

DALLAS WATER UTILITIES

BID ITEM AND COST ESTIMATING MANUAL



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INTRODUCTION

Dallas Water Utilities (DWU) Pipeline projects are usually written as line item contracts. Each item of work to be paid is identified in the contract as a bid item. The BID ITEM LIST shows bid item numbers and specifications now available for use in preparing pipeline contracts. The bid item specifications refer to the North Central Texas Council of Governments (NCTCOG) Standard Specifications for Public Works Construction, Fifth Edition, November 2017, the City of Dallas (COD) Addendum to the NCTCOG Standard Specifications, the DWU Standard Technical Specifications for Water & Wastewater Construction, latest edition, and the City of Dallas Public Works Standard Details for Construction (251-D). Designers and Contractors are responsible for using the most up to date DWU standards as published at http://www.dallascityhall.com/dwu/dwu_design_standards.html.

To ensure uniformity, each specific bid item carries a unique identifying Bid Item Number. The Bid Item Number consists of four or five digits and one to four letters. The letter portion of a Bid Item Number is the size indicator for items with a size requirement (see section H. UNIFORM SIZE INDICATOR TABLE). The size indicators are uniformly assigned and are consistent throughout this list regardless of which type of pipe, fitting, or appurtenance they indicate. Extra depth items include an “X” and “with Paving” items for use on joint contracts include a “P”.

A member of the Engineering Services Program shall be designated as the Administrator of the Bid Item List and is assigned the responsibility of maintaining and distributing the Bid Item List and the Bid Item Specifications to be used on pipeline contracts.

A. BID ITEM LIST DISTRIBUTION

The Administrator will be responsible to distribute a copy of the latest Bid Item List and Bid Item Specifications on an annual basis.

B. BID QUANTITY AND COST ESTIMATE RESPONSIBILITY

The Designer is responsible for preparing a Bid Quantity and Cost Estimate to include all bid items and quantities required for construction of the project he/she designs. The Bid Quantity and Cost Estimate must be checked by either the Section Manager or a person designated by the Manager.

The Project Manager is responsible for reviewing the Bid Quantity and Cost Estimate and aiding the Designer by ensuring that the proper bid item number is called out for the work intended.

The Project Manager is responsible for identifying bid items that may be required for construction of a project that may be missing from the Designer’s Bid Quantity and Cost Estimate.

It is the final responsibility of the Project Manager to add or utilize accurate bid items. Where necessary and approved the Project Manager can include bid items for “No Separate Pay Items” if it is to the benefit of the bid and the management of the project.

In any City Contract where multiple or alternate pipe materials are specified on the design plans for the same pipe segment the project manager shall coordinate with the Contracts Program to include Alternate Bid Items in the contract documents. The Alternate Bid Items format shall conform to the language currently approved by the City Attorney’s office.

C. PROCEDURE

1. PLANS ARE ESSENTIALLY COMPLETE

When the plans are sent out for review and comments the reviewers from other divisions within the water department may identify bid items that should be included in the contract.

The initial Bid Quantity and Cost Estimate, including the worksheet used to calculate quantities, should be sent with the plans to the Project Manager for review. The final Bid Quantity and Cost Estimate should be sent with the sealed plans to the Project Manager for construction. The Project Manager will be responsible for forwarding the Bid Quantity and Cost Estimate to Mapping and Capital Services for the preparation of bid documents.

2. BID QUANTITY AND COST ESTIMATE

The Bid Quantity and Cost Estimate should be prepared in an electronic spreadsheet format. Submit an electronic copy to the Project Manager with the review copy of the plans and with the sealed plans. A hard copy should be kept in the project file folder. The spreadsheet should always include the following information:

PROJECT:	Name of project.
FILE:	411Q or 685W or 421Q or 311T file number.
CONTRACT NO.:	The engineering or construction contract number.
PREPARED BY:	Usually the Designer.
CHECKED BY:	Section Manager or the manager's designated representative.
REVIEWED BY:	Project Manager.
ESTIMATE:	Estimate after all adjustments.
ITEM NO:	The Bid Item Number obtained from the BID ITEM LIST.
UNIT:	The unit of measurement for the item.
GEN. ITEMS:	Items needed in the contract but not specifically found on a particular sheet in the plans, (i.e.) Sand Backfill, Rock Foundation, etc.
SHEET #:	A listing of the quantities of a bid item found on that particular sheet of the plans.
PLAN QUANTITY:	A total of the quantities in the GEN. ITEMS and SHEET # columns.
ROUNDED QNTY:	The rounded PLAN QUANTITIES.
BID QUANTITY:	Adjustments made to the ROUNDED QUANTITIES. Project Management personnel may increase or decrease specific quantities they deem necessary. If the Project Manager does not make an entry in this column then the amount shown in the ROUNDED QUANTITY column will be used.
UNIT PRICE:	An estimated unit cost for a bid item. The Administrator maintains a tabulation of the average unit bid prices for each item.
BID ESTIMATE:	The total estimated cost for that specific bid item. This is obtained by multiplying the BID QUANTITY by the UNIT PRICE.
ESTIMATE:	Total estimated cost of the contract.

D. LIST OF ABBREVIATIONS

These abbreviations are used in the Bid Item Index and in the Bid Item List.

Units		Common		Pipe	
Bd	Bed Width	BOTOC	By Other Than Open Cut	DI	Ductile Iron
CF	Cubic Feet	CL	Center Line	ECI	Enamel Cast Iron
CY	Cubic Yard	CTB	Cement Treated Base	HDPE	High Density Polyethylene
EA	Each	DWU	Dallas Water Utilities	RCP	Reinforced Concrete Pipe
LF	Linear Feet	Elev	Elevation	RCCP	Reinforced Concrete Pressure Pipe
LS	Lump Sum	FH	Fire Hydrant	RTRP	Reinforced Thermosetting Resin
SF	Square Feet	FL	Flow Line	PCCP	Prestressed Concrete Cylinder Pipe
SY	Square Feet	MH	Manhole	PVC	Polyvinyl Chloride
TN	Ton	PL	Property Line	VCT	Vitrified Clay Tile
VF	Vertical Feet	ROW	Right of Way		
		SWPPP	Storm Water Pollution Prevention		
		W	Water		
		WW	Wastewater		

E. GOVERNING ENTITIES

TCEQ	Texas Commission on Environmental Quality (formerly TNRCC – Texas Natural Resource Conservation Commission)
AWWA	American Waterworks Association
ASTM	American Society for Testing and Materials
NCTCOG	North Central Texas Council of Governments
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
TXDOT	Texas Department of Transportation
DART	Dallas Area Rapid Transit
TRE	Trinity Railway Express

F. UPDATE PROCEDURE

The BID ITEM LIST is generally revised for one the following reasons:

- 1) There is not a bid item for a pay item needed in a contract
- 2) A special bid item is required to describe work done under a change order, or
- 3) A bid item is no longer used and may be removed from the list.

1. NEW BID ITEM REQUIRED

A request for a new bid item can originate from any source. All requests will be routed to the Administrator through the appropriate Project Manager. A preliminary Bid Item Specification should be included with the request. If approved, the Administrator will add the item to the BID ITEM LIST. The Administrator will assist in finalizing the Bid Item Specification. No new bid item should be introduced without informing the Administrator.

2. SPECIAL AND TEMPORARY BID ITEMS

A special bid item is generally required for a change order and is needed as soon as possible. The request should be made directly to the Administrator for assignment of a bid item number. In most cases, the item is not included in the BID ITEM LIST since it is usually only used one time. A special or modified bid item needed for a particular contract can also be set up as a temporary bid item and not added to the BID ITEM LIST. The request should be made to the Administrator for assignment of a temporary bid item number.

3. BID ITEM NO LONGER REQUIRED

A bid item should be removed from the BID ITEM LIST if it is determined that the item is no longer necessary by the Manager of the Engineering Services, Pipeline Project Management Programs, and the Private Development Program.

4. BID ITEM SPECIFICATION CHANGE

All new or altered Bid Item Specification should be forwarded to the Administrator for inclusion in the Bid Item Manual. The Administrator shall be responsible for updating the Bid Item Manual.

G. GUIDELINES FOR ESTIMATE PREPARATIONS

1. ROUNDING PROCEDURE

- A. All pipe items shall be rounded up to the nearest ten feet. All associated pipe items such as trench safety and television inspection must be increased accordingly.
- B. All items in SY, CY, or Tons shall be rounded up to the nearest whole number.
- C. All BOTO C items shall be rounded up to the nearest even foot.
- D. All Bid prices will be rounded up to the nearest dollar.
- E. EA items will not be increased from the plan quantity except at the Project Manager's request.

2. GENERAL CHECKLIST FOR CITY CONTRACTS

- A. Include all pipe lengths, sizes, and materials
- B. Include all appurtenances.
- C. Include all BOTO C and special crossing items.
- D. Grass restoration items must be included when any part of the proposed construction is outside of paving. Use Item 6902 Place Block Sod in residential areas and Item 6905 Seed in commercial areas.
- E. Item 6925 Trench Safety & Support must be included and shall be equal to the total length of all pipes minus total length of all BOTO C.
- F. Item 7030 Rock Foundation must be calculated for all pipes. Use the formula and proportion of pipe length shown in the bid item manual to calculate a 1-foot thickness.
- G. Item 7050 Sand Backfill will be included as a general item quantity per contract and should not be calculated separately.
- H. Temporary and permanent paving items must be included when any part of the proposed construction is within existing paving.
 - i. Temporary paving must include Item 7520 Temporary Paving (Hot Mix) and Item 7560 Crushed Rock for Temporary Paving Base
 - ii. Temporary paving shall be calculated for trench width only.
 - iii. Permanent paving shall be the type, materials, and dimensions as specified in the City of Dallas PW & T Paving Cut Manual, pages 20-29.
 - iv. Use Item 7570 Reinforced Concrete Driveway for alley transition concrete pavement. Alley transition pavement is the concrete pavement connecting a street and an alley where the alley pavement is other than concrete. Use Item 7525 Flex Base (Crushed Rock) Alley Surface for alley surfaces that are not concrete or asphalt.

- I. Include appropriate quantities of Item 7530 Concrete Curb and/or Gutter, Item 7540 Concrete Curb, Item 7580 Reinforced Concrete Sidewalk, and Item 7583 Reinforced Concrete Driveway. Assume all these to be replaced if within the trench limits or within 3 feet of the edge of the trench.
- J. Include Item 8011 Construction Surveying & Staking (Water & WW Mains) for the total length of all pipes.
- K. Include Item 8012 Construction Surveying & Staking (Paving) for lengths of pipes under existing paving.
- L. Item No. 8000 BARRICADING should only be used if barricading is specifically called out on the plans, including the length and type of barricades to be used. Barricading is incidental and not counted separately on most bid items.
- M. Brick paving or brick sidewalk will be specified for payment as a separate bid item.
- N. Item No. 7712 STORM WATER POLLUTION PREVENTION PLAN will be included as lump sum general item per contract unless directed otherwise.
- O. Item No. 20500 INVESTIGATION is used on all contracts as a contingency item. Include one per pipeline segment and any additional as directed by the Project Manager.

3. GENERAL CHECKLIST FOR CITY - WATER CONTRACTS

In addition to the specified items for City Contracts, the following are specific to Water contracts.

- A. Item No. 5020 CAST IRON FITTINGS will be included as a general item per contract on all water main projects requiring either Ductile Iron or PVC pipe.
- B. Use Item No. 5050 WATER SERVICE for all water service sizes from 3/4" through 2".
- C. Use Item 5091 INSTALL FIRE HYDRANT for all new fire hydrants. Use Item No. 5092 REMOVE EXISTING FIRE HYDRANT and Item No. 5093 DELIVER FIRE HYDRANT whenever any existing fire hydrant is replaced or otherwise taken out of service.
- D. Item 5110__x__ TAPPING SLEEVE: If more than one configuration of tap is used a separate bid item number is used for each size. The tapping valve should be included in the total item count for Item 5100__ GATE VALVE.
- E. Item No. 5600 CUT AND PLUG EXISTING WATER MAIN must be called out as an item of work on the plans and should only be used when one side of the cut main will remain in service and no other fitting for connection is called out.
- F. Item No. 5610 CUT AND PLUG EXISTING WATER MAIN FOR TEST is a contingent item and should be counted one per water pipe segment to be replaced.
- G. Use Item No. 7071 CLASS "B" CONCRETE for blocking of all bends and tees. List every fitting to be blocked and the volume for each fitting on the calculations sheet. Use the tables in the DWU Standard Drawings Manual, pages 229-234 for volumes of concrete per fitting.
- H. Concrete water mains will require bid items for all closure sections, test fittings, monitoring stations, blow-offs, and air valves. Bends and bevels are included in the pipe item.
- I. If a valve is included that requires a manhole, then the manhole should be a separate bid item.
- J. Item No. 7730 DISPOSAL OF HEAVILY CHLORINATED WATER MAIN FLUSHING WATER is used as a general item per contract on all contracts that require chlorination of water mains.

4. GENERAL CHECKLIST FOR CITY - WASTEWATER CONTRACTS

In addition to the specified items for City Contracts, the following are specific to Wastewater contracts.

- A. For Item 6110__ DROP CONNECTION MANHOLE, Item 6120__ PRESSURE TYPE MANHOLE, and Item 6130__ WASTEWATER MANHOLE always specifies size and type on plans.
- B. Item No. 6140 ABANDON EXISTING MANHOLE should only be used for manholes to be abandoned which are outside the trench for the proposed main, and which would otherwise remain undisturbed by construction.
- C. One of Item No. 6141 VACUUM TEST FOR WASTEWATER MANHOLE should be counted for every new wastewater manhole.
- D. Use Item No. 6060 WASTEWATER LATERAL for all wastewater laterals. This item includes all sizes and types of laterals.
- E. Item 6920 TELEVISION INSPECTION should be used for all proposed wastewater mains

5. GENERAL CHECKLIST FOR JOINT CONTRACTS

- A. Item No. 5020 CAST IRON FITTINGS will be included as a general item per contract on all water main projects requiring either Ductile Iron or PVC pipe.
- B. Always include at least one Item No. 5050 WATER SERVICE as a contingency, even if there will be no adjustment to the water main.
- C. Always include at least one Item No. 5770 STANDARD WATER MAIN LOWERING as a contingency if there will be any adjustments to the water main. Include one each for every 2,000 LF of water main installation.
- D. Always include at least one Item No. 6060 WASTEWATER LATERAL as a contingency, even if there will be no adjustment to the wastewater main.
- E. Always use Item No. 6921 TELEVISION INSPECTION for Joint contracts. Always double the length of wastewater main when calculating quantities.
- F. Item No. 6925 TRENCH SAFETY AND SUPPORT is used on all Contracts. The quantity should equal the length of new main (water + wastewater) to be installed.
- G. Item No. 7030 ROCK FOUNDATION and Item No. 7050 SAND BACKFILL are used on all contracts. Item No. 7041 FLOWABLE BACKFILL and Item No. 7052 CEMENT TREATED BASE BACKFILL will be included at the engineer's discretion.
- H. Temporary paving items must be included when any part of the proposed construction is within existing paving. Permanent paving items must be included when any part of the proposed water and wastewater construction extends beyond the outside agency's proposed paving limits.
 - i. Temporary paving must include Item 7520 TEMPORARY PAVING (HOT MIX) and Item 7560 CRUSHED ROCK FOR TEMPORARY PAVING BASE.
 - ii. Temporary paving shall be calculated for trench width only.
 - iii. Permanent paving shall be the type, materials, and dimensions as specified in the City of Dallas PW & T Paving Cut Manual, pages 20-29. Use Item No. 7582 REINFORCED CONCRETE PAVING or Item Nos. 7600 REINFORCED CONCRETE BASE and 7655 HOT MIX ASPHALT CONCRETE.
- I. Item No. 7730 DISPOSAL OF HEAVILY CHLORINATED WATER MAIN FLUSHING WATER is used on all contracts that require chlorination of water mains.
- J. Item No. 8000 BARRICADING should only be used if barricading is specifically called out on the plans, including the length and type of barricades to be used. Barricading is incidental and not counted separately on most bid items.
- K. Include Item No. 8011 CONSTRUCTION SURVEYING & STAKING (WATER & WW MAINS) for the total length of all pipes, except for Joint contracts with the City of Dallas Public Works department.
- L. Include Item No. 8100 MOBILIZATION FOR WATER AND WASTEWATER MAINS only on Joint contracts with the City of Dallas Public Works department. Include one per construction contract; this item can be split among water and wastewater, e.g. 0.5 for water and 0.5 for wastewater.
- M. Include all necessary alteration and adjustment items (20000 series items). Item No. 20500 INVESTIGATION is used on all contracts.

6. GENERAL CHECKLIST FOR CITY – STORMWATER PROJECT CONTRACTS

- A. Item 11000 series shall be utilized for Stormwater Project. If bid items are unavailable in this series, check the other sections in the bid manual.
- B. Include Item 11301 Traffic Control for Stormwater Project in the bid document.
- C. Include Item 11203 Erosion Control for Stormwater Project in the bid document. For site disturbance equal to or greater than 5 acres, include Item 11201 Storm Water Pollution Prevention Plan for Stormwater Project. Both items will be included as lump sum general item per contract unless directed otherwise.
- D. Grass restoration items must be included when any part of the proposed construction is outside of paving. Use Item 11025 Bermuda or St. Augustine Grass Spot Sod for Stormwater Project or Item 11027 Block Sodding for Stormwater Project in residential areas and Item 11029 Grass Seeding by Hydro Mulching for Stormwater Project or Item 11301 Placement of Seed for Stormwater Project in commercial areas or City's ROW, unless directed otherwise.
- E. Include Item 11125 Sheeting, Shoring, and Bracing for storm drain installation only.

7. TABLE OF BID ITEMS THAT MUST ALSO INCLUDE OTHER ITEMS.

Item Number (Description)	Additional Required Items
1500__ Ductile Iron Water Pipe 1800__ PVC Water Pipe	5020 Iron Fittings
2000__ Bar-Wrapped Conc. Cylinder Water Pipe 2010__ Pre-stressed Conc. Cylinder Water Pipe	6930__ Closure Section
5050 Water Service	2030 Adjustment and/or Relocation of Water Meter Boxes (For Joint Contracts Only)
5092 Remove Fire Hydrant	5093 Deliver Fire Hydrant
5110__x__ Tapping Sleeve	5100__ Gate Valve
All Wastewater Manholes (all sizes, configurations, and materials)	6141 Vacuum Test
All Wastewater Pipes (all sizes, all materials)	6920 Television Inspection (City) 6921 Television Inspection (Joint)
5155__ Access Manhole with Blow-off	5140__ Flap Valve

H. UNIFORM SIZE INDICATOR TABLE

The following table shall be used for selecting the uniform size indicator for all pipes, fittings, and appurtenances for the bid items in this manual.

<i>A = ¾"</i>	<i>U = 21"</i>	<i>AM = 90"</i>
<i>B = 1"</i>	<i>V = 24"</i>	<i>AN = 96"</i>
<i>C = 1 1/2"</i>	<i>W = 27"</i>	<i>AQ = 102"</i>
<i>D = 2"</i>	<i>Y = 30"</i>	<i>AR = 108"</i>
<i>E = 3"</i>	<i>Z = 33"</i>	<i>AS = 114"</i>
<i>F = 4"</i>	<i>AA = 36"</i>	<i>AU = 120"</i>
<i>G = 5"</i>	<i>AB = 39"</i>	<i>AV = 126"</i>
<i>H = 6"</i>	<i>AC = 42"</i>	<i>AW = 132"</i>
<i>J = 8"</i>	<i>AD = 45"</i>	<i>AY = 138"</i>
<i>K = 10"</i>	<i>AE = 48"</i>	<i>AZ = 144"</i>
<i>L = 12"</i>	<i>AF = 54"</i>	
<i>M = 14"</i>	<i>AG = 60"</i>	
<i>N = 15"</i>	<i>AH = 66"</i>	
<i>Q = 16"</i>	<i>AJ = 72"</i>	
<i>R = 18"</i>	<i>AK = 78"</i>	
<i>S = 20"</i>	<i>AL = 84"</i>	

I. BID ITEM TERMS

Bid Item Number

Bid Item Description

ITEM NO. **1800__** **___" PVC WATER PIPE**

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-900) in accordance with **Item 506. Open Cut – Water Conduit Installation**, **Item 506.5.COD: Hydrostatic Test**, **Item 506.6.COD: Connections To Existing Water Conduits**, **Item 506.6.1.COD: Water Main Tie-In During Off Hours**, **Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger**, **Item 506.7.3.2.COD: Flushing Method**, **Item 506.7.COD: Disposal of Heavily Chlorinated Water Main Flushing Water**, **Item 506.7.1.COD: Preliminary Flushing**, **Item 506.7.2.COD: Chlorination**, **Item 506.7.3.COD: Flushing**, **Item 506.7.4.COD: Disposal of Flushing Water**, **Item 506.7.5.4.COD: Sampling**, **Item 506.7.6.COD: Indemnification**, **Item 506.8.1.COD: Cut and Plugs**, **Item 501.14. Polyvinyl Chloride (PVC) Water Pipe**, **Item 501.14.5.COD: Fittings**, and **Item 501.14.6.COD: NSF 61 Compliance** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

F = 4" PVC Water Pipe K = 10" PVC Water Pipe
H = 6" PVC Water Pipe L = 12" PVC Water Pipe
J = 8" PVC Water Pipe

Bid Item Specification

Instructions and Size Indicators

BID ITEM SPECIFICATIONS

1100 - 2200	Water Pipe
3000 - 3820	Wastewater and Reclaimed Wastewater Pipe
5020 - 5770	Water Appurtenances and related items
5800 - 5805	Special Water Meter Items (Small Service Contract)
5990 - 6200	Wastewater Appurtenances and related items
6240 - 6995	Miscellaneous Restoration, Fittings and Special Items
7020 - 7766	Embedment, Backfill, Paving and Environmental Items
7800 - 7837	Special Paving Items (Paving Restoration Contracts)
8000 - 8200	Survey Staking and Traffic Items
11000 - 11999	Stormwater Items
20300 - 20930	Alteration and Adjustment Items (Joint Contracts)

Note: Text in red italics is instructive or descriptive and applies to the specification immediately preceding the item. Red italic text should not be included as part of any bid item specification.

ITEM NO. 1100 ___ ___" TEMPORARY WATER MAIN

This item consists of furnishing and placing approximately ___ Linear Feet of ___" Galvanized Water Pipe in accordance with **Item 501.10. Seamless Copper Tubing, Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, and Item 506.8.1. Cut and Plugs** of these specifications and addenda thereto.

This item to include all valves, ___" blow-off coppers, temporary water service connection, asphalt paving, and barricading necessary to protect the main from traffic. This item to include the removal of the ___" water pipe and asphalt paving when the new ___" water main is placed in service. The removed system will become the property of the Contractor.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Embedment is not required. Use the following size indicators:

D = 2" Temporary Water Main

F = 4" Temporary Water Main

H = 6" Temporary Water Main

J = 8" Temporary Water Main

ITEM NO. 1200D 2" COPPER WATER MAIN

This item consists of furnishing and placing approximately ___ Linear Feet of 2" Copper Water Pipe in accordance with **Item 501.10. Seamless Copper Tubing, Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, and Item 506.8.1. Cut and Plugs** of these specifications and addenda thereto.

This item includes all fittings, polywrap (AWWA C105-99), barricading, and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. Embedment is not required. Use the following size indicators:

D = 2" Water Main

ITEM NO. 1500__ __" DUCTILE IRON WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Ductile Iron Water Pipe in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings** of these specifications and addenda thereto.

This item includes all fittings, polywrap (AWWA C105-99), barricading, and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. The plans will indicate pipe Class 52 or 53. Use the following size indicators:

<i>D = 2" Ductile Iron Water Pipe</i>	<i>S = 20" Ductile Iron Water Pipe</i>
<i>F = 4" Ductile Iron Water Pipe</i>	<i>V = 24" Ductile Iron Water Pipe</i>
<i>H = 6" Ductile Iron Water Pipe</i>	<i>Y = 30" Ductile Iron Water Pipe</i>
<i>J = 8" Ductile Iron Water Pipe</i>	<i>AA = 36" Ductile Iron Water Pipe</i>
<i>K = 10" Ductile Iron Water Pipe</i>	<i>AE = 48" Ductile Iron Water Pipe</i>
<i>L = 12" Ductile Iron Water Pipe</i>	<i>AF = 54" Ductile Iron Water Pipe</i>
<i>Q = 16" Ductile Iron Water Pipe</i>	<i>AG = 60" Ductile Iron Water Pipe</i>

ITEM NO. 1501__ __" DUCTILE IRON WATER PIPE WITH NITRILE GASKETS

This item consists of furnishing and placing approximately __ Linear Feet of __" Ductile Iron Water Pipe with Nitrile gaskets in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, tem 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings** of these specifications and addenda thereto.

This item includes all fittings, polywrap (AWWA C105-99), barricading, and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used only for projects where soil and groundwater testing has determined that there are contaminants which can damage standard gaskets. Use the following size indicators:

H = 6" Ductile Iron Water Pipe J = 8" Ductile Iron Water Pipe L = 12" Ductile Iron Water Pipe

ITEM NO. 1505__ __" DUCTILE IRON WATER PIPE AERIAL CROSSING

This item consists of
TO BE AMENDED

This item is used on DWU CITY contracts.

Use the following size indicators:

*D = 2" Ductile Iron Water Pipe S = 20" Ductile Iron Water Pipe
F = 4" Ductile Iron Water Pipe V = 24" Ductile Iron Water Pipe
H = 6" Ductile Iron Water Pipe Y = 30" Ductile Iron Water Pipe
J = 8" Ductile Iron Water Pipe AA = 36" Ductile Iron Water Pipe
K = 10" Ductile Iron Water Pipe AE = 48" Ductile Iron Water Pipe
L = 12" Ductile Iron Water Pipe AF = 54" Ductile Iron Water Pipe
Q = 16" Ductile Iron Water Pipe AG = 60" Ductile Iron Water Pipe*

ITEM NO. 1600__ __" STEEL WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Steel Water Pipe (C200) in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

This item includes all fittings, coatings, liners, barricading, and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. The plans will indicate minimum pipe thickness. Use the following size indicators:

<i>S = 20" Steel Pipe</i>	<i>AM = 90" Steel Pipe</i>
<i>V = 24" Steel Pipe</i>	<i>AN = 96" Steel Pipe</i>
<i>Y = 30" Steel Pipe</i>	<i>AQ = 102" Steel Pipe</i>
<i>AA = 36" Steel Pipe</i>	<i>AR = 108" Steel Pipe</i>
<i>AC = 42" Steel Pipe</i>	<i>AS = 114" Steel Pipe</i>
<i>AE = 48" Steel Pipe</i>	<i>AU = 120" Steel Pipe</i>
<i>AF = 54" Steel Pipe</i>	<i>AV = 126" Steel Pipe</i>
<i>AG = 60" Steel Pipe</i>	<i>AW = 132" Steel Pipe</i>
<i>AH = 66" Steel Pipe</i>	<i>AY = 138" Steel Pipe</i>
<i>AJ = 72" Steel Pipe</i>	<i>AZ = 144" Steel Pipe</i>
<i>AK = 78" Steel Pipe</i>	
<i>AL = 84" Steel Pipe</i>	

ITEM NO. 1800__ __" PVC WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-900) in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, and Item 501.14.6.COD: NSF 61 Compliance** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

F = 4" PVC Water Pipe K = 10" PVC Water Pipe

H = 6" PVC Water Pipe L = 12" PVC Water Pipe

J = 8" PVC Water Pipe

ITEM NO. 1801__ __" PVC WATER PIPE WITH NITRILE GASKETS

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-900) with nitrile gaskets in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, and Item 501.14.6.COD: NSF 61 Compliance** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used only for projects where soil and groundwater testing has determined that there are contaminants which can damage standard gaskets. Use the following size indicators:

H = 6" PVC Water Pipe J = 8" PVC Water Pipe L = 12" PVC Water Pipe

ITEM NO. 1805__ __" PVC WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-905) in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, and Item 501.14.6.COD: NSF 61 Compliance** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

Q = 16" PVC Water Pipe

ITEM NO. 1810__ __" FUSIBLE PVC WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-900 or C-905, per size) in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, Item 501.14.6.COD: NSF 61 Compliance, and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

F = 4" PVC Water Pipe K = 10" PVC Water Pipe

H = 6" PVC Water Pipe L = 12" PVC Water Pipe

J = 8" PVC Water Pipe Q = 16" PVC Water Pipe

ITEM NO. 1820__ __" RESTRAINED JOINT PVC WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe (C-900) in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, Item 501.14.6.COD: NSF 61 Compliance, and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

F = 4" PVC Water Pipe K = 10" PVC Water Pipe

H = 6" PVC Water Pipe L = 12" PVC Water Pipe

J = 8" PVC Water Pipe

ITEM NO. 1905__ __" PVC, DUCTILE IRON OR BAR-WRAPPED CONCRETE CYLINDER WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe or Ductile Iron Water Pipe or Bar-Wrapped Concrete Cylinder Water Pipe (C-905) with bends, bevels, outlets, other concrete fittings as shown on the plans in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe or, Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings or Item 501.4. Concrete Pressure Pipe and Fittings, Item 501.14.5.COD: Fittings, and Item 501.14.6.COD: NSF 61 Compliance** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU JOINT contracts. The Unit Price for this item includes most items except trench safety. Use the following size indicators:

Q=16" PVC, DI or Bar-Wrapped Water Pipe

ITEM NO. 2000__ __" BAR-WRAPPED CONCRETE CYLINDER WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Bar-Wrapped Concrete Cylinder Water Pipe; including bends, bevels, outlets, other concrete fittings as shown on the plans, barricading and all embedment materials in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.4. Concrete Pressure Pipe and Fittings, and Item 501.4.1.1.COD: NSF 61 Compliance** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

<i>K = 10" Bar Wrapped CC Pipe</i>	<i>V = 24" Bar Wrapped CC Pipe</i>
<i>L = 12" Bar Wrapped CC Pipe</i>	<i>W = 27" Bar Wrapped CC Pipe</i>
<i>M = 14" Bar Wrapped CC Pipe</i>	<i>Y = 30" Bar Wrapped CC Pipe</i>
<i>Q = 16" Bar Wrapped CC Pipe</i>	<i>AA = 36" Bar Wrapped CC Pipe</i>
<i>R = 18" Bar Wrapped CC Pipe</i>	<i>AC = 42" Bar Wrapped CC Pipe</i>
<i>S = 20" Bar Wrapped CC Pipe</i>	<i>AE = 48" Bar Wrapped CC Pipe</i>
	<i>AF = 54" Bar Wrapped CC Pipe</i>

ITEM NO. 2010__ __" PRESTRESSED CONCRETE CYLINDER WATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Prestressed Concrete Cylinder Water Pipe; including bends, bevels, outlets, other concrete fittings and all embedment materials as shown on the plans, and barricading in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.4. Concrete Pressure Pipe and Fittings, and Item 501.4.1.1.COD: NSF 61 Compliance** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. This item is used for either Pre-stressed Concrete Cylinder Pipe or Pre-stressed Concrete Embedded Cylinder Pipe. Use the following size indicators:

Q = 16" Pre-stressed CC Pipe

R = 18" Pre-stressed CC Pipe

S = 20" Pre-stressed CC Pipe

V = 24" Pre-stressed CC Pipe

Y = 30" Pre-stressed CC Pipe

AA = 36" Pre-stressed CC Pipe

AC = 42" Pre-stressed CC Pipe

AE = 48" Pre-stressed CC Pipe

AF = 54" Pre-stressed CC Pipe

AG = 60" Pre-stressed CC Pipe

AH = 66" Pre-stressed CC Pipe

AJ = 72" Pre-stressed CC Pipe

AK = 78" Pre-stressed CC Pipe

AL = 84" Pre-stressed CC Pipe

AM = 90" Pre-stressed CC Pipe

AN = 96" Pre-stressed CC Pipe

AQ = 102" Pre-stressed CC Pipe

AR = 108" Pre-stressed CC Pipe

AS = 114" Pre-stressed CC Pipe

AU = 120" Pre-stressed CC Pipe

AV = 126" Pre-stressed CC Pipe

AW = 132" Pre-stressed CC Pipe

AY = 138" Pre-stressed CC Pipe

AZ = 144" Pre-stressed CC Pipe

ITEM NO. 2100__X __" EXTRA DEPTH WATER PIPE (+20')

This item consists of additional excavation of __" Extra Depth Water Pipe for __ Linear Feet. This item is supplementary to the pipe item for extra depth exceeding twenty vertical feet and shall be paid per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and Payment will be per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone and will include any equipment, materials, and labor, crossing diagonal utilities, costs for barricading, trench safety and support for these mains, encasement, and embedment.

This item is used on ALL contracts. This item is for excavation only and does not include pipe. The regular pipe item must include the extra depth footage.

Use the following size indicators:

<i>H=6" Excavation</i>	<i>AH = 66" Excavation</i>
<i>J=8" Excavation</i>	<i>AJ = 72" Excavation</i>
<i>K=10" Excavation</i>	<i>AK = 78" Excavation</i>
<i>L=12" Excavation</i>	<i>AL = 84" Excavation</i>
<i>M=14" Excavation</i>	<i>AM = 90" Excavation</i>
<i>Q = 16" Excavation</i>	<i>AN = 96" Excavation</i>
<i>R = 18" Excavation</i>	<i>AQ = 102" Excavation</i>
<i>S = 20" Excavation</i>	<i>AR = 108" Excavation</i>
<i>V = 24" Excavation</i>	<i>AS = 114" Excavation</i>
<i>Y = 30" Excavation</i>	<i>AU = 120" Excavation</i>
<i>AA = 36" Excavation</i>	<i>AV = 126" Excavation</i>
<i>AC = 42" Excavation</i>	<i>AW = 132" Excavation</i>
<i>AE = 48" Excavation</i>	<i>AY = 138" Excavation</i>
<i>AF = 54" Excavation</i>	<i>AZ = 144" Excavation</i>
<i>AG = 60" Excavation</i>	

ITEM NO. 2200__ REHABILITATION OF EXISTING __" WATER MAIN

This item consists of the Rehabilitation of approximately __ Linear Feet of __" Water Main in accordance with the details and specifications on the design plans. This item includes all labor, materials, equipment, barricading, cleaning, televised inspection, and incidentals required to complete the rehabilitation of the water main in accordance with these specifications.

Measurement shall be the actual Linear Footage of main rehabilitated. Payment shall be at the contract Unit Price per Linear Foot complete in place.

This bid item is used for rehabilitating water mains using trenchless technologies. This item requires the Section Manager's or Project Manager's approval beforehand. Use the following for size indicators:

<i>F = 4" Water Main</i>
<i>H = 6" Water Main</i>

ITEM NO. 3000__ __" CLAY WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Clay Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.2. Clay Wastewater Pipe** of these specifications and addenda thereto.

This item to include all embedment materials and barricading.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

*H = 6" Clay WW Pipe K = 10" Clay WW Pipe N = 15" Clay WW Pipe U = 21" Clay WW Pipe
J = 8" Clay WW Pipe L = 12" Clay WW Pipe R = 18" Clay WW Pipe V = 24" Clay WW Pipe*

ITEM NO. 3100__ __" PVC WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.17. Polyvinyl Chloride (PVC) Wastewater Pipe & Fittings with Dimension Control** of these specifications and addenda thereto.

This item to include all embedment materials and barricading.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. The specific type of PVC, if required, will be specified in the profile. Use the following for size indicators:

*H = 6" PVC WW Pipe N = 15" PVC WW Pipe W = 27" PVC WW Pipe AB = 39" PVC WW Pipe
J = 8" PVC WW Pipe R = 18" PVC WW Pipe Y = 30" PVC WW Pipe AC = 42" PVC WW Pipe
K = 10" PVC WW Pipe U = 21" PVC WW Pipe Z = 33" PVC WW Pipe AE = 48" PVC WW Pipe
L = 12" PVC WW Pipe V = 24" PVC WW Pipe AA = 36" PVC WW Pipe
L = 12" PVC WW Pipe V = 24" PVC WW Pipe AA = 36" PVC WW Pipe*

ITEM NO. 3110__ __" PVC PRESSURE RATED WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Pressure Rated Wastewater Pipe conforming to ASTM D2241 (DR 26) Minimum Pressure Rating of 160 PSI and ASTM D3139 joints, and in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.15. Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)** of these specifications and addenda thereto.

This item to include barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts where a proposed main is less than 9' away from any potable water main. Use this item for pipe sizes 12" and smaller. Use item 3120__ for pipe sizes 16" and larger. Use the following for size indicators:

*D = 2" PVC Pressure WW Pipe F = 4" PVC Pressure WW Pipe
H = 6" PVC Pressure WW Pipe J = 8" PVC Pressure WW Pipe
K = 10" PVC Pressure WW Pipe L = 12" PVC Pressure WW Pipe*

ITEM NO. 3111__ __" PVC PRESSURE RATED WASTEWATER PIPE WITH NITRILE GASKETS

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Pressure Rated Wastewater Pipe with nitrile gaskets conforming to ASTM D2241 (DR 26) Minimum Pressure Rating of 160 PSI and ASTM D3139 joints, and in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.15. Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)** of these specifications and addenda thereto.

This item to include barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used only for projects where soil and groundwater testing has determined that there are contaminants which can damage standard gaskets Use this item for pipe sizes 12" and smaller. Use the following for size indicators:

*H = 6" PVC Pressure WW Pipe J = 8" PVC Pressure WW Pipe
K = 10" PVC Pressure WW Pipe L = 12" PVC Pressure WW Pipe*

ITEM NO. 3120__ __" PVC PRESSURE RATED WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Pressure Rated Wastewater Pipe conforming to ASTM C905 (DR 25) Minimum Pressure Rating of 165 PSI and ASTM D3139 joints, and in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.15. Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)** of these specifications and addenda thereto.

This item to include barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts where a proposed main is less than 9' away from any potable water main. Use this item for pipe sizes 16" and larger. Use 3110__ for pipe sizes 12" and smaller. Use the following for size indicators:

*Q = 16" PVC Pressure WW Pipe (Alt) V = 24" PVC Pressure WW Pipe (Alt)
R = 18" PVC Pressure WW Pipe (Alt) W = 27" PVC Pressure WW Pipe (Alt)
S = 20" PVC Pressure WW Pipe (Alt) Y = 30" PVC Pressure WW Pipe (Alt)
Z = 33" PVC Pressure WW Pipe (Alt) AA = 36" PVC Pressure WW Pipe (Alt)
AB = 39" PVC Pressure WW Pipe (Alt)*

ITEM NO. 3130__ __" FUSIBLE PVC WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.17. Polyvinyl Chloride (PVC) Wastewater Pipe & Fittings with Dimension Control** of these specifications and addenda thereto.

This item to include all embedment materials and barricading.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. The specific type of PVC, if required, will be specified in the profile. Use the following for size indicators:

F = 4" PVC WW Pipe

K = 10" PVC WW Pipe

R = 18" PVC WW Pipe

H = 6" PVC WW Pipe

L = 12" PVC WW Pipe

J = 8" PVC WW Pipe

Q = 16" PVC WW Pipe

ITEM NO. 3140__ __" RESTRAINED JOINT PVC WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.17. Polyvinyl Chloride (PVC) Wastewater Pipe & Fittings with Dimension Control** of these specifications and addenda thereto.

This item to include all embedment materials and barricading.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. The specific type of PVC, if required, will be specified in the profile. Use the following for size indicators:

F = 4" PVC WW Pipe

H = 6" PVC WW Pipe

J = 8" PVC WW Pipe

K = 10" PVC WW Pipe

L = 12" PVC WW Pipe

ITEM NO. 3410__ __" REINFORCED CONCRETE WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Reinforced Concrete Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, Item 501.5. Reinforced Concrete Wastewater Pipe with Rubber Gasket Joints, and Item 501.5.4.1 Rubber Gaskets** of these specifications and addenda thereto.

This item to include all barricading and embedment materials.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. Use the following for size indicators:

<i>Y = 30" Reinforced Concrete WW Pipe</i>	<i>AG = 60" Reinforced Concrete WW Pipe</i>
<i>Z = 33" Reinforced Concrete WW Pipe</i>	<i>AH = 66" Reinforced Concrete WW Pipe</i>
<i>AA = 36" Reinforced Concrete WW Pipe</i>	<i>AJ = 72" Reinforced Concrete WW Pipe</i>
<i>AB = 39" Reinforced Concrete WW Pipe</i>	<i>AK = 78" Reinforced Concrete WW Pipe</i>
<i>AC = 42" Reinforced Concrete WW Pipe</i>	<i>AL = 84" Reinforced Concrete WW Pipe</i>
<i>AD = 45" Reinforced Concrete WW Pipe</i>	<i>AM = 90" Reinforced Concrete WW Pipe</i>
<i>AE = 48" Reinforced Concrete WW Pipe</i>	<i>AN = 96" Reinforced Concrete WW Pipe</i>
<i>AF = 54" Reinforced Concrete WW Pipe</i>	

ITEM NO. 3420__ __" RTRP WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" fiberglass glass-fiber reinforced thermosetting-resin Wastewater Pipe (RTRP – ASTM D 3262) in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.24. Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Wastewater Pipe** of these specifications and addenda thereto.

This item to include barricading, all embedment materials, and fittings.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. Use the following for size indicators:

<i>R = 18" RTRP WW Pipe</i>	<i>AA = 36" RTRP WW Pipe</i>	<i>AJ = 72" RTRP WW Pipe</i>
<i>S = 20" RTRP WW Pipe</i>	<i>AC = 42" RTRP WW Pipe</i>	<i>AK = 78" RTRP WW Pipe</i>
<i>V = 24" RTRP WW Pipe</i>	<i>AE = 48" RTRP WW Pipe</i>	<i>AL = 84" RTRP WW Pipe</i>
<i>W = 27" RTRP WW Pipe</i>	<i>AF = 54" RTRP WW Pipe</i>	<i>AM = 90" RTRP WW Pipe</i>
<i>Y = 30" RTRP WW Pipe</i>	<i>AG = 60" RTRP WW Pipe</i>	<i>AN = 96" RTRP WW Pipe</i>
<i>Z = 33" RTRP WW Pipe</i>	<i>AH = 66" RTRP WW Pipe</i>	

ITEM NO. 3430__ __" HDPE WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyethylene Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 505.2.12.1.COD: Polyethylene (PE) Large Diameter Wastewater Pipe with Modified Wall Profiles and Performance Standards Installation.** of these specifications and addenda thereto.

This item to include barricading, all embedment materials, and fittings.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. Use the following for size indicators:

R = 18" HDPE WW Pipe

W = 27" HDPE WW Pipe

AA = 36" HDPE WW Pipe

U = 21" HDPE WW Pipe

Y = 30" HDPE WW Pipe

AC = 42" HDPE WW Pipe

V = 24" HDPE WW Pipe

Z = 33" HDPE WW Pipe

AE = 48" HDPE WW Pipe

ITEM NO. 3460__ __" PRESSURE RATED RTRP OR PRESSURE RATED PVC WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" pressure rated fiberglass glass-fiber reinforced thermosetting-resin Wastewater Pipe (RTRP – ASTM D 3754) OR Polyvinyl Chloride Pressure Rated Wastewater Pipe conforming to ASTM C905 (DR 25) Minimum Pressure Rating of 165 PSI and ASTM D3139 joints, in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.24. Fiberglass (Glass-Fiber-Reinforced Thermosetting-Resin) Wastewater Pipe or Item 501.15. Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)** of these specifications and addenda thereto.

This item to include barricading, all embedment materials, and fittings.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

ITEM NO. 3510__ __" WASTEWATER FORCE MAIN

This item consists of furnishing and placing approximately __ Linear Feet of __" Wastewater Force Main in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test, and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings, Item 501.17. Polyvinyl Chloride (PVC) Wastewater Pipe & Fittings with Dimension Control or, 501.22. Polyethylene (Pe) Large Diameter Wastewater Pipe with Modified Wall Profiles and Performance Standards** of these specifications and as shown on the plans, and addenda thereto.

This item to include barricading, all embedment materials, and fittings.

Measurement and payment will be in accordance with **Item 507.6.**

Measurement and Payment for Wastewater Conduit Installation of these specifications.

This item is used for DWU CITY contracts. Use the following for size indicators:

F = 4" WW Force Main L = 12" WW Force Main

H = 6" WW Force Main N = 15" WW Force Main

J = 8" WW Force Main R = 18" WW Force Main

K = 10" WW Force Main S = 20" WW Force Main

ITEM NO. 3520__ REHABILITATION OF EXISTING __" WASTEWATER MAIN

This item consists of the Rehabilitation of approximately __ Linear Feet of __" Wastewater Main in accordance with the **DWU Standard Technical Specifications Manual, Latest Edition**. This item to include all labor, materials, equipment, barricading, and incidentals required to complete the rehabilitation of the wastewater main in accordance with these specifications and addenda thereto.

Measurement shall be the actual Linear Footage of main rehabilitated.

Payment shall be at the contract Unit Price per Linear Foot complete in place.

This bid item is used for rehabilitating wastewater mains using trenchless technologies. This item requires the Section Manager's approval beforehand. Be sure to include the proper corresponding Item No. 3540_ and bid item 6070. Use the following for size indicators:

H = 6" WW Main L = 12" WW Main

J = 8" WW Main N = 15" WW Main

K = 10" WW Main et.al.

ITEM NO. 3530__ __" CORRUGATED METAL PIPE (SPLIT ENCASEMENT)

This item consists of furnishing and placing approximately __ Linear Feet of __" Corrugated Metal Spilt Encasement Pipe in accordance with **Item 501.11. Corrugated Metal Pipe or Pipe Arch Shapes or Item 501.13. Tunnel Liner Plates and Item 501.13.5.COD: Grout Holes** of these specifications and addenda thereto.

This item to include all barricading, the __" to __" adapter, bolts, nuts, mastic sealer, angle iron and other materials required to complete the work.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for ALL DWU contracts when encasement pipe is required around an existing water or wastewater main. Use the following for size indicators:

*K = 10" Corrugated Metal Pipe (Split Encasement)
 L = 12" Corrugated Metal Pipe (Split Encasement)
 N = 15" Corrugated Metal Pipe (Split Encasement)
 R = 18" Corrugated Metal Pipe (Split Encasement)
 V = 24" Corrugated Metal Pipe (Split Encasement)
 Y = 30" Corrugated Metal Pipe (Split Encasement)
 AA = 36" Corrugated Metal Pipe (Split Encasement)
 AC = 42" Corrugated Metal Pipe (Split Encasement)
 AE = 48" Corrugated Metal Pipe (Split Encasement)
 AF = 54" Corrugated Metal Pipe (Split Encasement)
 AG = 60" Corrugated Metal Pipe (Split Encasement)
 AH = 66" Corrugated Metal Pipe (Split Encasement)
 AJ = 72" Corrugated Metal Pipe (Split Encasement)
 AK = 78" Corrugated Metal Pipe (Split Encasement)
 AL = 84" Corrugated Metal Pipe (Split Encasement)*

ITEM NO. 3540__ POINT REPAIR OF __" WASTEWATER MAIN

This item consists of approximately __ point repair(s) of __" Wastewater Main as necessary to facilitate rehabilitation.

This item to include all labor, materials, equipment, and incidentals required to complete the repairs; including, but not limited to: excavation, trench safety and support, barricading, furnishing and installing pipe material, connection to existing main, by-pass pumping, and all backfill and embedment materials. This shall be a **contingent item** and shall only be used if directed by the Construction Engineer. Each point repair shall consist of up to twenty (20) linear feet of pipe.

Measurement shall be per each point repair complete and accepted at the contract Unit Price.

This item is only used in conjunction with bid item 3520_ to facilitate wastewater main rehabilitation. Use the following for size indicators:

<i>H = Point Repair of 6" WW Main</i>	<i>R = Point Repair of 18" WW Main</i>
<i>J = Point Repair of 8" WW Main</i>	<i>U = Point Repair of 21" WW Main</i>
<i>K = Point Repair of 10" WW Main</i>	<i>V = Point Repair of 24" WW Main</i>
<i>L = Point Repair of 12" WW Main</i>	<i>Y = Point Repair of 30" WW Main</i>
<i>N = Point Repair of 15" WW Main</i>	

ITEM NO. 3550 REMOVAL OF INTERNAL OBSTRUCTIONS FOR WASTEWATER MAINS

This item consists of the Removal of ___ Each Internal Obstruction in an Existing Wastewater Main without excavation.

This item to include all labor, materials, equipment and incidentals required to complete the removal of obstructions; including, but not limited to: trench safety and support, barricading, by-pass pumping, identifying and locating obstructions, providing and operating specialized cutting and removal equipment and disposal of debris. This item includes only those obstructions and blockages that are not removed in accordance with the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition for Wastewater Main Cleaning. This shall be a **contingent item** and shall only be used if directed by the Project Manager, in writing. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications related to over and under runs **do not** apply to this item.

Measurement and payment will be per each obstruction removed. Two or more obstructions shall be considered as one item for payment purposes if they are separated by less than 3' and can be removed with the same equipment setup.

This item is used in conjunction with Item No. 3520___, and when the Designer has reason to believe that obstructions are blocking the main.

ITEM NO. 3560 CONNECTION TO EXISTING MANHOLE

This item consists of furnishing and placing approximately ___ Each Connection to an Existing Manhole, in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, and Item 502.1.4.8.COD: Wastewater Manhole Frame Seals** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be per each in place in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

ITEM NO. 3570__x__ PIPE BURSTING OF EXISTING ___" WASTEWATER MAIN WITH ___" WASTEWATER MAIN

This item consists of Pipe Bursting approximately ___ Linear Feet of ___" Wastewater Main with ___" Wastewater Main in accordance with the **DWU Standard Technical Specifications Manual, Latest Edition**. This item to include all labor, materials, equipment, barricading, and incidentals required to complete the pipe bursting replacement of the wastewater main in accordance with these specifications and addenda thereto.

Measurement shall be the actual Linear Footage of main replaced. Payment shall be at the contract Unit Price per Linear Foot complete in place.

Use the following for size indicators:

HxJ = Pipe Bursting (6" to 8")

JxJ = Pipe Bursting (8" to 8")

JxK = Pipe Bursting (8" to 10")

JxL = Pipe Bursting (8" to 12")

KxK = Pipe Bursting (10" to 10")

KxL = Pipe Bursting (10" to 12")

LxL = Pipe Bursting (12" to 12")

ITEM NO. 3610__ __" DUCTILE IRON WASTEWATER PIPE

This item consists of furnishing and placing approximately __ Linear Feet of __" Ductile Iron Wastewater Pipe in accordance with **Item 507. Open Cut – Wastewater Conduit Installation, Item 507.5.1.1. Infiltration Test** of these specifications and addenda thereto.

This item to include all embedment materials, all coal tar lined fittings, and barricading. The Ductile Iron Wastewater Pipe shall have Coal Tar Epoxy Lining as per **Item 501.9. Steel Pipe and Fittings** and AWWA Publication C203.

Measurement and payment will be in accordance with **Item 509.6.2. River Crossings, Siphons and Miscellaneous Pipe Structures** and **Item 507.6. Measurement and Payment for Wastewater Conduit Installation** of these specifications.

Use the following for size indicators:

*H = 6" DI WW Pipe K = 10" DI WW Pipe
J = 8" DI WW Pipe L = 12" DI WW Pipe*

ITEM NO. 3700__X __" EXTRA DEPTH WASTEWATER PIPE (+20')

This item consists of additional excavation of __" Wastewater Pipe Extra Depth for __ Linear Feet. This item is supplementary to the pipe item for extra depth exceeding twenty vertical feet and shall be paid per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and Payment will be per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone and will include any equipment, materials, and labor, crossing diagonal utilities, costs for barricading, and trench safety and support for these mains.

This item is used on DWU CITY contracts.

Use the following size indicators:

<i>H=6" Excavation</i>	<i>AB = 39" Excavation</i>
<i>J=8" Excavation</i>	<i>AC = 42" Excavation</i>
<i>K=10" Excavation</i>	<i>AD = 45" Excavation</i>
<i>L=12" Excavation</i>	<i>AE = 48" Excavation</i>
<i>N=15" Excavation</i>	<i>AF = 54" Excavation</i>
<i>Q = 16" Excavation</i>	<i>AG = 60" Excavation</i>
<i>R = 18" Excavation</i>	<i>AH = 66" Excavation</i>
<i>U= 21" Excavation</i>	<i>AJ = 72" Excavation</i>
<i>V = 24" Excavation</i>	<i>AK = 78" Excavation</i>
<i>W=27" Excavation</i>	<i>AL = 84" Excavation</i>
<i>Y = 30" Excavation</i>	<i>AM = 90" Excavation</i>
<i>Z = 33" Excavation</i>	<i>AN = 96" Excavation</i>
<i>AA=36" Excavation</i>	

ITEM NO. 3800__ __" PVC RECLAIMED WASTEWATER PIPE (PURPLE)

This item consists of furnishing and placing approximately __ Linear Feet of __" Polyvinyl Chloride Water Pipe in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.14. Polyvinyl Chloride (PVC) Water Pipe, Item 501.14.5.COD: Fittings, and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

This item includes fittings, polywrap for fittings, mechanical tamping, diagonal utilities, barricading and all embedment materials.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

F = 4" PVC Water Pipe K = 10" PVC Water Pipe

H = 6" PVC Water Pipe L = 12" PVC Water Pipe

J = 8" PVC Water Pipe

ITEM NO. 3810__ __" BAR-WRAPPED CONCRETE CYLINDER RECLAIMED WASTEWATER PIPE (PURPLE)

This item consists of furnishing and placing approximately __ Linear Feet of __" Bar-Wrapped Concrete Cylinder Water Pipe; including bends, bevels, outlets, other concrete fittings as shown on the plans, barricading and all embedment materials in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.4. Concrete Pressure Pipe and Fittings, and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 506.9.**

Measurement and Payment of these specifications.

This item is used for DWU CITY contracts. Use the following size indicators:

K = 10" Bar Wrapped CC Pipe V = 24" Bar Wrapped CC Pipe

L = 12" Bar Wrapped CC Pipe W = 27" Bar Wrapped CC Pipe

M = 14" Bar Wrapped CC Pipe Y = 30" Bar Wrapped CC Pipe

Q = 16" Bar Wrapped CC Pipe AA = 36" Bar Wrapped CC Pipe

R = 18" Bar Wrapped CC Pipe AC = 42" Bar Wrapped CC Pipe

S = 20" Bar Wrapped CC Pipe AE = 48" Bar Wrapped CC Pipe

**ITEM NO. 3820 ___ ___" PRESTRESSED CONCRETE CYLINDER RECLAIMED
WASTEWATER PIPE (PURPLE)**

This item consists of furnishing and placing approximately ___ Linear Feet of ___" Prestressed Concrete Cylinder Water Pipe; including bends, bevels, outlets, other concrete fittings and all embedment materials as shown on the plans, and barricading in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, Item 501.4. Concrete Pressure Pipe and Fittings, and the DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 506.9. Measurement and Payment** of these specifications.

This item is used for DWU CITY contracts. This item is used for either Pre-stressed Concrete Cylinder Pipe or Pre-stressed Concrete Embedded Cylinder Pipe. Use the following size indicators:

Q = 16" Pre-stressed CC Pipe

R = 18" Pre-stressed CC Pipe

S = 20" Pre-stressed CC Pipe

V = 24" Pre-stressed CC Pipe

Y = 30" Pre-stressed CC Pipe

AA = 36" Pre-stressed CC Pipe

AC = 42" Pre-stressed CC Pipe

AE = 48" Pre-stressed CC Pipe

AF = 54" Pre-stressed CC Pipe

AG = 60" Pre-stressed CC Pipe

AH = 66" Pre-stressed CC Pipe

AJ = 72" Pre-stressed CC Pipe

AK = 78" Pre-stressed CC Pipe

AL = 84" Pre-stressed CC Pipe

AM = 90" Pre-stressed CC Pipe

AN = 96" Pre-stressed CC Pipe

AQ = 102" Pre-stressed CC Pipe

AR = 108" Pre-stressed CC Pipe

AS = 114" Pre-stressed CC Pipe

AU = 120" Pre-stressed CC Pipe

AV = 126" Pre-stressed CC Pipe

AW = 132" Pre-stressed CC Pipe

AY = 138" Pre-stressed CC Pipe

AZ = 144" Pre-stressed CC Pipe

ITEM NO. 5020 EXTRA IRON FITTINGS

This item consists of furnishing and placing approximately ___ Tons of Iron Fittings in accordance with **Item 501.7.4.COD: Fittings and Item 502.5.2.COD: All Other Fittings** of these specifications and addenda thereto.

This is a **Contingency** item and is intended to provide compensation for extra fittings not called for on the plans, which are required for changes in horizontal or vertical alignment of water mains, as approved by the Construction Engineer, to avoid conflicts with existing utilities. The use of Ductile Iron Compact fittings for this item is prohibited.

Measurement and payment will be per ton of fittings installed at the CONTRACT unit price.

For City contracts 5.0 TN shall be included as a contingency general item. Do not calculate this item for each individual project segment.

ITEM NO. 5040__x__ __" COMBINED SERVICE VAULT WITH __" METER AND SERVICE TRANSFER WITH FEES

This item consists of installing __ Each new __" Combined Service Vault and access hatch, removing the existing vault and existing meter, installing bypass piping, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish and install the __" meter.

The Contractor shall purchase and pick up the new access hatch cover from the Distribution Division. The Contractor shall increase his bid for this item to cover the cost of the new access hatch cover and should verify the appropriate cost prior to submitting a bid on this item.

The Contractor will remove and salvage the existing __" meter and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing __" meter is damaged during removal, the Contractor will be liable for the replacement cost. If the __" meter is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

This item includes all work to install the __" Combined Service Vault; to include __" gate valves, by-pass piping, installation of the new vault, vault floor, access hatch cover, blocking, disposal of excess material, boring, crossing diagonal utilities, permits, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

This item does *not* include any piping between the distribution water main and the first fitting of the by-pass piping. Any piping between the distribution water main and the by-pass will be paid under the appropriate separate pay item.

This item is *not* eligible for the City of Dallas No-Fee permitting process and the Contractor shall increase his bid for this item to cover paying the permit and access hatch fees (+\$1,016 as of Oct.1, 2013). The Contractor should verify the appropriate permit fee before submitting a bid on this item.

Measurement and payment will be per Each at the contract unit price.

This item is used only on F (joint) Contracts. Use the following for size indicators:

FxF = 4" Combined Service Vault with 4" Meter and Transfer

HxH = 6" Combined Service Vault with 6" Meter and Transfer

JxH = 8" Combined Service Vault with 6" Meter and Transfer

JxJ = 8" Combined Service Vault with 8" Meter and Transfer

KxJ = 10" Combined Service Vault with 8" Meter and Transfer

KxK = 10" Combined Service Vault with 10" Meter and Transfer

ITEM NO. 5041 __x__ __" DOMESTIC SERVICE VAULT WITH __" METER AND TRANSFER WITH FEES

This item consists of installing __ Each new __" Domestic Service Vault and access hatch, removing the existing vault and existing meter, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish and install the __" meter.

The Contractor will remove and salvage the existing __" meter and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing __" meter is damaged during removal, the Contractor will be liable for the replacement cost. If the __" meter is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

This item includes all work to install the __" Domestic Service Vault; to include __" gate valves, by-pass piping, installation of the new vault, vault floor, access hatch cover, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

This item does *not* include any piping between the distribution water main and the first fitting of the by-pass piping. Any piping between the distribution water main and the by-pass will be paid under the appropriate separate pay item.

This item is *not* eligible for the City of Dallas No-Fee permitting process and the Contractor shall increase his bid for this item to cover paying the permit and access hatch fees (+\$1,016 as of Oct.1, 2013). The Contractor should verify the appropriate permit fee before submitting a bid on this item.

Measurement and payment will be per Each at the contract unit price.

This item is used only on F (joint) Contracts. Use the following for size indicators:

FxE = 4" Domestic Service Vault with 3" Meter and Transfer

FxF = 4" Domestic Service Vault with 4" Meter and Transfer

HxH = 6" Domestic Service Vault with 6" Meter and Transfer

JxH = 8" Domestic Service Vault with 6" Meter and Transfer

ITEM NO. 5042__x__ __" CLOSED FIRELINE SERVICE VAULT WITH __" DETECTOR CHECK DEVICE AND TRANSFER WITH FEES

This item consists of installing __ Each new __" Closed Fireline Service Vault and access hatch, removing and disposing of the existing vault piping and fittings, and salvaging the existing detector check device, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish and install the new __" detector check device.

The Contractor will remove and salvage the existing __" detector check device and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing __" detector check device is damaged during removal, the Contractor will be liable for the replacement cost. If the __" detector check device is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

This item includes all work to install the __" Closed Fireline Service Vault; to include, installation of the new vault, vault floor, access hatch cover, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

This item does *not* include any piping from the distribution water main to one foot from the outside vault wall. Any piping from the distribution water main to one foot from the outside vault wall will be paid under the appropriate separate pay item.

This item is *not* eligible for the City of Dallas No-Fee permitting process and the Contractor shall increase his bid for this item to cover paying the permit and access hatch fees (+\$_____, size dependent, as of Oct.1, 2013). The Contractor should verify the appropriate permit fee before submitting a bid on this item.

Measurement and payment will be per Each at the contract unit price.

This item is used only on F (joint) Contracts. Use the following for size indicators:

FxF = 4" Closed Fireline Service Vault with 4" D.C. Device and Transfer

HxH = 6" Closed Fireline Service Vault with 6" D.C. Device and Transfer

JxH = 8" Closed Fireline Service Vault with 6" D.C. Device and Transfer

JxJ = 8" Closed Fireline Service Vault with 8" D.C. Device and Transfer

KxK = 10" Closed Fireline Service Vault with 10" D.C. Device and Transfer

ITEM NO. 5043 ___ ” NEW IRRIGATION SERVICE

This item consists of furnishing and placing approximately ___ Each ___” Water Service for irrigation on an existing or new water main. This item includes tapping of the existing or new water main, removing the existing meter box and lid and old service line and replacing with a new meter box and approved lid, transferring the water service to the meter, and installing a new service line from the new meter box to the property line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3. Item 504.2.3 Final Backfill** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item includes compensation to the Contractor for paying for and acquiring all permits necessary to install the services. Services installed under this item *are not eligible* for the City of Dallas No-Fee permitting process and must be purchased by the Contractor. Permit prices are listed in the City of Dallas Water-Wastewater Fee Table.

The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. If the meter is determined by the Project Manager to be defective, it will be replaced with a new meter, furnished by the City. This bid item will also be utilized to provide a water service to a vacant lot where no meter transfer is involved. It will be the Contractor's responsibility to relocate the existing backflow prevention devices on the existing water service between the meter and property line to a proper location as directed by the Project Manager. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

Measurement and payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for permits, pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

This item is used only on F (joint) Contracts. Use the following for size indicators:

A = ¾” New Irrigation Service

C = 1½” New Irrigation Service

B = 1” New Irrigation Service

D = 2” New Irrigation Service

ITEM NO. 5050 WATER SERVICE

This item consists of furnishing and placing approximately ___ Each Water Service on an existing or new water main. This item includes all sizes of water services, 3/4" through 2", water meter boxes and meters, 5/8" through 2". This item does not include Commercial Water Meter Vaults. This item includes tapping of the existing or new water main, removing the existing meter box and lid and old service line and replacing with a new meter box and approved lid, transferring the water service to the meter, adjusting the meter box and meter vertically and horizontally as required, and installing a new service line from the new meter box to the property line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Standard Drawings.

