

# Special Specification 7234

## Water and Sanitary Sewer



### 1. DESCRIPTION

Furnish, install, or replace water and sanitary sewer pipes, valves, meters and boxes, service connections, fire hydrant assemblies, pipefittings, encasement pipes manholes, and supporting materials in conformance with the City of Stephenville (CITY) requirements and details shown on the plans. Provide testing as required and request inspection of completed utility lines and appurtenances before being placed in service.

### 2. QUALIFICATION

Water and sewer utility improvements included in this project must be performed by a Contractor who meets the following qualifications and must demonstrate the following:

- Firm with at least five yr. of experience in the construction of public water or sanitary sewer projects.
- Firm with equipment capable of performing the work.

### 3. MATERIALS

Furnish all materials in accordance with the requirements shown on the plans or pick-up materials furnished by the utility companies and deliver to the project site. See Article 5, "Measurement," Table 1 – Section A: Water and Table 2 – Section B: Sewer, in this document.

Submit two (2) copies of information to CITY from all manufacturers for materials and equipment to be used on the project. This information must include:

- Product specifications sufficient to allow the CITY to determine whether the materials and equipment conform to the design concepts and project specifications.
- Information on all warranties provided by the manufacturer.
- All submittals shall be stamped by the manufacturer indicating that the manufacturer has checked the submittal for compliance with the specifications. Unstamped or certified submittals shall be returned to the manufacturer unprocessed.
- Submittals shall be provided to CITY before or at the preconstruction meeting. Construction will not be allowed to proceed until all submittals have been approved or a written waiver is issued by the CITY.

### 4. TESTING AND INSPECTION

4.1. Testing. Provide testing in conformance with City of Stephenville requirements or as directed by the City Engineer or designated representative. Perform the following testing as minimum:

- For water mains: hydrostatic test and disinfection/sterilization test.
- For sewer lines: Low-pressure air test, deflection (Mandrel) test, Vacuum test, and Closed Circuit Television (CCTV) Inspection.

4.2. **Inspection.** All water mains, sewer lines, and their appurtenances will be inspected by a representative of CITY and their decision of acceptability, based on the plans and specifications, on the installation will be final. CITY will hold a minimum of two (2) final inspections; one (1) upon completion of utility installation and one (1) upon roadway completion.

For all tie-ins to CITY utility system, especially any tapping sleeves and valves, a CITY representative must be present unless noted otherwise in writing by CITY.

## 5. CONSTRUCTION

Protect all water and sewer mains, vaults, and appurtenances at all times during the construction. Promptly repair, at no additional cost to CITY, any damage to the existing water or sewer systems and any interruption to the services, such as line stoppages or breakage caused as a result of Contractor's operations.

- 5.1. **Specifications.** Perform the work in such a manner consistent with the City of Stephenville standards and specifications. Reference the following attached specifications for the work to be performed.

This project shall be constructed by utilizing the November 2017 edition of the North Central Texas Council of Government's Public Works Construction Standards. A copy of the Standard Specifications for Public Works Construction may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Arlington, Texas, Telephone (817) 640-3300. Any permissible deviation from these standard specifications shall be noted in the General Provisions, Special Contract Requirements and Bid Item Definitions, City of Stephenville Amendments to NCTCOG Specifications, or Construction Plans.

- 5.2. **Trash Collection.** When Contractor is working in an area and street is impassable to local trash collection, Contractor shall be responsible for coordinating with local franchise trash collection service up to and including collecting trash in the morning and transporting it to the nearest street intersection that is not affected by the construction work zone.
- 5.3. **Notice.** Contractor shall notify all residences and businesses in the affected area a minimum of 24 hr. before any disruption in utility service. Residents shall be notified either in person or by placing a notice on the door of the dwelling. The notice shall contain the reason for the disruption of service, the time the utility is to be turned off, and the approximate length of time until the service is restored.

## 6. MEASUREMENT

Utility items will be measured as follows:

Table 1

### Section A: Water

Water Utility Pay Item	TxDOT Description Code	Stephenville Bid Item Description	Unit
1	7234 6001	Trench Excavation Protection	LF
2	7234 6002	3/4" Water Service Connections	EA
3	7234 6003	3/4" Water Service Lines	EA
4	7234 6004	Furn & Inst 8" PVC C900 DR18 Wat. Main	LF
5	7234 6005	Furn & Inst 6" PVC C900 DR18 Wat. Main	LF
6	7234 6006	Furn & Inst 4" PVC C900 DR18 Wat. Main	LF
7	7234 6007	Piping Connection (Temp and Permanent)	EA

