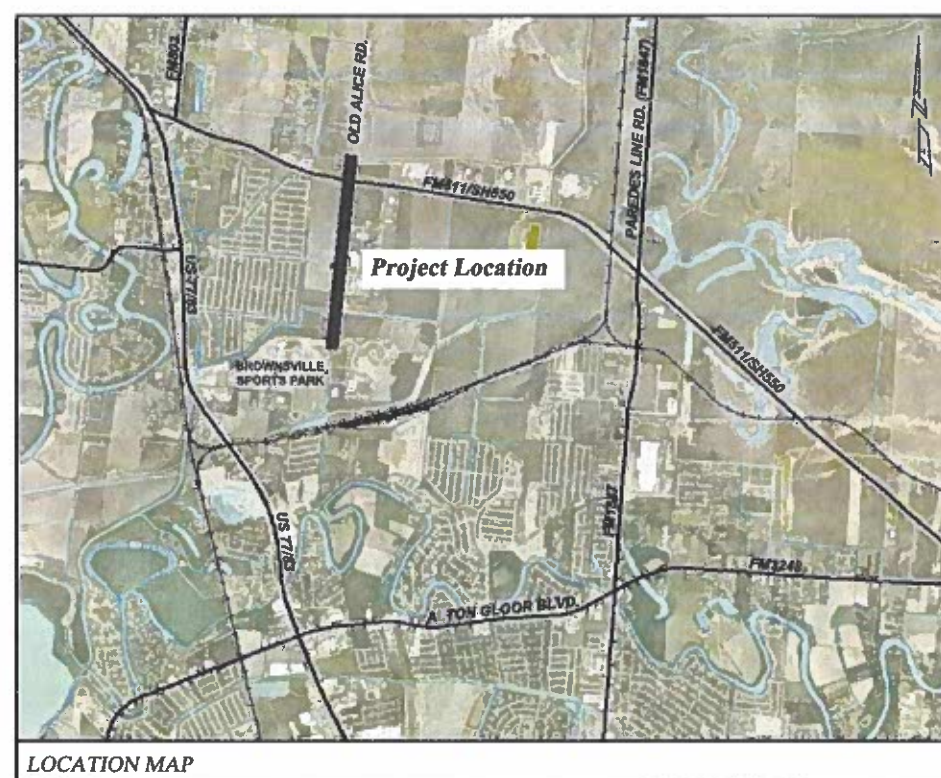


BID No. B023-25
PREPARED FOR:
BROWNSVILLE PUBLIC UTILITIES BOARD
DATE: JANUARY 2025

ARTHUR "ART" RENDON.....CHAIR
GERARDO MARTINEZ.....VICE-CHAIR
DAISY ZAMORA, Ph.D.....SECRETARY/TREASURER
ALEJANDRO NAJERA.....MEMBER
JOSEPH L. HOLLMANN, Ph.D.....MEMBER
ALONZO "AL" VILLARREAL.....MEMBER
JOHN F. COWEN, JR.....EX-OFFICIO MEMBER



01	COVER SHEET
02	GENERAL NOTES
03	STRUCTURAL NOTES
04	STA. 21+53
05	STA. 44+88
06	STA. 81+33
07	WATER DETAILS



BROWN SVILE
PUBLIC UTILITIES BOARD



Matt C. Neal, P.E.
1/17/2025

[illegible]

**BROWNSVILLE
PUBLIC UTILITIES BOARD**

Public Utilities Board
1425 Robinhood Drive
Crownsville, Texas 78521
1-800-869-2922
Water and Wastewater
Engineering Department
(956) 983-6715

OLD ALICE RD.
EXISTING WATERLINE RELOCATION
PROJECT

COVER SHEET

Scatter:	Dolar, January 2025
Designed:	
Drawn:	Luis Martinez
Approved:	Brian Alvarez, ENT, Onellea Benavides, ENT
Approved:	María Leal, PE