The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5.1. Description**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. If the meter is determined by the Project Manager to be defective, it will be replaced with a new meter, furnished by the City.

This bid item will also be utilized to provide a water service to a vacant lot where no meter transfer is involved. It will be the Contractor's responsibility to relocate the existing backflow prevention devices on the existing water service between the meter and property line to a proper location as directed by the Project Manager. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

Measurement and payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

This item includes all work necessary to install a new water service for sizes 3/4" through 2". On CITY contracts, the final appurtenance adjustment is included in this item, but on JOINT contracts, it is not. Bid item 20300 must be included for the appurtenance adjustment on JOINT contracts. Include bid item 5080 on DWU JOINT contracts, where the service is not being replaced and the service may need to be relocated to clear proposed Storm Sewers. Also, on JOINT Contracts, include this bid item for service replacement if the services are 1962 or older. The Items No. 5051 and 5052 are used for PRIVATE DEVELOPMENT projects only.

ITEM NO. 5051__ WATER SERVICE (PRIVATE DEVELOPMENT)

This item consists of furnishing and placing approximately __ Each Water Service on an existing or new water main. This item includes all sizes of water services, 3/4" through 2", water meter boxes and meters, 5/8" through 2". This item does not include Commercial Water Meter Vaults. This item includes tapping of the existing or new water main, removing the existing meter box and lid and old service line and replacing with a new meter box and approved lid, transferring the water service to the meter, and installing a new service line from the new meter box to the property line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3** of these specifications and addenda thereto, and the applicable Standard Drawings.

The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. If the meter is determined by the Project Manager to be defective, it will be replaced with a new meter, furnished by the City. This bid item will also be utilized to provide a water service to a vacant lot where no meter transfer is involved. It will be the Contractor's responsibility to relocate the existing backflow prevention devices on the existing water service between the meter and property line to a proper location as directed by the Project Manager. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

Measurement and payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

This item includes all work necessary to install a new water service for sizes 3/4" through 2". The Items No. 5051 and 5052 are used for PRIVATE DEVELOPMENT projects only.

A = 3/4" Water Service

B = 1" Water Service

C = 1 1/2" Water Service

D = 2" Water Service

ITEM NO. 5052__ WATER SERVICE WITH TRANSFER (PRIVATE DEVELOPMENT)

This item consists of furnishing and placing approximately __ Each Water Service on an existing or new water main. This item includes all sizes of water services, 3/4" through 2", water meter boxes and meters, 5/8" through 2". This item does not include Commercial Water Meter Vaults. This item includes tapping of the existing or new water main, removing the existing meter box and lid and old service line and replacing with a new meter box and approved lid, transferring the water service to the meter, and installing a new service line from the new meter box to the property line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3** of these specifications and addenda thereto, and the applicable Standard Drawings.

The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. If the meter is determined by the Project Manager to be defective, it will be replaced with a new meter, furnished by the City. This bid item will also be utilized to provide a water service to a vacant lot where no meter transfer is involved. It will be the Contractor's responsibility to relocate the existing backflow prevention devices on the existing water service between the meter and property line to a proper location as directed by the Project Manager. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **does not** apply to this item.

Measurement and payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

This item includes all work necessary to install a new water service for sizes 3/4" through 2". The Items No. 5051 and 5052 are used for PRIVATE DEVELOPMENT projects only.

*A = 3/4" Water Service with Transfer C = 1 1/2" Water Service with Transfer
B = 1" Water Service with Transfer D = 2" Water Service with Transfer*

ITEM NO. 5055X WATER SERVICE – EXTRA DEPTH (+20')

This item consists of additional excavation of Water Service Extra Depth for ___ Linear Feet. This item is supplementary to Item No. 5050 for extra depth exceeding twenty vertical feet and shall be paid per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and payment will be per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone and will include any equipment, materials and labor, crossing diagonal utilities, costs for barricading, trench safety and support for these services.

This item is used on DWU CITY contracts.

ITEM NO. 5060 ___x___ " COMBINED SERVICE WITH ___" METER AND TRANSFER

This item consists of installing ___ Each new ___" Combined Service with ___" Meter, removing the existing vault and existing meter, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" meter and the meter access hatch cover to the Contractor for the new ___" Combined Service.

The Contractor will remove and salvage the existing ___" meter and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing ___" meter is damaged during removal, the Contractor will be liable for the replacement cost. If the ___" meter is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

Measurement and payment will be per Each and will include all work to install the ___" Combined Service; to include ___" gate valves, meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under Item No. ___, ___" Ductile Iron Water Pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxF = 4" Combined Service with 4" Meter and Transfer

HxH = 6" Combined Service with 6" Meter and Transfer

JxH = 8" Combined Service with 6" Meter and Transfer

JxJ = 8" Combined Service with 8" Meter and Transfer

KxJ = 10" Combined Service with 8" Meter and Transfer

KxK = 10" Combined Service with 10" Meter and Transfer

ITEM NO. 5061__x__ ___" DOMESTIC SERVICE WITH ___" METER AND TRANSFER

This item consists of installing ___ Each new ___" Domestic Service with ___" Meter, removing the existing vault and existing meter, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" meter and the meter access hatch cover to the Contractor for the new ___" Domestic Service.

The Contractor will remove and salvage the existing ___" meter and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing ___" meter is damaged during removal, the Contractor will be liable for the replacement cost. If the ___" meter is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

Measurement and payment will be per Each and will include all work to install the ___" Domestic Service; to include ___" gate valves, meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxE = 4" Domestic Service with 3" Meter and Transfer

FxF = 4" Domestic Service with 4" Meter and Transfer

HxH = 6" Domestic Service with 6" Meter and Transfer

JxH = 8" Domestic Service with 6" Meter and Transfer

ITEM NO. 5062__x__ ___" CLOSED FIRELINE SERVICE WITH ___" DETECTOR CHECK DEVICE AND TRANSFER

This item consists of installing ___ Each new ___" Closed Fireline Service with ___" Detector Check Device, removing and disposing of the existing vault piping and fittings, and salvaging the existing detector check device, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" detector check device and the vault access hatch cover to the Contractor for the new ___" Closed Fireline Service.

The Contractor will remove and salvage the existing ___" detector check device and deliver it to the Large Meter Repair Shop, 2821 Municipal Street. If the existing ___" detector check device is damaged during removal, the Contractor will be liable for the replacement cost. If the ___" detector check device is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the Contractor will not be liable for replacement cost.

Measurement and payment will be per Each and will include all work to dispose of the existing vault, piping and fittings, and all work to install the ___" Closed Fireline Service; to include ___" detector check device, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxF = 4" Closed Fireline Service with 4" D.C. Device and Transfer

HxH = 6" Closed Fireline Service with 6" D.C. Device and Transfer

JxH = 8" Closed Fireline Service with 6" D.C. Device and Transfer

JxJ = 8" Closed Fireline Service with 8" D.C. Device and Transfer

KxK = 10" Closed Fireline Service with 10" D.C. Device and Transfer

ITEM NO. 5063__x__ ___" STANDPIPE FIRELINE SERVICE WITH ___" METER AND TRANSFER

This item consists of installing ___ Each new ___" Standpipe Fireline Service with ___" Turbine Meter with U.L. approved strainer, removing and disposing of the existing vault piping and fittings, and transferring service in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" turbine meter and the meter access hatch cover to the Contractor for the new ___" Standpipe Fireline Service. The Contractor will install the new vault, meter, frame, and cover.

Measurement and payment will be per Each and will include all work to dispose of the existing vault, piping and fittings, and all work to install the ___" Standpipe Fireline Service; to include ___" gate valve and ___" turbine meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxF = 4" Standpipe Fireline Service with 4" Meter and Transfer

HxH = 6" Standpipe Fireline Service with 6" Meter and Transfer

JxJ = 8" Standpipe Fireline Service with 8" Meter and Transfer

KxJ = 10" Standpipe Fireline Service with 8" Meter and Transfer

KxK = 10" Standpipe Fireline Service with 10" Meter and Transfer

ITEM NO. 5064__x__ ___" COMBINED SERVICE WITH ___" METER

This item consists of installing ___ Each new ___" Combined Service with ___" Meter in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" meter and the meter access hatch cover to the Contractor for the new ___" Combined Service. The Contractor will install the new vault, meter and frame, and cover.

Measurement and payment will be per Each and will include all work to install the ___" Combined Service; to include ___" gate valve, meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is utilized for new installations where no existing service exists. Use the following for size indicators:

FXF = 4" Combined Service with 4" Meter

HXH = 6" Combined Service with 6" Meter

JXH = 8" Combined Service with 6" Meter

JXJ = 8" Combined Service with 8" Meter

KXJ = 10" Combined Service with 8" Meter

KXK = 10" Combined Service with 10" Meter

ITEM NO. 5065__x__ ___" DOMESTIC SERVICE WITH ___" METER

This item consists of installing ___ Each new ___" Domestic Service with ___" Meter in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" meter and the meter access hatch cover to the Contractor for the new ___" Domestic Service. The Contractor will install the new vault, meter and frame, and cover.

Measurement and payment will be per Each and will include all work to install the ___" Domestic Service; to include ___" gate valve, meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is utilized for new installations where no service exists. Use the following for size indicators:

FxE = 4" Domestic Service with 3" Meter

FxF = 4" Domestic Service with 4" Meter

HxH = 6" Domestic Service with 6" Meter

JxH = 8" Domestic Service with 6" Meter

ITEM NO. 5066__x__ ___" CLOSED FIRELINE SERVICE WITH ___" DETECTOR CHECK DEVICE

This item consists of installing ___ Each new ___" Closed Fireline Service with ___" Detector Check Device in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new ___" detector check device and the vault access hatch cover to the Contractor for the new ___" Closed Fireline Service.

Measurement and payment will be per Each and will include all work to install the ___" Closed Fireline Service; to include ___" detector check device, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving, and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxF = 4" Closed Fireline Service with 4" D.C. Device

HxH = 6" Closed Fireline Service with 6" D.C. Device

JxH = 8" Closed Fireline Service with 6" D.C. Device

JxJ = 8" Closed Fireline Service with 8" D.C. Device

KxK = 10" Closed Fireline Service with 10" D.C. Device

ITEM NO. 5067__x__ __" STANDPIPE FIRELINE SERVICE WITH __" METER

This item consists of installing __ Each new __" Standpipe Fireline Service with __" Turbine Meter with U.L. approved strainer in accordance with the specifications and addenda thereto, and the Standard Drawings.

The City will furnish the new __" turbine meter and the meter access hatch cover to the Contractor for the new __" Standpipe Fireline Service. The Contractor will install the new vault, meter and frame, and cover.

Measurement and payment will be per Each and will include all work to install the __" Standpipe Fireline Service; to include __" gate valve and __" turbine meter, installation of the new vault, vault floor, piping, blocking, disposal of excess material, boring, crossing diagonal utilities, and all temporary and permanent paving, and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.), and any costs for barricading, trench safety and support for these services.

The water pipe from the new main to the first fitting of the by-pass piping will not be included in this item. This pipe will be paid under the bid item for the appropriate water pipe.

This item is used when replacing or relocating an existing service. Use the following for size indicators:

FxF = 4" Standpipe Fireline Service with 4" Meter

HxH = 6" Standpipe Fireline Service with 6" Meter

JxJ = 8" Standpipe Fireline Service with 8" Meter

KxJ = 10" Standpipe Fireline Service with 8" Meter

KxK = 10" Standpipe Fireline Service with 10" Meter

ITEM NO. 5070 INSTALL AMI-READY METER LID

This item consists of the contractor removing __ existing water meter lids and installing __AMI-Ready RF-Transparent meter lids at each 5/8" Domestic water service. This item shall be paid per meter and shall be considered additional to pay item 5050 and 5060-5067

ITEM NO 5071 DELIVER AMI-READY METER COMPONENTS

This item consists of the contractor delivering _ AMI Meter Modules, End Point Mounting Brackets Sets, and mounting rods for 5/8" or 1" meter to DWU Materials Services 2900 Municipal for future installation by DWU Meters Section. This item shall be paid per domestic meter and shall be considered an additional pay item to 5050, and 5060-5067

ITEM NO 5072 DELIVER AMI-READY METER

This item consists of the contractor delivering __ AMI-Ready meter for 5/8" or 1" meter to DWU Materials Services 2900 Municipal for future installation by DWU Meters Section. This item shall be paid per domestic meter and shall be considered an additional pay item to 5050, and 5060-5067

ITEM NO. 5080 RECONNECT EXISTING WATER SERVICE

This item consists of furnishing and placing approximately ___ Each Water Service on an existing or new water main. This item includes all sizes of water services, 3/4" through 2", water meter boxes and meters, 5/8" through 2". This item does not include Commercial Water Meter Vaults. This item includes removing a portion of the existing service line and replacing it with a new copper service line to clear all obstructions, and if required by the Project Manager, any or all of the following; tapping of the existing water main, removing the existing meter box and lid and old service line and replacing with a new meter box and approved lid, and transferring the water service to the meter from the new meter box to the property line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3** of these specifications and addenda thereto, and the applicable Standard Drawings.

If a new meter is required by the Project Manager, the new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. If the meter is determined by the Project Manager to be defective, it will be replaced with a new meter furnished by the City. It will be the Contractor's responsibility to relocate the existing backflow prevention devices on the existing water service between the meter and property line to a proper location as directed by the Project Manager. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns do not apply to this item

Measurement and payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, fittings, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

This item is most often used on DWU JOINT contracts where the water service is not being replaced and only a portion of the water service may need to be replaced to clear proposed storm sewers. The item includes all water services of sizes 3/4" through 2" and all approved material types. This item includes all items necessary to relocate the water service. Refer to DWU Standard Drawings 201-206A of the Dallas Water Utilities Standard Drawings for Water and Wastewater Construction for more detail.

ITEM NO. 5091 INSTALL FIRE HYDRANT

This item consists of furnishing and placing approximately ___ Each Fire Hydrant in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.3.3.COD: Measurement and Payment** of these specifications and will include all items necessary to furnish and install a fire hydrant; including barricading, all paving removal and replacement, saw-cut, embedment, and concrete blocking required. This item does not include any of the fire hydrant lead. That pipe will be paid for under the appropriate 6" D.I. or 6" PVC Water Pipe bid item.

Only new fire hydrants are installed regardless of the age of the existing fire hydrant.

ITEM NO. 5092 REMOVING EXISTING FIRE HYDRANT

This item consists of Removing, in the most economical manner, approximately ___ Each Existing Fire Hydrant. If the Project Manager determines the fire hydrant is to be salvaged and paid for under Item No. 5093, the Contractor must take necessary precautions to ensure the fire hydrant is not damaged. A cap or plug on the existing fire hydrant lead is included with this item.

This includes all items necessary to remove a fire hydrant.

ITEM NO. 5093 DELIVER FIRE HYDRANT

This item consists of delivering approximately ___ Each Existing Fire Hydrant.

This item to include loading and hauling the fire hydrant to the Dallas Water Utilities Yard located at 2863 Municipal St. The Contractor shall contact Distribution 24-48 hours prior to delivery.

This item is a **contingent item** and payment will be made only if directed by the Project Manager. If delivery is not directed, the fire hydrant shall become the property of the Contractor.

This bid item pays the Contractor for delivering a fire hydrant to stores yard for salvage usage. The total number of this bid item should be the same as the total number removed under Item No. 5092. The Project Manager is responsible for determining if DWU wants these delivered to stores yard based on age, type, condition, and bid cost.

ITEM NO. 5094 RELOCATE FIRE HYDRANT

This item is to consist of moving and relocating approximately ___ Each Existing Fire Hydrant as shown on the plans.

This item is used for DWU PRIVATE DEVELOPMENT contracts only.

ITEM NO. 5100__ __" GATE VALVE

This item consists of furnishing and placing approximately __ Each __" Gate Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

Always include the tapping valve(s) with the total number of gate valves when arriving at a total, as there is no separate item specifically for tapping valves. If a valve placement requires installation of a manhole, the manhole will be paid for under bid item 5160. Use the following for size indicators:

F = 4" Gate Valve

AA = 36" Gate Valve

H = 6" Gate Valve

AC = 42" Gate Valve

J = 8" Gate Valve

AE = 48" Gate Valve

K = 10" Gate Valve

AF = 54" Gate Valve

L = 12" Gate Valve

AG = 60" Gate Valve

Q = 16" Gate Valve

AH = 66" Gate Valve

R = 18" Gate Valve

AJ = 72" Gate Valve

S = 20" Gate Valve

AK = 78" Gate Valve

V = 24" Gate Valve

AL = 84" Gate Valve

Y = 30" Gate Valve

AM = 90" Gate Valve

ITEM NO. 5101__ __" GATE VALVE WITH NITRILE GASKETS

This item consists of furnishing and placing approximately __ Each __" Gate Valve with nitrile gaskets in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

This item is used only for projects where soil and groundwater testing has determined that there are contaminants which can damage standard gaskets. Use the following for size indicators:

H = 6" Gate Valve

J = 8" Gate Valve

L = 12" Gate Valve

ITEM NO. 5105__ __" GATE VALVE (PLACE ONLY)

This item consists of removing existing valve, vault, associated appurtenances and placing approximately __ each __" Gate Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item shall include barricading, trench safety, four "F" flowable backfill, all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and gutter, sod, seed, etc.) All paving in City ROW shall be installed in accordance with the Pavement Cut and Repair Standards Manual issued by the Department of Public Works and Transportation, latest edition, except as stated in the special provisions. All paving installed in TxDOT ROW shall be in accordance with the latest edition of the TxDOT paving cut manual.

This item also includes all associated piping, closures, fittings, and transitional couplings. This item includes pick-up of the city provided valve and delivery to the job site. The Contractor shall take necessary precautions to ensure that the valve is not damaged.

Measurement and Payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications and will include all labor, materials, tools, equipment, and incidental items necessary to complete the work.

The manhole(s) for this item will be furnished under Item No. 5160__. Use the following for size indicators:

F = 4" Gate Valve

AA = 36" Gate Valve

H = 6" Gate Valve

AC = 42" Gate Valve

J = 8" Gate Valve

AE = 48" Gate Valve

K = 10" Gate Valve

AF = 54" Gate Valve

L = 12" Gate Valve

AG = 60" Gate Valve

Q = 16" Gate Valve

AH = 66" Gate Valve

R = 18" Gate Valve

AJ = 72" Gate Valve

S = 20" Gate Valve

AK = 78" Gate Valve

V = 24" Gate Valve

AL = 84" Gate Valve

Y = 30" Gate Valve

AM = 90" Gate Valve

ITEM NO. 5110__x__ __" x __" TAPPING SLEEVE

This item consists of furnishing and placing approximately __ Each __" x __" Tapping Sleeve in accordance with **Item 502.6.1.17. Tapping Valves and Item 502.10.2.3. Tapping Sleeves** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 502.5.3.COD: Measurement and Payment** of these specifications.

Most sizes are indicated below. Each individual size on the contract must have a separate bid item assigned to it. Use the following for size indicators:

FxF = 4" x 4" Tapping Sleeve

HxH = 6" x 6" Tapping Sleeve

JxD = 8" x 2" Tapping Sleeve

JxH = 8" x 6" Tapping Sleeve

JxJ = 8" x 8" Tapping Sleeve

KxJ = 10" x 8" Tapping Sleeve

LxJ = 12" x 8" Tapping Sleeve

LxL = 12" x 12" Tapping Sleeve

QxJ = 16" x 8" Tapping Sleeve

QxL = 16" x 12" Tapping Sleeve

SxJ = 20" x 8" Tapping Sleeve

SxL = 20" x 12" Tapping Sleeve

VxL = 24" x 12" Tapping Sleeve

VxQ = 24" x 16" Tapping Sleeve

YxL = 30" x 12" Tapping Sleeve

AAxH = 36" x 6" Tapping Sleeve

AAxL = 36" x 12" Tapping Sleeve

VxJ = 24" x 8" Tapping Sleeve

QxQ = 16" x 16" Tapping Sleeve

RxJ = 18" x 8" Tapping Sleeve

SxQ = 20" x 16" Tapping Sleeve

YxQ = 30" x 16" Tapping Sleeve

AAxQ = 36" x 16" Tapping Sleeve

YxV = 30" x 24" Tapping Sleeve

JxF = 8" x 4" Tapping Sleeve

LxH = 12" x 6" Tapping Sleeve

ACxL = 42" x 12" Tapping Sleeve

KxK = 10" x 10" Tapping Sleeve

QxH = 16" x 6" Tapping Sleeve

MxD = 14" x 2" Tapping Sleeve

AAxJ = 36" x 8" Tapping Sleeve

LxD = 12" x 2" Tapping Sleeve

ALxAE = 84" x 48" Tapping Sleeve

AAxS = 36" x 20" Tapping Sleeve

AExQ = 48" x 16" Tapping Sleeve

LxF = 12" x 4" Tapping Sleeve

HxF = 6" x 4" Tapping Sleeve

RxL = 18" x 12" Tapping Sleeve

For any size combination not shown, use the size indicator table in the Introduction Section H to determine the appropriate size indicator.

ITEM NO. 5120__ REMOVE, SALVAGE, AND DELIVER __" VALVE

This item consists of Removing, Salvaging, and delivering approximately __ Each __" Valve. This item to include cleaning, loading, hauling, and unloading the valve at Dallas Water Utilities Yard located at 4120 Scottsdale Road. If the Contractor has damaged the valve, after unloading and in the opinion of the Project Manager, no payment on this item will be made, and the Contractor will be charged the replacement cost of the valve.

. Use the following for size indicators:

F = 4" Valve

H = 6" Valve

J = 8" Valve

K = 10" Valve

L = 12" Valve

Q = 16" Valve

R = 18" Valve

S = 20" Valve

V = 24" Valve

Y = 30" Valve

AA = 36" Valve

AC = 42" Valve

AE = 48" Valve

AF = 54" Valve

AG = 60" Valve

AH = 66" Valve

AJ = 72" Valve

AK = 78" Valve

AL = 84" Valve

AM = 90" Valve

ITEM NO. 5130__ __" CUT-IN VALVE

This item consists of furnishing and placing approximately __ Each __" Cut-in Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications and will include all items necessary to furnish and install a cut-in valve; including barricading, all temporary and permanent paving removal and replacement, saw-cut, embedment, and concrete blocking required.

This item is required when a need exists to isolate a portion of main being installed or lowered so as not to disrupt existing customers. It includes all material necessary to install the valve. Use the following for size indicators:

H = 6" Cut-In Valve

J = 8" Cut =In Valve

L = 12" Cut-In Valve

Q = 16" Cut-In Valve

ITEM NO. 5140__ __" FLAP VALVE

This item consists of furnishing and placing approximately __ Each __" Flap Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

This item is required as a bid item to drain water on a water main containing a water access manhole with blowoff. Use the following for size indicators:

H = 6" Flap Valve

J = 8" Flap Valve

K = 10" Flap Valve

L = 12" Flap Valve

ITEM NO. 5150__ __" ACCESS MANHOLE

This item consists of furnishing and placing __ Each __" Access Manhole.

This item is complete and includes the manhole, valves, labor, materials, drainpipe, fittings, barricading, and incidentals as detailed on the plans and standard drawings.

Measurement and payment will be per each and in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is normally used on large diameter water mains to provide access at a flanged outlet. Use the following for size indicators:

AE = 48" Access Manhole

AG = 60" Access Manhole

AJ = 72" Access Manhole

ITEM NO. 5155__ __" ACCESS MANHOLE WITH BLOWOFF

This item consists of furnishing and placing __ Each __" Access Manhole.

This item is complete and includes the manhole, blowoff valves, labor, materials, drainpipe, fittings, barricading, and incidentals as detailed on the plans and standard drawings.

Measurement and payment will be per each and in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is normally used on large diameter water mains to provide access at a blowoff drainage structure. Use the following for size indicators:

AE = 48" Access Manhole with Blowoff

AF = 54" Access Manhole with Blowoff

AG = 60" Access Manhole with Blowoff

AJ = 72" Access Manhole with Blowoff

ITEM NO. 5160__ __" DIAMETER WATER MANHOLE

This item consists of furnishing and placing approximately __ Each __" Diameter Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, and Item 502.1.4.8.COD: Wastewater Manhole Frame Seals** of these specifications and addenda thereto, and the applicable Standard Drawings.

Barricading is included in this item. Nonshrink grout shall be used in place of mortar.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications per each complete in place.

All horizontal gate valves, large tapping valves, and horizontal butterfly valves require this bid item to install the manhole as a separate bid item. Use the following for size indicators:

AG = 60" Diameter Water Manhole AJ = 72" Diameter Water Manhole

ITEM NO. 5170__ __" PRESSURE REDUCING VALVE AND VAULT

This item consists of furnishing and placing __ each __" pressure reducing valve and vault as per the **DWU Standard Drawings for Water and Wastewater Construction, Latest Edition**. This item includes all special couplings, appurtenances, pilot piping, valves, excavation, foundation material, backfill, and incidentals required for a complete in place pressure reducing valve and vault.

Payment will be per each as set forth in the contract.

A detail drawing must be included on the design sheets. Use the following for size indicators:

F = 4" PRV & Vault

L = 12" PRV & Vault

V = 24" PRV & Vault

H = 6" PRV & Vault

Q = 16" PRV & Vault

Y = 30" PRV & Vault

J = 8" PRV & Vault

R = 18" PRV & Vault

AA = 36" PRV & Vault

K = 10" PRV & Vault

S = 20" PRV & Vault

ITEM NO. 5180__ __" DIAMETER WATER MANHOLE – EXTRA DEPTH (+20')

This item consists of furnishing and placing approximately __ Each __" Diameter Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Barricading is included in this item. Nonshrink grout shall be used in place of mortar.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications per each complete in place.

All horizontal gate valves, large tapping valves, and horizontal butterfly valves require this bid item to install the manhole as a separate bid item. Use the following for size indicators:

AE = 48" Diameter Water Manhole

AG = 60" Diameter Water Manhole

AJ = 72" Diameter Water Manhole

ITEM NO. 5200__ __" BUTTERFLY VALVE

This item consists of furnishing and placing approximately __ Each __" Butterfly Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.5.COD: Rubber Seated Butterfly Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications and will include all labor, materials, tools, equipment, and incidental items necessary to complete the work.

The manhole(s) for this item will be furnished under Item No. 5160__. Use the following for size indicators:

J = 8" Butterfly Valve

Q = 16" Butterfly Valve

R = 18" Butterfly Valve

S = 20" Butterfly Valve

V = 24" Butterfly Valve

Y = 30" Butterfly Valve

AA = 36" Butterfly Valve

AC = 42" Butterfly Valve

AE = 48" Butterfly Valve

AF = 54" Butterfly Valve

AG = 60" Butterfly Valve

AH = 66" Butterfly Valve

AJ = 72" Butterfly Valve

AL = 84" Butterfly Valve

AN = 96" Butterfly Valve

ITEM NO. 5205__ __" BUTTERFLY VALVE (PLACE ONLY)

This item consists of picking up, delivering and placing approximately __ Each __" Butterfly Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.5.COD: Rubber Seated Butterfly Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item shall include barricading, trench safety, four "F" flowable backfill, all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and gutter, sod, seed, etc.) All paving in City ROW shall be installed in accordance with the Pavement Cut and Repair Standards Manual issued by the Department of Public Works and Transportation, latest edition, except as stated in the special provisions. All paving installed in TxDOT ROW shall be in accordance with the latest edition of the TxDOT paving cut manual.

This item also includes all associated piping, closures, fittings, and transitional couplings. This item includes pick-up of the city provided valve and delivery to the job site. The Contractor shall take necessary precautions to ensure that the valve is not damaged.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications and will include all labor, materials, tools, equipment, and incidental items necessary to complete the work.

The manhole(s) for this item will be furnished under Item No. 5160__. Use the following for size indicators:

J = 8" Butterfly Valve

Q = 16" Butterfly Valve

R = 18" Butterfly Valve

S = 20" Butterfly Valve

V = 24" Butterfly Valve

Y = 30" Butterfly Valve

AA = 36" Butterfly Valve

AC = 42" Butterfly Valve

AE = 48" Butterfly Valve

AF = 54" Butterfly Valve

AG = 60" Butterfly Valve

AH = 66" Butterfly Valve

AJ = 72" Butterfly Valve

AL = 84" Butterfly Valve

AN = 96" Butterfly Valve

ITEM NO. 5300 DEEP ANODE CATHODIC PROTECTION SYSTEM

This item consists of furnishing and placing ___ each Deep Anode Cathodic Protection System as per **DWU Standard Drawings and DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Editions**. This item includes all materials, equipment, labor, rectifier fencing (if needed), and any incidentals required to furnish and install a Deep Anode Cathodic Protection System.

Payment will be per each as set forth in the contract.

ITEM NO. 5310 CORROSION CONTROL TEST STATION

This item consists of furnishing and placing ___ each Corrosion Control Test Station as per **DWU Standard Drawings and DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Editions**. This item includes all materials, equipment, labor, and any incidentals required to furnish and install a Corrosion Control Test Station.

Payment will be per each as set forth in the contract.

ITEM NO. 5500 ___ ___" WATER MAIN (BOTO)

This item consists of approximately ___ Linear Feet of ___" Water Main to be installed By Other Than Open Cut in accordance with **Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and as shown the plans.

The ___" carrier pipe is not to be included in this item. The encasement pipe is included in this item and shall have an inside diameter of at least 6" greater than the largest outside bell diameter of the carrier pipe. The size indicator for this item is the size of the carrier pipe, not the encasement pipe.

Measurement and payment will be in accordance with **Item 503.4.**

Measurement and Payment of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). Size & type of encasement pipe is not usually specified. Actual soil conditions will determine if encasement pipe is required, but no additional compensation will be paid to the Contractor for encasement. Use the following for size indicators:

D = 2" Water Main (BOTO)

F = 4" Water Main (BOTO)

H = 6" Water Main (BOTO)

J = 8" Water Main (BOTO)

L = 12" Water Main (BOTO)

Q = 16" Water Main (BOTO)

R = 18" Water Main (BOTO)

S = 20" Water Main (BOTO)

V = 24" Water Main (BOTO)

Y = 30" Water Main (BOTO)

AA = 36" Water Main (BOTO)

AC = 42" Water Main (BOTO)

AE = 48" Water Main (BOTO)

AF = 54" Water Main (BOTO)

AG = 60" Water Main (BOTO)

AH = 66" Water Main (BOTO)

AJ = 72" Water Main (BOTO)

AK = 78" Water Main (BOTO)

AL = 84" Water Main (BOTO)

AM = 90" Water Main (BOTO)

AN = 96" Water Main (BOTO)

ITEM NO. 5505__ __" WATER MAIN BY HORIZONTAL DIRECTIONAL DRILLING

This item consists of approximately __ Linear Feet of __" Water Main to be installed by Horizontal Directional Drilling in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**, and as shown on the Plans.

The pipe and any associated special appurtenances are included in this item. Measurement and payment will be per linear foot of pipe installed.

Use the following for size indicators:

H = 6" Water Main by Horiz. Directional Drilling

J = 8" Water Main by Horiz. Directional Drilling

L = 12" Water Main by Horiz. Directional Drilling

ITEM NO. 5510__ HIGHWAY CROSSING FOR __" WATER MAIN (BOTO)

This item consists of approximately __ Linear Feet of Highway Crossing for the proposed __" Water by Other Than Open Cut in accordance with **Item 509.2. State Highway Crossings, Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). It is required when crossing under a State Highway. Size and type of encasement pipe must be shown on the plans. Use the following for size indicators:

D = 2" Water Highway, Crossing (BOTO)

F = 4" Water Highway, Crossing (BOTO)

H = 6" Water Highway, Crossing (BOTO)

J = 8" Water Highway, Crossing (BOTO)

L = 12" Water Highway, Crossing (BOTO)

Q = 16" Water Highway, Crossing (BOTO)

S = 20" Water Highway, Crossing (BOTO)

V = 24" Water Highway, Crossing (BOTO)

Y = 30" Water Highway, Crossing (BOTO)

AA = 36" Water Highway, Crossing (BOTO)

AC = 42" Water Highway, Crossing (BOTO)

AE = 48" Water Highway, Crossing (BOTO)

AF = 54" Water Highway, Crossing (BOTO)

AG = 60" Water Highway, Crossing (BOTO)

AH = 66" Water Highway, Crossing (BOTO)

AJ = 72" Water Highway, Crossing (BOTO)

AK = 78" Water Highway, Crossing (BOTO)

AL = 84" Water Highway, Crossing (BOTO)

AM = 90" Water Highway, Crossing (BOTO)

ITEM NO. 5520__ HIGHWAY CROSSING FOR __" WATER MAIN (BY OPEN CUT)

This item consists of approximately __ Linear Feet of Highway Crossing for the proposed __" Water by Open Cut in accordance with **Item 509.2. State Highway Crossings** of these specifications and addenda thereto, and the applicable Standard Drawings.

The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item. This item is intended to cover that portion of the crossing at which open cut is permissible. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is typically used when TXDOT requires BOTOC to a minimum distance from the roadway but allows Open Cut (normally with encasement) for the remainder of the of the R.O.W. crossing. Generally, bid items 5510__ and 5520__ are used together on a contract to be specified on the plans. Use the following for size indicators:

D = 2" Water Highway, Crossing (By Open Cut)
F = 4" Water Highway, Crossing (By Open Cut)
H = 6" Water Highway, Crossing (By Open Cut)
J = 8" Water Highway, Crossing (By Open Cut)
L = 12" Water Highway, Crossing (By Open Cut)
Q = 16" Water Highway, Crossing (By Open Cut)
S = 20" Water Highway, Crossing (By Open Cut)
V = 24" Water Highway, Crossing (By Open Cut)
Y = 30" Water Highway, Crossing (By Open Cut)
AA = 36" Water Highway, Crossing (By Open Cut)
AC = 42" Water Highway, Crossing (By Open Cut)
AE = 48" Water Highway, Crossing (By Open Cut)
AF = 54" Water Highway, Crossing (By Open Cut)
AG = 60" Water Highway, Crossing (By Open Cut)
AH = 66" Water Highway, Crossing (By Open Cut)
AJ = 72" Water Highway, Crossing (By Open Cut)
AK = 78" Water Highway, Crossing (By Open Cut)
AL = 84" Water Highway, Crossing (By Open Cut)
AM = 90" Water Highway, Crossing (By Open Cut)

ITEM NO. 5530__ RAILROAD CROSSING FOR __" WATER MAIN (BOTO)

This item consists of approximately __ Linear Feet of Railroad Crossing for the proposed __" Water Main by Other Than Open Cut in accordance with **Item 509.4. Railroad Crossings, Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). This item is required when crossing under Railroad tracks. Size and type of encasement pipe must be shown on the plans, and requirements vary with each railroad.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). This item is required when crossing under Railroad tracks. Size and type of encasement pipe must be shown on the plans, and requirements vary with each railroad. Use the following for size indicators:

*D = 2" Water, RR Crossing (BOTO)
 F = 4" Water, RR Crossing (BOTO)
 H = 6" Water, RR Crossing (BOTO)
 J = 8" Water, RR Crossing (BOTO)
 L = 12" Water, RR Crossing (BOTO)
 Q = 16" Water, RR Crossing (BOTO)
 S = 20" Water, RR Crossing (BOTO)
 V = 24" Water, RR Crossing (BOTO)
 Y = 30" Water, RR Crossing (BOTO)
 AA = 36" Water, RR Crossing (BOTO)*

*AC = 42" Water, RR Crossing (BOTO)
 AE = 48" Water, RR Crossing (BOTO)
 AF = 54" Water, RR Crossing (BOTO)
 AG = 60" Water, RR Crossing (BOTO)
 AH = 66" Water, RR Crossing (BOTO)
 AJ = 72" Water, RR Crossing (BOTO)
 AK = 78" Water, RR Crossing (BOTO)
 AL = 84" Water, RR Crossing (BOTO)
 AM = 90" Water, RR Crossing (BOTO)
 AN = 96" Water, RR Crossing (BOTO)*

ITEM NO. 5540__ RAILROAD CROSSING FOR __" WATER MAIN (BY OPEN CUT)

This item consists of approximately __ Linear Feet of Railroad Crossing for the proposed __" Water Main by Open Cut in accordance with **Item 509.4. Railroad Crossings** of these specifications and addenda thereto, and the applicable Standard Drawings.

The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is like bid item 5520__ whereby the Railroad Company will allow a portion of their R.O.W. to be Open Cut. This item is generally used on a contract with bid item 5530__. Plans must show the limits and size and type of encasement pipe in this section "By Open Cut." Use the following for size indicators:

D = 2" Water, RR Crossing (By Open Cut)

AC = 42" Water, RR Crossing (By Open Cut)

F = 4" Water, RR Crossing (By Open Cut)

AE = 48" Water, RR Crossing (By Open Cut)

H = 6" Water, RR Crossing (By Open Cut)

AF = 54" Water, RR Crossing (By Open Cut)

J = 8" Water, RR Crossing (By Open Cut)

AG = 60" Water, RR Crossing (By Open Cut)

L = 12" Water, RR Crossing (By Open Cut)

AH = 66" Water, RR Crossing (By Open Cut)

Q = 16" Water, RR Crossing (By Open Cut)

AJ = 72" Water, RR Crossing (By Open Cut)

S = 20" Water, RR Crossing (By Open Cut)

AK = 78" Water, RR Crossing (By Open Cut)

V = 24" Water, RR Crossing (By Open Cut)

AL = 84" Water, RR Crossing (By Open Cut)

Y = 30" Water, RR Crossing (By Open Cut)

AM = 90" Water, RR Crossing (By Open Cut)

AA = 36" Water, RR Crossing (By Open Cut)

ITEM NO. 5550__ __" WATER MAIN CROSSING (BOTO)

This item consists of approximately __ Linear Feet of __" Water Main to be installed By Other Than Open Cut in accordance with **Item 509.3. Street and Alley Crossings** of these specifications and addenda thereto.

The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6. Measurement and Payment of Crossings** of these specifications.

This item is similar to bid item 5500__, except the Designer requires encasement pipe. This encasement may be for protection of the main from planned construction, or the soil conditions warrant encasement pipe. Plans must show the limits of the crossing, and size and type of encasement pipe. Use the following for size indicators:

D = 2" Water Main Crossing (BOTO)

F = 4" Water Main Crossing (BOTO)

H = 6" Water Main Crossing (BOTO)

J = 8" Water Main Crossing (BOTO)

L = 12" Water Main Crossing (BOTO)

Q = 16" Water Main Crossing (BOTO)

R = 18" Water Main Crossing (BOTO)

S = 20" Water Main Crossing (BOTO)

V = 24" Water Main Crossing (BOTO)

Y = 30" Water Main Crossing (BOTO)

AA = 36" Water Main Crossing (BOTO)

AC = 42" Water Main Crossing (BOTO)

AE = 48" Water Main Crossing (BOTO)

AF = 54" Water Main Crossing (BOTO)

AG = 60" Water Main Crossing (BOTO)

AH = 66" Water Main Crossing (BOTO)

AJ = 72" Water Main Crossing (BOTO)

AK = 78" Water Main Crossing (BOTO)

AL = 84" Water Main Crossing (BOTO)

AM = 90" Water Main Crossing (BOTO)

AN = 96" Water Main Crossing (BOTO)

ITEM NO. 5560 ___ ___ " **WATER MAIN CROSSING (BY OPEN CUT)**

This item consists of approximately ___ Linear Feet of ___" Water Main Crossing to be installed by Open Cut in accordance with **Item 509.3. Street and Alley Crossings** of these specifications and addenda thereto.

The ___" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

Usually this item is used when crossing a street and the Designer can allow open construction but wishes to encase the carrier pipe for future protection or because the street/highway is not yet built. Plans must show the limits of the crossing, and size and type of encasement pipe. Use the following for size indicators:

D = 2" Water Main Crossing (By Open Cut)

F = 4" Water Main Crossing (By Open Cut)

H = 6" Water Main Crossing (By Open Cut)

J = 8" Water Main Crossing (By Open Cut)

L = 12" Water Main Crossing (By Open Cut)

Q = 16" Water Main Crossing (By Open Cut)

R = 18" Water Main Crossing (By Open Cut)

S = 20" Water Main Crossing (By Open Cut)

V = 24" Water Main Crossing (By Open Cut)

Y = 30" Water Main Crossing (By Open Cut)

AA = 36" Water Main Crossing (By Open Cut)

AC = 42" Water Main Crossing (By Open Cut)

AE = 48" Water Main Crossing (By Open Cut)

AF = 54" Water Main Crossing (By Open Cut)

AG = 60" Water Main Crossing (By Open Cut)

AH = 66" Water Main Crossing (By Open Cut)

AJ = 72" Water Main Crossing (By Open Cut)

AK = 78" Water Main Crossing (By Open Cut)

AL = 84" Water Main Crossing (By Open Cut)

AM = 90" Water Main Crossing (By Open Cut)

AN = 96" Water Main Crossing (By Open Cut)

ITEM NO. 5570 **PITOT OUTLET AND MANHOLE**

This item consists of furnishing and placing approximately ___ Each Pitot Outlet, complete, in accordance with **Item 502.11.1. Pitot Outlets** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole and barricading.

Measurement and payment will be in accordance with **Item 502.11.1. Pitot Outlets** of these specifications.

ITEM NO. 5580__ __" DISHED HEAD PLUG

This item consists of furnishing and placing approximately __ Each Dished Head Plug in accordance with **Item 506.8. Plugs** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 506.9.2. Payment** of these specifications.

This bid item is used on concrete water mains for testing purposes and on dead-end concrete mains. Use the following for size indicators:

Q = 16" Dished Head Plug

R = 18" Dished Head Plug

S = 20" Dished Head Plug

V = 24" Dished Head Plug

Y = 30" Dished Head Plug

AA = 36" Dished Head Plug

AC = 42" Dished Head Plug

AE = 48" Dished Head Plug

AF = 54" Dished Head Plug

AG = 60" Dished Head Plug

AH = 66" Dished Head Plug

AJ = 72" Dished Head Plug

AK = 78" Dished Head Plug

AL = 84" Dished Head Plug

AM = 90" Dished Head Plug

AN = 96" Dished Head Plug

AQ = 102" Dished Head Plug

AR = 108" Dished Head Plug

AS = 114" Dished Head Plug

AU = 120" Dished Head Plug

AV = 126" Dished Head Plug

AW = 132" Dished Head Plug

AY = 138" Dished Head Plug

AZ = 144" Dished Head Plug

ITEM NO. 5585__ __" TEST FITTINGS

This item consists of furnishing and placing approximately __ Each __" Test Fittings.

This item to include all plugs and other fittings, and all concrete and steel for blocking.

Measurement and payment shall include all labor, materials, and equipment necessary to construct the test fittings.

Usually used for concrete water mains when requiring internal or external test fittings and plugs to hydrostatically test the water main. Detailed drawing must be shown on the plans. Use the following for size indicators:

Q = 16" Test Fitting

R = 18" Test Fitting

S = 20" Test Fitting

V = 24" Test Fitting

Y = 30" Test Fitting

AA = 36" Test Fitting

AC = 42" Test Fitting

AE = 48" Test Fitting

AF = 54" Test Fitting

AG = 60" Test Fitting

AH = 66" Test Fitting

AJ = 72" Test Fitting

AK = 78" Test Fitting

AL = 84" Test Fitting

AM = 90" Test Fitting

AN = 96" Test Fitting

AQ = 102" Test Fitting

AR = 108" Test Fitting

AS = 114" Test Fitting

AU = 120" Test Fitting

AV = 126" Test Fitting

AW = 132" Test Fitting

AY = 138" Test Fitting

AZ = 144" Test Fitting

ITEM NO. 5590**___" NIGHT CAP PLUG**

This item consists of furnishing and placing approximately ___ Each ___" Night Cap Plug in accordance with **Item 506.8. Plugs** of these specifications and addenda thereto.

Measurement and payment shall be in accordance with **Item 506.9.2.**

Payment of these specifications.

Use the following for size indicators:

Q = 16" Night Cap Plug

R = 18" Night Cap Plug

S = 20" Night Cap Plug

V = 24" Night Cap Plug

Y = 30" Night Cap Plug

AA = 36" Night Cap Plug

AC = 42" Night Cap Plug

AE = 48" Night Cap Plug

AF = 54" Night Cap Plug

AG = 60" Night Cap Plug

AH = 66" Night Cap Plug

AJ = 72" Night Cap Plug

AK = 78" Night Cap Plug

AL = 84" Night Cap Plug

AM = 90" Night Cap Plug

AN = 96" Night Cap Plug

AQ = 102" Night Cap Plug

AR = 108" Night Cap Plug

AS = 114" Night Cap Plug

AU = 120" Night Cap Plug

AV = 126" Night Cap Plug

AW = 132" Night Cap Plug

AY = 138" Night Cap Plug

AZ = 144" Night Cap Plug

ITEM NO. 5600 CUT AND PLUG EXISTING WATER MAIN

This item consists of approximately ___ Each Cut and Plug Existing Water Main as indicated on the plans. The cast iron plug and barricading shall be incidental to this bid item.

Measurement and payment will be per each complete in place and shall include all labor, materials, and equipment necessary to Cut and Plug Existing Water Main.

This must be designed and indicated on plans. Normally a cut and plug bid item is not established where a new main is being connected into an existing main.

ITEM NO. 5600P CUT AND PLUG EXISTING WATER MAIN WITH PAVING

This item consists of approximately ___ Each Cut and Plug Existing Water Main as indicated on the plans.

This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.). The cast iron plug shall be incidental to this bid item.

Measurement and payment will be per each complete in place and shall include all labor, materials, and equipment necessary to Cut and Plug Existing Water Main.

This item is for DWU JOINT contracts and must be designed and indicated on plans. Normally a cut and plug bid item is not established where a new main is being connected into an existing main.

ITEM NO. 5605 CUT AND PLUG EXISTING ASBESTOS-CEMENT WATER MAIN

This item consists of ___ Each Cut and Plug Existing Asbestos-Cement Water Main as indicated on the plans. This item includes all labor, materials, fittings, barricading, environmental regulation compliance and disposal of asbestos-cement pipe for a complete and in place Cut and Plug. All work must be done in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

Measurement and payment will be per each complete and in place.

This must be called out as an item of work on the plans.

ITEM NO. 5605P CUT AND PLUG EXISTING ASBESTOS-CEMENT WATER MAIN WITH PAVING

This item consists of ___ Each Cut and Plug Existing Asbestos-Cement Water Main as indicated on the plans. This item includes all labor, materials, fittings, barricading, traffic control signage, environmental regulation compliance, disposal of asbestos-cement pipe and all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.) for a complete and in place Cut and Plug. All work must be done in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

Measurement and payment will be per each complete and in place.

This must be called out as an item of work on the plans.

ITEM NO. 5610 CUT AND PLUG WATER MAIN FOR TEST

This item consists of ___ Each Cut and Plug Water Main for Test.

This is a contingent item to be used if approved by the Project Manager, in the event pressure testing of the newly constructed main proves unsatisfactory because of leaks in the existing system. In such case, the Contractor must isolate the new construction, perform the required test, and then tie the newly constructed main to the existing water main.

Measurement and payment will be per each complete in place and shall include all labor, materials, and equipment necessary to Cut and Plug Existing Water Main for Test.

Sometimes, when an existing valve is near a tie-in, a Contractor connects into the existing system and pressure tests against the existing valve. If the test fails, he is required to isolate the new main and retest. Set up a minimum of 1 for every 3 new water mains to be constructed in a contract.

ITEM NO. 5620X CUT AND PLUG MAINS – EXTRA DEPTH (+20')

This item consists of additional excavation of Cut and Plug Mains Extra Depth. This item is supplementary to Items No. 5600 and 5600P for extra depth exceeding twenty vertical feet and shall be paid once per location where depth is greater than twenty vertical feet measured to the bottom of the existing main.

Measurement and payment will be per each location for depth exceeding twenty feet measured to the bottom of the existing main and will include any equipment, materials and labor, crossing diagonal utilities, costs for barricading, trench safety and support.

This item is used on DWU CITY contracts.

ITEM NO. 5650 REMOVAL OF LEAD PIPE JOINTS

This item consists of cutting and removal of ___ Each of lead pipe joint(s) on iron pipes in order to facilitate the tie-in of new piping onto the pre-existing iron pipe. The limit of each joint removal is 20 linear feet.

This item shall include only the labor and equipment required to cut, remove, and dispose of the lead joints and connecting the existing iron pipe to the new pipe. This item does not include payment for any materials or incidentals necessary to complete the work. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the Specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

This item is a contingent item and payment will be made only if directed by the DWU Construction Superintendent.

Measure and Payment shall be at the Contract Unit Price per each.

This item is used for the labor and equipment to remove lead and jute pipe joints commonly used on older iron pipes. The lead joint will be cut off the iron pipe and new pipe will be joined with appropriate cast-iron mechanical fittings to adequately restrain the pipes and prevent leaking.

ITEM NO. 5660 CONNECTION TO EXISTING ASBESTOS-CEMENT WATER MAIN

This item consists of ___ Each connection of a new water main to an existing Asbestos-Cement water main as indicated on the plans. This item includes all labor, materials, fittings, barricading, environmental regulation compliance, and disposal of asbestos-cement pipe for a complete and in place water main connection. All work must be done in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

Measurement and payment will be per each complete and in place.

This item is used for DWU City contracts. This must be called out as an item of work on the plans.

ITEM NO. 5660P CONNECTION TO EXISTING ASBESTOS-CEMENT WATER MAIN WITH PAVING

This item consists of ___ Each connection of a new water main to an existing Asbestos-Cement water main as indicated on the plans. This item includes all labor, materials, fittings, barricading, traffic control signage, environmental regulation compliance, disposal of asbestos-cement pipe and all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.) for a complete and in place water main connection. All work must be done in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

Measurement and payment will be per each complete and in place.

This item is used for DWU JOINT contracts. This must be called out as an item of work on the plans.

ITEM NO. 5750__ __" FLUSH POINT

This item consists of furnishing and placing approximately __ Each __" Flush Point, complete, in accordance with **Item 502.10.3. Water Conduit Connections, Item 502.10.3.1.1.COD: Taps, Item 502.10.3.1.2.COD: Tap Assemblies, and Item 502.10.3.1.4.COD: Tapping Ductile Iron Pipe, Item 502.10.3.1.5.COD: Tapping Concrete Pipe, or Item 502.10.3.1.7.COD: Tapping of PVC Pipe** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.10.3.1.8. Measurement and Payment** of these specifications.

Use this item or Item 5755 at plug end of all dead-end water mains. 3/4" Flush Points are no longer acceptable to DWU. 1" flush points are sufficient for sizes up to 36" mains, 2" for larger mains. Use the following for size indicators:

B = 1" Flush Point

D = 2" Flush Point

ITEM NO. 5755__ __" AUTOMATED FLUSH POINT

This item consists of furnishing and placing approximately __ Each __" Automated Flush Point, complete, in accordance with **Item 502.10.3. Water Conduit Connections, Item 502.10.3.1.1.COD: Taps, Item 502.10.3.1.2.COD: Tap Assemblies, and Item 502.10.3.1.4.COD: Tapping Ductile Iron Pipe, Item 502.10.3.1.5.COD: Tapping Concrete Pipe, or Item 502.10.3.1.7.COD: Tapping of PVC Pipe** of these specifications and addenda thereto, and the applicable Standard Drawings. This item includes the service saddle and tap, copper pipe, ball valve, meter box, automated flushing device and pedestal, and any other incidental work and materials. This item does not include the wastewater lateral and connection.

Measurement and payment will be in accordance with **Item 502.10.3.1.8. Measurement and Payment** of these specifications.

Use this item or Item 5750 at plug end of all dead-end water mains. Use the following size indicator:

B = 1" Flush Point

D = 2" Flush Point

ITEM NO. 5761 TYPE 1 AIR VALVE INSTALLATION

This item consists of furnishing and placing approximately ___ Each Type 1 Air Valve Installation, complete, in accordance with **Item 502.6.3. Air Valves and Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

ITEM NO. 5762 ___ ___" TYPE 2 AIR VALVE INSTALLATION

This item consists of furnishing and placing approximately ___ Each Type 2 Air Valve Installation, complete, in accordance with **Item 502.6.3. Air Valves and Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

Use the following for size indicators:

D = 2" Type 2 Air Valve

E = 3" Type 2 Air Valve

F = 4" Type 2 Air Valve

H = 6" Type 2 Air Valve

J = 8" Type 2 Air Valve

K = 10" Type 2 Air Valve

L = 12" Type 2 Air Valve

ITEM NO. 5770__ STANDARD __" WATER MAIN LOWERING

This item consists of constructing __ Each __" Water Main Lowering in accordance with the specifications and addenda thereto, and a Standard Drawing and Standard Drawings,

This item is to include all required __" water pipe, including bends, fittings and polywrap in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs, and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings or Item 501.14. Polyvinyl Chloride (PVC) Water Pipe.** This item also is to include the required concrete blocking, pipe embedment, backfill, temporary and permanent paving.

Measurement and payment will per each completed and accepted work and shall include all cost for labor and equipment, barricading, trench safety, all temporary and permanent paving related items (saw-cut, base, asphalt, sidewalk, driveway, curb and/or gutter, sod, etc.) and all other work associated with this item.

This item is a contingent item and payment will be made only if work is directed by the Project Manager. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitation as set forth in the specifications.

This item is used for DWU JOINT contracts when a temporary main is designed. A separate embedment item is not required. The Unit Price for this item includes most items and trench safety. Use the following for size indicators:

*H = Standard 6" Main Lowering
J = Standard 8" Main Lowering
L = Standard 12" Main Lowering
Q = Standard 16" Main Lowering*

Items 5800__ through 5805 are to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 5800__ __" WATER SERVICE

This item consists of furnishing and placing approximately __ each __" Water Service on an existing or new water main. This item includes tapping of the existing or new water main and installing a new service line to the property line, not to exceed **25** feet in service line length, in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets. This item includes water meter boxes and __" meters. This item does not include Commercial Water Meter Vaults. This item includes a new meter box and approved lid and connecting the water service to the meter and installing a new service line from the new meter box to the property line. The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. All new water meters to be installed will be provided by the City.

Measurement and Payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

This item includes all work necessary to install a new water service for sizes 3/4" through 2". Item No. 5800__ is to be used for SMALL SERVICE CONTRACTS only. Use the following for size indicators:

A = 3/4" Water Service

C = 1 1/2" Water Service

B = 1" Water Service

D = 2" Water Service

ITEM NO. 5801__ __" WATER DEADHEAD CONNECTION

This item consists of furnishing and placing approximately __ each __" Water Deadhead Connections. This item includes water meter boxes and __" meters. This item does not include Commercial Water Meter Vaults. This item includes a new meter box and approved lid, and connecting the water service to the meter and installing a new service line from the new meter box to the property line, not to exceed **25** feet in service line length, in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets.

The new meter box and lid shall be replaced to the proper grade and relocated to the correct location on a sand cushion. The disturbed area around the meter box will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. All new water meters to be installed will be provided by the City.

Measurement and Payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

This item includes all work necessary to install a new water service deadheads for sizes 3/4" through 2". Item No. 5801__ is to be used for SMALL SERVICE CONTRACTS only. Use the following for size indicators:

*A = 3/4" Water Service Deadhead
B = 1" Water Service Deadhead*

*C = 1 1/2" Water Service Deadhead
D = 2" Water Service Deadhead*

ITEM NO. 5802 BULLHEAD WATER SERVICE

This item consists of furnishing and placing approximately ___ each up to 2" Bullhead Water Service on an existing or new water main. This item includes tapping of the existing or new main and installing a new service line to the property line, not to exceed 25 feet in service line length, in accordance with **Item 502.10.3.2.COD: Services and Bullheads**, **Item 502.10.3.2.1.COD: Procedures for Transferring Service**, **Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING** and **502.10.3.2.1.2.COD: After Paving**, **Item 502.10.3.3. COD: NSF 61 Compliance** and **Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets.

Measurement and Payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

This item includes all work necessary to install a new water bullhead service. Item No. 5802 is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 5803 BULLHEAD WATER SERVICE (EXTRA LENGTH)

This item consists of furnishing and placing approximately ___ Linear Feet of additional length for up to 2" Bullhead Water Service. This item is supplementary to Item No. 5802 for extra lengths exceeding 25 linear feet and includes street, alley, and easement water services. This item includes installing new service line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets.

Measurement and Payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

Item No. 5803 is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 5804__ " WATER SERVICE (EXTRA LENGTH)

This item consists of furnishing and placing approximately __ Linear Feet of additional length for Water Services for extra lengths exceeding **25** linear feet and includes street, alley, and easement water services. This item is supplementary to Items No. 5800__ and 5801__. This item includes installing new service line in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets.

Measurement and Payment will be in accordance with **Item 502.10.3.2.2. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

Item No. 5804__ is to be used for SMALL SERVICE CONTRACTS only. Use the following for size indicators:

A = ¾" Water Service

C = 1½" Water Service

B = 1" Water Service

D = 2" Water Service

ITEM NO. 5805X WATER SERVICE – EXTRA DEPTH (+12')

This item consists of additional excavation of Water Service Extra Depth for __ Linear Feet. This item is supplementary to Items No. 5800A, 5800B, 5800C, 5800D, 5801A, 5801B, 5801C, 5801D, and 5802 to be installed exceeding twelve (12) vertical feet and shall be paid per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and payment will be per Linear Foot for the distance where depth is greater than twelve (12) vertical feet measured to the bottom of the embedment zone and will include any equipment, materials and labor, crossing diagonal utilities, costs for barricading, and trench safety and support for these services.

Item No. 5805X is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 5990 ___ ___" WASTEWATER MAIN (BOTOC)

This item consists of approximately ___ Linear Feet of ___" Wastewater Main to be installed By Other Than Open Cut in accordance with **Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto.

The ___" carrier pipe is not to be included in this item. The encasement pipe, if required, is included in this item.

Measurement and payment will be in accordance with **Item 503.4. Measurement and Payment** of these specifications.

This item is used for BOTOC construction methods (Jacking/Boring/Tunneling). It is usually specified when crossing under a major thoroughfare or some other obstruction that is not to be disturbed. Size and type of encasement pipe is not usually specified. Actual soil conditions will determine if encasement pipe is required, but no additional compensation will be paid to the Contractor for encasement. Use the following for size indicators:

H = 6" Wastewater Main (BOTOC)

J = 8" Wastewater Main (BOTOC)

K = 10" Wastewater Main (BOTOC)

L = 12" Wastewater Main (BOTOC)

N = 15" Wastewater Main (BOTOC)

Q = 16" Wastewater Main (BOTOC)

R = 18" Wastewater Main (BOTOC)

U = 21" Wastewater Main (BOTOC)

V = 24" Wastewater Main (BOTOC)

W = 27" Wastewater Main (BOTOC)

Y = 30" Wastewater Main (BOTOC)

Z = 33" Wastewater Main (BOTOC)

AA = 36" Wastewater Main (BOTOC)

AB = 39" Wastewater Main (BOTOC)

AC = 42" Wastewater Main (BOTOC)

AD = 45" Wastewater Main (BOTOC)

AE = 48" Wastewater Main (BOTOC)

AF = 54" Wastewater Main (BOTOC)

AG = 60" Wastewater Main (BOTOC)

AH = 66" Wastewater Main (BOTOC)

AJ = 72" Wastewater Main (BOTOC)

AK = 78" Wastewater Main (BOTOC)

AN = 96" Wastewater Main (BOTOC)

AQ = 102" Wastewater Main (BOTOC)

AU = 120" Wastewater Main (BOTOC)

ITEM NO. 5995 ___ ___" WASTEWATER MAIN BY HORIZONTAL DIRECTIONAL DRILLING

This item consists of approximately ___ Linear Feet of ___" Wastewater Main to be installed by Horizontal Directional Drilling in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**, and as shown on the Plans.

The pipe and any associated special appurtenances are included in this item. Measurement and payment will be per linear foot of pipe installed.

ITEM NO. 6000__ HIGHWAY CROSSING FOR __" WASTEWATER MAIN (BOTO)

This item consists of approximately __ Linear Feet of Highway Crossing Cut for the proposed __" Wastewater Main by Other Than Open Cut in accordance with **Item 509.2. State Highway Crossings, Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). It is required when crossing under a State Highway. Size and type of encasement pipe must be shown on the plans. Use the following for size indicators:

H = 6" Wastewater, Hwy Crossing (BOTO)
J = 8" Wastewater, Hwy Crossing (BOTO)
K = 10" Wastewater, Hwy Crossing (BOTO)
L = 12" Wastewater, Hwy Crossing (BOTO)
N = 15" Wastewater, Hwy Crossing (BOTO)
Q = 16" Wastewater, Hwy Crossing (BOTO)
R = 18" Wastewater, Hwy Crossing (BOTO)
U = 21" Wastewater, Hwy Crossing (BOTO)
V = 24" Wastewater, Hwy Crossing (BOTO)
W = 27" Wastewater, Hwy Crossing (BOTO)
Y = 30" Wastewater, Hwy Crossing (BOTO)
Z = 33" Wastewater, Hwy Crossing (BOTO)
AA = 36" Wastewater, Hwy Crossing (BOTO)

AB = 39" Wastewater, Hwy Crossing (BOTO)
AC = 42" Wastewater, Hwy Crossing (BOTO)
AD = 45" Wastewater, Hwy Crossing (BOTO)
AE = 48" Wastewater, Hwy Crossing (BOTO)
AF = 54" Wastewater, Hwy Crossing (BOTO)
AG = 60" Wastewater, Hwy Crossing (BOTO)
AH = 66" Wastewater, Hwy Crossing (BOTO)
AJ = 72" Wastewater, Hwy Crossing (BOTO)
AK = 78" Wastewater, Hwy Crossing (BOTO)
AN = 96" Wastewater, Hwy Crossing (BOTO)
AQ = 102" Wastewater, Hwy Crossing (BOTO)
AU = 120" Wastewater, Hwy Crossing (BOTO)

ITEM NO. 6010__ HIGHWAY CROSSING FOR __" WASTEWATER MAIN (BY OPEN CUT)

This item consists of approximately __ Linear Feet of Highway Crossing for the proposed __" Wastewater Main by Open Cut in accordance with **Item 509.2. State Highway Crossings** of these specifications and addenda thereto, and the applicable Standard Drawings.

The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is typically used when TXDOT requires BOTOC to a minimum distance from the roadway but allows Open Cut (normally with encasement) for the remainder of the of the R.O.W. crossing. Generally, 6000__ and 6010__ are used together on a contract to be specified on the plans. Use the following for size indicators:

H = 6" Wastewater, Hwy Crossing (By Open Cut)
J = 8" Wastewater, Hwy Crossing (By Open Cut)
K = 10" Wastewater, Hwy Crossing (By Open Cut)
L = 12" Wastewater, Hwy Crossing (By Open Cut)
N = 15" Wastewater, Hwy Crossing (By Open Cut)
Q = 16" Wastewater, Hwy Crossing (By Open Cut)
R = 18" Wastewater, Hwy Crossing (By Open Cut)
S = 20" Wastewater, Hwy Crossing (By Open Cut)
U = 21" Wastewater, Hwy Crossing (By Open Cut)
V = 24" Wastewater, Hwy Crossing (By Open Cut)
Y = 30" Wastewater, Hwy Crossing (By Open Cut)
AA = 36" Wastewater, Hwy Crossing (By Open Cut)
AC = 42" Wastewater, Hwy Crossing (By Open Cut)
AE = 48" Wastewater, Hwy Crossing (By Open Cut)
AF = 54" Wastewater, Hwy Crossing (By Open Cut)
AG = 60" Wastewater, Hwy Crossing (By Open Cut)
AH = 66" Wastewater, Hwy Crossing (By Open Cut)
AJ = 72" Wastewater, Hwy Crossing (By Open Cut)
AK = 78" Wastewater, Hwy Crossing (By Open Cut)
AL = 84" Wastewater, Hwy Crossing (By Open Cut)
AM = 90" Wastewater, Hwy Crossing (By Open Cut)

ITEM NO. 6020__ RAILROAD CROSSING FOR __" WASTEWATER MAIN (BOTO)

This item consists of approximately __ Linear Feet of Railroad Crossing for the proposed __" Wastewater Main by Other Than Open Cut in accordance with **Item 509.4.**

Railroad Crossings, Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1.

