

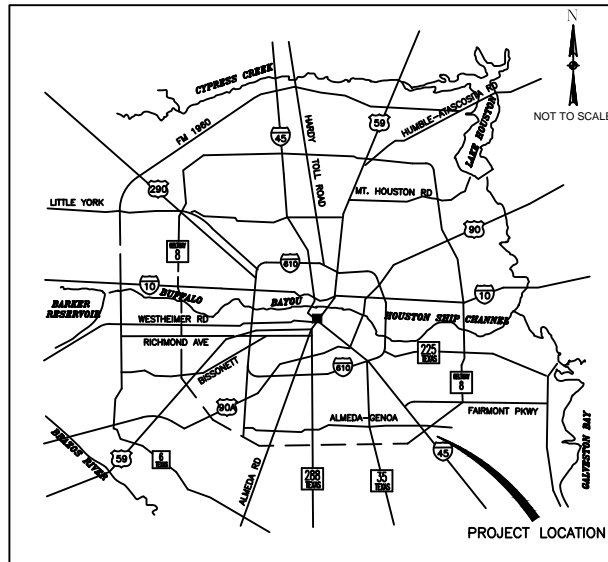
CITY OF HOUSTON

HOUSTON PUBLIC WORKS

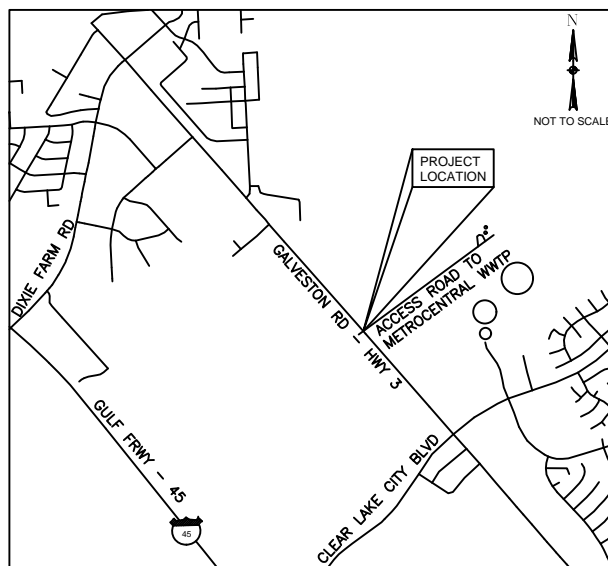
CAPITAL PROJECTS

GRAVITY SEWER LINE ADJUSTMENT

WBS NO. R-002011-0096-3



LOCATION MAP



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



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 I	EDWARD POLLARD DISTRICT J	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	

CONSTRUCTION IN HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHT-OF-WAY REQUIRES:
SITE PLANS MUST BE APPROVED PRIOR TO OBTAINING THE REQUIRED HCFC
RIGHT-OF-WAY NOTIFICATION. BE ADVISED THAT THE HCFC RIGHT-OF-WAY
NOTIFICATION IS SEPARATE FROM THE SITE DEVELOPMENT PERMIT PACKAGE.
1) HCFC RIGHT-OF-WAY NOTIFICATION (PERMIT)
2) HCFC 48-HR PRE-CONSTRUCTION NOTICE
BOTH ARE REQUIRED PRIOR TO ENTERING OR WORKING WITHIN HARRIS COUNTY FLOOD
CONTROL DISTRICT RIGHT-OF-WAY. THE HCFC RIGHT-OF-WAY NOTIFICATION AND
48-HOUR NOTICE MUST BE PROVIDED TO HCFC AT dcid@hcfcd.org.
TO APPLY FOR THE HCFC RIGHT-OF-WAY NOTIFICATION PLEASE GO TO
<http://apps/harriscountytexas.gov/EPermits> AND APPLY FOR THE HCFC ROW UNDER ROW
NOTIFICATION.
FAILURE TO PROVIDE BOTH ITEMS COULD RESULT IN PROJECT DELAYS.

Zarinkelk
Engineering Services, Inc.

617 Caroline St.
Houston, Texas 77002
Ph: 832.242.2425
Fax: 832.242.2445
Firm Reg. # F-004270



SURVEYED BY: TSC SURVEYING
FB NO. 10083100

PARKS-FORESTRY DEPT.

METRO

HOUSTON WATER

TRANSPORTATION & DRAINAGE OPERATIONS

CAPITAL PROJECTS

SURVEY

CITY ENGINEER DATE

DIRECTOR OF DATE
HOUSTON PUBLIC WORKS

SHEET NO 01 OF 35 SHEETS

FOR CITY OF HOUSTON USE ONLY

PLOTTED: 10/8/2025 1:15 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\02 G-002 INDEX SHEET.dwg

GENERAL SHEETS

- COVER
- INDEX SHEET
- GENERAL NOTES
- GENERAL NOTES (CONTINUED)
- GENERAL NOTES (CONTINUED)
- ABBREVIATIONS
- SURVEY CONTROL MAP (SHEET 1 OF 2)
- SURVEY CONTROL MAP (SHEET 2 OF 2)
- SANITARY SEWER EASEMENT LAYOUT
- BORE HOLES LOCATION
- BORE HOLES LOGS
- PIPELINE INFORMATION
- DEMOLITION PLAN (SHEET 1 OF 3)
- DEMOLITION PROFILE – BEGIN PROJECT STA 0+80.59 TO STA 03+88.06 (SHEET 2 OF 3)
- DEMOLITION PROFILE – STA. 03+88.06 TO STA. 05+68.51 (SHEET 3 OF 3)

SANITARY SEWER

- OVERALL LAYOUT
- PLAN – BEGIN PROJECT STA. 0+80.59 TO STA. 03+88.06
- PROFILE – BEGIN PROJECT STA. 0+80.59 TO STA. 03+88.06
- PLAN – STA. 03+88.06 TO STA. 05+68.51
- PROFILE – STA. 03+88.06 TO STA. 05+68.51
- CROSS SECTIONS STA. 0+80.59 TO STA. 02+00 (SHEET 1 OF 3)
- CROSS SECTIONS STA. 02+50 TO STA. 04+00 (SHEET 2 OF 3)
- CROSS SECTIONS STA. 04+50 TO STA. 05+68.51 (SHEET 3 OF 3)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 1 OF 6)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 2 OF 6)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 3 OF 6)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 4 OF 6)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 5 OF 6)
- C.O.H. STANDARD DETAILS – SANITARY SEWER (SHEET 6 OF 6)

TRAFFIC CONTROL



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

SWPPP AND STANDARDS

- STORM WATER POLLUTION PREVENTION PLAN
- STORM WATER POLLUTION PREVENTION PLAN DETAILS (NOT TO SCALE)

RAIL ROAD CROSSING STANDARDS

- RAILROAD CROSSING, PLAN & PROFILE

 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			
INDEX SHEET			
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. 02 OF 35			

GENERAL CONSTRUCTION NOTES:

- 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.
- 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).
- 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 800-344-8377 AND LONE STAR NOTIFICATION CENTER AT 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
- CONTRACTOR SHALL COMPLY WITH LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION.
- 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.
- INSTALL DEWATERING SYSTEM IF REQUIRED TO LOWER THE WATER TABLE DURING CONSTRUCTION OF UNDERGROUND STRUCTURES AND LINES.
- 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.
- 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.
- 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.
- WORK SHAFTS FOR TUNNELING OR AUGERING OPERATION SHALL BE BORDERED 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.
- 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, L.L.C. WHERE APPLICABLE) ARE SHOW 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: (CON'T)

- 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 LOCATED 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
- 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 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:

- 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.
- THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- 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.
- 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.
- 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.
- 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:

- 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: (CON'T)

- 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 SWEEPED BACK INTO THE EXCAVATED AREA.
- 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.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT, ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
- 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.
- 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

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

EMERGENCY, REPAIR AND CLEAN UP

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 CONTAMINATED SOIL. EMPCO SHALL BE ENTITLED TO INSPECT EACH STAGE OF SUCH OPERATIONS TO DETERMINE WHETHER PIPELINE OWNER HAS SATISFIED THIS OBLIGATION. INCLUDED IN THE CORRIDOR RECLAMATION, PIPELINE OWNER SHALL USE CLEAN REPLACEMENT SOIL OF A COMPARABLE NATURE IF CORRIDOR SOIL BECOMES CONTAMINATED FROM THE SPILL, AND PIPELINE OWNER SHALL PROVIDE EMPCO WITH WRITTEN NOTIFICATION OF WHERE AND HOW PIPELINE OWNER PLANS TO DISPOSE OF THE CONTAMINATED SOIL AND CLEAN UP MATERIALS.

6.5 IF PIPELINE OWNER DOES NOT PROVIDE FOR PUBLIC SAFETY AND VACUATION AS NECESSARY, REPAIR, CLEAN UP, RECLAIM CORRIDOR PROPERTIES TO A LIKE STATE PRIOR TO THE SPILL, AND/OR PROPERLY DISPOSE OF CONTAMINATED SOIL AND CLEAN UP MATERIALS IN A TIMELY MANNER TO THE SATISFACTION OF EMPCO, THEN EMPCO SHALL HAVE THE RIGHT TO PERFORM SUCH ACTIONS, AS EMPCO MAY DEEM APPROPRIATE, AT PIPELINE OWNER'S RISK AND EXPENSE.

7.0 NOTIFICATION AND CONSTRUCTION REQUIREMENTS



7.1 PIPELINE OWNER AND ITS CONTRACTORS SHALL NOTIFY EMPCO BY CALLING (281) 925-3816 AT LEAST FORTY-EIGHT HOURS BEFORE BEGINNING ANY CONSTRUCTION WITHIN THE CORRIDORS. NOTIFICATION SHOULD INCLUDE THE FOLLOWING: DATE AND TIME CONSTRUCTION IS TO BEGIN, NUMBER OF HOURS TO BE WORKED PER DAY, AND NUMBER OF DAYS TO BE WORKED PER WEEK. THE MAXIMUM CORRIDOR CONSTRUCTION SCHEDULE WILL CONSIST OF 10 HOURS PER DAY, 6 DAYS PER WEEK; HOWEVER, EXCEPTIONS WILL BE CONSIDERED ON A CASE BY CASE BASIS. PRIOR TO STARTING CONSTRUCTION, A PRECONSTRUCTION MEETING WILL BE HELD AND THE WORK TO BE DONE WILL BE REVIEWED WITH EMPCO'S REPRESENTATIVE. THE PIPELINE OWNER IS RESPONSIBLE FOR NOTIFYING TEXAS ONE CALL SYSTEM (TOCS) AT (800) 245-4545 PRIOR TO ANY EXCAVATION WORK OR UNDERGROUND ACTIVITIES IN THE CORRIDOR.

7.2 EMPCO SHALL HAVE THE RIGHT TO HAVE A REPRESENTATIVE ON THE JOB AT ALL TIMES DURING ANY CONSTRUCTION AND/OR CLEAN UP BY PIPELINE OWNER IN THE CORRIDORS, AND TO ESTABLISH CERTAIN SAFETY RULES FOR THE PROTECTION OF PERSONS AND PROPERTY WITHIN THE CORRIDOR AND ON ADJACENT LANDS, WHICH SHALL BE BINDING ON PIPELINE OWNER AND PIPELINE OWNER'S CONTRACTORS.

7.3 PIPELINE OWNER SHALL HAVE A QUALIFIED INSPECTION CREW WITH A DESIGNATED CHIEF INSPECTOR ON THE JOB AT ALL TIMES DURING CONSTRUCTION AND CLEAN UP. THE CHIEF INSPECTOR SHALL HAVE A COMPLETE AND SIGNED COPY OF THE CORRIDOR AGREEMENT (LONG FORM) AND A COPY OF THE GENERAL CONDITIONS AND SHALL SERVE AS EMPCO'S PRIMARY CONTACT ON THE JOB.

7.4 AT LEAST FORTY-EIGHT HOURS BEFORE BEGINNING CONSTRUCTION, THE PIPELINE OWNER AND ITS CONTRACTORS SHALL NOTIFY ALL PIPELINE OWNERS OF CORRIDOR PIPELINES AND RELATED FACILITIES THAT WILL BE CROSSED OR PARALLELED BY THE PROPOSED PIPELINE.

7.5 AFTER CONSTRUCTION IS COMPLETE PIPELINE OWNER AND ITS CONTRACTORS SHALL BE RESPONSIBLE FOR GRADING AND CLEARING THE CORRIDOR AND ANY AFFECTED ADJACENT PROPERTIES TO THE SATISFACTION OF EMPCO'S REPRESENTATIVE. IF REQUESTED BY EMPCO'S REPRESENTATIVE, PIPELINE OWNER AGREES TO RE-SEED ANY AREAS DISTURBED DURING PIPELINE OWNER'S OPERATIONS TO THE REASONABLE SATISFACTION OF EMPCO. IF THE CLEAN UP IS NOT TO EMPCO'S SATISFACTION, EMPCO RESERVES THE RIGHT TO CLEAN AND GRADE THE CORRIDORS INVOLVED AT PIPELINE OWNER'S RISK AND EXPENSE.

 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4279</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p> <p><i>Michael Bagstad No. 81193</i></p>
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7.0 NOTIFICATION AND CONSTRUCTION REQUIREMENTS (CON'T)

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 ONSITE COVERING THE EXCAVATIONS WITHIN 25 FEET. EXAMPLE: IF A CORRIDOR JOB HAS TWO INSPECTORS ONSITE, 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 TRUE TRACKER 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, AND 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 HOUDLY REPAIRED BY PIPELINE OWNER PRIOR TO LOWERING THE PIPELINE INTO THE DITCH. 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 (CON'T)

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 PRUDENT 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 RECEVE OF STRAY CURRENT INTERFERENCE ON PIPELINE OWNER'S PIPELINE AND SHALL COOPERATE WITH EMPCO IN THE RESTORATION OF THE PIPELINE PIPE--TO--SOIL POTENT

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 JOB SITE 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 RUING 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 (CON'T)

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 JOB SITE 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 & 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 & REQUIREMENTS:

1. IN ACCORDANCE WITH LAW, CONSTRUCTORS 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 CONSTRUCTOR'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 THE 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--OF--WAY MUST BE APPROVED IN ADVANCE IN WRITING.

8. BLASTING ACTIVITIES (E.G. SEISMIC SURVEYS, EXPLOSIVE BLASTING) WITHIN 500 FEET OF AN EMPCO PIPELINE WILL REQUIRE AN APPROVED BLASTING PLAN IN ADVANCE IN WRITING. EXXONMOBIL

9. THE CONSTRUCTOR SHALL ASSUME FULL LIABILITY FOR ANY DAMAGES TO EMPCO FACILITIES DUE TO CONSTRUCTION / EXCAVATION ACTIVITIES. EMPCO PIPELINES ARE CATHODICALLY PROTECTED COULD HAVE AN EFFECT ON UTILITY LINES THAT ARE MADE OF ELECTRICALLY CONDUCTIVE MATERIAL

TEMPORARY CONSTRUCTION ROAD CROSSINGS:

10. ANY CROSSINGS OF EMPCO'S PIPELINES WITH VEHICLES OR HEAVY EQUIPMENT MUST BE PRE-APPROVED BY EMPCO AND MAY REQUIRE RAMPING, MATTING, OR AIR BRIDGING AT CONSTRUCTOR'S EXPENSE. AN EMPCO INSPECTOR MUST BE PRESENT WHEN TEMPORARY MATERIALS ARE INSTALLED AND REMOVED ON EMPCO'S RIGHT OF WAY. USE OF AIR BRIDGING, PER EMPCO STANDARDS, IS GENERALLY PREFERRED AND MAY EXPEDITE APPROVAL OF THE TEMPORARY CROSSING.

EXCAVATION/CONSTRUCTION RESTRICTIONS & REQUIREMENTS:

11. NO HOLES ARE TO BE BORED OR EXCAVATED WITHIN THE BOUNDARIES OF THE RIGHT OF WAY WITHOUT EMPCO'S PRIOR APPROVAL.

12. ALL HEAVY EQUIPMENT MUST HAVE A SPOTTER WITH IT AT ALL TIMES WHILE WORKING WITHIN 10 FEET OF EMPCO'S PIPELINE OR ON EMPCO'S RIGHT OF WAY.

13. THE EXCAVATOR MUST INSTALL A BAR ACROSS THE TEETH OF THE BUCKET TO BE USED DURING EXCAVATION.

14. EXCAVATION TO INITIALLY EXPOSE THE PIPELINE SHALL BE PARALLEL WITH THE PIPELINE.

15. MECHANICAL EXCAVATION WILL CEASE ONCE THE EARTH HAS BEEN REMOVED TO WITHIN (24") TWENTY-FOUR INCHES OF EMPCO PIPELINE, APPURTENANCES, AND AT ALL VALVE/STOPPLE SITES ("FIXTURES") AND MAY NOT RESUME UNTIL THE FIXTURE HAS BEEN EXPOSED.

16. SHOVELS OR OTHER SOFT DIGGING TECHNIQUES WILL BE USED TO MANUALLY CLEAN THE AREA ABOVE AND BELOW THE LINE AFTER THE LINE HAS BEEN INITIALLY LOCATED. THE LINE MUST BE KEPT VISIBLE TO THE EQUIPMENT OPERATOR DURING THE EXCAVATION PROCESS.

17. NO EXCAVATIONS SHALL BE MADE ON LAND ADJACENT TO THE PIPELINE THAT WILL IN ANYWAY IMPAIR OR WITHDRAW THE LATERAL SUPPORT AND/OR CAUSE ANY SUBSIDENCE OR DAMAGE TO THE PIPELINE.

18. DRIVING OF SHEET PILING OR ANY OTHER VIBRATION INDUCING ACTIVITIES IN THE VICINITY OF AN EMPCO RIGHT OF WAY MUST BE REVIEWED IN ADVANCE AND APPROVED BY EMPCO.

19. ALL BACKFILL ON EMPCO'S RIGHT OF WAY SHALL BE APPROVED BY EMPCO'S ON-SITE INSPECTOR.

20. IF EMPCO'S LINE IS EXPOSED DURING THE EXCAVATION, THE EXCAVATION WILL BE MADE SAFE FOR ENTRY AND LEFT OPEN UNTIL EMPCO INSTALLS TEST LEADS OR PERFORMS ANY OTHER VISUAL INSPECTION THAT MAY BE REQUIRED.



21. CONSTRUCTOR SHALL ABIDE BY ALL STATE & FEDERAL LAWS, RULES AND REGULATIONS AND SHALL OPERATE EQUIPMENT THAT IS IN GOOD WORKING CONDITION AND IN A MANNER THAT IS CONDUCTIVE TO A SAFE WORKING ENVIRONMENT WHILE WORKING IN OR AROUND EMPCO'S FACILITIES. AN EXXONMOBIL REPRESENTATIVE HAS THE AUTHORITY TO SUSPEND ALL EXCAVATION/CONSTRUCTION ACTIVITIES IN AND AROUND EMPCO FACILITIES IF THE EQUIPMENT OPERATOR IN EMPCO'S DETERMINATION APPEARS TO BE UNQUALIFIED OR EQUIPMENT MAINTENANCE IS NOT IN ACCORDANCE WITH APPLICABLE REGULATIONS. EXXONMOBILE

PIPELINE & UTILITY CROSSINGS:

22. ALL PIPELINES, UTILITY LINES AND OTHER UNDERGROUND FACILITIES CONSTRUCTED ACROSS EMPCO FACILITIES MUST: CROSS THE PIPELINE EASEMENT AT AN ANGLE AS CLOSE TO 90 DEGREES AS POSSIBLE BUT NOT LESS THAN 45 DEGREES; BE INSTALLED UNDER THE PIPELINES WITH A MINIMUM VERTICAL SEPARATION OF 24 INCHES BETWEEN STRUCTURES; AND BE INSTALLED IN A MANNER ACCEPTABLE TO EMPCO'S ON-SITE REPRESENTATIVE. IF THE CONSTRUCTOR ELECTS TO INSTALL PIPELINES/UTILITIES ACROSS EMPCO'S EASEMENT BY ANY METHOD OF BORING, THEN THE CONSTRUCTOR, IF REQUESTED BY EMPCO'S REPRESENTATIVE, SHALL VERIFY THE VERTICAL SEPARATION BETWEEN EMPCO'S FACILITIES AND THE CONSTRUCTOR'S PIPELINES/UTILITIES.(SEE BORE CROSSINGS, BELOW)

23. AN APPROVED CROSSING ABOVE AN EMPCO PIPELINE WILL NEED TO CLEAR EMPCO'S PIPELINE BY A MINIMUM OF 24 INCHES AND MAY REQUIRE A CROSSING AGREEMENT TO BE SIGNED BY THE OWNER OF THAT CROSSING. PVC/HDPE IRRIGATION, COMMUNICATION LINES (E.G. CABLE, TELEPHONE, FIBER OPTIC), WATERLINES 4 INCHES IN DIAMETER OR LESS, MAY CROSS ABOVE EMPCO'S PIPELINE(S) SO LONG AS EXCAVATION IS PERFORMED BY HAND OR ANOTHER METHOD OF SOFT DIGGING ACROSS THE ENTIRE WIDTH OF EASEMENT, IN THE PRESENCE OF AN ONSITE EMPCO TECHNICIAN, AND PLANS ARE REVIEWED BY EMPCO'S RIGHT--OF--WAY & CLAIMS AGENT.

24. WHEN APPROVED BY EMPCO, ALL ELECTRICAL AND COMMUNICATION CABLES CROSSING ABOVE AN EMPCO PIPELINE SHOULD BE PLACED IN A CASING ACROSS THE WIDTH OF EMPCO'S RIGHT OF WAY AND COVERED WITH RED CONCRETE AT LEAST 6" TO 8" THICK WITH A MINIMUM WIDTH OF 6 INCHES ON EACH SIDE AND ABOVE THE CONDUIT. ALL FIBER OPTIC, AND COMMUNICATIONS CROSSINGS ABOVE AN EMPCO PIPELINE SHOULD BE PLACED IN A CASING ACROSS THE WIDTH OF EMPCO'S RIGHT OF WAY. CASINGS MUST, AT A MINIMUM, BE MADE OF SCHEDULE 80 PVC.

