ADDENDUM NO. 2
7/28/2025

PROJECT: **CITY OF ABILENE**
I-20 UTILITY RELOCATES - WORK AUTHORIZATION NO.1

BID DATE: **AUGUST 7, 2025**

The following changes and/or additions shall be made to the Plans, Specifications, and Contract Documents for the above referenced project. Bidder shall acknowledge receipt of this Addendum by signing below and returning this Addendum with the Bid.

1) GENERAL

a) The following is a list of general contractors that attended the mandatory pre-bid meeting and are eligible to bid the project:
   i) Finco Services
   ii) Deerwood Construction
   iii) Skyblue Utilities, Inc.
   iv) Bontke Brothers Construction
   v) Triad Service Group, LLC
   vi) Ella SA Contracting, LP
   vii) Western Municipal Construction of Texas, LLC
   viii) Spiess Construction
   ix) Acadia Services, LLC
   x) Belt Construction
   xi) Alpha Construction & Engineering, LLC
   xii) MH Civil Constructors, Inc.

2) SPECIFICATIONS

a) Specification 33 05 01 has been revised. The attached version shall replace the version included in the bid documents.

Prepared by:

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STATE OF TEXAS
JAMES T. KING
145624
LICENSED PROFESSIONAL ENGINEER
07/28/2025

_____
Bidder's Acknowledgment

_____
Date

SECTION 33 05 01 - BORE AND ENCASEMENT

PART 1 GENERAL

1.1 WORK INCLUDED

A. The work under this Section consists of furnishing all materials, labor, equipment, and services required for the complete installation of encasement pipe and carrier pipes under highways, railroads and creeks/rivers by boring, jacking, or directional boring as shown on the Drawings and specified herein.

B. All work in connection with constructing encasement pipes under highways and railroads shall comply with all current requirements of governing highway and railroad agencies. The CONTRACTOR shall be familiar with these requirements.

C. The CONTRACTOR shall inspect the locations at the proposed crossings and shall familiarize himself with the conditions under which the work will be performed, and with all necessary details and the suitability of his equipment and methods for the work required.

1.2 REFERENCE STANDARDS

ASTM A139/A139M - Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over); 2016.
ASTM C150/C150M - Standard Specification for Portland Cement; 2016.
ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2016.
ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2015.
ASTM D4832 - Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders; Latest Edition.

1.3 DEFINITIONS

A. Auger Boring: A technique for forming a bore from a drive pit to a reception pit, by means of a rotating cutting head. Spoil is removed back to the drive pit by helically wound auger flights rotating in a steel casing pipe.

B. Bentonite: Colloidal clay sold under various trade names that form slick slurry or gel when water is added. Also, known as driller mud.

C. Carrier Pipe: The tube that carries the product being transported and which may go through casings at highways and railroad crossing. It may be made of steel, concrete, clay, plastic, ductile iron, or other materials.

D. Casing: A pipe used to line bore holes through which a pipe(s) called carrier pipes or ducts are installed.

E. Directional Drilling: A steerable system for the installation of pipes, conduits and cables in a shallow arc using a surface launched drilling rig.

F. Dry Bore: Any drilling or rod pushing system not employing drilling fluid in the process.

G. Pipe Jacking: A system of directly installing pipes behind a shield machine by hydraulic jacking from a drive shaft such that the pipes form a continuous string in the ground.

H. Trenchless Technology: Techniques for utility line installation, replacement, rehabilitation, renovation, repair, inspection, location and leak detection, with minimum excavation from the ground surface.

1.4 QUALIFICATIONS

A. General Requirements:

1. CONTRACTOR shall submit with statement of qualifications documenting successful completion of bores of similar scope within the last 5 years. If the CONTRACTOR is not performing the bore himself, CONTRACTOR shall submit the name and information of the

boring subcontractor as well as qualifications documenting successful completion of bores by the subcontractor. Failure to submit qualifications is grounds for rejection of the CONTRACTOR's bid or withholding of payment.

