



**CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
ENGINEERING AND CONSTRUCTION DIVISION»**

**PROJECT MANUAL  
PROPOSED 72-INCH WATER LINE  
FROM DOWLING ST. TO TUAM ST.  
WBS No. S-000900-0131-4**

**VOLUME 1 of 1**

Divisions 00 through 16

JUNE 2016

**DRAFT 60% SUBMITTAL**

These documents are issued for the purpose of preliminary review and are not intended for construction. When issued in final form they will be sealed, signed and dated.

Responsible Engineer:  
Brown & Gay Engineers, Inc.  
F-1046  
Lance K. McLeod, P.E.  
Texas Registration  
No. 85520  
June 24, 2016

Brown & Gay Engineers, Inc.  
10777 Westheimer, Suite 400  
Houston, TX 77042  
Tel: 281-558-8700  
TBPE Registration No. F-1046

Document 00010

## TABLE OF CONTENTS

NOTE: Bold capitalized Specification Sections are included in the City of Houston Department of Public Works and Engineering Standard Construction Specifications for Wastewater Collection Systems, Water Lines, Storm Drainage, Street Paving, and Traffic located here: <https://edocs.publicworks.houstontx.gov/all-documents/engineering-and-construction/specifications/division-02-16-standard-specifications/3041-standard-construction-specifications.html>; and are incorporated in Project Manuals by reference as if copied verbatim. Documents listed "for filing" are to be provided by Bidder and are not included in this Project Manual unless indicated for example only. The Document numbers and titles hold places for actual documents to be submitted by Contractor during Bid, post-bid, or construction phase of the Project. Specification Sections marked with an asterisk (\*) are amended by a supplemental specification, printed on blue paper and placed in front of the Specification it amends. Documents in the 200, 300 and 400 series of Division 00, except for Document 00410B – Bid Form, Part B, are not part of the Contract.

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
<b>INTRODUCTORY INFORMATION</b>		
00010	Table of Contents .....	03-07-2016
00015	List of Drawings .....	02-01-2004
<b>BIDDING REQUIREMENTS</b>		
<b>INSTRUCTIONS TO BIDDERS</b>		
00200	Instructions to Bidders .....	08-01-2015
00210	Supplementary Instructions to Bidders .....	09-20-2012
00220	Request for Bid Information .....	06-11-2004
<b>INFORMATION AVAILABLE TO BIDDERS</b>		
00320	Geotechnical Information .....	09-02-2005
00340	Environmental Information .....	09-14-2005
<b>BID FORMS AND SUPPLEMENTS</b>		
00410	Bid Form, Parts A & B .....	08-01-2015
00430	Bidder's Bond (For filing; Example Form) .....	02-01-2004
00450	Bidder's Statement of SMWBE Status .....	07-01-2013
00452	Contractor Submission List - Fair Campaign Ordinance .....	04-30-2004
00453	Bidder's Statement of Residency .....	02-01-2004
00454	Affidavit of Non-interest .....	02-01-2004
00455	Affidavit of Ownership or Control .....	09-04-2007
00457	Conflict of Interest Questionnaire .....	02-28-2006
00458	Bidder's Certificate Regarding Foreign Trade Restriction .....	02-01-2004
00459	Contractor's Statement Regarding Previous Contracts Subject to EEO .....	02-01-2004

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
00460	Pay or Play Acknowledgement Form (POP-1A) .....	04-01-2013
00470	Bidder's MWSBE Participation Plan .....	08-01-2015
00471	Pre-Bid Good Faith Efforts .....	08-01-2015
00472	Bidder's Goal Deviation Request.....	08-01-2015

**POST-BID PROCEDURES**

00495	Post-bid Procedures.....	07-01-2013
-------	--------------------------	------------

**CONTRACTING REQUIREMENTS****AGREEMENT**

00501	Resolution of Contractor.....	02-01-2010
00520	Agreement.....	03-02-2016
00570	Amended MWSBE Participation Plan .....	08-01-2013
00571	Post-Bid Good Faith Efforts.....	08-01-2013
00572	Contractor's Plan Deviation Request.....	08-01-2013

**BONDS AND CERTIFICATES**

00600	List of Proposed Subcontractors and Suppliers, Parts A & B.....	07-01-2013
00601	Drug Policy Compliance Agreement.....	02-01-2004
00602	Contractor's Drug Free Workplace Policy (For filing)	
00603	Checklist for Drug Policy Submittal .....	02-09-2012
00604	History of OSHA Actions and List of On-the-job Injuries .....	02-01-2004
00605	List of Safety Impact Positions .....	02-01-2004
00606	Contractor's Certification of No Safety Impact Positions .....	02-01-2004
00607	Certification Regarding Debarment, Suspension, and Other Responsibility Matters.....	02-01-2004
00610	Performance Bond .....	05-17-2005
00611	Statutory Payment Bond .....	05-17-2005
00612	One-year Maintenance Bond .....	05-17-2005
00613	One-year Surface Correction Bond .....	05-17-2005
00620	Affidavit of Insurance (with attached Certificates of Insurance).....	02-01-2004
00622	Name and Qualifications of Proposed Superintendent (For filing)	
00624	Affidavit of Compliance with MWSBE Program .....	02-01-2004
00630	Certification of Agreement to Comply with Pay or Play Program ....	07-03-2012
00631	City of Houston Pay or Play Program – List of Participating Subcontractors .....	07-03-2012
00633	Equal Employment Opportunity - Certification By Material Suppliers .....	02-01-2010
00642	Monthly Subcontractor Payment Reporting Form .....	02-01-2010
00646	Payment Notification Explanation of Withholding.....	02-01-2010

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
<b>GENERAL CONDITIONS</b>		
00700	General Conditions.....	08-15-2015
<b>SUPPLEMENTARY CONDITIONS</b>		
00800	Supplementary Conditions .....	03-07-2016
00805	Equal Employment Opportunity Program Requirements.....	03-01-2016
00808	Requirements for the City of Houston Program for Minority, Women and Small Business Enterprises (MWSBE), and Persons with Disabilities Business Enterprises (PDBE) .....	12-23-2015
00820	Wage Scale for Engineering Construction .....	02-01-2016
00830	Trench Safety Geotechnical Information .....	02-01-2004
00840	Pay or Play Program Requirements .....	07-03-2012
<b>ADDENDA AND MODIFICATIONS</b>		
00931	Request for Information.....	02-01-2004
<b>SPECIFICATIONS</b>		
<b>DIVISION 1 - GENERAL REQUIREMENTS</b>		
01110	Summary of Work .....	06-27-2005
01145	Use of Premises.....	01-01-2011
01255	Change Order Procedures .....	08-01-2003
01270	Measurement and Payment .....	08-01-2003
01292	Schedule of Values .....	08-01-2003
01312	Coordination and Meetings .....	08-01-2003
01321	Construction Photographs.....	08-01-2003
01325	Construction Schedule .....	08-01-2003
01326	Construction Schedule (Bar Chart).....	08-01-2003
01330	Submittal Procedures .....	08-01-2003
01340	Shop Drawings, Product Data, and Samples .....	08-01-2003
01410	TPDES Requirements (with Attachments) .....	02-01-2011
01422	Reference Standards .....	08-01-2003
01450	Contractor's Quality Control .....	08-01-2003
01452	Inspection Services .....	08-01-2003
01454	Testing Laboratory Services.....	08-01-2003
01502	Mobilization .....	08-01-2008
01504	Temporary Facilities and Controls.....	01-01-2011
01506	Diversion Pumping .....	08-01-2003
01520	Temporary Field Office.....	02-08-2012
01555S	Traffic Control and Regulation.....	04-22-2009
*01555	Traffic Control and Regulation.....	01-01-2011
01562	Tree and Plant Protection.....	01-01-2011