8	7234 6008	Furn & Inst 8" Resil. W. Gate Valve	EA
9	7234 6009	Furn & Inst 6" Resil. W. Gate Valve	EA
10	7234 6010	Furn & Inst 4" Resil. W. Gate Valve	EA
11	7234 6012	Furn & Inst 1" Co Air Rel/Vac Relief	EA
12	7234 6013	Furn & Inst 6"x 8" Reducer	EA
13	7234 6014	Furn & Inst 4"x 8" Reducer	EA
14	7234 6015	Inst Std Fire Hydrant & 6" Gate Valve	EA
15	7234 6016	Furn & Inst Thrust Block	EA
16	7234 6017	Furn & Inst Anchor Collar	EA
17	7234 6018	Steel Gas Main Crossing	EA
18	7234 6019	Sewer Crossing	EA
19	7234 6020	Testing	LS
20	7234 6021	Disinfection	LS
21	7234 6022	Cut & Plug Existing Water main	EA
22	7234 6023	Abandon Existing Water main	LF
23	7234 6024	Ductile Iron Fittings	TON

Table 2

## Section B: Sewer

Sewer Utility Pay Item	TxDOT Description Code	Stephenville Bid Item Description	Unit
1	7234 6001	Trench Excavation Protection	LF
2	7234 6025	Remove & Dispose 4' Dia. MH	EA
3	7234 6026	Remove & Dispose 5' Dia. MH	EA
4	7234 6027	Abandon/Remove Exist Sanitary Sewer	LF
5	7234 6028	Furn & Inst 8" PVC SDR 35 Sewer Main	LF

6	7234 6029	Furn & Inst 8" PVC 150 Pressure Class	LF
7	7234 6030	Furn & Inst 12" PVC SDR 35 Sewer Main	LF
8	7234 6031	16" 150 PSI Sewer Main	LF
9	7234 6032	24" 150 PSI Sewer Main	LF
10	7234 6033	Furn & Instal 4' Dia. Manhole	EA
11	7234 6034	Furn & Instal 5' Dia. Manhole	EA
12	7234 6035	Furn & Instal 5' Dia. Drop Manhole	EA
13	7234 6036	Extra Depth for STD Manhole	VF
14	7234 6037	Extra Depth for DROP Manhole	VF
15	7234 6038	Extra Depth for 5' Dia. Manhole	VF
16	7234 6039	Install Cleanout	EA
17	7234 6040	Install 4" Service Lateral Connection	EA
18	7234 6041	Connect Main to Exist Sanitary Sewer	EA
19	7234 6042	Television Inspection	LF
20	7234 6043	By-Pass Pumping	LS
21	7234 6044	Pressure pipe Encasement	LF
22	7234 6045	Class G Concrete Embedment	LF
23	7234 6020	Testing	LS

## 7. PAY ITEM DESCRIPTIONS

Utility items are described as follows:

### 7.1. WATER

7.1.1. **Water Pay Item No. 1 Trench Excavation Protection.** This Item includes providing and removing acceptable trench safety for trenches 3 ft. deep or more. Job conditions, locations of utilities, and pavement conditions must be considered and work must be in accordance with NCTCOG Item 107.19.3. Measurement and payment for This Item must be by the contract unit price bid per feet and must include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

