

# Special Specification 7221

## Water Mains, Sewer Lines and Appurtenances Replacements



### 1. DESCRIPTION

Furnish and install or replace water pipe, water valves, water meters and boxes, water service connections, fire hydrant assemblies, pipe fittings, encasement pipes for water lines, sewer pipe, manholes and supporting materials in conformance to the City of Fort Worth requirements and details shown on the plans. Obtain necessary permit(s), provide testing as necessary, and request inspection of the completed water and sewer lines before being placed in service.

#### 1.1. Prequalification.

In addition to TxDOT's prequalification, water and sewer utility improvements included in this project must be performed by a contractor who is prequalified by the Fort Worth Water Department at the time of the bid opening. Reference the following City of Fort Worth specifications for bidder prequalification requirements:

- ▲ 00 45 11 Bidders Prequalifications
- ▲ 00 45 12 Prequalification Statement
- ▲ 00 45 13 Bidder Prequalification Application

### 2. MATERIALS

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

### 3. CONSTRUCTION

Protect all water mains, sewer lines, vaults and appurtenances at all times during construction. Promptly repair, at no cost to the authority, any damage to the existing water or sewer system and/or any interruption to the services such as line stoppages or breakage caused by Contractor's operation. Follow "Location of Existing Utilities Handout" per City of Fort Worth Requirements

3.1. **Specifications.** Perform the work in such a manner consistent with current City of Fort Worth standards and specifications. Reference the following attached Specifications for the work to be performed:

#### 3.1.1. Division 00 - General Conditions

- 00 45 11 Bidders Prequalifications
- 00 45 12 Prequalification Statement
- 00 45 13 Bidder Prequalification Application
- 00 61 19 Maintenance Bond

#### 3.1.2. Division 01 - General Requirements

- 01 25 00 Substitution Procedures
- 01 32 33 Preconstruction Video
- 01 33 00 Submittals
- 01 60 00 Product Requirements

🚧 01 71 23 Construction Staking and Survey

3.1.3. Division 02 - Existing Conditions

- 02 41 13 Selective Site Demolition
- 02 41 14 Utility Removal/Abandonment
- 02 41 15 Paving Removal

3.1.4. Division 03 - Concrete

- 03 30 00 Cast-In-Place Concrete
- 03 34 13 Controlled Low Strength Material (CLSM)
- 03 34 16 Concrete Base Material for Trench Repair
- 03 80 00 Modifications to Existing Concrete Structures

3.1.5. Division 32 – Exterior Improvements

- 32 01 17 Permanent Asphalt Paving Repair
- 31 01 18 Temporary Asphalt Paving Repair
- 31 01 29 Concrete Paving Repair
- 32 12 16 Asphalt Paving
- 32 13 13 Concrete Paving
- 32 13 20 Concrete Sidewalks, Driveways and Barrier Free Ramps
- 32 13 73 Concrete Paving Joint Sealants
- 32 16 13 Concrete Curb and Gutters and Valley Gutters
- 32 91 19 Topsoil Placement and Finishing of Parkways
- 32 92 13 Hydro-Mulching, Seeding, and Sodding

3.1.6. Division 33 - Utilities

- 🚧 33 01 30 Sewer and Manhole Testing
- 🚧 33 01 31 Closed Circuit Television (CCTV) Inspection
- 🚧 33 04 10 Joint Bonding and Electrical Isolation
- 🚧 33 04 11 Corrosion Control Test Stations
- 🚧 33 04 12 Magnesium Anode Cathodic Protection System
- 🚧 33 04 30 Temporary Water Services
- 🚧 33 04 40 Cleaning and Acceptance Testing of Water Mains
- 🚧 33 04 50 Cleaning of Sewer Mains
- 🚧 33 05 10 Utility Trench Excavation, Embedment, and Backfill
- 🚧 33 05 13 Frame, Cover and Grade Rings
- 🚧 33 05 14 Adjusting Manholes, Inlets, Valve Boxes, and Other Structures to Grade
- 🚧 33 05 16 Concrete Water Vaults
- 🚧 33 05 17 Concrete Collars
- 🚧 33 05 22 Steel Casing Pipe
- 🚧 33 05 24 Installation of Carrier Pipe in Casing or Tunnel Liner Plate
- 🚧 33 05 26 Utility Markers/Locators
- 🚧 33 05 30 Location of Existing Utilities
- 🚧 33 11 05 Bolts, Nuts, and Gaskets
- 🚧 33 11 11 Ductile Iron Fittings
- 🚧 33 11 12 Polyvinyl Chloride (PVC) Pressure Pipe
- 🚧 33 11 13 Concrete Pressure Pipe, Bar-Wrapped, Steel Cylinder Type
- 🚧 33 12 10 Water Services 1in. to 2 in.
- 🚧 33 12 20 Resilient Seated Gate Valve

- 33 12 25 Connection to Existing Water Mains
- 33 12 40 Fire Hydrants
- 33 12 50 Water Sample Stations
- 33 12 60 Standard Blow-off Valve Assembly
- 33 31 20 Polyvinyl Chloride (PVC) Gravity Sanitary Sewer Pipe
- 33 31 50 Sanitary Sewer Service Connections and Service Line
- 33 39 10 Cast-in-Place Concrete Manholes
- 33 39 20 Precast Concrete Manholes
- 33 39 60 Epoxy Liners for Sanitary Sewer Structures