 <div>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4279</div>	
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GRAVITY SEWER LINE ADJUSTMENT	
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EXCAVATION/CONSTRUCTION RESTRICTIONS & REQUIREMENTS: (CON'T)

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; DOWNWIND 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 (LB./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 DEFNES THE TOLERANCE ZONE AS 18 (TEXAS) INCHES FROM THE OUTER EDGE OF THE PIPE (IN ALL DIRECTIONS), OR AS DEFNED 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 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.
- METALLIC PIPE CROSSING ENTERPRISE PIPELINES MAY BE SUBJECT TO A CATHODIC PROTECTION STUDY. FOREIGN METALLIC 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 (NEC) 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 RED 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 RESULT 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 25 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 (CON’T)
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

- CONTRACTORS SHALL BE ADVISED OF COMPANY’S REQUIREMENTS AND BE CONTRACTUALLY OBLIGATED TO COMPLY.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 SUBSIDENCE OF TILES.
- 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.
- 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.
- 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 COMPACTED 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.
- 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.
- COMPANY SHALL BE INDEMNIFIED AND HELD HARMLESS FROM ANY LOSS, COST OF LIABILITY FOR PERSONAL INJURIES RECEIVED, DEATH CAUSED OR PROPERTY DAMAGE SUFFERED OR SUSTAINED 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 (CON’T)

- 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 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)
- 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.
- COMPANY PERSONNEL SHALL INSTALL ALL TEST LEADS ON COMPANY FACILITIES.
- 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 ERFORMED 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 PERMITEE AND ANY CONTRACTORS, AGENTS AND OR REPRESENTATIVES IT USES FOR CONSTRUCTION ACTIVITIES CONDUCTED IN PERMITTOR’S RIGHT–OF–WAY AND/OR AFFECTING PERMITTOR’S PIPELINES:

- THE PERMITEE 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).
- PERMITEE SHALL CONDUCT THEIR ACTIVITIES IN COMPLIANCE WITH PERMITTOR’S DESIGN GUIDELINES AS WELL AS ANY APPLICABLE ENCROACHMENT AGREEMENT IN PLACE WITH PERMITEE AND OR THE TERMS OF THE CONSTRUCTION GUIDELINES CONTAINED HEREIN.
- 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, PERMITEE SHALL MEET WITH PERMITTOR REPRESENTATIVES PRIOR TO CONSTRUCTION TO PROVIDE AND RECEIVE NOTIFICATION LISTINGS FOR APPROPRIATE AREA OPERATIONS AND EMERGENCY PERSONNEL. PERMITTOR’S ONSITE REPRESENTATIVE SHALL REQUIRE IS CONTINUATION OF ANY WORK THAT, IN THEIR OPINION, ENDANGERS THE OPERATION OR SAFETY OF PERSONNEL, PIPELINES, OR FACILITIES.
- 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 BESIDES PROBING IS NECESSARY TO LOCATE THE PIPELINE, THIS SHALL BE DONE AT THE PERMITEE’S EXPENSE UNDER PERMITTOR SUPERVISION.
- 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 PERMITEE SCHEDULE CHANGES SHALL BE PROVIDED TO PERMITTOR IMMEDIATELY.
- PERMITEE 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 PERMITEE. 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 PERATE DIRECTLY OVER PERMITTOR PIPELINES OR IN PERMITTOR ROW UNLESS WRITTEN APPROVAL IS OBTAINED FROM PERMITTOR. HEAVY–WHEELED EQUIPMENT SHALL ONLY BE ALLOWED TO CROSS PERMITTOR PIPELINES AT LOCATIONS ESIGNATED BY PERMITTOR. THE PERMITEE 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 SUBSIDENCE OF TIRES.
- 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.
- 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 NEW BORE AND EXISTING PIPELINES. IN ADDITION, PHILLIPS 66 MAY REQUIRE PERMITEE TO EXCAVATE AN OBSERVATION HOLE PARALLEL TO AND APPROXIMATELY 5 FT ON ONE OR BOTH SIDES OF PERMITTOR’S PIPELINE(S) EXTENDING AT LEAST 1 FT BELOW THE PIPELINE OR BORE, WHICHEVER IS

SHALLOWEST. THE OBSERVATION HOLE(S) ARE TO BE MONITORED DURING BOTH THE PILOT BORE AND BACK REAMING.

- EXCAVATION OR GRADING THAT MIGHT RESULT IN EROSION OR THAT COULD RENDER THE ROW INACCESSIBLE SHALL NOT BE PERMITTED UNLESS THE PERMITEE AGREES TO RESTORE THE AREA TO ITS ORIGINAL CONDITION AND PROVIDE ROTECTION TO PERMITTOR’S FACILITY.
- PERMITEE WILL REMOVE CUTTING TEETH FROM EXCAVATION EQUIPMENT BUCKET WHEN WITHIN 10 FEET OF PERMITTOR’S PIPELINE(S). MECHANICAL EXCAVATION WILL CEASE, AND ONLY HAND EXCAVATION SHALL BE PERMITTED, WITHIN 18 INCHES OF A CRUDE OIL OR PRODUCT PIPELINE AND WITHIN 24 INCHES OF A LINE CONTAINING HIGHLY VOLATILE LIQUIDS (HVL). EXCAVATION WILL NOT BE ALLOWED TO CONTINUE UNTIL THE PERMITTOR’S PIPELINE VALVES, AND/OR FITTINGS TOP AND SIDES ARE VISIBLE TO THE SPOTTER. HOWEVER, PROCEED WITH EXTREME CAUTION WHEN WITHIN THREE (3) FEET OF THE PIPE.

- PERMITEE SHALL MAINTAIN A MINIMUM OF 48 INCHES OF SOIL COVER OVER PERMITTOR’S PIPELINE(S) ACROSS THE ENTIRE WIDTH OF THE ENCROACHMENT. IF SUFFICIENT COVER DOES NOT CURRENTLY EXIST, THEN AT PERMITEE’S SOLE COST AND EXPENSE, THE LINE SHALL BE LOWERED OR ADDITIONAL COVER PROVIDED FOR PLACEMENT OVER THE ROW. COVER OVER THE LINES MAY NOT EXCEED 6 FEET WITHOUT PERMITTOR’S PRIOR WRITTEN APPROVAL. THE METHOD OF ACHIEVING THE REQUIRED DEPTH OF COVER SHALL BE AT PERMITTOR’S SOLE DISCRETION. PROJECTS/MODIFICATIONS MAY INCLUDE OVER EXCAVATING TO ACHIEVE THE FINAL GRADE. IF THE PROJECT INCLUDES OVER EXCAVATING TO ACHIEVE THE FINAL GRADE, PIPELINE PROTECTIVE MEASURES SHALL BE DISCUSSED AND AGREED TO IN ADVANCE BY THE PERMITTOR AND THE PERMITEE.
- TEMPORARY SUPPORT OF ANY EXPOSED PERMITTOR PIPELINE BY PERMITEE MAY BE NECESSARY IF REQUIRED BY PERMITTOR ON–SITE REPRESENTATIVE TO COMPLETE CONSTRUCTION OF CROSSING. DEPENDING ON THE SIZE AND THE AMOUNT OF XPOSED PERMITTOR PIPELINE, ADDITIONAL PIPELINE SUPPORT MAY BE NECESSARY TO ROTECT THE PIPELINE FROM STRESSES THAT MAY BE CAUSED BY THE SETTLING OF THE SOIL AND PIPELINE AFTER EXCAVATION. CONSULT A PERMITTOR REPRESENTATIVE PRIOR TO THE COMMENCEMENT OF EXCAVATION FOR FURTHER DETAILS AS TO WHAT MAY BE REQUIRED.
- NO ‘NON–EXPLOSIVE’ SEISMIC TESTING OR CONSTRUCTION EQUIPMENT WITH STEADY STATE VIBRATOR, INTERMITTENT VIBRATOR, OR THUMPER SOURCES SHALL BE CONDUCTED WITHIN 150 FEET OF PERMITTOR’S PIPELINE WITHOUT PERMITTOR WRITTEN APPROVAL. A VIBRATION ANALYSIS WILL NEED TO BE CONDUCTED TO ENSURE NO POTENTIAL DAMAGE TO THE PIPELINE. WORK SHALL ONLY RESUME WITH WRITTEN APPROVAL FROM THE PERMITTO.
- NO BLASTING SHALL BE ALLOWED WITHIN 1320 FEET OF PERMITTOR’S FACILITIES WITHOUT PERMITTOR WRITTEN APPROVAL. NOTIFICATION OF BLASTING SHALL BE GIVEN TO PERMITTOR INCLUDING A COMPLETE BLASTING PLAN. A PRE–BLAST MEETING SHALL BE CONDUCTED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING. PERMITTOR SHALL HAVE A SIGNED AND EXECUTED BLASTING INDEMNIFICATION AGREEMENT BEFORE AUTHORIZED PERMISSION TO BLAST CAN BE GIVEN. A WRITTEN EMERGENCY PLAN SHALL BE PROVIDED BY THE ORGANIZATION RESPONSIBLE FOR BLASTING.

 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4279</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
<h1>CITY OF HOUSTON</h1> <p>HOUSTON PUBLIC WORKS</p> <p>GRAVITY SEWER LINE ADJUSTMENT</p> <h2>GENERAL NOTES (CONTINUED)</h2>	
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. 05 OF 35	

ABBREVIATIONS:

&	AND
⊙	AT
AB	ALL BELL
AC	ACRE / ASBESTOS CEMENT
AI/VR	AIR INLET / VACUUM RELIEF
APPROX	APPROXIMATELY
ASPH	ASPHALT
AVE	AVENUE
℄	BASELINE
B/B	BACK TO BACK
BC	BACK OF CURB
BFV	BUTTERFLY VALVE
BL	BUILDING LINE
BLDG	BUILDING
BLVD	BOULEVARD
℄	CENTER LINE
C/C	CENTER TO CENTER
CCMP	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
℄	FLOW LINE
FM	FORCE MAIN
FT	FEET
GPS	GLOBAL POSITIONING SYSTEM
GV	GATE VALVE
GV&B	GATE VALVE AND BOX
HCFC	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:

Ⓡ	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

NOTICE:
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

VERIFICATION OF PRIVATE UTILITY LINES

Date

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.

Date

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities – not to be used
for conflict verification)
Signature valid for six months.

Date

Approved for AT&T underground conduit facilities only.
Signature valid for one year.

APPROVED FOR UPRR FACILITIESDATE

APPROVED FOR TxDOT FACILITIESDATE


APPROVED FOR EXXON MOBILE PIPELINE CO. FACILITIES

APPROVED FOR KINDER MORGAN FACILITIESDATE


APPROVED FOR ENTERPRISE FACILITIESDATE

APPROVED FOR CHEVRON FACILITIESDATE

DATE
APPROVED FOR ENERGY TRANSFER COMPANY FACILITIES



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



MICHAEL J. BAGSTAD
81193
REGISTERED
PROFESSIONAL ENGINEER

Michael J. Bagstad
10/8/2025

SURVEYED BY: TSC SURVEYING
FB NO. 10083100

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

ABBREVIATIONS

WBS NUMBER

R-002011-0096-3

DRAWING SCALE

N/A

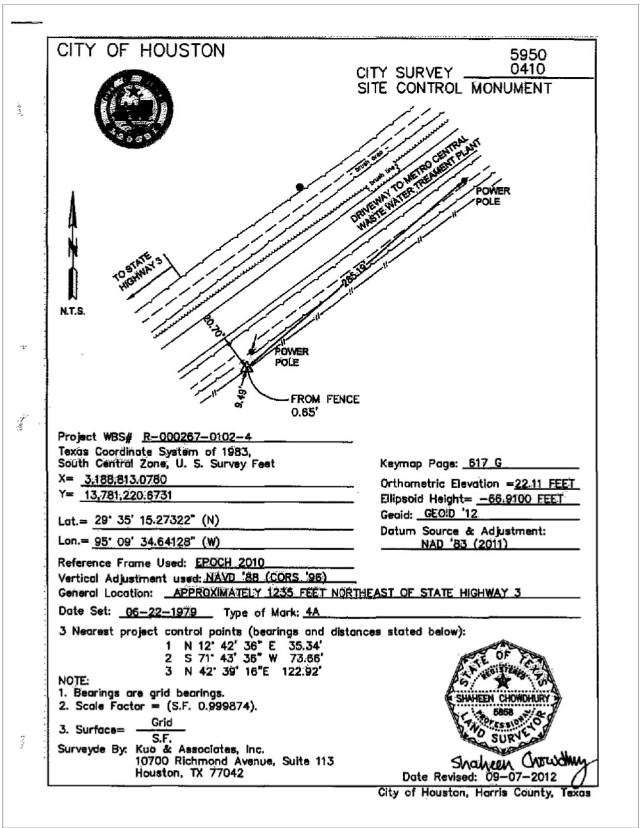
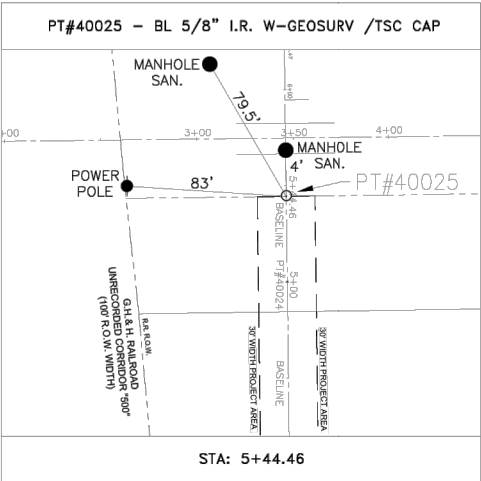
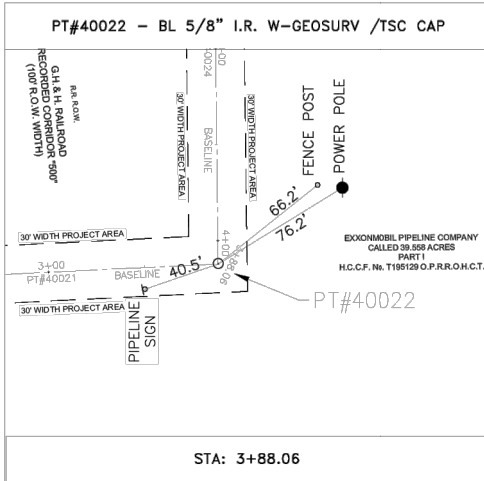
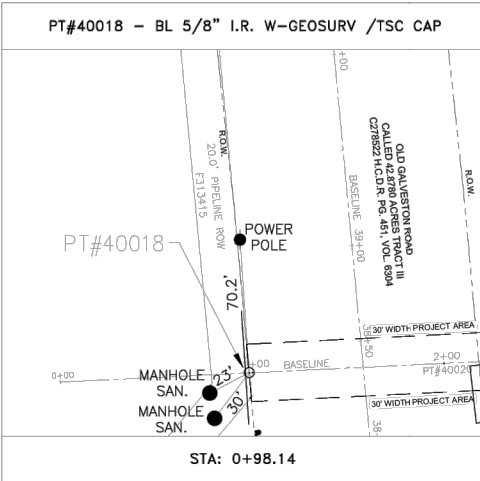
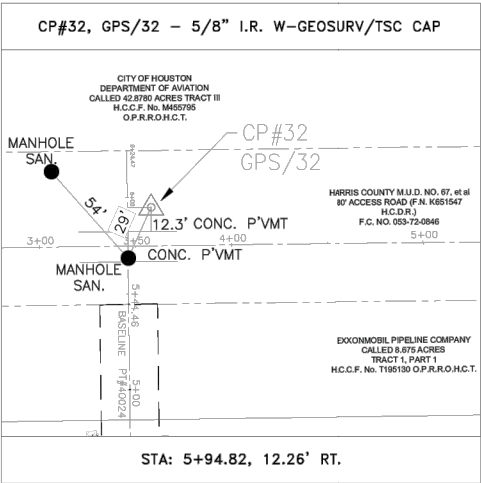
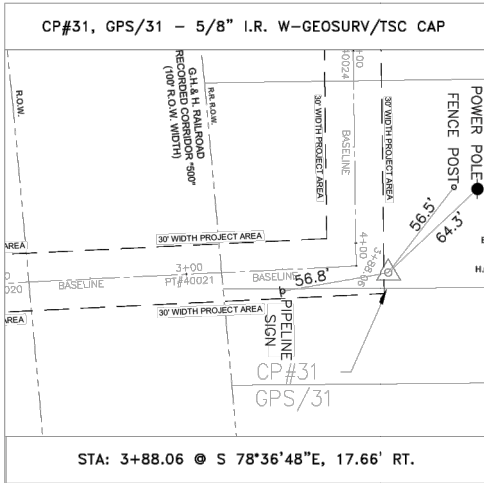
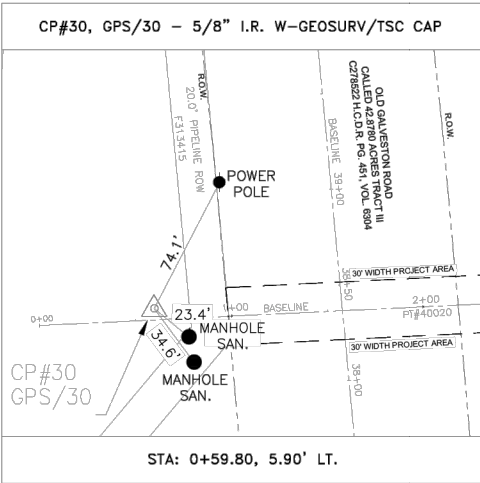
CITY OF HOUSTON PM

MARIA GEORGE, P.E.

SHEET NO. 06 OF 35

FOR CITY OF HOUSTON USE ONLY

S:\PROJECTS\817006 COH OLD GALVESTON ROAD-SUE_ZESI\2019_E-W_PIPELINES\DWG\SCM\817006_OLD GALVESTON ROAD_SCM-SHEET-2.DWG JUN. 01, 2025-10:48am



CONTROL POINTS:

TBM#15 IS A 1/2" 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.
ELEV. 25.11 FEET NAVD 88
STA. 5+64.02, 169.82'

5950-0410 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 2010.00. 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, GEOD 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 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

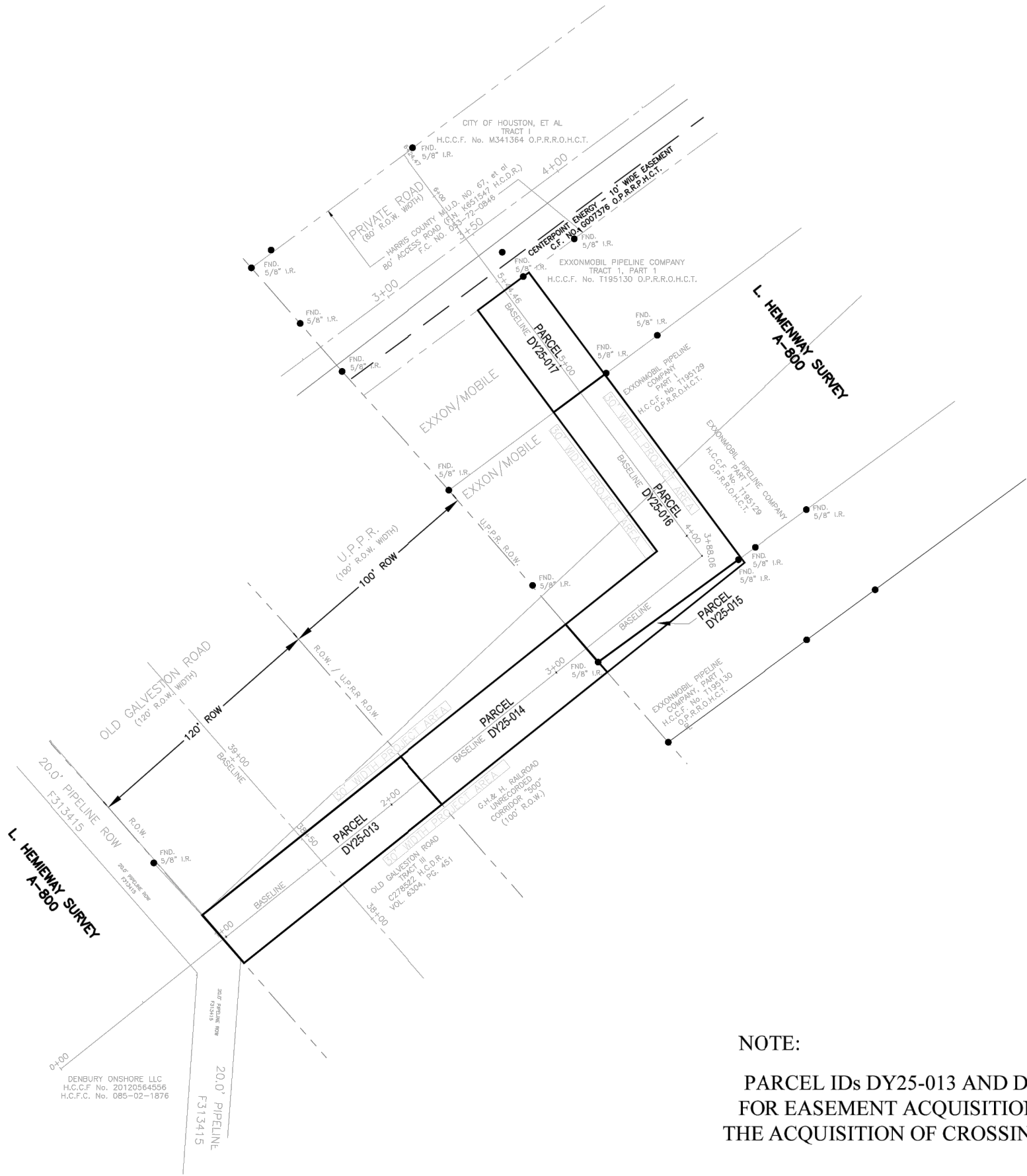
10970 STANCLIFF RD. HOUSTON, TEXAS 77099
TEL. 713-784-4466

(SHEET 2 of 2)

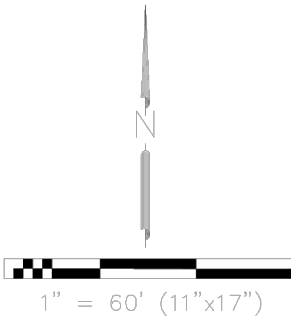


GRAVITY SEWER LINE ADJUSTMENT	
SURVEY CONTROL MAP	
APPROVAL	DATE
SURVEY SECTION	RIGHT OF WAY SECTION
KEY MAP No. 617G	GIMS MAP No. 5950C
WBS NUMBER	
R-002011-0096-3	
DRAWING SCALE	
N/A	
CITY OF HOUSTON PM	
ALYA AGARWAL, P.E.	
SHEET NO. 08 OF 35	

S:\PROJECTS\817006 COH OLD GALVESTON ROAD-SUE_ZES\2019_E-W_PIPELINES\DWG\EASEMENT SHEETS\817006 COH OLD GALVESTON RD ESMT SH 01 OVERALL.DWG JUN. 26, 2025-7: 46am



NOTE:
PARCEL IDs DY25-013 AND DY25-014 ARE NOT FOR EASEMENT ACQUISITION. THEY ARE FOR THE ACQUISITION OF CROSSING AGREEMENTS.



- NOTES:
- THE BEARINGS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT OR NAD83 (2001 ADJ.), TEXAS STATE COORDINATE SYSTEM SOUTH CENTRAL ZONE 4204. THE HORIZONTAL CONTROL SHOWN HEREON THIS MAP IS TIED TO WESTERN DATA SYSTEMS (WDS) TRIMBLE VRS NETWORK WHICH IS REFERENCED TO THE NGS CONTINUOUS OPERATING STATIONS (C.O.R.S.) NETWORK.
 - THE VERTICAL CONTROL IS REFERENCED TO THE HARRIS COUNTY FLOODPLAIN REFERENCE MARKER MONUMENT 010190, NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD88) 2001 ADJUSTMENT.
 - COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.999874.
 - 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.

