

AGENDA
BOARD OF CITY COMMISSIONERS
DECEMBER 16, 2024 AT 6:00 PM
COMMISSION CHAMBERS AT CITY HALL
16 WEST 9TH STREET
SHAWNEE, OKLAHOMA

Official action can only be taken on items which appear on the agenda. The public body may adopt, approve, ratify, deny, defer, recommend, amend, strike, or continue any agenda item. When more information is needed to act on an item, the public body may refer the matter to Staff or back to Committee or the recommending body. Under certain circumstances, items are deferred to a future date or stricken from the agenda entirely.

CALL TO ORDER

DECLARATION OF A QUORUM

INVOCATION

FLAG SALUTE

1. Citizens Participation (A three-minute limit per person)
(A twelve-minute limit per topic)

Citizens may provide comment relevant to City business. Per Oklahoma State Statute 25 O.S. § 311(B)(1), the City Commission may only consider, deliberate, or render decisions on those items of City business that were included in the agenda. For other citizen comments, the City Commission may refer the matter to the City Manager for administrative consideration, or to schedule the matter for Commission consideration at a later date.

2. Consider approval of Consent Agenda:

- a. Minutes from the November 18, 2024, regular meeting and December 9, 2024, special call meeting.
- b. Acknowledge the following minutes and reports:
 - Planning Commission Minutes from the October 2, 2024, regular meeting.
 - Shawnee Beautification, Parks, and Recreation Committee Minutes from the September 19, 2024, regular meeting.
 - License Payment Report for November 2024.

- Project Payment Report for November 2024.
- c. Budget amendments for Fiscal Year 2024 – 2025:
- Fund 603 - Insurance Recovery - To appropriate insurance proceeds received for traffic pole claim.
- d. Mayor Appointments:
- Shawnee Hospital Authority
 Ron Sharp 1st Partial Term Expires: September 30, 2028
Replaces Mike Warwick, Deceased
- e. Acknowledgment of Assistant City Manager Mark Simpson as City of Shawnee member for the REACT board.
- f. Approve renewal of contract with Latham Consulting Group and Dunnington Consulting for legislative consulting services.
3. Presentation of the Pet of the Month by Animal Control.
4. Acknowledgment of the Oklahoma Municipal League's Honor Roll of Service for Twenty-Five Years of Service to the City of Shawnee.
5. Presentation by the Pottawatomie County School Superintendents regarding the importance of education funding and the proposed April 1, 2025, election for the continuation of the county sales tax of 0.00495-cent "Education Money," which is set to expire in June 2026.
6. Public Hearing on an Amendment to the City of Shawnee Five-Year Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029, encompassing multiple changes.
7. Consideration of an Amendment to the City of Shawnee Five-Year Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029, encompassing multiple changes.
8. Consideration of the following Budget Amendments regarding the City of Shawnee's Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029.
- a. Fund 303 - 2018 Capital Improvement Plan - adding Expo Fleet Acquisition

- 3/4 Ton Truck to the Capital Improvement Plan

- b. Fund 304/502 - American Rescue Plan Association (ARPA)/Shawnee Municipal Authority/Capital Projects - adding Walnut Street to both ARPA and Shawnee Municipal Authority in the Capital Improvement Plan
 - c. Fund 502 - Shawnee Municipal Authority/Capital Projects - adding SW Loop Water Main Project
9. Consideration and approval of the City Manager's hiring of James Kriwanek as the City's Fire Chief.
 10. Consideration of a contract between the City of Shawnee and Wall Engineering for Design Services associated with the SW Loop Water Main Project.
 11. Consideration of a Professional Services Agreement with Kimley-Horn and Associates, Inc. to provide design services for Wallace Street Sidewalk project.
 12. Consideration of an amendment to a contract with Landmark Construction to provide Construction Manager at Risk Services for the Shawnee Fire Department Station 3 Remodel.
 13. Consideration of a Memorandum of Understanding between the City of Shawnee and the Oklahoma Department of Mental Health and Substance Abuse Services related to the provision of overdose education, Naloxone distribution training, and overdose reversal kits.
 14. Consideration of an ordinance of the City of Shawnee, Oklahoma amending Section 16, Article II, Division 8 of the Shawnee Municipal Code; providing for repeal; providing for severability; providing for codification.
 15. Consideration of an emergency clause as it relates to Agenda Item No. 14 for the protection of the public's health, safety, and welfare, an emergency is declared to exist per Oklahoma State Statute Title 11, Article XIV, Section 14-103.
 16. Public hearing of a request to rezone property located at 3918 North Kickapoo from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).
Case No. RZ05-24 | Applicant: Erika Jones
(Deferred from November 18, 2024 City Commission meeting.)

17. Consideration of an ordinance to rezone from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District) for property located at 3918 Kickapoo Avenue.
Case No. RZ05-24 | Applicant: Erika Jones
18. Public Hearing of a request for a Conditional Use Permit for a Short Term Rental located at 40 Chickasaw Drive.
Case No. CUP05-24 | Applicant: Edward King
19. Consideration of a Conditional Use Permit for a Short Term Rental located at 40 Chickasaw Drive.
Case No. CUP05-24 | Applicant: Edward King
20. Consider Bid(s):
 - a. Lowe's Water Line Loop Replacement (Award)
 - b. Hayes Street Waterline Replacement (Award)
 - c. Public Works Maintenance Facility - Storm Repairs (Award)
21. Acknowledge Monthly Sales Tax and Budget Reports.
22. Administrative Report(s):
 - a. Per- and Poly-Fluoroalkyl Substances (PFAS) Update - Joe Vorndran, City Attorney
23. New Business (Any matter not known or which could not have been reasonably foreseen prior to the posting of the agenda.)
24. Commissioners Comments
25. Discussion and consideration of entering into executive session, as allowed under 25 O.S. § 307 (B) (4) to discuss confidential information between City Council, City Attorney and attorneys from Fulmer Sill concerning litigation against social media companies related to mental health, addiction and societal harms on behalf of the City of Shawnee and, under advice of City Attorney, disclosure will seriously impair the ability of the City of Shawnee to conduct litigation in the public interest.
26. Discussion and consideration of entering into executive session, as allowed

under 25 O.S. § 307 (B) (4) to discuss confidential information between City Council, City Attorney and attorneys from Fulmer Sill concerning litigation against Pharmacy Benefit Managers related to price fixing schemes of insulin and other medications vital to the community on behalf of the City of Shawnee and, under advice of City Attorney, disclosure will seriously impair the ability of the City of Shawnee to conduct litigation in the public interest.

27. Discussion and consideration to authorize the Mayor to execute the Legal Services Agreement (LSA) and Resolution for the City of Shawnee for representation by Fulmer Sill on behalf of the City of Shawnee in litigation against social media companies.

28. Discussion and consideration to authorize the Mayor to execute the Legal Services Agreement (LSA) and Resolution for the City of Shawnee for representation by Fulmer Sill on behalf of the City of Shawnee in litigation against Pharmacy Benefit Managers.

29. Adjournment

Respectfully submitted,



Lisa Lasyone, MMC, City Clerk

The City of Shawnee encourages participation from its citizens in public meetings. If participation is not possible due to a disability, notify the City Clerk, in writing, at least forty-eight hours prior to the scheduled meeting, and necessary accommodations will be made. (ADA 28 CFR 36)

DRAFT

BOARD OF CITY COMMISSIONERS PROCEEDINGS

NOVEMBER 18, 2024 AT 6:00 PM

The Board of City Commissioners of the City of Shawnee, County of Pottawatomie, State of Oklahoma, met in Regular Session in the Commission Chambers at City Hall, 16 West 9th Street, Shawnee, Oklahoma on Monday, November 18, 2024 at 6:00 PM, pursuant to notice duly posted as prescribed by law on Thursday, November 14, 2024, at 5:54 PM. Mayor Stephens presided and called the meeting to order. Upon roll call, the following members were in attendance.

Eric Stephens

Mayor

Absent

Commissioner Ward 1 - Vice Mayor

Greta Madson

Commissioner Ward 2

Chris Odneal

Commissioner Ward 3

Ashley Fichtner

Commissioner Ward 4

Mark Sehorn

Commissioner Ward 5

Lauren Richter

Commissioner Ward 6

ABSENT: Daniel Matthews

CALL TO ORDER

DECLARATION OF A QUORUM

INVOCATION

FLAG SALUTE

1. Citizens Participation (A three-minute limit per person)
(A twelve-minute limit per topic)

Citizens may provide comment relevant to City business. Per Oklahoma State Statute 25 O.S. § 311(B)(1), the City Commission may only consider, deliberate, or render decisions on those items of City business that were included in the agenda. For other citizen comments, the City Commission may refer the matter to the City Manager for administrative consideration, or to schedule the matter for Commission consideration at a later date.

Mr. Rob Morris, Ms. Theresa Cody, Mr. John Bobb-Semple, and Ms. Cyndi Berger spoke during Citizens Participation.

2. Consider approval of Consent Agenda:

- a. Minutes from the October 21, 2024, regular meeting.
- b. Acknowledge the following minutes and reports:
 - Shawnee Urban Renewal Authority Minutes from the August 6, 2024, regular meeting.
 - License Payment Report for October 2024.
 - Project Payment Report for October 2024.
- c. Lake Lease Transfer:
 - Magnino A Lot 8, 17230 Magnino Rd
From: Brian Eugene Hughes
To: Morgan Mosley
- d. Approval of an agreement with McLoud Fire Department for Dispatch Services.
- e. Acknowledge updated Bylaws for the Shawnee Public Library Advisory Board.
- f. Authorize an amendment to a Professional Services Agreement with Brandstetter Carroll Inc. for Design Services for the Fire Station #3 remodel.

- g. Approval of the FY-2024 Audit Engagement Letter with Arledge & Associates, P.C.

A motion was made by Commissioner Odneal, seconded by Commissioner Sehorn, to approve Consent Agenda Item Nos. 2(a-g) with a correction to Agenda Item No. 2(a) reflecting Commissioner Matthews as Vice Mayor. Motion carried 6-0-0.

AYE: Odneal, Sehorn, Richter, Madson, Stephens, Fichtner

NAY: None

ABSTAIN: None

3. Presentation of the Pet of the Month by Animal Control.

Animal Control Officer Theresa Touchet introduced Wolfie, an approximately ten (10) month old Airedale Terrier mix.

4. Mayor's Proclamation(s)

- a. "Small Business Saturday & Shop Shawnee Day", November 30, 2024

Ms. Lisa Gilcrease with Shawnee Forward accepted the Mayor's Proclamation for "Small Business Saturday & Shop Shawnee" from Mayor Stephens.

5. Consideration of a resolution of the Mayor and City Commission of the City of Shawnee, Oklahoma that establishes and provides compensation of the City Manager pursuant to Article V, Section 3 of the City Charter.

City Attorney Joe Vorndran stated that at the October 21, 2024, City Commission meeting a step merit pay increase was approved for the City Manager commensurate with that of other City employees. He stated that Article V, Section 3 of the City Charter, stipulates that the agreed-upon salary for the City Manager be fixed and recited by resolution.

A motion was made by Commissioner Sehorn, seconded by Commissioner Odneal, to approve a resolution of the Mayor and City Commission of the City of Shawnee, Oklahoma that establishes and provides compensation of the City Manager pursuant to Article V, Section 3 of the City Charter.

Resolution No. 6758 was introduced.

A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF SHAWNEE, OKLAHOMA THAT ESTABLISHES AND PROVIDES COMPENSATION OF THE CITY MANAGER PURSUANT TO ARTICLE V, SECTION 3 OF THE CITY CHARTER.

Motion carried 6-0-0.

AYE: Sehorn, Odneal, Stephens, Fichtner, Richter, Madson

NAY: None

ABSTAIN: None

6. Consideration of a resolution declaring certain items surplus and no longer needed for City purposes; describing said items; and authorizing disposal of said item at the City's discretion.

City Manager Andrea Weckmueller-Behringer stated that over the years, the City has acquired various pieces of outdoor Christmas decorations and the Public Works Department has displayed the decorations in public areas. Approximately seven (7) sets of decorations remain, each with multiple pieces, of which only a few are still operational. Staff is requesting that the decorations be declared surplus and no longer needed for City purposes.

A motion was made by Commissioner Odneal, seconded by Mayor Stephens, to approve a resolution declaring certain items surplus and no longer needed for City purposes; describing said items; and authorizing disposal of said item at the City's discretion.

Resolution No. 6759 was introduced.

A RESOLUTION DECLARING CERTAIN ITEMS OF PERSONAL PROPERTY SURPLUS AND NO LONGER NEEDED FOR CITY PURPOSES; DESCRIBING SAID ITEMS; AND AUTHORIZING SALE OR DISPOSAL AT THE CITY'S DISCRETION.

Motion carried 6-0-0.

AYE: Odneal, Stephens, Fichtner, Sehorn, Richter, Madson

NAY: None

ABSTAIN: None

7. Consideration of an ordinance regarding an update to the OkMRF (Oklahoma

Municipal Retirement Fund) DB Master Plan and Joinder Agreement.

City Manager Andrea Weckmueller-Behringer advised that full-time, non-union City employees participate in retirement plans administered by the OkMRF. The Internal Revenue Service (IRS) requires the retirement plans to be updated and submitted for approval every six (6) years. The Defined Benefit (DB) Plan is due for submittal and the City has received notification that the IRS approved the plan updates.

A motion was made by Commissioner Sehorn, seconded by Commissioner Fichtner, to approve an ordinance regarding an update to the OkMRF (Oklahoma Municipal Retirement Fund) DB Master Plan and Joinder Agreement.

Ordinance No. 2812NS was introduced.

AN ORDINANCE AMENDING THE EMPLOYEE RETIREMENT SYSTEM, DEFINED BENEFIT PLAN FOR THE CITY OF SHAWNEE, OKLAHOMA BY ADOPTING A REVISED AND RESTATED RETIREMENT PLAN; PROVIDING RETIREMENT BENEFITS FOR ELIGIBLE EMPLOYEES OF THE CITY OF SHAWNEE, OKLAHOMA; PROVIDING FOR PURPOSE AND ORGANIZATION; PROVIDING FOR DEFINITIONS; PROVIDING FOR ELIGIBILITY AND PARTICIPATION; PROVIDING FOR NON-ALIENATION OF BENEFITS; PROVIDING FOR EMPLOYER AND EMPLOYEE CONTRIBUTIONS; PROVIDING FOR ACCOUNTING, ALLOCATION, AND VALUATION; PROVIDING BENEFITS; PROVIDING FOR REQUIRED NOTICE; PROVIDING FOR AMENDMENTS AND TERMINATION; PROVIDING FOR TRANSFER TO AND FROM OTHER PLANS; CREATING A RETIREMENT COMMITTEE AND PROVIDING FOR POWERS, DUTIES, AND RIGHTS OF RETIREMENT COMMITTEE; PROVIDING FOR PAYMENT OF CERTAIN OBLIGATIONS; PROVIDING FOR DURATION AND PAYMENT OF EXPENSES; PROVIDING FOR EFFECTIVE DATE; PROVIDING FOR VESTING SCHEDULES; PROVIDING FOR A FUND TO FINANCE THE SYSTEM TO BE POOLED WITH OTHER INCORPORATED CITIES, TOWNS AND THEIR AGENCIES AND INSTRUMENTALITIES FOR PURPOSES OF ADMINISTRATION, MANAGEMENT, AND INVESTMENT AS PART OF THE OKLAHOMA MUNICIPAL RETIREMENT FUND; PROVIDING FOR PAYMENT OF ALL CONTRIBUTIONS UNDER THE SYSTEM TO THE OKLAHOMA MUNICIPAL RETIREMENT FUND FOR MANAGEMENT AND INVESTMENT; PROVIDING FOR REPEALER AND SEVERABILITY; AND ADOPTING THOSE AMENDMENTS MANDATED

BY THE INTERNAL REVENUE CODE.

Motion carried 6-0-0.

AYE: Sehorn, Fichtner, Richter, Madson, Odneal, Stephens

NAY: None

ABSTAIN: None

Ordinance No. 2812NS was adopted by the City Commission.

8. Consideration of an ordinance of the City of Shawnee, Oklahoma amending Section 22-184(A) and Section 22-208(E)(3)(a), of the Shawnee Municipal Code, providing for repealer, codification, and severability.

Community Development Director Rian Harkins stated that the Unified Development Code (UDC) has been adopted and is in the process of being codified. During that process, two (2) minor errors were identified. The proposed ordinance corrects those errors.

A motion was made by Commissioner Sehorn, seconded by Commissioner Odneal, to approve an ordinance of the City of Shawnee, Oklahoma amending Section 22-184(A) and Section 22-208(E)(3)(a), of the Shawnee Municipal Code, providing for repealer, codification, and severability.

Ordinance No. 2813NS was introduced.

AN ORDINANCE OF THE CITY OF SHAWNEE, OKLAHOMA AMENDING SECTION 22-184(A) AND SECTION 22-208(E)(3)(a) OF CHAPTER 22, "PLANNING AND DEVELOPMENT"; AND ALSO PROVIDING FOR REPEALER, CODIFICATION, AND SEVERABILITY.

Motion carried 6-0-0.

AYE: Sehorn, Odneal, Stephens, Fichtner, Richter, Madson

NAY: None

ABSTAIN: None

Ordinance No. 2813NS was adopted by the City Commission.

9. Consideration of a resolution updating the City Fee Schedule by amending portions of Chapter 22, "Planning and Development", Article X of the Shawnee

Municipal Code; and providing for the re-adoption of the City Fee Schedule in whole.

Community Development Director Rian Harkins stated that at the October 21, 2024, meeting, Staff presented to the City Commission an overview of current and proposed planning and zoning fees for the City as well as peer city comparisons. Based on the feedback received from the City Commissioners, Staff has now drafted a proposed resolution aimed at formalizing these fees. The establishment or increase of these application fees represents a crucial step towards ensuring the sustainability and quality of development projects within the City of Shawnee.

A motion was made by Commissioner Madson, seconded by Commissioner Odneal, to approve a resolution updating the City Fee Schedule by amending portions of Chapter 22, "Planning and Development", Article X of the Shawnee Municipal Code; and providing for the re-adoption of the City Fee Schedule in whole.

Resolution No. 6760 was introduced.

A RESOLUTION UPDATING THE CITY FEE SCHEDULE BY AMENDING PORTIONS OF CHAPTER 22, "PLANNING AND DEVELOPMENT" OF THE SHAWNEE MUNICIPAL CODE; AND PROVIDING FOR THE RE-ADOPTION OF THE CITY FEE SCHEDULE IN WHOLE.

Motion carried 6-0-0.

AYE: Madson, Odneal, Stephens, Fichtner, Sehorn, Richter

NAY: None

ABSTAIN: None

10. Public hearing of a request to rezone property located at 3918 North Kickapoo Avenue from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).

Case No. RZ05-24 | Applicant: Erika Jones

Community Development Director Rian Harkins stated that the proposed rezoning has not been reviewed by the Planning Commission due to the cancelation of the November meeting. Staff is recommending this item be deferred to the December 16, 2024, City Commission meeting in order to allow it to be reviewed by the Planning Commission at the December meeting.

A motion was made by Commissioner Madson, seconded by Commissioner

Fichtner, to defer the item to the December 16, 2024, City Commission meeting. Motion carried 6-0-0.

AYE: Madson, Fichtner, Sehorn, Richter, Odneal, Stephens

NAY: None

ABSTAIN: None

11. Public hearing of a request to rezone from R-1 (Low Density Residential District) to C-2 (Regional Commercial District). *(Property located at approximately 2025 East MacArthur.)*

Case No. RZ04-24 | Applicant: Rueben Peltier Properties (Nick Atwood, Attorney).

(Deferred from the October 21, 2024, City Commission meeting.)

Community Development Director Rian Harkins stated this is a rezoning request for property located at 2025 East MacArthur. He stated that the Planning Commission and Staff recommend denial.

Mayor Stephens declared a public hearing in session to consider rezoning the property located at approximately 2025 East MacArthur from R-1 (Low-Density Residential) to C-2 (Regional Commercial District). Mr. Nick Atwood appeared in favor of the rezoning. Mr. Rob Morris and Mr. Bill Ruth appeared against the rezoning. The public hearing was closed.

12. Consideration of an ordinance to rezone property located at approximately 2025 East MacArthur from R-1 (Low Density Residential District) to C-2 (Regional Commercial District).

Case No. RZ04-24 | Applicant: Rueben Peltier Properties (Nick Atwood, Attorney)

A motion was made by Commissioner Fichtner, seconded by Commissioner Sehorn, to deny an ordinance to rezone property located at approximately 2025 East MacArthur from R-1 (Low Density Residential District) to C-2 (Regional Commercial District). Motion carried 6-0-0.

AYE: Fichtner, Sehorn, Richter, Madson, Odneal, Stephens

NAY: None

ABSTAIN: None

13. Consideration of the following budget amendments for Fiscal Year 2024 – 2025:

- a. General Fund - Fund 001 - Local Emergency Planning Committee (LEPC) - to appropriate funds to pay expenses for Craig Carter & Associates.
- b. General Fund - Fund 001 - Local Emergency Planning Committee (LEPC) - to appropriate prior year funds to open a new bank account in Fiscal Year 2024-2025.
- c. Donations Fund - Fund 706 - to appropriate prior year donations received by the Police Department for use in Fiscal Year 2024-2025 for cost associated with Ammo/Special Training.
- d. Airport Fund - Fund 511 - to appropriate funds to cover fuel expenses purchased in Fiscal Year 2024-2025 at the Airport.
- e. General Fund - Fund 001 - to appropriate grant funds received from Best Friends Animal Society for use at the Animal Shelter.

Finance Director Kimberly Smith provided a staff report for the proposed budget amendments.

A motion was made by Commissioner Sehorn, seconded by Commissioner Madson, to approve the budget amendments listed in Agenda Item No. 13(a-e). Motion carried 6-0-0.

AYE: Sehorn, Madson, Odneal, Stephens, Fichtner, Richter

NAY: None

ABSTAIN: None

14. Acknowledge Monthly Sales Tax and Budget Reports.

Finance Director Kimberly Smith reported sales tax collections are up One Hundred Forty-Nine Thousand Five Hundred Forty-Three Dollars (\$149,543.00) or One Point One Seven Percent (1.17%), over the projected budget year-to-date. She stated that use tax collections are down approximately Seventy-Six Thousand

Thirty Dollars (\$76,030.00) or Three Point Nine Zero Percent (3.90%) below the projected budget year-to-date.

15. New Business (Any matter not known or which could not have been reasonably foreseen prior to the posting of the agenda.)

There was no new business.

16. Commissioners Comments

Commissioner Madson commented on the Pet of the Month and her role as Commissioner.

Commissioner Odneal commented on the sales tax report, the Shop Local Proclamation, and thanked the citizens that spoke during Citizen Participation.

Commissioner Sehorn commented on the sales tax report and encouraged everyone to shop and dine in Shawnee.

Mayor Stephens encouraged everyone to shop local and at small businesses. He also commented on Veterans Day.

RECESS CITY COMMISSION MEETING BY THE POWER OF THE CHAIR
TO CONVENE SHAWNEE AIRPORT AUTHORITY AND SHAWNEE
MUNICIPAL AUTHORITY (6:47 P.M.)

RECONVENE CITY COMMISSION MEETING BY THE POWER OF THE
CHAIR (7:24 P.M.)

17. Consider an executive session in accordance with 25 O.S. § 307(B)(4) to discuss confidential communications between a public body and its attorney concerning a pending investigation, claim, or action, if the public body, with the advice of its attorney, determines that disclosure will seriously impair the ability of the public body to process the claim or conduct a pending investigation, litigation, or proceeding in the public interest, specifically regarding PFAS settlement.

A motion was made by Commissioner Sehorn, seconded by Commissioner Odneal, to approve an executive session in accordance with 25 O.S. § 307(B)(4) to discuss confidential communications between a public body and its attorney concerning a pending investigation, claim, or action, if the public body, with the advice of its attorney, determines that disclosure will seriously impair the ability of the public body to process the claim or conduct a pending investigation, litigation, or proceeding in the public interest, specifically regarding PFAS settlement.

Motion carried 6-0-0.

AYE: Sehorn, Odneal, Stephens, Fichtner, Richter, Madson

NAY: None

ABSTAIN: None

COMMISSION ENTERED INTO EXECUTIVE SESSION AT 7:25 P.M. WITH ALL MEMBERS PRESENT.

COMMISSION RECONVENED FROM EXECUTIVE SESSION AT 7:47 P.M. WITH ALL MEMBERS PRESENT.

18. Consider matters discussed in executive session in accordance with 25 O.S. §307(B)(4) to discuss confidential communications between a public body and its attorney concerning a pending investigation, claim, or action if the public body, with the advice of its attorney, determines that disclosure will seriously impair the ability of the public body to process the claim or conduct a pending investigation, litigation, or proceeding in the public interest, specifically regarding PFAS settlement.

Commissioner Odneal asked Staff for an administrative report regarding the PFAS settlement at the next City Commission meeting.

A motion was made by Commissioner Odneal, seconded by Commissioner Madson, to opt into the PFAS MDL settlement upon advice of counsel. Motion carried 6-0-0.

AYE: Odneal, Madson, Stephens, Fichtner, Sehorn, Richter

NAY: None

ABSTAIN: None

19. Adjournment

There being no further business to be considered, the meeting was adjourned by power of the Chair. (7:49 p.m.)

ERIC STEPHENS, MAYOR

ATTEST:

LISA LASYONE, MMC
CITY CLERK

DRAFT

BOARD OF CITY COMMISSIONERS PROCEEDINGS

DECEMBER 9, 2024 AT 4:30 PM

The Board of City Commissioners of the City of Shawnee, County of Pottawatomie, State of Oklahoma, met in Special Call Session in the Commission Chambers at City Hall, 16 West 9th Street, Shawnee, Oklahoma on Monday, December 9, 2024 at 4:30 PM, pursuant to notice duly posted as prescribed by law on Thursday, December 5, 2024, at 4:26 PM. Mayor Stephens presided and called the meeting to order. Upon roll call, the following members were in attendance.

Eric Stephens

Mayor

Daniel Matthews

Commissioner Ward 1 - Vice Mayor

Greta Madson

Commissioner Ward 2

Chris Odneal

Commissioner Ward 3

Ashley Fichtner

Commissioner Ward 4

Mark Sehorn

Commissioner Ward 5

Lauren Richter

Commissioner Ward 6

ABSENT: None

CALL TO ORDER

DECLARATION OF A QUORUM

1. Work session on Sales Tax and General Fund Operations.

City Manager Andrea Weckmueller-Behringer provided a presentation regarding the Sales Tax and General Fund Operations. Topics discussed included:

- Regulations for City Finances
- Types of Revenues
- Municipal Funds
- General Fund Operations
- General Fund Revenues
 - Major General Fund Revenues
- Combined Sales Tax Rate
 - State Sales Tax
 - County Sales Tax
 - City Sales Tax
 - Peer County Population & Tax Rate
 - Peer City Population Tax Rate & Employees

- Audited Financials
- Budget Development
- Workforce Impact
- Current Status
- Future Outlook

2. Adjournment

There being no further business to be considered, the meeting was adjourned by power of the Chair. (5:01 p.m.)

ERIC STEPHENS, MAYOR

ATTEST:

LISA LASYONE, MMC
CITY CLERK

PLANNING COMMISSION MINUTES

DATE: October 2, 2024

MINUTES

The Planning Commission of the City of Shawnee, County of Pottawatomie, State of Oklahoma, met in person for a regular meeting on October 2, 2024, at 1:30 p.m., according to notice duly posted as prescribed by law.

Chair Barrett called the meeting to order at **1:30 p.m.** Community Development Director Rian Harkins called Roll and stated a quorum was present.

The following Commissioners were present:

Present: Johnson, Porter, Hayes, Barrett, Reese, Alexander, Hembree

Absent:

Item 1. Consideration of approval of the minutes from the regular meeting on September 4, 2024. Chair Barrett asked for questions or corrections to the minutes.

Commissioner Johnson made a motion to **Approve** the minutes as presented, which Commissioner Reese seconded. Motion **passed 7-0-0.**

Aye: Johnson, Barrett, Reese, Porter, Alexander, Hayes, Hembree

Nay: None

Abstain: None

Item 2. Consideration of a request for a Final Plat for Union Square Addition Case No. **FPL05-24** |

Applicant: Royal Land Properties, LLC

Background: The subject property is located northeast of the intersection of E 45th Street and N. Union Avenue in Section 31, Township 11 North, Range 4 East. The property is zoned C-2 (Regional Commercial District). The Preliminary Plat included approximately 11.952 acres and was approved in May 2024. The Preliminary Plat of Union Square Addition contained eight (8) lots and one (1) common tract. The City Commission reviewed and approved the Preliminary Plat after suggested changes made by staff were incorporated.

Discussion:

The proposed Final Plat was submitted by the applicant and reviewed by staff, which proposes the following revisions:

- Noting all cross-access easements as delineated on the copy of the proposed plat staff has marked up.
- Revise easements to note they are also drainage easements as shown on the marked-up copy of the proposed plat.
- Include the additional drainage easement near the northwest corner of the common area as noted by staff.

Findings and Facts:

- Staff has reviewed the document for accuracy and finds it sufficient.
- The City Engineer, Community Development Director, and Fire Marshal are satisfied with the Final Plat with the proposed revisions

Alternatives:

- Recommending Approval of Case No. FPL05-24, for the Final Plat, Union Square Addition as presented.
- Recommending Approval of Case No. FPL05-24, for the Final Plat, Union Square Addition as recommended (including suggested revisions).
- Recommending Denial of the application for Case No. FPL05-24.
- Recommending Deferral of Case No. FPL0-24 with a request for additional and specific information to a certain date.

Recommendation: Based on the Findings and Facts, staff recommends that the Planning Commission recommend to the City Commission **CONDITIONAL APPROVAL** of **FPL05-24** for the Final Plat, Union Square Addition with the suggested revisions.

It was noted that this application will be heard at the City Commission meeting on Monday, October 21, 2024, at 6:00 p.m. in the City Hall Commission Chambers.

Commissioner Porter made a motion to recommend the **APPROVAL** of Case No. FPL05-24 with the conditions noted in the staff report, which Commissioner Reese seconded.

Motion **passed 7-0-0**.

Aye: Reese, Johnson, Porter, Hayes, Alexander, Barrett, Hembree

Nay: None

Abstain: None

Item 3. Public hearing and consideration of a request to rezone from C-1 (Local Commercial District) to R-2 (Medium Density Residential District). Case No. **RZ03-24** | Applicant: Gerona Fowler

Background

The subject property is located at 1339 E Highland and is currently zoned C-1 Local Commercial. The request by the applicant is to rezone the property to the R-2 Medium Density Residential District. The subject property is at the corner of Highland and Pesotum at the southwest corner of the intersection.

Discussion

The subject property is zoned C-1 (Local Commercial District). The properties surrounding the subject property to the east, west, and north are a combination of C-1 Local Commercial and C-2 Regional Commercial Zoning Districts. To the south, the adjacent parcels are zoned R-2 (Medium Density Residential District). The applicant is currently looking to sell the property, which contains a single family detached dwelling unit. However, the existing dwelling unit is considered a non-conforming use. Because of this, the applicant is seeking the zoning change to make the dwelling unit a legally compliant structure as part of the sale of the property.

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Medium Density Residential land use designation. This land use designation features a density of up to 12 dwelling units per acre. R-2 is an appropriate zoning district for this land use designation. The request is in conformance with the 2040 Comprehensive Plan.

Referencing the City of Shawnee Zoning Code (Code) DIVISION 15. - Amendments; Procedures. Section 22-645. – Planning commission recommendation required. This section gives authority to the Planning Commission to make changes (amendments) to the official Zoning Map. *"...be amended, supplemented, changed, modified, or repealed by ordinance, but no change shall be made until the planning commission, after notice and public hearing, files with the city commission a report and recommendation on the proposed change."*

Staff completed the required public hearing notifications for this application. All property owners within 300' from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Findings and Facts:

- The subject property is adjacent to R-2 zoning.
- If approved, the rezoning of the property would make the existing dwelling unit a conforming structure.
- Removing the non-conforming status of the dwelling unit will allow for easier title transfer.
- The request is in conformance with the Comprehensive Plan Future Land Use Map (FLUM).

- Notification for a public hearing was served.

Options:

- Recommending Approval of Case No. RZ03-24 to rezone from C-1 (Local Commercial District) to R-2 (Medium Density Residential District) as requested by the applicant.
- Recommending Denial of the application for RZ03-24 to rezone the subject property.
- Recommending Deferral Case No. RZ03-24 with a request for additional and specific information to a certain date.

Recommendation: Based on the Findings and Facts, staff recommends that the Planning Commission recommend to the City Commission **APPROVAL** of **RZ03-24** to rezone the subject property from C-1 (Local Commercial District) to R-2 (Medium Density Residential District).

This rezoning application will be heard at the City Commission meeting on Monday, October 21, 2024, at 6:00 pm.

Chair Barrett opened the public hearing, and then noted no one present to speak on the item, after which the public hearing was closed after no additional comment. Planning Commission members then discussed the merits of the application.

Commissioner Reese made a motion to recommend the **APPROVAL** of Case No. RZ03-24, which Commissioner Hayes seconded.

Motion **passed 7-0-0**.

Aye: Reese, Johnson, Porter, Hayes, Alexander, Barrett, Hembree

Nay: None

Abstain: None

Item 4. Public hearing and consideration of a request to rezone from R-1 (Low Density Residential District) to C-2 (Regional Commercial District). Case No. **RZ04-24** | Applicant: Rueben Peltier Properties (Nick Atwood, Attorney)

Background

The subject property is located at approximately 2025 E MacArthur and contains approximately 4.84 acres. The request is to rezone approximately 1.81 acres of the property to C-2 (Regional Commercial District) from the current R-1 (Low Density Residential District). The subject property is just to the east of the intersection of Bryant and MacArthur. The remaining part of the property would likely be split from the area under consideration for later development. The applicant is requesting the rezoning in order to construct a Dollar General store location.

Discussion

The subject property is zoned R-1 (Low Density Residential District). The properties surrounding the subject property to the east are zoned TA (Transitional Agricultural District). To the north, across MacArthur, the land is zoned C-2 (Regional Commercial District). To the immediate west and then further west at the intersection is land zoned R-1 and C-1 respectively. Thus, the request would be an extension of the existing C-2 zoning located to the north of the subject property.

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Large Lot Residential land use designation. The description of this land use is that is a land use focused on single family detached development, with civic uses generally allowed, and with special permission granted for higher intensity uses. Transitional Agricultural zoning is generally the appropriate zoning district for this land use designation. However, there is a low intensity commercial land use immediately north of the subject property. This land use classification generally lends itself to the C-1 Local Commercial District. With this in mind, the request for the C-2 zoning would not be in conformance with the 2040 Comprehensive Plan.

Referencing the City of Shawnee Zoning Code (Code) DIVISION 15. - Amendments; Procedures. Section 22-645. – Planning commission recommendation required. This section gives authority to the Planning Commission to make changes (amendments) to the official Zoning Map. *"...be amended, supplemented, changed, modified, or repealed by ordinance, but no change shall be made until the planning commission, after notice and public hearing, files with the city commission a report and recommendation on the proposed change."*

Staff completed the required public hearing notifications for this application. All property owners within 300' from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Staff have received objections to the rezoning request, with any written objections included as an attachment to the staff report.

Findings and Facts:

- The subject property is adjacent to C-2 and TA zoning on MacArthur.
- Due to the Large Lot Residential future land use classification, the request is generally not in conformance with the Comprehensive Plan Future Land Use Map (FLUM).
- There is a Low Intensity Commercial designation on the FLUM immediately across MacArthur to the north.
- The increased lighting, landscaping, and screening standards would help mitigate any negative impacts upon neighboring properties.
- Notification for a public hearing was served.

Options:

- Recommending Approval of Case No. RZ024-24 to rezone from R-1 (Low Intensity Residential District) to C-2 (Regional Commercial District) as requested by the applicant.
- Recommending Approval of Case No. RZ024-24 to rezone from R-1 (Low Intensity Residential District) to C-1 (Local Commercial District).
- Recommending Denial of the application for RZ04-24 to rezone the subject property.
- Recommending Deferral Case No. RZ04-24 with a request for additional and specific information to a certain date.

Recommendation: Based on the Findings and Facts, staff recommends that the Planning Commission recommend to the City Commission **DENIAL** of **RZ04-24** to rezone the subject property to C- 2 (Highway Commercial District) to R-1 (Low Density Residential District).

This rezoning application will be heard at the City Commission meeting on Monday, October 21, 2024, at 6:00 pm.

Chair Barrett opened the public hearing, and then noted that individuals will be limited to three minutes of speaking time on this matter, and that comments should not simply be a repeat of what others have previously stated. Multiple people spoke against the proposed rezoning, citing the nearby school, drainage, traffic, and the presence of multiple locations of this store in the community already. Nick Atwood, Attorney for the applicant, spoke in favor of the proposal, noting that this part of the community is underserved for grocery stores, and that this part of the community will continue to grow in spite of no access to Interstate 40. After public comment had concluded, Chairman Barrett closed the public hearing, and noted because he was related to the applicant, he would be abstaining from the vote to avoid a conflict of interest. Commissioner Porter noted the following factors as reasons to deny the application: traffic, drainage, and the lack of continuity in uses.

Commissioner Alexander made a motion to recommend the **DENIAL** of Case No. RZ04-24, which Commissioner Hembree seconded.

Motion **passed 6-0-1**.

Aye: Reese, Johnson, Porter, Hayes, Alexander

Nay: None

Item 5. Community Development Update

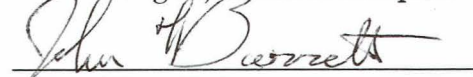
Community Development Director Harkins introduced the Planning Commission to Emily Lisenby, the newest staff member. She will be assuming the position held by Rachel Clyne. CDBG housing rehabilitation projects continue. Staff will be looking at additional feedback and project opportunities using CDBG funds, and that input can be sent to city staff for discussion as part of the Annual Action Plan. Director Harkins also spoke of the upcoming Quad State Planning Conference held this coming October in Arkansas, noting staff will be involved in two presentations at the event. He also noted that the Twin Lakes Master Plan will be awarded the Outstanding Plan award from the Oklahoma Chapter of the American Planning Association.

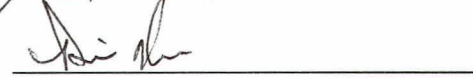
Item 6. Planning Commissioners' Comments

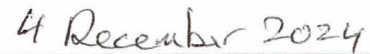
Commissioners expressed excitement for the achievements of many groups in the community, how the community continues to move forward, and excitement for the ongoing and upcoming events and projects, how Pedal-Pa-Looza had over 200 in attendance, and gratitude for the work of staff. It was also noted that the Appalachian Service Project is looking for volunteers to help with crisis management.

Item 7. Adjournment

The meeting adjourned at 2:31 p.m.


Chair/Vice-Chair


Community Development Director


Date


Date

**SHAWNEE BEAUTIFICATION, PARKS, AND RECREATION COMMITTEE
PROCEEDINGS**

SEPTEMBER 19, 2024 AT 4:00 PM

The Shawnee Beautification, Parks, and Recreation Committee of the City of Shawnee, County of Pottawatomie, State of Oklahoma, met in Regular Session in the Commission Chambers at City Hall, 16 West 9th Street, Shawnee, Oklahoma on, September 19, 2024 at 4:00 P.M., pursuant to notice duly posted as prescribed by law at 9:54 A.M. on September 18, 2024. Chairperson Payn presided and called the meeting to order. Upon roll call, the following members were in attendance.

Chad Payn
Chairperson

Absent
Vice Chairperson

Vacant
Committee Member

Kerri Keck
Committee Member

Sue Nelson
Committee Member

Vickie Winters
Committee Member

Absent
Commissioner/Committee Member

ABSENT: Sherry Lankford and Lauren Richter

CALL TO ORDER

DECLARATION OF QUORUM

1. Consideration of approval of the Minutes from the August 15, 2024 regular meeting.

A motion to approve the August 15, 2024 minutes was made by Kerri Keck. A 2nd was made by Vickie Winters. Motion carried 4-0.

Aye: Chad Payn, Kerri Keck, Vickie Winters, and Sue Nelson

Nay: None

2. Staff Reports

1. Kwame Thomas was introduced as the new Parks/Maintenance Supervisor.
2. Amy Riggins was introduced as the new Special Events and Volunteer Supervisor.
3. Angie Kelly was introduced as the new Senior Program Supervisor.
4. Some repairs are being done at the Sister Cities Park. Assistance was requested to raise funds to replace the flag poles at the Sister Cities Park as they were

destroyed by the 2023 tornado.

5. Ongoing repairs at Splash.

6. Cemetery mapping is ongoing with a possibility of going live at the end of September or beginning of October.

3. Consideration of Shawnee Beautification, Parks, and Recreation Regular 2025 Meeting Schedule.

A motion to approve the Shawnee Beautification, Parks, and Recreation Regular 2025 meeting schedule was made by Vickie Winters. A 2nd was made by Kerri Keck. Motion carried 4-0.

Aye: Chad Payn, Kerri Keck, Vickie Winters, and Sue Nelson

Nay: None

4. Consideration of date for the Committee Service Project in October to plant pansies in beds and pots on the corner of 9th and Bell Streets.

A motion to approve the date of October 17, 2024 at 4:00 P.M. for the Committee Service Project to plant pansies and shrubs in the flower beds and pots on the corner of 9th and Bell Streets was made by Kerri Keck. A 2nd was made by Vickie Winters. Motion carried 4-0.

Aye: Chad Payn, Kerri Keck, Vickie Winters, and Sue Nelson

Nay: None

5. Consideration of spending \$150.00 from Beautification Fund to purchase pansies for the Committee Service Project.

A motion to approve spending \$150.00 from Beautification Fund to purchase pansies and shrubs for the Committee Service Project was made by Kerri Keck. A 2nd was made by Sue Nelson. Motion carried 4-0.

Aye: Chad Payn, Kerri Keck, Vickie Winters, and Sue Nelson

Nay: None

6. Citizens Participation (A three-minute limit per person)
(A twelve-minute limit per topic)

Mr. Lutomski spoke during citizens participation.

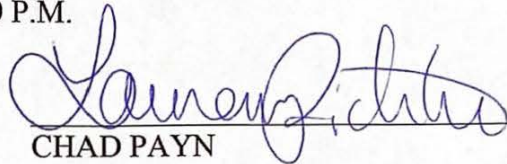
7. Committee Comments

Kerri Keck let the committee know of Veterans Memorial events coming up in November. Sue Nelson will check on getting some items donated for the

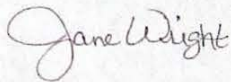
Committee Service Project.

8. Adjournment

The meeting was adjourned at 4:40 P.M.

 for
CHAD PAYN
CHAIRPERSON

ATTEST:



JANE WRIGHT
SECRETARY



Entity Payment Report

11/01/2024 - 11/29/2024

Payment Date	Name	Payment Type	Receipt #	Payment Amount
11/27/2024	ALL ABOUT ELECTRIC LLC	IBX CC	3888	100.00
11/26/2024	DOLLAR GENERAL STORE #30004	Check	3887	500.00
11/26/2024	DAREN & VALERIE BOYNE	Check	3886	792.00
11/26/2024	TWISTED ELECTRIC LLC	IBX CC	3885	75.00
11/25/2024	YEARWOOD DESIGN WORKS	Check	3884	75.00
11/25/2024	ACURA NEON, INC	Check	3883	75.00
11/25/2024	INTEGRATED HVAC	Check	3882	75.00
11/25/2024	COE PLUMBING	Check	3881	75.00
11/25/2024	BATH FITTERS	Check	3880	75.00
11/25/2024	RAFTER G ELECTRICAL, LLC	Check	3879	75.00
11/25/2024	LEGACY 4 PLUMBING	Check	3878	75.00
11/25/2024	OKLAHOMA SAFEROOM AND SEPTIC	Check	3877	75.00
11/25/2024	K & M DIRT SERVICES, LLC dba K&M WREKING	Check	3876	75.00
11/25/2024	RITCHIE ELECTRIC, INC	IBX CC	3875	75.00
11/21/2024	THIRD STEP PLUMBING	Check	3873	100.00
11/21/2024	ON THE MARK HEAT & AIR, LLC	IBX CC	3872	100.00
11/21/2024	ARBOR TRANSPORT & CONSTRUCTION	IBX CC	3871	75.00

11/21/2024	RHYCO ELECTRIC	IBX CC	3874	100.00
11/20/2024	REACT PLBG & HTG	Cash	3866	75.00
11/20/2024	BRUCE JOHNSON CONSTRUCTION LLC	IBX CC	3869	75.00
11/20/2024	BRUCE JOHNSON CONSTRUCTION LLC	IBX CC	3870	75.00
11/20/2024	SIGNET GROUP SERVICES ATTN sHELBY bLAIR	IBX CC	3864	15.00
11/20/2024	R-2 ELECTRIC INC	IBX CC	3863	75.00
11/20/2024	OKLAHOMA ROOTS LLC	IBX CC	3865	1,500.00
11/20/2024	AIRCO SERVICE	IBX CC	3868	75.00
11/20/2024	PINNACLE HOME SERVICES dba MISTER SPARKY	IBX CC	3867	75.00
11/19/2024	TROOPS REFRIGERATION	Check	3860	100.00
11/19/2024	CHASSIDY TONEY	Cash	3859	25.00
11/19/2024	AIRMAN SOLUTIONS INC	IBX CC	3858	100.00
11/19/2024	GROUND ZERO SHELTERS	IBX CC	3862	75.00
11/19/2024	PAUL THE PLUMBER	IBX CC	3861	75.00
11/18/2024	MGE GROUP, INC dba FUMO	Cash	3857	1,500.00
11/18/2024	MGE GROUP, INC dba FUMO	Cash	3856	1,500.00
11/18/2024	JOHN BRACKLEIN	Check	3853	792.00
11/18/2024	INSIGNIA SIGNS LLC	IBX CC	3854	75.00
11/18/2024	LARRISON ELECTRIC SERVICES	IBX CC	3855	75.00
11/18/2024	ACOCK CLIMATE CONTROL	IBX CC	3852	75.00
11/15/2024	RACHEL CLEERE PHOTOGRAPHY	Check	3851	50.00
11/14/2024	CARL HEAD JR & ROY DENZ SR	Check	3849	792.00

11/14/2024	SHAWNEE PUBLIC SCHOOL - TRANSPORTATION	Check	3848	50.00
11/14/2024	ESKIMO JOE'S CLOTHES	Check	3847	50.00
11/14/2024	BRAGGS PLUMBING INC	IBX CC	3850	100.00
11/13/2024	JIMMY'S PLUMBING	Cash	3846	75.00
11/13/2024	OKLAHOMA ROOTS CANNABIS COMPANY, INC	Check	3845	1,500.00
11/13/2024	VIP PLUMBING OK	IBX CC	3843	75.00
11/13/2024	\$ - SIGN INSTALLATION GROUP, INC dba NATIONAL SIGNS & SERVICE	IBX CC	3842	75.00
11/13/2024	DURANGO ELECTRIC LLC	IBX CC	3844	75.00
11/12/2024	LANNY & DEANA LEWIS	Check	3841	792.00
11/12/2024	BANCFIRST	Check	3838	15.00
11/12/2024	BANCFIRST	Check	3837	15.00
11/12/2024	BANCFIRST	Check	3836	15.00
11/12/2024	BANCFIRST	Check	3835	15.00
11/12/2024	HOLLOWELL PLUMBING, INC	Check	3832	75.00
11/12/2024	AMERICAN AIR CONDITIONING AND HEATING	Check	3830	75.00
11/12/2024	AMERICAN AIR CONDITIONING AND HEATING	Check	3829	75.00
11/12/2024	STANLEY PLUMBING SERVICES, LLC	IBX CC	3831	75.00
11/12/2024	\$ - ROGERS MECHANICAL CONTRACTORS, LLC	IBX CC	3834	75.00
11/12/2024	CLARITY TELECOM LLC DBA BLUEPEAK FIBER	IBX CC	3833	50.00
11/12/2024	AIR TECHNOLOGIES OF OKC INC	IBX CC	3839	100.00

11/12/2024	AIR TECHNOLOGIES OF OKC INC	IBX CC	3840	100.00
11/8/2024	MARGARET MANOR ELDERLY HOUSING	Check	3828	15.00
11/8/2024	PATCO ELECTRICAL SERVICE	Check	3827	75.00
11/8/2024	KENNEDY PLUMBING	Check	3826	75.00
11/7/2024	HOLIDOG INN	Check	3825	50.00
11/7/2024	CONCEPT ELECTRIC	Check	3823	100.00
11/7/2024	TRAVELIN TOMS COFFEE OF SHAWNEE	Check	3822	50.00
11/7/2024	MERGE LANE PROPERTIES, LLC	Check	3821	792.00
11/7/2024	CHECK 'N GO	Check	3819	15.00
11/7/2024	JASON JOBSON	IBX CC	3824	15.00
11/7/2024	SISSONS PLUMBING	IBX CC	3818	75.00
11/7/2024	IPLUMB CO	IBX CC	3820	75.00
11/6/2024	FORWARD THINKING PRODUCTS LLC	Cash	3815	50.00
11/6/2024	BLUSH INK, SP	IBX CC	3817	50.00
11/6/2024	BIRDIES GIFTS AND MORE	IBX CC	3811	50.00
11/6/2024	CLEAN RESIDENTIAL ENERGY LLC	IBX CC	3813	100.00
11/6/2024	WORK READY SHAWNEE	IBX CC	3812	50.00
11/6/2024	KJ HOWARD CONSTRUCTION	IBX CC	3816	100.00
11/6/2024	STANFIELD PLUMBING LLC	IBX CC	3810	75.00
11/6/2024	KELLYS PLUMBING AND HEATING	IBX CC	3814	75.00
11/5/2024	DENALI PLUMBING	IBX CC	3808	100.00
11/5/2024	DALE'S PLUMBING	IBX CC	3809	75.00

11/4/2024	FREEDOM FOREVER OKLAHOMA, LLC	Check	3807	75.00
11/4/2024	MORGAN MOSLEY	Check	3806	1,867.00
11/4/2024	REACT PLBG	IBX CC	3805	75.00
				17,347.00

Total Records: 84

12/2/2024



Monthly - City Clerk

11/01/2024 - 11/29/2024

Permit #	Permit Date	Permit Type	Parcel Address	Applicant Name	Description	Project Cost	Square Feet	Total Fees
20241747	11/27/2024	E - Electrical	1123 N TUCKER	ALL ABOUT ELECTRIC	METER RESET	0	0	\$54.50
20241746	11/27/2024	E - Electrical	3 POST OFFICE NECK	GENERATOR SUPERCENTER	NEW INSTALLATION	0	0	\$54.50
20241745	11/27/2024	B - Commercial - Remodel	1102 W MACARTHUR	COLEMAN CONSTRUCTION SOLUTIONS INC	REMODEL	320,000	976	\$248.50
20241744	11/26/2024	B - Accessory Structure	613 W DILL	PHILLIP T HAMMONS	160 FT SHED	1,800	160	
20241743	11/26/2024	B - Residential - Add On	4 TERRA LN	SCISSORTAIL RENOVATIONS		25,000	144	
20241742	11/26/2024	O - Paving Cut and Boring	4785 N HARRISON	COX COMMUNICATIONS / CODE RED UNDERGROUND		0	0	
20241741	11/26/2024	P - Plumbing	712 N HOBSON	DALES PLUMBING	REMODEL	0	0	\$54.50
20241740	11/25/2024	E - Electrical	4832 MARKETPLACE BOULEVARD SUITE 100	RAFTER G ELECTRIC LLC	TENANT FINISH OUT	0	0	\$154.50
20241739	11/25/2024	E - Electrical	3325 N HARRISON	MARSH ELECTRIC LLC	200 AMP SERVICE / BCW	0	0	\$104.50

20241738	11/25/2024	P - Plumbing	324 N LOUISA	COWBOYS PLUMBING LLC	PRESSURE TEST	0	0	\$54.50
20241737	11/25/2024	E - Electrical	613 W DILL	ECK ELECTRIC LLC	NEW SERVICE	0	0	\$54.50
20241736	11/25/2024	E - Electrical	323 S MINNESOTA	TWISTED ELECTRIC	METER RESET	0	0	\$54.50
20241735	11/25/2024	M - Mechanical	27 W CHICAGO	ROBERTS AND SONS HVAC	CHANGE OUT	0	0	\$64.50
20241734	11/25/2024	M - Mechanical	4832 MARKETPLACE BOULEVARD SUITE 100	ON THE MARK HEAT & AIR, LLC	REMODEL	0	0	\$174.50
20241733	11/25/2024	P - Plumbing	1835 N BEARD	DALES PLUMBING	GAS PRESSURE TEST	0	0	\$54.50
20241732	11/22/2024	P - Plumbing	1307 E FARRALL ST	ERIC'S PLUMBING	bathroom remodel	0	0	\$54.50
20241731	11/22/2024	E - Electrical	1136 E MAIN	PINNACLE HOME SERVICES DBA MISTER SPARKY	MOVING 200AMP	0	0	\$54.50
20241730	11/22/2024	P - Plumbing	418 N CHAPMAN AVE	linns plumbing	REMODEL	0	0	\$54.50
20241729	11/21/2024	E - Electrical	3325 ELBERTA	RHYCO ELECTRIC	200 AMP SERVICE AND REWIRE	0	0	\$54.50
20241728	11/21/2024	E - Electrical	1920 N BROADWAY AVE	KENNYCO ELECTRIC INC	POOL	0	0	\$54.50
20241727	11/21/2024	O - Paving Cut and Boring	14108 ACME RD	B&H BORING	BORE	0	0	
20241726	11/21/2024	P - Plumbing	304 N TUCKER	THIRD STEP PLUMBING	CHANGE OUT	0	0	\$54.50
20241725	11/21/2024	B - Commercial - Remodel	413 W MACARTHUR	BLAKE LUMAN	REMODEL	45,000	1,300	\$327.60

20241724	11/21/2024	B - Residential - Remodel	916 E WHITTAKER	KING QUALITY RENTALS	REMODEL	35,100	702	
20241723	11/21/2024	B - Residential - Remodel	521 S LOUISA	KING QUALITY RENTALS LLC	REMODEL	64,000	1,280	
20241722	11/21/2024	P - Plumbing	200 E SHAWNEE MALL DR	BUTLER PLUMBING INC	REPLACE EXISTING	0	0	\$54.50
20241721	11/21/2024	B - Roof Redeck	1405 N UNION	ACTS 29 ROOFING	ROOFING	15,000	2,100	\$54.50
20241720	11/21/2024	B - Residential - New	1314 E MARGARET	GS INVESTMENTS	NEW CONSTRUCTION	125,000	1,013	\$1,159.76
20241719	11/21/2024	B - Residential - New	1320 E MARGARET	GS INVESTMENTS	NEW CONSTRUCTION	125,000	1,013	\$1,159.76
20241718	11/21/2024	B - Residential - New	1322 E MARGARET	GS INVESTMENTS	NEW CONSTRUCTION	125,000	1,013	\$1,159.76
20241717	11/20/2024	M - Mechanical	4 FRANKLIN CIR	AIRCO SERVICE	CHANGE OUT	0	0	\$84.50
20241716	11/20/2024	B - Commercial - Remodel	14106 ACME RD STE D	HOME INTEGRATION	REMODEL	10,000	3,000	\$754.50
20241715	11/20/2024	E - Electrical	131 N BELL	ECK ELECTRIC	MISC WIRING	0	0	\$54.50
20241714	11/20/2024	P - Plumbing	515 N BELL	DALES PLUMBING	WATER SERVICE	0	0	\$54.50
20241713	11/20/2024	P - Plumbing	2009 N BEARD	DALES PLUMBING	WATER SERVICE	0	0	\$54.50
20241712	11/20/2024	M - Mechanical	501 N HARRISON	SPARKS HEAT AND AIR INC	FRESH AIR LOUVERS	0	0	\$54.50
20241711	11/20/2024	E - Electrical	608 W DEWEY ST	BRIGHTSUN ENERGY OK LLC	NEW INSTALLATION	0	0	\$54.50
20241710	11/20/2024	B - Solar Panels	608 W DEWEY ST	BRIGHTSUN ENERGY OK LLC	NEW INSTALLATION	14,400	238	\$55.08

20241709	11/20/2024	E - Electrical	505 POOL PLACE	R-2 ELECTRIC INC	NEW INSTALLATION	0	0	\$54.50
20241708	11/19/2024	M - Mechanical	14311 US HIGHWAY 177	TROOPS REFRIGERATION	384 NEW SYSTEM	0	0	\$7,684.50
20241707	11/19/2024	M - Mechanical	218 W 35TH ST	LUCKY DAY HVAC	CONDENSER CHANGE OUT	0	0	\$54.50
20241706	11/19/2024	E - Electrical	520 N BROADWAY AVE	AMERICAN AC	METER RESET	0	0	\$54.50
20241705	11/19/2024	E - Electrical	520 N BROADWAY AVE	AMERICAN AC	METER RESET	0	0	\$54.50
20241704	11/19/2024	M - Mechanical	8001 N KICKAPOO AVE	GREGGS CLIMATE CONTROL	MINI SPLIT / 2	0	0	\$104.50
20241703	11/19/2024	M - Mechanical	4010 N KICKAPOO SUITE 3	TRI-COUNTY AIR SOLUTIONS	REMODEL - DUCT WORK	0	0	\$54.50
20241702	11/19/2024	B - Residential - New	1210 Ariana St	J BENTLEY CONSTRUCTION	NEW SINGLE FAMILY	200,000	2,355	\$1,474.94
20241701	11/19/2024	B - Residential - New	1212 Ariana St	J BENTLEY CONSTRUCTION	NEW SINGLE FAMILY	200,000	2,466	\$1,498.53
20241700	11/19/2024	M - Mechanical	406 S MARKET AVE	AIRMAN SOLUTIONS INC	DUCT WORK, 2 EXHAUST INSTALLATIONS, NEW SYSTEM	0	0	\$94.50
20241699	11/19/2024	E - Electrical	4010 N KICKAPOO SUITE 3	FULL SPEED ELECTRIC	COMMERCIAL REMODEL	0	0	\$54.50
20241698	11/19/2024	P - Plumbing	4010 N KICKAPOO SUITE 3	ROWDY BOYS PLUMBING	REMODEL	0	0	\$54.50

20241697	11/19/2024	O - Sign	3930 N KICKAPOO AVE UNIT 200	SIGNS & WONDERS, LLC	NEW INSTALLATION - WALL	2,700	24	\$50.00
20241696	11/18/2024	B - Residential - Remodel	12 MOJAVE DR	CHRIS DUNLAP	REMODEL	146,000	1,716	\$369.15
20241695	11/18/2024	B - Residential - Remodel	1307 E FARRALL ST	TAILORED ROOFING AND REMODELING, LLC	REMODEL	13,618	39	\$29.50
20241694	11/18/2024	PC - Zoning Change & Conditional Use Permit	40 CHICKASAW	KING QUALITY RENTALS LLC	PLANNING COMMISSION	0	0	
20241693	11/18/2024	E - Electrical	1001 N KENNEDY SUITE	NEXT LEVEL CONTRACTORS ELECTRIC LLC	RUNNING 200 AMP CIRCUITS TO A FREEZER	0	0	\$54.50
20241692	11/18/2024	O - Demolition and Moving	611 N PHILADELPHIA	MEIER AND SON DEMOLITION	DEMO	0	0	
20241691	11/18/2024	P - Plumbing	4014 N AYDELOTTE AVE	WEST SHORE HOME LLC	TUB AND SHOWER CONVERSION	0	0	\$54.50
20241690	11/18/2024	B - Residential - Remodel	218 W FEDERAL	JEFFERIE PATTON	REMODEL	10,000	150	\$29.50
20241689	11/18/2024	M - Mechanical	2006 N DOROTHY	TRI-COUNTY AIR SOLUTIONS	CHANGE OUT	0	0	\$54.50
20241688	11/18/2024	M - Mechanical	4153 N HARRISON AVE	TRI-COUNTY AIR SOLUTIONS	CHANGE OUT	0	0	\$204.50
20241687	11/18/2024	M - Mechanical	403 S AYDELOTTE	ACOCK CLIMATE CONTROL	GAS PRESSURE TEST	0	0	\$54.50
20241686	11/18/2024	E - Electrical	2204 BRYANT VIA	PINNACLE HOME SERVICE DBA MISTER SPARKY	200AMP PANEL REPLACE	0	0	\$54.50

20241685	11/18/2024	E - Electrical	116 TENNESSEE	PINNACLE HOME SERVICE DBA MISTER SPARKY	100AMP PANEL REPLACE	0	0	
20241684	11/18/2024	E - Electrical	120 W WALLACE ST	PINNACLE HOME SERVICE DBA MISTER SPARKY	METER BASE REPAIR	0	0	\$54.50
20241683	11/15/2024	B - Residential - Remodel	816 W 7TH ST	LETICIA MONTERROSO	REMODEL	15,000	888	\$193.20
20241682	11/15/2024	P - Plumbing	8001 N KICKAPOO AVE	ROWDY BOYS PLUMBING	REMODEL	0	0	\$54.50
20241681	11/15/2024	B - Residential - New	8420 N Kickapoo	LILLEY SIGNATURE HOMES	SINGLE FAMILY	450,000	4,177	\$1,767.11
20241680	11/15/2024	B - Residential - Add On	5 DELAWARE	BRYCE HOLLAND CONSTRUCTION, LLC	ADD ON	80,000	306	\$69.53
20241679	11/14/2024	P - Plumbing	419 N KICKAPOO	SALZER PLUMBING AND MORE	MISCELLANEOUS	0	0	\$54.50
20241678	11/14/2024	P - Plumbing	406 S MARKET AVE	WYNN PLUMBING, LLC	REMODEL / WH CO	0	0	\$104.50
20241677	11/14/2024	O - Paving Cut and Boring	2201 N KICKAPOO	TRANS-TEL LLC	ROAD BORE	0	0	
20241676	11/14/2024	B - Residential - Remodel	619 N PHILADELPHIA	Clarissa Mcelvany	ABATEMENT- remodel	30,000	968	\$29.50
20241675	11/14/2024	P - Plumbing	706 E GRANT	BRAGGS PLUMBING	REMODEL	0	0	\$54.50
20241674	11/14/2024	P - Plumbing	14106 ACME RD STE B	COMPLETE PLUMBING	MISCELLANEOUS	0	0	\$54.50
20241673	11/14/2024	P - Plumbing	814 S BELL	DALES PLUMBING	GAS TEST	0	0	\$54.50
20241672	11/13/2024	E - Electrical	306 N EASTERN	ABOVE ALL ELECTRICAL SOLUTIONS LLC	ADDING JUNCTION BOX AND COVERS	0	0	\$54.50

20241671	11/13/2024	E - Electrical	1200 MUIRFIELD	ALL BOLT ELECTRIC INC	NEW INSTALLATION	0	0	\$54.50
20241670	11/13/2024	P - Plumbing	1801 RICKEY RD	DALE'S PLUMBING	MISCELLANEOUS	0	0	\$54.50
20241669	11/13/2024	O - Chicken Permit	640 N BEARD AVE	CAROLYN ORTIZ	CHICKEN PERMIT	0	0	
20241668	11/13/2024	E - Electrical	816 W 7TH ST	DURANGO ELECTRIC	SERVICE 200AMP	0	0	\$54.50
20241667	11/13/2024	F - Burn	1 JOHN C BRUTON BLVD	MARK SAUDERS	BURN PERMIT	0	0	\$29.50
20241666	11/13/2024	B - Residential - New	1103 N TUCKER	BUILDERS INVESTMENT GROUP	NEW CONSTRUCTION	104,920	924	\$1,190.85
20241665	11/13/2024	B - Residential - New	1101 N TUCKER	BUILDERS INVESTMENT GROUP	NEW CONSTRUCTION	104,920	1,174	\$1,243.98
20241664	11/13/2024	O - Sign	198 SHAWNEE MALL DR	NATIONAL SIGNS & SERVICE	CANOPY SIGN	0	0	\$50.00
20241663	11/13/2024	E - Electrical	229 W MIDLAND	YARDY ELECTRIC	REWIRE HOUSE	0	0	\$54.50
20241662	11/13/2024	M - Mechanical	23 E EMMETT	SPARKS HEAT & AIR, INC	MISCELLANEOUS	0	0	\$54.50
20241661	11/13/2024	M - Mechanical	17 E EMMETT	SPARKS HEAT & AIR, INC	MISCELLANEOUS	0	0	\$54.50
20241660	11/13/2024	F - Fire Suppression	210 W GEORGIA	ALLIANCE FIRE PROTECTION	FIRE SUPPRESSION	0	0	
20241659	11/12/2024	B - Commercial - Remodel	306 E MACARTHUR	LANDMARK CONSTRUCTION COMPANY	REMODEL	2,500,000	8,341	

20241658	11/12/2024	O - Sign	1601 N HARRISON AVE	GENERAL LIGHTING AND SIGN SERVICES INC	erect wall sign *STOREFRONT WALL WIDTHS OF UNDER 50 FEET HAVE A MAXIMUM WALL SIGN AREA OF 25 SQUARE FEET*	0	0	\$50.00
20241657	11/12/2024	E - Electrical	2009 N HARRISON	ALL PHASE ELECTRIC, INC	MISCELLANEOUS	0	0	\$54.50
20241656	11/12/2024	O - Paving Cut and Boring	906 E 35TH ST	ARIAS UTILITY LLC	BORE	0	0	
20241655	11/12/2024	M - Mechanical	701 N UNION	ROBERTS AND SONS HVAC LLC	MINI SPLIT SYSTEM 2 TON	0	0	\$104.50
20241654	11/12/2024	P - Plumbing	3901 N KICKAPOO #29	COMPLETE PLUMBING	REMODEL	0	0	\$54.50
20241653	11/12/2024	B - Commercial - Remodel	131 N BELL	CHILD ADVOCACY CENTER OF CENTER OK	REMODEL	19,000	800	\$174.50
20241652	11/12/2024	O - Sign	609 N HARRISON	CH HAMPTON LLC	SIGN PERMIT	0	0	
20241651	11/12/2024	P - Plumbing	30 SEQUOYAH	STANLEY PLUMBING SERVICES LLC	GAS INSPECTION	0	0	\$54.50
20241650	11/12/2024	P - Plumbing	814 S BELL	STANLEY PLUMBING	GAS INSPECTION	0	0	\$54.50
20241649	11/12/2024	E - Electrical	419 N KICKAPOO	AMERICAN AIR CONDITIONING & HEATING, INC	MISCELLANEOUS	0	0	\$54.50
20241648	11/12/2024	P - Plumbing	1002 N UNION	DALES PLUMBING	SEWER LINE	0	0	\$54.50
20241647	11/12/2024	B - Residential - Remodel	406 S MARKET AVE	MADISON MYRICK	REMODEL	45,000	908	\$197.45

20241646	11/8/2024	E - Electrical	529 N DOROTHY	GARY'S ELECTRIC SERVICES LLC	REPAIR SERVICE	0	0	\$54.50
20241645	11/8/2024	P - Plumbing	2006 N DOROTHY	KENNEDY PLUMBING	REMODEL	0	0	\$54.50
20241644	11/8/2024	M - Mechanical	76 CROWN POINT	WATKINS HEATING & AIR CONDITIONING	CHANGE OUT	0	0	\$54.50
20241643	11/8/2024	O - Demolition and Moving	1413 N OKLAHOMA	ARBOR TRANSPORT & CONSTRUCTION INC	DEMOLITION	0	0	
20241642	11/8/2024	O - Sign	1817 N HARRISON AVE	SIGN FACTORY LLC	NEW INSTALLATION	550	25	\$50.00
20241641	11/7/2024	P - Plumbing	2512 N HARRISON AVE	LUCKINBILL MECHANICAL	SEWER TAP	0	0	\$429.50
20241640	11/7/2024	B - Residential - Remodel	215 N ELM	ELMER CONTORRO	ABATEMENT - REMODEL	5,000	764	
20241639	11/7/2024	B - Residential - Remodel	222 S OKLAHOMA	NORDHAUS INVESTMENTS	ABATEMENT - REMODEL	15,000	2,380	\$29.50
20241638	11/7/2024	E - Electrical	14106 ACME RD STE B	CONCEPT ELECTRIC	MISCELLANEOUS	0	0	\$54.50
20241637	11/7/2024	F - Burn	33700 POST OFFICE NECK	KEITH CARPENTER	BURN PERMIT	0	0	\$29.50
20241636	11/7/2024	P - Plumbing	920 N BROADWAY	KELLYS PLUMBING AND HEATING INC	GAS METER RESET	0	0	\$54.50
20241635	11/7/2024	B - Residential - Remodel	428 S CHAPMAN AVE	MARIA GOVEA	ABATEMENT - REMODEL	5,000	50	\$54.50
20241634	11/7/2024	B - Storm Shelter	3923 MAPLE GROVE AVE	GROUND ZERO SHELTERS	GARAGE SHELTER	2,895	12	\$29.50
20241633	11/6/2024	O - Demolition and Moving	319 N UNION	NEAL'S LAWN SERVICE LLC	DEMOLITION	0	0	

20241632	11/6/2024	E - Electrical	575 DALEY LN	PATCO ELECTRICAL SERVICES	NEW SERVICE	0	0	\$104.50
20241631	11/6/2024	PC - Zoning Change	409 N WASHINGTON	ACOCK PROPERTIES	REZONING	0	0	
20241630	11/6/2024	PC - Zoning Change	415 N TENBROOK	ACOCK PROPERTIES	REZONING	0	0	
20241629	11/6/2024	O - Curb Cut, Driveway and Sidewalk	3308 N HARRISON AVE	A SQUARE CONCRETE CONSTRUCTION		0	0	\$100.00
20241628	11/6/2024	E - Electrical	301 W 9TH ST	EIGHTTWENTY LLC	SOLAR PANEL	0	0	\$54.50
20241627	11/6/2024	B - Solar Panels	301 W 9TH ST	EIGHTTWENTY LLC	SOLAR PANEL	46,000	805	\$175.56
20241626	11/6/2024	M - Mechanical	2009 N HARRISON	SPARKS HEAT AND AIR	CHANGE OUT	0	0	\$204.50
20241625	11/6/2024	E - Electrical	314 W 9TH ST	EIGHTTWENTY LLC	SOLAR PANEL	0	0	\$54.50
20241624	11/6/2024	B - Solar Panels	314 W 9TH ST	EIGHTTWENTY LLC	SOLAR PANEL	63,000	1,053	\$228.26
20241623	11/6/2024	P - Plumbing	218 W 35TH ST	STANFIELD PLUMBING	RESET	0	0	\$54.50
20241622	11/6/2024	E - Electrical	116 TENNESSEE	PINNCAL HOME SERVICES DBA MISTER SPARKY	100 AMP REPLACEMENT BONDING WITH NEW WIRE	0	0	\$54.50
20241621	11/5/2024	E - Electrical	404 N PENNSYLVANIA	FULL SPEED ELECTRIC	NEW SERVICE / RISER AND METER BASE	0	0	\$54.50
20241620	11/5/2024	M - Mechanical	1116 MORNING SIDE CT	WATKINS HEATING AND AIR	3 TON NEW SYSTEM	0	0	\$64.50

20241619	11/5/2024	B - Storm Shelter	324 E RIDGEWOOD ST	FIRESTORM SEPTICS AND SHELTERS	NEW INSTALLATION	5,600	56	\$29.50
20241618	11/4/2024	O - Sign	4420 N KICKAPOO AVE STE 200	METRO SIGN	WALL SIGN	0	0	\$50.00
20241617	11/4/2024	O - Sign	4420 N KICKAPOO AVE STE 500	METRO SIGN	2 SIGNS	0	0	\$100.00
20241616	11/4/2024	B - Commercial - Remodel	519 W UNIVERSITY ST	JOSH LITTLE CONSTRUCTION	REMODEL	55,000	2,320	\$497.50
20241615	11/4/2024	B - Commercial - Remodel	301 N BEARD	DEMPSEY TEMPLETON	REMODEL	75,762	1,080	\$274.50
20241614	11/4/2024	B - Swimming Pool	505 POOL PLACE	ROCK CREEK POOLS	FIBERGLASS POOL	78,000	488	
20241613	11/4/2024	F - Burn	15028 DRUMMOND RD	ROBERT BATEMAN	BURN PERMIT	0	0	\$29.50
20241612	11/1/2024	B - Storm Shelter	1404 LEXI DR	GROUND ZERO SHELTERS	NEW INSTALLATION	2,995	48	\$29.50
								\$28,026.52

Total Records: 136

12/2/2024



Finance Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Kimberly Smith, Finance Director
Subject: Budget amendments for Fiscal Year 2024 – 2025:

Background: A total budget amendment in the amount of \$27,745.00 for insurance recovery monies should be considered.

Insurance Recovery – to appropriate insurance proceeds received for a traffic pole claim. The amount for appropriation is as follows:

- \$27,745.00 – Insurance Recovery - Capital Outlay - Equipment

Financial Impact: (See budget amendment)

Attachments:

Staff Recommendation: Approval of the item

**CITY OF SHAWNEE
2024-2025 BUDGET AMENDMENT
INSURANCE RECOVERY FUND**

Estimated Revenue, Fund Balance, or Transfers IN

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
603	48040			INSURANCE RECOVERY	50,000.00	(27,745.00)	77,745.00
				Total	50,000.00	(27,745.00)	22,255.00

Appropriations

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
603	5-0930-54500			CAPITAL OUTLAY - EQUIPMENT	3,500.00	27,745.00	31,245.00
					-	-	-
					3,500.00	27,745.00	31,245.00

Approved by the City Commission this

Explanation of Budget Amendment:

To appropriate insurance proceed received for traffic pole claim.

Approved:

Mayor _____

Attest: _____

City Clerk _____

Posted By _____ Date _____ BA# _____ Pkt.# _____



APPLICATION TO SERVE
Boards, Committees, and Commissions

- ☐ Appointment
☐ Reappointment – Partial/First/Second Term

Name: <u>RON SHARP</u>	Application Date: <u>Dec 5, 2024</u>
Address: <u>1835 N. Oklahoma Ave Shawnee, OK 74804</u>	
Mailing Address: <u>1835 N. Oklahoma Ave Shawnee OK 74804</u>	
Daytime Phone: <u>(405) 215-0669</u>	Email: <u>senatorsharp@gmail.com</u>
Profession: <u>retired</u>	
Business Name: _____	
Business Address: _____	
Business Phone: _____ Email: _____	

Do you live within the City Limits of the City of Shawnee? Yes ☒ No ☐

How many years have you lived in Shawnee? 72 years

Do you currently serve on a City board, committee, or commission? Yes ☐ No ☒

If so, please list the board/committee/commission: _____

Select the Board/Committee/Commission you are interested in serving on: (please check)

☐ Airport Advisory Board	☐ Shawnee Beautification, Parks, and Recreation Committee
☐ Board of Adjustment (Zoning)	☐ Shawnee Civic and Cultural Development Authority
☐ Housing Authority	☒ Shawnee Hospital Authority
☐ Library Board	☐ Shawnee Senior Citizens Advisory Board
☐ Oklahoma Baptist University Trust Authority	☐ Shawnee Urban Renewal Authority
☐ Planning Commission	☐ Other _____
☐ Shawnee Arts and Culture Commission	

Why are you interested in serving on the Board/Committee/Commission selected above?

I have lived in Shawnee all of my life. I have been a public school teacher within Shawnee for 38 years. From 2012-2020 I served on the Oklahoma State Senate. My knowledge of budgeting and Administration is extensive to serve in this capacity.

Revised January 9, 2024

What will make you a good board member and what skills or knowledge do you have that would be relevant to this board/committee/commission?

My ability to work well with others!

What civic or volunteer activities (if any) are you currently involved in?

Retired - ready to get involved

List education, including degree(s) earned:

BA Southeastern Oklahoma State University

Have you ever served on a City-appointed board/committee/commission before? No!

If so, which ones and for how long did you serve?

Have you ever been charged and/or convicted of a felony? No!

If so, please explain the circumstances and the current status of the charge(s) and/or conviction(s):

Have you ever declared personal or business bankruptcy? No!

If so, please explain:

Please include up to three personal or professional references:

Name	Relationship	Telephone Number
Dell Kerbs	Friend	(405) 609-0308
Phil Thompson	Pastor	(405) 388-1971
Christy Jobson	Niece	(405) 850-7921

PLEASE READ CAREFULLY:

Appointment by the Commission is for one term and individuals may not serve more than two consecutive full terms. Appointment to a second term remains at the discretion of the City Commission.

My signature affirms that all information contained herein is true to the best of my knowledge, and that I understand that any misstatement of fact or misrepresentation of credentials may result in disqualification from further consideration.

Signature

Ron Sharf

Date

Dec. 5, 2024

Applications are retained on file for one (1) year. Applicants are encouraged to include a letter of interest with this application. Thank you for your interest in serving Shawnee.

Send completed application to:

City of Shawnee, Attn: City Clerk, PO Box 1448, Shawnee, OK 74802 or CityClerk@shawneeok.org



City Manager

Andrea Weckmueller-Behringer
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

November 18, 2024

REACT Ambulance Authority
c/o Angi Mohr (email: Angi.Mohr@ssmhealth.com)
2316 N Airport Dr.
Shawnee, Oklahoma 74804

Re.: Addition of Mark Simpson as City of Shawnee Representative on the REACT Board

Dear Angi,

Following the retirement of the City of Shawnee's most recent representative on REACT's Board of Directors, please allow me to request that Assistant City Manager, Mark Simpson, be recognized as the new City of Shawnee member for the REACT Board.

Kindly let me know if you have any questions or concerns.

Sincerely,

Andrea Weckmueller-Behringer
City Manager

cc: Mark Simpson, Assistant City Manager
Lisa Lasyone, City Clerk



City Manager Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Andrea Weckmueller-Behringer, City Manager
Subject: Approve renewal of contract with Latham Consulting Group and Dunnington Consulting for legislative consulting services.

Background: In October 2021, the City of Shawnee first engaged Dunnington Consulting and Latham Consulting for governmental and community affairs services. Over the past three years, the City of Shawnee has worked closely with these consultants to help build important relationships between City staff, state agencies and elected officials as well as to identify and advocate for grant opportunities benefiting the community.

Another key service provided by the consultants is the active monitoring of state legislative activities and the alerting of City staff regarding potential legislation that could impact City operations and the residents of Shawnee. By having this early notice and review, City staff is able to talk through challenges and opportunities with state lawmakers to ensure that Shawnee's voice is heard.

Financial Impact: As budgeted; \$60,000 from General Fund, City Manager's Department, Other Contractual Services, 001-5-0110-53390

Attachments: Dunnington-Latham_Consuming_Contract_2024-2025

Staff Recommendation: Approval of the contract renewal

CONSULTING AGREEMENT

THIS AGREEMENT is made and entered into as of December ____, 2024, by and between Dunnington Consulting, and Latham Consulting an Oklahoma limited liability company, (“Consultant”) and the City of Shawnee, Oklahoma (“Client”).

RECITALS

A. Client is an Oklahoma Municipal Corporation, and Consultant has expertise related to the State of Oklahoma and its laws, regulations, and governmental agencies.

B. Client desires to retain the services of Consultant, and Consultant desires to render those services to Client.

In consideration of the mutual covenants contained in this agreement, the parties agree as follows:

1. Retention of Services. Client hereby appoints and retains the services of Consultant to provide the consulting services set forth on Exhibit A (the “Services”). Consultant accepts such appointments.

2. Term. This Agreement shall commence on the date hereof and shall continue for a period of 1 year.

3. Compensation and Billing. As compensation for the Services, Client shall pay Consultant in accordance with Exhibit B.

4. Reimbursement of Expenses. Client shall reimburse Consultant for all reasonable expenses incurred by Consultant in connection with the performance of the Services, including but not limited to filing and registration costs, meals, travel, and entertainment expenses, and copies and postage.

5. Representations, Warranties, and Covenants by Consultant. Consultant represents and warrants to, and covenants with, Client as follows:

(a) Consultant has obtained all licenses, permits, and approvals necessary for Consultant to perform the Services hereunder.

(b) Consultant will comply with all applicable laws, rules, and regulations in the performance of the Services.

6. Termination.

(a) In General. This Agreement may be terminated in any of the following events.

(i) By mutual agreement of the parties;

(ii) By either party, without cause, on 45 days' prior written notice to the other party; or

(i) By reason of material breach, as provided hereafter.

(b) Termination for Material Breach. If either party defaults by the failure to comply in all material respects with the terms of this Agreement, the other party may terminate this Agreement upon fifteen (15) days prior written notice to the defaulting party, unless the defaulting party cures such default within the 15-day period. This provision shall not constitute an election of remedies by either party, and each party shall have and retain all rights to damages at law and rights to equitable relief in the event of breach by the other party.

(c) On Termination. Upon termination of this Agreement, Client shall pay Consultant for Services rendered through the date of termination. Neither party shall have any further obligation to the other except for (i) obligations accruing prior to the date of termination, and (ii) obligations contained in this Agreement that are expressly made or otherwise contemplated to extend beyond the term of this Agreement.

7. Indemnification.

(d) By Consultant. Consultant shall indemnify and hold harmless Client and its employees, directors, officers, managers, members, shareholders, agents, and affiliates from and against any and all liability, claims, demands, costs, actions, and expenses, including reasonable attorneys' fees, which may result from or arise in connection with (i) the failure by Consultant, its employees, or agents to perform their obligations in accordance with this Agreement, or (ii) the negligent or intentional acts or omissions of Consultant, its employees, or agents.

(e) By Client. Client shall indemnify and hold harmless Consultant and its employees, directors, officers, agents, and affiliates from and against any and all liability, claims, demands, costs, actions, and expenses, including reasonable attorneys' fees, which may result from or arise in connection with (i) the failure by Client, its employees, or agents to perform their obligations in accordance with this Agreement, (ii) the negligent or intentional acts or omissions of Client, its employees, or agents.

8. Relationship between Parties. Consultant will furnish the Services as an independent contractor and not as an employee of Client. Except as required by this Agreement, Consultant shall be free to dispose of such portion of Consultant's time, energy, and skill which Consultant is not requested to devote hereunder to Client in such manner as Consultant sees fit to such persons, firms, or corporations as Consultant deems advisable. Consultant has no power or authority to bind Client in any manner. Consultant shall not by virtue of this Agreement be deemed to be partners or joint venturers.

9. Disclaimer of Warranties. Consultant agrees to put forth a good faith effort as it relates to time and talent to accomplish the stated legislative and governmental objectives of Client. It is mutually agreed and understood that Consultant cannot and does not either expressly or impliedly guarantee or warrant the results of Client's efforts.

10. Notices. Any and all notices, consents, or other communications by one party intended for the other shall be deemed to have been properly given if in writing and personally delivered, transmitted by electronic means, or deposited in the United States first class mails, postpaid, to the addresses or numbers set forth below the signatures of the parties.

2. General. The invalidity or unenforceability of any provision of this Agreement will not affect the validity or enforceability of any other provision. Neither party may assign its rights or delegate its duties under this Agreement without the prior written consent of the other. This Agreement shall be binding upon, and shall inure to the benefit of, the parties and their respective legal representatives, successors and permitted assigns. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Oklahoma. No right or remedy conferred in this Agreement upon or reserved to either Client or Consultant is intended to be exclusive of any other right or remedy. Each and every right and remedy shall be cumulative and in addition to any other right or remedy provided in this Agreement. The failure of Client or Consultant to insist upon the strict observance or performance of any of the provisions of this Agreement or to exercise any right or remedy shall not impair any such right or remedy or be construed as a waiver or relinquishment thereof with respect to subsequent defaults. This Agreement is not intended to confer any right or benefit upon, or permit enforcement of any provision by, any patient or any person other than the parties to this Agreement.

11. Entire Agreement. This Agreement and its exhibits constitute the entire understanding and agreement of the parties with respect to its subject matter and cannot be changed or modified except by another agreement in writing signed by all parties.

[SIGNATURE PAGE FOLLOWS]

CONSULTANT:

DUNNINGTON CONSULTING, LLC

By_____

Name: Jason Dunnington

Title: President

Address: 220 NW 13th St Suite #6

Oklahoma City, OK 73103

Email: jason@dunningtonconsulting.com

Fax: _____

CLIENT:

THE CITY OF SHAWNEE

By_____

Name: Andrea Weckmueller-Behringer

Title: City Manager

Address: 16 W. 9th Street

Shawnee, OK 74801

Email: Andrea.Weckmueller-Behringer@shawneecok.org

Fax: _____

EXHIBIT A

Services

- Assist, inform, and advise Client regarding Client's legislative agenda in Oklahoma
- Work with Client on legislation during the 2025 OK Legislative Session as well as track bills and work against legislation deemed harmful to Client's cause.
- Help with managing coalitions and long-term planning.
- Assist and develop strategic relationships between The City of Shawnee and legislative and community leaders
- Periodically meet with representatives and update representatives of Client to discuss Client's objectives and progress on legislation or other strategic plans

EXHIBIT B

Compensation

Dunnington Consulting will charge a monthly retainer of \$5,000 per month or \$15,000 per quarter depending on the desired billing of the client.



Human Resources Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Jennifer Greenland, Human Resources Director
Subject: Acknowledgment of the Oklahoma Municipal League's Honor Roll of Service for Twenty-Five Years of Service to the City of Shawnee.

Background: The Oklahoma Municipal League (OML) recognizes and honors Oklahoma municipal officials and employees who have completed 25 or more years of public service. This recognition program has been in existence for over 30 years.

For the City of Shawnee, four new names will be inscribed in a permanent Honor Roll of Service book at the OML office this year.

Terry Moore, 29 years
James Palinkas, 29 years
Todd Luster, 27 years
Jennifer Greenland, 26 years

The City of Shawnee congratulates these Honor Roll Recipients, and thanks them for their many years of faithful service and dedication to our community.

Financial Impact: None

Attachments:

Staff Recommendation: Acknowledge employees' years of service to the City of Shawnee



Finance Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Kimberly Smith, Finance Director
Subject: Public Hearing on an Amendment to the City of Shawnee Five-Year Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029, encompassing multiple changes.

Background: The Capital Improvement Plan (CIP) for Fiscal Years (FY) 2025-2029 was adopted on June 17, 2024. City staff is requesting an amendment to the CIP to make multiple changes. The details are as follows:

Fund 301 – Capital Improvement Fund Projects –

In October 2024, the City of Shawnee received a \$191,000 grant from the Avedis Foundation for the construction of two splash pads. The City will be adjusting the cost for the **Boy Scout Park Splash Pad** to \$156,000, utilizing both City and Avedis Foundation funding. In parallel, the **Optimist Park Splash Pad** will be added to the CIP in the amount of \$226,000.00, utilizing both City and Avedis Foundation funding. A change will also be made to the **Kayak Dock Area Improvements**, adjusting the cost of the project to \$344,000.

In lieu of purchasing replacement vehicles, the City of Shawnee will be partnering with Enterprise for Police Department Fleet Vehicles. Therefore, the Police Fleet Replacement project will become a **Police Fleet Leasing** project, inclusive of a residual payment option. At \$227,920, the cost will remain unchanged.

These projects do not require a related budget amendment.

Fund 302 – Street Improvement Fund Projects –

The previously planned **High Mast Light Replacement** will now be handled by the Oklahoma Department of Transportation (ODOT), freeing up \$270,000 that had been allocated to this project.

The **Main Street Bridge Replacement** is now complete and came in \$50,000 under budget.

The combined amounts of \$270,000 and \$50,000 from these two projects will be moved to increase the **Unit Rate Paving and Drainage** project amount from \$500,000 to \$820,000. Furthermore, the Westech Road Overlay will be moved from its Fiscal Year 2030-2034 schedule and incorporated into the Unit Rate Paving and Drainage project for Fiscal Year 2025.

These projects do not require a related budget amendment.

Fund 303 – 2018 Capital Improvement Fund Project –

A new capital project in the amount of \$63,900 will be added for the purchase of an **Expo Fleet Acquisition - ¾ Ton Truck** for the Heart of Oklahoma Exposition Center.

This item will be contingent on the related budget amendment.

Fund 304/501 – American Rescue Plan/Shawnee Municipal Authority Funds Project –

A new fund combination tab will be added to the CIP, and the **Walnut Street Water Line** project in the amount of \$1,200,000 will be moved to this combined funding category.

This item will be contingent on the related budget amendment.

Fund 501 - Shawnee Municipal Authority Fund Project –

A new capital project in the amount of \$299,500 will be added for the design of the **SW Loop Water Main** project.

This item will be contingent on the related budget amendment.

This agenda item provides for the formal public hearing on an amendment to the CIP as set forth in the CIP Policy. Notice of date, time, and location of the public hearing was published in the Shawnee News Star on December 5, 2024.

Financial Impact: As described

Attachments: Capital_Projects Amended

Staff Recommendation: Conduct public hearing

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Boy Scout Park Splash Pad		 Maxar, Microsoft Esri Community Maps Contributors, City of S... Powered by Esri			
Category	Parks & Rec					
Department	0940 - PARKS	Pending Project				
Ward	Ward 4					
ID	24-0940-01					
Project Description Complete reconstruction of the Splash Pad at Rotary Briscoe Boy Scout Park.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$156,000	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$156,000	\$0	\$0	\$0	\$0	\$0

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Optimist Park Splash Pad					
Category	Parks & Rec					
Department	0940 - PARKS	Pending Project				
Ward	Ward 1					
ID	25-0940-01					
Project Description Complete construction of a new Splash pad at Optimist Park.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	226,000	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$226,000	\$0	\$0	\$0	\$0	\$0

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Kayak Dock Area Improvements		 Maxar, Microsoft Esri Community Maps Contributors, City of S... Powered by Esri			
Category	Parks & Rec, Public Facilities					
Department	0940 - PARKS	Pending Project				
Ward	Ward 2					
ID	24-0940-08					
Project Description Improve the area adjacent to the Shawnee Twin Lakes #2 kayak dock to include Americans with Disabilities Act (ADA) compliant sidewalks and parking as well as drainage.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	344,000	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$344,000	\$0	\$0	\$0	\$0	\$0

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Police Fleet Leasing					
Category	Public Safety					
Department	0620 - POLICE PATROL	Pending Project				
Ward	Not Applicable					
ID	24-0620-01					
Project Description Lease 5 Dodge Chargers (or comparable police-rated vehicles) with residual payment option; and outfit with in-cab and external equipment.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	227,920	239,320	251,290	263,850	278,360	1,500,000
Infrastructure	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$227,920	\$239,320	\$251,290	\$263,850	\$278,360	\$1,500,000

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	High Mast Light Replacement					
Category	Streets/Traffic					
Department	0930 - TRAFFIC CONTROL	Pending Project				
Ward	Ward 1, Ward 6					
ID	25-0930-01					
Project Description Replace Interstate-40 high mast lights damaged by the April 19, 2023, storm event.						
Maxar Esri Community Maps Contributors; City of Shawnee, T... Powered by Esri						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$0	\$0	\$0	\$0	\$0	\$0

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Main Street Bridge Replacement	
Category	Streets/Traffic	
Department	0920 - STREETS	Ongoing Project
Ward	Ward 3	
ID	24-0810-02	
Project Description Remove and replace the Main Street bridge over Shawnee Creek, just west of Tucker Ave.		



	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$0	\$0	\$0	\$0	\$0	\$0

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Unit Rate - Paving and Drainage					
Category	Streets/Traffic, Stormwater					
Department	0920 - STREETS	Pending Project				
Ward	Not Applicable					
ID	25-0920-01					
Project Description Utilize unit price contract to complete paving and storm drainage projects that involve repetitive tasks or, alternatively, projects where the duration, scope, or requirements may be incomplete or difficult to estimate.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	820,000	500,000	500,000	500,000	500,000	2,500,000
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$820,000	\$500,000	\$500,000	\$500,000	\$500,000	\$2,500,000

City of Shawnee

FY 2025-2029 Capital Improvement Plan

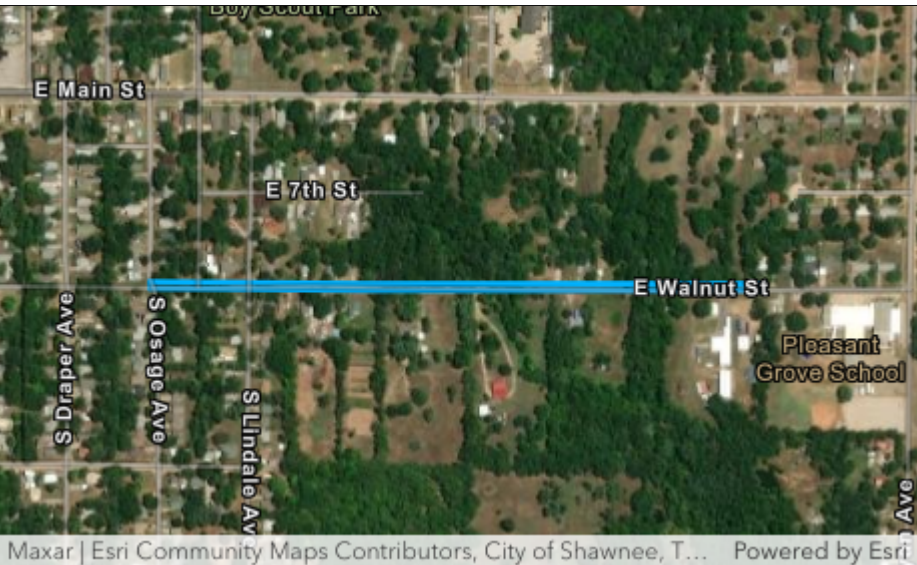
Project Title	Expo Fleet Acquisition - 3/4 Ton Truck					
Category	Public Facilities					
Department	1210 – EXPO CENTER	Pending Project				
Ward	Ward 6					
ID	25-1210-01					
Project Description Purchase a new three-quarter (3/4) ton diesel truck to support the Heart of Oklahoma Expo operations.						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	63,900	0	0	0	0	0
Infrastructure	0	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$63,900	\$0	\$0	\$0	\$0	\$0

AMENDED

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	Walnut Street Water Line Project	
Category	Utilities	
Department	1040 - WATER DISTRIBUTION	Pending Project
Ward	Ward 4	
ID	24-1040-03	
Project Description Replace a segment of waterline and extend the existing waterline to create a loop. The project is designed to increase availability and reliability of water in the area. (West of Bryan Ave. to Osage Ave.)		



Maxar | Esri Community Maps Contributors, City of Shawnee, T... Powered by Esri

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	1,200,000	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$1,200,000	\$0	\$0	\$0	\$0	\$0

City of Shawnee

FY 2025-2029 Capital Improvement Plan

Project Title	SW Loop Water Main Project		 Maxar City of Shawnee, Texas Parks & Wildlife, Esri, TomTom, ... Powered by Esri			
Category	Utilities					
Department	1040 - WATER DISTRIBUTION	Pending Project				
Ward	Ward 3					
ID	25-1040-01					
Project Description Extending 9,850 feet of 12-inch water line, creating a crucial loop to the west side of Highway 177						
	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY30-34
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle	0	0	0	0	0	0
Infrastructure	299,500	0	0	0	0	0
Facilities	0	0	0	0	0	0
Facility Improvements	0	0	0	0	0	0
Land	0	0	0	0	0	0
Land Improvements	0	0	0	0	0	0
Professional Services	0	0	0	0	0	0
Total	\$299,500	\$0	\$0	\$0	\$0	\$0



Finance Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Kimberly Smith, Finance Director
Subject: Consideration of an Amendment to the City of Shawnee Five-Year Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029, encompassing multiple changes.

Background: The Capital Improvement Plan (CIP) for Fiscal Years (FY) 2025-2029 was originally adopted on June 17, 2024.

At this time, City staff is requesting an amendment to the following, previously approved projects:

- Boy Scout Park
- Kayak Dock Area Improvements
- Police Department Fleet
- High Mast Light Replacement
- Main Street Bridge Replacement
- Unit Rate - Paving and Drainage

In addition, City staff is requesting the addition of the following projects:

- Optimist Park
- Expo Fleet Acquisition – ¾ Ton Truck
- Walnut Street Water Line
- SW Loop Water Main

The latter three additional CIP projects are contingent on the approval of related budget amendments.

Financial Impact: Fiscal impact for the latter three projects is contingent on the approval of related budget amendments, which are listed in Agenda Item 8

Attachments:

Staff Recommendation: Approval of the item



Finance Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Kimberly Smith, Finance Director
Subject: Consideration of the following Budget Amendments regarding the City of Shawnee's Capital Improvement Plan (CIP) for Fiscal Years 2025 through 2029.

Background: A total budget amendment in the amount of \$1,563,400.00 across several funds should be considered.

303 - 2018 Capital Improvement Fund – The Expo is in need of a fleet vehicle. Therefore, City staff proposes to add an Expo Fleet Acquisition – ¾ Ton Truck project as part of the amendment to the Fiscal Year 2025 of the City's Capital Improvement Plan. The amount to be appropriated is \$63,900 and stems from 2018 Half-Cent Sales Tax fund balance.

- \$63,900.00 – 2018 Capital Improvement Fund – Capital Outlay - Equipment

304 - American Rescue Plan / 501 - Shawnee Municipal Authority Funds –The City has to allocate all moneys received from the American Rescue Plan Act (ARPA) to projects by the statutory December 31, 2024, deadline. At this time, one of the ARPA-funded projects came in under budget, leaving \$600,000 to be re-assigned to a different project. This ARPA funding requires a 50/50 match, which will be provided by fund balance. Therefore, City staff has determined that it is in the community's best interest to move the Walnut Street Water Line project forward to Fiscal Year 2025. The amount for appropriation is as follows:

- \$600,000.00 – American Rescue Plan – Capital Outlay - Buildings & Improvements
- \$600,000.00 – Shawnee Municipal Authority – Capital Outlay - Buildings & Improvements

501 - Shawnee Municipal Authority Fund – The City staff has determined that it is in the community's best interest to move the SW Loop Water Line project forward to Fiscal Year 2025. The amount for appropriation of fund balance is as follows:

- \$299,500.00 – Shawnee Municipal Authority – Capital Outlay - Building & Improvements

Financial Impact: See budget amendments

Attachments:

Staff Recommendation: Approval of the items

City of Shawnee
2024-2025 Budget Amendment
Shawnee Airport Authority

Estimated Revenue, Fund Balance, or Transfers IN

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
303	40010			2018 Half-Cent Sales Tax	1,933,679.09	(63,900.00)	1,869,779.09
				Total	1,933,679.09	(63,900.00)	1,869,779.09

Appropriations

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
303	5-1210-54500			Capital Outlay - Equipment	-	63,900.00	63,900.00
					-	-	-
					-	-	-
					-	-	-
					-	63,900.00	63,900.00

Approved by the City Commission this

Explanation of Budget Amendment:

- To fund an increase related to adding the Expo Fleet Acquisition
in FY 2025 in the City of Shawnee's Capital Improvement Plan

Approved:

Mayor _____
Attest: _____

City Clerk _____

On Date _____

Posted By _____ Date _____ BA# _____ Pkt.# _____

City of Shawnee
2024-2025 Budget Amendment
American Rescue Plan & Shawnee Municipal Authority

Estimated Revenue, Fund Balance, or Transfers IN							
Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
							-
				Total	-	-	-

Appropriations							
Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
304	5-1040-54200			Capital Outlay - Buildings & Improvements	-	600,000.00	600,000.00
502	5-1030-54200			Capital Outlay - Buildings & Improvements	-	600,000.00	600,000.00
					-	-	-
					-	-	-
					-	-	-
					-	1,200,000.00	1,200,000.00

Approved by the City Commission this

Explanation of Budget Amendment:
- To fund an increase adding Walnut Street in the CIP

Approved:

Mayor _____
Attest: _____

City Clerk _____

On Date _____

Posted By _____ Date _____ BA# _____ Pkt.# _____

City of Shawnee
2024-2025 Budget Amendment
Shawnee Municipal Authority

Estimated Revenue, Fund Balance, or Transfers IN

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
							-
				Total	-	-	-

Appropriations

Fund Number	Account Number	Project Code	Line Item	Description	Balance Before Amendment	Amount of Amendment Increase (Decrease)	Balance After Amendment
502	5-1030-54200			Capital Outlay - Buildings & Improvements	-	299,500.00	299,500.00
					-	-	-
					-	-	-
					-	-	-
					-	299,500.00	299,500.00

Approved by the City Commission this _____

Explanation of Budget Amendment:

- To fund an increase adding SW Loop Water Main Project in the CIP

Approved:

Mayor _____
Attest: _____

City Clerk _____

On Date _____

Posted By _____ Date _____ BA# _____ Pkt.# _____



City Manager Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Andrea Weckmueller-Behringer, City Manager
Subject: Consideration and approval of the City Manager's hiring of James Kriwanek as the City's Fire Chief.

Background: I have extended an offer of employment to Interim Fire Chief, James Kriwanek, to be the City of Shawnee's next Fire Chief, subject to approval by the City Commission. In accordance with Article V, Section 2 of the City Charter, the appointment of a department head shall not become effective until approved by the Board of Commissioners.

Mr. Kriwanek comes to the Chief's position with 20 years of experience in fire suppression and fire prevention. Having most recently served Shawnee as the Acting Fire Chief since August 2024, and then assuming the role of Interim Fire Chief in November 2024, Mr. Kriwanek has already had a positive impact on the Shawnee Fire Department through the creation and implementation of updated operating procedures and policies that are of great benefit to our Fire Department. Coupled with his track record of leadership, community engagement, and operational excellence, his knowledge and expertise will greatly contribute to the continued success of the Shawnee firefighters and their fire suppression and prevention activities.

Mr. Kriwanek's career has equipped him with the education, skills, and expertise necessary to succeed as the Fire Chief for the City of Shawnee, and his dedication to our community will undoubtedly be of great benefit to the entire community.

Financial Impact: As budgeted

Attachments:

Staff Recommendation: Approval of the item



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkhimer, Director of Engineering
Subject: Consideration of a contract between the City of Shawnee and Wall Engineering for Design Services associated with the SW Loop Water Main Project.

Background: This project involves a 9,850-foot extension of a 12-inch water line, creating a crucial loop on the west side of Highway 177. This will be only the fourth crossing of the state highway for Shawnee, and the improvement is important to the water distribution system. The primary objectives of the project are to reduce water age, increase fire flow to the existing western system, and enhance water capacity for current customers.

The project has been included in the City of Shawnee's Capital Improvement Plan as an amendment, set for approval on December 16, 2024.

Wall Engineering has been selected for the design, with a contract valued at \$299,500. The project scope will encompass:

- Survey
- Geotechnical Engineering
- Preliminary and Final Design
- Contract Documents, Bidding, and Procurement
- Construction Inspection and Engineering
- As-builts and Project Closeout

Staff has reviewed the contract and recommends its approval.

Financial Impact: \$299,500; from SMA, Water System Capital Improvement Fund, Capital Outlay - Buildings & Improvements - 502-5-1030-54200

Attachments: Shawnee Engineering Services Proposal_letter, Shawnee SW 177 Watermain EA 062524

Staff Recommendation: Award of the contract.

WALL ENGINEERING, LLC

223 N Washington Ave

Durant, OK 74701

Ph: 580-924-1800

Seth Barkhimer, PE CFM
Director of Engineering
City of Shawnee
222 N Broadway Ave.
Shawnee, OK 74801

RE: Engineering Services Proposal
SW Loop 177 Watermain Connection
Engineering Proposal

Mr. Barkhimer,

We appreciate the opportunity to provide a proposal for Engineering Services on the SW Loop 177 Watermain Connection. We acknowledge the comments in your email and will incorporate any/all changes requested in initial scoping meetings. Services would include:

- Participation in meetings with the Owner's representatives and other governmental entities as required to define the project scope and design requirements.
- Provide, or cause to be provided, Topographic Survey, Property & ROW survey as required for project design.
- Provide, or cause to be provided, Geotechnical Engineering to establish subsurface conditions.
- Prepare Plans and Specifications
- Obtain approval of the Plans and Specifications from the Owner and seek approval from Oklahoma DEQ (fee to be paid by Owner)
- Prepare bid packages and assist Owner in obtaining bids from contractors.
- Make recommendation of award after review of bids received.
- Owner will issue the Notice of Award and be responsible for final Contractor selection.
- Prepare Contract documents and coordinate contract execution by Owner and Owner's selected Contractor.
- Provide general engineering contract administration during construction to include general overview of Contractors work, review and approval of Contractor's pay estimates, review of change order requests, and facilitate the acceptance of the work performed by the Contractor.
- Provide certain Inspection Services during Construction.
- Conduct Final Inspection and Project Closeout.
- Prepare final "As-Built" drawings.

- It is anticipated that only the services through ODEQ Permit will be authorized initially and Bidding/Construction service will be authorized at a much later date.

For the services outlined, the lump sum fee schedule would be as follows:

Initial Scope of Work (authorized at Engineering Agreement execution)

Basic Engineering through ODEQ Permitting	\$89,530
Geotechnical Engineering	\$10,890
Survey and Data Collection	\$33,880

Future Scope of Work (TBD)

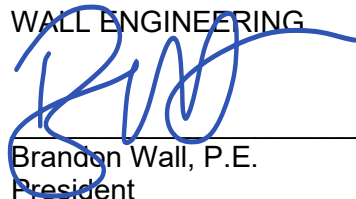
Contract Documents, Bidding & Procurement	\$16,570
Construction Engineering	\$48,980
Asbuilts and Project Closeout	\$8,200
Construction Inspection (5 months full time)	\$91,450

If this meets with you we have attached an Engineering Agreement for execution.

Should you have any questions or need any additional information feel free to contract us at (580) 924-1800.

Respectfully,

WALL ENGINEERING



Brandon Wall, P.E.
President

cc: WE Files

CITY OF SHAWNEE

SW LOOP 177 WATERMAIN

SHORT FORM OF AGREEMENT BETWEEN OWNER AND ENGINEER FOR PROFESSIONAL SERVICES



WE FIRM CERTIFICATE OF AUTHORIZATION #5413

WALL ENGINEERING, LLC
SHORT FORM OF AGREEMENT
BETWEEN OWNER AND ENGINEER
FOR PROFESSIONAL SERVICES

THIS IS AN AGREEMENT effective as of the date of signature on Page 12 ("Effective Date") between City of Shawnee ("Owner") and Wall Engineering, LLC ("Engineer").

Owner's Project, of which Engineer's services under this Agreement are a part, is generally identified as follows: SW Loop 177 Watermain ("Project").

Subject to other terms herein, including without limitation 5.01, Engineer's Scope of Services ("Services") under this Agreement are generally identified as follows:

- Participation in meetings with the Owner's representatives and other governmental entities as required to define the project scope and design requirements.
- Provide, or cause to be provided, Topographic Survey, Property & ROW survey as required for project design.
- Provide, or cause to be provided, Geotechnical Engineering to establish subsurface conditions.
- Prepare Plans and Specifications
- Obtain approval of the Plans and Specifications from the Owner and seek approval from Oklahoma DEQ (fee to be paid by Owner)
- Prepare bid packages and assist Owner in obtaining bids from contractors.
- Make recommendation of award after review of bids received.
- Owner will issue the Notice of Award and be responsible for final Contractor selection.
- Prepare Contract documents and coordinate contract execution by Owner and Owner's selected Contractor.
- Provide general engineering contract administration during construction to include general overview of Contractors work, review and approval of Contractor's pay estimates, review of change order requests, and facilitate the acceptance of the work performed by the Contractor.
- Provide certain Inspection Services during Construction.
- Conduct Final Inspection and Project Closeout.
- Prepare final "As-Built" drawings.

- It is anticipated that only the services through ODEQ Permit will be authorized initially and Bidding/Construction service will be authorized at a much later date.

Items specifically excluded from the scope of work (but may be included as additional services) include:

- Payment of fees for bid advertisement
- Payment of fees for ODEQ Permitting

- Any Easement Survey & Preparation

In addition to those items set forth in the Agreement, Owner shall:

- Give thorough consideration to all documents and other information presented by Engineer and informing Engineer of all decisions within a reasonable time so as not to delay the Services.
- Make provision for the Personnel of Engineer to enter public and private lands as required for Engineer to perform necessary preliminary surveys and other investigations required under this scope of work.
- Obtain the necessary lands, easements and right-of-way for the construction of the work. All costs associated with securing the necessary land interests, including property acquisition and/or easement document preparation, surveys, appraisals, and abstract work, shall be borne by the Owner outside of this Agreement unless specifically outlined otherwise.
- Furnish Engineer such plans and records of construction and operation of existing facilities, available aerial photography, reports, surveys, or copies of the same, related to or bearing on the proposed work as may be in the possession of Owner. Such documents or data will be returned upon completion of the Services or at the request of Owner.
- Pay all ODEQ plan review and advertising costs in connection with the Project.
- Provide legal, accounting, and insurance counseling services necessary for the Project and such auditing services as Owner may require.
- Furnish permits, permit fees, and approvals from all governmental authorities having jurisdiction over the Project and others as may be necessary for completion of the Project.
- Engineer shall be entitled to rely upon and shall not be responsible for the accuracy, completeness and timeliness of services and information furnished by Owner or Owner's consultants.

Any additional services beyond this Scope of Services specifically listed herein would be performed as requested based on current hourly rates or as a negotiated lump sum agreement, and may include an appropriate adjustment to the schedule.

Owner and Engineer further agree as follows:

1.01 Basic Agreement and Period of Service

- A. Engineer shall provide or furnish the Services set forth in this Agreement. If authorized by Owner, or if required because of changes in the Project, Engineer shall furnish services in addition to those set forth above ("Additional Services").
- B. Engineer shall complete its Services based on a mutually agreeable schedule.

- C. If, through no fault of Engineer, such periods of time or dates are changed, or the orderly and continuous progress of Engineer's Services is impaired, or Engineer's Services are delayed or suspended, then the time for completion of Engineer's Services, and the rates and amounts of Engineer's compensation, shall be adjusted equitably.

2.01 *Payment Procedures*

- A. *Invoices:* Engineer shall prepare invoices in accordance with its standard invoicing practices and submit the invoices to Owner on a monthly basis. Invoices are due and payable within 30 days of receipt. If Owner fails to make any payment due Engineer for Services, Additional Services, and expenses within 30 days after receipt of Engineer's invoice, then (1) the amounts due Engineer will be increased at the rate of 2.5% per month (or the maximum rate of interest permitted by law, if less) from said thirtieth day, and (2) in addition Engineer may, after giving seven days written notice to Owner, suspend Services under this Agreement until Engineer has been paid in full all amounts due for Services, Additional Services, expenses, and other related charges. Owner waives any and all claims against Engineer for any such suspension.
- B. *Payment:* As compensation for Engineer providing or furnishing Services and Additional Services, Owner shall pay Engineer as set forth in Paragraphs 2.01, 2.02 (Services), and 2.03 (Additional Services). If Owner disputes an invoice, either as to amount or entitlement, then Owner shall promptly and within 30 days advise Engineer in writing of the specific basis for doing so, may withhold only that portion so disputed, and must pay the undisputed portion.

2.02 *Basis of Payment—Lump Sum*

- A. Owner shall pay Engineer for Services as follows:

1. A Lump Sum amount outlined as follows:

Initial Scope of Work (authorized at Agreement execution)

- | | |
|--|----------|
| a. Basic Engineering through ODEQ Permitting | \$89,530 |
| b. Geotechnical Engineering | \$10,890 |
| c. Survey and Data Collection | \$33,880 |

Future Scope of Work (TBD with no authorization to proceed at time of Agreement execution)

- | | |
|---|----------|
| d. Contract Documents, Bidding & Procurement | \$16,570 |
| e. Construction Engineering | \$48,980 |
| f. Asbuilts and Project Closeout | \$8,200 |
| g. Construction Inspection (5 months full time) | \$91,450 |

2. In addition to the Lump Sum amount, reimbursement for the following expenses: **None**

- B. The portion of the compensation amount billed monthly for Engineer's Services will be based upon Engineer's estimate of the percentage of the total Services actually completed during the billing period.

2.03 *Additional Services:* For Additional Services, Owner shall pay Engineer an amount equal to the cumulative hours charged in providing the Additional Services by each class of Engineer's employees, times the standard hourly rates for each applicable billing class; plus reimbursement of expenses incurred in connection with providing the Additional Services and Engineer's consultants' charges, if any. Engineer's standard hourly rates are attached as Appendix 1. Alternatively, if agreed to, Owner shall pay Engineer a negotiated lump sum amount. As an example, Additional Services may include, among others: Services due to changes in the Project, Services necessitated by the enactment or revision of codes, laws or regulations, and preparation for and attendance at public presentations, meetings or hearings relating to the Project.

3.01 *Termination*

- A. The obligation to continue performance under this Agreement may be terminated:

- 1. For cause,

- a. By either party upon 30 days written notice in the event of substantial failure by the other party to perform in accordance with the Agreement's terms through no fault of the terminating party. Failure to pay Engineer for its Services is a substantial failure to perform and a basis for termination for cause and suspension of Services.

- b. By Engineer:

- 1) upon seven days written notice if Owner demands that Engineer furnish or perform Services contrary to Engineer's responsibilities as a licensed professional; or
 - 2) upon seven days written notice if the Engineer's Services are delayed for more than 90 days for reasons beyond Engineer's control, including without limitation Owner's suspending of the Project, or as the result of the presence at the Site of undisclosed Constituents of Concern, as set forth in Paragraph 5.01.L.

- c. Engineer shall have no liability to Owner on account of a termination for cause by Engineer.

- d. Notwithstanding the foregoing, this Agreement will not terminate as a result of a substantial failure under Paragraph 3.01.A.1.a if the party receiving such notice begins, within seven days of receipt of such notice, to correct its substantial failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of notice; provided, however, that if and to the extent such substantial failure cannot be reasonably cured within such 30 day period, and if such party has diligently attempted to cure the same and thereafter continues diligently to cure the same, then the cure period provided for herein shall extend up to, but in no case more than, 60 days after the date of receipt of the notice.

- 2. For convenience, by Owner effective upon Engineer's receipt of written notice from Owner.

- 3. Either Party may terminate this Agreement immediately upon notice to the other Party, and without incurring any liability, if the non-terminating Party has: (i) been adjudicated bankrupt; (ii) filed a voluntary petition in bankruptcy or had an involuntary petition filed against it in bankruptcy; (iii) made

an assignment for the benefit of creditors; (iv) had a trustee or receiver appointed for it; (v) becomes insolvent; or (vi) any part of its property is put under receivership.

- B. In the event of any termination under Paragraph 3.01, Engineer will be entitled to invoice Owner and to receive full payment for all Services and Additional Services performed or furnished in accordance with this Agreement, plus reimbursement of expenses incurred through the effective date of termination in connection with providing the Services and Additional Services, Engineer's consultants' charges, if any, and costs attributable to termination.

4.01 *Successors, Assigns, and Beneficiaries*

- A. Owner and Engineer are hereby bound and the successors, executors, administrators, agents and legal representatives of Owner and Engineer (and to the extent permitted by Paragraph 4.01.B the assigns of Owner and Engineer) are hereby bound to the other party to this Agreement and to the successors, executors, administrators, agents and legal representatives (and said assigns) of such other party, in respect of all covenants, rights, agreements, duties and obligations of this Agreement.
- B. Neither Owner nor Engineer may assign, sublet, or transfer any rights under or interest (including, but without limitation, money that is due or may become due) in this Agreement without the written consent of the other party, except to the extent that any assignment, subletting, or transfer is mandated by law, and except that Owner may assign this Agreement to a lender providing financing to the Project if the lender agrees to assume Owner's rights and obligations hereunder, including any payments due to Engineer by Owner. Furthermore, Engineer may engage professional services subconsultants in the performance of the work, such as licensed surveyors, hydrologists, geologists/hydrogeologists, electrical, mechanical, structural, geotechnical, hydraulic, and other specialized engineering experts in their respective fields, to the extent deemed necessary by the Engineer. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.
- C. Unless expressly provided otherwise, nothing in this Agreement shall be construed to create a contractual relationship with, or a cause of action in favor of, or to create, impose, or give rise to any duty owed by Owner or Engineer to any Constructor, other third-party individual or entity, or to any surety for or employee of any of them. All duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Owner and Engineer and not for the benefit of any other party.

5.01 *General Considerations*

- A. The standard of care for all professional engineering and related services performed or furnished by Engineer under this Agreement will be the care and skill ordinarily used by members of the subject profession practicing under similar circumstances at the same time and in the same locality. Engineer makes no warranties, express or implied, under this Agreement or otherwise, in connection with any services performed or furnished by Engineer. Subject to the foregoing standard of care, Engineer and its consultants may use or rely upon design elements and information ordinarily or customarily furnished by others, including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.
- B. Engineer shall not at any time supervise, direct, control, have authority over or be responsible for any Constructor's work, or any Constructor's means, methods, techniques, sequences, or procedures of

construction selected or used by any Constructor, or the safety precautions and programs incident thereto, for security or safety at the Project site, nor for any failure of a Constructor to comply with laws and regulations applicable to such Constructor's furnishing and performing of its work. Engineer shall not be responsible for the acts or omissions of any Constructor, nor shall Engineer be responsible for any Constructor's failure to perform the work in accordance with the requirements of the Contract Documents.

- C. Engineer shall not be responsible for the acts or omissions of any Constructor or any of Constructor's agents or employees or any other persons (except Engineer's own employees) at the Project site or otherwise furnishing or performing any construction work; or for any decision made on interpretations or clarifications of the construction contract or the Contract Documents given by Owner without consultation and written approval of Engineer. The Engineer shall have authority to act on behalf of Owner only to the extent provided in this Agreement or with express written authorization.
- D. Engineer shall visit the Project at intervals appropriate to the stage of construction to become familiar with the progress and quality of Constructor's work and to determine, in general, if the work observed is being performed in a manner indicating that the work, when completed, will be in accordance with the Contract Documents. However, Engineer shall not be required to make extensive or continual on-site inspections. If Engineer reviews Constructor's submittals, such as Shop Drawings, Product Data or Samples, that review is only for the limited purpose of checking for general conformance with information given and the design concept in the Contract Documents. Such review is not for the purpose of determining the accuracy and completeness of other information such as dimensions, quantities, and installation or performance of equipment or systems, which are Constructor's responsibility. Engineer's review shall not constitute approval of a deviation from the requirements of the Contract Documents unless Constructor has specifically informed Engineer in writing of such deviation at the time of submittal and Engineer has given specific written acknowledgment of the specific deviation. Engineer neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to properly furnish and perform its work.
- E. Engineer's estimates (if any) of probable construction cost are to be made on the basis of Engineer's experience, qualifications, and general familiarity with the construction industry. However, because Engineer has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, Engineer cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from estimates of probable construction cost prepared by Engineer. If Owner requires greater assurance as to probable construction cost, then Owner agrees to obtain an independent cost estimate.
- F. Owner understands that the construction cost estimates developed by Engineer do not establish a limit for the construction contract amount. If the actual amount of the low construction bid or resulting construction contract exceeds the construction budget established by Owner, Engineer will not be required to re-design the Services without additional compensation.
- G. Engineer has the authority to reject work that does not conform to the Contract Documents and may require inspection or testing of the work, however a decision made in good faith by Engineer shall not give rise to any duty or responsibility of Engineer to any Constructor performing any work. Engineer shall not be responsible for any decision made regarding the construction contract requirements, or any application, interpretation, clarification, or modification of the construction Contract Documents other than those made by Engineer or its consultants.

- H. All documents prepared or furnished by Engineer are Instruments of Service, and Engineer retains exclusively an ownership and property interest (including the copyright and the right of reuse) in such documents, whether or not the Project is completed. Owner shall have a limited license to use the Instruments of Service on the Project, extensions of the Project, and for related uses of the Owner, including use solely on this Project by Constructor, subject to Owner performing its obligations under this Agreement, including receipt by Engineer of full payment due and owing for all Services and Additional Services relating to preparation of the Instruments of Service and subject to the following limitations:
1. Owner acknowledges that such documents are not intended or represented to be suitable for use on the Project unless completed by Engineer, or for use or reuse by Owner or others on extensions of the Project, on any other project, or for any other use or purpose, without written verification or adaptation by Engineer;
 2. any such use or reuse, or any modification of the documents, without written verification, completion, or adaptation by Engineer, as appropriate for the specific purpose intended, is improper and will be at Owner's sole risk and without liability or legal exposure to Engineer or to its officers, directors, members, partners, agents, employees, and consultants;
 3. Owner shall indemnify and hold harmless Engineer and its officers, directors, members, partners, agents, employees, and consultants from all claims, damages, losses, and expenses, including all attorneys' fees, arising out of or resulting from any use, reuse, or modification of the documents without written verification, completion, or adaptation by Engineer; and
 4. such limited license to Owner shall not create any rights in third parties.
- I. Owner and Engineer may transmit, and shall accept, Project-related correspondence, documents, text, data, drawings, information, and graphics, in electronic media or digital format, either directly, or through access to a secure Project website, in accordance with a mutually agreeable protocol. Contemporaneous with this Agreement, Owner and Engineer shall designate in writing specific individuals to act as Owner's and Engineer's representatives with respect to the duties and responsibilities of the Parties to this Agreement.
- J. In accepting and utilizing any form of digital data generated and provided by Engineer for its Services, Owner agrees that all such digital data are Instruments of Service of Engineer. Owner is aware that differences may exist between the digital data delivered and the printed hardcopy document. In the event of a conflict between the original signed document prepared by Engineer and digital data, the original signed and sealed hard-copy document shall govern. Under no circumstances shall delivery of digital data for use by Owner be deemed a sale by Engineer, and Engineer makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event shall Engineer be liable for indirect or consequential damages as a result of Owner's use or reuse of the digital data.
- K. To the fullest extent permitted by law, Owner and Engineer (1) waive against each other, and the other's employees, officers, directors, members, agents, insurers, partners, representatives and consultants, any and all claims for or entitlement to special, incidental, indirect, or consequential damages such as loss of use, lost profits, financing, and other such damages arising out of, resulting from, or in any way related to this Agreement or the Project, (2) to the extent damages are covered by property insurance, waive any and all claims or rights against each other for damages, except such rights as they may have to the proceeds of insurance, (3) agree that Engineer's total liability to Owner and maximum recovery from Engineer for any damages, claims, costs or expenses under this Agreement, whether in contract, tort or otherwise, shall be

limited to the scope of services provided and further limited to the total amount of compensation received by Engineer under this Agreement, and (4) agree that Engineer is not responsible for damages arising from any circumstances beyond Engineer's reasonable control, including without limitation, strike or labor disputes, severe weather disruptions, natural disasters, fire or other acts of God, riots, epidemics, war or other emergencies, failure of any governmental agency to act in a timely manner, failure of performance by Owner or Constructors, or discovery of any hazardous substances or differing and unforeseeable site conditions.

- L. The limitations set forth in the waivers above apply regardless of whether the claim is based in contract, tort, or negligence including gross negligence, strict liability, warranty, indemnity, error and omission, or any other cause whatsoever.
- M. No other warranties or causes of action of any kind, whether statutory, express or implied (including all warranties of merchantability and fitness for a particular purpose and all warranties arising from course of dealing or usage of trade) shall apply. Owner's exclusive remedies and Engineer's only obligations arising out of or in connection with defective Services (patent, latent or otherwise), whether based in contract, in tort (including negligence and strict liability), or otherwise, shall be those stated in the Agreement.
- N. Owner shall procure and maintain insurance as set forth workers' compensation (if applicable), general liability, motor vehicle damage and injuries, and other insurance necessary and sufficient to protect Owner's and Engineer's interests in the Project. Owner agrees that should he/she not have sufficient knowledge and expertise to ascertain levels of proper insurance required, that a insurance professional will be consulted. Owner shall cause Engineer to be listed as additional insureds on any general liability policies carried by Owner, which are applicable to the Project. If Owner requires additional liability coverages greater than those discussed in Section 5.01 K, the owner shall obtain Owner's Protective Professional Indemnity (OPPI) insurance to cover damages in excess of the total liability of the Engineer as specified in Section 5.01K, and shall coordinate with insurance experts to ensure proper coverage in the interest of the Owner.
- O. Owner shall require any consultant and/or contractor additionally working on this project to purchase and maintain policies of insurance covering workers' compensation, general liability, motor vehicle damage and injuries, and other insurance necessary and sufficient to protect Owner's and Engineer's interests in the Project. Owner shall require Contractor to cause Engineer and its Consultants to be listed as additional insureds with respect to such general liability insurance purchased and maintained by consultants and/or contractors for the Project.
- P. The parties acknowledge that Engineer's Services do not include any services related to unknown or undisclosed Constituents of Concern. If Engineer or any other party encounters, uncovers, or reveals an unknown or undisclosed Constituent of Concern, then Engineer may, at its option and without liability for consequential or any other damages, suspend performance of Services on the portion of the Project affected thereby until such portion of the Project is no longer affected, or terminate this Agreement for cause if it is not practical to continue providing Services.
- Q. Owner and Engineer agree to informally discuss and negotiate each dispute and any claim between them in good faith during the 30 days after notice of dispute. If negotiations are unsuccessful in resolving the dispute, then the dispute shall be mediated by a mediator agreed upon by the parties. The Mediator's fee and any filing fees shall be shared equally by Owner and Engineer. If mediation is unsuccessful, then the parties may exercise their rights at law.

- R. This Agreement is to be governed by the law of the state in which the Project is located.
- S. Engineer's Services and Additional Services do not include: (1) serving as a "municipal advisor" for purposes of the registration requirements of Section 975 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (2010) or the municipal advisor registration rules issued by the Securities and Exchange Commission; (2) advising Owner, or any municipal entity or other person or entity, regarding municipal financial products or the issuance of municipal securities, including advice with respect to the structure, timing, terms, or other similar matters concerning such products or issuances; (3) providing surety bonding or insurance-related advice, recommendations, counseling, or research, or enforcement of construction insurance or surety bonding requirements; or (4) providing legal advice or representation.
- T. Engineer's Services and Additional Services do not include: providing any general insurance-related advice include amounts of coverage required, recommendations, counseling, or research, or enforcement of insurance requirements. It is the responsibility of the Owner to review and verify the submitted requirements and type of policies / riders outlined in the Contract Documents are reasonable and valid for project type. The amounts/type inserted by Engineer are for reference only and Engineer has no assumed responsibility or stated/implied expertise.
- U. Engineer has no stated or implied expertise in matter outside and not specifically referenced in this Agreement or within Engineer's standard area of practice. Examples include, but are not limited to, legal representation for review of Agreements and Contract Documents, municipal advisers, financial advisers, bond council, insurance professionals for review of insurance and bonding limits and requirements, accountants, and auditors. Owner should consult with relevant professionals for any matters not specific to this Agreement.
- V. The invalidity of any provision of this Agreement shall not invalidate the Agreement or its remaining provisions. If it is determined that any provision of the Agreement violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make it legal and enforceable, and if not, then that provision shall be stricken and all remaining provisions shall be valid and enforceable.
- W. Engineer may use or rely upon design elements and information ordinarily or customarily furnished by others including, but not limited to, specialty contractors, manufacturers, suppliers, and the publishers of technical standards.
- X. Except to the extent expressly included as part of the Services, Engineer will not provide research regarding utilities or survey utilities located and marked by their owners. Furthermore, since many utility companies typically will not locate and mark their underground facilities prior to notice of excavation, Engineer is not responsible for knowing whether underground utilities are present or knowing the exact location of such utilities for design and cost estimating purposes. In no event is Engineer responsible for damage to underground utilities, unmarked or improperly marked, caused by geotechnical conditions, potholing, construction, or other contractors or subcontractors working under a subcontract to this Agreement. Design modifications necessitated by incomplete utility data shall be paid for as additional services.
- Y. Owner and Engineer shall consider: (i) all information provided by the other Party that is marked as 'Confidential Information' or 'Proprietary Information' or identified as confidential pursuant to this Agreement promptly after being disclosed verbally; and (ii) all documents resulting from Engineer's performance of Services to be Confidential Information. Except as legally required, Confidential Information

shall not be discussed with or transmitted to any third parties, except on a 'need-to-know basis' with equal or greater confidentiality protection or written consent of the disclosing Party. Confidential Information shall not include, and nothing herein shall limit either Party's right to disclose any information provided hereunder which: (i) was or becomes generally available to the public, other than as a result of a disclosure by the receiving Party or its Personnel; (ii) was or becomes available to the receiving Party or its representatives on a non-confidential basis, provided that the source of the information is not bound by a confidentiality agreement or otherwise prohibited from transmitting such information by a contractual, legal, or fiduciary duty; (iii) was independently developed by the receiving Party without the use of any Confidential Information of the disclosing Party; or (iv) is required to be disclosed by applicable law or a court order. All confidentiality obligations hereunder shall expire three (3) years after completion of the Services. Nothing herein shall be interpreted as prohibiting Engineer from disclosing general information regarding the Project for future marketing purposes.

- Z. Engineer is and at all times shall be deemed an independent contractor in the performance of the Services under this Agreement.
- AA. In accordance with applicable law, including the applicable Uniform Electronic Transactions Act, Owner and Engineer agree that electronic signatures (such as e-mail or electronically-typed signatures) of the parties' authorized representatives to this Agreement or to later consents or approvals associated herewith shall constitute the valid signature of the party for purposes of obtaining agreements, consents or other matters prescribed by the Agreement.

6.01 *Owner's Responsibilities*

- A. In connection with the Project, Owner's responsibilities shall include the following:
 - 1. Any responsibilities set forth in Scope of Work.
 - 2. Owner shall be responsible for all requirements and instructions that it furnishes to Engineer pursuant to this Agreement, and for the accuracy and completeness of all programs, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. Engineer may use and rely upon such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement, subject to any express limitations or reservations applicable to the furnished items as further set forth in Scope of Work.
 - 3. Owner shall give prompt written notice to Engineer whenever Owner observes or otherwise becomes aware of the presence at the Project site of any Hazardous Materials or any relevant, material defect, or nonconformance in: (i) the Services; (ii) the performance by any contractor providing or otherwise performing construction services related to the Project; or (iii) Owner's performance of its responsibilities under this Agreement.
 - 4. Owner shall include Engineer as an indemnified party under the contractor's indemnity obligations included in the construction contract documents.
 - 5. Owner will not directly or indirectly solicit any of Engineer's Personnel during performance of this Agreement and for a period of one (1) year beyond completion of this Agreement.
 - 6. Owner shall provide additional advisers/professionals as deemed necessary by Owner for any services not specifically outlined and included in this Agreement. Examples include, but are not limited to, legal

representation for review of Agreements and Contract Documents, municipal advisers, financial advisers, bond council, insurance professionals for review of insurance and bonding limits and requirements, accountants, auditors and other professionals as deemed necessary. Engineer has no stated or implied expertise in these matters and Owner should consult with relevant professional for any matters not specific to this Agreement.

7.01 *Entire Agreement; Amendment*

- A. This Agreement (including any expressly incorporated attachments), constitutes the entire agreement between Owner and Engineer and supersedes all prior written or oral representations, understandings, or agreements. This Agreement may only be amended, supplemented, modified, or canceled by a written instrument executed by both Owner and Engineer and dated.

Definitions

- B. *Constructor*—Any person or entity (not including the Engineer, its employees, agents, representatives, and consultants), performing or supporting construction activities relating to the Project, including but not limited to contractors, subcontractors, suppliers, Owner’s work forces, utility companies, construction managers, testing firms, shippers, and truckers, and the employees, agents, and representatives of any or all of them.
- C. *Constituent of Concern*—Asbestos, petroleum, radioactive material, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, State, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

Attachments: Appendix 1, Engineer’s Standard Hourly Rates

[REMAINDER OF THIS PAGE IS INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, the Effective Date of which is indicated on page 1.

Owner: City of Shawnee

Engineer: Wall Engineering, LLC

By: _____

By: _____



Print name: Ed Bolt

Print name: Brandon Wall, P.E.

Title: Mayor

Title: President

Date Signed: _____

Engineer License or Firm's Certificate No. :
Oklahoma #5413

Address for Owner's receipt of notices:
6 West 9th Street
Shawnee, OK 74801-6812

Address for Engineer's receipt of notices:
223 N Washington

This is **Appendix 1, Engineer's Standard Hourly Rates**, referred to in and part of the Short Form of Agreement between Owner and Engineer for Professional Services.

Engineer's Standard Hourly Rates

A. Standard Hourly Rates:

1. Standard Hourly Rates are set forth in this Appendix 1 and include salaries and wages paid to personnel in each billing class plus the cost of customary and statutory benefits, general and administrative overhead, non-project operating costs, and operating margin or profit.
2. The Standard Hourly Rates apply only as specified in the Agreement, and are subject to annual review and adjustment.

B. Schedule of Hourly Rates:

Principal Engineer	\$235.00/hour
Professional Engineer / Project Engineer / Project Manager	\$185.00/hour
Construction Manager	\$155.00/hour
Engineering Intern	\$145.00/hour
Senior Engineering Technician	\$125.00/hour
Construction Inspector	\$120.00/hour
Engineering Technician	\$110.00/hour
CAD Technician	\$100.00/hour
Administrative / Clerical	\$75.00/hour
Survey Crew – Field	\$300.00/hour
Survey Crew – Office	\$175.00/hour
Misc Mileage	IRS Rate
Per Diem	\$200/day
Engineering General Services Agreements	\$175.00/hour



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkhimer, Director of Engineering
Subject: Consideration of a Professional Services Agreement with Kimley-Horn and Associates, Inc. to provide design services for Wallace Street Sidewalk project.

Background: As part of Fiscal year 2025 of the City of Shawnee's Capital Improvement Plan (CIP), the Wallace Street Sidewalk project was identified for design initiation. In August 2024, the City published a Request for Qualifications for design firms. After reviewing and evaluating the submissions, Kimley-Horn emerged as the selected firm.

Kimley-Horn has submitted a proposal for engineering services to improve the sidewalk on the north side of Wallace Street, between Kickapoo and Harrison. The project scope will encompass the following:

- Survey
- Final Plans
- Railroad Crossing Coordination

The proposal's total cost of \$115,000 is within the budget set forth by the adopted CIP.

Financial Impact: \$115,000; from Street Improvement Fund, Capital Outlay - Buildings & Improvements - 302-5-0810-54200

Attachments: 20241126 - City of Shawnee - Wallace Street Sidewalks Scope and Fee - KH Signed

Staff Recommendation: Approval of the item



November 26, 2024

Mr. Seth Barkhimer, P.E., CFM
Director of Engineering
City of Shawnee
222 N. Broadway Avenue
Shawnee, OK 74801

**Re: Professional Services Agreement
Wallace Street Sidewalk Project – Shawnee, OK**

Dear Mr. Barkhimer:

Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Consultant") is pleased to submit this letter agreement ("Agreement") to the City of Shawnee ("Client") for providing engineering design services for the Wallace Street Sidewalk Project.

Project Understanding

This project consists of providing professional engineering services associated with sidewalk improvements within the public right-of-way along the north side of E. Wallace Street from N. Kickapoo Avenue to N. Harrison Street (approximately 1.0 mile).



Scope of Services

Kimley-Horn will provide the services specifically set forth below.

Task 1 – Topographic Survey and Land Ties

- A. Survey will be conducted by Elevation Land Surveying, LLC.
- B. Survey to be collected on the north side of Wallace Street from Kickapoo Avenue to Harrison Street.
- C. Legal descriptions for ROW/easement acquisition are not included in the scope. ROW/easement preparation is an additional service and will only be performed once notice to proceed is received from the Client. ROW acquisition is to be performed by the Client.

Task 2 – Final Plan Services

This task will result in an opinion of probable construction cost, 30% design plans, 90% design plans, and final signed and sealed plans and specifications suitable for proceeding with the bidding phase of this project. The detailed scope of services for each subtask is outlined below.

- A. Prepare engineering plan sheets, specifications, and construction contract documents in for project bidding and regulatory approval. Plans shall consist of 11" x 17" plan sheets. Design plans will follow Oklahoma Department of Transportation (ODOT) design standards and specifications. The plan set is anticipated to include the following sheets:
 - a. Title Sheet
 - b. Typical Section
 - c. General Notes & Pay Items
 - d. Summary Sheets
 - e. Storm Water Management Plan
 - f. Erosion Control Plan
 - g. Demolition Plan Sheets
 - h. Sidewalk Layout Sheets (profiles of the sidewalks will not be included)
 - i. Signing and Striping Sheets
 - j. Traffic Control Details
- B. Kimley-Horn will coordinate with the BNSF railroad for the proposed pedestrian crossing on the north side of Wallace Street at the railroad tracks along the corridor. A separate plan sheet will be prepared for the railroad to facilitate the sidewalk improvements within the railroad right-of-way separate from the full construction of the sidewalk project.
- C. Utility coordination will be conducted by the Client with the existing franchise utilities within the project footprint to coordinate any conflicts. Design of any utility relocations is not included in the scope of this project.
- D. Kimley-Horn will attend up to two (2) review meetings with the Client after each submittal milestone to discuss modifications to the construction plans. Kimley-Horn will respond to one (1) consolidated round of comments per plan submittal. Comments will be addressed as part of the subsequent submittal. Kimley-Horn will attend one (1) field meeting to assess conditions on the project site or meet with the Client on site.

Services Not Included

Any other services, including but not limited to the following, are not included in this Agreement:

- A. Utility Coordination
- B. Bidding Services
- C. Construction Management/Administration
- D. As-Built Plans

Additional Services

Any services not specifically provided for in the above scope will be billed as additional services and performed at Kimley-Horn's then current hourly rates.

Schedule of Milestone Submittals

- A. 30% Submittal – 120 days from Notice to Proceed
- B. 90% Submittal – 150 days from resolution of the 30% design comments from the Client
- C. Final Plan Submittal – 30 days from resolution of the 90% design comments from the Client

Fee Schedule

Kimley-Horn will perform the services in Tasks 1 and 2 for the total lump sum fee below. Individual task amounts are informational only. All permitting, application, and similar project fees will be paid directly by the Client.

Task	Description	Fee	Type
1	Topographic Survey	\$27,500	Lump Sum
2	Final Plan Services 30% Plan Submittal 90% Plan Submittal - Final Plan Submittal	\$32,400 \$44,700 \$10,400	Lump Sum
Total		\$115,000	

Lump sum fees will be invoiced monthly based upon the overall percentage of services performed. Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Kimley-Horn project number.

Closure

In addition to the matters set forth herein, our Agreement shall include and be subject to, and only to, the attached Standard Provisions, which are incorporated by reference. As used in the Standard Provisions, "Kimley-Horn" shall refer to Kimley-Horn and Associates, Inc., and "Client" shall refer to **The City of Shawnee.**

Kimley-Horn, in an effort to expedite invoices and reduce paper waste, submits invoices via email in a PDF. We can also provide a paper copy via regular mail if requested. Please include the invoice number and Kimley-Horn project number with all payments. Please provide the following information:

Please email all invoices to _____

Please copy _____

To proceed with the services, please have an authorized person sign this Agreement below and return to us. We will commence services only after we have received a fully-executed agreement. Fees and times stated in this Agreement are valid for sixty (60) days after the date of this letter.

To ensure proper set up of your projects so that we can get started, please complete and return with the signed copy of this Agreement the attached Request for Information. Failure to supply this information could result in delay in starting work on this project.

We appreciate the opportunity to provide these services. Please contact me if you have any questions.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Signed: Luke Alan Schmidt
Digitally signed by Luke Alan Schmidt
Date: 2024.12.01 21:55:25 -06'00'

Printed Name: Luke Schmidt, P.E.

Title: Contract Specialist

City of Shawnee

SIGNED: _____

PRINTED NAME: _____

TITLE: _____

DATE: _____

Client's Federal Tax ID: _____

Client's Business License No.: _____

Client's Street Address: _____

Attachment – Request for Information

Attachment – Standard Provisions

Request for Information

Please return this information with your signed contract; failure to provide this information could result in delay in starting your project

Client Identification

Full, Legal Name of Client					
Mailing Address for Invoices					
Contact for Billing Inquiries					
Contact's Phone and e-mail					
Client is (check one)	Owner	☐	Agent for Owner	☐	Unrelated to Owner

Property Identification

	Parcel 1	Parcel 2	Parcel 3	Parcel 4
Street Address				
County in which Property is Located				
Tax Assessor's Number(s)				

Property Owner Identification

	Owner 1	Owner 2	Owner 3	Owner 4
Owner(s) Name				
Owner(s) Mailing Address				
Owner's Phone No.				
Owner of Which Parcel #?				

Project Funding Identification – List Funding Sources for the Project

Attach additional sheets if there are more than 4 parcels or more than 4 owners

KIMLEY-HORN AND ASSOCIATES, INC.
STANDARD PROVISIONS

- 1) **Kimley-Horn's Scope of Services and Additional Services.** Kimley-Horn will perform only the services specifically described in this Agreement ("Services"). Any services that are not set forth in the scope of Services described herein will constitute additional services ("Additional Services"). If requested by the Client and agreed to by Kimley-Horn, Kimley-Horn will perform Additional Services, which shall be governed by these provisions. Unless otherwise agreed to in writing, the Client shall pay Kimley-Horn for any Additional Services an amount based upon Kimley-Horn's then-current hourly rates plus an amount to cover certain direct expenses including telecommunications, in-house reproduction, postage, supplies, project related computer time, and local mileage. Other direct expenses will be billed at 1.15 times cost.
- 2) **Client's Responsibilities.** In addition to other responsibilities herein or imposed by law, the Client shall:
 - a. Designate in writing a person to act as its representative, such person having complete authority to transmit instructions, receive information, and make or interpret the Client's decisions.
 - b. Provide all information and criteria as to the Client's requirements, objectives, and expectations for the project and all standards of development, design, or construction.
 - c. Provide Kimley-Horn all available studies, plans, or other documents pertaining to the project, such as surveys, engineering data, environmental information, etc., all of which Kimley-Horn may rely upon.
 - d. Arrange for access to the site and other property as required for Kimley-Horn to provide its services.
 - e. Review all documents or reports presented by Kimley-Horn and communicate decisions pertaining thereto within a reasonable time so as not to delay Kimley-Horn.
 - f. Furnish approvals and permits from governmental authorities having jurisdiction over the project and approvals and consents from other parties as may be necessary.
 - g. Obtain any independent accounting, legal, insurance, cost estimating, and feasibility services required by Client.
 - h. Give prompt written notice to Kimley-Horn whenever the Client becomes aware of any development that affects Kimley-Horn's services or any defect or noncompliance in any aspect of the project.
- 3) **Period of Services.** Unless otherwise stated herein, Kimley-Horn will begin work after receipt of a properly executed copy of this Agreement. This Agreement assumes conditions permitting continuous and orderly progress through completion of the services. Times for performance shall be extended as necessary for delays or suspensions due to circumstances that Kimley-Horn does not control. If such delay or suspension extends for more than six months, Kimley-Horn's compensation shall be renegotiated.
- 4) **Method of Payment.** Client shall pay Kimley-Horn as follows:
 - a. Invoices will be submitted periodically for services performed and expenses incurred. Payment of each invoice will be due within 25 days of receipt. The Client shall also pay any applicable sales tax. All retainers will be held by Kimley-Horn and applied against the final invoice. Interest will be added to accounts not paid within 25 days at the maximum rate allowed by law. If the Client fails to make any payment due under this or any other agreement within 30 days after Kimley-Horn's transmittal of its invoice, Kimley-Horn may, after giving notice to the Client, suspend services and withhold deliverables until all amounts due are paid.
 - b. The Client will remit all payments electronically to:

Account Name: KIMLEY-HORN AND ASSOCIATES, INC.
Bank Name and Address: WELLS FARGO BANK, N.A., SAN FRANCISCO, CA 94104
Account Number: 2073089159554
ABA#: 121000248
 - c. The Client will send the project number, invoice number and other remittance information by e-mail to payments@kimley-horn.com at the time of payment.
 - d. If the Client relies on payment or proceeds from a third party to pay Kimley-Horn and Client does not pay Kimley-Horn's invoice within 60 days of receipt, Kimley-Horn may communicate directly with such third party to secure payment.
 - e. If the Client objects to an invoice, it must advise Kimley-Horn in writing giving its reasons within 14 days of receipt of the invoice or the Client's objections will be waived, and the invoice shall conclusively be deemed due and owing. If the Client objects to only a portion of the invoice, payment for all other portions remains due.
 - f. If Kimley-Horn initiates legal proceedings to collect payment, it shall recover, in addition to all amounts due, its reasonable attorneys' fees, reasonable experts' fees, and other expenses related to the proceedings.

Such expenses shall include the cost, at Kimley-Horn's normal hourly billing rates, of the time devoted to such proceedings by its employees.

- g. The Client agrees that the payment to Kimley-Horn is not subject to any contingency or condition. Kimley-Horn may negotiate payment of any check tendered by the Client, even if the words "in full satisfaction" or words intended to have similar effect appear on the check without such negotiation being an accord and satisfaction of any disputed debt and without prejudicing any right of Kimley-Horn to collect additional amounts from the Client.
- 5) **Use of Deliverables.** All documents, data, and other deliverables prepared by Kimley-Horn are related exclusively to the services described in this Agreement and may be used only if the Client has satisfied all of its obligations under this Agreement. They are not intended or represented to be suitable for use or reuse by the Client or others on extensions of this project or on any other project. Any modifications by the Client to any of Kimley-Horn's deliverables, or any reuse of the deliverables without written authorization by Kimley-Horn will be at the Client's sole risk and without liability to Kimley-Horn, and the Client shall indemnify, defend and hold Kimley-Horn harmless from all claims, damages, losses and expenses, including but not limited to attorneys' fees, resulting therefrom. Kimley-Horn's electronic files and source code remain the property of Kimley-Horn and shall be provided to the Client only if expressly provided for in this Agreement. Any electronic files not containing an electronic seal are provided only for the convenience of the Client and use of them is at the Client's sole risk. In the case of any defects in the electronic files or any discrepancies between them and the hardcopy of the deliverables prepared by Kimley-Horn, the hardcopy shall govern.
- 6) **Intellectual Property.** Kimley-Horn may use or develop its proprietary software, patents, copyrights, trademarks, trade secrets, and other intellectual property owned by Kimley-Horn or its affiliates ("Intellectual Property") in the performance of this Agreement. Intellectual Property, for purposes of this section, does not include deliverables specifically created for Client pursuant to the Agreement and use of such deliverables is governed by section 5 of this Agreement. Unless explicitly agreed to in writing by both parties to the contrary, Kimley-Horn maintains all interest in and ownership of its Intellectual Property and conveys no interest, ownership, license to use, or any other rights in the Intellectual Property to Client. Any enhancements of Intellectual Property made during the performance of this Agreement are solely owned by Kimley-Horn and its affiliates. If Kimley-Horn's services include providing Client with access to or a license for Kimley-Horn's (or its affiliates') proprietary software or technology, Client agrees to the terms of the Software License Agreement set forth at <https://www.kimley-horn.com/khts-software-license-agreement> ("the License Agreement") which terms are incorporated herein by reference.
- 7) **Opinions of Cost.** Because Kimley-Horn does not control the cost of labor, materials, equipment or services furnished by others, methods of determining prices, or competitive bidding or market conditions, any opinions rendered as to costs, including but not limited to the costs of construction and materials, are made solely based on its judgment as a professional familiar with the industry. Kimley-Horn cannot and does not guarantee that proposals, bids or actual costs will not vary from its opinions of cost. If the Client wishes greater assurance as to the amount of any cost, it shall employ an independent cost estimator. Kimley-Horn's services required to bring costs within any limitation established by the Client will be paid for as Additional Services.
- 8) **Termination.** The obligation to provide further services under this Agreement may be terminated by either party upon seven days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof, or upon thirty days' written notice for the convenience of the terminating party. Kimley-Horn shall be paid for all services rendered and expenses incurred to the effective date of termination, and other reasonable expenses incurred by Kimley-Horn as a result of such termination.
- 9) **Standard of Care.** The standard of care applicable to Kimley-Horn's services will be the degree of care and skill ordinarily exercised by consultants performing the same or similar services in the same locality at the time the services are provided. No warranty, express or implied, is made or intended by Kimley-Horn's performance of services, and it is agreed that Kimley-Horn is not a fiduciary with respect to the Client.
- 10) **LIMITATION OF LIABILITY.** In recognition of the relative risks and benefits of the Project to the Client and Kimley-Horn, the risks are allocated such that, to the fullest extent allowed by law, and notwithstanding any other provisions of this Agreement or the existence of applicable insurance coverage, that the total liability, in the aggregate, of Kimley-Horn and Kimley-Horn's officers, directors, employees, agents, and subconsultants to the Client or to anyone claiming by, through or under the Client, for any and all claims,

losses, costs, attorneys' fees, or damages whatsoever arising out of or in any way related to the services under this Agreement from any causes, including but not limited to, the negligence, professional errors or omissions, strict liability or breach of contract or any warranty, express or implied, of Kimley-Horn or Kimley-Horn's officers, directors, employees, agents, and subconsultants, shall not exceed twice the total compensation received by Kimley-Horn under this Agreement or \$50,000, whichever is greater. Higher limits of liability may be negotiated for additional fee. This Section is intended solely to limit the remedies available to the Client or those claiming by or through the Client, and nothing in this Section shall require the Client to indemnify Kimley-Horn.

- 11) **Mutual Waiver of Consequential Damages.** In no event shall either party be liable to the other for any consequential, incidental, punitive, or indirect damages including but not limited to loss of income or loss of profits.
- 12) **Construction Costs.** Under no circumstances shall Kimley-Horn be liable for extra costs or other consequences due to changed or unknown conditions or related to the failure of contractors to perform work in accordance with the plans and specifications. Kimley-Horn shall have no liability whatsoever for any costs arising out of the Client's decision to obtain bids or proceed with construction before Kimley-Horn has issued final, fully approved plans and specifications. The Client acknowledges that all preliminary plans are subject to substantial revision until plans are fully approved and all permits obtained.
- 13) **Certifications.** All requests for Kimley-Horn to execute certificates, lender consents, or other third-party reliance letters must be submitted to Kimley-Horn at least 14 days prior to the requested date of execution. Kimley-Horn shall not be required to execute certificates, consents, or third-party reliance letters that are inaccurate, that relate to facts of which Kimley-Horn does not have actual knowledge, or that would cause Kimley-Horn to violate applicable rules of professional responsibility.
- 14) **Dispute Resolution.** All claims arising out of this Agreement or its breach shall be submitted first to mediation in accordance with the American Arbitration Association as a condition precedent to litigation. Any mediation or civil action by Client must be commenced within one year of the accrual of the cause of action asserted but in no event later than allowed by applicable statutes.
- 15) **Hazardous Substances and Conditions.** Kimley-Horn shall not be a custodian, transporter, handler, arranger, contractor, or remediator with respect to hazardous substances and conditions. Kimley-Horn's services will be limited to analysis, recommendations, and reporting, including, when agreed to, plans and specifications for isolation, removal, or remediation. Kimley-Horn will notify the Client of unanticipated hazardous substances or conditions of which Kimley-Horn actually becomes aware. Kimley-Horn may stop affected portions of its services until the hazardous substance or condition is eliminated.
- 16) **Construction Phase Services.**
 - a. If Kimley-Horn prepares construction documents and Kimley-Horn is not retained to make periodic site visits, the Client assumes all responsibility for interpretation of the documents and for construction observation, and the Client waives any claims against Kimley-Horn in any way connected thereto.
 - b. Kimley-Horn shall have no responsibility for any contractor's means, methods, techniques, equipment choice and usage, equipment maintenance and inspection, sequence, schedule, safety programs, or safety practices, nor shall Kimley-Horn have any authority or responsibility to stop or direct the work of any contractor. Kimley-Horn's visits will be for the purpose of observing construction and reporting to the Client whether the contractors' work generally conforms to the construction documents prepared by Kimley-Horn. Kimley-Horn neither guarantees the performance of contractors, nor assumes responsibility for any contractor's failure to perform its work in accordance with the contract documents.
 - c. Kimley-Horn is not responsible for any duties assigned to it in the construction contract that are not expressly provided for in this Agreement. The Client agrees that each contract with any contractor shall state that the contractor shall be solely responsible for job site safety and its means and methods; that the contractor shall indemnify the Client and Kimley-Horn for all claims and liability arising out of job site accidents; and that the Client and Kimley-Horn shall be made additional insureds under the contractor's general liability insurance policy.
- 17) **No Third-Party Beneficiaries; Assignment and Subcontracting.** This Agreement gives no rights or benefits to anyone other than the Client and Kimley-Horn, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole benefit of the Client and Kimley-Horn. The Client shall not assign or transfer any rights under or interest in this Agreement, or any claim arising out of the performance

of services by Kimley-Horn, without the written consent of Kimley-Horn. Kimley-Horn reserves the right to augment its staff with subconsultants as it deems appropriate due to project logistics, schedules, or market conditions. If Kimley-Horn exercises this right, Kimley-Horn will maintain the agreed-upon billing rates for services identified in the contract, regardless of whether the services are provided by in-house employees, contract employees, or independent subconsultants.

- 18) **Confidentiality.** The Client consents to the use and dissemination by Kimley-Horn of photographs of the project and to the use by Kimley-Horn of facts, data and information obtained by Kimley-Horn in the performance of its services. If, however, any facts, data or information are specifically identified in writing by the Client as confidential, Kimley-Horn shall use reasonable care to maintain the confidentiality of that material.
- 19) **Miscellaneous Provisions.** This Agreement is to be governed by the law of the State where the Project is located. This Agreement contains the entire and fully integrated agreement between the parties and supersedes all prior and contemporaneous negotiations, representations, agreements, or understandings, whether written or oral. Except as provided in Section 1, this Agreement can be supplemented or amended only by a written document executed by both parties. Any conflicting or additional terms on any purchase order issued by the Client shall be void and are hereby expressly rejected by Kimley-Horn. If Client requires Kimley-Horn to register with or use an online vendor portal for payment or any other purpose, any terms included in the registration or use of the online vendor portal that are inconsistent or in addition to these terms shall be void and shall have no effect on Kimley-Horn or this Agreement. Any provision in this Agreement that is unenforceable shall be ineffective to the extent of such unenforceability without invalidating the remaining provisions. The non-enforcement of any provision by either party shall not constitute a waiver of that provision nor shall it affect the enforceability of that provision or of the remainder of this Agreement.



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkimer, Director of Engineering
Subject: Consideration of an amendment to a contract with Landmark Construction to provide Construction Manager at Risk Services for the Shawnee Fire Department Station 3 Remodel.

Background: In April 2024, the City Commission authorized City staff to negotiate and enter into a contract for Construction Manager at Risk (CMAR) services for the Shawnee Fire Station 3 Remodel. As the City Commission is aware, CMAR is a delivery method that involves a commitment by the Construction Manager (CM) to deliver the project within a Guaranteed Maximum Price (GMP). The CMAR provides professional services and acts as a consultant to the City during the design development and construction phases.

City staff is pleased to report that the design stages of the project are nearing completion, and Landmark has submitted a GMP for an amendment to their originally negotiated contract. This amendment will cover the total cost of construction, as well as Landmark's consulting fees. The GMP is \$1,747,431.

This project was identified in the City of Shawnee's Capital Improvement Plan (CIP) with a budget of \$2.5 million. Staff has been actively involved in the design, bidding, and budgetary processes, and has reviewed the GMP submittal. City staff recommends approval of the amendment.

Financial Impact: \$1,747,431; from 2018 Capital Improvement Fund, Capital Outlays - Buildings & Improvements - 303-5-0720-54200; Proj. No. C-21-04E

Attachments: A133ExhibitA-2019 - Final - LM Signed, Exhibit A-1 Itemized Statement, Exhibit A-2 Specs, Exhibit A-3 Drawings, Landmark_AIA Contract - Signed

Staff Recommendation: Approval of the item

AIA Document A133® – 2019 Exhibit A

Guaranteed Maximum Price Amendment

This Amendment dated the 11th day of December in the year 2024, is incorporated into the accompanying AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price dated the 6th day of May in the year 2024 (the "Agreement")

(In words, indicate day, month, and year.)

for the following **PROJECT**:

(Name and address or location)

Shawnee Fire Station #3
306 E MacArthur St
Shawnee, OK 74804

THE OWNER:

(Name, legal status, and address)

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

THE CONSTRUCTION MANAGER:

(Name, legal status, and address)

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

TABLE OF ARTICLES

- A.1 GUARANTEED MAXIMUM PRICE**
- A.2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION**
- A.3 INFORMATION UPON WHICH AMENDMENT IS BASED**
- A.4 CONSTRUCTION MANAGER'S CONSULTANTS, CONTRACTORS, DESIGN PROFESSIONALS, AND SUPPLIERS**

ARTICLE A.1 GUARANTEED MAXIMUM PRICE

§ A.1.1 Guaranteed Maximum Price

Pursuant to Section 3.2.6 of the Agreement, the Owner and Construction Manager hereby amend the Agreement to establish a Guaranteed Maximum Price. As agreed by the Owner and Construction Manager, the Guaranteed Maximum Price is an amount that the Contract Sum shall not exceed. The Contract Sum consists of the Construction Manager's Fee plus the Cost of the Work, as that term is defined in Article 6 of the Agreement.

§ A.1.1.1 The Contract Sum is guaranteed by the Construction Manager not to exceed One Million Seven Hundred Forty-Seven Thousand Four Hundred Thirty One Dollars (\$

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

1,747,431), subject to additions and deductions by Change Order as provided in the Contract Documents.

§ A.1.1.2 Itemized Statement of the Guaranteed Maximum Price. Provided below is an itemized statement of the Guaranteed Maximum Price organized by trade categories, including allowances; the Construction Manager's contingency; alternates; the Construction Manager's Fee; and other items that comprise the Guaranteed Maximum Price as defined in Section 3.2.1 of the Agreement.

(Provide itemized statement below or reference an attachment.)

See attachment A-1

§ A.1.1.3 The Construction Manager's Fee is set forth in Section 6.1.2 of the Agreement.

§ A.1.1.4 The method of adjustment of the Construction Manager's Fee for changes in the Work is set forth in Section 6.1.3 of the Agreement.

§ A.1.1.5 Alternates

§ A.1.1.5.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price
Alternate #2 – Storefront type "A", Type "C" and door 121A to receive custom color finish	\$1,800
Alternate #3 – Replace all existing windows	\$18,450
Alternate #4 – Provide mechanical air curtains above 2 doors	\$8,050

§ A.1.1.5.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Exhibit A. Upon acceptance, the Owner shall issue a Modification to the Agreement.

(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
------	-------	---------------------------

§ A.1.1.6 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

ARTICLE A.2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ A.2.1 The date of commencement of the Work shall be:

(Check one of the following boxes.)

☐ The date of execution of this Amendment.

☒ Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

Within 10 days of written Notice to Proceed

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of execution of this Amendment.

§ A.2.2 Unless otherwise provided, the Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work. The Contract Time shall be measured from the date of commencement of the Work.

§ A.2.3 Substantial Completion

§ A.2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Construction Manager shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

☒ Not later than Two Hundred Ten (210) calendar days from the date of commencement of the Work.

☐ By the following date:

§ A.2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Construction Manager shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ A.2.3.3 If the Construction Manager fails to achieve Substantial Completion as provided in this Section A.2.3, liquidated damages, if any, shall be assessed as set forth in Section 6.1.6 of the Agreement.

ARTICLE A.3 INFORMATION UPON WHICH AMENDMENT IS BASED

§ A.3.1 The Guaranteed Maximum Price and Contract Time set forth in this Amendment are based on the Contract Documents and the following:

§ A.3.1.1 The following Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Addendum #1	Contractor's Specs	11/19/24	86
Addendum #2	Addendum #2	11/22/24	44
Addendum #3	Addendum #3	11/26/24	19
Addendum #4	Addendum #4	11/29/24	7

§ A.3.1.2 The following Specifications:

(Either list the Specifications here, or refer to an exhibit attached to this Amendment.)

Attached Exhibit A-2

Section	Title	Date	Pages
---------	-------	------	-------

§ A.3.1.3 The following Drawings:

(Either list the Drawings here, or refer to an exhibit attached to this Amendment.)

Attached Exhibit A-3

Number	Title	Date
--------	-------	------

(Paragraph deleted)

(Table deleted)

(Paragraphs deleted)

§ A.3.1.5 Allowances, if any, included in the Guaranteed Maximum Price:

(Identify each allowance.)

Item	Price
Owner's Contingency Allowance	\$25,000

§ A.3.1.6 Assumptions and clarifications, if any, upon which the Guaranteed Maximum Price is based:

(Identify each assumption and clarification.)

Hollow metal, hardware, glazing, overhead doors, and toilet accessories are included in the GMP but will be bid out as part of Bid Package #2

§ A.3.1.7 The Guaranteed Maximum Price is based upon the following other documents and information:

(List any other documents or information here, or refer to an exhibit attached to this Amendment.)

ARTICLE A.4 CONSTRUCTION MANAGER'S CONSULTANTS, CONTRACTORS, DESIGN PROFESSIONALS, AND SUPPLIERS

§ A.4.1 The Construction Manager shall retain the consultants, contractors, design professionals, and suppliers, identified below:

(List name, discipline, address, and other information.)

This Amendment to the Agreement entered into as of the day and year first written above.

OWNER (Signature)

(Printed name and title)

CONSTRUCTION MANAGER (Signature)

Rod Smith Member

(Printed name and title)

Additions and Deletions Report for AIA® Document A133® – 2019 Exhibit A

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 14:59:41 ET on 12/11/2024.

PAGE 1

This Amendment dated the 11th day of December in the year 2024, is incorporated into the accompanying AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price dated the 6th day of May in the year 2024 (the "Agreement")

...

Shawnee Fire Station #3
306 E MacArthur St
Shawnee, OK 74804

...

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

...

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

...

§ A.1.1.1 The Contract Sum is guaranteed by the Construction Manager not to exceed One Million Seven Hundred Forty-Seven Thousand Four Hundred Thirty One Dollars (\$ 1,747,431), subject to additions and deductions by Change Order as provided in the Contract Documents.

PAGE 2

See attachment A-1

...

<u>Alternate #2 – Storefront type "A", Type</u>	<u>\$1,800</u>
<u>"C" and door 121A to receive custom</u>	
<u>color finish</u>	
<u>Alternate #3 – Replace all existing</u>	<u>\$18,450</u>
<u>windows</u>	
<u>Alternate #4 – Provide mechanical air</u>	<u>\$8,050</u>
<u>curtains above 2 doors</u>	

...

[X] Established as follows:

...

Within 10 days of written Notice to Proceed

PAGE 3

[X] Not later than Two Hundred Ten (210) calendar days from the date of commencement of the Work.

...

<u>Addendum #1</u>	<u>Contractor's Specs</u>	<u>11/19/24</u>	<u>86</u>
<u>Addendum #2</u>	<u>Addendum #2</u>	<u>11/22/24</u>	<u>44</u>
<u>Addendum #3</u>	<u>Addendum #3</u>	<u>11/26/24</u>	<u>19</u>
<u>Addendum #4</u>	<u>Addendum #4</u>	<u>11/29/24</u>	<u>7</u>

...

Attached Exhibit A-2

...

Attached Exhibit A-3

...

§ A.3.1.4 The Sustainability Plan, if any:

(If the Owner identified a Sustainable Objective in the Owner's Criteria, identify the document or documents that comprise the Sustainability Plan by title, date and number of pages, and include other identifying information. The Sustainability Plan identifies and describes the Sustainable Objective; the targeted Sustainable Measures; implementation strategies selected to achieve the Sustainable Measures; the Owner's and Construction Manager's roles and responsibilities associated with achieving the Sustainable Measures; the specific details about design reviews, testing or metrics to verify achievement of each Sustainable Measure; and the Sustainability Documentation required for the Project, as those terms are defined in Exhibit C to the Agreement.)

Title	Date	Pages
-------	------	-------

Other identifying information:

PAGE 4

<u>Owner's Contingency Allowance</u>	<u>\$25,000</u>
--------------------------------------	-----------------

...

Hollow metal, hardware, glazing, overhead doors, and toilet accessories are included in the GMP but will be bid out as part of Bid Package #2

...

Rod Smith Member

Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, , hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 14:59:41 ET on 12/11/2024 under Order No. 2114584521 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A133™ – 2019 Exhibit A, Guaranteed Maximum Price Amendment, other than those additions and deletions shown in the associated Additions and Deletions Report.


(Signed)


(Title)


(Dated)

PROJECT: **SHAWNEE FS3**
ESTIMATOR: Matt Smith
BID DATE: 12/05/24
SALES TAX:


CONSTRUCTION GROUP, L.L.C.
Phone: 405-843-8041 Fax: 405-843-1882

DESCRIPTION	BASE BID											
FIELD MANAGEMENT	81,500											
ALL RISK & LIABILITY INSURANCE	19,600											
TEMP UTILITIES & FACILITIES	11,800											
TOOLS AND EQUIPMENT	16,900											
CLEAN-UP AND DUMPSTER	11,500											
EARTHWORK	26,050											
PAVING & SITE CONCRETE	44,940											
LANDSCAPING	7,800											
DEMOLITION & ABATEMENT	36,300											
CONCRETE SLAB & FOUNDATION	34,920											
MASONRY	84,316											
STRUCTURAL STEEL	33,250											
STEEL ERECTION	13,860											
MILLWORK & COUNTERTOPS	49,856											
WATERPROOFING	14,600											
ROOFING	49,420											
LOCKERS	66,677											
HOLLOW METAL DRS. & FRAMES	30,000											
FINISH HARDWARE	25,000											
DIV. 8 INSTALLATION	1,600											
OVERHEAD DOORS	32,957											
ALUM. STOREFRONTS & WIND.	46,200											
FRAMING & DRYWALL	45,460											
POLISHED CONCRETE FLOORING	18,793											
TILE & CARPET	27,785											
TAPE, BED & PAINT	21,500											
TOILET ACCESSORIES & CORNER GD	4,450											
SIGNAGE	3,630											
F.E. & CABINETS	750											
KITCHEN EQUIPMENT	4,600											
BUNKROOM BEDS	9,832											
BLINDS	3,820											
PLUMBING	181,400											
HVAC & VEHICLE EXHAUST	109,950											
ELECTRICAL, FA, AND GENERATOR	299,700											
OWNER'S CONTINGENCY	25,000											
SUBTOTAL	1,495,716											
CM CONTINGENCY (5%)	74,786											
ALTERNATE #2 - RED STOREFRONT	1,800											
ALTERNATE #3 - REPLACE ALL WINDOWS	18,450											
ALTERNATE #4 - AIR CURTAINS	8,050											
SUBTOTAL	1,598,802	0	0	0	0	0	0	0	0	0	0	0
O.H. & P. 8.50%	135,898	0	0	0	0	0	0	0	0	0	0	0
SUBTOTAL	1,734,700	0	0	0	0	0	0	0	0	0	0	0
BOND<100K 0.98%	978	0	0	0	0	0	0	0	0	0	0	0
100K - 2500K 0.72%	11,753	0	0	0	0	0	0	0	0	0	0	0
BOND>2500K 0.58%	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1,747,431	0	0	0	0	0	0	0	0	0	0	0
12/11/2024												
	BASE BID	0	0	0	0	0	0	0	0	0	0	0
		0	0	0	0	0	0	0	0	0	0	0

**SECTION 000110
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- C. 000102 - Project Information
- D. 000103 - Project Directory
- E. 000110 - Table of Contents - Addendum No. 2
- F. 003100 - Available Project Information - Addendum No. 2
 - 1. Geotechnical Report
 - 2. Asbestos Report
 - 3. Alerting System Design - Addendum No. 2
- G. 004325 - Substitution Request Form - During Procurement
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- B. 012000 - Price and Payment Procedures
- C. 012100 - Allowances
- D. 012300 - Alternates - Addendum No. 2
- E. 012500 - Substitution Procedures
- F. 012600 - Contract Modification Procedures
- G. 013000 - Administrative Requirements
- H. 013233 - Photographic Documentation
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- J. 014100 - Regulatory Requirements
- K. 014219 - Reference Standards
- L. 014533 - Code-Required Special Inspections and Procedures
- M. 015000 - Temporary Facilities and Controls
- N. 015100 - Temporary Utilities
- O. 015213 - Field Offices and Sheds
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- Q. 015639 - Temporary Tree and Plant Protection
- R. 015713 - Temporary Erosion and Sediment Control
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- I. 260526 - Grounding and Bonding for Electrical Systems
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11/12/2024		ED2-0	BASEMENT DEMO PLAN - ELECTRICAL
11/22/2024	2	ED2-1	FIRST FLOOR DEMO PLAN - ELECTRICAL

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TOTAL SHEETS: 80



AIA® Document A133® – 2019

Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

AGREEMENT made as of the 6th day of May in the year 2024
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

and the Construction Manager:
(Name, legal status, address, and other information)

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

for the following Project:
(Name, location, and detailed description)

Shawnee Fire Station #3
306 E MacArthur St.
Shawnee, OK 74804

The Architect:
(Name, legal status, address, and other information)

Brandstetter Carroll INC
2360 Chauvin Drive
Lexington, KY 40517

The Owner and Construction Manager agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

Init.

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User Notes:

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EXHIBIT A GUARANTEED MAXIMUM PRICE AMENDMENT

EXHIBIT B INSURANCE AND BONDS

ARTICLE 1 INITIAL INFORMATION

§ 1.1 This Agreement is based on the Initial Information set forth in this Section 1.1.

(For each item in this section, insert the information or a statement such as "not applicable" or "unknown at time of execution.")

§ 1.1.1 The Owner's program for the Project, as described in Section 4.1.1:

(Insert the Owner's program, identify documentation that establishes the Owner's program, or state the manner in which the program will be developed.)

Construction documents and project specifications developed by Brandstetter Carroll Architects

§ 1.1.2 The Project's physical characteristics:

(Identify or describe pertinent information about the Project's physical characteristics, such as size; location; dimensions; geotechnical reports; site boundaries; topographic surveys; traffic and utility studies; availability of public and private utilities and services; legal description of the site, etc.)

The project scope is planned to include a renovation of the first floor of the existing facility, the addition of approximately 1,500 square feet to the North, and the addition of approximately 1,600 square feet to the West.

The work includes, but is not limited to, the following building systems: metal stud framing, reinforced concrete masonry units, structural steel, concrete foundation, brick masonry facade, TPO roofing, aluminum storefront system, interior partitions of drywall construction, gypsum board and acoustical panel tile ceilings, interior finishes, installation of a fire

protection system, alterations to the power distribution system, alterations and new installations of general lighting, and the alteration and new installation of HVAC systems.

§ 1.1.3 The Owner's budget for the Guaranteed Maximum Price, as defined in Article 6:
(Provide total and, if known, a line item breakdown.)

As defined in section 3.2

§ 1.1.4 The Owner's anticipated design and construction milestone dates:

.1 Design phase milestone dates, if any:

.2 Construction commencement date:

July 1, 2024

.3 Substantial Completion date or dates:

.4 Other milestone dates:

§ 1.1.5 The Owner's requirements for accelerated or fast-track scheduling, or phased construction, are set forth below:
(Identify any requirements for fast-track scheduling or phased construction.)

§ 1.1.6 The Owner's anticipated Sustainable Objective for the Project:
(Identify and describe the Owner's Sustainable Objective for the Project, if any.)

§ 1.1.6.1 If the Owner identifies a Sustainable Objective, the Owner and Construction Manager shall complete and incorporate AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, into this Agreement to define the terms, conditions and services related to the Owner's Sustainable Objective. If E234–2019 is incorporated into this agreement, the Owner and Construction Manager shall incorporate the completed E234–2019 into the agreements with the consultants and contractors performing services or Work in any way associated with the Sustainable Objective.

§ 1.1.7 Other Project information:
(Identify special characteristics or needs of the Project not provided elsewhere.)

Coordinate with the fire department to allow 1 truck and a small crew to remain on site during construction. Crew to have access to the basement via East entrance. Contractor shall make every effort to keep power and communications on line in the basement.

§ 1.1.8 The Owner identifies the following representative in accordance with Section 4.2:
(List name, address, and other contact information.)

Seth Barkhimer
City of Shawnee
222 N Broadway Ave
Shawnee, OK 74801

Init.

405-878-1760
seth.barkhimer@shawneeok.org

§ 1.1.9 The persons or entities, in addition to the Owner's representative, who are required to review the Construction Manager's submittals to the Owner are as follows:
(List name, address and other contact information.)

Brandstetter Carroll Inc, Architect

§ 1.1.10 The Owner shall retain the following consultants and contractors:
(List name, legal status, address, and other contact information.)

.1 Geotechnical Engineer:

.2 Civil Engineer:

.3 Other, if any:
(List any other consultants retained by the Owner, such as a Project or Program Manager.)

§ 1.1.11 The Architect's representative:
(List name, address, and other contact information.)

John Wendt
Job Captain
100 West Mulberry
Denton, TX 76201
940-387-8182
jwendt@bciaep.com

§ 1.1.12 The Construction Manager identifies the following representative in accordance with Article 3:
(List name, address, and other contact information.)

Matt Smith
Project Manager
13301 N Santa Fe Ave
Oklahoma City, OK 73114
405-843-8041
msmith@landmarkokc.com

§ 1.1.13 The Owner's requirements for the Construction Manager's staffing plan for Preconstruction Services, as required under Section 3.1.9:
(List any Owner-specific requirements to be included in the staffing plan.)

Prepare cost estimates based on the design drawings prepared by the A/E firm.
Work collaboratively with the City and the A/E firm to develop alternatives to keep the Project estimates within the Project Budget
Provide a proposed GMP at such time as the City, A/E firm, and CMAA determine that the drawings and specifications are sufficiently complete (likely after CDs are complete).

§ 1.1.14 The Owner's requirements for subcontractor procurement for the performance of the Work:
(List any Owner-specific requirements for subcontractor procurement.)

For those contracts to be awarded on a competitive bid basis, CMAR shall solicit a minimum of three (3) competitive, publicly advertised bids for each trade category unless otherwise authorized by the City. CMAR is responsible for preparation of bid documents and forms related to subcontractor procurement.

§ 1.1.15 Other Initial Information on which this Agreement is based:

§ 1.2 The Owner and Construction Manager may rely on the Initial Information. Both parties, however, recognize that such information may materially change and, in that event, the Owner and the Construction Manager shall appropriately adjust the Project schedule, the Construction Manager's services, and the Construction Manager's compensation. The Owner shall adjust the Owner's budget for the Guaranteed Maximum Price and the Owner's anticipated design and construction milestones, as necessary, to accommodate material changes in the Initial Information.

§ 1.3 Neither the Owner's nor the Construction Manager's representative shall be changed without ten days' prior notice to the other party.

ARTICLE 2 GENERAL PROVISIONS

§ 2.1 The Contract Documents

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract and are as fully a part of the Contract as if attached to this Agreement or repeated herein. Upon the Owner's acceptance of the Construction Manager's Guaranteed Maximum Price proposal, the Contract Documents will also include the documents described in Section 3.2.3 and identified in the Guaranteed Maximum Price Amendment and revisions prepared by the Architect and furnished by the Owner as described in Section 3.2.8. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. If anything in the other Contract Documents, other than a Modification, is inconsistent with this Agreement, this Agreement shall govern. An enumeration of the Contract Documents, other than a Modification, appears in Article 15.

§ 2.2 Relationship of the Parties

The Construction Manager accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Construction Manager's skill and judgment in furthering the interests of the Owner to furnish efficient construction administration, management services, and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish or approve, in a timely manner, information required by the Construction Manager and to make payments to the Construction Manager in accordance with the requirements of the Contract Documents.

§ 2.3 General Conditions

§ 2.3.1 For the Preconstruction Phase, AIA Document A201™-2017, General Conditions of the Contract for Construction, shall apply as follows: Section 1.5, Ownership and Use of Documents; Section 1.7, Digital Data Use and Transmission; Section 1.8, Building Information Model Use and Reliance; Section 2.2.4, Confidential Information; Section 3.12.10, Professional Services; Section 10.3, Hazardous Materials; Section 13.1, Governing Law. The term "Contractor" as used in A201-2017 shall mean the Construction Manager.

§ 2.3.2 For the Construction Phase, the general conditions of the contract shall be as set forth in A201–2017, which document is incorporated herein by reference. The term "Contractor" as used in A201–2017 shall mean the Construction Manager.

ARTICLE 3 CONSTRUCTION MANAGER'S RESPONSIBILITIES

The Construction Manager's Preconstruction Phase responsibilities are set forth in Sections 3.1 and 3.2, and in the applicable provisions of A201-2017 referenced in Section 2.3.1. The Construction Manager's Construction Phase responsibilities are set forth in Section 3.3. The Owner and Construction Manager may agree, in consultation with the Architect, for the Construction Phase to commence prior to completion of the Preconstruction Phase, in which case, both phases will proceed concurrently. The Construction Manager shall identify a representative authorized to act on behalf of the Construction Manager with respect to the Project.

§ 3.1 Preconstruction Phase

§ 3.1.1 Extent of Responsibility

The Construction Manager shall exercise reasonable care in performing its Preconstruction Services. The Owner and Architect shall be entitled to rely on, and shall not be responsible for, the accuracy, completeness, and timeliness of services and information furnished by the Construction Manager. The Construction Manager, however, does not warrant or guarantee estimates and schedules except as may be included as part of the Guaranteed Maximum Price. The Construction Manager is not required to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Construction Manager shall promptly report to the Architect and Owner any nonconformity discovered by or made known to the Construction Manager as a request for information in such form as the Architect may require.

§ 3.1.2 The Construction Manager shall provide a preliminary evaluation of the Owner's program, schedule and construction budget requirements, each in terms of the other.

§ 3.1.3 Consultation

§ 3.1.3.1 The Construction Manager shall schedule and conduct meetings with the Architect and Owner to discuss such matters as procedures, progress, coordination, and scheduling of the Work.

§ 3.1.3.2 The Construction Manager shall advise the Owner and Architect on proposed site use and improvements, selection of materials, building systems, and equipment. The Construction Manager shall also provide recommendations to the Owner and Architect, consistent with the Project requirements, on constructability; availability of materials and labor; time requirements for procurement, installation and construction; prefabrication; and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions. The Construction Manager shall consult with the Architect regarding professional services to be provided by the Construction Manager during the Construction Phase.

(Paragraph deleted)

§ 3.1.4 Project Schedule

When Project requirements in Section 4.1.1 have been sufficiently identified, the Construction Manager shall prepare and periodically update a Project schedule for the Architect's review and the Owner's acceptance. The Construction Manager shall obtain the Architect's approval for the portion of the Project schedule relating to the performance of the Architect's services. The Project schedule shall coordinate and integrate the Construction Manager's services, the Architect's services, other Owner consultants' services, and the Owner's responsibilities; and identify items that affect the Project's timely completion. The updated Project schedule shall include the following: submission of the Guaranteed Maximum Price proposal; components of the Work; times of commencement and completion required of each Subcontractor; ordering and delivery of products, including those that must be ordered in advance of construction; and the occupancy requirements of the Owner.

§ 3.1.5 Phased Construction

The Construction Manager, in consultation with the Architect, shall provide recommendations with regard to accelerated or fast-track scheduling, procurement, and sequencing for phased construction. The Construction Manager shall take into consideration cost reductions, cost information, constructability, provisions for temporary facilities, and procurement and construction scheduling issues.

§ 3.1.6 Cost Estimates

§ 3.1.6.1 Based on the preliminary design and other design criteria prepared by the Architect, the Construction Manager shall prepare, for the Architect's review and the Owner's approval, preliminary estimates of the Cost of the Work or the cost of program requirements using area, volume, or similar conceptual estimating techniques. If the Architect or Construction Manager suggests alternative materials and systems, the Construction Manager shall provide cost evaluations of those alternative materials and systems.

§ 3.1.6.2 As the Architect progresses with the preparation of the Schematic Design, Design Development and Construction Documents, the Construction Manager shall prepare and update, at appropriate intervals agreed to by the Owner, Construction Manager and Architect, an estimate of the Cost of the Work with increasing detail and refinement. The Construction Manager shall include in the estimate those costs to allow for the further development of the design, price escalation, and market conditions, until such time as the Owner and Construction Manager agree on a Guaranteed Maximum Price for the Work. The estimate shall be provided for the Architect's review and the Owner's approval. The Construction Manager shall inform the Owner and Architect in the event that the estimate of the Cost of the Work exceeds the latest approved Project budget, and make recommendations for corrective action.

§ 3.1.6.3 If the Architect is providing cost estimating services as a Supplemental Service, and a discrepancy exists between the Construction Manager's cost estimates and the Architect's cost estimates, the Construction Manager and the Architect shall work together to reconcile the cost estimates.

§ 3.1.7 As the Architect progresses with the preparation of the Schematic Design, Design Development and Construction Documents, the Construction Manager shall consult with the Owner and Architect and make recommendations regarding constructability and schedules, for the Architect's review and the Owner's approval.

§ 3.1.8 The Construction Manager shall provide recommendations and information to the Owner and Architect regarding equipment, materials, services, and temporary Project facilities.

§ 3.1.9 The Construction Manager shall provide a staffing plan for Preconstruction Phase services for the Owner's review and approval.

§ 3.1.10 If the Owner identified a Sustainable Objective in Article 1, the Construction Manager shall fulfill its Preconstruction Phase responsibilities as required in AIA Document E234™-2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, attached to this Agreement.

§ 3.1.11 Subcontractors and Suppliers

§ 3.1.11.1 If the Owner has provided requirements for subcontractor procurement in section 1.1.14, the Construction Manager shall provide a subcontracting plan, addressing the Owner's requirements, for the Owner's review and approval.

§ 3.1.11.2 The Construction Manager shall develop bidders' interest in the Project.

§ 3.1.11.3 The processes described in Article 9 shall apply if bid packages will be issued during the Preconstruction Phase.

§ 3.1.12 Procurement

The Construction Manager shall prepare, for the Architect's review and the Owner's acceptance, a procurement schedule for items that must be ordered in advance of construction. The Construction Manager shall expedite and coordinate the ordering and delivery of materials that must be ordered in advance of construction. If the Owner agrees to procure any items prior to the establishment of the Guaranteed Maximum Price, the Owner shall procure the items on terms and conditions acceptable to the Construction Manager. Upon the establishment of the Guaranteed Maximum Price, the Owner shall assign all contracts for these items to the Construction Manager and the Construction Manager shall thereafter accept responsibility for them.

§ 3.1.13 Compliance with Laws

The Construction Manager shall comply with applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to its performance under this Contract, and with equal employment opportunity programs, and other programs as may be required by governmental and quasi-governmental authorities.

§ 3.1.14 Other Preconstruction Services

Insert a description of any other Preconstruction Phase services to be provided by the Construction Manager, or reference an exhibit attached to this document

(Describe any other Preconstruction Phase services, such as providing cash flow projections, development of a project information management system, early selection or procurement of subcontractors, etc.)

§ 3.2 Guaranteed Maximum Price Proposal

§ 3.2.1 At a time to be mutually agreed upon by the Owner and the Construction Manager, the Construction Manager shall prepare a Guaranteed Maximum Price proposal for the Owner's and Architect's review, and the Owner's acceptance. The Guaranteed Maximum Price in the proposal shall be the sum of the Construction Manager's estimate of the Cost of the Work, the Construction Manager's contingency described in Section 3.2.4, and the Construction Manager's Fee described in Section 6.1.2.

§ 3.2.2 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes, or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.2.3 The Construction Manager shall include with the Guaranteed Maximum Price proposal a written statement of its basis, which shall include the following:

- .1 A list of the Drawings and Specifications, including all Addenda thereto, and the Conditions of the Contract;
- .2 A list of the clarifications and assumptions made by the Construction Manager in the preparation of the Guaranteed Maximum Price proposal, including assumptions under Section 3.2.2;
- .3 A statement of the proposed Guaranteed Maximum Price, including a statement of the estimated Cost of the Work organized by trade categories or systems, including allowances; the Construction Manager's contingency set forth in Section 3.2.4; and the Construction Manager's Fee;
- .4 The anticipated date of Substantial Completion upon which the proposed Guaranteed Maximum Price is based; and
- .5 A date by which the Owner must accept the Guaranteed Maximum Price.

§ 3.2.4 In preparing the Construction Manager's Guaranteed Maximum Price proposal, the Construction Manager shall include a contingency for the Construction Manager's exclusive use to cover those costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order.

§ 3.2.5 The Construction Manager shall meet with the Owner and Architect to review the Guaranteed Maximum Price proposal. In the event that the Owner or Architect discover any inconsistencies or inaccuracies in the information presented, they shall promptly notify the Construction Manager, who shall make appropriate adjustments to the Guaranteed Maximum Price proposal, its basis, or both.