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
01570	Storm Water Pollution Control.....	01-26-2012
01575	Stabilized Construction Access .....	02-01-2011
01576	Waste Material Disposal.....	08-01-2003
01578	Control of Ground and Surface Water.....	01-01-2011
01580	Project Identification Signs .....	08-01-2003
01581	Excavation in Public Way Permit Signs.....	08-01-2003
01610	Basic Product Requirements .....	01-01-2011
01630	Product Substitution Procedures .....	08-01-2003
01725	Field Surveying.....	01-01-2011
01731	Cutting and Patching .....	01-01-2011
01732	Procedure for Water Valve Assistance (with Attachments) .....	08-01-2003
01740	Site Restoration.....	08-01-2003
01755	Starting Systems .....	08-01-2003
01770	Closeout Procedures .....	08-01-2003
01782	Operations and Maintenance Data.....	08-01-2003
01785	Project Record Documents .....	08-01-2003
<b>DIVISION 2 - SITE WORK</b>		
<b>02081</b>	<b>CAST-IN-PLACE CONCRETE MANHOLES .....</b>	<b>01-01-2011</b>
02082S	Precast Concrete Manholes.....	11-08-2012
<b>*02082</b>	<b>PRECAST CONCRETE MANHOLES .....</b>	<b>01-01-2011</b>
<b>02083</b>	<b>FIBERGLASS MANHOLES .....</b>	<b>01-01-2011</b>
<b>02084</b>	<b>FRAMES, GRATES, RINGS, AND COVERS.....</b>	<b>08-01-2008</b>
<b>02085</b>	<b>VALVE BOXES, METER BOXES, AND METER VAULTS.....</b>	<b>01-01-2011</b>
<b>02086</b>	<b>ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.....</b>	<b>01-01-2011</b>
<b>02087</b>	<b>BRICK MANHOLE FOR STORM SEWERS .....</b>	<b>10-01-2002</b>
02221S	Removing Existing Pavements and Structures.....	10-24-2012
<b>*02221</b>	<b>REMOVING EXISTING PAVEMENTS AND STRUCTURES .....</b>	<b>07-01-2009</b>
<b>02222</b>	<b>ABANDONMENT OF SEWERS.....</b>	<b>01-01-2011</b>
<b>02233</b>	<b>CLEARING AND GRUBBING .....</b>	<b>01-01-2011</b>
<b>02260</b>	<b>TRENCH SAFETY SYSTEM.....</b>	<b>02-01-2011</b>
<b>02315</b>	<b>ROADWAY EXCAVATION .....</b>	<b>07-01-2009</b>
<b>02316</b>	<b>EXCAVATION AND BACKFILL FOR STRUCTURES .....</b>	<b>01-01-2011</b>
<b>02317</b>	<b>EXCAVATION AND BACKFILL FOR UTILITIES .....</b>	<b>01-01-2011</b>
<b>02318</b>	<b>EXTRA UNIT PRICE WORK FOR EXCAVATION AND BACKFILL .....</b>	<b>01-01-2011</b>
<b>02319</b>	<b>BORROW.....</b>	<b>01-01-2011</b>
02320S	Utility Backfill Materials.....	11-08-2012
<b>*02320</b>	<b>UTILITY BACKFILL MATERIALS.....</b>	<b>01-01-2011</b>
<b>02321</b>	<b>CEMENT STABILIZED SAND .....</b>	<b>01-01-2011</b>
<b>02322</b>	<b>FLOWABLE FILL.....</b>	<b>08-01-2008</b>

<u>Doc. No.</u>	<u>Document Title</u>	<u>Doc. Date</u>
02330	EMBANKMENT .....	10-01-2002
02336	LIME-STABILIZED SUBGRADE .....	10-01-2002
02337	LIME/FLY-ASH STABILIZED SUBGRADE .....	10-01-2002
02338	PORTLAND CEMENT STABILIZED SUBGRADE .....	10-01-2002
02371(LD)	Erosion Control and Vegetation Mat.....	10-15-1995
02400	TUNNEL SHAFTS.....	01-01-2011
02401	COMMON TUNNEL SHAFTS .....	01-01-2011
02425	TUNNEL EXCAVATION AND PRIMARY LINER .....	10-01-2002
02426	SEWER LINE IN TUNNELS.....	10-01-2002
02427	PLASTIC LINER FOR LARGE-DIAMETER CONCRETE SEWERS AND STRUCTURES .....	10-01-2002
02431	TUNNEL GROUT .....	10-01-2002
02441	MICROTUNNELING AND PIPE-JACKED TUNNELS .....	01-01-2011
02447	AUGERING PIPE AND CONDUIT .....	10-01-2002
02448	PIPE AND CASING AUGERING FOR SEWERS.....	10-01-2002
02465	DRILLED SHAFT FOUNDATIONS .....	10-01-2002
02501	DUCTILE IRON PIPE AND FITTINGS.....	02-01-2011
02502	STEEL PIPE AND FITTINGS.....	01-01-2011
02503	COPPER TUBING.....	10-01-2002
02504	CENTRIFUGALLY CAST FIBERGLASS PIPE.....	02-01-2011
02505	HIGH DENSITY POLYETHYLENE (HDPE) SOLID AND PROFILE WALL PIPE .....	02-01-2011
02506	POLYVINYL CHLORIDE PIPE .....	01-01-2011
02507	PRESTRESSED CONCRETE CYLINDER PIPE .....	01-01-2011
02508	EXTRA STRENGTH CLAY PIPE .....	02-01-2011
02509	FIBERGLASS REINFORCED PIPE FOR PRESSURE MAINS .....	01-01-2011
02511S	Water Lines.....	10-24-2012
*02511	WATER LINES.....	01-01-2011
02512	WATER TAP AND SERVICE LINE INSTALLATION .....	04-27-2012
02513S	Wet Connections.....	10-24-2012
*02513	WET CONNECTIONS.....	10-01-2002
02514S	Disinfection of Water Lines.....	11-08-2012
*02514	DISINFECTION OF WATER LINES.....	01-01-2011
02515S	Hydrostatic Testing of Pipelines.....	11-08-2012
*02515	HYDROSTATIC TESTING OF PIPELINES .....	01-01-2011
02516	CUT, PLUG, AND ABANDONMENT OF WATER LINES.....	01-01-2011
02517	WATER LINE IN TUNNELS.....	10-01-2002
02518S	Steel Pipe and Fittings for Large-Diameter Water Lines.....	11-08-2012
*02518	STEEL PIPE AND FITTINGS FOR LARGE-DIAMETER WATER LINES.....	01-01-2011
02520	FIRE HYDRANTS .....	05-05-2011
02521	GATE VALVES .....	01-01-2011

<u>Doc. No.</u>	<u>Document Title</u>	<u>Doc. Date</u>
02522	BUTTERFLY VALVES .....	01-01-2011
02523	PRESSURE REDUCING VALVES .....	10-01-2002
02524	AIR RELEASE AND VACUUM RELIEF VALVES .....	01-01-2011
02525S	Tapping Sleeves and Valves.....	10-24-2012
*02525	TAPPING SLEEVES AND VALVES .....	01-01-2011
02526	WATER METERS .....	01-01-2011
02527S	Polyurethane Coatings on Steel or Ductile Iron Pipe.....	11-08-2012
*02527	POLYURETHANE COATINGS ON STEEL OR DUCTILE IRON PIPE .....	10-01-2002
02528	POLYETHYLENE WRAP.....	01-01-2011
02531	GRAVITY SANITARY SEWERS .....	01-01-2011
02532	SANITARY SEWER FORCE MAINS .....	01-01-2011
02533	ACCEPTANCE TESTING FOR SANITARY SEWERS .....	01-01-2011
02534	SANITARY SEWER SERVICE STUBS OR RECONNECTIONS....	01-01-2011
02581	STREET LIGHTING CONDUIT .....	10-01-2002
02582	TRAFFIC SIGNAL POLE ASSEMBLIES .....	07-01-2009
02611	REINFORCED CONCRETE PIPE .....	02-01-2011
02612	PRECAST REINFORCED CONCRETE BOX SEWERS .....	10-01-2002
02613	BAR WRAPPED STEEL CYLINDER PIPE.....	01-01-2011
02614	Large Diameter Line Stop .....	09-23-2016
02621	GEOTEXTILE.....	10-01-2002
02631	STORM SEWERS.....	01-26-2012
02632	CAST-IN-PLACE INLETS, HEADWALLS, AND WINGWALLS .....	10-01-2002
02633	PRECAST CONCRETE INLETS, HEADWALLS, AND WINGWALLS .....	10-01-2002
02642	CORRUGATED METAL PIPE .....	10-01-2002
02643	PLATE CULVERT STRUCTURES.....	10-01-2002
02711	HOT MIX ASPHALT BASE COURSE.....	07-01-2009
02712	CEMENT STABILIZED BASE COURSE .....	10-01-2002
02713S	Recycled Crushed Concrete Base Course.....	10-08-2009
*02713	RECYCLED CRUSHED CONCRETE BASE COURSE .....	07-01-2009
02714	FLEXIBLE BASE COURSE FOR TEMPORARY DRIVEWAYS .....	07-01-2009
02741	ASPHALTIC CONCRETE PAVEMENT .....	07-01-2009
02742	PRIME COAT .....	10-01-2002
02743	TACK COAT.....	10-01-2002
02751S	Concrete Paving.....	11-08-2012
*02751	CONCRETE PAVING.....	07-01-2009
02752S	Concrete Pavement Joints .....	12-29-2009
*02752	CONCRETE PAVEMENT JOINTS.....	10-01-2002
02753	CONCRETE PAVEMENT CURING .....	10-01-2002
02754	CONCRETE DRIVEWAYS.....	09-01-2002

