

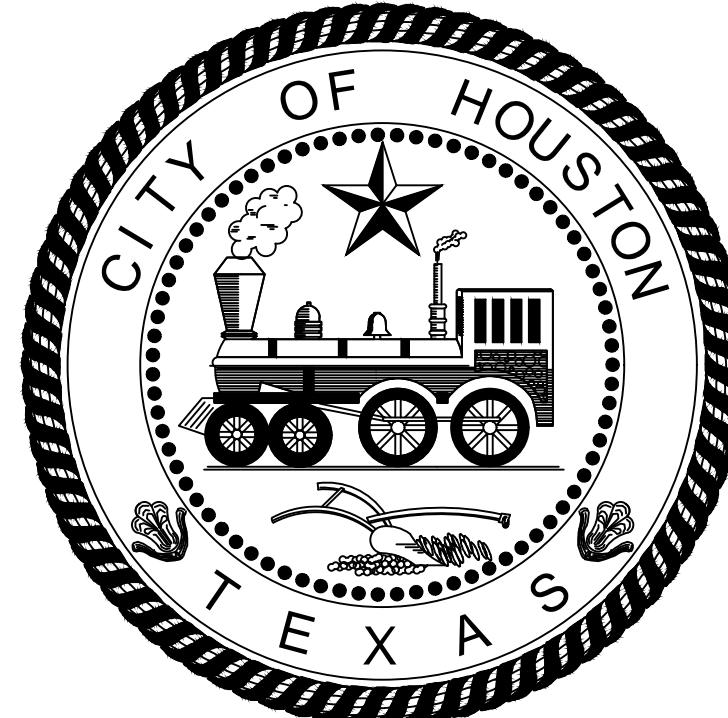
# CITY OF HOUSTON HOUSTON PUBLIC WORKS CAPITAL PROJECTS GRAVITY SEWER LINE ADJUSTMENT

WBS NO. R-002011-0096-3

## LOCATION MAP

VICINITY MAP  
KEY MAP NO ### X  
GIMS MAP NO ### X

NWP Permit No. \_\_\_\_\_  
HCFCD Permit No. \_\_\_\_\_  
TDLR EABPR \_\_\_\_\_



MAYOR  
JOHN WHITMIRE

CONTROLLER  
CHRIS HOLLINS

## DISTRICT COUNCIL MEMBERS

AMY PECK DISTRICT A	TARSHA JACKSON DISTRICT B	ABBIE KAMIN DISTRICT C	CAROLYN EVANS-SHABAZZ DISTRICT D
FRED FLICKINGER DISTRICT E	TIFFANY D. THOMAS DISTRICT F	MARY NAN HUFFMAN DISTRICT G	MARIO CISNEROS DISTRICT H
JOAQUIN MARTINEZ DISTRICT J	EDWARD POLLARD DISTRICT L	MARTHA CASTEX-TATUM DISTRICT K	

## COUNCIL MEMBERS AT-LARGE

JULIAN RAMIREZ POSITION 1	WILLIE DAVIS POSITION 2
TWILA CARTER POSITION 3	LETITIA PLUMMER POSITION 4
SALLIE ALCORN POSITION 5	

 <p>617 Caroline St., #7002 Houston, TX 77002 Ph: 832.242.2426 Fax: 832.242.2445 Firm Reg. # F-004270</p>		 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER <i>Michael J. Bagstad 3-23</i></p>
<p>SURVEYED BY: TSC SURVEYING FB NO. 10083100</p>		
<hr/> <p>PARKS-FORESTRY DEPT.</p> <hr/>		
<hr/> <p>METRO</p> <hr/>		
<hr/> <p>HOUSTON WATER</p> <hr/>		
<hr/> <p>TRANSPORTATION &amp; DRAINAGE OPERATIONS</p> <hr/>		
<p>CAPITAL PROJECTS</p>		<p>SURVEY</p>
<p>CITY ENGINEER</p>		<p>DATE</p>
<p>DIRECTOR OF</p>		<p>DATE</p>
<p>HOUSTON PUBLIC WORKS</p>		
<p>SHEET NO 01 OF 35 SHEETS</p>		

**CONSTRUCTION IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY REQUIREMENTS**

SITE PLANS MUST BE APPROVED PRIOR TO OBTAINING THE REQUIRED HCFCD RIGHT-OF-WAY NOTIFICATION. BE ADVISED THAT THE HCFCD RIGHT-OF-WAY NOTIFICATION IS SEPARATE FROM THE SITE DEVELOPMENT PERMIT PACKAGE.

1) HCFCD RIGHT-OF-WAY NOTIFICATION (PERMIT)  
2) HCFCD 48-HR PRE-CONSTRUCTION NOTICE

BOTH ARE REQUIRED PRIOR TO ENTERING OR WORKING WITHIN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY. THE HCFCD RIGHT-OF-WAY NOTIFICATION AND 48-HR NOTICE MUST BE PROVIDED TO HCFCD at [dci@hcfcd.org](mailto:dci@hcfcd.org).

TO APPLY FOR THE HCFCD RIGHT-OF-WAY NOTIFICATION PLEASE GO TO <http://apps.harriscountytx.gov/EPermits> AND APPLY FOR THE HCFCD ROW UNDER ROW NOTIFICATION.

FAILURE TO PROVIDE BOTH ITEMS COULD RESULT IN PROJECT DELAYS.

GENERAL SHEETS

1. COVER
2. INDEX SHEET
3. GENERAL NOTES
4. GENERAL NOTES (CONTINUED)
5. GENERAL NOTES (CONTINUED)
6. ABBREVIATIONS
7. SURVEY CONTROL MAP (SHEET 1 OF 2)
8. SURVEY CONTROL MAP (SHEET 2 OF 2)
9. SANITARY SEWER EASEMENT LAYOUT
10. BORE HOLES LOCATION
11. BORE HOLES LOGS
12. PIPELINE INFORMATION
13. DEMOLITION PLAN (SHEET 1 OF 3)
14. DEMOLITION PROFILE – BEGIN PROJECT STA 0+80.59 TO STA 03+88.06 (SHEET 2 OF 3)
15. DEMOLITION PROFILE – STA. 03+88.06 TO STA. 05+68.51 (SHEET 3 OF 3)

SANITARY SEWER

16. OVERALL LAYOUT
17. PLAN – BEGIN PROJECT STA. 0+80.59 TO STA. 03+88.06
18. PROFILE – BEGIN PROJECT STA. 0+80.59 TO STA. 03+88.06
19. PLAN – STA. 03+88.06 TO STA. 05+68.51
20. PROFILE – STA. 03+88.06 TO STA. 05+68.51
21. CROSS SECTIONS STA. 0+80.59 TO STA. 02+00 (SHEET 1 OF 3)
22. CROSS SECTIONS STA. 02+50 TO STA. 04+00 (SHEET 2 OF 3)
23. CROSS SECTIONS STA. 04+50 TO STA. 05+68.51 (SHEET 3 OF 3)
24. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 1 OF 6)
25. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 2 OF 6)
26. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 3 OF 6)
27. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 4 OF 6)
28. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 5 OF 6)
29. C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 6 OF 6)

TRAFFIC CONTROL

30. TRAFFIC CONTROL PLAN PHASE 1 ACCESS ROAD TO MERTO CENTRAL WWTP
31. TRAFFIC CONTROL PLAN PHASES 2, 3 AND 4 STATE HWY 3
32. BARRICADE AND CHANNELIZING DEVICES

SWPPP AND STANDARDS

33. STORM WATER POLLUTION PREVENTION PLAN
34. STORM WATER POLLUTION PREVENTION PLAN DETAILS (NOT TO SCALE)

RAIL ROAD CROSSING STANDARDS

35. RAILROAD CROSSING, PLAN & PROFILE

 <b>ZARINKELK ENGINEERING SERVICES, INC.</b> 617 Caroline St. Houston, TX 77002 Phone (832) 242-2402 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	 <b>STATE OF TEXAS PROFESSIONAL ENGINEER MICHAEL J. BAGSTAD 81193</b> <i>Michael J. Bagstad P.E. Registered 10/8/2025</i>
<b>SURVEYED BY: TSC SURVEYING FB NO. 10083100</b>	
<b>CITY OF HOUSTON HOUSTON PUBLIC WORKS</b>	
<b>GRAVITY SEWER LINE ADJUSTMENT</b>	
<b>INDEX SHEET</b>	
<b>WBS NUMBER</b>	
R-002011-0096-3	
<b>DRAWING SCALE</b>	
N/A	
<b>CITY OF HOUSTON PM</b>	
MARIA GEORGE, P.E.	
<b>SHEET NO. 02 OF 35</b>	
<b>FOR CITY OF HOUSTON USE ONLY</b>	

**GENERAL CONSTRUCTION NOTES:**

1. CONSTRUCT WASTEWATER COLLECTION SYSTEMS, IN ACCORDANCE WITH THE LATEST EDITION OF THE PUBLICATIONS STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEMS, AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
2. THE GEOTECHNICAL INVESTIGATION FOR THIS PROJECT WAS CONDUCTED IN ACCORDANCE WITH CHAPTER 11 OF THE LATEST EDITION OF THE PUBLICATION INFRASTRUCTURE DESIGN MANUAL, PUBLISHED BY THE CITY OF HOUSTON, DEPARTMENT OF THE PUBLIC WORKS AND ENGINEERING. SOILS REPORT WAS PREPARED BY HVJ ASSOCIATES. REPORT NO. 1140230801 DATED MARCH 3, 2022 (DRAFT).
3. UTILITIES PRESENTED ON THESE DRAWINGS ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL NOTIFY TEXAS ONE CALL AT 713-223-4567/811 OR 800-669-8344 AT LEAST 48 HOURS BEFORE PROCEEDING WITH ANY EXCAVATION. UTILITIES MARKED WITHIN THE PUBLIC RIGHT OF WAY OR IN EASEMENTS SHALL COMPLY WITH TAC TITLE 16, PART 1, CHAPTER 18, RULE §18.6 AND THE AMERICAN PUBLIC WORKS ADMINISTRATION (APWA) UNIFORM COLOR CODE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING WATER, WASTEWATER, STORM WATER LINES AND TRAFFIC CONTROL DEVICES. DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S STANDARD CONSTRUCTION SPECIFICATIONS FOR WASTEWATER COLLECTION SYSTEM, WATER LINES, STORM DRAINAGE, AND STREET PAVING AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE, AND STREET PAVING, REFERENCED ABOVE, AT NO ADDITIONAL COST.
5. CONTRACTOR SHALL NOTIFY THE OFFICE OF THE CITY ENGINEER, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING @ 832-394-9098 OR VIA FAX AT 832-395-4424 FOR INSPECTION AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
6. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER.
7. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
8. CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
9. CONTRACTOR SHALL MAINTAIN A SET OF REDLINE DRAWINGS AND RECORD AS-BUILT CONDITIONS DURING CONSTRUCTION. THESE REDLINE MARKED UP DRAWINGS WILL BE SUBMITTED TO THE DESIGN CONSULTANT WHO WILL MAKE THE CHANGES ON THE ORIGINAL TRACINGS, LABEL EACH SHEET IN THE SET AS "RECORD DRAWINGS", AND RETURN IT TO THE OFFICE OF THE CITY ENGINEER.
10. INSTALL Dewatering SYSTEM IF REQUIRED TO LOWER THE WATER TABLE DURING CONSTRUCTION OF UNDERGROUND STRUCTURES AND LINES.
11. EXISTING UTILITIES ARE TO REMAIN IN SERVICE AT ALL TIMES. CONTRACTOR TO UTILIZE TEMPORARY BYPASS PUMPING OR WET HAULING, AS NECESSARY, TO MAINTAIN SANITARY SEWER SERVICE.
12. UTILITY SERVICE LINES ARE NOT SHOWN ON THE DRAWINGS. CONTRACTOR SHALL ANTICIPATE THAT SUCH SERVICE LINES EXIST AND REPAIR THEM IF DAMAGED DURING CONSTRUCTION. NO SEPARATE PAY WILL BE MADE FOR REPAIRS. THE COST SHALL BE INCIDENTAL TO THE WORK.
13. THE LOCATION OF ALL UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY. THE CONTRACTOR SHALL LOCATE UTILITIES PRIOR TO CONSTRUCTION BY WHATEVER MEANS MAY BE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY UTILITY INVESTIGATION. NOTIFY ENGINEER IF EXISTING UTILITIES CONFLICT WITH PROPOSED UTILITIES.
14. WORK SHAFTS FOR TUNNELING OR AUGERING OPERATION SHALL BE BORDED BY A SECURITY FENCE, OR PROTECTED FROM THE PUBLIC BY OTHER MEANS AS APPROVED BY THE ENGINEER, WHEN NOT IN USE. COVER SHAFTS WITH STEEL PLATES WHEN NOT IN USE.
15. THE CONTRACTOR IS TO DETERMINE THE LOCATION OF AUGER PITS/TUNNEL SHAFTS IN THE FIELD. PROPOSED PIT LOCATIONS ARE SUBJECT TO REGULATORY AGENCY REQUIREMENTS.

**CENTERPOINT ENERGY:****CAUTION: UNDERGROUND GAS FACILITIES**

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY INTRASTATE PIPELINE, LLC WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION, IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567 OR 1-800-669-8344 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

**CENTERPOINT ENERGY: (CONT)**

- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 945-8036 OR (713) 945-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
- FOR EMERGENCIES REGARDING GAS LINES CALL (713) 659-3552 OR (713) 207-4200.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

**CAUTION: OVERHEAD ELECTRICAL LINES**

OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY;

- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES AND WILL OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

THE PLANS HAVE BEEN MARKED TO INDICATE THE APPROXIMATE LOCATION OF THE EXISTING UNDERGROUND RESIDENTIAL/STREET-LIGHTING ELECTRICAL FACILITIES THAT MAY CONFLICT WITH CONSTRUCTION. CONTRACTORS SHALL NOT BEGIN CONSTRUCTION UNTIL CENTERPOINT ENERGY UNDERGROUND FACILITIES HAVE BEEN LOCATED AND STAKED. CONTRACTOR SHALL ALSO BE AWARE THAT THERE MAY BE CUSTOMER OWNED UNDERGROUND FACILITIES IN THE AREA WHICH WOULD NOT BE REFLECTED IN OUR RECORDS, AND WHICH WILL NOT BE STAKED BY OUR PERSONNEL TO STAKE OUR UNDERGROUND FACILITIES. PLEASE CALL THE UTILITY COORDINATION COMMITTEE AT (713) 223-4567 OR 1-800-669-8344 AT LEAST 48 HOURS BEFORE STARTING EXCAVATION.

HAND DIG WITHIN ONE (1) FOOT OF CENTERPOINT ENERGY UNDERGROUND CONDUIT OR CABLE SYSTEMS.

OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY A CONFLICT ANALYSIS HAS BEEN MADE.

**ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY**

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

**AT&T TEXAS/SWBT FACILITIES NOTES:**

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWBT FACILITIES.
4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713)567-4552 OR E-MAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

**SWPPP CONSTRUCTION NOTES:**

1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPP) PLANS TO KEEP SILT AND OR EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.

**SWPPP CONSTRUCTION NOTES: (CONT)**

2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATION MATERIAL CAN BE QUICKLY HAULED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALLS ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEP BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FORM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.

- DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
- AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
- STRUCTURAL CONTROL MEASURES.
- LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.

6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

**GRADING NOTES**

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE STARTING CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. BEFORE STARTING CONSTRUCTION, CONTRACTOR SHALL VERIFY BENCHMARK ELEVATION AND NOTIFY ENGINEER IF ANY DISCREPANCY AND/OR CONFLICT IS FOUND.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.

5. ALL EXISTING CONCRETE PAVING, SIDEWALK, AND CURB DEMOLITION SHALL BE REMOVED AND DISPOSED OF BY CONTRACTOR. DISPOSAL SHALL BE AT AN APPROVED OFF-SITE, LAWFUL LOCATION, UNLESS DIRECTED OTHERWISE BY THE OWNER.

**DEFINITIONS – EXXON MOBIL**

THE FOLLOWING DEFINITIONS SHALL APPLY FOR THESE CONDITIONS:

**1.1 EMPCO – EXXON MOBIL PIPELINE COMPANY**

- 1.2 CODES – APPLICABLE REGULATIONS, STANDARDS AND REQUIREMENTS OF GOVERNMENTAL AND INDUSTRIAL ORGANIZATIONS, INCLUDING, BUT NOT LIMITED TO, UNITED STATES DEPARTMENT OF TRANSPORTATION (DOT), THE TEXAS RAILROAD COMMISSION (TRRC), THE AMERICAN PETROLEUM INSTITUTE THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI), THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), THE NATIONAL ELECTRIC CODE (NEC) AND ANY VALID AND ENFORCEABLE RESTRICTIONS, APPLICABLE TO THE CORRIDORS, RECORDED IN THE OFFICIAL PUBLIC RECORDS OF REAL PROPERTY OF HARRIS COUNTY, TEXAS.

- 1.3 GOVERNING AGENCIES – STATE, COUNTY AND CITY HIGHWAY DEPARTMENTS, NAVIGATION DISTRICTS, DRAINAGE DISTRICTS, U.S. BUREAU OF PUBLIC ROADS, CORPS OF ENGINEERS, DOT, TRRC, AND ALL OTHER SIMILAR ENTITIES HAVING JURISDICTION OVER EMPCO CORRIDORS.

- 1.4 CORRIDORS – LANDS NOW OR HEREAFTER SET ASIDE BY EMPCO FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF PIPELINE FACILITIES AND DESIGNATED BY EMPCO AS PIPELINE CORRIDORS.

**1.5 PIPELINE – GRAVITY SANITARY SEWER****1.6 PIPELINE OWNER – THOSE OWNING PIPELINES LOCATED IN THE CORRIDORS. CITY OF HOUSTON**

- 1.7 GENERAL CONDITIONS – THESE GENERAL CONDITIONS FOR CONSTRUCTING, OPERATING, AND MAINTAINING PIPELINES WITHIN EMPCO'S CORRIDORS AS SET FORTH HEREIN OR AS REVISED FROM TIME TO TIME BY EMPCO.

**DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE**

- 5.1 EACH PIPELINE OWNER SHALL USE THE CORRIDORS IN A WAY THAT WILL PERMIT SAFE OPERATION AND OPTIMUM UTILIZATION OF AVAILABLE SPACE IN THE CORRIDORS.

- 5.2 ALL PIPELINES AND RELATED FACILITIES INSTALLED BY PIPELINE OWNER WITHIN THE CORRIDOR SHALL BE DESIGNED, CONSTRUCTED, TESTED, OPERATED, AND MAINTAINED IN ACCORDANCE WITH ALL APPLICABLE LAWS, RULES, REGULATIONS AND CODES INCLUDING WITHOUT LIMITATION, DOT REGULATIONS PUBLISHED IN 49 CFR PART 195, TRANSPORTATION OF HAZARDOUS LIQUIDS BY PIPELINE, OR 49 CFR PART 192, TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE. THESE DOT REGULATIONS, AND/OR OTHER APPLICABLE CODES, WILL SERVE AS MINIMUM STANDARDS FOR PIPELINES TO BE CONSTRUCTED IN THE CORRIDORS. EMPCO RESERVES THE RIGHT TO SPECIFY ADDITIONAL REQUIREMENTS OR RESTRICTIONS AS EMPCO DEEMS NECESSARY OR APPROPRIATE TO ASSURE SAFE OPERATION AND MAINTENANCE OF PIPELINES IN THE CORRIDOR. PIPELINE OWNER SHALL ALSO COMPLY WITH ANY MORE STRINGENT CODES APPLICABLE TO THE DESIGN, CONSTRUCTION, TESTING, OPERATION AND/OR MAINTENANCE OF PIPELINE OWNER'S PIPELINES IN EMPCO'S CORRIDORS, WHICH MAY BECOME EFFECTIVE AFTER THE DATE OF THIS INSTRUMENT.

- 5.3 PIPELINE OWNER AND ITS CONTRACTORS PERFORMING WORK IN THE CORRIDORS SHALL DESIGN, CONSTRUCT, AND MAINTAIN PIPELINES AND OTHER FACILITIES AND CONDUCT ALL OPERATIONS IN THE CORRIDORS IN A CAREFUL AND PRUDENT MANNER, UTILIZING SAFETY PRACTICES NORMALLY FOLLOWED BY PRUDENT OPERATORS UNDER SIMILAR CIRCUMSTANCES. MATS SHALL BE USED DURING WET/MUDDY CONDITIONS TO ENSURE THE CORRIDOR INTEGRITY IS MAINTAINED THROUGHOUT CONSTRUCTION ACTIVITIES.

- 5.4 PIPELINE OWNER AND ITS CONTRACTORS PERFORMING WORK IN THE CORRIDORS SHALL COMPLY WITH THE ATTACHED DRUG AND ALCOHOL REQUIREMENTS SET OUT IN ATTACHMENT 2. (FOR PURPOSES OF THIS SPECIFICATION, THE TERM "CONTRACTOR" AS USED IN ATTACHMENT 2 REFERS TO THE PIPELINE OWNER AND ITS CONTRACTORS.)

- 5.5 PRIOR TO COMMENCING ANY EXCAVATION ACTIVITY IN THE CORRIDORS, ANY PIPELINE OWNER OR CONTRACT PERSONNEL WHO ARE OPERATING EXCAVATION EQUIPMENT IN THE CORRIDORS, INCLUDING BUT NOT LIMITED TO BACKHOES, TRACKHOES, DOZERS, AND OTHER EXCAVATION EQUIPMENT SHALL BE RESPONSIBLE FOR SCHEDULING AND ATTENDING AN EMPCO SPONSORED CORRIDOR SAFETY ORIENTATION (CSO). SESSIONS WILL BE HELD AT EMPCO'S BAYPORT OFFICE OR OTHER LOCATION SPECIFIED BY EMPCO. PARTICIPATION IN THE CSO MAY BE WAIVED UPON WRITTEN AUTHORIZATION FROM EMPCO. IT IS THE RESPONSIBILITY OF THE PIPELINE OWNER AND CONTRACTOR TO ENSURE THAT EXCAVATION EQUIPMENT OPERATORS ARE QUALIFIED.

- 5.6 IN THE DESIGN AND SELECTION OF PIPE, CONSIDERATION SHALL BE GIVEN TO LOADS DUE TO CONSTRUCTION AND MAINTENANCE ACTIVITIES IN THE CORRIDOR. MINIMUM REQUIREMENTS FOR PIPE WALL THICKNESS ARE SPECIFIED IN THE WALL THICKNESS TABLE, ATTACHMENT 1. MAXIMUM HOOP STRESS DUE TO INTERNAL PRESSURE SHALL BE 50 PERCENT OF THE SPECIFIED MINIMUM YIELD STRENGTH OF THE PIPE.

- 5.7 PIPELINE OWNER SHALL FURNISH SUCH DESIGN, CONSTRUCTION, TESTING, OPERATING AND/OR MAINTENANCE DATA AS EMPCO MAY REQUEST SO THAT OPTIMUM LINE LOCATION AND CROSSING REQUIREMENTS CAN BE ASSURED. THIS DATA SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, THE INFORMATION SPECIFIED IN THE PIPELINE ENTRY TO CORRIDOR REQUEST FORM.

- 5.8 THE USE OF DIRECTIONAL DRILLING FOR CROSSINGS IS DISCOURAGED, HOWEVER, EXCEPTIONS WILL BE CONSIDERED ON A CASE BY CASE BASIS.

- 5.9 PIPELINE OWNER SHALL NOT CHANGE ANY OF THE OPERATING PARAMETERS (PRODUCTS, MOP, VALVE CHANGE, ETC.) FOR ANY PIPELINE WITHIN CORRIDORS SUBJECT TO THIS DOCUMENT WITHOUT FIRST NOTIFYING EMPCO IN WRITING OF SUCH PROPOSED CHANGE AND RECEIVING WRITTEN APPROVAL FROM EMPCO FOR ANY SUCH CHANGE. PIPELINE OWNER AGREES TO PERFORM VARIOUS INSPECTION, TESTING AND MAINTENANCE ACTIVITIES SPECIFIED BY EMPCO AS MAY BE NECESSARY OR APPROPRIATE TO ASSURE SAFE OPERATION AND MAINTENANCE OF THE PIPELINE OR OF THE CORRIDOR. EMPCO RESERVES THE RIGHT, WITHOUT PIPELINE OWNER APPROVAL, TO PERFORM CORROSION CONTROL TESTS AND OTHER TESTS AND INSPECTIONS ON PIPELINE OWNER'S PIPELINE ASSOCIATED WITH MAINTAINING THE PHYSICAL INTEGRITY OF PIPELINES IN THE CORRIDOR.

- 6.1 EXCEPT IN THE CASE OF A BONA FIDE EMERGENCY, PIPELINE OWNER SHALL NOTIFY EMPCO BY CALLING 925-3816 AT LEAST FORTY-EIGHT HOURS IN ADVANCE OF INITIATING ANY ACTIVITIES WITHIN THE CORRIDORS WHICH INVOLVE EXCAVATION OR OTHER WORK BELOW GROUND LEVEL, AND SHALL GIVE EMPCO THE OPPORTUNITY TO HAVE A REPRESENTATIVE PRESENT DURING ANY SUCH ACTIVITY. FOR AN EMERGENCY, PIPELINE OWNER SHALL NOTIFY THE EMPCO OPERATIONS CONTROL CENTER AT (800) 537-5200 AS TO THE NATURE OF THE EMERGENCY.

- 6.2 EACH PIPELINE OWNER SHALL BE RESPONSIBLE FOR ALL EMERGENCY REPAIR AND CLEAN UP OPERATIONS ARISING OUT OF INCIDENTS OCCURRING ON PIPELINE OWNER'S PIPELINES AND RELATED FACILITIES IN THE CORRIDOR. PIPELINE OWNER SHALL DEVELOP WRITTEN RESPONSE PLANS THAT ARE DESIGNED WITH THE OBJECTIVE OF PROVIDING PROCEDURES TO BE EXECUTED BY THE PIPELINE OWNER FOR THE PROTECTION OF PEOPLE, PROPERTY (INCLUDING OTHER PIPELINE OWNERS' PROPERTY IN THE CORRIDOR), AND THE ENVIRONMENT DUE TO AN EMERGENCY.

- 6.3 PIPELINE OWNER'S RESPONSE PLANS SHALL INCLUDE, BUT MAY NOT BE LIMITED TO, SPECIFIC PROCEDURES WHICH COVER EMERGENCY PREPAREDNESS PROCEDURES FOR PUBLIC SAFETY, EVACUATION, SPILL CONTAINMENT, REPAIRS AND CLEAN UP. THESE RESPONSE PLANS ALSO SHALL INCLUDE SPECIFIC RESPONSE PROCEDURES, WHICH COVER ENVIRONMENTAL REHABILITATION, CORRIDOR RECLAMATION, DISPOSAL OF CONTAMINATED SOIL AND CLEAN UP MATERIALS, AND THE SAFE RESUMPTION OF NORMAL PIPELINE SYSTEM OPERATIONS. IN GENERAL, THESE PROCEDURES SHOULD BE FOLLOWED BY THE PIPELINE OWNER FROM THE FIRST INDICATION OF AN EMERGENCY UNTIL SAFE CONDITIONS ARE RE-ESTABLISHED, THE PIPELINE OR RELATED FACILITIES ARE RETURNED TO SERVICE, AND ALL REPAIRS, INCLUDING REPAIRS TO OTHER PIPELINE OWNERS' FACILITIES WITHIN THE CORRIDORS, AND CLEAN UP HAVE BEEN COMPLETED.

- 6.4 PIPELINE OWNER SHALL COMPLETE THE ENTIRE REPAIR, CLEAN UP AND CORRIDOR RECLAMATION OPERATIONS IN A CAREFUL AND WORKMAN LIKE MANNER, AND SHALL PROPERLY DISPOSE OF ANY CONTAMIN

## 7.0 NOTIFICATION AND CONSTRUCTION REQUIREMENTS (CONT)

7.6 EACH WORK SITE, WHERE EXCAVATION OR CONSTRUCTION ACTIVITIES OCCUR WITHIN 25 FEET OF AN EMPCO LINE, REQUIRES AN EMPCO INSPECTOR TO BE ON-SITE AT ALL TIMES. ONLY THE PREDETERMINED AND AGREED UPON AMOUNT OF EMPCO INSPECTORS WILL BE ON SITE COVERING THE EXCAVATIONS WITHIN 25 FEET. EXAMPLE: IF A CORRIDOR JOB HAS TWO INSPECTORS ON SITE, THIS WOULD ALLOW FOR A MAXIMUM OF TWO AREAS OF EXCAVATION WITHIN 25 FEET OF EMPCO'S PIPELINES. A THIRD PARTY EXCAVATION SAFE WORK CHECKLIST WILL BE COMPLETED DAILY BY THE EMPCO INSPECTOR PRIOR TO THE START OF EXCAVATION. SOFT TRENCH EXCAVATION WILL BE REQUIRED WHEN REQUESTED BY EMPCO. THE EXCAVATOR WILL INSTALL A BAR ACROSS THE TEETH OF THE BUCKET BEFORE EXCAVATION. VARIATIONS TO THIS REQUIREMENT MAY BE GRANTED ON A CASE BY CASE BASIS.

7.7 ALL HEAVY EQUIPMENT WILL HAVE A SPOTTER WITH IT AT ALL TIMES WHILE WORKING ON COMPANY OWNED PROPERTY. BUCKET DIGGING WILL NOT BE ALLOWED UNLESS THE SPOT HAS BEEN THOROUGHLY PROBED TO ENSURE PROTECTION OF UNDERGROUND ASSETS.

7.8 MECHANICAL EXCAVATION WILL CEASE ONCE THE EARTH HAS BEEN REMOVED TO WITHIN EIGHTEEN INCHES OF EMPCO'S PIPELINE. THE TOLERANCE ZONE WILL INCREASE TO TWENTY-FOUR INCHES AT KNOWN APPURTENANCES AND AT ALL VALVE/STOPPLE SITES UNTIL THE APPURTENANCE IS EXPOSED. SHOVELS WILL BE USED TO MANUALLY CLEAN THE AREAS ABOVE AND BELOW THE LINE. AFTER THE EMPCO LINE HAS BEEN INITIALLY LOCATED, THE LINE SHALL BE KEPT VISIBLE TO THE EQUIPMENT OPERATOR DURING THE EXCAVATION PROCESS. MECHANICAL DIGGING WILL NOT BE ALLOWED CLOSER THAN 6 INCHES FROM THE SIDE AND BOTTOM OF THE PIPELINE AFTER THE LINES HAS BEEN EXPOSED PER THE ABOVE PROCEDURE. NO PERPENDICULAR DIGGING WILL OCCUR TO INITIALLY EXPOSE THE PIPELINE UNLESS THERE ARE NO OTHER OPTIONS.