§ 3.2.6 If the Owner notifies the Construction Manager that the Owner has accepted the Guaranteed Maximum Price proposal in writing before the date specified in the Guaranteed Maximum Price proposal, the Guaranteed Maximum Price proposal shall be deemed effective without further acceptance from the Construction Manager. Following acceptance of a Guaranteed Maximum Price, the Owner and Construction Manager shall execute the Guaranteed Maximum Price Amendment amending this Agreement, a copy of which the Owner shall provide to the Architect. The Guaranteed Maximum Price Amendment shall set forth the agreed upon Guaranteed Maximum Price with the information and assumptions upon which it is based.

§ 3.2.7 The Construction Manager shall not incur any cost to be reimbursed as part of the Cost of the Work prior to the execution of the Guaranteed Maximum Price Amendment, unless the Owner provides prior written authorization for such costs.

§ 3.2.8 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions and clarifications contained in the Guaranteed Maximum Price Amendment. The Owner shall promptly furnish such revised Contract Documents to the Construction Manager. The Construction Manager shall notify the Owner

and Architect of any inconsistencies between the agreed-upon assumptions and clarifications contained in the Guaranteed Maximum Price Amendment and the revised Contract Documents.

§ 3.2.9 The Construction Manager shall include in the Guaranteed Maximum Price all sales, consumer, use and similar taxes for the Work provided by the Construction Manager that are legally enacted, whether or not yet effective, at the time the Guaranteed Maximum Price Amendment is executed.

§ 3.3 Construction Phase

§ 3.3.1 General

§ 3.3.1.1 For purposes of Section 8.1.2 of A201–2017, the date of commencement of the Work shall mean the date of commencement of the Construction Phase.

§ 3.3.1.2 The Construction Phase shall commence upon the Owner's execution of the Guaranteed Maximum Price Amendment or, prior to acceptance of the Guaranteed Maximum Price proposal, by written agreement of the parties. The written agreement shall set forth a description of the Work to be performed by the Construction Manager, and any insurance and bond requirements for Work performed prior to execution of the Guaranteed Maximum Price Amendment.

§ 3.3.2 Administration

§ 3.3.2.1 The Construction Manager shall schedule and conduct meetings to discuss such matters as procedures, progress, coordination, scheduling, and status of the Work. The Construction Manager shall prepare and promptly distribute minutes of the meetings to the Owner and Architect.

§ 3.3.2.2 Upon the execution of the Guaranteed Maximum Price Amendment, the Construction Manager shall prepare and submit to the Owner and Architect a construction schedule for the Work and a submittal schedule in accordance with Section 3.10 of A201–2017.

§ 3.3.2.3 Monthly Report

The Construction Manager shall record the progress of the Project. On a monthly basis, or otherwise as agreed to by the Owner, the Construction Manager shall submit written progress reports to the Owner and Architect, showing percentages of completion and other information required by the Owner.

§ 3.3.2.4 Daily Logs

The Construction Manager shall keep, and make available to the Owner and Architect, a daily log containing a record for each day of weather, portions of the Work in progress, number of workers on site, identification of equipment on site, problems that might affect progress of the work, accidents, injuries, and other information required by the Owner.

§ 3.3.2.5 Cost Control

The Construction Manager shall develop a system of cost control for the Work, including regular monitoring of actual costs for activities in progress and estimates for uncompleted tasks and proposed changes. The Construction Manager shall identify variances between actual and estimated costs and report the variances to the Owner and Architect, and shall provide this information in its monthly reports to the Owner and Architect, in accordance with Section 3.3.2.3 above.

ARTICLE 4 OWNER'S RESPONSIBILITIES

§ 4.1 Information and Services Required of the Owner

§ 4.1.1 The Owner shall provide information with reasonable promptness, regarding requirements for and limitations on the Project, including a written program which shall set forth the Owner's objectives, constraints, and criteria, including schedule, space requirements and relationships, flexibility and expandability, special equipment, systems, sustainability and site requirements.

§ 4.1.2 Prior to the execution of the Guaranteed Maximum Price Amendment, the Construction Manager may request in writing that the Owner provide reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. After execution of the Guaranteed Maximum Price Amendment, the Construction Manager may request such information as set forth in A201-2017 Section 2.2.

§ 4.1.3 The Owner shall establish and periodically update the Owner's budget for the Project, including (1) the budget for the Cost of the Work as defined in Article 7, (2) the Owner's other costs, and (3) reasonable contingencies related to all of these costs. If the Owner significantly increases or decreases the Owner's budget for the Cost of the Work, the Owner

shall notify the Construction Manager and Architect. The Owner and the Architect, in consultation with the Construction Manager, shall thereafter agree to a corresponding change in the Project's scope and quality.

§ 4.1.4 Structural and Environmental Tests, Surveys and Reports. During the Preconstruction Phase, the Owner shall furnish the following information or services with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services. The Construction Manager shall be entitled to rely on the accuracy of information and services furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 4.1.4.1 The Owner shall furnish tests, inspections, and reports, required by law and as otherwise agreed to by the parties, such as structural, mechanical, and chemical tests, tests for air and water pollution, and tests for hazardous materials.

§ 4.1.4.2 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a written legal description of the site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; designated wetlands; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions and other necessary data with respect to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All the information on the survey shall be referenced to a Project benchmark.

§ 4.1.4.3 The Owner, when such services are requested, shall furnish services of geotechnical engineers, which may include test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations.

§ 4.1.5 During the Construction Phase, the Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services.

§ 4.1.6 If the Owner identified a Sustainable Objective in Article 1, the Owner shall fulfill its responsibilities as required in AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, attached to this Agreement.

§ 4.2 Owner's Designated Representative

The Owner shall identify a representative authorized to act on behalf of the Owner with respect to the Project. The Owner's representative shall render decisions promptly and furnish information expeditiously, so as to avoid unreasonable delay in the services or Work of the Construction Manager. Except as otherwise provided in Section 4.2.1 of A201–2017, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 4.2.1 Legal Requirements. The Owner shall furnish all legal, insurance and accounting services, including auditing services, that may be reasonably necessary at any time for the Project to meet the Owner's needs and interests.

§ 4.3 Architect

The Owner shall retain an Architect to provide services, duties and responsibilities as described in AIA Document B133™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Constructor Edition, including any additional services requested by the Construction Manager that are necessary for the Preconstruction and Construction Phase services under this Agreement. The Owner shall provide the Construction Manager with a copy of the scope of services in the executed agreement between the Owner and the Architect, and any further modifications to the Architect's scope of services in the agreement.

ARTICLE 5 COMPENSATION AND PAYMENTS FOR PRECONSTRUCTION PHASE SERVICES

§ 5.1 Compensation

§ 5.1.1 For the Construction Manager's Preconstruction Phase services described in Sections 3.1 and 3.2, the Owner shall compensate the Construction Manager as follows:

(Insert amount of, or basis for, compensation and include a list of reimbursable cost items, as applicable.)

½ of 1% of the cost of the work

§ 5.1.2 The hourly billing rates for Preconstruction Phase services of the Construction Manager and the Construction Manager's Consultants and Subcontractors, if any, are set forth below.

(If applicable, attach an exhibit of hourly billing rates or insert them below.)

Individual or Position	Rate
------------------------	------

§ 5.1.2.1 Hourly billing rates for Preconstruction Phase services include all costs to be paid or incurred by the Construction Manager, as required by law or collective bargaining agreements, for taxes, insurance, contributions, assessments and benefits and, for personnel not covered by collective bargaining agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, and shall remain unchanged unless the parties execute a Modification.

§ 5.1.3 If the Preconstruction Phase services covered by this Agreement have not been completed within Six (6) months of the date of this Agreement, through no fault of the Construction Manager, the Construction Manager's compensation for Preconstruction Phase services shall be equitably adjusted.

§ 5.2 Payments

§ 5.2.1 Unless otherwise agreed, payments for services shall be made monthly in proportion to services performed.

§ 5.2.2 Payments are due and payable upon presentation of the Construction Manager's invoice. Amounts unpaid Thirty (30) days after the invoice date shall bear interest at the rate entered below, or in the absence thereof at the legal rate prevailing from time to time at the principal place of business of the Construction Manager.

(Insert rate of monthly or annual interest agreed upon.)

%

ARTICLE 6 COMPENSATION FOR CONSTRUCTION PHASE SERVICES

§ 6.1 Contract Sum

§ 6.1.1 The Owner shall pay the Construction Manager the Contract Sum in current funds for the Construction Manager's performance of the Contract after execution of the Guaranteed Maximum Price Amendment. The Contract Sum is the Cost of the Work as defined in Article 7 plus the Construction Manager's Fee.

§ 6.1.2 The Construction Manager's Fee:

(State a lump sum, percentage of Cost of the Work or other provision for determining the Construction Manager's Fee.)

8% of the cost of the work

§ 6.1.3 The method of adjustment of the Construction Manager's Fee for changes in the Work:

For changes in the work, the Construction Manager's fee shall be 8%

§ 6.1.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ 6.1.5 Rental rates for Construction Manager-owned equipment shall not exceed Ten percent (10 %) of the standard rental rate paid at the place of the Project.

§ 6.1.6 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

Init.

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User Notes:

§ 6.1.7 Other:

(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

§ 6.2 Guaranteed Maximum Price

The Construction Manager guarantees that the Contract Sum shall not exceed the Guaranteed Maximum Price set forth in the Guaranteed Maximum Price Amendment, subject to additions and deductions by Change Order as provided in the Contract Documents. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Construction Manager without reimbursement by the Owner.

§ 6.3 Changes in the Work

§ 6.3.1 The Owner may, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions. The Owner shall issue such changes in writing. The Construction Manager may be entitled to an equitable adjustment in the Contract Time as a result of changes in the Work.

§ 6.3.1.1 The Architect may order minor changes in the Work as provided in Article 7 of AIA Document A201–2017, General Conditions of the Contract for Construction.

§ 6.3.2 Adjustments to the Guaranteed Maximum Price on account of changes in the Work subsequent to the execution of the Guaranteed Maximum Price Amendment may be determined by any of the methods listed in Article 7 of AIA Document A201–2017, General Conditions of the Contract for Construction.

§ 6.3.3 Adjustments to subcontracts awarded on the basis of a stipulated sum shall be determined in accordance with Article 7 of A201–2017, as they refer to "cost" and "fee," and not by Articles 6 and 7 of this Agreement. Adjustments to subcontracts awarded with the Owner's prior written consent on the basis of cost plus a fee shall be calculated in accordance with the terms of those subcontracts.

§ 6.3.4 In calculating adjustments to the Guaranteed Maximum Price, the terms "cost" and "costs" as used in Article 7 of AIA Document A201–2017 shall mean the Cost of the Work as defined in Article 7 of this Agreement and the term "fee" shall mean the Construction Manager's Fee as defined in Section 6.1.2 of this Agreement.

§ 6.3.5 If no specific provision is made in Section 6.1.3 for adjustment of the Construction Manager's Fee in the case of changes in the Work, or if the extent of such changes is such, in the aggregate, that application of the adjustment provisions of Section 6.1.3 will cause substantial inequity to the Owner or Construction Manager, the Construction Manager's Fee shall be equitably adjusted on the same basis that was used to establish the Fee for the original Work, and the Guaranteed Maximum Price shall be adjusted accordingly.

ARTICLE 7 COST OF THE WORK FOR CONSTRUCTION PHASE

§ 7.1 Costs to Be Reimbursed

§ 7.1.1 The term Cost of the Work shall mean costs necessarily incurred by the Construction Manager in the proper performance of the Work. The Cost of the Work shall include only the items set forth in Sections 7.1 through 7.7.

§ 7.1.2 Where, pursuant to the Contract Documents, any cost is subject to the Owner's prior approval, the Construction Manager shall obtain such approval in writing prior to incurring the cost.

§ 7.1.3 Costs shall be at rates not higher than the standard rates paid at the place of the Project, except with prior approval of the Owner.

§ 7.2 Labor Costs

§ 7.2.1 Wages or salaries of construction workers directly employed by the Construction Manager to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ 7.2.2 Wages or salaries of the Construction Manager's supervisory and administrative personnel when stationed at the site and performing Work, with the Owner's prior approval.

§ 7.2.2.1 Wages or salaries of the Construction Manager's supervisory and administrative personnel when performing Work and stationed at a location other than the site, but only for that portion of time required for the Work, and limited to the personnel and activities listed below:

(Identify the personnel, type of activity and, if applicable, any agreed upon percentage of time to be devoted to the Work.)

§ 7.2.3 Wages and salaries of the Construction Manager's supervisory or administrative personnel engaged at factories, workshops or while traveling, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.

§ 7.2.4 Costs paid or incurred by the Construction Manager, as required by law or collective bargaining agreements, for taxes, insurance, contributions, assessments and benefits and, for personnel not covered by collective bargaining agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 7.2.1 through 7.2.3.

§ 7.2.5 If agreed rates for labor costs, in lieu of actual costs, are provided in this Agreement, the rates shall remain unchanged throughout the duration of this Agreement, unless the parties execute a Modification.

§ 7.3 Subcontract Costs

Payments made by the Construction Manager to Subcontractors in accordance with the requirements of the subcontracts and this Agreement.

§ 7.4 Costs of Materials and Equipment Incorporated in the Completed Construction

§ 7.4.1 Costs, including transportation and storage at the site, of materials and equipment incorporated, or to be incorporated, in the completed construction.

§ 7.4.2 Costs of materials described in the preceding Section 7.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Construction Manager. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 7.5 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ 7.5.1 Costs of transportation, storage, installation, dismantling, maintenance, and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment, and tools, that are not fully consumed, shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Construction Manager shall mean fair market value.

§ 7.5.2 Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site, and the costs of transportation, installation, dismantling, minor repairs, and removal of such temporary facilities, machinery, equipment, and hand tools. Rates and quantities of equipment owned by the Construction Manager, or a related party as defined in Section 7.8, shall be subject to the Owner's prior approval. The total rental cost of any such equipment may not exceed the purchase price of any comparable item.

§ 7.5.3 Costs of removal of debris from the site of the Work and its proper and legal disposal.

§ 7.5.4 Costs of the Construction Manager's site office, including general office equipment and supplies.

§ 7.5.5 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, subject to the Owner's prior approval.

§ 7.6 Miscellaneous Costs

§ 7.6.1 Premiums for that portion of insurance and bonds required by the Contract Documents that can be directly attributed to this Contract.

§ 7.6.1.1 Costs for self-insurance, for either full or partial amounts of the coverages required by the Contract Documents, with the Owner's prior approval.

§ 7.6.1.2 Costs for insurance through a captive insurer owned or controlled by the Construction Manager, with the Owner's prior approval.

§ 7.6.2 Sales, use, or similar taxes, imposed by a governmental authority, that are related to the Work and for which the Construction Manager is liable.

§ 7.6.3 Fees and assessments for the building permit, and for other permits, licenses, and inspections, for which the Construction Manager is required by the Contract Documents to pay.

§ 7.6.4 Fees of laboratories for tests required by the Contract Documents; except those related to defective or nonconforming Work for which reimbursement is excluded under Article 13 of AIA Document A201–2017 or by other provisions of the Contract Documents, and which do not fall within the scope of Section 7.7.3.

§ 7.6.5 Royalties and license fees paid for the use of a particular design, process, or product, required by the Contract Documents.

§ 7.6.5.1 The cost of defending suits or claims for infringement of patent rights arising from requirements of the Contract Documents, payments made in accordance with legal judgments against the Construction Manager resulting from such suits or claims, and payments of settlements made with the Owner's consent, unless the Construction Manager had reason to believe that the required design, process, or product was an infringement of a copyright or a patent, and the Construction Manager failed to promptly furnish such information to the Architect as required by Article 3 of AIA Document A201–2017. The costs of legal defenses, judgments, and settlements shall not be included in the Cost of the Work used to calculate the Construction Manager's Fee or subject to the Guaranteed Maximum Price.

§ 7.6.6 Costs for communications services, electronic equipment, , directly related to the Work and located at the site, with the Owner's prior approval.

§ 7.6.7 Costs of document reproductions and delivery charges.

§ 7.6.8 Deposits lost for causes other than the Construction Manager's negligence or failure to fulfill a specific responsibility in the Contract Documents.

§ 7.6.9 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between the Owner and Construction Manager, reasonably incurred by the Construction Manager after the execution of this Agreement in the performance of the Work and with the Owner's prior approval, which shall not be unreasonably withheld.

§ 7.6.10 Expenses incurred in accordance with the Construction Manager's standard written personnel policy for relocation and temporary living allowances of the Construction Manager's personnel required for the Work, with the Owner's prior approval.

§ 7.6.11 That portion of the reasonable expenses of the Construction Manager's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work.

§ 7.7 Other Costs and Emergencies

§ 7.7.1 Other costs incurred in the performance of the Work, with the Owner's prior approval.

§ 7.7.2 Costs incurred in taking action to prevent threatened damage, injury, or loss, in case of an emergency affecting the safety of persons and property, as provided in Article 10 of AIA Document A201–2017.

§ 7.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Construction Manager, Subcontractors, or suppliers, provided that such damaged or nonconforming Work was not caused by the negligence of, or failure to fulfill a specific responsibility by, the Construction Manager, and only to the extent that the cost of repair or correction is not recovered by the Construction Manager from insurance, sureties, Subcontractors, suppliers, or others.

§ 7.7.4 The costs described in Sections 7.1 through 7.7 shall be included in the Cost of the Work, notwithstanding any provision of AIA Document A201–2017 or other Conditions of the Contract which may require the Construction Manager to pay such costs, unless such costs are excluded by the provisions of Section 7.9.

§ 7.8 Related Party Transactions

§ 7.8.1 For purposes of this Section 7.8, the term "related party" shall mean (1) a parent, subsidiary, affiliate, or other entity having common ownership of, or sharing common management with, the Construction Manager; (2) any entity in which any stockholder in, or management employee of, the Construction Manager holds an equity interest in excess of ten percent in the aggregate; (3) any entity which has the right to control the business or affairs of the Construction Manager; or (4) any person, or any member of the immediate family of any person, who has the right to control the business or affairs of the Construction Manager.

§ 7.8.2 If any of the costs to be reimbursed arise from a transaction between the Construction Manager and a related party, the Construction Manager shall notify the Owner of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If the Owner, after such notification, authorizes the proposed transaction in writing, then the cost incurred shall be included as a cost to be reimbursed, and the Construction Manager shall procure the Work, equipment, goods, or service, from the related party, as a Subcontractor, according to the terms of Article 9. If the Owner fails to authorize the transaction in writing, the Construction Manager shall procure the Work, equipment, goods, or service from some person or entity other than a related party according to the terms of Article 9.

§ 7.9 Costs Not To Be Reimbursed

§ 7.9.1 The Cost of the Work shall not include the items listed below:

- .1 Salaries and other compensation of the Construction Manager's personnel stationed at the Construction Manager's principal office or offices other than the site office, except as specifically provided in Section 7.2, or as may be provided in Article 14;
- .2 Bonuses, profit sharing, incentive compensation, and any other discretionary payments, paid to anyone hired by the Construction Manager or paid to any Subcontractor or vendor, unless the Owner has provided prior approval;
- .3 Expenses of the Construction Manager's principal office and offices other than the site office;
- .4 Overhead and general expenses, except as may be expressly included in Sections 7.1 to 7.7;
- .5 The Construction Manager's capital expenses, including interest on the Construction Manager's capital employed for the Work;
- .6 Except as provided in Section 7.7.3 of this Agreement, costs due to the negligence of, or failure to fulfill a specific responsibility of the Contract by, the Construction Manager, Subcontractors, and suppliers, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable;
- .7 Any cost not specifically and expressly described in Sections 7.1 to 7.7;
- .8 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded; and
- .9 Costs for services incurred during the Preconstruction Phase.

ARTICLE 8 DISCOUNTS, REBATES, AND REFUNDS

§ 8.1 Cash discounts obtained on payments made by the Construction Manager shall accrue to the Owner if (1) before making the payment, the Construction Manager included the amount to be paid, less such discount, in an Application for Payment and received payment from the Owner, or (2) the Owner has deposited funds with the Construction Manager with which to make payments; otherwise, cash discounts shall accrue to the Construction Manager. Trade discounts, rebates, refunds, and amounts received from sales of surplus materials and equipment shall accrue to the Owner, and the Construction Manager shall make provisions so that they can be obtained.

§ 8.2 Amounts that accrue to the Owner in accordance with the provisions of Section 8.1 shall be credited to the Owner as a deduction from the Cost of the Work.

ARTICLE 9 SUBCONTRACTS AND OTHER AGREEMENTS

§ 9.1 Those portions of the Work that the Construction Manager does not customarily perform with the Construction Manager's own personnel shall be performed under subcontracts or other appropriate agreements with the Construction Manager. The Owner may designate specific persons from whom, or entities from which, the Construction Manager shall obtain bids. The Construction Manager shall obtain bids from Subcontractors, and from suppliers of materials or equipment fabricated especially for the Work, who are qualified to perform that portion of the Work in accordance with the requirements of the Contract Documents. The Construction Manager shall deliver such bids to the Architect and Owner with an indication as to which bids the Construction Manager intends to accept. The Owner then has the right to review the Construction Manager's list of proposed subcontractors and suppliers in consultation with the Architect and, subject to Section 9.1.1, to object to any subcontractor or supplier. Any advice of the Architect, or approval or objection by the Owner, shall not relieve the Construction Manager of its responsibility to perform the Work in accordance with the Contract Documents. The Construction Manager shall not be required to contract with anyone to whom the Construction Manager has reasonable objection.

§ 9.1.1 When a specific subcontractor or supplier (1) is recommended to the Owner by the Construction Manager; (2) is qualified to perform that portion of the Work; and (3) has submitted a bid that conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then the Construction Manager may require that a Change Order be issued to adjust the Guaranteed Maximum Price by the difference between the bid of the person or entity recommended to the Owner by the Construction Manager and the amount of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

§ 9.2 Subcontracts or other agreements shall conform to the applicable payment provisions of this Agreement, and shall not be awarded on the basis of cost plus a fee without the Owner's prior written approval. If a subcontract is awarded on the basis of cost plus a fee, the Construction Manager shall provide in the subcontract for the Owner to receive the same audit rights with regard to the Subcontractor as the Owner receives with regard to the Construction Manager in Article 10.

ARTICLE 10 ACCOUNTING RECORDS

The Construction Manager shall keep full and detailed records and accounts related to the Cost of the Work, and exercise such controls, as may be necessary for proper financial management under this Contract and to substantiate all costs incurred. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Construction Manager's records and accounts, including complete documentation supporting accounting entries, books, job cost reports, correspondence, instructions, drawings, receipts, subcontracts, Subcontractor's proposals, Subcontractor's invoices, purchase orders, vouchers, memoranda, and other data relating to this Contract. The Construction Manager shall preserve these records for a period of three years after final payment, or for such longer period as may be required by law.

ARTICLE 11 PAYMENTS FOR CONSTRUCTION PHASE SERVICES

§ 11.1 Progress Payments

§ 11.1.1 Based upon Applications for Payment submitted to the Architect by the Construction Manager, and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum, to the Construction Manager, as provided below and elsewhere in the Contract Documents.

§ 11.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 11.1.3 Provided that an Application for Payment is received by the Architect not later than the last day of a month, the Owner shall make payment of the amount certified to the Construction Manager not later than the last day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than Thirty (30) days after the Architect receives the Application for Payment.

(Federal, state or local laws may require payment within a certain period of time.)

§ 11.1.4 With each Application for Payment, the Construction Manager shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner or Architect to demonstrate

that payments already made by the Construction Manager on account of the Cost of the Work equal or exceed progress payments already received by the Construction Manager, plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Construction Manager's Fee.

§ 11.1.5 Each Application for Payment shall be based on the most recent schedule of values submitted by the Construction Manager in accordance with the Contract Documents. The schedule of values shall allocate the entire Guaranteed Maximum Price among: (1) the various portions of the Work; (2) any contingency for costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order; and (3) the Construction Manager's Fee.

§ 11.1.5.1 The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. The schedule of values shall be used as a basis for reviewing the Construction Manager's Applications for Payment.

§ 11.1.5.2 The allocation of the Guaranteed Maximum Price under this Section 11.1.5 shall not constitute a separate guaranteed maximum price for the Cost of the Work of each individual line item in the schedule of values.

§ 11.1.5.3 When the Construction Manager allocates costs from a contingency to another line item in the schedule of values, the Construction Manager shall submit supporting documentation to the Architect.

§ 11.1.6 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed, or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Construction Manager on account of that portion of the Work and for which the Construction Manager has made payment or intends to make payment prior to the next Application for Payment, by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 11.1.7 In accordance with AIA Document A201–2017 and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 11.1.7.1 The amount of each progress payment shall first include:

- .1 That portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the most recent schedule of values;
- .2 That portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction or, if approved in writing in advance by the Owner, suitably stored off the site at a location agreed upon in writing;
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and
- .4 The Construction Manager's Fee, computed upon the Cost of the Work described in the preceding Sections 11.1.7.1.1 and 11.1.7.1.2 at the rate stated in Section 6.1.2 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work included in Sections 11.1.7.1.1 and 11.1.7.1.2 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 11.1.7.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Construction Manager does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Construction Manager intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017;
- .5 The shortfall, if any, indicated by the Construction Manager in the documentation required by Section 11.1.4 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and

.6 Retainage withheld pursuant to Section 11.1.8.

§ 11.1.8 Retainage

§ 11.1.8.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

5%

§ 11.1.8.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 11.1.8.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 11.1.8.1 is to be modified prior to Substantial Completion of the entire Work, insert provisions for such modification.)

§ 11.1.8.3 Except as set forth in this Section 11.1.8.3, upon Substantial Completion of the Work, the Construction Manager may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 11.1.8. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage, such as upon completion of the Owner's audit and reconciliation, upon Substantial Completion.)

§ 11.1.9 If final completion of the Work is materially delayed through no fault of the Construction Manager, the Owner shall pay the Construction Manager any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 11.1.10 Except with the Owner's prior written approval, the Construction Manager shall not make advance payments to suppliers for materials or equipment which have not been delivered and suitably stored at the site.

§ 11.1.11 The Owner and the Construction Manager shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors, and the percentage of retainage held on Subcontracts, and the Construction Manager shall execute subcontracts in accordance with those agreements.

§ 11.1.12 In taking action on the Construction Manager's Applications for Payment the Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Construction Manager, and such action shall not be deemed to be a representation that (1) the Architect has made a detailed examination, audit, or arithmetic verification, of the documentation submitted in accordance with Section 11.1.4 or other supporting data; (2) that the Architect has made exhaustive or continuous on-site inspections; or (3) that the Architect has made examinations to ascertain how or for what purposes the Construction Manager has used amounts previously paid on account of the Contract. Such examinations, audits, and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 11.2 Final Payment

§ 11.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Construction Manager when

- .1** the Construction Manager has fully performed the Contract, except for the Construction Manager's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment;
- .2** the Construction Manager has submitted a final accounting for the Cost of the Work and a final Application for Payment; and

.3 a final Certificate for Payment has been issued by the Architect in accordance with Section 11.2.2.2.

§ 11.2.2 Within 30 days of the Owner's receipt of the Construction Manager's final accounting for the Cost of the Work, the Owner shall conduct an audit of the Cost of the Work or notify the Architect that it will not conduct an audit.

§ 11.2.2.1 If the Owner conducts an audit of the Cost of the Work, the Owner shall, within 10 days after completion of the audit, submit a written report based upon the auditors' findings to the Architect.

§ 11.2.2.2 Within seven days after receipt of the written report described in Section 11.2.2.1, or receipt of notice that the Owner will not conduct an audit, and provided that the other conditions of Section 11.2.1 have been met, the Architect will either issue to the Owner a final Certificate for Payment with a copy to the Construction Manager, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding a certificate as provided in Article 9 of AIA Document A201–2017. The time periods stated in this Section 11.2.2 supersede those stated in Article 9 of AIA Document A201–2017. The Architect is not responsible for verifying the accuracy of the Construction Manager's final accounting.

§ 11.2.2.3 If the Owner's auditors' report concludes that the Cost of the Work, as substantiated by the Construction Manager's final accounting, is less than claimed by the Construction Manager, the Construction Manager shall be entitled to request mediation of the disputed amount without seeking an initial decision pursuant to Article 15 of AIA Document A201–2017. A request for mediation shall be made by the Construction Manager within 30 days after the Construction Manager's receipt of a copy of the Architect's final Certificate for Payment. Failure to request mediation within this 30-day period shall result in the substantiated amount reported by the Owner's auditors becoming binding on the Construction Manager. Pending a final resolution of the disputed amount, the Owner shall pay the Construction Manager the amount certified in the Architect's final Certificate for Payment.

§ 11.2.3 The Owner's final payment to the Construction Manager shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

§ 11.2.4 If, subsequent to final payment, and at the Owner's request, the Construction Manager incurs costs, described in Sections 7.1 through 7.7, and not excluded by Section 7.9, to correct defective or nonconforming Work, the Owner shall reimburse the Construction Manager for such costs, and the Construction Manager's Fee applicable thereto, on the same basis as if such costs had been incurred prior to final payment, but not in excess of the Guaranteed Maximum Price. If adjustments to the Contract Sum are provided for in Section 6.1.7, the amount of those adjustments shall be recalculated, taking into account any reimbursements made pursuant to this Section 11.2.4 in determining the net amount to be paid by the Owner to the Construction Manager.

§ 11.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

(Insert rate of interest agreed upon, if any.)

%

ARTICLE 12 DISPUTE RESOLUTION

§ 12.1 Initial Decision Maker

§ 12.1.1 Any Claim between the Owner and Construction Manager shall be resolved in accordance with the provisions set forth in this Article 12 and Article 15 of A201–2017. However, for Claims arising from or relating to the Construction Manager's Preconstruction Phase services, no decision by the Initial Decision Maker shall be required as a condition precedent to mediation or binding dispute resolution, and Section 12.1.2 of this Agreement shall not apply.

§ 12.1.2 The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017 for Claims arising from or relating to the Construction Manager's Construction Phase services, unless the parties appoint below another individual, not a party to the Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

Init.

§ 12.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- ☒ [X] Arbitration pursuant to Article 15 of AIA Document A201–2017
- ☐ [] Litigation in a court of competent jurisdiction
- ☐ [] Other: (Specify)

If the Owner and Construction Manager do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 13 TERMINATION OR SUSPENSION

§ 13.1 Termination Prior to Execution of the Guaranteed Maximum Price Amendment

§ 13.1.1 If the Owner and the Construction Manager do not reach an agreement on the Guaranteed Maximum Price, the Owner may terminate this Agreement upon not less than seven days' written notice to the Construction Manager, and the Construction Manager may terminate this Agreement, upon not less than seven days' written notice to the Owner.

§ 13.1.2 In the event of termination of this Agreement pursuant to Section 13.1.1, the Construction Manager shall be compensated for Preconstruction Phase services and Work performed prior to receipt of a notice of termination, in accordance with the terms of this Agreement. In no event shall the Construction Manager's compensation under this Section exceed the compensation set forth in Section 5.1.

§ 13.1.3 Prior to the execution of the Guaranteed Maximum Price Amendment, the Owner may terminate this Agreement upon not less than seven days' written notice to the Construction Manager for the Owner's convenience and without cause, and the Construction Manager may terminate this Agreement, upon not less than seven days' written notice to the Owner, for the reasons set forth in Article 14 of A201–2017.

§ 13.1.4 In the event of termination of this Agreement pursuant to Section 13.1.3, the Construction Manager shall be equitably compensated for Preconstruction Phase services and Work performed prior to receipt of a notice of termination. In no event shall the Construction Manager's compensation under this Section exceed the compensation set forth in Section 5.1.

§ 13.1.5 If the Owner terminates the Contract pursuant to Section 13.1.3 after the commencement of the Construction Phase but prior to the execution of the Guaranteed Maximum Price Amendment, the Owner shall pay to the Construction Manager an amount calculated as follows, which amount shall be in addition to any compensation paid to the Construction Manager under Section 13.1.4:

- .1 Take the Cost of the Work incurred by the Construction Manager to the date of termination;
- .2 Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 6.1 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and
- .3 Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

§ 13.1.6 The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager that the Owner elects to retain and that is not

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otherwise included in the Cost of the Work under Section 13.1.5.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Construction Manager shall, as a condition of receiving the payments referred to in this Article 13, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction Manager under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Construction Manager will contain provisions allowing for assignment to the Owner as described above.

§ 13.1.6.1 If the Owner accepts assignment of subcontracts, purchase orders or rental agreements as described above, the Owner will reimburse or indemnify the Construction Manager for all costs arising under the subcontract, purchase order or rental agreement, if those costs would have been reimbursable as Cost of the Work if the contract had not been terminated. If the Owner chooses not to accept assignment of any subcontract, purchase order or rental agreement that would have constituted a Cost of the Work had this agreement not been terminated, the Construction Manager will terminate the subcontract, purchase order or rental agreement and the Owner will pay the Construction Manager the costs necessarily incurred by the Construction Manager because of such termination.

§ 13.2 Termination or Suspension Following Execution of the Guaranteed Maximum Price Amendment

§ 13.2.1 Termination

The Contract may be terminated by the Owner or the Construction Manager as provided in Article 14 of AIA Document A201–2017.

§ 13.2.2 Termination by the Owner for Cause

§ 13.2.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A201–2017, the amount, if any, to be paid to the Construction Manager under Article 14 of AIA Document A201–2017 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed an amount calculated as follows:

- .1 Take the Cost of the Work incurred by the Construction Manager to the date of termination;
- .2 Add the Construction Manager's Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 6.1 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A201–2017.

§ 13.2.2.2 The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 13.2.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Construction Manager shall, as a condition of receiving the payments referred to in this Article 13, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction Manager under such subcontracts or purchase orders.

§ 13.2.3 Termination by the Owner for Convenience

If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Construction Manager a termination fee as follows:

(Insert the amount of or method for determining the fee, if any, payable to the Construction Manager following a termination for the Owner's convenience.)

- 1 Take the cost of the work incurred by the Construction Manager to the date of termination.
- 2 Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 5.1; and
- 3 Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

§ 13.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017; in such case, the Guaranteed Maximum Price and Contract Time shall be increased as provided in Article 14 of AIA Document

A201–2017, except that the term "profit" shall be understood to mean the Construction Manager’s Fee as described in Sections 6.1 and 6.3.5 of this Agreement.

ARTICLE 14 MISCELLANEOUS PROVISIONS

§ 14.1 Terms in this Agreement shall have the same meaning as those in A201–2017. Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 14.2 Successors and Assigns

§ 14.2.1 The Owner and Construction Manager, respectively, bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 14.2.2 of this Agreement, and in Section 13.2.2 of A201–2017, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 14.2.2 The Owner may, without consent of the Construction Manager, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner’s rights and obligations under the Contract Documents. The Construction Manager shall execute all consents reasonably required to facilitate the assignment.

§ 14.3 Insurance and Bonds

§ 14.3.1 Preconstruction Phase

The Construction Manager shall maintain the following insurance for the duration of the Preconstruction Services performed under this Agreement. If any of the requirements set forth below exceed the types and limits the Construction Manager normally maintains, the Owner shall reimburse the Construction Manager for any additional cost.

§ 14.3.1.1 Commercial General Liability with policy limits of not less than One Million Dollars (\$ 1,000,000) for each occurrence and Two Million Dollars (\$ 2,000,000) in the aggregate for bodily injury and property damage.

§ 14.3.1.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager with policy limits of not less than One Million Dollars (\$ 1,000,000) per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.

§ 14.3.1.3 The Construction Manager may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided that such primary and excess or umbrella liability insurance policies result in the same or greater coverage as the coverages required under Sections 14.3.1.1 and 14.3.1.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 14.3.1.4 Workers’ Compensation at statutory limits and Employers Liability with policy limits not less than One Million Dollars (\$ 1,000,000) each accident, One Million Dollars (\$ 1,000,000) each employee, and One Million Dollars (\$ 1,000,000) policy limit.

§ 14.3.1.5 Professional Liability covering negligent acts, errors and omissions in the performance of professional services, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ 14.3.1.6 Other Insurance

(List below any other insurance coverage to be provided by the Construction Manager and any applicable limits.)

Coverage

Limits

Init.

§ 14.3.1.7 **Additional Insured Obligations.** To the fullest extent permitted by law, the Construction Manager shall cause the primary and excess or umbrella policies for Commercial General Liability and Automobile Liability to include the Owner as an additional insured for claims caused in whole or in part by the Construction Manager's negligent acts or omissions. The additional insured coverage shall be primary and non-contributory to any of the Owner's insurance policies and shall apply to both ongoing and completed operations.

§ 14.3.1.8 The Construction Manager shall provide certificates of insurance to the Owner that evidence compliance with the requirements in this Section 14.3.1.

§ 14.3.2 **Construction Phase**

After execution of the Guaranteed Maximum Price Amendment, the Owner and the Construction Manager shall purchase and maintain insurance as set forth in AIA Document A133™-2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price, Exhibit B, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 14.3.2.1 The Construction Manager shall provide bonds as set forth in AIA Document A133™-2019 Exhibit B, and elsewhere in the Contract Documents.

§ 14.4 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given in accordance with AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203-2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 14.5 Other provisions:

ARTICLE 15 SCOPE OF THE AGREEMENT

§ 15.1 This Agreement represents the entire and integrated agreement between the Owner and the Construction Manager and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Construction Manager.

§ 15.2 The following documents comprise the Agreement:

- .1 AIA Document A133™-2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price
- .2 AIA Document A133™-2019, Exhibit A, Guaranteed Maximum Price Amendment, if executed
- .3 AIA Document A133™-2019, Exhibit B, Insurance and Bonds
- .4 AIA Document A201™-2017, General Conditions of the Contract for Construction
- .5

- .6 Other Exhibits:
(Check all boxes that apply.)

[] AIA Document E234™-2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, dated as indicated below:
(Insert the date of the E234-2019 incorporated into this Agreement.)

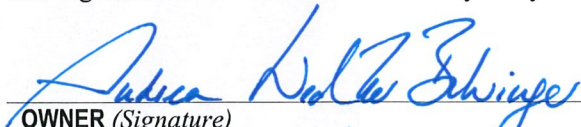
[X] Supplementary and other Conditions of the Contract:

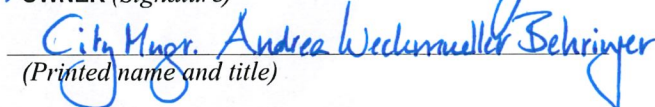
Document	Title	Date	Pages
Exhibit C	Contract Time Extension Determination	6/21/24	2

.7 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Construction Manager's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

This Agreement is entered into as of the day and year first written above.


OWNER (Signature)


City Mgr. Andrea Weckmueller Behringer
(Printed name and title)


CONSTRUCTION MANAGER (Signature)

Rod Smith Member
(Printed name and title)

Init.

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Additions and Deletions Report for AIA® Document A133® – 2019

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 17:53:40 ET on 06/24/2024.

PAGE 1

AGREEMENT made as of the 6th day of May in the year 2024

...

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

...

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

...

Shawnee Fire Station #3
306 E MacArthur St.
Shawnee, OK 74804

...

Brandstetter Carroll INC
2360 Chauvin Drive
Lexington, KY 40517

PAGE 2

Construction documents and project specifications developed by Brandstetter Carroll Architects

...

The project scope is planned to include a renovation of the first floor of the existing facility, the addition of approximately 1,500 square feet to the North, and the addition of approximately 1,600 square feet to the West. The work includes, but is not limited to, the following building systems: metal stud framing, reinforced concrete masonry units, structural steel, concrete foundation, brick masonry facade, TPO roofing, aluminum storefront system, interior partitions of drywall construction, gypsum board and acoustical panel tile ceilings, interior finishes, installation of a fire protection system, alterations to the power distribution system, alterations and new installations of general lighting, and the alteration and new installation of HVAC systems.

PAGE 3

As defined in section 3.2

...

July 1, 2024

...

Coordinate with the fire department to allow 1 truck and a small crew to remain on site during construction. Crew to have access to the basement via East entrance. Contractor shall make every effort to keep power and communications on line in the basement.

...

Seth Barkhimer
City of Shawnee
222 N Broadway Ave
Shawnee, OK 74801
405-878-1760
seth.barkhimer@shawneeok.org

PAGE 4

Brandstetter Carroll Inc, Architect

...

John Wendt
Job Captain
100 West Mulberry
Denton, TX 76201
940-387-8182
jwendt@bciaep.com

...

Matt Smith
Project Manager
13301 N Santa Fe Ave
Oklahoma City, OK 73114
405-843-8041
msmith@landmarkokc.com

PAGE 5

Prepare cost estimates based on the design drawings prepared by the A/E firm.
Work collaboratively with the City and the A/E firm to develop alternatives to keep the Project estimates within the Project Budget
Provide a proposed GMP at such time as the City, A/E firm, and CMaR
determine that the drawings and specifications are sufficiently complete (likely after CDs are complete).

...

For those contracts to be awarded on a competitive bid basis, CMAR shall solicit a minimum of three (3) competitive, publicly advertised bids for each trade category unless otherwise authorized by the City. CMAR is responsible for preparation of bid documents and forms related to subcontractor procurement.

PAGE 6

§ 3.1.3.3 ~~The Construction Manager shall assist the Owner and Architect in establishing building information modeling and digital data protocols for the Project, using AIA Document E203™ 2013, Building Information~~

Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

PAGE 11

½ of 1% of the cost of the work

...

§ 5.1.3 If the Preconstruction Phase services covered by this Agreement have not been completed within Six (6) months of the date of this Agreement, through no fault of the Construction Manager, the Construction Manager's compensation for Preconstruction Phase services shall be equitably adjusted.

...

§ 5.2.2 Payments are due and payable upon presentation of the Construction Manager's invoice. Amounts unpaid Thirty (30) days after the invoice date shall bear interest at the rate entered below, or in the absence thereof at the legal rate prevailing from time to time at the principal place of business of the Construction Manager.

...

8% of the cost of the work

...

For changes in the work, the Construction Manager's fee shall be 8%

...

§ 6.1.5 Rental rates for Construction Manager-owned equipment shall not exceed Ten percent (10 %) of the standard rental rate paid at the place of the Project.

PAGE 14

§ 7.6.6 Costs for communications services, electronic equipment, ~~and software,~~ directly related to the Work and located at the site, with the Owner's prior approval.

PAGE 16

§ 11.1.3 Provided that an Application for Payment is received by the Architect not later than the last day of a month, the Owner shall make payment of the amount certified to the Construction Manager not later than the last day of the Following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than Thirty (30) days after the Architect receives the Application for Payment.

PAGE 18

5%

PAGE 20

[☒] Arbitration pursuant to Article 15 of AIA Document A201-2017

PAGE 21

1 Take the cost of the work incurred by the Construction Manager to the date of termination.

2 Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 5.1; and

3 Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

PAGE 22

§ 14.3.1.1 Commercial General Liability with policy limits of not less than One Million Dollars (\$ 1,000,000) for each occurrence and Two Million Dollars (\$ 2,000,000) in the aggregate for bodily injury and property damage.

§ 14.3.1.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager with policy limits of not less than One Million Dollars (\$ 1,000,000) per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.

...

§ 14.3.1.4 Workers' Compensation at statutory limits and Employers Liability with policy limits not less than One Million Dollars (\$ 1,000,000) each accident, One Million Dollars (\$ 1,000,000) each employee, and One Million Dollars (\$ 1,000,000) policy limit.

§ 14.3.1.5 Professional Liability covering negligent acts, errors and omissions in the performance of professional services, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

PAGE 23

- .5 ~~AIA Document E203™ 2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:~~
~~(Insert the date of the E203-2013 incorporated into this Agreement.)~~

PAGE 24

[X] Supplementary and other Conditions of the Contract:

...

<u>Exhibit C</u>	<u>Contract Time Extension</u>	<u>6/21/24</u>	<u>2</u>
	<u>Determination</u>		

...

Rod Smith Member

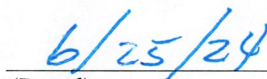
Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Rod Smith, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 17:53:40 ET on 06/24/2024 under Order No. 2114544983 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A133™ – 2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price, other than those additions and deletions shown in the associated Additions and Deletions Report.


(Signed)


(Title)


(Dated)



AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Shawnee Fire Station #3
306 East MacArthur Street
Shawnee, Oklahoma 74804

THE OWNER:

(Name, legal status and address)

City of Shawnee
16 West 9th Street
Shawnee Oklahoma, 74801

THE ARCHITECT:

(Name, legal status and address)

Brandstetter Carroll Inc.
2360 Chauvin Drive
Lexington, KY 40517

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1	GENERAL PROVISIONS
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5	SUBCONTRACTORS
6	CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS
7	CHANGES IN THE WORK
8	TIME
9	PAYMENTS AND COMPLETION
10	PROTECTION OF PERSONS AND PROPERTY
11	INSURANCE AND BONDS
12	UNCOVERING AND CORRECTION OF WORK
13	MISCELLANEOUS PROVISIONS

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

Init.

14 **TERMINATION OR SUSPENSION OF THE CONTRACT**

15 **CLAIMS AND DISPUTES**

Init.

/

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act

or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and

approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

Additions and Deletions Report for

AIA® Document A201® – 2017

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 17:57:37 ET on 06/24/2024.

PAGE 1

Shawnee Fire Station #3
306 East MacArthur Street
Shawnee, Oklahoma 74804

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City of Shawnee
16 West 9th Street
Shawnee Oklahoma, 74801

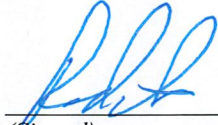
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Brandstetter Carroll Inc.
2360 Chauvin Drive
Lexington, KY 40517

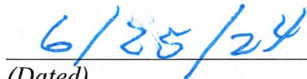
Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, Rod Smith, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 17:57:37 ET on 06/24/2024 under Order No. 2114544985 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2017, General Conditions of the Contract for Construction, other than those additions and deletions shown in the associated Additions and Deletions Report.


(Signed)


(Title)


(Dated)

STATEMENT OF PROBABLE COST

PROJECT: **Shawnee Fire Station #3**
 ESTIMATOR: Matt Smith
 BID DATE: 09/30/24
 SALES TAX: 0.000%



Phone: 405-843-8041 Fax: 405-843-1882

DESCRIPTION	Current 9.30.24	Last 7.24.24	Change				
FIELD MANAGEMENT	81,500	103,920	(22,420)				
ALL RISK & LIABILITY INSURANCE	19,600	22,150	(2,550)				
TEMP UTILITIES & FACILITIES	11,800	13,000	(1,200)				
TOOLS AND EQUIPMENT	16,900	18,750	(1,850)				
CLEAN-UP AND DUMPSTER	11,500	13,700	(2,200)				
EARTHWORK	49,800	79,874	(30,074)				
PAVING & SITE CONCRETE	45,300	59,000	(13,700)				
SITE UTILITIES	9,500	31,000	(21,500)				
LANDSCAPING	7,000	7,000	0				
DEMOLITION	55,000	70,000	(15,000)				
ABATEMENT	5,000	5,000	0				
TERMITE TREATMENT	750	1,500	(750)				
CONCRETE SLAB & FOUNDATION	34,000	64,750	(30,750)				
MASONRY	137,000	248,200	(111,200)				
STRUCTURAL STEEL	38,000	69,000	(31,000)				
STEEL ERECTION	23,500	49,000	(25,500)				
COUNTERTOPS	7,500	10,130	(2,630)				
MILLWORK	40,000	71,650	(31,650)				
WATERPROOFING	15,000	35,000	(20,000)				
ROOFING	58,000	90,500	(32,500)				
SPRAY INSULATION	5,000	5,000	0				
LOCKERS	27,500	27,500	0				
HOLLOW METAL DRS. & FRAMES	30,000	40,000	(10,000)				
FINISH HARDWARE	25,000	35,800	(10,800)				
DIV. 8 INSTALLATION	1,600	1,600	0				
OVERHEAD DOORS	38,500	38,500	0				
ALUM. STOREFRONTS & WIND.	38,500	58,650	(20,150)				
FRAMING & DRYWALL	66,410	190,100	(123,690)				
POLISHED CONCRETE FLOORING	27,950	27,950	0				
TILE & SHOWERS	25,000	25,000	0				
CARPET ELEVATED PLATFORM	1,000	1,000	0				
TAPE, BED & PAINT	36,000	45,572	(9,572)				
TOILET ACCESSORIES & CORNER GD	4,450	4,450	0				
SIGNAGE	4,700	4,700	0				
DIV. 10 INSTALLATION	500	500	0				
F.E. & CABINETS	1,000	1,000	0				
MISC FF&E	23,950	23,950	0				
FIRE SUPPRESSION	0	27,000	(27,000)				
PLUMBING	200,000	258,000	(58,000)				
HVAC	175,000	232,000	(57,000)				
VEHICLE EXHAUST FAN	20,000	20,000	0				
ELECTRICAL & FA	215,000	250,000	(35,000)				
GENERATOR	98,750	98,750	0				
SUBTOTAL	1,732,460	2,480,146	(747,686)				
DESIGN CONTINGENCY	173,246	124,007	49,239				
BETTERMENT ALLOWANCE	86,623	124,007	(37,384)				
SUBTOTAL	1,992,329	2,728,161	(735,832)	0	0	0	0
O.H. & P. 8.50%	169,348	231,894	(62,546)	0	0	0	0
SUBTOTAL	2,161,677	2,960,054	(798,377)	0	0	0	0
BOND<100K 0.98%	978	978	0	0	0	0	0
100K - 2500K 0.72%	14,823	17,256	(5,740)	0	0	0	0
BOND>2500K 0.58%	0	2,645	0	0	0	0	0
TOTAL	2,177,478	2,980,934	(803,455)	0	0	0	0
	Current	Last 7.24.24	Change	0	0	0	0
				0	0	0	0

AIA® Document A133® – 2019 Exhibit B

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Construction Manager, dated the day of in the year
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

Shawnee Fire Station #3
306 E MacArthur St.
Shawnee, OK 74804

THE OWNER:
(Name, legal status, and address)

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

TABLE OF ARTICLES

- B.1 GENERAL**
- B.2 OWNER'S INSURANCE**
- B.3 CONSTRUCTION MANAGER'S INSURANCE AND BONDS**
- B.4 SPECIAL TERMS AND CONDITIONS**

ARTICLE B.1 GENERAL

The Owner and Construction Manager shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE B.2 OWNER'S INSURANCE

§ B.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article B.2 and, upon the Construction Manager's request, provide a copy of the property insurance policy or policies required by Section B.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

§ B.2.2 Liability Insurance

The Owner shall be responsible for purchasing and maintaining the Owner’s usual general liability insurance.

§ B.2.3 Required Property Insurance

§ B.2.3.1 Unless this obligation is placed on the Construction Manager pursuant to Section B.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder’s risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner’s property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section B.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Construction Manager, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ B.2.3.1.1 Causes of Loss. The insurance required by this Section B.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:

(Indicate below the cause of loss and any applicable sub-limit.)

Cause of Loss	Sub-Limit
§ B.2.3.1.2 Specific Required Coverages. The insurance required by this Section B.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect’s and Construction Manager’s services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows: (Indicate below type of coverage and any applicable sub-limit for specific required coverages.)	

Coverage	Sub-Limit
§ B.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section B.2.3.1 or, if necessary, replace the insurance policy required under Section B.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.	

§ B.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section B.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ B.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner’s occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section B.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Construction Manager shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ B.2.3.3 Insurance for Existing Structures
If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section B.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ B.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

- ☐ **§ B.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.
- ☐ **§ B.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.
- ☐ **§ B.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.
- ☐ **§ B.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.
- ☐ **§ B.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.
- ☐ **§ B.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.
- ☐ **§ B.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ B.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

Init.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

☐ § B.2.5.1 **Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information.
(Indicate applicable limits of coverage or other conditions in the fill point below.)

☐ § B.2.5.2 **Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage

Limits

ARTICLE B.3 CONSTRUCTION MANAGER'S INSURANCE AND BONDS

§ B.3.1 General

§ B.3.1.1 **Certificates of Insurance.** The Construction Manager shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article B.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section B.3.2.1 and Section B.3.3.1. The certificates will show the Owner as an additional insured on the Construction Manager's Commercial General Liability and excess or umbrella liability policy or policies.

§ B.3.1.2 **Deductibles and Self-Insured Retentions.** The Construction Manager shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Construction Manager.

§ B.3.1.3 **Additional Insured Obligations.** To the fullest extent permitted by law, the Construction Manager shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Construction Manager's negligent acts or omissions during the Construction Manager's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Construction Manager's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ B.3.2 Construction Manager's Required Insurance Coverage

§ B.3.2.1 The Construction Manager shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Construction Manager shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Construction Manager is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ B.3.2.2 Commercial General Liability

§ B.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than One Million Dollars (\$ 1,000,000) each occurrence, Two Million Dollars (\$ 2,000,000) general aggregate, and Two Million Dollars (\$ 2,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

- .1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- .2 personal injury and advertising injury;
- .3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- .4 bodily injury or property damage arising out of completed operations; and
- .5 the Construction Manager's indemnity obligations under Section 3.18 of the General Conditions.

§ B.3.2.2.2 The Construction Manager's Commercial General Liability policy under this Section B.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- .1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- .2 Claims for property damage to the Construction Manager's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- .3 Claims for bodily injury other than to employees of the insured.
- .4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- .5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- .6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- .7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- .8 Claims related to roofing, if the Work involves roofing.
- .9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
- .10 Claims related to earth subsidence or movement, where the Work involves such hazards.
- .11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ B.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager, with policy limits of not less than One Million Dollars (\$ 1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ B.3.2.4 The Construction Manager may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section B.3.2.2 and B.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ B.3.2.5 Workers' Compensation at statutory limits.

§ B.3.2.6 Employers' Liability with policy limits not less than One Million Dollars (\$ 1,000,000) each accident, One Million Dollars (\$ 1,000,000) each employee, and One Million Dollars (\$ 1,000,000) policy limit.

§ B.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ B.3.2.8 If the Construction Manager is required to furnish professional services as part of the Work, the Construction Manager shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Construction Manager shall procure Pollution Liability insurance, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.10 Coverage under Sections B.3.2.8 and B.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.3 Construction Manager's Other Insurance Coverage

§ B.3.3.1 Insurance selected and described in this Section B.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Construction Manager shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Construction Manager is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ B.3.3.2 The Construction Manager shall purchase and maintain the following types and limits of insurance in accordance with Section B.3.3.1.

(Select the types of insurance the Construction Manager is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

- [] § B.3.3.2.1 Property insurance of the same type and scope satisfying the requirements identified in Section B.2.3, which, if selected in this Section B.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section B.2.3.1.3 and Section B.2.3.3. The Construction Manager shall comply with all obligations of the Owner under Section B.2.3 except to the extent provided below. The Construction Manager shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Construction Manager shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:

(Where the Construction Manager's obligation to provide property insurance differs from the Owner's obligations as described under Section B.2.3, indicate such differences in the space below.

Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

- [] § B.3.3.2.2 Railroad Protective Liability Insurance, with policy limits of not less than (\$) per claim and (\$) in the aggregate, for Work within fifty (50) feet of railroad property.

- [] § B.3.3.2.3 Asbestos Abatement Liability Insurance, with policy limits of not less than (\$) per claim and (\$) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

- [] § B.3.3.2.4 Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

- [] § B.3.3.2.5 Property insurance on an "all-risks" completed value form, covering property owned by the

Construction Manager and used on the Project, including scaffolding and other equipment.

[] **§ B.3.3.2.6 Other Insurance**

(List below any other insurance coverage to be provided by the Construction Manager and any applicable limits.)

Coverage

Limits

§ B.3.4 Performance Bond and Payment Bond

The Construction Manager shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:

(Specify type and penal sum of bonds.)

Type

Penal Sum (\$0.00)

Payment Bond

Combined 5% of the cost of the work for
Payment and Performance Bond

Performance Bond

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE B.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

Init.

/

Additions and Deletions Report for

AIA® Document A133® – 2019 Exhibit B

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 12:54:43 ET on 05/22/2024.

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Shawnee Fire Station #3
306 E MacArthur St.
Shawnee, OK 74804

...

City of Shawnee
16 W. 9th St.
Shawnee, OK 74801

...

Landmark Construction Group, LLC
13301 N Santa Fe Ave
Oklahoma city, OK 73114

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§ B.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than One Million Dollars (\$ 1,000,000) each occurrence, Two Million Dollars (\$ 2,000,000) general aggregate, and Two Million Dollars (\$ 2,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

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§ B.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager, with policy limits of not less than One Million Dollars (\$ 1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

...

§ B.3.2.6 Employers' Liability with policy limits not less than One Million Dollars (\$ 1,000,000) each accident, One Million Dollars (\$ 1,000,000) each employee, and One Million Dollars (\$ 1,000,000) policy limit.

...

§ B.3.2.8 If the Construction Manager is required to furnish professional services as part of the Work, the Construction Manager shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Construction Manager shall procure Pollution Liability insurance, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.10 Coverage under Sections B.3.2.8 and B.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

§ B.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than N/A (\$) per claim and N/A (\$) in the aggregate.

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Payment Bond

Combined 5% of the cost of the work for
Payment and Performance Bond



City Manager Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Andrea Weckmueller-Behringer, City Manager
Subject: Consideration of a Memorandum of Understanding between the City of Shawnee and the Oklahoma Department of Mental Health and Substance Abuse Services related to the provision of overdose education, Naloxone distribution training, and overdose reversal kits.

Background: Enacted in 2020, Title 74 of the Oklahoma Statutes (OS), Sections 30.3 through 30.8 created the Political Subdivisions Opioid Abatement Grants Act. The intent of the Act is to promote and protect the health of Oklahomans by using monetary grants to abate the opioid crisis in collaboration with political subdivisions. The related grants are administered through the Office of Oklahoma's Attorney General (OAG).

While 1,200 subdivisions were eligible to apply, 251 applicants had declared their intent by November 8, 2023, including 66 counties, 69 municipalities, 103 school districts, 4 career technology centers, and 9 public trusts. As part of this first round of competitive, statewide opioid abatement grant applications, the City of Shawnee was among the 71 successful applicants and was awarded \$124,360.56 in Opioid Abatement Grant funding to be spent across two fiscal years.

As part of its revised implementation plan, the City of Shawnee was asked by staff of the OAG to first pursue, as available, Naloxone distribution through the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS) for the agreed-to grant activities, before City staff proceeds to purchase Naloxone from any commercial vendors.

In compliance with the OAG's request, City staff has established contact with the appropriate representative from ODMHSAS, and the Memorandum of Understanding presented for consideration and approval would allow for the cost-free distribution of Naloxone (overdose reversal kits) to the City of Shawnee.

Financial Impact: None

Attachments: OEND MOU

Staff Recommendation: Approval of the item

MEMORANDUM OF UNDERSTANDING
Between the City of Shawnee and
The Oklahoma Department of Mental Health and Substance Abuse Services

AGREEMENT TO PROVIDE OVERDOSE EDUCATION & NALOXONE DISTRIBUTION TRAINING & OVERDOSE REVERSAL KITS

This Agreement is entered into this ____ day of December, 2024, by the City of Shawnee (hereinafter referred to as “CITY”) and the Oklahoma Department of Mental Health and Substance Abuse Services (hereinafter referred to as “ODMHSAS”) and will remain in effect for up to 1 year from this date as funding allows. This agreement may be terminated by either party by providing at least 30 days’ written notice.

Purpose and Objectives of Agreement/Project

This Agreement reflects the understanding of the CITY and ODMHSAS regarding the ODMHSAS’s sponsorship of an overdose education and naloxone distribution (OEND) training course for the CITY and provision of overdose reversal kits. This Agreement will:

- Build a working relationship between the organizations with a common goal of reducing the number of opioid overdose injuries and deaths.
- Provide the CITY access to overdose reversal kits for distribution to persons at risk of witnessing or experiencing opioid overdose.
- Provide the CITY training in OEND.
- Provide the CITY appropriate forms for documenting the utilization of any other harm reduction tools provided by the ODMHSAS.

Responsibilities of ODMHSAS

- 1.) Sponsor and conduct OEND training courses as mutually agreed for CITY staff.
- 2.) Provide all necessary equipment and materials for trainings.
- 3.) Provide the CITY appropriate access to data collection systems for documenting staff training and the distribution of each overdose reversal kit and/or other harm reductions tools.
- 4.) Provide the CITY appropriate forms for documenting the utilization of each overdose reversal kit.
- 5.) Aid in the development of an overdose risk assessment and kit distribution workflow and provide naloxone for distribution to people at risk of experiencing or witnessing an overdose as determined by brief screening and/or known overdose injury.

Responsibilities of the CITY

- 1.) Properly train all identified personnel for the distribution of overdose reversal kits.
 - 2.) Document the training of personnel and report into the ODMHSAS data collection system.
 - 3.) Develop and adopt a workflow or policy for risk assessment, overdose education, and naloxone kit distribution for people at risk of experiencing or witnessing overdose.
 - 4.) Distribute overdose reversal kits for their intended purposes.
 - 5.) Document the distribution of each overdose reversal kit using the data collection system provided by the ODMHSAS; develop method to document services in electronic medical record and billing system for sustainability.
 - 6.) Document the utilization/distribution of additional harm reduction tools using forms provided by the ODMHSAS and remit completed forms to the ODMHSAS for managing data.
 - 7.) Return all undistributed overdose reversal kits upon termination or expiration of this agreement to ODMHSAS.
 - 8.) Identify methods to coordinate the project in accordance with all relevant laws/rules and sustain the project in the event the ODMHSAS is unable to renew the agreement.
-

Contact Personnel

- The ODMHSAS liaison for this Agreement is Gary Shepherd, (405) 985-9796, Gary.Shepherd@odmhsas.org.
- The CITY liaison for this Agreement is Kevin Nichols, (405) 878-1685, knichols@shawneeok.org.

Oklahoma Department of Mental Health and Substance Abuse Services

Signature: _____ Date: _____

Print Name: Durand Crosby

Title: Senior Deputy Commissioner

City of Shawnee

Signature: _____ Date: _____

Print name: _____

Title: _____



City Attorney Department
130 N. Broadway Ave., Suite 100
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Joe Vorndran, City Attorney
Subject: Consideration of an ordinance of the City of Shawnee, Oklahoma amending Section 16, Article II, Division 8 of the Shawnee Municipal Code; providing for repeal; providing for severability; providing for codification.

Background: The City of Shawnee seeks to provide additional guidance related to potential assignments of lake lot leases when transfers are related to one of the following:

- Where the transfer is made to a trust of which the lessee is the grantor and owner of the assets and property for income and estate tax purposes;
- As a result of the administration of a trust or estate, or the probate of a will; or
- In cases where a lease has joint owners and one owner obtains full ownership rights.

The proposed ordinance would update and expand on the current provisions within Shawnee's Municipal Code Section 16-322.

Financial Impact: Not applicable

Attachments: COS - Ordinance Amending Lake Lease Transfer

Staff Recommendation: Approval of the item

AN ORDINANCE AMENDING CHAPTER 16, ARTICLE II, DIVISION 8 OF THE SHAWNEE MUNICIPAL CODE; PROVIDING FOR REPEAL; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; AND PROVIDING FOR EMERGENCY.

BE IT ORDAINED BY THE COMMISSIONERS OF THE CITY OF SHAWNEE:

SECTION 1. AMENDMENT. That Division 8 of Article II of Chapter 16 of the Shawnee City Code is hereby amended as follows:

Sec. 16-322. Assignment of Lease; sale of improvements.

- (a) No lease entered into under this division shall be assigned or sublet, but the lessee may at any time during the term of his lease sell and transfer to other persons the improvements on the lot leased by him.
- (b) If improvements are sold by the lessee, the transfer shall not become effective until approved by the city commission at a regular or adjourned meeting held for that purpose. The city as lessor reserves the right to reject and disapprove any transfer when, in its opinion, it would be to the best interests of the city and its inhabitants to do so. If the transfer is approved, a new full-term lease shall be entered into between the purchaser and the city, and a transfer charge in an amount as described in the city fee schedule shall be paid to the city prior to such transfer. ~~No transfer fee shall be charged in cases where the transfer is made as a result of a trust or will or in cases where a lease has joint owners and one owner obtains full ownership rights.~~

Such section shall now read as follows:

Sec. 16-322. Assignment of Lease; sale of improvements.

- (a) No lease entered into under this division shall be assigned or sublet, but the lessee may at any time during the term of his lease sell and transfer to other persons the improvements on the lot leased by him.
- (b) If improvements are sold by the lessee, the transfer shall not become effective until approved by the city commission at a regular or adjourned meeting held for that purpose. The city as lessor reserves the right to reject and disapprove any transfer when, in its opinion, it would be to the best interests of the city and its inhabitants to do so. If the transfer is approved, a new full-term lease shall be entered into between the purchaser and the city, and a transfer charge in an amount as described in the city fee schedule shall be paid to the city prior to such transfer.
- (c) Notwithstanding the foregoing, no transfer charge shall be charged in the following situations:
 - 1. Where the transfer is made to a trust of which the lessee is the grantor and owner of the assets and property for income and estate tax purposes;
 - 2. As a result of the administration of a trust or estate, or the probate of a will;
 - 3. In cases where a lease has joint owners and one owner obtains full ownership rights.

However, a \$250 administrative fee will be assessed against the lessee or its estate to transfer the lease pursuant to an exception listed above. Further, any transfer made pursuant to the exceptions listed in the instant sub-section does not require the approval of the city commission, but may be administratively performed by the City Manager or their designee.

SECTION 2. REPEALER. All sections, subsections, clauses, and sentences of existing law in conflict with this ordinance are repealed.

SECTION 3. SEVERABILITY. The provisions of this Ordinance are severable and, if any sentence, provision, or other part of this Ordinance shall be held invalid, the decision of the court so holding shall not affect or impair any of the remaining parts or provisions of this Ordinance.

SECTION 4. CODIFICATION. This Ordinance shall be codified in the Shawnee City Code, and the codifier is authorized to set out the ordinance as appropriate.

SECTION 5: EMERGENCY. Because it is necessary for the protection of the public’s health, safety, and welfare, an emergency is declared to exist. This ordinance shall be effective immediately upon its passage and publication.

PASSED AND APPROVED this 16th day of December, 2024.

ERIC STEPHENS, MAYOR

ATTEST:
(SEAL)

LISA LASYONE, MMC, CITY CLERK

Emergency clause separately passed and approved on this 16th day of December, 2024.

ERIC STEPHENS, MAYOR

ATTEST:
(SEAL)

LISA LASYONE, MMC, CITY CLERK

Approved as to form and legality this 16th _day of December, 2024.

JOSEPH M. VORNDRAN
CITY ATTORNEY



Community Development Department
16 W 9th Street
Shawnee, OK 74801
shawneeok.org

Date: December 16, 2024
To: Board of City Commissioners
From: Rian Harkins, Community Development Director
Subject: Public hearing of a request to rezone property located at 3918 North Kickapoo from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).
Case No. RZ05-24 | Applicant: Erika Jones
(Deferred from November 18, 2024 City Commission meeting.)

Background: The subject property is located at 3918 N Kickapoo and contains approximately 0.72 acres. The request is to rezone the property from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).

Discussion:

The subject property is zoned R-1 (Low-Density Residential), and is located on the major arterial corridor of North Kickapoo. The properties surrounding the subject property to the east and south are zoned C-2 (Regional Commercial). To the north, the land is zoned C-1 (Local Commercial). To the west is a neighborhood zoned R-1 (Low-Density Residential).

There is a 16-inch water line located along the west side of North Kickapoo, and a 60-inch RCP storm sewer line located on the east side of North Kickapoo. An 8-inch gravity sewer line runs behind the property along the unpaved alleyway on the west side. There are no sidewalk paths immediately adjacent to the property or to the south, but there is potential for sidewalk connection to the north along North Kickapoo.

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Mixed Use land use designation. C-2 is an appropriate zoning district for this land use designation, because a major commercial use will help to improve economic performance and allow for more complementary uses within a close proximity. The request is in conformance with the 2040 Comprehensive Plan, which calls for mixed-use developments with similar intensity along arterial corridors.

Referencing the City of Shawnee Zoning Code (Code) DIVISION 15. - Amendments; Procedures. Section 22-645. – Planning commission recommendation required. This section gives authority to the Planning Commission to make changes (amendments) to the official Zoning Map. "...be amended, supplemented, changed, modified, or repealed by ordinance, but no change shall be made until the planning commission, after notice and public hearing, files with the city commission a report and recommendation on the proposed change."

Staff completed the required public hearing notifications for this application. All property owners within

a 300-foot radius from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Findings and Facts:

- The subject property is adjacent to C-2 zoning on North Kickapoo Street.
- The request is in conformance with the Comprehensive Plan Future Land Use Map (FLUM).
- Notification for a public hearing was served.

This item was heard at the December 4, 2024, Planning Commission meeting, where approval was recommended 6-0.

Financial Impact: None

Attachments: RZ05-24 PC to CC Record of Action, STAFF RZ05-24 3918 N Kickapoo Ave, Application RZ05-24 3918 N Kickapoo, Public Mail Out Notice RZ05-24, RZ05-24 Notice to PUBLISH 3918 N Kickapoo

Staff Recommendation: Based on the findings and facts, staff recommends **APPROVAL** of **RZ05-24** to rezone the subject property from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).

RECORD OF ACTION

DATE: December 10, 2024

TO: Mayor and Board of City Commissioners -- City of Shawnee, OK

FROM: Rian Harkins, Community Development Director

SUBJECT: **Record of Action by Planning Commission**

=====

CASE NO: RZ05-24

REQUEST: Request to rezone from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District)

Applicant: Erika Jones

Subject Property Address: 3918 N Kickapoo

Legal Description: Lot 3, Block One, College View Addition to the City of Shawnee, Pottawatomie County, Oklahoma

Current Zoning: R-1 Low-Density Residential **Requested Zoning:** C-2 Regional Commercial

Staff Recommendation: Approval

=====

Planning Commission Meeting Date: December 4, 2024

PC Recommendation: Approval

Conditions: None

Vote: 6 -- 0 -- 0

Members Present: 6

Members:	Motion	2 nd	Aye	Nay	Abstain	Comments
ALEXANDER	X	X	X			
PORTER			X			
JOHNSON			X			
REESE			X			
HEMBREE			X			
BARRETT(CHAIR)			X			



Planning Commission Meeting – 12.4.2024 – City of Shawnee, Oklahoma

Staff Report | RZ05-24 | R-1 to C-2 | 3918 N Kickapoo Ave

Date: November 14, 2024

To: Shawnee Planning Commission

From: Rian Harkins, Community Development Director

Subject: **Staff Report** - Public hearing and consideration of a request to rezone from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).
Case No. RZ05-24 | Applicant: Erika Jones

Background

The subject property is located at 3918 N Kickapoo Ave and contains approximately .72 acres. The request is to rezone the property from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).

Discussion

The subject property is zoned R-1 (Low-Density Residential), and is located on the major arterial corridor of North Kickapoo. The properties surrounding the subject property to the east and south are zoned C-2 (Regional Commercial). To the north, the land is zoned C-1 (Local Commercial). To the west is a neighborhood zoned R-1 (Low-Density Residential).

There is a 16 inch water line located along the west side of North Kickapoo, and a 60 inch RCP storm sewer line located on the east side of North Kickapoo. An 8 inch gravity sewer line runs behind the property along the unpaved alleyway on the west side. There are no sidewalk paths immediately adjacent to the property or to the south, but there is potential for sidewalk connection to the north along North Kickapoo.

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Mixed Use land use designation. C-2 is an appropriate zoning district for this land use designation, because a major commercial use will help to improve economic performance and allow for more complementary uses within a close proximity. The request is in conformance with the 2040 Comprehensive Plan, which calls for mixed use developments with similar intensity along arterial corridors.

Referencing the City of Shawnee Zoning Code (Code) DIVISION 15. - Amendments; Procedures. Section 22-645. – Planning commission recommendation required. This section gives authority to the Planning Commission to make changes (amendments) to the official Zoning Map. *"...be amended, supplemented, changed, modified, or repealed by ordinance, but no change shall be made until the planning commission, after notice and public hearing, files with the city commission a report and recommendation on the proposed change."*

Staff completed the required public hearing notifications for this application. All property owners within a 300 foot radius from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Findings and Facts:

- The subject property is adjacent to C-2 zoning on North Kickapoo St.
- The request is in conformance with the Comprehensive Plan Future Land Use Map (FLUM).
- Notification for a public hearing was served.

Options:

- Recommending Approval of Case No. RZ05-24 to rezone from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District) as requested by the applicant.
- Recommending Denial of the application for RZ05-24 to rezone the subject property.
- Recommending Deferral Case No. RZ05-24 with a request for additional and specific information to a certain date.

Recommendation: Based on the Findings and Facts, staff recommends that the Planning Commission recommend to the City Commission **APPROVAL** of **RZ05-24** to rezone the subject property from R-1 (Low-Density Residential District) to C-2 (Regional Commercial District).

This rezoning application will be heard at the City Commission meeting on Monday, December 16, 2024, at 6:00 pm.

PLANNING COMMISSION APPLICATION



City of Shawnee Community Development Department

222 N. Broadway
Shawnee, OK 74801
(405) 878-1672
www.ShawneeOK.org

For Office Use Only

Case Number: R2 08-24

Project Number: 20241342

Date Filed: 9-11-2024

Planning Commission Secretary

REQUEST:

☒ Rezoning

☐ Conditional Use Permit

☐ Rezoning w/Conditional Use Permit

☐ Planned Unit Development

I, the undersigned, do hereby respectfully make application and petition to the City Commission to amend the zoning map, and to change the zoning district of the Shawnee area, from R-1 District to C-3 District, as hereinafter requested, and in support of this application, the following facts are shown:

PROPERTY LOCATION (STREET ADDRESS): 3918 N Kickapoo Ave, Shawnee, OK 74804

LEGAL DESCRIPTION: College View Block 1 Lot 3

PROPERTY OWNER (S): Eight Eagles LLC C/O Mike Massey

PROPERTY AGENT (APPLICANT): Erika Jones

APPLICANT'S ADDRESS: PO Box 1471

CITY: Shawnee **STATE:** Oklahoma **ZIP:** 74802

EMAIL ADDRESS: erika@nexthomecre.com

TELEPHONE NUMBER: (405) 476-4158 **CONTACT NUMBER:** (405) 476-4158

DIMENSIONS OF PROPERTY: AREA: 31,500 sf WIDTH: 150 feet

LENGTH: 210 feet FRONTAGE: 150 feet

CURRENT ZONING: R-1 **CURRENT USE:** Vacant Land

PROPOSED ZONING: C-3 **PROPOSED USE:** Commerical use in C-3

With the filing of this application, I acknowledge that I have been informed of off-street parking, fencing and paving requirements in regard to the zoning I have requested as witnessed by my signature.

COMPLETED APPLICATION AND ALL CORRESPONDING DOCUMENTS MUST BE RECEIVED 30 DAYS PRIOR TO MEETING TO MAKE THE AGENDA.

Erika Jones
SIGNATURE OF APPLICANT

FOR STAFF USE ONLY

REZONING &/OR C.U.P FEE \$ 280.00

RECEIPT NO. 5590 Darel

PLANNED UNIT DEVELOPMENT FEE \$ 550.00

NOTIFICATION SIGN \$ 50.00

PLANNING COMMISSION ACTION: _____ **DATE:** _____

CITY COMMISSION ACTION: _____ **DATE:** _____

PLACE ON ZONING MAP: _____ **ORDINANCE NO.:** _____

September 5, 2024

Re: Rezoning
3918 N Kickapoo Ave
Shawnee, OK 74804

To Whom It May Concern:

I, Mike Massey, explicitly give permission for the public hearing for a rezoning on the above referenced property, and for Erika Jones to complete the necessary tasks to assist me in the rezoning process.

Sincerely,



Eight Eagles, LLC C/O Mike Massey

201300014514
Filed for Record in
POTTAWATOMIE OKLAHOMA
RAESHEL FLEWALLEN, COUNTY CLERK
08-28-2013 At 03:42 pm.
WARR DEED 187.50

Instrument PG 1 OF 2
201300014514

Return To:
Eight Eagles, LLC
65 Granada
Shawnee, OK 74804

WARRANTY DEED
(OKLAHOMA STATUTORY FORM)

File No.: **1858320-SH01 (dkb)**
Doc Stamps: **\$172.50**

Tax ID#: **0555-00-001-003-0-000-00**

That **Donald Earl Stewart and Jorun Helen Holt Stewart, Husband and Wife**, party(ies) of the first part, in consideration of the sum of TEN & NO/100-----Dollars and other valuable considerations, in hand paid, the receipt of which is hereby acknowledged, do(es) hereby, grant, bargain, sell and convey unto **Eight Eagles, LLC**, party(ies) of the second part, the following described real property and premises situated in **Pottawatomie County, State of Oklahoma**, to wit:

Lot Three (3), Block One (1), COLLEGE VIEW ADDITION, to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof.

Property Address: **3918 North Kickapoo, Shawnee, OK 74804**

Together with all the improvements thereon and the appurtenances thereunto belonging, and warrant the title to the same.

TO HAVE AND TO HOLD said described premises unto the said party(ies) of the second part, and to the heirs, successors and assigns, forever, free, clear and discharged of and from all former grants, charges, taxes, judgments, mortgages and other liens and encumbrances of whatsoever nature.

EXCEPT covenants, conditions, easements, restrictions and mineral reservations or conveyances of record.

Signed and delivered this **August 21, 2013**.

STATE OF OKLAHOMA
Pottawatomie County **50**
Documentary Stamps: **\$172**



SH1858320 / Eight Eagles, LLC

File American Title

VIEW ADDITIONAL LAND RECORDS AT
OKCOUNTYRECORDS.COM

Donald Earl Stewart
Donald Earl Stewart

Jorun Helen Holt Stewart
Jorun Helen Holt Stewart

ACKNOWLEDGMENT OKLAHOMA FORM
STATE OF _____ } CITY OF OSLO } SS:
COUNTY OF _____ } EMBASSY OF THE }
UNITED STATES OF AMERICA)

This instrument was acknowledged before me on August 21, 2013, by Donald Earl Stewart and Jorun Helen Holt Stewart, Husband and Wife.

Erin Sunde
NOTARY PUBLIC
Erin Sunde
Professional Adjudication Specialist

My Commission Expires: N/A

Mail Tax Statements To:

VIEW ADDITIONAL LAND RECORDS AT
OKCOUNTYRECORDS.COM

CERTIFICATE OF BONDED ABTRACTOR
(300 FEET RADIUS REPORT)

STATE OF OKLAHOMA)
) §:
COUNTY OF POTTAWATOMIE)

The undersigned bonded abstractor in and for POTTAWATOMIE County, State of Oklahoma, does hereby certify that the following Ownership is true and correct according to the current year's tax rolls in the office of the County Treasurer of POTTAWATOMIE County, Oklahoma, as updated by the records of the County Clerk of POTTAWATOMIE County, Oklahoma; that the owners, as reflected by said records, are based on the last conveyance or final decree of record of certain properties located within 300 feet in all directions of the following described land:

Lot Three (3), Block One (1), COLLEGE VIEW ADDITION, to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof.

and find the following owners, addresses and brief legal descriptions on the attached pages numbered from (1) to (3), both inclusive.

NOTICE TO CUSTOMERS: This report is released with the understanding that the information is strictly confidential. This report contains information from public land records only and is not to be construed as an abstract of title, opinion of title, title commitment, title insurance policy, or environmental research report. As used herein, the term "public land records" means those land records which under the recording laws of the applicable state, impart constructive notice to the third parties with respect to recorded, unreleased or record instruments memorializing legal interests in real estate. The company suggests that you contact your attorney for matters of a legal nature or legal opinion. We have exercised due care and diligence in preparing this report, however, the Abstractor does not guarantee validity of the title and acceptance of this report by the Company or person(s) for whom this report is made, constitutes agreement and confirmation of the limitation of this report.

Dated: SEPTEMBER 3, 2024 at 7:30 AM

First American Title Insurance Company

By: 

Julie Jordan
Abstractor License No. 4071
OAB Certificate of Authority # 017
File No. 2893131-OK99

OWNERSHIP LIST

ORDER NO 2893131-OK99

DATE PREPARED: September 11, 2024

EFFECTIVE DATE: August 30, 2024 at 7:30 am

OWNER	LOT	BLK	ADDITION
EIGHT EAGLES LLC C/O MIKE MASSEY 2100 E 45TH ST SHAWNEE, OK 74804-0000	3	1	COLLEGE VIEW
EIGHT EAGLES LLC C/O MIKE MASSEY 2100 E 45TH ST SHAWNEE, OK 74804-0000	2	1	COLLEGE VIEW
COHESIVE PROPERTIES LLC 12480 BRANGUS ROAD SHAWNEE, OK 74804-0000	1	1	COLLEGE VIEW
STONEBRIDGE FARMS LLC 43809 MACARTHUR ST SHAWNEE, OK 74804-0000	6	1	COLLEGE VIEW
M2 REAL ESTATE LLC 1107 MARLBORO LN NICHOLS HILLS, OK 73116-0000	5	1	COLLEGE VIEW
M2 REAL ESTATE LLC 1107 MARLBORO LN NICHOLS HILLS, OK 73116-0000	4	1	COLLEGE VIEW
ASKINS MICHAEL D & KAREN L 4003 BLAINE RD SHAWNEE, OK 74804-0000	7	1	COLLEGE VIEW AP
FLEISCHFRESSER KENNETH L & ROXANE K 3917 N AYDELOTTE SHAWNEE, OK 74804-0000	LOT 8 &; N35' LOT 9	1	COLLEGE VIEW AP
SMITH TYLER J & ASHLEY N 3915 N AYDELOTTE SHAWNEE, OK 74804-0000	S25' LOT 9 &; LOT 10 LESS S10	1	COLLEGE VIEW AP
THOMAS MILLARD JR 3913 N AYDELOTTE SHAWNEE, OK 74804-0000	S10' LOT 10 &; ALL LOT 11 &; N4.76' LOT 12	1	COLLEGE VIEW AP
FARRIS HAROLD D & JUDY M 3911 N AYDELOTTE SHAWNEE, OK 74804-0000	S55' LOT 12 &; N30' LOT 13	1	COLLEGE VIEW AP
RUEBEN PELTIER PROPERTIES LLC P O BOX 3071 SHAWNEE, OK 74802-0043	S30' LOT 13 &; ALL LOT 14	1	COLLEGE VIEW AP
WILLIAMS MATTHEW ISAAC & MARGARET ANNE WILLIAMS 3906 N AYDELOTTE AVE SHAWNEE, OK 74804-	LOT 15 &; N10' LOT 16	1	COLLEGE VIEW AP
HAZLEWOOD JOANNA G 3903 N AYDELOTTE SHAWNEE, OK 74804-0000	S60' LOT 16 &; ALL LOT 17	1	COLLEGE VIEW AP

PRESLEY KENNETH D & SHERRIE A PRESLEY FAMILY TRUST 3902 N AYDELOTTE SHAWNEE, OK 74804-	LOT 19 &; S10' LOT 20	3	COLLEGE VIEW AP
LOULA DON L & GAIL L REVOCABLE TRUST 3906 N AYDELOTTE SHAWNEE, OK 74804-0000	N55' LOT 20 &; S35' LOT 21	3	COLLEGE VIEW AP
P & F PROPERTIES LLC 12 MOHICAN CIR SHAWNEE, OK 74801-0000	N30' LOT 21 &; S60' LOT 22	3	COLLEGE VIEW AP
WALLS JOHN ROBERT 3910 N AYDELOTTE SHAWNEE, OK 74804-	N5' LT 22 &; ALL LT 23 &; S5' LOT 24	3	COLLEGE VIEW AP
BREWER LAUREL E 3912 N AYDELOTTE SHAWNEE, OK 74804-0000	N74.56' LOT 24 &; S30' LOT 25	3	COLLEGE VIEW AP
JOES RENTALS LLC 24 E AYRE SHAWNEE, OK 74804-0000	N40' LOT 25 &; S50' LOT 26	3	COLLEGE VIEW AP
OKLA BAPTIST UNIVERSITY 500 W UNIVERSITY SHAWNEE, OK 74804-0000	1 &; 2	7	COLLEGE VIEW AP
ROS SAMPHORS & RA BOU 16 N RICE RD SHAWNEE, OK 74804-0000			BEG 574.51' N SW/C NW E180' N180.49' W180' S180.49' POB. I.K.S.#14 (6-10N-4E)
AMERICAN SELF STG L L C P O BOX 13540 OKLAHOMA CITY, OK 73113-0000			BEG 375' N &; 180.07' E SW/C NW E450' N380.24' W450' S380.24' POB (6-10N-4E)
ELLIOTT ADAEZE HOLDINGS LLC 12335 N ROCKWELL AVE OKC, OK 73142-			BEG 375' N SW/C NW E50' N199.49' TH WESTERLY 50' TO A POINT ON W LINE NW TH S ALG WEST LINE TO POB (6-10N-4E)
ELLIOTT ADAEZE HOLDINGS LLC 12335 N ROCKWELL AVE OKC, OK 73142-	1	1	NORTH CREEK PLAZA
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	1	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	2	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	3	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	4	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	5	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	6	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	7	1	NORTHCREEK MANOR

NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	8	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	9	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	10	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	11	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	12	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	13	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	14	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	15	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	16	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	17	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	18	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	19	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	20	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	21	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	22	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	23	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	24	1	NORTHCREEK MANOR
NORTH CREEK MANOR ASSOCIATION P O BOX 23 SHAWNEE, OK 74802-0023	A	3	

Planning Commission

December 4, 2024
City Hall at 16 W. 9th Street, Commission
Chambers
1:30 PM

City Commission

December 16, 2024
City Hall at 16 W. 9th Street, Commission
Chambers
6:00 PM



For more information

Community Development Department
Shawnee City Hall
16 W. 9th Street
Shawnee, OK 74801
405-878-1672

PUBLIC HEARING



December 4, 2024
1:30 PM

City Hall at 16 W. 9th Street,
Commission Chambers

Project Information

Request: Request to rezone from R-1 (Low Density Residential District) to C-2 (Regional Commercial District) unit.

Applicant: Erika Jones

Location: 3918 N Kickapoo, Shawnee, OK, 74804

Legal Description:

Lot 3, Block One, College View Addition to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof.



Frequently Asked Questions

What is a Rezoning?

A Rezoning is a request to change the zoning of a property to a different zoning district. The zoning of a property determines many of the allowed uses available for development.

What is a Conditional Use Permit (CUP)?

A Conditional Use Permit (CUP) is a request for a particular use that has been classified in the Zoning Code as requiring a CUP. These uses require a thorough review because some uses could more intensely affect the area in which it is located.

Why did I receive a letter?

You own property within 300 feet of the subject property.

How do I comment on the request?

Try to attend the public hearing if you are able. Staff will also accept written comments for those who cannot attend.

What if I have questions?

Call the Community Development Dept. at 405-878-1672 or email the Community Development Director at rian.harkins@shawneeok.org.

What if I cannot attend the hearing?

Staff will accept written comments. You may also have a neighbor or friend attend the hearing to represent your interests at the meeting.

How will this request affect me?

Every property is different. Contact the Community Development Department for more information if you have concerns about any impact on you.

I am not in favor of the request, what do I do?

Attend the meetings or provide written comments if you cannot attend. Property owners within 300 feet of the subject property may also prepare a protest petition. Staff can supply information about the protest petition requirements.

NOTICE OF PUBLIC HEARING
Rezoning Request (RZ05-24)

It is hereby noticed that the City of Shawnee Planning Commission will hold a public hearing on December 4, 2024, at 1:30 p.m. in the Commission Chambers at City Hall, 16 W. 9th St, Shawnee, OK. The City of Shawnee City Commission will hold a public hearing on December 16, 2024, at 6:00 p.m. in the Commission Chambers at City Hall. The Planning Commission and City Commission will consider a rezoning request (**RZ05-24**) to rezone from R-1 (Low Density Residential District) to C-2 (Regional Commercial District) at property addressed as 3918 N Kickapoo and described as:

Lot 3, Block One, College View Addition to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof.

Public hearings will be held at the above times and dates. All residents and parties in interest shall have an opportunity to be heard regarding the request above.



RZ05-24 3918 N Kickapoo

ORDINANCE NO. _____

AN ORDINANCE CONCERNING THE ZONING CLASSIFICATION OF THE FOLLOWING DESCRIBED PROPERTY LOCATED WITHIN THE CORPORATE LIMITS OF THE CITY OF SHAWNEE, POTTAWATOMIE COUNTY, OKLAHOMA, TO-WIT: LOT THREE, BLOCK ONE, COLLEGE VIEW ADDITION TO THE CITY OF SHAWNEE, POTTAWATOMIE COUNTY, OKLAHOMA, ACCORDING TO THE RECORDED PLAT THEREOF.

FROM ZONING CLASSIFICATION R-1 (LOW DENSITY RESIDENTIAL DISTRICT) TO C-2 (REGIONAL COMMERCIAL DISTRICT), AMENDING THE OFFICIAL ZONING MAP OF THE CITY OF SHAWNEE ACCORDINGLY.

WHEREAS, pursuant to notice duly given as required by law, a public hearing conducted by the Board of Commissioners of the City of Shawnee, Oklahoma, on the 16th day of December 2024, upon an application to rezone certain properties located in the City of Shawnee, Oklahoma, from zoning classification R-1 (Low Density Residential District) to C-2 (Regional Commercial District).

WHEREAS, the Planning Commission of the City of Shawnee has conducted one or more public hearings on said application pursuant to notice as required by law and has submitted its final report and recommendation upon said application to the Board of Commissioners; and,

WHEREAS, it appears to be in the best interest of the City of Shawnee and the inhabitants thereof for said properties to be rezoned to C-2 (Regional Commercial District).

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF COMMISSIONERS OF THE CITY OF SHAWNEE, OKLAHOMA:

SECTION 1: That the following described property located in the City of Shawnee, Oklahoma, to-wit: Lot 3, Block One, College View Addition to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof, FROM ZONING CLASSIFICATION R-1 (LOW DENSITY RESIDENTIAL DISTRICT) TO C-2 (REGIONAL COMMERCIAL DISTRICT), AND AMENDING THE OFFICIAL ZONING MAP OF THE CITY OF SHAWNEE ACCORDINGLY.

PASSED AND APPROVED this _____ day of _____, 2024.

(SEAL)
ATTEST:

ERIC STEPHENS, MAYOR

LISA LASYONE, MMC, CITY CLERK

Approved as to form and legality this _____ day of _____, 2024.

JOSEPH M. VORNDRAN,
CITY ATTORNEY



Community Development Department
16 W 9th Street
Shawnee, OK 74801
shawneeok.org

Date: December 16, 2024
To: Board of City Commissioners
From: Rian Harkins, Community Development Director
Subject: Public Hearing of a request for a Conditional Use Permit for a Short Term Rental located at 40 Chickasaw Drive.
Case No. CUP05-24 | Applicant: Edward King

Background: The subject property is located at 40 Chickasaw Drive and contains approximately 0.18 acres. A Conditional Use Permit (CUP) is required to allow one (1) short term rental unit on the property.

Discussion:

Referencing the City of Shawnee Zoning Code (Code) DIVISION 14. – Administration. Section 22-605. – Conditional Use Permit. "The uses designated under the various districts herein as "conditional uses" are so classified because they could more intensely dominate the area in which they are located...." The conditional uses shall be reviewed and authorized or rejected with or without special conditions placed on the project."

In Section 22-291 of Shawnee's Unified Development Code is Table 22-291: Permitted uses in Residential Zoning Districts. The table indicates that in zoning district R-1, the use of a Short Term Rental at a single-family residential (use) is permitted subject to acquiring a Conditional Use Permit (CUP).

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Low Density Residential land use designation. R-1 is an appropriate zoning district for this land use designation. The request is in conformance with the 2040 Comprehensive Plan.

Staff completed the required public hearing notifications for this application. All property owners within a 300-foot radius from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Findings and Facts:

- Proper notification for a public hearing was served.
- The application was reviewed, and conditions are recommended.

Staff Recommendation:

Based on the review of the application and the listed Findings, staff recommends that the Planning Commission recommend to the City Commission APPROVAL of CUP05-24 to locate one (1) short term rental unit at 40 Chickasaw Drive with the following conditions:

- Acknowledgment by the applicant that the Approval of a Conditional Use Permit (CUP) does not negate or circumvent the other requirements of development as stated in the City Codes, which include the Zoning Code and the adopted Building and Fire Codes.
- Acknowledgment by the applicant that additional permits may be required and standard inspections will be conducted.
- Adherence to Section 22-199(i) of Shawnee's Unified Development Code as follows:

1. Short-term Rental. A short-term rental is defined as the rental of an existing or otherwise permitted dwelling unit, or any portion thereof, for not more than 30 days, where the owner is engaged in a contract for the rental of that specific dwelling unit or any portion thereof. In addition to a conditional use permit, accessory dwelling units must also meet the following criteria:

- a. Application and approval of a conditional use permit is required before application of the license is approved.
 - b. An annual short-term rental license may be issued to eligible applicants by the city. A short-term rental license is a privilege that may be denied, suspended, revoked, or not renewed.
 - c. Short-term rental units shall only be utilized by those individuals who are renting said units, and then only for the purposes of overnight accommodation.
 - d. Short-term rentals shall not adversely affect the residential character of the neighborhood, nor shall the use generate noise beyond what is allowed under city code, vibration, glare, odors, or other effects that unreasonably interfere with any person's enjoyment of their residence.
 - e. A licensee or guest of a short-term rental shall not use or allow the use of sound equipment, amplified music, and musical instruments.
 - f. A licensee or guest of a short-term rental shall not violate any parking ordinances of this Code. Suitable parking based on proposed occupancy must be available on-site, and the use of street parking as the primary guest parking is not allowed.
 - g. Guest occupancy limits are established for each short-term rental.
 - h. Anyone under the age of 18 is prohibited from renting a short-term rental.
 - i. All short-term rental properties shall pay a license application fee and a license renewal fee, as noted in the city fee schedule.
 - j. All short-term rental properties shall be inspected by the city annually.
 - k. Short-term rental licenses shall not be transferrable.
 - l. No person shall offer or engage in a short-term rental in or on any part of the property not approved for residential occupancy. Examples include, but are not limited to, a vehicle or RV parked on the property, storage shed, trailer, garage, or any temporary structure such as a tent.
2. Short-term rental, residential; license required; compliance with applicable codes. Any fraud, material misrepresentation, or false statements contained in the attestations, required documentation, or correlating application material shall be grounds for immediate revocation of a short-term rental license. Furthermore, all requirements shall be continuously maintained throughout the duration of the permit. These requirements shall be verified as having been met through an annual inspection.
- a. No person shall manage or operate a short-term rental without an annual license, as provided herein, issued by the community development department.
 - b. Licenses for short-term rental shall expire annually on the date the license was originally granted or immediately upon change of ownership. Licenses may be renewed annually upon filing a renewal

application with the community development department.

c. No license shall be issued or renewed until the applicant verifies that tax permits have been issued by the State of Oklahoma and provides evidence that all applicable collection of taxes will take place or is taking place.

d. No license shall be issued or renewed where taxes are delinquent and are owed by the owner or operator of the property or if the property violates any section of this Code. No renewal shall be issued for a property deemed to breach this Code until such violation is resolved through final disposition of a prosecution filed in the municipal or district court or upon certification by the building code official that the property is in compliance with applicable codes

e. No short-term rental license shall be issued until a conditional use permit (CUP) has been approved by the city.

f. No person shall offer or engage in a short-term rental without complying with applicable building and fire codes.

g. Use of a short-term rental for any commercial events is prohibited. Each short-term rental shall comply with all applicable noise ordinances.

h. The number of occupants at any given time in a short-term rental unit shall not exceed the number of beds.

3. Suspension, revocation; notice and appeal; complaint process

a. A license issued may be suspended or revoked by the city for failure to pay applicable sales and/or occupancy taxes due or for violation of any section of this Code or state law.

b. Failure to renew the short-term rental license annually will require a new license application to be submitted and charged the initial fee as described in the city fee schedule.

c. A resident within 300 feet of the short-term rental may file a complaint with the city if they feel the short-term rental unit is noncompliant with the provisions of this division.

d. No license shall be suspended or revoked until the owner has been accorded written notice of the violation(s) and administrative hearing with the city.

e. The decision to suspend or revoke the license may be appealed to the city commission by filing notice thereof with the city clerk within ten days of said action.

4. Covenants, deed restrictions; overlay requirements

This division or any section therein is not intended to be construed in derogation of, or in conflict with, any restrictive covenant, deed restriction, or lease agreement that may be applicable. This division or section therein shall be subject to any applicable overlay district or provision thereof or any zoning restriction unique to a particular area or parcel.

5. Penalty Violation of Division III.Sec. 22-199.I. shall be deemed a class C offense. Each day a short-term rental is operated in violation of said section shall constitute a separate offense.

This item was heard at the December 4, 2024, Planning Commission meeting, and approval was recommended 6-0.

Financial Impact: None

Attachments: STAFF CUP05-24 40 Chickasaw Drive, CUP05-24 PC to CC Record of Action, CUP Application - 40 Chickasaw, Media Notice CUP05-24, Public Mail Out Notice CUP05-24

Staff Recommendation: Based on the Findings and Facts, staff recommends **APPROVAL** of CUP05-24



Planning Commission Meeting – 12.4.2024 – City of Shawnee, Oklahoma

Staff Report | CUP05-24 | 40 Chickasaw Drive

Date: November 14, 2024

To: Shawnee Planning Commission

From: Rian Harkins, Community Development Director

Subject: **Staff Report** - Public hearing and consideration of a request for a Conditional Use Permit (CUP) for a short term rental.
Case No. CUP05-24 | Applicant: Edward King

Background

The subject property is located at 40 Chickasaw Drive and contains approximately .18 acres. A Conditional Use Permit (CUP) is required to allow one (1) short term rental unit on the property.

Discussion

Referencing the City of Shawnee Zoning Code (Code) DIVISION 14. – Administration. Section 22-605. – Conditional Use Permit. "The uses designated under the various districts herein as "conditional uses" are so classified because they could more intensely dominate the area in which they are located..." The conditional uses shall be reviewed and authorized or rejected with or without special conditions placed on the project."

In Section 22-291 of Shawnee's Unified Development Code is Table 22-291: Permitted uses in Residential Zoning Districts. The table indicates that in zoning district R-1, the use of a Short Term Rental at a single-family residential (use) is permitted subject to acquiring a Conditional Use Permit (CUP).

The Comprehensive Plan Future Land Use Map (FLUM) indicates the subject property has a Low Density Residential land use designation. R-1 is an appropriate zoning district for this land use designation. The request is in conformance with the 2040 Comprehensive Plan.

Staff completed the required public hearing notifications for this application. All property owners within a 300 foot radius from the perimeter of the subject property were mailed a public hearing notification letter. Additionally, a notice of public hearing was published in The County Democrat weekly newspaper. A sign providing details and contact information was placed on the subject property.

Findings and Facts:

- Proper notification for a public hearing was served.

- The application was reviewed, and conditions are recommended.

Staff Recommendation:

Based on the review of the application and the listed Findings, staff recommends that the Planning Commission recommend to the City Commission APPROVAL of CUP05-24 to locate one (1) short term rental unit at 40 Chickasaw Drive with the following conditions:

- Acknowledgment by the applicant that the Approval of a Conditional Use Permit (CUP) does not negate or circumvent the other requirements of development as stated in the City Codes, which include the Zoning Code and the adopted Building and Fire Codes.
- Acknowledgment by the applicant that additional permits may be required and standard inspections will be conducted.
- Adherence to Section 22-199(i) of Shawnee's Unified Development Code as follows:

1. Short-term Rental. A short-term rental is defined as the rental of an existing or otherwise permitted dwelling unit, or any portion thereof, for not more than 30 days, where the owner is engaged in a contract for the rental of that specific dwelling unit or any portion thereof. In addition to a conditional use permit, accessory dwelling units must also meet the following criteria:

- a. Application and approval of a conditional use permit is required before application of the license is approved.
- b. An annual short-term rental license may be issued to eligible applicants by the city. A short-term rental license is a privilege that may be denied, suspended, revoked, or not renewed.
- c. Short-term rental units shall only be utilized by those individuals who are renting said units, and then only for the purposes of overnight accommodation.
- d. Short-term rentals shall not adversely affect the residential character of the neighborhood, nor shall the use generate noise beyond what is allowed under city code, vibration, glare, odors, or other effects that unreasonably interfere with any person's enjoyment of their residence.
- e. A licensee or guest of a short-term rental shall not use or allow the use of sound equipment, amplified music, and musical instruments.
- f. A licensee or guest of a short-term rental shall not violate any parking ordinances of this Code. Suitable parking based on proposed occupancy must be available on-site, and the use of street parking as the primary guest parking is not allowed.
- g. Guest occupancy limits are established for each short-term rental.
- h. Anyone under the age of 18 is prohibited from renting a short-term rental.
- i. All short-term rental properties shall pay a license application fee and a license renewal fee, as noted in the city fee schedule.
- j. All short-term rental properties shall be inspected by the city annually.
- k. Short-term rental licenses shall not be transferrable.
- l. No person shall offer or engage in a short-term rental in or on any part of the property not approved for residential occupancy. Examples include, but are not limited to, a vehicle or RV parked on the property, storage shed, trailer, garage, or any temporary structure such as a tent.

2. Short-term rental, residential; license required; compliance with applicable codes. Any fraud, material misrepresentation, or false statements contained in the attestations, required documentation, or correlating application material shall be grounds for immediate revocation of a short-term rental license. Furthermore, all requirements shall be continuously maintained throughout the duration of the permit. These requirements shall be verified as having been met through an annual inspection.

- a. No person shall manage or operate a short-term rental without an annual license, as provided herein, issued by the community development department.
- b. Licenses for short-term rental shall expire annually on the date the license was originally granted or immediately upon change of ownership. Licenses may be renewed annually upon filing a renewal application with the community development department.

- c. No license shall be issued or renewed until the applicant verifies that tax permits have been issued by the State of Oklahoma and provides evidence that all applicable collection of taxes will take place or is taking place.
 - d. No license shall be issued or renewed where taxes are delinquent and are owed by the owner or operator of the property or if the property violates any section of this Code. No renewal shall be issued for a property deemed to breach this Code until such violation is resolved through final disposition of a prosecution filed in the municipal or district court or upon certification by the building code official that the property is in compliance with applicable codes
 - e. No short-term rental license shall be issued until a conditional use permit (CUP) has been approved by the city.
 - f. No person shall offer or engage in a short-term rental without complying with applicable building and fire codes.
 - g. Use of a short-term rental for any commercial events is prohibited. Each short-term rental shall comply with all applicable noise ordinances.
 - h. The number of occupants at any given time in a short-term rental unit shall not exceed the number of beds.
3. Suspension, revocation; notice and appeal; complaint process
 - a. A license issued may be suspended or revoked by the city for failure to pay applicable sales and/or occupancy taxes due or for violation of any section of this Code or state law.
 - b. Failure to renew the short-term rental license annually will require a new license application to be submitted and charged the initial fee as described in the city fee schedule.
 - c. A resident within 300 feet of the short-term rental may file a complaint with the city if they feel the short-term rental unit is noncompliant with the provisions of this division.
 - d. No license shall be suspended or revoked until the owner has been accorded written notice of the violation(s) and administrative hearing with the city.
 - e. The decision to suspend or revoke the license may be appealed to the city commission by filing notice thereof with the city clerk within ten days of said action.
 4. Covenants, deed restrictions; overlay requirements
This division or any section therein is not intended to be construed in derogation of, or in conflict with, any restrictive covenant, deed restriction, or lease agreement that may be applicable. This division or section therein shall be subject to any applicable overlay district or provision thereof or any zoning restriction unique to a particular area or parcel.
 5. Penalty Violation of Division III.Sec. 22-199. I. shall be deemed a class C offense. Each day a short-term rental is operated in violation of said section shall constitute a separate offense.

Options:

- Recommending Approval of Case No. CUP05-24 to to allow for one short term rental unit as requested by the applicant.
- Recommending Denial of the application for CUP05-24.
- Recommending Deferral Case No. CUP05-24 with a request for additional and specific information to a certain date.

Recommendation: Based on the Findings and Facts, staff recommends that the Planning Commission recommend to the City Commission **APPROVAL** of **CUP05-24**.

This CUP application will be heard at the City Commission meeting on Monday, December 16, 2024, at 6:00 pm.

RECORD OF ACTION

DATE: October 4, 2024

TO: Mayor and Board of City Commissioners -- City of Shawnee, OK

FROM: Rian Harkins, Community Development Director

SUBJECT: Record of Action by Planning Commission

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CASE NO: CUP05-24

REQUEST: Request to rezone from C-1 (Local Commercial District) to R-2 (Medium Density Residential District).

Applicant: Ed Kline

Subject Property Address: 40 Chickasaw Drive, Shawnee, OK

Legal Description: Lot 34, Block 11, Larkins Meadow 4th Addition to the City of Shawnee, Pottawatomie County, Oklahoma, according to the recorded plat thereof.

Current Zoning: R-1 Low-Density Residential **Requested Zoning:** CUP for Short Term Rental

Staff Recommendation: Approval

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Planning Commission Meeting Date: December 4, 2024

PC Recommendation: Approval

Conditions: None

Vote: 6 -- 0 -- 0

Members Present: 6

Members:	Motion	2 nd	Aye	Nay	Abstain	Comments
ALEXANDER			X			
PORTER	X		X			
JOHNSON		X	X			
REESE			X			
HAYES			X			
BARRETT(CHAIR)			X			
HEMBREE			X			

PLANNING COMMISSION APPLICATION



City of Shawnee Community Development Department

222 N. Broadway
Shawnee, OK 74801
(405) 878-1672
www.ShawneeOK.org

For Office Use Only

Case Number: _____

Project Number : _____

Date Filed: _____

Planning Commission Secretary

REQUEST:

____ Rezoning

X Conditional Use Permit

____ Rezoning w/Conditional Use Permit

____ Planned Unit Development

I, the undersigned, do hereby respectfully make application and petition to the City Commission to amend the zoning map, and to change the zoning district of the Shawnee area, from (218) 93 Shawnee District to (218) 93 Shawnee District, as hereinafter requested, and in support of this application, the following facts are shown:

PROPERTY LOCATION (STREET ADDRESS): 40 Chickasaw Dr., Shawnee

LEGAL DESCRIPTION: LARKINS MEADOW 4TH BLK 11 LOT 34

PROPERTY OWNER (S): King Quality Rentals LLC

PROPERTY AGENT (APPLICANT): Edward King

APPLICANT'S ADDRESS: 40 Chickasaw Drive

CITY: Shawnee **STATE:** OK **ZIP:** 74801

EMAIL ADDRESS: edwardking98@gmail.com

TELEPHONE NUMBER: (907) 699-6788 **CONTACT NUMBER:** (907) 696-6788

DIMENSIONS OF PROPERTY: AREA: 7,818.269 ft2 WIDTH: 65 ft
LENGTH: 120 ft FRONTAGE: 65 ft

CURRENT ZONING: R1 **CURRENT USE:** Single family residential

PROPOSED ZONING: R1 **PROPOSED USE:** Short-term rental

With the filing of this application, I acknowledge that I have been informed of off-street parking, fencing and paving requirements in regard to the zoning I have requested as witnessed by my signature.

COMPLETED APPLICATION AND ALL CORRESPONDING DOCUMENTS MUST BE RECEIVED 30 DAYS PRIOR TO MEETING TO MAKE THE AGENDA.


SIGNATURE OF APPLICANT

FOR STAFF USE ONLY

REZONING &/OR C.U.P FEE \$ 280.00

RECEIPT NO. _____

PLANNED UNIT DEVELOPMENT FEE \$ 550.00

NOTIFICATION SIGN \$ 50.00

PLANNING COMMISSION ACTION: _____ **DATE:** _____

CITY COMMISSION ACTION: _____ **DATE:** _____

PLACE ON ZONING MAP: _____ **ORDINANCE NO.:** _____

Planning Department Application Submittal Guidelines - City of Shawnee, OK

Planning Department – 222 N. Broadway Ave. – 405-878-1672

Rezoning (RZ) – Conditional Use Permits (CUP) – Planned Unit Developments (PUD)

Applicants must speak with a member of the Planning Department staff **prior** to submitting an application. Please contact the Planning Department to schedule a time to discuss your application with a staff member. Initial meetings can be over the phone, virtual, or in-person. Follow-up phone calls and emails are welcomed.

Application packages shall be submitted to the Planning Department **at least 30 days** prior to the Planning Commission meeting. Attached to these guidelines are a current Planning Commission meetings calendar and the corresponding due dates for application submittal.

The submittal package shall include **Application – Deed or Affidavit – Mailing List – Fees**

Application

The completed and signed application. Include the full legal description of the subject property – attached by separate sheet if necessary. Incomplete or unsigned applications will not be accepted or will be returned.

Deed or Affidavit

A copy of the deed of ownership or a signed affidavit from the property owner explicitly giving permission for the public hearing for a rezoning is allowed on the subject property.

Mailing List

A mailing address list of all property owners located within a 300' radius of the perimeter of the subject property lines. Multi-family uses or treatment facilities rezoning requests require a radius of 1,320 feet and increased notice time. (*see next page*)

The certified list **must be obtained** from a registered, bonded abstract company or a licensed title insurance company. The cost of obtaining the list is the applicant's responsibility.

Fees

The fees due with submittal are application and sign fees. Calls or emails to confirm are welcomed.

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Upon receipt, staff will review the submittal and contact the applicant with any questions.

In compliance with Oklahoma State Statute the notifications of a public hearing must be mailed, published, and posted not less than 20 days prior to the public hearing meeting date

- A notification of a public hearing shall be mailed to all property owners located within a 300' radius of the perimeter of the subject property lines. City staff will generate and mail the notification letters.
- A legal notice of a public hearing shall be published in a newspaper of general circulation in Shawnee. City staff will arrange for the publication.
- A sign announcing a public hearing shall be posted on the subject property by the City.

- The Planning Commission will hold a public hearing to review the rezoning/CUP/PUD request. The Planning Commission is a recommending body, so a recommendation of approval, approval with conditions, or denial will be forwarded with the application to the City Commission for review.
 - While not required, the applicant or a knowledgeable representative should plan to attend and speak at the public hearing. Legal representation is not needed.
- The City Commission will hold a public hearing and review the rezoning/CUP/PUD request along with the Planning Commission's recommendation. If you do not attend the meeting, you may contact the Planning Department after the City Commission meeting for the final decision. The City Commission typically meets the first and third Mondays of each month at 6:00 p.m.

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- When a rezoning request is for multi-family or treatment facilities, and similar facilities
 - 11 O.S. 43-106 – “ In addition to the notice required in this subsection, if the zoning change requested permits the use of treatment facilities, multiple family facilities, transitional living facilities, halfway houses and any housing or facility that may be used for medical or nonmedical detoxification as these terms are defined pursuant to Section 3-403 of Title 43A of the Oklahoma Statutes, the entity proposing the zoning change shall mail a written notice within thirty (30) days of the hearing to all real property owners within one-quarter (1/4) of a mile where the area to be affected is located...”
 - ❖ This additional notification time will affect the due date for application submittal. The typical due date is 30-days prior to the scheduled Planning Commission meeting you wish to attend. For the uses listed pursuant to 11 O.S. 43-106, the submittal due date may be 60-days prior to the public hearing meeting. Planning staff will confirm an application due date on a case-by-case basis.

Planning Applications Submittal Checklist

- _____ Meeting with Planning Department staff member
- _____ Application – completed and signed
- _____ Certified list of property owners' addresses obtained from a licensed abstract or title company
- _____ Deed or Affidavit – proof of ownership or signed permission for land use change application
- _____ Fees – The cost of the application and applicable fees are due at the time of submittal.

2022 CALENDAR YEAR

Schedule of Regular Meetings

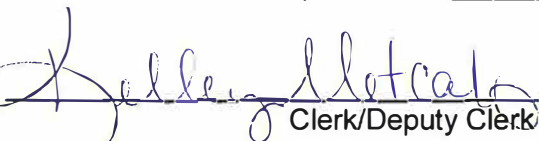
PLANNING COMMISSION, SHAWNEE, OK

<u>DATE</u>	<u>TIME</u>	<u>PLACE OF MEETING</u>
January 5, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
February 2, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
March 2, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
April 6, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
May 4, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
June 1, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
July 6, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
August 3, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
September 7, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
October 5, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
November 2, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.
December 7, 2022	1:30 PM	Commission Chambers City Hall, 16 W. 9 th St.

Rachel Clyne, City Planner
222 N Broadway Ave. Shawnee, OK 74801
405-878-1672

Filed in the office of the municipal clerk at 3:32 am/pm on December 7th, 2021.

Signed


Clerk/Deputy Clerk

2022 CALENDAR YEAR
Schedule of Regular Meetings
PLANNING COMMISSION, SHAWNEE, OK

MEETING DATES

APPLICATION DUE DATES

January 5, 2022	-----	December 6, 2021
February 2, 2022	-----	January 5, 2022
March 2, 2022	-----	February 2, 2022
April 6, 2022	-----	March 2, 2022
May 4, 2022	-----	April 6, 2022
June 1, 2022	-----	May 4, 2022
July 6, 2022	-----	June 1, 2022
August 3, 2022	-----	July 1, 2022
September 7, 2022	-----	August 1, 2022
October 5, 2022	-----	September 1, 2022
November 2, 2022	-----	October 3, 2022
December 7, 2022	-----	November 2, 2022

Publish ASAP

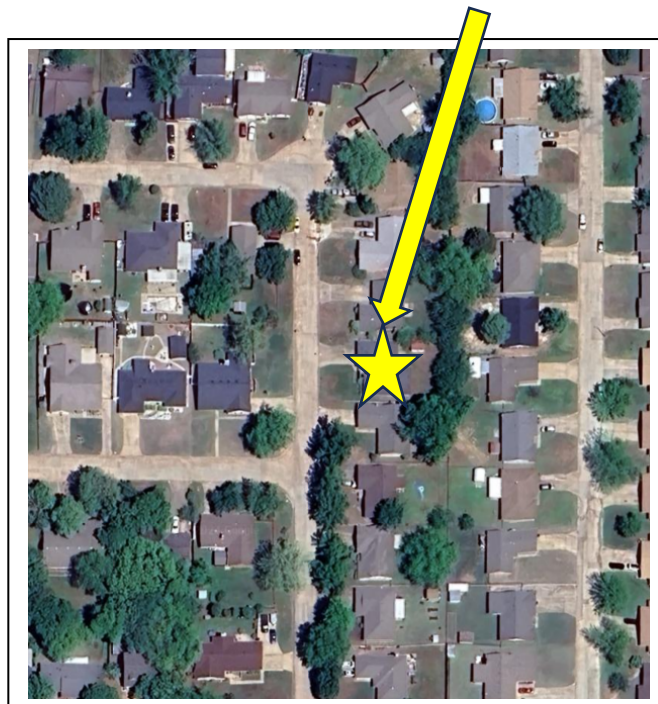
NOTICE OF PUBLIC HEARING
Conditional Use Request

It is hereby noticed that the City of Shawnee Planning Commission will hold a public hearing on December 4, 2024, at 1:30 p.m. in the Commission Chambers at City Hall, 16 W. 9th St, Shawnee, OK. The City of Shawnee City Commission will hold a public hearing on December 16, 2024, at 6:00 p.m. in the Commission Chambers at City Hall. The Planning Commission and City Commission will consider a Conditional Use Permit request to allow a short-term rental unit at property addressed as 40 Chickasaw Drive, Shawnee, OK, 74801 and described as:

LARKINS MEADOW 4TH BLK 11 LOT 34

Public hearings will be held at the above times and dates. All residents and parties in interest shall have an opportunity to be heard regarding the request above.

40 Chickasaw Drive, Shawnee, OK, 74801



Planning Commission

December 4, 2024
City Hall at 16 W. 9th Street, Commission
Chambers
1:30 PM

City Commission

December 16, 2024
City Hall at 16 W. 9th Street, Commission
Chambers
6:00 PM



For more information

Community Development Department
Shawnee City Hall
16 W. 9th Street
Shawnee, OK 74801
405-878-1672

PUBLIC HEARING



December 4, 2024
1:30 PM

City Hall at 16 W. 9th Street,
Commission Chambers

Project Information

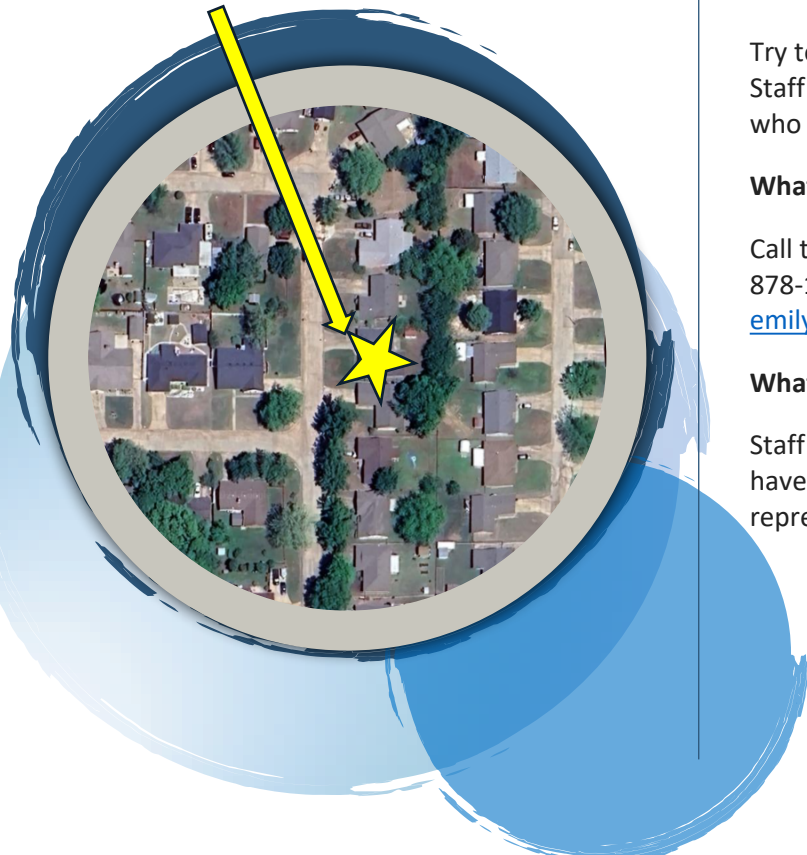
Request: Request for a Conditional Use Permit (CUP) for a single-family residence for a short-term rental unit.

Applicant: Edward King

Location: 40 Chickasaw Drive, Shawnee, OK, 74801

Legal Description:

LARKINS MEADOW 4TH BLK 11 LOT 34



Frequently Asked Questions

What is a Conditional Use Permit (CUP)?

A Conditional Use Permit (CUP) is a request for a particular use that has been classified in the Zoning Code as requiring a CUP. These uses require a thorough review because some uses could more intensely affect the area in which it is located.

Why did I receive a letter?

You own property within 300 feet of the subject property.

How do I comment on the request?

Try to attend the public hearing if you are able. Staff will also accept written comments for those who cannot attend.

What if I have questions?

Call the Community Development Dept. at 405-878-1672 or email the City Planner at emily.lisenby@shawneeok.org.

What if I cannot attend the hearing?

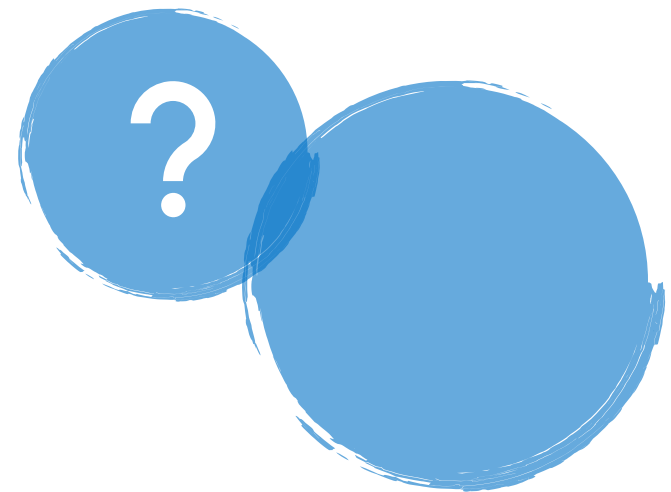
Staff will accept written comments. You may also have a neighbor or friend attend the hearing to represent your interests at the meeting.

How will this request affect me?

Every property is different. Contact the Community Development Department for more information if you have concerns about any impact on you.

I am not in favor of the request, what do I do?

Attend the meetings or provide written comments if you cannot attend. Property owners within 300 feet of the subject property may also prepare a protest petition. Staff can supply information about the protest petition requirements.





Conditional Use Permit (CUP)

ADDRESS: 40 Chickasaw Drive Shawnee, OK

CASE NUMBER: CUP05-24

USE APPROVED: One Accessory Dwelling Unit for a Short-Term Rental

CONDITIONS OF APPROVAL:

- Acknowledgment by the applicant that the Approval of a Conditional Use Permit (CUP) does not negate or circumvent the other requirements of development as stated in the City Codes, which include the Zoning Code and the adopted Building and Fire Codes.
- Acknowledgment by the applicant that additional permits may be required, and standard inspections will be conducted.
- Adherence to Section 22-297.8 of the Shawnee Zoning as follows:

(8) Accessory dwelling units (ADUs). Accessory dwelling units are designed to allow for a secondary residence which is attached to the main structure or over a current detached garage. The intent of this regulation is to allow additional options for homeowners in relation to allowing family members or renters housing while still maintaining a neighborhood feel. In addition to a conditional use permit, accessory dwelling units must also meet the following criteria:

- a. The property owner must reside in either the principal structure or the ADU.
- b. Only one ADU is allowed per lot in conjunction with a single-family house. ADUs are not allowed in conjunction with duplexes, triplexes or multifamily dwelling units.
- c. An instrument shall be recorded with the register's office covenanting that the structure is being established as an accessory dwelling unit and may only be used under the conditions expressed herein.
- d. The ADU may only be located in the established rear yard.
- e. The living space of the ADU shall not exceed 900 square feet.
- f. The footprint of a single story detached accessory dwelling shall not exceed 50 percent of the first-floor area of the principal structure.
- g. The footprint of a two-story detached accessory dwelling shall not exceed 40 percent of the first floor of the principal structure.
- h. ADUs with a second story dwelling unit shall enclose the stairs interior to the structure.
- i. The ADU shall be of similar style, design and material color and used for the principal structure and shall use similar architectural characteristics, including roof form and pitch, to the existing principal structure.
- j. A home occupation shall not be based out of the ADU.
- k. The ADU must provide, at minimum, one off-street parking space.
- l. A separate driveway providing exclusive access to the ADU from a road shall not be allowed unless problematic, lot-specific circumstances exist which requires approval from the director.
- m. The lot area shall be larger than 10,000 square feet

UPON DUE NOTICE OF THIS PUBLIC HEARING AND CONSIDERATION OF COMMENTS AND RECOMMENDATIONS OF ALL INTERESTED PARTIES, THE BOARD OF COMMISSIONERS OF THE CITY OF SHAWNEE, OKLAHOMA, DOES HEREBY AUTHORIZE THE CONDITIONAL USE OF THE LAND OR BUILDINGS TO OCCUR ON THE SUBJECT PROPERTY ACCORDING TO THE INFORMATION CONTAINED IN THE APPLICATION AND ILLUSTRATED ON THE SITE PLAN. THE USE PERMIT IS GRANTED WITH THE ABOVE-STATED CONDITIONS ON THIS _____ DAY OF _____, 20____.

ERIC STEPHENS, MAYOR
SHAWNEE CITY COMMISSION

(SEAL)

ATTEST:

LISA LASYONE, CITY CLERK



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkhimer, Director of Engineering
Subject: Lowe's Water Line Loop Replacement (Award)

Background: In January 2023, the City of Shawnee entered into a Professional Services Agreement with Burns and McDonnell for the final design of the Lowe's Water Line Replacement project. With design complete, the project was advertised, and staff opened bids on November 26, 2024.

City staff and the Burns and McDonnell design team have reviewed the bid proposals. Four (4) bids were received, and the base bids ranged from \$549,017 (low) to \$641,785 (high). The design estimate for the Base Bid, prior to the bid opening, was \$652,000.

Staff recommends awarding the base bid to Davenport Construction, who submitted the lowest bid.

Financial Impact: \$549,017; from American Rescue Plan Act (ARPA) Fund, Water Distribution, Capital Outlay-Buildings & Improvements - 304-5-1040-54200; C-23-04

Attachments: Bid Specifications, Bid Drawings, Advertisement for Bids, Addendum No. 1, Addendum No. 2, Plan Holders List, Project Award Recommendation, 154794 Lowe's Loop Bid Tab_Sealed

Staff Recommendation: Award of Contract



Burns & McDonnell
615 North Hudson, Suite 200
Oklahoma City, OK 73102
Phone: 405-200-0300
www.burnsmcd.com



Project Manual for Lowe's Water Line Loop Replacement and Extension

16 West 9th Street
Shawnee, OK 74801-6812
Project No. 154794

Rev. No. 0

ISSUED FOR BID

October 10, 2024

Burns & McDonnell: Making our clients successful for more than 100 years

Advertisement for Bids

Notice is hereby given that City of Shawnee, Oklahoma
(hereinafter called the "Owner") will receive sealed bids at 11:00 am at the City of Shawnee City Clerk's office,
Pottawatomie County, Oklahoma, until the 26th day of November, 2024, for the
construction of the Lowe's Water Line Loop Replacement and Extension project, approximately 1,200 linear of 14-inch HDPE piping.

_____.

Funding for this project is provided through American Rescue Plan Act (ARPA) grant program. As such, compliance with Labor Standards Contract Provisions is mandatory. Compliance with the Davis Bacon Act is mandatory **if the total project cost exceeds \$10,000,000 (ten million dollars).**

All bids received at said time will be opened and evaluated for completeness and correctness. All work shall be performed, and all construction and materials used and furnished shall be in accordance with the Plans and Specifications prepared by Burns & McDonnell Engineering Company, Inc., and on file in the office of Burns & McDonnell Engineering Company, Inc. Oklahoma City office.

The Bid Packet and Contract Documents for this project may be examined at the following locations:

1. Quest CDN - #9367774
2. _____
3. _____

A complete set of Plans and Specifications may be obtained by the prospective bidders at these locations upon deposit of \$22.00. Upon return of a complete set, in good condition, within 0 days after the time of bid opening, \$0.00 will be refunded.

Each bidder shall accompany his original bid, filed with the City of Shawnee City Clerk, with a certified or Cashier's Check on a solvent bank located in Oklahoma, or a Bidder's Bond, in the amount of five (5) percent of the amount bid, as a guarantee of his ability to perform the contract bid upon, and that he will enter into a written contract with the Owner to perform said work and/or furnish said materials in accordance with said Plans and Specifications, and furnish the required bonds according to the Public Competitive Bidding Act of 1974.

The Owner will retain the deposit for liquidated damages in case the successful bidder fails to enter in said contract and furnish the required bonds provided for in the specifications within the time required. Deposit of the unsuccessful bidders will be returned upon the execution of the Contract

and required bonds.

Each bidder shall accompany his bid with a sworn statement in writing that the bidder has not directly or indirectly entered into an agreement, expressed or implied, with any other bidder concerning the price or amount of such bid or any bids, the limiting of the bids or bidders, the paying to anyone any money for promotion expenses, the parceling or farming out to any bidder or bidders or other persons of any part of the contract or any part of the subject matter of the bid or of the profits thereof.

Construction, Maintenance and Statutory Payment Bonds in the amount of 100% of the contract price are required for this project. These bonds must be obtained from a Corporate Surety licensed in Oklahoma and approved by the Owner and Consulting Engineer. The bidder shall state in the proposal the name and address of the Surety or Sureties who will sign this bond in case the contract is awarded. The Maintenance Bond required will guarantee the repair of all damage due to improper materials or workmanship for a period of one (1) year after the acceptance of the work by the Owner.

This project is to be financed by the ARPA grant program managed by the Oklahoma Water Resources Board (OWRB) and shall be referred to as Project No. ARP-23 - 0015 - DPG. The following requirements and regulations must be complied with:

- A. "Equal Opportunity in Employment: All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, age or physical handicap. Bidders on this work will be required to comply with the President's Executive Order No. 11246, as amended."
- B. "Each bidder must fully comply with the requirements, terms and conditions of the Environmental Protection Agency's Disadvantaged Business Enterprise Requirements, which have been adopted for the OWRB ARPA program, and include employing the six (6) good faith efforts and soliciting disadvantaged business enterprises during the performance of this contract. Requirements are contained in OWRB's Guidance and Procedures, ARP-267. The bidder commits itself to following the good faith efforts to solicit disadvantaged business enterprises contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed bid."
- C. **If the total project cost exceeds \$10,000,000 (ten million dollars)** "Davis Bacon Act wage rules shall apply. All laborers and mechanics employed by contractors and sub-contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code and 29 CFR

parts 1,3, and 5. The Department of Labor provides all pertinent information related to compliance with labor standards, including prevailing wage rates and instructions for reporting. More information is available at <http://www.sam.gov/>” and <https://www.dol.gov/agencies/whd/government-contracts/construction>

- D. System for Award Management (SAM) registration is required for all Applicants and Awardees (Entities, Prime Contractors, Subcontractors, Vendors) in order to receive funds from the ARPA program. SAM replaced the Central Contractor Registration/Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System. Applicants and awardees are required to complete a one-time free registration to provide basic information relevant to procurement and financial transactions. On April 4, 2022, the unique entity identifier used across the federal government changed from the DUNS Number to the Unique Entity ID (generated by SAM.gov). Registrants must retain an active status to be eligible for ARPA funding. Applicants and Awardees can go to SAM.gov to complete the registration process.

The bids filed with the City of Shawnee City Clerk will be opened and considered by the Owner, at a meeting to be held in the City of Shawnee City Hall Commission Chambers Room at 11:00 am, on the 26th day of November, 2024. Bids received more than ninety-six (96) hours prior to the Bid Opening will be returned.

The contract is to be awarded to the lowest, responsive, responsible bidder. The Owner reserves the right to correct any non-material clerical errors in the bidding as allowed under Oklahoma Law. The Owner reserves the right to reject any and all bids in accordance with the Oklahoma Public Competitive Bidding Act of 1974. Conditional bids shall not be accepted.

A mandatory pre-bid conference will be held on this project at City of Shawnee City Hall Commission Chambers Room at 11:00 am on the 15th day of November, 2024.

Approved on this day of , 2024.

City Manager

Information for Bidders

Notice is hereby given that City of Shawnee (hereinafter called the "Owner") will receive sealed bids at 11:00 am at the City Clerk's office, Pottawatomie County, Oklahoma, until the 26th day of November, 2024, for the construction of the Lowe's Water Line Loop Replacement and Extension project, approximately 1,200 linear of HDPE piping.

This project is to be financed by the ARPA grant program managed by the Oklahoma Water Resources Board (OWRB) and shall be referred to as Project No. ARP-23 - 0015 - DPG. The following requirements and regulations must be complied with:

- A. "Equal Opportunity in Employment: All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, age or physical handicap Bidders on this work will be required to comply with the President's Executive Order No. 11246, as amended."
- B. " Each bidder must fully comply with the requirements, terms, and conditions of the Environmental Protection Agency's Disadvantaged Business Enterprise Requirements, which have been adopted for the OWRB ARPA program, and include employing the six (6) good faith efforts and soliciting disadvantaged business enterprises during the performance of this contract. Requirements are contained in OWRB's Guidance and Procedures, ARP-267. The bidder commits itself to following the good faith efforts to solicit disadvantaged business enterprises contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed bid."
- C. **If the total project cost exceeds \$10,000,000 (ten million dollars)** "Davis Bacon Act wage rules shall apply. All laborers and mechanics employed by contractors and sub-contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code and 29 CFR parts 1,3, and 5. The Department of Labor provides all pertinent information related to compliance with labor standards, including prevailing wage rates and instructions for reporting. More information is available at <https://www.dol.gov/agencies/whd/government-contracts/construction> and <http://www.sam.gov/>"

D. System for Award Management (SAM) registration is required for all Applicants and Awardees (Entities, Prime Contractors, Subcontractors, Vendors) in order to receive funds from the ARPA program. SAM replaced the Central Contractor Registration/Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System. Applicants and awardees are required to complete a one-time free registration to provide basic information relevant to procurement and financial transactions. On April 4, 2022, the unique entity identifier used across the federal government changed from the DUNS Number to the Unique Entity ID (generated by SAM.gov). Registrants must retain an active status to be eligible for ARPA funding. Applicants and Awardees can go to SAM.gov to complete the registration process.

Each sealed envelope containing a bid must be plainly marked on the outside as “Bid for Lowe's Water Line Loop Replacement and Extension”, and the envelope should bear on the outside the bidder's name, address, and license number (if applicable). If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the Owner at City of Shawnee City Clerk's Office - PO Box 1448, 16 West 9th St. Shawnee, OK 74802-1448.

All bids must be made on the required bid form, where all blank spaces for bid prices must be filled in, in ink or typewritten. The bid form must be fully completed and executed when submitted. Only one copy of the bid form is required. The Owner may waive any informalities or minor defects or reject any and all bids as allowed under Oklahoma Law. Any bid may be withdrawn prior to the above scheduled time for bid opening, or authorized postponement thereof. Bids received more than ninety-six (96) hours before the time specified, or those received after the time set for bid opening will not be considered and will be returned unopened. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the bidders.

Bidders must satisfy themselves of the accuracy of estimated quantities in the bid proposal by review of the Plans and Specifications, including any existing addenda, and by examination of the project site. Once a bid is submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities or the nature of work to be performed. The failure or omission of any bidder to do any of the foregoing shall in no way relieve any bidder from any obligation in respect to its bid.

Prior to bidding, the Owner shall provide to the bidders all pertinent information that delineates and describes the land owned and rights-of-way acquired or to be acquired.

The Contract Documents contain the provisions required for the construction of the product. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the contractor or relieve the contractor from fulfilling

any of the conditions of the contract.

Each bid exceeding \$100,000 must be accompanied by a Bid Bond for five percent of the total amount of the bid and payable to the Owner. A certified check may be used in lieu of the Bid Bond. As soon as the bid prices have been compared, the Owner will return the bonds of all except the three lowest responsive, responsible bidders. The bid securities of the successful bidder and the two remaining unsuccessful bidders will be returned upon Owner's approval of the successful bidder's executed certificate of insurance and construction bonds.

Construction bonds (Performance, Statutory, and Maintenance) in the amount of 100 percent with a corporate surety approved by the Owner will be required for the faithful performance of the contract. Attorneys-in-fact who sign bid and construction bonds must file with each bond a certified and effective dated copy of their Power-of-Attorney.

The Owner shall award a contract to the lowest, responsive, responsible bidder or bidders within thirty (30) calendar days after bid opening. The Owner may extend the award period not to exceed fifteen (15) calendar days by formal recorded action and for good cause. The time may be extended further by mutual agreement between the Owner and the bidder per O.S. Title 61 Section 111, Public Competitive Bidding Act of 1974 (PCBA).

The Notice of Award shall be accompanied by the necessary contract, bonds, and insurance. In the event of failure of the bidder to execute the contract, the Owner may consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.

The party to whom the contract is awarded will be required to execute the contract and obtain the construction bonds (Performance, Statutory and Maintenance) and certificate of insurance within ⁷⁵ calendar days (not to exceed 60 days) from the date when the Notice of Award is delivered to the bidder. The time may be extended further by mutual agreement between the Owner and the bidder per O.S. Title 61 Section 113 (PCBA).

With an acceptable contract, bonds and certificate of insurance signed by the party to whom the Contract was awarded, the Owner shall sign the contract and return to such party an executed duplicate. Should the Owner not execute the contract within the agreed upon period, the bidder may by written notice withdraw the signed contract. Such notice of withdrawal shall be effective upon its receipt by the Owner.

The Owner shall issue the Notice to Proceed after the execution of the contract, approval of bonds and certificate of insurance. If the Notice to Proceed has not been issued within the agreed upon period, the contractor may terminate the contract without further liability on the part of either party.

The Owner may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of such bidders fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

A conditional or qualified bid will not be accepted. Tied bids are non-restrictive, and in order for a tied bid to be accepted it must be lower than the sum of low separate bids.

All applicable laws, ordinances, rules, and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout. The successful bidder will be required to meet all requirements of the Underground Facilities Damage Prevention Act when engaged in work within public rights-of-way.

When using alternate bids, they will be listed in numerical order, with the highest priority being number one, the second highest priority being number two, etc. The lowest bidder will be determined by comparing all bids that contain the selected alternates and computing the total value of the base bid plus the alternates.

All bidders and owners shall comply with the Oklahoma PCBA of 1974.

The awarded bidder shall supply the names and addresses of all subcontractors and material suppliers when required to do so by the Owner.

To avoid bypassing of raw sewage during construction, the contractor shall use the methods and/or schedule(s) described in Section NA of these Specifications, or the method(s) and/or schedule(s) described as follows:

Not applicable.

The Contractor will be required to begin work within 10 calendar days of the date shown on the Notice to Proceed. The time for completion is 75 calendar days. Liquidated damages will be \$ 1,000 per calendar day.

In the event of a conflict between the Plans and the Specifications, the Specifications will govern.

The following items, included in this Bid Packet, shall be submitted along with the bid: Bid Proposal, Bid Bond, Non-Collusion Affidavit, Business Relationship Affidavit, Contractor's

Statement about Equal Opportunity (ARP-211), Contractor's Certificate of Non-Segregated Facilities (ARP-212), Sub-Contractor's Certificate of Non-Segregated Facilities (ARP-212a) Bidder's/Supplier's List (ARP-249), Subcontractor Performance form (ARP-6100-3), Subcontractor Utilization form (ARP-6100-4) and DBE documentation (if applicable).

The consulting engineer is Burns & McDonnell Engineering Company, Inc.. The consulting engineer's contact person for this project is Michael way, with phone number 405-401-9710.

Disadvantaged Business Enterprise Program (DBE) Guidance (ARP-267)

Important note: All OWRB ARPA information can be found at: <https://www.owrb.ok.gov/financing/grant/arpa.php>

The OWRB is administering the State of Oklahoma's ARPA funding for various wastewater and water quality projects. The ARPA program is federally funded, and one of the conditions of federal grant awards is for recipients and sub-recipients (i.e., prime contractors and subcontractors) make a good-faith effort to award a fair share of work to DBEs who are small business enterprises (SBEs), minority business enterprises (MBEs) and women's business enterprises (WBEs).

To ensure compliance with federal DBE requirements, both **Grant Recipients (Project Owners)** and **Prime Contractors** **must** undertake the good faith efforts to provide opportunities for DBE firms to participate in contracts. Federal regulations require evidence of the demonstration of the six good faith efforts in trying to achieve the DBE participation goals. The Oklahoma Department of Transportation has a Directory of Certified DBE Firms. This directory can be accessed at <https://okdot.gob2g.com/Default.asp>

Good Faith Efforts: EPA's Good Faith Efforts for the Clean Water State Revolving Fund (CWSRF) will be used for the OWRB ARPA grant program. The following good faith efforts will apply to all procurement categories involving ARPA funds (See Appendices A& B).

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For state and local government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For state and local government recipients, this will include dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
5. Use the services and assistance of the Small Business Administration (SBE) and the Minority Business Development Agency of the Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.

Please submit all information to:

Financial Assistance Division, OWRB
3800 North Classen Blvd, Oklahoma City, OK 73118
Phone: 405.530.8800, FAX: 405.530.8900
<http://www.owrb.ok.gov>

Disadvantaged Business Enterprise Program (DBE) Guidance

Demonstration of the Six Good Faith Efforts. See Appendices A & B for additional bidding instructions and contract administrative provisions.

A: Project Owners are required to create and maintain a bidders list in accordance with Subpart E of Part 33 of EPA's Disadvantaged Business Enterprise Program rule, (§ 33.501(b)). This requirement will be adopted for projects funded through the OWRB ARPA program. The list must include all firms that bid or quote on prime contracts, or bid or quote subcontracts, on competitively bid ARPA funded projects. The bidders list must only be kept until the project period for the identified grant has ended. The following information must be obtained from all prime and subcontractors and can be provided on Bidders List (ARP-249):

1. Entity's name with point of contact
2. Entity's mailing address, telephone number, and e-mail address
3. The procurement on which the entity bid or quoted, and when; and
4. Entity's status as an MBE/WBE or non-MBE/WBE

B: Project Owners are required to undertake good faith efforts. Steps 1 through 5 can be utilized during the project planning, design and/or pre-bidding phase, to assure that qualified DBE firms have procurement opportunities in construction, equipment, services, and supplies.

To provide procurement opportunities to DBE Firms, the Project Owner should undertake the following:

- Conduct pre-bid meetings to inform potential bidders/contractors about DBE requirements and provide guidance in undertaking the required good faith efforts.
- Use listings of certified DBEs from the U.S. Small Business Administration (SBA), Oklahoma Department of Transportation (ODOT), etc., to solicit DBE firms as prime contractors whenever they are potential candidates. Project Owners should advertise in minority, local and regional newspapers.
- Invite DBE firms, where appropriate, to meetings, conferences etc., to inform them of procurement opportunities and develop, where possible, reasonable contract and delivery schedules that encourage and facilitate participation by DBE's. This includes, whenever possible, a minimum of 30 calendar days for bids or request for proposals.
- Determine if a project can be broken down into smaller components/contracts to allow opportunity for DBE firms to bid both as prime-contractors and as sub-contractors.
- For projects broken down into smaller components (e.g., painting, roofing, excavation, pipe laying, etc.,) ensure that the delivery schedules are reasonable.
- Encourage DBE firms, where appropriate, to apply as a consortium of DBEs, when a contract is too large for one of these firms to handle individually.
- **Require prime contractor to complete ARP Form 6100-3 & ARP Form 6100-4** and submit with bid proposal to Project Owner.

C: Project Owners must require the prime contractor to undertake steps 1 through 5 of the Good Faith Efforts in providing DBE firms opportunity for sub-contracts.

Project Owner must provide the **DBE Guidance (ARP-267)** and associated forms to Prime Contractors for utilization of DBEs in the bidding documents.

APPENDIX A: Project Owner, Prime Contractor and Sub-Contractor Responsibilities

EPA's Disadvantaged Business Enterprise Program rule applies to contract procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. The rule is found at Federal regulation Title 40, Part 33. Specific responsibilities are highlighted below.

Project Owner Responsibilities:

- Include OWRB's DBE guidance (ARP-267) in each contract with a primary contractor.
- Employ the six Good Faith Efforts during prime contractor procurement (§33.301).
- Require prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - a) To employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).
 - b) To provide **ARP form 6100-2 – DBE Subcontractor Participation Form to all DBE subcontractors** (Optional submittal by subcontractors) (§ 33.302(e)).
 - c) To submit **ARP form 6100-3 – DBE Program Subcontractor Performance Form and ARP form 6100-4 – DBE Program Subcontractor Utilization Form with bid package or proposal.** (§ 33.302 (f) and (g)).
 - d) To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§ 33.302(a)).
 - e) To notify recipient in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor (§ 33.302(b)).
 - f) To employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
 - g) To employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
 - h) Provide Project Owner DBE participation achievements with bid proposal – this includes all information necessary for the Owner to complete the **Bidders List (ARP-249)**. The Owner may allow the prime contractor to complete the **Bidders List (ARP-249)**; however, the **Owner is responsible for review and submittal.**
- Maintain records documenting compliance with the requirements of Title 40 Part 33, including **Bidders List (ARP-249)** and documentation of the good faith efforts (§ 33.301(a)) by the project owner and prime contractor.

Prime Contractor Responsibilities:

- Employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).

- Provide **ARP form 6100-2 – DBE Program Subcontractor Participation Form** and **ARP form 6100-3 – DBE Program Subcontractor Performance Form** to each DBE subcontractor as part of the bid conference and prior to opening of the contractor's bid or proposal (§ 33.302(e) and (f)). Complete **ARP form 6100-4 – DBE Program Subcontractor Utilization Form** (§ 33.302(g))
- Submit to recipient with bid package or proposal the completed **ARP form 6100-4**, plus an **ARP form 6100-3** for each DBE subcontractor used in the contractor's bid or proposal (§ 33.302(f) and (g)).
- Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the Project Owner (§ 33.302(a)).
- Notify the recipient in writing prior to prime contractor termination of a DBE subcontractor for convenience (§ 33.302(b)).
- Employ the six good faith efforts described in (§ 33.301) if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
- Employ the six good faith efforts described in (§ 33.301) even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
- Provide Project Owner DBE participation achievements with bid proposal. This includes information necessary for Owner's completion of the **Bidders List (ARP-249)**.
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including **Bidders List (ARP-249)** and documentation of the good faith efforts (§ 33.301(a)) by the project owner and prime contractor.

Subcontractor Responsibilities:

- May submit **ARP form 6100-2 – DBE Subcontractor Participation Form** to Debra Bradford, EPA Region 6 DBE Coordinator (§ 33.302(e)). Submitted if concerns with EPA funded project (e.g., termination, late payment, etc.)
- Must complete **ARP form 6100-3 – DBE Program Subcontractor Performance Form** and submit it to the prime contractor soliciting services from the subcontractor prior to the opening of bids for the prime contract.

Summary of ARP Forms

ARP Form	Requirement	Provided By	Completed By	Submitted To
6100-2: DBE Subcontractor Participation Form	Project Owners required to have prime contractors provide form to Subcontractors	Prime Contractors to DBE Subcontractors	DBE Subcontractors if concerns with EPA funded project (e.g., termination, late payment, etc.)	EPA Region 6 DBE Coordinator, Debora Bradford
6100-3: DBE Subcontractor Performance Form	Project Owners required to have prime contractors provide form to Subcontractors	Prime Contractors to DBE Subcontractors	DBE Subcontractors with Prime Contractor's Signature. Completed when bidding on a job.	Project Owners as part of a bid or proposal package
6100-4: DBE Subcontractor Utilization Form	Project Owners required to have prime contractors complete the form	Project Owners to Prime Contractors	Prime Contractors to indicate the utilization of a DBE.	Project Owners as part of bid or proposal

APPENDIX B: TITLE 40 PART 33 SUBPART C—GOOD FAITH EFFORTS

§ 33.102 When do the requirements of this part apply?

The requirements of this part apply to procurement under ARPA Grant program agreements performed entirely within the United States, whether by a Project Owner or its prime contractor, for construction, equipment, services, and supplies.

§ 33.106 What assurances must ARPA Grant program recipients obtain from their contractors?

The recipient must ensure that each procurement contract it awards contains the term and condition specified in Appendix A to this part concerning compliance with the requirements of this part.

§ 33.206 Is there a list of certified MBEs and WBEs?

The Oklahoma Department of Transportation has a Directory of Certified DBE Firms. This database can be found at this website: <https://okdot.gob2g.com/Default.asp>.

§ 33.301 What does this subpart require?

A recipient, including one exempted from applying the fair share objective requirements by § 33.411, is required to make the following good faith efforts whenever procuring construction, equipment, services, and supplies under an ARPA Grant program agreement, even if it has achieved its fair share objectives under subpart D of this part:

- a) Ensure DBEs are made aware of contracting opportunities fully practicable through outreach and recruitment activities. For State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- b) Make information on forthcoming opportunities available to DBE's, arrange periods for contracts, and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBE's. For state and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- d) Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
- e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

§ 33.302 Are there any additional contract administration requirements?

- a) Project Owners must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient.
- b) Its prime contractor must notify Project Owner in writing prior to any termination of a DBE subcontractor for convenience by the prime contractor.
- c) If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor.
- d) A project owner must require its prime contractor to employ the six good faith efforts described in §33.301 even if the prime contractor has achieved its fair share objectives under §33.301 subpart D above.

- e) A recipient must require its prime contractor to provide **ARP Form 6100-2**—DBE Program Subcontractor Participation Form to all of its DBE subcontractors. **ARP Form 6100-2** gives a DBE subcontractor the opportunity to describe the work the DBE subcontractor received from the prime contractor, how much the DBE subcontractor was paid and any other concerns the DBE subcontractor might have, for example reasons why the DBE subcontractor believes it was terminated by the prime contractor. DBE subcontractors may send completed copies of **ARP Form 6100-2** directly to the appropriate EPA DBE Coordinator.
- f) A recipient must require its prime contractor to have its DBE subcontractors complete **ARP Form 6100-3**—DBE Program Subcontractor Performance Form. A recipient must then require its prime contractor to include all completed forms as part of the prime contractor's bid or proposal package.
- g) A recipient must require its prime contractor to complete and submit **ARP Form 6100-4**—DBE Program Subcontractor Utilization Form as part of the prime contractor's bid or proposal package.
- h) Copies of **ARP Form 6100-2**—DBE Program Subcontractor Participation Form, **ARP Form 6100-3**—DBE Program Subcontractor Performance Form and **ARP Form 6100-4**—DBE Program Subcontractor Utilization Form may be obtained from EPA OSDBU's Home Page on the Internet or directly from EPA OSDBU.
- i) A recipient must ensure that each procurement contract it awards contains the term and condition specified in the Appendix A concerning compliance with the requirements of this part. A recipient must also ensure that this term and condition is included in each procurement contract awarded by an entity receiving a grant under federal financial assistance agreement.

§ 33.410 Can a recipient be penalized for failing to meet its fair share objectives?

A recipient cannot be penalized or treated by EPA as being in noncompliance with this subpart, solely because its MBE or WBE participation does not meet its applicable fair share objective. However, EPA may take remedial action under § 33.105 for a recipient's failure to comply with other provisions of this part, including, but not limited to, the good faith efforts requirements described in subpart C of this part.

Source: *Federal Requirements and Contract Provisions for Special Appropriation Act Projects, US Environmental Protection Agency, Region III, June 2008*

**APPENDIX C: RESOURCE LISTING AND CONTACT INFORMATION
FOR UTILIZATION OF MINORITY AND WOMEN’S BUSINESS ENTERPRISES**

Resource Listing	Contact Information	Website if applicable
U.S. Small Business Administration (SBA) In addition to the national office, the SBA has local district and regional offices to assist small businesses in contracting with the public and private sector.	US Small Business Administration 409 3rd St, SW Washington DC 20416 Phone: 800-827-5722	https://www.sba.gov/
U. S. Small Business Administration (SBA) - OK. District Office	301 NW 6 th St. Oklahoma City, OK 73102 Phone: 405.609.8000	https://www.sba.gov/offices/district/ok/oklahoma-city
Minority Business Development Administration (MBDA): The MBDA is an agency within the U.S. Dept. of Commerce, created to foster the development and growth of minority businesses in the U.S. and coordinates resources in the public and private sectors to help MBEs.	1401 Constitution Ave NW Washington, D.C. 20230 Email: support@mbda.gov Phone: (202) 482-2000	http://www.mbda.gov/
Standard Industrial Classification Codes (SIC) or North American Industry Classification System (NAICS) codes visit the websites.	U.S. Bureau of Labor Statistics Postal Square Building, 2 Massachusetts Ave. NE Washington, DC 20212-0001 Phone: 1-202-691-5200	http://www.bls.gov/iag/tgs/iag_index_naics.htm
Oklahoma Department of Transportation (ODOT) and the <u>Minority/Disadvantaged Business Enterprise (ODOT – MBE/DBE)</u> . Project Owners and bidders may locate qualified M/WBE’s through the MBE/WBE Directory	200 NE 21 st Street Oklahoma City, OK 73105 Phone: 405.521.2082	https://okdot.gob2g.com/Default.asp .
US EPA Office of Small and Disadvantaged Business Utilization (OSDBU): advocates and advances the business, regulatory, and environmental compliance concerns of small and socio-economically disadvantaged businesses. The Small Business Vendor Profile System contains information of number of small and disadvantaged companies registered with OSDBU.	USEPA Office of Small Programs 1200 Pennsylvania Ave. NW Mail Code 1230T Washington, D.C. 20460 Phone: 202 566-2075	https://www.epa.gov/aboutepa/about-office-small-and-disadvantaged-business-utilization-osdbu Select “search the OSBP Registry” Click on the search criteria of interest (ethnicity, size, SIC, etc.)

National Black Chamber of Commerce	4400 Jenifer St NW #331, Washington, DC 20015 Phone: 202 466-6888 Fax: 202 466-4918 Email: info@nationalbcc.org	http://www.nationalbcc.org
U.S. Hispanic Chamber of Commerce	424 K St NW #401, Washington, DC 20005 Phone: (202) 842-1212	http://www.usbcc.com
National Association of Minority Contractors (NAMC)	910 17th Street, NW, Suite 413 Washington, DC 20006 Phone: 202.296.1600 info@namcnational.org	http://namcnational.org/
National Association of Women's Business Owners (NAWBO)	601 Pennsylvania Ave NW South Building, Ste 900 Washington, DC 20004 Phone: 800-556-2926 Fax: 202-403-3788	www.nawbo.org
National Minority Supplier Development Council, Inc. (NMSDC)	1359 Broadway, 10th Floor, Suite 1000 New York, NY 10018 Phone: (212) 944-2430 Fax: (212) 719-9611	http://www.nmsdc.org/
Native American Development Corporation (NADC) - provides technical assistance, financial lending opportunities, and champions small businesses	17 N. 26th St. Billings, MT 59101 Phone: (406) 259-3804 Fax: (406) 259-4569 Email: nadcptac@nadc-nabn.org	http://www.nadc-nabn.org/
City of Tulsa – Small Business Enterprise Program Maintains a list of Minority and Female business Enterprises that are certified through the “building Resources in Developing and Growing Enterprises	175 E. 2nd St. Tulsa, OK. 74103 Phone: (918) 596-7818	https://www.cityoftulsa.org/developmentbusiness/small-business-enterprise-program/ Click on the ‘member list”
Southwest Minority Supplier Development Council: Maintains lists of certified Minority Business Enterprises in Oklahoma	7301 Broadway Ext Ste 224, OKC, OK 73116 Phone: (405) 767-9900	http://www.smsdc.org/

National Association of Women in Construction (NAWIC)	327 S. Adams Street Fort Worth, TX 76104 Phone: 800-552-3506 817.877.5551 Fax: 817.877.0324	http://www.nawic.org/
Bureau of Indian Affairs - Maintains a list of Native American Contractors and Suppliers by Trade	P.O. Box 368 (1 Mile North on Hwy 281) Anadarko, OK 73005 Phone: (405) 247-6673 Fax: (405) 247-5611	https://www.bia.gov/as-ia/ieed/division-economic-development/native-american-business-development
Oklahoma Department of Commerce Certification Programs and information	900 N Stiles Ave. Oklahoma City, OK 73104 Phone: (405) 815-6552 Toll-Free: (800) 879-6552	https://www.okcommerce.gov/doing-business/#business-services
Cherokee Nation Tribal Employment Rights Office - Maintains a directory of Indian-owned businesses	Cherokee Nation TERO Dept. P.O. Box 948 Tahlequah, OK 74465 Phone: (918) 453-5334 or Toll Free: 800-256-0671 ext. 5334	http://cherokeetero.com/

ARP-249 BIDDERS/SUPPLIERS LIST

To be completed by Project Owner with documentation from all bidding Prime Contractors & Subcontractors
(List of **all firms** that bid or quote on **Prime Contracts** and **Subcontracts** on the project including Services and Supplies)

Project Name: Lowe's Water Line Loop Replacement and Extension

OWRB Project Number: ARP- 23 - 0015 - DPG

Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes ☐ No ☐	If utilized and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
DBE: Yes ☐ No ☐	If yes , MBE or WBE? _____ Check one: Construction ☐ Equipment ☐ Services ☐ Supplies ☐ ARP 6100-3 form is required for all DBEs that bid/quote, even if not utilized . <u>Submit with Bidders List.</u> If utilized submit the following with Bidders List: - A copy of the companies MBE or WBE certificate is required. ARP 6100-4 form is also required.

Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes ☐ No ☐	If utilized and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
DBE: Yes ☐ No ☐	If yes , MBE or WBE? _____ Check one: Construction ☐ Equipment ☐ Services ☐ Supplies ☐ ARP 6100-3 form is required for all DBEs that bid/quote, even if not utilized . <u>Submit with Bidders List.</u> If utilized submit the following with Bidders List: - A copy of the companies MBE or WBE certificate is required. ARP 6100-4 form is also required.

Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes ☐ No ☐	If utilized and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
DBE: Yes ☐ No ☐	If yes , MBE or WBE? _____ Check one: Construction ☐ Equipment ☐ Services ☐ Supplies ☐ ARP 6100-3 form is required for all DBEs that bid/quote, even if not utilized . <u>Submit with Bidders List.</u> If utilized submit the following with Bidders List: - A copy of the companies MBE or WBE certificate is required. ARP 6100-4 form is also required.

ARP-6100-2 DBE Subcontractor Participation Form

OWRB Financial Assistance Agreement Recipients must require prime contractors to provide this form to their DBE subcontractors. This form gives a DBE subcontractor the opportunity to describe work received and/or report any concerns regarding the project.

Subcontractor Name		Project Name	
Bid/Proposal No.		Point of Contact	
Address			
Telephone No.		Email address	
Prime Contractor Name		Funding entity Oklahoma Water Resources Board	

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Amount Received by Prime Contractor

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Subcontractor Signature	Print Name
Title	Date

ARP-6100-3 DBE Subcontractor Performance Form

This form is intended to capture the DBE₁ subcontractor's₂ description of work to be performed and the price of the work submitted to the prime contractor. OWRB Financial Assistance Agreement Recipients must require prime contractors to provide this form to their DBE subcontractors.

Subcontractor Name	Project Name
Bid/Proposal No.	Point of Contact
Address	
Telephone No.	Email Address
Prime Contractor Name	Funding Entity Oklahoma Water Resources Board

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: ☐ DOT ☐ SBA ☐ Other: _____		Meets/ exceeds EPA certification standards? ☐ YES ☐ NO ☐ Unknown

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

ARP-6100-4 DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE¹ subcontractors² and the estimated dollar amount of each subcontract. OWRB Financial Assistance Agreement Recipients must require their prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name	Project Name
Bid/Proposal No.	Point of Contact
Address	
Telephone No.	Email address
Funding Entity Oklahoma Water Resources Board	

I have identified potential DBE certified Subcontractors	☐ YES	☐ NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt.	Currently DBE Certified?

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Bidder's Statement about: **Equal Opportunity Clause (ARP-211)**

Mark **one**:

- ☐ I have participated in previous contract(s) or subcontract(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375 or preceding Executive Orders 10925 and 11114. I have filed all reports due under the requirements contained in 40 CFR, Part C, 8.11.
- ☐ I have not participated in previous contract(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375 or preceding Executive Orders 10925 and 11114.

- ☐ I will obtain a similar statement from any proposed subcontractor(s), when appropriate.

Bidder's Statement about: **Non-Segregated Facilities (ARP-212 and ARP-212a)**

- ☐ I hereby certify that I do not and will not maintain any facilities provided for my employees in a segregated manner or permit my employees to perform their services at any location under my control where segregated facilities are maintained; and that I will obtain a similar certification prior to the award of any subcontract exceeding \$10,000 which is not exempted from the equal opportunity clause.

Bidder's Statement about: **Bonds**

- ☐ I hereby certify that I will obtain and provide a Bid Bond along with my Bid.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Performance Bond for 100% of the contract amount.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Statutory/Payment Bond for 100% of the contract amount.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Maintenance Bond for at least 1 year after construction completion, and 100% of the contract amount

Bidder's Statement about: **sam.gov registration**

Mark **one**:

- ☐ I have registered in SAM.gov and my statut is "active".
- ☐ I am not currently registered in SAM.gov, but I will be registered and holding an "active" status prior to the beginning of any construction.

- ☐ I certify that I will actively review the SAM.gov status of all of the subcontractors in this work to verify they are registered and their status is "active".

Bidder's Statement about: **Davis Bacon Act**

If the total project cost exceeds \$10,000,000 (ten million dollars):

- ☐ I hereby certify that all of my employees will be paid according to the Davis Bacon Act.

Name and Title of Prospective Prime Contractor's Representative

Signature of Prospective Prime Contractor's Representative

Name and address of Prospective Prime Contractor

AFFIDAVITS

State of _____ ss.
County of _____

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the bidder to submit the attached bid.

Non-Collusion

Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any government official or employee as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contract; or in any discussions between bidders and any government official concerning exchange of money or other value for special consideration in the letting of a contract; that the bidder/contractor had not paid, given or donated or agreed to pay, give or donate to any officer or employee of the _____ (or other entity) any money or other thing of value, either directly or indirectly in the procurement of a contract or pursuant to this bid.

Business Relationships

Affiant further states that the nature of any partnership, joint venture, or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with the architect, engineer, or other party to the project is as follows:

_____.

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the bidding company and any officer or director of the architectural or engineering firm or other party to the project is as follows:

_____.

Affiant further states that the names of all persons having any such business relationships and the positions they hold with their respective companies or firms are as follows:

_____.

If none of the business relationship herein above mentioned exists, affiant should so state.

Subscribed and sworn to before me this ____ day of _____, 20____.

Notary Public Signature

My Commission Expires: _____

CLAIM OR INVOICE AFFIDAVIT

State of _____ ss.
County of _____

The undersigned (engineer or supervisory official), of lawful age, being first duly sworn, on oath says that this (invoice, claim, or contract) is true and correct. Affiant further states that the (work, services, or materials) as shown by this invoice or claim have been (completed or supplied) in accordance with the plans, specifications, orders, or requests furnished to the affiant. Affiant further states that (s)he has made no payment, given, or donated or agreed to pay, give, or donate, either directly or indirectly, to any elected official, officer, or employee of the State of Oklahoma, of money or any other thing of value to obtain payment or the award of this contract.

Engineer/Supervisory Official signature

Subscribed and sworn to before me this ____ day of _____, 20__.

Notary Public signature

My Commission Expires: _____

NOTICE OF AWARD

Date: ____/____/____

Project: _____

Grant#: ARP-____-____-____

The _____ has considered the bid submitted by
Owner
_____ for the above referenced project in response to the
Contractor
Advertisement for Bids dated ____/____/____ and Information for Bidders. You are hereby notified
that your bid has been accepted for items in the amount of \$_____.

You are required per the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Statutory Bond, Maintenance Bond, and Certificate of Insurance within ____ calendar days from the date of this Notice. If you fail to provide these in the specified time, the Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

Owner's Authorized Representative signature

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____,
Contractor's Representative name

Authorized Representative of _____.
Contractor

Contractor's Authorized Representative signature

____/____/____
Date

AGREEMENT

This Agreement made this ____ day of _____, 20____ between _____
(hereinafter called the Owner) and _____ (hereinafter called the Contractor).

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the work for:

construction of the Lowe's Water Line Loop Replacement and Extension project, approximately 1,200 linear of HDPE piping.

2. The Contractor will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described herein.

3. The Contractor will commence the work required by the Contract documents within 10
calendar days after the date of the Notice to Proceed and will complete the same within 75
calendar days unless the period for completion is extended otherwise.

4. The Contractor agrees to perform all the work described in the Contract documents and comply with the terms therein for the sum of \$ _____ or as shown in the Bid Schedule.

5. The term "Contract documents" means and includes the following:

- | | |
|--|-------------------------------------|
| (A) Advertisement for Bids | (I) Standard Requirements |
| (B) Information for Bidders | (J) Statutory Bond |
| (C) Bid Proposal | (K) Performance Bond |
| (D) Bid Schedule | (L) Maintenance Bond |
| (E) Business Relationships Affidavit | (M) Certificate of Insurance |
| (F) Non-collusion Affidavit | (N) Notice of Award |
| (G) Bid Bond | (O) Notice to Proceed |
| (H) Agreement | (P) Change Order |
| (Q) Drawings prepared by <u>Burns & McDonnell Engineering Company, Inc.</u>
Numbers <u>1</u> through <u>6</u> and dated <u>10 / 10 / 2024</u> . | |
| (R) Specifications prepared by <u>Burns & McDonnell Engineering Company, Inc.</u> , dated <u>10 / 10 / 2024</u> . | |
| (S) ADDENDA: | |
| No. _____, dated ____ / ____ / ____ | No. _____, dated ____ / ____ / ____ |
| No. _____, dated ____ / ____ / ____ | No. _____, dated ____ / ____ / ____ |

6. The Owner will pay to the Contractor in the manner and at such times as set forth in the Standard Requirements such amounts as required by the Contract documents.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

8. It is understood that the following are also required of the Contractor in performance of this contract:

- a. Liquidated damages for failure to complete the work within the time specified shall be assessed at the rate of \$ 1,000 per day for each additional calendar day until the work is completed.
- b. Contractor shall comply with the Underground Facilities Damage Prevention Act (63 O.S. 42.1 et seq.).

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in 3 copies each of which shall be deemed an original on the date first above written.

_____ Owner's Authorized Representative	_____ Title	_____ Signature	____/____/____ Date
_____ Attested by	_____ Title	_____ Signature	____/____/____ Date
_____ Contractor's Authorized Representative	_____ Title	_____ Signature	____/____/____ Date
_____ Attested by	_____ Title	_____ Signature	____/____/____ Date

NOTICE TO PROCEED

Date: ____/____/____

Project: _____

Grant#: ARP-____-____-____

Notice is hereby given to _____ to commence work on the above
Contractor
referenced project on or before ____/____/____. In accordance with the Agreement dated
____/____/____, you are to complete the work within ____ consecutive calendar days. The date of
completion of all work is ____/____/____.

Owner's Authorized Representative signature

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by _____,
Contractor's Representative name

Authorized Representative of _____.
Contractor

Contractor's Authorized Representative signature

____/____/____
Date

**CERTIFICATE OF APPROVAL OF CONTRACTS AND BONDS BY LOCAL
ATTORNEY**

I, the undersigned _____,
the duly authorized and acting legal representative of the _____,
after careful examination of the Contract between this Entity and
_____, and the surety bonds given by the contractor in
connection with the performance of said contract, do hereby certify that:

1. Each of the aforesaid agreements has been duly executed by the proper parties thereto, acting through their duly authorized representatives.
2. Said representatives have full power and authority to execute said agreements on behalf of the respective parties named therein.
3. The foregoing contract and surety bonds, as applicable, constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Dated this ____ day of _____, 20 ____.

Attorney's signature

NONCOLLUSION AFFIDAVIT

STATE OF _____) ss.
COUNTY OF _____)

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the bidder to submit the attached bid. Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any government official or employee as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contract; or in any discussions between bidders and any government official concerning exchange of money or other value for special consideration in the letting of a contract; that the bidder/contractor had not paid, given or donated or agreed to pay, give or donate to any officer or employee of the _____ (or other entity) any money or other thing of value, either directly or indirectly in the procurement of a contract or pursuant to this bid.

Signed:

Subscribed and sworn to before me this _____ day of _____, _____.

Notary Public

My Commission Expires:

BUSINESS RELATIONSHIPS AFFIDAVIT

STATE OF _____) ss.
COUNTY OF _____)

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the bidder to submit the attached bid. Affiant further states that the nature of any partnership, joint venture, or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with the architect, engineer, or other party to the project is as follows:

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the bidding company and any officer or director of the architectural or engineering firm or other party to the project is as follows:

Affiant further states that the names of all persons having any such business relationships and the positions they hold with their respective companies or firms are as follows:

(If none of the business relationships hereinabove mentioned exist, affiant should so state.)

Signed: _____

Subscribed and sworn to before me this _____ day of _____, _____.

Notary Public

My Commission Expires:

BID BOND

KNOW ALL MEN BE THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____ of,
_____, a corporation duly organized under the laws of the
State of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto

_____,
hereinafter called the Obligee, in the sum of: _____
_____ Dollars (\$ _____), for the payment of which
sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors,
administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for _____

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a
Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be
specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such
Contract, and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of
the failure of the Principal to enter such contract and give such bond or bonds, if the Principal shall pay to the
Obligee the difference not to exceed the penalty which the Obligee may in good faith contract with another party
to perform the work covered by said bid, this obligation shall be null and void, otherwise to remain in full force and
effect.

SIGNED AND SEALED this _____ day of _____, _____.

_____	(	_____ (Seal)
	(	PRINCIPAL
	(	
WITNESS	(	_____
	(	TITLE
	(	
	(	_____ (Seal)
	(	SURETY
	(	
WITNESS	(	_____
	(	TITLE

MAINTENANCE BOND

KNOW ALL MEN BE THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____ of,
_____, a corporation duly organized under the laws of the State of
_____, hereinafter called the Surety, as Surety, are held and firmly bound unto

_____, hereinafter called
the Obligee, in the sum of _____ Dollars
(\$_____), for the payment of which sum well and truly to be made, the said Principal and the said Surety,
bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these
presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
_____, for _____,
_____, all in
compliance with the plans and specifications, therefore, made a part of said Contract and on file in the office of
_____.

NOW THEREFORE, if said Principal shall pay or cause to be paid to Obligee all damage, loss, and expense which may
result by reason of defective materials and/or workmanship in connection with said work, occurring within a period of one
(1) year after acceptance of said project by Obligee; and if Principal shall pay or cause to be paid all labor and materials,
including the prime contractor and all subcontractors; and if Principal shall save and hold Obligee harmless from all
damages, loss, and expense occasioned by, or resulting from, any failure whatsoever of said Principal, then this obligation
shall be null and void, otherwise to be and remain in full force and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said Contract and no
deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or any of them,
from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each of which shall be deemed an original,
this _____ day of _____, _____.

WITNESS AS TO PRINCIPAL

(_____
(PRINCIPAL
(_____
(BY: _____

WITNESS AS TO SURETY

(_____
(SURETY
(_____
(BY: _____
(ATTORNEY-IN-FACT

PERFORMANCE BOND

KNOW ALL MEN BE THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____ of,
_____, a corporation duly organized under the laws of the
State of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto

_____,
hereinafter called the Obligee, in the sum of
_____ Dollars (\$ _____), for the
payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs,
executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
_____, for _____,
_____,
all in compliance with the plans and specifications therefore, made a part of said Contract and on file in the office
of
_____.

NOW THEREFORE, if said Principal shall, in all particulars, well, truly and faithfully perform and abide by said
Contract and each and every covenant, condition, and part thereof, and shall fulfill all obligations resting upon
said Principal by the terms of said Contract and said specifications, and if said Principal shall protect and save
harmless said Obligee from any pecuniary loss resulting from the breach of any of the items, covenants and
conditions of said Contract resting upon said Principal, the this obligation shall be null and void, otherwise to be
and remain in full force and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said
Contract and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the
sureties, or any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each of which shall be deemed an
original, this ____ day of _____, _____.

WITNESS AS TO PRINCIPAL

(_____
(PRINCIPAL
(_____
(BY: _____

WITNESS AS TO SURETY

(_____
(SURETY
(_____
(BY: _____
(ATTORNEY-IN-FACT

STATUTORY BOND

KNOW ALL MEN BE THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____ of,
_____, a corporation duly organized under the laws of the
State of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto

_____,
hereinafter called the Obligee, in the sum of _____
_____ Dollars (\$_____),
for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves,
our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
_____, for _____
_____,
all in compliance with the plans and specifications therefore, made a part of said Contract and on file in the office
of _____.

NOW THEREFORE, if said Principal shall fail or neglect to pay all indebtedness incurred by said Principal or
subcontractors of said Principal who perform work in the performance of such contract, for labor and materials
and repairs to and parts for equipment used and consumed in the performance of said contract after the same
becomes due and payable the person, firm, or corporation entitled thereto may sue and recover on this bond, the
amount so due and unpaid.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said
Contract and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the
sureties, or any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each of which shall be deemed an
original, this _____ day of _____, _____.

WITNESS AS TO PRINCIPAL

(_____
(PRINCIPAL
(_____
(BY: _____

WITNESS AS TO SURETY

(_____
(SURETY
(_____
(BY: _____
(ATTORNEY-IN-FACT

ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	ITEM TOTAL
BB-1	MOBILIZATION	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-2	MATERIAL STORAGE & SWPPP	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-3	SOLID SLAB SODDING	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	300	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	77	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-8	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY DIRECTIONAL BORE	1,090	LF	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-9	8" PVC DR14	7	LF	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-10	6" PVC DR14	23	LF	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-11	TRENCH EXCAVATION	107	LF	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-12	EMBEDMENT AND BACKFILL	159	TON	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-13	SINGLE SHORT SERVICE (2")	3	EA	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				
BB-14	FIRE HYDRANT ASSEMBLY	2	EA	\$	\$
	<i>Dollars &</i>				<i>Cents per Pay Unit</i>
	<i>(Unit Price Bid Written in Words)</i>				

BB-15	REMOVAL OF FIRE HYDRANT	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-16	CONCRETE CURB AND GUTTER	80	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-17	REMOVE CURB AND GUTTER	80	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-18	MACHINE SAW CUT	390	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-19	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-20	6" GATE VALVE AND VALVE BOX	3	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-21	METER RELOCATION	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-22	8" GATE VALVE AND VALVE BOX	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-23	12" TAPPING SLEEVE AND VALVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-24	FITTING (CAP 12")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-25	FITTING (CAP 6")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-26	FITTING (TEE 14"x8")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-27	FITTING (TEE 14"x6")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-28	FITTING (90 DEGREE BEND 14")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-29	FITTING (45 DEGREE BEND 14")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-30	FITTING (45 DEGREE BEND 8")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-31	12" SOLID SLEEVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-32	14"X12" REDUCER	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-33	TRAFFIC STRIPE (PAINT)	60	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
TOTAL BASE BID				\$	
<i>(Unit Price Bid Written in Words)</i>					

A36	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A37	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A38	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A39	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A40	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A41	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A42	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A43	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>		
A44	\$ _____	\$ _____
	<i>Dollars &</i>	<i>Cents per Pay Unit</i>

(Unit Price Bid Written in Words)

TOTAL BASE BID

\$

ACKNOWLEDGEMENT OF ADDENDUM

Bidder hereby acknowledges receipt of the following addendum:

Addendum Number

Dated

ITEM NO.	ALTERNATE 1 ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	ITEM TOTAL
A1-1	MOBILIZATION	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-2	MATERIAL STORAGE & SWPPP	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-3	SOLID SLAB SODDING	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	1,668	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	524	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	1,167	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-8	8" PVC DR14	7	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-9	6" PVC DR14	23	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-10	TRENCH EXCAVATION	1,197	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-11	EMBEDMENT AND BACKFILL	1,955	TON	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-12	SINGLE SHORT SERVICE (2")	3	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-13	FIRE HYDRANT ASSEMBLY	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-14	REMOVAL OF FIRE HYDRANT	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-15	CONCRETE CURB AND GUTTER	730	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-16	REMOVE CURB AND GUTTER	730	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-17	MACHINE SAW CUT	1,855	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-18	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-19	6" GATE VALVE AND VALVE BOX	3	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-20	METER RELOCATION	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-21	8" GATE VALVE AND VALVE BOX	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-22	12" TAPPING SLEEVE AND VALVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-23	FITTING (CAP 12")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-24	FITTING (CAP 6")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-25	FITTING (TEE 14"x8")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-26	FITTING (TEE 14"x6")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-27	FITTING (90 DEGREE BEND 14")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-28	FITTING (45 DEGREE BEND 14")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-29	FITTING (45 DEGREE BEND 8")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-30	12" SOLID SLEEVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-31	14"X12" REDUCER	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-32	TRAFFIC STRIPE (PAINT)	440	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
TOTAL ALTERNATE 1 BID				\$	
<i>(Unit Price Bid Written in Words)</i>					

DIVISION 03 CONCRETE

SECTION 03 30 00 – CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section includes concrete and related items.

1.03 REFERENCE STANDARDS:

- A. Comply with the provisions of the following codes, specifications, and standards, except as otherwise indicated.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
 - 1. American Concrete Institute (ACI):
 - a. 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
 - b. 301 - Specifications for Structural Concrete.
 - c. 302.1R - Guide for Concrete Floor and Slab Construction.
 - d. 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete.
 - e. 305R - Guide to Hot Weather Concreting.
 - f. 306R - Guide to Cold Weather Concreting.
 - g. 308.1 - Specification for Curing Concrete.
 - h. 309R - Guide for Consolidation of Concrete.
 - i. 318 - Building Code Requirements for Structural Concrete.
 - j. 350 - Environmental Engineering Structures.
 - k. 350.1 - Tightness Testing of Environmental Concrete Structures.
 - 2. ASTM International (ASTM):
 - a. C31 REV A - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 - b. C33 - Standard Specification for Concrete Aggregates.
 - c. C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 - d. C40 - Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.
 - e. C42 - Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - f. C78 REV B - Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).
 - g. C88 - Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
 - h. C94 - Standard Specification for Ready-Mixed Concrete.
 - i. C114 - Standard Test Methods for Chemical Analysis of Hydraulic Cement.
 - j. C117 - Standard Test Method for Material Finer than 75 μ (No. 200) Sieve in Mineral Aggregates by Washing.
 - k. C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.

SECTION 03 30 00 – CONCRETE: continued

- l. C142 - Standard Test Method for Clay Lumps and Friable Particles in Aggregates.
 - m. C143/REV A - Standard Test Method for Slump of Hydraulic Cement Concrete.
 - n. C150 - Standard Specification for Portland Cement.
 - o. C157 - Standard Test Method for Length Change of Hardened Hydraulic-Cement Mortar and Concrete.
 - p. C172 REV A - Standard Practice for Sampling Freshly Mixed Concrete.
 - q. C192 - Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory.
 - r. C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - s. C233 - Standard Test Methods for Air-Entraining Admixtures for Concrete.
 - t. C260 REVA - Standard Specification for Air-Entraining Admixtures for Concrete.
 - u. C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.
 - v. C430 - Standard Test Method for Fineness of Hydraulic Cement by the 45 μ (No. 325) Sieve.
 - w. C494 - Standard Specification for Chemical Admixtures for Concrete.
 - x. C566 - Standard Test Method for Total Evaporable Moisture Content of Aggregate by Drying.
 - y. C595 - Standard Specification for Blended Hydraulic Cements.
 - z. C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - aa. C881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.
 - bb. C1107 REVA - Standard Specification for Packaged Dry, Hydraulic Cement Grout (Nonshrink).
 - cc. C1193 - Standard Guide for Use of Joint Sealants.
 - dd. C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
 - ee. C1260 - Standard Test Method for Potential Alkali Reactivity of Aggregates (Mortar-Bar Method).
 - ff. C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete.
 - gg. D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction. (Nonextruding and Resilient Bituminous Types).
 - hh. D1752 REVA - Standard Specification for Standard Specification for - Standard Specification for Preformed Sponge Rubber, Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - ii. D4832 - Standard Test Method for Preparation and Testing of Controlled Low Strength material (CLSM).
 - jj. D5084 - Standard test Method for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter.
 - kk. D6023 - Standard Test Method for Density (Unit Weight), Yield, Cement Content, and Air Content (Gravimetric) of Controlled Low-Strength Material (CLSM).
 - ll. E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers.
3. Concrete Plant Manufacturers Bureau (CPMB):
- a. 100 - Concrete Plant Standards.

SECTION 03 30 00 – CONCRETE: continued

- b. 102 - Recommended Guide Specifications for Batching Equipment and Control Systems in Concrete Batch Plants.
 - 4. Plant Mixer Manufacturers Division (PMMD):
 - a. 100 - Concrete Plant Mixer Standards.
 - 5. Federal Specification (FS):
 - a. SS-S-200 - Sealants, Joint: Two-Component, Jet-Blast-Resistant, Cold-Applied, for Portland Cement Concrete Pavement.
 - b. TT-S-227 - Sealing Compound: Elastomeric Type, Multi-Component (for Calking, Sealing, and Glazing in Buildings and Other Structures).
 - 6. National Bureau of Standards (NBS) Specifications for Scales.
 - 7. Truck Mixer Manufacturers Bureau (TMMB):
 - a. Truck Mixer, Agitator and Front Discharge Concrete Carrier Standards.
- 1.04 SUBMITTALS:
 - A. Include, but not limited to, product data and Shop Drawings of the following:
 - 1. Nonshrink grouts.
 - 2. Bentonite.
 - 3. Admixtures.
 - 4. Bonding agents.
 - 5. Curing agents.
 - 6. Expansion joint materials.
 - 7. Joint sealants.
 - 8. Waterstops.
 - B. Mill Certificates:
 - 1. Submit to Engineer a minimum of one (1) copy for each cement shipment.
 - C. Concrete Mix Design Proportions:
 - 1. Submit as specified in PART 2, Paragraph 2.01.D. - Mix Proportions, this Section.
 - 2. Submit for each mix design, including aggregate gradation data.
 - 3. Resubmit for any change in each mix design.
 - D. Production Test Reports: Submit as specified in PART 2, Paragraph 2.01.E. - Measurement of Materials, this Section.
- 1.05 QUALITY ASSURANCE (QA):
 - A. Field Testing: Shall be performed by an ACI Concrete Field Testing Technician Grade 1 under Contractor's quality control (QC) program.

PART 2 - PRODUCTS

- 2.01 CONCRETE:
 - A. Materials:
 - 1. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - b. Portland cement: ASTM C150, Type I, Type II, or Type I/II shall conform to ASTM C150.
 - c. Twenty to twenty-five percent (20-25%) fly ash shall be used as the pozzolan and be interground with the clinker in the manufacture of the cement. Fly ash shall conform to ASTM C618, Class F.