7.1.2. **Water Pay Item No. 2 Furnish and Install 3/4 in. Water Service Connection.** This Item includes the furnishing and installation of 3/4-in. Short and Long Service Connections in accordance with City Standard Detail, Single Service Connection, shown on the plans. This Item includes Saddle Taps and connections for 3/4-in. Short and Long Water Service Lines. Measurement and payment for This Item must be by the contract unit price per each (EA) and must include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- 7.1.3. **Water Pay Item No. 3 Furnish and Install 3/4 in. Water Service Lines.** This Item includes the furnishing and installation of 3/4 in. Short and Long Services in accordance with City Standard Detail, Single Service Connection, shown on the plans. This Item includes Saddle Tap and 10 ft. of 3/4-in. Service Line for Short Taps. This Item also includes Saddle Tap and 45 ft. of 3/4 in. Service Line for Long Taps. Measurement and payment for This Item must be by the contract unit price per each (EA) and must include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.4. **Water Pay Item No. 4 Furnish and Install 8 in. PVC Water Line.** This Item consists of the furnishing and installation of 8 in. Polyvinyl Chloride (PVC) DR18 C900 (Class 150) Water Pipe in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.5. **Water Pay Item No. 5 Furnish and Install 6 in. PVC Water Line.** This Item consists of the furnishing and installation of 6 in. Polyvinyl Chloride (PVC) DR18 C900 (Class 150) Water Pipe in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.6. **Water Pay Item No. 6 Furnish and Install 4 in. PVC Water Line.** This Item consists of the furnishing and installation of 4 in. Polyvinyl Chloride (PVC) DR18 C900 (Class 150) Water Pipe in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.7. **Water Pay Item No. 7: Piping Connection (Temp and Permanent)** This Item consists of the furnishing and installation of temporary and permanent piping connections shown on the plans and NCTCOG Item 502.10 and 506.6. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.8. **Water Pay Item No. 8 Furnish and Install 8 in. Gate Valves.** This Item consists of the furnishing and installation of 8 in. vertical Gate Valves in accordance with City Standard Detail, 4 in. to 12 in. GATE VALVE, shown on the plans and NCTCOG Item 502.6. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.9. **Water Pay Item No. 9 Furnish and Install 6 in. Gate Valves.** This Item consists of the furnishing and installation of 6 in. vertical Gate Valves in accordance with City Standard Detail, 4 in. to 12 in. GATE VALVE, shown on the plans and NCTCOG Item 502.6. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.10. **Water Pay Item No. 10 Furnish and Install 4 in. Gate Valves.** This Item consists of the furnishing and installation of 4 in. vertical Gate Valves in accordance with City Standard Detail, 4 in. to 12 in. GATE VALVE, shown on the plans and NCTCOG Item 502.6. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- 7.1.11. **Water Pay Item No. 11 Furnish and Install 1 in. Combination Air Release / Vacuum Relief Valve.** This Item consists of the furnishing and installation of 1 in. combination air release / vacuum relief valve in accordance with City Standard Detail, COMBINATION AIR RELEASE/VACUUM RELIEF VALVE, shown on the plans and NCTCOG Item 502.6. Measurement and payment for This Item shall be by the contract unit price per each and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.12. **Water Pay Item No. 12 Furnish and Install 6 in. x 8 in. Reducer.** This Item consists of the furnishing and installation of 6 in. x 8 in. reducer in accordance with City Standards shown on the plans and NCTCOG Item 502.5. Measurement and payment for This Item shall be by the contract unit price per each and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.13. **Water Pay Item No. 13 Furnish and Install 4 in. x 8 in. Reducer.** This Item consists of the furnishing and installation of 6 in. x 8 in. reducer in accordance with City Standards shown on the plans and NCTCOG Item 502.5. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.14. **Water Pay Item No. 14 Furnish and Install Standard Fire Hydrant & 6 in. Gate Valve.** This Item consists of the furnishing and installation of City Standard Fire Hydrants in accordance with City Standard Details, FIRE HYDRANT ELEVATION & FIRE HYDRANT PLAN VIEW, shown on the plans and the furnishing and installation of 6 in. Gate Valves in-line with Fire Hydrants (Refer to respective Pay Item). Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.15. **Water Pay Item No. 15 Furnish and Install Thrust Block.** This Item consists of the furnishing and installation of thrust blocking in accordance with City Standards shown on the plans and NCTCOG Item 502.4. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.16. **Water Pay Item No. 16 Furnish and Install Anchor Collar.** This Item consists of the furnishing and installation of anchor collars in accordance with City Standard Details, ANCHOR COLLAR DETAIL, shown on the plans. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.17. **Water Pay Item No. 17 Furnish and Install Steel Gas Main Crossing.** This Item consists of the furnishing and installation of steel gas main crossings as shown on the plans. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.18. **Water Pay Item No. 18 Furnish and Install Sewer Crossing.** This Item consists of the furnishing and installation of sewer crossings as shown on the plans. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.19. **Water Pay Item No. 19 Testing.** This Item includes the hydrostatic testing of water mains as shown on the plans and in accordance with NCTCOG Item 506.5. Measurement and payment for This Item shall be by the contract unit price per lump sum (LS) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.20. **Water Pay Item No. 20 Disinfection.** This Item includes the hydrostatic testing of water mains as shown on the plans and in accordance with NCTCOG Item 506.7 PURGING AND DISINFECTION OF WATER CONDUITS. Measurement and payment for This Item shall be by the contract unit price per lump sum (LS) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.1.21. **Water Pay Item No. 21 Cut & Plug Existing Water Line.** This Item includes the cutting and plugging of existing water mains, to be abandoned, shown on the plans. Measurement and payment for This Item shall