## 8.0 CROSSINGS

8.1 PRIOR TO APPLICATION BY PIPELINE OWNER TO RAILROADS OR GOVERNING AGENCIES FOR CONSTRUCTION PERMITS FOR CROSSING RAILROADS, HIGHWAYS, STREAMS AND OTHER PUBLIC WAYS WITHIN THE CORRIDORS, PIPELINE OWNER SHALL OBTAIN EMPCO'S WRITTEN APPROVAL AS TO LOCATION, DESIGN AND CONSTRUCTION METHODS.

8.2 PIPELINE OWNER AND ITS CONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING AND COMPLYING WITH ALL PERMIT REQUIREMENTS AND FOR OBTAINING NECESSARY PERMITS. EMPCO MAY REQUIRE THAT TEMPORARY SHEET PILING BE INSTALLED OR OTHER METHODS BE EMPLOYED AT ANY CROSSING LOCATION IDENTIFIED BY EMPCO, INCLUDING BUT NOT LIMITED TO BAYOU AND STREAM CROSSINGS, IN ORDER TO PROTECT THE EXISTING LINES.

8.4 EMPCO REQUIRES THE PIPELINE OWNER AND ITS CONTRACTORS TO FURNISH AND INSTALL A NEW GALVANIZED STEEL WIRE ROPE PARALLELING 24 INCHES ALONG THE LENGTH OF THE NEWLY INSTALLED BORED CROSSING. THE PURPOSE OF THE WIRE ROPE IS TO AID IN MAINTAINING MINIMUM WALL-TO-WALL CLEARANCE FOR THE NEXT PIPELINE. PIPELINE OWNER MAY USE EXISTING CABLES FOUND AT BORED CROSSINGS IF APPROVED BY EMPCO. THE WIRE ROPE WILL EXTEND 10 FEET PAST THE ENDS OF THE BORED CROSSING. THE ENDS OF THE WIRE ROPE SHALL BE COILED IN THE BORE PIT AND BACKFILLED. THE WIRE ROPE SHALL BE 3/4 INCH NOMINAL DIAMETER AND MUST MEET OR EXCEED THE 6/37 CLASSIFICATION. THE END FITTINGS OF THE WIRE ROPE SHALL BE A WIRE ROPE SOCKET.

8.5 MINIMUM REQUIREMENTS FOR CROSSING WITHOUT EXTERNAL PROTECTION ARE SPECIFIED IN THE WALL THICKNESS TABLE, ATTACHMENT I.

8.6 IF A DIRECTIONALLY DRILLED INSTALLATION PROPOSAL IS APPROVED BY EMPCO, PIPELINE OWNER AND ITS CONTRACTORS SHALL IMPLEMENT THE FOLLOWING MEASURES PRIOR TO DIRECTIONAL DRILLING.

A. THE SOIL AROUND ANY EXISTING LINES IN THE RANGE OF THE ENTRY AND ANTICIPATED EXIT POINTS SHALL BE EXCAVATED TO A DEPTH OF AT LEAST THREE (3) FEET BELOW THE BOTTOM OF THE EXISTING LINES.

B. THE CATHODIC PROTECTION SYSTEMS ON THE EXISTING CORRIDOR PIPELINES AND FOREIGN PIPELINES IN THE VICINITY MUST BE TURNED OFF, OR THE DIRECTIONAL DRILLER AND SURVEYOR MUST BE INFORMED AS TO THE PRESENCE OF THE STRENGTH OF THE CATHODIC PROTECTION SYSTEM.

C. A TRUE-TRACKER TYPE LOCATOR SYSTEM OF GRIDS MUST BE LAID OUT ON THE ENTRY AND EXIT SIDES OF THE OBSTACLE TO BE CROSSED, AND ACROSS THE OBSTACLE IF POSSIBLE.

8.7 PIPELINE OWNER AND SHALL FURNISH AN ACCURATE AND PRECISE AS-BUILT DRAWING OF ANY DIRECTIONALLY DRILLED AND ITS CONTRACTORS INSTALLATION. THE DRAWING SHALL BE TIED TO THE ELEVATION AND STATION NUMBER OF THE NEAREST KNOWN CORRIDOR BENCHMARK. IF A TRUE-TRACKER TYPE GRID SYSTEM LOCATOR WAS LAID ACROSS IN THE FULL LENGTH OF THE DRILL AND USED DURING THE FULL DURATION OF THE DRILL, THE INFORMATION GENERATED BY IT WILL SUFFICE. HOWEVER, IF THE DRILL HEAD SURVEY DATA DOES NOT MATCH THE TRUE-TRACKER DATA BECAUSE THE TRUETRACKER WAS ONLY USED AT THE ENTRY AND EXIT SIDES OF THE DRILL, OR IF THE CROSSING WAS TOO DEEP TO BE ACCURATELY FOLLOWED BY THE TRUE-TRACKER, THEN DRILL HEAD SURVEY DATA SHALL BE BACK-CORRECTED BASED ON WHERE THE DRILL HEAD REAPPEARED IN THE TRUE-TRACKER GRID. ALL AS-BUILT DRAWINGS SHALL BE IN ACCORDANCE WITH SECTION 4.6 OF THIS SPECIFICATION.

## 9.0 CATHODIC PROTECTION MEASURES

9.1 PIPELINE OWNER AND ITS CONTRACTORS SHALL BE RESPONSIBLE FOR CORROSION CONTROL OF THEIR PIPELINE(S) WITHIN THE CORRIDOR, SHALL COMPLY WITH ALL REGULATORY REQUIREMENTS INTENDED TO PROTECT AGAINST CORROSION AND, WITHOUT LIMITATION OF THE FOREGOING, SHALL COMPLY WITH THE FOLLOWING:

A. PIPELINE OWNER AND ITS CONTRACTORS SHALL PROVIDE PROPERLY APPLIED AND INSPECTED COATINGS FOR PIPELINES, FIELD JOINTS AND CASINGS, INCLUDING ANY REPLACEMENT COATINGS NEEDED FOR REPAIRS. PIPELINE OWNER SHALL UTILIZE ONLY COATINGS WHICH SATISFY ALL GENERALLY ACCEPTED INDUSTRY STANDARDS AND SPECIFICATIONS, WHICH ARE ABLE TO WITHSTAND PIPELINE OPERATING TEMPERATURES, SOIL STRESSES, CATHODIC PROTECTION CURRENT, AND DAMAGE CAUSED DURING NORMAL HANDLING, TRANSPORTATION AND CONSTRUCTION. PRIOR TO USE, PIPELINE OWNER SHALL PROVIDE TO EMPCO COMPLETE INFORMATION CONCERNING THE TYPE, PROCESS AND SPECIFICATIONS FOR ALL COATING TO BE UTILIZED AND SHALL OBTAIN FROM EMPCO A WRITTEN STATEMENT OF NO OBJECTIONS TO THE PROPOSED TYPE, PROCESS AND SPECIFICATIONS. DURING CONSTRUCTION AND MODIFICATION, ALL PIPELINE COATINGS SHALL BE HOLDFAST TESTED AND REPAIRED BY PIPELINE OWNER PRIOR TO LOWERING THE PIPELINE INTO THE BORCH. PIPELINE OWNER SHALL OPERATE, MAINTAIN AND INSPECT THE PIPELINE AS NECESSARY TO AVOID ANY DISBONDED COATINGS THAT MAY SHIELD CATHODIC PROTECTION CURRENT AND TO PREVENT ANY DETERIORATION OF THE COATINGS RESULTING FROM SOIL STRESSES, OPERATING TEMPERATURES OR ANY OTHER CAUSE OR CAUSES. PIPELINE OWNER SHALL PROMPTLY REPAIR OR REPLACE ANY DISBONDED COATING OR ANY COATING THAT HAS OTHERWISE DETERIORATED FROM ANY CAUSE OR CAUSES.

B. PIPELINE OWNER AND ITS CONTRACTORS SHALL PROVIDE PROPERLY APPLIED COATINGS ON ALL ABOVE GROUND PIPING, VALVES, AND OTHER PIPELINE APPURTENANCES, AND SHALL INSPECT COATINGS ON ABOVE GROUND PIPING ANNUALLY, AND REPAIR COATINGS, AS NEEDED, TO MITIGATE ATMOSPHERIC CORROSION.

C. PIPELINE OWNER AND ITS CONTRACTORS SHALL AVOID THE USE OF ANY CASINGS OR OTHER FACILITIES THAT MAY HAVE A TENDENCY TO SHIELD PIPELINE OWNER'S PIPELINE FROM CATHODIC PROTECTION CURRENT, UNLESS REQUIRED BY THE PERMITTING AGENCY.

## 9.0 CATHODIC PROTECTION MEASURES (CONT)

D. WHERE CASINGS ARE REQUIRED, PIPELINE OWNER AND ITS CONTRACTORS SHALL PROVIDE APPROVED AND PROPERLY SPACED CASING CENTRALIZERS AND END SEALS FOR CASINGS. PIPELINE OWNER SHALL TEST FOR AND RECTIFY METALLICALLY SHORTED CASINGS DURING THE INITIAL CONSTRUCTION. DURING OPERATION OF THE PIPELINE, PIPELINE OWNER SHALL PROMPTLY REPAIR OR TAKE OTHER REMEDIAL MEASURES TO RECTIFY METALLICALLY SHORTED CASINGS, BUT IN ANY EVENT, SUCH ACTION SHALL BE TAKEN WITHIN 90 DAYS AFTER RECEIPT FROM EMPCO OF NOTICE OF SUSPECTED SHORTED CASINGS.

E. PIPELINE OWNER AND ITS CONTRACTORS SHALL SUPPLY AND PROPERLY INSTALL GOOD AND SUFFICIENT INSULATING FLANGES AND INSULATING GASKETS, IDENTIFICATION SIGNS, AND TEST STATIONS WHERE THE PIPELINE ENTERS AND EXITS THE CORRIDOR, AND AT ANY OTHER POINT SPECIFIED BY EMPCO OR WHERE INDICATED BY EXISTING LAW OR PRUDENT OPERATING PRACTICES. INSULATING GASKETS ARE NOT REQUIRED WHERE PIPELINE OWNER'S PIPELINE ONLY CROSSES THE CORRIDOR, UNLESS OTHERWISE SPECIFIED BY EMPCO.

F. PIPELINE OWNER SHALL TEST FOR AND RECTIFY SHORTED INSULATING FLANGES DURING ANY CONSTRUCTION OR MODIFICATION OF THE PIPELINE, AND SHALL TAKE PROPER STEPS TO DETERMINE THE EXISTENCE OF SHORTED INSULATING FLANGES WHICH MAY OCCUR DURING OPERATION OF THE PIPELINE. DURING OPERATION OF THE PIPELINE, PIPELINE OWNER SHALL PROMPTLY REPAIR SHORTED INSULATING FLANGES WHEN DISCOVERED.

G. DURING OPERATION OF THE PIPELINE, PIPELINE OWNER SHALL MAINTAIN, INSPECT AS MAY BE APPROPRIATE AND PROMPTLY REPAIR AND/OR REPLACE DAMAGED OR DEFECTIVE TEST STATION BOXES AND CABLES, BOND CABLES BETWEEN THE BOND BOX AND PIPELINE, GALVANIC ANODES, AND PIPELINE COATINGS.

H. AT EMPCO'S REQUEST, PIPELINE OWNER SHALL PROVIDE EMPCO ACCESS TO ITS PIPELINE OUTSIDE THE LIMITS OF THE CORRIDOR FOR PURPOSES OF PERFORMING CATHODIC PROTECTION TESTS.

I. EMPCO SHALL HAVE THE RIGHT TO PERFORM, AND PIPELINE OWNER SHALL ASSIST EMPCO IN THE PERFORMANCE OF INTERFERENCE TESTS WHEN CATHODIC PROTECTION IS INITIALLY ACTIVATED, WHEN NEW PIPELINES ARE INSTALLED THAT MAY CAUSE INTERFERENCE PROBLEMS WITH PIPELINE OWNER'S PIPELINES AND AT ANY OTHER TIME THAT THERE MAY BE A REASON TO CHECK FOR INTERFERENCE PROBLEMS.

J. PIPELINE OWNER SHALL NOTIFY EMPCO OF ANY INDICATIONS IT MAY HAVE OR RECEIVE OF STRAY CURRENT INTERFERENCE ON PIPELINE OWNER'S PIPELINE AND SHALL COOPERATE WITH EMPCO IN THE RESTORATION OF THE PIPELINE PIPE-TO-SOIL POTENTIAL.

K. PIPELINE OWNER SHALL SUPPLY AND PROPERLY INSTALL GOOD AND SUFFICIENT BONDING CABLES TO PIPELINE OWNER'S PIPELINE LEAVING SUFFICIENT CABLE FOR EMPCO TO MAKE CONNECTIONS TO ITS BOND BOXES.

L. PIPELINE OWNER SHALL SUPPLY AND PROPERLY INSTALL GOOD AND SUFFICIENT GALVANIC ANODES ON PIPELINE OWNER'S PIPELINE AS MAY BE NEEDED TO MAINTAIN CATHODIC PROTECTION OR WHEN REQUESTED BY EMPCO. EMPCO MAY REQUIRE THAT GALVANIC ANODE CABLES BE CONNECTED TO GALVANIC ANODE TEST STATIONS FURNISHED AND INSTALLED BY PIPELINE OWNER. PIPELINE OWNER SHALL OBTAIN EMPCO'S APPROVAL OF MATERIALS FOR GALVANIC ANODES, SPECIAL BACKFILL SUPPLIED BY PIPELINE OWNER AND METHOD OF INSTALLATION.

M. PIPELINE OWNER SHALL SUPPLY AND PROPERLY INSTALL GOOD AND SUFFICIENT TEST STATION CABLES AND BOXES AT LOCATIONS DESIGNATED BY EMPCO.

N. PIPELINE OWNER SHALL PURCHASE ALL MATERIALS FROM GOOD QUALITY, REPUTABLE MANUFACTURERS, AND SHALL NOT UTILIZE SUPPLIERS TO WHICH EMPCO OBJECTS FOR QUALITY, RELIABILITY OR SAFETY REASONS. CABLE SHALL BE PROPERLY SIZED AND INSULATED ACCORDING TO APPLICABLE CODES AND STANDARDS.

O. PIPELINE OWNER AND ITS CONTRACTORS SHALL CONNECT ALL CABLES TO PIPELINES BY THERMITE WELDING OR EQUIVALENT METHOD APPROVED IN WRITING BY EMPCO. ALL CONNECTIONS AND DAMAGED PIPELINE COATINGS SHALL BE PROPERLY COATED WITH A COATING COMPATIBLE WITH THE PIPELINE COATINGS. CABLES SHALL BE INSTALLED WITH SUFFICIENT SLACK TO PREVENT DAMAGE CAUSED BY SETTLEMENT AND STRESSES.

P. PIPELINE OWNER AND ITS CONTRACTORS SHALL NOT UTILIZE ANY SPLICED CABLE IN THE CATHODIC PROTECTION SYSTEM UNLESS APPROVED IN WRITING BY EMPCO.

Q. PIPELINE OWNER SHALL PERFORM ANNUAL PIPE-TO-SOIL POTENTIAL SURVEYS, FLANGE INSULATION TESTS, AND BONDING CABLE TESTS FOR PIPELINE OWNER'S PIPELINE.

R. PIPELINE OWNER SHALL TAKE ALL NECESSARY OR APPROPRIATE ACTION, AND SHALL COOPERATE WITH EMPCO, TO PROMPTLY ESTABLISH OR REESTABLISH THE APPROPRIATE PIPE-TO-SOIL POTENTIALS ON PIPELINE OWNER'S PIPELINE.

## EXXON CONTRACTOR DRUG AND ALCOHOL REQUIREMENTS

1. CONTRACTOR, CONTRACTOR'S EMPLOYEES, AGENTS, SUBCONTRACTORS AND THE EMPLOYEES AND AGENTS OF SUBCONTRACTORS ("CONTRACTOR'S GROUP") SHALL NOT PERFORM ANY SERVICE FOR EMPCO OR ON PROPERTY OWNED OR CONTROLLED BY EMPCO WHILE UNDER THE INFLUENCE OF ALCOHOL OR ANY CONTROLLED SUBSTANCE. CONTRACTOR'S GROUP SHALL NOT USE, POSSESS, DISTRIBUTE OR SELL ALCOHOLIC BEVERAGES, ILLICIT OR UNPRESCRIBED DRUGS OR DRUG PARAPHERNALIA, OR MISUSE LEGITIMATE PRESCRIPTION DRUGS ON ANY PROPERTY IN WHICH EMPCO OWNS AN INTEREST, AT THE JOBSITE OR WHILE PERFORMING WORK FOR EMPCO. ONLY DRUGS TAKEN IN ACCORDANCE WITH THE PRESCRIBING PHYSICIAN'S INSTRUCTIONS AND LEGAL NON-PREScription DRUGS WHICH DO NOT CONTRIBUTE TO IMPAIRED OR UNSAFE WORK PERFORMANCE ARE AUTHORIZED FOR POSSESSION OR USE ON EMPCO PROPERTY; THOSE USING PRESCRIPTION DRUGS MUST NOTIFY THEIR SUPERVISORS IN ADVANCE OF WORK IF SUCH USE MAY ADVERSELY AFFECT JOB SAFETY. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR NOTIFICATION TO ALL MEMBERS OF CONTRACTOR'S GROUP OF, AND COMPLIANCE WITH, THESE DRUG AND ALCOHOL ABUSE PROVISIONS.

2. CONTRACTOR HAS ADOPTED OR SHALL ADOPT AND IMPLEMENT PRIOR TO COMMENCEMENT OF THE WORK ITS OWN WRITTEN ANTI-DRUG AND ALCOHOL PLAN TO ASSURE A DRUG AND ALCOHOL FREE WORK PLACE WHILE PERFORMING WORK FOR EMPCO OR ON EMPCO PROPERTY, AND SHALL ASSURE THAT ANY SUBCONTRACTOR HIRED BY CONTRACTOR HAS ADOPTED AND IMPLEMENTED SUCH A PLAN. SUCH PLAN SHALL CONFORM TO ALL REQUIREMENTS IMPOSED BY THE DEPARTMENT OF TRANSPORTATION ("DOT"), INCLUDING THE REQUIREMENTS IMPOSED ON "OPERATORS" UNDER 49 CFR 199, WHETHER OR NOT CONTRACTOR IS WITHIN THE DEFINITION OF "OPERATOR" UNDER THE DOT REGULATIONS. THE PLAN SHALL LIST, AT A MINIMUM, (I) METHODS AND PROCEDURES FOR COMPLIANCE WITH ALL THE DOT REQUIREMENTS, (II) THE NAME AND ADDRESS OF EACH LABORATORY THAT ANALYZES THE SPECIMENS COLLECTED FOR DRUG TESTING, (III) THE NAME AND ADDRESS OF CONTRACTOR'S MEDICAL REVIEW OFFICER AND (IV) SUBSTANCES, TESTING FREQUENCY AND THRESHOLD LEVELS WHICH, AT A MINIMUM, COMPLY WITH DOT'S DRUG TESTING REGULATIONS AND WITH STANDARDS IMPOSED BY THE DEPARTMENT OF HEALTH AND HUMAN SERVICES ("DHHS"). WITHOUT LIMITATION OF THE FOREGOING, THE PLAN SHALL INCLUDE PRE-EMPLOYMENT/PRE-ACCESS TESTING, POST-ACCIDENT TESTING, TESTING BASED ON REASONABLE CAUSE AND TESTING AFTER REHABILITATION FOR BOTH DRUGS AND ALCOHOL AND SHALL INCLUDE RANDOM TESTING FOR DRUGS. CONTRACTOR SHALL UTILIZE A LABORATORY WHICH IS CERTIFIED BY THE NATIONAL INSTITUTE ON DRUG ABUSE ("NIDA") AND WHICH SATISFIES ALL DOT, DHHS AND NIDA REQUIREMENTS.

3. BEFORE PERFORMING WORK FOR EMPCO, CONTRACTOR SHALL CERTIFY THAT ITS EMPLOYEES HAVE PASSED A PRE-EMPLOYMENT OR PRE-ACCESS ALCOHOL AND DRUG TEST WITHIN THE TWELVE-MONTH PERIOD IMMEDIATELY PRIOR TO COMMENCING SUCH WORK AND THAT CONTRACTOR HAS IMPLEMENTED AND IS IN FULL COMPLIANCE WITH A DRUG AND ALCOHOL PLAN WHICH SATISFIES THE REQUIREMENTS SET FORTH HEREIN. ANY TYPE OF ALCOHOL AND DRUG TEST CONDUCTED DURING THIS PERIOD AS PART OF THE CONTRACTOR'S SUBSTANCE ABUSE PROGRAM THAT MEETS THE STANDARDS CONTAINED IN THIS CONTRACT MAY BE USED TO SATISFY THIS PRE-EMPLOYMENT OR PRE-ACCESS TEST REQUIREMENT.

## EXXON CONTRACTOR DRUG AND ALCOHOL REQUIREMENTS (CONT)

4. EMPCO SHALL BE ENTITLED TO REMOVE, AND CONTRACTOR SHALL BE OBLIGATED TO REMOVE, ANY MEMBER OF CONTRACTOR'S GROUP FROM PERFORMING WORK FOR EMPCO ANY TIME THAT (I) EITHER CONTRACTOR OR EMPCO SUSPECTS SUCH PERSON MAY HAVE USED, POSSESSED OR BEEN IMPAIRED BY ALCOHOL OR DRUGS ON ANY PROPERTY IN WHICH EMPCO OWNS AN INTEREST, AT THE JOBSITE OR WHILE PERFORMING WORK FOR EMPCO OR (II) AN INCIDENT OCCURS WHERE DRUG OR ALCOHOL USE BY SUCH PERSON COULD HAVE BEEN A CONTRIBUTING FACTOR. IN SUCH CASES, SUCH MEMBER OF CONTRACTOR'S GROUP MAY ONLY BE CONSIDERED FOR RETURN TO PERFORMING WORK FOR EMPCO IF CONTRACTOR CERTIFIES AS A RESULT OF A FOR-CAUSE TEST, CONDUCTED IMMEDIATELY FOLLOWING REMOVAL, THAT SUCH PERSON WAS IN COMPLIANCE WITH THIS CONTRACT AT THE TIME OF REMOVAL. CONTRACTOR SHALL NOT USE ANY PERSON TO PERFORM SERVICES FOR EMPCO WHO EITHER REFUSES TO TAKE, OR TESTS POSITIVE IN, ANY ALCOHOL OR DRUG TEST.

5. EMPCO MAY, WITHOUT PRIOR NOTICE, SEARCH THE PERSON, POSSESSIONS, AND VEHICLES OF ANY MEMBER OF CONTRACTOR'S GROUP LOCATED ON PROPERTY IN WHICH EMPCO OWNS AN INTEREST, OR ON PROPERTY OTHERWISE CONTROLLED BY EMPCO. ANY PERSON WHO REFUSES TO COOPERATE WITH SUCH SEARCH SHALL BE REMOVED FROM THE PREMISES AND NOT ALLOWED TO RETURN.

6. CONTRACTOR SHALL MAINTAIN DETAILED RECORDS ESTABLISHING THAT CONTRACTOR HAS FULLY IMPLEMENTED CONTRACTOR'S ANTI-DRUG AND ALCOHOL PLAN AND IS IN FULL COMPLIANCE WITH ALL DRUG AND ALCOHOL ABUSE REQUIREMENTS IMPOSED UNDER THE TERMS OF THIS CONTRACT OR UNDER THE DOT REGULATIONS, INCLUDING THOSE REQUIREMENTS IMPOSED ON "OPERATORS" UNDER THE DOT REGULATIONS, REGARDLESS OF WHETHER CONTRACTOR IS AN "OPERATOR" AS DEFINED IN THE DOT REGULATIONS. SUCH RECORDS SHALL BE MAINTAINED FOR AT LEAST THE PERIODS OF TIME PRESCRIBED IN THE DOT REGULATIONS. EMPCO SHALL HAVE THE RIGHT, BUT NOT THE OBLIGATION, TO PERFORM UNANNOUNCED AUDITS OF CONTRACTOR'S ALCOHOL AND DRUG PROGRAM TO VERIFY THAT CONTRACTOR'S ANTI-DRUG AND ALCOHOL PLAN AND THE IMPLEMENTATION OF THAT PLAN SATISFY THE REQUIREMENTS OF THIS CONTRACT AND OF ANY AND ALL APPLICABLE LAWS, RULES AND REGULATIONS AND THAT CONTRACTOR IS IN COMPLIANCE WITH ALL OF THE DRUG AND ALCOHOL ABUSE PROVISIONS OF THIS CONTRACT. CONTRACTOR SHALL CAUSE ITS MEDICAL REVIEW OFFICER AND OTHER SERVICE PROVIDERS TO MAKE RECORDS OF CONTRACTOR'S DRUG AND ALCOHOL PROGRAM AVAILABLE FOR AUDIT UPON REQUEST BY EMPCO OR ITS CONTRACTOR, EXCEPT TO THE EXTENT THAT SUCH RECORDS ARE MADE CONFIDENTIAL AS A MATTER OF LAW.

7. CONTRACTOR AND CONTRACTOR'S GROUP SHALL COMPLY WITH (I) ALL APPLICABLE FEDERAL, STATE, AND LOCAL DRUG AND ALCOHOL RELATED LAWS AND REGULATIONS, INCLUDING, WITHOUT LIMITATION THE DOT REGULATIONS, (II) THE DRUG AND ALCOHOL REQUIREMENTS SET FORTH HEREIN AND (III) CONTRACTOR'S ANTI-DRUG AND ALCOHOL PLAN, AND EMPCO SHALL BE ENTITLED TO TERMINATE THIS CONTRACT WITHOUT PRIOR NOTICE AT ANY TIME THAT CONTRACTOR IS FOUND TO HAVE VIOLATED ANY OF SUCH REQUIREMENTS.

## EXXON GUIDELINE CONSTRUCTION

## RIGHT-OF-WAY RESTRICTIONS &amp; REQUIREMENTS:

EMPCO OPERATES ITS PIPELINES IN ACCORDANCE WITH THE REGULATIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION AND OTHER STATE AND LOCAL AGENCIES. IN ACCORDANCE WITH REGULATORY REQUIREMENTS AND INTERNAL COMPANY GUIDELINES, EMPCO HAS DEVELOPED CERTAIN RESTRICTIONS AND REQUIREMENTS TO PROTECT PUBLIC SAFETY, PROPERTY, AND THE ENVIRONMENT. IN ORDER TO PROVIDE A SAFE ENVIRONMENT FOR PERSONS WORKING ON OR NEAR PIPELINES OPERATED BY EXXONMOBIL PIPELINE, THESE RESTRICTIONS AND REQUIREMENTS WILL APPLY TO ALL WORK IN AND AROUND EMPCO RIGHT OF WAYS (ROW). DEVIATIONS FROM THESE RESTRICTIONS MAY REQUIRE EMPCO'S EXPRESS WRITTEN CONSENT.

THIRD PARTIES ("CONSTRUCTORS"), PRIOR TO COMMENCING WORK ON OR NEAR AN EMPCO ROW, MUST SUBMIT DETAILED PLANS (PLAN AND PROFILE) FOR PROPOSED CONSTRUCTION, TO ALLOW EMPCO TO DETERMINE TO WHAT EXTENT THE ROW WILL BE IMPACTED BY THE PROPOSED CONSTRUCTION OR DEVELOPMENT ACTIVITY. SEE SUBMISSION ADDRESSES AND REQUIREMENTS IN THE NOTIFICATIONS SECTION BELOW. THESE RESTRICTIONS APPLY ONLY TO ROWS ASSOCIATED WITH EMPCO OPERATED PIPELINES. EXXON MOBIL CORPORATION AND/OR ITS OTHER AFFILIATES MAY HAVE DIFFERENT RESTRICTIONS AND REQUIREMENTS AND SHOULD BE CONTACTED DIRECTLY FOR MORE INFORMATION IF THEIR FACILITIES WILL BE IMPACTED.

## GENERAL RESTRICTIONS &amp; REQUIREMENTS:

1. IN ACCORDANCE WITH LAW, CONTRACTORS MUST CONTACT THE APPROPRIATE ONE CALL SYSTEM(S) PRIOR TO WORK AND COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS.

2. NO WORK MAY COMMENCE IN OR AROUND EMPCO'S RIGHT OF WAY UNTIL AN EMPCO REPRESENTATIVE HAS AUTHORIZED IT TO BEGIN. NOTICE OF DESIRED WORK START DATE SHOULD BE GIVEN TO EMPCO A MINIMUM OF 72 HOURS IN ADVANCE.

3. A THIRD PARTY EXCAVATION SAFE WORK CHECKLIST MUST BE SIGNED EACH DAY PRIOR TO BEGINNING WORK ON EMPCO'S RIGHT OF WAY.

4. IF IT IS DETERMINED THAT A PROJECT IMPACTS EMPCO'S FACILITIES, A NON-REFUNDABLE ADVANCE FEE MAY BE REQUIRED TO CONDUCT PRELIMINARY ENGINEERING DESIGN WORK. ANY WORK PERFORMED BY EMPCO TO REMEDY SUCH IMPACTS WILL BE ENTIRELY AT THE CONTRACTOR'S EXPENSE, AND WILL ALSO REQUIRE EXECUTION OF EMPCO'S STANDARD REIMBURSEMENT AGREEMENT. ANY NECESSARY INSPECTION, PROTECTION, LOWERING, ADJUSTMENT, CASING, RE-COATING, AND/OR RELOCATION OF THE PIPELINES WILL NOT BE SCHEDULED UNTIL: (A) ALL PREREQUISITE DATA IS COMPILED; (B) THE APPROPRIATE AGREEMENTS ARE EXECUTED; AND (C) SUFFICIENT FUNDS ARE RECEIVED. IT IS EMPCO'S CUSTOMARY PRACTICE TO INSPECT AND RECONDITION THE PIPELINE(S) AT PROPOSED DRIVEWAY, ROADWAY OR RAILROAD CROSSINGS, THE COSTS FOR WHICH WILL BE BORNE BY THE DEVELOPER OR OWNER.

5. EMPCO'S RIGHT OF WAY MAY NOT BE USED AS TEMPORARY WORKSPACE (WHICH INCLUDES ITS USE FOR STAGING, STORAGE, OR LAYDOWN OF EQUIPMENT, MATERIALS OR SPOIL) WITHOUT PRIOR WRITTEN APPROVAL FROM EMPCO.

6. ENCROACHMENTS ARE NOT PERMITTED, INCLUDING, BUT NOT LIMITED TO, SIGNS, MONUMENTS, BUILDINGS, PARKING LOTS, STRUCTURES, PATIOS, DECKS, SLABS, TREES, SHRUBS, MANHOLES, SWIMMING POOLS, WELLS, LEACH BEDS, SEPTIC SYSTEMS, CESSPOOLS, IMPOUNDMENTS OR LARGE DEBRIS (SUCH AS CARS, BOATS, TRAILERS, TANKS, SCRAP METAL OR BOULDERS) WITHIN THE PIPELINE RIGHT OF WAY. THE INTENTION OF THIS RESTRICTION IS TO MAINTAIN AN UNOBSTRUCTED RIGHT OF WAY.