SHEET

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GENERAL NOTES

- CONTRACTOR TO SUBMIT WORKPLAN DETAILING SEQUENCE OF CONSTRUCTION FOR REVIEW AND APPROVAL BY THE BROWNSVILLE PUBLIC UTILITIES BOARD PRIOR TO BEGINNING OF CONSTRUCTION. WATER AND WASTEWATER SERVICES SHALL NOT BE INTERRUPTED BETWEEN THE HOURS OF 5:30 PM AND 8:00 A.M.
- CONTRACTOR TO GIVE A MINIMUM OF 48 HOURS NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
- NO SEPARATE PAY FOR ITEMS REQUIRED BY NOTES ON THIS SHEET.
- BLASTING IS NOT PERMITTED ON THIS PROJECT.
- ALL CONSTRUCTION OPERATIONS TO BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE.
- ELECTRICAL LINES ARE LOCATED IN THE PROJECT AREA. THE ATTENTION OF THE CONTRACTOR IS DIRECTED TO STATE LAW (VERNON'S ANNOTATED TEXAS STATUTES, ARTICLE 1436 (C)) CONCERNING CONSTRUCTION OPERATIONS IN THE VICINITY OF ELECTRICAL LINES AND THE NEED FOR EFFECTIVE PRECAUTIONARY MEASURES.
- THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THE WORK. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS.
- ANY CHANGES OR REVISIONS TO THESE PLANS MUST FIRST BE SUBMITTED TO THE BROWNSVILLE PUBLIC UTILITIES BOARD FOR REVIEW AND WRITTEN APPROVAL.
- EXISTING PAVING, BUILDING, AND OTHER ITEMS SHOWN ON PLANS NOT SPECIFICALLY RELATED TO THE WORK OF THE CONTRACTOR ARE FOR INFORMATION ONLY.
- CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS REGARDING EXCESS AND WASTE MATERIAL INCLUDING METHODS OF HANDLING AND DISPOSAL. EXCESS SOIL, ROCK, DEBRIS, EQUIPMENT, AND SPOIL MATERIAL NOT SPECIFICALLY LABELED FOR SALVAGE IN THIS PROJECT'S DRAWINGS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT JOBSITE AND LEGALLY DISPOSED OF AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL VISIT THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ)'S WEBSITE AND CALL TCEQ FOR CURRENT WASTE DISPOSAL COMPLIANCE GUIDANCE, INCLUDING GUIDANCE ON CURRENT WASTE DISPOSAL REGULATIONS AND APPROVED OR PERMITTED DISPOSAL SITES. CONTRACTOR SHALL SUBMIT WASTE DISPOSAL DOCUMENTATION SUCH AS MANIFESTS TO THE OWNER UPON REQUEST. IF THE CONTRACTOR ENCOUNTERS ANY UNEXPECTED REGULATED WASTE DURING CONSTRUCTION THE CONTRACTOR SHALL FORMALLY CONTACT THE ENGINEER AND THE OWNER AND NOTIFY THE FINDING FOR FURTHER WASTE HANDLING INSTRUCTIONS. IF UNEXPECTED WASTE OF UNKNOWN QUALITY IS ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE OWNER IMMEDIATELY FOR FURTHER ENVIRONMENTAL ASSESSMENT AND TESTING TO DETERMINE ANY SPECIAL HANDLING AND DISPOSAL REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME ACQUAINTED WITH CURRENT WASTE HANDLING AND DISPOSAL LAWS AND REGULATIONS.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
- CONTRACTOR TO MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES, RESIDENCES, AND BUSINESSES DURING CONSTRUCTION. CONTRACTOR SHALL MAKE ALL EFFORTS TO KEEP DRIVEWAYS OPEN AND ACCESSIBLE DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES TO BE COORDINATED WITH OWNER'S REPRESENTATIVE AND THE BROWNSVILLE PUBLIC UTILITIES BOARD. THE CONTRACTOR SHALL COORDINATE ALL DRIVEWAY CLOSURES WITH THE PROPERTY OWNER.
- THE CONTRACTOR SHALL COORDINATE TEMPORARY RELOCATION OF MAILBOXES WITH THE BROWNSVILLE POSTMASTER. FINAL LOCATION SHALL BE IN ACCORDANCE WITH THE LOCAL POST OFFICE REQUIREMENTS AT CONTRACTOR'S EXPENSE.
- CONTRACTOR TO TAKE ALL DUE PRECAUTIONS TO PROTECT EXISTING FACILITIES FROM DAMAGE. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF THESE CONSTRUCTION OPERATIONS ARE TO BE REPAIRED IMMEDIATELY BY THE CONTRACTOR TO THE PRE-EXISTING CONDITION OR BETTER AT NO ADDITIONAL COST TO OWNER.
- LOCATION OF EXISTING UTILITIES SHOWN ON PLANS WAS COMPILED FROM RECORD INFORMATION. NO WARRANTY IS IMPLIED AS TO THE ACTUAL LOCATION OF EXISTING UTILITIES. CONTRACTOR TO FIELD VERIFY LOCATIONS OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE FOLLOWING:

