ADDENDUM NO. 3
7/31/2025

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) SPECIFICATIONS

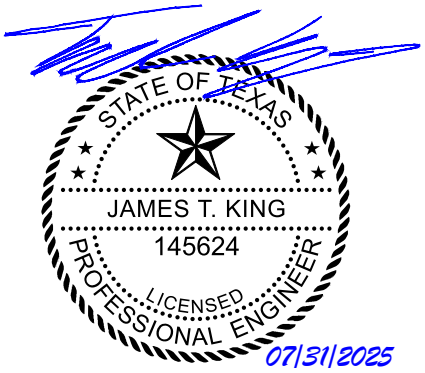
a) Specification 33 30 01 – Bypass Pumping of Existing Sewer Systems has been added. The attached version shall dictate bypass pumping operations for this project.

Prepared by:

_____
Bidder's Acknowledgment

JACOB | MARTIN
TBPE Firm No. 2448

_____
Date



SECTION 33 30 01 – BYPASS PUMPING OF EXISTING SEWER SYSTEMS

PART 1 GENERAL

1.1 DESCRIPTION

A. The work covered in this specification consists of bypass pumping operations to temporarily reroute sewer flows to prevent a sanitary sewage overflow (SSO) and to always provide adequate and reliable sewer flow during construction, while the tasked scope of work is executed.

B. This specification includes all requirements for implementing a temporary pumping system for diverting sewage flow around any construction-related activity to an approved reintroduction point within the sanitary sewer system.

C. Minimize health, safety and regulatory risks by taking all reasonable measures to avoid an SSO. Manage the flow of wastewater in a planned and proactive manner.

D. The CONTRACTOR is responsible for locating all public and private utilities in the area prior to construction. The CONTRACTOR shall locate bypass pipelines to minimize disturbance to traffic flow and existing utilities. Access to private property shall be maintained at all times, including driveways.

1.2 REFERENCE STANDARDS

Texas Commission on Environmental Quality (TCEQ) – Chapter 217 Design Criteria for Domestic Wastewater Systems
Occupational Safety and Health Organization (OSHA)

1.3 DEFINITIONS

A. Bypass pumping is the installation and operation of bulkheads, plugs, hoses, piping, temporary manholes and pumps to maintain wastewater flow and prevent backup and overflow.

B. Bypass pumping provides continuous wastewater service to the users while maintenance or construction operations are in progress by diverting flow when necessary around the construction location and pumping it to a downstream reintroduction point.

C. Sanitary sewer surcharge is any bypassed flows entering the manhole or structure (above the crown of the pipe), due to lapses in the CONTRACTOR’s bypass pumping plan.

1.4 WORK INCLUDED

A. The work covered by this specification consists of furnishing all labor, supervision, tools, equipment, power, appliances and materials to perform all operations in connection with pumping of wastewater and wet weather flows around pipe section(s). The purpose of bypass pumping is to prevent wastewater overflows and provide reliable sewer service at all times.

B. The bypass pumping plan sheets included as part of the Drawings are conceptual only. The CONTRACTOR shall be responsible for submitting their own bypass pumping plan (BPP) for review and approval prior to the start of construction. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The design, installation, and operation of the temporary bypass pumping system shall be the CONTRACTOR’s responsibility.

C. The CONTRACTOR shall maintain sewage flow in the construction area in order to prevent backup and/or overflow into the upstream pipe segments and laterals, adjacent ditches, storm sewers and waterways.

D. All unmanned bypass pumping operations shall be fitted with an auto-dialer feature to monitor the operation of the pump(s) and notify the CONTRACTOR in the event of a pump failure or overflow situation.

E. The CONTRACTOR assumes sole responsibility for bypass pumping systems and for all loss or damage resulting from partial or complete failure of protective measures and any spills or resultant damage caused by his operation.
F. The CONTRACTOR shall cease bypass pumping operations when directed by the ENGINEER.

1.5 RELATED WORK

A. Section 31 03 01 TRENCHING, BACKFILLING AND COMPACTING
B. Division 33 UTILITIES

1.6 QUALITY ASSURANCE

A. The CONTRACTOR shall employ the services of a vendor who can demonstrate to the ENGINEER that he specializes in the design and operation of temporary bypass pumping systems. The vendor shall provide at least five (5) references of projects of a similar size and complexity of this project performed by his firm within the past five (5) years.
B. All material may be rejected for failure to meet any of the requirements of this specification. Material rejected by the ENGINEER shall be removed from the site.
C. Inspection: The quality of all materials, process or manufacture and the finished installation shall be subject to the inspection and approval of the ENGINEER.
D. Scheduling: The CONTRACTOR shall report any bypass pumping activities not included in the submitted plan to the ENGINEER prior to proceeding with these activities.