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
02761	COLORED CONCRETE FOR MEDIANS AND SIDEWALKS.....	09-01-2002
02762S	Blast Cleaning of Pavement.....	10-27-2004
*02762	BLAST CLEANING OF PAVEMENT .....	10-01-2002
02764	RAISED PAVEMENT MARKERS .....	07-01-2012
02765	TEMPORARY AND REMOVABLE REFLECTORIZED PAVEMENT MARKINGS .....	07-01-2012
02767	THERMOPLASTIC PAVEMENT MARKINGS.....	07-01-2012
02771	CURB, CURB AND GUTTER, AND HEADERS .....	10-01-2002
02772	CONCRETE MEDIANS AND DIRECTIONAL ISLANDS .....	10-01-2002
02775	CONCRETE SIDEWALKS .....	10-01-2002
02811	LANDSCAPE IRRIGATION .....	10-01-2002
02893	TRAFFIC SIGNAL CONSTRUCTION .....	07-01-2009
02911	TOPSOIL.....	10-01-2002
02912	TREE, PLANT, AND HARDSCAPE PROTECTION.....	07-01-2009
02915	TREE PLANTING.....	01-01-2011
02921	HYDROMULCH SEEDING .....	01-01-2011
02922	SODDING.....	07-01-2009
02951S	Pavement Repair and Restoration.....	11-08-2012
*02951	PAVEMENT REPAIR AND RESTORATION.....	07-01-2009
02983	REMOVAL AND RESTORATION OF BRICK-PAVED STREETS..	10-01-2002
 <b>DIVISION 3 - CONCRETE</b>		
03315	CONCRETE FOR UTILITY CONSTRUCTION.....	10-01-2002
 <b>DIVISION 4 - MORTAR</b>		
04061	MORTAR.....	10-01-2002
04210	BRICK MASONRY FOR UTILITY CONSTRUCTION .....	10-01-2002
 <b>DIVISION 5 - METALS</b>		
05501	METAL FABRICATIONS .....	01-01-2011
 <b>DIVISION 6 - WOOD AND PLASTICS</b>		
 <b>DIVISION 7 - THERMAL AND MOISTURE PROTECTION</b>		
 <b>DIVISION 8 - DOORS AND WINDOWS</b>		
 <b>DIVISION 9 - FINISHES</b>		
 <b>DIVISION 10 - SPECIALTIES</b>		
 <b>DIVISION 11 – EQUIPMENT</b>		

<b><u>Doc. No.</u></b>	<b><u>Document Title</u></b>	<b><u>Doc. Date</u></b>
------------------------	------------------------------	-------------------------

**DIVISION 12 - FURNISHINGS**

**DIVISION 13 - SPECIAL CONSTRUCTION**

**DIVISION 14 - CONVEYING SYSTEMS**

**DIVISION 15 – MECHANICAL**

15640 JOINT BONDING AND ELECTRICAL ISOLATION .....01-01-2011

15641 CORROSION CONTROL TEST STATIONS.....01-01-2011

**DIVISION 16 – ELECTRICAL**

16640 CATHODIC PROTECTION FOR PIPELINES .....01-01-2011

END OF DOCUMENT

Document 00410A

BID FORM – PART A

To: **The Honorable Mayor and City Council of the City of Houston  
City Hall Annex  
900 Bagby Street  
Houston, Texas 77002**

Project: 72-inch Water Line from Dowling to Tuam along Polk, Hutchins, Clay,  
Chenevert, Hadley and Crawford

Project No.: WBS No. S-000900-0131-4

Bidder: \_\_\_\_\_  
(Print or type full name of business entity, such as corporation, LLC, etc.)

**1.0 OFFER**

- A. Total Bid Price:** Having examined the Project location and all matters referred to in Bid Documents for the Project, we, the undersigned, offer to enter into a Contract to perform the Work for the Total Bid Price shown on the signature page of this Document
- B. Security Deposit:** Included with the Bid is a Security Deposit in the amount of 10 percent of the Total Bid Price subject to terms described in Document 00200 – Instructions to Bidders.
- C. Period for Bid Acceptance:** This offer is open to acceptance and is irrevocable for 90 days from Bid Date. That period may be extended by mutual written agreement of the City and Bidder.
- D. Addenda:** All Addenda have been received. Modifications to Bid Documents have been considered and all related costs are included in the Total Bid Price.
- E. Bid Supplements:** The following documents are attached:
  - Security Deposit (*as defined in Document 00200 – Instructions to Bidders*)
  - Document 00450 - Bidder's Statement of MWSBE Status
  - Document 00454 - Affidavit of Non-interest
  - Document 00455 - Ownership Information Form
  - Document 00456 - Bidder's Certificate of Compliance with Buy American Program (*required for AIP funded project*)
  - Document 00457 – Conflicts of Interest Questionnaire (CIQ)
  - Document 00458 - Bidder's Certificate Regarding Foreign Trade Restriction (*required for AIP funded project*)
  - Document 00459 - Contractor's Statement Regarding Previous Contracts Subject to EEO (*required for AIP funded project*)
  - Document 00460 – Pay or Play Acknowledgement Form (POP 1-A)
  - Document 00470 – Bidder's MWSBE Participation Plan (*required unless no MWSBE participation goal is provided in Document 00800 (the "Goal")*).

- Document 00471 – Bidder’s Record of Good Faith Efforts (*required if the goal in Bidder’s Participation Plan–Document 00470 is lower than the Goal*).
  - Document 00472 – Bidder’s Goal Deviation Request (*required if the goal in Bidder’s Participation Plan–Document 00470 is lower than the Goal*).
  - Others as listed: \_\_\_\_\_
- 

**2.0 CONTRACT TIME**

- A.** If offer is accepted, Contractor shall achieve Date of Substantial Completion within «ContractDura» days after Date of Commencement of the Work, subject to adjustments of Contract Time as provided in the Contract.

**Document 00410B  
BID FORM – PART B**

**1.0 TOTAL BID PRICE HAS BEEN CALCULATED BY BIDDER, USING THE FOLLOWING  
COMPONENT PRICES AND PROCESS (PRINT OR TYPE NUMERICAL AMOUNTS):**

**A. STIPULATED PRICE:**

**NOT APPLICABLE - \$0.00**

(Total Bid Price; minus Base Unit Prices, Extra Unit Prices, Cash Allowances and All Alternates)

**B. BASE UNIT PRICE TABLE:**

Item No.	Spec Ref	Item Description	Unit Measure	Unit Quantity	Unit Price (this column controls)	Total in Figures
1	1502	Mobilization	LS	1	\$500,000 <sup>(1)</sup>	\$500,000 <sup>(1)</sup>
2	1555	Flagmen	LS	1		
3	1555	Traffic Control and Regulation	LS	1		
4	1555	Install Low Profile Concrete Barriers	LF	3200		
5	1555	Relocate Low Profile Concrete Barriers	LF	8600		
6	1555	Remove Low Profile Concrete Barriers	LF	3200		
7	1562	Tree and Plant Protection	LS	1		
8	1570	Filter Fabric Fence	LF	12094		
9	1570	Sandbag Barrier	LF	2430		
10	1570	Inlet Protection Barrier	LF	3858		
11	1570	Inlet Protection Barrier (Stage II)	LF	1650		
12	1570	Storm Inlet Sediment Trap	EA	81		
13	1575	Stabilized Construction access	SY	375		
14	1578	Ground Water control for Open-Cut Construction	LF	7534		
15	2260	Trench Safety System for Trench Excavations	LF	10045		
16	02714	Flexible Base Course/Temp Driveways Residential upto 12 feet wide	EA	25		
17	02714	Flexible Base Course/Temp Driveways Commercial upto 24 feet wide	EA	110		
18	2082	72-inch Water Line access manhole	EA	19		

19	2082	Extra depth manhole	VF	26		
20	2221	Remove/Dispose 8-inch diameter water line	LF	690		
21	2221	Remove/Dispose 60-inch diameter water line	LF	64		
22	2221	Remove/Dispose 72-inch diameter water line	LF	70		
23	2511	8-inch diameter water line by open-cut	LF	3995		
24	2511	8-inch diameter Water Line by trenchless construction	LF	1527		
25	2511	8-inch diameter water line by trenchless construction with restrained joints	LF	2312		
26	2511	8-inch diameter water line in 16" welded steel casing	LF	18		
27	2511	12-inch diameter water line by open-cut	LF	436		
28	2511	12-inch diameter Water Line by trenchless	LF	33		
29	2511	12-inch diameter water line by trenchless construction with restrained joints	LF	1354		
30	2511	12-inch diameter DIP water line by trenchless construction with restrained joints	LF	60		
31	2511	16-inch diameter water line by open-cut	LF	80		
32	2511	20-inch diameter water line by open-cut	LF	770		
33	2511	20-inch diameter DIP water line by trenchless construction with restrained joints	LF	68		
34	2511	48-inch diameter Steel Water Line by Open Cut	LF	19		
35	2511	60-inch diameter Steel Water Line by Open Cut	LF	64		
36	2511	72-inch diameter water line by open-cut	LF	5189		
37	2511	72-inch diameter steel water line by open-cut	LF	1438		
38	2511	Remove 72-inch diameter internal elliptical or dished head plug	EA	1		
39	2511	Drainline valve w/ Service Manhole	EA	1		
40	2512	3/4-inch through 1-inch diameter water taps and copper service line with meter box, short side	EA	27		
41	2512	3/4-inch through 1-inch diameter water taps and copper service line with meter box, long side	EA	34		

