

June 2, 2020

Re: Storm Sewer and Drainage Improvements
Britton, South Dakota
A-6786

Bid Opening: **June 4, 2020**
2:00 pm Local Time

ADDENDUM NUMBER 1


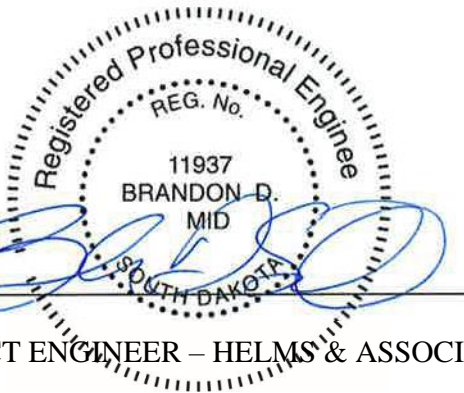
The following modifications become a part of the original plans and specifications, taking precedence over the items that may conflict. The bidder shall note receipt and make acknowledgement of the addendum on his bid form, incorporating its provisions in his bid.

CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS

1. CONTRACT DOCUMENTS: SECTION 00 52 14, ARTICLE 4- Contract Times, 4.02 A, page 67: *Add the following sentence to the end of the paragraph:* Asphalt Paving shall be completed within one calendar year of the substantial completion. Asphalt Paving shall be completed the following construction season.

2. PART 2, Division 33 00 00: *Add the attached specification.*

ALL OTHER ITEMS OF THE PLANS AND SPECIFICATIONS REMAIN UNCHANGED

BY: 


PROJECT ENGINEER – HELMS & ASSOCIATES

Acknowledge receipt of the Addendum by inserting its number on the Bid Form. Failure to do so may subject bidder to disqualification. This Addendum forms a part of the Contract Documents. It modifies them as above.

SECTION 33 39 13 - MANHOLES AND CASTINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. The general provisions of the Contract, including General and Supplementary Conditions and the provisions of Division 1, Special Requirements apply to Work specified in this Section.
- B. Related Work Specified Elsewhere:
 - 1. Traffic Control - Section 01 55 26
 - 2. Curbs, Gutters, Sidewalks and Driveways - Section 32 16 00
 - 3. Existing Underground Utilities - Section 33 01 00

1.02 DESCRIPTION OF WORK

- A. The Work covered under these specifications shall include the furnishing of all material, labor, tools, and equipment necessary to furnish, install, and construct complete in place all manholes as shown on the drawings and specified herein.
- B. When the term "manhole" is used in these specifications, it shall mean a structure that is placed on the storm sewer line to permit entry, inspection, cleaning, and repair of the storm sewer, and shall apply to all types of manholes whether standard, drop, flow measuring, or pond control.

1.03 JOB CONDITIONS

- A. Existing underground utilities, as shown on the drawings, are located in accordance with available data, but locations may vary and cannot be guaranteed. The exact locations shall be determined by the Contractor as work proceeds. Excavation work shall be done carefully so as to avoid damaging existing work.
- B. Contractor shall provide for protection, temporary removal and replacement or relocation of said obstructions as required for the performance of the work required in these contract documents.

1.04 SUBMITTALS

- A. The Contractor shall submit for review copies of shop drawings for the materials as specified herein in accordance with the requirements of Section 01 33 23.

PART 2 PRODUCTS

2.01 MANHOLES

- A. Manholes shall be constructed of concrete or precast concrete with bases, rings, and covers according to the dimensions and details as shown on the plans or as called for in the specifications.
- B. The materials used shall conform to the following requirements:
 - 1. Concrete shall conform to the requirements of Division 3 of these specifications.
 - 2. Concrete reinforcing shall be Class 60 and conform to the requirements of Division 3 of these specifications.