be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- 7.1.22. **Water Pay Item No. 22 Abandon Existing Water Main.** This Item includes the abandonment of existing water mains, in accordance with detail WATERLINE ABANDONMENT DETAIL shown on the plans. Measurement and payment for This Item shall be by the contract unit price per linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work. The linear footage shall be only the footage necessary to complete the abandonment and not excessive in the opinion of the CITY representative.
- 7.1.23. **Water Pay Item No. 23 Furnish and Install Ductile Iron Fittings.** This Item consists of the furnishing and installation of all Ductile Iron fittings in accordance with NCTCOG Item 501.7. Measurement and payment for This Item shall be by the contract unit price bid per the ton (TNS) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2. **SEWER**
- 7.2.1. **Sewer Pay Item No. 1 Trench Excavation Protection.** This Item includes providing and removing acceptable trench safety for trenches 3 ft. deep or more. Job conditions, locations of utilities, and pavement conditions shall be considered and work shall be in accordance with NCTCOG Item 107.19.3. Measurement and payment for This Item shall be by the contract unit price bid per linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.2. **Sewer Pay Item No. 2 Remove and Dispose of 4 ft. Dia. Manhole.** This Item includes the abandonment of existing 4 ft. diameter manholes, shown on the plans in accordance with detail SEWER MANHOLE ABANDONMENT DETAIL. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.3. **Sewer Pay Item No. 3 Remove and Dispose of 5 ft. Dia. Manhole.** This Item includes the abandonment of existing 5 ft. diameter manholes, shown on the plans in accordance with detail SEWER MANHOLE ABANDONMENT DETAIL. Measurement and payment for This Item shall be by the contract unit price per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.4. **Sewer Pay Item No. 4 Abandon / Remove Existing Sanitary Sewer.** This Item includes the abandonment of existing sanitary sewer lines, as shown on the plans in accordance with detail SEWER PIPE AND SIPHON ABANDONMENT DETAIL. Measurement and payment for This Item shall be by the contract unit price per linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work. The linear footage shall be only the footage necessary to complete the abandonment and not excessive in the opinion of the CITY representative.
- 7.2.5. **Sewer Pay Item No. 5 Furnish and Install 8 in. PVC SDR 35 Sewer Main.** This Item consists of the furnishing and installation of 8 in. Polyvinyl Chloride (PVC) SDR 35 Sewer Pipe as shown on the plans in accordance with NCTCOG Item 501.17. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.6. **Sewer Pay Item No. 6 Furnish and Install 8 in. PVC 150 Pressure Class.** This Item consists of the furnishing and installation of 8 in. Polyvinyl Chloride (PVC) SDR 26 Sewer Pipe as shown on the plans in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and

payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- 7.2.7. **Sewer Pay Item No. 7 Furnish and Install 12 in. PVC SDR 35 Sewer Main.** This Item consists of the furnishing and installation of 12 in. Polyvinyl Chloride (PVC) SDR 35 Sewer Pipe as shown on the plans in accordance with NCTCOG Item 501.17. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per the linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.8. **SEWER PAY ITEM No. 8 Furnish and Install 16 in. 150 PSI Sewer Main.** This Item consists of the furnishing and installation of 16 in. Polyvinyl Chloride (PVC) SDR 26 Sewer Pipe as shown on the plans in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item.
- 7.2.9. **Sewer Pay Item No. 9 Furnish and Install 24 in. 150 PSI Sewer Main.** This Item consists of the furnishing and installation of 24 in. Polyvinyl Chloride (PVC) SDR 26 Sewer Pipe as shown on the plans in accordance with NCTCOG Item 501.14. Embedment and backfill shall be in accordance with the City Standard Details, EMBEDMENT AND BACKFILL UNDER NON-LOAD BEARING SURFACES & EMBEDMENT AND BACKFILL UNDER LOAD BEARING SURFACES WITH PAVEMENT REPAIR, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item.
- 7.2.10. **Sewer Pay Item No. 10 Furnish and Install 4' Dia. Manhole.** This Item consists of the furnishing and installation of 4 ft. diameter manholes as shown on the plans and in accordance with NCTCOG Item 502.1. Embedment and backfill shall be in accordance with the City Standard Details, SANITARY SEWER MANHOLE, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.11. **Sewer Pay Item No. 11 Furnish and Install 5' Dia. Manhole.**  
This Item consists of the furnishing and installation of 5 ft. diameter manholes as shown on the plans and in accordance with NCTCOG Item 502.1. and Standard Details, SANITARY SEWER MANHOLE, as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.12. **Sewer Pay Item No. 12 Furnish and Install 5' Dia. Drop Manhole.** This Item consists of the furnishing and installation of 5 ft. diameter drop manholes as shown on the plans and in accordance with NCTCOG Item 502.1.4. and City Standard Details, MANHOLE WITH INTERIOR DROP SYSTEM, shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.13. **Sewer Pay Item No. 13 Extra Depth for Standard Manhole.** This Item consists of the furnishing and installation of extra depth for standard manholes as shown on the plans. This Item does not cover extra depth for 5-ft. diameter manholes. Measurement and payment for This Item shall be by the contract unit price bid per vertical foot (VF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.14. **Sewer Pay Item No. 14 Extra Depth for Drop Manhole.** This Item consists of the furnishing and installation of extra depth for drop manholes as shown on the plans. Measurement and payment for This Item shall be



by the contract unit price bid per vertical foot (VF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