42	2512	1 1/2-inch through 2-inch diameter water taps and copper service line with meter box, short side	EA	21		
43	2512	1 1/2-inch through 2-inch diameter water taps and copper service line with meter box, long side	EA	7		
44	2512	3-inch through 6-inch diameter water taps and copper service line with meter box, short side	EA	6		
45	2513	2-inch or smaller gooseneck wet connection	EA	9		
46	2513	6-inch diameter wet connection	EA	6		
47	2513	8-inch diameter wet connection	EA	32		
48	2513	12-inch diameter wet connection	EA	15		
49	2513	16-inch diameter wet connection	EA	2		
50	2516	Cut, plug, and abandon existing 2-inch or smaller diameter water line	EA	10		
51	2516	Cut, plug, and abandon existing 6-inch diameter water line	EA	6		
52	2516	Cut, plug, and abandon existing 8-inch diameter water line	EA	33		
53	2516	Cut, plug, and abandon existing 12-inch diameter water line	EA	13		
54	2516	Cut, plug, and abandon existing 16-inch diameter water line	EA	2		
55	2516	8-inch diameter Plug & Clamp	EA	4		
56	2517	72-inch diameter water line in tunnel	LF	414		
57	2517	72-inch diameter water line in tunnel @ US 59	LF	742		
58	2520	Fire hydrant assembly, all depths, including 6-inch diameter gate valve and box	EA	26		
59	2520	6-inch diameter fire hydrant branch by open-cut	LF	144		
60	2520	Remove and salvage existing fire hydrant	EA	13		
61	2521	48-inch Gate Valve w/ Box	EA	1		
62	2522	60-inch Butterfly Valve w/ Operator Manhole	EA	2		
63	2522	72-inch diameter butterfly valve	EA	5		
64	2614	72-inch Line Stop	EA	1		

65	2524	6-inch diameter air inlet vacuum relief valve assembly	EA	10		
66	2525	8-inch by 6-inch diameter tapping sleeves and valve with box	EA	1		
67	2525	8-inch by 8-inch diameter tapping sleeves and valve with box	EA	2		
68	2525	12-inch by 12-inch diameter tapping sleeves and valve with box	EA	2		
69	2525	24-inch by 12-inch diameter tapping sleeve and valve with box	EA	2		
70	2525	30-inch by 20-inch diameter tapping sleeves and valve with box	EA	1		
71	16640	Cathodic protection system	LS	1		
72	2082	4-ft Diameter Sanitary Sewer Manhole	EA	27		
73	2221	Remove and dispose sanitary sewer manhole, all depths	EA	17		
74	2221	Remove and Dispose 6 inch sewer line	LF	70		
75	2221	Remove and Dispose 8 inch sewer line	LF	995		
76	2221	Remove and Dispose 10 inch sewer line	LF	308		
77	2531	6-inch diameter Sanitary Sewer in 12-inch steel casing, by open-cut	LF	18		
78	2531	6-inch diameter Sanitary Sewer, by open-cut	LF	27		
79	2531	6-inch sanitary sewer (pressure rated)	LF	72		
80	2531	8-inch diameter Sanitary Sewer, by open-cut	LF	972		
81	2531	8-inch sanitary sewer (pressure rated)	LF	620		
82	2531	10-inch diameter Sanitary Sewer, by open-cut	LF	52		
83	2531	10-inch sanitary sewer (pressure rated)	LF	18		
84	2531	12-inch sanitary sewer (pressure rated)	LF	18		
85	2531	8-inch sanitary sewer	LF	378		
86	2531	10-inch sanitary sewer	LF	943		
87	2218	Remove/Dispose storm pipe 8-inch dia	LF	190		

88	2221	Remove/Dispose storm pipe 10-inch dia	LF	543		
89	2222	Remove/Dispose storm pipe 12-inch dia	LF	37		
90	2221	Remove/Dispose storm pipe 15-inch dia	LF	1784		
91	2221	Remove/Dispose storm pipe 18-inch dia	LF	1433		
92	2221	Remove/Dispose storm pipe 21-inch dia	LF	550		
93	2221	Remove/Dispose storm pipe 24-inch dia	LF	44		
94	2221	Remove/Dispose storm pipe 30-inch dia	LF	615		
95	2221	Remove/Dispose storm pipe 36-inch dia	LF	327		
96	2222	Remove/Dispose storm pipe 42-inch dia	LF	337		
97	2221	Remove/Dispose inlets all sizes/depth	EA	83		
98	2221	Remove/Dispose manholes all sizes/depth	EA	55		
99	2082	Type C manhole for 42-inch diameter and smaller sewers	EA	62		
100	2082	Type C manhole for 48-inch to 72-inch diameter sewers	EA	23		
101	2631	24-inch diameter storm sewer by open-cut	LF	3266		
102	2631	30-inch diameter storm sewer by open-cut	LF	1035		
103	2631	36-inch diameter storm sewer by open-cut	LF	1872		
104	2631	42-inch diameter storm sewer by open-cut	LF	1821		
105	2631	48-inch diameter storm sewer by open-cut	LF	1359		
106	2631	54-inch diameter storm sewer by open-cut	LF	816		
107	2631	66-inch diameter storm sewer by open-cut	LF	1942		
108	2633	Type C-1 inlet	EA	20		
109	2633	Type BB inlet	EA	89		
110	1554	Furnish & Install Traffic Signs	EA	204		

111	2821	Remove and replace private chain link fence	LF	0		
112	1270	Remove and replace private wooden fence	LF	0		
113	2086	Adjust existing manhole frame and cover to new grade	EA	55		
114	2086	Adjust existing water meter box or valve box to new grade, replace all damaged or missing parts	EA	2		
115	2221	Removing and disposing of concrete pavements (including all thickness, w/or w/o asphalt, including base & subgrade, w/ or w/o curb, all depths)	SY	61402		
116	2221	Remove and dispose of concrete sidewalks and driveways, all thicknesses	SY	13495		
117	2315	Roadway excavation, including removal of waste disposal	CY	7917		
118	2336	Lime stabilized subgrade 8-inch thick	SY	62894		
119	2336	Lime for lime stabilized subgrade (dry weight)	TON	1433		
120	2741	Temporary asphalt concrete pavement for detour/roadway and shoulder	SY	2388		
121	2751	Reinforced concrete pavement 9-inch thick	SY	3360		
122	2751	Reinforced concrete pavement 10-inch thick	SY	17688		
123	2751	Reinforced concrete pavement 11-inch thick	SY	24663		
124	2752	Street pavement expansion joint with load transfer	LF	8388		
125	2752	Horizontal dowels, 24-inch	EA	8388		
126	2752	Saw-cut concrete pavement, driveways and sidewalk (all depths)	LF	2332		
127	2754	Concrete driveways including excavation 6-inch thick	SF	2123		
128	2754	Concrete driveways including excavation 7-inch thick	SF	40994		
129	2764	Raised reflective pavement marker, (TY II-C-R)	EA	661		
130	2764	Raised reflective pavement marker, CL B (TY II-B-B)	EA	99		
131	2767	Thermoplastic Pavement Marking 4-inch wide White/Yellow(SLD/BRK)	LF	27583		
132	2767	Thermoplastic pavement marking 12-inch-wide White/Yellow	LF	6855		
133	2767	Thermoplastic pavement marking 24-inch-wide White/Yellow	LF	1144		

134	2771	6-inch concrete curb	LF	21285		
135	2771	6-inch curb and gutter (monolithic)	LF	4797		
136	2771	Concrete Paving Header	LF	472		
137	2775	Curb ramp	SF	14948		
138	2775	Sidewalk 4 1/2-inch thick	SF	70908		
139	02582	25-Ft. Mast Arm Pole Assembly With Foundation	EA	3		
140	02582	30-Ft. Mast Arm Pole Assembly With Foundation	EA	3		
141	02582	35-Ft. Mast Arm Pole Assembly With Foundation	EA	9		
142	02582	40-Ft. Mast Arm Pole Assembly With Foundation	EA	6		
143	02582	45-Ft. Mast Arm Pole Assembly With Foundation	EA	3		
144	02893-07	Pedestal Pole Assembly With Concrete Foundation	EA	64		
145	02893-14	Electrical Service Pedestal Assembly - (Square "D" Breakers Included)	EA	11		
146	Drwgs	15' Luminaire, 115 W, LED	EA	24		
147	Drwgs	Photocell	EA	11		
148	02893	Remove and Salvage Existing Traffic Signal Equipment	EA	11		
149	02893	Overhead Street Name Signs	EA	24		
150	02893	Sign, "ONE-WAY", R1-6 R/L (36" X 12")	EA	21		
151	02893	Sign, "ONE-WAY", R6-2 L/R (36" X 30")	EA	21		
152	02893	Sign, "LEFT TURN YIELD ON FLASHING YELLOW ARROW" R10-17T (24" x 30")	EA	2		
153	16710	Type "A" Pull Box With Apron, Gravel and Ground Rod	EA	48		
154	16710	Type "B" Pull Box With Apron, Gravel and Ground Rod	EA	47		
155	16710	Type "C" Pull Box With Apron, Gravel and Ground Rod	EA	11		
156	16711	Conduit, 1-In SCH 80 PVC Trench	LF	840		