7. ANY CHANGE IN THE SURFACE GRADE OR ELEVATION OVER OR ALONG THE PIPELINE(S) AND RIGHT-

**EXCAVATION/CONSTRUCTION RESTRICTIONS & REQUIREMENTS: (CONT)**

25. PERMANENT ABOVE GROUND MARKERS IDENTIFYING THE CROSSING PIPELINE OR UTILITY SHALL BE INSTALLED AND MAINTAINED AT THE LIMITS OF EMPCO'S RIGHT OF WAY AND/OR AT THE CROSSING.

26. IF IT IS IMPRACTICAL TO INSTALL AND MAINTAIN ABOVEGROUND MARKERS DUE TO THE CROSSING LOCATION, PLASTIC MARKER TAPE SHALL BE INSTALLED BELOW CULTIVATION LEVEL AND OVER EMPCO'S PIPELINE, EXTENDING THE WIDTH OF THE RIGHT OF WAY.

BORE CROSSINGS:

27. WIRE GUIDED BORES WITH 10' OR GREATER CLEARANCE WILL NOT REQUIRE PEEPHOLES. ALL OTHER BORES WILL REQUIRE INSTALLATION OF PEEPHOLES ON THE INCOMING SIDES OF EMPCO'S PIPELINE, AT THE POINT OF INTERSECTION AS TO VIEW THE DRILL STEM CLEARANCE PRIOR TO CROSSING.

HYDRO-VAC EXCAVATION:

28. IN EMPCO'S DISCRETION, EMPCO MAY REQUIRE HYDRO-EXCAVATION (HYDRO-VAC) TO REDUCE THE RISK OF DAMAGE TO A PIPELINE.

29. GROUNDING OF THE VACUUM TRUCK AND WAND IS REQUIRED AND SHOULD BE TESTED; DOWNDOWN VENTING OF THE VACUUM TRUCK IS REQUIRED.

30. THE WATER WAND TIP IS TO BE AN OSCILLATION TYPE (CIRCULAR PATTERN) TO PREVENT A CONCENTRATED WATER STREAM; STREAM NOZZLES ARE NOT ALLOWED. THE VACUUM WAND TIP MUST HAVE A NEOPRENE OR EQUIVALENT TIP TO PREVENT DAMAGE TO THE PIPELINE COATING AND SURROUNDING STRUCTURES.

31. THE EXCAVATION SITE IS SUSPECTED TO CONTAIN HYDROCARBON-IMPACTED SOIL, A PLAN MUST BE DEVELOPED FOR TESTING AND DISPOSAL OF SOIL/WATER SLURRY (E.G., LINED ROLL-OFF BIN.) AT CONSTRUCTOR'S EXPENSE, AND IN ADVANCE OF THE PROJECT.

**NOTIFICATIONS:**

ALL IMPROVEMENT, CONSTRUCTION, OR ENCROACHMENT NOTIFICATIONS AND/OR REQUESTS FOR INFORMATION PERTAINING TO ASSETS OPERATED BY EXXONMOBIL PIPELINE COMPANY MUST BE DIRECTED, IN WRITING, TO THE APPROPRIATE EMAIL ADDRESS NOTED BELOW.

Mobil Pipe Line Company ExxonMobil Pipeline Company LLC  
ROW & Claims: ENCROACHMENTS  
22777 Springwoods Village Parkway E3.5A.552 Spring, TX 77389  
Phone (832)624-2663  
EMPCo.Encroachments@exxonmobil.com

**REQUESTS SHOULD INCLUDE:**

- A BRIEF DESCRIPTION OF THE PROJECT OR WORK TO BE PERFORMED
- APPROPRIATE VICINITY MAP PAGE(S), GPS COORDINATES AND KMZ (IF AVAILABLE)
- PLAN AND PROFILE DRAWINGS FOR PROPOSED CONSTRUCTION (INCLUDING EMPCO PIPELINE(S) CLEARLY LABELED AND IDENTIFIED, PIPELINE DIAMETER(S) AND DEPTH(S), CROSSING ANGLE, CUT MARK/FILL, ELEVATION, ETC)
- ELECTRONIC FILES PREFERRED.
- ESTIMATED TIMING OF THE PROJECT OR SPECIAL TIMING REQUIREMENTS (INCLUDING START DATE AND DURATION)
- A CONTACT NAME, COMPANY NAME, MAILING ADDRESS, EMAIL ADDRESS AND TELEPHONE NUMBER OF THE CONSTRUCTOR, CONSTRUCTOR'S SUB-CONTRACTORS, AND FACILITY OWNER AS APPLICABLE.
- LIST AND DESCRIPTION OF CONSTRUCTION EQUIPMENT THAT WILL CROSS EMPCO PIPELINE(S); INCLUDING APPLICABLE SURFACE PRESSURES (LBS/PSI, MAX. GROSS WEIGHT, ETC.)

ONCE RECEIVED, YOUR REQUEST WILL BE LOGGED, REVIEWED AND RESPONDED TO AS SOON AS POSSIBLE (MINIMUM 45 DAYS). REQUESTS TO PERFORM LARGE SCALE DEVELOPMENT/CONSTRUCTION/EXCAVATION MAY REQUIRE SUBSTANTIALLY MORE TIME. INCLUSION OF THE ABOVE INFORMATION WILL HELP TO EXPEDITE YOUR REQUEST.

**ENTERPRISE STANDARDS FOR NEW PROJECTS ENCROACHING ON ENTERPRISE'S RIGHTS-OF-WAY**

THE FOLLOWING IS A GENERAL SUMMARY OF ENTERPRISE'S STANDARDS AND GUIDELINES RELATED TO COMMON ENCROACHMENTS.

**EXCAVATION ACTIVITIES**

TOLERANCE ZONE: ENTERPRISE DEFINES THE TOLERANCE ZONE AS 18 (TEXAS) INCHES FROM THE OUTER EDGE OF THE PIPE (IN ALL DIRECTIONS), OR AS DEFINED BY STATE REGULATIONS, WHICHEVER IS GREATER.

- MECHANIZED EQUIPMENT IS NOT ALLOWED WITHIN THE TOLERANCE ZONE.
- ANY EXCAVATION TAKING PLACE WITHIN THE TOLERANCE ZONE MUST BE DONE BY HAND.

GENERAL EXCAVATION GUIDELINES

- ALWAYS MAKE A ONE-CALL PRIOR TO PERFORMING ANY EXCAVATION ACTIVITIES. DIAL 811 OR GO TO WWW.CALL811.COM.
- DO NOT PERFORM ANY EXCAVATION ACTIVITIES ON ENTERPRISE'S RIGHTS-OF-WAY WITHOUT APPROVAL FROM ENTERPRISE. ENTERPRISE WILL REVIEW YOUR PLANS FOR EXCAVATION WITHIN ENTERPRISE'S RIGHTS-OF-WAY, LOCATE AND MARK THE PIPELINE ASSETS (IF NECESSARY) AND AN ENTERPRISE REPRESENTATIVE WILL BE ON-SITE TO MONITOR THE EXCAVATION ACTIVITY.
- NO HEAVY EQUIPMENT IS ALLOWED TO WORK DIRECTLY OVER THE PIPELINE. THE RIGHT-OF-WAY BOUNDARY SHOULD BE MARKED WITH TEMPORARY FENCING OR WHITE LINE TO ASSIST THE OPERATOR WITH POSITIONING HEAVY EQUIPMENT.
- ALL MECHANICAL DIGGING EQUIPMENT MUST DIG PARALLEL TO THE PIPELINES AND HAVE THE TEETH REMOVED OR BARRED WITH A PLATE WELDED ACROSS THE BUCKET.

AN ENTERPRISE REPRESENTATIVE HAS THE AUTHORITY TO SUSPEND EXCAVATION ACTIVITIES IF AN EQUIPMENT OPERATOR APPEARS TO BE UNQUALIFIED OR EQUIPMENT MAINTENANCE IS NOT IN ACCORDANCE WITH APPLICABLE REGULATIONS.

**CONSTRUCTION EQUIPMENT & LARGE VEHICLE CROSSINGS**

- CONSTRUCTION EQUIPMENT AND LARGE VEHICLES CROSSING THE PIPELINE EASEMENT MAY PRESENT A RISK OF DAMAGE TO UNDERGROUND UTILITIES. THEREFORE, WHEN PROPERLY NOTIFIED, ENTERPRISE WILL PERFORM STRESS ANALYSIS TO ENSURE THAT THE PROPOSED USE OF CONSTRUCTION EQUIPMENT OR LARGE VEHICLES WILL NEITHER DAMAGE THE PIPELINE NOR PRESENT A SAFETY RISK WHEN SUBMITTING A REQUEST FOR HEAVY EQUIPMENT CROSSING, PLEASE INCLUDE THE FOLLOWING FOR ANY VEHICLE PROPOSING TO CROSS ENTERPRISE'S RIGHTS-OF-WAY: MAKE/MODEL, SIZE, WEIGHT, AND MAXIMUM AXLE LOAD
- ENTERPRISE WILL WORK DILIGENTLY TO PERFORM ITS ANALYSIS, BUT TYPICALLY REQUIRES A MINIMUM OF THREE WORKING DAYS TO COMPLETE THE REVIEW PROCESS
- CONSTRUCTION EQUIPMENT SHOULD ONLY CROSS THE PIPELINE AT ENTERPRISE-DESIGNATED LOCATIONS.

**FOREIGN PIPELINES & UTILITY CROSSINGS:**

FOR YOUR SAFETY AND THE SAFETY OF OTHERS, ENTERPRISE SHOULD BE INVOLVED IN THE PLANNING OF ANY PIPELINE OR UTILITY CROSSING ENTERPRISE'S RIGHTS-OF-WAY. THERE ARE NUMEROUS ISSUES TO BE CONSIDERED IN ANY FOREIGN UTILITY CROSSING, AND THE FOLLOWING ARE COMMON UTILITY INDUSTRY STANDARD GUIDELINES:

- CROSSINGS SHOULD BE AT AN ANGLE AS CLOSE TO 90 DEGREES AS POSSIBLE IN ORDER TO MINIMIZE THE AREA OF POTENTIAL IMPACT.
- ENTERPRISE PREFERS THAT NO FOREIGN LINES RUN PARALLEL TO ENTERPRISE PIPELINES WITHIN THE RIGHTS-OF-WAY.
- THE PREFERRED METHOD IS TO HAVE FOREIGN LINES CROSS BELOW ENTERPRISE PIPELINES. IN GENERAL, FOREIGN PIPELINE AND UTILITY CROSSINGS NEED TO MAINTAIN A MINIMUM CLEARANCE OF 24 INCHES BETWEEN THE BOTTOM OF ENTERPRISE'S PIPELINE AND THE TOP OF THE PIPELINE/UTILITY WHEN INSTALLED VIA OPEN CUT EXCAVATION. TRENCHLESS CROSSINGS MAY REQUIRE ADDITIONAL CLEARANCE, AMONG OTHER THINGS.
- METALIC PIPE CROSSING ENTERPRISE PIPELINES MAY BE SUBJECT TO A CATHODIC PROTECTION STUD. FOREIGN METALIC PIPE CROSSINGS SHALL BE COATED WITH AN APPROPRIATE NONCONDUCTIVE COATING THE FULL WIDTH OF ENTERPRISE'S RIGHTS-OF-WAY.
- ALL BURIED ELECTRICAL CABLES SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC SAFETY CODE (NESC) OR THE NATIONAL ELECTRICAL CODE (NEC). ALL POWER CABLES SHALL BE INSTALLED IN NON-METALLIC OR HIGH IMPACT PVC CONDUIT. IN THE EVENT THE CONDUIT CROSSES OVER OR BELOW ENTERPRISE'S PIPELINE BY OPEN CUT TRENCH EXCAVATION, IT SHALL BE ENCASED IN RIGID CONCRETE THE FULL WIDTH OF THE RIGHT-OF-WAY.
- ALL BURIED COMMUNICATION CABLES, SUCH AS TELEPHONE, TV, INTERNET SERVICES, AND OTHER DATA LINES SHALL CROSS ENTERPRISE PIPELINES WITH A MINIMUM CLEARANCE OF 24 INCHES AND ENCASED IN A RIGID, NON-METALLIC CONDUIT. EXCEPTIONS WILL BE REVIEWED ON A CASE-BY-CASE BASIS.
- WARNING TAPE SHALL BE PLACED OVER THE FOREIGN UTILITY FOR A MINIMUM OF 20 FEET (PERPENDICULAR TO THE UTILITY AND 10 FEET ON BOTH SIDES) IN SUCH A MANNER THAT IT WOULD BE UNEARTHED BEFORE DAMAGE COULD REST TO THE PIPELINE.
- IN GENERAL, UTILITY POLES AND GUY ANCHORS ARE NOT PERMITTED WITHIN ENTERPRISE'S RIGHTS-OF-WAY. OVERHEAD ELECTRICAL OR TELEPHONE LINES SHALL BE INSTALLED SO THAT A MINIMUM OF 23 FEET VERTICAL CLEARANCE IS MAINTAINED BETWEEN THE LOWEST POINT OF THE OVERHEAD CROSSING AND THE NATURAL GROUND LEVEL ABOVE ENTERPRISE'S PIPELINE.

**ENTERPRISE STANDARDS FOR NEW PROJECTS  
ENCROACHING ON ENTERPRISE'S RIGHTS-OF-WAY (CONT)  
CONSTRUCTION INDUCED VIBRATIONS**

CONSTRUCTION ACTIVITIES THAT GENERATE GROUND VIBRATIONS, INCLUDING, BUT NOT LIMITED TO, PILE DRIVING, STEEL SHEET DRIVING, SOIL COMPACTION, PAVEMENT MATERIAL COMPACTION, HYDRAULIC JACK HAMMERING, OR ANY TYPE OF SURFACE IMPACT THAT WILL INDUCE VIBRATIONS, SHOULD BE REVIEWED BY ENTERPRISE ON A CASE-BY-CASE BASIS.

IF THE ENCROACHING PARTY ANTICIPATES THIS TYPE OF ACTIVITY WITHIN 100 FEET FROM THE PIPELINE, THEN CONTINUOUS TESTING MONITORED BY A SEISMOGRAPH LOCATED DIRECTLY OVER THE PIPELINE AT ITS CLOSEST POINT TO THE ACTIVITY SHOULD BE CONDUCTED. THE ENCROACHING PARTY SHALL PROVIDE, AT THEIR EXPENSE, THE MONITORING SERVICE CONTRACTOR AND EQUIPMENT.

THE ENCROACHING PARTY SHALL PROVIDE THE MAKE AND MODEL OF THE VIBRATORY OR COMPACTION EQUIPMENT. IF CONSTRUCTION-INDUCED VIBRATIONS ARE ASSOCIATED WITH USING PILE DRIVING OR VIBRATORY DRIVING EQUIPMENT, THEN THE SPECIFICATIONS OF THE EQUIPMENT AND THE MAXIMUM ANTICIPATED ENERGY SHALL BE PROVIDED TO ENTERPRISE.

THE ENCROACHING PARTY SHALL DETERMINE AND LIMIT THE MAXIMUM PEAK FORCE ALLOWED UNDER CONTINUOUS SEISMOGRAPHIC VIBRATION MONITORING SUCH THAT THE PEAK PARTICLE VELOCITY WILL NOT EXCEED 5 INCHES PER SECOND. THE PEAK PARTICLE VELOCITY RESULTS SHALL BE PROVIDED TO ENTERPRISE OR FIELD REPRESENTATIVE. IF RESULTS ARE ABOVE 5 INCHES PER SECOND, ENTERPRISE RESERVES THE RIGHT TO HALT SEISMIC ACTIVITIES TO EVALUATE THE INTEGRITY OF THE PIPELINE. IN GENERAL, LARGE VIBRATORY COMPACTION EQUIPMENT POSES A RISK TO UNDERGROUND PIPELINES AND IS NOT ALLOWED WITHIN ENTERPRISE'S RIGHTS-OF-WAY.

**GUIDELINES FOR CONSTRUCTION NEAR KINDER MORGAN OPERATED FACILITIES**

REFERENCE: O&M PROCEDURE 204 OM200-29 2016-05-01

1. CONTRACTORS SHALL BE ADVISED OF COMPANY'S REQUIREMENTS AND BE CONTRACTUALLY OBLIGATED TO COMPLY.

2. THE CONTINUED INTEGRITY OF COMPANY'S PIPELINES AND THE SAFETY OF ALL INDIVIDUALS IN THE AREA OF PROPOSED WORK NEAR COMPANY'S FACILITIES ARE OF THE UTMOST IMPORTANCE. THEREFORE, CONTRACTOR MUST MEET WITH COMPANY REPRESENTATIVES PRIOR TO CONSTRUCTION TO PROVIDE AND RECEIVE NOTIFICATION LISTINGS FOR APPROPRIATE AREA OPERATIONS AND EMERGENCY PERSONNEL. COMPANY'S ON-SITE REPRESENTATIVE WILL REQUIRE DISCONTINUATION OF ANY WORK THAT, IN HIS OPINION, ENDANGERS THE OPERATIONS OR SAFETY OF PERSONNEL, PIPELINES OR FACILITIES.

3. THE CONTRACTOR MUST EXPOSE ALL COMPANY TRANSMISSION AND DISTRIBUTION LINES PRIOR TO CROSSING TO DETERMINE THE EXACT ALIGNMENT AND DEPTH OF THE LINES. A COMPANY REPRESENTATIVE MUST BE PRESENT. IN THE EVENT OF PARALLEL LINES, ONLY ONE PIPELINE CAN BE EXPOSED AT A TIME.

4. COMPANY WILL NOT ALLOW PIPELINES TO REMAIN EXPOSED OVERNIGHT WITHOUT CONSENT OF COMPANY DESIGNATED REPRESENTATIVE. CONTRACTOR MAY BE REQUIRED TO BACKFILL PIPELINES AT THE END OF EACH DAY.

5. A COMPANY REPRESENTATIVE SHALL DO ALL LINE LOCATING. A COMPANY REPRESENTATIVE SHALL BE PRESENT FOR HYDRAULIC EXCAVATION. THE USE OF PROBING RODS FOR PIPELINE LOCATING SHALL BE PERFORMED BY COMPANY REPRESENTATIVES ONLY, TO PREVENT UNNECESSARY DAMAGE TO THE PIPELINE COATING.

6. NOTIFICATION SHALL BE GIVEN TO COMPANY AT LEAST 72 HOURS BEFORE START OF CONSTRUCTION. A SCHEDULE OF ACTIVITIES FOR THE DURATION OF THE PROJECT MUST BE MADE AVAILABLE AT THAT TIME TO FACILITATE THE SCHEDULING OF COMPANY'S WORK SITE REPRESENTATIVE. ANY CONTRACTOR SCHEDULE CHANGES SHALL BE PROVIDED TO COMPANY IMMEDIATELY.

7. HEAVY EQUIPMENT WILL NOT BE ALLOWED TO OPERATE DIRECTLY OVER COMPANY PIPELINES OR IN COMPANY ROW UNLESS WRITTEN APPROVAL IS OBTAINED FROM COMPANY. HEAVY EQUIPMENT SHALL ONLY BE ALLOWED TO CROSS COMPANY PIPELINES AT LOCATIONS DESIGNATED BY COMPANY. CONTRACTOR SHALL COMPLY WITH ALL PRECAUTIONARY MEASURES REQUIRED BY COMPANY TO PROTECT ITS PIPELINES. WHEN INCLEMENT WEATHER EXISTS, PROVISIONS MUST BE MADE TO COMPENSATE FOR SOIL DISPLACEMENT DUE TO SUBLISSION OF TIRES.

8. EXCAVATING OR GRADING WHICH MIGHT RESULT IN EROSION OR WHICH COULD RENDER THE COMPANY ROW INACCESSIBLE SHALL NOT BE PERMITTED UNLESS THE CONTRACTOR/DEVELOPER/OWNER AGREES TO RESTORE THE AREA TO ITS ORIGINAL CONDITION AND PROVIDE PROTECTION TO COMPANY'S FACILITY.

9. RIPPING IS ONLY ALLOWED WHEN THE POSITION OF THE PIPE IS KNOWN AND NOT WITHIN 10-FEET OF COMPANY FACILITY UNLESS COMPANY REPRESENTATIVE IS PRESENT.

10. TEMPORARY SUPPORT OF ANY EXPOSED COMPANY PIPELINE BY CONTRACTOR MAY BE NECESSARY IF REQUIRED BY COMPANY'S ON-SITE REPRESENTATIVE. BACKFILL BELOW THE EXPOSED LINES AND 12-INCHES ABOVE THE LINES SHALL BE REPLACED WITH SAND OR OTHER SELECTED MATERIAL AS APPROVED BY COMPANY'S ON-SITE REPRESENTATIVE AND THOROUGHLY COMPAKTED IN 12-INCHES LIFTS TO 95% OF STANDARD PROCTOR DRY DENSITY MINIMUM OR AS APPROVED BY COMPANY'S ON-SITE REPRESENTATIVE. THIS IS TO ADEQUATELY PROTECT AGAINST STRESSES THAT MAY BE CAUSED BY THE SETTLING OF THE PIPELINE.

11. NO BLASTING SHALL BE ALLOWED WITHIN 1000-FEET OF COMPANY'S FACILITIES UNLESS BLASTING NOTIFICATION IS GIVEN TO COMPANY, INCLUDING COMPLETE BLASTING PLAN DATA. A PRE-BLAST MEETING SHALL BE CONDUCTED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING.

12. COMPANY SHALL BE INDEMNIFIED AND HELD HARMLESS FROM ANY LOSS, COST OR LIABILITY FOR PERSONAL INJURIES RECEIVED, DEATH CAUSED OR PROPERTY DAMAGE SUFFERED OR SUSTAINED BY ANY PERSON RESULTING FROM ANY BLASTING OPERATIONS UNDERTAKEN WITHIN 500-FEET OF FACILITIES. THE ORGANIZATION RESPONSIBLE FOR BLASTING SHALL BE LIABLE FOR ANY AND ALL DAMAGES CAUSED TO COMPANY'S FACILITIES AS A RESULT OF THEIR ACTIVITIES WHETHER OR NOT COMPANY REPRESENTATIVES ARE PRESENT. COMPANY SHALL HAVE A SIGNED AND EXECUTED BLASTING INDEMNIFICATION AGREEMENT BEFORE AUTHORIZED PERMISSION TO BLAST CAN BE GIVEN.

**GUIDELINES FOR CONSTRUCTION NEAR KINDER MORGAN OPERATED FACILITIES**  
REFERENCE: O&M PROCEDURE 204 OM200-29 2016-05-01 (CONT)

13. NO BLASTING SHALL BE ALLOWED WITHIN 300-FEET OF COMPANY'S FACILITIES UNLESS BLASTING NOTIFICATION IS GIVEN TO COMPANY A MINIMUM OF ONE WEEK BEFORE BLASTING. (NOTE: COVERED ABOVE) COMPANY SHALL REVIEW AND ANALYZE THE BLASTING METHODS. A WRITTEN BLASTING PLAN SHALL BE PROVIDED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING AND AGREED TO IN WRITING BY COMPANY IN ADDITION TO MEETING REQUIREMENTS FOR 500-FEET AND 1000-FEET BEING MET ABOVE. A WRITTEN EMERGENCY PLAN SHALL BE PROVIDED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING. (NOTE: COVERED ABOVE)

14. ANY CONTACT WITH ANY COMPANY FACILITY, PIPELINE, VALVE SET, ETC. SHALL BE REPORTED IMMEDIATELY TO COMPANY. IF REPAIRS TO THE PIPE ARE NECESSARY, THEY WILL BE MADE AND INSPECTED BEFORE THE SECTION IS RE-COATED AND THE LINE IS BACK-FILLED.

15. COMPANY PERSONNEL SHALL INSTALL ALL TEST LEADS ON COMPANY FACILITIES.

16. BURNING OF TRASH, BRUSH, ETC. IS NOT PERMITTED WITHIN THE COMPANY ROW

**GENERAL ENCROACHMENT GUIDELINES FOR DESIGN AND CONSTRUCTION NEAR PHILLIPS 66 PIPELINE LLC AND FACILITIES**

P66-TSD-3501 APPENDIX B  
GENERAL ENCROACHMENT GUIDELINES FOR PROPERTY DEVELOPERS AND LAND OWNERS NEAR PHILLIPS 66 PIPELINE LLC AND FACILITIES  
REV. 1 - EFFECTIVE DATE: 2022-07-01

DOCUMENT SUMMARY  
THIS DOCUMENT IS INTENDED TO PROVIDE A GENERAL LISTING OF DESIGN AND CONSTRUCTION GUIDELINES TO BE PROVIDED TO ENCROACHING PARTIES. BY HAVING THE GENERAL DESIGN CRITERIA REQUIRED BY COMPANY (PERMITTOR) TO ENSURE THE SAFETY OF THEIR PIPELINES AND FACILITIES, THE ENCROACHING PARTY CAN BETTER PREPARE FOR THEIR DESIGNS NEAR THE PIPELINE AND PIPELINE RIGHT-OF-WAY (ROW). IN ADDITION TO HAVING THE DESIGN GUIDELINES, THE CONSTRUCTION POLICIES ALLOW FOR ENCROACHING PARTIES TO BE AWARE OF THE ACTUAL WORKING RESTRICTIONS ON OR NEAR THE PERMITTOR ROW. THE CONSTRUCTION GUIDELINES WERE WRITTEN WITH THE INTENT TO BE UTILIZED ON CONSTRUCTION DRAWINGS, THEREFORE PROVIDING DETAILS TO THE CHALLENGES OF THE WORK BEING PERFORMED NEAR THE PERMITTOR PIPELINE ROW.

**1.0 CONSTRUCTION GUIDELINES**  
(IF APPLICABLE, PROVIDE THE FOLLOWING IN ANY CONSTRUCTION DRAWING NOTES)

FOR PLANNING PURPOSES PLEASE NOTIFY PHILLIPS 66 PIPELINE LLC ("PERMITTOR"), FOR LINE MARKING, DEPTH ROBING, AND PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES IN THE PIPELINE RIGHT-OF-WAY. THE FOLLOWING GUIDELINES APPLY TO PERMITTEE AND ANY CONTRACTORS, AGENTS OR REPRESENTATIVES IT USES FOR CONSTRUCTION ACTIVITIES CONDUCTED IN PERMITTOR'S RIGHT-OF-WAY AND/OR AFFECTING PERMITTOR'S PIPELINES:

1.1. THE PERMITTEE IS REQUIRED BY STATE LAW TO CONTACT THE LOCAL ONE-CALL CENTER AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION TAKING PLACE NEAR THE PIPELINE(S).

1.2. PERMITTEE SHALL CONDUCT THEIR ACTIVITIES IN COMPLIANCE WITH PERMITTOR'S DESIGN GUIDELINES AS WELL AS ANY APPLICABLE ENCROACHMENT AGREEMENT IN PLACE WITH PERMITTEE AND OR THE TERMS OF THE CONSTRUCTION GUIDELINES CONTAINED HEREIN.

1.3. THE CONTINUED INTEGRITY OF PERMITTOR'S PIPELINES AND THE SAFETY OF ALL INDIVIDUALS IN THE AREA OF PROPOSED WORK NEAR PERMITTOR'S FACILITIES ARE OF THE UTMOST IMPORTANCE. THEREFORE, PERMITTEE SHALL MEET WITH PERMITTOR REPRESENTATIVES PRIOR TO CONSTRUCTION TO PROVIDE AND RECEIVE NOTIFICATION LISTINGS FOR APPROPRIATE AREA OPERATIONS AND EMERGENCY PERSONNEL. PERMITTOR'S ON-SITE REPRESENTATIVE SHALL

REQUIRE IS CONTINUATION OF ANY WORK THAT, IN THEIR OPINION, ENDANGERS THE OPERATION OR SAFETY OF PERSONNEL, PIPELINES, OR FACILITIES.

1.4. THE USE OF PROBING RODS FOR PIPELINE LOCATING SHALL BE PERFORMED BY PERMITTOR REPRESENTATIVES ONLY TO ENSURE NO DAMAGE TO THE PIPELINE COATING. IF ADDITIONAL WORK BESESIDES PROBING IS NECESSARY TO LOCATE THE PIPELINE, THIS SHALL BE DONE AT THE PERMITTEE'S EXPENSE UNDER PERMITTOR SUPERVISION.

1.5. NOTIFICATION SHALL BE GIVEN TO PERMITTOR AT LEAST 72 HOURS BEFORE START OF CONSTRUCTION. A SCHEDULE OF ACTIVITIES FOR THE DURATION OF THE PROJECT SHALL BE MADE AVAILABLE AT THAT TIME TO FACILITATE THE SCHEDULING OF PERMITTOR'S WORK SITE REPRESENTATIVE. ANY PERMITTEE SCHEDULE CHANGES SHALL BE PROVIDED TO PERMITTOR IMMEDIATELY.

1.6. PERMITTEE SHALL NOT COMMENCE WORK WITHIN TWENTY-FIVE (25) FEET OF A PERMITTOR PIPELINE OR ABOVEGROUND APPURTENANCE WITHOUT A PERMITTOR REPRESENTATIVE BEING ON SITE (UNLESS OTHERWISE AGREED TO BY PERMITTOR). THE PERMITTOR RESERVES THE RIGHT TO HAVE AN INSPECTOR OR REPRESENTATIVE ON THE JOB TO OVERSEE ALL CONSTRUCTION WITHIN THIS DISTANCE. DEPENDING ON SIZE AND SCOPE OF THE WORK, A PERMITTOR INSPECTOR MAY BE AN ADDITIONAL COST TO THE PERMITTEE. 1.7 HEAVY-WHEELED EQUIPMENT OVER 10,000 LBS OR TRACKED EQUIPMENT OVER 60,000 LBS WORKING ON OR NEAR PIPELINE (E.G. DUMP TRUCKS, BACKHOE, TRACKHOE, CRANE, BULLDOZER, LOGGING TRUCK, ETC) SHALL NOT BE ALLOWED TO PERSE DIRECTLY OVER PERMITTOR PIPELINES OR IN PERMITTOR ROW UNLESS WRITTEN APPROVAL IS OBTAINED FROM PERMITTOR. HEAVY-WHEELED EQUIPMENT HALL ONLY BE ALLOWED TO CROSS PERMITTOR PIPELINES AT LOCATIONS DESIGNATED BY PERMITTOR. THE PERMITTEE SHALL COMPLY WITH ALL CAUTIONARY MEASURES REQUIRED BY PERMITTOR TO PROTECT ITS PIPELINES. WHEN INCLEMENT WEATHER EXISTS, PROVISION SHALL BE MADE TO COMPENSATE FOR SOIL DISPLACEMENT DUE TO SUBLISSION OF TIRES.

