

SPECIFICATIONS FOR MATERIALS

For

**PROJECT NUMBER EWC-28103A, JP 37100(38)
MOORE WWTP EFFLUENT FORCE MAIN RELOCATION**

Prepared

for

CITY OF MOORE

MOORE, OKLAHOMA

JULY 27, 2025

Prepared

By

**EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL**

**Eagle Office Center
2803 South Bryant Ave.
Edmond, Oklahoma 73013
Tel: (405) 844 - 3900
Fax: (405) 844 – 3600**

APPROVAL SHEET

SPECIFICATIONS FOR MATERIALS

PROJECT NUMBER EWC-28103A, JP 37100(38)
MOORE WWTP EFFLUENT FORCE MAIN RELOCATION

Prepared by

EAGLE CONSULTANTS, INC.

This document has been prepared under the supervision of a registered engineer licensed in the
State of Oklahoma


Satish Dasharathy

Mr. Satish Dasharathy, P.E.

July 25, 2025

Date

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Advertisement for Bids

Notice is hereby given that the City of Moore, hereinafter called the "Owner" will receive sealed bids from Bidders by the Owner, at the Office of the Purchasing Agent Purchasing Division, Moore City Hall, 301 N. Broadway, Suite 142, Moore, Oklahoma 73160 until 01:45 P.M. CST on the 19th Day of August 2025.

**Moore WWTP Effluent Sewer Force Main Relocation Improvements
OTA Project # EWC-28103A, JP 37100(38)
BID NUMBER 2026 - 001**

This project is funded by the Oklahoma Turnpike Authority (OTA). All bids received at said time will be opened for the supply of Pipe, pipe fittings, full-bore plug valves, gate valves, magnetic flow meter, & air relief valves to be delivered to sites in & around the City of Moore FOB job sites designated by the City of Moore & the Oklahoma Turnpike Authority selected by the City of Moore for the construction of the Moore WWTP Effluent Sewer Force Main Relocation Improvements. The City of Moore will bid for the construction of the WWTP Effluent Sewer Force Main Improvements project separately towards the end of 2025 & construction is projected to start by the first quarter of 2026 & last approximately 540 Calendar days thereafter.

BID A:

1. 36-INCH HDPE DR 13.5 160 PSI IRON PIPE SIZE (IPS) FORCE MAIN PRESSURE PIPE. – 43,000 LF
 2. VALVE ASSEMBLIES FOR NORTH & SOUTH EFFLUENT FORCE MAINS TO INSTALL PLUG VALVES COMPLETE PER PARTS LIST AT THREE LOCATIONS PER DRAWING, PLUG VALVE BID SEPERATELY & NOT INCLUDED, BIDS A, B, & C
 3. 36-INCH EDR 13.5 IRON PIPE SIZE 22.5° ELBOW 2-SEGMENT FABRICATION HDPE – QUANTITY - 16
 4. 36" EDR 13.5 IRON PIPE SIZE 45° ELBOW 3-SEGMENT FABRICATION HDPE – QUANTITY – 10
 5. 36" EDR 13.5 IRON PIPE SIZE 90° ELBOW 3-SEGMENT FABRICATION HDPE – QUANTITY – 4
 6. 36" X 2' GUSSETED REDUCING TEE COMPLETE PER PARTS LIST FOR AIR RELEASE VALVE PER DRAWING – QUANTITY - 8
 7. 36" C153 MJ ADAPTER KIT WITH GLAND, GASKET, & BOLTS – QUANTITY - 4
 8. 36" DR 13.5 IRON PIPE SIZE MJ ADAPTER ONLY PE W/ SS STIFFENER – QUANTITY - 4
- COMPLETE FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES.

BID B:

1. FULL-BORE 36-INCH DEZURIK FLANGED PLUG VALVES FOR 36-INCH HDPE 160 PSI DR 13.5 IPS COMPATIBLE WITH 36-INCH HDPE DR 13.5 FLANGE ADAPTER – QUANTITY - 7
2. 2-INCH SEWAGE TYPE AIR & VACUUM VALVE, DEZURIK OR EQUAL – QUANTITY - 8
3. 30-INCH MOTORIZED DEZURIK BUTTERFLY VALVE – QUANTITY – 2

- 4 18-INCH MOTORIZED DEZURIK BUTTERFLY VALVE – QUANTITY – 1
- 5 30-INCH MAGNETIC FLOW METER - QUANTITY – 1
- 6 36-INCH DEZURIK BUTTERFLY VALVES – QUANTITY – 3
- 7 ONE SUMP PUMP IN METER VAULT (MIN 0.5 HP, 2-INCH DISCHARGE, 18' STATIC HEAD) & TWO IN OG&E DIVERSION BOX (MIN 0.5 HP, 2-INCH DISCHARGE, 14' STATIC HEAD) – QUANTITY – 3
8. 8-INCH MANUAL BUTTERFLY VALVE – QUANTITY - 1

COMPLETE FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES.

This project when completed will transport wastewater from the existing Moore wastewater treatment plant located north of Indian Hills & East of Interstate 35 to a new cascade aerator discharge location at an unnamed tributary to the South Canadian River on the west side of Pennsylvania Avenue.

All material furnished shall be in accordance with the Plans and Specifications prepared by Eagle Consultants, Inc., and on file in the office of the Purchasing Agent, for the Moore Public Works Authority / City of Moore, Oklahoma.

The Notice to Bidders, Form of Bid, Form of Contract, Plans and Specifications, Forms of Bid Bond and other Contract Documents may be examined by bidders at the following locations. Please direct all project questions to Eagle Consultants, Inc.

1. City of Moore
301 N. Broadway,
Moore, Oklahoma 73160
2. Eagle Consultants, Inc.
Eagle Office Center
2803 S. Bryant Ave.
Edmond, OK 73013
Tel: 405-844-3900

Each Bidder shall accompany his original bid, filed with the Purchasing Agent, 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 furnish said materials in accordance with said plans and specifications and furnish the required bonds within seven (7) days after the acceptance of his bid.

The Owner will retain the deposit, and use it 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.

The supplier shall guarantee the repair of all damage due to supply of faulty equipment, improper materials, or materials of sub-standard quality workmanship for a period of one (1) year after the FINAL acceptance of the construction work by the Owner which is expected to be completed mid-2027.

This project is funded by the Oklahoma Turnpike Authority as a part of the East West Corridor construction to connect Interstate 44 to Interstate 35.

"Equal Opportunity in Employment: All qualified applicants will receive considerations 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."

The bids filed with the City of Moore Purchasing Agent will be opened at 02:00 P.M. CST, on the 19th day of August 2025 and considered by the City of Moore at the next City Council Meeting after bid opening held in the City Council Chambers, City Hall, Moore, Oklahoma. Bids may be considered, evaluated & approved by the OTA.

All bids shall remain on file at least forty-eight (48) hours thereafter before a contract is made and entered into thereon. Bids received more than ninety-six (96) hours prior to the Bid Opening will be returned.

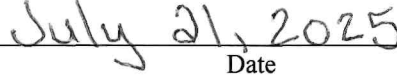
Contract is to be awarded to the lowest, responsive, responsible bidder.

The Owner reserves the right to waive any informality in the bidding.

The Owner reserves the right to reject any and all bids in accordance with the Oklahoma Competitive Bidding Act. Conditional bids shall not be accepted.



Mr. Jerry Ihler, Assistant City Manager, Moore, OK



Date

Approved as to form and legality, this 21 day of July 2025.



Municipal Counselor

INFORMATION FOR BIDDERS

BIDS will be received by City of Moore (hereinafter called the "OWNER"), at the office of Purchasing Agent, Purchasing Division, Moore City Hall, 301 N. Broadway, Suite 142, Moore, Oklahoma 73160 until 1:45 P.M. CST on August 19, 2025, and then at said office publicly opened and read aloud at 02:00 P.M. Each BID must be submitted in sealed envelope, addressed to: Purchasing Agent, Purchasing Division, Moore City Hall, 301 N. Broadway, Suite 142, Moore, Oklahoma 73160 for Bid A and/or Bid B as follows:

BID A:

1. 36-INCH HDPE DR 13.5 160 PSI IRON PIPE SIZE (IPS) FORCE MAIN PRESSURE PIPE. – 43,000 LF
2. VALVE ASEMBLIES FOR NORTH & SOUTH EFFLUENT FORCE MAINS TO INSTALL PLUG VALVES COMPLETE PER PARTS LIST AT THREE LOCATIONS PER DRAWING, PLUG VALVE BID SEPERATELY & NOT INCLUDED,

2A – VALVE ASSEMBLY 1 - BETWEEN PENNSYLVANIA AVENUE & WESTERN AVENUE PER DRAWING & PARTS LIST COMPLETE - QUANTITY - 1

2B – VALVE ASSEMBLY 2 - BETWEEN SANTA FE AVENUE & TELEPHONE ROAD PER DRAWING & PARTS LIST COMPLETE - QUANTITY - 1

2C – VALVE ASSEMBLY 3 - BETWEEN WESTERN AVENUE & SANTA FE AVENUE PER DRAWING & PARTS LIST COMPLETE - QUANTITY - 1
3. 36-INCH EDR 13.5 IRON PIPE SIZE 22.5° ELBOW 2-SEGMENT FABRICATION HDPE – QUANTITY - 16
4. 36" EDR 13.5 IRON PIPE SIZE 45° ELBOW 3-SEGMENT FABRICATION HDPE – QUANTITY – 10
5. 36" EDR 13.5 IRON PIPE SIZE 90° ELBOW 3-SEGMENT FABRICATION HDPE5 – QUANTITY – 4
6. 36" X 2' GUSSETED REDUCING TEE COMPLETE PER PARTS LIST FOR AIR RELEASE VALVE PER DRAWING – QUANTITY - 8
7. 36" C153 MJ ADAPTER KIT WITH GLAND, GASKET, & BOLTS – QUANTITY - 4
8. 36" DR 13.5 IRON PIPE SIZE MJ ADAPTER ONLY PE W/ SS STIFFENER – QUANTITY - 4

COMPLETE FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES.

BID B:

1. FULL-BORE 36-INCH DEZURIK PLUG VALVES (FOR 36-INCH HDPE 160 PSI DR 13.5 IPS COMPATIBLE. 36-INCH HDPE 160 PSI DR 13.5 IPS PIPE HAS A NOMINAL OD OF 36-INCHES & AN AVERAGE ID OF 30.347 INCHES) FOB MOORE, OKLAHOMA. - TO MATCH EXISTING VALVES IN MOORE – QUANTITY – 7
- 2 2-INCH SEWAGE TYPE AIR & VACCUUM VALVE, DEZURIK OR EQUAL – QUANTITY - 8
- 3 30-INCH MOTORIZED DEZURIK BUTTERFLY VALVE – QUANTITY – 2
- 4 18-INCH MOTORIZED DEZURIK BUTTERFLY VALVE – QUANTITY – 1

- 5 30-INCH MAGNETIC FLOW METER, SIEMENS 5100W WITH REMOTE MOUNTED READOUT - QUANTITY – 1
- 6 36-INCH DEZURIK BUTTERFLY VALVES – QUANTITY – 3
- 7 ONE SUMP PUMP IN METER VAULT-18' STATIC HEAD & TWO SUMP PUMPS IN OG&E DIVERSION BOX-14' STATIC HEAD W/ 2" DISCHARGE LINE. HYDROMATIC MESPD50AH1 20, AUTOMATIC SUMP PUMP ½ HP, 115/1/60, 20' CORD – QUANTITY – 3
8. 8-INCH MANUAL BUTTERFLY VALVE – QUANTITY - 1

COMPLETE FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES.

This project when completed will transport wastewater from the existing Moore wastewater treatment plant located north of Indian Hills & East of Interstate 35 to the cascade aerator discharge location at an unnamed tributary to the South Canadian River on the west side of Pennsylvania Avenue.

Each sealed envelope containing a BID must be plainly marked on the outside as BID for Moore WWTP Effluent Sewer Force Main Relocation Improvements, OTA Project # EWC-28103A, JP 37100(38) and the envelope should bear on the outside the BIDDER'S name, address, and 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 Purchasing Agent, Purchasing Division, Moore City Hall, 301 N. Broadway, Suite 203, Moore, Oklahoma 73160.

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.

The OWNER may waive any informalities or minor defects or reject all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Bids received more than ninety-six (96) hours before time specified and Bids received after the time set for opening Bids will not be considered and will be returned unopened. 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 estimated quantities in the BID schedule by examination of the specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities OR nature of MATERIALS to be supplied & delivered.

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 BIDDER or relieve the BIDDER from fulfilling any of the conditions of the contract.

Each bid must be accompanied by a bid bond payable to the OWNER for five percent of the total amount of the bid. A certified check may be used in lieu of the bid bond.

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 party to whom the contract is awarded will be given a purchase order after contract award by the City of Moore.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to supply the materials, 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 supply of materials contemplated therein.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest, responsive responsible BIDDER, and Tied Bids are non-restrictive. For a Tied Bid proposal to be accepted, it must be lower than the sum of low separate bids.

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.

The time for completion is 240 Calendar Days.

Liquidated damages will be \$100.00 per calendar day.

The following items will be submitted with the bid:

Bid proposal, Non-Collusion Affidavit, Business Relationship Affidavit, & Bid bond.

The Consultant is Eagle Consultants, Inc., 2803 South Bryant Avenue, Edmond, OK 73013

The Consultants phone number is: (405) 844-3900 .

The Consultant's contact person is Satish Dasharathy, P.E.

Email Address is satish@eagleconsultants.com

BID PROPOSAL

Proposal of _____ (hereinafter called "BIDDER"), organized and exists under the laws of the State of _____ doing business as _____. * To the City of Moore (hereinafter called "OWNER").

In compliance with your Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the construction of Moore WWTP Effluent Sewer Force Main Relocation Improvements, OTA Project # EWC-28103A, JP 37100(38), in strict accordance with The CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER is familiar with and has satisfied itself as to all Federal, State, and local Laws, and Regulations and Permits that may affect cost, progress, and performance of the WORK.

BIDDER hereby agrees to commence WORK under this contract within ten (10) calendar days of the date to be specified in The NOTICE TO PROCEED and to fully complete The PROJECT within Two Hundred & Forty (240) consecutive calendar days. BIDDER further agrees to pay as liquidated damages, the sum of \$100.00 for each consecutive calendar day thereafter.

No BIDDER may withdraw a BID within 60 days of the actual opening thereof. Each BID must be accompanied by a BID BOND payable to OWNER for 5% of the amount bid.

BIDDER agrees to perform all The Work described in The CONTRACT DOCUMENTS for the unit prices given in The Bid Schedule to deliver as required by the contractor selected by the City of Moore & the OTA..

By submitting a bid/proposal under this solicitation, the BIDDER understands that the bid/proposal is subject to the City of Moore, OTA, ODEQ, & Oklahoma State requirements.

* Insert "a corporation", "a partnership", or "an individual" as applicable

BID A: BID SCHEDULE - PURCHASE IS SALES TAX EXEMPT

**MOORE WWTP EFFLUENT SEWER FORCE MAIN RELOCATION IMPROVEMENTS
OTA PROJECT # EWC-28103A, JP 37100(38)
FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES**

ITEM #	DESCRIPTION	QTY	UNITS	UNIT PRICE	EXTENSION PRICE
1	36-INCH HDPE DR 13.5 160 PSI IRON PIPE SIZE (IPS) FORCE MAIN PRESSURE PIPE	43,000	LF		
2	VALVE ASEMBLIES FOR NORTH & SOUTH EFFLUENT FORCE MAINS TO INSTALL PLUG VALVES COMPLETE PER DRAWING & PARTS LIST AT THREE LOCATIONS, PLUG VALVE TO BID SEPERATELY & NOT INCLUDED IN BIDS 2A, 2B, & 2C BELOW	N/A	N/A	N/A	N/A
2 A	VALVE ASSEMBLY 1 BETWEEN PENNSYLVANIA AVENUE & WESTERN AVENUE PER DRAWING & PARTS LIST COMPLETE	1	EACH		
2 B	VALVE ASSEMBLY 2 BETWEEN SANTA FE AVENUE & TELEPHONE ROAD PER DRAWING & PARTS LIST COMPLETE	1	EACH		
2 C	VALVE ASSEMBLY 3 BETWEEN WESTERN AVENUE & SANTA FE AVENUE PER DRAWING & PARTS LIST COMPLETE	1	EACH		
3	36-INCH EDR 13.5 IRON PIPE SIZE 22.5° ELBOW 2-SEGMENT FABRICATION HDPE	16	EACH		
4	36" EDR 13.5 IRON PIPE SIZE 45° ELBOW 3-SEGMENT FABRICATION HDPE	10	EACH		
5	36" EDR 13.5 IRON PIPE SIZE 90° ELBOW 3-SEGMENT FABRICATION HDPE	4	EACH		
6	36" X 2' GUSSETED REDUCING TEE COMPLETE PER DRAWING & PARTS LIST FOR AIR RELEASE VALVE	8	EACH		
7	36" C153 MJ ADAPTER KIT WITH GLAND, GASKET, & BOLTS	4	EACH		
8	36" DR 13.5 IRON PIPE SIZE MJ ADAPTER ONLY PE W/ SS STIFFENER	4	EACH		
TOTAL BASE BID A – INCLUDES BID ITEMS 1,2,3,4,5,6,7, & 8					

TOTAL BASE BID A IN WORDS: _____

BID B: BID SCHEDULE - PURCHASE IS SALES TAX EXEMPT

**MOORE WWTP EFFLUENT SEWER FORCE MAIN RELOCATION IMPROVEMENTS
OTA PROJECT # EWC-28103A, JP 37100(38)
FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES**

ITEM #	DESCRIPTION	QTY	UNITS	UNIT PRICE	EXTENSION PRICE
1	FULL-BORE 36-INCH DEZURIK FLANGED PLUG VALVES FOR 36-INCH HDPE 160 PSI DR 13.5 IPS COMPATIBLE WITH 36-INCH HDPE DR 13.5 FLANGE ADAPTER	7	EACH		
2	2-INCH SEWAGE TYPE AIR & VACUUM VALVE, DEZURIK OR EQUAL	8	EACH		
3	30-INCH MOTORIZED DEZURIK BUTTERFLY VALVE	2	EACH		
4	18-INCH MOTORIZED DEZURIK BUTTERFLY VALVE	1	EACH		
5	30-INCH MAGNETIC FLOW METER, SIEMENS 5100W WITH REMOTE MOUNTED READOUT	1	EACH		
6	36-INCH DEZURIK BUTTERFLY VALVES	3	EACH		
7	ONE SUMP PUMP IN METER VAULT-18' STATIC HEAD & TWO SUMP PUMPS IN OG&E DIVERSION BOX-14' STATIC HEAD W/ 2" DISCHARGE LINE. HYDROMATIC MESPD50AH1 20, AUTOMATIC SUMP PUMP ½ HP, 115/1/60, 20' CORD	3	EACH		
8	8-INCH MANUAL DEZURIK BUTTERFLY VALVE	1	EACH		
TOTAL BASE BID – INCLUDES BID ITEMS 1,2,3,4,5,6,7&8					

TOTAL BASE BID IN WORDS: _____

Respectfully submitted,

Signature

Firm Name

Title

Address

Employer I.D. No.

Email Address of Firm / Contractor

(SEAL) - if BID is by a
corporation

Tel/Fax No. of Contractor

ATTEST:

Secretary/Witness

Date

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned, _____ as Principal, and _____ as Surety, are hereby held firmly bound unto the City of Moore 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 _____, 2025. The Condition of the above obligation is such that whereas the principal has submitted to the City of Moore a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the Moore WWTP Effluent Sewer Force Main Relocation Improvements, OTA Project # EWC-28103A, JP 37100(38).

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 attachment hereto (properly completed in accordance with said BOND) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor furnishings materials in connection there with 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 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 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)

ATTEST: (if by Corporation)

(Surety)

(Address of Surety)

(Telephone/Fax Number of Surety)

(Email address of Surety Contact)

By: _____
(Signature)

(Name and Title)

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 people 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 above mentioned exists, affiant should state so.)

Affiant's Signature: _____

Subscribed and sworn to before me this _____ day of _____, 2025.

Notary Public

My Commission Expires:

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.

Subscribed and sworn to before me this _____ day of _____, 202__.

Notary Public

My Commission Expires:

My Commission Number:

CLAIM OR INVOICE AFFIDAVIT

STATE OF OKLAHOMA)
) ss.
COUNTY OF _____)

The undersigned (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.

Supervisory Official

Subscribed and sworn to before me this _____ day of _____, 20____.

Notary Public

My Commission Expires:

My Commission Number:

CONTRACT

THIS CONTRACT made and entered into this ____ day of _____, 2025, by and between CITY OF MOORE, Oklahoma, a Municipal Corporation, acting by and through the Mayor and City Council, party of the first part, hereinafter referred to as "CITY", and _____, party of the second part, hereinafter referred to as "CONTRACTOR".

W I T N E S S E T H:

WHEREAS, the CITY has caused to be prepared in accordance with law, certain Contract Documents and Technical Specifications (including Plans) for the work hereinafter described, and has caused a Solicitation for Bids to be given and advertised as required by law, and has received sealed proposals for the furnishing of all labor and materials for

PROJECT NUMBER EWC-28103A, JP 37100(38) **MOORE WWTP EFFLUENT FORCE MAIN RELOCATION**

and

WHEREAS, the Contractor in response to said Solicitation for Bids submitted to the CITY in the manner and at the time specified a sealed proposal in accordance with the terms and provisions of said Contract Documents and Technical Specifications, Plans and Addenda(s) associated with this project; and

WHEREAS, the CITY, in the manner provided by law, has publicly opened, examined, and canvassed all the proposals submitted and has determined and declared the above named Contractor to be the best responsive bidder on the above described project; and

WHEREAS, the City, has duly awarded this Contract to said Contractor for the sum specified in the Contractor's proposal, to wit:

_____ Dollars (\$). Said proposal of _____ is incorporated by reference into this contract.

NOW, THEREFORE, for and in consideration of the mutual agreements and covenants herein contained, the parties to this Contract have agreed, and hereby agree, as follows:

1. The Contractor shall, in a good and first-class workmanlike manner, at his own cost and expense, furnish all labor and materials, tools, and equipment required to perform and complete said work in strict accordance with this Contract, the Contract Documents and Technical Specifications and all applicable Plans and Addenda, all of which are on file in the office of the Purchasing Agent, 301 N. Broadway, Moore, OK, 73160, and hereby incorporated by reference and made a part of this Contract as if the same were each herein set out at length.

2. The CITY will make progress payments to the Contractor no more than once per month upon request of the Contractor.

Such payment will be made on the basis of an agreed estimate of work performed since the previous pay request, provided that the Contractor and the Assistant City Manager shall have previously come to an agreement as to the amount of the request prior to submission.

The City shall retain five percent (5%) of the amount of each estimate until the project is complete. This retainage shall not be released until final acceptance of project by the City Council.

Each monthly estimate for payment must contain or have attached an affidavit for payment, as set forth in the Contract Documents and Technical Specifications.

On completion of the work, but prior to the acceptance by the CITY, it shall be the duty of the Assistant City Manager, or his authorized designee, to determine that said work has been completed and fully performed in accordance with said Contract Documents and Technical Specifications and all applicable Plans and Addenda; and upon making such determination said official shall make his final certificate to the CITY.

The Contractor hereby agrees to commence work under this Contract on a date to be specified in a written "Work Order" of the CITY and to fully complete the project within **Two Hundred & Forty (240) consecutive calendar days**. The Contractor further agrees to pay as liquidated damages, the sum of **One Hundred Dollars and 00/100 (\$100.00) for each consecutive calendar day** thereafter as provided in Paragraph 18 of the General Conditions section of the Contract Documents and Technical Specifications.

The Contractor shall furnish proof that all claims and obligations incurred by him in connection with the performance of said work have been fully paid and settled; said information shall be in the form of an affidavit constituting the Contractor's Release to City as set forth in the Contract Documents and Technical Specifications; thereupon, the final estimate (including any retained amounts) will be approved and paid.

3. Discrimination. The Contractor agrees in connection with the performance of work under this contract as follows:

- a. The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, sex, national origin, disability, age or ancestry. Such actions shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruiting or recruitment, advertising, layoff, termination, rates of pay or other forms of compensation, and selection for training, (including apprenticeship.) The Contractor agrees to include this non-discrimination clause in any subcontracts connected with the performance of this Contract.

- b. The Contractor and subcontractor shall agree to post in a conspicuous place available to employees and applicants for employment, notice to be provided by the City Clerk of the City of Moore setting forth provisions of this section.
 - c. In the event of the Contractor's non-compliance with the above non-discrimination clause, this Contract may be terminated by the CITY. The Contractor may also be declared by the CITY to be ineligible for future contracts with the CITY until satisfactory proof of intent to comply shall be made by the Contractor.
- 4. Use of Subcontractors. The Contractor shall actively solicit bids for the subcontracting of goods or services from qualified minority businesses. At the request of the CITY, the Contractor shall furnish evidence of compliance with this requirement of minority solicitation. The Contractor further agrees to consider the grant of subcontracts to minority bidders on the basis of substantially equal proposals in the light most favorable to said minority businesses.
- 5. Entire Contract. This Contract and all the documents incorporated by reference contain the entire understanding and agreement of the parties upon the subject matter hereof. There is no agreement, oral or otherwise, which is not set forth in writing hereto or attached. This Contract includes the following items: this Contract, the Contract Documents and Technical Specifications, all applicable Plans and Addenda and the Contractor's Proposal.
- 6. Modification and Termination. This Contract cannot be modified or terminated except in writing signed by both parties or as otherwise provided herein.
- 7. Assignment. This Contract shall not be assigned without the written consent of the CITY.
- 8. Bankruptcy. If the Contractor becomes bankrupt or insolvent, or if a petition in bankruptcy is filed against the Contractor, or if a receiver is appointed for the Contractor, the CITY shall have the right to terminate this Contract upon written notice to the Contractor without prejudice to any claim for damages or any other right of the CITY under this Contract to the time of such termination.
- 9. Variables in Cost. The parties hereto assume and understand that the variables in Contractor's cost of performance may fluctuate; consequently, the parties hereto agree that any fluctuations in Contractor's costs will in no way alter the Contractor's obligations under this Contract nor excuse performance or delay on his part.
- 10. Choice of Laws and Venue. This Contract shall be governed by the laws of the State of Oklahoma. Any lawsuit brought concerning this Contract shall be filed with the appropriate state court, Cleveland County, Oklahoma or with the United States District Court for Western District of Oklahoma, as applicable.

