PART "T"

TECHNICAL SPECIFICATIONS

SECTION 4.X

GALVANIC CATHODIC PROTECTION SYSTEM FOR WATER TRANSMISSION LINES

PART 1: GENERAL

1.1 Scope of Work

Furnish all the necessary materials, labor, tools, equipment and associated appurtenances, as well as providing all operations necessary to install and test the required cathodic protection system components.

PART 2: QUALITY ASSURANCE

2.1 Reference Standards

Unless otherwise stated, the latest editions of the following documents are applicable for this specification:

ASTM C 94	Ready Mixed Concrete
ASTM D 1248	Polyethylene Plastics Extrusion Material for Wire Cable
NEC 70	National Electrical Code
NACE SP0169	Recommended Practice, Control of External Corrosion on Underground or Submerged Metallic Piping Systems (2013)
AWWA M11	Steel Pipe – A Guide for Design and Installation
NEMA TC6	PVC and ABS Plastic Utilities Duct for Underground Installation
NEMA TC9	Fittings for ABS and PVC Plastic Utilities Duct for Underground Installation
UL 83	Thermoplastic-Insulated Wires
UL 467	Bonding and Grounding Equipment
UL 486A	Wire Connectors and Soldering Lugs for Use with Copper Conductors

2.2 Requirements

- Certification: Provide manufacturer's certification that all components of the cathodic protection system meet the requirements of the drawings and specifications. The certification shall reference the applicable section of the specifications and the applicable standard detail.

- Drawings: The drawings for the cathodic protection system are diagrammatic and not scaled for exact locations unless scales are explicitly stated on the specific drawing. Determine exact locations by field conditions and non-interference with other utilities or mechanical and structural features. Note other existing utilities in the area and do not damage these utilities during excavation. Repair any damaged

utilities to the satisfaction of the City of Dallas at the Contractor's expense.

- Inspection: All materials, fabrication and installations are subject to inspection and testing by the City of Dallas or its designated representative.

2.3 Submittals

Following submittals shall be provided by the contractor:

2.3.1 Catalog Cuts

Manufacturer's catalog cuts shall be submitted for each item. The catalog cuts shall include the manufacturer's name and shall provide sufficient information to show that the materials meet the requirements of the drawings and specifications. Where more than one item or catalog number appears on a catalog cut, clearly identify the item proposed.

2.3.2 Report

Submit six (6) operating, monitoring and maintenance reports for the cathodic protection systems. Included shall be all test data as required by Section 4.6, under *Method* section. The manuals shall include operating instructions, maintenance data, product data and test procedures.

2.4 Quality Control

2.4.1 Installer Qualifications

Cathodic protection installer shall have a minimum of 5 years of documented experience in the type of cathodic protection work required for the project.

2.4.2 Cathodic Protection Tester

A Certified cathodic protection professional shall provide instruction for installation of anodes, field splices, and thermite welding. NACE International certified corrosion personnel (CP1 or higher) shall complete all testing.

2.4.3 Owner Inspection

All materials, fabrication, and installations are subject to inspection and testing by the OWNER or its designated representative.

2.4.4 Drawings

The drawings for the cathodic protection system are diagrammatic and shall not be scaled for exact locations unless scales are explicitly stated on the specific drawing. Field

conditions, on-interference with other utilities or mechanical and structural features shall determine exact locations. CONTRACTOR shall locate and mark other existing utilities in the area in accordance with the Texa811 damage prevention program. Care shall be taken during excavation not to damage these utilities. Any damaged utilities shall be repaired o the satisfaction of the OWNER at the CONTRACTOR's expense.

PART 3: PRODUCT

3.1 SACRIFICIAL ANODES – MAGNESIUM

3.1.1 High Potential Magnesium Anodes:

- Provide 17 lb. – D3 high potential magnesium anodes. Anodes shall be cast with an ingot length of 24".

- Follow the metallurgical composition of the magnesium anodes as listed below:

Element	Percent Composition
Aluminum	0.01 Maximum
Manganese	0.50 to 1.3
Copper	0.02 Maximum
Nickel	0.001 Maximum
Iron	0.03 Maximum
Other - (each)	0.05 Maximum
Other - (total)	0.30 Maximum
Magnesium	Balance

- Magnesium Anode Current Capacity: Magnesium anodes require a current capacity of no less than 500 amp-hours per pound of magnesium.

3.1.2 Anode Backfill Material:

Use chemical backfill material around all galvanic anodes. Backfill provides a reduced contact resistance to earth, provides a uniform environment surrounding the anode, retains moisture around the anode, and prevents passivation of the anode.

- All galvanic anodes come prepacked in a backfill material conforming to the following composition:

Ground hydrated gypsum:	75 percent
Powdered bentonite:	20 percent
Anhydrous sodium sulfate:	5 percent.

- Have a grain size backfill such that 100 percent is capable of passing through a 20-mesh screen and 50 percent is retained by a 100-mesh screen.

- Completely surround the anode with the backfill mixture within a cotton bag.

- The required weight of backfill is 25 lb. for a total weight if the packaged anode of 42 lb..

3.1.3 Anode Lead Wires:

- Use a 20-foot length of No. 12 AWG solid copper wire equipped with TW or THW insulation for standard lead wires for a galvanic anode.

- Label and install cable lug connectors all anode lead wires as shown on drawings when terminated in test stations.

3.1.4 Lead Wire Connection to Magnesium Anode:

- Cast magnesium anodes with a galvanized steel core with the weight of the core not to exceed 0.10 pounds per linear foot.

- Recess one end of the anode to expose the core for the lead wire connection.

- Silver-solder the lead wire to the core and fully insulate the connection by filling the recess with an electrical potting compound.

3.2 Test Station Lead Wires and Joint Bonding Wires

- Test station lead wires shall be No. 12 AWG, solid copper with white TW, THW or THHN insulation.

- Label and install cable lug connectors all anode lead wires as shown on drawings when terminated in test stations.

- Joint bonding wires shall be used to bond across mechanical joints in the newly installed metallic piping as illustrated on DWU Standard Drawings 637, 638 and 639 as appropriate except the size of the wire shall be #8 AWG instead of #4 AWG.

- Bond wires shall be #8 AWG, stranded copper with TW, THW or THHN insulation. Color is not critical as the connections will be buried.

3.3 Above-Grade Test Stations

- At test station locations indicated on the drawings, an above-grade test station shall be used, and placed such that possible damage from vandalism, traffic, etc. is minimized.

- The test station shall be a five terminal Big Fink as manufactured by Cott Manufacturing or approved equal. See DWU Standard Drawings 601, 605 and 608.

- Test Stations which will include anodes shall be provided with a calibrated shunt rated at 0.1 ohm and a maximum current of 2 amperes.

- Test Stations shall be mounted on a 5-foot length of 3-inch diameter UV-resistant plastic conduit.

- The test station shall be installed adjacent to a permanent structure, if available, for physical protection.

- All terminal boards shall be wired by the installer as shown on the drawings. NOTE: Not all test stations include galvanic anodes. See Table 4.XX for a list of required test station configurations.

- Where required to offset the test station out of the traffic lanes of a roadway, test and anode leads will be protected in Schedule 80 PVC conduit meeting NEMA TC6 requirements. See DWU Standard Drawing s 609.

3.4 Reference Electrode

- The electrode shall be equipped with No. 14 AWG stranded copper wire with blue HMW/PE insulation of suitable length to extend from near the pipe (see drawings) to the rectifier without splicing.

- The reference electrode shall be copper/copper sulfate Permacell Plus, double membrane, and ceramic cell in a geomembrane package, as manufactured by Corrpro or approved equal. See DWU Drawing 657.

3.5 Thermite Weld Equipment

- Charges and Molds- Cadweld molds and charges shall be used. Charges and mold size shall be as specified by Erico for the specific surface configuration.

- For high strength steel pipelines, use only 15 gram Cadweld charges.

- Weld Coating- Coating for welds shall be Kop-Coat as manufactured by Carboline or Royston Handy Caps (caps prefilled with mastic)

- Weld Cap- The coated weld shall be covered with a plastic weld cap.

PART 4: INSTALLATION

4.1 Galvanic Anodes

- Location: Install sacrificial anodes at test stations indicated on drawings. Note: all anodes should be placed on the side of the pipeline opposite the gas pipeline indicated

on the plans and shall be at a minimum of 5 feet from the outside diameter of the pipe.

- Placement: Install anodes in native soil, in a vertically augured hole as shown on the drawings. If a vertical installation of the anodes is not feasible, the anodes may be installed horizontally. Ensure the plastic protective bag is removed, exposing the cloth bag, prior to installation.

- Backfilling: After the hole is augured, lower the packaged anode into the hole and firmly tamp the soil around the package so that it is in intimate contact with the package.

- Lead Wire: Run lead wires from the anodes underground at a minimum depth of 36 inches. Connect the wires through a test station as indicated on the drawings. Offset wiring under traffic lanes requires installation of a protective PVC conduit as shown on the drawings.

  Handling: Handle galvanic anodes carefully to avoid damaging anode materials and wire connections. Do not lower anodes into the wagered holes using the lead wires.

4.3 Bond Cables and Test Lead

- Bond Cables – No. 8 and 12 AWG bond wires shall be installed in configurations as outlined on DWU Standard Drawings 637, 638, and 639 as appropriate between new metallic piping components at all taps and hydrants installed.

- Test Leads - No. 12 AWG test leads to the water transmission line and route to the cathodic protection test station. All cables shall be continuous between the pipe and the test station terminal board (no splices). DWU Standard Drawing 645 illustrates the Cable to Pipe Connection.

- Method- Attach test leads to the water transmission lines by thermite welding at the location shown on the drawings.

- Preparation- Clean and dry the steel surface to which the lead is to be attached. Use a grinding wheel to remove all dirt, coating, oxide and mill scale from the surface. Use a solvent or file to remove oil and grease, if necessary. Clean the surface to bright metal. Remove approximately 1 inch of insulation from each end of the wires to be thermite welded to the steel surface, exposing clean, oxide-free copper.

- Welding- Thermite weld the leads as follows:

  - Using the proper size thermite weld mold as recommended by the manufacturer, place the wire between the graphite mold and the prepared metal surface.

  - Place the metal disk in the bottom of the mold.

- Remove the cap from the weld charge container and pour the contents into the mold. Squeeze the bottom of the weld charge container to spread ignition powder over the charge.
- Close the mold cover and ignite the starting powder with a flint gun. Firmly hold the mold in place until all of the charge has burned and the weld has cooled slightly.
- Remove the thermite weld mold and gently strike the weld with a hammer to remove the weld slag. Pull on the wire to assure a secure connection. If the weld is not secure or the wire breaks, repeat the procedure.
- When the weld is secure, coat all bare metal and weld metal and cover with a thermite weld cap.

- Testing: Prior to backfill and immediately after backfill of the pipeline, verify continuity of the test leads to the pipe. This can be verified by measuring the continuity between the two test leads attached to the pipeline using a digital multimeter.

- Testing: Prior to backfill and immediately after backfill of the pipeline, verify continuity of bonded joints in the pipe. This can be verified by measuring the continuity between the two bonded components of the pipeline using a digital multimeter.

4.4 Permanent Reference Cell

- Location- Locate the permanent reference cell near the negative pipeline connection as shown on the drawings.

- Placement- Remove the permanent reference cell from the shipping package and place below the springline and one foot away from the pipeline, opposite the anode locations if possible.

- Backfill- Backfill the reference electrode with six inches of select, native soil and compact by hand. Moisten soil with 5 gallons of water to achieve good compaction.

- Wiring- Run continuous lengths of the blue reference cell wiring in the same trench as the other leads to the Test Station. Do not nick or otherwise damage the wire insulation.

4.5 Wire and Cable Trenching

- Depth- Install all underground wires and cables a minimum of 36 inches below final grade with a minimum separation of 6 inches from other underground structures.

- Conduit- Place all anode leads, test leads, and permanent reference cell leads in schedule 80 PVC conduit from the pipe to the test station.

- A 3" wide, yellow, non-detectable warning tape labeled "Cathodic Protection Cable Buried Below" shall be buried at a depth of 18" below the surface and long the length of all cathodic protection cable trenches.

4.4 Above-Grade Test Stations

- Install above-grade test stations where indicated on project drawings as outlined in the following Table:

Test Station	Pipe Station	Anodes	DWU STD
1	53+50	4 x17 lb.	605,616
2	66+25	none	601,612
3	78+00	4 x 17 lb.	605,616

- Locate test station adjacent to a permanent structure (e.g. a power pole), if available, for physical protection.

- Coil sufficient slack beneath the test station to allow for soil settlement and to prevent damage to the leads during backfilling.

- Set test stations in a Portland cement concrete anchor. The concrete anchor shall be a minimum of 12 inches in diameter and no less than 2 feet thick.

- Terminate test leads, permanent reference cell leads, and anode leads as appropriate on the test station terminal board. Each wire is to be labeled and terminated with a soldered terminal connection as outlined in DWU Standard Drawings 612 and 616 as appropriate.

4.6 Post-Installation Testing of the Cathodic Protection Systems

- General- Inspect, energize, and adjust the cathodic protection as soon as possible after the equipment has been installed.

- Commissioning- The commissioning of the cathodic protection system shall be performed by a Corrosion Engineer hired by the Contractor to achieve compliance with the referenced corrosion control standards set forth by NACE International and AWWA. The Corrosion Engineer shall through experience and education, qualified in cathodic protection of steel water transmission pipe.

- Notice- Prior to native state and polarized potential testing, the Contractor shall give a minimum of 72 hours' notice to Dallas Water Utilities to facilitate observation of the tests by its designated representative. Coordinated testing is required with

ATMOS Energy during this process.

- Method- The Corrosion Engineer shall:
  - Measure native state pipe-to-soil potentials at all test stations, permanent reference cells, and locations of exposed pipe prior to energizing the cathodic protection system.
  - Measure electrical isolation effectiveness at all insulated test station locations.
  - Measure foreign line potentials, prior to energizing the cathodic protection system. NOTE: There are at least two ATMOS test stations in the direct vicinity of the pipeline.
  - Energize the cathodic protection system by connecting the anodes to the pipeline via shunts installed within the test station. Measure the initial current flow and initial "energized potentials" at all test stations.
  - Allow sufficient time for the pipeline to polarize, typically 4 weeks.
  - Measure polarized potentials at all test stations, permanent reference cells and locations of exposed pipe.
  - Verify that interference does not exist with foreign pipelines. Perform joint tests and mitigate any interference detected.
- After initial energizing, perform a walk-through inspection with Dallas Water Utilities or its designated representative to verify that all corrosion control components have been installed in accordance with project drawings and specifications.
- A punch list of outstanding work identified during walk-through inspection shall be made. Once Contractor has completed all work on punch list, pipeline will be allowed to polarize for 30 days before final testing. Final testing and adjustment shall be performed after 30-day polarization period.
- Deficiencies discovered during final testing shall be repaired at Contractor's expense and at no additional cost to Dallas Water Utilities. Should additional testing be required after final testing, cost of additional testing shall be paid by Contractor and will be charged at a rate of $1,500 per day.
- Equipment- All cathodic protection testing instruments shall be in proper working order and calibrated according to factory specifications.
- Report- The results of all commissioning procedures along with documentation of anode ground bed current outputs, pipe-to-soil potential, results of insulated joint tests shall be compiled in a final report and furnished to the OWNER along with O&M

Manuals and the As-Built Drawings.

PART 5: METHOD OF MEASUREMENT AND PAYMENT

Payment for Impressed Current Cathodic Protection System as specified in this section shall be incidental and inclusive in the applicable unit price bid item.

****END OF SECTION****

Soil and Groundwater Management Plan

PID No. 1362
Puget Street from Singleton Boulevard to Dennison Street
PID No. 3141
Pueblo Street from Puget Street west
Improvement Project
Dallas, Dallas County, Texas

Prepared for:

City of Dallas
Department of Water Utilities
Dallas, Texas

Prepared by:

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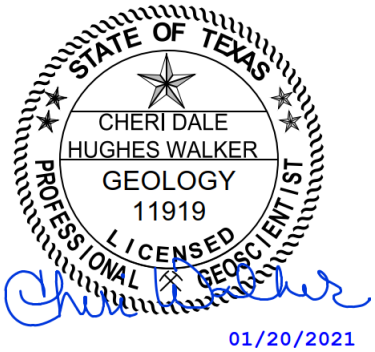
MARCH 2020



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APPENDICES

Acronyms and Abbreviations

AECOM	AECOM Technical Services Inc.
AOC	area of concerns
APAR	Affected Property Assessment Report
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylene
CFR	Code of Federal Regulations
City	City of Dallas Water Utilities Department
COC	chemical of concern
CY	cubic yards
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FRSS	File Review/Site Screening
LPST	Leaking Petroleum Storage Tank
MBC	Median Background Concentration
mg/kg	milligrams per liter
mg/L	milligrams per liter
MSD	Municipal Setting Designation
MTBE	methyl tertiary butyl ether
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
PAH	Polycyclic Aromatic Hydrocarbons
PCL	Protective Concentration Level
PID	Photo Ionization Detector
PPE	Personal Protective Equipment
RCRA	Resource Conservation and Recovery Act
ROW	right-of-way
SDL	Sample Detection Limit
SGMP	Soil and Groundwater Management Plan
SVOC	semivolatile organic compound
TCEQ	Texas Commission on Environmental Quality
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
TRRP	Texas Risk Reduction Program
USGSBC	United States Geological Geochemical and Mineralogical for Soils of the Conterminous United States
UST	underground storage tank
VCP	Voluntary Cleanup Program
VOC	volatile organic compound

1.0 INTRODUCTION

The City of Dallas Water Utilities Department (City) plans to improve the utilities along Pipeline Design Projects Nos. 1362 and 3141 (PID Nos. 1362 and 3141) an approximately 1,700-foot corridor on Puget Street from Singleton Boulevard to Dennison Street (PID No. 1362) and Pueblo Street from Puget Street west (PID No. 3141), herein referred to as the "Project Area" as shown on **Figure 1** provided in **Appendix A**. Puget Street and Pueblo Street are currently two-lane roadways that traverse a residential neighborhood. The City plans to improve the utilities within the Project Area by replacing the water pipeline, connections, and associated infrastructure.

PID 1362 – Puget Street from Singleton Boulevard to Dennison Street. It is our understanding that this PID is a water and wastewater replacement project currently under design by the City's in-house staff. Further, we understand that the excavation and construction is planned for depths of 4 to 15 feet below ground surface (bgs).

PID 3141 – Pueblo Street from Puget Street west. It is our understanding that this project is a water and wastewater replacement project currently under design by the City's in-house staff. The planned excavation and construction will be between 4 and 8 feet bgs.

The City estimates that the total volume of soil material that will be excavated and stockpiled from the project areas during construction, and possibly disposed of, is approximately 400 cubic yards (CYs) from PID Nos. 1362 and 3141.

AECOM Technical Services, Inc. (AECOM) prepared this Soil and Groundwater Management Plan (SGMP or plan) to address soil and groundwater management procedures for City utility improvement work in the following project components:

1.1 Previous Environmental Investigations

This section summarizes the previous investigations conducted by AECOM for the Project Area:

- AECOM conducted a File Review/Site Screening (FRSS) on an approximately 1,700-foot corridor on Puget Street from Singleton Boulevard to Dennison Street (PID 1362) and Pueblo Street from Puget Street west (PID 3141), dated March 2018; and

- AECOM conducted a Limited Phase II Environmental Site Assessment (ESA) on PID Nos. 1362 and 3141, dated February 2020.

1.1.1 File Review/Site Screening (FRSS)

Based on the FRSS, AECOM identified sites of potential environmental concern in the Project Area or surrounding area during the review of the historical aerial photographs including: prior mining operations, agricultural land use, and former above-ground storage tanks. These types of land use and/or operations have the potential to impact the shallow soil and/or groundwater with chemicals of concern (COCs) (i.e., pesticides, hydrocarbons, etc.). Additionally, the FRSS concluded that there are several sites in the project area that are of environmental concern based on their distance from the project area (within 1,000 feet), regulatory status (i.e., municipal

setting designation [MSD], Leaking Petroleum Storage Tank [LPST], etc.), and/or topographical position from the project area (i.e., up-gradient). The sites identified as environmental concerns area shown on **Figure 2**, attached and summarized below:

- Thorton Fixit Shop (Hist Auto)
  2001 Singleton Boulevard, Dallas, TX
- GEVCAR Automotive (Hist Auto)
  1961 Singleton Boulevard, Dallas, TX
- Edwards Service Station (Hist Auto)
  2008 Singleton Boulevard, Dallas, TX
- Empire Iron & Metal (LPST, UST)
  1926 Singleton Boulevard, Dallas, TX
- Alamo Food Mart (LPST, UST)
  2102 Singleton Boulevard, Dallas, TX
- Arbor Woods Apartments (AUL, VCP)
  3030 North Hampton Road, Dallas, TX
- Fuji Hunt Photograph (AUL, VCP, RCRA NonGen/NLR, FINDS, ECHO, APAR)
  2020 Singleton Boulevard, Dallas, TX
- Arbor Woods Housing (MSD)
  3030 North Hampton Road, Dallas, TX
- Holman Boiler Works (AUL, VCP, MSD, UST)
  1956 Singleton Boulevard, Dallas, TX
- Goodwill Industries (UST, LPST, MSD)
  2800 North Hampton Road, Dallas, TX
- AIDES IND DISP (SEMS-ARCHIVE)
  1926 Singleton Boulevard, Dallas, TX
- Singleton Boulevard Warehouse (EPA)
  2020 Singleton Boulevard, Dallas, TX
- RSR Corporation Superfund Site
  OU-1 Boundary
- Caver Family Trust (MSD)
- Singleton Corridor (MSD)
- Holman Boiler Works (MSD)
- Arbor Woods Addition (MSD)

Based on the findings, AECOM recommended further assessment of the soil and groundwater within PID No. 3141, and the soil and groundwater within the portion of PID No. 1362 south from Pueblo Street, as the groundwater in these areas have already been identified as having potential impacts by chlorinated solvents, petroleum products, and metals. In addition, AECOM recommended further assessment of the soil and groundwater in the portion of PID No. 1362 north of Pueblo Street as the potential for contamination from up-gradient/adjacent sources is high.

1.2 Limited Phase II ESA

Based on the FRSS, AECOM conducted a Limited Phase II ESA within the Project Area as discussed below.

1.2.1 Soil

Limited Soil Assessment Activities

On July 26 and 27, 2018, AECOM installed four (4) soil boring (PID 1362-1 through PID 1362-3, and PID 3141-1) in the right-of-way (ROW) of the area of concerns (AOCs) within the project area known as PID Nos. 1362 and 3141. The boring locations were determined based on the findings of the FRSS's and the location of the utilities identified during mark-out activities. Each boring was advanced by a Texas licensed well driller, Sunbelt Industrial Services, using Direct-Push Drilling technology with a 5-foot core barrel sampler using disposable polyethylene liners. The soil cores were continuously collected from ground surface to a total depth of seventeen (17) feet below ground surface (bgs). The recovered 5-foot soil cores were field-screened by a geologist using a hand-held photoionization detector (PID) to identify sample intervals containing volatile organic compounds (VOCs). In addition, on October 31, 2018 AECOM returned to PID 1362 to further delineate soil boring, PID 1362-3 by collecting soil samples from five (5) feet, ten (10) feet, and fifteen (15') north and south of the original sample location. The boring locations for PID Nos. 1362 & 3141 are shown on **Figure 3** in **Appendix A**. The boring logs and geologic cross section are provided in **Appendix A**.