Handwritten signature of Georg R. Lardizabal



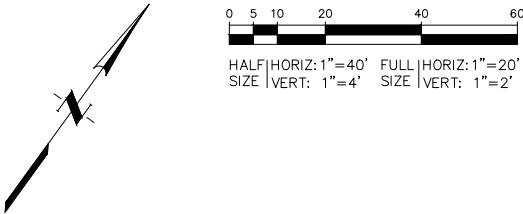
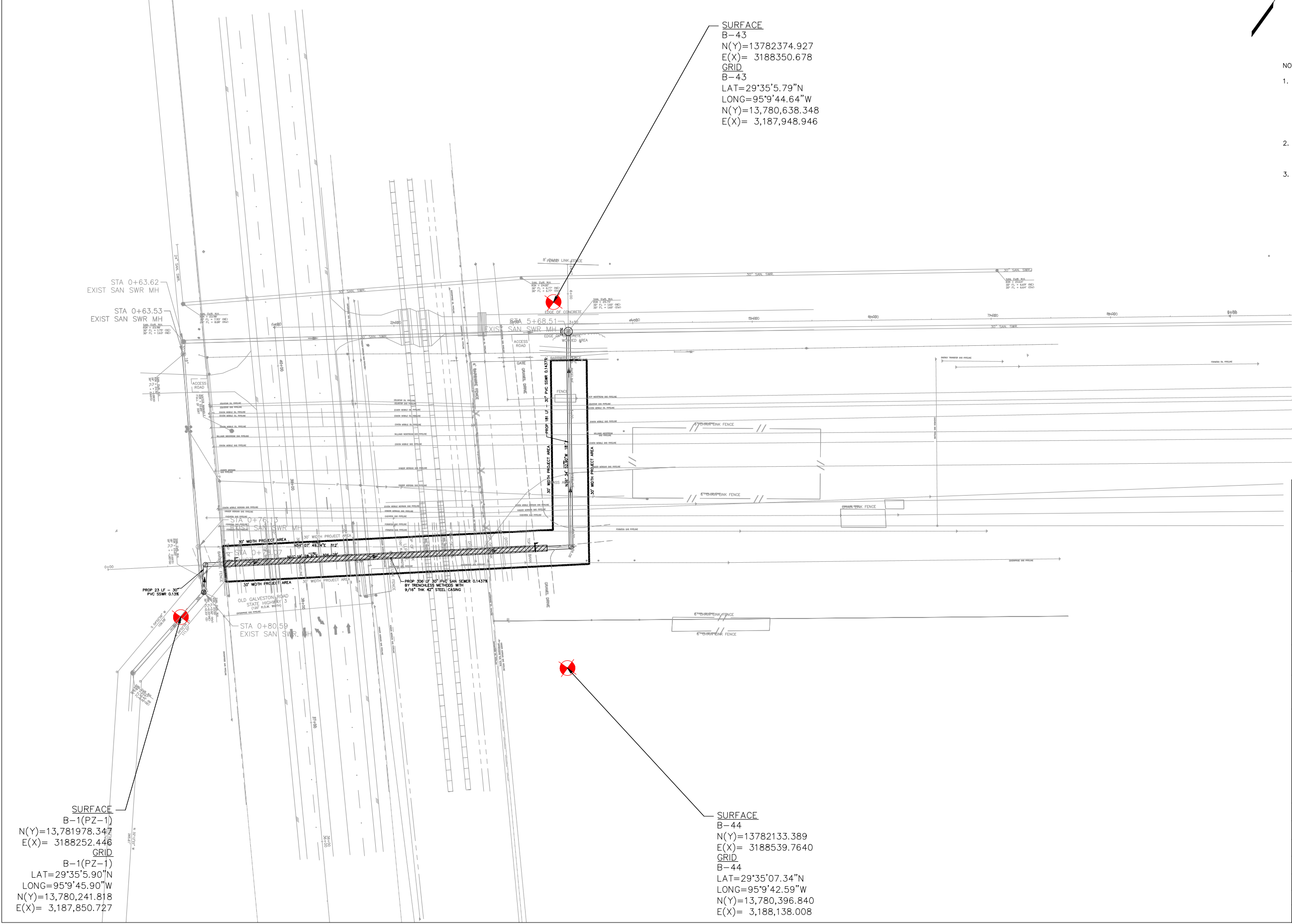
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GeoSurv, Inc. d/b/a TSC Surveying
TBPLS Firm No. 10083100
10970 STANCLIFF RD. HOUSTON, TEXAS 77099
TEL. 713-784-4466

LEGEND

- SET 5/8" I.R. W/TSC/GEOSURV CAP UNLESS OTHERWISE NOTED (PROPOSED R.O.W.)
SET 5/8" I.R. W/GEOSURV CAP UNLESS OTHERWISE NOTED (EXISTING R.O.W.)
FOUND PROPERTY CORNER UNLESS OTHERWISE NOTED
POINT
PARCEL NUMBER
HARRIS COUNTY CLERK'S FILE NUMBER
HARRIS COUNTY FILM CODE NUMBER
HARRIS COUNTY DEED RECORDS
HARRIS COUNTY MAP RECORDS
DEED RECORDS HARRIS COUNTY TEXAS
OFFICIAL PUBLIC RECORDS OF REAL PROPERTY HARRIS COUNTY TEXAS
POINT OF BEGINNING
POINT OF COMMENCEMENT
RIGHT-OF-WAY
BUILDING LINE
UTILITY EASEMENT
REFERENCE POINT
IRON ROD
IRON PIPE
PROPERTY LINE
COH REFERENCE MONUMENT


- □
●
○
⊗
H.C.C.F. NO.
H.C.F.C. NO.
H.C.D.R.
H.C.M.R.
D.R.H.C.T.
O.P.R.O.R.P.H.C.T.
P.O.B.
P.O.C.
R.O.W.
B.L.
U.E.
R.P.
I.R.
I.P.
E
COH REF MON

GRAVITY SEWER LINE ADJUSTMENT	
SANITARY SEWER EASEMENT LAYOUT	
CITY OF HOUSTON PUBLIC WORKS AND ENGINEERING DEPARTMENT	
APPROVAL _____ DATE _____	
SURVEY SECTION	RIGHT OF WAY SECTION
KEY MAP No. 617G	HCAD/GIMS MAP No. 5950-C
WBS NUMBER	
R-002011-0096-3	
DRAWING SCALE	
CITY OF HOUSTON PM	
HOUSING VU, P.E.	
SHEET NO. 09 OF 35	




- NOTES:
- THE BEARINGS SHOWN HEREON ARE REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT OR NAD83 (2001 ADJ.), TEXAS STATE COORDINATE SYSTEM SOUTH CENTRAL ZONE 4204. THE HORIZONTAL CONTROL SHOWN HEREON THIS MAP IS TIED TO WESTERN DATA SYSTEMS (WDS) TRIMBLE VRS NETWORK WHICH IS REFERENCED TO THE NGS CONTINUOUS OPERATING STATIONS (C.O.R.S.) NETWORK.
 - THE VERTICAL CONTROL IS REFERENCED TO THE HARRIS COUNTY FLOODPLAIN REFERENCE MARKER MONUMENT 010190, NORTH AMERICAN VERTICAL DATUM OF 1988 (NVD88) 2001 ADJUSTMENT.
 - COORDINATES AND DISTANCES SHOWN HEREON ARE SURFACE AND MAY BE CONVERTED TO GRID BY MULTIPLYING SURFACE VALUES BY A COMBINED SCALE FACTOR OF 0.999874.

Table 3-1 – Borehole Survey Data				
Boring	Drilling Depth, Feet	Coordinates, Feet		Elevation, Feet
		Latitude	Longitude	
B-1 (PZ-1)	60	29°35'5.90"N	95° 9'45.90"W	23.0
Borings from Previous Study				
Boring	Drilling Depth, Feet	Coordinates, Feet		Elevation, Feet
		Northing	Easting	
B-43	50	13,780,638.348	3,187,948.946	25.8
B-44	50	13,780,396.840	3,188,138.008	22.97



**ZARINKELK
ENGINEERING
SERVICES, INC.**
617 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

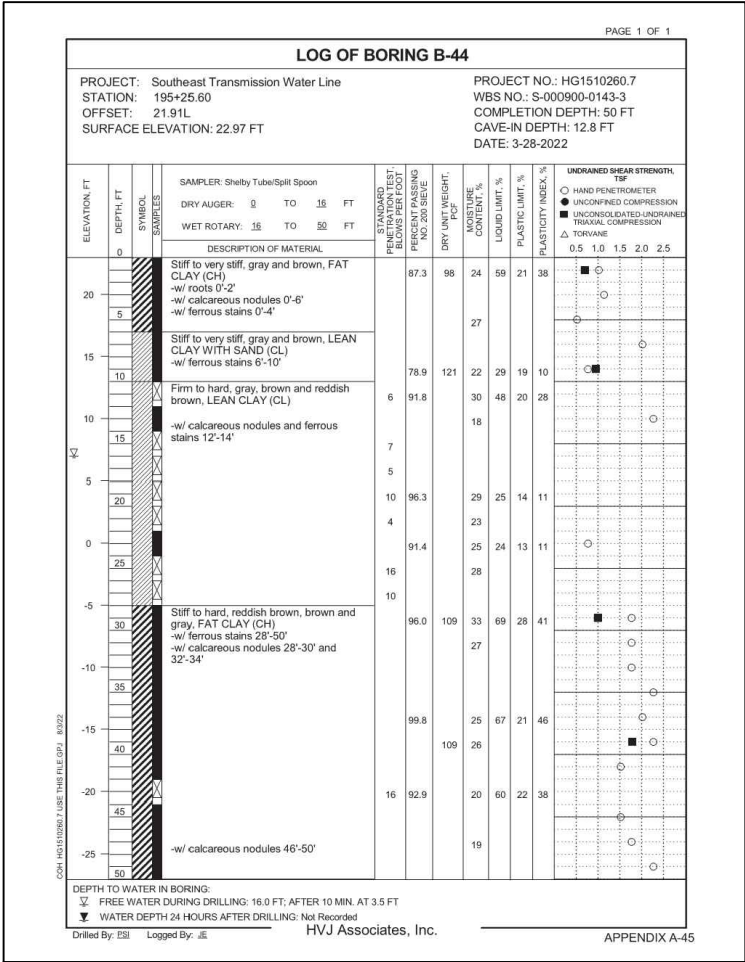
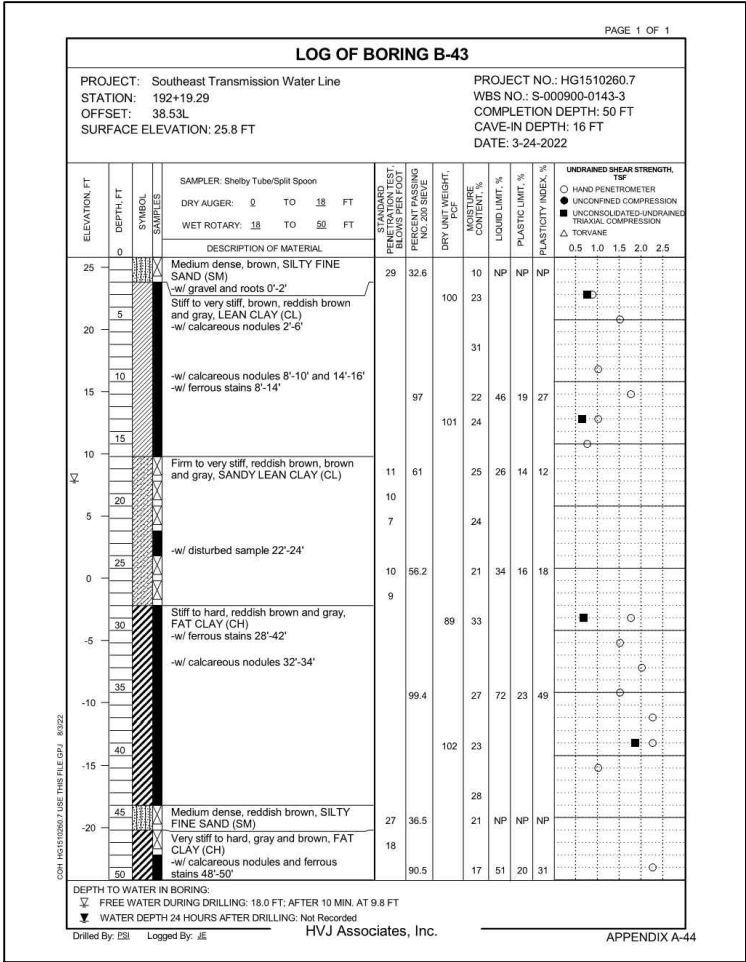
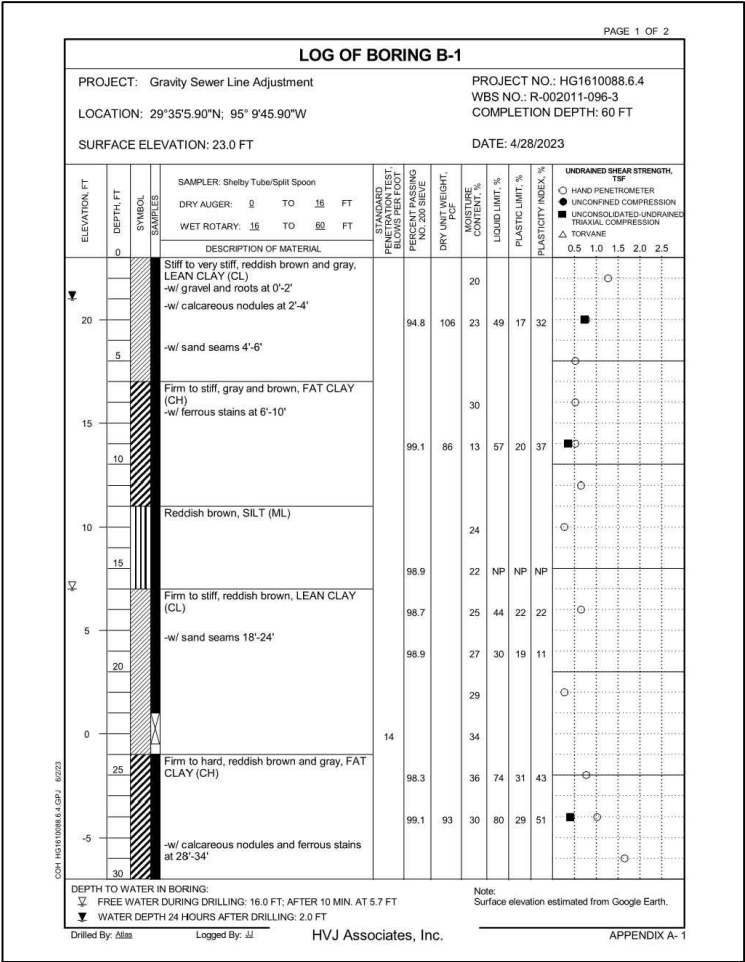
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FB NO. 10083100



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

BORE HOLES LOCATION

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. 10 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		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
GRAVITY SEWER LINE ADJUSTMENT		
BORE HOLES LOGS		
WBS NUMBER R-002011-0096-3		FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N/A		
CITY OF HOUSTON PM MARIA GEORGE, P.E.		
SHEET NO. 11 OF 35		


WBS No. : S-000900-0138-3				
UTILITY TABLE				
Owner	Contact Name	Address	Phone No.	Email
UPRR	Kerin Bristow	1400 Douglas St, STOP 1690, Omaha, NE 68179		klbristo@up.com
Chevron	Mr. Ben Bohannon	(832) 418-4578.	(832) 418-4578.	boha@chevron.com
Energy Transfer Co	Mr. Daniel Tarlton	(832) 516-0941	(832) 516-0941	encroachments@energytransfer.com
Enterprise	Sherwood Gregory /Cameron Lair	281-885-9272 /(281)770-9124	Cameron Lair Enterprise Products Company Land-Encroachments 1100 Louisiana Street Houston, TX 77002	E.clair@eprod.com
ExxonMobil Pipeline Company LLC	Rachel Bear	ExxonMobil Pipeline Company LLC 22777 Springwoods Village Parkway E2.2B.333 Spring, TX 77389	Cell: 281.939.4966 Zoom: 346.566.9214	rachel.p.bear@exxonmobil.com
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	Joshua_Amador@kindermorgan.com kmencroachmentsgulf@kindermorgan.com
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	stacy.jamison@lyondellbasell.com
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	lamar.felder@p66.com
ATT Texas/SWBT	Ms. Kathy Tinney	6500 West Loop South Zone 1.3 Bellaire, TX 77401	713-660-5334	kg7085@att.com
COH		PO Box 611 Houston, Texas 77002	832-395-2500	
Centerpoint Elec	Cynthia Martinez	1111 Louisiana, Rm 942D, Houston, TX 77002	713-207-6555	cindy.martinez@centerpointenergy.com
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	april.dow@txdot.gov
Easton Energy	C. Sutton		281-36-1468 (Corporate Office 281-767-2511)	csutton@eastonenergy.com

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



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NO. F-4270



MICHAEL J. BAGSTAD
81193
REGISTERED PROFESSIONAL ENGINEER

SURVEYED BY: TSC SURVEYING
FB NO. 10083100

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

PIPELINE INFORMATION

WBS NUMBER

R-002011-0096-3

DRAWING SCALE

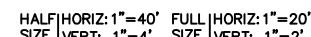
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CITY OF HOUSTON PM

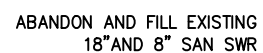
MARIA GEORGE, P.E.

SHEET NO. 12 OF 35

FOR CITY OF HOUSTON USE ONLY



DEMOLITION



— REMOVE AND DISPOSE
EXISTING MHS

✓ ABANDON AND FILL EXISTING 30 INCH DIAMETER SAN SWR

PLUG EXISTING 30" SAN SW

EXISTING
30" SAN SWR

END DISPOSE EXISTING MHS

PLUG EXISTING 18" & 8" SAN
SWR PIPE

REMOVE AND DISPOSE -
DIAMETER SAN SWR PIPE

REMOVE AND DISPOSE EXISTING M

UPRR



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SURVEYED BY: TSC SURVEYING
FB NO. 10083100



CITY OF HOUSTON

GRAVITY SEWER LINE ADJUSTMENT

DEMOLITION PLAN

(SHEET 1 OF 3)

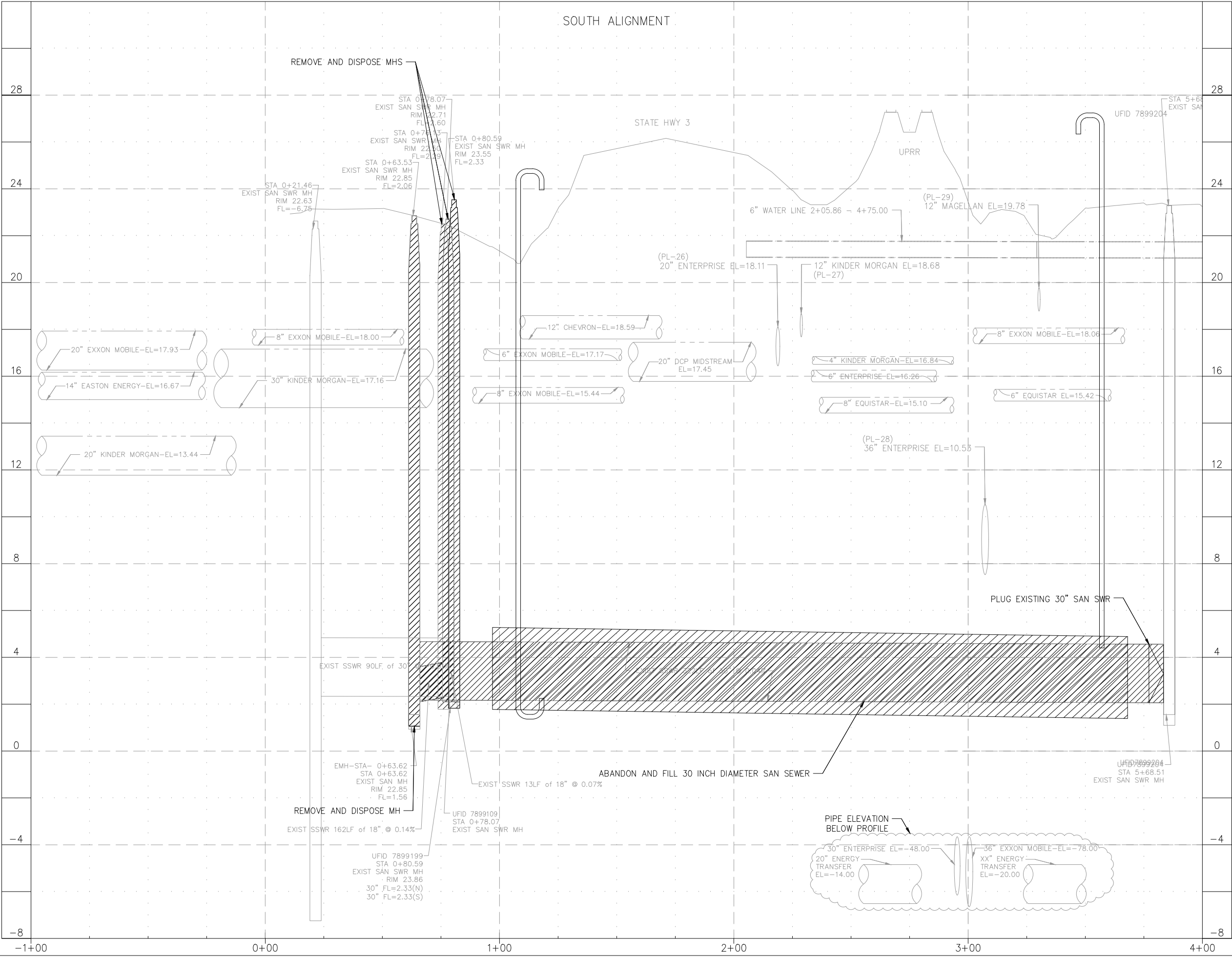
WBS NUMBER
R-002011-0096-3
DRAWING SCALE 1"=40'
N/A
CITY OF HOUSTON PM
MARIA GEORGE, P.E.
SHEET NO. 13 OF 35

FOR CITY OF HOUSTON USE ONLY	
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FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\14 - 15 DEMOLITION PROFILE_STB.dwg

PLOT STYLE: COH.ctb

PLOTTED: 10/8/2025 1:25 PM



0 5 10 20 40 60

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

LEGEND

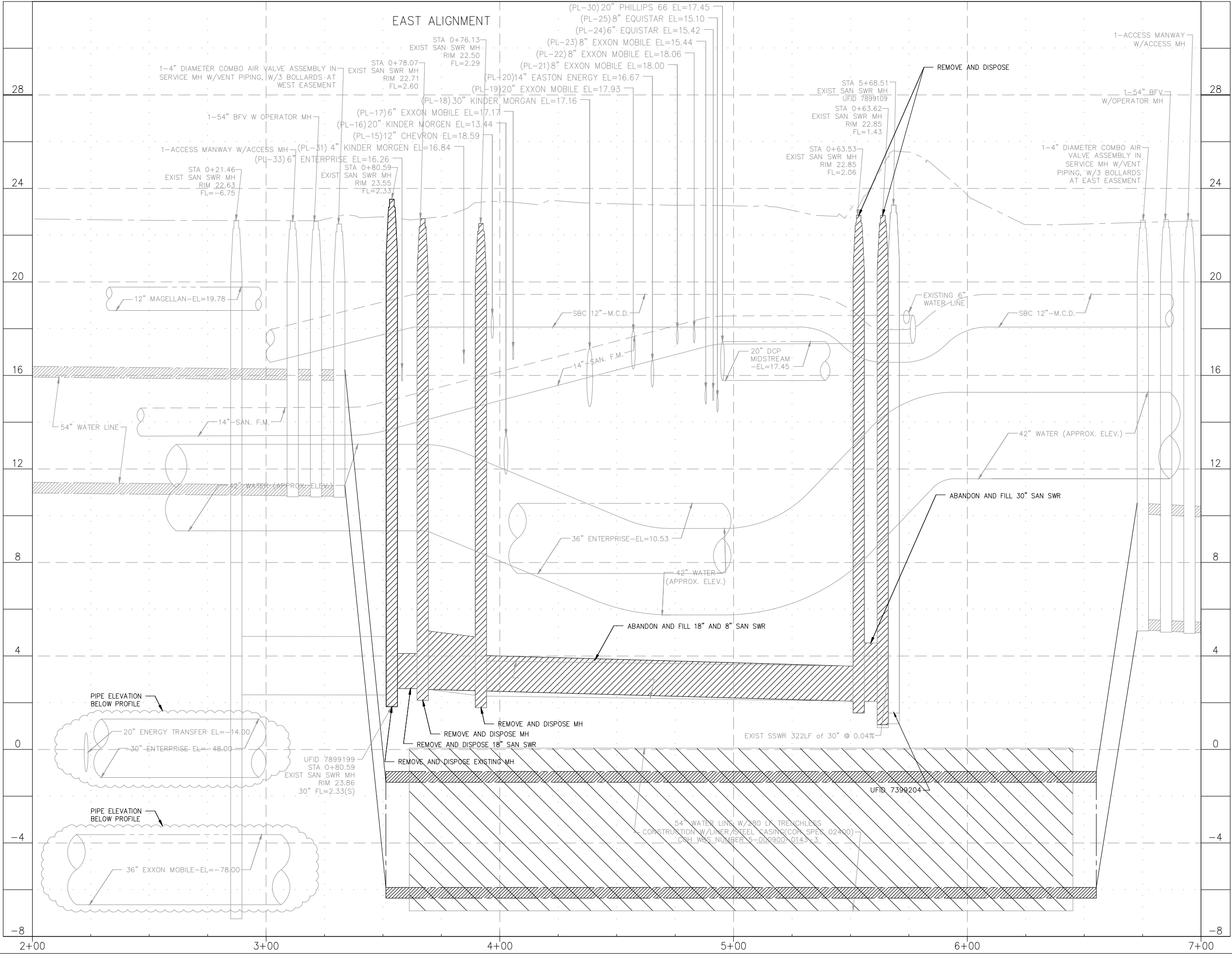
DEMOLITION

 ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4279		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
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		

PLOTTED: 10/8/2025 1:25 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Sewer\CAD\14 - 15 DEMOLITION PROFILE_STB.dwg



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

LEGEND



DEMOLITION

ZARINKEL
ENGINEERING
SERVICES, INC.
617 Caroline St.
Houston, TX 77002
Phone (832) 242-2426
FAX (832) 242-2445
TEXAS REGISTRATION
NO. F-4279



SURVEYED BY: TSC SURVEYING
FB NO. 10083100

CITY OF HOUSTON
HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

DEMOLITION PROFILE

STA 03+88.06 TO STA 05+68.51

(SHEET 3 OF 3)

WBS NUMBER

R-002011-0096-3

DRAWING SCALE 1"=40'

N/A

CITY OF HOUSTON PM

MARIA GEORGE, P.E.