3. Precast manhole sections and bases shall be of the class as shown on the drawings and shall conform to ASTM C-478.

2.02 CASTINGS

- A. Gratings and covers shall be of the standard design of the manufacturer. All castings shall be of uniform quality, free from blowholes, shrinkage, cracks, distortion, or other defects affecting strength and appearance. They shall be smooth and well cleaned.
- B. Metal used in the manufacture of castings shall conform to ASTM A48, Class 35B for gray iron or ASTM A536, Grade 65-45-12 for ductile iron.
- C. All castings shall be manufactured true to pattern; component parts shall fit together in a satisfactory manner. Round frames and covers shall have continuously machined bearing surfaces to prevent rocking and rattling.
- D. All cast dimensions may vary 1/2 the maximum shrinkage possessed by the metal or plus or minus 1/16 inch per foot.
- E. All weights shall not exceed the manufacturer's published weights by plus or minus 5%.
- F. All castings shall exceed proof load requirements of 16,000 lbs. The proof load test results shall be furnished upon request. The proof load test procedure shall be in accordance with Federal Specification A-A 60005.
- G. Standard manhole castings and covers will provide a minimum 24.0 inches clear opening for access. Manholes will have a minimum height of 7.0 inches and a minimum base width of 35.25 inches. Manhole lids will be provided with a rubber gasket to provide a self-sealing water tight lid when installed. Lids will be furnished with concealed pick holes.

2.03 LADDERS AND STEPS

- A. Steps when called for on the detailed drawings and specifications shall conform to the requirements shown thereon and as supplemented herein.
- B. Manhole Steps will have a minimum step width of 11.0" and have a minimum 5.75" projection from the wall.
- C. Steps will have copolymer polypropylene cover with 1/2 inch ASTM A615 Grade 60 Steel reinforcement. All steel will be powder coated as per ASTM A934.

2.04 MANHOLE WALL JOINT SEALANT

- A. Manholes will be constructed with flexible rubber joints meeting the requirements of C990, "Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants."
- B. It is also recommended, but not specifically required, that a flexible gasket material be used on each joint to insure sealing of manhole wall joints. Flexible sealants may be RAM-NEK as manufactured by Henry Company, Houston Texas; ConSeal as manufactured by Concrete Sealants, Inc., New Carlisle, Ohio; Polylok's Butyl Joint Sealant, Polylok, Incorporated, Wallingford, CT; or Engineer approved equal.
- C. **Under no conditions will spray foam insulation of any form or brand be used to seal manhole joints.**

2.05 MANHOLE INTERIOR LINING

- A. Not applicable

2.06 MANHOLE WALL - CASTING SEALANT

- A. Unless otherwise shown on the plans, sealant material meeting the requirements of Paragraph 2.04-A above shall be used to make a watertight seal between the manhole wall and casting.
- B. When shown on the plans, the manhole wall - casting joint shall be sealed with an internal flexible rubber seal that conforms to the following requirements:
 - 1. The rubber sleeve shall have a minimum thickness of 3/16 inches. The rubber sleeve shall be corrugated to allow up to 2 inches of vertical and horizontal movement without stretching the material. The rubber sleeve shall have a minimum unexpanded vertical height of 6 inches. The rubber sleeve material shall have the physical properties as shown in Table I.

TABLE I - RUBBER SLEEVE

PHYSICAL PROPERTIES	
Tensile Strength	1200 psi
Elongation at break	350% min.
Hardness (Durometer)	45 \ 5
Accelerated oven aging	max. 15% decrease of tensile, 20% of elongation
Chemical resistance	no weight loss in 1N of sulfuric or hydrochloric acid
Compression set	25% maximum decrease
Water absorption	max. 10% increase by weight
Ozone resistance	rating 0
Low temperature brittle point	No fracture at -40 degrees C.
Tear resistance	200 lb. f/in.
Splice strength	180 degree bend with no visible separation

- 2. The expansion bands shall be one piece; channeled 16-gauge stainless steel with a minimum width of 1-1/4 inches. The bands shall have a minimum 10-inch long adjustment slot which shall provide a minimum of 2-1/2 inches of diameter range. The bands shall be locked in place by the tightening of 2 self-locking stainless steel studs.