SECTION 03 30 00 – CONCRETE: continued

- (1) Fly ash may be added by Supplier as a separate ingredient provided the Supplier has scales for dispensing fly ash that meet the requirements of Paragraph 2.01.E., this Part.
- d. The maximum amount retained on the No. 325 sieve shall be ten percent (10%) as determined in accordance with ASTM C430.
- e. The maximum amount of alkalis ($\text{Na}_2\text{O} + 0.658 \text{ K}_2\text{O}$) shall be 0.60% determined in accordance with ASTM C114. A running average of three (3) Samples shall not exceed a maximum of 0.50%.
- f. Use one (1) brand of cement throughout the Project unless otherwise approved by Engineer.
- 2. Fine Aggregate:
 - a. Conform to ASTM C33.
 - b. Approved service record of three (3) years with a history indicating that the fine aggregate is not chemically reactive.
 - c. For a new fine aggregate source, or when three (3) years' approved service records are not available, or when the service records are unacceptable; the aggregate shall be evaluated for potential reactivity. Aggregate must be considered innocuous in accordance with petrographic examination by ASTM C295.
 - d. Fine aggregate considered deleterious or potentially deleterious shall not be used without approval.
 - e. Maintain fine aggregate free of ice and frozen lumps.
 - f. Fineness modulus shall be between 2.3 and 3.1.
- 3. Coarse Aggregate:
 - a. Conform to ASTM C33.
 - (1) Limits for deleterious substances and physical property requirements shall conform to Table 3 and applicable class designation 5S, 5M, or 1N.
 - b. Approved service record of three (3) years with a history indicating that the coarse aggregate is not chemically reactive.
 - c. For a new coarse-aggregate source, when three (3) years' approved service records are not available, or when the service records are unacceptable; the aggregate shall be evaluated for potential reactivity. Aggregate must be considered innocuous in accordance with petrographic examination by ASTM C295 and tests conforming to ASTM C1260.
 - d. Coarse aggregate considered deleterious or potentially deleterious shall not be used without approval.
 - e. Blast furnace slag will not be permitted.
 - f. Maintain coarse aggregate free of ice and frozen lumps.
 - g. Grading Requirements:
 - (1) Size No. 57, from 1-inch to No. 4 sieve for all concrete unless otherwise specified.
- 4. Mixing Water:
 - a. Only potable water will be acceptable.
- 5. Admixtures:
 - a. Water-Reducing Type:
 - (1) Conform to ASTM C494, Type A.
 - (2) Conform to manufacturer's recommendations for use.
 - (3) Technical assistance of the manufacturer's field representative shall be furnished upon request.
 - b. Air-Entraining Type:

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- (1) Conform to ASTM C260.
 - (2) Conform to manufacturer's recommendations for use.
 - (3) Technical assistance of the manufacturer's field representative shall be furnished upon request.
 - (4) Testing of air-entraining admixtures shall conform to ASTM C233.
 - c. Other Admixtures: Use only with Engineer's written concurrence.
 - (1) Water-Reducing, Retarding Type: Conform to ASTM C494, Type D.
 - d. Admixtures shall not contain any chloride ions.
 - e. Storage: Admixtures shall be stored in such a manner as to avoid contamination, evaporation, freezing, temperature changes, settling, or any damage which would adversely affect their characteristics.
- B. Laboratory Testing of Materials for Use in Concrete:
- 1. An approved independent testing laboratory shall be selected and paid by Contractor to perform all required laboratory tests of materials proposed for use in the production of concrete and to determine mix proportions when laboratory trial batches are required.
 - 2. Contractor shall deliver representative Samples of all proposed concrete materials to the laboratory for the following testing:
 - a. Fine Aggregate:
 - (1) ASTM C33.
 - (2) ASTM C40.
 - (3) ASTM C88.
 - (4) ASTM C117.
 - (5) ASTM C136.
 - (6) ASTM C142.
 - (7) Fineness modulus.
 - (8) ASTM C1260 or approved service records.
 - b. Coarse Aggregate:
 - (1) ASTM C33.
 - (2) ASTM C88.
 - (3) ASTM C136.
 - (4) ASTM C142.
 - (5) ASTM C1260 or approved service records.
 - c. Air-entraining admixture shall be tested conforming to ASTM C233.
 - 3. The laboratory test results shall be part of the design mix submittal specified in this PART 2, Paragraph 2.01.D. - Mix Proportions.
- C. Concrete Qualities Required:
- 1. Compressive Strength:
 - a. Minimum 28-day compressive strength = 4,500 psi for all construction unless otherwise indicated.
 - 2. Slump of concrete shall be between two and four inches (2-4") as tested in accordance with ASTM C143.
 - 3. Air Content:
 - a. 6% ±1.5% unless otherwise indicated or specified.
 - b. Testing shall be in accordance with ASTM C231.
 - 4. Water-Cement Ratio:
 - a. In addition to the aforementioned requirements, maximum water-cementitious materials ratio shall be limited as follows:
 - (1) 0.42 for all concrete unless otherwise specified.
 - 5. Chloride Ion Content:

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- a. Maximum water-soluble chloride ion content, in percent by weight of cement:
(1) 0.30 for all concrete unless otherwise specified.
 - b. Minimum Cement Content: 564 pounds per cubic yard (564 lb/yd³).
 - c. Testing shall be in accordance with ASTM C1218.
- D. Mix Proportions:
- 1. Concrete shall be homogeneous, readily placeable, uniformly workable, and finishable; proportioned to conform to ACI 211.1.
 - 2. Mix proportions for all concrete, unless otherwise specified, shall be selected preferably on the basis of field experience; but in the case where sufficient or suitable strength test data is not available, concrete shall be proportioned on the basis of laboratory trial mix design.
 - a. Field experience using test results within the preceding year, with the materials and plant to be employed may be the basis of mix proportioning, provided that not less than thirty (30) consecutive satisfactory compressive-strength (or flexural-strength) tests on concrete using the proposed materials with a similar mix are available. A compressive-strength test is defined as the average 28-day compressive strength of two (2) companion cylinders made conforming to ASTM C172 and ASTM C31 and tested conforming to ASTM C39.
 - (1) The standard deviation of compressive-strength tests shall be computed as a basis for design of the mix. The design average compressive strength shall exceed the specified strength by at least:
 - (a) 400 psi if standard deviation is less than 300 psi.
 - (b) 550 psi if standard deviation is 300 to 400 psi.
 - (c) 700 psi if standard deviation is 400 to 500 psi.
 - (d) 900 psi if standard deviation is 500 to 600 psi.
 - (e) 1,200 psi if standard deviation is greater than 600 psi.
 - (2) Submit the following test data to Engineer for approval prior to placing concrete:
 - (a) Fine Aggregate:
 - 1) Results for tests listed in Part 2, Paragraph 2.01.B.2.a.
 - (b) Coarse Aggregate:
 - 1) Results for tests listed in Part 2, Paragraph 2.01.B.2.b.
 - (c) Cement:
 - 1) Mill certificate.
 - 2) ASTM C430.
 - (d) Concrete:
 - 1) Fine and coarse aggregate, water and cement sources.
 - 2) Mix proportions, slump and air content.
 - 3) Data on thirty (30) consecutive satisfactory compressive strength tests and standard deviation calculations.
 - 4) Data on thirty (30) consecutive satisfactory dry shrinkage tests reported as required by ASTM C157. Concrete not used in liquid retaining structures or as fill material is not subject to this requirement.
 - b. Laboratory Trial Batch: When laboratory trial batches are used as a basis for determining mix proportions, all such Work shall be performed by the laboratory as specified in PART 2, Paragraph 2.01.B. - Laboratory Testing of Materials for Use in Concrete, this Section.
 - (1) Laboratory trial batches shall be used to establish a water-cement ratio, compression-strength curve with at least three (3) points, each representing

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the strength of a separate trial batch. At least one (1) point shall be above and one (1) below the strength required. Each point on the curve shall represent the average of at least three (3) cylinders tested at twenty-eight (28) days or an earlier age when approved by Engineer. The slump and air content shall be at the maximum limits specified in PART 2, Paragraph 2.01.C. - Concrete Qualities Required, this Section.

- (2) A point on the water-cement ratio, compressive-strength curve shall be selected that will provide an average compressive strength at least 1,200 psi greater than the specified minimum strength.
- (3) Laboratory trial batches shall be used to determine the drying shrinkage of concrete trial mixes. A drying shrinkage test shall be conducted for every mix design proposed for the project. Drying shrinkage tests shall be conducted including all admixtures required in proposed mix designs. Three (3) test specimens shall be prepared for each drying shrinkage test. Test specimens 4"x4"x11" prisms) shall be molded, cured, dried, and measured in accordance with ASTM C157 except with modifications listed below.
 - (a) After 7 days in the lime saturated water the specimen shall be removed and measured to determine the base length for drying shrinkage calculations. This point shall be considered day zero for time measurement. Specimens shall be immediately placed in a humidity controlled room maintained at 73°F, ±3°F and 50 percent, ±4 percent (50%, ±4%) relative humidity for the remainder of the test (21 days after day zero measurement). Final length measurement shall be conducted at 28 days after the addition of water to the cement during the mixing operations.
- (4) Submit the following test data to Engineer for approval prior to placing concrete.
 - (a) Fine Aggregate:
 - 1) Results for tests listed in PART 2, Paragraph 2.01.B.2.a.
 - (b) Coarse Aggregate:
 - 1) Results for tests listed in PART 2, Paragraph 2.01.B.2.b.
 - (c) Cement:
 - 1) Mill certificate.
 - 2) ASTM C430.
 - (d) Concrete:
 - 1) Fine and coarse aggregate, water and cement sources.
 - 2) Laboratory mix proportions, slump and air content.
 - 3) Water-cement ratio, compressive-strength curve.
 - 4) ASTM C1218.
 - 5) Drying shrinkage data as required by ASTM C157.
- 3. Mix proportions for topping course of 2-course floors or pan-filled stairs, when such courses are 2 inches or less in thickness, shall be:
 - a. Fine Aggregate: 110 pounds.
 - b. Coarse Aggregate 3/8-inch to No. 4 sieve: 220 pounds.
 - c. Cement: 94 pounds.
 - d. Water: Minimum required to obtain a 2-inch maximum slump.
 - e. Water-reducing admixture.
 - f. Submit the same test data as required for in PART 2, Paragraph 2.01.D.2.b. - Laboratory Trial Batch, this Section, except for the water-cement ratio compressive-

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- strength curve. Submit this proposed mix design to Engineer for approval prior to placing concrete.
4. Mix Proportions for Concrete for Underwater Placing (special requirements):
 - a. Fine Aggregate: Not less than forty percent (40%) natural sand.
 - b. Coarse Aggregate: 3/4-inch maximum size natural gravel.
 - c. Cement: Seven (7) sacks minimum per cubic yard.
 - d. Water: Minimum required for slump between six and eight inches (6-8").
 - e. Water-Reducing Retarder: Conform to ASTM C494, Type D, and use in sufficient amount to delay the setting time to not less than 6 hours.
 - f. Air Entrainment: Conform to ASTM C260 and use in sufficient amount to entrain 4% air $\pm 1\%$.
 - g. 28-Day Compressive Strength:
(1) Not less than 4,000 psi when tested conforming to ASTM C31 and ASTM C39.
 - h. Submit the same test data as required for in PART 2, Paragraph 2.01.D.2.b. - Laboratory Trial Batch, this Section, to the Engineer for approval prior to placing concrete.
 5. Prior to placing any concrete, the laboratory selected by Contractor shall report the results of the testing and mix designs to the following:
 - a. Engineer, electronic, one copy.
 - b. Resident Project Representative (RPR), electronic, one copy.
 - c. Contractor (copies as required).
 - d. Concrete Supplier (copies as required).
- E. Measurement of Materials:
1. General Requirements:
 - a. Conform to ACI 304R.
 - b. Beam or springless dial-type scale conforming with NBS - "Specifications for Scales."
 - c. Volumetric measurement of water shall be performed with an approved automatic valve.
 2. Concrete Plant Scale Accuracy and Calibration Frequency:
 - a. The concrete plant scales shall be accurate to $\pm 0.4\%$ of the capacity of the scale.
 - b. The scales shall be calibrated at intervals as specified in PART 3, Article 3.09 - Testing, this Section.
 3. Individual Batch Accuracy:
 - a. Cement: $\pm 1.0\%$.
 - b. Water: $\pm 1.0\%$ by volume or weight.
 - c. Aggregates: $\pm 2.0\%$.
 - d. Admixtures: $\pm 3.0\%$ by volume or weight.
 - e. Fly Ash: $\pm 1.0\%$.
- F. Mixing and Delivery:
1. Conform to ACI 304R.
 2. Cement temperature, when added to mix, shall not exceed 170°F.
 3. Adjust the amount of mix water to compensate for the moisture content of the aggregates.
 4. Concrete Plant:
 - a. Conform to "Concrete Plant Mixer Standards" of the Plant Mixer Manufacturers Division, Concrete Plant Manufacturers Bureau, and "Concrete Plant Standards" of the Concrete Plant Manufacturers Bureau.
 - b. Charge with five to ten percent (5-10%) of the mixing water both in advance and after the addition of aggregates and cement.

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- c. Charge with remaining water uniformly with the other materials.
- d. Avoid charging in excess of manufacturer's rating.
- e. Discharge mixed concrete completely prior to recharging.
- f. Mixing Time:
 - (1) Start immediately when all ingredients, except the last of the water, are in the mixer.
 - (2) Minimum mixing time shall conform with mixer manufacturer's instructions, but not be less than what is provided in Table 1:

Table 1	
Capacity of Mixer (yd ³)	Minimum Time of Mixing (seconds)
1 or less	60
2	75
3	90
4	105
5	120
6	135

- (3) Add 15 seconds of mixing time for each additional cubic yard of concrete.
5. Mixing of Concrete at Plant Off Jobsite:
- a. Mix concrete in central mixer or truck mixer. Transport in truck mixer turning at agitation speeds only.
 - b. Water added to concrete having a slump below the specified minimum shall be at Contractor's risk. If the water added produces a slump greater than the specified maximum, the concrete will be rejected. If water is added, the concrete shall be remixed for a minimum of 25 revolutions. Water shall not be added after the truck mixer has begun to discharge concrete.
 - c. Truck mixer shall conform to "Truck Mixer, Agitator, and Front Discharge Concrete Carrier Standards" of the Truck Mixer Manufacturers Bureau.
 - d. Ready-mixed concrete shall be produced and delivered conforming to ASTM C94 as applicable.
 - e. Contractor shall furnish Owner with a concrete delivery ticket for each load of concrete. The ticket shall have the following information recorded:
 - (1) Serial number of ticket.
 - (2) Time batched.
 - (3) Time arrived on jobsite.
 - (4) Amount of concrete (by volume).
 - (5) Mix number.
 - (6) Amount of all water added at jobsite by Contractor.
 - (7) Name of ready-mix batch plant.
 - (8) Date.
 - (9) Truck number.
 - (10) Name of purchaser.
6. Plant and truck mixer uniformity shall be tested according to ASTM C94. Frequency of tests shall be as specified in PART 3, this Section.

2.02 GROUT:

- A. Grout for Dry Packing:

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1. Volume: One (1) part Portland cement to two (2) parts sand.
 2. Keep water to a minimum as required for placing by the dry packing method.
 3. Place after the mixed grout has been allowed to stand for two (2) hours.
 4. The sand and cement shall be as specified for concrete.
- B. Flowable Nonshrinking Grout:
1. Required for setting handrail posts, for setting equipment recommended by the manufacturer to be set with nonshrinking grout, and in other places indicated.
 2. Grout shall be nonmetallic and conform to ASTM C1107.
 3. Prepare and place conforming to manufacturer's printed instructions.
 4. For equipment bases, the concrete surfaces shall be grit blasted or roughened with a chipping hammer prior to grouting. The foundation plates shall be cleaned of any grease, oil, paint, primers, or epoxy coatings.
 5. Grout shall be manufactured by one of the following:
 - a. L & M Construction Chemicals, Inc. - Crystex.
 - b. Five Star Products, Inc. - Five Star Grout.
 - c. Sauereisen Cements Company - Sauereisen F-100.
 - d. Euclid Chemical Company - Hi-Flow Grout.
 - e. Conspec Marketing & Manufacturing Company - Conspec 100.
 - f. Sika Corporation - Sika Grout 212.
 - g. Tamms Industries - Horn Non-Corrosive, Non-Shrink Grout.
- C. Grout for Bonding:
1. Proportion (by weight): 1 part cement to 1-1/2 parts sand.
 2. Keep water to a minimum.
- 2.03 BONDING AGENT:
- A. Provide moisture-insensitive, epoxy-resin bonding agent conforming to ASTM C881, Type V, as manufactured by one of the following:
1. Tamms Industries - Dural Bond.
 2. Euclid Chemical Company - Corr-Bond.
 3. Sika Chemical Company - Sikadur 32, HiMod.
 4. L&M Construction Chemicals, Inc. - Epobond.
 5. Master Builders, Inc. - Concreseive 1090 Liquid.
 6. Conspec Marketing and Manufacturing Company - SpecBond 100.
- 2.04 CONCRETE ACCESSORIES:
- A. PVC Waterstops:
1. 4-inch ribbed serrated thermoplastic elastomeric rubber or a thermoplastic vulcanizate (TPV) equal to one of the following:
 - a. Sika Greenstreak, Inc.- Envirostop™ TPER Style 618.
 - b. Engineer approved equal.
- B. Base Seal:
1. Thermoplastic elastomeric rubber or a thermoplastic vulcanizate (TPV) equal to one (1) of the following:
 - a. Expansion and Nonexpansion Joints:
 - (1)Sika Greenstreak, Inc. – Envirostop™ TPER Greenstreak Style 555.
 - (2)Engineer approved equal.
 1. Provide factory fabricated waterstop corner transitions and intersections leaving only straight butt joint splices for the field.

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2. Waterstops shall be provided with factory-installed hog rings at 12-inch centers along each flange.
3. Use for all locations unless otherwise specified.
- B. Plastic Waterstops:
 1. Swellable, Bentonite Waterstop:
 - a. Greenstreak, Inc. - Swellstop Profile 594 (3/4 inch by 1 inch).
 - b. CETCO Building Materials - Volclay RX 101 (3/4 inch by 1 inch).
 2. Non-swelling, Mastic/Asphaltic Waterstop:
 - a. Greenstreak, Inc. - Lockstop.
 - b. Henry Company - Synko-Flex (SF302).
 3. Provide all accessories as recommended by the manufacturer including, but not limited to, primers, adhesives, and sealants to ensure watertight construction. Install per manufacturer's written instructions and recommendations.
- C. Expansion Joints:
 1. Expansion Joint Filler: Preformed asphalt-impregnated fiber of thickness indicated and conforming to ASTM D1751. Use where indicated.
 2. Bond Breaker: Polyethylene tape or other plastic tape as recommended by sealant manufacturer.
 3. Sealant Backer Rod: Provide closed cell backer rod or other backing material as recommended by sealant manufacturer.
 4. Joint Sealants:
 - a. Multi-component sealant as follows:
 - (1) Joint Sealant - Potable Water Treatment and Storage Facilities:
 - (a) Sika Corporation: Sikaflex-2c NS.
- D. Preformed Contraction Joints:
 1. Zip Joint T-shaped plastic strip as manufactured by BoMetals, Inc., Powder Springs, Georgia.
 - a. Depth of preformed construction joint shall exceed one-quarter (1/4) of the slab thickness.

2.05 CURING AGENT:

- A. Apply to all concrete surfaces unless otherwise indicated or specified.
- B. Curing agent shall conform as follows:
 1. ASTM C309, Type 1: Use where concrete surface is not exposed to direct sunlight after placement.
 2. ASTM C309, Type 1-D: Use where slabs are exposed to direct sunlight for a period of seven (7) days minimum after placement. Curing and sealing agent with fugitive dye shall be readily distinguishable upon the concrete surface for at least four (4) hours after application but shall be inconspicuous within seven (7) days after application.
 3. ASTM C309, Type 2: Use as specified in PART 3, Article 3.05 - Hot Weather Concreting, this Section.
- C. Curing compound used on floors to be sealed, painted, tiled, topped, dampproofed, waterproofed, or covered with resilient floor covering shall be guaranteed not to interfere with application of sealer, paint, tile mortar, or tile adhesive after a 28-day curing period.
- D. Curing compound shall be VOC compliant with a maximum VOC content of 2.9 pounds per gallon (2.9 lbs/gal), or less where Project location regulations are more stringent.

PART 3 - EXECUTION

SECTION 03 30 00 – CONCRETE: continued

3.01 PREPARATION FOR CONCRETE PLACEMENT:

- A. Openings Through Concrete: Provide openings through concrete as indicated and for the proper installation of all equipment, piping, wiring, ductwork and similar items, installed under this Contract.
- B. Installation of Embedded Items:
 - 1. Provide for accurate installation of embedded items installed under this Contract.
 - 2. Securely fix floor drains in place to prevent flotation while placing concrete. Uniformly and accurately slope finish floor slab toward the drains.
 - 3. Embedded items shall be as indicated or specified, or as selected by Contractor and approved by Engineer.
 - 4. During cold weather, protect pipe sleeves, shear pockets, and blockouts from moisture which may freeze, expand, and crack the sleeve, pocket, or blockout and concrete structure.
 - 5. Grease or tape anchor bolt threads to protect from concrete splatter.
- C. Installation of Joints:
 - 1. Construction Joints:
 - a. Location:
 - (1) Locate joints, which are not indicated or specified, in conformance with ACI 318.
 - (2) Locate joints to limit the length of all concrete placements to not more than forty feet (40').
 - (3) Obtain Engineer's approval of joints located by Contractor prior to preparation of reinforcing steel drawings.
 - b. Preparation and Installation:
 - (1) Clean and break laitance or other foreign material from bonding surface.
 - (2) Tighten forms remaining in place (where applicable) to prevent seepage between forms and hardened concrete.
 - (3) Provide waterstops and shear keys as indicated or specified and as required in any new construction joint requested by Contractor.
 - c. Waterstops:
 - (1) Install in all construction joints where indicated.
 - (2) Install conforming to manufacturer's printed instructions. All joints and splices of PVC waterstop shall be one hundred percent (100%) fused. Use thermostatically controlled splicing iron as recommended by manufacturer.
 - (3) Metal waterstops shall be welded with a continuous watertight weld or bolted with a minimum contact lap of twelve inches (12").
 - 2. Expansion Joints:
 - a. Install filler, backer rod and sealant in strict conformance with manufacturer's written instructions.
 - b. Reinforcing steel shall not extend through expansion joints unless indicated otherwise.
 - c. Attach rigid joint filler to the face of the joint prior to placing adjacent concrete. The filler shall occupy the entire width of the joint.
 - d. Install sealant backer rod for sealant except where indicated to be omitted. Install bond breaker where indicated.
 - e. Clean joints surfaces immediately before application of sealant.
 - f. Install joint sealants to conform to ASTM C1193. Tool sealants to provide smooth, uniform bead with a slightly concave surface, eliminate air pockets, and insure sealant contact and adhesion with sides of joint.

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- g. Protect joints from moisture and ice during freezing.
 - 3. Contraction Joints: As specified in this PART 3, Article 3.03 - Finishing, this Section.
 - D. Cutting and Bonding to Existing Concrete:
 - 1. Cutting Existing Concrete:
 - a. Use methods and equipment that will avoid damage to adjacent parts of the structure from heavy blows or vibration.
 - b. Cut existing concrete with power concrete saw where possible to prevent spalling and chipping and to form neat, straight edge.
 - c. Remove all loose or cracked concrete resulting from cutting existing concrete, leaving only sound, undamaged concrete adjacent to new Work.
 - d. Leave access opening edges with a neat, true grout surface to the opening size indicated.
 - e. Cut reinforcing steel with sufficient length remaining (approximately thirty-eight [38] bar diameters) for bending and lapping into new construction.
 - 2. Bonding to Existing Concrete:
 - a. Roughen concrete to 1/4-inch amplitude by use of a pneumatic chipping hammer or other approved means.
 - b. Thoroughly clean the concrete surface and apply the bonding agent in accordance with manufacturer's written instructions.

3.02 PLACING OF CONCRETE:

- A. Conventional Placing:
 - 1. General Requirements:
 - a. Conform to ACI 304R.
 - b. Bonding surfaces, including reinforcement, shall be clean, free of laitance and foreign materials.
 - c. Face horizontal bonding surfaces with 1-inch thick coat of fresh "grout for bonding." Wet all other surfaces.
 - d. Place concrete on properly prepared and unfrozen subgrade and only in dewatered excavation and forms.
 - e. Use forms for all concrete except where otherwise indicated or specified.
 - f. Do not place concrete that has partially hardened or has been contaminated by foreign materials.
 - g. Prevent mud or foreign materials from entering the concrete or forms during placement operations.
 - 2. Conveying:
 - a. Convey concrete from the mixer and deposit in place by methods which will prevent the segregation or loss of materials.
 - b. Equipment for chuting, pumping, and pneumatically conveying concrete shall be of such size and design as to provide a practically continuous flow of concrete at the delivery end.
 - c. Aluminum conveying equipment shall not be used.
 - 3. Depositing:
 - a. Place concrete in continuous horizontal lifts not to exceed two feet (2'), and place concrete against bulkheads and keyways at vertical joints.
 - b. Maximum free drop of concrete and grout for bonding shall be five feet (5'), in walls ten inches (10") or less in thickness, with 1-foot additional drop allowed for each inch of wall thickness over ten inches (10"), with a maximum drop of ten feet (10').

SECTION 03 30 00 – CONCRETE: continued

- c. When vapor barrier is used, keep lapped joints closed and take precautions to avoid puncturing the barrier.
- 4. Consolidation of Concrete:
 - a. Consolidate concrete in conformance with ACI 309R. Characteristics and application of concrete vibrators shall be as set forth in Table 5.1.5.
 - b. Provide an adequate number of vibrators of sufficient capacity to keep up with the maximum rate of concrete placement. Keep on hand adequate standby equipment in good operating condition.
 - c. Vibrate concrete only until the concrete is thoroughly consolidated and the voids filled, as evidenced by the leveled appearance of the concrete at the exposed surface and the embedment of the surface aggregate.
 - d. Insert internal vibrators vertically to the full depth of the layer being placed and into the previous layer. Do not drag vibrators through the concrete. Insert and withdraw vibrator slowly with the vibrator running continuously so that no hole will be left in the concrete. Do not flow concrete from one (1) location to another by use of a vibrator.
 - e. Consolidate concrete layer to full depth when using a surface vibrator. Use thinner layers or a more powerful vibrator if necessary to achieve complete consolidation.
 - f. Use form vibrators only where sections are too thin or where sections are inaccessible for internal vibrators.
- 5. Time Requirements:
 - a. Place concrete at a sufficient rate to assure that lifts below have not taken initial set before fresh concrete is deposited.
 - b. Place concrete within forty-five (45) minutes after mixing. This period may be extended to one (1) hour and thirty (30) minutes provided that the combined air temperature, relative humidity, and wind velocity are such that the plasticity of the fresh concrete is satisfactory for placement and consolidation, and that the specified mixing water is not exceeded. Concrete which has partially set shall not be retempered but shall be discarded.
- B. Placing Concrete at Joints:
 - 1. Bed horizontal joints with one inch (1") of grout for bonding.
 - 2. Take precautions to ensure tight, well-bonded construction joints with no air pockets or voids.
 - 3. Take special precautions to avoid bending or displacing waterstop while placing concrete around it.
 - 4. Delay construction at a joint a minimum of sixteen (16) hours where placement is continued past joint, except where otherwise indicated.

3.03 FINISHING:

- A. Unformed Surfaces:
 - 1. Screed Finish:
 - a. Use as first stage for all concrete finishes.
 - b. Use as final finish on surfaces that will be covered by additional concrete, grout placement, or mortar setting bed except as otherwise specified.
 - c. Immediately after screeding, use a wood float, darby, or bullfloat to eliminate high and low spots and to embed large aggregate. This shall be done in a manner to produce even, uniform surfaces so that surface irregularities do not exceed 3/8-inch in ten feet (10') when used as final finish.
 - 2. Floated Finish:

SECTION 03 30 00 – CONCRETE: continued

- a. Use as second stage of broomed, troweled, or magnesium-troweled finish.
- b. Float with mechanical float. Hand floating will be permitted only in areas inaccessible to mechanical float.
- c. On surfaces not to receive troweled or magnesium-troweled finish, finish with wood or cork float after mechanical floating to a true uniform surface so that surface irregularities do not exceed 1/8-inch in ten feet (10'), except at floor drains.
- 3. Broomed Finish:
 - a. Use as final finish on all outdoor slabs including pavements, sidewalks, and bridge deck/intake slab.
 - b. After floated finish, draw a stiff bristle broom across the surface making uniform corrugations, perpendicular to the direction of traffic, not more than 1/16-inch deep.
- 4. Troweled Finish:
 - a. Use as final finish on inside floors and on all other unformed surfaces not otherwise indicated or specified.
 - b. Trowel with mechanical steel trowel to obtain a smooth, dense finish. Hand steel trowel shall be used in areas not accessible by mechanical trowel. The final troweling shall be done after the concrete has become hard enough so that no mortar adheres to the edge of trowel and a ringing sound is produced as the trowel passes over the surface.
 - c. Do not trowel before surface water has evaporated or has been removed with a squeegee.
 - d. Finish to a true uniform surface so that surface irregularities do not exceed 1/8-inch in ten feet (10'), except at floor drains.
 - e. Do not add sand or cement to the floor surface.
- 5. Magnesium-Troweled Finish:
 - a. Perform as specified in PART 3, Paragraph 3.03.A.4. - Troweled Finish, this Section, except use a magnesium trowel by hand instead of a steel trowel to obtain a dense, but not slick, finish.
 - b. Use where floor will receive protective coating after curing.
- 6. Contraction Joints:
 - a. Locate as indicated.
 - b. Maintain true alignment with straightedge.
 - c. Joints shall be grooved except where sawed joints are indicated.
 - (1) Slab on grade joints shall be sawed.
 - d. Grooved Joints:
 - (1) Perform during the finishing process.
 - (2) Width of groove shall not exceed 1/4-inch
 - (3) Depth of groove shall be at least 1 inch.
 - e. Sawed Joints:
 - (1) Cut joints with power blade as soon as concrete surface is firm enough to resist tearing or damage by the blade and before random shrinkage cracks can occur. (Usually required 4-12 hours after finishing.)
 - (2) Make joints approximately 1/8-inch wide with depth equal to one-quarter the slab thickness unless otherwise indicated.
 - (3) Seal where indicated with the same type sealant specified for expansion joint sealant.
- 7. Floor Flatness and Levelness:
 - a. Applicable for steel and magnesium troweled finish floors, and other floors as indicated or specified.

SECTION 03 30 00 – CONCRETE: continued

- b. Finish to a true uniform surface so that surface irregularities do not exceed 1/8-inch in 10 feet, except at floor drains.
 - c. All slabs on grade not meeting the above minimum tolerance tests shall be removed and replaced at Contractor's expense.
- B. Formed Surfaces:
 - 1. Repair surface defects as specified in PART 3, Paragraph 3.03.C. - Repair of Defective Surfaces, this Section.
 - 2. Burlap Finish:
 - a. Apply burlap surface treatment to the following formed surfaces:
 - (1) Concrete exposed to public view.
 - (2) Concrete that is to be painted.
 - b. Remove forms as soon as permitted in accordance with Section 03 10 00 - "Concrete Formwork."
 - c. Wet and fill all voids using mortar with the same sand-cement ratio as original concrete. Blend with white cement to match concrete color.
 - d. Strike off all excess mortar flush with the surface using a burlap or canvas cloth with a circular motion.
 - e. Remove all rough spots and rub with cloth to leave a surface of uniform texture and appearance.
 - f. Finish shall result in a coating of mortar that will fill all small voids and air holes, leaving a smooth surface.
 - g. Cure as specified in this PART 3, Article 3.04 - Curing, this Section.
- C. Repair of Defective Surfaces:
 - 1. Repair on concrete flat work is not acceptable. Refer to City of Thornton's General and Special Conditions.

3.04 CURING:

- A. Cure concrete by one of the following methods in accordance with ACI 308.1:
 - 1. Leaving in forms for a minimum of seven (7) days. Keep formwork wet to prevent drying of concrete surfaces.
 - 2. Using one coat of a liquid membrane forming compound as specified. Apply immediately after removal of forms (which have been continuously wet); or in case of a slab, after the concrete has been finished and is hardened sufficiently to walk on.
 - 3. Curing of concrete during hot or cold weather shall conform to PART 3 - Hot Weather Concreting and Cold Weather Concreting, this Section.

3.05 HOT WEATHER CONCRETING:

- A. Follow the recommendations of ACI 305R if any of the following conditions occur:
 - 1. When the temperature is 90°F or above.
 - 2. When the temperature is likely to rise above 90°F within the 24-hour period after concrete placement.
 - 3. When there is any combination of high air temperature, low relative humidity, and wind velocity which would impair either concrete strength or quality.
- B. Concrete shall have a maximum temperature of 85°F during placement.
- C. Dampen subgrade and forms with cool water immediately prior to placement of concrete.
- D. Protect freshly placed concrete immediately after placement so that the rate of evaporation as determined by ACI 305R (Figure 4.2) does not exceed 0.2 pounds per square foot per hour (0.2 lb/ft²/hr).

SECTION 03 30 00 – CONCRETE: continued

- E. Protect concrete with suitable insulation if rapidly decreasing nighttime temperatures occur, which would cause thermal shock to concrete placed during warm daytime temperatures.
- F. Protect the concrete with temporary wet covering during any appreciable delay between placement and finishing.
- G. Begin curing unformed surfaces immediately after finishing and continue for twenty-four (24) hours. Curing shall consist of application and maintenance of water-saturated material to all exposed surfaces; horizontal, vertical, and otherwise. After the 24-hour interval, continue curing using one of the following methods:
 - 1. Moist curing for six (6) days.
 - 2. Application of one (1) coat of curing compound as specified.
 - 3. Application and maintenance of curing paper or heat-reflecting plastic sheets for six (6) more days.
- H. Begin curing formed concrete immediately after placing. Curing shall consist of keeping forms continuously wet for twenty-four (24) hours. Thereafter, continue curing using one (1) of the following methods:
 - 1. Loosen forms and position soaker hose so that water runs down along concrete surfaces. Continue for six (6) days.
 - 2. Strip forms and apply curing compound as specified. Do not allow concrete surfaces to dry prior to application of curing compound.

3.06 COLD WEATHER CONCRETING:

- A. When the temperature is 40°F or is likely to fall below 40°F during the 24-hour period after concrete placement, follow the recommendations of ACI 306R to prevent loss of concrete strength or quality.
- B. Minimum temperature for concrete as mixed shall be as indicated on lines 2, 3, and 4 of Table 5.1 of ACI 306R. Maximum temperature for concrete as mixed shall be 10°F greater than the corresponding minimum temperature.
- C. Place and maintain concrete so that its temperature is never less than the temperature indicated on line 1 of Table 5.1 of ACI 306R. Maintain the required temperature for the time duration indicated on Tables 5.1 and 7.1 of ACI 306R.
- D. Monitor temperature of concrete in place at corners or edges of formwork as applicable.
- E. Air Heaters:
 - 1. Do not expose concrete to carbon monoxide or carbon dioxide fumes from heaters or engines.
 - 2. Oil- or coke-burning salamanders will not be permitted.
 - 3. Heaters shall be ultramatic portable heaters made by the Union Chill Mat Company or Engineer approved equal.
 - 4. Personnel shall be present at all times to maintain safe, continuous operation of heating system.
- F. Control temperature and humidity of protected concrete so that excessive drying of concrete surfaces does not occur.
- G. Calcium chloride will not be permitted as a concrete accelerator or to thaw frozen subgrade prior to concrete placement.
- H. The maximum allowable temperature drop during the first 24-hour period after protection is discontinued shall be as indicated on line 1 of Table 5.1 of ACI 306R.
- I. Cure the concrete in accordance with Chapter 10 of ACI 306R.

3.07 LOW-STRENGTH CONCRETE:

- A. Specified in Section 31 23 33.13 - "Trenching and Backfilling for Utilities."

SECTION 03 30 00 – CONCRETE: continued

- B. Low-Strength Concrete:
 - 1. Defined as either:
 - a. Concrete whose average, of any sets of three consecutive 28-day compressive strength tests, is below the required 28-day strength.
 - b. Concrete whose individual 28-day strength test (average of two [2] cylinders) is more than 500 psi below the required 28-day strength.
 - 2. Should concrete meet either definition of low-strength concrete as a minimum, the Contractor shall take the following steps:
 - a. Increase the cement content. The increase shall be based on a statistical evaluation of the strength data, the design water-cement ratio, compressive-strength curve, and acceptable mix-design literature as follows:
 - (1) If sufficient concrete has been furnished to accumulate thirty (30) tests, these should be used to establish a new target average strength in accordance with ACI 318, Section 5.3.
 - (2) If less than thirty (30) tests have been made, the new target average strength should be at least as great as the average strength used in the initial selection of the mix proportions. Increase the target average strength based on a statistical evaluation of the available strength data, the design water-cement ratio, compressive-strength curve, and acceptable mix-design literature. If the statistical average equals or exceeds the initial mix-design level, a further increase in the average level is required.
 - b. Remove and replace with acceptable concrete when the quality and location of the low-strength concrete is such that Engineer considers the strength or durability of the structure is impaired and so orders.
 - 3. Low-strength concrete shall be considered defective Work as defined in General Conditions.
- C. Potentially Low-Strength Concrete: Defined as concrete whose 7-day test (average of two [2] cylinders) is less than seventy percent (70%) of the specified minimum 28-day compressive strength.
- D. Construction delays caused by low-strength or potentially low-strength concrete shall not relieve Contractor from responsibility for late completion even though extensions of time may be granted.

3.08 SOIL-BENTONITE BACKFILL:

- A. Clean pipe and concrete to remove all soil, debris, and other materials to ensure bond between pipe and soil-bentonite.
 - 1. Obtain Engineer's approval of the area to receive soil-bentonite, prior to placement.
 - 2. Discharge soil-bentonite into the areas to be filled using means acceptable to the engineer. Restrict the rate of placement to prevent excessive lateral loads on structures, pipes, and forms. Place soil-bentonite uniformly, and at rates slow enough to allow for slurry to completely fill spaces beneath pipes and other structures.
 - 3. Place soil-bentonite in one continuous placement. Do not allow the cement-bentonite to obtain initial set or form joints.
 - 4. Repair any cracking, displacement, or other damage to cement-bentonite prior to backfilling.

3.09 MISCELLANEOUS CONCRETE ITEMS:

- A. Equipment Bases:

SECTION 03 30 00 – CONCRETE: continued

1. Construct equipment bases, pads, and foundations as indicated or, when not indicated, conforming to equipment manufacturer's requirements.
 2. Reinforce conforming to typical detail unless otherwise indicated.
 3. Equipment bases shall include concrete, reinforcing steel, formwork as required, and anchor bolts. Place grout for equipment installed under this Contract.
 4. Finish top area of bases between anchor bolts and forms with a troweled finish.
- 3.10 TESTING:
- A. Perform the following tests:
 1. Moisture content, ASTM C566. Perform this test a minimum of twice a day and adjust the amount of mix water to compensate for the moisture content of the aggregates.
 2. Prepare test cylinders conforming to ASTM C31, with not less than one (1) set of cylinders (four cylinders) from each day's placement for each one hundred cubic yards (100 yd³) or fraction thereof.
 3. Slump test conforming to ASTM C143. Perform tests on the first batch produced each day, for every fifty cubic yards (50 yd³) or fraction thereafter, and with every set of test cylinders. Additional tests shall be run when directed by Engineer.
 4. Air content test conforming to ASTM C231. Perform for first batch of day and with each set of test cylinders.
 5. The batch of concrete being tested for slump or air content shall not be placed until acceptable results are obtained.
 6. Discard concrete used for slump and air tests.
 7. Perform concrete and air temperature tests for first batch of day and with each set of test cylinders. Additional readings shall be taken when directed by Engineer.
 8. Any batch of concrete with slump or air content not in conformance with Specifications shall be rejected.
 9. Furnish slump, air content, and temperature test results to the testing laboratory for inclusion in the cylinder test reports.
 10. Concrete shrinkage tests (as described herein) shall be performed once for each one thousand cubic yards (1,000 yd³) of concrete poured. Shrinkage tests shall also be conducted for preliminary trial mixes as indicated.
 11. Prepare test cross-section beams conforming to ASTM C78 with not less than one set of test beams for testing laboratory.
 - B. Laboratory Testing of Aggregates and Concrete During Construction:
 1. An independent testing laboratory will be selected and paid by Contractor to perform the required laboratory tests and statistical evaluations of aggregates and concrete being used in the Work.
 - a. Laboratory will cure and test concrete cylinders conforming to ASTM C192 and C39, testing two (2) cylinders at seven (7) days of age and two (2) at twenty-eight (28) days of age.
 - b. Contractor shall have the right to observe all phases of concrete cylinder curing and testing. Should Contractor observe any deviations from the prescribed testing procedures that he considers detrimental to concrete strength test results, he shall immediately notify Owner in writing.
 - c. Contractor shall assist laboratory in obtaining Samples of fine and coarse aggregate for testing.
 - d. Should the test results indicate low strength concrete as defined in PART 3, Article 3.07 - Low-Strength Concrete, this Section, Contractor shall take immediate corrective action.

SECTION 03 30 00 – CONCRETE: continued

- e. Should the statistical data indicate an excessive margin of safety, the concrete mix may be modified subject to Engineer's approval.
- f. Should the material tests taken during construction indicate nonconformance with the Specifications, Contractor shall take immediate corrective action.
- C. Water Leakage Tests:
 - 1. Purpose: Determine water tightness of finished concrete intake structure.
 - 2. Testing Procedure:
 - a. Test Shall be performed in accordance with ACI 350.1-01 with the following modifications.
 - b. Testing shall meet the requirements of HST-VIO and HST-100.
 - c. Test shall be performed on intake structure.
 - d. Perform leakage tests after concrete structure is complete and capable of resisting the hydrostatic pressure of the water test. The concrete shall have achieved its full design strength (twenty-eight [28] days minimum-no exceptions).
 - e. Perform leakage test before backfill or other work that will cover concrete wall surfaces.
 - f. Install all temporary bulkheads and pipe blind flanges and close all valves and gates. Inspect each to see that it provides a complete seal.
 - g. Fill entire intake structure with water to within one foot (1') of the top of the structure.
 - h. Measure the water surface at two (2) points one-hundred eighty degrees (180°) apart, when possible, where attachments such as ladders exist, at 24-hour intervals.
 - i. Clean all soil and debris from top of exposed base slab edge and power wash for inspection of visual leak test. Heaters or burners may be used to remove standing water on the footing twenty-four (24) hours prior to visual inspection.
 - 3. Contractor shall dispose of test water in an acceptable manner.
 - 4. Repairs When Test Fails:
 - a. Repair cracks and joints visually leaking using a hydrophobic polyurethane grout injected from the outside.
 - b. Hydrophobic polyurethane shall be NSF 61 product certified.
 - c. Follow manufactures installation instructions.
 - d. Drill holes for injection ports at 45° angle to surface intersecting crack at center of wall. Start injection at lowest port. Inject polyurethane until grout appears at adjacent port before continuing to next port.
 - e. Cracks shall remain dry for twenty-four (24) hours prior to continuing the visual leak test.
 - (1) If structure continues to leak after application of polyurethane grout; dewater the structure, repair leaks and wet areas by Engineer approved means and repeat water leakage test in its entirety until the structure successfully passes the test.

3.11 REPAIR, REPLACEMENT, AND FIELD MODIFICATIONS:

- A. Embedded items and concrete that are misplaced or damaged during construction shall not be repaired, replaced, or field-modified without approval of Engineer.

3.12 – METHOD OF MEASUREMENT

Payment for "Thrust Blocks" shall be made at the unit price bid per cubic yard (CY) when identified on plans (neat cut dimensions); otherwise, considered incidental to construction of water line. The price

SECTION 03 30 00 – CONCRETE: continued

established shall be full compensation for all materials including concrete, steel reinforcement, straps, labor, tools, equipment, and incidentals necessary to complete this item of work.

3.13 – BASIS OF PAYMENT

The items measured as provided above will be paid for at the contract unit price bid:

THRUST BLOCK – to be included with associated fitting.

Such payment shall be compensation in full for furnishing all materials, labor, equipment, tools and incidentals, and for performing the work in accordance with these specifications.

END OF SECTION 03 30 00

DIVISION 31 EARTHWORK

SECTION 31 23 33.13 - TRENCHING AND BACKFILLING FOR UTILITIES

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes:
 - 1. Excavation, sheeting, bracing, and all operations necessary for the preparation of trenches for bedding of pipes and pipe appurtenances.
 - 2. Pipe embedment and encasements.
 - 3. Backfilling of trenches.
- B. Related Work Specified Elsewhere:
 - 1. DIVISION 03 - CONCRETE.
 - 2. Section 31 20 00 - "Site Preparation and Earthwork."
 - 3. Section 33 11 00 - "Pressure Pipe."

1.02 REFERENCES:

- A. Applicable Standards:
 - 1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. M147 - Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses.
 - b. T99 - The Moisture-Density Relations of Soils Using a 5.5-Pound Rammer and a 12-Inch Drop.
 - c. T104 - Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
 - 2. ASTM International (ASTM):
 - a. D4253 - Test Method for Maximum Index Density of Soils Using a Vibratory Table.
 - b. D4254 - Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
 - 3. Occupational Safety and Health Administration (OSHA):
 - a. Part 1926 - Safety and Health Regulations for Construction.
 - 4. Oklahoma Department of Transportation (ODOT):
 - a. 2019 Standard Specifications for Highway Construction.

1.03 SUBMITTALS:

- A. Includes, but not limited to, the following:
 - 1. Test results from laboratory testing of granular material and trench stabilization material.
 - 2. Steel reinforcement for concrete straddle block.
 - 3. Concrete Submittals as specified in DIVISION 03 - CONCRETE.
- B. Where selecting an option for excavation, trenching, and shoring in compliance with local, state, or federal safety regulations such as "OSHA Part 1926" or successor regulations, which require design by a registered professional engineer, submit (for information only and not for Engineer approval) the following:
 - 1. Copies of design calculations and notes for sloping, benching, support systems, shield systems, and other protective systems prepared by or under the supervision of a professional engineer legally authorized to practice in the jurisdiction where the Project is located.
 - 2. Documents provided with evidence of registered professional engineer's seal, signature, and date in accordance with appropriate state licensing requirements.

SECTION 31 23 33.13 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

PART 2 - PRODUCTS

2.01 GRANULAR PIPE EMBEDMENT:

- A. Bedding Material: The bedding material for the pipelines shall consist of clean, well-graded squeegee sand which will provide good stability. The size range of the material shall be from No. 200 minimum to 3/8-inch maximum, with a maximum amount of fines passing a No. 200 screen not to exceed 3-percent by weight.
- B. Bedding Material: Bedding material shall conform to the following limits when tested by means of laboratory sieves:

Sieve Size	Percent Passing
3/8-inch	100%
No. 8	65-100%
No. 50	10-30%
No. 100	0-10%
No. 200	0-3%

2.02 TRENCH STABILIZATION MATERIAL:

- A. Material shall be one of the following:
 - 1. 2-inch minus river-run or pit-run gravel free from clay balls, roots and organic matter, graded from course to fine, with less than 8 percent by weight passing a 1/4-inch sieve.
 - 2. As approved by the Owner and Engineer.

2.03 CONCRETE:

- A. Concrete and reinforcing steel shall conform to applicable requirements of DIVISION 03 - CONCRETE.

2.04 TRENCH BACKFILL MATERIALS:

- A. Within the City of Shawnee:
 - 1. Oklahoma Department of Transportation Aggregate Base Course Type A as specified in Section 32 11 23 – “Aggregate Base Courses.”
- B. Obtain from the following:
 - 1. Trenches and other excavations included in this Contract.
 - 2. Borrow from location off Site.
 - 3. As specified for pipe embedment.
 - 4. Combination of above.
- C. Free from organic matter, refuse, ashes, cinders, frozen, or other unsuitable material.
- D. Gravel, rock, or shale particle size limited as follows:
 - 1. Not to exceed 2 inches in greatest dimension within 12 inches of pipe or conduit and upper 18 inches of trench.
 - 2. Gravel, rock, or shale not allowed within 12 inches of buried cable.
 - 3. Maximum dimension one-half the depth of layer to be compacted in other areas.
- E. Contain sufficient fine materials to provide a dense mass free of voids and capable of satisfactory compaction.
- F. Have moisture content enabling satisfactory placement and compaction.
- G. Blended or otherwise processed to provide required gradation and obtain moisture content at time of placement of not less than 3% below or more than 3% above optimum as determined by AASHTO T99.

SECTION 31 23 33.13 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

- H. Use granular material as specified for pipe embedment under pavements, shoulders, driveways, and median strips.

PART 3 - EXECUTION

3.01 TRENCHING:

- A. Equipment and Methods:
1. Types of Equipment and methods may be at Contractor's option, where structures or other facilities are not endangered.
 2. Equipment and methods shall be subject to approval of jurisdictional agency where stability or usefulness of other facilities may be impaired.
 3. Perform by hand methods when required to save or protect trees, culverts, utilities, or other structures above or below ground.
 4. Maximum length of open trench shall be limited to 60 feet in advance and to 40 feet behind pipe installation, except as approved by Engineer.
- B. Side Walls:
1. Make vertical or slope within specified trench-width limitations below a horizontal plane 12 inches above top of pipe.
 2. Vertical or sloped as required for stability, above a horizontal plane 12 inches above top of pipe.
 3. Sheet and brace where necessary.
 4. Excavate without undercutting.
- C. Trench Depth:
1. Depth shall be sufficient to provide the minimum bedding requirements for the pipe being placed.
 2. Do not exceed the indicated depth where conditions of bottom are satisfactory.
 3. Increase depth as necessary to remove unsuitable supporting materials.
- D. Trench Bottom:
1. Protect and maintain when suitable natural materials are encountered.
 2. Remove rock fragments and materials disturbed during excavation or raveled from trench walls.
 3. Restore to proper subgrade with trench-stabilization material when overexcavated:
 - a. Payment shall be in accordance with the Unit Price stipulated in the Agreement and as approved by the Resident Project Representative.
 - b. Correct, at no additional cost to Owner, when trench is overexcavated without authority or to stabilize bottom rendered unsuitable through negligence or improper operations.
 - c. Placement of Trench Stabilization Material:
 - (1) Compact in lifts not exceeding 6-inch loose thickness:
 - (a) With pneumatic or vibratory equipment.
 - (b) To density specified for granular pipe embedment.
- E. Trench Width:
1. Excavate trench to a width which will permit satisfactory jointing of the pipe and thorough tamping of the bedding.
 2. Minimum and Maximum Trench Width:
 - a. Below a plane 12-inches above the top of the pipe:

SECTION 31 23 33.13 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

Nominal Pipe Size	Depth of Cover	Minimum Trench Width	Maximum Trench Width
6-inch Waterline	4.0' (min) 9.0' (max)	2'-6"	3'-6"
12-inch Waterline	4.5' (min) 9.0' (max)	3'-0"	4'-0"
14-inch Waterline	4.5' (min) 9.0' (max)	3'-0"	4'-6"

- b. Above plane defined in "a", no maximum limit.
 - c. Maximum trench-width limitations shall apply beginning 3 feet from manhole or structure walls.
 - d. Maximum width shall be as near the minimum specified as can be controlled by construction equipment and methods used.
 - e. Correct when over-excavated at no additional cost to Owner:
 - (1) Use stronger pipe or higher-class embedment.
 - (2) Obtain approval of Engineer before proceeding.
 - F. Test Pits:
 - 1. Excavate test pits sufficiently in advance of trenching to enable adequate planning of construction procedure.
 - 2. Locate as follows:
 - a. Where unstable material is suspected that may require special protective measures.
 - b. Where groundwater may require special handling methods.
 - c. Where interference or conflict with other utilities or structures could affect alignment of pipe.
 - 3. With lateral dimension not less than minimum trench width specified for location excavated.
 - 4. To depth required to obtain information desired.
- 3.02 PIPE EMBEDMENTS AND ENCASEMENTS:
- A. Granular Pipe Embedment:
 - 1. Place granular embedment as follows:
 - a. Level bottom layer at proper grade to receive and uniformly support pipe barrel throughout its length.
 - b. Form shallow depression under each joint to facilitate grouting.
 - c. Add second layer simultaneously to both sides of the pipe with care to avoid displacement.
 - d. Complete promptly after completion of jointing operations and approval to proceed.
 - 2. Compact granular bedding as follows:
 - a. In lifts not exceeding 12 inches in compacted depth.
 - b. Rod, spade, or use pneumatic or vibratory equipment:
 - (1) As required to obtain not less than 80% relative density as determined by ASTM Method D4253 and D4254.
 - (2) Throughout depth of embedment.
 - c. Compaction using flooding or water spraying techniques will not be allowed.
- 3.03 BACKFILLING:
- A. Placement:
 - 1. Complete promptly after approval to proceed:

SECTION 31 23 33.13 - TRENCHING AND BACKFILLING FOR UTILITIES: continued

- a. Upon completion of pipe embedment.
 2. Use hand methods to a horizontal plane 12 inches above top of pipe.
 3. Use approved mechanical methods where hand backfill is not required.
 4. Place in layers of thickness within compacting ability of equipment used.
 5. Until compacted depth over conduit exceeds 3 feet, do not drop fill material over 5 feet. Then distance may be increased 2 feet for each additional 1 foot of cover. Backfill conduit trenches in layers of 4 to 8 inches.
 - B. Compaction:
 1. Perform at moisture content necessary to achieve required results with equipment used.
 2. Perform with spreading equipment supplemented by hand-operated equipment and rollers as required to obtain density specified.
 3. Accomplish without inundation or flooding.
 4. Trench compaction in street right-of-way is to conform to applicable municipal standards as specified in Section 31 20 00 - "Site Preparation and Earthwork".
 5. Backfill failing to meet required densities shall be removed and re-compacted as necessary to achieve specified results.
- 3.04 BACKFILL WITHIN ROADWAY:
- A. Oklahoma Department of Transportation (ODOT) Type A Aggregate Base Course is required as backfill for all trenches within effected roadways:
 1. ODOT Type A aggregate as specified in Section 32 11 23 - "Aggregate Base Course."
- 3.05 FIELD QUALITY CONTROL:
- A. Compaction: Contractor will, through services of an independent laboratory, test all trench-stabilization material, granular pipe embedment, earth-pipe embedment, and trench backfill to determine conformance with specified moisture- density relationships:
 1. Method of test will be as specified in Section 31 20 00 - "Site Preparation and Earthwork".
 - B. Concrete: Contractor shall test all concrete for use in straddle blocks to determine conformance with Specifications. Method of test shall be as specified in DIVISION 03 - CONCRETE.

END OF SECTION 31 23 33.13

DIVISION 32 - EXTERIOR IMPROVEMENTS

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section consists of a base course composed of crushed aggregates constructed on a prepared course in accordance with these Specifications and in conformity to the dimensions and typical cross-sections shown on the Drawings.

1.03 REFERENCE STANDARDS:

- A. The publications listed below form a part of this Specification to the extent referenced. The publications are referred to within the text by the basic designation only.
 - 1. ASTM International (ASTM):
 - a. C29 - Unit Weight of Aggregate.
 - b. C88 - Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.
 - c. C117 - Materials Finer than No. 200 Sieve in Mineral Aggregates by Washing.
 - d. C131 - Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - e. C136 - Sieve Analysis of Fine and Coarse Aggregates.
 - f. D75 - Sampling Aggregate.
 - g. D422 - Particle Size Analysis of Soils.
 - h. D693 - Crushed Aggregate for Macadam Pavements.
 - i. D698 - Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb. Rammer and 12-inch Drop.
 - j. D1556 - Density of Soil in Place by the Sand-Cone Method.
 - k. D1557 - Test for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - l. D2167 - Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
 - m. D2419 - Sand Equivalent Value of Soils and Fine Aggregate.
 - n. D6938 - In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods.
 - o. D3665 - Random Sampling of Construction Materials.
 - p. D4318 - Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

1.04 SUBMITTALS:

- A. Submit the following:
 - 1. Product Data:
 - a. Sieve analysis.
 - b. Aggregate sources.
 - 2. Test Reports.

1.05 QUALITY ASSURANCE:

- A. Sampling and testing are the responsibility of the Contractor and performed by an independent testing laboratory approved by the Engineer. Work requiring testing will not be permitted until the testing laboratory has been inspected and approved. Test the materials to establish

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE: continued

compliance with the specified requirements; perform testing at the specified frequency. The Engineer may specify the time and location of the tests. Furnish copies of test results to the Engineer within 24 hours of completion of the tests.

1. Sampling:
 - a. Take samples for laboratory testing in conformance with ASTM D75. When deemed necessary, the sampling will be observed by the Engineer.
2. Tests:
 - a. Perform the following tests in conformance with the applicable standards listed.
 - b. Sieve Analysis:
 - (1) Make sieve analysis in conformance with ASTM C117 and ASTM C136. Sieves shall conform to ASTM E11.
 - c. Liquid Limit and Plasticity Index:
 - (1) Determine liquid limit and plasticity index in accordance with ASTM D4318.
 - d. Moisture-Density Determinations:
 - (1) Determine the laboratory maximum dry density and optimum moisture content in accordance with ASTM D1557.
 - e. Field Density Tests:
 - (1) Measure field density in accordance with ASTM D1556, ASTM D2167, or ASTM D6938. For the method presented in ASTM D6938 check the calibration curves and adjust them, if necessary, using only the sand cone method as described in Paragraph "Calibration," of the ASTM publication. Tests performed in accordance with ASTM D6938 result in a wet unit weight of soil, and ASTM D6938 shall be used to determine the moisture content of the soil. The calibration curves furnished with the moisture gauges shall also be checked along with density calibration checks as described in ASTM D6938. The calibration checks of both the density and moisture gauges shall be made by the prepared containers of material method, as described in Paragraph "Calibration" of ASTM D6938, on each different type of material being tested at the beginning of a job and at intervals as directed.
 - (a) Submit certified copies of test results for approval not less than 30 days before material is required for the Work.
 - (b) Submit calibration curves and related test results prior to using the device or equipment being calibrated.
 - (c) Submit copies of field test results within 24 hours after the tests are performed.
 - f. Wear Test:
 - (1) Perform wear tests on aggregate base course material in conformance with ASTM C131.
 - g. Soundness:
 - (1) Perform soundness tests on GCA in accordance with ASTM C88.
3. Testing Frequency:
 - a. Initial Tests:
 - (1) Perform one of each of the following tests, on the proposed material prior to commencing construction, to demonstrate that the proposed material meets all specified requirements when furnished. If materials from more than one source are going to be utilized, this testing shall be completed for each source.
 - (a) Sieve Analysis.
 - (b) Liquid limit and plasticity index.
 - (c) Moisture-density relationship.

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE: continued

- (d) Wear.
 - (e) Soundness.
 - b. In Place Tests:
 - (1) Perform each of the following tests on samples taken from the placed and compacted aggregate base course. Samples shall be taken and tested at the rates indicated.
 - (a) Perform density tests on every lift of material placed and at a frequency of one set of tests for every 100 square yards, or portion thereof, of completed area.
 - (b) Perform sieve analysis on every lift of material placed and at a frequency of one sieve analysis for every 250 square yards, or portion thereof, of material placed.
 - (c) Perform liquid limit and plasticity index tests at the same frequency as the sieve analysis.
 - (d) Measure the total thickness of the base course at intervals, in such a manner as to ensure one measurement for each 250 square yards of base course. Measurements shall be made in 3-inch diameter test holes penetrating the base course.
- 4. Approval of Material:
 - a. Select the source of the material 30 days prior to the time the material will be required in the Work. Tentative approval of material will be based on initial tests results. Final approval of the materials will be based on sieve analysis, liquid limit, and plasticity index tests performed on samples taken from the completed and fully compacted course(s).

1.06 ENVIRONMENTAL REQUIREMENTS:

- A. Perform construction when the atmospheric temperature is above 35°F. When the temperature falls below 35°F, protect all completed areas by approved methods against detrimental effects of freezing. Correct completed areas damaged by freezing, rainfall, or other weather conditions to meet specified requirements.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. Aggregate:
 - 1. Aggregates shall consist of clean, sound, durable particles of crushed stone, or crushed gravel, and shall be free from coatings of clay, silt, vegetable matter, and other objectionable materials and shall contain no clay balls. Fine aggregate passing the No. 4 sieve shall consist of fines from the operation of crushing the coarse aggregate. If necessary, fine aggregate may be added to produce the correct gradation. The fine aggregate shall be produced by crushing stone, gravel, or slag that meets the requirements for wear and soundness specified for coarse aggregate.
 - 2. The coarse aggregate portion, defined as the material retained on the No. 4 sieve and larger, shall contain no more than 15%, by weight, of flat or elongated pieces as defined in ASTM D693 and shall have at least 90% by weight of particles with at least two fractured faces and 100% with at least one fractured face. The area of each face shall be equal to at least 75% of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces.

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE: continued

3. The percentage of wear shall not be greater than 45% when tested in accordance with ASTM C131. The sodium sulfate soundness loss shall not exceed 12%, after 5 cycles, when tested in accordance with ASTM C88.
4. The fraction passing the No. 40 sieve shall have a liquid limit no greater than 25 and a plasticity index of not more than 4 when tested in accordance with ASTM D4318. The fine aggregate shall have a minimum sand equivalent value of 35 when tested in accordance with ASTM D2419.
 - a. Sampling and Testing: In lieu of testing, the Engineer may accept certified state test results indicating that the aggregate meets Specification requirements. Certified test results shall be less than 6 months old.
 - b. Gradation Requirements:
 - (1) The gradation (job mix) of the final mixture shall fall within the design range indicated in Table 1, when tested in accordance with ASTM C117 and ASTM C136. The final gradation shall be continuously well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on an adjacent sieve or vice versa. Where environmental conditions (temperature and availability of free moisture) indicate potential damage due to frost action, the maximum percent of material by weight of particles smaller than No. 200 shall be 3% when tested in accordance with ASTM D422.

Table 1. Requirements for Gradation of Aggregate shall be as defined in the Oklahoma Department of Transportation 2009 Specifications, Section 703, for Type A aggregate.

Sieve Size	Design Range by Weight (%)
2-inch	-
1-1/2-inch	100
1-inch	-
3/4-inch	40-100
No. 4	25-60
No. 40	8-26
No. 200	4.0-12.0

PART 3 - EXECUTION

- 3.01 PREPARING UNDERLYING COURSE:
 - A. The underlying course shall be checked and accepted by the Engineer before placing and spreading operations are started. Any ruts or soft yielding places caused by improper drainage conditions, hauling, or any other cause shall be corrected at the Contractor's expense before the base course is placed thereon. Material shall not be placed on frozen subgrade.
- 3.02 MIXING:
 - A. The aggregate shall be uniformly blended during crushing operations or mixed in a plant. The plant shall blend and mix the materials to meet the Specifications and to secure the proper moisture content for compaction.
- 3.03 PLACING:
 - A. The crushed aggregate base material shall be placed on the moistened subgrade in layers of uniform thickness with a mechanical spreader.

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE: continued

- B. The maximum depth of a compacted layer shall be 6 inches. If the total depth of the compacted material is more than 6 inches, it shall be constructed in two or more layers. In multi-layer construction, the base course shall be placed in approximately equal-depth layers.
- C. The previously constructed layer should be cleaned of loose and foreign material prior to placing the next layer. The surface of the compacted material shall be kept moist until covered with the next layer.

3.04 COMPACTION:

- A. Immediately upon completion of the spreading operations, the crushed aggregate shall be thoroughly compacted. The number, type, and weight of rollers shall be sufficient to compact the material to the required density.
- B. The moisture content of the material during placing operations shall not be below, or more than 2 percentage points above, the optimum moisture content as determined by ASTM D698.

3.05 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY:

- A. Aggregate base course shall be accepted for density on a lot basis. A lot will consist of one day's production where it is not expected to exceed 2,400 square yards. A lot will consist of one-half day's production where a day's production is expected to consist of between 2,400 and 4,800 square yards.
- B. Each lot shall be divided into two equal sublots. One test shall be made for each subplot. Sampling locations will be determined by a random basis in accordance with statistical procedures contained in ASTM D3665.
- C. Each lot will be accepted for density when the field density is at least 100% of the maximum density of laboratory specimens prepared from samples of the base course material delivered to the Job Site. The specimens shall be compacted and tested in accordance with ASTM D698. The in-place field density shall be determined in accordance with ASTM D1556 or D2167. If the specified density is not attained, the entire lot shall be reworked and/or recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached.
- D. In lieu of the core method of field density determination, acceptance testing may be accomplished using a nuclear gauge in accordance with ASTM D6938. The gauge should be field calibrated in accordance with Section 120 and ASTM Standards. Calibration tests shall be conducted on the first lot of material placed that meets the density requirements.
- E. When using the nuclear method ASTM D6938 shall be used to determine the moisture content of the material. The calibration curve furnished with the nuclear gauges shall be checked in accordance with ASTM standards. The calibration checks shall be made at the beginning of a job and at regular intervals.
- F. If a nuclear gauge is used for density determination, two random readings shall be made and averaged for each subplot.

3.06 FINISHING:

- A. The surface of the aggregate base course shall be finished by blading or with automated equipment especially designed for this purpose.
- B. In no case will the addition of thin layers of material be added to the top layer of base course to meet grade. If the elevation of the top layer is 1/2 inch or more below grade, the top layer of base shall be scarified to a depth of at least 3 inches, new material added, and the layer shall be blended and recompacted to bring it to grade. If the finished surface is above plan grade, it shall be cut back to grade and rerolled.

SECTION 32 11 23 – CRUSHED AGGREGATE BASE COURSE: continued

3.07 SURFACE TOLERANCES:

- A. The finished surface shall not vary more than 3/8 inch when tested with a 16-foot straightedge applied parallel with or at right angles to the centerline. Any deviation more than this amount shall be corrected by the Contractor at the Contractor's expense.

3.08 THICKNESS CONTROL:

- A. The completed thickness of the base course shall be within 1/2 inch of the design thickness. Four determinations of thickness shall be made for each lot of material placed. The lot size shall be consistent with that specified in Paragraph 3.05. Each lot shall be divided into four equal sublots. One test shall be made for each subplot. Sampling locations will be determined by a random basis in accordance with procedures contained in ASTM D3665. Where the thickness is deficient by more than 1/2 inch, the Contractor shall correct such areas at no additional cost by excavating to the required depth and replacing with new material. Additional test holes may be required to identify the limits of deficient areas.

3.09 MAINTENANCE:

- A. The base course shall be maintained in a condition that will meet all specification requirements until the Work is accepted. Equipment used in the construction of an adjoining section may be routed over completed portions of the base course, provided no damage results and provided that the equipment is routed over the full width of the base course to avoid rutting or uneven compaction.
- B. The Contractor shall remove all survey and grade hubs from the base courses prior to placing any bituminous surface course.

END OF SECTION 32 11 23

SECTION 32 12 15 - PAVEMENT REMOVAL AND REPLACEMENT FOR UTILITIES

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section provides guidelines for the removal and replacement of pavement to permit placement and repair of utilities in existing roadways, parking lots, driveways, curbs, gutters and other surfaces.
- B. Any improvements in the right-of-way or on private property damaged during construction shall be repaired prior to placement of the permanent pavement patch.
- C. Damaged sections of concrete sidewalk curb and/or gutter shall be removed and replaced to the nearest control joint. Replacement of less than a 10-foot length of curb and gutter or sidewalk is not permitted. Integral curb, gutters, and/or sidewalk shall be replaced in their entirety. Private improvements shall be replaced to equal or better standards.
- D. Related Work Specified Elsewhere:
 - 1. DIVISION 03 - CONCRETE.

PART 2 - PRODUCTS

2.01 ASPHALTIC CONCRETE PAVEMENT:

- A. Asphaltic concrete pavement shall be as specified in Section 32 13 13 - "Concrete Pavement."

2.02 PORTLAND CEMENT CONCRETE PAVEMENT:

- A. Portland cement concrete pavement, reinforcement and accessories shall be as specified in DIVISION 03 - CONCRETE, and as indicated on Contract Drawings.

2.03 TEMPORARY PAVEMENTS:

- A. Whenever permanent pavement patches are not constructed immediately following backfilling operations, temporary pavement patches shall be provided as specified by the Owner.

2.04 TACK COAT:

- A. Tack coat material shall comply with ODOT Standards and Specifications for SS-1 emulsified asphalt, diluted by mixing one gallon of SS-1 emulsion with one gallon of clean water, applied at the rate of 0.05 to 0.15 gallons per square yard.

PART 3 - EXECUTION

3.01 PAVEMENT CUTTING AND REMOVAL:

- A. Contact the City Public Works Department at least 48-hours in advance of cutting within right-of-way. All cuts require a Right-of-Way Permit and an approved Traffic Control Plan.
- B. Lay out area to be removed in neat, straight lines parallel or perpendicular to the street centerline.
- C. Make cuts prior to breaking and removal.
- D. Cut pavements full depth to obtain straight cuts with smooth vertical faces.
- E. Use approved power-driven saw on portland cement and asphaltic concrete pavements.
- F. Repeat after backfill of trench as required to provide adequate shear stress overcuts as shown on the Construction Drawings.
- G. Repeat after backfill of trench as required to remove undermined, heaved, or otherwise damaged surfaces or edges.
- H. Dispose of materials off the Project site at a location arranged and paid for by the Contractor.

3.02 PAVEMENT REPLACEMENT:

32 12 15-1

SECTION 32 12 15 - PAVEMENT REMOVAL AND REPLACEMENT FOR UTILITIES: continued

- A. Contractor shall provide permanent pavement replacement within one week after below ground installations are complete or as required by the Owner.
- B. Replace pavements and surfacing with like materials to condition equal to or better than condition before start of work.
- C. The depth of pavement shall be placed in maximum 3-inch compacted lifts.
- D. Apply tack coat to the vertical face of all pavement cuts' edges and milled surfaces prior to patching or placement of any asphaltic surface or base course materials.
- E. Restore and compact to the requirements outlined in this Section.
- F. Patches shall not leave strips of existing pavement less than 3 feet in width from the edge of the new patch to the lip of the gutter, edge of paved roadway surface, or 4 feet from edges of existing patches.
- G. Patches on all streets shall be four sided, with sides either parallel or perpendicular to the direction of traffic.

3.03 PAVEMENT QUALITY:

- A. Upon completion of the permanent patch, the surface shall be thoroughly compacted, smooth, and free from ruts, humps, depressions, or irregularities and shall not separate from pre-existing adjacent pavement.
- B. When a straightedge 10 feet long is laid across the permanent patch both parallel to the centerline of the street and in a direction perpendicular to the centerline, the surface shall not vary more than 3/16 inch from the lower edge of the straight edge.
 - 1. Patches exhibiting deviations greater than 3/16 inch shall be replaced prior to acceptance of the patch.
 - 2. Patches separating from pre-existing adjacent pavement more than 3/16 inch shall be replaced or sealed as directed by the Owner.
- C. Patches shall have a cross slope consistent with the design of the existing roadway.
- D. Compaction Testing Requirements:
 - 1. Contractor shall conduct compaction tests on the permanent asphalt installation.
 - 2. Compaction shall be between 92% and 96% of AASHTO T209. Average compaction of less than 92% of AASHTO T209 shall be cause for rejection.
 - 3. Compaction test results shall be certified by a Oklahoma-licensed Professional Engineer and provided to the Engineer.
 - 4. Frequency:
 - a. Asphalt compaction shall be tested at maximum intervals of 250 square feet.
 - b. A minimum of one test location is required within one foot of a valve box.
 - c. Each asphalt lift shall be tested, minimum 2 tests per lift.

3.04 TEMPORARY PATCHING:

- A. The use of steel plates to cover excavations is not permitted unless specifically authorized by the Owner. All trenches and other excavations must be backfilled, with a temporary cold mix asphalt paving surface provided, at the end of each workday unless otherwise approved by the local jurisdiction. The use of asphalt millings or other aggregates is not permitted.

3.05 PERMITS TO OPEN SURFACES:

- A. Obtain permits to open surface from the Owner prior to cutting any streets.
- B. Post bond and pay any permit fees or licenses as required.

END OF SECTION 32 12 15

SECTION 32 13 13 – CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section covers Portland cement concrete pavement.

1.03 RELATED STANDARDS:

- A. Section 32 11 23 - "Crushed Aggregate Base Course."

1.04 REFERENCE STANDARDS:

- A. Applicable Standards:
 - 1. American Concrete Institute (ACI):
 - a. 305 - Hot-Weather Concreting.
 - 2. ASTM International (ASTM):
 - a. A185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
 - b. A499 - Steel Bars and Shapes, Carbon Rolled from "T" Rails.
 - c. A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - d. A675 - Steel Bars, Carbon, Hot Wrought, Special Quality, Mechanical Properties.
 - e. C31 - Practice for Making and Curing Concrete Test Specimens in the Field.
 - f. C33 - Concrete Aggregates.
 - g. C39 - Test Method Compressive Strength of Cylindrical Concrete Specimens.
 - h. C70 - Test Method for Surface Moisture in Fine Aggregate.
 - i. C78 - Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading).
 - j. C94 - Ready-Mixed Concrete.
 - k. C127 - Test Method for Specific Gravity and Absorption of Coarse Aggregate.
 - l. C128 - Test Method for Specific Gravity and Absorption of Fine Aggregate.
 - m. C131 - Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - n. C138 - Test Method for Unit Weight, Yield, and Air Content (Gravimetric) of Concrete.
 - o. C143 - Test Method for Slump of Hydraulic Cement Concrete.
 - p. C150 - Portland Cement.
 - q. C156 - Test Method for Water Retention by Concrete Curing Materials.
 - r. C171 - Sheet Materials for Curing Concrete.
 - s. C192 - Practice for Making and Curing Concrete Test Specimens in the Laboratory.
 - t. C231 - Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - u. C260 - Air-Entraining Admixture for Concrete.
 - v. C309 - Liquid Membrane-Forming Compound for Curing Concrete.
 - w. D75 - Sampling Aggregates.
 - x. D235 - Mineral Spirits [Petroleum Spirits] [Hydrocarbon Dry Cleaning Solvent].
 - y. D260 - Boiled Linseed Oil.
 - z. D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- aa. D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - bb. D1854 - Jet-Fuel-Resistant Concrete Joint Sealer, Hot-Poured Elastic Type.
 - cc. D6690 - Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
 - 3. American Association of State Highway and Transportation Officials (AASHTO):
 - a. M6 - Fine Aggregate for Portland Cement Concrete.
 - b. M80 - Coarse Aggregate for Portland Cement Concrete.
 - c. M171 - Sheet Materials for Curing Concrete.
 - d. T24 - Standard Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
 - e. T26 - Standard Method of Test for Quality of Water to be Used in Concrete.
 - 4. Federal Specifications (FS):
 - a. CCC-C-467 - Cloth, Burlap, Jute, (or Kenaf).
 - 5. City of McPherson, Kansas Public Works Department:
 - a. Concrete Paving Details.
- 1.05 SUBMITTALS:
- A. Includes, but not limited to, the following:
- 1. Acceptance Tests:
 - a. Furnish and deliver representative Samples of all following materials proposed for use in the Work to an independent testing laboratory.
 - (1) Coarse Aggregate.
 - (2) Fine Aggregate.
 - (3) Cement.
 - (4) Admixture.
 - b. Select and compensate independent testing laboratory, subject to approval by Engineer.
 - c. Test specified materials to determine compliance with specified physical and chemical properties.
 - d. Prepare concrete mix design as specified.
 - e. Furnish five copies of all test certificates to Engineer not less than 30 days prior to beginning production of Portland cement concrete.
 - 2. Certification that joint sealer and preformed expansion joint fillers meet Specifications.
 - 3. Descriptive details of metal accessories for support of dowels, tiebars, and reinforcing steel.

PART 2 - PRODUCTS

- 2.01 MATERIALS:
- A. Reinforcing Steel:
- 1. Mesh or bar mats shall conform to ASTM A185.
 - a. Gage and spacing of individual bars or wires shall be as indicated.
 - 2. Dowels shall be smooth round steel bars or pipes of sizes indicated and conforming to ASTM A499 or A675 Grade 80.
 - a. Grind as required to remove shearing burrs.
 - 3. Bars shall be deformed and of the sizes indicated and conforming to ASTM A615, Grade 60 for all bars No. 4 or larger.
 - a. Tiebars and all No. 3 bars shall conform to A615, Grade 40.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

4. Metal accessories used to support dowels and tiebars shall be designed to hold these items rigidly in place in the center of the slab parallel to the pavement surface without displacement.
 5. Metal dowel caps or tubes shall be 32-gage sheet metal of proper size to fit dowels shown on the Drawings.
 - a. Indent to provide a limiting stop.
 - b. Provide unobstructed expansion space of not less than 1 inch.
- B. Portland Cement:
1. Furnish cement conforming to ASTM C150, Type II.
 2. Use standard brand only.
 3. Use only one brand.
- C. Coarse Aggregate:
1. Coarse aggregate shall conform to AASHTO M80, except as follows:

Deleterious Substances	Maximum Percent by Weight (%)
Clay Lumps	0.25
Shale	0.50
Soft particles	5
Material finer than No. 200 Sieve	1
Total combined deleterious substances	5

2. Percentage of wear shall not exceed 40 after 500 revolutions as determined by ASTM C131.
3. Gradation shall conform to the following limits as determined by ASTM C136:

Standard Square Mesh Sieve	Percent Passing by Weight (%)
1-inch	100
3/4-inch	90-100
3/8-inch	20-55
No. 4	0-5

- D. Fine Aggregate:
1. Fine aggregate shall conform to AASHTO M6, except as follows:

Deleterious Substances	Maximum Percent by Weight (%)
Clay Lumps	0.25
Shale	0.50
Coal and Lignite	0.25
Material finer than No. 200 Sieve	2
Total combined deleterious substances	4

2. Gradation shall conform to the following limits as determined by ASTM C136 and be well-graded from coarse to fine.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

Standard Square Mesh Sieve	Percent Passing by Weight (%)
3/8-inch	100
No. 4	95-100
No. 20	40-75
No. 50	5-30
No. 100	0.0

- E. Water:
1. Mixing and curing water shall be clean, clear, and free from injurious amounts of sewage, oil, acid, alkali, salt, or organic matter.
 2. Potable water will be accepted without testing.
 3. Nonpotable water shall be tested conforming to AASHTO T26.
- F. Admixtures:
1. Air-entraining agents shall be neutralized Vinsol Resin conforming to ASTM C260, of one of the following brands or approved equal:
 - a. Darex AEA.
 - b. Protex AEA.
 2. Use of set-retarding and water-reducing admixtures, when requested in writing by Contractor, will be permitted only with the specific written approval of Engineer.
 - a. Furnish evidence of satisfactory performance on other work for the specific brand proposed for use.
 - b. Compatible with concrete mixture.
 - c. Discontinue use when required by Engineer.
 3. Additional compensation will not be allowed for water-reducing and set-retarding admixtures.
- G. Preformed Joint Fillers: Material shall be of the thickness as indicated and accurately punched to the exact diameter and at the locations of any dowels required.
1. Premolded material shall conform to ASTM D1751.
- H. Joint Sealant: Sealer for all joints in concrete pavements shall be hot-pour elastic type conforming to one of the following:
1. ASTM D1854 for all joints in aircraft apron, and in vehicular pavements in areas where fuel is dispensed.
 2. ASTM D6690 for all joints in pavement, except as modified as follows:
 - a. Sealer shall be free of all foreign material. When melted it shall be free of lumps.
 - b. Penetration at 77°F, 150 g, 5 sec: 0.50-0.90.
 3. Furnish five certified copies of manufacturer's test reports certifying compliance with the specified requirements for all batches of sealants proposed for use in the Work.
 4. Deliver sealant to the Site in containers clearly marked with the name of manufacturer, brand name, weight, batch number, and recommended pouring temperature.
- I. Curing Materials:
1. Burlap mats shall conform to Federal Specification CCC-C-467.
 2. Waterproof paper shall conform to ASTM C171.
 3. White polyethylene sheeting shall conform to AASHTO M171.
 4. Liquid Membrane-curing compound shall conform to ASTM C309, Type 1-D.
- J. Linseed Oil Treatment:
1. Boiled linseed oil shall conform to ASTM D260, Type II.
 2. Mineral spirits shall conform to ASTM D235, Type II.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

2.02 HANDLING AND STORAGE OF MATERIALS:

- A. Aggregate Stockpiles:
 - 1. Build stockpiles in layers of not more than 3 feet in thickness.
 - 2. Stockpile all fine and coarse aggregates separately.
 - 3. Prepare and maintain stockpile foundation to prevent contamination of aggregates.
 - 4. Completely place each layer before beginning the next layer.
 - 5. Coning of aggregates will not be permitted.
- B. Handling Aggregates:
 - 1. Handle aggregates in a manner to secure a uniform grading of the material.
 - 2. Waste segregated aggregates or aggregates contaminated with earth or other foreign material.
- C. Cement:
 - 1. Store in dry weathertight and properly ventilated enclosure with adequate provisions for preventing absorption of moisture.
 - 2. Arrange facilities to prevent dead storage and permit easy access for inspection.
 - 3. Store different brands and types of cement separately.
 - 4. Waste lumpy, caked, partially set, or otherwise contaminated cement.
 - 5. Transport cement from storage to proportioning plant or mixer by methods required to ensure:
 - a. Cement does not acquire moisture from aggregates or rain.
 - b. None is lost during transport.
 - c. Cement is not in contact with aggregate more than 45 minutes before depositing in the mixer.
 - d. All cement is removed from batch truck compartments when depositing in the mixer.
- D. Reinforcing Steel: Store all reinforcing steel and accessories above ground.

2.03 EQUIPMENT:

- A. Batching Plant and Equipment:
 - 1. Batch Plant:
 - a. Furnish semi-automatic batching plant consisting of a central batching plant or a group of individual batching plants or units.
 - (1) Set batch weights manually.
 - (2) Change batch weights manually.
 - (3) Weigh and batch materials automatically.
 - b. Provide separate bins or compartments for each size of aggregate to be batched, and for bulk cement when used.
 - c. Size and construct bins to provide positive separation of materials under all working conditions and eliminate dead spots and segregation.
 - 2. Scales:
 - a. Scales for weighing aggregate and bulk cement shall be either beam or springless dial type; suitable for supporting the weigh hopper or hoppers.
 - b. Maintain to assure accuracy within a range of error not greater than $\pm 1/2$ of 1% throughout the entire weight range.
 - c. Set accurately in substantial mountings which will ensure permanent spacing of knife edges under all conditions of loading and use.
 - d. Protect scales from vibrations, accumulation of foreign material, air currents, or other factors that might affect the accuracy of weighing.
 - e. Mount weighing beam or dial in full view of the operator during bin gate operation.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- f. Provide minimum graduation not greater than 1/2 of 1% of total being weighed.
 - 3. Compartments: Provide adequate size to keep all materials separate under all loading conditions.
 - 4. Hoppers:
 - a. Design and construct so no materials are wasted in transferring from weigh equipment to mixer or batch truck.
 - b. Provide for removal of overload from hoppers.
 - c. Hoppers shall be tight enough to hold all materials without leaking.
 - 5. Controls:
 - a. Interlock so a new batching cycle cannot be started until all weigh hoppers are empty.
 - 6. Cement:
 - a. Provide a screen in the loading chute sized to ensure against the presence of any foreign material in the cement.
 - b. Equip chute with canvas boot or other device to prevent waste or loss from air currents.
 - 7. Recorders: Provide recorders as follows:
 - a. Not more than two recorders shall be provided with a central batching plant unit.
 - (1) One shall register weights of aggregates as batched.
 - (2) One shall register weight of cement as batched.
 - (3) Cement records shall also produce a record of water as batched by either weight or volume when central plant mixing is used.
 - (4) Batching equipment consisting of individual plants or units shall be equipped with a recorder for each unit.
 - (5) Place recorders in a convenient position for observation by plant operators and inspectors.
 - b. Provide lockable cabinets to protect recorders from exposure to dust and weather.
 - c. Record by batch; weights of cement, weight of each type of aggregate, volume, or weight of water when central mixing plant is used, and time of day in not greater than 15-minute intervals.
 - (1) Print records on single visible chart of tape for each recorder.
 - (2) Charts or tapes shall be submitted to Engineer.
 - 8. Control:
 - a. Maintain one set of accurate platform scales of not less than 500 pound capacity for use of Engineer.
 - b. Provide ten 50 pound test weights for testing weighing equipment.
 - 9. Sampling Facilities: Provide all necessary tools, platforms, equipment, and other facilities for readily obtaining samples from each bin or compartment.
- B. Paving Mixers:
 - 1. All Mixers:
 - a. Equip with a device for automatically counting the total batches mixed.
 - b. Size to assure volume of concrete mixed per batch is not more than the manufacturer's guaranteed capacity as specified in the Concrete Mixer Standards adopted by the Mixer Manufacturer's Bureau and approved by the Associated General Contractors of America.
 - c. Maintain in first-class mechanical condition.
 - d. Replace blades when worn down more than 10% of their original depth.
 - 2. Ready Mix: Ready-mix equipment and operation shall conform to ASTM C94.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- C. Transporting Equipment:
 - 1. Batch Trucks:
 - a. Provide separate compartments of the required capacity for each material.
 - b. Design to charge mixer, batch by batch, with proper amounts of each material without spillage, wastage, or mixing batches.
 - c. Provide covers adequate to prevent loss of any material during haul from plant to mixer.
 - d. Gross weight transmitted to subgrade shall not exceed 550 pounds per inch width of tire.
 - 2. Agitator Trucks:
 - a. Equip with closed, watertight revolving drum suitably mounted, capable of discharging concrete without segregation.
 - b. Agitating speed of drum shall be within a range of two to six revolutions per min.
 - c. Drum volume shall be 20% more than volume of concrete in each load.
 - (1) Gross volume in cubic feet shall be supplied by manufacturer.
 - 3. Nonagitator Trucks:
 - a. Bodies shall be smooth, watertight, metal containers equipped with gates suitable for controlling discharge of the concrete.
 - b. Provide covers for protection against the weather.
 - c. Design to permit delivery of concrete in a thoroughly mixed and uniform mass.
 - (1) Slump shall be uniform throughout the entire load.
 - d. Chuting concrete from truck directly to subgrade will not be permitted.
 - e. Discontinue use of nonagitating trucks when specified slump and uniform consistency is not obtained.
- D. Spreading Equipment:
 - 1. Equipment shall be capable of spreading concrete in a uniform layer without segregation.
 - 2. When nonagitator trucks are used for transporting concrete, a complete spreader designed specifically for use with such trucks shall be used for spreading concrete between paving forms.
- E. Compacting and Transverse Finishing Equipment:
 - 1. General: Use self-propelled spreading and finishing machine of an approved vibratory type having two independently operated screeds.
 - a. Maintain in first-class condition.
 - b. Machine shall be capable of compacting and finishing the concrete specified without displacing the side forms from line and grade.
 - 2. Vibratory Screed Type:
 - a. Equip front screed with vibratory units having a frequency of not less than 3,500 pulsations per minute.
 - b. Provide one vibratory unit for each 8 feet length of screed surface or portion thereof.
 - c. Front screed shall be at least 12 inches wide and have a "bull-nose" front edge built on a radius of at least 2 inches.
 - 3. Vibratory Pan Type:
 - a. Equip with an independent vibratory pan in addition to the two screeds specified.
 - b. Mount pan to prevent contact with forms and permit simultaneous vibration of the full paving lane width.
 - c. Provide one vibratory unit for each 6 feet length of pan surface or portion thereof.
 - d. Synchronize vibratory units on individual pans at a frequency of at least 3,500 pulsations per minute.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- e. Set front screed in a position to strike off concrete at sufficient height above forms to allow for proper compaction.
- 4. Internal Vibratory Unit Type:
 - a. Provide number and size of units required to properly consolidate concrete without excessive vibration.
 - b. Mount units on a frame capable of perpendicular and, when necessary, radial movement sufficient to provide vibrator operation at any depth in the slab or complete withdrawal from the slab.
 - c. Operate vibrators at a frequency of at least 5,000 impulses per minute.
 - (1) Amplitude of vibration shall produce noticeable vibrations at 1-1/2 feet radii when operated at the proper depth.
 - d. Provide sufficient parts or spare vibrators at the Site to permit immediate replacement of any vibrating units that may become defective during placing operations.
 - e. Vibrating tubes may be mounted in either of the following configurations:
 - (1) Spaced at not more than 30 inches on centers on frame transverse to the paving lane, and in a vertical position.
 - (2) Spaced at not more than 4 inches on centers nor more than 2 inches from forms, transverse to the paving lane, and in a horizontal position.
- 5. Other Equipment:
 - a. Other external or internal vibratory equipment may be used on a trial basis providing evidence satisfactory to Engineer of its satisfactory performance in placing and finishing concrete of the same quality and consistency as specified on other jobs is furnished.
 - b. Failure to perform satisfactorily, in Engineer's judgment, shall be cause for removal from the Job and replacement with approved equipment.
- 6. Hand Vibrators: Provide hand vibrators of the size and number necessary to provide supplemental vibration at forms, joints, and around all embedded items.
- 7. Longitudinal Float:
 - a. Provide longitudinal finishing machine having float operated by mechanical means.
 - b. Float may be wood or metal of required weight to prevent sinking into the concrete surface.
 - (1) Not less than 12 inches wide.
 - (2) Not less than 10 feet long.
 - c. Float shall be straight, smooth, and readily adjustable to a true plane.
- 8. Straightedge: Provide straightedge 10 feet in length equipped with a handle 3 feet longer than one-half the pavement width.
- 9. Belting Device: Belting device shall be operated mechanically and ride on the paving forms.
 - a. Belt shall be rubber or fabric.
 - (1) At least 10 inches wide.
 - (2) At least 2 feet longer than the width of the paving lane.
- 10. Burlap Drag:
 - a. Attach burlap drag to traveling bridge operated on forms with at least 1 foot of burlap adjacent to the rear edge in contact with pavement.
 - b. Burlap drag shall be multiple-ply burlap at least 3 feet in width and equal in length to the width of the slab.
- F. Membrane-Curing Applicator:
 - 1. Self-propelled mechanical pressure distributors shall be used to apply curing compound.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

2. Equip with spray nozzles and pressure controls required to apply a uniform film in the form of a fine spray to the entire slab width.
 3. Shield applicator to prevent wind interference with spray.
 4. Provide standby equipment required to ensure timely and efficient application of compound.
- G. Concrete Saws:
1. Use adequately powered circular cutting blades mounted on a sturdy frame supported on wheels designed to protect the green concrete from damage from machine operations.
 2. Equip with positive control device to regulate depth of cut.
 3. Provide alignment and guide devices required to cut joints to specified tolerances.
 4. Blade(s) shall be properly sized to make cut of required dimension.
 5. Maintain equipment in first-class condition and provide standby equipment and blade stocks on the Site as required to ensure against any delays in sawing due to mechanical difficulties.
- H. Sealing Compound Heaters:
1. Kettles shall be double-wall agitator type with oil medium between walls for heat transfer.
 2. Equip with positive temperature controls.
 3. Flame or heating element shall not be in direct contact with compound or compound container.
- I. Sealant Applicator: Joint sealing applicator shall be of the pressure type capable of filling the joint from bottom to top without voids.
- J. Forms:
1. Side forms shall be steel of an approved section, straight, and equal in depth to the thickness of pavement at the edge.
 2. Base width shall be adequate to assure stability, but not less than 8 inches wide.
 3. Forms shall be free of warps, bends, or kinks. Face shall not vary from true line more than 1/4 inch in 10 feet.
 4. Provide curved forms of an approved design for all curves having a radius of 150 feet and less.
 - a. Wood forms may be used subject to Engineer's approval.
 - b. Length of individual form section shall be as required to ensure alignment during paving operations.
 5. Use forms with adequate braces and pin sockets to permit anchoring forms securely in place.
- K. Subgrade Planers:
1. Subgrade planers shall be designed to operate on the forms or on rubber tires riding on adjacent completed pavement.
 2. Planes shall have a continuous cutting edge capable of trimming subgrade or granular subbase to the cross section and slope required across the full width of the paving lanes.
 3. Planers shall be equipped with automatic control devices capable of using erected stringlines for horizontal and vertical alignment and grade references when slipform pavers are used.
- L. Scratch Template: Scratch template designed to operate on the forms shall be provided for checking grade following completion of planing.

2.04 CONCRETE MIXTURE:

- A. General: Paving concrete shall be composed of coarse aggregate, fine aggregate, Portland cement, an air-entraining admixture, and water.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- B. Mix Design:
 - 1. Proportion materials based on trial mixes.
 - 2. Prepare six cylinders and six test beams for each trial mix.
 - 3. Test three cylinders and three beams at seven days, and the remaining three of each at 28 days.
 - 4. Design mix to produce concrete with an average strength, based on test beams and cylinders, approximately 15% more than the design strength specified in "Mix Properties," this Article.
 - 5. Make specimens and test conforming to ASTM C192, ASTM C39, and ASTM C78.
 - 6. Submit recommended mix proportions with certified test reports to Engineer for review of the mix design.
- C. Mix Properties: Concrete mix shall be designed to produce maximum density, minimum shrinkage during setting, and be uniformly plastic, cohesive, and workable.
 - 1. Ultimate compressive strength at 28 days shall be not less than 5,000 psi.
 - 2. Minimum modulus of rupture at 28 days shall be not less than 650 psi.
 - 3. Minimum cement content shall be not less than 6 sacks per cubic yard.
 - 4. Maximum water content based on saturated surface dry aggregates shall not be greater than 5.0 gallon per sack of cement.
 - 5. Slump shall not exceed 1-1/2 inches.
 - 6. Entrained-air content shall be 5% $\pm$ 2% by volume.
- D. Field Control of Mix:
 - 1. Tests to determine conformance with specified design mix proportions and properties will be conducted during the time concrete mixtures are being produced.
 - 2. Testing will be performed by Contractor without charge to Owner.
 - 3. Furnish all Samples of materials and mixtures as required by Engineer.
 - 4. Determine water required for the batch with allowances for free moisture contained in the aggregates and for the moisture they will absorb by the following tests:
 - a. ASTM C127.
 - b. ASTM C128.
 - 5. Consistency: Control of consistency and workability will be maintained by measuring slump conforming to ASTM C143.
 - 6. Strength: Will be determined based on sets of four compression test cylinders for each 1,000 yds.³ or part thereof and four test beams for each 2,000 yds.³ or part thereof; but not less than one set each of beams and cylinders for each day's production:
 - a. Specimens will be prepared conforming to ASTM C31.
 - b. One cylinder will be tested at seven days and two at 28 days conforming to ASTM C78.
 - 7. Cement Content: Will be determined conforming to ASTM C138.
 - 8. Entrained-Air Content: Will be determined conforming to ASTM C231.
 - 9. Mix Adjustments:
 - a. Make minor adjustments of relative weights of fine and coarse aggregate when required by Engineer; the sum of the weights of aggregates shall remain unchanged.
 - b. Correct low cement content when determined by yield tests by reducing fine and coarse aggregate batch weights by equal percentages.
 - 10. Low-Strength Concrete:
 - a. Secure specimens from the completed pavement conforming to AASHTO T24 at locations required by Engineer when molded test specimens indicate low-strength concrete has been placed in the Work.
 - b. Repair or replace low-strength pavement as required by Engineer.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

- c. Fill all core holes with concrete.

PART 3 - EXECUTION

3.01 PREPARATION OF UNDERLYING COURSE:

- A. Subgrade or Granular Subbase:
 - 1. Trim previously completed subgrade or granular subbase to exact cross section required using planer specified.
 - 2. Waste excess material outside the forms.
 - 3. Repair low spots by loosening, adding material, recompact, and planing.
 - 4. Check subgrade with scratch template specified and correct any deviation.

3.02 MOISTURE BARRIER:

- A. Install polyethylene sheeting on completed subgrade or subbase.
- B. Install by unrolling parallel to the longitudinal axis of the paving lane.
- C. Center-lap on paving lanes 12 feet and greater in width shall be not less than 18 inches, and moisture barrier shall extend not less than 12 inches beyond the inside face of forms on each side.

3.03 SETTING FORMS:

- A. Clean and oil forms each time they are used.
- B. Setting: Set and maintain to grade and alignment during entire operation of placing and finishing concrete.
 - 1. Support on thoroughly compacted material for entire length of forms.
 - 2. Set and secure with adequate devices to main rigidity of the forms without springing, weaving, or settling.
 - 3. Set in a manner to preclude interference with final shaping, compacting, checking of subgrade, and concreting operations.
 - 4. Provide and set sufficient forms to maintain completed forms on each side in advance of the paving operation.
 - 5. Compact supporting material under forms for full length of the forms with equipment specifically designed for this purpose.
- C. Checking:
 - 1. Test forms for grade and smoothness with a 10 foot straightedge.
 - 2. Variations from a true plane at top of forms shall not exceed 1/8 inch.
- D. Stripping:
 - 1. Forms shall remain in place for at least 12 hours after concrete is finished, except when the temperature is below 50°F; forms shall not be removed in less than 30 hours.
 - 2. Remove forms without damaging concrete.
 - a. Do not use crowbars or heavy tools against green concrete.
- E. Other Support: Adjacent completed paving lanes may be used for supporting finishing equipment.
 - 1. Concrete must be at least seven days old.
 - 2. Mount equipment on rubber tires.
 - 3. Inside edge of wheels shall not operate within 4 inches of the edge of concrete.
 - 4. Surface of concrete-carrying finishing equipment may not vary more than 1/8 inch in 10 feet.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

3.04 BATCHING AND MIXING:

- A. All measurements of aggregates and cement shall be by weight.
- B. Weigh each aggregate on the specified scales. Maintain accuracy of weighing within $\pm 1\%$ of design mix requirements.
- C. Weigh cement in a separate hopper. Maintain accuracy of weighing within $\pm 0.5\%$ of design mix requirements.
- D. Measure water by weight or volume. Adjust net mixing water to compensate for water added with admixtures and free and absorbed moisture in the aggregates.
 - 1. One gal. of water shall be considered equal to 8.33 pounds.
- E. Add admixture in solution form at the mixer. Maintain accuracy within $\pm 3\%$ of design mix requirements.
- F. Place materials for a batch of concrete in mixer drum only after the previous batch has been completely discharged.
 - 1. Discharge mixing water for batch within ten seconds after all aggregates are in drum.
 - 2. Part of aggregates shall have entered drum before beginning discharge of mixing water.
- G. Mixing time shall be at least the minimum specified and shall be increased if required to produce a mixture of uniform composition and consistency, or when samples from the front, center, and back of mixer vary more than 10% in sand-cement or water-cement ratio.
 - 1. Mixer shall revolve within a range of 14 to 20 revolutions per minute throughout the specified mixing time.
 - 2. Mixing time for mixers at the Site shall be at least 1-1/4 minute per batch beginning after all materials are in the drum.
 - a. Transfer time for dual-drum mixers shall not be included in mixing time required.
 - 3. Central plant mixers 1 yd.³ and less in capacity shall have a mixing time of at least one min. per batch. Increase minimum by 15 seconds for each additional cubic yard or fraction thereof unless otherwise approved by Engineer.

3.05 TRANSPORTING CONCRETE:

- A. Transport materials from batching plant or central mix plant in the hauling equipment specified.
- B. Agitating speed of drum on agitator trucks shall be within a range of two to six revolutions per min.
- C. Discharge concrete delivered in truck mixers or truck agitators within 60 minutes after water is added to the mix.
- D. Discharge concrete delivered in nonagitating trucks within 30 minutes after water is added to the mix.
- E. Waste all concrete that is not placed within the time specified.
- F. Route haul units to eliminate all traffic from prepared subgrade or subbase.
- G. Haul on completed pavements only after at least seven days have elapsed since placing, or after a longer period when required by Engineer.
 - 1. Route haul units on new pavement to prevent channelizing of traffic.

3.06 PLACING REINFORCEMENT:

- A. Clean reinforcement as required to remove dirt, scale, or other foreign matter and rust of such degree that bond would be impaired.
- B. Sequence:
 - 1. Place concrete in two layers.
 - 2. Strike first layer off uniformly at the depth of reinforcement.
 - 3. Place reinforcement on first layer of concrete.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

4. Place balance of concrete in second layer within 20 minutes after the first layer is struck and finish as specified.
- C. Placement:
 1. Strike concrete off to the entire width of the pour, and a sufficient length to permit the reinforcing sheet or mat to be laid full length without further manipulation of the reinforcement.
 2. Lap steel fabric sheet at least one wire spacing.
 3. Position reinforcing to provide 2 to 4 inches clearance from the slab edges to the extreme longitudinal members, and 2 to 4 inches clearance from all transverse expansion and construction joints.
- 3.07 EMBEDDED ITEMS:
 - A. Construct recesses and blockouts conforming to dimensions and details indicated.
 - B. Finish concrete in these areas to provide a smooth true surface of the same texture as surrounding area.
- 3.08 PLACING AND FINISHING:
 - A. Sequence of placing and finishing shall be as follows:
 1. Machine spreading.
 2. Strikeoff and machine compacting.
 3. Transverse machine finishing.
 4. Longitudinal floating.
 5. Smoothing and surface testing.
 6. Belting.
 7. Burlap-drag finishing.
 8. Joint edging.
 - B. Preparation: Anchor all embedments including dowels, tiebars, joint assemblies, conduit, boxes, anchor bolts, sleeves, and castings securely in place before placing concrete.
 - C. Machine Spreading: Spread concrete in a uniform, unsegregated layer of the loose thickness required to produce a finished pavement of the required thickness.
 - D. Compacting and Transverse Finishing: Compact and finish using the equipment specified.
 1. Operate machine over each section of pavement two or more times at intervals as required to produce finished pavement of the required quality.
 2. Each section of pavement shall receive at least one, but not more than two, vibratory passes.
 - a. Limit vibration to the amount necessary to achieve satisfactory consolidation of the concrete.
 - b. Use hand-manipulated internal vibrator to consolidate concrete along forms, joints, and other embedded items when external vibratory equipment is used.
 - c. Insert internal vibrators in the concrete to the depth that provides the best compaction, but not closer than 2 inches to the underlying course.
 3. Maintain a uniform ridge of concrete at least 3 inches in depth ahead of the full length of strike off screed.
 4. Add concrete to all low areas and honeycombed spots after the first finishing machine pass and rescreed.
 5. Maintain a uniform head of concrete ahead of rescreeding strike off for its full length.
 - E. Longitudinal Floating:
 1. Operate float parallel to centerline of paving lane.
 2. Always maintain contact with surface.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

3. Advance float lapping previous position by at least one-fourth the float length.
- F. Smoothing and Surface Testing:
 1. Remove minor surface irregularities with long-handled wood floats and straightedges.
 2. Remove excess water and laitance with finishing straightedge.
 3. Use long-handled floats only to correct local irregularities. Do not float entire pavement surface.
 4. Test surface for smoothness with 10 ft. straightedge.
 5. Hold straightedge in successive position parallel and at right angles to centerline of paving lane.
 6. Advance straightedge in successive stages of not more than one-half its length.
 7. Fill depressions with fresh concrete, strike off, compact, and refinish.
 8. Continue straightedge testing and finishing until a true surface conforming to specified smoothness and elevation is obtained.
- G. Belting:
 1. Belt pavement after completion of straightedging and after the water sheen has disappeared from the concrete.
 2. Operate mechanical belt transversely on the pavement, advancing forward with a sawing motion.
- H. Edging:
 1. After burlap dragging is completed, edging shall be done at slab edges along forms and at joints and only on areas with sufficient mortar to obtain good solid edges.
 2. Remove and replace soupy mortar with mortar of correct proportions and consistency.
 3. Use edging tool to form smooth rounded surface edges.
 4. Protect during removal of forms and patch any damaged or honeycombed areas as required.

3.09 HAND FINISHING:

- A. Hand-finish only those areas where use of finishing machines would be impractical.
- B. Obtain prior approval of Engineer.
- C. Spread, compact, float, and finish handwork areas using equipment and methods required to produce finished pavement conforming to Specifications.

3.10 SLIP FORM CONSTRUCTION:

- A. General: Provisions of these Specifications requiring the use of equipment riding on forms will not be applicable when slip-form construction is used.
- B. Subgrade: Operate subgrade machine in front of slip-form paver.
 1. Equipment used must provide trackways and subgrade for paver that will ensure finished pavement will meet specified requirements and tolerances.
- C. Control: Erect and maintain a taut wire line true to line and grade to ensure vertical control during subgrading and paving operations.
 1. Maintain trackway true to line and grade prior to passage of both subgrade and paving machines.
- D. Equipment:
 1. Slip-form paver shall be self-propelled and equipped with:
 - a. Strike off screed.
 - b. Tamping bar.
 - c. Vibratory tubes or pans.
 - d. Extrusion plate and belt.
 2. Use equipment capable of covering the full width of the paving lane.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

3. Extrusion plate shall shape and compact concrete to cross sections shown on the plans and be readily adjustable to crown and superelevation.
 4. Equip machine with oscillating 24-inch rubber belt set just back of extrusion plate.
 - a. Belt shall be mechanically operated and have a lateral movement of at least 3 inches.
 5. Provide with trailing side forms of dimensions, shape, and strength required to support concrete laterally for a sufficient length of time during placement to produce pavement of the required cross section.
 6. Maintain on the Job Site all materials required to protect the edges and surface of unhardened concrete against rain.
 - a. Provide wood planks of a 2-inch nominal thickness having a width equal to the thickness of the pavement for protection of pavement edges.
- E. Placing and Finishing:
1. Spread, consolidate, screed, and float-finish the concrete in one complete pass of the equipment.
 2. Extrude concrete under load and compact into dense stable mass to assure that concrete remains stable with minimum slumping after trailing side forms have passed.
 3. Adjust forward-travel speed to production of batching and mixing equipment as required to provide continuous uninterrupted operation.
 4. Smoothness and surface testing, burlap-drag finishing, and edging shall be performed as specified for paving with equipment using forms except equipment shall be capable of forming these operations without use of side forms.

3.11 COLD WEATHER CONSTRUCTION:

- A. Temperature of concrete when placed shall not be less than 65°F nor more than 85°F. Subgrade shall be entirely free from frost.
- B. The temperature of forms, reinforcement, embedments, or other surfaces to be in contact with the concrete shall not be less than 10°F of the temperature of the concrete at placement.
- C. Heat mixing water and aggregates to maintain minimum temperature of 65°F. Aggregates shall be free from ice and snow. Methods and equipment for heating are subject to prior approval of Engineer.
- D. Provide covering and other means to maintain concrete at a minimum of 65°F for not less than 72 hours, and above freezing for the remainder of curing period. Do not use salt, chemicals, or other additives.
- E. Remove concrete damaged by freezing to the nearest contraction or construction joint and replace at Contractor's expense.

3.12 HOT WEATHER CONSTRUCTION:

- A. Hot weather is defined as when the rate of evaporation approaches 0.2 lb/ft² per hour as outlined in Fig. 2.1.4 of ACI 305.
- B. Concrete shall have a maximum temperature of 80°F when placed in form.
- C. Temperature of mix shall be controlled by cooling the mixing water, sprinkling aggregates, or other acceptable methods.
- D. Cease operations during intense hot weather if concrete shows excessive hairline cracking or poor finish due to hot weather or if requested in writing by Engineer.

3.13 JOINTS:

- A. General:
 1. Construct joints as indicated and perpendicular to the pavement surface.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

2. Surfaces of adjacent slabs shall not vary more than 1/8 inch when tested with a 10 ft. straightedge placed at right angles to the joint.
 3. Construct joints true to line. Horizontal deviation shall not exceed 1/4 inch from true line or from designated position.
 4. Form keyways with metal templates sufficiently anchored, and of proper gage to ensure full keyways of the required dimension at the correct location.
 5. Set offset hubs for each transverse joint in curved paving lanes, and as required at tangent sections of paving lanes to assure accurate joint location.
- B. Longitudinal Construction Joints:
1. Form joints with keyways where indicated.
 2. Install tiebars where required.
 3. Finish edges of joints adjacent to other paving lanes flush with forms.
 4. Saw sealant groove to the dimensions indicated.
- C. Longitudinal Center Joints:
1. Form by sawing grooves of dimensions indicated.
 2. Install tiebars by supporting rigidly in place with approved devices or placing with equipment mounted on the transverse finishing machine, capable of accurately positioning tiebars in the center of the slab and at the spacing indicated.
 3. Keyed longitudinal construction joints may be used in lieu of sawed center joints at Contractor's option.
- D. Longitudinal Expansion Joints:
1. Install at locations and conforming to details indicated.
 2. Install premolded filler conforming to ASTM 1751. Filler shall extend for the full width and required depth of joint.
 3. Fasten filler securely in position perpendicular to the finished surface with top of filler 1 inch below the proposed surface.
 4. Protect top of filler with metal or wooden cap. Withdraw cap after finishing operations and edge joint with a 1/4-inch radius edging tool.
- E. Transverse Construction Joints:
1. Locate joints at plan location of transverse contraction joints.
 2. Install joints at any time placing is suspended for 30 minutes or more.
 3. Construct joint as detailed and specified for longitudinal construction joints, including keyway.
- F. Transverse Expansion Joints:
1. Install premolded filler conforming to ASTM 1751. Secure in position and protect as specified for "Longitudinal Expansion Joints," this Article.
 2. Use oiled steel plate cut to the cross section of the pavement and slotted for dowels where required to maintain position of premolded material during placing and finishing.
 3. Devices used for installation of joints shall be easily removable without disturbing concrete.
 4. Remove joint caps and any concrete bridging joint following finishing operations and edge joint with 1/4 inch radius edging tool.
- G. Transverse Contraction Joints:
1. Construct by sawing a groove of the dimensions indicated.
 2. Saw after concrete has hardened and before random cracking occurs.
 3. Begin sawing as soon as concrete has hardened enough to prevent excessive chipping, spalling, or tearing; saw approximately four to eight hours after placement.
 4. Continue sawing without interruption for any reason. Saw joints at the required spacing consecutively in the order of placement.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

5. Locate and install all marks and guides required to ensure accurate location of sawed grooves.
 6. Wet surface of pavement cured with membrane compounds prior to sawing.
 7. Limit personnel working on slab to only those essential for construction of joints. Equip all personnel with rubber-soled footwear.
 8. Flush each joint and adjacent concrete surface to remove all debris from sawing operations immediately after sawing.
 9. Respray joint and any damaged membrane with curing compound as specified as soon as free water disappears from the surface.
 10. Install dowels where required prior to placing and finishing concrete.
- H. Joint Accessories:
1. General: Install tiebars, dowels, and preformed filler conforming to details indicated after final testing of underlying course.
 2. Supports: Use adequate baskets or supports to rigidly fix all joint accessories in position in proper location, and in planes parallel or perpendicular to the pavement surface.
 3. Tiebars:
 - a. Install at right angles to centerline of paving lane.
 - b. Place parallel to the surface and at mid-depth of slab.
 - c. Tiebars extending into unpaved lanes may be bent at right angles against the side forms at keyed longitudinal construction joints.
 4. Dowels:
 - a. Secure dowels rigidly in place in the middle of the slab by an approved assembly device to be left permanently in place.
 - b. Assembly and support shall be rigid enough to permit lifting and placing as a unit.
 - c. Alignment tolerance for any dowel or assembly shall not exceed 1/8-inch per ft.
 - d. Furnish an approved template for checking position of dowels.
 - e. Install expansion caps on dowels used in expansion joints.
 - f. Paint one entire half of all dowels with one coat of red rust-inhibitive paint at the Site of the Work.
 - g. Thoroughly coat the painted half of the dowel with a heavy oil after the paint has dried, and immediately before dowel is placed in position in the slab.

3.14 CURING:

- A. General: Cure concrete by protecting against loss of moisture and action of the elements and mechanical injury.
1. Curing period shall be seven days after completion of pavement.
 2. Curing method used shall retain at least 90% of the original water present in the mix at the end of the curing period.
- B. Moist Curing:
1. Cover concrete with two or more layers of burlap conforming to FS CCC-C-467 or Engineer-approved equal.
 2. Saturate covering immediately before placing and keep saturated throughout the curing period.
 3. Place covering to completely cover the surfaces and edges of the slab.
- C. Paper or Polyethylene-Sheet Curing:
1. Place blankets or impermeable paper conforming to ASTM C171 or white polyethylene sheeting conforming to AASHTO M171 on the pavement surface and along the slab edges as soon as possible without marring the surface, but early enough to prevent loss of moisture.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

2. Wet surface with water applied in the form of a fine spray before covering with paper or sheeting when required by Engineer.
3. Extend blankets at least 12 inches beyond pavement edges and weight in place.
4. Pleat blankets as required to allow for shrinkage.
5. Overlap adjoining blankets at least 4 inches and cement joint with an asphalt cement suitable for use with the blanket material used as required to produce a waterproof joint.
6. Reuse only those blankets that have been satisfactorily repaired to provide an airtight cover.

3.15 SEALING JOINTS:

- A. General: Seal all joints with specified material before permitting any traffic on the pavement.
- B. Time of Application:
 1. Seal immediately after the curing period or as soon thereafter as weather permits.
 2. Seal only when weather conditions will not reduce adhesion of sealant. Do not apply sealant during rainy or foggy weather.
- C. Preparation:
 1. Clean joints immediately before filling. Remove all laitance, curing compound, protrusions of hardened concrete, and foreign material.
 2. Wire-brush or resaw all joints as required to remove all traces of curing compound on inside joint faces.
 3. Clean joints with compressed air immediately prior to application of sealant.
- D. Heating:
 1. Heat sealant in the specified equipment to the temperature recommended by the sealant manufacturer and maintain temperature throughout pouring operation.
 2. Waste all material heated more than permissible temperature, and all material remaining in kettles at the end of the day.
- E. Sealing:
 1. Fill joints from the bottom up.
 2. Fill joint to 1/8-inch below the pavement surface.
 3. Remove all excess sealer from the pavement surface.
 4. Clean and reseal all underfilled, overfilled, or otherwise unsatisfactory joints.
 5. Dust surface of joints with sand or other approved material or cover with tape when required to prevent tackiness or pickup.
- F. Approval:
 1. Demonstrate that the equipment and procedures used for preparing joints and heating and application of sealant will produce a satisfactory seal before beginning Work.
 2. Prepare and apply at least one small batch of each sealant proposed for use.
 3. Reject any batches of sealant that do not have a satisfactory consistency for application.
 4. Replace any equipment that does not perform satisfactorily.

3.16 SMOOTHNESS AND GRADE:

- A. Preparation:
 1. Remove all materials used for curing concrete.
 2. Clean surface of pavement by sweeping and power blowing or as required to remove all foreign material from the surface.
- B. Testing Equipment:
 1. Furnish rolling straightedge of the "Scotch" type or other mechanical surface testing machine approved by Engineer.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

2. Machine shall be capable of indicating surface deviation from a true plane over 16 ft. in length.
 - C. Tolerance:
 1. Surface smoothness variations shall not exceed 1/4 inch in 16 ft.
 2. Maximum absolute deviation from plan grade elevation shall not exceed 1/2 inch and distance from point of maximum deviation to nearest point of zero deviation shall not exceed 100 ft.
 3. Remove and replace all sections that exceed the specified deviation.
 4. Grind off localized bumps and high spots. Bush hammering will not be permitted.
- 3.17 PROTECTIVE COATING (LINSEED OIL):
- A. General Requirements:
 1. Thoroughly clean all surfaces indicated to receive the boiled linseed oil treatment by brooming with a stiff bristle power broom to remove all dirt and loose materials.
 2. Surfaces shall be dry.
 3. Do not apply coating sooner than 14 days after curing period.
 - B. Application:
 1. Linseed oil shall be mixed with an equal volume of mineral spirits to decrease the viscosity and facilitate spreading.
 - a. Mineral Spirits are flammable with a flash point of 100 to 140°F and caution must be exercised in use of the solutions of linseed oil in this solvent.
 - b. Apply first coat at the rate of 0.025 gal. per yd.²
 - c. After the first coat is thoroughly dry, apply second coat at the rate of 0.015 gal. per yd.²
 2. Surfaces to receive the linseed oil coating shall be kept clear of traffic until the second coat is dried.
 3. The temperature of the concrete surface and atmosphere shall be 40°F or above.
 - C. Application Equipment:
 1. Equipment and tanks used for storing the linseed oil mixtures shall be clean and free from any residual material.
 2. Equipment shall be capable of applying the linseed oil mixture safely and uniformly at the specified application rate.
- 3.18 THICKNESS:
- A. General:
 1. Construct pavements to the thickness indicated.
 - B. Measurement:
 1. Slab thickness will be measured by at least three caliper measurements of the thickness of cores taken from the slab at locations determined by Engineer.
 2. Coring will be done under Engineer's supervision without cost to Contractor; except Contractor shall fill all core holes with fresh concrete, finish surface, and apply curing compound.
 3. Area of any pavement found to be deficient by measurement of cores as specified will be the distance between adjacent cores of satisfactory thickness multiplied by the lane width between longitudinal construction joints.
 4. When any core indicates a thickness deficiency of 1/2 inch or greater, additional cores will be taken by Engineer at 20 ft. intervals longitudinally along the paving lane in each direction from the deficient core until a section less than 1/2 inch deficient in thickness is found.

SECTION 32 13 13 – CONCRETE PAVEMENT: continued

5. Contractor may request additional cores be taken if Contractor believes that cores and measurements taken are insufficient to fairly indicate the actual pavement thickness. Cost of additional cores and measurements will be deducted from sums due Contractor unless such measurements indicate that the slab within the area in question is of the specified thickness.
 - C. Correction and Repair:
 1. No deduction will be made for pavement areas within 1/4 inch of the required thickness.
 2. No additional payment will be made for pavements found to exceed plan thickness.
 3. No payment will be made for pavement areas having thickness deficiencies more than 1/2 inch.
 4. Engineer may require removal and replacement of all pavements deficient in thickness by greater than 1/2 inch if, in Engineer's judgment, such deficiency will seriously impair the expected service from the pavement. No payment will be made for removal and replacement.
- 3.19 PAVEMENT PROTECTION:
- A. General: Close pavement to all traffic, including Contractor vehicles, for a period of at least 20 days after concrete is placed, and a longer period when requested by Engineer.
 1. Furnish and maintain all necessary barricades, lights, and signs required to exclude traffic from pavement.
 2. Repair any damage to pavement without additional compensation.
 3. Seal all joints before opening to traffic.
 - B. Paving Adjacent Lanes:
 1. Do not operate paving equipment on completed lanes for a period of 10 days after placement except as specified.
 2. Completed lane may be used to support paving equipment after five days if Contractor can demonstrate by test cylinders that the pavement has attained a strength of at least 3,000 psi. Such test cylinders will be made by Contractor under Engineer's observation and tested by Engineer at Contractor's expense.
 - C. Maintenance:
 1. Maintain pavement free of all debris from Contractor's operations by sweeping, power blowing, and other methods as required.
 2. Remove any aggregates or other foreign material forced into joints and reseal.

END OF SECTION 32 13 13

SECTION 32 16 00 – CURBS, GUTTERS, SIDEWALKS, MEDIAN, AND PAVED DRAINAGE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section includes concrete curbs, gutters, sidewalks, median, and paved drainage where indicated.

1.03 RELATED REQUIREMENTS:

- A. DIVISION 03 - CONCRETE.

1.04 REFERENCE STANDARDS:

- A. Applicable Standards:
 - 1. American Concrete Institute (ACI):
 - a. 306 - Cold Weather Concreting.
 - b. 305 - Hot Weather Concreting.
 - 2. ASTM International (ASTM):
 - a. A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 - b. A616 - Rail-Steel Deformed and Plain Bars for Concrete Reinforcement.
 - c. C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
 - d. D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
 - e. D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
 - f. D6690 - Joint and Crack Sealants, Hot Applied, for Concrete and Asphalt Pavements.
 - 3. Federal Specifications (FS):
 - a. TT-S-00227 - Sealing Compound; Elastomeric Type, Multi-Component. (For caulking, sealing, and glazing in buildings and other structures.)

1.05 WEATHER LIMITATIONS:

- A. Conform to ACI 306 when temperature is below 40°F or is likely to fall below 40°F within a 24-hour period after placement of concrete.
- B. Conform to ACI 305 when temperature is above 100°F or is likely to rise above 100°F within a 24-hour period after placement of concrete.

PART 2 - PRODUCTS

2.01 CONCRETE:

- A. 4,000 psi concrete as specified in DIVISION 03 - Concrete.
- B. Reinforcing steel as specified in DIVISION 03 - Concrete .
- C. Concrete slump reduced as necessary for slip-form construction, construction on steep slopes, and consolidation of concrete in curb back sections.

2.02 JOINT DOWELS:

- A. Smooth round dowels having at least one-half the length of each dowel coated to ensure that no bond is developed between dowel and concrete.

SECTION 32 16 00 – CURBS, GUTTERS, SIDEWALKS, MEDIAN, AND PAVED DRAINAGE:
continued

- B. Conform to ASTM A615, Intermediate Grade or ASTM A616, Regular Grade.
- 2.03 EXPANSION JOINT FILLER:
 - A. Preformed material cut and shaped to the required cross section.
 - B. Thickness of 1/2 inch unless otherwise indicated.
 - C. Conform to ASTM D1751 for all expansion joints except for those in sidewalks. Conform to ASTM D1752, Type II or Type III, for expansion joints in sidewalks.
- 2.04 JOINT SEALER:
 - A. Conform to ASTM D6690 for all joints required to be sealed except those in sidewalks.
 - B. For Expansion Joints in Sidewalks:
 - 1. Conform to FS TT-S-00227.
 - 2. Nontracking after initial cure.
 - 3. Two-component, cold-applied.
 - 4. Compatible with preformed expansion joint filler.
 - 5. Black or gray color.
- 2.05 CURING COMPOUND: Conform to ASTM C309, Type I or Type I-D.
- 2.06 FORMS:
 - A. Wood or metal.
 - B. Straight and strong enough to resist springing during placement of concrete.
 - C. Sufficient bearing surface to prevent tipping.
 - D. Height equal to full depth of section to be constructed.
- 2.07 SLIP-FORM MACHINE:
 - A. Designed to produce finished concrete items true to line, grade, and cross section.
 - B. Designed to extrude and compact concrete by means of extrusion form accurately shaped to the required cross section.
 - C. Line and grade controlled automatically from erected taut wire or string line.
 - D. Equipped with trailing side form when necessary to support material behind the extrusion plate.
 - E. Equipped with finishing devices to produce type of finish specified.

PART 3 - EXECUTION

- 3.01 PREPARATION:
 - A. Subgrade preparation is as specified in DIVISION 31 - EARTHWORK.
- 3.02 INSTALLATION:
 - A. Forms:
 - 1. Use flexible forms for all curved form lines except:
 - a. Curves having a radius of 200 ft. or greater may be formed in 10 ft. or shorter chords.
 - b. Curves having a radius of 100 ft. or greater may be formed in 5 ft. or shorter chords.
 - 2. Thoroughly clean, oil, securely stake, brace, and hold forms to line and grade.
 - 3. Remove forms from front face of curb section at the time necessary to permit finishing concrete. Leave other forms in place not less than 12 hours after placement of concrete.

SECTION 32 16 00 – CURBS, GUTTERS, SIDEWALKS, MEDIAN, AND PAVED DRAINAGE:
continued

B. Joints:

1. Contraction Joints:

- a. Construct at locations indicated and as follows:
 - (1) Divide concrete curb, curb and gutter, median, and paved drainage into monolithic sections not greater than 10 ft. in length.
 - (2) Match contraction joint spacing of adjacent Portland cement concrete pavement.
 - (3) Divide sidewalks into approximately square areas.
- b. Form contraction joints by the following methods:
 - (1) Place 1/8-inch-thick steel separators after concrete has taken its initial set, but before final finishing.
 - (2) Cut a groove in the fresh concrete to a depth of at least one-fourth the section thickness by use of a jointer having a radius of 1/8 inch and thickness not exceeding 1/8 inch.
 - (3) Saw the hardened concrete before shrinkage cracking occurs. Depth of cut not less than 1/4 the section thickness and width of key not to exceed 3/16 inch.

2. Expansion Joints:

- a. Construct at the following locations:
 - (1) Locations as indicated.
 - (2) All points of curvature and points of tangency of curves having a radius of 100 ft. or less, and at intervals not exceeding 60 ft. in tangent section.
 - (3) Locations matching expansion joint spacing of adjacent Portland cement concrete pavement.
 - (4) Locations where curb, curb and gutter, sidewalk, median, or paved drainage abut each other or other structures and slabs.
- b. Stake, support, and secure local transfer dowels and preformed joint filler in position to prevent displacement during placing and finishing operations.
- c. Round edges of joints with an edging tool of 1/4 inch radius.
- 3. Key Joints: Construct at locations indicated for paved drainage and curb and gutter adjacent to Portland cement concrete pavement.
- 4. Construction Joints:
 - a. Locate to coincide with contraction, expansion, or key joints.
 - b. When concrete placement is interrupted between joint locations for a sufficient time for the concrete to take its initial set, remove concrete to the nearest joint location before resuming placement.
 - c. Make transverse construction joints in paved drainage having a thickness of 6 inches or greater by either key joints or expansion joints.

C. Concrete:

1. Placing Concrete:

- a. Place only on prepared and approved subgrade.
- b. Lightly moisten surface of dry subgrade before placing concrete.
- c. Deposit and compact concrete in manner to avoid displacement of forms and joint materials.
- d. Tamp or vibrate concrete sufficiently to eliminate all voids and bring the mortar to the top for finishing.

2. Finishing Concrete:

- a. Edge concrete with proper edging tools.

SECTION 32 16 00 – CURBS, GUTTERS, SIDEWALKS, MEDIAN, AND PAVED DRAINAGE:
continued

- b. Tool radii as soon as possible after concrete has taken its initial set.
 - c. Remove curb face forms and rub with rubbing block and water until all blemishes, forms, and tool marks have been removed.
 - d. Float-finish with wood float or concrete rubbing block until concrete is true to line, grade, and cross section, and is uniform in texture.
 - e. Brush with hairbrush as follows:
 - (1) Curb and curb and gutter parallel to the line of curb.
 - (2) Sidewalk and median perpendicular to their longitudinal axis.
 - f. Do not use mortar topping or sand and cement dryer.
 - D. Tolerances:
 - 1. Applies to conventional and slip-form construction.
 - 2. Alignment deviation of finished concrete Work not to exceed 1/4 inch in 10 ft. from true line and grade.
- 3.03 SLIP-FORM CONSTRUCTION:
 - A. Prepare subgrade a sufficient additional width as necessary to provide support and tracking for the slip-form machine.
 - B. Adjust slump (reduce) and control concrete mix as necessary to provide satisfactory slip-form construction.
 - C. Use supplementary hand-finishing operation when necessary to produce uniform finishes free from blemishes and of the types and textures specified.
- 3.04 CONCRETE CURING AND PROTECTION:
 - A. Curing:
 - 1. Spray all exposed surfaces after finishing with curing compound.
 - 2. Apply curing compound at a rate of not less than 1 gal. per 25 yds.² of surface area.
 - 3. Apply second coat at a rate of not less than 1 gal. per 30 yds.² 30 minutes after first-coat application when the atmospheric temperature exceeds 100°F.
 - B. Protection:
 - 1. Protect the finished Work from damage until final acceptance.
 - 2. Repair, replace, or clean all concrete damaged or discolored prior to final acceptance.
- 3.05 SEALING JOINTS:
 - A. Seal all expansion joints and contraction joints 1/4 inch or greater in width.
 - B. Do not seal portions of expansion joints located in vertical parts of curbs.
 - C. Remove curing compound and other material from joint surfaces before sealing. Joint shall be clean and surface dry at time of sealant application.
 - D. Apply joint sealant using methods and equipment necessary to ensure complete filling of the joint space without voids or air bubbles.
 - E. Apply sealant to conform to sealant manufacturer's instructions.
 - F. Apply finished sealant from 1/8 inch below to level with adjacent concrete surfaces.
 - G. Protect adjacent surfaces to prevent contamination with sealant material.
 - H. Protect sealant until it has set up or cured sufficiently to preclude pickup or tracking.

END OF SECTION 32 16 00

SECTION 32 17 23 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 SUMMARY:

- A. This work consists of furnishing and applying pavement marking, and furnishing, installing, and removing temporary pavement markings in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), the Oklahoma supplement thereto, and in conformity to the lines, dimensions, patterns, locations and details shown on the plans or established.
- B. This Section includes lane marking paint for the following areas:
 - 1. Highways and Interstates.
 - 2. Roads and streets.

1.02 REFERENCES:

- A. Applicable Standards:
 - 1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. M 247 - Standard Specification for Glass Beads Used in Traffic Paints.
 - b. M 249 - White and Yellow Reflective Thermoplastic Striping material (Solid Form).
 - 2. ASTM International (ASTM):
 - a. E303 - Standard Test Method for Measuring Surface Frictional Properties Using the British Pendulum Tester.
 - 3. Federal Standards (FS):
 - a. 595 - Colors Used in Government Procurement.
 - 4. Oklahoma Department of Transportation (ODOT).
 - a. 2019 Standard Specifications for Highway Construction.

1.03 SUBMITTALS:

- A. Includes, but not limited to, the following:
 - 1. Pavement Marking Plan:
 - a. When pavement marking location details are not provided on the Contract Drawings, the Contractor shall submit a layout of existing conditions to the Engineer for approval or modification. This layout is to be used as the final pavement marking plan.
 - 2. Reflective glass beads product data and application rates
 - 3. Thermoplastic product data and installation equipment and procedure
 - 4. Product data and label analysis on marking paint.

1.04 DELIVERY AND STORAGE:

- A. Deliver all paint materials to jobsite in original unopened containers with labels intact and legible.
- B. Store as recommended by the manufacturer.

PART 2 - PRODUCTS

2.01 MATERIALS:

- A. General: In addition to the below specifications, all products, materials, and equipment shall meet the requirements of the Oklahoma Department of Transportation (ODOT) 2019 Standard Specifications for Highway Construction and any revisions thereto.

SECTION 32 17 23 - PAVEMENT MARKING: continued

2.02 TEMPORARY PAVEMENT MARKINGS:

- A. Temporary pavement markings necessary to facilitate construction (i.e., detours or temporary lane markings) may be installed using paint.

2.03 PERMANENT PAVEMENT MARKINGS:

- A. Replacement of pavement markings shall match that of the pavement markings removed or damaged due to constructive efforts. Match existing pavement markings in dimensions, color, and materials.
 - 1. Paint is not an acceptable permanent pavement markings. Existing pavement markings of paint shall be replaced with THERMOPLASTIC or EPOXY.
- B. Lane designation striping reinstalled as a result of new construction shall be THERMOPLASTIC as per ODOT specification 711.
- C. All arrows, graphics, or lettering reinstalled as a result of new construction shall be THERMOPLASTIC as per ODOT specification 711.

2.04 THERMOPLASTIC MARKING MATERIAL

- A. Preformed Thermoplastic markings shall be composed of aggregates, pigments, binders and glass beads, and shall conform to AASHTO M 249 with the exception of the relevant differences due to the fact that the material is supplied in a preformed state. The material shall be either alkyd or hydrocarbon based. Only preformed thermoplastic pavement marking material listed on the Department's approved products list may be used.
- B. Physical Requirements.
 - 1. Graded Glass Beads: The material shall contain a minimum of 30% graded glass beads by weight. The beads shall be clear and transparent.
 - a. Twenty percent or less shall consist of irregular, fused spheroids, or silica.
 - b. The refractive index shall be at least 1.50.
 - 2. Pigments:
 - a. White - Sufficient titanium dioxide pigment shall be used to insure a color similar to Federal Highway White, Color Number 17886, conforming to FS 595.
 - b. Yellow - Sufficient yellow pigment shall be used to insure a color similar to Federal Highway Yellow, Color Number 13655, conforming to FS 595. The yellow pigment shall be organic and contain no lead chromate.
 - 3. Skid Resistance: The surface of the preformed thermoplastic markings shall provide a minimum resistance value of 45 BPN when tested according to ASTM E303.
 - 4. Thickness: The material shall be supplied at a minimum thickness of 125 mils.
 - 5. Environmental Resistance: The preformed thermoplastic material shall be resistant to deterioration due to exposure to sunlight, water, oil, gasoline salt and adverse weather conditions.

2.05 GLASS BEADS FOR TRAFFIC MARKINGS

- A. Glass beads for Traffic Paint shall conform to AASHTO M 247, Type 1 or Type 2, non-flotation grade.
- B. Glass beads for Thermoplastic Pavement Marking shall conform to AASHTO M 247, Type 1.
- C. Glass beads for epoxy pavement marking shall conform to AASHTO M 247, Type 1.
- D. The beads shall be silicon treated to meet the requirements of Section 4.4.2 of
- E. AASHTO M 247.
- F. Glass beads shall be furnished in fully identified containers and shall be free of extraneous material or clumps.

SECTION 32 17 23 - PAVEMENT MARKING: continued

- G. Glass beads applied by the second bead applicator shall be AASHTO M 247, type 1 silane coated (AC-02) flotation beads.

PART 3 - EXECUTION

3.01 GENERAL

- A. Pavement markings shall be restored to original conditions per the instruction of the Owner. Owner shall review in the field prior to and during installation of permanent pavement markings.
- B. In addition to the below specifications, all construction requirements shall meet the Oklahoma Department of Transportation (ODOT) 2019 Standard Specifications for Highway Construction and any revisions thereto.

3.02 SURFACE PREPARATION:

- A. Clean surface dry, smooth, and free of dust, oil, grease, and frost.
- B. Surface areas of new asphalt pavement, existing asphalt pavement, and existing concrete pavement that are to receive marking shall be cleaned with a high pressure air blast to remove loose material prior to placement.

3.03 TEMPORARY PAVEMENT MARKINGS:

- A. Apply temporary, painted markings if permanent pavement parking is unavailable or not constructable.
 - 1. Apply during cold weather until air temperatures allow for permanent markings.
- B. Apply immediately following construction and disturbance to existing lane markers.
- C. When one roadway of a normally physically divided highway is closed, and a crossover is constructed, full compliance pavement markings shall be placed along the tapers and through the median crossovers to the two-way traffic section. Pavement markings through the two-way traffic section shall be as shown on the plans.
- D. All temporary paved roadways shall have full compliance pavement markings before they are open for traffic.
- E. Markings applied to a final surface shall not leave a scar that conflicts with permanent markings.

3.04 PERMANENT PAVEMENT MARKING:

- A. Contractor shall notify the appropriate jurisdiction at least 48-hours in advance of permanent pavement marking installations.
- B. Installation per Technical Provisions & Standard Drawings for Roads and Sewers edition 2008, Section 6150 Pavement Marking (Paint).
- C. Apply markings where indicated or where removed, including direction arrows, handicapped symbols, and other indicated symbols or wording.
- D. Apply under dry and dust-free conditions.
- E. Protect pavement marking from traffic until pavement marking has dried sufficiently to prevent tracking.
- F. Apply to a thickness of not less than 3/32-inch at the edges, or less than 1/8-inch at the center.
- G. The finished lines shall have well defined edges and be free of waviness. All of the equipment necessary to the preheating and application of the material shall be so designed that the temperature of the material can be controlled within the limits necessary to its pourability for good application.

SECTION 32 17 23 - PAVEMENT MARKING: continued

- H. At the time of installation of thermoplastic materials, the pavement shall be clean, dry, and free of laitance, oil, dirt, grease, paint or other foreign contaminants.
- I. Pavement and ambient temperatures shall be at least 50°F.
- J. An epoxy resin primer shall be applied to all pavement surfaces prior to the application of the thermoplastic pavement marking.
- K. The marking material shall not be applied until the epoxy resin primer reaches the tacky stage, approximately 15 minutes under normal conditions.
 - 1. An infrared heating device may be employed to shorten the curing time of the epoxy.
- L. To insure the best possible adhesion, the marking material as specified, shall be installed at the manufacturer's recommended temperature.
- M. Apply to a thickness of not less than:
 - 1. 15 mils for epoxy markings.
 - 2. 3/32-inch at the edges, or less than 1/8-inch at the center for thermoplastic markings.
 - 3. The minimum thickness of thermoplastic lines as viewed from a lateral cross section shall not be less than 3/32-inch at the edges, or less than 1/8-inch at the center.
 - a. Measurements shall be taken as an average throughout any 36-inch section of the line.
- N. The material, when formed into traffic stripes, must be readily renewable by placing an overlay of new material directly over an old line of compatible material. Such new material shall bond itself to the old line in such a manner that no splitting or separation takes place.
- O. Glass beads shall be applied:
 - 1. To the epoxy pavement markings at a rate of 25 pounds per 100 square feet, 25 pounds per gallon, minimum.
 - a. Provide by means of pressurized bead applicator
 - 2. To the thermoplastic pavement marking at a rate of 10 pounds per 100 square feet, minimum.

END OF SECTION 32 17 23

SECTION 32 92 00 - SEEDING AND SODDING

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes seedbed preparation, sodding, for areas indicated and/or disturbed by Contractor's construction activities.
 - 1. All materials and work shall be in accordance with the Oklahoma Department of Transportation 2009 Specifications.
 - a. Section 230, "Sodding and Spigging"

PART 2 - PRODUCTS

2.01 FERTILIZER:

- A. Fertilizer shall be applied in accordance with Subsection 230.04 G, "Fertilizer Options".

2.02 SOD:

- A. Sod shall supplied and installed in accordance with Section 230.04, "Solid Slab Sodding Operations"
- B. Cut sod in strips of uniform thickness with a minimum thickness of one and 1/2-inch.
 - 1. Each strip shall contain at least one-half (1/2) but not more than one square yard.
 - 2. Strips shall be not less than 12 inches in width.
- C. At the time of sodlifting, the top growth shall not exceed 3 inches in length.
- D. Moisten sod to depth at which it is to be cut when stripped during dry periods.

PART 3 - EXECUTION

3.01 SEEDBED AND SODBED PREPARATION:

- A. Dispose of any growth, rocks, or other obstructions which might interfere with tilling, seeding, sodding, or later maintenance operations.
- B. Thoroughly loosen and pulverize topsoil to a depth of at least 3 inches. Minimum depth of topsoil at seeded areas shall be 4 inches.
- C. Maintain tilled areas until seeded and mulched, or sodded to provide a smooth area with no gullies or depressions.

3.02 APPLICATION - SOD:

SECTION 329200 - SEEDING AND SODDING: continued

- A. Prior to placing sod, the soil surface shall be worked until it is relatively free from debris, washes, gullies, clods, and stones. Surface shall be worked to a depth of not less than 3 inches with a disk, tiller, or other equipment approved by the Engineer.
- B. Fertilizer shall be placed prior to placement of sod.
- C. Handle sod with care to prevent loss of native soil from roots.
- D. Do not use frozen sod.
- E. Do not place sod on frozen ground.
- F. Sod shall be moist at the time it is placed.
- G. Lay sod strips along contour lines, by hand, commencing at the base of the area to be sodded and working upward.
 - 1. Carefully lay sod to produce tight joints.
 - 2. Stagger transverse joints of sod strips.
- H. Firm, water, and refirm sod immediately after it is placed.
 - 1. Accomplish firming by application of a smooth-wheel roller weighing not less than 60 or more than 90 pounds per linear foot of roller.
- I. On slopes of 3 horizontal to 1 vertical and steeper, anchor sod by wooden pegs after sod has been firmed.
 - 1. Pegs shall be 1/2-inch by 12 inches, driven into the ground on about 2-foot centers.
 - 2. Top of peg after driving shall be not less than 1/2-inch but not more than 1 inch above top of sod.

3.03 MAINTENANCE:

- A. Mow grass to a height of 2 inches whenever average height of grass exceeds 5 inches.
- B. Remove weeds by approved chemical treatment.
- C. Erect and maintain signs or barricades to exclude traffic from seeded or sodded areas.
- D. Seeded Areas: Perform maintenance for a period of three months after planting unless the desired cover is obtained in a shorter time and the shortening of the period of Contractor's responsibility is authorized.
 - 1. Water as required by good practice during the three-month maintenance period or until accepted by Engineer.
 - 2. Prior to acceptance, repair at Contractor's expense any portion of the seeded surface which becomes gullied or otherwise damaged, or destroyed.

SECTION 329200 - SEEDING AND SODDING: continued

3. To be acceptable, seeded areas shall have a good, uniform color and sturdy growth with no bare soil spots, over a minimum of 98 percent of the area seeded.
- E. Sodded Areas: Perform maintenance for a period of three months after planting unless the desired cover is obtained in a shorter time and the shorter period of Contractor's responsibility is authorized by Engineer.
 1. Thoroughly water sodded areas daily for a period of 15 days after placing.
 2. Maintain sod in good live condition. Prior to acceptance, replace any sod not in good growing condition with fresh live sod.
 3. Water thoroughly whenever sod shows evidence of excessive drying until sod is accepted.
 4. To be acceptable, sodded areas shall have a good, uniform color and sturdy growth with no bare soil spots, over a minimum of 98 percent of the area sodded.

3.04 MEASUREMENT AND PAYMENT:

- A. Time of Completion: Completion time for seeding and sodding shall not apply to provisions for liquidated damages with respect to Contract completion time. Payment for seeding and sodding will be withheld until such Work is accepted.

3.09 METHOD OF MEASUREMENT

Solid Slab Sodding will be paid as a lump sum.

3.10 BASIS OF PAYMENT

Accepted Sodding, measured as provided above will be paid for at the contract unit price for:

SOLID SLAB SODDING

L.S.

The contract unit price shall be the total compensation for furnishing and placing all sod; for all rolling and tamping; watering and fertilizer; for disposal of all surplus materials; and for all materials, labor, equipment, tools and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

END OF SECTION 32 92 00

DIVISION 33 - UTILITIES

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes all labor, materials, machinery, construction equipment and appurtenances required to perform the installation of a new raw water transmission main using horizontal directional drilling (HDD) methods for the construction.
 - 1. The overall work scope shall include, but not be limited to, steerable directional drilling equipment, drilling pits and equipment, and miscellaneous appurtenances to complete the Work as shown. Directional drilling operations shall be performed within the construction limits as indicated.
- B. The directional drill shall be accomplished by first drilling a pilot hole to design standards, and then enlarging the pilot hole no larger than 1.5 times larger than the outer diameter (O.D.) of the pipe to accommodate the pull back of the pipe through the enlarged hole.
- C. The equipment used in directional drilling shall be of adequate commercial size for safe operation. Contractor shall only use key personnel experienced for a minimum of 12 years in directional drilling operations when performing the Work.
- D. Provide all structures, safety equipment, and professional services required for the health and safety of the general public and of personnel involved in directional drilling work in accordance with the requirements of the regulatory agencies having jurisdiction including the City of Shawnee, Oklahoma and Pottawatomie County, and any other agencies having jurisdiction but are not specifically listed.
- E. Provide all measures necessary to protect surrounding public and private property, adjacent buildings, roads, drives, sidewalks, and appurtenances from damage due to directional drilling work. Responsibility and payment for correction of such damage shall be the sole responsibility of the Contractor.
- F. Related Work Specified Elsewhere:
 - 1. Section 33 11 00 – “Pressure Pipe.”

1.02 REFERENCES:

- A. Reference Test Standards and Specifications:
 - 1. American Association of State Highway and Transportation Officials (AASHTO).
 - 2. American Water Works Association (AWWA):
 - a. C906 - Polyethylene (PE) Pressure Pipe & Tubing, 4-Inch Through 63-Inch for Waterworks.
 - b. M55 - Manual for the Design and Installation of Polyethylene Pipe in Water Applications.
 - 3. ASTM International (ASTM):
 - a. D638 - Standard Test Method for Tensile Properties of Plastics.
 - b. D2122 - Standard Method of Determining Dimensions of Thermoplastics Pipe and Fittings.
 - c. D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.
 - d. D2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
 - e. D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

- f. E3261 - Standard Specification for Butt Heat Fusion Polyethylene Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
 - g. D3350 - Standard Specification for PE Pipe & Fittings Material.
 - h. F412 - Standard Terminology Relating to Plastic Piping Systems
 - i. F714 - Standard Specification for PE Pipe (DR-PR) Based on Outside Diameter
 - j. F2026 - Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
 - 4. Plastic Pipes Institute (PPI):
 - a. Handbook of Polyethylene Pipe.
 - b. MS-3 HDPE Pipe and Fittings Specification for Buried Potable Water.
 - c. TR-3 Policies and Procedures for Developing Hydrostatic Design Basis (HDB), Pressure Design Basis (PDB), Strength Design Basis (SDB), and minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - d. TR-4 HDB/SDB/PDB/MRS Listed Materials, PPI Listing of Hydrostatic Design Basis (HDB), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - e. TR-9 Recommended Design Factors for Pressure Applications of Thermoplastic Pressure Pipe Materials.
 - f. TR-33 Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe.
 - g. TN-42 Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects.
 - 5. Occupational Safety and Health Administration (OSHA):
 - a. Part 1926 - Safety and Health Regulations for Construction.
- 1.03 SUBMITTALS:
 - A. Detailed Work Plan: Prior to beginning Work, the Contractor must submit to the Engineer a work plan detailing the procedure and schedule to be utilized to execute the Work. The work plan should include a description of all equipment to be utilized, down-hole tools, a list of personnel and their qualifications and experience (including backup personnel if an individual is unavailable), list of subcontractors, a schedule of work activity, a safety plan (including material safety data sheets [MSDS] of any potentially hazardous substances to be used), an environmental protection plan and contingency plans for possible problems, descriptions of drilling procedures for pilot hole, reaming operations, and pullback procedures. Plan should also provide estimated bit pressure ranges (maximum and minimum) to meet performance requirements of this Specification. As part of the Work Plan herein specified, the Contractor shall submit a drilling fluid plan which details types of drilling fluids, cleaning, and recycling equipment, estimated flow rates, and procedures for minimizing drilling fluid escape. Work plan should be comprehensive, realistic, and based on actual working conditions for this Project. Plan should document the thoughtful planning required to successfully complete the Work.
 - B. Bore plan: Prior to beginning work, the Contractor must submit to the Engineer a scale shop drawing of the pilot bore plan with Vertical scale 1" = 2' and Horizontal scale 1" = 20'. The plan shall show finished grade, deflection, and radii of the pilot bore, and all existing utilities with minimum vertical and horizontal clearances.
 - C. Material: Specifications on material to be used shall be submitted to Engineer. Material shall include the pipe, fittings, and any other item which is to be an installed component of the project.
 - D. Equipment: Submit specifications on directional drilling equipment to be used to ensure that

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

the equipment will be adequate to complete the project. Equipment shall include but not be limited to: drilling rig, mud system, mud motors (if applicable), downhole tools, guidance system, rig safety systems. Calibration records for guidance equipment shall be included. Specifications for any drilling fluid additives that Contractor intends to use or might use shall be submitted.

- E. Manufacturer's most current calculations regarding tensile load limitations for trenchless application.
- F. Manufacturer's most current calculations and recommendations regarding radius of curvature for pipe to be used for trenchless application.
- G. Qualifications shall be current as of the actual date of fusion performance on the Project. Fusion technician shall have a minimum of 5 years' experience fusing pipe 14-inches in diameter and larger. Submit fusion technician's qualifications.

1.04 QUALITY ASSURANCE (QA):

- A. Directional drilling and pipe installation shall be done only by an experienced Contractor specializing in directional drilling and whose key personnel have at least 12 years' experience in this work. Furthermore, the Contractor shall have a minimum 5 projects where directionally drilled pipe was installed at least as large as 14-inches in diameter and have performed installations at least 500 linear feet.
- B. The Contractor may use HDD subcontractors to accomplish this Work if they meet the qualifications outlined in paragraph 1.04A. Furthermore, references and a list of at least 5 representative projects shall be submitted with the Bid. A representative project is a successful, single pull-back of similar pipe size and length as shown in the plans. The Owner reserves the right to reject any subcontractor who does not meet the requirements.
- C. Bids will be considered nonresponsive if the Contractor fails to list the HDD subcontractor and provide references as stated above.

1.05 PROJECT RECORD DOCUMENTS:

- A. The Contractor shall provide two copies of the "Record Drawing" plans within 30 days of completion of the HDD installation and related work.
- B. The Record Drawing shall be reviewed by the Engineer for accuracy and compliance with the requirements prior to submittal of the monthly pay applications. The pay applications shall be rejected if the marked-up blueline prints do not conform to the "Record Drawings" requirements. Record Drawings shall be submitted to the Inspector for approval upon completion of the Project and prior to acceptance of final pay request.

1.06 FIELD ENGINEERING AND SURVEYING:

- A. The Contractor shall locate the positions of the horizontal directional drilling entry and exit points, establish elevation and horizontal datum for the bore head control, and lay out the pipe assembly area. All information shall be provided in Oklahoma State Plane South Zone. Elevations shall be provided in NAVD88.
- B. The Contractor shall provide and pay for field engineering services for:
 - 1. Survey work required in execution of work. Surveyor shall be licensed to perform work in the State of Oklahoma.
 - 2. Civil, structural, or other professional engineering services specified or required to execute the Contractor's construction method. Engineer shall be licensed to perform work in the State of Oklahoma.
- C. The method of field staking for the construction of the work shall be at the option of the Contractor. Benchmark locations from previous survey work may be available to the Contractor upon request.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

- D. The accuracy of any method of staking shall be the responsibility of the Contractor. All engineering for vertical and horizontal control shall be the responsibility of the Contractor.
- E. The Contractor shall be held responsible for the preservation of all stakes and marks. If any stakes or marks are disturbed by the Contractor, the Contractor shall not proceed with any work until they have established such points, marks, lines, and elevations as may be necessary for the prosecution of the work.
- F. Prior to construction, the Contractor shall be responsible for taking all measurements, horizontal and vertical, as required to complete the Work.

1.07 STREET OR PARKING LOT CLOSURES:

- A. In general, obstructions of streets and/or parking lots are not permitted unless approved by Owner, Engineer, and the appropriate jurisdictions in advance.

1.08 NOISE LEVELS:

- A. Sound levels shall not exceed 70 A-weighted decibels (dBA) from 6 pm to 7 am or 85 dBA from 7:00 am to 6:00 pm. This sound level is to be measured at the property line of the nearest property owner. Sound levels more than these values are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the Owner for excessive noise shall not relieve the Contractor of the other portions of this Specification including, but not limited to, Contract Time and Contract Price.
- B. If mufflers cannot achieve the necessary noise reduction, noise abatement shall be accomplished by the Contractor's installation of baffles (or other acceptable means) positioned to break line-of-sight from the noise source to affected residences. Minimum noise abatement measures shall consist of equipping all engines with hospital grade mufflers or silencers.

1.09 ENVIRONMENTAL CONSIDERATIONS:

- A. The horizontal directional drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud, and cuttings to the areas involved during the construction process. Contractor shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All pits used in the drilling operation shall be lined by Contractor with heavy-duty plastic sheeting with sealed joints to prevent the migration of drilling fluids into the groundwater.
- B. The Contractor shall visit the site and prepare a Drilling Plan outlining procedures to control drilling fluid. Drilling Plan shall be submitted to Engineer as part of the Work Plan.
- C. The general work areas on the entry and exit sides of the crossing shall be laid out in a manner to contain unplanned spills or discharge.
- D. The cuttings and excess drilling fluids shall be appropriately disposed of by Contractor to an off-site location. Contractor shall be responsible for all permits and approvals required by the jurisdictional agencies. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.
- E. Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by Contractor and maintained for use in the event of inadvertent leaks, seeps, or spills.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

1.10 VARIATIONS IN PLAN OR PROFILE:

- A. The Contractor may make changes to the proposed vertical and horizontal alignment of the installation and the location of the entry and exit points, provided these changes are first submitted in writing and agreed to in writing by the Engineer.

1.11 GEOTECHNICAL REPORT:

- A. Contractor shall, at their own expense, make any surveys and investigations as they may deem necessary to evaluate conditions which will affect performance of the Work.
- B. Contractor may also obtain any general information available from USDA Soil Conservation Service for the Site by contacting the Soil Survey Division.

PART 2 - PRODUCTS

2.01 DIRECTIONAL DRILLING EQUIPMENT:

- A. The directional drilling equipment shall be steerable by means of an electronic tool directional system. The directional drilling equipment shall have sufficient strength to drill the pilot hole, ream the hole to adequate diameter, and pull the pipe through the hole.
- B. The drilling rig shall have a system to monitor pull-back hydraulic pressure during pull-back operations.
- C. Drill pipe shall be API steel drill pipe in a diameter sufficient for the torque and longitudinal loads and fluid capacities required for the Work.
- D. Contractor shall provide drilling fluid mixing system of sufficient size to mix and deliver drilling fluid for the Project. The mixing system shall be able to ensure thorough mixing of drilling fluid and reservoir tank shall be sized for adequate storage. The mixing system shall continually agitate the drilling fluid during drilling operations.

2.02 WELL DRILLING FLUID:

- A. Drilling fluid slurry shall be composed of clean water and appropriate additive(s). The composition of the drilling fluid shall be compatible with the soil type encountered during drilling operations. Contractor shall have additives available onsite for all soil types anticipated for Work Site based on Contractor's determination of subsurface conditions that will be encountered.
- B. Drilling fluid slurry mix design shall be provided by the Contractor and submitted to Engineer in the Detailed Work Plan. Drilling fluid shall be selected to accomplish hydraulic cutting, reduce friction, lubricate cutting heads, transport drill cuttings to the surface, stabilize the drill hole against collapse and prevent loss of slurry into surrounding formation.
- C. Additives, such as polymer extenders, shall be submitted for approval prior to use. Material Safety Data Sheets (MSDS) shall be submitted to the Engineer for all drilling fluid materials.
- D. No hazardous additives may be used.
- E. Drilling fluid slurry shall conform to the API specifications for freshwater drilling fluids.
- F. Viscosity of the drilling fluid slurry shall be sufficient to allow spoil to be suspended and transported in the fluid stream. High slurry viscosity which increases pumping requirements reduces annular flow rates and creates excessive annular pressures shall not be used.
- G. Contractor shall establish a drilling fluid return monitoring program. Contractor shall closely monitor drilling fluid returns and note changes in the soil conditions. Adequate preparatory materials shall be onsite to change drilling fluid mixture if deemed necessary while monitoring drilling fluid returns.
- H. Owner may sample and monitor waste drilling mud, cuttings, and water.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

2.03 OTHER EQUIPMENT:

- A. Pipe Rollers: Pipe rollers shall be used to support the pipe assembly during final product pull back. Other methods of pipe support considered shall be submitted and approved by the Engineer prior to use.

PART 3 - EXECUTION

3.01 GENERAL:

- A. The Owner and Engineer shall be notified at least 7 work days in advance of starting work. The Directional Bore shall not begin until the Engineer is present at the Site and agrees that proper preparations for the operation have been made. The Engineer approval for beginning the installation shall in no way relieve the Contractor of the ultimate responsibility for the satisfactory completion of the Work as authorized under the Contract.
- B. The Contractor shall be fully responsible for all damages arising from the Work.
- C. Investigation of the Site and determination of the Site's soil conditions prior to bidding is the sole responsibility of the Contractor. Any subsurface investigation by the Bidder or Contractor must be permitted or approved by the appropriate authority having jurisdiction over the Site.
- D. Contractor shall place silt fence or other approved best management practices (BMPs) between all drilling operations and any drainage, wellfields, wetland, waterway, or other area designated for such protection necessary by documents, state, federal, and local regulations. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations and permits. Fuel may not be stored in bulk containers within 200 feet of any water body or wetland.
- E. A lubrication system shall be used to mix and pump drilling fluid slurry through a hollow stem drill rod to lubricate the hole, assist in the cutting of the earth and rock, and stabilize the bore hole.
- F. The drill rod shall exit at the indicated location and a back reamer is installed to the drill rod to enlarge the hole. The pipe shall be attached to the reamer with a swivel installed between the two to ensure that the rotating action of the reamer is not transmitted to the pipe being pulled back.
- G. If applicable, ballast fluid shall be potable water. Drilling mud is not an acceptable ballast fluid.
- H. During the pullback, drilling fluid shall be pumped through the hollow stem drill rod and injected at the reamer to assist in the cutting and lubrication of the hole, the reduction of friction on the outside of the pipe, and the stabilization of the bore hole.
- I. The pipe shall be filled with water prior to the pullback procedure. This shall aid in keeping the pipe from floating or collapsing during pullback operation and also aid in dissipating the heat of hydration and its effects on the pipe as the drilling mud cures. This can be done in coordination with the hydrostatic testing performed on the pipe.

3.02 PERSONNEL REQUIREMENTS:

- A. All personnel shall be fully trained in their respective duties as part of the directional drilling crew and in safety.

3.03 DRILLING PROCEDURE:

- A. Site Preparation:
 - 1. Prior to any alterations to the Site, Contractor shall photograph and video the entire Site, including entry and exit points. One copy of this record shall be given to each the Owner

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

- and the Engineer and one copy shall remain with the Contractor for a period of one year following the completion of the Project.
2. Work site, as indicated on Contract Drawings, shall be graded or filled to provide a level working area. No alterations beyond what is required for operations are to be made. Contractor shall confine all activities to designated work areas.
 3. Verify that there are no conflicts with existing utilities prior to the start of work.
- B. Drill Path Survey:
1. Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on drawings. If Contractor is using a magnetic guidance system, drill path shall be surveyed for any surface geo-magnetic variations or anomalies.
- C. Environmental Protection:
1. Contractor shall place silt fence between all drilling operations and any drainage, wetland, waterway or other area designated for such protection by Contract Documents, state, federal, and local regulations.
 2. Additional environmental protection necessary to contain any hydraulic or drilling fluid spills shall be put in place, including berms, liners, turbidity curtains and other measures. Contractor shall adhere to all applicable environmental regulations.
 3. Fuel or oil may not be stored in bulk containers within 200-feet of any water-body or wetland and shall not be stored within a floodplain.
- D. Entry and Exit Angles:
1. The entry angle of the drill string shall range between 10 and 12 degrees from horizontal unless otherwise allowed by the Engineer. For the assembled-line method the drill string exit angle shall be such that when the butt fused HDPE pipe is pulled back using the assembled-line option, any transition from the surface of the ground or from rollers placed on the surface onto the entry ramp or into the bore path is within the allowable joint deflection.
 2. The Contractor shall submit a detailed plan showing the connection between the HDD installed piping and the next section of pipeline.
- E. Pipe:
1. High-density polyethylene (HDPE) pipe shall be heat fused and pressure tested as per manufacturer's guidelines before installation in the borehole. During assembly and prior to pullback, pipe must be laid out in such a way as to minimize interference to pedestrian and vehicular traffic, as well as livestock. Pipe shall be welded/fused together in one length, if space permits. Pipe should be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.
- F. Pilot Hole:
1. Pilot hole shall be drilled on bore path. As-built variance for grade of pilot hole shall be a maximum of ± 3 inches in any 100-foot section. Deviations in horizontal alignment for pilot hole shall be a maximum of ± 6 inches in any 100-foot section.
 2. In the event that pilot does deviate from bore path in excess of these variances, Contractor will notify the Engineer and the Engineer may require Contractor to pull-back and re-drill from a location along bore path before the deviation.
 3. Contractor is responsible for providing the certified as-built information showing vertical depth to the centerline of the pipe at 30' intervals and any deviations in the horizontal plane measured from fixed objects.
- G. Reaming:

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

1. Upon successful completion of pilot hole, Contractor will ream the borehole to a minimum of 50% greater than outside diameter of pipe using the appropriate tools. Contractor shall not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle.
 - H. Pull-Back:
 1. After successfully reaming borehole to a sufficient diameter, Contractor will pull the pipe through the borehole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into borehole. During pull-back operations Contractor will not apply more than the maximum safe pipe pull pressure at any time.
 2. In the event that pipe becomes stuck, Contractor will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, Contractor will notify the Engineer. Engineer and Contractor will discuss options and then work will proceed accordingly.
 - I. Site Restoration:
 1. Following drilling operations, Contractor will de-mobilize equipment and restore the Site to original or better condition.
 2. All excavations will be backfilled and compacted in accordance with the Contract Documents.
 - J. Record Keeping:
 1. As-Built:
 - a. Contractor shall maintain a daily project log of drilling operations and a computer generated guidance system log with a copy given to the Engineer at completion of each HDD installation.
 - b. Contractor shall certify as-built drawings for accuracy.
- 3.04 DRILLING CONTROL SYSTEM:
- A. Contractor shall calibrate and verify electronic detection and control system prior to the start of the bore.
 - B. Verification shall confirm ability to conform to Section 3.06 below.
- 3.05 DRILLING FLUID PRESSURES:
- A. Contractor shall determine the maximum and minimum drilling fluid pressures and submit to the Engineer in the Work Plan submitted.
 1. Contractor shall establish a maximum allowable pressure based on the friction angle, the shear modulus of the soil, the depth of cover, and pore pressures.
 2. Contractor shall be required to maintain pressures below the maximum allowable pressure in the annular space of the bore throughout the drilling process to minimize the potential for hydrofracturing, initiating plastic yield, and losing drilling fluids to the surface.
 3. Minimum drilling pressure shall be maintained to prevent collapse of the bore hole.
 - B. Contractor shall continuously monitor the drilling fluid pressures throughout the entire drilling process.
 1. Pressure shall be monitored at the mud pump to calculate drilling fluid pressures within the drilling stem.
 2. Pressure shall also be monitored in the annular space of the bore hole.
 3. In the event of drilling fluid loss, the Contractor shall immediately notify the Engineer and Owner.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

3.06 MONITORING:

- A. The position of the drill string shall be monitored by the Contractor with the downhole survey instruments. Contractor shall compute the position in the X, Y, and Z axis relative to ground surface from downhole survey data a minimum of once per length of each drilling pipe interval.
- B. Positioning shall be field reportable in terms of offset from baseline, distance along baseline, and depth of cover. Point of rotation of the head shall also be monitored.
- C. Deviations from the design position which may affect the installation of the pipeline shall be documented and immediately brought to the attention of the Engineer.
- D. At no point in the drilled profile shall the radius of curvature of the bore be less than the pipe minimum bending radius.
- E. Contractor shall maintain and provide to the Owner, upon request, the data generated by the downhole survey tools in a form suitable for independent calculation of the pilot hole profile.
- F. Contractor shall establish a backup monitoring system to ensure accurate reading in the event of primary monitoring system encounters interference and/or loss of accuracy.
- G. The exit point shall fall within a rectangle 5 feet wide and 5 feet long centered on the planned exit point.

3.07 EXISTING UTILITIES:

- A. Contractor shall be responsible for locating all nearby utilities or other subsurface obstructions that may interfere with the work.
 - 1. Method of locating shall be vacuum excavation or other suitable method approved by the Engineer.

3.08 TOLERANCES:

- A. Pipe installed by the directional drilled method shall be located as shown and shall not be shallower than shown on the Contract Drawings unless otherwise approved.
- B. Contractor shall plot the actual horizontal and vertical alignment of the pilot bore at intervals not exceeding 30 feet. This "as-built" plan and profile shall be updated as the pilot bore is advanced and plotted on a scaled drawing of 1" = 2', both vertical and horizontal.
- C. Contractor shall always provide and maintain instrumentation that will accurately locate the pilot hole and measure drilling fluid flow and pressure.
- D. Contractor shall provide Engineer and Owner access to all data and readout pertaining to the position of the bore head and the fluid pressures and flows. When requested, Contractor shall provide explanations of this position monitoring and steering equipment.
- E. Contractor shall employ experienced personnel to operate the directional drilling equipment and in particular, the position monitoring, and steering equipment.
- F. The pilot hole shall be drilled on bore path with no deviations in alignment or grade greater than 3-inches per 100 feet. In the event that the pilot hole does deviate from the bore path more than 3-inches in 100 feet, Contractor shall notify Engineer and Owner may require Contractor to pull-back and re-drill from the location along bore path before the deviation.
- G. In the event that a drilling fluid fracture, inadvertent returns or returns loss occurs during pilot hole drilling operations, Contractor shall cease drilling, wait at least 30 minutes, inject a quantity of drilling fluid with a viscosity exceeding 120 seconds as measured by a Marsh funnel and wait another 30 minutes. If mud fracture or returns loss continues, Contractor will discuss additional options with the Engineer and work will then proceed accordingly.
- H. Entry and exit angles shall be kept between 10 and 12 degrees, unless otherwise approved by Engineer.
- I. Minimum radius of curvature shall be within manufacturer's guidelines provided for the pipe and for the drilling equipment.

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

- J. Contractor shall submit to Engineer pipe design calculations for pipe reflecting any proposed changes.
- K. The horizontal alignment of each pilot bore must be approved by the Engineer before pipe can be pulled.
- L. When alignment is off line or grade, make ongoing corrections to avoid major changes and keep within specified tolerances.
- M. Deviations of grade for final pipe location shall be a maximum of ± 3 inches in any 100-foot section.
- N. Deviations in horizontal alignment for final pipe location shall be a maximum of ± 6 inches in any 100-foot section.
- O. Pipe installed outside tolerances and subsequently abandoned shall first be fully grouted.

3.09 REAM AND PULLBACK:

- A. Upon approval of the pilot hole location by the Engineer, the hole opening or enlarging phase of the installation shall begin. The borehole diameter shall be increased to accommodate the pullback operation of the 14-inch pipe.
- B. The type of hole opener or back reamer shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation.
 - 1. The reamer type and the number and size of such reaming operations shall be at the Contractor's discretion with the final hole opening diameter being a minimum of 1.5 times the outside diameter (O.D.) of the pipe to be installed in the borehole.
- C. During the pullback operation, the Contractor shall monitor roller operation to assist movement of the pipe. Surface damage shall be repaired by Contractor before pulling operations resume.
- D. Pulling Loads: The maximum pull (axial tension force) exerted on the pipeline shall be measured continuously and limited to the maximum allowed by the pipe manufacturer so that the pipe or fused joints are not overstressed.
- E. Torsion and Stresses: A swivel shall be used to connect the pipeline to the drill pipe to prevent torsional stresses from occurring in the pipe.
- F. Pipe Support:
 - 1. The pipe shall be adequately supported during installation to prevent excessive sagging, overstressing, or buckling.
 - 2. The Contractor shall provide adequate support/rollers along the stringing area to support the required length of the pipe including the weight of a water-filled pipe.
 - 3. Such support/rollers shall be spaced as recommended by the pipe supplier, and the rollers be comprised of a nonabrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipe allowing for free movement of the pipe during pullback.
- G. Both ends of the pipe shall be closed with cap or plug during the pullback operation to prevent water, drilling fluids, and other foreign material from entering the pipe.
- H. The Contractor shall always handle the pipe in a manner that does not overstress the pipe.
 - 1. Vertical and horizontal curves shall be limited so that the pipe is not buckled, cracked, or otherwise damaged, the damaged section shall be removed and replaced by the Contractor at Contractor's expense.
 - 2. The Contractor shall take appropriate steps during pullback to ensure that the pipe is installed without damage.

3.10 TESTING:

- A. Testing shall be performed in accordance with Specification requirements located in the Contract Documents. The pipe ends shall be sealed with blind flanges or plugs. The Contractor shall

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

furnish all equipment needed to chlorinate, pressure test, and disinfect the pipe in accordance with Section 33 11 90 - "Field Testing" after the waterline is installed.

3.11 HANDLING, DRILLING FLUIDS, AND CUTTINGS:

- A. During the drilling, reaming, or pullback operations, the Contractor shall make adequate provisions for handling the drilling fluids, or cuttings at the entry and exit pits.
 - 1. These fluids shall not be discharged into any waterway.
 - 2. When the Contractor's provisions for storage of the fluids or cuttings on site are exceeded, these materials shall be hauled away to a suitable legal disposal site and in accordance with all applicable federal, state, and local regulations.
 - 3. After completion of the directional drilling work, the entry and exit pit locations shall be restored in accordance with the Specification requirements.
- B. During the entire operation, waste and leftover drilling fluids from the pits and cuttings shall be dewatered and disposed of by the Contractor.
- C. Contractor is responsible for all costs of disposal and permitting costs associated with disposal.
- D. All drilling mud shall be removed from the entry and exit area soils such that water will percolate and replacement seeding will grow to restore original conditions.
- E. Pits constructed at the entry or exit point area shall be so constructed to completely contain the drill fluid and prevent its escape to any waterway.
- F. The Contractor shall utilize drilling tools and procedures which will minimize the discharge of any drilling fluids.
- G. The Contractor shall maintain a closed-loop drilling fluid system.
- H. The Contractor shall minimize drilling fluid disposal quantities by utilizing a drilling fluid cleaning system which allows the return fluids to be reused.

3.12 LAYOUT OF ENTRY AND EXIT PIT AREAS:

- A. Entry and exit point shall be located as shown on the Contract Drawings unless otherwise approved by Owner and/or Engineer.
- B. The pipes shall be laid and assembled in a manner that does not obstruct adjacent roads or City, County, or public activities adjacent to the layout areas except as shown otherwise.
- C. The Contractor shall erect temporary fencing around the entry and at the exit used for construction and pipe staging areas.

3.13 SURFACE DEFECTS:

- A. The Contractor shall be fully responsible for the steerable, directional drilling operation. Any noticeable surface defects resulting from improper operation of this drilling equipment shall be repaired by the Contractor at Contractor's expense.

3.14 DIRECTIONAL DRILLING FAILURES:

- A. In the event of a failure during the installation of the directional drilled pipeline, the Contractor shall maintain sufficient grout on site to completely fill the pipe, annular space, and remaining bore hole.
 - 1. The bore holes shall be filled with grout to prevent future problems.
 - 2. If the pipe cannot be removed from the bore it shall be cut off 5 feet below ground, and the pipe and annular space shall be grouted.

3.15 SITE SECURITY:

SECTION 33 05 23.13 – HORIZONTAL DIRECTIONAL DRILLING: continued

- A. The Contractor shall be responsible for maintaining adequate site security measures that will discourage public access to the bore work areas including, but not limited to, placement of security fencing around the work areas.

END OF SECTION 33 05 23.13

SECTION 33 11 00 – PRESSURE PIPE

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes all pressure pipe, fittings, specials, and appurtenances.
- B. Related Work Specified Elsewhere:
 - 1. Section 33 12 16 - “Utility Valves and Accessories.”
 - 2. Section 33 31 50 - “Pipe Installation.”

1.02 REFERENCE STANDARDS:

- A. Applicable Standards:
 - 1. American Association of State Highway and Transportation Officials (AASHTO).
 - 2. American Water Works Association (AWWA):
 - a. C110 - Ductile-Iron and Gray-Iron Fittings.
 - b. C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - c. C153 - Ductile-Iron Compact Fittings.
 - d. C906 - Polyethylene (PE) Pressure Pipe & Tubing, 4-Inch Through 63-Inch for Waterworks.
 - e. M41 - Ductile-Iron Pipe Fittings.
 - f. M55 - Manual for the Design and Installation of Polyethylene Pipe in Water Applications.
 - 3. ASTM International (ASTM):
 - a. A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60,000 psi Tensile Strength.
 - b. D638 - Standard Test Method for Tensile Properties of Plastics.
 - c. D1248 - Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable.
 - d. D2122 - Standard Method of Determining Dimensions of Thermoplastics Pipe and Fittings.
 - e. D2683 - Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.
 - f. D2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
 - g. D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter.
 - h. E3261 - Standard Specification for Butt Heat Fusion Polyethylene Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
 - i. D3350 - Standard Specification for PE Pipe & Fittings Material.
 - j. F412 - Standard Terminology Relating to Plastic Piping Systems.
 - k. F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.
 - l. F714 - Standard Specification for PE Pipe (DR-PR) Based on Outside Diameter.
 - m. F2026 - Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.
 - n. F3124 – Standard Practice for Data Recording the Procedure used to Produce Heat Butt Fusion Joints in Plastic Piping Systems or Fittings
 - 4. NSF International (NSF):
 - a. 14 - Plastic Piping System Components and Related Materials.
 - b. 60 - Drinking Water Treatment Chemicals - Health Effects.
 - c. 61 - Drinking Water System Components - Health Effects.

SECTION 33 11 00 – PRESSURE PIPE: continued

- d. 372 - Drinking Water System Components - Lead Content.
- 5. Plastic Pipes Institute (PPI):
 - a. Handbook of Polyethylene Pipe.
 - b. MS-3 - HDPE Pipe and Fittings Specification for Buried Potable Water.
 - c. TR-3 - Policies and Procedures for Developing Hydrostatic Design Basis (HDB), Pressure Design Basis (PDB), Strength Design Basis (SDB), and minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - d. TR-4 - HDB/SDB/PDB/MRS Listed Materials, PPI Listing of Hydrostatic Design Basis (HDB), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - e. TR-9 - Recommended Design Factors for Pressure Applications of Thermoplastic Pressure Pipe Materials.
 - f. TR-33 - Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe.
 - g. TN-42 - Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects.
- 1.03 SUBMITTALS:
 - A. Submit the following for acceptance prior to fabrication:
 - 1. Pipe and joint details.
 - 2. Special, fitting, and coupling details.
 - 3. Laying and installation schedule.
 - 4. Specifications, data sheets, and affidavits of compliance for protective shop coatings and linings.
 - 5. Manufacturer's design calculations including, but not limited to, wall thickness and deflection under specified live and dead loads.
 - B. Certificates and Affidavits: Furnish the Following Prior to Shipment:
 - 1. Affidavit of compliance with applicable standard.
 - 2. Test certificates.
 - C. Qualifications:
 - 1. Furnish prior to joint fusion:
 - a. Fusion technician qualifications from the pipe supplier for the size and type of fusible pipe being installed.
- 1.04 QUALITY ASSURANCE:
 - A. Manufacturers shall be experienced in the design and manufacture of pipe, fittings, specials, or appurtenances for a minimum period of 5 years.
- 1.05 DELIVERY, STORAGE AND HANDLING:
 - A. Pipe shall be off-loaded, stack, stored, installed, and handled per the pipe supplier's guidelines.
 - B. The general best practices of the industry per AWWA M55 shall be observed.
 - C. Ship all material to the Site and store in assigned laydown areas or as directed by Engineer.
 - D. Ship spare material separately packaged and tagged as spare parts. Spare part tags shall identify type, size, material, and other related information.
 - E. Handling and storage shall be in accordance Specification requirements.

SECTION 33 11 00 – PRESSURE PIPE: continued

PART 2 - PRODUCTS

2.01 PIPE REQUIREMENTS:

- A. Furnish pipe of materials, joint types, and sizes as indicated or specified.
- B. Pipe shall be designed to withstand all stresses resulting from external loads and internal pressures plus applicable allowance for surge unless otherwise specified.
- C. Pipe Marking: All pipe and fittings shall be marked conforming to the applicable standard specification under which the pipe is manufactured and as otherwise specified.
- D. All pipes, fittings, valves, coatings, gaskets, lubricants, adhesives, and other appurtenances and materials in contact with raw, partially treated, or treated potable water must be NSF 61 product certified, as applicable.
 - 1. Compliance with the Reduction of Lead in Drinking Water Act (2014) is required, and all applicable products must meet the lead-free requirements and NSF 372 product certified.
 - 2. All chemicals applied must be NSF 60 product certified.

2.02 HDPE PIPE FOR OPEN CUT INSTALLATION:

- A. Materials:
 - 1. Materials shall be High Density Polyethylene Pipe (HDPE) PE 4710 conforming to the latest edition of ANSI/AWWA C906 and be NSF 61 product certified. Resin used in the extrusion of water polyethylene pipe shall conform to the latest edition of the ASTM D3350 Cell classification 445574E.
 - 2. Gaskets shall conform to ASTM F477 and be synthetic rubber.
- B. Design of Pipe: Design shall conform to AWWA C906 and as specified:
 - 1. Internal Loading:
 - a. Internal pressure specified plus allowance for surge pressure conforming to AWWA C906.
 - b. Hydrostatic test pressure as specified.
 - 2. External Loading:
 - a. Earth dead load cover at 120 pcf plus AASHTO H-20 live loads.
 - b. 5% deflection limit.
 - c. Bedding condition as indicated.
 - 3. Use E' of 700 and bedding angle of 90°.
 - 4. Dimensions: The minimum pressure class for HDPE pipe shall be as follows:

Location	Pipe Size (in)	Style	Minimum Pressure Class
Open Cut Installation	12	Butt Fused	DR-11
Open Cut Installation	14	Butt Fused	DR-11

- C. Diameters: HDPE pressure pipe shall have Ductile Iron Pipe Size (DIPS) outside diameters.
- D. Joints and Fusion:
 - 1. All HDPE pipe shall be joined to by the heat fusion process which produces homogeneous, sealed, leak-tight joints. Tie-ins between sections of HDPE pipe shall be made by butt fusion whenever possible.
 - 2. Butt Fusion: The pipe shall be joined by the butt fusion procedure outlined in ASTM F2620 or PPI TR-33. Fusion joints shall be made by qualified fusion technicians per ASTM F3190.

SECTION 33 11 00 – PRESSURE PIPE: continued

3. For 6” and larger pipe sizes, the pipe butt fusion machine shall be a self-contained hydraulic fusion machine capable of butt fusing HDPE pipe. Accessories will include all butt fusion inserts for the specified range of pipe sizes, a pyrometer kit for checking the surface temperature of the heater, extension cord of appropriate gauge (25' minimum), and hydraulic extension hoses (minimum of four). The butt fusion machine will be McElroy, or approved equivalent.
4. For 16” and larger pipe sizes, the butt fusion machine shall be capable of autonomously calculating the drag pressure and perform the shift sequence autonomously.
5. Fusion Data Recording
 - a. For 6” and larger pipe sizes, McElroy DataLogger or equivalent fusion data recorder shall be used to record all fusion welds on hydraulically operated fusion machines. The device shall be capable of meeting the requirements of ASTM F3124, “Standard Practice for Data Recording the Procedure used to Produce Heat Butt Fusion Joints in Plastic Piping Systems or Fittings”. The device, or combination of devices, shall record the following variables of each fused joint:
 - (1) Heater surface temperature- immediately before inserting the heater plate, measure with a pyrometer and manually enter into the weld record.
 - (2) Gauge pressure during the initial heat cycle
 - (3) Gauge pressure and elapsed time during the heat-soak cycle
 - (4) Heater removal (dwell) time
 - (5) Gauge pressure and elapsed time during the fusing/cool cycle
 - (6) Drag pressure
 - (7) Pipe diameter and wall thickness
 - (8) Type of HDPE material (Specification and Classification) and manufacturer
 - (9) Fusion Machine Identification
 - b. The device shall record the operator name and a unique operator ID number, along with the date and time of each weld.
 - c. Records showing the device is up to date on all required calibration should be available for presentation when requested.
 - d. All fusion welds should be traceable to the report (via operator and weld ID) with an indentation weld stamp or by permanent paint marker/pen next to fusion weld.
 - e. A weld location map may be requested, prior to commencement of work, by the Owner or Owner’s Representative.
- E. Fittings:
 1. Fittings shall conform to AWWA C110 or C153 and be ductile iron. Fittings shall be mechanical joint (MJ).
 2. When required by mechanical coupling manufacturer, pipe stiffeners shall be employed to support the interior wall of the HDPE. The stiffeners shall support the pipe’s end and control the “necking down” reaction to the pressure applied during normal installation. The pipe stiffeners shall be formed of 304 or 316 stainless steel, with a wedged style design to fit the HDPE manufacturers published average inside diameter of the specific size and DR of the HDPE.
 3. Includes use of MJ adapter kit for transition to DI fitting.
 4. Include all specials, taps, plugs, flanges, and wall fittings as required.
 5. Lining and coating:
 - a. Fittings shall be fusion bonded epoxy lined and coated to AWWA C116/A21.16 specifications and be NSF 61 product certified.
- F. Marking: Identification markings on pipe shall be in accordance with ASTM F714 and/or AWWA C906. Markings shall indicate pipe’s Pressure Rating (PR) and Pressure Class (PC).

SECTION 33 11 00 – PRESSURE PIPE: continued

G. Color:

1. The color for HDPE pressure pipe shall indicate the contents within the pipe and shall be as follows:

Location	Contents	Pipe Color
All HDPE installations	Potable Water	Black with Blue Stripes*

H. Fused HDPE piping additional requirements:

1. The pipe shall be joined using heat applied HDPE butt fusion methods approved and reviewed by the pipe manufacturer.

2.03 RESTRAINING SYSTEMS:

A. All bolting hardware shall be type 304 stainless steel.

B. Joint Restraint Devices:

1. Shall be manufactured of ductile iron conforming to ASTM A536.
2. Shall have twist-off nuts, sized the same as the tee head bolts used to ensure proper torque.
3. Mechanical Joint Restraining Devices:
 - a. Minimum working pressure equal to that of installed pipe.
 - b. Shall be supplied with a premium tight bonded epoxy coating system (StarBond or Engineer approved equal).
 - c. Acceptable Manufacturers:
 - (1) EBAA Iron - Series 2000
 - (2) Star Pipe Products - Series 4000
 - (3) Engineer approved equal.
 - d. Design:
 - (1) Provide with premium tight-bonded epoxy costing (Mega-Bond, Star-Bond, or Engineer approved equal).

2.04 SLEEVES AND COUPLINGS:

A. Sleeves:

1. AWWA C110 or C153 mechanical joint ductile-iron solid-sleeve type:
 - a. Pipe end space shall not exceed one-third of the sleeve laying length.
 - b. Interior, exposed, exterior, or buried service as indicated.

B. Couplings:

1. Center sleeve and compression gland-type end ring conforming to AWWA C219.
2. Center sleeve shall be without pipe stop.
3. Couplings for exposed interior iron or PVC pipe may be steel or iron.
4. Fastener bolts shall be stainless steel for iron couplings and high-strength, low-alloy steel for steel couplings. Bolts for direct buried coupling installations shall be stainless steel.
5. Center sleeve and end rings shall be:
 - a. Ductile or malleable iron for iron couplings.
 - b. Steel for steel couplings.
6. Lining and Exterior Coating:
 - a. Use for all steel couplings intended for direct bury, exposed exterior, vault or pit installations.
 - b. Completely coat center sleeve and end rings.
 - c. Two-part epoxy or nylon fuse-coated to a minimum 10 mils thickness.

SECTION 33 11 00 – PRESSURE PIPE: continued

- d. Line interior of all steel couplings intended for exposed-interior installations. Coat exterior with normal shop coating.

2.05 GASKETS AND BOLTING MATERIALS:

- A. Provide all gaskets, bolts, lubricant, and other accessories required to install pipe, fittings, and specials complete and ready for service.
- B. Gaskets for push-on pipe shall be flexible elastomeric gaskets meeting the requirements of ASTM F477 and shall be synthetic rubber.
- C. Gaskets for fittings 12-inch and smaller shall have "nominal" inside diameters, not the larger inside diameters per ANSI B16.21.
- D. Bolts for flanged joints shall conform to ASTM A307, Grade B. Nut and bolt heads shall be hexagonal.
- E. Gaskets and bolts for other than flanged joints shall be as otherwise specified for pipe and pipe joints.

2.06 TRACER WIRE:

- A. Tracer wire shall be provided as indicated.
 - 1. Minimum AWG 10 solid copper
 - 2. 30 mils of blue PE insulation
- B. Tracer wire tape shall be as follows:
 - 1. 2-inch-wide vinyl plastic electrical tape
 - 2. 7 mils in thickness
- C. Where connections to existing tracer wire are required or where connections to newly installed tracer wire (tees, end of rolls, etc.) are required, tracer wire shall be spliced with:
 - 1. DryConn Direct Bury Lug Aqua waterproof connector.
 - 2. Engineer approved equal.

2.07 TRACER WIRE ACCESS BOXES (TRACER WIRE TEST STATION):

- A. Test stations shall consist of at grade housing capable of secured mounting to utility marker post.
 - 1. Secured mounting shall be stainless steel strap or otherwise approved by Owner and/or Engineer.
- B. Terminal board hardware shall be:
 - 1. Pro-Mark Utility Supply, Inc - PM-10BP
 - 2. Engineer approved equal.

2.08 WARNING TAPE:

- A. Shall be at 6 inches in width.
- B. Shall be blue in color.
- C. Shall have black lettering stating, "CAUTION BURIED WATERLINE BELOW."
 - 1. Lettering shall be imprinted at 20 to 30-inch intervals.

2.09 UTILITY MARKER POSTS:

- A. None required.

PART 3 - EXECUTION

3.01 PIPE INSTALLATION:

- A. Specified in Section 33 31 50 - "Pipe Installation."

SECTION 33 11 00 – PRESSURE PIPE: continued

1. All joint data for HDPE must be approved by the Owner or Engineer prior to installation of the pipe.
- 3.02 FIELD TESTING:
- A. Specified in Section 33 11 90 - "Field Testing."
- 3.03 TRACER WIRE:
- A. All water main installations shall include the installation of a single tracing wire taped to the top of the pipe.
 1. Tracer wire shall be secured at no less than three locations per length of pipe and at every fitting or change in direction.
 - B. The tracing wire shall be installed in a continuous run and the ends of the tracer wire shall be brought to the surface in test stations.
 1. Trace wire shall be routed around manholes/vaults and brought up into test stations/tracer wire boxes located adjacent to the utility marker posts and secured with a stainless steel strap or as otherwise directed by Owner and/or Engineer.
 2. Tracer wire test stations shall be installed as indicated on Contract Drawings.
 - C. Wire splices shall be accomplished using a mechanical connector and sealed with an epoxy type material.
- 3.04 WARNING TAPE:
- A. Underground marking tape shall be installed at least 18 inches above waterline.
- 3.05 BOLLARDS:
1. Bollards shall be installed per detail in Contract Drawings.
 2. A minimum of two bollards shall be installed at each above grade appurtenance within a cultivated field or parcel with livestock.
 3. Bollards shall be installed outside of wheel path of irrigation pivots and staggered on opposite sides of the appurtenance.
- 3.06 UTILITY MARKER POSTS:
- A. None required.

END OF SECTION 33 11 00

SECTION 33 11 90 - FIELD TESTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and Specification Sections, apply to this Section.

1.02 SUMMARY:

- A. This Section includes requirements for field testing of the piping systems specified in this DIVISION 33 - UTILITIES.

1.03 RELATED REQUIREMENTS:

- A. Section 33 11 00 - "Pressure Pipe."
- B. Section 33 31 50 - "Pipe Installation."

1.04 REFERENCE STANDARDS:

- A. Applicable Standards:
 - 1. American Water Works Association (AWWA):
 - a. M55 - Manual for the Design and Installation of Polyethylene Pipe in water Applications.
 - b. C651 - Disinfecting Water Mains.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. Submit a list of all equipment and materials proposed for use in flushing and testing to Engineer for review and approval prior to any field flushing or testing.
- B. Furnish all required materials and equipment for the flushing and testing of pipelines. Includes, but not limited to, the following:
 - 1. Leakage Tests and Flushing:
 - a. Necessary piping connections.
 - b. Test pumping equipment.
 - c. Water meter.
 - d. Pressure gauge.
 - e. Bulkheads, supports, struts, strong backs, etc.
 - f. All miscellaneous items required.
- C. Submit certified calibration test reports from an independent testing laboratory to Engineer on all gauges and meters proposed for use in the tests.

2.02 WATER:

- A. Water for performing hydrostatic tests on the pipeline may be obtained from the Owner's existing potable water system at a maximum rate of one foot per second (1 fps). Contractor is responsible for transfer of water from Owner's supply via clean potable water tanks and/or existing wells, free of debris and contaminants, to the point of use.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Submit proposed methods and procedures for flushing and testing to Engineer for review and acceptance prior to performing any flushing or testing operations.