AECOM collected a total of twelve (12) soil samples from PID Nos. 1362 and 3141 that were sent for chemical analysis using a National Environmental Laboratory Accreditation Program (NELAP)/ National Environmental Laboratory Accreditation Conference (NELAC) approved laboratory, Pace Analytical. The type of laboratory analysis for each sample was determined based on the findings of the FRSS's and nearby potential sources of contamination. As such, the soil samples were analyzed for Total Petroleum Hydrocarbons (TPH) by Method TX1005, VOCs by Method 8260, Polycyclic Aromatic Hydrocarbons (PAHs) by Method 8270C, and Resource Conservation and Recovery Act metals (RCRA Metals) by Method 6010B (except mercury, by method 7471A).

Soil Sample Analytical Results and Conclusions

The April 2018 Texas Risk Reduction Program (TRRP) Tier 1 Residential Protective Concentration Levels (PCLs) for 0.5-acre source area were used to evaluate soil and/or groundwater analytical results. Due to planned construction activities, involving potential worker exposure to soil, and the demonstrated presence of groundwater within the project areas, the

selected Tier 1 Residential PCLs were:

- $^{Tot}Soil_{Comb}$ PCL, the Residential soil standard for the total combined pathways of ingestion, dermal and inhalation; and

- $^{GW}Soil_{Ing}$ PCL, the Residential soil standard protective of groundwater.

The Tier 1 PCL for each COC was determined by selecting the lowest exposure pathway PCL**.**

Metal concentrations in soil were also compared to their respective Texas-Specific Median Background Concentration (MBC) and/or the United States Geological Geochemical and Mineralogical for Soils of the Conterminous United States (USGSBC). The lowest Tier 1 PCL (i.e. $^{GW}Soil_{Ing}$ vs. $^{GW}GW_{Ing}$) was then compared to the MBC/USGSBC; the higher of which was then used as the PCL.

VOC concentrations were not reported above the laboratory Sample Detection Limits (SDLs) in the soil samples collected from PID Nos. 1362 and 3141.

Several semivolatile organic compounds (SVOCs) were detected above the laboratory SDLs in the soil samples collected from PID Nos. 1362 and 3141; however, none of the SVOCs were detected above their respective Tier 1 PCLs.

The analytical results from soil samples obtained from PID Nos. 1362 and 3141 revealed no concentrations of TPH above the laboratory reporting limits with the exception of soil boring PID 1362-3 at a depth of 0-2 feet. The TPH concentrations exceeded the Tier 1 $^{GW}Soil_{Ing}$ PCLs; however, they did not exceed the $^{Tot}Soil_{Comb}$, therefore, the soils are not considered an issue for worker exposure.

All analyzed 8-RCRA metals, with the exception of silver, were detected in the analyzed soil samples collected from PID Nos. 1362 and 3141. Of these detected metals, only arsenic and lead exceeded their respective PCLs: arsenic exceeded background concentrations in sample PID 1362-2 (11') but did not exceed the Tier 1 $^{Tot}Soil_{Comb}$ PCL and lead exceeded background concentrations and the Tier 1 $^{Tot}Soil_{Comb}$ PCL in PID 1362-3, at a depth of 0-2 feet (Sample PID 1362-3(0-2). Concentrations of barium, cadmium, chromium, mercury, and selenium were below their respective PCLs.

No COCs, with the exception of lead in the soils from PID 1362-3 (0-2), were detected above their respective Tier 1 $^{Tot}Soil_{Comb}$ PCLs.

On October 31, 2018 AECOM returned to PID 1362 to delineate the lead in this location by collecting soil samples from five (5) feet, ten (10) feet, and fifteen (15) feet north and south of the original sample location due to the elevated lead levels in sample PID 1362-3 (0-2). The sample collected five (5) feet north, [PID 1362-3-5'N (0-2)] resulted in a lead concentration which exceeded the background PCL and the Tier 1 $^{GW}Soil_{Ing}$ PCL; but below the $^{Tot}Soil_{Comb}$ PCL. The sample from five (5) feet south of the original sample [PID 1362-3-5'S (0-2)] resulted in a lead which exceeded the Tier 1 $^{Tot}Soil_{Comb}$ PCL. Due to the lead concentration in sample, [PID 1362-3-5'S (0-2)] above the Tier 1 $^{Tot}Soil_{Comb}$ PCL, the 10 feet sample [PID 1362-3 10'S (0-2)] collected to the south of the original sample was also analyzed for lead. The sample results

reported a lead concentration which exceeded the background PCL and the Tier 1 $^{GW}Soil_{Ing}$ PCL; but below the $^{Tot}Soil_{Comb}$ PCL. The remaining samples [PID 1362-3-10'N (0-2), PID 1362-3-15'N (0-2), and PID 1362-3-15'S (0-2)] were not analyzed. In addition, soil sample, PID 1362-3-5'S (0-2), was analyzed for lead via Synthetic Precipitation Leaching Procedure (SPLP) with a reported concentration of 0.265 milligrams per liter (mg/L).

In summary, the Limited Phase II ESA found the following for soil:

- VOC concentrations were not reported above the laboratory Sample Detection Limits (SDLs) in the soil samples collected from PID Nos. 1362 and 3141.

- Several SVOCs were detected above SDLs; however, none of these COCs exceeded the Tier 1 PCLs.

- TPH was not reported above the SDLs in the soil samples with the exception of PID 1362-3 (0-2'). The concentration of TPH in this sample exceeded the Tier 1 $^{GW}Soil_{Ing}$ PCL; however, it was not above the Tier 1 $^{Tot}Soil_{Comb}$ PCL.

- The 8-RCRA metals, with the exception of silver, were detected above the SDLs. Arsenic, exceeded the Texas-Specific Median Background Concentrations in sample PID 1362-2 (11'). None of the RCRA metals reported in the soil samples exceeded the Tier 1 $^{Total}Soil_{Comb}$ PCLs with the exception of lead in samples PID 1362-3 (0-2) and PID 1362-3-5'S (0-2).

1.2.2 Groundwater

Limited Groundwater Assessment Activities

AECOM installed three temporary wells into PID No. 1362 (PID 1362-1 through PID 1362-3) and one (1) into PID No. 3141 (PID 3141-1) to collect groundwater samples. A such, AECOM personnel collected a grab groundwater sample from PID Nos. 1362-1 (PID 1362-1 WATER) and 1362-2 (PID 1362-2 WATER) using a new disposable micro-bailer or a peristaltic pump with disposable tubing. Water levels in PID 1362-1, and PID 1362-2 was approximately 12 feet bgs and PID 1362-3 and PID 3141-1 were dry. The collected groundwater samples were sent to a NELAP/NELAC approved laboratory, Pace Analytical for chemical analysis. The two (2) groundwater samples were sent for analysis for TPH by Method TX1005, VOCs by Method 8260, PAHs by Method 8270C, and RCRA Metals by Method 6010B (except mercury, by method 7471A).

Groundwater Sample Analytical Results and Conclusions

The April 2018 TRRP Tier 1 Residential PCLs for 0.5-acre source area were used to evaluate groundwater analytical results. Due to planned construction activities, involving potential worker exposure to soil, and the demonstrated presence of groundwater within the project areas, the selected Tier 1 Residential PCLs for groundwater was:

- $^{GW}GW_{Ing}$ PCL, the Residential groundwater ingestion pathway for beneficial use.

Several VOCs and SVOCs were detected in the two groundwater sample collected in PID No. 1362; however, none of these COCs exceeded the Tier 1 $^{GW}GW_{Ing}$ PCLs. The analytical results from both samples revealed no concentrations of TPH above the SDL. Of the 8-RCRA metals analyzed, five (i.e., arsenic, barium, chromium, mercury and lead) were detected above the laboratory SDLs in one or both groundwater samples. These five metals exceeded the Tier 1 $^{GW}GW_{Ing}$ PCLs in PID 1362-1.

In summary, the Limited Phase II ESA found the following for groundwater:

- Several VOCs were detected above the SDLs; however, none of the COCs exceeded the Tier 1 $^{GW}GW_{Ing}$ PCLs.
- Several SVOCs were detected above the SDLs; however, none of the COCs exceeded the Tier 1 $^{GW}GW_{Ing}$ PCLs.
- TPH was not reported above the SDLs in the groundwater samples.
- Arsenic, barium, chromium, mercury and lead were the metals detected in groundwater sample PID 1362-1 and the results for all five metals exceeded the Tier 1 $^{GW}GW_{Ing}$ PCLs.

Based on investigation results, AECOM and the City determined that an SGMP was required to address contaminated soil and groundwater that could potentially affect construction activities within the Project Area.

1.2.3 Limitations

This SGMP is based on information obtained from sources listed in the report which AECOM considers to be reliable. AECOM's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. AECOM makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that AECOM does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of this plan. These services were performed in accordance with the scope of work agreed with you, our client, as set forth in our proposal. In addition, the findings, conclusions, and recommendations resulting from these services are based upon available information derived from reviewed past environmental reports, on-site activities, and other services performed in connection with the site; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, non-detectable, or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services. In addition, AECOM was retained to provide this SGMP as a tool that can be used to manage environmental risk during project construction activities; however, a SGMP cannot eliminate all environmental risk.

This report, including all supporting field data, notes and laboratory data where applicable (collectively referred hereinafter as "information"), was prepared or collected by AECOM for the benefit of its client, The City of Dallas. AECOM's client may release the information to third parties, who may use and rely upon the information at their discretion. However, any use of or reliance upon the information by a party other than specifically named above shall be solely at the risk of such third party and without legal recourse against AECOM, its parent, its subsidiaries and affiliates; or their respective employees, officer, or directors; regardless of whether the action in which recovery of damages is sought is based upon contract, tort (including the sole, concurrent, or other negligence and strict liability of AECOM), stature, or otherwise. This information shall not be used or relied upon by a party that does not agree to be bound by the above statement.

2.0 SOIL AND GROUNDWATER MANAGEMENT

This SGMP outlines the requirements for the City and its Contractor to manage soil and groundwater generated during construction activities for the utility improvements in the Project Area. All handling, management, and disposal of impacted soil and groundwater from the City right-of-way, roadway, and utility corridors must be completed in accordance with requirements set forth in this document.

2.1 Execution of the Soil and Groundwater Management Plan

The proposed utility improvements in the Project Area, an approximately 1,700-foot corridor on Puget Street from Singleton Boulevard to Dennison Street (PID No. 1362) and Pueblo Street from Puget Street west (PID No. 3141), are the subject of this SGMP. Based on review of the data provided by the City , the following project details are relevant to the execution of this SGMP:

PID 1362 – Puget Street from Singleton Boulevard to Dennison Street. It is our understanding that this PID is a water and wastewater replacement project currently under design by the City's in-house staff. Further, we understand that the excavation and construction is planned for depths of 4 to 15 feet bgs.

PID 3141 – Pueblo Street from Puget Street west. It is our understanding that this project is a water and wastewater replacement project currently under design by the City's in-house staff. The planned excavation and construction will be between 4 and 8 feet bgs.

The City estimates that the total volume of soil material that will be excavated and stockpiled from the Project Area during construction, and possibly disposed of, is approximately 650 CYs.

Based on analytical results, there are three individual management zones present within the Project Area. Management of soils, groundwater, and/or surface water generated from each of these zones should be handled in accordance with the methods outlined in Sections 3.0 (Zone A), 4.0 (Zone B), and 5.0 (Zone C) of this report. **Figure 4** in **Appendix A** shows the locations of these management zones relative to the Project Area.

No soils from the project site can be removed from the site and re-used on other properties without prior authorization from the City's Project Manager. In addition, groundwater from Zone C can not be released to the ground surface, returned to the excavation, or discharged without a one-time groundwater discharge permit from the DWU Pretreatment and Laboratory Services Division. The permit process will likely involve collecting a representative composite sample of the water to be discharged in accordance with the terms of the City.

<u>Zone A</u>
(Line 1 – Sta. 1+75.0 to Sta. 2+35.0)

Soils located in an approximately 2,100 square-foot area around soil boring PID 1362-3 beginning at Station 1+75.0 and extending to Station 2+35.0 along Puget Street, between Pueblo Street and Dennison Street a shown on **Figure 4**. Soils in Zone A contain elevated lead

concentrations (maximum concentration of 547 milligrams per kilogram (mg/kg) in soil sample PID 1362-3-5'S (0-2')) above the TRRP Tier 1 TotSoilComb PCL (residential direct human contact) of 500 mg/kg. However, the lead concentrations are below the TRRP Tier 1 TotSoilComb PCL (commercial direct human contact) of 1,600 mg/kg. Further, Synthetic Precipitation Leaching Procedure (SPLP) analysis of lead in the soil from PID1362-3-5'S(0-2') was reported at a concentration of 0.265 milligrams per Liter (mg/L) below the Texas Class I non-hazardous and U.S. Environmental Protection Agency (EPA) Maximum Leachable Concentrations (MCLs) waste criteria of 1.5 mg/L. Based on this sample, it is likely that Zone A soils will meet the Class II non-hazardous waste criteria.

Zone B
(Line 1 – Sta. 0+00.0 to 1+75.0 and Sta. 2+35.0 to 6+50.0 and Line 2 – Sta. 0+00.0 to 4+40.0)

Soils located in the remainder of the Project Area outside of Zones A and C as shown on **Figure 4**. This zone comprises the majority of the Project Area. Zone B soils contain low level concentrations of metals and SVOCs, but the detected concentrations are less than their respective TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (residential direct human contact) PCLs and Class I non-hazardous waste criteria.

Zone C
(Line 1 – 6+50.0 to 10+50.7)

Dry soils located in the remainder of the Project Area outside of Zone A and B as shown on **Figure 4**. Zone C dry soils contain low level concentrations of metals and SVOCs, but the detected concentrations are less than their respective TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (residential direct human contact) PCLs and Class I non-hazardous waste criteria. However, Zone C has elevated metal (i.e., arsenic, barium, chromium, lead and mercury) impacts to groundwater that exceed the $^{GW}GW_{Ing}$ (groundwater ingestion pathway/drinking water standard). As such, the wet soils (i.e., below the water table) and groundwater in Zone C may be impacted.

2.2 Contacts and Revisions to the SGMP

If necessary revisions to this SGMP are identified before or during construction activities that would be beneficial to the City or the Contractor, notification must be made to the following parties and an addendum to this SGMP will be prepared and distributed to all appropriate parties. The contacts for the following role are To Be Determined (TBD) and should be completed upon award of the work.

NAME OF CONTRACTOR : _____
ROLE : _____
COMPANY : _____
TELEPHONE : _____
EMAIL : _____

NOTIFICATION: The Contractor should be contacted upon discovery of unanticipated conditions (defined below) at the site during construction that will alter the scope of this SGMP and/or will result in modifications to construction plans, procedures, and/or schedule.

	:	
NAME OF CITY PROJECT MANAGER		
ROLE	:	
COMPANY	:	
TELEPHONE	:	
EMAIL	:	

NOTIFICATION: The City should be contacted upon discovery of unanticipated conditions (defined below) at the site during construction that will alter the scope of this SGMP and/or will result in modifications to project plans, schedule, and/or budget.

NAME OF ENVIRONMENTAL CONSULTANT	:	
ROLE	:	
COMPANY	:	
TELEPHONE	:	
EMAIL	:	

NOTIFICATION: The Environmental Consultant should be contacted upon discovery of unanticipated conditions (defined below) at the site during construction that will alter the scope of this SGMP.

The Environmental Consultant should also be contacted with questions regarding on-site soil management and environmental activities, or with questions regarding this plan and/or the implementation of this plan.

Unanticipated Conditions:

- - Discovery of new or unanticipated conditions or objectionable soil characteristics by the Contractor or subcontractors will result in work stoppage in the area and notification of the appropriate contacts listed above. New or unanticipated conditions or objectionable soil characteristics may include, but are not limited to, the following:
    - Discovery of sub-grade tanks, unanticipated piping other than known water/wastewater lines, grit traps, sand traps, oil-water separators, drums or other underground structures or waste containers;
    - Visual evidence of free product in on-site soils and/or accumulated rainwater, or visual evidence of stained soils; and
    - Olfactory evidence of petroleum, solvent, or other chemical odors sensed during excavation or grading activities.
- Please be aware that an attempt will be made to avoid construction delays due to potential environmental issues; however, limited delays may occur based on the conditions experienced at the site during construction activities.

3.0 ZONE A CONSTRUCTION ACTIVITIES

The City's Contractor will be responsible for conducting construction activities within the Project Area in accordance with the SGMP. Soils generated from Zone A should:

Zone A

- Soils from within Zone A to a depth of 11 feet bgs should be returned to the excavation with two feet of cover from Zone B or Zone C (dry soils) or removed from the Project Area for disposal at a Class II non-hazardous waste landfill.
- Soils from within Zone A can be re-used in other portions of the excavation within the Project Area if covered with two feet of soil from Zone B or Zone C (dry soils).
- Soils from within Zone A should not be mixed with soils from other portions of the Project Area during staging or stockpiling.
- If Zone A soils cannot be re-used in other areas of the excavation with cover then they will require disposal at a Class II non-hazardous waste landfill. Soils from within Zone A contain elevated concentrations of lead above TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (residential direct human contact) of 500 mg/kg. Workers handling soils from this area should take appropriate health and safety precautions and should be equipped with appropriate personal protective equipment (PPE).
- Additional dust control measures should be implemented.

3.1 Generated Soils

The Engineer estimates approximately 19 CY of excess generated soils in Zone A cumulatively. . Based on previous investigations, the soils in Zone A are potentially contaminated with elevated levels of lead and low levels of metals, SVOCs, and TPH. Soils in Zone A contain elevated lead concentrations (maximum concentration of 547 mg/kg in soil sample PID 1362-3-5'S (0-2')) above the TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (residential direct human contact) of 500 mg/kg. However, the lead concentrations are below the TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (commercial direct human contact) of 1,600 mg/kg. All generated soils from within the Zone A of the Project Area should be segregated by the Contractor in stockpiles in accordance with the construction plans and specifications.

The Contractor should make every possible effort to return the generated soils from Zone A to the excavation or trench within the Project Area with at least two (2) feet of soil cover (i.e., soil cap) from Zone B or Zone C (dry soils). The Zone A soils can be returned to the excavation during construction activities. Per the TCEQ and EPA) guidance for common utility projects and excavation-type activities indicates that all generated soils, regardless of the level of contamination, can be returned to the excavation or utility trench from which it was derived for use as backfill whenever possible under Resource Conservation and Recovery Act (RCRA) requirements. Copies of the TCEQ rule and EPA letter are included in **Appendix C**.

The excess soils that cannot be returned to the trench and/or excavation in Zone A should be

placed in lined stockpiles or roll-off containers. The lining should be consistent with impermeable plastic sheeting with a thickness of at least 6 mil. Plastic sheeting should be used to cover the stockpiles or roll-off containers during non-working hours or during precipitation events. Soils from within Zone A should not be mixed with soils from other portions of the Project Area.

Due to the elevated concentrations of lead detected in Zone A soils cannot be re-used offsite in other locations or for other uses. Synthetic Precipitation Leaching Procedure (SPLP) analysis of lead in the soil from PID1362-3-5'S(0-2') was reported at a concentration of 0.265 milligrams per Liter (mg/L) below the Texas Class I non-hazardous and EPA MCLs waste criteria of 1.5 mg/L. The generated soils exceed TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCL (residential direct human contact) of 500 mg/kg but based on the SPLP sample, it is likely that the Zone A soils will meet waste characterization criteria of a Class II non-hazardous waste. However, waste characterization is required prior to disposal at a landfill. Prior to transport and disposal of generated soils, the necessary waste classification sampling efforts and coordination with the disposal landfill will be conducted by the City with the assistance of an Environmental Consultant.

Pre-approval has not been obtained for the disposal of soils from Zone A since every effort should be made to return the generated soils from Zone A to the excavation or trench within the Project Area. If Zone A soils cannot be reused within the Project Area, as defined above, then generated soils from Zone A will require offsite disposal at a landfill permitted to accept Class II non-hazardous waste landfill, such as McCommas Bluff Landfill located at 5100 Youngblood Road in Dallas, Texas.

If generated soils from Zone A require offsite disposal, waste characterization will be conducted by the City with the assistance of an Environmental Consultant. Based on existing soil analytical data, it is anticipated that additional soil composite samples, at a minimum rate of one sample per 50 CY of generated soils, will be necessary for proper classification and disposal of the generated soils from Zone A of the Project Area. The landfill will likely require the additional samples be analyzed for toxicity characteristic leaching procedure (TCLP) VOCs by EPA methods 1311/8260, TCLP SVOCs by EPA methods 1311/8270, TCLP RCRA 8 metals by EPA methods 1311/6010/7470, and TPH by TCEQ method TX 1005 as part of the waste characterization. Final approval for waste profiling is at the discretion of the permitted landfill. The actual analyses and associated frequencies warranted for profiling and landfill approval may vary based on the landfill. The number of laboratory analyses is determined by the amount of waste material warranting off-site disposal and specific analytical requirements of the landfill.

Upon receiving approvals, the City Project Manager will provide direction to the Contractor regarding proper transport and disposal of generated soils from Zone A. The Contractor will be responsible for ensuring that all soils leaving the site are covered under an approved landfill profile or waste acceptance application and accompanied by unique, numbered waste manifests or load authorization tickets. Copies of the manifests or load authorization tickets should be returned to the City Project Manager. The City of Dallas will be listed as Generator for waste soils originating from the Project Area.

3.2 Recovered Groundwater or Stormwater

Perched groundwater may occur non-uniformly across the Project Area in the upper 15 feet of soil. The excavation and construction activities within Zone A soils of PID No. 1362 are planned for depths of 4 to 15 feet bgs. During the Phase II ESA, groundwater was not encountered in PID No. 1362-3 to a depth of approximately 17 feet bgs. As such, it is not anticipated that groundwater will be encountered during construction activities in Zone A. However, it is possible that surface water run off at the site may come into contact with affected on-site soils from open excavations in Zone A and will need to be managed accordingly. The actual amount of accumulated surface water generated from dewatering during construction activities will depend on the conditions encountered at the site and the construction methods utilized. During periods of work stoppage, berming of open excavations to prevent surface water/precipitation run off into the open excavations is recommended.

If groundwater or surface water/precipitation accumulates in on-site excavations in Zone A and requires removal and disposal, the Contractor shall containerize the water onsite in watertight containers as discussed in Section 5.3. Recovered groundwater and/or surface water from Zone A may come in contact with Zone A soils and exhibit elevated concentrations of lead or other contaminants.

Waste classification sampling efforts will be conducted by the City with the assistance of an Environmental Consultant. If accumulated surface water is present in Zone A and the water will be discharged to the City of Dallas sanitary sewer system, a one-time groundwater discharge permit will be obtained by the City. This will likely involve collecting a representative composite sample of the water to be discharged in accordance with the terms of DWU. If necessary, water composite samples collected for waste characterization purposes will be analyzed using the following methods:

- Select chemicals from EPA Tables II, III, and V (40 CFR 122, Appendix D) + Total Oil & Grease (TOG), pH, Cyanide, Sulfide, flashpoint, Temperature, and Metals (Specific, TBD).

However, the analytical criteria will be based on the discretion of the Dallas Water Utilities (DWU). The analytical results should be used to characterize and profile the water being discharged. The City Project Manager will be provided final direction to the Contractor on proper disposal or discharge of the recovered water.