1.7 SUBMITTALS

A. Shop Drawings and Product Data:
    1. Comply with the provisions of Section 01 04 01 and the supplemental requirements below.
    2. Submit detailed bypass pumping plan (BPP). The BPP shall include detailed design plans and descriptions outlining all provisions and precautions to be taken by the CONTRACTOR regarding the handling of existing wastewater flows. The pumping system must be designed to provide adequate capacity for peak flows.
    3. The following must be submitted as part of the BPP:
        a. A cover letter containing:
            1) Project name and number.
            2) The name and address of the contractor.
            3) Contact information for the project manager, superintendent, foreman, and safety professional.
            4) Emergency (24/7) contact information for the bypass pumping subcontractor, if applicable. Include the name, telephone number and title of the person(s) onsite responsible for the bypass pumping operation.
            5) The name, telephone number, title and signature of the person preparing the BPP.
        b. A description of how the maximum amount of sewer flows to be bypass was obtained (including all flow measurement devices, calculations, equipment or other sources of how data was collected)
        c. Description of all proposed bypass pumping components to be used. If applicable, describe all various bypass pumping phases. Include bypass pump size and capacity, as well as the size and capacity of the suction and discharge piping. The description must also include manhole or structure depth and sized used during the bypass pumping operation; sewer plugging method and type of plugs used; flowmeter installation locations; staging area for pumps; and calculations of static lift, friction and flow velocity.
        d. The date and time the bypass pumping is to begin and be completed. Indicate whether bypass pumping is outside normal work hours as described in the contract documents.

e. The pump curves showing operating range. This information must include the proposed system curve, addressing the pump operation in relation to the suction and discharge piping alignments with respect to restriction and elevations. Also include backup pump, power and piping equipment. Backup pump shall not be included in the CONTRACTOR's calculations.
f. Suction and discharge piping material and capacity used for the bypass pumping operation, including the material for any bends and valves used.
g. A detailed layout showing the location of pump(s) and the route of the suction and discharge piping. If the route is different from what is shown in the Contract Drawings, include sufficient information to allow Engineer to determine operation, location and major site components.
h. Thrust and restraint block sizes and locations.
i. Any temporary pipe supports and anchoring, if required.
j. A traffic control plan pertinent solely to the bypass pumping operations, if required. This plan may differ from the project's traffic control plan for the overall scope of work. Maintain pedestrian and vehicular traffic.
k. An emergency plan detailing procedures to be followed if any portion of the bypass operation fails and causes either surcharging or an actual SSO. CONTRACTOR is herein advised that any surcharging of the sewer flows during bypass pumping operations will be deemed a failure of the BPP, and the CONTRACTOR must repropose an improvement to their BPP for review and acknowledgement.
l. Method of noise control for each pump and generator (when in residential areas). Control noise per agency having jurisdiction.

4. Submit detailed layout drawings for all piping systems. Those drawings may be organized by system or by areas. Prepare drawings to scale and show the following information on them:
   a. Type of piping including material, weight, linings, and coatings. If desired, use code and key to product data sheet specified below.
   b. Location and type of joints, fittings, taps, supports, restraint systems, kickers and blocking (as applicable).
5. Submit fabrication drawings for specials including fabricated fittings, wall pipes and wall sleeves. Show dimensions and materials of construction.
6. Submit manufacturer's standard drawings showing dimensions, configuration and materials of construction.
7. Submit the following product data on all piping materials.
   a. Reference standard.
   b. Type material.
   c. Wall thickness, schedule or class as appropriate.
   d. Outside diameter.
   e. Dimension Ratio
   f. Type and thickness of lining.
   g. Type and thickness of coating.
   h. Pressure rating, if applicable.

B. Affidavits of Compliance:
   1. Submit manufacturer's affidavits of compliance with the reference standards.

1.8 DELIVERY, STORAGE AND HANDLING

A. General: Comply with manufacturer's instructions.
B. Delivery and Handling:
   1. Do not deliver piping materials to project site prior to ENGINEER's approval of required submittals.
   2. Unload and handle piping materials using proper materials handling equipment.
   3. Do not drop, roll, skid piping materials.

4. Take such additional precautions as necessary to avoid damaging piping materials and coatings thereon.

C. Storage:
1. Store piping materials in a manner which will reduce risk of damage.
2. Block piping materials to prevent rolling.
3. Protect materials from weather and sun as recommended by the manufacturer.