General of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). This item is required when crossing under a Railroad track. Size and type of encasement pipe must be shown on the plans, and requirements vary with each railroad. Use the following for size indicators:

<i>H = 6" Wastewater, RR Crossing (BOTO)</i>	<i>Z = 33" Wastewater, RR Crossing (BOTO)</i>
<i>J = 8" Wastewater, RR Crossing (BOTO)</i>	<i>AA = 36" Wastewater, RR Crossing (BOTO)</i>
<i>K = 10" Wastewater, RR Crossing (BOTO)</i>	<i>AB = 39" Wastewater, RR Crossing (BOTO)</i>
<i>L = 12" Wastewater, RR Crossing (BOTO)</i>	<i>AC = 42" Wastewater, RR Crossing (BOTO)</i>
<i>N = 15" Wastewater, RR Crossing (BOTO)</i>	<i>AD = 45" Wastewater, RR Crossing (BOTO)</i>
<i>Q = 16" Wastewater, RR Crossing (BOTO)</i>	<i>AE = 48" Wastewater, RR Crossing (BOTO)</i>
<i>R = 18" Wastewater, RR Crossing (BOTO)</i>	<i>AF = 54" Wastewater, RR Crossing (BOTO)</i>
<i>U = 21" Wastewater, RR Crossing (BOTO)</i>	<i>AG = 60" Wastewater, RR Crossing (BOTO)</i>
<i>V = 24" Wastewater, RR Crossing (BOTO)</i>	<i>AH = 66" Wastewater, RR Crossing (BOTO)</i>
<i>W = 27" Wastewater, RR Crossing (BOTO)</i>	<i>AJ = 72" Wastewater, RR Crossing (BOTO)</i>
<i>Y = 30" Wastewater, RR Crossing (BOTO)</i>	<i>AK = 78" Wastewater, RR Crossing (BOTO)</i>

ITEM NO. 6030__ RAILROAD CROSSING FOR __" WASTEWATER MAIN (BY OPEN CUT)

This item consists of approximately __ Linear Feet of Railroad Crossing for the proposed __" Wastewater Main by Open Cut in accordance with **Item 509.4. Railroad Crossings** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6.**

Measurement and Payment of Crossings of these specifications.

This item is similar to bid item 6020__, whereby the Railroad Company will allow a portion of their property to be Open Cut. This item is generally used on a contract with bid item 6020__. Plans must show the limits, size, and type of encasement pipe, if required in this section "By Open Cut." Use the following for size indicators:

H = 6" Wastewater RR Crossing (By Open Cut)

J = 8" Wastewater RR Crossing (By Open Cut)

K = 10" Wastewater RR Crossing (By Open Cut)

L = 12" Wastewater RR Crossing (By Open Cut)

N = 15" Wastewater RR Crossing (By Open Cut)

Q = 16" Wastewater RR Crossing (By Open Cut)

S = 20" Wastewater RR Crossing (By Open Cut)

V = 24" Wastewater RR Crossing (By Open Cut)

Y = 30" Wastewater RR Crossing (By Open Cut)

AA = 36" Wastewater RR Crossing (By Open Cut)

AC = 42" Wastewater RR Crossing (By Open Cut)

AE = 48" Wastewater RR Crossing (By Open Cut)

AF = 54" Wastewater RR Crossing (By Open Cut)

AG = 60" Wastewater RR Crossing (By Open Cut)

AH = 66" Wastewater RR Crossing (By Open Cut)

AJ = 72" Wastewater RR Crossing (By Open Cut)

AK = 78" Wastewater RR Crossing (By Open Cut)

AL = 84" Wastewater RR Crossing (By Open Cut)

AM = 90" Wastewater RR Crossing (By Open Cut)

AQ = 102" Wastewater RR Crossing (By Open Cut)

ITEM NO. 6040 ___ ___ " WASTEWATER MAIN CROSSING (BOTO)

This item consists of approximately ___ Linear Feet of ___" Wastewater Main to be installed By Other Than Open Cut in accordance with **Item 509.3. Street and Alley Crossings** of these specifications and addenda thereto.

The ___" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6. Measurement and Payment of Crossings** of these specifications.

This item is similar to Item No. 5990___, except the Designer requires encasement pipe. This encasement may be for future protection of the main, or soil conditions that warrant encasement pipe. Plans must show the limits of the crossing and size and type of encasement pipe. Use the following for size indicators:

H = 6" Wastewater Main Crossing (BOTO)
J = 8" Wastewater Main Crossing (BOTO)
K = 10" Wastewater Main Crossing (BOTO)
L = 12" Wastewater Main Crossing (BOTO)
N = 15" Wastewater Main Crossing (BOTO)
Q = 16" Wastewater Main Crossing (BOTO)
R = 18" Wastewater Main Crossing (BOTO)
U = 21" Wastewater Main Crossing (BOTO)
V = 24" Wastewater Main Crossing (BOTO)
W = 27" Wastewater Main Crossing (BOTO)
Y = 30" Wastewater Main Crossing (BOTO)
Z = 33" Wastewater Main Crossing (BOTO)
AA = 36" Wastewater Main Crossing (BOTO)

AB = 39" Wastewater Main Crossing (BOTO)
AC = 42" Wastewater Main Crossing (BOTO)
AD = 45" Wastewater Main Crossing (BOTO)
AE = 48" Wastewater Main Crossing (BOTO)
AF = 54" Wastewater Main Crossing (BOTO)
AG = 60" Wastewater Main Crossing (BOTO)
AH = 66" Wastewater Main Crossing (BOTO)
AJ = 72" Wastewater Main Crossing (BOTO)
AK = 78" Wastewater Main Crossing (BOTO)
AL = 84" Wastewater Main Crossing (BOTO)
AN = 96" Wastewater Main Crossing (BOTO)
AQ = 102" Wastewater Main Crossing (BOTO)
AU = 120" Wastewater Main Crossing (BOTO)

ITEM NO. 6050 ___ ___ " WASTEWATER MAIN CROSSING (BY OPEN CUT)

This item consists of approximately ___ Linear Feet of ___" Wastewater Main to be installed By Open Cut in accordance with **Item 509.3. Street and Alley Crossings** of these specifications and addenda thereto.

The ___" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6. Measurement and Payment of Crossings** of these specifications.

Usually this item is used when crossing a street and the Designer can allow open construction but wishes to encase the carrier pipe for future protection, or because the street/highway is not yet built. Plans must show the limits of the crossing, and size and type of encasement pipe. Use the following for size indicators:

H = 6" Wastewater Main Crossing (By Open Cut)
J = 8" Wastewater Main Crossing (By Open Cut)
K = 10" Wastewater Main Crossing (By Open Cut)
L = 12" Wastewater Main Crossing (By Open Cut)
N = 15" Wastewater Main Crossing (By Open Cut)
Q = 16" Wastewater Main Crossing (By Open Cut)
R = 18" Wastewater Main Crossing (By Open Cut)
U = 21" Wastewater Main Crossing (By Open Cut)
V = 24" Wastewater Main Crossing (By Open Cut)
W = 27" Wastewater Main Crossing (By Open Cut)
Y = 30" Wastewater Main Crossing (By Open Cut)
Z = 33" Wastewater Main Crossing (By Open Cut)
AA = 36" Wastewater Main Crossing (By Open Cut)
AB = 39" Wastewater Main Crossing (By Open Cut)
AC = 42" Wastewater Main Crossing (By Open Cut)
AD = 45" Wastewater Main Crossing (By Open Cut)
AE = 48" Wastewater Main Crossing (By Open Cut)
AF = 54" Wastewater Main Crossing (By Open Cut)
AG = 60" Wastewater Main Crossing (By Open Cut)
AH = 66" Wastewater Main Crossing (By Open Cut)
AJ = 72" Wastewater Main Crossing (By Open Cut)
AK = 78" Wastewater Main Crossing (By Open Cut)
AN = 96" Wastewater Main Crossing (By Open Cut)
AQ = 102" Wastewater Main Crossing (By Open Cut)
AU = 120" Wastewater Main Crossing (By Open Cut)

ITEM NO. 6060 WASTEWATER LATERAL

This item consists of furnishing and placing approximately ___ Each Wastewater Lateral on an existing or new wastewater main. This item will include street, alley, and easement laterals with cleanouts, with or without caps in accordance with **Item 502.10.4. Wastewater Conduit Connections, Item 502.10.4.1.COD: Service Connection, and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Standard Drawings.

Laterals will be replaced with the same size and type as the existing lateral or as indicated on the plans, with a minimum of 6" diameter pipe required. This item will include, if required, Polyvinyl Chloride Pressure Rated Laterals conforming to ASTM D2241 (DR 26), minimum pressure rating of 160 PSI and ASTM D3139 joints. If a deep cut connection is required, the costs will be included in this item.

The replacement shall include removal of the existing lateral, plugging the existing lateral near the main, installing a new lateral with cleanout by removing a portion of the existing main, installing a wye, connecting to the existing main with adapters for 6" and 8" mains and by tapping mains 10" and larger, installing a new lateral with cleanout and connection to the existing house lateral. Should a private wastewater lateral not exist, a wastewater mainline lateral shall be installed with a cleanout and cap, or a cap only as indicated on the plans. The disturbed area around the cleanout will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete or asphalt in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence. Should any additional laterals be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed laterals not be necessary, they will be removed from the contract without having any effect on the unit price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns do not apply to this item

Measurement and payment will be in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications, and will include any costs for pipe, equipment, materials and labor, deep cut connections, all boring, encasement, crossing diagonal utilities, costs for barricading, trench safety and support for these laterals, embedment, and all temporary paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

This item includes all items necessary to install new laterals and/or make any required adjustments or alterations to existing laterals of any size. On DWU JOINT contracts where the service is not being replaced, and the service may need to be relocated to clear proposed Storm Sewers include bid item 6090. Also, on JOINT contracts, include this bid item for lateral replacement if the laterals are 1973 or older.

ITEM NO. 6061**6" WASTEWATER LATERAL WITH CLEANOUT**

This item consists of furnishing and placing approximately ___ each Wastewater Lateral with Cleanout on an existing or new wastewater main. This item will include street, alley, and easement laterals. This item includes connection to the existing or new wastewater main and installing a new service line to the property line, **not to exceed fifteen (15) linear feet in service line length**, in accordance with **Item 502.10.4. Wastewater Conduit Connections, Item 502.10.4.1.COD: Service Connection, and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets. This item will include, if required, Polyvinyl Chloride Pressure rated Laterals conforming to ASTM D2241 (DR 26) minimum pressure rating of 160 PSI and ASTM D3139 joints. If a deep cut connection is required, the costs will be included in this item.

The replacement shall include installing a new lateral by removing a portion of the existing main, installing a wye, connecting to the existing main with adapters for 6" and 8" mains and by tapping mains 10" and larger, installing a new lateral to the property line with cleanout. The disturbed area will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete or asphalt in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface.

Measurement and Payment will be in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

This item includes all items necessary to install new 6" laterals with cleanouts. Item No. 6061 is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 6062**6" WASTEWATER LATERAL (EXTRA LENGTH)**

This item consists of furnishing and placing approximately ___ linear feet of additional length of Wastewater Lateral. This item is supplementary to Item No. 6061 for lengths exceeding **fifteen (15)** linear feet and includes street, alley, and easement laterals. This item includes installing new service line in accordance with **Item 502.10.4. Wastewater Conduit Connections, Item 502.10.4.1.COD: Service Connection, and Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services** of these specifications and addenda thereto, and the applicable Drawings and Standard Appurtenance Sheets. This item will include, if required, Polyvinyl Chloride Pressure rated Laterals conforming to ASTM D2241 (DR 26) minimum pressure rating of 160 PSI and ASTM D3139 joints. If a deep cut connection is required, the costs will be included in this item.

The disturbed area will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete or asphalt in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** to match the existing surface.

Measurement and Payment will be in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications and will include any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

Measurement and Payment of permanent paving requirements, imposed by the Public Works Pavement Repair Manual and beyond the ditch width plus two (2) feet, will be paid under Item No. 7570 or 7655 as applicable.

Item No. 6062 is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 6063 WASTEWATER LATERAL IN CREEK

This item consists of furnishing and placing approximately ___ Each Wastewater Lateral on an existing or new wastewater main in a creek, drainage channel or intermittent waterway. This item will include all piping, cleanouts, excavation, and concrete bedding in accordance with **Item 502.10.4. Wastewater Conduit Connections, Item 502.10.4.1.COD: Service Connection, Item 504.2.3.5.1.COD: Open Cut Wastewater Lateral and Water Services, Item 504.3.2. Foundation, Item 502.4.1.COD: Concrete Blocking, Item 702.3. Mix Design and Mixing Concrete for Structures, and Item 107.28.COD: Environmental Compliance** of these specifications and addenda thereto, and the detail drawings on the plan sheets. Any riprap or non-standard backfill as detailed on the plans will be paid under the appropriate riprap and backfill pay items.

Laterals will be replaced with the same size and type as the existing lateral or as indicated on the plans, with a minimum of 6" diameter pipe required. This item will include, if required, Polyvinyl Chloride Pressure Rated Laterals conforming to ASTM D2241 (DR 26), minimum pressure rating of 160 PSI and ASTM D3139 joints. If a deep cut connection is required, the costs will be included in this item.

The replacement shall include removal of the existing lateral, plugging the existing lateral near the main, installing a new lateral with cleanout by removing a portion of the existing main, installing a wye, connecting to the existing main with adapters for 6" and 8" mains and by tapping mains 10" and larger, installing a new lateral with cleanout and connection to the existing house lateral. Should a private wastewater lateral not exist, a wastewater mainline lateral shall be installed with a cleanout and cap, or a cap only as indicated on the plans. The restoration of any disturbed area outside of the rip-rap area is included in this item and will be replaced with sod in accordance with **Item 204.5. Sodding**, or concrete or asphalt in accordance with **Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement**, to match the existing surface. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence. Should any additional laterals be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed laterals not be necessary, they will be removed from the contract without having any effect on the unit price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns do not apply to this item.

Measurement and payment will be in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications, and will include any costs for pipe, equipment, materials and labor, deep cut connections, all boring, encasement, crossing diagonal utilities, costs for barricading, trench safety and support for these laterals, embedment, and all temporary paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod) and all other work associated with this item.

This item includes all items necessary to install new laterals in creeks. This item should only be used for laterals in creeks, channels, or intermittent waterways. A detail drawing must be included on the plan sheets.

ITEM NO. 6065X WASTEWATER LATERAL – EXTRA DEPTH (+20')

This item consists of additional excavation of Wastewater Lateral Extra Depth for ___ Linear Feet. This item is supplementary to Item No. 6060 for extra depth exceeding twenty vertical feet and shall be paid per linear foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and payment will be per Linear Foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone and will include any equipment, materials and labor, crossing diagonal utilities, costs for barricading, and trench safety and support.

This item is used on DWU CITY contracts.

ITEM NO. 6066X WASTEWATER LATERAL WITH CLEANOUT– EXTRA DEPTH (+20')

This item consists of additional excavation for Wastewater Lateral Extra Depth with Cleanout for ___ Linear Feet. This item is supplementary to Item No. 6061 for extra depth exceeding twenty (20) vertical feet and shall be paid per linear foot for the distance where depth is greater than twenty vertical feet measured to the bottom of the embedment zone.

Measurement and payment will be per Linear Foot for the distance where depth is greater than twenty (20) vertical feet measured to the bottom of the embedment zone and will include any equipment, materials and labor, crossing diagonal utilities, costs for barricading, and trench safety and support.

Item No. 6066X is to be used for SMALL SERVICE CONTRACTS only.

ITEM NO. 6070 EXTERNAL LATERAL CONNECTION

This item consists of the reinstatement of approximately ___ Each External Lateral Connection in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

All wastewater lateral services shall be reinstated within 24 hours of beginning the lining process. The external live laterals shall be reinstated by excavating the existing connection and installing a new 6" minimum diameter lateral with cleanout to the property line where and when possible.

This item is completed as each and is to include all labor, materials, equipment, barricading, embedment, clean out, backfilling and incidentals required to complete the reinstatement of the laterals in accordance with these specifications and addenda thereto.

Measurement and payment will be per each complete in place.

This item is only used in conjunction with bid item 3570_x_ to facilitate wastewater main rehabilitation.

ITEM NO. 6075 INTERNAL LATERAL CONNECTION

This item consists of the reinstatement of approximately __ Each Internal Lateral Connection in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

All wastewater lateral services shall be reinstated within 24 hours of beginning the inversion or lining process. The existing live laterals shall be reinstated by using an interior cutting device and television camera from within the wastewater main. The cutter shall reinstate each connection to not less than 90% capacity.

This item is complete and includes all labor, materials, equipment, barricading, and incidentals required to complete the reinstatement of the laterals in accordance with these specifications and addenda thereto.

Measurement and payment will be per each complete in place.

This item is only used in conjunction with bid item 3520__ to facilitate wastewater main rehabilitation.

ITEM NO. 6080 STANDARD MAINLINE CLEANOUT

This item consists of furnishing and placing approximately __ Each Standard Mainline Cleanout in accordance with **Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item shall include barricading

Measurement and payment will be in accordance with **Item 502.2.3.**

Measurement and Payment of Cleanouts of these specifications.

This item is used for DWU CITY contracts.

ITEM NO. 6080P STANDARD MAINLINE CLEANOUT WITH PAVING

This item consists of furnishing and placing approximately __ Each Standard Mainline Cleanout in accordance with **Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings.

This shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, etc.).

Measurement and payment will be in accordance with **Item 502.2.3.**

Measurement and Payment of Cleanouts of these specifications.

This item is used for DWU JOINT contracts.

ITEM NO. 6090 ADJUSTMENT OF EXISTING WASTEWATER LATERAL

This item consists of furnishing and placing approximately ___ Each Wastewater Lateral on an existing or new wastewater main. This item will include street, alley, and easement laterals with cleanouts, with or without caps in accordance with **Item 502.10.4. Wastewater Conduit Connections** of these specifications and addenda thereto, and the applicable Standard Drawings.

Laterals will be replaced with the same size and type as the existing lateral or as indicated on the plans, with a minimum of 6" diameter pipe required. This item will include, if required, Polyvinyl Chloride Pressure Rated Laterals conforming to ASTM D2241 (DR 26) minimum pressure rating of 160 PSI and ASTM D3139 joints. If a deep cut connection is required, the costs will be included in this item.

This item includes removing a portion of the existing lateral and replacing that portion of the lateral as detailed in the DWU Standard Drawings for Water & Wastewater Construction, page 406. If a new wye or tee connection is required by the Project Manager, this item shall also include plugging the existing lateral near the main, installing a wye or tee, connecting to the existing main with adapters for 6" and 8" mains, and by tapping mains 10" and larger. Should any additional laterals be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed laterals not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

Measurement and payment will be in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications and will include any costs for pipe, equipment, materials and labor, deep cut connections, all boring, encasement, crossing diagonal utilities, costs for barricading, trench safety and support for these laterals, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

This item is most often used on DWU JOINT contracts, where the wastewater laterals are not being replaced and only a portion of the lateral may need to be replaced to clear proposed Storm Sewers. The item includes all sizes and all approved material types for wastewater laterals. This item includes all items necessary to adjust the wastewater lateral. Refer to Dallas Water Utilities Standard Drawings for Water & Wastewater Construction, p. 406 for more detail.

ITEM NO. 6100 WASTEWATER ACCESS DEVICE

This item consists of furnishing and placing approximately ___ Each Wastewater Access Device in accordance with the plans and Standard Drawings.

Removal of any existing conflicting manhole or cleanout, if required, will be included in this item. This item shall include barricading.

Measurement and payment will be paid for at contract Unit Price per Each, complete in place, as shall be the total compensation for the furnishing of all labor, materials, tools and equipment and incidentals necessary to complete the work, including each excavation, disposal of surplus materials, and backfill all in accordance with the plans and specifications.

This device may be installed on DWU CITY contracts at the end of a wastewater main in lieu of a manhole or main line clean out.

ITEM NO. 6110 ___ ___" DIAMETER DROP CONNECTION MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately ___ Each ___" Diameter Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Manhole

AL = 84" Drop Manhole

AG = 60" Drop Manhole

AN = 96" Drop Manhole

AJ = 72" Drop Manhole

ITEM NO. 6110__P __" DIAMETER DROP CONNECTION MANHOLE WITH PAVING

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Manhole

AL = 84" Drop Manhole

AG = 60" Drop Manhole

AN = 96" Drop Manhole

AJ = 72" Drop Manhole

ITEM NO. 6111__X __" DIAMETER DROP CONNECTION MANHOLE – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Manhole

AL = 84" Drop Manhole

AG = 60" Drop Manhole

AN = 96" Drop Manhole

AJ = 72" Drop Manhole

ITEM NO. 6111__PX ___" DIAMETER DROP CONNECTION MANHOLE WITH PAVING – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately ___ Each ___" Diameter Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Manhole

AL = 84" Drop Manhole

AG = 60" Drop Manhole

AN = 96" Drop Manhole

AJ = 72" Drop Manhole

ITEM NO. 6120__ ___" DIAMETER PRESSURE TYPE MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately ___ Each ___" Diameter Pressure Type Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, and Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Pressure Type Manhole

AL = 84" Pressure Type Manhole

AG = 60" Pressure Type Manhole

AN = 96" Pressure Type Manhole

AJ = 72" Pressure Type Manhole

ITEM NO. 6120__P__" DIAMETER PRESSURE TYPE MANHOLE WITH PAVING

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Pressure Type Manhole

AL = 84" Pressure Type Manhole

AG = 60" Pressure Type Manhole

AN = 96" Pressure Type Manhole

AJ = 72" Pressure Type Manhole

ITEM NO. 6121__X__" DIAMETER PRESSURE TYPE MANHOLE – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Pressure Type Manhole

AL = 84" Pressure Type Manhole

AG = 60" Pressure Type Manhole

AN = 96" Pressure Type Manhole

AJ = 72" Pressure Type Manhole

ITEM NO. 6121__PX ___" DIAMETER PRESSURE TYPE MANHOLE WITH PAVING – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Pressure Type Manhole

AL = 84" Pressure Type Manhole

AG = 60" Pressure Type Manhole

AN = 96" Pressure Type Manhole

AJ = 72" Pressure Type Manhole

ITEM NO. 6125__ ___" DIAMETER PRESSURE TYPE DROP CONNECTION MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Pressure Type Manhole

AL = 84" Drop Pressure Type Manhole

AG = 60" Drop Pressure Type Manhole

AN = 96" Drop Pressure Type Manhole

AJ = 72" Drop Pressure Type Manhole

ITEM NO. 6125__P __" DIAMETER PRESSURE TYPE DROP CONNECTION MANHOLE WITH PAVING

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Pressure Type Manhole

AL = 84" Drop Pressure Type Manhole

AG = 60" Drop Pressure Type Manhole

AN = 96" Drop Pressure Type Manhole

AJ = 72" Drop Pressure Type Manhole

ITEM NO. 6126__X __" DIAMETER PRESSURE TYPE DROP CONNECTION MANHOLE – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Pressure Type Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Drop Pressure Type Manhole

AL = 84" Drop Pressure Type Manhole

AG = 60" Drop Pressure Type Manhole

AN = 96" Drop Pressure Type Manhole

AJ = 72" Drop Pressure Type Manhole

ITEM NO. 6130__ __" DIAMETER WASTEWATER MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout and precast concrete grade rings shall be used for adjustments of the ring and cover. This item is to include Wastewater Manhole Frame Seals for each manhole installed as per the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**. This item shall also include trench safety and barricades.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Wastewater Manhole

AL = 84" Wastewater Manhole

AG = 60" Wastewater Manhole

AN = 96" Wastewater Manhole

AJ = 72" Wastewater Manhole

ITEM NO. 6131__X __" DIAMETER WASTEWATER MANHOLE – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout and precast concrete grade rings shall be used for adjustments of the ring and cover. This item is to include Wastewater Manhole Frame Seals for each manhole installed as per the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**. This item shall also include trench safety and barricades.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item used for DWU CITY contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Wastewater Manhole

AL = 84" Wastewater Manhole

AG = 60" Wastewater Manhole

AN = 96" Wastewater Manhole

AJ = 72" Wastewater Manhole

ITEM NO. 6131__PX ___" DIAMETER WASTEWATER MANHOLE WITH PAVING – EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately ___ Each ___" Diameter Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts. If the existing manhole is not in conflict with any proposed construction, then it should be abandoned using Item No. 6140. Use the following for size indicators:

AE = 48" Wastewater Manhole

AL = 84" Wastewater Manhole

AG = 60" Wastewater Manhole

AN = 96" Wastewater Manhole

AJ = 72" Wastewater Manhole

ITEM NO. 6140 ABANDON EXISTING MANHOLE

This item consists of abandoning approximately ___ Each Existing Manhole, backfilling the manhole with granular material at 95% standard proctor dry density, and removing and salvaging the frame and cover as per the applicable Standard Drawing.

This item to also include the cleaning, loading, hauling, and unloading the frame and cover at the Stores Division, Yard #2, 2901 Municipal Street. The Contractor will be charged new item replacement cost for any amount lost, stolen, or broken due to the Contractor's negligence prior to delivery into Water Utilities Department Salvage Yard. This item shall also include barricading.

Measurement and payment shall be at the contract Unit Price per Each completed and accepted abandonment.

This item is used whenever an existing manhole will be abandoned and not replaced at the same location.

ITEM NO. 6141 VACUUM TEST FOR WASTEWATER MANHOLE

This item consists of performing approximately ___ Each Vacuum Test for Wastewater Manhole in accordance with **Item 502.1.5.2 Vacuum Testing Manholes and Item 507.5. Tests and Inspections** of these specifications.

This item shall include all materials, equipment, labor, and incidentals required to complete the test as specified. This item is a **contingent item** and payment will be made only if directed by the DWU Construction Superintendent. Should any of the listed tests not be necessary, they will be removed from the contract without having any effect on the Unit Price.

Measurement and payment shall be at the contract Unit Price per Each tested manhole.

This item should be included for every manhole even though some manholes may not be tested. The Project Engineer or DWU Construction Superintendent will make the decision as to which ones will be tested.

ITEM NO. 6142 DROP CONNECTION TO EXISTING MANHOLE

This item consists of furnishing and placing approximately ___ Each Drop Connection to Existing Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of any existing conflicting drop connection, if required, will be included in this item. This item shall include barricading.

Measurement and payment will be per each in place in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used when installing a new main into an existing manhole using a drop connection. It includes all material to make the complete drop connection.

ITEM NO. 6143 ABANDON EXISTING STRUCTURAL MANHOLE

This item consists of abandoning ___ Each Existing Structural Manhole, backfilling the manhole with granular material at 95% standard proctor dry density, and removing and salvaging the frame and cover as per the applicable Standard Drawing.

This item to also include the cleaning, loading, hauling, and unloading the frame and cover at the Stores Division #2, 2901 Municipal Street. The Contractor will be charged new item replacement cost for any amount lost, stolen, or broken due to the Contractor's negligence prior to delivery into Water Utilities Department Salvage Yard.

Measurement and payment shall be at the contract Unit Price per Each completed and accepted abandonment.

This item is used on DWU CITY contracts.

ITEM NO. 6150__ __" DIAMETER MANHOLE REHABILITATION

This item consists of rehabilitating approximately __ Each __" Diameter Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Manhole Rehabilitation

AG = 60" Manhole Rehabilitation

AF = 54" Manhole Rehabilitation

AJ = 72" Manhole Rehabilitation

ITEM NO. 6151__X __" DIAMETER MANHOLE REHABILITATION – EXTRA DEPTH (+20')

This item consists of rehabilitating approximately __ Each __" Diameter Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Manhole Rehabilitation

AG = 60" Manhole Rehabilitation

AF = 54" Manhole Rehabilitation

AJ = 72" Manhole Rehabilitation

ITEM NO. 6155__ __" DIAMETER DROP CONNECTION MANHOLE REHABILITATION

This item consists of rehabilitating approximately __ Each __" Diameter Drop Connection Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Drop Manhole Rehabilitation

AG = 60" Drop Manhole Rehabilitation

AF = 54" Drop Manhole Rehabilitation

AJ = 72" Drop Manhole Rehabilitation

ITEM NO. 6156__ X __" DIAMETER DROP CONNECTION MANHOLE REHABILITATION - EXTRA DEPTH (+20')

This item consists of rehabilitating approximately __ Each __" Diameter Drop Connection Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Drop Manhole Rehabilitation

AG = 60" Drop Manhole Rehabilitation

AF = 54" Drop Manhole Rehabilitation

AJ = 72" Drop Manhole Rehabilitation

ITEM NO. 6160__ __” SPECIAL MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __” Diameter Special Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto.

This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU CITY contracts for other than standard manholes, where a detail is shown on the plans. The station will be indicated in the bid item description along with the title. Use the following for size indicators:

AE = 48” Special Manhole

AF = 54” Special Manhole

AG = 60” Special Manhole

AJ = 72” Special Manhole

AL = 84” Special Manhole

AN = 96” Special Manhole

ITEM NO. 6161__X __” SPECIAL MANHOLE - EXTRA DEPTH (+20’)

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __” Diameter Special Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto.

This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU CITY contracts for other than standard manholes, where a detail is shown on the plans. The station will be indicated in the bid item description along with the title. Use the following for size indicators:

AE = 48” Special Manhole

AF = 54” Special Manhole

AG = 60” Special Manhole

AJ = 72” Special Manhole

AL = 84” Special Manhole

AN = 96” Special Manhole

ITEM NO. 6162__ __” SPECIAL INTERNAL DROP CONNECTION MANHOLE WITH ODOR CONTROL INSERT

This item consists of furnishing and placing approximately __ Each __” Diameter Special Internal Drop Connection Manholes with Odor Control as shown on the plans and in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and the addenda thereto. Manholes shall have corrosion protection as indicated on the plan details and in the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU CITY contracts for other than standard manholes, where a detail is shown on the plans. Use the following for size indicators:

AE = 48” Special Manhole

AF = 54” Special Manhole

AG = 60” Special Manhole

AJ = 72” Special Manhole

ITEM NO. 6162__X __” SPECIAL INTERNAL DROP CONNECTION MANHOLE WITH ODOR CONTROL INSERT - EXTRA DEPTH (+20’)

This item consists of furnishing and placing approximately __ Each __” Diameter Special Internal Drop Connection Manholes with Odor Control Inserts as shown on the plans and in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and the addenda thereto. Manholes shall have corrosion protection as indicated on the plan details and in the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU CITY contracts for other than standard manholes, where a detail is shown on the plans. Use the following for size indicators:

AE = 48” Special Manhole

AF = 54” Special Manhole

AG = 60” Special Manhole

AJ = 72” Special Manhole

ITEM NO. 6162__PX __” SPECIAL INTERNAL DROP CONNECTION MANHOLE WITH ODOR CONTROL INSERT - EXTRA DEPTH (+20’) WITH PAVING

This item consists of furnishing and placing approximately __ Each __” Diameter Special Internal Drop Connection Manholes with Odor Control Inserts as shown on the plans and in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and the addenda thereto. Manholes shall have corrosion protection as indicated on the plan details and in the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

This item shall also include barricading, traffic control signage, all temporary and permanent paving and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.)

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

This item is used for DWU JOINT contracts for other than standard manholes, where a detail is shown on the plans. Use the following for size indicators:

AE = 48” Special Manhole

AF = 54” Special Manhole

AG = 60” Special Manhole

AJ = 72” Special Manhole

ITEM NO. 6170__X __” EXTRA DEPTH MANHOLE

Used for PRIVATE DEVELOPMENT contracts only. Use the following for size indicators:

AE = 48” Extra Depth Manhole

AF= 54” Extra Depth Manhole

AG= 60” Extra Depth Manhole

ITEM NO. 6180__ __" DIAMETER GAS SEALED DROP CONNECTION MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Gas Sealed Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

Use the following for size indicators:

AE = 48" Gas Sealed Drop Manhole

AG = 60" Gas Sealed Drop Manhole

AJ = 72" Gas Sealed Drop Manhole

AL = 84" Gas Sealed Drop Manhole

AN = 96" Gas Sealed Drop Manhole

ITEM NO. 6181__X __" DIAMETER GAS SEALED DROP CONNECTION MANHOLE - EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Gas Sealed Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item includes barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

Use the following for size indicators:

AE = 48" Gas Sealed Drop Manhole

AG = 60" Gas Sealed Drop Manhole

AJ = 72" Gas Sealed Drop Manhole

AL = 84" Gas Sealed Drop Manhole

AN = 96" Gas Sealed Drop Manhole

**ITEM NO. 6181__PX ___" DIAMETER GAS SEALED DROP CONNECTION
MANHOLE WITH PAVING - EXTRA DEPTH (+20')**

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Gas Sealed Drop Connection Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Removal of existing conflicting manhole, if required, will be included in this item. Nonshrink grout shall be used in place of mortar. This item shall also include barricading, traffic control signage, all temporary and permanent paving, and paving related items (removal, disposal, replacement, saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod, seed, etc.).

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

Use the following for size indicators:

AE = 48" Gas Sealed Drop Manhole

AG = 60" Gas Sealed Drop Manhole

AJ = 72" Gas Sealed Drop Manhole

AL = 84" Gas Sealed Drop Manhole

AN = 96" Gas Sealed Drop Manhole

ITEM NO. 6190__ ___" DIAMETER VORTEX MANHOLE

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Vortex Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

Use the following for size indicators:

AE = 48" Vortex Manhole

AG = 60" Vortex Manhole

AJ = 72" Vortex Manhole

AL = 84" Vortex Manhole

AN = 96" Vortex Manhole

ITEM NO. 6191__X __" DIAMETER VORTEX MANHOLE - EXTRA DEPTH (+20')

This item consists of furnishing, placing, and protecting from corrosion by Epoxy Coating or other approved method approximately __ Each __" Diameter Vortex Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

Nonshrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications.

Use the following for size indicators:

AE = 48" Vortex Manhole

AL = 84" Vortex Manhole

AG = 60" Vortex Manhole

AN = 96" Vortex Manhole

AJ = 72" Vortex Manhole

ITEM NO. 6200__ __" WASTEWATER AERIAL CROSSING

This item consists of furnishing and placing approximately __ Each __" Aerial Crossing in accordance with **Item 502.12. Structures** of these specifications and addenda thereto.

This item includes all barricading, trench safety, utility supports, encasement pipe, carrier pipe, manholes, manhole vacuum tests, paving, and all plan details and notes.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item is used for wastewater main aerial crossings where a detail is shown on the plans. The station will be indicated in the bid item description along with the title. Use the following for size indicators:

J = 8" Wastewater Aerial Crossing

N = 15" Wastewater Aerial Crossing

L = 12" Wastewater Aerial Crossing

U = 21" Wastewater Aerial Crossing

ITEM NO. 6240 TREE

This item consists of furnishing and placing approximately __ Each Tree at locations approved by the Project Manager, in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

Measurement and payment will be in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

The Technical Specifications must be included in the contract documents.

ITEM NO. 6245 ___ ___" DIAMETER TREE

This item consists of furnishing and placing approximately ___ Each ___" Diameter Trees at locations approved by the Project Manager, in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

Measurement and payment will be in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

The type and diameter of the trees to be planted must be called out on the plans. The Technical Specifications must be included in the contract documents. Use the following size indicators:

H = 6" Diameter Tree

J = 8" Diameter Tree

K = 10" Diameter Tree

L = 12" Diameter Tree

M = 14" Diameter Tree

N = 15" Diameter Tree

Q = 16" Diameter Tree

R = 18" Diameter Tree

S = 20" Diameter Tree

ITEM NO. 6250 SHRUBS, FLOWERS, GROUND COVER, ETC.

This item consists of furnishing and placing approximately ___ Each (Type/Size") Pots at locations approved by the Project Manager, in accordance with Special Provision S ___ - Tree Planting, of these specifications.

Measurement and payment will be in accordance with Special Provision S ___ of these specifications.

This must describe the type of shrubs/flowers, etc. to be planted. The Special Provision must also contain the Technical Specifications in the Contract Documents.

ITEM NO. 6260 CLEARING AND GRUBBING

This item consists of required Clearing and Grubbing within the limits shown on the plans and in accordance with **Item 201.1. Removal, Protection, and Replacement of Trees, Shrubbery, Plants, Sod, and Other Vegetation** of these specifications and addenda thereto.

Payment will be Lump Sum at contract bid price.

This item is used to pay a Contractor to remove timber and shrubs within a given area as shown on the plans.

ITEM NO. 6270 FENCE REPLACEMENT

This item consists of installing ___ Linear Feet of various types of Fence to replace existing fences within the limits described on the plans.

Fences shall be installed plumb. They shall be constructed of new materials of like kind and same construction as the existing fences to be replaced. Replacement fences shall abut adjacent fences to maintain the completeness of previously enclosed areas. This item shall include any posts and footings, gates, and all accessory objects necessary to install and match the individual types of existing fences to be replaced.

This is a contingent item and payment will only be made if directed by the Project Manager. Basis for payment shall be per Linear Foot of fence replaced.

ITEM NO. 6320 ABANDON WASTEWATER LIFT STATION

This item consists of Abandoning Lift Station(s).

This item includes furnishing all labor, equipment, supervision, tools, miscellaneous items, barricading, and all incidentals required to perform the work as specified.

Payment will be made at the Lump Sum cost as set forth in the contract.

ITEM NO. 6321 PUMP, MOTOR, AND VARIABLE SPEED DRIVE

This item consists of furnishing and placing Pump, Motor, and Variable Speed Drive at Lift Station as specified in Part T - Technical Specifications.

This item to include furnishing all labor, equipment, supervision, tools miscellaneous items, and all incidentals required to perform the work as specified.

Payment will be made at the Lump Sum cost as set forth in the contract.

ITEM NO. 6322 WASTEWATER LIFT STATION

This item consists of constructing ___ Each Wastewater Lift Station in accordance with **Item 303. Portland Cement Concrete Pavement, Item 303.2.1.3.2. Gradation, Item 802.4.3. Construction Methods Item 802.4.3.2 Backfill, Item 802.4.3.2.1.COD: Compaction Testing, Item 702.8.3. Construction Method,704.2. Driving Piling, Item 702. Concrete Structures, Item 702.3.5.2 Transit Mix Concrete, Item 702.5.9.COD: Finishing Concrete, Item 702.5.10 COD: Curing Concrete, Item 801. Barriers, Warning and Detour Signs, and Fences, Item 801.4.3.1.COD: General, Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, Item 305.2.2.2.COD: Reinforcement, Item 804. Painting and Other Protective Treatments; Pavement Marking, Item 804.2.3.1.COD: Descaling, Cleaning and Preparation of Surface, Item 804.2.3.1.1.COD: Faulty Surface Preparation, Item 805. Electrical Components and Conduit, Item 805.2.2.COD: Drawings, and Item 805.4.COD: Conduit Construction Methods** of these specifications and addenda thereto.

This item to include the plastic liner, all pumps, base elbows, ___" discharge pipe, " gate valves, ___" check valves, access frame and covers, lever sensors, electrical wiring and conduit, service pole, chain link fence, barricading, and all other equipment and material pertinent to the lift station accessibility and operation.

The pumps and electrical wiring shall be in accordance with Part T - Technical Specifications.

Measurement and payment shall be in accordance with **Item 802.4.4. Measurement and Payment, 704.6. Measurement and Payment, Item 702.5.14. Measurement and Payment, Item 702.7.6. Measurement and Payment, Item 801.1.3. Payment, Item 305.2.4. Measurement and Payment, Item 804.4. Measurement and Payment, Item 801.3.4. Measurement and Payment, and Item 801.4.4. Measurement and Payment** of these specifications and addenda thereto.

ITEM NO. 6400__ __" GATE VALVE – CCW OPEN FOR RECLAIMED WASTEWATER

This item consists of furnishing and placing approximately __ Each __"
Counter-clockwise Opening Gate Valve for Reclaimed Wastewater mains in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service** of these specifications and addenda thereto, and the applicable Standard Drawings.

Measurement and payment will be in accordance with **Item 502.6.8 Measurement and Payment** of these specifications.

Use this item for all valves on reclaimed/Reclaimed Wastewater lines. If a valve placement requires installation of a manhole, the manhole will be paid for under bid item 5160. Use the following for size indicators:

F = 4" Gate Valve

AA = 36" Gate Valve

H = 6" Gate Valve

AC = 42" Gate Valve

J = 8" Gate Valve

AE = 48" Gate Valve

K = 10" Gate Valve

L = 12" Gate Valve

Q = 16" Gate Valve

R = 18" Gate Valve

S = 20" Gate Valve

V = 24" Gate Valve

Y = 30" Gate Valve

ITEM NO. 6800 PROJECT PARTNERING

This item is intended for compensating the Contractor for all costs to implement Project Partnering as detailed in the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item to include hiring a third-party facilitator, travel and lodging expenses, meeting room rental, program materials, reproduction costs and all costs associated with Contractor's own personnel, Subcontractors and Suppliers participating in partnering.

This is a **Contingent Item** and payment will be made, as directed by the Project Manager.

Payment for this item shall be Lump Sum.

This item is to be included in all DWU CITY contracts with an estimated cost of \$4,000,000.00 or more.

ITEM NO. 6870 MOVE IN AND MOVE OUT

This item is intended for compensating the Contractor for Move in and Move Out, completely off the limits of this project.

This is a contingent item and payment will be made at the direction of the Project Manager.

This item is used when a section of R.O.W. has not been obtained at design time but is anticipated that it will be by work order date. In the event it is not obtained, the Contractor will be paid under this bid item to move his equipment from the job and return when R.O.W. is clear.

ITEM NO. 6875 MOVE TO ANOTHER LOCATION

This item is intended for compensating the Contractor for Moving from One Location to Another specified Location within the project limits.

This is a contingent item and payment will be made at the direction of the Project Manager.

This item is similar to Item No. 6870, except that the Contractor is allowed to complete work in one section of the project and move to another location within the project and continue work.

ITEM NO. 6900 PLACEMENT OF GRASS SODDING

This item consists of furnishing and placing approximately ___ Square Yards of Grass Sodding in accordance with **Item 204.5.1. Description, Item 204.5.2. Materials, and Item 204.5.3.2. Solid Sodding** of these specifications and addenda thereto.

This is a contingent item and payment will be made if placement is directed by the Project Manager.

Measurement will be specified as ditch width and the length measured in Linear Feet.

Payment will be in accordance with **Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these specifications.

This item will normally result as a requirement of Inspection personnel through their plan review or as requested by the Parks and Recreation Department, as a part of their easement agreement.

ITEM NO. 6901 PLACEMENT OF SPOT SODDING

This item consists of furnishing and placing approximately ___ Square Yards of Spot Sodding in accordance with **Item 204.5.1. Description, Item 204.5.2. Materials, and Item 204.5.3.1. Plugging** of these specifications and addenda thereto.

This is a contingent item and payment will be made if placement is directed by the Project Manager.

Measurement will be specified as ditch width and the length measured in Linear Feet.

Payment will be in accordance with **Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these specifications.

This item will normally result as a requirement of Inspection personnel through their plan review or as requested by the Parks and Recreation Department, as a part of their easement agreement.

ITEM NO. 6902 PLACEMENT OF BLOCK SODDING

This item consists of furnishing and placing approximately ___ Square Yards of Block Sodding in accordance with **Item 204.5.1. Description, Item 204.5.2. Materials, and Item 204.5.3.2. Solid Sodding** of these specifications and addenda thereto.

This is a contingent item and payment will be made if placement is directed by the Project Manager.

Measurement will be specified ditch width with the length measured in Linear Feet.

Payment will be in accordance with **Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these Specifications.

This is the normal bid item used when in residential areas. It is used on CITY contracts only, since JOINT contract items contain sod replacement within their description. If other than ditch width is calculated, a special provision is written stating where the extra amount is planning to be used.

ITEM NO. 6903 PLACEMENT OF SPRIGS

This item consists of furnishing and placing approximately ___ Square Yards of Sprigs in accordance with Special Provision S-___.

This is a contingent item and payment will be made if placement is directed by the Project Manager.

Measurement will be specified as ditch width and the length measured in Linear Feet.

Payment will be in accordance with **Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these specifications.

This item will normally result as a requirement of Inspection personnel through their plan review, or as requested by the Parks and Recreation Department, as a part of their easement agreement. A special provision will be included along with this item in the contract documents.

ITEM NO. 6904 HYDROMULCH

This item consists of furnishing and placing approximately ___ Square Yards of Seed by Hydromulch in accordance with these specifications and addenda thereto. Hydromulch shall be in accord with **Item 204.4. Fertilizer, Item 204.6.4.1. General, Item 204.6.4.4. Hydraulic Mulching, and Item 204.6.4.6. Watering, Maintaining, and Furnishing Seeded Areas** of these specifications.

This item shall include all labor, tools, transportation, materials, (including topsoil, seed and fertilizer), equipment, supervision, and incidentals required to establish a grass turf as specified in Special Provisions S-___.

Measurement and payment will be in accordance with **Item 204.6.5. Measurement and Payment** of these specifications and addenda thereto.

This item will normally result as a requirement of Inspection personnel through their plan review, or as requested by the Parks and Recreation Department, as a part of their easement agreement. The limits of the Hydromulch will be shown on the plans and in a Special Provision further describing the Hydromulch procedure.

ITEM NO. 6905 PLACEMENT OF SEED

This item consists of furnishing and placing approximately ___ Square Yards of Seed in accordance with **Item 204.6.1. General, Item 204.6.3. Planting Season and Application Rates, Item 204.6.4.1. General, and Item 204.6.4.6. Watering, Maintaining, and Furnishing Seeded Areas** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 204.6.5.**

Measurement and Payment of these Specifications.

This is normally used in areas that are rural in nature, or when crossing Park Department property where seeding is required. Some contracts will contain a portion requiring sodding and another requiring seeding. Quantity calculations vary from job to job and may require use of a written special provision in the contract. Seeding cannot be placed in winter months.

ITEM NO. 6907 FERTILIZER

This item consists of furnishing and placing approximately ___ Tons of Fertilizer having the analysis shown on the plans in accordance with **Item 204.4. Fertilizer and Item 204.6. Seeding Turfgrass** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 204.6.5.**

Measurement and Payment of these specifications

This item will normally result as a requirement of Inspection personnel through their plan review, or as requested by the Parks and Recreation Department, as a part of their easement agreement. Fertilizer cannot be placed in winter months.

ITEM NO. 6908 PLACE BRICK PAVING

This item consists of furnishing and placing approximately ___ Square Yards of Brick Paving Replacement in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

Measurement and payment shall include all labor, materials, and equipment necessary to replace paving based on the maximum permissible ditch width plus two feet for the specified conduit or as directed by the Project Manager.

This item must also contain in the contract documents a technical section for type of brick, material, and method of replacement.

ITEM NO. 6909 PLACE BRICK SIDEWALK

This item consists of furnishing and placing approximately ___ Square Yards of Brick Sidewalk Replacement in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition.**

Measurement and payment shall include all labor, materials, and equipment necessary to replace sidewalk based on the maximum permissible ditch width plus two feet for the specified conduit or as directed by the Project Manager

This item must also contain in the contract documents a technical section for type of brick, material, and method of replacement.

ITEM NO. 6910 COBBLESTONE SIDEWALK PAVERS

This item consists of removing and replacing approximately ___ Square Yards of Cobblestone Sidewalk Pavers in areas specified on the plans.

This item shall include all materials, equipment, and labor required to remove and salvage the cobblestones, saw cut and remove the underlying concrete base material, and when the new main has been accepted, dowel into the existing concrete base, pour new concrete base, install the sand bedding and reset the cobblestones, maintaining the same color patterns, configurations, and grade as currently exists. Cobblestones that are damaged during this process shall be replaced with like kind and color at the Contractor's expense.

Measurement and payment shall be in Square Yards of completed and accepted work. Payment shall be limited to a maximum of ditch width plus four feet, in accordance with **Item 504.7.1. Measurement of Backfill Material and Item 504.7.2. Payment of Backfill Material** of these specifications and addenda thereto.

Details for this bid item can be found on the original paving construction plans for Main Street 311D-3225.

ITEM NO. 6911 CORSOL\BRICK INTERSECTION PAVERS

This item consists of removing and replacing approximately ___ Square Yards of Corsol\Brick Intersection Pavers in areas specified on the plans.

This item shall include all materials, equipment, and labor required to remove and salvage the pavers, saw cut and remove the underlying concrete base material, and when the new main has been accepted, dowel into the existing concrete base, pour new concrete base, install the sand bedding and reset the pavers, maintaining the same color patterns, configurations, and grade as currently exists. Pavers that are damaged during this process shall be replaced with like kind and color at the Contractor's expense.

Measurement and payment shall be in Square Yards of completed and accepted work. Payment shall be limited to a maximum of ditch width plus four feet, in accordance with **Item 504.7.1. Measurement of Backfill Material and Item 504.7.2. Payment of Backfill Material** of these specifications and addenda thereto.

Details for this bid item can be found on the original paving construction plans for Main Street 311D-3225.

ITEM NO. 6920 TELEVISION INSPECTION

This item consists of performing a Television Inspection on approximately ___ Linear Feet of Wastewater Main in accordance with **Item 507.5.2. Television Inspection** of these specifications and addenda thereto, and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

Measurement shall be per Linear Foot of Television Inspection for pipe segments as directed by the Construction Inspector. Payment shall be at the Contract Unit Price per Linear Foot.

This is used for CITY contracts and is normally calculated for the entire length of wastewater main being installed.

ITEM NO. 6921 TELEVISION INSPECTION

This item consists of performing a Television Inspection on approximately ___ Linear Feet of Wastewater Main in accordance with **Item 507.5.2. Television Inspection** of these specifications and addenda thereto, and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

Measurement shall be per Linear Foot of Television Inspection for pipe segments as directed by the Construction Inspector, twice per segment. Payment shall be at the Contract Unit Price per Linear Foot.

This is used for JOINT (Advance of Paving) contracts and is normally calculated as twice the entire length of wastewater main being installed. The main is televised twice; once after backfilling is completed and again prior to paving operations to check for possible damage caused by another Contractor.

ITEM NO. 6925 TRENCH EXCAVATION SAFETY AND SUPPORT

This item consists of Trench Excavation Safety and Support for approximately ___ Linear Feet of trench in accordance with the Occupational Safety and Health Administration Standards 1926.652 "Requirements for Protective Systems".

Trench Excavation Safety and Support shall be measured along the centerline of the trench where trench is sloped to maintain angle of repose, a trench box is utilized, or trench is shored. Payment shall be allowed for all section of trench regardless of depth.

This is a requirement for all contracts with water and wastewater mains or fire hydrant leads. The footage of mains and fire hydrant leads installed, minus the total length of any BOTOOC footage, should equal the quantity of this item in LF. This item is included in the descriptions of water services and wastewater laterals items.

ITEM NO. 6930 ___ ___ " **CLOSURE SECTION**

This item consists of furnishing and placing approximately ___ Each ___" Closure Section.

This item shall include the flanged outlet on the closure section and all fittings required to complete the installation.

This is a contingent item to be used and paid for only if directed by the Project Manager.

This item is to be used on all concrete water mains, which are built, tested, and then connected into the existing system or another newly constructed main. Use the following for size indicators:

Q = 16" Closure Section

AC = 42" Closure Section

S = 20" Closure Section

AE = 48" Closure Section

V = 24" Closure Section

AF = 54" Closure Section

Y = 30" Closure Section

AG = 60" Closure Section

AA = 36" Closure Section

AH = 66" Closure Section

ITEM NO. 6940 **BASE PREPARATION**

This item consists of preparing and placing approximately ___ Square Yards of Base Materials for Type A Paving Repair in accordance with Special Provision S-___.

This item will be used to repair existing base failures prior to installing the new paving material. It is normally requested by Inspection personnel, during the review process, or by the Street Department. A special provision is to describe specific base material to use and depth to be placed.

ITEM NO. 6941 **LIME TREATED BASE**

This item consists of furnishing and placing approximately ___ Square Yards of Lime Treated Base in accordance with **Item 301.2. Lime Treatment** of these specifications and addenda thereto.

This item shall be a Commercial Lime Slurry, 6" in depth, with a 6% lime content. Quick Lime will not be allowed.

Measurement and payment will be in accordance with **Item 301.2.4. Measurement and Payment** of these specifications.

This item is sometimes used when lime treated base is already in existence. It may be required by another agency.

ITEM NO. 6942 **STREET SURFACE MILLING**

This item consists of Street Surface Milling approximately ___ Square Yards in preparation for asphalt resurfacing of existing concrete or asphalt streets in accordance with the Special Provisions.

This item shall include all labor, materials, and equipment necessary to complete the street surface milling.

ITEM NO. 6950 GABIONS FOR SLOPE PROTECTION

This item consists of furnishing and placing approximately ___ Cubic Yards of Gabion Structures for slope protection in accordance with **Item 803.2. Gabion Structures** of these specifications.

Gabions shall be measured and paid for at contract Unit Price per Cubic Yard of completed and accepted work.

This bid item is very specific and must contain a detailed drawing of the type and placement of gabion to be used. The limits of the gabions are detailed on the plans.

ITEM NO. 6960___ REMOVE ___" INTERNAL TEST PLUG

This item consists of removing ___ Each ___" Internal Test Plug.

Measurement and payment shall include all labor, materials, and equipment necessary for dewatering and removal of the test plug.

An internal test plug will be designed into the concrete water main as required, and as indicated on the plan. The removal of this plug is a separate bid item. Use the following for size indicators:

Q = 16" Internal Test Plug

AC = 42" Internal Test Plug

S = 20" Internal Test Plug

AE = 48" Internal Test Plug

V = 24" Internal Test Plug

AF = 54" Internal Test Plug

Y = 30" Internal Test Plug

AG = 60" Internal Test Plug

AA = 36" Internal Test Plug

AH = 66" Internal Test Plug

ITEM NO. 6970 PIPE TO SOIL POTENTIAL MONITORING STATION

This item consists of furnishing and placing approximately ___ Each Pipe to Soil Monitoring Station as specified by the DWU Standard Drawings. Exact placement shall be as directed by the Project Engineer.

This item is to include all costs for labor, materials, and incidentals necessary to complete the work.

This item is required on all concrete water mains. See Standard Drawings #226-228.

ITEM NO. 6990___ ___" GATE VALVE REPLACEMENT

This item consists of furnishing and placing approximately ___ Each ___" Gate Valve Replacement in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service**, of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the removal of the existing valve, placing one cut-in valve, and furnishing and placing ___ manholes. This item, also, to include all fittings and polywrap in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings** of these specifications and addenda thereto;

trench safety and support in accordance with Occupational Safety and Health Administration Standards 1926.652 "Requirements for Protective Systems"; embedment in accordance with **Item 504.2.2.2. Granular Material, Item 504.3.2. Foundation, Item 504.2.2.4. Crushed Stone for Foundation, Item 504.7.1. Measurement of Backfill Material, Item 504.7.2. Payment of Backfill Material, Item 504.7.2.1.1.COD: No Extra Allowances, Item 504.7.3.COD: Surplus Excavation, Item 504.3.2.1. Foundation Measurement, and Item 504.3.2.2. Foundation Payment** of these specifications; cement stabilized sand backfills in accordance with **Item 504.6.2. Stabilized Backfill** of these specifications; sand backfill in accordance with **Item 504.6.5. Sand Backfill and Item 504.2.2.6. Sand** of these specifications; temporary pavement in accordance with **Item 402.4. Replacing Paved Surfaces and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications; and permanent paving in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement**. All barricading necessary for this item is included in this item.

Payment will be Lump Sum for complete in place and accepted work.

This Item is used on CITY contracts when replacing existing valves. Manholes are included in this item. Use the following for size indicators:

H = 6" Gate Valve Replacement

J = 8" Gate Valve Replacement

K = 10" Gate Valve Replacement

L = 12" Gate Valve Replacement

Q = 16" Gate Valve Replacement

R = 18" Gate Valve Replacement

S = 20" Gate Valve Replacement

V = 24" Gate Valve Replacement

Y = 30" Gate Valve Replacement

AA = 36" Gate Valve Replacement

AC = 42" Gate Valve Replacement

AE = 48" Gate Valve Replacement

ITEM NO. 6995__ __" GATE VALVE REPLACEMENT (CITY FURNISHED VALVE)

This item consists of placing approximately __ Each City Furnished __" Gate Valve in accordance with **Item 502.6.6.COD: Line Valve Installation and Item 502.6.1.COD: Double Disk, Metal Seated Gate Valves For Ordinary Waterworks Service Or Item 502.6.2.COD: Resilient-Seated Gate Valves For Ordinary Waterworks Service**, of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the removal of the existing valve, placing one cut-in valve, and furnishing and placing __ manholes. This item, also, to include all fittings and polywrap in accordance with **Item 506. Open Cut – Water Conduit Installation, Item 506.5.COD: Hydrostatic Test, Item 506.6.COD: Connections To Existing Water Conduits, Item 506.6.1.COD: Water Main Tie-In During Off Hours, Item 506.6.2.COD: Shutdown of Water Mains 20" Diameter and Larger, Item 506.7.3.2. Flushing Method, Item 506.7.2. Pre-Disinfection, Item 506.7.2.1.COD: Chlorination, Item 506.7.2.2.COD: Flushing, Item 506.7.3.3.COD: Disposal of Flushing Water, Item 506.7.5.4.COD: Sampling, Item 506.7.6.COD: Indemnification, Item 506.8.1. Cut and Plugs and Item 501.7.COD: Ductile-Iron Pressure Pipe and Fittings** of these specifications and addenda thereto; trench safety and support in accordance with Occupational Safety and Health Administration Standards 1926.652 "Requirements for Protective Systems"; embedment in accordance with **Item 504.2.2.2. Granular Material, Item 504.3.2. Foundation, Item 504.2.2.4. Crushed Stone for Foundation, Item 504.7.1. Measurement of Backfill Material, Item 504.7.2. Payment of Backfill Material, Item 504.7.2.1.1.COD: No Extra Allowances, Item 504.7.3.COD: Surplus Excavation, Item 504.3.2.1. Foundation Measurement, and Item 504.3.2.2. Foundation Payment** of these specifications; cement stabilized sand backfills in accordance with **Item 504.6.2. Stabilized Backfill** of these specifications; sand backfill in accordance with **Item 504.6.5. Sand Backfill and Item 504.2.2.6. Sand** of these specifications; temporary pavement in accordance with **Item 402.4. Replacing Paved Surfaces and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications; and permanent paving in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement**. All barricading necessary for this item is included in this item.

Payment will be Lump Sum for complete in place and accepted work.

This item is used on CITY contracts when replacing existing City furnished valves. Manholes are included in this item. Use the following for size indicators:

<i>H = 6" Gate Valve Replacement (City Furn)</i>	<i>S = 20" Gate Valve Replacement (City Furn)</i>
<i>J = 8" Gate Valve Replacement (City Furn)</i>	<i>V = 24" Gate Valve Replacement (City Furn)</i>
<i>K = 10" Gate Valve Replacement (City Furn)</i>	<i>Y = 30" Gate Valve Replacement (City Furn)</i>
<i>L = 12" Gate Valve Replacement (City Furn)</i>	<i>AA = 36" Gate Valve Replacement (City Furn)</i>
<i>Q = 16" Gate Valve Replacement (City Furn)</i>	<i>AC = 42" Gate Valve Replacement (City Furn)</i>
<i>R = 18" Gate Valve Replacement (City Furn)</i>	<i>AE = 48" Gate Valve Replacement (City Furn)</i>

ITEM NO. 7020 STEEL GUARD POST (BOLLARD)

This item consists of furnishing and placing _each Steel Guard Post(s) in accordance with these specifications and addenda thereto, and the applicable Standard Drawings. This item is to include all Materials, Excavation, Backfill and Incidentals required for a complete in place Steel Guard Post.

Measurement and Payment will be per each as set forth in the contract.

This item is used around fire hydrants, flush points, and any other surface level appurtenance in a high traffic area or in a location where the risk of vehicular contact is high. This item must be shown on the plans.

ITEM NO. 7030 ROCK FOUNDATION

This item consists of furnishing and placing approximately __ Cubic Yards of Rock Foundation at locations approved by the Project Manager, in accordance with **Item 504.3.2. Foundation and Item 504.2.2.4. Crushed Stone for Foundation** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager.

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment** of these specifications.

This item is used as a support for water and wastewater mains when unstable material is found in or below the embedment zone. If used it is normally placed in depths from 12" to 36" below the embedment zone. A rule of thumb is to calculate ditch width @ 12" thickness for 10% of the total pipe length of wastewater mains, and about half that for water mains. This will be included as a contingency item on all contracts.

$$CY = \frac{(LF \text{ of pipe}) (Ditch Width)(Depth)(F)}{(27 \text{ CF/CY})}$$

Where:

F = 0.05 (5%) (water mains)

F = 0.10 (10%) (wastewater mains)

ITEM NO. 7040 STABILIZED BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Stabilized Backfill in accordance with **Item 504.6.2. Stabilized Backfill** of these specifications and addenda thereto, and as shown on the plans and detailed on the applicable Standard Drawings.

This is a **Contingent Item** and payment will be made as directed by the Project Manager. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.7. Measurement and Payment of Backfill, Item 504.7.1. Measurement of Backfill Material, and Item 504.7.2. Payment of Backfill Material** of these specifications.

This item is used as a stabilizing material in the space above the embedment zone to the ground surface. It can be used in water or wastewater main construction. The limits must be shown on the plans.

$$\text{CY} = \frac{(\text{LF of pipe}) (\text{Ditch Width}) (\text{Depth from top of embedment to ground line})}{(27 \text{ CF/CY})}$$

ITEM NO. 7041 FLOWABLE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Flowable Backfill in accordance with **Item 504.6.6. Flowable Backfill and Item 504.2.3.4. Flowable Backfill or Stabilized Backfill** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment shall be at the contract Unit Price per Cubic Yard for completed and accepted work.

This bid item is used to provide a stabilizing material in the space above the embedment zone as in Item No. 7040 but has a compressive strength of between 250 PSI and 450 PSI after 28 days. It can be used for both water and wastewater mains. It is normally an item requested by Inspection personnel during the review process.

ITEM NO. 7042 MODIFIED FLOWABLE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Modified Flowable Backfill in accordance with **Item 504.6.7. Modified Flowable Backfill and Item 504.2.3.5.COD: Modified Flowable Backfill** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment shall be at the contract Unit Price per Cubic Yard for completed and accepted work.

This bid item is used to provide a stabilizing material in the space above the embedment zone as in Item No. 7040 but has a compressive strength of between 50 PSI and 150 PSI after 28 days. It can be used for both water and wastewater mains. It is normally an item requested by Inspection personnel during the review process.