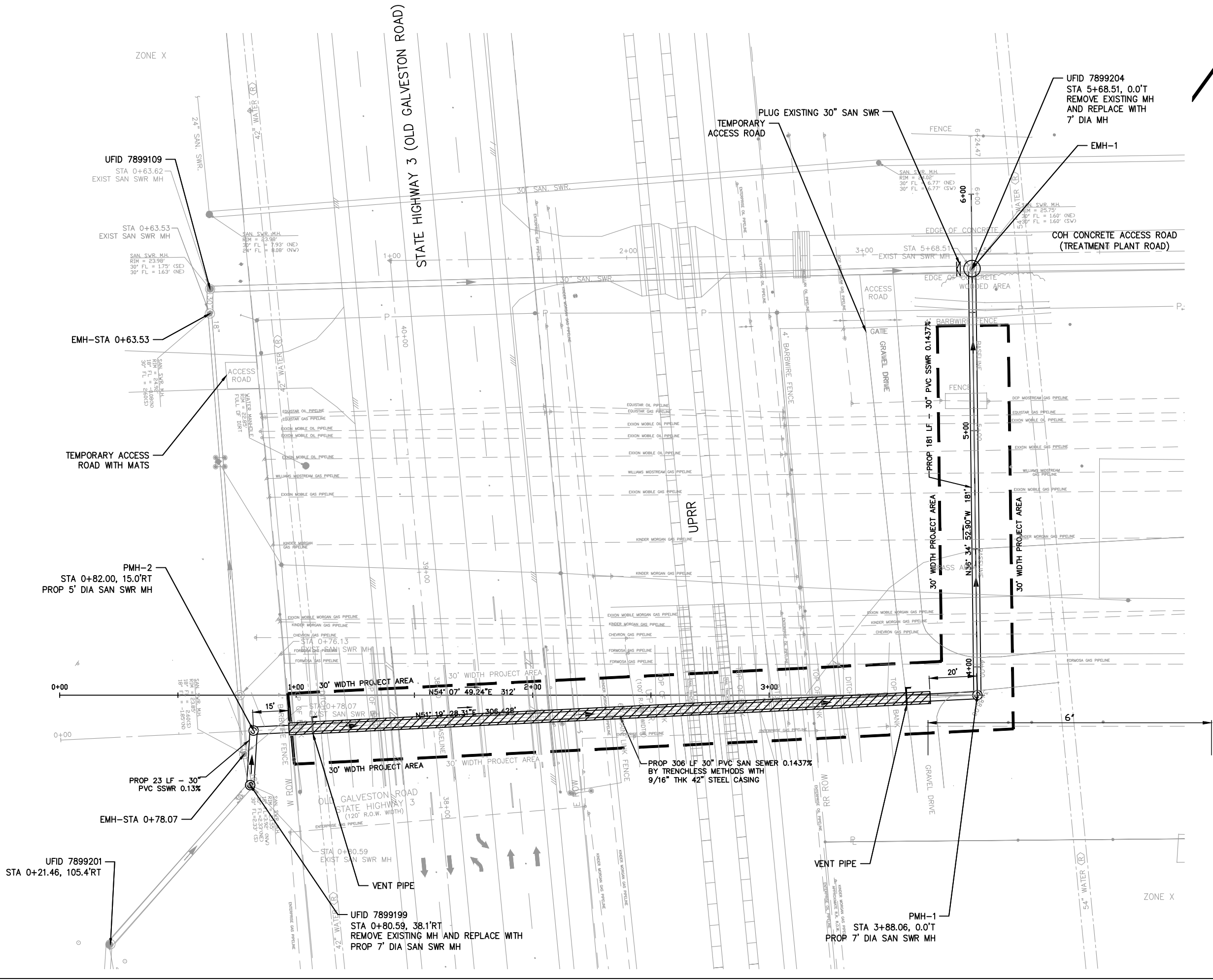
SHEET NO. 15 OF 35

FOR CITY OF HOUSTON USE ONLY

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\16 G-007-001 OVERALL LAYOUT.dwg

PLOT STYLE: COH.ctb

PLOTTED: 10/8/2025 1:17 PM



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



STEEL CASING

LEGEND

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
P AVEMENT

PLAN

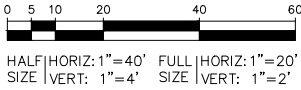
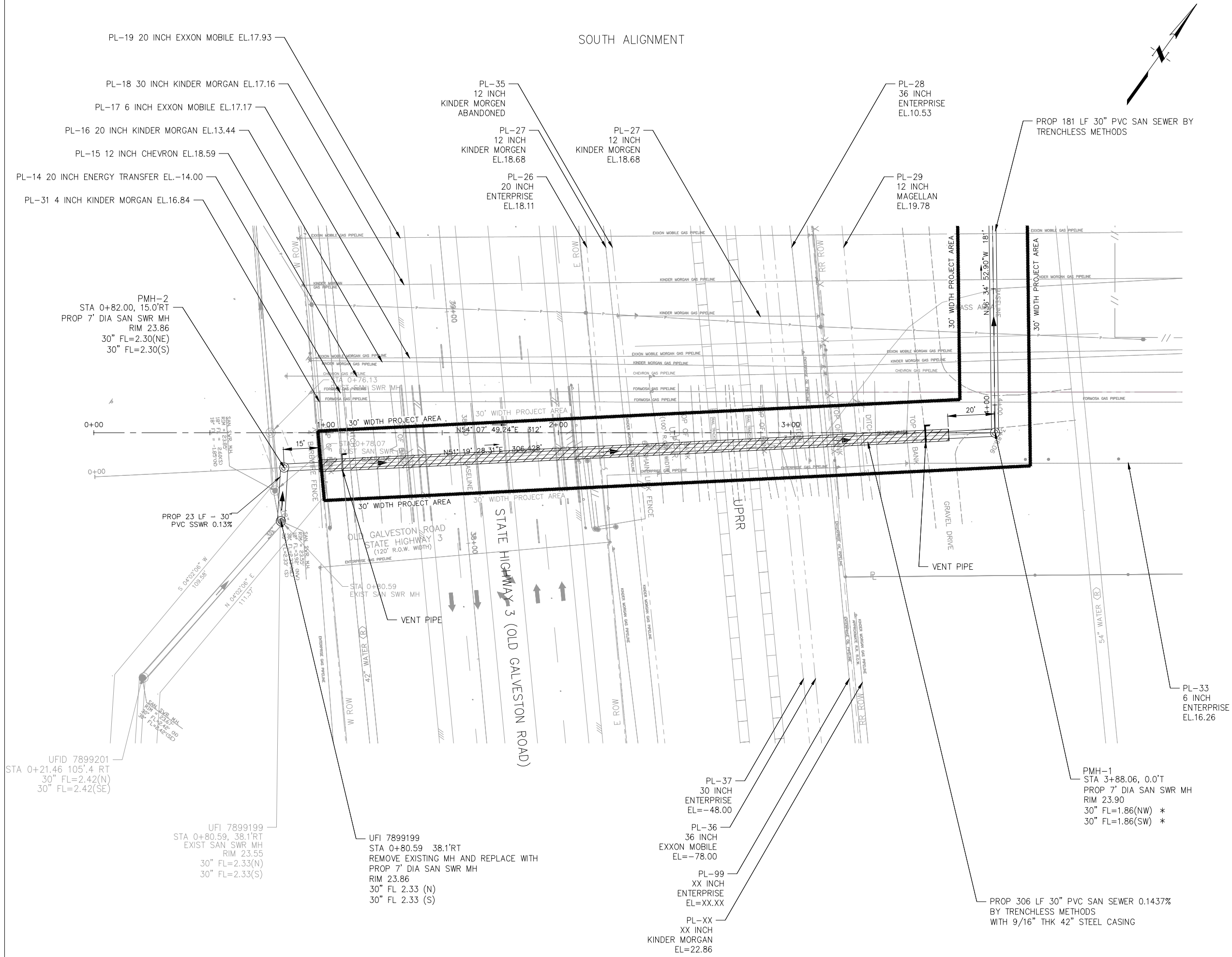
PROFILE

 ZARINKEL ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
GRAVITY SEWER LINE ADJUSTMENT		
OVERALL LAYOUT		
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. 16 OF 35		

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\17 - 20 C-001-001-STB.dwg

PLOT STYLE: COH.ctb

PLOTTED: 10/8/2025 1:25 PM



PROJECT BENCHMARK

CITY OF HOUSTON SITE CONTROL MONUMENT NO. 5950-0410:
BEING A CITY OF HOUSTON BRASS DISC STAMPED 5950-0410
BEGINNING 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 WWT. 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 ≤ 0.5". ACCEPTABLE FL ELEV=1.9023 TO 1.8353

LEGEND

STEEL CASING

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

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STATE OF TEXAS
MICHAEL J. BAGSTAD
81193
REGISTERED PROFESSIONAL ENGINEER

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	

UFID 7899201
STA 0+21.46 105.4 RT
30" FL=2.42(N)
30" FL=2.42(SE)

UFI 7899199
STA 0+80.59, 38.1'RT
EXIST SAN SWR MH
RIM 23.55
30" FL=2.33(N)
30" FL=2.33(S)

UFI 7899199
STA 0+80.59 38.1'RT
REMOVE EXISTING MH AND REPLACE WITH
PROP 7' DIA SAN SWR MH
RIM 23.86
30" FL 2.33 (N)
30" FL 2.33 (S)

PL-37
30 INCH
ENTERPRISE
EL=-48.00

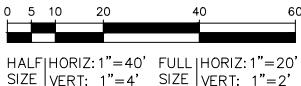
PL-36
36 INCH
EXXON MOBILE
EL=-78.00

PL-99
XX INCH
ENTERPRISE
EL=XX.XX

PL-XX
XX INCH
KINDER MORGAN
EL=22.86

PMH-1
STA 3+88.06, 0.0'T
PROP 7' DIA SAN SWR MH
RIM 23.90
30" FL=1.86(NW) *
30" FL=1.86(SW) *

PROP 306 LF 30" PVC SAN SEWER 0.1437%
BY TRENCHLESS METHODS
WITH 9/16" THK 42" STEEL CASING





PUBLISHED ELEV = 23.29 FEET NAVD88 (CORS 96

 STEEL CASING

PROP (E) ROW
PROP (W) ROW
EXIST (E) ROW
EXIST (W) ROW
EDGE OF PAVEMENT

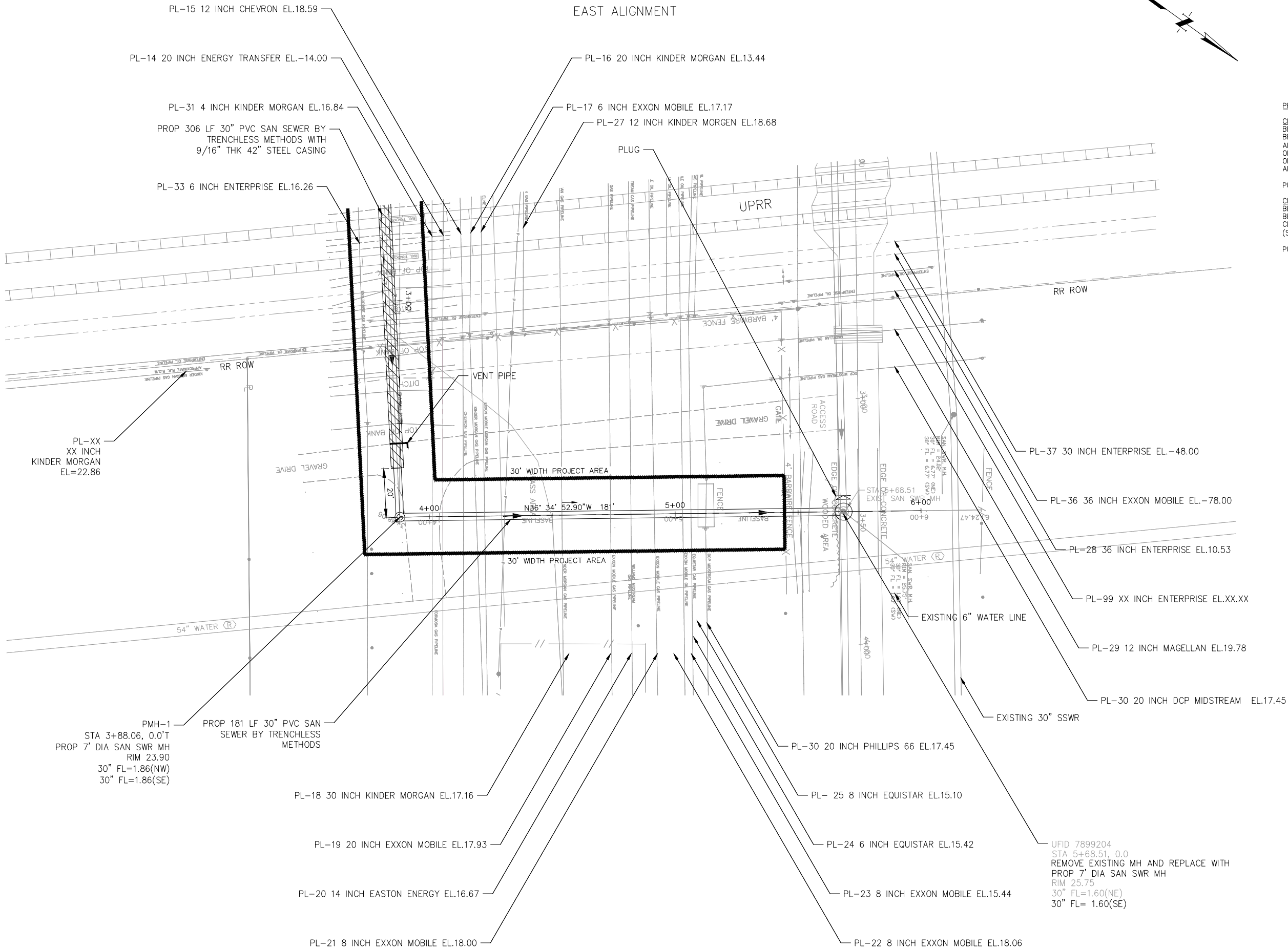
GAS
 WTR
 EXIST (S) TOC
 PROP (E) ROW
 PROP (W) ROW
 EXIST (E) ROW
 EXIST (W) ROW
 C PAVEMENT

 <p>ZARINKEL ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO: F-4270</p>	 <p><i>Michael Bagstad 8-9-2013</i></p>
<p>SURVEYED BY: TSC SURVEYING FB NO. 10083100</p>	
<h1 style="text-align: center;">CITY OF HOUSTON</h1> <h2 style="text-align: center;">HOUSTON PUBLIC WORKS</h2> <h3 style="text-align: center;">GRAVITY SEWER LINE ADJUSTMENT</h3> <h1 style="text-align: center;">PROFILE</h1> <p style="text-align: center;">BEGIN PROJECT STA 0+80.59 TO STA 3+88.06</p>	
<p>WBS NUMBER</p> <p>R-002011-0096-3</p> <p>DRAWING SCALE 1"=40'</p> <p>N/A</p> <p>CITY OF HOUSTON PM</p> <p>MARIA GEORGE, P.E.</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>SHEET NO. 18 OF 35</p>	

PLOTTED: 10/8/2025 1:25 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\17 - 20 C-001-001-STB.dwg



0510204060

HALF | HORIZ: 1"=40' FULL | HORIZ: 1"=20'

SIZE | VERT: 1"=4' SIZE | VERT: 1"=2'

PROJECT BENCHMARK

CITY OF HOUSTON SITE CONTROL MONUMENT NO. 5950-0410:
BEING A CITY OF HOUSTON BRASS DISC STAMPED 5950-0410
BEGINNING 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)

LEGEND

STEEL CASING

LEGEND

PLAN

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

℄ PAVEMENT

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NO. F-4270

STATE OF TEXAS

MICHAEL J. BAGSTAD

81193

REGISTERED
PROFESSIONAL ENGINEER

SURVEYED BY: TSC SURVEYING

FB NO. 10083100

CITY OF HOUSTON

HOUSTON PUBLIC WORKS

GRAVITY SEWER LINE ADJUSTMENT

PLAN

STA 03+88.06 TO STA 05+68.51

WBS NUMBER

R-002011-0096-3

DRAWING SCALE

N/A

CITY OF HOUSTON PM

MARIA GEORGE, P.E.

SHEET NO. 19 OF 35

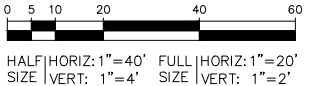
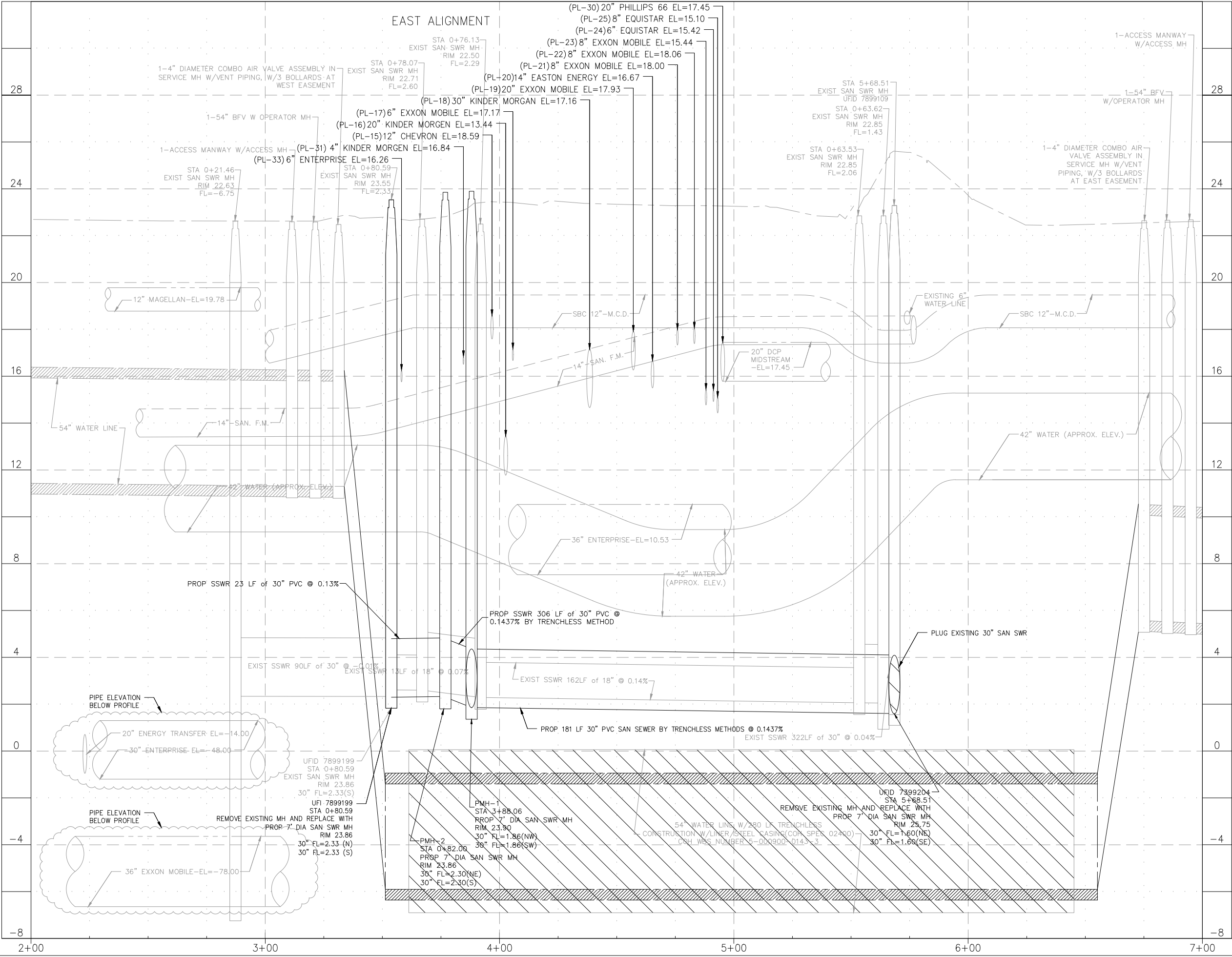
FOR CITY OF HOUSTON USE ONLY

UFID 7899204
STA 5+68.51, 0.0
REMOVE EXISTING MH AND REPLACE WITH
PROP 7' DIA SAN SWR MH
RIM 25.75
30" FL=1.60(NE)
30" FL= 1.60(SE)

PLOTTED: 10/8/2025 1:25 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\17 - 20 C-001-001-STB.dwg



PROJECT BENCHMARK

CITY OF HOUSTON SITE CONTROL MONUMENT NO. 5950-0410:
BEING A CITY OF HOUSTON BRASS DISC STAMPED 5950-0410
BEGINNING FROM THE INTERSECTION OF CLEAR LAKE CITY BOULEVARD
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ON STATE HIGHWAY 3 APPROXIMATELY 2,500 FEET TO THE DRIVEWAY
OF METRO CENTRAL WWT. 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)