4.0 ZONE B CONSTRUCTION ACTIVITIES

The City's Contractor will be responsible for conducting construction activities within the Project Area in accordance with the SGMP. Soils generated from Zone B should:

- Soils from within Zone B can be re-used in the Project Area and on-site re-use is encouraged to reduce disposal costs.
- If Zone-B soils cannot be re-used on the site, they should be disposed at Class II non-hazardous waste landfill. Re-use of Zone B soils on another City of Dallas owned property may be an option, but off-site re-use must be approved in advance by the City's Project Manager.
- Off-site re-use of soils from Zone B on properties not owned by the City of Dallas is strictly prohibited unless approved in advance by the Project Manager.
- Soils from within Zone B contain low level concentrations of metals and SVOCs, but the detected concentrations are less than their respective TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCLs (residential direct human contact).

4.1 Generated Soils

The Engineer estimates approximately 465 CY of excess generated soils in Zone B cumulatively. Based on previous investigations, the soils in Zone B contain low level concentrations of metals and SVOCs, but the detected concentrations are less than their respective TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCLs (residential direct human contact). These soils can be returned to the excavation during construction activities. TCEQ and EPA guidance for common utility projects and excavation-type activities indicates that all generated soils, regardless of the level of contamination, can be returned to the excavation or utility trench from which it was derived for use as backfill whenever possible under RCRA requirements. Copies of the TCEQ rule and EPA letter are included in **Appendix C**.

The generated soils from within the Zone B of the Project Area should be segregated by the Contractor in stockpiles in accordance with the construction plans and specifications. The excess soils that cannot be returned to the trench and/or excavation in Zone B should be placed in lined stockpiles. The lining should be consistent with impermeable plastic sheeting with a thickness of at least 6 mil. Plastic sheeting should be used to cover the stockpiles during non-working hours or during precipitation events. Stockpiled soils from within Zone B should not be comingled with soils from Zone A.

Soils generated from within Zone B can be re-used within the Project Area and on-site reuse is strongly encouraged to reduce disposal costs. However, whenever possible, Zone A generated soils shall be returned to the excavation or trench before reusing Zone B generated soils. If Zone B soils cannot be re- used within the Project Area, they should be disposed at a Class II non-hazardous waste landfill.

Generated soils in Zone B meet waste characterization criteria of a Class II non-hazardous waste. Prior to transport and disposal of generated soils, any necessary waste classification sampling efforts and coordination with the disposal landfill will be conducted by the City with the assistance of an Environmental Consultant. Generated soils from within Zone B cannot be re-

used offsite on other properties without prior authorization from the City Project Manager.

Pre-approval will be obtained from the Class II non-hazardous waste landfill for the disposal of approximately 650 CY of Class II non-hazardous soils from Zone B. Based on the on-site soils already analyzed, it is anticipated that no additional soil sampling will be required to classify soils generated from Zone B as a Class II non-hazardous waste. Soil sampling performed to date appears to appropriately characterize on-site soil for waste profiling purposes; however, final approval for waste profiling is at the discretion of the landfill. Additional sampling may be necessary if requested by the landfill or if there are modifications to the pre-approved soil volume. The landfill will likely require the additional samples be analyzed for toxicity characteristic leaching procedure (TCLP) VOCs by EPA methods 1311/8260, TCLP SVOCs by EPA methods 1311/8270, TCLP RCRA 8 metals by EPA methods 1311/6010/7470, and TPH by TCEQ method TX 1005 as part of the waste characterization. It should be noted that the actual analyses and associated frequencies warranted for profiling and landfill approval may vary based on the landfill's requirements. The number of laboratory analyses is determined by the amount of waste material warranting off-site disposal and specific analytical requirements of the landfill.

Upon receiving approvals, the City Project Manager will provide direction to the Contractor regarding proper transport and disposal of generated soils from Zone B. The Contractor will be responsible for ensuring that all soils leaving the site are covered under an approved landfill profile or waste acceptance application and accompanied by unique, numbered waste manifests or load authorization tickets. Copies of the manifests or load authorization tickets should be returned to the City Project Manager. The City of Dallas will be listed as Generator for waste soils originating from the site.

4.2 Recovered Groundwater

Perched groundwater may occur non-uniformly across the Project Area in the upper 15 feet of soil of the planned excavations. It is anticipated that groundwater may be encountered at depths of 10 to 15 feet bgs during excavation activities, and it is also possible that surface water runoff in the Project Area may occur. The actual amount of accumulated groundwater and surface water generated from dewatering during construction activities will depend on the conditions encountered at the Project Area and the construction methods utilized for the work. During periods of work stoppage, berming of open excavations to prevent surface water/precipitation run off into the open excavations is recommended.

If groundwater or surface water/precipitation accumulates in on-site excavations in Zone B and requires removal and disposal, the Contractor shall containerize the water onsite in watertight containers.

Waste classification sampling efforts will be conducted by the City with the assistance of an Environmental Consultant. If accumulated surface water is present in Zone B and the water will be discharged to the City of Dallas sanitary sewer system, a one-time groundwater discharge permit will be obtained by the City. This will likely involve collecting a representative composite sample of the water to be discharged in accordance with the terms of DWU. If necessary, water composite samples collected for waste characterization purposes will be analyzed using the following methods:

- Select chemicals from EPA Tables II, III, and V (40 CFR 122, Appendix D) + Total Oil & Grease (TOG), pH, Cyanide, Sulfide, flashpoint, Temperature, and Metals (Specific, TBD).

However, the analytical criteria will be based on the discretion of the City. The analytical results should be used to characterize and profile the water being discharged. The City Project Manager will be provided final direction to the Contractor on proper disposal or discharge of the recovered water.

5.0 ZONE C CONSTRUCTION ACTIVITIES

The City's Contractor will be responsible for conducting construction activities within the Project Area in accordance with the SGMP. Soils generated from Zone C should:

- Dry soils (i.e., soils above the water table) from within Zone C can be re-used in the Project Area and on-site re-use is encouraged to reduce disposal costs.
- If Zone-C dry soils cannot be re-used on the site, they should be disposed at a Class II non-hazardous waste landfill. Re-use of Zone C dry soils on another City of Dallas owned property may be an option, but off-site re-use must be approved in advance by the City's Project Manager.
- Wet soils (i.e., below the water table) from within Zone C may contain elevated levels of metal concentrations and SVOCs from groundwater impacts. These soils must be kept separate from the dry soils in Zone C.
- Wet soils from within Zone C can be re-used in other areas of the Project Area if covered with soils from Zone B or Zone C (dry soils).
- Off-site re-use of any soils from Zone C on properties not owned by the City of Dallas is strictly prohibited unless approved in advance by the Project Manager.
- Zone C groundwater has elevated metal (i.e., arsenic, barium, chromium, lead and mercury) impacts to groundwater that exceed the $^{GW}GW_{Ing}$ (groundwater ingestion pathway/drinking water standard). Workers handling wet soils or groundwater from this area should take appropriate health and safety precautions and should be equipped with appropriate personal protective equipment (PPE).
- Groundwater from Zone C must be containerized and discharged through a City permit or disposed off-site. **Pumping groundwater/surface water from Zone C directly on to the ground is strictly prohibited.**

5.1 Generated Dry Soils

The Engineer estimates approximately 126 CY of excess generated soils in Zone C (dry soils) cumulatively. Based on previous investigations, the soils in Zone C (dry soils) contain low level concentrations of metals and SVOCs, but the detected concentrations are less than their respective TRRP Tier 1 $^{Tot}Soil_{Comb}$ PCLs (residential direct human contact). Thee dry soils can be returned to the excavation during construction activities. TCEQ and EPA guidance for common utility projects and excavation-type activities indicates that all generated soils, regardless of the level of contamination, can be returned to the excavation or utility trench from which it was derived for use as backfill whenever possible under RCRA requirements. Copies of the TCEQ rule and EPA letter are included in **Appendix C**.

The generated dry soils (i.e., soils from above the water table) from within the Zone C of the Project Area should be segregated by the Contractor in stockpiles in accordance with the construction plans and specifications. The excess soils that cannot be returned to the trench and/or excavation in Zone C should be placed in lined stockpiles. The lining should be consistent with impermeable plastic sheeting with a thickness of at least 6 mil. Plastic sheeting should be used to cover the stockpiles during non-working hours or during precipitation events. Stockpiled dry soils from within Zone C can be co-mingled with soils from Zone B only.

Dry soils generated from within Zone C can be re-used within the Project Area and on-site reuse is strongly encouraged to reduce disposal costs. If Zone C (dry soils) cannot be re- used within the Project Area or other areas as approved by the City Project Manager, they should be disposed at a Class II non-hazardous waste landfill.

Generated dry soils in Zone C meet waste characterization criteria of a Class II non-hazardous waste. Prior to transport and disposal of generated soils, any necessary waste classification sampling efforts and coordination with the disposal landfill will be conducted by the City with the assistance of an Environmental Consultant. Generated dry soils from within Zone C cannot be re-used offsite on other properties without prior authorization from the City Project Manager.

Pre-approval will be obtained from a Class II non-hazardous waste landfill for the disposal of approximately 650 CY of Class II non-hazardous dry soils from Zone C. Based on the on-site soils already analyzed, it is anticipated that no additional soil sampling will be required to classify the dry soils generated from Zone C as a Class II non-hazardous waste. Soil sampling performed to date appears to appropriately characterize on-site soil for waste profiling purposes; however, final approval for waste profiling is at the discretion of the landfill. Additional sampling may be necessary if requested by the landfill or if there are modifications to the pre-approved soil volume. The landfill will likely require the additional samples be analyzed for toxicity characteristic leaching procedure (TCLP) VOCs by EPA methods 1311/8260, TCLP SVOCs by EPA methods 1311/8270, TCLP RCRA 8 metals by EPA methods 1311/6010/7470, and TPH by TCEQ method TX 1005 as part of the waste characterization. It should be noted that the actual analyses and associated frequencies warranted for profiling and landfill approval may vary based on the landfill's requirements. The number of laboratory analyses is determined by the amount of waste material warranting off-site disposal and specific analytical requirements of the landfill.

Upon receiving approvals, the City Project Manager will provide direction to the Contractor regarding proper transport and disposal of generated dry soils from Zone C. The Contractor will be responsible for ensuring that all soils leaving the site are covered under an approved landfill profile or waste acceptance application and accompanied by unique, numbered waste manifests or load authorization tickets. Copies of the manifests or load authorization tickets should be returned to the City Project Manager. The City of Dallas will be listed as Generator for waste soils originating from the site.

5.2 Generated Wet Soils

The Engineer estimates approximately 126 CY of excess generated soils in Zone C(wet soils) cumulatively. Based on previous investigations, the wet soils in Zone C are potentially with metal (i.e., arsenic, barium, chromium, lead and mercury) impacts from groundwater. The groundwater in Zone C is contaminated with elevated metal concentrations that exceed the $^{GW}GW_{Ing}$ (groundwater ingestion pathway/ drinking water standard). Synthetic Precipitation Leaching Procedure (SPLP) analysis of lead in the soil from PID1362-3-5'S(0-2') was reported at a concentration of 0.265 milligrams per Liter (mg/L) which is above $^{GW}GW_{Ing}$ (groundwater ingestion pathway/ drinking water standard)but below the Texas Class I non-hazardous and EPA MCLs waste criteria of 1.5 mg/L. Based on this sample, Zone C wet soils will likely meet the Class II non-hazardous Waste criteria. Further, SPLP and TCLP analysis were conducted on

composite samples (Puget IDW) from the soils investigative derived waste (IDW) generated in the Project area for the 8 RCRA Metals. These soil samples were also below their respective the Texas Class I non-hazardous and EPA MCLs waste criteria. However, waste characterization is required prior to disposal at a landfill.

The Zone C (wet soils) can be returned to the excavation during construction activities and should be returned prior to Zone B or Zone C (dry soils). In addition, the Zone C (wet soils) should be covered with two feet of soil material from Zone B or Zone C (dry soils). Per the TCEQ and EPA) guidance for common utility projects and excavation-type activities indicates that all generated soils, regardless of the level of contamination, can be returned to the excavation or utility trench from which it was derived for use as backfill whenever possible under Resource Conservation and Recovery Act (RCRA) requirements. Copies of the TCEQ rule and EPA letter are included in **Appendix C**.

All generated wet soils (i.e., soils from below the water table) from within Zone C of the Project Area should be segregated by the Contractor in stockpiles in accordance with the construction plans and specifications. It is anticipated that groundwater may be encountered at depths of 10 to 15 feet bgs during excavation activities. The excess soils that cannot be returned to the trench and/or excavation in Zone C should be placed in lined stockpiles or roll-off containers. The lining should be consistent with impermeable plastic sheeting with a thickness of at least 6 mil. Plastic sheeting should be used to cover the stockpiles or roll-off containers during non-working hours or during precipitation events. In addition, any accumulated water should be removed from the wet soils staging area and contained with a frac tank or similar watertight container and disposed as part of the recover groundwater as discussed in Section 5.3 below. Wet soils from within Zone C should not be mixed with soils from other portions of the Project Area

The Contractor should make every possible effort to return the generated wet soils from Zone C to the excavation or trench within the Project Area with at least two (2) feet of soil cover (i.e., soil cap) from Zone B or from dry soils in Zone C. Due to the elevated metal concentrations detected in Zone C groundwater, the wet soils cannot be re-used offsite in other locations or for other uses. However, the generated wet soils will likely meet waste characterization criteria of a Class II non-hazardous waste. Prior to transport and disposal of generated soils, the necessary waste classification sampling efforts and coordination with the disposal landfill will be conducted by the City with the assistance of an Environmental Consultant.

Pre-approval <u>has not</u> been obtained for the disposal of wet soils from Zone C since every effort should be made to return the generated soils from Zone C to the excavation or trench within the Project Area. If Zone C wet soils cannot be reused within the Project Area, as defined above, then generated wet soils from Zone C will require offsite disposal at a landfill permitted to accept Class II non-hazardous waste landfill, such as McCommas Bluff Landfill located at 5100 Youngblood Road in Dallas, Texas.

If generated wet soils from Zone C require offsite disposal, waste characterization will be conducted by the City with the assistance of an Environmental Consultant. Based on existing soil analytical data, it is anticipated that additional soil composite samples, at a minimum rate of one sample per 50 CY of generated soils, will be necessary for proper classification and disposal of the generated soils from Zone C of the Project Area. The landfill will likely require the additional

samples be analyzed for toxicity characteristic leaching procedure (TCLP) VOCs by EPA methods 1311/8260, TCLP SVOCs by EPA methods 1311/8270, TCLP RCRA 8 metals by EPA methods 1311/6010/7470, and TPH by TCEQ method TX 1005 as part of the waste characterization. Final approval for waste profiling is at the discretion of the permitted landfill. The actual analyses and associated frequencies warranted for profiling and landfill approval may vary based on the landfill. The number of laboratory analyses is determined by the amount of waste material warranting off-site disposal and specific analytical requirements of the landfill.

Upon receiving approvals, the City Project Manager will provide direction to the Contractor regarding proper transport and disposal of generated wet soils from Zone C. The Contractor will be responsible for ensuring that all soils leaving the site are covered under an approved landfill profile or waste acceptance application and accompanied by unique, numbered waste manifests or load authorization tickets. Copies of the manifests or load authorization tickets should be returned to the City Project Manager. The City of Dallas will be listed as Generator for waste soils originating from the Project Area.

5.2 Recovered Groundwater

Perched groundwater may occur non-uniformly across the Project Area in the upper 15 feet of soil of the planned excavations. It is anticipated that groundwater may be encountered at depths of 10 to 15 feet bgs during excavation activities, and it is also possible that surface water runoff in the Project Area may occur. The actual amount of accumulated groundwater and surface water generated from dewatering during construction activities will depend on the conditions encountered at the Project Area and the construction methods utilized for the work. During periods of work stoppage, berming of open excavations to prevent surface water/precipitation run off into the open excavations is recommended. Zone C groundwater has elevated metal (i.e., arsenic, barium, chromium, lead and mercury) impacts to groundwater that exceed the $^{GW}GW_{Ing}$ (groundwater ingestion pathway/drinking water standard). If groundwater or surface water/precipitation accumulates in on-site excavations in Zone C it must be dewatered, stored in a watertight container, and discharged to the City of Dallas sanitary sewer system, under a one-time groundwater discharge permit by the City. This will likely involve collecting a representative composite sample of the water to be discharged in accordance with the terms of DWU. If necessary, water composite samples collected for waste characterization purposes will be analyzed using the following methods:

- Select chemicals from EPA Tables II, III, and V (40 CFR 122, Appendix D) + Total Oil & Grease (TOG), pH, Cyanide, Sulfide, flashpoint, Temperature, and Metals (Specific, TBD).

However, the analytical criteria will be based on the discretion of the DWU. The analytical results should be used to characterize and profile the water being discharged. The City Project Manager will be provided final direction to the Contractor on proper disposal or discharge of the recovered water. If a permit can not be obtained, then the groundwater/surface water from Zone C will require off-site disposal. Prior to transport and disposal of generated water, the necessary waste classification sampling efforts and coordination with the disposal facility will be conducted by the City with an Environmental Consultant. **Pumping groundwater/surface water from Zone C directly on to the ground is strictly prohibited.**

6.0 OFFSITE MANAGEMENT OF SOIL AND GROUNDWATER

This section describes the off-site management of excess soil and/or groundwater that may remain after the utility improvement project and associated excavation actives are complete.

6.1 Generated Soils

Any generated soils temporarily stockpiled within the Project Area that are not returned to the excavation at the end of the project shall be loaded into roll-off containers or haul trucks utilizing appropriate equipment for proper disposal as indicated in Sections 3.0 through 5.0 of this plan. The stockpiled material shall remain at the Project Area until waste classification has been completed. Soils generated from Zone A, B, and C are anticipated to meet Class II non-hazardous waste criteria. Final characterization and waste profiling of the excess soils for offsite disposal at a licensed facility will be conducted by the City with the assistance of an Environmental Consultant as indicated in Sections 3.0 through 5.0 of this SGMP.

No soils from the Project Area can be removed from the site and re-used on other properties without prior authorization from the City's Project Manager.

6.2 Recovered Groundwater

If a sanitary sewer discharge permit was not obtained for the project, recovered groundwater shall remain in the watertight holding tanks at the staging area until waste classification has been completed. Decontamination water and recovered groundwater/surface water shall be disposed of utilizing a vacuum truck, tanker truck or other appropriate mode of transportation by a state licensed waste transporter to the appropriate licensed disposal facility. While transferring water from the excavation areas to the holding tanks and from the holding tanks to the vehicles, all appropriate steps should be taken to ensure that water is not released to the ground surface. Final characterization and waste profiling of the recovered water for offsite disposal at a licensed facility will be conducted by the City with the assistance of an Environmental Consultant as indicated in Sections 3.0 through 5.0 of this SGMP.

7.0 WORKER HEALTH & SAFETY PROCEDURES

7.1 Daily Work Logs

The Contractor shall coordinate construction activities during excavation activities in potentially contaminated areas in accordance with this SGMP. The Contractor will maintain a daily log of activities with respect to soil and groundwater management. The daily log will include the following observations made by the Contractor:

1. Summary of daily construction activities.
2. Extent and depth of the excavation in each PID within the Project Area.
3. Description of material generated from each PID within the Project Area.
4. Date and origin of material generated from each PID within the Project Area.
5. Volume of soil generated from each PID within the Project Area.
6. Staging or final disposition for material generated from each PID within the Project Area.
7. Description of groundwater or stormwater encountered in each PID within the Project Area, if any.
8. Date and method of groundwater or stormwater recovery from each PID within the Project Area, if any.
9. Volume of groundwater or stormwater recovered from each PID within the Project Area, if any.
10. Staging or final disposition of groundwater or stormwater recovered from each PID within the Project Area, if any.

7.2 Personal Protective Equipment (PPE)

Per Occupational Safety and Health Administration (OSHA) regulations and guidelines, worker health and safety is the responsibility of the employer. The Contractor should review this SGMP and develop a specific health and safety program for their employees. Due to the presence of COCs in surface soils, construction workers in the Project Area could potentially be exposed to the COCs via dermal contact, ingestion, and/or inhalation exposure pathways. The Contractor shall ensure that all applicable worker health and safety and construction safety regulations, including Title 20 of the CFR Section 1910.120, are properly applied. All required medical monitoring, worker health and safety monitoring, and PPE shall be provided by the Contractor.

7.3 Site Security

Temporary fencing must be installed around the perimeter of the soil staging area. The temporary fencing must be secured at the completion of each day or when personnel are not in the Project Area.

7.4 Equipment Decontamination

Equipment shall be decontaminated before moving from a more impacted to less impacted zone within the Project Area. Therefore, decontamination is required when moving from Zone A to Zone B.

All equipment should be properly decontaminated when moving between zones and at the end of each day. High-pressure sprayers or steam cleaners should be used when appropriate. Decontamination fluids should be collected in properly labeled water-tight containers and stored on-site for waste characterization and disposal as generated water.