1.8. PRIOR TO EACH EXCAVATION, AN AUTHORIZED PERMITTOR REPRESENTATIVE SHALL EVALUATE THE PROPOSED EXCAVATION TO DETERMINE IF A RISK ASSESSMENT IS REQUIRED. MAPS, DRAWINGS, AND/OR RECORDS SHALL BE READILY AVAILABLE DURING THE ASSESSMENT AND EXCAVATIONS.

1.9. DURING INSTALLATION OF UNDERGROUND PIPELINES OR FACILITIES WITH DRILLING OR BORING TECHNOLOGY, AN AUTHORIZED PERMITTOR REPRESENTATIVE SHALL HAVE THE RIGHT TO EVALUATE AND APPROVE THE DRILLING PLAN. FOR A DRILLED CROSSING, PROVIDE AT LEAST 10 FT OF VERTICAL SEPARATION FOR CROSSINGS AND 15 FT FOR PARALLEL BORES BETWEEN

ABBREVIATIONS:

&	AND
@	AT
AB	ALL BELL
AC	ACRE / ASBESTOS CEMENT
AI/VR	AIR INLET / VACUUM RELIEF
APPROX	APPROXIMATELY
ASPH	ASPHALT
AVE	AVENUE
B	BASELINE
B/B	BACK TO BACK
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BL	BUILDING LINE
BLDG	BUILDING
BLVD	BOULEVARD
C	CENTER LINE
C/C	CENTER TO CENTER
CGMP	CORRUGATED GALVANIZED METAL PIPE
CMP	CORRUGATED METAL PIPE
CIP	CAST IRON PIPE
CLR	CLEARANCE
CO	CLEAN OUT
COH	CITY OF HOUSTON
CONC	CONCRETE
CONSTR	CONSTRUCTION
CPEE	CENTERPOINT ENERGY ELECTRIC
CPEG	CENTERPOINT ENERGY GAS
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DWG	DRAWING
DWY	DRIVeway
E	EAST
EL	ELEVATION
EP	EDGE OF PAVEMENT
E/R	END OF RADIUS
ESMT	EASEMENT
EXST	EXISTING
FC	FACE OF CURB
F/F	FACE TO FACE
FH	FIRE HYDRANT
F	FLOW LINE
FM	FORCE MAIN
FT	FEET
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
GV&B	GATE VALVE AND BOX
HCFCD	HARRIS COUNTY FLOOD CONTROL DISTRICT
HDPE	HIGH-DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HP	HIGH PRESSURE
INV EL	INVERT ELEVATION
IP	INTERMEDIATE PRESSURE
IR	IRON ROD

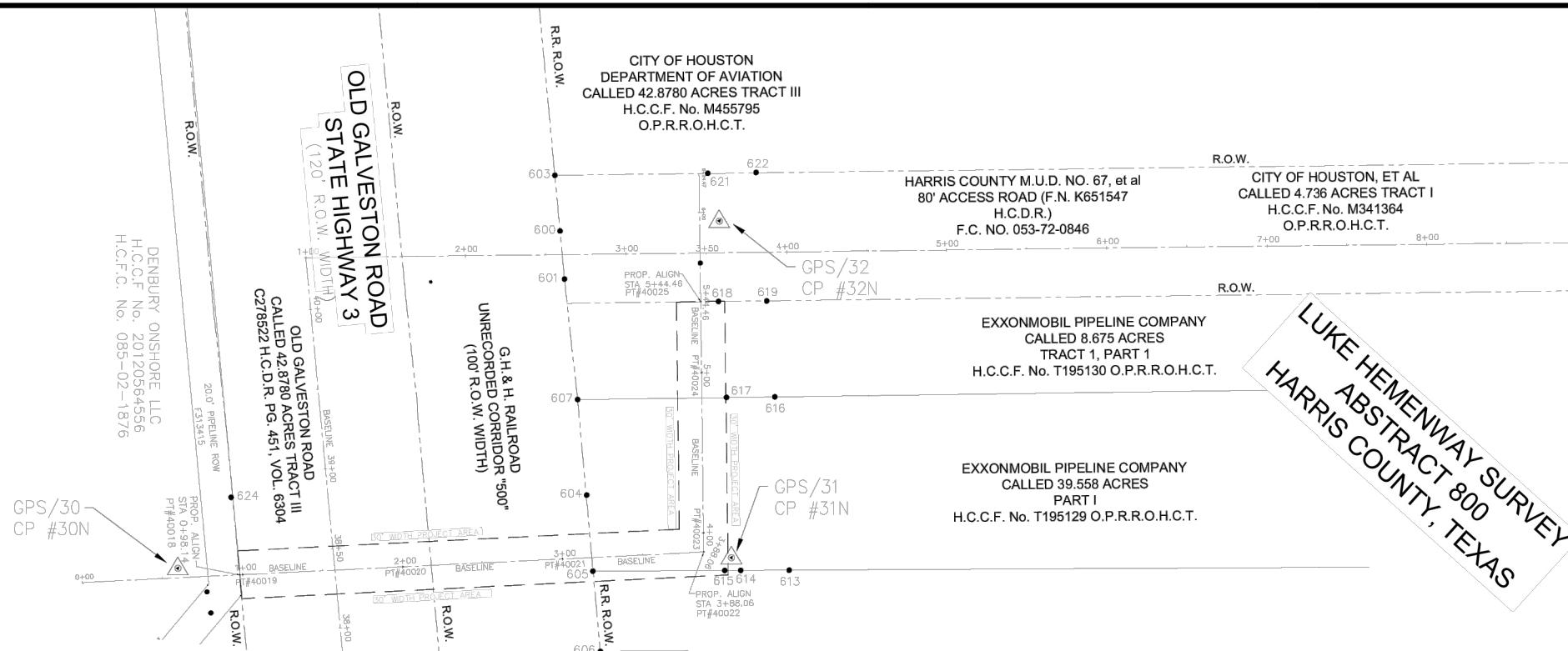
ABBREVIATIONS:

J-BOX	JUNCTION BOX
JT	JOINT
JUNCT	JUNCTION
LF	LINEAR FEET
LN	LANE
LPT	LOW POINT
LT	LEFT
LS	LIFT STATION
MAX	MAXIMUM
METRO	METROPOLITAN TRANSIT AUTHORITY
MH	MANHOLE
MIN	MINIMUM
MON	MONUMENT
N	NORTH
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NG	NATURAL GROUND
NO	NUMBER
NTS	NOT TO SCALE
OCC	ZERO CURB CUT
OS	OFFSET
OH	OVERHEAD
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVATURE
PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
PERM	PERMANENT
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PNT	POINT
PPCA	POTENTIALLY PETROLEUM CONTAMINATED AREA
PRC	POINT OF REVERSE
PROP	PROPOSED
PSI	POUND PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE / POINT OF VERTICAL CURVATURE
PVMT	PAVEMENT
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

ABBREVIATIONS:

R	RECORD DRAWING
R	RADIUS
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REINF	REINFORCED
REM	REMOVABLE
RJ	RESTRAINED JOINT
ROW	RIGHT OF WAY
RR	RAILROAD
RRPM	REFLECTIVE REMOVABLE PAVEMENT MARKERS
RT	RIGHT
S	SOUTH
SAN	SANITARY
SCHED	SCHEDULE
SF	SQUARE FEET
SHT	SHEET
SSE	SANITARY SEWER EASEMENT
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STM	STORM
SWBT	SOUTHWESTERN BELL TELEPHONE
SWR	SEWER
SY	SQUARE YARD
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TEMP	TEMPORARY
TOB	TOP OF BANK
TOC	TOP OF CURB
TOP	TOP OF PAVEMENT
TOS	TOP OF STACK
TS&V	TAPPING SLEEVE AND VALVE
TXDOT	TEXAS DEPARTMENT OF TRANSPORTATION
TYP	TYPICAL
UE	UTILITY EASEMENT
UGND	UNDERGROUND
VC	VERTICAL CURVE
VPI	VERTICAL POINT OF INTERSECTION
W	WEST
W/	WITH
WL	WATER LINE
WLE	WATER LINE EASEMENT
WM	WATER METER
WP	WOOD POLE
WSEL	WATER SURFACE ELEVATION
WV	WATER VALVE
WWTP	WASTE WATER TREATMENT PLANT

<b>NOTICE:</b>	
FOR YOUR SAFETY, YOU ARE REQUIRED BY TEXAS LAW TO CALL 811 AT LEAST 48 HOURS BEFORE YOU DIG SO THAT UNDERGROUND LINES CAN BE MARKED. THIS SIGNATURE DOES NOT FULFILL YOUR OBLIGATION TO CALL 811.	
<b>VERIFICATION OF PRIVATE UTILITY LINES</b>	
CenterPoint Energy natural gas utilities shown. (Gas service lines are not shown). This signature not be used for conflict verification.	
Signature valid for six months.	
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This signature verifies existing underground facilities - not to be used for conflict verification)	
Signature valid for one year.	
<b>APPROVED FOR AT&amp;T underground conduit facilities only.</b>	
Signature valid for six months.	
<b>APPROVED FOR UPRR FACILITIES DATE</b>	
<b>APPROVED FOR TxDOT FACILITIES DATE</b>	
<b>APPROVED FOR EXXON MOBILE PIPELINE CO. FACILITIES</b>	
<b>APPROVED FOR KINDER MORGAN FACILITIES DATE</b>	
<b>APPROVED FOR ENTERPRISE FACILITIES DATE</b>	
<b>APPROVED FOR CHEVRON FACILITIES DATE</b>	
<b>APPROVED FOR ENERGY TRANSFER COMPANY FACILITIES DATE</b>	
 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2446 TEXAS REGISTRATION NO: F-4270</p> <p>SURVEYED BY: TSC SURVEYING FB NO. 10083100</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER Michael J. Bagstad 10/8/2025</p>
<b>CITY OF HOUSTON</b>	
HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
<b>ABBREVIATIONS</b>	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 06 OF 35	



## PROPERTY CORNERS

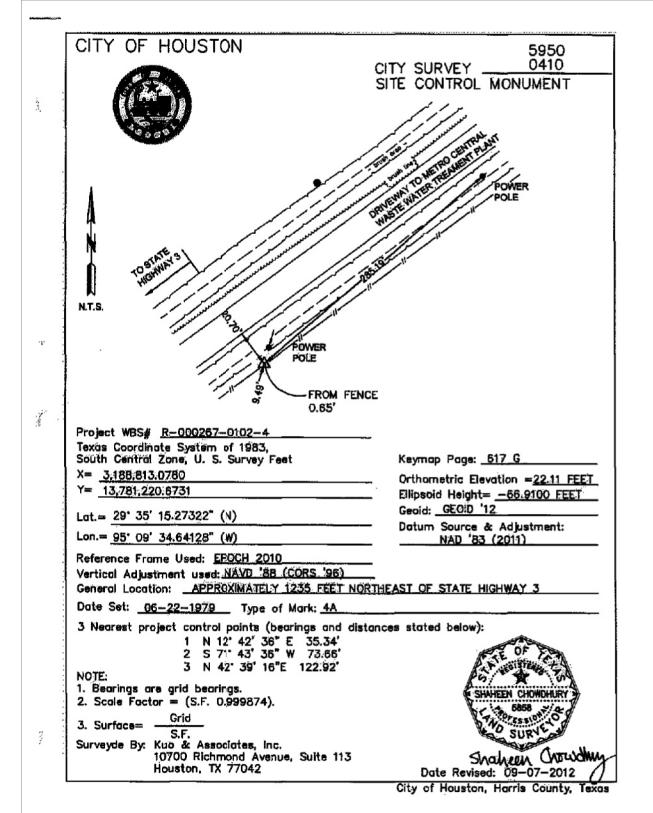
POINTS	NORTHING (GRID)	EASTING (GRID)	NORTHING (SURFACE)	EASTING (SURFACE)	DESCRIPTION
600	13,780,590.84	3,187,891.04	13,782,327.41	3,188,292.77	IRCA 58 MCM INC RPLS4743
601	13,780,568.15	3,187,910.84	13,782,304.72	3,188,312.57	IRCA 58 MCM INC RPLS4743
603	13,780,617.12	3,187,868.00	13,782,353.70	3,188,269.72	IR 58
604	13,780,466.96	3,188,001.08	13,782,203.51	3,188,402.82	IR 58
605	13,780,430.66	3,188,032.01	13,782,167.22	3,188,433.75	IR 58
606	13,780,392.79	3,188,065.13	13,782,129.33	3,188,466.88	IR 58
607	13,780,511.98	3,187,961.51	13,782,248.54	3,188,363.25	IR 58
613	13,780,502.77	3,188,130.65	13,782,239.33	3,188,532.40	IRCA 58 MCM INC RPLS4743
614	13,780,484.97	3,188,106.26	13,782,221.53	3,188,508.01	IRCA 58 MCM INC RPLS4743
615	13,780,479.12	3,188,098.26	13,782,215.67	3,188,500.01	IRCA 58 MCM INC RPLS4743
616	13,780,585.20	3,188,059.94	13,782,321.78	3,188,461.68	IRCA 58 MCM INC RPLS4743
617	13,780,567.31	3,188,035.78	13,782,303.88	3,188,437.53	IRCA 58 MCM INC RPLS4743
618	13,780,613.00	3,187,996.68	13,782,349.58	3,188,398.42	IRCA 58 MCM INC RPLS4743
619	13,780,630.82	3,188,020.78	13,782,367.40	3,188,422.52	IRCA 58 MCM INC RPLS4743
621	13,780,673.92	3,187,944.40	13,782,410.51	3,188,346.13	IRCA 58 MCM INC RPLS4743
622	13,780,691.91	3,187,968.43	13,782,428.50	3,188,370.17	IRCA 58 MCM INC RPLS4743
624	13,780,335.69	3,187,821.94	13,782,072.23	3,188,223.65	IR 58

## PROJECT BASELINE POINTS TABLE

POINT	NORTHING (GRID)	EASTING (GRID)	NORTHING (SURFACE)	EASTING (SURFACE)	TYPE OF MARKER	PROJ. B.L. STATION
40018	13,780,299.63	3,187,854.64	13,782,036.17	3,188,256.36	SET IR 58 GEOSURV STA 0+98.14	STA 0+98.14
40019	13,780,300.79	3,187,856.09	13,782,037.33	3,188,257.81	SET IR 58 GEOSURV STA 1+00	STA 1+00
40020	13,780,363.28	3,187,934.16	13,782,099.82	3,188,335.89	SET MAG NAIL SHINER STA 2+00	STA 2+00
40021	13,780,425.78	3,188,012.23	13,782,162.33	3,188,413.97	SET IR 58 GEOSURV STA 3+00	STA 3+00
40022	13,780,480.81	3,188,080.98	13,782,217.37	3,188,482.73	SET IR 58 GEOSURV STA 3+88.06	STA 3+88.06
40023	13,780,490.39	3,188,073.86	13,782,226.95	3,188,475.61	SET IR 58 GEOSURV STA 4+00	STA 4+00
40024	13,780,570.69	3,188,014.27	13,782,307.26	3,188,416.01	SET IR 58 GEOSURV STA 5+00	STA 5+00
40025	13,780,606.39	3,187,987.77	13,782,342.97	3,188,389.51	SET IR 58 GEOSURV STA 5+44.46	STA 5+44.46

## PROJECT CONTROL POINTS

Project Control Points									
Point	Northing (Grid)	Easting (Grid)	Northing (Surface)	Easting (Surface)	Elevation	Proj. B.L. Station	Type of Marker	Description	
30N	13,780,280.25	3,187,821.03	13,782,016.79	3,188,222.75	23.06	0+64.28 - 25.43' RIGHT	5/8" I.R. W/ GEOSURV/TSC CAP	GPS/30	
31N	13,780,488.10	3,188,097.02	13,782,224.66	3,188,498.77	22.95	3+88.06 - 17.66' RIGHT, 4.32' S.E.	5/8" I.R. W/ GEOSURV/TSC CAP	GPS/31	
32N	13,780,654.10	3,187,967.57	13,782,390.68	3,188,369.31	24.66	5+94.82 - 12.26' RIGHT	5/8" I.R. W/ GEOSURV/TSC CAP	GPS/32	



CONTROL POINTS:  
TB#15 IS A  $\frac{1}{4}$  INCH IRON ROD WITH CAP LOCATED ON THE NORTHEAST SIDE OF STATE HIGHWAY 3 AND THE SOUTHWEST SIDE OF G.H. & H. RAILROAD AND APPROX. 2,497 FEET NORTH OF CLEARLAKE CITY BLVD.  
LEV. 25.11 FEET NAVD 88  
STA. 5+64.02, 169.82'

6950-0410 CITY OF HOUSTON.. SITE CONTROL MONUMENT IS LOCATED APPROXIMATELY 1,235 FEET NORTHEAST OF STATE HIGHWAY 3.  
ELEV. 22.11 FEET NAVD 88  
STA. 5+50.01, 1,029.16'R

HORIZONTAL DATUM:  
ALL HORIZONTAL COORDINATES ARE BASED ON TEXAS STATE PLANE  
COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (2001 ADJUSTMENT),  
EPOCH 2010.0. THE COORDINATES & DISTANCES SHOWN HEREON ARE  
SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING SURFACE VALUES  
BY A COMBINED SCALE FACTOR OF 0.999874.  
SURF. X S.F.= GRID

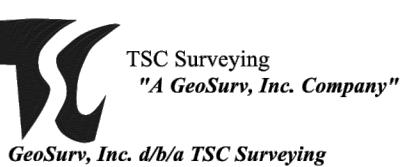
VERTICAL DATUM:  
COH SITE CONTROL MONUMENT 5950-0410 ELEV. = 22.11'  
ALL VERTICAL ELEVATIONS ARE BASED ON NAVD 88, 2001  
ADJUSTMENT, CGPS 12.

## NOTES:

1. THE BEARINGS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT OR NAD83 (2011 ADJ.), TEXAS STATE COORDINATE SYSTEM SOUTH CENTRAL ZONE 4204. THE HORIZONTAL CONTROL SHOWN HEREON IS TIED TO WESTERN DATA SYSTEMS (WDS) TRIMBLE VRS NETWORK WHICH IS REFERENCED TO THE NGS CONTINOUS OPERATING REFERENCE STATIONS (C.O.R.S.).
2. R.O.W. SURVEY WAS NOT PERFORMED FOR THIS PROJECT.  
THE STATE HIGHWAY 3 (OLD GALVESTON ROAD) R.O.W. WAS ESTABLISHED USING FOUND LR POINTS #601 / #602 PARALLEL TO RAILROAD R.O.W.

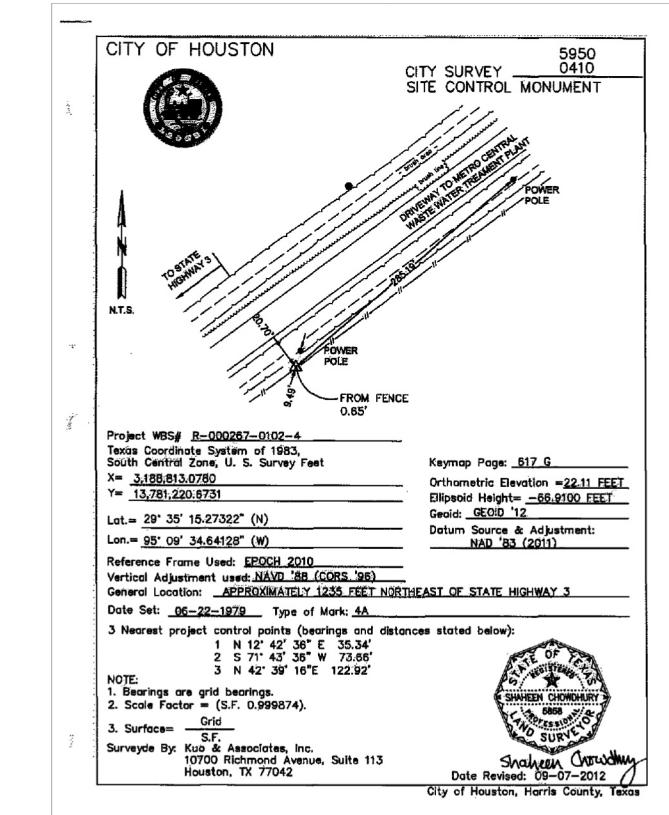
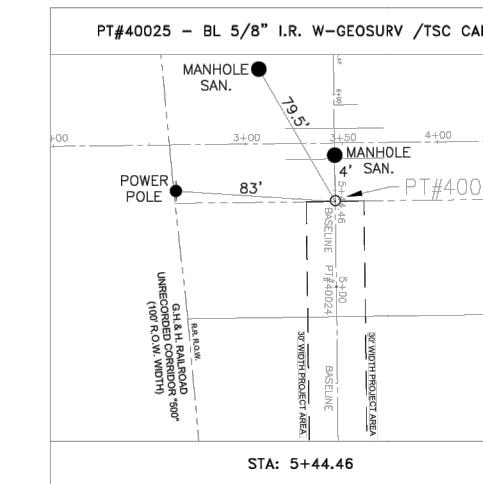
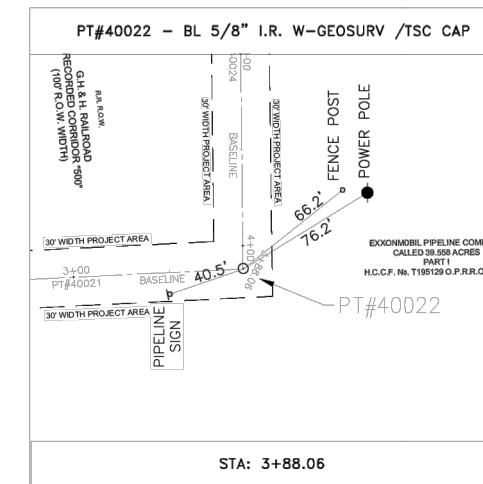
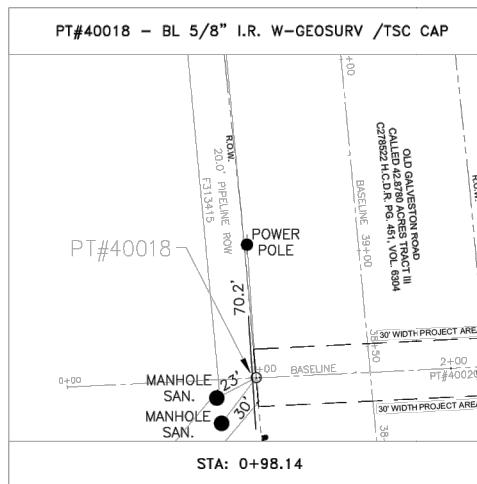
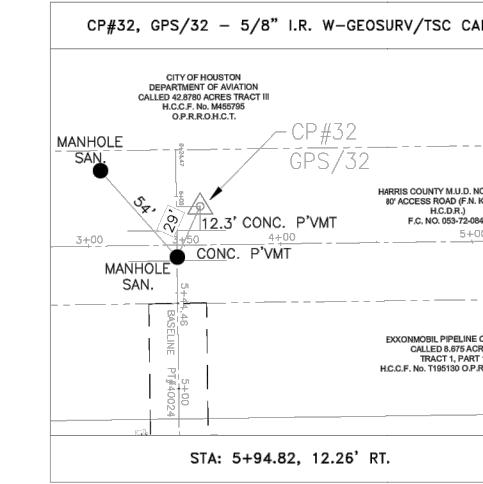
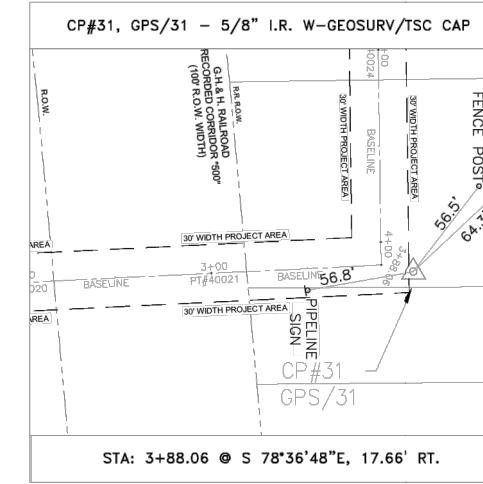
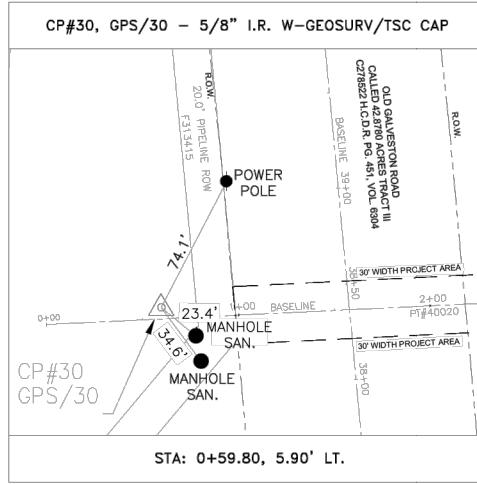
2. R.O.

THE STATE HIGHWAY 3 (OLD GALVESTON ROAD) R.O.W. WAS ESTABLISHED  
USING FOUND L.R. POINTS #601, #602 PARALLEL TO RAILROAD R.O.W.



IBPLS Firm No. 10083100  
10970 STANCLIFF RD. HOUSTON, TEXAS 77099  
TEL. 713-584-4466

GRAVITY SEWER LINE ADJUSTMENT	
SURVEY CONTROL MAP	
 <b>CITY OF HOUSTON PUBLIC WORKS AND ENGINEERING DEPARTMENT</b>	
<u>APPROVAL</u>	<u>DATE</u>
<u>SURVEY SECTION</u>	
RIGHT OF WAY SECTION	
KEY MAP No. 517G	
WBS NUMBER	
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
ALKA AGARWAL, P.E.	
<b>SHEET NO. 07 OF 35</b>	



HORIZONTAL DATUM:  
ALL HORIZONTAL COORDINATES ARE BASED ON TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD83 (2001 ADJUSTMENT), EPOCH 2010.0. THE COORDINATES & DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.999874.  
(SURF. X S.F. = GRID)

VERTICAL DATUM:  
COH SITE CONTROL MONUMENT 5950-0410 ELEV. = 22.11'  
ALL VERTICAL ELEVATIONS ARE BASED ON NAVD 88, 2001  
ADJUSTMENT, GEODID 12.

## NOTES:

1. THE BEARINGS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT OR NAD83 (2011 ADJ.), TEXAS STATE COORDINATE SYSTEM SOUTH CENTRAL ZONE 2404. THE HORIZONTAL CONTROL SHOWN HEREON IS TIED TO WESTERN DATA SYSTEMS (WDS) TRIMBLE VRS NETWORK WHICH IS REFERENCED TO THE NGS CONTINUOUS OPERATING REFERENCE STATIONS (C.O.R.S.).
2. R.O.W. SURVEY WAS NOT PERFORMED FOR THIS PROJECT. THE STATE HIGHWAY 3 (OLD GALVESTON ROAD) R.O.W. WAS ESTABLISHED USING FOUND I.R. POINTS #601-#607 PARALLEL TO RAILROAD R.O.W.