157	16711	Conduit, 2-In SCH 80 PVC Trench	LF	8365		
158	16711	Conduit, 2-In SCH 80 PVC Bore	LF	2035		
159	16711	Conduit, 2-In RMC Trench	LF	640		
160	16711	Conduit, 3-In SCH 80 PVC Trench	LF	760		
161	16711	Conduit, 4-In SCH 80 PVC Trench	LF	560		
162	16711	Conduit, 4-In SCH 80 PVC Bore	LF	3460		
163	16715	3-Section Vehicle Signal Head Assembly (RYG) (Horizontal) (H3)	EA	76		
164	16715	3-Section Vehicle Signal Head Assembly (RYG) (Vertical) (V3)	EA	6		
165	16715	4-Section Vehicle Signal Head Assembly (<R<Y<Y<G) (Horizontal) (H4LF)	EA	1		
166	16715	4-Section Vehicle Signal Head Assembly (<R<Y<Y<G) (Vertical) (V4LF)	EA	1		
167	16719	LED Pedestrian Signal Head Assembly (Symbolic) (Countdown)	EA	88		
168	16720	Traffic Signal Cables, Detector Lead-In Cable 2/C-14 AWG IMSA 50-2-1984	LF	29060		
169	16720	Traffic Signal Cables, 3/C-#14 AWG Solid Cable	LF	14980		
170	16720	Traffic Signal Cables, 5/C-#14 AWG Solid Cable	LF	16480		
171	16720	Traffic Signal Cables, 7/C-#14 AWG SOLID Cable	LF	18900		
172	16720	#4 THHN Service Wire	LF	550		
173	16724	Emergency Vehicle Pre-Emption System	EA	24		
174	16727	Traffic Signal Pre-Formed Loop Detector (6' X 6')	EA	72		
175	16727	Traffic Signal Sawed Loop Detector (6' X 6')	EA	98		
176	16730	ITS Controller Cabinet Assembly (MODEL 340) (TYPE 2070L)	EA	11		
177	02893-10C	Controller Cabinet Foundation With Apron	EA	11		
178	16732	Uninterruptible Power Supply	EA	11		
179	16734	WiMAX	EA	11		

180	16750	Accessible Pedestrian Push Button Station	EA	88		
181	16785	GPS Serial Communication Module	EA	11		
182	02221	Remove Existing Pole Foundation	EA	24		
<b>TOTAL BASE UNIT PRICES</b>						\$ _____

**C. EXTRA UNIT PRICE TABLE:**

183	2317	6" Overexcavate trench bottom	LF	6300		
184	02317	Excavation around obstructions	CY	400		
185	02317	Extra hand excavation	CY	300		
186	02317	Extra machine excavation	CY	100		
187	02317	Extra placement of backfill material	CY	600		
188	2511	Extra 72-inch diameter cylinder pipe angle adapters	EA	4		
189	2511	Extra 72-inch water fittings in place	EA	4		
190	2501	Extra ductile iron compact fittings in place	TON	2		
191	1270	Demobilize/remobilize	EA	1		
<b>TOTAL EXTRA UNIT PRICES</b>						\$ _____

**D. CASH ALLOWANCE TABLE:**

192	1110	Street cut permit fee	EA	1	\$20,000 <sup>(1)</sup>	\$20,000 <sup>(1)</sup>
<b>TOTAL CASH ALLOWANCE PRICES</b>						\$ _____

**D. ALTERNATES TABLE:**

<b>TOTAL ALTERNATES PRICES</b>						\$ _____



SECTION 01110

SUMMARY OF WORK

PART 1 GENERAL

1.01. SECTION INCLUDES

- A. Summary of the Work including Project Description, Work Covered by Contract Documents, Definitions, Cash Allowances, Work by City, City furnished products, Work sequence, future Work, Contractor use of Premises, and City occupancy.

1.02. PROJECT DESCRIPTION

- A. Surface Water Transmission Program (SWTP) consists of major improvements to the transmission system to convert from primarily groundwater to surface water in order to comply with the Harris-Galveston Coastal Subsidence District's (HGCSO) regulatory plan. Program includes transmission and distribution of surface water and associated consolidation of groundwater plants in the City.
- B. Project primarily consists of construction of 72-inch large diameter water transmission line, public utility adjustments, and construction of one (1) 48-inch interconnection from the proposed 72-inch water line to an existing 60-inch water line, and construction of one (1) 20-inch interconnection from the proposed 72-inch water line to an existing 30-inch water line. The project also includes storm sewer, small diameter water and wastewater line replacement; roadway pavement repair as needed, and roadway pavement replacement to current City standards in City ROW.

1.03. DEFINITIONS

- A. Large Diameter Water Lines: Water Lines 24-inches in diameter and larger. References to large diameter water lines shall apply to pipe, valves and appurtenances 24-inch and larger. Cost to procure pipe will be paid separately.
- B. Small Diameter Water Lines: Water Lines 20-inches in diameter and smaller. Unless otherwise noted in the Contract Documents, requirements pertaining to large diameter water lines do not apply to pipe, valves and appurtenances 20-inches in diameter and smaller. Some materials may be provided by the City.

1.04. WORK COVERED BY CONTRACT DOCUMENTS

This work will include, but not be limited to, the following:

- A. Construction of primarily a 72-inch water line by combination of open cut and tunneling construction methods, including installation of valves, connections and appurtenances.

B. Construction of a tunnel across US-59 Highway.

1. Tunnel shall have steel liner when within TxDOT ROW. Acceptable steel liner includes steel casing pipe and steel liner plate only.
2. A portion of the tunnel occurs in PPCA. Rib and lagging tunnel liner is not allowed in PPCA.
3. Chemical grouting of subsurface sand formation under the US-59 Highway bridge must be complete prior to commencing tunneling operations in accordance with Section 02432 - Tunnel Chemical Grout for Ground Improvement. Refer to the geotechnical report and the grouting limits shown on the Drawings. Submit chemical grouting procedures, signed and sealed by a Registered Professional Engineer in the State of Texas, to the Project Manager for approval prior to commencing grouting procedure.
  - a) Replace TxDOT pavement impacted from grouting as identified on drawings. Pavement replacement and repair shall be made using a TxDOT certified contractor.
  - b) Grout the formation underneath the US-59 Northbound Frontage Road not indicated for pavement replacement from outside the pavement limits.
  - c) Patch holes in sidewalks, medians, and embankments according to TxDOT specification "Item 700 Pothole Repair". Pre-approved concrete repair materials can be found at:  
<http://ftp.dot.state.tx.us/pub/txdot-info/cmd/mpl/concrepair.pdf>.  
Payment for hole patching is incidental to grouting operation.
  - d) If submitted chemical grouting procedures require additional pavement replacement and traffic control, then obtain approval from TxDOT prior to replacing pavement. No separate pay.
4. Perform tunnel excavation using a Tunnel Boring Machine (TBM) with closed face capabilities.
5. Submit specific monitoring instrumentation and settlement surveying plans, in accordance with Section 02425 (LD) - Tunnel Excavation and Primary Liner for Water Mains to Project Manager for approval.
  - a) Refer to the geotechnical report for minimum monitoring instrumentation plan for the US-59 Bridge. The type, locations, and number of monitoring instruments shall be utilized at a minimum. Additional instrumentation may be utilized at contractor's sole expense. Measure and record the monitoring points at least every four hours, beginning at least 2 weeks prior to approaching the bridge and for 4 weeks after placement of the primary liner within the TxDOT ROW is complete.

5. Submit specific contingency plan to prevent loss of ground underneath TxDOT ROW and other tunnel areas, and to prevent movement of US-59 Highway in accordance with Section 02425 (LD) - Tunnel Excavation and Primary Liner for Water Mains to Project Manager for approval. In addition to the above requirements, the plan shall include actions to be taken in the event of a cave-in or other large ground-loss event. Contingency plan shall be implemented when 50% of estimated settlement per the Geotechnical Report is exceeded, and/or if any movement of the bridge is detected, and/or a cave-in or other large ground-loss event occurs.
  6. Refer to Section 1.07.E of this Section for additional information.
- C. Construction of a tunnel across I-45 Highway.
1. Tunnel shall have steel liner when within TxDOT ROW. Acceptable steel liner includes steel casing pipe and steel liner plate only.
  2. Perform tunnel excavation using a Tunnel Boring Machine (TBM) with closed face capabilities.
  3. Submit specific monitoring instrumentation and settlement surveying plans, in accordance with Section 02425 (LD) Tunnel Excavation and Primary Liner for Water Mains to Project Manager for approval.
  4. Submit specific contingency plan to prevent loss of ground underneath TxDOT ROW and other tunnel areas, and to prevent movement of I-45 Bridge and Connector Ramps in accordance with Section 02425 (LD) Tunnel Excavation and Primary Liner for Water Mains to Project Manager for approval. In addition to the above requirements, the plan shall include actions to be taken in the event of a cave-in or other large ground-loss event. Contingency plan shall be implemented when 50% of estimated settlement per the Geotechnical Report is exceeded, and/or if any movement of the bridge is detected, and/or a cave-in or other large ground-loss event occurs.
- D. Connect to existing 60-inch prestressed concrete cylinder pipe (PCCP) water line with proposed 48-inch water line as shown on the Drawings. Adequately support 60-inch water line to prevent movement or shifting, which may affect the integrity of the water line.
1. Field verify tap occurs a minimum of 4 feet from existing joint.
  2. Field verify dimensions of existing 60-inch water line prior to ordering materials. Notify the Project Manager if the dimensions vary from the Lay Schedule.
  3. Submit signed and sealed plans by a Texas Professional Engineer to support the water line prior to beginning construction of the interconnection and supports. No separate pay.
  4. Provide buoyancy control where flowable fill (controlled low strength material, CLSM)

is required per the Drawings. No separate pay.