B. Large Diameter Bores (18" or larger carrier pipe):
   1. CONTRACTOR shall submit with statement of qualifications documenting successful completion of bores of similar scope within the last 5 years. Included in the statement of qualifications shall be a minimum of three (3) bores with the same or larger carrier and casing pipe and the same or longer bore lengths or as listed in the contract documents. If the CONTRACTOR is not performing the bore himself, CONTRACTOR shall submit the name and information of the boring subcontractor as well as qualifications documenting successful completion of bores by the subcontractor. Failure to submit qualifications is grounds for rejection of the CONTRACTOR's bid or withholding of payment.
   2. CONTRACTOR shall provide a list of equipment to be used to complete the bore(s) as shown on the Plans. CONTRACTOR shall submit a work plan for review by the ENGINEER documenting bore completion time, sequencing of work, staging locations, and any other information deemed necessary by the ENGINEER. In the event a bore cannot be completed as shown on the Plans, or the CONTRACTOR desires to deviate from the bores as shown on the Plans or described in the CONTRACTOR's work plan, CONTACTOR shall submit a written list of changes and methods to accomplish the intent of the bore for ENGINEER's approval.
   3. All excavation on this project is unclassified. Geotechnical data is provided in the Contract Documents for reference only and may not be relied on for accuracy of subsurface conditions. It is the responsibility of the CONTRACTOR to address any field conditions discovered during construction and complete the project as shown on the Plans, with any written changes. No additional payment will be made for subsurface condition changes or CONTRACTOR failing to complete the bore(s) as shown on the Plans or as listed in the work plan.

1.5 PERFORMANCE REQUIREMENTS

A. General Performance:
   1. Carrier Pipe: Lateral or vertical variation in pipe's final position from the established Drawing line and grade shall not exceed 1-inch per 10 feet, provided such variation shall be regular, only in one direction, and the final grade of the flow line shall be in the direction indicated on the Drawings.

1.6 PROJECT CONDITIONS

A. Construction Method: Unless otherwise specifically designated, CONTRACTOR may select jacking, boring, or trenchless construction method to be employed. Gravity sewer lines shall be maintained at a uniform grade throughout trenchless construction.

B. Permit:
   1. The OWNER shall be responsible to provide the documentation to the appropriate jurisdiction and obtain the required permits for designated jacking, boring, and trenchless operations shown on the Drawings.
   2. For those areas where CONTRACTOR proposed to use jacking, boring, or trenchless excavation operations in lieu of open cut, it shall be the responsibility of the CONTRACTOR to prepare documentation, obtain approval and required permits.

C. Operation Restrictions: Conduct operations so as not to interfere with, interrupt, or endanger surface and activity thereon.
   1. Minimize subsidence of surface, structures, and utilities above and in vicinity of operations.
   2. Support ground continuously to prevent loss of ground and keep perimeters stable.
   3. Be responsible for settlement resulting from operations.
   4. Repair and restore damaged property to its condition before being disturbed at no cost to the OWNER.

5. Provide 48-hour notice prior to commencement of any jacking, boring, or trenchless operations.

D. Compliance: Comply with applicable ordinances, codes, statutes, rules, and regulations of the jurisdictional agency, the affected Railroad, TxDOT, and municipal, state and federal governmental agencies.

E. Additional Criteria for Work Railroad Property:
1. Do not schedule work until submittals and insurance approval received from Railroad and ENGINEER and permit, if applicable, has been obtained.
2. Provide any additional insurance required by the Railroad or other jurisdiction agency.
3. Comply with AREMA and other Railroad requirements prior to commencing work.
4. Obtain required Railroad safety training for operators performing work within Railroad right-of-way, the required flagman, and work authorization from the Railroad. All costs associated with these activities shall be the CONTRACTOR's responsibility.
5. Place safety, precautionary, and protective devices and services required before work proceeds.

F. Safety Requirements:
1. Provide flagman, barricades, lights, warning signs, ventilation, air quality monitoring, and other safety devices and equipment required to ensure the safety of personnel entering area and safeguard traffic and pedestrians.
2. Comply with requirements of Division 31, Section 31 04 01, TRENCH EXCAVATION SAFETY PROTECTION SYSTEM.

PART 2 PRODUCTS

2.1 MATERIALS

A. General:
1. Material of construction of casing pipe shall be as designated on the Drawings or as required by the jurisdictional agency for type of service.
2. Material of construction for the carrier pipe shall be as designated on the Drawings.
3. Carrier pipe shall be placed inside a casing pipe where foundation conditions (presence of boulders, rubble, or rock) make the direct trenchless installation of the carrier pipe impractical. A casing pipe may also be used if the carrier pipe or conduit is not by itself suitable for trenchless installation.