**TSC** Surveying  
"A GeoSurv, Inc. Company"  
GeoSurv, Inc. d/b/a TSC Surveying  
TBPLS Firm No. 10083100

10970 STANCLIFF RD. HOUSTON, TEXAS 77099  
TEL. 713-784-4466

(SHEET 2 of 2)

GRAVITY SEWER LINE ADJUSTMENT

SURVEY CONTROL MAP

CITY OF HOUSTON  
PUBLIC WORKS AND  
ENGINEERING DEPARTMENT

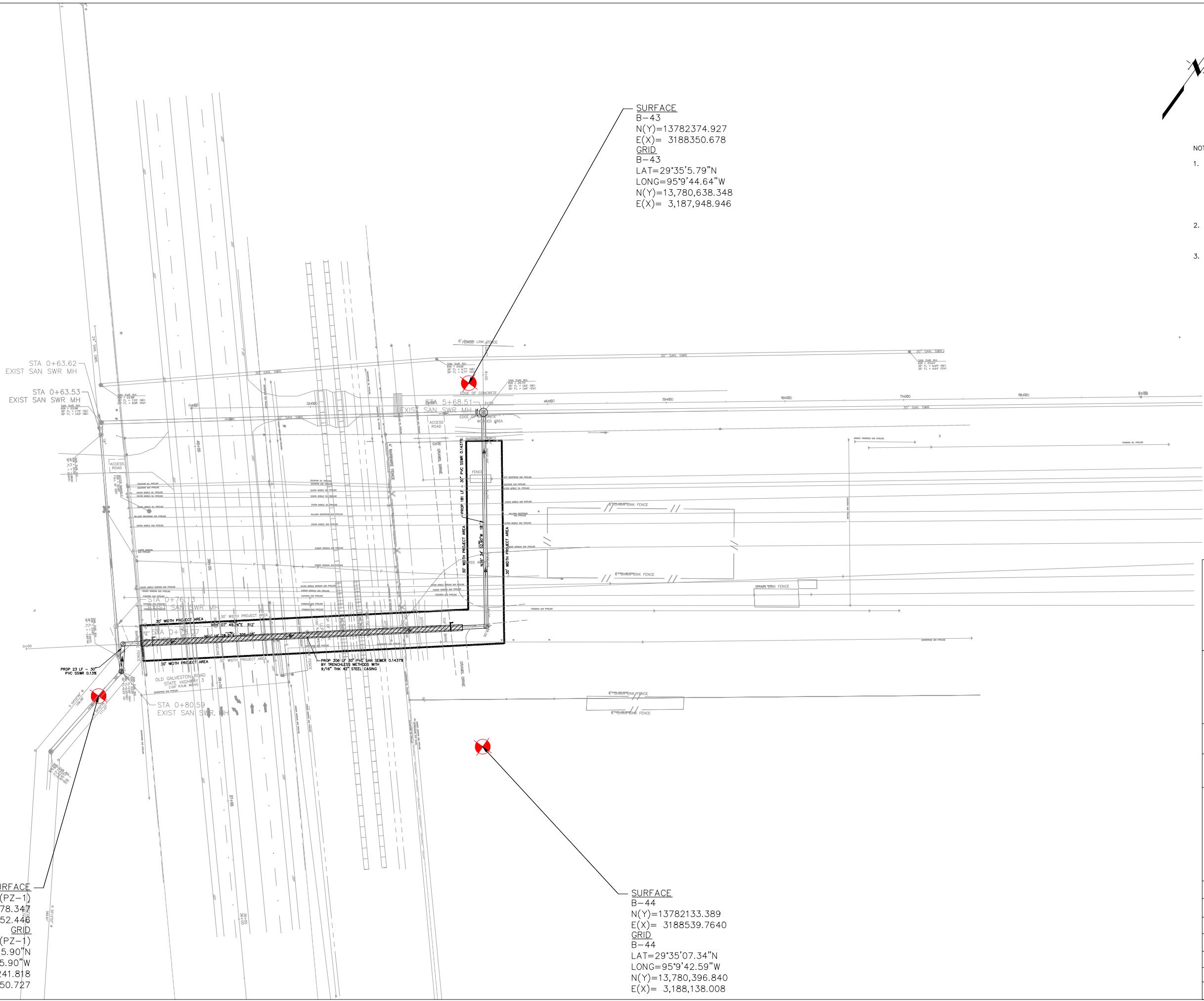
APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_

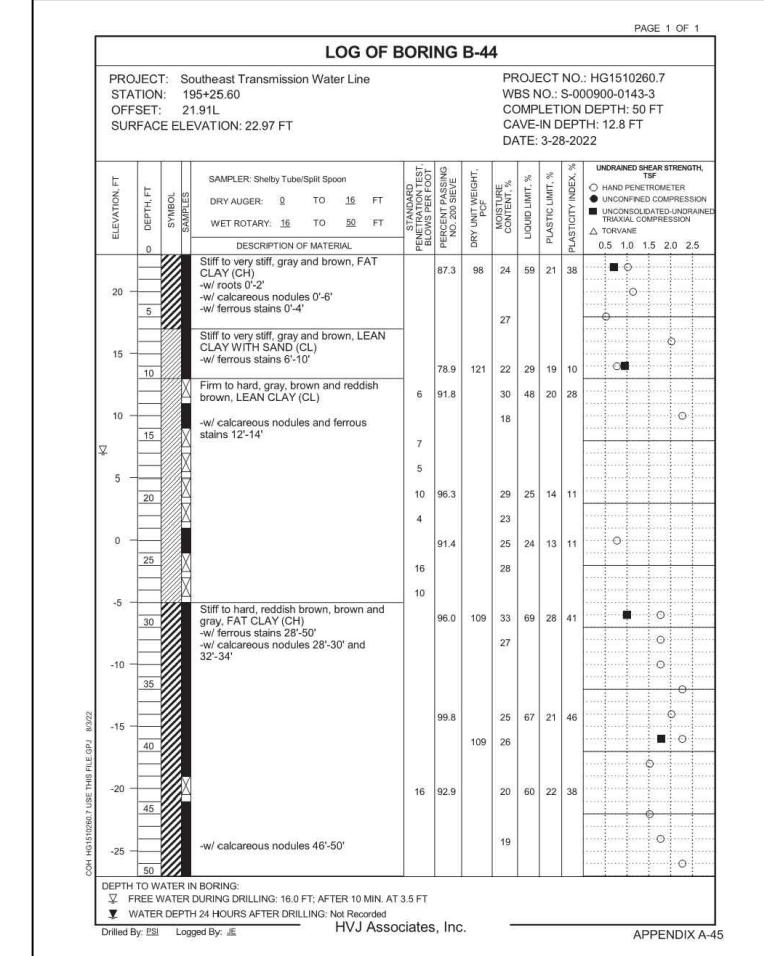
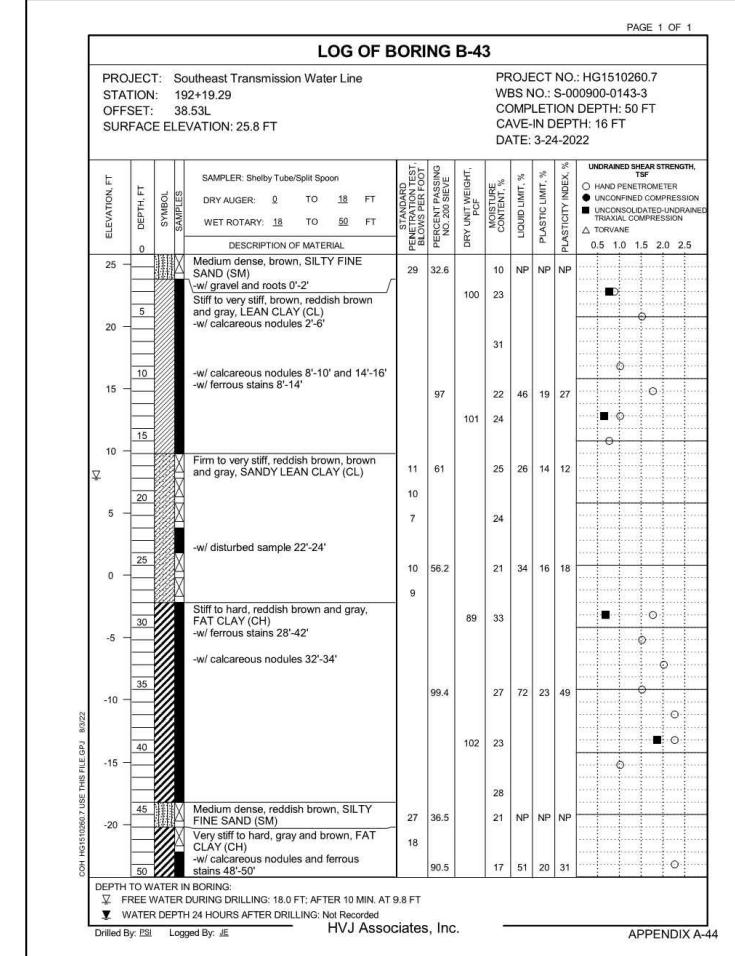
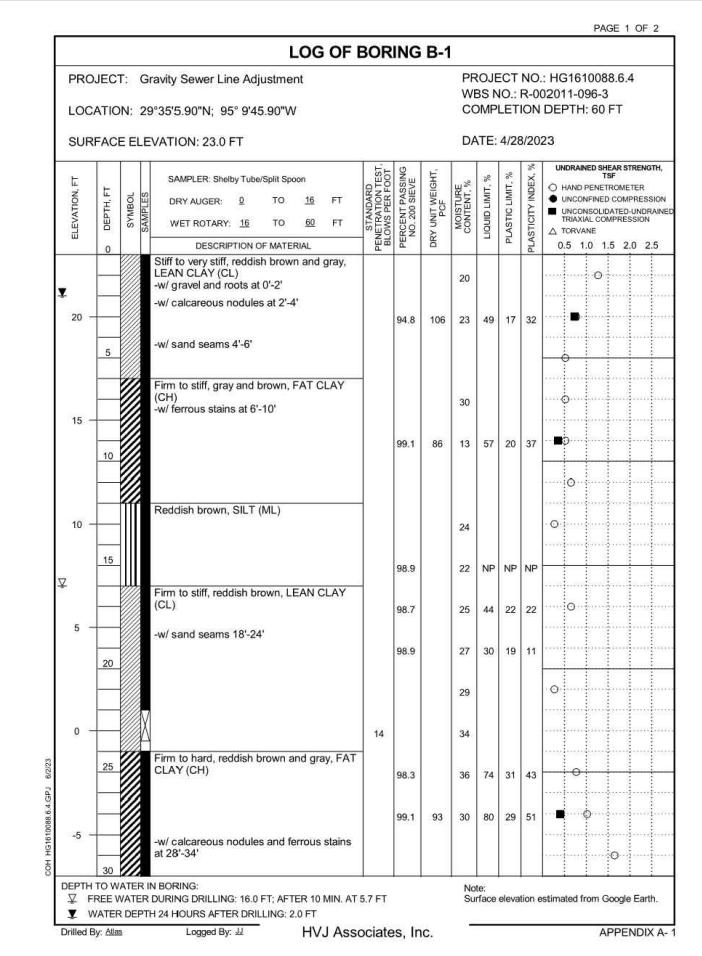
SURVEY SECTION		RIGHT OF WAY SECTION
KEY MAP No. 617G	GIMS MAP No. 5950	
WBS NUMBER		
R-002011-0096-3		
DRAWING SCALE		
N/A		
CITY OF HOUSTON PM		
ALKA AGARWAL, P.E.		
SHEET NO. 08 OF 35		

*By [Signature]*

STATE OF TEXAS  
REGISTERED  
PROFESSIONAL SURVEYOR  
GEORG R. LARDIZABAL  
6051  
LAWRENCE SURVEYING







 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO: F-4270</p> <p>SURVEYED BY: TSC SURVEYING FB NO. 10083100</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER Michael J. Bagstad 10/8/2025</p>														
<p><b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS</p> <p>GRAVITY SEWER LINE ADJUSTMENT</p> <p><b>BORE HOLES LOGS</b></p>															
<table border="1"> <tr> <td>WBS NUMBER</td> <td>FOR CITY OF HOUSTON USE ONLY</td> </tr> <tr> <td>R-002011-0096-3</td> <td></td> </tr> <tr> <td>DRAWING SCALE</td> <td></td> </tr> <tr> <td>N/A</td> <td></td> </tr> <tr> <td>CITY OF HOUSTON PM</td> <td></td> </tr> <tr> <td>MARIA GEORGE, P.E.</td> <td></td> </tr> <tr> <td>SHEET NO. 11 OF 35</td> <td></td> </tr> </table>		WBS NUMBER	FOR CITY OF HOUSTON USE ONLY	R-002011-0096-3		DRAWING SCALE		N/A		CITY OF HOUSTON PM		MARIA GEORGE, P.E.		SHEET NO. 11 OF 35	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY														
R-002011-0096-3															
DRAWING SCALE															
N/A															
CITY OF HOUSTON PM															
MARIA GEORGE, P.E.															
SHEET NO. 11 OF 35															

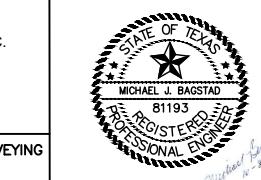
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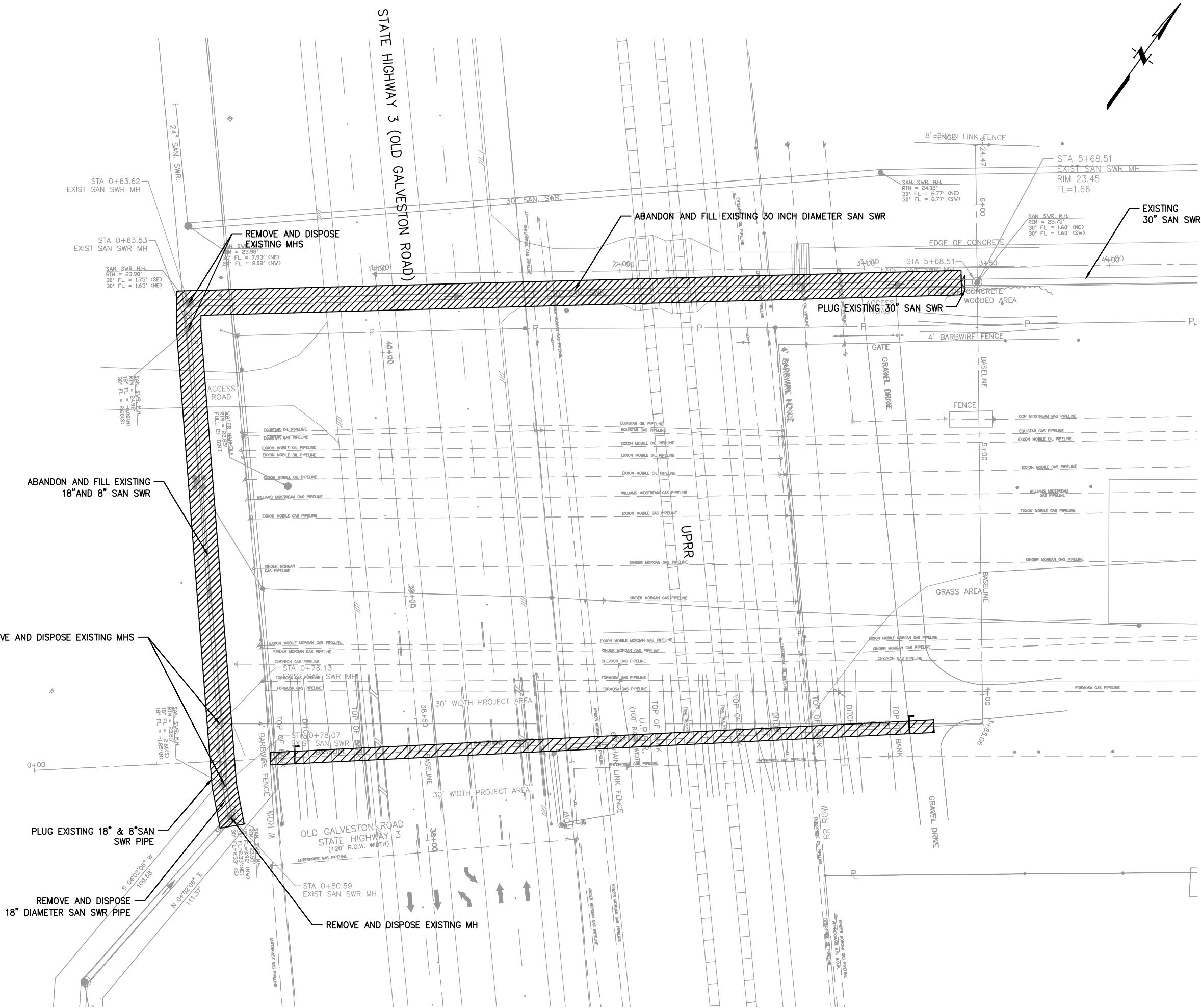
## UTILITY TABLE

Owner	Contact Name	Address	Phone No.	Email
UPRR	Kerin Bristow	1400 Douglas St, STOP 1690, Omaha, NE 68179		<a href="mailto:klbristo@up.com">klbristo@up.com</a>
Chevron	Mr. Ben Bohannon	(832) 418-4578.	(832) 418-4578.	<a href="mailto:boha@chevron.com">boha@chevron.com</a>
Energy Transfer Co	Mr. Daniel Tarlton	(832) 516-0941	(832) 516-0941	<a href="mailto:encroachments@energytransfer.com">encroachments@energytransfer.com</a>
Enterprise	Sherwood Gregory /Cameron Lair	281-885-9272 /(281)770-9124	Cameron Lair Enterprise Products Company Land-Encroachments 1100 Louisiana Street Houston, TX 77002	<a href="mailto:E.clair@eprod.com">E.clair@eprod.com</a>
ExxonMobil Pipeline Company LLC	Rachel Bear	ExxonMobil Pipeline Company LLC 22777 Springwoods Village Parkway E2.B.333 Spring, TX 77389	Cell: 281.939.4966 Zoom: 346.566.9214	<a href="mailto:rachel.p.bear@exxonmobil.com">rachel.p.bear@exxonmobil.com</a>
Kinder Morgan	Josh Amador PM - Interstate PL Encroachment - Eng. Tech.	Assigned case A2305001 ( 1001 Louisiana Street Houston, Texas 77002	Jason 832-542-5018 CELL (713) 420-2590 office	<a href="mailto:Joshua_Amador@kindermorgan.com">Joshua_Amador@kindermorgan.com</a> <a href="mailto:kmencroachmentsgulf@kindermorgan.com">kmencroachmentsgulf@kindermorgan.com</a>
Williams Midstream	Mr.Richard Anthony	832-256-2543	832-256-2543	
Equistar	Stacy Jamison Supervisor, Pipeline Damage Prevention and Right-Of-Way	16055 Space Center Blvd. Ste 350 Houston, Texas 77062	O: 281.709.0618 - M: 281-387.3850	<a href="mailto:stacy.jamison@lyondellbasell.com">stacy.jamison@lyondellbasell.com</a>
Magellan	Ms. Erin Brantley	713-475-4303	713-475-4303	
Phillips	Lamar Felder RES Agent, Eastern Region Real Estate & Right-of-Way	HQ-2-S231-02   2331 CityWest Blvd   Houston, TX 77042-2862	O: 832-765-4015 - M: 713-517-0516	<a href="mailto:lamar.felder@p66.com">lamar.felder@p66.com</a>
ATT Texas/SWBT	Ms. Kathy Tinney	6500 West Loop South Zone 1.3 Bellaire, TX 77401	713-660-5334	<a href="mailto:kg7085@att.com">kg7085@att.com</a>
COH		PO Box 611 Houston, Texas 77002	832-395-2500	
Centerpoint Elec	Cynthia Martinez	1111 Louisiana, Rm 942D, Houston, TX 77002	713-207-6555	<a href="mailto:cindy.martinez@centerpointenergy.com">cindy.martinez@centerpointenergy.com</a>
ComCast	Kelly Mercurio	Comcast 8590 West Tidwell, Houston Texas 77040		
Centerpoint Gas	Ms. Lory Simmons	1111 Louisiana, Rm 1233A, Houston, TX 77002	713-207-4624	
TxDOT	Ms. April Dow	7600 Washington Avenue, Houston, TX 77007	713-802-5575	<a href="mailto:april.dow@txdot.gov">april.dow@txdot.gov</a>
Easton Energy	C. Sutton		281-36-1468 (Corporate Office 281-767-2511)	<a href="mailto:csutton@eastonenergy.com">csutton@eastonenergy.com</a>

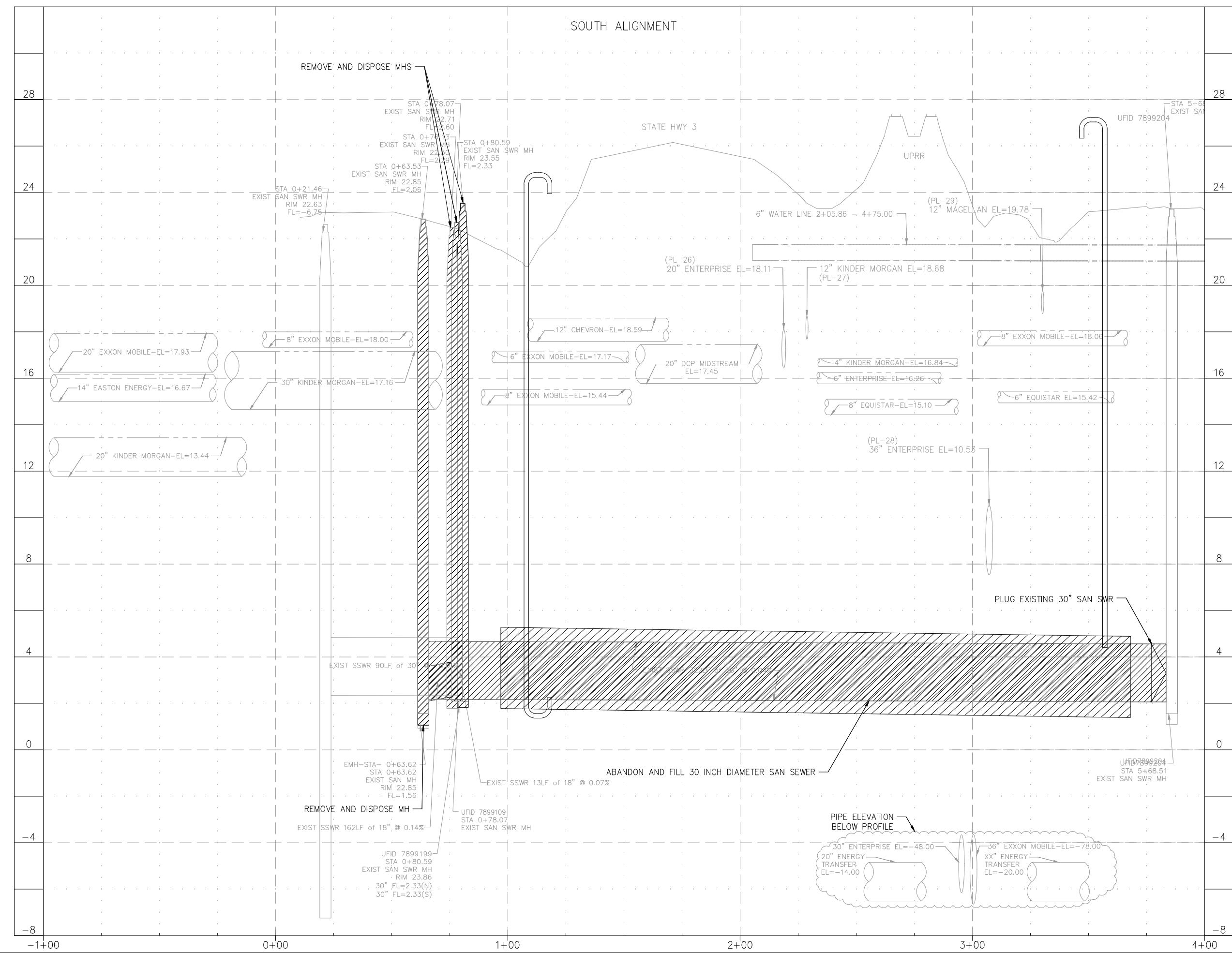
Label	Owner	Diameter (Inches)	Ground Elev.	Elev.	Depth to top of pipe	PROBED
PL-14	Energy Transfer	20	22.46	-14	36.46	NO
PL-15	Chevron	12	22.33	18.59	3.74	YES
PL-16	Kinder Morgan	20	22.60	13.44	9.16	YES
PL-17	Exxon Mobil	6	22.57	17.17	5.4	YES
PL-18	Kinder Morgan	30	22.97	17.16	5.81	YES
PL-19	Exxon Mobil	20	23.03	17.93	5.1	YES
PL-20	William Midstream	14	23.06	16.67	6.39	YES
PL-21	Exxon Mobil	8	23.09	18.00	5.09	YES
PL-22	Exxon Mobil	8	23.17	18.06	5.11	YES
PL-23	Exxon Mobil	8	23.00	15.44	7.56	YES
PL-24	Equistar	6	22.98	15.42	7.56	YES
PL-25	Equistar	8	22.93	15.10	7.83	YES
PL-26	Enterprise	20	24.11	18.11	6	YES
PL-27	Kinder Morgan	12	23.68	18.68	5	YES
PL-28	Enterprise	36	23.51	10.53	12.98	YES
PL-29	Magellan	12	22.78	19.78	3	YES
PL-30	Philips 66	20	22.64	17.45	5.19	YES
PL-31	Kinder Morgan	4	22.73	16.84	5.89	YES
PL-33	Enterprise	6	23.02	16.26	6.76	YES
PL-34	Kinder Morgan	12	22.93	17.79	5.14	YES
PL-34	Kinder Morgan	12				NO
PL-35	Kinder Morgan	12				NO
PL-36	Exxon Mobil	36	22.50	-78	100.5	NO
PL-37	Enterprise	30	22.00	-48	70	NO
PL-38	Energy Transfer		22.46	-20	42	NO

PL= PIPE LINE

ZARINKELK ENGINEERING SERVICES, INC. 6117 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2446 TEXAS REGISTRATION NO: F-4270	 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER Michael J. Bagstad P.E.
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
PIPELINE INFORMATION	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 12 OF 35	



ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS GRAVITY SEWER LINE ADJUSTMENT <b>DEMOLITION PLAN</b>	
(SHEET 1 OF 3)	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE 1"=40'	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 13 OF 35	



ZARINKELK  
ENGINEERING  
SERVICES, INC.  
6117 Caroline St.  
Houston, TX 77002  
Phone (832) 242-2426  
FAX (832) 242-2445  
TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100



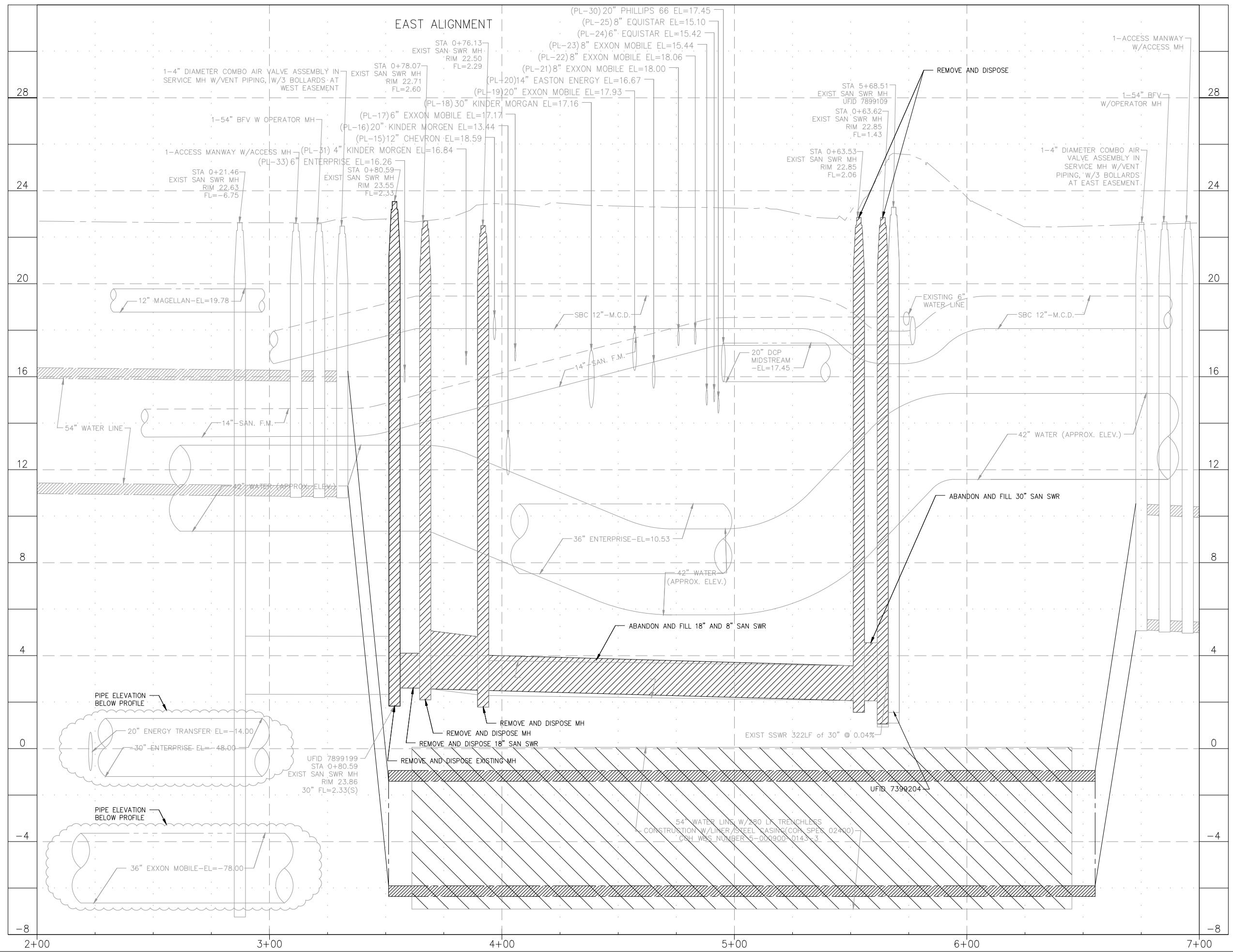
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

**DEMOLITION PROFILE**

BEGIN PROJECT STA 0+80.59 TO STA 3+88.06  
(SHEET 2 OF 3)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE 1"=40'	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 14 OF 35	



HALF | HORIZ: 1"=40' FULL | HORIZ: 1"=20'  
SIZE | VERT: 1"=4' SIZE | VERT: 1"=2'

## LEGEND



## DEMOLITION

1000 100 10 1

The logo for Zarinkelk Engineering Services, Inc. It features a stylized, italicized lowercase 'e' on the left. To the right of the 'e', the company name is written in a bold, sans-serif font, with 'ZARINKELK' on the first line, 'ENGINEERING' on the second line, and 'SERVICES, INC.' on the third line.

A circular red seal for a professional engineer. The outer ring contains the words "STATE OF TEXAS" at the top and "REGISTERED PROFESSIONAL ENGINEER" at the bottom. The inner circle features a large five-pointed star in the center, with the name "MICHAEL J. BAGSTAD" above it and the number "81193" below it.

SURVEYED BY: TSC SURVEYING  
SER. NO. 10007100

**CITY OF HOUSTON**

## DEMOLITION PROFILE

STA 03+88.06 TO STA 05+68.5  
(SH)

FOR CITY OF HOUSTON USE ONLY

2021.1-2026.3

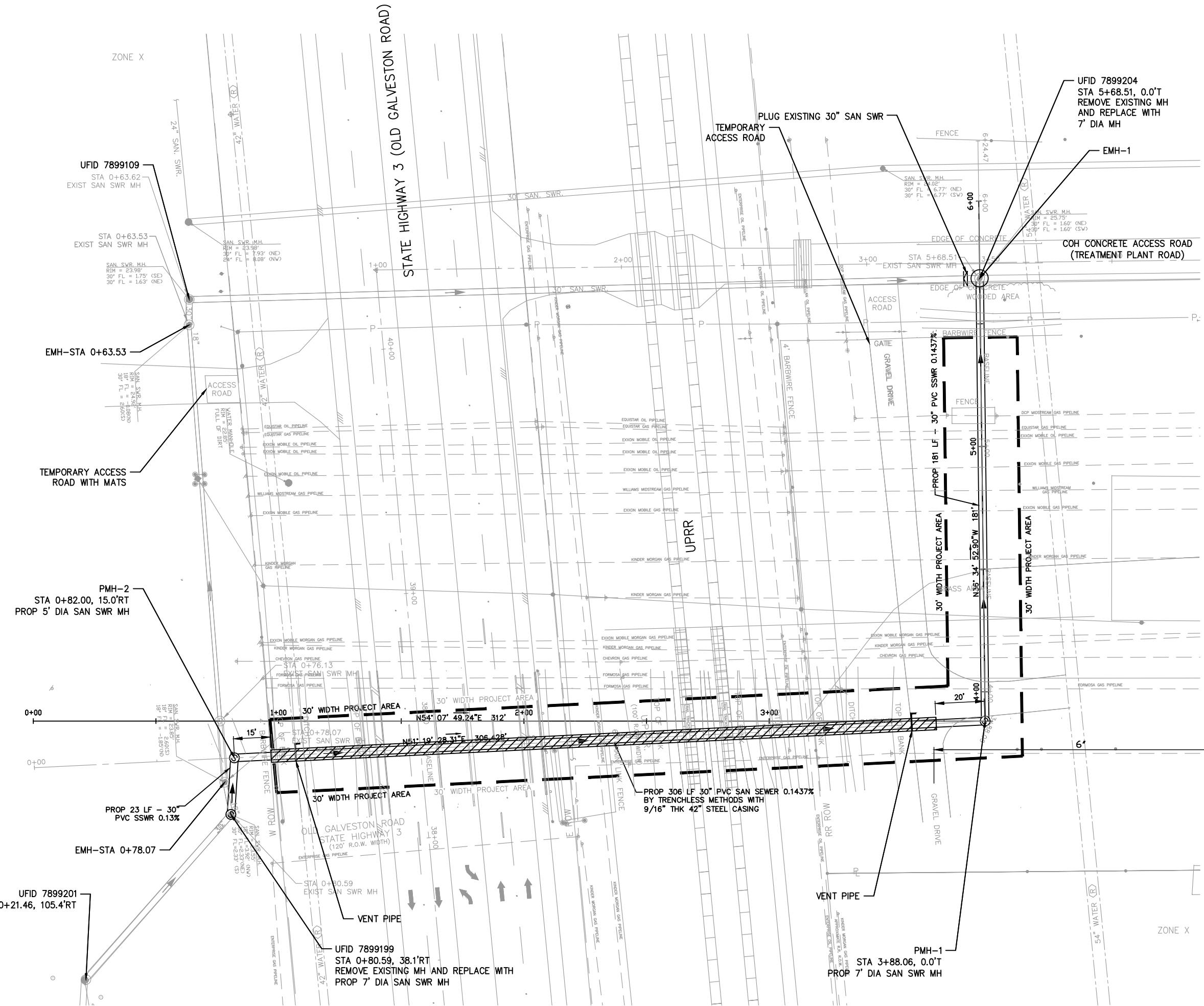
10 of 10

WATER LEVELS

4 OF HOUSTON, RM

MARIA GEORGE P.E.