DIG TESS:	1-800-DIG-TESS (811)
TEXAS ONE CALL SYSTEM (TOCS)	1-800-545-6005
BROWNSVILLE (BPUB)	956 983-6572
BROWNSVILLE ENGINEERING DEPT.	956-341-1012
TEXAS GAS:	1-800-700-2443
AT&T:	1-800-828-5127
BROWNSVILLE IRRIGATION DISTRICT:	956-831-8482
TxDOT	956-542-2260
- LOCATIONS AND DEPTHS SHOWN FOR EXISTING UTILITIES ARE APPROXIMATE. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATIONS AND DEPTHS OF ALL APPLICABLE LINES, AND TO REPAIR ANY DAMAGES MADE AS A RESULT OF PROJECT CONSTRUCTION, INCLUDING UTILITIES NOT SHOWN ON THESE DRAWINGS.
- CONTRACTOR TO COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES WITH APPLICABLE UTILITIES COMPANY OR COMPANIES. ALL WORK TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITIES COMPANY OR AGENCY INVOLVED. (NO SEPARATE PAY).
- WHEN NOT LOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING OR A BREAK IN A LINE OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING SITE WORK OPERATIONS, CONTRACTOR TO NOTIFY THE APPLICABLE UTILITIES COMPANY IMMEDIATELY TO OBTAIN DIRECTION. CONTRACTOR TO COOPERATE WITH THE APPLICABLE UTILITIES COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.
- CONTRACTOR TO ASSURE THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. PERMITS ARE TO BE OBTAINED AT THE CONTRACTOR'S EXPENSE.
- OWNER, ENGINEER, CONTRACTOR, REPRESENTATIVES OF ALL UTILITIES COMPANIES, AND A REPRESENTATIVE FROM THE TESTING LAB TO ATTEND PRE-CONSTRUCTION CONFERENCE PRIOR TO START OF CONSTRUCTION.
- CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, AND CONTROL POINTS. CONTRACTOR TO RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY A REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT THE CONTRACTOR'S EXPENSE.
- MATERIAL STORAGE, LAYDOWN, AND STAGING AREAS TO BE ON SAME SIDE OF ROADWAY AS ADJACENT WORK ZONE. STAGING AREAS ARE NOT TO BE USED FOR STOCKPILING SPOIL.
- SPOIL MATERIAL SHALL NOT BE MOUNDING MORE THAN 18" HIGH ADJACENT TO DRIVEWAYS.
- ANY DAMAGE CAUSED TO EXISTING PAVEMENT, CURBS, SIDEWALKS, ETC., SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE CITY OF BROWNSVILLE ENGINEERING DEPARTMENT PRIOR TO ACCEPTANCE OF THE PROJECT.
- ALL JOINTS TO MATCH EXISTING PAVEMENT SHALL BE SAW CUT. PAVEMENT PATCHING SHALL BE IN ACCORDANCE WITH BROWNSVILLE PUBLIC UTILITIES BOARD STANDARDS.
- ALL SIDEWALKS TO BE CUT OR PATCHED TO COMPLY WITH AMERICANS WITH DISABILITIES ACT REQUIREMENTS.
- CONTRACTOR SHALL NOTIFY THE BROWNSVILLE PUBLIC UTILITIES BOARD ENGINEERING DEPARTMENT AT LEAST 48 HOURS BEFORE DEMOLITION OF, OR CONNECTION WITH, ANY CITY UTILITIES OR STREET.
- THE CONTRACTOR SHALL GIVE THE BROWNSVILLE PUBLIC UTILITIES BOARD 24 HOUR ADVANCE NOTICE PRIOR TO PLACEMENT OF ANY CONCRETE, TO PERMIT THE REVIEW OF FORMS, REINFORCING STEEL PLACEMENT, AND OTHER PREPARATIONS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST CITY OF BROWNSVILLE PUBLIC UTILITIES BOARD STANDARD SPECIFICATIONS.
- BURNING OF TREES, BRUSH OR OTHER VEGETATIVE MATTER ON THE PROJECT SITE IS NOT PERMITTED.
- NO TREES SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER OR ENGINEER, UNLESS OTHERWISE NOTED.
- FUEL STORAGE IS NOT ALLOWED ON THIS PROJECT.
- CONTRACTOR TO ADVISE OWNER IMMEDIATELY, VERBALLY AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TO BE TAKEN TO REMEDY THE PROBLEM.
- CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF THEIR FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING & MAINTAINING SANITARY FACILITIES ON THIS PROJECT FOR EMPLOYEES.
- UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, ALL CONCRETE IS TO BE CLASS "C" (4000 PSI-28 DAYS), AND ALL REINFORCING STEEL TO BE ASTM A615 GRADE 60.
- PROJECT MANHOLE CASTINGS OF ALL TYPES SHALL BE BROUGHT TO FINISHED GRADE BY THE CONTRACTOR.
- PRIOR TO ACCEPTANCE OF THE PROJECT, ALL GRADED AND DISTURBED AREAS ARE TO BE RE-VEGETATED IN A CASE BY CASE BASIS.
- APPROPRIATE SHORING AND BRACING EQUIPMENT SHALL BE USED WHERE TRENCHES ARE DEEPER THAN FIVE (5') FEET OR WHERE CONDITIONS WARRANT, AND SHALL COMPLY WITH OSHA REGULATIONS.

- MAXIMUM LENGTH OF OPEN TRENCH TO BE 60', OR AS DIRECTED BY THE OWNER.