APPENDIX A

Figures

Project Area

Data Sources: Roads - TxDOT 2015
Basemap: NAIP 2016

Project Location Map

Pipeline Design Project
PID Nos. 1362 & 3141

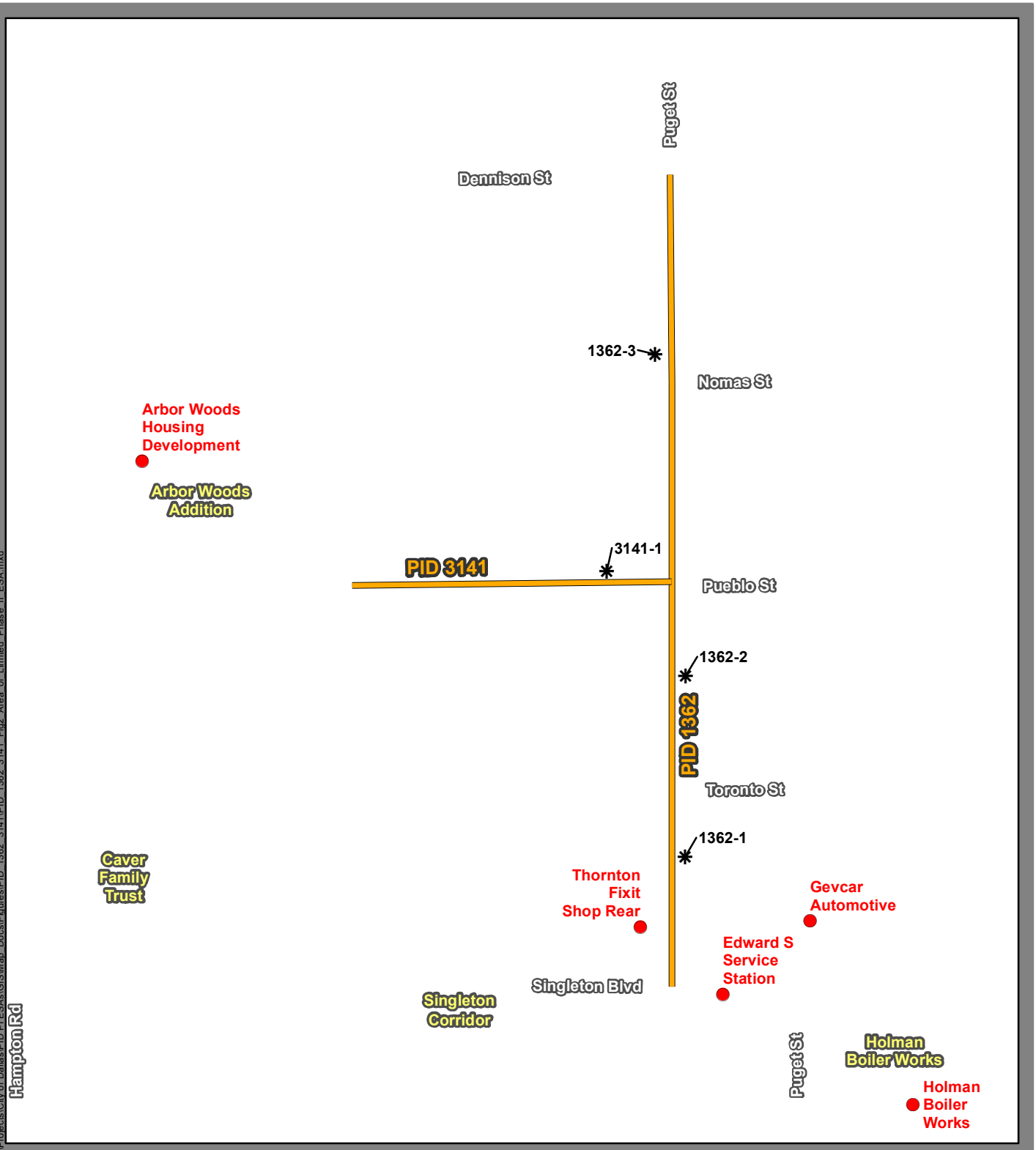
N
W E
S

0 100 200
Feet

January 2020

Figure 1

Author: Helen.Potter; Document Path: \\USDAL1FP002\Data\Industrial\Projects\City of Dallas\PID PLESAs\GIS\Map_Docs\Figures\PID_1362_3141\PID_1362_3141_Fig1_Site_Layout_Map.mxd



Project Area
Soil Boring/Temporary Well
Site of Concern
Area of Concern
Municipal Setting Designation
RSR Corp Superfund Site

Data Sources: Sites of Concern - TCEQ/EPA 2017; MSDs - City of Dallas 2017; Superfund - TCEQ 2018; Roads - TxDOT 2015
Basemap: NAIP 2016

Sites of Environmental Concern

Pipeline Design Project
PID Nos. 1362 & 3141

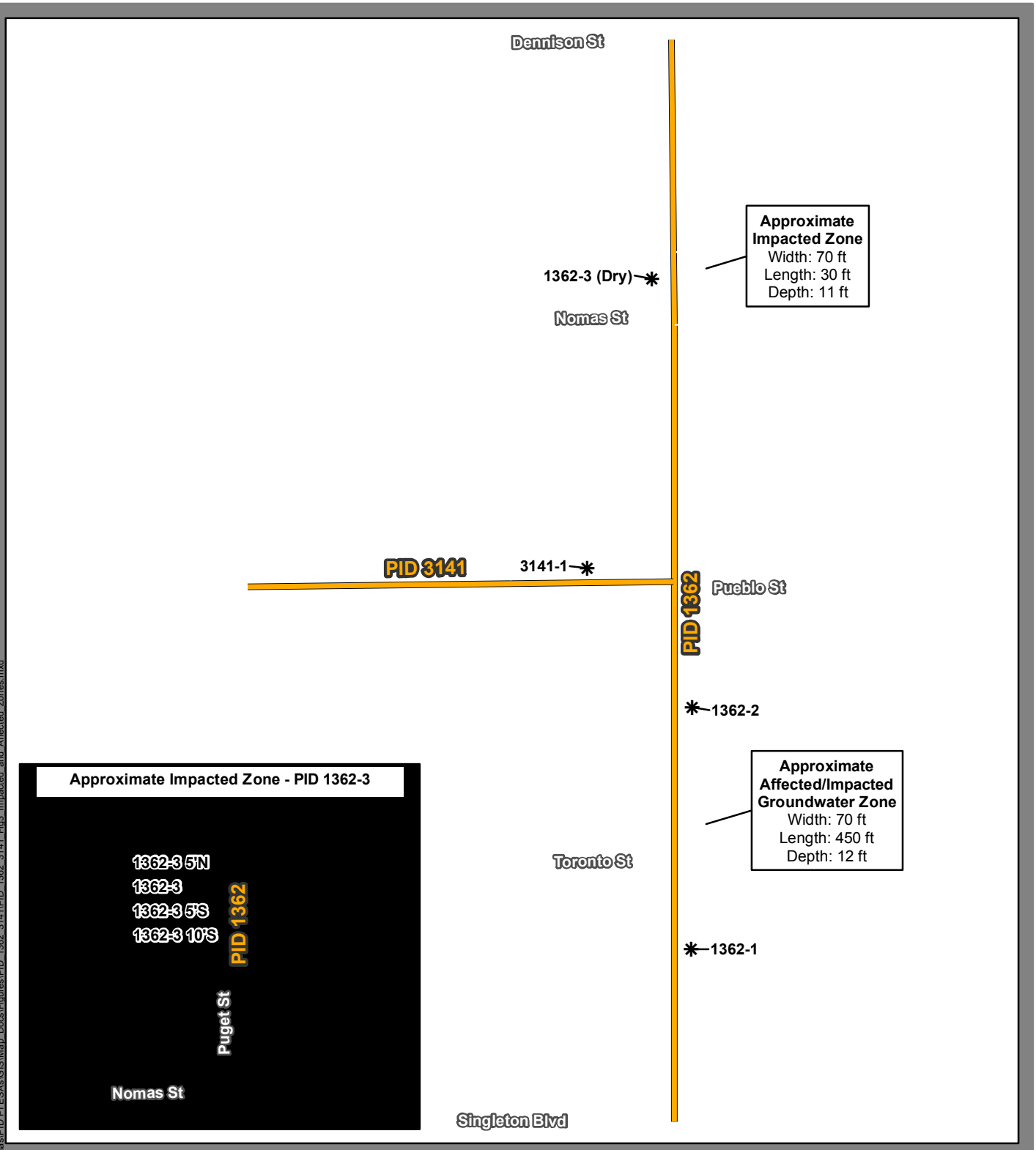
N W E S

0 100 200
Feet

January 2020

Figure 2

Author: helen.potter: Document Path: \\USDAL1FP002\Data\Industrial\Projects\City of Dallas\PID PI ESAs\GIS\Map_Docs\Figures\PID_1362_3141\PID_1362_3141_Fig2_Area_of_Limited_Phase_II_ESA.mxd



Project Area
Approximate Impacted Zone
Approximate Affected/Impacted Zone (Groundwater)
Approximate Affected Zone (Soil)
Soil Boring/Temporary Well

Data Sources: Roads - TxDOT 2015
Basemap: DigitalGlobe 2018

Phase II ESA Location Map

Pipeline Design Project
PID Nos. 1362 & 3141

N W E S

0 100 200
Feet

January 2020

Figure 3

Author: helen.potter; Document Path: R:\Industrial\Projects\City of Dallas\PID PI ESAs\GIS\Map_Docs\Figures\PID_1362_3141\PID_1362_3141_Fig3_Impacted_and_Affected_Zones.mxd

SOUTH

NORTH

1362-1

1362-2

1362-3

GENERALIZED GROUND SURFACE

INTERSECTION WITH PID 3141

WELL No. 3141-1 PROJECTED

EXCAVATION AND CONSTRUCTION AREA BETWEEN 4 AND 15 FEET DEEP

DEPTH IN FEET

0
3
6
9
12
15
18

TD = 17'

TD = 17'

TD = 17'

LEGEND:

VERTICAL SCALE
0 1 2 3
HORIZONTAL SCALE
0 10 20 30 40 50
VERTICAL EXAGGERATION = 16.66x

1362-1
BLANK PVC CASING
SLOTTED WELL SCREEN
SOIL SAMPLE
GROUNDWATER ELEV.
(TOTAL DEPTH) TD
SOIL BORING/ MONITORING WELL

NO RECOVERY

SAND (SP); WITH OR WITHOUT GRAVEL

CLAYEY SAND (SC)

CLAY (CL); SANDY OR LEAN

APPROXIMATE AFFECTED AREA

Generalized Cross-Section
PID Nos. 1362 & 3141
South to North
City of Dallas
Pipeline Design Project

AECOM

JAN 2019 | Cross-Section

FILE: O:\Temporary\Trash\Nbrown\C Walker\205 Exec Dr\Cross-Sections - 1362 And 2124.dwg , SAVED: Monday, February 04, 2019 2:17:34 PM , PLOTTED: Monday, February 04, 2019 2:18:57 PM

AECOM

Soil Boring Log

BORING NO. 1362-1
PAGE 1 OF 1

PROJECT: Puget Street
CLIENT: City of Dallas
CONTRACTOR: Sunbelt
EQUIPMENT: Geoprobe

PROJECT NO: 60555095
LOCATION Dallas, TX
ELEVATION: UNK
DATE START 7/26/2018
DATE FINISH 7/26/2018
DRILLER: Sunbelt
PREPARED BY: MP

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE		WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	PVC	Split Spoon	3 inches
7/27/2018		12'	17'	17'	SIZE ID	1-inch		
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	WELL SCREEN LOCATION	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0-2	0		PID 1362-1 (0-2)		CL - Sandy clay, light brown, dry
2-4	0				SC - Clayey sand, dark brown
4-8	0				CL - Clay, dark brown
8-11	0				CL - Sandy clay, light gray
11-12	0		PID 1362-1 (11)		CL - Sandy clay, tannish orange very moist
12-16	0				SP - Sand with pea-sized gravel, tannish orange, wet
16-17	0				CL - Sandy clay gravel with shale, wet

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Soil Boring Log

BORING NO. 1362-2
PAGE 1 OF 1

PROJECT: Puget Street
CLIENT: City of Dallas
CONTRACTOR: Sunbelt
EQUIPMENT: Geoprobe

PROJECT NO: 60555095
LOCATION Dallas, TX
ELEVATION: UNK
DATE START 7/26/2018
DATE FINISH 7/26/2018
DRILLER: Sunbelt
PREPARED BY: MP

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE		WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	PVC	Split Spoon	3 inches
7/27/2018		12'	17'	17'	SIZE ID	1-inch		
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	WELL SCREEN LOCATION	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0-4	0		PID 1362-2 (0-2)		CL - Clay, brown, dry
4-8	0				CL - Sandy clay, grayish brown, damp, some calcareous fissures
8-12	0		PID 1362-2 (11)		CL - Clay, grayish orange, moist
12-14	0				Not recovered
14-17	0				SP - Sand, grayish-orange, wet

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY

AECOM

Soil Boring Log

BORING NO. 1362-3
PAGE 1 OF 1

PROJECT: Puget Street
CLIENT: City of Dallas
CONTRACTOR: Sunbelt
EQUIPMENT: Geoprobe

PROJECT NO: 60555095
LOCATION Dallas, TX
ELEVATION: UNK
DATE START 7/26/2018
DATE FINISH 7/26/2018
DRILLER: Sunbelt
PREPARED BY: MP

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE		WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	PVC	Split Spoon	3 inches
N/A		NA	17'	17'	SIZE ID	1-inch		
					HAMMER WT			
					HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	WELL SCREEN LOCATION	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0-4	0		PID 1362-3 (0-2)		CL - brown, dry
4-9	0				CL - Sandy clay, brown, very stiff
10-12	0		PID 1362-3 (11-12)		SC - Clayey sand, light grayish tan, moist
12-14	0				Not recovered
14-15	0				SP - Sand with gravel, orange, wet
15-17	0		PID 1362-3 (17)		CL- Clay, gray, very stiff

BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY
N/A	

AECOM

Soil Boring Log

BORING NO. 3141-1
PAGE 1 OF 1

PROJECT: Pueblo Street
CLIENT: City of Dallas
CONTRACTOR: Sunbelt
EQUIPMENT: Geoprobe

PROJECT NO: 60555095
LOCATION Dallas, TX
ELEVATION: UNK
DATE START 7/27/2018
DATE FINISH 7/27/2018
DRILLER: Sunbelt
PREPARED BY: MP

GROUND WATER DEPTH TO:					CASING	SAMPLER	CORE BARREL
DATE	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	PVC	Split Spoon	3 inches
N/A	N/A	17'	17'	SIZE ID	1-inch		
				HAMMER WT			
				HAMMER FALL			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	WELL SCREEN LOCATION	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0-2	0		PID 3141-1 (0-5)		CL - Sandy clay with organics, brown
2-5	0				Cl - Clay, dark gray, very stiff to hard
5-8	0				CL - Sandy clay, grayish-tan, damp, very stiff to hard
8-12	0				CL - Tannish-orange, damp, medium plasticity
12-17	0		PID 3141-1 (17)		CL - Grayish tan, damp, medium plasticity

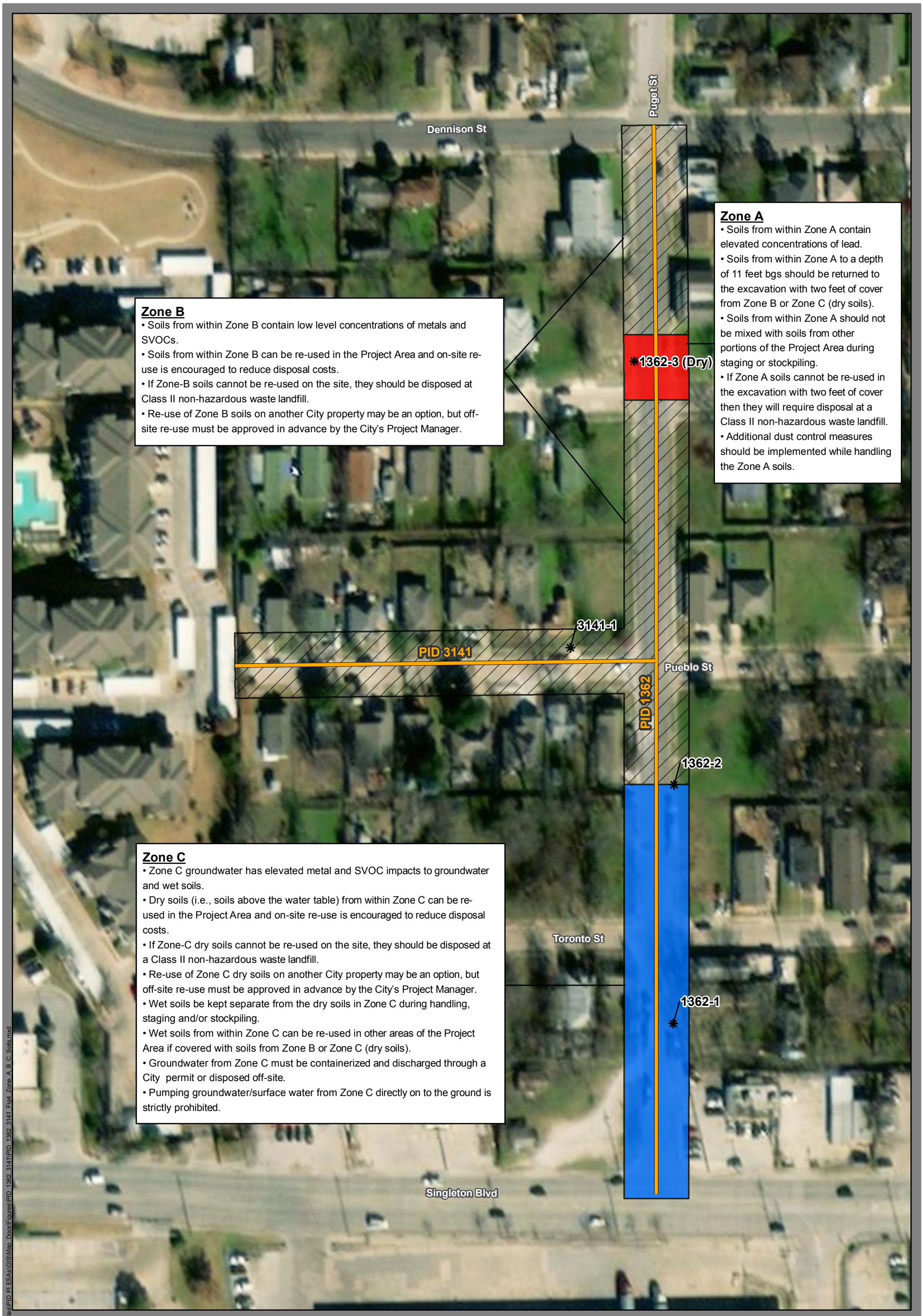
BLOWS/FT.	DENSITY
0-4	VERY LOOSE
5-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
50+	VERY DENSE

BLOWS/FT.	CONSISTENCY
0-2	VERY SOFT
3-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
31+	HARD

SAMPLER ID.	
SS	SPLIT SPOON
ST	SHELBY TUBE
G	GRAB SAMPLE
MC	MACRO-CORE

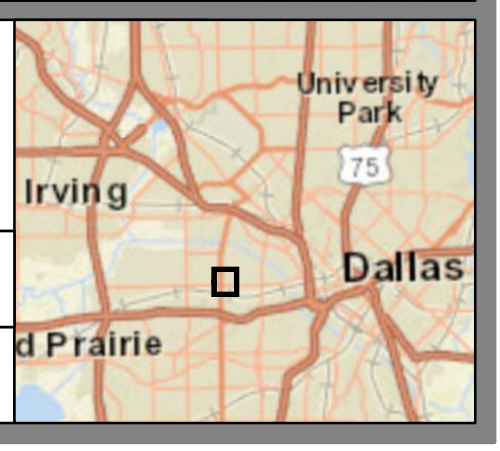
DESCRIPTIONS	
MOSTLY	50-100%
SOME	30-45%
LITTLE	15-25%
FEW	5-10%
TRACE	<5%

NOTES	
WD	WHILE DRILLING
NE	NOT ENCOUNTERED
UR	NOT READ
NR	NO RECOVERY
N/A	Not Applicable



Project Area
Soil Boring/Temporary Well
Zone A
Zone B
Zone C

Data Sources: Roads - TxDOT 2015
Basemap: DigitalGlobe 2018



Soil/GW Management Zones (A, B, and C)
Pipeline Design Project
PID Nos. 1362 & 3141

N
W E
S
0 50 100 150
Feet

City of Dallas
AECOM

February 2020

Figure 4

Author: helen.potter: Document Path: R:\Industrial\Projects\City of Dallas\PID PI ESAs\GIS\Map_Docs\Figures\PID_1362_3141\PID_1362_3141_Fig4_Zone_A_B_C_Soils.mxd

APPENDIX B

Tables

Table 1
Soil Analytical Data Summary
PID Nos. 1362 and 3141

Lab Sample ID								L1013193-01		L1013193-02		L1013193-03		L1013193-04		L1013193-05		L1013193-06		L1013193-07		L1013193-23		L1013193-24		L1040262-01		L1040262-02		L1042918-01	
Client Sample ID								PID 1362-1 (0-2')		PID 1362-1 (11')		PID 1362-2 (0-2')		PID 1362-2 (11')		PID 1362-3 (0-2')		PID 1362-3 (11-12')		PID 1362-3 (17')		PID 3141-1 (0-5')		PID 3141-1 (17')		PID1362-3-5'N(0-2')		PID1362-3-5'S(0-2')		PID1362-3-10'S(0-2')	
Date Collected								07/26/2018		07/26/2018		07/26/2018		07/26/2018		07/26/2018		07/26/2018		07/26/2018		07/27/2018		07/27/2018		10/31/2018		10/31/2018		10/31/2018	
Analyte	Method	Units	Tot Soil Comb [1]	GW Soil Ing [2]	Background Concentration [3]	Low[4]	High[4]	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Metals*																															
ARSENIC	6010B	mg/kg	24	5	5.9 / 7.0-**8.3**	8.3	5900	**2.82**		**5.03**		**3.87**		**10.2**		**5.86**		**4.24**		**7.01**		**2.59**		**7.82**		NS		NS		NS	
BARIUM	6010B	mg/kg	8100	440	**300** / 171-286	300	220000	**82**		**41.2**		**82.4**		**70.7**		**84.2**		**46.6**		**49.7**		**77.5**		**52.1**		NS		NS		NS	
CADMIUM	6010B	mg/kg	52	1.5	**NA** / 0.3-0.4	0.75	750	**0.152**	J	**0.110**	J	**0.180**	J	<0.0865		**0.160**	J	**0.130**	J	<0.0826		**0.175**	J	<0.0904		NS		NS		NS	
CHROMIUM	6010B	mg/kg	33000	2400	30 / 39-**45**	1200	1200000	**21.4**		**19.8**		**27.6**		**24.9**		**28.0**		**23.1**		**33.6**		**25.6**		**28.5**		NS		NS		NS	
LEAD	6010B	mg/kg	500	3	15 / 20.0-**22.3**	22.3	15000	**21.6**		**7.91**		**16.5**		**11.6**		**523**		**11.00**		**10.9**		**6.77**		**11.0**		**18.4**		**547**		**153**	
SELENIUM	6010B	mg/kg	310	2.3	0.3 / 0.6-**3.3**	3.3	1100	<0.924		<0.940		<0.855		<0.914		<0.905		<0.925		<0.874		<0.842		**1.5**	J	NS		NS		NS	
MERCURY	7471A	mg/kg	3.6	0.0078	0.04 / 0.3-**0.5**	0.5	40	**0.0135**	B J	**0.0122**	B J	**0.0148**	B J	**0.0164**	B J	**0.0179**	B J	**0.0103**	B J	**0.0137**	B J	**0.00727**	J	**0.0172**	J	NS		NS		NS	
SVOCs*																															
ANTHRACENE	8270C-SIM	mg/kg	18000	6900	NA	3400	3400000	**0.00121**	J	<0.00762		<0.00693		<0.00741		**0.0154**		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
ACENAPHTHENE	8270C-SIM	mg/kg	3000	240	NA	1200	120000	<0.00749		<0.00762		<0.00693		<0.00741		<0.00734		<0.00750		**0.00109**	J	<0.00683		<0.00775		NS		NS		NS	
ACENAPHTHYLENE	8270C-SIM	mg/kg	3800	410	NA	200	200000	<0.00749		<0.00762		<0.00693		<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
BENZO(A)ANTHRACENE	8270C-SIM	mg/kg	41	130	NA	5.6	5600	**0.00767**		<0.00762		**0.00325**	J	<0.00741		**0.00245**	J	<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
BENZO(A)PYRENE	8270C-SIM	mg/kg	4.1	7.6	NA	0.56	560	**0.00927**		<0.00762		**0.00314**	J	<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
BENZO(B)FLUORANTHENE	8270C-SIM	mg/kg	42	440	NA	5.7	5700	**0.0125**		<0.00762		**0.00471**	J	<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
BENZO(G,H,I)PERYLENE	8270C-SIM	mg/kg	1800	46000	NA	1800	180000	**0.00963**		<0.00762		**0.00307**	J	<0.00741		**0.024**		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
BENZO(K)FLUORANTHENE	8270C-SIM	mg/kg	420	4500	NA	57	57000	**0.00426**	J	<0.00762		**0.00132**	J	<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
CHRYSENE	8270C-SIM	mg/kg	4100	11000	NA	560	560000	**0.00917**		<0.00762		**0.00295**	J	<0.00741		**0.00253**	J	<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
DIBENZ(A,H)ANTHRACENE	8270C-SIM	mg/kg	4	15	NA	0.55	550	**0.0016**	J	<0.00762		**0.000754**	J	<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
FLUORANTHENE	8270C-SIM	mg/kg	2300	1900	NA	960	960000	**0.0134**		<0.00762		**0.00505**	J	<0.00741		**0.00308**	J	<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
FLUORENE	8270C-SIM	mg/kg	2300	300	NA	150	150000	<0.00749		<0.00762		<0.00693		<0.00741		<0.00734		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
INDENO(1,2,3-CD)PYRENE	8270C-SIM	mg/kg	42	1300	NA	5.7	5700	**0.00653**	J	<0.00762		**0.00214**	J	<0.00741		**0.00148**	J	<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
NAPHTHALENE	8270C-SIM	mg/kg	220	31	NA	16	80	**0.00532**	J	**0.0035**	J	<0.0231		<0.0247		**0.00307**	J	<0.0250		<0.0236		**0.00344**	B J	**0.00307**	B J	NS		NS		NS	
PHENANTHRENE	8270C-SIM	mg/kg	1700	420	NA	210	210000	**0.0114**		<0.00762		**0.00328**	J	<0.00741		**0.00741**		<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
PYRENE	8270C-SIM	mg/kg	1700	1100	NA	560	560000	**0.0177**		<0.00762		**0.00594**	J	<0.00741		**0.00611**	J	<0.00750		<0.00708		<0.00683		<0.00775		NS		NS		NS	
1-METHYLNAPHTHALENE	8270C-SIM	mg/kg	150	2.9	NA	NA	NA	**0.00307**	J	<0.0254		<0.0231		<0.0247		<0.0245		<0.0250		<0.0236		<0.0228		<0.0258		NS		NS		NS	
2-METHYLNAPHTHALENE	8270C-SIM	mg/kg	250	17	NA	NA	NA	**0.00663**	J	<0.0254		<0.0231		<0.0247		**0.00391**	J	<0.0250		<0.0236		<0.0228		<0.0258		NS		NS		NS	
TPH*																															
TPH C12 - C28	TX 1005	mg/kg	2300	200	NA	99	10000	<30.3		<24.6		<22.5		<25.2		**443**		<22.5		<25.1		<26.5		<27.9		NS		NS		NS	
TPH C28 - C35	TX 1005	mg/kg	2300	200	NA	99	10000	<30.3		<24.6		<22.5		<25.2		**229**		<22.5		<25.1		<26.5		<27.9		NS		NS		NS	
TPH C6 - C35	TX 1005	mg/kg	2300	200	NA	99	10000	<30.3		<24.6		<22.5		<25.2		**671**		<22.5		<25.1		<26.5		<27.9		NS		NS		NS	

BOLD samples indicate the analyte was detected above laboratory limits.