SECTION 33 11 90 - FIELD TESTING: continued

- B. All flushing and testing operations shall be performed by Contractor in the presence of Engineer. Protect all plant equipment, pipe, and structures from damage and leakage during and after the flushing and testing operations. Damage resulting from leakage or failures of bulkheads, plugs, or supports shall be repaired by Contractor at his expense.
- C. Leakage:
 - 1. Test all other pipe conforming to applicable sections of AWWA M55 and as modified herein.
- D. Submit lengths and locations of proposed test sections to Engineer for review and acceptance.
- E. If any test discloses leakage greater than that specified, Contractor shall, at his expense:
 - 1. Locate the defective pipe, joint, joints, or holidays.
 - 2. Submit proposed repair methods and materials to Engineer for review and acceptance prior to making repairs.
 - 3. Repair at no additional cost to Owner.
 - 4. Repeat the applicable test until the leakage is within the specified allowance.
- F. Submit test reports signed by the witnessing Engineer. Test reports shall identify the line, line size, station to station, date, type of test, pressure, and test results.

3.02 FLUSHING:

- A. Water Flushing:
 - 1. Flush water shall be provided at a flow rate such that velocity in pipeline shall not be less than 2.5 feet per second.
 - 2. Flushing shall continue until discolored discharge water is eliminated as determined by Engineer.
 - 3. Flush water shall not be discharged into pipe trench. Water shall be disposed of using a method, and in a location, as approved by Engineer.
- B. Notify Engineer at least 24 hours in advance of intended initiation of flushing operation.

3.03 LEAKAGE TESTING FOR HDPE PIPE:

- A. Pressure testing shall be conducted in accordance with requirements and recommendations of ASTM F2164, AWWA M55 Chapter 9, and PPI Handbook of Polyethylene Pipe Chapter 2 (2nd Edition).
- B. The test pressure shall be 1.5 times the system design pressure, based on the lowest point in elevation in the test section. Contractor shall ensure that the designated test pressure does not exceed the maximum allowable test pressure specified by the manufacturer for any component in the test section.
- C. Test pressures require consideration of thermal conditions. Polyethylene piping materials are typically pressure rated at 73°F and PE piping at temperatures greater than 80°F require reduced test pressures.
 - 1. The section of pipe to be tested shall be filled with potable water approved by the Owner/Engineer. While the system is being filled with water, air shall be carefully and completely exhausted.
 - 2. The test procedure for HDPE pipe consists of two steps:
 - a. Expansion phase: During the initial/expansion phase, sufficient make-up water shall be added hourly for 3 hours to return to the test pressure.
 - b. Test phase: During the test phase, the expansion phase pressure is reduced by 10 psi to test phase pressure and monitored for at least one hour (3 hours maximum).
 - 3. Under no circumstances shall the total time under test exceed 8 hours. If the test is not completed due to leakage, equipment failure or any other reason, depressurize the test section and permit the system to "relax" for 8 hours prior to the next testing sequence.

SECTION 33 11 90 - FIELD TESTING: continued

4. The pipe shall pass if the final pressure is within 5% of the test phase pressure for the testing period (3 hours maximum). If the test section fails this test, the Contractor shall repair or replace all defective materials and/or workmanship at no additional cost to the Owner.
- D. All pressure and leakage testing shall be done in the presence of a representative of the Owner and/or Engineer.

3.04 DISINFECTION:

- A. Disinfection of potable water lines:
 1. Contractor shall provide all equipment and materials required to disinfect the potable water lines as specified.
 - a. Perform in conformance with AWWA C651 as specified.
 - b. Include chlorination and final flushing.
 2. Submit proposed materials and methods to Engineer for review and acceptance prior to disinfection.
 3. Conform with AWWA C651.
 - a. As modified herein.
 - b. Include preliminary flushing, chlorination, and final flushing.
 4. Contractor will accomplish chlorination.
 - a. In conjunction with pressure testing.
 5. At minimum initial dosage of 50 parts per million (ppm) in all portions.
 - a. Allow to stand for minimum of 24 hours.
 - b. Minimum residual shall be at least 10 ppm.
 6. Contractor shall perform preliminary and final flushing.
 7. Disinfection may be conducted in conjunction with final field tests.
 8. Contractor shall provide sampling and laboratory testing.
 9. Contractor shall dispose of flushing water without damage to public or private property as approved by Engineer.
 10. Repeat disinfection procedure, at no additional cost to Owner, should initial treatment fail to yield satisfactory results.
 11. Owner will provide water source under terms stipulated for final field tests.

3.05 BACTERIOLOGICAL AND TURBIDITY (CLEARWATER) TESTING:

- A. Before placing into service, water from all new mains must successfully pass a bacteriological and turbidity test in accordance with the requirements of the Owner and Oklahoma Department of Environmental Quality (ODEQ) before the main is placed in service.
 1. Clearwater tests will be taken at the Contractor's expense with results taken by an independent, State Certified Lab.
 - a. Samples shall be taken at a minimum of one for each fire hydrant installed per the Contract Drawings.
 - b. A minimum 24 hours is required to receive bacteriological test results and may take as long as 72 hours.
 - c. No bacteriological tests will be taken on Fridays.
 2. Results shall be sent to Owner and Engineer.
 3. When unsatisfactory results are obtained from bacteriological tests, the Owner and/or Engineer may direct the contractor to re-chlorinate the main.
 - a. When rechlorination is deemed necessary, it will be done by the Contractor, at their expense.

SECTION 33 11 90 - FIELD TESTING: continued

- b. After re-chlorination, the bacteriological test shall be performed again and the procedure repeated until the test passes.
- 4. Repeat pipeline acceptance testing as necessary until satisfactory performance of test.

END OF SECTION 33 11 90

SECTION 33 12 16 – UTILITY VALVES AND ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes all valves and accessories.
- B. Related Work Specified Elsewhere:
 - 1. Section 33 31 50 - "Pipe Installation."

1.02 REFERENCES:

- A. Applicable Standards:
 - 1. ASTM International (ASTM):
 - a. A126 - Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 - b. A536 - Ductile Iron Castings.
 - 2. American Water Works Association (AWWA):
 - a. C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - b. C502 - Dry-Barrel Fire Hydrants.
 - c. C509 - Resilient-Seated Gate Valves for Water Supply Service.
 - d. C550 - Protective Epoxy Interior Coatings for Valves and Hydrants.
 - e. M17 – Fire Hydrants: Installation, Field Testing, and Maintenance
 - 3. NSF International (NSF):
 - a. 14 - Plastic Piping System Components and Related Materials.
 - b. 60 - Drinking Water Treatment Chemicals - Health Effects.
 - c. 61 - Drinking Water System Components - Health Effects.
 - d. 372 - Drinking Water System Components - Lead Content.

1.03 SUBMITTALS:

- A. Include, but not limited to, the following:
 - 1. Catalog data or illustrations showing principal dimensions, parts, and materials.
 - 2. Spare parts list referenced to illustration of parts.
 - 3. Assembly and disassembly or repair instructions.
 - 4. Dimensions of the clearance required for butterfly valve discs.
- B. Certificates and Affidavits: Furnish prior to shipment.
 - 1. Include the following:
 - a. Test certificates.
 - b. Affidavit of compliance with applicable AWWA Standard.

1.04 QUALITY ASSURANCE:

- A. Manufacturers shall be experienced in the design and manufacture of specific valves and accessories for a minimum period of 5 years.

1.05 DELIVERY, STORAGE, AND HANDLING:

- A. Ship all valves with suitable end covers to prevent entrance of foreign material into valve body.
- B. Protect valve threads, stems, and operators from damage.

1.06 RESPONSIBILITY:

- A. Actuators and accessories shall be the responsibility of the valve manufacturer for sizing, assembly, certification, field testing, and any adjustments necessary to operate the valve as specified.

SECTION 33 12 16 – UTILITY VALVES AND ACCESSORIES: continued

PART 2 - PRODUCTS

2.01 GENERAL:

- A. All pipes, fittings, valves, coatings, gaskets, lubricants, adhesives, and other appurtenances and materials in contact with raw, partially treated, or treated potable water must be NSF 61 product certified, as applicable.
 - 1. Compliance with the Reduction of Lead in Drinking Water Act (2014) is required, and all applicable products must meet the lead-free requirements and shall be NSF 372 product certified.
 - 2. All chemicals applied must be NSF 60 product certified.

2.02 RESILIENT-SEATED GATE VALVES:

- A. Acceptable Manufacturers:
 - 1. American Flow Control.
 - 2. Mueller Company.
 - 3. Stockham Valves and Fittings.
 - 4. U.S. Pipe & Foundry Company.
 - 5. Engineer approved equal.
- B. Design:
 - 1. Conform to AWWA C509 and as specified.
 - 2. Non-rising brass stem.
 - 3. All stem seals shall be double O-ring type.
 - 4. Shall be suitable for use with 200 psi service.
- C. Actuators:
 - 1. All valves shall open counterclockwise.
 - 2. All buried valves shall have a 2-inch-square operating nut.
 - 3. Provide extension stem equipped with 2-inch-square nut and an adaptor for connection to the actuator when the distance from the valve cover to the operating nut exceeds 3 feet.
- D. Interior Coating:
 - 1. Conform to AWWA C550.
 - 2. Apply to all interior and exterior ferrous metal surfaces.
 - 3. The coating shall be a two-part thermosetting epoxy suitable for field over coating and touch-up.
 - a. Minimum thickness of 4 mils.
- E. Bolting Material:
 - 1. Provide Type 304 stainless steel nuts and bolts.
 - 2. Nuts shall be coated to prevent seizing and galling.
 - 3. Contractor shall install with anti-seize.
- F. Testing:
 - 1. Testing shall be performed conforming to AWWA C509.
 - 2. Furnish affidavit of compliance.
- G. Valve Schedule:

No.	Location (STA)	Nominal Valve Size (in.)
1	10+00	12
2	17+45	6
3	20+92	6

2.03 FIRE HYDRANTS:

SECTION 33 12 16 – UTILITY VALVES AND ACCESSORIES: continued

- A. Acceptable Manufacturers:
 - 1. American Flow Control.
 - 2. Mueller Company, model Centurion.
 - 3. Clow Valve.
 - 4. EJ USA, Inc.p
 - 5. Engineer approved equal.
- B. Design:
 - 1. Conform to AWWA C502 and as specified.
 - 2. Provide compression type main valve designed to open against pressure. Valve facings shall be of nontoxic materials suitable for potable water service.
 - 3. Provide internal main valve seat opening of not less than 5 inches diameter.
 - 4. Design to open clockwise (right).
 - 5. Provide dry-type bonnet with lubricant reservoir protected by O- or Quad-ring seals.
 - 6. Provide mechanical joint bell on shoe.
 - 7. Furnish for minimum bury depth of 4 feet. Include extensions as required for blow-offs.
 - 8. Furnish with two 2-1/2-inch hose nozzles and one 4-1/2-inch pumper nozzle with NFPA 1963 standard threads. Nozzle caps shall be chained to the hydrant.
 - 9. Provide traffic break-off joint located above and near ground surface designed to minimize accident repairs.
- C. Shop Painting:
 - 1. Shop paint exterior of hydrants red.
 - 2. Interior Coating:
 - a. Conform to AWWA C550.
 - b. Apply to exposed interior ferrous metal surfaces.

2.04 CORPORATION STOPS:

- A. Provide as specified to isolate air valves or as manual air release or inlet valves.
- B. Shall be brass construction, tee head type.
 - 1. Mueller Company Style H-10003, H-10013, or H-10045
 - 2. Engineer approved equal.
- C. All corporation stops shall be furnished with AWWA taper thread on inlets.

2.05 VALVE BOXES:

- A. Acceptable Manufacturers:
 - 1. Clay and Bailey Manufacturing Company.
 - 2. Engineer approved equal.
- B. Provide for all buried valves.
- C. Design:
 - 1. Boxes, lids, and covers shall be coated in bituminous varnish.
 - 2. Boxes shall be three-piece cast-iron screw type with 5-1/4-inch shaft.
 - 3. Boxes shall consist of a cast-iron cover, lid, and base castings with 6-inch cast-iron pipe shaft.
 - 4. Provide extension stem to bring operating nut within 3 feet of valve box top.
 - 5. Drop cover shall be marked "WATER".
 - 6. All boxes shall be set plumb and placed directly over the valve it serves.
 - 7. All lids shall be set flush with finish grade.
 - 8. Valve box adaptors shall be Clay and Bailey #P-1080 with drop-type lid or Engineer approved equal as applicable.

SECTION 33 12 16 – UTILITY VALVES AND ACCESSORIES: continued

2.06 SHOP PAINTING:

- A. Prepare surfaces and paint or coat all valves, fire hydrants, valve boxes, corporation stops, and all related accessories standard of the manufacturer unless otherwise specified herein.
- B. Paint and coatings shall be suitable for the service intended.
- C. Submit type of paint or coating proposed with drawings and data for Engineer approval prior to fabrication.

PART 3 - EXECUTION

3.01 INSTALLATION:

- A. Thoroughly clean and remove all shipping materials prior to setting.
- B. Operate all valves from fully opened to totally closed to verify that parts are in satisfactory working condition.
- C. Equip with anchorage where indicated.
- D. Install valves and valve boxes where shown on the Contract Drawings.
- E. Set valves plumb and as detailed.
- F. Center valve boxes on valves or valve actuators.
- G. Carefully tamp earth around each valve box for a minimum radius of 4 feet, or to undisturbed trench face when less than 4 feet.

3.02 FIELD TESTING:

- A. Perform on piping and valves as specified in Section 33 31 50 - "Pipe Installation" and for the following:
 - 1. Gate valves.
 - 2. Fire hydrants.

END OF SECTION 33 12 16

SECTION 33 14 11.40 – HIGH DENSITY POLYETHYLENE (HDPE) UTILITY PIPING

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes high density polyethylene (HDPE) pressure pipe, fittings, specials, and appurtenances.
- B. This section specifies material and installation requirements for high density polyethylene (HDPE) pressure pipe including safe handling, and storage.
- C. Related Work Specified Elsewhere:
 - 1. SECTION 31 23 33 Trenching and Backfilling for Utilities.
 - 2. SECTION 33 12 16 Utility Valves and Accessories.

1.02 REFERENCES:

- A. Applicable Standards:
 - 1. American Water Works Association (AWWA):
 - a. C111 – Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
 - b. C153 – Ductile-Iron Compact Fittings, 3” Through 24” and 54” Through 64”, for Water Service.
 - c. C219 – Bolted, Sleeve-Type Couplings for Plain-End Pipe.
 - d. C901 – Standard for Polyethylene (PE) Pressure Pipe and Tubing, 1/2" through 3" for Water Service.
 - e. C906 – Polyethylene (PE) Pressure Pipe & Tubing, 4-Inch Through 63-Inch for Waterworks.
 - f. M55 – Manual for the Design and Installation of Polyethylene Pipe in water Applications.
 - 2. American National Standards Institute (ANSI):
 - a. B16.1 – Cast-Iron Pipe Flanges and Flanged Fittings, Class 25, 125, 250 and 800.
 - b. B16.21 – Nonmetallic Flat Gaskets for Pipe Flanges.
 - 3. American Society for Testing and Materials (ASTM):
 - a. D638 – Standard Test Method for Tensile Properties of Plastics.
 - b. D2122 – Standard Method of Determining Dimensions of Thermoplastics Pipe and Fittings.
 - c. D2290 – Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe.
 - d. D2683 – Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing.
 - e. D2774 – Standard Practice for Underground Installation of Thermoplastic Pressure Piping
 - f. D2837 – Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials.
 - g. D3035 – Standard Specification for Polyethylene Plastic Pipe Based on Controlled Outside Diameter.
 - h. D3261 - Standard Specification for Butt Heat Fusion
 - i. D3035 – Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Controlled Outside Diameter.
 - j. E3261 – Standard Specification for Butt Heat Fusion Polyethylene Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing.
 - k. D3350 – Standard Specification for PE Pipe & Fittings Material.
 - l. F412 – Standard Terminology Relating to Plastic Piping Systems.
 - m. F714 – Standard Specification for PE Pipe (SDR-PR) Based on Outside Diameter.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- n. F905 – Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
 - o. F1055 – Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing.
 - p. F2164 – Standard Practice for Field Leak Testing of Polyethylene (PE) and Crosslinked Polyethylene (PEX) Pressure Piping Systems Using Hydrostatic Pressure
 - q. F2206 – Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene.
 - r. F2620 – Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings.
 - 4. International Organization for Standardization:
 - a. ISO 8179-1
 - 5. National Sanitation Foundation (NSF):
 - a. 14 - Plastics Piping System Components and Related Materials.
 - 6. Plastic Pipes Institute (PPI):
 - a. Handbook of Polyethylene Pipe.
 - b. MS-3 – HDPE Pipe and Fittings Specification for Buried Potable Water.
 - c. TR-3 – Policies and Procedures for Developing Hydrostatic Design Basis (HDB), Pressure Design Basis (PDB), Strength Design Basis (SDB), and minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - d. TR-4 - HDB/SDB/PDB/MRS Listed Materials, PPI Listing of Hydrostatic Design Basis (HDB), Strength Design Basis (SDB), Pressure Design Basis (PDB), and Minimum Required Strength (MRS) Ratings for Thermoplastic Piping Materials or Pipe.
 - e. TR-9 – Recommended Design Factors for Pressure Applications of Thermoplastic Pressure Pipe Materials.
 - f. TR-33 – Generic Butt Fusion Joining Procedure for Field Joining of Polyethylene Pipe.
 - g. TN-42 – Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects.
- 1.03 SUBMITTALS:
- A. Submit the following for acceptance prior to fabrication:
 - 1. Pipe and joint details.
 - a. Size.
 - b. Dimensionality.
 - c. Pressure Class/Dimension Ratio.
 - d. Color and/or Striping.
 - e. Printed Markings.
 - f. Manufacturer's design calculations including, but not limited to, wall thickness and deflection under specified live and dead loads.
 - g. Manufacturer's calculations and recommendation for minimum bending radius.
 - B. Laying and installation schedule, if required.
 - C. Specials and coupling details.
 - D. Mechanical joint adapter and flange adapter details.
 - E. Installation schedule.
 - F. Pressure testing plan.
 - G. HDPE Weld Quality:
 - 1. Quality control plan for the certified fusion machine.
 - 2. Certifications and qualifications of welders running the fusion machine.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

3. Daily weld reports.
 4. Daily reports on the certification suitability of weld equipment including thermal readings of weld plates.
 - H. Hydrostatic Test Report.
 - I. Surveyed As-built Alignments:
 1. Provide centerline and elevations of the crown of the pipe as installed at each change in horizontal direction.
- 1.04 QUALITY ASSURANCE:
- A. Manufacturers shall be experienced in the design and manufacture of pipe, fittings, specials, or appurtenances for a minimum period of 5 years.
 - B. All pipe, of same material, and fittings shall be from a single manufacturer.
 - C. Inspection of the pipe may be made by the Engineer after delivery. The pipe shall be subject to rejection at any time on account of failure to meet any of the Specification requirements, even though pipes may have been accepted as satisfactory at the place of manufacture. Pipe rejected after delivery shall be marked for identification and shall immediately be removed from the job.
 - D. Contractor shall prove that installations are within the design conditions per the alignment by proving surveyed alignment of the installed pipe. Pipe shall be surveyed at all change in vertical and horizontal direction, and at a minimum every 500LF of pipe installed. Provide the Engineer with as-built surveying monthly and complete at the end of the project.
 - E. Daily temperature reports on the hot plates shall be provided by the Contractor. These shall be provided to the Engineer on a daily basis as taken in the morning before welding procedures take place.
 - F. Fusion Technicians:
 1. Fused pipe shall be fused by qualified fusion technicians, as documented by the pipe supplier and the Contractor.
 - a. Prior to the start of a new fusion technician and/or a new piece of welding equipment, Contractor's fusion technician shall be qualified by a method approved by the Engineer. Engineer will witness the Contractor's fusion personnel perform a joint weld of each type on each size pipe. Engineer will verify competency with equipment, data logging equipment, operation of hydraulic system, and cleanliness of pipe. Engineer will provide written notification of competency of fusion technician.
- 1.05 DELIVERY, STORAGE AND HANDLING:
- A. Ship all material to the Site and store in assigned laydown areas or as directed by Engineer.
 - B. Ship spare material separately packaged and tagged as spare parts. Spare part tags shall identify type, size, material, and other related information.
 - C. Handle in a manner to ensure installation in sound and undamaged condition.
 1. Do not drop or bump.
 2. Use slings, lifting lugs, hooks, and other devices designed to protect pipe, joint elements, linings, and coatings.
 - D. Handling and storage shall be in accordance with manufacturer's requirements.

PART 2 - PRODUCTS

2.01 PIPE REQUIREMENTS:

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- A. HDPE shall be high-performance polyethylene designated PE4710 conforming to ASTM D3350 with the cell classification 445574C/E as described in PPI TR4. Pipe shall be formulated with carbon black stabilizer for UV protection.
- B. Furnish pipe of materials, joint types, sizes, and strength classes indicated or specified. Higher strengths may be furnished at Contractor's option. Furnish maximum pipe lengths produced by the manufacturer.
- C. The pipeline manufacturer shall verify and attest to the fact that their pipe is rated at all depths scheduled for installation.
 - 1. Shop drawings and pipe wall thickness calculations certifying that pipe is rated at all depths scheduled for installation shall be submitted to the Engineer for review prior to pipe installation.
- D. Pipe shall be designed to withstand all stresses resulting from external loads at depths shown on the construction plans and H-20 live loadings in roadways.
- E. Pipe Material:
 - 1. Materials shall conform to AWWA C906.
 - 2. Install pipe of materials, joint types, and sizes as indicated or specified.

Location/Description	Pipe Size (inches)	Material	Design Cover Depth (feet)	Live Load	Design Internal Working Pressure (PSI)
Water main	14	HDPE	4-10	HS-20	200 (may want to use design HGL)

- F. Pipe Bedding: As specified in SECTION 31 23 33.
- G. Pipe Color and Markings:

Location	Pipe Size	Required Color	Required Striping
All	14"	Black	Blue

- 1. Each pipe or fitting shall have plainly and permanently marked on the pipe wall the pipe class and size, date of manufacturer, manufacturer's name or trade mark, and deflection angle for bends.
- H. All pipe, fittings and specials shall be marked conforming to the applicable standard specification under which the pipe is manufactured and as otherwise specified.
- I. Mark field location of fittings and specials by station.
- J. Pressure Class: The minimum pressure class for HDPE pipe shall be as follows.

Location	Pipe Size	Style	Minimum Required Pressure Class
All	14"	Butt Fused	PE4710 DR11

- K. Outside Diameters:
 - 1. HDPE pipe shall have Ductile-Iron-Pipe-Size (DIPS) outside diameters.
- L. Joints:

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

1. HDPE pipe shall be joined using heat applied HDPE butt fusion methods approved and reviewed by the pipe manufacturer. The Supplier shall follow the pipe manufacturer's written guidelines for this procedure. All fusion joints shall be completed as described in this specification.
 - a. Joint fusions shall be provided by certified/qualified fusion technicians certified by the pipe supplier.
- 2.02 HDPE MECHANICAL JOINT (MJ) ADAPTERS:
 - A. Provide mechanical joint adapters complete with MJ accessory kit and stainless-steel internal stiffener ring. All MJ adapters, regardless of pipe class, shall be provided with the optional internal pipe stiffener.
 - B. Provide molded Fittings in compliance with ASTM D3261 and AWWA C906.
 - C. Material: NSF-61 approved PE 4710 resin as listed in PPI-TR4.
 - D. Internal stiffener ring shall be stainless steel.
 - E. Mechanical joint gland pack shall be ductile iron with fusion bonded epoxy coating.
 - F. Contractor shall order MJ adapters so that the fusion end matches that of the pipe class, specific to the actual fitting installation.
 1. Coordinate both pipe class and outside pipe diameter nominal dimension (IPS vs DIPS).
 - G. Provide beveled adapter as required at butterfly valve locations.
- 2.03 HDPE FLANGE ADAPTERS:
 - A. Provide flange adapters complete with ductile iron flange backing ring.
 - B. Provide molded Fittings in compliance with ASTM D3261 and AWWA C906.
 - C. Material: NSF-61 approved PE 4710 resin as listed in PPI-TR4.
 - D. Contractor shall order flange adapters so that the fusion end matches that of the pipe class, specific to the actual fitting installation.
 1. Coordinate both pipe class and outside pipe diameter nominal dimension (IPS vs DIPS).
 - E. Contractor is responsible for coordinating flange drilling, pattern, and class.
 1. Flange face shall be "full face" making full contact with metallic fittings.
 - F. Provide beveled adapter as required at butterfly valve locations.
- 2.04 METALLIC SLEEVES AND COUPLINGS:
 - A. Metallic sleeves shall be ductile iron, fully restrained/restraining, and capable of accepting a high range of outside diameters. Provide sleeves for use on HDPE complete with stainless steel internal stiffener rings as recommended by the manufacturer.
 - B. Construction:
 1. Body: Ductile iron ASTM A536 grade 65-45-12.
 2. Coating: Provide sleeved with a fusion bonded epoxy coating.
 3. Sleeve shall have an minimum angularity of (+/-) 4% on each socket end.
 4. Internal stiffener rings: 304 stainless steel.
 5. Nuts and bolts shall be 304 stainless steel.
 - C. Acceptable manufacturers:
 1. Georg Fischer - MultiJoint® 3000 Plus
 2. Krausz - Hymax Grip® Wide Range Coupling
 3. Romac – Alpha Wide Range Restrained Joint (yellow grippers)
- 2.05 RESTRAINING SYSTEMS:
 - A. The HDPE piping system shall be inherently restrained by the use of fused joints.
 - B. Harness Rods:

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

1. Harness rods and nuts shall be low alloy steel.
 - a. Rods and nuts shall be polyethylene wrapped.
- C. Metallic Joint Restraint Devices:
 1. See section 33 12 16.

PART 3 - EXECUTION

3.01 DELIVERY AND OFF-LOADING:

- A. Each pipe shipment should be inspected prior to unloading to see if the load has shifted or otherwise been damaged. Notify Engineer immediately if more than immaterial damage is found. Each pipe shipment should be checked for quantity and proper pipe size, pressure class, color, and type.
- B. Pipe should be off-loaded and otherwise handled in accordance with AWWA M55, and all of the pipe manufacturer's guidelines shall be followed.
- C. Off-loading devices such as chains, wire rope, chokers, or other pipe handling implements that may scratch, nick, cut, or gouge the pipe are strictly prohibited.
- D. During removal and handling, be sure that the pipe does not strike anything. Significant impact could cause damage, particularly during cold weather.
- E. If appropriate unloading equipment is not available, pipe may be unloaded by removing individual pieces. Care should be taken to verify that pipe is not dropped or damaged.
- F. Pipe shall not be dumped, dropped, pushed, etc., from the truck. Pipe should be carefully lowered from trucks. Pipe must be offloaded in a manner to prevent damage to the pipe.
- G. Ship all material to the Site and store in assigned laydown areas or as directed by Purchaser.
- H. The pipe shall be placed on a minimum of 4" wide wooden dunnage, evenly spaced at intervals no greater than 4'. Pipes must be laid straight, parallel and not cross over one another.
- I. Stored pipe shall not be stacked greater than the pipe manufacturers recommendations.
 1. Pipe shall not be stacked greater than two high. One pipe level on wooden dunnage and one row of pipes on that row.

3.02 HANDLING AND STORAGE:

- A. Handling and storage shall be in accordance with manufacturer's requirements.
- B. Contractor is allowed to drag the pipe on the ground provided the ground surface is non-abrasive and non-scratching. **Ground shall not cut, nick, chip, or gouge the HDPE pipe.**
 1. No more than 10 joints of pipe (approximately 500 LF +/-) shall be dragged as a continuous segment at any time.
 2. If the surface is rocky, abrasive, or likely to scratch the pipe the Contractor shall use either rollers or string the pipe along the alignment.
- C. Any scratch or gouge greater than 0.7% of the wall thickness will be considered significant and can be rejected unless determined acceptable by the Contractor.
- D. Any length of pipe showing a crack or which has received a blow that may have caused a defect, even though no such defect can be seen, shall be marked as rejected and removed at once from the Work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Contractor.
- E. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. Pipe shall be stored so as to not exceed the recommended stacking height provided by the manufacturer. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- F. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
- G. Stored pipe be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
- H. Pipe shall only be stored and stacked per the pipe manufacturer's guidelines.

3.03 INSTALLATION - GENERAL:

- A. Use equipment, methods, and materials ensuring installation to lines and grades indicated.
 - 1. Maintain within tolerances specified or acceptable laying schedule.
 - a. Alignment: within 1-inches of design centerline.
 - b. Grade: within 1-inches of design centerline elevation such that:
 - (1) Under no circumstance may grade tolerance interrupt designed (positive or negative) grade.
 - (2) Waterlines approaching air release valves from low point shall maintain positive grade.
 - (3) Waterlines leaving air release valves shall maintain negative grade to low point.
 - 2. Do not lay on blocks unless pipe is to receive total concrete encasement.
 - 3. Accomplish horizontal and vertical curve alignments with curved pipe or bends.
 - 4. Obtain acceptance of method proposed for transfer of line and grade from control to the Work.
- B. Install pipe of size, materials, strength class, and joint type with embedment indicated for plan location.
- C. Clean interior of all pipe, fittings, and joints prior to installation. Exclude entrance of foreign matter during installation and at discontinuance of installation.
 - 1. Close open ends of pipe with snug-fitting closures.
 - 2. Do not let water fill trench. Include provisions to prevent flotation should water control measures prove inadequate.
 - 3. Remove water, sand, mud, and other undesirable materials from trench before removal of end cap.
- D. Brace or anchor as required to prevent displacement after establishing final position.
- E. Perform only when weather and trench conditions are suitable. Do not lay in water.
- F. Observe extra precaution when hazardous atmospheres might be encountered.
- G. All field joints shall be inspected, tested, and recorded prior to backfilling.
- H. Dragging of pipe along the ground during fusing/installation is permissible ensuring any gouging does not exceed 7% (seven percent) of the wall thickness.

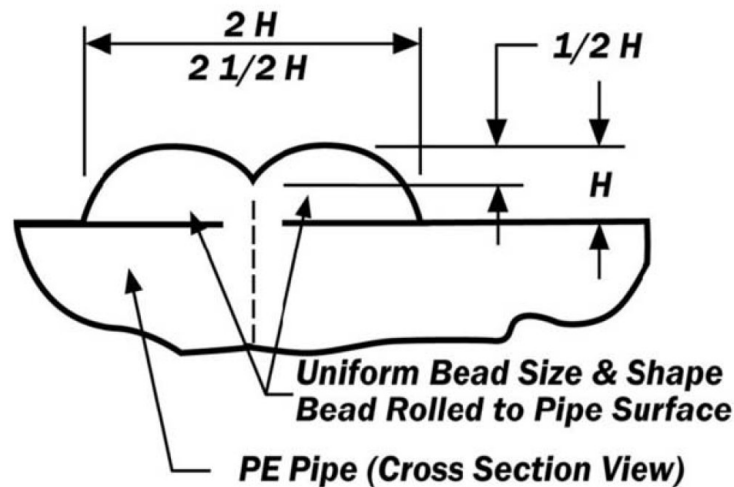
3.04 JOINTING BY PIPE FUSION:

- 1. Fused pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe manufacturer's guidelines.
- 2. Pipe welds shall not be cooled using air cooled or air assisted equipment.
 - a. Fastfusion® is strictly prohibited.
 - b. Fused pipe shall be allowed to cool using only ambient air temperatures.
- 3. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

4. Only appropriately sized and outfitted butt fusion machines that have been approved by the pipe manufacturer shall be used for the fusion process. Fusion machines must incorporate the following elements:
 - a. Heat Plate – Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines. The heat plate shall be capable of maintaining a surface temperature between 400 to 450 degrees F.
 - b. Power – Must be self-generated or generator supplied for electrical requirements.
 - c. Clamping – Shall be able to clamp the pipe axially to allow for subsequent operations to take place.
 - d. Carriage – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
 - e. Facer – the unit shall have a facer to establish clean, parallel mating surfaces, perpendicular to the centerline of each pipe. Facing blades specifically designed for cutting fused HDPE pipe shall be used.
 - f. General Machine – Overview of machine body shall yield no obvious defects, missing parts, leaks of hydraulic system, or potential safety issues during fusion.
 - g. Data Logging Device – An HDPE pipe supplier and Contractor approved datalogging device with the current version of the pipe manufacturer's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
5. Other equipment specifically required for the fusion process shall include the following:
 - a. Pipe rollers shall be used for support of pipe to either side of the machine
 - b. Pipe cleaning solvent shall be accessible and used by the fusion crews at every joint. No oil or grease residue shall be present at the time of fusing.
 - c. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe manufacturer's recommendations.
 - d. Pipe rollers do need to be used for transporting the pipe unless there is risk of excessive/serious damage to the pipe.
 - e. An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
 - f. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
6. On both sides of the joint, a double bead should be rolled over to the surface, and be uniformly rounded and consistent in size all around the joint. The double bead width should be 2 to 2-1/2 times its height above the surface, and the v-groove depth between the beads should not be more than half the bead height. Figure below illustrates the requirements.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued



7. Un-acceptable joints shall be completely removed and replaced.
 - a. Un-acceptable joints include any of the following:
 - (1) Visually un-acceptable joints as determined by Contractor and/or pipe manufacturer.
 - (2) Joints determined to be out of manufacturer's specifications as measured in the field or collected by the fusion data logger.
 - (3) Joints not recorded by the data logger.
 - (4) Joints not visually inspected by the Contractor.

3.05 JOINT RECORDING:

- A. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.
 1. The software shall register and/or record the parameters required by the pipe manufacturer and these specifications.
 2. The Contractor shall setup a digital (online) account on the fusion data logger vault associated with the manufacturer of the device.
 - a. The account login and password shall be provided to the Engineer.
 - b. All joint fusion data shall be uploaded daily to the online account inclusive of all joints and operators.
- B. Each fusion joint shall be permanently marked on the pipe (near joint) with the weld ID number (or equivalent ID) and operator ID/Name as shown on the data logging report.
- C. All fusion joint reports shall be provided to Engineer.
- D. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of fused HDPE pipe.
- E. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.
- F. Data not logged by the data logger shall be reported immediately to the Contractor for review. Contractor reserves the right to reject the weld which would require the operator to cut out and resubmit another fusion.
- G. Joint reports not submitted, not in compliance with ASTM 2620, and/or not in compliance with the pipe manufacturers specific recommended procedures may require the operator to cut out and resubmit another fusion.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

3.06 INTERNAL FUSION BEAD REMOVAL:

- A. Removal of the internal fusion bead is not required.

3.07 EXTERNAL FUSION BEAD REMOVAL:

- A. Removal of the external fusion bead is not required.

3.08 BENDING HDPE PIPE:

- A. For HDPE pipe, the minimum bending radius at joints or fittings shall never exceed the pipe manufacturers recommendations and is subject to the following.
- B. Field bending depends on pipe diameter, wall thickness (DR), and whether or not fittings are or will be used in the bend area.
1. Minimum calculated bend radius:

$$R_F = (D/12) * F_R$$

R_F = MINIMUM BENDING RADIUS, FEET

D = PIPE OUTSIDE DIAMETER, INCHES

F_R = BENDING RADIUS FACTOR (TABLE BELOW)

Bending Radius Factor Table f_R :

Pipe DR	Bending Radius Factor
DR 6, DR 7, DR 7.3, DR 9	20
DR 11, DR 13.5	25
DR 15.5 - DR21	27
DR 26	34
Fitting in bend	100

The length of pipe required to deflect HDPE pipe around a sweep bend of Θ degrees is:

$$L = \frac{\Theta}{180} \pi \left(r + \frac{D}{24} \right)$$

L = pipe length along pipe bend centerline, Feet

Θ = sweep bend in degrees

π = pi, approximately 3.14159

r = bend radius, feet.

3.09 CUTTING:

- A. Cut in neat manner without damage to pipe.
- B. Observe Specifications regarding joint locations.
- C. Cut HDPE pipe with carborundum saw or other acceptable method per manufacturer's instructions.
1. Smooth cut by power grinding to remove burrs and sharp edges.

3.10 CLOSURE PIECES:

- A. Connect two segments of pipeline or a pipeline segment and existing structure with short sections of pipe fabricated for the purpose.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- B. Observe Specifications regarding location of joints, type of joints, and pipe materials and strength classifications.
- C. Field-fabricated closures, where required, shall be concrete encased between adjacent flexible joints.
- D. May be accomplished with sleeve coupling:
 - 1. Of length such that gaskets are not less than 3 inches from pipe ends.
 - 2. Wrap exterior of buried steel couplings with polyethylene encasement conforming to AWWA C105.
 - 3. Include spacer ring identical to pipe end such that clear space in closure does not exceed ¼-inch.

3.11 TEMPORARY PLUGS:

- A. Furnish and install temporary plugs for removal by others where indicated on the Construction Drawings.
- B. Remove from pipe laid under adjacent contract in order to complete pipe connection when connecting to existing stub out or fitting.
- C. Plugs:
 - 1. Test plugs as manufactured by pipe supplier.
 - 2. Fabricated by Contractor of substantial construction.
 - 3. Watertight against heads up to the hydrostatic design pressure.
 - 4. Secured in place in a manner to facilitate removal when future work is required to connect to pipe.

3.12 ELECTROFUSION COUPLINGS:

- A. The installer of electrofusion fittings shall have received training from an authorized instructor and have a strong working knowledge of polyethylene and heat fusions.
- B. Initial Cleaning:
 - 1. Clean the pipe ends and the area to be fused. Remove all dirt, mud, and debris. Clean water can be used prior to scraping.
- C. Re-rounding:
 - 1. Care must be taken to ensure that the polyethylene pipe is not out-of-round before attempting the electrofusion process.
 - 2. Out-of-round pipe will result in surface area not in adequate contact with the fusion zone resulting in cold zones and leakage.
 - 3. If ovality is greater than 5%, the installer must take measures to re-round the pipe.
 - a. Ovality as measured by ASTM 2513 and F714.

Pipe Size
14" DIPS DR 11

- 4. Ovality can be visually observed and/or measured in the field.
 - 5. Use a tape measure to determine the high/low points. If these measurements exceed the maximum OD tolerance, a re-rounding clamp or device must be used to bring the pipe to a round condition.
- D. Square Pipe Ends:
 - 1. Pipe ends must be square and even. A chain saw without bar oil can be used for larger pipe sizes.
- E. Pipe Marking:

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

1. Marks must be made on the outer surface of the pipe as a visual aid to help indicate the required scraper coverage. Markings and lines must be non-petroleum based. Permanent markers such as “Sharpie” are acceptable.
 2. Measure the total length of the coupler. Make a marker that is $\frac{1}{2}$ the total length of the coupler which will verify that the pipe end is inserted to the center of the coupler.
- F. Scraping Preparation:
1. For a pipe surface to be properly prepared for electrofusion the outer layer or “skin” of the pipe should be removed to expose a clean, virgin pipe material.
 - a. Remove a minimum of 0.007” to 0.010” of the pipe surface material during the scraping process.
 - b. Inspect the entire scraped area to verify total scraping coverage.
 - c. Avoid touching the scraped pipe surface as this will contaminate the surface with oils.
 2. This can be achieved by using one of several types of approved scraping tools.
 - a. “Approved” scraping tools can vary widely between electrofusion manufacturers and they may not necessarily be a tool that is manufactured by the fitting manufacturer. A few examples of scraping tools that Central Plastics classifies as “approved” are; a rasp type tool (Stanley Surform Model 21-296 or equivalent), a metal blade paint scraper, or tools manufactured specifically for electrofusion scraping. “Approved” simply indicates that the tool has been qualified by the manufacturer and has been found to perform in a satisfactory manner under the joining conditions established by the manufacturer.
 - (1) Wood rasps or metal files are not considered acceptable.
 - (2) Materials such as sandpaper or emory cloth are not acceptable.
 - (3) Do not use abrasives, grinding wheels, or other devices.
- G. Cleaning:
1. After scraping, do not clean with water. Use a minimum 70% isopropyl alcohol concentration with not additives to clean scraped surfaces.
 2. Clean both sides of pipe when the sleeve must be pulled onto one pipe to allow for assembly. Clean before pulling on sleeve.
- H. Fitting Restraint:
1. Electrofusion couplings require the pipe to be restrained and supported on each side of the pipe. This restricts movement during fusion and cooling and alleviates stress/strain until the fusion cycle is completed.
 2. Contractor shall use some form of pipe restraint and/or support during the fusion and cooling process.
- I. Barcode Scanning Instructions:
1. All installed couplings shall be documented by using the barcode readers.
 2. Ensure the processor is ready and displays that it is ready to read data.
 3. Scan the barcode reader in a smooth quick motion, without stopping.
- J. Cooling:
1. The cooling phase is critical to the success of the fusion.
 2. Do not assume because the fitting is cool to the touch, that the cooling process is complete.
 3. Follow all manufacturers recommendation regarding cooling. Do not remove supports/restraints until after the cooling process is complete.
- K. Joint information and Record Keeping:

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

1. The Contractor shall provide documentation linked to each weld to demonstrate that the joint was prepared by qualified welders using the correct installation equipment, joint geometry, and environmental controls to verify that the weld was constructed correctly.
 2. A system used to link each weld within a record keeping data system shall be used. The following information is required at each installation:
 - a. The identity of the welder(s)
 - b. Identify the fitting manufacturer, type and identification code
 - c. Data to show prepared pipe ends are within the dimensional range specified.
 - d. The operator has correctly removed the required depth of oxidised material from the surface of the pipes
 - e. The type of manufacturer approved welding wipe used
 - f. The joint has been assembled correctly including correct insertion depth, pipe rounding (if necessary), pipe alignment and clamping to prevent movement during the welding process
 - g. Suitable environmental controls have been used to prevent damage to the joint from factors such as dust, water and excessive heat or cold from environmental factors
 - h. The type of rounding and alignment clamps used
 - i. That the control box used was correctly calibrated and compliant to ISO 12176-2
 - j. That the weld was allowed to cool for the correct amount of time in the alignment clamps prior to removal of the clamps and that the fitting was not pressure tested before the end of the second cooling period.
- 3.13 FIELD TESTING:
- A. Acceptance Tests for Pressure Pipelines:
 1. Perform hydrostatic pressure and leakage testing – the “hydro” test.
 - B. Perform after backfilling.
 - C. Test separately in segments between sectionalizing valves, between a sectionalizing valve and a test plug, between test plugs or temporary isolation valving.
 1. Test in individual segments based on the requirements specified herein.
 2. Contractor shall install test plugs or temporary isolation valving as required for the hydrostatic tests to the test segments specified in this section.
 - a. Including all anchors, braces, and other devices to withstand hydrostatic pressure on plugs.
 - b. Be responsible for any damage to public or private property caused by failure of plugs.
 - D. Limit fill rate of line to available venting capacity. Fill rate shall be regulated to limit velocity in lines when flowing full to not more than 0.5 fps.
- 3.14 HYDROSTATIC PRESSURE AND LEAKAGE TEST:
- A. This section describes the procedures for hydrostatic testing of polyethylene piping, fittings, and components. In addition to the standards and procedures listed below, testing will be in accordance with AWWA M55, PPI TN-46, and ASTM F2164 “Standard Practice for Field Leak Testing of Polyethylene Pressure Pipe Systems Using Hydrostatic Pressure”. If there is a discrepancy between these documents, the most stringent shall apply.
 - B. Contractor shall provide all equipment and materials and labor to perform hydrostatic pressure leakage test, testing, repairing as needed, and replacing as needed as modified herein with no additional cost to the Contractor.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- C. Contractor shall submit a pressure testing plan outlining all testing steps. This shall include planned test sections, pipe plugs/valves, pipe restraint, safety pre-cautions and personal protection, and procedures and pressures to be utilized.
 - 1. Contractor shall submit the locations and elevations of all test equipment including test gauges so that the actual test pressures required can be calculated by the Contractor and Engineer.
- D. The pipeline shall be tested at a pressure of not less than 1.5 times the maximum operating pressure within the test section, or 50 psi above maximum operating pressure, whichever is greater.
- E. Pipe sections shall be tested with clean water. Pneumatic testing is not permitted.
 - 1. General:
 - a. The section of the piping system to be tested is isolated from other parts of the system and restrained against movement to prevent failure. Components that are not to be subjected to test pressure or could be damaged by test pressures shall be isolated or removed as necessary. Isolated components must be vented to atmosphere. The test section is filled with water, raised to the test pressure, and allowed to stabilize. The system is inspected or monitored for leakage, and then test pressure is relieved. If repairs or corrections are necessary, they are performed only when the test section is depressurized. If necessary, a retest is performed after a relaxation period. At the conclusion of an acceptable test, the test section may be placed in service. Purging and disposal of the water from the test section may be necessary.
 - (1) Do not exceed the working rated pressure of inline block valves.
 - (2) The Contractor shall prepare a check list of all preparatory work undertaken and ensure that all safety measures are in place. The check list shall be signed by the Contractor and approved by the Engineer. All in-line instruments and instrument probes shall be removed, blocked and bled or otherwise isolated from the test.
 - (3) Each test section shall be filled with water from approved source as indicated in the permit or by Contractor. Pre-tested test headers shall be installed prior to filling. During pressurization, a pressure/volume plot shall be made by taking regular readings from the pump stroke counter and pressure gauge.
 - 2. Apparatus and Equipment for Hydrostatic Procedures:
 - a. General - Components such as caps, plugs, valves, blind flanges, manual or automatic air release devices, vents, and other devices that are used to isolate the test section from other parts of the system, to purge air from the system, and to isolate components that are not to be subjected to test pressure are generally needed.
 - b. Isolation - Test section isolation and closure components are to be rated for pressures equal to, or greater than, the test pressure applied to the test section.
 - (1) Although section isolation and closure components may only be connected to the test section for the duration of the test, the joint between the test section and a closure or isolation component should be at least as strong as joints in the test section. Additional restraint may be required.
 - (2) Air release devices should be located at all high points along the test section. Excessively worn or deteriorated equipment is unsuitable and is not to be used.
 - (3) Where an existing water supply is used to supply test water, protect the existing water supply from backflow contamination in accordance with local codes or as required by the authority having jurisdiction. Remove backflow

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

protection and isolate the test section from the existing water supply before testing.

- c. Filling and Pressurizing Equipment – Contractor shall furnish all liquid filling and pressurizing equipment such as pumps, and pressure regulating devices as necessary. Filling equipment shall be capable of filling the test section in a reasonable time against any elevation head pressure that may be present. Pressurizing equipment shall be able to maintain the necessary test pressure in the test section and provide sufficient quantities of make-up test water for the duration of the test. Pressure regulating equipment shall be capable of maintaining pressures for the duration of the test.
- d. Pressure Monitoring - Contractor shall furnish all labor and materials, including a pressure/temperature recorder, an ambient thermometer, dead weight tester, and pressure gauge to hydrostatically test the pipeline and facilities. The pressure and temperature recorder(s), and dead weight tester must be calibrated annually.
 - (1) Use at least one calibrated pressure gauge or sensor accurate to within two percent (2 %) of full scale. Gauge or sensor full scale value shall not be more than twice the test pressure, and that scale graduations be no greater than two percent (2 %) of the full scale value. Using a valved tee, a gauge cock for bleeding, a pressure snubber, and a duplicate, back-up pressure gauge are recommended.
 - (2) Deadweight or calibrated pressure gauge readings shall be recorded every fifteen minutes and temperature readings shall be recorded every 30 minutes for the duration of the test. The pipeline pressure and temperature shall be continuously recorded.
 - (3) The pressure recording shall serve only as information data and shall not be used to determine pressure drop for pipeline leakage. No pipeline shall be judged acceptable until a continuous test for the minimum time period have been recorded without pressure loss due or gain unless correlated to temperature change. All data and charts shall be clearly marked with the time and date, description of test section and type of test and shall be signed by Engineer's representative and Contractor.
 - (4) The hydrostatic test must have one inline relief valve (Contractor provided) that is set to relieve upon overpressure. This relief valve shall be tested and verified prior to beginning the hydrostatic test.
 - (5) Locate the test pressure gauge or sensor to monitor test pressure at the lowest point in the test section. Pressure may also be monitored at other points as well.
 - (6) Other equipment for connection of pump(s) to the test section and the liquid supply, controlling the flow of test liquid, power to the pump(s), connection of pressure gauge(s) or sensor(s) to the test section, monitoring pressure, and draining/purging the test liquid from the test section may also be necessary.
- 3. Specific Safety Precautions:
 - a. This safety information is in addition to the safety information in other sections of these specifications.
 - b. Always take precautions to eliminate hazards to persons near lines being tested. For the entire duration of the procedure, including filling, initial pressurization, time at test pressure, and depressurization, only persons conducting the test or inspecting the system should be allowed near the section under test. These persons should be

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

fully informed of the hazards of field pressure testing. All other persons should be kept a safe distance away. The test section must be supervised at all times.

- c. Failure may result in sudden, violent, uncontrolled, and dangerous movement of system piping, or components, or parts of components.
 - d. Restraint Against Movement - Take measures to verify that all parts of the section under test are restrained against movement if failure occurs. Such measures may include backfilling, anchoring, or other appropriate means.
 - e. Partial Backfilling During Testing - When underground connections, joints, and seals are to be exposed for observation during the test, use sufficient backfill material placed between the joints, and over the pipe to prevent movement, giving due consideration to restraining thrust forces. In particular, pipes connected to restrained joints that derive their stability from the interaction of the pipe and soil are to be backfilled prior to testing. Leakage usually occurs at a connection, joint, or seal in the system. Depending upon the type of connection, joint, or seal, leakage may be seepage, spray, or a stream of water.
 - (1) When properly made, heat fusion joints in polyethylene pipe are as strong as the pipe and do not leak. Leakage at a fusion joint indicates a faulty joint that may rupture completely at any time. If leakage is observed at a fusion joint, move away immediately, and depressurize the test section.
4. Pre-Test Preparation and Set-Up:
- a. Before testing, heat fusion joints are to be completely cooled. Mechanical joints are to be completely assembled with all necessary seals and all fasteners installed and tightened.
 - b. Allow concrete supports and anchors in the test section to cure until they have developed at least 75% strength to withstand test pressure thrust forces. Restrain the test section against movement in the event of failure. Temporarily remove, restrain, or isolate expansion joints and expansion compensators before starting.
 - c. Test Section - Equipment that has inadequate capacity may not be able to complete the test within allowable testing time limits. If so, use higher capacity test equipment, or test a smaller (shorter) section of the system.
 - d. Test Temperature - Polyethylene piping materials are typically pressure rated at 73°F (23°C). At higher temperatures, reduced pressure ratings and test pressures may be required. If the equalized temperature exceeds 73°F prior to beginning the test, the Contractor shall be consulted for elevated temperature pressure ratings.
 - e. All thermoplastic pipes have reduced strength at elevated temperatures of the pipe itself. Test pressure must be reduced when the section is at elevated temperature either from service conditions or from environmental conditions such as being warmed by the sun. Multiply the test pressure by the below table multiplier to determine the allowable elevated temperature test pressure.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

TEMPERATURE AND TESTING PRESSURE MULTIPLYING FACTOR FOR HDPE PIPE							
TEST SECTION TEMPERATURE (of pipe) Degrees F	≤ 80	≤ 90	≤ 100	≤ 110	≤ 120	≤ 130	≤ 140
Multiplier	1.00	0.90	0.80	0.75	0.65	0.60	0.50
Note: Use 80F multiplier for 80 F and lower temperatures.							

- f. Maximum Test Pressure - Maximum Test Pressure shall be 1.5 times the maximum working pressure, with temperature factored in. This shall be submitted to the Contractor for review. The expected maximum test HGL is shown below.

$$\text{Maximum Working Pressure} * 1.5 * \text{Multiplying Factor (Temperature Related)} = \text{Maximum Testing Pressure}$$

The following table shall be used when pressurizing the pipeline for the hydrostatic test:

Test Description	Test Pressure (psi)
Water Main	150

* Reduce per temperature correction as required.

* Also the minimum required HGL Test requirement unless adjusted for temperature.

- (1) Do not deviate outside of these test segments and test hydraulic gradients without approval by the Contractor.
 - (a) Testing outside of these limits and at hydraulic gradients above or below these will result in improper testing and may result in over pressurization and possible failure of the waterline.
- (2) Contractor shall not test the pipe if the pipe temperature is above 140°F.
- (3) Maximum testing pressure shall abide by Maximum Test Pressure is limited by the SDR rating of the polyethylene pipe, fittings, and components.
- (4) The maximum test pressure shall not exceed 1.5 times the maximum working pressure rating of the polyethylene pipe (also taking into account appropriate temperature de-rating factors) where lower pressure-rated components or devices are not present, or have been removed or isolated from the test section.
- (5) Do not use higher test pressure even though some components in the test section may have a higher pressure rating.
- (6) Total testing time including the time required to pressurize, stabilize, hold test pressure, and depressurize should not exceed 8 hours.
- (7) If retesting is necessary, the test section shall be depressurized completely if a repair is required. Or down to the maximum allowable operating pressure

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

including the expected temperature de rate if temperatures are projected to be above 73°F. for 8 hours prior to retesting if the following apply:

- (8) The line has previously been tested above the SDR rating (maximum working pressure rating) of the polyethylene piping for more than one hour.
- (9) A leak is discovered along the test section of pipe and requires repair.
- (10) If the test was not able to be conducted and the elevated pressure was not applied to the pipe for more than 1 hour, bring pressure down in the pipe to the maximum allowable operating pressure including the expected temperature factors.
- (11) Before pressure is applied, examine test equipment and all connections in the test section to ensure that all are in proper operating condition and tightly connected. Isolated components or devices are to be vented to atmosphere. All low-pressure filling lines and other low-pressure items should be vented, disconnected or isolated.
- (12) The following exhibit demonstrates the test sections and respective hydraulic grade lines:

5. Hydrostatic Test Procedure:

- a. Filling - Fill the test section slowly. Purge all air. Take appropriate precautions to verify that no air is trapped in the test section. To allow air to escape from the test section, flow velocities during filling should not exceed the capacities of air release devices or other openings used to release entrapped air. To avoid or limit transient pressure surges, the filling flow velocity should not exceed 0.5 ft/sec.
- b. Temperature Equalization - Allow the test section and the test liquid to equalize to a common temperature.
- c. Pressurizing (Initial Expansion Phase) - When the section is completely filled and purged of air, gradually increase pressure in the section to the minimum required test pressure (designated by Contractor).
 - (1) If the minimum required test pressure cannot be attained, or if it takes an unreasonably long time to reach the minimum required test pressure, there may be excessive leakage, entrapped air, or open valving, or the pressurizing equipment may be inadequate for the size of the test section. If such faults exist, discontinue pressurizing, and correct them before continuing. Add make-up water as necessary to maintain the minimum required test pressure for 4 hours.
- d. Test Phase - Reduce minimum required test pressure by 10 psi and monitor pressure for 1 hour. Do not increase pressure or add make-up water.
 - (1) Example: Considering a minimum required test pressure of 200 psi, the 1 hour test phase would reduce the minimum required test pressure to 190 psi.
- e. Pass/Fail Criteria - If no visual leakage is observed, and pressure during the test phase remains steady (within 5% of the minimum required test phase pressure) for the 1 hour test phase period, a passing test is indicated.
 - (1) Example: Using 200 psi minimum required test pressure and considering the 10 psi reduction to 190 psi during the test phase. The 5% window allows the pressure to drop by 9.5 psi.
 - (2) Retesting - If retesting is necessary, depressurize the test section per item 8 below and correct any faults or leaks in the test section. Do not attempt to correct faults or fix leaks while the test section is under pressure.

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- (3) Relaxation Period - Allow the test section to “relax” for at least 8 hours before re-pressurizing. After the relaxation period, repeat the initial expansion and test phases per step 1 and 2 above.
- (4) Depressurization - Depressurize the test section by reducing pressure or releasing test liquid at a controlled rate. Sudden depressurization can cause water hammer.
- (5) After the test remove temporary closure and isolation devices from the test section.
 - (a) All thermocouples installed on the line shall be removed and the coating repaired to the satisfaction of the Engineer. All fill pressure and instrument connections on completion of the hydrostatic test shall be blanked off by the Contractor using blind flanges where possible or shall be otherwise plugged or capped by means approved by Contractor.
- f. A schematic for typical pressure testing is attached below for reference.
- 6. Test Records:
 - a. The procedure will be terminated after the Engineer has given his written approval of the successful test. The Contractor shall furnish to the Engineer, all necessary records for each test section. These shall include recording charts, deadweight and temperature half hourly reading logs, recording charts, and complete reports on any leaks or breaks all properly witnessed by the Engineer, Contractor, and the Owners’ representatives.
 - b. Within Seven (7) days of successful completion of the hydrostatic test, the Contractor shall submit copies of its test report to the Engineer, with the number of copies specified in the Contract documents. The bound report shall contain, as a minimum, the following:
 - (1) Name, contact information, and firm of testing company
 - (2) Backflow prevention devices, if used
 - (3) Weather conditions and ambient temperature at the site during the test
 - (4) Test pressure
 - (5) Type of test gauges in the test section
 - (6) Placement of test gauges in the test section, test gauge location distances and elevations from the beginning of the section
 - (7) Test gauge calibration records
 - (8) Test pressures recorded during the test
 - (9) Pressure recording charts with appropriate information clearly noted and annotated. Charts shall be noted with date, line segment and signed by testing Contractor.
 - (10) Any adjustments made to test pressure for elevated temperatures
 - (11) Test duration
 - (12) Description of the test section length, elevations, and site location
 - (13) Description of the test section components
 - (14) Description of any leaks or failures and the corrective actions taken
 - (15) Date and time of day of the test
 - (16) Identification of the party conducting the test
 - (17) Permits acquired by the Contractor
 - (18) Depressurization Logs
 - (19) Records of chemical analysis and corrosion monitoring and inspection tests performed prior to and during hydrostatic test and wet lay-up period

SECTION 33 14 11 – WATER UTILITY TRANSMISSION PIPING: continued

- (20) The testing procedure actually used on site, marked up with any modifications differing from that previously approved prior to the tests
- (21) All calculations

3.17 – MEASUREMENT AND PAYMENT

Payment for the items of this section shall be made at the contract unit price bid listed in the proposal for the items of work. The price established shall be full compensation for all materials including pipe, short pieces and specials, embedment material, labor, tools, equipment and incidentals necessary to complete this item of work.

- A. “(SIZE) (DR) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT” shall be measured along the pipe, through fittings and valves.
- B. “(SIZE) (DR) HDPE WATER LINE PIPE – INSTALL BY DIRECTIONAL BORE” shall be measured along the pipe, through fittings and valves. Payment at the contract unit price listed in the proposal shall be consider full compensation for furnishing and installing pipe and materials, including fusible fittings, equipment setup, directional drilling, mud pits, pullback of pipe, boring and receiving pits, and related work as delineated on the plans and as defined in these specifications. Ductile iron fittings will be paid for in other sections.
- C. “HYDROSTATIC PRESSURE TESTING AND DISINFECTION ” shall be made at the unit price bid lump sum. The price established shall be full compensation for all material, labor, tools, equipment and incidentals necessary to complete this item of work and disinfection as specified in this section.

The price established shall be full compensation for all materials including fittings, embedment material, concrete thrust blocks, labor, tools, equipment and incidentals necessary to complete this item of work.

3.18 – BASIS OF PAYMENT

The items measured as provided above will be paid for at the contract unit price bid:

(SIZE) (DR) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	L.F.
(SIZE) (DR) HDPE WATER LINE PIPE – INSTALL BY DIRECTIONAL BORE	L.F.
HYDROSTATIC PRESSURE TESTING AND DISINFECTION	L.S.

Such payment shall be compensation in full for furnishing all materials, labor, equipment, tools and the work in accordance with these specifications.

END OF SECTION 33 14 11

SECTION 33 31 50 - PIPE INSTALLATION

PART 1 - GENERAL

1.01 SUMMARY:

- A. This Section includes handling, installation and testing of pipe, fittings, specials, and appurtenances as indicated or specified.
- B. Related Work Specified Elsewhere:
 - 1. Section 33 11 00 - "Pressure Pipe."
 - 2. Section 33 12 16 - "Utility Valves and Accessories."

1.02 REFERENCES:

- A. Applicable Standards:
 - 1. American Water Works Association (AWWA):
 - a. C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
 - b. C651- Disinfecting Water Mains.
 - c. M55 - Manual for the Design and Installation of Polyethylene Pipe in Water Applications.

1.03 DELIVERY, STORAGE AND HANDLING:

- A. Handle in a manner to ensure installation in sound and undamaged condition.
 - 1. Do not drop or bump.
 - 2. Use slings, lifting lugs, hooks, and other devices designed to protect pipe, joint elements, linings, and coatings.
- B. Ship, move, and store with provisions to prevent movement or shock contact with adjacent units.
- C. Handle with equipment capable of work with adequate factor of safety against overturning or other unsafe procedures.
- D. Pipe openings shall be covered during shipment.
- E. Inside of pipe shall kept clean and free of debris during on-site storage.
- F. Handling of HDPE Pipe:
 - 1. Handling and storage shall be in accordance with manufacturer's requirements.
 - 2. Contractor is allowed to drag the pipe on the ground provided the ground surface is non-abrasive and non-scratching. Ground shall not cut, nick, chip, or gouge the HDPE pipe.
 - a. No more than 10 joints of pipe (approximately 500 LF +/-) shall be dragged as a continuous segment at any time.
 - b. If the surface is rocky, abrasive, or likely to scratch the pipe the Contractor shall use either rollers or string the pipe along the alignment
 - 3. Any length of pipe showing a crack or which has received a blow that may have caused an incident fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the work. Damaged areas, or possible areas of damage may be removed by cutting out and removing the suspected incident fracture area. Limits of the acceptable length of pipe shall be determined by the Owner or Engineer.
 - 4. Any scratch or gouge greater than 10% of the wall thickness or that indicated by manufacturer, whichever is less, will be considered significant and can be rejected unless determined acceptable by the Owner or Engineer.
 - 5. Pipe lengths should be stored and placed on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. Caution should be exercised to avoid compression, damage, or deformation to the ends of the pipe. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

SECTION 33 31 50 - PIPE INSTALLATION: continued

6. Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way.
7. If pipe is to be stored for periods of 1 year or longer, the pipe should be shaded or otherwise shielded from direct sunlight. Covering of the pipe which allows for temperature build-up is strictly prohibited. Pipe should be covered with an opaque material while permitting adequate air circulation above and around the pipe as required to prevent excess heat accumulation.
8. Pipe shall be stored and stacked per the pipe supplier's guidelines.

PART 2 - PRODUCTS Specified in respective Sections, this Division.

PART 3 - EXECUTION

3.01 INSTALLATION - GENERAL:

- A. Installation of HDPE Pipe shall be per AWWA M55 Manual for the Design and Installation of Polyethylene Pipe in Water Applications.
- B. Use equipment, methods, and materials ensuring installation to lines and grades indicated.
 1. Maintain within tolerances specified or acceptable laying schedule.
 - a. Alignment: ± 1 inch per 100 feet in open cut or tunnel.
 - b. Grade: ± 1 inch per 100 feet.
 2. Do not lay on blocks for any reason.
 3. Accomplish horizontal and vertical curve alignments with bends, bevels, and joint deflections.
 4. Obtain acceptance of method proposed for transfer of line and grade from control prior to the Work.
- C. Install pipe of size, materials, strength class, and joint type with embedment indicated for plan location.
- D. Clean interior of all pipe, fittings, and joints prior to installation. Exclude entrance of foreign matter during installation and at discontinuance of installation.
 1. Close open ends of pipe with snug-fitting closures.
 2. Do not let water fill trench. Include provisions to prevent flotation should water control measures prove inadequate.
 3. Remove water, sand, mud, and other undesirable materials from trench before removal of end cap.
- E. Brace or anchor as required to prevent displacement after establishing final position.
- F. Perform pipe installation only when weather and trench conditions are suitable. Do not lay in water.
- G. Observe extra precaution when hazardous atmospheres might be encountered.

3.02 HDPE FUSION PROCESS:

- A. General:
 1. HDPE pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier's guidelines.
 2. HDPE pipe will be fused by qualified fusion technicians, as documented by the pipe supplier.

SECTION 33 31 50 - PIPE INSTALLATION: continued

3. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process. Fusion machines must incorporate the following elements:
 - a. Heat Plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly; cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier's guidelines.
 - b. Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to carriage travel.
 - c. Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
 4. Other equipment specifically required for the fusion process shall include the following:
 - a. Pipe rollers shall be used for support of pipe to either side of the machine
 - b. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement, extreme temperatures, and /or windy weather, per the pipe supplier's recommendations.
 - c. An infrared (IR) pyrometer for checking pipe and heat plate temperatures.
 - d. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
 - e. Facing blades specifically designed for cutting HDPE pipe shall be used.
- B. Fusion Bead Removal:
1. Removal of the external fusion bead is not required.
 2. Removal of the internal fusion bead is not required.
- 3.03 JOINTING:
- A. General Requirements:
1. Perform conforming to manufacturer's recommendations.
 2. Clean all joint and gasket surfaces with lubricant recommended.
 3. Use methods and equipment capable of fully seating or making up joints without damage.
 4. Check joint opening and deflection for specification limits.
- 3.04 CUTTING:
- A. Cut in neat manner without damage to pipe.
- B. Observe Specifications regarding joint locations.
- 3.05 CLOSURE PIECES:
- A. Connect two segments of pipeline or a pipeline segment and existing structure with short sections of pipe fabricated for the purpose.
- B. Observe Specifications regarding location of joints, type of joints, and pipe materials and strength classifications.
- C. May be accomplished with sleeve coupling:
1. Of length such that gaskets are not less than 3 inches from pipe ends.
 2. Wrap exterior of buried metallic couplings with polyethylene encasement conforming to AWWA C105.
- 3.06 TEMPORARY PLUGS:

SECTION 33 31 50 - PIPE INSTALLATION: continued

- A. Furnish and install temporary plugs at end of Work for removal by others when completed ahead of adjacent contract.
- B. Remove from pipe laid under adjacent contract in order to complete pipe connection when work by other contractor is finished prior to work at connection point under this Contract.
- C. Plugs:
 - 1. Test plugs as manufactured by pipe supplier.
 - 2. Fabricated by Contractor of substantial construction.
 - 3. Watertight against heads up to 20 feet of water.
 - 4. Secured in place in a manner to facilitate removal when required to connect pipe.

3.07 POLYETHYLENE ENCASEMENT:

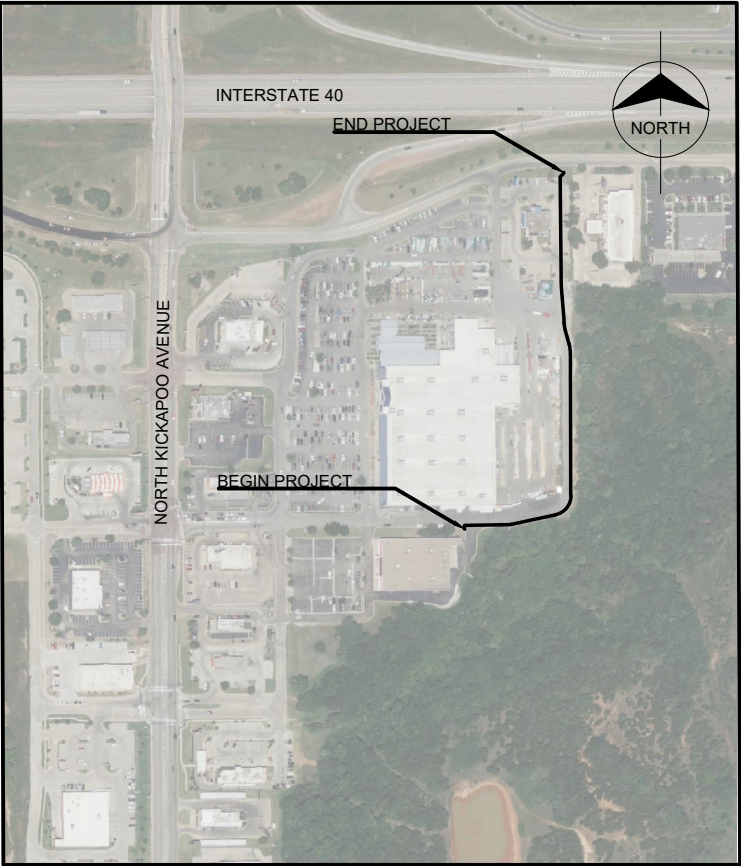
- A. Encase ductile iron fittings, valves, and other appurtenances with polyethylene film, minimum 8 mil thickness conforming with ASTM A674 as indicated or specified.
- B. Materials:
 - 1. Polyethylene material shall be as follows:
 - a. Tubular or sheet form without tears, breaks, or defects.
 - b. Linear low-density film manufactured from virgin polyethylene material conforming to ANSI/AWWA C105/A21.5.
 - c. Class C (Black).
 - 2. Adhesive tape shall be as follows:
 - a. Approximately 2 inches wide and a minimum of 10 mil thickness PVC wrapping tape.
 - b. Capable of bonding securely to metal surfaces and/or polyethylene material.
 - (1) Polyken No. 900
 - (2) Scotchrap No. 50
 - (3) Engineer approved equal
- C. Installation:
 - 1. Perform to conform to AWWA C105.
 - 2. Use adhesive tape to fasten polyethylene film in place.
 - 3. Minimize exposure of polyethylene film to sunlight.
 - 4. Wrap pipe, valves, fittings, and couplings per AWWA C105 installation standards.
 - 5. Repair any cuts, tears, punctures, or damage to polyethylene film with PVC tape or short length of polyethylene sheet or cut open tube, wrapped around pipe to cover damaged area and secure in place.
 - 6. Prevent damage to film by assuring that backfill material is free from cinders, refuse, boulders, rocks, stoned or other material that could damage the film.

3.08 FIELD TESTING:

- A. Specified in Section 33 11 90 - "Field Testing."

END OF SECTION 33 31 50

CITY OF SHAWNEE LOWE'S WATER LINE LOOP REPLACEMENT AND EXTENSION



PROJECT VICINITY MAP
NOT TO SCALE

Sheet Index

Sheet Number	Sheet Title
1	TITLE
2	GENERAL NOTES
3	PLAN & PROFILE 1
4	PLAN & PROFILE 2
5	DETAILS I
6	DETAILS II



OCTOBER 10, 2024

CITY OF SHAWNEE PROJECT ARP-23-0015-DPG
BURNS & McDONNELL PROJECT NO. 154794



MICHAEL A. WAY
CIVIL
LICENSE NO. 27707

TITLE

no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID



Millimeters
Inches
Scale For Microfinning

- GENERAL NOTES:**
- ALL WORK PERFORMED AND MATERIALS PROVIDED SHALL CONFORM TO THE SPECIFICATIONS FOUND IN THE PROJECT MANUAL.
 - CONTRACTOR SHALL TEST AND DISINFECT ALL INSTALLED WATER MAINS ACCORDING TO GUIDELINES SPECIFIED IN THE PROJECT MANUAL.
 - ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES WITH THEIR RESPECTIVE OWNER AS REQUIRED PRIOR TO BEGINNING WORK TO PREVENT DAMAGE BY CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S ACTIVITIES. ALL COSTS ASSOCIATED WITH REPAIRS OR DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND BE MADE AT NO ADDITIONAL COST TO THE OWNER.
 - CONTRACTOR SHALL CALL OKIE811 AT 800-522-OKIE TO HAVE EXISTING UTILITIES LOCATED IN ADVANCE OF BEGINNING ANY WORK OR EXCAVATION.
 - CONTRACTOR SHALL POTHOLE AND EXPOSE ALL TIE IN AND EXISTING UTILITY CROSSING LOCATIONS PRIOR TO BEGINNING WORK TO CONFIRM MATERIAL, OUTSIDE DIAMETER, AND ELEVATION OF TIE IN AND EXISTING UTILITIES. NECESSARY ALIGNMENT ADJUSTMENTS SHALL BE PROPOSED TO AND APPROVED BY THE ENGINEER, OWNER, OR OWNER REPRESENTATIVE PRIOR TO ADJUSTMENT WORK COMMENCING.
 - CONTRACTOR SHALL PROVIDE PROTECTION TO PREVENT UNDERMINING OR DAMAGING THE STRUCTURAL INTEGRITY OF ALL POWER POLES, GUY WIRES, FENCES, BLOCK WALLS, HIGHWAY AND STREET SIGNS OR OTHER UTILITY POLES LOCATED IN THE CONSTRUCTION ZONE OF THE WORK, AND MAKE ARRANGEMENTS WITH THE OWNING UTILITY AS REQUIRED TO PROVIDE TEMPORARY SUPPORT OR PROTECTION DURING CONSTRUCTION WORK. THE COST FOR SUPPORT OF POWER POLES, GUY WIRES, FENCES, BLOCK WALLS, HIGHWAY AND STREET SIGNS, AND OTHER UTILITY POLES SHALL BE CONSIDERED AS INCIDENTAL TO CONSTRUCTION.
 - CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO MAINTAIN CONTINUAL SERVICE OF EXISTING UTILITIES DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE SUPPORT AND PROTECTION OF ALL UTILITY LINES TO PREVENT UNDERMINING OR DAMAGING OF THE UTILITY LINES DURING CONSTRUCTION. METHOD OF CROSSING AND/OR SUPPORT OF UTILITIES SHALL BE APPROVED BY UTILITY OWNER. SUPPORT OF UTILITY LINES SHALL BE CONSIDERED AS SUBSIDIARY TO CONSTRUCTION.
 - CONTRACTOR SHALL FURNISH, INSTALL, CONSTRUCT, AND MAINTAIN TEMPORARY MEASURES TO CONTROL EROSION AND MINIMIZE THE SILTATION OF INTERMITTENT STREAMS AND THE POLLUTION OF PRIVATE PROPERTIES. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH LOCAL, STATE, FEDERAL, AND JURISDICTIONAL AGENCY'S REGULATIONS AND CONTRACT DRAWINGS. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL COMPLETION OF THE WORK.
 - CONTRACTOR SHALL TAKE ALL REQUIRED STEPS TO PREVENT EROSION OF EARTHWORK AND DEPOSITION OF SEDIMENTS INTO WATER COURSES OR DRAINAGE SWALES.
 - CONTRACTOR SHALL PROVIDE CONTINUOUS PROTECTION AGAINST THE ENTRANCE OF DRAINAGE INTO TRENCH EXCAVATIONS, BORE PIT EXCAVATIONS, AND INSTALLED PIPE.
 - CONTRACTOR SHALL RESTORE ALL EXISTING FEATURES OR IMPROVEMENTS LOCATED ON THE UTILITY EASEMENTS TO PRECONSTRUCTION OR BETTER CONDITION. EXISTING FENCING TEMPORARILY REMOVED SHALL BE RESTORED IN KIND. ALL RESTORATION COST SHALL BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION COST.
 - CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO PERFORM THIS WORK. THE COST FOR PERMITTING SHALL BE SUBSIDIARY TO PROJECT CONSTRUCTION.
 - CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY BLOW-OFF ASSEMBLIES, FITTINGS, THRUST BLOCKING AND RESTRAINING DEVICES NECESSARY FOR TEMPORARY CONNECTIONS FOR FLUSHING, PRESSURE TESTING, CHLORINATION, AND DE-CHLORINATION OF THE NEW WATER MAINS. PRIOR TO PLACING NEW WATER MAIN IN SERVICE, CONTRACTOR SHALL REMOVE ALL TEMPORARY APPURTENANCES INSTALLED FOR TESTING PURPOSES.
 - CONTRACTOR SHALL CONFINE ALL CONSTRUCTION ACTIVITIES TO THE EASEMENT AREA SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY SECURE RIGHTS FOR USE OF ADDITIONAL AREA OUTSIDE THE EASEMENT AREA SHOWN AND INCLUDE IN THE MATERIAL STORAGE PAY ITEM. ALL AGREEMENTS FOR USE OF ADDITIONAL AREAS SHALL BE IN WRITING. CONTRACTOR SHALL FURNISH THE OWNER COPIES OF ALL WRITTEN AGREEMENTS.
 - WATER MAINS CROSSING SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) RULES AND REGULATIONS PERTAINING TO PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS SECTION 252:626-19-2. WATERLINES SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 24 INCHES BETWEEN THE WATER MAIN AND THE SEWER LINE AND 10 FEET HORIZONTALLY FROM ANY EXISTING SEWER LINES, AS MEASURED EDGE TO EDGE.
 - ENVIRONMENTAL CONTAMINATION:
 - ENVIRONMENTAL POLLUTANTS, HAZARDOUS SUBSTANCES, CONTAMINATED PRODUCTS OR UNIDENTIFIABLE POLLUTANTS SHALL NOT BE CONSIDERING TYPICAL WASTE MATERIALS AND SHALL BE HANDLED IN A MANNER REGULATED UNDER APPLICABLE ENVIRONMENTAL LAWS.
 - UNLESS A SPECIFIC CONTAMINATED AREA AND REMEDIATION PROCEDURE IS CALLED OUT IN THE CONTRACT DOCUMENTS, THE COST OF ANY UNFORESEEN CONTAMINATION WILL BE COVERED BY AN APPROVED CHANGE ORDER.
 - FOR ALL DISTURBED AREAS, RETURN LAND TO ORIGINAL GRADE AND RESTORE SURFACE WITH SOD OF LIKE KIND.
 - CONNECTION TO POTABLE WATER SERVICE LINE(S) AND FIRE SUPPRESSION SYSTEM(S) SHALL BE CONDUCTED DURING OFF-PEAK HOURS WHEN BUSINESSES ARE CLOSED FOR THE EVENING OR A COORDINATED TIME. CONTRACTOR SHALL COORDINATE CONNECTION SHALL BE MADE SEVEN (7) DAYS IN ADVANCE TO ALLOW BUSINESSES TO COORDINATE FLUSHING OF FIRE SUPPRESSION SYSTEMS AS NECESSARY.
 - CONNECTING THE WATER SERVICES TO THE NEW WATER MAIN SHALL BE COORDINATED WITH ALL IMPACTED BUSINESSES A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF THE WORK COMMENCING. WATER OUTAGES SHALL BE LIMITED TO TWO HOURS FOR POTABLE WATER SERVICE LINES AND FOUR HOURS FOR ALL OTHER CONNECTIONS UNLESS OTHERWISE AGREED UPON.
 - LEAKAGE SHALL NOT EXCEED 10 GAL/INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT 150 PSI TESTING PRESSURE IN ACCORDANCE WITH OAC 252:626-19-2(E).

BASE BID QUANTITIES			
#	DESCRIPTION	QUANTITY	UNIT
BB-1	MOBILIZATION	1	LS
BB-2	MATERIAL STORAGE & SWPPP	1	LS
BB-3	SOLID SLAB SODDING	1	LS
BB-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS
BB-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	271	SY
BB-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY
BB-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	77	LF
BB-8	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY DIRECTIONAL BORE	1090	LF
BB-9	8" PVC DR14	7	LF
BB-10	6" PVC DR14	87	LF
BB-11	TRENCH EXCAVATION	171	LF
BB-12	EMBEDMENT AND BACKFILL	254	TON
BB-13	SINGLE SHORT SERVICE (2")	3	EA
BB-14	FIRE HYDRANT ASSEMBLY	2	EA
BB-15	REMOVAL OF FIRE HYDRANT	1	EA
BB-16	CONCRETE CURB AND GUTTER	80	LF
BB-17	REMOVE CURB AND GUTTER	80	LF
BB-18	MACHINE SAW CUT	390	LF
BB-19	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS
BB-20	6" GATE VALVE AND VALVE BOX	3	EA
BB-21	METER RELOCATION	1	EA
BB-22	8" GATE VALVE AND VALVE BOX	1	EA
BB-23	12" TAPPING SLEEVE AND VALVE	1	EA
BB-24	FITTING (CAP 12")	2	EA
BB-25	FITTING (CAP 6")	1	EA
BB-26	FITTING (TEE 14"x8")	1	EA
BB-27	FITTING (TEE 14"x6")	1	EA
BB-28	FITTING (90 DEGREE BEND 14")	1	EA
BB-29	FITTING (45 DEGREE BEND 14")	2	EA
BB-30	FITTING (45 DEGREE BEND 8")	2	EA
BB-31	12" SOLID SLEEVE	1	EA
BB-32	14"x12" REDUCER	2	EA
BB-33	TRAFFIC STRIPE (PAINT)	60	LF

ALETERNATE NO. 1 QUANTITIES			
#	DESCRIPTION	QUANTITY	UNIT
A1-1	MOBILIZATION	1	LS
A1-2	MATERIAL STORAGE & SWPPP	1	LS
A1-3	SOLID SLAB SODDING	1	LS
A1-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS
A1-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	1414	SY
A1-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	448	SY
A1-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	1167	LF
A1-8	8" PVC DR14	7	LF
A1-9	6" PVC DR14	87	LF
A1-10	TRENCH EXCAVATION	1261	LF
A1-11	EMBEDMENT AND BACKFILL	2060	TON
A1-12	SINGLE SHORT SERVICE (2")	3	EA
A1-13	FIRE HYDRANT ASSEMBLY	2	EA
A1-14	REMOVAL OF FIRE HYDRANT	1	EA
A1-15	CONCRETE CURB AND GUTTER	730	LF
A1-16	REMOVAL AND DISPOSAL OF CURB AND GUTTER	730	LF
A1-17	MACHINE SAW CUT	1855	LF
A1-18	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS
A1-19	6" GATE VALVE AND VALVE BOX	3	EA
A1-20	METER RELOCATION	1	EA
A1-21	8" GATE VALVE AND VALVE BOX	1	EA
A1-22	12" TAPPING SLEEVE AND VALVE	1	EA
A1-23	FITTING (CAP 12")	2	EA
A1-24	FITTING (CAP 6")	1	EA
A1-25	FITTING (TEE 14"x8")	1	EA
A1-26	FITTING (TEE 14"x6")	1	EA
A1-27	FITTING (90 DEGREE BEND 14")	1	EA
A1-28	FITTING (45 DEGREE BEND 14")	2	EA
A1-29	FITTING (45 DEGREE BEND 8")	2	EA
A1-30	12" SOLID SLEEVE	1	EA
A1-31	14"x12" REDUCER	2	EA
A1-32	TRAFFIC STRIPE (PAINT)	440	LF

ABBREVIATION LIST	
AVE	AVENUE
BM#	BENCHMARK
BOL	BEGINNING OF LINE
BVCE	VERTICAL TANGENT-CURVE INTERSECTION ELEVATION
BVCS	VERTICAL TANGENT-CURVE INTERSECTION STATION
CL	CENTERLINE
CL EL	CENTERLINE ELEVATION
CLR	CLEARANCE
CONC	CONCRETE
CP	CONTROL POINT
DR	DRIVE
EVCE	VERTICAL CURVE-TANGENT INTERSECTION ELEVATION
EVCS	VERTICAL CURVE-TANGENT INTERSECTION STATION
DWG	DRAWING
ODEQ	OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
E	EASTING
ELEV	ELEVATION
EOL	END OF LINE
FH	FIRE HYDRANT
FL	FLOW LINE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HORIZ	HORIZONTAL
HWY	HIGHWAY
ID	INNER DIAMETER
LF	LINEAR FEET
LN	LANE
LT	LEFT
LVC	VERTICAL CURVE LENGTH
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
N	NORTHING
OD	OUTER DIAMETER
OE	OVERHEAD ELECTRIC
P/E	PERMANENT EASEMENT
PE	POLYETHYLENE
PI	POINT OF INTERSECTION
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
RT	RIGHT
R/W	RIGHT-OF-WAY
SCH	SCHEDULE
ST	STREET
STA	STATION
STD	STANDARD
SQ.	SQUARE
TOP	TOP OF PIPE ELEVATION
TWTS	TRACER WIRE TEST STATION
TYP	TYPICAL
UNK	UNKNOWN
UT	UNDERGROUND TELEPHONE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WL	WATER LINE
WM	WATER METER

SURVEY PROVIDED BY:

GATEWAY SERVICES GROUP, LLC
GARY PAULE, PLS
80 EAST 5TH STREET, SUITE 400
EDMOND, OK 73034
(405) 285-5884
GPAULE@GATEWAYOK.COM

no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID



9400 Ward Parkway
Kansas City, MO 64114
405-200-0300
Burns & McDonnell Engineering Co, Inc.
OK LICENSEE NO. 421

date FEB. 24, 2023	detailed M. WAY
designed M. WAY	checked M. GALLAGHER

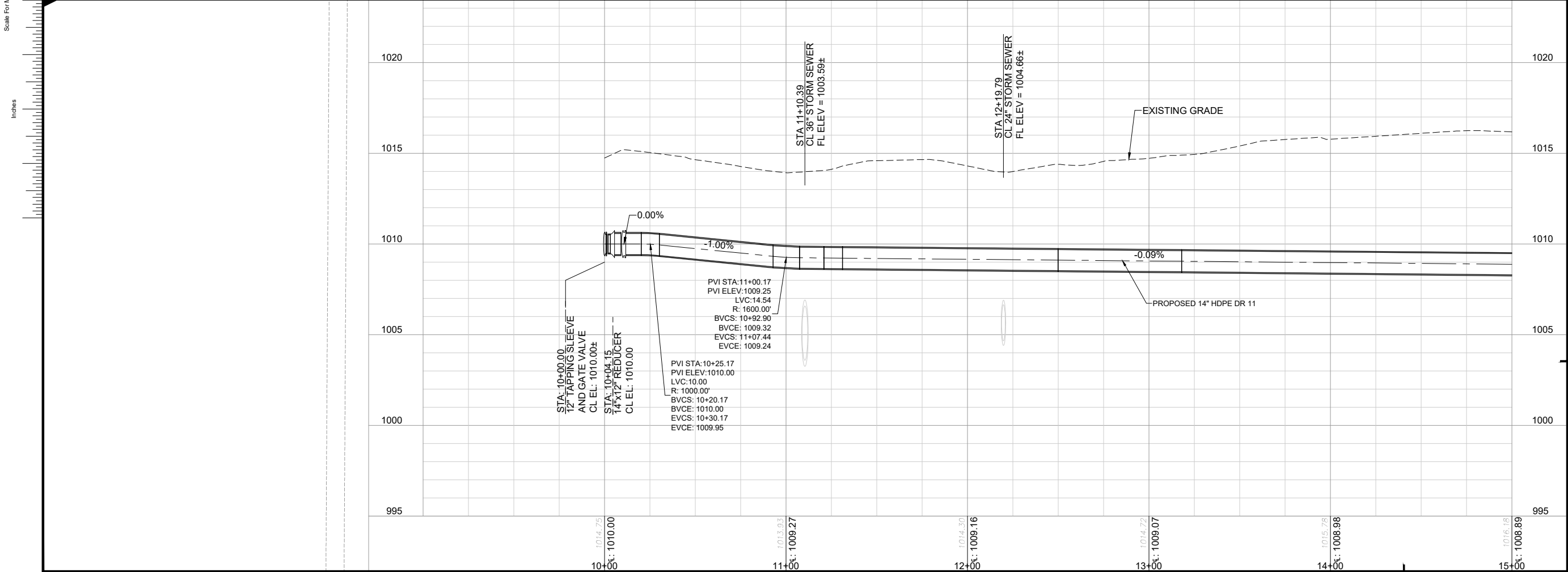
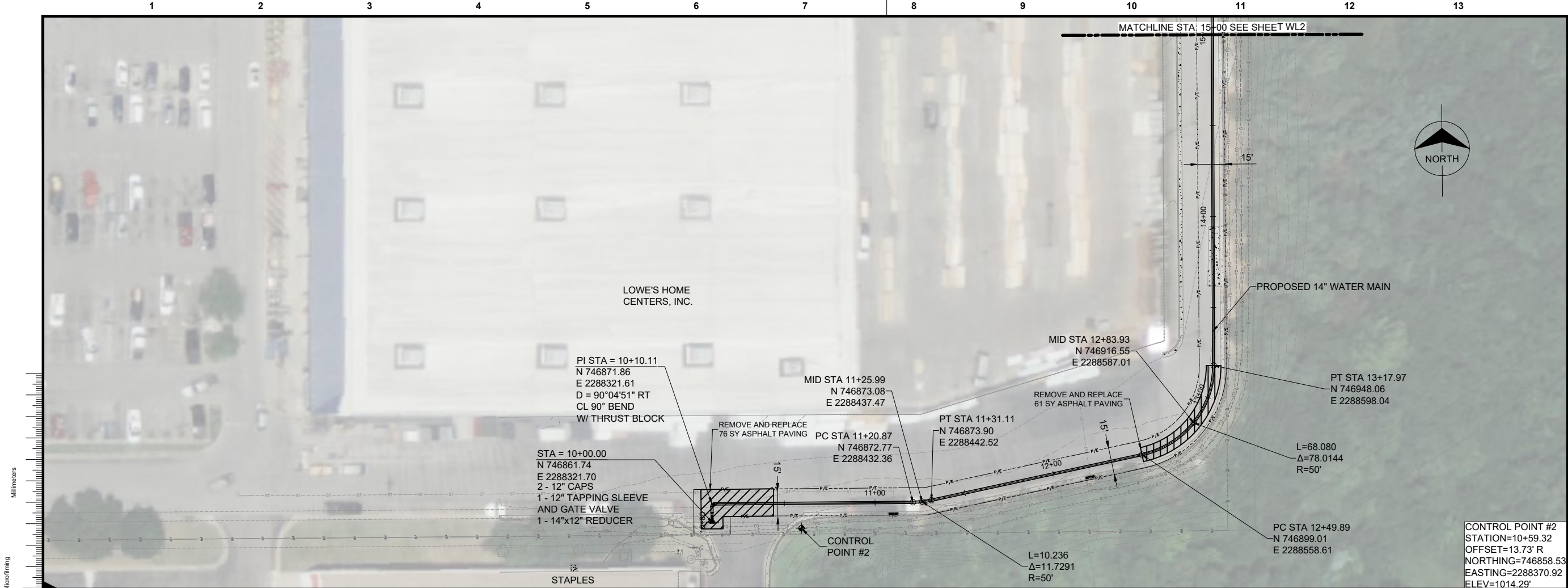


POTTAWATOMIE COUNTY, OK

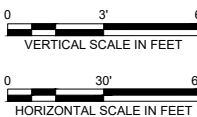
LOWE'S WATER LINE LOOP

GENERAL NOTES

project 154794	contract ARP-23-0015-DPG
drawing GN1	rev. 0
sheet 2	of 6 sheets
file 154794 GENERAL NOTES.dwg	



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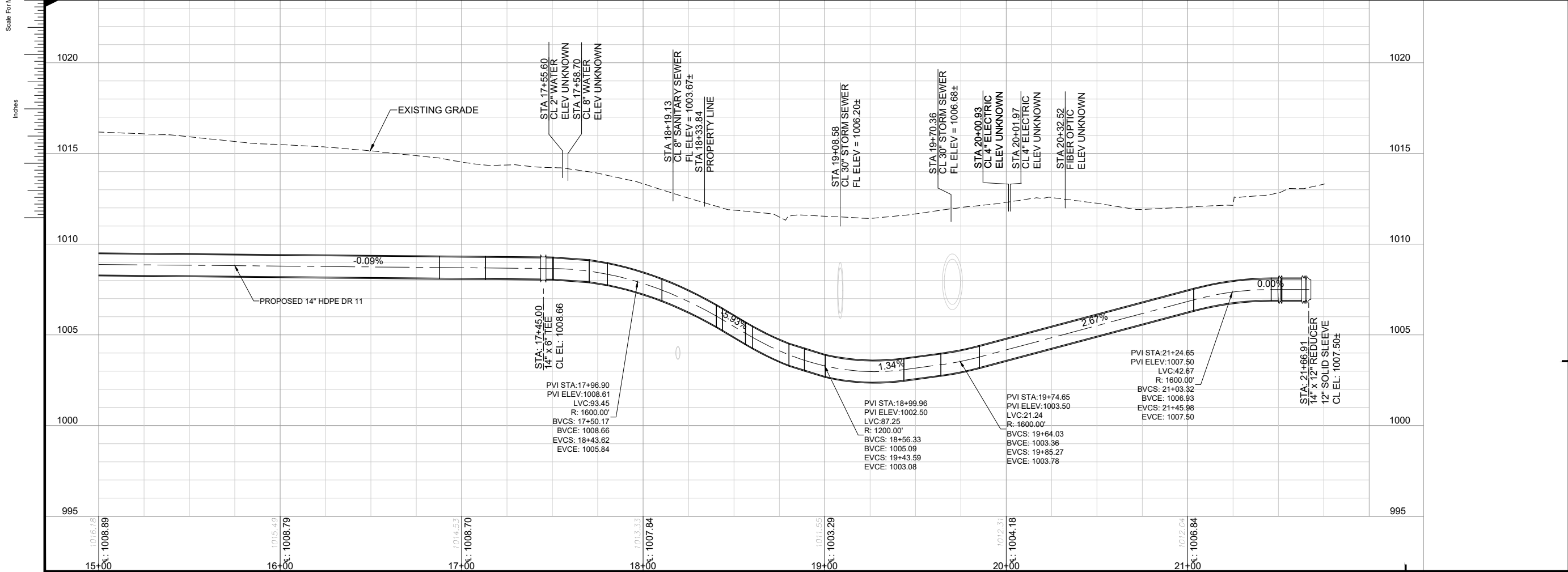
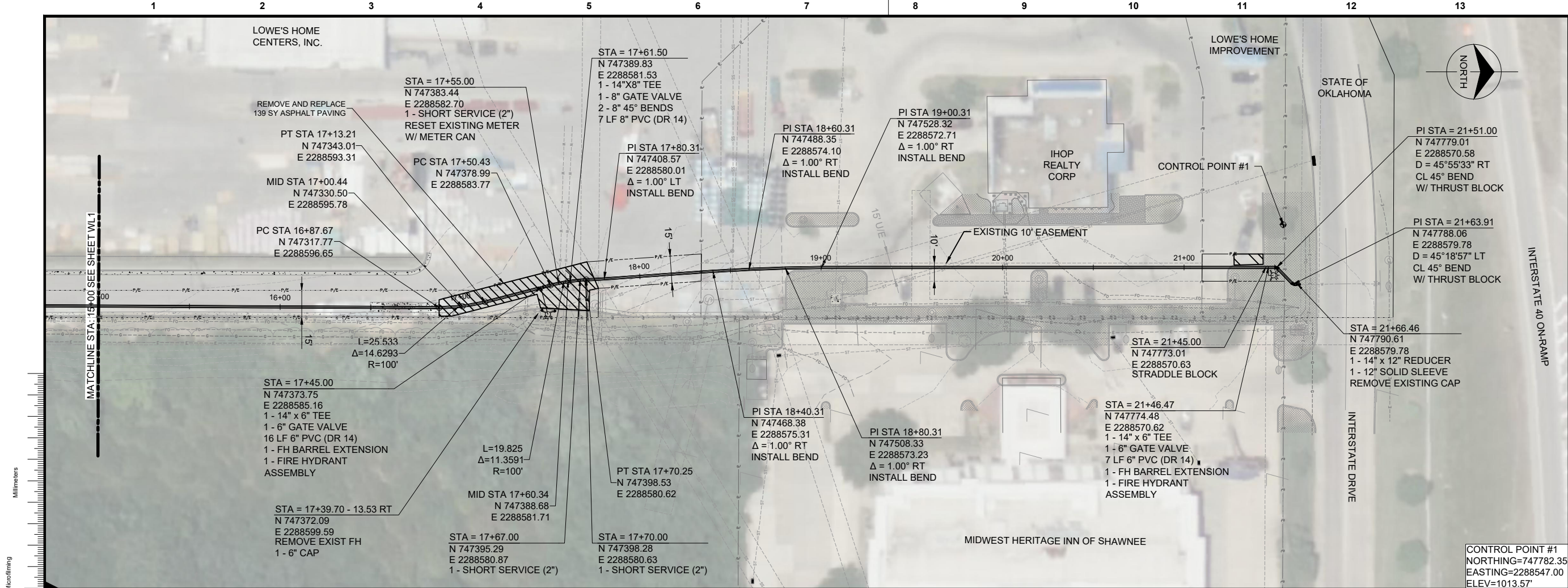


POTTAWATOMIE COUNTY, OK

LOWE'S WATER LINE LOOP

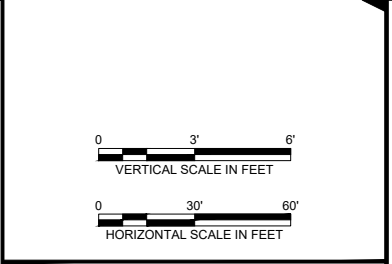
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drawing	WL1	rev.	0
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no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID

A	
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E	

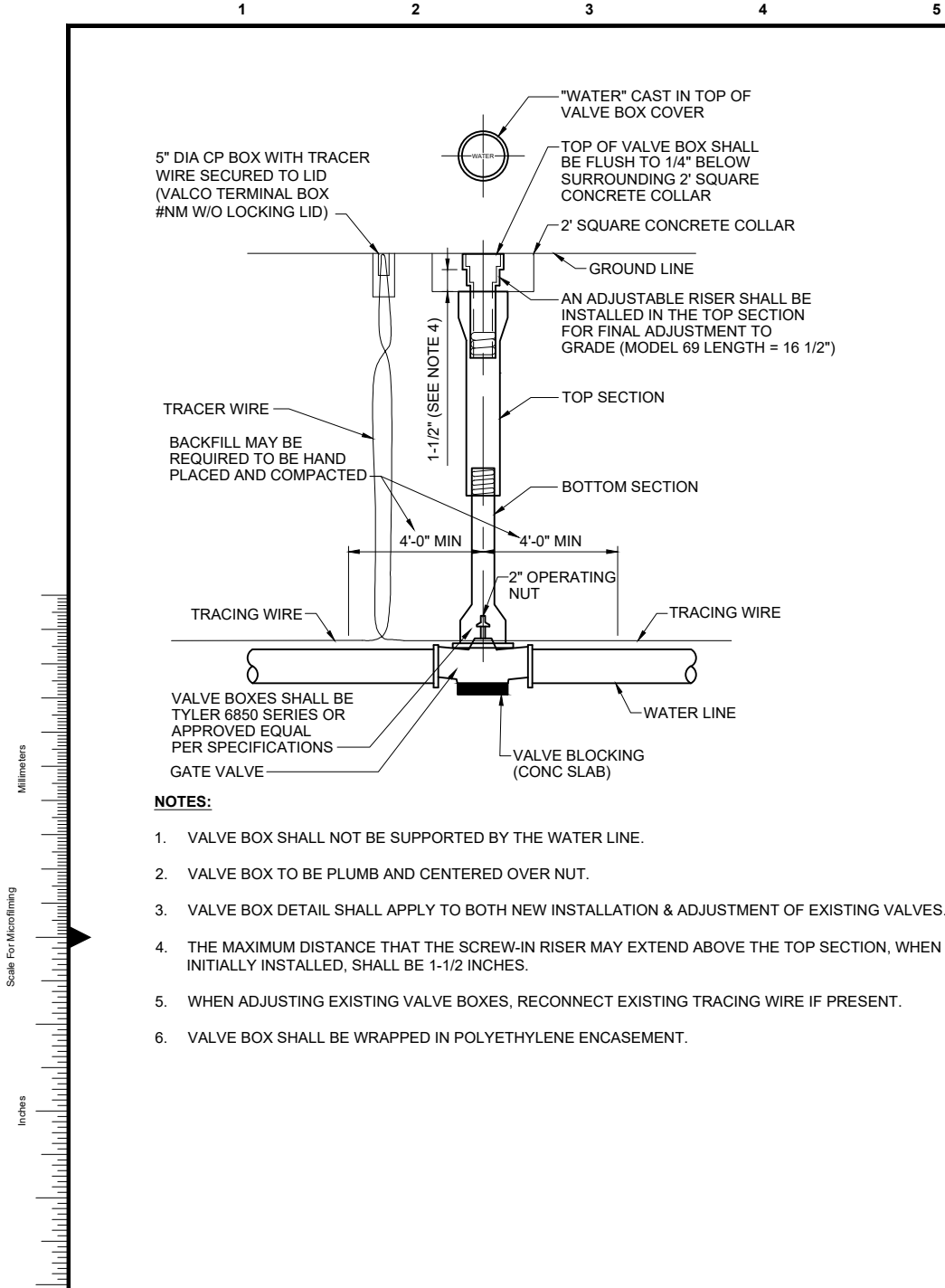


BURNS MEDONNELL
9400 Ward Parkway
Kansas City, MO 64114
405-200-0300
Burns & McDonnell Engineering Co., Inc.
OK LICENSE NO. 421

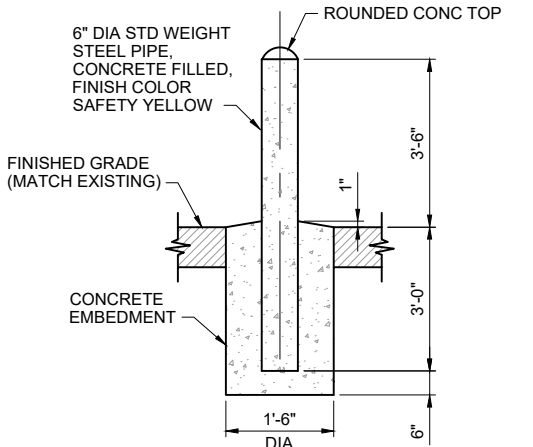
date	FEB. 24, 2023	detailed	M. WAY
designed	M. WAY	checked	M. GALLAGHER

City of Shawnee
OKLAHOMA
POTTAWATOMIE COUNTY, OK

LOWE'S WATER LINE LOOP	
PLAN & PROFILE 2	
project	contract
154794	ARP-23-0015-DPG
drawing	rev.
WL2	0
sheet 4	of 6 sheets
file 154794 BASE.dwg	

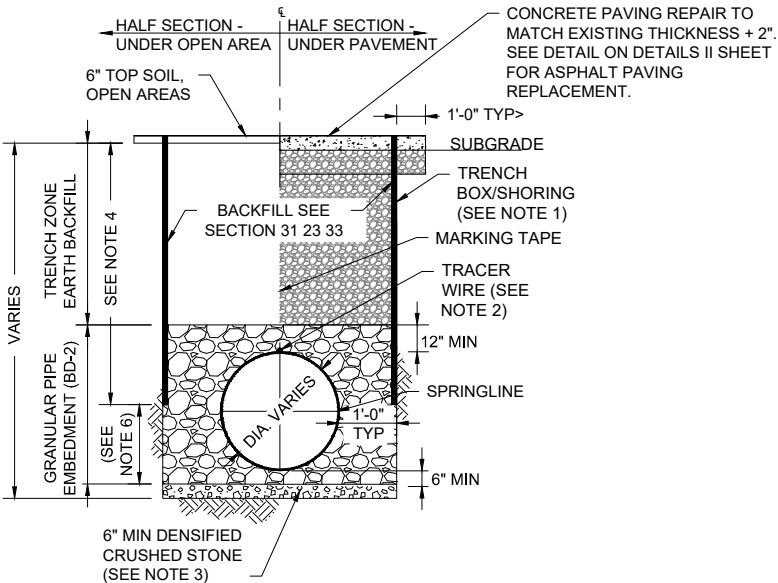


- NOTES:**
1. VALVE BOX SHALL NOT BE SUPPORTED BY THE WATER LINE.
 2. VALVE BOX TO BE PLUMB AND CENTERED OVER NUT.
 3. VALVE BOX DETAIL SHALL APPLY TO BOTH NEW INSTALLATION & ADJUSTMENT OF EXISTING VALVES.
 4. THE MAXIMUM DISTANCE THAT THE SCREW-IN RISER MAY EXTEND ABOVE THE TOP SECTION, WHEN INITIALLY INSTALLED, SHALL BE 1-1/2 INCHES.
 5. WHEN ADJUSTING EXISTING VALVE BOXES, RECONNECT EXISTING TRACING WIRE IF PRESENT.
 6. VALVE BOX SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT.



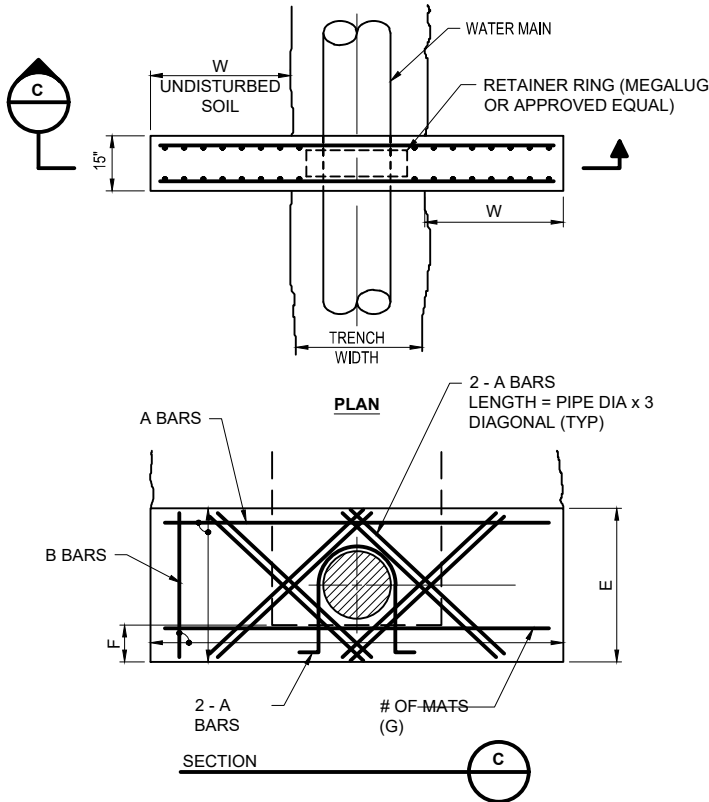
- NOTES:**
1. A MIN. OF TWO BOLLARDS SHALL BE INSTALLED AT EACH FIRE HYDRANT.
 2. PLACE STAGGERED ON OPPOSITE SIDES OF APPURTENANCE.

BOLLARD
NOT TO SCALE



- NOTES:**
1. REFER TO TRENCHING AND BACKFILLING FOR UTILITIES SPECIFICATION FOR TRENCH BOX/SBORING REQUIREMENTS OR SLOPE TRENCH WALLS IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.
 2. INSTALL MARKING TAPE 24" ABOVE TOP OF PIPE AS SHOWN. INSTALL TRACER WIRE IN CONFORMANCE TO TRACER WIRE DETAIL AND STANDARD SPECIFICATIONS.
 3. OVER EXCAVATE AND USE STABILIZATION MATERIAL WHEN WET AND UNSUITABLE OR UNEXPECTED TRENCH CONDITIONS ARE FOUND DURING CONSTRUCTION.
 4. PIPE EMBEDMENT ZONE MUST BE FILLED AND RECOMPACTED TO SPECIFIED DENSITIES UPON REMOVAL OR MOVEMENT OF TRENCH SAFETY SYSTEM.
 5. USE POLYETHYLENE WRAP AS BOND BREAKER BETWEEN CONCRETE OR FLOWABLE FILL AND PIPE, BOLTS, AND FLANGES.
 6. ADJUST HEIGHT OF UNSUPPORTED TRENCH AS NEEDED FOR SAFE CONDITIONS IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.
 7. MAXIMUM PAVEMENT DISTURBANCE FOR WATERLINE INSTALLATION SHALL BE 6 FEET, UNLESS OTHERWISE APPROVED.

OPEN CUT WATER PIPE TRENCHING AND BEDDING
NOT TO SCALE



ANCHOR COLLAR SCHEDULE						
DIA	E	F	G	W	A BAR	B BAR
4"	2.00'	0.33'	1	1.00'	#6@6"	#6@6"
6"	3.00'	0.50'	1	1.00'	#6@6"	#6@6"
8"	3.50'	0.50'	1	1.00'	#6@6"	#6@6"
12"	4.00'	1.50'	2	2.00'	#6@6"	#6@10"
14"	4.50'	2.00'	2	2.00'	#6@6"	#6@10"

STRADDLE BLOCK
NOT TO SCALE

no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID



9400 Ward Parkway
Kansas City, MO 64114
405-200-0300
Burns & McDonnell Engineering Co, Inc.
OK LICENSE NO. 421

date	APRIL 24, 2023	detailed	MICHAEL WAY
designed	MICHAEL WAY	checked	M. GALLAGHER



POTTAWATOMIE COUNTY, OK

LOWE'S WATER LINE LOOP

DETAILS I

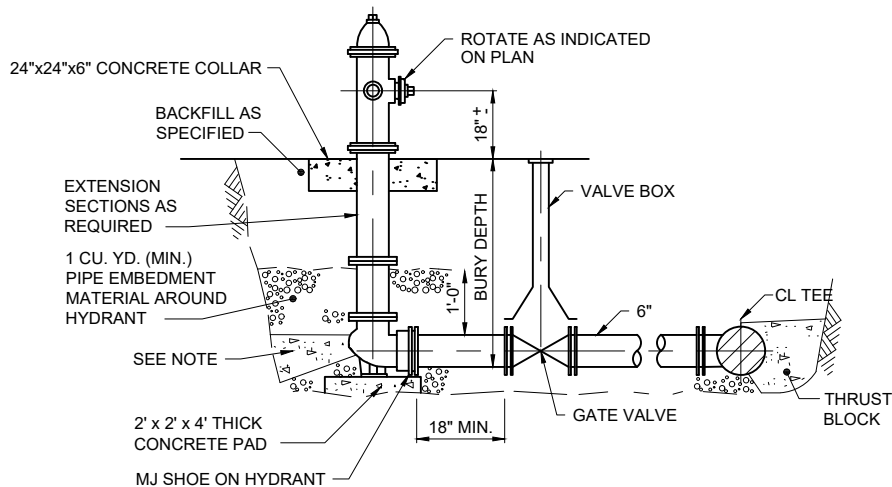
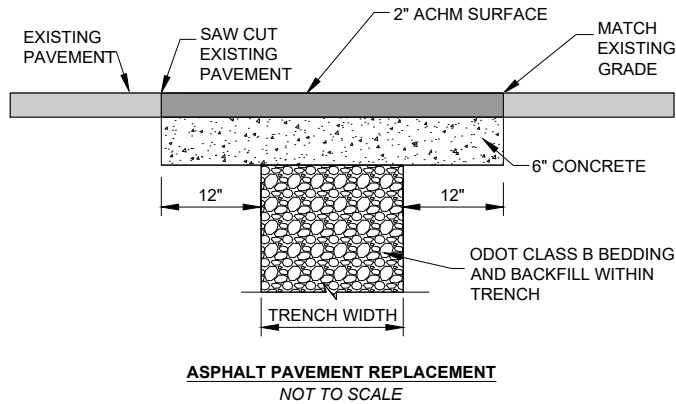
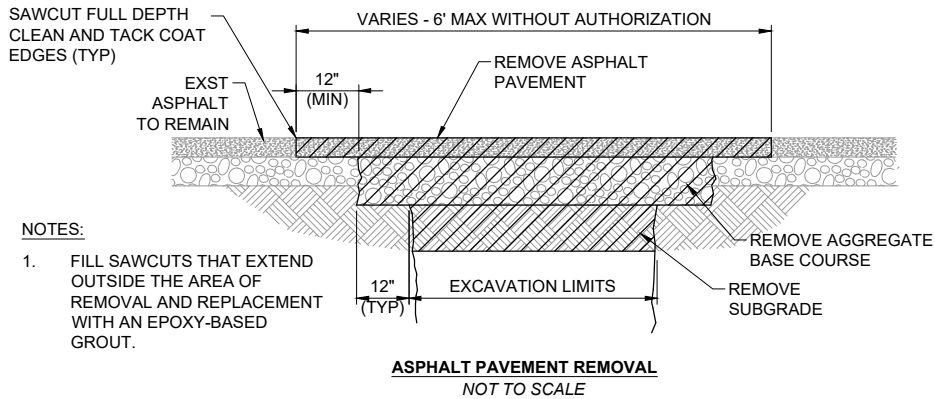
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drawing	DTLS I - 0		
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Millimeters

Scale For Microfilming

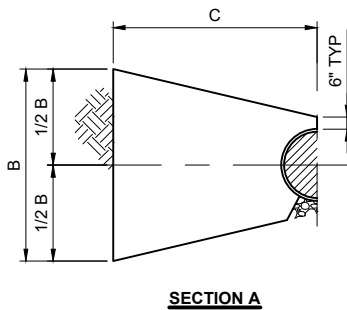
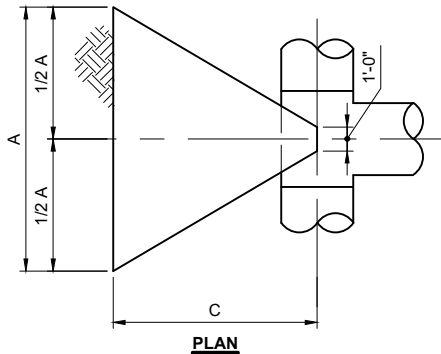
Inches



NOTES:

- THRUST BLOCK REQUIRED WHEN HYDRANT & VALVE ARE NOT RESTRAINED. DO NOT COVER HYDRANT DRAIN HOLES W/ CONC.
- SEE BOLLARD DETAIL THIS SHEET.

FIRE HYDRANT AND ISOLATION VALVE DETAIL
NOT TO SCALE



MINIMUM DIMENSIONS FOR THRUST BLOCKS

FITTING SIZE	TEES & PLUGS			90° BEND			45° BENDS & WYES		
	A	B	C	A	B	C	A	B	C
6	1.92	1.50	N/A	5.25	2.50	1.251	3.50	2.00	1.00
8	2.50	2.00	N/A	7.50	3.00	1.50	5.00	2.50	1.25
10	3.17	2.50	N/A	8.50	4.00	2.00	6.25	3.00	1.50
12	3.75	3.00	N/A	9.75	5.00	2.50	7.50	3.50	1.75

FITTING SIZE	REDUCERS & 22 1/2° BENDS			11 1/4° BENDS		
	A	B	C	A	B	C
6	2.50	1.50	0.75	2.00	1.00	0.50
8	3.50	1.75	0.88	2.50	1.25	0.63
10	4.25	2.25	1.13	3.00	1.50	0.75

GENERAL NOTES:

- BEARING SURFACE AREAS SHOWN IN CHART ARE MINIMUM.
- BASED ON 150 P.S.I. INTERNAL PIPE PRESSURE.
- SOIL BEARING CAPACITY = 2000 LB/SQ FT.
- ALL FITTINGS TO BE WRAPPED WITH POLYETHYLENE (MINIMUM 8 MIL).
- FITTING SIZES ARE IN INCHES AND ALL OTHER DIMENSIONS ARE SHOWN IN FEET UNLESS OTHERWISE NOTED.

**MINIMUM BEARING SURFACE AREA
(IN SQUARE FEET)**

NOMINAL PIPE DIAMETER	BENDS				TEE OR DEAD END
	11 1/4°	22 1/2°	45°	90°	
4.0000	1.00	1.00	1.00	1.75	1.25
6.0000	1.00	1.25	2.25	3.25	2.75
8.0000	1.00	2.00	3.75	6.75	5.00
12.0000	2.25	4.25	8.25	15.00	10.75
16.0000	3.25	7.50	14.25	26.50	18.75
20.0000	5.00	9.75	19.25	35.50	25.00
24.0000	7.00	14.00	27.75	51.00	36.00

NOTES:

- THE MINIMUM BEARING SURFACE AREAS SHOWN IN THE TABLE ARE BASED ON THE 150 POUNDS SQUARE INCH INTERNAL PIPE PRESSURE PLUS WATER HAMMER AND 3000 POUNDS PER SQUARE FOOT ALLOWABLE SOIL BEARING CAPACITY.
A. WATER HAMMER = 110 POUNDS PER SQUARE INCH FOR 4", 6", 8", 12", AND 16"
B. WATER HAMMER = 70 POUNDS PER SQUARE INCH FOR 20" AND 24"
- SEE SECTIONS 6.29 AND 8.18 OF THE ENGINEERING STANDARDS FOR ADDITIONAL KICKBLOCK REQUIREMENTS.

no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID



9400 Ward Parkway
Kansas City, MO 64114
405-200-0300
Burns & McDonnell Engineering Co., Inc.
OK LICENSEE NO. 421

date APR. 24, 2023	detailed M. WAY
designed M. WAY	checked M. GALLAGHER



---, OK

LOWE'S WATER LINE LOOP

DETAILS II

project 154794	contract ARP-23-0015-DPG
drawing DTLS II	rev. 0
sheet 6	of 6
file 154794_DTALS.dwg	sheets

Advertisement for Bids

Notice is hereby given that City of Shawnee, Oklahoma (hereinafter called the "Owner") will receive sealed bids no later than 11:00 am at the City of Shawnee City Clerk's office at 16 West 9th Street, Pottawatomie County, Oklahoma, on the 26th day of November, 2024, for the construction of the Lowe's Water Line Loop Replacement and Extension project, approximately 1,200 linear of 14-inch HDPE piping.

Funding for this Project is provided through American Rescue Plan Act (ARPA) grant program. As such, compliance with Labor Standards Contract Provisions is mandatory. Compliance with the Davis Bacon Act is mandatory if the total project cost exceeds Ten Million Dollars (\$10,000,000).

All bids received at said time will be opened and evaluated for completeness and correctness. All work shall be performed, and all construction and materials used and furnished shall be in accordance with the Plans and Specifications prepared by _Burns & McDonnell Engineering Company, Inc., and on file in the office of Burns & McDonnell Engineering Company, Inc. Oklahoma City office.

The Bid Packet and Contract Documents for this project may be examined at the following locations:

1. Quest CDN - #9367774
2. City of Shawnee Engineering Office

A complete set of Plans and Specifications may be obtained by the prospective bidders at these locations upon deposit of \$22.00.

Each bidder shall accompany his original bid, filed with the City of Shawnee City Clerk, with a certified or Cashier's Check on a solvent bank located in Oklahoma, or a Bidder's Bond, in the amount of five (5) percent of the amount bid, as a guarantee of his ability to perform the contract bid upon, and that he will enter into a written contract with the Owner to perform said work and/or furnish said materials in accordance with said Plans and Specifications, and furnish the required bonds according to the Public Competitive Bidding Act of 1974.

The Owner will retain the deposit for liquidated damages in case the successful bidder fails to enter in said contract and furnish the required bonds provided for in the specifications within the time required. Deposit of the unsuccessful bidders will be returned upon the execution of the Contract and required bonds.

Each bidder shall accompany his bid with a sworn statement in writing that the bidder has not directly or indirectly entered into an agreement, expressed or implied, with any other bidder concerning the price or amount of such bid or any bids, the limiting of the bids or bidders, the paying to anyone any money for promotion expenses, the parceling or farming out to any bidder or bidders or other persons of any part of the contract or any part of the subject matter of the bid or of the profits thereof.

Construction, Maintenance, and Statutory Payment Bonds in the amount of 100% of the contract price are required for this project. These bonds must be obtained from a Corporate Surety licensed in Oklahoma and approved by the Owner and Consulting Engineer. The bidder shall state in the proposal the name and address of the Surety or Sureties who will sign this bond in case the contract is awarded. The Maintenance Bond required will guarantee the repair of all damage due to improper materials or workmanship for a period of one (1) year after the acceptance of the work by the Owner.

This project is to be financed by the ARPA grant program managed by the Oklahoma Water Resources Board (OWRB) and shall be referred to as Project No. ARP-23-0015-DPG. The following requirements and regulations must be complied with:

- A. "Equal Opportunity in Employment: All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, age or physical handicap. Bidders on this work will be required to comply with the President's Executive Order No. 11246, as amended."
- B. "Each bidder must fully comply with the requirements, terms and conditions of the Environmental Protection Agency's Disadvantaged Business Enterprise Requirements, which have been adopted for the OWRB ARPA program, and include employing the six (6) good faith efforts and soliciting disadvantaged business enterprises during the performance of this contract. Requirements are contained in OWRB's Guidance and Procedures, ARP-267. The bidder commits itself to following the good faith efforts to solicit disadvantaged business enterprises contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed bid."
- C. If the total project cost exceeds ten million dollars (\$10,000,000) "Davis Bacon Act wage rules shall apply. All laborers and mechanics employed by contractors and sub-contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code and 29 CFR parts 1,3, and 5. The Department of Labor provides all pertinent information related to compliance with labor standards, including prevailing wage rates and instructions for reporting. More information is available at <http://www.sam.gov/>" and <https://www.dol.gov/agencies/whd/government-contracts/construction>.
- D. System for Award Management (SAM) registration is required for all Applicants and Awardees (Entities, Prime Contractors, Subcontractors, Vendors) in order to receive funds from the ARPA program. SAM replaced the Central Contractor Registration/Federal Agency Registration, Online Representations and Certifications Application, and excluded Parties List System. Applicants and Awardees are required to complete a one-time free registration to provide basic information relevant to procurement and financial

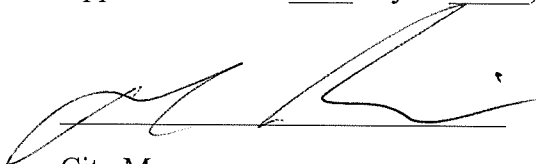
transactions. On April 4, 2022, the unique entity identifier used across the federal government changed from the DUNS Number to the Unique Entity ID (generated by SAM.gov). Registrants must retain an active status to be eligible for ARPA funding. Applicants and Awardees can go to SAM.gov to complete the registration process.

The bids filed with the City of Shawnee City Clerk, 16 W 9th Street Shawnee, OK will be opened by the Owner, at a meeting to be held in the City of Shawnee Annex Conference Room, 222 N Broadway, OK at 11:00 am, on the 26th day of November, 2024. Bids received more than ninety-six (96) hours prior to the Bid Opening will be returned.

The contract is to be awarded to the lowest, responsive, responsible bidder. The Owner reserves the right to correct any non-material clerical errors in the bidding as allowed under Oklahoma Law. The Owner reserves the right to reject any and all bids in accordance with the Oklahoma Public Competitive Bidding Act of 1974. Conditional bids shall not be accepted.

A mandatory pre-bid conference will be held on this project at City of Shawnee City Hall Commission Chambers Room at 11:00 am on the 15th day of November, 2024.

Approved on this 28 day of Oct., 2024.


City Manager

ADDENDUM NO. 001

Issued to All Bid Document Holders of Record

Date: November 19, 2024

Owner: City of Shawnee, Oklahoma

Project Name: Lowe's Water Line Loop Replacement and Extension

Project No.: ARP-23-0015-DPG

Burns & McDonnell Project No. 154794



This Addendum forms a part of the Contract described above. The original Contract Documents and any prior Addenda remain in full force and effect except as modified by the following which shall take precedence over any contrary provisions in the prior documents.

PROJECT MANUAL:

1. This project is tax exempt and documentation will be provided to the successful Contractor.
2. Ford Meter Box company is an approved manufacturer for Corp stops and tapping sleeves.
3. The mandatory pre-bid meeting sign-in sheet is attached. Only those contractors in attendance at the pre-bid meeting are eligible to submit bids.
4. Pre-construction and post-construction videos shall be required by the successful Contractor to document existing conditions of the area to be impacted by construction, storage of equipment of materials, and all areas between. These items shall be included in the Mobilization pay item.
5. A revised Bid Form is attached to provide the revised pay items as noted.
 - a. Addition of a 12-inch gate valve pay item to be included at STA 21+66.46.
 - b. Addition of a straddle block pay item.
 - c. Revision of quantities of Alternate No. 1 for the inclusion of directional drilling across the IHOP parking lot.
6. Contractor's Liability Insurance:
 - A. Contractor shall purchase and maintain such liability and other insurance as is appropriate for the Work being furnished and performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's furnishing and performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - a. Claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - b. Claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - c. Claims for damages because of bodily injury, sickness, or disease, or death of any person other than Contractor's employees;

ARP-23-0015-DPG

11/19/2024

- d. Claims for damages insured by reasonably available personal injury liability coverage which are sustained: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or (ii) by any other person for any other reason;
 - e. Claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use therefrom;
 - f. Claims arising out of operation of Laws or Regulations for damages because of bodily injury or death of any person or for damage to property; and
 - g. Claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle.
- B. Contractor insurance requirements are as follows:
The insurance required by this paragraph shall include the specific coverages, and be written for not less than the limits of liability specified or required by Law, whichever is greater.
- a. Workers compensation: Statutory
 - b. Employer's Liability: \$1,000,000 Each accident
 - c. Commercial General Liability:
 - ii. Bodily Injury (including completed operations and products liability)
 - A. \$1,000,000 Each occurrence
 - B. \$2,000,000 Annual aggregate
 - iii. Property Damage:
 - A. \$1,000,000 Each occurrence
 - B. \$2,000,000 Annual aggregate
 - d. Commercial Automobile Liability:
 - iv. Bodily Injury:
 - A. \$1,000,000 Each person
 - B. \$1,000,000 Each occurrence
 - v. Property Damage:
 - A. \$1,000,000 Each occurrence
 - vi. Umbrella General Liability:
 - A. \$4,000,000 Annual aggregate
- A. The policies of insurance so required by paragraph 6 to be purchased and maintained shall:
- 1. with respect to insurance required by paragraphs 5.02A.1.c through 502A.1.g inclusive, include as additional insureds by endorsement (subject to customary exclusion in respect of professional liability) Owner, Engineer, and Engineer's Consultants, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 - 2. include at least the specific coverages and be written for not less than the limits of liability specified in paragraph 5.02A.2 or required by Laws and Regulations, whichever is greater;
 - 3. include completed operations insurance and premises/operations insurance;
 - 4. include in the commercial general liability policy, contractual liability insurance covering Contractor's indemnity obligations under paragraphs 6.06, 6.10, and 6.16, and written for not less than the limits of liability and coverages specified:
 - Bodily Injury
 - \$ 1,000,000 Each occurrence
 - Property Damage

DOCUMENT 00900 - ADDENDUM NO. 001: continued

\$ 1,000,000

Each occurrence

\$ 2,000,000

Annual aggregate

5. contain a provision or endorsement that the coverage afforded will not be cancelled, materially changed, or renewal refused until at least 30 days' prior written notice by certified mail has been given to Owner and Contractor and to each other additional insured to whom a certificate of insurance has been issued;
6. provide Broad Form Property Damage coverage and contain no exclusion (commonly referred to as XC&U exclusion) relative to blasting, explosion, collapse of buildings, or damage to underground property;
7. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07;
8. with respect to completed operations insurance, and any insurance coverage written on a claims-made basis, remain in effect for at least two years after final payment (and Contractor shall furnish Owner and each other specified additional insured to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter); and include Independent Contractors Protective Liability coverage.

PROJECT DRAWINGS:

1. General Notes – removal of quantity tables.
2. WL2 for the inclusion of the 12” gate valve at STA 21+66.46.

END OF DOCUMENT



PRE BID MEETING SIGN-IN SHEET

Project: Lowe's Water Line Loop

Meeting Date: November 15, 2024

TIME: 11:00 am

City Project No.: 24-0810-07

**Place/Room: City Commission
Chambers**

[illegible]

ITEM NO.	ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	ITEM TOTAL
BB-1	MOBILIZATION	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-2	MATERIAL STORAGE & SWPPP	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-3	SOLID SLAB SODDING	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	300	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	77	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-8	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY DIRECTIONAL BORE	1,090	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-9	8" PVC DR14	7	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-10	6" PVC DR14	23	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-11	TRENCH EXCAVATION	107	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-12	EMBEDMENT AND BACKFILL	159	TON	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-13	SINGLE SHORT SERVICE (2")	3	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-14	FIRE HYDRANT ASSEMBLY	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-15	REMOVAL OF FIRE HYDRANT	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-16	CONCRETE CURB AND GUTTER	80	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-17	REMOVE CURB AND GUTTER	80	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-18	MACHINE SAW CUT	390	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-19	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-20	6" GATE VALVE AND VALVE BOX	3	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-21	METER RELOCATION	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-22	8" GATE VALVE AND VALVE BOX	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-23	12" TAPPING SLEEVE AND VALVE	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-24	FITTING (CAP 12")	2	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-25	FITTING (CAP 6")	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-26	FITTING (TEE 14"x8")	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-27	FITTING (TEE 14"x6")	2	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-28	FITTING (90 DEGREE BEND 14")	1	EA	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

BB-29	FITTING (45 DEGREE BEND 14")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-30	FITTING (45 DEGREE BEND 8")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-31	12" SOLID SLEEVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-32	14"X12" REDUCER	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-33	TRAFFIC STRIPE (PAINT)	60	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-34	STRADDLE BLOCK	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
BB-35	12" GATE VALVE AND VALVE BOX	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

TOTAL BASE BID \$

ACKNOWLEDGEMENT OF ADDENDUM

Bidder hereby acknowledges receipt of the following addendum:

Addendum Number _____ Dated _____

ITEM NO.	ALTERNATE 1 ITEM DESCRIPTION	QTY.	PAY UNIT	UNIT PRICE	ITEM TOTAL
A1-1	MOBILIZATION	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-2	MATERIAL STORAGE & SWPPP	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-3	SOLID SLAB SODDING	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-4	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-5	REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	1,414	SY	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-6	REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-7	(14") (DR11) HDPE WATER LINE PIPE – INSTALL BY OPEN CUT	745	LF	\$ _____	\$ _____
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-8	8" PVC DR14	7	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-9	6" PVC DR14	23	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-10	TRENCH EXCAVATION	775	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-11	EMBEDMENT AND BACKFILL	1,266	TON	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-12	SINGLE SHORT SERVICE (2")	3	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-13	FIRE HYDRANT ASSEMBLY	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-14	REMOVAL OF FIRE HYDRANT	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-15	CONCRETE CURB AND GUTTER	730	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-16	REMOVE CURB AND GUTTER	730	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-17	MACHINE SAW CUT	1,855	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-18	HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-19	6" GATE VALVE AND VALVE BOX	3	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-20	METER RELOCATION	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-21	8" GATE VALVE AND VALVE BOX	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-22	12" TAPPING SLEEVE AND VALVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-23	FITTING (CAP 12")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-24	FITTING (CAP 6")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-25	FITTING (TEE 14"x8")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-26	FITTING (TEE 14"x6")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-27	FITTING (90 DEGREE BEND 14")	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-28	FITTING (45 DEGREE BEND 14")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-29	FITTING (45 DEGREE BEND 8")	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-30	12" SOLID SLEEVE	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					
A1-31	14"X12" REDUCER	2	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-32	TRAFFIC STRIPE (PAINT)	440	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-33	(14") (DR11) HDPE WATER LINE PIPE - INSTALL BY DIRECTIONAL BORE	422	LF	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-34	12" GATE VALVE AND VALVE BOX	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

A1-35	STRADDLE BLOCK	1	EA	\$	\$
				<i>Dollars &</i>	<i>Cents per Pay Unit</i>
<i>(Unit Price Bid Written in Words)</i>					

TOTAL ALTERNATE 1 BID				\$	
<i>(Unit Price Bid Written in Words)</i>					

ACKNOWLEDGEMENT OF ADDENDUM

Bidder hereby acknowledges receipt of the following addendum:

Addendum Number	Dated

GENERAL NOTES:

1. ALL WORK PERFORMED AND MATERIALS PROVIDED SHALL CONFORM TO THE SPECIFICATIONS FOUND IN THE PROJECT MANUAL.
2. CONTRACTOR SHALL TEST AND DISINFECT ALL INSTALLED WATER MAINS ACCORDING TO GUIDELINES SPECIFIED IN THE PROJECT MANUAL.
3. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL VERIFY THE ACTUAL LOCATION OF ALL UTILITIES WITH THEIR RESPECTIVE OWNER AS REQUIRED PRIOR TO BEGINNING WORK TO PREVENT DAMAGE BY CONTRACTOR'S OPERATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONTRACTOR'S ACTIVITIES. ALL COSTS ASSOCIATED WITH REPAIRS OR DAMAGES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND BE MADE AT NO ADDITIONAL COST TO THE OWNER.
4. CONTRACTOR SHALL CALL OKIE811 AT 800-522-OKIE TO HAVE EXISTING UTILITIES LOCATED IN ADVANCE OF BEGINNING ANY WORK OR EXCAVATION.
5. CONTRACTOR SHALL POTHOLE AND EXPOSE ALL TIE IN AND EXISTING UTILITY CROSSING LOCATIONS PRIOR TO BEGINNING WORK TO CONFIRM MATERIAL, OUTSIDE DIAMETER, AND ELEVATION OF TIE IN AND EXISTING UTILITIES. NECESSARY ALIGNMENT ADJUSTMENTS SHALL BE PROPOSED TO AND APPROVED BY THE ENGINEER, OWNER, OR OWNER REPRESENTATIVE PRIOR TO ADJUSTMENT WORK COMMENCING.
6. CONTRACTOR SHALL PROVIDE PROTECTION TO PREVENT UNDERMINING OR DAMAGING THE STRUCTURAL INTEGRITY OF ALL POWER POLES, GUY WIRES, FENCES, BLOCK WALLS, HIGHWAY AND STREET SIGNS OR OTHER UTILITY POLES LOCATED IN THE CONSTRUCTION ZONE OF THE WORK, AND MAKE ARRANGEMENTS WITH THE OWNING UTILITY AS REQUIRED TO PROVIDE TEMPORARY SUPPORT OR PROTECTION DURING CONSTRUCTION WORK. THE COST FOR SUPPORT OF POWER POLES, GUY WIRES, FENCES, BLOCK WALLS, HIGHWAY AND STREET SIGNS, AND OTHER UTILITY POLES SHALL BE CONSIDERED AS INCIDENTAL TO CONSTRUCTION.
7. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO MAINTAIN CONTINUAL SERVICE OF EXISTING UTILITIES DURING CONSTRUCTION. CONTRACTOR SHALL PROVIDE SUPPORT AND PROTECTION OF ALL UTILITY LINES TO PREVENT UNDERMINING OR DAMAGING OF THE UTILITY LINES DURING CONSTRUCTION. METHOD OF CROSSING AND/OR SUPPORT OF UTILITIES SHALL BE APPROVED BY UTILITY OWNER. SUPPORT OF UTILITY LINES SHALL BE CONSIDERED AS SUBSIDIARY TO CONSTRUCTION.
8. CONTRACTOR SHALL FURNISH, INSTALL, CONSTRUCT, AND MAINTAIN TEMPORARY MEASURES TO CONTROL EROSION AND MINIMIZE THE SILTATION OF INTERMITTENT STREAMS AND THE POLLUTION OF PRIVATE PROPERTIES. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH LOCAL, STATE, FEDERAL, AND JURISDICTIONAL AGENCY'S REGULATIONS AND CONTRACT DRAWINGS. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL COMPLETION OF THE WORK.
9. CONTRACTOR SHALL TAKE ALL REQUIRED STEPS TO PREVENT EROSION OF EARTHWORK AND DEPOSITION OF SEDIMENTS INTO WATER COURSES OR DRAINAGE SWALES.
10. CONTRACTOR SHALL PROVIDE CONTINUOUS PROTECTION AGAINST THE ENTRANCE OF DRAINAGE INTO TRENCH EXCAVATIONS, BORE PIT EXCAVATIONS, AND INSTALLED PIPE.
11. CONTRACTOR SHALL RESTORE ALL EXISTING FEATURES OR IMPROVEMENTS LOCATED ON THE UTILITY EASEMENTS TO PRECONSTRUCTION OR BETTER CONDITION. EXISTING FENCING TEMPORARILY REMOVED SHALL BE RESTORED IN KIND. ALL RESTORATION COST SHALL BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION COST.
12. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS TO PERFORM THIS WORK. THE COST FOR PERMITTING SHALL BE SUBSIDIARY TO PROJECT CONSTRUCTION.
13. CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY BLOW-OFF ASSEMBLIES, FITTINGS, THRUST BLOCKING AND RESTRAINING DEVICES NECESSARY FOR TEMPORARY CONNECTIONS FOR FLUSHING, PRESSURE TESTING, CHLORINATION, AND DE-CHLORINATION OF THE NEW WATER MAINS. PRIOR TO PLACING NEW WATER MAIN IN SERVICE, CONTRACTOR SHALL REMOVE ALL TEMPORARY APPURTENANCES INSTALLED FOR TESTING PURPOSES.
14. CONTRACTOR SHALL CONFINE ALL CONSTRUCTION ACTIVITIES TO THE EASEMENT AREA SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY SECURE RIGHTS FOR USE OF ADDITIONAL AREA OUTSIDE THE EASEMENT AREA SHOWN AND INCLUDE IN THE MATERIAL STORAGE PAY ITEM. ALL AGREEMENTS FOR USE OF ADDITIONAL AREAS SHALL BE IN WRITING. CONTRACTOR SHALL FURNISH THE OWNER COPIES OF ALL WRITTEN AGREEMENTS.
15. WATER MAINS CROSSING SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY (ODEQ) RULES AND REGULATIONS PERTAINING TO PUBLIC WATER SUPPLY CONSTRUCTION STANDARDS SECTION 252-626-19-2. WATERLINES SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 24 INCHES BETWEEN THE WATER MAIN AND THE SEWER LINE AND 10 FEET HORIZONTALLY FROM ANY EXISTING SEWER LINES, AS MEASURED EDGE TO EDGE.
16. ENVIRONMENTAL CONTAMINATION:
 - A. ENVIRONMENTAL POLLUTANTS, HAZARDOUS SUBSTANCES, CONTAMINATED PRODUCTS OR UNIDENTIFIABLE POLLUTANTS SHALL NOT BE CONSIDERED TYPICAL WASTE MATERIALS AND SHALL BE HANDLED IN A MANNER REGULATED UNDER APPLICABLE ENVIRONMENTAL LAWS.
 - B. UNLESS A SPECIFIC CONTAMINATED AREA AND REMEDIATION PROCEDURE IS CALLED OUT IN THE CONTRACT DOCUMENTS, THE COST OF ANY UNFORESEEN CONTAMINATION WILL BE COVERED BY AN APPROVED CHANGE ORDER.
17. FOR ALL DISTURBED AREAS, RETURN LAND TO ORIGINAL GRADE AND RESTORE SURFACE WITH SOD OF LIKE KIND.
18. CONNECTION TO POTABLE WATER SERVICE LINE(S) AND FIRE SUPPRESSION SYSTEM(S) SHALL BE CONDUCTED DURING OFF-PEAK HOURS WHEN BUSINESSES ARE CLOSED FOR THE EVENING OR A COORDINATED TIME. CONTRACTOR SHALL COORDINATE CONNECTION SHALL BE MADE SEVEN (7) DAYS IN ADVANCE TO ALLOW BUSINESSES TO COORDINATE FLUSHING OF FIRE SUPPRESSION SYSTEMS AS NECESSARY.
19. CONNECTING THE WATER SERVICES TO THE NEW WATER MAIN SHALL BE COORDINATED WITH ALL IMPACTED BUSINESSES A MINIMUM OF SEVEN (7) DAYS IN ADVANCE OF THE WORK COMMENCING. WATER OUTAGES SHALL BE LIMITED TO TWO HOURS FOR POTABLE WATER SERVICE LINES AND FOUR HOURS FOR ALL OTHER CONNECTIONS UNLESS OTHERWISE AGREED UPON.
20. LEAKAGE SHALL NOT EXCEED 10 GAL/INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT 150 PSI TESTING PRESSURE IN ACCORDANCE WITH OAC 252:626-19-2(E).

ABBREVIATION LIST

AVE	AVENUE
BM#	BENCHMARK
BOL	BEGINNING OF LINE
BVCE	VERTICAL TANGENT-CURVE INTERSECTION ELEVATION
BVCS	VERTICAL TANGENT-CURVE INTERSECTION STATION
CL	CENTERLINE
CL EL	CENTERLINE ELEVATION
CLR	CLEARANCE
CONC	CONCRETE
CP	CONTROL POINT
DR	DRIVE
EVCE	VERTICAL CURVE-TANGENT INTERSECTION ELEVATION
EVCS	VERTICAL CURVE-TANGENT INTERSECTION STATION
DWG	DRAWING
ODEQ	OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY
E	EASTING
ELEV	ELEVATION
EOL	END OF LINE
FH	FIRE HYDRANT
FL	FLOW LINE
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HORIZ	HORIZONTAL
HWY	HIGHWAY
ID	INNER DIAMETER
LF	LINEAR FEET
LN	LANE
LT	LEFT
LVC	VERTICAL CURVE LENGTH
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
N	NORTHING
OD	OUTER DIAMETER
OE	OVERHEAD ELECTRIC
P/E	PERMANENT EASEMENT
PE	POLYETHYLENE
PI	POINT OF INTERSECTION
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
RT	RIGHT
R/W	RIGHT-OF-WAY
SCH	SCHEDULE
ST	STREET
STA	STATION
STD	STANDARD
SQ.	SQUARE
TOP	TOP OF PIPE ELEVATION
TWTS	TRACER WIRE TEST STATION
TYP	TYPICAL
UNK	UNKNOWN
UT	UNDERGROUND TELEPHONE
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WL	WATER LINE
WM	WATER METER

SURVEY PROVIDED BY:

GATEWAY SERVICES GROUP, LLC
GARY PAULE, PLS
80 EAST 5TH STREET, SUITE 400
EDMOND, OK 73034
(405) 285-5884
GPAULE@GATEWAYOK.COM

no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID
1	11/18/24	MAW		REMOVED QTY TABLE

**BURNS
MCDONNELL**

9400 Ward Parkway
Kansas City, MO 64114
405-200-0300

Burns & McDonnell Engineering Co, Inc.
OK LICENSEE NO. 421

date FEB. 24, 2023 designed M. WAY	detailed M. WAY checked M. GALLAGHER
--	--

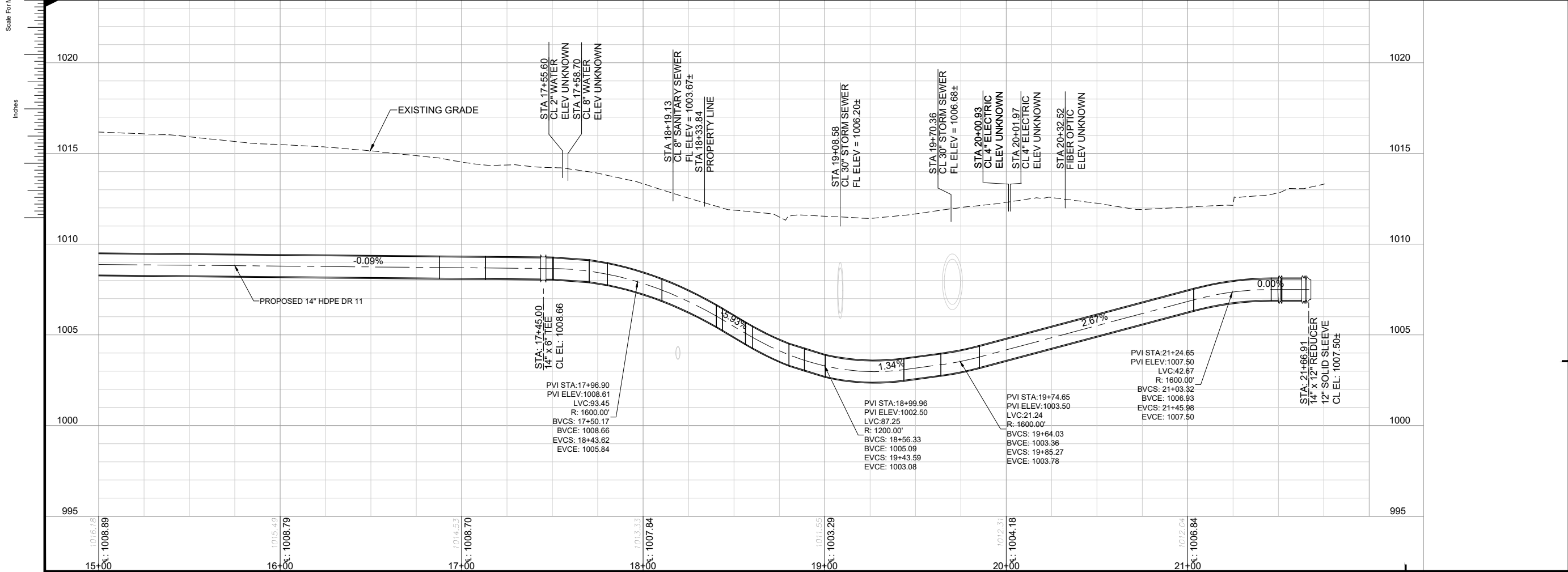
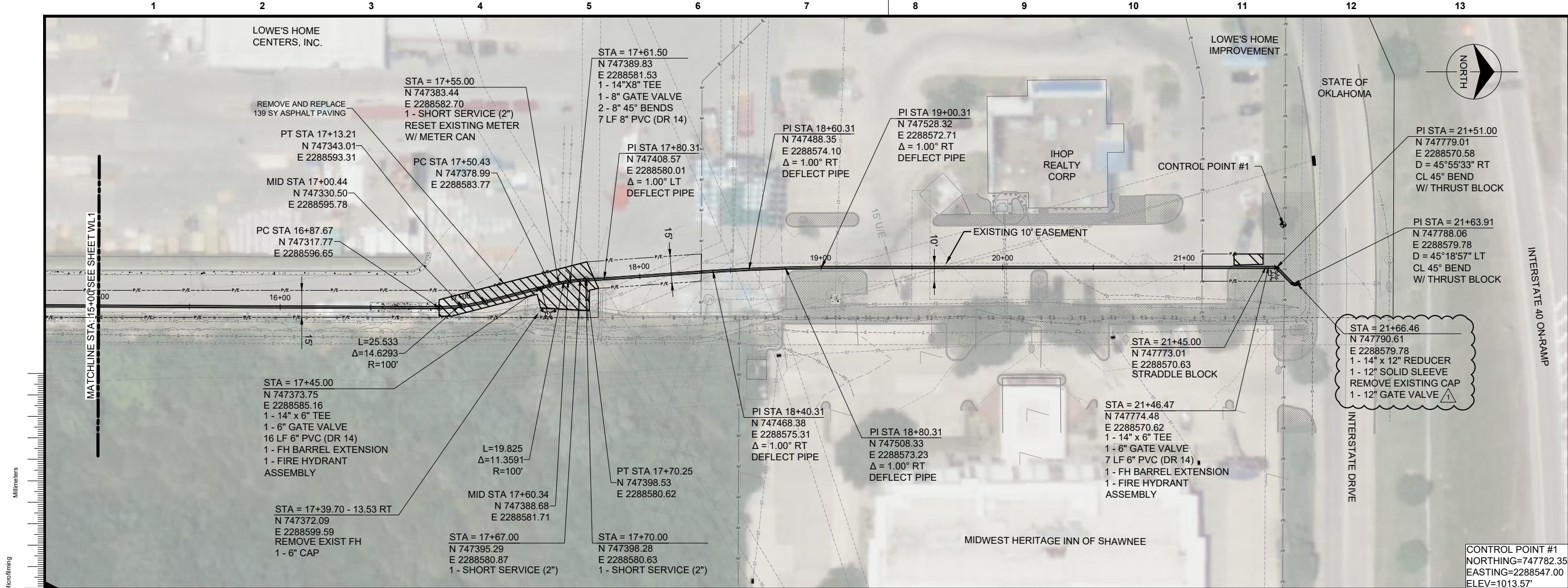


POTTAWATOMIE COUNTY, OK

LOWE'S WATER LINE LOOP

GENERAL NOTES

project	contract
154794	ARP-23-0015-DPG
drawing	rev.
GN1	0
sheet 2	sheet 5
file 154794_GENERAL NOTES.dwg	



no.	date	by	ckd	description
0	10/10/24	MAW	MDG	ISSUED FOR BID
1	11/18/24	MAW		ADDED GATE VALVE

9400 Ward Parkway
Kansas City, MO 64114
405-200-0300
Burns & McDonnell Engineering Co., Inc.
OK LICENSE NO. 421

date FEB. 24, 2023	detailed M. WAY
designed M. WAY	checked M. GALLAGHER

POTTAWATOMIE COUNTY, OK

LOWE'S WATER LINE LOOP

PLAN & PROFILE 2

project 154794	contract ARP-23-0015-DPG
drawing WL2	rev. 0
sheet 4	of 6
file 154794 BASE.dwg	sheets

ADDENDUM NO. 002

Issued to All Bid Document Holders of Record

Date: November 22, 2024

Owner: City of Shawnee, Oklahoma

Project Name: Lowe's Water Line Loop Replacement and Extension

Project No.: ARP-23-0015-DPG

Burns & McDonnell Project No. 154794



This Addendum forms a part of the Contract described above. The original Contract Documents and any prior Addenda remain in full force and effect except as modified by the following which shall take precedence over any contrary provisions in the prior documents.

PROJECT MANUAL:

1. The time for completion is revised to ninety (90) calendar days.

END OF DOCUMENT

Plan Holder's List			
CITY OF SHAWNEE - Lowe's			
	Name of Company	Contact Info (Phone and Email)	Representative Name
1	Orr Construction, Inc.	918.377.4362 projects@orrconstructionok.com	Orr Staff
2	Downey Contracting	405.478.5277 bids@downeycontracting.com	Brandon Downey
3	Marsau Enterprises	580.233.3910 terry.alexander@marsauenterprises.com	Terry Alexander
4	Circle B Underground	918.367.8881 ddean@cbruok.com	Darin Dean
5	B&H Construction	405.650.4319 red@bhborng.com	Steven (Red) Schulze
6	Davenport Constrion	405.348.4262 davcon@cox.net	Greg Davenport
7	ConstructConnect	800.364.2059 content@constructconnect.com	Eric Mills
8	NPL Construction	918.794.6747 jmccanles@gonpl.com	Jason McCanles
9	Precision Undergroun of OK LLC	580.618.0974 curt.duck@yahoo.com	Curt Duck



December 3, 2024

Mr. Seth Barhimer, PE
Director of Engineering
City of Shawnee
222 North Broadway Avenue
Shawnee, Oklahoma 74801

Re: Lowe's Water Line Loop Replacement and Extension

Dear Mr. Barkhimer:

Bids for the Lowe's Water Line Loop Replacement and Extension Project were received by the City of Shawnee at 11:00 am on November 26, 2024, and the received bids were read aloud in the City Commission Chambers Room. We developed a bid summary and a bid tabulation spreadsheet which indicates the Unit Price Schedules for the bid received and is attached for reference. We have determined that Davenport Construction, Inc. is the low bidder for this project with a Total Base Bid in the amount of \$549,017.00. A complete table of the bid results is provided below.

Contractor	Bid
Davenport Construction, Inc.	\$549,017.00
Downey Contracting, LLC	\$587,022.00
Marsau Enterprises, Inc.	\$599,294.24
Orr Construction, Inc.	\$641,785.00
Engineer's Estimate	\$652,000.00

Burns & McDonnell recommends that the City of Shawnee award the Lowe's Water Line Loop Replacement and Extension Project to Davenport Construction, Inc. for the Base Bid. This recommendation is based on the received bid documents and contractor qualifications.

If you have any questions please call me anytime at (405) 401-9710.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Way".

Michael Way, P.E.
Project Engineer

Attachment

Project Name: Lowe's Water Line Loop Replacement and Extension
BMcD Project Number: 154794
Client Job Number: ARP-23-0015-DPG
Client Job Name: Lowe's Water Line Loop Replacement and Extension
First Advertisement for Bid:
Bid Opening: November 26, 2024



BID TABULATION														
CONTRACT					ENGINEER'S OPCC		Davenport Construction, Inc.		Downey Contracting, LLC		Marsau Enterprises, Inc.		Orr Construction, Inc.	
ITEM NO.	SPEC SECTION	BASE BID ITEM DESCRIPTION	QTY.	UNIT	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL
BB-1		MOBILIZATION	1	LS	\$ 25,000.00	\$ 25,000.00	\$ 15,000.00	\$ 15,000.00	\$ 39,622.00	\$ 39,622.00	\$ 25,000.00	\$ 25,000.00	\$ 35,000.00	\$ 35,000.00
BB-2		MATERIAL STORAGE & SWPPP	1	LS	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 7,109.00	\$ 7,109.00	\$ 5,000.00	\$ 5,000.00	\$ 15,000.00	\$ 15,000.00
BB-3		SOLID SLAB SODDING	1	LS	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 3,502.00	\$ 3,502.00	\$ 5,000.00	\$ 5,000.00	\$ 6,500.00	\$ 6,500.00
BB-4		CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$ 30,000.00	\$ 30,000.00	\$ 2,000.00	\$ 2,000.00	\$ 18,406.00	\$ 18,406.00	\$ 5,000.00	\$ 5,000.00	\$ 20,000.00	\$ 20,000.00
BB-5		REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	300	SY	\$ 160.00	\$ 48,000.00	\$ 300.00	\$ 90,000.00	\$ 158.00	\$ 47,400.00	\$ 350.00	\$ 105,000.00	\$ 225.00	\$ 67,500.00
BB-6		REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY	\$ 160.00	\$ 17,280.00	\$ 300.00	\$ 32,400.00	\$ 123.00	\$ 13,284.00	\$ 325.00	\$ 35,100.00	\$ 200.00	\$ 21,600.00
BB-7		(14")(DR11) HDPE WATER LINE PIPE-INSTALL BY OPEN CUT	77	LF	\$ 225.00	\$ 17,325.00	\$ 150.00	\$ 11,550.00	\$ 278.00	\$ 21,406.00	\$ 104.29	\$ 8,030.33	\$ 150.00	\$ 11,550.00
BB-8		(14")(DR11) HDPE WATER LINE PIPE-INSTALL BY DIRECTIONAL BORE	1090	LF	\$ 350.00	\$ 381,500.00	\$ 250.00	\$ 272,500.00	\$ 226.00	\$ 246,340.00	\$ 238.00	\$ 259,420.00	\$ 265.00	\$ 288,850.00
BB-9		8" PVC DR14	7	LF	\$ 250.00	\$ 1,750.00	\$ 111.00	\$ 777.00	\$ 62.00	\$ 434.00	\$ 482.51	\$ 3,377.57	\$ 250.00	\$ 1,750.00
BB-10		6" PVC DR14	23	LF	\$ 225.00	\$ 5,175.00	\$ 111.00	\$ 2,553.00	\$ 24.00	\$ 552.00	\$ 431.40	\$ 9,922.20	\$ 150.00	\$ 3,450.00
BB-11		TRENCH EXCAVATION	107	LF	\$ 20.00	\$ 2,140.00	\$ 15.00	\$ 1,605.00	\$ 108.00	\$ 11,556.00	\$ 73.24	\$ 7,836.68	\$ 100.00	\$ 10,700.00
BB-12		EMBEDMENT AND BACKFILL	159	TON	\$ 55.00	\$ 8,745.00	\$ 48.00	\$ 7,632.00	\$ 74.00	\$ 11,766.00	\$ 70.94	\$ 11,279.46	\$ 90.00	\$ 14,310.00
BB-13		SINGLE SHORT SERVICE (2")	3	EA	\$ 4,500.00	\$ 13,500.00	\$ 3,500.00	\$ 10,500.00	\$ 7,541.00	\$ 22,623.00	\$ 3,960.00	\$ 11,880.00	\$ 3,500.00	\$ 10,500.00
BB-14		FIRE HYDRANT ASSEMBLY	2	EA	\$ 10,000.00	\$ 20,000.00	\$ 6,800.00	\$ 13,600.00	\$ 9,643.00	\$ 19,286.00	\$ 8,814.00	\$ 17,628.00	\$ 7,000.00	\$ 14,000.00
BB-15		REMOVAL OF FIRE HYDRANT	1	EA	\$ 500.00	\$ 500.00	\$ 500.00	\$ 500.00	\$ 917.00	\$ 917.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00
BB-16		CONCRETE CURB AND GUTTER	80	LF	\$ 60.00	\$ 4,800.00	\$ 70.00	\$ 5,600.00	\$ 106.00	\$ 8,480.00	\$ 55.00	\$ 4,400.00	\$ 80.00	\$ 6,400.00
BB-17		REMOVE CURB AND GUTTER	80	LF	\$ 20.00	\$ 1,600.00	\$ 25.00	\$ 2,000.00	\$ 35.00	\$ 2,800.00	\$ 55.00	\$ 4,400.00	\$ 50.00	\$ 4,000.00
BB-18		MACHINE SAW CUT	390	LF	\$ 3.50	\$ 1,365.00	\$ 5.00	\$ 1,950.00	\$ 11.00	\$ 4,290.00	\$ 14.00	\$ 5,460.00	\$ 12.50	\$ 4,875.00
BB-19		HYDROSTATIC PRESURE TESTING AND DISINFECTION	1	LS	\$ 10,000.00	\$ 10,000.00	\$ 3,500.00	\$ 3,500.00	\$ 13,101.00	\$ 13,101.00	\$ 4,000.00	\$ 4,000.00	\$ 7,500.00	\$ 7,500.00
BB-20		6" GATE VALVE AND VALVE BOX	3	EA	\$ 1,500.00	\$ 4,500.00	\$ 2,400.00	\$ 7,200.00	\$ 1,916.00	\$ 5,748.00	\$ 2,500.00	\$ 7,500.00	\$ 3,200.00	\$ 9,600.00
BB-21		METER RELOCATION	1	EA	\$ 2,000.00	\$ 2,000.00	\$ 4,300.00	\$ 4,300.00	\$ 2,168.00	\$ 2,168.00	\$ 4,026.00	\$ 4,026.00	\$ 7,000.00	\$ 7,000.00
BB-22		8" GATE VALVE AND VALVE BOX	1	EA	\$ 2,000.00	\$ 2,000.00	\$ 3,500.00	\$ 3,500.00	\$ 3,603.00	\$ 3,603.00	\$ 3,255.00	\$ 3,255.00	\$ 4,000.00	\$ 4,000.00
BB-23		12" TAPPING SLEEVE AND VALVE	1	EA	\$ 12,500.00	\$ 12,500.00	\$ 9,000.00	\$ 9,000.00	\$ 13,207.00	\$ 13,207.00	\$ 12,000.00	\$ 12,000.00	\$ 18,000.00	\$ 18,000.00
BB-24		FITTING (CAP 12")	2	EA	\$ 1,200.00	\$ 2,400.00	\$ 550.00	\$ 1,100.00	\$ 1,483.00	\$ 2,966.00	\$ 758.00	\$ 1,516.00	\$ 2,000.00	\$ 4,000.00
BB-25		FITTING (CAP 6")	1	EA	\$ 800.00	\$ 800.00	\$ 250.00	\$ 250.00	\$ 1,389.00	\$ 1,389.00	\$ 462.00	\$ 462.00	\$ 1,500.00	\$ 1,500.00
BB-26		FITTING (TEE 14"x8")	1	EA	\$ 2,500.00	\$ 2,500.00	\$ 3,500.00	\$ 3,500.00	\$ 5,186.00	\$ 5,186.00	\$ 4,625.00	\$ 4,625.00	\$ 3,600.00	\$ 3,600.00
BB-27		FITTING (TEE 14"x6")	2	EA	\$ 2,500.00	\$ 5,000.00	\$ 3,500.00	\$ 7,000.00	\$ 5,023.00	\$ 10,046.00	\$ 4,505.00	\$ 9,010.00	\$ 3,200.00	\$ 6,400.00
BB-28		FITTING (14" 90 DEGREE BEND)	1	EA	\$ 2,000.00	\$ 2,000.00	\$ 3,300.00	\$ 3,300.00	\$ 4,738.00	\$ 4,738.00	\$ 4,495.00	\$ 4,495.00	\$ 3,500.00	\$ 3,500.00
BB-29		FITTING (14" 45 DEGREE BEND)	2	EA	\$ 2,000.00	\$ 4,000.00	\$ 3,300.00	\$ 6,600.00	\$ 4,484.00	\$ 8,968.00	\$ 4,360.00	\$ 8,720.00	\$ 3,000.00	\$ 6,000.00
BB-30		FITTING (8" 45 DEGREE BEND)	2	EA	\$ 1,500.00	\$ 3,000.00	\$ 1,500.00	\$ 3,000.00	\$ 982.00	\$ 1,964.00	\$ 650.00	\$ 1,300.00	\$ 2,500.00	\$ 5,000.00
BB-31		12" SOLID SLEEVE	1	EA	\$ 1,000.00	\$ 1,000.00	\$ 1,200.00	\$ 1,200.00	\$ 3,422.00	\$ 3,422.00	\$ 1,575.00	\$ 1,575.00	\$ 3,000.00	\$ 3,000.00
BB-32		14"x12" REDUCER	2	EA	\$ 1,500.00	\$ 3,000.00	\$ 2,500.00	\$ 5,000.00	\$ 4,272.00	\$ 8,544.00	\$ 1,798.00	\$ 3,596.00	\$ 3,800.00	\$ 7,600.00
BB-33		TRAFFIC STRIPE (PAINT)	60	LF	\$ 2.00	\$ 120.00	\$ 15.00	\$ 900.00	\$ 12.00	\$ 720.00	\$ 25.00	\$ 1,500.00	\$ 150.00	\$ 9,000.00
BB-34		STRADDLE BLOCK	1	EA	\$ 2,000.00	\$ 2,000.00	\$ 1,200.00	\$ 1,200.00	\$ 17,204.00	\$ 17,204.00	\$ 1,500.00	\$ 1,500.00	\$ 2,500.00	\$ 2,500.00
BB-35		12" GATE VALVE AND VALVE BOX	1	EA	\$ 4,000.00	\$ 4,000.00	\$ 5,800.00	\$ 5,800.00	\$ 4,275.00	\$ 4,275.00	\$ 4,980.00	\$ 4,980.00	\$ 6,100.00	\$ 6,100.00
BASE BID TOTALS					\$ 652,000.00		\$ 549,017.00		\$ 587,022.00		\$ 599,294.24		\$ 641,785.00	



CONTRACT					ENGINEER'S OPCC		Davenport Construction, Inc.		Downey Contracting, LLC		Marsau Enterprises, Inc.		Orr Construction, Inc.	
ITEM NO.	SPEC SECTION	BASE BID ITEM DESCRIPTION	QTY.	UNIT	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL	UNIT PRICE	ITEM TOTAL
A1-1		MOBILIZATION	1	LS	\$ 35,000.00	\$ 35,000.00	\$ -	\$ -	\$ -	\$ -	\$ 25,000.00	\$ 25,000.00	\$ 35,000.00	\$ 35,000.00
A1-2		MATERIAL STORAGE & SWPPP	1	LS	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	\$ 15,000.00	\$ 15,000.00
A1-3		SOLID SLAB SODDING	1	LS	\$ 3,000.00	\$ 3,000.00	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	\$ 6,500.00	\$ 6,500.00
A1-4		CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LS	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -	\$ -	\$ -	\$ 5,000.00	\$ 5,000.00	\$ 40,000.00	\$ 40,000.00
A1-5		REMOVE AND REPLACE PARKING LOT PAVEMENT (ASPHALT)	1,414	SY	\$ 150.00	\$ 212,100.00	\$ -	\$ -	\$ -	\$ -	\$ 200.00	\$ 282,800.00	\$ 190.00	\$ 268,660.00
A1-6		REMOVE AND REPLACE PARKING LOT PAVEMENT (CONCRETE)	108	SY	\$ 150.00	\$ 16,200.00	\$ -	\$ -	\$ -	\$ -	\$ 325.00	\$ 35,100.00	\$ 190.00	\$ 20,520.00
A1-7		(14")(DR11)HDPE WATRE LINE PIPE INSTALL BY OPEN CUT	745	LF	\$ 225.00	\$ 167,625.00	\$ -	\$ -	\$ -	\$ -	\$ 104.29	\$ 77,696.05	\$ 75.00	\$ 55,875.00
A1-8		8" PVC DR14	7	LF	\$ 250.00	\$ 1,750.00	\$ -	\$ -	\$ -	\$ -	\$ 482.51	\$ 3,377.57	\$ 250.00	\$ 1,750.00
A1-9		6" PVC	23	LF	\$ 225.00	\$ 5,175.00	\$ -	\$ -	\$ -	\$ -	\$ 431.40	\$ 9,922.20	\$ 150.00	\$ 3,450.00
A1-10		TRENCH EXCAVATION	775	LF	\$ 20.00	\$ 15,500.00	\$ -	\$ -	\$ -	\$ -	\$ 73.24	\$ 56,761.00	\$ 90.00	\$ 69,750.00
A1-11		EMBEDMENT AND BACKFILL	1266	TON	\$ 55.00	\$ 69,630.00	\$ -	\$ -	\$ -	\$ -	\$ 70.94	\$ 89,810.04	\$ 50.00	\$ 63,300.00
A1-12		SINGLE SHORT SERVICE (2")	3	EA	\$ 4,500.00	\$ 13,500.00	\$ -	\$ -	\$ -	\$ -	\$ 3,960.00	\$ 11,880.00	\$ 3,500.00	\$ 10,500.00
A1-13		FIRE HYDRANT ASSEMBLY	2	EA	\$ 10,000.00	\$ 20,000.00	\$ -	\$ -	\$ -	\$ -	\$ 8,814.00	\$ 17,628.00	\$ 7,000.00	\$ 14,000.00
A1-14		REMOVAL OF FIRE HYDRANT	1	EA	\$ 500.00	\$ 500.00	\$ -	\$ -	\$ -	\$ -	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00	\$ 1,500.00
A1-15		CONCRETE CURB AND GUTTER	730	LF	\$ 60.00	\$ 43,800.00	\$ -	\$ -	\$ -	\$ -	\$ 55.00	\$ 40,150.00	\$ 55.00	\$ 40,150.00
A1-16		REMOVE CURB AND GUTTER	730	LF	\$ 20.00	\$ 14,600.00	\$ -	\$ -	\$ -	\$ -	\$ 55.00	\$ 40,150.00	\$ 48.00	\$ 35,040.00
A1-17		MACHINE SAW CUT	1855	LF	\$ 3.50	\$ 6,492.50	\$ -	\$ -	\$ -	\$ -	\$ 14.00	\$ 25,970.00	\$ 11.00	\$ 20,405.00
A1-18		HYDROSTATIC PRESSURE TESTING AND DISINFECTION	1	LS	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,000.00	\$ 4,000.00	\$ 7,500.00	\$ 7,500.00
A1-19		6" GATE VALVE AND VALVE BOX	3	EA	\$ 1,500.00	\$ 4,500.00	\$ -	\$ -	\$ -	\$ -	\$ 2,500.00	\$ 7,500.00	\$ 3,200.00	\$ 9,600.00
A1-20		METER RELOCATION	1	EA	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,026.00	\$ 4,026.00	\$ 7,000.00	\$ 7,000.00
A1-21		8" GATE VALVE AND VAVLE BOX	1	EA	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -	\$ -	\$ -	\$ 3,255.00	\$ 3,255.00	\$ 3,600.00	\$ 3,600.00
A1-22		12" TAPPING SLEEVE AND VALVE	1	EA	\$ 12,500.00	\$ 12,500.00	\$ -	\$ -	\$ -	\$ -	\$ 12,000.00	\$ 12,000.00	\$ 18,000.00	\$ 18,000.00
A1-23		FITTING (12" CAP)	2	EA	\$ 1,200.00	\$ 2,400.00	\$ -	\$ -	\$ -	\$ -	\$ 758.00	\$ 1,516.00	\$ 2,000.00	\$ 4,000.00
A1-24		(FITTING (6" CAP)	1	EA	\$ 800.00	\$ 800.00	\$ -	\$ -	\$ -	\$ -	\$ 462.00	\$ 462.00	\$ 1,500.00	\$ 1,500.00
A1-25		FITTING (14"X8" TEE)	1	EA	\$ 2,500.00	\$ 2,500.00	\$ -	\$ -	\$ -	\$ -	\$ 4,625.00	\$ 4,625.00	\$ 3,600.00	\$ 3,600.00
A1-26		FITTING (14"X6" TEE)	2	EA	\$ 2,500.00	\$ 5,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,505.00	\$ 9,010.00	\$ 3,200.00	\$ 6,400.00
A1-27		FITTING (14" 90 DEGREE BEND)	1	EA	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,495.00	\$ 4,495.00	\$ 3,500.00	\$ 3,500.00
A1-28		FITTING (14" 45 DEGREE BEND)	2	EA	\$ 2,000.00	\$ 4,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,360.00	\$ 8,720.00	\$ 3,000.00	\$ 6,000.00
A1-29		FITTING (8" 45 DEGREE BEND)	2	EA	\$ 1,500.00	\$ 3,000.00	\$ -	\$ -	\$ -	\$ -	\$ 650.00	\$ 1,300.00	\$ 2,500.00	\$ 5,000.00
A1-30		12" SOLID SLEEVE	1	EA	\$ 1,000.00	\$ 1,000.00	\$ -	\$ -	\$ -	\$ -	\$ 1,575.00	\$ 1,575.00	\$ 3,500.00	\$ 3,500.00
A1-31		14"X12" REDUCER	2	EA	\$ 1,500.00	\$ 3,000.00	\$ -	\$ -	\$ -	\$ -	\$ 1,798.00	\$ 3,596.00	\$ 4,500.00	\$ 9,000.00
A1-32		TRAFFIC STRIPE (PAINT)	440	LF	\$ 2.00	\$ 880.00	\$ -	\$ -	\$ -	\$ -	\$ 25.00	\$ 11,000.00	\$ 150.00	\$ 66,000.00
A1-33		(14") (DR11) HDPE WATER LINE PIPE - INSTALL BY DIRECTION BORE	422	LF	\$ 350.00	\$ 147,700.00	\$ -	\$ -	\$ -	\$ -	\$ 238.00	\$ 100,436.00	\$ 265.00	\$ 111,830.00
A1-34		12" GATE VALVE AND VALVE BOX	1	EA	\$ 4,000.00	\$ 4,000.00	\$ -	\$ -	\$ -	\$ -	\$ 4,980.00	\$ 4,980.00	\$ 6,000.00	\$ 6,000.00
A1-35		STRADDLE BLOCK	1	EA	\$ 2,000.00	\$ 2,000.00	\$ -	\$ -	\$ -	\$ -	\$ 1,500.00	\$ 1,500.00	\$ 4,500.00	\$ 4,500.00
ALTERNATE No. 1 BID TOTALS					\$ 884,152.50		\$ -		\$ -		\$ 916,740.86		\$ 977,930.00	
							No response to alternate		No Response to alternate					

PROFESSIONAL ENGINEER
MICHAEL A. WAY
2024.12.03
07:49:03-06:00'

Michael A. Way



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkhimer, Director of Engineering
Subject: Hayes Street Waterline Replacement (Award)

Background: In March 2024, the City of Shawnee entered into a Professional Services Agreement with Cowan Group Engineering LLC for the final design of the Haye's Water Line Replacement project. With the design complete, the project was advertised, and staff opened bids on December 5, 2024.

City staff and the Cowan design team have reviewed the bid proposals. Three (3) bids were received, and the base bid ranged from \$450,192 (low) to \$701,415 (high). The design estimate for the Base Bid, prior to the bid opening, was \$510,036.

Staff recommends awarding the base bid to B&H Construction LLC, who submitted the lowest bid.

Financial Impact: \$450,192; from American Rescue Plan Act (ARPA) Fund, Water Distribution, Capital Outlay-Buildings & Improvements - 304-5-1040-54200; 24-0810-15

Attachments: Bid Plan, Bid Specifications, Plan holder's list, Bid Tabulation, Bid Recommendation

Staff Recommendation: Award of the Contract

COWAN GROUP ENGINEERING
 7100 N CLASSEN, SUITE 500
 OKLAHOMA CITY, OK 73116
 405-463-3366 D 405-463-3381 F
 WWW.COWANGROUP.CC
 CA# 6414 EXPIRES 6/30/2026

HAYES STREET WATERLINE REPLACEMENT

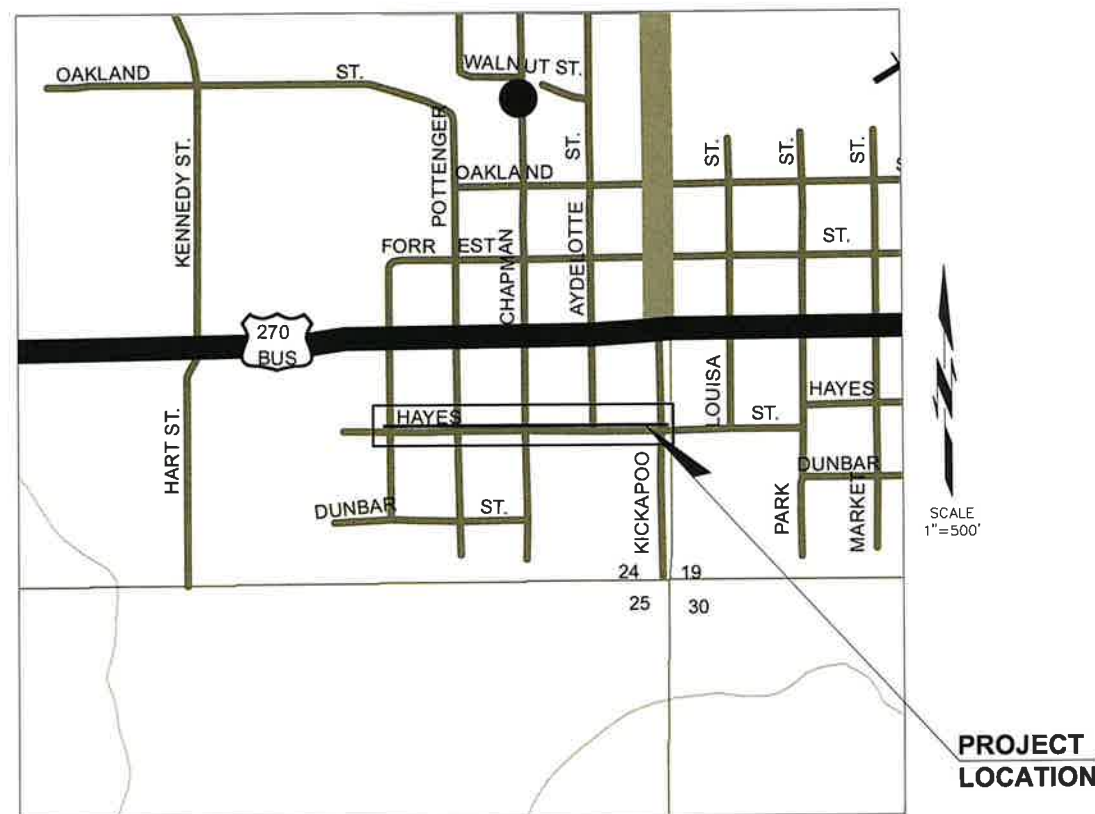
CITY OF SHAWNEE
POTTAWATOMIE COUNTY, OKLAHOMA

1. HORIZONTAL CONTROL:
 - A. HORIZONTAL CONTROL FOR THIS SURVEY IS THE NGS OKLAHOMA STATE PLANE COORDINATE SYSTEM, NAD 83 (2011), LAMBERT PROJECTION (SOUTH ZONE).
 - B. ACCURACY - THE PRIMARY CONTROL NETWORK, THE SECONDARY CONTROL NETWORK AND THE SECTION BOUNDARIES FOR THIS SURVEY ARE IN GENERAL COMPLIANCE WITH NGS SECOND ORDER, CLASS II STANDARDS FOR HORIZONTAL CONTROL (1:20,000).
2. BASIS OF BEARINGS:

THE BEARINGS SHOWN HERE OR HEREON ARE GRID BEARINGS DERIVED FROM THE NGS OKLAHOMA STATE PLANE COORDINATE SYSTEM AND ARE NOT ASTRONOMICAL.
3. VERTICAL CONTROLS:
 - A. LEVEL DATUM FOR THIS SURVEY IS NGS, NAVD 88.
 - A: ACCURACY - VERTICAL CONTROL FOR THIS SURVEY IS WITHIN THE CLOSURE REQUIREMENTS OF NGS THIRD ORDER STANDARDS AS A MINIMUM.

<u>BM #1</u> ELEV= 1037.66 N= 724835.9587 E= 2287795.7635 CUT "X" ON HEADWALL AT NE CORNER OF KICKAPOO AND HAYES	<u>BM #3</u> ELEV= 1053.13 N= 724817.1472 E= 2287048.6244 SET MAGNAIL AT CENTER OF INTERSECTION OF CHAPMAN AND HAYES
<u>BM #2</u> ELEV= 1035.94 N= 724818.6962 E= 2287399.2674 SET MAGNAIL AT CENTER OF INTERSECTION OF AYOELOTER AND HAYES	<u>BM #4</u> ELEV= 1050.84 N= 723850.8141 E= 2287130.8305 SET MAGNAIL AT CENTER OF INTERSECTION OF TENNESSEE AND HAYES

COMPANY NAME	CONTACT NAME	PHONE NUMBER
SHAWNEE UTILITIES	SHAWNEE PUBLIC WORKS	(405) 273-1960
OKLAHOMA GAS & ELECTRIC	TIM THOMPSON	(405) 401-7229
OKLAHOMA NATURAL GAS	ALEXANDRIA MARSHALL	(405) 551-6889
AT&T	JOE ANDERSON	(539) 444-1026
BLUEPEAK	JERRY LEIBY	JERRY.LEIBY@MYBLUEPEAK.COM



SHEET NUMBER	SHEET TITLE
1	TITLE SHEET
2	GENERAL NOTES & PAY QUANTITIES
3	OVERALL MAP
4	LINE 1 PLAN & PROFILE (1 OF 4)
5	LINE 1 PLAN & PROFILE (2 OF 4)
6	LINE 1 PLAN & PROFILE (3 OF 4)
7	LINE 1 PLAN & PROFILE (4 OF 4)
8	LINE 2 PLAN & PROFILE
9	LINE 3 PLAN & PROFILE
10	PIPE LAYOUT DETAIL
11	WATER DETAIL (1 OF 3)
12	WATER DETAIL (2 OF 3)
13	WATER DETAIL (3 OF 3)
14	EROSION CONTROL DETAIL

- 1200 - - - - - EXISTING CONTOUR
 - 1200 - - - - - PROPOSED CONTOUR
 - - - - - SECTION LINE
 - - - - - QUARTER SECTION LINE
 - - - - - RIGHT-OF-WAY (EXISTING)
 - - - - - RIGHT-OF-WAY (PROPOSED)
 - - - - - EXISTING ROAD
 - - - - - PROPOSED ROAD
 - - - - - FENCES
 - - - - - POWER OVERHEAD
 - - - - - PUG
 - - - - - TUG
 - - - - - G
 - - - - - W
 - - - - - SS
 - - - - - SANITARY SEWER LINE
 - - - - - STORM SEWER (EXISTING)
 - - - - - STORM SEWER (PROPOSED)

A circular professional engineer seal for the State of Oklahoma. The outer ring contains the text "LICENSED PROFESSIONAL ENGINEER" at the top and "OKLAHOMA" at the bottom, separated by a rope-like border. The center of the seal contains the name "MICHAEL TAYLOR" in black, the license number "27655" in black, and the expiration date "10/15/24" in blue ink. There are also some blue ink marks at the bottom left of the seal.

MICHAEL TAYLOR, P.E.
OKLAHOMA REGISTERED PROFESSIONAL ENGINEER NO. 27655

COWAN GROUP ENGINEERING, LLC
OKLAHOMA CERTIFICATE OF AUTHORIZATION NO. 6414
EXPIRES JUNE 30, 2026



- (1) AN EFFORT HAS BEEN MADE TO LOCATE AND SHOW APPROXIMATE LOCATION OF UNDERGROUND UTILITY LINES. BURIED UTILITIES ARE NOT NECESSARILY SHOWN. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE AND PRESERVE ALL UTILITIES.
- (2) CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES WITHIN WORK ZONE PRIOR TO CONSTRUCTION.

TITLE SHEET

DESIGNED BY	GMT
DRAWN BY	DXN
REVIEWED BY	GMT
PROJECT NUMBER	24-174
DATE	SEPTEMBER 2024

REVISIONS

SHEET NUMBER

Thursday, October 10, 2024 9:28:35 AM

GENERAL CONSTRUCTION NOTES

1.

ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE, FEDERAL, AND LOCAL STANDARDS AND SPECIFICATIONS AND THE REQUIREMENTS OF THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY. WHERE IN CONFLICT THE MOST STRINGENT REQUIREMENT SHALL APPLY.
2.

ANY CONSTRUCTION ITEMS THAT ARE NOT LISTED IN THE SUMMARY OF QUANTITIES SHALL BE CONSIDERED INCIDENTAL CONSTRUCTION ITEMS. THE COST OF INCIDENTAL CONSTRUCTION ITEMS SHALL BE INCLUDED IN THE COST OF OTHER BID ITEMS.
3.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PUBLIC AND/OR PRIVATE UTILITY COMPANIES IN THE VICINITY OF CONSTRUCTION.
4.

EXISTING UTILITIES AND THEIR LOCATIONS, AS SHOWN ON THE PLANS REPRESENT THE BEST INFORMATION OBTAINABLE FOR DESIGN. LOCATION INFORMATION HAS BEEN OBTAINED FROM THE VARIOUS UTILITY COMPANIES AND IS EITHER FROM COMPANY RECORD DRAWINGS OR COMPANY PROVIDED FIELD LOCATIONS. THE PLAN LOCATIONS SHOWN ARE NOT GUARANTEED. ADDITIONAL EXISTING UTILITIES MAY ALSO BE ENCOUNTERED.
5.

RUBBLE FROM THE REMOVAL OF MISCELLANEOUS STRUCTURES AND EXCESS EXCAVATION WHICH IS TO BE WASTED ON SITES TO BE PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY. ALL DISPOSAL SITES MUST BE APPROVED BY THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY. MATERIAL EITHER STOCKPILED OR DISPOSED OF IN A FLOOD PLAIN SHALL REQUIRE THE NECESSARY PERMITS. ANY MATERIAL DUMPED IN THE WATERS OF THE UNITED STATES OR WETLANDS IS SUBJECT TO U.S. CORP OF ENGINEERS PERMITTING REGULATIONS. ANY MATERIAL BURIED OR STOCKPILED BEYOND APPROVED CONSTRUCTION LIMITS WOULD REQUIRE ADDITIONAL ARCHAEOLOGICAL INVESTIGATIONS AND STATE APPROVAL.
6.

A COPY OF THE EROSION CONTROL SITE PLANS AND THE STORM WATER POLLUTION PREVENTION PLAN MUST BE ON SITE AT ALL TIMES AND MADE AVAILABLE TO THE INSPECTOR UPON REQUEST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION , MAINTENANCE, REPAIR, AND REPLACEMENT OF ALL EROSION CONTROL DEVICES DAMAGED DUE TO CONSTRUCTION.
7.

CONTRACTOR SHALL PROVIDE BONDS AND PROOF OF INSURANCE IN ACCORDANCE WITH THE LOCAL REQUIREMENTS.
8.

CONSTRUCTION STAKING AND TESTING SHALL BE PROVIDED BY THE CONTRACTOR.
9.

THE CONTRACTOR SHALL GIVE ALL PROPERTY OWNERS AND/OR TENANTS OF DEVELOPED PROPERTY DIRECTLY ABUTTING CONSTRUCTION OF THIS PROJECT MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO START OF CONSTRUCTION.
10.

THE CONTRACTOR SHALL GIVE ALL WATER SERVICE CUSTOMERS AFFECTED BY CONSTRUCTION MINIMUM OF TEN (10) DAYS NOTICE PRIOR TO INTERRUPTION OF SERVICE.
11.

THE CONTRACTOR SHALL AVOID TREE DAMAGE IF AT ALL POSSIBLE AND SHALL PRUNE ALL ROOTS DAMAGED DURING CONSTRUCTION ACTIVITIES
12.

ALL WATER LINE MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF FOUR (4) FEET, UNLESS OTHERWISE NOTED.
13.

SHOP DRAWINGS FOR ALL PIPE MATERIALS INCLUDING BUT NOT LIMITED TO VALVES, FITTINGS, AND PIPE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION BEGINS.
14.

PRESSURE AND LEAKAGE TESTS SHALL BE PERFORMED BY CONTRACTOR IN ACCORDANCE WITH OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY OAC252:626–19–2(e) AND LATEST REVISION OF AWWA STANDARD SPECIFICATIONS.
15.

DISINFECTION TESTS SHALL BE PERFORMED BY CONTRACTOR IN ACCORDANCE WITH OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY OAC252:626–19–2(f) AND LATEST REVISION OF AWWA STANDARD SPECIFICATIONS.
16.