- 7.2.15. **Sewer Pay Item No. 15 Extra Depth for 5 ft. Dia. Manhole.** This Item consists of the furnishing and installation of extra depth for 5 ft. diameter manholes as shown on the plans. Measurement and payment for This Item shall be by the contract unit price bid per vertical foot (VF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.16. **Sewer Pay Item No. 16 Install Cleanout.** This Item consists of the furnishing and installation of sanitary sewer cleanouts as shown on the plans and in accordance with NCTCOG Item 502.2. and City Standard Details, CLEANOUT, as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.17. **Sewer Pay Item No. 17 Install 4 in. Service Lateral Connection.** This Item consists of the furnishing and installation of sanitary sewer service lines as shown on the plans and in accordance with NCTCOG Item 502.10. and City Standard Details, STANDARD SINGLE SERVICE CONNECTION, as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials,
- 7.2.18. **Sewer Pay Item No. 18 Connect Main to Existing Sanitary Sewer.** This Item consists of the furnishing and installation of sanitary sewer service lines as shown on the plans and in accordance with NCTCOG Item 502.10. as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per each (EA) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.19. **Sewer Pay Item No. 19 Television Inspection.** This Item consists of television inspection of sanitary sewer lines. Following deflection testing, the entire line shall be inspected by TV/video camera. The televising shall be witnessed by a representative of the City of Stephenville Public Works Department and shall be recorded on video in a format acceptable to the City of Stephenville, with the sewer line stationing identified in the picture. As the camera is advanced through the line, the stationing shall also advance on the screen. The end product shall show the pipeline interior features and stationing easily recognized. This shall require proper lighting in order to identify detail and not have glare. A written report must accompany the video tapes and provide (as a minimum) the following information:
- company performing the service and the technician responsible for the work,
  - times and dates of the inspection,
  - significant findings (with station numbers):
    - leaks,
    - deflected pipe,
    - improper joint alignment,
    - pipe failures (cracks, cave-ins, etc.), and
    - collection of debris, sediment or other material.
  - Type of equipment used.
- Any defects located during television inspection will be corrected before acceptance of project.
- 7.2.20. **Sewer Pay Item No. 20 By-Pass Pumping.** This Item consists of the furnishing and installation of any necessary bypass pumping. Measurement and payment for This Item shall be by the contract unit price bid per lump sum (LS) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.
- 7.2.21. **Sewer Pay Item No. 21 Pressure Pipe Encasement.** This Item consists of the furnishing and installation of pressure pipe encasement as shown on the plans as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract

unit price bid per linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

7.2.22. **Sewer Pay Item No. 22 Class G Concrete Embedment.** This Item consists of the furnishing and installation of class G concrete embedment as shown on the plans as shown on the plans. Embedment, backfill, and tracer wire are considered subsidiary to This Item. Measurement and payment for This Item shall be by the contract unit price bid per linear foot (LF) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

7.2.23. **Sewer Pay Item No. 23 Testing.** Sewer piping shall be low-pressure air tested in accordance with NCTCOG Item 507.5.1.3 and deflection tested with mandrel in accordance with NCTCOG Item 5.7.5.1.4. Manholes shall be tested in accordance with NCTCOG Item 502.1.5 by hydrostatic exfiltration or vacuum testing, or other method as approved by TCEQ and determined by the OWNER. Manholes shall be tested after installation with all connections (existing and proposed) in place. Drop-connections and gas sealing connections shall be installed before testing. Measurement and payment for This Item shall be by the contract unit price bid per lump sum (LS) and shall include all materials, labor, tools, equipment, and incidentals necessary to complete the work.

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## 8. PAYMENT

The work performed and materials furnished in accordance with This Item and measured as provided by under "Measurement," will be paid for at the unit prices bid for the various items specified on the plans and as defined in the November 2017 edition of the North Central Texas Council of Government's Public Works Construction Standards. Any permissible deviation from these standard specifications shall be noted in the General Provisions, Special Contract Requirements and Bid Item Definitions, City of Stephenville Amendments to NCTCOG Specifications, or Construction Plans.