[1] TX TRRP Tier 1 Residential Soil PCL for the total combined pathways of ingestions, dermal and inhalation exceedance, dated 4/2018.

[2] TX TRRP Tier 1 Residential Soil PCL for the groundwater protection standard, the soil to groundwater ingestion pathway exceedance, dated 4/2018.

[3] Texas Specific Soil Background Concentrations exceedance, dated 3/19/07 / Smith, D.B., Solano, Federico, Woodruff, L.G., Cannon, W.F., and Ellefsen, K.J., 2019, Geochemical and mineralogical maps, with interpretation, for soils of the conterminous United States: U.S. Geological Survey Scientific Investigations Report 2017-5118, https://doi.org/10.3133/sir20175118. For metal analytes, the highest of the two aforementioned background concentration values **(bolded)** were used the PCL instead of the Tier 1 Residential Soil PCL for the groundwater protection standard per TRRP.

[4]Chart 1 Low/High Values for Soil of the Dallas Water Utilities Soil Groundwater Management Manual (Manual), dated 11/04/2011. Per the Manual, analytes are considered in the low range for material selection if they are detected to the maximum value shown. For metals, the maximum value shown are the highest value among the applicable background levels and the low value from the Manual.

NA - Not applicable.

B - The same analyte is found in the associated blank.

J - The identification of the analyte is acceptable; the reported value is an estimate.

J3 - The associated batch QC was outside the established quality control range for precision.

NS - Not Sampled.

< = Indicates analyte is below the Sample Detection Limit.

* Indicates list of analytes that were detected. Unlisted analytes did not exceed the laboratory sample detection limits. See Pace Analytical report No. L1013193 for details.

Table 2

Groundwater Analytical Data Summary

PID Nos. 1362

Lab Sample ID						L1013193-25		L1013193-26	
Client Sample ID						PID 1362-2 WATER		PID 1362-1 WATER	
Date Collected						07/27/2018		07/27/2018	
Analyte	Method	Units	[GW]GW_{Ing}	Low[1]	High[1]	Result	Q	Result	Q
Metals*									
ARSENIC	6010B	mg/l	0.01	1.00E-02	1.00E+01	**0.0092**	J	**4.75**	
BARIUM	6010B	mg/l	2	2.00E+00	2.00E+03	**0.0725**		**22.4**	
CHROMIUM	6010B	mg/l	0.1	1.00E-01	1.00E+02	**0.00194**	J	**5.73**	
LEAD	6010B	mg/l	0.015	1.50E-02	1.50E+01	**0.00192**	J	**10.4**	
MERCURY	7470A	mg/l	0.002	2.00E-03	2.00E+00	<0.0000490		**0.00674**	
VOCs*									
METHYL TERT-BUTYL ETHER	8260B	mg/l	0.24	0.24	40	**0.00159**		**0.00205**	
NAPHTHALENE	8260B	mg/l	0.49	0.49	25	<0.00100	J3	<0.0100	J3
SVOCs*									
BENZO(A)ANTHRACENE	8270C-SIM	mg/l	0.0091	0.0013	1.3	<0.00000410		**0.0000437**	J
BENZO(A)PYRENE	8270C-SIM	mg/l	0.0002	0.0002	NA	<0.0000116		**0.0000387**	J
BENZO(B)FLUORANTHENE	8270C-SIM	mg/l	0.0091	0.0013	1.3	**0.00000264**	B J	**0.0000506**	J
BENZO(G,H,I)PERYLENE	8270C-SIM	mg/l	0.73	0.73	730	<0.00000227		**0.000031**	J
BENZO(K)FLUORANTHENE	8270C-SIM	mg/l	0.091	0.013	13	<0.0000136		**0.0000239**	J
CHRYSENE	8270C-SIM	mg/l	0.91	0.13	130	<0.0000108		**0.0000369**	J
DIBENZ(A,H)ANTHRACENE	8270C-SIM	mg/l	0.0002	0.00002	0.02	<0.00000396		**0.00000749**	J
FLUORANTHENE	8270C-SIM	mg/l	0.98	0.98	980	<0.0000157		**0.0000692**	
INDENO(1,2,3-CD)PYRENE	8270C-SIM	mg/l	0.0091	0.0013	1.3	<0.0000148		**0.0000249**	J
NAPHTHALENE	8270C-SIM	mg/l	0.49	0.49	25	**0.0000391**	J	**0.0000533**	J
PHENANTHRENE	8270C-SIM	mg/l	0.73	0.73	730	<0.00000820		**0.0000316**	J
PYRENE	8270C-SIM	mg/l	0.73	0.073	730	<0.0000117		**0.0000583**	
1-METHYLNAPHTHALENE	8270C-SIM	mg/l	0.031	NA	NA	**0.00000877**	J	**0.0000186**	J
2-METHYLNAPHTHALENE	8270C-SIM	mg/l	0.098	NA	NA	**0.0000114**	J	**0.0000175**	J

BOLD samples indicate the analyte was detected above laboratory limits

[GW]GW_{Ing} - TX TRRP Drinking Water PCL exceedance, dated 4/2018.

[1]Chart 2 Low/high Values for Groundwater of the Dallas Water Utilities Soil Groundwater Management Manual, dated 11/04/2011

J - The identification of the analyte is acceptable; the reported value is an estimate.

J3 - The associated batch QC was outside the established quality control range for precision.

NA - Not applicable.

* Indicates list of analytes that were detected. Unlisted analytes did not exceed the laboratory sample detection limits. See Pace Analytical report No. L1013193 for details.

Table 3
Investigation-Derived Waste Analytical Results

Lab Sample ID				L1026466-03		L1026366-04		L1044584-01	
Client Sample ID				PUGET IDW		PUGET IDW		PID1362-3-5'S (0-2')	
Date Collected				9/14/2018		9/14/2018		10/31/2018	
Extraction				TCLP		SPLP		SPLP	
Analyte	Method	Units	$^{GW}GW_{Ing}$	Result	Q	Result	Q	Result	Q
Metals*									
ARSENIC	6010B	mg/l	0.01	< 0.100		<0.00650		NS	
BARIUM	6010B	mg/l	2	**0.475**		**0.119**		NS	
CADMIUM	6010B	mg/l	0.005	< 0.100		**0.00102**	**J**	NS	
CHROMIUM	6010B	mg/l	0.1	< 0.100		**0.0317**		NS	
LEAD	6010B	mg/l	0.015	< 0.100		0.0172		0.265	
SELENIUM	6010B	mg/l	0.05	< 0.100		<0.00740		NS	
SILVER	6010B	mg/l	0.12	< 0.100		<0.00280		NS	
MERCURY	7470A	mg/l	0.002	< 0.010		<0.000049		NS	

BOLD samples indicate the analyte was detected above laboratory limits

GWGWIng TX TRRP Drinking Water PCL Exceedance, Dated 4/2018

J - The identification of the analyte is acceptable; the report value is an estimate.

NS - Not sampled.

Appendix C

TCEQ and EPA Guidance on Generated Soils

<<Prev Rule Next Rule>>

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 350	TEXAS RISK REDUCTION PROGRAM
SUBCHAPTER B	REMEDY STANDARDS
RULE §350.36	Relocation of Soils Containing Chemicals of Concern for Reuse Purposes

---

(a) A person must comply with this section when relocating soils for reuse purposes from an affected property (on-site or off-site) which is undergoing or has completed a response action under Remedy Standard A or B and the soils contain COCs in excess of naturally occurring background concentrations. Relocation of soils which contain COCs may be subject to additional requirements or limitations (e.g., land disposal restrictions) within each program area identified in §350.2 of this title (relating to Applicability). The person must treat excavated soils containing non-aqueous phase liquids to applicable levels prior to relocation or else manage the soils as wastes. The excavation of soils containing COCs during construction activities (e.g., installation, repair, removal of telephone lines or other utilities, but not closures, remediations, or PST tank removal actions, for example) and the subsequent replacement of those soils into that same excavation shall not be considered to constitute relocation or reuse and shall not be subject to the provisions of this section.

(b) The person may relocate soils for reuse in response to Remedy Standard A when COCs meet the critical soil PCLs and the following requirements for the new location.

(1) Soils to be reused must meet the residential or commercial/industrial critical surface or subsurface soil PCLs as applicable for the new location, depending upon depth of placement, established in accordance with Subchapter D of this chapter (relating to Development of Protective Concentration Levels).

(2) The soil reuse shall be protective of ecological receptors at the new location.

(3) The soil reuse activity must allow the requirements for Remedy Standard A response actions set forth in §350.32(a) of this title (relating to Remedy Standard A) to be met at the new location.

(4) The person shall comply with the institutional control requirement for commercial/industrial land use as specified in §350.31(g) of this title (relating to General Requirements for Remedy Standards). Proof of compliance with the institutional control requirement shall be submitted within 90 days of completing the relocation action.

(5) The reuse of soils with concentrations of COCs which do not exceed the critical soil PCLs for the new location does not require the prior approval of the executive director, when that new location is within the boundary of on-site or off-site property which contains the affected property (i.e., not just within the affected property limits).

(c) The person must meet the following requirements in response to Remedy Standard B when soils that are to be relocated for reuse purposes contain concentrations of COCs that exceed the critical soil PCLs for the new location.

(1) The person shall determine the critical surface and, if applicable, subsurface soil PCLs in accordance with Subchapter D of this chapter (relating to Development of Protective Concentration Levels) for the new location.

(2) The soil reuse must be protective of ecological receptors at the new location.

(3) The person shall demonstrate that the soil reuse activity will allow the requirements for Remedy Standard B response actions set forth in §350.33(a) of this title (relating to Remedy Standard B) to be met for the new location.

(4) The person shall comply with the institutional control requirements specified in §350.31(g) of this title (relating to General Requirements for Remedy Standards). Proof of compliance with the institutional control shall be submitted within 90 days of completing the relocation action.

(5) The reuse of soil under Remedy Standard B requires prior executive director approval.

(6) The executive director may require the person to conduct post-response action care and submit PRACRs.

(7) The executive director may require the person to provide financial assurance for post-response action care in response to §350.33(e)(2)(C) of this title (relating to Remedy Standard B).

(d) If soils which contain concentrations of COCs above naturally-occurring levels resulting from a release are to be relocated for reuse on property not owned by the person, then the person shall obtain the written consent of the landowner prior to relocation of the soils.

(e) Within 90 days of completing a soil relocation action under this section, the person shall complete the applicable portions of a RACR as described in §350.95 of this title (relating to Response Action Completion Report) and make it available for inspection or submittal upon request of the executive director.

Source Note: The provisions of this §350.36 adopted to be effective September 23, 1999, 24 TexReg 7436

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9441.1992(16)

United States Environmental Protection Agency
Washington, D.C. 20460
Office of Solid Waste and Emergency Response

June 11, 1992

Mr. Douglas H. Green
Piper & Marbury
1200 Nineteenth Street, N.W.
Washington, D.C. 20036-2430

Dear Mr. Green:

Thank you for your letter of April 30, 1992, requesting clarification of the Environmental Protection Agency's (EPA's) interpretation of the applicability of certain Resource conservation and Recovery Act (RCRA) requirements to common excavation-type activities.

The particular situation which you presented in your letter involves excavation of soils, such as trenching operations for pipeline installation, where the soils may be hazardous by characteristic, or may contain listed hazardous wastes. We understand that your questions specifically relate to excavations being conducted on public roadways or at other similar locations that are not necessarily associated with or are part of a RCRA regulated treatment, storage, or disposal facility.

In the example which you cited in your letter, the soils from the excavation or construction activities are temporarily moved within the area of contamination, and subsequently redeposited into the same excavated area. In these situations, we agree that such activity does not constitute treatment, storage, or disposal of a hazardous waste under RCRA. The activity of placing waste in the ground would not normally meet the regulatory definitions of "treatment" or "storage" (40 CFR 260.10). In addition, as you noted in your letter, movement of wastes within an area of contamination does not constitute "land disposal" and thus does not trigger RCRA hazardous waste disposal requirements (55 FR 8666, March 8, 1990). Thus, RCRA requirements such as land disposal restrictions would not apply.

With respect to generator requirements, as you indicated, a hazardous waste "generator" is one, by site, who produces a hazardous waste or first causes the waste to be regulated as hazardous (40 CFR 260.10). In the circumstances you described, the excavation does not "produce" the hazardous waste, nor does it subject the waste to hazardous waste regulation since, as discussed above, the activity you described is not "treatment," storage, or "land disposal" of hazardous waste. Therefore, we agree that the activity is not subject to any generator requirements.

Please let me know if you have any further questions regarding this issue.

Sincerely yours,
Sylvia K. Lowrance, Director
Office of Solid Waste

SOIL AND GROUNDWATER MANAGEMENT PLAN
PID 1210 – LUNA ROAD WATER AND WASTEWATER MAIN REPLACEMENT PROJECT

LUNA ROAD WATER AND WASTEWATER MAIN REPLACEMENT PROJECT

DALLAS WATER UTILITIES

Prepared for:
Dallas Water Utilities
2121 Main Street, Room 300
Dallas, Texas 75201

Prepared by:
HALFF
1201 North Bowser Road
Richardson, Texas 75081
TBPG Firm Registration #50330

January 2021

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SOIL AND GROUNDWATER MANAGEMENT PLAN
PID 1210

Luna Road Water and Wastewater Main Replacement Project
Dallas, Texas

1.0 INTRODUCTION

Halff Associates, Inc. (Halff) has prepared this Soil and Groundwater Management Plan (SGMP) for the City of Dallas (City) Dallas Water Utilities (DWU) PID 1210, Luna Road Water and Wastewater Replacement Project located between Royal Lane and Loop 12 in Dallas, Texas. This SGMP has been prepared in accordance with the requirements detailed in the *DWU Standard Protocol for Soil and Groundwater Management on Construction Sites (Version 1)*, dated November 4, 2011 (Guidance Document). Based on design drawings provided to Halff, the anticipated depth of excavation through the Affected Zones will not exceed 15 feet below the ground surface (bgs). This SGMP has been developed based on this depth of excavation. Excavated soil will be re-used on-site in accordance with the utility exclusion in Texas Risk Reduction Program (TRRP) Rule 30 Texas Administrative Code (TAC) 350.36 unless unexpected conditions discussed in this SGMP are encountered. Procedures for modifying this SGMP are presented in Section 2.4 should conditions materially change.

1.1 BACKGROUND

A Subsurface Site Investigation (SSI) was conducted by Halff at the site in May 2017, a copy of which can be provided upon request. Concentrations of the metals arsenic, barium, cadmium, mercury, and/or silver considered to be high contaminant conditions, based upon the Chemical of Concern (COC) Evaluation Chart presented in the Guidance Document, were identified in the soils in two areas within the project construction zone. The concentrations of arsenic, cadmium, and mercury exceeded the applicable TRRP Tier 1 Residential Protective Concentration Levels (PCLs) [impacted soil]. A portion of the construction zone contains concentrations of tetrachloroethylene and trichloroethene in the groundwater that are considered high contaminant conditions based upon the COC Evaluation Chart presented in the Guidance Document and also exceeded the applicable TRRP Tier 1 Residential PCLs (impacted groundwater). Data developed during the investigation identified the following COCs at the site:

- Concentrations of the volatile organic compound (VOC) constituents 1,2-dichloreobenzene, 1,4-dichloreobenzene, cis-1,2-dichloroethylene, tetrachloroethylene, toluene, and trichloroethene, and the pesticides dieldrin, endosulfan II, endrin, and heptachlor epoxide above the laboratory sample detection limit (SDL) were identified in the soil samples in the Affected Zones but at concentrations below the applicable TRRP Tier 1 Residential PCLs.
- Concentrations of the metals arsenic, cadmium, and mercury above the laboratory SDL were identified in soil samples in the Affected Zones. The concentrations exceeded the applicable TRRP Tier 1 Residential PCLs but were below the TRRP Total Soil Combined PCLs.
- Concentrations of the VOC constituents tetrachloroethylene and trichloroethene above the laboratory SDL were identified in groundwater samples in the Affected Zones. The concentrations exceeded the applicable TRRP Tier 1 Residential PCLs.
- Concentrations of the VOC constituent cis-1,2-dichloroethylene were identified above the laboratory SDL in groundwater samples in the Affected Zones but below the applicable TRRP Tier 1 Residential PCLs.

1.2 SGMP OBJECTIVES

The objectives of this SGMP are to:

- Outline procedures to guide underground construction through the potentially impacted soil and groundwater in the "Affected Zones" identified in section 2.1 below;
- Provide guidance for the management of the potentially impacted soil and groundwater during construction within the Affected Zones; and
- Provide guidance for the reuse/disposal of impacted soil and groundwater within the Affected Zones.

1.3 QUALIFICATIONS FOR ENVIRONMENTAL PROFESSIONAL

DWU will be responsible for contracting an approved Environmental Consultant to oversee the soil and groundwater management field activities and implementation of the Project-Specific SGMP implemented. The Environmental Consultant must have the following minimum qualifications:

- 2 years of sampling and management of COCs in soil and groundwater;
- 40-Hour HAZWOPER training in accordance with 29 CFR 1910.120;
- Professional Registration as a P.E., P.G., REM, CAPM, CHMM, or other certification approved by DWU; or
- Working under the direction of a P.E., P.G., REM, or CHMM.

2.0 SGMP OVERVIEW

This section identifies the Affected Zones within the project boundary based on the existing site investigation data and describes the impacted environmental media within these zones. It further outlines the responsibilities of the Contractor with regards to implementation of the SGMP and provides situations in which modifications to the SGMP may be made. Based on the existing site investigation data, COCs in on-Site soils exceed TRRP Tier 1 Residential PCLs but are below the TRRP Total Soil Combined PCLs. Therefore, soil excavated from the Affected Zones at the Site may be reused on-Site in the same general location but placed within the trench deeper than 2 feet bgs and covered with soils from the un-affected portion of the project. Excess soil not used on-site should be disposed at a Class 2 non-hazardous waste landfill. Re-use of soil on another City of Dallas owned property may be an option, but off-site re-use must be approved in advance by the City's Project Manager. Re-use and disposal of soil is further discussed in Section 3.5.

2.1 AFFECTED ZONES

Affected Zones have been established based on the existing site investigation data (Figure 1, in appendix A).

Soil – North Zone

A northern soil Affected Zone containing concentrations of arsenic, cadmium, and/or mercury which exceeded the applicable TRRP Tier 1 Residential PCLs was identified from Royal Lane on the north to approximately 150 feet north of Tantor Road or approximately 95 feet south of Station 75+36.0. The impacted soil in the northern soil Affected Zone is anticipated to be encountered to a depth of 16 feet bgs.

Soil – South Zone

Another soil Affected Zone with concentrations of arsenic and cadmium which exceeded the applicable TRRP Tier 1 Residential PCLs was identified on the south-central portion of the project. The southern soil Affected Zone extended from approximately 1,000 feet to the south of Y Street to approximately 240 feet north of Ryan Road. The impacted soil in the south Affected Zone is anticipated to be encountered from the surface to a depth of 16 feet bgs.

Groundwater

An Affected Zone of groundwater containing concentrations of tetrachloroethylene and trichloroethene that represents a high contaminant condition for the construction zone was located along Luna Road from approximately 150 feet north of Tantor Road or approximately 95 feet south of Station 75+36.0 to approximately 1,000 feet to the south of Y Street or 191 feet south of Station 55+36.0. The groundwater Affected Zone consists of an area of approximately 2,100 linear feet (LF) within the construction zone. The impacted groundwater was encountered in the Affected Zone at depths ranging from 3.5 feet bgs to 8.5 feet bgs. The vertical extent of the impacted groundwater in the Affected Zone is estimated to extend to approximately 16 feet bgs. Shallow groundwater appears to be continuous across the construction zone.

The limits of the Affected Zones as shown on Figure 1 are only estimates based on the available subsurface data. Actual field conditions encountered could vary from those described herein. If impacted soil and/or groundwater are encountered outside the limits of the Affected Zone as defined herein, Section 2.5 shall be followed to determine whether or not a modification to this SGMP is necessary.

The generalized subsurface soil conditions in the Affected Zones, based on the site investigation data, consist of fill material and discontinuous lenses of clay and sand overlying shale. Fill material was encountered from the surface to approximate depths ranging from 6 inches to 5 feet bgs. Clay and sand lenses were encountered beneath the fill material. Shale was encountered beneath the clay and sand lenses at approximate depths ranging from 12 to 16 feet bgs. Groundwater was encountered at depths ranging from approximately 3 to 11.5 feet bgs in the Affected Zones at the site. Metals concentrations were identified in the soils and tetrachloroethylene and trichloroethene

concentrations were identified in the groundwater above the TRRP Tier 1 Residential PCL within the Affected Zones and are discussed in further detail below.