ITEM NO. 7043 FOUR "F" FLOWABLE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Four "F" Flowable Backfill in accordance with of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment shall be at the contract Unit Price per Cubic Yard for completed and accepted work.

This bid item is used to provide a stabilizing material in the space above the embedment zone as in Item No. 7040 but has a compressive strength of between 25 PSI and 100 PSI after 28 days. It can be used for both water and wastewater mains. It is normally an item requested by Inspection personnel during the review process.

ITEM NO. 7044 FOUR "F" FLOWABLE BASE - HIGH STRENGTH, FAST SET

This item consists of furnishing and placing approximately ___ Cubic Yards of Four "F" Flowable Base-High Strength, Fast Set in accordance with **Item IV.3.d of the Department of Public Works Pavement Cut and Repair Standards Manual, latest edition** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment shall be at the contract Unit Price per Cubic Yard for completed and accepted work. The price per unit of volume will remain the same, regardless of the volume used.

This bid item is used to provide a stabilizing material in the space above the embedment zone as in Item No. 7040 but has a compressive strength of between 300 PSI and 500 PSI after 28 days. It can be used for both water and wastewater mains. It is normally used as the base material under asphalt pavement.

ITEM NO. 7045 GROUT FOR PIPELINE ABANDONMENT

This item consists of furnishing and placing approximately ___ Cubic Yards of Cementitious Grout in accordance with and **Item 504.2.3.4. Flowable Backfill or Stabilized Backfill** of these specifications and addenda thereto.

This is a contingent item and placement shall be made only as directed by the Project Manager.

Measurement and payment shall be at the contract Unit Price per Cubic Yard for completed and accepted work.

This bid item is used to fill an abandoned pipeline. It should only be used for sizes 18" or greater where the condition of the pipe is of imminent collapse, or if this item is specifically requested by the Project Manager. It can be used for both water and wastewater mains.

ITEM NO. 7050 SAND BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Sand Backfill at locations approved by the Project Manager, in accordance with **Item 504.6.5. Sand Backfill and Item 504.2.2.6. Sand** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made as directed by the Project Manager.

Measurement and payment will be in accordance with **Item 504.7.2.2. Final Trench Backfill** of these specifications. The price per unit of volume will remain the same, regardless of the volume used.

A contingency volume of sand as a General Item will be determined by the Project Manager on a contract by contract basis. Do not calculate a quantity by pipe length for individual pipeline segments.

ITEM NO. 7051 TOPSOIL

This item consists of furnishing and placing approximately ___ Square Yards of Topsoil in accordance with Part P-___ Park Department Specifications and **Item 204.2. Topsoil** of these specifications and addenda thereto.

Payment will be made for topsoil salvaged, and all salvaged topsoil shall be used before any topsoil may be brought in. The basis of payment will be on the maximum permissible width of ditch as specified for type of kind of conduit to be constructed, as shown on the plans or Standard Drawings, plus two feet. This item to include all items required to furnish and place the topsoil under Section 0201 of the Part P-___ Park Department Specifications.

Measurement and payment will be in accordance with **Item 204.2.4. Measurement and Payment** of these specifications.

This item is sometimes required when crossing Parks and Recreation Department property. The Parks and Recreation Department specifications are always included with the contract documents.

ITEM NO. 7052 CEMENT TREATED BASE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Cement Treated Base Backfill in accordance with **Item 504. Open Cut – Backfill** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.7.**

Measurement and Payment of Backfill, Item 504.7.1. Measurement of Backfill Material, and Item 504.7.2. Payment of Backfill Material of these specifications and will include all materials, tools, labor, and incidentals necessary to complete the work.

Cement Treated Base is sometimes used in lieu of stabilized or concrete backfill. CTB has a special design mix and the technical specifications must always be included with the contract documents.

ITEM NO. 7053 CEMENT STABILIZED SAND BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Cement Stabilized Sand Backfill in accordance with the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition. See Item 107.28.COD: Environmental Compliance.**

Measurement and payment above the pipe shall be at the trench width in accordance with **Item 504.7.1. Measurement of Backfill Material and Item 504.7.2. Payment of Backfill Material** of these specifications and the addenda thereto. Measurement and payment in other areas where placement is directed will be at the contract Unit Price per Cubic Yard of completed and accepted work.

This bid item may, at the discretion of the Engineer, be used in lieu of Item No. 7044 above the pipe in areas designated on the plans, or in locations as directed by the Engineer.

ITEM NO. 7060 CONCRETE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Concrete Backfill in accordance with **Item 504.6.3. Concrete Backfill** of these specifications and addenda thereto, and the applicable Standard Drawings.

Concrete backfill will be placed above the Class “G” embedment to the top of the existing rock line. If the rock line is below the existing ground line, the trench above the rock line shall be backfilled with trench-excavated material, and the Class “B” concrete cap will not be required. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.7.**

Measurement and Payment of Backfill, Item 504.7.1. Measurement of Backfill Material and Item 504.7.2. Payment of Backfill Material of these specifications.

This item is normally used for stabilizing the space between the Class “G” embedment and the 6" thick Class “B” concrete cap when Class “G-1” embedment is required in wastewater mains. The difference between this item and stabilized backfill is that native soils may not be used with this two-sack mix. Rock or granular material must not be used in the mix. The formula for calculating quantities is:

$$\text{CY} = \frac{(\text{LF of pipe}) (\text{Ditch width}) (\text{Depth from top of embedment to ground line})}{(27 \text{ CF/CY})}$$

ITEM NO. 7061 CLASS 'B' CONCRETE BACKFILL

This item consists of furnishing and placing approximately ___ Cubic Yards of Class 'B' Concrete Backfill in accordance with **Item 504.6.3. Concrete Backfill, Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, Item 702.3. Mix Design and Mixing Concrete for Structures, and Item 107.28.COD: Environmental Compliance** of these specifications and addenda thereto, and the detail drawings on the plan sheets.

Concrete backfill will be placed above the Class "G" embedment to the ground surface or bottom of rip rap. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns do not apply to this item.

Measurement and payment shall be made at the contract unit price per cubic yard of concrete, calculated at the standard trench width times the depth measured between the top of the embedment and the bottom of rip rap or ground surface times the measured length. This shall include furnishing and placing all materials and all labor, tools, equipment, and incidentals necessary to complete the work, all in accordance with the plans and specifications. No allowance for waste shall be made.

This item is used for stabilizing the space between the Class "G" embedment and the ground surface or rip rap in creeks, channels, or waterways. The formula for calculating quantities is:

$$\text{CY} = \frac{(\text{LF of pipe}) (\text{Ditch width}) (\text{Depth from top of embedment to ground line})}{(27 \text{ CF/CY})}$$

ITEM NO. 7070 CLASS "A" CONCRETE

This item consists of furnishing and placing approximately __ Cubic Yards of Class "A" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is a 4000-PSI concrete.

ITEM NO. 7071 CLASS "B" CONCRETE

This item consists of furnishing and placing approximately __ Cubic Yards of Class "B" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is 2000-PSI concrete, normally used in blocking. Always calculate the worst case for blocking. Use earth, not rock, for material type, and the next higher degree bend when using odd angle bends. In addition, when using combination angle bends, the bend type will be vertical bends.

ITEM NO. 7072 CLASS "C" CONCRETE

This item consists of furnishing and placing approximately __ Cubic Yards of Class "C" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is 3600-PSI concrete.

ITEM NO. 7073 CLASS "D" CONCRETE

This item consists of furnishing and placing approximately ___ Cubic Yards of Class "D" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is 500-PSI concrete.

ITEM NO. 7074 CLASS "E" CONCRETE

This item consists of furnishing and placing approximately ___ Cubic Yards of Class "E" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 201.2.4.1. Measurement and Payment for Temporary Utility Supports** of these specifications.

This item is 3000-PSI concrete for Type "A" utility supports. Utility supports are required when a proposed main cross under an existing utility or other structure within ~4' (vertically). The quantity is calculated using the following:

$$CY = \frac{(\text{Ditch width} + 2') (12" \text{ minimum thickness}) (\text{Width of utility being crossed 'the horizontal section'})}{(27 \text{ CF/CY})}$$

The vertical columns are calculated, at a minimum:

$$CY = \frac{(12 \text{ in/ft}) (12 \text{ in/ft}) (\text{Length required})}{(27 \text{ CF/CY})}$$

ITEM NO. 7075 CLASS "F" CONCRETE

This item consists of furnishing and placing approximately ___ Cubic Yards of Class "F" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is 4200-PSI concrete.

ITEM NO. 7076 CLASS "H" CONCRETE

This item consists of furnishing and placing approximately ___ Cubic Yards of Class "H" Concrete in accordance with **Item 504.3.2. Foundation, Item 502.4.1.COD:Concrete Blocking, and Item 702.3. Mix Design and Mixing Concrete for Structures** of these specifications and addenda thereto, and the applicable Standard Drawings. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2. Foundation Payment or Item 502.4.4. Measurement and Payment** of these specifications.

This item is a prestressed concrete and is to be specified on the plans.

ITEM NO. 7090 FURNISH AND PLACE RIP RAP

This item consists of furnishing and placing approximately ___ Square Yards of Rip Rap in accordance with **Item 803.3. Riprap, Item 803.3.3.2. Dry Riprap, Type A and Type B and Item 803.3.3.3. Dry Riprap, Type C and Type D** of these specifications and addenda thereto, and the applicable Standard Drawings.

This is not to include Stabilized Backfill, which is a separate bid item.

Measurement and payment will be in accordance with **Item 803.3.4.COD: Measurement and Payment** of these specifications and addenda thereto.

This item is used to indicate any type of riprap, other than that shown in DWU Standard Drawing No. 120, which is Item No. 7095 Dry Rip Rap, Type A.

ITEM NO. 7095 FURNISH AND PLACE DRY RIP RAP (TYPE A)

This item consists of furnishing and placing approximately ___ Square Yards of Rip Rap in accordance with **Item 803.3. Riprap, Item 803.3.3.2. Dry Riprap, Type A and Type B** of these specifications and addenda thereto, and the applicable Standard Drawings.

This is not to include Stabilized Backfill, which is a separate bid item.

Measurement and payment will be in accordance with **Item 803.3.4.COD: Measurement and Payment** of these specifications and addenda thereto.

The dimensions must be shown on the plans for the limits, both horizontally and vertically. The minimum thickness is 12". The quantity is calculated by the SY area of that is detailed in the plan view. Whatever is shown on the plans will be calculated in SY and shown on the estimate. Stabilized backfill will be calculated and shown as the bid item for stabilized backfill.

ITEM NO. 7096 FURNISH AND PLACE GROUTED RIP RAP (TYPE A AND TYPE B)

This item consists of furnishing and placing approximately ___ Square Yards of Grouted Rip Rap in accordance with **Item 803.3. Riprap, and Item 803.3.3.4. Grouted Riprap, Type A and Type B** of these specifications and addenda thereto, and the detail drawings shown on the plan sheets.

Measurement and payment will be in accordance with **Item 803.3.4.COD: Measurement and Payment** of these specifications and addenda thereto.

The dimensions must be shown on the plans for the limits, both horizontally and vertically. The minimum thickness is 12". The quantity is calculated by the SY area of that is detailed in the plan view. Whatever is shown on the plans will be calculated in SY and shown on the estimate.

ITEM NO. 7100 LUMP SUM COST DIFFERENCE FOR BASE BID ITEMS USING OTHER THAN DRY KILN PORTLAND CEMENT

This item, lump sum, consists of the cost difference for Base Bid Items (7041, 7043, 7044, 7052, 7053, 7071, 7530, 7540, 7570, 7575, 7580, 7583, 7585, 7590, 7600 and 7605) containing Portland cement manufactured by means other than the "Dry Kiln" process for entire project Parts 1, 2 and 3 as outlined in **Item 107.28.COD: Environmental Compliance** and **Item 303.3.6.COD: Cement Used On Public Projects – Sustainable Air Quality** of these Specifications.

Measurement and payment will be deductive per lump sum as set forth in the Contract.

ITEM NO. 7200 ___ ___" DIAMETER STORM SEWER MANHOLE FOR WASTEWATER PASSTHROUGH

This item consists of furnishing and placing approximately ___ Each ___" Diameter Storm Sewer Manhole in accordance with **Item 502.1.1.1. Precast Reinforced Concrete Manhole Sections** of these specifications, Page 2008 of File 251D-1, Standard Construction Details, City of Dallas Department of Public Works, and the applicable DWU Standard Drawings. This item includes removal and disposal of storm sewer pipe, fittings, grouting, encasement pipe, and barricading. This item does not include the carrier pipe.

Measurement and payment will be in accordance with **Item 502.1.6.**

Measurement and Payment of Manholes of these specifications.

This item used for DWU CITY contracts. This item is to be used for constructing storm sewer manholes when a wastewater main will intersect with a storm sewer pipe as per DWU Standard Drawing 416. This should be called out as an item of work on the plans. The minimum manhole diameter should be the next standard size larger than the storm sewer pipe plus two feet. Use the following for size indicators:

AE = 48" Storm Sewer Manhole

AL = 84" Storm Sewer Manhole

AG = 60" Storm Sewer Manhole

AN = 96" Storm Sewer Manhole

AJ = 72" Storm Sewer Manhole

AR = 108" Storm Sewer Manhole

ITEM NO. 7520 TEMPORARY PAVING (HOT MIX OR HIGH-PERFORMANCE MIX)

This item consists of furnishing, placing, and removing approximately ___ Tons of Hot or High-Performance Mix Asphalt Pavement for Temporary Paving, as authorized by the Engineer. Hot Mix Asphalt shall conform to **Item 302.9. Hot-Mix Asphalt Pavement and 403.2.3. Hot-Mix, Cold-Laid Asphaltic Concrete (Cold Mix)** of these specifications. Hot or High-Performance Mix shall be placed in accordance with **Item 402.4. Replacing Paved Surfaces** of these specifications and addenda thereto.

The method of measurement for payment will be in Tons (2,000 pounds) of material in place and accepted. The basis of payment will be based on the maximum permissible width of ditch as specified for type or kind of conduit to be constructed as shown on the plans or Standard Drawings, and a compacted thickness of 2" over flexible base.

This item is used for temporary paving, only on CITY contracts. This item requires Item 7560 Crushed Rock for Paving Repairs (Ditch Line Temporary Paving) on CITY contracts. Asphalt is calculated in Tons based on 1" compacted thickness, weighing 110 pounds per square yard. Always make bid quantity calculations based on (220 lbs/SY) using the formula:

$$\text{TON} = \frac{(\text{LF of pipe}) (\text{Ditch width}) (220 \text{ lbs/SY})}{(9 \text{ SF/YD}) (2000 \text{ lbs/ton})}$$

ITEM NO. 7525 FLEX BASE (CRUSHED ROCK) ALLEY SURFACE

This item consists of removing existing alley surface, furnishing and placing approximately ___ Cubic Yards of Crushed Rock (Flexible Base) for final alley driving surface as authorized by the Project Manager in accordance with **Item 402.4.Replacing Paved Surfaces, and Item 301.5.COD: FLEXIBLE SUBBASE OR BASE (CRUSHED STONE/CONCRETE)** of these specifications and addenda thereto.

This item also includes haul off spoil, grading, blading, hauling, spreading, and compacting the material. **Item 104.2.1. Increased or Decreased Quantities of Work** of these specifications **does not** apply to this bid item.

The basis of payment will be based on the maximum permissible depth of 8" of compacted stone by approximately 10' wide or as specified by the Project Manager.

This item will be used on CITY contracts for all alleys with no permanent paving. For 10' alleys calculate for the entire width. For alleys greater than 10' width, make bid quantity calculations using the formula:

$$CY = \frac{(LF \text{ of Pipe}) (Ditch \text{ width}) (Thickness)}{(27 \text{ CF/CY})}$$

ITEM NO. 7530 CONCRETE CURB AND/OR GUTTER

This item consists of furnishing and placing approximately ___ Linear Feet of Concrete Curb and/or Gutter in accordance with **Item 402.4.3. Replacing Curb, Gutter, Sidewalks, Driveways, Etc. and Item 305.1. Concrete Curb and Gutter** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item should be mainly used on CITY contracts where the installation of a water or wastewater main requires removal of existing curb and/or gutter. Even if the proposed main installation is not anticipated to disturb any existing curb and/or gutter, approximately 20 LF per City block shall be added to allow for a contingency item.

ITEM NO. 7531 ASPHALT CURB AND/OR GUTTER

This item consists of furnishing and placing approximately ___ Linear Feet of Asphalt Curb and/or Gutter in accordance with **Item 402.4. Replacing Paved Surfaces and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications and addenda thereto.

The Asphalt Curb and/or gutter will consist of Hot Mix Asphalt and conform to **Item 302.9. Hot-Mix Asphalt Pavement** of these specifications.

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item should be used to match existing asphalt curb and/or gutter removed during water and wastewater construction.

ITEM NO. 7532 CONCRETE GUTTER

This item consists of furnishing and placing approximately ___ Linear Feet of Concrete Gutter in accordance with **Item 402.4.3. Replacing Curb, Gutter, Sidewalks, Driveways, Etc. and Item 305.1. Concrete Curb and Gutter** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

There are some locations throughout the city, which have streets with no curbs, only gutters. If replacing this type of gutter, the dimensions and thickness for replacement are to be indicated on the plans.

ITEM NO. 7540 CONCRETE CURB

This item consists of furnishing and placing approximately ___ Linear Feet of Concrete Curb in accordance with **Item 402.4.3. Replacing Curb, Gutter, Sidewalks, Driveways, Etc. and Item 305.1. Concrete Curb and Gutter** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item should be mainly used on CITY contracts, when replacing a curb and/or gutter in the same pour with the paving. The curb is paid in LF as a separate item. Reinforced Concrete Paving is paid to the back of curb and no gutter is paid. If a monolithic pour needs to be set up in the contract prior to advertisement, this bid item for the curb should be used. This is more common for large mains, where a wide section of street is being removed and replaced.

ITEM NO. 7545 ASPHALT CURB

This item consists of furnishing and placing approximately ___ Linear Feet of Asphalt Curb in accordance with **Item 402.4. Replacing Paved Surfaces and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications and addenda thereto.

The Asphalt Curb and/or Gutter will consist of Hot Mix Asphalt and conform to **Item 302.9. Hot-Mix Asphalt Pavement** of these specifications.

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item should be used to match existing asphalt curb removed during water and wastewater construction.

ITEM NO. 7560 CRUSHED ROCK FOR TEMPORARY PAVING BASE

This item consists of furnishing and placing approximately ___ Cubic Yards of Crushed Rock (Flexible Base) for Temporary Paving Base material in accordance with **Item 402.4. Replacing Paved Surfaces and Item 301.5.COD: FLEXIBLE SUBBASE OR BASE (CRUSHED STONE/CONCRETE)** of these specifications and addenda thereto.

Measurement and payment will be in accordance with **Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is used on CITY contracts, as a base material underneath Temporary Asphalt or Hot Mix Asphalt Pavement. Make bid quantity calculations using the formula, with a minimum thickness of 6 inches:

$$\text{CY} = \frac{(\text{LF of pipe}) (\text{Ditch width}) (0.5' \text{ thickness})}{(27 \text{ CF/CY})}$$

ITEM NO. 7570 REINFORCED CONCRETE PAVING

This item consists of furnishing and placing approximately ___ Cubic Yards of Reinforced Concrete Paving in accordance with **Item 402.4.4. Replacing Reinforced Concrete Pavement, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is normally used on CITY contracts and requires Class "A" (4000-PSI) concrete. The replacement paving must be the same thickness as the existing paving, with a 6" minimum thickness. If information from probes or corings indicates a greater thickness than 6", use that thickness. The CBD requires a minimum 9" replacement thickness. Make bid quantity calculations using the formula:

$$CY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2') (Thickness)}{(27 \text{ CF/CY})}$$

ITEM NO. 7575 TYPE 3K-2 REINFORCED CONCRETE PAVING

This item consists of furnishing and placing approximately ___ Cubic Yards of Type 3K-2 Reinforced Concrete Paving in accordance with **Item 402.4.4. Replacing Reinforced Concrete Pavement, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications, Dallas Street Cut Standard Manual, and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This is a **contingent item** and placement shall be made only as directed by the Project Manager. The price per unit of volume will remain the same, regardless of the volume used.

This item is normally used on CITY contracts and requires Class "A" 4000 PSI concrete. The replacement paving must be the same thickness as the existing paving, with a 6" minimum thickness. If information from probes or corings indicates a greater thickness than 6", use that thickness. The CBD requires a minimum 9" replacement thickness. Make bid quantity calculations using the formula:

$$CY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2') (Thickness)}{(27 \text{ CF/CY})}$$

ITEM NO. 7580 REINFORCED CONCRETE SIDEWALK

This item consists of furnishing and placing approximately ___ Square Yards of Reinforced Concrete Sidewalk in accordance with **Item 402.4. Replacing Paved Surfaces, Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** of these specifications and addenda thereto. See **Item 107.28.COD: Environmental Compliance**.

This item shall also include removal and disposal of existing sidewalk if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is normally used on CITY contracts and requires 3000-PSI concrete. A small contingent quantity (1.0 SY) per contract should be included if there is a possibility of sidewalk removal and replacement. The minimum thickness is 4" and minimum width 4'.

$$SY = \frac{(\text{LF of sidewalk}) (\text{Width of sidewalk})}{(9 \text{ SF/SY})}$$

ITEM NO. 7581 TEMPORARY HOT MIX ASPHALT SIDEWALK

This item consists of furnishing, placing, and removing approximately ___ Square Yards of Hot Mix Asphalt for Temporary Sidewalk as authorized by the Engineer. Hot Mix shall be placed in accordance with **Item 402.4. Replacing Paved Surfaces and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications and addenda thereto. The Hot Mix Asphalt shall conform to **Item 302.9. Hot-Mix Asphalt Pavement** of these specifications.

Measurement and payment will be in Square Yards of material in place and accepted.

This item is normally used on JOINT contracts. The minimum thickness is 4" and minimum width 4'.

$$SY = \frac{(\text{LF of sidewalk}) (\text{Width of sidewalk})}{(9 \text{ SF/SY})}$$

ITEM NO. 7582 REINFORCED CONCRETE PAVING

This item consists of furnishing and placing approximately ___ Square Yards of Reinforced Concrete Paving in accordance with **Item 402.4.4. Replacing Reinforced Concrete Pavement, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.** This item also includes removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is normally used on CITY contracts and JOINT contracts with PW&T. This item requires 4000-PSI concrete. The replacement paving must be the same thickness as the existing paving, with a 6" minimum thickness. If information from probes or corings indicates a greater thickness than 6", use that thickness. The CBD requires a minimum 9" replacement thickness. This bid item is not to be used unless the thickness being replaced is indicated on the plans, general notes, or in special provisions. Make bid quantity calculations using the formula:

$$SY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2')}{(9 \text{ SF/SY})}$$

ITEM NO. 7583 REINFORCED CONCRETE DRIVEWAY

This item consists of furnishing and placing approximately ___ Square Yards of Reinforced Concrete Driveway in accordance with **Item 402.4. Replacing Paved Surfaces, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.** This item also includes removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications. This item requires the concrete be set at 4500 PSI strength if hand finished or 4000 PSI strength if machine finished.

A small contingent quantity (5.0 SY) per contract should be included if there is a possibility of driveway removal and replacement. The replacement paving must be the same thickness as the existing paving, with a 6" minimum thickness. If information from probes or corings indicates a greater thickness than 6", use that thickness. Make bid quantity calculations using the formula:

$$SY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2')}{(9 \text{ SF/SY})}$$

ITEM NO. 7584 SLURRY SEAL SURFACE TREATMENT

This item consists of furnishing and placing approximately ___ Square Yards of Slurry Seal Surface Treatment in accordance with **Item 404.3.7.COD: Limitations** of the Dallas Water Utilities Addendum to the North Central Texas Standard Specifications for Slurry Seal.

This is a contingent item. Placement and payment shall be made only as directed by the Project Manager.

Slurry Seal shall be measured and paid for at the contract Unit Price per Square Yard on surface area of completed and accepted work.

This item is normally used for asphalt streets on CITY contracts. The entire street is treated, which seals cracks and covers up 'unsightly' lines caused by paving removal and replacement. Quantity is normally the entire street where replacement was made. A special provision must be included in all contracts containing Slurry Seal.

ITEM NO. 7585 BARRIER FREE RAMP

This item consists of constructing approximately ___ Each Concrete Barrier Free (wheelchair) Ramps as specified herein and in conformity with the **Public Works Standard Details for Construction (251-D)** and any special details.

This item shall include all necessary saw-cut, removal of existing sidewalk, curb and gutter, excavation and backfill, subgrade preparation, furnishing and placing all materials; including expansion joint materials, asphalt replacement needed to adjacent to new gutter area, and any related work for manipulation, labor, tools, equipment and incidentals. **See Item 107.28.COD: Environmental Compliance.**

Measurement and payment shall be at unit contract price for complete and accepted work.

This item is used on DWU CITY contracts and requires 4000-PSI concrete.

ITEM NO. 7590 REINFORCED CONCRETE DRIVEWAY

This item consists of furnishing and placing approximately ___ Cubic Yards of Reinforced Concrete Driveway in accordance with **Item 402.4. Replacing Paved Surfaces, Item 305.2. Concrete Sidewalks, Driveway Approaches, and Barrier Free Ramps, and Item 305.2.2.2.COD: Reinforcement** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is normally used on CITY contracts. A small contingent quantity (1) per contract should be included if there is a possibility of driveway removal and replacement required. The minimum thickness is 6" and minimum width is ditch width plus 2'.

ITEM NO. 7600 REINFORCED CONCRETE BASE

This item consists of furnishing and placing approximately ___ Cubic Yards of Reinforced Concrete Base in accordance with **Item 402.4. Replacing Paved Surfaces, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.5.1. Measurement of Concrete Pavement and Asphalt Overlay and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This item is normally used on CITY contracts under asphalt as a base. It consists of 4000-PSI concrete and must match the existing base, with minimum thickness of 6". Inside the CBD, use a minimum of 9" thickness. Make bid quantity calculations using the formula:

$$CY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2') (Thickness)}{(27 \text{ CF/CY})}$$

ITEM NO. 7605 TYPE 3K-2 REINFORCED CONCRETE BASE

This item consists of furnishing and placing approximately ___ Cubic Yards of Type 3K-2 Reinforced Concrete Base in accordance with **Item 402.4. Replacing Paved Surfaces, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto. **See Item 107.28.COD: Environmental Compliance.**

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.5.1. Measurement of Concrete Pavement and Asphalt Overlay and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

This is a contingent item and placement shall be made only as directed by the Project Manager. The price per unit of volume will remain the same, regardless of the volume used.

This item is normally used on CITY contracts under asphalt as a base. It consists of 4000-PSI concrete and must match the existing base, with minimum thickness of 6". Inside the CBD, use a minimum of 9" thickness. Make bid quantity calculations using the formula:

$$\text{CY} = \frac{(\text{LF of pipe}) (\text{Ditch width} + 2') (\text{Thickness})}{(27 \text{ CF/CY})}$$

ITEM NO. 7650 PENETRATION TYPE ASPHALT REPLACEMENT

This item consists of furnishing and placing approximately ___ Square Yards of Asphalt Pavement. This item shall pertain to replacing Penetration Type Pavement on Flexible Base with 1" Hot Mix Asphaltic Concrete in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications or Two Course Penetration Asphalt Surface in accordance with **Item 402.4. Replacing Paved Surfaces and Item 404.4. Bituminous Surface Treatment (Chip Seal)** of these specifications and addenda thereto.

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 404.4.4.**

Measurement and Payment, Item 402.4.10. Payment for Pavement Replacement of these specifications.

This seldom-used item is for CITY contracts. Rarely, when placing a new main in an existing street of this type, should Two Course Penetration be specified as a replacement. The Designer normally specifies Hot Mix as a replacement. Sometimes when the street has been shot with several layers of penetration asphalt and stone, it resembles more of an asphaltic concrete type of paving than penetration type. Since the quantities are in SY, the thickness (1.5") must be specified on the plans. Reinforced Concrete Base (6") must be included when using this item. Always make bid quantity calculations using the formula:

$$SY = \frac{(LF \text{ of pipe}) (Ditch \text{ width} + 2')}{(9 \text{ SF/SY})}$$

ITEM NO. 7655 HOT MIX ASPHALT CONCRETE PAVEMENT

This item consists of furnishing and placing approximately ___ Tons of Hot Mix Asphalt Concrete Pavement in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications and addenda thereto. A prime coat shall be applied to a completed granular base course as described in **Item 302.7. Prime Coat and Item 302.9. Hot-Mix Asphalt Pavement**, at a rate of 0.25 gallons per square yard. A tack coat shall be applied to a surface of concrete, brick, or asphalt at a rate of 0.10 gallons per square yard. Prime coat and tack coat shall not be measured for payment but will be subsidiary to this bid item.

This item shall also include removal and disposal of existing pavement if it lies outside of trench width plus two feet.

Measurement and payment will be in accordance with **Item 402.4.5.1.**

Measurement of Concrete Pavement and Asphalt Overlay, Item 402.4.6.1.

Measurement for Full Depth Hot-Mix Asphalt Pavement, or Item 402.4.7.1.

Measurement for Hot-Mix Asphalt Pavement on A Flexible Base, and Item 402.4.10.

Payment for Pavement Replacement of these specifications.

This item is the most common type of asphalt replacement used for CITY contracts. It is to be installed over a 6" (minimum) Concrete Base. If the street needs repairing in several areas adjacent to the ditch line, Inspection personnel should note this during their review and add additional asphalt. Normally additional base is added if additional asphalt is added. The specifications require 1.5" thickness over Concrete Base. Always make bid quantity calculations using the formula:

$$\text{TON} = \frac{(\text{LF of pipe}) (\text{Ditch width} + 2') (220 \text{ lbs/SY})}{(9 \text{ SF/YD}) (2000 \text{ lbs/ton})}$$

ITEM NO. 7700 GEOTEXTILE FABRIC (EROSION CONTROL)

This item consists of furnishing and placing approximately ___ Linear Feet of Geotextile Fabric for Erosion Control in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** of these specifications and addenda thereto.

Measurement and payment will be per Linear Foot of Geotextile Fabric in place as approved by the Project Manager.

This item is used to help prevent erosion after placement of a main. The fabric to be used must be specified in a special provision or detail drawn on the plans. The dimensions must be shown on the detail.

ITEM NO. 7701 GEOTEXTILE FABRIC (EROSION CONTROL)

This item consists of furnishing and placing approximately ___ Square Yards of Geotextile Fabric for Erosion Control in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** of these specifications and addenda thereto.

Measurement and payment will be per Square Yard of Geotextile Fabric in place as approved by the Project Manager.

This item is used to help prevent erosion after placement of a main. The fabric to be used must be specified in a special provision or detail drawn on the plans. The dimensions must be shown on the detail.

ITEM NO. 7702 GEOTEXTILE FABRIC (EMBEDMENT)

This item consists of furnishing and placing approximately ___ Linear Feet of Geotextile Fabric in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** of these specifications and addenda thereto.

Measurement and payment will be per Linear Foot of Geotextile Fabric in place as approved by the Project Manager.

This item is used to provide a material between the embedment and the surrounding soil to prevent infiltration of the embedment zone. The fabric to be used must be specified in a special provision or detail drawn on the plans. The dimensions must be shown on the detail.

ITEM NO. 7703 GEOTEXTILE FABRIC (EMBEDMENT)

This item consists of furnishing and placing approximately ___ Square yards of Geotextile Fabric in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** of these specifications and addenda thereto.

Measurement and payment will be per Square Yard of Geotextile Fabric in place as approved by the Project Manager.

This item is used to provide a material between the embedment and the surrounding soil to prevent infiltration of the embedment zone. The fabric to be used must be specified in a special provision or detail drawn on the plans. The dimensions must be shown on the detail.

ITEM NO. 7710 SILT FENCE

This item consists of furnishing and placing approximately ___ Linear Feet of Geotextile Silt Fence in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications.**

This item to include the installation, maintenance, and removal of silt fence. Replacement of silt fence, if it is determined to be ineffective by the Engineer, will be at no additional cost to the City.

The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be in Linear Feet measured along the centerline of the fence and will include all materials and labor to install, maintain, and remove silt fence. Materials that are removed and reinstalled at another location will be paid, provided that the materials are in a satisfactory condition as determined by the owner.

This should be included in any contract as a contingency item when silt fence only is required without hay bales. 100 LF is adequate for most contracts unless the construction is in open ground outside existing paving. A special provision outlining the Contractor's general responsibilities for providing measures to control soil erosion sediment and water pollution will be included in each contract. Each contract must include the silt fence detail sheet.

ITEM NO. 7711 SILT FENCE AND HAY BALES

This item consists of furnishing and placing approximately ___ Linear Feet of Geotextile Silt Fence in accordance with **Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** and ___ Linear Feet of Hay Bales.

This item to include the installation, maintenance, and removal of silt fence and hay bales. Replacement of silt fence and/or hay bales, if it is determined to be ineffective by the Engineer, will be at no additional cost to the City. Hay Bales shall be rectangular and shall have minimum dimensions of 14"W x 18"H x 36"L.

The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be in Linear Feet measured along the centerline of the silt fence and hay bales and will include all materials and labor to install, maintain, and remove hay bales. Materials that are removed and reinstalled at another location will be paid, provided that the materials are in a satisfactory condition as determined by the owner.

This should be included as a contingency item only if Item No. 7712 or Item No. 7713 is not used. 100 LF of silt fence and 100 LF of hay bales are adequate for most contracts unless the construction is in open ground outside existing paving. A special provision outlining the Contractor's general responsibilities for providing measures to control soil erosion sediment and water pollution will be included in each contract. Each contract must also include the silt fence and hay bales detail sheet.

ITEM NO. 7712 STORM WATER POLLUTION PREVENTION PLAN

This item is to reimburse the Contractor for costs to develop, implement, and maintain the Storm Water Pollution Prevention Plan. Modification to the SWPPP or additional control items required by the Engineer will be at no additional cost.

This item to include all equipment, materials, labor, and maintenance necessary to control storm water pollution.

This is a lump sum item and payment shall be based on the percentage of construction for complete, in place, maintained, removed, and accepted work.

This item is used on CITY contracts, unless advised otherwise, and any JOINT contract whereby the Public Works agency does not include a bid item or special provision for a Storm Water Pollution Prevention Plan, if the disturbed area is greater than five acres. The Storm Water Pollution Prevention Plan must be shown as part of the bid documents (usually as a sheet in the plans). It is not necessary to specify hay bales or silt fences when using this item since the bid item includes all pollution control devices.

ITEM NO. 7713 EROSION CONTROL

This item is to reimburse the Contractor for costs to install pollution control devices to prevent sediment from entering the storm water system or waterway. Modifications or additions to the control measures used as directed by the Engineer will be at no additional cost.

This item to include all equipment, materials, labor, and maintenance necessary to control storm water pollution.

Payment will be Lump Sum for complete, in place, maintained, removed, and accepted work.

This item is used on CITY contracts, unless advised otherwise, and any JOINT contract whereby the Public Works agency does not include a bid item or special provision for Erosion Control, if the disturbed area is less than five acres. The types and locations of the erosion control devices will not be part of the bid documents. It is not necessary to specify hay bales or silt fences when using this item since the bid item includes all pollution control devices.

ITEM NO. 7720 EXCAVATION

This item consists of ___ Cubic Yards of required Excavation for channels within limits shown on plans and in accordance with **Item 203.7.COD: UNCLASSIFIED CHANNEL EXCAVATION**, **Item 203.7.6.5.COD: Excavation for Altered Grade**, **Item 203.7.6.6.COD: Installation on Top Of Fill**, **Item 203.7.6.7.COD: Class G Embedment** and **Item 203.7.6.8.COD: Existing Curbs** of these specifications and addenda thereto.

Measurement and payment will be accordance with **Item 203.7.9.COD: Measurement and Payment** of these specifications.

This item is used when a special excavation is required to facilitate installation of pipe, i.e. by-pass channel. The quantities are calculated by:

$$CY = \frac{(\text{Length})(\text{Width})(\text{Depth})}{(27 \text{ CF/CY})}$$

ITEM NO. 7725 ROCK EXCAVATION

This item used on PRIVATE DEVELOPMENT contracts only.

ITEM NO. 7730 DISPOSAL OF HEAVILY CHLORINATED WATER MAIN FLUSHING WATER

This item consists of Disposal of Heavily Chlorinated Water Main Flushing Water after sterilization or re-sterilization in accordance with the requirements of the EPA [40 C.F.R. 122.26], and **Item 506.7.3.3.COD: Disposal of Flushing Water**.

Measurement and payment will be Lump Sum, complete to include all labor, materials, and equipment necessary to dispose of the heavily chlorinated water main flushing water after sterilization or re-sterilization.

This item is to be used on ALL contracts when a water main is installed and requires chlorination. The Special Provision is to be included whenever Item No. 7730 is used.

ITEM NO. 7765 DISPOSAL OF CLASS I NON-HAZARDOUS INDUSTRIAL WASTE SOILS

This item is to reimburse the Contractor for costs to handle and dispose of ___ Cubic Yards of Class I Non-hazardous Industrial Waste Soils.

This item shall include all equipment, materials, permits, approvals, treatment, transportation fees, disposal fees, labor, and all other costs necessary to handle and dispose of Class I Non-hazardous Industrial Waste Soils.

This is a contingent item and payment will only be made if directed by the Construction Engineer. Basis for payment shall be per Cubic Yard of Class I Non-hazardous Industrial Waste Soils.

This item is used on DWU CITY contracts.

ITEM NO. 7766 DISPOSAL OF CLASS II NON-HAZARDOUS INDUSTRIAL WASTE

This item is to reimburse the Contractor for costs to handle and dispose of ___ Cubic Yards of Class II Non-hazardous Industrial Waste Soils.

This item shall include all equipment, materials, permits, approvals, treatment, transportation fees, disposal fees, labor, and all other costs necessary to handle and dispose of Class II Non-hazardous Industrial Waste Soils.

This is a contingent item and payment will only be made if directed by the Construction Engineer. Basis for payment shall be per Cubic Yard of Class II Non-hazardous Industrial Waste Soils.

This item is used on DWU CITY contracts.

ITEM NO. 7767 DISPOSAL OF CONTAMINATED GROUNDWATER

This item is to reimburse the Contractor for costs to handle and dispose of ___ Gallons of hazardous contaminated groundwater.

This item shall include all equipment, materials, permits, approvals, pumping to holding tank prior to testing, holding tank, treatment, transportation fees, disposal fees, labor, and all other costs necessary to handle, transport, and dispose of contaminated groundwater.

This is a contingent item and payment will only be made if directed by the Construction Engineer. Basis for payment shall be per gallon of contaminated groundwater that is disposed.

This item is used only for projects where a Phase II ESA report has determined that there are non-petroleum-based solvents or other toxic chemicals which require special handling and disposal methods.

ITEM NO. 7768 HEALTH, SAFETY, AND MONITORING PLAN

The contractor must reference the Project-Specific Soil & Groundwater Management Plan (SGMP) prepared by DWU and prepare a Health, Safety, and Monitoring (HSM) Plan that meets the requirements of OSHA's Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard, 29 CFR 1910.120 or 29 CFR 1926.65, paragraph (b)(4). Contractor must provide copy of HSM Plan to DWU.

The item includes all equipment, materials, labor, testing and maintenance necessary to monitor for potentially hazardous waste material in areas specified.

Payment will be lump sum.

For use on all projects where known issue has been determined by Phase II ESA report.

Items No. 7801 through 7837 to be used on DWU City Pavement Restoration contracts ONLY.

ITEM NO. 7801 ___ ___" REINFORCED CONCRETE PAVEMENT OR BASE

This item consists of removing approximately ___ square feet of existing concrete pavement, furnishing and placing, as needed, ___-inch reinforced concrete paving in accordance with **Item 402.4.4. Replacing Reinforced Concrete Pavement, Item 303. Portland Cement Concrete Pavement and Item 303.2.1.3.2. Gradation** of these specifications and addenda thereto.

This item will pay for a minimum depth of ___ inches. Any thickness over ___-inches will be measured and paid proportionally, on pro-rata basis.

This item shall also include sawing, removal, backfill and disposal of existing pavement.

Measurement and payment will be per square foot in accordance with **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications

Use the following size indicators:

F = 4" Reinforced Concrete

H = 6" Reinforced Concrete

J = 8" Reinforced Concrete

ITEM NO. 7803 REINFORCED CONCRETE SIDEWALK

This item consists of removing, furnishing, and replacing approximately ___ square feet of reinforced concrete sidewalk. To include break out of existing sidewalk, sawing, disposal of excavated material, placement of new concrete sidewalk, clearing and wrecking of forms and replacement of backfill material.

Measurement and payment will be per square foot in accordance with **Item 402.4.3.1. Measurement for Replacement of Curb, Gutter, Sidewalks, Driveways, Etc. and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

Normally four (4) inches in depth.

ITEM NO. 7804D 2-INCH HOT-MIX ASPHALT CONCRETE PAVEMENT

This item consists of removing, furnishing, and replacing approximately ___ square feet of 2-inch hot-mix asphalt concrete pavement in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement** of these specifications and addenda thereto.

A prime coat shall be applied to a completed granular base course as described in in **Item 302.7. Prime Coat and Item 302.9. Hot-Mix Asphalt Pavement** at a rate of 0.25 gallons per square yard. A tack coat shall be applied to a surface of concrete, brick, or asphalt at a rate of 0.10 gallons per square yard.

This item shall be for 1.5 to 2.0 inches of hot mix asphaltic concrete over portland concrete base or other base material. Any thickness over 2-inches will measured and paid proportionally, on pro-rata basis.

Measurement and payment will be per square foot in accordance with **Item 402.4.5.1. Measurement of Concrete Pavement and Asphalt Overlay, Item 402.4.6.1. Measurement for Full Depth Hot-Mix Asphalt Pavement, or Item 402.4.7.1. Measurement for Hot-Mix Asphalt Pavement on A Flexible Base, and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

ITEM NO. 7805H 6" TYPE FOUR F FLOWABLE-HIGH STRENGTH/FAST SET

This item consists of removing, furnishing and replacing approximately ___ square feet of type four f flowable-high strength/fast set in accordance with items **Item IV.3.d of the Department of Public Works Pavement Cut and Repair Standards Manual, latest edition** of these specifications and addenda thereto.

Any thickness over 6-inches will measured and paid proportionally, on pro-rata basis. This is a contingent item and placement shall be made only as directed by the project manager.

Measurement and payment will be at the contract unit price per square Foot of completed and accepted work. The price per unit of volume will remain the same, regardless of the volume used.

ITEM NO. 7806H 6" CLASS "K" REINFORCED CONCRETE PAVING

This item consists of removing, furnishing, and placing approximately ___ square feet of 6-inch concrete paving in accordance with items 361, 420, and 421 of the Texas Department of Transportation (TXDOT) Standard Specifications.

Any thickness over 6-inches will measured and paid proportionally, on pro-rata basis.

Measurement and payment will be per square foot in accordance with items 361.4 and 361.5 of the TXDOT Standard Specifications.

**ITEM NO. 7807F 4" WASHED/ARCHITECTURAL/EXPOSED AGGREGATE
CONCRETE PAVING**

This item consists of removing, furnishing, and placing approximately ___ square feet of 4-inch exposed aggregate concrete paving. Contractor will evaluate and match existing pavement structure, type, and appearance.

Any thickness over 4-inches will be measured and paid proportionally, on pro-rata basis.

Measurement and payment will be per square foot in accordance **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

ITEM NO. 7808H 6" SPECIAL PAVEMENT

This item consists of removing, furnishing, and placing approximately ___ square feet of 6-inch special pavement, including brick, stone, granite, slate, dyed, stamped, or dyed concrete. Paving contractor will evaluate and match existing pavement structure, type, and appearance.

Any thickness over 6-inches will be measured and paid proportionally, on pro-rata basis.

Measurement and payment will be per square foot in accordance with **Item 402.4.4.1. Measurement of Reinforced Concrete Pavement and Item 402.4.10. Payment for Pavement Replacement** of these specifications.

ITEM NO. 7809 24-HOUR EMERGENCY CALLOUT

This item, per each occurrence, is intended for compensating the contractor for approximately ___ occurrences for all costs associated with scheduling, rescheduling and mobilization activated with an emergency callout. The contractor will be given notice prior to implementation of this bid item and must respond within 4-hours. This item does not cover the cost of the other paving items which will be paid under their respective bid item number. This item is all inclusive and is a contingency item.

This item is not to be used for scheduling purposes, traffic control requiring night or weekend work, or other normal activities covered by this contract.

Measurement and payment will be at the contract unit price of per each occurrence for requested and accepted work. The price will remain the same regardless of overrun or underrun.

ITEM NO. 7810 STAND-BY TIME

This item is intended for compensating the contractor approximately ___ hours for all costs associated with stand-by time. This item is to be used as approved by the DWU inspector. This item is to compensate the contractor for idle time while waiting for completion of water and wastewater repairs associated with an emergency callout. This item does not cover the cost of the other paving items which will be paid under their respective bid item number. This item is all inclusive and is a contingency item.

Stand-by time is defined as the time over the initial 4-hour response time to the emergency callout provided the contractor must have the necessary personnel, equipment, and materials on site to complete the repair work.

Measurement and payment will be at the contract unit price of per hour for requested and accepted work. The price will remain the same regardless of overrun or underrun.

ITEM NO. 7811 STAR (CORE) HOLE REPAIR

This item consists of repairing approximately ___ Star Holes in existing concrete or asphalt pavement.

This repair will be made in accordance with the latest “pavement cut and repair standards manual” and any addenda thereto.

Measurement and payment will be at the contract unit price of per each for requested and accepted work. The price will remain the same regardless of overrun or underrun.

ITEM NO. 7812 TRAFFIC BUTTONS

This item, all types and sizes, consists of approximately ___ Traffic Buttons.

These buttons will be placed in accordance to the latest “Pavement Cut And Repair Standards Manual”, City Of Dallas Specifications For Public Works Construction, Public Works Standard Details for Construction (251-D) and any addenda thereto.

Existing traffic buttons in areas to be rehabilitated will be removed and the pavement surface smoothed. Before buttons are removed, the contractor will verify need with the project engineer and receive approval of sequence of operations to assure prompt resurfacing and replacement of buttons as directed.

Measurement and payment will be at the contract unit price of per each for requested and accepted work regardless of type or size. The price will remain the same regardless of quantity overrun or underrun.

ITEM NO. 7813 TRAFFIC STRIPING

This item, all types and sizes, consists of approximately ___ linear feet of Traffic Striping.

This striping will be placed in accordance to the latest “Pavement Cut And Repair Standards Manual”, City Of Dallas Specifications For Public Works Construction, Public Works Standard Details for Construction (251-D), and any addenda thereto.

Measurement and payment will be at the contract unit price of per linear foot for requested and accepted work regardless of type or size. The price will remain the same regardless of quantity overrun or underrun.

ITEM NO. 7814 STORM DRAIN MANHOLE ADJUSTMENT

This Item, approximately ___ Each, Is the adjustment of storm drain manhole, adjust or cap existing manholes or inlets. drainage junction boxes will be classified as manholes. LOWERING THE TOP OF A MANHOLE OR INLET. Remove a sufficient depth of brick courses or concrete to permit reconstruction on a batter not exceeding 1 in. horizontal to 2 in. vertical. Where brickwork is present, clean the mortar from the top course of brick. Rebuild the manhole or inlet to the original top dimensions or to the dimensions shown in the plans. Install the manhole or inlet ring and the cover, plate, or grate to conform to the proposed new surface contour.

RAISING THE TOP OF THE MANHOLE OR INLET. Clean the top surface of brick or concrete. Construct to the proper new elevation using new brick, brick salvaged from other manholes or inlets, prefabricated metals extension rings, concrete rings, or class A concrete. Install the manhole or inlet ring and the cover, plate, or grate to conform to the proposed new surface contour. Install prefabricated extension rings in accordance with manufacturer's instructions.

CAPPING AN INLET OR MANHOLE. Remove the inlet or manhole to a minimum of 1 Ft. below subgrade elevation or as indicated on the plans. Cap as shown on the plans. Measure for payment shall be measured and paid per each in accordance with these specifications.

ITEM NO. 7816 SAWING

This item consists of approximately ___ Linear Feet of Sawing. This shall apply in the removal of bituminous or concrete pavement, curb, gutter, sidewalk, or driveways. This item shall also govern for the sawing of weakened plane joints (contraction joints). Sawing shall be in accordance with the requirements of this item. Dust and residues from sawing shall be prevented from entering the atmosphere or storm drain. The edge of pavements, curb, gutter, sidewalk and/or driveways shall be neatly sawed. Saw cuts shall be made perpendicularly to surface to full pavement depth or as directed by the owner. The edges of pavement and appurtenances damaged subsequent to sawing shall again be saw cut to neat straight lines for the purpose of removing the damaged areas. Such saw cuts shall be parallel to the original saw cut. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk.

Measure for payment shall be measured and paid in linear feet of groove cut in accordance with these specifications.

ITEM NO. 7817 UNCLASSIFIED SIDEWALK EXCAVATION

This item, approximately ___ Cubic Yards, for Unclassified Sidewalk Excavation shall consist of all the required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications); the removal, proper utilization or disposal of all excavation material; and the shaping and finishing of all earthwork in the conformity with the lines and grades as shown on the plans or as established by the owner all in accordance with the specifications requirements contained herein. Without regard to materials encountered, all sidewalk excavations shall be unclassified and shall be designated as “unclassified sidewalk excavation”, which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER’S and CONTRACTOR’S information and is not to be taken as an indication of classification of excavation.

Measure for payment shall be measured and paid in cubic yards in accordance with these specifications.

ITEM NO. 7818 UNCLASSIFIED STREET EXCAVATION

This item, approximately ___ Cubic Yards, is for Unclassified Street Excavation and shall consist of all the required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications); the removal, proper utilization or disposal of all excavation material; and the shaping and finishing of all earthwork in the conformity with the lines and grades as shown on the plans or as established by the owner all in accordance with the specifications requirements contained herein. Without regard to materials encountered, all street excavations shall be unclassified and shall be designated as “unclassified street excavation”, which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER’S and CONTRACTOR’S information and is not to be taken as an indication of classification of excavation.

Measure for payment shall be measured and paid in cubic yards in accordance with these specifications.

ITEM NO. 7819 UNCLASSIFIED ALLEY EXCAVATION

This item, approximately ___ Cubic Yards, is for Unclassified Alley Excavation and shall consist of all the required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications); the removal, proper utilization or disposal of all excavation material; and the shaping and finishing of all earthwork in the conformity with the lines and grades as shown on the plans or as established by the owner all in accordance with the specifications requirements contained herein. Without regard to materials encountered, all alley excavations shall be unclassified and shall be designated as "unclassified alley excavation", which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER'S and CONTRACTOR'S information and is not to be taken as an indication of classification of excavation.

Measure for payment shall be measured and paid in cubic yards in accordance with these specifications.

ITEM NO. 7820 GENERAL REQUIREMENTS FOR ASPHALT BASE RECYCLING

This Item, Approximately ___ Square Yards Asphalt Base Recycling. It is the intent of the following specifications to establish provisions for restoration of selected city of Dallas asphaltic concrete and/or penetration type asphalt streets which are unimproved (without curb and gutter). The reconstruction will consist of recycling the existing base and asphalt into a new base, application of super slurry or cement slurry 4-6% per square yard. The program is generally referred to as "full depth reclamation". This specification may also be used for improved streets (with curb and gutter). Other work items related to base repair, and valley gutter replacement shall be paid for by the contract pay items provided elsewhere in the contract proposal and special provisions. (see technical spec)

This item will pay for a minimum depth of six (6) inches. Any thickness over 6 inches will measure and be paid proportionally on a pro-rata basis.

Measure for payment shall be measured and paid in square yards in accordance with these specifications.

ITEM NO. 7823 BASE REPAIR, FLEXBASE, CTB OR REBASE

This Item, approximately ___ Cubic Yards consists of Base Repair, Flexbase, Ctb Or Rebase. Base repairs shall be made with course graded asphaltic concrete base course, cement treated base, crushed limestone flex base, 6" to 8" reinforced concrete to match as closely as possible the existing base and valley gutters. Depths of asphalt base and flex base may be increased when deemed desirable by the engineer due to soil conditions of other considerations. Street shall be inspected by the contractor in advance of starting work and with representatives of street operations and public works to determine actual locations and extent of base repairs and valley gutters needed. This pay item includes sawing (if required), breakout, removal, replacement of unstable subgrade down to 2 feet depth if necessary, compaction, base material compaction, and all other incidentals necessary to perform the base and valley gutter repair work authorized by the engineer in accordance with this special provision. Payment shall be based on the quantity of surface area of actual base and valley gutter repair work authorized and performed in tons, for full depth asphalt base work at the bid price, for item 504a and in square yards for concrete work, complete in place. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are not provided shall be considered incidental and not paid for separately. The pay items provided shall be considered full compensation for the repairs and valley gutter construction on this contract. (see technical spec)

Measure for payment shall be measured and paid in cubic yards in accordance with these specifications.

ITEM NO. 7826 UNDERSEAL

This Item, approximately ___ Square Yards, shall consist of a surface treatment composed of a single application of asphalt covered with aggregate for the sealing of existing pavements in accordance with these specifications. Underseal shall not be applied when the air temperature is below 60 F and is falling, but may be applied when the air temperature is above 50 F and is rising, the air temperature being taken in the shade and away from artificial heat. Underseal shall not be applied when the temperature of the roadway surface is below 60 F. Asphaltic material shall not be placed when general weather conditions, in the opinion of the engineer, are not suitable.

Measure for payment shall be measured and paid in square yards in accordance with these specifications.

ITEM NO. 7827 SURFACE, EDGE, AND BUTT JOINT MILLING

This item, approximately ___ Linear Feet, consists of six (6) foot edge and butt joint milling of the existing surface on designated streets and shall be milled to the depths and dimensions directed by the engineer. It is the intent of the specifications to hold milling work to a minimum. Only those locations specifically designated in the field by the engineer shall be milled. Milling work shall only be performed on this contract to prevent potential bumper drag or blockage of drainage and to provide a smooth match to existing concrete curb and gutter and valley gutters with standard overlay thickness. All other milling work not directed or authorized by the engineer shall be considered incidental to the performance of the contract work and separate payment shall not be made for such work.

Measure for payment shall be measured and paid in linear feet in accordance with these specifications.

ITEM NO. 7829 BARRIER FREE RAMP (INSIDE DALLAS CITY LIMITS)

This item consists of constructing approximately ___ each concrete barrier free (wheelchair) ramps as specified herein and in conformity with special details.

This item shall include all necessary saw-cut, removal of existing sidewalk, curb and gutter, excavation and backfill, subgrade preparation, furnishing and placing all materials; including expansion joint materials, asphalt replacement needed to adjacent to new gutter area, and any related work for manipulation, labor, tools, equipment and incidentals.

Measurement and payment shall be at unit contract price for complete and accepted work.

Pavers will have detectable warning that consists of raised truncated domes with a diameter of 0.9 inches (23 mm). a height of nominal 0.2 inches (5 mm) and a center-to-center spacing of nominal 2.35 inches (60 mm) and shall be red in color. (NO SEPARATE PAY ITEM FOR PAVERS)

ITEM NO. 7830 BARRIER FREE RAMP (OUTSIDE DALLAS CITY LIMITS)

This item consists of constructing approximately ___ each concrete barrier free (wheelchair) ramps outside city limits as specified herein and in conformity with special details.

This item shall include all necessary saw-cut, removal of existing sidewalk, curb and gutter, excavation and backfill, subgrade preparation, furnishing and placing all materials; including expansion joint materials, asphalt replacement needed to adjacent to new gutter area, and any related work for manipulation, labor, tools, equipment and incidentals.

Measurement and payment shall be at unit contract price for complete and accepted work.

Pavers will have detectable warning that consists of raised truncated domes with a diameter of 0.9 inches (23 mm). a height of nominal 0.2 inches (5 mm) and a center-to-center spacing of nominal 2.35 inches (60 mm) and shall be red in color. (NO SEPARATE PAY ITEM FOR PAVERS)

ITEM NO. 7832__ ADJUSTMENT RINGS FOR __” STORM SEWER MANHOLE FRAME AND COVER, ANCHOR-LOCK TYPE

This item, approximately __ each, shall consist of adjusting __” storm sewer manhole ring and cover. The manhole adjusting ring shall provide a clear unobstructed opening into the manhole after installation and shall be designed to be mechanically locked into the existing frame and use the existing lid. The entire installation shall be made watertight by using a water-swelling elastic component sealant.

Measure for payment shall be measured and paid per each in accordance with these specifications.

Use the following size indicators:

V = 24” Bar Wrapped CC Pipe

Y = 30” Bar Wrapped CC Pipe

AA = 36” Bar Wrapped CC Pipe

AB = 40” Bar Wrapped CC Pipe

AC = 42” Bar Wrapped CC Pipe

AE = 48” Bar Wrapped CC Pipe

ITEM NO. 7833 ADJUSTMENT OF WATER VALVE STACK BOX RISER AND LID IN ADVANCE OF RESURFACING

This item consists of installing and adjusting __ each anchor type water valve stack box riser and lid in accordance with **Item 502.6.6.COD: Line Valve Installation** of these specifications and addenda thereto, and the applicable drawings.

The adjustment shall include removal of the existing water valve stack box riser and lid and installing a new anchor type water valve stack box riser and lid to the proper grade.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 7834 ADJUSTMENT OF WASTEWATER ACCESS DEVICE

This item shall consist of adjusting ___ each wastewater mainline access device in accordance with the specifications and applicable drawings.

The adjustment shall include extending or lowering of the 15" riser pipe and resetting the frame, plug, and cover to the proper grade. The contractor shall furnish a frame, plug, and cover if lost, stolen, or damaged due to contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, side walk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 7835 ADJUSTMENT OF WASTEWATER MAINLINE CLEANOUT IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ each anchor type cleanout boot riser for wastewater mainline cleanout in accordance with **Item 502.12. Structures and Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable drawings.

The adjustment shall include removal of the existing cleanout lid and installing a new anchor type cleanout boot riser and replacing the existing lid to the proper grade and forming an invert to allow access to the cleanout stack.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 7836 ADJUSTMENT OF WASTEWATER MANHOLE IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ each anchor type grade adjusting ring for wastewater manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings For Manholes** of these specifications and addenda thereto, and the applicable drawings.

The adjustment shall include removal of the existing manhole cover, installing the anchor type grade adjusting ring and seal and replacing the existing manhole cover to the proper grade. The contractor shall furnish a manhole cover if lost, stolen, or damage due to contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 7837 JOINT AND CRACK SEALING

This item, approximately ___ linear feet, consists of joint and crack sealing. All joints and cracks shall be inspected, accepted, and measured for payment prior to the application of surface treatment. If any deterioration occurs between the time the joints or cracks are sealed and the time treatment is applied, the damage must be repaired to the satisfaction of the engineer before the treatment is applied, (no separate pay). Joint and crack routing and sealing, pay item 7837, shall be measured, and paid for by the linear foot for the actual area of work satisfactorily completed and accepted as authorized by the engineer. The contract price for this item will be full compensation for all material, labor, equipment, routing, overhead, and all other costs necessary to complete the work in full compliance with the requirements of this special provision of the contract. The contract unit price for item 7837, shall not be subject to renegotiation due to underrun of quantities as set forth in **Item 104.2.1. Increased or Decreased Quantities of Work** of the standard specifications. Joint and crack routing and sealing in accordance with this specification shall also be required on streets restored and resurfaced under schedule 1 of this contract during the warranty maintenance period as directed by the engineer at no cost to the city. The contractor shall provide an acceptable schedule to the city within 48 hours of notice by the city that crack sealing is required. The performance of joint and crack sealing during the warranty period shall in no way be construed to relieve the contractor of his obligations for guarantee of material and workmanship under the contract bonds.

Measure for payment shall be measured and paid in square yards in accordance with these specifications.

ITEM NO. 8000 BARRICADING (WATER AND WW MAINS ONLY)

This item is to reimburse the Contractor for costs to install and maintain Barricades, warning devices, flagmen, signs and lights, and other precautionary measures in accordance with the City of Dallas Barricade Manual for protection of persons or property during the construction process on ___ Linear Feet.

Payment will be in Linear Feet as determined by the length of pipe installed.

This item is now included in with most bid items as incidental work. This bid item was left in the manual for special use only.

ITEM NO. 8005 CONCRETE BARRICADING (WATER AND WW MAINS ONLY)

This item is to reimburse the Contractor for costs to install, maintain, and remove continuous Concrete Barricades for protection of persons or property during the construction process on approximately ___ Linear Feet.

Payment will be in Linear Feet as determined by the length of excavation to be barricaded.

This item allows payment for concrete barricading. A detail drawing and/or callout note showing the type and limits of concrete barricades needs to be included on the plans.

ITEM NO. 8010 CONSTRUCTION STAKING

This bid item consists of furnishing all supervision, labor, materials, equipment, fees, incidentals, and related items required to Survey Stake Water and Wastewater Main and related appurtenances in accordance with the contract's drawings and specifications or as designated by the Engineer.

Payment will be made at Lump Sum price as set forth in the contract.

ITEM NO. 8011 CONSTRUCTION SURVEYING AND STAKING OF PROPOSED WATER & WASTEWATER MAINS

This item consists of providing Construction Surveying and Staking by the Contractor's qualified personnel for approximately ___ Linear Feet of Proposed Water and Wastewater Main installations shown on the plan drawings and in accordance with **Item 105.4.COD: Construction Stakes** of the NCTCOG Specifications and addenda thereto.

This item shall include establishment of all horizontal and vertical controls, horizontal and vertical alignments per plan drawings, and cut depths for all proposed mains shown on the plan drawings with specific grades, elevations, and profiles.

Measurement and payment will be per Linear Foot of proposed water and per Linear Foot of proposed wastewater main including instrumentation and equipment, staking materials, notes and cut sheets in final form and any other associated costs, such as barricading and traffic control for these services. Payment will be made when surveying is complete from point of beginning to point of end as shown on the plan drawings and upon submission and approval of survey data (see **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** for approved data format). The Contractor is responsible for maintaining all staked controls and hubs in the construction area at all times and any costs for re-staking or re-establishing controls required shall be borne by the Contractor.

ITEM NO. 8012 CONSTRUCTION SURVEYING AND STAKING OF PROPOSED STREET AND ALLEY PAVING

This item consists of providing Construction Surveying and Staking by the Contractor's qualified personnel for approximately ___ Linear Feet of Proposed Alley and/or Street Pavement Replacement shown on the plan drawings and in accordance with **Item 105.4.COD: Construction Stakes** of the NCTCOG Specifications and addenda thereto.

This item shall include establishment of all horizontal and vertical controls, horizontal and vertical alignments, and cut/fill depths for all proposed street and/or alley pavement replacement.

Measurement and payment will be per Linear Foot of proposed pavement including instrumentation and equipment, staking materials, notes and cut sheets in final form, and any other associated costs, such as barricading and traffic control for these services. Payment will be made when surveying is complete for the full street/alley width from point of beginning to point of end as shown on the plan drawings and upon submission and approval of survey data (see **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** for approved data format). This item does not include pavement repairs and patches, nor does it include pavement replacement associated with bid item 7570. The Contractor is responsible for maintaining all staked controls and hubs in the construction area at all times and any costs for re-staking or re-establishing controls required shall be borne by the Contractor.