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	---

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

PROFILE

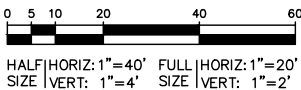
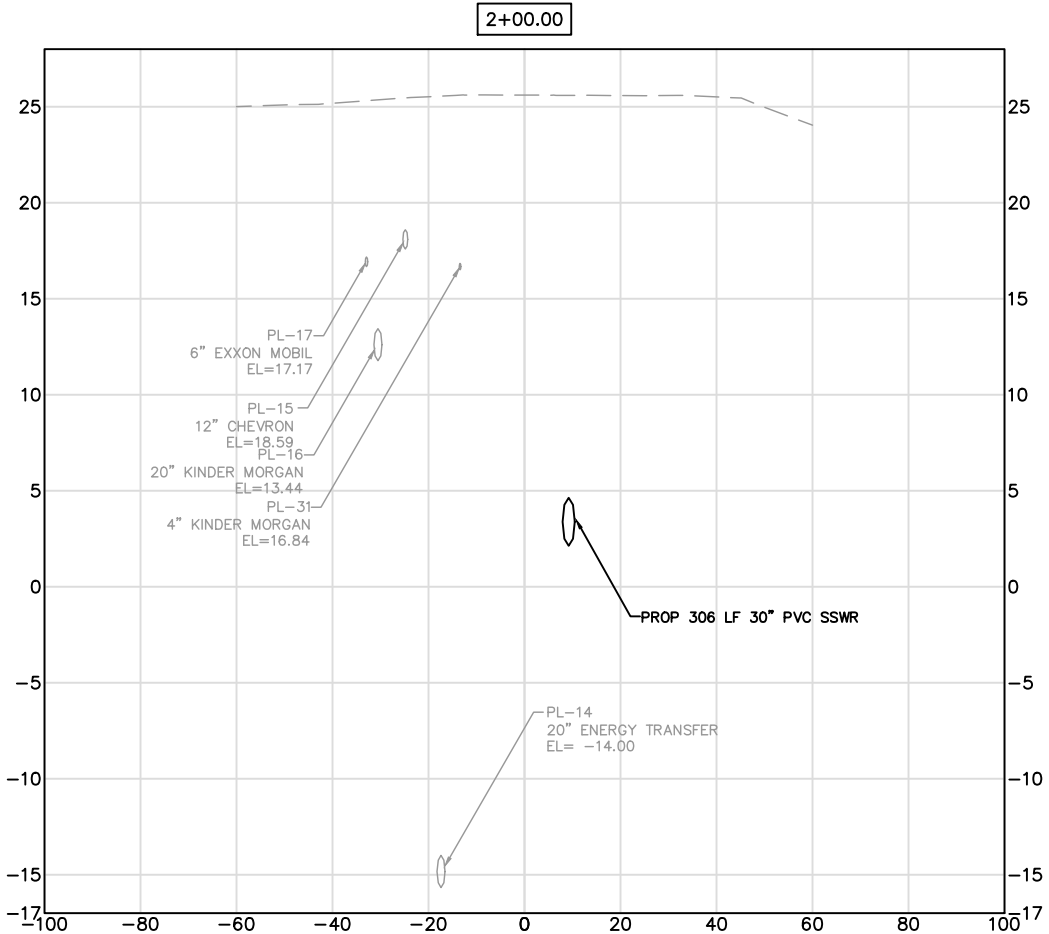
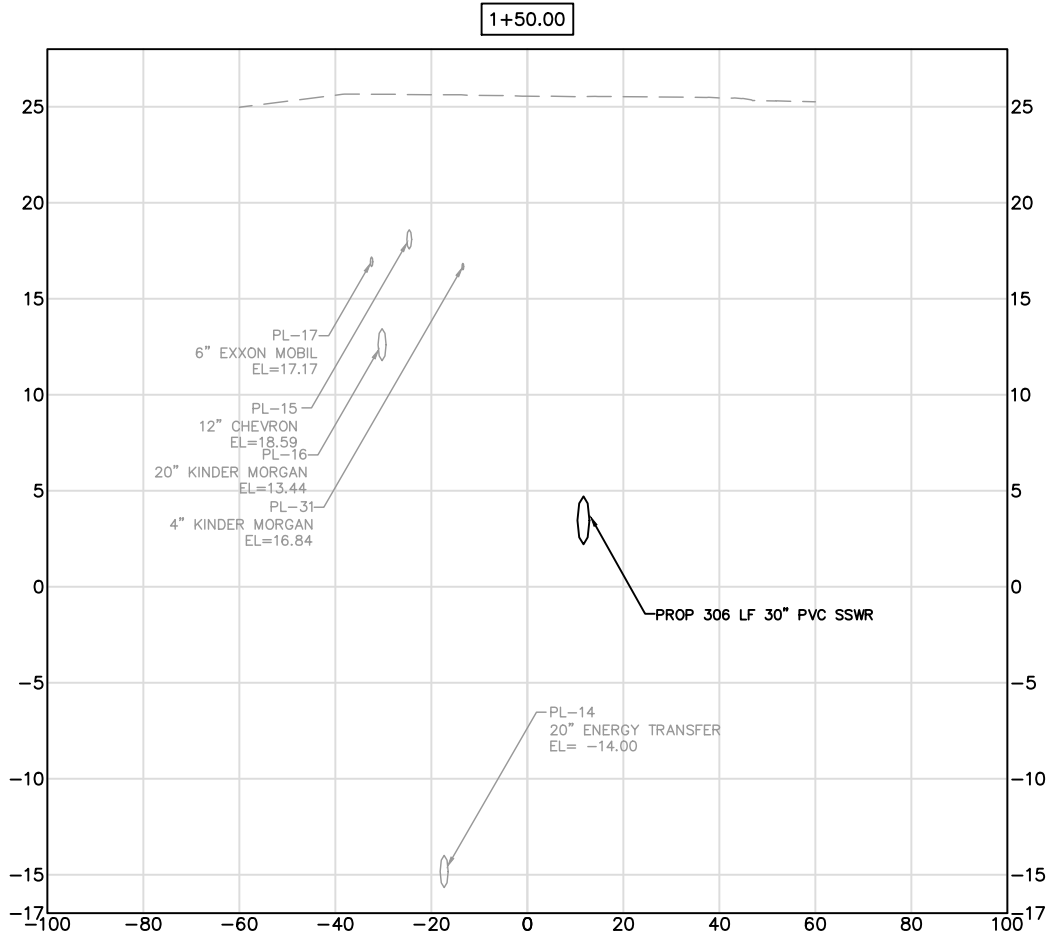
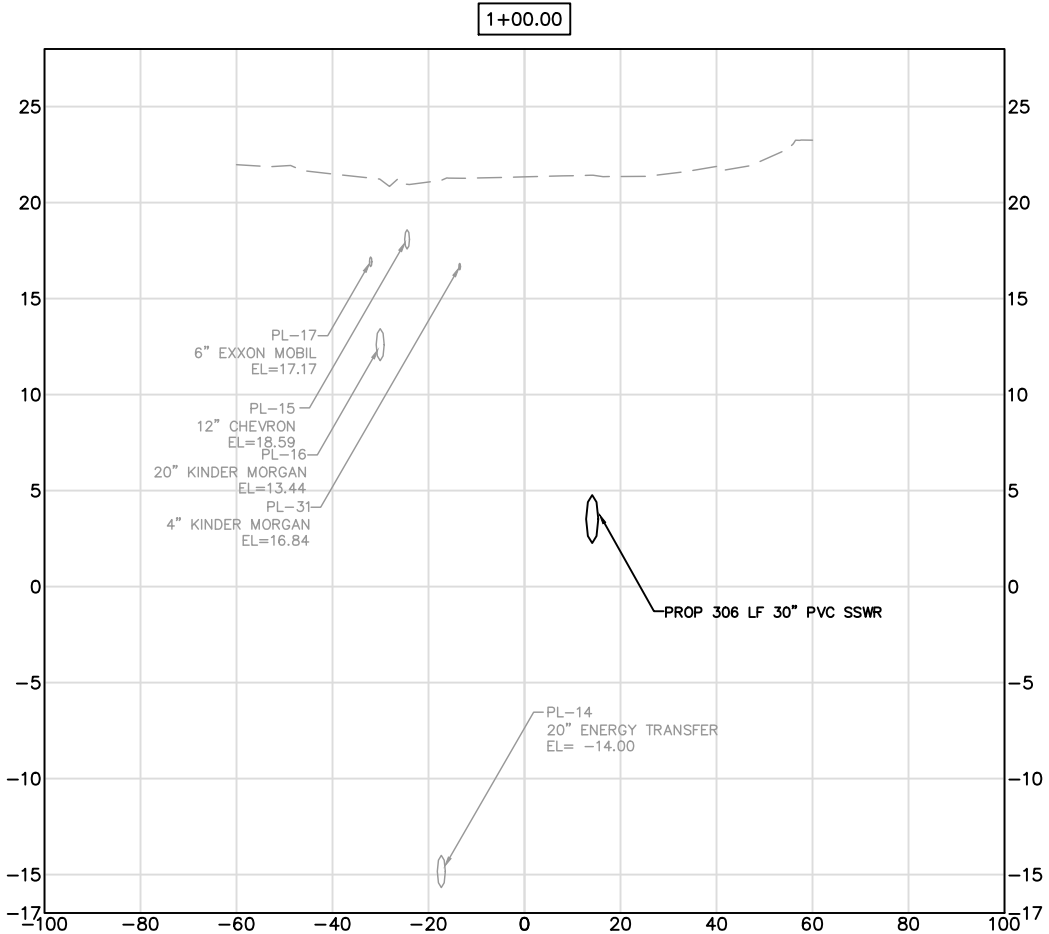
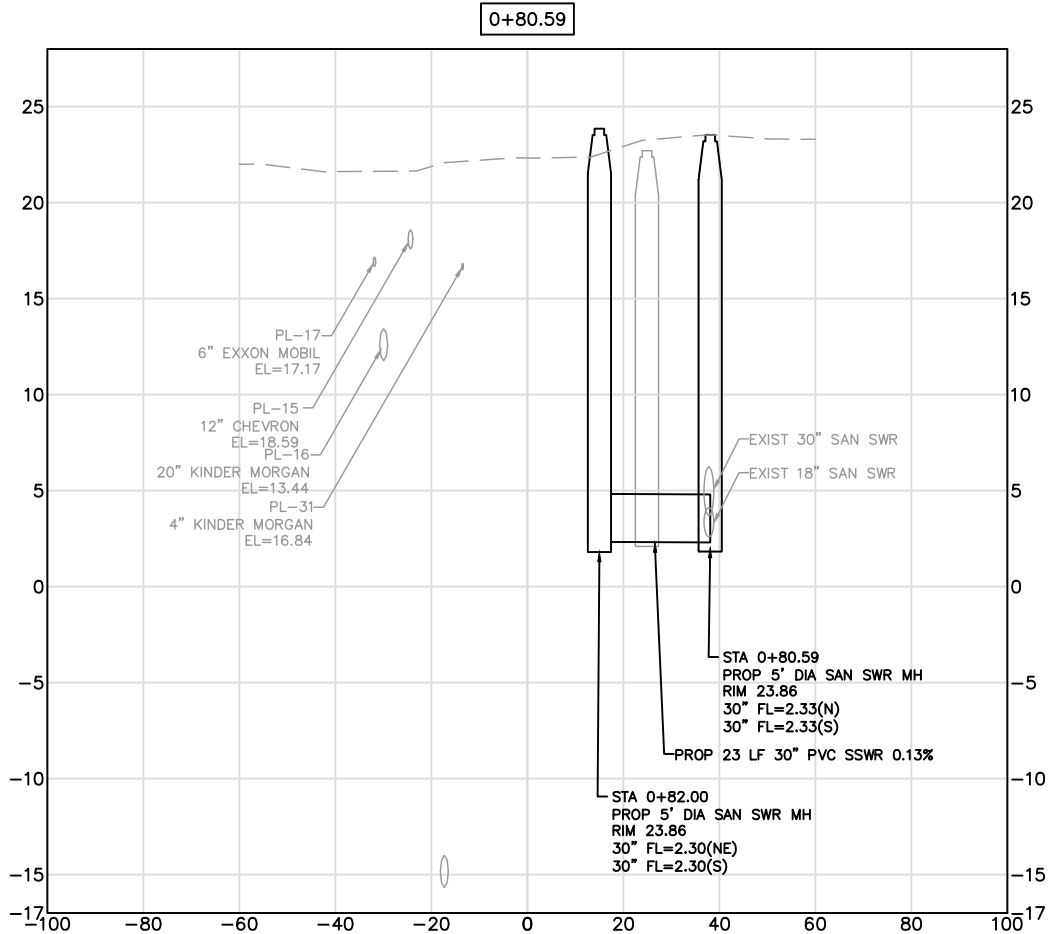
STA 03+88.06 TO STA 05+68.51

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. 20 OF 35	

PLOTTED: 10/8/2025 1:17 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\21 - 23 C-003-003.dwg

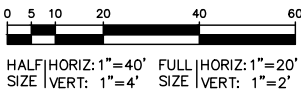
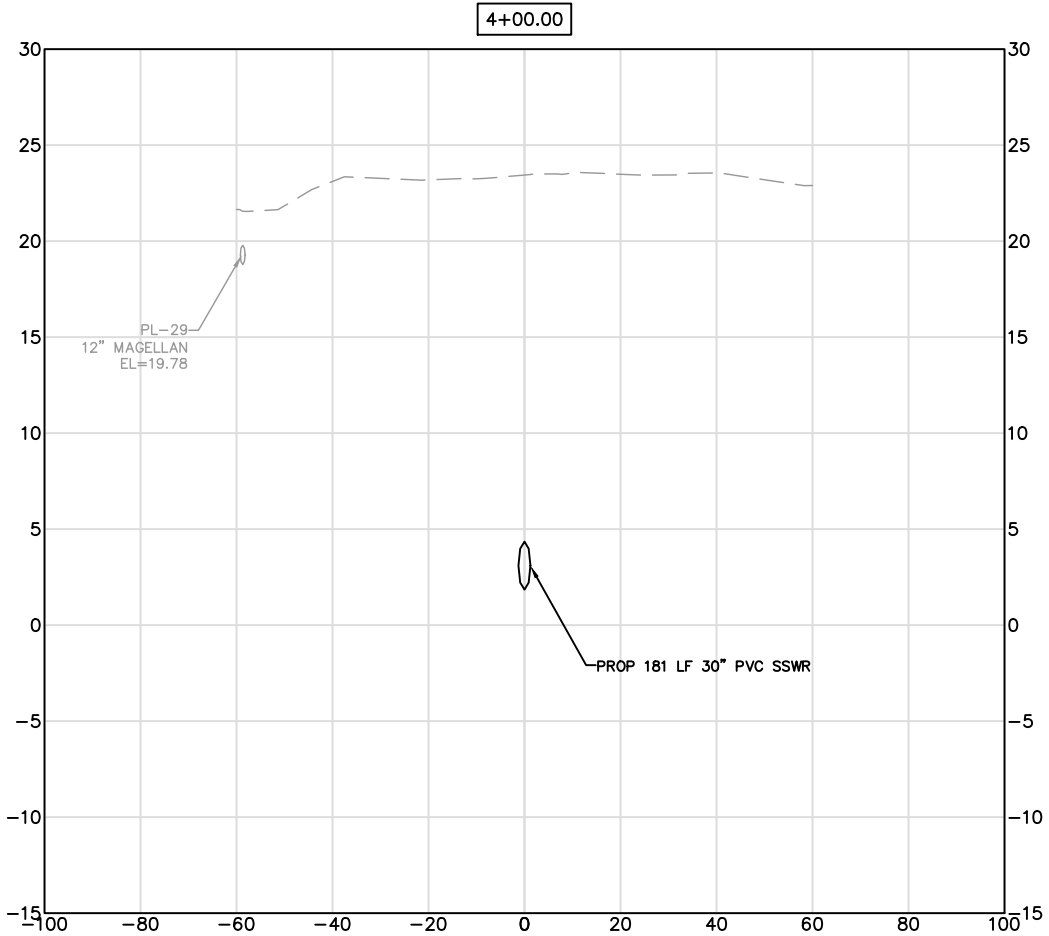
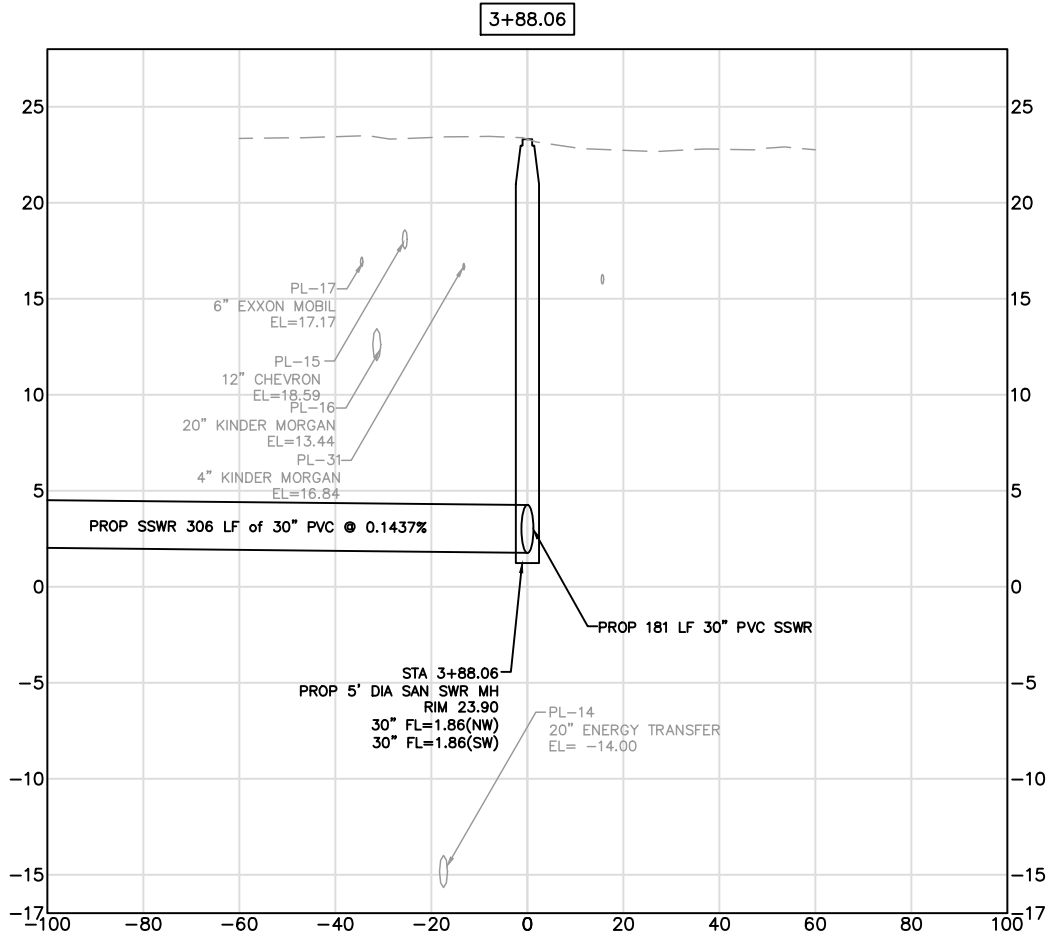
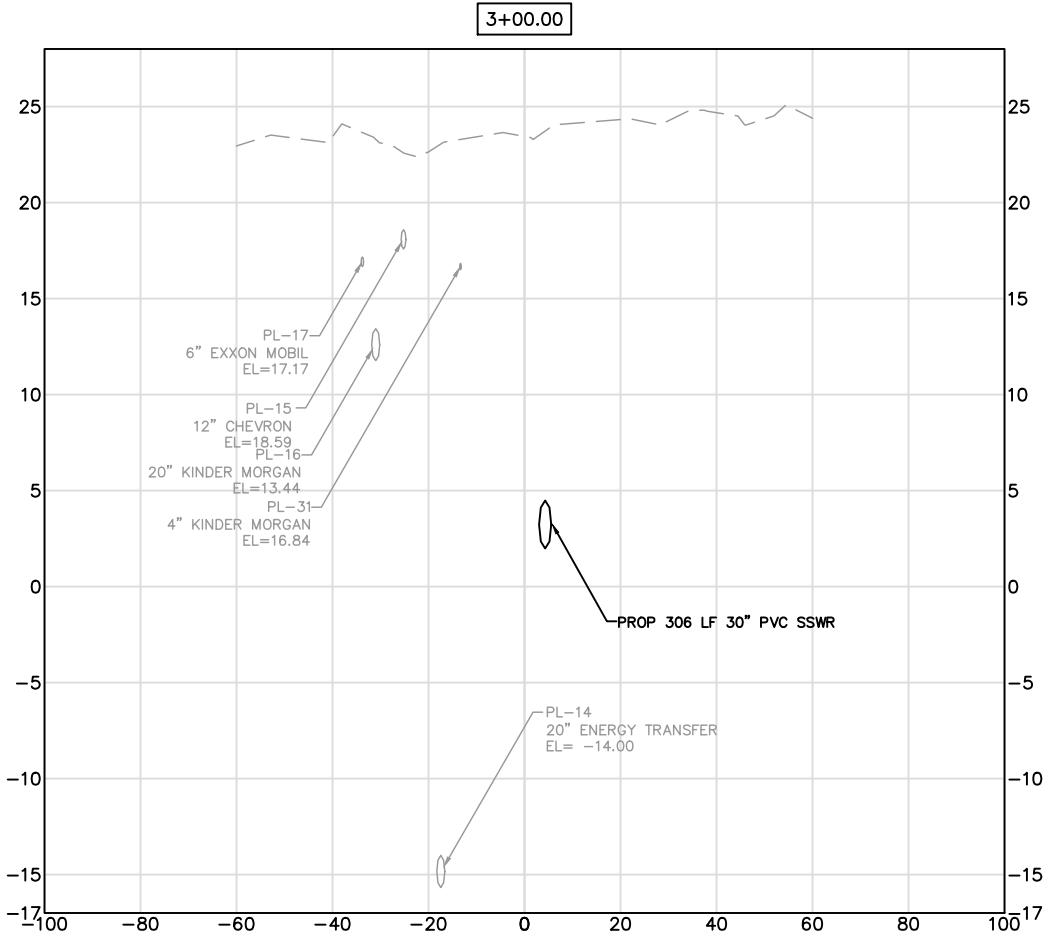
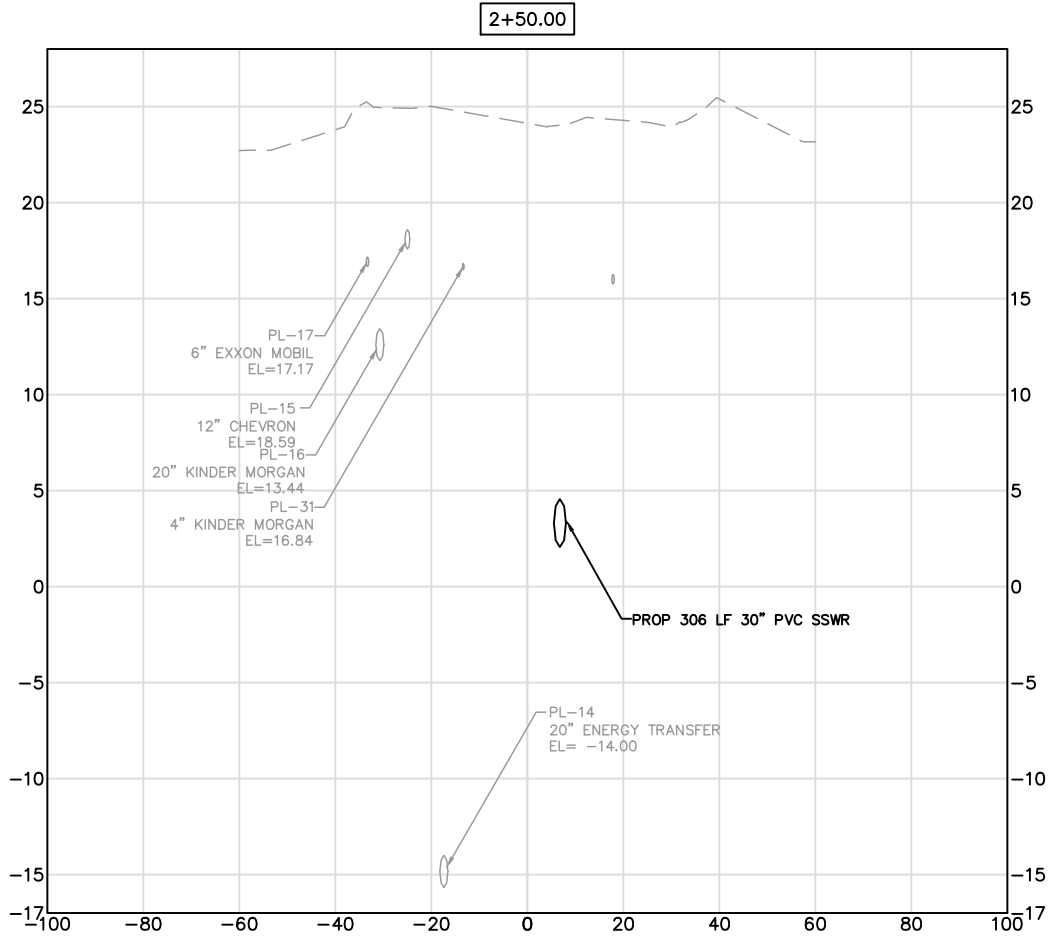