2.2 IMPACTED MEDIA WITHIN AFFECTED ZONES

The available site investigation data indicates concentrations of arsenic, cadmium, and mercury impacted soil may be encountered from the ground surface to approximately 16 feet bgs in the northern soil Affected Zone. Maximum concentrations of 7.72 milligrams per kilogram (mg/kg) arsenic, 2.86 mg/kg cadmium, and 0.0524 mg/kg mercury were documented in soil in the northern soil Affected Zone. Concentrations of arsenic and cadmium impacted soil could be encountered from the ground surface to approximately 16 feet bgs in the southern soil Affected Zone. Maximum concentrations of 9.82 mg/kg arsenic and 3.86 mg/kg cadmium were documented in soil in the southern soil Affected Zone.

Concentrations of tetrachloroethylene and trichloroethene impacted groundwater could be encountered as shallow as approximately 3.5 feet bgs and extend to approximately 16 feet bgs in the groundwater Affected Zone. Maximum concentrations of 0.301 milligrams per liter (mg/l) tetrachloroethylene and 0.00998 mg/L trichloroethene were documented in groundwater in the Affected Zone.

2.3 CONTRACTOR'S RESPONSIBILITY

Concentrations of arsenic, cadmium, and/or mercury impacted soil may be encountered in the soil Affected Zones and tetrachloroethylene and trichloroethene impacted groundwater may be expected to be encountered within the groundwater Affected Zone as defined in Section 2.1 and shown on Figure 1. The Contractor will be responsible for worker health and safety, and although this SGMP may provide insight on what conditions might be encountered during construction, it is not intended to diminish the Contractor's responsibility for evaluating the hazards and determining appropriate health and safety measures for its workers. The Contractor will be responsible for assisting DWU or its designated representative in accessing the work areas as necessary for collecting samples.

The Contractor shall be responsible for all work within the limits of the Affected Zone as identified in this SGMP. The Contractor may be responsible for the following tasks:

- Interim soil stockpile area installation and operation;
- Construction equipment decontamination;
- Contaminated wastewater storage, contaminated wastewater treatment related permits or fees, mobilization/demobilization, contaminated wastewater treatment system operation and disposal;
- Contaminated water dewatering and wastewater treatment;
- Installation and maintenance of utility controls to prevent contaminated soil or wastewater from entering the existing storm sewer; and
- Affected soil and/or groundwater handling, storage, transportation and disposal costs with the exception of transporting and disposing of hazardous wastes.

The Contractor shall be solely responsible for the means and methods of managing impacted groundwater and soil, if encountered, in accordance with this SGMP. Within the limits of the Affected Zones (Figure 1), costs associated with management and disposal of potentially contaminated media, related permits and/or fees, equipment mobilization, equipment operation and maintenance, and any hazardous materials/waste transportation and disposal shall be paid for under the appropriate bid items included in the Contract Documents.

2.4 MODIFYING THE SGMP

Actual conditions encountered could vary from those described herein. For example, if impacted soil and/or groundwater are encountered outside the limits of the Affected Zones, modifications to this SGMP may be necessary. In addition, a change to this SGMP may be identified by DWU or the Contractor as being beneficial to the project based on conditions encountered in the field. Any modification or change to this SGMP shall only be made with DWU's prior approval, unless delay would further endanger human health and the environment, in which case the DWU shall be notified as soon as possible.

3.0 SOIL MANAGEMENT PLAN

This section describes the general procedures to be followed to manage potentially impacted soil, during decontamination of equipment, and to determine the final disposition of impacted soil from the Affected Zones. The DWU Environmental Consultant shall conduct visual and olfactory screening of soils for potential contamination during excavation activities outside and within the Affected Zones. If contamination is encountered outside or within the Affected Zones during construction activities, DWU shall be notified immediately for further investigation. DWU may contact the Environmental Consultant to implement field screening and perform laboratory analysis on the affected soil and/or groundwater.

3.1 SCREENING OF POTENTIALLY IMPACTED SOIL

Potentially impacted soil encountered during construction shall be screened regularly using an Organic Vapor Monitor (OVM) equipped with a Photoionization Detector (PID). The DWU Environmental Consultant will determine the location for obtaining readings/samples based on site-specific conditions. At least one representative soil sample shall be screened for approximately every 10 cubic yards of excavated soil. Any soil PID screening concentration >5 parts per million (PPM) must be segregated from clean soil and samples collected as detailed in Section 3.3 below. The soil screening activities and readings shall be documented in the field as they are obtained. Example copies of a Daily Activity Log and Screening of Potentially Impacted Soil are provided in Appendix C.

The following general field procedures shall be followed for screening potentially impacted soil samples:

- Calibrate the Organic Vapor Monitor (OVM) equipped with a Photoionization Detector (PID) in accordance with the equipment manufacturer's specifications prior to start of screening of soil samples each day.
- Collect a soil sample for screening using appropriate chemical resistant gloves and immediately place the sample in an appropriate container (e.g., clean zip lock bag).
- Measure the sample headspace with the OVM after allowing the sample to sit for approximately 10 minutes, and record the results on the Screening of Potentially Impacted Soil data sheet in Appendix C.

- Decontaminate sampling equipment prior to collection of each sample using laboratory grade soap and distilled water rinse to prevent cross contamination.

3.2 HANDLING OF POTENTIALLY IMPACTED SOIL

The Environmental Consultant and Contractor should identify designated areas for stockpiling potentially impacted soil and obtain approval from DWU. In selecting these areas, consideration should be given to storm water flow direction, so as not to impede storm water runoff, and to avoid low-lying areas prone to flooding. Stockpile areas shall be free of access routes to the subsurface such as monitor wells and utility manholes.

Potentially impacted soil shall be segregated from non-impacted soil. Potentially impacted soil excavated from the site with PID screening results >5 ppm shall be placed on plastic sheeting (minimum 20 mil thick) in the designated stockpile area(s). The stockpiled soil shall be covered with plastic sheeting (minimum 10 mil thick) when the stockpile is not being actively worked. The Contractor shall take the necessary steps to secure the cover, anchored in place with sand bags (or other comparable means). The Contractor shall take the necessary steps to direct storm water runoff away from the stockpile(s).

3.3 SAMPLING AND ANALYSIS OF POTENTIALLY IMPACTED SOIL

The Environmental Consultant shall be responsible for sampling potentially impacted soil. Soil samples will be collected to determine if potentially impacted soil can be re-used or to characterize the soil for off-Site disposal.

To determine on-Site re-use, one composite soil sample shall be collected for approximately every 50 cubic yards of potentially impacted stockpiled soil. The samples shall be collected using clean disposable gloves and clean sampling equipment. The samples shall be placed into laboratory provided pre-cleaned EPA-approved sample containers. The sample containers shall be immediately transferred to a cooler with ice and transported to the laboratory for analysis under chain of custody documentation. The equipment used for collecting the soil samples shall be decontaminated between uses. At a minimum the soil samples shall be analyzed for the following parameters:

Analytical Testing Parameters

Total Petroleum Hydrocarbons by Texas Method TX1005

Volatile Organic Compounds by EPA 8260

RCRA Metals by EPA 6010/6020

For soil that is to be transported off-site for disposal, one, four-part composite soil sample shall be collected for approximately every 200 cubic yards of potentially impacted stockpiled soil. The samples shall be collected using clean disposable gloves and clean sampling equipment. The samples shall be placed into laboratory provided pre-cleaned EPA-approved sample containers. The sample containers shall be immediately transferred to a cooler with ice and transported to the laboratory for analysis under chain of custody documentation. The equipment used for collecting the soil samples shall be decontaminated between uses. At a minimum the soil samples shall be analyzed for the following parameters:

Analytical Testing Parameters

Total Petroleum Hydrocarbons by Texas Method TX1005

Volatile Organic Compounds by EPA 8260

Semi-volatile Organic Compounds by EPA 8270

Pesticides by EPA 8081

Herbicides by EPA 8151

Texas 11 Metals (RCRA 8 Metals plus antimony, beryllium, and nickel) by EPA 6010/6020

Laboratory results will be used to classify the soil for offsite disposal, recycling, and/or reuse. Analytical testing requirements of the selected landfill/recycling facility shall be verified in order to determine if additional laboratory analyses will be required for acceptance of impacted soil.

3.4 EQUIPMENT DECONTAMINATION

The Contractor shall decontaminate all construction equipment coming in contact with potentially impacted soil and/or groundwater. At a minimum the decontamination operation shall include the following:

- Remove large clods or adhered deposits of material with shovel or other tool;
- If not visibly clean after the above step, scrub with a brush and phosphate-free detergent; and
- Place the decontamination residue in the excavated soil stockpile.

All construction equipment utilized during excavation, hauling, stockpiling, and/or loading of impacted soil shall not leave that work area until decontaminated in accordance with the procedure described above.

3.5 REUSE/DISPOSAL OF IMPACTED SOIL

Reuse of impacted soil encountered during construction shall be in accordance with TRRP Rule 30 Texas Administrative Code (TAC) 350.36. Disposal of impacted soil encountered during construction shall be in accordance with 30 TAC 335 Subchapter R. Impacted soil excavated from outside or within the Affected Zones as a part of the normal construction activities shall be reused, or disposed of offsite, as described below.

- Affected soil with concentrations of COCs above the TRRP Tier 1 Residential PCLs (Class 1 Groundwater Resource Classification) may be re-used on-site and placed in the trench as backfill if Phase Separated Product (PSH) is not present. The material shall be used in the same general area from which it was excavated and shall meet the DWU standard specification for backfill materials. Excess impacted soil shall not be used in un-impacted areas of the trench. Re-use of impacted soil from the Affected Zones shall be placed re-used within the trench deeper than 2 feet bgs and covered with soils from the un-affected portion of the project.
- Affected soil with concentrations of COCs above the TRRP Tier 1 Residential PCLs (Class 1 Groundwater Resource Classification) not re-used on-site and placed in the trench as backfill or if PSH is present shall be treated as a waste and managed in accordance with all applicable requirements.

TRRP Tier 1 Residential PCLs (Class 1 Groundwater Resource Classification) for COCs identified in soil at the site are summarized in Table 1 Attachment B. Only waste transporters licensed in the State of Texas will be used to transport affected soil for disposal. Required record keeping is discussed in Section 3.6. DWU or a designated authorized agent will sign as generator for any contaminated soil being disposed of from the site.

A potential disposal facility for excess soil is the Waste Management DFW Landfill located at 1600 South Railroad Street in Lewisville, Texas. Based on the available analytical data and discussions with the disposal facility, the excess material should be characterized as Class 2 non-hazardous waste. The estimated volume of excess soil from displacement by embedment material is estimated to be approximately 15 cubic yards per 100 feet of trench length. The estimated totals generated during the replacement of the water and wastewater lines for each Affected Area are 450 cubic yards (CY) in the northern soil Affected Area, and 1,080 CY of excess soil in the southern soil Affected Area.

3.6 USE OF OFF-SITE FILL MATERIAL

If fill material from an off-Site borrow pit is needed for construction purposes, the Contractor shall provide representative environmental laboratory testing results for TPH, VOCs, PAHs, and RCRA 8 metals for review by the Project Contacts, listed in Section 5.0, prior to approval by the City. Alternatively, the Contractor can provide an environmental site assessment or environmental desktop review document for the borrow source site for review by the Project Contacts prior to approval. The documents should demonstrate that there are no environmental concerns based on the current and past land uses and regulatory history.

3.7 RECORD KEEPING

The following records shall be kept with regards to management of impacted soil.

- Daily Field Activity Log and field data, e.g. OVM readings;
- Copies of analytical laboratory reports including chain of custody forms;
- Photo documentation of pertinent features and events; and
- Waste documentation including, but not limited to, waste profile, manifests, etc.

4.0 GROUNDWATER MANAGEMENT PLAN

The general procedures to be followed to manage, test, and dispose of groundwater encountered during the construction activities within the Affected Zone are included below.

4.1 HANDLING OF POTENTIALLY IMPACTED GROUNDWATER

Groundwater is expected to be encountered in the groundwater Affected Zone in a range of approximately 3.5 to 8.5 feet bgs. Groundwater or storm water entering the excavation in the Affected Zone that requires removal to facilitate construction shall be pumped via pumps and hoses by the Contractor to a holding tank(s). The required capacity of the tank(s) will be a function of the Contractor's construction means and methods and the area of open excavation. The Contractor shall sequence work in the Affected Zone to limit the length of open trench at any given time in order to reduce the quantity of potentially impacted water requiring storage and disposal. Based on a DWU project with similar geology in the Harry Hines corridor, approximately 2 miles from the Luna Road project area, water discharge volumes of approximately 50 to 100 gallons per minute may be expected.

4.2 SAMPLING AND ANALYSIS OF POTENTIALLY IMPACTED GROUNDWATER

Potentially impacted water stored in the holding tank(s) can either be disposed of via vacuum truck, treated on-site prior to discharge, sampled and analyzed for possible discharge to the DWU sanitary sewer, or to the ground surface or the storm sewer system if found to be free of COCs. At the completion of construction activities in the Affected Zone, or as the tanks reaches its capacity, the tanks(s) contents should be properly sampled for disposal. The DWU Environmental Consultant shall be responsible for conducting all sampling, laboratory analyses, characterization, and profiling. The Contractor shall be responsible for obtaining all permits or authorizations that may be required for disposal of contaminated water from the Affected Zone to a permitted disposal facility or point of discharge. At a minimum the groundwater samples shall be analyzed for the following parameters:

Analytical Testing Parameters

Total Petroleum Hydrocarbons by Texas Method TX1005

Volatile Organic Compounds by EPA 8260

RCRA Metals by EPA 6010/6020

4.3 DISPOSAL OF GROUNDWATER

As discussed above, potentially impacted water (groundwater or storm water) entering the excavation can be containerized on-site in a holding tank(s) to either be disposed of via vacuum truck at a DWU approved facility, treated on-site prior to discharge to the DWU sanitary sewer system, treated prior to discharge to the ground surface or storm water system, or sampled and analyzed for possible discharge to the ground surface if found to be free of hazardous chemical constituents. If disposed of via vacuum truck the existing analytical results for the groundwater may be sufficient for profiling the water for disposal. DWU or a designated authorized agent will sign as generator for any contaminated groundwater being disposed of from the Affected Zone.

If the water is to be discharged to the DWU sanitary sewer system, the Contractor shall obtain a One-Time Groundwater Discharge Authorization through DWU Pretreatment and Laboratory Services (PALS) for metered discharge. Collection of a representative composite sample for laboratory analysis of the water to be discharged in accordance with the terms of DWU-PALS will be required. Analytical parameters for the composite water samples collected may include select chemicals from EPA Tables II, III, and V (40 CFR 122, Appendix D), Total Oil & Grease (TOG), pH, Cyanide, Sulfide, Flashpoint, Temperature, and Metals. However, the specific analytical criteria required should be verified with DWU-PALs prior to sample collection. The analytical results should be used to characterize and profile the water being discharged. If the water is sampled and found to be free of COCs and all required permits and authorizations through the City of Dallas Storm Water Management Section and/or the Texas Pollution Discharge Elimination System (TPDES) have been obtained by the Contractor, the groundwater may be discharged to the ground surface or a storm water drain in a controlled manner. Pretreatment of the water will likely be required for discharge to the sanitary sewer system or surface discharge if contaminants are identified in the water. TRRP Tier 1 Residential PCLs (Class 1 Groundwater Resource

Classification) for COCs identified in groundwater at the site are summarized in Table 2 Appendix B.

4.4 RECORDKEEPING

The following records shall be kept with regards to potentially impacted groundwater or storm water pumped from the trench within the Affected Zone.

- The daily log shall describe the related activities, observations, and record the volume of water pumped and stored each day;
- If the water is sampled and tested, retain copies of the analytical laboratory reports including chain of custody forms; and
- Waste documentation including, but not limited to, waste profile, manifests, etc.

5.0 COMMUNICATION AND PROJECT CONTACTS

In the event that unanticipated conditions (e.g., underground storage tanks, piping, drums, unusual soil staining/odors indicative of contamination, etc.) are encountered during construction activities, the site findings shall be communicated to DWU as soon as possible. The Contractor shall immediately contact the DWU field inspector to assess the situation. The DWU Project Manager shall then be contacted by the field inspector. In the event the DWU field inspector is unavailable, the DWU Project Manager shall be contacted. The DWU personnel requiring notification along with contact information will be provided to the Contractor at the execution of the contract.

6.0 PROCEDURES FOR HANDLING UNEXPECTED CONTAMINATION

If unexpected contamination (e.g., stained soil, unusual odors, petroleum hydrocarbon product, etc.) is encountered during the utility construction, The Contractor shall notify the DWU field inspector, who shall postpone the work activities and contact the DWU Project Manager. The DWU Project Manager shall then contact an approved Environmental Consultant to meet at the site with the DWU Project Manager to assess the situation. The Environmental Consultant shall perform field screening and collect initial soil and/or groundwater samples to submit for laboratory analyses. Based on the analytical results, additional SSI investigation may be required. Following

characterization of the Affected Zone, the Environmental Consultant and Design Consultant shall review the analytical results for the Affected Zone and select the appropriate alternative materials and design specifications using the Protocol charts. DWU shall direct the Environmental Consultant to prepare amendments to the Project-Specific SGMP for work in the unexpected Affected Zone. Arrangement will be made for change orders in accordance with the applicable pay-items and soil and groundwater management activities in the Affected Zone will proceed.

7.0 PROCEDURES FOR HANDLING HAZARDOUS SOIL AND/OR GROUNDWATER

The initial procedures for handling potentially hazardous soil and/or groundwater are outlined in Section 6.0 above. The soil or groundwater should be segregated from all other material. Samples should be collected and submitted to the laboratory for analysis by Toxicity Characteristic Leaching Procedure (TCLP). At a minimum the soil samples shall be analyzed for the following parameters:

Analytical Testing Parameters

Volatile Organic Compounds by TCLP
Semi-volatile Organic Compounds (SVOCs) by TCLP
Texas 11 Metals (RCRA 8 Metals plus antimony, beryllium, and nickel) by TCLP
Reactivity, Corrosivity, Ignitability (RCI)

The anticipated disposal facility for hazardous soil and/or groundwater is the US Ecology facility in Robstown, Texas. The Environmental Consultant will prepare the waste profile for the disposal facility. DWU will be responsible for the transportation and disposal of the hazardous soil or groundwater using hazardous materials transporters licensed by the State of Texas. The hazardous soil and/or groundwater must be removed from the site within 90 days of the hazardous determination. DWU or a designated authorized agent will sign as generator for any hazardous soil or groundwater being disposed of from the Affected Zone.

8.0 SUMMARY OF WORK SITE PHYSICAL AND CHEMICAL HAZARDS

Physical hazards that may be encountered while working in the Affected Zone include slips, trips, falls, automobile traffic, and working around and within trenches. Depending on the time of year work activities are being conducted, heat or cold stress are potential issues. The potential chemical hazards are exposure to the chemicals of concern (COCs) listed in Table 1 and Table 2 included in Appendix B.

This information is provided for informational purposes. Contractors are responsible for preparing their own Health and Safety Plans (HASPs) to ensure the health and safety of their employees.

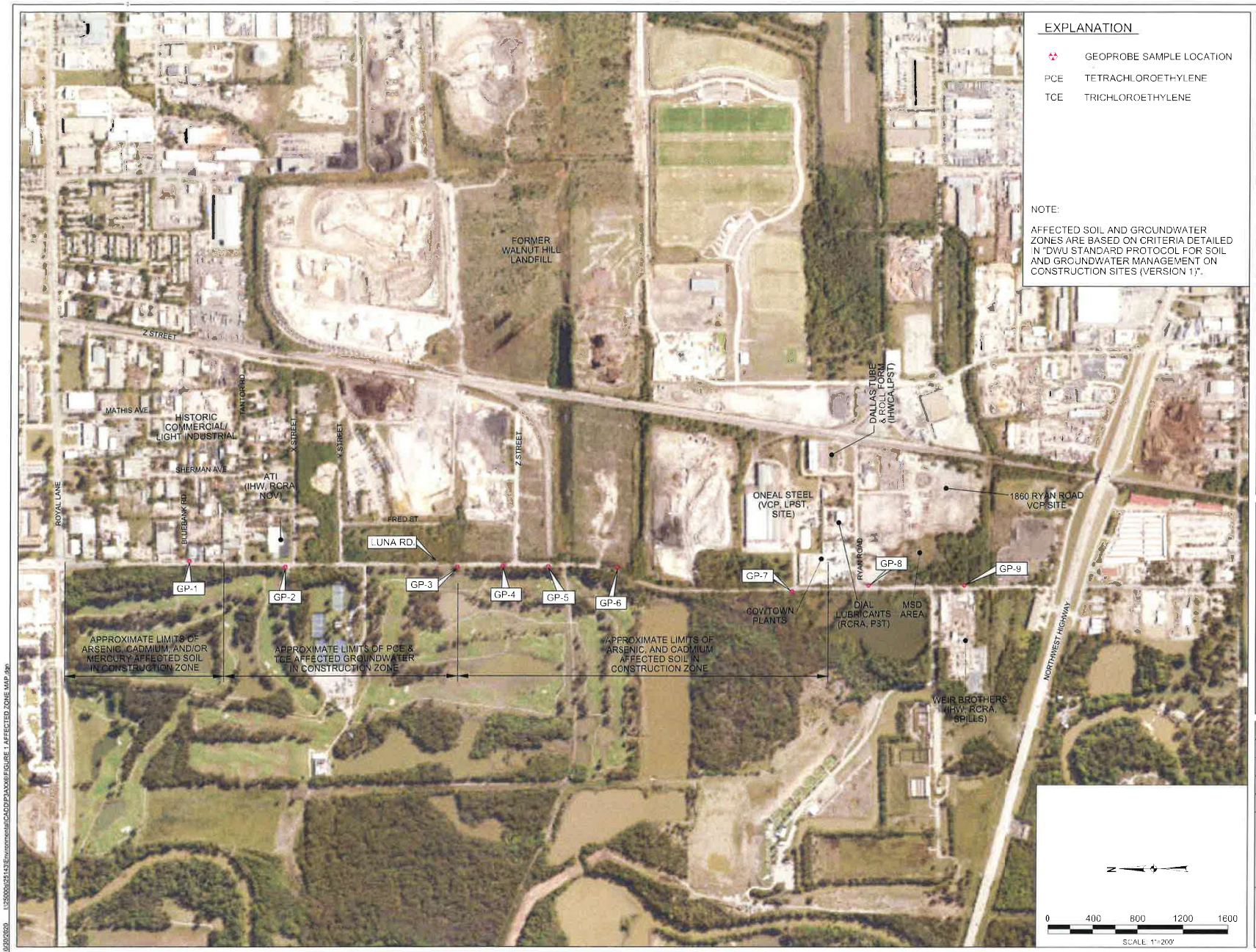
9.0 FINAL REPORT

At the conclusion of the construction activities involving impacted soil, groundwater, and/or storm water within the Affected Zone, the environmental professional shall prepare a summary report that documents the following:

- The field activities, including daily activity logs and field data collected;
- Estimated quantity of potentially impacted soil and groundwater removed from the Affected Zones;
- Final disposition and estimated quantity of excavated soil not returned to the trench, i.e. soil disposed of off-site;
- Final disposition and estimated volume of water disposed of;
- Photo documentation of pertinent features and events;
- Copies of complete analytical laboratory reports; and
- Waste documentation including, but not limited to, waste profile, manifests, etc.

APPENDIX A

FIGURE 1 – AFFECTED ZONES



EXPLANATION

- GEOPROBE SAMPLE LOCATION
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE

NOTE:

AFFECTED SOIL AND GROUNDWATER ZONES ARE BASED ON CRITERIA DETAILED IN "DWU STANDARD PROTOCOL FOR SOIL AND GROUNDWATER MANAGEMENT ON CONSTRUCTION SITES (VERSION 1)".