ITEM NO. 8100 MOBILIZATION FOR WATER AND WASTEWATER MAINS

This item shall consist of the mobilization of personnel, equipment and supplies at the project site in preparation for beginning work on the Water and Wastewater Mains contract items only. Mobilization shall include the movement of equipment, personnel, equipment material supplies, etc., to and from the project site, and the establishment and removal of contractor's field office and other facilities necessary to construct or complete the Water and Wastewater Main Items.

This Item shall be bid as a Lump Sum and shall not exceed 10% of the adjusted contract price. The adjusted contract price for this item is defined as the sum of all bid prices for Water and Wastewater Main Items minus the Lump Sum bid for Mobilization for Water And Wastewater Mains. The Lump Sum bid for this item shall not include any cost or sum for mobilization for work on Paving or Drainage Items.

Measurement for this Item shall be proportional to the value of Water and Wastewater Main Items completed, and Partial Payments will be made in accordance with the following schedule:

- (1) When 10 percent of the adjusted contract value for water and wastewater main construction has been earned, a payment for 50 percent of the lump sum for Mobilization will be made.
- (2) When 25 percent of the adjusted contract value for water and wastewater main construction has been earned, a payment for 25 percent of the lump sum for Mobilization will be made, for a total of 75 percent of the lump sum.
- (3) When 50 percent of the adjusted contract value for water and wastewater main construction has been earned, a payment for the remaining 25 percent of the lump sum for Mobilization will be made, for a total of 100 percent of the lump sum.

This item is to be used on Special Joint Contracts ONLY, and at the discretion of the Relocations Section Manager. This item will be used to pay for mobilization associated with water & wastewater construction in advance of paving and in which the paving portion of the contract has established a separate mobilization item for the paving work.

ITEM NO. 8200 TRAFFIC DETOURS

This bid item consists of furnishing all supervision, labor, materials, equipment, incidentals, and related items required to install, maintain, and remove the required Temporary Traffic Detour.

This item to include all work and materials necessary to remove and restore existing vegetation, topsoil, paving (including curb, striping, signs, etc.), and all incidentals associated with the installation and removal of the detour, in accordance with the general specifications and addenda thereto, and as described in the Special Provision ___.

Measurement and partial payment shall be based on an approved schedule of values to be submitted by the Contractor prior to construction. Payment will be made at Lump Sum price as set forth in the contract.

11000 – 11099**GENERAL****ITEM 11003****CLEARING AND GRUBBING FOR STORMWATER PROJECT**

This item consists of required Clearing and Grubbing from the beginning to the end of the project. This item shall be in accordance with **NCTCOG Item 201.1: Removal, Protection, and Replacement of Trees, Shrubbery, Plants, Sod, and Other Vegetation and NCTCOG ITEM 203.COD: Site Preparation**. It includes the removal of all-natural material/soil, trees (less than 6 inches in diameter), snag trees/fallen trees (no size limits), brush, road material, and ancillary components such as trimming and mowing in order to begin construction and equipment access to the site. The Contractor is responsible for the protection of any item that is to remain. **The City of Dallas Traffic Barricade Manual shall be utilized when directed to by the City of Dallas representative.**

Payment will be **Lump Sum** at contract bid price. Partial Payment will be measured by 100-foot stations, regardless of the Right of Way width. Payment will be made by the station at the prorated unit bid price per station for Clearing and Grubbing.

This item is used to pay a Contractor to remove timber and shrubs within a given area as shown on the plans.

ITEM 11004**TREE PLACEMENT**

This item is for furnishing and installing plant material of various sizes and species described in the locations indicated on the plans. Shade trees generally have an upright growth, intended to achieve a height of greater than 25 feet. Ornamental trees are normally used as accent planting, providing interest through their blooms, leaf and/or bark color, or other features of the tree.

The payment is made according to the unit bid price for plant material of the size and type specified. This price and payment will be the full compensation for furnishing and installing all plant materials, incidentals and water used at time of installation, water used to keep plants irrigated until all planting operations are complete or the maintenance period begins; cleaning, and storage or disposal of the materials; repair to areas outside designated locations for planting; and equipment, labor, tools and incidentals.

Payment for plant materials will be handled in the following manner:

1. **Initial Payment.** When the planting and installation of related materials are completed and approved, 55% of the unit price bid for each related plant will be paid.
2. **30-Day Payment.** When the first 30 days of the plant maintenance (see "Maintenance" description) are completed and approved, an additional 15% of the unit price bid for each related plant will be paid, but if the maintenance is not completed and approved, that 15% will be forfeited.
3. **60-Day Payment.** When the second 30 days of the plant maintenance are completed and approved, an additional 15% of the unit price bid for each related plant will be paid, but if the maintenance is not completed and approved, that 15% will be forfeited.
4. **Final Payment.** After the final inspection and acceptance of the project or the completion of the 90-day maintenance, whichever occurs later, an additional 15% of the unit price bid for all plants will be paid, but if the maintenance is not completed and approved, that 15% will be forfeited.

This item consists of furnishing and placing trees at locations and tree species as shown on the plans. This item is measured per **Each**, complete in place.

SP1 = 1 Gal. Inland Sea Oats

SP2 = 5 Gal. Nellie R Stevens

SP3 = 2-Inch Caliper, 30 Gal. Mexican Plum

SP4 = 3-Inch Caliper Monterrey Oak

ITEM 11005_ REMOVE TREE _" - <_"

This item provides for the removal and disposal of _ each tree with diameter between _ inches and up to _ inches as shown on the design plans. The tree diameter is measured at 4 feet above the ground. This item includes removal of stump 18" below the surrounding terrain, backfilling the hole with an acceptable material. **The City of Dallas Traffic Barricade Manual shall be utilized when directed to by the City of Dallas representative.**

The item is paid per **Each**, complete in place. This price is the full compensation for removal, disposal, equipment, traffic control (if needed), labor and other incidentals. Costs to correct or repair damage to adjacent trees, shrubs, and other landscape features is also included in this item.

Use the following size indicators:

A = 6"-<15"

B = 15"-<30"

C = Over 30"

ITEM 11007**EXISTING VEGETATION PROTECTION AND MAINTENANCE**

This item relates to the protection of trees, existing landscape/vegetation areas and other existing natural areas.

It shall be in accordance with NCTCOG Item 201.1: Removal, Protection, and Replacement of Trees, Shrubbery, Plants, Sod, and Other Vegetation and NCTCOG ITEM 203.COD: Site Preparation.

Measure for payment shall be measured and paid for by **Lump Sum**. This item includes all labor, material, tools, machinery, equipment and incidentals necessary to complete the work in accordance with the plans and specifications.

ITEM 11009**STROMWATER PROJECT MOBILIZATION**

Mobilization includes the movement of all labor, equipment and supplies, establishment of facilities, and construction site access necessary for work, and other work and operations which must be performed and cost no directly attributable to other pay items, excluding bidding costs, which must be incurred in order to enable the Contractor to begin work on other contract items.

This item shall be measured as a **Lump Sum**. **If the Lump Sum amount bid for Mobilization exceeds 10% of the Adjusted Contract Amount, the City will pay the excess (the amount that exceeds 10%) upon completion of the Project.**

The adjusted contract amount is defined as the sum of all bid prices excluding water and wastewater main items minus the Lump Sum bid for Mobilization. When work begins on the other contract items, the Adjusted Contract Amount shall be used throughout for determining the amount earned under Mobilization. **The Lump Sum bid for this item shall not include any cost or sum for mobilization for work related to Dallas Water Utilities.**

Partial Payments of the Lump Sum bid for Mobilization shall be limited as follows:

1. When 1% of the adjusted contract amount is earned, 50% of the Mobilization Lump Sum or 5% of the Public Works total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
2. When 5% of the adjusted contract amount is earned, 75% of the Mobilization Lump Sum or 10% of the Public Works total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
3. When 10% of the adjusted contract amount is earned, 90% of the Mobilization Lump Sum or 10% of the Public Works total contract amount shall be paid, whichever is less. Previous payments under this item will be deducted from this amount.
4. When all work under the contract is completed by the Contractor and accepted by the City, 100% of the Mobilization Lump Sum will be paid.

ITEM 11011**REMOBILIZATION FOR STORMWATER PROJECT**

This item shall consist of the movement of all labor, equipment and supplies, establishment of facilities necessary for work, and other work and operation which must be performed and cost not directly attributable to other pay items, excluding bidding costs, which must be incurred in order to enable the Contractor to begin work on other contract items.

The adjusted contract amount is defined as the total contract amount less the Lump Sum bid for Remobilization. When work begins on the other contract items, the adjusted contract amount shall be used throughout for determining the amount under Remobilization.

When all work under the contract is completed by the Contractor and accepted by the City, 100% of the Remobilization **Lump Sum** will be paid.

Note: This item should be discussed with the Program Manager before adding to bid specifications.

ITEM 11013**STORMWATER PROJECT PARTNERING**

This item is intended for compensating the Contractor for all costs to implement Project Partnering as detailed in the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item to include hiring a third-party facilitator, travel and lodging expenses, meeting room rental, program materials, reproduction costs and all costs associated with Contractor's own personnel, Subcontractors and Suppliers participating in partnering.

This is a **Contingent Item** and payment will be made, as directed by the Project Manager. Payment for this item shall be **Lump Sum**.

Note: this item is used to pay a Contractor only at the direction of the Owner of the applicable department/division.

ITEM 11015**REMOVE FENCE**

This item provides for removing the fence of the type as shown on the plans with or without gate, cleaning, backfilling, grading, and disposal or storage of the material as per the design plans. Cleaning includes clearing of all brush, debris, rock, and removal of up to 6" caliper trees. This Item shall adhere to **ITEM 701.COD: General Structures**.

Measurement and payment for this item is per **Linear Foot**.

ITEM 11017_ REMOVE AND REPLACE FENCE

This item provides for the removal of _LF of the existing fence wherever it is deemed necessary, either as per the plan or as determined by the Owner's representative and replacing with equal or better fence of the same material. Use only new materials. Payment is made as per the unit bid price shown in the bid proposal for the specified item. The price is the full compensation for removal, furnishing, preparing, hauling and installing fence and gate material; excavation, backfilling and disposal of surplus materials; clearing of rocks and debris and removal and trimming of brush and tree limbs; temporary fencing (if required to maintain public safety), labor, equipment, tools and incidentals.

This item shall adhere to **ITEM 701.COD: General Structures**. Measurement and payment of this item is per **Linear Foot** of completed and accepted work.

Measurement and payment can use the following indicator for different types of fence or decking as needed.:

- I - REMOVE AND REPLACE WOOD FENCE
- II - REMOVE AND REPLACE CHAIN LINK FENCE
- III - REMOVE AND REPLACE WROUGHT IRON FENCE
- IV – REMOVE AND REPLACE RAIL AND GATE
- V – REMOVE AND REPLACE SLIDING GATE
- VI – REMOVE AND REPLACE WOODEN DECK (LUMP SUM)
- VII - WOOD FENCE
- VIII - WROUGHT IRON FENCE
- IX – DECKING (LS)

ITEM 11019_ REMOVE AND RESET FENCE

This item provides for the removal of __ linear feet existing fence with or without gate and set to a location, as per the plan or as determined by the Owner's representative. All salvaged materials should be used at the reset location. If existing fence is damaged by the contractor, the contractor shall replace it at no additional cost. The damaged fence will be replaced to a condition equal to or better than that existing before the damage was done. There is no separate payment for any new materials used. Payment is made as per the unit bid price shown in the bid proposal for the specified item. The price is the full compensation for preparing, hauling and installing fence and gate material; excavation, concrete (2000 psi) for post foundation, backfilling and disposal of any unusable materials; clearing of rocks and debris and removal and trimming of brush and tree limbs; temporary fencing (if required to maintain public safety), labor, equipment, tools and incidentals. This item shall be removed and disposed of per Federal, State and Local regulations.

This item shall adhere to **ITEM 701.COD: General Structures**. Measurement and payment of this item is per **Linear Foot** of completed and accepted work.

Measurement and payment can use the following indicator for different types of fence or decking as needed.:

- I - REMOVE AND RESET WOOD FENCE
- II - REMOVE AND RESET CHAIN LINK FENCE
- III - REMOVE AND RESET WROUGHT IRON FENCE
- IV – REMOVE AND RESET RAIL AND GATE
- V – REMOVE AND RESET SLIDING GATE

ITEM 11021**CHAIN LINK FENCE**

This item shall govern furnishing and installing fencing and gates at locations shown on the Drawings or directed by the Owner or designated representative, including all posts, bracing and accessories as specified in this item and as indicated on the Drawings. This Item shall adhere to **NCTCOG ITEM 801: Barriers, Warning and Detour Signs, and Fences - sub section 801.4 Chain Link Fence and ITEM 801.COD: Barriers, Warning and Detour Signs, and Fences.** Prior to installation of the fencing, the Contractor shall furnish the Owner or designated representative with certification from the manufacturer that all fencing materials comply with the requirements specified in this item.

The work performed, and material furnished by this item, measured as provided under "Measurement" will be paid for at the unit bid price for "Chain Link Fence" of the height specified. The unit bid price shall include full compensation for furnishing and installing all fencing materials (except gates) including all miscellaneous fittings, braces, post caps, line wires, connection clips or wires; digging post holes and grouting in rock where required; furnishing and placing concrete for setting posts; furnishing and installing all electrical grounds; all hauling and handling charges; and for all manipulation, labor, tools, equipment and incidentals necessary to complete the work, including excavation, backfilling and disposal of surplus material.

Gates measured as provided under "Measurement" will be paid for at the unit bid price for "Pedestrian Gate" or "Vehicular Gate", of the type, height and opening specified. The unit bid price shall include full compensation for furnishing all materials; fabricating, preparation, hauling, handling charges and erecting, including all miscellaneous fittings, braces, latches, gate hinges, stops and center anchorage; and for all manipulations, labor, tools, equipment and incidentals necessary for complete installation.

Chain Link Fence of each height specified, will be measured by **Linear Foot** of fence measured at the bottom of the fabric along the centerline of fence from center to center of terminal posts, excluding gated. Gates will be measured by each gate, complete in place.

ITEM 11022**METAL BEAM GUARD FENCE**

This item shall govern furnishing, installing, replacing, and adjusting ___ linear feet metal beam guard fence consisting of metal beam rail elements, hardware, blocks, and support posts at locations shown on the Drawings or directed by the Owner or designated representative and as indicated on the Drawings. This Item shall adhere to **NCTCOG ITEM 801: Barriers, Warning and Detour Signs, and Fences - sub section 801.2 Metal Beam Guard Fence and ITEM 801.COD: Barriers, Warning and Detour Signs, and Fences**. Prior to installation of the fencing, the Contractor shall furnish the Owner or designated representative with certification from the manufacturer that all fencing materials comply with the requirements specified in this item.

Metal Beam Guard Fence will be measured by **Linear Foot** on the face of the rail in place, from center-to-center of end splice locations. The price is full compensation for materials, hauling, erection, setting posts in concrete, blocks, driving posts, excavating, backfilling, equipment, labor, tools, and incidentals.

ITEM 11023**REMOVE AND RESET GUARD RAIL**

This item provides for the removal and reset of ___ Linear Feet of existing guard rail wherever it is deemed necessary, either as per the plan or as determined by the Owner's representative and reset in new position. The removal includes the posts (wood or metal) and hardware. Payment is made as per the unit bid price shown in the bid proposal for the specified item. The price is the full compensation for furnishing, hauling and installing guardrail material; excavation, backfilling and disposal of any surplus materials; clearing of rocks, debris and removal, trimming of brush and tree limbs; temporary barrier (if required for public safety), labor, equipment, tools and incidentals. If existing guardrail has concrete foundations, the reset guardrail shall also have concrete foundations. The concrete foundations shall not be paid for separately but considered subsidiary to the bid item. This Item shall adhere to **ITEM 701.COD: General Structures**.

Measurement and payment of this item is per **Linear Foot** of completed and accepted work.

ITEM 11024**REMOVE AND REPLACE IRRIGATION**

This item provides for the removal and replace of the existing irrigation wherever it is deemed necessary, either as per the plan or as determined by the Owner's representative and reset in new position. Provide all work and materials, appliances, tools, equipment, facilities, transportation, and services necessary for an incidental to the installation of underground irrigation system complete in place

Measurement and payment of this item is per **Lump Sum**.

ITEM 11025**BERMUDA OR ST. AUGUSTINE GRASS SPOT SOD FOR
STORMWATER PROJECT**

This item consists of furnishing and placing approximately ___ Square Yards of Spot Sodding in accordance with **Item 204.5.1. Description, Item 20.5.2. Materials, and Item 204.5.3.1. Plugging** of these specifications and addenda thereto.

This is a contingent item and payment will be made, if placement is directed by the Project Manager. Measurement and payment will be per **Square Yard** and in accordance with **Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these specifications.

This item will normally result as a requirement of Inspection personnel through their plan review or as requested by the Parks and Recreation Department, as a part of their easement agreement.

ITEM 11027**BLOCK SODDING FOR STORMWATER PROJECT**

This item consists of furnishing and placing approximately ___ Square Yards of Block Sodding in accordance with **Item 204.5.1. Description, Item 204.5.2. Materials, and Item 204.5.3.2. Solid Sodding** of these specifications and addenda thereto.

This is a **Contingent Item** and payment will be made, if placement is directed by the Project Manager.

This item consists of providing and installing grass sod as shown on the plans or as directed. The payment is made according to the unit bid price for block sodding of the species of grass specified on the plans. Payment will be in accordance with **Item Item 204.5.4.COD: Measurement and Payment (Plugging and Solid Sodding)** of these Specifications. This price is full compensation for securing a source, excavation, loading, hauling, placing, rolling, finishing, furnishing materials, equipment, labor, tools, supplies, and incidentals. Water used to maintain and prepare the sod before planting shall be subsidiary to this item. This is for use with Bermuda, St. Augustine, or Buffalo grass.

Measurement and payment will be per **Square Yard** of completed and accepted work.

ITEM 11029 GRASS SEEDING BY HYDRO MULCHING FOR STORMWATER PROJECT

This item consists of furnishing and placing approximately ___ Square Yards of Seed by Hydromulch in accordance with these specifications and addenda thereto. Hydromulch shall be in accord with **Item 204.4. Fertilizer, Item 204.6.4.1. General, Item 204.6.4.4. Hydraulic Mulching And, Item 204.6.4.6. Watering, Maintaining, and Finishing Seeded Areas** of these specifications.

This item shall include all labor, tools, transportation, materials, (including topsoil, seed and fertilizer), equipment, supervision, and incidentals required to establish a grass turf.

Measurement and payment will be **Square Yard** in accordance with **Item 204.6.5. Measurement and Payment** of these specifications and addenda thereto. *This item will normally result as a requirement of Inspection personnel through their plan review, or as requested by the Parks and Recreation Department, as a part of their easement agreement. The limits of the Hydromulch will be shown on the plans and in a Special Provision further describing the Hydromulch procedure.*

ITEM 11031**PLACEMENT OF SEED FOR STORMWATER PROJECT**

This item consists of furnishing and placing approximately ___ Square Yards of Seed in accordance with **Item 204.6.1. General, Item 204.6.3. Planting Season and Application Rates, Item 204.6.4.1. General and Item 204.6.4.6. Watering, Maintaining, and Finishing Seeded Areas** of these specifications and addenda thereto.

Measurement and payment will be **Square Yard** in accordance with **Item 204.6.5. Measurement and Payment** of these Specifications.

This is normally used in areas that are rural in nature, or when crossing Park Department property where seeding is required. Some contracts will contain a portion requiring sodding and another requiring seeding. Quantity calculations vary from job to job and may require use of a written special provision in the contract. Seeding cannot be placed in winter months.

ITEM 11033

SAWING (LF) FOR STORMWATER PROJECT

TBD

ITEM 11035 LOCATE UNDERGROUND UTILITY NOT UNDER PAVEMENT

This item provides for the location _ Each underground utilities not under pavement. This item consists of excavating specific infrastructure(s) to determine type, size, location, elevation, and/or condition as determined by the Owner. The disturbed area will be replaced with compacted backfill in accordance with **NCTCOG ITEM 504. Open Cut – Backfill.**

This item includes all equipment, materials and labor, saw-cut, pavement, base, and sub-base removal, excavation, backfill, compaction, disposal of excess materials, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, support for existing utilities, and all other work associated with this item.

Payment will not be made under this item if the infrastructure is to be adjusted, abandoned, or replaced prior to the placement of backfill. If the investigation is for more than one infrastructure in the same excavation, payment shall be made for only one investigation.

Measurement and payment will be per **Each** complete in place. Payment will not be paid for unless approved by the Owner prior to the probing.

ITEM 11035 SP1 LOCATE UNDERGROUND UTILITY UNDER PAVEMENT

This item consists of excavating specific infrastructure(s) to determine type, size, location, elevation, and/or condition as determined by the Owner. The disturbed area will be replaced with compacted backfill in accordance with **NCTCOG ITEM 504.6.1 Excavated Material and ITEM 504.COD: Open Cut-Backfill.** The pavement will be replaced in accordance with **NCTCOG ITEM 402 Pavement Cut, Excavation and Repair.** This item includes all equipment, materials and labor, saw-cut, pavement, base, and sub-base removal, excavation, backfill, compaction, disposal of excess materials, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, support for existing utilities, and all other work associated with this item.

Payment will not be made under this item if the infrastructure is to be adjusted, abandoned, or replaced prior to the placement of backfill. If the investigation is for more than one infrastructure in the same excavation, payment shall be made for only one investigation.

Measurement and payment will be per **Each** complete in place. Payment will not be paid for unless approved by the Owner prior to the probing.

**11100 - 11199 EXCAVATION, EMBEDMENT, AND BACKFILL
(CONTINGENCY ITEMS)****ITEM 11101 UNCLASSIFIED SIDEWALK EXCAVATION**

This item shall consist of all the required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications); the removal, proper utilization or disposal of all excavation material; and the shaping and finishing of all earthwork in the conformity with the lines and grades as shown on the plans or as established by the Owner all in accordance with the specification requirements contained herein and **NCTCOG ITEM 203.2 Unclassified Excavation and ITEM 203.COD: Site Preparation**. Without regard to materials encountered, all sidewalk excavations shall be unclassified and shall be designated as “unclassified sidewalk excavation”, which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER’S and CONTRACTOR’S information and is not to be taken as an indication of classification of excavation.

Measurement and payment shall be in **Cubic Yard**. Payment will be made at the quantity and unit price as stated in the contract documents.

ITEM 11103**UNCLASSIFIED STREET EXCAVATION**

This item shall consist of all the required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications). This item shall adhere to **NCTCOG ITEM 203.4 Unclassified Street Excavation, NCTCOG ITEM 203.4 Borrow and Spoil and NCTCOG ITEM 203.5 Embankment**. Without regard to materials encountered, all street excavations shall be unclassified and shall be designated as “unclassified street excavation”, which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER’S and CONTRACTOR’S information and is not to be taken as an indication of classification of excavation.

Measure for payment shall be measured and paid in **Cubic Yard** in accordance with these specifications. Payment will be made at the quantity and unit price as stated in the contract documents. This ITEM includes all labor, material, tools, machinery, equipment and incidentals necessary to complete work in accordance with the plans and this specification

ITEM 11105**UNCLASSIFIED ALLEY EXCAVATION**

This item is for Unclassified Alley Excavation and shall consist of all required excavation within the limits of the right-of-way and areas adjacent thereto (except excavation specifically described and provided for elsewhere in the specifications); the removal, proper utilization or disposal of all excavation material; and the shaping and finishing of all earthwork in the conformity with the lines and grades as shown on the plans or as established by the Owner all in accordance with the specifications requirements contained herein. This item shall adhere to **ITEM 11103 Unclassified Street Excavation**. Without regard to materials encountered, all alley excavations shall be unclassified and shall be designated as “unclassified alley excavation”, which shall include all materials excavated. It is to be distinctly understood that any reference to rock or other material on the plans and/or in this specification is solely for the OWNER’S and CONTRACTOR’S information and is not to be taken as an indication of classification of excavation.

Measure for payment shall be measured and paid in **Cubic Yard** in accordance with these specifications. This ITEM includes all labor, material, tools, machinery, equipment and incidentals necessary to complete work in accordance with the plans and this specification.

ITEM 11107**UNCLASSIFIED CHANNEL EXCAVATION**

This item consists of ___ Cubic Yards of Unclassified Channel Excavation. Excavate areas to finish subgrade as shown on the plans or as directed. Remove materials encountered to the lines, grades, and typical sections shown on the plans and cross-sections. Avoid damaging appurtenances and materials determined by the Owner to be salvageable. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the site in accordance with federal, state, and local regulations. This item shall adhere to **NCTCOG ITEM 203.2 UNCLASSIFIED CHANNEL EXCAVATION.**

This item is for full compensation for authorized excavation; dewatering; undercutting subgrade and reworking or replacing the undercut material; hauling; disposal of material not used elsewhere on the project; scarification and compaction; and equipment, labor, materials, tools, and incidentals. The quantity to be paid is the quantity shown in the contract bid documents.

Measurement and payment will be per **Cubic Yard** of excavation in its original position as computed by the method of average end areas, and regardless of depth for the net quantity shown on the plans.

ITEM 11109**ROCK CHANNEL EXCAVATION**

This item shall consist of ___ Cubic Yards of Rock Channel Excavation. Excavate areas to finish subgrade as shown on the plans or as directed. Remove materials encountered to the lines, grades, and typical sections shown on the plans and cross-sections. Avoid damaging appurtenances and materials determined by the Owner to be salvageable. Material removed that is not deemed to be salvageable is the property of the Contractor. The Contractor shall dispose of removed material off the site in accordance with federal, state, and local regulations. This item shall adhere to **NCTCOG ITEM 203.2 UNCLASSIFIED CHANNEL EXCAVATION.**

This item will be measured for payment by the cubic yard in its original position as computed by the method of average end areas, regardless of depth. This is a plans quantity measurement item. The quantity to be paid is the quantity shown in the contract bid documents.

This item shall be paid for at the contract unit price per the **Cubic Yard**. This price is full compensation for authorized excavation; drying; undercutting subgrade and reworking or replacing the undercut material in rock cuts; hauling; disposal of material not used elsewhere on the project; scarification and compaction; and equipment, labor, materials, tools, and incidentals.

ITEM 11111**FURNISHING AND PLACING TOP SOIL**

This item provides for the furnishing of ____ Square Yards of Top Soil. This item is only to be utilized there is insufficient top soil on the project. All disturbed areas to be re-vegetated are required to have a minimum of six (6) inches of topsoil. The topsoil shall be able to support the growth of planting seeding, sodding and native grassland seeding and planting. This ITEM should adhere to **NCTCOG Item 204.2. Topsoil**

This is a **Contingent Item** and payment will be made as directed by the Project Manager. Measurement and payment for furnishing and placing topsoil shall be per **Square Yard**. Topsoil obtained on-site shall not be paid for separately..

ITEM 11113**SELECT BORROW MATERIAL FOR SUBGRADE**

This item provides for the furnishing of ___ Cubic Yards of Borrow Material for Subgrade. Borrow material for subgrade consists of suitable granular material with a plasticity index (PI) less than 20, free from trash or other objectionable matter and reasonably free from lumps of earth. This item shall adhere to **NCTCOG ITEM 203.4**. This item is paid according to the contract bid price.

Measurement and payment for borrow materials is per **Cubic Yard**, finished in place. The price includes all material, labor, and other incidental expenses

11113 SP1: Select Borrow Material For Fill Cap

11113 SP2: Select Borrow Material For Gabion Wall Backfill

ITEM 11115**SELECT BORROW MATERIAL FOR TOPSOIL**

The select borrow material must be clean dirt, free from trash, weeds, deleterious materials, rocks and debris and adhere to **NCTCOG Item 204.2. Topsoil**. The select borrow material shall be able to support the growth of planting seeding, sodding, and native grassland seeding and planting. This item is paid according to the contract bid price.

Select borrow material is measured and paid for by **Cubic Yard**, finished in place. The depth of the topsoil shall be between 4" and 6", 4" being the minimum depth allowed. This price includes all material, labor, freight and other incidental expenses.

ITEM 11117

FLOWABLE BACKFILL FOR STORMWATER PROJECT

This item consists of furnishing and placing _ cubic yards of Flowable Backfill as per plans and **NCTCOG Item 504.2.3.4. Flowable Backfill or Stabilized Backfill**. This item is complete and includes all equipment, materials and labor to furnish flowable fill.

Measurement and payment will be per **Cubic Yard**, complete in place.

ITEM 11119 MODIFIED FLOWABLE BACKFILL FOR STORMWATER PROJECT

This item consists of furnishing and placing Modified Flowable Backfill as per **NCTCOG ITEM COD:504.2.3.5**. This item is complete and includes all equipment, materials and labor to furnish flowable fill.

Measurement and payment will be per **Cubic Yard**, complete in place.

ITEM 11121**DRY RIPRAP**

This item provides for the furnishing of ___ Cubic Yards of Dry Riprap. This section shall cover work consisting of dry riprap, all complete in place in conformity with the lines, grades and details shown on the plans and in accordance with these specifications. Riprap shall be used for slope, bank and ditch bottom protection, for erosion control at the ends of pipes and structures, and at other designated locations in accordance with **ITEM 11601 Grouted Riprap**. The type of stone and the weight shall be as shown on the plans and adhere to **NCTCOG ITEM 803.3.2.2.1** Types and **ITEM 803.3.2.2.3** Weight for the type shown on the plans.

The contract unit price shall be the total compensation for preparing the subgrade, including excavation; for furnishing and placing all materials; for furnishing, placing, shaping and tamping backfill; for proper disposal of all surplus materials; and for all labor, tools, equipment, and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

This item will be measured and paid for per **Cubic Yard**, based on the dimensions shown on the plans.

This item is used for DWU contracts.

C1 = 24" Thick Riprap with 12" Stone

C2 = 24" Thick Riprap with 18" Stone

C3 = Dry Riprap with 36" Minimum Stone (Use Each for Unit)

ITEM 11123**SAND BACKFILL FOR STORMWATER PROJECT**

This item consists of furnishing and placing Sand Backfill at locations approved by the Project Manager, in accordance with **NCTCOG ITEM 504.6.5: Sand Backfill and ITEM 504.2.2.6.**

Measurement and payment will be by the **Linear Foot** in accordance with **NCTCOG ITEM 504.7.2.2. Final Trench Backfill.** The price will remain the same, regardless of the volume used.

This is a Contingent ITEM and payment will be made as directed by the Project Manager.

ITEM 11125**SHEETING, SHORING AND BRACING**

This item consists of furnishing and placing _ linear feet of Sheeting Shoring and Bracing. If the Contractor elects to slope the sides of the trench and work in the open excavation, the following conditions must be met:

- The side slopes will not impact any vehicular or pedestrian traffic;
- Underground utilities will not be impacted; and
- Additional excavation due to the side slopes will not be measured for payment.

This item shall be measured in linear feet along the centerline of the trench, and includes the use of portable trench boxes, sliding trench shields, open excavation, or sheeting, shoring and bracing. Trenches or excavations which are less than five feet deep will not be considered under this item. Normally, special support systems will be required on all excavations **over five feet in depth**. Trenches or excavations which are less than five feet deep will not be considered under this item. It is the Contractor's responsibility to provide a certified system that meets the requirements for the trench depth. The plans shall be certified by a Professional Engineer who specializes in the design of sheeting, shoring and bracing.

The unit price bid for this item will apply whether sheeting and shoring, trench box, trench shield, or open excavation method is approved and used, but at the same time, **this item** will apply only if the trench or excavation is five feet deep or greater. All costs for Trench Excavation, Safety, and Support for trenches or excavations less than five feet deep will be considered incidental to other contract pay items provided. The contract unit bid price will be full compensation for all expenses to comply with the requirements of any special provisions on the design plans, Standard Specifications, and current Occupational Safety and Health Administration (OSHA) regulations. This price is full compensation for excavation and backfill; contractor excavation plans, traffic control plans, pedestrian safety measures, furnishing, applicable soil testing, construction easements or agreements (when required), coordination, placing and removing shoring, sheeting, or bracing; de-watering or diversion of water; jacking and jack removal; and equipment, labor, materials, tools, and incidentals.

This item shall be measured and paid for at the contract unit price per **Linear Foot**.

This item is used for storm drain installation. Any sheeting, shoring, and bracing for Gabion Structure is subsidiary to Gabion Structure item:

11200 - 11299**ENVIRONMENTAL AND GEOTECHNICAL ITEMS****ITEM 11201****STORM WATER POLLUTION PREVENTION PLAN FOR STORMWATER PROJECT**

This item consists of the preparation, implementation, and maintenance of the **Storm Water Pollution Prevention Plan (SWPPP)** required for this project as mandated by Texas Commission on Environmental Quality (TCEQ) regulations. The Contractor is responsible for contracting with a Licensed Professional Engineer to prepare the SWPPP report. The SWPPP report must be submitted to and reviewed by the City of Dallas Stormwater Management Division at least fourteen (14) days before construction begins. A second copy should be provided to the City Project Manager.

This item also includes performing on-site inspections of all BMPs and maintaining and updating all required documentation in the SWPPP, as mandated by TCEQ regulations and as required by City Storm Water Inspectors. This item includes all permits and applicable fee, postings at the construction site per TCEQ regulations.

The Contractor shall certify the SWPPP at the Pre-Construction conference.

Partial payment of the Lump Sum bid shall be limited as follows:

1. When 5% of the *adjusted contract amount is earned, 25% of the Lump Sum bid shall be paid.
2. When 25% of the *adjusted contract amount is earned, 50% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.
3. When 50% of the *adjusted contract amount is earned, 75% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.
4. When all work under the contract is completed by the Contractor and accepted by the City, 100% of the Lump Sum bid shall be paid.

*The Adjusted Contract Amount is defined as the total contract amount less the Lump Sum bid for this item.

Separate measurement and payment for SWPPP work items have been provided for some common Best Management Practices (BMPs) such as inlet protection, silt fencing, and stabilized construction entrances. **These BMPs items shall be paid through Item 11203 Erosion Control.**

ITEM 11203**EROSION CONTROL FOR STORMWATER PROJECT**

This item is to reimburse the Contractor for costs to install, maintain, and remove the pollution control devices per **NCTCOG ITEM 202. Temporary Erosion, Sedimentation, and Water Pollution Prevention and Control** to prevent sediment from entering the storm water system or waterway. Modifications or additions to the control measures used as directed by the Engineer will be at no additional cost.

This item to include all equipment, materials, labor, and maintenance necessary to control storm water pollution.

Payment will be **Lump Sum** for complete, in place, maintained, removed, and accepted work.

This item is used on CITY contracts, unless advised otherwise. Item 11201 SWPPP is required, if the construction activities disturbed area or common area (within a quarter mile) is greater than 1 acre. The types and locations of the erosion control devices will not be part of the bid documents. It is not necessary to specify hay bales, rock filter dam, silt fences, or even stabilized construction entrance when using this item since the bid item includes all pollution control devices.

ITEM 11205**INLET PROTECTION**

This item consists of furnishing and placing ___ Each Inlet Protection.

This ITEM shall govern the installation of inlet protection for existing and proposed inlets. Inlet protection consists of a variety of methods of intercepting sediment at low point inlets using stone, filter fabric, inlet inserts, and other materials in accordance with **NCTCOG ITEM 202.14 INLET PROTECTION**.

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWPPP) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or Design Consultant's specifications.

The work performed, and materials furnished in accordance with this ITEM and measured as provided under "Measurement". These measures include all labor and materials associated with installation and maintenance of inlet protection as shown in the construction plans and SWPPP.

This item will be measured for payment by **Each** as necessary for one storm drain inlet, complete in place and ready for use inclusive of all components necessary for a complete and working installation. If included in the contract and plans as a Pay Item, this item will be measured for payment by the unit for installation and maintenance. This Item shall not be paid for when this Item is shown on the Contractor's SWPPP that is submitted to the City of Dallas for approval. This Item will be paid for when directed to install by the Owner.

ITEM 11207**EROSION CONTROL LOG**

This item shall govern the installation, maintenance and removal of erosion control logs. Install biodegradable erosion control logs near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the biodegradable erosion control logs into the erosion measures used to control sediment in areas of higher flow. Install, align, and locate the biodegradable erosion control logs as specified below, as shown on the plans, or as directed.

The contractor shall secure biodegradable erosion control logs in a method adequate to prevent displacement as a result of normal rain events, prevent damage to the logs, and as approved, such that flow is not allowed under the logs. Temporarily removing and replacing biodegradable erosion logs as to facilitate daily work is allowed at the contractor's expense. The contractor shall perform vertical tracking on slopes to temporarily stabilize soil. Provide equipment with a track undercarriage capable of producing a linear soil impression measuring a minimum of 12 in. long x 2 to 4 in. wide x 1/2 to 2 in. deep. Do not exceed 12 in. between track impressions. Install continuous linear track impressions where the 12 in. length impressions are perpendicular to the slope. Vertical tracking is required on projects where soil disturbing activities have occurred unless otherwise approved.

This item includes installation, maintenance, and removal of erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWPPP) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or Design Consultant's specifications.

Vertical tracking will not be measured or paid for directly but is considered subsidiary to this item. The work performed, and materials furnished in accordance with this ITEM and measured as provided under "Measurement". These measures include all labor and materials associated with installation, maintenance and removal of erosion control logs as shown in the construction plans and SWPPP. This price is full compensation for furnishing and operating equipment finish backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals.

This item will be measured for payment by the **Linear Foot** for the installation, maintenance and removal along the centerline of the top of the control logs.

If included in the contract and plans as a Pay Item, this item will be measured for payment by the square yard for installation and maintenance. This Item shall not be paid for when this Item is shown on the Contractor's SWPPP that is submitted to the City of Dallas for approval. This Item will be paid for when directed to install by the Owner.

ITEM 11209**TEMP PAVED FLUME**

This item consists of the construction of a temp paved flume dimensioned as shown on the plans. The paved flume shall be constructed at the locations as shown on the construction plans. This item shall include all materials, equipment and labor to complete the construction of this item.

Measurement and payment shall be in **Cubic Yard** of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11211

TEMP PIPE SLOPE DRAIN

TBD

ITEM 11213

INTERCEPTOR SWALE

TBD

ITEM 11215**STABILIZED CONSTRUCTION EXIT**

This item consists of the construction of ___ Each Stabilized Construction Entrance. This consists of a stabilized pad of crushed stone located at any point where traffic entering or leaving a construction site to or from a public right of way, street alley, and sidewalk or parking area per **NCTCOG ITEM 202.11 STABILIZED CONSTRUCTION EXIT**. The removal of the stabilized pad of crushed stone shall also be included in this item. The purpose of stabilized construction entrance is to reduce or eliminate the track or deposition of sediment onto public right of way. This item shall include furnishing and maintaining, hauling and placing all materials, labor, tolls, equipment and incidentals necessary to complete the work including inspecting, repairing, replacing and relocating existing fencing, removal of silt and removal and disposal of all materials at the completion of construction.

Acceptable work performed as prescribed in this item shall be measured per **Each** stabilized construction entrance installed.

ITEM 11217**SILT FENCE FOR STORMWATER PROJECT**

This item includes the installation of ___ Linear Feet of Silt Fence. This item shall govern the installation, maintenance and removal of geotextile silt fence. Provide geotextile silt fence near the downstream perimeter of a disturbed area to intercept sediment from sheet flow. Incorporate the fence into erosion-control measures used to control sediment in areas of higher flow. Install the fence as shown on the construction plans and SWPPP in accordance with **NCTCOG ITEM 202.5 SILT FENCE**.

Perform vertical tracking on slopes to temporarily stabilize soil. Inspection shall be made weekly and after each rainfall. Repair or replacement shall be made promptly as needed. Silt fence shall be removed when the site is completely stabilized so as not to block or impede storm flow or drainage. Accumulated silt shall be removed when it reaches a depth of half the height of the fence. The silt shall be disposed of at an approved site, and in such a manner as to not contribute to additional siltation.

Contractor shall install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWPPP) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable Federal, State, and Local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or Design Consultant's specifications.

The work performed, and materials furnished in accordance with this item and measured as provided under "Measurement". These measures include all labor and materials associated with installation, maintenance and removal of geotextile silt fence as shown in the construction plans and SWPPP. This price is full compensation for furnishing and operating equipment finish, backfill and grading, staking, proper disposal, labor, materials, tools, and incidentals. Vertical tracking will not be measured or paid for directly but is considered subsidiary to this item.

This item will be measured for payment by the **Linear Foot** for the installation, maintenance and removal. Payment will be as follows:

1. Upon the acceptance by the Owner, 90% of the installed linear footage will be paid for.
2. Upon completion of the project or at the direction of the Owner for the removal of this item, including partial removal, the 10% will be paid.

ITEM 11219**ROCK FILTER DAM**

This item consists of the installation of ___ Linear Feet of Rock Filter Dam. The work shall consist of constructing rock filter dams as shown on the plans during the construction period to control erosion and sedimentation. This includes all labor and materials associated with installation, maintenance and removal of the rock filter dam as shown in the construction plans and (SWPPP).

The purpose of a rock filter dam is to reduce the velocity of small concentrated flows, provide a limited barrier for sediment and help disperse concentrated flows, reducing potential erosion. Rock filter dams are typically used early in construction in swales for long linear projects such as roadways. They can also be used in short swales with a steep slope to reduce unacceptable velocities. Rock Filter dams shall not be used in live stream channels. Rock filter dams shall be placed in accordance with **NCTCOG 202.9. CHECK DAM (ROCK)**.

Install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SWPPP) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or Design Consultant's specifications.

This item includes all labor and materials associated with installation, maintenance and removal of rock filter dam as shown in the construction plans and SWPPP. This price is full compensation for furnishing and operating equipment, finish backfill and grading, lacing, proper disposal, labor, materials, tools, and incidentals.

This item will be measured for payment by **Linear Foot** along the centerline of the top of the dam for installation, maintenance and removal. This item shall be paid for at the contract unit price per linear foot. Payment will be as follows:

1. Upon the acceptance by the Owner, 90% of the installed linear footage will be paid for.
2. Upon completion of the project or at the direction of the Owner for the removal of this item, including partial removal, the 10% will be paid.

ITEM 11221**EROSION CONTROL BLANKET**

This item shall govern the installation of erosion control blanket. Erosion control blanket is a temporary degradable erosion prevention product placed over disturbed areas to limit the effects of erosion due to rainfall impact and runoff across barren soil. Erosion control blankets are manufactured by a wide variety of vendors addressing a wide variety of conditions such as slope and functional longevity. Blankets are typically constructed of natural materials such as coir (coconut husk) fibers, excelsior (wood) or straw covered on both sides by degradable synthetic netting. Installation shall include native grass seed, embedded with topsoil, unless otherwise noted on the plans. Erosion control blanket shall be placed in accordance with **NCTCOG ITEM 202.15 EROSION CONTROL BLANKETS**.

The Contractor shall install, maintain, and remove erosion, sedimentation, and environmental control measures to prevent or reduce the discharge of pollutants in accordance with the Storm Water Pollution Prevention Plan (SW3P) on the plans and the Texas Pollutant Discharge Elimination System (TPDES) General Permit TXR150000. Control measures are defined as Best Management Practices used to prevent or reduce the discharge of pollutants. Perform work in a manner to prevent degradation of receiving waters, facilitate project construction, and comply with applicable federal, state, and local regulations. Ensure the installation and maintenance of control measures is performed in accordance with the manufacturer's or Design Consultant's specifications.

The work performed, and materials furnished in accordance with this item and measured as provided under "Measurement". These measures include all labor and materials associated with installation and maintenance of erosion control blanket as shown in the construction plans and SWPPP. This price is full compensation for furnishing and operating equipment finish backfill and grading, anchoring, labor, materials, tools, and incidentals.

If included in the contract and plans as a Pay Item, this item will be measured for payment by the square yard for installation and maintenance. This Item shall not be paid for when this Item is shown on the Contractor's SW3P that is submitted to the City of Dallas for approval. This Item will be paid for when directed to install by the Owner.

ITEM 11223**DIVERSION DIKE**

This item consists of the construction of a Diversion Dike per **NCTCOG**. The removal of the diversion dike shall also be included in this item.

This item shall include furnishing and maintaining, hauling and placing all materials, labor, tolls, equipment and incidentals necessary to complete the work including inspecting, repairing, replacing and relocating existing fencing, removal of silt and removal and disposal of all materials at the completion of construction.

Acceptable work performed shall be measured per **Lump Sum** diversion dike installed.

11300 - 11399**PAVING, TRAFFIC CONTROL, AND SURVEYING****ITEM 11301****TRAFFIC CONTROL**

This item shall include the installation, maintenance, relocation, and removal of all traffic signs (street name, directional, informational or regulatory), barricades, temporary signs, temporary pavement markings (except those identified in the plans as another bid item), and all other traffic control measures necessary to provide for the safe travel of vehicles and pedestrians through, along, or around the construction site and for the protection of the work on the project. This item shall also include all labor, materials, supplies, equipment, and incidentals necessary to complete the work as specified

All barricades and warning signs will conform to those sections of the Texas Manual on Uniform Traffic Control Devices, latest edition, as amended by the Texas Department of Transportation.

Partial payment of the **Lump Sum** bid shall be limited as follows:

1. When 5% of the *adjusted contract amount is earned, 25% of the Lump Sum bid shall be paid.
2. When 25% of the *adjusted contract amount is earned, 50% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.
3. When 50% of the *adjusted contract amount is earned, 75% of the Lump Sum bid shall be paid. Previous payments under this item will be deducted from this amount.
4. When all work under the contract is completed by the Contractor and accepted by the City, 100% of the Lump Sum bid shall be paid.
5. An overrun of the contract quantity will not be allowed under any circumstances unless the quantity is added by an approved change order.
6. If the Contractor fails to provide properly maintain barricades, signs, and traffic control devices in compliance with the specifications, the Contractor will be considered in non-compliance with this item and payment may be delayed for this item.

*The Adjusted Contract Amount is defined as the total contract amount less the lump sum bid for this item.

The Contractor shall submit the Traffic Control Plan prior to the Pre-Construction conference. If the Owner has revisions to the Traffic Control Plan, the Contractor shall make the revisions for the Pre-Construction conference.

NOTE: THIS ITEM DOES NOT INCLUDE PAYMENT FOR ITEM 11302.

ITEM 11303**SIGNS FOR CAPITAL PROJECTS**

This item consists of providing two signs for a specific project. The specific project's **SPECIAL PROVISIONS SECTION A PROPOSAL REQUIREMENTS AND GENERAL CONDITIONS** will provide the details for the signs, including sign color and dimensions. Signs for the project shall be erected as directed by the Owner. Contractor should not add additional signs without approval from the Owner.

Project sign boards shall be supplied, erected, maintained and removed by the Contractor in accordance with City Standards. Project Signs shall be paid as a Lump Sum Item. The Contractor shall provide a color, scaled proof of the sign, including all lettering, to the City prior to fabrication.

The Contractor will be paid 95% of the Lump Sum after the signs are erected and approved by the Owner. The remaining 5% will be paid at the completion of the project.

ITEM 11305 REMOVE CONCRETE PAVEMENT, DRIVE, APRON, HEADER AND INTEGRAL CURB

This item provides for the demolition, removal and disposal of _ Square Yards of reinforced concrete pavement with or without asphalt overlay, drive, apron, street header, floors, porches, patios, rip rap, medians, driveways, foundations and other appurtenances and integral curb associated with the pavement regardless of the thickness of the portion that is removed. It includes all associated saw cutting, hauling charges and disposal fees; and all labor, materials, tools, equipment and incidentals to complete the work. This item shall be delivered to a recycling facility. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement and payment for concrete removal is per **Square Yard.**

This item is used to pay for removal of concrete and asphalt overlaid concrete streets

ITEM 11307 REMOVE SEPARATE CONCRETE CURB WITH/WITHOUT GUTTER

This item provides for the demolition, removal and disposal of _ Linear Feet of concrete curb that is separate from the existing asphalt pavement, with or without gutter. It includes all associated hauling charges and disposal fees; and all labor, materials, tools, equipment and incidentals to complete the work. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement of and payment of this item is per **Linear Foot.**

ITEM 11309**REMOVE ASPHALT PAVEMENT**

This item provides for breaking, removal, and disposal of _ Square Yards of existing asphalt pavement and stabilized base materials, if removal of base material is shown on the plans. It includes all associated hauling charges and disposal fees; and all labor, materials, tools, equipment and incidentals to complete the work. All asphaltic material shall be disposed of at a landfill site that is certified to accept asphaltic material. A copy of the disposal ticket shall be furnished to the Owner. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement and payment of this item is per **Square Yard** regardless of the depth.

This item is used to pay for removal of full depth asphalt and asphalt penetration streets

ITEM 11311**REMOVE CONCRETE SIDEWALK**

This item provides for breaking, removal, and disposal of _ Square Yards of existing reinforced concrete sidewalks as shown in the plans. It includes all associated hauling charges and disposal fees; and all labor, materials, tools, equipment and incidentals to complete the work. If only a portion of the sidewalk is shown to be removed, the contractors shall saw cut and remove the existing sidewalk to neat lines. If concrete sidewalk to remain is damaged in the removal process it shall be replaced by the contractor at no cost to the City. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement and payment of this item is per **Square Yard.**

ITEM 11313**REMOVE CONCRETE OR MASONRY RETAINING WALL**

This item provides for breaking, removal, and storage or disposal of concrete or masonry retaining wall or any other related material according to design plans. This price includes breaking material, loading, hauling, unloading, stockpiling or disposing, equipment, labor, tools and incidentals needed to accomplish the work. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement and payment for this item is per **Lump Sum** for the wall type and wall height as shown on the plans.

ITEM 11313A: Remove Wooden Retaining Wall (LS):

ITEM 11315**REMOVE CONCRETE MEDIAN**

This item provides for breaking, removal and disposal of _ Square Yards of reinforced concrete median paving and monolithic reinforced concrete median paving as shown in the design plans. This includes the full depth saw cutting at the face of the curb and other incidental work associated with the removal of median pavement. This price includes saw cutting, curb removal, loading, hauling, unloading, stockpiling or disposing, along with equipment, labor, tools and incidentals needed to accomplish the work. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement for this item shall be measured from face of the curb to the face of the curb. Removal of curbs shall not be paid for separately but measured as part of the median.

Payment for this item is per **Square Yard.**

ITEM 11317**REMOVE AND REPLACE CONCRETE MEDIAN**

This item provides for breaking, removal and disposal of _ Square Yards of reinforced concrete median; the placement of a new monolithic reinforced concrete median, as shown in the plan or as directed by the Owner's representative and replacing it with the same type of median. This includes full depth saw cutting and other incidental work associated with the removal and replacement of the concrete median. This price and payment will be the full compensation for breaking the pavement, loading, hauling, unloading, stock piling or disposing; equipment, labor, tools and incidentals; repair to areas outside designated locations for removal; and concrete, rebars, dowels and other materials necessary for the replacement of the reinforced concrete median and curbs. This Item shall adhere to **ITEM 701.COD: General Structures.**

Measurement for this item shall be measured from face of the curb to the face of the curb. Removal of curbs shall not be paid for separately but measured as part of the median.

Payment for this item is per **Square Yard.**

ITEM 11319**CONCRETE SIDEWALK CURB**

This item consists of constructing _ Linear Feet of 4 inches to 9 inches concrete sidewalk curb where the natural grade/slope between the back of sidewalk and existing property line exceeds 3:1 as specified on the construction plans. This item shall include all materials, equipment, incidentals and labor required to complete the construction of this item.

Measurement and payment shall be in **Linear Foot** of completed and accepted work regardless of curb height. Payment shall be limited to length shown on construction plans or approved by engineer prior to the construction. No extra allowance shall be made for backfill materials used in back of sidewalk curb.

ITEM 11321**CEMENT TREATED BASE**

This item consists the construction of _ Square Yards of cement treated base which shall contain aggregate, cement and water uniformly in accordance with **NCTCOG ITEM 301.3.3.3. Plant-Mixed Cement Treated Base, 301.3.3.3.2. MIXING AND PROCESSING FOR PLANT-MIXED CEMENT TREATED BASE and 301.3.3.3.4. COMPACTION AND FINISHING OF PLANT-MIXED CEMENT TREATED BASE.**

This item shall include all materials, equipment, necessary incidental items and labor required to complete the item.

Measurement and payment shall be in **Square Yard** of completed and accepted work. Payment shall be limited to the measurements shown on the construction plans or approved by the Owner prior to the placement of the cement treatment base.

ITEM 11323**4" THICK REINFORCED CONCRETE PAD/BIKE PATH**

This item consists of the construction of _ Square Yards of reinforced concrete bike path at the locations as shown on the construction plans. Concrete strength shall be 3000 PSI. This Item shall adhere to **ITEM 303.COD: Portland Cement Pavement**.

This item shall include materials, equipment and labor to complete the construction of this item. The construction of this item shall be in accordance with **Department of Public Works Standard Construction Details, City of Dallas, Texas, File 251D-1, Page 1013**.

Measurement and payment shall be in **Square Yard** of completed and accepted work. Bike Path Ramps shall not be measured nor paid separately. Bike Path Ramps measurement and payment shall be considered as Bike Path. Payment shall be limited to the length and width as shown in on the construction plans or approved by the Owner prior to the construction of the Concrete Bike Path.

ITEM 11325**4" THICK REINFORCED CONCRETE WALK**

This item consists the construction of _ Square Feet of reinforced concrete (3000 psi) sidewalk conforming to the lines, grades and designs at the locations as shown on the construction plans. This item shall include excavation, subgrade treatment, materials, equipment and labor to complete the construction of this item and is considered subsidiary to the bid item. The Concrete Sidewalk shall have a minimum thickness 4-inch except that sidewalks constructed in driveway approach section shall have a minimum thickness equal to that of driveway approach or as called by construction plans. The construction of this item shall be in accordance with **ITEM 303.COD: Portland Cement Pavement and NCTCOG ITEM 305.2: Concrete Sidewalks, Driveway Approaches and Barrier Free Ramps** as well as **251D-1, Page 1015**.

Measurement and payment shall be in **Square Foot** of completed and accepted work. Payment shall be limited to the dimensions shown on the construction plans or approved by the Owner prior to the construction of the reinforced concrete sidewalk.

ITEM 11327**4" THICK CONCRETE MEDIAN PAVEMENT**

This item consists the construction of _ Square Feet of concrete median conforming to the lines, grades and designs at the locations as shown on the construction plans. This item shall include materials, equipment and labor to complete the construction of this item. The construction of this item shall be in accordance with **ITEM 303.COD: Portland Cement Pavement and NCTCOG ITEM 305.1 Concrete Curb and Gutter** as well as **251D-1, Page 9008**.

Measurement and payment shall be in **Square Foot** of completed and accepted work. Payment shall be limited to the dimensions shown on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11329 REMOVE / FURNISH & PLACE 4" EXPOSED AGGREGATE CONCRETE SIDEWALK

This item consists of removal, furnishing and placement of _ Square Feet of 4-inch exposed aggregate concrete sidewalk, the removal, proper disposal of removed material, trial batches, and the shaping and finishing the aggregate concrete in the conformity with the lines, grades and designs at the locations as shown on the construction plans and matching the existing adjacent walk. This item shall include materials, equipment and labor to complete the construction of this item. This item shall be in accordance with **ITEM 303.COD: Portland Cement Pavement, ITEM 701.COD: General Structures and NCTCOG ITEM 305.2: Concrete Sidewalks, Driveway Approaches and Barrier Free Ramps**. The concrete shall be 3000 psi and the reinforcement shall be as shown on the plans.

Small Trial batches of concrete may be requested by the Owner. Trials will be made if requested to verify that new sidewalk concrete matches the existing in appearance. Trial batches are considered subsidiary to the bid item.

Measurement and payment shall be in **Square Foot** of completed and accepted work. Payment shall be limited to the dimensions as shown on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11331**6" HIGH CONCRETE INTEGRAL CURB WITH 18" GUTTER**

This item consists of the construction of _ Linear Feet of 6-inch high concrete integral curb with 18-inch gutter. The 6-inch high concrete integral curb with 18-inch gutter shall be constructed at the locations as shown on the construction plans. This item shall include materials, equipment and labor to complete the construction of this item. The construction of this item shall be in accordance with **File 251D-1 Page 1007B**. This Item shall adhere to **NCTCOG ITEM 305.1 Concrete Curb and Gutter and ITEM 303.COD: Portland Cement Pavement**.

Measurement and payment shall be in **Linear Foot** of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

**ITEM 11333_ REINFORCED CONCRETE SEPARATE CURB WITH _”
GUTTER**

This item consists of the construction of _ Linear Feet of 6-inch high reinforced concrete integral curb with 12-inch gutter. This item is to be used when adding curb and gutter to an existing street. The 6-inch high reinforced concrete separate curb with 12-inch gutter shall be constructed at the locations as shown on the construction plans. This item shall include materials, equipment and labor to complete the construction of this item. The construction of this item shall be in accordance with **File 251D-1, Updated September 2021, Page 1007B**. This Item shall adhere to **NCTCOG ITEM 305.1 Concrete Curb and Gutter and ITEM 303.COD: Portland Cement Pavement**.

Measurement and payment shall be in **Linear Foot** of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

The measurement and payment above apply to the following bid items:

- *A – with 12” gutter*
- *B – with 18” gutter*
- *C – with 24” gutter*

ITEM 11335**REINFORCED CONCRETE FLUME**

This item consists of the construction of _ Cubic Yards of reinforced concrete flume dimensioned as shown on the plans. The concrete flume shall be constructed at the locations as shown on the construction plans. This item shall adhere to **NCTCOG ITEM 305.1 Concrete Curb and Gutter and ITEM 303.COD: Portland Cement Pavement**. This item shall include all materials, equipment and labor to complete the construction of this item.

Measurement and payment shall be in **Cubic Yard** of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11339**3600 PSI REINFORCED CONCRETE RETAINING WALL**

This item consists of furnishing and placing _ Cubic Yards of 3600 psi reinforced concrete retaining wall as per **TxDOT item 423 Retaining Walls**. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item. This item shall comply with **NCTCOG ITEM 702: Concrete Structures, ITEM 303 Portland Cement Pavement** and **ITEM 802.2 NCTCOG: Concrete Retaining Walls**.

Measurement and payment will be per **Cubic Yard** work, complete in place.

ITEM 11341 REINFORCED CONCRETE PAVEMENT (MATCH EXISTING THICKNESS)

This item consists of furnishing and installing _ Square Yards of reinforced concrete pavement as per **ITEM 303.COD: Portland Cement Concrete Pavement, 251D-1 Page 1003** and **City of Dallas Pavement Cut and Repair Standard Manual**. This item includes all equipment, materials and labor, formwork, saw-cut, pavement, joints sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

For Concrete Base repair / replacement, payment for all required work including replacement of unstable subgrade down to 2 feet in depth with select material (flex base material) if necessary, shall be provided by separate pay items. A redwood header shall be installed, as directed by the Owner, at no separate pay. All concrete removal shall be by the pneumatic hammer method. The use of any other equipment to break up the concrete will not be permitted. Payment shall be based on the quantity of surface area of actual base repair work authorized.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11343**REINFORCED CONCRETE TRAFFIC ISLAND**

This item consists of furnishing and placing _ Square Yards of reinforced concrete pavement as per **NCTCOG ITEM 303.COD: Portland Cement Concrete Pavement**, TxDOT ITEM 536 and City of Dallas Pavement Cut and Repair Standard Manual. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces and curbs. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

Measurement will be to the face of the curb. Payment will be per **Square Yard**, complete in place.

ITEM 11345**MONOLITHIC MEDIAN NOSE**

This item consists of installing _ Each of Monolithic Median reinforced concrete nose as per **ITEM 303.COD: Portland Cement Concrete Pavement and 251D-1, page 1002 and 1002A** and **City of Dallas Pavement Cut and Repair Standard Manual**. This item includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces and curbs. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

Measurement will be to the face of the curb. Payment will be per **Each**, complete in place.

ITEM 11347**4000 PSI, 8-IN REINFORCED CONCRETE DRIVE**

This item consists of furnishing and placing _ Square Yards of 8", 4000 psi reinforced concrete pavement as per **ITEM 303.COD: Portland Cement Concrete Pavement** and 251D-1, page 1003 and 1004 and City of Dallas Pavement Cut and Repair Standard Manual. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

If the 8" Reinforced Concrete Drive is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11349 REMOVING EXISTING CONCRETE PAVING & PLACING 8-INCH CONCRETE PAVEMENT

This item consists of removing _ Square Yards of existing concrete pavement and placing approximately 8" reinforced concrete pavement as per **ITEM 303.COD: Portland Cement Concrete Pavement and ITEM 11305: Remove Concrete Pavement, Drive, Apron, Header and Integral Curb** and 251D-1, page 1003 and City of Dallas Pavement Cut and Repair Standard Manual. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately. If the 8" Reinforced Concrete Pavement is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Square Yard**, complete in place.

**ITEM 11351 8-IN THICK REINFORCED HIGH-EARLY STRENGTH
CONCRETE PAVEMENT**

This item consists of furnishing and placing approximately _ Square Yards of 8" reinforced concrete pavement as per **ITEM 432, ITEM 303.COD: Portland Cement Concrete Pavement**, 251D-1 page 1003, **TxDOT ITEM 360 Concrete Pavement High Early Strength (HES)** and City of Dallas Pavement Cut and Repair Standard Manual as directed by the Owner's representative. Contractor shall cure compression test cylinders according to Field Cured Method described in AASHTO T23 or TxDOT standards, to determine high early strength and to open to traffic. The pavement may be opened to traffic when the machine laid concrete reaches 3700 psi or 4200 psi when finished by hand. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11353 6-IN REINFORCED CONCRETE ALLEY PAVEMENT & CONCRETE CONNECTION

This item consists of furnishing and placing _ Square Yards of 6" reinforced concrete pavement as per **ITEM 303.COD: Portland Cement Concrete Pavement** and 251D-1 page 4001. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately. Concrete shall be 4000 psi unless the 6" Reinforced Concrete Pavement is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11355 6-IN REINFORCED CONCRETE SLOPE DOWN (SLOPE PROTECTION)

This item consists of furnishing and placing approximately _ Square Yards of 6" reinforced concrete pavement as per **ITEM 303.COD: Portland Cement Concrete Pavement** and **ITEM 803.COD: Slope and Channel Protection** and 251D-1 page 4001. Maximum 1:1 slope of pavement is permitted. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11357_ REINFORCED CONCRETE PAVEMENT

This item consists of furnishing and placing _ Square Yards of reinforced concrete pavement as per **ITEM 303 COD: Portland Cement Concrete Pavement** and 251D-1, page 1003 and City of Dallas Pavement Cut and Repair Standard Manual. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately.

Concrete shall be 4000 psi unless the Reinforced Concrete Pavement is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Square Yard**, complete in place.