- NO CONSTRUCTION OPERATIONS RELATIVE TO INSTALLATION OF UTILITIES, INCLUDING STOCKPILING OF EXCAVATED MATERIALS, SHALL BE PERMITTED WITHIN THE LIMITS OF EXISTING PAVEMENTS CARRYING TRAFFIC ON STATE HIGHWAYS, OR SHOULDERS ADJACENT THERETO, UNLESS SPECIFICALLY AUTHORIZED BY THE TEXAS DEPARTMENT OF TRANSPORTATION.
- WHEN WORK IS PERFORMED ON PRIVATE PROPERTY OR EASEMENTS, ALL LAWN GRASS, SHRUBBERY, FLOWERS, AND FENCES IN THE WAY OF THE WORK SHALL BE REMOVED, PROTECTED AND REPLACED TO THEIR ORIGINAL POSITION AND CONDITION, OR BETTER, UPON COMPLETION OF THE WORK AT THE CONTRACTORS EXPENSE.
- ALL DIMENSIONS GIVEN ARE TO THE CENTERLINE OF PIPE, UNLESS OTHERWISE NOTED. DO NOT ATTEMPT TO SCALE DIMENSIONS FROM THESE DRAWINGS, ALTHOUGH DRAWINGS ARE TO SCALE, THE ENGINEER SHOULD BE CONSULTED IF DIMENSIONING IS UNCLEAR OR INSUFFICIENT.
- PRE-CONSTRUCTION PHOTOGRAPHS SHALL BE TAKEN THAT SHOW EXISTING CONDITIONS OF THE SITE AND ADJOINING STRUCTURES TO REMAIN. PHOTOS SHALL INCLUDE DAMAGE TO FINISH SURFACES THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY DEMOLITION OPERATIONS.
- THE CONTRACTOR IS REQUIRED TO DISPOSE OF ALL MATERIALS AND PAY FOR ALL FEES RELATING TO DISPOSAL OF ALL MATERIAL IN COMPLIANCE WITH TCEQ AND EPA RULES AND REGULATIONS.
- EXISTING BUILDINGS, PAVEMENTS, SIDEWALKS, CURBS, DRIVEWAYS, ELECTRICAL TRANSFORMERS, DITCHES, DRAINAGE PIPES AND STRUCTURES, FENCES, LAWNS, TREES, BUSHES, SIGNS, POWER POLES, ETC., TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE DURING CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ALL DAMAGES SHALL BE RESTORED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR BETTER OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL GOVERNING AGENCIES.

WATER AND WASTEWATER NOTES

- ALL PIPE BEDDING MATERIAL SHALL CONFORM TO DETAILS.
- ALL CONCRETE BENCHES FOR WASTEWATER MANHOLES TO BE COATED PER MATERIALS AND PROCEDURES SPECIFIED IN CONTRACT SPECIFICATIONS. MINIMUM THICKNESS TO BE 80 MILS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING AND RECONNECTING ANY BROWNSVILLE PUBLIC UTILITIES BOARD WATER AND WASTEWATER LINES, SERVICE TAPS, AND STORM SEWER WHERE REQUIRED. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ANY REQUIRED RELOCATION OF GAS, CABLE, TELEPHONE OR ELECTRIC LINES WITH THE APPROPRIATE UTILITIES OWNER.
- PIPE MATERIAL FOR WATER MAINS SHALL BE PVC AWWA C900 OR-18. PIPE MATERIAL FOR PRESSURE WASTEWATER MAINS SHALL BE PVC AWWA C-900 OR-18. PIPE MATERIAL FOR GRAVITY WASTEWATER MAINS SHALL BE PVC ASTM D3034, SDR 26 OR PS 115 UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.
- WATER AND WASTEWATER LINES TO BE LAD WITH A MINIMUM COVER OF 48-INCHES BELOW FINISH GRADE UNLESS OTHERWISE NOTED.
- ANY POTABLE WATERLINE WHICH MUST BE RELOCATED SHALL BE COORDINATED WITH BROWNSVILLE PUBLIC UTILITIES BOARD.
- THE CONTRACTOR SHALL PERFORM QUALITY TESTING FOR THE WATER AND WASTEWATER SYSTEM INSTALLED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS AT HIS EXPENSE. BROWNSVILLE P.U.B. TO BE GIVEN 48 HRS NOTICE PRIOR TO ALL TESTING AND SHALL BE MONITORED BY BROWNSVILLE PUB PERSONNEL. TESTING IS TO BE DONE IN ACCORDANCE WITH B.P.U.B. STANDARDS.
- PROPOSED WATER AND SANITARY SEWER SERVICES ARE SHOWN IN AN APPROXIMATE LOCATION AND SHALL BE VERIFIED IN THE FIELD WITH AN INSPECTOR BASED ON THE LOCATION OF HOMES. SANITARY SEWER SERVICES SHALL BE SINGLE SERVICES UNLESS DECIDED OTHERWISE BY FIELD TECHNICIAN DURING CONSTRUCTION.
- CONTRACTOR SHALL KEEP 9 FT. MIN. SEPARATION BETWEEN SANITARY SEWER LINES AND WATERLINES. 9 FT. MIN. SEPARATION BETWEEN SANITARY SEWER LINES AND WATER METERS.
- ALL EXISTING DRIVEWAYS SHALL BE OPEN CUT IN A NEAT STRAIGHT LINE, AND REPAIRED ON A LIKE FOR LIKE BASIS. ALL CONFLICTING RCP CULVERTS SHALL BE REMOVED AND REINSTALLED AS NEEDED. BOTH ITEMS ARE SUBSIDIARY TO OTHER ITEMS. NO SEPARATE PAY.
- CONTRACTOR SHALL RESTORE ALL DRAINAGE SWALES TO ORIGINAL CONDITIONS. WATER SERVICE REPLACEMENT OR REPAIR SUBSIDIARY TO OTHER LINE ITEM'S PRICE PER L.F. (LINEAR FOOT) OF SEWER LINE. NO SEPARATE PAY.