11. This Contract requires proper signature and acceptance by the Contractor and approval by the Moore City Council before it becomes effective.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be executed, in three (3) originals, the day and year first above written.

(FOR CORPORATIONS ONLY)

Name of Corporation

By _____

Title _____

ATTEST:

Title _____
(AFFIX SEAL)

(FOR PARTNERSHIPS AND PROPRIETORSHIPS)

Name of Partnership or Proprietorship

By _____

Title _____

COUNTY OF CLEVELAND }
STATE OF OKLAHOMA }

Before me the undersigned, a Notary Public in and for said state, on this _____ day of _____, 2025, personally appeared _____, a member of the partnership/proprietorship _____ to me known to be the identical person who executed the within and foregoing instrument on behalf of said partnership/proprietorship and acknowledged to me that _____ (he/she) executed the same as _____ (his/her) free and voluntary act and deed, and for the free and voluntary act and deed of said partnership/proprietorship, for the uses and purposes therein set forth.

Notary Public

My Commission Expires _____

CITY OF MOORE, OKLAHOMA
A Municipal Corporation

Mark Hamm, MAYOR

ATTEST:

Vanessa Kemp, CITY CLERK

APPROVED as to form and legality this _____ day of _____, 2025.

Brian Miller, CITY ATTORNEY

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS that

_____ as Principal, and
(full name and address)

_____ as Surety, a
(full name and address)

corporation organized under the laws of the State of _____, and authorized to transact business in the State of Oklahoma, are hereby held and firmly bound unto the CITY OF MOORE, as OWNER, in the penal sum

of _____ DOLLARS (\$_____) for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, trustees, successors, and assigns, firmly by these presents.

The condition of this obligation is such that WHEREAS, said Principal entered into a written contract with the CITY OF MOORE, OKLAHOMA, dated on the _____ day of _____, 2025, for

PROJECT NUMBER EWC-28103A, JP 37100(38)
MOORE WWTP EFFLUENT FORCE MAIN RELOCATION

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 Moore, City Hall, 301 N. Broadway Ave, Moore, Oklahoma 73160.

NOW, THEREFORE, if said Principal shall

- (1) in all particulars, well, truly and faithfully perform and abide by said Contract, each and every covenant, and part thereof and shall fulfill all obligations resting upon said Principal by the terms of said Contract and said specifications; and
- (2) if said Principal shall promptly pay, or cause to be paid, all labor, materials and/or repairs and all bills for labor performed on said work, whether by subcontract or otherwise.

then this obligation shall be null and void. **Otherwise** said obligation shall be and remain in full force and effect.

It is further expressly agreed and understood by the parties hereto that no changes or alterations in said Contract and no deviations from the plan or mode or procedure herein fixed shall have the effect of releasing the sureties, or any of them, from the obligation of this bond.

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 to do so, the day and year above written.

Dated this _____ day of _____, 2025.

Principal:

Surety:

(Name of Contractor)

By: _____
(Name & Title)

By: _____
Attorney-in-Fact (Affix Seal)

(FOR CORPORATIONS ONLY)

ATTEST:

(Name & Title) (Affix Seal)

(FOR PARTNERSHIPS AND PROPRIETORSHIPS)

Notarized on this _____ day of _____, 2025

Notary: _____ My commission expires:

STATUTORY BOND

KNOW ALL MEN BY THESE PRESENTS that

_____ as Principal, and
(full name and address)

_____ as Surety, a
(full name and address)

corporation organized under the laws of the State of _____, and authorized to transact business in the State of Oklahoma, are hereby held and firmly bound unto the CITY OF MOORE, as OWNER, in the penal sum of

_____ DOLLARS
(\$ _____) in lawful money of the United States of America, for the payment of which, well and truly to be made, we bind ourselves and each of us, our heirs, executors, administrators, trustees, successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that WHEREAS, said Principal entered into a written Contract with the CITY OF MOORE, OKLAHOMA, dated on the _____ day of _____, 2025, for

PROJECT NUMBER EWC-28103A, JP 37100(38)
MOORE WWTP EFFLUENT FORCE MAIN RELOCATION

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 Hall, 301 N. Broadway Ave, Moore, Oklahoma 73160.

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. It is further expressly agreed and understood by the parties hereto that no changes or alterations 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, 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 year and day first above written.

Dated this _____ day of _____, 2025.

Principal:

Surety:

(Name of Contractor)

By: _____
(Name & Title)

By: _____
Attorney-in-Fact (Affix Seal)

(FOR CORPORATIONS ONLY)

ATTEST:

(Name & Title) (Affix Seal)

(FOR PARTNERSHIPS AND PROPRIETORSHIPS)

Notarized on this _____ day of _____, 2025

Notary: _____ My commission expires: _____

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS that

_____ as Principal, and
(full name and address)

_____ as Surety, a
(full name and address)

corporation organized under the laws of the State of _____, and authorized to transact business in the State of Oklahoma, are hereby held and firmly bound unto the CITY OF MOORE, as OWNER, in the penal sum of

_____ DOLLARS
(\$ _____) in lawful money of the United States of America, said sum being equal to One Hundred Percent (100%) of the Contract price, for two (2) years after completion and acceptance of the project, payment of which, well and truly to be made, we bind ourselves and each of us, our heirs, executors, administrators, trustees, successors, and assigns, jointly and severally, firmly by these presents.

The condition of this obligation is such that WHEREAS, said Principal entered into a written contract with the CITY OF MOORE, OKLAHOMA, dated on the _____ day of _____, 2025, for

PROJECT NUMBER EWC-28103A, JP 37100(38)
MOORE WWTP EFFLUENT FORCE MAIN RELOCATION

all in compliance with the plans and specifications therefore, made a part of this contract and file in the Office of the City Clerk of the City of Moore, City Hall, 301 N. Broadway Ave, Moore, Oklahoma, 73160.

NOW, THEREFORE, if said Principal shall pay or cause to be paid to the CITY OF MOORE, OKLAHOMA all damage, loss and expense which may result by reason of defective materials and/or workmanship in connection with said work for a period of TWO (2) years, from and after acceptance of said project by the CITY OF MOORE 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 the CITY OF MOORE harmless 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 alterations 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 the bond.

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 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 to do so, the day and year first above written.

Dated this _____ day of _____, 2025.

Principal:

Surety:

(Name of Contractor)

By:

(Name & Title)

By:

Attorney-in-Fact

(Affix Seal)

(FOR CORPORATIONS ONLY)

ATTEST:

(Name & Title)

(Affix Seal)

(FOR PARTNERSHIPS AND PROPRIETORSHIPS)

Notarized on this _____ day of _____, 2025

Notary: _____ My commission expires: _____

INSURANCE REQUIREMENTS

Name of Insured City of Moore , Moore, Oklahoma

Description of Work Moore Effluent Force Main Relocation, Project Number EWC-28103A, JP 37100(38)

Location of Work Moore, Oklahoma

<u>Kind of Insurance</u>	<u>Minimum Coverage</u>	<u>Expected Dates Coverage Needed</u>	
		<u>From</u>	<u>To</u>
Workmen's Compensation	Legal Amount	_____	_____
General Public Liability and Property Damage, Including Vehicle Coverage		_____	_____
Bodily Injury-Each Person	\$ 500,000	_____	_____
Bodily Injury-Each Accident	\$ 500,000	_____	_____
Property Damage-Each Person	\$ 200,000	_____	_____
Property Damage-Aggregate Limit	\$ 200,000	_____	_____
Builder's Risk (if required)	Full Coverage	_____	_____

Note: This covers all motor driven vehicles such as cars, trucks, graders, etc.

In the event of any material change or cancellation of said policies, the company will give fifteen (15) day written notice to the Owner.

Statements such as “will endeavor” and “but failure to notify owner shall impose no obligation or liability of any kind upon the company” shall not be allowed.

Coverage shall be indicated by checking all boxes applicable. Insurance shall cover any hazards involved with the planned construction. Special coverage for blasting operations shall be listed separately on the certificates.

The Owner shall be listed as the certificate holder.

Insurance Company address, telephone and fax numbers shall be shown of the certificate.

NOTE: This form is to be completed by the Contractor after Award of Contract and included in the Contract Documents.

NOTICE OF AWARD

Date:

Supplier / Contractor Name:

Street Address:

City, State, Zip Code

PROJECT DESCRIPTION: EW-27103A, JP 37100(38); Moore WWTP Effluent Force Main Relocation

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated _____, 2025, 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 furnish the required Contractor's Performance Bond, Statutory Bond, Maintenance Bond, and Certificate of Insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said agreement and to furnish said BONDS 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 and 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 an acknowledged copy of this **NOTICE OF AWARD** to the OWNER. Dated this 21st day of June 2021.

City of Moore
OWNER

BY

Mr. Jerry Ihler, Assistant City Manager
TITLE

ACCEPTANCE OF NOTICE:

Receipt of the above **NOTICE OF AWARD** is hereby acknowledged by _____

(Contractor)

this the _____ day of _____, 201__.

By: _____
(Signature)

Title: _____
(Print or Type)

NOTICE TO PROCEED

TO: _____

DATE: _____

PROJECT DESCRIPTION: **EWC-27103A, JP 37100(38); Moore WWTP Effluent Force Main Relocation**

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2025, on or before _____, 2025, and you are to complete the WORK within 240 consecutive calendar days thereafter. The date of completion of all WORK is, therefore, _____, _____.

City of Moore
OWNER

BY

Mr. Jerry Ihler, Asst. City Manager
TITLE

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED is hereby acknowledged by _____
_____ this _____ day of _____.

BY

TITLE

RELEASE OF CLAIMANTS

Date: _____

Project: **EW-27103A, JP 37100(38)**
Moore WWTP Effluent Force Main Relocation, Moore, Oklahoma

Dear Sir:

I hereby acknowledge receipt of _____
_____ Dollars and No Cents (\$ _____) in full payment of my contract
dated _____, for improvement work which I did for _____ and which is
described in my contract.

I Certify that I have paid in full for all materials purchased and all labor employed in the
performance of this contract and that there are no claims against me as an employer under this
contract on account of injuries sustained by workmen employed by me thereunder. I hereby release
you from any claims arising by virtue of this contract.

WARNING

The making of any false statement or misrepresentation
herein may be a crime punishable under Title 18 U.S.C.
§1001 which provides in part: "Whoever, in any matter
within the jurisdiction of any department or agency of the
United States knowingly and willfully makes false
representation, or makes or uses any false writing or
document knowing the same to contain any false, fictitious or
fraudulent statement or entry, shall be fined not more than
\$10,000.00 or imprisoned not more than five years, or both."

Sincerely,

(Contractor' Signature)

(Print or Type Name & Title)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

Prepared By



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National Society of Professional Engineers
1420 King Street, Alexandria, VA 22314-2794
(703) 684-2882
www.nspe.org

American Council of Engineering Companies
1015 15th Street N.W., Washington, DC 20005
(202) 347-7474
www.acec.org

American Society of Civil Engineers
1801 Alexander Bell Drive, Reston, VA 20191-4400
(800) 548-2723
www.asce.org

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STANDARD GENERAL CONDITIONS OF THE PROCUREMENT CONTRACT

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ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Whenever used in the Procurement Bidding Requirements or Procurement Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated, which are applicable to the singular or plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Procurement Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Procurement Contract Documents.
 2. *Application for Payment*—The document prepared by Seller, in a form acceptable to Buyer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Procurement Contract Documents.
 3. *Bid*—An offer or proposal of a prospective Seller submitted on the prescribed form setting forth the prices for the Goods and Special Services to be provided.
 4. *Bidder*—An individual or entity that, as a prospective Seller, submits a Bid to Buyer.
 5. *Buyer*—The individual or entity purchasing the Goods and Special Services.
 6. *Change Directive*—A written directive from Buyer to Seller issued on or after the Effective Date of the Procurement Contract, ordering an addition, deletion, or revision in the Goods and Special Services.
 7. *Change Order*—A document which is signed by Seller and Buyer and authorizes an addition, deletion, or revision to the Procurement Contract Documents or an adjustment in the Procurement Contract Price or the Procurement Contract Times, issued on or after the Effective Date of the Procurement Contract. Change Orders may be the result of mutual agreement by Buyer and Seller, or of resolution of a Claim.
 8. *Claim*—A demand or assertion by Buyer or Seller seeking an adjustment of Procurement Contract Price or Procurement Contract Times, or both, or other relief with respect to the terms of the Procurement Contract. A demand for money or services by a third party is not a Claim.
 9. *Contractor/Assignee*—A construction contractor with which Project Owner enters into a construction contract, and to which Project Owner, as initial Buyer, assigns this Procurement Contract.
 10. *Effective Date of the Procurement Contract*—The date indicated in the Procurement Agreement on which the Procurement Contract becomes effective.
 11. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

12. *Electronic Means*—Electronic mail (e-mail), upload/download from a secure Project website, or other communications methods that allow: the transmission or communication of Electronic Documents; the documentation of transmissions, including sending and receipt; printing of the transmitted Electronic Document by the recipient; the storage and archiving of the Electronic Document by sender and recipient; and the use by recipient of the Electronic Document for purposes permitted by this Procurement Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.
13. *Engineer*—The individual or entity designated as such in the Procurement Agreement.
14. *Field Order*—A written order issued by Engineer which requires minor changes in the Goods or Special Services, but which does not involve a change in the Procurement Contract Price or Procurement Contract Times.
15. *Goods*—The tangible and movable personal property that is described in the Procurement Contract Documents, regardless of whether the property is to be later attached to realty.
16. *Goods and Special Services*—The full scope of materials, equipment, other items, and services to be furnished by Seller, including Goods, as defined herein, and Special Services, if any, as defined herein. This term refers to both the Goods and the Special Services, or to either the Goods or the Special Services, and to any portion of the Goods or the Special Services, as the context requires.
17. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
18. *Milestone*—A principal event specified in the Procurement Contract that Seller must attain by the date or within the number of days indicated, including but not limited to the delivery of the Goods and the furnishing of Special Services.
19. *Notice of Award*—The written notice, by Buyer to a Bidder, of Buyer's acceptance of the Bid.
20. *Point of Destination*—The specific address of the location where delivery of the Goods will be made, as stated in the Procurement Agreement.
21. *Procurement Agreement*—The written instrument, executed by Buyer and Seller, that sets forth the Procurement Contract Price and Procurement Contract Times, identifies the parties and the Engineer, and designates the specific items that are Procurement Contract Documents.
22. *Procurement Bidding Documents*—The Procurement Bidding Requirements and the proposed Procurement Contract Documents (including all Addenda).
23. *Procurement Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and Bid Form with any supplements.
24. *Procurement Contract*—The entire and integrated written agreement between Buyer and Seller concerning the Goods and Special Services.

25. *Procurement Contract Documents*—Those items so designated in the Procurement Agreement, and which together comprise the Procurement Contract. Shop Drawings and other Seller submittals are not Procurement Contract Documents, even if accepted, reviewed, or approved by Engineer or Buyer.
26. *Procurement Contract Price*—The money that Buyer has agreed to pay Seller for furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.
27. *Procurement Contract Times*—The times stated in the Procurement Agreement by which the Goods must be delivered, Special Services must be furnished, and other Milestones must be attained.
28. *Procurement Drawings*—That part of the Procurement Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Goods and Special Services to be furnished by Seller. Shop Drawings and other Seller submittals are not Procurement Drawings as so defined.
29. *Procurement Specifications*—That part of the Procurement Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the furnishing of the Goods and Special Services, and certain administrative requirements and procedural matters applicable thereto.
30. *Project*—The total undertaking to be accomplished for Project Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Goods and Special Services are a part.
31. *Project Owner*—The entity that has retained (or will retain) engineers, contractors, and others for the planning, study, design, construction, testing, commissioning, and start-up of facilities and improvements. As of the Effective Date of the Procurement Contract, the Project Owner is the Buyer.
32. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Goods and Special Services and which establish the standards by which such portion of the Goods and Special Services will be judged.
33. *Schedule of Submittals*—A schedule, prepared and maintained by Seller, of required Submittals and the time requirements for Engineer's review of the Submittals.
34. *Seller*—The individual or entity furnishing the Goods and Special Services.
35. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Seller and submitted by Seller to illustrate some portion of the Goods and Special Services. Shop Drawings, whether approved or not, are not Procurement Drawings and are not Procurement Contract Documents.
36. *Special Services*—Services to be performed by Seller (or its agents or subcontractors) in association with the Goods to be furnished by Seller, as required by the Procurement Contract Documents.
37. *Submittal*—A written or graphic document, prepared by or for Seller, which the Procurement Contract Documents require Seller to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals

may include Shop Drawings and Samples; schedules; product data; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or site quality-control testing and inspections; warranties and certifications; suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; record documents; and other such documents required by the Procurement Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Procurement Contract Documents. Change proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

38. *Successful Bidder*—The Bidder whose Bid the Buyer accepts, and to which Buyer makes an award of the Procurement Contract.
39. *Supplementary Conditions*—The part of the Procurement Contract that amends or supplements these General Conditions.
40. *Unit Price Goods and Special Services*—Goods and Special Services to be paid for on the basis of unit prices (if any).

1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B and 1.02.C are not defined, but have the indicated meanings when used in the Bidding Requirements or Procurement Contract Documents.
- B. *Intent of Certain Terms or Adjectives*
 1. The Procurement Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Goods and Special Services. It is intended that such exercise of professional judgment, action, or determination will be commercially reasonable and will be solely to evaluate, in general, the Goods and Special Services for compliance with the requirements of and information in the Procurement Contract Documents and conformance with the design concept of the completed Project as a functioning whole, as shown or indicated in the Procurement Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective will not be effective to assign to Engineer any duty or authority to supervise or direct the furnishing of Goods or Special Services or any duty or authority to undertake responsibility contrary to any other provision of the Procurement Contract Documents.
 2. The word “non-conforming” when modifying the words “Goods and Special Services,” “Goods,” or “Special Services,” refers to Goods and Special Services that are unsatisfactory, faulty, or deficient in that they:
 - a. do not conform to or comply with the requirements of the Procurement Contract Documents;
 - b. do not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Procurement Contract Documents; or

- c. in the case of Special Services, have not been completed.
- 3. The word “receipt” when referring to the Goods, means the physical taking and possession by the Buyer under the conditions specified in Paragraph 9.02.B.2.
- 4. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- 5. The word “furnish,” when used in connection with the Goods and Special Services means to supply and deliver said Goods to the Point of Destination (or some other specified location) and to perform said Special Services fully, all in accordance with the Procurement Contract Documents.
- C. *Procurement Contract Price or Procurement Contract Times*: References to a change in “Procurement Contract Price or Procurement Contract Times” or “Procurement Contract Times or Procurement Contract Price” or similar, indicate that such change applies to (1) Procurement Contract Price, (2) Procurement Contract Times, or (3) both Procurement Contract Price and Procurement Contract Times, as warranted, even if the term “or both” is not expressed.
- D. Unless stated otherwise in the Procurement Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Procurement Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Seller delivers the executed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer the performance bond and payment bond (if the Procurement Contract requires Seller to furnish such bonds).
- B. *Evidence of Seller’s Insurance*: When Seller delivers the signed counterparts of the Procurement Agreement to Buyer, the Seller also shall deliver to Buyer, with copies to each additional insured (as identified in the Procurement Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Seller in accordance with Article 5. Evidence of insurance to be obtained at a later date, such as insurance relating to transit or storage of the Goods, will be provided to Buyer at the time of such insurance is obtained.
- C. *Evidence of Buyer’s Insurance*: After receipt of the signed counterparts of the Procurement Agreement and all required bonds and insurance documentation, Buyer shall promptly deliver to Seller, with copies to each additional insured (as identified in the Procurement Contract), certificates and other evidence of insurance (if any) required to be provided by Buyer.

2.02 *Copies of Documents*

- A. Buyer shall furnish to Seller four printed copies of the Procurement Contract (including one fully executed counterpart of the Procurement Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

2.03 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Procurement Contract, the Buyer, Seller, and Engineer may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Procurement Contract does not establish protocols for Electronic Means, then Buyer, Seller, and Engineer shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

2.04 *Preliminary Schedules*

- A. Within 15 days after the Effective Date of the Procurement Contract, Seller shall submit to Buyer and Engineer for timely review:
 - 1. a progress schedule of activities, consistent with the Procurement Contract Times, including at a minimum, Shop Drawing and Sample submittals, tests, and deliveries as required by the Procurement Contract Documents.
 - a. The progress schedule will be acceptable to Buyer and Engineer if it provides an orderly progression of the Submittals, tests, and deliveries to completion within the specified Milestones of the Procurement Contract Times.
 - b. Such acceptance will not impose on Buyer or Engineer responsibility for the progress schedule, for sequencing, scheduling, or progress of Seller's performance of its obligations under the Procurement Contract, nor interfere with or relieve Seller from Seller's full responsibility therefor.
 - c. Such acceptance will not be deemed as an acknowledgment of the reasonableness and attainability of the schedule.
 - 2. a preliminary schedule of Submittals.
- B. No progress payment will be made to Seller until an acceptable progress schedule and acceptable schedule of Submittals are submitted to Buyer and Engineer (and other conditions applicable to progress payments are met).

2.05 *Preliminary Conference*

- A. Within 20 days after the Procurement Contract Times start to run, a conference attended by Seller, Buyer, Engineer and others as appropriate will be held to establish a working understanding among the parties as to the Goods and Special Services and to discuss the schedules referred to in Paragraph 2.04.A, procedures for handling Shop Drawings and other Submittals, processing Applications for Payment, and maintaining required records.

2.06 *Safety*

- A. Buyer and Seller shall comply with all applicable Laws and Regulations relating to the safety of persons or property, and to the protection of persons or property from damage, injury, or loss.

- B. When Seller's personnel, or the personnel of any subcontractor to Seller, are present at the Point of Destination or any work area or site controlled by Buyer, the Seller shall be responsible for the compliance by such personnel with any applicable requirements of Buyer's safety programs that are made known to Seller.
- C. If Buyer or its representatives visit the Seller's manufacturing or storage facilities, for testing, inspection, or other purposes, Seller shall inform Buyer in advance of any safety preparations, standards, or programs with which Buyer and its representatives must comply.

ARTICLE 3—PROCUREMENT CONTRACT DOCUMENTS

3.01 *Intent*

- A. The Procurement Contract Documents are complementary; what is called for by one is as binding as if called for by all.
- B. Any labor, documentation, services, materials, or equipment that may reasonably be inferred from the Procurement Contract Documents or from prevailing custom or trade usage as being required to produce or furnish the indicated Goods and Special Services will be provided, whether or not specifically called for, at no additional cost to Buyer.
- C. Unless otherwise stated in the Procurement Contract Documents, if there is a discrepancy between the electronic or digital versions of the Procurement Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version will govern.
- D. The Procurement Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Procurement Contract Documents, as provided in Paragraph 3.04.
- F. Any provision or part of the Procurement Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Buyer and Seller.

3.02 *Reference Standards*

- A. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws and Regulations, whether such reference be specific or by implication, means the standard, specification, manual, code, or Laws and Regulations in effect at the time of opening of Bids (or on the Effective Date of the Procurement Agreement if there were no Bids), except as may be otherwise specifically stated in the Procurement Contract Documents.
- B. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a supplier, will be effective to change the duties or responsibilities of Buyer, Seller, or Engineer from those set forth in the part of the Procurement Contract Documents prepared by or for Engineer. No such provision or instruction will be effective to assign to Buyer or Engineer any duty or authority to supervise or direct the performance of Seller's obligations, or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Procurement Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Seller's Review of Procurement Contract Documents:* If, before or during the performance of Seller's obligations, Seller discovers any conflict, error, ambiguity, or discrepancy within the Procurement Contract Documents, or between the Procurement Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any supplier to Seller, then Seller shall promptly report it to Engineer (or if the Procurement Contract is assigned, then directly to Contractor/Assignee) in writing. Seller shall not proceed with the Goods and Special Services affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer (or if the Procurement Contract is assigned, then by Contractor/Assignee) or by an amendment or supplement to the Procurement Contract Documents issued pursuant to Article 11.
2. Seller shall not be liable to Buyer or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Procurement Contract Documents unless Seller had actual knowledge thereof.

B. *Resolving Discrepancies:* Except as may be otherwise specifically stated in the Procurement Contract Documents, the provisions of the Procurement Contract Documents will take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Procurement Contract Documents and:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Procurement Contract Documents); or
2. the provisions of any Laws or Regulations applicable to the furnishing of the Goods and Special Services (unless such an interpretation of the provisions of the Procurement Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Procurement Drawings and Procurement Specifications*

- #### A.
- During the performance of Seller's obligations and until final payment, Seller and Buyer shall submit to the Engineer all matters in question concerning the requirements of the Procurement Drawings and Procurement Specifications (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Goods and Special Services, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Procurement Drawings and Procurement Specifications, and judge of the acceptability of the Goods and Special Services thereunder.
1. After assignment (if any) Seller shall submit such matters directly to Contractor/Assignee for response or administration, and the Procurement Contract provisions in Paragraphs 3.04.B and C will not apply.
- #### B.
- Engineer will issue with reasonable promptness a written clarification, interpretation, or decision on the issue submitted, and if necessary, initiate an amendment or supplement to the Procurement Drawings or Procurement Specifications. Engineer's written clarification, interpretation, or decision will be consistent with the overall intent of the Procurement Contract Documents, and will be final and binding on Seller and Buyer. If either Buyer or Seller believes that a written clarification or interpretation justifies an adjustment in the

Procurement Contract Price or Procurement Contract Times, either may make a Claim for such adjustment as provided in Article 12.

- C. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of the Goods and Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation.