The **measurement and payment above apply to the following bid items:**

- *I - 6 INCH THICK REINFORCED CONCRETE PAVEMENT*
- *II - 8 INCH THICK REINFORCED CONCRETE PAVEMENT*
- *III - 9 INCH THICK REINFORCED CONCRETE PAVEMENT*
- *IV - 10 INCH THICK REINFORCED CONCRETE PAVEMENT*
- *V - 11-INCH-THICK REINFORCED CONCRETE PAVEMENT*

ITEM 11359**6-IN THICK REINFORCED CONCRETE DRIVEWAY**

This item consists of furnishing and placing _ Square Yards of 6-inch thick reinforced concrete driveway as per **ITEM 303.COD: Portland Cement Concrete Pavement** and 251D-1 Page 1004 and Page 1005 and City of Dallas Pavement Cut and Repair Standard Manual. The 6-inch thick is for residential driveways only. The portion through a driveway that is utilized as sidewalk, shall be considered as part of the driveway and is not a separate pay item. This item is complete and includes all equipment, materials and labor, reinforcing steel, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately. Concrete shall be 4000 psi unless the 6" Reinforced Concrete Driveway is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11361**6-IN HIGH CONCRETE INTEGRAL CURB**

This item consists of furnishing and placing _ Linear Feet of 6-in high concrete integral curb as per **251D-1, page 1007B**. This item will adhere to **ITEM 303.COD: Portland Cement Concrete Pavement**. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, foundation work, backfill and compaction, disposal of excess materials, paving related items and all other work associated with this item.

Measurement and payment will be per **Linear Foot**, complete in place.

ITEM 11363**7-1/2 IN TO 9-IN HIGH CONCRETE INTEGRAL CURB**

This item consists of furnishing and placing _ Linear Feet of 7-1/2" high concrete integral curb as per **251D-1 construction details, Page 1007B**. Where the height of the existing curb varies for 7-1/2-IN to 9-IN, the proposed curb height shall be as shown on the plans or as directed by the Owner. This item will adhere to **ITEM 303.COD: Portland Cement Concrete Pavement**. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, foundation work, backfill and compaction, disposal of excess materials, paving related items and all other work associated with this item.

Measurement and payment will be per **Linear Foot**, complete in place.

ITEM 11365**REINFORCED CONCRETE VALLEY GUTTER**

This item consists of furnishing and placing _ Linear Feet of Reinforced Concrete Valley Gutter as per **ITEM 303.COD: Portland Cement Concrete Pavement** and **251D-1 Page 1005**, or as shown in the plans. This item is complete and includes all equipment, materials and labor, reinforcing steel, formwork, saw-cut, pavement, joints, sealing joints, finishing surfaces. Disposal of material, select borrow material, subgrade preparation, and all other minor items of work for which pay items are needed but not provided shall be considered incidental and not paid for separately. Concrete shall be 4000 psi unless the Reinforced Concrete Valley Gutter is finished by hand, then the concrete strength shall be 4500 psi. There will not be any additional payment when 4500 psi concrete is utilized.

Measurement and payment will be per **Linear Foot**, complete in place.

ITEM 11367 ROCK BASE (FLEX BASE MATERIAL) (TEMPORARY PAVEMENT)

This item consists of removing an existing driving surface, furnishing and placing _ Square Yards of Rock Base (Flex Base Material Temporary) for a temporary driving surface. This item shall adhere to **NCTCOG ITEM 301 Flex Base for Subgrades**. This item also includes haul of spoil, grading, blading, hauling, spreading, and compacting the material. The Flex Base Material will have a minimum permissible depth of 8-in of compacted base by approximately 10-ft wide, unless otherwise directed by the Owner.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11369**HOT MIX ASPHALT FOR TEMPORARY PAVING**

This item consists of furnishing and placing _ Square Yards Asphaltic Concrete Fine Grade to be used for a temporary driving surface as the asphaltic surface shall be a Type D Fine Surface per **TxDOT ITEM 340 Dense Graded Hot Mix Asphalt, NCTCOG ITEM 402.4. Replacing Paved Surfaces and ITEM 302.9. Hot-Mix Asphalt Pavement,** and **City of Dallas Pavement Cut and Repair Standard Manual.**

This item includes grading, blading, hauling, spreading, prime coat, tack coat and compacting, labor, materials and all incidentals necessary to complete. This asphalt material will be installed will have a minimum thickness of 2-inches.

Measurement and payment will be per **Square Yard**, complete in place.

ITEM 11371**ASPHALT CONCRETE GRADE "B" BASE,**

This item consists of constructing _ Tons of hot-mix asphalt (HMA) pavement layer composed of a compacted, dense-graded mixture of aggregate and asphalt binder mixed hot in a mixing plant as Type "B" base course. Type "B" Base shall adhere to all the requirements as stated in **TxDOT ITEM 340 Dense Graded Hot-Mix Asphalt (Small Quantity)** and **NCTCOG ITEM 302 Asphalt Pavement**.

Measurement and payment shall be by the **Ton** of composite hot-mix, which includes asphalt, aggregate, and additives. The work performed, materials furnished labor in accordance with this ITEM. Measurement will be paid for at the unit bid price for this item. These prices are full compensation for surface preparation, materials including tack coat, placement, equipment, labor, tools, hauling, and incidentals.

ITEM 11373**ASPHALT CONCRETE GRADE "C" SURFACE**

This item consists of constructing _ Tons of hot-mix asphalt (HMA) pavement layer composed of a compacted, dense-graded mixture of aggregate and asphalt binder mixed hot in a mixing plant as Type "C" Coarse Surface. Type "C" Surface shall adhere to all the requirements as stated in **TxDOT ITEM 340 Dense Graded Hot-Mix Asphalt (Small Quantity)** and **NCTCOG ITEM 302 Asphalt Pavement**.

Measurement and payment shall be by the **Ton** of composite hot-mix, which includes asphalt, aggregate, and additives. The work performed, and materials furnished in accordance with this ITEM and measured will be paid for at the unit bid price for "Dense Graded Hot-Mix Asphalt" of the mixture type, SAC, and binder specified. These prices are full compensation for surface preparation, materials including tack coat, placement, equipment, labor, tools, and incidentals.

ITEM 11375**FLEX BASE FOR SUBGRADES**

This item consists of furnishing ___ Square Yards of Flex Base for Subgrades. This item shall consist of the construction of a foundation course for a surface course or for other subbase or base courses; shall be constructed as herein specified in one or more courses in conformity with the typical section shown on the plans and to the lines and grades or as directed by the OWNER. This item shall conform to **Item 301.5.COD: FLEXIBLE SUBBASE OR BASE (CRUSHED STONE/CONCRETE)**. Crushed Concrete is not allowed for pavement subgrade. This item shall include furnishing all material, hauling, blading, sprinkling, compacting and furnishing all labor and equipment necessary to complete the work.

Work and accepted materials as specified for this item shall be measured by the square-yard of the required depth from plans and specifications completed flexible base as follows:

1. Where no curb and gutter is in place or is to be constructed in connection with the flexible base, measurement shall be made to the lines shown on the plans or established as the edge of the base to be constructed.
2. Where curb and gutter is in place or is proposed to be constructed in connection with the placing of the flexible base, measurement shall be made to the lip of the gutter. Material placed under the curb and gutter or behind the curb shall not be measured as flexible base but shall be considered as foundation courses for the curb and gutter.

The work performed and material placed (including additional binder if required) as prescribed for this item, measured as provided in this item, shall be paid for at the unit price bid per **Square Yard** for the depth as shown on the plans for flexible base, which price shall be full compensation for preparation of subgrade, furnishing of material, hauling, blading, sprinkling, compacting and furnishing all of labor and equipment necessary to complete work.

Grade of FlexBase is as shown on Paving and Drainage Plans.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

SP1: crushed concrete for culvert base materials (Cubic Yards)

TEM 11377**SOIL CEMENT STABILIZATION SUBGRADE**

This item consists of the construction of _ Square Yards of Cement Treated Subgrade Course per Addendum to NCTCOG ITEM **301.3 COD: PORTLAND CEMENT TREATMENT**. Soil cement subgrade stabilization consists of soil and Portland cement uniformly mixed, moistened, compacted, finished and cured. It should conform to lines, grades, thickness and typical cross-section shown or as directed by the Owner.

This item shall include all materials, equipment and labor required to complete the application of this items. This item shall include pulverizing or providing the soil material; handling, hauling, and spreading dry or slurry cement, mixing the cement with the soil either in place or in a mixing plant; furnishing, hauling and mixing water with the soil-cement mixture, spreading and shaping the mixture; compacting the mixture, including all rolling required for this compaction; surface finishing; curing; and for all manipulation, labor, equipment, appliances, tools, and incidental necessary to complete the work and carry out the maintenance provisions in this specification

Measurement and payment shall be in **Square Yard** of completed and accepted cement treated subgrade course. No allowance shall be made for any materials used or work done outside the limits as established by the Owner.

ITEM 11379**LIME STABILIZATION BASE COURSE**

This item shall consist of treating _ Square Yards of subgrade, subbase, and base courses by the pulverization, addition of lime, mixing and compacting the mixed material to the required density per **ITEM 301. 2. COD: LIME TREATMENT**. When Type B, commercial lime slurry is specified, the lime slurry shall be the Grade as shown in the plans or the percent by weight of the slurry. This item applies to natural ground, embankment, or pulverized recycled asphalt pavement base or subbase courses placed under this contract, which shall be constructed as specified herein and in conformity with the typical section, lines and grades as shown on the plans. The contract unit price shall be the total compensation for preparing the roadbed; for loosening, pulverizing, application of lime, water content in the slurry mixture and the mixing water; mixing, shaping, sprinkling, compacting, finishing, curing and maintaining; for manipulations required; and for all labor, equipment, fuels, tools and incidentals necessary to complete the work, all in accordance with the plans and specifications. This item shall include all materials, equipment and labor required to complete the application of this items, except for lime. Payment for lime is per **PBW Item 515 Hydrated Lime**.

Measurement and Payment shall be measured in **Square-Yard** for thickness shown in the plans for the surface area of completed and accepted work.

ITEM 11381**6-IN REINFORCED CONCRETE BARRIER FREE RAMP**

This item consists of constructing _ Each of concrete barrier free ramps as specified herein and in conformity with special details. This item shall include all necessary saw-cut, removal of existing sidewalk, curb and gutter, excavation and backfill, subgrade preparation, furnishing and placing all materials; including expansion joint materials, asphalt replacement needed adjacent to new gutter area, and any related work for manipulation, labor, tools, equipment and incidentals. Pavers/Tiles/Plates will have detectable warning that consists of raised truncated domes with a diameter of 0.9 Inches (23 Mm). A height of nominal 0.2 Inches (5 Mm) and a center-to-center spacing of nominal 2.35 Inches (60 Mm) and shall be red in color. There are no separate pay items for brick pavers. This Item shall adhere to **ITEM 303 COD: Portland Cement Concrete Pavement**

Measurement and payment shall be per **Each** for completed and accepted work.

ITEM 11383**BOLLARD**

This item is for the procurement and installation of _ Each of bollard as show in the plans. It includes procurement, materials, installation, setting the bollard, painting, paint and related work necessary to install this item. The color of the bollard shall be as shown on the plans or as directed by the Owner prior to construction. Only name brand exterior paint will be allowed.

This item is measured and paid for per **Each**, complete in place.

11400 - 11499**STORM DRAIN****ITEM 11401_ _” CLASS III RCP STORM DRAIN**

This item consists of furnishing and placing approximately ___ Linear Feet of ___" CLASS III RCP STORM DRAIN in accordance with **NCTCOG ITEM 501.6.1 Reinforced Concrete Culvert, Storm Drain, and Pipe and 251D-1, page 2006.**

This item will be measured for payment by the linear foot. This is a plans quantity measurement item. Measurement will be made between the ends of the pipe barrel along the flow line. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This item shall be paid for at the contract unit price per **Linear Foot**. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

N = 15" RCP Storm Drain

R = 18" RCP Storm Drain

U = 21" RCP Storm Drain

V = 24" RCP Storm Drain

Y = 30" RCP Storm Drain

Z = 33" RCP Storm Drain

AA = 36" RCP Storm Drain

AC = 42" RCP Storm Drain

AQ = 102" RCP Storm Drain

A36=36"x58.5" RCP Arch Storm Drain

A18=18"x28.5" RCP Arch Storm Drain

AE = 48" RCP Storm Drain

AF = 54" RCP Storm Drain

AG = 60" RCP Storm Drain

AH = 66" RCP Storm Drain

AJ = 72" RCP Storm Drain

AK = 78" RCP Storm Drain

AL = 84" RCP Storm Drain

AM = 90" RCP Storm Drain

AN = 96" RCP Storm Drain

ITEM 11403_ _" CLASS V RCP STORM DRAIN

This item consists of furnishing and placing approximately ___ Linear Feet of ___" CLASS V RCP STORM DRAIN in accordance with **NCTCOG ITEM 501.6.1 Reinforced Concrete Culvert, Storm Drain, and Pipe and 251D-1, page 2006.**

This item will be measured for payment by the linear foot. This is a plans quantity measurement item. Measurement will be made between the ends of the pipe barrel along the flow line. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This item shall be paid for at the contract unit price per **Linear Foot**. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

This item consists of furnishing and placing reinforced concrete

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

N = 15" RCP Storm Drain

R = 18" RCP Storm Drain

V = 24" RCP Storm Drain

Y = 30" RCP Storm Drain

Z = 33" RCP Storm Drain

AA = 36" RCP Storm Drain

AC = 42" RCP Storm Drain

AE = 48" RCP Storm Drain

AF = 54" RCP Storm Drain

AG = 60" RCP Storm Drain

AH = 66" RCP Storm Drain

AJ = 72" RCP Storm Drain

AK = 78" RCP Storm Drain

AL = 84" RCP Storm Drain

AM = 90" RCP Storm Drain

AN = 96" RCP Storm Drain

AQ = 102" RCP Storm Drain

ITEM 11404_ _" STORM DRAIN

This item consists of furnishing and placing approximately ___ Linear Feet of ___" Stormwater Pipe (General) in accordance with **NCTCOG Item 508. Open Cut – Storm Water Conduit Installation.**

Measurement will be made between the ends of the pipe barrel along the flow line. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This item shall be paid for at the contract unit price per **Linear Foot**. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

This item is used for DWU CITY contracts. Use the following for size indicators:

R = 18" SD

S = 20" SD

V = 24" SD

W = 27" SD

Y = 30" SD

Z = 33" SD

AA = 36" SD

AC = 42" SD

AE = 48" SD

AF = 54" SD

AG = 60" SD

AH = 66" SD

AJ = 72" SD

AK = 78" SD

AL = 84" SD

AM = 90" SD

AN = 96" SD

ITEM 11405_ _" RTRP STORM DRAIN

This item consists of furnishing and placing approximately ___ Linear Feet of ___" fiberglass glass-fiber reinforced thermosetting-resin Stormwater Pipe (RTRP – ASTM D 3262) in accordance with **NCTCOG Item 508. Open Cut – Storm Water Conduit Installation.**

This item will be measured for payment by the linear foot. This is a plans quantity measurement item. Measurement will be made between the ends of the pipe barrel along the flow line. Measurement of spurs, branches, or new connecting pipe will be made from the intersection of the flow line with the outside surface of the pipe into which it connects. Where inlets, headwalls, catch basins, manholes, junction chambers, or other structures are included in lines of pipe, the length of pipe tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. For multiple pipes, the measured length will be the sum of the lengths of the barrels.

This item shall be paid for at the contract unit price per **Linear Foot**. This price is full compensation for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to new structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

This item is used for DWU CITY contracts. Use the following for size indicators:

R = 18" RTRP SD

S = 20" RTRP SD

V = 24" RTRP SD

W = 27" RTRP SD

Y = 30" RTRP SD

Z = 33" RTRP SD

AA = 36" RTRP SD

AC = 42" RTRP SD

AE = 48" RTRP SD

AF = 54" RTRP SD

AG = 60" RTRP SD

AH = 66" RTRP SD

AJ = 72" RTRP SD

AK = 78" RTRP SD

AL = 84" RTRP SD

AM = 90" RTRP SD

AN = 96" RTRP SD

ITEM 11407_ _" PVC STORM DRAIN

This item consists of furnishing and placing approximately ___ Linear Feet of ___" PVC STORM DRAIN in accordance with **NCTCOG Item 508. Open Cut – Storm Water Conduit Installation.**

The total cost for this item per linear foot shall include all labor, tools, equipment, backfill and any other incidentals.

Measurement and payment is per **Linear Foot**, complete in place.

This item is used for DWU CITY contracts. Use the following for size indicators:

F= 4" PVC Pipe

G= 5" PVC Pipe

H= 6" PVC Pipe

J= 8" PVC Pipe

K= 10" PVC Pipe

L= 12" PVC Pipe

ITEM 11409

_ - _" PIPE UNDERDRAINS

TBD

ITEM 11411 ___ " STORM DRAIN (BOTO)

This item consists of approximately ___ Linear Feet of ___" Storm Drain to be installed By Other Than Open Cut in accordance with **NCTCOG Item 503.3. Methods of Jacking, Boring or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto.

The ___" carrier pipe is not to be included in this item. The encasement pipe, if required, is included in this item.

Measurement and payment will be per **Linear Foot** and in accordance with **Item 503.4. Measurement and Payment** of these specifications.

This item is used for BOTO construction methods (Jacking/Boring/Tunneling). It is usually specified when crossing under a major thoroughfare or some other obstruction that is not to be disturbed. Size and type of encasement pipe is not usually specified. Actual soil conditions will determine if encasement pipe is required, but no additional compensation will be paid to the Contractor for encasement. Use the following for size indicators:

H = 6" SD (BOTO)

AB = 39" SD (BOTO)

J = 8" SD (BOTO)

AC = 42" SD (BOTO)

K = 10" SD (BOTO)

AD = 45" SD (BOTO)

L = 12" SD (BOTO)

AE = 48" SD (BOTO)

N = 15" SD (BOTO)

AF = 54" SD (BOTO)

Q = 16" SD (BOTO)

AG = 60" SD (BOTO)

R = 18" SD (BOTO)

AH = 66" SD (BOTO)

U = 21" SD (BOTO)

AJ = 72" SD (BOTO)

V = 24" SD (BOTO)

AK = 78" SD (BOTO)

W = 27" SD (BOTO)

AN = 96" SD (BOTO)

Y = 30" SD (BOTO)

AQ = 102" SD (BOTO)

Z = 33" SD (BOTO)

AU = 120" SD (BOTO)

AA = 36" SD (BOTO)

ITEM 11413__ HIGHWAY OR RAILROAD CROSSING FOR __" STORM DRAIN(BOTOC)

This item consists of approximately __ Linear Feet of Highway/Railroad Crossing for the proposed __" Stormwater Main By Other Than Open Cut in accordance with **Item 5092 State Highway Crossing, Item 509.4. Railroad Crossings, Item 503.3. Methods of Jacking, Boring Or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6. Measurement and Payment of Crossings** of these specifications.

This item is used for BOTOC construction methods (Jacking/Boring/Tunneling). This item is required when crossing under Railroad tracks. Size and type of encasement pipe must be shown on the plans, and requirements vary with each railroad.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

N= 15" RCP Storm Drain

R = 18" RCP Storm Drain

S = 24" RCP Storm Drain

Y= 30" RCP Storm Drain

Z = 33" RCP Storm Drain

AA = 36" RCP Storm Drain

AC= 42" RCP Storm Drain

AE= 48" RCP Storm Drain

AF= 54" RCP Storm Drain

AG = 60" RCP Storm Drain

AH = 66" RCP Storm Drain

AJ = 72" RCP Storm Drain

AK = 78" RCP Storm Drain

AL = 84" RCP Storm Drain

AM = 90" RCP Storm Drain

AN = 96" RCP Storm Drain

**ITEM 11414__ HIGHWAY OR RAILROAD CROSSING FOR __"
STORMWATER MAIN (OPEN CUT)**

This item consists of approximately __ Linear Feet of Highway/Railroad Crossing for the proposed __" Stormwater Main By Open Cut in accordance with **Item 5092 State Highway Crossing, Item 509.4. Railroad Crossings, Item 503.3. Methods of Jacking, Boring Or Tunneling, Item 503.3.2.COD: Materials, Item 503.3.3. Construction Methods, and Item 503.3.3.1. General** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item to include the manhole, if shown on the plans. The __" carrier pipe is not to be included in this item. The encasement pipe is included in this item.

Measurement and payment will be in accordance with **Item 509.6. Measurement and Payment of Crossings** of these specifications.

This item is used for BOTOC construction methods (Jacking/Boring/Tunneling). This item is required when crossing under Railroad tracks. Size and type of encasement pipe must be shown on the plans, and requirements vary with each railroad.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

N= 15" RCP Storm Drain

R = 18" RCP Storm Drain

S = 24" RCP Storm Drain

Y= 30" RCP Storm Drain

Z = 33" RCP Storm Drain

AA = 36" RCP Storm Drain

AC= 42" RCP Storm Drain

AE= 48" RCP Storm Drain

AF= 54" RCP Storm Drain

AG = 60" RCP Storm Drain

AH = 66" RCP Storm Drain

AJ = 72" RCP Storm Drain

AK = 78" RCP Storm Drain

AL = 84" RCP Storm Drain

AM = 90" RCP Storm Drain

AN = 96" RCP Storm Drain

ITEM 11415 REINFORCED CONCRETE FOR PIPE HEADWALL AND WINGWALLS

This item consists of approximately ___ Cubic Yards of reinforced concrete for furnishing, constructing, and installing concrete headwalls and wing walls for drainage structures and underpasses in accordance with **City of Dallas Standard Details, File 251D-1, Page No. 2007**. Use 3600 psi compressive strength concrete for cast-in-place and precast concrete units unless otherwise shown on the plans. Furnish cast-in-place or precast headwalls and wing walls unless otherwise shown on the plans.

This item includes full compensation for constructing, furnishing, transporting, and installing the headwalls or wing walls; connecting to existing structure; breaking back, removing and disposing of portions of the existing structure, and replacing portions of the existing structure as required to make connections; excavation and backfill; and concrete, reinforcing steel, corrugated metal pipe or RCP Storm Drain, equipment, labor, tools, and incidentals.

This item will be measured and paid per **Cubic Yard**. The quantity to be paid is the quantity shown in the proposal unless indicated otherwise in the plans. Additional measurements or calculations will be made if adjustments of quantities are required. For payment purposes, the wing wall height will be rounded to the nearest foot.

ITEM 11415SP1 REINFORCED CONCRETE HEADWALL AND WINGWALLS WITH STONE/BRICK VENEER (LS)

ITEM 11415SP2 REINFORCED CONCRETE FOR PARAPET WALL

ITEM 11417

DRAINAGE TRENCH WITH GRATE

This item consists of approximately ___ linear foot drainage trench with grate.

This item is for a special drainage item that may be utilized to remove storm water from specific locations as shown on the plans. The width and depth of the trench, the grate width and aggregate gradation will be as shown on the plans. The measurement and payment per linear foot includes all labor, tools, equipment, procurement and incidentals necessary to complete the item.

This item is measured and paid for per linear foot, complete in place.

ITEM 11419_ REMOVE AND SALVAGE CORRUGATED METAL PIPE

This item consists of approximately _ linear feet of removal and salvaging corrugated metal pipe. The Contractor shall follow the demolition sequence shown on the plans for elements to be removed and salvaged, or submit a demolition plan if indicated on the plans. Include in the required demolition plan the type and location of equipment to be used, the method and sequence of removal of the elements, and a narrative indicating the stability and the integrity of the partially demolished structure is maintained throughout the demolition process. Avoid damaging pipes, appurtenances and materials determined by the Owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Material removed that is not deemed to be salvageable is the property of the Contractor and shall be removed off the site and disposed of in accordance with federal, state, and local regulations. This price is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of pipes, appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

This item will be measured and paid for per each pipe size by the linear foot and will include removal, hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material. This is a plan quantity item.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

<i>L = 12" Corrugated Metal SD</i>	<i>AF = 54" Corrugated Metal SD</i>
<i>N = 15" Corrugated Metal SD</i>	<i>AG = 60" Corrugated Metal SD</i>
<i>R = 18" Corrugated Metal SD</i>	<i>AH = 66" Corrugated Metal SD</i>
<i>S = 24" Corrugated Metal SD</i>	<i>AJ = 72" Corrugated Metal SD</i>
<i>Y = 30" Corrugated Metal SD</i>	<i>AK = 78" Corrugated Metal SD</i>
<i>Z = 33" Corrugated Metal SD</i>	<i>AL = 84" Corrugated Metal SD</i>
<i>AA = 36" Corrugated Metal SD</i>	<i>AM = 90" Corrugated Metal SD</i>
<i>AC = 42" Corrugated Metal SD</i>	<i>AN = 96" Corrugated Metal SD</i>
<i>AE = 48" Corrugated Metal SD</i>	

ITEM 11420**REMOVE AND DISPOSE CORRUGATED METAL PIPE**

This item consists of approximately _ linear feet of removal and disposal of corrugated metal pipe. The Contractor shall follow the demolition sequence shown on the plans for elements to be removed and disposed, or submit a demolition plan if indicated on the plans. Include in the required demolition plan the type and location of equipment to be used, the method and sequence of removal of the elements, and a narrative indicating the stability and the integrity of the partially demolished structure is maintained throughout the demolition process. This item is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of pipes, appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

This item will be measured and paid for per each pipe size by the linear foot and will include removal, hauling away and final disposal of any surplus unsuitable material.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" Corrugated Metal SD

N = 15" Corrugated Metal SD

R = 18" Corrugated Metal SD

S = 24" Corrugated Metal SD

Y = 30" Corrugated Metal SD

Z = 33" Corrugated Metal SD

AA = 36" Corrugated Metal SD

AC = 42" Corrugated Metal SD

AE = 48" Corrugated Metal SD

AF = 54" Corrugated Metal SD

AG = 60" Corrugated Metal SD

AH = 66" Corrugated Metal SD

AJ = 72" Corrugated Metal SD

AK = 78" Corrugated Metal SD

AL = 84" Corrugated Metal SD

AM = 90" Corrugated Metal SD

AN = 96" Corrugated Metal SD

ITEM 11421_ REMOVE AND SALVAGE RCP STORM DRAIN

This item consists of approximately _ linear feet of removal and salvaging of RCP Storm Drain.

The Contractor shall follow the demolition sequence shown on the plans for elements to be removed and salvaged, or submit a demolition plan if indicated on the plans. Include in the required demolition plan the type and location of equipment to be used, the method and sequence of removal of the elements, and a narrative indicating the stability and the integrity of the partially demolished structure is maintained throughout the demolition process. Avoid damaging pipes, appurtenances and materials determined by the Owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Material removed that is not deemed to be salvageable is the property of the Contractor and shall be removed off the site and disposed of in accordance with federal, state, and local regulations. This item includes full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of pipes, appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

This item will be measured and paid for per each pipe size by the linear foot and will include removal, hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

AF= 54" RCP Storm Drain

N= 15" RCP Storm Drain

AG = 60" RCP Storm Drain

R = 18" RCP Storm Drain

AH = 66" RCP Storm Drain

S = 24" RCP Storm Drain

AJ = 72" RCP Storm Drain

Y= 30" RCP Storm Drain

AK = 78" RCP Storm Drain

Z = 33" RCP Storm Drain

AL = 84" RCP Storm Drain

AA = 36" RCP Storm Drain

AM = 90" RCP Storm Drain

AC= 42" RCP Storm Drain

AN = 96" RCP Storm Drain

AE= 48" RCP Storm Drain

ITEM 11422_ REMOVE AND DISPOSE _" RCP STORM DRAIN

This item consists of approximately _ linear feet of removal and disposal of RCP Storm Drain. The Contractor shall follow the demolition sequence shown on the plans for elements to be removed and disposed or submit a demolition plan if indicated on the plans. Include in the required demolition plan the type and location of equipment to be used, the method and sequence of removal of the elements, and a narrative indicating the stability and the integrity of the partially demolished structure is maintained throughout the demolition process. This price is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of pipes, appurtenances, excavation and backfill, equipment, labor, tools, and incidentals. This item includes removal, hauling away and final disposal of any surplus unsuitable material.

This item will be measured and paid for per **Each** pipe size by the **Linear Foot**.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

AF= 54" RCP Storm Drain

N= 15" RCP Storm Drain

AG = 60" RCP Storm Drain

R = 18" RCP Storm Drain

AH = 66" RCP Storm Drain

V = 24" RCP Storm Drain

AJ = 72" RCP Storm Drain

Y= 30" RCP Storm Drain

AK = 78" RCP Storm Drain

Z = 33" RCP Storm Drain

AL = 84" RCP Storm Drain

AA = 36" RCP Storm Drain

AM = 90" RCP Storm Drain

AC= 42" RCP Storm Drain

AN = 96" RCP Storm Drain

AE= 48" RCP Storm Drain

SP1= HDPE Storm Drain (Various Sizes)

ITEM 11423

TELEVISION INSPECTION OF STORM DRAIN

This item consists of performing a Television Inspection on approximately ___ Linear Feet of Storm Drain

In order to ensure that the storm drainage conduit performs the function for which it was designed and constructed, a television inspection will be performed in accordance with this Special Provision. This inspection of the installed storm drainage conduits will be made after construction of the project is substantially complete, at a time directed by the Engineer. Generally, this operation shall take place prior to the make ready inspection and final acceptance of the project. The contractor shall schedule the television inspection 72 hours in advance with the Superintendent to ensure the City's Inspector is present for the television inspection.

ITEM 11425**RCP WYE CONNECTION**

This item consists of _ EA furnishing and connecting new RCP Storm Drain to new pipe or structure, within the limits shown on the plans and in accordance with **251D-1, page 2006** or constructed according to Owner plans.

This item will be measured for payment by each. Measurement will be made between the ends of the pipe barrel along the flow line. This item is for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to existing structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

ITEM 11427_ _" STORM DRAIN TO EXISTING PIPE CONNECTION

This item consists of furnishing and construction ___ Each Storm Drain to existing pipe or structure, within the limits shown on the plans and in accordance **City of Dallas Standard Details, File 251D-1, page 2006** or constructed according to Owner plans.

This item will be measured for payment per **Each**. Measurement will be made between the ends of the pipe barrel along the flow line. This item is for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to existing structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" RCP Storm Drain

AF = 54" RCP Storm Drain

N = 15" RCP Storm Drain

AG = 60" RCP Storm Drain

R = 18" RCP Storm Drain

AH = 66" RCP Storm Drain

V = 24" RCP Storm Drain

AJ = 72" RCP Storm Drain

Y = 30" RCP Storm Drain

AK = 78" RCP Storm Drain

Z = 33" RCP Storm Drain

AL = 84" RCP Storm Drain

AA = 36" RCP Storm Drain

AM = 90" RCP Storm Drain

AC = 42" RCP Storm Drain

AN = 96" RCP Storm Drain

AE = 48" RCP Storm Drain

ITEM 11429_ _" STORM DRAIN TO EXISTING STRUCTURE CONNECTION

This item consists of furnishing and construction _ Each of RCP Storm Drain to existing pipe or structure, within the limits shown on the plans and in accordance **City of Dallas Standard Details, File 251D-1, page 2006** or constructed according to Owner plans.

This item will be measured for payment per **Each**. Measurement will be made between the ends of the pipe barrel along the flow line. This item is for constructing, furnishing, transporting, placing, and joining pipes; shaping the bed; cutting pipes on skew or slope; connecting to existing structures; concrete collars and reinforcing, breaking back, removing, and disposing of portions of the existing structure; replacing portions of the existing structure; cutting pipe ends on skew or slope; and equipment, labor, tools, and incidentals.

ITEM 11431**STORM DRAIN CLEANING**

This item consists of the Cleaning of approximately ___ Linear Feet of ___" Storm Drain Cleaning accordance with the details and specifications on the design plans. This item includes all labor, materials, equipment, barricading, and incidentals required to complete the cleaning of Stormwater main in accordance with these specifications.

Measurement shall be the actual Linear Footage of main rehabilitated. Payment shall be at the contract Unit Price per Linear Foot complete in place

H = 6" SD

J = 8" SD

K = 10" SD

L = 12" SD

N = 15" SD

Q = 16" SD

R = 18" SD

U = 21" SD

V = 24" SD

W = 27" SD

Y = 30" SD

Z = 33" SD

AA = 36" SD

AB = 39" SD

AC = 42" SD

AD = 45" SD

AE = 48" SD

AF = 54" SD

AG = 60" SD

AH = 66" SD

AJ = 72" SD

AK = 78" SD

AN = 96" SD

AQ = 102" SD

AU = 120" SD

ITEM 11433_ POINT REPAIR OF ___" STORM DRAIN

This item consists of approximately ___ point repair(s) of ___" Storm Drain as necessary to facilitate rehabilitation.

This item to include all labor, materials, equipment, and incidentals required to complete the repairs; including, but not limited to: excavation, trench safety and support, barricading, furnishing and installing pipe material, connection to existing main, by-pass pumping, and all backfill and embedment materials. This shall be a **contingent item** and shall only be used if directed by the Construction Engineer. Each point repair shall consist of up to twenty (20) linear feet of pipe.

Measurement shall be per each point repair complete and accepted at the contract Unit Price.

This item is used for DWU contracts. Use the following for size indicators:

H = Point Repair of 12" SD

R = Point Repair of 30" SD

J = Point Repair of 15" SD

U = Point Repair of 36" SD

K = Point Repair of 18" SD

V = Point Repair of 48" SD

L = Point Repair of 21" SD

Y = Point Repair of 54" SD

N = Point Repair of 24" SD

ITEM 11435_ REHABILITATION OF EXISTING ___" STORM DRAIN

This item consists of the Rehabilitation of approximately ___ Linear Feet of ___" Storm Drain accordance with the **DWU Standard Technical Specifications Manual, Latest Edition**. This item to include all labor, materials, equipment, barricading, and incidentals required to complete the rehabilitation of the Stormwater main in accordance with these specifications and addenda thereto.

Measurement shall be the actual Linear Footage of main rehabilitated. Payment shall be at the contract Unit Price per Linear Foot complete in place.

This bid item is used for rehabilitating wastewater mains using trenchless technologies. This item requires the Section Manager's approval beforehand. Be sure to include the proper corresponding Item No. 3540_ and bid item 6070. Use the following for size indicators:

H = 12" SD

L = 24" SD

J = 15" SD

N = 30" SD

K = 18" SD et.al.

ITEM 11437_ CONSTRUCTION SURVEYING & STAKING (STORM DRAIN)

This item consists of providing Construction Surveying and Staking by the Contractor's qualified personnel for approximately ___ Linear Feet of Proposed Storm Drain Main installations shown on the plan drawings and in accordance with **Item 105.4.COD: Construction Stakes** of the NCTCOG Specifications and addenda thereto.

This item shall include establishment of all horizontal and vertical controls, horizontal and vertical alignments per plan drawings, and cut depths for all proposed mains shown on the plan drawings with specific grades, elevations and profiles.

Measurement and payment will be per Linear Foot of proposed water and per Linear Foot of proposed wastewater main including instrumentation and equipment, staking materials, notes and cut sheets in final form and any other associated costs, such as barricading and traffic control for these services. Payment will be made when surveying is complete from point of beginning to point of end as shown on the plan drawings and upon submission and approval of survey data (see **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition** for approved data format). The Contractor is responsible for maintaining all staked controls and hubs in the construction area at all times and any costs for re-staking or re-establishing controls required shall be borne by the Contractor.

**11500 - 11599
ITEMS****STORM DRAIN APPURTENANCE AND RELATED****ITEM 11501_ _ DRAIN INLETS**

This item consists of furnishing and placing ___ Each ___ Drain Inlets.

This item is for any special drainage inlets. Special drainage inlets shall be considered any inlets other than those in 251D-1 and identified as ITEM 11503 Inlet. Special drain inlets shall conform to the requirements of 251D-1 page 1007 and page 2004. ITEM 911A also includes inlets in the Central Business District (CBD) as shown in 251D-1 page 1007 and 2004.

Removal of any existing conflicting inlet, if required, will be included in this item. Non-shrink grout shall be used in place of mortar. This item shall include barricading.

This price and payment will be the full compensation for any excavation and backfilling required, furnishing and installing all components, equipment, labor, materials, tools, and incidentals.

This item is measured and paid for per **Each**, complete in place.

Item 11501SP1: 24" ADS Drain Inlet (Each)

Item 11501SP2: Special Storm Drain Trench Drain Inlets at Pond (Use LS for Unit)

ITEM 11503_ -FOOT INLET

This item consists of furnishing and placing ___ Each Inlets.

This item shall govern the construction of inlets complete in place or to the stage detailed in the plans, including excavation and backfilling; furnishing and installing frames, grates, rings, and covers.

Precast inlets, risers, and appurtenances are acceptable unless otherwise shown. Alternate designs for precast items must be acceptable to the Owner and not deviate from the functional dimensions given. Alternate designs are to be designed and sealed by a licensed professional Owner.

All precast reinforced concrete inlets shall be inspected and/or certified during the casting and shall meet the approved design on file with the Owner. The inspection shall be by the Owner or his agent. The cost of any test required during the inspections to certify precast reinforced concrete inlets shall be at the expense of the manufacturer.

All precast reinforced concrete inlets shall have the manufacturer's brand stamped into the concrete along with the date of casting and a registration number all of which shall be easily visible to any field inspector after installation. All numbers required shall be on each section of any inlet if said inlet is cast in more than one section. The design and detail drawings for any precast reinforced concrete inlet shall be approved by the Owner.

The precast reinforced inlets shall meet or surpass the standard design of the cast in place reinforced concrete inlets as **per 251D-1 pages 2001-2004 and 2010**. Frames, grates, rings, and covers, when a part of the complete inlet, will not be measured for payment but will be considered subsidiary to inlet. This price is full compensation for concrete, reinforcing steel, brick, mortar, aluminum and cast-iron castings, frames, grates, rings and covers, excavation, and backfill and for all other materials, tools, equipment, labor, and incidentals. This item will be measured for payment by each inlet satisfactorily completed in accordance with the plans and specifications complete in place.

Removal of any existing conflicting inlet, if required, will be included in this item. Non-shrink grout shall be used in place of mortar. This item shall include barricading.

This item shall be paid at the contract unit price per each inlet.

The measurement and payment above apply to the following bid items:

A = 14 FOOT INLET

B = 10 FOOT INLET

C = 8 FOOT INLET

D = 6 FOOT INLET

E = 60 INCH (5 FOOT) INLET

F = 48 INCH (4 FOOT) INLET

G = 36 INCH (3 FOOT) INLET

H = 14 FOOT RECESSED INLET

J = 10 FOOT RECESSED INLET

K = 8 FOOT RECESSED INLET

L = 6 FOOT RECESSED INLET

M = 5 FOOT RECESSED INLET

N = 4 FOOT RECESSED INLET

P = 3 FOOT RECESSED INLET

Q = STANDARD TYPE "Y" INLET

R = SPECIAL "Y" INLET

S = SINGLE GRATE INLET

T = DOUBLE GRATE INLET

U = TRIPLE GRATE INLET

V = TWO GRATE INLET

W = FOUR GRATE INLET

X = SIX GRATE INLET

Y = EIGHT GRATE INLET

Z = SPECIAL INLET (AS SHOWN ON THE PLANS)

ITEM 11505**ADJUST INLET**

This item consists of adjusting approximately _ Each Inlets.

This item covers vertical adjustments for all inlet types to a new grade. This item shall be paid for at the contract unit price per each inlet adjustment completed. The price bid shall include pavement removal, excavation, hauling, disposal of excess material, structural modifications, furnishing, placing and compaction of embedment and backfill, concrete base material, as required; surface restoration, permanent asphalt patch or concrete paving repair, as required, clean-up.

Measurement and payment will be per each complete in place.

LOWERING THE TOP OF A MANHOLE OR INLET. Remove a sufficient depth of brick courses or concrete to permit reconstruction on a batter not exceeding 1 in. horizontal to 2 in. vertical. Where brickwork is present, clean the mortar from the top course of brick. Rebuild the manhole or inlet to the original top dimensions or to the dimensions shown in the plans. Install the manhole or Inlet ring and the cover, plate, or grate to conform to the proposed new surface contour.

RAISING THE TOP OF THE MANHOLE OR INLET. Clean the top surface of brick or concrete. Construct to the proper new elevation using new brick, brick salvaged from other manholes or inlets, prefabricated metals extension rings, concrete rings, or class A concrete. Install the manhole or inlet ring and the cover, plate or grate to conform to the proposed new surface contour. Install prefabricated extension rings in accordance with manufacturer's instructions.

CAPPING AN INLET OR MANHOLE. Remove the inlet or manhole to a minimum of 1 ft. below subgrade elevation or as indicated on the plans. Cap as shown on the plans.

ITEM 11507**EXTRA DEPTH OF INLETS (+20')**

This item consists of furnishing and placing ___ Each Extra Depth of Inlet

This item provides compensation for extra construction depth of all inlet types. Inlets constructed six (6) inches, or more, deeper than standard depth, as required by the plans or by specific instructions of the owner, will be paid for at the contract unit price for the inlet plus compensation for the extra depth. Standard steps will be required due to the extra depth and will NOT be paid for separately but will be considered incidental to this pay item.

Removal of any existing conflicting inlet, if required, will be included in this item. Non-shrink grout shall be used in place of mortar. This item shall include barricading.

This item will be measured for payment at the unit price per foot of extra depth from top of curb to flow line of pipe that exceeds the standard depth as shown in **251D-1 pages 2001-2004 and 2010**. This item shall be paid for at the contract unit price for each inlet to the nearest foot of extra depth. No fractions of a foot will be used for calculating pay quantities. This pay item will apply to inlets of each type or size contained in the contract.

ITEM 11509_ TYPE _ STORM MANHOLE

This item shall govern the construction of storm manholes, complete in place or to the stage detailed, including furnishing and installing frames, grates, rings, and covers. Precast manholes, risers, and appurtenances are acceptable unless otherwise shown. Alternate designs for precast items must be acceptable to the Owner and not deviate from the functional dimensions given. Alternate designs are to be designed and sealed by a licensed professional Owner. Storm Manholes shall be constructed in accordance with **NCTCOG 502.1 Manholes** and as shown in **COD Standard Details, File No. 251D-1, page 2008**. Frames, grates, rings, and covers, when a part of the complete manhole will not be measured for payment but will be considered subsidiary to manhole.

Removal of any existing conflicting manhole, if required, will be included in this item. Non-shrink grout shall be used in place of mortar. This item shall include barricading.

Measurement and payment will be in accordance with **Item 502.1.6.COD: Measurement and Payment of Manholes** of these specifications. This item will be measured for payment per each storm manhole and shall cover all costs for the structure complete in place as designed. Included shall be all excavation, castings, reinforcing steel, concrete, backfill, and other materials, and all appurtenances for a complete and functional unit.

This item shall be paid for at the contract unit price per each storm manhole. The contract price shall be the total compensation for the furnishing of all labor, materials, tools, equipment and incidentals necessary to complete the work, including earth excavation, disposal of surplus materials and backfill, all in accordance with the plans and these specifications. All storm manholes satisfactorily completed in accordance with the plans and specifications will be measured by each storm manhole complete, or by each storm manhole, completed to the stage of construction required by the plans.

The measurement and payment above apply to the following

bid items:

- - **STORM MANHOLE**
- **A - TYPE "A" (18" TO 30" PIPE CONNECTIONS) STORM MANHOLE**
- **B - TYPE "B" (33" TO 78" PIPE CONNECTIONS) STORM MANHOLE**

ITEM 11511**ADJUST STORM MANHOLE**

This item consists of adjusting approximately _ Each Storm Manholes.

This item provides vertical adjustments or capping existing manholes or junction box and other miscellaneous structures to a new grade. Adjust Storm Manhole shall be in accordance with **NCTCOG 502.1 Manholes**. The price bid shall include pavement removal, excavation, hauling, disposal of excess material, structural modifications, furnishing, placing and compaction of embedment and backfill, concrete base material, as required; surface restoration, permanent asphalt patch or concrete paving repair, as required, clean-up

This item will be measured for payment as each manhole or junction box adjusted or capped. This item shall be measure and paid for at the contract unit price per each manhole or junction box adjusted or capped.

ITEM 11513**CURB DRAIN TYPE 2**

This item consists of furnishing and placing ___ Linear Foot of Curb Drain Type 2.

This item consists of furnishing and installing 4-in diameter black steel pipe under the sidewalk encased in concrete with minimum 3 in concrete under the pipe and 2 in on the top. This item shall be constructed at the locations as shown on the construction plans. This price will be full compensation for installing the curb drain, furnishing all materials, tools, labor, equipment, and incidentals.

Measurement and payment shall be by the linear foot of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11515_ SLOTTED DRAINS

This item consists of furnishing and placing ___ Linear Foot of Curb Drain Type 2.

Furnish and install Slotted Drains as shown on the plans. Slotted drains consist of a drain guide assembly attached to a longitudinal opening in a corrugated metal pipe. Slotted Drains are intended for use in gutters, driveways, alleys, parking lots and standard barrier walls. Outlet pipes and inverts shall be 0.6% or steeper toward the outlet regardless of the surface slope.

Slotted Drains may be stubbed directly into drainage structure or outlet pipes and may be used to connect the drain to drainage structure. Slotted Drains shall be constructed in accordance with **COD Standard Details, File No. 251D-1, Page No 2005 and TxDOT ITEM 474, Linear Drains.**

This item will be measured by the linear foot between the ends of the slotted drain along the pavement surface as installed, complete and in place. Where inlets are included in lines of slotted drain, that length of drain tying into the structure wall will be included for measurements, but no other portion of the structure length or width will be included. Excavation must allow for a minimum of 6-inches of concrete to be placed under and alongside the drain channel system. This price will be full compensation for structure excavation, installing the slotted drain, concrete, reinforcing steel, reinforcement anchors, other connecting devices, furnishing all materials (including forms, rails, anchorages, support bars, and grates), tools, labor, equipment, and incidentals

Measurement and payment shall be by the linear foot of completed and accepted work. Payment shall be limited to the length shown on the construction plans or approved by the Owner prior to the construction of this item.

The measurement and payment above apply to the following bid items:

- **A: SLOTTED DRAINS WITH ASPHALTIC CONCRETE PAVEMENT**
- **B: SLOTTED DRAINS WITH REINFORCED CONCRETE PAVEMENT**
- **C: SLOTTED DRAINS THROUGH DRIVE**
- **D: SLOTTED DRAINS THROUGH ALLEY**

ITEM 11517**6-IN REINFORCED CONCRETE CHANNEL LINING**

This item consists of furnishing and placing ___ Square Yard 6-in Reinforced Concrete Channel Lining in conformity with the lines, grades and details shown on the plans and in accordance with **NCTCOG ITEM 803.3 Riprap and City of Dallas Standard Details, File 251D-1, Page No. 2009.**

The contract unit price shall be the total compensation for preparing the subgrade, including excavation; for furnishing and placing all materials; for furnishing, placing, shaping and tamping backfill; for proper disposal of all surplus materials; and for all labor, tools, equipment, and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

The contract unit price shall be the total compensation for preparing the subgrade, including excavation; for furnishing and placing all materials; for furnishing, placing, shaping and tamping backfill; for proper disposal of all surplus materials; and for all labor, tools, equipment, and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

This item will be measured and paid by per square yard complete in place.

**ITEM 11519
JUNCTION BOX****REINFORCED CONCRETE TRANSITION STRUCTURE AND**

This item consists of furnishing and placing ___ EA Reinforced Concrete Transition Structure and Junction Box.

This item shall govern the construction of concrete transition structures and junction boxes complete in place or to the stage detailed, including furnishing and installing frames, grates, rings, and covers.

Precast appurtenances are acceptable unless otherwise shown. Alternate designs for precast items must be acceptable to the Owner and not deviate from the functional dimensions given. Alternate designs are to be designed and sealed by a licensed professional engineer. Reinforced concrete transition structure and junction box shall be constructed in accordance with **TxDOT ITEM 462 Concrete Box Culverts and Storm Drains**.

Furnish materials in accordance with the following TxDOT Items:

- ITEM 420 "Concrete Structures"
- ITEM 421 "Hydraulic Cement Concrete"
- ITEM 440 "Reinforcing Steel"
- ITEM 464 "RCP Storm Drain"

For Transition Structure and/or Junction Box with overlay or a 1 to 2-course surface treatment or if the top of the slab is the final riding surface, use 4000 psi concrete and for slabs of cast-in-place unless otherwise shown on the Owner's plans.

This item will be measured for payment by each transition structure or junction box complete, or by each transition structure or junction box, completed to the stage of construction required by the plans. Frames, grates, rings, and covers, when a part of the complete transition structure or junction box will not be measured for payment but will be considered subsidiary. This item is full compensation for concrete, reinforcing steel, brick, mortar, aluminum and cast-iron castings, frames, grates, rings and covers, excavation, and backfill and for all other materials, tools, equipment, labor, and incidentals.

ITEM 11521**REMOVE EXISTING DRAINAGE STRUCTURE**

This item consists of removing ___ EA Existing Drainage Structure. This item covers all labor, equipment and material required to remove existing drainage structures and restore the pavement, including removing and hauling away of any surplus material and all other items or work to the satisfaction of the Owner. Avoid damaging appurtenances and materials determined by the owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the site in accordance with federal, state, and local regulations.

This item will be measured and paid for per **Each** drainage structure removed and will include removal and salvage of the material in the original system, plugging the existing lines where cut, hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material. The unit price will be full compensation for all parts, material, labor, tools, equipment, etc., as necessary to remove and salvage the drainage structure.

ITEM 11523**REMOVE STORM MANHOLES**

This item consists of removing ___ EA Manholes.

This item covers all labor, equipment and material required to remove existing manholes and restore the pavement, including hauling away of any surplus material and all other items or work to the satisfaction of the Owner. Avoid damaging appurtenances and materials determined by the Owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Plug old pipes. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the site in accordance with federal, state, and local regulations. The unit price will be full compensation for all parts, material, labor, tools, equipment, etc., as necessary to remove and salvage the manhole.

This item shall be paid for at the contract unit price per each manhole removed and will include removal and salvage of the material in the original system, plugging the existing lines where cut, hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material. The unit price will be full compensation for all parts, material, labor, tools, equipment, etc., as necessary to remove and salvage the drainage structure.

ITEM 11525**REMOVE INLETS**

This item consists of removing ___ EA Inlets.

This item covers all labor, equipment and material required to remove existing inlets and restore the pavement, including hauling away of any surplus material and all other items or work to the satisfaction of the owner. Avoid damaging appurtenances and materials determined by the owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the site in accordance with federal, state, and local regulations. This item includes full compensation for all parts, material, labor, tools, equipment, etc., as necessary to remove and salvage the inlet. This item includes hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material.

This item will be measured and paid for per each inlet removed.

ITEM 11527**REMOVE AND REPLACE DRIVE CULVERT**

This item consists of removing and replacing__ Linear Foot Drive Culvert.

Driveway pipe culverts shown on the plans to be removed and replaced, shall meet **TxDOT ITEM 460 CORRUGATED METAL PIPE or ITEM 11401, 11402, 11403 RCP STORM DRAIN** for the replacement pipe. The length of the replacement pipe shall match the existing length, unless otherwise directed by the Owner. The Contractor shall use new bedding material for the pipe culvert. The existing roadway surface materials may be salvaged if suitable and approved by the Owner. When new roadway material is required, the new material shall meet the required specifications for new materials.

This item shall be measured and paid for by the linear foot shown on the plans. This is a plan quantity item. This price includes full compensation for removing and disposing of surplus and unwanted material; furnishing and placing new material; backfilling; site restoration; and equipment, labor, tools, and incidentals, as per plans and as directed by the Owner.

ITEM 11529**REMOVE CHANNEL LINING**

This item consists of removing ___ Square Yard Channel Lining.

This item governs channel lining removal. The contractor shall follow the demolition sequence shown on the plans for elements to be removed or submit a demolition plan if indicated on the plans. The Contractor's demolition plan shall identify the type and location of equipment to be used, the method and sequence of removal of the elements, and a narrative indicating the stability and the integrity of the partially demolished structure is maintained throughout the demolition process. Avoid damaging appurtenances and materials determined by the Owner to be salvageable. Material removed that is not deemed to be salvageable is the property of the Contractor and shall be removed off the site and disposed of in accordance with federal, state, and local regulations. This unit price is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of channel lining and appurtenances, excavation and backfill, equipment, labor, tools, and incidentals. This item will include removal, hauling and storage of all salvaged material and the hauling away and final disposal of any surplus unsuitable material.

This item will be measured and paid for by the square yard of channel lining removed.

ITEM 11531_ _'X_' REINFORCED CONCRETE BOX CULVERT

This item consists of furnishing and installing ___ Linear Foot Reinforced Concrete Box Culvert.

This item shall govern reinforced concrete culvert and precast reinforced concrete box sections within in the limits shown on the plans and in accordance with **NCTCOG ITEM 501.6.1 Reinforced Concrete Culvert, Storm Drain, and Pipe.**

Measurement will be made between the ends of the culvert along the flow line." Measurement of spurs, branches, or new connection box section will be made from the intersection of the flow line with the outside surface of the structure into which it connects. Where inlets, headwalls, wing walls, catch basins, manholes, junction chambers, or other structures are included in lines of culverts, the length of box section tying into the structure wall will be included for measurement, but no other portion of the structure length or width will be included. The work performed, and materials furnished in accordance with this ITEM and measured as provided under "Measurement" will be paid for at the unit price bid of the size specified. This price is full compensation for constructing, furnishing, and transporting sections; preparation and shaping of the bed; backfill material between box sections; jointing of sections; jointing material; cutting of sections on skew or slope; connections to new or existing structures; breaking back, removing and disposing of portions of the existing structure and replacing portions of the existing structure as required to make connections; concrete and reinforcing steel; and equipment, labor, sheeting, shoring and bracing, materials, tools, and incidentals.

Measurement and payment of this item shall be in **Linear Foot** of completed and accepted work.

The measurement and payment above apply to the following bid items:

- A- 3' X 3' BOX CULVERT
- B- 4' X 4' BOX CULVERT
- C- 5' X 3' BOX CULVERT
- D- 5' X 4' BOX CULVERT
- E- 5' X 5' BOX CULVERT
- F- 5' X 6' BOX CULVERT
- G- 6' X 3' BOX CULVERT
- H- 6' X 4' BOX CULVERT
- I-6' X 5' BOX CULVERT
- J-6' X 6' BOX CULVERT
- K-6' X 7' BOX CULVERT
- L-6' X 8' BOX CULVERT
- M-8' X 4' BOX CULVERT
- N- 8' X 5' BOX CULVERT
- O-8' X 6' BOX CULVERT
- P-8' X 7' BOX CULVERT
- Q-8' X 8' BOX CULVERT
- R-8' X 9' BOX CULVERT
- S-8' X 10' BOX CULVERT
- T-10' X 4' BOX CULVERT
- U-10' X 5' BOX CULVERT
- V-10' X 6' BOX CULVERT
- W-10' X 7' BOX CULVERT
- X- 10' X 8' BOX CULVERT
- Y- 10' X 9' BOX CULVERT
- Z- 10' X 10' BOX CULVERT
- AA-10' X 11' BOX CULVERT
- AB- 10' X 12' BOX CULVERT
- AC -12' X 4' BOX CULVERT
- AD-12' X 5' BOX CULVERT
- AE-12' X 6' BOX CULVERT
- AF-12' X 7' BOX CULVERT
- AG-12' X 8' BOX CULVERT
- AH-12' X 9' BOX CULVERT
- AI-12' X 10' BOX CULVERT
- AJ-12' X 11' BOX CULVERT
- AK-12' X 12 BOX CULVERT
- SP1-9'x9' BOX CULVERT
- SP2-7'x7' BOX CULVERT
- SP3-7'x7' BOX CULVERT (BOTOC)
- SP4-7'x5' BOX CULVERT

ITEM 11533

DRAIN INLET CLEANING

This item consists of the Cleaning of approximately ___ EA of Drain Inlet in accordance with the details and specifications on the design plans. This item includes all labor, materials, equipment, barricading, and incidentals required to complete the cleaning of Stormwater main in accordance with these specifications.

Measurement shall be the actual unit of drain inlet. Payment shall be at the contract Unit Price per each unit complete in place

ITEM 11535**CULVERT CLEANING**

This item consists of removing all extraneous material from _ EA existing culvert barrels and pipes in accordance with the details and specifications on the design plans and in conformance with **TxDOT Item 480**. This item includes all labor, materials, equipment, barricading, and incidentals required to complete the cleaning of culvert in accordance with these specifications.

This Item will be measured by each complete culvert cleaned regardless of the number of barrels or pipes at each location.

ITEM 11537

SLOT DRAIN CLEANING

This item consists of the Cleaning of approximately ___ Linear Feet of ___" slot drain in accordance with the details and specifications on the design plans. This item includes all labor, materials, equipment, barricading, and incidentals required to complete the cleaning of slot drain in accordance with these specifications.

Measurement shall be the actual Linear Footage of slot drain. Payment shall be at the contract Unit Price per Linear Foot complete in place.

ITEM 11539**ABANDON EXISTING STORM MANHOLE**

This item consists of abandoning approximately ___ Each Existing Manhole, backfilling the manhole with granular material at 95% standard proctor dry density, and removing and salvaging the frame and cover as per the applicable Standard Drawing.

This item to also include the cleaning, loading, hauling, and unloading the frame and cover at the Stores Division, Yard #2, 2901 Municipal Street. The Contractor will be charged new item replacement cost for any amount lost, stolen, or broken due to the Contractor's negligence prior to delivery into Water Utilities Department Salvage Yard. This item shall also include barricading.

Measurement and payment shall be at the contract Unit Price per Each completed and accepted abandonment.

This item is used whenever an existing manhole will be abandoned and not replaced at the same location.

ITEM 11543**ABANDON EXISTING INLET**

This item consists of abandoning approximately ___ Each Existing Inlet, backfilling the manhole with granular material at 95% standard proctor dry density, and removing and salvaging the frame and cover as per the applicable Standard Drawing.

This item to also include the cleaning, loading, hauling, and unloading the frame and cover at the Stores Division, Yard #2, 2901 Municipal Street. The Contractor will be charged new item replacement cost for any amount lost, stolen, or broken due to the Contractor's negligence prior to delivery into Water Utilities Department Salvage Yard. This item shall also include barricading.

Measurement and payment shall be at the contract Unit Price per Each completed and accepted abandonment.

This item is used whenever an existing manhole will be abandoned and not replaced at the same location.

ITEM 11545**ABANDON EXISTING PIPE**

This item consists of abandoning approximately ___ Each Pipe and shall include removing a portion of the existing pipe and capping the existing pipe and encasing it with Class "B" concrete.

Should any additional abandonments be found necessary, they shall be added to the contract at the same unit bid price. Likewise should any of the listed abandonments be found not necessary, they shall be deleted from the contract without having any effect on the unit bid price.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items (saw-cut, base, concrete, hot mix asphalt, sidewalk, driveways, curb and/or gutter), sod, backfill compaction, any costs for barricading, trench safety and support, and all other incidentals necessary to complete the work.

Measurement and payment will be per each complete in place.

ITEM 11547 ___ " DIAMETER STORM MANHOLE REHABILITATION

This item consists of rehabilitating approximately ___ Each ___" Diameter Storm Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Manhole Rehabilitation

AG = 60" Manhole Rehabilitation

AF = 54" Manhole Rehabilitation

AJ = 72" Manhole Rehabilitation

ITEM 11549 ___ " DIAMETER STORM MANHOLE REHABILITATION –
EXTRA DEPTH (+20')

This item consists of rehabilitating approximately ___ Each ___" Diameter Storm Manhole with Epoxy Lining or other approved method in accordance with these specifications and addenda thereto, the applicable Standard Drawings and the **DWU Standard Technical Specifications for Water & Wastewater Construction, Latest Edition**.

This item includes barricading, pavement removal, replacement, and all other work required to complete the rehabilitation.

Measurement and payment shall be at contract Unit Price for complete and accepted work.

This item requires a technical specification in the contract documents. Use the following for size indicators:

AE = 48" Manhole Rehabilitation

AG = 60" Manhole Rehabilitation

AF = 54" Manhole Rehabilitation

AJ = 72" Manhole Rehabilitation

11600 - 11699**EROSION CONTROL/GABION ITEMS****ITEM 11601_****GROUTED RIPRAP FOR STORMWATER PROJECT**

This item consists of furnishing ___ Square Yards of ___" Thick Grouted Riprap.

Riprap shall be used for slope, bank and ditch bottom protection, for erosion control at the ends of pipes and structures, and at other designated locations in accordance with **NCTCOG ITEM 803.3 Riprap, and Item 803.3.3.4. Grouted Riprap, Type A and Type B** of these specifications and addenda thereto, and the detail drawings shown on the plan sheets. The type of stone and the weight shall be as shown on the plans and adhere to **NCTCOG ITEM 803.3.2.2.1 Types** and **ITEM 803.3.2.2.3 Weight** for the type shown on the plans. The Concrete, Grout and Mortar shall adhere to **NCTCOG ITEM 803.3.2.3**.

This item will be measured and paid for by the **Square Yard** of specified minimum thickness, based on the dimensions shown on the plans. The contract unit price shall be the total compensation for preparing the subgrade, including excavation; for furnishing and placing all materials; for furnishing, placing, shaping and tamping backfill; for proper disposal of all surplus materials; and for all labor, tools, equipment, and incidentals necessary to complete the work, all in accordance with the plans and these specifications.

The dimensions must be shown on the plans for the limits, both horizontally and vertically. The minimum thickness is 12" or shown on the plans. The quantity is calculated by the SY area of that is detailed in the plan view. Whatever is shown on the plans will be calculated in SY and shown on the estimate.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

G= 5" Thick Riprap

C1 = 18" Thick Riprap with 12" Stone

C2 = 18" Thick Riprap with 18" Stone

C3 = 30" Thick Riprap with 24" TxDOT Gradation Stone

SP1 = Grouted Energy Dissipation Boulder (LS)

ITEM 11603**ROCK FOUNDATION**

This item consists of furnishing and placing approximately ___ Cubic Yards of Rock Foundation at locations approved by the Project Manager, in accordance with **NCTCOG ITEM 504.3.2: FOUNDATION AND ITEM 504.2.2.4. CRUSHED STONE FOR FOUNDATION**. Geotextile material will not be paid for, but it is considered subsidiary to this item.

This is a **Contingent Item** and payment will be made as directed by the Project Manager.

Measurement and payment will be in per cubic yard complete in accordance with **NCTCOG Item 504.3.2.1. Foundation Measurement and Item 504.3.2.2 Foundation Payment of these specifications.**

ITEM 11605**GABION STRUCTURES**

This item consists of furnishing and placing approximately ___ Cubic Yards of rectangular, compartmented wire baskets filled with stone used for slope or bank protection and erosion control on open channels. This item shall govern the materials, construction and assembly of gabion structures conforming to the lines, grades, locations and designs as indicated on the plans and specifications in accordance with **NCTCOG ITEM 803.2. Gabion Structures.**

This item will be measured for payment by the cubic yard of stone-filled gabions. The work performed, and materials furnished shall be in accordance with this **NCTCOG ITEM 803.2.2 Materials and ITEM 803.2.3 Gabion Construction.**

This item shall be paid for at the contract unit price per the **Cubic Yard**. The price bid is full compensation for wire baskets, stone fill, lacing and fasteners, crushed stone fill behind the gabion wall, filter fabric, filter material, excavation, grading and in-situ backfill, materials, tools, equipment, labor, and incidentals. Filter fabric and filter material, if used, will not be paid for directly but will be considered subsidiary to this item. **All associated sheeting, shoring, bracing, and pipe adjustment shall be considered as incidental or subsidiary to this bid item, unless otherwise specified.**

This bid item is very specific and must contain a detailed drawing of the type and placement of gabion to be used. The limits of the gabions are detailed on the plans.