TESTING NOTES

- BROWNSVILLE PUBLIC UTILITIES BOARD TO BE GIVEN 48 HOURS NOTICE PRIOR TO ALL TESTING OF WATER LINES, WASTEWATER LINES, AND DENSITY TESTING. REFER TO SPECIFICATIONS AND TCEQ NOTES FOR TESTING REQUIREMENTS. ALL TESTING TO BE CONDUCTED IN PRESENCE OF B.P.U.B. INSPECTOR.
- THE CONTRACTOR, AT HIS EXPENSE, SHALL PERFORM QUALITY TESTING FOR ALL WASTEWATER PIPE INSTALLED AND PRESSURE PIPE HYDROSTATIC TESTING OF ALL WATER LINES CONSTRUCTED AND SHALL PROVIDE ALL EQUIPMENT (INCLUDING PUMPS AND GAUGES), SUPPLIES AND LABOR NECESSARY TO PERFORM THE TESTS. QUALITY AND PRESSURE TESTING SHALL BE MONITORED BY BROWNSVILLE PUB PERSONNEL. TESTING IS TO BE DONE IN ACCORDANCE WITH BPUB STANDARDS AND TCEQ REGULATIONS.
- SOL DENSITY TESTS AND RELATED SOL ANALYSIS TESTS TO BE ACCOMPLISHED BY AN INDEPENDENT LABORATORY UNDER CONTRACT WITH THE OWNER. TESTS WHICH SHOW UNSATISFACTORY RESULTS ARE TO BE REPEATED AT THE EXPENSE OF THE CONTRACTOR SUBSEQUENT TO CONTRACTOR'S REMEDIAL ACTIVITIES.
- DENSITY TESTING OF COMPACTED SUBGRADE MATERIAL FOR FIRST COURSE, AND SECOND COURSE OF COMPACTED BASE SHALL BE MADE AT ALL DRIVEWAYS AND INTERSECTING STREETS. IN ADDITION, ONE (1) DENSITY TEST PER LIFT PER FIVE HUNDRED (500) FEET OF INSTALLED PIPELINE SHALL BE CONDUCTED.

SITE GRADING NOTES

- EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO DISTURBING EXISTING GRADE WITHIN ANY WORK AREA. SUCH MEASURES SHALL REMAIN IN PLACE UNTIL WORK IS COMPLETE AND/OR GRASS IS ESTABLISHED, AS DIRECTED BY OWNER.
- CONTRACTOR TO CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF GOVERNING AUTHORITIES. (NO SEPARATE PAY.)
- CONTRACTOR IS RESPONSIBLE FOR CLEANING MUD AND/OR DIRT TRACKED ONTO EXISTING STREETS BY HIS WORKMEN'S, SUPPLIERS, OR SUBCONTRACTOR'S VEHICLES. STREETS MUST BE CLEANED WITHIN 2 HOURS OF WHEN THE TRACKING OCCURS. (NO SEPARATE PAY.)
- EXCESS EXCAVATED MATERIAL TO BE STOCKPILED IN DESIGNATED AREA AS SHOWN ON PLANS OR AS DIRECTED BY THE OWNER. REINFORCED FILTER FABRIC FENCE TO BE INSTALLED AROUND STOCKPILE ON DOWNSTREAM SIDE AND BOTH SIDES ADJACENT TO THE DOWNSTREAM SIDE. STOCKPILES ARE NOT TO TRAP OR POND WATER. TOPSOIL TO BE STOCKPILED SEPARATELY. ALL EXCESS EXCAVATED MATERIAL IS TO BE REMOVED FROM THE SITE. CONTRACTOR TO NOTIFY TCEQ AND THE OWNER'S REPRESENTATIVE OF LOCATION OF DISPOSAL BEFORE MATERIAL IS REMOVED.