PART 2 PRODUCTS

2.1 GENERAL

A. Provide all necessary pumping equipment, piping and all other necessary appurtenances to maintain adequate and reliable sanitary sewer flow in the sewer system during construction. All materials and equipment must be in good condition and should not have visible damage such as cracks, holes, foreign materials or blisters.

B. See other Sections in Division 33 for piping materials specifications.

C. Do not begin bypass pumping operations until all materials, equipment and labor necessary to complete the Work are onsite.

D. Provide temporary road ramps of structural steel construction for bypass pumping construction in conflict with traffic operations.

2.2 EQUIPMENT

A. Pumps:
1. All pumps shall be fully automatic self-priming units that do not require the use of foot valves or vacuum pumps to prime the system. The pumps may be electric or diesel powered. All pumps used must be constructed to allow dry running for long periods of time to account for the cyclical nature of sewer flows.
2. Provide the necessary start/stop controls for each pump.
3. Include one standby pump for each size to be maintained onsite. Bypass pump shall be the same capacity as the largest pump in the system. Backup pumps shall be online, isolated from the primary system by a valve.
4. If multiple pumps are required to meet the flow requirements, provide the necessary fittings and connections to incorporate multiple discharges.
5. Provide equipment that will convey dry-weather flow conditions and 100% of wet-weather peak flow conditions.
6. Demonstrate the pumping system is in good working order and sufficiently sized by performing a 24 hour run test prior to beginning the work.

B. Plugs and Stop Logs:
1. Plugs:
a. Plugs must be selected and installed according to the size of the line plugged. An additional plug must be onsite and ready to be installed if a plug fails or becomes dislodged. Plugs must be reviewed by the CONTRACTOR and Inspector for defects prior to installation. Notify the ENGINEER at the completion of the work to verify that all plugs have been removed from the system.
b. Select a plug that is made for the size and potential pressure head that will be experienced.
c. Provide additional anchoring, support, or bracing to secure plug when back pressure is present.
d. Plugs shall be secured and anchored to prevent plug movement or escape into the adjoining sanitary sewers should the plug fail.
e. Use accurately calibrated air pressure gauges for monitoring the inflation pressure.
f. Never overinflate the plug beyond its pressure rating.
g. Plugs shall either be redundantly tethered or include a radio transmitter locating device to ensure they are not lost in the wastewater collection system.
2. Stop Logs:

a. Use stop log devices designed for the manhole or sewer facility in use.

C. Piping:
1. All piping, joints and accessories shall be designed to withstand at least twice the shutoff head of the pump.
2. Neither irrigation type pipe nor glued PVC pipe will be permitted.
3. Discharge and suction piping must be approved by the ENGINEER.
   a. Discharge piping: Determined according to flow calculations and system operating calculations.
   b. Suction piping: Determined according to pump size, flow calculations and manhole depth following manufacturer's specifications and recommendations.
4. Bypass pumping operations shall use 100% leak-proof pipe such as Yellow Mine or fusion welded HDPE.
5. High Density Polyethylene (HDPE):
   a. Assembled and joined at site using butt-fusion method to provide leak-proof joint. Follow manufacturer's recommendations and ASTM 2657.
   b. Cut out defective areas of pipe and fuse joints as specified.
   c. Fusing: By personnel certified as fusion technicians by manufacturer of HDPE pipe and/or fusing equipment.
   d. Butt-fused joint: True alignment and uniform roll-back beads resulting from use of proper temperature and pressure.
   e. Comply with Section 33 01 11.
6. Flexible Hoses and Associated Couplings and Connectors:
   a. Abrasion resistant and suited for intended service.
   b. Rated for external and internal loads anticipated, including test pressure.
   c. External load design shall incorporate anticipated traffic loadings, including traffic impact loads, where applicable.

D. Valves and Fittings:
   a. Determined according to flow calculations, pump sizes and system operating pressures.

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. During construction, CONTRACTOR is responsible for maintaining a safe and secure environment.

B. Comply with OSHA requirements for working in the presence of sewer gases, combustible oxygen-deficient atmospheres and confined spaces.

C. Have full-time (24-hr) onsite qualified personnel, including supervision, for monitoring the entire bypass installation while it is in operation. The entire length of bypassing must be inspected hourly to monitor for leaks. Alarm notifications to radios or cell phones does not eliminate this requirement.

D. Examine all piping materials prior to installation and replace items that are damaged or otherwise defective.

E. Do not modify structures, equipment, or piping for the purpose of installing bypass system unless specifically authorized by the ENGINEER.

F. Before installing any plugs, inspect the existing pipe for imperfections that might cause damage to the plug, cause the plug to not seal and function properly, or compromise the integrity of the pipe when the plug is inflated. The results of this inspection will directly impact the planned plugging location(s). Provide the ENGINEER or Inspector an opportunity to confirm that the plug location is acceptable.