ALL DISTURBED AREAS SHALL HAVE 4” TOPSOIL AND SOLID SLAB SOD LAID. CONTRACTORS SHALL TAKE NECESSARY MEASURES TO RE–ESTABLISH SOD. PRICE BID TO INCLUDE COST OF (10–20–10) FERTILIZER, ESTIMATED AT 200 POUNDS PER 1000 SY. OF SODDING. PRICE BID ALSO TO INCLUDE COST OF WATERING, ESTIMATED AT 40 GALLONS PER SY. REMOVE GRAVEL AND DEBRIS PRIOR TO LAYING SOD.
17.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROMPT REPLACEMENT AND/OR REPAIR OF ALL TRAFFIC CONTROL DEVICES AND APPURTENANCES DAMAGED OR DISTURBED DUE TO CONSTRUCTION.
18.

WATER VALVES TO BE ABANDONED IN SIDEWALKS OR PAVEMENT SHALL BE CLOSED; POUR CONCRETE OVER VALVE, PULL VALVE BOX, AND REPAIR SIDEWALK OR PAVING.
19.

CONTRACTOR SHALL CONDUCT PRESSURE TESTS AND DISINFECTION ON ALL WATER MAINS PRIOR TO CONNECTION TO EXISTING DISTRIBUTION SYSTEM. LEAKAGE MUST NOT EXCEED 10 GAL. PER INCH DIAMETER PER MILE OF PIPE FOR 24 HOURS AT 150 PSI TESTING PRESSURE. DISINFECTION AND TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARD SPECIFICATION C–651 AND OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS OAC 252:626–19–2(F).
20.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL IN ACCORDANCE WITH FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE CONTRACTOR IS RESPONSIBLE FOR THE PROMPT REPLACEMENT AND/OR REPAIR OF ALL TRAFFIC CONTROL DEVICES AND APPURTENANCES DAMAGED OR DISTURBED DUE TO CONSTRUCTION. COST OF TRAFFIC CONTROL SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE COST OF OTHER BID ITEMS.
21.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE REQUIRED 10 FOOT HORIZONTAL AND 2 FOOT VERTICAL SEPARATION BETWEEN SANITARY SEWER AND POTABLE WATER MAINS. 5 FT HORIZONTAL AND 2 FT VERTICAL SEPARATION BETWEEN WATER MAINS AND OTHER UTILITIES, 15 FOOT HORIZONTAL SEPARATION BETWEEN WATER MAINS AND ALL PARTS

22.

WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS REQUIRED, DESIGN AND CONSTRUCT THE OTHER LINE EQUAL TO WATER PIPE AND PRESSURE TEST IT TO ASSURE WATER TIGHTNESS OF JOINTS ADJACENT TO THE WATER LINE PRIOR TO BACKFILLING.
23.

CONTRACTOR SHALL MAINTAIN WATER SERVICE DURING CONSTRUCTION. CONNECTION SHALL BE COORDINATED WITH OWNER AND COMPLETED IN A TIMELY MANNER TO MINIMIZE INTERRUPTION TO SERVICE.
24.

ALL EXISTING WATER MAINS AND APPURTENANCES BEING ABANDONED BY ANY PROJECT ARE TO REMAIN THE PROPERTY OF CITY OF SHAWNEE/SHAWNEE MUNICIPAL AUTHORITY, AND SHALL BE SALVAGED FOR THE CITY OF SHAWNEE/SHAWNEE MUNICIPAL AUTHORITY.
25.

IN INSTANCES WHERE FLOW LINES ARE NOT INDICATED ON THE DRAWINGS, MAIN SHALL BE CONSTRUCTED WITH A MINIMUM OF 4’ COVER, OR AS DIRECTED BY THE CITY ENGINEER AND IN ACCORDANCE WITH OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY STANDARDS.
26.

ALL EMBANKMENTS AND BACKFILL SHALL MEET THE STANDARD SPECIFICATION. REMOVE ALL STONES FOUND IN THE TRENCH TO A DEPTH OF AT LEAST 6 INCHES BELOW THE BOTTOM OF THE PIPE.
27.

ANY CONSTRUCTION PROCEDURES NOT COVERED IN THE PLANS AND SPECIFICATIONS WILL BE EXECUTED IN ACCORDANCE WITH PROPER CONSTRUCTION TECHNIQUES AND SHALL BE APPROVED BY THE ENGINEER.
27.

CONTRACTOR IS RESPONSIBLE FOR PROMPT REPLACEMENT OF ANY FENCE DISTURBED DURING CONSTRUCTION.
28.

ALL MATERIALS INCLUDING PIPING, FITTINGS, VALVES, FIRE HYDRANTS, GASKETS, PACKING, AND OTHER JOINTS SHALL MEET THE LATEST SPECIFICATIONS ISSUED BY AWWA, ASTM, ANSI, NSF, AND OTHER FEDERAL GOVERNMENT STANDARDS, AS DEFINED IN THE TECHNICAL SPECIFICATIONS.
29.

AIR RELIEF VALVES SHALL BE LOCATED AT HIGH POINTS IN LINES WHERE AIR CAN ACCUMULATE.

PAY QUANTITY NOTES

1.

TEMPORARY EROSION AND SEDIMENT CONTROL SHALL CONSIST OF TEMPORARY MEASURES WITHIN THE PROJECT LIMITS AND MINIMIZE POLLUTION OF RIVERS, STREAMS, AND PRIVATE PROPERTIES. SUCH MEASURES MAY INCLUDE SILT FENCES, BERMS, DIKES, SLOPE DRAINS, BALE BARRIERS, SEDIMENT FILTERS, SEDIMENT BASINS, SILT FENCES, MULCHES, AND GRASSES.
2.

INCLUDES COST FOR STORMWATER POLLUTION PREVENTION PLAN DOCUMENTATION AND MANAGEMENT AS PER ODEQ STANDARDS.
3.

STORMWATER POLLUTION PREVENTION PLAN SHALL BE PROVIDED TO ENGINEER PRIOR TO CONSTRUCTION.
4.

ALL DISTURBED NON–PAVED AREAS SHALL BE SOLID SLAB SODDED. INCLUDES COST OF WATERING AT 40 GALLONS PER SQUARE YARD, AND FERTILIZING 10–20–10 AT 10 LBS PER 1000 SQUARE FEET.
5.

QUANTITY IS CALCULATED USING THE STANDARD TRENCH WIDTH AS SHOWN ON WATER DETAILS SHEET NO EXTRA PAYMENT IS MADE FOR ANY ADDITIONAL TRENCH WIDTH OR SODDING.
6.

COST OF EXCAVATION AND BACKFILL RETURNING TO EXISTING GRADE INCLUDING COST OF BEDDING MATERIALS AS PER STANDARD WATER DETAILS SHALL BE INCLUDED IN THE COST OF PIPE. NO ADDITIONAL PAYMENT SHALL BE MADE.
7.

EXISTING WATERLINES ARE SHOWN AT APPROXIMATE LOCATIONS ON PLANS. CONTRACTOR TO FIELD LOCATE THE EXISTING WATERLINES. CONNECTION TO EXISTING WATERLINE SHALL INCLUDE ALL COSTS FOR LABOR AND MATERIAL TO LOCATE AND CUT EXISTING WATERLINE AND INSTALL THE REQUIRED VALVES AND FITTINGS CONNECTING THE NEW WATERLINE. NO ADDITIONAL PAYMENT SHALL BE MADE.
8.

PIPE SHALL BE FUSED HDPE WITH RESTRAINED FITTINGS.
9.

SERVICE CONNECTIONS SHALL ONLY INCLUDE TAP AND LINE TO EXISTING METER.
10.

CONCRETE USED FOR DRIVE PLACEMENT SHALL BE 3,500 PSI HIGH EARLY STRENGTH CONCRETE.
11.

ESTIMATED QUANTITY. LOCATION, IF AND WHERE REQUIRED, TO BE DETERMINED BY THE ENGINEER. COST TO INCLUDE CURB AND GUTTER.
12.

WALL ANCHORS SHALL BE PLACED IN EVERY BORE PIT AND AT MINIMUM EVERY 400 FEET.
13.

INCLUDES COST OF CUTTING, PLUGGING, AND ABANDONING EXISTING WATER LINE.
14.

ADDITIONAL REPLACEMENT NOT SHOWN ON PLANS AS DIRECTED BY INSPECTOR.
15.

QUANTITY INCLUDES TRACER WIRE.

PAY QUANTITIES

ITEM NO.	ITEM	NOTES	UNIT	QUANTITY	AS-BUILT
1	MOBILIZATION		LSUM	1	
2	CLEARING & GRUBBING		LSUM	1	
3	8" HDPE DR11 PIPE BY TRENCHING	(4)(6)(15)	LF	1357	
4	24" HDPE DR11 PIPE BY TRENCHING	(4)(6)(15)	LF	17	
5	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING	(8)(12)(15)	LF	203	
6	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING (SLICK BORE)	(8)(12)(15)	LF	259	
7	SERVICE LINE (SHORT)	(9)	EA	1	
8	SERVICE LINE (LONG)	(9)	EA	1	
9	8" 11.25-DEGREE BEND		EA	2	
10	8" 45-DEGREE BEND		EA	6	
11	8" 90-DEGREE BEND		EA	5	
12	24" X 24" TEE		EA	2	
13	24" X 8" TEE		EA	1	
14	8" X 8" TEE		EA	6	
15	8" X 8" TAPPING SLEEVE & VALVE W/ BOX		EA	1	
16	6" X 6" TAPPING SLEEVE & VALVE W/ BOX		EA	5	
17	4" X 4" TAPPING SLEEVE & VALVE W/ BOX		EA	2	
18	24" GATE VALVE W/ BOX		EA	2	
19	8" GATE VALVE W/ BOX		EA	2	
20	24" X 8" REDUCER		EA	2	
21	8" X 6" REDUCER		EA	6	
22	8" X 4" REDUCER		EA	2	
23	24" BLIND FLANGE		EA	2	
24	6" PLUG	(13)	EA	5	
25	4" PLUG	(13)	EA	2	
26	2" AIR RELEASE VALVE		EA	1	
27	24" HDPE MJ ADAPTER		EA	4	
28	8" HDPE MJ ADAPTER		EA	3	
29	FIRE HYDRANT ASSEMBLY		EA	2	
30	REMOVE & REPLACE ASPHALT PAVEMENT	(11)(14)	SY	214	
31	REMOVE & REPLACE GRAVEL DRIVE	(11)	SY	24	
32	REMOVE & REPLACE CONCRETE DRIVE	(10)(11)	SY	15	
33	SOLID SLAB SOD	(4)(5)	SY	456	
34	CONSTRUCTION SIGNING AND TRAFFIC CONTROL		LSUM	1	
35	STORMWATER POLLUTION PREVENTION PLAN	(2)(3)	LSUM	1	
36	TEMPORARY EROSION AND SEDIMENT CONTROL	(1)	LSUM	1	
37	DISINFECTION AND TESTING		LSUM	1	

HAYES STREET WATERLINE REPLACEMENT

CITY OF SHAWNEE

POTTAWATOMIE COUNTY

GENERAL NOTES & PAY QUANTITIES

DESIGNED BY	GMT
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PROJECT NUMBER	24-174
DATE	SEPTEMBER 2024
REVISIONS	
SHEET NUMBER	
2	





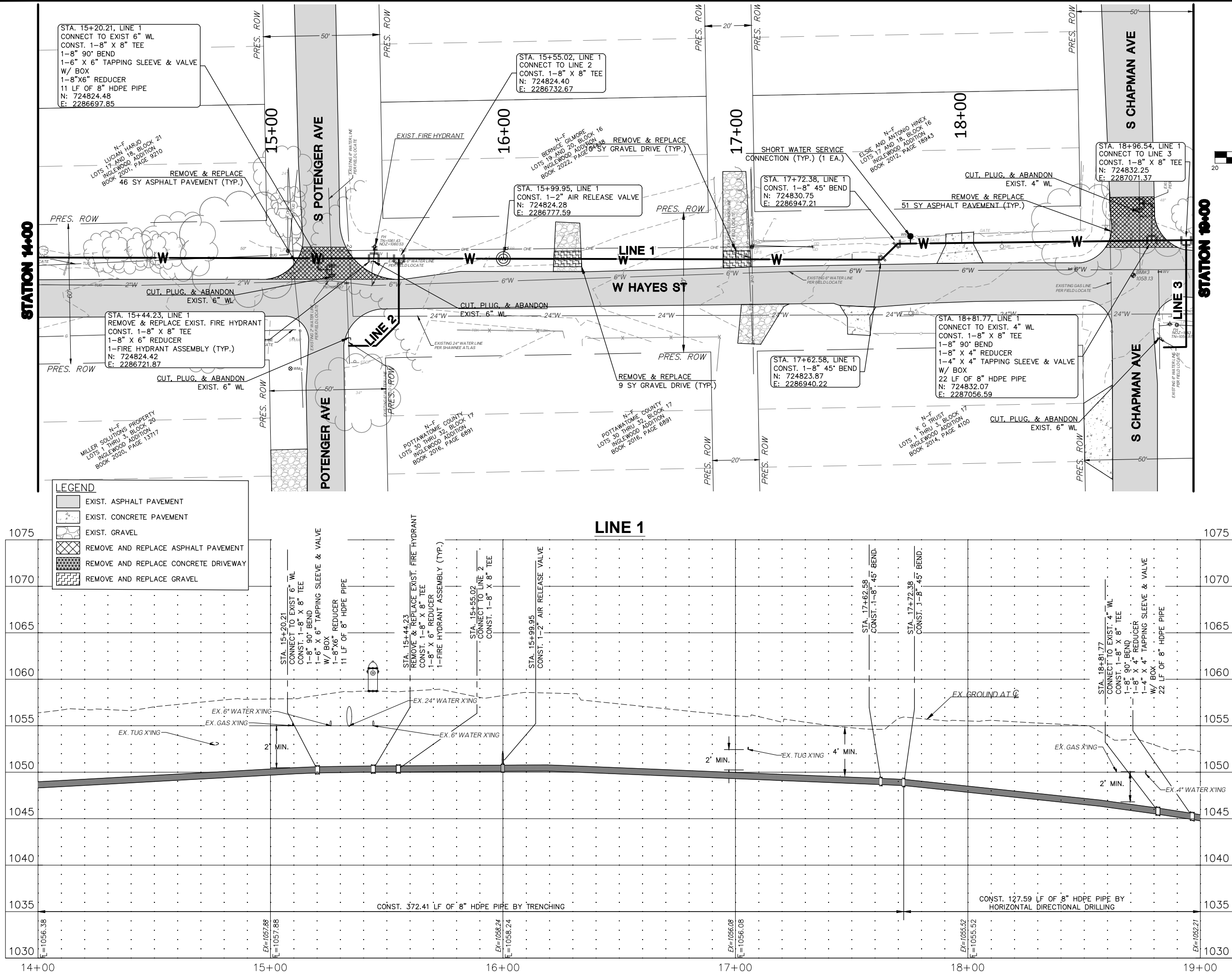
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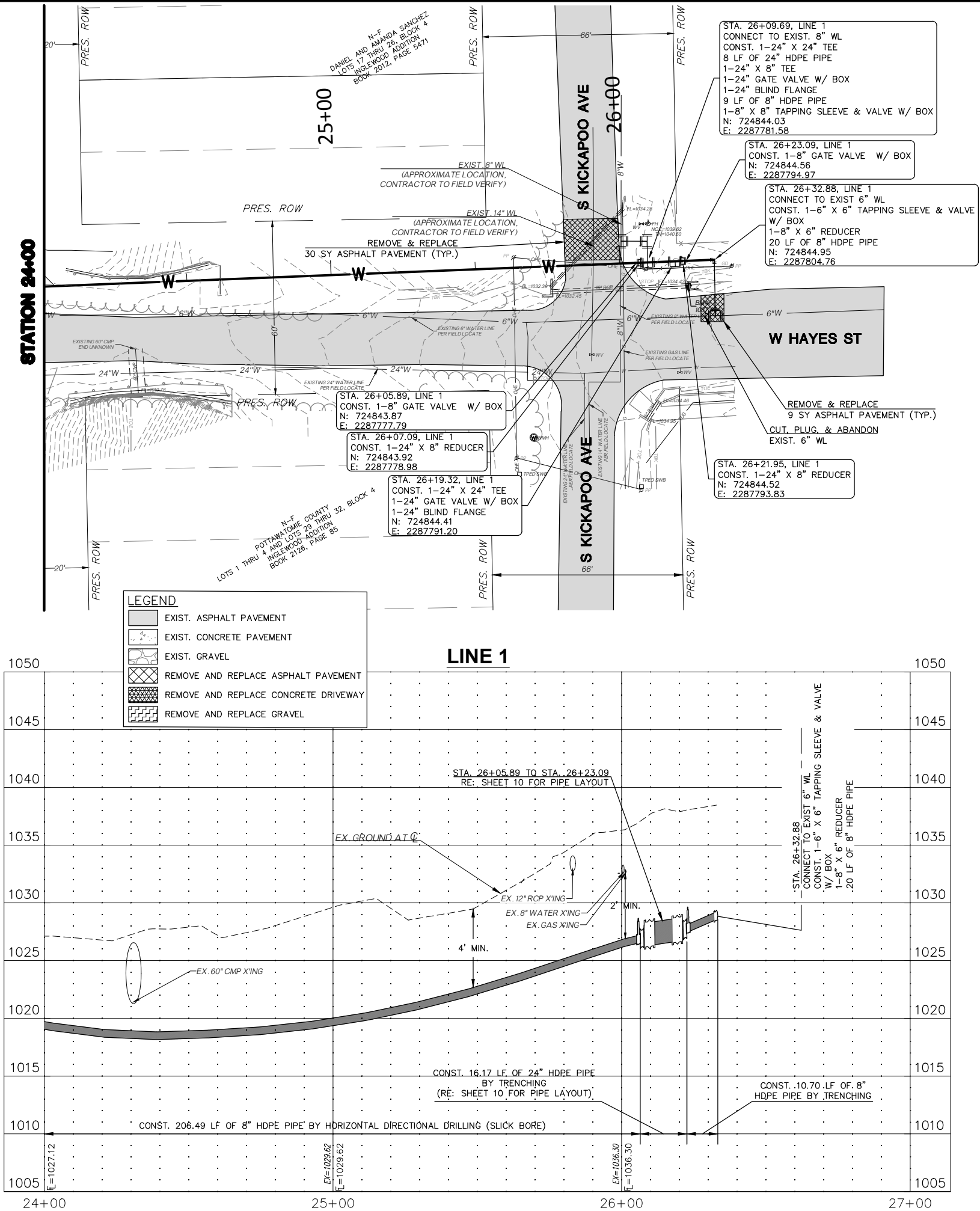
HAYES STREET WATERLINE REPLACEMENT

CITY OF SHAWNEE
POTTAWATOMIE COUNTY, OKLAHOMA

OVERALL MAP	
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DATE	SEPTEMBER 2024
REVISIONS	
SHEET NUMBER	
3	

G:\PROJECTS\24-174 CITY OF SHAWNEE HAYES ST WATERLINE REPLACEMENT\24-174 OVERALL MAP.DWG





NOTE:
1. STA. 26+07.04 TO STA. 25+21.95
RE: SHEET 10 FOR PIPE AND FITTINGS
LAYOUT



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CITY OF SHAWNEE
POTTAWATOMIE COUNTY, OKLAHOMA

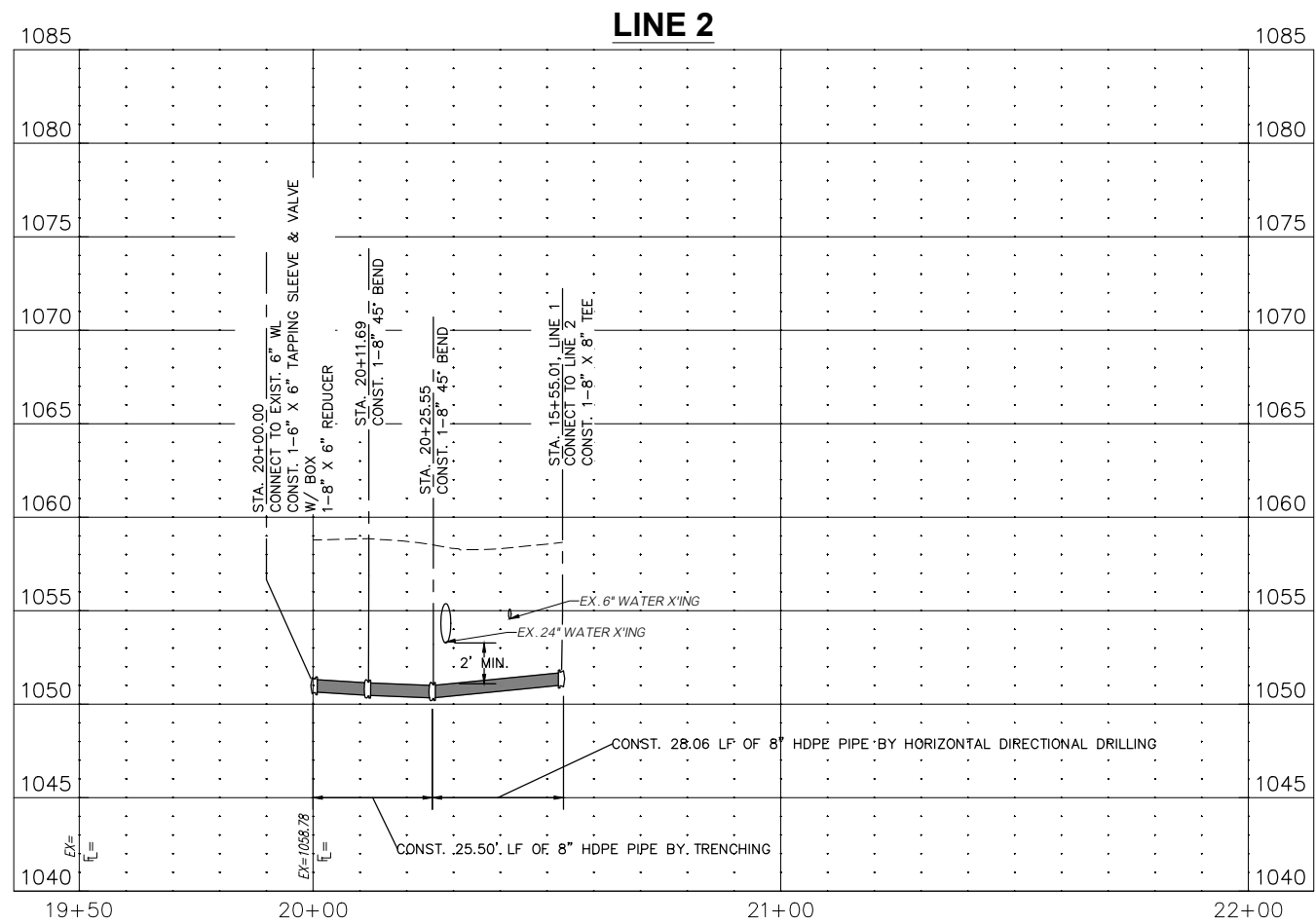
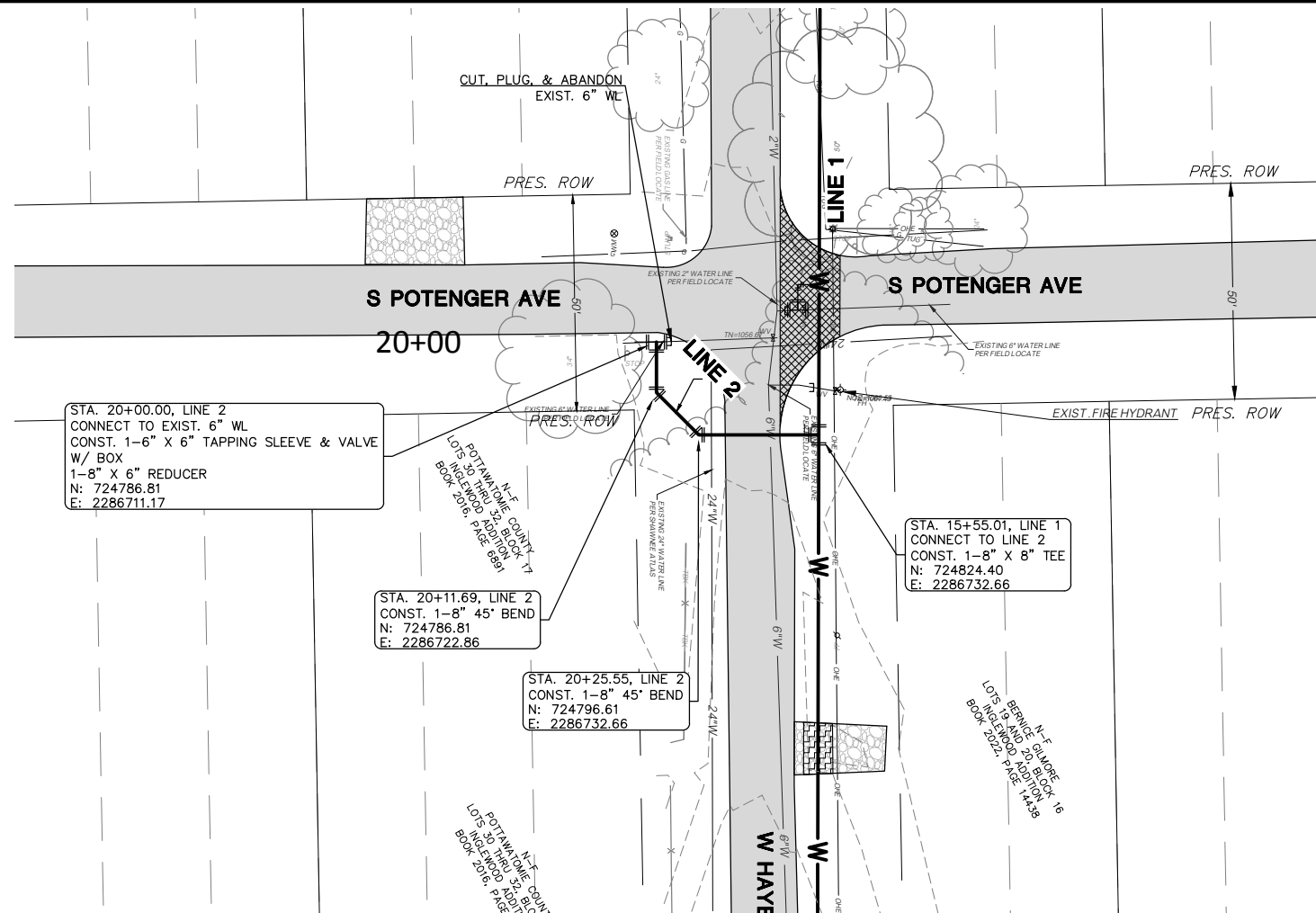
LINE 1 PLAN & PROFILE (4 OF 4)

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DATE	SEPTEMBER 2024

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7



LEGEND

	EXIST. ASPHALT PAVEMENT
	EXIST. CONCRETE PAVEMENT
	EXIST. GRAVEL
	REMOVE AND REPLACE ASPHALT PAVEMENT
	REMOVE AND REPLACE CONCRETE DRIVEWAY
	REMOVE AND REPLACE GRAVEL

HAYES STREET WATERLINE REPLACEMENT

CITY OF SHAWNEE
POTTAWATOMIE COUNTY, OKLAHOMA

LINE 2 PLAN & PROFILE

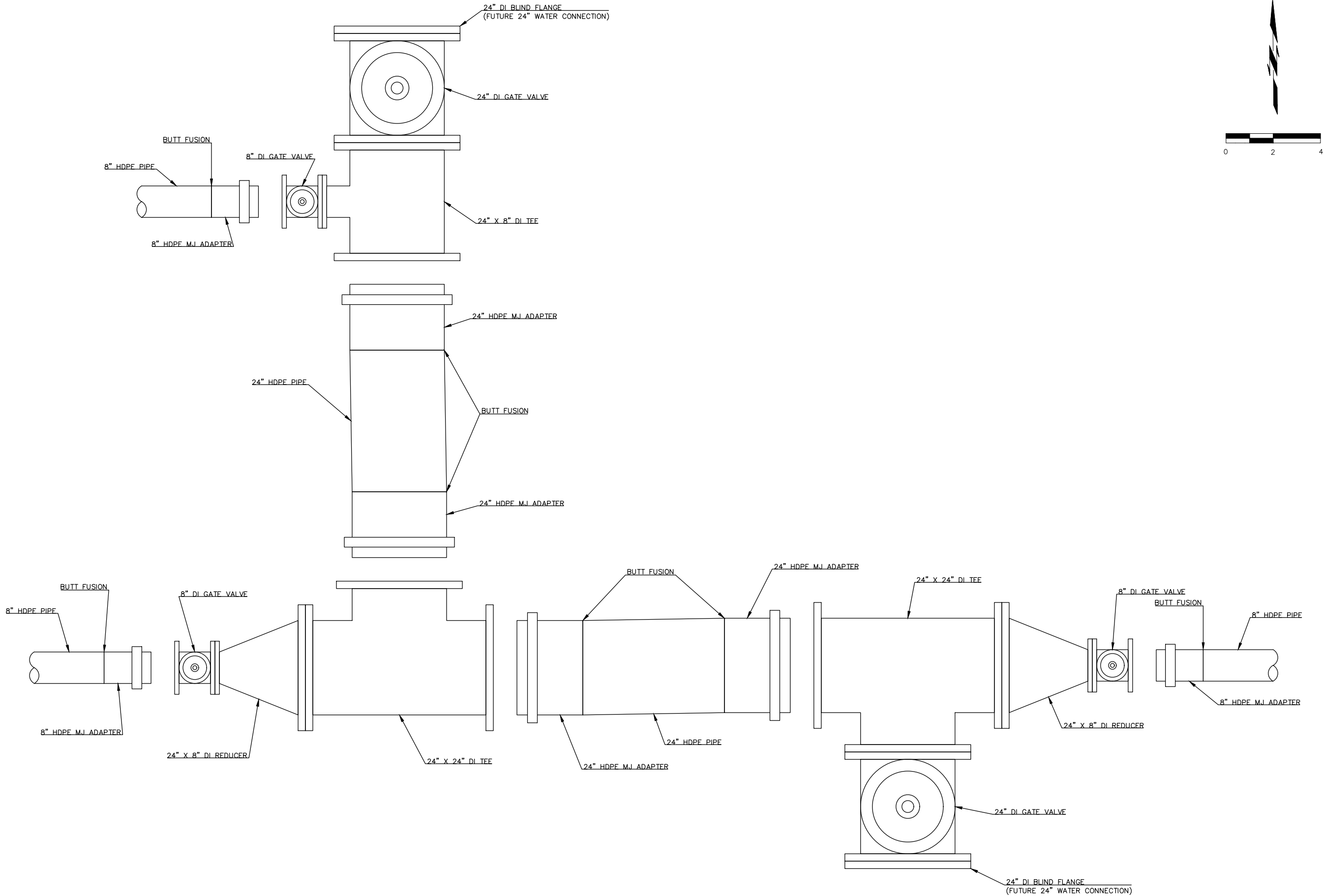
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Thursday, October 10, 2024 9:32:58 AM



PIPE LAYOUT DETAIL

SCALE: 1"=1'



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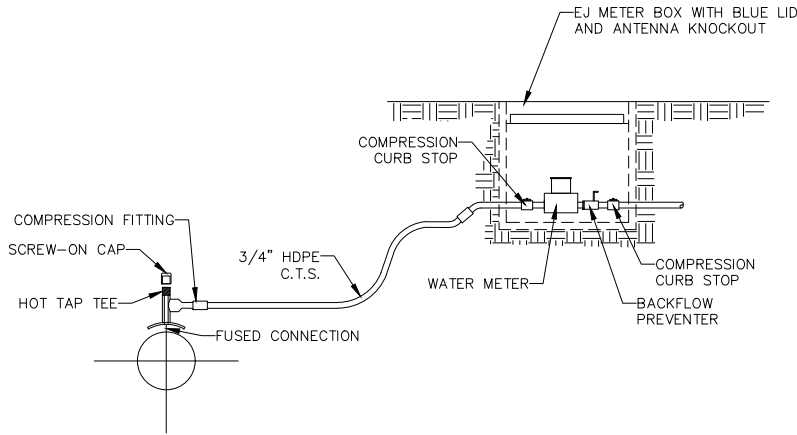
PIPE LAYOUT DETAIL

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SHEET NUMBER	10
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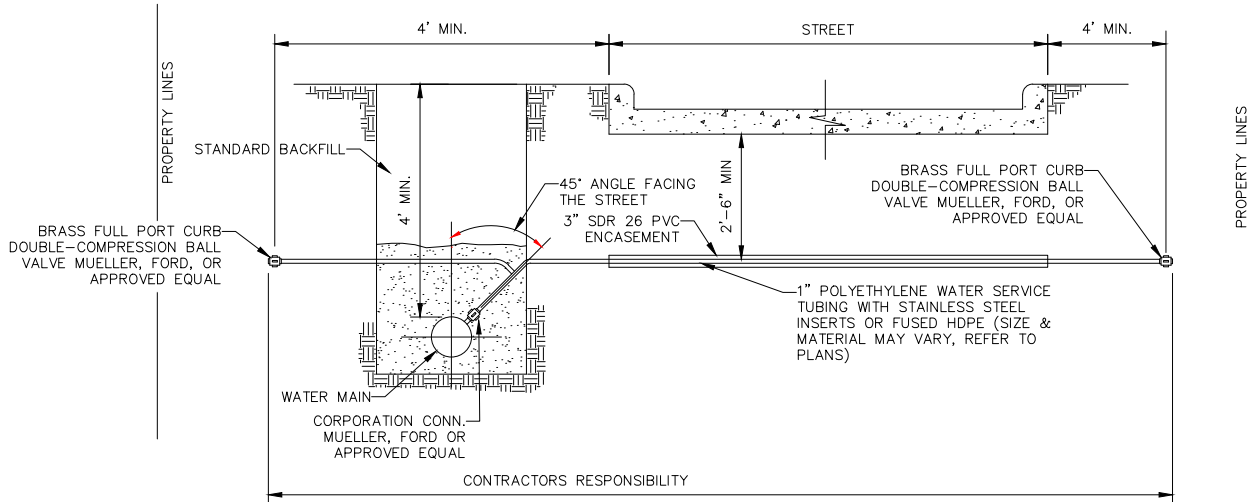
G:\PROJECTS\24-174 CITY OF SHAWNEE HAYES WL\CAD\WTR\24-174 DETAIL.DWG



- NOTES:
- SOIL AROUND SERVICE CONNECTION SHALL BE COMPACTED.
 - SERVICE LINE SHALL BE HIGH DENSITY POLYETHYLENE WATER SERVICE TUBING, COLOR BLUE, PC 200 PSI, DR 9 IN CONFORMANCE WITH THE REQUIREMENTS OF ANSI/AWWA C901 AND ASTM D2737. (AS REQUIRED)
 - SERVICE LINES ATTACHED TO CAST IRON OR DUCTILE IRON WATER MAIN SHALL BE WRAPPED A MINIMUM OF 3' FROM THE MAIN WITH PLASTIC-BACKED ADHESIVE TAPE, POLYKEN #900 OR SCOTCHRAP #50 OR EQUAL, 2" IN WIDTH.

TYPICAL SERVICE LINE CONNECTION

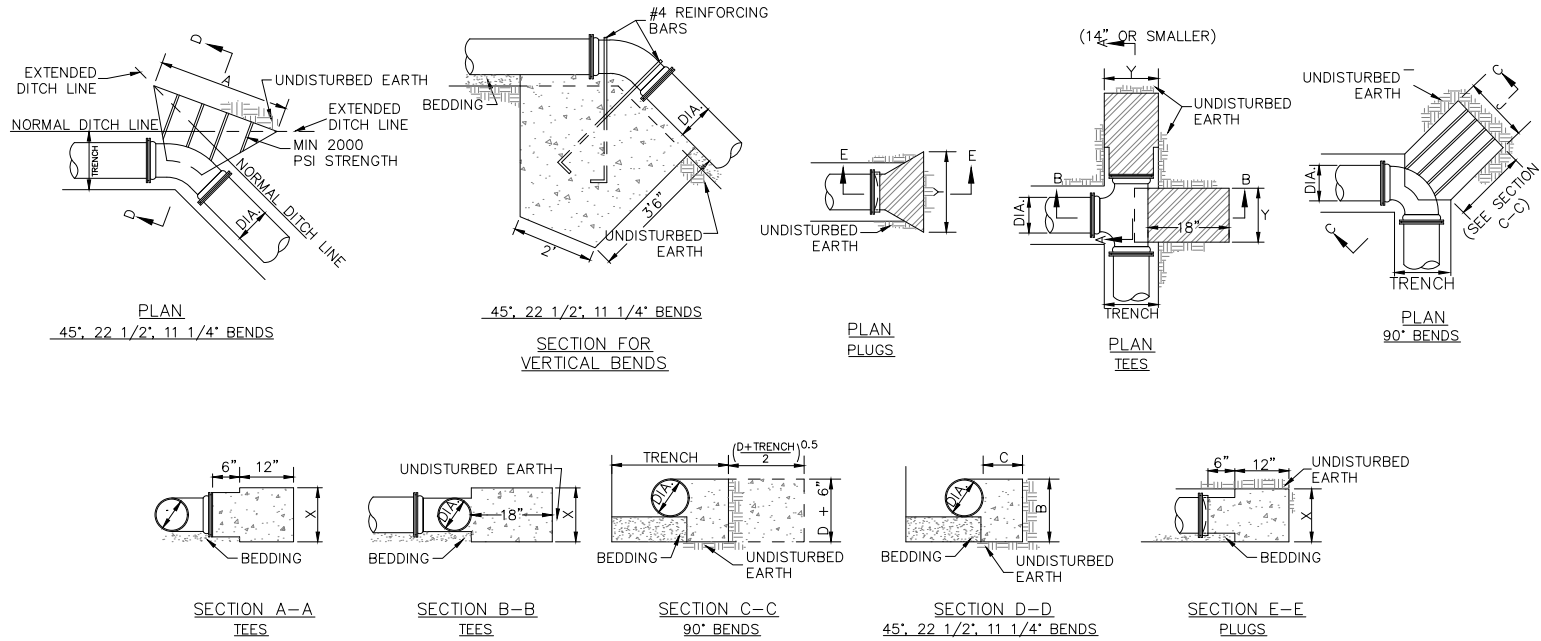
SCALE: N.T.S.



- NOTES:
- PVC ENCASEMENT SHALL BE PROVIDED FOR ALL SERVICE LINES CROSSING UNDER PAVING.
 - EACH SERVICE SHALL BE PROVIDED WITH A SEPARATE CORPORATION CONNECTION. USE OF A SINGLE CORPORATION CONNECTION TO PROVIDE SERVICE TO MORE THAN ONE (1) LOCATION IS PROHIBITED.
 - PLACEMENT OF ONE (1) OR MORE SERVICE LINES WITHIN THE REQUIRED PVC ENCASEMENT WILL BE ALLOWED AS APPROVED BY THE ENGINEER.
 - ALL CORPORATION CONNECTIONS SHALL BE CONSTRUCTED ON THE STREET SIDE OF WATER MAIN.
 - UTILITY STREET CROSSINGS MUST BE BORED IF STREET SUBGRADE IS ALREADY IN-PLACE.

TYPICAL LONG SERVICE LINE CONNECTION

SCALE: N.T.S.



DIMENSIONS FOR CONCRETE ANCHORAGES												
PIPE DIA.	TRENCH WIDTH	45° BEND			22 1/2° BEND			11 1/4° BEND			TEE OR PLUG	
		A	B	C	A	B	C	A	B	C	X	Y
36	60	7'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	6'-0"	3'-0"	2'-6"	3'-4"	4'-0"
30	54	5'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	4'-6"	2'-6"	2'-0"	3'-0"	3'-6"
24	44	3'-9"	2'-6"	1'-10"	2'-6"	1'-1"	2'-0"	2'-6"	2'-0"	1'-0"	3'-0"	3'-3"
20	39	2'-9"	2'-2"	1'-8"	2'-0"	2'-2"	1'-1"	2'-0"	2'-2"	0'-11"	2'-0"	3'-0"
18	37	2'-3"	2'-0"	1'-6"	2'-0"	2'-0"	1'-1"	2'-0"	2'-0"	0'-11"	2'-0"	2'-3"
16	35	2'-0"	1'-10"	1'-5"	2'-0"	1'-10"	1'-1"	2'-0"	1'-10"	0'-11"	2'-0"	1'-6"
12	30	2'-0"	1'-6"	1'-4"	2'-0"	1'-6"	1'-0"	2'-0"	1'-6"	0'-11"	2'-0"	1'-0"
10	28	2'-0"	1'-4"	1'-4"	2'-0"	1'-4"	1'-0"	1'-10"	1'-4"	0'-11"	1'-8"	1'-0"
8	26	2'-0"	1'-2"	1'-4"	1'-10"	1'-2"	1'-0"	1'-8"	1'-2"	0'-11"	1'-6"	0'-10"
6	24	2'-0"	1'-1"	1'-4"	1'-8"	1'-1"	1'-0"	1'-6"	1'-0"	0'-11"	1'-4"	0'-8"

THRUST BLOCKING



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HAYES STREET WATERLINE REPLACEMENT

CITY OF SHAWNEE
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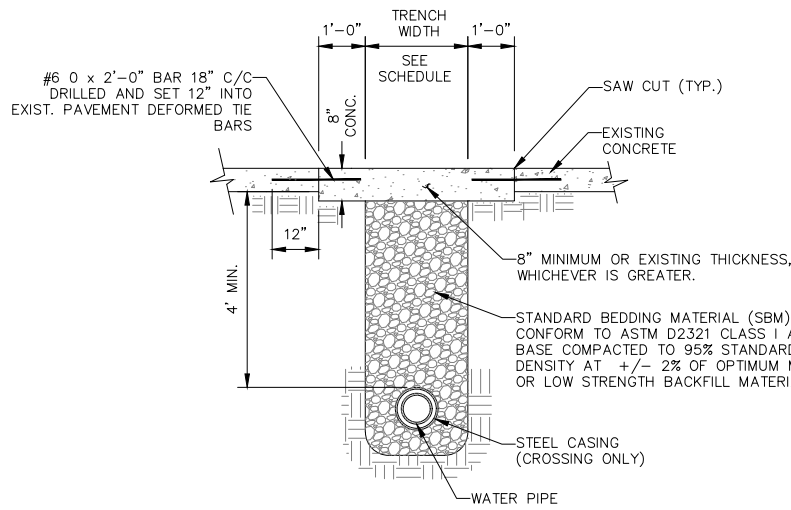
WATER DETAIL
(1 OF 3)

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DATE SEPTEMBER 2024

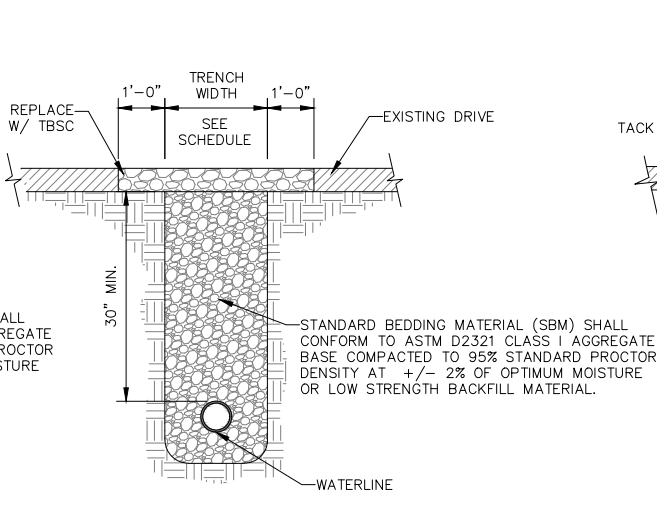
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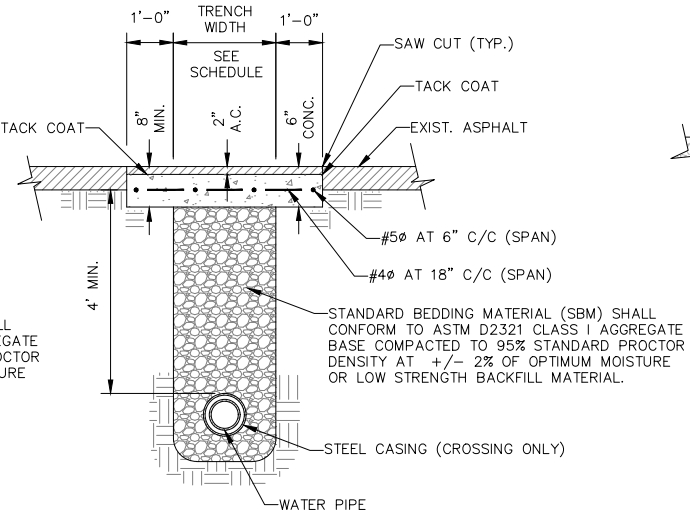
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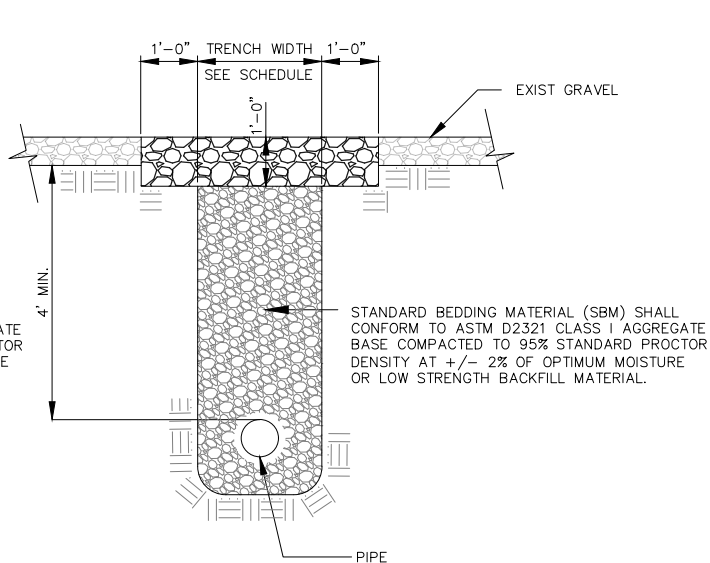
CONCRETE PAVING CUT AND
PERMANENT REPAIR
SCALE: N.T.S.



DRIVE CUT AND PERMANENT
REPAIR GRAVEL
SCALE: N.T.S.



ASPHALT PAVING CUT AND
PERMANENT REPAIR - ASPHALT
SCALE: N.T.S.

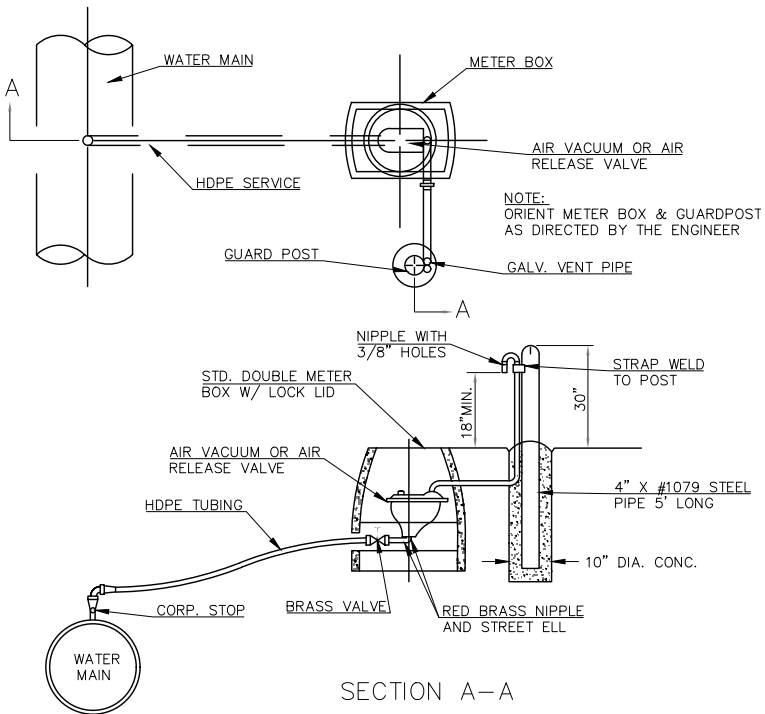


GRAVEL PAVEMENT PERMANENT REPAIR
SCALE: N.T.S.

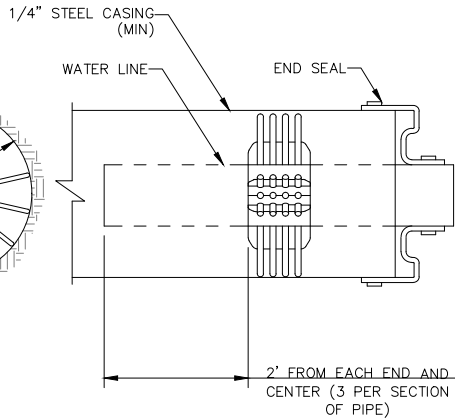
- NOTES:
1. CONSTRUCT WATER TIGHT PLUG AT EACH END OF CASING
 2. ALL WATERLINE JOINTS WITHIN CASING SHALL BE RESTRAINED.
 3. STEEL CASING PIPE SHALL CONFORM WITH ASTM A-139. STANDARD SPECIFICATION FOR ELECTRIC-FUSION(ARC)-WELDED STEEL PIPE (NPS4 AND OVER). THE STEEL MATERIAL SHALL BE NEW, SMOOTH WALL, CARBON STEEL, GRADE B, WITH A MINIMUM TENSILE STRENGTH, AND MINIMUM 35,000 PSI YIELD STRENGTH.

USE HIGH DENSITY POLYETHYLENE SPACERS (INSULATORS).
INSTALL 3 SPACERS PER SECTION OF PIPE (ONE AT THE
CENTER AND ONE 2' FROM EACH END) AND SHALL BE SIZED
IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS

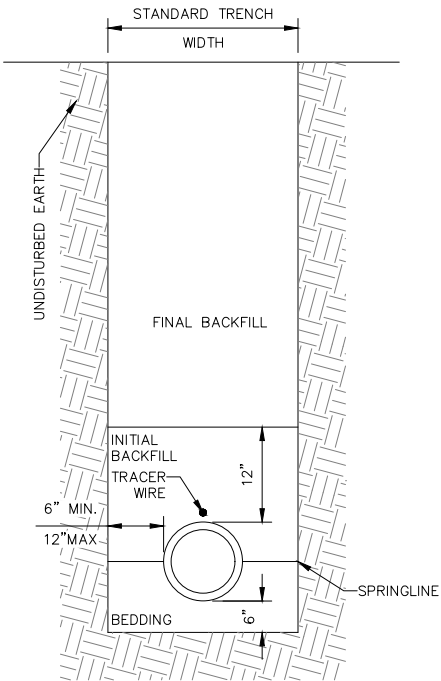
STANDARD ROAD CROSSING BORE
SCALE: N.T.S.



1" & 2" AIR VACUUM VALVES
3/4" AIR RELEASE VALVES
SCALE: N.T.S.



PIPE & STEEL CASING SCHEDULE	
PIPE DIA. "A"	CASING DIA. "B"
6"	16"
8"	18"
10"	20"
12"	24"
16"	30"
18"	30"
24"	42"

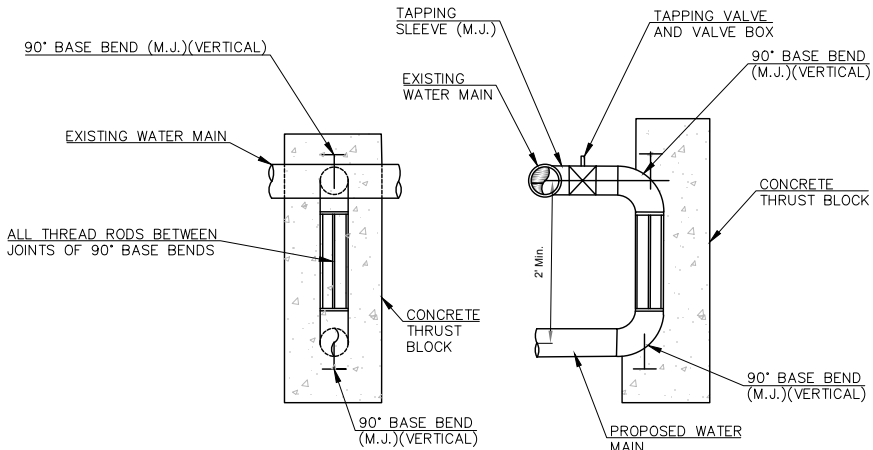


INSIDE PIPE DIAMETER (IN.)	STANDARD TRENCH WIDTH (IN.)
6	18
8	24
10	30
12	30
15	36
18	36
21	42
24	42
27	48
30	48
36	54
42	60
48	66

- NOTES:
1. STANDARD BEDDING MATERIAL (SBM) SHALL CONFORM TO ASTM D2321 CLASS I AGGREGATE BASE OR LOW STRENGTH BACKFILL MATERIAL.
 2. SELECT FILL CONSISTS OF EXCAVATED MATERIALS FREE OF ROCKS LARGER THAN 2-1/2 INCHES, ORGANIC MATERIAL, RUBBISH, DEBRIS, AND ALL OTHER OBJECTIONABLE MATERIAL.
 3. COMPACTION REQUIREMENTS:
A. PAVED AREAS: 95% STANDARD PROCTOR DENSITY.
B. NON-PAVED AREAS: 90% STANDARD PROCTOR DENSITY IF COVER DEPTH < 10'. 95% STANDARD PROCTOR DENSITY IF COVER DEPTH > 10'.

DESCRIPTION	PAVED AREAS		NON-PAVED AREAS	
	FLEXIBLE PIPE	RIGID PIPE	FLEXIBLE PIPE	RIGID PIPE
FINAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	EXCAVATED MATERIAL	EXCAVATED MATERIAL
INITIAL BACKFILL	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	COVER DEPTH ≤ 10' - SELECT FILL COVER DEPTH > 10' - STAND. BEDDING MATERIAL	SELECT FILL
BEDDING	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)	STAND. BEDDING MATERIAL (SBM)

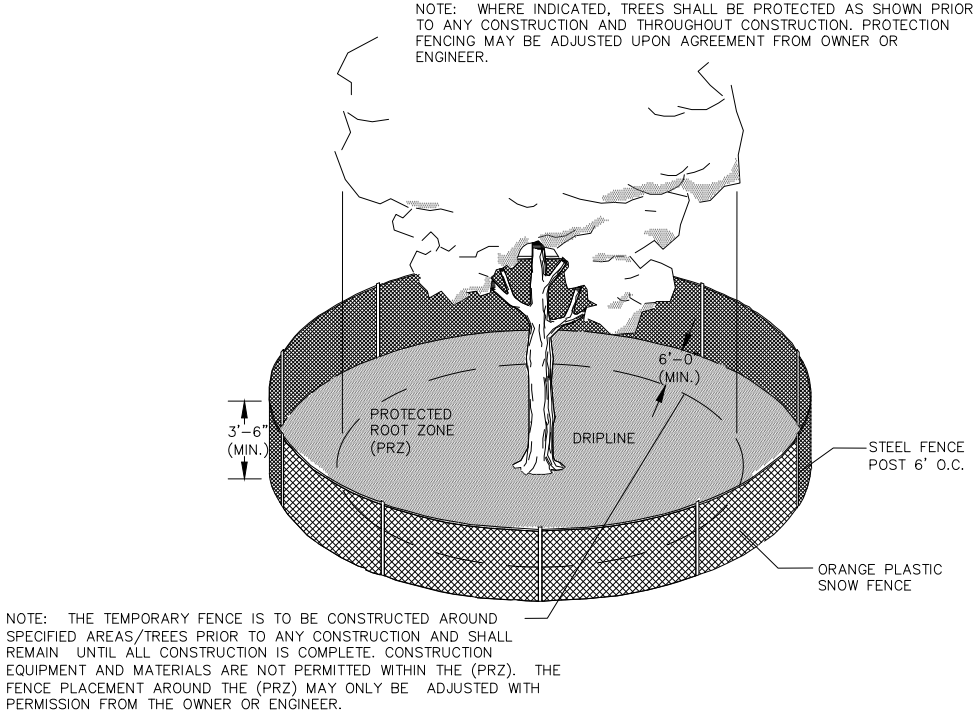
PIPE INSTALLATION
SCALE: N.T.S.



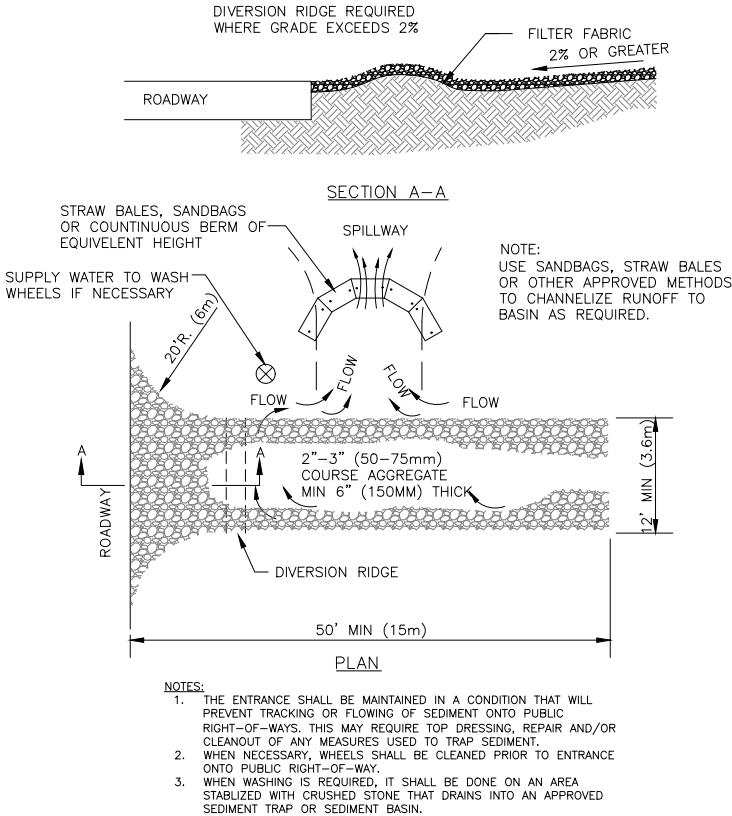
NOTE:
1. RESTRAINT JOINT SYSTEM OPTIONS
1.1. MEGA-LUG TYPE JOINT RESTRAINT SYSTEM ON ALL JOINTS.
1.2. STAINLESS STEEL ALL THREAD RODS B/W 90° VERTICAL BASE BENDS.
TYPICAL REVERSE TAP INSTALLATION
SCALE: N.T.S.

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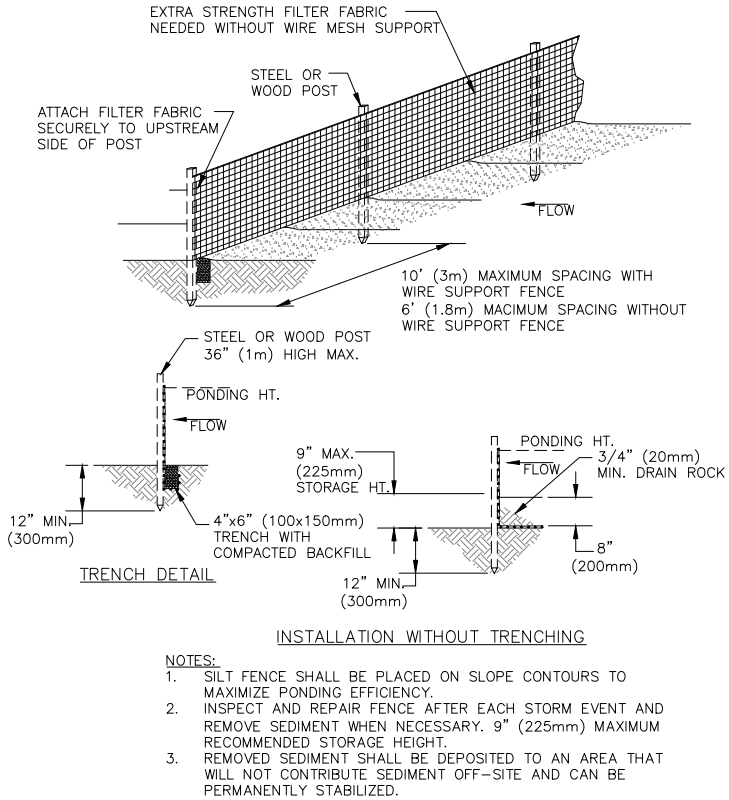
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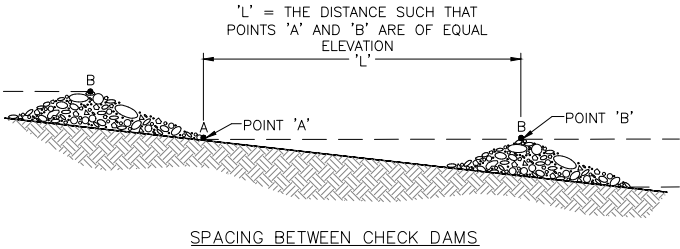
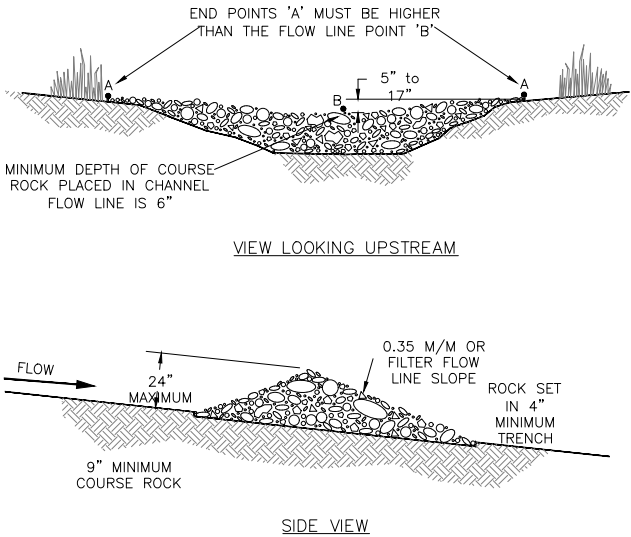
TREE PROTECTION DETAIL



TEMP. GRAVEL CONSTRUCTION ENTRANCE



SILT FENCE



D-50 OF ROCK (MM)	DOWNSTREAM FLOWLINE SLOPE OF STRUCTURE (M / M)					
	0.35	0.30	0.25	0.20	0.15	0.10
75	15	18	20	25	33	48
150	30	36	41	50	66	100

ROCK CHECK DAM



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CITY OF SHAWNEE
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EROSION CONTROL DETAIL

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DATE	SEPTEMBER 2024

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SHEET NUMBER
14



CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

HAYES STREET WATERLINE REPLACEMENT

PROJECT NUMBER: 24-174
ARPA Grant Project Number: ARP-23-0092-G
BID DATE: December 5, 2024

By:

Cowan Group Engineering, LLC
7100 N Classen, Suite 500
Oklahoma City, OK 73116
Phone: 405-463-3369
CA # 6414 Expires 6/30/26

October 2024

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Responsible Registrant

Cowan Group Engineering, LLC
CA No. 6414 (Expires 6/30/26)



Michael Taylor, PE
Project Manager
OK PE 27655

Advertisement for Bids

Notice is hereby given that City of Shawnee (hereinafter called the "Owner") will receive sealed bids at the City Clerk's Office, 16 W. 9th Street, Shawnee, OK 74801 until the 5th day of December, 2024 at 3:00 p.m. for the Hayes Street Waterline Replacement.

Funding for this project is provided through American Rescue Plan Act (ARPA) grant program. As such, compliance with Labor Standards Contract Provisions is mandatory. Compliance with the Davis Bacon Act is mandatory **if the total project cost exceeds \$10,000,000 (ten million dollars)**.

All bids received at said time will be opened and evaluated for completeness and correctness. All work shall be performed, and all construction and materials used and furnished shall be in accordance with the Plans and Specifications prepared by Cowan Group Engineering, and on file in the City Clerk's Office, 16 W. 9th Street, Shawnee, OK 74802-1448.

The Bid Packet and Contract Documents for this project may be examined at the following locations:

1. Cowan Group Engineering, 7100 N. Classen, Suite 500, Oklahoma City, OK 73116

Hard copy plans and specifications may be obtained by the prospective bidders at these locations for \$100.00. No documents will be mailed until payment is received in full.

Complete digital project bidding documents are available for a non-refundable fee of \$50.00 by going to www.cowangroup.co, navigating to the Bid Documents page, and by entering Quest Project #9377957 on the website's project search page. Please contact QuestCDN.com at 952.233.1632 or info@questcdn.com for assistance in free membership registration, downloading and working with this digital project information.

Each bidder shall accompany his original bid, filed with the City Clerk's Office with a certified or Cashier's Check on a solvent bank located in Oklahoma, or a Bidder's Bond, in the amount of five (5) percent of the amount bid, as a guarantee of his ability to perform the contract bid upon, and that he will enter into a written contract with the Owner to perform said work and/or furnish said materials in accordance with said Plans and Specifications and furnish the required bonds according to the Public Competitive Bidding Act of 1974.

The Owner will retain the deposit for liquidated damages in case the successful bidder fails to enter in said contract and furnish the required bonds provided for in the specifications within the time required. Deposit of the unsuccessful bidders will be returned upon the execution of the Contract and required bonds.

Each bidder shall accompany his bid with a sworn statement in writing that the bidder has not directly or indirectly entered into an agreement, expressed or implied, with any other bidder concerning the price or amount of such bid or any bids, the limiting of the bids or bidders, the paying to anyone any money for promotion expenses, the parceling or farming out to any bidder or bidders or other persons of any part of the contract or any part of the subject matter of the bid or of the profits thereof.

Construction, Maintenance and Statutory Payment Bonds in the amount of 100% of the contract price are required for this project. These bonds must be obtained from a Corporate Surety licensed in Oklahoma and approved by the Owner and Consulting Engineer. The bidder shall state in the proposal the name and address of the Surety or Sureties who will sign this bond in case the contract is awarded. The Maintenance Bond required will guarantee the repair of all damage due to improper materials or workmanship for a period of one (1) year after the acceptance of the work by the Owner.

This project is to be financed by the ARPA grant program managed by the Oklahoma Water Resources Board (OWRB) and shall be referred to as Project No. ARP-23-0092-G. The following requirements and regulations must be complied with:

- A. "Equal Opportunity in Employment: All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, age or physical handicap. Bidders on this work will be required to comply with the President's Executive Order No. 11246, as amended."
- B. "Each bidder must fully comply with the requirements, terms and conditions of the Environmental Protection Agency's Disadvantaged Business Enterprise Requirements, which have been adopted for the OWRB ARPA program, and include employing the six (6) good faith efforts and soliciting disadvantaged business enterprises during the performance of this contract. Requirements are contained in OWRB's Guidance and Procedures, ARP-267. The bidder commits itself to following the good faith efforts to solicit disadvantaged business enterprises contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed bid."
- C. **If the total project cost exceeds \$10,000,000 (ten million dollars)** "Davis Bacon Act wage rules shall apply. All laborers and mechanics employed by contractors and sub- contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code and 29 CFR parts 1,3, and 5. The Department of Labor provides all pertinent information related to compliance with labor standards, including prevailing wage rates and instructions for reporting. More information is available at <http://www.sam.gov/>" and <https://www.dol.gov/agencies/whd/government-contracts/construction>
- D. System for Award Management (SAM) registration is required for all Applicants and Awardees (Entities, Prime Contractors, Subcontractors, Vendors) in order to receive funds from the ARPA program. SAM replaced the Central Contractor Registration/Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System. Applicants and awardees are required to complete a one-time free registration to provide basic information relevant to procurement and financial transactions. On April 4, 2022, the unique entity identifier used across the federal government changed from the DUNS Number to the Unique Entity ID (generated by SAM.gov). Registrants must retain an active status to be eligible for ARPA funding. Applicants and Awardees can go to SAM.gov to complete the registration process.

The bids filed with the City Clerk's Office will be opened and considered by the Owner, at a meeting to be held at City Commission Chambers, 16 W. 9th Street, Shawnee, OK 74801, on the 5th day of December, 2024 at 3:00 p.m. Bids received more than ninety-six (96) hours prior to the Bid Opening will be returned.

The contract is to be awarded to the lowest, responsive, responsible bidder. The Owner reserves the right to correct any non-material clerical errors in the bidding as allowed under Oklahoma Law. The Owner reserves the right to reject any and all bids in accordance with the Oklahoma Public Competitive Bidding Act of 1974. Conditional bids shall not be accepted.

A pre-bid conference will be held on this project at: City Clerk's Office, 16 W. 9th Street, Shawnee, OK 74801 at 10:00 a.m. on the 21st day of November, 2024.

Authorized on this day ____ of _____ 2024

By: _____
Andrea Weckmueller-Behringer, City Manager, City of Shawnee

Information for Bidders

Notice is hereby given that City of Shawnee (hereinafter called the "Owner") will receive sealed bids at the City Clerk's Office, 16 W. 9th Street, Shawnee, Pottawatomie County, Oklahoma until 3:00 p.m. on the 5th day of December, 2024, for the Hayes Street Waterline Replacement.

The bids filed with the City Clerk's Office will be opened and considered by the Owner, at a meeting to be held at City Commission Chambers, 16 W. 9th Street, Shawnee, OK 74801, on the 5th day of December, 2024 at 3:00 p.m. Bids received more than ninety-six (96) hours prior to the Bid Opening will be returned.

A non-mandatory pre-bid conference will be held on this project at: City Clerk's Office, 16 W. 9th Street, Shawnee, OK 74801 at 10:00 a.m. on the 21st day of November, 2024.

This project is to be financed by the ARPA grant program managed by the Oklahoma Water Resources Board (OWRB) and shall be referred to as Project No. ARP-23-0092-G. The following requirements and regulations must be complied with:

- A. "Equal Opportunity in Employment: All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, age or physical handicap Bidders on this work will be required to comply with the President's Executive Order No. 11246, as amended."
- B. " Each bidder must fully comply with the requirements, terms, and conditions of the Environmental Protection Agency's Disadvantaged Business Enterprise Requirements, which have been adopted for the OWRB ARPA program, and include employing the six (6) good faith efforts and soliciting disadvantaged business enterprises during the performance of this contract. Requirements are contained in OWRB's Guidance and Procedures, ARP-267. The bidder commits itself to following the good faith efforts to solicit disadvantaged business enterprises contained herein and all other requirements, terms, and conditions of these bid conditions by submitting a properly signed bid."
- C. **If the total project cost exceeds \$10,000,000 (ten million dollars)** "Davis Bacon Act wage rules shall apply. All borers and mechanics employed by contractors and sub- contractors on projects funded directly by or assisted in whole or in part by and through the Federal Government shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of Chapter 31 of Title 40, United States Code and 29 CFR parts 1,3, and 5. The Department of Labor provides all pertinent information related to compliance with labor standards, including prevailing wage rates and instructions for reporting. More information is available at <https://www.dol.gov/agencies/whd/government-contracts/construction> and <http://www.sam.gov/>"
- D. System for Award Management (SAM) registration is required for all Applicants and Awardees (Entities, Prime Contractors, Subcontractors, Vendors) in order to receive funds from the ARPA program. SAM replaced the Central Contractor Registration/Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System. Applicants and awardees are required to complete a one-time free registration to provide basic information relevant to procurement and financial transactions. On April 4, 2022, the unique entity identifier used across the federal government changed from the DUNS Number to the Unique Entity ID (generated by SAM.gov). Registrants must retain an active status to be eligible for ARPA funding. Applicants and Awardees can go to SAM.gov to complete the registration process.

Each sealed envelope containing a bid must be plainly marked on the outside as "Bid for Hayes Street Waterline Replacement", and the envelope should bear on the outside the bidder's name, address, and license number (if applicable). If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed to the Owner at: City Clerk's Office, P.O. Box 1448, Shawnee, OK 74802-1448.

All bids must be made on the required bid form, where all blank spaces for bid prices must be filled in, in ink or typewritten. The bid form must be fully completed and executed when submitted. Only one copy of the bid form is required. The Owner may waive any informalities or minor defects or reject any and all bids as allowed under Oklahoma Law. Any bid may be withdrawn prior to the above scheduled time for bid opening, or authorized postponement thereof. Bids received more than ninety-six (96) hours before the time specified, or those received after the time set for bid opening will not be considered and will be returned unopened. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the Owner and the bidders.

Bidders must satisfy themselves of the accuracy of estimated quantities in the bid proposal by review of the Plans and Specifications, including any existing addenda, and by examination of the project site. Once a bid is submitted, the bidder shall not assert that there was a misunderstanding concerning the quantities or the nature of work to be performed. The failure or omission of any bidder to do any of the foregoing shall in no way relieve any bidder from any obligation in respect to its bid.

Prior to bidding, the Owner shall provide to the bidders all pertinent information that delineates and describes the land owned and rights-of-way acquired or to be acquired.

The Contract Documents contain the provisions required for the construction of the product. Information obtained from an officer, agent, or employee of the Owner or any other person shall not affect the risks or obligations assumed by the contractor or relieve the contractor from fulfilling any of the conditions of the contract.

Each bid exceeding \$100,000 must be accompanied by a Bid Bond for five percent of the total amount of the bid and payable to the Owner. A certified check may be used in lieu of the Bid Bond. As soon as the bid prices have been compared, the Owner will return the bonds of all except the three lowest responsive, responsible bidders. The bid securities of the successful bidder and the two remaining unsuccessful bidders will be returned upon Owner's approval of the successful bidder's executed certificate of insurance and construction bonds.

Construction bonds (Performance, Statutory, and Maintenance) in the amount of 100 percent with a corporate surety approved by the Owner will be required for the faithful performance of the contract. Attorneys-in-fact who sign bid and construction bonds must file with each bond a certified and effective dated copy of their Power-of-Attorney.

The Owner shall award a contract to the lowest, responsive, responsible bidder or bidders within thirty (30) calendar days after bid opening. The Owner may extend the award period not to exceed fifteen (15) calendar days by formal recorded action and for good cause. The time may be extended further by mutual agreement between the Owner and the bidder per O.S. Title 61 Section 111, Public Competitive Bidding Act of 1974 (PCBA).

The Notice of Award shall be accompanied by the necessary contract, bonds, and insurance. In the event of failure of the bidder to execute the contract, the Owner may consider the bidder in default, in which case the Bid Bond accompanying the proposal shall become the property of the Owner.

The party to whom the contract is awarded will be required to execute the contract and obtain the construction bonds (Performance, Statutory and Maintenance) and certificate of insurance within 15 calendar days (not to exceed 60 days) from the date when the Notice of Award is delivered to the bidder. The time may be extended further by mutual agreement between the Owner and the bidder per O.S. Title 61 Section 113 (PCBA).

With an acceptable contract, bonds and certificate of insurance signed by the party to whom the Contract was awarded, the Owner shall sign the contract and return to such party an executed duplicate. Should the Owner not execute the contract within the agreed upon period, the bidder may by written notice withdraw the signed contract. Such notice of withdrawal shall be effective upon its receipt by the Owner.

The Owner shall issue the Notice to Proceed after the execution of the contract, approval of bonds and certificate of insurance. If the Notice to Proceed has not been issued within the agreed upon period, the contractor may terminate the contract without further liability on the part of either party.

The Owner may make such investigations as deemed necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of such bidders fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

A conditional or qualified bid will not be accepted. Tied bids are non-restrictive, and in order for a tied bid to be accepted it must be lower than the sum of low separate bids.

All applicable laws, ordinances, rules, and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout. The successful bidder will be required to meet all requirements of the Underground Facilities Damage Prevention Act when engaged in work within public rights-of-way.

When using alternate bids, they will be listed in numerical order, with the highest priority being number one, the second highest priority being number two, etc. The lowest bidder will be determined by comparing all bids that contain the selected alternates and computing the total value of the base bid plus the alternates.

All bidders and owners shall comply with the Oklahoma PCBA of 1974.

The awarded bidder shall supply the names and addresses of all subcontractors and material suppliers when required to do so by the Owner.

To avoid bypassing of raw sewage during construction, the contractor shall use the methods and/or schedule(s) described in Section N/A of these Specifications, or the method(s) and/or schedule(s) described as follows:

1. Bypass pumping systems shall have sufficient capacity to pump a peak flow of 3.0 MGD. The CONTRACTOR shall provide all pipeline plugs, pumps of adequate size to handle peak flow, and temporary discharge piping to ensure that the total flow can be safely diverted around the section to be repaired. Bypass pumping system will be required to be operated 24 hours per day.
2. The CONTRACTOR shall have adequate stand-by equipment available and ready for immediate operation and use in the event of an emergency or breakdown. One stand-by pump for each size pump utilized shall be installed at the mainline flow bypassing locations, ready for use in the event of primary pump failure.
3. Bypass pumping system shall be capable of bypassing the flow around the work area and of releasing any amount of flow up to full available flow into the work area as necessary for satisfactory performances of work.
4. Bypass pump system must overcome any existing force main pressure on discharge.

The Contractor will be required to begin work within 15 calendar days of the date shown on the Notice to Proceed. The time for completion is 90 calendar days. Liquidated damages will be \$500 per calendar day.

In the event of a conflict between the Plans and the Specifications, the Specifications will govern.

The following items, included in this Bid Packet, shall be submitted along with the bid:

- Bid Proposal
- Bid Bond
- Non-Collusion Affidavit
- Business Relationship Affidavit
- Contractor's Statement about Equal Opportunity (ARP-211)
- Contractor's Certificate of Non-Segregated Facilities (ARP-212)
- Sub-Contractor's Certificate of Non-Segregated Facilities (ARP-212a)
- Bidder's/Supplier's List (ARP-249)
- Subcontractor Performance form (ARP-6100-3)
- Subcontractor Utilization form (ARP-6100-4)
- DBE documentation (if applicable)
- Statement of Qualifications

The consulting engineer is Cowan Group Engineering. The consulting engineer's contact person for this project is Michael Taylor, PE, with phone number 405.463.3369 and email michael@cowangroup.co.

BID PROPOSAL FORM

CITY OF SHAWNEE **BID NOTICE: ARP-23-0092-G**

THE UNDERSIGNED BIDDER, having examined the plans, specifications, the locations, arrangements, and conditions of roads, street, utilities and other facilities or appurtenances which affect or may be affected by the proposed work, the actual sites of the proposed improvements and being acquainted with and fully understanding: (1) the extent and character of the work covered by this proposal; (2) the locations and specified requirements of and for the proposed improvements and other items of work appurtenant thereto; and (3) the normal existing and probable construction difficulties, hazards or all other factors or conditions which may or may not be apparent, which may affect or be affected by the specified work.

HEREBY PROPOSES to furnish all required materials, supplies, equipment, tools, and plant; to perform all necessary labor; and to construct, erect, equip, and complete all work stipulated in, required by, and in accordance with the contract documents hereto attached and the specifications referred to therein (as altered, changed, or modified by any and all addenda thereto), for and in connection with the Contract for which this proposal is herein submitted for and in consideration of the prices set out herein.

The undersigned bidder hereby agrees to furnish the required Performance Bond, Statutory Bond, Maintenance Bond, and evidence of insurance and to enter into a contract within fifteen (15) days after the acceptance of this proposal, and further agrees to complete the work in 90 days (stipulated in the Contract Agreement) from the date of the issuance by the City's Engineer of a Work Order authorizing commencement of work.

Attached hereto is a Certified Check, Cashier's Check or Bidder's Surety Bond in the amount of: _____ DOLLARS \$ _____ which the undersigned agrees is to be forfeited to and become the property of the City of Shawnee, as liquidated damages, should this proposal be accepted and the Contract be awarded to him, he fails to enter into a Contract in the form prescribed and to furnish the required bonds and evidence of insurance within fifteen (15) days as above stipulated, but otherwise the proposal guarantee shall be returned to the undersigned upon the signing of the Contract and delivery of the approved bonds and evidence of insurance to the City of Shawnee.

DATED this _____ day of _____ 20 _____.

Signature: _____

Name and Title: _____

Company: _____ Circle One: Corporation Partnership Individual

Address: _____

Phone: _____ Fax: _____

E-mail Address: _____

Federal Tax I.D. _____

Attest: _____

Secretary

Corporate Seal

(if applicable)

HAYES STREET WATERLINE REPLACEMENT

BID SCHEDULE: ARP-23-0092-G

ITEM NO.	ITEM	UNIT	QTY	UNIT PRICE	TOTAL COST
1	MOBILIZATION	LSUM	1		
2	CLEARING & GRUBBING	LSUM	1		
3	8" HDPE DR11 PIPE BY TRENCHING	LF	1357		
4	24" HDPE DR11 PIPE BY TRENCHING	LF	17		
5	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING	LF	203		
6	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING (SLICK BORE)	LF	259		
7	SERVICE LINE (SHORT)	EA	1		
8	SERVICE LINE (LONG)	EA	1		
9	8" 11.25-DEGREE BEND	EA	2		
10	8" 45-DEGREE BEND	EA	6		
11	8" 90-DEGREE BEND	EA	5		
12	24" X 24" TEE	EA	2		
13	24" X 8" TEE	EA	1		
14	8" X 8" TEE	EA	6		
15	8" X 8" TAPPING SLEEVE & VALVE W/ BOX	EA	1		
16	6" X 6" TAPPING SLEEVE & VALVE W/ BOX	EA	5		
17	4" X 4" TAPPING SLEEVE & VALVE W/ BOX	EA	2		
18	24" GATE VALVE W/ BOX	EA	2		
19	8" GATE VALVE W/ BOX	EA	2		
20	24" X 8" REDUCER	EA	2		
21	8" X 6" REDUCER	EA	6		
22	8" X 4" REDUCER	EA	2		
23	24" BLIND FLANGE	EA	2		
24	6" PLUG	EA	5		
25	4" PLUG	EA	2		
26	2" AIR RELEASE VALVE	EA	1		
27	24" HDPE MJ ADAPTER	EA	4		
28	8" HDPE MJ ADAPTER	EA	3		
29	FIRE HYDRANT ASSEMBLY	EA	2		
30	REMOVE & REPLACE ASPHALT PAVEMENT	SY	214		
31	REMOVE & REPLACE GRAVEL DRIVE	SY	24		
32	REMOVE & REPLACE CONCRETE DRIVE	SY	15		
33	SOLID SLAB SOD	SY	456		
34	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	LSUM	1		
35	STORMWATER POLLUTION PREVENTION PLAN	LSUM	1		
36	TEMPORARY EROSION AND SEDIMENT CONTROL	LSUM	1		
37	DISINFECTION AND TESTING	LSUM	1		

ALL ITEMS TO INCLUDE ALL APPURTENANCES NECESSARY TO PROVIDE A COMPLETE AND OPERABLE SYSTEM AS DESCRIBED IN THE PLANS AND SPECIFICATIONS.

TOTAL BASE BID \$ _____

TOTAL BASE BID IN WORDS _____

Bidder's Statement about: Equal Opportunity Clause (ARP-211)

Mark one:

- ☐ I have participated in previous contract(s) or subcontract(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375 or preceding Executive Orders 10925 and 11114. I have filed all reports due under the requirements contained in 40 CFR, Part C, 8.11.
- ☐ I have not participated in previous contract(s) subject to the equal opportunity clause under Executive Orders 11246 and 11375 or preceding Executive Orders 10925 and 11114.

- ☐ I will obtain a similar statement from any proposed subcontractor(s), when appropriate.

Bidder's Statement about: Non-Segregated Facilities (ARP-212 and ARP-212a)

- ☐ I hereby certify that I do not and will not maintain any facilities provided for my employees in a segregated manner or permit my employees to perform their services at any location under my control where segregated facilities are maintained; and that I will obtain a similar certification prior to the award of any subcontract exceeding \$10,000 which is not exempted from the equal opportunity clause.

Bidder's Statement about: Bonds

- ☐ I hereby certify that I will obtain and provide a Bid Bond along with my Bid.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Performance Bond for 100% of the contract amount.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Statutory/Payment Bond for 100% of the contract amount.
- ☐ I hereby certify that, in the event of being awarded a Contract, I will provide a Maintenance Bond for at least 1 year after construction completion, and 100% of the contract amount

Bidder's Statement about: sam.gov registration

Mark one:

- ☐ I have registered in SAM.gov and my status is "active".
- ☐ I am not currently registered in SAM.gov, but I will be registered and holding an "active" status prior to the beginning of any construction.

- ☐ I certify that I will actively review the SAM.gov status of all of the subcontractors in this work to verify they are registered and their status is "active".

Bidder's Statement about: Davis Bacon Act

If the total project cost exceeds \$10,000,000 (ten million dollars):

- ☐ I hereby certify that all of my employees will be paid according to the Davis Bacon Act.

Name and Title of Prospective Prime Contractor's Representative

Signature of Prospective Prime Contractor's Representative

Name and address of Prospective Prime Contractor

AFFIDAVITS

State of _____ ss.
County of _____

_____, of lawful age, being first duly sworn, on oath says that (s)he is the agent authorized by the bidder to submit the attached bid.

Non-Collusion

Affiant further states that the bidder has not been a party to any collusion among bidders in restraint of freedom of competition by agreement to bid at a fixed price or to refrain from bidding; or with any government official or employee as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contract; or in any discussions between bidders and any government official concerning exchange of money or other value for special consideration in the letting of a contract; that the bidder/contractor had not paid, given or donated or agreed to pay, give or donate to any officer or employee of the _____ (or other entity) any money or other thing of value, either directly or indirectly in the procurement of a contract or pursuant to this bid.

Business Relationships

Affiant further states that the nature of any partnership, joint venture, or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with the architect, engineer, or other party to the project is as follows:

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the bidding company and any officer or director of the architectural or engineering firm or other party to the project is as follows:

Affiant further states that the names of all persons having any such business relationships and the positions they hold with their respective companies or firms are as follows:

If none of the business relationship herein above mentioned exists, affiant should so state.

Subscribed and sworn to before me this ____ day of _____, 20 ____.

Notary Public Signature

My Commission Expires: _____

ARP-249 BIDDERS/SUPPLIERS LIST

To be completed by Project Owner with documentation from all bidding Prime Contractors & Subcontractors
(List of all firms that bid or quote on Prime Contracts and Subcontracts on the project including Services and Supplies)

Project Name: _____ OWRB Project Number: ARP- ____ - ____ - ____

Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes No	If <u>utilized</u> and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
DBE: Yes No	If <u>yes</u> , MBE or WBE? _____ Check one: Construction _____ Equipment _____ Services _____ Supplies _____ ARP 6100-3 form is <u>required</u> for all DBEs that bid/quote, even if not utilized. <u>Submit with Bidders List.</u> If <u>utilized</u> submit the following with Bidders List: - A copy of the companies MBE or WBE certificate is <u>required</u>. - ARP 6100-4 form is also <u>required</u>.

Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes No	If <u>utilized</u> and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
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Company Name:	
Address:	
Contact Name:	
Phone:	
Email:	
Quote/Bid Amount (\$)	
Date:	
Utilized: Yes No	If <u>utilized</u> and >\$10,000 then ARP 212a form is required (from all subcontractors and suppliers).
DBE: Yes No	If <u>yes</u> , MBE or WBE? _____ Check one: Construction _____ Equipment _____ Services _____ Supplies _____ ARP 6100-3 form is <u>required</u> for all DBEs that bid/quote, even if not utilized. <u>Submit with Bidders List.</u> If <u>utilized</u> submit the following with Bidders List: - A copy of the companies MBE or WBE certificate is <u>required</u>. - ARP 6100-4 form is also <u>required</u>.

STATEMENT OF QUALIFICATIONS:

Bidder

Address

Similar Projects Completed by Bidder:

1. NAME OF PROJECT: _____
OWNER: _____ ADDRESS: _____
DATE STARTED: _____ DATE COMPLETED: _____
APPROX. QUANTITIES OF MAJOR ITEMS: _____

VALUE OF CONTRACT: _____
2. NAME OF PROJECT: _____
OWNER: _____ ADDRESS: _____
DATE STARTED: _____ DATE COMPLETED: _____
APPROX. QUANTITIES OF MAJOR ITEMS: _____

VALUE OF CONTRACT: _____
3. NAME OF PROJECT: _____
OWNER: _____ ADDRESS: _____
DATE STARTED: _____ DATE COMPLETED: _____
APPROX. QUANTITIES OF MAJOR ITEMS: _____

VALUE OF CONTRACT: _____
4. OTHER PROJECT REFERENCES: _____

NOTE: THIS FORM IS TO BE RETURNED WITH THE BID.

BID BOND

We, the undersigned, _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto **City of Shawnee**, as Owner, in the penal sum of _____ for the payment of which, well and truly to be made, hereby jointly and severally bind ourselves, our successors and our assigns.

Signed this _____ day of _____, _____.

The condition of the above obligation is such that, whereas the Principal has submitted to **City of Shawnee**, a certain bid, attached hereto and hereby made a part hereof, to enter into a contract, in writing, for the **Hayes Street Waterline Replacement**;

NOW, THEREFORE, if said bid shall be rejected or if said bid shall be accepted and the Principal shall execute and deliver a contract in the form of the contract attached hereto (properly completed in accordance with said bid) and shall furnish a bond for faithful performance of said contract and for the payment of all persons performing labor or furnishing materials in connection therewith and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void; otherwise, the same shall remain in force and effect, it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bonds shall in no way be impaired or affected by any extension of the time within which the Owner may accept such bid and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers the day and year first set forth above.

Principal

Surety

By:_____

ATTEST: (if by corporation)

Type Name & Title

Corporate Seal

NOTE: THIS FORM IS TO BE RETURNED WITH THE BID.

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____
of, _____, a corporation duly organized under the laws of the State
of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto the City of
Shawnee, hereinafter call the Obligee, in the sum of _____
Dollars (\$_____), for the payment of which sum well and truly to be made, the said Principal
and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____, for Hayes Street Waterline Replacement, all in compliance with the plans and specifications therefore, made a part of said Contract and on file in the office of Cowan Group Engineering, LLC, 7100 N. Classen Blvd., Suite 500, Oklahoma City, OK 73116.

WHEREAS, this bond is given in compliance with Title 61, Oklahoma Statutes 2001, Section 113(B)(3).

NOW THEREFORE, if said Principal shall pay or cause to be paid to Obligee all damage, loss, and expense which may result by reason of defective materials and/or workmanship in connection with said work, occurring within a period of one (1) year after acceptance of said project by Obligee; and if Principal shall pay or cause to be paid all labor and materials, including the prime contractor and all subcontractors; and if Principal shall save and hold Obligee harmless from all damages, loss, and expense occasioned by, or resulting from, any failure whatsoever of said Principal, then this obligation shall be null and void, otherwise to be and remain in full force and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said Contract and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in 4 counterparts, each of which shall be deemed an original,
this ____ day of _____, 2023.

_____	(	_____
WITNESS AS TO PRINCIPAL	(	PRINCIPAL
_____	(	BY: _____
_____	(	_____
WITNESS AS TO SURETY	(	SURETY
_____	(	BY: _____
_____	(	ATTORNEY-IN-FACT

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Oklahoma. Attach a certified Copy of the Power of Attorney.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____
of, _____, a corporation duly organized under the laws of the State
of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto the City of
Shawnee, hereinafter call the Obligee, in the sum of _____
Dollars (\$_____), for the payment of which sum well and truly to be made, the said Principal
and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
for the Hayes Street Waterline Replacement, all in compliance with the plans and specifications therefore, made
a part of said Contract and on file in the office of Cowan Group Engineering, 7100 N. Classen Blvd., Suite 500,
Oklahoma City, OK 73116.

WHEREAS, this bond is given in compliance with Title 61, Oklahoma Statutes 2001, Section 113(B)(2).
NOW THEREFORE, if said Principal shall, in all particulars, well, truly and faithfully perform and abide by said
Contract and each and every covenant, condition, and part thereof, and shall fulfill all obligations resting upon said
Principal by the terms of said Contract and said specifications, and if said Principal shall protect and save harmless
said Obligee from any pecuniary loss resulting from the breach of any of the items, covenants and conditions of said
Contract resting upon said Principal, the this obligation shall be null and void, otherwise to be and remain in full force
and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said Contract
and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or
any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in 4 counterparts, each of which shall be deemed an original,
this ____ day of _____, 2023.

_____	(	_____
	(	PRINCIPAL
WITNESS AS TO PRINCIPAL	(	
	(	BY: _____
_____	(	_____
	(	SURETY
WITNESS AS TO SURETY	(	
	(	BY: _____
	(	ATTORNEY-IN-FACT

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list
(Circular 570 as amended) and be authorized to transact business in the State of Oklahoma. Attach a certified Copy
of the Power of Attorney.

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____
of, _____, a corporation duly organized under the laws of the State
of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto the City of
Shawnee, hereinafter call the Obligee, in the sum of _____
Dollars (\$_____), for the payment of which sum well and truly to be made, the said Principal
and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
for the Hayes Street Waterline Replacement, all in compliance with the plans and specifications therefore, made
a part of said Contract and on file in the office of Cowan Group Engineering, LLC, 7100 N. Classen Blvd., Oklahoma
City, OK 73116.

WHEREAS, this bond is given in compliance with Title 61, Oklahoma Statutes 2001, Sections 1 and 113(B)(1).
NOW THEREFORE, if said Principal shall fail or neglect to pay all indebtedness incurred by said Principal or
subcontractors of said Principal who perform work in the performance of such contract, for labor and materials and
repairs to and parts for equipment used and consumed in the performance of said contract after the same becomes
due and payable the person, firm, or corporation entitled thereto may sue and recover on this bond, the amount so
due and unpaid.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said Contract
and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or
any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in 4 counterparts, each of which shall be deemed an original,
this ____ day of _____, 2023.

	(	
	(	PRINCIPAL
	(	
_____ WITNESS AS TO PRINCIPAL	(	BY: _____
	(	_____ SURETY
	(	
_____ WITNESS AS TO SURETY	(	BY: _____
	(	ATTORNEY-IN-FACT

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list
(Circular 570 as amended) and be authorized to transact business in the State of Oklahoma. Attach a certified
Copy of the Power of Attorney

APPLICATION AND CERTIFICATE FOR PAYMENT

PROJECT: HAYES STREET WATERLINE REPLACEMENT

TO: (OWNER): CITY OF SHAWNEE

ENGINEER: Cowan Group Engineering, LLC

CONTRACTOR:

CONTRACT FOR:

APPLICATION DATE:

APPLICATION NO:

PERIOD FROM:

TO:

CHANGE ORDER SUMMARY

Application is made for Payment, as shown below, in connection with the Contract. The present status of the account for this Contract is as follows:

Change Orders approved		ADDITIONS \$	DEDUCTIONS \$	ORIGINAL CONTRACT SUM	\$ _____
in previous months by					
Owner					
TOTAL				Net change by Change Orders	\$ _____
Subsequent Change Orders				CONTRACT SUM TO DATE	\$ _____
No. Approved					
(Date)					
				TOTAL COMPLETED TO DATE	\$ _____
				RETAINAGE _____ %	\$ _____
				TOTAL EARNED LESS RETAINAGE	\$ _____
				LESS PREVIOUS CERTIFICATES FOR PAYMENT	\$ _____

TOTALS

Net change by Change Orders \$ _____

CURRENT PAYMENT DUE \$ _____

The undersigned Contractor certifies that the work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by him for work for which previous Certificates for Payment were issued and payments received from the Owner, and that the current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED. \$ _____

INSPECTOR:

By: _____

ENGINEER:

By: _____

OWNER:

By: _____

Item No.	Description of Item	Scheduled Quantities	Unit Price	<u>Quantities of Work Completed</u>				
				<u>Previous Applications</u>		<u>This Application</u>		Amount Completed to Date
				Quantities	Amount	Quantities	Amount	

Subtotal or Total

CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS

THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES; CONSULTATION WITH AN ATTORNEY IS ENCOURAGED WITH RESPECT TO ITS COMPLETION OR MODIFICATION.

TO OWNER: **City of Shawnee**
16 W. 9th Street
Shawnee, OK 74822-1448

PROJECT: Hayes Street Waterline Replacement

CONTRACT DATED: _____

STATE OF: _____

COUNTY OF: _____

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered against any property of the Owner arising in any manner out of the performance of the Contract referenced above:

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

The following supporting documents should be attached hereto if required by Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens.

CONTRACTOR:
(Name and address)

BY: _____
(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn before me on this date:

Notary Public: _____

My Commission Expires: _____

CLAIM OR INVOICE AFFIDAVIT

State of _____ ss.
County of _____

The undersigned (engineer or supervisory official), of lawful age, being first duly sworn, on oath says that this (invoice, claim, or contract) is true and correct. Affiant further states that the (work, services, or materials) as shown by this invoice or claim have been (completed or supplied) in accordance with the plans, specifications, orders, or requests furnished to the affiant. Affiant further states that (s)he has made no payment, given, or donated or agreed to pay, give, or donate, either directly or indirectly, to any elected official, officer, or employee of the State of Oklahoma, of money or any other thing of value to obtain payment or the award of this contract.

Engineer/Supervisory Official signature

Subscribed and sworn to before me this ____ day of _____, 20 ____.

Notary Public signature

My Commission Expires: _____

NOTICE OF AWARD

Date: ____/____/____

Project: _____

Grant#: ARP-____-____-____

The _____ has considered the bid submitted by

Owner
_____ for the above referenced project in response to the
Contractor
Advertisement for Bids dated ____/____/____ and Information for Bidders. You are hereby notified
that your bid has been accepted for items in the amount of \$ _____.

You are required per the Information for Bidders to execute the Agreement and furnish the required Contractor's Performance Bond, Statutory Bond, Maintenance Bond, and Certificate of Insurance within ____ calendar days from the date of this Notice. If you fail to provide these in the specified time, the Owner will be entitled to consider all your rights arising out of the Owner's acceptance of your Bid as abandoned and as a forfeiture of your Bid Bond. The Owner will be entitled to such other rights as may be granted by law.

Owner's Authorized Representative signature

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged by _____,
Contractor's Representative name

Authorized Representative of _____
Contractor

Contractor's Authorized Representative signature

____/____/____
Date

AGREEMENT

This Agreement made this ____ day of _____, 20__ between _____
(hereinafter called the Owner) and _____ (hereinafter called the Contractor).

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The Contractor will commence and complete the work for:

_____.

2. The Contractor will furnish all of the materials, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described herein.

3. The Contractor will commence the work required by the Contract documents within ____ calendar days after the date of the Notice to Proceed and will complete the same within ____ calendar days unless the period for completion is extended otherwise.

4. The Contractor agrees to perform all the work described in the Contract documents and comply with the terms therein for the sum of \$ _____ or as shown in the Bid Schedule.

5. The term "Contract documents" means and includes the following:

- | | |
|--------------------------------------|------------------------------|
| (A) Advertisement for Bids | (I) Standard Requirements |
| (B) Information for Bidders | (J) Statutory Bond |
| (C) Bid Proposal | (K) Performance Bond |
| (D) Bid Schedule | (L) Maintenance Bond |
| (E) Business Relationships Affidavit | (M) Certificate of Insurance |
| (F) Non-collusion Affidavit | (N) Notice of Award |
| (G) Bid Bond | (O) Notice to Proceed |
| (H) Agreement | (P) Change Order |
- (Q) Drawings prepared by _____.
Numbers ____ through ____ and dated ____/____/____.
- (R) Specifications prepared by _____, dated ____/____/____.
- (S) ADDENDA:
No. _____, dated ____/____/____ No. _____, dated ____/____/____
No. _____, dated ____/____/____ No. _____, dated ____/____/____

6. The Owner will pay to the Contractor in the manner and at such times as set forth in the Standard Requirements such amounts as required by the Contract documents.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

8. It is understood that the following are also required of the Contractor in performance of this contract:

- a. Liquidated damages for failure to complete the work within the time specified shall be assessed at the rate of \$_____ per day for each additional calendar day until the work is completed.
- b. Contractor shall comply with the Underground Facilities Damage Prevention Act (63 O.S. 42.1 et seq.).

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in _____ copies each of which shall be deemed an original on the date first above written.

Owner's Authorized Representative	Title	Signature	____/____/____ Date
Attested by	Title	Signature	____/____/____ Date
Contractor's Authorized Representative	Title	Signature	____/____/____ Date
Attested by	Title	Signature	____/____/____ Date

NOTICE TO PROCEED

Date: ____/____/____

Project: _____

Grant#: ARP-____-____-____

Notice is hereby given to _____ to commence work on the above
Contractor
referenced project on or before ____/____/____. In accordance with the Agreement dated
____/____/____, you are to complete the work within ____ consecutive calendar days. The date of
completion of all work is ____/____/____.

Owner's Authorized Representative signature

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged by _____,
Contractor's Representative name

Authorized Representative of _____
Contractor

Contractor's Authorized Representative signature

____/____/____
Date

**CERTIFICATE OF APPROVAL OF CONTRACTS AND BONDS BY LOCAL
ATTORNEY**

I, the undersigned _____,
the duly authorized and acting legal representative of the _____,
after careful examination of the Contract between this Entity and
_____, and the surety bonds given by the contractor in
connection with the performance of said contract, do hereby certify that:

1. Each of the aforesaid agreements has been duly executed by the proper parties thereto, acting through their duly authorized representatives.
2. Said representatives have full power and authority to execute said agreements on behalf of the respective parties named therein.
3. The foregoing contract and surety bonds, as applicable, constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Dated this ____ day of _____, 20 ____.

Attorney's signature

Disadvantaged Business Enterprise Program (DBE) Guidance (ARP-267)

Important note: All OWRB ARPA information can be found at: <https://www.owrb.ok.gov/financing/grant/arpa.php>

The OWRB is administering the State of Oklahoma's ARPA funding for various wastewater and water quality projects. The ARPA program is federally funded, and one of the conditions of federal grant awards is for recipients and sub-recipients (i.e., prime contractors and subcontractors) make a good-faith effort to award a fair share of work to DBEs who are small business enterprises (SBEs), minority business enterprises (MBEs) and women's business enterprises (WBEs).

To ensure compliance with federal DBE requirements, both Grant Recipients (Project Owners) and Prime Contractors must undertake the good faith efforts to provide opportunities for DBE firms to participate in contracts. Federal regulations require evidence of the demonstration of the six good faith efforts in trying to achieve the DBE participation goals. The Oklahoma Department of Transportation has a Directory of Certified DBE Firms. This directory can be accessed at <https://okdot.gob2g.com/Default.asp>

Good Faith Efforts: EPA's Good Faith Efforts for the Clean Water State Revolving Fund (CWSRF) will be used for the OWRB ARPA grant program. The following good faith efforts will apply to all procurement categories involving ARPA funds (See Appendices A& B).

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For state and local government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For state and local government recipients, this will include dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.
5. Use the services and assistance of the Small Business Administration (SBE) and the Minority Business Development Agency of the Department of Commerce.
6. If the prime contractor awards subcontracts, require the prime contractor to take the above steps.

Please submit all information to:
Financial Assistance Division, OWRB
3800 North Classen Blvd, Oklahoma City, OK 73118
Phone: 405.530.8800, FAX: 405.530.8900
<http://www.owrb.ok.gov>

Disadvantaged Business Enterprise Program (DBE) Guidance

Demonstration of the Six Good Faith Efforts. See Appendices A & B for additional bidding instructions and contract administrative provisions.

A: Project Owners are required to create and maintain a bidders list in accordance with Subpart E of Part 33 of EPA's Disadvantaged Business Enterprise Program rule, (§ 33.501(b)). This requirement will be adopted for projects funded through the OWRB ARPA program. The list must include all firms that bid or quote on prime contracts, or bid or quote subcontracts, on competitively bid ARPA funded projects. The bidders list must only be kept until the project period for the identified grant has ended. The following information must be obtained from all prime and subcontractors and can be provided on Bidders List (ARP-249):

1. Entity's name with point of contact
2. Entity's mailing address, telephone number, and e-mail address
3. The procurement on which the entity bid or quoted, and when; and
4. Entity's status as an MBE/WBE or non-MBE/WBE

B: Project Owners are required to undertake good faith efforts. Steps 1 through 5 can be utilized during the project planning, design and/or pre-bidding phase, to assure that qualified DBE firms have procurement opportunities in construction, equipment, services, and supplies.

To provide procurement opportunities to DBE Firms, the Project Owner should undertake the following:

- Conduct pre-bid meetings to inform potential bidders/contractors about DBE requirements and provide guidance in undertaking the required good faith efforts.
- Use listings of certified DBEs from the U.S. Small Business Administration (SBA), Oklahoma Department of Transportation (ODOT), etc., to solicit DBE firms as prime contractors whenever they are potential candidates. Project Owners should advertise in minority, local and regional newspapers.
- Invite DBE firms, where appropriate, to meetings, conferences etc., to inform them of procurement opportunities and develop, where possible, reasonable contract and delivery schedules that encourage and facilitate participation by DBE's. This includes, whenever possible, a minimum of 30 calendar days for bids or request for proposals.
- Determine if a project can be broken down into smaller components/contracts to allow opportunity for DBE firms to bid both as prime-contractors and as sub-contractors.
- For projects broken down into smaller components (e.g., painting, roofing, excavation, pipe laying, etc.) ensure that the delivery schedules are reasonable.
- Encourage DBE firms, where appropriate, to apply as a consortium of DBEs, when a contract is too large for one of these firms to handle individually.
- Require prime contractor to complete ARP Form 6100-3 & ARP Form 6100-4 and submit with bid proposal to Project Owner.

C: Project Owners must require the prime contractor to undertake steps 1 through 5 of the Good Faith Efforts in providing DBE firms opportunity for sub-contracts.

Project Owner must provide the DBE Guidance (ARP-267) and associated forms to Prime Contractors for utilization of DBEs in the bidding documents.

APPENDIX A: Project Owner, Prime Contractor and Sub-Contractor Responsibilities

EPA's Disadvantaged Business Enterprise Program rule applies to contract procurement actions funded in part by EPA assistance agreements awarded after May 27, 2008. The rule is found at Federal regulation Title 40, Part 33. Specific responsibilities are highlighted below.

Project Owner Responsibilities:

- Include OWRB's DBE guidance (ARP-267) in each contract with a primary contractor.
- Employ the six Good Faith Efforts during prime contractor procurement (§33.301).
- Require prime contractor to comply with the following prime contractor requirements of Title 40 Part 33:
 - a) To employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).
 - b) To provide **ARP form 6100-2 – DBE Subcontractor Participation Form** to all DBE subcontractors (Optional submittal by subcontractors) (§ 33.302(e)).
 - c) To submit **ARP form 6100-3 – DBE Program Subcontractor Performance Form** and **ARP form 6100-4 – DBE Program Subcontractor Utilization Form** with bid package or proposal. (§ 33.302 (f) and (g)).
 - d) To pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient (§ 33.302(a)).
 - e) To notify recipient in writing by its prime contractor prior to any termination of a DBE subcontractor for convenience by the prime contractor (§ 33.302(b)).
 - f) To employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
 - g) To employ the six good faith efforts described in § 33.301 even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
 - h) Provide Project Owner DBE participation achievements with bid proposal – this includes all information necessary for the Owner to complete the Bidders List (ARP-249). The Owner may allow the prime contractor to complete the Bidders List (ARP-249); however, the Owner is responsible for review and submittal.
- Maintain records documenting compliance with the requirements of Title 40 Part 33, including Bidders List (ARP-249) and documentation of the good faith efforts (§ 33.301(a)) by the project owner and prime contractor.

Prime Contractor Responsibilities:

- Employ the six Good Faith Efforts steps in paragraphs (a) through (e) of § 33.301 if the prime contractor awards subcontracts (§ 33.301(f)).

- Provide ARP form 6100-2 – *DBE Program Subcontractor Participation Form* and ARP form 6100-3 – *DBE Program Subcontractor Performance Form* to each DBE subcontractor as part of the bid conference and prior to opening of the contractor's bid or proposal (§ 33.302(e) and (f)). Complete ARP form 6100-4 – *DBE Program Subcontractor Utilization Form* (§ 33.302(g)).
- Submit to recipient with bid package or proposal the completed ARP form 6100-4, plus an ARP form 6100-3 for each DBE subcontractor used in the contractor's bid or proposal (§ 33.302(f) and (g)).
- Pay subcontractors for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the Project Owner (§ 33.302(a)).
- Notify the recipient in writing prior to prime contractor termination of a DBE subcontractor for convenience (§ 33.302(b)).
- Employ the six good faith efforts described in (§ 33.301) if soliciting a replacement subcontractor after a DBE subcontractor fails to complete work under the subcontract for any reason. (§ 33.302(c)).
- Employ the six good faith efforts described in (§ 33.301) even if the prime contractor has achieved its fair share objectives under subpart D of Part 33. (§33.302(d)).
- Provide Project Owner DBE participation achievements with bid proposal. This includes information necessary for Owner's completion of the Bidders List (ARP-249).
- Maintain records documenting its compliance with the requirements of Title 40 Part 33, including Bidders List (ARP-249) and documentation of the good faith efforts (§ 33.301(a)) by the project owner and prime contractor.

Subcontractor Responsibilities:

- May submit ARP form 6100-2 – *DBE Subcontractor Participation Form* to Debra Bradford, EPA Region 6 DBE Coordinator (§ 33.302(e)). Submitted if concerns with EPA funded project (e.g., termination, late payment, etc.)
- Must complete ARP form 6100-3 – *DBE Program Subcontractor Performance Form* and submit it to the prime contractor soliciting services from the subcontractor prior to the opening of bids for the prime contract.

Summary of ARP Forms

ARP Form	Requirement	Provided By	Completed By	Submitted To
6100-2: DBE Subcontractor Participation Form	Project Owners required to have prime contractors provide form to Subcontractors	Prime Contractors to DBE Subcontractors	DBE Subcontractors if concerns with EPA funded project (e.g., termination, late payment, etc.)	EPA Region 6 DBE Coordinator, Debora Bradford
6100-3: DBE Subcontractor Performance Form	Project Owners required to have prime contractors provide form to Subcontractors	Prime Contractors to DBE Subcontractors	DBE Subcontractors with Prime Contractor's Signature. Completed when bidding on a job.	Project Owners as part of a bid or proposal package
6100-4: DBE Subcontractor Utilization Form	Project Owners required to have prime contractors complete the form	Project Owners to Prime Contractors	Prime Contractors to indicate the utilization of a DBE.	Project Owners as part of bid or proposal

APPENDIX B: TITLE 40 PART 33 SUBPART C—GOOD FAITH EFFORTS

§ 33.102 When do the requirements of this part apply?

The requirements of this part apply to procurement under ARPA Grant program agreements performed entirely within the United States, whether by a Project Owner or its prime contractor, for construction, equipment, services, and supplies.

§ 33.106 What assurances must ARPA Grant program recipients obtain from their contractors?

The recipient must ensure that each procurement contract it awards contains the term and condition specified in Appendix A to this part concerning compliance with the requirements of this part.

§ 33.206 Is there a list of certified MBEs and WBEs?

The Oklahoma Department of Transportation has a Directory of Certified DBE Firms. This database can be found at this website: <https://okdot.gob2g.com/Default.asp>.

§ 33.301 What does this subpart require?

A recipient, including one exempted from applying the fair share objective requirements by § 33.411, is required to make the following good faith efforts whenever procuring construction, equipment, services, and supplies under an ARPA Grant program agreement, even if it has achieved its fair share objectives under subpart D of this part:

- a) Ensure DBEs are made aware of contracting opportunities fully practicable through outreach and recruitment activities. For State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.
- b) Make information on forthcoming opportunities available to DBE's, arrange periods for contracts, and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.
- c) Consider in the contracting process whether firms competing for large contracts could subcontract with DBE's. For state and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
- d) Encourage contracting with a consortium of DBE's when a contract is too large for one of these firms to handle individually.
- e) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce.
- f) If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs (a) through (e) of this section.

§ 33.302 Are there any additional contract administration requirements?

- a) Project Owners must require its prime contractor to pay its subcontractor for satisfactory performance no more than 30 days from the prime contractor's receipt of payment from the recipient.
- b) Its prime contractor must notify Project Owner in writing prior to any termination of a DBE subcontractor for convenience by the prime contractor.
- c) If a DBE subcontractor fails to complete work under the subcontract for any reason, the recipient must require the prime contractor to employ the six good faith efforts described in § 33.301 if soliciting a replacement subcontractor.
- d) A project owner must require its prime contractor to employ the six good faith efforts described in §33.301 even if the prime contractor has achieved its fair share objectives under §33.301 subpart D above.

- e) A recipient must require its prime contractor to provide ARP Form 6100-2—DBE Program Subcontractor Participation Form to all of its DBE subcontractors. ARP Form 6100-2 gives a DBE subcontractor the opportunity to describe the work the DBE subcontractor received from the prime contractor, how much the DBE subcontractor was paid and any other concerns the DBE subcontractor might have, for example reasons why the DBE subcontractor believes it was terminated by the prime contractor. DBE subcontractors may send completed copies of ARP Form 6100-2 directly to the appropriate EPA DBE Coordinator.
- f) A recipient must require its prime contractor to have its DBE subcontractors complete ARP Form 6100-3—DBE Program Subcontractor Performance Form. A recipient must then require its prime contractor to include all completed forms as part of the prime contractor's bid or proposal package.
- g) A recipient must require its prime contractor to complete and submit ARP Form 6100-4—DBE Program Subcontractor Utilization Form as part of the prime contractor's bid or proposal package.
- h) Copies of ARP Form 6100-2—DBE Program Subcontractor Participation Form, ARP Form 6100-3—DBE Program Subcontractor Performance Form and ARP Form 6100-4—DBE Program Subcontractor Utilization Form may be obtained from EPA OSDBU's Home Page on the Internet or directly from EPA OSDBU.
- i) A recipient must ensure that each procurement contract it awards contains the term and condition specified in the Appendix A concerning compliance with the requirements of this part. A recipient must also ensure that this term and condition is included in each procurement contract awarded by an entity receiving a grant under federal financial assistance agreement.

§ 33.410 Can a recipient be penalized for failing to meet its fair share objectives?

A recipient cannot be penalized or treated by EPA as being in noncompliance with this subpart, solely because its MBE or WBE participation does not meet its applicable fair share objective. However, EPA may take remedial action under § 33.105 for a recipient's failure to comply with other provisions of this part, including, but not limited to, the good faith efforts requirements described in subpart C of this part.

Source: Federal Requirements and Contract Provisions for Special Appropriation Act Projects, US Environmental Protection Agency, Region III, June 2008

**APPENDIX C: RESOURCE LISTING AND CONTACT INFORMATION
FOR UTILIZATION OF MINORITY AND WOMEN'S BUSINESS ENTERPRISES**

Resource Listing	Contact Information	Website if applicable
U.S. Small Business Administration (SBA) In addition to the national office, the SBA has local district and regional offices to assist small businesses in contracting with the public and private sector.	US Small Business Administration 409 3rd St, SW Washington DC 20416 Phone: 800-827-5722	https://www.sba.gov/
U. S. Small Business Administration (SBA) - OK. District Office	301 NW 6 th St. Oklahoma City, OK 73102 Phone: 405.609.8000	https://www.sba.gov/offices/district/ok/oklahoma-city
Minority Business Development Administration (MBDA): The MBDA is an agency within the U.S. Dept. of Commerce, created to foster the development and growth of minority businesses in the U.S. and coordinates resources in the public and private sectors to help MBEs.	1401 Constitution Ave NW Washington, D.C. 20230 Email: support@mbda.gov Phone: (202) 482-2000	http://www.mbda.gov/
Standard Industrial Classification Codes (SIC) or North American Industry Classification System (NAICS) codes visit the websites.	U.S. Bureau of Labor Statistics Postal Square Building, 2 Massachusetts Ave. NE Washington, DC 20212-0001 Phone: 1-202-691-5200	http://www.bls.gov/iag/tgs/iag_index_naics.htm
Oklahoma Department of Transportation (ODOT) and the <u>Minority/Disadvantaged Business Enterprise (ODOT – MBE/DBE)</u> . Project Owners and bidders may locate qualified M/WBE's through the MBE/WBE Directory	200 NE 21 st Street Oklahoma City, OK 73105 Phone: 405.521.2082	https://okdot.gob2g.com/Default.asp
US EPA Office of Small and Disadvantaged Business Utilization (OSDBU): advocates and advances the business, regulatory, and environmental compliance concerns of small and socio-economically disadvantaged businesses. The Small Business Vendor Profile System contains information of number of small and disadvantaged companies registered with OSDBU.	USEPA Office of Small Programs 1200 Pennsylvania Ave. NW Mail Code 1230T Washington, D.C. 20460 Phone: 202 566-2075	https://www.epa.gov/aboutepa/about-office-small-and-disadvantaged-business-utilization-osdbu Select "search the OSBP Registry" Click on the search criteria of interest (ethnicity, size, SIC, etc.)

National Black Chamber of Commerce	4400 Jenifer St NW #331, Washington, DC 20015 Phone: 202 466-6888 Fax: 202 466-4918 Email: info@nationalbcc.org	http://www.nationalbcc.org
U.S. Hispanic Chamber of Commerce	424 K St NW #401, Washington, DC 20005 Phone: (202) 842-1212	http://www.ushcc.com
National Association of Minority Contractors (NAMC)	910 17th Street, NW, Suite 413 Washington, DC 20006 Phone: 202.296.1600 info@namcnational.org	http://namcnational.org/
National Association of Women's Business Owners (NAWBO)	601 Pennsylvania Ave NW South Building, Ste 900 Washington, DC 20004 Phone: 800-556-2926 Fax: 202-403-3788	www.nawbo.org
National Minority Supplier Development Council, Inc. (NMSDC)	1359 Broadway, 10th Floor, Suite 1000 New York, NY 10018 Phone: (212) 944-2430 Fax: (212) 719-9611	http://www.nmsdc.org/
Native American Development Corporation (NADC) - provides technical assistance, financial lending opportunities, and champions small businesses	17 N. 26th St. Billings, MT 59101 Phone: (406) 259-3804 Fax: (406) 259-4569 Email: nadcptac@nadc-nabn.org	http://www.nadc-nabn.org/
City of Tulsa – Small Business Enterprise Program Maintains a list of Minority and Female business Enterprises that are certified through the “building Resources in Developing and Growing Enterprises	175 E. 2nd St. Tulsa, OK. 74103 Phone: (918) 596-7818	https://www.cityoftulsa.org/developmentbusiness/small-business-enterprise-program/ Click on the ‘member list’
Southwest Minority Supplier Development Council: Maintains lists of certified Minority Business Enterprises in Oklahoma	7301 Broadway Ext Ste 224, OKC, OK 73116 Phone: (405) 767-9900	http://www.smsdc.org/

National Association of Women in Construction (NAWIC)	327 S. Adams Street Fort Worth, TX 76104 Phone: 800-552-3506 817.877.5551 Fax: 817.877.0324	http://www.nawic.org/
Bureau of Indian Affairs - Maintains a list of Native American Contractors and Suppliers by Trade	P.O. Box 368 (1 Mile North on Hwy 281) Anadarko, OK 73005 Phone: (405) 247-6673 Fax: (405) 247-5611	https://www.bia.gov/as-ia/eed/division-economic-development/native-american-business-development
Oklahoma Department of Commerce Certification Programs and information	900 N Stiles Ave. Oklahoma City, OK 73104 Phone: (405) 815-6552 Toll-Free: (800) 879-6552	https://www.okcommerce.gov/doing-business/#business-services
Cherokee Nation Tribal Employment Rights Office - Maintains a directory of Indian-owned businesses	Cherokee Nation TERO Dept. P.O. Box 948 Tahlequah, OK 74465 Phone: (918) 453-5334 or Toll Free: 800-256-0671 ext. 5334	http://cherokeetero.com/

ARP-6100-2 DBE Subcontractor Participation Form

OWRB Financial Assistance Agreement Recipients must require prime contractors to provide this form to their DBE subcontractors. This form gives a DBE subcontractor the opportunity to describe work received and/or report any concerns regarding the project.

Subcontractor Name	Project Name	
Bid/Proposal No.		Point of Contact
Address		
Telephone No.	Email address	
Prime Contractor Name		Funding entity Oklahoma Water Resources Board

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Amount Received by Prime Contractor

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Subcontractor Signature	Print Name
Title	Date

ARP-6100-3 DBE Subcontractor Performance Form

This form is intended to capture the DBE₁ subcontractor's₂ description of work to be performed and the price of the work submitted to the prime contractor. OWRB Financial Assistance Agreement Recipients must require prime contractors to provide this form to their DBE subcontractors.

Subcontractor Name	Project Name
Bid/Proposal No.	Point of Contact
Address	
Telephone No.	Email Address
Prime Contractor Name	Funding Entity Oklahoma Water Resources Board

Contract Item Number	Description of Work Received from the Prime Contractor Involving Construction, Services , Equipment or Supplies	Price of Work Submitted to the Prime Contractor
DBE Certified By: ____ DOT ____ SBA ____ Other: _____		Meets/ exceeds EPA certification standards? ____ YES ____ NO ____ Unknown

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

Subcontractor Signature	Print Name
Title	Date

ARP-6100-4 DBE Subcontractor Utilization Form

This form is intended to capture the prime contractor's actual and/or anticipated use of identified certified DBE₁ subcontractors₂ and the estimated dollar amount of each subcontract. OWRB Financial Assistance Agreement Recipients must require their prime contractors to complete this form and include it in the bid or proposal package. Prime contractors should also maintain a copy of this form on file.

Prime Contractor Name	Project Name
Bid/Proposal No.	Point of Contact
Address	
Telephone No.	Email address
Funding Entity Oklahoma Water Resources Board	

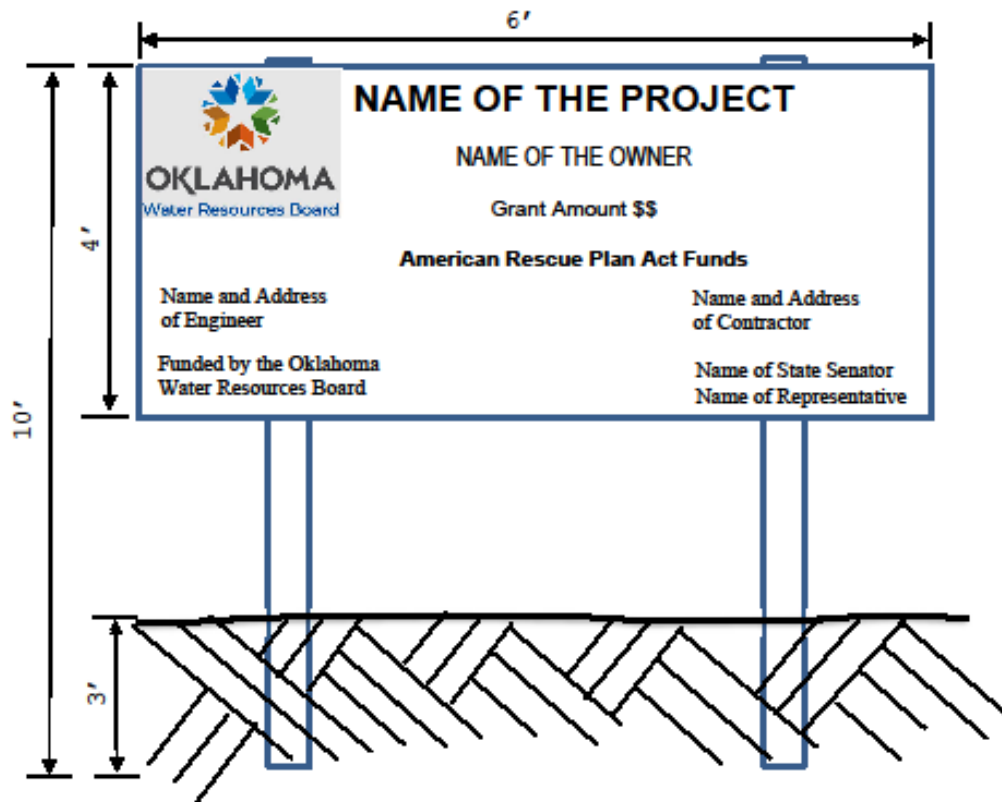
I have identified potential DBE certified Subcontractors	___ YES	___ NO	
If yes, please complete the table below. If no, please explain:			
Subcontractor Name/ Company Name	Company Address/ Phone/ Email	Est. Dollar Amt.	Currently DBE Certified?

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to utilize the subcontractors above. I am aware of that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 CFR Part 33 Section 33.302 (c).

Prime Contractor Signature	Print Name
Title	Date

PROJECT SIGN

- The general contractor shall erect and maintain for the life of the construction contract a suitable sign, 4' x 6' in size, and detailed hereon, lettered black on white background. Sign shall be professionally painted. Lettering to be appropriate size. No separate bid item. Sign shall be the general obligation of the Contractor.
- The OWRB logo is required on the project sign if the project is funded in part with OWRB Financial Assistance Program funds. The OWRB logo is available at <http://www.owrb.ok.gov/about/index.php> or may be provided directly by OWRB.
- Redwood Posts shall be 4" x 4" x 10' buried securely a minimum of 3 feet below ground.
- Sign face shall be constructed of 3/4" x 4' x 6' - 5 ply Dura-plywood board & mounted to Posts with four (4) 5/8" x 6" Carriage Bolts.



CONTRACT SPECIFICATIONS

A. General

1. This Contract is intended to, and hereby does, provide for complete in place, **Hayes Street Waterline Replacement (ARP-23-0092-G)**, including all necessary work and material for a total job, whether or not such work and material is shown or implied in the plans and specifications.
2. All construction and materials shall conform to the City of Shawnee Standard Specifications as contained herein. All work necessary to make for a complete and operable system as intended by these plans and specifications for which bid items are not provided, shall be considered incidental work and the cost thereof shall be included in other appropriate bid items.
3. The cost to include the furnishing and installation of all temporary sheeting, shoring, timbering and bracing required to maintain any excavation in a condition to furnish safe working conditions and to permit the safe and efficient installation of all items of contract work shall be included in other items of work. The CONTRACTOR shall further, at his own expense, shore up or otherwise protect all fences, buildings, walls, walks, curbs, or other property adjacent to any excavation which might be disturbed during the progress of the work. The CONTRACTOR will be held liable for any damage which may result to neighboring property from excavation or construction operations.
4. Whenever any excavation is carried beyond the lines and grades shown on the Contract Drawings, written in the Contract Documents, and/or given by the ENGINEER, the CONTRACTOR shall, at his own expense, refill all such excavated space with such materials and in such a manner as may be directed. Beneath and around concrete structures, space excavated without authority shall be thoroughly compacted when refilling, or if deemed necessary by the ENGINEER, shall be refilled with concrete at the CONTRACTOR'S expense.
5. If the materials encountered on any excavation are not suitable for structural foundations, or if necessary, to go an additional depth or width from that designated on the contract drawings to provide proper bearing for pipe and concrete, the CONTRACTOR shall make such additional excavations outside the regular limits of the work as may be directed by the ENGINEER. The cost of such additional excavation shall be merged into the appropriate unit price.
6. Excavated material shall be deposited so as to interfere as little as possible with the execution of the whole work or its several parts. Such material as cannot be placed in its final position in fills and embankment shall be removed to a temporary spoil bank, from which it shall later be taken and placed in embankment or fills.
7. Unsuitable and surplus excavated material not incorporated in the improvement shall be disposed of by the CONTRACTOR at his own expense unless otherwise designated in the project specifications, or on the contract drawings.
8. If private land is used by the CONTRACTOR as a spoil site, the CONTRACTOR shall obtain written permission from the OWNER or agent of the land agreeing to its use for this purpose and provide the project OWNER with a certified copy of such agreement.
9. The CONTRACTOR shall notify residents and business OWNERS of construction by distributing door hangers to each and every house, business, and /or occupied structure located

on the street or alley where the construction shall occur, at least 48 hours in advance of the commencement of construction.

B. Site Conditions

The CONTRACTOR shall be responsible for familiarizing himself with surface and subsurface conditions. The base bid as shown in the proposal shall include cost for unclassified excavating of earth, rock, dewatering, stabilizing unsuitable soils such as quicksand or other unsuitable materials, or any hazard that may be encountered. The cost for such work shall be included in the appropriate bid item. No additional compensation shall be given for such work. The CONTRACTOR shall satisfy himself as to the accuracy of all measurements before constructing any permanent structure.

C. Surveys

The CONTRACTOR shall develop and make all detailed surveys needed for construction such as slope stakes, batter boards, stakes for construction location and other working points, lines and elevations. The CONTRACTOR shall carefully preserve all benchmarks, reference points and stakes established by the ENGINEER and in case he causes damage or disturbance, he will be charged for the cost of replacement and shall be responsible for any mistakes that may be caused by their loss.

D. Utility Locations

The elevation and location of all utilities shown on the contract drawings were taken from public records. It shall be the duty of the CONTRACTOR to make final and exact determination of the location and extent of these utilities, and he will be liable for any expense resulting from damage to them. Unless otherwise indicated on the contract drawings or unless otherwise taken care of by the OWNER thereof, all utilities and all structures of any nature, whether below or above ground, that may be affected by the work shall be protected and maintained by the CONTRACTOR and shall not be disturbed or damaged by him during the progress of the work. Should the CONTRACTOR disturb, disconnect or damage any utility or any structure, all expenses of whatever nature arising from such disturbance or the replacement or repair thereof shall be borne by the CONTRACTOR. This provision shall apply whether or not said utility or structure is shown on the plans. All utility locations shown or not shown on these plans shall be the responsibility of the CONTRACTOR prior to excavation. Utility location telephone numbers are:

1-800-522-6543	Statewide
1-800-654-8349	Out of State

E. As-Built Records

The CONTRACTOR is required to keep a current record of all field changes on jobsite at all times. They shall be legibly marked on his plan and shall become property of the City of Shawnee prior to completion for purposes of constructing an as-built record of this project.

F. Arrangement and Charge for Water Furnished by the City

If the CONTRACTOR desires to use City water, he shall pay the rate established by City Ordinance for such service and he shall make complete and satisfactory arrangements with the City Utility Department for so doing. Flush meters will be used and the CONTRACTOR shall deposit the cost of the flush meter with the Utility Department and will pay for repairs and maintenance of the meter

for the period which he has the meter in use in his possession. CONTRACTOR shall be charged for the amount of water he uses, including any monthly minimum charge.

G. Use of Fire Hydrants

The CONTRACTOR or his employees shall not open, turn off, interfere with, attach pipe or hose to, or connect anything with any fire hydrant, stop valve or stop cock or tap any water-main belonging to the City unless duly authorized to do so by the OWNER.

H. Protection and Opening to Pedestrians and Traffic

The CONTRACTOR is required to receive permission from the CITY ENGINEER to close any traffic lanes or alleys or roads during construction. No road shall be permanently or temporarily closed without prior approval by the CITY ENGINEER. The CONTRACTOR shall conduct his work so as to interfere as little as possible with public travel, whether vehicular or pedestrian; whenever it is necessary to cross, obstruct, or temporarily close roads, driveways and walks, whether public or private. The CONTRACTOR shall, at his own expense, provide and maintain suitable and safe bridges, detours, barricades, signing, lighting, striping and/or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to OWNERS of private drives before interfering with them; provided, however, that such maintenance of traffic will not be required at any point where the CONTRACTOR has obtained permission from the OWNER and/or tenant of private property, or from the authority having jurisdiction over public property involved to obstruct traffic at any designated point thereon and for the duration of whatever period of time as may be agreed upon. All work pertaining to traffic control shall be in accordance with the latest revision of "The Manual on Uniform Traffic Control Devices."

I. Materials and Construction

All materials and construction shall be in accordance with the City of Shawnee Standard Specifications for Construction (Standard Specifications) and Construction Standards as contained herein.

J. Testing and Acceptance Requirements

The CONTRACTOR shall be responsible for paying the cost of all testing outlined in the Standard Specifications. Testing shall be performed by a qualified testing laboratory approved by the OWNER.

K. Protection and Preservation of Property and Landscape

The CONTRACTOR will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours. The CONTRACTOR shall furnish such watchmen, guards, fences, warning signs, lights and walkways, and shall take all other precautions as shall be necessary to prevent damage to persons or property. All structures and improvements damaged by the CONTRACTOR, his employees, SUBCONTRACTORS, or agents, shall be restored to a condition as good as when he entered upon the work. The duty of the ENGINEER to conduct construction inspection of the CONTRACTOR'S performance does not include any review of the adequacy of the CONTRACTOR'S safety measures in, on, or near the construction site or sites. The ENGINEER has not been retained or compensated to provide design and construction review services relating to the CONTRACTOR'S safety precautions or to means, methods, techniques, sequences, or procedures required for the CONTRACTOR to perform his work.

No trees shall be removed on the site of the work where outside of excavation limits, except where their removal is authorized by the ENGINEER. Where trees are on the line of the trench or adjacent thereto such trees and roots shall be removed and disposed of by and at the expense of the CONTRACTOR.

Trees remaining at the end of construction shall be adequately protected from permanent damage by reason of construction operations. Trimming of remaining trees where required shall be as directed by the ENGINEER.

All turf, shrubbery, and other landscaping, damaged or removed by the CONTRACTOR shall be replaced under the direction and to the satisfaction of the OWNER, by and at the expense of the CONTRACTOR.

Any traffic signal loop wire, pull box, or conduit that is damaged or destroyed shall be replaced under the direction and to the satisfaction of the OWNER, by and at the expense of the CONTRACTOR.

L Administrative Matters

All permits, fees, and licenses required under City Ordinance not regulated by state or federal law will be collected.

DIVISION 01 – GENERAL REQUIREMENTS

SECTION 01 00 00 – GENERAL CONDITIONS

PART 1 – GENERAL

1.1 DESCRIPTION

The General Conditions shall govern and control all work to which they apply; however, since these specifications are of a general nature, they may refer to work not found in this project, in which case such non-applicable stipulations will have no meaning in this Contract. In case of conflict between the General Conditions and the Special Conditions, the Special Conditions shall govern. In case of conflict with either the General or Special Conditions by Supplemental Conditions of a funding agency such as EPA, FMHA, EDA or HUD, the Supplemental Conditions will govern.

PART 2 – DEFINITIONS

2.1 DEFINITIONS

DEFINITIONS: Whenever the words defined below, or pronouns used in their stead occur hereinafter, they shall have the meanings given as follows:

- A. "OWNER" shall mean the City of Shawnee or Shawnee Municipal Authority.
- B. "ENGINEER" shall mean Cowan Group Engineering, LLC, who has been employed by the OWNER for this work, or his duly authorized agent.
- C. "Inspector" shall mean the engineering or technical inspector or inspectors duly authorized by the ENGINEER, limited to the particular duties entrusted to him or them.
- D. "CONTRACTOR" shall mean the person, persons, partnership, company, firm or corporation entering into this contract for the performance of the work, or the agent appointed to act for such party.
- E. "Specification" shall mean, collectively, all of the terms and stipulations contained in the written portion of information furnished.
- F. "Drawings or Plan Sheets" shall mean, collectively, all of the drawings pertaining to the contract and made a part thereof, and also such supplementary drawings as the ENGINEER may issue from time to time in order to clarify the drawings, or for the purpose of showing authorized changes in the work, or for showing details which are not shown thereon.
- G. The term "Grade" used in these Specification is understood to refer to and indicate the established elevations of the paving, flow line of waterlines and other appurtenances as shown on the drawings.
- H. Whenever in these CONTRACT DOCUMENTS the words "as ordered", "as directed", "as permitted", "as allowed", or words or phrases of like import are used, it shall

be understood that the order, direction, requirements, permission, or allowance of the OWNER and ENGINEER is intended.

- I. Similarly, the words "approved", "reasonable", "suitable", "acceptable", "properly", "satisfactory", or words of like effect and import, unless otherwise particularly specified herein, shall mean approved, reasonable, suitable, acceptable, proper, or satisfactory in the judgment of the OWNER and ENGINEER.
- J. Whenever the term "or equal" is used in the drawings and/or Specification it shall refer to a material which will adequately perform the same function, in the opinion of the ENGINEER, as the material specified or shown on the drawings.

PART 3 - SCOPE OF WORK

The work to be covered under these contracts in accordance with the drawings listed herein and, in these specifications, consists of the furnishing of all materials, equipment, tools, labor, transportation and services necessary to complete the construction as outlined herein and as shown on the drawings. The complete installation shall not lack any part which can be reasonably implied as necessary to its proper functioning nor any subsidiary which is customarily furnished.

PART 4 - EXAMINATION OF SITE OF WORK

It is the obligation of the bidder to examine carefully the site of the proposed work; to ascertain for himself all the facts concerning conditions therein, including all physical characteristics above, on and below the surface of the ground; to investigate the subsurface conditions and to determine for his information the character and proportionate quantities of soils, rock and other subsurface material which may be encountered in the work; to inform himself by independent research of the difficulties to be encountered and judge for himself the accessibility of the work and all other circumstances affecting the cost of doing the work or the time required for its completion; and the bidder agrees to this obligation in signing the proposal. When provided, the soils boring and testing report is attached to these Specification for the CONTRACTOR'S information and is not a part of the contract. No guarantee is made as to their accuracy or completeness. The OWNER assumes no responsibility whatsoever with respect to ascertaining for the bidder such facts covering physical characteristics at the site of the work. The bidder agrees that, if awarded the contract, he will make no claim for, and will have no right to, additional payment or extension of time for completion of the work or any other concession because of any failure on his part to fully acquaint himself with all conditions relating to the work. The bidder shall rely exclusively upon his own estimate, investigation and evaluation of site conditions.

PART 5 - SITE CONDITIONS

Where connections to existing utilities are shown on the drawings, the work may be required to be done at night or at a time which will least interfere with the operation of the existing facility.

The tie to existing utilities will be coordinated with personnel of the OWNER of the existing lines and will be done at a time to least inconvenience their operation. The work may be required to be done at night or weekends or both.

Where possible the existing utilities (water, gas, etc.) have been noted on the drawings. There may be additional buried lines that are not shown and if such is encountered, said lines will be left in service. CONTRACTOR shall take all precautions available prior to construction to locate, identify, and verify utilities. If said lines are broken by the CONTRACTOR, they shall be repaired as soon as possible.

The work along or across state highways shall be done in accordance with the permit from Division Engineer, Department of Transportation. The right-of-way shall be maintained in a satisfactory manner at all times. All roads, streets, drives, etc., cut during construction shall be properly protected by barricades, flashing lights, etc., and shall be made passable as soon as possible after laying of lines during the day and always at night. CONTRACTOR shall maintain the above cut roads in a passable condition until the wearing surface is replaced and then kept in a satisfactory condition for five (5) years after job is completed.

PART 6 - EXPLOSIVES

In handling explosives used during the construction of the project, the CONTRACTOR shall adhere to all Federal and State laws and City ordinances regulating the purchase, transportation, storage, handling, and use of such explosives. No blasting shall be done without 12-hour notification of the OWNER and ENGINEER, proof of insurance, and the presence of the Inspector. All equipment, tools, and materials used shall be of the correct type and in good condition for the operation. The CONTRACTOR shall take all necessary precautions to avoid damage to property resulting from the transportation, storage, handling and use of explosives. Before blasting, the CONTRACTOR shall take all necessary precautions to ensure that rock and debris will be confined to the excavation. Any blasting within 10 ft. of a water, sewer, gas or pipeline shall be done with very light charges, and utmost care shall be taken to avoid disturbance to these lines.

PART 7 - SUBMITTALS

Engineering data covering all equipment and fabricated materials to be furnished under this contract shall be submitted to the ENGINEER for review. This data shall include drawings and operation of component materials and devices; the external connections; anchorages and supports required; performance characteristics; and dimensions needed for installation and correlation with other materials and equipment. Data submitted shall include drawings showing essential details of any changes proposed by CONTRACTOR and all required structural layout and wiring diagrams.

No work shall be performed in connection with the fabrication or manufacture of materials and equipment, nor shall any accessory or appurtenance be purchased until the drawings and data therefore have been reviewed, except at the CONTRACTOR'S own risk and responsibility.

At least five (5) copies of each drawing and necessary data with statement of approval by the CONTRACTOR, shall be submitted to the ENGINEER. Each drawing or data sheet shall be clearly marked with the name of the project, the ENGINEER'S name, CONTRACTOR'S name and references to applicable specification paragraphs and drawing sheets. When catalog pages are submitted, the applicable items shall be identified.

The ENGINEER'S review of drawings and data submitted by the CONTRACTOR will cover only general conformity to the drawings and specifications, external connections and

dimensions which affect the layout. The ENGINEER'S review of drawings returned marked NO EXCEPTIONS NOTED or EXCEPTIONS NOTED does not indicate a thorough review of all dimensions, quantities and details of the material, equipment, device or items shown and does not relieve the CONTRACTOR from any responsibility for errors, omissions, or deviations from the contract requirements.

All drawings and data, after final processing by the ENGINEER, shall become a part of the contract documents, and the work shown or described thereby shall be performed in conformance therewith unless otherwise authorized by the OWNER or the ENGINEER.

After drawings and data have been accepted by OWNER or ENGINEER, the CONTRACTOR shall submit three (3) additional copies of all data and one (1) set of reproducible of all drawings to OWNER for file records. Also, CONTRACTOR shall keep accurate "record drawings" records of the work and turn these records over to the OWNER at the completion of the work.

PART 8 - SURVEYS

The OWNER shall establish base lines or control points for the location of the principal component parts of the work together with benchmarks adjacent to the work as shown or indicated on the Drawings. The CONTRACTOR shall develop and make all detail surveys necessary for construction. The CONTRACTOR shall be responsible for the accuracy of all lines and grades for all parts of the work. He shall do all field work necessary to lay out and maintain the work and shall make available to the OWNER all facilities and information necessary for properly checking the accuracy of such field work. Such checking shall in no way relieve the CONTRACTOR of his responsibility of the correctness of all field work.

The OWNER will provide survey of property including reference points, property corners and benchmarks where necessary in the opinion of the ENGINEER. If necessary, the CONTRACTOR shall transfer these reference points and benchmarks to permanent locations where they will not be disturbed. If disturbed, the CONTRACTOR shall re-install them to OWNER'S satisfaction, at CONTRACTOR'S cost.

PART 9 - PERMITS AND REGULATIONS

The CONTRACTOR shall secure and pay for all construction permits required to carry out the work unless otherwise specified and shall produce same upon demand of the OWNER. The CONTRACTOR shall give all notices and pay all fees and shall, before starting work, ascertain whether the drawings and specification are at variance with any codes or regulations applying at the site. The CONTRACTOR shall obtain completion survey, certificate of completion or occupancy if required by local regulations.

All features of design and construction shall comply with the local building regulations and/or other lawful or public regulations which apply at the site. If any features of construction as shown on the OWNER'S plan, do not conform to the regulations, the CONTRACTOR shall notify the OWNER of such discrepancy, and shall base his quotation and work on features of construction which do conform to the regulations.

If the CONTRACTOR performs any work contrary to such laws, ordinances, rules and regulations and without such notice to the OWNER, he shall bear all costs arising therefrom.

PART 10 - INSPECTION

The CONTRACTOR will provide access to the work site and facilities for representatives of the Environmental Protection Agency, Oklahoma Department of Environmental Quality and other agencies, as well as, OWNER and ENGINEER, as required whenever the work is in progress.

PART 11 - SATURDAY, SUNDAY, HOLIDAY AND NIGHT WORK

No work shall be done between the hours of 7:00 p.m. and 7:00 a.m., nor on Saturday, Sunday or legal holidays without the written approval or permission of the ENGINEER in each case, except such work as may be necessary for the proper care, maintenance and protection of work already done, or of equipment, or in the case of an emergency.

PART 12 - PROTECTION OF PROPERTY

- A. The protection of City, State and Government monuments, street signs and other OWNER's property is of prime importance, and if the same be damaged, destroyed or removed, they shall be repaired, replaced or paid for by the CONTRACTOR. Disturbance to this property must first be approved by the agency which controls it.
- B. No valves or other control on any utility main or building service line shall be operated for any purpose by the CONTRACTOR.
- C. At places where the CONTRACTOR'S operations are adjacent to the plant of railway, telegraph, telephone, electric and gas companies, or water, sanitary sewers and storm sewers, damage to which might result in expense, loss or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.
- D. The OWNER has attempted to locate all storm sewers, culverts, buried telephone or electrical conduits, sanitary sewers and water mains that might interfere with the construction of this project. The CONTRACTOR shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner and duplication or rearrangement work may be reduced to a minimum and that services rendered by those parties will not be unnecessarily interrupted. The revision and crossings of the various types of lines shall be made as follows:
 1. Storm sewers and culverts may be removed at the time of crossing or may be adequately braced and held in position while the pipe is placed beneath them. If the storm sewer or culvert is removed, it shall be replaced with pipe of the same type and size as that removed and it shall be re-joined to the undisturbed line with a joint satisfactory to the ENGINEER. Backfill over the main up to and around the storm sewer shall be thoroughly compacted in order that no settlement will occur. The revision and crossing of said lines shall be at the expense of the CONTRACTOR.
 2. All overhead and buried telephone and electrical conduits, to be revised or crossed by the construction of this project shall be protected in accordance with the directions of the utility company owning the conduits and/or mains. The CONTRACTOR shall notify the companies and obtain their permission before

making any crossing or revisions. The revision and crossing of said lines shall be at the expense of the CONTRACTOR. Any overhead cables or buried cables or conduits damaged by the CONTRACTOR shall be repaired at his expense to the satisfaction of the ENGINEER and of the OWNER.

3. The CONTRACTOR shall not remove any water or sanitary sewer lines except as directed by the ENGINEER or as required by the Drawings and specifications and shall adequately brace and protect them from any damage during construction. Any existing water main or sewer main or lateral damage caused by the CONTRACTOR'S operations will be repaired by the CONTRACTOR. The repairs will be made at the CONTRACTOR'S expense.
- E. The location of utility service lines serving individual properties may or may not be shown on the Drawings, but the CONTRACTOR shall assume that such service lines exist whether or not they are shown on the Drawings, and it shall be the responsibility of the CONTRACTOR to make any necessary changes in the line and/or grade of such services, or to secure the necessary changes therein to be made by the particular utility company involved or other OWNER thereof, or by an agent or individual CONTRACTOR approved by such utility company or other OWNER. CONTRACTOR shall pay the cost of all such revisions whether performed by CONTRACTOR, the utility company or other OWNER, or an approved CONTRACTOR. In the event of interruption of a utility service as a result of accidental breakage, CONTRACTOR shall promptly notify the ENGINEER and the OWNER of the utility and shall repair or cause the same to be repaired, in the same manner as necessary changes above are provided for, the CONTRACTOR shall do all things necessary to see that the restoration of services is done as promptly as may be reasonably done. All sanitary sewer service lines damaged shall be replaced with cast iron pipe regardless of type or kind damaged.
- F. In the event the CONTRACTOR in any way fails to comply with the requirements of protecting, repairing and restoring of any utility or utility service, the OWNER may, upon forty-eight (48) hours written notice proceed to protect, repair, rebuild or otherwise restore such utility or utility service as may be deemed necessary, and the cost thereof will be deducted from any money due, or which may become due the CONTRACTOR pursuant to the terms of his contract.

PART 13 - FIELD OFFICE

Copies of the drawings, specification, and other contract documents shall be kept at the site of the work available for use at all times.

PART 14 – MATERIALS AND CONSTRUCTION

All materials and construction shall be in accordance with the latest Oklahoma Department of Transportation Standard Specifications for Construction (Standard Specifications) and Construction Standards unless otherwise specified in the contract plans and specifications.

PART 15 - ALTERATION OF QUANTITIES

The CONTRACTOR agrees that the quantities of work as stated in the Bid Schedule or indicated on the drawings are only approximate, and that the OWNER shall have the right to omit portions of the work and to increase or decrease the quantities of any item of work. Final payment will be based on the actual quantities used and installed in accordance with the drawings and Specification.

PART 16 - QUALITY CONTROL

When required in writing by the ENGINEER, the CONTRACTOR shall make such tests as may be necessary to show that the requirements of the Specification have been fulfilled.

All tests shall be made under the supervision and direction of the ENGINEER, and the CONTRACTOR will provide all required materials, labor and apparatus, etc., or so directed, engage an approved testing laboratory for making same. Any work found defective shall be removed, replaced and retested until satisfactory to the ENGINEER, all at the CONTRACTOR'S expense.

Should tests required by the ENGINEER, except those specifically called for elsewhere in these General Requirements or in the Specification show that the requirements of the Specification have been fulfilled, then the costs of such tests shall be paid for by the OWNER.

PART 17 - MEASUREMENT AND FITTING OF PARTS

The CONTRACTOR, without extra charge, shall make such slight alterations as may be necessary to make adjustable parts fit the fixed parts, leaving all complete and in proper shape when done. The CONTRACTOR shall verify all dimensions given in the drawings and shall report any error or inconsistency to the ENGINEER before commencing work.

PART 18 - CONTRACTOR'S SUPERINTENDENT

The CONTRACTOR shall keep a competent Superintendent and any necessary assistants at the site throughout the progress of the work. All directions given to said Superintendent shall be as binding as if given to the CONTRACTOR. Upon request, such directions will be confirmed, in writing, to the CONTRACTOR.

The CONTRACTOR'S Superintendent and/or any of his assistants shall be promptly replaced in the event he or they shall prove to be incompetent and/or unsatisfactory to the ENGINEER.

PART 19 - ASSISTANCE BY ENGINEER

It is distinctly understood and agreed that such assistance as the ENGINEER may render to the CONTRACTOR in connection with the interpretation of drawings and specification shall not relieve the CONTRACTOR from any responsibility for the work. Any work which proves faulty shall be made right by the CONTRACTOR without delay. The failure of the ENGINEER, or his Inspectors to call the CONTRACTOR'S attention to faulty work or work done which is not in accordance with drawings and specification shall not prevent the OWNER from insisting that the CONTRACTOR make all work right.

PART 20 - INCIDENTAL WORK

Work called for on the drawings and/or specifications and are not set forth in the Bid Schedule as pay items, shall be considered as incidental work and will not be paid for directly, but shall be included in the price bid for the various pay items.

PART 21 - TERMINATION OF CONTRACT

If the CONTRACTOR shall be adjudged bankrupt, or if he should make a general assignment for the benefit of his creditors, or if a receiver should be appointed on account of his insolvency, or if he should persistently or repeatedly refuse, or should fail, except in cases for which extension of time is provided, to supply enough properly skilled workmen, equipment or proper materials, or if he should fail to make prompt payment to SUBCONTRACTOR or for material or labor, or persistently disregard laws, ordinances or the instructions of the ENGINEER, or otherwise be guilty of a substantial violation of any provision of the Contract, then the OWNER upon the certificate of the ENGINEER that sufficient cause exists to justify such action, may without prejudice to any other right or remedy and after giving the CONTRACTOR seven days written notice, terminate the employment of the CONTRACTOR and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method the OWNER may deem expedient. In such case, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract Price shall exceed the expense of finishing the work, including compensation for additional managerial and administrative services, such excess shall be paid to the CONTRACTOR. If such expense shall exceed such unpaid balance, the CONTRACTOR shall pay the difference to the OWNER as herein provided, and the damage incurred through the CONTRACTOR's default shall be certified by the ENGINEER.

In the event of termination of Contract before completion of the work, due to abandonment of the project or discontinuance thereof, the CONTRACTOR will be paid in proportion to the work completed and in progress as per scope of work described in the drawings and specification and in accordance with the unit price schedule.

PART 22 – PROGRESS PAYMENTS, ACCEPTANCE AND FINAL PAYMENT

Basis for Progress Payments: The Schedule of Quantities as shown in the Plans will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period. The amount of retainage with respect to progress payments will be 5% until 50 percent completion after which retainage shall be 2.5%.

Upon receipt of written notice from the CONTRACTOR that the work is ready for final inspection and acceptance, the ENGINEER shall promptly make such inspection and when he finds the work acceptable under the Contract and the Contract fully performed, he shall promptly issue a final certificate over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof, and the entire balance found to be due the CONTRACTOR, including the retained percentage, shall be paid to the CONTRACTOR, as approved by the OWNER, at the office of the OWNER within 30 days after the date of said final certificate.

If, after receipt of written notice from CONTRACTOR requesting final inspection and the performance of said final inspection by ENGINEER, additional inspections are necessary in order for ENGINEER to issue a final certificate; the OWNER shall withhold the cost associated with said additional inspections from the final payment due the CONTRACTOR.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the ENGINEER that all payrolls, material bills, equipment rentals, and all other indebtedness connected with the work have been paid.

PART 23 - PLACING WORK IN SERVICE

If desired by the OWNER, portions of the work may be placed in service when completed and the CONTRACTOR shall give prior access to the work for this purpose, but such use and operation shall not constitute an acceptance of the work.

PART 24 - SCHEDULES

The CONTRACTOR shall furnish the ENGINEER with a tentative schedule, in a format approved by the ENGINEER, setting forth in detail the procedure he proposes to follow, and giving the dates on which he expects to start and to complete separate portions of the work. If at any time, in the opinion of the ENGINEER, proper progress is not being maintained, such changes shall be made in the schedule of operations which will satisfy the ENGINEER that the work will be completed within the period stated in the proposal, or extension thereof made as herein provided.

CONTRACTOR is to prepare list of proposed SUBCONTRACTORS including material suppliers; submit to ENGINEER for approval before subcontracts are awarded. No SUBCONTRACTOR is to be employed on work unless approved by OWNER and ENGINEER.

PART 25 - PROJECT SIGN

A project sign is not required for this project.

PART 26 - INSURANCE

The CONTRACTOR shall protect, indemnify, save and hold harmless the OWNER, their officers, agents, and employees from all suits, actions or claims of any kind or character brought because of bodily injuries, sickness, disease or personal injury, or damages received or sustained by any person, persons, or property on account of any operations of the CONTRACTOR, his agents, employees, his subcontractors or any others authorized by the CONTRACTOR to perform work on the project.

Third Party Beneficiary Clause. It is specifically agreed by and between the parties executing this Contract, that it is not intended by any of the provisions of any part of the Contract to create in the public or any member thereof any third-party beneficiary provisions or to authorize anyone not a party to this Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of this Contract.

The CONTRACTOR shall carry insurance of the following kinds and amounts on all City Contracts:

- A. CONTRACTOR'S Public Liability, Auto Liability and Property Damage Liability Insurance.** The CONTRACTOR shall provide regular CONTRACTOR'S Public

Liability Insurance for a combined amount of one million (\$1,000,000) dollars of coverage for all damages arising out of bodily injury, death, and property damage for each occurrence with an aggregate limit of two million (\$2,000,000) dollars.

The CONTRACTOR shall provide business auto liability coverage for an aggregate limit of one million (\$1,000,000) dollars of coverage for bodily injury and property damage arising out of the operation or maintenance of any vehicle including owned, non-owned and hired vehicles, and employee non-ownership use.

B. Insurance for SUBCONTRACTOR'S and CONTRACTOR'S Protective Public Liability and Property Damage Liability Insurance. In the event that any of the work to be performed by the CONTRACTOR on the project is sublet or assigned or is otherwise to be performed by anyone other than the CONTRACTOR'S own employees, then the insurance specified above shall extend to cover such work.

C. Workmen's Compensation Insurance and Employer's Liability Insurance. The CONTRACTOR shall furnish satisfactory evidence to the City that, with respect to the work to be performed by him on the project, he carries regular Workmen's Compensation and Employers Liability Insurance covering his liability under the "Workmen's Compensation Law of the State of Oklahoma". The CONTRACTOR shall maintain the aforementioned insurance in full force and effect for the duration of the Contract. Should the CONTRACTOR fail or neglect to maintain the aforementioned insurance, the City specifically reserves the right to withhold all funds due and owing the CONTRACTOR until such time as the required insurance is in effect.

In addition to the aforementioned insurance coverage, on any project in which the CONTRACTOR shall perform any Railway-Highway work, the CONTRACTOR shall also secure the following: "Railroads' Protective Liability and Property Damage Insurance".

D. Railroads' Protective Liability and Property Damage Insurance. In addition to the above, the CONTRACTOR shall furnish satisfactory evidence to the City that, with respect to the work to be performed by him under the Contract, he has provided for and on behalf of the Railway Company or Railway Companies involved, Protective Public Liability Insurance in an amount as may be required by the Railway Company, which amount shall be specified in the bid documents. Policies shall not include liability for negligence on the part of the Railway Company, its agents or employees, except as set out in Coverage A, B, or C of the form of policy, or amendments thereto, referred to under paragraph 6 below. This insurance applies to each and all Railway Companies involved in the work.

E. General. The insurance hereinbefore specified shall be carried in Insurance Companies approved by the City, and where applicable the Railway Company, during all times when work is being carried on under the terms of the Contract, until all work required to be performed under the Contract is satisfactorily completed as evidenced by the formal acceptance by the City.

F. Certificates of Insurance. Required insurance shall be documented by Certificates of Insurance which provide that the OWNER shall be notified at least thirty (30) days in advance of cancellation, non-renewal or adverse change. The Certificate of

Insurance shall show the OWNER as the named insured.

For general liability, the CONTRACTOR shall provide an indication of the amounts of claims, payments or reserves chargeable to the aggregate amount of liability coverage.

PART 27 - SAFETY STANDARDS AND ACCIDENT PREVENTION

With respect to all work performed under this Contract, the CONTRACTOR shall:

- A. Comply with the safety standards provisions of applicable laws, building and construction codes and the Manual of Accident Prevention in Construction published by the Associated General Contractors of America, the requirements of the Occupational Safety and Health Act of 1970 (Public Law 91-596), and the requirements of Title 29 of the Code of Federal Regulations, Section 1910 or 1926 as applicable.
- B. Exercise every precaution at all times for the prevention of accidents and the protection of persons (including employees) and property.
- C. Trench Excavation and Safety System: All work under this item shall be in accordance with the current edition of the OSHA Standard for Excavation and Trench Safety Systems, 29 CFR 1926 Subpart P.

The CONTRACTOR shall notify all utility companies and OWNERS in accordance with the OSHA requirements given in 29 CFR 1926.651 (b) (2) for the purpose of locating utilities and underground installations.

Where the trench or excavation endangers the stability of a building, wall, street, highway, utilities, or other facility, the CONTRACTOR shall provide support systems such as shoring, bracing, or underpinning to ensure the stability of such facility. The CONTRACTOR may elect to remove and replace or relocate such facilities with the written approval of the facility owner, the ENGINEER, and the OWNER.

Payment for the work required by this item shall be included in the lump sum price bid. With each periodic payment request, CONTRACTOR shall submit a certification that the CONTRACTOR has complied with the provisions of the OSHA standards.

PART 28 - WAGE RATES

NO SPECIFIC REQUIREMENTS FOR THIS PROJECT.

PART 29 - WORKMEN

The CONTRACTOR shall employ foreman and skilled laborers where necessary, and if any person employed on the work shall refuse or neglect to obey orders of the ENGINEER or Inspector when such orders are in keeping with the provisions of these specifications or shall appear to the ENGINEER or his Inspector to be incompetent, disorderly or unfaithful, he shall, upon order of the ENGINEER, be at once discharged and not again employed upon any part of the work. It shall be the responsibility of the superintendent representing the CONTRACTOR to transmit all necessary orders and instructions. If requested by the ENGINEER, the

CONTRACTOR shall submit, in written form, qualifications including work experience of any workman used on the project.

PART 30 - NUMBER OF WORKING DRAWINGS AND SPECIFICATIONS

The ENGINEER will furnish to the CONTRACTOR not more than two (2) sets of drawings and specifications for construction. The CONTRACTOR may procure additional copies of drawings and specifications for construction at cost of reproduction. Such costs are reimbursable by the ENGINEER.

PART 31 - PRECONSTRUCTION CONFERENCE

Prior to the commencement of work at the site, a preconstruction conference will be held at a mutually agreed time and place. The conference shall be attended by:

- A. CONTRACTOR and his superintendent.
- B. Principal SUBCONTRACTORS.
- C. Representatives of principal suppliers and manufacturers as appropriate.
- D. ENGINEER and its Resident Project Representative.
- E. Representatives of OWNER.
- F. Government representatives as appropriate.
- G. Others as requested by CONTRACTOR, OWNER, or ENGINEER.
- H. Unless previously submitted to ENGINEER, CONTRACTOR shall bring to the conference a preliminary schedule for each of the following:
 - 1. Progress.
 - 2. Procurement.
 - 3. Values for progress payment purposes.
 - 4. Shop Drawings and other submittals.

The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The agenda will include:

- A. CONTRACTOR'S preliminary schedules.
- B. Transmittal, review, and distribution of CONTRACTOR'S submittals.
- C. Processing applications for payment.
- D. Maintaining record documents.
- E. Critical work sequencing.
- F. Field decisions and change orders.

- G. Use of premises, office and storage areas, security, housekeeping, and OWNER'S needs.
- H. Major equipment deliveries and priorities.
- I. CONTRACTOR'S assignments for safety and first aid.

ENGINEER will preside at the conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

PART 32 - PROGRESS MEETINGS

CONTRACTOR shall schedule and hold regular progress meetings at least monthly and at other times as requested by ENGINEER or required by progress of the work. CONTRACTOR, ENGINEER, and all SUBCONTRACTORS active on the site shall be represented at each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturers, and other SUBCONTRACTORS.

CONTRACTOR shall preside at the meetings. Meeting minutes will be prepared and distributed by CONTRACTOR. The purpose of the meetings will be to review the progress of the work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

PART 33 - SUBSTANTIAL AND FINAL COMPLETION

All work including site restoration shall be finished within the time called out on the Bid Form for final completion.

PART 34 - EXCAVATION

All excavation shall be unclassified. No additional payment shall be made for rock, groundwater, or other natural formations encountered. Payment for excavation shall be included in other items of work.

PART 35 - SUBCONTRACTORS

CONTRACTOR is to prepare a list of proposed SUBCONTRACTORS including material suppliers and submit to ENGINEER for approval before SUBCONTRACTORS are awarded.

No SUBCONTRACTOR is to be employed on work unless approved by OWNER and ENGINEER.

PART 36 - RIGHT-OF-WAY/PROJECT VIDEO

CONTRACTOR shall video the complete right-of-way of the project prior to initiating construction and deliver video tape to the ENGINEER at the pre-construction conference. The video shall be taken in such a way to document pre-construction conditions for use in documenting satisfactory right-of-way restoration and other issues relative to initial conditions prior to construction.

PART 37 - RECORD DRAWINGS

37.1 GENERAL

- A. The CONTRACTOR shall be responsible for accumulation and maintenance of a complete set of Project Record Documents and upon completion and acceptance of the project shall submit these documents to the ENGINEER, as the OWNER'S representative, for a permanent record.
- B. The Project Record Documents shall consist of:
 - 1. One complete set of drawings, with revisions.
 - 2. One complete Project Manual with all addenda, field bulletins and change orders.
 - 3. Complete set of all field test data.
 - 4. Complete set of approved shop drawings, product data brochures and samples.
 - 5. Six complete sets of maintenance and operating instructions, parts lists and supplier identification on all operating fixtures and equipment.

37.2 MAINTENANCE OF RECORD DOCUMENTS

- A. The CONTRACTOR shall maintain, on the site, one complete set of contract documents, other than those used for construction, throughout the life of the job.
 - 1. This set of documents shall be marked "Record Set" and shall be maintained up to date at all times and available to the ENGINEER for inspection.
 - 2. The only notations or other markings to be made on this set are notations of field variations made from the work shown on the drawings for purposes of "Record Drawings" revisions when the project is complete. Failure to record revisions by each CONTRACTOR, shall be considered a breach of contract.
 - 3. This set of Documents will be turned over to the ENGINEER for preparation of "Record Drawings" **prior to approval of final application for payment.**

37.3 MAINTENANCE AND OPERATING INSTRUCTIONS

- A. A complete set of maintenance and operating instructions on the project shall be prepared for the OWNER'S continual use.
 - 1. To be bound in booklet form, 8-1/2" x 11" in size, labeled "Operating Manual".
 - 2. To be indexed for quick reference use.
 - 3. To contain manufacturer's printed data, record forms, diagrams, parts lists, maintenance procedures, start-up procedures, operating procedures, service requirements and schedules, and names, addresses and phone numbers of SUBCONTRACTOR, manufacturer and local service agent.
 - 4. To contain all written warranties and guarantees.
- B. Each CONTRACTOR shall submit six complete copies of this "Operating Manual" material from his trade to the ENGINEER at the completion of the project.
- C. The ENGINEER shall assemble, bind, label and index this material for the OWNER as stated above. Failure to submit the data listed on the part of any CONTRACTOR may

be considered cause to withhold final payment until all such information is received.

PART 38 - CHANGES IN THE WORK

ALL CHANGES SHALL BE MADE IN WRITING AND APPROVED BY THE OWNER OR ENGINEER. THIS INCLUDES CHANGES INVOLVING COST OR THOSE NOT INVOLVING COST. NO CHANGE WILL BE ACCEPTABLE UNLESS APPROVED IN WRITING.

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the work with the Contract Total being adjusted accordingly. All changes involving cost shall be made using a written modification order and shall be supported with necessary documentation as to the increase or decrease in cost and time. No increase or decrease in cost or time will be made without an approved modification order that is completed at or before the change is made. Increases in cost or time will not be allowed at the end of the job for work completed earlier without an approved change order. The OWNER shall have authority to make minor changes in the work which do not involve extra cost, and which do not significantly change the design. All such changes shall be made with a written field order.

PART 39 – WEATHER DAYS

CONTRACTOR IS RESPONSIBLE FOR TRACKING ADVERSE WEATHER DAYS. CONTRACTOR SHALL NOTIFY THE ENGINEER THAT THEY WILL BE TAKING A WEATHER DAY. THE WEATHER DAY WILL NOT BE CONSIDERED UNLESS IT MEETS THE REQUIREMENTS BELOW. IT IS UP TO THE ENGINEER TO ACCEPT THE WEATHER DAY.

The contract time consists of the number of calendar days stated in the Contract for the completion of the work beginning on the effective date of the work order including all weekends, holiday, and normal adverse weather days. All calendar days elapsing between effective dates of any orders of the Owner to suspend work and to resume work for suspensions, not the fault of the Contractor shall be excluded.

The occurrence of unusually severe weather during the life of the Contract will be considered a basis for extending contract time when work is not already suspended for other reasons. Unusually severe weather shall mean weather which at the time of year it occurs is unusual for the place in which it occurs.

Extension of time for unusually severe weather will include only those actual adverse weather days in excess of the normal adverse weather days included in the contract time. Normal adverse weather shall mean adverse weather which, regardless of its severity, is to be reasonably expected for that particular place at that particular time of year. The normal adverse weather days included in the contract time as shown in Table A are based on historical records of temperature and precipitation.

Actual adverse weather days are those days meeting one or more of the criteria in A, B, C, or D below. Time extensions for days meeting more than one criterion will take into consideration only that criterion having the greatest impact. Those actual adverse weather days covered by criterion A, B, or C that are **in excess of** the days in Table A will be allowed without regard to when they occur (except prior to mobilization, during suspension for other reasons, or after the project completion date) or their impact on contract completion. However, those days covered by criterion D will be subject to the limitations as noted.

- A. Days with Maximum temperature of 32°F or less - one full day allowed.

HAYES STREET WATERLINE REPLACEMENT

- B. Days with Minimum temperature of 32°F or less, but whose maximum temperature is over 32°F - one-half day allowed.
- C. Days when 1" or more precipitation (rain or snow equivalent) occurs - one full day allowed.
- D. Days when weather related conditions exist which prohibit proper performance of work as specified - one full day allowed. Allowance of such days will be subject to the work which is being delayed, being critical to timely contract completion and the Contractor making every reasonable effort to minimize the adverse impact of the conditions.

TABLE A
NORMAL ADVERSE WEATHER DAYS
(BY MONTH)

<u>MONTH</u>	<u>NORMAL ADVERSE WEATHER DAYS</u>
January	8
February	7
March	5
April	3
May	3
June	3
July	2
August	2
September	2
October	3
November	4
December	7

END OF SECTION 01 00 00

SECTION 01 11 00 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work covered by these specifications and drawings shall consist of all materials, transportation costs, equipment, and tools that are related to, or are to be incorporated in this contract and must be received, unloaded, stored, installed, erected, service connections provided, and coordinated with the construction by the CONTRACTOR under this contract. Installation of equipment and materials shall mean furnishing of all labor and materials as required to place the improvements in successful operation. The CONTRACTOR shall be responsible for all equipment and materials and shall replace at his own expense all such equipment and materials found defective in manufacture or damaged in handling after delivery by the manufacturer. The improvements are as listed:

**CITY OF SHAWNEE / SHAWNEE MUNICIPAL AUTHORITY
WATER SYSTEM IMPROVEMENTS**

- B. This contract shall include minor items not specifically mentioned herein but shown on the accompanying plans or obviously necessary to provide a complete job.
- C. The following description, while not intended to cover all details, outlines some items of the work to be accomplished under this Contract:
1. **Replace approximately 1,772 LF of 8" HDPE waterline through trenching and boring.**
 2. **Replace approximately 17 LF of 24" HDPE waterline by trenching.**
 3. **Remove and replace asphalt and concrete pavement and gravel driveways as necessary.**

Note: The waterline must stay in operation throughout construction. Temporary pumping, piping, plugs, shut offs, etc. shall be considered incidental and included in the cost of other bid items.

- D. The price named in the Proposal shall include the furnishing of all labor, material, transportation costs, equipment rental, etc., necessary to construct the project as herein specified and as shown on the accompanying plans.
- E. The CONTRACTOR shall cooperate with the OWNER during construction so as to place the improvements in operation at minimum inconvenience and without significant disruption of the OWNER. The CONTRACTOR shall minimize his area of operation. Any areas disturbed will be restored to the OWNER'S satisfaction.

END OF SECTION 01 11 00

SECTION 01 11 50 – MEASUREMENTS AND PAYMENTS

PART 1 – PAY REQUESTS

1.1 CONTRACTOR TO SUBMIT DETAILED BREAKDOWN OF CONTRACT AMOUNT

- A. Except in the cases where the unit prices form the basis for payment under the contract, the CONTRACTOR shall, within ten (10) days of receipt of the Notice to Proceed, submit a complete breakdown of the contract amount showing the value assigned to each part of the work, including an allowance for profit and overhead. Upon approval of the breakdown of the contract amount by the ENGINEER, it shall be used as the basis for all requests for payment.

1.2 CONTRACTOR MONTHLY PAY REQUESTS

- A. The CONTRACTOR may submit periodically, but not more than once each month, a request for payment for work done and materials delivered and stored on the site. The CONTRACTOR shall furnish the ENGINEER all reasonable facilities required for obtaining the necessary information relative to the progress and execution of the work. Payment for materials stored on the site will be conditioned upon evidence submitted to establish the OWNER'S title to such materials. Each request for payment shall be computed from the work completed on all items listed in the detailed breakdown of contract amount, less five (5) percent to be retained until 50 percent completion and acceptance of the work, and less previous payments, provided that any after 50 percent of the work has been satisfactorily completed, the OWNER shall reduce the percentage retainage to two and one-half (2 ½) percent where unit prices are specified. The request for payment shall be based on the quantities completed.

1.3 MATERIAL STORED ON SITE

- A. The following items will be required if the CONTRACTOR requests payment for material stored on the site.
1. CONTRACTOR must furnish invoices showing quantity, size, costs, etc. of the material.
 2. The invoices must be approved by the OWNER, PROJECT INSPECTOR and/or ENGINEER.
 3. Payment will be made only for material stored in a location approved by the ENGINEER and the OWNER. The storage area must provide adequate protection from the weather and vandalism.
 4. The 5 percent retainer which applies to materials installed will also apply to materials stored.
 5. Payment for materials stored on the site for this project will be made as follows: The above items must be furnished with the current pay estimate, and the CONTRACTOR will be paid as per invoice. In order for the CONTRACTOR to receive payment for the next pay estimate, he must furnish a notarized statement of payment in full from the suppliers for materials invoiced in preceding pay estimate. The procedure shall hold true for all successive materials payments until all materials have been acquired by the CONTRACTOR.

1.4 ENGINEER'S ACTIONS TO PENDING PAY REQUESTS

- A. Within ten (10) days of submission of any request for payment by the CONTRACTOR, the ENGINEER shall:
1. Approve the request for payment as submitted.
 2. Approve such other amount as he shall decide is due the CONTRACTOR, informing the CONTRACTOR in writing of his reasons for approving the amended amount.
 3. Withhold the request for payment, informing the CONTRACTOR in writing for his reasons for withholding it.

1.5 OWNER'S ACTIONS TO APPROVED PAYMENT REQUEST

- A. Within thirty (30) days from the date of approval of a request for payment by the ENGINEER, the OWNER shall:
1. Pay the request of payment as approved.
 2. Pay such other amount in accordance as herein provided as he shall decide is due the CONTRACTOR, informing the CONTRACTOR and the ENGINEER in writing of his reasons for paying the amended amount.
 3. Withhold payment in accordance as herein provided informing the CONTRACTOR and the ENGINEER of his reasons for withholding payment in writing.

1.6 OWNER'S RIGHT TO WITHHOLD PAYMENT ON APPROVED REQUESTS

- A. The OWNER may withhold payment in whole or in part on an approved request for payment to the extent necessary to protect himself from loss on account of any of the following causes discovered subsequent to approval of a request for payment by the ENGINEER:
1. Defective work.
 2. Evidence indicating the probable filing of claims by other parties against the CONTRACTOR.
 3. Failure of the CONTRACTOR to make payments to SUBCONTRACTORS, material suppliers or labor.
 4. Damage to another CONTRACTOR.

1.7 PAYMENT FOR UNCORRECTED WORK

- A. If, in the opinion of the ENGINEER, it is undesirable to replace any defective or damaged material or to reconstruct or correct any portion of the work injured or not performed in accordance with the contract documents, the compensation to be paid the CONTRACTOR hereunder shall be reduced by such amount as in the judgment of the ENGINEER shall be equitable.

1.8 PAYMENT FOR REJECTED WORK AND MATERIALS

- A. The removal of work and materials rejected by the OWNER and the re-execution of acceptable work by the CONTRACTOR shall be at the expense of the CONTRACTOR, and he shall pay the cost of replacing the work of other CONTRACTORS destroyed or damaged by the removal of the rejected work or materials and the subsequent replacement of acceptable work.
- B. Removal of rejected work or materials and storage of materials by the OWNER shall be paid by THE CONTRACTOR within thirty (30) days after written notice to pay is given by the OWNER. If the CONTRACTOR does not pay expenses of such removal and after ten (10) days written notice being given by the OWNER of his intent to sell the materials, the OWNER may sell the materials at auction or at private sale and shall pay to the CONTRACTOR the net proceeds therefrom after deducting all the costs and expenses that should have been borne by the CONTRACTOR.

1.9 ACCEPTANCE AND FINAL PAYMENT

- A. When the CONTRACTOR shall have completed the work in accordance with the terms of the contract documents, the ENGINEER shall certify his acceptance to the OWNER and his approval of the CONTRACTOR'S final request for payment, which shall be the contract amount plus all approved additions less all approved deductions and less previous payments made. The CONTRACTOR shall furnish evidence that he has fully paid all debts for labor, materials, and equipment incurred in connection with the work, following which the OWNER shall accept the work and release the CONTRACTOR except as to the conditions of the Performance Bond, any legal rights of the OWNER, required guarantee and correction of faulty work after final payment, and shall authorize payment of the CONTRACTOR'S final request for payment. The CONTRACTOR must allow sufficient time between the time of completion of the work and approval of the final request for payment for the ENGINEER to assemble and check the necessary data.

1.10 CORRECTION OF FAULTY WORK AFTER FINAL PAYMENT

- A. The approval of the final request for payment by the ENGINEER and the making of the final payment by the OWNER to the CONTRACTOR shall not relieve the CONTRACTOR of responsibility for faulty materials or workmanship. The OWNER shall promptly give notice of faulty materials or workmanship and the CONTRACTOR shall promptly replace any such defects discovered within one year from the date of written acceptance of the work. The ENGINEER shall decide all questions arising under this paragraph.

END OF SECTION 01 11 50

SECTION 01 33 00 - SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included

1. Wherever possible throughout the contract documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.
2. To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for their review by the ENGINEER.
3. Make all submittals required by the contract documents, and revise and resubmit as necessary to establish compliance with the specified requirements.

B. Related Work Described Elsewhere: Individual requirements for submittals are described in pertinent other Sections of these specifications.

1.2 QUALITY ASSURANCE

A. Coordination of Submittals: Prior to each submittal, carefully review and coordinate all aspects of each item being submitted and verify that each item and the submittal for it conforms in all respects with the requirements of the contract documents. By affixing the CONTRACTOR'S signature to each submittal, certify that this coordination has been performed.

B. Certificates of Compliance

1. When requested, certify that materials used in the work comply with specified provisions thereof. Certification shall not be construed as relieving the CONTRACTOR from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found to not meet specified requirements.
2. Show on each certification the name and location of the work, name and address of CONTRACTOR, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing all required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.
3. In addition to the above information, all laboratory test reports submitted with certificates of compliance shall show the date or dates of testing, the specified requirements for which testing was performed, and results of the test or tests.

1.3 SUBMITTALS

- A. Submittal Schedule: Within 10 days after award of Contract, and before any items are submitted for approval, submit to the ENGINEER two copies of the schedule described in Article 2.1 of this Section.
- B. Certificates of Compliance: Upon completion of the work, and as a condition of its acceptance, submit to the ENGINEER all Certificates of Compliance.
- C. Procedures: Make submittals in strict accordance with the provisions of this Section.
- D. Schedule of Values: Within 10 days of the Pre-Construction Conference, submit a schedule of values for lump sum bid items indicating the cost breakdown of lump sum bid items for use in progress payment preparation. Submit to the ENGINEER two copies of the schedule described in Article 2.2 of this Section.

PART 2 - PRODUCTS

2.1 SUBMITTAL SCHEDULE

- A. General: Compile a complete and comprehensive schedule of all submittals anticipated to be made during progress of the work. Include a list of each type of item for which CONTRACTOR'S drawings, Shop Drawings, Certificates of Compliance, material samples, guarantees, Operations and Maintenance manuals or other types of submittals are required. Upon approval by the ENGINEER this schedule will become part of the Contract and the CONTRACTOR will be required to adhere to the schedule except when specifically otherwise permitted.
- B. Coordination: Coordinate the schedule with all necessary subcontractors and materials suppliers to ensure their understanding of the importance of adhering to the approved schedule and their ability to so adhere. Coordinate as required to ensure the grouping of submittals as described in Article 1.3.
- C. Revisions: Revise and update the schedule on a monthly basis as necessary to reflect conditions and sequences. Promptly submit revised schedules to the ENGINEER for review and comment.

2.2 SCHEDULE OF VALUES

- A. The ENGINEER will review the tentative schedule of values to determine whether, in his judgment, the schedule of values is of sufficient detail and if the prices included are "unbalanced" or "front-end loaded", in an effort to inflate the prices of those items of work to be completed in the early stages of the work.
- B. Breakdown cost to list major products or operations for each line item which has an installed value of more than \$5,000.00. The sum of the items listed on the schedule of values shall equal the contract lump sum price.

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- C. The ENGINEER will provide the CONTRACTOR with his comments and/or may request additional information from the CONTRACTOR to justify certain item quantities and prices, therefore. On the basis of the ENGINEER'S comments, the CONTRACTOR shall revise and resubmit the tentative schedule for further review and/or approval.
- D. Once the ENGINEER accepts the tentative schedule, it shall become the schedule of values to be used in determining partial payment estimates. Two (2) copies of this schedule shall be submitted to the ENGINEER for distribution and his use. No modifications will be made to the schedule of values, except as required by approved change orders.
- E. No partial payment request (including the first) shall be approved until the schedule of values has been approved by the OWNER and ENGINEER.

2.3 SHOP DRAWINGS AND COORDINATION DRAWINGS

A. Shop Drawings

- 1. Scale and Measurements: Make all Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
- 2. Type of Prints Required: Submit all Shop Drawings in the form of electronic (.pdf) or hardcopy, minimum of 8 ½" by 11".

2.4 MANUFACTURERS' LITERATURE

- A. General: Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly indicate which portion of the contents is being submitted for review.
- B. Number of Copies Required: Submit the number of copies which are required to be returned plus two copies which will be retained by the ENGINEER. Under no circumstances shall less than five copies be submitted.

2.5 SAMPLES

- A. Accuracy of Samples: Samples shall be of the precise article proposed to be furnished. Samples shall have stickers or tags which bear identification of the project, the subcontractor, the vendor or manufacturer, the product color name or number, model, style or series, and the size and thickness of components.
- B. Number of Samples Required: Unless otherwise specified, submit all Samples in the quantity which is required to be returned plus one which will be retained by the ENGINEER.
- C. Reuse of Samples: In situations specifically so approved by the ENGINEER, the ENGINEER'S retained sample may be used in the construction as one of the installed items.

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- D. Match Existing Materials: Brick or other materials that are to match existing materials shall require a "test panel" to be erected adjacent to the existing material to allow the OWNER to approve the match in size, color, and texture.

2.6 COLORS AND PATTERNS

- A. Unless the precise color and pattern is specifically described in the contract documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern charts to the ENGINEER for review and selection.

2.7 SUBSTITUTIONS

A. Approval Required

1. The Contract is based on the standards of quality established in the contract documents.
2. All products proposed for use, including those specified by required attributes and performance, shall require approval by the ENGINEER before being incorporated into the work.
3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the ENGINEER.

B. "Or Equal":

1. Where the phrase "or equal" or "approved or equal" occurs in the contract documents, do not assume that materials, equipment, or methods will be approved as equal unless the item has been specifically approved for this work by the ENGINEER.
2. The decision of the ENGINEER shall be final.

PART 3 - EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

- A. General: Bind submittals with cover label that identifies project, division of work, subcontractor, and vendor/manufacturer. Consecutively number all submittals. Accompany each submittal with a letter of transmittal containing all pertinent information required for identification and checking of submittals.
- B. Internal Identification: On at least the first page of each copy of each submittal, and elsewhere as required for positive identification, clearly indicate the submittal number in which the item was included.
- C. Resubmittals: When material is resubmitted for any reason, transmit under a new letter of transmittal and with a new submittal number.

3.2 COORDINATION OF SUBMITTALS

- A. General: Prior to submittal for approval, use all means necessary to fully coordinate all material including, but not necessarily limited to:
 - 1. Determine and verify all interface conditions, catalog numbers, and similar data.
 - 2. Coordinate with other trades as required.
 - 3. Clearly indicate all deviations from requirements of the contract documents.
- B. Grouping of Submittals: Unless otherwise specified, make all submittals in groups containing all associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the contract documents and the CONTRACTOR shall be strictly liable for all delays so occasioned.

3.3 TIMING OF SUBMITTALS

- A. General: Make all submittals far enough in advance of scheduled dates for installation to provide all time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
- B. ENGINEER'S Review Time: In scheduling, allow at least 21 calendar days for review by the ENGINEER following his receipt of the submittal. Should unanticipated circumstances prevent the normal review time, a minimum of 10 working days review time must be allowed for reviews.
- C. Delays: Delays caused by tardiness in receipt of submittals will not be an acceptable basis for extension of the contract completion date.

3.4 ENGINEER'S REVIEW

- A. CONTRACTOR'S approval: Prior to submission to the ENGINEER, all submittals shall have been reviewed and approved by the CONTRACTOR.
- B. General: Review by the ENGINEER shall not be construed as a complete check, but only that the general method of construction and detailing is satisfactory. Review shall not relieve the CONTRACTOR from responsibility for errors which may exist.
- C. Authority to Proceed: The notations "Reviewed, No Exceptions Noted" or "Reviewed, Exceptions Noted" authorize the CONTRACTOR to proceed with fabrication, purchase, or both, of the items so noted, subject to the revisions, if any, required by the ENGINEER'S review comments.
- D. Revisions: Make all revisions required by the ENGINEER. If the CONTRACTOR considers any required revision to be a change, he shall so notify the ENGINEER as provided for under "Changes" in the General Considerations. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed or approved by the ENGINEER.

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- E. Revisions After Approval: When a submittal has been reviewed by the ENGINEER, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an acceptable explanation as to why the substitution is necessary.

END OF SECTION 01 33 00

SECTION 01 45 00 - QUALITY CONTROL

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes

1. Quality assurance - control of installation.
2. Tolerances
3. References and standards.
4. Mock-up.
5. Testing laboratory services.
6. Inspection services.
7. Manufacturers' field services.
8. Subcontracting.

B. Related Sections

1. Section 01 33 00 – Submittals and Substitutions: Submission of manufacturers' instructions and certificates.

1.2 QUALITY ASSURANCE

- A. The CONTRACTOR will be held strictly to the intent of the contract documents in regard to the quality of materials, workmanship, and execution of the work. Inspections may be made at the factory or fabrication plant of the source of material supply.
- B. The ENGINEER will not be responsible for the construction means, controls, techniques, sequences, procedure, or construction safety.
- C. The CONTRACTOR shall monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- D. The CONTRACTOR will supervise and direct the work. He will be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The CONTRACTOR will employ and maintain on the work a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervisor and coordination of the work.
- E. The CONTRACTOR shall comply with manufacturers' instructions, including each step in sequence.