3.05 *Reuse of Documents*

- A. Seller and its subcontractors and suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Procurement Drawings, Procurement Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Procurement Drawings, Procurement Specifications, other documents, or copies thereof, on extensions of the Project or any other project, without written consent of Buyer and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Procurement Contract Documents, reuse any such Procurement Contract Documents for any purpose without Buyer's express written consent, or violate any copyrights pertaining to such Procurement Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Procurement Contract. Nothing herein precludes Seller from retaining copies of the Procurement Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND SCHEDULE

4.01 *Commencement of Procurement Contract Times*

- A. The Procurement Contract Times will commence to run on the Effective Date of the Procurement Contract.

4.02 *Continuing Performance*

- A. Seller shall adhere to the progress schedule established in accordance with Paragraph 2.04.A., as duly adjusted, and the Goods will be delivered and the Special Services furnished within the Procurement Contract Times.
- B. Seller shall carry on furnishing of the Goods and Special Services and adhere to the progress schedule during all disputes or disagreements with Buyer. No furnishing of Goods and Special Services will be delayed or postponed pending resolution of any disputes or disagreements, except as expressly permitted herein, or as Buyer and Seller may otherwise agree in writing.

4.03 *Adjustments to Progress Schedule*

- A. The progress schedule established in accordance with Paragraph 2.04 may be adjusted from time to time as provided below.

1. Seller shall submit to Buyer for acceptance (to the extent indicated in Paragraph 2.04) proposed adjustments in the progress schedule that will not result in changing the Procurement Contract Times. Such adjustments will comply with any applicable provisions of the Procurement Specifications.
2. Proposed adjustments in the progress schedule that will change the Procurement Contract Times must be submitted in accordance with the requirements of Article 11. Adjustments in Procurement Contract Times may only be made by a Change Order.

4.04 *Delays*

- A. If Buyer, Engineer, or anyone for whom Buyer is responsible, delays, disrupts, or interferes with Seller's performance or progress, then Seller shall be entitled to an equitable adjustment in Procurement Contract Price or Procurement Contract Times.
- B. Seller shall not be entitled to an adjustment in Procurement Contract Price or Procurement Contract Times for delay, disruption, or interference caused by or within the control of Seller or anyone for whom Seller is responsible.
- C. If Seller's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Buyer, Seller, and those for which they are responsible, then Seller shall be entitled to an equitable adjustment in Procurement Contract Times. Such an adjustment will be Seller's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Procurement Contract Times under this paragraph include but are not limited to the following:
 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. inspection delays by governmental authorities, and custom delays;
 4. international shipping delays;
 5. acts or failures to act of third-party entities; and
 6. acts of war or terrorism.
- D. *Adjustments of Procurement Contract Times or Procurement Contract Price—General Provisions:* Seller's entitlement to an adjustment of Procurement Contract Times or Procurement Contract Price is limited as follows:
 1. Seller's entitlement to an adjustment of the Procurement Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of Seller's obligations, as of the time of the delay, disruption, or interference.
 2. Seller shall not be entitled to an adjustment in Procurement Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Seller. Such a concurrent delay by Seller does not preclude an adjustment of Procurement Contract Times to which Seller is otherwise entitled.

3. Adjustments of Procurement Contract Times or Procurement Contract Price are subject to the provisions of Articles 11 and 12.
- E. Each Seller request seeking a delay-related increase in Procurement Contract Times or Procurement Contract Price must be supplemented by supporting data that sets forth in detail the following: (1) the circumstances that form the basis for the requested adjustment; (2) the date upon which each cause of delay, disruption, or interference began to affect Seller's progress; (3) the date upon which each cause of delay, disruption, or interference ceased to affect Seller's progress; (4) the number of days' increase in Procurement Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and (5) the impact on Procurement Contract Price. Seller shall also furnish such additional supporting documentation as Buyer or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion.

ARTICLE 5—BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Seller shall furnish a performance bond and a payment bond, each in an amount at least equal to the Procurement Contract Price, as security for the faithful performance and payment of Seller's obligations under the Procurement Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 9.04, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Procurement Contract.
- B. Seller shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Procurement Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Buyer prior to execution of the Procurement Contract, except as provided otherwise by Laws or Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- D. Seller shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Seller is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Seller shall promptly notify Buyer and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements of this Procurement Contract.

- F. If Seller has failed to obtain a required bond, Buyer may exercise Buyer's termination rights under Article 14.
- G. Upon request to Buyer from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller's obligations, Buyer shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Seller from any subcontractor, supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of Seller's obligations, Seller shall provide a copy of the payment bond to such person or entity.

5.02 *Insurance*

- A. Seller shall provide insurance of the types and coverages and in the amounts stipulated in the Supplementary Conditions.
- B. Failure of Buyer to demand certificates of insurance or other evidence of Seller's full compliance with these insurance requirements or failure of Buyer to identify a deficiency in compliance from the evidence provided will not be construed as a waiver of Seller's obligation to maintain such insurance.
- C. Upon assignment of this Procurement Contract, Seller shall name the Contractor/Assignee as an additional insured and comply with the written request of Contractor/Assignee to provide evidence of insurance.
- D. Buyer does not represent that insurance coverage and limits established in this Procurement Contract necessarily will be adequate to protect Seller.
- E. The insurance and insurance limits required herein will not be deemed as a limitation on Seller's liability under the indemnities and other rights granted to Buyer in the Procurement Contract.

5.03 *Surety or Insurance Companies*

- A. All bonds and insurance required by the Procurement Contract Documents to be purchased and maintained by Buyer or Seller shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies must also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

ARTICLE 6—LICENSES AND FEES

6.01 *Intellectual Property and License Fees*

- A. Except to the extent stated elsewhere in the Procurement Contract Documents, Seller is not transferring any patent rights, copyrights, or other intellectual property rights for the Goods delivered.
- B. To the extent Seller is manufacturing to Buyer's design, Buyer retains all patent rights, copyrights, and other intellectual property rights in such design.
- C. If an invention, design, process, product, or device is specified in the Procurement Contract Documents for incorporation in the Goods or for the performance of Special Services, and if, to the actual knowledge of Buyer or Engineer, its use is subject to patent rights, copyrights,

or other intellectual property rights calling for the payment of a license fee or royalty to others, then the existence of such rights and payment obligations will be disclosed to Seller in the Procurement Contract Documents.

- D. Seller shall pay all license fees and royalties and assume all costs incident to the use or the furnishing of the Goods, unless specified otherwise by the Procurement Contract Documents.

6.02 *Seller's Infringement*

- A. Subject to Paragraph 6.01, to the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, damages, and judgments (including but not limited to all reasonable fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement or alleged infringement of any patent, copyright, or other intellectual property right by any of the Goods as delivered or Special Services as performed.
- B. Buyer will promptly notify Seller in writing of any claim, suit, or threat of suit by a third party for any infringement or alleged infringement of any patent, copyright, or other intellectual property right with respect to the Goods as delivered or Special Services as performed.
- C. Seller shall promptly defend or settle the claim or suit. Seller shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
 - 1. If Seller fails to defend such suit or claim after written notice by Buyer, Seller will be bound, in any subsequent suit or claim against Seller by Buyer, by any factual determination in the prior suit or claim.
 - 2. If Buyer fails to provide Seller the opportunity to defend such suit or claim, Buyer shall be barred from any remedy against Seller for such suit or claim.
- D. If a determination is made that Seller has infringed upon the intellectual property rights of another, Seller may, at Seller's own expense, obtain the necessary licenses for Buyer's benefit, or replace the Goods and provide related design and construction, consistent with the requirements of the Procurement Contract Documents, to avoid the infringement.

6.03 *Buyer's Infringement*

- A. Subject to Paragraph 6.01, and to the fullest extent permitted by Laws and Regulations, Buyer shall be responsible to Seller for any infringement or alleged infringement of any patent, copyright, or other intellectual property right caused by Seller's compliance with the Procurement Drawings or Procurement Specifications, and will reimburse Seller for any license fee or royalties paid by Seller to others if such payment resulted from any invention, design, process, product, or device specified to be furnished or performed in the Procurement Drawings or Procurement Specifications, but not identified as being subject to payment of such license fee or royalty.
- B. Seller will promptly notify Buyer in writing of any claim, suit, or threat of suit by a third party for intellectual property infringement arising from Seller's compliance with the Procurement Drawings or Procurement Specifications.

- C. Buyer shall defend or settle the claim or suit. Buyer shall have control over such claim or suit, bear all expenses, and satisfy any adverse judgment.
 - 1. If Buyer fails to defend such suit or claim after written notice by Seller, Buyer will be bound, in any subsequent suit or claim against Buyer by Seller, by any factual determination in the prior suit or claim.
 - 2. If Seller fails to provide Buyer the opportunity to defend such suit or claim, Seller shall be barred from any remedy against Buyer for such suit or claim.

ARTICLE 7—SELLER’S RESPONSIBILITIES

7.01 *Performance of Obligations*

- A. Seller shall be solely responsible for the means, methods, techniques, sequences, and procedures necessary to perform its obligations in accordance with the Procurement Contract Documents.
- B. Seller shall supervise, inspect, and direct the furnishing of the Goods and Special Services competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform its obligations in accordance with the Procurement Contract Documents.
- C. Seller shall coordinate the provision of Special Services to avoid or limit interference or disruption of other activities at the location where the Special Services are to occur, including but not limited to ongoing facility operations and construction activities.

7.02 *Labor, Materials and Equipment*

- A. Seller shall provide competent, qualified and trained personnel in all aspects of its performance of the Procurement Contract.
- B. All Goods, and all equipment and material incorporated into the Goods, must be as specified, and unless specified otherwise in the Procurement Contract Documents, must be:
 - 1. new, and of good quality;
 - 2. protected, assembled, connected, cleaned, and conditioned in accordance with the original manufacturer’s instructions; and
 - 3. shop-assembled to the greatest extent practicable.

7.03 *Laws and Regulations*

- A. Seller shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of its obligations in accordance with the Procurement Contract Documents. Except where otherwise expressly required by such Laws and Regulations, neither Buyer nor Engineer shall be responsible for monitoring Seller’s compliance with any Laws or Regulations.
- B. If Seller furnishes Goods and Special Services knowing or having reason to know that such furnishing is contrary to Laws or Regulations, Seller shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such performance. It will not be Seller’s responsibility to make certain

that the Procurement Specifications and Procurement Drawings are in accordance with Laws and Regulations, but this provision will not relieve Seller of Seller's obligations under Paragraph 3.03.

- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Procurement Contract if there were no Bids) that have a direct effect on the cost or time of Seller's performance will be the subject of an adjustment in Procurement Contract Price or Procurement Contract Times. If Buyer and Seller are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Article 12.

7.04 "Or Equals"

- A. Whenever an item of material or equipment to be incorporated into the Goods is specified or described in the Procurement Contract Documents by using the names of one or more proprietary items or specific suppliers or manufacturers, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, other items of material or equipment or material or equipment of other suppliers or manufacturers may be submitted to Buyer for Engineer's review.
 - 1. If in Engineer's sole discretion, such an item of material or equipment proposed by Seller is functionally equal to that named and sufficiently similar so that no change in related work will be required, it may be considered by Engineer as an "or equal" item.
 - 2. For the purposes of this paragraph, a proposed item of material or equipment may be considered functionally equal to an item so named only if in the exercise of reasonable judgment, Engineer determines that: 1) it is at least equal in quality, durability, appearance, strength, and design characteristics; 2) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; 3) it has an acceptable record of performance and availability of responsive service; and (4) Seller certifies that if approved: a) there will be no increase in any cost, including capital, installation or operating costs, to Buyer; and b) the proposed item will conform substantially to the detailed requirements of the item named in the Procurement Contract Documents.
- B. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or Submittal made pursuant to Paragraph 7.04.A. Engineer will be the sole judge of whether to accept or reject such a proposal or Submittal. No "or equal" will be ordered, manufactured or utilized until Engineer's review is complete, which will be evidenced by an approved Shop Drawing. Engineer will advise Buyer and Seller in writing of any negative determination. Notwithstanding Engineer's approval of an "or-equal" item, Seller shall remain obligated to comply with the requirements of the Procurement Contract Documents.
- C. *Special Guarantee:* Buyer may require Seller to furnish at Seller's expense a special performance guarantee or other surety with respect to any such proposed "or-equal."
- D. *Data:* Seller shall provide all data in support of any such proposed "or equal" at Seller's expense.

7.05 *Taxes*

- A. Seller shall pay all taxes and duties arising out of the sale of the Goods and the performance of Special Services. All taxes and duties are included in the Procurement Contract Price, except as noted in the Bid Schedule.

7.06 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Seller shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Procurement Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal; and
 - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of Seller's obligations.
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Seller has satisfied its obligations under the Procurement Contract Documents with respect to Seller's review of that Submittal, and that Seller approves the Submittal.
- 3. With each Shop Drawing or Sample, Seller shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Procurement Contract Documents. This notice will be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples:* Seller shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

- a. Seller shall submit the number of copies required in the Procurement Specifications.
- b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Seller proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.06.C.

2. *Samples*

- a. Seller shall submit the number of Samples required in the Procurement Specifications.

- b. Seller shall clearly identify each Sample as to material, supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.06.C.
3. Where a Shop Drawing or Sample is required by the Procurement Contract Documents or the Schedule of Submittals, any related work performed by Seller prior to Engineer's review and approval of the pertinent Submittal will be at the sole expense and responsibility of Seller.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Goods, comply with the requirements of the Procurement Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Procurement Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or to safety precautions or programs incident thereto.
3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for any variation from the requirements of the Procurement Contract Documents unless Seller has complied with the requirements of Paragraph 7.06.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Procurement Contract Documents in a Field Order or other appropriate Procurement Contract modification.
5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Seller from responsibility for complying with the requirements of Paragraphs 7.06.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Procurement Contract Documents, will not, under any circumstances, change the Procurement Contract Times or Procurement Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing or Sample will result in such item becoming a Procurement Contract Document.
8. Seller shall furnish Goods that comply with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.06.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Seller shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review

and approval. Seller shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Seller shall furnish required Shop Drawing and Sample Submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Seller shall be responsible for Engineer's charges to Buyer for such time. Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges.
3. If Seller requests a change of a previously approved Shop Drawing or Sample, Seller shall be responsible for Engineer's charges to Buyer for its review time, and Buyer may impose a set-off against payments due Seller to secure reimbursement for such charges, unless the need for such change is beyond the control of Seller.

E. *Submittals Other than Shop Drawings and Samples*

1. The following provisions apply to all Submittals other than Shop Drawings and Samples:
 - a. Seller shall submit all such Submittals to the Engineer in accordance with the schedule of Submittals and pursuant to the applicable terms of the Procurement Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Procurement Contract Documents as to general form and content of the Submittal.
 - d. If any such Submittal is not accepted, Seller shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.04 and 2.05.

7.07 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Seller shall indemnify and hold harmless Buyer, Engineer, Project Owner, and any assignee of Buyer, including Contractor/Assignee, and their officers, directors, members, partners, employees, agents, consultants, contractors, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of Seller's obligations under the Procurement Contract, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Goods themselves), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Seller, or any individual or entity directly or indirectly employed by Seller or anyone for whose acts Seller may be liable.

- B. In any and all claims against Buyer, Engineer, Project Owner, or any assignee of Buyer, including Contractor/Assignee, or their officers, directors, members, partners, employees, agents, consultants, contractors, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Seller, any subcontractor, any supplier, or any individual or entity directly or indirectly employed by any of them to furnish any of the Goods and Special Services, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.07.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Seller or any such subcontractor, supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.08 *Concerning Subcontractors and Suppliers*

- A. Seller may retain subcontractors and suppliers for the performance of parts of the furnishing of the Goods and Special Services. The Seller's retention of a subcontractor or supplier will not relieve Seller's obligation to Buyer to perform and complete the furnishing the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 8—SHIPPING AND DELIVERY

8.01 *Shipping*

- A. Seller shall select the carrier and bear all costs of packaging, transportation, insurance, special handling, and all other costs associated with shipment and delivery.

8.02 *Delivery*

- A. Seller shall deliver the Goods free on board (FOB) to the Point of Destination, freight prepaid, in accordance with the Procurement Contract Times set forth in the Procurement Agreement, or other date agreed to by Buyer and Seller.
- B. At least 10 days before shipment, Seller shall provide written notice to Buyer of the manner of shipment and the anticipated delivery date. The notice must also include any instructions concerning special equipment or services required at the Point of Destination to unload and care for the Goods. Seller shall also require the carrier to give Buyer at least 24 hours' notice by telephone prior to the anticipated time of delivery.
- C. Buyer will be responsible and bear all costs for unloading the Goods from carrier.
- D. Buyer will assure that adequate facilities are available to receive delivery of the Goods at the time established for delivery, or on another date agreed to by Buyer and Seller.
- E. No partial deliveries will be allowed, unless permitted or required by the Procurement Contract Documents or agreed to in writing by Buyer.
- F. Provisions governing inspection on delivery are set forth in Paragraph 9.02.

8.03 *Risk of Loss*

- A. Risk of loss and insurable interests transfer from Seller to Buyer upon Buyer's receipt of the Goods.
- B. Notwithstanding the provisions of Paragraph 8.03.A, if Buyer rejects the Goods as non-conforming, the risk of loss on such Goods will remain with Seller until Seller corrects the non-conformity or Buyer accepts the Goods. If rejected Goods remain at the Point of

Destination pending modification and acceptance, then Seller shall be responsible for arranging adequate protection and maintenance of the Goods at Seller's expense.

ARTICLE 9—BUYER’S RIGHTS

9.01 *Seller’s Warranties and Guarantees*

- A. Seller warrants and guarantees to Buyer that the title to the Goods conveyed will be proper, its transfer rightful, and free from any security interest, lien, or other encumbrance. Seller shall defend, indemnify, and hold Buyer harmless against any liens, claims, or demands contesting or affecting title of the Goods conveyed.
- B. Seller warrants and guarantees to Buyer that all Goods and Special Services will conform with the Procurement Contract Documents, and with the standards established by any Samples approved by Engineer. Engineer shall be entitled to rely on Seller’s warranty and guarantee. If the Procurement Contract Documents do not otherwise specify the characteristics or the quality of the Goods, the Goods must comply with the requirements of Paragraph 7.02.B.
- C. Seller’s warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, improper modification, improper maintenance, or improper operation by persons other than Seller;
 - 2. excessive corrosion or chemical attack, unless corrosive or chemically-damaging conditions were disclosed by Buyer in the Procurement Contract Documents and the Procurement Contract Documents required the Goods to withstand such conditions;
 - 3. use in a manner contrary to Seller's written instructions for installation, operation, and maintenance; or
 - 4. normal wear and tear under normal usage.
- D. Seller's obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents will be absolute. None of the following will constitute an acceptance of Goods and Special Services that are non-conforming, or a release of Seller’s obligation to furnish the Goods and Special Services in accordance with the Procurement Contract Documents:
 - 1. observations by Buyer, Engineer, or Project Owner;
 - 2. recommendation by Engineer or payment by Buyer of any progress or final payment;
 - 3. use of the Goods by Buyer or Project Owner;
 - 4. any acceptance by Buyer, Engineer, or Project Owner, or any failure to do so;
 - 5. the end of the correction period established in Paragraph 9.04;
 - 6. the issuance of a notice of acceptance;
 - 7. any inspection, test or approval by others; or
 - 8. any correction of non-conforming Goods and Special Services by Buyer or Project Owner.
- E. Buyer shall promptly notify Seller of any breach of Seller’s warranties or guarantees.

9.02 *Inspections and Testing*

A. *General Provisions*

1. The Procurement Contract Documents specify required inspections and tests. Buyer shall have the right to perform, or cause to be performed, reasonable inspections and require reasonable tests of the Goods at Seller's facility, and at the Point of Destination. Seller shall allow Buyer a reasonable time to perform such inspections or tests.
2. Seller shall reimburse Buyer for all expenses, except for travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, for inspections and tests specified in the Procurement Contract Documents. If as the result of any such specified testing the Goods are determined to be non-conforming, then Seller shall also bear the travel, lodging, and subsistence expenses of Buyer's and Engineer's representatives, and all expenses of re-inspection or retesting.
3. Buyer shall bear all expenses of inspections and tests that are not specified in the Procurement Contract Documents (other than any re-inspection or retesting resulting from a determination of non-conformity, as set forth in Paragraph 9.03); provided, however, that if as the result of any such non-specified inspections or testing the Goods are determined to be non-conforming, then Seller shall bear all expenses of such inspections and testing, and of any necessary re-inspection and retesting.
4. Seller shall provide Buyer timely written notice of the readiness of the Goods for all inspections, tests, or approvals which the Procurement Contract Documents specify are to be observed by Buyer prior to shipment.
5. Buyer will give Seller timely notice of all specified tests, inspections, and approvals of the Goods which are to be conducted at the Point of Destination, and a representative of Seller will attend such tests, inspections, and approvals.
6. If, on the basis of inspections or testing, the Goods appear to be conforming, Buyer will give Seller prompt notice thereof. If on the basis of inspections or testing, the Goods appear to be non-conforming, Buyer will give Seller prompt notice thereof and will advise Seller of the remedy Buyer elects under the provisions of Paragraph 9.03.
7. Neither payments made by Buyer to Seller prior to any tests or inspections, nor any tests or inspections, will constitute acceptance of non-conforming Goods, or prejudice Buyer's rights under the Procurement Contract.

B. *Visual Inspection on Delivery*

1. Buyer will visually inspect the Goods upon delivery solely for purposes of identifying the Goods, general verification of quantities, and observation of apparent condition. Such visual inspection will not be construed as final or as receipt of any Goods and Special Services that, as a result of subsequent inspections and tests, are determined to be non-conforming.
2. If, on the basis of the visual inspection specified in Paragraph 9.02.B.1, the Goods appear to comply with the requirements of the Procurement Contract Documents as to quantities and condition, then within 10 days of delivery Buyer shall issue to Seller Buyer's acknowledgment of the receipt of Goods.

C. *Final Inspection*

1. After all of the Goods have been incorporated into the Project, tested in accordance with such testing requirements as are specified, and are functioning as required, and Seller has performed and completed all Special Services, Buyer will make a final inspection.
2. If, on the basis of the final inspection, Buyer determines that the Goods and Special Services are conforming, Buyer's notice thereof will constitute Buyer's acceptance of the Goods and Special Services, subject to any limitations stated in the notice.
3. If, on the basis of the final inspection, the Goods and Special Services are non-conforming, Buyer will identify the non-conformity in writing.

9.03 *Non-Conforming Goods and Special Services*

- A. If, on the basis of inspections and testing prior to delivery, the Goods and Special Services are found to be non-conforming, or if at any time after Buyer has acknowledged receipt of delivery and before the expiration of the correction period described in Paragraph 9.04, Buyer determines that the Goods and Special Services are non-conforming, then Seller shall promptly, without cost to Buyer and in response to written instructions from Buyer, either correct such non-conforming Goods and Special Services, or, if Goods are rejected by Buyer, remove and replace the non-conforming Goods with conforming Goods, including all work required for reinstallation.

B. *Buyer's Rejection of Non-Conforming Goods*

1. If Buyer elects to reject the Goods in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Goods. If Goods have been delivered to Buyer, Seller shall promptly, and within the Procurement Contract Times, remove and replace the rejected Goods.
2. Seller shall bear all costs, losses and damages attributable to the removal, replacement, reinspection, and retesting of the non-conforming Goods.
3. Upon rejection of the Goods, Buyer retains a security interest in the Goods to the extent of any payments made and expenses incurred in their testing and inspection.

C. *Buyer's Rejection of Non-Conforming Special Services*

1. If at any time Buyer elects to reject the Special Services in whole or in part, Buyer's notice to Seller will describe in sufficient detail the non-conforming aspect of the Special Services.
2. Seller shall promptly provide conforming Special Services acceptable to Buyer.
3. If Seller fails to provide conforming Special Services, Buyer may remove the Special Services from the scope of the Procurement Contract, and equitably reduce the Procurement Contract Price.

- D. *Remedying Non-Conforming Goods:* If Buyer elects to permit the Seller to modify the Goods to correct the non-conformance, then Seller shall promptly provide a schedule for such modifications and shall make the Goods conforming within a reasonable time.

- E. *Buyer's Acceptance of Non-Conforming Goods:* Instead of requiring correction or removal and replacement of non-conforming Goods discovered either before or after final payment,

Buyer may accept the non-conforming Goods. Seller shall bear all reasonable costs, losses, and damages attributable to Buyer's evaluation of and determination to accept such non-conforming Goods.

- F. *Seller Obligations:* Seller shall pay all claims, costs, losses, and damages, including but not limited to all fees and charges for re-inspection, retesting and for any engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs arising out of or relating to the non-conforming Goods and Special Services. Seller's obligations will include the costs of the correction or removal and replacement of the non-conforming Goods and the replacement of property of Buyer and others destroyed by the correction or removal and replacement of the non-conforming Goods, and obtaining conforming Special Services from others.
- G. *Buyer's Rejection of Conforming Goods:* If Buyer asserts that Goods and Special Services are non-conforming and such Goods and Special Services are determined to be conforming, or if Buyer rejects as non-conforming Goods and Special Services that are later determined to be conforming, then Seller shall be entitled to reimbursement from Buyer of costs incurred by Seller in inspecting, testing, correcting, removing, or replacing the conforming Goods and Special Services, including but not limited to fees and charges of engineers, architects, attorneys and other professionals, and all court or arbitration or other dispute resolution costs associated with the incorrect assertion of non-conformance or rejection of conforming Goods and Special Services.

9.04 *Correction Period*

- A. Seller's responsibility for correcting all non-conformities in the Goods and Special Services will extend for a period of one year after the acceptance of the Goods and Special Services in accordance with Paragraph 9.02.C.2.
- B. Where non-conforming Goods and Services (and damage to other work resulting therefrom) have been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Goods and Services will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- C. Seller's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph may not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 10—ENGINEER'S STATUS

10.01 *Engineer's Role Defined*

- A. Engineer will be Buyer's representative until assignment (if any) of the Procurement Contract.
- B. The duties and responsibilities and the limitations of authority of Engineer prior to assignment, if any, of the Procurement Contract, are set forth in the Procurement Contract Documents.
- C. Engineer's responsibilities, if any, after an assignment (if any) of the Procurement Contract, are set forth in the Procurement Agreement.