B. Casing Pipe:
1. Steel Pipe:
a. Smooth walled steel pipe conforming to ASTM A139/A139M, Grade B; 35,000 psi minimum yield strength.
b. Minimum inside diameter shall be as designated on the Plans.
c. Minimum wall thickness shall be as designated on the Plans. If not shown on the Plans, minimum wall thickness shall be 3/8-inch for 24-inch diameter and smaller; 1/2-inch for 48-inch diameter and smaller, but larger than 24-inch; and 5/8-inch for 66-inch and smaller, but larger than 48-inch.
d. Joints: Interlocking type, or butt-welded, lap welded, or welded using butt straps in the field. Each end of the casing for butt-welding shall be prepared by providing a 1/4-inch by 45-degree chamfer on the outside edges.
e. Coating: None.

C. Carrier Pipe:
1. Material of construction shall be as shown on the Drawings and shall have restrained joints.
2. Carrier pipe shall be the same nominal diameter as the system pipe on either side of the carrier pipe.

D. Casing spacers shall meet one (1) of the following requirements and shall be installed as shown on the Plans.

1. Casing spacers shall be flanged, bolt-on style with a two-section stainless steel shell lined with a PVC liner, minimum 0.09-inch. Runners shall be attached to stainless steel risers, which shall be properly welded to the shell. The height of the runners and risers shall be manufactured such that the pipe does not float within the casing. Casing spacers shall be Cascade Waterworks Manufacturing Company or Advanced Products Systems, Inc. or approved equal.
2. Casing spacers shall be a two-section, flanged, bolt-on style constructed of heat-fused, PVC-coated steel, minimum 14-gauge band and 10-gauge risers, with two inch (2”) wide glass reinforced polyester insulating skids, heavy duty PVC inner liner, minimum 0.09-inch thick and 85-90 durometer hardness, and all stainless steel or cadmium plated hardware shall be Pipeline Seal and Insulator, Inc. or approved equal.
3. Casing spacers shall be high density polyethylene. Spacers shall be RACI spacers or approved equal.

E. Casing End Seals:
1. Manufactured of 1/8-inch thick neoprene rubber, attached using 1/2-inch wide T304 stainless steel banding's 100% non-magnetic worm gear mechanism.
2. Configuration may be pull-on end molded, wrap around with self-curing mastic sealing strips, or zipper configuration.
3. Available Manufacturers:
   a. Advance Products & Systems, Inc.
   b. Cascade Waterworks Mfg.
   c. Pipeline Seal & Insulator Inc.

F. Grout:
1. Consist of one part Portland cement, ASTM C150/C150M, Type I or II, three parts sand, and minimum amount of water to obtain desired consistency.
2. Sand shall consist of clean, hard, durable, uncoated grains, free from lumps and organic material. All particles shall pass a No. 8 sieve and the material shall have a plasticity index of 12 or less.
3. Compressive strength of 100 psi at 28 days.

G. Flowable Fill:
1. Ready mixed flowable fill is a blend of cement, fly ash, fine aggregate, and water. It is designed as a low strength, flowable material requiring no subsequent vibration or tamping to achieve 100% consolidation.
2. Unless indicated otherwise, select and proportion ingredients to obtain compressive strength between 50 and 150 psi at 28 days in accordance with ASTM D4832.
3. Materials:
   a. Cement: ASTM C150/C150M, Type I, II, or III.
   b. Aggregate: ASTM C33/C33M, Size 8 or fine aggregate.
   c. Fly Ash (if used): ASTM C618, Class C.
   d. Water: Clean, potable, free of odor, organics, and deleterious materials.
4. The flowable fill mixture shall be mixed either in a pug mill, concrete mixer, or transit mixer and shall have a minimum slump of five (5) inches.

PART 3 EXECUTION

3.1 GENERAL

A. Unless soil borings in the immediate vicinity of the work area are available, CONTRACTOR shall investigate the existing soils and subsurface conditions so the appropriate equipment is provided to counter conditions which can cause delay, such as groundwater, running sand, boulders, or other subsurface conditions.