2.07 PIPE OPENING GASKET

- A. Unless otherwise shown on the plans, the pipe opening in the manhole wall shall be made watertight with a rubber gasket assembly meeting the requirements of ASTM C923 and the following:

1. GASKET:

Minimum Thickness of Gasket Material

8" Holes thru 16" Hole Sizes ----- 0.290" \ 0.025

18" Holes and Larger Hole Sizes ----- 0.300" \ 0.025

Minimum Compound Tensile

Strength of Rubber ----- 1,800 PSI

Elongation of Rubber ----- 450% - 550%

Shore A Durometer of Rubber ----- 42 \ 5

2. EXPANSION SLEEVE:

Type 304 Stainless Steel

Tensile Strength of Steel ----- 85,000 PSI
Yield Strength of Steel ----- 35,000 PSI
8" thru 26" Hole Sizes -----1.5" Wide 11-Gauge
28" Hole Sizes and Larger -----1.5" Wide 10-Gauge

3. TAKE UP CLAMPS:

Stainless Steel

Band, Saddle and Housing made of Type 302
Screw made of Type 305 Stainless Steel

PART 3 EXECUTION

3.01 LOCATIONS

A. Manholes shall be constructed at the locations and grades indicated on the plans.

3.02 EXCAVATION

A. The requirements of Section 31 23 16 shall apply to the excavation, backfilling, and compaction for manholes.

3.03 GENERAL CONSTRUCTION

- A. Manholes shall be constructed only when the temperature is above 32 degrees F. All Work shall be protected against freezing.
- B. The bottom of the foundations shall be not lower than 12 inches below the lines of the invert of the storm sewer at that point and shall be included in the unit price bid for manholes.
- C. Invert channels shall be smooth, accurately shaped, and in accordance with the plan elevations. Invert channels may be formed directly in the concrete of the manhole base, may be formed using a section of PVC of required size and length as form material, and pouring concrete around same on top of the manhole foundation, may be built up of brick work and mortar, may consist of half tile laid in the concrete base, or may be constructed by laying full section storm sewer pipe straight through the manhole and cutting out the top half after the manhole floor is constructed and sufficiently set. The floor of the manhole shall be constructed in such a manner as to drain into the invert properly.
- D. Manholes shall be built up so that the cover, when placed, will be at the grade required in the plans or as set by the Engineer.

3.04 PRECAST CONCRETE MANHOLES

- A. Monolithic precast concrete manholes shall be constructed in accordance with the details shown on the plans, as required by ASTM specification C478 and as specified hereinafter.
- B. Monolithic concrete and precast concrete manholes shall have offset cones; that is, one side shall be vertical.
- C. Precast base sections may be a base riser section and separate base slab or base section with integral floor. Cast in place bases shall be furnished as shown on the plans.
- D. Precast concrete manholes shall be placed using present acceptable construction methods.
- E. The openings in monolithic precast manhole sections shall be sealed using a rubber sleeve gasket to make a flexible watertight connection.

- F. All manhole sections shall be sealed with a double ring of sealant to form a watertight seal.
- G. All lifting holes in the manhole walls shall be carefully grouted with non-shrink grout prior to backfilling.

3.05 BACKFILLING

- A. After completion of footings, walls, and other construction below the elevation of the final grades and prior to backfilling, all forms shall be removed and the excavation cleaned of all trash and debris.
- B. The Contractor shall protect the manhole from all elements and from displacement during backfill operations. If any displacement of a manhole occurs, the Contractor shall repair all resulting damage and return the manhole to the original position required at his own expense.
- C. The backfill material shall conform to the requirements of Section 31 23 16.

3.06 CASTING PLACEMENT

- A. The manhole casting and cover shall be carefully centered and sealed in the opening manhole wall-casting. Sealant methods and material as shown on the plans.
- B. When an internal or external manhole casting sleeve is required. The Contractor shall install seal according to Manufacturer's requirement. Care shall be taken to insure seal is not damaged during installation. Contractor shall replace any damaged seals at no cost to Owner if damaged during installation procedures.

3.07 SURFACE FINISH

- A. The surface of the area shall be finished and smoothed to the lines and grades as shown on the plans.
- B. The requirements for the surface finish of the surrounding area shall conform to the requirements of the specifications relating to the surface to be replaced.

PART 4 MEASUREMENT AND PAYMENT

4.01 MEASUREMENT

- A. Manholes shall be measured in units as specifically called for in the Bid Form.

4.02 BASIS OF PAYMENT

- A. The price bid for standard, air release, inlet, outlet, or control manholes, complete in place, shall be full compensation for furnishing all materials, labor, equipment, and incidentals necessary to construct and place in satisfactory operating condition the manholes, including excavation, backfill, and concrete foundations.
- B. The price bid shall include and constitute full compensation for all manhole castings and covers, fittings, valves, linings, and other appurtenances as required therein.

* * * END OF SECTION * * *