NO 15 OF 35



0 5 10 20 40 60  
HALF|HORIZ: 1"=40' FULL|HORIZ: 1"=20'  
SIZE|VERT: 1"=4' SIZE|VERT: 1"=2'

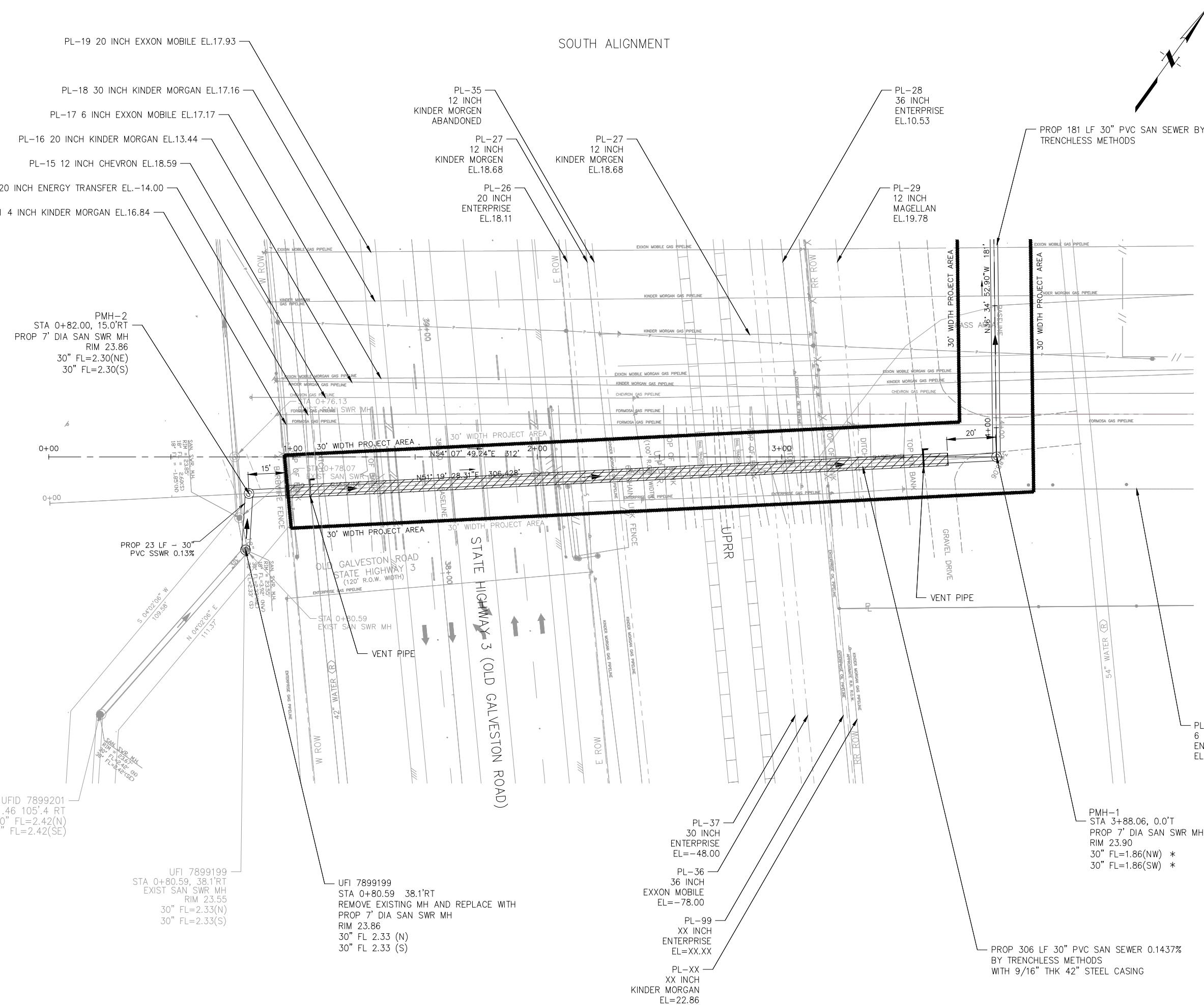
## NOTE

THE PROJECT AREA LIES IN ZONE X WITHIN THE 500-YEAR FLOOD PLAIN PER THE NATIONAL FLOOD INSURANCE RATE MAP. PANEL NUMBER 48201C1060M, DATED JANUARY 6, 2017. (NAVD88)

LEGEND  
Hatched area: STEEL CASING

LEGEND  
PROP (E) ROW  
PROP (W) ROW  
EXIST (E) ROW  
EXIST (W) ROW  
EDGE OF PAVEMENT  
PROFILE  
PROP N TOC  
GAS  
WTR  
EXIST (S) TOC  
PROP (E) ROW  
PROP (W) ROW  
EXIST (E) ROW  
EXIST (W) ROW  
C PAVEMENT

ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
OVERALL LAYOUT	
WBS NUMBER R-002011-0096-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE 1"=40' N/A	
CITY OF HOUSTON PM MARIA GEORGE, P.E.	
SHEET NO. 16 OF 35	



## PROJECT BENCHMARK

CITY OF HOUSTON SITE CONTROL MONUMENT NO. 5950-0410: BEING A CITY OF HOUSTON BRASS DISC STAMPED 5950-0410 BEGGINING FROM THE INTERSECTION OF CLEAR LAKE CITY BOULEVARD AND OLD GALVESTON ROAD (STATE HIGHWAY 3), TRAVEL NORTHWEST ON STATE HIGHWAY 3 APPROXIMATELY 2,500 FEET TO THE DRIVEWAY OF METRO CENTRAL WWTP. MONUMENT IS LOCATED APPROXIMATELY 1,235 FEET NORTHEAST OF STATE HIGHWAY 3.

PUBLISHED ELEV = 22.11 FEET NAVD88 (CORS 96)

CITY OF HOUSTON SITE CONTROL MONUMENT NO. 5950-7505: BEING A CITY OF HOUSTON BRASS DISC STAMPED 5950-7505 BEING LOCATED ON THE SOUTHWEST OF THE INTERSECTION OF CLEAR LAKE CITY BOULEVARD AND OLD GALVESTON ROAD (STATE HIGHWAY 3) 28 FEET WEST OF TYPE "C" INLET

PUBLISHED ELEV = 23.29 FEET NAVD88 (CORS 96)

\* TO MAINTAIN MINIMUM SLOPE OF 0.13% IN CARRIER PIPE. MAXIMUM DEVIATION  $\leq 0.5"$ . ACCEPTABLE FL ELEV=1.9023 TO 1.8353

## LEGEND

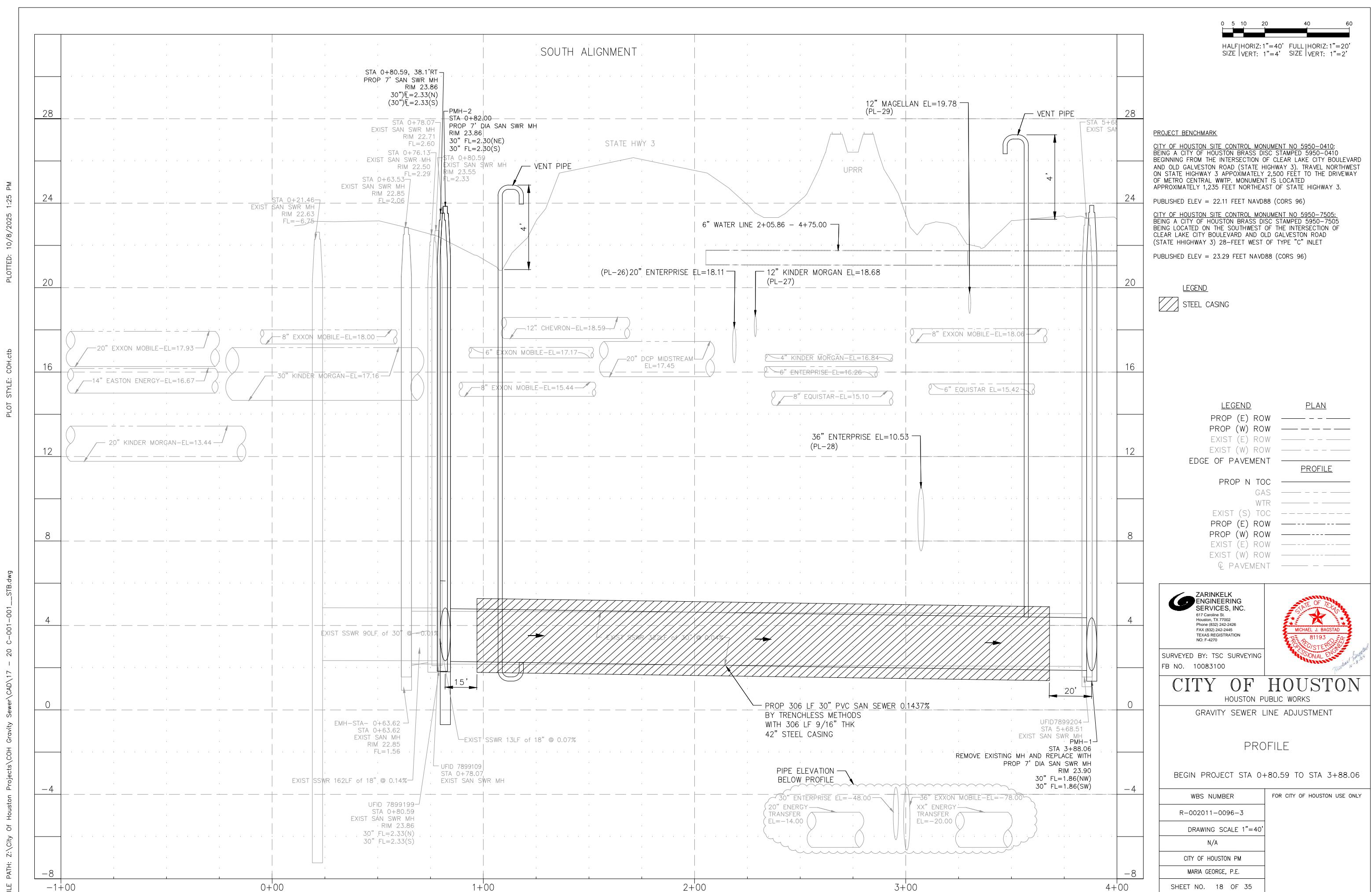
STEEL CASING

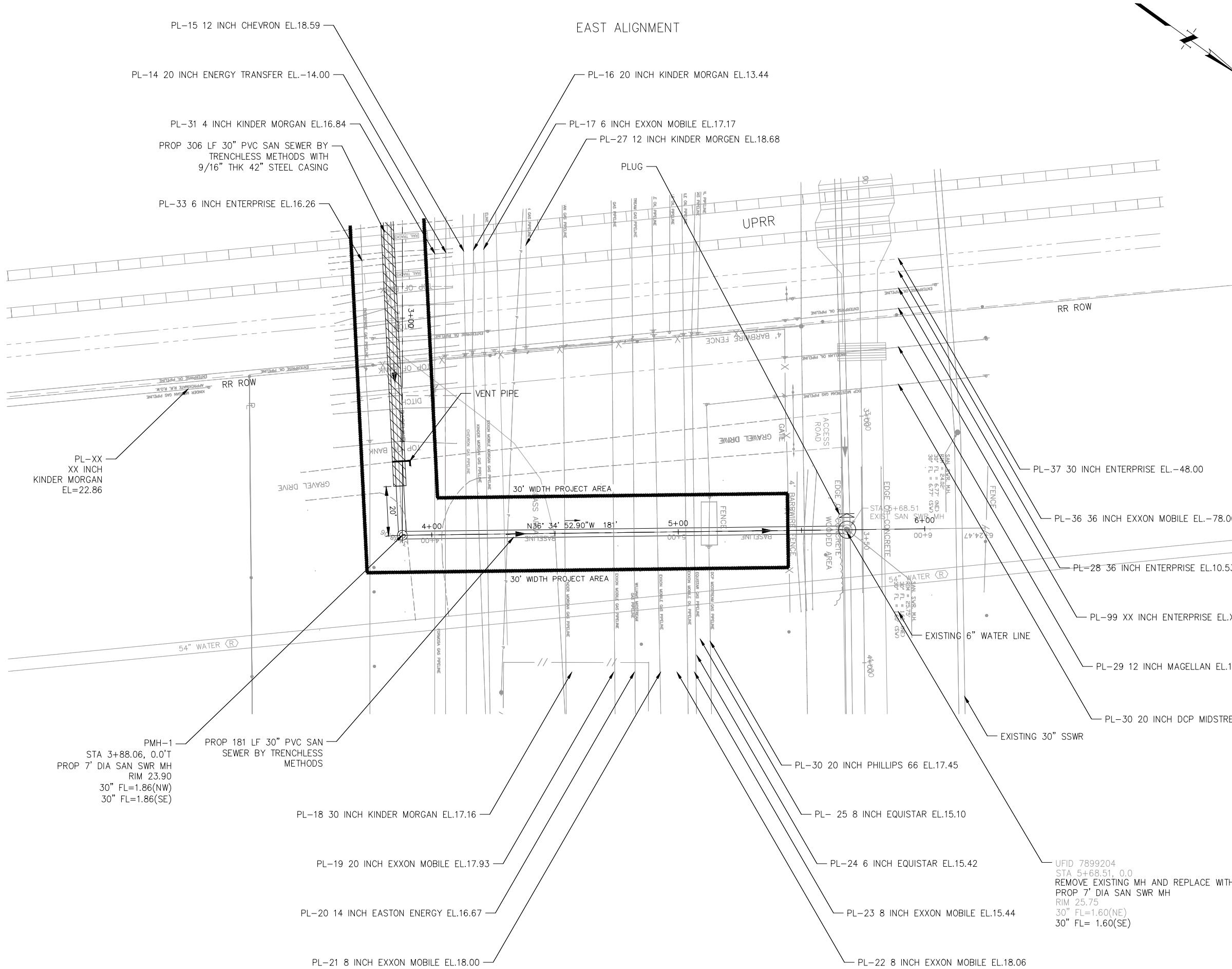
## LEGEND

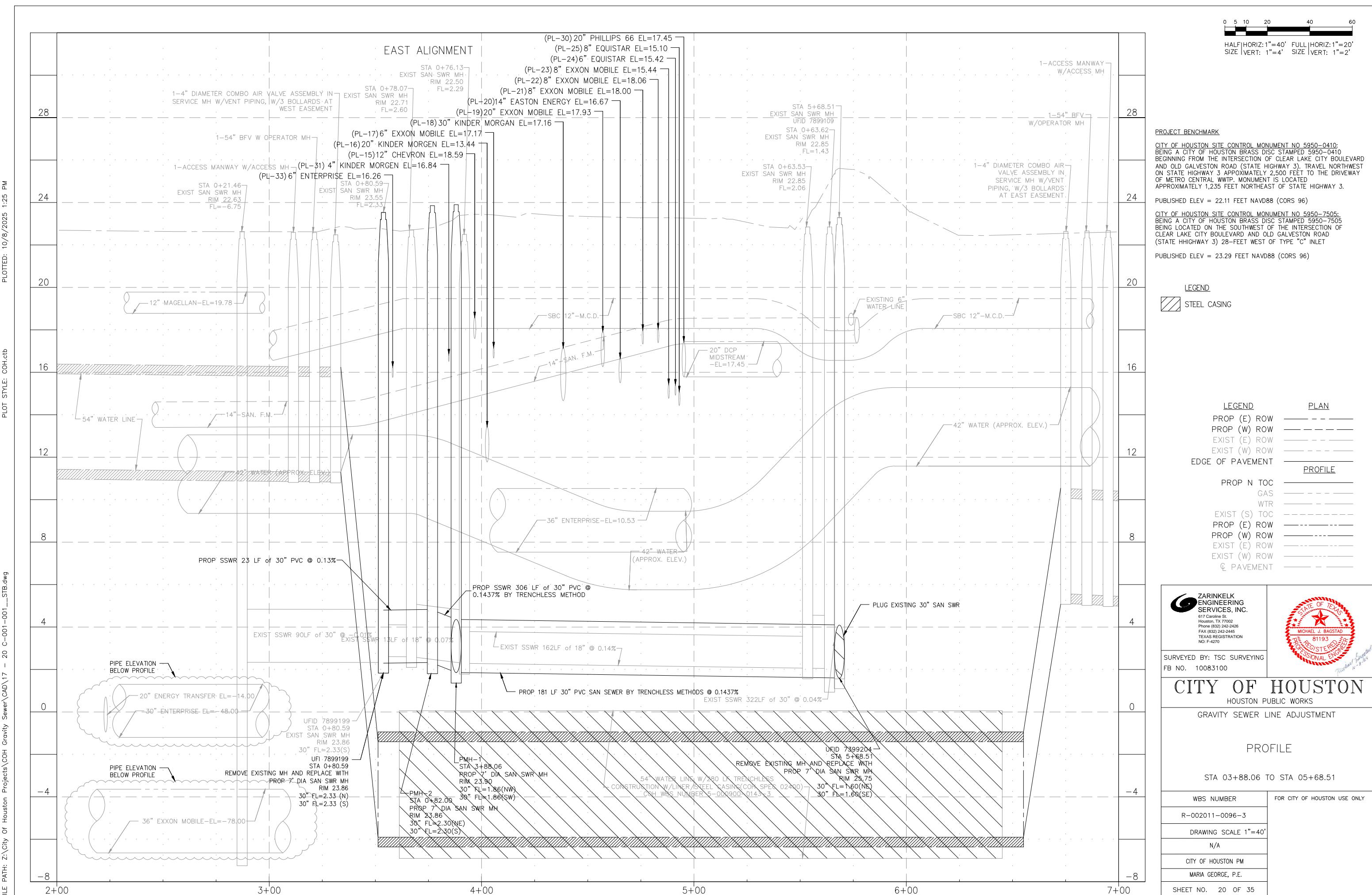
PLAN	PROFILE
PROP (E) ROW	---
PROP (W) ROW	---
EXIST (E) ROW	---
EXIST (W) ROW	---
EDGE OF PAVEMENT	---
PROP N TOC	---
GAS	---
WTR	---
EXIST (S) TOC	---
PROP (E) ROW	---
PROP (W) ROW	---
EXIST (E) ROW	---
EXIST (W) ROW	---
PAVEMENT	---

<p> ZARINKELK ENGINEERING SERVICES, INC. 617 Gardner St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO: F-4270</p>	<p> STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER Michael J. Bagstad P.E. #81193 Issued 10/12/2023</p>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	

CITY OF HOUSTON HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
PLAN	
BEGIN PROJECT STA 0+80.59 TO STA 03+88.06	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE 1"=40'	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 17 OF 35	

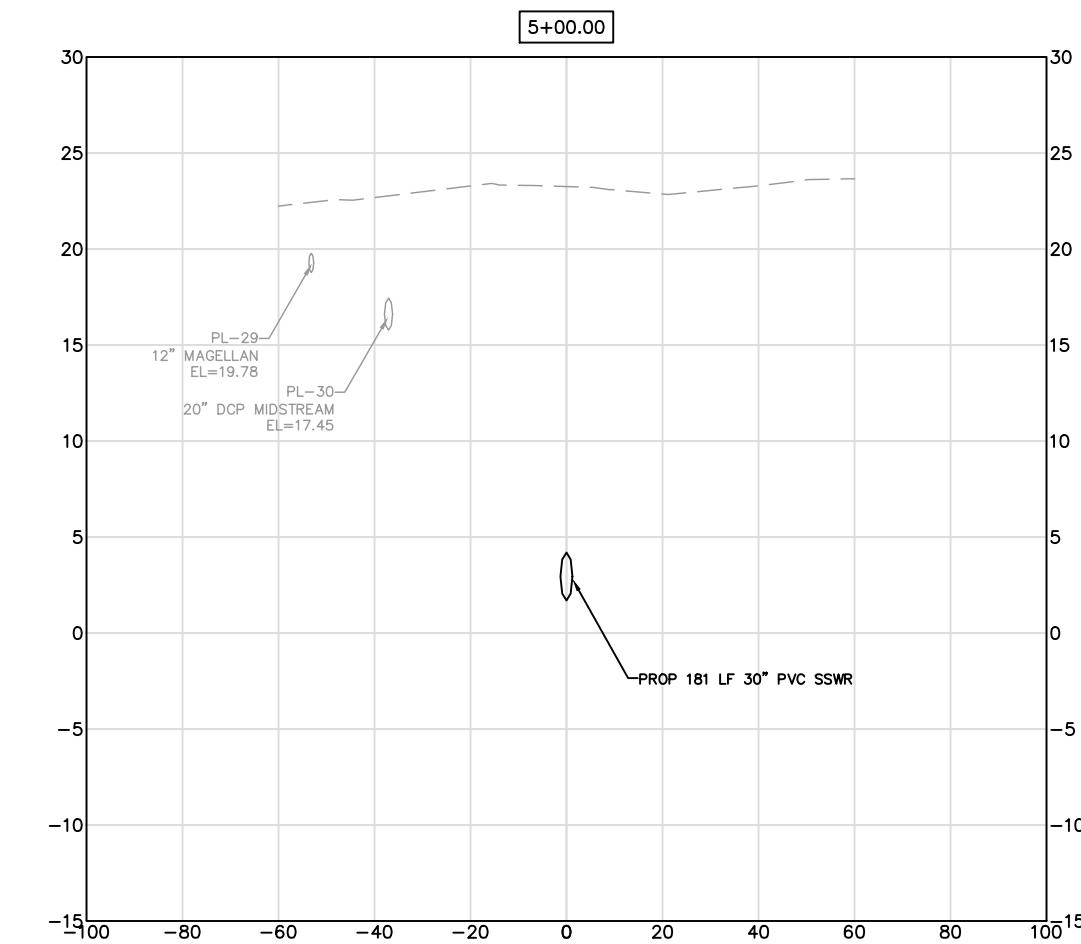
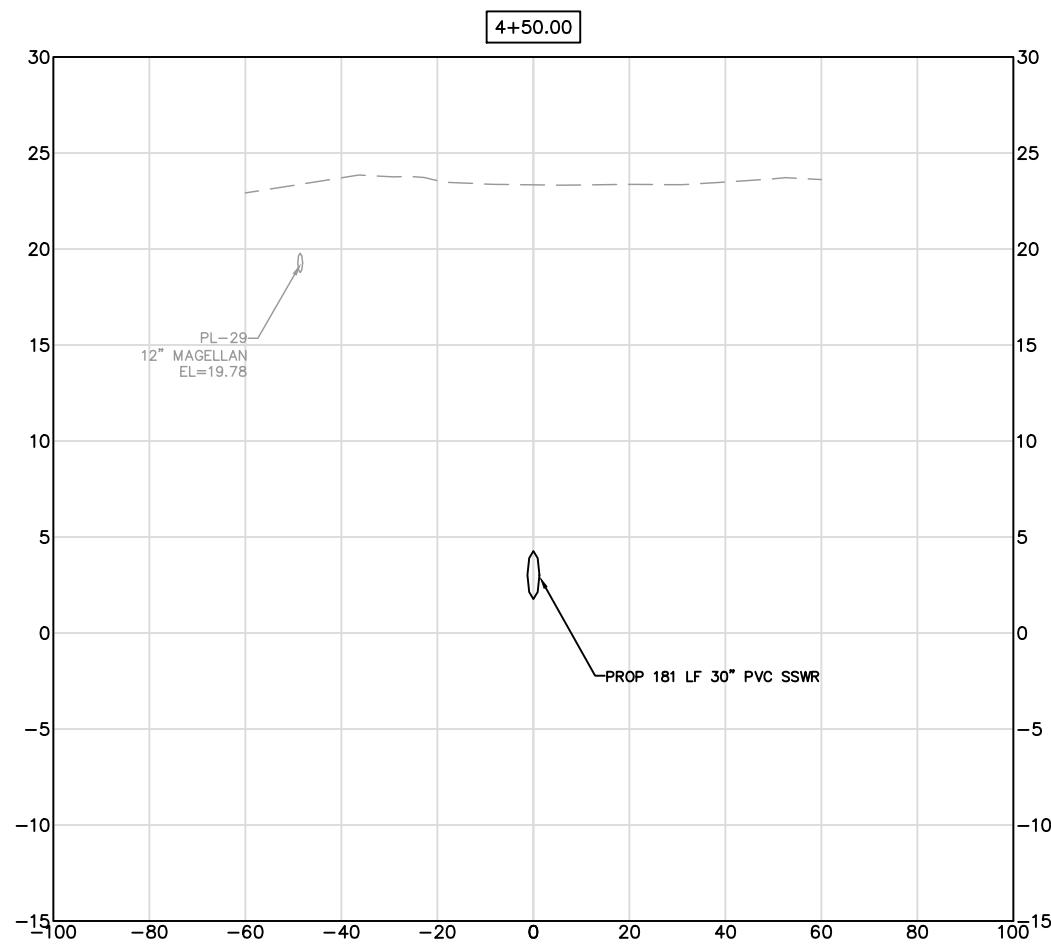