3.2 CONSTRUCTION BY JACKING

A. Construct suitable pits or trenches at the jacking and receiving end to a depth no greater than required for placing of the guide and jacking timbers and a horizontal distance no nearer the roadbed than minimum distance shown on the Drawings.
B. All open pits and trenches shall be braced and shored or their walls sloped preventing caving or sliding of the walls into the open pit or trench complying with requirements of Section 31 04 01, TRENCH EXCAVATION SAFETY PROTECTION SYSTEM.
C. Place pipe on guides for supporting pipe to be jacked and to direct it for proper alignment and grade. Embankment material shall be excavated just ahead of the pipe, removed through the pipe, and the pipe forced through the opening provided.
D. Excavation for the underside of the pipe, for at least one-third (1/3) of the pipe circumference, shall conform to the contour and grade of the pipe. Excavation for the top half of the pipe shall conform closely to the outside diameter and a clearance greater than 2 inches shall not be permitted. Preferably pipe shall be jacked from the low or downstream end.
E. All voids between the pipe and the earth shall be filled with grout. Provide grout holes in the pipe. The grouting shall follow immediately upon completion of the jacking operation. Backfill pits and trenches as soon as practical following completion of jacking operations and installation of carrier pipe(s).
F. Any pipe that cannot be repaired to its original condition or is damaged during jacking operations shall be removed and replaced at CONTRACTOR's expense.

3.3 CONSTRUCTION BY BORING

A. Construct suitable pits or trenches at the boring and receiving end to a depth no greater than required for placing of the guide and jacking timbers and a horizontal distance no nearer the roadbed than minimum distance shown on the Drawings.
B. All open pits and trenches shall be braced and shored or their walls sloped preventing caving or sliding of the walls into the open pit or trench complying with requirements of Section 31 04 01, TRENCH EXCAVATION SAFETY PROTECTION SYSTEM.
C. The hole shall be bored mechanically with a suitable boring assemble designed to produce a smooth, straight shaft and so operated that the completed shaft shall be at the established line and grade. The boring shall be accomplished using either a pilot hole method or a dry hole method.
    1. Pilot Hole Method: Bore approximately a 2-inch pilot hole the entire length of the crossing and confirm line and grade. The pilot hole shall serve as the centerline for the larger diameter hole to be bored.
    2. Dry Hole Method: Advance casing pipe as augers through the casing pipe remove the soil. Bentonite may be used as a lubricant.
D. All voids between the pipe and the earth shall be filled with grout. Provide grout holes in the pipe. The grouting shall follow immediately upon completion of the jacking operation. Backfill pits and trenches as soon as practical following completion of jacking operations and installation of carrier pipe(s).
E. Any pipe that cannot be repaired to its original condition or is damaged during boring operations shall be removed and replaced at CONTRACTOR's expense.

3.4 CARRIER PIPE INSTALLATION

A. Installation:
    1. Install carrier pipe to establish lines and grades.
    2. Carrier pipe joints within the casing pipe shall be of the restrained type in accordance with applicable pipe specifications. If applicable, exterior and interior joints of the carrier pipe shall be mortar coated and lined in the field as installation progresses.

3. For cast iron or ductile iron, encase pipe in polyethylene in accordance with applicable pipe section.
4. Install casing spacers by placing at each end of the casing pipe and at 6 to 8 foot intervals, and in accordance with manufacturer instructions. There shall be at least two spacers installed on each pipe section.
5. Seal ends of casing and carrier pipe using neoprene casing end seals and stainless steel bands. If overlap seal is employed, bond together the overlapping surfaces with permanent sealing adhesive.

B. Testing: Hydrostatic testing of the carrier pipe shall be completed prior to backfilling the bore pits. Testing shall be accomplished in accordance with the applicable pipe section.

C. Supports: Carrier pipe shall be supported to the quarter point by a concrete cradle across the boring or jacking pit to the first joint in the ditch section at each end.

3.5 CONSTRUCTION BY GUIDED BORING OR DIRECTIONAL BORING

A. Guided boring or directional drilling shall be accomplished according to the standards in "Trenchless Technology Guidelines" published by International Society of Trenchless Technology.

3.6 FIELD QUALITY CONTROL

A. Grade and Alignment. Provide field survey data confirming grade and alignment conforms to values shown on the Drawings and within limits of specified in this Section.

B. Provide test data for materials used in installing casing and carrier pipe, such as grout, concrete, flowable fill, and sand used to fill annular space between casing pipe and borehole.

C. Provide settlement measurements. During construction, make observations of settlement markers at regular intervals of roadway and railroad tracks. Record and provide information.

-- END OF SECTION --