Excavate the foundation to the extent shown on the plans or as directed per General Note. Remove all loose or otherwise unsuitable materials. Carefully backfill all depressions to grade with suitable materials from adjacent required excavation or another approved source, and compact the backfill to a density at least equal to the adjacent foundation. If selected backfill is required according to the contract document, it will be paid separately as Item 11115. Remove any buried debris protruding from the foundation that will impede the proper installation and final appearance of the gabion or gabion mattress, and carefully backfill and compact voids as specified above. Have the Engineer inspect the prepared foundation surface immediately before gabion placement.

ITEM 11607_ _" THICK GABION MATTRESSES

This item consists of furnishing and placing approximately ___ Square Yards of a wire fabric or mesh container filled with stone and with a height of 6, 9, or 12-inch used for slope or bank protection and erosion control on open channels. This item shall govern the materials, construction and assembly of gabion mattresses conforming to the lines, grades, locations and designs as indicated on the plans and specifications in accordance with **NCTCOG ITEM 803.2. Gabion Structures.**

The bid price is full compensation for wire baskets, stone fill, lacing and fasteners, filter fabric, filter material, excavation, grading and backfill, materials, tools, equipment, labor, and incidentals. Filter fabric and filter material, if used, will not be paid for directly but will be considered subsidiary to this item. This item will be measured for payment by the **Square Yard** of stone-filled gabion mattress. The work performed, and materials furnished shall be in accordance with **NCTCOG ITEM 803.2.2: Materials and ITEM 803.2: Gabion Construction.**

The above bid item description applies to the following bid items:

- *A = 6" GABION MATTRESSES*
- *B = 9" GABION MATTRESSES*
- *C = 12" GABION MATTRESSES*
- *D = 18" GABION MATTRESSES*

This bid item is very specific and must contain a detailed drawing of the type and placement of gabion to be used. The limits of the gabions are detailed on the plans.

ITEM 11609**TIE BACK FOR GABION STRUCTURES**

This item consists of the furnishing of ___ Linear Feet of Tie Back for Gabion Structures. This item consists all necessary design and construction requirements for of furnishing and installing Tie Back Anchors for retaining walls shown on the plans.

The tie back anchor design shall be in accordance with “2017” or the latest edition of the “Standard Specifications for Highway Bridges” adopted by the American Association of State Highway and Transportation Officials and the post Tensioning Recommendations for Prestressed Rock and soil Anchors”.

The design shall consider the internal and global stability of the wall system. The tie back anchors shall be designed to safety support the service loads provided in the plans and construction loads. Design drawings shall be prepared showing the proposed method for tie back retaining wall work, including plan, elevation and sections of the wall, the relationship of the tie back to the right-of-way and easement lines, existing buildings, other structures, utilities, street sand other construction shall be clearly identified.

A description of the tieback installation including drilling procedures, grout mix design and placement method and stressing information shall also be required. The unbound tendon length shall extend beyond the critical failure surface.

This item will be measured and paid by the **Linear Foot** of acceptable tie back anchor in place. The tie back anchor length measured is the length of the drilled and grouted hole as specified on the plans or modified by the Engineer. Tie back anchor tests, both verification tests and proof tests, are subsidiary to this Item. This price is full compensation for materials, equipment, labor, tools, and incidentals.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

ITEM 11609A GROUND ANCHOR FOR MATTRESS, GRIPPLE GROUND ANCHOR, 5' DEPTH (EA)

ITEM 11609B 4' GALVANIZED HELICAL EARTH SCREW, 16' MAX. @ 10 FT O.C (EA)

ITEM 11611 SOIL NAIL ANCHORS

This item consists of furnishing and installing approximately ___ Linear Feet Soil Nail Anchors shown on the plans and in conformance with **TxDOT Item 410**.

Measurement and payment shall be in **Linear Foot** of completed and accepted work.. The soil nail anchor length measured is the length of the drilled and grouted hole as specified on the plans or modified by the Engineer. Soil nail anchor tests, both verification tests and proof tests, are subsidiary to this Item. This price is full compensation for materials, equipment, labor, tools, and incidentals.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

11611SP1: soil nail shall be #6 solid rod with high tensile steel 75ksi continuous coil thread bar.

ITEM 11611SP2 GROUND ANCHOR FOR MATTRESS

This item consists of furnishing and installing approximately **XXX** Each Gripple TL100-TLA3-6FT-3MM-Z Ground Anchors or Approved Equal, 6' depth as shown on the plans. Ground Anchors top bearing plate, anchor head, cable tendon, and top termination shall be corrosion resistant.

Measurement and payment shall be in **Each** of completed and accepted work. The anchor length measured is the length of the drilled hole as specified on the plans or modified by the Engineer. Anchor tests, both verification tests and proof tests, are subsidiary to this Item. This price is full compensation for materials, equipment, labor, installation, tools, and incidentals.

ITEM 11611SP3 4" DIAMETER HELICAL EARTH SCREW, 16' MAX. @ 10 FT O.C (EA)

This item consists of furnishing and installing approximately **XXX** Each Helical Earth Screw Anchors shown on the plans. Each pier shall resist the minimum specified vertical load (30 kip) as shown in plans. Design shall be in conformance with a method approved by the helical pier vendor, according to the manufacturer's recommendations, and the adopted code requirements of the civil authority having jurisdiction over the project. Engineer shall consider all available geotechnical data in the design of the helical piers. Helical pier fabrication and installation drawings shall be provided for owner review. Drawings shall be accompanied by sealed structural calculations.

Provide helical piers with an expected service life of 50 years, minimum. Fabricated helical anchor assemblies which are galvanized to achieve service life shall be coated according to ASTM A153, "Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware". Fabricated helical anchor assemblies which are epoxy-coated to achieve service life shall be coated and protected during cure and transport in strict conformance with the coating material manufacturer's recommendations. Uncoated helical anchor assemblies shall provide for a minimum 1/8" corrosion loss all around on all shafts, or expected loss required to achieve service life based on soil type, whichever is greater.

Helical pier shaft and flight material properties shall conform to the applicable standards which follow, based on type and grade of material being considered for the helical pier design: ASTM A29, "Standard Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought". ASTM A36, "Standard Specification for Carbon Structural Steel". ASTM A53, Grade B, "Standard Specification for Pipe, Steel, Black and Hot-

Dipped, Zinc-Coated, Welded and Seamless". ASTM A572, "Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel". ASTM A1018, "Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Carbon, Commercial, Drawing, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength". ASTM A656, "Standard Specification for Hot-Rolled Structural Steel, High-Strength Low-Alloy Plate with Improved Formability"

Measurement and payment shall be in **Each** of completed and accepted work. The anchor length measured is the length of the drilled hole as specified on the plans or modified by the Engineer. Anchor tests, both verification tests and proof tests, are subsidiary to this Item. This price is full compensation for materials, equipment, labor, installation, tools, and incidentals.

ITEM 11613**ROCK NAIL ANCHORS**

This item consists of furnishing and installing approximately ___ Linear Foot Rock Nail Anchors shown on the plans and in conformance with **TxDOT Item 411**.

This item will be measured and paid by the foot of acceptable rock nail anchors in place. The rock nail anchor length measured is the length of the drilled and grouted hole as specified on the plans or modified by the Engineer. Rock nail anchor tests, both verification tests and proof tests, are subsidiary to this Item. This price is full compensation for materials, equipment, labor, tools, and incidentals.

ITEM 11615**REINFORCED CONCRETE RETAINING WALL**

This item consists of furnishing and placing ___ Cubic Yards of minimum 3600 psi reinforced concrete retaining wall as per **TxDOT ITEM 423 Retaining Walls**. This item includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, excavation, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item. This item shall comply to **ITEM 702.COD: Concrete Structures, ITEM 303.COD: Portland Cement Concrete Pavement and ITEM 802.COD: Steps and Retaining Walls**.

Measurement and payment will be per **Cubic Yard** work, complete in place.

The measurement and payment above apply to the following bid items:

- **STANDARD RETAINING WALL (DESIGNS A-K)**
- **A - CONCRETE TYPE 6 RETAINING WALL**
- **B - CONCRETE TYPE 7 RETAINING WALL**
- **C - CONCRETE TYPE 8 RETAINING WALL**

ITEM 11617**CONCRETE CURB WALL**

This item consists of furnishing and placing approximately ___ Linear Foot of Concrete Curb Wall as shown on the design plans. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item. The construction of this item shall be in accordance with 251D-1, Page 1006

Measurement and payment shall be in **Linear Foot** of completed and accepted work. Payment shall be limited to the length show on the construction plans or approved by the Owner prior to the construction of this item.

ITEM 11619**SEGMENTED RETAINING WALL**

This item consists of furnishing and placing approximately ___ **Square Yard** of Segmented Retaining Wall as shown on the design plans. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item.

This item is measured per **Square-Yard**, complete in place.

ITEM 11621

CONCRETE BAG RETAINING WALL

This item consists of furnishing and placing Quickcrete® Riprap Sacks. The size shall be 80 lbs. (36.3 kg) Paper bags (#1129-80 per manufacturer).

Measurement and payment will be per EA per plans. This price is full compensation for materials (rebar, staple, concrete footing, subgrade preparation), shipping, labor, tools, and incidentals. Payment shall not be made until the shipping invoices indicating the total sacks of material used have been received and checked by the owner.

ITEM 11623

SANDBAG FOR EROSION CONTROL

TBD

ITEM 11625**12" THICK CLAY CAP**

This item consists of furnishing and placing approximately ___ Cubic Yards of 12" thick clay cap as shown on the design plans.

The clay cap above the crushed stone filter and compacted clay fill shall be 1'-0" thick and consist of clay or silty clay with a minimum of 70% passing the number 200 sieve, shall have a minimum of plasticity index of 25, and shall be compacted between a minimum of 92% and a maximum of 98% of standard proctor density with a moisture content between optimum and +4 percent points above the optimum.

Measurement and payment will be per **Cubic Yard** per plans.. This item includes all equipment, materials and labor, backfill and compaction, and all other work associated with this item.

ITEM 11625V 24" THICK CLAY CAP

ITEM 11627**FLEXMAT**

This item consists of furnishing and placing approximately ___ Square Yards of Flexmat as shown on the design plans. This item is complete and includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item.

Flexamat shall consist of pyramidal concrete blocks that are interconnected utilizing a rough surface polyester geogrid. The completed mat yields a high strength, ultra-flexible hard armor systems of Erosion Control.

ITEM 11628**TURFSTONE**

This item consists of furnishing and placing approximately ___ Square Yards of Turfstone as shown on the design plans. This item includes all equipment, materials and labor, formwork, saw-cut, pavement, sealing joints, backfill and compaction, providing chamfered edges, geotextile, granular material, pipe underdrains, finishing surfaces and all other work associated with this item.

Measurement and payment will be per **Square Yard** per plans.

ITEM 11629

PNEUMATICALLY PLACED CONCRETE

This item consists of furnishing and placing ___ Square Feet pneumatically applied concrete for the construction of portions of structures, repairing concrete structures, encasement of structural steel members, lining ditches and tunnels, soil-nail walls, retaining walls, and other work as shown on the plans or as directed and as per **NCTCOG ITEM 702.7 PNEUMATICALLY PLACED CONCRETE (GUNITE)**.

This item is measured by the **Square Foot**, complete in place.

ITEM 11631

REMOVE BOULDER

This item consists of removing approximately ___ Each Boulder for the construction.

This item is a contingent item and payment will be made at the direction of the Project Manager.

This item will be measured for payment per **Each**.

This item only applies to special project and the information is provided by the consultant on specified plan.

ITEM 11633**GEOTEXTILE FABRIC**

This item consists of furnishing and placing approximately ___ Square Yards of Geotextile Fabric for Erosion Control in accordance with **NCTCOG Item 803.4. Geotextiles Used in Drainage and Stabilization Applications** of these specifications and addenda thereto.

Measurement and payment will be per **Square Yard** of Geotextile Fabric in place as approved by the Project Manager.

This item is used to help prevent erosion after placement of a storm drain and permanent slope stabilization. The fabric to be used must be specified in a special provision or detail drawn on the plans. The dimensions must be shown on the detail.

ITEM 11635**CONCRETE STRUCTURE**

This item consists of furnishing and placing approximately ___ Cubic Yards of concrete structure. This item shall govern the materials and construction as indicated on the plans and specifications in accordance with **NCTCOG ITEM 702.4 CONSTRUCTING CONCRETE STRUCTURES.**

Measurement and payment will be in **Cubic Yard** of completed and accepted work. This price is full compensation for furnishing, hauling, and mixing concrete materials; furnishing, bending, fabricating, splicing, welding and placing the required reinforcement; clips, blocks, metal spacers, ties, wire, or other materials used for fastening reinforcement in place; furnishing, placing, and stressing post-tensioning system; placing, finishing, and curing concrete; mass placement controls; applying ordinary surface finish; furnishing and placing drains, metal flashing strips, and expansion-joint material; excavation, subgrade preparation; and forms and falsework, equipment, labor, tools, and incidentals.

ITEM 11636**STEEL STRUCTURE**

This item consists of fabrication and erection of structural steel and other metals (except reinforcing steel), which are used for steel structures or steel portions of structures. This item shall govern the materials and construction as indicated on the plans and specifications in accordance with **NCTCOG ITEM 703.2 MATERIALS FOR STEEL STRUCTURES and 703.3 STEEL STRUCTURE CONSTRUCTION.**

Measurement and payment will be in **Lump Sum** of completed and accepted work, which includes structural metal, concrete, reinforcement, railing and other proposal items which constitute the completed and accepted structures shall be made in accordance with the provisions of pertinent specifications. Payment for structural steel shall not be made until shipping invoices indicating total weight of material used have been received and checked by the OWNER.

ITEM 11637_ DRILLED SHAFT FOUNDATIONS

This item consists of furnishing and placing approximately ___ Linear Feet of reinforced concrete shafts. This item shall govern the materials and construction as indicated on the plans and specifications in accordance with **NCTCOG ITEM 702.8 DRILLED SHAFT FOUNDATIONS**.

Payment will be **Linear Foot** at contract bid price. The unit prices bid for the various classifications of drilled shafts will be full compensation for excavation; furnishing, placing, and removing casing; furnishing, processing, and recovering slurry; furnishing, and placing reinforcing steel; pumping; furnishing and placing concrete, including additional concrete required to fill an oversize casing or oversize excavation; conducting slump loss tests; backfilling; disposing of cuttings and slurry; and materials, tools, equipment, labor, and incidentals.

This item is used for DWU contracts. The Unit Price for this item includes most items except trench safety. Use the following for size indicators:

L = 12" Drilled Shaft Foundations

N= 15" Drilled Shaft Foundations

R = 18" Drilled Shaft Foundations

V =24" Drilled Shaft Foundations

Y = 30" Drilled Shaft Foundations

AA = 36" Drilled Shaft Foundations

AE= 48" Drilled Shaft Foundations

ITEM 11639**REMOVING STRUCTURE**

This item includes the removal of portions of structures that will not interfere with the proposed construction may remain in place 2 ft. or more below the permanent ground line. Square off remaining structures and cut reinforcement flush with the surface of the concrete.

This item shall be measured as a **Lump Sum**. This price is full compensation for demolition plan preparation, loading, hauling, disposal, stockpiling, removal of appurtenances, excavation and backfill, equipment, labor, tools, and incidentals.

ITEM 11640: REMOVE AND DISPOSE STRUCTURE

This item consists of removing Existing Structures. This item covers all labor, equipment and material required to remove and dispose of existing structures such as but not limited to concrete debris, gabions, mattresses, concrete flumes, concrete cylinder walls, concrete bag walls, reinforced concrete walls, including hauling away of any surplus material and all other items or work to the satisfaction of the Owner. Avoid damaging appurtenances, nearby structures, and materials determined by the owner to be salvageable. Deliver materials to be retained by the City to the location shown on the plans. Block up salvaged steel materials off the ground. Material removed that is not deemed to be salvageable is the property of the Contractor. Dispose of removed material off the site in accordance with federal, state, and local regulations.

Payment will be **Lump Sum** for complete, in place, maintained, removed, and accepted work.

ITEM 11641**CONCRETE STRUCTURE REPAIR**

This item consists of furnishing and installing approximately ___ Square Foot Concrete Structure Repair shown on the plans and in conformance with **TxDOT Item 429 Concrete Structure Repair**.

This price is full compensation for furnishing, placing, and curing all repair materials; removing concrete; saw-cutting; cleaning reinforcing steel; supplying and installing replacement or supplemental reinforcing steel, drive pins, studs, or expansion bolts; and equipment, labor, and incidentals.

ITEM 11643

CONCRETE CRACK REPAIR

This item consists of furnishing and providing ___ Each Concrete Crack Repair shown on the plans and in conformance with **TxDOT Item 780 Concrete Crack Repair**.

Measurement and payment shall be per **Each**. This price is full compensation for furnishing and installing all repair materials, equipment, labor, and incidentals.

ITEM 11645**SURFACE FINISHES FOR CONCRETE**

This item consists of furnishing and installing approximately ___ Square Yards concrete stamping and coloring shown on the plans and in conformance with **TxDOT Item 427**.

This is a **contingency** item. The color and pattern of the surface finishes for the concrete will directed by the PM during the construction.

This item will be measured and paid by the **Square Yard** of surface finishes for concrete in place. This price is full compensation for materials, equipment, labor, tools, and incidentals.

11700 - 11799**FLOOD CONTROL AND DREDGING ITEMS****ITEM 11701****DITCH CLEANING (DREDGING)/RESHAPING**

This item consists of furnishing approximately ___ Feet ditch cleaning (dredging)/reshaping shown on the plans and in conformance with **TxDOT Item 760**.

This item will be measured and paid by the **Foot** of ditch, measured along the centerline of the ditch. This price is full compensation for materials, reshaping, equipment, labor, tools, and incidentals.

11800 - 11899**STORMWATER FACILITIES AND RELATED ITEMS****ITEM 11801****PUMP STATION WELL CLEANING**

TBD

ITEM 11803**PLUG AND ABANDON WELL**

This item consists of plugging and abandoning the existing “~~XXX’ Dia. Brick Well~~” shown on 425D-~~XXX~~, Sheet ~~XXX~~ at approximately ~~STA: 2+13, 4’ RT.~~, if it is determined in the field by the Contractor that the well has not been previously properly plugged.

The Contractor shall plug the well in accordance with 16 TAC Rule 76.104. The well shall be plugged by a TDLR-licensed Driller or Pump Installer. A State of Texas Plugging Report shall be submitted to the TDLR Water Well Driller Program within 30 days of the well being plugged.

The well may be removed as necessary for construction of the proposed gabion wall. Any portion of the remaining well shall be properly plugged and abandoned, if necessary.

Measurement and payment will be on a Lump Sum basis. This item includes all equipment, materials and labor, reporting as required by TDLR requirements, and all other work associated with this item.

ITEM NO. 20300 ADJUSTMENT AND/OR RELOCATION OF WATER METER BOX

This item consists of Adjusting and/or Relocating ___ Each Water Meter Box and Meter in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING** or **Item 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3 Final Backfill** of these specifications and addenda thereto, and the applicable Drawings and Standard Drawings.

This item includes all sizes of water services, 3/4" through 2", water meter boxes and meters 5/8" through 2". This item does not include Commercial Water Meter Vaults. The meter box and meter shall be placed to the finished grade and correct location on a sand cushion. Any extension, alterations, or relocations to the service required to adjust the meter box and meter will be included in this item. The Contractor shall furnish a new meter box that is the correct size and type (i.e. a roadway box and cover is required for meters that are placed in driveways or areas subjected to vehicular traffic). If the meter is determined to be defective by the Engineer, it will be replaced with a new meter furnished by the City. Should any additional services be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed services not be necessary, they will be removed from the contract without having any effect on the Unit Price. The provisions of **Item 104.2.1. Increased or Decreased Quantities of Work** of the specifications regarding negotiating for revised consideration for over/underruns **do not** apply to this item.

This item is complete and includes any costs for pipe, copper, equipment, materials and labor, all boring, tapping, crossing diagonal utilities, costs for barricading, trench safety and support for these services, encasement, embedment, and all temporary and permanent paving related items (saw-cut, base, asphalt, concrete, sidewalk, driveways, curb and/or gutter, sod), and all other work associated with this item.

Measurement and payment will be per each complete in place.

Include this item with all JOINT contracts in conjunction with Item No. 5050 Water Service. Always include a minimum of one these items under the General items' category per contract even if none are indicated on the plans.

ITEM NO. 20330 ADJUSTMENT OF WATER VALVE COVERS AND VALVE STACKS

This item consists of adjusting ___ Each Water Valve Cover and Valve Stack in accordance with **Item 502.6.6.COD: Line Valve Installation** of these specifications and addenda thereto, and the applicable Drawings and Standard Drawings.

The adjustment shall include removal and replacement of the valve cover, adjusting the valve stack, and resetting the valve cover and lid to the proper grade. The Contractor shall furnish a valve cover and lid, if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

Always include a minimum of one these items per contract under the General items category even if none are indicated on the plans. Also, be sure to include the by-pass valve on large diameter horizontal gate valves as an adjustment.

ITEM NO. 20331 INSTALL AND ADJUST WATER VALVE STACK BOX RISER AND LID IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ Each Anchor Type Water Valve Stack Box Riser and Lid in accordance with **Item 502.6.6.COD: Line Valve Installation** of these specifications and addenda thereto, and the applicable Drawings.

The adjustment shall include removal of the existing water valve stack box riser and lid and installing a new anchor type water valve stack box riser and lid to the proper grade.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20332 ADJUSTMENT OF WATER VALVE STACK BOX RISER AND LIDS IN ADVANCE OF RESURFACING

This item consists of adjusting ___ Each Water Valve Stack Box Riser and Lid in accordance with **Item 502.6.6.COD: Line Valve Installation** of these specifications and addenda thereto, and the applicable Drawings.

If the existing water valve stack box riser and lid has existing damage or is damaged due to Contractor's negligence and cannot be used with the anchor type water valve stack box riser, the Contractor shall furnish a new standard water valve stack box riser and lid. The existing water valve stack box riser and lid shall be removed, and the new water valve stack box riser and lid installed and adjusted to the proper grade.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20340 ADJUSTMENT OF WASTEWATER LATERAL CLEANOUT

This item consists of adjusting ___ Each Wastewater Lateral Cleanout in accordance with **Item 502.12. Structures and Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Drawings and Standard Drawings.

The adjustment shall include removal of the cleanout casting extending or lowering the cleanout pipe and replacing the cleanout casting to the proper grade. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place and in accordance with **Item 502.2.3. Measurement and Payment of Cleanouts** of these specifications.

Include this item with all JOINT Contracts. Always indicate one as a contingency item, even if none are shown on the plans.

ITEM NO. 20350 ADJUSTMENT OF WASTEWATER MAINLINE CLEANOUT

This item consists of adjusting ___ Each Wastewater Mainline Cleanout in accordance with **Item 502.12. Structures and Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the cleanout stopper, extending or lowering the cleanout pipe and replacing the cleanout casting to the proper grade. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place and in accordance with **Item 502.2.3. Measurement and Payment of Cleanouts** of these specifications.

ITEM NO. 20351 ADJUSTMENT OF WASTEWATER ACCESS DEVICE

This item shall consist of adjusting ___ Each Wastewater Mainline Access Device in accordance with the specifications and applicable drawings.

The adjustment shall include extending or lowering of the 15" riser pipe and resetting the frame, plug, and cover to the proper grade. The Contractor shall furnish a frame, plug and cover if lost, stolen, or damaged due to Contractors negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, side walk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20352 INSTALL AND ADJUST WASTEWATER MAINLINE CLEANOUT IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ Each Anchor Type Cleanout Boot Riser for Wastewater Mainline Cleanout in accordance with **Item 502.12. Structures and Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Drawings.

The adjustment shall include removal of the existing cleanout lid and installing a new anchor type cleanout boot riser and replacing the existing lid to the proper grade and forming an invert to allow access to the cleanout stack.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20353 ADJUSTMENT OF WASTEWATER MAINLINE CLEANOUT IN ADVANCE OF RESURFACING

This item consists of adjusting ___ Each Wastewater Mainline Cleanout in accordance with **Item 502.12. Structures and Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Drawings.

If the existing cleanout casting has existing damage or is damaged due to Contractor's negligence and cannot be used with the anchor type cleanout boot riser, the Contractor shall furnish a new standard mainline cleanout casting and lid. The adjustment shall include removal of the cleanout concrete base, cleanout casting and lid, and replacing the cleanout casting and lid to the proper grade and forming an invert to allow access to the cleanout stack. If the cleanout stack is damaged during breakout, the Contractor shall replace it with like material and jointed to existing undamaged pipe using a rubber coupling with stainless steel bands.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20360 ADJUSTMENT OF WASTEWATER MANHOLES

This item consists of adjusting ___ Each Wastewater Manholes in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the manhole ring and cover, constructing a manhole neck of new manhole rings and nonshrink grout, replacing the manhole ring and cover to the proper grade, and coating the outside of the manhole neck with a waterproof bituminous coating. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to Contractor's negligence. This item also includes removal of the false bottom during final inspection.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20361 ADJUSTMENT OF WASTEWATER MANHOLES IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ Each Anchor Type Grade Adjusting Ring for Wastewater Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the existing manhole cover, installing the anchor type grade-adjusting ring and seal and replacing the existing manhole cover to the proper grade. The Contractor shall furnish a manhole cover if lost, stolen, or damage due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the Specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20362 ADJUSTMENT OF PRESSURE TYPE WASTEWATER MANHOLE

This item consists of adjusting ___ Each Pressure Type Wastewater Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the manhole ring, cover and concrete cone, constructing a cast-in-place manhole extension, replacing the manhole ring and cover to the proper grade, and coating the new concrete with a waterproof bituminous coating. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20363 ADJUSTMENT OF WASTEWATER MANHOLE IN ADVANCE OF RESURFACING

This item consists of adjusting ___ each Wastewater Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Drawings.

If the existing manhole frame has existing damage or is damaged due to Contractor's negligence and cannot be used with the anchor type grade-adjusting ring, the Contractor shall furnish a new standard manhole frame. The adjustment shall include removal of the manhole frame and cover, adding concrete grade ring(s) and nonshrink grout, installing a new manhole frame and replacing the existing manhole cover to the proper grade. The Contractor shall furnish a manhole cover if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20380 ADJUSTMENT OF WATER MANHOLE

This item consists of adjusting ___ Each Water Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings

The adjustment shall include removal of the manhole ring and cover, constructing a manhole neck of new manhole rings and nonshrink grout, replacing the manhole ring and cover to the proper grade. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20381 ADJUSTMENT OF WATER MANHOLE IN ADVANCE OF RESURFACING

This item consists of installing and adjusting ___ Each Anchor Type Grade Adjusting Ring for Water Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Drawings.

The adjustment shall include removal of the existing manhole cover, installing the anchor type grade-adjusting ring and seal and replacing the existing manhole cover to the proper grade. The Contractor shall furnish a manhole cover if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

This bid item is used for all JOINT Contracts in conjunction with Public Works Rehabilitation and Restoration projects. Always include a minimum of one these items under the General items' category per contract even if none are present in the area indicated by Public Works.

ITEM NO. 20400 ADJUSTMENT OF FLUSH POINT

This item consists of adjusting ___ Each Flush Point in accordance with **Item 506.7.3.2. Flushing Method** of these specifications and addenda thereto, and the applicable Standard Drawings.

The meter box and lid shall be placed to the proper grade on sand cushion. Any extensions or alterations to the service pipe required and adjustments to the meter box and lid will be included in this item. The Contractor shall furnish a new meter box if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20410 ADJUSTMENT OF TYPE 1 AIR VALVE

This item consists of adjusting ___ Each Type 1 Air Valve in accordance with **Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the manhole ring and cover, constructing a manhole neck of new brick or new manhole rings and nonshrink grout, replacing the manhole ring and cover to the proper grade. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20420 ADJUSTMENT OF TYPE 2 AIR VALVE

This item consists of adjusting ___ Each Type 2 Air Valve in accordance with **Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal of the manhole ring and cover, constructing a manhole neck or new brick or new manhole rings and nonshrink grout, and replacing the manhole ring and cover to the proper grade. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to Contractor's negligence. This item also covers any adjustment for the riser pipe if required.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20430 INSTALL FIRE HYDRANT EXTENSION

This item consists of installing ___ Each Fire Hydrant Extension in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item shall include removal of the existing fire hydrant, installation of the extension, and reconnection of the existing fire hydrant. The Contractor shall furnish a new fire hydrant if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, excavation, backfill, compaction, disposal of excess material, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Sufficient extensions must be established in the contract to allow the fire hydrant to be able to function until the final grading is completed. Always establish Item No. 20440 along with Item No. 20430.

ITEM NO. 20440 REMOVE FIRE HYDRANT EXTENSION

This item consists of removing ___ Each Fire Hydrant Extension in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Standard Drawings.

This item shall include removal of the existing fire hydrant, removal of the existing extension, and reconnection of the existing fire hydrant. The Contractor shall furnish a new fire hydrant if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, excavation, backfill, compaction, disposal of excess material, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

The fire hydrant extensions, when removed during final grading adjustments, should adjust the fire hydrant sufficiently to the finished grade with no adjustment to the fire hydrant lead. Always establish Item No. 20440 along with Item No. 20430.

ITEM NO. 20450 ADJUSTMENT OF LARGE WATER SERVICE HATCH COVERS AND FRAME

This item consists of adjusting ___ each 3'x4' Aluminum Access Hatch Cover in accordance with **Item 502.10.3.2.COD: Services and Bullheads, Item 502.10.3.2.1.COD: Procedures for Transferring Service, Item 502.10.3.2.1.1.COD: IN ADVANCE OF PAVING and 502.10.3.2.1.2.COD: After Paving, Item 502.10.3.3. COD: NSF 61 Compliance and Item 504.2.3 Final Backfill** of these specifications and addenda thereto, and the applicable Standard Drawings.

The adjustment shall include removal and replacement of the existing cover and frame, replacement with a new aluminum hatch cover to final grade using brick risers and non-shrink grout. The old frame and cover shall become the property of the Contractor. If the meter is determined to be defective by the Project Manager, it shall be replaced with a new meter furnished by the City. The old meter shall be salvaged and delivered to the large meter repair shop at 2821 Municipal Street, Dallas, Texas. If the existing meter is lost, stolen, or damaged due to Contractor's negligence the Contractor will become responsible for the replacement cost. The replacement meter, access hatch covers, and frame will be furnished by the City and picked up and transported to the site by the Contractor. The new meters and access hatch cover and frame will be made available at 2900 Municipal Street.

This item is a contingent item and shall be installed only if directed by the Project Manager. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each and will include all materials and labor, disposal of excess material, pickup and delivery of the salvaged meter, costs for barricading, trench safety and support, and all other work associated with this item.

Always include a minimum of one these items per contract even if none are indicated on the plans under the General items' category.

ITEM NO. 20500 INVESTIGATION

This item consists of excavating at approximately ___ each location to a specific infrastructure(s) to determine type, size, location, elevation, and/or condition as determined by the Engineer. The disturbed area will be replaced with compacted backfill in accordance with **Item 504. Open Cut – Backfill** and **Item 504.6.1. Excavated Material** of these specifications and addenda thereto.

In paved areas, the pavement will be replaced with a compacted 8" thick base of Crushed Rock in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 301.5.COD: FLEXIBLE SUBBASE OR BASE (CRUSHED STONE/CONCRETE)**, and a compacted 2" thick surface of Hot or Cold Mix asphalt pavement for temporary paving in accordance with **Item 402.4. Replacing Paved Surfaces, and Item 302.9. Hot-Mix Asphalt Pavement**.

This item is complete and includes all equipment, materials and labor, saw-cut, pavement, base, and sub-base removal, excavation, backfill, compaction, disposal of excess materials, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, support for existing utilities, and all other work associated with this item.

Payment will not be made under this item if the infrastructure is to be adjusted, abandoned, or replaced prior to the placement of backfill. If the investigation is for more than one infrastructure in the same excavation, payment shall be made for only one investigation.

Measurement and payment will be per each complete in place.

Establish a minimum of one investigation each for water and one for wastewater per Each City block of work done on the project. This item should be included on all Advance of Paving projects whether in JOINT contract with Public Works or a separate CITY contract.

ITEM NO. 20540 ALTER WATER VALVE COVERS AND VALVE STACKS

This item consists of altering ___ Each Water Valve Covers and Valve Stacks in accordance with **Item 502.6.6.COD: Line Valve Installation** of these specifications and addenda thereto, and the applicable Standard Drawings.

The alteration shall include removal and replacement of the valve cover, extending or removing a portion of the existing valve stack, and resetting the valve cover to a point 2' to 4' above the proposed paving grade. Final adjustment to the paving grade will be paid under another bid item. The Contractor shall furnish a new valve cover and lid if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Always include one per contract as a minimum for a contingency.

ITEM NO. 20550 ALTER WASTEWATER MAINLINE CLEANOUT

This item consists of altering ___ Each Wastewater Mainline Cleanout in accordance with **Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings.

The alterations shall include removal and storage of the cleanout casting, removal or extending a portion of the existing cleanout pipe, if required, and installing a stopper in the end of the cleanout pipe. Extension of the cleanout pipe and setting the cleanout casting to final grade will be paid under another bid item. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20560 ALTER WASTEWATER MANHOLE

This item consists of altering ___ Each Wastewater Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

The alteration shall include installing a false bottom, removal of the manhole ring and cover, removing the existing grade rings or brick neck, if required, removing a portion of the manhole and rebuilding the manhole to the proper grade, and setting the salvaged manhole ring and cover on the top of the cone section with mortar. Final adjustment of the manhole ring and cover to the paving grade will be paid under another bid item. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to the Contractor's negligence. This item also includes removal of the false bottom during the final inspection.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20580 ALTER WATER MANHOLE

This item consists of altering ___ Each Water Manhole in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings For Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings.

The alteration shall include removal of the manhole ring and cover, removing the existing grade rings or brick neck, if required, removing a portion of the manhole and rebuilding the manhole to the proper grade, and setting the salvaged manhole ring and cover on the top of the reset cone section with mortar. Final adjustment of the manhole ring and cover to the paving grade will be paid under another bid item. The Contractor shall furnish a manhole ring or manhole cover if lost, stolen, or damaged due to the Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20600 INSTALL CLEANOUT ON AN EXISTING WASTEWATER LATERAL

This item consists of installing ___ Each Wastewater Lateral Cleanout on an existing wastewater lateral in accordance with **Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings.

The installation shall include removal of the existing lateral, installing additional piping, tee, cleanout stack, adapters, embedment, compacted backfill material, cleanout casting, concrete and connection to the existing lateral to the cleanout and the existing house line. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Any existing lateral that does not contain a cleanout is to have one installed under this bid item.

ITEM NO. 20620 REPLACE EXISTING WASTEWATER LATERAL CLEANOUT

This item consists of replacing ___ Each Wastewater Lateral Cleanout in accordance with **Item 502.2.COD: Wastewater Main Cleanouts, Access Chambers, and Wastewater Access Devices** of these specifications and addenda thereto, and the applicable Standard Drawings

The replacement shall include removal of the existing cleanout, installing a new lateral piping with a new cleanout and connection to the existing house lateral. The Contractor shall furnish a cleanout casting if lost, stolen, or damaged due to Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item will not be subject to renegotiation due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20630 RELOCATION OF TYPE 1 AIR VALVE

This item consists of relocating ___ Each Type 1 Air Valve in accordance with **Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

The relocation shall include the removal of the existing manhole ring and cover, manhole neck, manhole, combination air valve, piping, riser and riser support and installing a new combination air valve and riser with support at a new location to the proper grade and reinstalling the salvaged manhole, manhole ring and cover. If the existing air valve is located in a meter box rather than a manhole the Contractor will furnish a new manhole, manhole ring and cover at no additional pay.

Final adjustment of the manhole ring and cover and construction of the manhole neck wall be paid under a separate item. Contractor shall furnish a new cone section and/or manhole ring and/or cover if lost, stolen, or damaged due to the Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20640 RELOCATION OF TYPE 2 AIR VALVE

This item consists of relocating ___ Each Type 2 Air Valve in accordance with **Item 502.6.6.2.COD: Air Release Valves** of these specifications and addenda thereto, and the applicable Standard Drawings.

The relocation shall include the removal of the existing manhole ring and cover, manhole neck, a portion of the manhole, combination air valve, piping, riser and riser support and installing new piping, a new combination air valve and riser with support at a new location to the proper grade with a new manhole, manhole ring and cover, rebuilding the upper portion of the existing manhole and cover, and resetting the salvaged manhole ring and cover.

Final adjustment of the manhole ring and cover and construction of the manhole neck wall be paid under a separate item. Contractor shall furnish a new cone section and/or manhole ring and/or cover if lost, stolen, or damaged due to the Contractor's negligence.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

ITEM NO. 20650 REPLACE EXISTING FIRE HYDRANT

This item consists of replacing ___ Each Existing Fire Hydrant in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Standard Drawings.

The replacement shall include removal and salvage of the existing fire hydrant, removal of a portion of the fire hydrant lead or extending the fire hydrant lead, if required, installing fittings, if required, and setting a new fire hydrant. The Contractor shall furnish a new valve at no cost to the City if the existing valve is damaged due to the Contractor's negligence.

This item is complete and includes all equipment, materials and labor, fittings, fire hydrant, concrete, embedment, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, delivery of the removed fire hydrant to the DWU Stores' yard at 2901 Municipal Street (call 214-670-8035 or 214-670-8970, 24 hours in advance), and all other work associated with this item.

Readjustment of fire hydrant to accommodate a slip-form-paving machine will not be eligible for reimbursement. If a fire hydrant valve is required, it shall be paid under another item to the contract. Adjustment of the existing fire hydrant barrel to the final elevation will be paid under another item to the contract. The new fire hydrant lead will be paid under another item to the contract. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Always establish additional 6" valves for the leads in the event some of the existing leads do not have valves. The new fire hydrant lead will be paid as a separate bid item (1500H or 1800H).

ITEM NO. 20651 REPLACE EXISTING FIRE HYDRANT TO FINAL GRADE

This item consists of replacing ___ Each Existing Fire Hydrant in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Drawings and the Standard Drawings.

The replacement shall include removal and salvage of the existing fire hydrant, removal of a portion of the fire hydrant lead or extending the fire hydrant lead or new fire hydrant lead, if required, installing fittings, if required, and setting a new fire hydrant. The Contractor shall furnish a new valve at no cost to the City if the existing valve is damaged due to the Contractor's negligence.

This item is complete and includes all equipment, fire hydrant lead, materials and labor, fittings, the replacement of the fire hydrant tee, tapping, including plugging the existing tee, boring, crossing diagonal utilities, fire hydrant, concrete, embedment, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, erosion control devices, such as silt fences and hay bales, delivery of the removed fire hydrant to the DWU Stores' yard at 2901 Municipal Street (call 214-670-8035 or 214-670-8970, 24 hours in advance), and all other work associated with this item.

Readjustment of fire hydrant to accommodate a slip-form paving machine will not be eligible for reimbursement. If a fire hydrant valve is required, it shall be paid under another item to the contract. Adjustment of the existing fire hydrant barrel to the final elevation is included in this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

This bid item should be used on Public Works projects where only a sidewalk is being constructed. Always establish additional 6" valves for the leads in the event some of the existing leads do not have valves.

ITEM NO. 20652 ADJUST / RELOCATE NEW FIRE HYDRANT

This item consists of relocating ___ Each Existing Fire Hydrant in accordance with **Item 502.3.COD: Fire Hydrants, Item 502.3.1.COD: Materials, Item 502.3.1.1.COD: Supplementary Details Specified Item 502.3.1.2. Breakable Type Hydrants, Item 502.3.1.3.COD: Main Valve Seats, Item 502.3.1.4.COD: Nozzle Cap Chains, Item 502.3.1.5.COD: Flanges, Item 502.3.1.6.COD: Operating Stems, Item 502.3.1.7. O-Rings, Item 502.3.1.8.COD: Extensions, Item 502.3.1.11. Upperstem thread Lubrication, Item 502.3.1.12. Tests and Affidavit of Compliance, Item 502.3.1.14.COD: Rejection, Item 502.3.1.15.COD: Protection of Stem Threads, Item 502.3.2.COD: Installation, Item 502.3.17.COD: Hydrant Approval** of these specifications and addenda thereto, and the applicable Drawings and the Standard Drawings.

This item shall include removal of the existing fire hydrant, removal or extending a portion of the fire hydrant lead, installing fittings, if required, and resetting the existing fire hydrant. The Contractor shall furnish a new fire hydrant, valve or associated materials, at no cost to the City, if these existing items are damaged due to the Contractor's negligence.

This item is complete and includes all equipment, materials and labor, embedment, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, erosion control devices such as silt fences and hay bales, and all other work associated with this item.

Readjustment of fire hydrant to accommodate a slip-form paving machine will not be eligible for reimbursement. If a fire hydrant valve is required, it shall be paid under another item to the contract. Adjustment of the existing fire hydrant barrel to the final elevation is included in this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

This bid item should be used on Public Works projects where there is a possibility of needing to relocate a new fire hydrant installed by the same contract, due to an unforeseen paving conflict or staking error.

ITEM NO. 20660 RELOCATE COMMERCIAL WATER SERVICE

This item consists of relocating __ Each Commercial Water Service by removing the vault, piping, and meter, and relocating at a new location in accordance with the Specifications and addenda thereto, and the Drawings and Standard Drawing.

The relocation shall include removal of the existing vault, piping, fittings, meter, relocation of the vault, piping, fittings, meter, service extension, service cut and sleeves. Any items damaged during removal shall be replaced at no cost to the City. If any item is determined by the Engineer to be defective or damaged prior to any work by the Contractor, the item will be furnished, by the City, at no cost to the Contractor.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

This relocation can either be vertically and/or horizontally. Be aware of major grade changes to the existing ground line at the vault when determining the necessity of this item.

ITEM NO. 20670 ABANDON WATER SERVICE OFF EXISTING MAIN

This item consists of abandoning approximately __ Each Water Service and shall include turning off the corporation stop at the water main, cutting and removing a portion of the water service, and installing a cap on the existing corporation stop.

Should any additional abandonments be found necessary, they shall be added to the contract at the same unit bid price. Likewise, should any of the listed abandonments be found not necessary, they shall be deleted from the contract without having any effect on the unit bid price.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items (saw-cut, base, concrete, hot mix asphalt, sidewalk, driveways, curb and/or gutter), sod, backfill compaction, any costs for barricading, trench safety and support, and all other incidentals necessary to complete the work.

Measurement and payment will be per each complete in place.

ITEM NO. 20680 ABANDON WASTEWATER LATERAL OFF EXISTING MAIN

This item consists of abandoning approximately ___ Each Wastewater Lateral and shall include removing a portion of the existing wastewater lateral and capping the existing lateral wye and encasing it with Class "B" concrete.

Should any additional abandonments be found necessary, they shall be added to the contract at the same unit bid price. Likewise, should any of the listed abandonments be found not necessary, they shall be deleted from the contract without having any effect on the unit bid price.

This item is complete and includes all equipment, materials and labor, all temporary and permanent paving, and paving related items (saw-cut, base, concrete, hot mix asphalt, sidewalk, driveways, curb and/or gutter), sod, backfill compaction, any costs for barricading, trench safety and support, and all other incidentals necessary to complete the work.

Measurement and payment will be per each complete in place.

ITEM NO. 20700 ADJUST EXISTING WASTEWATER LATERAL

This item consists of adjusting approximately ___ Each Existing Wastewater Lateral, including reconnection to the existing main if necessary and transferring the lateral in accordance with **Item 502.10.4. Wastewater Conduit Connections** of these specifications and addenda thereto, and the applicable Standard Drawings.

This adjustment of the wastewater lateral shall include new pipe, and, if necessary, transferring the lateral and reconnection to the existing wastewater main.

This item is a contingent item and payment will be made only if directed by the Construction Engineer. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all boring, crossing diagonal utilities, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item.

Measurement and payment will be per each complete in place, and in accordance with **Item 502.10.4.3. Measurement and Payment** of these specifications.

If there is an existing wastewater main within the project limits, this item is to be established in the contract as a contingency item.

ITEM NO. 20910 REPLACE EXISTING 4' DIAMETER MANHOLE

This item consists of replacing ___ Each 4' Diameter Wastewater Manhole with 32" Diameter Lid in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings

The replacement shall include salvaging the existing manhole ring and cover, removing and disposing of the existing manhole and manhole base, constructing or installing a new 4' diameter concrete manhole and base to proper grade, setting the salvaged manhole ring and cover on the top of the cone section with mortar, and installing a false bottom. Final adjustment of the manhole ring and cover to the paving grade will be paid under another bid item. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to the Contractor's negligence. This item also includes removal of the false bottom during the final inspection.

Should any additional manholes be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed manholes not be necessary, they will be removed from the contract without having effect on the Unit Price.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Replace all existing brick manholes within the project limits, regardless of their condition.

ITEM NO. 20920 REPLACE EXISTING 5' DIAMETER MANHOLE

This item consists of replacing ___ Each 5' Diameter Wastewater Manholes with 32" or 40" Diameter Lid in accordance with **Item 502.1. Manholes, Item 502.1.2.COD: Wastewater Manhole Grade Adjustment Risers, Item 502.1.4.8.COD: Wastewater Manhole Frame Seals, Item 502.1.4.9.COD: Interior Coatings for Manholes** of these specifications and addenda thereto, and the applicable Standard Drawings

The replacement shall include salvaging the existing manhole ring and cover, removing and disposing of the existing manhole and manhole base, constructing or installing a new 5' diameter concrete manhole and base to proper grade, setting the salvaged manhole ring and cover on the top of the cone section with mortar, and installing a false bottom. Final adjustment of the manhole ring and cover to the paving grade will be paid under another bid item. The Contractor shall furnish a manhole ring or cover if lost, stolen, or damaged due to the Contractor's negligence. This item also includes removal of the false bottom during the final inspection.

Should any additional manholes be found necessary, they will be added to the contract at the same Unit Price. Likewise, should any of the listed manholes not be necessary, they will be removed from the contract without having effect on the Unit Price.

This item is complete and includes all equipment, materials and labor, all excavation, backfill, compaction, disposal of excess material, all temporary and permanent paving, and paving related items, sidewalk, curb and/or gutter, driveways, sod, costs for barricading, trench safety and support, and all other work associated with this item. The bid price for this item is not subject to renegotiations due to quantity overrun or underrun limitations as set forth in the specifications.

Measurement and payment will be per each complete in place.

Replace all brick manholes within the project limits, regardless of their condition.

ITEM NO. 20930 RELOCATE PIPE-TO-SOIL POTENTIAL MONITORING STATION

This item consists of removing, furnishing, and placing approximately ___ Each Pipe to Soil Potential Monitoring Stations as specified on the plans. Exact placement shall be as directed by the Project Engineer.

This item is to include the removal of the existing Pipe to Soil Potential Monitoring Station, cutting the existing conduit and wire at the existing test station, furnishing and placing new conduit and wire from the existing test station to the new location, splicing the existing wire to the new wire, connecting and bonding the existing conduit to the new conduit, furnishing and placing a new meter box and test station, barricades, excavation, backfill, and any paving or ground cover necessary to return the site to its original condition.

Measurement and payment shall include and all costs for labor, materials, and incidentals necessary to complete the work.

Refer to Standard Drawing #417.

BID ITEM LIST

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
1100D	2" Temporary Water Main	LS	CITY	Water	Pipe	x
1100F	4" Temporary Water Main	LS	CITY	Water	Pipe	x
1100H	6" Temporary Water Main	LS	CITY	Water	Pipe	x
1100J	8" Temporary Water Main	LS	CITY	Water	Pipe	x
1200D	2" Copper Water Main	LF	CITY	Water	Pipe	x
1500D	2" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500F	4" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500H	6" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500J	8" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500K	10" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500L	12" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500Q	16" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500S	20" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500V	24" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500Y	30" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500AA	36" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500AE	48" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500AF	54" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1500AG	60" Ductile Iron Water Pipe	LF	CITY	Water	Pipe	x
1501H	6" Ductile Iron Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1501J	8" Ductile Iron Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1501L	12" Ductile Iron Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1505D	2" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505F	4" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505H	6" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505J	8" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505K	10" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505L	12" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505Q	16" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505S	20" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505V	24" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505Y	30" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505AA	36" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505AE	48" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505AF	54" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1505AG	60" Ductile Iron Water Pipe Aerial Crossing	LF	CITY	Water	Pipe	x
1600S	20" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600V	24" Steel Water Pipe	LF	CITY	Water	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
1600Y	30" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AA	36" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AC	42" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AE	48" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AF	54" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AG	60" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AH	66" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AJ	72" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AK	78" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AL	84" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AM	90" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AN	96" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AQ	102" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AR	108" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AS	114" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AU	120" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AV	126" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AW	132" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AY	138" Steel Water Pipe	LF	CITY	Water	Pipe	x
1600AZ	144" Steel Water Pipe	LF	CITY	Water	Pipe	x
1800D	2" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800F	4" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800H	6" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800J	8" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800K	10" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800L	12" PVC Water Pipe	LF	CITY	Water	Pipe	x
1800Q	16" PVC Water Pipe	LF	CITY	Water	Pipe	x
1801H	6" PVC Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1801J	8" PVC Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1801L	12" PVC Water Pipe with Nitrile Gaskets	LF	CITY	Water	Pipe	x
1810F	4" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1800H	6" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1810J	8" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1810K	10" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1810L	12" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1810Q	16" Fusible PVC Water Pipe	LF	CITY	Water	Pipe	x
1820F	4" Restrained Joint PVC Water Pipe	LF	CITY	Water	Pipe	x
1820H	6" Restrained Joint PVC Water Pipe	LF	CITY	Water	Pipe	x
1820J	8" Restrained Joint PVC Water Pipe	LF	CITY	Water	Pipe	x
1820K	10" Restrained Joint PVC Water Pipe	LF	CITY	Water	Pipe	x
1820L	12" Restrained Joint PVC Water Pipe	LF	CITY	Water	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
1905Q	16" PVC, Ductile Iron, or Bar-Wrapped Concrete Cylinder Water Pipe	LF	JOINT	Water	Pipe	x
2000K	10" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000L	12" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000M	14" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000Q	16" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000R	18" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000S	20" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000V	24" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000W	27" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000Y	30" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000AA	36" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000AC	42" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000AE	48" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2000AF	54" Bar-Wrapped Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010Q	16" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010R	18" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010S	20" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010V	24" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010Y	30" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AA	36" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AC	42" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AE	48" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AF	54" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AG	60" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AH	66" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AJ	72" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AK	78" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AL	84" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AM	90" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AN	96" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AQ	102" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AR	108" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AS	114" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AU	120" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AV	126" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AW	132" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AY	138" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2010AZ	144" Prestressed Concrete Cylinder Pipe	LF	CITY	Water	Pipe	x
2100HX	6" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100JX	8" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100KX	10" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
2100LX	12" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100MX	14" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100QX	16" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100RX	18" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100SX	20" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100VX	24" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100WX	27" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100YX	30" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AAX	36" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100ACX	42" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AEX	48" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AFX	54" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AGX	60" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AHX	66" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AJX	72" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AKX	78" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100ALX	84" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AMX	90" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100ANX	96" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AQX	102" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100ARX	108" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100ASX	114" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AUX	120" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AWX	132" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AYX	138" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2100AZX	144" Extra Depth Water Pipe (+20')	LF	ALL	Water	Excavation	x
2200F	Rehabilitation of Existing 4" Water Main	LF	ALL	Water	Rehabilitation	x
2200H	Rehabilitation of Existing 6" Water Main	LF	ALL	Water	Rehabilitation	x
3000H	6" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000J	8" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000K	10" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000L	12" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000N	15" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000R	18" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000U	21" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3000V	24" Clay Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100H	6" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100J	8" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100K	10" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100L	12" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100N	15" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
3100R	18" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100U	21" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100V	24" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100W	27" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100Y	30" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100Z	33" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100AA	36" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100AB	39" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100AC	42" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3100AE	48" PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110D	2" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110F	4" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110FP	4" PVC Pressure Rated Wastewater Pipe	LF	JOINT	Wastewater	Pipe	x
3110H	6" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110J	8" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110K	10" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3110L	12" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3111H	6" PVC Pressure Rated Wastewater Pipe with Nitrile Gaskets	LF	ALL	Wastewater	Pipe	x
3111J	8" PVC Pressure Rated Wastewater Pipe with Nitrile Gaskets	LF	ALL	Wastewater	Pipe	x
3111K	10" PVC Pressure Rated Wastewater Pipe with Nitrile Gaskets	LF	ALL	Wastewater	Pipe	x
3111L	12" PVC Pressure Rated Wastewater Pipe with Nitrile Gaskets	LF	ALL	Wastewater	Pipe	x
3120Q	16" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120R	18" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120S	20" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120V	24" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120W	27" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120Y	30" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120Z	33" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120AA	36" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3120AB	39" PVC Pressure Rated Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130F	4" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130H	6" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130J	8" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130K	10" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130L	12" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130Q	16" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3130R	18" Fusible PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3140F	4" Restrained Joint PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3140H	6" Restrained Joint PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3140J	8" Restrained Joint PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3140K	10" Restrained Joint PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
3140L	12" Restrained Joint PVC Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410Y	30" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410Z	33" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AA	36" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AB	39" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AC	42" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AD	45" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AE	48" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AF	54" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AG	60" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AH	66" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AJ	72" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AK	78" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AL	84" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AM	90" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3410AN	96" Reinforced Concrete Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420R	18" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420S	20" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420V	24" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420W	27" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420Y	30" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420Z	33" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AA	36" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AC	42" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AE	48" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AF	54" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AG	60" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AH	66" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AJ	72" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AK	78" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AL	84" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AM	90" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3420AN	96" RTRP Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430R	18" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430U	21" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430V	24" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430W	27" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430Y	30" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430Z	33" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430AA	36" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3430AC	42" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
3430AE	48" HDPE Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3460	Pressure Rated RTRP or Pressure Rated PVC Wastewater Pipe	LF	JOINT	Wastewater	Pipe	x
3510F	4" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510H	6" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510J	8" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510K	10" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510L	12" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510N	15" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510R	18" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3510S	20" Wastewater Force Main	LF	CITY	Wastewater	Pipe	x
3520H	Rehabilitation of Existing 6" Wastewater Main	LF	ALL	Wastewater	Rehabilitation	x
3520J	Rehabilitation of Existing 8" Wastewater Main	LF	ALL	Wastewater	Rehabilitation	x
3520K	Rehabilitation of Existing 10" Wastewater Main	LF	ALL	Wastewater	Rehabilitation	x
3520L	Rehabilitation of Existing 12" Wastewater Main	LF	ALL	Wastewater	Rehabilitation	x
3520N	Rehabilitation of Existing 15" Wastewater Main	LF	ALL	Wastewater	Rehabilitation	x
3530K	10" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530L	12" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530N	15" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530R	18" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530V	24" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530Y	30" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AA	36" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AC	42" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AE	48" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AF	54" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AG	60" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AH	66" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AJ	72" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AK	78" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3530AL	84" Corrugated Metal Pipe (Split Encasement)	LF	ALL	Wastewater	Encasement	x
3540H	Point Repair of 6" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540J	Point Repair of 8" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540K	Point Repair of 10" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540L	Point Repair of 12" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540N	Point Repair of 15" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540R	Point Repair of 18" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540U	Point Repair of 21" Wastewater Main	EA	ALL	Wastewater	Repair	X
3540V	Point Repair of 24" Wastewater Main	EA	ALL	Wastewater	Repair	x
3540Y	Point Repair of 30" Wastewater Main	EA	ALL	Wastewater	Repair	x
3550	Removal of Internal Obstructions for Wastewater Mains	EA	ALL	Wastewater	Repair	x
3560	Connection to Existing Manhole	EA	ALL	Wastewater	Appurtenance	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
3570HxJ	Pipe Bursting (6" to 8")	LF	ALL	Wastewater	Rehabilitation	x
3570JxJ	Pipe Bursting (8" to 8")	LF	ALL	Wastewater	Rehabilitation	x
3570JxK	Pipe Bursting (8" to 10")	LF	ALL	Wastewater	Rehabilitation	x
3570JxL	Pipe Bursting (8" to 12")	LF	ALL	Wastewater	Rehabilitation	x
3570KxK	Pipe Bursting (10" to 10")	LF	ALL	Wastewater	Rehabilitation	x
3570KxL	Pipe Bursting (10" to 12")	LF	ALL	Wastewater	Rehabilitation	x
3570LxL	Pipe Bursting (12" to 12")	LF	ALL	Wastewater	Rehabilitation	x
3610H	6" Ductile Iron Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3610J	8" Ductile Iron Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3610K	10" Ductile Iron Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3610L	12" Ductile Iron Wastewater Pipe	LF	CITY	Wastewater	Pipe	x
3700HX	6" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700JX	8" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700KX	10" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700LX	12" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700NX	15" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700QX	16" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700RX	18" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700UX	21" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700VX	24" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700WX	27" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700YX	30" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ZX	33" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AAX	36" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ABX	39" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ACX	42" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ADX	45" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AEX	48" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AFX	54" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AGX	60" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AHX	66" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AJX	72" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AKX	78" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ALX	84" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700AMX	90" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3700ANX	96" Extra Depth Wastewater Pipe (+20')	LF	CITY	Wastewater	Excavation	x
3800F	4" PVC Reclaimed Wastewater Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3800H	6" PVC Reclaimed Wastewater Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3800J	8" PVC Reclaimed Wastewater Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3800K	10" PVC Reclaimed Wastewater Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3800L	12" PVC Reclaimed Wastewater Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
3810K	10" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810L	12" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810M	14" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810Q	16" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810R	18" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810S	20" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810V	24" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810W	27" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810Y	30" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810AA	36" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810AC	42" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3810AE	48" Bar-Wrapped Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820Q	16" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820R	18" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820S	20" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820V	24" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820Y	30" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820AA	36" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820AC	42" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
3820AE	48" Prestressed Concrete Cylinder Pipe (Purple)	LF	CITY	Reclaimed	Pipe	x
5020	Extra Iron Fittings for Non-Plan Alignment Changes	TN	ALL	Water	Appurtenance	X
5040FxF	4" Combined Service Vault with 4" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5040HxH	6" Combined Service Vault with 6" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5040JxH	8" Combined Service Vault with 6" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5040JxJ	8" Combined Service Vault with 8" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5040KxJ	10" Combined Service Vault with 8" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5040KxK	10" Combined Service Vault with 10" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5041FxE	4" Domestic Service Vault with 3" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5041FxH	4" Domestic Service Vault with 4" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5041HxH	6" Domestic Service Vault with 6" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5041JxH	8" Domestic Service Vault with 6" Meter and Transfer	EA	JOINT	Water	Appurtenance	x
5042FxH	4" Closed Fireline Service Vault with 4" D.C. Device and Transfer	EA	JOINT	Water	Appurtenance	x
5042HxH	6" Closed Fireline Service Vault with 6" D.C. Device and Transfer	EA	JOINT	Water	Appurtenance	x
5042JxH	8" Closed Fireline Service Vault with 6" D.C. Device and Transfer	EA	JOINT	Water	Appurtenance	x
5042JxJ	8" Closed Fireline Service Vault with 8" D.C. Device and Transfer	EA	JOINT	Water	Appurtenance	x
5042KxK	10" Closed Fireline Service Vault with 10" D.C. Device and Transfer	EA	JOINT	Water	Appurtenance	x
5043A	¾" New Irrigation Service	EA	JOINT	Water	Appurtenance	x
5043B	1" New Irrigation Service	EA	JOINT	Water	Appurtenance	x
5043C	1 ½" New Irrigation Service	EA	JOINT	Water	Appurtenance	x
5043D	2" New Irrigation Service	EA	JOINT	Water	Appurtenance	X
5050	Water Service	EA	ALL	Water	Appurtenance	201-206

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5051A	3/4 " Water Service	EA	P.DEV	Water	Appurtenance	201-206
5051B	1" Water Service	EA	P.DEV	Water	Appurtenance	201-206
5051C	1 1/2 " Water Service	EA	P.DEV	Water	Appurtenance	201-206
5051D	2" Water Service	EA	P.DEV	Water	Appurtenance	201-206
5052A	3/4 " Water Service with Transfer	EA	P.DEV	Water	Appurtenance	201-206
5052B	1" Water Service with Transfer	EA	P.DEV	Water	Appurtenance	201-206
5052C	1 1/2 " Water Service with Transfer	EA	P.DEV	Water	Appurtenance	201-206
5052D	2" Water Service with Transfer	EA	P.DEV	Water	Appurtenance	201-206
5055X	Water Service - Extra Depth	LF	CITY	Water	Excavation	x
5060FxF	4" Combined Service with 4" Meter and Transfer	EA	ALL	Water	Appurtenance	507
5060HxH	6" Combined Service with 6" Meter and Transfer	EA	ALL	Water	Appurtenance	508
5060JxH	8" Combined Service with 6" Meter and Transfer	EA	ALL	Water	Appurtenance	509
5060JxJ	8" Combined Service with 8" Meter and Transfer	EA	ALL	Water	Appurtenance	510
5060KxJ	10" Combined Service with 8" Meter and Transfer	EA	ALL	Water	Appurtenance	511
5060KxK	10" Combined Service with 10" Meter and Transfer	EA	ALL	Water	Appurtenance	512
5061FxE	4" Domestic Service with 3" Meter and Transfer	EA	ALL	Water	Appurtenance	513
5061FxH	4" Domestic Service with 4" Meter and Transfer	EA	ALL	Water	Appurtenance	514
5061HxH	6" Domestic Service with 6" Meter and Transfer	EA	ALL	Water	Appurtenance	515
5061JxH	8" Domestic Service with 6" Meter and Transfer	EA	ALL	Water	Appurtenance	516
5062FxH	4" Closed Fireline Service with 4" D.C. Device and Transfer	EA	ALL	Water	Appurtenance	517
5062HxH	6" Closed Fireline Service with 6" D.C. Device and Transfer	EA	ALL	Water	Appurtenance	518
5062JxH	8" Closed Fireline Service with 6" D.C. Device and Transfer	EA	ALL	Water	Appurtenance	519
5062JxJ	8" Closed Fireline Service with 8" D.C. Device and Transfer	EA	ALL	Water	Appurtenance	520
5062KxK	10" Closed Fireline Service with 10" D.C. Device and Transfer	EA	ALL	Water	Appurtenance	521
5063FxH	4" Standpipe Fireline Service with 4" Meter and Transfer	EA	ALL	Water	Appurtenance	522
5063HxH	6" Standpipe Fireline Service with 6" Meter and Transfer	EA	ALL	Water	Appurtenance	523
5063JxJ	8" Standpipe Fireline Service with 8" Meter and Transfer	EA	ALL	Water	Appurtenance	525
5063KxJ	10" Standpipe Fireline Service with 8" Meter and Transfer	EA	ALL	Water	Appurtenance	526
5063KxK	10" Standpipe Fireline Service with 10" Meter and Transfer	EA	ALL	Water	Appurtenance	527
5064FxH	4" Combined Service with 4" Meter	EA	ALL	Water	Appurtenance	507
5064HxH	6" Combined Service with 6" Meter	EA	ALL	Water	Appurtenance	508
5064JxH	8" Combined Service with 6" Meter	EA	ALL	Water	Appurtenance	509
5064JxJ	8" Combined Service with 8" Meter	EA	ALL	Water	Appurtenance	510
5064KxJ	10" Combined Service with 8" Meter	EA	ALL	Water	Appurtenance	511
5064KxK	10" Combined Service with 10" Meter	EA	ALL	Water	Appurtenance	512
5065FxH	4" Domestic Service with 3" Meter	EA	ALL	Water	Appurtenance	513
5065FxH	4" Domestic Service with 4" Meter	EA	ALL	Water	Appurtenance	514
5065HxH	6" Domestic Service with 6" Meter	EA	ALL	Water	Appurtenance	515
5065JxJ	8" Domestic Service with 6" Meter	EA	ALL	Water	Appurtenance	516
5066FxH	4" Closed Fireline Service with 4" D.C. Device	EA	ALL	Water	Appurtenance	517
5066HxH	6" Closed Fireline Service with 6" D.C. Device	EA	ALL	Water	Appurtenance	518