- E. Connect to an existing 72-inch steel water line as shown on the Drawings. Adequately support existing 72-inch water line to prevent movement of shifting, which may affect the integrity of the water line.
  - 1. Field verify location of tap occurs a minimum of 4 feet from existing joint.
  - 2. Field verify dimensions of existing 72-inch water line prior to ordering materials.
  - 3. Provide buoyancy control where flowable fill (controlled low strength material, CLSM) is required per the Drawings. No separate pay.

- F. Remove and replace storm sewers, roadway pavement, and small diameter water and wastewater lines impacted by proposed 72-inch water line or otherwise shown on the Drawings.

- G. Repair and replace public and private utilities damaged by construction activities, including, but not limited to, traffic signs, water meters and valves, water service lines, unmetered fire lines, sanitary sewer service lines, electrical conduit and lines, electrical meters, gas lines, and telecommunication lines.

1.05. CASH ALLOWANCES

- A. Include the following specific Cash Allowances in the Contract Price under provision of Document 0700 – General Conditions, Paragraph 3.11.
  - 1. Street Cut Permit Fee(s) Allowance - To be used as described in Street Cut Ordinance.
  - 2. Floodplain Management Permit Fee.
  - 3. Street Lighting.

1.06. INCENTIVE ALLOWANCES (Not Used)

1.07. WORK SEQUENCE

- A. Perform critical locates and provide major project submittals (pipe, valves, tunneling procedures and shafts for water lines greater than 24-inches diameter) within 30 days from Notice to Proceed. Field verify dimensions and conditions before commencing work. Report discrepancies to project Manager before commencing work. Submit documentation of work completion to the Project Manager.
- B. Due to overall project complexity and numerous active utility interface requirements, submit a sequence of construction for review by Project Manager. Proposed sequence of construction shall address proposed method and timing of major construction

activities. Refer to Section 01326 – Construction Schedule (Bar Chart) for specific details.

- C. Prior to beginning construction, survey and photograph parking lots, concrete pads, and gravel ground cover areas along the alignment construction area to establish pre-existing conditions for purpose of restoring to existing or better conditions after construction.
- D. Unless otherwise approved by Project Manager, begin installation of 72-inch line from XXXXX Road and progress uninterrupted west toward XXXXX Road. Obtain approval from Project Manager if using more than one pipe laying crew for 72-inch water line installation. Tunnel construction may be undertaken in advance of pipe installation.
- E. For US-59 tunnel, perform tunneling operations from shaft on east side of US-59.
- F. Phasing for disinfection
  - 1. Phase I –
  - 2. Phase II –
  - 3. Phase III –
  - 4. If the contractor in project WBS No. S-XXXXXX-XXX-4 is not ready to disinfect, demobilization will be included under extra unit price item. The contractor should be ready to re-mobilize within 14-business days upon notification of successful pressure testing in WBS No S-XXXXXX-XXXX-4.
- G. Incorporate Traffic Control Plan and Traffic Control General Notes as shown on Drawings in proposed sequence of work.

1.08. COORDINATION OF WORK

- A. Schedule Work with any other contractors of any trade or discipline working adjacent to the project site prior to and during construction.
- B. Schedule construction operations with Project Manager, Traffic Management, Maintenance Division, Drinking Water Operations, and private utilities.
- C. Notify TxDOT at least 48 hours prior to construction within the TxDOT ROW. Contact XXXX XXXXX at XXX-XXX-XXXX. Provide daily readings from settlement monitoring surveying and instrumentation to XXXXX XXXXX at XXX-XXX-XXXX. Onsite inspector will be XXXXX XXXXX.
- D. Notify CenterPoint prior to needing poles relocated and overhead lines raised. Advance notice required prior to relocations are included in an attachment to this Section. Plan accordingly to maintain project schedule. Contact Timothy Hunt at 713-945-3235 and Nora Luna at 713-945-6253.

- E. Coordination of the Work: Refer to Section 01312 – Coordination and Meetings.
- F. Soil Disposal: Refer to Section 01576 – Waste Material Disposal, and coordinate with Harris County Public Infrastructure Department to obtain disposal permit for proposed disposal sites in Harris County, outside the City of Houston city limits.
- G. Coordinate Work around existing METRO bus stops in the project area with METRO bus operations, Shirley Mitchell at 713-615-7212 or Carl Taylor at 713-615-7219. Provide minimum of two (2) weeks notice before construction begins in this area.
- H. Schedule testing and inspection of cathodic protection system and protective coatings for pipe, valves, and tanks with the City's independent consultant. Contact David Pedersen at 832-395-3833.
- I. Water Line Shutdown: Contractor to provide the construction schedule within 30 days of Notice to Proceed, and Project Manager to forward to the following departments: Drinking Water Operations, Infrastructure Planning Branch and Water Engineering. Departments will review the shutdown process and verify current operating conditions support shutdown of existing water line. Project Manager to confirm shutdown schedule with Contractor and City departments 21 days prior to the existing water line shutdown.
- J. Roadside ditches, basin and/or channel may require maintenance during construction. Maintain the drainage systems as directed by Project Manager. Extra unit pay items will be granted if approved by Project Manager.
- K. Limits of construction outside of City of Houston Right of Way as shown on Drawings.
- L. Major Haul Routes
  - 1. Do not use residential / minor streets for hauling and transport of construction materials, excavations, or equipment except where such items are needed on residential / minor streets for construction.
- M. Comply with procedures for access to site and Contractor's use of rights-of-way as specified in Section 01145 – Use of Premises.
- N. Comply with procedures for site mobilization as specified in Section 01502 – Mobilization. No separate payment for mobilization at each separate construction activity appurtenance location identified on the construction plans, include cost in pay item for mobilization.
- O. Construction Operations: Limited to identified public rights-of-way, water line easements and areas shown or described in the contract documents. Perform construction activities within easements illustrated on Drawings if applicable. If at any point construction activities need to be performed outside easements or ROW; Contractor shall coordinate with the property owner and obtain written approval from the property owner prior to commencement of construction activities.

- P. Utility Outages and Shutdown: Provide notification to City and private utility companies (when applicable) a minimum of 48 hours, excluding weekends and holidays, in advance of required utility shutdown. Coordinate Work with Project Manager as required.
- Q. Work to be done to lines, grades, elevations, and locations as shown on Drawings.
- R. Prevent overstress of any structure, and any part or member of it, during construction. This applies to existing work and structures affected by operations. Check effect of operations, and provide temporary supports and connections required to assure safety and stability of both new and existing work and to prevent overstress of any part.
- S. Coordinate activity schedule and extend full cooperation to other contractors who have responsibilities either concurrent with, proceeding or following this Contractor's time along Work site. Ensure availability of access, availability of selected portions of this area to others and provide appropriate information for planning purposes to other contractors, as required.
- T. Collection, storage, and transport/disposal of ground and flushing water.
  - 1. Excess flows shall be collected and discharged when ground water production is reduced, or the excess water shall be hauled offsite for discharge in a legal fashion.
  - 2. In all other areas, do not discharge water at volume which overflows storm sewers, roadside ditches, causes ponding, or floods City/County/TxDOT right-of-ways or private property.
  - 3. Prevent erosion induced from discharging water.
  - 4. Discharge piping shall be fitted with filter socks or other sediment removal apparatus shall be used when ground water discharge is ultimately directed to a storm sewer.
  - 5. Dechlorinate flushing water prior to discharge.
  - 6. In addition to the above, the following shall apply in the TxDOT ROW:
    - a) Discharge of water into storm sewers is not permitted during precipitation, or following precipitation until the roadways have completed draining.
    - b) Water discharged to TxDOT storm sewers shall be free of VOC's, free available chlorine, combined available chlorine, sediment, and other contaminants. Sample produced groundwater for VOC's, petroleum, and other relevant contaminants according to Section 2105 initially and at every 100 feet of excavation or every 4 days, whichever results in the shorter interval.
- U. Traffic Control:

1. Traffic control plan responsive to Texas Manual on Uniform Traffic Control Devices (TMUTCD) and sealed by a Registered Professional Engineer is incorporated into Drawings for known Work. If traffic control will be implemented without modification to plan provided, submit letter confirming that decision. If traffic control will be modified from what is shown, submit traffic control plan in conformance with TMUTCD and sealed by Registered Professional Engineer to Project Manager for approval.
  2. Traffic control provided is based on the assumption there is no conflict with traffic control from separate projects or other ongoing development within construction limits. Coordinate Work to prevent traffic control conflicts or submit revised traffic control plans sealed by Registered Professional Engineer and conform to TMUTCD at no additional cost. Submit traffic control plan to Project Manager for approval.
  3. Submit traffic control plans and Request for Approval of Traffic Control Plan form to TxDOT North Harris Area Office. Traffic control plans must be approved by TxDOT prior to work in TxDOT ROW, prior to placing traffic control devices in the TxDOT ROW, and prior to utilization of traffic control devices impacting TxDOT roadways. North Harris Area Office may be contacted at:  
  
16803 Eastex Freeway  
Humble, TX 77396  
Phone: (281) 319-6450
  4. Maintain local driveway access to residential and commercial properties adjacent to work areas. Provide temporary driveway access to driveways in accordance with Section 01145 – Use of Premises. Coordinate with business owners and residents.
  5. Specific Traffic Control Plan for pavement restoration with drainage, and adjustment in work sequence as necessary to prevent traffic control conflicts, submission is required for the revised traffic control plans, sealed by Registered Professional Engineer and conforming to TMUCD, at no additional cost. Submit plan to Project Manager for approval.
  6. Utilize standard lane closure details as appropriate and with approval of Project Manager for pavement repair and maintenance activities.
  7. Refer to Traffic Control Plan General Notes for further instruction.
- V. Work will be allowed which pertains to any tunneling operation 24 hours per day, provided above ground activities do not conflict with provisions of City of Houston Code of Ordinances, Section no. 40-28 and work does not occur on a Sunday or holiday without prior written approval. No night work shall occur in residential areas. A non-inclusive list of work pertaining to tunneling operation is as follows:
1. Multiple tunneling crews will be required to keep construction project on schedule.