STORMWATER NOTES

- THE CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING A T.C.E.Q. APPROVED SWPPP AND BE RESPONSIBLE FOR THE IMPLEMENTATION, MAINTENANCE, AND INSPECTION OF SWPPP CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO, EROSION AND SEDIMENT CONTROLS, STORM WATER MANAGEMENT PLANS, WASTE COLLECTION AND DISPOSAL, OFF-SITE VEHICLE TRACKING, AND OTHER CONSTRUCTION PRACTICES.
- DURING CONSTRUCTION, SILT FENCING AND/OR HAY BALES ONES SHALL BE ERECTED AND MAINTAINED TO MINIMIZE ESCAPE OF SEDIMENT INTO STORM SEWER SYSTEM AND RECEIVING WATERS. THE CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES WHERE NEEDED.
- DURING CONSTRUCTION, THESE TEMPORARY EROSION AND SEDIMENTATION CONTROLS TO REMAIN IN PLACE UNTIL THE DISTURBED AREAS ARE RE-VEGETATED AND THE AREAS HAVE BECOME PERMANENTLY STABILIZED. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS TO BE INSPECTED PERIODICALLY FOR DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES AND FOLLOWING EVERY RAINFALL. DAMAGED OR OBSTRUCTED CONTROLS TO BE REPAIRED/REPLACED AS NECESSARY TO MAINTAIN THEIR PROPER OPERATION.
- THE CONTRACTOR SHALL SELECT A SPECIFIC LOCATION TO BE THE STAGING FOR THE PROJECTS OPERATIONS, WHICH INCLUDES A CONSTRUCTION ENTRANCE AS PER NPDES REQUIREMENTS. THE CONTRACTOR WILL DESIGNATE THIS AREA FOR EQUIPMENT CLEANING, MAINTENANCE, REPAIR, AND STORAGE. ALL CONTRACTORS AND SUBCONTRACTORS SHALL UTILIZE SUCH AREA FOR THOSE PURPOSES. THIS AREA WILL BE LOCATED SUCH THAT HARMFUL SUBSTANCES WILL NOT BE ALLOWED TO LEACH OR RUN OFF-SITE. A STRICT POLICY WILL BE ENACTED WHICH WILL MINIMIZE VEHICLE TRAFFIC FROM ENTERING NON-PAVED AREAS.

TRAFFIC CONTROL NOTES

- CONTRACTOR SHALL DEVELOP AND SUBMIT A TRAFFIC CONTROL PLAN WHICH WILL SHOW BOTH DAY AND NIGHT TIME OPERATIONS FOR THE INSTALLATION OF THE UTILITIES IMPROVEMENTS IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, AND TxDOT STANDARDS. CONTRACTOR IS TO SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY OF BROWNSVILLE TRAFFIC DEPARTMENT AND BROWNSVILLE PUBLIC UTILITIES BOARD PRIOR TO START OF CONSTRUCTION. ANY WORK PERFORMED WITHIN A TxDOT RIGHT OF WAY SHALL REQUIRE A TxDOT PERMIT FOR WORK. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO TxDOT FOR APPROVAL.
- THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN BARRICADES, WARNING SIGNS, AND OTHER TRAFFIC HANDLING DEVICES OF THE SIZE AND TYPE SPECIFIED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR AS DIRECTED BY THE ENGINEER OR HIGHWAY DEPARTMENT OFFICIAL.
- THE CONTRACTOR SHALL INSPECT AND PROPERLY MAINTAIN TRAFFIC CONTROLS EACH EVENING AND DURING THE WEEKEND IN ADDITION TO NORMAL DAYTIME WORKING HOURS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH INSTALLATION AND MAINTENANCE OF TRAFFIC CONTROLS.
- THE CONTRACTOR SHALL DESIGNATE ONE PERSON WHO WILL BE ACCESSIBLE TO THE OWNER ON A 24-HOUR BASIS AND WILL BE RESPONSIBLE FOR THE MAINTENANCE OF THE BARRICADES AND THE WORK SITE.
- TRAFFIC INTERRUPTION SHALL BE COORDINATED WITH THE TEXAS DEPARTMENT OF TRANSPORTATION, THE BROWNSVILLE PUBLIC UTILITIES BOARD, FIRE AND POLICE DEPARTMENTS, AND THE ENGINEER AT LEAST 24 HOURS IN ADVANCE OF SUCH INTERRUPTIONS.
- TRAFFIC CONTROL PLAN SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE SUBSIDIARY TO ALL OTHER BID ITEMS.

PROJECT CONSTRUCTION SIGN

ONE OR MORE CONSTRUCTION SIGNS AT PROJECT SITE OR NEAR THE CONSTRUCTION SITE PER THE FOLLOWING GUIDANCE AND ATTACHED SPECIFICATIONS.

- THE GENERAL CONTRACTOR AS DIRECTED BY THE OWNER SHALL FURNISH AND INSTALL A CONSTRUCTION SIGN(S) FOR IDENTIFICATION OF THE OLD ALICE RD. EXISTING WATERLINE RELOCATION PROJECT. THE SIGN SHALL BE CONSTRUCTED AS SHOWN ON DETAILS SHEET. NO SEPARATE PAY.
- IF THE CONTRACTOR CHOOSES TO ERECT A SEPARATE SIGN, IT MAY BE ATTACHED TO OR ADJACENT TO THE PROJECT SIGN, BUT NO OTHER CONTRACTOR OR SUBCONTRACTOR OR MATERIAL SIGNS WILL BE PERMITTED ON THE CONSTRUCTION PROJECT SIGN.
- THE CONSTRUCTION SIGN WILL BE INSTALLED PRIOR TO ANY CONSTRUCTION AT A LOCATION WHICH IS NEAR THE PROJECT SITE AND WITHIN PUBLIC VIEWING.
- THE SIGN (PORTABLE MOUNT PERMISSIBLE) WILL BE CONSTRUCTED OF A 4.0 FEET BY 4.0 FEET EXTERIOR TYPE HIGH DENSITY OVERLAD PLYWOOD OR OTHER SIGN MATERIAL OF EQUIVALENT QUALITY WITH ROUNDED CORNERS AND PRE-PUNCHED HOLES TO INSURE A HASSLE-FREE INSTALLATION.
- THE SIGN SHALL BE CONSTRUCTED WITH BLACK VINYL LETTERING ON A REFLECTIVE WHITE BACKGROUND AS SHOWN ON DETAIL SHEET.
- LETTERING WILL BE OF PROFESSIONAL QUALITY AND ALL LETTERING WILL BE IN PROPORTION TO THE SIZES SHOWN AND ALIGNED ON THE SIGN.
- INFORMATION SPECIFIED ON THE ATTACHED DETAIL WILL BE DISPLAYED ON THE SIGN.
- THE SIGN WILL BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR UNTIL COMPLETION OF THE CONSTRUCTION PROJECT.
- THE SIGN WILL BE REMOVED WHEN THE CONSTRUCTION IS COMPLETE.