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5066JxH	8" Closed Fireline Service with 6" D.C. Device	EA	ALL	Water	Appurtenance	519
5066JxJ	8" Closed Fireline Service with 8" D.C. Device	EA	ALL	Water	Appurtenance	520
5066KxK	10" Closed Fireline Service with 10" D.C. Device	EA	ALL	Water	Appurtenance	521
5067FxF	4" Standpipe Fireline Service with 4" Meter	EA	ALL	Water	Appurtenance	522
5067HxH	6" Standpipe Fireline Service with 6" Meter	EA	ALL	Water	Appurtenance	523
5067JxJ	8" Standpipe Fireline Service with 8" Meter	EA	ALL	Water	Appurtenance	525
5067KxJ	10" Standpipe Fireline Service with 8" Meter	EA	ALL	Water	Appurtenance	526
5067KxK	10" Standpipe Fireline Service with 10" Meter	EA	ALL	Water	Appurtenance	527
5070	Install AMI-Ready meter lid	EA	ALL	Water	Appurtenance	x
5071	Deliver AMI-Ready meter components	EA	ALL	Water	Appurtenance	x
5072	Deliver AMI-Ready meter	EA	ALL	Water	Appurtenance	x
5080	Reconnect Existing Water Service	EA	JOINT	Water	Appurtenance	x
5091	Install Fire Hydrant	EA	ALL	Water	Appurtenance	224
5092	Remove Existing Fire Hydrant	EA	ALL	Water	Appurtenance	x
5093	Deliver Fire Hydrant	EA	ALL	Water	Appurtenance	x
5094	Relocate Fire Hydrant	EA	P.DEV	Water	Appurtenance	x
5100F	4" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100H	6" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100J	8" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100K	10" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100L	12" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100Q	16" Gate Valve	EA	ALL	Water	Appurtenance	219A
5100R	18" Gate Valve	EA	ALL	Water	Appurtenance	x
5100S	20" Gate Valve	EA	ALL	Water	Appurtenance	x
5100V	24" Gate Valve	EA	ALL	Water	Appurtenance	x
5100Y	30" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AA	36" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AC	42" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AE	48" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AF	54" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AG	60" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AH	66" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AJ	72" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AK	78" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AL	84" Gate Valve	EA	ALL	Water	Appurtenance	x
5100AM	90" Gate Valve	EA	ALL	Water	Appurtenance	x
5101H	6" Gate Valve with Nitrile Gaskets	EA	ALL	Water	Appurtenance	x
5101J	8" Gate Valve with Nitrile Gaskets	EA	ALL	Water	Appurtenance	x
5101L	12" Gate Valve with Nitrile Gaskets	EA	ALL	Water	Appurtenance	x
5105F	4" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A
5105H	6" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5105J	8" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A
5105K	10" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A
5105L	12" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A
5105Q	16" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	219A
5105R	18" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105S	20" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105V	24" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105Y	30" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AA	36" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AC	42" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AE	48" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AF	54" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AG	60" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AH	66" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AJ	72" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AK	78" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AL	84" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5105AM	90" Gate Valve (Place Only)	EA	CITY	Water	Appurtenance	x
5110FxH	4"x4" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110HxH	6"x6" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110JxD	8"x2" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110JxH	8"x6" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110JxJ	8"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110KxJ	10"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110LxJ	12"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110LxL	12"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110QxJ	16"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110QxL	16"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110SxJ	20"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110SxL	20"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110VxL	24"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110VxQ	24"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110YxL	30"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AAxH	36"x6" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AAxL	36"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110VxJ	24"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110QxQ	16"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110RxJ	18"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110SxQ	20"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110YxQ	30"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AAxQ	36"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5110YxV	30"x24" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110JxF	8"x4" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110LxH	12"x6" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110ACxL	42"x12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110KxK	10"x10" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110QxH	16"x6" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110MxD	14"x2" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AAxJ	36"x8" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110LxD	12"x2" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110ALxAE	84"x48" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AAxS	36"x20" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110AExQ	48"x16" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110LxF	12"x4" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110HxF	6"x4" Tapping Sleeve	EA	ALL	Water	Fitting	217
5110RxL	18" x 12" Tapping Sleeve	EA	ALL	Water	Fitting	217
5120F	Remove, Salvage, & Deliver 4" Valve	EA	CITY	Water	Appurtenance	x
5120H	Remove, Salvage, & Deliver 6" Valve	EA	CITY	Water	Appurtenance	x
5120J	Remove, Salvage, & Deliver 8" Valve	EA	CITY	Water	Appurtenance	x
5120K	Remove, Salvage, & Deliver 10" Valve	EA	CITY	Water	Appurtenance	x
5120L	Remove, Salvage, & Deliver 12" Valve	EA	CITY	Water	Appurtenance	x
5120Q	Remove, Salvage, & Deliver 16" Valve	EA	CITY	Water	Appurtenance	x
5120R	Remove, Salvage, & Deliver 18" Valve	EA	CITY	Water	Appurtenance	x
5120S	Remove, Salvage, & Deliver 20" Valve	EA	CITY	Water	Appurtenance	x
5120V	Remove, Salvage, & Deliver 24" Valve	EA	CITY	Water	Appurtenance	x
5120Y	Remove, Salvage, & Deliver 30" Valve	EA	CITY	Water	Appurtenance	x
5120AA	Remove, Salvage, & Deliver 36" Valve	EA	CITY	Water	Appurtenance	x
5120AC	Remove, Salvage, & Deliver 42" Valve	EA	CITY	Water	Appurtenance	x
5120AE	Remove, Salvage, & Deliver 48" Valve	EA	CITY	Water	Appurtenance	x
5120AF	Remove, Salvage, & Deliver 54" Valve	EA	CITY	Water	Appurtenance	x
5120AG	Remove, Salvage, & Deliver 60" Valve	EA	CITY	Water	Appurtenance	x
5120AH	Remove, Salvage, & Deliver 66" Valve	EA	CITY	Water	Appurtenance	x
5120AJ	Remove, Salvage, & Deliver 72" Valve	EA	CITY	Water	Appurtenance	x
5120AK	Remove, Salvage, & Deliver 78" Valve	EA	CITY	Water	Appurtenance	x
5120AL	Remove, Salvage, & Deliver 84" Valve	EA	CITY	Water	Appurtenance	x
5120AM	Remove, Salvage, & Deliver 90" Valve	EA	CITY	Water	Appurtenance	x
5130H	6" Cut-In Valve	EA	ALL	Water	Appurtenance	x
5130J	8" Cut-In Valve	EA	ALL	Water	Appurtenance	x
5130L	12" Cut-In Valve	EA	ALL	Water	Appurtenance	x
5130Q	16" Cut-In Valve	EA	ALL	Water	Appurtenance	x
5140H	6" Flap Valve	EA	ALL	Water	Appurtenance	x
5140J	8" Flap Valve	EA	ALL	Water	Appurtenance	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5140K	10" Flap Valve	EA	ALL	Water	Appurtenance	x
5140L	12" Flap Valve	EA	ALL	Water	Appurtenance	x
5150AE	48" Access Manhole	EA	CITY	Water	Appurtenance	x
5150AF	54" Access Manhole	EA	CITY	Water	Appurtenance	x
5150AG	60" Access Manhole	EA	CITY	Water	Appurtenance	x
5150AJ	72" Access Manhole	EA	CITY	Water	Appurtenance	x
5155AE	48" Access Manhole with Blowoff	EA	CITY	Water	Appurtenance	x
5155AG	60" Access Manhole with Blowoff	EA	CITY	Water	Appurtenance	x
5155AJ	72" Access Manhole with Blowoff	EA	CITY	Water	Appurtenance	x
5160AG	60" Diameter Water Manhole	EA	CITY	Water	Appurtenance	x
5160AJ	72" Diameter Water Manhole	EA	CITY	Water	Appurtenance	x
5170F	4" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170H	6" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170J	8" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170K	10" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170L	12" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170Q	16" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170R	18" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170S	20" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170V	24" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170Y	30" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5170AA	36" Pressure Reducing Valve & Vault	EA	ALL	Water	Appurtenance	x
5180AEX	48" Water Manhole -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5180AEPX	48" Water Manhole with Paving -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5180AGX	60" Water Manhole -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5180AGPX	60" Water Manhole with Paving -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5180AJX	72" Water Manhole -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5180AJPX	72" Water Manhole with Paving -Extra Depth (+20')	EA	ALL	Water	Appurtenance	x
5200J	8" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200Q	16" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200R	18" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200S	20" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200V	24" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200Y	30" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AA	36" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AC	42" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AE	48" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AF	54" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AG	60" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AH	66" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AJ	72" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5200AL	84" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5200AN	96" Butterfly Valve	EA	ALL	Water	Appurtenance	214, 215
5205J	8" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205Q	16" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205R	18" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205S	20" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205V	24" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205Y	30" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AA	36" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AC	42" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AE	48" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AF	54" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AG	60" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AH	66" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AJ	72" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AL	84" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5205AN	96" Butterfly Valve (Place Only)	EA	ALL	Water	Appurtenance	214, 215
5300	Deep Anode Cathodic Protection System	EA	ALL	Water	Appurtenance	x
5310	Corrosion Control Test Station	EA	ALL	Water	Appurtenance	x
5500D	2" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500F	4" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500H	6" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500J	8" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500L	12" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500Q	16" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500R	18" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500S	20" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500V	24" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500Y	30" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AA	36" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AC	42" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AE	48" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AF	54" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AG	60" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AH	66" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AJ	72" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AK	78" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AL	84" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AM	90" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5500AN	96" Water Main (BOTO)	LF	ALL	Water	Std. BOTO	101
5505H	6" Water Main by Horiz. Directional Drilling	LF	ALL	Water	HDD BOTO	101

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5505J	8" Water Main by Horiz. Directional Drilling	LF	ALL	Water	HDD BOTOC	101
5505L	12" Water Main by Horiz. Directional Drilling	LF	ALL	Water	HDD BOTOC	101
5510D	2" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	102
5510F	4" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	102
5510H	6" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	102
5510J	8" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	102
5510L	12" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	102
5510Q	16" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510S	20" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510V	24" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510Y	30" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AA	36" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AC	42" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AE	48" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AF	54" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AG	60" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AH	66" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AJ	72" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AK	78" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AL	84" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5510AM	90" Water, Highway Crossing (BOTOC)	LF	ALL	Water	Highway X-ing	103
5520D	2" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520F	4" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520H	6" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520J	8" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520L	12" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520Q	16" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520S	20" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520V	24" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520Y	30" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AA	36" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AC	42" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AE	48" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AF	54" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AG	60" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AH	66" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AJ	72" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AK	78" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AL	84" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5520AM	90" Water, Highway Crossing (By Open Cut)	LF	ALL	Water	Highway X-ing	x
5530D	2" Water, RR Crossing (BOTOC)	LF	ALL	Water	Railway X-ing	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5530F	4" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530H	6" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530J	8" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530L	12" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530Q	16" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530S	20" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530V	24" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530Y	30" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AA	36" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AC	42" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AE	48" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AF	54" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AG	60" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AH	66" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AJ	72" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AK	78" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AL	84" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AM	90" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5530AN	96" Water, RR Crossing (BOTO)	LF	ALL	Water	Railway X-ing	x
5540D	2" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540F	4" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540H	6" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540J	8" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540L	12" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540Q	16" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540S	20" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540V	24" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540Y	30" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AA	36" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AC	42" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AE	48" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AF	54" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AG	60" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AH	66" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AJ	72" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AK	78" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AL	84" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5540AM	90" Water, RR Crossing (By Open Cut)	LF	ALL	Water	Railway X-ing	x
5550D	2" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550F	4" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550H	6" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5550J	8" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550L	12" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550Q	16" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550R	18" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550S	20" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550V	24" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550Y	30" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AA	36" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AC	42" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AE	48" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AF	54" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AG	60" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AH	66" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AJ	72" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AK	78" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AL	84" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AM	90" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5550AN	96" Water Main Crossing (BOTO)	LF	ALL	Water	Enc. BOTO	x
5560D	2" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560F	4" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560H	6" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560J	8" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560L	12" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560Q	16" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560R	18" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560S	20" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560V	24" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560Y	30" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AA	36" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AC	42" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AE	48" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AF	54" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AG	60" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AH	66" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AJ	72" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AK	78" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AL	84" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AM	90" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5560AN	96" Water Main Crossing (By Open Cut)	LF	ALL	Water	Encasement	x
5570	Pitot Outlet and Manhole	EA	ALL	Water	Appurtenance	220
5580Q	16" Dished Head Plug	EA	ALL	Water	Fitting	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5580R	18" Dished Head Plug	EA	ALL	Water	Fitting	x
5580S	20" Dished Head Plug	EA	ALL	Water	Fitting	x
5580V	24" Dished Head Plug	EA	ALL	Water	Fitting	x
5580Y	30" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AA	36" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AC	42" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AE	48" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AF	54" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AG	60" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AH	66" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AJ	72" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AK	78" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AL	84" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AM	90" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AN	96" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AQ	102" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AR	108" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AS	114" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AU	120" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AV	126" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AW	132" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AY	138" Dished Head Plug	EA	ALL	Water	Fitting	x
5580AZ	144" Dished Head Plug	EA	ALL	Water	Fitting	x
5585Q	16" Test Fitting	EA	ALL	Water	Fitting	x
5585R	18" Test Fitting	EA	ALL	Water	Fitting	x
5585S	20" Test Fitting	EA	ALL	Water	Fitting	x
5585V	24" Test Fitting	EA	ALL	Water	Fitting	x
5585Y	30" Test Fitting	EA	ALL	Water	Fitting	x
5585AA	36" Test Fitting	EA	ALL	Water	Fitting	x
5585AC	42" Test Fitting	EA	ALL	Water	Fitting	x
5585AE	48" Test Fitting	EA	ALL	Water	Fitting	x
5585AF	54" Test Fitting	EA	ALL	Water	Fitting	x
5585AG	60" Test Fitting	EA	ALL	Water	Fitting	x
5585AH	66" Test Fitting	EA	ALL	Water	Fitting	x
5585AJ	72" Test Fitting	EA	ALL	Water	Fitting	x
5585AK	78" Test Fitting	EA	ALL	Water	Fitting	x
5585AL	84" Test Fitting	EA	ALL	Water	Fitting	x
5585AM	90" Test Fitting	EA	ALL	Water	Fitting	x
5585AN	96" Test Fitting	EA	ALL	Water	Fitting	x
5585AQ	102" Test Fitting	EA	ALL	Water	Fitting	x
5585AR	108" Test Fitting	EA	ALL	Water	Fitting	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5585AS	114" Test Fitting	EA	ALL	Water	Fitting	x
5585AU	120" Test Fitting	EA	ALL	Water	Fitting	x
5585AV	126" Test Fitting	EA	ALL	Water	Fitting	x
5585AW	132" Test Fitting	EA	ALL	Water	Fitting	x
5585AY	138" Test Fitting	EA	ALL	Water	Fitting	x
5585AZ	144" Test Fitting	EA	ALL	Water	Fitting	x
5590Q	16" Night Cap Plug	EA	ALL	Water	Fitting	x
5590R	18" Night Cap Plug	EA	ALL	Water	Fitting	x
5590S	20" Night Cap Plug	EA	ALL	Water	Fitting	x
5590V	24" Night Cap Plug	EA	ALL	Water	Fitting	x
5590Y	30" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AA	36" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AC	42" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AE	48" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AF	54" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AG	60" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AH	66" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AJ	72" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AK	78" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AL	84" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AM	90" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AN	96" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AQ	102" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AR	108" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AS	114" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AU	120" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AV	126" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AW	132" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AY	138" Night Cap Plug	EA	ALL	Water	Fitting	x
5590AZ	144" Night Cap Plug	EA	ALL	Water	Fitting	x
5600	Cut and Plug Existing Water Main	EA	ALL	Water	Appurtenance	x
5605	Cut and Plug Existing Asbestos-Cement Water Main	EA	CITY	Water	Appurtenance	x
5610	Cut and Plug Water Main for Test	EA	ALL	Water	Testing	x
5620X	Cut and Plug Mains - Extra Depth (+20')	VF	CITY	Water	Excavation	x
5650	Remove & Dispose of Lead Pipe Joint	EA	ALL	Water	Environmental	x
5660	Connection to Existing Asbestos-Cement Water Main	EA	CITY	Water	Environmental	x
5750B	1" Flush Point	EA	ALL	Water	Appurtenance	207
5750D	2" Flush Point	EA	ALL	Water	Appurtenance	207
5755B	Automated 1" Flush Point	EA	ALL	Water	Appurtenance	x
5755D	Automated 2" Flush Point	EA	ALL	Water	Appurtenance	x
5761	Type 1 Air Valve Installation	EA	ALL	Water	Appurtenance	208

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5762D	2" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762E	3" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762F	4" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762H	6" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762J	8" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762K	10" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5762L	12" Type 2 Air Valve Installation	EA	ALL	Water	Appurtenance	209-211
5770H	Standard 6" Water Main Lowering	EA	JOINT	Water	Adjustment	209-211
5770J	Standard 8" Water Main Lowering	EA	JOINT	Water	Adjustment	209-211
5770L	Standard 12" Water Main Lowering	EA	JOINT	Water	Adjustment	225
5770Q	Standard 16" Water Main Lowering	EA	JOINT	Water	Adjustment	225
5800A	3/4" Water Service	EA	SMALL SERVICE	Water	Appurtenance	201-206
5800B	1" Water Service	EA	SMALL SERVICE	Water	Appurtenance	201-206
5800C	1 1/2" Water Service	EA	SMALL SERVICE	Water	Appurtenance	201-206
5800D	2" Water Service	EA	SMALL SERVICE	Water	Appurtenance	201-206
5801A	3/4" Water Deadhead Connection	EA	SMALL SERVICE	Water	Appurtenance	201-206
5801B	1" Water Deadhead Connection	EA	SMALL SERVICE	Water	Appurtenance	201-206
5801C	1 1/2" Water Deadhead Connection	EA	SMALL SERVICE	Water	Appurtenance	201-206
5801D	2" Water Deadhead Connection	EA	SMALL SERVICE	Water	Appurtenance	201-206
5802	Bullhead Water Service	EA	SMALL SERVICE	Water	Appurtenance	201-206
5803	Bullhead Water Service (Extra Length)	LF	SMALL SERVICE	Water	Appurtenance	201-206
5804A	3/4" Water Service (Extra Length)	LF	SMALL SERVICE	Water	Appurtenance	201-206
5804B	1" Water Service (Extra Length)	LF	SMALL SERVICE	Water	Appurtenance	201-206
5804C	1 1/2" Water Service (Extra Length)	LF	SMALL SERVICE	Water	Appurtenance	201-206
5804D	2" Water Service (Extra Length)	LF	SMALL SERVICE	Water	Appurtenance	201-206
5805X	Water Service - Extra Depth (+12')	LF	SMALL SERVICE	Water	Appurtenance	x
5955	Wastewater Main by Horizontal Directional Drilling	LF	ALL	Wastewater	HDD	x
5990H	6" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990J	8" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990K	10" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990L	12" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990N	15" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990Q	16" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990R	18" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990U	21" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990V	24" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990W	27" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990Y	30" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990Z	33" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AA	36" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AB	39" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
5990AC	42" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AD	45" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AE	48" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AF	54" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AG	60" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AH	66" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AJ	72" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AK	78" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AN	96" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AQ	102" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
5990AU	120" Wastewater Main (BOTOC)	LF	ALL	Wastewater	Std.BOTOC	101
6000H	6" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	102
6000J	8" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	102
6000K	10" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	102
6000L	12" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	102
6000N	15" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000Q	16" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000R	18" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000U	21" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000V	24" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000W	27" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000Y	30" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000Z	33" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AA	36" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AB	39" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AC	42" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AD	45" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AE	48" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AF	54" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AG	60" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AH	66" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AJ	72" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AK	78" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AN	96" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AQ	102" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6000AU	120" Wastewater, Highway Crossing (BOTOC)	LF	ALL	Wastewater	Highway X-ing	103
6010H	6" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010J	8" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010K	10" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010L	12" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010N	15" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6010Q	16" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010R	18" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010S	20" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010U	21" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010V	24" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010Y	30" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AA	36" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AC	42" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AE	48" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AF	54" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AG	60" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AH	66" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AJ	72" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AK	78" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AL	84" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6010AM	90" Wastewater, Highway Crossing (By Open Cut)	LF	ALL	Wastewater	Highway X-ing	x
6020H	6" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020J	8" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020K	10" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020L	12" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020N	15" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020Q	16" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020R	18" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020U	21" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020V	24" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020W	27" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020Y	30" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020Z	33" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AA	36" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AB	39" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AC	42" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AD	45" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AE	48" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AF	54" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AG	60" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AH	66" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AJ	72" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6020AK	78" Wastewater, RR Crossing (BOTOC)	LF	ALL	Wastewater	Railway X-ing	x
6030H	6" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030J	8" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030K	10" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6030L	12" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030N	15" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030Q	16" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030S	20" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030V	24" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030Y	30" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AA	36" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AC	42" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AE	48" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AF	54" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AG	60" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AH	66" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AJ	72" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AK	78" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AL	84" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AM	90" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6030AQ	102" Wastewater, RR Crossing (By Open Cut)	LF	ALL	Wastewater	Railway X-ing	x
6040H	6" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040J	8" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040K	10" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040L	12" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040N	15" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040Q	16" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040R	18" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040U	21" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040V	24" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040W	27" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040Y	30" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040Z	33" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AA	36" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AB	39" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AC	42" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AD	45" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AE	48" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AF	54" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AG	60" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AH	66" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AJ	72" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AK	78" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AL	84" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x
6040AN	96" Wastewater Main Crossing (BOTO)	LF	ALL	Wastewater	Enc. BOTO	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6040AQ	102" Wastewater Main Crossing (BOTOC)	LF	ALL	Wastewater	Enc. BOTOC	x
6040AU	120" Wastewater Main Crossing (BOTOC)	LF	ALL	Wastewater	Enc. BOTOC	x
6050H	6" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050J	8" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050K	10" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050L	12" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050N	15" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050Q	16" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050R	18" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050U	21" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050V	24" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050W	27" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050Y	30" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050Z	33" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AA	36" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AB	39" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AC	42" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AD	45" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AE	48" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AF	54" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AG	60" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AH	66" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AJ	72" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AK	78" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AN	96" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AQ	102" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6050AU	120" Wastewater Main Crossing (By Open Cut)	LF	ALL	Wastewater	Encasement	x
6060	Wastewater Lateral	EA	ALL	Wastewater	Appurtenance	319
6061	6" Wastewater Lateral with Cleanout	EA	SMALL SERVICE	Wastewater	Appurtenance	319
6062	6" Wastewater Lateral (Extra Length)	LF	SMALL SERVICE	Wastewater	Appurtenance	319
6063	Wastewater Lateral in Creek	EA	CITY	Wastewater	Appurtenance	x
6065X	Wastewater Lateral - Extra Depth (+20')	LF	CITY	Wastewater	Excavation	x
6066X	Wastewater Lateral - Extra Depth (+20')	LF	SMALL SERVICE	Wastewater	Excavation	x
6070	External Wastewater Lateral Connection	EA	ALL	Wastewater	Appurtenance	x
6075	Internal Wastewater Lateral Connection	EA	ALL	Wastewater	Appurtenance	x
6080	Standard Mainline Cleanout	EA	CITY	Wastewater	Appurtenance	317
6090	Adjust Existing Wastewater Lateral	EA	JOINT	Wastewater	Adjustment	406
6100	Wastewater Access Device	EA	CITY	Wastewater	Appurtenance	x
6110AE	48" Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6110AG	60" Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6110AJ	72" Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6110AL	84" Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6110AN	96" Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6111AEX	48" Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6111AEPX	48" Drop Manhole with Paving - Extra Depth (+20')	EA	JOINT	Wastewater	Appurtenance	307, 308
6111AGX	60" Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6111AJX	72" Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6111AJPX	72" Drop Manhole with Paving - Extra Depth (+20')	EA	JOINT	Wastewater	Appurtenance	307, 308
6111ALX	84" Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6111ANX	96" Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6120AE	48" Pressure Type Manhole	EA	CITY	Wastewater	Appurtenance	x
6120AG	60" Pressure Type Manhole	EA	CITY	Wastewater	Appurtenance	x
6120AJ	72" Pressure Type Manhole	EA	CITY	Wastewater	Appurtenance	x
6120AL	84" Pressure Type Manhole	EA	CITY	Wastewater	Appurtenance	x
6120AN	96" Pressure Type Manhole	EA	CITY	Wastewater	Appurtenance	x
6121AEX	48" Pressure Type Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6121AGX	60" Pressure Type Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6121AJX	72" Pressure Type Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6121ALX	84" Pressure Type Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6121ANX	96" Pressure Type Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6125AE	48" Pressure Type Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6125AG	60" Pressure Type Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6125AJ	72" Pressure Type Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6125AL	84" Pressure Type Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6125AN	96" Pressure Type Drop Manhole	EA	CITY	Wastewater	Appurtenance	307, 308
6126AEX	48" Pressure Type Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6126AGX	60" Pressure Type Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6126AJX	72" Pressure Type Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6126ALX	84" Pressure Type Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6126ANX	96" Pressure Type Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	307, 308
6130AE	48" Wastewater Manhole	EA	CITY	Wastewater	Appurtenance	301, 302
6130AG	60" Wastewater Manhole	EA	CITY	Wastewater	Appurtenance	301, 302
6130AJ	72" Wastewater Manhole	EA	CITY	Wastewater	Appurtenance	301, 302
6130AL	84" Wastewater Manhole	EA	CITY	Wastewater	Appurtenance	301, 302
6130AN	96" Wastewater Manhole	EA	CITY	Wastewater	Appurtenance	301, 302
6131AEX	48" Wastewater Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	301, 302
6131AGX	60" Wastewater Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	301, 302
6131AJX	72" Wastewater Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	301, 302
6131ALX	84" Wastewater Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	301, 302
6131ANX	96" Wastewater Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	301, 302
6140	Abandon Existing Manhole	EA	ALL	Wastewater	Appurtenance	316
6141	Vacuum Test for Wastewater Manhole	EA	ALL	Wastewater	Appurtenance	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6142	Drop Connection to Existing Manhole	EA	ALL	Wastewater	Appurtenance	307, 308
6143	Abandon Existing Structural Manhole	EA	CITY	Wastewater	Appurtenance	316
6150AE	48" Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6150AF	54" Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6150AG	60" Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6150AJ	72" Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6151AEX	48" Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6151AFX	54" Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6151AGX	60" Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6151AJX	72" Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6155AE	48" Drop Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6155AF	54" Drop Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6155AG	60" Drop Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6155AJ	72" Drop Manhole Rehabilitation	EA	ALL	Wastewater	Rehabilitation	x
6156AEX	48" Drop Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6156AFX	54" Drop Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6156AGX	60" Drop Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6156AJX	72" Drop Manhole Rehabilitation - Extra Depth (+20')	EA	ALL	Wastewater	Rehabilitation	x
6160AE	48" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6160AF	54" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6160AG	60" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6160AJ	72" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6160AL	84" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6160AN	96" Special Manhole	EA	CITY	Wastewater	Appurtenance	x
6161AEX	48" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6161AF	54" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6161AGX	60" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6161AJX	72" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6161ALX	84" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6161ANX	96" Special Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6162AE	48" Special Internal Drop Connection Manhole with Odor Control Insert	EA	CITY	Wastewater	Appurtenance	x
6162AF	54" Special Internal Drop Connection Manhole with Odor Control Insert	EA	CITY	Wastewater	Appurtenance	x
6162AG	60" Special Internal Drop Connection Manhole with Odor Control Insert	EA	CITY	Wastewater	Appurtenance	x
6162AJ	72" Special Internal Drop Connection Manhole with Odor Control Insert	EA	CITY	Wastewater	Appurtenance	x
6162AEX	48" Spec. Internal Drop Conn. MH with Odor Control Insert - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6162AFX	54" Spec. Internal Drop Conn. MH with Odor Control Insert - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6162AGX	60" Spec. Internal Drop Conn. MH with Odor Control Insert - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6462AJ	72" Spec. Internal Drop Conn. MH with Odor Control Insert - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6170AEX	48" Extra Depth Manhole	LF	P.DEV	Wastewater	Appurtenance	x
6170AFX	54" Extra Depth Manhole	LF	P.DEV	Wastewater	Appurtenance	x
6170AGX	60" Extra Depth Manhole	LF	P.DEV	Wastewater	Appurtenance	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6180AE	48" Gas Sealed Drop Manhole	EA	CITY	Wastewater	Appurtenance	x
6180AG	60" Gas Sealed Drop Manhole	EA	CITY	Wastewater	Appurtenance	x
6180AJ	72" Gas Sealed Drop Manhole	EA	CITY	Wastewater	Appurtenance	x
6180AL	84" Gas Sealed Drop Manhole	EA	CITY	Wastewater	Appurtenance	x
6180AN	96" Gas Sealed Drop Manhole	EA	CITY	Wastewater	Appurtenance	x
6181AEX	48" Gas Sealed Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6181AGX	60" Gas Sealed Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6181AJX	72" Gas Sealed Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6181ALX	84" Gas Sealed Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6181ANX	96" Gas Sealed Drop Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6190AE	48" Vortex Manhole	EA	CITY	Wastewater	Appurtenance	x
6190AG	60" Vortex Manhole	EA	CITY	Wastewater	Appurtenance	x
6190AJ	72" Vortex Manhole	EA	CITY	Wastewater	Appurtenance	x
6190AL	84" Vortex Manhole	EA	CITY	Wastewater	Appurtenance	x
6190AN	96" Vortex Manhole	EA	CITY	Wastewater	Appurtenance	x
6191AEX	48" Vortex Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6191AGX	60" Vortex Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6191AJX	72" Vortex Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6191ALX	84" Vortex Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6191ANX	96" Vortex Manhole - Extra Depth (+20')	EA	CITY	Wastewater	Appurtenance	x
6200J	8" Wastewater Aerial Crossing	EA	ALL	Wastewater	Pipe	x
6200L	12" Wastewater Aerial Crossing	EA	ALL	Wastewater	Pipe	x
6200N	15" Wastewater Aerial Crossing	EA	ALL	Wastewater	Pipe	x
6200U	21" Wastewater Aerial Crossing	EA	ALL	Wastewater	Pipe	x
6240	Tree	EA	ALL	Restoration	Landscaping	x
6245H	6" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245J	8" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245K	10" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245L	12" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245M	14" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245N	15" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245Q	16" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245R	18" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6245S	20" Diameter Tree	EA	ALL	Restoration	Landscaping	x
6250	Shrubs, Flowers, Ground Cover, Etc..	EA	ALL	Restoration	Landscaping	x
6260	Clearing & Grubbing	LS	ALL	Restoration	Landscaping	x
6270	Fence Replacement	LF	ALL	Restoration	Landscaping	x
6320	Abandon Wastewater Lift Station	LS	ALL	Wastewater	Appurtenance	x
6321	Pump, Motor, & Variable Speed Drive	LS	ALL	Wastewater	Appurtenance	x
6322	Wastewater Lift Station	LS	ALL	Wastewater	Appurtenance	x
6400F	4" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6400H	6" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400J	8" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400K	10" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400L	12" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400Q	16" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400R	18" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400S	20" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400V	24" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400Y	30" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400AA	36" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400AC	42" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6400AE	48" Gate Valve -CCW Open for Reclaimed Wastewater	EA	ALL	Reclaimed	Appurtenance	x
6800	Project Partnering	LS	CITY	General	Management	x
6870	Move In and Move Out	EA	CITY	General	Mobilization	x
6875	Move to another Location	EA	CITY	General	Mobilization	x
6900	Place Grass Sod	SY	CITY	Restoration	Landscaping	x
6901	Place Spot Sod	SY	CITY	Restoration	Landscaping	x
6902	Place Block Sod	SY	CITY	Restoration	Landscaping	x
6903	Place Sprig	SY	CITY	Restoration	Landscaping	x
6904	Hydromulch	SY	CITY	Restoration	Landscaping	x
6905	Seed	SY	CITY	Restoration	Landscaping	x
6907	Fertilizer	SY	CITY	Restoration	Landscaping	x
6908	Place Brick Paving	SY	CITY	Paving	Paving	x
6909	Place Brick Sidewalk	SY	CITY	Paving	Paving	x
6910	Cobblestone Sidewalk Pavers	SY	CITY	Paving	Paving	x
6911	Corsol/Brick Intersection Pavers	SY	CITY	Paving	Paving	x
6920	Television Inspection	LF	CITY	Wastewater	Testing	x
6921	Television Inspection	LF	JOINT	Wastewater	Testing	x
6925	Trench Safety & Support	LF	ALL	General	Safety	x
6930Q	16" Closure Section	EA	ALL	General	Fitting	x
6930S	20" Closure Section	EA	ALL	General	Fitting	x
6930V	24" Closure Section	EA	ALL	General	Fitting	x
6930Y	30" Closure Section	EA	ALL	General	Fitting	x
6930AA	36" Closure Section	EA	ALL	General	Fitting	x
6930AC	42" Closure Section	EA	ALL	General	Fitting	x
6930AE	48" Closure Section	EA	ALL	General	Fitting	x
6930AF	54" Closure Section	EA	ALL	General	Fitting	x
6930AG	60" Closure Section	EA	ALL	General	Fitting	x
6930AH	66" Closure Section	EA	ALL	General	Fitting	x
6940	Base Preparation	SY	CITY	Paving	Paving	x
6941	Lime Treated Base	SY	CITY	Paving	Paving	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
6942	Street Surface Milling	SY	CITY	Paving	Paving	x
6950	Gabions for Slope Protection	CY	ALL	Restoration	Drainage	x
6960Q	Remove 16" Internal Test Plug	EA	ALL	Water	Fitting	x
6960S	Remove 20" Internal Test Plug	EA	ALL	Water	Fitting	x
6960V	Remove 24" Internal Test Plug	EA	ALL	Water	Fitting	x
6960Y	Remove 30" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AA	Remove 36" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AC	Remove 42" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AE	Remove 48" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AF	Remove 54" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AG	Remove 60" Internal Test Plug	EA	ALL	Water	Fitting	x
6960AH	Remove 66" Internal Test Plug	EA	ALL	Water	Fitting	x
6970	Pipe to Soil Potential Monitoring Station	EA	ALL	Water	Appurtenance	226, 227
6990H	6" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995H	6" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990J	8" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995J	8" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990K	10" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995K	10" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990L	12" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995L	12" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990Q	16" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995Q	16" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990R	18" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995R	18" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990S	20" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995S	20" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990V	24" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995V	24" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990Y	30" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995Y	30" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990AA	36" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995AA	36" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990AC	42" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995AC	42" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6990AE	48" Gate Valve Replacement	LS	CITY-VALVE REPL.	Water	Appurtenance	x
6995AE	48" Gate Valve Replacement (City Furnished)	LS	CITY-VALVE REPL.	Water	Appurtenance	x
7020	Steel Guard Post (Bollard)	EA	ALL	General	Appurtenance	236
7030	Rock Foundation	CY	ALL	General	Trench	x
7040	Stabilized Backfill	CY	ALL	General	Trench	x
7041	Flowable Backfill	CY	ALL	General	Trench	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
7042	Modified Flowable Backfill	CY	ALL	General	Trench	x
7043	Four "F" Flowable Backfill	CY	ALL	General	Trench	x
7044	Four "F" Flowable Base - High Strength & Fast Set	CY	ALL	Paving	Paving	x
7045	Grout for Pipeline Abandonment	CY	ALL	General	Abandonment	x
7050	Sand Backfill	CY	ALL	General	Trench	x
7051	Topsoil	CY	ALL	Restoration	Landscaping	x
7052	Cement Treated Base Backfill	CY	ALL	General	Trench	x
7053	Cement Stabilized Sand Backfill	CY	CITY	General	Trench	x
7060	Concrete Backfill	CY	ALL	General	Trench	x
7061	Class 'B' Concrete Backfill	CY	ALL	General	Trench	x
7070	Class "A" Concrete	CY	ALL	General	Trench	X
7071	Class "B" Concrete	CY	ALL	General	Trench	x
7072	Class "C" Concrete	CY	ALL	General	Trench	x
7073	Class "D" Concrete	CY	ALL	General	Trench	x
7074	Class "E" Concrete	CY	ALL	General	Trench	x
7075	Class "F" Concrete	CY	ALL	General	Trench	x
7076	Class "H" Concrete	CY	ALL	General	Trench	x
7090	Furnish and Place Rip Rap	SY	ALL	Paving	Paving	x
7095	Furnish and Place Dry Rip Rap (Type A)	SY	ALL	Paving	Paving	x
7096	Furnish and Place Grouted Rip Rap (Type A and Type B)	SY	ALL	Paving	Paving	x
7100	Lump Sum Cost Difference - Other Than Dry Kiln Portland Cement	LS	CITY	General	Alternate	X
7200AE	48" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7200AG	60" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7200AJ	72" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7200AL	84" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7200AN	96" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7200AR	108" Diameter Storm Sewer Manhole for Wastewater Passthrough	EA	CITY	General	Trench	416
7520	Temporary Paving (Hot Mix or High-Performance Mix)	TN	ALL	Paving	Paving	x
7525	Flex Base (Crushed Rock) Alley Surface	CY	CITY	Paving	Paving	x
7530	Concrete Curb and/or Gutter	LF	CITY	Paving	Paving	x
7531	Asphalt Curb and/or Gutter	LF	CITY	Paving	Paving	x
7532	Concrete Gutter	LF	CITY	Paving	Paving	x
7540	Concrete Curb	LF	CITY	Paving	Paving	x
7545	Asphalt Curb	LF	CITY	Paving	Paving	x
7560	Crushed Rock for Temporary Paving Base	CY	CITY	Paving	Paving	x
7570	Reinforced Concrete Paving	CY	CITY	Paving	Paving	x
7580	Reinforced Concrete Sidewalk	SY	CITY	Paving	Paving	x
7581	Temporary Hot Mix Asphalt Sidewalk	SY	CITY	Paving	Paving	x
7582	Reinforced Concrete Paving	SY	CITY	Paving	Paving	x
7583	Reinforced Concrete Driveway	SY	CITY	Paving	Paving	x
7584	Slurry Seal Surface Treatment	SY	CITY	Paving	Paving	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
7585	Barrier Free Ramp	EA	CITY	Paving	Paving	x
7590	Reinforced Concrete Driveway	CY	CITY	Paving	Paving	x
7600	Reinforced Concrete Base	CY	CITY	Paving	Paving	x
7605	Type 3K-2 Reinforced Concrete Base	CY	CITY	Paving	Paving	x
7650	Penetration Type Asphalt Replacement	SY	CITY	Paving	Paving	x
7655	Hot Mix Asphalt Concrete Pavement	TN	CITY	Paving	Paving	x
7700	Geotextile Fabric (Erosion Control)	LF	ALL	General	Environmental	x
7701	Geotextile Fabric (Erosion Control)	SY	ALL	General	Environmental	x
7702	Geotextile Fabric (Embedment)	LF	ALL	General	Trench	x
7703	Geotextile Fabric (Embedment)	SY	ALL	General	Trench	x
7710	Silt Fence	LF	ALL	General	Environmental	x
7711	Silt Fence and Hay Bales	LF	ALL	General	Environmental	x
7712	Storm Water Pollution Prevention Plan	EA	ALL	General	Environmental	x
7713	Erosion Control	LS	ALL	General	Environmental	x
7720	Excavation	CY	SPECIAL	General	Excavation	x
7725	Rock Excavation	CY	P. DEV	General	Excavation	x
7730	Disposal of Heavy Chlorinated Water Main Flushing Water	LS	ALL	Water	Environmental	x
7765	Disposal of Non-Hazardous Class I Industrial Waste Soils	CY	ALL	General	Environmental	x
7766	Disposal of Non-Hazardous Class II Industrial Waste Soils	CY	ALL	General	Environmental	x
7767	Disposal of Contaminated Groundwater	GAL	ALL	General	Environmental	x
7768	Health, Safety, and Monitoring Plan	LS	ALL	General	Environmental	x
7801F	4" Reinforced Concrete Pavement or Base	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7801H	6" Reinforced Concrete Pavement or Base	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7801J	8" Reinforced Concrete Pavement or Base	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7803	Reinforced Concrete Sidewalk	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7804D	2" Hot-Mix Asphalt Concrete Pavement	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7805H	6" Type Four F Flowable-High Strength/Fast Set	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7806H	6" Class "K" Reinforced Concrete Paving	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7807F	4" Washed/Architectural/Exposed Aggregate Concrete Paving	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7808H	6" Special Pavement	SF	CITY-PAVING REP.	Paving Rep.	Paving	x
7809	24-Hour Emergency Callout	EA	CITY-PAVING REP.	Paving Rep.	Paving	x
7810	Stand-By Time	HR	CITY-PAVING REP.	Paving Rep.	Paving	x
7811	Star (Core) Hole Repair	EA	CITY-PAVING REP.	Paving Rep.	Paving	x
7812	Traffic Buttons	EA	CITY-PAVING REP.	Paving Rep.	Paving	x
7813	Traffic Striping	LF	CITY-PAVING REP.	Paving Rep.	Paving	x
7814	Storm Drain Manhole Adjustment	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7816	Sawing	LF	CITY-PAVING REP.	Paving Rep.	Paving	x
7817	Unclassified Sidewalk Excavation	CY	CITY-PAVING REP.	Paving Rep.	Excavation	x
7818	Unclassified Street Excavation	CY	CITY-PAVING REP.	Paving Rep.	Excavation	x
7819	Unclassified Alley Excavation	CY	CITY-PAVING REP.	Paving Rep.	Excavation	x
7820	General Requirements for Asphalt Base Recycling	SY	CITY-PAVING REP.	Paving Rep.	Environmental	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
7823	Base Repair, Flexbase, Ctb Or Rebase	CY	CITY-PAVING REP.	Paving Rep.	Paving	x
7826	Underseal	SY	CITY-PAVING REP.	Paving Rep.	Paving	x
7827	Surface, Edge, and Butt Joint Milling	LF	CITY-PAVING REP.	Paving Rep.	Paving	x
7829	Barrier Free Ramp (Inside Dallas City Limits)	EA	CITY-PAVING REP.	Paving Rep.	Paving	x
7830	Barrier Free Ramp (Outside Dallas City Limits)	EA	CITY-PAVING REP.	Paving Rep.	Paving	x
7832V	Adjustment Rings For 24" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7832Y	Adjustment Rings For 30" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7832AA	Adjustment Rings For 36" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7832AB	Adjustment Rings For 40" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7832AC	Adjustment Rings For 42" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7832AE	Adjustment Rings For 48" Storm Sewer Manhole	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	x
7833	Adjustment of Water Valve Stack Box Riser and Lid in Adv. of Resurfacing	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	404
7834	Adjustment of Wastewater Access Device	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	328
7835	Adjustment of Wastewater Mainline Cleanout in Adv. of Resurfacing	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	410
7836	Adjustment of Wastewater Manhole Lid in Adv. of Resurfacing	EA	CITY-PAVING REP.	Paving Rep.	Adjustment	401
7837	Joint and Crack Sealing	SY	CITY-PAVING REP.	Paving Rep.	Paving	x
8000	Barricading (Water & WW Mains)	LF	SPECIAL	General	Safety	x
8005	Concrete Barricading (Water & WW Mains)	LF	ALL	General	Safety	x
8010	Construction Staking	LS	CITY	General	Survey	x
8011	Construction Surveying & Staking (Water & WW Mains)	LF	CITY	General	Survey	x
8012	Construction Surveying & Staking (Paving)	LF	CITY	General	Survey	x
8100	Mobilization for Water and Wastewater Mains	LS	JOINT	General	Mobilization	x
8200	Traffic Detour	LS	CITY	General	Safety	x
11003	Clearing and Grubbing for Stormwater Project	LS	City	Stormwater	General	x
11004	Tree Placement	EA	City	Stormwater	General	x
11005	Remove Tree -In - < -In	EA	City	Stormwater	General	x
11007	Existing Vegetation Protection and Maintenance	LS	City	Stormwater	General	x
11009	Stormwater Project Mobilization	LS	City	Stormwater	General	x
11011	Remobilization for Stormwater Project	LS	City	Stormwater	General	x
11013	Stormwater Project Partnering	LS	City	Stormwater	General	x
11015	Remove Fence	LF	City	Stormwater	General	x
11017	Remove and Replace Fence	LF	City	Stormwater	General	x
11019	Remove and Reset Fence	LF	City	Stormwater	General	x
11021	Chain Link Fence	LF	City	Stormwater	General	x
11022	Metal Beam Guard Fence	LF	City	Stormwater	General	x
11023	Remove and Reset Guard Rail	LF	City	Stormwater	General	x
11024	Remove and Replace Irrigation	LS	City	Stormwater	General	x
11025	Bermuda Or St. Augustine Grass Spot Sod for Stormwater Project	SY	City	Stormwater	General	x
11027	Block Sodding for Stormwater Project	SY	City	Stormwater	General	x
11029	Grass Seeding by Hydro Mulching for Stormwater Project	SY	City	Stormwater	General	x
11031	Placement of Seed for Stormwater Project	SY	City	Stormwater	General	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
11033	Sawing (LF) for Stormwater Project	LF	City	Stormwater	General	x
11035	Locate Underground Utility Not Under Pavement	EA	City	Stormwater	General	x
11101	Unclassified Sidewalk Excavation	CY	City	Stormwater	Excavation	x
11103	Unclassified Street Excavation	CY	City	Stormwater	Excavation	x
11105	Unclassified Alley Excavation	CY	City	Stormwater	Excavation	x
11107	Unclassified Channel Excavation	CY	City	Stormwater	Excavation	x
11109	Rock Channel Excavation	CY	City	Stormwater	Excavation	x
11111	Furnishing and Placing Top Soil	SY	City	Stormwater	Excavation	x
11113	Select Borrow Material for Subgrade	CY	City	Stormwater	Excavation	x
11115	Select Borrow Material for Topsoil	CY	City	Stormwater	Excavation	x
11117	Flowable Backfill for Stormwater Project	CY	City	Stormwater	Excavation	x
11119	Modified Flowable Backfill for Stormwater Project	CY	City	Stormwater	Excavation	x
11121	Dry Riprap	CY	City	Stormwater	Excavation	x
11123	Sand Backfill for Stormwater Project	LF	City	Stormwater	Excavation	x
11125	Sheeting, Shoring and Bracing	LF	City	Stormwater	Excavation	x
11201	Storm Water Pollution Prevention Plan for Stormwater Project	LS	City	Stormwater	Environmental	x
11203	Erosion Control for Stormwater Project	LS	City	Stormwater	Environmental	x
11205	Inlet Protection	EA	City	Stormwater	Environmental	x
11207	Erosion Control Log	LF	City	Stormwater	Environmental	x
11209	Temp Paved Flume	CY	City	Stormwater	Environmental	x
11211	Temp Pipe Slope Drain	LF	City	Stormwater	Environmental	x
11213	Interceptor Swale	LF	City	Stormwater	Environmental	x
11215	Stabilized Construction Exit	EA	City	Stormwater	Environmental	x
11217	Silt Fence for Stormwater Project	LF	City	Stormwater	Environmental	x
11219	Rock Filter Dam	LF	City	Stormwater	Environmental	x
11221	Erosion Control Blanket	SY	City	Stormwater	Environmental	x
11223	Diversion Dike	LS	City	Stormwater	Environmental	x
11301	Traffic Control	LS	City	Stormwater	Paving	x
11303	Signs for Capital Projects	LS	City	Stormwater	Paving	x
11305	Remove Concrete Pavement, Drive, Apron, Header and Integral Curb	SY	City	Stormwater	Paving	x
11307	Remove Separate Concrete Curb with/without Gutter	LF	City	Stormwater	Paving	x
11309	Remove Asphalt Pavement	SY	City	Stormwater	Paving	x
11311	Remove Concrete Sidewalk	SY	City	Stormwater	Paving	x
11313	Remove Concrete or Masonry Retaining Wall	LS	City	Stormwater	Paving	x
11315	Remove Concrete Median	SY	City	Stormwater	Paving	x
11317	Remove and Replace Concrete Median	SY	City	Stormwater	Paving	x
11319	Concrete Sidewalk Curb	LF	City	Stormwater	Paving	x
11321	Cement Treated Base	SY	City	Stormwater	Paving	x
11323	4" Thick Reinforced Concrete Pad/Bike Path	SY	City	Stormwater	Paving	x
11325	4" Thick Reinforced Concrete Walk	SF	City	Stormwater	Paving	x
11327	4" Thick Concrete Median Pavement	SF	City	Stormwater	Paving	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
11329	Remove / Furnish & Place 4" Exposed Aggregate Concrete Sidewalk	SF	City	Stormwater	Paving	x
11331	6" High Concrete Integral Curb with 18" Gutter	LF	City	Stormwater	Paving	x
11333	Reinforced Concrete Separate Curb with " Gutter	LF	City	Stormwater	Paving	x
11335	Reinforced Concrete Flume	CY	City	Stormwater	Paving	x
11337	6" High Reinforced Concrete Integral Mount Curb with 18" Gutter	LF	City	Stormwater	Paving	x
11339	3600 Psi Reinforced Concrete Retaining Wall	CY	City	Stormwater	Paving	x
11341	Reinforced Concrete Pavement (Match Existing Thickness)	SY	City	Stormwater	Paving	x
11343	Reinforced Concrete Traffic Island	SY	City	Stormwater	Paving	x
11345	Monolithic Median Nose	EA	City	Stormwater	Paving	x
11347	4000 Psi, 8-In Reinforced Concrete Drive	SY	City	Stormwater	Paving	x
11349	Removing Existing Concrete Paving & Placing 8-Inch Concrete Pavement	SY	City	Stormwater	Paving	x
11351	8-In Thick Reinforced High-Early Strength Concrete Pavement	SY	City	Stormwater	Paving	x
11353	6-In Reinforced Concrete Alley Pavement & Concrete Connection	SY	City	Stormwater	Paving	x
11355	6-In Reinforced Concrete Slope Down (Slope Protection)	SY	City	Stormwater	Paving	x
11357	" Thick Reinforced Concrete Pavement	SY	City	Stormwater	Paving	x
11359	6-In Thick Reinforced Concrete Driveway	SY	City	Stormwater	Paving	x
11361	6-In High Concrete Integral Curb	LF	City	Stormwater	Paving	x
11363	7-1/2 In to 9-In High Concrete Integral Curb	LF	City	Stormwater	Paving	x
11365	Reinforced Concrete Valley Gutter	LF	City	Stormwater	Paving	x
11367	Rock Base (Flex Base Material) (Temporary Pavement)	SY	City	Stormwater	Paving	x
11369	Hot Mix Asphalt for Temporary Paving	SY	City	Stormwater	Paving	x
11371	Asphalt Concrete Grade "B" Base,	TN	City	Stormwater	Paving	x
11373	Asphalt Concrete Grade "C" Surface	TN	City	Stormwater	Paving	x
11375	Flex Base for Subgrades	SY	City	Stormwater	Paving	x
11377	Soil Cement Stabilization Subgrade	SY	City	Stormwater	Paving	x
11379	Lime Stabilization Base Course	SY	City	Stormwater	Paving	x
11381	6-In Reinforced Concrete Barrier Free Ramp	EA	City	Stormwater	Paving	x
11383	Bollard	EA	City	Stormwater	Paving	x
11401	-- " Class III RCP Storm Drain	LF	City	Stormwater	Storm Drain	x
11402	-- " Class Iv RCP Storm Drain	LF	City	Stormwater	Storm Drain	x
11403	-- " Class V RCP Storm Drain	LF	City	Stormwater	Storm Drain	x
11404	-- " Storm Drain	LF	City	Stormwater	Storm Drain	x
11405	-- " RTRP Storm Drain	LF	City	Stormwater	Storm Drain	x
11407	-- " PVC Storm Drain	LF	City	Stormwater	Storm Drain	x
11409	-- " Pipe Underdrains	LF	City	Stormwater	Storm Drain	x
11411	-- " Storm Drain (BOTOC)	LF	City	Stormwater	Storm Drain	x
11413	Highway Or Railroad Crossing for " Storm Drain(BOTOC)	LF	City	Stormwater	Storm Drain	x
11414	Highway or Railroad Crossing for " Stormwater Main (Open Cut)	LF	City	Stormwater	Storm Drain	x
11415	Reinforced Concrete for Pipe Headwall and Wingwalls	CY	City	Stormwater	Storm Drain	x
11417	Drainage Trench with Grate	LF	City	Stormwater	Storm Drain	x
11419	Remove and Salvage Corrugated Metal Pipe	LF	City	Stormwater	Storm Drain	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
11420	Remove and Dispose Corrugated Metal Pipe	LF	City	Stormwater	Storm Drain	x
11421	Remove and Salvage RCP Storm Drain	LF	City	Stormwater	Storm Drain	x
11422	Remove and Dispose " RCP Storm Drain	LF	City	Stormwater	Storm Drain	x
11423	Television Inspection of Storm Drain	LF	City	Stormwater	Storm Drain	x
11425	RCP Wye Connection	EA	City	Stormwater	Storm Drain	x
11427	_ - " Storm Drain to Existing Pipe Connection	EA	City	Stormwater	Storm Drain	x
11429	_ - " Storm Drain to Existing Structure Connection	EA	City	Stormwater	Storm Drain	x
11431	_ - " Storm Drain Cleaning	LF	City	Stormwater	Storm Drain	x
11433	Point Repair of " Storm Drain	EA	City	Stormwater	Storm Drain	x
11435	Rehabilitation of Existing " Storm Drain	LF	City	Stormwater	Storm Drain	x
11437	Construction Surveying & Staking (Storm Drain)	LF	City	Stormwater	Storm Drain	x
11501	_ - Drain Inlets	EA	City	Stormwater	Appurtenances	x
11503	_ - -Foot Inlet	EA	City	Stormwater	Appurtenances	x
11505	Adjust Inlet	EA	City	Stormwater	Appurtenances	x
11507	Extra Depth of Inlets (+20')	EA	City	Stormwater	Appurtenances	x
11509	_ - Type _ Storm Manhole	EA	City	Stormwater	Appurtenances	x
11511	Adjust Storm Manhole	EA	City	Stormwater	Appurtenances	x
11513	Curb Drain Type 2	LF	City	Stormwater	Appurtenances	x
11515	_ -Slotted Drains	LF	City	Stormwater	Appurtenances	x
11517	6-In Reinforced Concrete Channel Lining	SY	City	Stormwater	Appurtenances	x
11519	Reinforced Concrete Transition Structure and Junction Box	EA	City	Stormwater	Appurtenances	x
11521	Remove Existing Drainage Structure	EA	City	Stormwater	Appurtenances	x
11523	Remove Storm Manholes	EA	City	Stormwater	Appurtenances	x
11525	Remove Inlets	EA	City	Stormwater	Appurtenances	x
11527	Remove and Replace Drive Culvert	LF	City	Stormwater	Appurtenances	x
11529	Remove Channel Lining	SY	City	Stormwater	Appurtenances	x
11531	_ - 'X ' Reinforced Concrete Box Culvert	LF	City	Stormwater	Appurtenances	x
11533	Drain Inlet Cleaning	EA	City	Stormwater	Appurtenances	x
11535	Culvert Cleaning	EA	City	Stormwater	Appurtenances	x
11537	Slot Drain Cleaning	LF	City	Stormwater	Appurtenances	x
11539	Abandon Existing Storm Manhole	EA	City	Stormwater	Appurtenances	x
11543	Abandon Existing Inlet	EA	City	Stormwater	Appurtenances	x
11545	Abandon Existing Pipe	EA	City	Stormwater	Appurtenances	x
11547	_ " Diameter Storm Manhole Rehabilitation	EA	City	Stormwater	Appurtenances	x
11549	_ " Diameter Storm Manhole Rehabilitation-Extra Depth (+20')	EA	City	Stormwater	Appurtenances	x
11601	Grouted Riprap for Stormwater Project	SY	City	Stormwater	Erosion Control	x
11603	Rock Foundation	CY	City	Stormwater	Erosion Control	x
11605	Gabion Structures	CY	City	Stormwater	Erosion Control	x
11607	_ - " Thick Gabion Mattresses	SY	City	Stormwater	Erosion Control	x
11609	Tie Back for Gabion Structures	LF	City	Stormwater	Erosion Control	x
11611	Soil Nail Anchors	LF	City	Stormwater	Erosion Control	x

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
11613	Rock Nail Anchors	LF	City	Stormwater	Erosion Control	x
11615	Reinforced Concrete Retaining Wall	CY	City	Stormwater	Erosion Control	x
11617	Concrete Curb Wall	LF	City	Stormwater	Erosion Control	x
11619	Segmented Retaining Wall	SY	City	Stormwater	Erosion Control	x
11621	Concrete Bag Retaining Wall	EA	City	Stormwater	Erosion Control	x
11623	Sandbag for Erosion Control	EA	City	Stormwater	Erosion Control	x
11625	" Thick Clay Cap	CY	City	Stormwater	Erosion Control	x
11627	Flexmat	SY	City	Stormwater	Erosion Control	x
11628	Turfstone	SY	City	Stormwater	Erosion Control	x
11629	Pneumatically Placed Concrete	SF	City	Stormwater	Erosion Control	x
11631	Remove Boulder	EA	City	Stormwater	Erosion Control	x
11633	Geotextile Fabric	SY	City	Stormwater	Erosion Control	x
11635	Concrete Structure	CY	City	Stormwater	Erosion Control	x
11636	Steel Structure	LS	City	Stormwater	Erosion Control	x
11637	Drilled Shaft Foundations	LF	City	Stormwater	Erosion Control	x
11639	Removing Structure	LS	City	Stormwater	Erosion Control	x
11640	Remove and Dispose Structure	LS	City	Stormwater	Erosion Control	x
11641	Concrete Structure Repair	SF	City	Stormwater	Erosion Control	x
11643	Concrete Crack Repair	EA	City	Stormwater	Erosion Control	x
11645	Surface Finishes for Concrete	LS	City	Stormwater	Erosion Control	x
11701	Ditch Cleaning (Dredging)/Reshaping	LF	City	Stormwater	Flood Control	x
11801	Pump Station Well Cleaning	LS	City	Stormwater	Facilities	x
11803	Plug and Abandon Well	LS	City	Stormwater	Facilities	x
20300	Adjust and/or Relocate Water Meter Box	EA	JOINT	Wat. Adj.	Adjustment	409, 411
20330	Adjust Water Valve Covers & Stacks	EA	JOINT	Wat. Adj.	Adjustment	404
20331	Install and Adjust Water Valve Covers & Stacks in Advance of Resurfacing	EA	JOINT	Wat. Adj.	Adjustment	404
20332	Adjust Water Valve Covers & Stacks in Advance of Resurfacing	EA	JOINT	Wat. Adj.	Adjustment	404
20340	Adjust Wastewater Lateral Cleanout	EA	JOINT	WW. Adj.	Adjustment	406
20350	Adjust Wastewater Mainline Cleanout	EA	JOINT	WW. Adj.	Adjustment	410
20351	Adjust Wastewater Access Device	EA	JOINT	WW. Adj.	Adjustment	328
20352	Install and Adjust Wastewater Mainline Cleanout in Advance of Resurfacing	EA	JOINT	WW. Adj.	Adjustment	410
20353	Adjust Wastewater Mainline Cleanout in Advance of Resurfacing	EA	JOINT	WW. Adj.	Adjustment	410
20360	Adjust Wastewater Manhole	EA	JOINT	WW. Adj.	Adjustment	412
20361	Adjust Wastewater Manhole in Advance of Resurfacing	EA	JOINT	WW. Adj.	Adjustment	412
20662	Adjust Pressure Type Wastewater Manhole	EA	JOINT	WW. Adj.	Adjustment	412
20363	Adjust Pressure Type Wastewater Manhole in Advance of Resurfacing	EA	JOINT	WW. Adj.	Adjustment	412
20380	Adjust Water Manhole	EA	JOINT	Wat. Adj.	Adjustment	412
20381	Adjust Water Manhole in Advance of Resurfacing	EA	JOINT	Wat. Adj.	Adjustment	412
20400	Adjust Flush Point	EA	JOINT	Wat. Adj.	Adjustment	207
20410	Adjust Type 1 Air Valve	EA	JOINT	Wat. Adj.	Adjustment	208
20420	Adjust Type 2 Air Valve	EA	JOINT	Wat. Adj.	Adjustment	209, 210

Item No.	Item Description	Units	Contract Type	Item Category	Item Use	DWU Standard Drawing
20430	Install Fire Hydrant Extension	EA	JOINT	Wat. Adj.	Adjustment	224
20440	Remove Fire Hydrant Extension	EA	JOINT	Wat. Adj.	Adjustment	x
20450	Adjust Large Water Service Cover and Frame	EA	JOINT	Wat. Adj.	Adjustment	411, 502, 506
20500	Investigation	EA	ALL	General	General	x
20540	Alter Water Valve Covers & Stacks	EA	JOINT	Wat. Adj.	Adjustment	x
20550	Alter Wastewater Mainline Cleanout	EA	JOINT	WW. Adj.	Adjustment	410
20560	Alter Wastewater Manhole	EA	JOINT	WW. Adj.	Adjustment	311
20580	Alter Water Manhole	EA	JOINT	Wat. Adj.	Adjustment	401
20600	Install Cleanout on Existing Wastewater Lateral	EA	JOINT	WW. Adj.	Adjustment	406
20620	Replace Existing Wastewater Lateral Cleanout	EA	JOINT	WW. Adj.	Adjustment	407
20630	Relocate Type 1 Air Valve	EA	JOINT	Wat. Adj.	Adjustment	208
20640	Relocate Type 2 Air Valve	EA	JOINT	Wat. Adj.	Adjustment	209, 210
20650	Replace Existing Fire Hydrant	EA	JOINT	Wat. Adj.	Adjustment	224
20651	Replace Existing Fire Hydrant to Final Grade	EA	JOINT	Wat. Adj.	Adjustment	x
20652	Adjust/Relocate New Fire Hydrant	EA	JOINT	Wat. Adj.	Adjustment	224
20660	Relocate Commercial Water Service	EA	JOINT	Wat. Adj.	Adjustment	x
20670	Abandon Water Service Off Existing Main	EA	JOINT	Wat. Adj.	Adjustment	x
20680	Abandon Wastewater Lateral Off Existing Main	EA	JOINT	WW. Adj.	Adjustment	x
20700	Adjust Existing Wastewater Lateral	EA	JOINT	WW. Adj.	Adjustment	406
20910	Replace Existing 4' Diameter Manhole	EA	JOINT	WW. Adj.	Adjustment	311
20920	Replace Existing 5' Diameter Manhole	EA	JOINT	WW. Adj.	Adjustment	311
20390	Relocate Pipe-To-Soil Potential Monitoring Station	EA	JOINT	Wat. Adj.	Adjustment	417