G. Provide continuous-supply onsite fuel storage for 24-hr operation of the bypass pumping installation.

H. Protect all components of the bypass operations from vandalism and vehicular damage by making the site secure.
I. Minimize sewer odors by using lids, shroud covers, or any method approved by the Inspector or ENGINEER.

3.2 INSTALLATION OF BYPASS SYSTEMS

A. Install and operate pumping and piping equipment in accordance with the submittals provided per this Specification. Flow diversion materials and equipment must be in place and successfully operating prior to starting any Work requiring flow diversion.
B. Remove manhole sections or make connections to the existing sewer and construct temporary bypass pumping structures only at the access location(s) indicated on the Drawings, BPP, and as may be required to provide suction conduit.
C. Plugging a manhole and holding wastewater in the manhole while work is performed downstream is unacceptable.
D. Where dead-end sections occur and wastewater cannot be bypassed to a downstream manhole, the CONTRACTOR shall be responsible for pumping and hauling the wastewater to an approved location to complete the Work.
E. During bypass pumping, do not allow sewage to be leaked, dumped or spilled in or onto any area outside of the existing sanitary sewer system.
F. In the event of an accidental spill or overflow, immediately stop the discharge and take action to cleanup and disinfect the spill. Promptly notify the OWNER and ENGINEER so that required reporting can be made to TCEQ by the OWNER. Any fees or fines resulting from spills or overflows shall be the responsibility of the CONTRACTOR at no additional cost to the OWNER. The CONTRACTOR is responsible for any damages that may have occurred to public or private property including but not limited to cleaning, disinfection and other corrections to the satisfaction of the ENGINEER at no additional cost to the OWNER.
G. Sewer Flow Stoppage:
    1. Plugging
        a. Use confined space procedures and equipment during installation when necessary.
        b. Thoroughly clean the pipe before insertion of the plug.
        c. Insert the plug seal surface completely so it is fully supported by the pipe.
        d. Position the plug where there are not sharp edges or protrusions that may damage the plug.
        e. Use pressure gauges for measuring inflation pressures.
        f. Minimize upstream pressure head before deflating and removing.
H. Sewer Flow Control and Monitoring:
    1. Take sufficient precautions to ensure sewer flow operations do not cause flooding or damage to public or private property. The CONTRACTOR is responsible for any damage resulting from bypass pumping operations.
    2. Begin continual monitoring of the sewer system as soon as the sewer is plugged or blocked. Be prepared to immediately start bypass pumping if needed due to surcharge conditions.
    3. Contractor shall continuously track all flows being bypassed and provide data to ENGINEER daily.
    4. Sewer discharge may be into another sewer manhole or appropriate vehicle only. Do not discharge sewer into an open environment.
    5. Do not construct bypass facilities where vehicular traffic may travel over the piping.

3.3 QUALITY CONTROL

A. Testing: The CONTRACTOR shall perform leakage and pressure tests of the bypass pumping discharge piping using clean water prior to actual operation. The ENGINEER must be given 24-hour notice prior to testing.

B. Inspection: The CONTRACTOR shall monitor the bypass pumps at all times (24/7) and inspect the bypass pumping equipment at least hourly, for lines 24” and larger, and at least every two hours, for lines smaller than 24”, when operational to ensure that the system is working properly.

C. Maintenance: The CONTRACTOR shall ensure that the bypass pumping system is properly maintained and a responsible operator shall be onsite at all times when pumps are operating.

D. Spare Parts:
   1. Spare parts for pumps and piping shall be kept onsite as required.
   2. Adequate hoisting equipment for each pump and accessories shall be maintained onsite.

3.4 REMOVAL OF BYPASS SYSTEMS

A. Once all work is completed and the bypass pumping operation is no longer required, drain the entire bypass system flow into an existing sanitary sewer manhole before disassembly and removal of the system from the construction site.

B. Remove bypass pumping system in a manner that permits the sewage flow to slowly return to normal without surge, to prevent surcharging or causing other major disturbances downstream.

C. Backfilling:
   1. Comply with Section 31 03 01, TRENCHING, BACKFILLING AND COMPACTING, and the following supplemental requirements.
   2. Backfill as soon as practicable after completion of Work.
   3. Existing sewer system structures that have been damaged shall be reconstructed or replaced to the satisfaction of the ENGINEER at no additional cost to the OWNER prior to backfilling.
   4. Exercise care to avoid damaging piping or protective coatings with tamping equipment.

D. Cleanup:
   1. Repair site to pre-construction condition and restore all pavement and roadways.

-- END OF SECTION --