3.1.7. Technical Specifications listed are included for this Project by reference and can be viewed/downloaded from the City's Buzzsaw site at link shown below:

3.1.8. Link: <https://projectpoint.buzzsaw.com/fortworthgov/Resources?public>

3.1.9. Sitename: fortworthgov

3.1.10. Username: (public) - {Include the parenthesis}

3.1.11. Password: NO PASSWORD - {There is no password}

3.1.12. Path:

- Resources {Click on Chevron}
- Specifications for City Staff {Click on Chevron}
- Standard Specifications for All {Click on Chevron}
- Std Spec Div 33 Utilities {Click on Chevron}
- {Select and view folder}

### 3.2. Permits, Testing, Inspection, Construction Staking and Submittals.

3.2.1. **Permits.** Acquire all necessary permits from the City of Fort Worth to perform the work. The cost of applying for the permits will be subsidiary to the listed bid items. Please contact the following entities as needed:

- 👤 Fort Worth Water Department – Field Operations: 817-392-8296
- 👤 Fort Worth Transportation and Public Works – 817-392-8100

3.2.2. **Testing.** Provide testing for water mains and sewer lines in conformance to the City of Fort Worth requirements or as directed. Perform the following tests as a minimum:

- 👤 For Water Mains: hydrostatic test, poly pigging, and sterilization test
  - Reference Specification – 33 04 40 – “Cleaning and Acceptance Testing of Water Mains”
- 👤 For Sewer Lines: Low pressure air test, deflection (Mandrel) test, vacuum test, and Closed Circuit Television (CCTV) Inspection.
  - Reference Specification – 33 01 30 Sewer and Manhole Testing, 33 01 31 Closed Circuit Television (CCTV) Inspection.

All testing requirements for water and sewer lines will be subsidiary to the listed bid items.

3.2.3. **Inspection.** All water mains, sewer lines, and their appurtenances will be inspected by a representative of the City. Those representatives' decision of acceptability of the installation will be final. The City will hold two (2) final inspections, one at water and sewer line completion and the other at roadway completion for final utility grade adjustments according to Specification Section 33 05 14

3.2.4. **Construction Staking.** The construction staking and survey must be done by the Contractor according to the following City of Arlington specification section:

- 👤 Section C 1.12 - Construction Staking

3.2.5. **Submittals.** The Contractor must review, approve, and submit all Shop Drawings, Product Data, and

Samples required by the Contract Documents according to Section A 3.9 Shop Drawings, Product Data and Samples of the City of Arlington specifications, with reasonable promptness and in such sequence as to cause no delay in the Work or in the Work of the City or any separate Contractor.

#### 4. MEASUREMENT

Water main and sewer line replacement items will be measured as follow

Table 1  
Section A: Water

City of Fort Worth Bid Item Description	Unit	City of Fort Worth Item Number	City of Fort Worth Spec Number
Manhole Adjustment, Minor	EA	3305.0109	33 05 14
Ductile Iron Water Fittings w/Restraint (12" & Smaller)	Ton	3311.0001	33 11 11
Fire Hydrant	EA	3312.0001	33 12 40
Connection to Existing 4"-12" Water Main	EA	3312.0117	33 12 25
6" Gate Valve	EA	3312.3002	33 12 20
12" Gate Valve	EA	3312.3005	33 12 20
Aband/Fill Exist Water Pipe (6")	LF	9999.0001	02 41 14
Remove Exist Water Pipe (6")	LF	0241.1012	02 41 14
Relocate Exist Fire Hydrant	EA	9999.0002	02 41 14
Casing (Steel)(20IN)(Bored)	LF	9999.0003	33 05 22
Water Main Pipe (PVC)(2")	LF	9999.0004	33 11 12
Water Main Pipe (PVC)(6")	LF	3311.0161	33 11 12
Water Main Pipe (PVC)(12")	LF	3311.0461	33 11 12
Adjust Water Valve Box	EA	3305.0111	33 05 14
Remove Fire Hydrant	EA	9999.0005	33 12 40
Remove Water Valve and Box	EA	9999.0006	02 41 14
Remove Water Meter and Vault	EA	9999.0007	02 41 14
1" Water Service, Meter Relocation	EA	3312.2001	33 12 10

Table 2  
Section B: Sewer

City of Fort Worth Bid Item Description	Unit	City of Fort Worth Item	City of Fort Worth Spec
Manhole Adjustment, Minor	EA	3305.0109	33 05 14
4' Manhole	EA	3339.1001	33 39 10 33 39 20
4' Manhole External Drop	EA	3339.1002	33 39 10 33 39 20
Tie Existing Sanitary Sewer to Proposed Manhole	EA	9999.0008	33 31 50
Concrete Encase Sewer Pipe	CY	0330.0001	03 33 00
Connect Proposed Sanitary Sewer to Existing Manhole	EA	9999.0009	33 31 50
Sanitary Sewer (6") (PVC) (SDR-26)	LF	9999.0010	33 31 20
Sanitary Sewer (8") (PVC) (SDR-26)	LF	9999.0011	33 31 20

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**5. PAYMENT**

The work performed and materials furnished in accordance to this item and measured as provided by under "Measurement" will be paid for at the unit price bid for the various items specified in the plans. This price is for full compensation for furnishing all labor, tools, equipment, testing, and incidentals necessary to satisfactorily complete the work as detailed on the plans including excavation, embedment, and backfill.