HALFF
1201 NORTH BOWSER ROAD
RICHARDSON, TEXAS 75081
TEL (214) 346-6200
FAX (214) 739-0095

AFFECTED ZONE MAP
SAMPLE LOCATION MAP
DWU - PID 1210
LUNA ROAD
DALLAS, TEXAS

STATE OF TEXAS
MICHAEL O. THIELE
GEOLOGY
4079
LICENSED
PROFESSIONAL GEOSCIENTIST
1-19-2021

Project No.:	25143/P3AXX6/TA01
Issued:	7/2020
Drawn By:	CAD
Checked By:	LB
Scale:	AS SHOWN

Sheet Title

AFFECTED ZONE MAP
DWU - PID 1210
LUNA ROAD
DALLAS, TEXAS

1

Figure Number

10/30/2020 I:\25000s\25143\Environmental\CAD\P3AXX6\FIGURE 1 AFFECTED ZONE MAP.dgn

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APPENDIX B
TABLES

TABLE 1
Chemicals of Concern TRRP Tier 1 Residential PCLs - Soil
PID 1210
Luna Road Water and Wastewater Replacement Project
Dallas, Texas

COC	TRRP Tier 1 Residential PCLs for a 0.5-Acre Source Area (PPM)
Metals:	
Arsenic	5.9
Barium	440
Cadmium	1.5
Mercury	0.04
Silver	0.48
VOCs:	
1,2-Dichlorobenzene	18.0
1,4-Dichlorobenzene	2.1
cis-1,2-Dichloroethene	0.25
Methylene Chloride	0.013
Tetrachloroethylene	0.05
Toluene	8.2
Trichloroethene	0.034
Pesticides:	
Dieldrin	0.049
Endosulfan II	92.0
Endrin	0.75
Endrin Aldehyde	19.0
Heptachlor Epoxide	0.058

TABLE 2
Chemicals of Concern TRRP Tier 1 Residential PCLs - Groundwater
PID 1210
Luna Road Water and Wastewater Replacement Project
Dallas, Texas

COC	TRRP Tier 1 Residential PCLs for a 0.5-Acre Source Area (PPM)
VOCs:	
Chlorobenzene	0.1
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.075
1,1-Dichloroethane	4.9
cis-1,2-Dichloroethylene	0.07
Tetrachloroethylene	0.005
Trichloroethylene	0.005
Vinyl Chloride	0.002
SVOCs:	
bis(2-Ethylhexyl)Phthalate	0.006
Herbicides:	
Dichloroprop	0.24

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APPENDIX C
FIELD FORMS

HALFF

1201 North Bowser Road
Richardson, Texas 75081
(214) 346-6200
Fax (214) 739-0095

FIELD ACTIVITY REPORT

Project Name: _____ **Date:** _____

Location: _____ **AVO:** _____

Description of Daily Activities and Events: (Provide Necessary Sketches)

Weather Conditions:	Last Night	Changes from plans and specifications and other special orders and important decisions:
Temperature Range: to °F	°F	
Precipitation: Inches of	Inches	Visitors on site:
Wind: to mph		
River (stream) level:		
Attachments: (Cost records, telephone conversation, etc.) 1. 4. 2. 5. 3. 6.		Telephone calls (provide record of telephone conversations):
Halff personnel on site:		
Prepared by:		Date:
Received by:		Date:

HALFF

1201 North Bowser Road
Richardson, Texas 75081
(214) 346-6200
Fax (214) 739-0095

SCREENING OF POTENTIALLY IMPACTED SOIL LOG

Project Name: _____

Location: _____

Field Analyst: _____

Instrument Type: _____

Calibration Gas: _____

Calibration Date/Time: _____

Date	Sample Location (Stockpile ID or Depth)	Sample No.	Date	Time	Background Reading (PPM)	Sample Reading (PPM)

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CONSTRUCTION STAKING CUT SHEET

PROJECT: 12” Water in Highland Rd., from Dorrington Dr. W to Jim Miller Rd.

PARTY: Sanders & Party

DATE: June 18, 2006

FILE NO.: 411Q 1245, Sheet 126

CONTRACT NO.: 86-211

CONTRACTOR: Lightning Const. Co.

STATION	CUT	OFFSET	LEFT	RIGHT	REMARKS
9+50	6.43	Hub		10’	1-12”x8” Tee, 1-12” Valve & 1-8” Valve
10+00	8.12	”		”	
10+50	8.22	”		”	
11+00	8.82	”		”	
11+50	9.38	”		”	
12+00	9.45	”		”	
12+50	9.29	”		”	
13+00	9.47	”		”	
13+50	9.76	”		”	
13+57.30	9.69	”		”	P.T.
14+00	9.60	”		”	
14+50	9.33	”		”	
15+00	9.16	”		”	1-12”x8” F.H. Tee, 1-6” Valve & 1-F.H.
15+50	8.95	”		”	
16+00	8.65	”		”	
16+30	7.52	“x” Conc.		”	1-12”x8” Reducer
16+33.83	7.37	”		”	1-8”x8” Tapping Sleeve/Conn. To ex. W

Typed and Delivered To:

Date: June 19, 1999

CONSTRUCTION STAKING CUT SHEET

PROJECT: _____

_____

_____

_____

_____

PARTY: _____

DATE: _____

FILE NO.: _____

CONTRACT NO.: _____

CONTRACTOR: _____

STATION	CUT	OFFSET	LEFT	RIGHT	REMARKS

Typed and Delivered To: _____

Date: _____

CONTRACTOR ENVIRONMENTAL PACKET

(See 107.27 of City of Dallas NCTCOG Addendum)

ENVIRONMENTAL RECORD AFFIDAVIT

For purposes of this Affidavit:

(A) the term "Bidder/Proposer" includes any and all authorized officers, employees, agents, or other representatives of Bidder/Proposer working in that capacity on behalf of Bidder/ Proposer within the past three (3) years prior to the date of this Affidavit;

(B) the term "Environmental Laws" includes the (i) Clean Air Act, (ii) Clean Water Act, (iii) any rules, regulations, or ordinances promulgated pursuant to either of the above mentioned acts by State, Federal, or local regulatory authorities, or (iv) any other State, Federal, or local environmental law, rule, regulation, or ordinance related to the protection of the environment, including but not limited to solid waste disposal, hazardous waste disposal, illegal discharges of pollutants, and other similar environmental laws, rules, regulations, and ordinances.

I, _____, the duly authorized representative of

_____ (Hereinafter called the "Bidder/Proposer"), hereby swears (or affirms) on behalf of Bidder/Proposer the following:

(1) That Bidder/Proposer has received and read the Contractor Environmental Packet. Bidder/Proposer also understands that the Contractor Environmental Packet is not intended to be all-inclusive, but rather a guideline for environmental responsibility.

[Strike the item indicated below that does NOT apply in this Affidavit.]

(2) That Bidder/Proposer *has **not*** been served with any notices of violation, or notices of enforcement, nor had any civil or criminal fines or penalties imposed by any regulatory authority for a violation of any Environmental Laws within the past three (3) years prior to the date of this Affidavit.

(3) That Bidder/Proposer ***has*** been served with any notices of violation or notices of enforcement or had any civil or criminal fines or penalties imposed by any regulatory authority for a violation of any Environmental within the past three (3) years prior to the date of this Affidavit as follows:

[If item (3) applies, use a separate sheet to list the notices of violation or enforcement, and any adjudication of actual violations, along with copies of any compliance documents issued by the regulatory authority in connection with the notices or actual violation, and attach the separate sheet to this affidavit.]

Subscribed to and sworn before me on this the _____ day of _____, 20____.

[Seal]

_____
Notary Public
State of Texas

My Commission expires _____

NOTICE

THE FOLLOWING BLANK SPACES IN THE CONTRACT

AND BONDS ARE NOT TO BE FILLED IN BY THE

BIDDER AT TIME OF SUBMITTING HIS PROPOSAL

THE CONTRACT AND BONDS FORMS ARE SUBMITTED AT THIS

TIME TO FAMILIARIZE THE BIDDER WITH THE FORM

OF CONTRACT AND BONDS WHICH THE SUCCESSFUL BIDDER

WILL BE REQUIRED TO EXECUTE.

Resolution No. ___-_____
Contract No.
Approved _____, 20__

STATE OF TEXAS §
§ CIVIL CONSTRUCTION SERVICES CONTRACT
COUNTY OF DALLAS §

THIS CONTRACT is made and entered into by and between the CITY OF DALLAS, a Texas municipal corporation (hereinafter called "Owner"), and _____, a _____, with offices at _____ (hereinafter called "Contractor").

1. CONTRACT DOCUMENTS

That for the consideration stated in this Section, Contractor undertakes, covenants and agrees to perform the work described below, in every detail conforming to the advertisement, bid proposal, Owner's Standard Specifications for Public Works Construction (Fourth Edition, 2004), as amended, and all other specifications, including special provisions, addendums, plans, working drawings, and performance and payment bonds, all of which instruments are wholly incorporated by reference into this Contract as though written word for word, on a certain public work described as _____ for a sum not to exceed _____ **DOLLARS ($_____)**.

2. TERMS

Defined Terms used in this Contract that are defined in the City's Standard Specifications for Public Works Construction and City's Addendum to the Standard Specifications, October 2011 Edition shall have the meanings designated in these publications.

3. CONTRACT TIME; LIQUIDATED DAMAGES

A. Contractor hereby agrees to commence the work under this Contract on a date to be specified in a work order of City's Project Engineer, and to complete fully all work hereunder as specified in Special Provision _____ of the Specifications.

B. Contractor further agrees to pay liquidated damages as specified in Special Provision _____ of the Specifications in the event the work is not substantially completed within the time or times provided in that Special Provision.

4. PAYMENTS

A. Owner agrees that between the 25th day and last day of each month for odd-numbered contracts, and between the 10th day and the 15th day of the month for even-numbered contracts, the Project Engineer will make an estimate of the value of the work done during the previous month under the Contract, based upon the prices furnished in Contractor's bid proposal, and the actual quantities of work performed as measured by the Project Engineer in accordance with the Contract. Lump sum units shall be estimated and paid on a percentage-of-completion basis. Contractor shall furnish the Project Engineer information as may be requested to aid the Project Engineer as a guide in the preparation of estimates. Contractor shall also comply, where applicable, with Item 109.5.1 of the Standard Specifications for Public Works Construction, as may be modified by the City's Addendum to the Standard Specifications. If the confirmed value of the work done since the last previous estimate exceeds $100.00 in amount, a percentage of such confirmed sum will be paid to the Contractor about thirty (30) days after completion of the estimate. Owner shall not be liable for interest on any late or delayed payment caused by any claim or dispute, any discrepancy in quantities, any failure to provide supporting documentation or other information required with the estimate or as a precondition to payment, or due to any payment Owner has a right to withhold under the Contract. Payment may include amounts for acceptable, non-perishable materials delivered to the work site, based on the net invoice value as presented in the Contractor's supporting information and confirmed by the Project Engineer's estimate. The percentage retained by Owner shall be as provided below. In no event shall payment for any bid item of work exceed the unit price for the item stated in Contractor's bid proposal, nor shall payment be made in excess of actual quantities of work constructed or supplied.

B. For purposes of subparagraph (a), "odd-numbered contracts" are those contracts numbered under the Dallas Water Utilities Enumeration System such that the second last digit is an odd-number (one, three, five, seven or nine); "even-numbered contracts" are those contracts numbered under the Dallas Water Utilities Enumeration System such that the second last digit is an even-number (two, four, six, eight or zero).

C. If the due date for a progress payment described above falls on a Saturday, Sunday or official City of Dallas holiday, payment will be made to Contractor on or about the first business day following the Saturday, Sunday or official City of Dallas holiday.

D. Progress payments may include payment for acceptable, non-perishable materials delivered to the worksite; payment for materials will be allowed on the same percentage basis of net invoice value as provided hereinafter. The percentage retained by Owner will be fifteen percent (15%) of the total dollar amount of work done on all contracts $50,000 and less for which performance and payment bonds have been furnished; and ten percent (10%) of the total dollar amount of work done on all contracts in excess of $50,000.00 and less than $400,000.00; and five percent (5%) of the total dollar amount of work done on all contracts of $400,000.00 or more. On all contracts described in this paragraph, the following retainage rules shall also apply:

(1) When work progress is eighty percent complete, retainage may be reduced to two percent (2%) of the dollar value of all work satisfactorily completed to date (not to include material on hand), provided that Contractor is making satisfactory progress and there is no cause for greater retainage as determined by the Project Engineer.

(2) When work progress is substantially complete (operational or beneficial occupancy) the retainage may be further reduced to only that amount necessary to assure completion as determined by the Project Engineer.

(3) If Owner determines that Contractor is not making satisfactory progress or if there is other specific cause, Owner may, at its discretion, reinstate in full the applicable retainage.

5. SURETY

A. It is further mutually agreed that should it appear to Owner or to the Project Engineer that, at any time during the existence of this Contract, the surety on the said Contractor's bond has become insolvent, bankrupt or otherwise financially unable to protect Owner under the terms of the Contract, Owner may demand that the Contractor furnish additional or substitute surety through some approved surety company satisfactory to Owner; the act of Owner or the Project Engineer with reference to demanding additional or substitute surety shall never be construed to relieve the original surety of its obligation under the Contract.

B. Owner may stop the work under the Contract until the additional or substitute surety has been furnished by the Contractor, and Owner shall in no case be liable to the Contractor on account thereof. Further, substitution of the surety or stoppage of work under the circumstances of this Section shall not serve as an extension of the performance time requirements set forth in Section 2, nor as a waiver of the liquidated damages due thereunder. Owner may exercise its right, as provided under this Contract, to take charge of the work in the event of the refusal or failure of the Contractor to comply with the demands of Owner with reference to furnishing additional or substitute surety.

6. OFFSET

Owner may, at its option, offset any amounts due and payable under this Contract against any debt (including taxes) lawfully due to Owner from Contractor, regardless of whether the amount due arises pursuant to the terms of this Contract or otherwise and regardless of whether or not the debt due to Owner has been reduced to judgment by a court.

7. PRICES

In consideration of Contractor fully and faithfully complying with all terms, provisions and stipulations of this Contract, Owner undertakes, covenants and agrees to pay to Contractor for the furnishing of all material and labor, and the performance of the work herein contracted

for, the following prices as shown on the bid proposal of Contractor, which prices represent the total compensation to be received by Contractor under this Contract, consistent with the not-to-exceed sum stated in Section 1, which prices are as stated in **Exhibit A**.

8. CONFLICT OF INTEREST

A. Contractor and its employees, agents or associates are required to make regular, timely, continual and full disclosures to the Director of all significant outside interests and responsibilities that may give rise to a direct or indirect conflict of interest, including, but not limited to, any and all significant outside interests and responsibilities that could reasonably be expected to impair independence of judgment in Contractor's performance of all of the services under this Contract. Such disclosures must be made no later than ten (10) days following the event giving rise to the potential or actual conflict of interest for the duration of the Contract term. A potential or actual conflict of interest exists when commitments and obligations to the City or widely recognized professional norms are likely to be compromised in Contractor's performance of its duties under this Contract by the existence of Contractor's other professional relationships, contracts, obligations, or commitments. Failure to disclose such a conflict of interest may result in the City's immediate termination of this Contract by the City Manager.

B. The following section of the Charter of the City of Dallas shall be one of the conditions, and a part of, the consideration of this Contract, to wit:

"CHAPTER XXII. Sec. 11. FINANCIAL INTEREST OF EMPLOYEE OR OFFICER PROHIBITED.

(a) No city official or employee shall have any financial interest, direct or indirect, in any contract with the city, or be financially interested, directly or indirectly, in the sale to the city of any land, materials, supplies or services, except on behalf of the city as a city official or employee. Any violation of this section shall constitute malfeasance in office, and any city official or employee guilty thereof shall thereby forfeit the city official's or employee's office or position with the city. Any violation of this section, with knowledge, express or implied, of the person or corporation contracting with the city shall render the contract involved voidable by the city manager or the city council.

(b) The alleged violations of this section shall be matters to be determined either by the trial board in the case of employees who have the right to appeal to the trial board, and by the city council in the case of other employees.

(c) The prohibitions of this section shall not apply to the participation by city employees in federally-funded housing programs, to the extent permitted by applicable federal or state law.

(d) This section does not apply to an ownership interest in a mutual or common investment fund that holds securities or other assets unless the person owns more than 10 percent of the value of the fund.

(e) This section does not apply to non-negotiated, form contracts for general city services or benefits if the city services or benefits are made available to the city official or employee on the same terms that they are made available to the general public.

(f) This section does not apply to a nominee or member of a city board or commission, including a city appointee to the Dallas Area Rapid Transit Board. A nominee or member of a city board or commission, including a city appointee to the Dallas Area Rapid Transit Board, must comply with any applicable conflict of interest or ethics provisions in the state law and the Dallas City Code. (Amend. of 8-12-89, Prop. No. 1; Amend. of 8-12-89, Prop. No. 15; Amend. of 11-4-14, Prop. Nos. 2 and 9)"

9. GIFT TO PUBLIC SERVANT

City may terminate this Contract immediately if Contractor has offered, or agreed to confer any benefit upon a City employee or official that the City employee or official is prohibited by law from accepting.

For purposes of this section, "benefit" means anything reasonably regarded as pecuniary gain or pecuniary advantage, including benefit to any other person in whose welfare the beneficiary has a direct or substantial interest, but does not include a contribution or expenditure made and reported in accordance with law.

Notwithstanding any other legal remedies, City may require Contractor to remove any employee of Contractor from the Services who has violated the restrictions of this section or any similar state or federal law, and obtain reimbursement for any expenditures made as a result of the improper offer, Contract to confer, or conferring of a benefit to a City employee or official.

10. NOTICE OF CONTRACT CLAIM

This Contract is subject to the provisions of Section 2-86 of the Dallas City Code, as amended, relating to requirements for filing a notice of a breach of contract claim against City. Section 2-86 of the Dallas City Code, as amended, is expressly incorporated by reference and made a part of this Contract as if written word for word in this Contract. Contractor shall comply with the requirements of this ordinance as a precondition of any claim relating to this Contract, in addition to all other requirements in this Contract related to claims and notice of claims.

11. NOTICES

Except as otherwise provided in Section 10, any notice, payment, statement, or demand required or permitted to be given under this Contract by either party to the other may be effected by

personal delivery in writing or by mail, postage prepaid. Mailed notices shall be addressed to the parties at the addresses appearing below, but each party may change its address by written notice in accordance with this section. Mailed notices shall be deemed communicated as of three (3) days after mailing.

If intended for City, to:

_____, Director
City of Dallas
Water Utilities Department
1500 Marilla Street, Room 4AN
Dallas, Texas 75201

If intended for Contractor, to:

_____
_____
_____
_____

12. EQUAL EMPLOYMENT OPPORTUNITY/NONDISCRIMINATION

A. Contractor shall not discriminate against any employee or applicant for employment because of race, age, color, ancestry, national origin, place of birth, religion, sex, sexual orientation, gender identity and expression, military or veteran status, genetic characteristics, or disability unrelated to job performance. Contractor shall take affirmative action to insure that applicants are employed and that employees are treated during their employment without regard to their race, age, color, ancestry, national origin, place of birth, religion, sex, sexual orientation, gender identity and expression, military or veteran status, genetic characteristics, or disability unrelated to job performance. This action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection of training, including apprenticeship. Contractor shall also comply with all applicable requirements of the Americans with Disabilities Act, 42 U.S.C.A. §§12101-12213, as amended. Contractor agrees to post in conspicuous places a notice, available to employees and applicants, setting forth the provisions of this non-discrimination clause.

B. Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of Contractor, state that all qualified applicants will receive consideration for employment without regard to race, age, color, ancestry, national origin, place of birth, religion, sex, sexual orientation, gender identity and expression, military or veteran status, genetic characteristics, or disability unrelated to job performance.

C. Contractor shall furnish all information and reports required by the City Manager or his designee and shall permit the City Manager or his designee to investigate its payrolls and personnel records which pertain to current professional services contracts with City for purposes of ascertaining compliance with this equal employment opportunity clause.

D. Contractor shall file compliance reports with City as may be required by the City Manager or his designee. Compliance reports must be filed within the time, must contain information as to the employment practices, policies, programs, and statistics of Contractor, and must be in the form that the City Manager or his designee prescribes.

E. If Contractor fails to comply with the equal employment opportunity provisions of this Contract, it is agreed that City at its option may do either or both of the following:

(1) Cancel, terminate or suspend this Contract in whole or in part;

(2) Declare Contractor ineligible for further City contracts until it is determined to be in compliance.

13. TITLE VI CONTRACT COMPLIANCE (REQUIRED BY THE TEXAS DEPARTMENT OF TRANSPORTATION)

During the performance of this contract, the Contractor, for itself, its assignees and successors in interest agrees as follows (where applicable):

(1) Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-Assisted programs of the United States Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Texas Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the Recipient, or the Texas Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this contract, the Recipient (as defined in the Regulations) shall impose such contract sanctions as it or the Texas Department of Transportation may determine to be appropriate, including, but not limited to: (a) withholding of payments to the Contractor under the contract until the Contractor complies, and/or (b) cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The Contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the Recipient or the Texas Department of Transportation may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Recipient to enter into such litigation to protect the interests of the Recipient, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

14. TERMINATION

Contractor and City acknowledge and agree that the termination provisions set forth in this Contract and the General Conditions shall survive the termination or expiration of the term of this Contract.

15. CERTIFICATION OF EXECUTION

The person or persons signing and executing this Contract on behalf of Contractor, or representing themselves as signing and executing this Contract on behalf of Contractor, do hereby warrant and certify that he, she or they have been duly authorized by Contractor to execute this Contract on behalf of Contractor and to validly and legally bind Contractor to all terms, performances and provisions herein set forth.

16. COUNTERPARTS

This Contract may be executed, including electronically, in one or more counterparts, each of which when so executed shall be deemed to be an original and constitute one and the same instrument. If this Contract is executed in counterparts, then it shall become fully executed only as of the execution of the last such counterpart called for by the terms of this Contract to be executed.

17. ENTIRE AGREEMENT

This Contract (with all referenced Contract Documents, exhibits, attachments, and other provisions incorporated by reference) embodies the entire Contract of both parties, superseding all oral or written previous and contemporary agreements between the parties relating to matters set forth in this Contract. This Contract can only be amended by an Amendment as provided in the General Conditions.

EXECUTED this the____ day of _____, 20___, by Owner, signing by and through its City Manager, duly authorized to execute same by Resolution No. __-_____, adopted by the City Council on _____, 20___, and by Contractor, acting through its duly authorized officials.

APPROVED AS TO FORM:
LARRY E. CASTO
City Attorney

BY_____
Assistant City Attorney

CITY OF DALLAS
T. C. BROADNAX
City Manager

BY_____
Assistant City Manager

CONTRACTOR:
XXX
a _____

BY_____

PRINTED
NAME_____

TITLE _____

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
3550	2	EA	Removal of Internal Obstruction in Existing 6" Wastewater main, complete in place, the sum of ***One Thousand*** DOLLARS and ***No*** CENTS per each	***1,000.00***	***2,000.00***
3551	2	EA	Removal of Internal Obstruction in Existing 8" Wastewater main, complete in place, the sum of ***Fifteen Hundred*** DOLLARS and ***No*** CENTS per each	***1,500.00***	***3,000.00***
3560	4	EA	Furnish and place Connection to Existing Manhole, complete in place, the sum of ***One Thousand Five Hundred*** DOLLARS and ***Ten*** CENTS per each	***1,500.10***	***6,000.40***

THIS PAGE TO BE USED AS AN EXAMPLE FOR COMPLETING PROPOSAL PAGES

NOTE: The Contractor's ***Unit Price In Words***, ***Unit Price In Numbers*** And ***Total Amount*** Must Be Shown For Each Bid Item.