10.02 *Duties and Responsibilities; Authority; Limitations*

- A. As set forth in Article 3, Engineer will be the initial interpreter of the Procurement Contract Documents and judge of the acceptability of the Goods and Special Services, and will issue clarifications, interpretations, and decisions regarding such issues.
- B. Acting on behalf of Buyer under the provisions of Article 9, Engineer has the authority to disapprove or reject Goods and Special Services that Engineer believes to be non-conforming. Engineer also has the authority to require special inspection or testing of the Goods or Special Services as provided in Paragraph 9.02, whether or not the Goods are fabricated or installed, or the Special Services are completed.
- C. Engineer may authorize minor deviations or variations in the Procurement Contract Documents by: 1) written approval of specific variations set forth in Shop Drawings when Seller has duly noted such variations as required in Paragraph 7.06.A.3, or 2) a Field Order.
- D. As set forth in Article 12, Engineer will review Claims, and render decisions on Claims.
- E. In rendering any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, and judgments, Engineer will not show partiality to Buyer or Seller. Engineer will not be liable to Buyer, Seller, or others in connection with any interpretations, clarifications, reviews, decisions, disapprovals, acceptances, rejections, authorizations, or judgments conducted or rendered by Engineer in good faith.
- F. Engineer will not supervise, direct, control, or have authority over or be responsible for the means, methods, techniques, sequences, or procedures used by Seller to perform its obligations under this Procurement Contract, or the safety precautions and programs incident thereto, or for any failure of Seller to comply with Laws and Regulations applicable to the performance of its obligations. Engineer will not be responsible for Seller's failure to furnish the Goods and Special Services in accordance with the Procurement Contract Documents.

ARTICLE 11—CHANGES

11.01 *Amending and Supplementing the Procurement Contract*

- A. The Procurement Contract may be amended or supplemented by a Change Order, a Change Directive, or a Field Order.
- B. If an amendment or supplement to the Procurement Contract includes a change in the Procurement Contract Price or the Procurement Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Procurement Contract that involve (1) the conformance or acceptability of the Goods and Special Services, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Buyer and Seller may amend other terms and conditions of the Procurement Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Buyer and Seller shall execute appropriate Change Orders covering:
 - 1. Changes in Procurement Contract Price or Procurement Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Goods and Special Services furnished in accordance with a Change Directive;
 - 2. Changes in Procurement Contract Price resulting from a Buyer set-off, unless Seller has duly contested such set-off;
 - 3. Changes in the Goods and Special Services which are: (a) ordered by Buyer pursuant to Paragraph 11.05, (b) required because of Buyer's acceptance of non-conforming Goods and Services under Paragraph 9.03 or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Goods and Special Services involves the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters; and
 - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Change Directive; Article 12, Claims; and similar provisions.
- B. If Buyer or Seller refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Change Directives*

- A. A Change Directive will not change the Procurement Contract Price or the Procurement Contract Times but is evidence that the parties expect that the modification ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Change Directive's effect, if any, on the Procurement Contract Price and Procurement Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Procurement Contract Documents governing adjustments, expressly including Paragraph 11.08 regarding change of Procurement Contract Price.
- B. If Buyer has issued a Change Directive and Buyer or Seller believes that an adjustment in Procurement Contract Times or Procurement Contract Price is necessary, then such party shall submit a Claim seeking such an adjustment no later than 30 days after the completion of the Goods and Services set out in the Change Directive.

11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Goods and Services if the changes do not involve an adjustment in the Procurement Contract Price or the Procurement Contract Times and are compatible with the design concept as indicated by the Procurement Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Buyer and also on Seller, which shall perform the Goods and Special Services involved promptly.
- B. If Seller believes that a Field Order justifies an adjustment in the Procurement Contract Price or Procurement Contract Times, then before proceeding with the Goods and Special Services at issue, Seller shall submit a Claim as provided herein.

11.05 *Buyer-Authorized Changes in the Goods and Special Services*

- A. Without invalidating the Procurement Contract and without notice to any surety, Buyer may, at any time or from time to time, order additions, deletions, or revisions in the Goods and Special Services. Changes involving the design (as set forth in the Procurement Drawings, Procurement Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Goods and Special Services may be accomplished by a Change Order, if Buyer and Seller have agreed as to the effect, if any, of the changes on Procurement Contract Times or Procurement Contract Price; or by a Change Directive. Upon receipt of any such document, Seller shall promptly proceed with the Goods and Special Services involved; or, in the case of a deletion in the Goods and Special Services, promptly cease activities with respect to such deletion. Added or revised Goods and Special Services must be performed under the applicable conditions of the Procurement Contract Documents.

11.06 *Buyer's Contingency Allowance*

- A. The Buyer's Contingency Allowance, if any such is set forth in the Procurement Agreement, is for the sole use of Buyer to cover unanticipated costs.
- B. If Buyer exercises its unilateral right to use all or a portion of the Buyer's Contingency Allowance, Buyer will issue a written directive that documents the costs to which the allowance is applied, Seller's entitlement to compensation, and the consequent reduction in such allowance.
- C. Prior to final payment, the Total Price, as set forth in the Procurement Agreement, will be duly adjusted to account for any unused portion of the Buyer's Contingency Allowance.
- D. The Procurement Agreement, Article 5, addresses the impact on Buyer's Contingency Allowance of an assignment of the Procurement Contract.

11.07 *Unauthorized Changes in the Goods and Special Services*

- A. Seller shall not be entitled to an increase in the Procurement Contract Price or an extension of the Procurement Contract Times with respect to any work performed that is not required by the Procurement Contract Documents, as amended, modified, or supplemented.

11.08 *Change of Procurement Contract Price*

- A. The Procurement Contract Price may only be changed by a Change Order. Any Claim for an adjustment of Procurement Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Procurement Contract Price will be determined as follows:
 - 1. For changes in Unit Price Goods and Special Services, by application of the unit prices to the quantities of the items involved;
 - 2. To the extent the cost of the change is not covered by unit prices, then by a mutually agreed lump sum; or
 - 3. To the extent the cost of the change is not covered by unit prices and the parties do not reach mutual agreement to a lump sum, then on the basis of documented costs plus a Seller's fee for overhead and profit of 15%.

11.09 *Change of Procurement Contract Times*

- A. The Procurement Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Procurement Contract Times must comply with the provisions of Article 12.

11.10 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Goods and Special Services or the provisions of the Procurement Contract (including, but not limited to, Procurement Contract Price or Procurement Contract Times), the giving of any such notice will be Seller's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS, DISPUTES, AND DISPUTE RESOLUTION

12.01 *Claims*

- A. The parties agree to endeavor to avoid or resolve Claims through direct, good faith discussions and negotiations whenever practicable. Such discussions and negotiations should at the outset address whether the parties mutually agree to suspend the Claims process, including the time periods established in this Paragraph 12.01; if so, a written record of such mutual agreement should be made and jointly executed.
- B. Claimant shall deliver to Engineer and the other party to the Procurement Contract written notice of each Claim within 15 days after the occurrence of the event giving rise to the Claim.
- C. Claimant shall deliver written supporting data to Engineer and the other party within 45 days after such occurrence unless Engineer allows an additional period of time.
- D. Engineer will review each such Claim and render a decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- E. If Engineer does not render a formal written decision on a Claim within the time stated in Paragraph 12.01.D., Engineer shall be deemed to have issued a decision denying the Claim in its entirety 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.
- F. The rendering of a decision by Engineer pursuant to this Paragraph 12.01 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Buyer or Seller of such rights or remedies as either may otherwise have under the Procurement Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter. If the exercise of such rights or remedies will imminently be time-barred, a party may take actions necessary to preserve such rights and remedies notwithstanding the lack of the condition precedent referred to in this paragraph.
- G. If a submitted matter in question concerns terms and conditions of the Procurement Contract Documents that do not involve (1) the performance or acceptability of Goods and Special Services under the Procurement Contract Documents, (2) the design (as set forth in the Procurement Drawings, Procurement Specifications, Addenda, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Buyer and Seller that Engineer is unable to provide a decision or interpretation. If Buyer and Seller

are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Paragraph 12.02.

- H. Engineer's written decision on such Claim or a decision denying the Claim in its entirety that is deemed to have been issued pursuant to Paragraph 12.01, will be final and binding upon Buyer and Seller 30 days after it is issued unless within 30 days of issuance Buyer or Seller appeals Engineer's decision by initiating the mediation of such Claim in accordance with the dispute resolution procedures set forth in Paragraph 12.02.
- I. If Article 12 has been amended to delete the mediation requirement, then Buyer or Seller may appeal Engineer's decision within 30 days of issuance by following the alternative dispute resolution process set forth in Article 12, as amended; or if no such alternative dispute resolution process has been set forth, Buyer or Seller may appeal Engineer's decision by 1) delivering to the other party within 30 days of the date of such decision a written notice of intent to submit the Claim to a court of competent jurisdiction, and 2) within 60 days after the date of such decision instituting a formal proceeding in a court of competent jurisdiction.
- J. No Claim for an adjustment in Procurement Contract Price or Procurement Contract Times will be valid if not submitted in accordance with Article 12.
- K. The effect on Claims of an assignment of the Procurement Contract by Buyer to a Contractor/Assignee is addressed in the Procurement Agreement, Article 5.

12.02 *Dispute Resolution Method*

- A. Either Buyer or Seller may initiate the mediation of (1) any Claim decided in writing by Engineer under Paragraph 12.01 before such decision becomes final and binding, or (2) any other dispute between the parties, including but not limited to any dispute arising after final inspection of the Goods and Services. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Procurement Contract. The request for mediation must be submitted in writing to the American Arbitration Association and the other party to the Procurement Contract. Timely submission of the request will stay Engineer's decision from becoming final and binding.
- B. Mediation is a condition precedent to seeking final dispute resolution under Paragraph 12.01.C. Buyer and Seller shall participate in the mediation process in good faith. The process must be concluded within 60 days of filing of the request. The date of termination of the mediation will be determined by application of the mediation rules referenced above.
- C. If the mediation process does not result in resolution of the dispute, then Engineer's written Claim decision under Paragraph 12.01.D or a Claim denial pursuant to Paragraph 12.01.E becomes final and binding, or if applicable such other dispute is deemed resolved in favor of respondent, unless, within 30 days after termination of the mediation, Buyer or Seller:
 - 1. elects in writing to invoke any final dispute resolution process provided for in the Supplementary Conditions, or
 - 2. agrees with the other party to submit the Claim or dispute to another final dispute resolution process, or
 - 3. if no final dispute resolution process has been provided for in the Supplementary Conditions, delivers to the other party written notice of the intent to submit the Claim

EJCDC® P-700, Standard General Conditions of the Procurement Contract.

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or dispute to a court of competent jurisdiction, and within 60 days of the termination of the mediation institutes such formal proceeding.

ARTICLE 13—PAYMENT

13.01 *Applications for Progress Payments*

- A. Seller shall submit to Buyer for Engineer's review Applications for Payment filled out and signed by Seller and accompanied by such supporting documentation as is required by the Procurement Contract Documents and also as Buyer or Engineer may reasonably require.
- B. The timing and amounts of progress payments will be as stipulated in the Procurement Agreement.
- C. Any Application for Payment that is based in whole or in part on the delivery of Goods must be accompanied by a bill of sale, invoice, or other documentation reasonably satisfactory to Buyer warranting that Buyer has rightfully received good title to the Goods from Seller and that, upon payment, the Goods will be free and clear of all liens. Such documentation will include releases and waivers from all parties with viable lien rights.
- D. Buyer shall notify Seller promptly of any deficiency in the required documentation.

13.02 *Review of Applications for Progress Payments*

A. *Review of Applications*

- 1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Buyer, or return the Application to Seller indicating in writing Engineer's reasons for refusing to recommend payment.
- 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Buyer, based on Engineer's observations of Seller's progress, as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Goods and Special Services or other obligations of Seller have progressed to the point indicated;
 - b. the quality of the Goods and Special Services or other obligations of Seller are generally in accordance with the Procurement Contract Documents; and
 - c. the conditions precedent to Seller being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Seller's progress.
- 3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Goods and Special Services or other obligations of Seller have been exhaustive, extended to every aspect of the Goods and Special Services or other obligations of Seller in progress, or involved detailed inspections of the Goods and Special Services or other

- obligations of Seller beyond the responsibilities specifically assigned to Engineer in the Procurement Contract; or
- b. there may not be other matters or issues between the parties that might entitle Seller to be paid additionally by Buyer, or entitle Buyer to withhold payment to Seller.
4. Neither Engineer's review of Seller's progress for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Seller's performance or furnishing of Goods and Special Services or other obligations of Seller; or
 - b. for the means, methods, techniques, sequences, or procedures of construction, manufacturing, fabrication, installation, or shipping, or the safety precautions and programs incident thereto; or
 - c. for Seller's failure to comply with Laws and Regulations applicable to Seller's performance under the Procurement Contract; or
 - d. to make any examination to ascertain how or for what purposes Seller has used the money paid for the Procurement Contract Price; or
 - e. to determine that title to any of the Goods or component parts have passed to Buyer free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Buyer stated in Paragraph 13.02.A.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Buyer from loss because:
- a. the Goods and Services are non-conforming, requiring correction or replacement;
 - b. the Procurement Contract Price has been reduced by Change Orders;
 - c. Buyer has been required to correct non-conforming Goods and Special Services in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E; or
 - d. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Seller and therefore justify termination for cause under the Procurement Contract Documents.

13.03 *Basis and Amount of Progress Payments*

- A. The basis and amounts of the progress payments will be as provided in the Procurement Agreement, subject to the provisions of this Article 13 regarding reductions in payment.

13.04 *Suspension of or Reduction in Payment*

- A. Buyer may temporarily cease making progress payments, or reduce the amount of a progress payment, even though recommended for payment by Engineer, under the following circumstances:

1. Buyer has reasonable grounds to conclude that Seller will not furnish the Goods or the Special Services in accordance with the Procurement Contract Documents, and
 2. Buyer has requested in writing assurances from Seller that the Goods and Special Services will be delivered or furnished in accordance with the Procurement Contract Documents, and Seller has failed to provide adequate assurances within ten days of Buyer's written request.
 3. In addition to any reductions in payment (set-offs) recommended by Engineer, Buyer is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Buyer based on Seller's conduct in the performance or furnishing of the Goods and Special Services, or has incurred costs, losses, or damages resulting from Seller's conduct in the performance or furnishing of the Goods and Special Services, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Seller has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Point of Destination or the worksite;
 - c. Seller has failed to provide and maintain required bonds or insurance;
 - d. Buyer has incurred extra charges or engineering costs related to Submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - e. the Goods and Special Services are non-conforming, requiring correction or replacement;
 - f. Buyer has been required to correct non-conforming Goods and Special Services, in accordance with Paragraph 9.03.C, or has accepted non-conforming Goods and Special Services pursuant to Paragraph 9.03.E;
 - g. the Procurement Contract Price has been reduced by Change Orders;
 - h. an event that would constitute a default by Seller and therefore justify a termination for cause has occurred;
 - i. liquidated or other damages have accrued as a result of Seller's failure to achieve Milestones, Substantial Completion, or final completion of the Goods and Special Services; or
 - j. liens have been filed in connection with the Procurement Contract, except where Seller has delivered a specific bond satisfactory to Buyer to secure the satisfaction and discharge of such liens.
- B. If Buyer refuses to make payment of the full amount recommended by Engineer, Buyer will provide Seller and Engineer immediate written notice stating the reason for such action and promptly pay Seller any amount remaining after deduction of the amount withheld. Buyer shall promptly pay Seller the amount withheld when Seller corrects the reason for such action to Buyer's satisfaction.

13.05 *Final Payment*

- A. After Seller has corrected all non-conformities to the reasonable satisfaction of Buyer and Engineer and furnished all Special Services, Seller may submit its final Application for Payment following the procedures for progress payments.
- B. The final Application for Payment will be accompanied by all documentation called for in the Procurement Contract Documents (including but not limited to all final operations and maintenance manuals, and any special warranties), a list of all unsettled Claims, and the written consent of surety to the making of final payment.
- C. If, on the basis of final inspection and the review of the final Application for Payment and accompanying documentation, Engineer is reasonably satisfied that Seller has furnished the Goods and Special Services in accordance with the Procurement Contract Documents, and that Seller has fulfilled all other obligations under the Procurement Contract Documents, then Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment subject to the provisions of Paragraph 13.02, and present the final Application for Payment to Buyer. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Buyer from loss for the reasons stated in Paragraph 13.02.
- D. If Engineer does not recommend final payment, Engineer will return the final Application for Payment to Seller, indicating the reasons for refusing to recommend final payment, in which case Seller shall make the necessary corrections and resubmit the final Application for Payment.
- E. In support of its recommendation of final payment Engineer will also give written notice to Buyer and Seller that the Goods and Special Services are acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 13.06.
- F. If the final Application for Payment and accompanying documentation are appropriate as to form and substance, Buyer shall, within 30 days after receipt thereof, pay Seller the amount recommended by Engineer, less any sum Buyer is entitled to set off against Engineer's recommendation, pursuant to the provisions of Paragraph 13.04.
- G. Buyer will not make final payment, or return or release included retainage (if any) at any time, unless Seller submits written consent of the surety to such payment, return, or release.

13.06 *Waiver of Claims*

- A. By making final payment, Buyer waives its claim or right to liquidated damages or other damages for late completion by Seller, except as set forth in an outstanding Claim, appeal, set-off, or express reservation of rights by Buyer. Buyer reserves all other claims or rights after final payment.
- B. The acceptance of final payment by Seller will constitute a waiver by Seller of all claims and rights against Buyer other than those pending matters that have been duly submitted or appealed under the provisions of Article 12.

ARTICLE 14—CANCELLATION, SUSPENSION, AND TERMINATION

14.01 *Cancellation*

- A. Buyer has the right to cancel the Procurement Contract, without cause, at any time prior to delivery of the Goods by written notice. Cancellation pursuant to the terms of this paragraph will not constitute a breach of contract by Buyer. Upon cancellation:
 - 1. Buyer shall pay Seller for the direct costs incurred in producing any Goods that Seller has specially manufactured for the Project, plus a fair and reasonable amount for overhead and profit.
 - 2. For Goods that are not specially manufactured for the Project, Seller shall be entitled to a restocking charge of 10 percent of the unpaid Procurement Contract Price of such Goods.

14.02 *Suspension of Performance by Buyer*

- A. Buyer has the right to suspend performance of the Procurement Contract for up to 90 days, without cause, by written notice. Upon suspension under this paragraph, Seller shall be entitled to an increase in the Procurement Contract Times and Procurement Contract Price caused by the suspension, provided that performance would not have been suspended or delayed for causes attributable to Seller.

14.03 *Suspension of Performance by Seller*

- A. Seller may suspend the furnishing of the Goods and Special Services only under the following circumstance:
 - 1. Seller has reasonable grounds to conclude that Buyer will not perform its future payment obligations under the Procurement Contract; and
 - 2. Seller has requested in writing assurances from Buyer that future payments will be made in accordance with the Procurement Contract, and Buyer has failed to provide such assurances within ten days of Seller's written request.

14.04 *Breach and Termination*

A. *Buyer's Breach*

- 1. Seller shall have the right to terminate the Procurement Contract for cause by declaring a breach if Buyer fails to comply with any material provision of the Procurement Contract. Upon termination, Seller shall be entitled to all remedies provided by Laws and Regulations.
- 2. If Seller believes Buyer is in breach of its obligations under the Procurement Contract, Seller shall provide Buyer with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Buyer shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Seller may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.

B. *Seller's Breach*

- 1. Buyer may terminate Seller's right to perform the Procurement Contract for cause by declaring a breach should Seller fail to comply with any material provision of the

Procurement Contract Documents. Upon termination, Buyer shall be entitled to all remedies provided by Laws and Regulations.

2. In the event Buyer believes Seller is in breach of its obligations under the Procurement Contract, Buyer shall provide Seller with reasonably prompt written notice setting forth in sufficient detail the reasons for declaring that it believes a breach has occurred. Seller shall have 7 days from receipt of the written notice declaring the breach (or such longer period of time as Buyer may grant in writing) within which to cure or to proceed diligently to cure such alleged breach.
3. If and to the extent that Seller has provided a performance bond under the provisions of Paragraph 5.01, the notice and cure procedures of that bond, if any, will supersede the notice and cure procedures of Paragraph 14.04.B.2.

ARTICLE 15—MISCELLANEOUS

15.01 *Giving Notice*

- A. Whenever any provision of the Procurement Contract requires the giving of written notice to Buyer, Seller, or Engineer, it will be deemed to have been validly given if delivered:
 1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

15.02 *Controlling Law*

- A. This Procurement Contract is to be governed by the law of the state in which the Goods are to be installed.
- B. In the case of any conflict between the express terms of this Procurement Contract and the Uniform Commercial Code, as adopted in the state whose law governs, it is the intent of the parties that the express terms of this Procurement Contract will apply.

15.03 *Computation of Time*

- A. When any period of time is referred to in the Procurement Contract by number of days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

15.04 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Procurement Contract, and the provisions of this paragraph will be as effective as if repeated specifically in the Procurement Contract in connection with each particular duty, obligation, right, and remedy to which they apply.

15.05 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Procurement Contract, as well as all continuing obligations indicated in the Procurement Contract, will survive final payment, completion, and acceptance of the Goods and Special Services or termination or completion of the Procurement Contract or of the services of Seller.

15.06 *Entire Agreement*

- A. Buyer and Seller agree that this Procurement Contract is the complete and final agreement between them, and supersedes all prior negotiations, representations, or agreements, either written or oral. This Procurement Contract may not be altered, modified, or amended except in writing signed by an authorized representative of both parties.

15.07 *No Waiver*

- A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Procurement Contract.

15.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

15.09 *Successors and Assigns*

- A. Buyer and Seller each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Procurement Contract.

**SECTION 01000
METHOD OF PAYMENT**

PART 1: GENERAL REQUIREMENTS

These general requirements apply to the entire project. Bidders shall become completely familiar with these requirements because this section will be utilized in not only evaluating payment requests but also in ascertaining whether the Materials Supplier has completed and complied with project specifications & requirements. Project is funded by the Oklahoma Turnpike Authority (OTA) & is part of a series of East West Corridor projects undertaken to connect Interstate 44 to Interstate 35 approximately along Indian Hills Road.

1. SCOPE

Effluent forcemain consists of furnishing materials described in Bid Schedules A & B, including transportation FOB City of Moore to several storage locations within a four-mile radius of the Moore Wastewater treatment plant. Storage locations are north of Indian Hills Road at sites located starting at Pennsylvania Avenue & extending to the Moore Wastewater Treatment Plant located east of Interstate 35. Successful bidders shall coordinate delivery of each truck load of materials with the City of Moore designated official to establish contents of materials being delivered, time of delivery, and allow adequate time for City official(s) to examine & establish if items being delivered meet required specifications. Rejected materials shall be promptly removed & hauled off at no cost to the City of Moore. Material suppliers shall replace rejected materials at no additional cost within a reasonable time not to exceed thirty (30) calendar days.

Plans & Specifications for the Effluent Forcemain Project are approximately 50 to 60 percent complete at the present time. It is anticipated that the City of Moore will take bids for construction & start construction of the project in the first quarter of 2026 & it is estimated to complete construction by July 2027. Successful bidders on Bids A & B shall be responsible for coordinating the incorporation and implementation of materials supplied for the project with the City of Moore selected contractor to ascertain that the supplied materials or equipment are being installed per specifications.

The supplier shall guarantee the repair of all damage due to supply of faulty pipe & equipment, improper materials, or materials of sub-standard quality/workmanship for a period of two (2) years after the FINAL acceptance of the work by the City of Moore (OWNER) in accordance with the Maintenance Bond.

2. BIDDERS INSPECTION OF THE PROJECT SITE

All bidders must examine the Project location for delivery of materials and be fully informed about the conditions affecting the materials supply prior to submitting their bids.

3. CONTRACTORS RESPONSIBILITIES

The Contractor (or Supplier) is solely responsible for securing the timely purchase and provision of all materials and equipment. The Contractor must contract, in writing, with subcontractors, and with material and equipment suppliers for the timely manufacture, supply, and delivery of all materials and supplies. It is the duty of the Contractor as part of the bidding process and as part of calculating the bid to identify and select subcontractors and material and equipment suppliers that can and will timely and fully perform the Work. It is the responsibility of the Contractor to include any risk of delay and of cost increases in its bid. Submission of a bid is a statement by the Contractor that the Contractor has contracted for firm fixed prices from subcontractors and for the material and equipment necessary for the Project. It is the duty of the Contractor to negotiate and enforce a fixed price contract with subcontractors and with material and equipment suppliers and to enforce timely delivery. The City of

Moore will **neither entertain nor pay** any additional compensation for changes in prices of materials or equipment nor grant additional time for delays in provision of materials or equipment based upon claims of force majeure or supplier nonperformance or delay. Neither the City of Moore nor the Oklahoma Turnpike Authority (OTA) will be responsible for paying any additional compensation for delays caused by or claimed by Contractor's or its subcontractors or suppliers. If Contractor cannot submit a bid that includes firm fixed prices and timely delivery from its subcontractors and suppliers, then the Contractor should not bid, as submission of a bid shall be deemed an admission and a statement by the Contractor that Contractor and its chosen subcontractors and suppliers can fully and timely perform for the bid price.

4. MEASUREMENT AND PAYMENT - UNIT BID PAY ITEMS

The quantities shown for unit bid pay items are estimated and are for the purpose of comparing bids. MPWA reserves the right to direct that additional or reduced quantities of any Bid Item be furnished. Contractor will be paid at the unit bid pay item price for actual quantities delivered in accordance with the direction of the Engineer & /or the OWNER. The Contractor agrees that it will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of materials, equipment, or Work performed or for the estimated amounts thereof.

5. INCIDENTAL WORK

Any item not covered in the Standard Specifications or these special provisions and **NOT** shown in the summary of quantities shall be considered as incidental for which the Contractor is responsible and shall not receive additional payment.