- F. Should the manufacturers' instructions conflict with Contract Documents, the CONTRACTOR shall request clarification from ENGINEER before proceeding.
- G. The CONTRACTOR shall comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- H. The CONTRACTOR shall perform work by persons qualified to produce required and specified quality.
- I. The CONTRACTOR shall verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- J. The CONTRACTOR shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 IMPROPER COVERAGE OF BURIED CONSTRUCTION

- A. If any work is covered contrary to the written instructions of the ENGINEER, it must, if requested by the ENGINEER, be uncovered for the ENGINEER'S observation, and replaced at the CONTRACTOR'S expense.
- B. If the ENGINEER considers it necessary or advisable that covered WORK be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such work is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction; if, however, such work is not found to be defective, the CONTRACTOR will be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate change order shall be issued.
- C. Defect Assessment
 - 1. Replace the work, or portions of the work, not conforming to specified requirements.
 - 2. If, in the opinion of the ENGINEER it is not practical to remove and replace the work, the ENGINEER will direct an appropriate remedy or adjust payment.
- D. Tolerances
 - 1. The CONTRACTOR shall monitor fabrication and installation tolerance control of all products to produce acceptable work. Do not permit products and installation outside of allowable tolerances to accumulate.
 - 2. The CONTRACTOR shall comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from ENGINEER before proceeding.

3. The CONTRACTOR shall adjust products to appropriate dimension and position before securing products in place.

E. References and Standards

1. For products or workmanship specified by association, trade, or other consensus standards, the CONTRACTOR shall comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
2. The CONTRACTOR shall conform to reference standard by date of issue current date for receiving bids, except where a specific date is established by code.
3. The CONTRACTOR shall obtain copies of standards where required by product specification sections.
4. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the ENGINEER shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

F. Mock-Up

1. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.
2. The CONTRACTOR shall assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
3. Accepted mock-ups shall be a comparison standard for the remaining work.
4. Where mock-up has been accepted by ENGINEER and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so.

G. Testing Services

1. The CONTRACTOR will appoint and employ services of an independent firm to perform testing. CONTRACTOR shall pay for services and include the price in the respective bid items.
2. The independent firm will perform tests and other services specified in individual specification sections and as required by the ENGINEER.
3. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the ENGINEER or the OWNER.
4. Reports will be submitted by the independent firm to the ENGINEER and CONTRACTOR, in duplicate indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.
5. The CONTRACTOR shall cooperate with the independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.

- a. Notify ENGINEER and independent firm 24 hours prior to expected time for operations requiring services.
 - b. Make arrangements with independent firm and pay for additional samples and tests required for CONTRACTOR'S use.
 6. Testing does not relieve CONTRACTOR to perform work to contract requirements.
 7. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the ENGINEER. Payment for re-testing will be charged to the CONTRACTOR or by deducting testing charges from the Contract Sum/Price.
- J. Removal of Defective and Unauthorized Work
1. All work which has been rejected or condemned shall be repaired, or, if it cannot be satisfactorily repaired it shall be removed and replaced at the CONTRACTOR'S expense. Defective materials shall be removed immediately from the site of the work.
 2. Work done without lines and grades having been given, work done beyond the lines or not in conformity with the grades shown on the plans or as given, save as herein provided, work done without proper inspection will be done at the contractor's risk and will be considered unauthorized and at the option of the ENGINEER may not be accepted and may be ordered removed at the CONTRACTOR'S expense.
 3. If any work is covered contrary to the written instructions of the ENGINEER it must, if requested by the ENGINEER, be uncovered for the ENGINEER'S observation, and replaced at the CONTRACTOR'S expense.
 4. If the ENGINEER considers it necessary or advisable that covered work be inspected or tested by others, the CONTRACTOR, at the ENGINEER'S request, will uncover, expose or otherwise make available for observation, inspection or testing as the ENGINEER may require, that portion of the work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such work is defective, the CONTRACTOR will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction; if, however, such work is not found to be defective, the CONTRACTOR will be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate change order shall be issued.
- K. Inspection Services
1. Owner will appoint, employ, and pay for specified services of an independent firm to perform inspection.
- L. Manufacturers' Field Services
1. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of

equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

2. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
3. Refer to Section 01 33 00 – Submittals and Substitutions, Manufacturers' Field Reports article.
4. Coordination of Plans, Specifications, and Special General Conditions: The plans, these specifications, Special General Conditions, and all supplementary documents are intended to describe a complete work and are essential parts of the contract. A requirement occurring in any of them is binding. In case of discrepancies, figured dimensions shall govern over scaled dimensions; plans shall govern over specifications. Special General Conditions shall govern over both General and Standard Specifications, and the plans and quantities shown on the plans shall govern over those shown on the proposal. The CONTRACTOR shall take no advance of any apparent error or omission in the plans and specifications, and the ENGINEER shall be permitted to make such corrections or interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specification.

In the event the CONTRACTOR discovers any apparent error or discrepancy, he shall immediately call such error or discrepancy to the attention of the ENGINEER, and request in writing an interpretation thereof by the ENGINEER.

M. Subcontracting

1. The CONTRACTOR may utilize the services of specialty SUBCONTRACTORS on those parts of the work which, under normal contracting practices, are performed by specialty SUBCONTRACTORS.
2. The CONTRACTOR shall not award work to SUBCONTRACTOR(S) in excess of fifty (50) percent of contract price, or in excess of fifty (50) percent of the labor and equipment required to install the project, without prior written approval of the OWNER.
3. The CONTRACTOR shall be fully responsible to the OWNER for the acts and omissions of its SUBCONTRACTORS, and of persons either directly or indirectly employed by them, as the CONTRACTOR is for the acts and omissions of persons directly employed by the CONTRACTOR.
4. The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind SUBCONTRACTORS to the CONTRACTOR by the terms of the contract documents insofar as applicable to the work of SUBCONTRACTORS and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provision of the CONTRACT DOCUMENTS.
5. Nothing contained in this CONTRACT shall create any contractual relationship between the SUBCONTRACTOR and the OWNER.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Beginning new work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION 01 45 00

SECTION 01 50 00 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Electricity, Lighting.
- B. Heat, Ventilation.
- C. Telephone Service.
- D. Water.
- E. Sanitary Facilities.
- F. Construction Aids.
- G. Barriers.
- H. Cleaning During Construction.
- I. Field Offices and Sheds.

1.2 ELECTRICITY, LIGHTING

- A. Provide and pay the cost of service required for construction operations.
- B. Arrange for connection of permanent power to operate the permanent facilities and pay the cost for power to operate each individual facility until such time as the individual facility is substantially complete.
- C. Provide and pay the cost of power required for all testing of each facility, including testing of the completed permanent installation.

1.3 HEAT, VENTILATION

- A. Provide as required to maintain specified conditions for construction operations, to protect materials and finishes from damage due to temperature or humidity.
- B. Provide ventilation of enclosed areas to cure materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, or gases.

1.4 WATER

- A. Provide all water required for construction operations.

1.5 SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures.

1.6 CONSTRUCTION AIDS

- A. Provide and operate drainage and pumping equipment; maintain excavations and site free of standing water.
- B. Provide special equipment required to locate prior to excavation all buried utilities and pipelines, regardless of whether or not they are shown on the drawings.

1.7 BARRIERS

- A. Provide traffic control required to direct and maintain an orderly flow of traffic in public roadways affected by the CONTRACTOR'S operations.
- B. Provide qualified and suitably equipped flagmen when construction operations encroach on traffic lanes as required for regulation of traffic.
- C. Provide barriers around existing trees and plants. Protect against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

1.8 CLEANING DURING CONSTRUCTION

- A. Control accumulation of waste materials and rubbish; periodically dispose of off-site.
- B. Clean interior areas prior to start of finish work; maintain areas free of dust and other contaminants during finishing operations.

1.9 FIELD OFFICES AND SHEDS

- A. Storage sheds for tools, materials, and equipment: Weathertight, with heat and ventilation for products requiring controlled conditions, with adequate space for organized storage and access, and lighting for inspection of stored materials.

1.10 REMOVAL

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary facilities. Remove underground installations to a depth of two (2) feet; grade site as indicated. Restore existing facilities used during construction to specified or to original condition.

END OF SECTION 01 50 00

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Section Includes

1. Products.
2. Transportation and handling.
3. Storage and protection.
4. Product options.
5. Substitutions.

B. Related Sections

1. Section 01 45 00 - Quality Control: Product quality monitoring.

C. Products

1. The CONTRACTOR shall not use materials and equipment removed from existing premises, except as specifically permitted by the contract documents.
2. The CONTRACTOR shall provide interchangeable components of the same manufacture for components being replaced.

D. Transportation and Handling

1. The CONTRACTOR shall:
 - a. Transport and handle products in accordance with manufacturer's instructions.
 - b. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
 - c. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

E. Storage and Protection

1. The CONTRACTOR shall:
 - a. Store and protect products in accordance with manufacturers' instructions.
 - b. Store with seals and labels intact and legible.
 - c. Store sensitive products in weathertight, climate controlled enclosures in an environment favorable to product.
 - d. Provide for exterior storage of fabricated products, which shall be placed on sloped supports above ground.

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- e. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- f. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- g. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- h. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- i. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

F. Product Options

- 1. The CONTRACTOR shall provide products specified by reference standards or by description only: any product meeting those standards or description.
- 2. The CONTRACTOR shall provide products specified by naming one or more manufacturers with a provision for substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

G. Substitutions

- 1. ARCHITECT / ENGINEER will consider requests for substitutions only within 15 days after date established in Notice to Proceed.
- 2. Substitutions may be considered when a product becomes unavailable through no fault of the CONTRACTOR.
- 3. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

A request constitutes a representation that the BIDDER or CONTRACTOR:

- a. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - b. Will provide the same warranty for the substitution as for the specified product.
 - c. Will coordinate installation and make changes to other work which may be required for the work to be completed with no additional cost to OWNER.
 - d. Waives claims for additional costs or time extension which may subsequently become apparent.
 - e. Will reimburse OWNER and ARCHITECT / ENGINEER for review or redesign services associated with re-approval by authorities.
- 4. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the contract documents.

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5. Substitution Submittal Procedure:
 - a. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
 - b. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - c. The ARCHITECT / ENGINEER will notify CONTRACTOR in writing of decision to accept or reject request.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION 01 60 00

SECTION 01 70 00 - CONTRACT CLOSEOUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures
- B. Final cleaning
- C. Adjusting
- D. Project record documents
- E. Operation and maintenance data
- F. Spare parts and maintenance products
- G. Maintenance service

1.2 CLOSEOUT PROCEDURES

- A. The CONTRACTOR shall:
 - 1. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for ENGINEER'S review.
 - 2. Provide submittals to ENGINEER that are required by governing or other authorities.
 - 3. Submit final Application for Payment identifying total adjusted contract sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

- A. The CONTRACTOR shall:
 - 1. Execute final cleaning prior to final project assessment.
 - a. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
 - b. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
 - c. Replace filters of operating equipment.
 - d. Clean debris from roofs, gutters, downspouts, and drainage systems.
 - e. Clean site, sweep paved areas, rake clean landscaped surfaces.
 - f. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.4 ADJUSTING

- A. The CONTRACTOR shall adjust operating products and equipment to ensure smooth and unhindered operation.

1.5 PROJECT RECORD DOCUMENTS

- A. The CONTRACTOR shall maintain on site one set of the following record documents and record actual revisions to the work:
 - 1. Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Change Orders and other modifications to the Contract
 - 5. Reviewed Shop Drawings, Product Data, and Samples
 - 6. Manufacturer's instruction for assembly, installation, and adjusting
- B. The CONTRACTOR shall ensure entries are complete and accurate, enabling future reference by OWNER.
- C. The CONTRACTOR shall store record documents separate from documents used for construction.
- D. The CONTRACTOR shall record information concurrent with construction progress.
- E. Specifications: The CONTRACTOR shall legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 1. Product substitutions or alternates utilized.
 - 2. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: The CONTRACTOR shall legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original contract drawings.

1.6 OPERATION AND MAINTENANCE DATA

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A. The CONTRACTOR shall:

1. Submit data bound in 8 ½ x 11-inch text pages, three D side ring binders with durable plastic or cloth covers.
2. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
3. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
4. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, typed on 20-pound white paper, in three parts as follows:
 - a. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, CONTRACTOR, SUBCONTRACTORS, and major equipment suppliers.
 - b. Part 2: Operation and maintenance instructions, arranged by system. For each category, identify names, addresses, and telephone numbers of SUBCONTRACTORS and suppliers. Identify the following:
 - 1) Significant design criteria
 - 2) List of equipment
 - 3) Parts list for each component
 - 4) Operating instructions
 - 5) Maintenance instructions for equipment and systems
 - 6) Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents
 - c. Part 3: Project documents and certificates, including the following:
 - 1) Shop drawings and product data
 - 2) Air and water balance reports
 - 3) Certificates
 - 4) Photocopies of warranties and bonds
5. Submit one (1) draft copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with ENGINEER'S comments. Revise content of all document sets as required prior to final submission.
6. Submit five sets of revised final volumes, prior to final payment.

1.7 SPARE PARTS AND MAINTENANCE PRODUCTS

A. The CONTRACTOR shall:

1. Provide spare parts, maintenance, and extra products in quantities specified in individual specification sections.
2. Deliver to project site and place in location as directed and obtain a receipt prior to final payment.

1.8 MAINTENANCE SERVICE

A. The CONTRACTOR shall:

1. Furnish service and maintenance of components indicated in specification sections during the warranty period.
2. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
3. Maintenance service shall not be assigned or transferred to any agent or SUBCONTRACTOR without prior written consent of the OWNER.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

NOT USED.

END OF SECTION 01 70 00

DIVISION 02 – EXISTING CONDITIONS

SECTION 02 10 00 – SITE REMEDIATION

PART 1 - GENERAL

1.1 SCOPE

Work under this heading shall include all items of demolition and clearing necessary to prepare the site for construction.

PART 2 - PRODUCTS

2.1 MATERIALS

All salvage materials from demolition or other clearing shall remain the property of the OWNER, unless specifically noted otherwise.

PART 3 - EXECUTION

- A. Protection of trees and improvements: CONTRACTOR shall exercise extreme care in the protection of all existing trees and other improvements on the site designated by the OWNER'S REPRESENTATIVE to remain.
- B. Topsoil shall be stripped from the area to be occupied by building, walks, drives, parking etc., and stockpiled in area designated by OWNER'S REPRESENTATIVE where it will not interfere with building or utility operations. Use topsoil for finish grading.
- C. Remove from site all brush, rubbish and miscellaneous debris resulting from demolition and clearing ahead of construction to meet all safety standards on the site. All wood, vegetation and non-vegetable matter to be removed from topsoil as it is being stockpiled and hauled off with other debris.
- D. Care must be taken to confine clearing operation to the building site with no encroachments on adjacent foliage or possible damage to adjacent areas.
- E. OWNER shall designate area to be cleared for parking, storage of materials and other workspace in addition to building site. This area shall not be cleared of trees and no soil to be stripped or disturbed. Fill and level holes and depressions, prior to final acceptance of project.

END OF SECTION 02 10 00

SECTION 02 42 00 - REMOVALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the contract, including General Supplementary Conditions and Division 01 Specification Sections, apply to this section.

1.2 WORK INCLUDED

- A. The work required under this section consists of operations, methods, labor, and materials for partial interior, exterior, and/or site underground removals with all related items necessary to complete the Work indicated on the contract drawings.

PART 2 - PRODUCTS

NOT USED.

PART 3 - EXECUTION

3.1 CONDITION OF SITE AND BUILDINGS

- A. The condition of site and buildings shall be accepted as found. The OWNER will not assume responsibility for conditions found or continuation of conditions existing at time of Proposal Invitation or thereafter. Any damage or loss, whether by reason of fire, theft, or other casualty or happening on the site, will not relieve the CONTRACTOR'S obligations to complete the work.

3.2 PROTECTION OF LIFE, STRUCTURES AND PROPERTY

- A. Execute work to insure against damages to remaining property. Do not interfere with property or portions of building without permission from authorized persons approved by the OWNER. Maintain free and safe passages in and around work areas. Do not seal off required exits without permission from authorities having jurisdiction.
- B. Provide, erect, and maintain lights, barriers, barricades as necessary to protect life, meeting all Federal, OSHA, State and local laws and regulations.

3.3 UTILITY SERVICES

- A. Remove all utility services as required and/or indicated on the drawings. Provide temporary utilities and services into areas requiring continued services before and after removal work.
- B. All electrical equipment and circuits shall be restored to original condition that are damaged or destroyed during removals and are not called out to be removed on the contract drawings.

3.4 REMOVALS

- A. Before starting demolition work, review all requirements for final remodeling work so that useable existing system components as required for completion of the new work is not destroyed. Coordinate all work with other CONTRACTORS.
- B. Remove any personal property, equipment, machinery, or other fixtures and turn them over to the OWNER as called for on the contract drawings.

3.5 DEBRIS

- A. Remove from the areas of removals, all debris as it accumulates. Do not store or permit debris to accumulate on the site. If the CONTRACTOR fails to remove excess debris promptly, the ENGINEER shall reserve the right to have debris removed by others at CONTRACTOR'S expense.
- B. Upon work completion, remove all tools, materials, equipment, apparatus, temporary toilets, and rubbish of every sort. Leave all existing building surfaces, not scheduled to be removed, swept clean condition at completion of work within any given area. Leave buildings and site clean, neat, and orderly.

3.6 REMOVAL OF PAVEMENT, SIDEWALKS, CURBS, ETC.

- A. Break concrete pavement, base course, and other similar materials designated for removal into pieces no heavier than 150 lbs. [68 kg]. Stockpile at locations shown on the plans.
- B. If the contract documents require the removal of asphalt concrete or Portland cement concrete pavement, saw the joint to the line and depth, as approved by the ENGINEER, to prevent under-break or shatter of adjacent areas.

3.7 REMOVAL AND DISPOSAL OF SALVAGED MATERIALS, STRUCTURES, AND OBSTRUCTIONS

- A. Unless otherwise required by the contract documents, all salvaged material shall become the property of the CONTRACTOR. Ownership of salvaged materials implies the responsibility to dispose of the salvaged material in accordance with all applicable local, state, and federal rules and regulations. CONTRACTOR is not allowed to bury or otherwise dispose of material within the project's boundaries or on any publicly owned property without the ENGINEER'S prior written approval.

END OF SECTION 02 42 00

SECTION 02 44 00 - ADJUSTMENT OF EXISTING STRUCTURES**PART 1 - GENERAL REQUIREMENTS****1.1 SCOPE**

This work shall consist of the necessary adjustments, alterations, relocating, or resetting to the required grade and alignment of existing structures, equipment or appurtenances which are not to be removed or abandoned and which are not the property of a private company, firm, or corporation required to move their own property, in accordance with these specifications and in reasonably close conformity with the lines, grades, elevations and dimensions shown on the drawings or established by the ENGINEER.

PART 2 - PRODUCTS**2.1 MATERIALS**

Materials for use in this work shall be as set out on the drawings, or if not specified, shall be of the same grade of material as specified elsewhere in these specifications for a similar type of work or of a material equivalent to that in the structure being adjusted.

PART 3 - EXECUTION**3.1 CONSTRUCTION METHODS****A. General**

1. The materials and workmanship necessary in raising, lowering, or otherwise adjusting or resetting existing structures shall conform to the requirements of the drawings and specifications for the class of work involved, or as directed by the ENGINEER. Whole bricks salvaged in good condition from structures may be used in rebuilding such structures provided the bricks are cleaned satisfactorily and approved by OWNER. Existing structures shall be rebuilt in accordance with the drawings and specifications. The final adjustment to grade shall be completed after the final surface course has been placed if the structure is in the pavement.
2. The CONTRACTOR shall guard against damage or breakage to any portion of the structure or appurtenance to be altered, removed, or reset. Any damage or breakage due to the CONTRACTOR'S negligence or failure to properly protect such structure or appurtenances, shall be repaired or replaced at the CONTRACTOR'S expense.

B. Manholes

1. Where the tops of the manholes are to be lowered to a new grade, the walls shall be removed and rebuilt to an elevation far enough below the new grade so that the maximum batter of the walls does not exceed 4 in. (10.1 cm) per foot (30.5 cm).
2. Where manholes are to be built up a distance of one foot (0.305 m) or less to a new grade, the walls may be carried up vertically and one new standard step shall

be set. Where the walls are to be built up a distance exceeding one foot (0.305 m), the existing walls shall first be removed to the bottom of the batter section of the walls, or to such elevation that the inside diameter of the manhole is not less than 3.5 ft. (1.1 m). The manhole shall then be rebuilt in conformity with the size and shape requirements for new manholes.

C. Catch Basins, Inlets, Manholes

1. Where inlets, catch basins, manholes or similar structures are to be revised to grade or rebuilt, the work shall be done in conformity with the requirements for new construction of this class of work as provided elsewhere in these specifications.

D. Valve Boxes, Meter Boxes, Lampholes

1. Care shall be taken in removing and resetting to grade, valve boxes, meter boxes, etc., to avoid breaking and any breakage shall be replaced by the CONTRACTOR at his expense.

E. Fire Hydrants, Valves, Water Meters, Water Line, etc.

1. Where adjustment or relocation of water lines and appurtenances is to be done by the OWNER, the CONTRACTOR shall be responsible for coordinating the arrangements with the OWNER for lowering or relocating of all water lines and the resetting of water valves, meters, manholes, and fire hydrants. When the alteration is part of the work to be performed by the CONTRACTOR as a part of his contract, such work shall be done in conformity with the requirements of the OWNER and in accordance with the requirements of these specifications for new work of this type.

F. Electric Traffic Signals or Right-of-Way Systems

1. Where the adjustment or relocation of electric traffic signals, highway lighting standard or conduits, cables, or appurtenances is to be done by the OWNER where the work is located, the CONTRACTOR shall make complete arrangements with the proper City or ODOT officials for the work to be done. When the alteration is part of the work to be performed by the CONTRACTOR as a part of his contract, such work shall be done in conformity with requirements of the OWNER, or as specified on the Drawings or in the Proposal and as directed by the ENGINEER.

G. Sewer Pipe

1. Sewer pipe removed to be re-laid shall be re-laid in conformity with the requirements of new sewers.

3.2 METHOD OF MEASUREMENT

Unless otherwise shown on bid form, the cost for various items, listed in Part 3.3, but not limited to, shall be included in other items of work.

3.3 BASIS OF PAYMENT

A. Accepted items, measured as provided above, will be paid for at the contract unit price for:

1. MANHOLES ADJUST TO GRADE	EA.
2. MANHOLES REBUILT	EA.
3. CATCH BASINS ADJUST TO GRADE	EA.
4. CATCH BASINS REBUILT	EA.
5. INLETS ADJUST TO GRADE	EA.
6. INLETS REBUILT	EA.
7. VALVE BOXES ADJUST TO GRADE	EA.
8. METER BOXES ADJUST TO GRADE	EA.
9. LAMPHOLES ADJUST TO GRADE	EA.
10. FIRE HYDRANT RESET	EA.
11. VALVES RESET	EA.
12. WATER METERS RESET	EA.
13. WATER LINE LOWERED	L.F.
14. WATER LINE REMOVED AND RELAID	L.F.
15. ELECTRIC TRAFFIC SIGNALS RESET	EA.
16. HIGHWAY LIGHTING STANDARDS RESET	EA.
17. ELECTRIC CABLE RELAID	L.F.
18. ELECTRIC CABLE CONDUIT RELAID	L.F.
19. PIPE SEWER REMOVED AND RELAID	L.F.
20. REMOVE AND RESET MANHOLE FRAME AND COVER	EA.

B. Valve boxes, meter boxes, etc., in conjunction with valves or meters to be reset will be considered as part of the valve or meter and will not be paid for as a separate item.

C. Valves in water lines or fire hydrant leads will not be considered as a separate pay item, but the cost of resetting same, and shall be included in the price bid for the water line or lead.

D. When the valve is under pavement, adjustment of valve box will be a separate pay item.

END OF SECTION 02 44 00

DIVISION 03 - CONCRETE

SECTION 03 10 00 - FORMWORK

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish, install all labor, materials, equipment, and services as required to complete all formwork for all cast-in-place concrete as shown on drawings, and/or specified herein.

1.2 SHOP DRAWINGS

- A. Per Division 01 General Conditions, submit Shop Drawings showing location, layout of construction joints, form joints, locations of tie holes or plugs, and procedure for pouring into formwork.

1.3 COORDINATION

- A. Secure all pipe sleeves, anchors, bolts, including those for angle frames, inserts, supports, ties, other materials in connection with concrete construction, in position before concrete is placed.
- B. Obtain information, instructions from other trades, suppliers in ample time to schedule, coordinate installation of items furnished by them to be embedded in concrete so provisions for their work can be made without delaying project.
- C. Make cutting and/or patching made necessary by failure or delay in complying with these requirements at no cost to OWNER.

1.4 GENERAL REQUIREMENTS

- A. Furnish formwork and formwork accessories according to ACI SPEC-301.
- B. Provide complete forms of such strength and construction as to prevent any spread, shifting, or settling when concrete is deposited, tight enough to avoid any leakage or washing out of cement mortar.
- C. Design forms, false-work supports so stresses indifferent members can be determined, including details. They shall have sufficient rigidity to resist deflection more than 1/8" between supports after concrete has been placed, to assure smooth, even appearance of surfaces.
- D. Plywood or lined forms will not be required for surfaces which are normally submerged or not ordinarily exposed to view. Other types of forms, such as steel or unlined wooden forms, may be used for surfaces which are not restricted to plywood and may be used as backing for form linings. Concrete forms are required above all extended footings.

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- E. Where concrete is placed against a gravel or crushed rock which does not contain at least 25% material passing a No. 4 sieve, such surfaces shall be covered with polyethylene film 6 mil thick to protect the concrete from loss of water. Joints in the film shall be lapped at least 4".
- F. Use bolts, rods, other approved devices for internal ties, spreaders; of such construction that when forms are removed, no metal is within 1" of an exterior nor within 1/2" of an interior concrete surface.
- G. Take special care that forms are true to required lines, grades, surfaces so as to give uniform, neat, workmanlike finish to all concrete surfaces, and to make form supports of sufficient strength, well braced, on adequate foundations so there is no settling or distortion when weight of concrete is added.
- H. Remove all dirt, chips, sawdust, rubbish, water, etc., from forms by water hosing and air pressure before any concrete is deposited. Leave no wooden ties or blocking in concrete except where indicated for attachment of other work.
- I. ENGINEER will cooperate with CONTRACTOR in matter of removing forms and shoring as early as possible. Length of time forms must remain in place depends on rate of time required for concrete to obtain proper strength and on construction loads that will be placed on concrete. Forms shall not be removed until authorized by the ENGINEER.
- J. Forms shall not be removed or disturbed for at least seven (7) days from date of last pouring unless approved by the ENGINEER.
- K. On removal of forms, all bolts, wires for anchoring, etc., shall be either removed, cut off to lengths as directed, or left in place for anchorage of other work as specified.
- L. Forms to be reused shall be in good condition, thoroughly cleaned before being reused.
- M. Provide 3/4" chamfer at any wall, column and vertical corners unless otherwise shown.

1.5 CONSTRUCTION JOINTS

- A. Make and locate generally as indicated on drawings all construction joints so as not to impair strength of structure and only at locations approved by the ENGINEER. Form keys used in any cold joints shown or required.

PART 2 - MATERIALS

2.1 SLABS, WALLS AND EXPOSED CONCRETE:

- A. Forms for flat exposed surfaces shall be 5-ply Exterior B-B (Concrete Form) panels. Panels with raised or separate face veneers shall not be used for exposed concrete.

2.2 SURFACE TREATMENT

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- A. Surface Treatment: Plywood panels shall have smooth surface treatment to prevent any development of bond or adhesion to concrete and to seal plywood surfaces against moisture. Master Finish RL Series as manufactured by Master Builder Solutions; Burke Form Sealer as manufactured by W. J. Burke Company, or approved equal, shall be used, applied in strict accordance with manufacturer's directions.

2.3 FORM TIES AND SPREADERS

- A. Form Ties and Spreaders: Shall be metal, cone nut type. No wood spreaders will be permitted.

2.4 ROUGH HARDWARE

- A. Rough Hardware: Nails, bolts, screws, anchors, etc., as shown or needed shall be furnished and set.

END OF SECTION 03 10 00

SECTION 03 20 00 - REINFORCEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, equipment, and services as required to complete all reinforcing steel work as shown on drawings, and/or specified herein.

1.2 SHOP DRAWINGS

- A. Per Division 01, General Conditions, submit Shop drawings showing bending and placing of all reinforcing. Drawings shall include diagrammatic elevations of all walls at a scale sufficiently large to clearly show the position, erection marks of marginal bars and their dowels and splices.

1.3 COORDINATION

- A. Coordinate with other trades so as not to interfere. Bring interferences between trades to ENGINEER'S attention; resolve before any concrete is poured.

1.4 STORAGE

- A. Store reinforcement to avoid rusting or coating with grease, oil, dirt, or other objectionable materials. Reinforcement coated with such materials will be rejected.

1.5 STANDARDS

- A. Comply with requirements set forth in the "Manual of Standard Practice for Detailing Reinforced Concrete Structures", published by the American Concrete Institute except where more exacting requirements are specified in Contract Documents.

PART 2 - MATERIALS

2.1 REINFORCEMENT

- A. Reinforcing bars shall be deformed bars conforming to ASTM A-615 Grade 60.
- B. Welded wire fabric shall conform to requirements of ASTM A-1064 using bright steel wire meeting ASTM A-1064. Gauges, dimensions shall be as noted on the drawings.
- C. All steel for reinforcement shall be new, non-rusted stock, free from mill scale, delivered without rust other than may have accumulated in prompt transportation to the work.
- D. Tie wire shall be No. 16 American Wire Gauge or heavier, black annealed.
- E. Supports for reinforcing bars in slabs shall be metal, of sufficient strength to adequately support bars, of a type approved by ENGINEER. Supports or spacers for

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bars in walls shall be such that exterior face of wall will not be marred when forms are stripped, and final finish has been completed.

- F. Dowels from footings to walls shall be same size, spacing as wall reinforcement, unless otherwise shown. Dowels shall project 12 inches into wall, 12 inches into footing unless detailed or noted otherwise.

PART 3 - REINFORCING BARS TO BE FURNISHED TO OTHER TRADES

3.1 VERTICAL REINFORCING

- A. All vertical reinforcing bars required for vertically reinforcing masonry work shall be furnished by REINFORCING CONTRACTOR, properly cut, shaped as indicated on drawings. Masons shall install in place all reinforcements supplied them as required by Drawing details.

3.2 HORIZONTAL REINFORCING

- A. Horizontal mesh type masonry reinforcing shall be furnished.

PART 4 –REINFORCING STEEL

4.1 REQUIREMENTS FOR PLACEMENT OF REINFORCING STEEL

- A. Reinforcement shall be accurately placed, securely tied at intersections with 16-gauge black annealed wire; shall be maintained in proper position by chair, bars, supports, or approved devices.
- B. Bars shall lap 18 inches at splices, except as otherwise indicated. Splices in adjoining horizontal bars shall be staggered at least 6'. Where this is not feasible, submit suggestions for ENGINEER'S consideration. Horizontal bars shall be hooked around corners not less than 9 inches, with minimum of 12 inches as per typical details.

4.2 CONCRETE PROTECTION OF REINFORCING

- A. Shall be not less than the following:
 - 1. 3" where concrete is poured against ground.
 - 2. 2" where concrete is poured against forms but may be in contact with ground.
 - 3. 1-1/2" minimum in exterior face of exterior walls (exposed to weather but not in contact with ground).
 - 4. 3/4" minimum in interior walls and interior face of exterior walls.
 - 5. 1-1/2" in beams, girders, and columns.
 - 6. Clear distance between bars shall be not less than 1-1/2", 1-1/2 bar diameters, nor less than 1-1/3 times the maximum size of coarse aggregate. See details for any specific variations to these requirements. Where conduits, piping, inserts, sleeves, etc., interfere with placing of reinforcing steel as shown or called for,

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CONTRACTOR must consult with ENGINEER, secure method of procedure from him before pouring any concrete. Bending or field cutting of bars around openings or sleeves will not be permitted.

END OF SECTION 03 20 00

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SCOPE

- A. This section covers all cast-in-place concrete, including reinforcing steel, forms, finishing, curing and other appurtenant work.
- B. Transit mix concrete will be permitted if it meets the requirements of this section and is mixed and delivered in accordance with ASTM C94.

1.2 SUBMITTALS

- A. Submittals shall be made in accordance with all the requirements of the General Conditions and the Contract Documents.
- B. Submit for review a proposed design mix for each concrete strength and class required by these Specifications. Failure to include any items of information noted in this paragraph for a given concrete strength or type will be cause for requirement of a resubmittal. Information to be submitted for each strength and class shall include the following items:
 - 1. Concrete mix design
 - a. Constituent quantities per cubic yard.
 - b. Sources of all concrete mix components including coarse aggregate, fine aggregate, cement, water, admixtures, and pozzolans where included.
 - c. Cement type and manufacturer, include chemical analysis (mill test report) for each cement type to be used.
 - d. Pozzolan type and source; include chemical analysis for each pozzolan type to be used.
 - e. Water/cement ratio, by weight.
 - f. Air content
 - g. Mix design slump.
 - h. Average compressive strengths conforming to the requirements of ACI 318 at 28 days. Provide both average strengths and sample standard deviation. Provide results at 7 and 14 days if available.
 - i. Laboratory shrinkage test results for concrete mix designs, where specified.
 - 2. Aggregate:
 - a. Laboratory sieve analysis, conforming to ASTM C33.
 - b. Verification that aggregate is not "deleterious," or "potentially deleterious." Provide documentation or other certification that aggregate does not contain deleterious substances and has been used without issues on previous projects.

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3. Admixtures. Submit Manufacturer's data brochures on all admixtures proposed for use and provide certification of compliance with specified ASTM standards for each admixture.
- C. Submit concrete placement drawings showing pour sequence, lift numbers, locations of all joints, concrete mix being placed, concrete finishes, and all pertinent embedments including embedded plates, sleeves, pipes, conduits, anchors, etc., where applicable. Where the Drawings permit the CONTRACTOR to select joint locations, show the selected dimensions on the placement drawings. Approval of the placement drawings shall not relieve the CONTRACTOR of the responsibility of placing all concrete and embedments as specified.
- D. If cold weather or hot weather concrete conditions are anticipated on the Project, submit a work plan for cold weather concreting and/or for hot weather concreting, describing proposed methods and procedures for mixing, delivering, placing, finishing, and curing concrete. Submit plans well in advance of cold or hot weather job conditions. Include procedures to be implemented upon abrupt changes in weather conditions or due to equipment failures. If a plan for either is not submitted and cold or hot weather concrete conditions are present, the CONTRACTOR will not be allowed to pour concrete until a plan is received and reviewed as long as cold or hot weather conditions are present on the Project.
- E. Furnish a delivery ticket for ready mixed concrete to the OWNER'S REPRESENTATIVE as each truck arrives. Each ticket shall provide a printed record of the weight of cement batched and each separate aggregate individually batched. Use the type of indicator that returns for zero punch or returns to zero after a batch is discharged. Clearly indicate the weight of fine and coarse aggregate, cement, and water in each batch, the quantity delivered, the time any water is added, and the numerical sequence of the delivery. Show the time of day batched and time of discharge from the truck. Indicate the number of revolutions of mix trucks.
- F. Submit Manufacturer's data sheets and product specifications for curing compounds and items specified in other Sections including form release agents, bonding agents, etc. Identify the locations where each will be used in the Work as a part of the submittal.
- G. Submitted data shall demonstrate compliance with all requirements of this Specification or deviations shall be clearly noted.

1.3 QUALITY ASSURANCE

A. Concrete Consistency

1. Test for slump shall be performed at the job site immediately prior to placing in accordance with ASTM C143. Slump tests shall be performed for every 35 CY separately for each construction item to indicate workability and consistency throughout the entire project.
2. If the slump is outside the allowed limits, the concrete shall be rejected. Concrete showing either poor cohesion or poor coating of the coarse

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aggregate with paste shall be remixed or rejected.

3. If the slump is within the allowable limit, but excessive bleeding, poor workability, or poor finishability are observed, the concrete shall be rejected and changes in the concrete mix shall be made only by an adjustment of one or more of the following:
 - a. The gradation of aggregate.
 - b. The proportion of fine and coarse aggregate.
 - c. The percentage of entrained air, within the allowable limits.

B. Concrete Temperature

1. Concrete temperature shall be taken immediately before placement with the point of measurement being in the chute or bucket.
2. Perform temperature test for each batch and record result on batch ticket.
3. If fresh concrete temperature does not meet requirements in this section the concrete shall be rejected.

C. Concrete Air

1. Test for air content shall be made on a fresh concrete sample for every 35 CY separately for each construction item prior to placing in forms.
2. Air content for concrete made of ordinary aggregates having low absorption shall be made in accordance with either ASTM C231, or ASTM C173. If light weight aggregates or aggregates with high absorptions are used, use ASTM C173.
3. If air content of fresh concrete does not meet requirements specified in this Section, the concrete shall be rejected. Do not place concrete that does not meet the air entrainment requirements of this Section.

D. Compression Testing

1. Compression test specimens shall be made, cured and tested in accordance with ASTM C31 and ASTM C39.
2. Compressive strength tests shall be made on cylinders at 7 and 28 days. The value of each test result shall be the average compressive strength of a minimum of 2 cylinders taken at the same time from the same batch of concrete.
3. Compressive test specimens shall be 6" x 12" cylinders or 4" x 8" cylinders. Sets of concrete test cylinders shall be cast for each day's concrete pour as follows.
 - a. A "set" of test cylinders consists of a minimum of six cylinders, one to be broken and strengths recorded at seven days; and three broken and strengths averaged at 28 days. Two hold cylinders will remain unbroken so that they will be available to be broken upon unforeseen circumstances or upon the option of the Engineer to break cylinders at different times.

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- b. A minimum of one “set” of cylinders will be made for each concrete pour up to 25 CY in volume. For pours larger than 25 CY, additional “sets” of cylinders will be made for each additional 50 CY of concrete poured.
4. Evaluation of compressive strength for compliance with design requirements will be conducted by the ENGINEER per ACI 318 – Section 26.12 based on the results of the 28-day test.
5. All test specimens shall be kept as near to the point of sampling as possible and yet receive the same protection from the elements as is given to the portions of the structure being built. Specimens shall be protected from injury. They shall be sent to a testing laboratory approved by the ENGINEER after a minimum of three days of field curing and while in the laboratory shall be kept in the ordinary air at the temperature of approximately 70°F until tested.

E. Failure to Meet Requirements

1. The OWNER may withhold payment for any section of concrete which does not meet the requirements of the plans and specifications. Withheld payment shall be based upon unit prices established for concrete, if available. Payment shall be withheld until the unacceptable concrete has been repaired or removed and replaced or otherwise brought into conformance with the plans and specifications.
2. Concrete Strength
 - a. If the 28-day strength test results fall below required values, additional curing may be performed and test cores may be obtained in accordance with ASTM C42 with approval of the ENGINEER. Additional curing, core removal and testing, if allowed by the ENGINEER, shall be at the CONTRACTOR'S expense.
 - b. If the strength results from test cores do not exhibit the required strength, the ENGINEER or OWNER'S REPRESENTATIVE reserve the right to require strengthening, replacement of substandard materials and/or additional testing at the CONTRACTOR'S expense. The choice of remedy is at the sole discretion of the ENGINEER or OWNER'S REPRESENTATIVE.
 - c. Other Concrete Properties
 - 1) If concrete properties besides strength do not meet required values, the ENGINEER may require concrete samples to be obtained in accordance with ASTM C42 and evaluated in accordance with ASTM C856 at the CONTRACTOR'S expense.
 - 2) If concrete properties besides strength do not meet required values, and the results of additional examination per ASTM C856 are deemed unsatisfactory at the sole discretion of the ENGINEER, the OWNER reserves the right to require strengthening, replacement of substandard materials and/or additional testing at the CONTRACTOR'S expense.

PART 2 - PRODUCTS

2.1 GENERAL

Cement	ASTM C150, Type II or I/II
Coarse Aggregate	Crushed rock, washed gravel or other inert material conforming to ASTM C33
Fine Aggregate	Shall conform to ASTM C33
Crushed	
Water	Clean and free from deleterious substances
Reinforcing Steel	Per specification 03 20 00 "Reinforcement"
Welded Wire Fabric	Per specification 03 10 00 "Form Work"
Expansion Joints	Preformed, bituminous type ASTM D994
Joint Sealer	Per specification 03 31 00 "Construction Joint Sealing"

2.2 DESIGN CRITERIA

- A. Use ACI 211.1 as the basis for selecting the proportions of ingredients to produce concrete having proper durability, strength, workability appearance and other required properties. Proportion ingredients to produce a homogenous mixture, which will work readily into corners and angles of forms and around reinforcement by methods of placing and consolidation employed on the work, but without permitting materials to segregate or allowing excessive free water to collect on the surface.
- B. Strength:
 - 1. All concrete is required to have an average 28-day compressive strength equal to or greater than specified strength in section 2.2(F) unless otherwise specified.
- C. Entrained Air:
 - 1. Air-entrain all concrete, unless otherwise specified.
 - 2. Drilled shafts do not require air entrainment unless placed underwater.
 - 3. Provide for not less than three percent (3.0%) nor more than six percent (6.0%) by volume of total entrapped and entrained air for normal weight concrete.
 - 4. Do not air entrain finished floors that call for a troweled finish.
- D. Slump:
 - 1. Provide adequate slump to produce acceptable workability, do not exceed maximum specified slump.
- E. Admixtures:
 - 1. Proportion admixtures according to the Manufacturer's recommendations. All admixtures shall be batched at the batch plant only.

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F. Concrete Classification

Class	Min. 28-Day Compressive Strength (psi)	Coarse Aggregate Size (in.)	Max. Water Cement Ratio	Max. Slump (in.)	Min. Cement Content (lb. per CY)
A	4000	1.5 (No. 467)	0.45	5	517
B	3000	1.5 (No. 467)	0.50	4	470
C	4000	1.0 (No. 57)	0.45	4	564
D	5000	0.75 (No. 67)	0.45	5	611
E	1500	1.5 (No. 467)	0.70	4	376
F	4000	0.375 (No. 8)	0.45	8	611

G. Concrete Usage

Class	Usage
A	All reinforced concrete unless otherwise specified
B	Concrete Encasement; Sidewalks, Curbs, Driveways
C	Drilled Shafts; Pumped Concrete; Thin Wall Sections
D	Precast Concrete and Panels
E	Lean Concrete Backfill; Foundation Seal; Blocking/Cradling
F	Underground Duct Banks

2.3 ADMIXTURES

A. Air-Entraining Admixture: ASTM C260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing intentionally added chlorides.

1. Water-Reducing Admixture: ASTM C494/C 494M, Type A. Products.
2. Retarding Admixture: ASTM C 494/C 494M, Type B. Products.
3. Water-Reducing and Retarding Admixture: ASTM C494 / C494M, Type D.
4. Accelerating Admixture: ASTM C494/C494M, Type C.
5. Water-reducing and Accelerating Admixture: ASTM C494/C494M, Type E.
6. High-Range, Water-Reducing Admixture: ASTM C494 / C494M, Type F.

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7. High-Range, Water-Reducing and Retarding Admixture: ASTM C494 / C494M, Type G.
8. Plasticizing and Retarding Admixture: ASTM C1017 / C1017M, Type II.
9. Workability-Retaining Admixture: ASTM C494/C494M, Type S.
10. Other admixtures shall be as specified in Section 03 30 00.

2.4 FIBERS

A. Synthetic Microfibers

1. Shall be manufactured from a proprietary blend of polypropylene resins in compliance with ASTM D7508/D7508M for micro-chopped strands, for use in fiber-reinforced concrete meeting the requirements of ASTM C1116/C1116M, Type III.
2. Shall provide a minimum cracking reduction ratio (CRR) of 40 percent when tested in accordance with ASTM C1579.
3. Dosage shall be as recommended by the manufacturer.

B. Synthetic Macrofibers

1. Shall be manufactured from a proprietary blend of polypropylene resins in compliance with ASTM D7508/D7508M for macro-chopped strands or hybrids chopped strands for use in fiber-reinforced concrete meeting the requirements of ASTM C1116/C1116M, Type III.
2. Shall provide a minimum average residual strength (f_{150}^D) [minimum average equivalent flexural strength ($f_{e,3}$)] of [] psi when tested in accordance with ASTM C1609/C1609M, using the roller support system in ASTM C1812/C1812M.
3. Dosage shall be as recommended by the manufacturer.

2.5 VAPOR RETARDER

- A. Plastic sheet, ASTM E1745, Class A or B.
- B. Polyethylene sheet, ASTM D4397, not less than 10 mils (0.25 mm) thick; or plastic sheet, ASTM E1745, Class C.

2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth or cotton mats.

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- C. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B.
- F. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C1315, Type 1, Class A.

2.7 STORAGE OF MATERIALS

- C. Cement shall be stored in suitable moisture-proof enclosures. Cement which has become caked or lumpy shall not be used.
- D. Aggregates shall be stored so that segregation and the inclusion of foreign materials is prevented. The bottom 6" of aggregate piles in contact with the ground shall not be used.
- E. Reinforcing steel shall be carefully handled and shall be stored on supports which will keep the steel from contact with the ground.

2.8 FORMS

- A. All forms shall be in accordance with Specification 03 10 00 "Form Work".

2.9 EMBEDMENTS

- A. Anchor bolts, castings, steel shapes, conduit, sleeves, masonry anchorage and other materials that are to be embedded in the concrete shall be accurately positioned in the forms and securely anchored. Conduits shall be installed between the reinforcing steel in walls or slabs which have reinforcements in both faces. In slabs which have only a single layer of reinforcing steel, conduits shall be placed under the reinforcement.
- B. Unless installed pipe sleeves, anchor bolts shall have sufficient threads to permit a nut to be installed on the concrete side of the form or template. A second nut shall be installed on the other side of the form or template and the two nuts shall be adjusted so that the bolt will be held rigidly to proper position.
- C. Embedments shall be clean when installed. After concrete placement, surfaces not in contact with concrete shall be cleaned of concrete spatter and other foreign substances.

2.10 BATCHING AND MIXING

- A. Concrete shall be furnished by an acceptable ready-mixed concrete supplier and shall conform to ASTM C94 and furnish batch ticket information.
 - 1. When air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.
- B. The consistency of concrete shall be suitable for the placement conditions. Aggregates shall float uniformly throughout the mass and the concrete shall flow sluggishly when vibrated or spaded. The slump shall be kept uniform.

PART 3 - EXECUTION

3.1 GENERAL

- A. The limits of each concrete pour shall be predetermined by the CONTRACTOR and shall be acceptable to the ENGINEER. All concrete within such limits shall be placed in one continuous operation.
- B. Before test sampling and placing concrete, water may be added at project site at the direction and approval of the ENGINEER.
- C. Before concrete is placed, forms, reinforcements, water stops, anchor bolts and embedments shall be rigidly secured in proper position; all dirt, mud, water, and debris shall be removed from the space to be occupied by concrete; all surfaces incrustated with dried concrete from previous placement operations shall be cleaned; and the entire installation shall be acceptable to the ENGINEER.
- D. Concrete shall be conveyed to the point of final deposit by methods which will prevent separation or loss of ingredients. Concrete shall be placed in final position without being moved laterally in the forms more than 6 feet. Lateral placement beyond 6 feet shall require the use of tremie pipe to meet the lateral limit.
- E. Concrete for piers shall be carefully deposited to avoid contact with forms, reinforcing and earth sides until completion of the drop. Necessary precautions shall be taken to prevent earth or other material from falling into excavations and to prevent dislocation of reinforcing during concrete placement. Concrete shall be placed continuously to the top of each pier at a rate of vertical rise of not less than 2' per hour. Forms above grade, if required, shall be cylindrical steel or fiber forms acceptable to the ENGINEER.
- F. During and immediately after placement, concrete shall be thoroughly compacted and worked around all reinforcements and embedments and into the corners of the forms. Mechanical vibrators shall be used which will maintain at least 9000 cycles per minute when immersed in the concrete. Each vibrator shall be driven by not smaller than a 1-1/2 hp motor. The number and type of vibrators shall be acceptable to the ENGINEER.

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3.2 HOT WEATHER CONCRETING

- A. Except as modified herein, hot weather concreting shall comply with ACI 305. At air temperatures of 90° F or above, concrete shall be kept as cool as possible during placement and curing. The temperature of the concrete when placed in the work shall not exceed 90° F.
- B. Plastic shrinkage cracking, due to rapid evaporation of moisture, shall be prevented. Concrete shall not be placed when the evaporation rate (actual or anticipated) equals or exceeds 0.2 lbs. per sq. ft. per hour, as determined in ACI 305.

3.3 COLD WEATHER CONCRETING

- A. Except as modified herein, cold weather concreting shall comply with ACI 306. The temperature of concrete at the time of mixing shall be not less than that shown in the following table for corresponding outdoor temperature (in shade) existing at the time of placement.

<u>Outdoor Temperature</u>	<u>Concrete Temperature</u>
Below 10° F	70° F
Between 10° F and 45° F	60° F
Above 45° F	45° F

- B. When placed, heated concrete shall not be warmer than 80° F.
- C. When freezing temperatures may be expected during the curing period, the concrete shall be maintained at a temperature of at least 50° F for five days or 70° F for three days after placement. Concrete and adjacent form surfaces shall be kept continuously moist. Sudden cooling of concrete shall not be permitted.

3.4 FINISHING

- A. All exposed surfaces shall be given a steel float finish.
- B. No Finish: A finish is not required on surfaces which are not visible from the inside or outside of the structure or more than 12 inches below finished grade.
- C. Screened surfaces shall be given an initial float finish as soon as the concrete has stiffened sufficiently for proper working. Any piece of coarse aggregate which is disturbed by the float or which causes a surface irregularity shall be removed and replaced with mortar. Initial floating shall produce a surface of uniform texture and appearance with no unnecessary working of the surface.
- D. Initial floating shall be followed by a second floating at the time of initial set. The second floating shall produce a finish of uniform texture and color. Unless additional finishing is specifically required, the completed finish for unformed surfaces shall be the float finish produced by the second floating.
- E. Floating shall be performed with hand floats or suitable mechanical compactor floats.

HAYES STREET WATERLINE REPLACEMENT

F. Smooth Form Finish:

1. Unless otherwise specified, all surfaces not meeting the requirements for “no finish” shall receive a smooth form finish. Use a smooth form finish on all surfaces exposed to view and liquid.
2. Provide a smooth, hard uniform texture on the concrete surface. Use plywood or fiberboard linings or forms in as large sheets as practicable and with smooth, even edges and close joints.
3. Patch tie holes and defects.
4. Provide a smooth, uniform, rubbed surface texture. Rub fins and joint marks and other irregularities with carborundum stone immediately after forms are stripped to leave a smooth, unmarred finish surface. If rubbing of surface is delayed to the point where the concrete surface is dry and cannot be rubbed to produce a smooth, uniform surface Contractor shall provide a blast finish to achieve a smooth uniform surface at no additional cost to the Owner.

G. Related Unformed Surfaces: Tops of piers, walls, bent caps and similar unformed surfaces occurring adjacent to formed surfaces shall be struck smooth after concrete is placed. Float unformed surfaces to a texture reasonably consistent with that of the formed surfaces. Final treatment on formed surfaces shall continue uniformly across the unformed surfaces.

3.5 FINISHING SLABS AND SIMILAR FLAT SURFACES

- A. Comply with the recommendations in ACI 302.1R for screeding, re-straightening and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Finish slabs and similar flat surfaces monolithically and apply as indicated in the Plans and as follows:
1. Rough Finish.
 - a. Tank floors and slabs that receive grout or additional concrete toppings.
 - b. Provide a rough surface by screeding only without further finish.
 2. Trowel Finish
 - a. Slab surfaces exposed to view, liquids or to be covered with a coating system, flooring coverings or membranes.
 - b. After apply float finish, apply trowel finish and consolidate by hand or power driven trowel. Continue troweling passes and re-straighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 3. Broom Finish
 - a. Sidewalks, walkways and platforms.
 - b. Immediately after float finishing, slightly roughen trafficked surface by

HAYES STREET WATERLINE REPLACEMENT

brooming with fiber-bristle broom perpendicular to main traffic route.

3.6 CONCRETE CURING

A. All concrete shall be cured in accordance with the specifications. The curing methods shall be wet curing, sheet materials or membrane curing compound. Unless the curing method is specified otherwise, select one of the appropriate curing methods below.

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI SPEC-306.1 for cold-weather protection and with ACI SPEC-301 for hot-weather protection during curing.
2. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb./sq. ft. / h (1 kg/sq. m / h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
3. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
4. Length of Curing Period
 - a. A "curing day" shall be any day on which the atmospheric temperature taken in the shade, or the air temperature adjacent to the concrete, remains above 50° F for at least 18 hours.
 - b. Continuously cure concrete for a period until 7 curing days have been reached. In cold weather, curing may be terminated after a period of 14 consecutive days.

B. Wet Curing

1. Immediately after the finishing operations are completed or forms are stripped, the concrete shall be covered with wet cotton mats or with a temporary covering of canvas or burlap, thoroughly saturated with water before placement. A temporary covering shall be used when factors dictate that cotton mats cannot be placed immediately after finishing operations without marring the finishing of the concrete surface.
2. When temporary coverings are used keep them in place only until the surface has sufficiently hardened so that a cotton mat can be substituted without marring or disturbing the concrete finish.
3. The coverings shall remain in contact with the concrete for the duration of the curing period.
4. The coverings shall be kept saturated with water for the entire curing period.
5. Water used for curing shall be potable and free from any injurious materials or deleterious substances.

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C. Sheet Curing

1. Immediately after the finishing operations are completed or forms are stripped, install sheet curing materials in accordance with all Manufacturer's recommendations.
2. Sheet curing shall be in contact with the entire concrete surface so as to prevent drying for the duration of the curing period.
3. When pedestrian traffic is unavoidable, provide suitable walkways to protect the sheet material.

D. Membrane Curing

1. Membrane curing compound is not permitted on surfaces to be rubbed or on surfaces to receive additional concrete, grout, plaster or coatings.
 2. Immediately after the finishing operations are completed or forms are stripped, apply membrane curing compound solution under pressure with a spray nozzle so the entire exposed surface is completely covered with a uniform film. The rate of application shall insure complete coverage but shall not exceed 150 square feet per gallon of curing compound.
 3. After application and under normal conditions, the curing compound shall be dry to the touch within 1 hour and shall be dry thoroughly and completely within 4 hours. When thoroughly dry it shall provide a continuous flexible membrane free from cracks and pinholes and shall remain intact during the required curing period.
 4. If the membrane seal is broken during the curing period, immediately repair it with additional curing compound.
- E. After the curing period, the temperature of the exposed surface shall not be permitted to drop faster than 30 degrees F in 24 hours.

3.7 JOINTS

- A. Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Contraction Joints in Slabs-on-Grade: Form weakened-plane sawed contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness.
- C. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint fillers full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

3.8 CONCRETE SURFACE REPAIRS

- A. Repair defective areas immediately after the removal of forms in accordance with this Section 02 42 00 "Removals" and Section 03 10 00 "Form Work". Repair of defective areas shall be at no additional cost to the OWNER.
- B. If the concrete surface is bulged, uneven or exhibits defects which in the ENGINEER'S opinion cannot be satisfactorily repaired, remove and replace the entire concrete section as directed at no additional cost to the OWNER.
- C. Patch tie holes immediately after removal of forms. After cleaning and thoroughly dampening the tie hole, fill solid with non-shrink, non-metallic grout.

3.9 MISCELLANEOUS ON-SITE MIXED BATCH

- A. The concrete shall be mixed in the approximate proportion of 1:2-1/2:4-1/4 and shall contain not less than one and one quarter barrels of cement per cubic yard of finished concrete. With the approval of the ENGINEER, admixtures may be added in order to increase workability.
- B. The onsite mixed batch will be subject to all testing requirements listed in this specification. The concrete shall meet or exceed strength requirements as required in this specification unless otherwise noted in the plans.

3.10 RESPONSIBILITY OF CONTRACTOR FOR STRENGTH

- C. It is the intent of these specifications that the CONTRACTOR shall guarantee that concrete of the specified compressive strength is incorporated in the structures and that the responsibility for producing the required grades of concrete is assumed by the CONTRACTOR.
- D. Should the average strengths shown by test cylinders fall below the strengths required, the ENGINEER will require any or all of the following changes: amount of cement, grading of aggregate, or ratio of the water to the cement used. If the tests disclosed that the strength of the concrete is insufficient for the structure as built, the ENGINEER may condemn the part of any structure in which concrete of insufficient strength has been placed and the CONTRACTOR, at his cost, shall remove and replace such concrete meeting these specifications.

3.11 EXPERIMENTAL CONCRETE MIXES

- A. The CONTRACTOR shall make experimental mixes prior to the placing of the concrete and at any time during the progress of the work when necessary to demonstrate that the concrete will meet these specifications. Materials for making experimental mixes shall be furnished by the CONTRACTOR and these materials shall be identical with those intended for use in the work. The cost of the materials shall be borne by the CONTRACTOR and shall be included in the price bid for concrete.

HAYES STREET WATERLINE REPLACEMENT

3.12 PAYMENT

- A. No separate measurement and payment will be made for the work covered under this section unless specified in the Bid Schedule. All costs in connection with this work shall be included in the applicable contract unit price for which the work pertains. Concrete encasement for underground piped utilities shall be paid for separately. Refer to the Standard Drawings for computation of encasement quantities.

END OF SECTION 03 30 00

SECTION 03 31 00 - CONSTRUCTION JOINT SEALING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work under this section shall include furnishing all labor, materials, and equipment necessary to clean and seal existing construction joints in concrete structures.

1.2 DELIVERY, STORAGE, AND HANDLING

- A. All materials shall be delivered to the site in the manufacturer's original unopened containers, with all labels and other markings intact.
- B. All materials shall be stored off the ground and protected from vandalism, the environment, and possible contamination in accordance with the manufacturer's recommendations.
- C. Materials not meeting the above shall be unacceptable and removed from the site.

1.3 SUBMITTALS

- A. All proposed materials and methods shall be submitted in accordance with Division 01.

PART 2 - PRODUCTS

2.1 GENERAL

- A. The joints shall be sealed by a one-part gun grade polyurethane sealant preceded by a primer receptive to urethane sealants. Modified amine epoxy or polyurethane grout with backer rod.

2.2 ACCEPTABLE PRODUCTS

A. Primer:

1. "Vulkem® Sealant Primer 171" as manufactured by Tremco.'
2. "MasterSeal P 173" as manufactured by Master Builders Solutions.

B. Sealant:

1. "Vulkem® 116 Polyurethane Sealant" as manufactured by Tremco.
2. "MasterSeal NP 1" as manufactured by Master Builders Solutions.

PART 3 - EXECUTION

3.1 ROUTING

- A. All construction joints shall be routed or sawed to provide the correct joint shape. That shape shall be 3/4" wide by 2" deep. The joint width shall be made with one pass of the saw or router.

3.2 CLEANING

- A. After routing, the joint shall be sandblast cleaned to remove all latent material and provide a good blast profile for sealant adhesion. After sandblasting, the joint shall be blown clean.
- B. After cleaning, install a bond breaker/backing rod in the bottom of the routed joint. The rod shall be installed by roller to ensure constant depth of the joint to be sealed. Backing rod materials are to be recommended by the sealant manufacturer; however, no low melting point or bituminous products are to be used.
- C. Apply one coat of the primer to the prepared joint, exercising care to avoid excessive coverage of the adjacent surface.
- D. After the primer has cured, in accordance with the manufacturer's recommendations, apply the joint sealer to within 1/4" of the top of the joint. The sealant shall then be tooled to provide a uniform concave finish.

3.3 GENERAL INSTALLATION NOTES

- A. All joints to be sealed shall be dry.
- B. Any leaking joints shall be pressure grouted as described elsewhere.
- C. Prior to sealing, all loose or spalled concrete adjacent to the joints shall be removed and replaced as described elsewhere.
- D. No joints are to be sealed which contain new concrete which has not cured for a minimum of 28 days.

END OF SECTION 03 31 00

SECTION 03 60 00 – GROUT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. CONTRACTOR shall furnish all labor, tools, and equipment for the placement of grout in tie holes and other locations as shown on the Drawings and specified herein.
- B. This section includes basic mixing, application, and curing methods for grout.
 - 1. Portland cement grout
 - 2. Rapid curing epoxy grout
 - 3. Non-shrink cementitious grout

1.2 RELATED SECTIONS

- A. The following is a list of Specifications which may be related to this section:
 - 1. Section 03 30 00, Cast-In-Place Concrete
 - 2. Section 03 11 00, Concrete Forming

1.3 QUALITY STANDARDS

- A. The following is a list of standards which may be referenced in this section:

American Concrete Institute:

- 1. ACI SPEC-301 - Specifications for Structural Concrete
- 2. ACI CODE-318 - Building Code Requirements for Structural Concrete

American Society of Testing and Materials:

- 1. ASTM C33 - Standard Specification for Concrete Aggregates
- 2. ASTM C40 – Standard Test Method for Organic Impurities in Fine Aggregates for Concrete
- 3. ASTM C150 - Standard Specification for Portland Cement
- 4. ASTM C191 – Standard Test Methods for Time of Setting of Hydraulic Cement by Vicat Needle
- 5. ASTM C307 – Standard Test Method for Tensile Strength of Chemical-Resistant Mortar, Grouts, and Monolithic Surfacing
- 6. ASTM C531 – Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
- 7. ASTM C579 – Standard Test Methods for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing and Polymer Concretes
- 8. ASTM C827 - Test Method for Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures

9. ASTM C1107 – Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink)

1.4 SUBMITTALS

- A. Section 01 33 00 – Submittals and Substitutions: Requirements for submittals.
- B. Product Data: Submit product data on grout and miscellaneous materials.
- C. Manufacturer's Installation Instructions: Submit manufacturer's instructions for mixing, handling, surface preparation and placing epoxy type and non-shrink type grouts.
- D. Manufacturer's Certificate: Certify products meet or exceed specified requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver grout in manufacturer's unopened containers with proper labels intact.
- B. Store grout in a dry shelter, protect from moisture.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not perform grouting if temperatures exceed 100 degrees.
- B. Maintain minimum temperature of 40 degrees F before, during and after grouting, until grout has set.

PART 2 - PRODUCTS

2.1 PORTLAND CEMENT GROUT MATERIALS

- A. Portland Cement: ASTM C150, Type I and II.
- B. Water
 1. Potable; containing no impurities, suspended particles, algae or dissolved natural salts in quantities capable of causing:
 - a. Corrosion of steel
 - b. Volume change increasing shrinkage cracking
 - c. Efflorescence
 - d. Excess air entraining
- C. Fine Aggregate
 1. Washed natural sand
 2. Gradation in accordance with ASTM C33 and represented by smooth granulometric curve within required limits
 3. Free from injurious amounts of organic impurities as determined by ASTM C40.

D. Mix

1. Portland cement, sand and water. Do not use ferrous aggregate or staining ingredients in grout mixes.

2.2 RAPID CURING EPOXY GROUT

A. Manufacturers

1. Sika Corporation
2. Laticrete L&M™
3. Master Builders Solutions
4. ENGINEER approved equal

- B. Rapid Curing Epoxy Grout: High strength, three component epoxy grout formulated with thermosetting resins and inert fillers. Rapid-curing, high adhesion, and resistant to ordinary chemicals, acids and alkalis.

Property	Test	Result
Compressive Strength	ASTM C579	12,000 psi (82.7 MPa) at 7 days
Tensile Strength	ASTM C307	2,000 psi (13.8 MPa) minimum
Coefficient of Expansion	ASTM C531	30x10 ⁻⁶ in per degree F (54x10 ⁻⁵ mm per degree C)
Shrinkage	ASTM C827	None

2.3 NON-SHRINK CEMENTITIOUS GROUT

A. Manufacturers

1. Sika Corporation SikaGrout® 212
2. Laticrete L&M™ Duragrout™
3. Euclid Chemical Dry-Pack Grout
4. Master Builders Solutions MasterFlow 713
5. ENGINEER approved equal

- B. Non-shrink Cementitious Grout: Pre-mixed ready for use formulation requiring only addition of water; non-shrink, non-corrosive, non-metallic, non-gas forming, no chlorides.

- C. Properties: Certified to maintain initial placement volume or expand after set and meet the following minimum properties when tested in accordance with ASTM C1107, for Type D non-shrink grout:

Property	Test	Time	Result
Setting Time	ASTM C191	Initial	2 hours (Approx.)
		Final	3 hours (Approx.)
Expansion			0.10% - 0.4% Maximum
Compressive Strength	ASTM C1107	1 day	4,000 psi (27.6 MPa)
		7 days	7,000 psi (48.3 MPa)
		28 days	10,000 psi to 10,800 psi (69.0 MPa to 74.5 MPa)

2.4 FORMWORK

- A. Refer to Section 03 10 00 for formwork requirements.

2.5 CURING

- A. Prevent rapid loss of water from grout during first 48 hours by use of approved membrane curing compound or with use of wet burlap method.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify areas to receive grout.

3.2 PREPARATION

- A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.
- B. Rough concrete lightly, but not enough to interfere with placement of grout.
- C. Remove foreign materials from metal surfaces in contact with grout.
- D. Align, level and maintain final positioning of components to be grouted.
- E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.

3.3 INSTALLATION - FORMWORK

- A. Construct leak proof forms anchored and shored to withstand grout pressures.
- B. Install formwork with clearances to permit proper placement of grout.

3.4 MIXING

A. Portland Cement Grout:

1. Use proportions of 2 parts sand and 1 part cement, measured by volume.
2. Prepare grout with water to obtain consistency to permit placing and packing.
3. Mix water and grout in two steps; pre-mix using approximately 2/3 of water; after partial mixing, add remaining water to bring mix to desired placement consistency and continue mixing 2 to 3 minutes.
4. Mix only quantities of grout capable of being placed within 30 minutes after mixing.
5. Do not add additional water after grout has been mixed.
6. Capable of developing minimum compressive strength of 2400 psi in 48 hours and 7000 psi in 28 days.

- B. Mix grout components in proximity to work area and transport mixture quickly and in manner not permitting segregation of materials.

3.5 PLACING GROUT

- A. Place grout material quickly and continuously.
- B. Do not use pneumatic-pressure or dry-packing methods.
- C. Apply grout from one side only to avoid entrapping air.
- D. Do not vibrate placed grout mixture, or permit placement when area is being vibrated by nearby equipment.
- E. Thoroughly compact final installation and eliminate air pockets.
- F. Do not remove leveling shims for at least 48 hours after grout has been placed.

3.6 CURING

- A. Immediately after placement, protect grout from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. After grout has attained its initial set, keep damp for minimum of 3 days.

3.7 FIELD QUALITY CONTROL

- A. Tests of grout components may be performed to ensure conformance with specified requirements.

END OF SECTION 03 60 00

DIVISION 31 – EARTHWORK

SECTION 31 00 00 – GENERAL EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION

This section covers the requirements and procedures for excavation and backfill for structures.

1.2 STANDARD SPECIFICATIONS

A. The following is a list of standard specifications with the accompanying abbreviations used in this specification section:

1. American Association of State Highway and Transportation Officials Standard Specifications - AASHTO.

1.3 QUALITY ASSURANCE

A. Compaction shall be in accordance with Section 31 23 33 - Trenching, Backfilling and Compaction.

B. The OWNER shall be the sole and final judge of suitability of all materials.

C. Materials in question, pending test results, shall not be used in the work. The CONTRACTOR shall remove all materials that fail to meet the requirements of the specifications, whether in stockpiles or in place.

D. Fills, embankments, backfills or subgrades which do not meet the specification requirements shall be removed or recompact until the requirements are satisfied.

1.4 PROTECTION

A. Protection of Existing Improvements

1. Protection shall be provided to prevent damage to existing improvements indicated to remain in place on the OWNER'S property and adjoining properties.
2. Damaged improvements shall be restored to their original condition, as acceptable to parties having jurisdiction.
3. Land areas outside the limits of permanent work performed under this contract shall be preserved in their present condition. The CONTRACTOR shall confine his construction activities to areas defined for work on the Drawings.

B. Protection of Existing Utilities

1. The CONTRACTOR shall verify all existing utility locations either shown or not shown on the drawings.

HAYES STREET WATERLINE REPLACEMENT

2. The CONTRACTOR shall immediately notify the OWNER and applicable utility company of any damages to existing utilities.
 3. Repairs to damaged utilities shall be made in accordance with the requirements of the OWNER and applicable utility company at no extra cost to the OWNER.
 4. The CONTRACTOR shall coordinate with the OWNER and the applicable utility company for shutoff of or connection to active utilities. Existing utility services shall not be interrupted except as authorized in writing by the OWNER.
- C. Protection of Work Site: Barricades or other type protectors shall be provided to prevent unauthorized personnel from entering work sites.

1.5 JOB CONDITIONS

A. Classification of Excavation

1. No classification shall be made to differentiate the various surface and subsurface conditions the CONTRACTOR may encounter during his performance under this contract.
2. It is the CONTRACTOR'S sole responsibility to verify the site surface and subsurface conditions.

B. Dewatering

1. Excavation and embankment shall be performed in such manner that the area of the site and the area immediately surrounding the site will be continually and effectively drained by gravity or temporary pumps.
2. Water shall not be permitted to accumulate in excavations or other areas of the site.
3. The excavation shall be drained by methods which prevent the softening of subgrades and embankments.

C. Blasting shall not be allowed.

1. Shoring, including sheet piling, shall be furnished and installed as necessary to protect workmen, banks, adjacent paving, structures, and utilities.
2. Shoring, bracing, and sheeting shall be removed as excavations are backfilled, in a manner to prevent caving.

PART 2 - PRODUCTS

2.1 SUITABLE MATERIALS

- A. Suitable materials for fill and, backfill include materials that are free of debris, roots, organic or frozen materials, stones having a maximum dimension of four (4) inches in the upper six (6) inches of fill or six (6) inches in the remainder of fill.

HAYES STREET WATERLINE REPLACEMENT

- B. Otherwise, suitable material which is unsuitable due to excess moisture content will not be classified as unsuitable material unless it cannot be dried by manipulation, aeration or blending with other materials to the satisfaction of the OWNER.
- C. Unsuitable materials shall include those materials that are determined by the OWNER to be inadequate for providing a stable slope, fill, subgrade, or foundation for structure.
- D. Expansive clay soils shall be classified as unsuitable unless treated or mixed in a manner approved by the OWNER.

2.2 CAPILLARY WATER BARRIER

A. Coarse Aggregate (Gravel) Capillary Water Barrier.

- 1. Coarse aggregate shall meet the requirements of AASHTO M80.
- 2. Coarse aggregate shall consist of gravel, crushed gravel, or crushed stone.
- 3. Gradation of coarse aggregate shall conform to the requirements of AASHTO M 43, Size Number 57:

Sieve	Mass-Percent Passing
1 ½ inches	(38 mm) 100
1 inch	95 – 100
½ inch (13 mm)	25 – 60
No. 4	0 – 10
No. 8	0 - 5

- 4. Maximum allowable percent of deleterious substances shall meet the requirements of AASHTO M 80, Class B.

B. Fine Aggregate (Sand) Capillary Water Barrier:

- 1. Fine aggregate shall meet the requirements of AASHTO M6.
- 2. In general, fine aggregate shall consist of natural sand having hard, strong, durable particles free from deleterious substances and meeting the following gradation requirements:

Sieve	Mass-Percent Passing
3/8 inch (9.5 mm)	100
No. 4	95 – 100
No. 16	45 – 80
No. 50	10 - 30
No. 100	2 - 10

2.3 FINE AGGREGATE (SAND) BACKFILL

- A. Fine aggregate backfill shall meet the requirements of Paragraph 2.2.B.

2.4 SELECTION OF BORROW MATERIAL

- A. Borrow material, if required, shall be selected to meet requirements and conditions of the particular fill for which it is to be used.
- B. For borrow material obtained outside the limits of the project site, the CONTRACTOR shall obtain the right to procure material and shall pay all royalties and other charges involved.

PART 3 - EXECUTION

3.1 EXCAVATION

- A. Excavation, regardless of material encountered, shall conform to the dimensions and elevations indicated on the Drawings for each building and structure, and shall include trenching for utility and foundation drainage systems to a point five (5) feet beyond the building line of each building and structure.
- B. Excavation shall extend a sufficient distance from walls and footings to allow for placing and removal of forms, installation of services, and for inspection, except where the concrete for walls and footings is authorized by the OWNER to be deposited directly against excavated surfaces.
- C. Suitable excavated material shall be transported to and placed to fill areas within the limits of the work.
- D. Unsuitable materials encountered within the limits of the work shall be excavated below grade and replaced with suitable materials as directed by the OWNER, except that concrete footings shall be increased in thickness to the bottom of the over-depth excavations and over-break in rock excavation.
- E. No excavated material shall be wasted without the authorization of the OWNER.
 - 1. Surplus excavated material and unsuitable material shall be disposed of by the CONTRACTOR at his own expense and responsibility.
 - 2. Material authorized to be wasted shall be disposed of in such manner as not to obstruct the flow characteristics of any stream or to impair the efficiency or appearance of any structure.
- F. No excavated material shall be deposited in a manner that may endanger a partly finished structure by direct pressure or by overloading banks contiguous to the operations or that may otherwise be detrimental to the completed work.
- G. Blasting shall not be allowed.

3.2 PREPARATION OF GROUND SURFACE FOR FILL

- A. Areas upon which fills are to be placed shall be cleared and grubbed before the fill is started.

HAYES STREET WATERLINE REPLACEMENT

- B. Sloped ground surfaces steeper than one (1) vertical to four (4) horizontal on which fill is to be placed shall be plowed, stepped, or benched, or broken up as directed by the OWNER, in such a manner that the fill material will bond with the existing surface.
- C. When surfaces on which fills are to be placed do not meet the specified density requirements, the ground surface shall be broken up, pulverized, and compacted to the specified density.
- D. When surfaces on which fills are to be placed do not meet the specified moisture content requirements, the ground shall be wetted, aerated, or dried to the specified density.
- E. When the subgrade is part fill and part excavation, the excavated portion shall be scarified to a depth of 12 inches and compacted as specified for the adjacent fill.

3.3 FILL AND BACKFILL

- A. Fills and backfills shall conform to the dimensions and elevations indicated on the Drawings for each building and structure.
- B. Placing Fill and Backfill
 - 1. Suitable material shall be placed in successive horizontal uniformly spread layers of loose material not more than six (6) inches thick, except that in areas not accessible or permitted for the use of self-propelled rollers or vibrators, the loose layer shall be four (4) inches thick.
 - 2. Fills and backfills shall not be placed in wet or frozen areas.
- C. Backfill
 - 1. Backfill shall not begin until construction below finish grade has been completed, underground utility systems have been inspected and tested, form removed, and the excavation cleaned of trash and debris.
 - 2. Fine aggregate backfill shall be placed to the dimensions and elevations indicated on the Drawings.
 - 3. Heavy equipment for spreading and compacting backfill shall not be operated closer to foundation or retaining walls than a distance equal to the height of backfill above the top of footing; the area remaining shall be compacted by power-driven hand tampers suitable for the material being compacted.
 - 4. Backfill shall be placed carefully around pipes to avoid damage to coatings.
 - 5. Backfill shall not be placed against foundation walls prior to 7 days after placement of the walls.
 - 6. As far as practical, backfill shall be brought up evenly on each side of the wall and sloped to drain away from the wall.

HAYES STREET WATERLINE REPLACEMENT

7. Where fill or backfill is to be placed and compacted against structure walls, the walls shall be supported laterally as necessary to prevent damaging or displacing the walls. Any wall so damaged as a result of the CONTRACTOR'S operation shall be completely and promptly replaced.

3.4 COMPACTION

- A. For fill and backfill compaction densities and moisture contents, see Section 31 23 33.
- B. Compaction shall be accomplished by those methods listed in Section 31 23 33. Material shall be aerated or moistened to maintain the required moisture content.
- C. Fine aggregate backfill shall be compacted with a minimum of two (2) passes of a power-driven hand tamper.

3.5 CAPILLARY WATER BARRIER

- A. Either coarse aggregate (gravel) or fine aggregate (sand) capillary water barriers shall be installed under slabs-on-grade as indicated on the Drawings.
- B. The capillary water barrier shall be placed directly on the subgrade after the subgrade has been compacted to the required density and placed to the elevation indicated on the Drawings.
- C. The barrier shall be constructed to the thickness shown in layers not exceeding six (6) inches in compacted thickness.
- D. Each layer shall be compacted to the required density, with a minimum of two passes of a plate-type vibratory compactor.

3.6 FINISH GRADING

- A. Excavated and filled sections, and adjacent transition areas, shall be uniformly smoothly graded. The finished surface shall be reasonably smooth, compacted, and free from irregular surface changes.
- B. The degree of finish shall be that ordinarily obtainable from blade-grader operations, except as otherwise specified.
- C. The surface of fills or excavated areas for slabs-on-grade shall not vary more than 0.05 foot from the established grade.
- D. Other finished surfaces shall not vary more than 0.15 foot from the established grade and cross section and shall be free of depressed areas where water would pond.

END OF SECTION 31 00 00

SECTION 31 23 19 - DEWATERING

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specifications sections, apply to this section.

1.2 SUMMARY

- A. This section includes construction dewatering.
- B. Related sections include the following:
 - 1. Division 31- Section 31 00 00 - Earthwork

1.3 PERFORMANCE REQUIREMENTS

- A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control ground water flow into excavations and permit construction to proceed on dry, stable subgrades.
 - 1. Maintain dewatering operations to ensure erosion control, stability of excavations and constructed slopes, that excavation does not flood, and that damage to subgrades and permanent structures is prevented.
 - 2. Prevent surface water from entering excavations by grading, dikes, or other means.
 - 3. Accomplish dewatering without damaging existing buildings adjacent to excavation.
 - 4. Remove dewatering system if no longer needed.

1.4 SUBMITTALS

- A. Shop Drawings for Information: For dewatering system. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.
 - 1. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
 - 2. Include a written report outlining control procedures to be adopted if dewatering problems arise.
 - 3. Include shop drawings signed and sealed by the qualified professional engineer responsible for their preparation.
- B. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by dewatering operations.

- C. Record drawings at project closeout identifying and located capped utilities and other subsurface structural, electrical, or mechanical conditions performed during dewatering.

- 1. Note locations and capping depth of wells and well points.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with water disposal requirements of authorities having jurisdiction. Discharge water into existing storm drainage system.
- B. Pre-installation Conference: Conduct conference at project site to comply with requirements in Division 01.

1.6 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by OWNER or others unless permitted in writing by OWNER and then only after arranging to provide temporary utility services according to requirements indicated.
- B. Project Site Information: Boring logs have been prepared for this Project and are available for information only. OWNER / ENGINEER will not be responsible for interpretations or conclusions drawn from this data.
 - 1. Make additional test borings and conduct other exploratory operations necessary for dewatering.
- C. Survey adjacent structures and improvements, employing a qualified professional engineer or land surveyor, establishing exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.
 - 1. During dewatering, regularly re-survey benchmarks, maintaining an accurate log of surveyed elevations for comparison with original elevations. Promptly notify ENGINEER if changes in elevations occur or if cracks, sags, or other damage is evident in adjacent construction.

PART 2 – PRODUCTS

NOT USED.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by dewatering operations.
 - 1. Prevent surface water and subsurface or ground water from entering excavations, from ponding on prepared subgrades, and from flooding site and surrounding area.

2. Protect subgrades and foundation soils from softening and damage by rain or water accumulation.
- B. Install dewatering system to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.
 1. Do not close or obstruct streets, walks or other adjacent occupied or used facilities without permission from OWNER and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

3.2 INSTALLATION

- A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.
- B. Before excavating below ground-water level, place system into operation to lower water to specified levels. Operate system continuously until sewers and structures have been constructed and fill materials have been placed, or until dewatering is no longer required.
- C. Provide an adequate system to lower and control ground water to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Install sufficient dewatering equipment to drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.
 1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.
- D. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.
 1. Maintain piezometric water level a minimum of 24 inches below surface of excavation.
- E. Dispose of water removed by dewatering in a manner that avoids endangering public health, property, and portions of work under construction or completed. Dispose of water in a manner that avoids inconvenience to others. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities.
- F. Provide standby equipment on site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails. If dewatering requirements are not satisfied due to inadequacy or failure of dewatering system, restore damaged structures and foundation soils at no additional expense to OWNER.
 1. Remove dewatering system from project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches (900 mm) below overlying construction.

HAYES STREET WATERLINE REPLACEMENT

- G. Damages: Promptly repair damages to adjacent facilities caused by dewatering operations.

END OF SECTION 31 23 19

SECTION 31 23 33 - TRENCHING, BACKFILLING & COMPACTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The work under this item shall include all earth, shale, gravel, loose rock, solid rock, debris, junk and/or other material excavated or otherwise removed in the preparation of the trench, all work in connection with the excavation, removal and subsequent handling and disposal of such material regardless of its type, character, composition or condition; subgrade preparation, all sheeting, piling, shoring, bracing; and dewatering of trenches; protection of adjacent property; backfilling; sand cushion; grade base stabilization; all specified backfill consolidation; and other work necessary or required. The CONTRACTOR shall fully inform himself of the conditions to be encountered and shall include all payment for same in his bid prices stated in the proposal. No payment will be made for extra work caused by unusual conditions not anticipated by the CONTRACTOR.

PART 2 - PRODUCTS

2.1 STANDARD BEDDING MATERIAL

- A. Standard Bedding Material (SBM) shall meet the requirements of ASTM D-2321 for the class of materials described in this subsection.
1. Class I shall be an angular, 1/4 in. to 1-1/2 in. graded crushed stone.
 2. Class II shall include coarse sands and gravels with maximum particle size of 1-1/2 inch. These materials may have small percentages of fines but shall be generally granular and non-cohesive, either wet or dry. Class II materials shall include Unified Soil Classification System (USCS) Soil Types GW, GP, SW and SP.
 3. Class III shall include fine sands, sand-clay mixtures and gravel-clay mixtures. USCS Soil Types GM, GC, SM and SC are included in this class.

2.2 BACKFILL

- A. Initial Backfill material used shall be as described below and/or as shown on the standard details.
1. Paved area: SBM material in accordance with section 2.1 of this specification.
 2. Non-Paved area:
 - a. For flexible pipe, SBM material used shall be in accordance with section 2.1 of this specifications at depths greater than 10-feet. Select Fill shall be used from depth 0-10 feet.
 - b. For rigid pipe, Select Fill shall be used.
 - i. Select Fill consists of excavated materials free of rocks larger than 2-1/2 inches, organic material, rubbish, debris, and all other objectionable material.

- B. Final Backfill material used shall be as described below and/or as shown on the standard details.
 - 1. Paved area: SBM material in accordance with section 2.1 of this specification.
 - 2. Non-Paved area: Excavated material shall be used.

PART 3 - EXECUTION

3.1 TRENCH EXCAVATION

- A. The trench shall be excavated so that the pipe can be laid to the alignment and grades shown on the drawings, or as directed by the OWNER'S REPRESENTATIVE. It shall be excavated a maximum of 150 feet in advance of pipe laying, or less, as permitted by the OWNER'S REPRESENTATIVE. Opening of trenches in excess of the maximum requires specific approval of the ENGINEER.
- B. Trenches shall be dry when the trench bottom is prepared. The trench bottom shall be shaped so that even bearing is obtained for the barrel of the pipe, with the bells unsupported. Any required dewatering shall be incidental to the trenching.
- C. From 12-inches above the pipe and below, the standard trench width as shown on the standard drawings shall not be exceeded. If, for any reason this portion of the trench exceeds the permitted width and if the OWNER'S REPRESENTATIVE shall determine that cradling or encasement then is required, said concrete cradle or encasement shall be installed.
- D. Any part of the bottom of the trench excavated more than 4 inches below the specified grade shall be considered incidental and shall be corrected with approved material as directed by the OWNER'S REPRESENTATIVE. In the event suitable material is not available, standard bedding material shall be used. When rock is encountered and concrete cradle is required, it shall be excavated 4 inches below the bottom of the pipe and the trench refilled to grade with standard bedding material.
- E. When quicksand or other unstable earth is encountered, the CONTRACTOR shall excavate to sufficient depth to permit backfilling with crushed stone to provide a stable base for the pipe and shall be considered incidental.

3.2 STANDARD BEDDING MATERIAL

- A. Standard Bedding Material (SBM) shall be used for embedding all pipe as shown on the Standard Details. SBM shall be carefully placed, compacted and tested along the entire length of the pipe to be installed to the limits of trench excavation until the thickness specified in the Standard Details is obtained. This layer of bedding material shall be smoothed by flat bottomed shovel or other appropriate means prior to the placement of pipe.
 - 1. Gravity Pipelines: SBM shall be placed simultaneously on each side of pipe and shall be carefully compacted in accordance with the SPECIFICATIONS for the type of pipe to be installed.

HAYES STREET WATERLINE REPLACEMENT

- a. Class I SBM requires little or no compaction due to the nature of the angular particles.
 - b. Class II SBM shall be compacted to a minimum 85% Standard Proctor Density using hand or mechanical tamping methods. Slightly damp material will generally result in maximum compaction with minimum effort. Avoid saturation of Class II SBM.
 - c. Class III SBM shall be compacted to a minimum 90% Standard Proctor Density using hand or mechanical methods. Take care to avoid excessive moisture in using Class III SBM.
2. Pressure Pipelines (except Rural Water): SBM shall be placed simultaneously on each side of pipe and compacted by hand sufficiently to maintain proper grade and alignment.

3.3 BACKFILL

- A. When the type of backfill material to be placed above the standard bedding material is not indicated on the drawings or specified, the backfill may be made with the excavated material, provided that such material, in the opinion of the OWNER'S REPRESENTATIVE, is suitable for backfilling. In the event the excavated material is not suitable, standard bedding material or other approved material shall be used.
- B. The trench shall be backfilled 12" above the pipe by hand or by other methods approved by the OWNER'S REPRESENTATIVE. Special care shall be used in placing this portion of the backfill to avoid damaging or moving the pipe. The remainder of the trench may be backfilled by mechanical methods. Backfilling operation shall be completed within 100 feet or less of the finished line at all times as directed by the OWNER'S REPRESENTATIVE.
- C. ALL clearing requiring proposed underground sewer line trench backfill materials and its placement must meet referenced ASTM D 2321, in accordance with OAC 252:656-5-3(b).

3.4 COMPACTION

- A. All trenching and backfill shall be tested every 400 lineal feet for sanitary sewer, every 800 lineal feet for waterlines and all other applications. The trenching and backfill shall meet the specification listed in section 3.2 of this specification or otherwise the required standards below:
 1. Paved area: 95% Standard Proctor Density (SPD)
 2. Non-Paved area: 90% SPD if cover is less than 10-feet and 95% SPD if cover is greater than 10-feet
- B. If the backfilling has been completed and the backfill material does not meet the requirements for compaction, all the material shall be removed and hauled from the job site and the trenches refilled with material as specified above. Boring will be required at all paved street crossings unless otherwise specified or approved by the ENGINEER.

END OF SECTION 31 23 33

SECTION 31 25 00 - EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Temporary and permanent erosion control systems.
2. Slope protection systems.

1.2 REFERENCES

A. United States Environmental Protection Agency (EPA):

1. NPDES - National Pollutant Discharge Elimination System.

B. Oklahoma Department of Environmental Quality (ODEQ):

1. DEQ General Storm Water Permit (OKR10 and OKR05)

C. Oklahoma Department of Transportation (ODOT):

1. ODOT - State of Oklahoma Department of Transportation Standard Specifications for Highway Construction, Section 735 - Material for Roadside Development and Erosion Control.

1.3 QUALITY ASSURANCE

A. Perform Work in accordance with the following ODOT standards:

1. Section 220 – Management of Erosion Sedimentation, and Storm Water Pollution Prevention and Control
2. Section 221 - Temporary Sediment
3. Section 230 - Sodding and Sprigging.

B. Regulatory Requirements: Conform to requirements of local Authority Having Jurisdiction for prevention of erosion and sediment control.

1. Conform to NPDES and ODEQ requirements, where required.

1.4 PROJECT CONDITIONS

A. Environmental Requirements: Protect adjacent properties and water resources from erosion and sediment damage throughout work. Take all necessary measures to prevent sedimentation from construction operations to enter adjacent property. Offsite discharge of sedimentation is not permitted.

B. Storm Water Pollution Prevention Plan: Maintain plan at project site at all times available for inspection during contract duration.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Quick Growing Grasses: Wheat, rye, or oats.
- B. Straw Bales: Free of weed seed.
- C. Fencing for Siltation Control: UV resistant geotextile fabric.
- D. Slab Sod: Rectangular slabs of Bermuda grass.
- E. Temporary Mulches: Loose straw, netting, wood cellulose, or agricultural silage free of seed.
- F. Bale Stakes:
 - 1. Minimum 3 feet length.
 - 2. 2 No. 4 steel reinforcing bars or,
 - 3. 2 steel pickets or,
 - 4. 2 - 2x2 inch hardwood stakes driven 18 inches to 24 inches into ground.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive work.
- B. Report in writing to ENGINEER prevailing conditions that will adversely affect satisfactory execution of the work of this section. Do not proceed with work until unsatisfactory conditions have been corrected.
- C. By beginning work, CONTRACTOR accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to the OWNER.

3.2 EROSION CONTROL AND SLOPE PROTECTION

- A. Provide erosion control and slope protection measures to prevent sediment from site entering adjacent property or public right-of-way to include but not be limited to:
 - 1. Temporary silt fences.
 - 2. Straw bales placed around culvert openings or inlets.
 - 3. Diked area with earth berm and silt trap for draining dredged material.
- B. Install erosion control and slope protection in accordance with ODOT standards.
- C. Place all erosion and siltation control measures before start of earthwork and grading construction operations.

HAYES STREET WATERLINE REPLACEMENT

- D. Mulch and seed all storm and sanitary sewer trenches not in streets no later than 10 days after backfill. Do not permit more than 500 feet of trench to be open at any one time.
- E. Place all excavated material on uphill side of trenches where possible. Do not place materials in stream beds. Seed any stockpiled material which remains in place longer than 30 days with temporary vegetation and mulch.
- F. Mulch and seed all temporary earth berms, diversions, erosion barriers and temporary stockpiles with temporary vegetative cover with 10 days after grading.
- G. Do not stockpile or otherwise place dredged, excavated or other material, at any time, in or near stream bed which may increase turbidity of water. If turbidity producing materials are present, hold surface drainage from cuts and fills within construction area and from borrow and waste disposal areas in suitable sedimentation ponds or grade surface drainage to control erosion within acceptable limits. Provide and maintain temporary erosion and sediment control measures such as berms, dikes, drains, or sedimentation basins, if required, until permanent damage and erosion control facilities are completed and operative. Hold to minimum area of bare soil exposed at any one time by construction operations.
- H. Drain dredged material minimum 7 days. Store material for drainage to a maximum height of 4 feet.
- I. OWNER'S REPRESENTATIVE may direct CONTRACTOR to limit surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations and may direct CONTRACTOR to provide immediate permanent or temporary erosion control measures.
- J. Maintain temporary erosion control systems as directed by OWNER'S Representative to control siltation during construction. Provide maintenance or additional work directed by OWNER'S REPRESENTATIVE immediately upon notification by OWNER'S REPRESENTATIVE.

END OF SECTION 31 25 00

DIVISION 32 – EXTERIOR IMPROVEMENTS

SECTION 32 10 00 - GENERAL REQUIREMENTS FOR SURFACES

PART 1 - GENERAL REQUIREMENTS

1.1 SCOPE

- A. This section covers requirements common to all or designated types of surface construction.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials as required for construction of the various types shall meet the requirements set forth in the appropriate Subsections of this Division.

2.2 EQUIPMENT

- A. Distributors: The distributor shall be so designed, equipped, maintained, and operated that bituminous material at even heat may be applied uniformly on variable widths of surface up to 26 feet (7.92 m) at readily determined and controlled rates from 0.1 - 1.0 gallons per square yard, (0.45 - 4.53 l/sq m) with uniform pressure, and with an allowable variation from any specified rate not to exceed 0.03 gallons per square yard (1.36 l/sq m). A check of distribution rate and uniformity of distribution shall be made when directed by the ENGINEER. Distributor equipment shall include a tachometer, pressure gauges, accurate volume measuring devices or a calibrated tank, and thermometer for measuring temperature of tank contents. Distributors shall be equipped with a power unit for the pump, and full circulation spray bars and adjustable laterally and vertically.
- B. Compactors: Rollers shall be steel wheel pneumatic tire, vibratory or a combination of these types, as the CONTRACTOR may elect. They shall be in good condition, capable of reversing without backlash, and shall be operated at speeds slow enough to avoid displacement of the mixture. Vibratory rollers shall be equipped with amplitude and/or frequency controls specifically designed for compaction of the material on which it is to be used. The type, number and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition. The use of equipment which crushes the aggregate will not be permitted.

PART 3 – EXECUTION

3.1 CONSTRUCTION METHODS

- A. Tolerances
 - 1. In order to provide a surface course or courses of acceptable smoothness, width and thickness, reasonably accurate control shall be maintained in placing, spreading, finishing, and compacting of surface courses. The CONTRACTOR shall

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use equipment as may be required to provide acceptable construction within the prescribed tolerances.

Surface Type	Surface
Asphalt Surface (Hot Mix – Cold Laid)	3/16 inch in 10 feet
Open Graded Friction Course	3/16 inch in 10 feet
Plant Mix Asphalt Concrete Pavement	3/16 inch in 10 feet
P.C. Concrete Pavement	1/8 inch in 10 feet

- Testing with a 10-foot (3.048 m) straightedge or other approved device for compliance with specified surface tolerances will be done by the ENGINEER at selected locations. The variation of the surface from the testing edge of the straightedge between any two contacts with the surface shall at no point exceed the specified tolerance. Humps or depressions exceeding the specified tolerance shall be corrected in an acceptable manner.

END OF SECTION 32 10 00

SECTION 32 11 23 - AGGREGATE BASE COURSES

PART 1 - GENERAL

1.1 SCOPE

- A. This item shall consist of a base course of blended coarse aggregate, sand, stone dust, or other inert finely divided mineral matter and soil binder, containing not less than 40% uniformly graded crushed material retained on the No. 4 sieve, and constructed on the prepared subgrade in accordance with these specifications, and in conformity with the lines, grades, compacted thickness, and typical cross section shown on the drawings.

PART 2 - MATERIAL

2.1 GENERAL

- A. Stabilized aggregate base course material shall consist of an intimate mixture of graded aggregate, coarse and fine, together with soil binder, and shall be practically free from vegetable or other deleterious substances. Coarse aggregate (material retained on a No. 10 sieve) shall be composed of gravel, stone or disintegrated granite and crushed material. Fine aggregate (the fraction passing No. 10 sieve) shall be sand, stone dust or other inert finely divided mineral matter and soil binder.

2.2 PHYSICAL PROPERTIES

- A. The coarse aggregate retained on the 3/8 in. sieve of the finished mixture, shall not have a percent of wear of more than 50 when tested in accordance with the Los Angeles Abrasion Test A.A.S.H.T.O. Method T-96.

2.3 GRADATION

- A. This specification permits the selection and use of one of three gradations or types of base course. The type required on the project may be specified in the bid item of the proposal. When the type is not so specified, the CONTRACTOR may select the gradation or type in advance of construction. The material produced or processes for the construction of the project shall conform in gradation and all other requirements herein for the type specified or selected and after work starts the same type of material as specified or selected shall be used throughout the project unless otherwise permitted in writing by the ENGINEER. In lieu of the above single type requirements, the CONTRACTOR will be permitted to use a type of finer gradation in the top of base course than in the bottom, provided the type used in the top has a compacted thickness or sufficient depth to obtain a satisfactory surface.
- B. Materials for base course which contain oversize particles of rock, gravel, lumps of clay or conglomerate material shall not be loaded into vehicles for delivery to the road. Such oversize particles of aggregate must be screened, crushed, or otherwise processed to meet the specification before delivery to the road.

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- C. The graded aggregate with soil binder, when uniformly blended and sampled from windrows, shall conform to the gradation limits by weight, and other characteristics, for the type being constructed as follows:

Sieve Size	TYPE A	TYPE B
3 inches	100	
1 ½ inches	100	40 – 100
¾ inch	40 – 100	30 – 75
3/8 inch	30 – 75	25 – 60
No. 4	25 -60	20 – 50
No. 10	20 – 43	15 – 35
No. 40	8 -26	7 – 22
No. 200	4 – 12	3 -10

1. The material passing the No. 200 sieve shall not be greater than 2/3 of the material passing the No. 40 sieve.
2. For all types, the material passing the No. 40 sieve shall conform to the following:
 - a. The Plasticity Index shall not exceed 6.
 - b. The Liquid Limit shall not exceed 25.

2.4 SAMPLING AND TESTING

- A. Samples shall be secured from the uniformly blended and flattened windrow and in accordance with A.A.S.H.T.O. Method of sampling T-2.
- B. Tests shall be conducted in accordance with the following A.A.S.H.T.O. Methods:
- | | |
|---------------------------------|-----------------|
| 1. Los Angeles Abrasion | T-96 |
| 2. Determining Liquid Limit | T-89 |
| 3. Sieve Analyses | T-27 |
| 4. Determining Plasticity Index | T-91 |
| 5. Sampling | T-2 |
| 6. Standard Density | T-180, Method D |

PART 3 - CONSTRUCTION METHODS

3.1 PREPARATION OF SUBGRADE

- A. Prior to placing the new base course material of subbase and base course material on the roadbed, the existing subgrade shall be brought to the required line, grade and typical cross section shown on the Drawings. Any soft or unsuitable material in the subgrade shall be removed and replaced with satisfactory material. The top 8 inches of the subgrade is then to be compacted to 95% of Standard Proctor Density.
- B. Immediately in advance of placing base course materials or subbase and base course material, the subgrade shall be tested for required density, conformity with the established line, grade and typical cross section shown on the drawings and shall be

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satisfactory before base course material or subbase and base course material is placed and spread.

3.2 MIXING AND PLACING

- A. When the several materials required to produce the specified mixture are to be combined and blended on the roadbed, the weighed material shall be delivered and placed in measured windrows, each in the proper proportions before blending. Soil binder to be added to the mixture shall be pulverized to 100% passing the 1-inch sieve and not less than 80% passing the No. 4 sieve. The total quantities for blending at one operation shall not be in excess of the amount that can be readily handled and thoroughly and uniformly mixed and blended to these requirements by the equipment available on the project.
- B. During the latter stages of the mixing and before final mixing is completed the mixture shall be moistened as deemed necessary by the ENGINEER to provide a suitable working condition during the final stages of mixing. Such application of water shall be accurate and uniform throughout the length of section being treated so that no excess wet or dry spots will be evidenced in the finished blend. Application of excess water should be avoided, either during mixing or during compaction, in order that undue softening of the subgrade will not develop.

3.3 SPREADING

- A. After the blended and flattened windrow has been tested and approved by the ENGINEER, the base course material shall be spread uniformly over the full length and width of the section to be compacted. This spreading shall be done in such a manner as to prevent segregation of the mixture. The thickness or depth of the layers shall not be in excess of that which the equipment on the project is capable of compacting to the density required herein for the completed base course.

3.4 COMPACTION - DENSITY

- A. The course or courses being compacted shall be wetted as necessary to maintain throughout the course, a suitable uniform moisture content (Optimum) in order to facilitate compaction and provide uniform density. Rolling shall be continued to the extent required to produce a completed base course having a minimum density of 95% of Standard Proctor Density, in any portion or areas, and including the edges.

END OF SECTION 32 11 23

SECTION 32 12 13.13 – TACK COAT

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This work consists of preparing and treating an existing bituminous or concrete surface with bituminous material.
 - 1. Original Emulsion. A mixture of asphalt, water, and a small amount of emulsifying agent to maintain a uniform blend.
 - 2. Diluted Emulsion. An original emulsion diluted with additional water to reduce the viscosity and to allow easier spraying, typically used for fog seals.
 - 3. Residual Asphalt Content. The amount of asphalt remaining on the pavement surface after all of the water, both in the original emulsion and any additional water, has evaporated.

1.2 MATERIALS

- A. Provide materials in accordance with Section 32 12 16.39 Part 2, “Asphalt Materials.”

1.3 EQUIPMENT

- A. Distributors and Supply Tanks
 - 1. Provide distributors and supply tanks capable of uniformly applying bituminous material in accordance with the following:
 - a. At the temperatures specified in the relevant specification sections;
 - b. On variable widths of surface not to exceed 26 ft [7.8 m];
 - c. At rates from 0.010 gal/yd² to 1.000 gal/yd² [0.045 L/m² to 4.525 L/m²]; and
 - d. With constant pressure and uniform temperature.
 - 2. Ensure the distributor can apply material to vertical faces of asphalt pavement at the joints between paving operations.
 - 3. Prevent variation that exceeds the specified application rate by more than 0.01 gal/yd² [0.045 L/m²].
 - 4. Provide a distributor equipped with the following:
 - a. A tachometer,
 - b. Pressure gauges,
 - c. Volume-metering devices or a calibrated tank,
 - d. A thermometer for measuring temperatures of tank contents,
 - e. A power unit for the pump,
 - f. Full circulation spray bars adjustable vertically and laterally,

- g. A positive shut-off valve, and
 - h. Fittings that prevent bituminous material from dripping.
5. Frequently check and adjust the angle of the spray nozzles and the height of the spray bar to ensure uniform distribution of the bituminous material. The ENGINEER will not allow drilling, clogging, or streaking the bituminous material. If any of these conditions occur, stop the operation and correct the problems creating these conditions before resuming distribution.
 6. Check the rate and uniformity of distribution if directed by the ENGINEER. Provide supply tanks in accordance with AASHTO M 156, Section 3.

B. Compactors

1. Provide rollers of the following types:
 - a. Vibratory steel-wheel,
 - b. Non-vibratory steel-wheel,
 - c. Pneumatic tire, or
 - d. A combination of the three types.
2. Provide rollers in good condition, capable of reversing without backlash, and operating at speeds that do not displace the bituminous mixture.
3. Equip vibratory rollers with working amplitude controls or frequency controls designed specifically for the compaction of the specified bituminous material.
4. Use rollers of a type, number, and weight to complete the compaction of the bituminous material before its temperature drops below the specified minimum.
5. Do not use equipment that crushes the aggregate in the bituminous material.

1.4 CONSTRUCTION METHODS

A. Preparation

1. Clean the existing roadbed surface before placing tack coat. Paint a thin, uniform tack coat on all surfaces of curbs and gutters, manholes, and other structures that will come in contact with hot mix asphalt. Ensure the tack coat applications minimize damage and inconvenience to traffic and allow one-way traffic without pickup or tracking the bituminous material.
2. Do not apply tack coat during wet or cold weather or in windy conditions that would cause the tack coat emulsion to drift. Do not apply tack coat to wet surfaces with free standing water. The ENGINEER will allow tack coat application to damp surfaces.
3. The ENGINEER must approve of the following before application:
 - a. Quantity,
 - b. Rate of application,
 - c. Temperature, and

d. Areas to be treated.

B. Fog Seal

1. Apply the fog seal at a rate of 0.100 gal/yd² [0.455 L/m²] of diluted emulsion diluted at 5:1 water to original emulsion. Alter the application rate or dilution ratio as directed by the ENGINEER (based on weather, type of emulsion, and surface type or layer).

C. Tack Coat

1. Apply the tack coat or NT tack material as shown in Table 1 on the following page, unless otherwise required by the Contract. Alter the application rate as directed by the ENGINEER (based on weather and surface type or layer). Use the highest rate in the table for the surface type or layer (top or bottom).

Table 1 Tack Application Rates		
Surface Type/Layer	Original Emulsion gal/yd² [L/m²]	Residual gal/yd² [L/m²]
New Asphalt (bottom)	0.060 [0.270]	0.035 [0.160]
Old Asphalt (bottom)	0.085 [0.385]	0.050 [0.225]
Milled (bottom)	0.085 [0.385]	0.050 [0.225]
New Fabric (bottom)	----	0.200 [0.905]
PFC, OGFSC (top)	0.100 [0.455]	0.060 [0.270]
UTBWC (top)	0.200 [0.905]	0.120 [0.545]
PCC (bottom)	0.075 [0.340]	0.45 .205]

2. Ensure that the tack breaks before the application of the next surfacing layer.
3. Re-apply tack at a rate that ensures proper bonding if the tack loses its adhesive properties or is damaged by traffic before being covered by the next surfacing layer, as directed by the ENGINEER, at no additional cost to the OWNER.

1.5 METHOD OF MEASUREMENT

- A. The ENGINEER will measure the volume of Emulsion for Fog Seal, Tack Coat, and NT Tack Material as delivered, before dilution.
- B. The ENGINEER will measure bituminous material by the gallon [liter] or ton [metric ton].

1.6 BASIS OF PAYMENT

- A. The OWNER will pay for each pay item at the contract unit price per the specified pay unit as follows:

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Pay Item:	Pay Unit:
(A) <i>FOG SEAL</i>	Gallon [Liter]
(B) <i>TACK COAT</i>	Gallon [Liter]
(C) <i>NT TACK MATERIAL</i>	Gallon [Liter]

- B. The OWNER considers the cost of water for dilution to be included in the contract unit price for *Fog Seal* and *Tack Coat*.

END OF SECTION 32 12 13.13

SECTION 32 12 16.13 – PLANT- MIX ASPHALT PAVING**PART 1 – GENERAL****1.1 DESCRIPTION**

- A. This work consists of constructing one or more courses of bituminous mixture on the prepared foundation (roadbed or base).
1. Asphalt mixture includes Hot Mix Asphalt and Warm Mix Asphalt.
 2. Hot Mix Asphalt (HMA) includes Superpave, Type A, Type B, and Type C.
 3. Warm Mix Asphalt (WMA) is defined as an asphalt binder and aggregate mixture which, by additive or process, can be produced and placed at a reduced temperature from normal HMA temperatures. WMA requirements are the same as for HMA except where noted.

1.2 MATERIALS

- A. ENGINEER must approve aggregate sources and blend percentages on a project basis before use.
- B. Coarse Aggregate
1. Course aggregate is defined as that part of the aggregate retained on the No. 8 [2.36 mm] sieve. Provide coarse aggregate consisting of clean, tough and durable particles that are free of soft and disintegrated pieces, shale, clay, organic, or other deleterious material.
 2. Natural gravel is not allowed as a source of insoluble material unless it is crushed so that at least 75 percent of the material retained on the No. 4 (4.75 mm) sieve has at least two mechanically fractured faces.
- C. Fine Aggregate
1. Fine aggregate is defined as that part of the aggregate that passes the No. 8 (2.36 mm) sieve and consists of hard, durable natural sand grains, crushed stone, stone dust, crushed gravel, mine chat, jig sand or any combination of these. Produce crushed materials from a source that meets the requirements for coarse aggregate in Table 1.
- D. Asphalt Requirements
1. Provide asphalt cement in accordance with AASHTO M 320 and Table 2.

Table 2 Additional Requirements to AASHTO M 320 for Asphalt Cement			
Test	PG 64-22 OK	PG 70-28 OK	PG 76-28 OK
Elastic recovery at 77°F (25°C), %	-----	≥65	≥75
Separation ^a , %	-----	≤10	≤10
Original DSR $G^*/\sin(\delta)$, kPa	≤2.50	≤2.50	≤2.50

RTFO DSR $G^*/\sin(\delta)$, <i>kPa</i>	≤5.50	≤5.50	≤5.50
PAV DSR change in testing temperature, °F (°C)	-----	77 [25]	77 [25]
Spot test ^b	Negative	-----	-----
Flash point, °F (°C)	≥500 [260]	≥500 [260]	≥500 [260]
Solubility in trichloroethylene, %	≥99	≥99	≥99
Note: Asphalt binder suppliers will provide handling requirements and recommended field mixing and compaction temperatures for their product to the hot-mix producer. ^a Separation test samples are prepared in accordance with ASTM D 5976 but are reported as the difference in G^* between the top and bottom samples. ^b Spot test using solvent blend of 65 percent heptane and 35 percent xylene by volume.			

PART 2 - EQUIPMENT

2.1 MIXING PLANTS

- A. Provide asphalt preparation plants in accordance with AASHTO M 156.
- B. Avoid exposing reclaimed asphalt paving material to the burner flame or high temperature combustion gases. Ensure plants modified for this purpose meet the manufacturer's requirements for the specific modifications.
- C. Allow the ENGINEER access to the mineral filler feeder systems for approval before use.
- D. Provide a closed system for storing and feeding mixtures with mineral fillers that maintains a constant material supply with minimal loss throughout the mix production system. Ensure the mineral filler measuring device provides a consistent percentage of filler. Provide a system that includes flow indicators or sensing devices to automatically stop mix production if mineral filler introduction ceases.
- E. Provide a separate system for mixtures with cellulose fibers to feed fibers into the mixture to obtain a uniform distribution. Ensure the fiber supply system includes low level, no-flow indicators and a file or printout that tracks the feed rate. Include a section of transparent pipe in the fiber supply for observing consistency of flow or feed.

2.2 SCALES

- A. Provide digital scales to weigh the bituminous mixture. For approved automatic printer systems with an automatic batching and mixing control system, use the printed batch weights or truck scales. Provide a weigh ticket for each load to record the weights. Provide certification of scales every six months, or after every move, unless otherwise directed by the ENGINEER.

2.3 PAVERS

- A. Provide self-contained, self-propelled asphalt pavers equipped with an activated heated screed, and an automatic control device for placing the mixture to the slopes and grades shown on the Plans. Ensure the pavers can spread and finish asphalt

courses on lanes, shoulders, and similar construction to the widths and thicknesses shown on the Plans.

- B. Equip the paver with a receiving hopper and a distribution system to uniformly place and spread the asphalt in front of the screed without causing asphalt segregation. The ENGINEER will not allow equipment designed to pick up asphalt from windrows.
- C. Ensure the paver can operate at forward speeds to place consistently the mixture.
- D. Use a heated strike-off assembly to produce a finished surface that meets the specified evenness and uniform texture without tearing, shoving, or gouging the mixture or causing asphalt segregation.

2.4 TRUCKS AND TRANSPORTS

- A. Ensure trucks hauling asphalt comply with legal load limits and have tight, clean, smooth metal beds thinly coated with a minimum amount of soap solution, lime solution, or other material that prevents the mixture from adhering to the beds as approved by the ENGINEER. Prevent ponds of these anti-adhesive solutions from forming in truck beds.
- B. Refrain from using solutions that contain diesel fuel or other contaminating solvents during material delivery.
- C. Provide trucks with a canvas cover or other material large enough to protect the asphalt from the weather. If necessary, insulate the truck beds and fasten the covers so that the mixture remains at the specified temperature until delivery.
- D. Provide transports to haul liquid asphalt materials in accordance with Subsection 32 12 16.39 Part 2, "Asphalt Materials." Keep a record of the following:
 - 1. Delivery date,
 - 2. Asphalt grade,
 - 3. Source,
 - 4. Quantity,
 - 5. Invoice number, and
 - 6. Material hauled in the previous load.
- E. Provide these records to the ENGINEER upon request.

2.5 COMPACTOR

- A. Use self-propelled, steel wheel, and pneumatic tired compactors. Ensure the steel wheeled compactors weigh at least 10 tons [9 metric tons]. Ensure the pneumatic tired compactors have at least seven pneumatic tires of equal size and diameter. Ensure the total weight of the tires produces an operating weight of at least 3,500 lbs. [1,588 kg] per tire. Inflate the tires to at least 90 percent of the maximum pressure recommended by the tire manufacturer. Maintain the tire pressure for at least one (1) hour after the start of operations and ensure the range in pressure among the tires does not exceed 10 psi [68 kPa].

PART 3 - CONSTRUCTION METHODS**3.1 ASPHALT MIX DESIGN AND INITIAL JOB MIX FORMULA**

- A. The ENGINEER will determine if the mix design meets the design criteria. Provide one mix design for each asphalt concrete mixture required by the contract documents.
- B. Ensure that the initial JMF is in accordance with Tables 8, 10, and 11, or Tables 9, 10, and 11 for the type of mix required by the contract documents. Prepare a trial mixture in accordance with Section 32 12 16.13 Plant Mix Asphalt Paving, Subsection 1.4C. Propose changes to the JMF if the trial, prepared at the initial JMF proportions, fails to meet the requirements of Tables 8, 12, 13, and 14, or Tables 9, 12, 13, and 14. If the changes do not produce a mix design in accordance with these tables, the ENGINEER will require a new mix design. If the changes do produce a mix design in accordance with these tables, the ENGINEER will approve the changes for adjustment of the JMF.
- C. Ensure the JMF establishes a percentage of aggregate passing each required sieve, a percentage of asphalt contained in the mixture, and a mixture temperature at the point of discharge from the plant.
- D. The JMF with the allowable tolerances shown in Table 15, establish the specification limits for each mixture. These limits may be outside the range in Table 8 or Table 9 except for the following conditions:
1. The absolute maximum sieve size,
 2. When no tolerances are shown in Table 15, the broad ranges given in Table 9 are the specification limits.
- E. All mix types shall be allowed 15% maximum recycled asphalt pavement (RAP).

Table 8					
Mixtures for Superpave					
Sieve Size ^a	Percent Passing per Superpave Mixture Type				
	S2	S3	S4	S5 / RIL	S6
1½ in [37.5 mm]	100	—	—	—	—
1 in [25.0 mm]	90 – 100	100	—	—	—
¾ in [19.0 mm]	≤ 90	90 – 100	100	—	—
½ in [12.5 mm]	—	≤ 90	90 – 100	100	—
⅜ in [9.5 mm]	—	—	≤ 90	90 – 100	100
No. 4 [4.75 mm]	≥ 40	—	—	≤ 90	80 – 100
No. 8 [2.36 mm]	29 – 45	31 – 49	34 – 58	37 – 67	54 – 90
No. 16 [1.18 mm]	—	—	—	—	—
No. 30 [0.600 mm]	—	—	—	—	—
No. 50 [0.300 mm]	—	—	—	—	—

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No. 100 [0.150 mm]	—	—	—	—	—
No. 200 [0.075 mm]	1.0 – 7.0 ^b	2.0 – 8.0 ^b	2.0 – 10.0 ^b	2.0 – 10.0 ^b	5.0 – 15.0
Other Mixture Requirements					
NMS ^c	1 in [25 mm]	$\frac{3}{4}$ in [19 mm]	$\frac{1}{2}$ in [12.5 mm]	$\frac{3}{8}$ in [9.5 mm]	No. 4 [4.75 mm]
Asphalt Cement ^d , % of mix mass	≥ 3.9	≥ 4.3	≥ 4.8	≥ 5.3 / ≥ 5.5	≥ 5.8
Performance grade asphalt cement	e	e	e	e	e
^a Table 8 reflects the sieve size boundaries for design and JMF purposes. After the design is established, the JMF will designate combined aggregate sieve requirements with tolerances in Table 14.					
^b Ensure the ratio of the percent passing the No. 200 (75 µm) sieve to the percent effective asphalt cement is from 0.6 to 1.6.					
^c Nominal Maximum Size (NMS) is defined as one size larger than the first sieve to retain more than 10 percent.					
^d The ENGINEER may adjust the lower limit if the effective specific gravity of the combined aggregates is greater than 2.65. The ENGINEER may allow adjustments if a theoretical lab molded specimen at the JMF asphalt content meets the VMA requirement at 4% air voids.					
^e The CONTRACTOR may substitute a higher grade of asphalt than that shown on the Plans at no additional cost to the OWNER.					

Table 10 Mix Design Properties of Laboratory Molded Specimens							
Property	Superpave			RIL	SMA	PFC	RBL
	PG64	PG70	PG76	PG76E-28	PG76	PG76	PG64
Number of SGC Gyrations							
Nini	6	7	8	—	—	—	—
Ndes	50	65	80	50	50	50	50
Required Density, % of Gmm							
Nini	85.5 – 91.5	85.5 – 90.5	85.5 – 89.0	—	—	—	—
Table 10, Continued Mix Design Properties of Laboratory Molded Specimens							
Ndes	96	96	96	97	96	≤ 82.0	98

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VMA, %	See Table 3.3:5						
VFA, %	See Table 3.3:5						
Lab Permeability, $\text{cm/s} \times 10^{-5}$	≤ 12.5	≤ 12.5	≤ 12.5	≤ 12.5	≤ 12.5	—	≤ 12.5
TSR, Min.	0.8	0.8	0.8	0.8	0.8	—	0.8
ITS ^a , psi	—	—	≥ 75	—	—	—	—
Draindown, %	—	—	—	—	≤ 0.20	≤ 0.20	—
Hamburg Rut Test, Min. No. of Cycles to 12.50 mm, 122 °F	10,000	15,000	20,000	20,000	20,000	—	5,000

Note: For this table: PG64, PG70, and PG76 refer to the high temperature grade of the binder. Unless otherwise noted, specifications for PG binder grades higher than PG76 will use PG76 specifications.

^a Indirect Tensile Strength from AASHTO T 283, preconditioned specimen average, in psi.

Table 11 Mix Design Properties of laboratory Molded Specimens									
Property	Superpave					RIL	SMA	PFC	RBL
	S2	S3	S4	S5	S6				
VMA ^a , %	≥ 12.5	≥ 13.5	≥ 14.5	≥ 15.5	≥ 16.5	≥ 15.5	≥ 17.0	—	≥ 14.0
VFA ^b , %	67 - 73	70 - 75	72 - 77	73 - 78	75 - 79	73 - 79	—	—	—
^a VMA is based on the bulk specific gravity of the aggregates. ^b VFA is defined as the percentage of VMA containing asphalt binder.									

Table 12 Field Properties of Laboratory Molded Specimens							
Property	Superpave			RIL	SMA	PFC	RBL
	PG64	PG70	PG76	PG76E-28	PG76	PG76	PG64
Number of SGC Gyrations							
Nini	6	7	8	—	—	—	—
Ndes	50	65	80	50	50	50	50
Required Density, % of Gmm							
Nini	85.5 – 91.5	85.5 – 90.5	85.5 – 89.0	—	—	—	—
Table 12, Continued Field Properties of Laboratory Molded Specimens							
Ndes	94.5 - 97.4	94.5 - 97.4	94.5 - 97.4	95.5 – 98.4	94.5 - 97.4	≤ 82.0	96.5 - 99.4

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VMA , %	See Table 13						
VFA, %	See Table 13						
Lab Permeability, cm/s $\times 10^{-5}$	—	—	—	—	—	—	—
TSR, Min.	0.75	0.75	0.75	0.75	0.75	—	0.75
ITS ^a , psi	—	—	—	—	—	—	—
Draindown, %	—	—	—	—	—	—	—
Hamburg Rut Test, Min. No. of Cycles to 12.50 mm, 122 °F	—	—	—	—	—	—	—
Note: For this table: PG64, PG70, and PG76 refer to the high temperature grade of the binder. Unless otherwise noted, specifications for PG binder grades higher than PG76 will use PG76 specifications.							
^a Indirect Tensile Strength from AASHTO T 283, preconditioned specimen average, in psi.							

Table 13									
Field Properties of Laboratory Molded Specimens									
Property	Superpave					RIL	SMA	PFC	RBL
	S2	S3	S4	S5	S6				
VMA ^a , %	≥ 12.0	≥ 13.0	≥ 14.0	≥ 15.0	≥ 16.0	≥ 15.0	≥ 16.5	—	≥ 13.5
VFA, ^b , %	—	—	—	—	—	—	—	—	—
^a VMA is based on the bulk specific gravity of the aggregates. Compute a new bulk specific gravity from each AASHTO T 209 test. Calculate the value by multiplying the aggregate Effective Specific Gravity (G _{se}) calculated from the latest AASHTO T 209 test by the aggregate Bulk Specific Gravity (G _{sb}) from the design. Afterwards, divide the product by the aggregate G _{se} from the design.									
^b VFA is defined as the percentage of VMA containing asphalt binder.									

Table 14	
Hamburg Test Requirements ^a	
Binder Grade	Minimum Number of Passes to 12.50 mm Rut Depth, Tested at 122°F
PG 58	10,000
PG 64	10,000
PG 70	15,000
PG 76	20,000
Table 14, Continued Hamburg Test Requirements	

HAYES STREET WATERLINE REPLACEMENT

Note: For the purposes of this table PG64, PG70, and PG76 refer to the high temperature grade of the binder.

^a Rut test requirements apply to Superpave, SMA, and RIL mixes only.

Table 15

JMF Tolerances Per Mixture

Sieve Size	Superpave	Stone Matrix Asphalt	Permeable Friction Course	Rich Bottom Layer	Open Graded Friction Course	Open Graded Bitum. Base
	Percent Passing					
≥No. 4 [4.75 mm]	±7	±7	±7	±7	±7	—
No. 8 [2.36 mm]	±5	±5	±5	±5	±5	—
No. 16 [1.18 mm]	±4	±4	—	±4	—	—
No. 30 [0.600 mm]	±4	±4	—	±4	—	—
No. 50 [0.300 mm]	±4	±4	—	±4	—	—
No. 100 [0.150 mm]	±3	±3	—	±3	—	—
No. 200 [0.075 mm]	±2	±2	±2	±2	±2	—

3.2 PREPARATION OF MATERIALS

A. Mat Irregularities

1. Ensure the mat is free of segregation, non-uniform texture, bleeding, fat spots, and cracking.

B. Tack Coat

1. If required by the contract documents, provide a tack coat in accordance with Section 32 12 13.13, "Tack Coat."

C. Temperature and Weather Limitations

1. Ensure the minimum surface temperature of the foundation is in accordance with Table 1.

Table 1 Compacted Thickness and Surface Temperature			
Lift Thickness, in [mm]	Surface Temperature, °F [°C]		
	Hot Mix Asphalt	Warm Mix Asphalt (Foamed)	Warm Mix Asphalt (Non-Foamed)
>3 [>75]	40 [4]	35 [2]	35 [2]
2-3 [50-75]	45 [7]	40 [4]	35 [2]
,2 [<50]	50 [10]	45 [7]	40 [4]

- Do not place asphalt if frost exists in or on the foundation. Stop operations if the material becomes too cold to be leveled and consolidated. If it starts raining, stop plant production immediately. During adverse weather conditions, the CONTRACTOR may place material already in transit; however, the CONTRACTOR shall assume the risk of weather related impacts.

D. Spreading and Finishing

- Remove foreign material from the surface of the foundation before placing asphalt. Place the asphalt on a dry surface with a paver in accordance with Subsection 1.3.C, "Pavers." Establish the alignment along one pavement edge with a string or wire line.
- Do not windrow asphalt. Deliver the asphalt to the paver at the optimum temperature shown on the mix design ± 25 °F [± 14 °C] or as approved by ENGINEER, but not to exceed plant mix temperature of 345 °F [174 °C].
- Use hand tools to dump, spread, rake, and compact the asphalt to the compacted thickness in areas inaccessible to mechanical spreading and finishing equipment shown on the Plans.
- To ensure a continuous operation, operate the spreading and finishing machine at a uniform forward speed consistent with the plant production rate, hauling capacities, and roller train capability. Maintain a paver speed that will minimize stopping and starting between trucks. If the ENGINEER determines that sporadic material delivery is adversely affecting the mat quality, the ENGINEER may direct paving operations to suspend until the CONTRACTOR makes adjustments.
- Spread the asphalt mixture uniformly adjacent to curbs, gutters, manholes, and other structures so that the compacted surface is ¼ inch [6 mm] above the edges of the structures. Before placing the mixture against these structures, clean and coat them with a thin, uniform tack coat in accordance with Section 32 12 13.13, "Tack Coat."
- Correct unsatisfactory asphalt mat immediately. The ENGINEER may suspend paving operation until the CONTRACTOR produces a satisfactory result. Remove and replace unsatisfactory asphalt as directed by the ENGINEER, at no additional cost to the OWNER.

E. Joints

- General

- a. Stagger longitudinal and transverse joints on succeeding layers by 6 inches [150 mm].
- b. Construct longitudinal joints within 1 ft [0.3 m] of the lane lines and ensure the longitudinal joints in the top asphalt layer are at the lane lines.
- c. Bond and seal longitudinal and transverse joints. If making joints between old and new pavements, or between successive days' work, create a continuous bond between the surfaces. Cut back the transverse edge of the previous course to its full depth to expose a fresh surface. Paint the edge with a tack coat and place the asphalt mixture directly against it. Rake the mixture to the depth and grade shown on the Plans.

2. Longitudinal Joint Density

- a. Perform a joint density evaluation at each pavement edge that is or will become a longitudinal joint for each lot or subplot at locations where roadway density tests are to be taken. Determine the joint density in accordance with the Oklahoma Department of Transportation's OHD L-14. The joint density is considered failing if the density at the joint is more than 3.0 pcf below the density at the random sample location at the same station and the measured (by core or correlation) joint density is less than 90%.
- b. Investigate joint density failures and take corrective actions during production and placement to improve the joint density. Suspend production if two (2) consecutive evaluations fail unless otherwise approved. Resume production after the ENGINEER approves changes to production or placement methods.

F. Compaction

1. General

- a. Operate compactors (rollers) in accordance with the manufacturer's recommendations.
- b. Perform the initial compaction for each placed layer of asphalt mixture using steel-drum rollers and follow with self-propelled pneumatic-tired rollers. Finish with a steel-drum roller. The ENGINEER requires at least two coverages with the pneumatic-tired roller on each layer.
- c. Use rakes and additional fresh material to correct the surface if mat displacement occurs during rolling. Avoid displacing the line and grade of the edges of asphalt. Ensure the mixture does not adhere to the compactors.
- d. Compact the mixture using hot hand tampers, smoothing irons, or mechanical tampers for areas inaccessible to compaction equipment. If approved by the ENGINEER, use a trench compactor to transmit compression to depressed areas.
- e. Remove mixture that is defective, loose, broken, or mixed with dirt, and replace with new asphalt, at no additional cost to the OWNER. Compact to conform to the surrounding area.

- f. Ensure the asphalt immediately behind the paver is at least 250 °F [121 °C] for HMA or 215°F [102°C] for WMA. Before the temperature of the asphalt drops below 140 °F [60 °C], compact thicker layers to the target density and thinner layers to the optimum density in accordance with Subsection 1.4.K.2.a, "Layers At Least 1½ in [38 mm] Thick," and Subsection 1.4.K.2.b, "Layers Less Than 1½ in [38 mm] Thick."

2. Acceptance

- a. The ENGINEER will accept layers at least 1½ in [38 mm] in nominal thickness on the basis of density in accordance with Subsection 1.4.K.2.a, "Layers At Least 1½ in [38 mm] Thick."
- b. The ENGINEER will accept layers less than 1½ inch [38 mm] in nominal thickness on the basis of compactive effort in accordance with Subsection 1.4.K.2.b, "Layers Less Than 1½ in [38 mm] Thick."
- c. The ENGINEER will accept layers of all thicknesses on a lot-by-lot basis. The ENGINEER considers a lot to be 500 ton [500 metric ton] of asphalt. The ENGINEER may terminate a lot and designate a new one if the CONTRACTOR makes adjustments to the material or production and placement procedures. For jobs less than 500 ton, if all the asphalt for each lift is placed in the same day, one sample is sufficient. If more than one day will be required for asphalt to be placed, a sample from each day shall be required.

1. Layers At Least 1½ in [38 mm] Thick

- a) Ensure the target density of each lot is 94 percent of the Maximum Theoretical Density, determined by the specific gravity of the asphalt in accordance with AASHTO T 209.
- b) The asphalt density for each lot is the average of two random samples from the lot. At times and locations directed by the ENGINEER, core samples from the pavement of 4" minimum diameter. The CONTRACTOR will perform tests on the samples or on the mat using a nuclear density gauge at the ENGINEER discretion.

Table 2 Pay Adjustments for Lot Density	
Pay Adjustment Factor (PAF) ^a % of Maximum Theoretical Density	Average Lot Density (ALD)
> 97.0 ^c	Unacceptable ^b
92.0 – 97.0 ^c	1
91.0 – 91.9	$1.00 - (0.07)(92.0 - \text{ALD})$
88.1 – 90.9	$0.93 - (0.15)(91.0 - \text{ALD})$
< 88.1	Unacceptable ^b
^a Use PAF for Roadway Density in the Combined Pay Factor equation in accordance with Subsection 1.4.N.2.a, "Basis of Acceptance and Payment." ^b Unless otherwise directed by the ENGINEER, remove and replace unacceptable lots at no additional cost to the OWNER. ^c For Rich Intermediate Layer (RIL) only, change 97.0 to 98.0.	

3. The OWNER will base acceptance and pay adjustments on ENGINEER-approved tests in accordance with the following schedule:
4. Documentation
 - a. Document asphalt pavement work in accordance with Subsection 1.4.K.2.b, "Layers Less Than 1½ in [38 mm] Thick" if required by the Contract. Include records of the ENGINEER'S directions and the resulting corrective actions. Ensure the records include a detailed description of the equipment, including weight, tire pressure, speed, and the number of coverages. Ensure the roller operators and superintendent (or other CONTRACTOR representative), sign the records at the end of each day's operation. Immediately after signing, submit the records to the ENGINEER for inspection. Submit the records to the ENGINEER at the conclusion of work on each day in accordance with Subsection 1.4.K.2.b, "Layers Less Than 1½ in [38 mm] Thick."

G Tolerances

1. Surface
 - a. Finish the surface elevations for new pavement construction and overlays within ½ in [13 mm] of the elevations shown on the Plans. If the Plans do not show the elevations for overlays, provide a finished surface in accordance with the surface smoothness tolerances. Ensure the surface smoothness is within ⅛ in in 10 ft [3 mm in 3 m]. Test for surface smoothness by placing a straightedge between two contacts on the finished surface and measuring the distance from the surface to the straightedge.
2. Width and Thickness

- A. Construct a finished pavement structure in conformance to the widths and thicknesses of individual layers and the total thicknesses of asphalt shown on the Plans or directed by the ENGINEER.

H. Opening to Traffic

- 1. Do not allow traffic on the pavement until after final rolling and the pavement has cooled sufficiently to ensure traffic will not damage the pavement surface. Use water or other artificial means to assist in cooling, as approved by the ENGINEER.

I Mix Properties

1. General

- a. Provide quality control personnel to ensure the production of acceptable products. Ensure the quality control personnel oversee the process control of asphalt materials during handling, mixing, and placing operations.
- b. At no time will the ENGINEER provide instructions to the CONTRACTOR or producer as to the setting of dials, gauges, scales, or meters; however, the ENGINEER may advise the CONTRACTOR or producer against continuing any operations or sequences of operations that will result in non-compliance with the Contract requirements.

2. Acceptance

- a. The ENGINEER will accept and pay for, or reject, each lot of asphalt pavement as defined in accordance with the following:
 - 1) Basis of Acceptance and Payment
 - a) The ENGINEER will consider asphalt cement content, air voids, and roadway density to determine acceptance and payment for asphalt pavement.
 - b) The ENGINEER may use several test methods to determine acceptability of asphalt cement content, air voids, and roadway density (in accordance with Subsection 1.4.K, "Compaction"). The ENGINEER will only use one test method but may perform several tests using that method to measure each characteristic. The ENGINEER will calculate the average deviation for each characteristic in accordance with Table 4, "Acceptance Schedule," and use the average to determine acceptance and calculate pay factors. For the characteristics of asphalt cement content and air voids, the ENGINEER will disregard algebraic signs of the deviations to calculate averages. The ENGINEER will address deviations above or below the target for these characteristics.
 - c) Perform sieve analyses in accordance with Subsection 32 12 16.39 Part 3, "Composition of Mixtures," or as modified by the special provisions. If a sieve analysis result does not fall within the tolerances specified in the JMF, provide test results that demonstrate that the asphalt mixture meets the following requirements in accordance with Subsection 32 12 16.39 Part 3, "Composition of Mixtures":
 - i. The gradation falls within the broad band; and
 - ii. The air voids at Ndes and VMA fall within the ranges.

- d) The ENGINEER will apply calculated pay factors for asphalt cement content, air voids, and roadway density to all acceptable asphalt pavement. The ENGINEER may consider additional pay factors for other characteristics including but not limited to smoothness. The ENGINEER will base the total pay adjustments for deficiencies on the following:
 - i. All pay adjustments will be based on the individual pay factors shown in Table 2, "Pay Adjustments for Lot Density" and Table 4, "Acceptance Schedule."
 - ii. Except for smoothness, pay factors will be applied on a lot by lot basis.
- e) Pay adjustments on lots, (all characteristics except smoothness) as each 500 tons (500 metric tons) lot is complete, will be made for deficiencies in asphalt cement content, roadway density, and air voids using the following formulas. If test results are incomplete at that time, an interim adjustment will be made assuming pay factors of 1.00 for the then unknown characteristics and corrected later when testing is completed.
- f) The ENGINEER will determine the total pay adjustment (combined pay factor) for asphalt pavement with deviations, using the following equation:

$$CPF = \frac{4RD + 3AC + 3AV}{10}$$

10

Where

CPF = Combined pay factor,
 RD = Pay factor for roadway density,
 AC = Pay factor for asphalt cement content, and
 AV = Pay factor for air voids.

- g) For layers less than 1½ inches [38 mm] thick, the ENGINEER will use a pay factor of "one" for roadway density. For permeable friction course, open-graded friction surface course, and open-graded bituminous base mixes, that do not have a target roadway density or target for air voids, the ENGINEER will use pay factors of "one" for both roadway density and air voids.
- b. ENGINEER'S Acceptance Procedures
- 1) Once a lot has been defined, maintain its identity throughout the mixing and placement process.
 - 2) The CONTRACTOR may perform varying amounts of the following sampling and testing per lot at ENGINEER discretion.
 - a) Asphalt cement content test: one mixture sample randomly selected, split and tested in accordance with Table 4.
 - b) Roadway density: three specimens randomly selected and each tested, averaged, and considered as one test in accordance with Table 2. Run

one maximum theoretical specific gravity test or if applicable run two and average as one test split from the mixture sample.

- c) Air voids (lab-molded): two specimens split from mixture sample, tested, averaged, and considered as one test in accordance with Table 4.
- d) The ENGINEER will use Table 4 for determining acceptance and calculating pay factors:

Table 4 Acceptance Schedule		
Characteristics	1 Test	Pay Factor
Deviation from JMF (without Regard to Sign)		
Asphalt Cement Content (Extraction, Nuclear or Ignition Oven) Target JMF Percent	0.000 – 0.40	1
	0.41 – 0.80	1.40 – (Deviation from JMF)
	>0.80	Unacceptable ^b
Asphalt Cement Content (Digital Printout from Hot-Mix Plant) Target JMF Percent	0.00 – 0.20	1
	0.21 – 0.30	1.80 – 4 x (Deviation from JMF)
	>0.30	Unacceptable ^b
Average of Deviations from Target (Without Regard to Sign)		
Air Void (Lab Molded Samples) ^a	0.00 – 1.50	1
	1.51 – 2.50	-0.16X + 0.24X + 1.00
Target (Superpave, Type A,B,& C) = 4%	>2.50	Unacceptable ^b
^a X is the average of deviations. ^b Unless otherwise directed by the ENGINEER, remove and replace unacceptable lots at no additional cost to the OWNER.		

J. Patching

- 1. Patch existing asphalt pavement as shown on the Plans or as directed by the ENGINEER.

K. Sampling and Testing

- A. The ENGINEER will inspect, test, and approve material before its incorporation in the work. Unless otherwise specified, tests will be performed using the most recent cited standard methods or specifications, AASHTO, ASTM, or other referenced authority. For differing test procedures, the ENGINEER will use the following order of precedence:

- 1. AASHTO, and
- 2. ASTM.

- B. For acceptance testing, samples will be taken and tested by certified technicians.

- C. The ENGINEER may inspect, test, or reject material before or during its incorporation into the work. The ENGINEER will address unacceptable material in accordance with Section 01 45 00, "Quality Control." The ENGINEER may retest material and reject material that does not meet the requirements of the contract documents, even if the material was previously tested and conditionally approved at the source of supply. The CONTRACTOR will provide copies of test results to the ENGINEER upon request.
- D. Sample and tests shall be in accordance with Table 16 below.

Table 16	
Sampling and Testing of Asphalt Mixtures	
Materials	Testing Method
Mechanical analysis of extracted aggregate	AASHTO T 30
Sampling asphalt mixtures	AASHTO T 168
Bulk specific gravity (Gmb) of compacted asphalt mixtures using saturated surface-dry specimens	OHD L-14
Maximum specific gravity of asphalt mixtures	AASHTO T 209
Resistance to moisture damage ^{a, g}	AASHTO T 283
Draindown characteristics of uncompacted asphalt samples	AASHTO T 305
Preparing specimens by superpave gyratory compactor ^b	AASHTO T 312
Bulk specific gravity (Gmb) and density of compacted asphalt mixtures using automatic vacuum sealing method CoreLok™	OHD L-45

1.5 METHOD OF MEASUREMENT

- A. The ENGINEER will measure asphalt pavement as a combined mixture including the aggregate, liquid asphalt, and other materials required in accordance with the mix design.
- B. The ENGINEER will measure bituminous material by the gallon [liter] or ton [metric ton].
- C. The CONTRACTOR shall submit all delivery tickets to the ENGINEER

1.6 BASIS OF PAYMENT

- A. General

HAYES STREET WATERLINE REPLACEMENT

1. The OWNER will pay for each pay item at the contract unit price per the specified pay unit as follows:

Pay Item:	Pay Unit:
(A) SUPERPAVE, TYPE S3	Ton [Metric Ton]
(B) SUPERPAVE, TYPE S4	Ton [Metric Ton]
(C) SUPERPAVE, TYPE S5	Ton [Metric Ton]
(D) SUPERPAVE, TYPE S6	Ton [Metric Ton]
(E) TYPE A	Ton [Metric Ton]
(F) TYPE B	Ton [Metric Ton]
(G)TYPE C	Ton [Metric Ton]

2. The OWNER will pay for asphalt by the lot, in accordance with Subsection 1.4.N 2, "Acceptance," on the basis of acceptance test results.
3. Include the cost of startup operations in the contract unit price for the relevant asphalt pavement pay item.
4. Include the cost of cutting samples and replacing sample materials 1000in the contract unit price for the relevant asphalt pay item.
5. Include the cost of tack coat in the contract unit price for the relevant asphalt type pay item.

END OF SECTION 32 12 16.13

SECTION 32 13 13 - PORTLAND CEMENT CONCRETE PAVEMENT**PART 1 – GENERAL****1.1 SCOPE**

- A. This work shall consist of a pavement composed of Portland Cement concrete, with or without reinforcement as specified, constructed on a prepared subgrade or base course in accordance with these Specifications and in reasonably close conformity with the lines, grades, thicknesses, and typical cross-sections shown on the plans or established by the ENGINEER.

PART 2 – MATERIALS**2.1 GENERAL**

Cement	AASHTO M 85 Type I & IA
High Early Cement	AASHTO M 85 Type III & IIIA
Water	Clean and free from deleterious substances
Reinforcing Steel	ASTM A615 Bars Grade 60
Epoxy Coated Reinforcing Steel	AASHTO M 284
Welded Wire Fabric	ASTM A1064
Air Entraining Admixtures	AASHTO M 154
Chemical Admixtures	AASHTO M 194
Fine Aggregate	AASHTO M 6
Course Aggregate	AASHTO M 80
Liquid Membrane Curing Compound	AASHTO M 148
Performed Expansion Joint	Bituminous Type AASHTO M 33
Joint Sealer	Hot poured elastic type ASTM C1190

2.2 STRENGTH

- A. The minimum compressive strength as determined by AASHTO T 22 shall be:

<u>AGE</u>	<u>MINIMUM STRENGTH</u>
7 days	2500 psi
28 days	3500 psi

- B. Maximum Water - Cementitious Materials Ratio: 0.48.
- C. Minimum Cementitious Materials Content: 564 lb. per C.Y.
- D. Slump: 2" ± 1", unless specified otherwise.

2.3 FORMS

- A. Straight side forms shall be made of a metal having a thickness of not less than 7/32" and shall be furnished in sections not less than 10' in length. Forms shall have a depth at least equal to the prescribed thickness of the concrete and a base width that will

provide adequate support for all equipment operating on the forms. Flexible or curved forms of proper radius shall be used for curves of 100' radius or less. Flexible or curved forms shall be of a design acceptable to the ENGINEER. Forms shall be provided with adequate devices for secure setting so that when in place they will withstand, without visible spring or settlement, the impact and vibration of the consolidating and finishing equipment.

- B. Flange braces shall extend outward on the base not less than $\frac{2}{3}$ the height of the form. Forms with battered top surfaces, and bent, twisted, or broken forms shall be removed from the work. Repaired forms shall not be used until inspected and approved. The top face of the form shall not vary from a true plane more than $\frac{1}{8}$ " in 10', and the upstanding leg shall not vary more than $\frac{1}{4}$ ". The forms shall contain provisions for locking the ends of abutting form sections together tightly, and for secure setting.

2.4 CONCRETE SAW

- A. When sawing joints is elected or specified, the CONTRACTOR shall provide sawing equipment adequate in number of units and power to complete the sawing to the required dimensions and at the required rate. All equipment shall be on the job both before and continuously during concrete placement.

2.5 FINISHING EQUIPMENT

- A. The finishing machine shall be equipped with at least two oscillating type transverse screeds or other approved method of striking off the concrete.
- B. Vibrators, for full width vibration of concrete paving slabs, may be the internal type with either immersed tube or multiple spuds. Pan type vibrators, if used, shall be used in conjunction with internal type vibrators. They may be attached to the spreader or the finishing machine, or may be mounted on a separate carriage. They shall not come in contact with the joint, load transfer devices, subgrade, or side forms. The rated frequency of the surface vibrators shall not be less than 3,500 impulses per minute and the frequency of the internal type shall not be less than 5,000 impulses per minute for tube vibrators and not less than 7,000 impulses per minute for spud vibrators.
- C. The longitudinal float may either be a mechanical float or screed mechanism meeting the approval of the ENGINEER or a manually operated float. The hand operated float shall be a rigid straightedge float not less than 12' nor more than 18' in length with a troweling or smoothing surface not less than 8" nor more than 12" in width, and shall be worked from bridges spanning the pavement.
 - 1. The mechanical float shall be so adjusted and so operated that the screed will have a small quantity of concrete in front of it at all times. The screed shall not be raised or lowered solely for the purpose of maintaining the proper amount of concrete in front of the screed.
 - 2. In lieu of the mechanical or hand operated longitudinal float, the use of a finishing machine with the float pan type finisher, will be permitted provided that satisfactory performance and specified surface smoothness and tolerances are obtained.

- D. The burlap drag shall consist of a seamless strip of burlap or cotton fabric, which shall produce a uniform surface of gritty texture after dragging it longitudinally along the full width of pavement. The dimensions of the drag shall be such that a strip of burlap or fabric at least 3' is in contact with the full width of pavement surface while the drag is used. The drag shall consist of not less than two layers of burlap with the bottom layer approximately 6" wider than the upper layer.
- E. The equipment for applying the white pigmented curing membrane shall be the fully atomizing type equipped with a tank agitator which will keep the compound thoroughly mixed during application. Hand sprayers of the pressure tank type, approved by the ENGINEER, may be used to apply curing membrane vertical surfaces, irregular areas or edges after form removal. Hand sprayers of the pressure tank type accepted by the ENGINEER may be used to apply curing membrane to vertical surfaces, irregular areas or edges after form removal.

PART 3 – EXECUTION

3.1 GENERAL

- A. Preparation of Grade: After the roadbed or base has been graded and compacted, the grade shall be trimmed approximately to correct elevation, extending the work beyond each edge of the proposed concrete pavement. When the foundation is stabilized with an admixture, it shall be within the tolerances provided for the foundation type.
- B. Setting Forms: Forms shall be set to line and grade by shimming or other approved methods. Imperfections or variations in the base or foundation which prohibits the placement of forms to the specified lines or grades shall be corrected in a manner approved by the ENGINEER. Forms shall be staked into place with not less than three pins for each 10' section. A pin shall be placed at each side of every joint. Form sections shall be tightly locked, free from play or movement in any direction. The forms shall not deviate from true line by more than 0.25" at any point. No excessive settlement or springing of forms under the finishing machine will be tolerated. Forms shall be cleaned and oiled prior to the placing of concrete.
- C. Grade and Alignment: The alignment and grade elevations of the forms shall be checked, and corrections made by the CONTRACTOR immediately before placing the concrete. When any form has been disturbed or any grade has become unstable, the form shall be reset and rechecked.
- D. Conditioning of Subgrade or Base Course: When side forms have been securely set to grade, the subgrade or base course shall be brought to proper cross section.
 - 1. When cementitious bases are used, material trimmed from high areas shall be removed and low areas shall be filled with concrete integral with the pavement. The finished grade shall be maintained in a smooth and compacted condition until the pavement is placed.
- E. Unless waterproof subgrade or base course cover material is specified, the subgrade or base course shall be uniformly moist when the concrete is placed.

- F. When cement treated base is used, excessive damage to the asphalt membrane or base shall be repaired at the CONTRACTOR'S expense before placing concrete pavement.
- G. Water may be measured either by volume or by weight. The accuracy of measuring the water shall be within a range of error of not over 1%.
- H. Methods and equipment for adding air entraining agent or other admixtures to the batch shall be approved by the ENGINEER.

3.2 MIXING

- A. The concrete may be mixed at the site of the work, in a central mix plant, or in truck mixers. The mixer shall be of an approved type and capacity. Mixing time shall be measured from the time all materials, except water, are in the drum. Ready mixed concrete shall be mixed and delivered in accordance with requirements of AASHTO M 157-13.
- B. Retempering concrete by adding water or by other means will not be permitted, except that when concrete is delivered in transit mixers or agitators additional water may be added to the batch materials and additional mixing performed in accordance with AASTHO M 157-13 to increase the slump to meet the specified requirements provided the original water cement ratio is maintained.
- C. Limitations of Mixing: No concretes shall be mixed, placed, or finished when the natural light is insufficient, unless an adequate and approved artificial lighting system is operated.

3.3 COLD WEATHER CONCRETING

- A. When concreting is authorized during cold weather, the aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might injure the materials. Unless otherwise authorized, the temperature of the mixed concrete shall be not less than 50°F (10°C) and not more than 90°F (32°C) at the time of placing it in the forms.
- B. Unless otherwise stated in contract documents if the air temperature is 35°F or falling, placing concrete will not be permitted without approval. The ENGINEER may require the water and/or the aggregates to be heated to not less than 70°F (21°C) nor more than 150°F (66°C). No concrete shall be placed on frozen subgrade nor shall frozen aggregates be used in the concrete.
- C. The CONTRACTOR shall be responsible for the protection and quality of concrete placed during any weather conditions.

3.4 PLACING CONCRETE

- A. The concrete shall be deposited on the grade in such manner as to require as little re-handling as possible. Unless truck mixers, truck agitators, or non-agitating hauling equipment are equipped with means for discharge of concrete without segregation of the materials, the concrete shall be unloaded into an approved spreading device and

mechanically spread on the grade in such manner as to prevent segregation of the materials. Placing shall be continuous between transverse joints without the use of intermediate bulkheads. Necessary hand spreading shall be done with shovels. Workmen shall not be allowed to walk in the freshly mixed concrete with boots or shoes coated with earth or foreign substances.

- B. Where concrete is to be placed adjoining a previously constructed lane of pavement and mechanical equipment will be operated upon the existing lane of pavement, that lane shall have attained the strength specified for opening to traffic. If only finishing equipment is carried on the existing lane, paving in adjoining lanes may be permitted after three days.
- C. Concrete shall be thoroughly consolidated against and along the faces of all forms and along the full length and on both sides of all joint assembly, the grade, or a side form. The vibrator shall not be operated in any one location longer than necessary to complete the consolidation.
- D. Concrete shall be deposited as near to expansion and contraction joints as possible without disturbing them, but shall not be dumped from the discharge bucket or hopper onto a joint assembly unless the hopper is well centered on the joint assembly.
- E. Should any concrete materials fall on or be worked into the surface of a completed slab, they shall be removed immediately by approved methods.
- F. The CONTRACTOR shall furnish the concrete necessary for casting test cylinders.
- G. Strike Off of Concrete and Placement of Reinforcement: When reinforced concrete pavement is placed in two layers, the bottom layer shall be struck off to such length and depth that the sheet of fabric or bar mat may be laid full length on the concrete in its final position without further manipulation. The reinforcement shall then be placed directly upon the concrete, after which the top layer of the concrete shall be placed, struck off and screeded. Any portion of the bottom layer of concrete which has been placed more than 30 minutes without being covered with the top layer shall be removed and replaced with freshly mixed concrete at the CONTRACTOR'S expense. When reinforced concrete is placed in one layer, the reinforcement may be positioned in advance of concrete placement or it may be placed in plastic concrete, after spreading by mechanical or vibratory means.
- H. Reinforcing steel shall be free from dirt, oil, paint, grease, mill scale, and loose or thick rust which could impair bond of the steel with the concrete.

3.5 JOINTS

- A. Joints shall be constructed perpendicular to the surface of the slab and of the type, dimensions and at locations shown on the plans. Suitable guide lines or devices shall be used to assure satisfactory alignment of joints.
- B. Longitudinal joints shall be formed by sawing or by a parting strip of metal or other approved pre molded material securely held in place while placing the concrete slab. Deformed steel tie bars of specified length, size, spacing and material shall be placed perpendicular to longitudinal joints.

- C. The parting strip shall be securely held in place perpendicular to the surface and true to line and grade, by metal pins, at intervals that average not greater than 3'. The minimum length of parting strips shall be 10' and adjoining sections shall be securely fastened together by lapping and pinning by means of a slip joint or other approved method. The CONTRACTOR shall furnish an approved gauge riding on the side forms for accurately checking the position of the parting strip before concrete is placed against it.
- D. For sawed longitudinal joints, tie bars shall be placed perpendicular to the longitudinal joints; they shall be placed by approved mechanical equipment or rigidly secured by chairs or other approved supports to prevent displacement. Tie bars shall not be painted or coated with asphalt or other material, or enclosed in tubes or sleeves.
- E. When tested with a straightedge, the surface across any joint shall not vary from the straightedge by more than 1/8". Concrete edges at joints which are not sawed shall be tooled to 1/8" radius or otherwise shown on the plans.
- F. The longitudinal joint shall be sawed before the end of the curing period or shortly thereafter and before any equipment or vehicles are allowed on the pavement. The sawed area shall be thoroughly cleaned and, if required, the joint shall immediately be filled with sealer.
- G. Transverse Expansion Joints: The expansion joint filler shall be continuous from form to form, shaped to the subgrade and to the keyway along the form. Preformed joint filler shall be furnished in lengths equal to the pavement width or equal to the width of one lane. Damaged or repaired joint filler shall not be used unless approved by the ENGINEER.
- H. The expansion joint filler shall be held securely in position. An approved installing bar, or other device, shall be used if required to secure preformed expansion joint filler at the proper grade and alignment during placing and finishing of the concrete. Finished joints shall not deviate more than 1/4" in the horizontal alignment from a straight line. If joint fillers are assembled in sections, there shall be no offsets between adjacent units. No plugs of concrete shall be permitted anywhere within the expansion space.
- I. Pre-molded joint filler shall be appropriately punched to the exact diameter and location of the dowels. It shall, unless otherwise provided, be furnished in lengths equal to the pavement width; however, in cases where pavement two or more traffic lanes wide is being placed the pre-molded filler may be furnished in sections, provided the length of each section is equal to the width of one lane. Where more than one section is used in a joint, the sections shall be securely laced or clipped together. The pre-molded joint filler shall be placed on the side of the installing bar nearest the mixer. The bottom edge of the filler shall project to or slightly below the bottom of the slab and unless otherwise prescribed, the top edge shall be 1" below the surface of the pavement. While the concrete is being placed, the top edge of the filler shall be protected by a metal channel cap of at least 38 mm sheet thickness material, having flanges not less than 1 1/2" in depth.

- J. Joints in concrete curbing that cannot be satisfactorily sawed shall be formed by means of steel templates or other approved joint forming dividers installed at the time the concrete is poured and at the location of the joint to be sawed.
- K. Contraction Joints: Transverse contraction joints shall be formed by sawing.
- L. Sawing of transverse contraction joints shall begin as soon after pouring the pavement as can be done without causing undue raveling. Succeeding joints shall be sawed consecutively from beginning to end of the day's run, and all transverse joints shall be sawed to the depth specified on the plans soon enough to prevent uncontrolled transverse cracking.
- M. Construction Joints: Unless otherwise directed, transverse construction joints shall be constructed when there is an interruption of more than 30 minutes in the concreting operations. No transverse joint shall be constructed with 10' of an expansion joint, contraction joint, or plane of weakness. If sufficient concrete has not been mixed at the time of interruption to form a slab at least 10' long, the excess concrete back to the last preceding joint shall be removed and disposed of as directed.
- N. A rigid header shall be provided with holes or slots for dowel bars that shall be of the spacing and dimensions as for expansion joints.
- O. Load Transfer Devices: Approved load transfer devices shall be firmly held in the position indicated on the plans. Dowels shall be held in position parallel to the surface and center line of the slab by an approved support. Dowels for expansion joints shall be capped as shown on the plans.
- P. In lieu of using dowel assemblies at contraction joints, dowel bars may be placed in the full thickness of pavement by a mechanical device approved by the ENGINEER.

3.6 FINAL STRIKE OFF

- A. The sequence of operations shall be the strike off and consolidation, floating and removal of surface particles and unconformities, straight edging, and final surface finish.
- B. In general, the addition of superficial water to the surface of the concrete to assist in finishing operations will not be permitted. If the application of water to the surface is permitted, it shall be applied as a fog spray by means of approved spray equipment.

3.7 STRAIGHTEDGE TESTING AND SURFACE CORRECTION

- A. After the floating has been completed and the excess water removed, but while the concrete is still plastic, the surface of the concrete shall be tested for trueness with a 10' straightedge. For this purpose, the CONTRACTOR shall furnish and use an accurate 10' straightedge swung from handles 3' longer than one half the width of the slab. The straightedge shall be held in contact with the surface in successive positions parallel to the road center line and the whole area gone over from one side of the slab to the other as necessary. Advance along the road shall be in successive stages of not more than one half the length of the straightedge. Any depressions found shall be immediately filled with freshly mixed concrete, struck off, consolidated, and refinished. High areas shall be cut down and refinished. Special attention shall be given to assure

that the surface across joints meets the requirements for smoothness. Straightedge testing and surface corrections shall continue until the entire surface is found to be free from observable departures from the straightedge and the slab conforms to the required grade and cross section.

3.8 EDGING AT FORMS AND JOINTS

- A. After the final finish, but before the concrete has taken its initial set, the edges of the pavement along each side of each slab, and on each side of transverse expansion joints, formed joints, transverse construction joints, and emergency construction joints shall be worked with an approved tool and rounded to the radius required by the plans. A well-defined and continuous radius shall be produced and a smooth, dense mortar finish obtained. The surface of the slab shall not be unduly disturbed by tilting of the tool during use.
- B. At all joints, any tool marks appearing on the slab adjacent to the joints shall be eliminated by brooming the surface. In doing this, the rounding of the corner of the slab shall not be disturbed. All concrete on top of the joint filler shall be completely removed.
- C. All joints shall be tested with a straightedge before the concrete has set, and correction made if one side of the joint is higher than the other or if they are higher or lower than the adjacent slabs.

3.9 SURFACE TEST

- A. As soon as the concrete has hardened sufficiently, the pavement surface shall be tested with a 10' straightedge or other specified device. Areas showing high spots of more than 1/8" but not exceeding 1/2" in 10' shall be marked and immediately ground down with an approved grinding tool to an elevation where the area or spot will not show surface deviations in excess of 1/8" when tested with a 10' straightedge. The surface of ground areas shall be re-textured to match the surface of the surrounding areas. Where the departure from correct cross section exceeds 1/2", the pavement shall be removed and replaced by and at the expense of the CONTRACTOR.
- B. Any area or section so removed shall be not less than 10' in length nor less than the full width of the lane involved. When it is necessary to remove and replace a section of pavement, any remaining portion of the slab adjacent to the joints that is less than 10' in length, shall also be removed and replaced.

3.10 CURING

- A. The entire surface of the pavement shall be sprayed uniformly with white pigmented curing compound immediately after the finishing of the surface and before the set of the concrete has taken place, or if the pavement is cured initially with jute or cotton mats, it may be applied upon removal of the mats. The curing compound shall not be applied during rainfall.
- B. Curing compound shall be applied under pressure at the rate of one gallon to not more than 200 sq. ft. by mechanical sprayers, provided however, that when the temperature

on the roadway is 100°F (37.5°C) or above, the curing compound shall be applied at the rate of one gallon to not more than 150 sq. ft.

- C. At the time of use, the compound shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle. Hand spraying of odd widths or shapes and concrete surfaces exposed by the removal of forms will be permitted. Curing compound shall not be applied to the inside faces of joints to be sealed.
- D. The curing compound shall be of such character that the film will harden within four hours after the application. Should the film become damaged from any cause within the required curing period, the damaged portions shall be repaired immediately with additional compound.
- E. Upon removal of side forms, the sides of the slabs exposed shall be protected immediately to provide a curing treatment equal to that provided for the surface.
- F. Curing for Cold Weather: The CONTRACTOR shall be responsible for the quality and strength of the concrete placed during cold weather, and any concrete injured by frost action shall be removed and replaced at the CONTRACTOR's expense.
- G. Removing Forms: Forms shall be removed carefully so as to avoid damage to the pavement. After the forms have been removed, the sides of the slab shall be cured as outlined in one of the methods indicated above. Honeycombed areas shall be satisfactorily repaired.

3.11 OPENING TO TRAFFIC

- A. Traffic shall be excluded from the newly constructed pavement for a period of 14 days after the concrete is placed or longer if weather conditions make it advisable to extend this time. However, at the discretion of the ENGINEER, the pavement may be opened to traffic when specimen beams or cylinders made, cured, and tested have attained a flexural strength of 550 psi when tested in accordance with AASHTO T 97 (third point method) or 650 psi when tested by the midpoint method AASHTO T 177, or a compressive strength of 3500 psi. Prior to opening to traffic, the pavement shall be cleaned of loose material and the joints shall be filled and trimmed as herein required.

3.12 HIGH-EARLY STRENGTH PAVEMENT

- A. General Requirements: When high early strength concrete pavement is specified, it shall be made with high early strength cement. In lieu of high early strength cement and with written permission of the ENGINEER, the CONTRACTOR may use standard Portland Cement with a cement factor 25% in excess of that specified for Portland Cement concrete pavement. No additional compensation will be allowed for the 25% additional cement if standard Portland Cement is used. When 25% of cement is added, the absolute volumes in the mix will be adjusted to compensate for the additional cement. All other requirements hereinbefore specified for concrete pavement shall be applicable subject to the following modifications.
- B. Curing: When high early strength concrete pavement is specified or used, the pavement shall be cured in the same manner as is provided for regular pavement.

- C. Opening to Traffic: Traffic shall be excluded from the newly constructed pavement for a period of not less than 24 hours and for 72 hours if necessary.

3.13 SLIP-FORM PAVER

- A. Optional Use of a Slip Form Paver: If the CONTRACTOR so elects, he may use a slip form paver in lieu of the conventional paving train and stationary side forms.
- B. When a slip form paver is used all requirements of placing pavement with rigid forms shall be complied with except as provided herein:
 - 1. Grade: After the grade or base has been placed and compacted to the required density, the areas which will support the paving machine shall be cut to the proper elevation by means of a properly designed machine. The grade on which the pavement is to be constructed shall then be brought to the proper profile by means of a properly designed machine. If the density of the base is disturbed by the grading operations, it shall be corrected by additional compaction before concrete is placed. The grade shall be constructed sufficiently in advance of the placing of the concrete. If any traffic is allowed to use the prepared grade, the grade shall be checked and corrected immediately ahead of the placing of the concrete. When the foundation for the surfacing is stabilized with an admixture, the area under the pavement and the supporting area for the paving machine shall be within the specified tolerances for the foundation type before concrete is placed.
 - 2. Placing Concrete: The concrete shall be placed with an approved slip form paver designed to spread, consolidate, screed, and float finish the freshly placed concrete in one complete pass of the machine in such manner that a minimum of hand finish will be necessary to provide a dense and homogeneous pavement in conformance with the plans and specifications. The machine shall vibrate the concrete for the full width and depth of the strip of pavement being placed. Such vibration shall be accomplished with vibrating tubes or arms working in the concrete or with a vibrating screen or pan operating on the surface of the concrete. The sliding forms shall be rigidly held together laterally to prevent spreading of the forms.
 - a. The slip form paver shall be operated with a continuous forward movement and all operations of mixing, delivering and spreading concrete shall be so coordinated as to provide a uniform progress with stopping and starting of the paver held to a minimum. If, for any reason, it is necessary to stop the forward movement of the paver, the vibratory and tamping elements shall also be stopped immediately.
 - 3. Finishing: A tube float finishing machine shall be used immediately following the slip form paver, in a manner approved by the ENGINEER.
 - 4. Tolerances: Tolerances of the finished pavement shall meet the requirements except that for the outer 6" along the edges of the pavement, a maximum deviation of 1/4" from a 10' straightedge placed parallel to the centerline of the roadway will be permitted. When auxiliary parallel lanes are constructed using a slip form paver, there shall be no appreciable slump along edges of adjoining lanes. Any valleys

or depressions that will not drain properly shall be corrected by the CONTRACTOR at his own expense and to the satisfaction of the ENGINEER.

5. Curing: Unless otherwise specified, curing shall be done in accordance with one of the methods included in Subsection 3.10. The curing media shall be applied at the appropriate time and shall be applied uniformly and completely to all surfaces and edges of the pavement.
6. Joints: All joints shall be constructed in accordance with Subsection 3.5.
7. Protection against Rain: In order that the concrete may be properly protected against the effects of rain before the concrete is sufficiently hardened, the CONTRACTOR will be required to have available at all times materials for the protection of the edges and surface of the unhardened concrete. Such protective materials shall consist of standard metal forms or wood plank having a nominal thickness of not less than 2" and a nominal width of not less than the thickness of the pavement at its edge for the protection of the pavement edges, and covering material such as burlap or cotton mats, curing paper, or plastic sheeting material for the protection of the surface of the pavement. When rain appears imminent, all paving operations shall stop and all available personnel shall begin placing forms against the sides of the pavement and covering the surface of the unhardened concrete with the protective covering.

END OF SECTION 32 13 13

SECTION 32 13 14 – CONCRETE SIDEWALKS, DRIVEWAYS AND DIVIDING STRIPS

PART 1 – GENERAL

1.1 SCOPE

- A. This work shall consist of the construction of concrete sidewalks, driveways and dividing strips in accordance with these specifications and in reasonably close conformity with the lines, grades and typical cross-sections shown on the plans or established by the ENGINEER.

PART 2 – MATERIALS

2.1 GENERAL

- A. Material shall meet the requirements specified in Section 32 13 13 – Portland Cement Concrete Pavement, Part 2 - Materials.

PART 3 – EXECUTION

3.1 GENERAL

- A. Concrete Construction. All forming, placing, and finishing shall be in accordance with Section 03 11 00 Concrete Forming. A sawed joint shall be made to connect the old and new pavements.
 - 1. Expansion Joints: Expansion joints shall be of the dimensions specified and shall be filled with the type of pre-molded expansion joint filler noted. The sidewalk shall be divided into sections by dummy joints formed by a jointing tool or other acceptable means as approved by the ENGINEER. These dummy joints shall extend into the concrete for at least 1/3 of the depth and shall be approximately 1/8-inch wide.
 - 2. Construction Joints: Construction joints shall be formed around all appurtenances such as manholes, utility poles, etc., extending into and through the sidewalk, driveway, or dividing strip. Pre-molded expansion joint filler ¼ inch thick shall be installed in these joints. Expansion joint filler of the thickness indicated shall be installed between the concrete and any fixed structure such as a building or bridge. This expansion joint material shall extend for the full depth of the concrete.
 - 3. Curing. Concrete shall be cured for at least 72 hours. Curing shall be by means of moist burlap or mats or by other approved methods. During the curing period all traffic, both pedestrian and vehicular, shall be excluded. Vehicular traffic shall be excluded for such additional time as the ENGINEER may direct.
- B. Backfill: The sides of sidewalks and driveways shall be backfilled as soon as the forms have been removed and the required pointing up of honeycombed areas completed. The backfill shall be of approved earth, thoroughly compacted in layers not exceeding 6 inches in depth as shown on the plans or in a manner approved by the ENGINEER. Care shall be taken not to damage the concrete material in placing or compacting the backfill. Where the general elevation of the adjacent ground surface is lower than the top of the sidewalk or driveway, the minimum width of the backfill shall be 2 feet.

- C. Protection from Traffic: Sidewalks, driveways and dividing strips shall be protected from traffic using substantial barricades for a period of 7 days, unless otherwise permitted or ordered by the ENGINEER.
- D. Remove Relay or Extend Brick or Stone Sidewalks: Where existing brick or stone sidewalks are to be re-laid or extended, the sub-grade shall be prepared as specified for concrete sidewalks, provided that a sand cushion 1-1/2 inches in depth shall be prepared, having a uniform flat surface at the proper sub-grade elevation. All old bricks shall be satisfactorily cleaned before re-laying. The brick or stone shall be laid close together in a manner to match the existing walk and shall be uniformly tamped firmly into the sand cushion. The top surface of the walk shall be smooth and at the proper grade.
- E. All joints shall be filled with concrete sand by spreading an excess over the surface and sweeping it into the joints. The top surface of the brick shall be cleaned. The sides of the walk shall be backfilled as specified for concrete walks.
- F. Reinforcement, if used, excavation, backfill, expansion joint material, rolled curb on driveways and other related miscellaneous items will not be paid for separately, but the cost thereof shall be included in the cost of other items.

END OF SECTION 32 13 14

SECTION 32 92 23 - SODDING

PART 1 - GENERAL

1.1 SCOPE

- A. This work shall consist of furnishing and planting viable Bermuda grass sod in accordance with these specifications. All areas which are not covered by pavement or structures shall be sodded, and/or areas utilized for construction staging.

PART 2 - PRODUCTS

2.1 SOD

- A. Bermuda grass sod to be used as source material shall be a thick stand of common Bermuda grass growing on fertile topsoil. Types of Bermuda grass other than "Common" may not be used unless approved by the ENGINEER. The vegetative parts (rhizomes, stolons, and roots) of Bermuda grass shall be viable as indicated by a dense, deep rooted stand.
- B. The source for sod shall be free of reproducing parts of weeds classified as "Prohibited Noxious" and shall be as free of other legally "Restricted Noxious" plant materials as required by the Oklahoma Department of Agriculture Seed Law. The proposed source of sod will be approved by the ENGINEER before the beginning of sodding operations. Prior to approval, the area shall not be tilled or mowed. However, all vegetative growth exceeding 3 inches in height shall be mowed and the residue removed prior to harvesting the sod or sprigs.
- C. The sod shall be moist when excavated from the source and shall be kept moist until planted. Sod in storage which becomes dry, shall not be re-moistened and used, but shall be discarded.
- D. Sod material shall consist of vegetative parts (rhizomes, stolons and roots) of Bermuda grass with an appreciable quantity of adhering soil.
- E. Solid slab sod shall be rectangular slabs of Bermuda grass. Bermuda grass vegetative parts shall exist throughout the slab and shall be obtained from soils with a minimum P.I. of 3. The slab must have a dense vegetative growth and be capable of being transported in a condition closely resembling its original state.

2.2 FERTILIZER

- A. Fertilizer of 10 20 10 grade and ammonium nitrate (33.5% N), uniform in composition, free flowing and suitable for application with approved equipment shall be provided. The fertilizer shall be delivered to the site in bags or other convenient containers, each fully labeled, conforming to the applicable State fertilizer laws, and bearing the name, trade name or trademark and warranty of the producer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Preparation of areas to be sodded shall include filling, reshaping of eroded areas, cleaning ditches and refinishing slopes to the established grading section. The area shall be cleared of all litter and debris.

3.2 APPLICATION

- A. The slabs of sod shall be placed soil side down. They shall be placed in rows, which on slopes shall run perpendicular to flow of water. Each slab shall fit tightly against the edge of adjoining slabs and shall be placed so that the vertical joints are not continuous across adjoining horizontal rows. Voids shall be filled with additional sod. All slabs shall be thoroughly pressed into firm contact with the soil underneath.
- B. After the slabs have been placed, the sodded area shall be thoroughly watered. When sufficiently dry, additional voids shall be filled with good soil and watered again. The area shall then be thoroughly watered daily for a period of at least seven days after placement.
- C. Soil moisture shall exist throughout the zone from 1 inch below the surface to at least 5 inches below the surface at the time of planting. The required moisture content of the soil may be estimated and judged closely by the hand squeeze test. The soil should readily form a tight cast when squeezed in the hand. The cast should break into two pieces without crumbling and without leaving excess water on the hand after casting.
- D. Fertilizer shall not be placed on hard or glazed surfaces. Fertilizer shall be applied at the rates shown on the plans or specifications.
- E. When satisfactory results can be obtained, disking for soil preparation, weed removal and incorporation of fertilizer may be accomplished in one operation.
- F. If a fertilizer containing phosphorous is specified, one half of the fertilizer shall be applied before placement of solid slab sod and shall then be incorporated into the soil by disking. After placement and compaction of the sod, the remaining one half of the fertilizer shall be applied and immediately incorporated into the soil with water.
- G. Fertilizer containing nitrogen only shall be applied after the sodding and sprigging operations have been completed.

3.3 SEASON

- A. If the construction work is not completed during the normal planting season (beginning April 15 through September 1), the CONTRACTOR shall seed the entire area with an approved temporary vegetative cover, such as wheat, oats or rye grass to prevent erosion until the following spring at which time the CONTRACTOR will be required to return and prepare the area to be sodded as specified above and sod the entire area with Bermuda grass as specified above at no additional cost to the OWNER. All areas

which have eroded will at this time be brought back to original line and grade as directed by the ENGINEER.

3.4 WATER SUPPLY

- A. The CONTRACTOR must make provisions to obtain water for this operation at his own expense. It will be the CONTRACTOR'S responsibility to transport the water to the area where it is needed.

END OF SECTION 32 92 23

SECTION 33 05 07.13 – DIRECTIONAL BORE

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. The work specified in this section consists of furnishing and installing underground utilities using the directional boring (horizontal directional drilling, HDD) method of installation also commonly referred to as guided horizontal boring. This work includes all services, equipment, materials, and environmental protection and restoration.

1.2 QUALITY ASSURANCE

- A. The requirement set forth in this document specifies a wide range of procedural precautions necessary to ensure that the very basic, essential aspects of a proper directional bore installation are adequately controlled. Strict adherence shall be required under specifically covered conditions outlined in this specification. Adherence to the specifications contained herein, or the ENGINEER'S approval of any aspect of any directional bore operation covered by this specification, shall in no way relieve the CONTRACTOR or their ultimate responsibility for the satisfactory completion of the work authorized under the contract.

1.3 SUBMITTALS

- A. Work Plan: Prior to beginning work, the CONTRACTOR must submit to the ENGINEER a general work plan outlining the procedure and schedule to be used to execute the project. Plan should document the thoughtful planning required to successfully complete the project.
- B. Equipment: CONTRACTOR will submit specifications on directional boring equipment to be used to ensure that the equipment will be adequate to complete the project. Spare inventory shall be included.
- C. Material: Specifications on material to be used shall be submitted to the ENGINEER. Material shall include the pipe, fittings and any other item which is to be an installed component of the project.
- D. Personnel: Documentation of training and relevant experience of personnel shall be submitted.

PART 2 – EQUIPMENT REQUIREMENTS

2.1 GENERAL

- A. The directional boring equipment shall consist of a directional boring rig of sufficient capacity to perform the bore and pullback the pipe, a boring fluid mixing and delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations along with trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials, and spare parts on hand to maintain the system in good working order for the duration of this project.

2.2 BORING SYSTEM

- A. Boring Rig: The directional boring machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power boring operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations. The rig shall be grounded during boring and pull-back operations. Sufficient spares shall be kept on hand for any break downs which can be reasonably anticipated.
- B. Bore Head: The bore head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and boring fluid jets.
- C. Mud Motors (if required): Mud motors shall be adequate power to turn the required boring tools.
- D. Drill Pipe: Shall be constructed of high-quality, 4130 seamless tubing, grade D or better, with threaded box and pins. Tool joints should be hardened to 32-36RC.

2.3 GUIDANCE SYSTEM

- A. The Guidance System shall be of a proven type and shall be set up and operated by personnel trained and experienced with this system. The operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system in using a magnetic system.

2.4 BORING FLUID (MUD) SYSTEM

- A. Mixing System: A self-contained, closed boring fluid mixing system shall be of sufficient size to mix and deliver boring fluid composed of bentonite clay, potable water, and appropriate additives. Mixing system shall be able to molecularly shear individual bentonite particles from the dry powder to avoid clumping and ensure thorough mixing. The boring fluid reservoir tank shall be of a sufficient capacity for that project. Mixing systems shall continually agitate the boring fluid during boring operations.
- B. Boring Fluids: Drilling fluid shall be composed of clean water and an appropriate additive. Water shall be from a clean source with a pH of 8.5 – 10. Water of a lower pH or with excessive calcium shall be treated with the appropriate amount of sodium carbonate or equal. The water and additives shall be mixed thoroughly and be absent of any clumps or clods. No hazardous additives may be used. Boring fluid shall be maintained at a viscosity sufficient to suspend cuttings and maintain the integrity of the bore wall.
- C. Delivery System: The mud pumping shall be capable of delivering the boring fluid at a constant pressure. The delivery system shall have filters in-line to prevent solids from being pumped into the drill pipe. Connections between the pump and drill pipe shall be relatively leak-free. Used boring fluid and boring fluid spilled during operations

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shall be contained and properly disposed of. A berm, minimum of 12 inches high, shall be maintained around boring equipment, boring fluid mixing system, entry and exit pits and boring fluid recycling system (if used) to prevent spills into the surrounding environment. Pumps and or vacuum truck(s) of sufficient size shall be in place to convey excess boring fluid from containment areas to storage facilities.

2.5 OTHER EQUIPMENT

- A. Pipe Rollers: Pipe rollers, if required, shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull back operations. Sufficient number of rollers shall be used to prevent excess sagging of pipe.
- B. Pipe Reamers / Pullers: Hydraulic or pneumatic pipe rammers or pullers may only be used if necessary and with the authorization of the ENGINEER.

Other devices or utility placement systems for providing horizontal thrust other than those previously defined in the preceding sections shall not be used unless approved by the ENGINEER prior to commencement of the work. Consideration for approval will be made on an individual basis for each specified location. The proposed device or system will be evaluated prior to approval or rejection on its potential ability to complete the utility placement satisfactorily without undue stoppage and to maintain line and grade within tolerances prescribed by the particular conditions of the project.

PART 3 – OPERATIONS

3.1 GENERAL

- A. The ENGINEER must be notified 48 hours in advance of starting work. The directional bore shall not begin until the ENGINEER is present at the job site and agrees that proper preparations for the operation have been made. The ENGINEER approval for beginning the installation shall in no way relieve the CONTRACTOR of the ultimate responsibility for the satisfactory completion of the work as authorized under the contract. It shall be the responsibility of the OWNER to provide inspection personnel at such time as appropriate without causing undue hardship by reason of delay to the CONTRACTOR.

3.2 PERSONNEL REQUIREMENTS

- A. All personnel shall be fully trained in their respective duties as part of the directional boring crew and in safety. Training shall be provided specific to the project if any potential hazards may be encountered which have not already been included in the personnel's training.

3.3 BORING PROCEDURE

- A. Site Preparation: Prior to any alterations to the work site, CONTRACTOR shall photograph or videotape the entire work area, including entry and exit points. One copy shall be given to the ENGINEER and one copy shall remain with the CONTRACTOR for a period of one year following completion of the project.

The work site, as indicated on the drawings, within right-of-way, shall be graded or filled to provide a level working area. No alterations beyond what is required for

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operations are to be made. The CONTRACTOR shall confine all activities to the designated work areas.

- B. Bore Path Survey: Entire drill path shall be accurately surveyed with entry and exit stakes placed in the appropriate locations within the areas indicated on the drawings. If CONTRACTOR is using a magnetic guidance system, drill path will be surveyed for any surface geo-magnetic variations or anomalies.
- C. Environmental Protection: CONTRACTOR shall place silt fence between all boring operations and any drainage, wetland, waterway, or other area designated for such protection by contract documents, state, federal and local regulations. Additional environmental protection necessary to contain any hydraulic or boring fluids spills shall be put in place, including berms, liners, turbidity curtains and other measures. CONTRACTOR shall adhere to all applicable environmental regulations. Fuel or oil may not be stored in bulk containers within 200 feet of any water body or wet land.
- D. Utility Locates: CONTRACTOR shall notify all companies with underground utilities in the work area via the state or local "one call" to obtain utility locates. Once the utilities have been located, CONTRACTOR shall physically identify the exact location of the utilities by vacuum or hand excavation, when possible, in order to determine the actual location and path of any underground utilities which might be within 20 feet of the bore path. CONTRACTOR shall not commence boring operations until the location of all underground utilities within the work area have been verified.
- E. Safety: CONTRACTOR shall adhere to all applicable State, Federal and local safety regulations and all operations shall be conducted in a safe manner. Safety meetings shall be conducted at least weekly with a written record of attendance and topic submitted to the ENGINEER.
- F. Pipe: Pipe shall be connected together in one length prior to pull-back operations. If space permits, pipe will be placed on pipe rollers before pulling into bore hole with rollers spaced close enough to prevent excessive sagging of pipe.
- G. Pilot Hole: Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100 feet. In the event that pilot dies deviate from the bore path more than 5% of depth in 100 feet, CONTRACTOR will notify ENGINEER and the ENGINEER may require CONTRACTOR to pull back and re-drill from the location along bore path before the deviation.

In the event that a boring fluid fracture, inadvertent returns or return loss occurs during pilot hole boring operations, CONTRACTOR shall cease boring, wait at least 30 minutes, inject a quantity of boring fluid with a viscosity exceeding 120 seconds as measured by a March funnel and then wait another 30 minutes. If mud fractured or return loss continues, CONTRACTOR will cease operations and notify ENGINEER. ENGINEER and CONTRACTOR will discuss additional options and work will then proceed accordingly.
- H. Reaming: Upon successful completion of pilot hole, CONTRACTOR will ream bore hole to a minimum of 25% greater than outside diameter of pipe using the appropriate tool. CONTRACTOR will not attempt to ream at one time more than the boring equipment and mid-system are designed to safely handle.

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- I. Pull Back: After successfully reaming bore hole to the required diameter, CONTRACTOR will pull the pipe through the bore hole. In front of the pipe will be a swivel. Once pull-back operations have commenced, operations must continue without interruption until pipe is completely pulled into bore hole. During pull-back operations, CONTRACTOR will not apply more than the maximum safe pipe pull pressure at any time.

In the event that pipe become stuck, CONTRACTOR will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck, CONTRACTOR will notify ENGINEER. ENGINEER and CONTRACTOR will discuss options and then work will proceed accordingly.

- J. Pipe Testing: Following successful pull back of pipe, CONTRACTOR will hydro test using potable water in accordance with ODEQ permits test requirements. A calibrated pressure recorder will be used to record the pressure during the test period. This record will be presented to the ENGINEER.

3.5 SITE RESTORATION

- A. Following boring operations, CONTRACTOR will de-mobilize equipment and restore the work site to original condition. All excavations will be backfilled and compacted to 95% of original density. Landscaping will be restored to original.

3.6 RECORD KEEPING, AS BUILT

- A. CONTRACTOR shall maintain a daily project log of boring operations and a guidance system log with a copy given to the ENGINEER at completion of the project. As-built drawings shall be certified as to accuracy by the CONTRACTOR.

END OF SECTION 33 05 07.13

DIVISION 33 – UTILITIES

SECTION 33 05 33 – HIGH-DENSITY POLYETHYLENE PIPE

PART 1 – DESCRIPTION

1.1 MATERIALS

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be extra high molecular weight, high-density PD 3408 polyethylene resin.
- B. The material shall be listed by PPI (Plastic Pipe Institute, a division of the Society of the Plastics Industry) in PPI TR-4 with a 73°F Hydrostatic design basis of 1,600 psi and a 140LF hydrostatic design basis of 800 psi. The PPI listing shall be in the name of the pipe manufacturer and shall be based on ASTM D 2837 testing.

1.2 PIPE AND FITTINGS

A. Pipe:

- 1. Pipe supplied under this specification shall have a nominal IPS (Iron Pipe Size) OD unless otherwise specified. The DR (Dimension Ratio) and the pressure rating of the pipe supplied shall be as specified by the ENGINEER.
- 2. The pipe shall be produced from approved HDPE pipe grade resin with the nominal physical properties outlined in Section III. Pipe having a diameter 3 inches and larger will be made to the dimensions and tolerances specified in ASTM F 714.
- 3. Previously approved pipe manufacturers:
 - a. Performance Pipe, a division of Chevron Phillips Chemical Company, LP.
- 4. The pipe shall contain no recycled compound except that generated in the manufacturer's own plant. The pipe shall be homogeneous throughout and free of visible cracks, holes, voids, foreign inclusion, or other defects that may affect the wall integrity.
- 5. Pipe Performance: The pipe will be extruded from resin meeting the specifications of ASTM D 3350 with a minimum cell classification 345464C.

B. Fittings

- 1. HDPE fittings shall be in accordance with ASTM D 3261 and shall be manufactured by injection molding, a combination of extrusion and machining, or fabrication from HDPE pipe conforming to this specification. The fittings shall be fully pressure rated and provide a working pressure equal to that of the pipe with an included 2:1 safety factor. The fittings shall be manufactured from the same base resin type and cell classification as the pipe itself. The fittings shall be homogeneous throughout and free from cracks, holes, foreign inclusions, voids, or other injurious defects.

1.3 JOINING

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- A. Sections of polyethylene pipe shall be joined by the butt fusion process into continuous lengths at the job site. The joining method shall be the heat fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The heat fusion used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer.
- B. Properly executed electro-fusion fittings may be used. Extrusion welding or hot gas welding of HDPE shall not be used for pressure pipe applications or fabrications where shear or structural strength is important. Mechanical joint adapters, flanges, unions, grooved couplers, transition fittings, and some mechanical couplings may be used to mechanically connect HDPE pipe. Refer to the manufacturer's recommendations.

1.4 QUALITY AND WORKMANSHIP

- A. The pipe and/or fitting manufacturer's production facilities shall be open for inspection by the OWNER or his designated agents with a reasonable advanced notice. During inspection, the manufacturer shall demonstrate that it has facilities capable of manufacturing and testing the pipe and/or fittings to standards required by this specification.

Pipe which has been tested by the manufacturer and falls outside of the appropriate limits set forth in this specification will be cause for rejection.

1.5 PIPE MARKINGS

- A. During extrusion production, the HDPE pipe shall be continuously marked with durable printing including the following information:
 - 1. Nominal size
 - 2. Dimension ratio
 - 3. Pressure class, psi
 - 4. Manufacturer's name and product series
 - 5. Cell class
 - 6. ASTM basis
 - 7. "NSF-PW"
 - 8. Pipe test category
 - 9. Plant code and extruder
 - 10. Production date
 - 11. Operator number (Shift letter optional)
 - 12. Resin supplier code
- B. For pipe diameters greater than or equal to 3 inches IPS, PE345464C shall be used as a cell class and F714 shall be used as the ASTM basis. An example of the print string will read as follows:

**14"IPS DR 21 PC80 Driscopipe 4100 PE345464C ASTM F714 NSF-PW C3 PR6
03Mar95 14AP**

1.6 PIPE PACKAGING, HANDLING AND STORAGE

- A. The manufacturer shall package the pipe in a manner designed to deliver the pipe to the project neatly, intact, and without physical damage. The transportation carrier shall use appropriate methods and intermittent checks to ensure the pipe is properly supported, stacked, and restrained during transport such that the pipe is not nicked, gouged, or physically damaged.