<p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270</p>	<p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
CROSS SECTIONS	
STA 0+80.59 TO STA 02+00 (SHEET 1 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. 21 OF 35	

PLOTTED: 10/8/2025 1:17 PM

PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\21 - 23 C-003-003.dwg

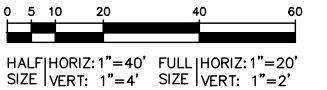
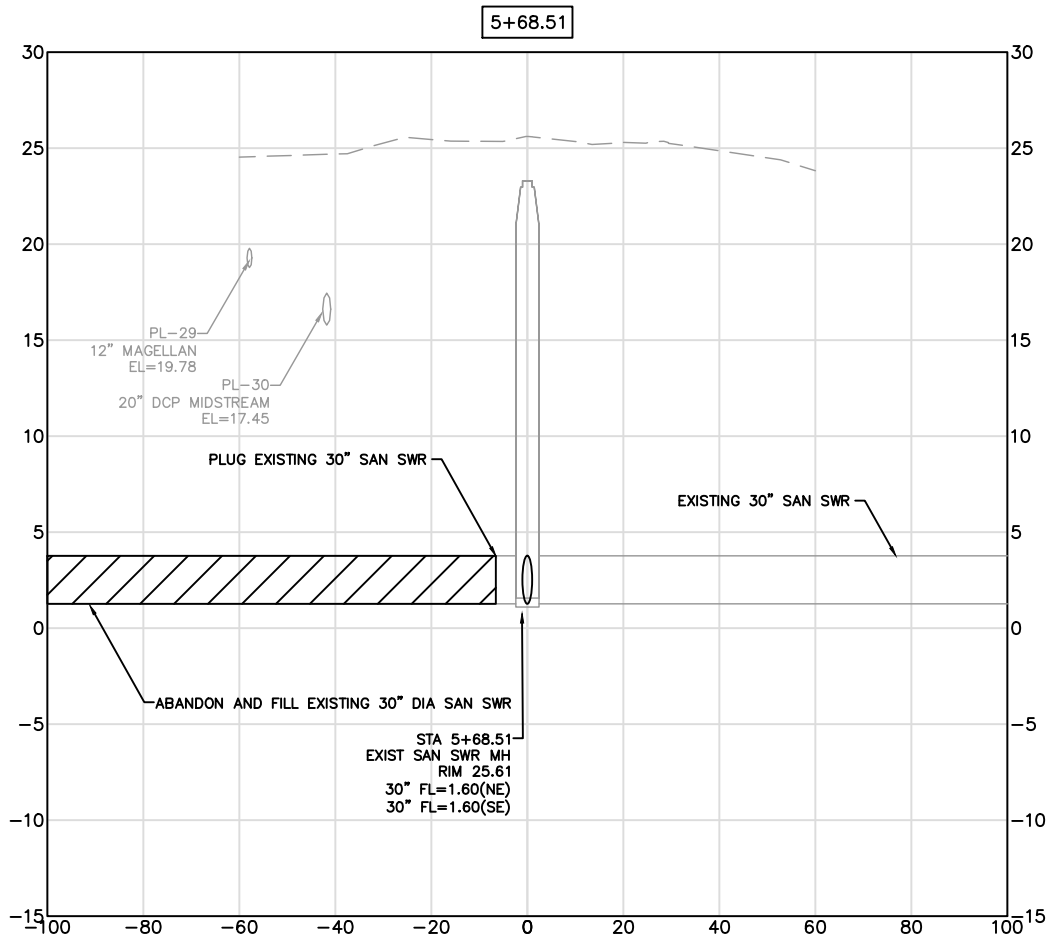
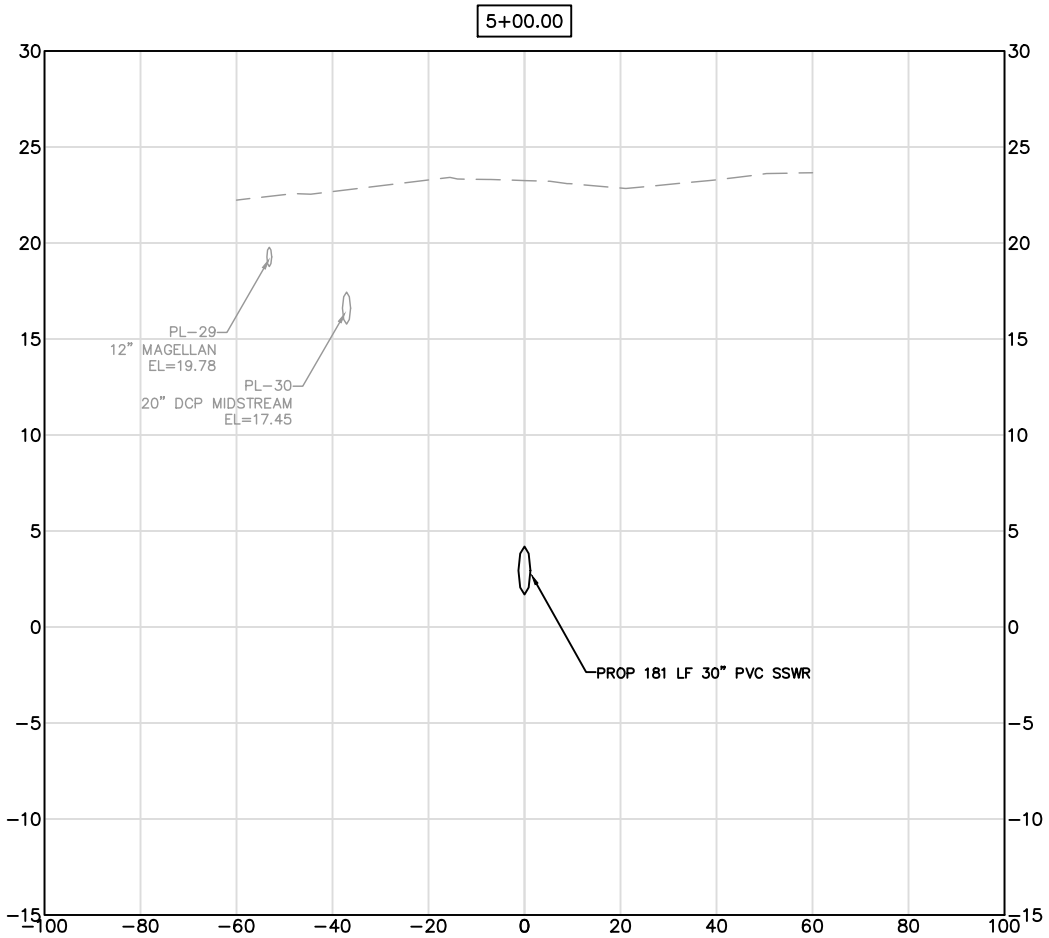
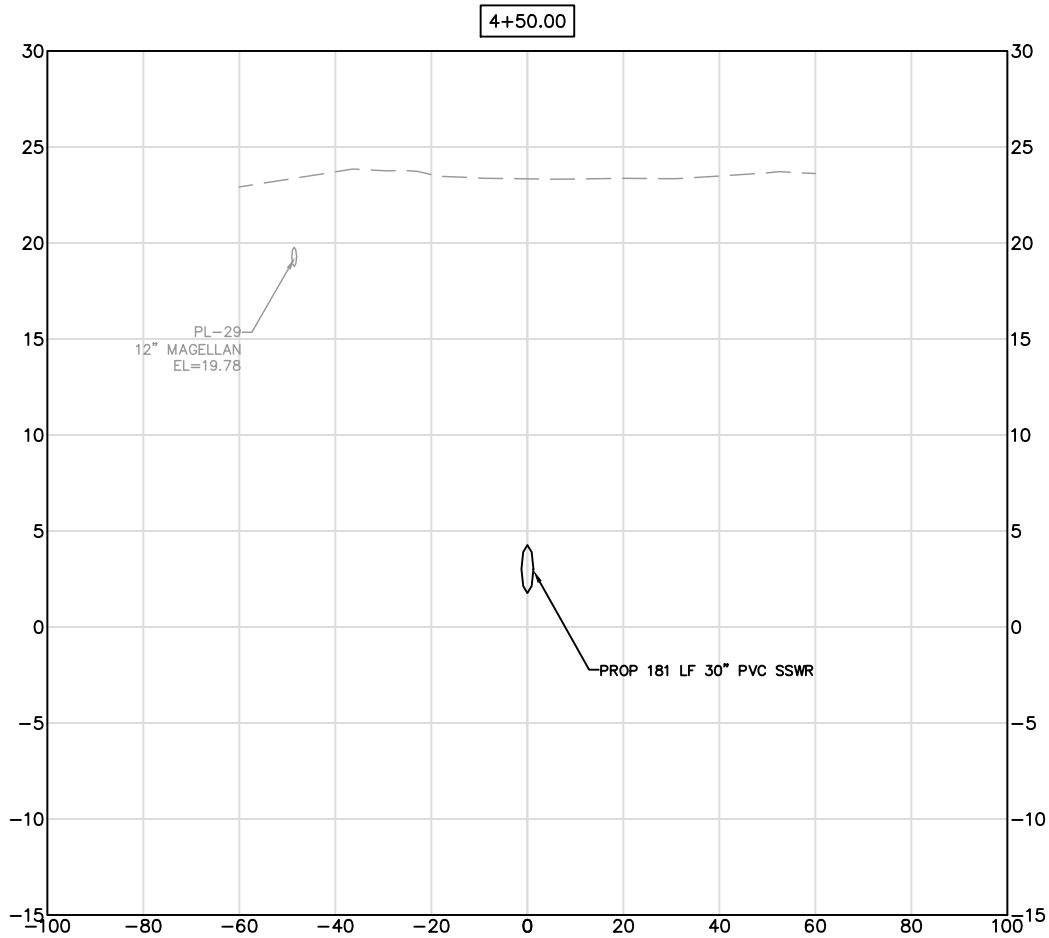




 ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
CROSS SECTIONS	
STA 02+50 TO STA 04+00 (SHEET 2 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. 22 OF 35	

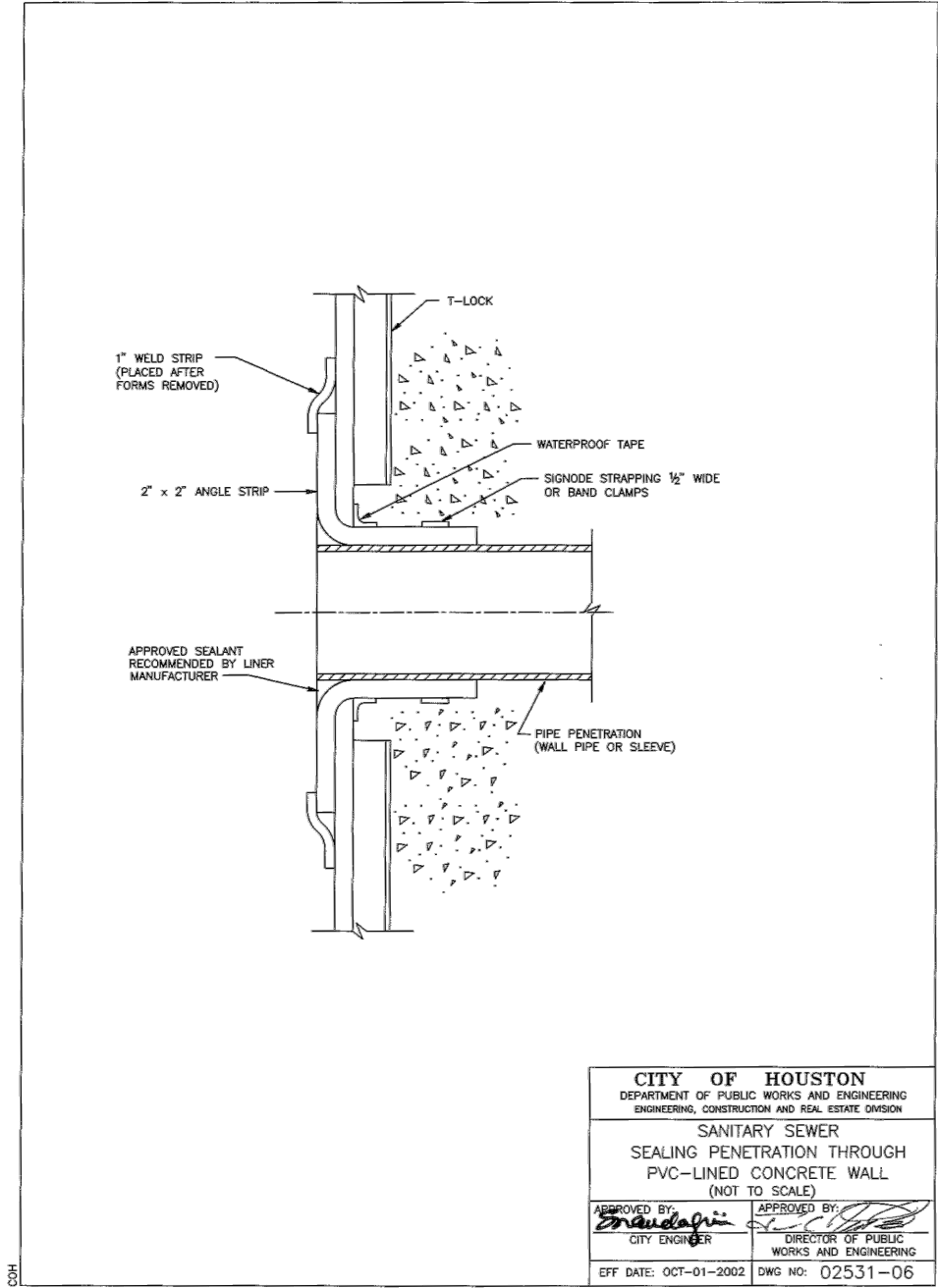
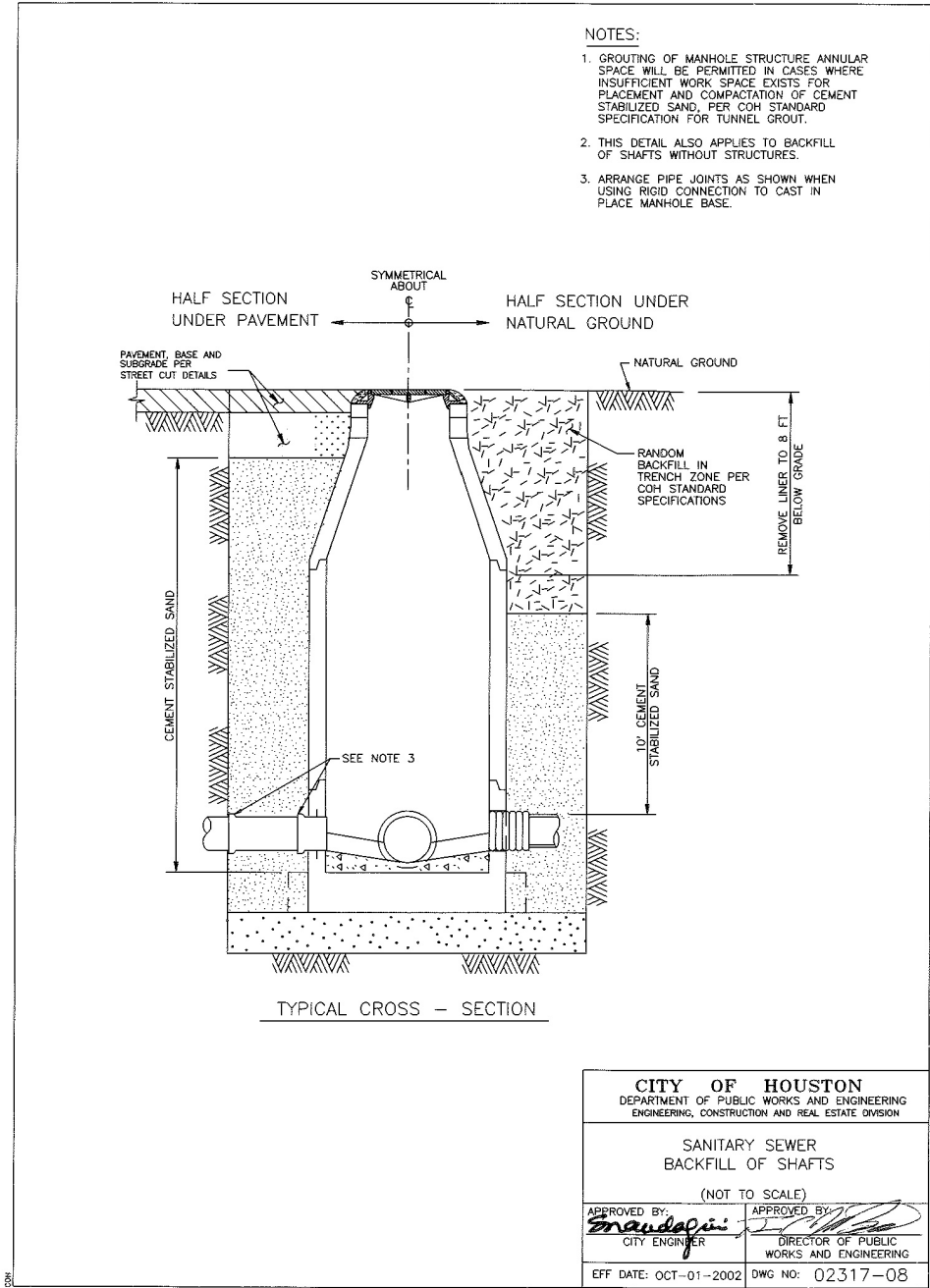
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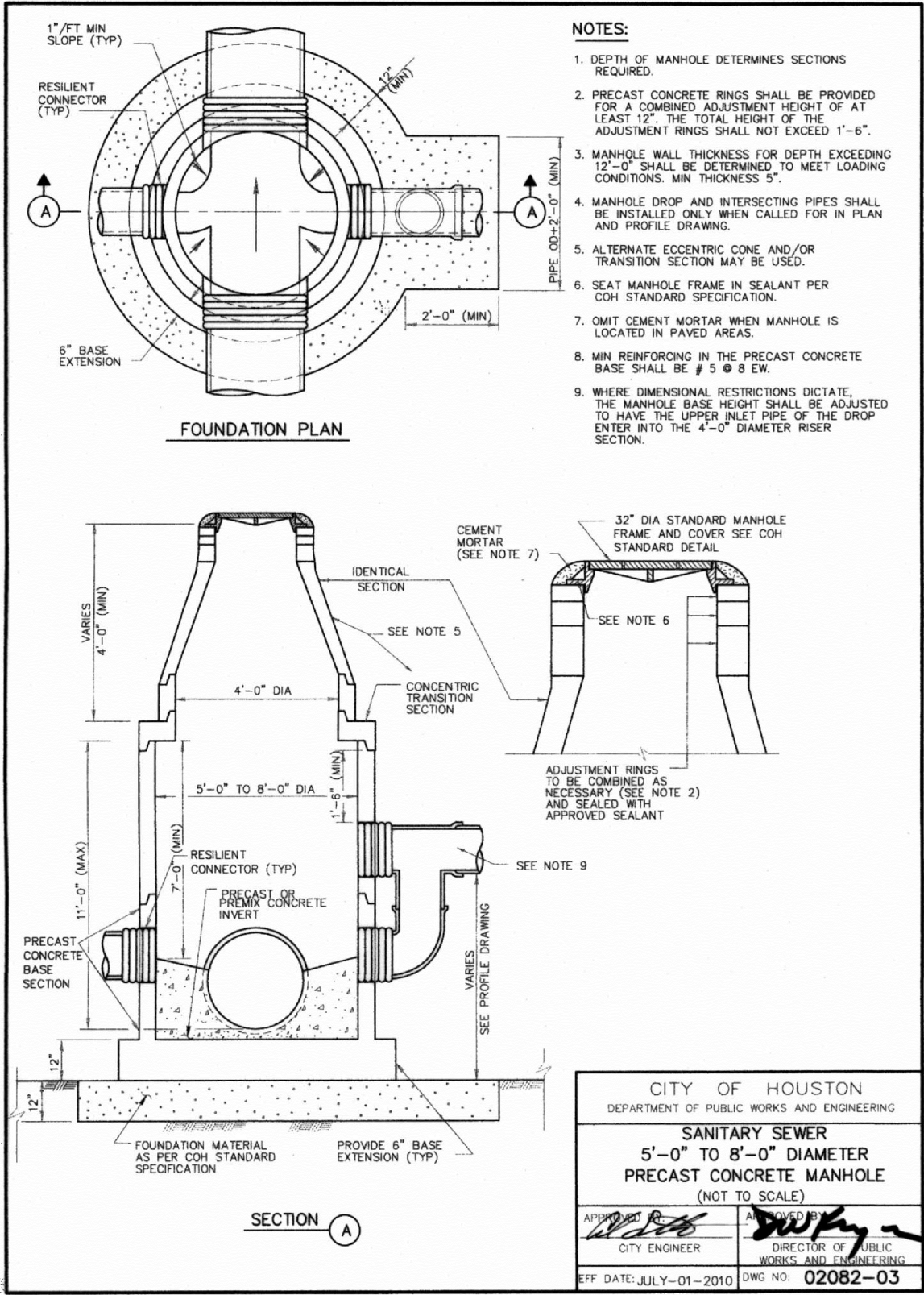
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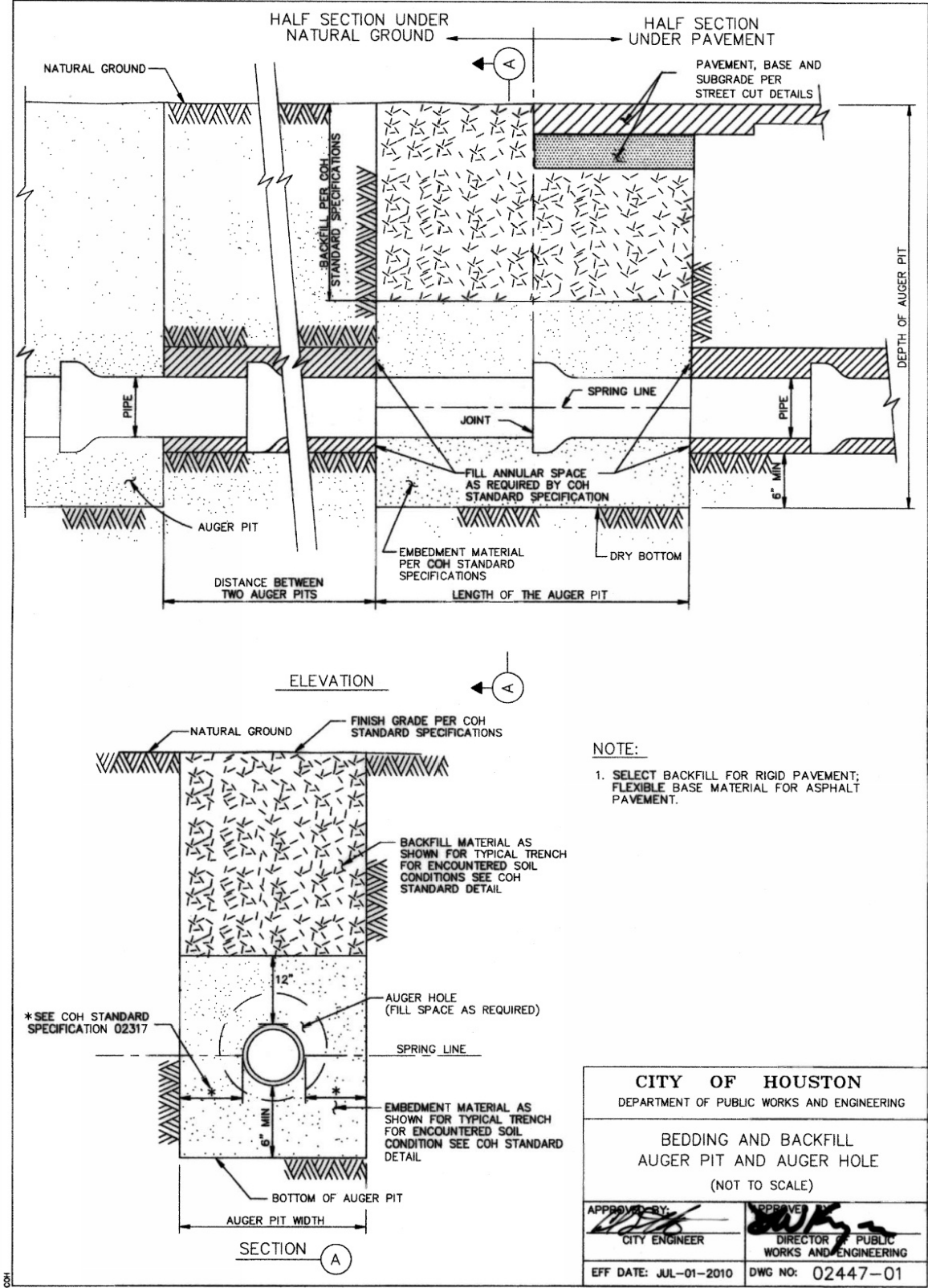
 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC 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	