6. SUPERVISION

The City of Moore & Engineer will not recognize any subcontractor. The Contractor shall always, when material delivery is in progress, be represented at the project delivery site either in person or by a qualified and authorized & approved representative who shall be in direct charge.

7. TESTING PRIOR TO SHIPMENT

- a. All tests will be in accordance with the appropriate specifications.
- b. All costs of conducting tests on materials which meet specification requirements will be paid by the Contractor.
- c. All costs of conducting tests on materials which do not meet specification requirements shall be re-tested at no additional cost to the City of Moore.
- d. Test results shall be submitted to the Engineer & OWNER with each delivery. No exceptions.

8. PUBLIC CONVENIENCES AND SAFETY

Materials stored at project sites must be placed to cause no obstruction to the traveling public. City of Moore shall plan for the diversion of traffic prior to delivery.

9. REMOVAL OF DEFECTIVE MATERIALS

All materials which have been rejected or condemned, or which are defective must be repaired or if it cannot be satisfactorily repaired, it must be removed and replaced at the Contractor's expense. Defective, rejected, and condemned materials must be removed immediately from the Project Site.

If the Contractor fails to immediately and satisfactorily repair or remove and replace any rejected, defective, unauthorized materials, the City of Moore will, after giving written notice to the Contractor, have the authority to have defective material removed and replaced by others and will deduct the cost thereof from any compensation due to the Contractor. At City of Moore sole discretion, the OWNER may accept rejected, defective, unauthorized, or condemned work or materials and make an equitable deduction from the contract price or payment due the Contractor.

10. COLOR PHOTOGRAPHS

Color photographs of delivered materials shall be taken & submitted to the Engineer & OWNER of each delivery to document the event with the bill payment request.

11. OTHER CONSIDERATIONS FOR WORK

This section describes the method by which the work will be measured and paid in accordance with the bid schedule. It divides the entire work into parts for ease of payments. The scope of each part, however, will primarily be as per the Specifications. The contents of this section shall complement the scope of work detailed in the specifications. If there is a conflict between the specifications and this section, the more stringent of the two requirements shall apply. Any work required but not included in this section shall be considered as "incidental" and shall be included in other work items.

Pay requests shall not be submitted more than once a Month.

PARTS 2 AND 3

Not Applicable

PART 4 - MEASUREMENT AND PAYMENT

Successful bidders on Bids A & B shall be responsible for coordinating the incorporation and implementation of materials supplied for the project with the City of Moore selected contractor to ascertain that the supplied materials or equipment are being installed per specifications.

The supplier shall guarantee the repair of all damage due to supply of faulty pipe & equipment, improper materials, or materials of sub-standard quality/workmanship for a period of two (2) years after the FINAL acceptance of the work by the City of Moore (OWNER) in accordance with the Maintenance Bond.

BID A: BID SCHEDULE - PURCHASE IS SALES TAX EXEMPT

MOORE WWTP EFFLUENT SEWER FORCE MAIN RELOCATION IMPROVEMENTS

OTA PROJECT # EWC-28103A, JP 37100(38)

FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES

- 1. 36-INCH HDPE DR 13.5 160 PSI IRON PIPE SIZE (IPS) FORCE MAIN PRESSURE PIPE - QUANTITY - 43,000 LF**
- 2 VALVE ASSEMBLIES FOR NORTH & SOUTH EFFLUENT FORCE MAINS TO INSTALL PLUG VALVES COMPLETE PER DRAWING & PARTS LIST AT THREE LOCATIONS, PLUG VALVE TO BID SEPERATELY & NOT INCLUDED IN BIDS 2A, 2B, & 2C BELOW.**
 - 2 A VALVE ASSEMBLY 1
BETWEEN PENNSYLVANIA AVENUE & WESTERN AVENUE PER DRAWING & PARTS LIST COMPLETE - 1 - EACH**

- 2 B VALVE ASSEMBLY 2
BETWEEN SANTA FE AVENUE & TELEPHONE ROAD PER DRAWING & PARTS LIST
COMPLETE - 1 - EACH
- 2 C VALVE ASSEMBLY 3
BETWEEN WESTERN AVENUE & SANTA FE AVENUE PER DRAWING & PARTS LIST
COMPLETE - 1 - EACH
- 3 36-INCH EDR 13.5 IRON PIPE SIZE 22.5° ELBOW 2-SEGMENT FABRICATION HDPE - 16 -
EACH
- 4 36" EDR 13.5 IRON PIPE SIZE 45° ELBOW 3-SEGMENT FABRICATION HDPE - 10 - EACH
- 5 36" EDR 13.5 IRON PIPE SIZE 90° ELBOW 3-SEGMENT FABRICATION HDPE - 4 - EACH
- 6 36" X 2' GUSSETED REDUCING TEE COMPLETE PER DRAWING & PARTS LIST FOR AIR
RELEASE VALVE - 8 - EACH
- 7 36" C153 MJ ADAPTER KIT WITH GLAND, GASKET, & BOLTS - 4 - EACH
- 8 36" DR 13.5 IRON PIPE SIZE MJ ADAPTER ONLY PE W/ SS STIFFENER - 4 - EACH

BID B: BID SCHEDULE - PURCHASE IS SALES TAX EXEMPT

**MOORE WWTP EFFLUENT SEWER FORCE MAIN RELOCATION IMPROVEMENTS
OTA PROJECT # EWC-28103A, JP 37100(38)
FOB CITY OF MOORE EFFLUENT FORCE MAIN PROJECT STORAGE SITES**

- 1. FULL-BORE 36-INCH DEZURIK FLANGED PLUG VALVES FOR 36-INCH HDPE 160 PSI DR 13.5
IPS COMPATIBLE WITH 36-INCH HDPE DR 13.5 FLANGE ADAPTER - 7 - EACH
- 2. 2-INCH SEWAGE TYPE AIR & VACUUM VALVE, DEZURIK OR EQUAL - 8 - EACH
- 3. 30-INCH MOTORIZED DEZURIK BUTTERFLY VALVE - 2 - EACH
- 4. 18-INCH MOTORIZED DEZURIK BUTTERFLY VALVE - 1 - EACH
- 5. 30-INCH MAGNETIC FLOW METER, SIEMENS 5100W WITH REMOTE MOUNTED READOUT -
1 - EACH
- 6. 36-INCH DEZURIK BUTTERFLY VALVES - 3 - EACH
- 7. ONE SUMP PUMP IN METER VAULT-18' STATIC HEAD & TWO SUMP PUMPS IN OG&E
DIVERSION BOX-14' STATIC HEAD W/ 2" DISCHARGE LINE. HYDROMATIC MESPD50AH1 20,
AUTOMATIC SUMP PUMP ½ HP, 115/1/60, 20' CORD - 3 - EACH
- 8. 8-INCH MANUAL DEZURIK BUTTERFLY VALVE - 1 - EACH

END OF SECTION

SECTION 01300 SUBMITTALS

PART 1 GENERAL - Every product requires a submittal.

1.01 SECTION INCLUDES

- A. Submittal procedures.
- B. Shop drawings.
- C. Product data.

1.02 RELATED SECTIONS

- A. Section 01400 - Quality Control: Manufacturers' field services and reports.
- B. Section 01700 – Contract Closeout; Contract Closeout Submittal
- C. Section 11005 – Equipment Submittals

1.03 SUBMITTAL PROCEDURES

- A. Before starting the shop drawing/product submittal process, Contractor shall provide a detailed list of submittals of all products to be provided on the project, sequentially numbered, to the Engineer for review and approval. This list shall be tracked and updated each month as needed..
- B. Transmit each submittal to Engineer.
- C. Sequentially number the transmittal forms. Resubmittals to have original numbers with an alphabetic suffix.
- D. Identify Project, supplier, pertinent Drawing sheet as applicable and detail numbers, and specification Section number, as appropriate.
- E. Apply Contractor's stamp, signed or initialed by authorized Contractor personnel, certifying that review, verification of Products required, dimensions, and coordination of information, is in accordance with the requirements of the Work and Contract Documents. Application of the stamp with signature or initials filled in shall be conclusive as to the making of such certification.
- F. Schedule submittals to expedite the project and deliver them to Engineer at business address. Coordinate submission of related items.
- G. Identify variations from Contract Documents and Product or system limitation, which may be detrimental to successful performance of the completed work in letterform on front of transmittal sheet.
- H. Provide space for Contractor and Engineer review stamps.
- I. Revise and resubmit submittals as required, identify all changes made since previous submittal by specific notation or color highlighting on the drawings or product data.
- J. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.04 SHOP DRAWINGS

- A. Submit the number of opaque reproductions that Contractor requires, plus two copies, which will be retained by Engineer.
- B. After review, reproduce and distribute in accordance with paragraph on Procedures above.

1.05 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Engineer.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with paragraph on Procedures above.

1.06 MANUFACTURERS' INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instruction and Contract Documents.

1.07 MANUFACTURERS' CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Engineer for review, in quantities specified for Product Data.

- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits and certifications as appropriate.

1.08 PROJECT RECORD DOCUMENTS

- A. Maintain on site and record actual revisions to the Work:
 - 1. Specifications
 - 2. Addenda
 - 3. Change Orders and other Modifications to the Contract.
 - 4. Reviewed shop drawings, product data, and samples.
- B. Take pictures at delivery & submit with pay request.
- C. Submit project record documents before final payment. Final payment will not be made without the submission of record documents of a summary of all deliveries to the Engineer.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 02620
HIGH DENSITY POLYETHYLENE (HDPE) PIPE, FITTINGS AND JOINING/FUSION

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This specification covers the material (pipe and fittings), joining methods and general installation practice for high density polyethylene pipe (HDPE) piping systems for water and wastewater utility use as indicated on the Drawings.

1.02 SUBMITTALS

- A. Submit product data to the Engineer for review in accordance with the Section SUBMITTALS for all pipe, fittings, and appurtenances.
- B. Contractor shall also submit the following to the Engineer for approval:
1. Certified dimensional as-built drawings/profile of all installed pipe, specials, and fittings.
 2. Details of fittings and specials such as elbows, tees, outlets, connections, test bulkheads, nozzles, or other special items where shown on the Construction Drawings. All connections to jointed gasketed pipe materials, valves or fire hydrants must be restrained and supported independently to withstand the pressure transients, soil settlement, and external loading conditions.
 3. The Supplier of the material shall submit, through the Contractor, a Certificate of Compliance that the HDPE pipe and fittings furnished for this project are FM approved materials that meet or exceed the standards set forth in this specification. The Contractor shall submit these certificates to the Engineer prior to installation of the pipe materials.
 4. Provide a statement that personnel responsible for fusing the pipe have been trained and qualified.
- C. For items that do not meet all the requirements of this specification, the bid/submittal shall include a written description of the deviations, along with data that show the magnitude and the justification for the deviation from the specification. The decision to accept material deviating from this specification shall be the responsibility of the specifying engineer and must be approved in writing.

1.03 REFERENCE DOCUMENTS AND STANDARDS

The standards and documents listed below may apply to the materials and practices in this specification. In the event of a conflict, the requirements of this specification prevail. Unless otherwise specified, references to documents shall mean the latest published edition of the referenced document in effect at the project bid date.

ANSI/AWWA

- ANSI/AWWA C901 Polyethylene (PE) Pressure Pipe and Tubing, ½ In. (13 mm) Through 3 In. (76 mm) for Water Service
- ANSI/AWWA C906 Polyethylene (PE) Pressure Pipe and Fittings, 4 In. (100 mm) Through 63 In. (1,600 mm), for Water Distribution and Transmission
- ANSI/AWWA C651 Standard for Disinfecting Water Mains
- AWWA M55 Manual of Water Supply Practices, PE Pipe—Design and Installation

Plastics Pipe Institute, PPI

- PPI Handbook of Polyethylene Pipe – 2009 (2nd Edition)
- PPI Municipal Advisory Board (MAB) Generic Electrofusion Procedure for Field Joining of 12 Inch and Smaller Polyethylene (PE) Pipe
- PPI Material Handling Guide for HDPE Pipe and Fittings
- PPI TR-33 Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe
- PPI TR-34 Disinfection of Newly Constructed Polyethylene Water Mains
- PPI TR-38 Bolt Torque for Polyethylene Flanged Joints
- PPI TR-41 Generic Saddle Fusion Joining Procedure for Polyethylene Gas Piping
- PPI TN-42 Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining Operators for Municipal and Industrial Projects
- PPI TR-46 Guidelines for Use of Mini-Horizontal Directional Drilling for Placement of High-Density Polyethylene Pipe

ASTM

- ASTM D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
- ASTM D 2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing
- ASTM D 2737 Standard Specification for Polyethylene (PE) Plastic Tubing
- ASTM D 2774 Standard Practice for Underground Installation of Thermoplastic Pressure Piping
- ASTM F 2880 Standard Specification for Lap-Joint Type Flange Adapters for Polyethylene Pressure Pipe in Nominal Pipe Sizes 3/4 in. to 65 in.
- ASTM D 3035 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
- ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
- ASTM D 3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
- ASTM F 585 Standard Guide for Insertion of Flexible Polyethylene Pipe into Existing Sewers
- ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
- ASTM F 905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
- ASTM F 1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and
- ASTM F 1290 Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
- ASTM F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air
- ASTM F 1962 Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit under Obstacles, Including River Crossings
- ASTM F 2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping Systems Using Hydrostatic Pressure
- ASTM F 2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE) Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
- ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
- ASTM F 3124 Standard Practice for Data Recording the Procedure Used to Produce Heat Butt Fusion Joints
- ASTM F 3183 Standard Practice for Guided Side Bend Evaluation of Polyethylene Pipe Butt Fusion Joint
- ASTM F 3190 Standard Practice for Heat Fusion Equipment (HFE) Operator Qualification on Polyethylene (PE) and Polyamide (PA) Pipe and Fittings

PART 2 – PRODUCTS

2.01 HIGH DENSITY POLYETHYLENE MATERIALS

A. Resin and Material Requirements

1. All material 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 D 3350 with a minimum cell classification of 445474C. 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 homogeneous throughout and free of visible cracks, holes, foreign inclusions, voids, or other injurious defects.

B. HDPE Pipe

1. All pipes must be extruded in the United States and import pipe will not be accepted.
2. Pipe shall be manufactured by a manufacturer with a minimum of 5 years of experience manufacturing the size(s) and pipe DR value(s) identified for the project.
3. Pipe shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01.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 manufacture of the HDPE resin shall certify the cell classification indicated.
4. Pipe sizes 3" and large shall have a manufacturing standard of ASTM F 714, while pipe smaller than 3" shall be manufactured to the dimensional requirements listed in ASTM D 3035. Dimension Ratio (DR) and Outside Diameter (IPS/DIPS) shall be as specified on plans.
5. Pipe shall meet AWWA C901 (1/2" to 3") or AWWA C906 (4" to 63") and shall be listed as meeting NSF-61.

6. 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 contamination. 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.
7. All pipes shall be color coded for the intended service. 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. Color coding shall be as follows:
 - a. Sewer – green
 - b. Water – blue
 - c. Reclaim – purple

C. HDPE Fittings

1. Butt Fusion Fittings- Fittings shall be made of HDPE material with a minimum material designation code of PE4710 and with a minimum Cell Classification as noted in 2.01.A. 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 owner/engineer. All fittings shall meet the requirements of AWWA C901 or C906.
 - a. Molded fittings shall comply with the requirements of ASTM D 3261.
 - b. All fabricated elbows, tees, reducing tees and end caps shall be produced and meet the requirements of ASTM F 2206, as manufactured by ISCO Industries, Inc or other approved manufacturer holding an ISO 9001 quality system certificate. Each fitting will be marked per ASTM F 2206 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 McElroy Datalogger 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 F 2206 section 7.3 and 9 shall be provided to owner or owner's representative upon request.
 - c. Socket fittings shall meet ASTM D 2683.
2. Electrofusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code of PE 4710 and with a minimum Cell Classification as noted in 2.01.A. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. 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. For potable water systems, all electrofusion fittings shall have AWWA approval
3. Bolted Connections – Flanged and Mechanical Joint Adapters can be made to ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206. 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.
 - a. Flange Adapters shall meet the dimensional and material requirements of ASTM F 2880.
 - b. Metallic back-up rings (Van-Stone style lap joint flanges) shall have a radius on the inside diameter of the bore to be compatible with HDPE Flanges. Back up rings shall have bolt pattern that will mate 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.
 - c. Flange assemblies shall be assembled and torqued according to PPI TN-38, "Bolt Torque for Polyethylene Flanged Joints."
 - d. Where shown on the drawings, 4" and larger transitions to mechanical joint fittings and valves shall be accomplished using a MJ Adapter with kit. The D.I./HDPE mechanical joint adaptor shall consist of:

- i. A molded or fabricated HDPE mechanical joint transition fitting.
 - ii. A rubber gasket.
 - iii. A mechanical joint backup drive ring.
 - iv. Corten mechanical joint tee bolts.
- 4. Mechanical Fittings: The use of mechanical coupling and saddles shall be approved by the owner or engineer prior to installation. Mechanical Fittings shall be designed for use and compatible with HDPE pipe. Mechanical fittings shall have a pressure rating equal to or greater than the pipe.
 - a. Couplings without self-restraining capabilities (integrated serrated teeth or grippers) shall include a plan for external restraint or isolation from pipeline generated forces.
 - b. Mechanical Saddles shall have wide straps for distribution of clamping loads. No U-bolts shall be allowed.
 - c. 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.
- D. Fusion Unit Requirements
 - 1. 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".
 - 2. 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 gage and thermometer should be checked for accuracy. When requested by the owner, records showing a maintenance service/inspection within 3 months prior to use for this project shall be provided.
 - 3. Rental Butt Fusion Equipment must be maintained by a McElroy Authorized Service and Repair Center with at least one McElroy Certified Master Mechanic on staff. When requested by owner or his authority, an inspection report detailing the components inspected within 3 months prior to arrival at jobsite will be provided.
 - 4. Electrofusion Processors shall be maintained and calibrated per manufacturers' requirements and recommendations.
 - 5. 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.
- E. Approved Suppliers
 - 1. All Pipe, Fittings, and Fusion Equipment shall be provided by one supplier. Approved suppliers are ISCO Industries, Inc. or equal.

2.02 PIPELINE LOCATING MATERIALS

- A. Detectable Marker Tape- Plastic marker tape shall be 5 mil minimum thickness with a solid aluminum core of .35mil minimum thickness and a minimum width of 2". The background of the tape shall be colored based on pipe service with black lettering continuously printed. Marker tape shall have a minimum 35 lbs./inch tensile strength. The installation of the tape shall be at 18 inches below finish grade.
- B. Tracer Wire- All HDPE pipe 4" and greater shall be installed with an extra high-strength, copper clad steel tracer wire including 45 mil HDPE jacket that has a minimum average break load of at least 1150 lbs. The jacket shall be colored based on pipe service, with blue for potable water or green for sewer. Tracer wire gauge shall be 12 AWG, 10 AWG, or 8 AWG depending upon application and installation procedure. This wire shall be continuous and brought up in the valve boxes at the ends of each line segment with splices made only by methods per the equipment manufacturer's recommendation. All miscellaneous splicing components shall be furnished and installed by the Contractor.

PART 3 – EXECUTION

3.01 GENERAL

- A. All HDPE pipe and fittings shall be cut, joined, and installed in accordance with the manufacturer's recommendations. Joining, laying, and pulling of polyethylene pipe shall be accomplished by personnel experienced in working with polyethylene pipe systems.

3.02 TRANSPORTATION, UNLOADING, AND STORAGE

- A. The manufacturer shall package product in a manner designed to deliver the pipe and fittings to the project neatly, intact and without physical damage. During transportation, each pipe shall rest on suitable pads, strips skids, or blocks securely wedged or tied in place.
- B. During loading, transportation, and unloading, every precaution should be taken to prevent damage to the pipe. The handling of the pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Cuts or gouges that reduce the wall thickness by more than 10% are not acceptable and must be cut out and discarded.
- C. Handle the pipe in accordance with the PPI Handbook of Polyethylene Pipe (2nd Edition), Chapter 2. All pipe and accessories shall be loaded and unloaded by lifting with hoists or by skidding to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks, or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe. All pipe and fittings shall be subjected to visual inspection at time of delivery and before they are lowered into the trench to be laid.
- D. Materials, if stored, shall be kept safe from damage, and shall not be stacked higher than the limits recommended by the manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe shall not be stored close to heat sources. The contractor shall be responsible for all security, damage, and loss of pipe, excluding Acts of God.
- E. The interior of the pipe as well as all sealing surfaces of mating components (i.e., flange faces) shall be always kept free from dirt or foreign matter. The open ends of all sections of joined and/or installed pipe (not in service) shall be plugged to prevent insects, animals, or foreign material from entering the pipe line or pipe section. The practice of stuffing cloth or paper in the open ends of the pipe will not be permitted. Use waterproof nightcaps to prevent the entrance of any type of natural precipitation into the carrier or containment pipe and will be secured to the pipe in such a manner that the wind cannot blow them loose. Where possible, the pipe shall be raised and supported at a suitable distance from the open end such that the open end will be below the level of the pipe at the point of support.

3.03 RECEIPT INSPECTION

- A. All pipe and fittings shall be subjected to visual inspection at time of delivery and before they are installed or lowered into the trench to be laid. Defective, damaged, or unsound pipe will be rejected. Cuts, punctures, or gouges that penetrate or reduce the wall thickness by 10% or more are not acceptable and must be removed and discarded. Joints or fittings that do not conform to these specifications will be rejected and must be removed immediately by the Contractor.

3.04 FUSION AND JOINING

- A. Fusion Joining Requirements:
 - 1. All HDPE pipes shall be joined to itself by the heat fusion process which produces homogeneous, seal, 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 F 2620 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 PPI TN-42. A record or certificate of training for the fusion operator must be if documents training to the fundamentals of ASTM F 2620. 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.
 - 3. Electrofusion: Electrofusion joining shall be done in accordance with the manufacturers recommended procedure. Other sources of electrofusion joining information are ASTM F 1290,

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.

B. Fusion Operators:

1. The employer of the fusion machine operator is responsible for the fusion joint quality of the fusion weld made by that individual. The employer is responsible for documenting all training and qualification records for that individual, including compliance to any code requirements for fusion/bonder operators.
2. All HDPE fusion equipment operators shall be qualified to the procedure used to perform pipe joining. Fusion equipment operators shall have current, formal training on all fusion equipment employed on the project. Training received more than two years prior to operation with no evidence of activity within the past 6 months shall not be considered current.
3. For Projects with at least 5,000 feet or with pipe larger than 24 inches, operators or their supervisor must have a current McElroy Fusion Training Certificate for the equipment to be used on the project.
4. When the fusion machine operator is employed by the HDPE pipe and fusion machine supplier, the supplier shall maintain an ISO 9001 Certified Quality Management System.

C. Butt Fusion Equipment:

1. 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.
2. In areas where there may be insufficient space to layout 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. The Contractor shall be responsible for securing and obtaining permission/permits from adjacent property if necessary, for staging and/or fusing of the pipe and HDD equipment at no additional cost to the Owner.

D. Fusion 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 F 3124, "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's 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.
 6. Pre-fabricated materials built in a shop environment must utilize a data recording device and reports for each joint should be provided, reviewed and approved prior to shipping.
- E. Butt Fusion Examination and Testing:
1. Examinations
 - i. Visual: For pipe sections, examine the full exterior circumference for bead uniformity before cutting. After cutting the pipe section, review the interior bead. All beads should have visually acceptable bead formation as shown in Fig 4 and Appendix X2 of ASTM F 2620. In addition, the following characteristics are expected:
 1. There shall be no evidence of cracks or incomplete fusing
 2. There shall be no evidence of captured objects (e.g., pipe shavings, facer ribbons) between bonded surfaces.
 3. Variations in upset bead heights on opposite sides of the cleavage and around the circumference of fused pipe joints are acceptable.
 4. The apex of the cleavage between the upset beads of the fused joint shall remain above the base material surface
 5. Fused joints shall not display visible angular misalignment, and outside diameter mismatch shall be less than 10% of the nominal wall thickness
 6. Fusion data record review that meets criteria of section 3.04.D.1 can be used as additional verification of visual indicators.
 - ii. Fusion Data Record Review

The fusion data record for each fused joint shall be compared to the approved fusion procedure. The reviewer shall verify the following:

 1. That all data required by section 3.04.D.1 was recorded
 2. Interfacial pressure was within the acceptable range
 3. Heater surface temperature was within the acceptable range
 4. Butt fusion pressure applied during the fusing/cool cycle was correctly calculated to include drag pressure, fell within the acceptable range for the applicable size and agrees with the recorded hydraulic fusing pressure.
 5. Butt fusing pressure was reduced to a value less than or equal to drag pressure at the beginning of the heat soak cycle.
 6. Fusing machine was opened at the end of the heat soak cycle, the heater was removed, and the end were brought together at the fusion pressure with the acceptable time range
 7. Cooling time at butt fusing pressure met the minimum time specified
 - iii. If the recorded data in section 3.04.D.1 is outside the limits of the acceptable range, the joint is unacceptable, and must be removed and replaced.
 - iv. Frequency. Records for test fusion joints should be reviewed immediately after the joint is completed. Fusion joints for jobsite fusions should be reviewed daily or before being covered with backfill.
 2. Mechanical Tests
 - i. Contractor shall mechanically test the first fusion of each operator and each machine used on the project. Installation shall not continue until a fusion test has passed the test. Additional mechanical test is not required if long as the fusion are reviewed with the frequency specified in section 3.04.E.1. iv. Testing of fusion joints with no fusion data record review shall be at a frequency specified by the Owner or Engineer.
 - ii. The fusion shall be allowed to cool completely, then fusion test straps shall be cut out.
 - iii. All samples shall be labeled with operator information. Testing must be done at 73 degrees F plus or minus 5 degrees. The test temperature and sample size are critical to testing. Testing performed at cold or elevated temperatures may not give similar results to tests performed at ambient temperatures.