SPECIAL NOTE:

PROJECT CONSTRUCTION MUST BEGIN NO LATER THAN:

APRIL 1, 2025

DURATION OF PROJECT SHALL BE 45 CALENDAR DAYS.

PROJECT TYPE:

OLD ALICE RD. EXISTING WATERLINE RELOCATION PROJECT

UTILITY OWNER CONTACT:

BROWNSVILLE PUBLIC UTILITIES BOARD
(956) 983-6100

CONTRACTOR CONTACT:

CONTRACTOR COMPANY NAME
CONTRACTOR COMPANY PHONE NUMBER



BROWNSVILLE
PUBLIC UTILITIES BOARD

Public Utilities Board
1425 Robinhood Drive
Brownsville, Texas 78521
1-800-869-2922
Water and Wastewater
Engineering Department
(956) 983-6215
(956) 983-6020



OLD ALICE RD.
EXISTING WATERLINE RELOCATION
PROJECT

GENERAL NOTES

Scale:	Date: January 2025
Designed:	
Drawn:	Luis Martinez
Approved:	Brian Aranda, PE, Director, Brownsville, UT
Approved:	Mike Leck, PE
Project #:	8003-25

SHEET

02
OF 07

UTILITY WORK GENERAL NOTES REVISION: MARCH 30, 2022

1/17/2025
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GENERAL REQUIREMENTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAINING HIS EMPLOYEES AND SUBCONTRACTORS IN THE RECOGNITION AND AVOIDANCE OF UNSAFE CONDITIONS, AND IN THE REGULATIONS AND HAZARDS WHICH APPLY TO THE AREA IN WHICH THE WORK WILL TAKE PLACE.
2. ALL SAFETY EXPOSURES OR VIOLATIONS SHALL BE RECTIFIED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING PROTECTION OF PERSONS AND PROPERTY, AND FOR PROVIDING SAFE WORKING CONDITIONS THROUGHOUT THE WORK PROGRESS. ALL AREAS ADJACENT TO THE CONSTRUCTION AREA OR AFFECTED BY THE CONSTRUCTION MUST BE PROTECTED FROM DAMAGE, CLEANED, AND RESTORED TO THE ORIGINAL CONDITION, AT NO ADDITIONAL EXPENSE TO THE OWNER.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL CLEARANCES AND PERMITS, AS NECESSARY, PRIOR TO THE COMMENCEMENT OF THE WORK.
4. WORK AREAS SHALL BE KEPT, AT ALL TIMES, FREE OF DEBRIS AND NON- HAZARDOUS MATERIAL TO THE SATISFACTION OF THE PROJECT COORDINATOR. ALL EXISTING PIPING AND CONDUITS SHALL HAVE TEMPORARY PROTECTION DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE STORAGE OF MATERIALS, PARKING OF VEHICLES, AND RESTRICTIONS OF WORK WITH THE OWNER. AFTER PROJECT COMPLETION, THE SITE SHALL BE CLEANED UP TO ITS CONDITION PRIOR TO THE START OF THE PROJECT TO THE SATISFACTION OF THE OWNER.
5. THE SEQUENCE OF CONSTRUCTION SHALL BE SCHEDULED AND COORDINATED WITH THE OWNER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITIONS, AND SHALL PERFORM FIELD MEASUREMENTS PRIOR TO FABRICATION AND/OR PURCHASE OF ANY MATERIAL AND SHALL CONTACT THE ENGINEER SHOULD EXISTING CONDITIONS BE DIFFERENT FROM THE DESIGN DRAWINGS FOR THIS PROJECT. CONFLICTS ARISING DUE TO LACK OF COORDINATION SHALL BE THE RESPONSIBILITY AND AT THE EXPENSE OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL NOT FABRICATE OR INSTALL MEMBERS AS SHOWN ON THE DRAWINGS IF THERE ARE DISCREPANCIES OR CONFLICTS BETWEEN THE EXISTING CONDITIONS AND THE INFORMATION SHOWN ON THE DRAWINGS, UNTIL SUCH DISCREPANCIES HAVE BEEN RESOLVED. PRIOR TO FABRICATION OR INSTALLATION, THE CONTRACTOR SHALL IMMEDIATELY CALL SUCH DISCREPANCIES OR CONFLICTS TO THE ATTENTION OF THE ENGINEER.
8. ANY REQUIRED CHANGES TO THE DRAWINGS RESULTING FROM THE ACCEPTANCE OF ALTERNATES AND/OR SUBSTITUTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE SUBMITTED TO THE OWNER AND THE ENGINEER FOR APPROVAL.
9. ALL CONTRACT WORK IN THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITIONS OF THE FOLLOWING NATIONAL CODES AND STANDARDS:
 - A INTERNATIONAL BUILDING CODES, 2024 (IBC2024).
 - B AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE).
 - C OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).
 - D NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
 - E NATIONAL FIRE CODE (NFC).
10. ALL SHOP DRAWINGS SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO SUBMITTING TO THE ENGINEER. ALL SHOP DRAWINGS NOT REVIEWED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW. AFTER REVIEW HAS BEEN COMPLETED, THE CONTRACTOR SHALL SUBMIT A COPY OF EACH SHOP DRAWING TO THE OWNER, WITH THE APPROVAL SEAL OF THE ENGINEER AND THE CONTRACTOR.
11. THE CONTRACTOR SHALL DISPOSE OF ALL MATERIALS REMOVED WHICH ARE NOT TO BE REINSTALLED OR SALVAGED ON THE PROJECT. DISPOSAL OF MATERIALS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER, IN LIEU OF THE PREPARATION OF SHOP DRAWINGS IS FORBIDDEN. SHOP DRAWINGS RECEIVED BEARING THE ENGINEER'S TITLE AND SEAL SHALL BE PROMPTLY REJECTED.
13. REFER TO THE SPECIFICATIONS FOR DETAILED REQUIREMENTS NOT FULLY ADDRESSED IN THESE NOTES.