END OF SECTION 33 05 33

SECTION 33 11 00 - WATERLINE AND SANITARY SEWER SPECIFICATIONS

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This division shall consist of the material and construction specification of water distribution lines, sanitary sewer lines, appurtenances, and related work, at the locations and grades as set out on the plans or established by the ENGINEER.

1.2 SUBMITTALS

- A. Submittals shall be in accordance with Section 01 33 00 "Submittal Procedures" and shall include:
1. Shop Drawings:
 - a. Drawings shall show complete physical description and performance capabilities of the equipment, including, but not necessarily limited to dimensions, flange ratings, weights, materials of construction, assemblies, sectional views.
 - b. Hydraulic calculations and CV characteristics certifying the valve can meet all the design conditions attached to this specification.
 2. Operation and Maintenance Manuals: Manuals shall be prepared by the equipment manufacturer and shall also incorporate appropriate final certified shop drawings. Manuals may be the manufacturer's standard instructions but shall be supplemented as necessary to cover any special feature not included in standard material. O&M manuals shall include storage instructions, valve installation and adjustment procedures and troubleshooting procedures. Manuals shall be provided in hard copy and digital format fully indexed.

PART 2 - APPLICABLE SPECIFICATIONS

2.1 DESCRIPTION

- A. The specifications, standards, and publications, including the latest amendments thereto, listed in these specifications by basic designation only, form a part of this specification to the extent indicated by the references thereto.
- B. Specification 03 30 00 – Cast-In Place Concrete
- C. Specification 31 23 33 – Trenching, Backfilling, & Compaction
- D. Specification 32 12 16.39 – Plant Mix Bituminous Bases and Surfaces
- E. Specification 33 05 07.13 – Directional Bore
- F. Specification 33 31 30 – Pipe Busting

PART 3 - CAST IRON AND DUCTILE IRON PIPE, FITTINGS AND VALVES**3.1 DESCRIPTION**

- A. The work under this item shall include furnishing, hauling, placing, and jointing of Cast Iron and Ductile Iron Pipe in the trench in specific conformity with the lines and levels given. For all pipe, the AWWA Standard for Installation of Cast Iron Water Mains, AWWA Designation C-600 shall govern the installation as applicable. The method of bedding shall be in accordance with Specification 31 23 33 and as shown on the plan Standard Details. If the paint is damaged, the valve shall be cleaned by wire-brushing and given two coats of black asphalt paint.

3.2 PIPE AND FITTINGS

- A. Where Ductile Iron Pipe (DIP) three (3) inches in diameter and larger is specified or required, it shall conform to, and be tested in accordance with, the current American Standard Specification for Ductile Iron Pipe, Centrifugally Cast in metal molds or sand-lined molds, for water or other liquids, AWWA Designation C 151 (ANSI A21.51). Ductile iron pipe less than three (3) inches in diameter shall conform to the manufacturer's standards, either centrifugally or statically cast with a minimum thickness of 0.25 inches. The ductile iron (nodular cast iron) shall conform to ASTM Specification A536 with physical properties of Grade 60-40-18. Length of joints shall be either eighteen or twenty feet. The minimum standard thickness of each size pipe shall be as follows:

<u>Pipe Size</u>	<u>Thickness Class</u>
3" thru 4"	51
6" thru 24"	50
30" thru 54"	51

For larger diameter or deep cover, special design will be provided.

- B. Where Cast Iron Pipe (CIP) is specified or required, it shall conform to, and be tested in accordance with, the American Standard for Gray Iron Pipe Centrifugally Cast in Metal Molds for water or other liquids, AWWA Designation C106. Lengths shall be either eighteen feet or twenty feet. Strength of iron shall be 18/40 and the minimum standard thickness of each size pipe shall be as follows:

<u>Pipe Size</u>	<u>Thickness Class</u>
3" thru 10"	22
12"	23
14" thru 24"	24
30" thru 48"	25

- C. Where Cast Iron Pipe (CIP) and Ductile Iron Fittings are specified or required, they shall conform to, and be tested in accordance with the American Standard for Gray Iron and Ductile Iron Fittings, 3-inch through 48-inch for water and other liquids, AWWA Designation C110. Pressure rating shall be 250 psi. All sleeves shall be the longest of the lengths allowed.

- D. The work under this item shall include all of the requirements specified under the item

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of pipe, in that "pipe" is understood to also mean "bends, tees, crosses, sleeves, outlet assemblies and other specified fittings". Unless otherwise specified, outlet assemblies shall consist of a flanged outlet constructed into the wall of steel or concrete pipe. If cast or ductile iron pipe is used, the outlet shall consist of a tee with the outlet flanged. If a gate valve or butterfly valve is shown on the drawings to be attached to the outlet, the line side end shall be flanged, and the opposite end shall be bell or mechanical joint according to the item for valves. All bends, tees, crosses, outlet assemblies, and plugs shall be blocked with concrete as shown on the attached Standard Details, except where the fittings have flanged, welded, or harnessed joints, the ENGINEER may under certain conditions delete the blocking. Concrete blocking shall be placed so that joints are accessible for repair.

3.3 JOINTS

- A. Cast Iron and Ductile Iron Pipe and Fittings shall be jointed with any of the end types as specified below unless a particular end type is specified. Flange ends shall be used only where specifically noted on the drawings except that the valve connection end of all tapping sleeves shall be flanged.
- B. Push-on joints shall conform to, and be tested in accordance with, the American Standard for Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings, AWWA Designation C111.
- C. Mechanical joints shall conform to, and be tested in accordance with, the American Standard for Rubber Gasket Joints for Ductile Iron and Gray Iron Pressure Pipe and Fittings, AWWA Designation C111.
- D. Bell and spigot joints shall consist of square, braided, sterilized hemp and 99.73 percent pure lead caulking.
- E. Flange joints shall conform to the American Standard for Cast Iron Pipe Flanges and Flanged Fittings, A.S.A. Designation B.16.1.

3.4 LINING AND COATING

- A. All Cast Iron and Ductile Iron Pipe and Fittings shall be bituminous coated outside and cement-mortar lined inside with seal coat in accordance with American Standards for Cement Mortar Lining for Ductile Iron and Gray Iron Pipe and Fittings for Water, AWWA Designation C104.

3.5 VALVES

- A. All valves shall be rated for 250 psi working pressure.
- B. Valve boxes shall consist of a cast iron valve box, encased with a concrete collar over a section of 6-inch PVC pipe, SDR-35 typically, which is of adequate length enabling the valve box to be set at ground level as shown on the standard drawings.

3.6 GATE VALVES

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- A. Where gate valves are specified or required, they shall conform to, and be tested in accordance with, the AWWA Standard for Gate Valves, 3-inch through 48-inch NPS for Water and Sewage Systems, AWWA Designation C500. Valves shall have double disc parallel seats, non-rising stem, vertical mounting "O" ring stem seal, counterclockwise opening, and ends to fit the pipe or fitting to which attached.

3.7 BUTTERFLY VALVES

- A. Where butterfly valves are specified or required, they shall conform to, and be tested in accordance with the AWWA Standard for Rubber-Seated Butterfly Valves, AWWA Designation C504. Valves shall have operators which are side mounted with plumb, non-rising stems, counterclockwise opening, and have mechanical joint connections of the size shown on the plans. The operator shall be mounted so that the square operating nut on the valve can be operated from the top.

3.8 AIR RELIEF VALVES

- A. Where air relief valves are specified or required, the valve shall be heavy-duty combination air release and vacuum type for 300 psi water working pressure, tested to 300 psi unless otherwise specified, two-inch size. Body, cover, and baffle shall be cast iron. All internal parts to be either highest quality stainless steel or bronze, and the inside of valve coated with rust inhibitor. Air relief valves shall be set so that the square operating nut on the valve can be operated from the top. Construction standards for air relief valve vaults shall be the same as for manholes.

3.9 CHECK VALVES

- A. Where check valves are specified or required, they shall conform to, and be tested in accordance with the AWWA Standard for Swing Check Valves for Ordinary Water Works Service, AWWA Designation C508. They shall be horizontally mounted, single disc, swing type with a full diameter passage providing minimum pressure loss. Valves shall be of the non-slamming type designed for the future installation of outside lever and weight. Disc faces and seat rings shall be bronze. Ends shall fit the pipe or fitting to which attached (push-on, mechanical, bell and spigot, or flanged). Construction standards for check valve vaults shall be the same as for manholes.

3.10 TAPPING VALVES

- A. Tapping valves shall have the same features as above double disc gate valves and shall have piloted flange or centering lip on the valve flange to fit the tapping sleeve flange.

3.11 FIRE HYDRANTS

- B. Fire hydrants shall conform to the AWWA Standard for Dry-Barrel Fire Hydrants, AWWA Designation C502 as to design, composition, quality of materials, workmanship and shall be manufactured by Mueller, American, M & H, or approved equal by ENGINEER.
- C. All fire hydrants shall be 6" mechanical joint connection, 5-1/4" valve openings

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- furnished with two 2-1/2" nozzles, and one 4-1/2" pumper connection, with National Standard threads. Two 2-1/2" nozzles shall be spaced 180 degrees apart, with the 4-1/2" pumper nozzle centered between them.
- D. Hydrants shall be of the compression type and shall have incorporated in their design a special section or bolts which intentionally have a lower breaking point than the balance of the unit (traffic flange).
 - E. Hydrants shall have a 1-1/2" pentagon shaped operating nut, open left and shall be sized for 3-1/2 feet depth of bury.
 - F. All nozzles shall be equipped with chained caps provided with gaskets made of suitable plastic or neoprene.
 - G. All fire hydrants shall be painted with two coats of Pittsburg, first line, or approved equal paint. Colors are to be designated by the OWNER'S Fire Department to conform with color-coding system.
 - H. Where fire hydrant extensions are specified or required, they shall be of the proper design to accommodate the make of fire hydrant installed.

3.12 CONSTRUCTION

- A. Proper implements, tools and facilities satisfactory to the ENGINEER shall be provided and used by the CONTRACTOR for the safe and convenient performance of the work. All pipe, valves and hydrants shall be carefully lowered into the trench piece by piece by means of a derrick, ropes, or other suitable tools or equipment, in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench. If damage occurs to any pipe or water main accessories in handling, the damage shall be immediately brought to the ENGINEER'S attention. The ENGINEER shall prescribe corrective repairs or rejection of the damaged items. All pipe and fittings shall be carefully examined for cracks and other defects while suspended above the trench immediately before installation in final position. Defective pipe or fittings shall be laid aside for inspection by the ENGINEER, who will prescribe corrective repairs or rejection. All lumps, blisters, and excess coating shall be removed from the bell and spigot end of each pipe, and the outside of the spigot and the inside of the bell shall be wire brushed and wiped clean and dry and free from oil and grease before the pipe is laid.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe. As each length of pipe is placed in the trench, the spigot end shall be centered in the bell and pipe forced home and brought to correct line and grade. The pipe shall be secured in place with approved backfill material tamped under it except at the bells. Precautions shall be taken to prevent dirt from entering the joint space.

1. Joining of Push-On Joint Pipe: The inside of the bell and the outside of the spigot

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end shall be thoroughly cleaned to remove oil, grit, excess coating and other foreign matter. The circular rubber gasket shall be flexed inward and inserted in the gasket recess of the bell socket.

A thin film of gasket lubricant shall be applied to either the inside surface of the gasket or the spigot end of the pipe or both. Gaskets lubricant shall be as supplied by the pipe manufacturer and approved by the ENGINEER.

The spigot end of the pipe shall be entered into the socket with care used to keep the joint from contacting the ground. The joint shall then be completed by forcing the plain end to the bottom of the socket with a forked tool, jack-type tool or other device approved by the ENGINEER.

Pipe that is not furnished with a depth mark shall be marked before assembly to assure that the spigot end is inserted to the full depth of the joint. Field-cut pipe lengths shall be filed or ground to resemble the spigot end of such pipe as manufactured.

2. Joining of Mechanical-Joint Pipe: The outside of the spigot and inside of the bell of mechanical-joint pipe shall be thoroughly cleaned to remove oil, grit, excess coating and other foreign matter from the joint, and then a thin film of gasket lubricant shall be applied to either the inside surface of the gasket or the spigot end of the pipe or both. Gasket lubricant shall be as supplied by the pipe manufacturer and approved by the ENGINEER.

The cast-iron gland shall be coated with the lubricant and placed on the spigot end with the thick edge toward the gland. The entire section of the pipe shall be pushed forward to seat the spigot end in the bell. The gasket shall then be pressed into place within the bell; care shall be taken to locate the gasket evenly around the entire joint.

When tightening bolts, the gland shall be brought up toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This shall be done by partially tightening the bottom bolt first then the top bolt, next the bolts at either side, and last, the remaining bolts. This cycle should be repeated until all bolts are within the range of torques as shown below:

Bolt Size (Inches)	Range of Torque (Ft. – Lb.)	Length of Wrench (Inches)
5/8	40 – 60	8
3/4	60 – 90	10
1	70 – 100	12
1 1/4	90 – 120	14

The torque loads may be applied with torque-measuring or torque-indicating wrenches, which may also be used to check the application of approximate torque loads applied by men trained to give an average pull on a definite length or regular socket wrench. If effective sealing is not attained at the maximum torque indicated, the joint should be disassembled, thoroughly cleaned, and reassembled. Overstressing of bolts to compensate for poor installation practice shall not be allowed.

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3. For waterlines, all fittings or specials included as pipe shall be blocked in accordance with the attached Standard Details.
 4. For sanitary sewers, a joint between cast iron pipe and vitrified clay pipe or reinforced concrete pipe shall be made with special adapters as approved by the ENGINEER. If adapters are not available, the joint shall be made as instructed by the ENGINEER and encased with concrete one foot (1 ft.) each side of the joints and six inches (6) in thickness.
- I. Fire hydrants shall be located as shown or as directed to provide complete accessibility and minimize the possibility of damage from vehicles or injury to pedestrians.
1. When placed behind the curb, the hydrant barrel shall be set so that no portion of the pumper or hose nozzle cap will be closer than three (3) feet nor more than six (6) feet from the face of the curb.
 2. When set in the lawn space between the curb and the sidewalk, no portion of the hydrant or nozzle cap shall be within six (6) inches of the sidewalk.
 3. All hydrants shall stand plumb and shall have their nozzles parallel with, or at right angles to the curb, with the pumper nozzle facing the curb, and centerline nozzles at least eighteen (18) inches above the ground.
 4. Each hydrant shall be connected to the main with a six (6) inch ductile iron branch controlled by an independent six (6) inch gate valve, unless otherwise specified.
 5. Each hydrant shall be placed upon a slab of stone or concrete not less than six (6) inches thick and fifteen (15) inches square. The rear side of the hydrant, opposite the pipe, shall be blocked with concrete or stone, firmly wedged between the hydrant and the vertical face of the end of the trench of undisturbed earth or it shall be tied to the pipe with suitable straps or metal tension rods as shown on the standard drawings or as directed by the ENGINEER.
 6. Dry walls shall be constructed of crushed stone or coarse gravel having a volume of approximately one-half cubic yard and shall be placed beneath and around the drain ports of the hydrant so the hydrant will properly drain when closed.
 7. Fire hydrant extensions shall be required to bring the fire hydrant up to the existing or proposed grade of the surrounding areas, whereby an 18-inch minimum distance from the ground level to the center of the pumper nozzle may be obtained as shown on the standard drawings.

3.13 METHOD OF PAYMENT

- A. Cast Iron and Ductile Iron Pipe (CIP and DIP) shall be measured for payment by the linear foot of pipe of the size specified in the proposal and shown on the plans and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the center line of the pipe. No additional payment shall be made for vertical bends in the pipe, fittings used with drop manholes, fittings or specials not included in this specification, or for concrete blocking.
- B. Deductions will not be made for bends or specials.

3.14 BASIS OF PAYMENT

- A. Accepted quantities of Cast Iron and Ductile Iron Pipe (CIP and DIP) measured as provided above, will be paid for at the contract unit price for:

Cast Iron Pipe Lineal Feet

Ductile Iron Pipe. Lineal Feet

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 4 - STEEL PIPE AND FITTINGS

4.1 DESCRIPTION

- A. The work under this item shall include furnishing, hauling, placing, and jointing of steel pipe in the trench in specific conformity with the lines and levels given. For all lines, the AWWA Standard for Installation of Cast Iron Water Mains, AWWA Designation C-600 shall govern the installation, as applicable. The method bedding shall be in accordance with Specification 31 23 33 and as shown on the attached Standard Details. The drawings show the plan and grade for the pipeline. The CONTRACTOR shall submit detail drawings to the ENGINEER for approval, showing his proposed method of laying the pipe to these grades. All pipelines to be crossed shall be located before these drawings are prepared. Fittings or specials included as pipe shall be blocked in accordance with the attached Standard Details

4.2 PIPE AND FITTINGS

- A. Where steel pipe is specified or required, it shall conform to the AWWA Standard for Steel Water Pipe 6-inches and larger, AWWA Designation C200. Only the following mill pipes specified under AWWA C200 shall be acceptable: ASTM A139, Grades B and C; ASTM A53, Grade B; ASTM A135, Grade B. Only the following steel plate fabricated under ASTM A134 shall be acceptable: ASTM A36, ASTM A572.
- B. All pipe shall be hydrostatically tested to 80% of the minimum yield point with the hydrostatic test pressure indicated on shop fabrication drawings. AWWA Designation C200 shall govern the testing. Pipe length shall be not less than 35 feet per joint, except for specials unless otherwise noted. There shall be no more than one longitudinal or girth seam per section. Nominal pipe diameter and steel thickness shall be as specified on the drawings. The diameter shown is the required inside diameter of steel pipe if coal tar lining is used or inside diameter of lining if mortar lining is used.
- C. All pipe shall be manufactured by an established manufacturer who has had at least three (3) years' experience in successfully building this type of pipe. Openings for air valves, main connections, and blow-off connections must be provided with suitable reinforcements around the opening, welded to the body of the pipe. Openings of the sizes shown on the drawings shall be furnished with steel blind flanges of proper strength to withstand the working pressure of the line where no other provision is made for closing the openings. The pipe shall have ends for slip joints for field welding,

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beveled ends for field welding, beveled ends for field butt welding, or plain ends for mechanically coupled field joints.

- D. Twenty-four inch (24") or smaller pipe shall be manufactured with ends of true circular shape, free from indentations, projections, or roll marks for a distance of eight inches (8") from the end of the pipe. This shall be done by hydraulic expansion or some other method satisfactory to the ENGINEER. The outside diameter of the pipe shall be true enough in dimension to permit the passage for a distance of eight inches (8") from the end of the pipe a ring gauge with a bore three-thirty seconds (3/32") of an inch larger than the outside diameter of the pipe.
- E. Where steel fittings or special fittings are specified or required, they shall conform to all of the steel pipe specification requirements and to the AWWA Standard for Dimensions for Steel Water Pipe Fittings, AWWA Designation C208. Where fittings and specials are fabricated from mill pipe, they shall be fabricated from pipe hydrostatically tested to 80% of the pipe steel yield point with mitered joints dye checked for welding flaws. Where fittings and specials are fabricated from plate, they shall be hydrostatically tested to 80% of the minimum plate steel yield point. Changes in line and grade shall be made by steel specials or in the joints. Steel specials shall be used wherever the angle exceeds ten degrees (10°).
- F. Where field cutting of steel pipe is permitted, pipe shall be cut by sawing. The inside lining shall be removed for a minimum of eight inches each side of the cut and the pipe surface shall be cleaned and brushed to bright metal. After welding, the inside lining shall be replaced in accordance with AWWA C203.
- G. All steel blind flanges supplied in accordance with Section 405 shall be ASTM A36 Steel, 5/8-inch thick with approved gaskets and bolts. All bolts shall be carbon steel ASTM A307 Grade A only, in accordance with AWWA C207.
- H. The work under this item shall include all of the requirements specified under the item of pipe, in that "pipe" is understood to also mean "bends, tees, crosses, sleeves, outlet assemblies and other specified fittings". Unless otherwise specified, outlet assemblies shall consist of a flanged outlet constructed into the wall of steel or concrete pipe. If cast or ductile iron pipe is used, the outlet shall consist of a tee with the outlet flanged. If a gate valve or butterfly valve is shown on the drawings to be attached to the outlet, the line side end shall be flanged, and the opposite end shall be bell or mechanical joint according to the item for valves. All bends, tees, crosses, outlet assemblies, and plugs shall be blocked with concrete as shown on the attached Standard Details, except where the fittings have flanged, welded, or harnessed joints, the ENGINEER may under certain conditions delete the blocking. Concrete blocking shall be placed so that joints are accessible for repair.

4.3 JOINTS

- A. Steel Pipe and fittings shall be jointed with any of the end types as specified below unless a particular end type is specified. Flange ends shall be used only where specifically noted on the drawings.
- B. Welded joints shall conform to, and be tested in accordance with, the AWWA Standard

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for Field Welding of Steel Water Pipe, AWWA Designation C206.

- C. Mechanically coupled joints shall consist of Dresser Couplings, Style 38, or equal, or as specified on the drawings.
- D. Flanged joints shall conform to the AWWA Standard for Steel Pipe Flanges for Waterworks Service Size 4-inch through 144-inch, AWWA Des. C207, Class E.

4.4 LINING AND COATING

- A. Steel pipe and fittings shall be lined in accordance with the AWWA Standard for Cement Mortar Protective Lining and Coat for Steel Water Pipe, AWWA Designation C205, or the AWWA Standard for Coal-Tar Enamel Protective Coatings for Steel Water Pipe, AWWA Designation C203. The exterior of all underground pipe shall be cleaned, primed, and coated with coal-tar enamel, fibrous glass mat, and a bonded asbestos felt wrapper, and with either a whitewash coating or a final wrap of kraft paper, and the exterior of all above ground pipe shall be cleaned, primed, and painted, all in accordance with the AWWA Standard for Coal-Tar Enamel Protective Coatings and Linings for Steel Water Pipe, AWWA Designation C203, or in accordance with the AWWA Standard for Chlorinated Rubber-Alkyd Paint System for the Exterior of Above Ground Steel Water Piping.
- B. If mechanical couplings are used for field joints, the ends of the pipe shall be primed and enameled before the pipe is laid. If field welding is used, the pipe joints shall be furnished with the inside lining and outside coating held back twelve inches on each end for field welding. All of the lining and coating, including any field touch-up work, shall be done under the direction of the manufacturer of the lining and coating to the satisfaction of the ENGINEER. The lining at the joints on welded pipe may be patched with a minimum of two (2) coats of a coal tar or epoxy-based paint which shall be compatible with the interior lining and which shall impart no taste or odor to the water in the lines.

4.5 CONSTRUCTION

- A. If joints are field-welded, they shall develop the full strength of the pipe. The CONTRACTOR shall file with the ENGINEER a description of the method of welding which he proposes to use, the name of the individual or company who will do the welding, and a statement regarding the previous experience of such individual or company in this particular line of work. If requested, coupons shall be cut across the field welds and tested by an approved testing laboratory. The line may be welded continuously with provisions for slack in the line, or in sections to be lowered in the trench and connected by a position weld.
- B. If joints are to be mechanically coupled, sections up to 240 feet may be coupled and lowered carefully into the ditch. Electrical continuity shall be provided at all joints. Preparation for, protection of, and repair of pipe coating and lining, and coating of mechanical couplings shall conform to the applicable section of these specifications.

4.6 METHOD OF PAYMENT

- A. Steel pipe shall be measured for payment by the linear foot of pipe specified in the proposal and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the centerline of the pipe. No additional payment shall be made for vertical bends in the pipe, fittings used with drop manholes, fittings or specials included as pipe, or for concrete blocking.

4.7 BASIS OF PAYMENT

- A. Accepted quantities of steel pipe measured as provided above, will be paid for at the contract unit price for:

STEEL PIPE Lineal Feet

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 5 - REINFORCED CONCRETE PIPE AND FITTINGS

5.1 DESCRIPTION

- A. The work under this item shall include furnishing, hauling, placing and jointing of reinforced concrete pipe (RCP) in the trench in specific conformity with the lines and levels given.

5.2 PIPE AND FITTINGS

- A. Where reinforced concrete pipe (RCP) and fittings are specified or required for waterlines, they shall conform to and be tested in accordance with the AWWA Standard for Prestressed Concrete Pressure Pipe, Steel Cylinder Type, for Water and Other Liquids, AWWA Designation C301. All pipe shall be manufactured by an established manufacturer who has had at least three years' experience in successfully building this type of pipe. All specials and fittings shall be either of Type A or Type B and must be built to the details furnished by the manufacturer and approved by the ENGINEER. Each special and each length of straight pipe shall be plainly marked to indicate the head for which the pipe is designed and to indicate where the pipe will be used by reference to the layout drawings.
- B. Where reinforced concrete pipe (RCP) and fittings are specified or required for sanitary sewers, they shall conform to and be tested in accordance with the specifications for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, ASTM Designation C76, Class as shown on the drawings. No lengths of pipe shall be less than eight feet. All concrete pipe shall be coated inside with two (2) coats of a coal-tar base paint (Standard Inertol®, or approved equal), with a twenty-four hour drying period between coats.

5.3 JOINTS

- A. Reinforced concrete pipe and fittings for waterlines shall be jointed according to AWWA Standard for Prestressed Concrete Pressure Pipe Steel Cylinder Type, for Water and Other Liquids, AWWA Designation C301.
- B. Reinforced concrete pipe and fittings for sanitary sewer shall be jointed with a single natural rubber or neoprene gasket and cement mortar formed by a diaper. It shall be formed in a continuous ring of suitable cross sections and of such size as to assure a watertight joint. Each length of pipe shall be provided with bell-and-spigot ends formed in the concrete wall. The spigot end shall contain a groove so that the gasket will be enclosed and compressed on four surfaces when the joint is in final position. All jointing materials shall be used in accordance with the manufacturer's instructions and subject to approval of the ENGINEER.

5.4 CONSTRUCTION

- A. For waterlines, the AWWA Standard for Installation of Cast Iron Water Mains, AWWA designation C-600, shall govern the installation as applicable. The method of bedding shall be in accordance with Specification 31 23 33 and as shown on the attached Standard Details. The drawings show the plan and grade for the pipeline. The CONTRACTOR shall submit detailed drawings to the ENGINEER for approval, showing the proposed method of laying the pipe to these grades. All pipelines to be crossed shall be located before these drawings are prepared. The ends of the pipes to be jointed shall be cleaned immediately prior to joining and the rubber gasket thoroughly lubricated with a thin film of gasket lubricant before it is placed in position on the spigot end.
- B. Gasket lubricant shall be as supplied by the pipe manufacturer and approved by the ENGINEER. Extreme care shall be taken in moving the spigot end of the pipe into the bell end of previously laid pipe. If the gasket is damaged or moved out of place, the new pipe shall be removed, and a new gasket applied before rejoining. Any lubricant remaining on the exposed concrete surfaces inside or outside the pipe shall be completely removed. Fittings or specials included as pipe shall be blocked in accordance with the attached Standard Details.
- C. For sanitary sewers, the methods of laying pipe, foundation, and grade specified under Pipe, Vitrified Clay, shall apply. All pipe shall be installed with the mark "C-76" visible on the top of the pipe. The ends of the pipes to be jointed shall be cleaned immediately prior to joining and the rubber gasket thoroughly lubricated with gasket lubricant before it is placed in position on the spigot end. Extreme care shall be taken in moving the spigot end of the pipe into the bell end of the previously laid pipe. If the gasket is damaged or moved out of place, the new pipe shall be removed, and a new gasket applied before rejoining.
- D. For all lines, after the pipe has been jointed, a band at least 5-1/2 inches wide shall be placed around the outside of the pipe at the joint. This band shall serve as a form for placing 1:1 cement mortar grout in the external recess formed by the face of the groove and the shoulder of the tongue. If a reinforced paper joint bank is used, it shall be drawn up tight around the pipe and the backfill tamped against it up to the spring line

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before pouring the grout. If a cloth band is used, it shall be wired around the outside of the pipe, and the grout poured before backfilling. On all pipes, the joint space remaining on the inside of the pipe shall be filled with a stiff mixture of 1:1 cement mortar which shall be troweled in place to produce a continuous, smooth, flush surface across the joint.

5.5 METHOD OF PAYMENT

- A. Reinforced Concrete Pipe (RCP) shall be measured for payment by the linear foot of pipe of the size specified in the proposal and on the plans and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the centerline of the pipe. No additional payment shall be made for vertical bends in the pipe, fittings used with drop manholes, fittings or specials included as pipe, or for concrete blocking.

5.6 BASIS OF PAYMENT

- A. Accepted quantities of Reinforced Concrete Pipe (RCP), measured as provided above, will be paid for at the contract unit price for:

REINFORCED CONCRETE PIPE (RCP) Lineal Feet

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 6 - THERMOPLASTIC POLYVINYL CHLORIDE (PVC) WATER PIPE AND FITTINGS

6.1 DESCRIPTION

- A. Thermoplastic Polyvinyl Chloride (PVC) water pipe 6 to 12-inches in size shall be allowed in the distribution system of the OWNER. The AWWA Standard for the installation of PVC water mains, AWWA Designation C-605 shall govern the installation, as applicable.

6.2 PIPE AND FITTINGS

- A. Where thermoplastic polyvinyl chloride (PVC) water pipe is specified or required, it shall conform to the AWWA Standard for Polyvinyl Chloride (PVC) Pressure Pipe, 4-inch through 12-inch, for water, AWWA Designation C900. PVC pipe shall conform to the dimensions shown in Table 2 of AWWA C900, Dimensions and Pressure Classes for Dimension Ratio (DR) for PVC 1120 Pipe with Cast Iron Pipe Equivalent ODS. The minimum DR shall be in accordance with the plans and the minimum working pressure rating shall be 150 psi.
- B. Fittings for PVC pipe 8-inches in diameter and smaller shall be Cast Iron Short Body Fittings in accordance with AWWA C110 specification for Cast Iron Fittings, 2-inch through 48-inch, for Water and Other Liquids. All fittings shall be designed and rated for 250 psi water working pressure.

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- C. The work under this item shall include all of the requirements specified under the item of pipe, in that "pipe" is understood to also mean "bends, tees, crosses, sleeves, outlet assemblies and other specified fittings". Unless otherwise specified, outlet assemblies shall consist of a flanged outlet constructed into the wall of steel or concrete pipe. If cast or ductile iron pipe is used, the outlet shall consist of a tee with the outlet flanged. If a gate valve or butterfly valve is shown on the drawings to be attached to the outlet, the line side end shall be flanged, and the opposite end shall be bell or mechanical joint according to the item for valves. All bends, tees, crosses, outlet assemblies, and plugs shall be blocked with concrete as shown on the attached Standard Details, except where the fittings have flanged, welded, or harnessed joints, the ENGINEER may under certain conditions delete the blocking. Concrete blocking shall be placed so that joints are accessible for repair.

6.3 JOINTS

- A. Jointing of plastic pipe shall be accomplished by push-on type joints. Push-on joints consisting of a rubber "O" ring shall be used. The CONTRACTOR shall furnish to the ENGINEER details of the proposed joint in triplicate for approval before any such jointing material is delivered to the job site.

6.4 CONSTRUCTION

- A. Pipe shall be laid to the lines and grades established by the ENGINEER. The bottom of the trench shall be relatively uniform and in no case shall pipe be laid on rock. Where rock is encountered, Class "A" bedding shall be required.
- B. Long plastic pipelines, over three hundred feet (300 ft.) in length without an abrupt change in direction, shall be "snaked" in the trench to provide for expansion and contraction. Snaking shall be equivalent to the pipe touching opposite sides of a twenty-four inch (24) wide trench within a distance of eighty feet (80 ft.). It is recommended that, during warm weather, whenever practical, pipelines be filled with cold water or allowed to cool overnight before backfilling trench. Push-on joints shall be made with extreme care and by following the manufacturer's recommendation as to installation procedures. If the design of the joint permits for linear expansion of the pipe, the trench width may be reduced. Adequate thrust blocks as approved by the ENGINEER will be required at all bends, tees, and crosses.

6.5 METHOD OF PAYMENT

- A. Thermoplastic Polyvinyl Chloride (PVC) water pipe shall be measured for payment by the linear foot of pipe of the size specified in the proposal and on the plans and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the centerline of the pipe. No additional payment shall be made for vertical bends in the pipe.

6.6 BASIS OF PAYMENT

- A. Accepted quantities of Thermoplastic Polyvinyl Chloride (PVC) water pipe, measured as provided above, will be paid for at the contract unit price for:

THERMOPLASTIC POLYVINYL CHLORIDE (PVC) PIPE Lineal Feet

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 7 - TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS

7.1 DESCRIPTION

- A. Type PSM Polyvinyl Chloride (PVC) sewer pipe ranging in size from 4 inches to 15 inches, may be installed within the OWNER'S collection system, as approved by the ENGINEER. The work under this item shall include furnishing, hauling, placing, and joining of PVC sewer pipe within the trench in specific conformity with lines and levels given. For all pipe, the ASTM Standard 2321-89 "Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications" shall govern with respect to installation of the pipe. The method of bedding shall be in accordance with PART 5 of this specification and any exceptions listed below, and as shown on the attached standard details.

7.2 PIPE AND FITTINGS

- A. Where Type PSM polyvinyl chloride (PVC) sewer pipe is specified or required, it shall conform to ASTM Standard D3034-94 "Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings". Nominal pipe diameter may be from 4 inches to 15 inches in size. All PVC sewer pipe shall have a minimum pipe stiffness of 115 psi and shall have a Standard Thermoplastic Pipe Dimension Ratio (SDR) in accordance to the plans. The pipe shall be made of PVC plastic having a cell classification of 12454-B or 12454-C or 12364-C or 13364-B (with minimum tensile modulus of 3450 MPa (500,000 psi) as defined in ASTM Standard D1784. The pipe shall be clearly marked at intervals of 1.5 meters (5 ft.) or less, and the markings shall indicate manufacturer's name or trademark and code, nominal pipe size, the cell classification, the designation "Type PSM SDR-XX PVC Sewer Pipe", and the designation "Specification D3034". The fittings shall be marked with manufacturer's name or trademark, nominal size, the material designation "PVC", PSM, and the designation "Specification D3034".

7.3 JOINTS

- A. Jointing of plastic pipe shall be accomplished by push-on type joint, with an elastomeric seal conforming to ASTM Standard D3212-92 "Standard Specification for Joint for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals". The CONTRACTOR shall furnish to the ENGINEER details of proposed joint in triplicate for approval before any such jointing material is delivered to the job site.

7.4 CONSTRUCTION

- A. The pipe shall be laid on a firm foundation as required in over-excavated areas, and a bedding with a minimum thickness of 4 inches (6 inches in rock cuts). Haunching material shall be placed to the springline of the pipe and be installed in layers with a maximum thickness of 6 inches. The haunching material shall be worked around the pipe by hand, and the shovel slicing method to provide uniform support of the pipe. The initial backfill shall be placed in layers to a minimum depth of 6 inches to the top of the pipe and be placed in layers with a maximum thickness of 6 inches. All material for foundation, bedding, haunching and initial backfill shall be compacted to 85% or 95% of Standard Proctor as required according to the USCS soil classification system, and in conjunction with ASTM Standard D2321-89. Maximum particle size for all backfill material shall be 3/4 inch. All backfill shall be free from clods, lumps, boulders and frozen matter.
- B. Place pipe and fittings in the trench with the invert conforming to the required elevations, slopes and alignment. Provide bell holes in the pipe bedding, no larger than necessary, in order to ensure uniform pipe support. Fill all voids under the bell by working in bedding material. In special cases where the pipe is to be installed to a curved alignment, maintain angular "joint deflection" (axial alignment) or pipe bending radius, or both, within acceptable design limits.
- C. Comply with manufacturers recommendation for assembly of joint components, lubrication, and making of joints. When pipe laying is interrupted, secure piping against movement and seal open ends to prevent the entrance of water, mud, or foreign material.
- D. For elastomeric seal joints conforming to ASTM D3212-92 "Standard Specification for Joints for Drain and Sewer Plastic Pipe Using Flexible Elastomeric Seal", the pipe ends shall be marked to indicate insertion stop position and ensure that the pipe is inserted into pipe or fitting bells to this mark. Push spigot into bell using methods recommended by the manufacturer, keeping pipe true to line and grade. Protect end of the pipe during homing and do not use excessive force that may result in over-assembled joints or dislodged gaskets. If full entry is not achieved, disassemble and clean the joint and reassemble. Use only lubricant supplied or recommended for use by the pipe manufacturer. Do not exceed manufacturer's recommendation for angular "joint deflection" (axial alignment).
- E. Where coarse and open-graded material is placed adjacent to finer material and within anticipated ground water elevations, a geotextile filter fabric shall be placed around the bedding and initial backfill material to prevent the migration of the surrounding fines into the open voided area.
- F. After installation of the pipe has been completed and air tested, the CONTRACTOR shall pull a mandrel that has been machined to 5% of the inside diameter of the pipe from manhole to manhole. The pulling of the mandrel shall be performed no earlier than 30 days from the date of the air testing.

7.5 METHOD OF PAYMENT

- A. Type PSM Polyvinyl Chloride (PVC) sewer pipe shall be measured for payment by linear foot of pipe of the size specified in the proposal and on the plans and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the centerline of the pipe. No additional payment shall be made for vertical bends in the pipe or fittings used with drop manholes.

7.6 BASIS OF PAYMENT

- A. Accepted quantities of Polyvinyl Chloride (PVC) sewer pipe, measured as provided above, will be paid for at the contract price for:

Polyvinyl Chloride (PVC) Sewer Pipe Lineal Feet

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 8 – HDPE PIPE AND FITTINGS

8.1 DESCRIPTION

- A. This specification covers the material, joining methods, and general installation practice for high density polyethylene pipe (HDPE) piping systems for use as indicated on the drawings. For all pipe, it must be installed in accordance with AWWA C901 and C906.

8.2 PIPE AND FITTINGS

- A. All materials shall be manufactured from a PE 4710 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material shall meet the specifications of ASTM D3350 with a minimum cell classification of 445474C or 445574C. HDPE pipe and fittings shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. HDPE products shall be homogenous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.
- B. Pipe shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell classification as noted in Section A. The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black of not less than 2 percent. The manufacturer of the HDPE resin shall certify the cell classification indicated.
- C. Pipe sizes 3" DIPS/4" IPS and larger shall have a manufacturing standards of ASTM F714, while IPS pipe 3" and smaller shall be manufactured to the dimensional requirements listed in ASTM D3035. Dimension Ratio (DR) and Outside Diameter (IPS/DIPS) shall be as specified on plans.

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- D. Pipe shall be manufactured by an ISO 9001 certified manufacturer. The pipe manufacturer shall have an ongoing Quality Control program for incoming and outgoing materials and shall assure that the pipe will meet the material requirements of this specification. HDPE resins for manufacturing of pipe shall be checked for density, melt flow rate, and decontamination. For potable water systems the facility shall have the necessary testing equipment to verify that pipe meets the AWWA and NSF standards. Pipe shall be checked for outside diameter, wall thickness, length, and surface finish on the inside and outside. The manufacturer's production facilities shall be open for inspection by the Owner or Engineer.
- E. All pipe may be color coded for the intended service. When required, the color coding shall be permanently co-extruded stripes on the pipe outside surface as part of the pipe's manufacturing process. Painting HDPE pipe to accomplish color coding is not permitted.
- F. All fabricated elbows, tees, reducing tees and end caps shall be produced and meet the requirements of ASTM F2206, as manufactured by ISCO Industries, Inc or other approved manufacturer holding an ISO 9001 quality system certificate. Each fitting will be marked per ASTM F2206 section 10 including the nominal size and fitting EDR, which will meet or exceed the pipe DR identified for the project. Fabricated fittings shall be manufactured using a data recording device to record fusion pressure and temperature and shall be stamped with unique joint number that corresponds to the joint report. A graphic representation of the temperature and pressure data for all fusion joints made producing fittings shall be maintained for a minimum of 5 years as part of the quality control and will be available upon request of owner. Test results to validate ASTM F2206 section 7.3 and 9 shall be provided to owner or owner's representative upon request.
- G. Fittings shall have a minimum pressure rating equal to or greater than the pipe to which they are joined unless otherwise specified on the plans or accepted by ENGINEER.
- H. The work under this item shall include all of the requirements specified under the item of pipe, in that "pipe" is understood to also mean "bends, tees, crosses, sleeves, outlet assemblies and other specified fittings". Unless otherwise specified, outlet assemblies shall consist of a flanged outlet constructed into the wall of steel or concrete pipe. If cast or ductile iron pipe is used, the outlet shall consist of a tee with the outlet flanged. If a gate valve or butterfly valve is shown on the drawings to be attached to the outlet, the line side end shall be flanged, and the opposite end shall be bell or mechanical joint according to the item for valves. All bends, tees, crosses, outlet assemblies, and plugs shall be blocked with concrete as shown on the attached Standard Details, except where the fittings have flanged, welded, or harnessed joints, the ENGINEER may under certain conditions delete the blocking. Concrete blocking shall be placed so that joints are accessible for repair.
- I. Bolted Connections
 - 1. Flanged and Mechanical Joint Adapters can be made to ASTM D3261. Flange adapters, if machined, may also meet the requirements of ASTM F2880. Flanges and MJ Adapters shall be fused onto the pipe and have a minimum pressure rating equal to or greater than the pipe unless otherwise specified on the plans.

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2. Metallic back-up rings (Van-Stone style lap joint flanges), shall have a radius on the inside diameter of the bore so as to be compatible with AWWA C207 Class D (or B or E), ASME/ANSI B 16.5 Class 150, ASME/ANSI B 16.1 Class 125, or ASME/ANSI B16.47 Series A.
3. Flange assemblies shall be assembled and torqued according to PPI TN-38, "Bolt Torque for Polyethylene Flanged Joints."

J. Mechanical Fittings

1. The use of mechanical coupling and saddles shall be approved by the ENGINEER prior to installation. Mechanical fittings shall be designed for use an compatible with HDPE pipe.
2. Coupling without self-restraining capabilities (integrated serrated teeth or grippers) shall include a plan for external restraint or isolation from pipeline generated forces.
3. Mechanical saddles shall have wide straps for distribution of clamping loads. No U-Bolts shall be allowed.
4. When required by mechanical coupling manufacturer, pipe stiffeners shall be employed to support the interior wall of the HDPE. The stiffeners shall support the pipe's end and control the "necking down" reaction to the pressure applied during normal installation. The pipe stiffeners shall be formed of 304 or 316 stainless steel, with a wedged style design to fit the HDPE manufacturers published average inside diameter of the specific size and DR of the HDPE.

8.3 EQUIPMENT

- A. All fusion equipment, whether new or used, rented or owned, shall comply with the requirements of ISO 12176-1 "Equipment for Fusion Jointing Polyethylene Systems".
- B. Butt Fusion
 1. Butt fusion equipment must be in satisfactory working order and the hydraulic system must be leak free. Heater plates shall be free from scrapes, gouges, and have a consistent clean coated surface. The pressure gauge and thermometer should be properly calibrated. When requested by the ENGINEER, records showing a maintenance service or inspection within 3 months prior to use for this project shall be provided.
 2. For 16" and larger pipe sizes, the butt fusion machine shall be capable of autonomously calculating the drag pressure and perform the shift sequence autonomously.

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3. For 6" and larger pipe sizes, the pipe butt fusion machine shall be a self-contained hydraulic fusion machine capable of butt fusing HDPE pipe. The carriage must be removable from the chassis for in-ditch use. The machine must be compatible with an electronic data recording device. Accessories will include all butt fusion inserts for the specified range of pipe sizes, a pyrometer kit for checking the surface temperature of the heater, extension cord of appropriate gauge (25' minimum), and hydraulic extension hoses (minimum of four). The butt fusion machine will be McElroy, or approved equivalent.
 4. In areas where there may be insufficient space for layout of the entire length of fused pipe to be pulled-back, the Contractor shall utilize a continuous HDPE pipe fusion equipment such as a PolyHorse by McElroy or other means in order to fuse the length of pipe necessary for the installation.
- C. Electrofusion processors shall be maintained and calibrated per manufacturer's requirements and recommendations.

8.4 JOINTS

- A. All HDPE pipe shall be joined to by the heat fusion process which produces homogeneous, sealed, leak-tight joints. Tie-ins between sections of HDPE pipe shall be made by butt fusion whenever possible.
- B. Butt Fusion
1. The pipe shall be joined by the butt fusion procedure outlined in ASTM F2620 or PPI TR-33. All fusion joints shall be made in compliance with the pipe or fitting manufacturer's recommendations. Fusion joints shall be made by qualified fusion technicians per ASTM F3190. A record or certificate of training for the fusion operator must be provided that documents training to the fundamentals of ASTM F2620. Considerations should be given to and provisions made for adverse weather conditions, such as temperatures below freezing, precipitation, or wind, which is accepted by the owner/engineer. The use of a controlled cooling cycle procedure to reduce cooling time is acceptable only as part of a controlled cooling cycle procedure where testing demonstrates that acceptable joints are produced using the controlled cooling cycle procedure.
- C. Electrofusion
1. Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are PPI TN 34 and PPI Municipal Advisory Board (MAB) Generic Electrofusion Procedure for Field Joining of 12 Inch and Smaller Polyethylene (PE) Pipe. The process of electrofusion requires an electric source, commonly called an electrofusion processor that has wire leads and a method to read electronically (by laser) or otherwise input the barcode of the fitting. The electrofusion processor must be capable of reading and storing the input parameters and the fusion results for later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence electrofusion training within the past year on the equipment to be utilized for this project.

HAYES STREET WATERLINE REPLACEMENT

D. Data Recording

1. For 6" and larger pipe sizes, McElroy DataLogger or equivalent fusion data recorder shall be used to record all fusion welds on hydraulically operated fusion machines. The device shall be capable of meeting the requirements of ASTM F3124, "Standard Practice for Data Recording the Procedure used to Produce Heat Butt Fusion Joints in Plastic Piping Systems or Fittings". The device, or combination of devices, shall record the following variables of each fused joint:
 - i. Heater surface temperature- immediately before inserting the heater plate, measure with a pyrometer and manually enter into the weld record.
 - ii. Gauge pressure during the initial heat cycle
 - iii. Gauge pressure and elapsed time during the heat-soak cycle
 - iv. Heater removal (dwell) time
 - v. Gauge pressure and elapsed time during the fusing/cool cycle
 - vi. Drag pressure
 - vii. Pipe diameter and wall thickness
 - viii. Type of HDPE material (Specification and Classification) and manufacturer
 - ix. Fusion Machine Identification
2. The device shall record the operator name and a unique operator ID number, along with the date and time of each weld.
3. Records showing the device is up to date on all required calibration should be available for presentation when requested.
4. All fusion welds should be traceable to the report (via operator and weld ID) with an indentation weld stamp or by permanent paint marker/pen next to fusion weld.
5. A weld location map may be requested, prior to commencement of work, by the owner or owner's representative.

8.5 CONSTRUCTION

A. For direct burial, refer to Specification 31 23 33.

B. Pull-In Installation

1. Per ASTM F1804 and/or www.HDPEapp.com, the contractor shall determine and document the maximum proposed pull-in length and pull-in force for the pressure class and pipe diameter to be pulled into an open trench. Pull-in lengths will not exceed the maximum lengths for the class and diameter pipe. A commercially available load limiter (weak link) approved by the Engineer shall be used between the puller and the pipe.
2. Prior to pulling the pipeline, contractor shall place rollers or other approved devices beneath the pipe to avoid unnecessary damage and to reduce pipe drag.

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3. Trenchless installations:

- i. For Horizontal Directional Drilling (HDD), refer to Specification 33 05 07.13 and ASTM F1962, PPI TR-46, PPI PE Handbook (Chapter 12).
- ii. For sliplining, refer to ASTM F585, PPI PE Handbook (Chapter 11).
- iii. For pipe bursting, refer to Specification 33 31 30 and PPI PE Handbook (Chapter 16)

C. Appurtenances

1. All appurtenances (tees, elbows, services, valves, air relief valves, fire hydrants, etc.), must be independently supported and shall not rely on the pipeline and its connections for this support. Excessive stresses may be encountered when appurtenances are inadequately supported.
2. Hydrant Assemblies shall be installed and field tested according to the requirements of AWWA M17.
3. Installation of Tracer Wire. When tracer wire is required, the Contractor shall install along the entire section of pipeline and along all service connections as listed below. The tracer wire shall be installed simultaneously with the polyethylene piping system. Tracer wire shall be installed by the Contractor once backfill has been placed and compacted to at least 12 inches above the top of the pipe and not more than 18 inches above the top of the pipe. Tracer wire shall be properly spliced at each end connection and each service connection. Care should be taken to adequately wrap and protect wire at all splice locations. No bare tracer wire shall be accepted. Provide Magnesium alloy anode for cathodic protection that conforms to the requirements of ASTM B843. Install tracer wire per local and manufacturer's requirements.

8.6 METHOD OF PAYMENT

- A. HDPE pipe shall be measured for payment by the linear foot of pipe of the size specified in the proposal and on the plans and placed as shown on the drawings. Total footage shall be the actual horizontal measurement along the centerline of the pipe. No additional payment shall be made for vertical bends in the pipe.

PART 9 – SEWER CONNECTION

9.1 DESCRIPTION

- A. The work under this item shall include all excavation, furnishing all materials required, construction, finishing, and backfilling of connections to existing mains, manholes, drop connections to manholes, special connections, service line connections, or plugs, as indicated on the drawings or as directed by the ENGINEER.

9.2 CONSTRUCTION

- A. Connections to existing manholes shall be made by cutting into the manhole at the specified grade, inserting the pipe, and encasing the joint with concrete. CONTRACTOR shall not break into any existing sewer unless the OWNER'S REPRESENTATIVE is present and the work done shall be under the direction of the OWNER'S REPRESENTATIVE. The manhole base shall be cut and reconstructed in such a manner that a proper invert section is maintained. All waste mortar, debris, and sharp edges shall be removed from the joints, bottom, and invert. CONTRACTOR shall remove and replace the manhole steps in the proper location and in accordance with the attached standard details if they are not properly located after the connection is made. Any and all diversion or pumping of water or sewage in a wet connection is included in this item.
- B. Methods of construction shall be the same for sewer service line reconnections as for main sewers. All reconnections shall be constructed in conformance with the Plumbing Code of the OWNER unless modified herein. New pipe used shall be of the same diameter as the existing line.
- C. Plugs shall be constructed of manhole brick and mortar, extending at least one foot into the line plugged from the manhole. The plug shall be watertight and troweled to a smooth finish on the interior of the manhole.
- D. At points indicated on the plans or by the ENGINEER, risers of the size indicated on the plans, or as required by the ENGINEER, shall be constructed. A 45-degree bell and spigot bend shall be jointed to the wye to a point level with lower side of bell of 45-degree bend. Pipe for risers shall be regular length joints of sewer pipe. Risers using full joints of pipe shall be set so that the top of riser is near to but not less than ten (10) feet below finished ground grade at rear of building location. If the OWNER desires, the CONTRACTOR may, at the OWNER's expense, extend risers to a point not less than six (6) feet below finished grade at rear of the building locations, but, in no case, shall there be less than four (4) feet of cover over riser.

When contained wholly on the public right-of-way, or within the boundaries of utility easements, risers may be laid on a slope of 45 degrees.

9.3 METHOD OF MEASUREMENT

- A. Connections will be measured for payment per each classification of connection as shown on the proposal. No additional payment will be made for excavation, backfilling, furnishing and placing concrete, removing and replacing manhole steps, or for diversion or pumping of water or sewage necessary to make the connection. Connections shown on the plans but not classified on the proposal shall be considered incidental to the work and will not be measured for payment but the cost shall be included in other items.

9.4 BASIS OF PAYMENT

- A. Accepted quantities measured as provided above will be paid for at the contract unit price as shown on the proposal for each connection which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 10 – WATER CONNECTION

10.1 DESCRIPTION

- A. The work under this item shall include all excavation, furnishing all materials required, construction, finishing, and backfilling of connections to existing mains, valves, special connections, service line connections, as indicated on the drawings or as directed by the ENGINEER.

10.2 CONSTRUCTION

- A. The drawing shows details of the various connections and they shall be made in accordance with the details or as directed by the ENGINEER. On water mains, the CONTRACTOR will make the pressure and wet connections to existing mains as shown on the drawing unless specifically noted otherwise. In making these connections all material, equipment, and personnel necessary for the job shall be assembled at the site and all work possible shall be done before the service is interrupted. The order and time of the work will be under the jurisdiction of the ENGINEER. If deemed necessary, the ENGINEER may order the CONTRACTOR to make the connection at night so as to inconvenience the public as little as possible.

- B. Where called for on the plans, or by the specifications, tapping valves and sleeves shall be used to make connections with existing water mains. The CONTRACTOR, when ready to make any of these connections, will notify the ENGINEER 48 hours in advance. The CONTRACTOR shall furnish all material, labor and equipment to make the taps.

The tapping valves furnished shall be Mueller, American Flow, or approved equal and tapping sleeves furnished shall be Ford, Smith Blair, or approved equal satisfactory to the ENGINEER. The tapping sleeves shall be the bolted type, heavy duty, using iron bolts, cast iron or equal satisfactory to the ENGINEER.

- C. Service line connections for water services shall be constructed as shown on the standard drawings and materials shall be copper, brass, municipex, or approved equal by ENGINEER.
- D. The material and workmanship for brass goods shall be of the highest quality and shall interchange with brass goods presently in use by the owner. Brass goods shall conform to the same precise standards as described in AWWA Specifications Number C800 Standard Specifications for underground service line fittings.
- E. Brass goods shall contain 85 percent copper and 5 percent each of tin, lead, and zinc and shall be tested by hydrostatic pressure of 200 pounds per square inch. The bidder shall furnish a complete description of brass goods with his bid.

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- F. Copper tubing shall be Type "K" soft annealed seamless tubing and shall conform to ASTM-B88 Standard Specification for Seamless Copper Water Tube.
- G. The coils of copper tubing shall be in individual packages. The CONTRACTOR shall furnish an affidavit that the copper tubing furnished complies with all specifications.
- H. Municipex pipe shall be in accordance with AWWA 904 and ASTM F876.

PART 11 – CASTINGS

11.1 GENERAL

- A. Castings for valve boxes, valve vaults, manholes, lamp holes, and other appurtenances shall conform to, and be tested in accordance with the specifications for Gray Cast Iron, ASTM Designation A48, Class 30. Design shall be according to the attached Standard Details. Frames and covers that are to be located within dedicated public right-of-way, or any other location subject to vehicular traffic, shall have all bearing surfaces machined so that fittings parts will not rattle or rock under traffic. All castings shall be subject to a hammer test before installation.

PART 12 - RIGHT-OF-WAY CLEARING AND RESTORING

12.1 DESCRIPTION

- A. Work under this item shall include the removal and reconstruction or replacement of all obstructions affected, other than those covered in this specification, by the construction of the project including, but not limited to fences, retaining walls, patios, barbecues, signs, mailboxes, outbuildings, landscaping, sidewalks, driveways, parking lot surfacing, curbs, and the like. Any such obstructions which are not to be reconstructed are so designed on the drawings. Such shall be removed and disposed of by the CONTRACTOR. All obstructions to be replaced or reconstructed shall be restored to substantially the same condition as existed prior to the construction, except as otherwise noted. All sidewalk, driveway, and parking lot replacement shall be of at least equal quality, thickness, compacted subgrade and base course, and surface course as that removed or damaged. The CONTRACTOR shall remove and dispose of all debris, restore the grade of the surface of the earth as reasonably as may be done to the grade existing prior to construction, and upon completion of the work shall leave the site in as neat, clean, and orderly condition as nearly as it was prior to construction as may be reasonably done.

12.2 MATERIALS AND TESTS

- A. Backfill materials under parking lots and driveways shall be in accordance with Specification 31 23 33 or as approved by the ENGINEER.
- B. Portland Cement Concrete shall be in accordance with Specification 03 30 00. All concrete placed in parking lots, driveways, sidewalks, and all other concrete structures within the right-of-way shall use high-early strength cement.
- C. Asphaltic Concrete - Bituminous pavement shall meet the requirements shown in Section 32 12 16.39.

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- D. Sampling and Testing - Sampling of materials will be made in accordance with the appropriate methods specified in the corresponding section listed above. Tests will be conducted in accordance with the schedule of tests provided in the special provisions or as shown on the plans.

12.3 CONSTRUCTION

- A. Passable surfaces across or along the construction vicinity shall be maintained at all times with gravel, steel mat or plate, or temporary bituminous surfacing material where a sidewalk, driveway, or parking lot previously existed.
- B. Sidewalks, driveways, parking lots, and other paved areas, all or partially composed of concrete, asphaltic concrete, or bituminous material shall be saw cut, removed, and replaced to at least the standard trench width if the project crossing is at right angles to the obstruction. If a construction joint is within two (2) feet of any proposed sawed line, the cut shall be extended to the joint, or as directed by the ENGINEER. Curbs shall be tunneled under in all cases, unless otherwise approved in writing by the ENGINEER.
- C. Backfill under sidewalks, driveways, parking lots, and other paved areas shall be in accordance with Specification 31 23 33. All backfill shall be thoroughly compacted with sufficient moisture and by mechanical means to prevent settlement. Settlement or other failure of backfill or restored right-of-way shall be corrected immediately. The method of correction shall be as directed by the ENGINEER.
- D. Existing water and sewer lines: Wherever existing water or sewer lines are encountered, the CONTRACTOR shall protect the same from damage. In case damage does result, the CONTRACTOR shall, as directed by the ENGINEER, repair the same at his own expense.
- E. Vertical and horizontal separation of water and sewer lines: Where a sanitary sewer crosses any existing or proposed water main and is closer than 10-feet horizontally or 2-feet vertically the sanitary sewer shall be ductile iron pipe for a distance of 20-feet horizontally. If the sanitary sewer crosses above the water main, the sanitary sewer shall be ductile iron pipe and concrete encased. Where a sanitary sewer is constructed closer than 50 feet to a water well (existing or proposal) the sanitary sewer shall be ductile iron pipe.

Where a water main crosses any existing or proposed sanitary sewer and is closer than 10-feet horizontally or 2-feet vertically, the sanitary sewer shall be replaced for a distance of 20-feet horizontally with ductile iron pipe. If the water main crosses below the sanitary sewer, the sanitary sewer shall be replaced with ductile iron pipe and concrete encased.

- F. Existing structures which are to be abandoned shall be broken off or removed to a depth of not less than six (6) inches below the foundation grade of new structures. Any blasting or other operation which might endanger the new work shall be completed prior to the construction of any part of the new structure. After the removal of any existing structures, all excavations not to be occupied by new structures and all holes created shall be cleaned up and the site left in a neat and orderly condition.

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- G. If an obstruction is of public ownership, the CONTRACTOR shall notify the appropriate agency, and obtain any necessary permit or license forty-eight (48) hours before beginning any operations affecting the obstruction. All work shall conform to the current standards and specifications of that agency and shall be approved by the agency before completion of the project. At the CONTRACTOR'S request, the ENGINEER will furnish information as to what licenses or permits are required.
- H. The CONTRACTOR shall notify all utility companies prior to beginning construction and shall provide an electrical or mechanical device or use such other means he may select, to locate any hidden utility line, oil or gas pipe line, water pipe line, sewer pipe line, telegraph and telephone line or other structures provided for in these specifications and locate such line or structures shown on the plans and any uncharted line or structure whether shown on the plans or not and protect, adjust to grade, disconnect and replace, relocate and replace, remove, provide supports during the construction and settlement of backfill and protect against freezing or unnecessary damage by the elements of existing utility lines, oil or gas pipe lines, water pipe lines, sewer pipe lines, telegraph and telephone lines, railroad right-of-way lines and other structures and shall pay all fees to County, City, State or Federal agencies which may be required in the performance of this work. In the event injury does result to any gas lines, power lines or poles, telephone lines or poles, etc., the CONTRACTOR shall, holding the OWNER entirely blameless, make proper restitution.

12.4 METHOD OF MEASUREMENT

- A. Remove and replace paved driveways, paved parking lots and other paved areas, except sidewalks, shall be measured by the square yard. This area will be derived by multiplying the length along the centerline of the pipe by the standard trench width and converting to square yards, unless otherwise approved by the ENGINEER.
- B. Remove and replace sidewalks shall be measured by the square foot, whereby the area was measured in the same manner as paved driveways in 12.3(B) above.
- C. Gravel and rock driveways, parking lots, and other areas will not be measured for payment, but rather shall be considered incidental to the work.
- D. Temporary materials required for maintenance of traffic through pavement cut locations will not be measured for payment.
- E. Compaction of backfill to 90% Standard Density in driveways, parking lots, etc. will not be measured for payment, and the cost of this work shall be included in other bid items.
- F. Other structures and obstructions shall not be measured for payment, unless shown on the proposal, and the cost of this work shall be included in other bid items.

12.5 BASIS OF PAYMENT

- A. Accepted quantities, measured as provided above will be paid at the contract unit price for:

Pavement repair, HES concrete Sq. Yd.

Pavement repair, asphaltic Sq. Yd.

Sidewalk repair, concrete Sq. Yd.

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 13 - STREET AND ALLEY, RIGHT-OF-WAY CROSSINGS

13.1 DESCRIPTION

- A. Work under this item shall consist of backfilling, compacting, and pavement repair, where applicable, of all trenches crossing streets and alleys, dedicated or proposed to be dedicated to the public in accordance with the lines, grades and dimensions shown on the plans or as directed by the ENGINEER.

13.2 MATERIALS AND TESTS

- A. Backfill materials and streets and alleys shall be in accordance with Specification 31 23 33.
- B. Portland Cement Concrete shall be in accordance with 03 30 00. All concrete placed within the right-of-way shall be high-early-strength (HES) cement.
- C. Asphaltic Concrete - Bituminous Pavement shall meet the requirements of Specification 32 12 16.39.
- D. Sampling and Testing - Sampling of materials will be made in accordance with the appropriate methods specified in the corresponding section listed above. Tests will be conducted in accordance with the schedule of tests provided in the special provisions or as shown on the plans.

13.3 CONSTRUCTION

- A. Compaction: The CONTRACTOR shall place the select soil in accordance with Specification 31 23 33.
- B. Pavement Removal: Removal of paved surfaces shall be in accordance with the standard drawings.
- C. Pavement Repair: Concrete and Bituminous Pavement shall be repaired in accordance with the standard drawings and the Standard Specifications for Streets and Alley Construction of the OWNER.

13.4 METHOD OF MEASUREMENT

- A. Compacted backfill in unpaved streets and alleys will be measured by the cubic yard. This volume will be derived by multiplying the length along the centerline of the pipe by the standard trench width and by the average depth of the trench and converting to cubic yards, unless otherwise approved by the ENGINEER.
- B. Compaction of backfill to 95% Standard Density in paved streets and alleys will not be measured for payment, and the cost of this work shall be included in removal and replacement of pavement.
- C. Remove and replace concrete and bituminous pavement will be measured by the square yard. This area will be derived by multiplying the length along the centerline of the pipe by the standard trench width plus 12-inches on each side of the trench and converting to square yards.
- D. Over-breakage (the removal of more paving than is specified in 4.4(C) above) will not be measured for payment but shall be repaired in accordance with these specifications at the expense of the CONTRACTOR.

13.5 BASIS OF PAYMENT

- A. Accepted quantities of the type specified on the proposal, measured as provided above, will be paid for at the contract unit price for:

Remove and replace pavement Sq. Yd.

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 14 - PIERS, REINFORCED CONCRETE

14.1 DESCRIPTION

- A. The work under this item shall include all materials, forming, pipe anchorage, construction and finishing of above ground standard reinforced concrete piers and below ground, restraining collar, reinforced concrete piers. Piers shall be located and constructed as shown on the drawings and the attached standard drawings.

14.2 MATERIALS AND TESTS

- A. Materials and testing shall be in accordance with Section 03 30 00.

14.3 CONSTRUCTION

- A. Forms shall be made to conform to the shape of the pier and securely braced. Reinforcing steel shall be bent as detailed and securely tied in place. Bearing area for the pipe shall be made to fit the outside diameter of the pipe and shall support the pipe at the proper grade. Any honeycomb or other unevenness in the concrete shall be patched with cement mortar immediately after form removal. Construction of piers shall be in accordance with Specification 03 30 00.

14.4 METHOD OF PAYMENT

- A. Reinforced concrete piers and restraining collars shall be measured by the number of units constructed. No additional payment will be made for excavation, forming, bracing, dewatering, backfilling, reinforcing steel, or pipe anchorage.

14.5 BASIS OF PAYMENT

- A. Accepted quantities of reinforced concrete piers, measured as provided above, will be paid at the contract unit price for:

Reinforced Concrete Pier, Standard EA.

Reinforced Concrete Pier, Restraining Collar EA.

which shall be full compensation for furnishing all materials, equipment, labor, and incidentals to complete the work as specified.

PART 15 - FIELD TESTS AND REVISIONS:

15.1 DESCRIPTION

- A. Field tests and revisions of water and sewer mains shall be successfully completed prior to final acceptance. All discrepancies shall be corrected by the CONTRACTOR to make a complete and workable system.

15.2 MATERIALS AND TESTS

- A. Sewer:

1. Alignment: After joints have been inspected and approved and trench backfilled as specified, the ENGINEER shall check alignment between manholes or manhole locations. Any misplaced pipes detected shall be corrected to line and grade at the CONTRACTOR'S expense.
2. Deflection: In accordance with OAC 252:656-5-5(a), CONTRACTOR shall perform deflection tests on all flexible pipe after the final backfill has been in place at least 30 days. Deflection must not exceed 5%. Tests must be run using a rigid ball or mandrel with a diameter equal to 95% of the inside diameter of the pipe, taking into account manufacturing tolerances. Tests must be performed without mechanical pulling devices. Tests must be in accordance with applicable ASTM standards.
3. Line Leakage Test: Leakage tests shall be required for all new construction in accordance with OAC 252:656-5-5(b). The leakage test shall be an exfiltration test, whereby a minimum positive head of two (2) feet shall be exerted on a section of line by plugging the lower end and filling the manhole upstream with water. The leakage outward shall not exceed 10 gallons per inch of pipe diameter per mile per day (10 gallons/inches/miles/day) for any section of the system. If infiltration is observed due to hydrostatic ground water leakage the infiltration shall be reduced so as not to exceed 10 gallons/inches/miles/day. The procedures listed in the Handbook of PVC Pipe, Uni-Bell PVC Pipe Association, 2001 may be used for PVC pipe. Pipe testing must meet the provisions for the applicable ASTM standard

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for the test to be used.

4. Manhole Leakage Test: Leakage tests shall be required for all new construction in accordance with OAC 252:656-5-4(g)(7) and shall be performed per ASTM C1244.
5. Where test results, in the opinion of the ENGINEER, indicated construction deficiencies, the CONTRACTOR shall make all effort to locate same and make satisfactory corrections. Infiltration through manhole walls shall be corrected regardless of the results of these tests.

B. Water:

1. Hydrostatic and Leakage Test:

- a. PVC: Shall be in accordance with AWWA C605 procedures. After the pipe has been laid and backfilled, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic gauge pressure of 200 psi, for a duration of two hours, said pressure not to vary more than five pounds, except that PVC pipe shall be tested a design working pressure.
 - b. HDPE: Shall be in accordance with AWWA C906 procedures. After the pipe has been laid and backfilled, subject the pipe to a pressure of 1.5 times the design working pressure at the lowest point in the test section is used as the test pressure. Acceptance is found by reducing the test pressure by 10 psi and monitoring the pressure for one hour. If the pressure remains steady – within five percent of the target value – for one hour, leakage is not indicated.
2. Each valved section of pipe shall be slowly filled with water and the specified test pressure, based on the elevation of the lowest point of the line of lowest point of the section under test, and corrected to the elevation of the test gauge shall be applied by means of a test pump connected to the pipe in a manner satisfactory to the ENGINEER. The CONTRACTOR shall make arrangements for metering the amount of water used during the test.
 3. The CONTRACTOR shall backfill all pipe and provide all reaction blocking before hydrostatic testing. It shall be the CONTRACTOR'S responsibility to locate and repair any and all leaks that may develop. The ENGINEER may direct the CONTRACTOR to leave certain joints and connections uncovered until testing has been completed.
 - a. Before applying the specified test pressure, all air shall be expelled from the pipe. If hydrants or blow-offs are not available at high places taps at points of highest elevation shall be made before test is made and plugs inserted after the test has been completed. Any cracked or defective pipe, fittings, valves or hydrants discovered in consequence of this pressure test shall be removed and replaced with sound material and the test shall be repeated until satisfactory to the ENGINEER.
 - b. In conjunction with the hydrostatic test, a leakage test shall be conducted as detailed in Section 4 of ANSI/AWWA Specification C-600/605, a portion of which is stated below.
 - c. Leakage shall be defined as the quantity of water that must be supplied into the newly laid pipe, or any valved section thereof, to maintain pressure within

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5 psi of the specified test pressure after the air in the pipeline has been expelled and the pipe has been filled with water. No pipe installation will be accepted if the leakage is greater than that determined by the following formula:

$$L = \frac{ND P^{1/2}}{7400}$$

in which "L" is the allowable leakage in gallons per hour; "N" is the number of joints in the length of pipe test; "D" is the nominal diameter of the pipe, in inches; and "P" is the average test pressure during the leakage test, in pounds per square inch gage. Allowable leakage per 1000 ft. of pipeline in gallons per hour at 200 psi for selected pipe diameters is listed below for 18-foot nominal lengths. Leakage tests for PVC pipe shall be at the design working pressure.

Nominal Pipe Diameter (Inches)	Allowable Leakage Per 1000 Feet of Pipeline (GPH)
2	0.22
3	0.33
4	0.44
6	0.65
8	0.87
10	1.09
12	1.31
Nominal Pipe Diameter (Inches)	Allowable Leakage Per 1000 Feet of Pipeline (GPH)
16	1.74
18	1.96
20	2.18
24	2.61
30	3.27
36	3.92
42	4.58
48	5.23
54	5.88

- d. When testing against closed metal-seated valves, an additional leakage per closed valve of 0.0078 gallons/hours/inches of nominal valve size shall be allowed. When hydrants are in the test section, the test shall be made against the closed hydrant. Acceptance shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than that specified, the CONTRACTOR shall, at his own expense, locate and repair the defect until the leakage is within the specified allowance. All visible leaks are to be repaired regardless of the amount of leakage.
- e. In accordance with OAC 252:626-19-2 (e), leakage must not exceed 10 gal/inch diameter per mile of pipe per 24 hours at 150 psi testing pressure.
4. Disinfection of Waterlines: All waterlines shall be flushed and disinfected, after testing and before being placed in service, by the methods detailed in AWWA C-601 except as modified herein.
 - a. Chlorine shall be introduced into the main in a liquid solution or as dry gas in a

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continuous feed unless otherwise approved by the ENGINEER.

- b. The results of the disinfection procedure shall produce a residual of a minimum of ten parts per million (10 ppm) of chlorine in the portion of the main farthest from the point of application, after a period of twenty-four (24) hours has elapsed, as well as any other portion of the main. Samples shall be taken at location determined by the ENGINEER for tests of residual chlorine.
5. Water and sewer lines shall be constructed at the locations shown on the plans or as directed by the ENGINEER. Planned locations, grades or depths shall be adhered to unless, in the opinion of the ENGINEER, actual field conditions dictate revisions thereof. When the ENGINEER considers it necessary to deviate from planned locations, the CONTRACTOR shall construct said water or sewer lines to new alignment and/or grades established by the ENGINEER or as directed by the ENGINEER, such directions, construction stakes showing alignment and depth of cut, or revised construction plans issued by the ENGINEER.

15.3 BASIS OF PAYMENT

- A. No extra payment will be made for construction to revised locations other than increased or decreased quantities of pipe, fittings, manholes, or other items tabulated on the proposal. No extra payment will be made for additional excavation required by deviations from planned alignment or grades. Leakage tests will not be measured for payment, but the cost shall be included in other bid items. The CONTRACTOR'S bid price for waterlines to include all costs of hydrostatic and leakage test and sterilization as no separate payment will be made for these items.

END OF SECTION 33 11 00

SECTION 33 12 17 – WATER METER BOX AND LID

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish, install all labor, materials, equipment, and services as required to complete all residential meter boxes and lids as specified herein.

1.2 DELIVERY, STORAGE, HANDLING

- A. Individual equipment components shall be crated in structurally adequate packing containers to prevent damage during shipping, facilitate ease of handling and to provide suitable protection from weather for extended storage at the jobsite prior to installation. Packing containers shall be permanently labeled with appropriate equipment identification, shipping address and return address. Packing list shall be provided with equipment at the time of delivery.
- B. Electrical equipment shall be kept thoroughly dry at all times and shall be stored indoors. Equipment storage shall be protected and maintained in accordance with the manufacturer's recommendations. Equipment shall not be stored directly on the ground. Equipment to be installed inside shall be stored inside.
- C. The CONTRACTOR shall utilize equipment and tools of adequate size suitable for unloading, transporting, storing and supporting the equipment during installation. Caution shall be employed to prevent equipment damage resulting from abrupt contact with other materials or equipment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE SUPPLIERS

- A. Carson Industries, LLC
- B. DFW Plastics, Inc.
- C. ENGINEER approved equal

2.2 DIMENSIONS

- A. Box Requirements
 - 1. Box shall be round.
 - 2. Material shall be plastic.
 - 3. DFW 800 A.B. Body.
- B. Lid Requirements
 - 1. Lid shall be round (anti-float).
 - 2. Material shall be plastic.

3. DFW 18 AMR-AF1EQAF (anti-float) .

PART 3 - EXECUTION

3.1 GENERAL

- A. The GENERAL CONTRACTOR shall assume full responsibility for coordination of the entire project, including verification all structures, piping, coating systems and equipment components are compatible. The GENERAL CONTRACTOR shall initially operate each equipment system and shall make all necessary adjustments so that each system is placed in proper operating condition.
- B. Equipment and materials utilized for this project must be approved by the ENGINEER prior to installation. Approval for installation or incorporation in this project will be made only after submittal or manufacturer's shop and installation drawings, test results or other data as specified herein.
- C. Installation of equipment shall be in full conformance with the manufacturer's shop drawings and requirements as approved by the ENGINEER. Wherever a conflict arises between manufacturer's instructions and the contract documents, the contractor shall follow the ENGINEER'S decision at no additional cost to the OWNER.

END OF SECTION 33 12 17

SECTION 33 12 18 – METER RISER

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish, install all labor, materials, equipment, and services as required to complete all residential meter settings as specified herein.

1.2 DELIVERY, STORAGE, HANDLING

- A. Individual equipment components shall be crated in structurally adequate packing containers to prevent damage during shipping, facilitate ease of handling and to provide suitable protection from weather for extended storage at the jobsite prior to installation. Packing containers shall be permanently labeled with appropriate equipment identification, shipping address and return address. Packing list shall be provided with equipment at the time of delivery.
- B. Electrical equipment shall be kept thoroughly dry at all times and shall be stored indoors. Equipment storage shall be protected and maintained in accordance with the manufacturer's recommendations. Equipment shall not be stored directly on the ground. Equipment to be installed inside shall be stored inside.
- C. The CONTRACTOR shall utilize equipment and tools of adequate size suitable for unloading, transporting, storing and supporting the equipment during installation. Caution shall be employed to prevent equipment damage resulting from abrupt contact with other materials or equipment.

PART 2 – PRODUCTS

2.1 ACCEPTABLE SUPPLIERS

- A. Uponor North America
- B. SharkBite®
- C. ENGINEER approved equal

PART 3 - EXECUTION

3.1 GENERAL

- A. The GENERAL CONTRACTOR shall assume full responsibility for coordination of the entire project, including verification all structures, piping, coating systems and equipment components are compatible. The GENERAL CONTRACTOR shall initially operate each equipment system and shall make all necessary adjustments so that each system is placed in proper operating condition.

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- B. Equipment and materials utilized for this project must be approved by the ENGINEER prior to installation. Approval for installation or incorporation in this project will be made only after submittal or manufacturer's shop and installation drawings, test results or other data as specified herein.
- C. Installation of equipment shall be in full conformance with the manufacturer's shop drawings and requirements as approved by the ENGINEER. Wherever a conflict arises between manufacturer's instructions and the contract documents, the CONTRACTOR shall follow the ENGINEER'S decision at no additional cost to the OWNER.
- D. Meters shall be brought and set to grade with PEX pipe utilizing metal ring compression crimping.

END OF SECTION 33 12 18

SECTION 33 12 20 – CURB STOP

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. Furnish, install all labor, materials, equipment, and services as required to complete all residential meter settings as specified herein.

1.2 DELIVERY, STORAGE, HANDLING

- A. Individual equipment components shall be crated in structurally adequate packing containers to prevent damage during shipping, facilitate ease of handling and to provide suitable protection from weather for extended storage at the jobsite prior to installation. Packing containers shall be permanently labeled with appropriate equipment identification, shipping address and return address. Packing list shall be provided with equipment at the time of delivery.
- B. Electrical equipment shall be kept thoroughly dry at all times and shall be stored indoors. Equipment storage shall be protected and maintained in accordance with the manufacturer's recommendations. Equipment shall not be stored directly on the ground. Equipment to be installed inside shall be stored inside.
- C. The CONTRACTOR shall utilize equipment and tools of adequate size suitable for unloading, transporting, storing and supporting the equipment during installation. Caution shall be employed to prevent equipment damage resulting from abrupt contact with other materials or equipment.

PART 2 - PRODUCTS

2.1 ACCEPTABLE SUPPLIERS

- A. Ford
- B. Mueller
- C. Cambridge
- D. NIBCO
- E. ENGINEER approved equal

PART 3 - EXECUTION

3.1 GENERAL

- A. The GENERAL CONTRACTOR shall assume full responsibility for coordination of the entire project, including verification all structures, piping, coating systems and equipment components are compatible. The GENERAL CONTRACTOR shall initially operate each equipment system and shall make all necessary adjustments so that each system is placed in proper operating condition.

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- B. Equipment and materials utilized for this project must be approved by the ENGINEER prior to installation. Approval for installation or incorporation in this project will be made only after submittal or manufacturer's shop and installation drawings, test results or other data as specified herein.
- C. Installation of equipment shall be in full conformance with the manufacturer's shop drawings and requirements as approved by the ENGINEER. Wherever a conflict arises between manufacturer's instructions and the contract documents, the CONTRACTOR shall follow the ENGINEER'S decision at no additional cost to the OWNER.
- D. Curb stop shall be set on City side of the service connection and valve stem upright.

END OF SECTION 33 12 20

SECTION 33 13 00 - DISINFECTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers the requirements for disinfecting waterlines or structures that will hold or carry potable water. Before the use of water is permitted from any portion of newly constructed waterline or structure that will hold or carry potable water, it shall be disinfected and flushed or cleaned.

1.2 SUBMITTAL

- A. The CONTRACTOR shall submit the following: Chlorine residuals immediately after the chlorine application.
 - 1. Chlorine residuals after the 24-hour retention period, but before the chlorinated water is flushed.
 - 2. Chlorine residuals after the chlorinated water is flushed.
 - 3. Results of the bacteriologic quality tests conducted after the waterline or structure is disinfected and flushed.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. The waterline or structure shall be disinfected by the use of liquid chlorine gas water mixture.

PART 3 - EXECUTION

3.1 FLUSHING AND CLEANING

- A. Prior to disinfection, all dirt and foreign matter shall be removed by a thorough flushing or cleaning of the newly laid pipeline or newly constructed structure.

3.2 CHLORINE APPLICATION

- A. A chlorine gas water mixture shall be applied by means of a solution feed chlorinating device. The rate of the chlorine gas water mixture flow shall be in such proportion to the rate of water entering the pipe or structure that the chlorine dose applied to the water entering the pipe or structure shall be 50 to 100 parts per million.
- B. The treated water shall be retained in the pipe or structure at least 24 hours, and then flushed to waste.
- C. The chlorine residual shall not be less than 10 ppm at any point in the pipe or structure at the end of the retention period.

HAYES STREET WATERLINE REPLACEMENT

- D. During the application of the chlorine and during the retention period, all necessary precautions, such as closing valves, shall be taken to prevent the chlorinated water from flowing back into the line supplying the water.
- E. As an alternate and supplement to the above, the CONTRACTOR shall use any of the methods described in the latest revisions of AWWA C-601 and AWWA B-100.

3.3 BACTERIOLOGIC TESTS

- A. After final flushing and before the waterline or structure is placed in service, samples shall be collected from the end of the line or as directed and tested for bacteriologic quality and shall show the absence of coliform organisms on two (2) consecutive days as per ODEQ 252:626-19-2(f).

END OF SECTION 33 13 00

SECTION 34 41 16.16 - CONSTRUCTION SIGNING AND TRAFFIC CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION

This work consists of providing and erecting signs, lights, barricades, and other devices.

PART 2 – PRODUCTS

2.1 MATERIALS

A. General

1. Provide materials for construction signing and traffic control in accordance with NCHRP 350 report or MASH Test Level 3 (TL-3), with letter of acceptance/eligibility from the FHWA.

B. Construction Signing and Traffic Control Materials

1. Arrow Display

- a. Provide each arrow display with a circuitry control unit, a mounting frame, and a sign panel with yellow sealed beam lamps attached in accordance with MUTCD Section 6F-3.
- b. Provide non-reflective black finish for panel faces exposed to oncoming traffic.
- c. Provide a control unit to display higher intensity during the day and lower intensity at night. Ensure lamps display the same light intensity for a given setting. The ENGINEER will only allow the substitution of larger panels for smaller panels.
- d. Provide a mounting frame to support the sign panel so the bottom edge of the panel is at least 7 ft [2.1 m] above the roadway surface when displayed to oncoming traffic. Mount arrow displays so the panel rotates on a horizontal axis to hide it from the view of oncoming traffic when not in use. Mount mobile arrow displays on pneumatic-tired vehicles.
- e. Provide a power source with a separate auxiliary power source that can be immediately available to operate flashing lights. Provide a self-contained battery or electric generator power source on mobile arrow displays.
- f. Provide arrow displays with a solid-state electronic circuitry control unit with four modes that contain switching controls for operator selection in accordance with Table 1:

Table 1 Arrow Display Controls	
Mode	Display
Pass Right	Flashing arrow
Pass Left	Flashing arrow
Pass either side	The apex of the outermost chevrons point to the nearest panel edge
Caution	At least four lamps in a pattern not indicating a direction

2. Construction Signs and Barricades

- a. Provide metal, wood, or plastic supports and sign blanks. Provide two supporting legs for each sign 10 ft² [1 m²] or larger. Provide wide-angle flat-top retroreflective sheeting for signs and barricades in accordance with Type IV-A sheeting, unless otherwise shown on the Plans.
- b. Construct sign messages and symbols in accordance with MUTCD and as shown on the Plans.
- c. Mark and immediately replace construction signs not in accordance with the following retroreflective sheeting requirements:
 - 1) Provide materials for retroreflective sheeting in accordance with ASTM D 4956, and the supplementary specifications of S3. Provide sheeting with a Class 1 adhesive backing. Perform outdoor weathering on an AASHTO, National Transportation Product Evaluation Program test deck.
 - 2) The Resident Engineer will inspect completed signs and will not accept sign faces with faults or blemishes that impair serviceability or mismatched colors visible from a distance of 25 ft [7.6 m] under day or night light conditions.

3. Construction Signs 32.3 ft² [3 m²] and Larger

- a. Provide aluminum or galvanized steel to construct signs. If ground mounting, provide and install breakaway signs in accordance with GMS-1, FGS-1, FGS-2, and SPA-1. The ENGINEER will approve installation locations before construction begins. The ENGINEER will not require reinforcing steel in the sign footings. Place signs on existing overhead signs if shown on the Plans.
- b. Retroreflectorize signs as required by the Contract. Provide signs of the designs and colors shown on the Plans.

4. Vertical Panels

- a. Provide vertical panels in accordance with MUTCD Section 6F-5. Place Type IV-A reflectorized sheeting on both sides of each vertical panel.

5. Warning Lights
 - a. Provide warning lights in accordance with MUTCD Section 6F-7OF.
6. Cones
 - a. Provide cones in accordance with MUTCD Section 6F-7.
7. Surveillance of Traffic Control
 - a. Provide an ATSSA or certified observer to maintain traffic control devices in position for work zones at the construction site 24 hours a day, seven days a week when traffic is directed away from the normal traffic lanes or when directed by the ENGINEER. Provide the observer with a cell phone. Certification must be issued by a National or State Traffic Engineering/Safety association and approved by the ENGINEER.
8. Traffic Surveillance, Police
 - a. Make arrangements through the Oklahoma Highway Patrol, Chief's office to provide one officially marked Oklahoma Highway Patrol car and one law enforcement officer capable of issuing traffic citations. Ensure the Oklahoma Highway Patrol insures, licenses, bonds, and approves the officer for this work. Ensure the duty hours of the officer and vehicle match the CONTRACTOR's working hours.
9. Flagger
 - a. If required by the contract documents, provide two flaggers per sign day. Provide lighting to illuminate the flagger stations at night.
10. Plastic Drums
 - a. Provide two-piece breakaway drums in accordance with the MUTCD. The drums must accommodate conventional barricade warning lights that are in accordance with the NCHRP 350 or MASH, Category I device requirements. These drums will be used as channelizing devices for construction and maintenance operations.
 - b. Provide plastic drums at least 36 inches [900 mm] high and at least 18 inches [450 mm] wide regardless of orientation. The plastic drum must be capable of withstanding 60 mph [100 km/h] winds, turbulence created by vehicles, and repeated movements during construction and maintenance operations. Ensure the top portion of the unit deforms and breaks away from the base upon vehicular impact. Ensure the base remains in place, allowing the vehicle to pass over it. Ensure the base, or combination of stacked bases, weighs at least 40 lbs., and the outside edge does not exceed 4 inches [100 mm]. Provide rubber base collars that are clean cut, the proper size, black in color, and not curved at the top edges. Ensure the maximum diameter of the base does not exceed 36 inches [900 mm].
 - c. Provide bright orange plastic drums that resist color fading. Ensure the plastic drum is crash worthy in accordance with the NCHRP 350 or MASH. Ensure sheeting surfaces provide maximum adhesion of reflective sheeting to the drum body.

- d. Provide weather tight drums designed to accept horizontal, circumferential bands of reflectorized sheeting, 4 inches to 6 inches [100 mm to 150 mm] wide. Provide drums with a D-shaped configuration at the base attachment point to minimize rolling after impact. Provide drums with enclosed tops and drains to prevent water accumulation. Ensure that stacking the drums will not damage the reflective surface. Ensure each drum allows the attachment of two Type A conventional barricade warning lights. Provide warning lights capable of remaining attached during repeated impacts at speeds of at least 55 mph [88 km/h] and in accordance with NCHRP 350 or MASH.
- e. Provide drums that have alternating fluorescent orange and white horizontal circumferential stripes of retro-reflectorized sheeting. Ensure there is a minimum of two fluorescent orange and two white stripes, beginning with a fluorescent orange stripe at the top of the drum. If there are non-reflectorized spaces between the horizontal orange and white stripes, ensure they are no more than 2 inches [50 mm] wide. Ensure the non-reflectorized portions of the drum are orange. Provide reflective sheeting that meets the requirements of the latest ASTM D4956, and the Federal Highway Administration Luminance Factor for fluorescent orange, Type VI reboundable sheeting (see Table 2).

Table 2 Luminance Factor, YT			
Sheeting Type	Min	Max	Fluorescence Luminance Factor Limit YF
Fluorescent Orange	25	None	15

11. Tube Channelizers

- a. Provide orange tube channelizers, at least 27 inches [700 mm] high and at least 2 inches [190 mm] wide when facing traffic. Ensure the channelizers do not damage vehicles upon impact.
- b. For nighttime use, equip each tube channelizer with two 3 inch [75 mm] wide white bands with retroreflectivity at least that of Type IV sheeting. Place the white bands no greater than 2 inches [50 mm] from the top of the tube and no greater than 6 inches [150 mm] apart.

12. Cone Channelizers

- a. Provide orange cone channelizers, at least 42 inches [1000 mm] high and at least 7.5 inches [50 mm] wide at the bottom of the cone portion. Provide a base for each cone channelizer of a minimum 30 lbs.
- b. Each channelizer shall have alternating 6 inch stripes of white (2) and orange (2) Type IV retroreflective sheeting (4 total sheeting stripes) to be spaced 4 inches apart.

13. Sampling and Testing

- a. Submit to the ENGINEER a manufacturer prepared certification stating that the material meets the contract documents requirements, listed by specification reference number, section reference, or other appropriate identification approved by the ENGINEER.

14. Temporary Roadway Lighting Assembly

- a. Provide temporary roadway lighting assemblies of the type specified, meeting the material requirements of applicable subsections of these specifications. Include all of the following items, unless otherwise specified:
 - 1) 2/C or 3/C No. 4 ACSR electric conductor (aerial), between the lighting poles and to the temporary service pole.
 - 2) 1/C No. 12 electric conductor, to the luminaires.
 - 3) In-line fuse connector with a 15 amp fuse. (Optional)
 - 4) An existing or new permanently installed roadway pole with either one or two luminaires may be considered a temporary roadway lighting assembly for payment as outlined in Section 4.1, "Method of Measurement."
- b. Provide the following specific items for the various assembly types:
 - 1) Assembly Type 40
 - a) 40 foot (12.2 m) Class 6 wood pole with an 8 foot (2.4 m) galvanized steel mast arm
 - b) 250 watt high pressure sodium roadway luminaire rated at 27,000 lumen, Type M-S-III
 - 2) Assembly Type 55
 - a) 55 foot (16.8 m) Class 4 wood pole with a 10 foot (3.0 m) galvanized steel mast arm.
 - b) 400 watt high pressure sodium roadway luminaire rated at 50,000 lumen, Type M-S-III

15. Temporary Service Pole Assembly

- a. Provide temporary service pole assemblies meeting the material requirements of applicable subsections of these specifications. Include all of the following items, unless otherwise specified:
 - 1) 35' (10.7 m) Class 6 wood pole
 - 2) 60 or 100 amp. , 2-pole lighting controller
 - 3) 60 or 100 amp. disconnect switch
 - 4) Miscellaneous equipment including PE cell, conduit, electrical conductors, fuses, connectors and meter base, if required

2.2 EQUIPMENT

NOT USED

PART 3 – EXECUTION

3.1 CONSTRUCTION METHODS

- A. Perform construction traffic control in accordance with MUTCD Chapter VI and as shown on the Plans, or as further modified by the ENGINEER.
- B. Traffic control devices shall meet the requirements of the MUTCD as pertains to shape, size, color, mounting height, and placement.
- C. Place signs, lights, and barricades on portable or fixed supports as required by the Contract.
- D. Monitor and maintain the condition of devices. Immediately replace damaged signs or devices as directed by the ENGINEER. If directed by the ENGINEER, clean the sign or device.
- E. Coordinate with the ENGINEER to conduct nighttime traffic control device reviews at the beginning of the Project, in conjunction with major changes to traffic signing, and at monthly intervals. Record the date and result of the nighttime inspection in the contractor signing log.
- F. Immediately remove or cover unnecessary traffic control devices as approved by the ENGINEER.
- G. Light the flagger stations at night and ensure the lighting does not impede the vision of passing drivers.
- H. The ENGINEER will give written notice of unacceptable conditions to facilitate prompt maintenance and changes in construction traffic control devices. Correct the specified devices within 24 hours of notice.
- I. Continue providing construction traffic control and maintain the log of devices until completion and acceptance at no additional cost to the OWNER.
- J. Install the temporary roadway lighting assembly and temporary service pole assembly at the direction of the ENGINEER, and in cooperation with the local utility company and the local governmental agency.
- K. Repair any damage to the temporary roadway lighting assembly and/or temporary service pole assembly inflicted during the installation, relocation, and/or removal of these items at no additional cost to the OWNER.
- L. Install Assembly Type 40 on two-lane and three-lane roadways. Install Assembly Type 50 on roadways with more than three lanes.
- M. The suggested maximum spacing between temporary lighting poles is 150' to 170' (45.7 m to 51.8 m) for Assembly Type 40, and 180' to 210' (54.9 m to 64 m) for Assembly Type 55. Connect the temporary lighting poles to electrical power at a temporary service pole using aerial conductors. Using portable median barrier, protect

the temporary light poles and service pole assemblies from the traffic flow in a manner approved by the ENGINEER.

N. Operate temporary roadway lighting at 480 volts.

PART 4 – METHOD OF MEASUREMENT AND BASIS OF PAYMENT

4.1 METHOD OF MEASUREMENT

A. Sign Day Pay Item

1. If Plans show itemized pay items for construction traffic control devices, the ENGINEER will measure each device used for construction traffic control per calendar day. For non-working periods, the ENGINEER will use the sign log from the previous and successive working days to measure payment for devices. The ENGINEER will measure one calendar day for devices used at multiple locations in one day.
2. Maintain a log of devices used for construction traffic control per calendar day. Update the log daily throughout the project to confirm the addition or deletion of individual devices. Submit the log to the ENGINEER before each pay period.
3. The OWNER will not allow unnecessary devices to remain in place for more than 5 days unless covered as directed by the ENGINEER. The ENGINEER will not measure unnecessary devices left in place. After 5 calendar days, the ENGINEER will deduct the contract unit price of the relevant pay item every day the unnecessary device remains in place and uncovered. If an unnecessary device remains in place and uncovered for more than 30 calendar days, the device will become the property of the OWNER.

B. Lump Sum Pay Item

1. Additional compensation for prolonged use of the traffic control devices will be considered for the following instances:
 - a. A change order is approved that provides additional work and additional time, or
 - b. A delay beyond the control of the CONTRACTOR occurs which renders the project unable to be completed within the contract time; such as a utility or OWNER caused delay.
2. If additional and compensation is warranted, the ENGINEER will calculate a daily rate by dividing the lump sum contract unit price for Construction Traffic Control by the number of calendar days in the contract time. The ENGINEER will calculate the additional compensation by multiplying the daily rate by the number of additional days.
3. If the CONTRACTOR fails to make corrections to devices as directed by the ENGINEER within 24 hours, the ENGINEER will assess a daily charge equal to half of the daily rate calculated in the previous paragraph. The ENGINEER may assess the daily charge for each additional 24 hours until the devices are

corrected. The OWNER will deduct this amount, as a non-recoverable charge, from the next progress payment.

C. Luminaire Day Pay Item

1. The installation and removal of the Temporary Roadway Lighting Assembly will be measured by the unit, complete in place, for each calendar day the device is required and is in place in an acceptable condition and position to meet all of the above requirements. Measurement for payment will be by the Luminaire Day (LMDY) beginning on the day that the temporary roadway lighting assembly is in place and operational. A Luminaire Day is defined as any 24-hour day that the assembly is operational.
2. Temporary or permanent lighting assemblies with two luminaires will be measured as two luminaire days.
3. Temporary Roadway Lighting Assembly will be measured for payment with a 30-day minimum for each relocation.
4. The cost bid for Temporary Roadway Lighting Assembly may also be used for compensation for temporary lighting utilizing existing and/or permanent pole installations during the interim time between the time they are installed and operational and before the final circuit is accepted and the permanent service pole is operational.
5. Any existing lighting pole assembly that is being used for temporary lighting during construction will not be paid for until that assembly is connected to a circuit for which the CONTRACTOR is furnishing the electrical energy.

4.2 BASIS OF PAYMENT

- A. The OWNER will pay for each pay item at the contract unit price per the specified pay unit as follows:

Pay Item:	Pay Unit:
(A) ARROW DISPLAY (TYPE)	Sign Day
(B) CONSTRUCTION SIGNS (SIZE)	Sign Day
(C) CONSTRUCTION BARRICADES	Sign Day
(D) VERTICAL PANELS	Sign Day
(E) WARNING LIGHTS (TYPE)	Sign Day
(F) DRUMS	Sign Day
(G) TUBE CHANNELIZERS	Sign Day
(H) CONES (SIZE)	Sign Day
(I) FLAGGER	Sign Day
(J) CONSTRUCTION TRAFFIC CONTROL	Lump Sum
(K) SURVEILLANCE OF TRAFFIC CONTROL	Sign Day
(L) TRAFFIC SURVEILLANCE, POLICE	Hour
(M) TEMPORARY ROADWAY LIGHTING ASSEMBLY	Luminaire Day

- B. The OWNER will consider the cost of installing, maintaining and removing all construction traffic control to be included in the contract unit price for relevant traffic control pay item.
- C. Unless otherwise shown on the Plans or Special Provisions, construction traffic control devices remain the property of the CONTRACTOR upon project completion.
 - 1. Sign Day Pay Item
 - a. The OWNER will consider the cost of providing two flaggers and lighting the flagger stations at night and any other incidental items to be included in the contract unit price for Flagger.
 - b. If the ENGINEER suspends contract time for public safety the OWNER will pay for construction traffic control during the period of suspension.
 - c. The OWNER will not pay for devices on liquidated damage days.
 - 2. Lump Sum Pay Item
 - a. The OWNER will pay for Construction Traffic Control as a percentage equal to the project percent complete. The OWNER will pay for amounts of Construction Traffic Control remaining on the date of completion in the next estimate.
 - b. The OWNER will pay for Surveillance of Traffic Control, Traffic Surveillance, Police, and Temporary Roadway Lighting Assembly separate from the Lump Sum construction traffic control pay items.
 - c. If the ENGINEER requires additional signage for safety, the OWNER will pay for work approved by the ENGINEER. In support of the material costs, provide itemized invoices prepared by the materials supplier.
 - d. The OWNER will not pay additional compensation for construction traffic control for time extensions due to unusually severe weather.
 - 3. Luminaire Day Pay Item
 - a. Payment will be considered full pay for this item of work. Include all costs for the Temporary Roadway Lighting Assembly in the unit price bid for this item of work, including all materials, hardware, installation, relocations, removal upon completion of the project, any temporary service pole assembly, costs of electrical energy to the service pole necessary to operate the completed temporary lighting system, and all maintenance or repairs required to keep the system in operation during construction.
 - b. Do not include the cost for portable median barrier used to protect the temporary lighting assembly in this item of work.

END OF SECTION 34 41 16.16

Plan Holder's List			
CITY OF SHAWNEE - Hayes			
	Name of Company	Contact Info (Phone and Email)	Representative Name
1	Orr Construction, Inc.	918.377.4362 projects@orrconstructionok.com	Orr Staff
2	Downey Contracting	405.478.5277 bids@downeycontracting.com	Brandon Downey
3	Circle B Underground	918.367.8881 ddean@cbruok.com	Darin Dean
4	B&H Construction	405.650.4319 red@bhborring.com	Steven (Red) Schulze
5	Davenport Constrion	405.348.4262 davcon@cox.net	Greg Davenport
6	ConstructConnect	800.364.2059 content@constructconnect.com	Eric Mills
7			
8			
9			



COWAN GROUP ENGINEERING, LLC
7100 N. CLASSEN BLVD., SUITE 500
OKLAHOMA CITY, OK 73116
405.463.3369 O
405.463.3381 F



City of Shawnee/Shawnee Municipal Authority

Hayes Street Waterline Replacement

BID NO. ARP-23-0015-DPG

DATE December 5, 2024

I do solemnly swear that the below amount is correct, reasonable and just.



Michael Taylor
Michael Taylor, P.E.

BASE BID

ITEM NUMBER	DESCRIPTION	QTY	UNIT	B&H Construction LLC		Orr Construction, Inc.		Davenport Construction	
1	MOBILIZATION	1	LSUM	\$ 12,000.00	\$ 12,000.00	\$ 25,000.00	\$ 25,000.00	\$ 34,000.00	\$ 34,000.00
2	CLEARING & GRUBBING	1	LSUM	\$ 8,000.00	\$ 8,000.00	\$ 15,000.00	\$ 15,000.00	\$ 20,000.00	\$ 20,000.00
3	8" HDPE DR11 PIPE BY TRENCHING	1357	LF	\$ 43.00	\$ 58,351.00	\$ 95.00	\$ 128,915.00	\$ 133.00	\$ 180,481.00
4	24" HDPE DR11 PIPE BY TRENCHING	17	LF	\$ 240.00	\$ 4,080.00	\$ 550.00	\$ 9,350.00	\$ 1,246.00	\$ 21,182.00
5	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING	203	LF	\$ 70.00	\$ 14,210.00	\$ 125.00	\$ 25,375.00	\$ 138.00	\$ 28,014.00
6	8" HDPE DR11 PIPE BY HORIZONTAL DIRECTIONAL DRILLING (SLIC	259	LF	\$ 70.00	\$ 18,130.00	\$ 125.00	\$ 32,375.00	\$ 138.00	\$ 35,742.00
7	SERVICE LINE (SHORT)	1	EA	\$ 1,500.00	\$ 1,500.00	\$ 3,000.00	\$ 3,000.00	\$ 950.00	\$ 950.00
8	SERVICE LINE (LONG)	1	EA	\$ 3,000.00	\$ 3,000.00	\$ 45,000.00	\$ 45,000.00	\$ 1,800.00	\$ 1,800.00
9	8" 11.25-DEGREE BEND	2	EA	\$ 1,800.00	\$ 3,600.00	\$ 2,000.00	\$ 4,000.00	\$ 1,380.00	\$ 2,760.00
10	8" 45-DEGREE BEND	6	EA	\$ 1,950.00	\$ 11,700.00	\$ 2,000.00	\$ 12,000.00	\$ 1,380.00	\$ 8,280.00
11	8" 90-DEGREE BEND	5	EA	\$ 2,100.00	\$ 10,500.00	\$ 2,000.00	\$ 10,000.00	\$ 1,420.00	\$ 7,100.00
12	24" X 24" TEE	2	EA	\$ 13,000.00	\$ 26,000.00	\$ 13,250.00	\$ 26,500.00	\$ 7,900.00	\$ 15,800.00
13	24" X 8" TEE	1	EA	\$ 12,000.00	\$ 12,000.00	\$ 10,000.00	\$ 10,000.00	\$ 5,300.00	\$ 5,300.00
14	8" X 8" TEE	6	EA	\$ 2,500.00	\$ 15,000.00	\$ 2,500.00	\$ 15,000.00	\$ 1,780.00	\$ 10,680.00
15	8" X 8" TAPPING SLEEVE & VALVE W/ BOX	1	EA	\$ 7,900.00	\$ 7,900.00	\$ 9,000.00	\$ 9,000.00	\$ 9,300.00	\$ 9,300.00
16	6" X 6" TAPPING SLEEVE & VALVE W/ BOX	5	EA	\$ 6,100.00	\$ 30,500.00	\$ 7,000.00	\$ 35,000.00	\$ 7,700.00	\$ 38,500.00
17	4" X 4" TAPPING SLEEVE & VALVE W/ BOX	2	EA	\$ 5,200.00	\$ 10,400.00	\$ 4,250.00	\$ 8,500.00	\$ 7,100.00	\$ 14,200.00
18	24" GATE VALVE W/ BOX	2	EA	\$ 39,600.00	\$ 79,200.00	\$ 45,000.00	\$ 90,000.00	\$ 49,300.00	\$ 98,600.00
19	8" GATE VALVE W/ BOX	2	EA	\$ 2,925.00	\$ 5,850.00	\$ 4,500.00	\$ 9,000.00	\$ 3,800.00	\$ 7,600.00
20	24" X 8" REDUCER	2	EA	\$ 4,700.00	\$ 9,400.00	\$ 7,800.00	\$ 15,600.00	\$ 3,800.00	\$ 7,600.00
21	8" X 6" REDUCER	6	EA	\$ 1,600.00	\$ 9,600.00	\$ 2,000.00	\$ 12,000.00	\$ 900.00	\$ 5,400.00
22	8" X 4" REDUCER	2	EA	\$ 1,300.00	\$ 2,600.00	\$ 2,000.00	\$ 4,000.00	\$ 900.00	\$ 1,800.00
23	24" BLIND FLANGE	2	EA	\$ 3,358.00	\$ 6,716.00	\$ 2,500.00	\$ 5,000.00	\$ 2,300.00	\$ 4,600.00
24	6" PLUG	5	EA	\$ 630.00	\$ 3,150.00	\$ 2,000.00	\$ 10,000.00	\$ 600.00	\$ 3,000.00
25	4" PLUG	2	EA	\$ 400.00	\$ 800.00	\$ 1,500.00	\$ 3,000.00	\$ 600.00	\$ 1,200.00
26	2" AIR RELEASE VALVE	1	EA	\$ 3,225.00	\$ 3,225.00	\$ 6,000.00	\$ 6,000.00	\$ 3,200.00	\$ 3,200.00
27	24" HDPE MJ ADAPTER	4	EA	\$ 6,500.00	\$ 26,000.00	\$ 5,500.00	\$ 22,000.00	\$ 2,800.00	\$ 11,200.00
28	8" HDPE MJ ADAPTER	3	EA	\$ 1,200.00	\$ 3,600.00	\$ 1,500.00	\$ 4,500.00	\$ 630.00	\$ 1,890.00
29	FIRE HYDRANT ASSEMBLY	2	EA	\$ 7,791.00	\$ 15,582.00	\$ 9,000.00	\$ 18,000.00	\$ 8,200.00	\$ 16,400.00
30	REMOVE & REPLACE ASPHALT PAVEMENT	214	SY	\$ 80.00	\$ 17,120.00	\$ 250.00	\$ 53,500.00	\$ 300.00	\$ 64,200.00
31	REMOVE & REPLACE GRAVEL DRIVE	24	SY	\$ 55.00	\$ 1,320.00	\$ 200.00	\$ 4,800.00	\$ 31.00	\$ 744.00
32	REMOVE & REPLACE CONCRETE DRIVE	15	SY	\$ 70.00	\$ 1,050.00	\$ 650.00	\$ 9,750.00	\$ 300.00	\$ 4,500.00
33	SOLID SLAB SOD	456	SY	\$ 5.50	\$ 2,508.00	\$ 16.00	\$ 7,296.00	\$ 7.00	\$ 3,192.00
34	CONSTRUCTION SIGNING AND TRAFFIC CONTROL	1	LSUM	\$ 3,500.00	\$ 3,500.00	\$ 12,000.00	\$ 12,000.00	\$ 18,000.00	\$ 18,000.00
35	STORMWATER POLLUTION PREVENTION PLAN	1	LSUM	\$ 4,600.00	\$ 4,600.00	\$ 8,500.00	\$ 8,500.00	\$ 2,500.00	\$ 2,500.00
36	TEMPORARY EROSION AND SEDIMENT CONTROL	1	LSUM	\$ 3,000.00	\$ 3,000.00	\$ 9,000.00	\$ 9,000.00	\$ 6,500.00	\$ 6,500.00
37	DISINFECTION AND TESTING	1	LSUM	\$ 4,500.00	\$ 4,500.00	\$ 12,000.00	\$ 12,000.00	\$ 5,500.00	\$ 5,500.00
BASE BID TOTAL				\$ 450,192.00		\$ 729,961.00		\$ 701,715.00	

Low Bidder
Calculation Error



December 11, 2024

Seth Barkhimer, P.E., Director of Engineering
City of Shawnee
222 N Broadway Ave
Shawnee, OK 74801

RE: Bid Recommendation for Hayes Street Waterline Replacement, ARP-23-0015-DPG

Dear Mr. Barkhimer,

Pursuant to the bid opening held on December 5, 2024, attached please find the bid tabulation for the subject project. The bid opening consisted of three (3) responsive bidders.

The apparent low base bidder of \$450,192.00 for the subject project is B&H Construction LLC. Pursuant to the review of the bid package, bonds, and bid tabulation, the low bid is accurate and complete.

After careful review and consideration, Cowan Group Engineering, LLC recommends the City of Shawnee award the subject contract to the low base bidder, B&H Construction LLC, at \$450,192.00.

Should you have any questions, please contact the undersigned at 405.463.3369.

Sincerely,

COWAN GROUP ENGINEERING, LLC

A handwritten signature in blue ink that reads 'Michael Taylor'.

Michael Taylor, P.E.
Project Manager

Enclosure (1): Bid Tabulation



Engineering Department
222 N. Broadway Ave.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: Board of City Commissioners
From: Seth Barkhimer, Director of Engineering
Subject: Public Works Maintenance Facility - Storm Repairs (Award)

Background: On November 19, 2024, City staff solicited bids for the repair of buildings located at the Public Works yard, at 111 S Kickapoo. Ten buildings within the yard had suffered damage during the April 19, 2023, storm event. Four (4) bids were received and opened on December 10, 2024.

Staff reviewed all bids and found Midtown Construction Services, Edmond, OK having the lowest and best bid.

Staff recommends awarding the contract to Midtown Construction Services, in the amount of \$126,392.

Financial Impact: \$126,392; from Insurance Recovery Fund, Capital Outlay - Buildings and Improvements - 603-5-1010-54200; EM-2023-0419-06

Attachments: Bid Documents, Addendum No. 1, Plan Holders List, Bid Tabulation, Em - Bid Tabulation

Staff Recommendation: Award of the contract

SPECIFICATIONS
FOR
CONTRACT NO. EM-2023-0419-06
Public Works Maintenance Facility – Storm Repairs

CITY OF SHAWNEE, OKLAHOMA
A MUNICIPAL CORPORATION



MAYOR
Eric Stephens

BOARD OF COMMISSIONERS

Lauren Richter	Chris Odneal
Mark Seahorn	Greta Madson
Ashley Fichtner	Daniel Mathews

CITY MANAGER
Andre Weckmueller-Behringer

CITY OF SHAWNEE, OKLAHOMA
A MUNICIPAL CORPORATION

**SPECIFICATIONS AND CONTRACT DOCUMENTS
FOR:
PROJECT NO. **EM-2023-0419-06****

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NOTICE TO BIDDERS

Sealed bids will be received by the City of Shawnee, Oklahoma, City Hall, 16 West 9th – P.O Box 1448, Shawnee, OK 74802-1448 up to **4:00 p.m., Tuesday, December 10, 2024**, for:

BID: CONTRACT NO. EM-2023-0419-06
Public Works Maintenance Facility – Storm Repairs

Bidding Documents, Plans and Specifications are available to qualified bidders at the office of City Engineer, 222 North Broadway, Shawnee, OK 74802-1448. Hard copy bid documents will be \$50 per set. No documents will be mailed unless the request is accompanied by an additional \$10.00 per set to cover mailing cost. Digital copies can be requested by emailing seth.barkhimer@shawneeok.org. There is no fee for digital copies. All respondents must be registered as a plan holder to be considered a qualified bidder. The only way to register as plan holder is by purchasing plans or obtaining digital plans via the email above. **There will be a Mandatory Pre-Bid Conference on December 3rd, 2024 at 10:00 a.m.** at the Public Works Facility, 111 S Kickapoo, Shawnee, OK 74802. The meeting will be held upstairs in the administrative area. **A deadline for questions will be November 22, 2024 via email.**

Each bid shall be filed in a sealed envelope. On the front of each envelope shall be written the following words to the left of the address:

BID: CONTRACT NO. EM-2023-0419-06
Public Works Maintenance Facility – Storm Repairs

This project shall include necessary [items for the repair of the Public Works facility](#). BIDDERS must obtain Bid Documents directly from the City of Shawnee in order for Bids to be acknowledged. The ORIGINAL COPY of each bid shall be filed with the City Clerk of the City of Shawnee, Oklahoma, together with a sworn anti-collusion affidavit in writing that the bidder has not entered into any agreement, expressed or implied, with any other bidder, or bidders, for the purpose of limiting the bid, or bidders, or parcel out to any bidder, or bidders or any other persons, any part of the contract or subject matter of the bid.

Each BIDDER shall attach to his/her BID filed with the City of Shawnee either a bidder's bond, a certified check, or a cashier's check made payable to the City of Shawnee, in an amount not less than five percent (5%) of the amount of bid as a guarantee of delivery of the service in full compliance with the specifications as issued by the City of Shawnee. Should the successful BIDDER fail to deliver the service in full compliance with the specifications within forty-five (45) days after acceptance of his/her bid, the bidder's bond, certified check or cashier's check deposited with his/her bid will be retained as and for liquidated damages. The deposit of each unsuccessful bidder will be returned when his/her bid is rejected.

The bids filed with the City Clerk will be publicly opened and read aloud in the City Hall Commission Chambers, Shawnee, Oklahoma, at **4:00 p.m., Tuesday, December 10, 2024**. The City of Shawnee reserves the right to reject any and all bids.

CITY OF SHAWNEE, OKLAHOMA
a Municipal Corporation

BY: 

INFORMATION FOR BIDDERS

Scope of Work:

It is the intent of this bid to secure, on a competitive basis, repair for 10 buildings located at the Public Works Maintenance Facility, 111 S Kickapoo Ave. Shawnee, OK 74802. The buildings were damaged during the April 2023 tornado event.

BIDS will be received by the CITY OF SHAWNEE, OKLAHOMA (herein called the "OWNER"), at the Office of the CITY CLERK until **4:00 p.m., Tuesday, December 10, 2024** and then publicly opened and read aloud at **4:00 p.m., Tuesday, December 10, 2024** in the City Hall Commission Chambers, Shawnee, Oklahoma.

BIDDERS ARE REQUIRED to obtain Contract Documents and associated Plans directly from the City of Shawnee, and pay for said Contract documents and plans at the fee stated. Only BIDDERS who have met this requirement will have their bids acknowledged. The ORIGINAL COPY of the bid for each project will be filed with the CITY CLERK OF THE CITY OF SHAWNEE, OKLAHOMA together with a sworn noncollusion and business relationship affidavits in writing that the bidder has not entered into any agreement, expressed or implied, with any other bidder, or bidders, for the purpose of limiting the bid, or bidders, or parcel out to any bidder, or bidders, or any other person, any part of the contract or subject matter of the bid.

Each BID must be submitted in a sealed envelope, addressed to the CITY OF SHAWNEE, at the office stated above. Each sealed envelope containing a BID must be plainly marked on the outside as BID for Public Works Maintenance Facility – Storm Repairs and the envelope should bear on the outside the name of the BIDDER, his address, his license number if applicable and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER at Office of the CITY CLERK, P.O. Box 1448, Shawnee, OK 74802-1448.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. Only one copy of the BID form is required in each bid package.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period, the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID SCHEDULE by examination of the site and review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information that is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of EACH PROJECT. Information obtained from an officer agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

A BID bond payable to the OWNER must accompany each BID FOR EACH PROJECT for five percent of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsible BIDDERS. When the Agreement is executed the bonds of the two remaining unsuccessful BIDDERS will be returned. The BID BOND of the successful BIDDER will be retained until the Contract, Statutory and Performance BONDS have been executed and approved after which it will be returned. A certified check may be used in lieu of a BID BOND.

A Performance BOND, MAINTENANCE and a STATUTORY BOND are all required as a part of this contract.

CONTRACTOR shall also submit a completed IRS form W-9, requirements for such set forth in the Contract Documents.

Attorneys-in-fact who sign BID BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to execute the Agreement within ten [10] calendar days from the date when NOTICE OF AWARD is delivered to the BIDDER. The necessary Agreement shall accompany the NOTICE OF AWARD. In case of failure of the BIDDER to execute the Agreement, the OWNER may at his option consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within ten [10] days of receipt of acceptable Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the bidder may by WRITTEN NOTICE withdraw his signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within thirty [30] days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period, the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the thirty [30] day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as he deems necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the work contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest responsible BIDDER.

All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for the reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

The low BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when requested to do so by the OWNER.

Bidders on this work will be required to comply with Title VI of the Civil Rights Act of 1964, and with the President's Executive Order 11246, as amended. The requirements for Bidders and Contractors under this order are indicated in the Contract Documents.

Inspection trips for prospective BIDDERS may be arranged through the City Engineer.

The ENGINEER is Seth Barkhimer, P.E., City Engineer. His address is City Hall, 222 N. Broadway, Shawnee, OK 74801 (405-878-1760).

INSTRUCTIONS AND FORMS

DIVISION I

BID FORM

CONTRACT NO. EM-2023-0419-06

Public Works Maintenance Facility – Storm Repairs

CITY OF SHAWNEE, OKLAHOMA

A Municipal Corporation

SUBMITTED TO:

Lisa Lasyone, City Clerk
City of Shawnee
P.O. Box 1448
16 W 9th Street
Shawnee, OK 74802

1. The undersigned Bidder declares that before preparing this bid he read carefully the Instructions to Bidders and the plans and detailed specifications and that his bid is made with full knowledge of the kind, quality and quantity of the materials or services to be furnished.

2. The undersigned bidder offers and proposes to furnish the materials, equipment, or other services hereinafter set forth, in the manner and under the conditions and in accordance with the specifications on file in the office of the City Clerk of the City of Shawnee, Oklahoma, the following bid prices:

SEE PARAGRAPH 4 - BID SCHEDULE

CONTRACT NO. EM-2023-0419-06

3. In submitting this Bid, Bidder represents, as more fully set forth in the Agreement, that;

(a) Bidder has examined copies of all Bidding Documents and of the following Addenda (receipt of all that is hereby acknowledged):

DATE

NUMBER

(b) Bidder has familiarized himself with the nature and extent of the Contract Documents, Work, Site, Locality and all-local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

(c) Bidder has studied carefully all reports and drawings of surface conditions and drawings of physical conditions which are identified in the Supplementary Conditions, and accepts the determinations set forth in the Supplementary Conditions of the extent of the technical data contained in such reports and drawings upon which Bidder is entitled to rely.

(d) Bidder has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests and studies (in addition to or to supplement those referred to in (c) above), which pertain to the surface or physical conditions at the site or otherwise may affect the costs, progress, performance or furnishing of the work as Bidder considers necessary for the performance or furnishing of the work at the Contract Price within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of examinations, investigations, explorations, tests, reports or similar information or data are or will be required by Bidder for such purposes.

- (e) Bidder has reviewed and checked all information on data shown or indicated on the contract documents with respect to existing facilities at or contiguous to the site and assumes responsibility for the accurate location of said facilities. No additional examinations, investigations, explorations, tests, reports or similar information or data in respect of said facilities are or will be required by Bidder in order to perform and furnish the work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of Paragraph 4.3 of the General Conditions.
- (f) Bidder has correlated the results of all such observations, examinations, investigations, explorations, tests, reports, and studies with the terms and conditions of the Contract Documents.
- (g) Bidder has given Engineer written notice of all conflicts, errors or discrepancies that it has discovered in the Contract Documents and written resolution thereof by Engineer is acceptable to Bidder.
- (h) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; Bidder has not directly or indirectly induced or solicited any other Bidder or submit a false or sham Bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.
4. Bidder will complete the work for the following price(s):

EM-2023-0419-06
Public Works Maintenance Facility – Storm Repairs
CITY OF SHAWNEE, OKLAHOMA
A Municipal Corporation

Item	Description	Quantity	Units	Unit Price	Total
1.	Building (B-1)	1	LS		
2.	Building (B-2)	1	LS		
3.	Building (B-3)	1	LS		
4.	Building (B-4)	1	LS		
5.	Building (B-5)	1	LS		
6.	Building (B-6)	1	LS		
7.	Building (B-7)	1	LS		
8.	Building (B-8)	1	LS		
9.	Building (B-9)	1	LS		
10.	Building (B-10)	1	LS		
11.	Construction Allowance	1	LS	7,500.00	7,500.00
TOTAL (Base-Bid):					

5. Bidder agrees that the work under the terms of this contract is an annual maintenance contract for the items of work let for bids, and that the contract may be extended for one additional year period if agreed upon by both the Contractor and the City of Shawnee. Maintenance work governed by this contract will occur at various locations throughout the City of Shawnee as directed by the Engineer, and once Contractor is directed to perform a task at a specified location, then, he/she shall have two weeks to schedule the activity accordingly and is expected to be onsite within two weeks of notification to initiate the repair work.

6. The following documents are attached to and made a condition of this Bid:

- a) Bid Bond - Required Bid securities in the form of certified or bank check or a bid bond in the amount of 5% of total bid price;
- b) A tabulation of Subcontractors, suppliers, and other persons and organizations required to be identified in this Bid; and
- c) Nonresident bidders form
- d) Non-collusion Affidavit
- e) Business Relationship Affidavit

7. Communications concerning this Bid shall be addressed to the address listed on the following page unless otherwise indicated as follows:

NAME: _____

ADDRESS: _____

PHONE: _____

ZIP CODE: _____

FAX NO.: _____

CONTACT PERSON: _____

8. The terms used in this Bid, which are defined in the General Conditions of the Construction Contract included as part of the Contract Documents, have the meanings assigned to them in the General Conditions.

DELIVERY DATE: (per Specifications/Contract)

Signature: _____

Title: _____

Date: _____

NONRESIDENT BIDDERS

Okla. Stat. §61-14 applies to the award of government contracts to nonresident bidders. This section provides that:

“To the extent permitted by federal laws and regulations, whenever the State of Oklahoma, or any department, agency or institution thereof or any city, town or county shall let for bid any contract to a contractor for any public works, the contractor domiciled outside the boundaries of Oklahoma shall be required, in order to be successful, to submit a bid the same percent less than the lowest bid submitted by a responsible contractor domiciled in Oklahoma as would be required for such an Oklahoma domiciled contractor to succeed over the bidding contractor domiciled outside Oklahoma on a like contract being let in his domiciliary state.”

Check the statement that is correct for Offeror:

- ☐ Offeror (includes parent company or majority owner) qualifies as a resident bidder whose principal place of business is in Oklahoma.
- ☐ Offeror qualifies as a nonresident bidder whose principal place of business or residency is in the state of: _____

Bidder preferences, if any, will be determined in accordance with applicable Laws and Regulations.

Offeror: _____
(typed or printed name of organization)

Signature: _____
(individual's signature)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Business Address: _____

Phone: _____ Email: _____

(Attach evidence of authority to sign if Offeror is a corporation, partnership, or a joint venture.)

NON-COLLUSION AFFIDAVIT

STATE OF _____ }
COUNTY OF _____ } SS:

_____, of lawful age, being first duly sworn, on oath says that he/she is the agent authorized by the VENDOR to submit the attached Proposal. Affiant further states that the VENDOR has not been a party to any collusion among the Proposers in restraint of freedom of competition by agreement to Propose at a fixed price or to refrain from submitting a Proposal; or with any City official or employee as to quantity, quality, or price in the prospective contract, or any other terms of said prospective contract; or in any discussions between the Proposers and any City official concerning exchange of money or other thing of value for special consideration in the awarding of a contract; that the undersigned/Proposer has not paid, given or donated or agreed to pay, give or donate to any officer or employee of the City of Shawnee, Oklahoma, any money or other thing of value, either directly or indirectly, in the procuring of the award of a contract pursuant to this Proposal.

FIRM NAME

By: _____

Sworn before me this _____ day of _____, 2024

Notary Public

My commission expires _____

BUSINESS RELATIONSHIP AFFIDAVIT

STATE OF _____ }
COUNTY OF _____ } SS:

_____, of lawful age, being first duly sworn, on oath says that he/she is the agent authorized by the VENDOR to submit the attached Proposal. Affiant further states that the nature of any partnership, joint venture, or other business relationship presently in effect or which existed within one (1) year prior to the date of this statement with any party to the prospective contract is as follows:

Affiant further states that any such business relationship presently in effect or which existed within one (1) year prior to the date of this statement between any officer or director of the Proposing company and any other party to the prospective contract is as follows:

Affiant further states that the names of all persons having such business relationships and the positions they hold with their respective companies or firms are as follows:

(If none of the business relationships herein above mentioned exists, the affiant should so state.)

AFFIANT

Sworn before me this _____ day of _____, 2024

Notary Public

My commission expires _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned

_____ as Principal, and

_____ as Surety,

are hereby held and firmly bound unto the CITY OF SHAWNEE, OKLAHOMA, as OWNER in the penal sum of _____ for the payment of which, well and truly to

be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 2024

The Condition of the above obligation is such that whereas the Principal has submitted to the CITY OF SHAWNEE, OKLAHOMA a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the _____

NOW, THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto [properly completed in accordance with said BID] and shall furnish a Bond for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by the extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by proper officers, the day and year first set forth above.

Principal

Surety

By: _____

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list [Circular 570 as amended] and be authorized to transact business in the state where the project is located.

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: we, the undersigned

_____ as Principal, and

_____ as Surety,

are hereby held and firmly bound unto the CITY OF SHAWNEE, OKLAHOMA, as OWNER in the penal sum of _____ for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the Surety and during the one year guaranty period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any wise affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts each one of which shall be deemed an original.

Signed, this _____ day of _____, 2024.

Signed, this _____ day of _____, 2024

ATTEST:

Principal

By:_____

Witness as to Principal

Surety

Witness as to Surety

By:_____
Attorney-in-Fact

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS: we, the undersigned
_____ as Principal, and
_____ a corporation organized
under the laws of the State _____ and authorized to transact business
in the State of Oklahoma, as Surety, are hereby held and firmly bound unto the
CITY OF SHAWNEE, OKLAHOMA, as OWNER
in the penal sum of _____ for the payment of which,
well and truly to be made, we hereby jointly and severally bind ourselves,
successors and assigns, by these presents.

The condition of this obligation is such that:

WHEREAS, said Principal entered into a written CONTRACT with the CITY OF
SHAWNEE, OKLAHOMA, dated _____, 2024, for
the _____
_____ all in compliance with the plans and specifications therefore, made a
part of said CONTRACT and on file in the office of the City Clerk, City of Shawnee,
16 W. 9th, P. O. Box 1448, Shawnee, OK 74802-1448.

NOW, THEREFORE, if said Principal shall fail or neglect to pay all indebtedness incurred by
said Principal or subcontractors of said Principal who perform work in the performance of such
contract, for labor and materials and repairs to and parts for equipment used and consumed in the
performance of said contract within thirty (30) days after the same becomes due and payable, the
person, firm, or corporation entitled thereto may sue and recover on this bond, the amount so due
and unpaid.

In WITNESS WHEREOF, the said Principal has caused these presents to be executed in its name
and its corporate seal to be hereunto affixed by its duly authorized officers, and the said Surety
has caused these presents to be executed in its name and its corporate seal to be hereunto affixed
by its attorney-in-fact, duly authorized so to do, the day and year first above written.

Signed, this _____ day of _____, 2024

ATTEST:

Principal

By:_____

Witness as to Principal

Surety

Witness as to Surety

By:_____
Attorney-in-Fact

NOTE: Date of BOND must not be prior to date of Contract. If CONTRACTOR is Partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the PROJECT is located.

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, _____,
hereinafter called the Principal, and the _____
of, _____, a corporation duly organized under the laws of the State
of _____, hereinafter called the Surety, as Surety, are held and firmly bound unto the City of
Shawnee, hereinafter call the Obligee, in the sum of _____
Dollars (\$_____), for the payment of which sum well and truly to be made, the said Principal
and the said Surety, bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

WHEREAS, said Principal entered into a written Contract with said Obligee dated _____,
for City of Shawnee Maintenance Facility - Storm Repair, all in compliance with the plans and specifications therefore,
made a part of said Contract and on file in the office of the City Clerk, City of Shawnee, OK, 74802

WHEREAS, this bond is given in compliance with Title 61, Oklahoma Statutes 2001, Section 113(B)(3).

NOW THEREFORE, if said Principal shall pay or cause to be paid to Obligee all damage, loss, and expense which
may result by reason of defective materials and/or workmanship in connection with said work, occurring within a
period of one (1) year after acceptance of said project by Obligee; and if Principal shall pay or cause to be paid all
labor and materials, including the prime contractor and all subcontractors; and if Principal shall save and hold
Obligee harmless from all damages, loss, and expense occasioned by, or resulting from, any failure
whatsoever of said Principal, then this obligation shall be null and void, otherwise to be and remain in full force and
effect.

It is further expressly agreed and understood by the parties hereto that no changes or alternations in said Contract
and no deviations from the plan or mode of procedure herein fixed shall have the effect of releasing the sureties, or
any of them, from the obligations of this Bond.

IN WITNESS WHEREOF, this instrument is executed in 4 counterparts, each of which shall be deemed an original,
this day of _____, 2024.

_____	(	PRINCIPAL
WITNESS AS TO PRINCIPAL	(	BY: _____

_____	(	SURETY
WITNESS AS TO SURETY	(	BY: _____
	(	ATTORNEY-IN-FACT

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department's most current list
(Circular 570 as amended) and be authorized to transact business in the State of Oklahoma. Attach a certified Copy
of the Power of Attorney.

CONSTRUCTION AGREEMENT

THIS AGREEMENT, made this _____ day of _____, 2024 by and

between _____ The City of Shawnee, Oklahoma _____, Hereinafter called
(name of owner or individual)

“OWNER” and _____, doing business as an individual, or
(contractor name)

a partnership, or a corporation hereinafter called “CONTRACTOR”:

WITNESSETH: That for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the following:

CONTRACT NO. EM-2023-0419-06
Public Works Maintenance Facility – Storm Repairs

2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor and other services necessary for the construction and completion of the project described herein.
 3. The CONTRACTOR shall commence the work required by the CONTRACT DOCUMENTS within 14 calendar days after the date of receipt of the Notice to Proceed, and will complete the same within 180 calendar days unless the period for completion is extended otherwise by the CONTRACT DOCUMENTS.
 4. The CONTRACTOR agrees to perform all of the work described in the CONTRACT DOCUMENTS and comply with the terms therein for the sum of \$ _____ or as shown in the Bid Schedule.
- A. The term “CONTRACT DOCUMENTS” means and includes the following:
- A. Notice to Bidders
 - B. Information to Bidders
 - C. Bid form and Schedule
 - D. Bid Bond
 - E. Construction Agreement
 - F. Performance Bond
 - G. Statutory Bond
 - H. Maintenance Bond

- I. Drawings prepared by City of Shawnee Engineering Department.
- J. Specifications prepared or issued by City of Shawnee Engineering Department.
- K. Addenda #_____ dated _____.
- Addenda #_____ dated _____.
- Addenda #_____ dated _____.

- 6. The OWNER will pay the CONTRACTOR in partial payments as work is performed with final payment to be made upon the acceptance of the project by the Board of Trustees of the Shawnee Municipal Authority or Board of Commissioners of the City of Shawnee.
- 7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns. IN WITNESS WHEREOF, the parties hereto have executed, or caused to be executed by their duly authorized officials, this Agreement in three (3) copies each of which shall be deemed an original on the date first above written.

OWNER:

CITY OF SHAWNEE
A Municipal Corporation

(SEAL)

ATTEST:

Lisa Lasyone, City Clerk

BY _____

NAME Andrea Weckmueller-Behringer

TITLE City Manager

(SEAL)

ATTEST:

BY _____

(signature)

NAME _____

(Print)

TITLE _____

(Secretary/Treasurer)

CONTRACTOR:

(name of Entity)

BY _____

(signature)

NAME _____

(Print)

TITLE _____

(President/Vice President)

ADDRESS

NOTICE OF AWARD

TO: _____

PROJECT Description: **Public Works Maintenance Facility – Storm Repairs - EM-2023-0419-06**

The OWNER has considered the bid submitted by you for the above described work in response to its Advertisement for Bids dated _____ and Information for Bidders. You are hereby notified that your BID has been accepted for items in the amount of \$ _____

You are required by the Information for Bidders to execute the Agreement and vendor registration forms (W-9), along with certificates of insurance, all within ten (10) calendar days from the date of this Notice to you. If you fail to execute said Agreement and to furnish said information within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER’S acceptance of your BID as abandoned as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return the ACCEPTANCE page of this NOTICE OF AWARD to the OWNER. Dated this _____ day of _____, 2024.

CITY OF SHAWNEE, OKLAHOMA
A Municipal Corporation

(SEAL)

ATTEST:

BY _____

TITLE _____

ACCEPTANCE OF AWARD

PROJECT NO. [EM-2023-0419-06](#)
[Public Works Maintenance Facility – Storm Repairs](#)

Receipt of the above NOTICE OF AWARD is hereby acknowledged

by _____

this the _____ day of _____, 2024.

BY _____

Title _____

NOTICE TO PROCEED

TO: _____

DATE: _____

PROJECT: **Public Works Maintenance Facility – Storm Repairs - EM-2023-0419-06**

You are hereby notified to commence WORK in accordance with the Agreement dated, day of _____, 2024 on or before _____, and you are to complete the WORK within 180 calendar days thereafter. Therefore, the approximate date of completion is _____.

CITY OF SHAWNEE, OKLAHOMA
A Municipal Corporation
Owner

BY _____

Title City Engineer

ACCEPTANCE OF NOTICE

Receipt of the above
NOTICE TO PROCEED is
hereby acknowledged

by _____

this the _____ day

of _____, 2024.

BY _____

Title _____

(Please sign and return one copy of this form to, Engineering Dept, City of Shawnee, P.O. Box 1448, Shawnee, OK 74802-1448)

EQUAL OPPORTUNITY CLAUSE

(Provisions of subsections (1) through (7) of Section 202 of Executive Order 11246, as amended)

"During the performance of this contract, the contractor agrees as follows:

(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous place available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of the nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(3) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the contractor's commitments under Section 202 of Executive Order No. 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The contractor will furnish all information and reports required by Executive Order N. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the contractor's noncompliance with the nondiscrimination clauses of the contract or with any of such rules, regulations, or orders, this contract may be cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(7) The contractor will include the provisions of Paragraph (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States."EOC1

THE CITY OF SHAWNEE
P.O. Box 1448
SHAWNEE, OKLAHOMA
74802-1448
(405) 878-1661

ESTIMATE NO. SHEET OF SHEETS
PROJECT DESCRIPTION: **Public Works Maintenance Facility Storm Repairs**

IN ACCOUNT WITH:
ADDRESS:

PAYMENT REQUEST FORM

ITEM No.	DESCRIPTION OF ITEM	UNIT	ESTIMATED QUANTITIES	TOTAL WORK DONE THIS ESTIMATE	TOTAL WORK DONE PREVIOUS ESTIMATE	TOTAL WORK DONE ON CONTRACT	CONTRACT PRICE	AMOUNT
1	Building (B-1)	LS	1					
2	Building (B-2)	LS	1					
3	Building (B-3)	LS	1					
4	Building (B-4)	LS	1					
5	Building (B-5)	LS	1					
6	Building (B-6)	LS	1					
7	Building (B-7)	LS	1					
8	Building (B-8)	LS	1					
9	Building (B-9)	LS	1					
10	Building (B-10)	LS	1					
11	Construction Allowance	LS	1				\$ 7,500.00	\$ 7,500.00

NOTE: - See Reverse Side of Last Sheet for Certification

CONTRACTOR'S CERTIFICATION

I, _____, the undersigned, upon oath do depose and say that I have full knowledge of the above and foregoing account, that the said account is just, correct, due and according to law and that the amount claimed after allowing all just credits, is now due and wholly unpaid, and that I am authorized to make this affidavit, so help me God.

CLAIMANT _____

BY: _____

Subscribed and sworn to before me _____

20 _____. My Commission expires _____,
20 _____.

Notary Public: _____

ENGINEER'S CERTIFICATION

I certify that I have checked and verified this Estimate

No. _____ for the period of _____ to

_____, inclusive, that to the best of my knowledge and belief it is a true and correct statement of work performed and/or materials supplied by the Contractor, that all work and/or materials included in this estimate has been inspected by me and/or my duly authorized representative and that it has been performed and/or supplied in full accordance with the terms and conditions of the Contract.

BY: _____
Engineer

I hereby certify that all of the contract requirements as specified under the Labor Standards have been complied with by

as principal contractor and by each sub-contractor employing mechanics and labors at the site of the work, or there is an honest dispute with respect to the required provisions.

BY: _____
Title

Original Contract Amount	\$
Total Additions	\$
Total Deductions	\$
Contract as Revised to Date	\$
Total Amount of Work Done to Date	\$
Materials on Hand	\$
Total Work and Materials	\$
Amount Retained () Per Cent	\$
Balance	\$
Less Previous Payments	\$
Amount Due on Contract Estimate	\$
Days Allowed in Contract	
Days Consumed This Estimate	
Days Previously Consumed	
Total Days Consumed to Date	
Days Remaining in Contract	
Remarks:	

CHANGE ORDER

ORDER NO. _____

DATE: _____

AGREEMENT DATE: _____

Project / Contract No: _____

Owner: City of Shawnee

Contractor: _____

The following changes are hereby made to the CONTRACT DOCUMENTS:

SEE ATTACHED CHANGE ORDER REQUEST

Change to CONTRACT PRICE: \$ _____

Original CONTRACT PRICE: \$ _____

Current CONTRACT PRICE adjusted by previous CHANGE ORDER \$ _____

The CONTRACT PRICE due to this CO will be (increased) or (decreased) by: \$ _____

The new CONTRACT PRICE including this CHANGE ORDER will be \$ _____

Change to CONTRACT TIME: _____

The CONTRACT TIME will be (increased) (decreased) by _____ calendar days.

The date for completion of all work will be _____ (Date).

Approvals Required:

To be effective this Order must be approved:

CONTRACTOR

City Manager

(Signed)

City Engineer

CONDITIONS OF CONTRACT

DIVISION II

DEFINITION OF TERMS

SECTION 000 DEFINITIONS

Wherever the words, forms or phrases herein defined, or pronouns used in their stead, occur in these specifications, in the contract or in the advertisement or any document or instruments herein contemplated or to which these specifications apply, the intent and meaning shall be interpreted as follows:

A.A.S.H.O.	The American Association of State Highway Officials.
Advertisement	All of the legal publications pertaining to the work contemplated or under contract.
A.N.S.I.	American National Standards Institute.
A.S.T.M.	The American Society for Testing and Materials.
Award	The decision of the Authority to accept the proposal of the lowest and best bidder for the work, subject to the execution and approval of a satisfactory contract and the required bonds therefore, and to such other conditions as may be specified or otherwise required by law.
Authority	City of Shawnee
Bidder	Any person or persons, partnership, company, firm or corporation acting directly or through a duly authorized representative submitting a proposal for the work contemplated for, Oklahoma, a municipal corporation, acting through its duly authorized representatives.
City Auditor	The City Auditor of the City of Shawnee, Oklahoma, or his duly authorized assistants or agents.
City Clerk	The City Clerk of the City of Shawnee, Oklahoma, or his duly authorized assistants or agents.
City Manager	The Manager of the City of Shawnee, Oklahoma.
City Treasurer	The City Treasurer of the City of Shawnee, Oklahoma, or his duly authorized assistants or agents.
Construction Bond	The approved form of security furnished by the Contractor and his Surety as a guarantee of good faith on the part of the Contractor to execute the work in accordance with the plans, specifications and terms of the Contract.
Contract	The written agreement covering the performance of the work. The contract includes the Advertisement and Notice to Contractors Proposal, Bonds, Specifications, including Special Provisions, Addenda, Plans or working drawings and any supplemental agreement pertaining to the work or materials therefore.

Contractor	The person or persons, partnership, company firm, or corporation entering into contract for the execution of the work, acting directly or through a duly authorized representative.
Commission	The Commission of the City of Shawnee, Oklahoma.
Director of Water Utilities	Acting within the scope of duly delegated authority.
Engineer	City Engineer
Furnish	To Supply.
Maintenance Bond	The approved form of security furnished by the Contractor and his Surety as a guarantee that he will maintain the work constructed by him in good condition for the period of time required.
Mayor	The Mayor of the City of Shawnee, Oklahoma.
Municipal Counselor	The Municipal Counselor of the City of Shawnee, Oklahoma, or his duly authorized assistants or agents.
Plan or Plans	All of the drawings pertaining to the contract and made a part thereof, including such supplementary drawings as the Engineer may issue from time to time, in order to elucidate other drawings or for the purpose of showing changes in the work as authorized under the Section, "Changes and Alterations," or for showing details not shown thereon.
Provide	To furnish and erect or install.
Special Provisions	The special clauses setting forth conditions or requirements peculiar to the specific project involved, supplementing the <u>General Provisions</u> and taking precedence over any conditions or requirements of the <u>General Provisions</u> with which they are in conflict.
Specifications	The directions, provisions and requirements contained herein, together with the "Special Provisions" supplemental hereto, pertaining to the method and manner of performing the work or to the quantities or qualities of materials to be furnished under the contract.
Statutory Bond	The approved form of Surety set up and furnished by the Contractor and his Surety as a guarantee that he will pay, in full, all bills and accounts for materials and labor used in the construction of the work, as provided by law.
Surety or Sureties	The corporate body which is bound by such bonds as are required with and for the Contractor, and engages to be responsible for the entire and satisfactory fulfillment of the contract and for any and all requirements as set out in the specifications, contract or plans.

The Work	All work, including the furnishing of labor, materials, tools, equipment and incidentals, to be performed by the Contractor under the terms of the Contract.
Working Day	Any day, other than a legal holiday, Saturday or Sunday, on which the approximate normal working forces of the Contractor may proceed with regular work in a manner satisfactory to the Engineer, for at least six (6) hours, toward completion of the work, unless work be suspended for causes beyond the Contractor's control, provided that Saturday, Sunday and holidays on which the Contractor's forces do engage regular work will be considered as working days.
Resolution	Establishing a Contractors Pre-qualification Board: adopting standards and procedures therefore; and requiring board examinations and approval of bidders or public improvement work.
Owner	City of Shawnee

SCOPE OF WORK

SECTION 001 INTENT OF PLANS AND SPECIFICATIONS

The intent of the plans and specifications is to prescribe a complete work or improvement, which the Contractor undertakes to do, in full compliance with the plans, specifications, special provisions, proposal and contract. The contractor shall do all work as provided in the plans, special provisions, specifications, proposal and contract and shall do such additional extra and incidental work as may be considered necessary to complete the work in a satisfactory and acceptable manner. He shall furnish all labor, materials, tools, equipment and incidentals necessary to the prosecution of the work, unless otherwise specified.

SECTION 002 SPECIAL PROVISIONS

Should any work or any conditions that are not thoroughly or satisfactorily stipulated or covered by the general or standard specifications be anticipated on any proposed work, "Special Provisions" for such work may be prepared and shall be considered as a part of the specifications and contract.

SECTION 003 INCREASED OR DECREASED QUANTITIES OF WORK

The Owner reserves the right to alter the quantities of the work to be performed or to extend or shorten the improvement at any time when and as found necessary, and the Contractor shall perform the work as altered, increased or decreased, at the contract unit prices.

SECTION 004 ALTERATIONS OF PLANS AND SPECIFICATIONS

The Owner reserves the right to make such changes in the plans and in the character of the work and approved by the Engineer as may be necessary or desirable to insure completion of the work in the most satisfactory manner, provided such changes do not materially alter the original plans and specifications or change the general nature of the work as a whole. Such changes shall not be considered as waiving or invalidating any condition or provision of the contract.

SECTION 005 EXTRA WORK

When any work is necessary to the proper completion of the project for which no prices are provided in the proposal or contract, the Contractor shall do such work, prior to acceptance by the City.

SECTION 006 FINAL CLEANING UP

Upon completion of the work and before acceptance the Contractor shall clean and remove from the site of the work surplus and discarded materials, temporary structures, stumps or portions of trees and debris of any kind. He shall leave the site of the work in a neat and orderly condition. Waste materials removed from the site of the work shall be disposed of at locations satisfactory to the Engineer.

CONTROL OF THE WORK AND MATERIALS

SECTION 007 AUTHORITY OF ENGINEER

All work shall be done under the supervision of the Engineer and to his satisfaction. He shall decide all questions which arise as to the quality and acceptability of materials furnished, work performed, manner of performance, rate of progress of the work, sequence of construction, interpretation of the plans and specifications, acceptable fulfillment of the contract, and suspension of work.

SECTION 008 DETAIL SHOP AND WORKING DRAWINGS FURNISHED BY CONTRACTORS

The contractor shall submit to the Engineer for approval, such additional shop and working drawings of structures or equipment as may be required, and, prior to the approval of such drawings by the Engineer, any work done or materials ordered shall be at the Contractor's risk.

SECTION 009 CONFORMITY WITH PLANS. ALLOWABLE DEVIATIONS

All work shall conform to the lines, grades, cross-sections and dimensions shown on the plans. All deviations from the plans

will be accomplished by change orders prepared by the Owner and approved by the Engineer. All change orders shall be in writing. Three copies shall be furnished to the City and two copies shall be furnished to the contractor of all change orders approved by the Engineer.

Change orders shall include the following:

1. Complete detail of work contemplated
2. Complete justification

SECTION 010 EXISTING STRUCTURES NOT SHOWN ON PLANS

The plans show the location of certain existing surface and subsurface structures. The City assumes no responsibility for failure to show any or all structures on the plans or to show them in their exact location.

SECTION 011 COORDINATION OF PLANS, SPECIFICATIONS, AND SPECIAL PROVISIONS

The plans, these specifications, Special Provisions and all supplementary documents are intended to describe a complete work and are essential parts of the contract. A requirement occurring in any of them is binding. In case of discrepancies, figured dimensions shall govern over scaled dimensions; plans shall govern over specifications, Special Provisions shall govern over both General and Standard Specifications, and the plans and quantities shown on the plans shall govern over those shown on the proposal. The Contractor shall take no advantage of any apparent error or omission in the plans and specifications, and the Engineer shall be permitted to make such corrections or interpretations as may be deemed necessary for the fulfillment of the intent of the plans and specifications. In the event the contractor discovers any apparent error or discrepancy, he shall immediately call such error or discrepancy to the attention of the Engineer, and request in writing an interpretation thereof by the Engineer.

SECTION 012 COOPERATION OF CONTRACTOR

The Contractor shall have a set of plans and specifications available at all points where a separate construction crew is working. The Contractor shall give to the work the consistent attention necessary to facilitate the progress thereof, and he shall cooperate with the Engineer and his inspectors and with other contractors in every way possible. The Contractor shall provide a competent Superintendent on the work at all times who is fully authorized as his agent on the work. Such Superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Engineer or his authorized representative. The Contractor and his Superintendent shall provide all reasonable facilities to enable the Engineer and his inspectors to inspect the workmanship and materials entering into the work.

SECTION 013 CONSTRUCTION STAKES

Where not indicated otherwise in plans and specifications, the Owner will furnish the Contractor with all lines, grades and measurements necessary to the proper prosecution and control of the work contracted for under these specifications. The Contractor shall satisfy himself as to the accuracy of all measurements before constructing any permanent structure.

SECTION 014 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

The Contractor shall not start delivery of materials until the Engineer has approved the source of supply. Only materials conforming to the requirements of these specifications shall be used in the work and such materials shall be used only after written approval has been given by the Engineer and only, so long as the quality of said material remains equal to the requirements of the specifications. The contractor shall furnish approved materials from other sources if, for any reason, the product from any source at any time before commencing or during the prosecution of the work proves unacceptable. After approval, any material, which has become mixed with or coated by dirt or any other foreign substances during its delivery and handling, shall not be used in the work.

SECTION 015 MATERIALS AND WORKMANSHIP

The Contractor shall submit samples of materials, finish, appliances, etc., when required by the Engineer, and the Engineer in writing must approve all such samples before the work is executed and all work shall conform in all respects to the approved samples. Any work, which does not conform to the approved samples, will be rejected, and shall be removed and replaced by work that does so conform.

SECTION 016 SAMPLES AND TESTS OF MATERIALS

Where in the opinion of the Engineer or called for in the specifications, tests of materials are necessary, such tests shall be made by and at the expense of the City, unless otherwise provided in the Special Provisions. Tests, unless otherwise specified, are to be made in accordance with the latest standard methods of the American Society for Testing Materials. The contractor shall provide such facilities as the Engineer may require for collecting and forwarding samples and shall not use the materials represented by the samples until tests have been made and approved by the designated Engineer or testing laboratory. The Contractor in all cases shall furnish the required samples without charge. A laboratory designated by the City shall make all tests. Testing shall be done only on written order of the Engineer on test order forms provided by the City, unless otherwise provided in the Special Provisions or in the material details; nothing in these specifications shall be construed as requiring a specific number of tests to be made.

SECTION 017 STORAGE OF MATERIALS

Materials shall be stored so as to insure the preservation of their quality and fitness for the work. When directed by the Engineer they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground, and shall be placed under cover when directed. Stored materials shall be located so as to facilitate prompt inspection.

SECTION 018 INSPECTION

The Contractor shall furnish the Engineer with every reasonable facility for ascertaining whether or not the work as performed is in accordance with the requirements and intent of the plans and specifications. If the Engineer requires, the Contractor shall at any time before acceptance of the work, remove or uncover such portions of the finished work as may be directed, for inspection. After inspection, the Contractor shall restore said portions of the work to the condition required by the specifications.

SECTION 019 REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All work, which has been rejected or condemned, shall be repaired, or, if it cannot be satisfactorily repaired it shall be removed and replaced at the Contractor's expense. Defective materials shall be removed immediately from the site of the work. Work done without lines and grades having been given; work done beyond the lines or not in conformity with the grades shown on the plans or as given, save as herein provided; work done without proper inspection will be done at the Contractor's risk and will be considered unauthorized and at the option of the Engineer may not be accepted and may be ordered removed at the Contractor's expense.

SECTION 020 CORRECTION OF WORK AFTER FINAL ACCEPTANCE

Neither the final certificate nor acceptance nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defects due thereto and pay for any damage to other work resulting there from, which shall appear within a period of five years from the date of substantial completion. The City shall give notice of observed defects with reasonable promptness.

SECTION 021 FINAL INSPECTION

The Engineer shall make final inspection of all work included in the contract or any portion thereof as soon as practicable after the work is completed and ready for acceptance. If the work is not acceptable to the Engineer at the time of such inspection, he shall inform the contractor as to the particular defects to be remedied before final acceptance can be made.

LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

SECTION 022 LAWS TO BE OBSERVED

The Contractor shall, at all times, observe and comply with all Federal and state laws and City ordinances and regulations which in any manner affect the conduct of the work and shall observe and comply with all orders and decrees which exist at the present or which may be enacted later, of bodies or tribunals having jurisdiction or authority over the work, and no plea of misunderstanding or ignorance thereof will be considered. The Contractor and his Surety shall defend, indemnify and save harmless the City and all its officers, agents, employees and servants against any claims or liability arising from or

based on the violation of any such law, ordinance, regulation, order or decree whether by himself or his employees.

SECTION 023 PERMITS AND LICENSES

The Contractor shall procure all permits and licenses, pay all charges or fees, and give all notices necessary and incidental to the due and lawful prosecution of the work including those established by ordinances in connection with paving removal and replacement.

SECTION 024 PATENTED DEVICES, MATERIALS AND PROCESSES

If the Contractor is required or desires to use any design, device, material or process covered by letters, patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. It is mutually understood and agreed that without exception the contract prices shall include all royalties or costs arising from patents, trademarks and copyrights in any way involved in the work. The Contractor and the Surety shall defend, indemnify and save harmless the City and all its officers, agents, and employees from all suits, actions or claims of any character, name and description brought for or on account of infringement or alleged infringement by reason of the use of any such patented design, device, material or process or any trademark of copyright used in connection with the work agreed to be performed under this contract, and shall indemnify the City for any cost, expense, or damage which it may be obliged to pay by reason of any action or actions, suit or suits which may be commenced against the City for any such infringement or alleged infringement at any time during the prosecution or after the completion of the work contracted for herein. It is mutually agreed that the City may give written notice of any such suit to the Contractor, and thereafter the Contractor shall attend to the defense of the same and save and keep harmless the City from all expense, counsel fees, cost liabilities, disbursements, recoveries, judgments and executions in any manner growing out of, pertaining to or connected therewith.

SECTION 025 SANITARY PROVISIONS

The Contractor shall establish and enforce among his employees such regulations in regard to cleanliness and the disposal of garbage and waste as will tend to prevent the inception and spread of contagious or infectious diseases and to effectively prevent the creation of a nuisance about the work or any property, either public or private and such regulations as are required by the Engineer shall be put into effect immediately by the Contractor. The necessary sanitary conveniences for the use of laborers on the work properly secluded from public observation shall be constructed and maintained by the Contractor and the Contractor shall strictly enforce their use. All sanitary laws and regulations of the City and the State of Oklahoma shall be strictly complied with.

SECTION 026 PUBLIC CONVENIENCE AND SAFETY

Materials stored about the work shall be so placed and the work shall, at all times, be so conducted as to cause no greater obstruction of the traveling public than is considered necessary by the Engineer. The Contractor shall make provisions by bridges or otherwise, at all cross streets, highways, sidewalks and private driveways for the free passage of vehicles and pedestrians, provided that, where bridging is impracticable or unnecessary in the opinion of the Engineer, the Contractor may make arrangements satisfactory to the Engineer for the diversion of traffic and shall, at his own expense, provide all materials and perform all work necessary for the construction and maintenance of roadways and bridges for the diversion of traffic. Sidewalks must not be obstructed unless by special permission of the Engineer. Neither the materials excavated nor the construction materials or plant used in the construction of the work shall be placed so as to endanger the work or prevent free access to all fire hydrants, water valves, gas valves, manholes for electric, telephone, telegraph or traffic signal conduits, sewers or fire alarm or police call boxes in the vicinity. The City reserves the right to remedy any neglect on the part of the Contractor as regards the public convenience and safety which may come to its attention, after twenty-one (24) hours' notice in writing to the Contractor, save in cases of emergency when it shall have the right to remedy any neglect without notice and, in either case, the cost of such work done by the City shall be paid prior to acceptance of the project. The Contractor shall notify the Traffic Control Office, The Fire Department Headquarters, and Police Headquarters when any street is closed or obstructed, and when directed by the Engineer shall keep any street or streets in condition for unobstructed use by fire apparatus. Where the Contractor is required to construct temporary culverts or bridges or make other arrangements for crossings over ditches or streams, his responsibility for accidents shall include the roadway approaches as well as the structures of such crossings.

SECTION 027 PRIVILEGES OF CONTRACTOR IN STREETS, ALLEYS OR RIGHT-OF-WAY

For the performance of the contract, the Contractor will be permitted to occupy such portions of streets or alleys, other public places or other rights-of-way as provided for in the ordinances of the City, as shown on the plans or as permitted by the Engineer. A reasonable amount of tools, materials and equipment for construction may be stored in such space but not more than is necessary to avoid delays in the Construction. Excavated and waste materials shall be piled or stacked in such a way as not to interfere with spaces that may be designated to be left free and unobstructed, nor inconvenience occupant of adjoining property. Other contractors of the City may, for all purposes required by their contracts, enter upon the work and premises used by the Contractor, and the Contractor shall give to other contractors of the City, all reasonable facilities and assistance for the completion of the adjoining work. He shall provide any additional grounds desired by the Contractor for his use at his own expense.

SECTION 028 RAILWAY CROSSINGS

When the work encroaches upon the right-of-way of any railway the Owner will secure for the Contractor all the necessary contracts, easements or authority to enter upon such right-of-way for the prosecution and completion of the work. Where railway tracks are to be crossed, the railway company, if it elects to do so, will construct the necessary bridges, trestles, cribs or other excavation during the time of construction of the work, and the cost of construction of such bridges, trestles, cribs or other structures shall be paid to the railway company by the contractor together with the necessary cost of any supervision or other incidental expense which may be required by the railway company while the work is in progress on the right-of-way of the railway company, and all such costs shall be taken into consideration by the Contractor in submitting proposals. The Contractor shall take such special precautions for the safety of the work and the traveling public as may be necessary by sheeting, bracing and thoroughly supporting the sides of any excavation and supporting and protecting any adjacent structures.

SECTION 029 BARRICADES AND WARNING SIGNS

Where work is carried on in or adjacent to any street, alley, or public place, the Contractor shall, at his own expense, furnish and erect such barricades, fences, lights and danger signals, shall provide such watchmen and shall take such other precautionary measures for the protection of persons or property and of the work as are necessary. Barricades shall be painted white or yellow, so as to be visible at night. The paint shall be renewed as often as necessary to keep the barricades substantially covered. From sunset to sunrise the Contractor shall furnish and maintain at least one (1) light at each barricade. A sufficient number of barricades shall be erected to keep vehicles from being driven on or into any work under construction. The Contractor shall furnish watchmen in sufficient numbers to protect any new work. Failure to comply with this requirement will result in the Engineer shutting down the work until the Contractor shall have provided the necessary protection. The Contractor will be held responsible for all damage to the work due to failure of barricades, signs, lights and watchmen to protect it, and whenever evidence of such damage is found prior to acceptance, the Engineer may order the damaged portion immediately removed and replaced by the Contractor at his expense, if, in the opinion of the Engineer such action is justified. The Contractor's responsibility for the maintenance of barricades, signs, and lights and for providing watchmen shall not cease until the City has accepted the project.

SECTION 030 USE OF EXPLOSIVES

Should the Contractor elect to use explosives in the prosecution of the work, the utmost care shall be exercised so as not to endanger life or property, and the Contractor shall carry on such work in accordance with the requirements of the section on Construction Details of these specifications and in compliance with the ordinances of the City and all laws of the State of Oklahoma. The Contractor shall notify the proper representatives of any public service corporation, any company or any individual not less than eight (8) hours in advance of any blasting which might damage their or his property along or adjacent to the work. Whenever explosives are stored or kept, they shall be stored in a safe and secure manner and all storage places shall be marked plainly, "DANGEROUS EXPLOSIVES," and shall be under the care of a competent watchman at all times.

SECTION 031 PROTECTION AND RESTORATION OF PROPERTY

The Contractor shall not enter upon private property for any purpose without first obtaining permission and he shall be responsible for the preservation of and shall use every precaution necessary to prevent damage to all trees, fences, culverts, bridges, pavements, driveways, sidewalks, etc., to all water, sewer, gas or electric lines or appurtenances thereof and to all other public or private property along or adjacent to the work. The Contractor shall notify the proper representatives of any public service corporation, any company or any individual not less than twenty-one (24) hours in advance of any work which

might damage or interfere with the operation of their or his property along or adjacent to the work. He shall be responsible for all damage or injury to property of any character method of executing the work or due to his non-execution of the work or at any time due to defective work or materials, and said responsibility shall not be released until the work shall have been completed and accepted. When and where any direct or indirect damage or injury is done to public or private property on account of any act, omission, neglect or misconduct in the execution of the work or in consequence of the non-execution thereof on the part of the Contractor, he shall restore at his expense such property to a condition similar or equal to that existing before such damage or indirected, or he shall make good such damage for injury in an acceptable manner. In case of the failure on the part of the Contractor to restore such property or make good such damage or injury, the Engineer may, upon forty-eight (48) hours written notice, under ordinary circumstances, and without notice when a nuisance or hazardous condition results, proceed to repair, rebuild or otherwise restore such property as may be determined necessary and the cost thereof will be paid by the Contractor prior to final acceptance.

SECTION 032 PROTECTION AND PRESERVATION OF LAND MONUMENTS AND PROPERTY LINE MARKS

The Contractor shall protect carefully from disturbance or damage all land monuments and iron pins or other markers which establish property or street lines, provided that where such monuments or markers must, of necessity, be disturbed or removed in the performance of the contract, the Contractor shall first give ample notice to the Engineer, so that he may witness or reference in such monuments or markers.

SECTION 033 RESPONSIBILITY FOR DAMAGE CLAIMS

The Contractor and his Surety shall defend, indemnify and save harmless the City and all its officers, agents and employees from all suits, actions or claims of any character, name and description brought for or on account of any injuries or damages received or sustained by any person or persons or property by or from the said Contractor or his employees or by or in consequence of any negligence in safeguarding the work or through the use of unacceptable materials in constructing the work or by or on account of any act or omission, neglect or misconduct of the said Contractor or by or on account of any claim or amounts recovered by any infringement of patent, trademark or copyright, or from any claims or amounts arising or recovered under the Workmen's Compensation Law or any other law, ordinance, order or decree.

SECTION 034 TEMPORARY SEWER AND DRAIN CONNECTIONS

When existing sewers have to be taken up or removed the Contractor at his own expense shall provide and maintain temporary outlets and connections for all private or public drains, sewers, or sewer inlets. He shall also take care of all sewage and drainage, which will be received from these drains, sewers and sewer inlets; and for this purpose he shall provide and maintain at his own expense adequate pumping facilities and temporary outlets or diversions. He shall construct such troughs, pipes or other structures necessary and be prepared at all times to dispose of drainage and sewage received from these temporary connections until such time as the permanent connections are built and in service. The existing sewers and connections shall be kept in service and maintained under the contract, save where specified or ordered to be abandoned by the Engineer. All water or sewage shall be disposed of in a satisfactory manner so that no nuisance is created and that the work under construction will be adequately protected.

SECTION 035 ARRANGEMENT AND CHARGE FOR WATER FURNISHED BY THE CITY

If the Contractor desires to use City water he shall pay the rate established by City ordinances for such service and he shall make complete and satisfactory arrangements with the City Water Department for so doing. Meters will be used and the Contractor shall deposit the cost of the water meter with the Water Department and will pay for all repairs and maintenance of the meter for the period which he has the meter in use or in his possession.

SECTION 036 USE OF FIRE HYDRANTS

The Contractor or his employees shall not open, turn off, interfere with, attach pipe or hose to or connect anything with any fire hydrant, stop valve or stopcock or tap any water main belonging to the City, unless duly authorized to do so by the Water Department.

SECTION 037 USE OF A SECTION OR PORTION OF THE WORK

Whenever in the opinion of the Engineer any portion of the work or any structure is in suitable condition, it may be put into use by the written order of the Engineer, approved by the City Council, and such usage will not be held to be in any way an

acceptance of said work or structure or any part thereof or as a waiver of any of the provisions of these specifications or contract. Pending final completion and acceptance of the work, all necessary repairs or renewals on any section of the work so put into use, due to defective material or workmanship, or to natural causes other than ordinary wear and tear or to the operations of the Contractor shall be performed by and at the expense of the Contractor.

SECTION 038 CONTRACTOR'S RESPONSIBILITY FOR THE WORK

Until written acceptance by the City as provided for in these specifications, the work shall be under the charge and care of the Contractor, and he shall take every necessary precaution to prevent injury or damage to the work or any part thereof by the action of the elements or from any other cause whatsoever, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good, at his own expense, all injuries or damage to any portion of the work occasioned by any of the above caused before acceptance.

SECTION 039 PERSONAL RESPONSIBILITY OF PUBLIC OFFICIALS

In carrying out any of the provisions contained herein or in exercising any power or authority granted to him by the contract, there shall be no liability upon the Engineer or his authorized assistants, either personal or as officials of the City, it being understood that in such matters he acts as the agent and representative of the City.

SECTION 040 WAIVER OR LEGAL RIGHTS

Inspection by the Engineer or by any of his duly authorized representatives, any order, measurement, or certificate by the Engineer, any acceptance of any work or any possession taken by the City, shall not operate as a waiver of any provision of the contract or any power therein reserved to the City or any right of damages therein provided. Any waiver of any breach of contract shall not be held to be a waiver of any other or subsequent breach.

SECTION 041 CONTRACTOR'S INSURANCE

The Contractor shall not commence work under this contract until he has obtained all insurance required under this specification and the City has approved such insurance, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained and approved.

SECTION 042 COMPENSATION AND DEATH LIABILITY INSURANCE

The Contractor shall maintain during the life of this contract Workmen's Compensation Insurance as prescribed by the laws of the State of Oklahoma and Employer's Liability Insurance in an amount not less than twenty-five thousand (\$25,000) dollars for all his employees employed at the site of the project, and in case any work is sublet the Contractor shall require the subcontractor similarly to provide Workmen's Compensation and Employer's Liability Insurance for all the latter's employees unless such employees are covered by the protection afforded by the Contractor. In the event any class of employees engaged in hazardous work performed under this contract at the site of the project is not protected under this insurance heretofore mentioned, the Contractor shall provide, and shall cause each subcontractor to provide adequate insurance for the protection of his employees not otherwise protected.

SECTION 043 PUBLIC LIABILITY AND PROPERTY DAMAGE INSURANCE

(a) The Contractor and/or subcontractor shall maintain during the life of this contract such Public Liability and Property Damage Insurance as will protect him from claims for damages for bodily injury, including accidental death, as well as from claims from property damages, which may arise from operations under this contract, whether such operations be by himself or by any subcontractor or by anyone directly or indirectly employed by either of them and the amounts of such insurance shall be as follows:

Bodily Injury Liability in the amount not less than \$500,000 for injuries including accidental death, to any one person, and subject to the same limit for each person, in amount not less than \$500,000 for one accident.

Property Damage Liability - Limits shall be carried in the amounts of not less than \$200,000 for any one accident and an aggregate limit of \$200,000.

(b) The Contractor shall provide Owner's Protective Liability Insurance, with this City as the named insured and the architects/engineers as additional insured, to protect the City and architects/engineers against claims arising out of operation

of Contractors and other independent contractors, as well as omissions of supervisory acts of the City and architects/engineers in connection with the performance of the contract covered by these specifications in the following minimum amounts:

Bodily Injury Liability in the amount not less than \$500,000 for injuries, including accidental death, to any one person and subject to the same limit for each person, in an amount not less than \$500,000 for an accident.

Property Damage Liability - Limits shall be carried in the amounts of not less than \$200,000 for any one accident and an aggregate limit of \$200,000.

(c) The policies of insurance shall be executed by an insurance of indemnity carrier authorized to do business in the State of Oklahoma.

(d) Before awarding a contract the City will be furnished a binder or certificate of insurance showing the coverage to be in effect.

SECTION 044 PROOF AND CARRIAGE OF INSURANCE

The Contractor shall furnish the City with satisfactory proof of carriage of insurance required.

PROSECUTION AND PROGRESS

SECTION 045 PROSECUTION OF WORK

The sequence of all construction operations shall at all times be as directed by or approved by the Engineer. Should the Contractor discontinue the prosecution of the work for any reason, he shall notify the Engineer at least twenty-four (24) hours in advance of resuming operations.

SECTION 046 LIMITATIONS OF OPERATIONS

The Contractor shall conduct his work so as to create a minimum amount of inconvenience to the public. At any time when in the judgment of the Engineer the Contractor has obstructed or closed or is carrying on operations on a greater portion of the street or public way than is necessary for the proper execution of the work, the Engineer may require the Contractor to finish the sections on which work is in progress before work is started on any additional section.

SECTION 047 CHARACTER OF WORKMEN AND EQUIPMENT

The Contractor shall employ such superintendents, foremen and workmen as are careful and competent and the Engineer may demand the dismissal of any person or persons employed by the Contractor, in, about or on the work who shall misconduct himself or be incompetent or negligent in the proper performance of his or their duties or neglect or refuse to comply with the directions of the Engineer, and such person or persons shall not be employed again thereon without the written consent of the Engineer. Should the Contractor continue to employ or again employ such person or persons without the written consent of the Engineer then the Engineer may withhold all estimates that are or may become due or may suspend the work until such orders are complied with.

All workmen shall have sufficient skill and experience to properly perform the work assigned them. All workmen engaged on special work or skilled work or in any trade shall have sufficient experience in such work to properly and satisfactorily perform it and operate the equipment involved, and shall make due and proper effort to execute the work in the manner prescribed in these specifications. Otherwise, the Engineer may take action as above prescribed.

The Contractor shall furnish such equipment as is considered necessary for the prosecution of the work in an acceptable manner. All equipment, tools and machinery used for handling materials and executing any part of the work shall be subject to the approval of the Engineer and shall be maintained in a satisfactory work condition. Equipment on any portion of the work shall be such that no injury to the work or adjacent property will result from its use.

SECTION 048 DAY'S WORK: WORKING HOURS

Work shall be done only during regular and commonly accepted and prescribed working hours. No work shall be done nights, Saturdays, Sundays, or regular holidays unless a special order or permit is given by the Engineer so to do.

SECTION 049 TEMPORARY SUSPENSIONS

The Engineer shall have the authority to suspend the work wholly or in part for such period or periods, as he may deem necessary, due to unsuitable weather or such other conditions as are considered unfavorable for the suitable prosecution of

the work. If it should become necessary to stop work for an indefinite period, the Contractor shall store all materials in such manner that they will not obstruct or impede the traveling public unnecessarily nor become damaged in any way, and he shall take every precaution to prevent damage or deterioration of the work performed, and shall provide suitable drainage about the work and erect temporary structures where necessary. The Contractor shall not suspend work without written authority from the Engineer and shall proceed with the work promptly when notified by the Engineer to resume operations.

SECTION 050 MAINTENANCE BOND

A good and sufficient Maintenance Bond in an amount specified within these contract documents, of the total amount of the contract, guaranteeing the maintenance in good condition of such improvements for the period specified and after the time of the completion and acceptance by the City of said improvements, and as required in the contract documents elsewhere, thereafter, for a total maintenance period provision.

SECTION 051 GENERAL

No Surety will be accepted who is now in default or delinquent on any bond or who is interested in any litigation against the City. All bonds shall be made on forms furnished by the City and shall be executed by surety companies licensed to do business in the State of Oklahoma and acceptable to the Council. The Contractor and the Surety shall execute each bond.

SUPPLEMENTAL GENERAL CONDITIONS

Section 001 OMISSIONS:

A. In the event that the specifications inadvertently omit some of the usual and customary work, auxiliary equipment or materials required for satisfactory installation and operation of all equipment, the contractor shall provide these items as directed by the architect/engineer at his own expense. The contractor will be assumed to be an experienced and qualified contractor in this type of work, and to have studied the purpose and operations of the equipment and the results to be obtained, and is to furnish equipment suitable for the work to be done.

B. In the event that the specifications inadvertently fail to contain a specification for work to be done and material to be furnished, then the standard current specification or requirements of the AWWA, ASTM, ASME, ASEE, NBFU or NEC shall apply. Should the above specification not apply, then the work done, equipment or material furnished, shall be as directed by the architect/engineer.

Section 002 - MAINTENANCE BOND

A maintenance bond in the amount specified within these contract documents shall be furnished, along with the contract, for approval of the owner. A Statutory Bond and Performance Bond shall be in the amount of 100% of the contract price and submitted along with the contract, for approval of the owner

Section 003

Engineer: Where engineer is used, it shall mean the City Engineer.

Section 004

The Attached Non-Collusion Affidavit and Business Relationships Affidavit shall be completed and submitted with the bid.

Section 005

The attached Claim or Invoice Affidavit shall be completed and submitted with each claim or invoice submitted for payment.

Section 006

Bidder understands that the Owner reserves the right to reject any or all bids.

Section 007 Telegraphic Modification

Any bidder may modify his bid by telegraphic communications at any time prior to the scheduled closing time for receipt of bids, provided such telegraphic communication is received by the Owner prior to the closing time, and provided further the Owner is satisfied that a written confirmation of the telegraphic modification over the signature of the bidder was mailed prior to the closing time. The telegraphic communication should not reveal the bid price but should provide the addition or subtraction or other modification so that the Owner will not know the final prices or terms until the sealed bid is opened. If written confirmation is not received within two (2) days from the closing time, no consideration will be given to the telegraphic modification.

Section 008 Qualifications of Bidder

The Owner may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any bid if the evidence submitted by, or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

Section 009 Bid Security

Each bid must be accompanied by cash, certified check of the bidder, or a bid bond prepared on the form of bid bond attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the Owner, in the amount of 5% of the bid. Such cash, checks or bid bonds will be returned promptly after the Owner and the accepted bidder have executed the contract, or if no award has been made within 60 days after the date of the opening of bids, upon demand of the bidder at any time thereafter, so long as he has not been notified of the acceptance of his bid.

Section 010 Liquidated Damages for Failure to Enter into Contract

The successful bidder, upon his failure or refusal to execute and deliver the contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure of refusal, the security deposit with his bid.

Section 011 Time of Completion and Liquidated Damages

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the work order within the time specified in the agreement. It is expressly understood and agreed that the said time for the completion of the work described herein is a reasonable time for the completion of the same. The Contractor may be required to furnish the Engineer with a tentative schedule, in a format acceptable to the Engineer, setting forth in detail the procedure he proposes to follow, and giving dates on which he expects to start and to complete separate portions of the work. If at any time, in the opinion of the Engineer, proper progress is not being maintained, such changes shall be made in the schedule of operations which will satisfy the Engineer that the work will be completed within the time period stated in the "Agreement", or extension thereof made as herein provided.

If the Contractor shall fail to complete the work within the time specified, then the Contractor agrees to pay to the City, not as a penalty, but as liquidated damages for such breach of contract, the sum of one thousand dollars (\$1,000.00) for each and every calendar day of failure to complete the work after the specified time set forth in the "Agreement". The said dollar amount is fixed and agreed upon because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would in such event sustain. In the event the Contractor does not maintain the work schedule accepted by the Engineer, a sum equal to the liquidated damages for the number of days the Contractor is behind schedule shall be retained by the City out of the partial payment requests (payment estimates) due the Contractor to complete the work or any part thereof in the time provided herein. The amount of the damages finally determined to be due the City, may be withheld from any sums determined to be due the Contractor hereunder, or otherwise, as provided by the contract and specifications.

Section 012 Conditions of Work

Each bidder must inform himself fully of the conditions relating to the construction of the project and employment of labor there on. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor

necessary to carry out the provisions of his contract. Insofar as possible the contractor, in carrying his work, must employ such methods or means as will not to cause any interruption of or interference with the work of any other contractor.

Section 013 Addenda and Interpretations

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to: [Seth Barkhimer, P.E., City Engineer City Hall, P.O. Box 1448, Shawnee, Oklahoma 74802-1448](#), and to be given consideration must be received at least five days prior to the date fixed for the opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications which, if issued, will be mailed by certified mail with return receipt requested to all prospective bidders (at the respective address furnished for such purposes), not later than three (3) days prior to the date fixed for the opening of bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.

Section 014 Notice of Special Conditions

Attention is particularly called to those parts of the contract documents and specifications that deal with the following:

TECHNICAL SPECIFICATIONS

DIVISION III

TECHNICAL SPECIFICATIONS

1. Scope of Work: It is the intent of this bid to secure, on a competitive basis, repair for 10 buildings located at the Public Works Maintenance Facility, 111 S Kickapoo Ave. Shawnee, OK 74802. The buildings were damaged during the April 2023 tornado event.
2. Specifications:

1.01 Division 00 – Procurement and Contracting Requirements

- 00 0101 – Project Title Page
- 00 0102 – Project Information
- 00 0103 - Compliance with Federal Requirements

2.01 Division 01 – General Requirements

- 01 1000 – Summary
- 01 2500 – Substitution Procedures
- 01 3000 – Administrative Requirements
- 01 4000 – Quality Requirements
- 01 5000 – Temporary Facilities and Controls
- 01 5719 – Temporary Environmental Controls
- 01 6000 – Product Requirements
- 01 7000 – Execution and Closeout Requirements
- 01 7800 – Closeout Submittals

2.02 – Division 02 – Existing Conditions

- 02 8500 – Mold Remediations

2.03 – Division 03 – Remaining Specifications

- Refer to Building Assessment Report Dated April 4, 2024
- Refer to Building Assessment & Materials Outline Dated February 5, 2024



415 Broadway
Oklahoma City
Oklahoma 73102
V. 405.232.8787
F. 405.232.8810

[City of Shawnee]

[16 W. 9th St]

[Shawnee, Oklahoma 74801]

TAP architecture Project Number: [2321.1]

[April 4, 2024]

[Building Assessment Report]

Project: City of Shawnee-Building Assessments

Public Works

111 S. Kickapoo Ave.

Shawnee, Ok 74801

I. Introduction:

On April 19th an EF-2 tornado severely damaged many existing homes and businesses in Shawnee's city core, including an assisted living center, the Shawnee Mall, Oklahoma Baptist University, Shawnee Regional Airport, Lion's Club Park, the Indoor Skate Park, the Public Works complex and many other structures. The data/information included in this report is intended to show proposed modifications/additions to (1) existing site, Public Works in order to meet current minimum codes and standards in accordance with the FEMA Recovery Interim Policy FP-104-009-11 version 2.1

Location of Site

- Oklahoma State Map
- City of Shawnee Map
- Public Works Site Plan

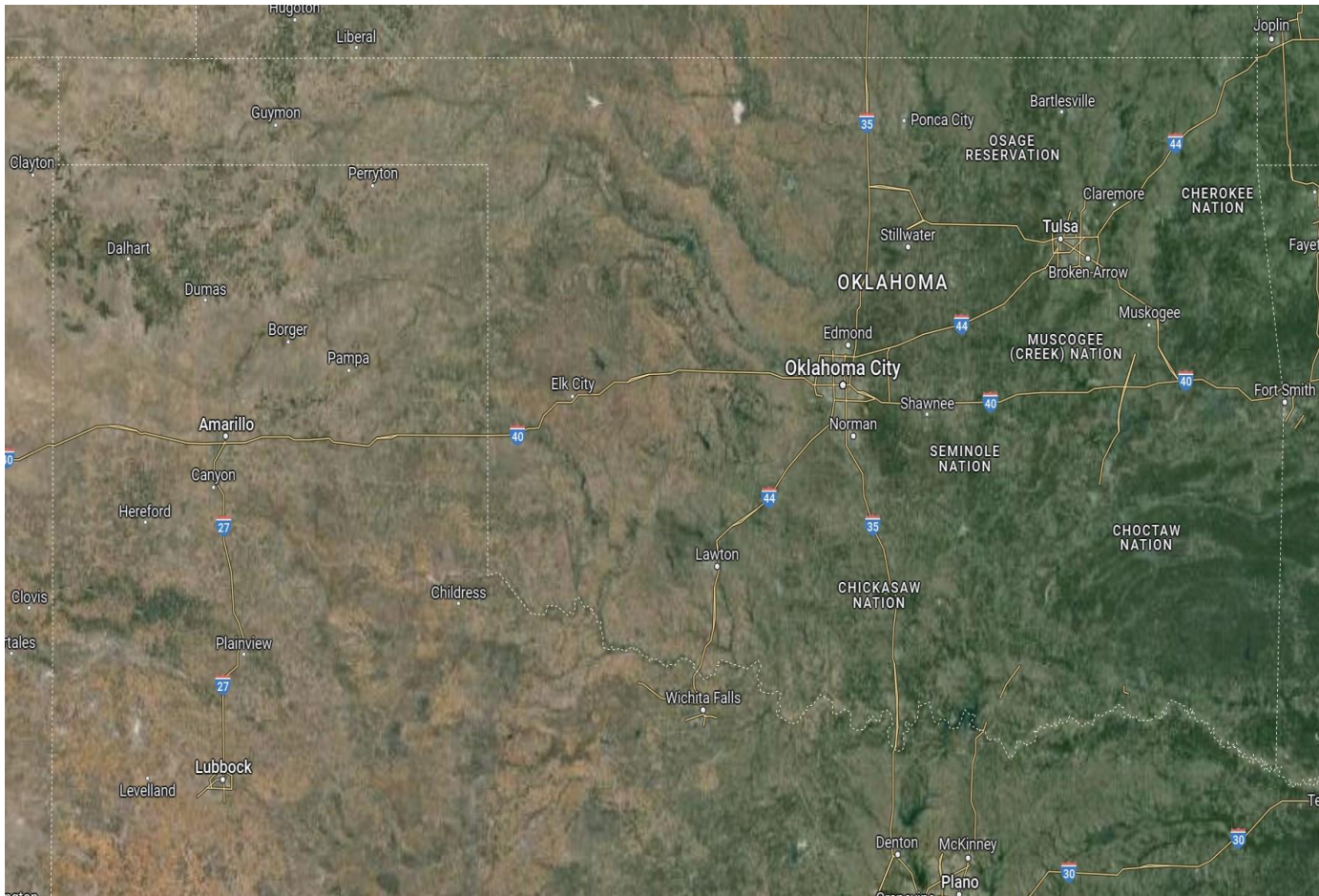


PHOTO #1: Oklahoma State Map.

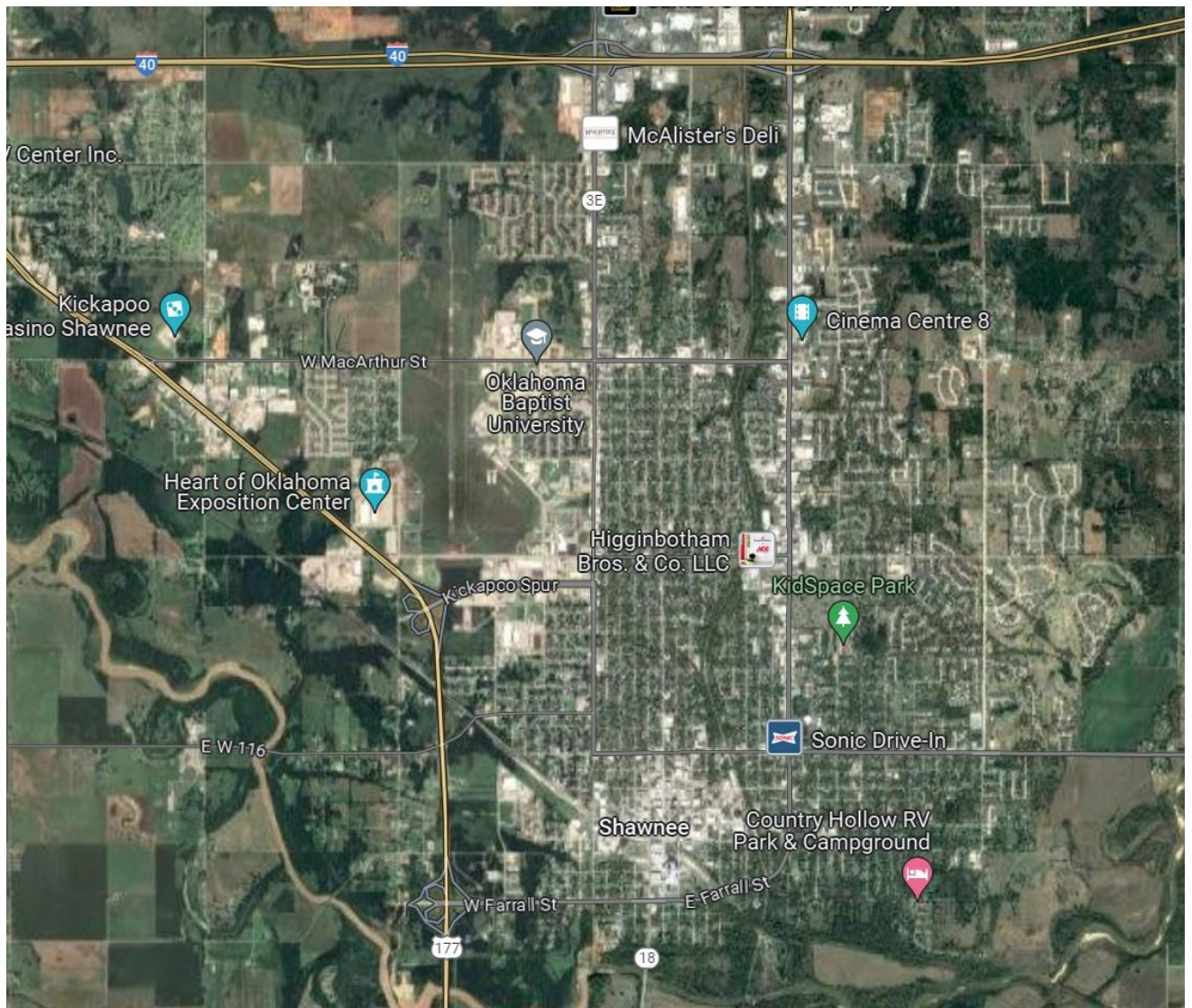


PHOTO #2: City of Shawnee Map.