- iv. Each pipe sample weld shall be subjected to testing at two locations 180 degrees apart from each other in the joint weld. All specimens shall be tested by one of the following methods:
 - 1. Reverse Bend Test are allowed for pipe sizes 4" IPS or smaller. The specimens shall be prepared and tested in accordance with ASTM F 2620, Appendix X4.
 - 2. Guided Side Bend Test are allowed for all wall thicknesses of 1" or greater. The specimens shall be removed and tested in accordance with ASTM F 3183.
 - 3. Hydrostatic Burst Test is allowed for pipe sizes 2"-24". The specimen length should measure 6 times pipe diameter with the butt fusion joint in the center of the specimen. The specimen should be tested in a tank filled with water, and testing conditions monitored and recorded with computerized equipment. The specimen will be tested at 4 times pipe rated pressure for 5 minutes with no failure of joint allowed.
- v. Results of any mechanical test should be documented. Information on the weld and operator should be transferred from the sample to the testing record.

3.05 INSTALLATION

- A. Direct Burial
 - 1. Buried HDPE pipe and fittings shall be installed per engineering drawings and ASTM D2487, ASTM D2774, ASTM D2321 and AWWA Manual of Water Supply Practices M55 Chapter 8. The Design Window identified in AWWA M55 Chapter 5 (page 65 of 2006 version) shall be considered acceptable design and installation conditions.
 - 2. When moveable trench bracing such as trench boxes, moveable sheeting, shoring or plates are used to support the sides of the trench, care shall be taken in placing and moving the boxes or supporting bracing to prevent movement of the pipe, or disturbance of the pipe bedding and the backfill. Trench boxes, moveable sheeting, shoring or plates shall not be allowed to extend below top of the pipe. As trench boxes, moveable sheeting, shoring or plates are moved, pipe bedding shall be placed to fill any voids created and the backfill shall be re-compacted to provide uniform side support for the pipe.
 - 3. Pipe embedment - Embedment material should be Class I, Class II, or Class III materials as defined by ASTM D-2321 Section 6. The use of Class IV or Class V materials is not recommended; however, they may be used only with the evaluation and approval of the engineer at a demonstrated achievable compaction
 - 4. Bedding: Pipe bedding shall be in conformance with ASTM D2321 Section 8. Compaction rates should be as specified in ASTM D2321. Deviations shall be approved by the engineer.
 - 5. Haunching and backfill shall be as specified in ASTM D 2321 Section 9 with Class I, II, or III materials. Compaction shall be more than 85% Proctor, providing a minimum modulus of 1000 psi or greater.
- 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.
 - 3. Trenchless installations:
 - i. For Horizontal Directional Drilling (HDD), refer to ASTM F1962, PPI TR-46, PPI PE Handbook (Chapter 12) and www.PPIBoreAid.com
 - ii. For slip lining, refer to ASTM F585, PPI PE Handbook (Chapter 11) and www.HDPEapp.com
 - iii. For pipe bursting, refer to 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.

3.06 PIGGING, FLUSHING, CLEANING, AND DISINFECTING

- A. All mains shall be pigged, cleaned, and flushed to remove all dirt, sand, debris and other foreign matter. The Contractor shall be responsible for developing a pigging and flushing plan to be submitted to the Engineer for approval prior to pigging and flushing.
- B. Disinfection:
 1. Cleaning and disinfecting of potable water systems shall be in accordance with AWWA C651 and AWWA M55 Chapter 10, and PPI Handbook of Polyethylene Pipe Chapter 2 (2nd Edition).
 2. The liquid disinfection chemical solution should be limited to less than 12% active chlorine. The time-duration of the disinfection should not exceed 24 hours. Chlorine tablets or powders are not permitted.
 3. Upon completion, the system should be thoroughly flushed with fresh water, and retested to verify the disinfectant chlorine level has been reduced to potable drinking water concentrations in all service water tubing and branch lateral pipes

3.07 TESTING AND LEAKAGE

- A. The contractor shall insure testing can be accomplished in a safe manner, including protection of personnel, equipment, and public in the event of a failure during testing. The contractor shall restrain pipe, components, and test equipment as required. All pumps, valves, temporary connections, meters, gauges, and other measuring devices shall be furnished, installed and operated by the Contractor and all such equipment and devices and their installation shall be approved by the Owner's Engineer.
- B. The pressure gauges or data recorders should be calibrated and sufficiently sized to provide mid-range data (pressure tested will not be below 10% or greater than 90% of gauge capacity) that result in easy reading, interpretation. Gauges shall be accurate to within 2% of full scale with increments no greater than X psi.
- C. The test pressure may be up to 1.5 times the FM pressure class, based on the lowest point in elevation in the test section.
- D. Test pressures require consideration of thermal conditions. Polyethylene piping materials are typically pressure rated at 73°F (23°C) and PE piping at temperatures greater than 80°F (26°C) require reduced test pressures. (Note that higher pipe temperatures should consider both ambient temperatures and radiant solar heating of exposed black HDPE pipe) Guidance for elevated temperatures can be found in the appendix of Chapter 3 (Material Properties) of the PPI Handbook of PE Pipe.
- E. Gravity Pipelines-The Contractor shall perform a low-pressure air test for gravity flow pipelines to the requirements and specifications of ASTM F 1473. Warning: All pneumatic test, regardless of pressure, can be dangerous and safety procedures shall be identified, documented, approved by the owner and engineer, and followed.
- F. Pressure Pipelines-Pressure testing shall be conducted in accordance with requirements and recommendations of ASTM F 2164 (Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure), AWWA M55 Chapter 9, and PPI Handbook of Polyethylene Pipe Chapter 2 (2nd

Edition). Pneumatic (compressed air) leakage testing of HDPE pressure piping is prohibited for safety reasons.

1. The section of pipe to be tested shall be filled with potable or generally clean water (uncontaminated river/lake water) approved by the Owner/Engineer. While the system is being filled with water, air shall be carefully and completely exhausted.
 2. If the Contractor elects to perform hydrostatic testing against valves in an existing system, it does so at his own risk and will bear the cost of any damages to the existing valve, piping system, private or public property, or the new pipeline under test.
 3. The test procedure for HDPE pipe consists of two steps: 1) the initial phase or expansion phase and 2) the test phase. During the initial/expansion phase, sufficient make-up water shall be added hourly for 3 hours to return to the test pressure. 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).
 4. Under no circumstances shall the total time under test exceed eight (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 eight (8) hours prior to the next testing sequence.
 5. In accordance with section 9.8 of ASTM F 2164, 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.
- G. All pressure and leakage testing shall be done in the presence of a representative of the Owner and Engineer.

END OF SECTION

**SECTION 11286
BUTTERFLY VALVES**

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. This specification covers the work necessary to furnish and install the various butterfly valves as specified herein and as shown on the plans.
- B. To obtain standardization of performance, operation, spare parts, maintenance, and Manufacturer's service, it is the intent of these specifications that all valves of like type be furnished by a single Manufacturer, DeZurik to match existing at the Moore wastewater treatment plant.

1.02 DELIVERY, STORAGE AND 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 at the jobsite prior to installation. Packing containers shall be permanently labeled with appropriate equipment identification, shipping address and return address. Packing lists shall be provided with equipment at time of delivery.
- B. Electrical equipment shall be always kept thoroughly dry and 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.
- C. Contractor shall utilize equipment and tools of adequate size suitable for unloading, transporting, storing and supporting the equipment during installation. Caution should be employed to prevent equipment damage resulting from abrupt contact with other materials or equipment.

1.03 RELATED REQUIREMENTS

- A. SECTION 01300: SUBMITTALS
- B. SECTION 09805: PAINTING
- C. SECTION 13000: INSTRUMENTATION AND CONTROLS
- D. SECTION 16000: ELECTRICAL

1.04 QUALITY ASSURANCE

- A. The valves furnished under this contract shall be as manufactured by DeZurik or approved equal.
- B. Manufacturers regularly engaged in the manufacture of the type of equipment specified and can demonstrate equipment of their manufacture in actual service for a period of not less than 15 years will be considered as acceptable Manufacturer if able to comply with the specifications.
- C. The valve Manufacturer shall submit to the Engineer & the City of Moore certified copies of factory test results for each system valve size. Test results shall be submitted prior to shipment and shall show compliance with specified performance requirements.

1.05 WARRANTY

- A. The Manufacturer shall warrant the equipment to be of quality construction, free from defects in materials and workmanship. The warranty shall become effective upon Final Acceptance of the installed project by the Owner.
- B. The equipment, apparatus, and parts furnished shall be warranted for a period of one (1) year, expecting only those items that are normally consumed in service such as packing, grease, gaskets, O-rings, etc. The Manufacturer and /Contractor shall be responsible for the warranty of the equipment and all non-consumable components.
- C. Components failing to perform as specified by the Engineer, or as represented by the Manufacturer, or proven to be defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the Manufacturer and Contractor without cost of parts or labor to the Owner.

1.06 FACTORY PAINTING

- A. Unless otherwise specified, exterior and interior metallic surfaces of each valve shall be shop painted per the latest revision of industry standard AWWA C504.

PART 2: PRODUCTS

2.01 MATERIALS – Butterfly Valves

- A. Body: Cast Iron
Packing: Acrylonitrile-Butadiene or PTFE
Seat: Acrylonitrile-Butadiene or Ethylene Propylene Diene Monomer (EPDM)
- B. Disc: Cast Iron with 316 Stainless Steel edge
Bearings: Non-metallic, self-lubricating
Shaft: 304 Stainless Steel

2.02 COMPONENTS – Butterfly Valves

- A. Valves shall be flanged style or mechanical joint with manual or electric operators(see valve schedule). Valves installed in overhead piping shall utilize chainwheel manual operators and be provided with enough chain to reach within four (4) feet of the floor. Valves shall have materials of construction as outlined above.

- B. The disc shall be securely attached to the shaft with a 304 Stainless Steel torque screw or tangential pin locked in place with a set screw.
- C. Shaft seals shall be self-compensating V-type packing with a minimum of four (4) sealing rings. One-piece molded shaft seals and O-ring shaft seals are not acceptable.
- D. The valve seat shall be of Acrylonitrile-Butadiene for water service and EPDM for high-temperature air service. Seat shall be molded in and vulcanized to the valve body. The seat shall contain an integral shaft seal protecting the valve bearings and packing from any pipeline debris. Seats vulcanized to cartridge inserts or seats on the valve disc edge are not acceptable.

2.03 MANUAL OPERATORS

- A. Manual operators shall be of a traveling nut style designed and tested per the requirements of AWWA C504. Housing shall be cast iron and shall be available in both weatherproof and buried constructions. All units shall have adjustable OPEN and CLOSED position stops. Manual operator input device (handwheel, chainwheel, 2" AWWA square nut) shall be provided as noted on the plans or as dictated by industry standard practices.

2.05 ELECTRIC MOTOR OPERATORS

- A. For the electric operating plug valves shown on the plans provide non-modulating electric motor operators of the close-coupled, electric motor-driven, worm gear type, complete with motor, gearing, limit switches and auxiliary contacts, torque switches, position indicators, handwheel, integral controller, and all required appurtenances.
- B. The operator shall be mounted in the position as shown on the plans.
- C. The motor operators must meet AWWA C540 standards.
- D. The valve operators provided must fully open the valve from the closed position in approximately 30 seconds and fully close it in approximately 30 seconds when the differential pressure and flow values specified for the valve and the voltage at the terminals are within 15 percent of the nominal voltage. The operator shall be designed to operate the valve through three consecutive opening and closing cycles or for a period of 15 minutes, whichever is longer, during every 60-minute period, at specified ambient temperature conditions under full differential pressure.
- E. The operator shall be designed for outdoor operation and for an ambient temperature range of -20 to 140 degrees F.
- F. The operator shall be designed to exert an unseating torque of at least 50 percent more than the required disc seating torque at the specified voltage, neglecting hammer-blow effect.
- G. The power gearing shall consist of helical or spur gears and worming gear. The helical and spur gears shall be accurately fabricated of machined alloy steel. The hardened alloy steel worm gear shall have the threads ground and polished after heat treating. Worm gear may be constructed of nickel or manganese bronze. Antifriction bearings shall be utilized throughout. The operator may be lubricated by grease pack or oil bath. The lubricants provided shall be suitable for the ambient temperatures specified.
- H. A handwheel for manual operation shall be provided and shall have a maximum rim pull of 40 pounds. The handwheel shall be designed so that it does not rotate during electrical operation and the motor does not rotate during manual handwheel operation. The operator shall be designed so that motor or motor gearing failure does not prevent manual operation. The operator shall be automatically changed from manual operation to electrical operation when the motor is energized and to continue electric operation until the operator is reset to manual operation. A means for locking the drive in either manual or motor operation shall be provided. The handwheel shall be removable. An adapter key or drive nut shall be provided to permit operation by a portable operator.
- I. A declutching mechanism shall be provided to disengage the motor mechanically by not electrically from motor to handwheel operation. If the clutch is of the external lever type, arrange it such that the lever does not move when the motor is energized.
- J. An operator-mounted disc position indicator of the mechanical or indicating light type shall be provided. Unless otherwise noted, indicate the fully open, fully closed, and intermediate disc position either mechanically or by lights. For throttling service, provide continuous disc position indication between the fully open and fully closed positions. Electrical contacts shall be provided for remote indication of disc position.
- K. The operator motor shall be of the high torque, ball or roller bearing, squirrel-cage type designed for continuous valve duty. The motor shall be rated for 15-minute duty cycle or three complete opening and closing valve strokes, whichever is longer, during a 60-minute period under full differential pressure at 40 degrees C ambient. The motor shall operate on 120 volts, 1-phase, 60-hertz electrical service. The motor windings and leads shall have Class F or better insulation with built-in thermal overload protection.
- L. The housing for the controls, gears, and motors shall be provided with integrally cast flanges. The flanges and mating surfaces shall be fully machined, and template drilled. The joints shall be metal-to-metal or gasketed or O-ring sealed as required.
- M. The control and motor enclosures shall be NEMA 4 rated, except as otherwise specified. NEMA 7 enclosures shall be provided where explosion-proof construction is shown or specified. The controller shall

be provided with mechanical interlocks and mounted as an integral part of the operator. For explosion-proof enclosures which are dependent upon metal-to-metal faces for weatherproofing, include explosion-proof breathers and drains with desiccant type dehumidification and with sufficient silica gel desiccant for 6 months service without requiring renewal. Instructions for desiccant renewal shall be provided. A 2-year supply of desiccants shall be provided.

- N. The electrical compartments shall be provided with heaters, unless otherwise specified.
- O. The electrical controls for the operators shall be as shown and specified. The operators shall be designed for 120-volt, 1-phase, 60-hertz service. All control circuits shall be designed for 120-volt, single phase, 60-hertz service.
- P. A NEMA rated reversing controller, or an approved special duty rated reversing controller, complete with mechanical interlocks and controls as an integral part of the operator shall be provided. Adequate overload protection in the controller or embedded in the motor windings shall be provided. An overload device shall be installed in each phase. If the overload devices are installed in the motor windings, devices of the bimetallic automatic reset type with contact in the control circuit shall be provided. The internal wiring in the operator shall be arranged so that the opening and closing coils cannot be energized simultaneously at any time, regardless of external wiring conditions.
- Q. When the operators are 7 feet or closer to the floor and in an accessible location, the OPEN-STOP-CLOSE push buttons or a selector switch shall be mounted on the operator housing, as shown. The red and green position indicator lights and where shown the amber ready light or MANUAL-AUTO mode selector switch shall be mounted on the operator housing.
- R. The operator shall be provided with limit and torque switches, either direct or gear driven. The limit and torque switches shall be adjustable with auxiliary contacts that are operative in either direction of travel. The limit switches shall always be "in-step" with the torque switches, whether in motor or manual operation. The operator shall be equipped with limit switches to stop movement in each direction and torque switches for protection against mechanical overload and to stop movement in either direction if an obstruction is encountered. The number, function, and arrangement of the limit switches shall be provided as shown, specified, or required.
- S. Additional limit switches, indicating lights, position transmitters and remote position indicators, remote operating controls and other accessories and controls shall be provided where shown, specified, or required.
- T. The electric motor actuators shall be M2CP as manufactured by Emerson Process Management (formerly EIM).

2.06 PNEUMATIC ROTARY ACTUATORS:

- A. Pneumatic actuators shall be of the vane-type design with only one moving part and must comply with AWWA C540-02. Actuators are to be sized based on the valve torque requirements and between 60 to 100 PSIG plant air supply. Actuator shaft and vane shall be a single machined part with square output shafts on both ends. Shaft and vane shall be either stainless steel or SG iron, zinc plated. Vane lip seals shall be Kinetrol's dual opposed injection molded polyurethane and must protect the shaft seals from the air supply. Stainless steel expanders shall be fitted beneath the vane lip seals to ensure continual seal-to-case contact. No o-ring type vane seals are acceptable. Actuator housing shall be either pressure die cast zinc alloy to ILZRO 16 standards or sand cast LM25 grade aluminum and must be externally coated with corrosion resistant baked epoxy enamel paint. Actuator housing internal surfaces shall be coated with either corrosion resistant baked epoxy enamel paint or Teflon impregnated. All actuators shall have stainless steel threaded travel stops allowing adjustment at each end of actuator stroke. All fasteners shall be stainless steel.
- B. All actuators shall be manufactured by Kinetrol, Ltd, or approved equal. Actuator manufacturer must be ISO 9001-2000 approved and must provide documentation that validates approval. Actuator manufacture must have products that have been installed in water and wastewater plants in the USA for a minimum of twenty years. All die-casting, machining, and injection-molding, of actuator case, vane and vane lip seals must be performed in-house by the actuator manufacturer to ISO 9001-2000 standards to assure the highest quality equipment is produced.
- C. Limit Switch (Valve Position Monitor) for On/Off Applications:
Valve position monitors shall be directly mounted to on / off pneumatic actuators and shall be housed in a pressure die-cast zinc alloy NEMA type 4 rated enclosure. A corrosion resistant stove baked epoxy enamel finish shall be applied to enclosure. The valve position monitor enclosure shall include two mechanical SPDT Micro Switches with a resistive load rating of 15amps @ 125Vac and 10amps up to 24Vdc. A clear cone visual position monitor must be fitted to the lid of valve position monitor housing indicating "OPEN" or "CLOSED." The enclosure shall have at least two 1/2"-14NPS conduit entries. Valve position monitors shall be manufactured by Kinetrol, Ltd, or approved equal. Valve position monitor manufacturer must be ISO 9001-2000 approved and must provide documentation that validates approval. All die-casting and machining must be performed in-house by the actuator manufacturer to ISO 9001-2000 standards to assure the highest quality equipment is produced.
- D. Solenoid Valve for Open-Close Service:

When the solenoid valve can be mounted to the actuator solenoid mount pad (Cv requirement of less than .71), a NAMUR style solenoid valve shall be furnished. This valve shall include one ¼" NPT air supply port, two 1/8" NPT exhaust ports, single 120 VAC or 24 VDC (coil voltage must be specified), IP65, NEMA IV coil, 2-position, pneumatic manual override, and two exhaust speed controls. The solenoid valve will be energized to close and de-energized to open unless specified otherwise.

When the solenoid valve cannot be mounted to the actuator solenoid mount pad (Cv requirement of more than .70), a body ported solenoid valve shall be furnished and mounted to a bracket. This valve shall include one ¼" NPT air supply port, one or two ¼" NPT exhaust ports, single 120 VAC or 24 VDC (coil voltage must be specified), IP65, NEMA IV coil, pneumatic manual override, and exhaust speed control(s). The solenoid valve will be energized to close and de-energized to open unless specified otherwise.

PART 3: EXECUTION

3.01 INSTALLATION

- A. The Contractor shall assume full responsibility for coordination of the entire project, including verification that all structures, piping, coating systems and equipment components are compatible. The 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 of Manufacturer's shop and installation drawings, test result certificates or other data as required and 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 instruction and the contract documents, the Contractor shall follow the Engineer's decision at no additional cost to the Owner.

3.02 WORKMANSHIP

- A. The Contractor shall install equipment and materials in a workmanlike manner utilizing craftsmen skilled in the trade. The finished installation shall portray a neat and plumb appearance.
- B. Before installation, carefully clean valves of all foreign material, adjust stuffing boxes, and inspect valves in the OPEN and CLOSED positions. Install valves in accordance with the applicable portions of the Specifications. Unless otherwise indicated, install valves with the shaft vertical. Valves provided with chainwheel manual operators are to be installed with the shaft vertical, and the manual operator located below the piping. This should provide the operator with a clear view of the visual position indicator. Mount horizontal valves in such a manner that adequate clearance is provided for operation. Installation practices shall conform to Manufacturer's recommendations.
- C. Prior to installing valves, the mating flange faces shall be thoroughly cleaned. After cleaning, insert the flange seals and valves and tighten the flange bolting progressively and in a uniform manner. Flanges should be pulled down tight against the valve / flange seals evenly. If flanges leak under pressure, loosen the bolting, reseal or replace the flange seals, re-tighten the bolting, and retest the connection. Flanged joints must be watertight at test pressures before acceptance.

3.03 MANUFACTURER'S SERVICES

- A. Provide the services of a Representative of the Manufacturer of the valves to assist in adjusting and testing the equipment, to supervise initial operation, and to assist in making final adjustments and the tests specified, or which may be necessary to assure the Engineer the equipment is in satisfactory operating condition.

END OF SECTION

SECTION 11400
MAGNETIC FLOW MEASURING EQUIPMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

- A. This specifications section covers the work necessary to furnish complete, operable magnetic flowmeters in the locations and sizes as shown on the plans.

1.02 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 lists shall be provided with equipment at time of delivery.
- B. All electrical equipment shall be always kept thoroughly dry, shall be stored indoors, and protected from freezing conditions. Equipment shall not be stored directly on the ground. Equipment storage shall be protected and maintained in accordance with the manufacturer's recommendations. Equipment is in storage when:
 - a. It has been delivered to the jobsite and is awaiting installation.
 - b. It has been installed, but operation is delayed pending completion of the project.
 - c. There has been long period between operation cycles (30 days or more).
- C. Improper storage could result in product failure or restoration not covered by warranty. Contractor shall be solely responsible for any damage to equipment during storage as described above in Paragraph 1.02, B. a. b. & c. If Contractor fails to store as required by manufacturer and supplier, and the warranty is voided due to such failure, equipment is automatically rejected by Owner/Engineer.
- D. 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.

1.03 COORDINATION

- A. General Contractor shall provide skilled supervision and coordination between all personnel (sub-contractors and employees) to make sure that installed equipment is easy to operate and maintain.
- B. Contractor is responsible for coordination between trades.
- C. The Contractor shall assume full responsibility for coordination of the entire project, including verification that all structures, piping, coating systems and equipment components are compatible. The Contractor shall initially operate each equipment system and shall make all necessary adjustments so that each system is placed in proper operating condition.
- D. Electrical connections, power supply, conduit runs, and anchor bolt installation shall be coordinated and supervised by Prime Contractor and checked for proper installation as per manufacturer's recommendations.

1.04 QUALITY ASSURANCE

- A. The magnetic flow meters furnished under this contract shall be manufactured by Siemens.
- B. Only manufacturers regularly engaged in the manufacture of the type of equipment specified and that can demonstrate equipment of their manufacture in actual service for a period of not less than 15 years will be considered.

PART 2 PRODUCTS

2.01 MAGNETIC FLOW METERS

- A. All magnetic flow meters installed by Contractor shall be set up for remote readout.
- B. The electromagnetic flow meter shall consist of a flow sensor based on Faraday's Law of Electromagnetic Induction and microprocessor-based signal converter.
- C. Sensor
 - 1. Operating principle: Utilizing Faraday's Law of Electromagnetic Induction, the flow of liquid through the sensor induces an electrical voltage that is proportional to the velocity of the flow.
 - 2. Construction: The sensor flow tube and liner material shall be constructed of nitrile, which is a hard rubber composite elastomer, surrounded by two integral coils. Measurement and grounding electrodes shall be 316stainless steel. Connecting flanges shall be carbon steel. Wetted materials shall be NSF approved for drinking water service.
 - 3. Installation: A minimum of 5 pipe diameters up stream and 3 pipe diameters down-stream.
 - 4. Operating Temp: -20 to +200 degrees F.
- D. Signal converter:
 - 1. Enclosure: NEMA 4X enclosure
 - 2. Display: Background illuminated alphanumeric 3-line, 20 character display to indicate flow rate, totaled values, settings and faults and 6-key keypad. (A blind transmitter version of the 5000 is available)

3. Power supply: 115/230 VAC or 11-24VDC.
 4. Operating temp: -5 to 120 degrees F.
 5. Output: 0-20mA or 4-20mA into 800 ohms max. 1 relay rated at 42VAC/2A, 24DC/1A.
 6. **NOTE: MAGNETIC FLOWMETER TUBES INSTALLED IN VAULTS SHALL BE EQUIPPED WITH REMOTE-MOUNTED SIGNAL CONVERTERS. THE FLOWMETER SUPPLIER WILL PROVIDE REQUIRED SIGNAL CABLE BETWEEN THE METER TUBE AND SIGNAL CONVERTER.**
- E. Sensor and converter/transmitter performance
1. Flow Range: 1.5 fps to 33 fps for accuracy stated below.
 2. Accuracy: 0.50% of actual.
 3. Separation: Maximum distance of 900 feet between converter and sensor without the use of any additional equipment.
 4. Bi-directional flow capabilities shall be standard.
- F. Totalizer
1. Two integral eight-digit counters programmable for forward, net or reverse flow.
 2. The totalizers may be programmed as non-resettable or resettable.
- G. Each flow sensor shall be wet calibrated and all the calibration information and factory settings matching the sensor shall be stored in an integrally mounted SENSORPROM memory unit. The SENSORPROM shall store sensor calibration data and signal converter settings for the lifetime of the product. At initial commissioning, the flow meter commences measurement without any initial programming. Any customer specified settings are downloaded to the SENSORPROM. Should the signal converter be replaced, the new signal converter will upload all previous settings and resume measurement without any need for reprogramming or rewiring. A certificate of calibration shall accompany each flow sensor.
- H. The following signal converter functions shall be provided
1. All programming shall be accomplished through an integral keypad and all programming shall be protected by a user-defined password.
 2. The signal converter shall be integrally mounted or remotely mounted using a remote-mount kit provided by the manufacturer.
 3. The signal converter shall provide a 0/4-20 mA DC signal proportional to flow rate into 800 ohms max. Output selectable as unidirectional or bi-directional.
 4. The relay shall be programmable as error indicator, limit alarm or pulsed output.
 5. The signal converter system shall be equipped with an error and status log with 4 groups of information.
 - a. Information without a functional error involved.
 - b. Warnings which may cause malfunction in the application
 - c. Permanent errors, which may cause malfunction in the application.
 - d. Fatal error, which is essential for the operation of the flow meter.
 6. A system error shall be indicated by a flashing icon on the display or activation of the relay when set as an error alarm.
 7. The first nine standing errors shall be stored in the error pending log. A corrected error is removed from the error pending log. A status log shall be provided to store the last 9 error messages received for 180 days regardless of correction.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The Contractor shall assume full responsibility for coordination of the entire project, including verification that all electronic systems and equipment components are compatible.
- 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 of manufacturer's shop and installation drawings, test results or other data as required and as specified herein.
- C. Installation of equipment shall be in full conformance with the manufacturer shop drawings and requirements as approved by the Engineer.