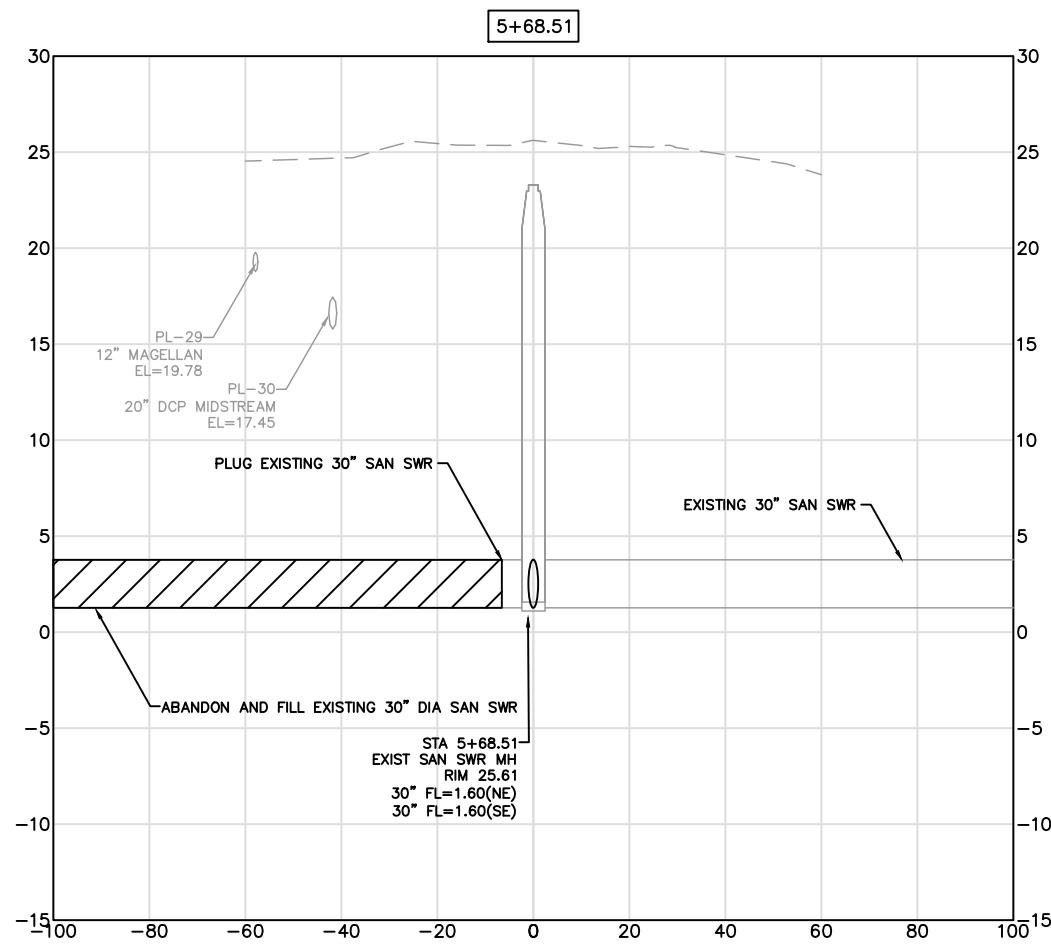




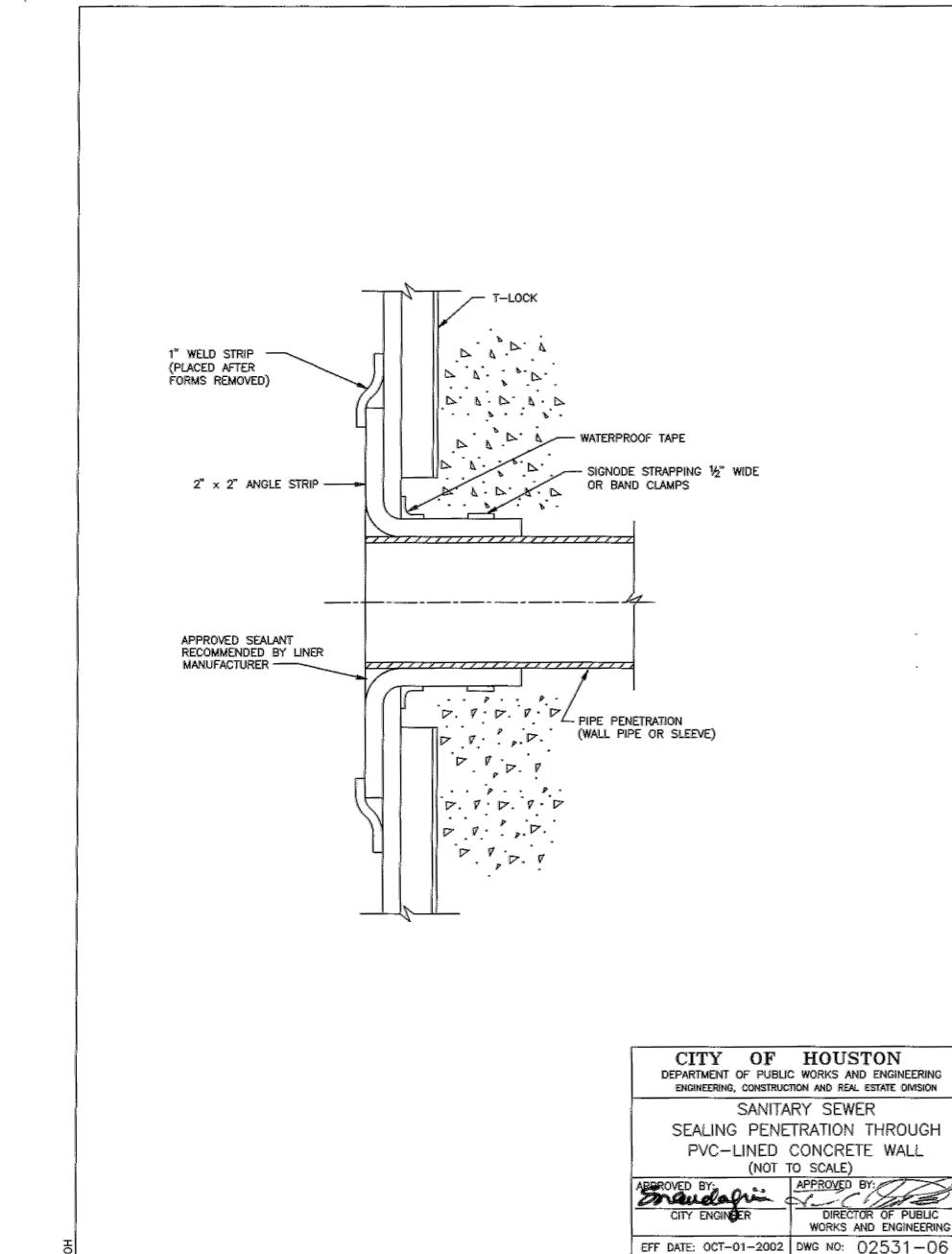
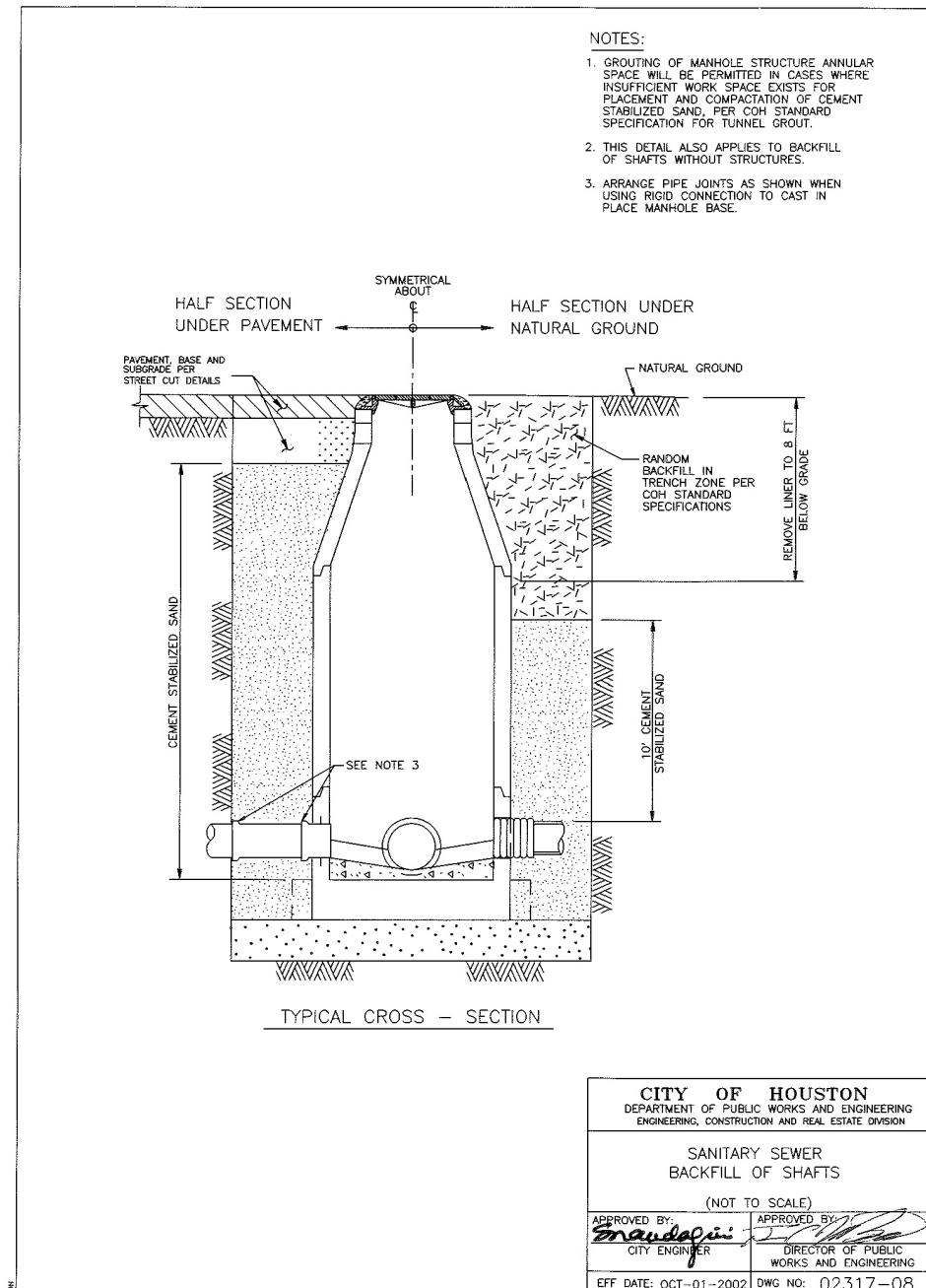




0 5 10 20 40 60  
HALF|HORIZ: 1"=40' FULL|HORIZ: 1"=20'  
SIZE | VERT: 1"=4' SIZE | VERT: 1"=2'



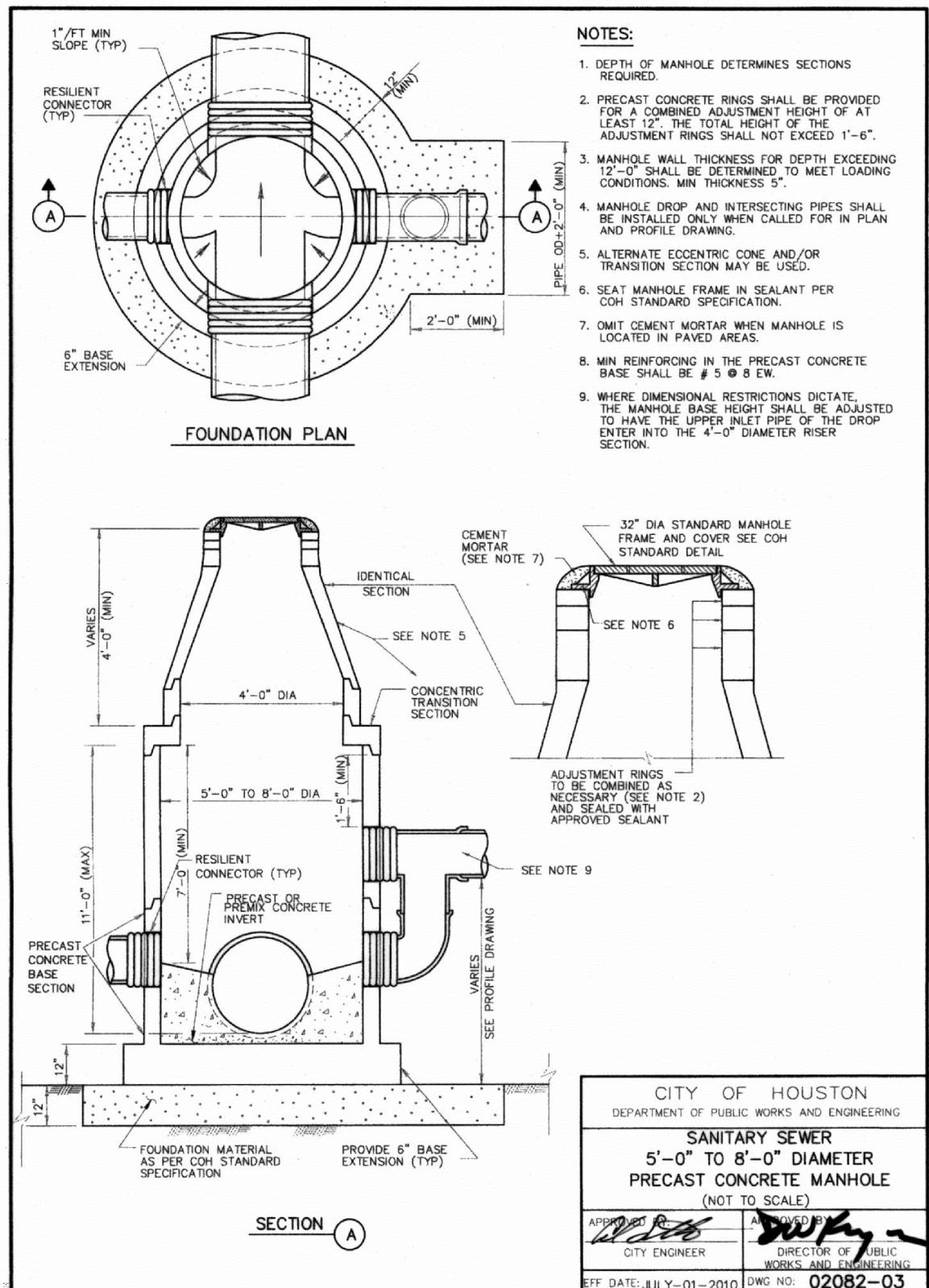
ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
CROSS SECTIONS	
STA 04+50 TO STA 05+68.51 (SHEET 3 OF 3)	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 23 OF 35	



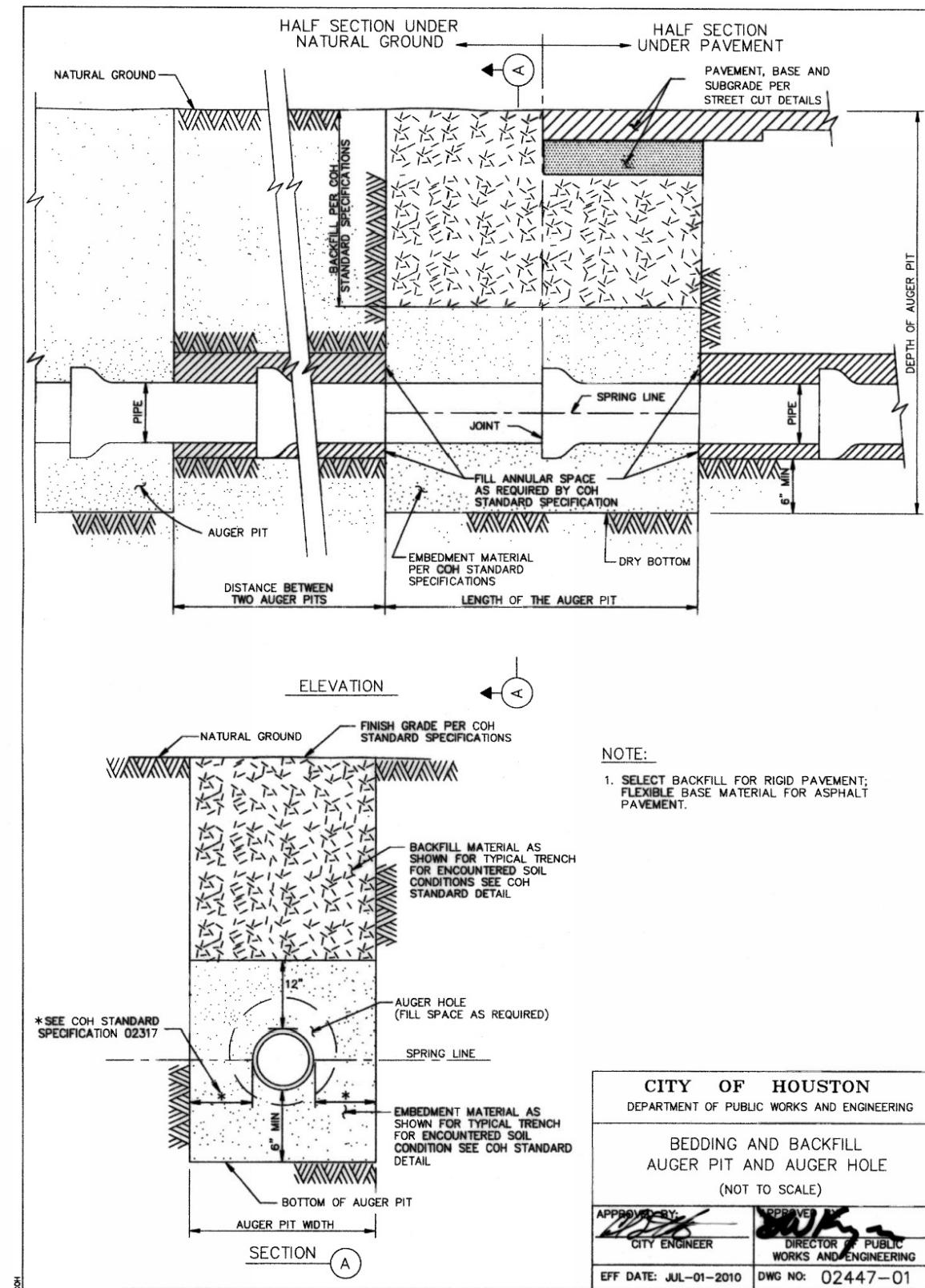
(SHEET 1 OF 6)	
WBS NUMBER	
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 24 OF 35	

FOR CITY OF HOUSTON USE ONLY

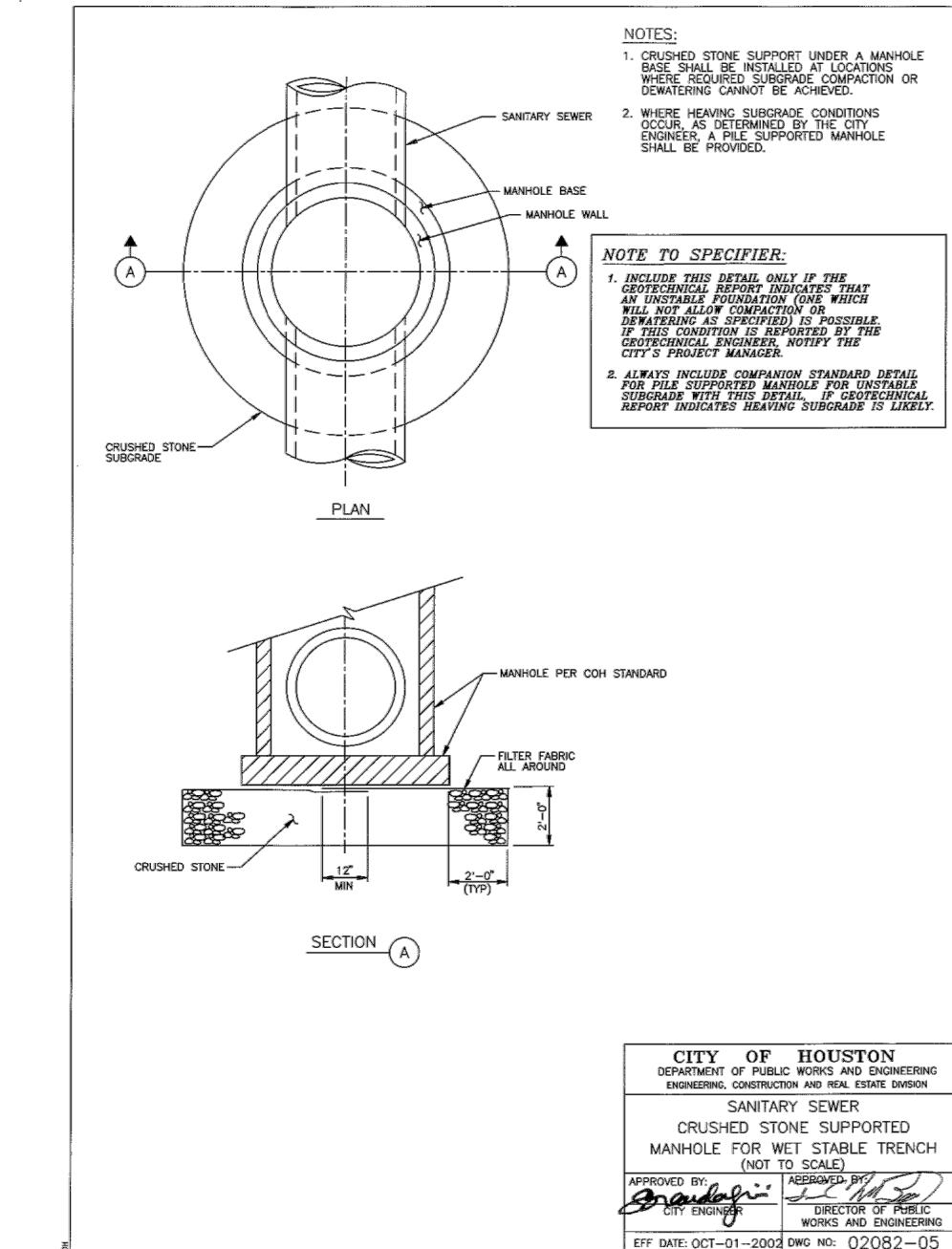
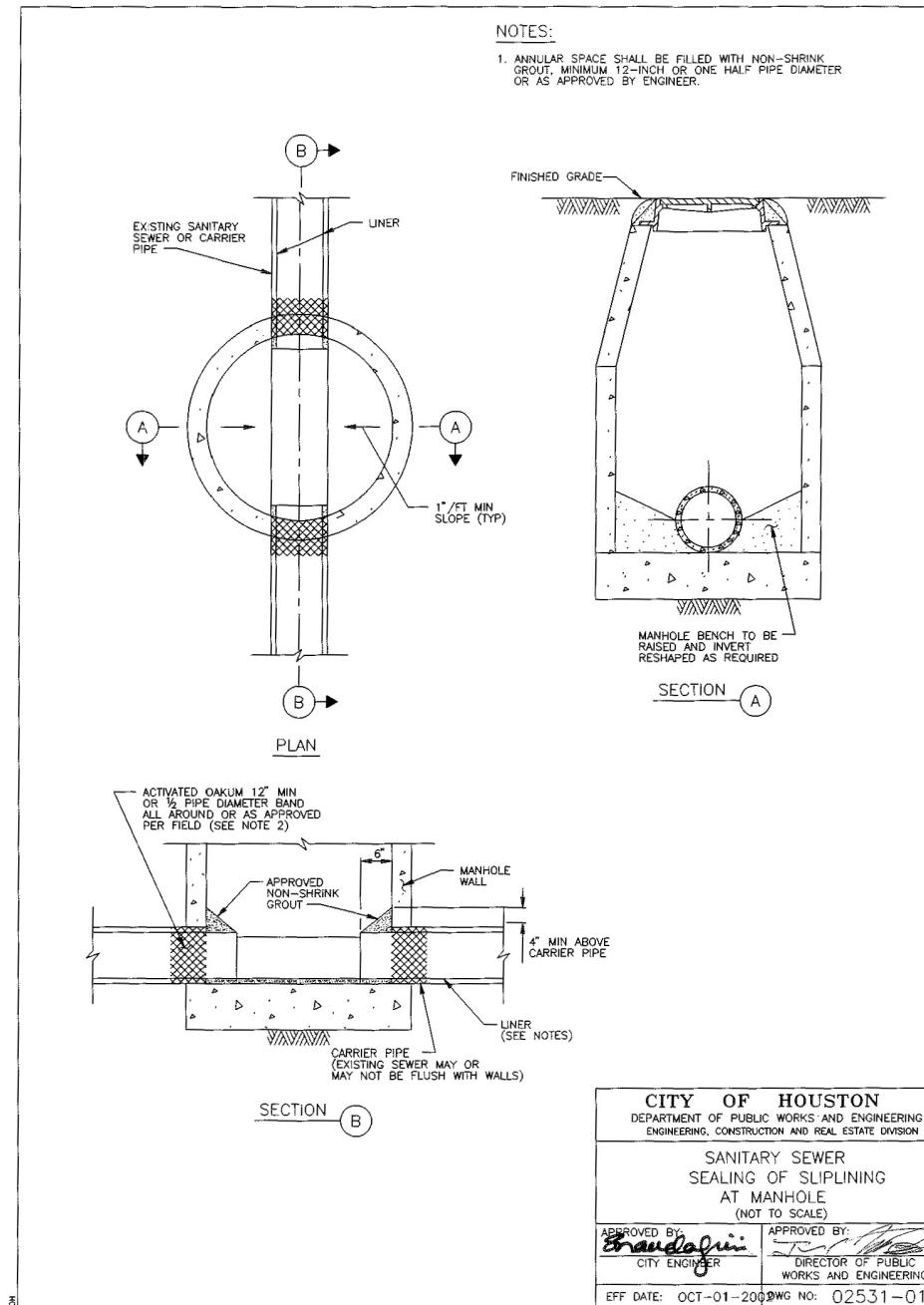
*Michael J. Bagstad  
81193  
REGISTERED PROFESSIONAL ENGINEER  
Michael J. Bagstad  
81193  
REGISTERED PROFESSIONAL ENGINEER*



ZARINKELK ENGINEERING SERVICES, INC. 6117 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO: F-4270	STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER <i>Michael J. Bagstad 81193</i>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
C.O.H STANDARD DETAILS SANITARY SEWER	
(SHEET 2 OF 6)	
WBS NUMBER R-002011-0096-3	
DRAWING SCALE N/A	
CITY OF HOUSTON PM MARIA GEORGE, P.E.	
SHEET NO. 25 OF 35	



<b>ZARINKELK ENGINEERING SERVICES, INC.</b> 6117 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO: F-4270	
<b>SURVEYED BY: TSC SURVEYING</b> FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
C.O.H STANDARD DETAILS SANITARY SEWER	
(SHEET 3 OF 6)	
<b>WBS NUMBER</b>	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 26 OF 35	



ZARINKELK  
ENGINEERING  
SERVICES, INC.  
617 Caroline St.  
Houston, TX 77002  
Phone (832) 242-2426  
FAX (832) 242-2445  
TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100



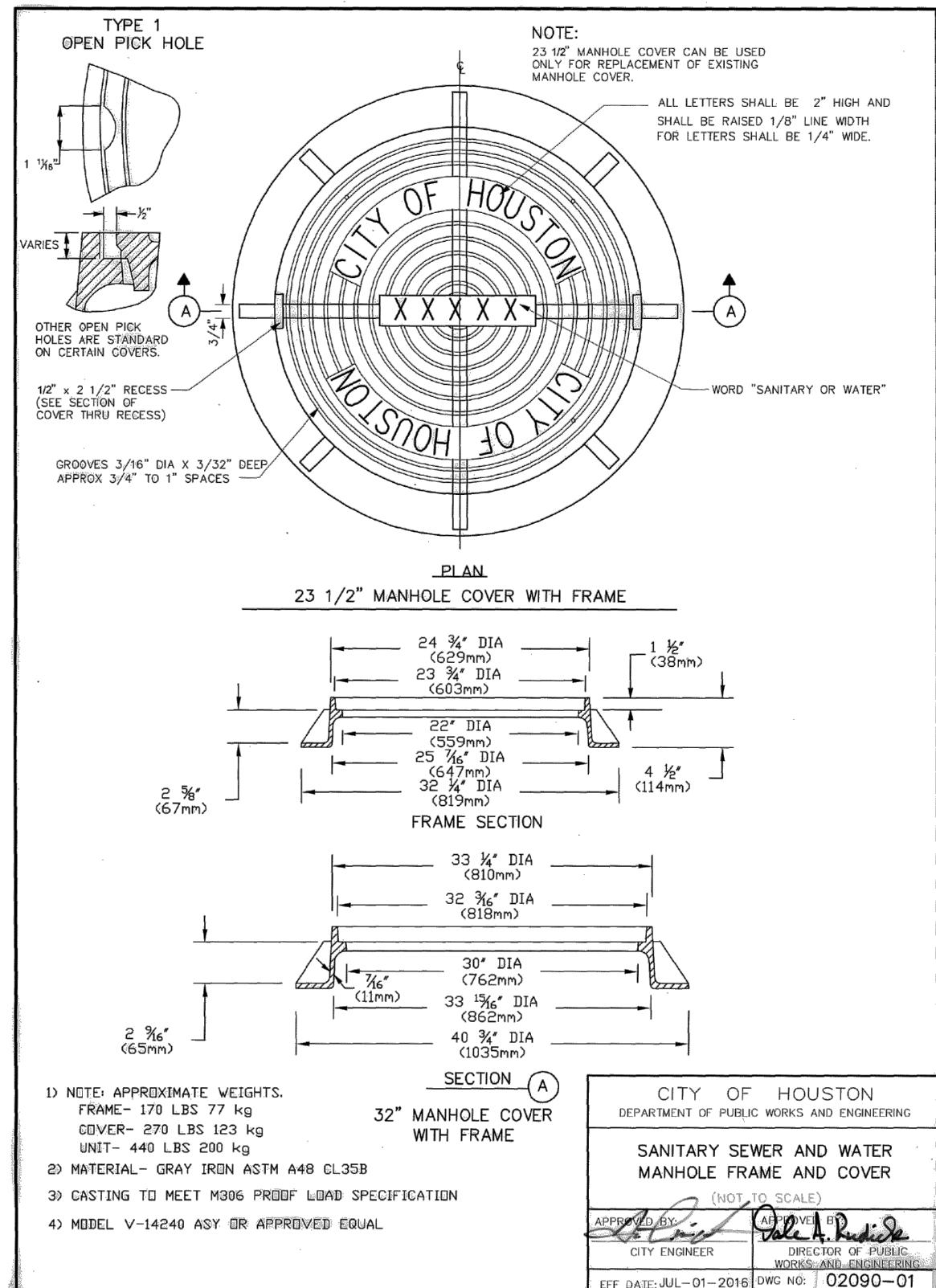
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

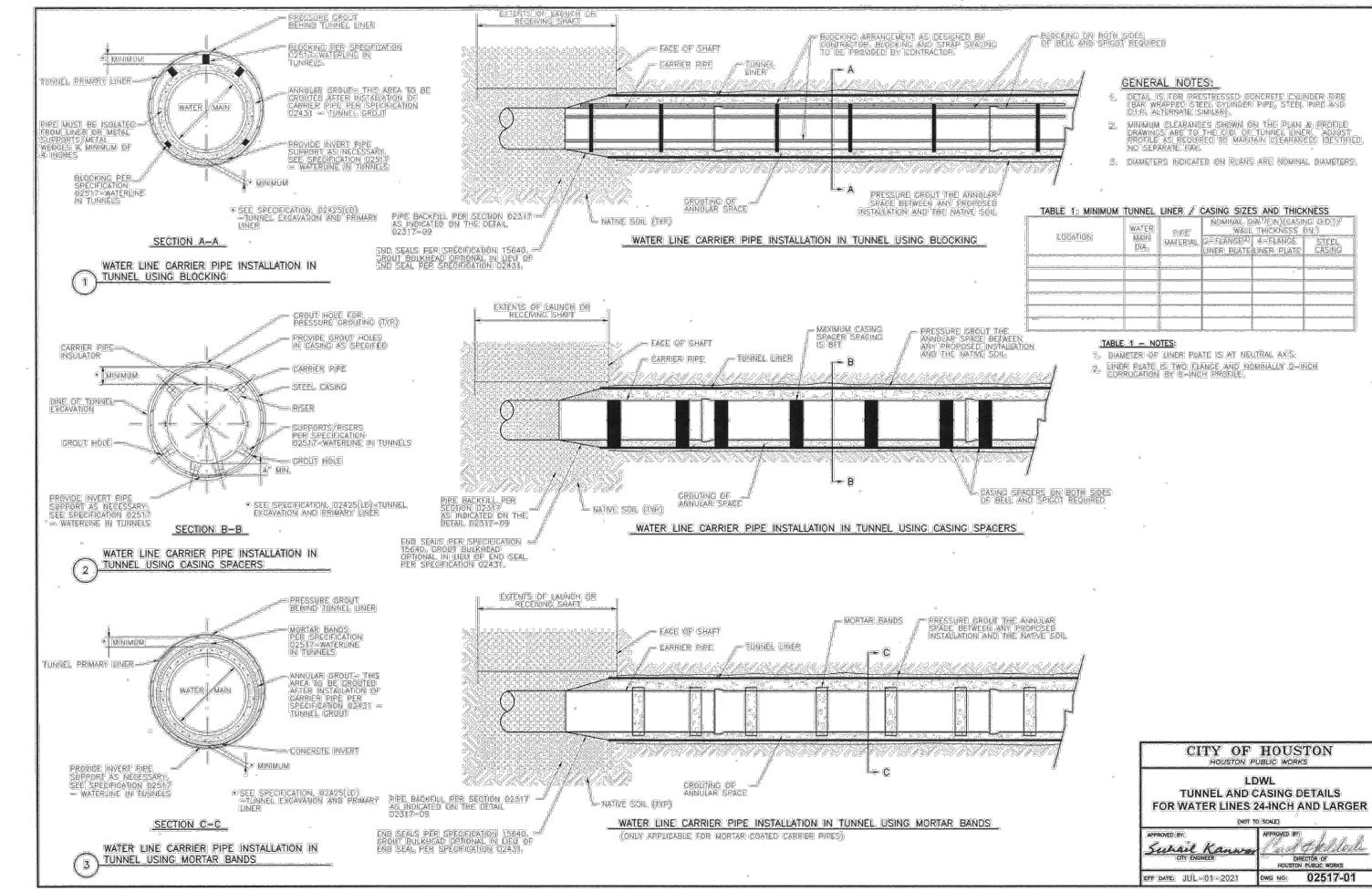
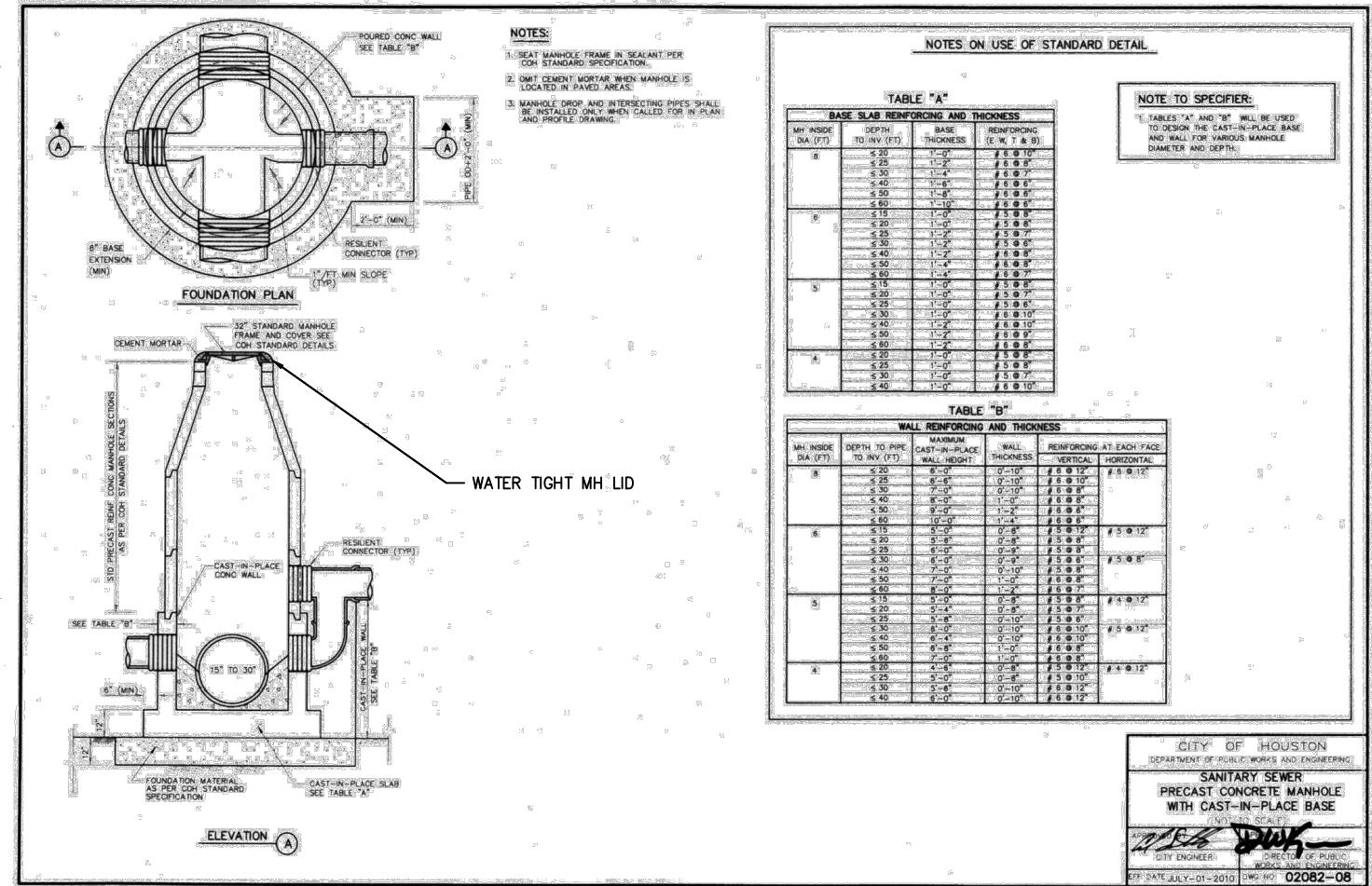
C.O.H STANDARD DETAILS  
SANITARY SEWER

