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ADDENDUM NO. 1

DATE: **April 2, 2025**

TO: **ALL PLANHOLDERS OF THE EAST DUNNE SEWER UPSIZE PROJECT**

FROM: **KRISTIAN WALLACE – ASSOCIATE ENGINEER**

RE: **MANHOLE COATING REQUIREMENTS**

1. Section 11 of the Technical Specifications shall be replaced with the attached Section 11R – Precast Concrete Structures.

ADDENDUM ACKNOWLEDGMENT

Bidder acknowledges receipt of this addendum, which shall be attached to the proposal.

Contractor's Representative

Date

THIS DOCUMENT SHALL BECOME A PART OF THE PROJECT SPECIFICATIONS

SECTION 11R - PRECAST CONCRETE STRUCTURES

Part 1 - GENERAL

1.01. SUMMARY

- A. The Contractor shall furnish and install all prefabricated manholes, and other structures, complete with grade rings, frames, covers, pipe connections, preformed joint sealant, and cast-in-place bases, and any other necessary appurtenances, in accordance with the requirements of the Contract Documents.
- B. Related Sections:
 - i. Section 09 - Cast-In-Place Concrete
 - ii. Section 13 – Earthwork
 - iii. Section 21 - Sanitary Sewer System Testing And Cleaning
 - iv. Section 22 - Manhole Rehabilitation
 - v. Section 23 - Manhole Frames And Covers

1.02. REFERENCE

- A. American Society for Testing and Materials (ASTM):
 - i. ASTM C150 - Standard Specification for Portland Cement.
 - ii. ASTM D3212 - Standard Specification for Drain and Sewer Plastic Pipes Using Elastomeric Seals3. ASTM C478 - Standard Specification for Precast Reinforced Concrete Manhole Sections.
 - iii. ASTM C478 – Standard Specification for Precast Reinforced Concrete Manhole Sections.

1.03. SUBMITTALS

Furnish, in accordance with the Contract Documents, complete Shop Drawings for all precast manhole sections, sewer inlets, and manhole appurtenances for review by the Engineer.

1.04. QUALITY ASSURANCE

After installation, the Contractor shall demonstrate that all manholes, drainage inlets, and other precast concrete structures have been properly installed, level, with tight joints, at the correct elevations and orientations, and that the backfilling has been carried out in accordance with the Contract Documents. All manholes shall be tested in accordance with the Contract Documents.

Part 2 - PRODUCTS

2.01. CONCRETE

Concrete for cast-in-place concrete manhole base shall be as specified in the Contract Documents.

2.02. REINFORCING

Reinforcing for cast-in-place concrete manhole base shall be as specified in the Contract Documents.

2.03. MANHOLE FRAMES AND COVERS

Manhole frames and covers shall be as specified in the Contract Documents.

2.04. MATERIALS

- A. Precast Concrete Sections: Manholes, drainage inlets, and other precast concrete structures, shall be constructed of precast concrete sections and shall conform to ASTM C478 and the Contract Documents.
- B. Precast concrete sections shall be manufactured by a process that will produce a dense, homogeneous concrete of first quality. The sections shall be steel reinforced and have a minimum wall thickness of four (4) inches. Cement used in manufacturing the sections shall be Type V, Portland cement, as specified in ASTM C150. Precast concrete sections, cones, and grade rings shall be joined using preformed joint sealant only. Use of mortar will not be allowed as joint sealant. All manholes shall have cast-in-place concrete bases and channels with inverts to match the adjoining pipes. All manhole bases shall be a minimum of 10 inches thick.
 - i. Manholes shall comply with City of Morgan Hill Standard Details for Construction.
 - ii. Joint-Seal Material, or Approved Equal: Ram-Nek, K.T. Snyder Company.
- C. Castings: Castings for manhole frames and covers and drainage inlet frames and grates shall conform to Contract Documents.
- D. Concrete Sealant: All precast concrete structures shall be waterproofed by grouting all joints and painting the interior of the structure with sodium silicate, or approved equivalent material.

2.05. DESIGN LOADS

- A. Vertical Loads: Design all precast manhole rings and accessories to support an AASHTO H-20 truck loading, in addition to soil weight above sloping ring sections and the dead load of all material supported above.
- B. Lateral Loads: Lateral loads shall be as dictated by the following formula or the geotechnical report requirements, whichever are more stringent.
 - i. Operating: $95 \times H$ (psf) triangular equivalent fluid pressure for dead load plus a live load surcharge from an H-20 truck, including impact.
 - ii. Seismic: $23 \times H^2$ (psf) uniform pressure distribution.
 - iii. Where H = depth below finished grade.