3.02 WARRANTY

- A. The manufacturer shall warrant the equipment to be of quality construction, free from defects in materials and workmanship. The warranty shall become effective upon Final Acceptance of the entire project by the Owner.
- B. The equipment, apparatus, and parts furnished shall be warranted for a period of one (1) year.
- C. Components failing to perform as specified by the Engineer, or as represented by the manufacturer, or proven defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the manufacturer without any cost to the Owner.

3.03 FUNCTION OF MANUFACTURER

- A. Provide the services of a qualified representative of the meter manufacturer to assist in adjusting and testing the equipment, to supervise initial operation, and to assist in making final adjustments and the tests specified,

- or which may be necessary to assure the Engineer that the equipment is in satisfactory operating conditions.
- B. Operation and Maintenance Materials
1. The meter and recorder manufacturer shall be responsible for supplying written instruction, which shall be sufficiently comprehensive to enable the operator to service, program, and operate the meter and all equipment supplied by the manufacturer.
 2. Operation and maintenance instruction shall be specific to the equipment supplied in accordance with these specifications. Instruction manuals applicable to many different configurations and meters, and which require the operator to selectively read portions of the instructions shall not be acceptable.
- C. All costs for the above flow meter manufacturer functions including travel, lodging, meals, and incidentals shall be considered to have been included in the Manufacturer's lump sum bid price and will be at no additional cost to the Owner.

END OF SECTION

SECTION 15000
FULL-PORT PLUG VALVES

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. This specification covers the work necessary to furnish and install the various full-port plug valves as specified herein and as shown on the plans.
- B. To obtain standardization of performance, operation, spare parts, maintenance, and Manufacturer's service, it is the intent of these specifications that all valves of like type be furnished by a single Manufacturer.

1.02 DELIVERY, STORAGE AND 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 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 time of delivery.
- B. Electrical equipment shall be always kept thoroughly dry and 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.
- C. 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.

1.03 QUALITY ASSURANCE

- A. The valves furnished under this contract shall be as manufactured by DeZurik or equal.
- B. Manufacturers regularly engaged in the manufacture of the type of equipment specified and can demonstrate equipment of their manufacture in actual service for a period of not less than 10 years will be considered as acceptable Manufacturer if able to comply with the specifications.
- C. The valve Manufacturer shall submit to the Contractor certified copies of factory test results for each system valve size. Test results shall be submitted prior to shipment upon Engineer's request and shall show compliance with specified performance requirements.

1.04 WARRANTY

- A. The Manufacturer shall warrant the equipment to be of quality construction, free from defects in materials and workmanship. The warranty shall become effective upon FINAL acceptance by the City of Moore (Owner) of the Moore Effluent Force Main project.
- B. The equipment, apparatus, and parts furnished shall be warranted for a period of one (1) year, expecting only those items that are normally consumed in service such as packing, grease, gaskets, O-rings, etc. The Manufacturer shall be solely responsible for the warranty of the equipment and all non-consumable components.
- C. Components failing to perform as specified by the Engineer, or as represented by the Manufacturer, or proven to be defective in service during the warranty period, shall be replaced, repaired, or satisfactorily modified by the Manufacturer without cost of parts or labor to the Owner.

1.05 FACTORY PAINTING

- A. Unless otherwise specified, exterior and interior metallic surfaces of each valve shall be shop painted per the latest revision of industry standard AWWA C504.

PART 2: PRODUCTS

2.01 100% PORT PLUG VALVES

- A. Plugs shall be solid one-piece, cast-iron ASTM A126 Class B or ductile iron ASTM A536 Grade 65-45-12. The plug shall have a cylindrical seating surface eccentrically offset from the center of the shaft. Plug shall not contact the seat until at least 90% closed. Resilient plug facing shall be chloroprene. Spherical shaped plugs are not acceptable.
- B. Bodies and covers shall be cast iron ASTM A126 Class B or ASTM A536 Grade 65-45-12. Ports shall be rectangular and shall be 100% full port. The valve port area shall meet or exceed standard pipe area per ASME/ANSI B36.10M. Round ports are not acceptable. Bearings shall be sleeve

type and made of sintered, oil impregnated permanently lubricated type 316SS for sizes 4"-18", and ASTM Grade CF8M for sizes 20"-36". In valves larger than 36", the upper and lower plug journals shall be fitted with ASTM A240 type 316SS sleeves with body bearings of ASTM B30, Alloy C95400 aluminum bronze.

- C. Seats shall be 1/8" thick welded overlay of not less than 95% pure nickel. Seat shall be at least 1/2" wide, 1/8" thick through entire width and raised. The raised surface shall be completely covered with nickel to ensure that the resilient plug face contacts only the nickel seat.
- D. Adjustable packing shall be NBR multiple v-ring type, with a packing gland follower. Packing gland shall permit inspection, adjustment, or complete replacement of packing without disturbing any part of the valve or actuator assembly, except the gland follower. Non-adjustable packing or packing requiring actuator removal to replace the packing is not acceptable.
- E. Pressure ratings shall be 175 PSI on valve sizes through 12", and 150 PSI for valves sizes 14" and larger. Every valve shall be given a certified hydrostatic shell test and seat test, with test reports being available upon request.
- F. Buried actuators shall be 90% grease filled. Input shaft and fasteners shall be stainless steel. Actuator mounting brackets shall be totally enclosed. Other actuators to be installed according to drawings or customer specifications.
- G. End connections shall meet or exceed the latest revisions of AWWA C517 and other applicable standards. End connections shall be flanged drilled per ASME B16.1, or mechanical joint per AWWA C111 & as shown on the plans.
- H. When specified, valves shall be NSF/ANSI 372 certified lead-free and NSF/ANSI 61 certified for drinking water.
- I. Manual vales shall have lever or worm gear actuators with handwheels, chainwheels, tee wrenches, extension stems, floor stands, etc., as shown on the plans or as called for in the valve schedule. Worm gear actuators shall be furnished for all valves 4" or larger where the maximum reverse shutoff pressure is greater than 25 psi as indicated on the plans or in a valve schedule. Worm gear actuators shall be sized for pressure as indicated on the plans. All gearings shall be enclosed in a semi-steel housing and be suitable for running in a lubricant with seals provided on all shafts to prevent entry of dirt and water into the actuator. The actuator shaft and the quadrant shall be supported on permanently lubricated bronze bearings. Actuators shall clearly indicate valve position, and an adjustable stop shall be provided to set closing torque. This adjustable stop shall be the only adjustment necessary to set the clearance between the valve plug and the seat while the valve is in line and under pressure. Handwheel and chainwheel sizes for worm gear actuators shall be no smaller than 6" in diameter and no larger than twice the diameter of the actuator's gear sector. All exposed nuts, bolts, and washers shall be zinc plated.
- J. Valves and gear actuators for buried or submerged service shall have seals on all shafts and gaskets on the valve and actuator covers to prevent the entry of water. Actuator mounting brackets for buried or submerged service shall be totally enclosed and shall have gasket seals. All exposed nuts, bolts, springs, and washers shall be stainless steel. Furnish adjustable valve boxes, and extension stems to within 12 inches of ground surface.

PART 3: EXECUTION

3.01 INSTALLATION

- A. The Contractor shall assume full responsibility for coordination of the entire project, including verification that all structures, piping, coating systems and equipment components are compatible. The 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 of Manufacturer's shop and installation drawings, test result certificates or other data as required and 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 instruction and the contract documents, the Contractor shall follow the Engineer's decision at no additional cost to the Owner.

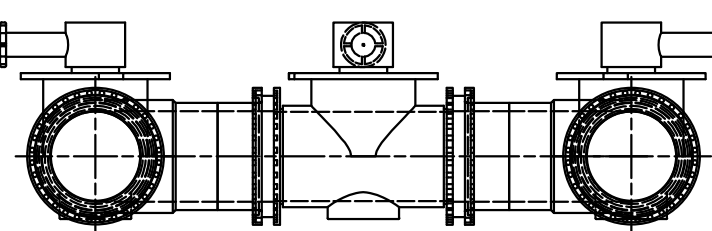
3.02 WORKMANSHIP

- A. The Contractor shall install equipment and materials in a workmanlike manner utilizing craftsmen skilled in the trade. The finished installation shall portray a neat and plumb appearance.
- B. Before installation, carefully clean valves of all foreign material, adjust stuffing boxes, and inspect valves in the OPEN and CLOSED positions. Install valves in accordance with the applicable portions of the Specifications. Unless otherwise indicated, install valves with the shaft vertical. Valves provided with chainwheel manual operators are to be installed with the shaft vertical, and the manual operator located below the piping. This should provide the operator with a clear view of the visual position indicator. Mount horizontal valves in such a manner that adequate clearance is provided for operation. Installation practices shall conform to Manufacturer's recommendations.
- C. Prior to installing valves, the mating flange faces shall be thoroughly cleaned. After cleaning, insert the flange seals and valves and tighten the flange bolting progressively and in a uniform manner. Flanges should be pulled down tight against the valve / flange seals evenly. If flanges leak under pressure, loosen the bolting, reseal, or replace the flange seals, re-tighten the bolting, and retest the connection. Flanged joints must be watertight at test pressures before acceptance.

3.03 MANUFACTURER'S SERVICES

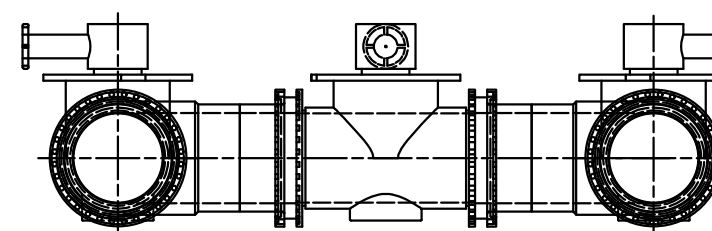
- A. Provide the services of a Representative of the Manufacturer of the valves to assist in adjusting and testing the equipment, to supervise initial operation, and to assist in making final adjustments and the tests specified, or which may be necessary to assure the Engineer the equipment is in satisfactory operating condition.

END OF SECTION



PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	
1	2	40361399	36" DR 13.5 IPS OVERWRAP TEE	FAB HDPE
2	8	40361310	36" DR 13.5 IPS FLANGE ADAPTER	HDPE
3	8	53360011	36" DR 11 IPS BACKUP RING	DUCTILE IRON
4	3	59360999	36" ECCENTRIC PLUG VALVE	FLANGED CAST IRON (DEZURK)
5	4 1/2	10361310	36" DR 13.5 IPS HDPE PIPE	
6	6	53360014	36" NEOPRENE GASKET	
7	6	53361010	36" STANDARD BOLT/PACK	

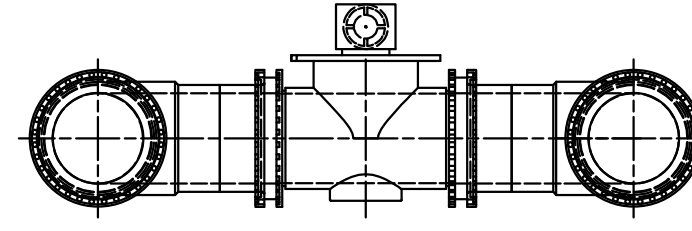
36" EDR 13.5 VALVE ASSEMBLY
BETWEEN PENNSYLVANIA AVENUE & WESTERN AVENUE
SCALE: 1" = 5'
VALVEASSEMBLY 1



		PARTS LIST	
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	4036139	36" DR 13.5 IPS OVERWRAP TEE FAB HDPE
2	8	40361310	36" DR 13.5 IPS FLANGE ADAPTER HDPE
3	8	53360111	36" DR 11 IPS BACKUP RING DUCTILE IRON
4	3	53699999	36" ECCENTRIC PLUG VALVE FLANGED CAST IRON (DEZURIK)
5	4 ft	53613110	36" DR 13.5 IPS HDPE PIPE
6	6	53360114	36" NEOPRENE GASKET
7	6	53361010	36" STANDARD BOLTPACK

Valve assembly general note:
Pricing for pre-fabricated spooling components must be built in a shop environment to include all materials, labor, equipment costs, and shipping to deliver the drawings completely fabricated to City of Moore, OK.

36" EDR 13.5 VALVE ASSEMBLY
BETWEEN SANTA FE AVENUE & TELEPHONE ROAD
SCALE: 1" = 5'
VALVE ASSEMBLY 2

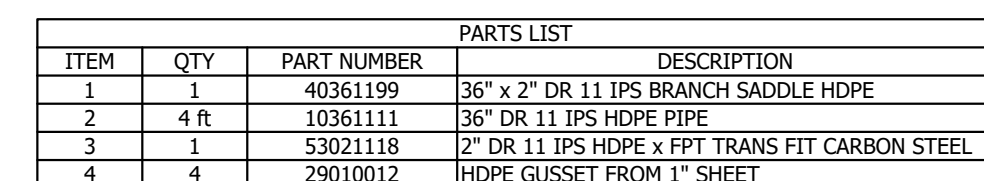


PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	2	40361399	36" DR 13.5 IPS OVERWRAP TEE F40 HDPE
2	6	40361310	36" DR 13.5 IPS FLANGE ADAPTER HDPE
3	6	53360011	36" DR 11 IPS BACKUP RING DUCTILE IRON
4	1	99369999	36" ECCENTRIC PLUG VALVE FLANGED CAST IRON (DEZURIK)
5	2	53360014	36" NEOPRENE GASKET
6	2	53361010	36" STANDARD BOLT TRAPX

VALVE ASSEMBLY 3

36" EDR 13.5 VALVE ASSEMBLY
BETWEEN WESTERN AVENUE & SANTA FE AVENUE

SCALE: 1" = 5'



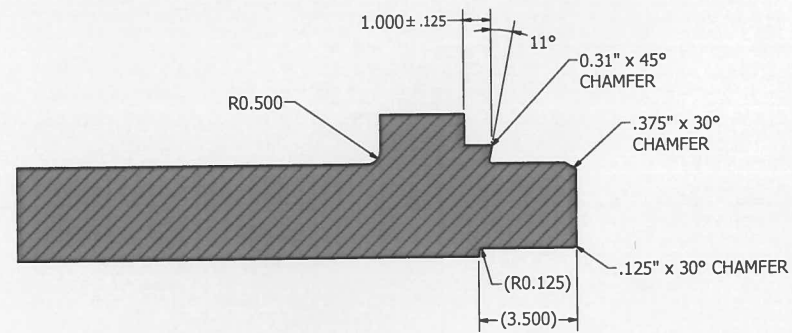
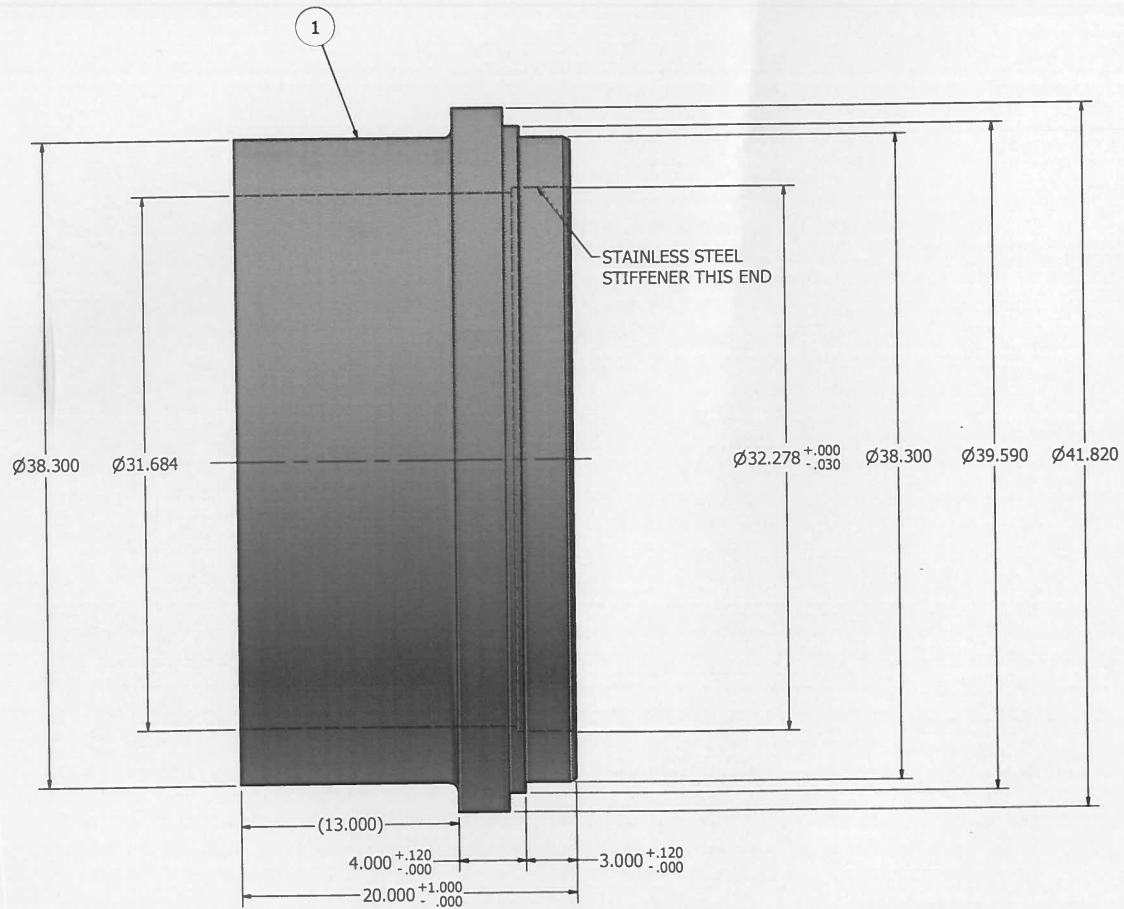
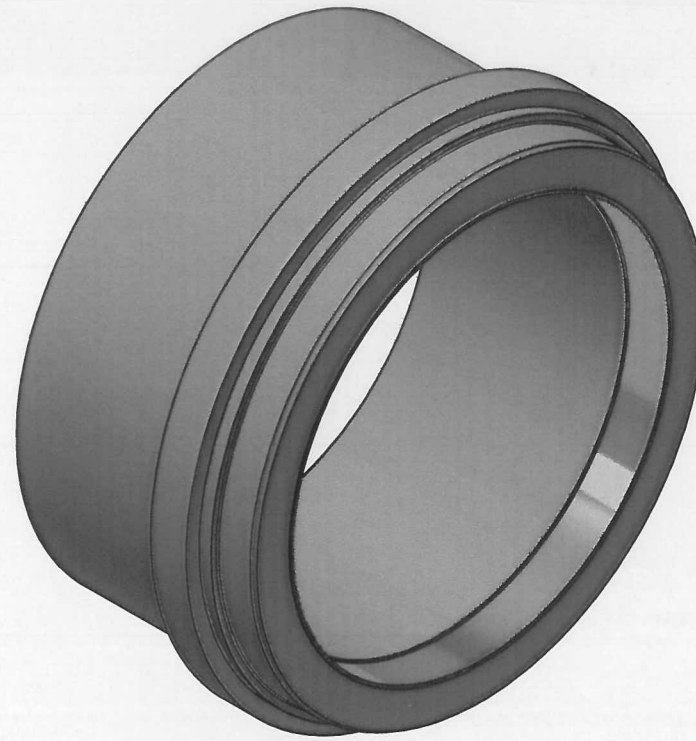
GUSSETED TEE
INSTALLED AT ARV LOCATIONS ON EACH LINE - TOTAL 8
SCALE: N.T.S

REVISIONS:	DATE:

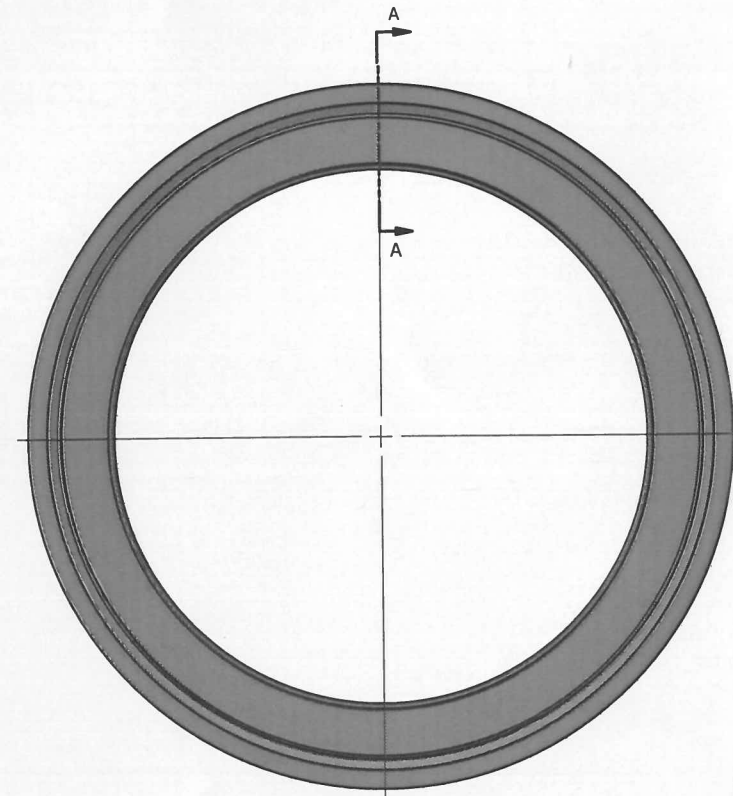
VALVE ASSEMBLIES & GUSSETED TEE
MOORE EFFLUENT FORCE MAIN

EAGLE OFFICE CENTER
2803 SOUTH BRYANT
EDMOND, OK. 73013
PH. (405) 844-3900
FAX. (405) 844-3600

EAGLE CONSULTANTS, INC.
CIVIL AND ENVIRONMENTAL ENGINEERS
CERTIFICATE OF AUTHORIZATION NO. CA2088



SECTION A-A




D:\20250510\20250506-email from kernal\Moore-Standard drawings.dwg

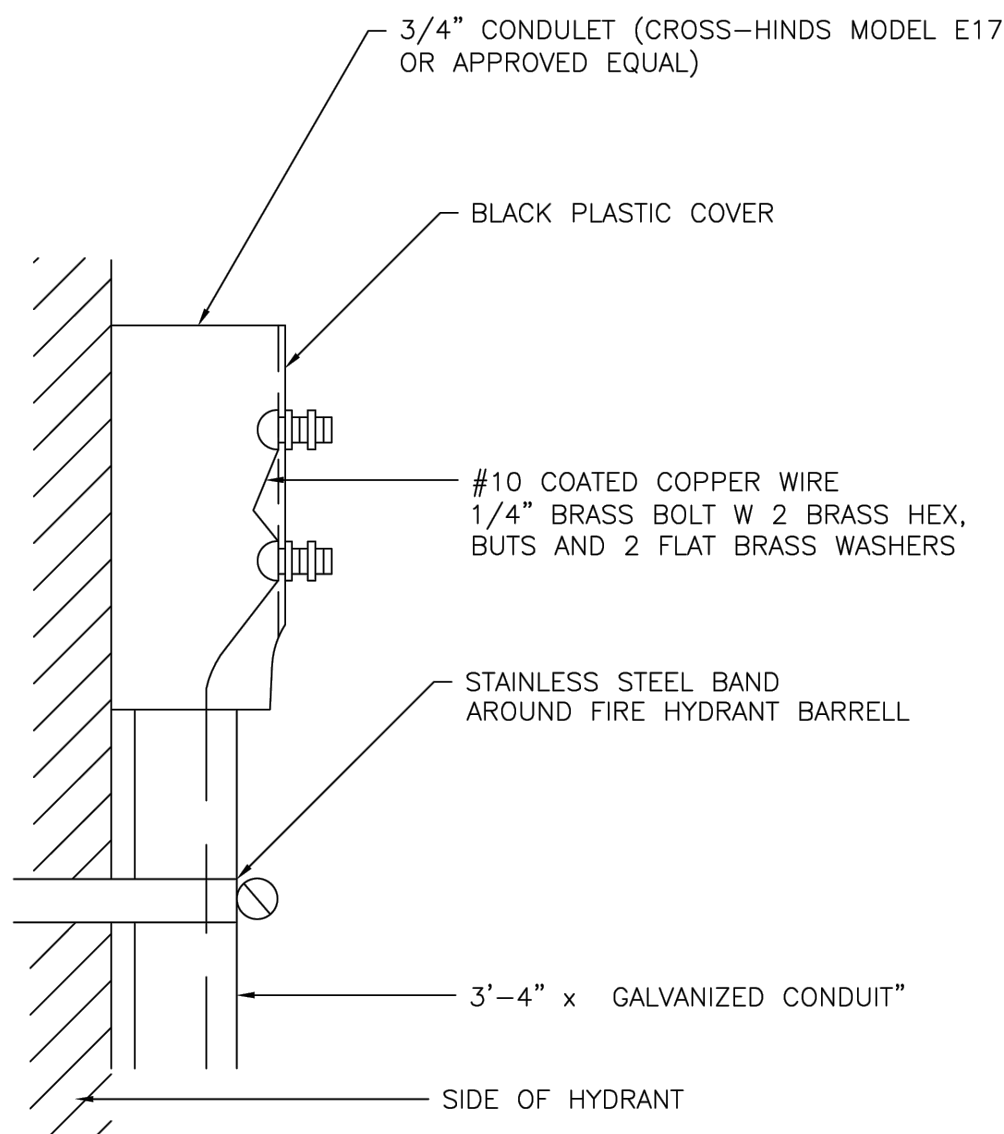
TRENCH WIDTH TABLE		
NOM. PIPE DIA. (IN.)	TRENCH WIDTH (FT.)	
MIN.	MAX.	
.....	3.00	5.00
15	3.25	5.00
18	3.50	5.00
21	3.75	5.25
24	4.00	6.00
27	4.25	6.25
30	4.50	6.75
33	4.75	8.25
36	5.25	9.00
42	6.25	9.50
48	7.00	10.00
54	8.00	10.50
60	9.00	11.00
66	9.75	11.50
72	10.50	12.00
78	10.50	12.50
84	11.00	13.00
90	11.50	13.50
96	12.00	14.00
102	12.50	14.50