- 2. Tunnel Excavation and incidental work such as muck removal and hauling, ventilation, lighting, survey control of tunnel line and grade, etc.
  - 3. Tunnel Primary Liner.
  - 4. Ground Water Control and Ground Stabilization.
  - 5. Pipe Installation.
  - 6. Tunnel Grouting.
- W. Implement groundwater control methods, while maintaining accessibility to driveways and cross streets.
- X. Maintain local driveway access to residential and commercial properties adjacent to Work areas. Provide temporary driveway access to driveways in accordance with Section 01555 – Traffic Control and Regulation and Section 01145 – Use of Premises. Coordinate with business owners and residents.
- Y. Working multiple and separate crews during construction is allowed, as approved by Project Manager.
- Z. Field Office:
- 1. A Field Office is required on this project. See Section 01520 – Temporary Field Office.
- AA. Protect existing street lights and power poles along project limits. Support as required to accomplish Work. Reestablish power to lights within 24 hours should power be disrupted. No separate pay.

1.09. STREET CUT ORDINANCE

- A. Excavations on or under pavement in City’s right-of-way must have a permit. Comply with City of Houston, Texas Ordinance No. 2000-1115, an ordinance amending Chapter 40 or the Code of Ordinances, Houston, Texas, relating to excavating in the Public right-of-way and comply with amendments provided Texas Ordinance No. 2006-0595, including the following fee schedule:

Schedule of Permit Application Fees\*

Initial Application Fee:	
Tunneling, Jacking, and Boring only	\$150.00

All other Methods of Excavation \$200.00

Permit Extension Application Fee:

Other Than Steel Plate Temporary Surface \$25.00

Steel Plate Temporary Surface \$50.00

Data Entry Fee for Non-Electronic Submission (per application): \$50.00

\* All fees/charges are non-refundable

Comply with latest edition of street cut “New Pavement Repair and Pavement Replacement” details.

Comply with requirements from Chapter 12 of the City of Houston’s Infrastructure Design Manual (dated December 2014), entitled Street Cut Requirements.

- B. Bid items for cost of street cut pavement repair and replacement identified on Drawings are included in the Bid Form Part B (Document 00410 B).
- C. Contractor to obtain required permits and signs prior to performing any method of Construction involving street excavation in existing pavement.

1.10. WARRANTY

- A. Comply with warranty requirements in accordance with Document 00700 - General Conditions.

1.11. INTERPRETATION OF CONFLICTS

- A. Should conflicts occur in Contract Documents, request interpretation before proceeding with Work. Such requests shall first be preceded by a diligent investigation into Contract Documents. Include evidence of such investigation in requests for interpretation.
- B. Should conflict occur between the City and County or TxDOT Specifications, the most stringent requirements shall apply.

1.12. GENERAL CONSTRUCTION NOTES

- A. Conduct operations under this Contract in conformance with the erosion control practices described in Document 01410 - TPDES Requirements and Document 01570 - Storm Water Pollution Control and Storm Water Pollution Prevention Plans included in Drawings. Work identified in this project falls under Large Construction Activity with area disturbed to be more than five acres. TPDES requirements applicable to Large Construction Activity shall apply.
- B. Restore or replace pavement (such as wheel chair ramps, pavement curbs, sidewalks, driveways, bikeways, etc.), fences, gates, lawns, irrigation utilities, landscapes, ditches, culverts, inlets, manholes, signs or mail boxes and other improvements disturbed due to

utility construction as necessary to pre-construction conditions or better, in accordance with identified specifications. Cost for this Work is incidental to various bid items, unless otherwise included as a specific bid item, or as modified on the Drawings.

- C. Contact Traffic Management and Maintenance Division of the City of Houston Public Works and Engineering Department or Harris County Public Infrastructure Department when Work is scheduled near signal conduits. Call at least five working days in advance. Contractor responsible for any damages to existing traffic signal cables as a result of construction activities for the project. No separate payment for repair to signal.
- D. Coordinate ahead of time with business owners and residents for installation of proposed facilities in encroached areas of the public right-of-way.
- E. Notify Utility Coordinating Committee at 1-800-669-8344 or (713) 223-4567; and City of Houston Department of Public Works and Engineering, Civil Construction at (832) 395-2500; and Office of the City Engineer, Department of Public Works and Engineering by fax at 832-394-9620, at least 48 hours prior to commencement of Work.
- F. Comply with OSHA Regulations and State of Texas laws concerning excavation, trenching and shoring as specified in City of Houston Ordinance No. 87-1457.
- G. Field verify existing facilities shown on Drawings by whatever means necessary (metal detection equipment, probes, excavation, survey, other) prior to excavation for proposed utilities. Complete field verification and utility adjustments prior to excavation.
- H. Measurement and payment will be made according to City of Houston specifications.

#### 1.13. EXISTING UTILITIES

- A. Underground utilities exist in the vicinity of project. Location and grades of existing utilities are based on as-built information. While effort has been made to show locations for existing utilities, they are approximate and other utilities may exist in vicinity of project, which are not shown on Drawings. Field determine exact locations prior to commencing construction activities.
- B. Public and private utility lines and customer service lines may exist that are not shown on Drawings. Locate, maintain and protect integrity of these lines. Hand excavation may be required.
- C. Coordinate with proper utility company at least 3 months in advance (unless otherwise noted) to relocate or divert any utility in conflict with proposed construction so as not to disrupt service of same. Restore relocated or diverted utility to its original condition and location upon completion of construction, unless otherwise shown on Drawings or approved by Project Manager. Upon approval, allowance will be granted for the removal and replacement of the utility line.

- D. Contractor responsible for damages to existing utilities. If damaged, replace in compliance with latest City Specifications and Details, at no additional cost to City.

1.14. WATER LINES

- A. Project shall be built by means of open-cut and tunneling as noted on Drawings.
- B. Water lines shall be constructed in accordance with current City of Houston Specifications for large diameter water lines, including supplements.
- C. Consider site access and constructability when choosing pipe joint lengths.
- D. Do not interrupt existing water service without approval of Project Manager. Proposed water lines shall be constructed and service transferred per City of Houston requirements prior to commencement of any underground construction that may interfere with existing water service. Maintain existing water service and sanitary sewer service within construction area until construction of new system is complete.
- E. If flowable fill (controlled low strength material, CLSM) is required for backfill it will be indicated on the Drawings, provide adequate pipeline buoyancy control. No separate pay.
- F. Determine sizes of water meters found in field and record on as-built drawings.

1.15. STORM SEWERS AND DRAINAGE DITCHES

- A. Maintain adequate drainage at all times and restore any drainage ditch or structure disturbed to satisfaction of owning authority. Construction storm runoff shall comply with the final draft of the Stormwater Management Handbook for construction activities, as prepared by Harris County, HCFCD and the City of Houston in compliance with NPDES requirements.
- B. Document conditions of storm sewers prior to beginning construction operations. Remove siltation in existing and proposed storm sewer systems that result from construction activities associated with project.

1.16. SANITARY SEWERS

- A. Maintain service to all sewers during construction. Locate sanitary sewer service laterals affected by construction. City does not warranty location, or number of sanitary leads shown on Drawings.
- B. Contractor fully responsible for damages to existing sanitary sewer facilities as a result of this project. Construct sanitary sewers in compliance with latest City specifications for sewer construction, and tested as specified in City test procedure for either liquid or air, including all amendments and revisions thereto. Place embedment and backfill for sanitary sewers in accordance with City of Houston standard drawing unless otherwise noted.

- C. If damaged sanitary sewer line is being replaced as result of construction, transfer of service stubs from existing to proposed sanitary sewer must be included. Remove and replace any stubs determined to be damaged by project inspector to right-of-way line.
- D. Cost of Diversion pumping to replace existing sanitary sewer and reroute sanitary sewer due to proposed water line is incidental to the project cost. Cost of saw cut, adapters and other fittings for remove and replace existing sanitary sewer line, connecting to existing sanitary sewer manhole is incidental to proposed sanitary sewer. Cost of plugs to remove existing sanitary sewer is incidental to remove and dispose existing sanitary sewer.