(SHEET 4 OF 6)

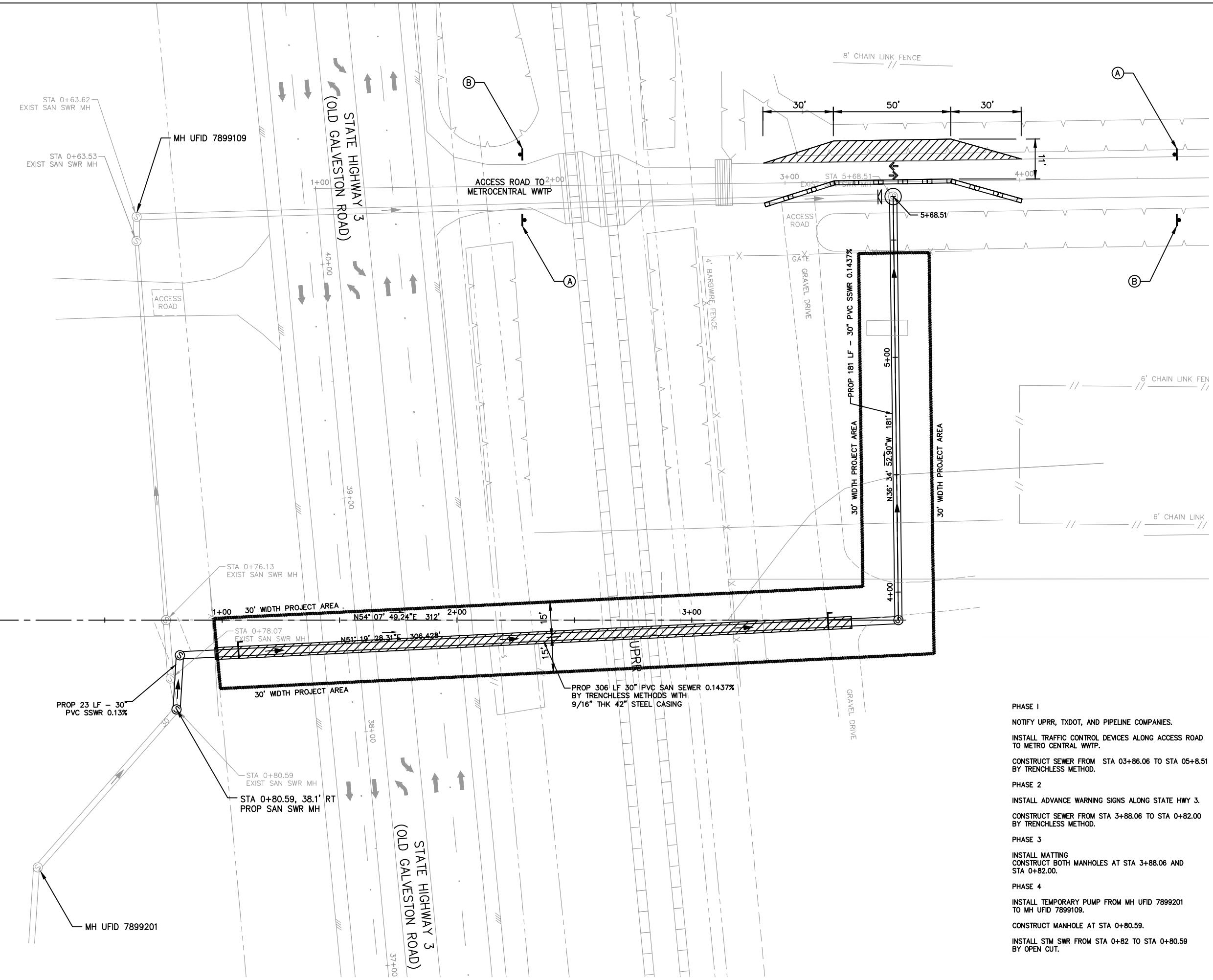
FOR CITY OF HOUSTON USE ONLY	
WBS NUMBER	R-002011-0096-3
DRAWING SCALE	N/A
CITY OF HOUSTON PM	MARIA GEORGE, P.E.
SHEET NO.	27 OF 35



ZARINKELK ENGINEERING SERVICES, INC. 6117 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER <i>[Signature]</i>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS GRAVITY SEWER LINE ADJUSTMENT C.O.H STANDARD DETAILS SANITARY SEWER	
(SHEET 5 OF 6)	
WBS NUMBER R-002011-0096-3	
DRAWING SCALE N/A	
CITY OF HOUSTON PM MARIA GEORGE, P.E.	
SHEET NO. 28 OF 35	



<p>ZARINKELK ENGINEERING SERVICES, INC. 617 Carolina St. Houston, TX 77002 Phone (832) 242-2426 Fax (832) 242-2445 TEXAS REGISTRATION NO. F-4270</p>	<p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER Michael J. Bagstad PE</p>														
		SURVEYED BY: TSC SURVEYING FB NO. 10083100													
<p><b>CITY OF HOUSTON</b> HOUSTON PUBLIC WORKS</p> <p><b>GRAVITY SEWER LINE ADJUSTMENT</b></p> <p><b>C.O.H STANDARD DETAILS SANITARY SEWER</b></p>															
<p>(SHEET 6 OF 6)</p>															
<table border="1"> <tr> <td>WBS NUMBER</td> <td>FOR CITY OF HOUSTON USE ONLY</td> </tr> <tr> <td>R-002011-0096-3</td> <td></td> </tr> <tr> <td>DRAWING SCALE</td> <td></td> </tr> <tr> <td>N/A</td> <td></td> </tr> <tr> <td>CITY OF HOUSTON PM</td> <td></td> </tr> <tr> <td>MARIA GEORGE, P.E.</td> <td></td> </tr> <tr> <td colspan="2">SHEET NO. 29 OF 35</td> </tr> </table>		WBS NUMBER	FOR CITY OF HOUSTON USE ONLY	R-002011-0096-3		DRAWING SCALE		N/A		CITY OF HOUSTON PM		MARIA GEORGE, P.E.		SHEET NO. 29 OF 35	
WBS NUMBER	FOR CITY OF HOUSTON USE ONLY														
R-002011-0096-3															
DRAWING SCALE															
N/A															
CITY OF HOUSTON PM															
MARIA GEORGE, P.E.															
SHEET NO. 29 OF 35															



ZARINKELK  
ENGINEERING  
SERVICES, INC.  
617 Caroline St.  
Houston, TX 77002  
Phone (832) 242-2426  
FAX (832) 242-2445  
TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100



## CITY OF HOUSTON HOUSTON PUBLIC WORKS

### GRAVITY SEWER LINE ADJUSTMENT

### TRAFFIC CONTROL PLAN PHASE 1 ACCESS ROAD TO METRO CENTRAL WWTP

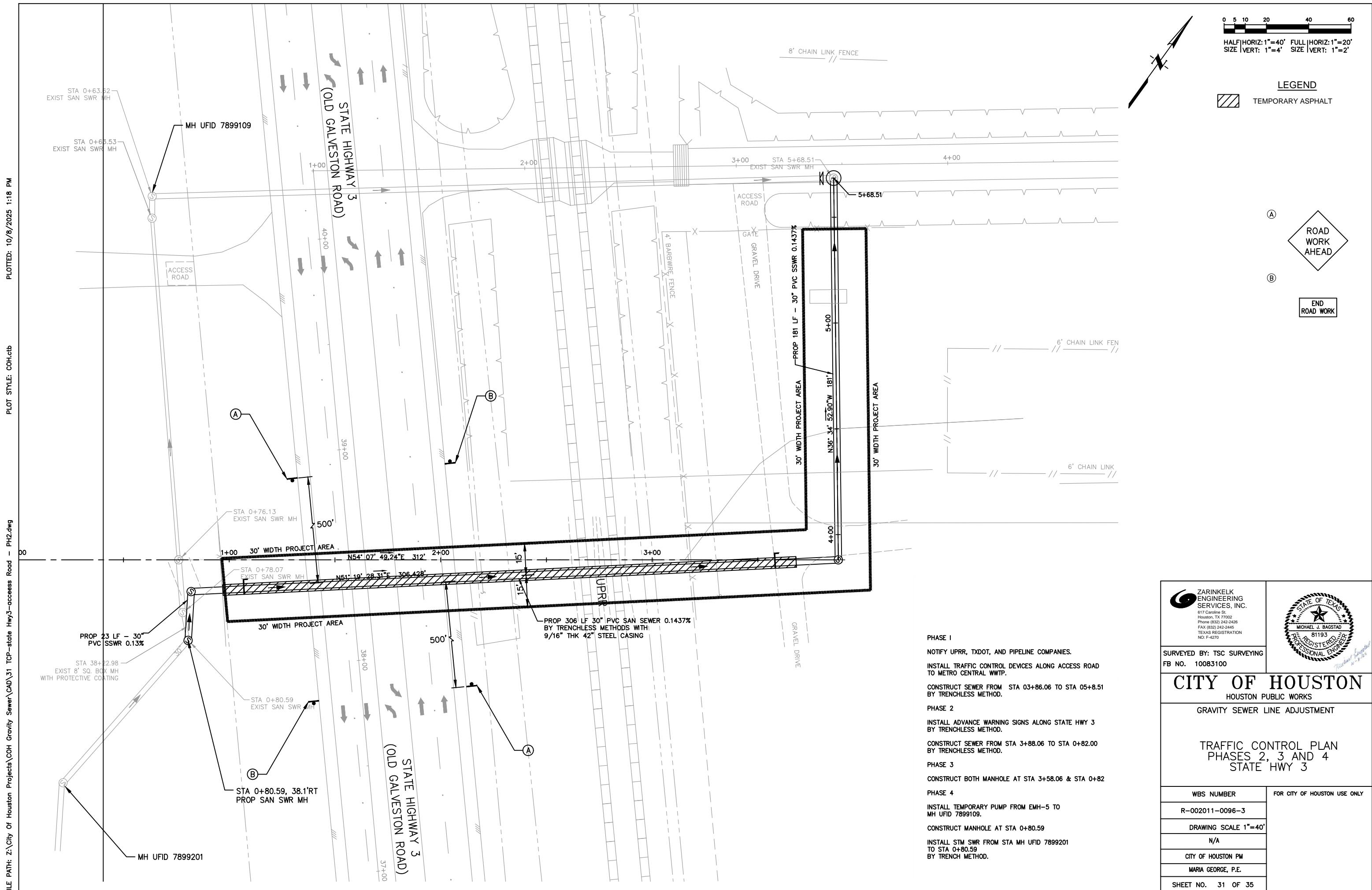
**PHASE 1**  
NOTIFY UPRR, TXDOT, AND PIPELINE COMPANIES.  
INSTALL TRAFFIC CONTROL DEVICES ALONG ACCESS ROAD  
TO METRO CENTRAL WWTP.  
CONSTRUCT SEWER FROM STA 03+86.06 TO STA 05+8.51  
BY TRENCHLESS METHOD.

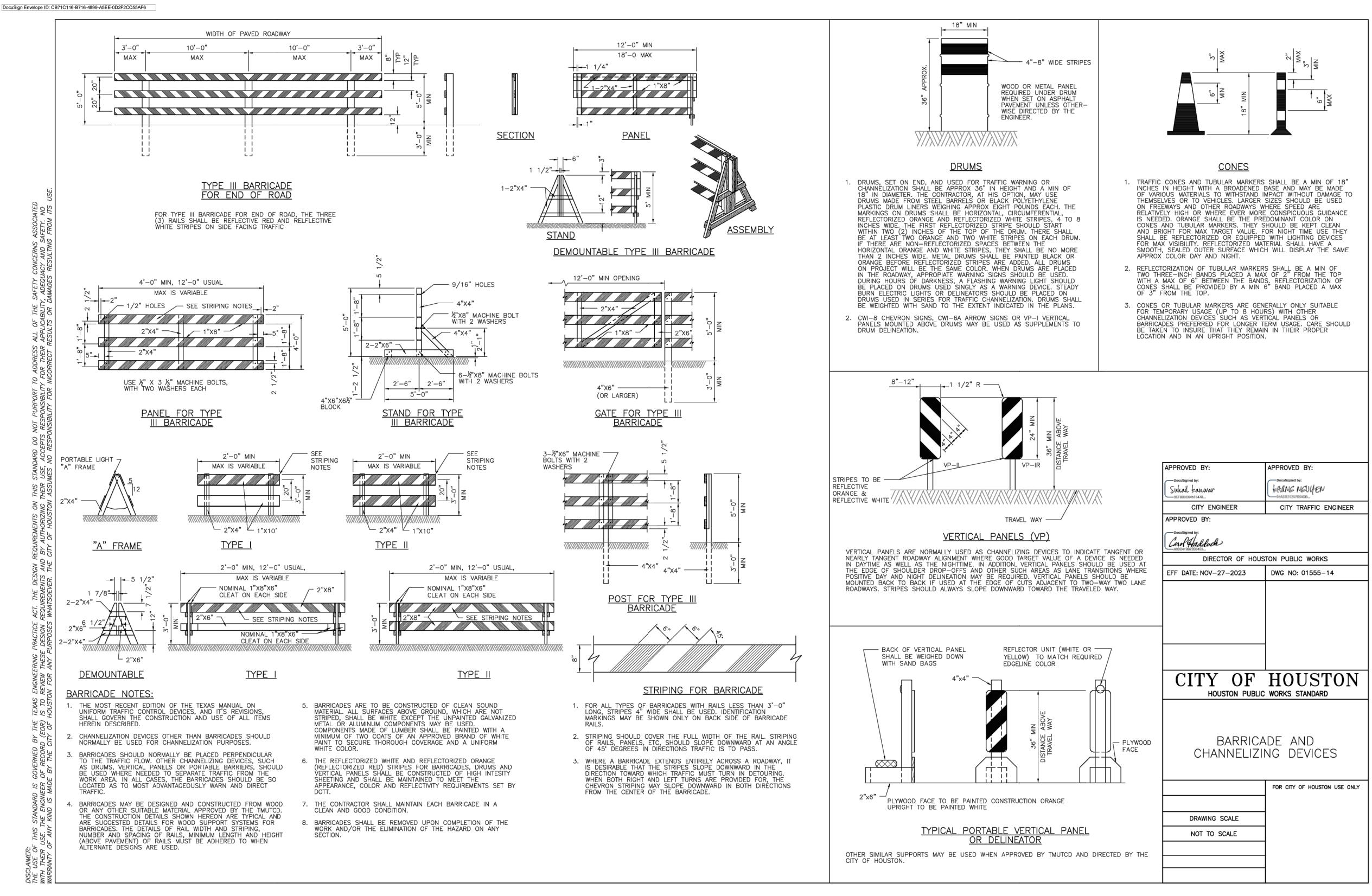
**PHASE 2**  
INSTALL ADVANCE WARNING SIGNS ALONG STATE HWY 3.  
CONSTRUCT SEWER FROM STA 3+88.06 TO STA 0+82.00  
BY TRENCHLESS METHOD.

**PHASE 3**  
INSTALL MATTING  
CONSTRUCT BOTH MANHOLES AT STA 3+88.06 AND  
STA 0+82.00.

**PHASE 4**  
INSTALL TEMPORARY PUMP FROM MH UFID 7899201  
TO MH UFID 7899109.  
CONSTRUCT MANHOLE AT STA 0+80.59.  
INSTALL STM SWR FROM STA 0+82 TO STA 0+80.59  
BY OPEN CUT.

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE 1"=40'	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 30 OF 35	





ZARINKELK  
ENGINEERING  
SERVICES, INC.  
617 Carolina St.  
Houston, TX 77002  
Phone (832) 242-2426  
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TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100



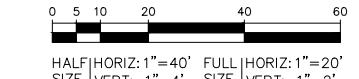
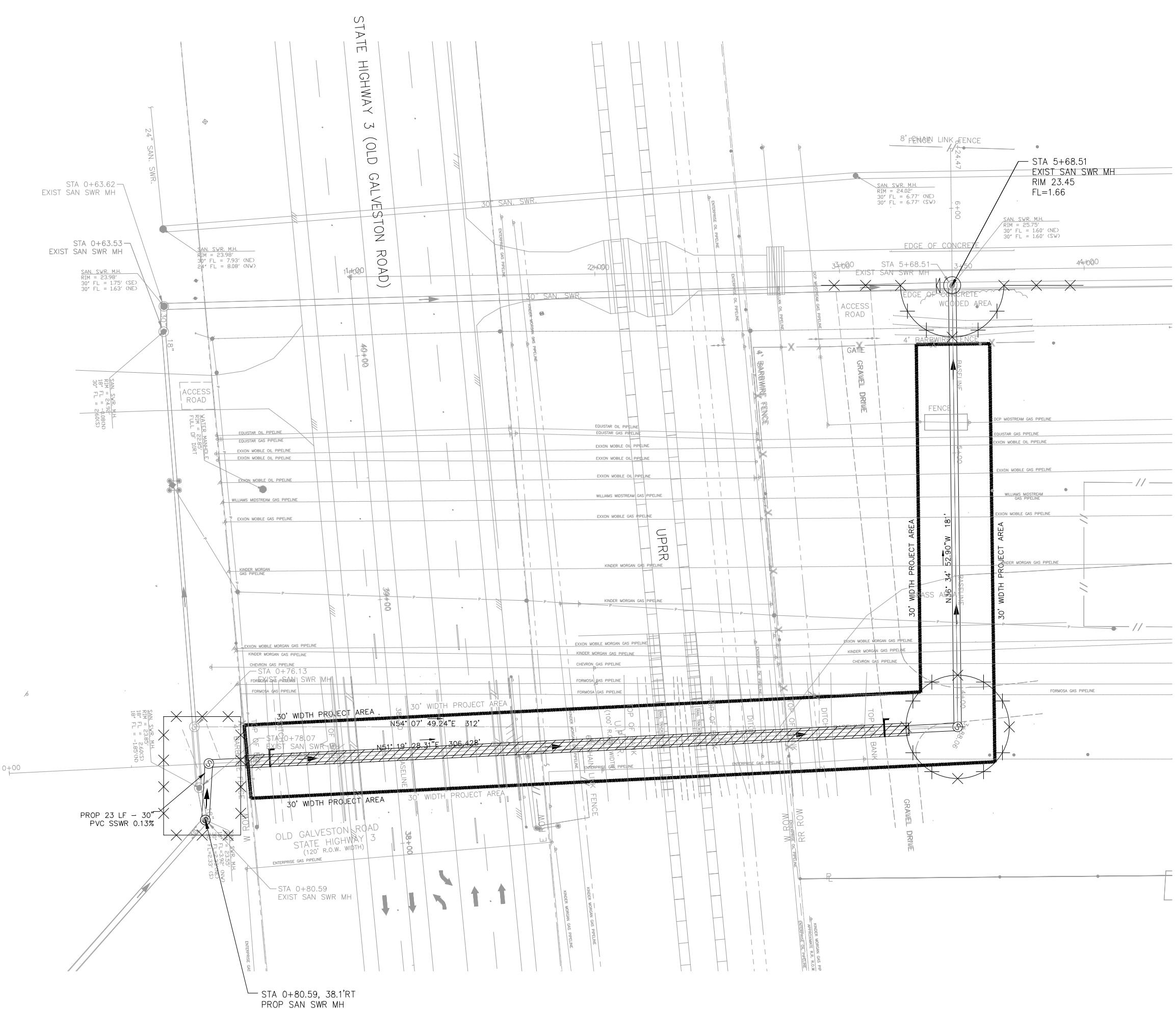
**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS STANDARD

**CITY OF HOUSTON**  
BARRICADE AND CHANNELIZING DEVICES

GRAVITY SEWER LINE ADJUSTMENT

BARRICADE AND CHANNELIZING DEVICES

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 32 OF 35	



HALF | HORIZ: 1"=40' FULL | HORIZ: 1"=20'  
SIZE | VERT: 1"=4' SIZE | VERT: 1"=2'

### LEGEND

## FILTER FABRIC BARRIER

PLOTTED: 10/8/2025 1:25 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City of Houston Projects\COH Gravity Sewer\CAD\33 STORM WATER PREVENTION POLLUTION PLAN—STB.dwg



SURVEYED BY: TSC SURVEYING  
ID. NO. 10007100

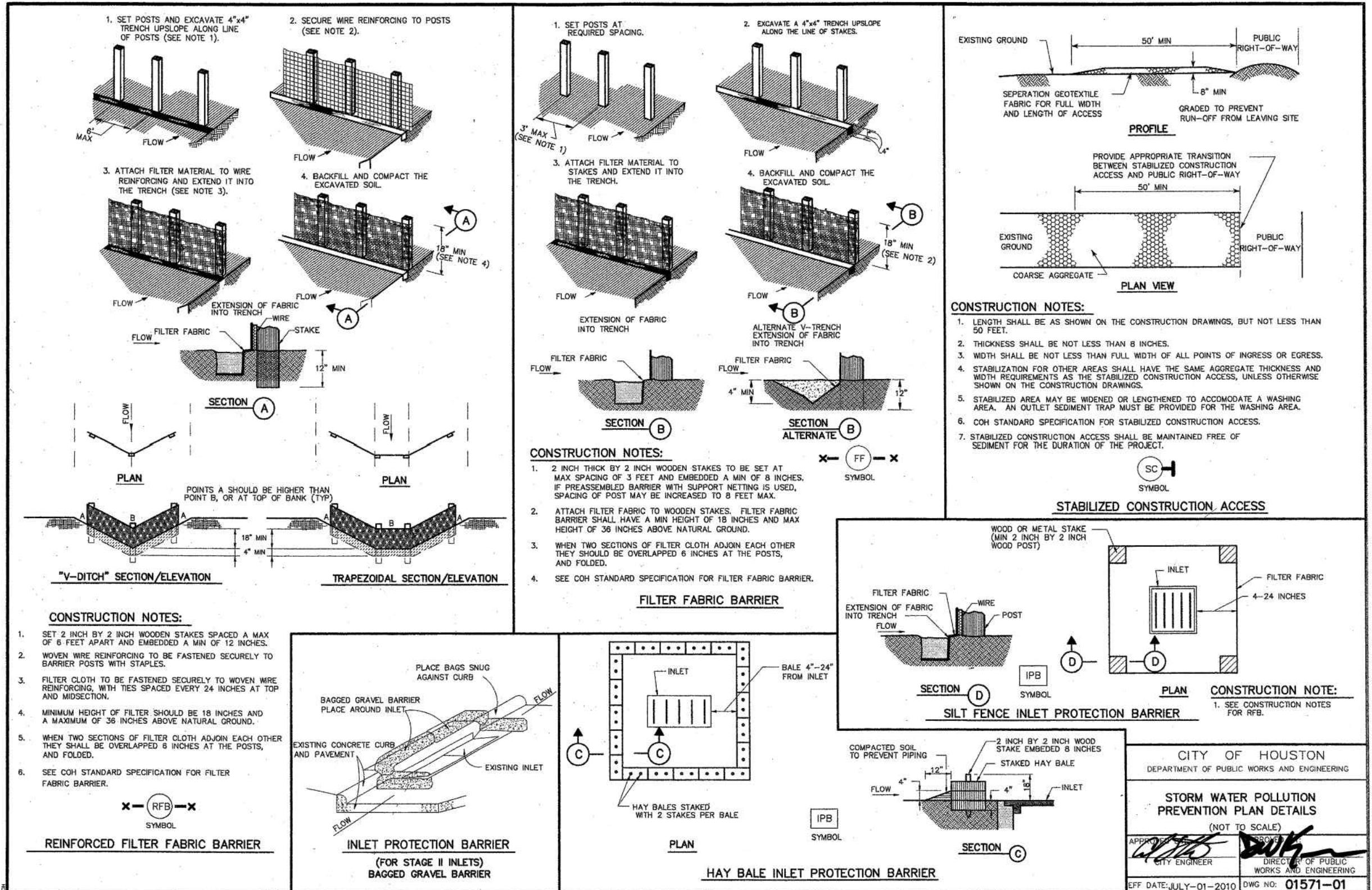
**CITY OF HOUSTON**

HOUSTON PUBLIC WORKS

## GRAVITY SEWER LINE ADJUSTMENT

# STORM WATER POLLUTION PREVENTION PLAN

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 33 OF 35	



ZARINKELK  
ENGINEERING  
SERVICES, INC.  
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TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100

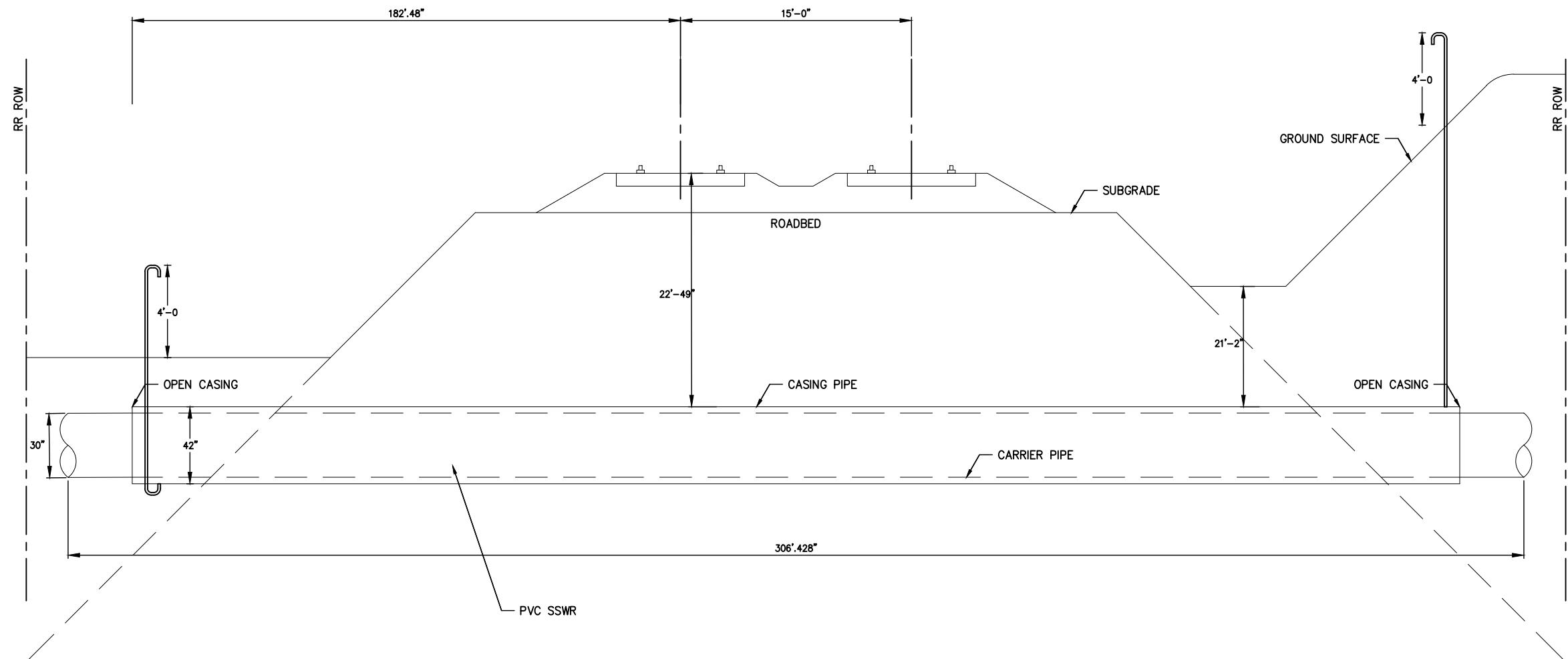


CITY OF HOUSTON  
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

STORM WATER POLLUTION  
PREVENTION PLAN DETAILS  
(NOT TO SCALE)

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	N/A
CITY OF HOUSTON PM	MARIA GEORGE, P.E.
SHEET NO.	34 OF 35



ZARINKELK  
ENGINEERING  
SERVICES, INC.  
6117 Caroline St.  
Houston, TX 77002  
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FAX (832) 242-2445  
TEXAS REGISTRATION  
NO. F-4270

SURVEYED BY: TSC SURVEYING  
FB NO. 10083100



**CITY OF HOUSTON**  
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

**RAILROAD CROSSING  
PLAN & PROFILE**

WBS NUMBER	FOR CITY OF HOUSTON USE ONLY
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
MARIA GEORGE, P.E.	
SHEET NO. 35 OF 35	