RIGID PIPE NOTES:
LOAD FACTOR = 0.9

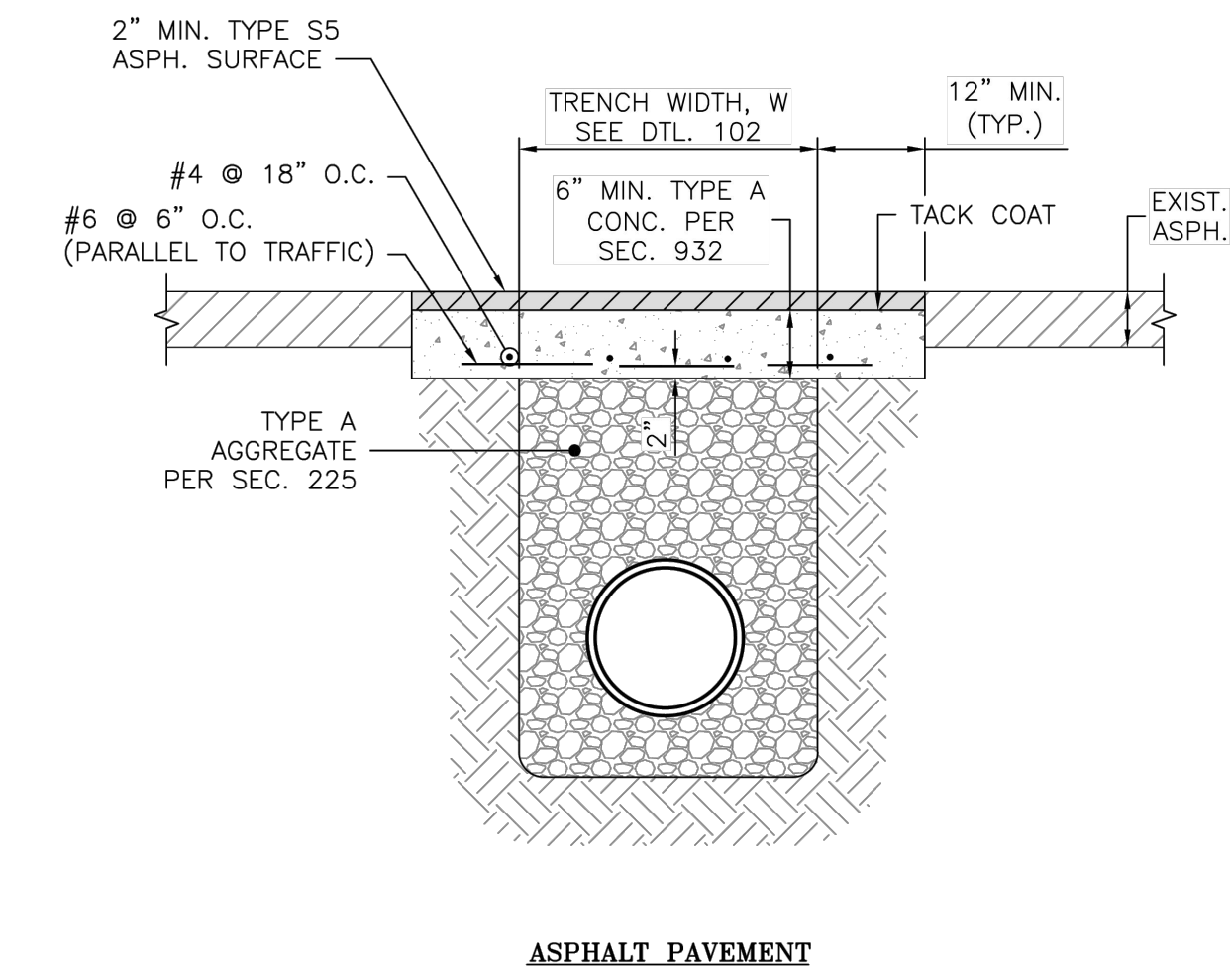
GENERAL NOTES:

- PER SECTION 212.04.04 OF THE STANDARD SPECIFICATIONS, FINAL BACKFILL SHALL BE APPROVED BY THE CITY'S DESIGNATED REPRESENTATIVE AND SHALL CONSIST OF LOOSE EARTH, FREE OF CLODS, STONES, ORGANIC MATTER, DEBRIS, OR OTHER OBJECTIONABLE MATERIAL.
- FOR INSTALLATIONS BENEATH ROADWAYS AND OTHER PAVED AREAS, FINAL BACKFILL SHALL BE TYPE A AGGREGATE PER SECTION 923 OF THE STANDARD SPECIFICATIONS.

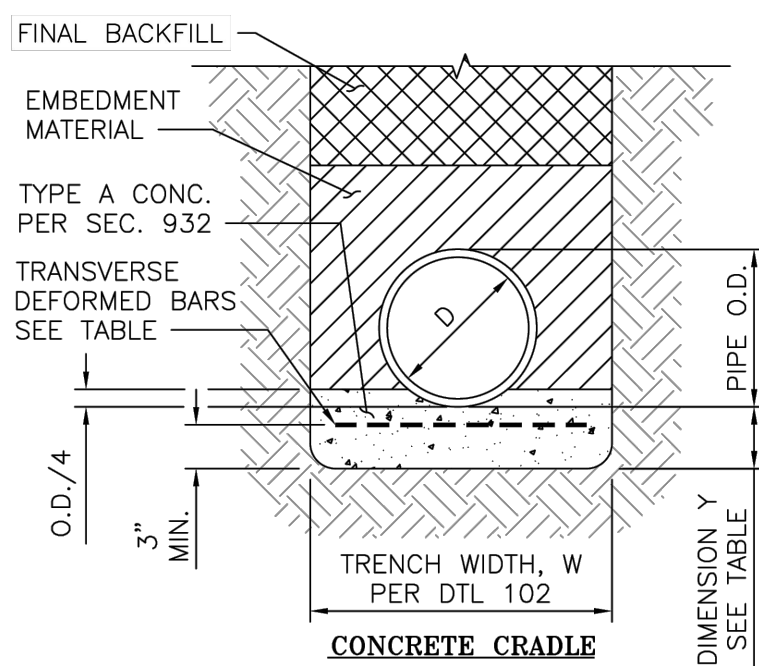
	TRENCH DETAILS	DETAIL NO.
		102
		APPROVED: 09/18/2023



	TRACER WIRE WEATHER HEAD DETAILS	DETAIL NO.
		304
		APPROVED: 09/18/2023

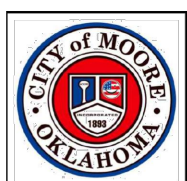


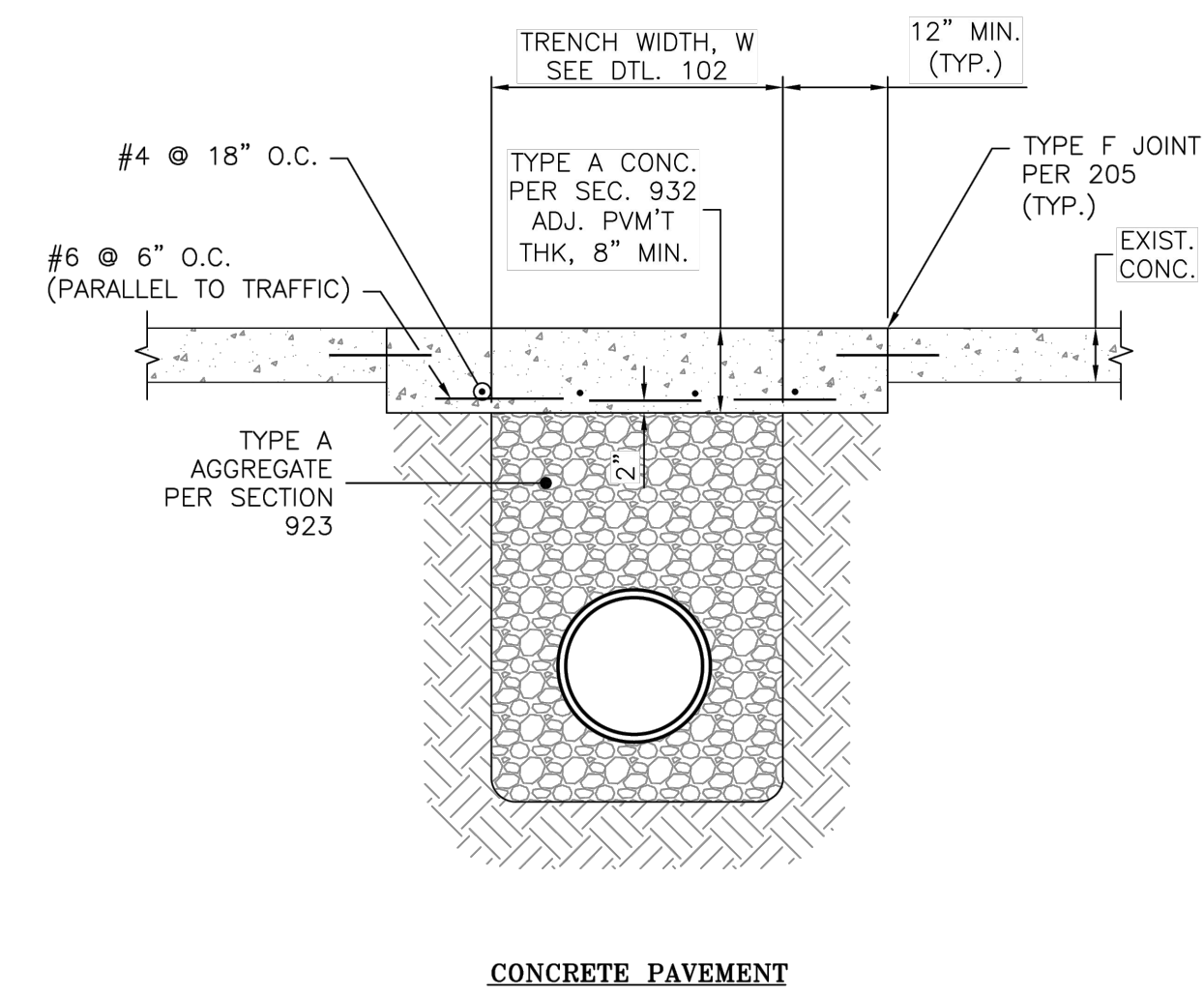
	FLEXIBLE PAVEMENT REPAIR	DETAIL NO.
		103-1
		APPROVED: 09/18/2023



CONCRETE CRADLE		
PIPE DIA. (IN.)	Y (IN.)	REINFORCING
8	6	#4@10"
10	6	#4@10"
12	6	#4@10"
18	6	#4@10"
24	6	#4@10"
30	8	#5@11"
36	9	#6@11"
42	11	#6@8"
48	12	#6@7"
54	15	#8@9"
60	15	#8@9"
72	15	#8@9"
84	15	#8@9"
96	15	#8@9"

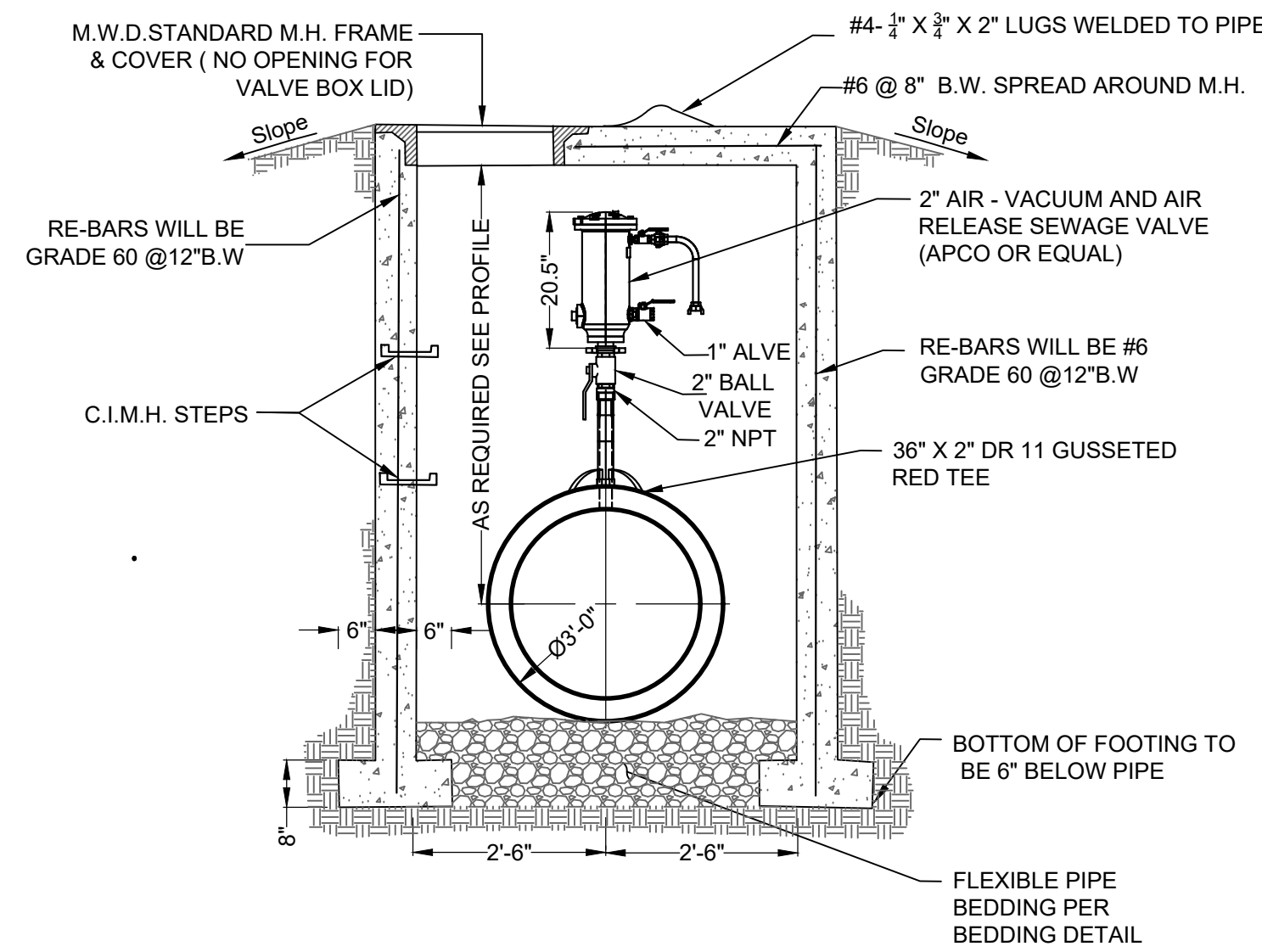
- NOTES:
- SEE DETAIL 102 FOR TYPICAL TRENCH DIMENSIONS.
 - CONTRACTOR SHALL INCORPORATE METHODS TO PREVENT THE PIPE FROM FLOATING OFF LINE AND GRADE DURING PLACEMENT OF CONCRETE AT THE CONTRACTOR'S EXPENSE.
 - DETAIL(S) BASED ON ASCE'S "GRAVITY SANITARY SEWER DESIGN AND CONSTRUCTION" MANUAL NO. 60, 2ND EDITION.
 - CRADLE OR ARCH SHALL BE CONSTRUCTED UNDER OR OVER RIGID PIPES, TO INCREASE LOAD BEARING CAPACITY OF PIPE-SOIL EMBEDMENT SYSTEM.

	CONCRETE CRADLE AND ARCH FOR RIGID PIPES	DETAIL NO.
		405
		APPROVED: 09/18/2023

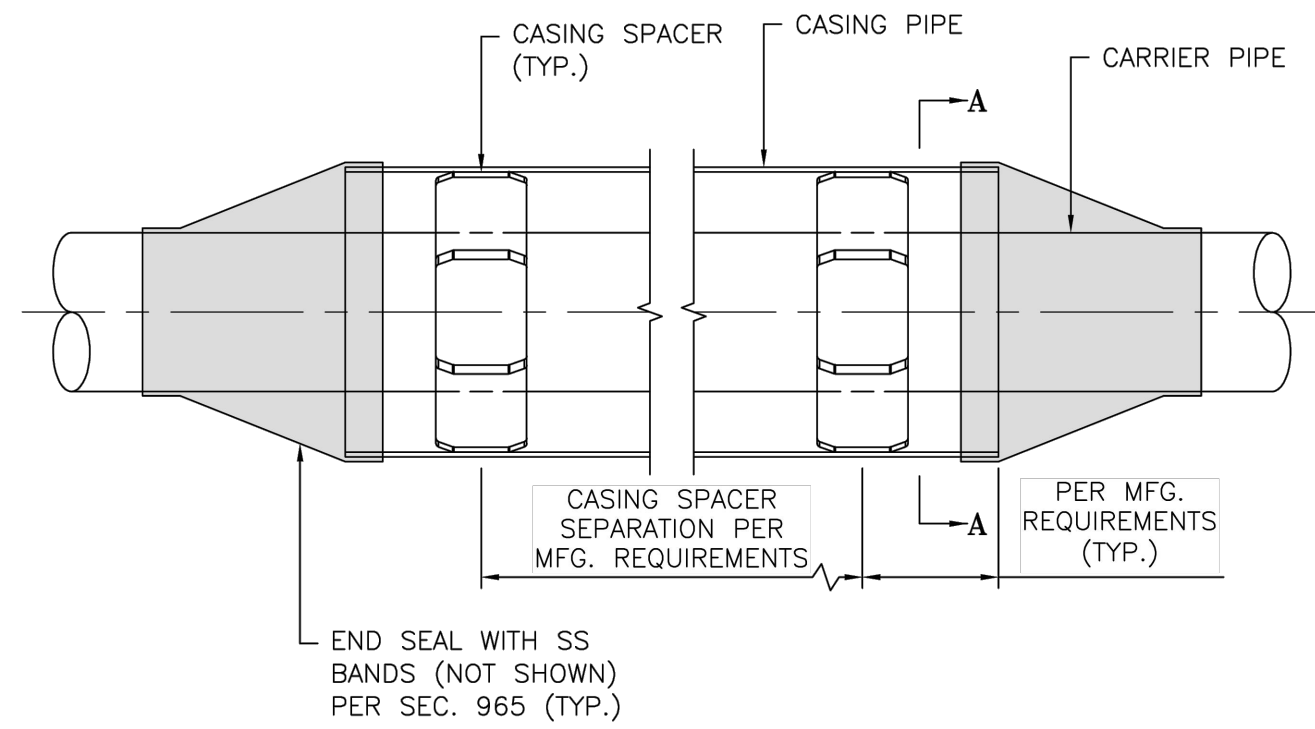


- NOTES:
- ALL CONCRETE SHALL BE TYPE A PER SECTION 932.
 - STEEL SHALL BE PER SECTION 941.
 - FOR ASPHALT ROADWAYS, ALL SURFACES IN CONTACT WITH NEW ASPHALT PAVEMENT SHALL BE TACK COATED PER SECTION 313.

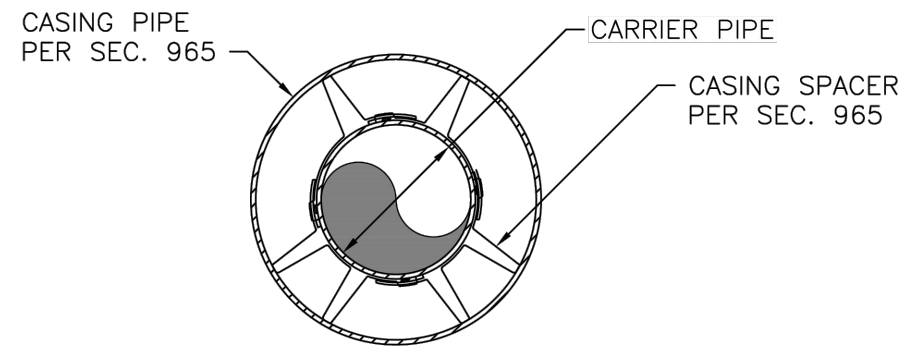
	RIGID PAVEMENT REPAIR	DETAIL NO.
		103-2
		APPROVED: 09/18/2023




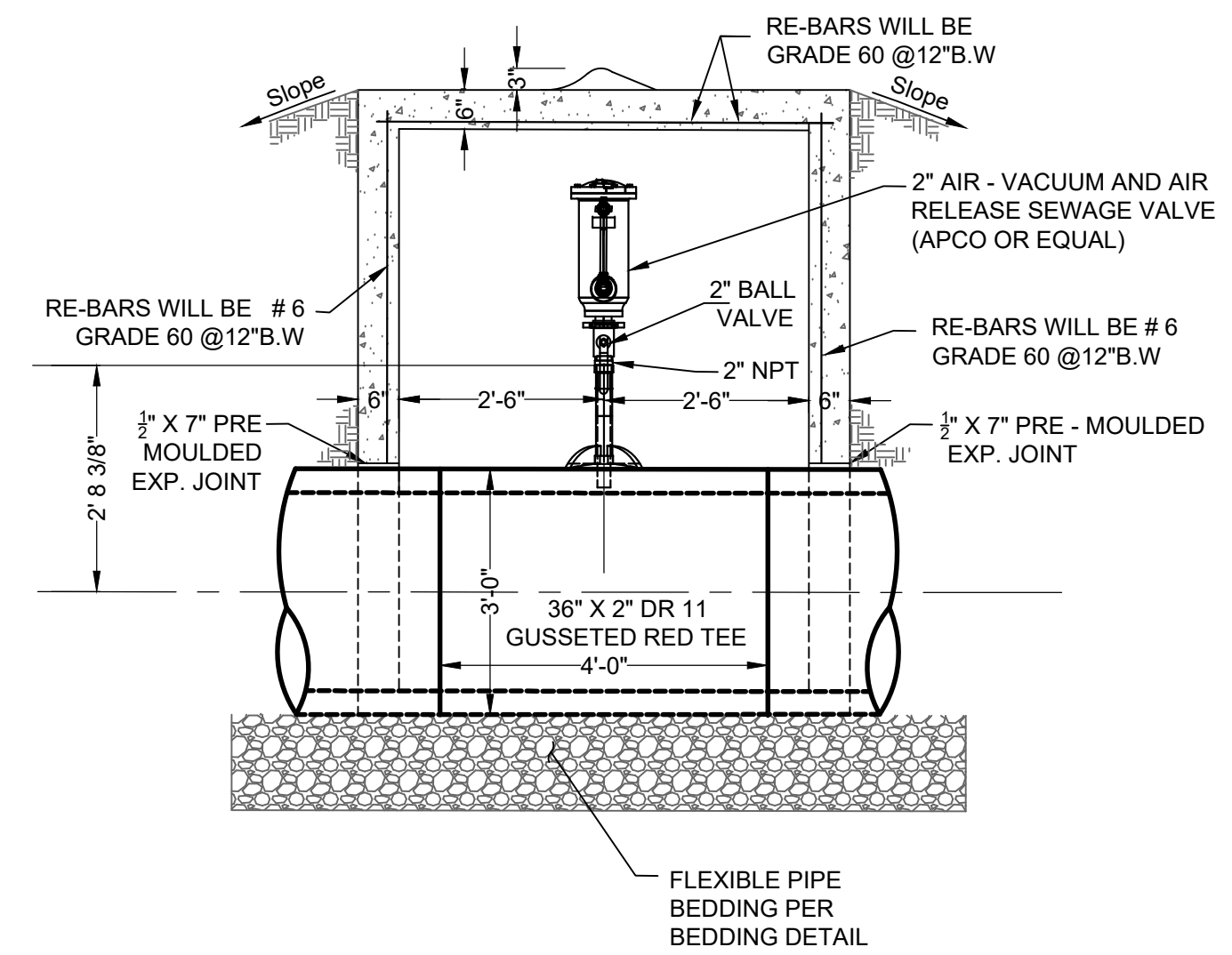
2" AIR VACUUM AND AIR RELEASE SEWAGE VALVE



- NOTE:
- CASING PIPE DIAMETERS PER SEC. 965.



	STANDARD DETAIL FOR BORING	DETAIL NO.
		104-1
		APPROVED: 09/18/2023



Bid A, Item

REVISIONS:	DATE:

DESIGNED BY:	CAD OPERATOR:	CHECKED:	APPROVED:	PLOT DATE:	DWG. SCALE:	SHEET:
MK	KM	S.D.	S.D.	6/15/2025	AS SHOWN	OF

CITY OF MOORE STANDARD DETAILS	EAGLE OFFICE CENTER 2803 SOUTH BRYANT EDMOND, OK. 73013 PH. (405) 844-3900 FAX. (405) 844-3600	EAGLE CONSULTANTS, INC. CIVIL AND ENVIRONMENTAL ENGINEERS CERTIFICATE OF AUTHORIZATION NO. CA2088