Part 3 - EXECUTION

3.01. WORKMANSHIP

- A. Manholes shall be sound watertight structures, constructed as shown on the Contract Documents. The type of manhole and its location is to be as shown on the Contract Documents. The manhole shall be constructed to the rim elevations shown on the Contract Documents. In paved areas, the Contractor shall set the manhole rim after backfill and site settlement to match the proposed finish pavement elevation based on pavement restoration and pavement overlay requirements, if applicable.
- B. Manhole Protection:
 - i. Particular care must be taken to protect new and existing manholes from damage and to keep rock, dirt, or debris from entering the sewer.
 - ii. On new manholes, or manholes that have had frame and cover removed, a steel cover of adequate strength, close fitted and well secured, shall be installed over the manhole opening until the frame and cover are permanently installed.
 - iii. Ground or surface water shall not be allowed to drain into or be discharged to existing sewers. Temporary watertight plugs shall be installed by the Contractor to affect this protection.
 - iv. Protective measures to prevent construction debris from entering the sewer system, such as "false bottoms" placed in the manhole, shall be installed when construction work is being performed at manholes that are in service.

C. Precast Manhole Base:

- i. In location(s) show in the plans, the base shall be pre-cast with Class A ASTM C478 concrete and shall be as specified in the Contract Documents.
- ii. Precast manhole base shall not be allowed unless shown on the plans or unless approved, in writing, by the Engineer.

D. Precast Manhole Shaft:

- i. The manhole shaft shall be composed of precast concrete sections.
- ii. Precast concrete sections for manholes shall be in accordance with the Contract Documents and shall conform to the requirements of ASTM C478. The cone section shall be concentric unless eccentric is specified elsewhere or directed by the Engineer and placed as shown on the Contract Documents. Manhole shaft shall be waterproofed by applying grout at all joints and painting with sodium silicate or other equivalent material as approved by the Engineer.
- iii. Joints between precast concrete sections shall have a "Ram-Nek" flexible plastic gasket installed between the tongue and groove joint to make a watertight joint. "Ram-Nek" sections shall be overlapped a minimum of 3 inches. After the shaft is in place, the joint shall be trimmed smooth with a sharp tool on the inside of the manhole.
- iv. Manhole sections shall be ordered without rungs.
- v. The grade rings installed height shall not exceed 12 inches, and a minimum number of grade rings shall be used. Grade rings shall be waterproofed by applying grout at all joints and painting with sodium silicate or other equivalent material as approved by the Engineer.
- vi. Sodium silicate sealant shall contain a colored dye to ensure entirety of structure interior has been coated.

E. Manhole Collar:

- i. Unless otherwise specified by the Engineer, a concrete collar shall be poured around the frame and shaft so as to securely anchor the frame to the shaft. The collar shall extend to the bottom of the lowest grade ring, as shown on the Contract Documents.
- ii. Concrete shall be poured around the manhole frame and shaft as shown on the Contract Documents.

- F. An approved rubber waterstop gasket shall be installed for all pipe at all manhole connections. For new manhole construction, the waterstop shall be placed in the manhole base and centered under the manhole wall. The waterstop shall be firmly fitted around the pipe exterior and cast into the structure base.
- G. Precast concrete sections shall be set so as to be vertical, with sections in true alignment. The joint of the previously set section shall be covered with sealing compound primer and joint sealant before the next section is placed.
- H. Connections to manufactured, precast items shall be made by casting sections of pipe into the items, using nonshrink grout, and using an approved resilient connector as shown on the Contract Documents.
- I. All precast concrete structures shall be installed in strict conformance with the manufacturer's written instructions, on a well-compacted foundation, as specified in the Contract Documents. After installation of concrete manholes and concrete manhole risers on junction structures, the Contractor shall apply concrete waterproofing sealant to the interior and exterior of manhole barrels and manhole risers. The Contractor shall allow sufficient time for sealant to cure, prior to backfill, in accordance with the manufacturer's written instructions.
- J. Concrete manhole collars shall be installed as indicated on the Contract Documents. Paving around the manhole shall be in accordance with the Contract Documents. Openings in manholes shall be protected from construction loads, debris, and unauthorized entry.
- K. CORE DRILL, CAREFULLY CHIP OUT, OR REMOVE BRICKS TO CREATE OPENINGS TO EXISTING manholes where new pipes are to connect. The new pipe shall be inserted into the opening with a GPK sanded manhole adapter, or approved equal, conforming to this Section and as shown on the Drawings, fitted around the pipe exterior. The annular space between the pipe outside diameter and the cored opening shall be packed with non-shrink grout. After connection the Contractor shall rechannel the inside of the existing manhole base to provide a smooth flow channel transition to the newly installed pipe. The Contractor shall plug any holes remaining from abandoned lines with concrete or non-shrink grout.

3.02. TESTING

All precast concrete structures shall be tested in accordance with the Contract Documents.

****END OF SECTION****