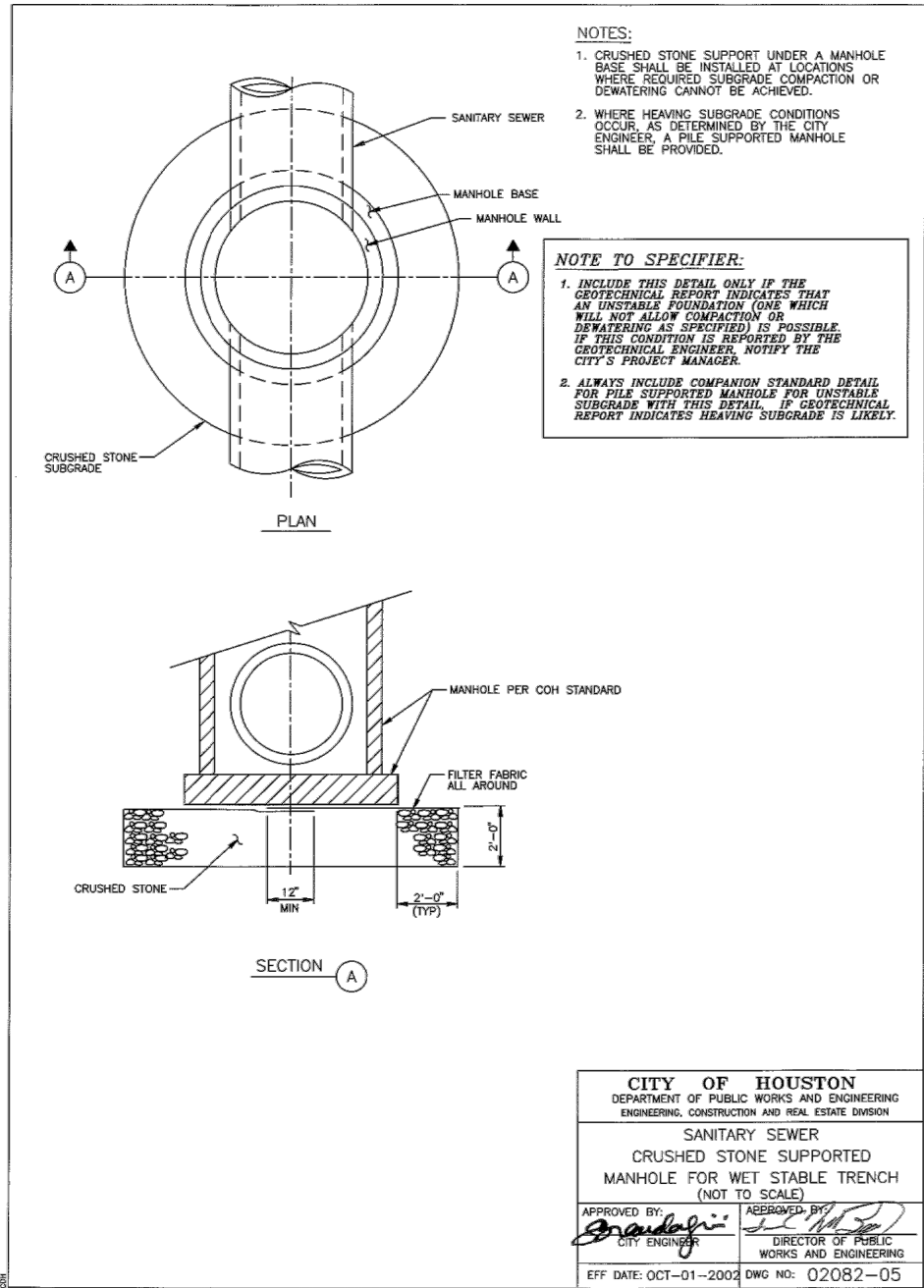
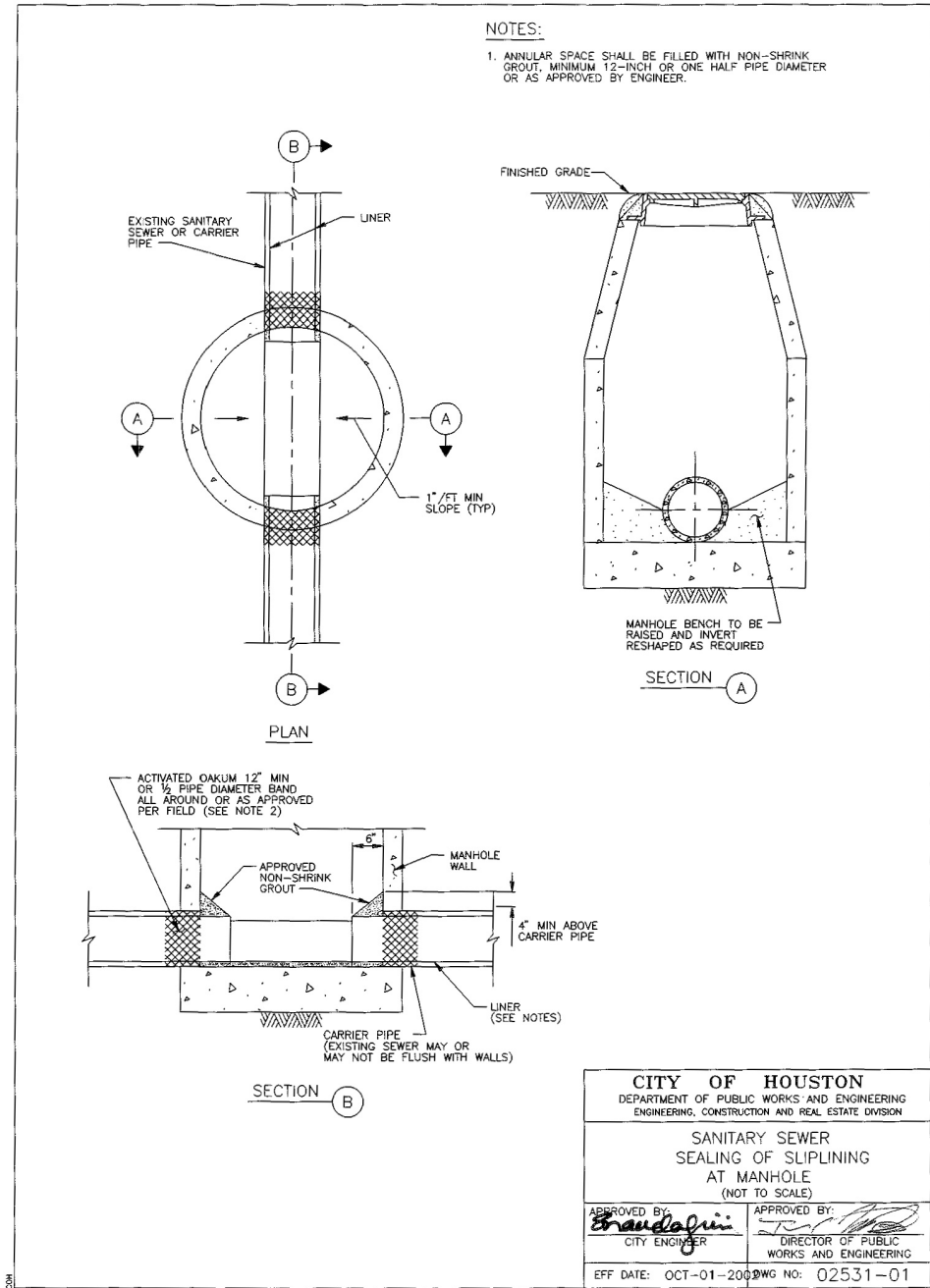
 ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
GRAVITY SEWER LINE ADJUSTMENT		
C.O.H STANDARD DETAILS SANITARY SEWER		
(SHEET 1 OF 6)		
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. 24 OF 35		



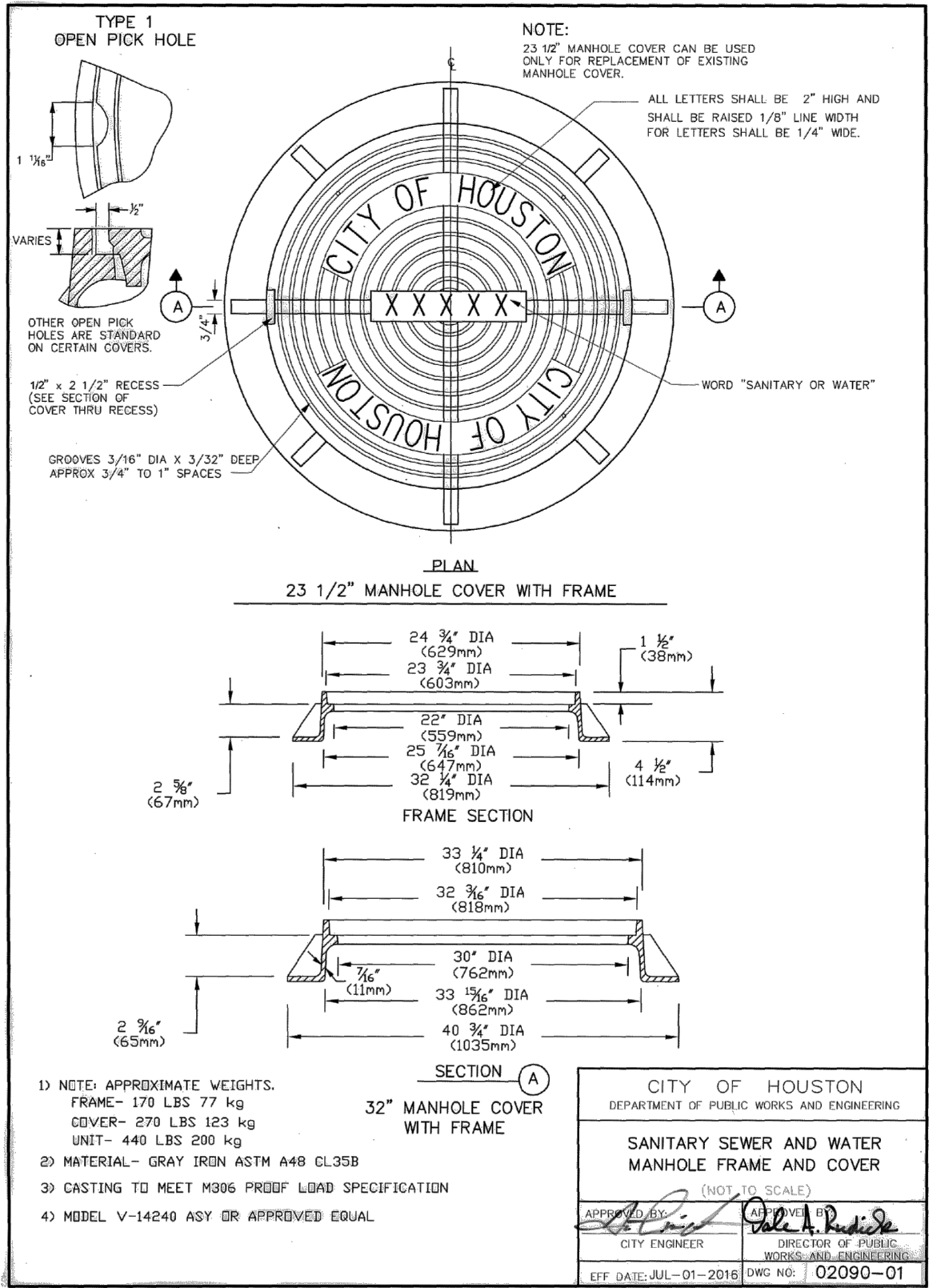
 <p>ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270</p>	 <p>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p>
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC WORKS	
GRAVITY SEWER LINE ADJUSTMENT	
C.O.H. STANDARD DETAILS SANITARY SEWER	
(SHEET 2 OF 6)	
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. 25 OF 35	





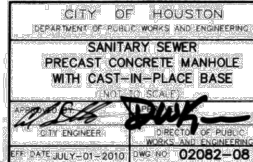
 ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100		
CITY OF HOUSTON HOUSTON PUBLIC WORKS		
GRAVITY SEWER LINE ADJUSTMENT		
C.O.H. STANDARD DETAILS SANITARY SEWER		
(SHEET 3 OF 6)		
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. 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	STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
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)	
WBS NUMBER R-002011-0096-3	FOR CITY OF HOUSTON USE ONLY
DRAWING SCALE N/A	
CITY OF HOUSTON PM MARIA GEORGE, P.E.	
SHEET NO. 27 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		 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER	
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 5 OF 6)			
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. 28 OF 35			

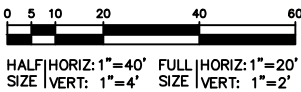
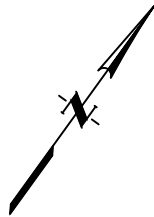
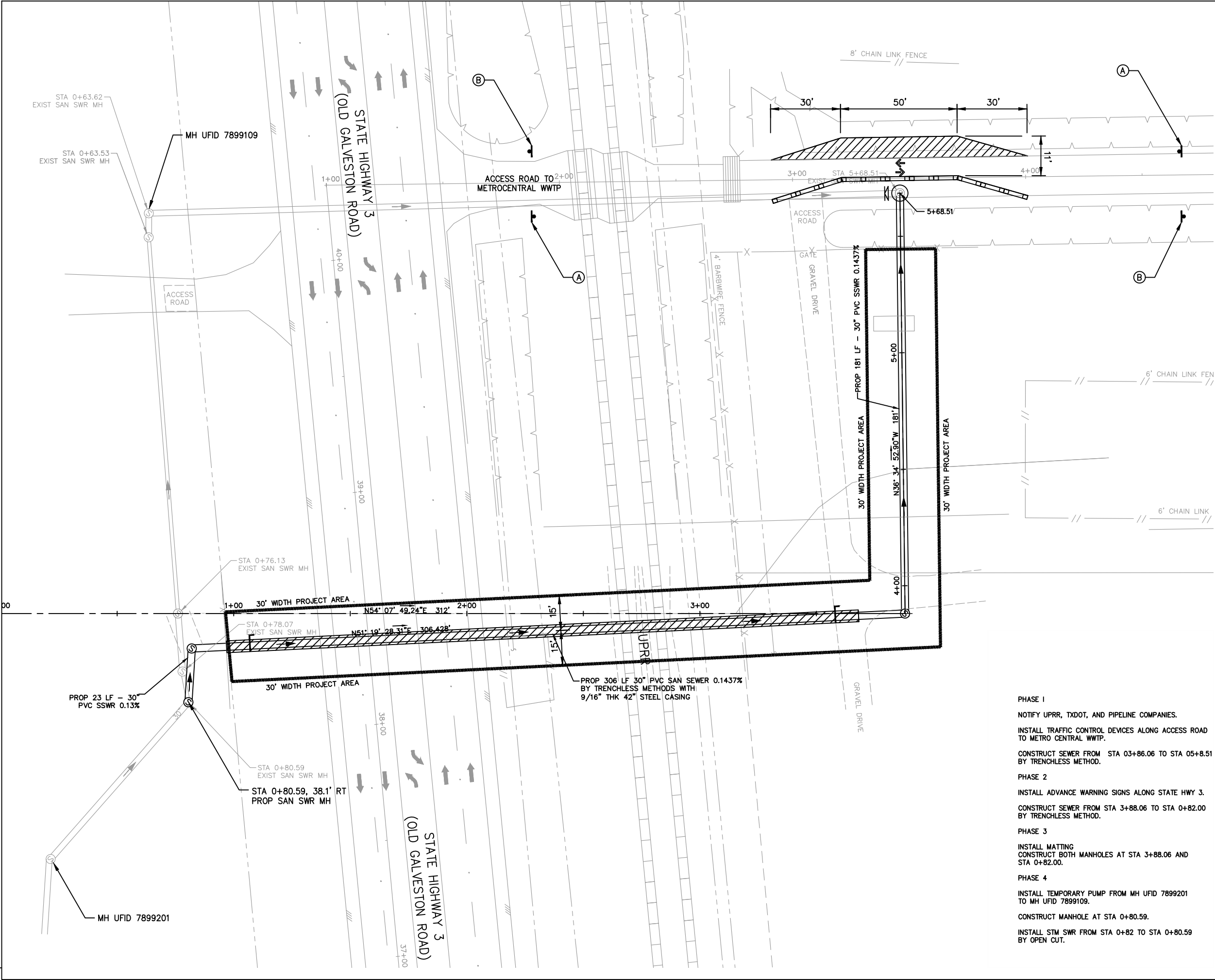


 <p>ZARINKEL ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2425 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270</p>	 <p>STATE OF TEXAS ★ MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p> <p><i>Michael Bagstad No. 81193</i></p>
<p>SURVEYED BY: TSC SURVEYING FB NO. 10083100</p>	
<p>CITY OF HOUSTON</p>	
<p>HOUSTON PUBLIC WORKS</p>	
<p>GRAVITY SEWER LINE ADJUSTMENT</p>	
<p>C.O.H STANDARD DETAILS</p>	
<p>SANITARY SEWER</p>	
<p>(SHEET 6 OF 6)</p>	
<p>WBS NUMBER</p>	<p>FOR CITY OF HOUSTON USE ONLY</p>
<p>R-002011-0096-3</p>	
<p>DRAWING SCALE</p>	
<p>N/A</p>	
<p>CITY OF HOUSTON PM</p>	
<p>MARIA GEORGE, P.E.</p>	
<p>SHEET NO. 29 OF 35</p>	

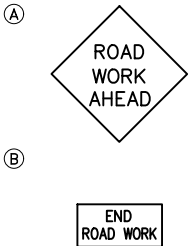
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PLOT STYLE: COH.ctb

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\30 TCP-state Hwy3--occeess Road - PH1.dwg



- LEGEND**
- TEMPORARY ASPHALT
 - LOW PROFILE CONCRETE BARRIER(LPCB)



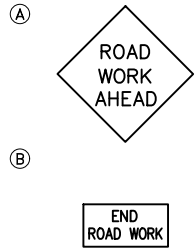
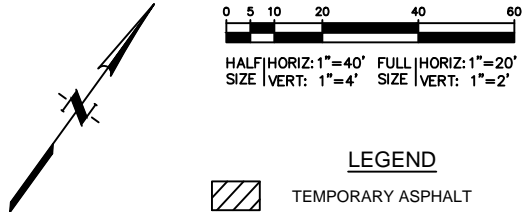
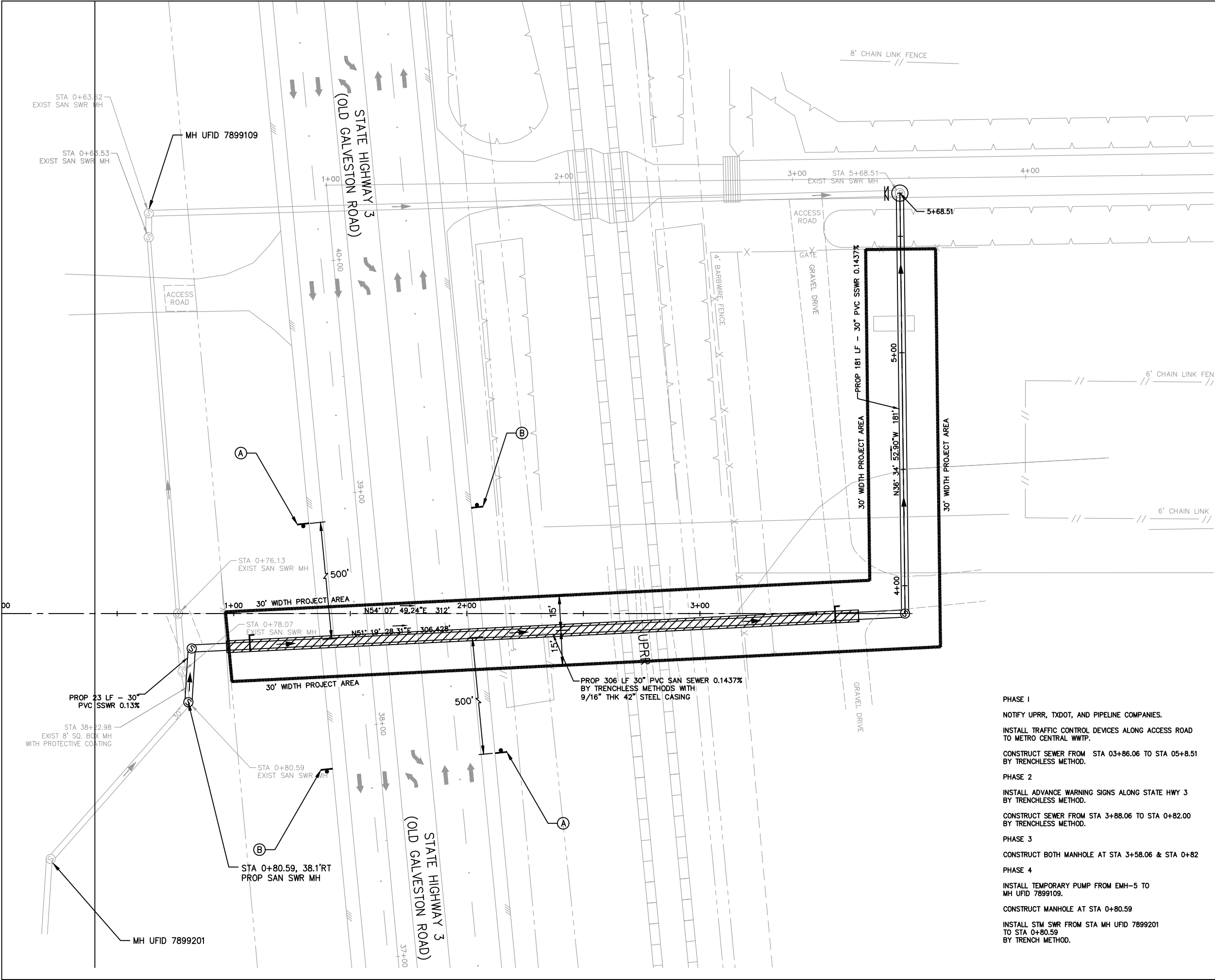
- PHASE 1**
- NOTIFY UPRR, TXDOT, AND PIPELINE COMPANIES.
- INSTALL TRAFFIC CONTROL DEVICES ALONG ACCESS ROAD TO METRO CENTRAL WWTP.
- CONSTRUCT SEWER FROM STA 03+86.06 TO STA 05+8.51 BY TRENCHLESS METHOD.
- PHASE 2**
- INSTALL ADVANCE WARNING SIGNS ALONG STATE HWY 3.
- CONSTRUCT SEWER FROM STA 3+88.06 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.