SPECIFICATIONS
AND
FORMS OF CONTRACT AND BONDS
FOR
SCHEDULE A:
WATER AND WASTEWATER MAIN REPLACEMENTS
AT VARIOUS LOCATIONS
AND
SCHEDULE B:
UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION
AND
SCHEDULE C:
LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LANE WATER AND WASTEWATE MAIN REPLACEMENTS

CONTRACT NO. 20-505/20-506

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
1100F	1,950	LF	For furnishing and placing 4" Temporary Water Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1800F	10	LF	For furnishing and placing 4" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1800H	2,190	LF	For furnishing and placing 6" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
1800J	4,780	LF	For furnishing and placing 8" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1800L	80	LF	For furnishing and placing 12" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1801H	80	LF	For furnishing and placing 6" Polyvinyl Chloride Water Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
1801J	1,680	LF	For furnishing and placing 6" Polyvinyl Chloride Water Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1805Q	110	LF	For furnishing and placing 16" PVC Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3110J	13,350	LF	For furnishing and placing 8" PVC Pressure Rated Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
3110L	20	LF	For furnishing and placing 12" PVC Pressure Rated Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3111J	400	LF	For furnishing and placing 8" PVC Pressure Rated Wastewater Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3520H	600	LF	For Rehabilitation of Existing 6" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
3520J	350	LF	For Rehabilitation of Existing 8" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3540H	3	EA	For Point Repair of 6" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
3540J	1	EA	For Point Repair of 8" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5020	11	TN	For furnishing and placing Extra Iron Fittings, complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		
5050	200	EA	For furnishing and placing Water Service, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5091	11	EA	For furnishing and Installing Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5092	7	EA	For Removing Existing Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5093	7	EA	For Delivering Exist Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5100H	14	EA	For furnishing and placing 6" Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5100J	25	EA	For furnishing and placing 8" Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5100L	2	EA	For furnishing and placing 12" Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5100Q	4	EA	For furnishing and placing 16" Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5101H	3	EA	For furnishing and placing 6" Gate Valve with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5101J	11	EA	For furnishing and placing 8" Gate Valve with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5110QxH	1	EA	For furnishing and placing 16" x 6" Tapping Sleeve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5600	1	EA	For Cut & Plug Existing Water Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5610	7	EA	For Cut and Plug Water Main for Test, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5750D	1	EA	For furnishing and placing 2” Flush Point, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
5755D	2	EA	For furnishing and placing 2" Flush Point, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6060	450	EA	For furnishing and placing Wastewater Lateral, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6100	10	EA	For furnishing and placing Wastewater Access Device, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
6110AE	1	EA	For furnishing, Epoxy Coating, and placing 48" Diameter Drop Connection Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6130AE	36	EA	For furnishing, Epoxy Coating, and placing 48" Diameter Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6140	2	EA	For Abandoning Existing Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
6141	37	EA	For Vacuum Test for Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6150AE	1	EA	For 48” Diameter Manhole Rehabilitation, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6800	1	LS	For Project Partnering, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
6902	720	SY	For furnishing and placing Block Sodding, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
6920	14,740	LF	For Television Inspection, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
6925	22,310	LF	For Trench Safety and Support, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7030	160	CY	For furnishing and placing Rock Foundation, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7050	300	CY	For furnishing and placing Sand Backfill, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7053	100	CY	For furnishing and placing Cement Stabilized Sand Backfill, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7071	100	CY	For furnishing and placing Class "B" Concrete, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7520	600	TN	For furnishing, placing and removing Temporary Paving (Hot Mix Or High Performance), complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		
7525	420	CY	For removing, furnishing, and placing Flex Base (Crushed Rock) Alley Surface, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7530	1,100	LF	For furnishing and placing Concrete Curb and/or Gutter, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
7540	3,990	LF	For furnishing and placing Concrete Curb, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
7560	880	CY	For furnishing and placing Crushed Rock for Temporary Paving Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7570	3,960	CY	For furnishing and placing Reinforced Concrete Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7575	100	CY	For furnishing and placing Type 3K-2 Reinforced Concrete paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7580	340	SY	For furnishing and placing Reinforced Concrete Sidewalk, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7583	770	SY	For furnishing and placing Reinforced Concrete Driveway, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
7590	30	SY	For furnishing and placing Reinforced Concrete Driveway, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
7600	1,840	CY	For furnishing and placing Reinforced Concrete Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7655	1,550	TN	For furnishing and placing Hot-Mix Asphalt Concrete Pavement, complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		
7712	1	LS	For SWPPP, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
7730	1	LS	For Disposal of Heavily Chlorinated Water Main Flushing Water, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7766	400	CY	For Disposal of Class II Non-Hazardous Industrial Waste, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7767	10,000	GAL	For Disposal of Contaminated Groundwater, complete in place, the sum of _____DOLLARS AND_____ CENTS per gallon		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
7768	1	LS	For Health, Safety, and Monitoring Plan, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
8011	23,100	LF	For Construction Surveying and Staking of Proposed Water and Wastewater Mains, complete in place, the sum _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS					
8012	18,510	LF	For Construction Surveying and Staking of Proposed Street and Alley Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
20500	26	EA	For Investigation, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

END SCHEDULE A: WATER AND WASTEWATER MAIN REPLACEMENTS AT VARIOUS LOCATIONS

SUMMARY OF BID FOR AWARD EVALUATION
CONTRACT NO. 20-505/506

SCHEDULE A:

TOTAL AMOUNT OF BID: SCHEDULE A:

(Items No. 1100F Thru 20500 Inclusive)$ _____

_____

_____ **DOLLARS**

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
1800H	10	LF	For furnishing and placing 6" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1800J	2,180	LF	For furnishing and placing 8" Polyvinyl Chloride Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3100N	1,320	LF	For furnishing and placing 15" Polyvinyl Chloride Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
3100R	1,390	LF	For furnishing and placing 18” Polyvinyl Chloride Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3100U	3,820	LF	For furnishing and placing 21” Polyvinyl Chloride Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3110J	3,990	LF	For furnishing and placing 8” Polyvinyl Chloride Pressure Rated Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
3110K	880	LF	For furnishing and placing 10” Polyvinyl Chloride Pressure Rated Wastewater Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3560	1	EA	For furnishing and placing Connection to Existing Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
3700NX	650	LF	For 15” Extra Depth Wastewater Pipe (+20’), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
3700RX	1,390	LF	For 18" Extra Depth Wastewater Pipe (+20'), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3700UX	3,670	LF	For 21" Extra Depth Wastewater Pipe (+20'), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
5020	3	TN	For furnishing and placing Extra Iron Fittings, complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
5091	1	EA	For furnishing and placing Install Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5100H	1	EA	For furnishing and placing 6” Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5100J	5	EA	For furnishing and placing 8” Gate Valve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
5110LxJ	1	EA	For furnishing and placing 12” x 8” Tapping Sleeve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5755D	1	EA	For furnishing and placing 2” Automated Flush Point, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5990N	58	LF	For 15” Wastewater Main By Other Open Cut (BOTOC), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
5990U	31	LF	For 21" Wastewater Main By Other Open Cut (BOTOC), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
6020U	119	LF	For Railroad Crossing for 21" Wastewater Main By Other Open Cut (BOTOC), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
6060	1	EA	For furnishing and placing Wastewater Lateral, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
6080	15	EA	For furnishing and placing Standard Mainline Cleanout, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6110AE	2	EA	For furnishing, Epoxy Coating, and placing 48" Diameter Drop Connection Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6110AG	2	EA	For furnishing, Epoxy Coating, and placing 60" Diameter Drop Connection Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
6120AG	3	EA	For furnishing and placing 60” Diameter Pressure Type Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6130AE	18	EA	For furnishing and placing 48” Diameter Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6130AG	7	EA	For furnishing and placing 60” Diameter Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
6141	32	EA	For Vacuum Test for Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6240	1	EA	For furnishing and placing Tree, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6260	1	LS	For Cleaning and Grubbing, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
6905	32,681	SY	For furnishing and placing Seed, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
6920	11,390	LF	For Television Inspection, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
6925	12,850	LF	For Trench Excavation Safety and Support, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
7030	176	CY	For furnishing and placing Rock Foundation, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7044	60	CY	For furnishing and placing Four "F" Flowable Base – High Strength, Fast Set, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7050	300	CY	For furnishing and placing Sand Backfill, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
7071	10	CY	For furnishing and placing Class "B" Concrete, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7520	226	TN	For furnishing, placing and removing Temporary Paving (Hot Mix or High Performance Mix), complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		
7525	50	CY	For Flex Base (Crushed Rock) Alley Surface, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
7530	20	LF	For furnishing and placing Concrete Curb and/or Gutter, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
7560	159	CY	For furnishing and placing Crushed Rock for Temporary Paving Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7570	885	CY	For furnishing and placing Reinforced Concrete Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
7580	24	SY	For furnishing and placing Reinforced Concrete Sidewalk, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
7600	33	CY	For furnishing and placing Reinforced Concrete Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7655	22	TN	For furnishing and placing Hot Mix Asphalt Concrete Pavement, complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
7712	1	LS	For Storm Water Pollution Prevention Plan, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
8011	13,500	LF	For Construction Survey and Staking of Proposed Water and Wastewater Mains, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION					
8012	13,500	LF	For Construction Surveying and Staking of Proposed Street and Alley Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
20500	5	EA	For Investigation, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

END SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT

SCHEDULE B: UNIVERSITY HILLS BOULEVARD WASTEWATER MAIN INSTALLATION

SUMMARY OF BID FOR AWARD EVALUATION

CONTRACT NO. 20-505/506

SCHEDULE B: _____

TOTAL AMOUNT OF BID: SCHEDULE B:

(Items No. 3110J Thru 20500 Inclusive)$ _____

_____

_____ **DOLLARS**

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
1600H	130	LF	For furnishing and placing 6” Steel Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1600J	40	LF	For furnishing and placing 8” Steel Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1600L	2,640	LF	For furnishing and placing 12” Steel Water Pipe, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
1801H	230	LF	For furnishing and placing 6" Polyvinyl Chloride Water Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1801J	140	LF	For furnishing and placing 8" Polyvinyl Chloride Water Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
1801L	6,410	LF	For furnishing and placing 12" Polyvinyl Chloride Water Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
3111J	660	LF	For furnishing and placing 8" Polyvinyl Chloride Pressure Rated Wastewater Pipe with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3520K	450	LF	For Rehabilitation of Existing 10" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3520N	570	LF	For Rehabilitation of Existing 15" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
3520R	1,130	LF	For Rehabilitation of Existing 18" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
3540K	2	EA	For Point Repair of 10" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
3540N	2	EA	For Point Repair of 15" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
3540R	4	EA	For Point Repair of 18" Wastewater Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5050	14	EA	For furnishing and placing Water Service, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5061FxF	1	EA	For 4" Domestic Service with 4" Meter and Transfer, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
5091	18	EA	For furnishing and placing Install Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5092	13	EA	For furnishing and placing Removing Existing Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5093	13	EA	For furnishing and placing Deliver Fire Hydrant, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
5101H	21	EA	For furnishing and placing 6” Gate Valve with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5101J	3	EA	For furnishing and placing 8” Gate Valve with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5101L	41	EA	For furnishing and placing 12” Gate Valve with Nitrile Gaskets, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
5110QxL	1	EA	For furnishing and placing 16”x12” Tapping Sleeve, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5160AG	2	EA	For furnishing and placing 60” Diameter Water Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5300	2	EA	For furnishing and placing Deep Anode Cathodic Protection System, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
5310	3	EA	For furnishing and placing Corrosion Control Test Station, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5500L	84	LF	For 12” Water Main (BOTOC), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
5600	2	EA	For Cut and Plug Existing Water Main, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
5610	1	EA	For Cut and Plug Water Main for Test, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
5990J	40	LF	For 8" Wastewater Main (BOTOC), complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
6060	4	EA	For Wastewater Lateral, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
6120AE	8	EA	For furnishing, placing, and protecting 48" Diameter Pressure Type Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6120AG	2	EA	For furnishing, placing, and protecting 60" Diameter Pressure Type Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6125AE	1	EA	For furnishing, placing, and protecting 48" Diameter Pressure Type Drop Connection Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
6140	2	EA	For Abandon Existing Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6141	11	EA	For Vacuum Test for Wastewater Manhole, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		
6920	2,798	LF	For Television Inspection, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
6925	10,284	LF	For Trench Excavation Safety and Support, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
7030	40	CY	For furnishing and placing Rock Foundation, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7050	50	CY	For furnishing and placing Sand Foundation, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
7053	160	CY	For furnishing and placing Cement Stabilized Sand Backfill, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7071	35	CY	For furnishing and placing Class "B" Concrete, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7095	70	SY	For furnishing and placing Dry RIP RAP (Type A), complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
7520	300	TN	For furnishing, placing and removing Temporary Paving (Hot Mix or High Performance Mix), complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		
7560	575	CY	For furnishing and placing Crushed Rock for Temporary Paving Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7570	70	CY	For furnishing and placing Reinforced Concrete Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
7583	25	SY	For furnishing and placing Reinforced Concrete Driveway, complete in place, the sum of _____DOLLARS AND_____ CENTS per square yard		
7600	4,300	CY	For furnishing and placing Reinforced Concrete Base, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		
7655	3,000	TN	For furnishing, and placing Hot Mix Asphalt Concrete Pavement, complete in place, the sum of _____DOLLARS AND_____ CENTS per ton		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
7712	1	LS	For Storm Water Pollution Prevention Plan, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
7730	1	LS	For Disposal of Heavily Chlorinated Water Main Flushing Water, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
7766	3,200	CY	For Disposal of Class II Non-Hazardous Industrial Waste, complete in place, the sum of _____DOLLARS AND_____ CENTS per cubic yard		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
7767	10,000	GAL	For Disposal of Contaminated Groundwater, complete in place, the sum of _____DOLLARS AND_____ CENTS per gallon		
7768	1	LS	For Health, Safety, and Monitoring Plan, complete in place, the sum of _____DOLLARS AND_____ CENTS per lump sum		
8011	10,220	LF	For Construction Surveying and Staking of Proposed Water and Wastewater Mains, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		

ITEM NO.	QUAN-TITY	UNIT	DESCRIPTION AND PRICE IN WORDS	UNIT PRICE	TOTAL AMOUNT
SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LAND WATER AND WASTEWATER MAIN REPLACEMENTS					
8012	9,113	LF	For Construction Surveying and Staking of Proposed Street and Alley Paving, complete in place, the sum of _____DOLLARS AND_____ CENTS per linear foot		
20500	16	EA	For Investigation, complete in place, the sum of _____DOLLARS AND_____ CENTS per each		

END SCHEDULE C: LUNA ROAD FROM NORTHWEST HIGHWAY TO ROYAL LANE WATER AND WASTEWATER MAIN REPLACEMENTS

SUMMARY OF BID FOR AWARD EVALUATION
CONTRACT NO. 20-505/506

SCHEDULE C:

TOTAL AMOUNT OF BID: SCHEDULE C:
(Items No. 1600H Thru 20500 Inclusive)$_____

_____

_____ **DOLLARS**

SUMMARY OF BID FOR AWARD EVALUATION
CONTRACT NO. 20-505/506

SCHEDULE A THRU C

TOTAL AMOUNT OF BID: SCHEDULE A THRU C
(Items No. 1100F Thru 20500 Inclusive)$ _____

_____

_____ **DOLLARS**

TIME OF COMPLETION AS PER SPECIAL PROVISION S-7

I Acknowledge Receipt Of:

Addendum No.	_____	**Addendum No.**	_____
Addendum No.	_____	**Addendum No.**	_____
Addendum No.	_____	**Addendum No.**	_____

_____
Name of Bidder

THIS IS A SAMPLE CONTRACT FORM ONLY. THE ACTUAL CONTRACT MAY OR MAY NOT CONTAIN THE PROVISIONS HEREIN, DEPENDING ON THE SCOPE OF WORK.

PAYMENT BOND

STATE OF TEXAS §
§
COUNTY OF DALLAS §

KNOW ALL MEN BY THESE PRESENTS: That _____,

whose address is _____, hereinafter called

Principal, and _____, a corporation organized

and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, as Surety, are held and firmly bound unto the City of Dallas, a municipal corporation organized and existing under the laws of the State of Texas, hereinafter called Owner, and unto all persons, firms, and corporations who may furnish materials for, or perform labor upon the building or improvements hereinafter referred to, in the penal sum of _____ DOLLARS ($_____) in lawful money ofthe United States, to be paid in Dallas County, Texas, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors jointly and severally, firmly by these presents. This Bond shall automatically be increased by the amount of any Change Order or Supplemental Agreement which increases the Contract price, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decrease the penal sum of this Bond.

THE OBLIGATION TO PAY SAME is conditioned as follows: Whereas, the Principal entered into a certain Contract, identified by Resolution No. _____, with the City of Dallas, the Owner, dated the ___ day of _____, A.D. 20__, a copy of which is hereto attached and made a part hereof, for _____.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties and make prompt payment to all persons, firms, subcontractors, corporations and claimants supplying labor and/or material in the prosecution of the Work provided for in said Contract and any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modification to the Surety is hereby expressly waived, then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED FURTHER, that if any legal action be filed on this Bond, exclusive venue shall lie in Dallas County, Texas.

AND PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the Contract, or to the Work performed thereunder, or the Plans, Specifications, Drawings, etc., accompanying the same, shall in anywise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract, or to the Work to be performed thereunder.

THIS IS A SAMPLE CONTRACT FORM ONLY. THE ACTUAL CONTRACT MAY OR MAY NOT CONTAIN THE PROVISIONS HEREIN, DEPENDING ON THE SCOPE OF WORK.

This Bond is given pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended, and any other applicable statutes of the State of Texas.

The undersigned and designated agent is hereby designated by the Surety herein as the Resident Agent in Dallas County to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship, as provided by Section 3503.003 of the Insurance Code, Vernon's Texas Codes Annotated.

THE ADDRESS OF THE SURETY TO WHICH ANY NOTICE OF CLAIM SHOULD BE SENT MAY BE OBTAINED FROM THE TEXAS DEPARTMENT OF INSURANCE IN AUSTIN, TEXAS BY CALLING THE FOLLOWING TOLL-FREE TELEPHONE NUMBER: 1-800-252-3439.

IN WITNESS WHEREOF, this instrument is executed in _____ copies, each one of which shall be deemed an original, this day of , 20____.

ATTEST: PRINCIPAL:

BY_____ BY_____
Secretary President

ATTEST: SURETY:

BY_____ BY_____
Attorney-in-Fact

The Resident Agent of the Surety in Dallas County, Texas, for delivery of notice and service of the process is:

NAME: _____

STREET ADDRESS: _____

(**NOTE:** Date of Payment Bond must be date of Contract. If Resident Agent is not a corporation, give a **person's** name.)

THIS IS A SAMPLE CONTRACT FORM ONLY. THE ACTUAL CONTRACT MAY OR MAY NOT CONTAIN THE PROVISIONS HEREIN, DEPENDING ON THE SCOPE OF WORK.

PERFORMANCE BOND

STATE OF TEXAS §
§
COUNTY OF DALLAS §

KNOW ALL MEN BY THESE PRESENTS: That _____, whose address is _____, hereinafter called Principal, and _____, a corporation organized and existing under the laws of the State of _____, and fully authorized to transact business in the State of Texas, as Surety, are held and firmly bound unto the City of Dallas, a municipal corporation organized and existing under the laws of the State of Texas, hereinafter called Owner, in the penal sum of _____ DOLLARS ($_____) plus 10 percent of the stated penal sum as an additional sum of money representing additional court expenses, attorneys' fees, and liquidated damages arising out of or connected with the below identified Contract in lawful money of the United States, to be paid in Dallas County, Texas, for the payment of which sum well and truly to be made, we hereby bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents. This Bond shall automatically be increased by the amount of any Change Order or Supplemental Agreement which increases the Contract price, but in no event shall a Change Order or Supplemental Agreement which reduces the Contract price decrease the penal sum of this Bond.

THE OBLIGATION TO PAY SAME is conditioned as follows:
Whereas, the Principal entered into a certain Contract, identified by Resolution No. _____, with the City of Dallas, the Owner, dated the day of _____, A.D. 20____, a copy of which is hereto attached and made a part hereof, for

_____

_____.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform and fulfill all of the undertakings, covenants, terms, conditions and agreements of said Contract in accordance with the plans, specifications and Contract Documents during the original term thereof and any extension thereof which may be granted by the Owner, with or without notice to the Surety, and during the life of any guaranty or warranty required under this Contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said Contract that may hereafter be made, notice of which modifications to the Surety being hereby waived; and, if the Principal shall repair and/or replace all defects due to faulty materials and workmanship that appear within a period of one (1) year from the date of final completion and final acceptance of the Work by Owner; and, if the Principal shall fully indemnify and save harmless the Owner from all costs and damages which Owner may suffer by reason of failure to so perform herein and shall fully reimburse and repay Owner all outlay and expense which the Owner may incur in making good any default or deficiency, then this obligation shall be void; otherwise, it shall remain in full force and effect.
PROVIDED FURTHER, that if any legal action be filed upon this Bond, exclusive venue shall lie in Dallas County, State of Texas.

THIS IS A SAMPLE CONTRACT FORM ONLY. THE ACTUAL CONTRACT MAY OR MAY NOT CONTAIN THE PROVISIONS HEREIN, DEPENDING ON THE SCOPE OF WORK.

AND PROVIDED FURTHER, that the said Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the Work to be performed thereunder or the Specifications accompanying the same shall in anywise affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications.

This Bond is given pursuant to the provisions of Chapter 2253 of the Texas Government Code, as amended, and any other applicable statutes of the State of Texas.

The undersigned and designated agent is hereby designated by the Surety herein as the Resident Agent in Dallas County to whom any requisite notices may be delivered and on whom service of process may be had in matters arising out of such suretyship, as provided by Section 3503.003 of the Insurance Code, Vernon's Texas Codes Annotated.

THE ADDRESS OF THE SURETY TO WHICH ANY NOTICE OF CLAIM SHOULD BE SENT MAY BE OBTAINED FROM THE TEXAS DEPARTMENT OF INSURANCE IN AUSTIN, TEXAS BY CALLING THE FOLLOWING TOLL-FREE TELEPHONE NUMBER: 1-800-252-3439.

IN WITNESS WHEREOF, this instrument is executed in copies, each one of which shall be deemed an original, this day of, **20____**.

ATTEST:

BY_____
Secretary

PRINCIPAL:

BY_____
President

ATTEST:

BY_____

SURETY:

BY_____
Attorney-in-Fact

THIS IS A SAMPLE CONTRACT FORM ONLY. THE ACTUAL CONTRACT MAY OR MAY NOT CONTAIN THE PROVISIONS HEREIN, DEPENDING ON THE SCOPE OF WORK.

The Resident Agent of the Surety in Dallas County, Texas, for delivery of notice and service of process is:

NAME: _____

STREET ADDRESS: _____

_____

(**NOTE:** Date of Performance Bond must be date of Contract. If Resident Agent is not a corporation, give a **person's** name.)