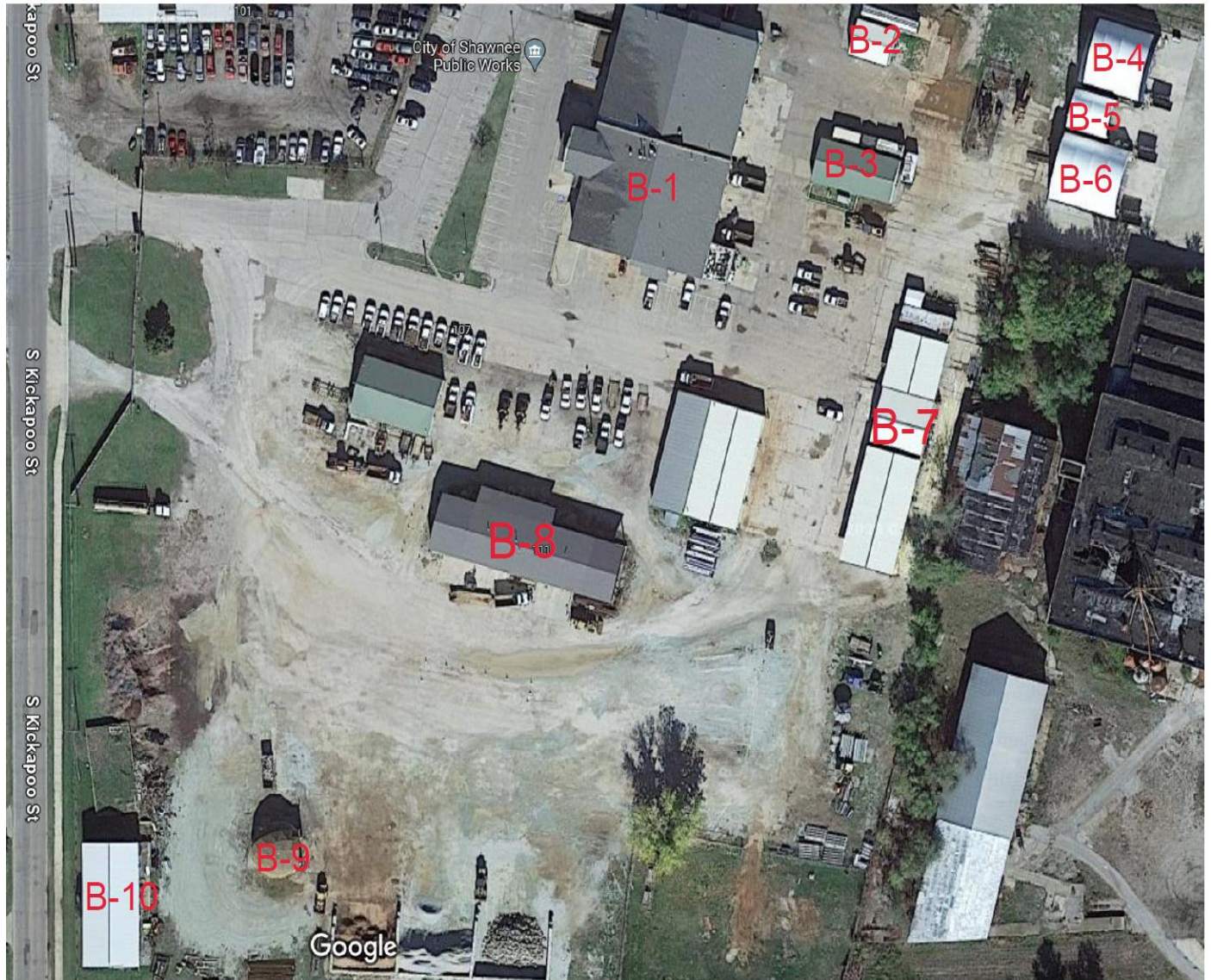


PHOTO #3: Public Works Site Plan before storm damage. (12) total buildings with (10) damaged.

Disaster Information

Shawnee Tornado...

Rating:	EF2
Estimated Peak Wind:	130 to 135 mph
Path Length /statute/:	15.5 miles
Path Width /maximum/:	2300 yards
Fatalities:	0
Injuries:	Unknown
Start Date:	04/19/2023
Start Time:	09:39 PM CDT
Start Location:	3 SE Bethel Acres / Pottawatomie County / OK
Start Lat/Lon:	35.27 / -97.00
End Date:	04/19/2023
End Time:	10:16 PM CDT
End Location:	2 NNW Aydelotte / Lincoln County / OK
End Lat/Lon:	35.47 / -96.93

- During the late afternoon hours of April 19, 2023, thunderstorms formed along a dryline in southwestern and central Oklahoma, and quickly reached severe levels. These supercell thunderstorms eventually produced large hail of 1 to 3 inches in diameter and 18 tornadoes in the area. One strong and damaging tornado killed 1 person in McClain County near the town of Cole. More tornadoes occurred near Tinker AFB, Etowah, Pink, Bethel Acres, and Shawnee.
- EF-2 Tornado moved from south to north for 15.5 miles beginning south of Shawnee and terminating to the north. The tornado tracked just west of Kickapoo Street, through some of the densest areas of town. Many homes and businesses in the city's core were heavily damaged, including an assisted living center, the Shawnee Mall, Oklahoma Baptist University, Shawnee Regional Airport, Lion's Club Park, the Indoor Skate Park, the Public Works complex and many other structures.

II. Building Descriptions (refer bid documents for material quantities)

A. Public Works Site Plan consists of 12 Buildings – Project Scope of work includes 10 Buildings.

Buildings to include: See Attached Site Plan – (Photo #3)

1. B-1: (Building '1') 35.32644,-96.92838 - Steel main frame with masonry veneer building. South end of building with roof damage. Approximately 4' to 5' of perimeter shingles removed along entire south gable end of building. The soffit material below was removed on the south east gable end. No outriggers are in place on the south east gable end where the soffit material has been removed. Add approximately 175 sq' of new composition roofing on underlayment on exterior plywood sheathing. Add 70 sq' of new treated 2x wood outriggers with continuous track each end. Building '1' is the area where the mold testing scope of work is located, and it's on the maintenance side of the facility on the 2nd floor – far southeast office and hallway. Office area is 12' x 11'-4" and will need to replace the following in this room: drywall, ceiling tile, flooring, rubber base, light fixtures and new paint. (Photos #4, #5, #23, #24, #25, #26, #27, #28, #29, #30, #31)
Re: Attached Sketch SK-B1.
2. B-2: (Building '2') 35.32685,-96.92783 - 30x24 Pole Barn. Wood truss & wood framed building with metal panels and metal roof. North side of building with roof removed. Sliding Doors on west side of building damaged. Wood end truss framing damaged. Replace approximately 250 sq' of metal roofing on north side of building and broken 2x4 purlins. Replace West end wood truss and 6x6 wind column. Replace 12x12 metal wall panel, rake trim & 12x12 wood framed metal sliding door. (Photos #6, #7, #8, #9, #10).
Re: Attached Sketches SK-B2, SK-B2.1.
3. B-3: (Building '3') 35.32662,-96.92792 - 25x60 Pole Barn. Wood truss & wood framed building with metal panels and metal roof. Damage to 12x12 sliding wood framed metal panel doors and metal trim on east side of building. Replace 12x12 sliding wood framed metal panel door and metal rake trim.
(Photo #11).
4. B-4: (Building '4') 35.32683,-96.92724 - 45x50 open web steel truss building with membrane structure fabric. Replace roof & end wall membrane structure fabric. (Photo #12)
5. B-5: (Building '5') 35.32672,-96.92729 - 25x30 open web steel truss building with membrane structure fabric. Replace end wall membrane structure fabric.
6. B-6: (Building '6') 35.32662,-96.92733 - 45x50 open web steel truss building with membrane structure fabric. Replace end wall membrane structure fabric. (Photo #13)
7. B-7: (Building '7') 35.32614,-96.92778 - Steel frame open canopy with metal roof. Replace damaged metal roof panels and metal trim. (Photos #14, #15)
8. B-8: (Building '8') 35.32599,-96.92867 - PEMB with (2) damaged Sectional Over Head Doors. Replace both doors. (Photos #16, #17)
9. B-9: (Building '9') 35.32533,-96.92921 - Dome shaped building with wood framing on concrete stem walls. Winds moved the structural wood framing, thus cracking concrete support walls. Roofing materials damaged. Replace roofing, anchor bolt wood structure at base to top of concrete stem wall. For concrete wall repair, inject epoxy in to all cracks in stem wall. (Photos #18, #19, #20, #21)
10. B-10: (Building '10') 35.32524,-96.92958 - Steel and wood framed building. Metal roof panels and wood framing members damaged on southwest corner of roof. Replace approximately 600 sq' of metal roof panels, 400 lineal feet of 2x8 wood purlins, and 300 lineal feet of 2x6 wood roof purlins.
(Photo #22)



PHOTO #4: View looking northwest along south gable wall with roof damage.



PHOTO #5: View looking north along south gable wall with removed soffit & outrigger materials under east gable end.



PHOTO #6: Sliding door removed, metal panels, trim and roof partially removed.



PHOTO #7: North side of roof partially removed with damaged 2x wood purlins.



PHOTO #8: West end wood truss member and 6x6 wind column damaged.



PHOTO #9: West end wood truss member and 6x6 wind column damaged.



PHOTO #10: View of west end 6x6 broken wind column.



PHOTO #11: View of wood framed sliding door, metal panels, trim damaged.



PHOTO #12: View of membrane structure fabric end wall damage.



PHOTO #13: View of membrane structure fabric end wall damage.



PHOTO #14: Damage to roof and metal trim from flying debris at canopy structures.



PHOTO #15: Damage to roof and metal trim from flying debris at canopy structures.



PHOTO #16: Damage to Over Head Door panels and building metal wall panels from flying debris.



PHOTO #17: Damage to Over Head Door panels and building metal wall panels from flying debris.



PHOTO #18: Damage to roofing, wood roof structure & concrete stem wall.



PHOTO #19: Damage to roofing, wood roof structure & concrete stem wall.



PHOTO #20: Damage to roofing, wood roof structure & concrete stem wall.



PHOTO #21: Damage to roofing, wood roof structure & concrete stem wall.



PHOTO #22: Damage to roofing, roof structural members at west wall.



PHOTO #23: Water damage to south, east and west wall due to exposure to elements for months.



PHOTO #24: Flooring has buckled due to excessive exposure to water.



PHOTO #25: Damage to ceiling tile from water exposure for months.



PHOTO #26: Damage to ceiling tile in hallway above door to exit stair.



PHOTO #27: Close up of ceiling tile damage from water in hallway.



PHOTO #28: Open roof for a period of time over the office area that caused the water damage.



PHOTO #29: Close up of open area exposed to water damage area.

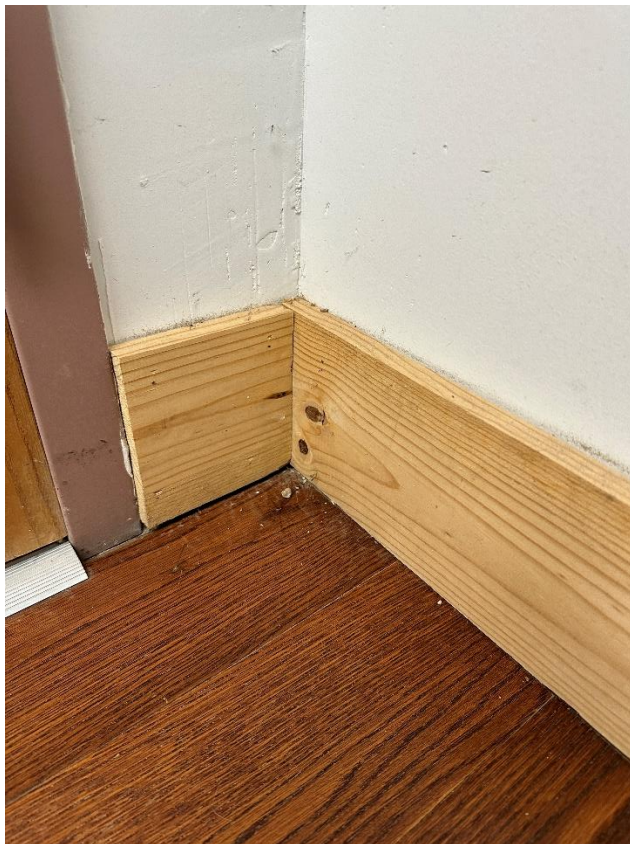
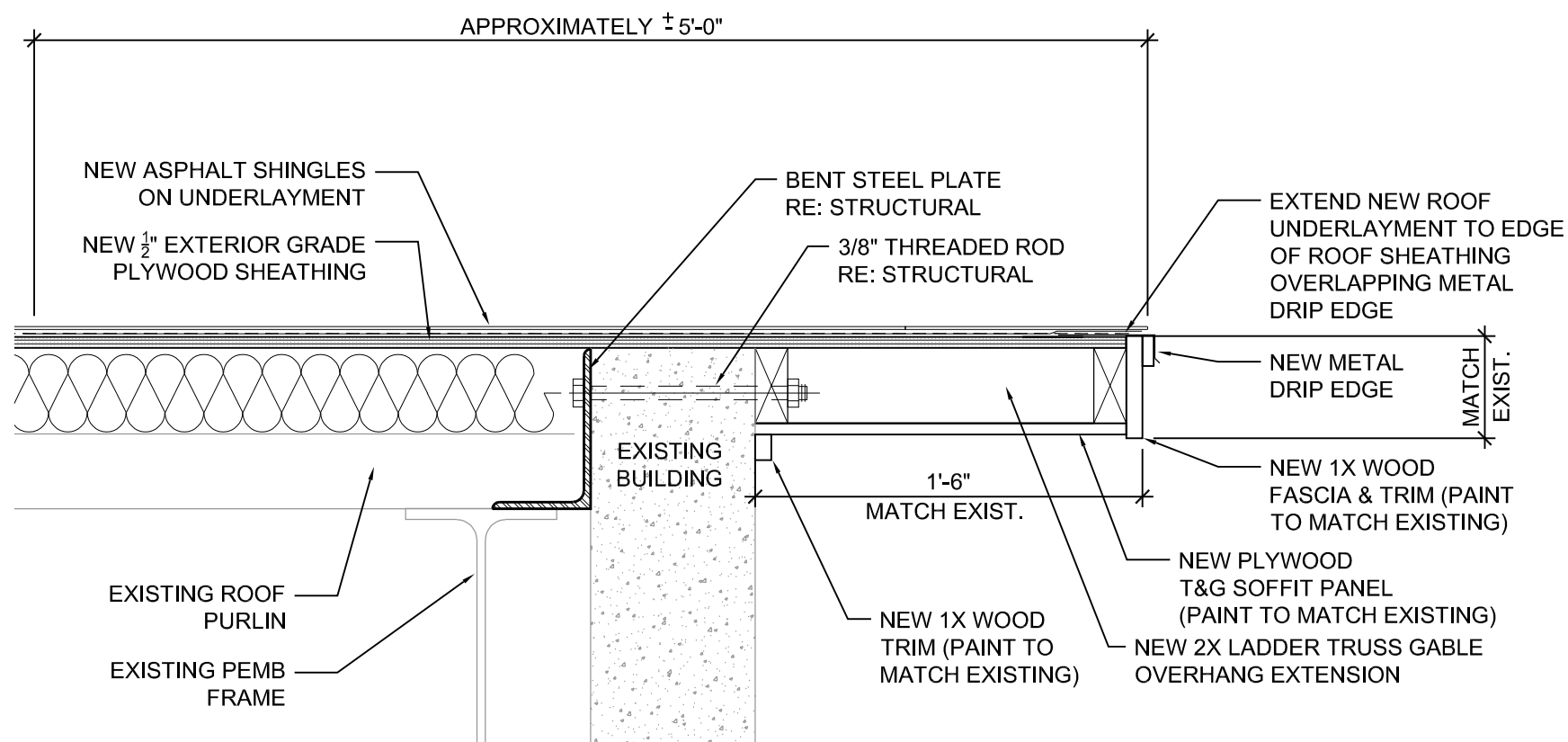


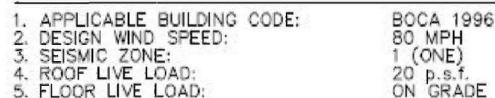
PHOTO #30: Wood base buckled in areas from water damage.



PHOTO #31: Overall view of the ceiling in the office.



01 **RAKE DETAIL**
SCALE: 1 1/2" = 1'-0"



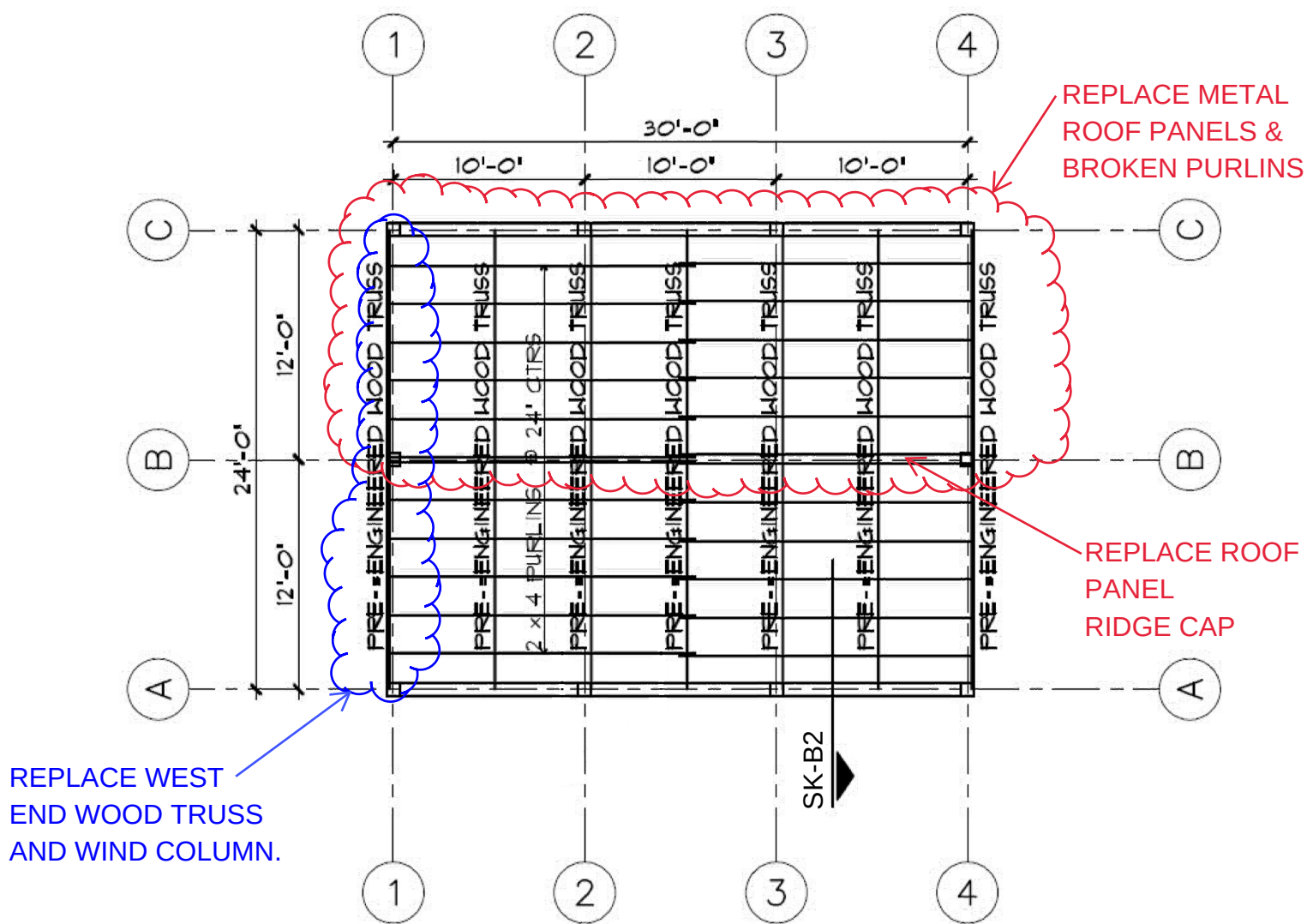
BUILDING SECTION

SCALE: NTS

CITY OF SHAWNEE
Shawnee, Oklahoma

BUILDING B-2
PROJECT No. 2321.1
DATE: 1-30-24

SK-B2.1



WOOD FRAMING NOTES

1. ALL WOOD FRAMING LUMBER TO BE STRESS GRADED WITH A MINIMUM $F_b=1500$ p.s.i. AND $E=1700$ k.s.i.
2. ALL WOOD EXPOSED TO WEATHER MUST BE PRESSURE TREATED.
3. ALL WOOD FRAMING CONNECTORS TO BE "STRONG-TIE" CONNECTORS AS MANUFACTURED BY SIMPSON, OR EQUAL.
4. ALL STRUCTURAL WOOD FRAMING SHALL BE PROPORTIONED, FABRICATED, DELIVERED, AND ERECTED IN ACCORDANCE WITH ALL APPLICABLE SECTIONS OF THE TIMBER CONSTRUCTION MANUAL, AMERICAN INSTITUTE OF TIMBER CONSTRUCTION, CURRENT EDITION.

LOADING NOTES

- | | |
|------------------------------|-----------|
| 1. APPLICABLE BUILDING CODE: | BOCA 1996 |
| 2. DESIGN WIND SPEED: | 80 MPH |
| 3. SEISMIC ZONE: | 1 (ONE) |
| 4. ROOF LIVE LOAD: | 20 p.s.f. |
| 5. FLOOR LIVE LOAD: | ON GRADE |

01
EXISTING ROOF PLAN
SCALE: NTS

MARK EUDALEY *Structural* **ENGINEERS, INC.**

August 8, 2024

City of Shawnee
16 W. 9th St.
Shawnee, Oklahoma 74801
Attn: Andrea Weckmueller-Behringer

Re: Public Works Building B-1
16 W. 9th Street

On July 8, I made a site visit with Russel Megee and Chris Teehee of TAP Architecture in order to evaluate some minor damage which occurred during the tornado event of April 2023. Briefly, the building has a footprint of approximately 200 ft. x 100 ft. The roof configuration is a gable with the ridge running north and south parallel to the 200' dimension. During this event, the wind pressure sucked the south-east section of the rake overhang framing and a few feet of the roof sheathing off of the building. Visual evaluation of the damage has been achieved using drone footage which was provided by the City of Shawnee.

The roof consists of composite shingles over plywood sheathing attached to the metal building purlins. Attached please find a proposed repair detail to secure the top of the wall to the primary building framing and replace the damaged sheathing and rake overhang. I appreciate the opportunity to assist you with this matter.

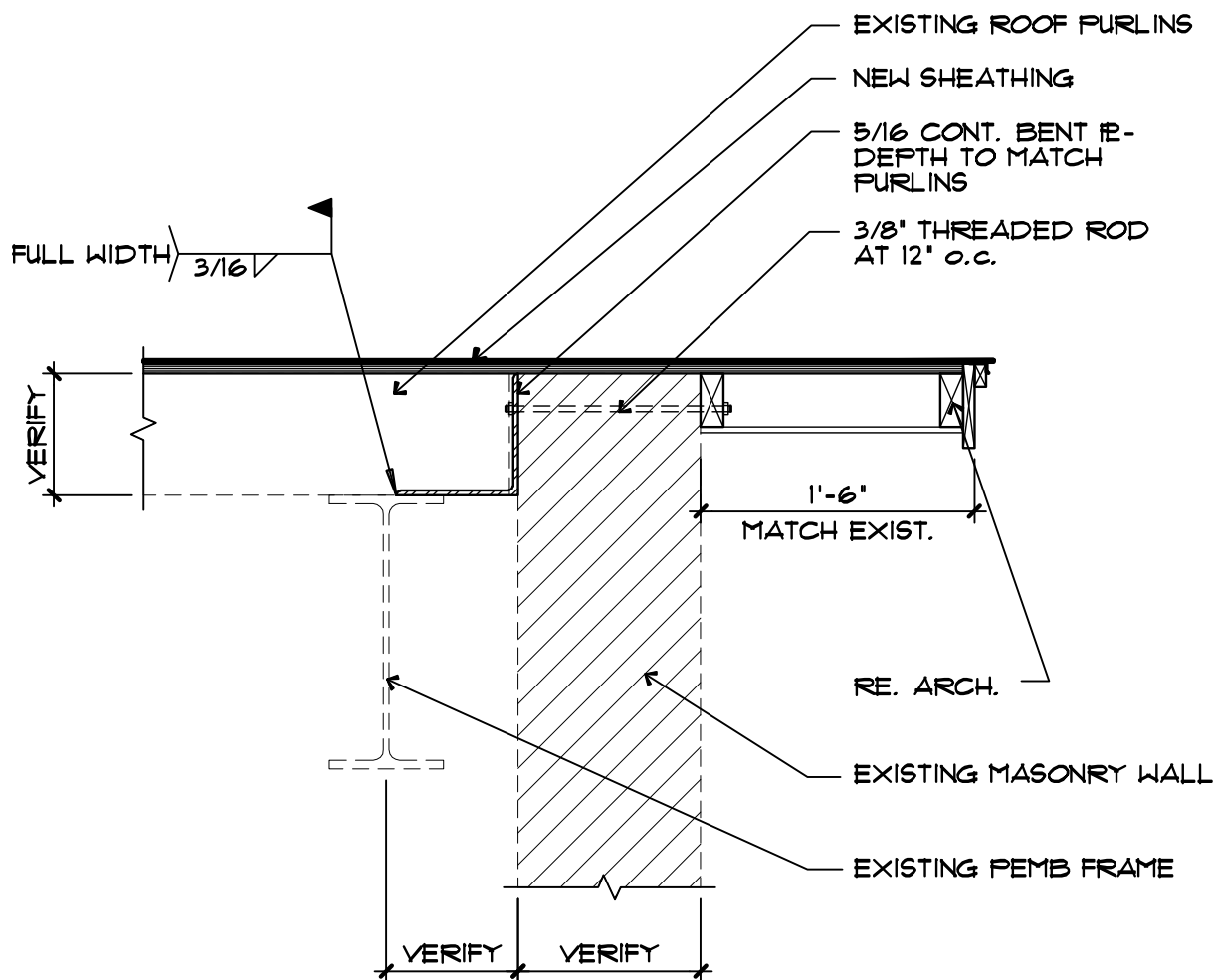
Respectfully,
Brian E. Baker P.E., S.E.



6656 N.W. 39th EXPRESSWAY, SUITE 200 BETHANY, OK 73008-2760
405-789-4433 FAX 405-789-4589 E-MAIL - MEEI@MEEIOK.COM

PROJECT SHAWNEE PUBLIC WORKS BLDG. B-1
 ARCH TAP
 SUBJECT WIND DAMAGE REPAIR
 DATE 8/8/2024

MARK EUDALEY ENGINEERS
 STRUCTURAL ENGINEERS
 6656 N.W. 39th Expressway Bethany, OK. 73008
 CA # 99 / 405.789.4433 / FAX 405.789.4589 / MEEI#24003



GABLE RAKE REPAIR DETAIL

SCALE: 1 1/2"=1'-0"

24002FR01

APPROXIMATE LENGTH OF DAMAGED ROOF IS 50'-0"
 (FIELD VERIFY). EXACT SPACING OF PURLINS IS NOT KNOWN.
 PROVIDE BENT RE SECTIONS BETWEEN PURLINS.

Building 1 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
EXTERIOR DAMAGES						
Roofing Assembly (Damages are to the south end of the building. Partial Roofing assembly was removed).						
Asphalt Shingles	Provide & Install new composition roofing.	175.00	SQ			Asphalt shingles installed over roof deck per IBC 1609.5.1 in accordance with ASCE 7 shall comply with the wind resistance per IBC 1504.1.1.
Felt Underlayment	Provide & Install new felt underlayment	175.00	SQ			
Compromised Plywood sheathing	Remove existing damaged plywood sheathing.	175.00	SF			Labor Only
Plywood sheathing	Provide & Install new plywood sheathing.	175.00	SF			
Gable Framing & Finish Materials (Due to high wind uplift speed wood gable framing was removed.)						
Gable Framing	Provide & install new treated 2x4 ladder truss gable.	0.45	MBF			New Roofing assembly shall meet performance requirements per IBC 1507.2.5 in accordance with 1609.3.1 ultimate design wind speeds for risk category II Buildings.
Gable Finish Fascia	Provide & install treated 1x6 & 1x2 Fascia trim	0.45	MBF			New Roofing Assembly shall meet performance requirements per IBC 1507.2.5 in accordance with 1609.3.1 ultimate design wind speeds for risk category II Buildings.
Metal Drip Edge	Provide & Install new pre-finished metal drip edge	35.00	LF			
Gable Soffit Panel	Provide & Install new Plywood T&G soffit panel.	70.00	SF			New roof system shall meet performance requirements per IBC 1507.2.5 in accordance with 1609.3.1 ultimate design wind speeds for risk category II Buildings.

Interior Office Area - Water Damage						
Drywall	Provide & install new treated 2x4 ladder truss gable.	288.00	SF			Remove and replace south, east and west walls drywall and replace.
Flooring	Provide & install new treated 2x4 ladder truss gable.	144.00	SF			Remove existing flooring and replace with similar finishes as other offices.
Ceiling	Provide & install new treated 2x4 ladder truss gable.	144.00	SF			Remove and replace all ceiling tile in office.
Wall Base	Provide & install new treated 2x4 ladder truss gable.	48.00	LF			Replace existing wood base with standard black 4" rubber base.
Light Fixtures	Provide & install new treated 2x4 ladder truss gable.	2.00	EA			Replace damaged 2x4 lights fixtures with new, match existing LED fixtures.
REPAIR COST TOTALS						

Building 2 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage (Due to damaging winds destroying the roof on north end of the building and compromising the sliding door at the west end, forceful winds are assumed to have damaged the west wood end truss and wind column.)						
Metal Roof Panel (1 Bay North Side)	Remove existing, compromised metal roof panel.	60.00	SF			
Metal Roof Panel (5 Bays North Side)	provide & Install new metal prefinished metal roof Panels complying with ASCE 7.	450.00	SF			New roof system shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II.
2x6 Wood Roof Purlins Entire North Side (6 Bays)	Remove existing, compromised 2x6 wood roof purlins.	150.00	LF			
Roof Purlins	Provide & Install new 2x6 wood roof purlins	150.00	LF			New roof construction shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II.
Metal Wall Panels West Side	Remove existing, compromised metal wall panels	120.00	SF			
Metal Wall Panels West Side	Provide & Install new prefinished metal wall panels complying with ASCE 7-16	240.00	SF			New wall panels shall meet performance requirements in accordance with the design wind
Metal Wall Panels Entire West Side Above sliding door	Remove existing prefinished metal wall panels to be re-installed.	60.00	SF			
Metal Wall Panels Entire West Side Above sliding door	Re-Install existing prefinished metal wall panels complying with ASCE 7-16.	60.00	SF			
Fascia/Drip	Remove damaged fascia/wall trim piece and install new fascia trim	90.00	LF			

North End Bay (Wood Framing)						
Damaged Wood Truss Members	Remove existing 2x6 wood members in damaged north end bay truss.	48.00	LF			
Wood Truss Members	Provide & Install new 2x6 wood members in north end bay truss	48.00	LF			
Damaged Wood Truss Members	Remove existing 2x10 wood members in damaged north end bay truss	48.00	LF			
Wood Truss Members	Provide & Install new 2x10 wood members in north end bay truss.	48.00	LF			
Wood wind Column	Remove existing 8x8 wood wind column	12.00	LF			
Wood wind Column	Provide and install 8x8 wood wind	MBF	LF			
Temporary 2x4 Wood Framed Wall & sheathing(North end)	Remove temporay 2x4 wood framed wall & sheathing	60.00	LF			
New Metal Panel for Sliding Door	Provide & Install New Metal Panel for Sliding Door	144.00	SF			New wall panels shall meet performance requirements in accordance with the design
Wood Framing for sliding door	New 2x4 wood framing for Sliding Door Panel	144.00	SF			
Concrete						
Concrete Footing	Remove existing concrete footing for wind column.	16.00	CF			
Concrete Footing	Pour new concrete footing for new wind column	16.00	CF			
Interior						
Light Fixtures	Disconnect and remove damaged linear mounted light fixture	6.00	EA			
Light Fixtures	Provide & install new linear mounted light fixtures	6.00	EA			
REPAIR COST TOTALS						

Building 3 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage (Due to damaging winds destroying the sliding metal panel door & metal trim at the east end.)						
Metal Rake Trim	Remove damaged metal rake/wall trim piece and install new fascia trim	90.00	LF			
Metal Rake Trim	Provide & Install metal rake/wall trim piece	90.00	LF			
Existing damaged 2x4 Wood Framed Door	Remove existing damaged 2x4 wood framed sliding door	60.00	LF			
Wood Framing for sliding door	New 2x4 wood framing for Sliding Door Panel	60.00	LF			
Metal Door Panel	New Metal Door Panel	60.00	SF			New wall panels shall meet performance requirements in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category
REPAIR COST TOTALS						

Buildings 4 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage - Building B-4 (Due to damaging winds compromising the membrane structure fabric.)						
45x50 Open web steel truss building membrane structure fabric	Remove & Replace One Main Cover	1.00	EA			
45x50 Open web steel truss building membrane structure fabric	45W Provide & Install 2 end wall	2.00	EA			New roof system shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II
REPAIR COST TOTALS						

Buildings 5 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage - Building B-5 (Due to damaging winds compromising the membrane structure fabric.)						
25x30 Open web steel truss building membrane structure fabric	Remove & Replace One end panel	1.00	EA			
REPAIR COST TOTALS						

Buildings 6 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage - Building B-6 (Due to damaging winds compromising the membrane structure fabric.)						
45x50 Open web steel truss building membrane structure fabric	Remove & Replace One end panel	1.00	EA			
REPAIR COST TOTALS						

Building 7 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Canopy Damage (Due to the damaging winds & flying debris, damage to the metal roof & fascia trim along metal canopy.)						
Metal Roof Panels (2 Bays West Side)	Remove existing, compromised metal roof panels.	200.00	SF			
Metal Fascia Trim	Remove damaged fascia trim piece and install new fascia trim	40.00	LF			
Metal Roof Panels (2 Bays West Side)	Provide & Install new prefinished metal roof complying with ASCE 7-16.	200.00	SF			New roof system shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II.
REPAIR COST TOTALS						

Building 8 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage (Due to damaging winds on north end of the building and compromising the Overhead Doors, and metal wall panels)						
Metal Wall Panels North Side	Remove existing, compromised metal wall panels	120.00	SF			Labor Only
Metal Wall Panels North Side	Provide & Install new prefinished metal wall panels complying with ASCE 7-16	240.00	SF			New wall panels shall meet performance requirements in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II
Steel Sectional Overhead Doors	Provide & Install new 9'-0"Wx10'-0"H impact-rated, steel sectional overhead doors.	2.00	EA			Exterior doors to comply with ASTM E330 per IBC 1709.5.2
Fascia/Drip	Remove damaged fascia/wall trim piece and install new fascia trim	90.00	LF			
REPAIR COST TOTALS						

Building 9 - REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
EXTERIOR DAMAGES						
Roofing Assembly (Damages are to the roof framing connections to the concrete stem wall).						
Asphalt Shingles	Provide & Install new composition roofing.	400.00	SQ			Asphalt shingles installed over roof deck per IBC 1609.5.1 in accordance with ASCE 7 shall comply with the wind resistance per IBC 1504.1.1.
Underlayment	Provide & Install new underlayment	400.00	SQ			
Concrete Wall repair	Structural Injection Epoxy	25.00	LF			ASTM C881, AASHTO M235, ASTM D695
Anchor Bolts	Replace anchor bolts. Provide & Install High-Strength Bolts	24.00	EA			
REPAIR COST TOTALS						

Building 10- REPAIR COSTS						
Location/Grouping	Scope of Work Description	Quantity	Unit	Unit Price	Total Estimated Cost	Comments
Building Damage (Due to damaging winds at southwest corner removing the roof panels, wood purlins & wood rafters.)						
Metal Roof Panels (2 Bays Southwest Side)	Remove existing, compromised metal roof panels.	600.00	SF			Labor Only
Metal Roof Panel (2 Bays Southwest Side)	Provide & Install new metal prefinished metal roof Panels complying with ASCE 7.	600.00	SF			New roof system shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II.
2x8 Wood Roof Purlins Southwest Side (2 Bays)	Remove existing, compromised 2x8 wood roof purlins.	400.00	LF			Labor Only
Wood Roof Purlins	Provide & Install new 2x8 wood roof purlins	400.00	LF			New roof construction shall meet performance requirements per IBC 1507.4 & 1609 in accordance with the design wind speed of 115 mph per ASCE 7-16 for Risk Category II.
Existing Damaged Wood Rafters	Remove existing, damaged 2x8 wood rafters.	300.00	LF			Labor Only
Wood Rafters	Provide & Install 2x8 wood rafters.	300.00	LF			New roof construction shall meet performance requirements per IBC 1507.4 & 1609 in accordance with
REPAIR COST TOTALS						



415 Broadway
Oklahoma City
Oklahoma 73102
V. 405.232.8787
F. 405.232.8810

[City of Shawnee]
[16 W. 9th St]
[Shawnee, Oklahoma 74801]

TAP architecture Project Number: [2321.1]

[February 5, 2024]

[Building Assessment & Materials Outline]

Project: City of Shawnee-Building Assessments

Public Works
111 S. Kickapoo Ave.
Shawnee, Ok 74801

I. **Building Descriptions**

A. Public Works Site Plan consists of 12 Buildings – Project Scope of work includes 10 Buildings.

Buildings to include: See Attached Site Plan – (Photo #1)

1. B-1: (Building '1') Steel main frame with masonry veneer building. South end of building with roof damage. Approximately 4' to 5' of perimeter shingles removed along entire south gable end of building. The soffit material below was removed on the south east gable end. No outriggers are in place on the south east gable end where the soffit material has been removed. Add approximately 175 sq' of new composition roofing on underlayment on exterior plywood sheathing. Add 70 sq' of new treated 2x wood outriggers with continuous track each end. (Photos #2, #3)
Re: SK-B1 and Specification Section 07 3111 Fiber Glass-Based Asphalt Shingles.
2. B-2: (Building '2') 30x24 Pole Barn. Wood truss & wood framed building with metal panels and metal roof. North side of building with roof removed. Sliding Doors on west side of building damaged. Wood end truss framing damaged. Replace approximately 250 sq' of metal roofing on north side of building and broken 2x4 purlins. Replace West end wood truss and 6x6 wind column. Replace 10x10 metal wall panel, rake trim & 10x10 wood framed metal sliding door.
(Photos #4, #5, #6, #7, #8).
Re: SK-B2, SK-B2.1 and Specification Section 07 4213 Metal Wall/Roof Panels. Roof & Wall Product/Technical Data Sheet.
3. B-3: (Building '3') 25x60 Wood truss & wood framed building with metal panels and metal roof. Damage to 10x10 sliding wood framed metal panel doors and metal trim on east side of building. Replace 10x10 sliding wood framed metal panel door and metal rake trim. (Photo #9)
Re: Specification Section 07 4213 Metal Wall/Roof Panels. Roof & Wall Product/Technical Data Sheet.
4. B-4: (Building '4') 45x50 open web steel truss building with membrane structure fabric. Replace roof & end wall membrane structure fabric. (Photo #10)
Re: Attached Technical Data Sheet & Fabric Replacement Descriptions.
5. B-5: (Building '5') 25x30 open web steel truss building with membrane structure fabric. Replace end wall membrane structure fabric.
Re: Attached Technical Data Sheet & Fabric Replacement Descriptions.

[City of Shawnee-Building Assessments]
[BUILDING ASSESSMENT OUTLINE]
[February 5, 2024]

6. B-6: (Building '6') 45x50 open web steel truss building with membrane structure fabric. Replace end wall membrane structure fabric. (Photo #11)
Re: Attached Technical Data Sheet & Fabric Replacement Descriptions.
7. B-7: (Building '7') Steel frame open canopy with metal roof. Replace (3) damaged metal roof panels and metal trim. (Photos #12, #13)
Re: Specification Section 07 4213 Metal Wall/Roof Panels.
8. B-8: (Building '8') PEMB with damage to (2) Over Head Doors and metal wall panels. Replace (2) damaged metal wall panels. The doors are the Clopay Commercial Model 524, 9' x 10'. Over Head Door sections can be repaired/replaced to meet Wind Performance Requirements to withstand 30 design psf (45 test psf) positive and negative wind loads. (Photos #14, #15)
The sections can be priced and installed by one of Clopay's local installing door dealers:
 - a. Johnson Equipment Company, 2000 SE 67th ST, OKC, 73149 (405-680-9641)
 - b. Sooner Overhead Door Services, 1700 S Prospect Ave, OKC, 73129 (405-360-4411)Re: Specification Section 07 4213 Metal Wall/Roof Panels and attached Clopay Commercial Model 524 Product Data.
9. B-9: (Building '9') Dome shaped building with wood framing on concrete stem walls. Winds moved the structural wood framing, thus cracking concrete support walls. Roofing materials damaged. Replace roofing, anchor bolt wood structure at base to top of concrete stem wall. For concrete wall repair, Inject epoxy in to all cracks in stem wall. (Photos #16, #17, #18, #19)
Re: Specification Section 07 3111 and Simpson CI-LV Structural Injection Epoxy Product Data
10. B-10: (Building '10') Steel and wood framed building. Metal roof panels and wood framing members damaged on southwest corner of roof. Replace approximately 600 sq' of broken wood purlins and metal roof panels. (Photo #20)
Re: Specification Section 07 4213 Metal Wall/Roof Panels.

Outline Specifications:

SECTION 07 3111 – FIBER GLASS-BASED ASPHALT SHINGLES

PART 1 - GENERAL

1.1 REFERENCES

Standards and Building Codes:

- A. ASTM D 224 -Standard Specification for Smooth-Surfaced Asphalt Roll Roofing.
- B. ASTM D 226 – Standard Specification for Asphalt-Saturated Organic Felt used in Roofing and Waterproofing.
- C. ASTM D 1970 – Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
- D. ASTM D 3018 – Standard Specification for Class A Shingles Surfaced with Mineral Granules.

E. ASTM D 3161 – Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).

F. ASTM D 7158 – Standard Test Method for Wind Resistance of Sealed Asphalt Shingles (Uplift Force/Uplift Resistance Method)

G. UL 2390 – Test Method for Wind Resistant Asphalt Shingles with Sealed Tabs

H. ASTM D 3462 – Standard Specification for Asphalt Shingles Made from Glass felt and Surfaced with Mineral Granules.

I. ASTM D 4586 – Standard Specification for Asphalt Roof Cement, Asbestos –Free.

J. ASTM D 4869 – Standard Specification for Asphalt –Saturated Organic Felt Shingle Underlayment Used in roofing.

K. ASTM E 108 – Standard Test Methods for Fire Tests of Roof Coverings.

L. ASTM C 1549 – Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature using a Portable Solar Reflectometer.

M. ASTM C 1371 – Standard Test Method for Determination of Emittance of Materials Near Room Temperature using Portable Emissionmeters.

N. ASTM D 6757 – Standard Specification for Underlayment Felt Containing Inorganic Fibers.

O. CSA A123.5 – Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.

P. UL 2218 - Impact Resistance of Prepared Roof Covering Materials.

Q. UL 790 – Standard Test Methods for Fire Test of Roof Coverings.

R. ASTM D3018 – Standard Specification for Class A Asphalt Shingles Surfaced with Mineral Granules

S. ASTM E 903 – Standard Test Method for Absorptance Reflectance, and Transmission of Materials Using Integrating Spheres.

1.2 REGULATORY REQUIREMENTS

A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.

B. Provide a roofing system achieving an ENERGY STAR® rating. Install all roofing products in accordance with all federal, state and local building codes.

C. Provide a roofing system achieving a COOL ROOF RATING COUNCIL (CRRC) Install all roofing products in accordance with all federal, state and local building codes.

D. All work shall be performed in a manner consistent with current OSHA guidelines

PART 2: PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer:

Owens Corning Roofing & Asphalt LLC One Owens Corning Pkwy Toledo, OH 43659

2.2 QUALITY ASSURANCE

A. Shingles shall carry Underwriters Laboratories Labels:

1. UL 790, Class A Fire Resistance
2. ASTM D 3161 Wind Resistance
3. ASTM D 3462 Asphalt Shingle Specification
4. CSA A123.5 Canadian Fiberglass Shingle Standard
5. ASTM D 7158 (UL2390/ASTMD6381) Wind Resistance
6. UL 2218 Impact Resistance

B. Install shingles to meet requirements of published Owens Corning instructions.

2.3 ASPHALT SHINGLES

Owens Corning fiber glass-based asphalt shingles complying with ASTM specifications E 108 Class A or UL 790 Class A, D 3462, D 3161 Class "F", D3161 Class "A" D 7158 (UL2390/D6381) Class H, D 3018 Type 1, D 3018, CSA A123.5, UL 2218, Cool Roof Rating Council (CRRC), Energy Star, Florida Building Code (FBC), Miami-Dade County Approved and International Code Council (ICC) Evaluation Report.

2.4 WEATHERLOCK SELF-SEALING ICE & WATER BARRIER

A. WeatherLock® Mat by Owens Corning - ASTM D1970 approved, UL Listed, Mat-faced skid resistant surface, self-adhering, self sealing, bituminous ice and water barrier. Each roll is 36" wide.

B. WeatherLock® G, by Owens Corning- ASTM D1970 approved, UL Listed, granule skid resistant surface, self-adhering, self sealing, bituminous ice and water barrier. Each roll is 36" wide

C. WeatherLock® Cold Climate, by Owens Corning - ASTM D1970 approved, UL Listed, granule skid resistant surface, self-adhering, self sealing, bituminous ice and water barrier. Designed for low temperature adhesion. Each roll is 36" wide

D. WeatherLock® Flex, by Owens Corning - ASTM D1970 approved, UL Listed, Cross laminated poly surface with skid resistant traction surface, self-adhering, self sealing, bituminous ice and water barrier. Each roll is 36" wide

E. WeatherLock® Specialty Tile and Metal, by Owens Corning - ASTM D1970 approved, UL Listed, Polyester surface with skid resistant traction surface, self-adhering, self sealing, bituminous ice and water barrier. Thermally stable in high temperatures up to 260°. Designed for all Tile, Metal, and shingle applications including mechanically fastened tile, foam adhesive set tile and all metals roof systems. Each roll is 36" wide.

2.5 SHINGLE UNDERLAYMENT

A. Fiberglas™ Reinforced Felt Underlayment, by Owens Corning—wrinkle resistant, Water resistant, breather type cellulose/glass fiber composite roofing underlayment. Each roll is 36" wide by 144', covering 4 roof squares.

B. Deck Defense™ High Performance Roof Underlayment, by Owens Corning – weathershedding synthetic tri-layer polyolefin barrier. Material offered in 48" wide by 250' rolls, each covering 10 roof squares.

2.6 FASTENERS

A. Fastener requirement: Use galvanized steel, stainless steel, or aluminum nails minimum 12 gauge shank with 3/8" diameter head. Owens Corning™ recommends that fasteners comply with ASTM F 1667. Check local building codes.

B. All fasteners must be driven flush with the shingle surface and penetrate at least 3/4" into the wood deck. Where the deck is less than 3/4" thick, the fastener should be long enough to penetrate fully and extend at least 1/8" through APA rated roof sheathing.

C. Owens Corning recommends the use of nails as the preferred method of attaching shingles to wood decking or other nailable substrates. If staples are used they must be, corrosion resistant, zinc-coated, 16-gauge minimum with minimum 15/16" crown width. Staples must be long enough to penetrate at least 3/4" into solid decking, or extend a minimum of 1/8" through the APA-rated sheathing

2.10 METAL FLASHING

A. .24 gauge hot-dip galvanized steel sheet, complying with ASTM A 653/A 653M, G90/Z275.

B. 16-oz/sq ft (0.56 mm) copper sheet, complying with ASTM B 370. C. 0.032-inch (0.8 mm) aluminum sheet, complying with ASTM B 209.

End of Section

SECTION 07 4213 – METAL WALL/ROOF PANELS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Exposed fastener metal wall/roof panels, with related metal trim and accessories.

1.2 RELATED REQUIREMENTS

A. Division 05 Section "Structural Steel Framing" for structural steel framing supporting metal panels.

B. Division 07 Section "Metal Roof Panels" for factory-formed metal roof panels.

C. Division 07 Section "Joint Sealants" for field-applied Joint Sealants.

D. Division 13 Section "Metal Building Systems" for steel framing supporting metal panels.

1.3 REFERENCES

A. American Architectural Manufacturer's Association (AAMA): www.aamanet.org:

1. AAMA 621 - Voluntary Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.

2. AAMA 809.2 - Voluntary Specification Non-Drying Sealants.

B. American Society of Civil Engineers (ASCE): www.asce.org/codes-standards:

1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International (ASTM): www.astm.org:

1. ASTM A 653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

2. ASTM A 755 - Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.

3. ASTM A 792/A 792M - Standard Specification for Steel Sheet, 55 % Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

4. ASTM C 645 - Specification for Nonstructural Steel Framing Members.

5. ASTM C 754 - Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

6. ASTM C 920 - Specification for Elastomeric Joint Sealants.

7. ASTM D 1003 - Standard Test Method for Haze and Luminous Transmittance of Transparent Plastics.

8. ASTM D 2244 - Test Method for Calculation of Color Differences from Instrumentally Measured Color Coordinates.

9. ASTM D 4214 - Test Methods for Evaluating Degree of Chalking of Exterior Paint Films.

D. International Accreditation Service (IAS):

1. IAS AC 472 - Accreditation Criteria for Inspection Programs for Manufacturers of Metal Building Systems, Part B.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Basis of Design Manufacturer: Ceco, an NCI Building Systems company; Rocky Mount, NC.
Tel: (800)474-CECO; Web: www.cecobuildings.com

1. Provide basis of design product.

2.2 PERFORMANCE REQUIREMENTS

A. General: Provide metal wall panel system meeting performance requirements as determined by application of specified tests by a qualified testing facility on manufacturer's standard assemblies.

B. Thermal Movements: Allow for thermal movements from variations in both ambient and internal temperatures. Accommodate movement of support structure caused by thermal expansion and contraction. Allow for deflection and design for thermal stresses caused by temperature differences from one side of the panel to the other.

C. Structural Performance: Provide metal panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated:

1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.

2. Deflection Limits: Withstand inward and outward wind-load design pressures in accordance with applicable building code with maximum deflection of $[1/120]$ $[1/180]$ $[1/240]$ of the span with no evidence of failure.

3. Seismic Performance: Comply with ASCE 7, Section 9, "Earthquake Loads."

2.2 METAL WALL/ROOF PANELS

A. Large Tapered-Rib-Profile, Exposed Fastener Metal Panels: Structural metal panel consisting of formed metal sheet with trapezoidal major ribs with intermediate stiffening ribs symmetrically placed between major ribs, installed by lapping edges of adjacent panels.

1. Basis of Design: Ceco, PBR Panel, <http://www.cecobuildings.com/cecobuildings.com/products/panelsystems/wall-panels/pbr-wall-panel-system/>

2. Coverage Width: 36 inches (914 mm).

3. Major Rib Spacing: 12 inches (305 mm) on center.

4. Rib Height: 1-1/4 inch (31.8 mm).

5. Nominal Coated Thickness: [29 gage].

6. Panel Surface: [Smooth].

7. Exterior Finish: [Modified silicone-polyester two-coat system]

8. Color: [Match existing].

2.3 METAL PANEL ACCESSORIES

A. General: Provide complete metal panel assembly incorporating base, corner, and opening trims and miscellaneous flashings, in [manufacturer's standard profiles] [profiles as indicated]. Provide required fasteners, closure strips, support plates, and sealants as indicated in manufacturer's written instructions.

B. Flashing and Trim: Match material, thickness, and finish of metal panel face sheet.

C. Panel Fasteners: Self-tapping screws and other acceptable fasteners recommended by metal panel manufacturer.

1. Exposed Fasteners: Long life fasteners with EPDM or neoprene gaskets, with heads matching color of metal panels by means of factory-applied coating.

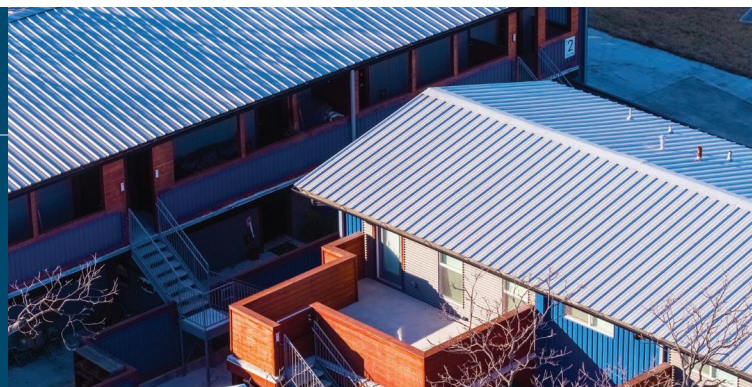
D. Joint Sealers: Manufacturer's standard or recommended liquid and preformed sealers and tapes, and as follows:

1. Tape Sealers: Manufacturer's standard non-curing butyl tape, AAMA 809.2.

End of Section

EXPOSED FASTENING SYSTEMS

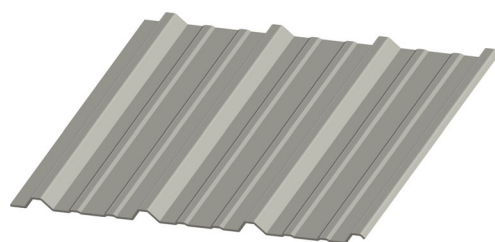
PBR



The PBR panel is commonly used for a wide variety of architectural, agricultural, commercial and industrial applications. PBR is a structural panel and an exposed fastener panel that can be used for both roof and wall applications. The minimum roof slope for PBR is ½:12.

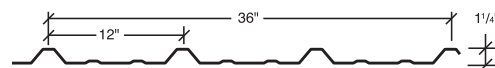
FEATURES AND BENEFITS

- ◆ Numerous UL 580 ratings are available, as well as UL 790, Class A for external fire, roof assembly for UL 263 for internal fire and the UL 2218 Class 4 impact rating.
- ◆ PBR carries Florida approval, Dade county ratings and FM 4471 approval standard for Class 1 panel roofs.



PRODUCT SPECIFICATIONS

- ◆ **Applications:** Roof and Wall
- ◆ **Coverage Widths:** 36"
- ◆ **Rib Spacing:** 12" on center
- ◆ **Rib Height:** 1-¼"
- ◆ **Minimum Slope:** ½:12
- ◆ **Panel Attachment:**
Exposed Fastening System
- ◆ **Gauges:** 26 (Standard);
22, 24, 29 (Optional)
- ◆ **Finishes:** Smooth (Standard);
Embossed (Optional)
- ◆ **Coatings:** Galvalume Plus®,
Signature® 200, Signature® 300

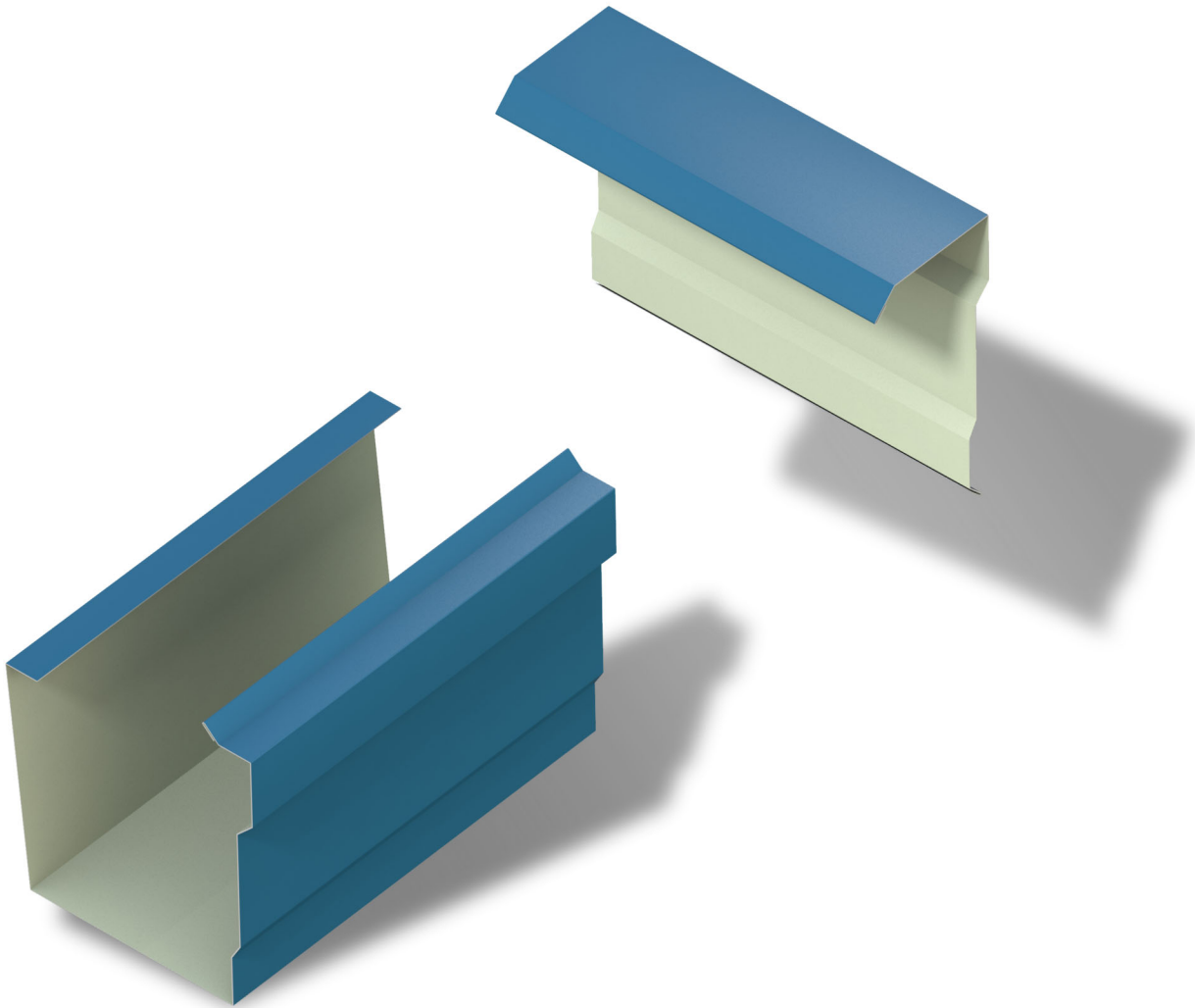


CATEGORY	CHARACTERISTIC	TEST METHOD	PURPOSE	RESULT
ENVIRONMENTAL	Air-leakage Through Roof Panel Joints	ASTM E1680	Determines the air leakage characteristics of metal roof panels under specified air pressure differences at ambient conditions	0.005 cfm/ft2 at 1.57 psf static pressure 0.006 cfm/ft2 at 6.24 psf static pressure
	Water Penetration Through Roof Panel Joints	ASTM E1646	Determines the resistance to water penetration of metal roof panels under uniform static air pressure difference	No uncontrolled water penetration through the panel joints at a static pressure of 20.00 psf
	Impact Resistance	UL 2218	Determines impact resistance of prepared roof covering materials	Class 4 Rating
FIRE RESISTANCE	Room Fire Performance	UL 790	Standard for Standard Test Methods for Fire Tests of Roof Coverings	See Class A Fire Rating Data Sheet
	Room Fire Performance	UL 263	Standard for Fire Tests of Building Construction and Materials	For use in Design Nos. P225, P227, P230, P237, P265, P268, P508, P510, P512, P701, P711, P720, P722, P726, P731, P734, P801, P815, P819.
STRUCTURAL	Uplift Resistance	AISI S100	Provides a standard procedure to evaluate or confirm structural performance under uniform static air pressure difference	See Section Properties and Allowable Load Table Section
	Gravity Loads	AISI S100	North American Specification for the Design of Cold-Formed Steel Structural Members	See Section Properties and Allowable Load Table Section
ROOF LISTINGS	Roof Performance - FM Global	FM 4471	Sets performance standards for panel roofs including uplift resistance	See FM Engineering Tech Bulletin
	Roof Performance -Underwriters Laboratories	UL 580	Determines the uplift resistance of roof assemblies consisting of the roof and roof coverings materials	Class 90 Rating - Construction Number 30, 54, 79, 104, 112, 161, 167, 184 and 542
	Roof Performance - Miami-Dade County	TAS 125 TAS 201 TAS 100 FM 4471 App. G	The Product Control Approval System establishes a protocol to evaluate the standards of products used in construction in Miami-Dade County. Miami-Dade County, with its inclusion in the High Velocity Hurricane Zone (HVHZ), has the most stringent code requirements of the Florida Building Code. Therefore, all products that comprise the structure's building envelope –doors, shutters, windows, prefabricated buildings and truss plates–require the issuance of an approval in order to be used for construction in Miami-Dade County	See NOA # 12-0123.07
	Roof Performance - Florida Approval	ASTM E 1592 FM 4471 UL 790	Florida product approval is the approval of products and systems, which comprise the building envelope and structural frame, for compliance with the structural requirements of the Florida Building Code	See FL# 11868.1
	Roof Performance - Texas Department of Insurance	ASTM E 1592	TWIA provides windstorm and hail insurance in areas exposed to hurricanes and currently provides windstorm and hail coverage in the following 14 "first tier" Texas coastal counties: Aransas, Brazoria, Calhoun, Cameron, Chambers, Galveston, Jefferson, Kenedy, Kleberg, Matagorda, Nueces, Refugio, San Patricio and Willacy	See RC-358 and RC-393

Descriptions and specifications contained herein were in effect at the time this publication was approved for printing. In a continuing effort to refine and improve products, Ceco Building Systems reserves the right to discontinue products at any time or change specifications and/or designs without incurring obligation. To ensure you have the latest information available, please inquire or visit our website at cecobuildings.com.

Edgecraft™

The preferred profile for gutter and rake trim.



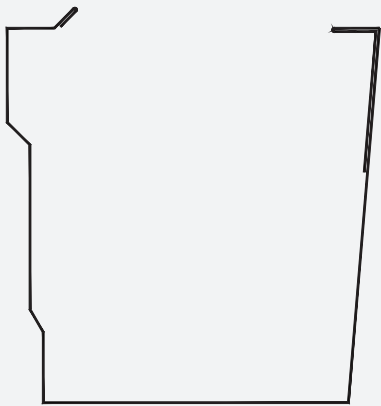
Finally, a high-quality profile that brings edge and sophistication to any building. This intricate design features a waterfall profile, completing your building's façade by adding details to the gutter and rake while properly shedding water.

Edgecraft™ is available in more than thirty colors as a siliconized polyester or PVDF and is made to complement our wide selection of panels and trim. Standard lengths are 20'2" and 8'2" for both single skin and insulated metal panels.

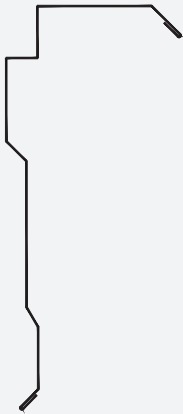
Contact your sales representative for more information.

Product Details

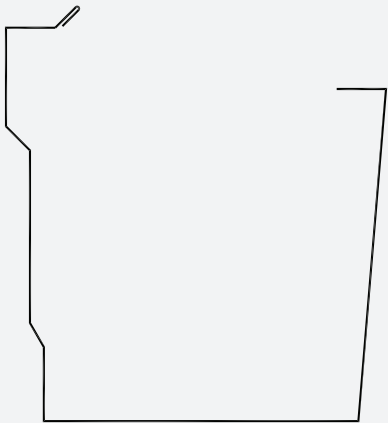
Edgecraft™ is available in Northern, Northern Large, Southern and Southern Large profiles. The following details are for exhibit purposes only. Refer to SearchLight for standard parts and construction drawings.



NORTHERN GUTTER
Edgecraft Northern Standard Gutter
All Roof Types Supported



NORTHERN RAKE
Edgecraft Northern Standard Rake
All Roof Types Supported



SOUTHERN GUTTER
Edgecraft Southern Standard Gutter
All Roof Types Supported



SOUTHERN RAKE
Edgecraft Southern Standard Rake
All Roof Types Supported



CECOBUILDINGS.COM
800-474-CECO

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Membrane Structure Fabric with ArmorKote

RU88X-6, 400

DESCRIPTION

RU88X-6, 400 is a heavyweight fabric for applications requiring UV stability. The scrim is produced in a special weaving pattern to enhance flatness, abrasion resistance, and tear properties. The proprietary coating is used to enhance abrasion resistance, flex resistance, seam strength, UV resistance and longevity. RU88X-6, 400 is perfect for a wide range of building applications in agriculture, oil and gas, mining, recreation and municipal structures.

FABRIC SPECIFICATIONS

Weave: Woven clear HDPE scrim
Coating: LDPE, 4 mil average each side (95 g/m²/side)
Color: Natural (clear), white, blue, green, red, beige and other colors available upon request
Weight: 12 oz/yd² (407g/m²) +/- 5 %

ROLL SPECIFICATIONS

Cores: 4 inch I.D. or 5 inch I.D. available
Width: Up to 144 inches (-0, +0.5) as ordered
Length: Minimum 250 yds/roll; up to 1000 yds/roll

These values are typical data and are not intended as limiting specifications.



100 Paramount Drive, Suite 300 | Sarasota, FL 34232 | USA
Customer Service: 800.565.2000
www.itape.com | info@itape.com

While we believe them to be reliable, the statements and information herein are only for general guidance and are not warrants or guarantees for accuracy and completeness. The user must, by test or otherwise, determine suitability for this purpose. There is no warranty of fitness for a particular purpose. Our standard term and conditions of sale apply exclusively to all orders, and all liability for damages of any kind, including consequential, exceeding purchase price is excluded. No one is authorized by us to make oral warranties. We reserve the right to make changes without notice or obligation in our products and publications.

EFFECTIVE: 01/18

INTERTAPE POLYMER GROUP TECHNICAL DATA SHEET

PERFORMANCE PROPERTIES

The following data are typical values based on ASTM standard tests. These data should not be considered specification.

Thickness ASTM D1777	23 mil (0.59 mm)
Grab Tensile ASTM D5034	Warp 370 lb 1664 N / Weft 345 lb 1532 N
Strip Tensile (N/5cm) ASTM D5035	Warp 245 lb/in (2178)/Weft 235 lb/in (2086)
Tongue Tear ASTM D2261	Warp 110 lb 488 N / Weft 100 lb 444 N
Trapezoidal Tear ASTM D4533	Warp 95 lb 422 N / Weft 90 lb 400 N
Mullen Burst ASTM D3786	655 psi / 4512 kPa
Accelerated UV Weathering¹ ASTM G154	>90 % strength retention after 2000 hrs exposure @ 0.77 W/m ² /nm, or 1200 hrs exposure @ 1.35 W/m ² /nm
Accelerated Natural Weathering ASTM G90	>80 % strength retention after 5 Florida Standard Years ²
Low Temperature Bend ASTM D2136	-60°C

¹ Q.U.V [A-340 Lamps]; 8 hrs UV @ 60°C; 4hrs condensation @ 50°C ² 1333 MJ

FR PERFORMANCE

This product meets the requirements of ASTM E84-00a (Class 1).

NovaShield
BRAND

CLOPAY COMMERCIAL – MODELS 524, 524V, 524S industrial series



Model 524, 10'2" x 14" Doors; Shown with 24" x 6" Lites

RIBBED STEEL DOORS

Available non-insulated (524) or insulated (524V/524S) with polystyrene insulation. Ideal for commercial and industrial building applications. R-Value 6.6 available on models 524V and 524S.

- Polystyrene insulation available on 524V and 524S.
- Three-stage paint process delivers a virtually maintenance-free finish.
- Tog-L-Loc® joining system's advanced design eliminates the need for antiquated welds and rivet construction, improving rust and leak prevention.
- Injection-molded lite frames with integral weatherseal are durable and seal against the elements. Multiple glass options available providing visibility or privacy.



Steel skins are protected through a tough, layered coating system, including a hot-dipped galvanized layer, a protective metal oxide pretreatment and a baked-on primer and top coat. Ten-year warranty against rust-through.

EXTERIOR SKIN PATTERN



Deep Ribbed

COLOR OPTIONS



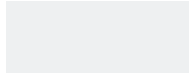
Standard White

Commercial Tan

Chocolate



Gray



Trinar® White*

* Additional charges apply.
Due to the printing process,
colors may vary.

CUSTOM PAINT OPTION



Color Blast® finish offers more than 1,500 Sherwin-Williams® color options to complement your building design. This durable two-part paint system has been thoroughly tested and is backed by a five-year warranty.

Due to solar reflective formulation to meet greater than a 38 LRV, some colors may not be available.

FEATURES

STANDARD HARDWARE

- TPE astragal in corrosion-resistant retainer
- Commercial 10-ball steel rollers (nylon tires available)
- Steel step plate and lift handle
- Galvanized steel end stiles
- Inside slide lock for increased security
- 2" track
- 10,000 cycle springs
- Galvanized aircraft cable with minimum 7:1 safety factor
- Variety of track configurations to meet building specifications

MATERIALS AND CONSTRUCTION

Panel Thickness	2"
Insulation	1-3/8" polystyrene (Available on Models 524V and 524S)
R-value	6.6* (Available on Models 524V and 524S)
Joining System	Tog-L-Loc®
Exterior Steel	24 gauge (.58 mm)
Interior Cover	Vinyl backing (Available on Model 524V) Painted steel back cover (Available on Model 524S)
Exterior Steel Emboss	Smooth
Max Width	26'2"
Max Height	24'
Exterior Colors	Standard White, Commercial Tan, Chocolate, Gray and Trinar® White. Also available in Color Blast® finish
Interior Color	Standard White
Limited Warranties	10-year standard paint 5-year Color Blast® finish 1-year materials and workmanship

*Calculated door section R-value is in accordance with DASMA TDS-163.

For special sizes, applications and options,
consult customer service at 1-800-526-4301.

ADDITIONAL OPTIONS

WINDOW OPTIONS



24" x 6"



24" x 12"



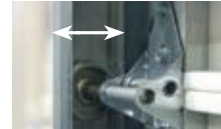
Full-View

Glazing options for 524 include DSB, plexiglass and wire glass. Double pane insulated windows are available for Models 524V and 524S. Prepainted full-view section with White or Chocolate finish available with DSB glass, plexiglass, wire glass or insulated glass.

HEAVY-DUTY HARDWARE (where not standard)



Double-end hinge



3" Track



High performance hardware features 10 gauge end hinges, heavy-duty top bracket and 3" sealed roller with 5/8" stem.

MULLIONS



Carry-away, roll-away or swing-up mullions are available on select sizes.

EXHAUST PORT



Can be cut into any type of sectional door. Available in select sizes.

SAFE-T-STOP™ CHAIN HOIST



Hand chain hoist with an integral braking system providing controlled descent for sectional doors.



WindCode® design pressure (DP) up to 52 PSF depending on size. Models tested 50% greater than DP.



Upgrade your standard door with industrial-grade components.

HIGH CYCLE SPRINGS



25,000, 50,000 or 100,000 cycle springs available.

DISTRIBUTED BY:



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CMDC-0524-02_REV0423

DESCRIPTION

CI-LV Low-Viscosity Structural Injection Epoxy is a two-component, high-solids, moisture-tolerant epoxy specially designed for pressure injection, gravity feeding and flood coat filling of concrete cracks; for increasing the bond between freshly placed repair mortars or concrete mixes and existing concrete; and for use as a repair mortar.

SPECIFICATION COMPLIANCE

- Meets the requirements of: ASTM C881 & AASHTO M235, Type I/II, Grade 1, Class B
ASTM C881 & AASHTO M235, Type I/IV and II/V, Grade 1, Class C
- Approved under NSF/ANSI Standard 61 (1.22cm²/L)

ASSESSMENT

WHERE TO USE

- Pressure-injection of cracks in structural concrete
- Gravity-feed and flood coat of cracks in horizontal concrete
- As a low-viscosity epoxy (350 cP) for repair of hairline cracks (0.05 mm) and cracks up to ¼" (6 mm) in width
- For structural repairs
- To bond new concrete or repair mortars to existing concrete
- For underwater pressure-injection applications
- For use as a repair mortar

FEATURES

- Chemically bonds with the concrete to provide a structural repair. CI-LV seals the crack from moisture, protecting rebar in the concrete from corrosion.
- Moisture-tolerant, can be used on dry and damp surfaces
- Low surface tension allows the material to effectively penetrate narrow cracks
- Formulated for maximum penetration under pressure
- Suitable for pressure injection or gravity-feed applications
- Non-shrink and resistant to oils, salts and mild chemicals
- Can be used with metered pressure-injection equipment
- Freeze-thaw resistant

PRODUCT DATA

Generic Description

Epoxy resin

Packaging

32 fl. oz. (946 mL) dual cartridge (CILV32), 5/carton;

3 US gallon (11.4 L) bulk kit (CILV3KT) contains:

- (2) 1 US gallon (3.8 L) cans of Component "A" (CILV1A)
- 1 US gallon (3.8 L) can of Component "B" (CILV1B)

Cured Color

Dark Amber

Shelf Life

2 years in unopened packaging

Storage

Store dry between 45°–90°F (7°–32°C)

VOC

2 g/L (mixed)

APPLICATION DATA

Mixing Ratio (By Volume)	2:1
Yield	231 in. ³ /US gal. (0.001 m ³ /L)
For Flood-Coat Applications	150–200 ft. ² /US gal. (3.7–4.9 m ² /L) depending on surface profile and porosity
Pot Life, 1 Quart (0.95 L)	10 minutes at 90°F (32°C) 25 minutes at 72°F (22°C) 100 minutes at 50°F (10°C)
Thin Film (5 mil) Cure Time at 72°F (22°C), ASTM D5895	Set to Touch: 3:50 hours Dry Through: 6:15 hours

APPLICATION DATA — MORTAR

Maximum Mixing Ratio (By Volume)	1 part CI-LV: 5 Parts FX-702
Pot Life, 1 Quart (0.95 L)	90 minutes at 72°F (22°C)
Yield, 1 gallon (3.8 L) CI-LV with 5 gallons (19 L) of dry, loose sand	3.7 gallons (14 L) of mortar



TECHNICAL INFORMATION

Compressive Strength

	40°F (4°C) psi (MPa)	60°F (16°C) psi (MPa)	72°F (22°C) psi (MPa)	90°F (32°C) psi (MPa)	Test Standard
4-hour cure	—	—	—	9,800 (67.6)	ASTM D695
8-hour cure	—	—	5,000 (34.5)	10,100 (69.6)	
16-hour cure	—	—	9,100 (62.7)	10,350 (71.4)	
24-hour cure	—	6,250 (43.0)	9,250 (63.8)	10,450 (72)	
3-day cure	5,350 (36.9)	10,800 (74.5)	10,700 (73.8)	11,150 (76.9)	
7-day cure	9,100 (62.7)	11,250 (77.6)	11,000 (75.8)	11,150 (76.9)	
14-day cure	11,000 (75.8)	11,800 (81.4)	11,250 (77.6)	11,150 (76.9)	
28-day cure	12,150 (83.8)	12,000 (82.7)	11,600 (80.0)	11,450 (78.9)	

Temperature Range	Class B 40°–60°F (4°C–16°C)	Class C >60°F (16°C)	Test Standard
Epoxy Classification	Types I, II Grade I (LV)	Types I, II, IV, V Grade I (LV)	ASTM C881
Viscosity, Mixed¹	1,500 cP	350 cP	ASTM D2556
Gel Time, 60 gram mass¹	400 minutes	45 minutes	ASTM C881
Bond Strength, Slant Shear: Hardened to Hardened Concrete, 2-day cure ² Hardened to Hardened Concrete, 14-day cure ² Fresh to Hardened Concrete, 14-day cure ³	1,100 psi (7.6 MPa) 2,150 psi (14.8 MPa) 1,850 psi (12.8 MPa)	2,400 psi (16.5 MPa) 3,450 psi (23.8 MPa) 1,850 psi (12.8 MPa)	ASTM C882
Tensile Strength, 7-day cure²	5,550 psi (38.2 MPa)	7,950 psi (54.8 MPa)	ASTM D638
Elongation at Break, 7-day cure²	2.2%	3.2%	ASTM D638
Flexural Strength, 14-day cure²	5,500 psi (37.9 MPa)	11,900 psi (82.0 MPa)	ASTM D790
Modulus of Elasticity in Compression, 7-day cure²	318,000 psi (2,190 MPa)	382,000 psi (2,630 MPa)	ASTM D695
Heat Deflection Temperature, 7-day cure³		127°F (53°C)	ASTM D648
Glass Transition Temperature, 7-day cure³		136°F (58°C)	ASTM E1356
Water Absorption, 7-day cure⁴		0.12%	ASTM D570
Linear Coefficient of Shrinkage³		0.003 in./in. (0.003 cm/cm)	ASTM D2566
Coefficient of Thermal Expansion³		5.82E-5 in./in. F (1.05E-4 cm/cm C)	ASTM C531
Shore D Hardness, 24-hour cure³		82	ASTM D2240
Shore D Hardness, 7-day cure³		82	ASTM D2240
Adhesion to Concrete, 24-hour cure³		1,100 psi (7.6 MPa)	ASTM D7234

1. Class B tested at 50°F (10°C), Class C tested at 72°F (22°C)

2. Class B cured at 40°F (4°C), Class C cured at 60°F (16°C)

3. Cured at 72°F (22°C)

4. Cured at 72°F (22°C), immersed in water 24 hours

TECHNICAL INFORMATION — WHEN USED AS A MORTAR

Tests performed at 1 part by volume of mixed CI-LV to 5 parts by volume of FX-702

Compressive Strength

	40°F (4°C) psi (MPa)	60°F (16°F) psi (MPa)	72°F (22°F) psi (MPa)	Test Standard
1-day cure	250 (1.7)	6,650 (45.9)	7,600 (52.4)	ASTM C579
7-day cure	6,500 (44.8)	7,200 (49.6)	8,100 (55.8)	
28-day cure	6,600 (45.5)	7,350 (50.7)	8,400 (57.9)	
	72°F (22°C) psi (MPa)			Test Standard
Flexural Strength, 7-day cure	2,250 (15.5)			ASTM C580
Tensile Strength, 7-day cure	1,200 (8.3)			ASTM C307
Bond Strength, Slant Shear Hardened to Fresh Mortar, 7-day cure	1,350 (9.3)			ASTM C882

LIMITATIONS

- For optimal product performance, do not apply to surfaces below 40°F (4°C) or above 90°F (32°C)
- Material is a vapor barrier after cure
- Not for use on exterior slab on-grade coating applications
- For use in non-moving cracks only
- Product may discolor if exposed to direct sunlight
- Not for use in actively leaking or seeping cracks
- Remove active hydrostatic pressure before attempting injection
- For cracks wider than ¼ in. (6 mm), consult a qualified engineer
- When used as a bonding agent, repair mortars and concrete mixes must be applied while CI-LV is still tacky

SURFACE PREPARATION

Gravity Feed Crack Repair: Crack and surrounding surface must be sound, clean and free of all contaminants that could impair product adhesion, bond or performance. If possible seal backside of crack. Open the crack with an abrasive or diamond blade to create a reservoir for the epoxy. Blow out the crack with minimum 80 psi (550 kPa) oil-free, compressed air to remove any visible debris.

General Concrete Repair/Flood Coat: Concrete surface must be sound, clean and free of all contaminants that could impair product adhesion, bond or performance. All cracks, spalls, and voids must be repaired prior to coating installation. Concrete should be a minimum of 28 days old or substantially cured to the equivalent design strength prior to CI-LV installation. Prepare the surface by abrasive blasting or other mechanical means to achieve an open pore structure and profile per ICRI Guideline 310.2 CSP 3-5. Remove all loose or deteriorated concrete by chipping hammer, water jetting or other mechanical means to achieve an open pore structure and sound concrete surface. Remove all cleaning media and debris by vacuum or blowing with high-pressure, oil-free air.

Pressure Injection: Prepare surface area around crack by abrasive blasting or other mechanical means, taking care not to impact any debris into the crack. Blow out the crack with minimum 80 psi (550 kPa) oil-free, compressed air to remove any visible debris. For surface mounted ports, use a suitable paste-over material such as CIP-LO, CIP-F, ETR16, or FX-764 (Underwater Applications) to adhere the ports to concrete surface. For drill-in ports, drill the appropriate sized hole and set. Paste over and seal the entire crack, and port bases using a putty knife. Apply the paste-over material at a minimum thickness of ¾ in. (5 mm) and 1 in. (25 mm) wide. Cover port bases with a minimum thickness of ¼ in. (6 mm) and extend the paste-over at least 1 in. (25 mm) beyond the base of the port. If possible, seal the backside of the crack. Allow paste-over material to fully cure before injecting.

Bonding Agent: Concrete surface must be sound, clean and free of all contaminants that could impair product adhesion, bond or performance. Concrete should be a minimum of 28 days old or substantially cured to the equivalent design strength prior to CI-LV installation. Prepare concrete in accordance with ICRI Guideline 310.2R CSP 5-9, taking care to avoid micro-cracking. Remove all loose or deteriorated concrete by chipping hammer, water jetting, or other mechanical means to achieve an open pore structure and sound concrete surface. Remove all cleaning media and debris by vacuum or blowing with high-pressure, oil-free air.

Repair Mortar: Prepare the surface by abrasive blasting or other mechanical means to achieve an open pore structure and profile per ICRI Guideline 310.2 CSP3-6. Prepare the repair area in accordance with ICRI Guideline No. 310.1R, taking care to avoid microcracking. Prime exposed reinforcing steel with a zinc-rich primer such as FX-406.

MIXING

For Neat Resin: For optimal product performance, condition individual components to 70°F (21°C) and stir thoroughly prior to use. Do not prepare more material than can be used within the pot life of the product. Proportion components at a 2A:1B ratio by volume in a clean pail or use calibrated mixing equipment. Mix thoroughly with a low-speed (300–600 rpm) drill and mixing paddle for 2–3 minutes, scraping unmixed material from sides and bottom of mixing container as needed to achieve a uniform consistency. Avoid entrapping air into mixture.

Dual Cartridges: Hold cartridge upright, unscrew retaining nut and remove plugs. Attach Simpson Strong-Tie EMNO22 mixing nozzle (included) to the top of cartridge and secure with retaining nut. Insert cartridge into dispensing tool. When using a pneumatic dispensing tool, regulate air pressure to 80–100 psi (550–690 kPa). **IMPORTANT:** Cartridge must be equalized prior to use. Failure to follow these instructions can result in product not properly curing. To ensure proper mixing ratio, orient the cartridge and tool in an upward direction so any entrapped air can escape into the mixing nozzle. Begin by squeezing the trigger on the tool until the mixing nozzle is completely full. Once full, re-orient the cartridge and tool to the side and dispense 3 full trigger pulls (approximately ½ fl. oz./15 mL) and ensure all air bubbles are out of the cartridge before beginning the injection process. Repeat if necessary. Dispose of unmixed adhesive in accordance with local regulations. When properly mixed, CI-LV will be a uniform amber color. Modification or improper use of mixing nozzle may impair adhesive performance. To store partially used cartridges, leave hardened nozzle in place. To re-use, attach new nozzle. Adhesive will start to gel in the nozzle if allowed to stand beyond the listed pot life. Adhesive will gel faster at higher temperatures. Material under pressure can blow out the back of the cartridge if the adhesive in the nozzle hardens.

Repair Mortar: Mix neat resin as stated above, then slowly add up to 5 parts by volume of FX-702 oven dried rounded silica filler for every 1 part by volume of mixed CI-LV, to avoid clumping, while continuing to mix for approximately 2–3 minutes or until a uniform consistency is achieved, scraping the pail as needed. For large batches, mix neat resin as stated above, then transfer the mixed liquid to a mortar mixer and add FX-702, and continue mixing for 2–3 minutes or until a uniform consistency is achieved. Do not thin CI-LV.

APPLICATION

Gravity Feed Crack Repair: Slowly pour or dispense epoxy into the crack/reservoir. Continue pouring until completely filled. Monitor and maintain fill level as epoxy penetrates the substrate.

For Pressure Injection: With all ports open, begin injecting CI-LV at the lowest port and work your way up. For horizontal applications, choose one end of the affected site and work your way to the other end. Begin pumping CI-LV into the first port to establish flow. If the next port shows material, close that port and continue pumping until the first port refuses material. If the first port refuses material prior to showing at the next port, close the first port and re-establish flow at the second port. Repeat until all ports refuse material. When injection is complete, and following initial set time, remove installation ports. If desired, remove cured paste-over epoxy by mechanical means.

For Flood-Coat Applications: Remove all standing water by vacuum or blowing with oil-free, compressed air prior to installation. CI-LV can be installed on damp or dry surfaces. Do not install through standing water. Avoid applying in direct sunlight. Pour properly mixed CI-LV onto surface to be treated and spread evenly with a squeegee, roller, or brush. Continue to work material to ensure all voids and cracks are filled, taking care not to leave puddles. Immediately broadcast 12 lb. (5.4 kg) of FX-702 oven dried rounded silica filler per 100 sq. ft. (9.3 m²) to create a non-slip surface. Allow to cure, then sweep off any excess sand.

As a Bonding Agent: Remove all standing water by vacuum or blowing with oil-free, compressed air prior to installation. CI-LV can be installed on damp or dry surfaces. Do not install through standing water. Avoid applying in direct sunlight. Apply CI-LV by brush, roller, spray, or squeegee at a rate of 60–100 ft.²/US gal. (1.5–2.5 m²/L), depending on surface profile and porosity. Care should be taken to prevent pooling of the bonding agent. Immediately install repair materials or concrete mix into wet CI-LV. Do not allow CI-LV to dry or become tack-free before concrete or mortar installation. If CI-LV does dry or becomes tack-free, abrade surface and recoat. Do not apply more bonding agent than can be effectively covered with repair mortars or concrete mixes while remaining tacky.

For Repair Mortar: Prior to applying repair mortar, apply neat resin as a bonding agent as stated above. Pour mixed repair mortar material into repair area. Screed and vibrate if necessary. Finish with wood float or steel trowel. Allow CI-LV to fully cure to its design strength prior to placing into service. CI-LV repair mortar can be applied to dry or damp surfaces (SSD). Do not apply to wet surfaces or through standing water.

WARNING

Resin: WARNING! Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction.

Hardener: DANGER! Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Protective Measures: The use of chemical splash goggles or safety glasses with side shields and chemical-resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of a NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) available at strongtie.com/sds for detailed information.

FIRST AID

Eye Contact: Hold open eyes under running water for 15 minutes. Seek medical advice.

Skin Contact: Wash skin with soap and water. Seek medical advice if irritation develops.

Inhalation: Remove victim to fresh air. If necessary, use artificial respiration. Seek medical advice.

Ingestion: If product is swallowed, call physician or poison control center. Do not induce vomiting, or give diluents to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice.

CLEAN-UP

Spills: Construct a dike to prevent spreading. Soak up with absorbent material such as clay, sand, or other non-reactive material. Place in leak-proof containers. Keep out of sewers, storm drains, surface waters, and soils.

Surface Area: Wipe up uncured material with cotton cloths. If desired, scrub area with abrasive, water-based cleaner and flush with water. If approved, solvents such as ketones (MEK, acetone, etc.), or adhesive remover can be used. Cured material can only be removed by mechanical means.

Tools and Equipment: Wipe up uncured material with cotton cloths. If desired, scrub area with abrasive, water-based cleaner and flush with water. If approved, solvents such as ketones (MEK, acetone, etc.), or adhesive remover can be used. Cured material can only be removed by mechanical means.

Skin: Use a non-toxic pumice-based soap, citrus-based hand cleaner or waterless hand-cleaner towel. Never use solvents to remove product from skin.

Disposal: Dispose of container and unused contents in accordance with federal, state, and local requirements. Containers may be recycled; consult local regulations for exceptions.

LIMITED WARRANTY

This product is covered by the Simpson Strong-Tie RPS Product One-Year Limited Warranty, which is available at strongtie.com/limited-warranties or by calling Simpson Strong-Tie at (800) 999-5099.

Distributor

IMPORTANT INFORMATION

It is the responsibility of each purchaser and user of each product to determine the suitability of the product for its intended use. Prior to using any product, consult a qualified design professional for advice regarding the suitability and use of the product, including whether the capacity of any structural building element may be impacted by a repair. As jobsite conditions vary greatly, a small-scale test patch is required to verify product suitability prior to full-scale application. The installer must read, understand, and follow all written instructions and warnings contained on the Limited Warranty, product label(s), Product Data Sheet(s), Safety Data Sheet(s), and the strongtie.com website prior to use. For industrial use only by qualified applicators. KEEP OUT OF REACH OF CHILDREN!

WARNING! Cancer and reproductive harm — www.P65Warnings.ca.gov.



NOTICE TO ALL BIDDERS

DATE: December 4, 2024

SUBJ: *CONTRACT NO. EM-2023-0419-06*
Public Works Facility, 111 S Kickapoo

ADDENDUM #1
Pg 1 of 58 pgs.

The following shall be added to and made a part of the above subject project specifications. Contractor shall, upon submittal of his/her bid, acknowledge this addendum and include this addendum in the Bid Documents.

Seth Barkhimer, PE, CFM
Director of Engineering

1. **Amend the Contract Documents**
 - a. Make additions, modifications or deletions to the Contract Documents described in this Addendum.
2. **Acknowledge Addenda**
 - a. Acknowledge receipt of this Addendum in the Bid Form submitted for this Project. Failure to acknowledge receipt of this addendum in the Bid Form may render the Bid as a non-responsive and serve as the basis for rejecting the Bid.
3. **Pre-Bid Meeting Information**
 - a. The Mandatory pre-bid meeting for this project was held on Tuesday, December 3, 2024 at 10 AM. The sign-in sheet from that meeting is attached to this addendum.
4. **Specifications**
 - a. The technical specifications were inadvertently not included in the original packet provided. They were listed on page 26, but now are included here accordingly:
 - i. 00 0101 – Project Title Page
 - ii. 00 0102 – Project Information



- iii. 00 0103 – Compliance with Federal Requirements.
- iv. 01 1000 – Summary
 - v. 01 2500 – Substitution Procedures
 - vi. 01 3000 – Administrative Requirements
 - vii. 01 4000 – Quality Requirements
- viii. 01 5000 – Temporary Facilities and Controls
 - ix. 01 5719 – Temporary Environmental Controls
 - x. 01 6000 – Product Requirements
 - xi. 01 7000 – Execution and Closeout Requirements
 - xii. 01 7800 – Closeout Submittal
- xiii. 02 8500 – Mold Remediations

5. **Building Description of Work for Building 1 (B-1)**

- a. During the roof damage repair on the South wall, detailed in drawing SK-B1, the south wall needs to be made square, and the roof purlins will need to be reattached as shown.

6. **Questions:**

- a. What mold Testing has been completed to date, and what is required as part of the project?
 - i. There hasn't been testing completed, however mold remediation expectations are detailed in 02 8500 included in this addendum.

ATTACHMENTS: Pre-Bid Sign-in Sheet (1 pg.), Specifications (55 pgs.)



PRE BID MEETING SIGN-IN SHEET

Project: Public Work Maintenance Facility – Storm Repairs

**Meeting Date: December 3, 2024
TIME: 10:00 am**

City Project No.: EM-2023-0419-06

Place/Room: Public Works Facility, 111 S Kickapoo

Name	Company	Phone	E-Mail
Seth Barkhimer	COS	405.683.0620	Seth.barkhimer@shawneekok.org
Philip Sheridan	4D Restoration	405-896-9088	ps Sheridan@4drestoration.com
Derrick Fredendall	4D Restoration	405 896 9088	dfredendall@4drestoration.com
Robin Breninger	Midtown Co.	405-888-0300	robin@midtownconst.com
BRAD SCHMIDT	COS	405 273 1960	BRADLEY. SCHMIDT@SHAWNEEOK.ORG
SHANE LOWELI	COS	405 273 1960	SHANE.Loweli@shawneeok.org
Rachelle Erickson	COS	405-276-1652	rachelle.erickson@shawneekok.org
Scott Leonard	Landmark	405-248-4136	
MATT SMITH	LANDMARK	405-843-8011	msmith@landmarkokc.com
Rance Miller	Sagemill Construction	918-810-4071	rance@sagemill.net
DAVID VAUGHAN	DOWNEY	405 470 9277	BIDS@DOWNEYKONTRACTING.COM

**SECTION 00 0101
PROJECT TITLE PAGE**

PROJECT MANUAL FOR PUBLIC WORKS MAINTENANCE FACILITY – STORM REPAIRS

ARCHITECT'S PROJECT ID: 2321.1

CEF NO. DR 4706 OK #725631

CITY OF SHAWNEE

111 S. KICKAPOO AVE.

SHAWNEE, OKLAHOMA 74801

BID DATE: December 10, 2024 at 4:00 PM

PREPARED BY: ANTHONY MCDERMID & CHRIS TEEHEE

TAP ARCHITECTURE, LLC

END OF SECTION

**SECTION 00 0102
PROJECT INFORMATION**

PART 1 GENERAL

1.01 PROJECT IDENTIFICATION

- A. Project Name: Public Works Maintenance Facility – Storm Repairs
- B. Architect's Project Number: 2321.1
 - 1. Architects: TAP Architecture, LLC
 - 2. Project Manager: Chris Teehee
 - 3. 415 North Broadway, Oklahoma City, OK 73102
 - 4. 405.232.8787; cteehee@tapokc.comProject is located at 111 S. Kickapoo Ave.
Shawnee, Oklahoma 74801
- C. The Owner, hereinafter referred to as Owner: City of Shawnee
- D. Owner's Project Manager: Andrea Weckmueller-Behringer

1.02 OWNER'S CONSULTANTS:

- A. None:

1.03 ARCHITECT'S CONSULTANTS:

- A. Structural Engineer:
 - 1. Eudaley Engineers, Inc
 - 2. 6656 NW 39th Expy.
 - 3. Bethany, OK 73008
 - 4. Brian Baker; 405.789.4433
 - 5. bbaker@meeiok.com
- B. Roofing Consultant:
 - 1. Nurnberg Roofing and Construction
 - 2. 1700 S. Agnew Ave
 - 3. Oklahoma City, OK 73108
 - 4. Robert Nurnberg; 580.225.92132
 - 5. nurnbergroofing@aol.com
- C. Mold Remediation Consultant
 - 1. Precision Restoration, Inc.
 - 2. 14310 N. Lincoln Blvd. #314
 - 3. Edmond, OK 73013
 - 4. Nick Sloan; 844.245.7979
 - 5. info@precisionresto.com

1.04 NOTICE TO PROSPECTIVE BIDDERS

- A. These documents constitute a Notice of Intent to Request Proposals and a Request for Qualifications from prospective Sub-Contractors and Suppliers. Proposals shall be addressed to the City of Shawnee.

1.05 PROJECT DESCRIPTION

- A. Refer Building Assessment Report dated April 4, 2024.
 - 1. This report provides overall building information for the existing conditions and the repair demands, along with photographs, design details, and quantities for each building that needs repair.
- B. Refer Building Assessment & Materials Outline dated February 5, 2024

1. This report provides detailed information on replacement materials and specifications for the project. These materials are the basis of design.
- C. Mold Remediation / Testing is a part of the scope of the work. Due to exposure to the elements, mold is present at the site. The selected contractor shall include site mold testing and remediate the mold that is present. The design team has been coordinating with Precision Restoration on mold issues.
 1. Since the extent of mold damage cannot be fully identified until demolition, the mold remediation / testing may extend past the limits of the bid documents. If discovery of mold is outside the bid documents, the scope of work shall be adjusted through an approved change order.

1.06 PROCUREMENT TIMETABLE

- A. The procurement timetable will be determined by the approved bidder and the approval from the City of Shawnee.
- B. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

1.07 PRE-QUALIFIED BIDDERS AND SUB-BIDDERS

- A. Pre-qualification of Bidders shall be provided in the bid packet with the required qualifications.

1.08 PROCUREMENT DOCUMENTS

- A. Availability of Documents: Complete sets of procurement documents may be obtained:
 1. From Owner at the Project Manager's address seth.barkhimer@shawneeok.org.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 00 0103
COMPLIANCE WITH FEDERAL REQUIREMENTS

1. COMPLIANCE WITH FEDERAL REQUIREMENTS. Since the parties anticipate that federal funding will be applied to this Request for Proposal/Agreement/Contract, the following federal contract clauses must be complied with, where applicable, in addition to the clauses already mentioned. Where any clauses conflict, the more stringent shall be the used.
 - 1.1. Equal Employment Opportunity: The regulation at 41 C.F.R. § 60-1.4(b) requires, except as otherwise provided or exempted in 41 C.F.R. Part 60, the insertion of the following contract clause: "During the performance of this contract, the contractor agrees as follows:
 - 1.1.1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
 - 1.1.1.1. Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
 - 1.1.2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
 - 1.1.3. The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
 - 1.1.4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
 - 1.1.5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
 - 1.1.6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
 - 1.1.7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally

assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

1.1.8. The contractor will include the portion of the sentence in Section 5.1 that immediately precedes Section 5.1.1 and the provisions of Sections 5.1.1 through 5.1.8 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

1.1.8.1. Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

1.1.9. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, that if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

1.1.10. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

1.2. Compliance with the Contract Work Hours and Safety Standards Act (2 CFR 200 Appendix II).

1.2.1. Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

1.2.2. Violation, liability for unpaid wages, liquidated damages: In the event of any violation of the clause set forth in Section 5.2.1 of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such

territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in Section 5.2.1 of this section, in the sum of \$27 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in Section 5.2.1 of this section.

1.2.3. Withholding for unpaid wages and liquidated damages: The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally- assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in Section 5.2.2 of this section.

1.2.4. Subcontracts: The contractor or subcontractor shall insert in any subcontracts the clauses set forth in Section 5.2.1 through 5.2.4 of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in Section 5.2.1 through 5.2.4 of this section.

1.2.5. The contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid.

1.2.6. Records to be maintained under this provision shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Department of Homeland Security, the Federal Emergency Management Agency, and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

1.3. Extension to Successors and Assigns: Each and all of the covenants and agreements contained in the Agreement affected by the acceptance of the Proposal shall extend to and be binding upon the successors and assigns of the parties thereto. Rights under this Agreement may not be assigned without mutual written consent of the parties.

1.4. Binding Agreement: This Agreement shall be construed in a neutral manner. This Agreement reflects the complete and full terms of agreement that is binding between the parties. The pages may be signed on separate pages, in counterparts and together are deemed to be one document. A true electronic copy is deemed an original.

1.5. Governing Law: All disputes relating to the execution, interpretation, construction, performance, or enforcement of the Agreement and the rights and obligations of the parties hereto shall be governed by the laws of the State of Oklahoma and resolved in a District Court of Oklahoma or applicable Federal Court of Oklahoma. Contractor hereby consents to and waives any objection to venue and jurisdiction in such courts.

1.6. Severability: If any term of this Agreement is to any extent illegal, otherwise invalid, or incapable of being enforced, such term shall be excluded to the extent of such invalidity or unenforceability; all other terms hereof shall remain in full force and effect; and, to the extent permitted and possible, the invalid or unenforceable term shall be deemed replaced by a term that is valid and enforceable and that comes closest to expressing the intention of such invalid or unenforceable term.

1.7. Clean Air Act

1.7.1.The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

1.7.2.The Contractor agrees to report each violation to the City of Shawnee and understands and agrees that the City of Shawnee will, in turn, report each violation as required to assure notification to FEMA, and the appropriate Environmental Protection Agency Regional Office.

1.7.3.The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

1.8. Federal Water Pollution Control Act

1.8.1.The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. § 7401 et seq.

1.8.2.The Contractor agrees to report each violation to the City of Shawnee and understands and agrees that the City of Shawnee will, in turn, report each violation as required to assure notification to the FEMA, and the appropriate Environmental Protection Agency Regional Office.

1.8.3.The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

1.9. Suspension And Debarment

1.9.1.This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such, the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995) or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).

1.9.2.The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into.

1.9.3.This certification is a material representation of fact relied upon by the City of Shawnee. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to the City of Shawnee, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

1.10. The bidder or proposer agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The bidder or proposer further agrees to include a provision requiring such compliance in its lower tier covered transactions.

1.11. Byrd Anti-Lobbying Act: The Contractor will be expected to comply with Federal statutes required in the Anti-Lobbying Act.

1.11.1. If applicable, contractors must sign and submit the following certification to the non-federal entity (NFE) with each bid or offer exceeding \$100,000. Each tier certifies to the tier above that it will not and has not used federally appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the federal awarding agency. The "44

C.F.R. Part 18 – Certification Regarding Lobbying” shown on ATTACHMENT A must be signed and included with the contract documents.

1.12. Anti-Kickback Clause: The Contractor hereby agrees to adhere to the mandate dictated by the Copeland “Anti-Kickback” Act which provides that each Contractor or subgrantee shall be prohibited from inducing, by any means, any person employed in the completion of work, to give up any part of the compensation to which he is otherwise entitled.

1.13. Procurement Of Recovered Materials: In the performance of this Contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:

1.13.1. Competitively within a timeframe providing for compliance with the Contract performance schedule;

1.13.2. Meeting Contract performance requirements; or

1.13.3. At a reasonable price.

1.13.4. Information about this requirement, along with the list of EPA-designate items, is available at EPA’s Comprehensive Procurement Guidelines website, www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program

1.14. Prohibition on Contracting for Covered Telecommunications Equipment or Services.

1.14.1. Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy 405-143-1, Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services (Interim), as used in this clause.

1.14.2. Prohibitions.

1.14.2.1. Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

1.14.2.2. Unless an exception in Section 5.14.3 of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:

1.14.2.2.1. Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system.

1.14.2.2.2. Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system.

1.14.2.2.3. Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or

1.14.2.2.4. Provide, as part of its performance of this contract, subcontract, or other contractual

instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

1.14.3. Exceptions.

1.14.3.1. This clause does not prohibit contractors from providing:

1.14.3.1.1. A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

1.14.3.1.2. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

1.14.3.2. By necessary implication and regulation, the prohibitions also do not apply to:

5.14.3.2.1. Covered telecommunications equipment or services that:

5.14.3.2.1.1. Are not used as a substantial or essential component of any system; and

5.14.3.2.1.2. Are not used as critical technology of any system.

5.14.3.2.2. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

1.14.4. Reporting requirement.

1.14.4.1. In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in Section 5.14.4.2 of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

1.14.4.2. The Contractor shall report the following information pursuant to Section 5.14.4.1 of this clause:

1.14.4.2.1. Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

1.14.4.2.2. Within 10 business days of submitting the information in Section 5.14.4.2.1 of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

1.14.5. Subcontracts. The Contractor shall insert the substance of this clause (Section 5.14), including this paragraph (5.14 .5), in all subcontracts and other contractual instruments.

1.15. Domestic Preferences for Procurements.

1.15.1. As appropriate, and to the extent consistent with law, the contractor should, to the greatest extent

Compliance with Federal Requirements 00 0103

practicable, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States. This includes, but is not limited to iron, aluminum, steel, cement, and other manufactured products.

1.15.2. For purposes of this clause:

1.15.2.1. Produced in the United States means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

1.15.2.2. Manufactured products mean items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

1.16. Access to Records

1.16.1. The following access to records requirements applies to this contract:

1.16.1.1. The Contractor agrees to provide the City of Shawnee, OEM, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives' access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

1.16.1.2. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

1.16.1.3. The Contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

1.16.1.4. In compliance with Section 1225 of the Disaster Recovery Reform Act of 2018, the City of Shawnee and the contractor acknowledge and agree that no language in this contract is intended to prohibit audits or internal reviews by the FEMA Administrator or the Comptroller General of the United States.

1.17. Termination

1.17.1. Termination for Cause. The City of Shawnee (Owner) shall submit a written notice to the contractor and surety which justifies placement of the contractor in default if:

1.17.1.1. The Work is not begun within the time specified in the Notice to Proceed.

1.17.1.2. The Work is performed with insufficient workmen, equipment, or materials to assure prompt completion.

1.17.1.3. The contractor performs unsuitable, neglected, or rejected work, refuses to remove materials.

1.17.1.4. The Work is discontinued.

1.17.1.5. The Work is not completed within the Contract Time or time extension.

1.17.1.6. Work is not resumed within a reasonable time after receiving a notice to continue.

1.17.1.7. The contractor becomes insolvent or is declared bankrupt or commits any act of bankruptcy or insolvency.

1.17.1.8. The contractor allows any final judgment to stand unsatisfied for a period of ten (10) days.

1.17.1.9. The contractor makes an assignment for the benefit of creditors.

1.17.1.10. The Work is not performed in an acceptable manner.

1.17.1.11. If the contractor or Surety does not remedy all conditions cited in the written notice within ten (10) days after receiving such a notice, the contractor is placed into default. In that event, the Owner may obtain the necessary labor, materials, and equipment, or enter into a new Contract in order to complete the Work. All costs incurred by the Owner for completing the Work under the new Contract will be deducted from the payment due the contractor. If the expense exceeds the sum payable under the Contract, the contractor and surety shall be liable to pay the Owner the difference.

1.17.2. Termination for Convenience. The City of Shawnee (Owner) may, at any time, terminate this Contract or any portion thereof, for Owner's convenience, upon providing written notice to the contractor. In such case, contractor shall be paid for all work completed through the date notice was provided (less payments already received) and reasonable demobilization and restocking charges incurred, and reasonable overhead and profit based upon industry standards on the work performed. In no event shall the contractor be entitled to payment of overhead and profit on work not performed. In the event it is determined that the contractor was wrongfully terminated for cause, such termination shall be automatically converted to a termination for convenience and payment be made as provided under this Section.

1.18. Breach: Any breach of the Contract by Contractor shall be governed by the Termination provision of the Contract. Additionally, in the event that the City of Shawnee incurs damages as a result of Contractor's breach, the City of Shawnee may pursue recovery of such damages from Contractor. The City of Shawnee further retains the right to seek specific performance of the Contract at any time as authorized by law. The City of Shawnee further retains the right to otherwise pursue any remedies available to the City of Shawnee as a result of the Contractor's breach, including but not limited to administrative, contractual, or legal remedies. Termination for cause and convenience are governed by the Termination provision of the Contract

1.19. Changes: To be allowable under a FEMA grant or cooperative agreement award, the cost of any contract change, modification, amendment, addendum, change order, or constructive change must be necessary, allocable, within the scope of the grant or cooperative agreement, reasonable for the scope of work, and otherwise allowable.

1.20. DHS Seal, Logo, And Flags: The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval. The contractor shall include this provision in any subcontracts.

1.21. Compliance with Federal Executive Orders: This is an acknowledgement that FEMA financial assistance will be used to fund the Contract only. The Contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

1.22. No Obligation by the Federal Government: The Federal Government is not a party to this Contract and is not subject to any obligations or liabilities to the non-Federal entity, Contractor, or any other party pertaining to any matter resulting from the Contract.

1.23. Program Fraud and False or Fraudulent Statements or Related Acts: The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor's actions pertaining to this contract.

1.24. Contracting with Small and Minority Businesses, Women's Business Enterprises, and Labor Surplus Area Firms: If subcontracts are to be let, the prime contractor is required to take all necessary steps identified in 2 C.F.R. § 200.321(b)(1)-(5) to ensure that small and minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

1.24.1. Any party to this contract must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. These steps are also required for the hiring of any subcontractors under this contract.

1.24.2. Affirmative steps must include:

1.24.2.1. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

1.24.2.2. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;

1.24.2.3. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;

1.24.2.4. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises; and

1.24.2.5. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce

1.25. Copyright and Data Rights: License and Delivery of Works Subject to Copyright and Data Rights – The contractor grants to the City of Shawnee, a paid-up, royalty-free, nonexclusive, irrevocable, worldwide license in data first produced in the performance of this contract to reproduce, publish, or otherwise use, including prepare derivative works, distribute copies to the public, and perform publicly and display publicly such data. For data required by the contract but not first produced in the performance of this contract, the contractor will identify such data and grant to the City of Shawnee or acquires on its behalf a license of the same scope as for data first produced in the performance of this contract. Data, as used herein, shall include any work subject to copyright under 17 U.S.C. § 102, for example, any written reports or literary works, software and/or source code, music, choreography, pictures or images, graphics, sculptures, videos, motion pictures or other audiovisual works, sound and/or video recordings, and architectural works. Upon or before the completion of this contract, the contractor will deliver to the City of Shawnee data first produced in the performance of this contract and data required by the contract but not first produced in the performance of this contract in formats acceptable by the City of Shawnee.

Certification for Contracts, Grants, Loans, and Cooperative Agreements as required by the Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352

The undersigned certifies, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$ 100,000 for each such failure.

The Contractor, _____, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Chap. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Contractor's Authorized Official

Date

Name & title of Contractor's Authorized Official

SECTION 01 1000 SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: City of Shawnee Public Works Maintenance Facility – Storm Repair
- B. Owner's Name: City of Shawnee.
- C. Architect's Name: TAP Architecture, LLC.
- D. Additional Project contact information is specified in Section 00 0102 - Project Information.
- E. Refer Building Assessment Report dated April 4, 2024.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: a single prime contract – refer Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

- A. Scope of demolition and removal work is indicated on drawings.

1.04 WORK BY OWNER

- A. Items noted NIC (Not in Contract) will be supplied and installed by Owner before Date of Substantial Completion.

1.05 OWNER OCCUPANCY

- A. Owner intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.06 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
 - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Utility Outages and Shutdown:
 - 1. Limit disruption of utility services to hours the building is unoccupied.
 - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 day's notice to Owner and authorities having jurisdiction.
 - 3. Prevent accidental disruption of utility services to other facilities.

1.07 WORK SEQUENCE

- A. Coordinate construction schedule and operations with Owner.

1.08 SPECIFICATION SECTIONS APPLICABLE TO EVERY CONTRACT

- A. Unless otherwise noted, provisions of the sections listed below apply to every contract. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 00 0115 - List of Drawing Sheets
- C. Section 01 2500 - Substitution Procedures.
- D. Section 01 3000 - Administrative Requirements.
- E. Section 01 4000 - Quality Requirements.
- F. Section 01 5000 - Temporary Facilities and Controls.

- G. Section 01 6000 - Product Requirements.
- H. Section 01 7000 - Execution and Closeout Requirements.
- I. Section 01 7800 - Closeout Submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2500
SUBSTITUTION PROCEDURES**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 01 2500F - Substitution Request Form
- B. Section 01 3000 - Administrative Requirements: Submittal procedures, coordination.
- C. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.

1.04 REFERENCE STANDARDS

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
 - 1. Forms indicated in the Project Manual are adequate for this purpose and must be used.
- D. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

- A. Submittal Time Restrictions:
- B. Submittal Form (before award of contract):

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- B. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
 - 1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 - 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
 - 3. Bear the costs engendered by proposed substitution of:
 - a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request.
- C. Substitutions will not be considered under one or more of the following circumstances:
 - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 - 2. Without a separate written request.
 - 3. When acceptance will require revisions to Contract Documents.

3.04 RESOLUTION

- A. Architect will notify Contractor in writing of decision to accept or reject request.
 - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

3.05 ACCEPTANCE

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

3.06 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record. Include both approved and rejected Requests.

END OF SECTION

01 2500F
SUBSTITUTION PRODUCT APPROVAL REQUEST FORM

All substitutions must be approved prior to bid

Project Name: City of Shawnee Maintenance Facility – Storm Repair Request Number: _____

Project No: 2321.1 BID DATE: _____

TO: Chris Teehee, cteehee@tapokc.com; PRINCIPAL, SENIOR PROJECT MANAGER)

FROM: _____

A proposed product is not approved and cannot be included in a bid or used in the Work until it appears in an Addendum or other Contract Modification Instrument as defined in the General Conditions. See Instructions To Bidders, General Conditions, and Section 01600. Include only one product substitution request on each form.

SUBSTITUTE PRODUCT INFORMATION:

Specification Section: No.: _____ Name: _____

Specified Product: _____

Substitute Product: _____

The Undersigned Submitter certifies:

1. Proposed product has been fully investigated and determined to be equal or superior in all respects to specified Product.
2. Same warranty will be furnished for proposed product as for specified Product.
3. Same maintenance service and source of replacement parts, as applicable, is available.
4. Proposed product will have no adverse effect on other trades and will not affect or delay progress schedule.
5. Proposed product does not substantially change dimensions or required clearances and is comparable in function, capacity, size, quality, and aesthetic appearance to the specified product. (Architect remains the sole judge of acceptable aesthetic appearance).
 - a. Submitter agrees to reimburse Owner for any charges by Consultants for review of substitution request and adjustments required to modify Bidding and Construction Documents to incorporate use of the substitute if applicable.

CHECK BELOW ONLY IF SUBSTITUTION IS PROPOSED DUE TO A PRODUCT COMPLICATION:

____ Specified product is no longer available from manufacturer and an equal product cannot be found. Proposed product will perform the function intended. Variations and effect of variations are identified on the line-item comparison sheet.

____ We have reviewed the site and have determined by our investigations that the specified product is not suitable for these field conditions. The substitute product will work as intended and can accommodate the field conditions.

Explain complication:

ATTACHMENTS:

Include the following attachments -

1. Copy of the Project Manual Section where the proposed product would be specified, rewritten or red-lined to include any changes necessary to correctly specify the proposed equal product. Identify completely changes necessary to the original Project Manual Section.
2. Provide copies of details, elevations, cross-sections, and other elements of the Project Drawings redone as necessary to show changes necessary to accommodate proposed product. Identify completely the changes from the original Drawings.
3. Provide complete product literature and technical data, installation and maintenance instructions, test results, and other information required to show complete conformance with requirements of the Contract Documents.
4. Provide attached line-item comparisons of product characteristics.

By signature below, the submitter warrants the proposed substitute product is comparable in capacity, quality, size and aesthetic appearance to the specified product and will function properly for the intend use.

SIGNED: _____
Company _____
Address _____
City, State, Zip _____
Telephone _____ FAX _____
Email: _____

PROPOSED EQUAL PRODUCT: (Please repeat data from page 1):

Specification Section: No.: _____ Name: _____

Proposed Product: _____

Submitter Additional Comments:

_____**ARCHITECT'S REVIEW COMMENTS:**

_____ Accepted. See Addenda Number _____.

_____ Submission is not in proper form or is missing data. Respond to comments and resubmit.

_____ Proposed Product not found acceptable. Use one of the approved Products.

_____ Not Reviewed. Submission received too late for proper review prior to bid. Use a specified Product.

BY: _____ **DATE:** _____

Title: _____

**LINE ITEM COMPARISON
SUBSTITUTE PRODUCT INFORMATION:**

Specification Section: No.: _____ Name: _____

Specified Comparison Product: _____

Substitute Product: _____

**Submitter is required to fill out this form and sign it. Duplicate as needed.
Utilize the specified characteristics or the characteristics of a specified product to
compare to the proposed substitute as required by “attachments” item 4:**

CHARACTERISTIC DESCRIPTION	SPECIFIED	SUBSTITUTE	EQUALITY (+ = -)	Comments
Example:				
Film Thickness	40 mil	60 mil	+	Thicker
Composition	Rubber	Rubber	=	Same: monolithic
Width	54"	52"	-	No effect, same Number seams

Signed: _____

**SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electronic document submittal service.
- B. Pre-Work Conference.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Coordination drawings.
- F. Submittals for review, information, and project closeout.
- G. Number of copies of submittals.
- H. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. City of Oklahoma General Provisions in front end documents in project manual.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents.

1.03 PROJECT COORDINATION

- A. Cooperate with the Owner's Project Coordinator or other General Contractor's of other phases in allocation of mobilization areas of site, for field offices and sheds, for continued access for tenants, traffic, and parking facilities.
- B. During construction, coordinate use of site and facilities with other on-going project coordinators.
- C. Coordinate for intra-project communications; coordination drawings at interface elements; and resolution of ambiguities and conflicts at interface points.
- D. Coordinate field engineering and layout work at inter-face points.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 - 1. Besides submittals for review, information, and closeout, this procedure applies to requests for information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, General Contractor's correction punch list, and any other document any participant wishes to make part of the project record.
 - 2. General Contractor and Architect are required to use this service.
 - 3. It is General Contractor's responsibility to submit documents in PDF format.
 - 4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
 - 5. Users of the service need an email address, Internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.

6. Paper document transmittals will not be reviewed; emailed PDF documents will not be reviewed.
7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.

B. Submittal Service: The selected service is: as agreed between the parties.

3.02 PRE-WORK CONFERENCE

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required: Refer front end Special Provisions, page 15.
 1. Additional attendees: Other on-going project coordinators.
- C. Agenda:
 1. Designation of personnel representing the parties to Contract, other project coordinators and Architect.
 2. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 3. Scheduling.
 4. Other agenda items placed on agenda by City Engineer.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals if needed.
- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- C. Agenda:
 1. Review minutes of previous meetings.
 2. Review of Work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to Work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 COORDINATION DRAWINGS

- A. Provide coordination drawings when necessary for interface to other on-going projects to resolve interfaces and avoid conflicts.

3.05 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 1. Product data.
 2. Shop drawings.
 3. Samples for selection.

4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout:
 1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 1. After review, produce duplicates.
 2. Retained samples will not be returned to General Contractor unless specifically so stated.

3.09 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
 2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- D. Identify Project, General Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

- E. Apply General Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 15 days excluding delivery time to and from the General Contractor.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- I. Provide space for General Contractor and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

END OF SECTION

SECTION 01 4000 QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Contractor's construction-related professional design services.
- F. Contractor's design-related professional design services.
- G. Control of installation.
- H. Mock-ups.
- I. Tolerances.
- J. Manufacturers' field services.
- K. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Document 00 7200 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 3000 - Administrative Requirements: Submittal procedures.
- C. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

1.04 DEFINITIONS

- A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.
- B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- C. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

1.05 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:

1. Temporary scaffolding.
2. Temporary bracing.
3. Temporary stairs or steps required for construction access only.
4. Temporary hoist(s) and rigging.
5. Investigation of soil conditions to support construction equipment.

1.06 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
 1. Submit a Request for Interpretation to Architect if the criteria indicated are not sufficient to perform required design services.

1.07 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.08 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- C. Contractor's Quality Control (CQC) Plan:
 1. Prior to start of work, submit a comprehensive plan describing how contract deliverables will be produced. Tailor CQC plan to specific requirements of the project. Include the following information:

1.09 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.10 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ services of an independent testing agency to perform certain specified testing if needed.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
 - 5. Perform additional tests and inspections required by Architect.
 - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 - 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.

END OF SECTION

**SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dewatering
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers, enclosures, and fencing.
- F. Security requirements.
- G. Vehicular access and parking.
- H. Waste removal facilities and services.
- I. Project identification sign.
- J. Field offices.

1.02 REFERENCE STANDARDS

1.03 DEWATERING

- A. Provide temporary means and methods for dewatering all temporary facilities and controls.
- B. Maintain temporary facilities in operable condition.

1.04 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes if any new services are installed.
- B. New permanent facilities may be used.
- C. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.05 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Internet Connections: Minimum of one; DSL modem or faster.
 - 3. Email: Account/address reserved for project use.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.
- C. At end of construction, return facilities to same or better condition as originally found.

1.07 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings.

- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.08 FENCING

- A. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks if required by the owner.

1.09 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.11 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.12 VEHICULAR ACCESS AND PARKING

- A. Coordinate access and haul routes with governing authorities and Owner.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Provide means of removing mud from vehicle wheels before entering streets.
- D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.13 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.14 PROJECT IDENTIFICATION

- A. Provide project identification sign of design and construction indicated on drawings.
- B. Erect on site at location indicated.
- C. Provide project identification sign of design, construction, and location approved by Owner.
- D. No other signs are allowed without Owner permission except those required by law.

1.15 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

- C. Locate offices a minimum distance of 30 feet (10 m) from existing and new structures.

1.16 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet (600 mm). Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5719
TEMPORARY ENVIRONMENTAL CONTROLS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction procedures to promote adequate indoor air quality after construction.
- B. Building flush-out after construction and before occupancy.
- C. Testing indoor air quality after completion of construction.
- D. Testing air change effectiveness after completion of construction.

1.02 PROJECT GOALS

- A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - 1. Cleaning of ductwork is not contemplated under this Contract.
 - 2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
- B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
 - 1. Furnish products meeting the specifications.
 - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 RELATED REQUIREMENTS - NONE

1.04 REFERENCE STANDARDS

- A. ASHRAE Std 129 - Measuring Air-Change Effectiveness; 1997 (Reaffirmed 2002).
- B. ASTM D5149 - Standard Test Method for Ozone in the Atmosphere: Continuous Measurement by Ethylene Chemiluminescence; 2002 (Reapproved 2016).
- C. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2021.
- D. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2; 2017.
- E. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; 1990.
- F. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; 1999.
- G. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 2007.

1.05 DEFINITIONS

- A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.
- C. Particulates: Dust, dirt, and other airborne solid matter.
- D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.

- B. Indoor Air Quality Management Plan: Describe, in detail, measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
 - 1. Submit not less than 60 days before enclosure of building.
 - 2. Identify potential sources of odor and dust.
 - 3. Identify construction activities likely to produce odor or dust.
 - 4. Identify areas of project potentially affected, especially occupied areas.
 - 5. Evaluate potential problems by severity and describe methods of control.
 - 6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
 - 7. Describe cleaning and dust control procedures.
- C. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.
- D. Duct and Terminal Unit Inspection Report.
- E. Air Contaminant Test Plan: Identify:
 - 1. Testing agency qualifications.
 - 2. Locations and scheduling of air sampling.
 - 3. Test procedures, in detail.
 - 4. Test instruments and apparatus.
 - 5. Sampling methods.
- F. Air Contaminant Test Reports: Show:
 - 1. Location where each sample was taken, and time.
 - 2. Test values for each air sample; average the values of each set of 3.
 - 3. HVAC operating conditions.
 - 4. Certification of test equipment calibration.
 - 5. Other conditions or discrepancies that might have influenced results.
- G. Ventilation Effectiveness Test Plan: Identify:
 - 1. Testing agency qualifications.
 - 2. Description of test spaces, including locations of air sampling.
 - 3. Test procedures, in detail; state whether tracer gas decay or step-up will be used.
 - 4. Test instruments and apparatus; identify tracer gas to be used.
 - 5. Sampling methods.
- H. Ventilation Effectiveness Test Reports: Show:
 - 1. Preliminary tests of instruments and apparatus and of test spaces.
 - 2. Calculations of ventilation effectiveness, variable "E".
 - 3. Location where each sample was taken, and time.
 - 4. Test values for each air sample.
 - 5. HVAC operating conditions.
 - 6. Other information specified in ASHRAE Std 129.
 - 7. Other conditions or discrepancies that might have influenced results.

1.07 QUALITY ASSURANCE

- A. Testing and Inspection Agency Qualifications: Independent testing agency having minimum of 5 year's experience in performing the types of testing specified.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Low VOC Materials: See other sections for specific requirements for materials with low VOC content.

PART 3 EXECUTION

3.01 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by adsorptive materials by:
 - 1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
 - 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
 - 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Begin construction ventilation when building is substantially enclosed.
- C. Do not store construction materials or waste in mechanical or electrical rooms.
- D. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
 - 1. Inspect duct intakes, return air grilles, and terminal units for dust.
 - 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
 - 3. Clean tops of doors and frames.
 - 4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
 - 5. Clean return plenums of air handling units.
 - 6. Remove intake filters last, after cleaning is complete.
- E. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.
- F. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

3.02 BUILDING FLUSH-OUT

- A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.
- B. Perform building flush-out before occupancy.
- C. Do not start flush-out until:
 - 1. All construction is complete.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
 - 4. New HVAC filtration media have been installed.
- D. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of 14,000 cubic feet per square foot (4500 cubic meters per square meter) of floor area has been supplied.
 - 1. Obtain Owner's concurrence that construction is complete enough before beginning flush-out.
 - 2. Maintain interior temperature of at least 60 degrees F (15 degrees C) and interior relative humidity no higher than 60 percent.
 - 3. If additional construction involving materials that produce particulates or any of the specified contaminants is conducted during flush-out, start flush-out over.
 - 4. If interior spaces must be occupied prior to completion of the flush-out, supply a minimum of 25 percent of the total air volume prior to occupancy, and:
 - a. Begin ventilation at least three hours prior to daily occupancy.
 - b. Continue ventilation during all occupied periods.
 - c. Provide minimum outside air volume of 0.30 cfm per square foot (0.0015 cu m/s/sq m) or design minimum outside air rate, whichever is greater.
- E. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

3.03 AIR CONTAMINANT TESTING

- A. Contractor's Option: Either full continuous flush-out, or satisfactory air contaminant testing is required, not both.
- B. Perform air contaminant testing before occupancy.
- C. Do not start air contaminant testing until:
 - 1. All construction is complete, including interior finishes.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. New HVAC filtration media have been installed.
- D. Indoor Air Samples: Collect from spaces representative of occupied areas:
 - 1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
 - 2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet (2300 square meters); take samples from areas having the least ventilation and those having the greatest presumed source strength.
 - 3. Collect samples from height from 36 inches (915 mm) to 72 inches (1830 mm) above floor.
 - 4. Collect samples from same locations on 3 consecutive days during normal business hours; average the results of each set of 3 samples.
 - 5. Exception: Areas with normal very high outside air ventilation rates, such as laboratories, do not need to be tested.
 - 6. When retesting the same building areas, take samples from at least the same locations as in first test.
- E. Outdoor Air Samples: Collect samples at outside air intake of each air handler at the same time as indoor samples are taken.
- F. Analyze air samples and submit report.
- G. Particulate Matter and Inorganic Gases Limits:
 - 1. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
 - 2. PM10 Particulates: Not more than 50 micrograms per cubic meter.
 - 3. PM2.5 Particulates: Not more than 15 micrograms per cubic meter.
 - 4. PM2.5 Particulates: Not more than 12 micrograms per cubic meter.
 - 5. Ozone: Not more than 0.075 parts per million.
 - 6. Regulated Pollutants: Measure in relation to outside air; not more than contained in outside air.
- H. Volatile Organic Compounds Limits:
 - 1. Formaldehyde: Not more than 27 parts per billion.
 - 2. Total Volatile Organic Compounds (TVOCs): Not more than 500 micrograms per cubic meter.
 - 3. Chemicals Listed in CAL (CDPH SM) Table 4-1, other than Formaldehyde: Not more than allowable concentrations listed in Table 4-1.
- I. Air Contaminant Concentration Test Methods:
 - 1. Formaldehyde: ASTM D5197, EPA 625/R-96/010b Method TO-11A, or EPA 600/4-90/010 Method IP-6A.
 - 2. Particulates: EPA 600/4-90/010 Method IP-10.
 - 3. Ozone: ASTM D5149.
 - 4. Total Volatile Organic Compounds (TVOC): EPA 625/R-96/010b Method TO-1, TO-15, or TO-17; or EPA 600/4-90/010 Method IP-1.
 - 5. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: ASTM D5197, or EPA 625/R-96/010b Method TO-1, TO-15, or TO-17.

6. Carbon Monoxide: EPA 600/4-90/010 Method IP-3, plus measure outdoor air; measure in ppm; report both indoor and outdoor measurements.

3.04 VENTILATION EFFECTIVENESS TESTING

- A. Perform ventilation effectiveness testing before occupancy.
- B. Do not begin ventilation effectiveness testing until:
 1. HVAC testing, adjusting, and balancing has been satisfactorily completed.
 2. Building flush-out or air contaminant testing has been completed satisfactorily.
 3. New HVAC filtration media have been installed.
- C. Test each air handler zone in accordance with ASHRAE Std 129.
- D. If calculated air change effectiveness for a particular zone is less than 0.9 due to inadequate balancing of the system, adjust, and retest at no cost to Owner.

3.05 ENVELOPE LEAKAGE TESTING

- A. General: Comply with the following procedural requirements for testing building or space envelope, as applicable:
- B. Verify that the envelope to be tested has been sufficiently completed for testing to commence.

END OF SECTION

**SECTION 01 6000
PRODUCT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 2500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

1.03 REFERENCE STANDARDS

- A. 16 CFR 260.13 - Guides for the Use of Environmental Marketing Claims; Federal Trade Commission; Recycled Content; Current Edition.
- B. ASTM D6866 - Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis; 2022.
- C. BIFMA e3 - Furniture Sustainability Standard; Business and Institutional Furniture Manufacturers Association; 2019.
- D. C2C (DIR) - C2C Certified Products Registry; Cradle to Cradle Products Innovation Institute; Current Edition.
- E. EN 15804 - Sustainability of Construction Works - Environmental Product Declarations - Core Rules for the Product Category of Construction Products; 2022 (Corrigendum 2021).
- F. GreenScreen (LIST) - GreenScreen for Safer Chemicals List Translator; Clean Production Action; Current Edition.
- G. GreenScreen (METH) - GreenScreen for Safer Chemicals Method v1.2; Clean Production Action; Current Edition.
- H. ISO 14025 - Environmental Labels and Declarations - Type III Environmental Declarations - Principles and Procedures; 2006.
- I. ISO 14040 - Environmental Management - Life Cycle Assessment - Principles and Framework; 2006, with Amendment (2020).
- J. ISO 14044 - Environmental Management - Life Cycle Assessment - Requirements and Guidelines; 2006, with Amendment (2020).
- K. ISO 21930 - Sustainability in Buildings and Civil Engineering Works — Core Rules for Environmental Product Declarations of Construction Products and Services; 2017.
- L. NSF 332 - Sustainability Assessment for Resilient Floor Coverings; 2022.
- M. NSF/ANSI 140 - Sustainability Assessment for Carpet; 2019.
- N. NSF/ANSI 347 - Sustainability Assessment for Single Ply Roofing Membranes; 2018.
- O. UL 100 - Standard for Sustainability for Gypsum Boards and Panels; Current Edition, Including All Revisions.

1.04 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.
- D. Sustainable Design Submittals: Items necessary to document use of sustainable construction materials, products, and practices.

1.05 QUALITY ASSURANCE

- A. Bio-Based Content: Of vegetable or animal origin, not including products made by killing the animal.
 - 1. Determine percentage of bio-based content in accordance with ASTM D6866.
 - 2. Bio-based content must be sourced from a Sustainable Agriculture Network certified farm.
- B. Chain-of-Custody (COC): A procedure that tracks a product from the point of harvest or extraction to its end use, including successive stages of processing, transformation, manufacturing, and distribution.
- C. Cradle-to-Cradle Certified: End use product certified Cradle-to-Cradle v2 Basic or Cradle-to-Cradle v3 Bronze, minimum, as evidenced by C2C (DIR).
- D. Environmental Product Declaration (EPD): Publicly available, critically reviewed life cycle analysis having at least a cradle-to-gate scope.
 - 1. Good: Product-specific; compliant with ISO 14044.
 - 2. Better: Industry-wide, generic; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
 - 3. Best: Commercial-product-specific; compliant with ISO 21930, or with ISO 14044, ISO 14040, ISO 14025, and EN 15804; Type III third-party certification with external verification, in which the manufacturer is recognized as the program operator.
 - 4. Where demonstration of impact reduction below industry average is required, submit both industry-wide and commercial-product-specific declarations; or submit at least 5 declarations for products of the same type by other manufacturers in the same industry.
- E. GreenScreen Chemical Hazard Analysis: Ingredients of 100 parts-per-million or greater evaluated using GreenScreen (METH).
 - 1. Good: GreenScreen (LIST) evaluation to identify Benchmark 1 hazards; a Health Product Declaration includes this information.
 - 2. Better: GreenScreen Full Assessment.
 - 3. Best: GreenScreen Full Assessment by GreenScreen Licensed Profiler.
 - 4. Acceptable Evidence: GreenScreen report.
- F. Health Product Declarations (HPD): Complete, published declaration with full disclosure of known hazards, prepared using one of the HPDC (HPD-OLT) online tools.
- G. Manufacturer's Inventory of Product Content: Publicly available inventory of every ingredient identified by name and Chemical Abstract Service Registration Number (CAS RN).
 - 1. For ingredients considered a trade secret or intellectual property, the name and CAS RN may be omitted, provided the ingredient's role, amount, and GreenScreen Benchmark are given.

- H. Multi-Attribute Certifications: Lifecycle-based environmental certifications that indicate that a product has undergone rigorous scientific testing, exhaustive auditing, or both, to prove its compliance with stringent, third-party, environmental performance standards. Third-party certifications include the following:
 - 1. BIFMA e3 Furniture Sustainability Standard.
 - 2. NSF/ANSI 140 Sustainability Assessment for Carpet.
 - 3. NSF 332 Sustainability Assessment for Resilient Floor Coverings.
 - 4. NSF/ANSI 347 Sustainability Assessment for Single Ply Roofing Membranes.
 - 5. UL 100 Standard for Sustainability for Gypsum Board and Panels.
- I. Rapidly Renewable Materials: Made from agricultural products that are typically harvested within a 10-year or shorter cycle.
- J. Recycled Content: Determine percentage of post-consumer and pre-consumer (post-industrial) content separately, using the guidelines contained in 16 CFR 260.13.
 - 1. Previously used, reused, refurbished, and salvaged products are not considered recycled.
 - 2. Wood fabricated from timber abandoned in transit to original mill is considered reused, not recycled.
 - 3. Determine percentage of recycled content of any item by dividing the weight of recycled content in the item by the total weight of materials in the item.
 - 4. Determine value of recycled content of each item separately, by multiplying the content percentage by the value of the item.
 - 5. Acceptable Evidence:
 - a. For percentage of recycled content, information from manufacturer.
 - b. For cost, Contractor's cost data.
- K. Regional Materials: Materials that are extracted, harvested, recovered, and manufactured within a radius of 100 miles (160.9 Km) from the Project site.
- L. Reused Products: Materials and equipment previously used in this or other construction, salvaged and refurbished as specified.
 - 1. Wood fabricated from timber abandoned in transit after harvesting is considered reused, not recycled.
 - 2. Acceptable Evidence: Information about the origin or source, from Contractor or supplier.
- M. Source Location: Location of harvest, extraction, recovery, or manufacture; where information about source location is required to be submitted, give the postal address:
 - 1. In every case, indicate the location of final assembly.
 - 2. For harvested products, indicate location of harvest.
 - 3. For extracted (i.e. mined) products, indicate location of extraction.
 - 4. For recovered products, indicate location of recovery.
 - 5. For products involving multiple manufacturing steps, provide a description of the process at each step, with location.
 - 6. Acceptable Evidence:
 - a. Manufacturer's certification.
 - b. Life cycle analysis (LCA) performed by third-party.
- N. Sustainably Harvested Wood: Solid wood, wood chips, and wood fiber certified or labeled by an organization accredited by one of the following:
 - 1. The Forest Stewardship Council, The Principles for Natural Forest Management; for Canada visit <http://www.fsccanada.org>, for the USA visit <http://www.fscus.org>.
 - 2. Acceptable Evidence: Copies of invoices bearing the certifying organization's certification numbers.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. Use of products having any of the following characteristics is not permitted:
- C. Where other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions.
 - 2. If wet-applied, have lower VOC content.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.

- D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

**SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- I. General requirements for maintenance service.

1.02 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- B. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- C. Section 01 5000 - Temporary Facilities and Controls: Temporary interior partitions.
- D. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.

1.03 REFERENCE STANDARDS

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
 - 1. On request, submit documentation verifying accuracy of survey work.
 - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
 - 3. Submit surveys and survey logs for the project record.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.

1.05 QUALIFICATIONS

- A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.06 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Perform dewatering activities, as required, for the duration of the project.
- D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 2. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
- F. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- G. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- H. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.

- 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

- A. Coordinate with requirements of Section 01 9113 - General Commissioning Requirements.
- B. Coordinate schedule for start-up of various equipment and systems.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.11 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- G. Clean site: sweep paved areas, rake clean landscaped surfaces.
- H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

3.14 MAINTENANCE

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

END OF SECTION

**SECTION 01 7800
CLOSEOUT SUBMITTALS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.

- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- C. Include color coded wiring diagrams as installed.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
 - 1. Include HVAC outdoor and exhaust air damper calibration strategy.
 - a. Include provisions which ensure that full closure of dampers can be achieved.
 - 2. Include Carbon Dioxide Monitoring Protocol.
 - 3. Include Carbon Monoxide Monitoring Protocol.
 - 4. Include Frost Mitigation Strategy for ventilation heat-recovery system.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include sequence of operation by controls manufacturer.
- G. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- H. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- I. Include test and balancing reports.
- J. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20-pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text, fold larger drawings to size of text pages.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

**SECTION 02 8500
MOLD REMEDIATION**

PART 1

1.1 SUMMARY

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 DESCRIPTION OF WORK

- A. Furnish all labor, materials, and equipment necessary to carry out the safe removal of mold-containing material in compliance with all applicable laws and regulations from all surfaces as identified herein, including all incidental and pertinent operations. The work shall generally include the cleaning of all walls, ceiling, floors, above ceiling joists, rafters, with fungicide or equivalent and the removal of stained acoustical ceiling tiles and dispose of all contaminated materials in accordance with this Section.
- B. The Contractor shall coordinate all of his work with the specifications and plans found elsewhere.
- C. In general, the principal items of the mold removal work shall be as follows:
 - 1. Worker Protection.
 - 2. Decontamination Enclosure System.
 - 3. Preparation of Work Area.
 - 4. Removal of mold contaminated materials.
 - 5. Cleaning of mold-contaminated surfaces.
 - 6. Disposal.
- D. Attend the Pre-Bid Conference.
- E. The Contractor acknowledges that he alone is responsible for his workmanship, and compliance with this specification and shall adhere to standard industry practices.

1.3 REQUIREMENTS

- A. Applicable Standards and Guidelines:
 - 1. The Contractor shall comply with current industry standards and guidelines pertaining to mold removal activities and as specified herein.
- B. Specific Statutory and Regulatory Requirements:
 - 1. Comply with applicable LA County and State of California regulations.
 - 2. 29 CFR 1910 — General Industry Standards.
 - 3. 29 CFR 1926 — Construction Industry Standards.

1.4 DEFINITIONS

- A. Fungus: A single celled or multi-cellular organism without chlorophyll that reproduces by spores and lives by absorbing nutrients from organic matter.
- B. Mold: Simple plants that belong to the group known as Fungi.

1.5 SUBMITTALS

- A. Work Plan: Submit six copies of a written work plan prior to work. The work plan shall be approved in writing by the Owner or its representatives prior to work. The work plan shall include the following:
1. Description of equipment supplies and personnel protective equipment to be employed.
 2. Documentation of fungicide solution to be employed. Provide manufacturers specifications of its effectiveness on mold and describe any mixtures and concentrations to be used.
 3. Security provisions.
 4. Work procedures.
 5. Staging and sequence of work.
 6. An 8,5 inch by 11 inch floor plan of the work area, entrances and exits.
 7. Documentation of Instruction: Submit documentation of all OSHA required training and other training described herein, including but not limited to respiratory protection and hazardous communication. Workers and supervisors shall attend at least eight hours of instruction on the removal, handling and disposal of mold. Documentation shall include the names of workers and supervisors that are anticipated to work on this project.
 8. Respirators: Submit notarized certifications that respirators and associated equipment meet all requirements of OSHA and EPA. Document NIOSH approval of all respiratory protective devices utilized on site. Include manufacturer's certification of HEPA filtration capabilities for all cartridges and filters.
 9. Daily site report forms, visitor log forms, and disposal and waste manifest forms that will be used for this project.
- B. Post-Work Submittals: Submit no later than fifteen working days after official completion of work. Submittals shall include the following:
1. Visitors log.
 2. Disposal manifest form including the quantity of waste disposed and location of landfill.
 3. Daily site reports.

PART 2 - PRODUCTS

2.1 EQUIPMENT AND MATERIALS

- A. Provide two complete sets of personal protective equipment daily, as required herein, for entry to and inspection of the controlled area. The personal protective equipment shall include respirators, and disposable protective whole body covering. The personal protective equipment shall remain the property of the Contractor.
- B. Respirators: Select respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services. Respirators shall comply with the requirements of 29 CFR 1910.134. For this project, respirators shall be worn at all times throughout the removal process. The half-face, air purifying respirator with the P-100 filter cartridge shall be the minimum respiratory protection for this project.
- C. Protective Clothing: Furnish personnel exposed to dust with disposable protective whole-body clothing, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves to protect hands and appropriate eye protection.

- D. Warning Signs and Labels: Provide warning signs at approaches to the controlled areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area.
- E. Protective Covering: The Contractor shall provide and install protective covering on an “as required” or “upon request” basis by the Owner or its representatives. Protective covering shall be clean, fire-retardant polyethylene plastic sheets with a minimum thickness of 6 mil.
- F. Plastic Bags: Minimum thickness 6-mil polyethylene film labeled as specified hereinafter.
- G. Tapes: Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attaching polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water. Silver cloth duct tape, minimum 2 inches wide; red or NATO orange tape, minimum 2 inches wide for exit arrows; and double-faced foam tapes, by Nashua, 3-M, Arno, or approved equal.
- H. Adhesives: Adhesives (3-M, #76, #77, or approved equal) shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
- I. Tools: Filters on vacuums and exhaust equipment shall be High Efficiency particulate Absolute (HEPA) filters and UL 586 labeled.
- J. Other Materials: Provide materials to properly prepare and complete this project.

PART 3 - EXECUTION

3.1 WORK AREA PREPARATION

- A. Posting of Danger Signs: Post danger signs in and around the work area. Signs shall be posted at a distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.
- B. Provide decontamination units where appropriate and as described in the Contractor's Work Plan.
- C. Protect all office supplies, equipment and personal effects either by arranging for its removal from the work area prior to start of work or covering with 6-mil plastic.

3.2 SEPARATION OF WORK AREAS FROM NON-WORK AREAS

- A. The entire work area shall be separated from the non-working areas. Non-working areas are office spaces inside the building that are either not included in this Scope of Work or temporarily occupied during mold abatement activities in other parts of the building.
- B. Make-up Air: Air from outside the building shall be fed into the work area and shall be filtered with at least a 3-micron filter.
- C. Exhaust Air: Air from inside the work area shall be removed with a fan unit that has at least a 3-micron filter and shall be constructed at the opposite side of the make-up air system to ensure that air flow is directed throughout the controlled area.
- D. Inspection: The Contractor shall inspect the containment at least twice a day (once prior to the start of each day's abatement operations and following the day's abatement operations). Document the inspections and observations in a daily project log.

3.3 CLEANING SURFACES

- A. After all air-conditioning ducts and appurtenances are removed by the general contractor, clean all surfaces (supply and return air vents, walls, ceilings, doors, trusses, floors, acoustical ceiling grids) with approved fungicide.
- B. Ensure that all surfaces that are cleaned are dry prior to vacuuming with HEPA vacuum cleaners. Repeat as necessary.
- C. Debris found above the hung ceiling shall also be cleaned.
- D. All acoustical ceiling tiles that show signs of water stains shall be removed and disposed of as contaminated debris.

3.4 DISPOSE OF MOLD-CONTAINING MATERIAL

- A. All mold-containing waste shall be wrapped or contained leak-tight.
- B. No labeling is required.
- C. Waste may be disposed of as non-regulated waste at a local landfill.

3.5 CLEANING AND CLEARANCE OF THE WORK AREA

- A. should the contractor fail to commence work to clean-up and make the work area mold free in a timely manner, the owner may, without further notice and without termination of the contract, do the clean-up and deduct the cost thereof from the contract.

END OF SECTION

Plan Holder's List			
CITY OF SHAWNEE - Public Works Storm Repair			
	Name of Company	Contact Info (Phone and Email)	Representative Name
1	Construct Connect	513-458-8606 geornean.andrews@constructconnect.com	Geornean Andrews
2	Landmark Construction Group	405.843.8041 msmith@landmarkokc.com	Matt Smith
3	Midtown Construction Services	405.482.5847 dean@midtownconst.com	Dean Baker
4	4D Restoration	405.896-9088 psheridan@4drestoration.com	Philip Sheridan
5	Downey Contracting	405.478.5277 dzimbelman@downeycontracting.com	Day Zimbelman
6	Sagemill Construction	918.810.4071 rance@sagemill.net	Rance Miller

BID TABULATION SHEET

PUBLIC WORKS MAINTENANCE FACILITY – STORM REPAIRS

Contract No. EM-2023-0419-06

December 10, 2024

<u>BIDDER</u>	<u>AMOUNT</u>
<u>Landmark Construction group LLC, Oklahoma City, OK</u>	\$ <u>222,500.00</u>
<u>Downey Contracting LLC, Oklahoma City, OK</u>	\$ <u>498,700.00</u>
<u>Midtown Construction Services, Edmond, OK</u>	\$ <u>126,392.00</u>
<u>Sagemill Construction, Meeker, OK</u>	\$ <u>382,300.00</u>

Public Works Maintenance Facility - Storm Repairs - BID TABULATION

CITY OF SHAWNEE OKLAHOMA

DATE: December 10, 2024

BASE BID PAY ITEMS				Midtown Construction		Landmark Construction		Sagemill Construction		Downey Contracting	
ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST	UNIT COST	TOTAL COST
1	Building (B-1)	LS	1	\$ 24,598.00	\$ 24,598.00	\$ 41,000.00	\$ 41,000.00	\$ 153,202.00	\$ 153,202.00	\$ 103,600.00	\$ 103,600.00
2	Building (B-1)	LS	1	\$ 7,365.00	\$ 7,365.00	\$ 33,000.00	\$ 33,000.00	\$ 25,620.00	\$ 25,620.00	\$ 51,200.00	\$ 51,200.00
3	Building (B-1)	LS	1	\$ 2,963.00	\$ 2,963.00	\$ 10,200.00	\$ 10,200.00	\$ 9,760.00	\$ 9,760.00	\$ 13,900.00	\$ 13,900.00
4	Building (B-1)	LS	1	\$ 38,395.00	\$ 38,395.00	\$ 45,900.00	\$ 45,900.00	\$ 46,238.00	\$ 46,238.00	\$ 32,100.00	\$ 32,100.00
5	Building (B-1)	LS	1	\$ 11,572.00	\$ 11,572.00	\$ 11,500.00	\$ 11,500.00	\$ 13,664.00	\$ 13,664.00	\$ 21,700.00	\$ 21,700.00
6	Building (B-1)	EA	1	\$ 12,838.00	\$ 12,838.00	\$ 12,900.00	\$ 12,900.00	\$ 14,884.00	\$ 14,884.00	\$ 32,100.00	\$ 32,100.00
7	Building (B-1)	LF	1	\$ 947.00	\$ 947.00	\$ 7,800.00	\$ 7,800.00	\$ 5,353.00	\$ 5,353.00	\$ 12,000.00	\$ 12,000.00
8	Building (B-1)	EA	1	\$ 1,129.00	\$ 1,129.00	\$ 15,900.00	\$ 15,900.00	\$ 15,860.00	\$ 15,860.00	\$ 53,200.00	\$ 53,200.00
9	Building (B-1)	EA	1	\$ 11,655.00	\$ 11,655.00	\$ 19,900.00	\$ 19,900.00	\$ 65,575.00	\$ 65,575.00	\$ 140,500.00	\$ 140,500.00
10	Building (B-1)	EA	1	\$ 7,430.00	\$ 7,430.00	\$ 16,900.00	\$ 16,900.00	\$ 24,644.00	\$ 24,644.00	\$ 30,900.00	\$ 30,900.00
11	Construction Allowance	EA	1	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00	\$ 7,500.00
TOTAL BASE BID ITEMS					\$126,392.00		\$222,500.00		\$382,300.00		\$498,700.00



Finance Department
16 W. 9th St.
Shawnee, OK 74801
ShawneeOK.org

Date: December 16, 2024
To: City Commission
From: Kimberly Smith, Finance Director
Subject: December 2024 Sales and Use Tax Deposit

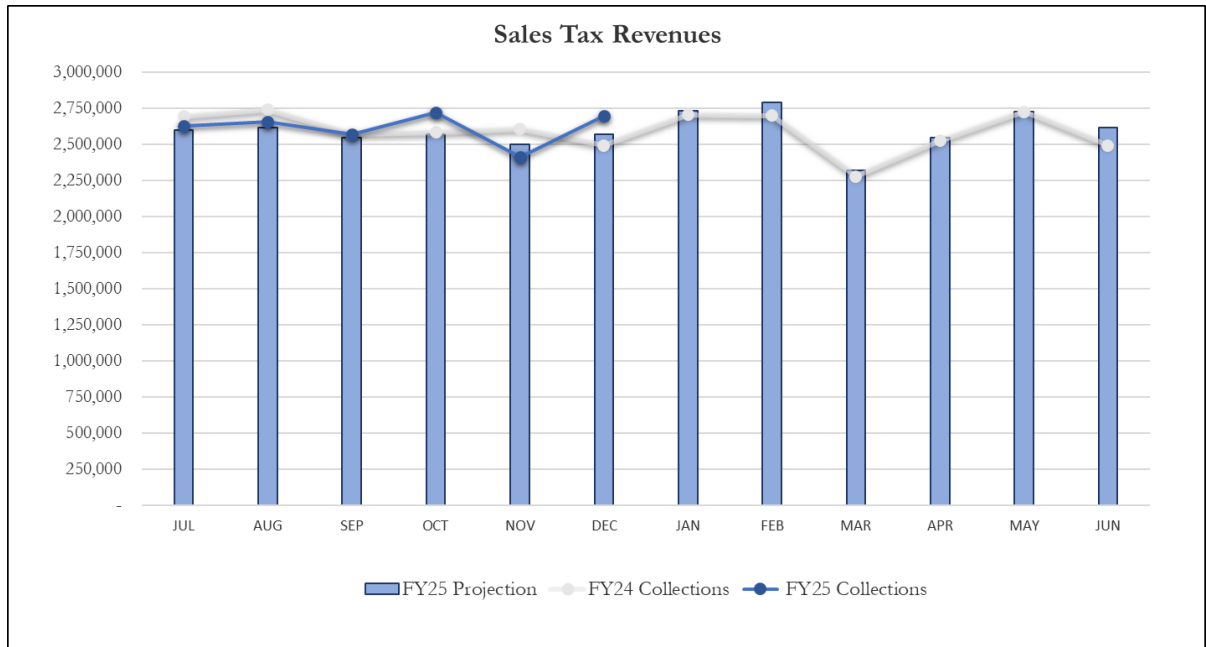
Background: The Oklahoma Tax Commission (the “OTC”) collects and enforces collection of sales and use taxes, including special earmarked taxes such as alcohol and tobacco, for the entities responsible for remitting taxes to the City of Shawnee. Entities with monthly tax liabilities exceeding \$2,500 are required to remit tax estimates each month by the 20th; in addition, entities are required to report their final tax collections for the previous month along with a final payment of taxes for the previous month on the 20th. To summarize, tax collections remitted to the City of Shawnee by the OTC in December consist of November estimates and October final reported collections. Any taxes collected for months prior to September will include accrued late penalties and interest.

- Sales Tax Collection Allocated by Fund - The December sales tax deposit was \$2,694,541.37 including interest of \$3,789.81, to be allocated as follows:

<u>Fund</u>	<u>Allocation</u>
General Fund	\$ 1,347,270.69
2018 Capital Improvements Fund	336,817.67
Capital Improvements Fund	261,033.70
Street Improvements Fund	294,715.46
Economic Development Fund	33,681.77
Police Sales Tax Fund	42,102.21
Fire Sales Tax Fund	42,102.21
2023 Capital Improvements Fund	<u>336,817.67</u>
Total Sales Taxes Collected	<u><u>\$ 2,694,541.37</u></u>

- Finance Department Report - Sales and use tax collections totaled \$3,051,201.28 for December 2024. Sales tax projections are based on an average for the most recent three years of sales tax history. For the year, sales tax collections are up \$275,380 or 1.79%, over the projected budget year-to-date, across 8 funds. Use tax collections are down \$149,387 or 6.28% below the projected budget year-to-date.

○ Fiscal Year 2025 Sales Tax Collections and Performance:

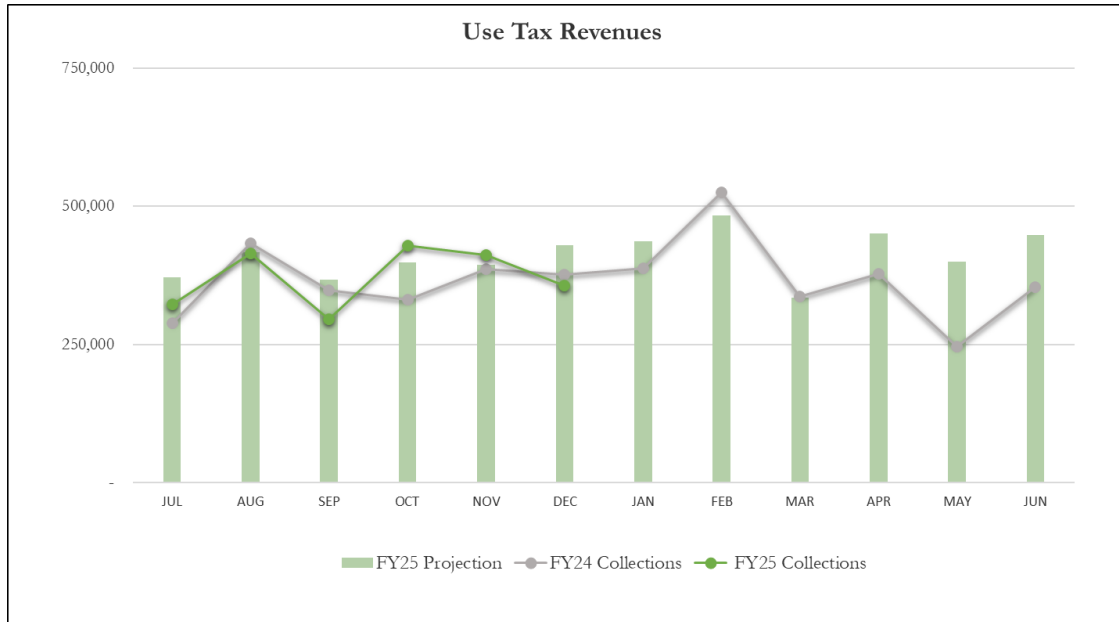


	Projected Budget	Actual	Amount Variance	Percentage Variance
Sales Tax Receipts - December 2024	\$ 2,568,705	\$ 2,694,541	\$ 125,836	4.90%
Sales Tax Receipts (year-to-date):	\$ 15,393,894	\$ 15,669,274	\$ 275,380	1.79%

	December 2023	December 2024	Amount Variance	Percentage Variance
Sales Tax Receipts (vs Prior Year):	\$ 2,492,297	\$ 2,694,541	\$ 202,245	8.11%

	Year To Date FY 2024	Year To Date FY 2025	Amount Variance	Percentage Variance
Sales Tax Receipts (vs Prior Year):	\$ 15,680,400	\$ 15,669,274	\$ (11,126)	-0.07%

○ Fiscal Year 2025 Use Tax Collections and Performance:



	Projected Budget	Actual	Amount Variance	Percentage Variance
Use Tax Receipts - December 2024	\$ 430,017	\$ 356,660	\$ (73,357)	-17.06%
Use Tax Receipts (year-to-date):	\$ 2,379,319	\$ 2,229,932	\$ (149,387)	-6.28%

	December 2023	December 2024	Amount Variance	Percentage Variance
Use Tax Receipts (vs Prior Year):	\$ 376,237	\$ 356,660	\$ (19,577)	-5.20%

	Year To Date FY 2024	Year To Date FY 2025	Amount Variance	Percentage Variance
Use Tax Receipts (vs Prior Year):	\$ 2,163,049	\$ 2,229,932	\$ 66,883	3.09%

○ Fiscal Year 2025 – General Fund Sales & Use Tax – Below Projections:

General Fund Projections (year-to-date)

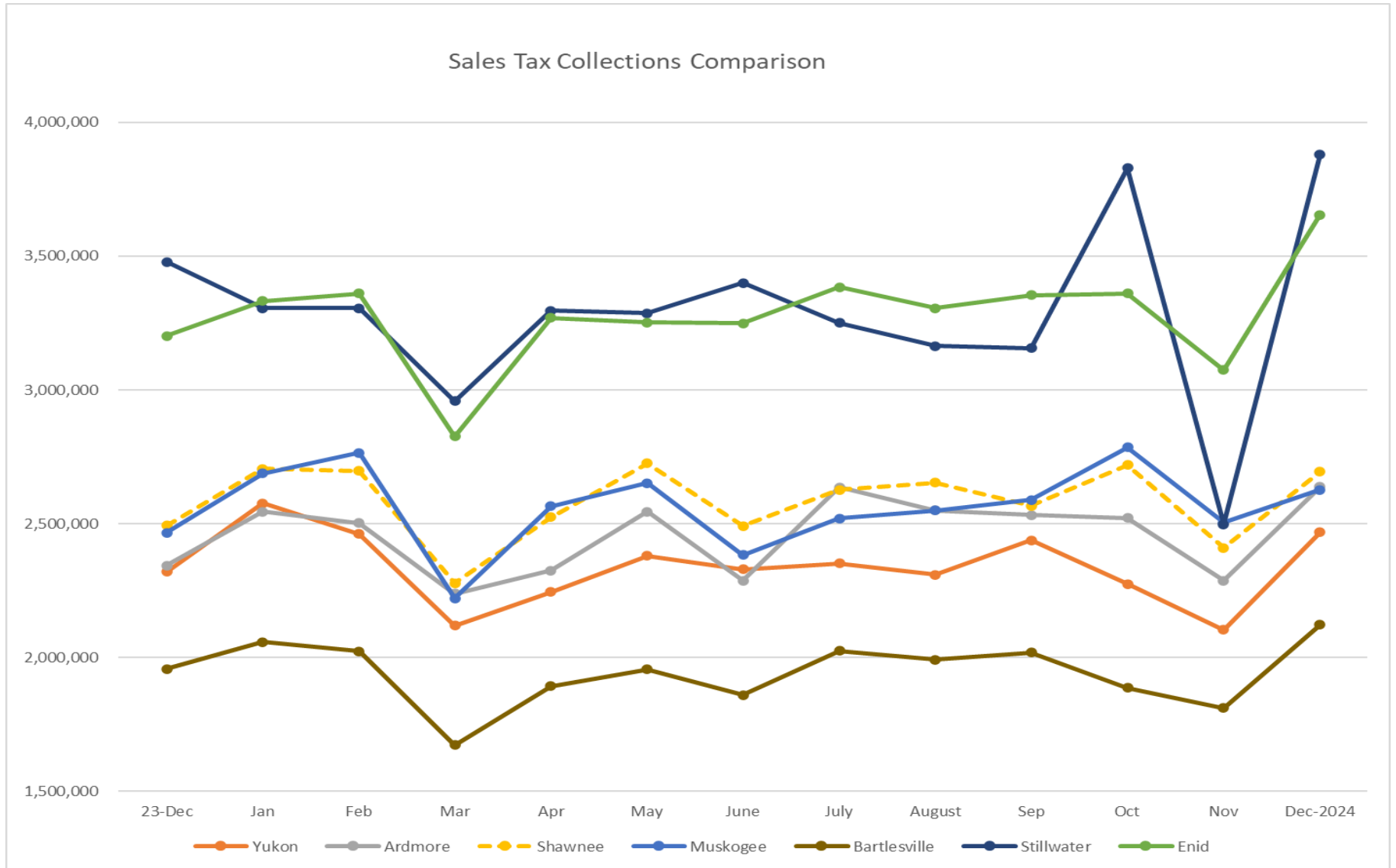
Sales Tax Above/(Below) Projections: \$ 137,690

Use Tax Above/(Below) Projections: \$ (149,387)

Appropriated:

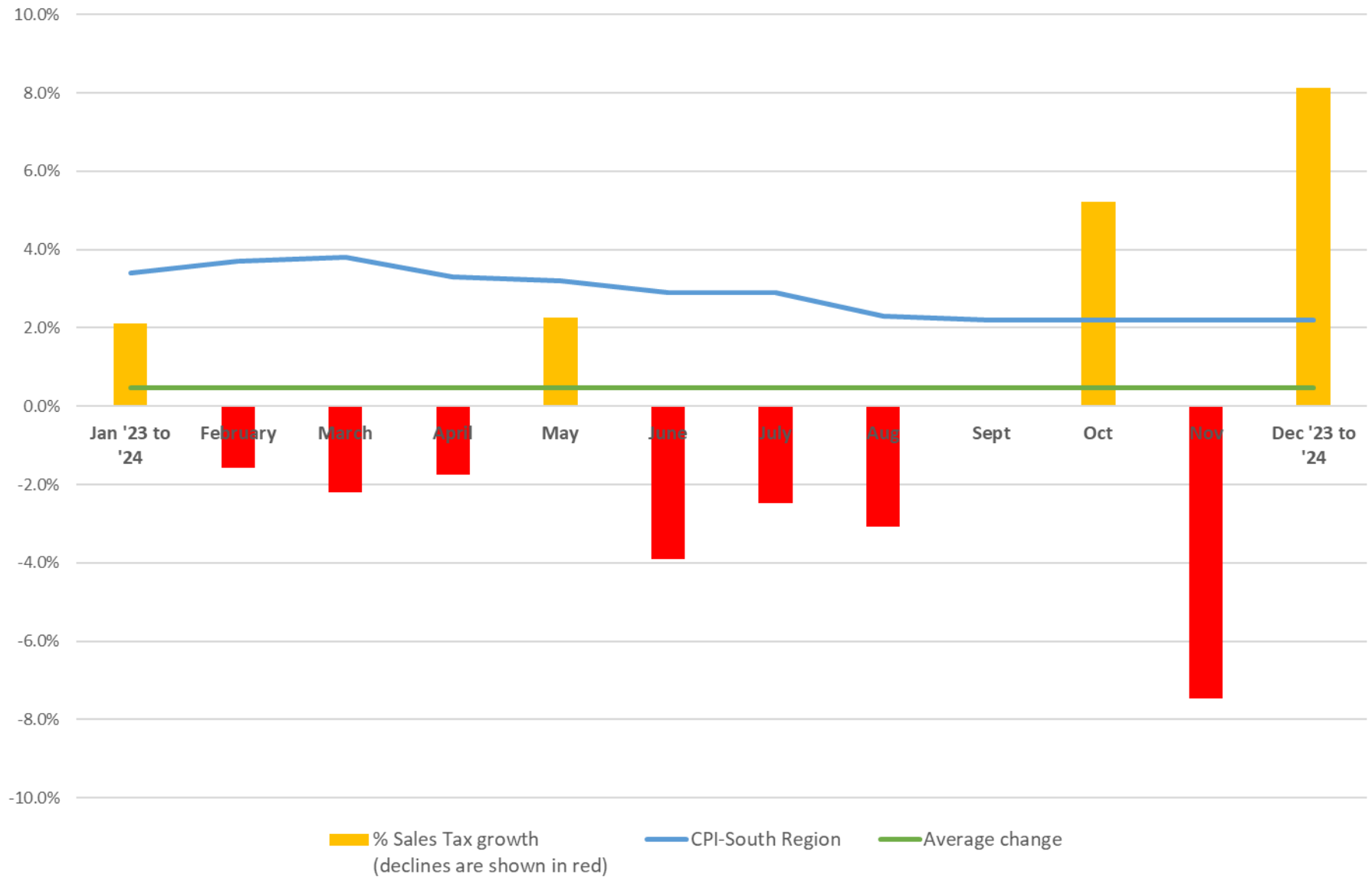
Total Appropriated \$ -

Total Unappropriated: \$ (11,697)



	Yukon	Ardmore	Shawnee	Muskogee	Bartlesville	Stillwater	Enid
Population	23,630	24,725	31,377	36,878	37,290	48,394	51,308
City Tax Rate	4.00%	3.75%	4.00%	4.00%	3.40%	3.63%	4.25%
State Rank by Total Collections (Prior Year)	14	13	15	12	16	11	10

Year over Year Sales Tax Growth by Month



How to Navigate the City of Shawnee's Online Budget to Actuals

This year, the City of Shawnee implemented OpenGov which allows for an interactive experience with the city's budget. The Budget to Actuals report is laid out in four sections: Revenue vs Expenditure Summary YTD, Revenue by Source, Breakdown by Account Group, and Breakdown by Department.

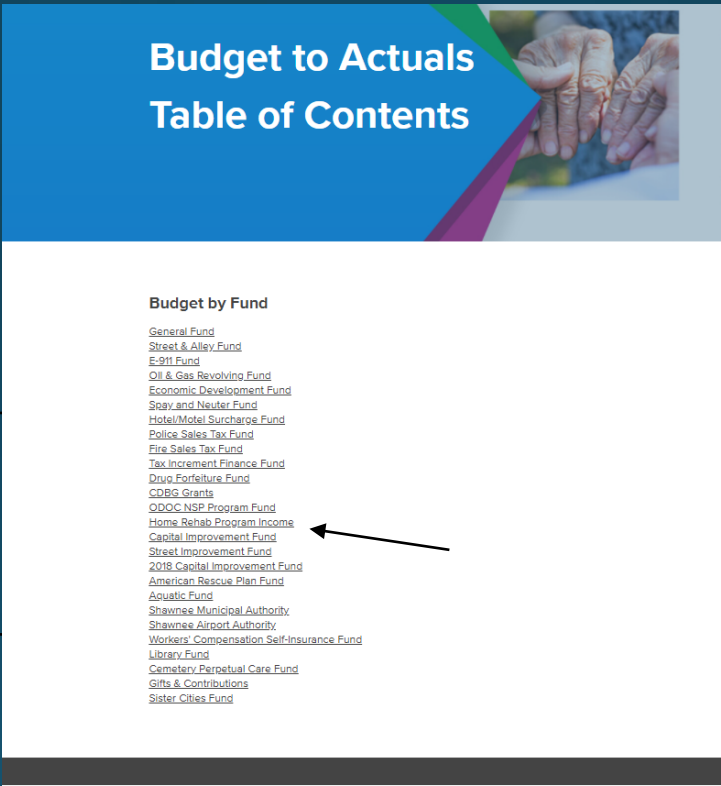
Please Note: *OpenGov works best with Google Chrome.*

Table of Contents

The link below will take you to the City of Shawnee Online Budget to Actuals.

<https://stories.opengov.com/shawneeok/published/u84NCy36R>

The first thing which appears is the Table of Contents. This page contains links to each fund. You may look at the desired budget by clicking on the hyperlink.

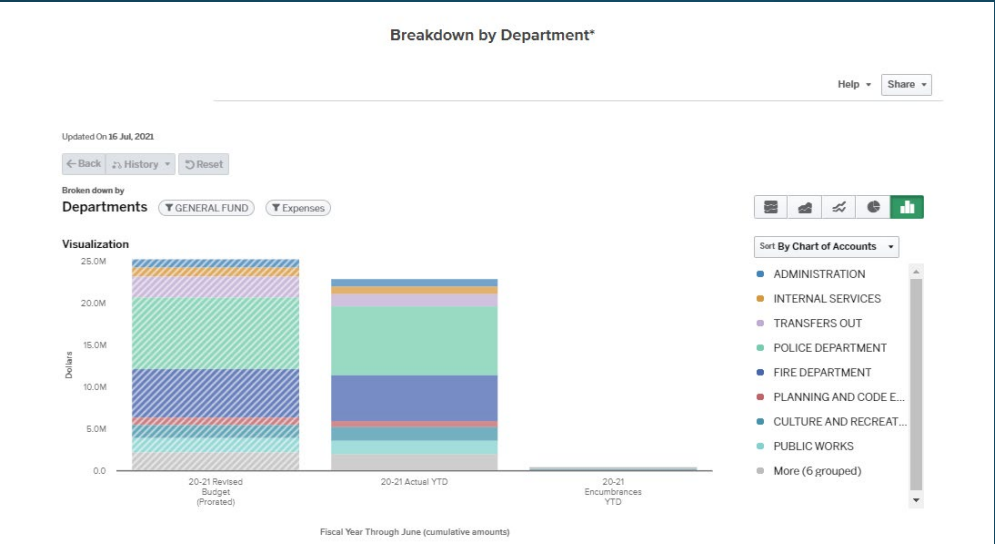


OpenGov comes with many features. The next two pages outline some of the basics of clicking through an OpenGov budget to actuals page.

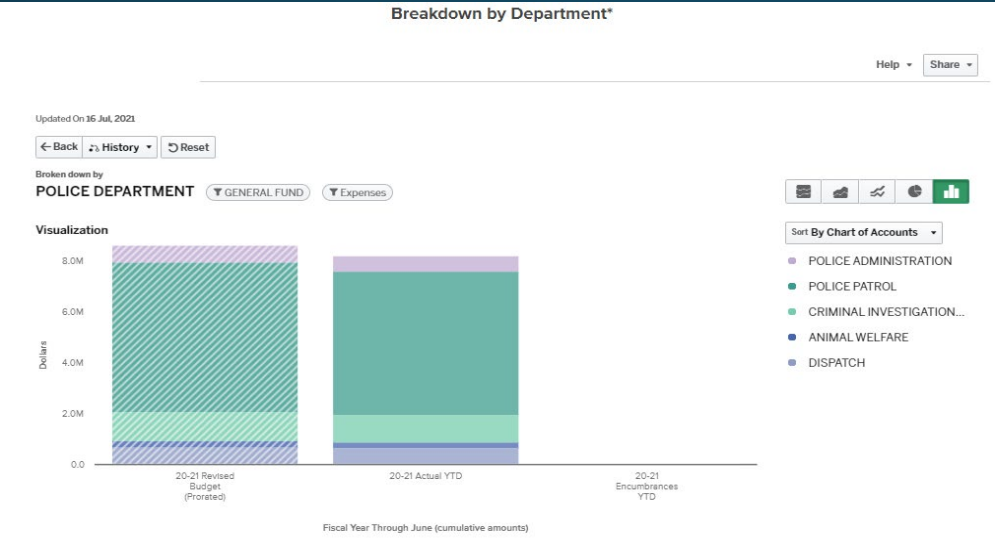
Drill-Down Capabilities

Certain graphs are dynamic and can be used to drill-down. For example, the General Fund Breakdown by Department can be limited to certain divisions. This is done by clicking on the portion of the graph which is of interest.

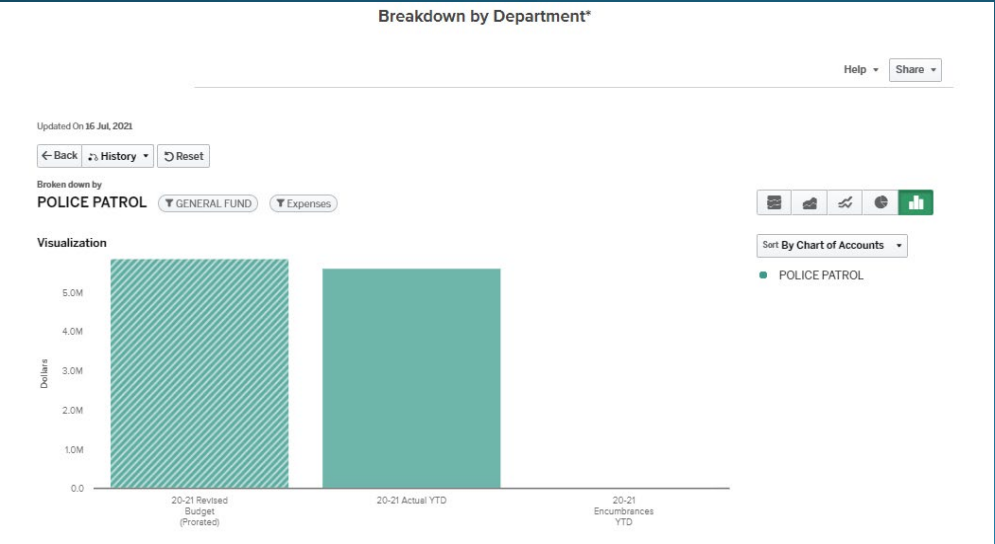
Initial View



Department Level

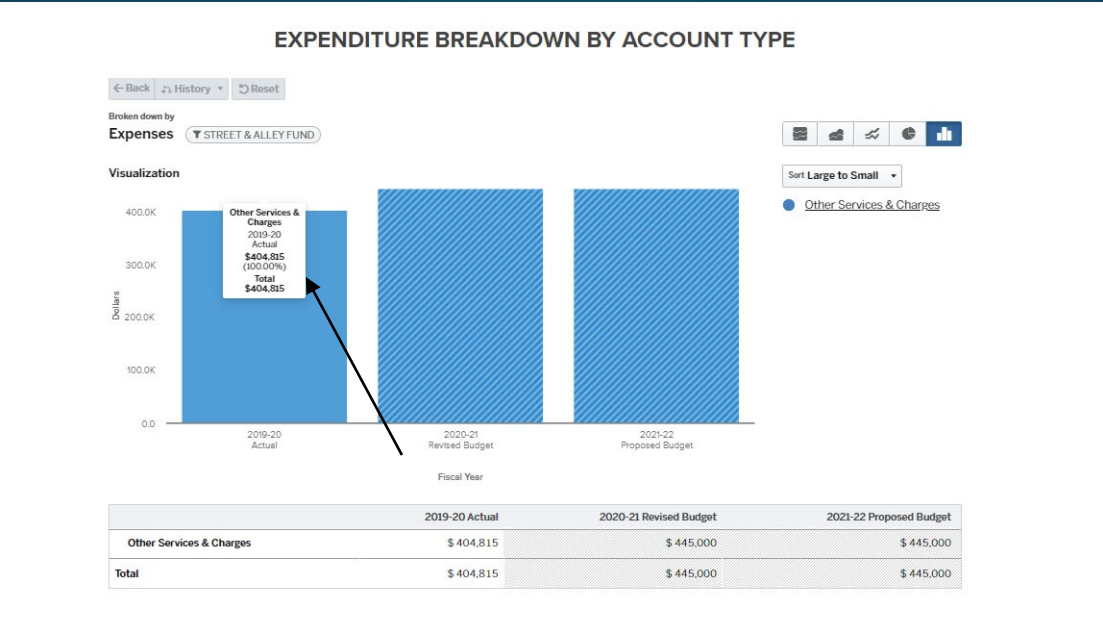


Division Level



Hovering to View Numbers

Hovering over each portion of a bar graph will show you the amount of a particular item.

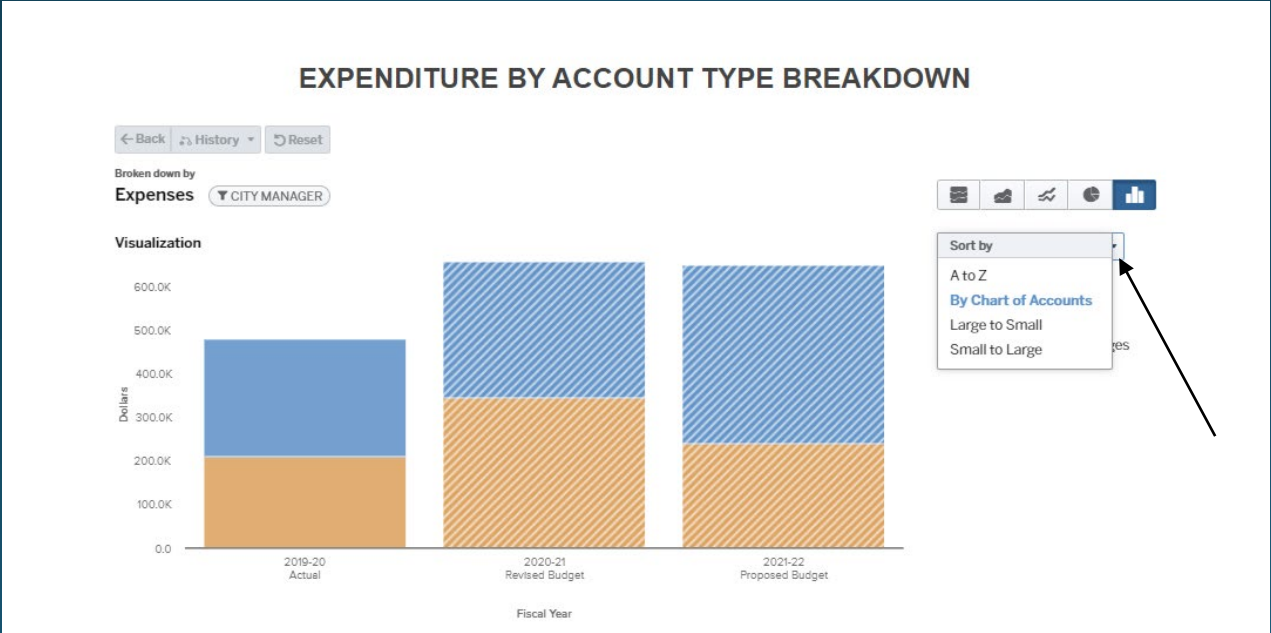


Sorting

Graphs may be sorted four ways:

- A to Z
- Chart of Accounts
- Smallest to Largest
- Largest to Smallest

To use this feature, please use the Sort By dropdown on the top right-hand corner of the graph.



Please Note: OpenGov information updates daily with current accounting records, and therefore, is subject to change if viewed subsequent to the original presentation date.



Per- and Poly-Fluoroalkyl Substances (PFAS) Update

December 16, 2024 – Joe Vorndran, City Attorney



Per- & Poly-Fluoroalkyl Substances - PFAS

- Group of manufactured chemicals
- Industrial and consumer use since 1940's
- Thousands of PFAS
- Extremely stable, leading to build up in environment & organisms

<https://www.epa.gov/pfas>

The screenshot shows the EPA website's page for PFAS. The header includes the EPA logo and navigation links. The main content area features a sidebar with links to 'PFAS Explained', 'Increasing Our Understanding', 'Action Steps to Reduce Risk', 'EPA Actions to Address PFAS', 'PFAS Strategic Roadmap', 'Data and Tools', and 'State Information'. The main article title is 'Our Current Understanding of the Human Health and Environmental Risks of PFAS'. Below the title is a light blue box with the text 'Per- and Polyfluoroalkyl Substances (PFAS) Are a Group of Manufactured Chemicals'. To the right of this box is a yellow box titled 'What EPA is Doing' with a link to 'Learn what EPA is doing to address PFAS.' The article text explains that PFAS are a group of manufactured chemicals used since the 1940s and provides examples like PFOA and PFOS.

EPA United States Environmental Protection Agency

Search EPA.gov

Environmental Topics ▾ Laws & Regulations ▾ Report a Violation ▾ About EPA ▾

Home / [PFOA, PFOS and Other PFAS](#) / [PFAS Explained](#)

PFOA, PFOS and Other PFAS

PFAS Explained ^

EPA's Current Understanding

Increasing Our Understanding

Action Steps to Reduce Risk

EPA Actions to Address PFAS

PFAS Strategic Roadmap

Data and Tools

State Information

[Contact Us About PFOA, PFOS and Other PFAS](#)

Our Current Understanding of the Human Health and Environmental Risks of PFAS

Per- and Polyfluoroalkyl Substances (PFAS) Are a Group of Manufactured Chemicals

What EPA is Doing

[Learn what EPA is doing to address PFAS.](#)

PFAS are a group of manufactured chemicals that have been used in industry and consumer products since the 1940s because of their useful properties. There are thousands of different PFAS, some of which have been more widely used and studied than others.

Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS), for example, are two of the most widely used and studied chemicals in the PFAS group. PFOA and PFOS have been replaced in the United States with other PFAS in recent years.

One common characteristic of concern of PFAS is that many break down very slowly and can build up in people, animals, and the environment over time.

Page 876 of 882

Multi-District Litigation

- Multi-district litigation (MDL) relating to PFAS began as early as 2020
- City started investigating issue in 2023 and identified litigation as pathway to cost-effective investigation & testing
- City engaged with counsel to conduct testing and protect City's rights in the MDL litigation in 2023



PFAS Testing and Results

- Full laboratory testing of multiple samples from both Twin Lakes and Wes Watkins conducted in fall 2023
- **All results** came back well below EPA thresholds for PFAS chemicals
- City followed advice of counsel and opted into the larger settlement matrix of the MDL litigation

		January 22, 2024 Client: Shawnee PWA DW (OK1020504) 111 South Kickapoo Street Shawnee, OK 74801 Requested By: -		 National Environmental Laboratory Accreditation Program ODEQ TNI Certified
Sample Project Name:	PFAS			
Date Samples Received:	January 11, 2024	Time: 16:20	sample temp upon arrival at lab = 0.40°C - On Ice	
Matrix:	Drinking Water			
Lab Log Numbers:	GA11092-01	GA11092-02	GA11092-03	
Work Order:	GA11092			
Report #	GA11092-0122241403			
EPA Lab ID#':	Stillwater OK00092 Tulsa OK00983 OKC OK00129 ICR OK 001			
Oklahoma Certification:	Stillwater NELAP WasteWater, ODEQ 8316/ Drinking Water, DEQ D9602 NELAP Tulsa WasteWater, ODEQ 9905 / Drinking Water, DEQ D9901 Oklahoma City NELAP WasteWater ODEQ 7202 / Drinking Water, DEQ D9937			
Kansas Certification:	Stillwater NELAP CERT # E-10219			
Method Reference:	40 CFR 136, 141, and 261 Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983. Test Methods for Evaluating Solid Wastes, SW-846, Final Update VI. Standard Methods 2005 (21st Edition), Standard Methods 2011 (22nd Edition), Standard Methods 2017 (23rd Edition) for the Examination of Water and Wastewater.			
Analysis Reference:	If qualifiers present in "Prep Info" or "Analysis Info", then analysis performed as follows: @= Tulsa Lab and * = OKC Lab. If no qualifiers present, then analysis performed at Stillwater Lab. Accurate Environmental Laboratories certify that the test results performed meet all requirements of TNI. Any exceptions to this can be found in the report notes, Quality Control section, or Method/Parameter section of the report. - No cert. = Laboratory does not carry certification for this method/analysis. - Non-TNI = Laboratory has state certification but method does not fall under TNI certification. This report is to only be replicated in its entirety. Revised or Amended reports supersede all previous reports. Accurate Environmental sampling protocol was followed for any sampling performed by Accurate Field Services. Field accreditation certification only applies to wastewater analysis. Field analysis for drinking water methods are not offered as part of the ODEQ's field certification program.			
505 S. Lowry Street ■ Stillwater, OK 74074 ■ 405-372-5300 ■ Page 878 of 882 Page 1 of 19 GA11092-0122241403				

Litigation Outlook

- Though not final, preliminary estimates are that the City will receive approximately \$30,000
- The City also retains the right to pursue future litigation in the unlikely circumstance that levels change



City Commission Questions



For more PFAS info, see
<https://www.epa.gov/pfas>

RESOLUTION NO. _____

A RESOLUTION OF THE CITY OF SHAWNEE, OKLAHOMA TO PROVIDE FOR RETENTION OF ATTORNEYS TO ADDRESS SOCIAL MEDIA COMPANIES RELATED TO MENTAL HEALTH, ADDICTION AND SOCIETAL HARM.

WHEREAS, social media companies have harmed the City of Shawnee and its citizens. This harm was created and exacerbated by the misconduct and illegal activities of social media companies.

WHEREAS, there is a substantial need for legal services to pursue the City of Shawnee's claims against social media companies.

WHEREAS, the City of Shawnee selects the legal team of Fulmer Sill to serve as counsel to prosecute this matter working under the oversight and approval of the City Counsel and any designees of the City of Shawnee.

WHEREAS, all fees to be paid to counsel are contingent upon the recovery of penalties, damages, attorney's fees, and costs. Fees shall be paid only from such recovery and no money shall be due or paid from the City of Shawnee's general fund or any special fund.

THEREFORE, it was duly moved and seconded that the following resolution be adopted.

THEREFORE, BE IT RESOLVED that the City of Shawnee, Oklahoma hereby authorize the filing of a civil suit against social media companies for penalties, damages, injunctive relief, and any other remedy available by law. Such legal action is essential to protecting the interests of the City of Shawnee and its citizens.

The City of Shawnee adopted the above Resolution on December 16, 2024.

CITY OF SHAWNEE, OKLAHOMA:

Eric Stephens, Mayor

ATTEST:

Lisa Lasyone, MMC, City Clerk

Date: _____

Fulmer Sill

RESOLUTION NO. _____

**A RESOLUTION OF THE CITY OF SHAWNEE, OKLAHOMA TO PROVIDE FOR
RETENTION OF ATTORNEYS TO ADDRESS PHARMACY BENEFIT MANAGERS
RELATED TO INSULIN AND OTHER MEDICATIONS.**

WHEREAS, price fixing schemes of insulin and other medications by Pharmacy Benefit Managers have harmed the City of Shawnee and its citizens. This harm was created and exacerbated by the misconduct and illegal activities of Pharmacy Benefit Managers.

WHEREAS, there is a substantial need for legal services to pursue the City of Shawnee's claims against Pharmacy Benefit Managers.

WHEREAS, the City of Shawnee selects the legal team of Fulmer Sill to serve as counsel to prosecute this matter working under the oversight and approval of the City Commission and any designees of the City of Shawnee.

WHEREAS, all fees to be paid to counsel are contingent upon the recovery of penalties, damages, attorney's fees, and costs. Fees shall be paid only from such recovery and no money shall be due or paid from the City of Shawnee's general fund or any special fund.

THEREFORE, it was duly moved and seconded that the following resolution be adopted.

THEREFORE, BE IT RESOLVED that the City of Shawnee, Oklahoma hereby authorize the filing of a civil suit against Pharmacy Benefit Managers for penalties, damages, injunctive relief, and any other remedy available by law. Such legal action is essential to protecting the interests of the City of Shawnee and its citizens.

The City of Shawnee adopted the above Resolution on December 16, 2024.

CITY OF SHAWNEE, OKLAHOMA:

Eric Stephens, Mayor

ATTEST:

Lisa Lasyone, MMC, City Clerk

Date: _____

Fulmer Sill