 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		
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		

FILE PATH: Z:\City Of Houston Projects\COH Gravity Sewer\CAD\31 TCP-state Hwy3--access Road - PH2.dwg

PLOT STYLE: COH.ctb

PLOTTED: 10/8/2025 1:18 PM



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 BY TRENCHLESS METHOD.

CONSTRUCT SEWER FROM STA 3+88.06 TO STA 0+82.00 BY TRENCHLESS METHOD.

PHASE 3

CONSTRUCT BOTH MANHOLE AT STA 3+58.06 & STA 0+82

PHASE 4

INSTALL TEMPORARY PUMP FROM EMH-5 TO MH UFID 7899109.

CONSTRUCT MANHOLE AT STA 0+80.59

INSTALL STM SWR FROM STA MH UFID 7899201 TO STA 0+80.59 BY TRENCH METHOD.



SURVEYED BY: TSC SURVEYING
FB NO. 10083100



CITY OF HOUSTON
HOUSTON PUBLIC WORKS

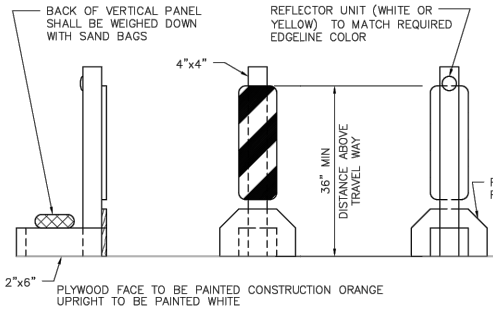
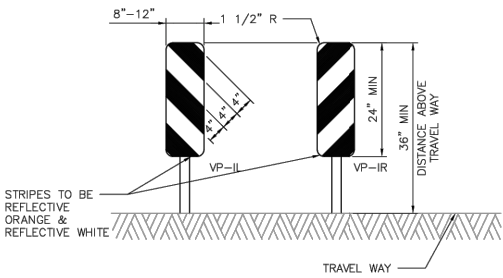
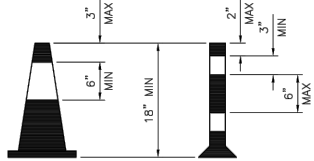
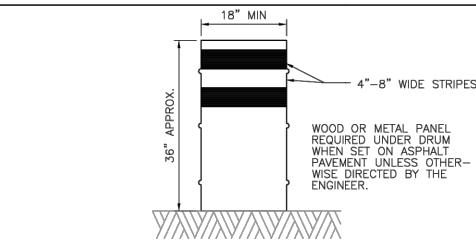
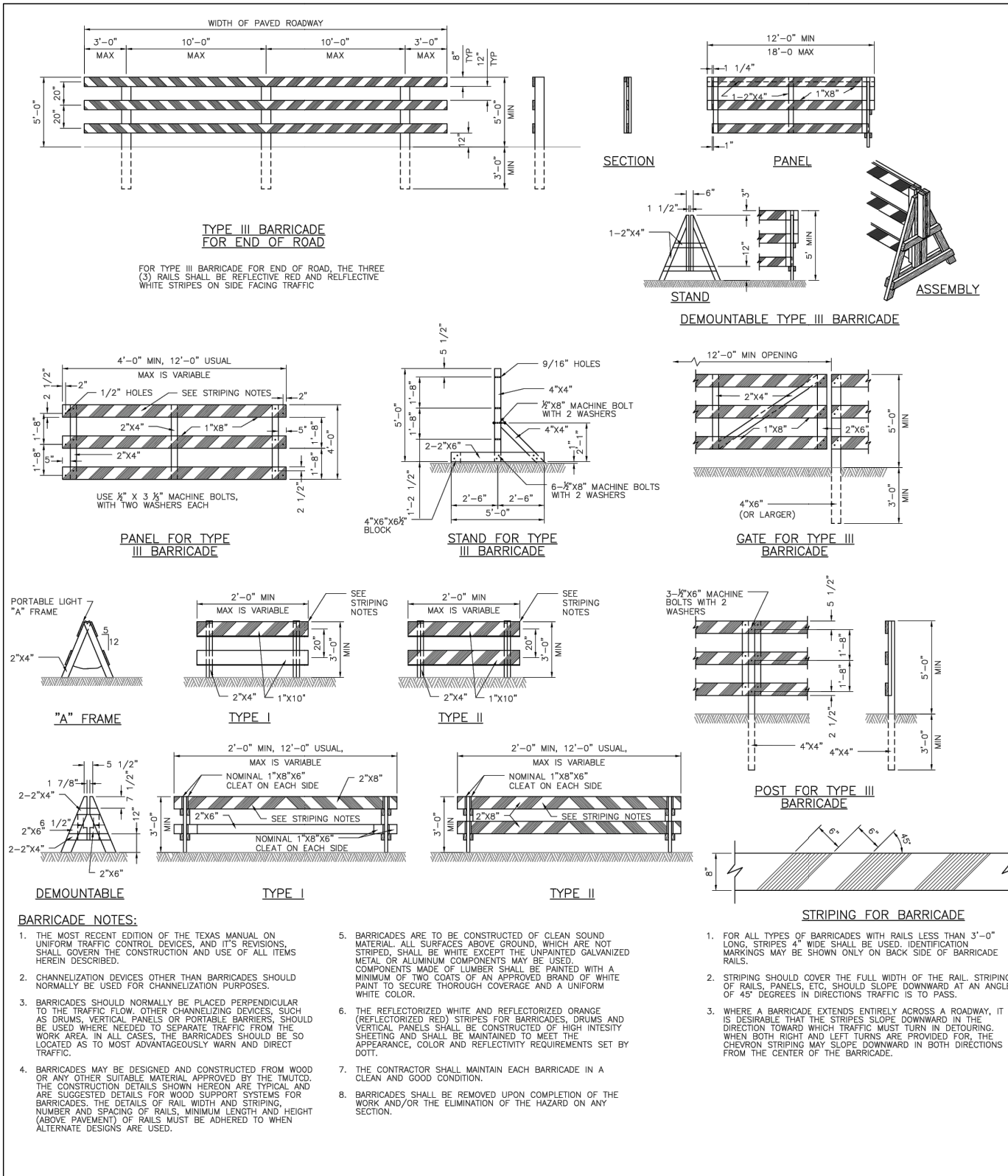
GRAVITY SEWER LINE ADJUSTMENT




TRAFFIC CONTROL PLAN
PHASES 2, 3 AND 4
STATE HWY 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. 31 OF 35	

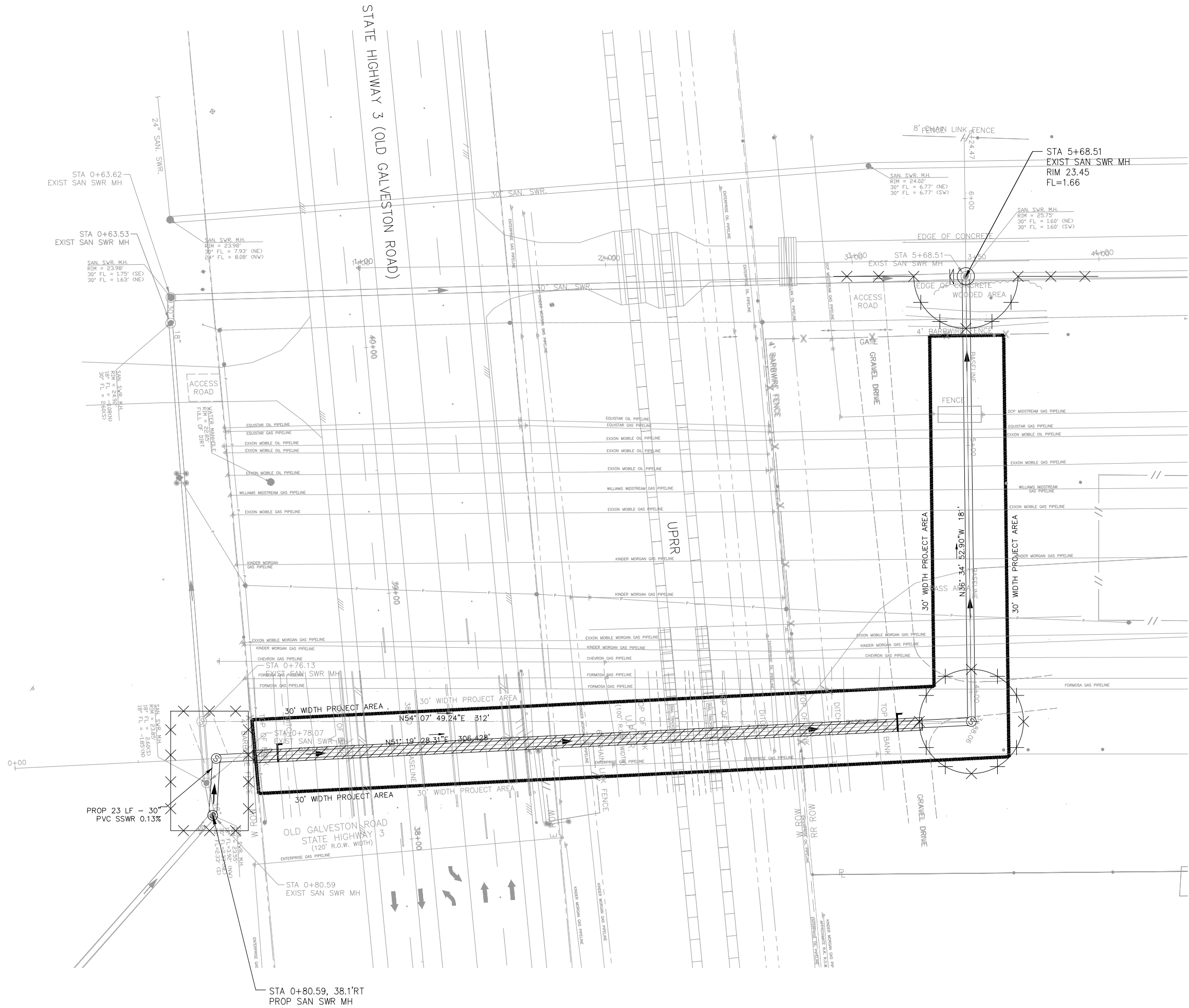
DISCLAIMER: THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THE USE OF THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICATION, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF HOUSTON FOR ANY PURPOSES WHATSOEVER. THE CITY OF HOUSTON ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

DocuSign Envelope ID: CB71C116-B716-4B99-A5EE-0D2F2C55AF6




APPROVED BY:	APPROVED BY:
	
CITY ENGINEER	CITY TRAFFIC ENGINEER
APPROVED BY:	
	
DIRECTOR OF HOUSTON PUBLIC WORKS	
EFF DATE: NOV-27-2023	DWG NO: 01555-14
CITY OF HOUSTON HOUSTON PUBLIC WORKS STANDARD	
BARRICADE AND CHANNELIZING DEVICES	
FOR CITY OF HOUSTON USE ONLY	
DRAWING SCALE	
NOT TO SCALE	


 ZARINKELK ENGINEERING SERVICES, INC. 617 Caroline St. Houston, TX 77002 Phone (832) 242-2426 FAX (832) 242-2445 TEXAS REGISTRATION NO. F-4270	 MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER
SURVEYED BY: TSC SURVEYING FB NO. 10083100	
CITY OF HOUSTON HOUSTON PUBLIC WORKS 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	



LEGEND
X X X X X
FILTER FABRIC BARRIER



**ZARINKELK
ENGINEERING
SERVICES, INC.**
617 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

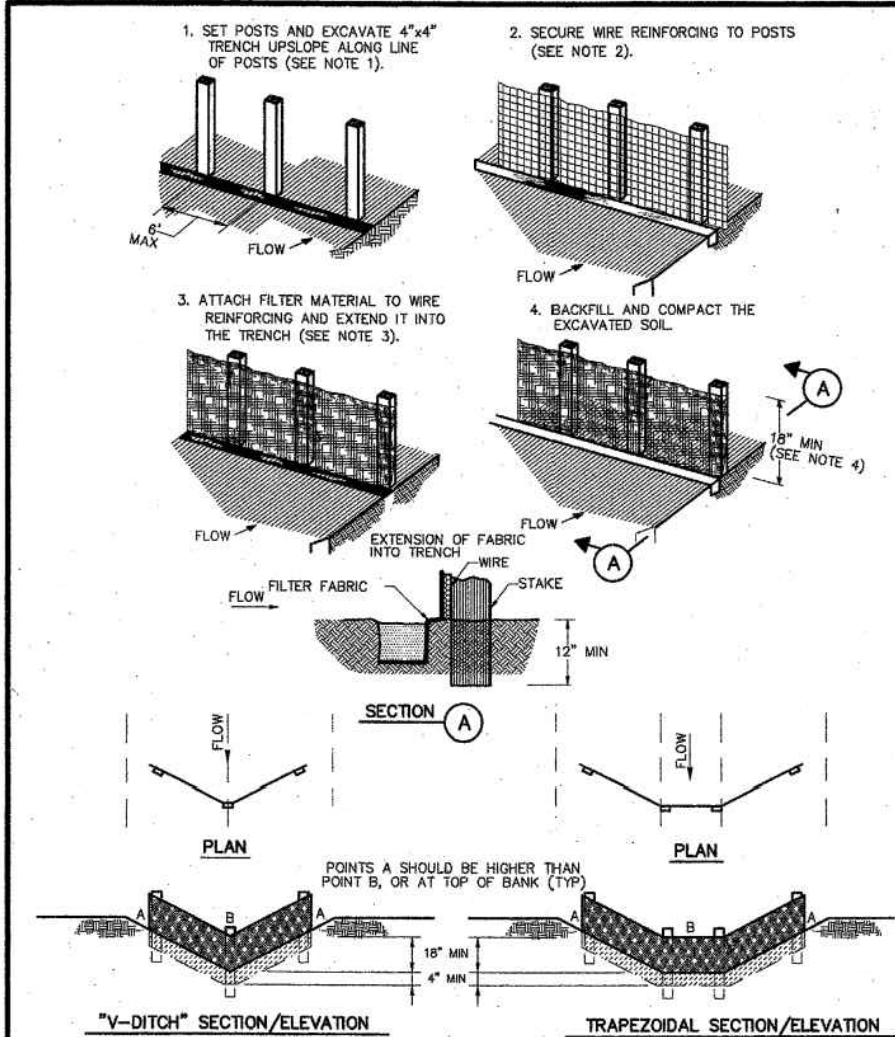
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FB NO. 10083100

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	

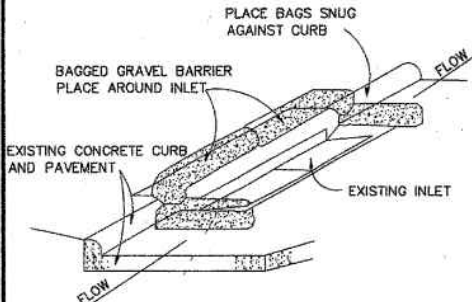


CONSTRUCTION NOTES:

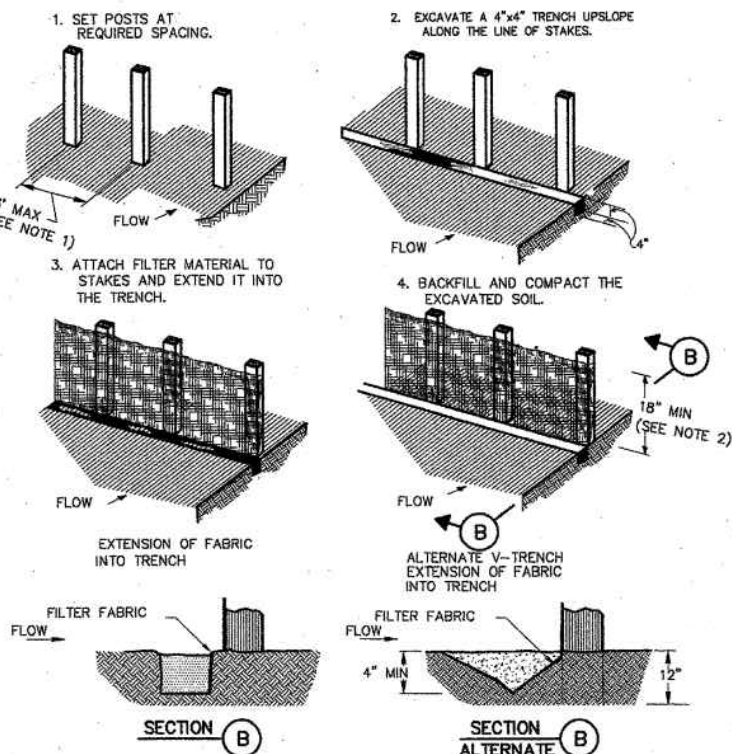
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.



REINFORCED FILTER FABRIC BARRIER



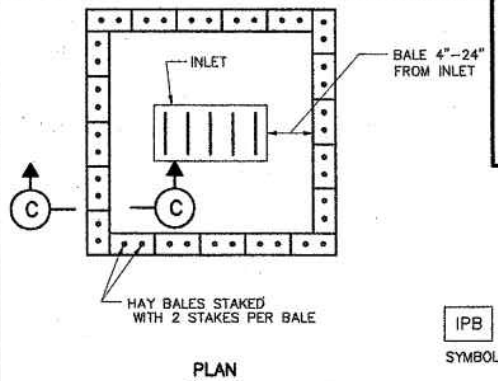
INLET PROTECTION BARRIER
(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER



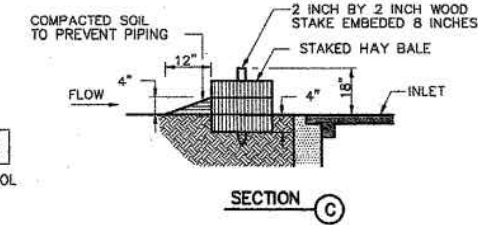
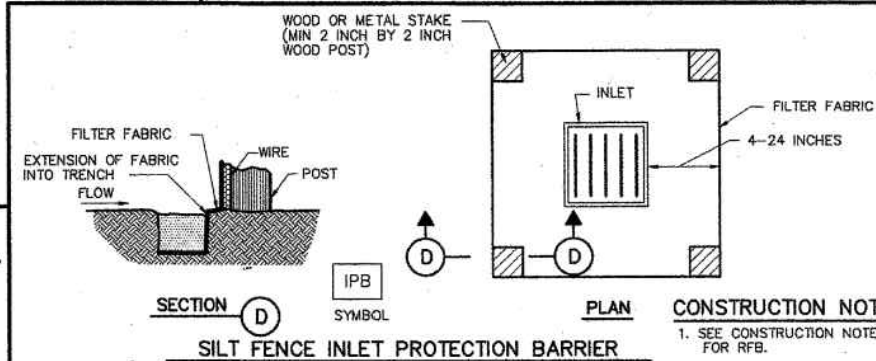
CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED BARRIER WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC BARRIER SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

FILTER FABRIC BARRIER



HAY BALE INLET PROTECTION BARRIER



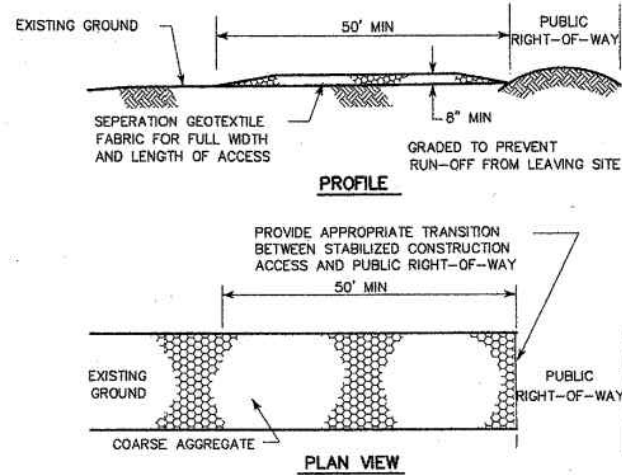
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS
(NOT TO SCALE)

APPROVED: [Signature] CITY ENGINEER

APPROVED: [Signature] DIRECTOR OF PUBLIC WORKS AND ENGINEERING

EFF. DATE: JULY-01-2010 DWG NO: 01571-01



CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.



STABILIZED CONSTRUCTION ACCESS



SURVEYED BY: TSC SURVEYING
FB NO. 10083100

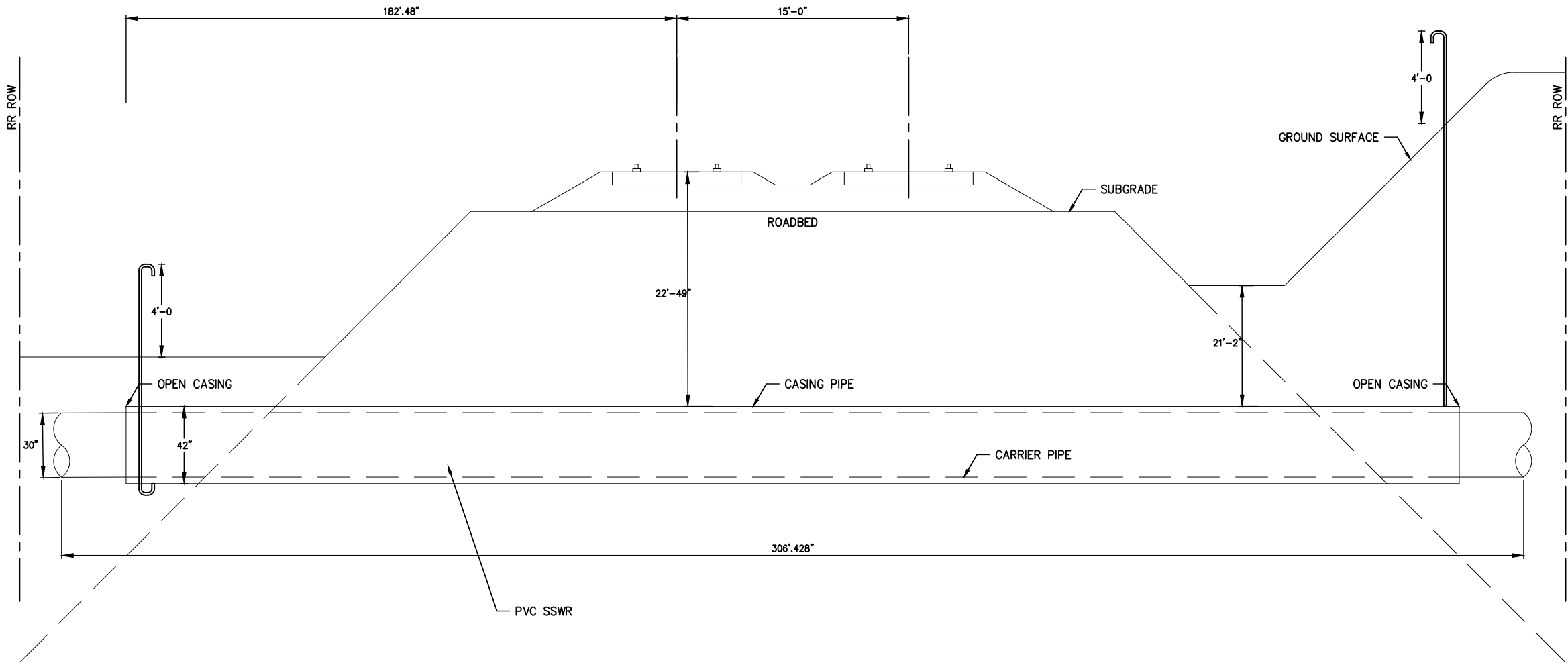




CITY OF HOUSTON
HOUSTON PUBLIC WORKS

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	



 <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>STATE OF TEXAS MICHAEL J. BAGSTAD 81193 REGISTERED PROFESSIONAL ENGINEER</p>
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	