1.17. PAVEMENT REPLACEMENT

- A. Drawings identify anticipated pavement to remove and replace.
- B. Trench Safety System (reference Section 02260), special shoring (reference Section 02317 - 1.08, 3.04D, 3.05F, H & I), and means and methods shall protect adjacent lanes of pavement not identified for removal and replacement. Assume risk for damaged pavement and, unless otherwise directed by Project Manager, remove and replace damaged pavement in accordance with Section 02951 and Street Cut Ordinance at no additional cost to City. Damage includes but is not limited to pavement cracks, chipped or broken pavement, and voids under adjacent pavement to remain. City may also assess additional costs to Contractor related to damaged pavement such as City laboratory testing and inspection.
- C. Where Work requires cutting existing pavement, provide positive shoring extending minimum of 6-inches above pavement surface.
- D. Unless otherwise directed by Project Manager, provide full-depth saw-cut 2-inch maximum away from pavement construction joints (ex., deformed metal joints, tooled joints, partially saw cut joints, etc.). Saw cut at the minimum distance from joint necessary for clean straight edge, and if joint is at crown, saw cut as close to crown as possible.
- E. Cut dowels at existing expansion joints to eliminate possible damage to adjacent pavement scheduled to remain. Cost for saw cut is incidental to pavement removal and disposal pay item(s).
- F. If existing pavement thickness is less than 7-inches thick, delete dowels and use Non Doweled Joint detail, unless directed otherwise by Project Manager.
- G. Remove pavement that is scheduled to be removed and replaced no earlier than fourteen (14) days prior to excavating to install new utilities and/or pavement.

1.18. ALTERNATE CONSTRUCTION METHODS

- A. Alternate construction methods will be allowed in accordance with applicable details and specifications in Contract Documents at no additional cost to City of Houston

provided City will receive substantial benefit from alternate construction method(s). Contractor accepts responsibility for all additional cost of geotechnical investigations and incidental items, including any re-design that may be necessary. Submit following for review by City Engineer prior to commencement of any construction activity if such alternate construction methods are to be considered. All modifications as listed below must be signed and sealed by a Licensed Professional Engineer registered in State of Texas prior to submittal to City Engineer.

1. Revisions to horizontal or vertical alignment.
2. Revisions to access manhole details, if applicable.
3. Revisions to line valve and operator manhole details, if applicable.
4. Revisions to vacuum relief valve vault details, if applicable.
5. Revisions to cathodic protection system, if applicable.
6. Proposed construction method and detailed plan of approach.
7. Location of access shafts, if applicable.
8. Proposed traffic control plan.
9. Revisions to material specifications.
10. Impact of revised alignment on hydraulic surge potential on line segment in question and all adjacent line segments, existing or proposed.

Failure of agreement between Contractor and Project Manager over proposed alternate construction methods would require construction to vertical and horizontal alignments, and details as per original Contract documents.

1.19. **ADDITIONAL CONDITIONS FOR SUBSTANTIAL COMPLETION**

A. In addition to requirements outlined in Document 00700 – General Conditions, for Contractor to be substantially complete with the Work and call for inspection by Project Manager to confirm, following conditions must be met or completed in accordance with Contract Documents:

1. All Pay Items complete.
2. All testing completed and accepted by Project Manager.
3. Notify Project Manager to complete Texas Department of Licensing and Regulation Post Construction Inspection of pedestrian elements for Texas Accessibility Standards.
4. Draft O&M manuals approved by Project Manager.
5. Training conducted utilizing draft O&M manuals.
6. All safety related systems and equipment installed, accepted by manufacturer's representative and approved for use.
7. All traffic related work including pavement striping, signing, and signalization to be complete.

8. Completion of site restoration and pavement restoration.
9. Approval of warranty documents.
10. No additional condition described in Paragraph 1.08 may be included in Contractor's punch list. Final acceptance shall require completion of all punch list items. This completion shall be approved by the Project Manager. Final acceptance shall require delivery, to Water and Wastewater Operations Branch, the final O&M Manuals, spare parts, and completion of all operator and maintenance training.

1.20. PIPELINES

- A. Refer to Section 02317 – Excavation and Backfill for Utilities for Specific requirements on excavation near pipelines.

1.21. SOIL CONDITIONS & ENVIRONMENTAL SITE ASSESSMENTS (ESA)

- A. Bidder(s) must consider soil conditions and ESA findings provided in the Geotechnical Report, and ESA Phase I & II Reports, respectively. Reports are provided on a CD, attached to Project Manual.

1.22. POTENTIALLY PETROLEUM CONTAMINATED AREAS (PPCA)

- A. PPCA was identified within project limits. Refer to Phase I and Phase II ESA Reports prepared by Aviles for additional information.

1. STA XX+XX to STA XX+XX

- i.

- B. Provide Preparatory Work in PPCA as required in Section 02105, Chemical Sampling and Analysis. In the event soil or groundwater contamination is found that exceeds the limits given in Section 02105, comply with requirements of Section 02120, Off-site Transportation and Disposal.
- C. Inform Project Manager of any observed soil or groundwater contamination. Where soil contamination and/or groundwater contamination exists, take proper action as described in Section 02105, Chemical Sampling and Analysis, and Section 02120, Off-Site Transportation and Disposal.

1.23. SAFETY SYSTEMS

- A. Drawings and any attendant drawings (including shop drawings, as-built drawings or record drawings), addenda, change orders and specifications, prepared by Lockwood, Andrews & Newnam, Inc. or Brown & Gay Engineers, Inc. do not extend to or include designs or systems pertaining to the safety of the Contractor or its employees, agents, or representatives in their performance of the Work. The seal of Lockwood, Andrews and

Newnam's or Brown & Gay Engineers' registered/licensed professional engineers hereon does not extend to any such safety systems that may now or hereafter be incorporated in these plans. Prepare or obtain appropriate safety systems, including Drawings and specifications as required to maintain a safe working environment and as required by Local, State, and Federal laws and regulations.

1.24. UTILITY SERVICE LINES

- A. Public utility service lines (water and sanitary sewer) not shown on Drawings. Anticipate such service lines exist and repair if damaged during construction. No separate pay will be made for repairs. The cost shall be incidental to the Work.

1.25. CENTERPOINT ENERGY ELECTRICAL FACILITIES

- A. Location of CenterPoint Energy electrical facilities are approximate and have not been verified by actual field check
- B. Overhead lines exist on and adjacent to the project site, which may be live during the construction period. Facilitate Work so as not to interrupt services unless permitted by CenterPoint Energy.
- C. Exercise caution when working in the vicinity of CenterPoint Energy electrical cable, underground wiring and overhead lines. Electrical facilities may be modified as listed in section 1.05 paragraph 10 and according to the agreement established with CenterPoint included in the attachments to this Section. If additional modifications to electrical facilities are required or desired, then CenterPoint Energy shall be notified of locations. No separate pay will be made for additional modifications.

1.28 TREE PROTECTION

- A. Notify City of Houston Parks and Recreation Department representative Mr. Dale Temple, City Forester, at (832) 395-2205, at least two (2) weeks in advance of clearing cutting or pruning any tree.
- B. Adhere to requirements of Section 01562 – Tree and Plant Protection, Section 02915 – Tree Planting, and Tree Protection Plan provided on Drawings. Protect existing trees, landscaping, and sprinkler systems. Repair damaged sprinkler systems and replace damaged landscaping to original condition or better. No separate payment.
- C. Live trees removed and designated as requiring replacement according to the Tree Protection Plan must be replaced with equivalent size in inches or with multiple trees whose cumulative size equated to size of tree being replaced. Tree replacement includes cost of new tree, installation, watering and warranty per Section 02915, at no additional cost.

PART 2 PRODUCTS

2.01. TYPE OF PIPE FOR CONSTRUCTION OF WATER LINE

- A. Steel pipe is the only material allowed for the large diameter water line construction along Bell St., Hutchins St. and Polk St., with the exception of ductile iron pipe where indicated on the Drawings.
- B. Unless specifically identified on Drawings or Specifications, types of materials used are Contractor's option. Manufacturer and subcontractor selection are within Contractor's control and will not warrant time extensions due failure to produce required deliverables within Contract Time. Extension of Contract Time due to non-delivery of Contractor's choice of material and or manufacturer, which affects Contractor's schedule, will not be approved. Contractor to submit pipe and other critical submittals in a timely manner to allow sufficient review time by Project Manager and to maintain construction schedule.
- C. Provide bends and fittings as required complying with invert elevations shown in profile view of Drawings. Call outs for bends and fittings are not identified in profile view, except in few instances.
- D. Clearly identify different pipe classes of the same pipe material using colored coatings or similar marking as approved by Project Manager.
- E. Provide electrical isolation when adjoining to pipe with different material or coating, unless directed to provide a welded connection. Coating on welded restrained portions of piping shall be identical to coating on adjoining pipe sections.
- F. No separate or additional payment for restrained or welded joints for large diameter water lines.

PART 3 EXECUTION (Not Used)

END OF SECTION