SUBMITTAL NOTES

- THE FOLLOWING PARTIAL LISTING OF SUBMITTALS SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW. THE WORK ASSOCIATED WITH THESE ITEMS SHALL NOT COMMENCE UNTIL THE SUBMITTALS HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER. REFERENCE THE PROJECT SPECIFICATIONS FOR A COMPLETE LISTING OF REQUIRED SUBMITTALS.
1. SUBMIT MOISTURE-DENSITY RELATIONSHIPS FOR EACH TYPE OF FILL MATERIAL SPECIFIED AND FOR EACH TYPE OF EXPOSED EXISTING SUBGRADE MATERIAL.
 2. SUBMIT CONCRETE MIX DESIGNS WITH TEST DATA FOR EACH TYPE AND STRENGTH OF CONCRETE SPECIFIED.
 3. SUBMIT A COMPLETE WATERLINE MATERIAL SUBMITTAL ALONG WITH FITTINGS, VALVES AND ALL APPURTENANCES TO BE USED IN PROJECT.
 4. SUBMIT ANY PROPOSED SUBSTITUTIONS TO THE ITEMS SPECIFIED HEREIN OR IN THE SPECIFICATIONS. OWNER RESERVES THE RIGHT TO REJECT ANY PROPOSED SUBSTITUTION IN FAVOR OF THAT SPECIFIED.

TESTING LABORATORY REQUIREMENTS

THE OWNER WILL SECURE THE SERVICES OF A COMMERCIAL TESTING LABORATORY, TO PERFORM CONSTRUCTION MATERIALS TESTS AND VISUAL INSPECTION SERVICES AS OUTLINED IN THE PROJECT SPECIFICATIONS AND AS LISTED BELOW:

1. APPROPRIATE TESTS SHALL BE PERFORMED TO CERTIFY THAT FILL AND BACKFILL MATERIALS SPECIFIED FOR USE ON THE PROJECT MEET THE MINIMUM REQUIREMENTS SET FORTH IN THE PROJECT SPECIFICATIONS AND IN THE NOTES HEREIN. MATERIAL SUBMITTED AS WALL BACKFILL MATERIAL SHALL HAVE A GRAIN SIZE ANALYSIS AND ATTEBURG LIMITS TEST PERFORMED AT THE RATE OF 1 TEST PER 5000 CUBIC YARDS TO MONITOR UNIFORMITY AND CONSISTENCY OF THE MATERIAL.
2. FIELD DENSITY TESTS SHALL BE PERFORMED ON EACH LIFT OF SOIL MATERIALS PLACED. ONE DENSITY TEST WILL BE REQUIRED FOR EACH 2,500 SQUARE FEET. A MINIMUM OF TWO TESTS SHALL BE REQUIRED FOR EACH LIFT.
3. TESTING OF CONCRETE SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
4. SHOP AND FIELD INSPECTION OF STEEL MEMBERS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. INSPECTION OF ALL ADHESIVE ANCHORS SHALL BE PERFORMED TO INSURE PROPER INSTALLATION AND TIGHTENING OF BOLTS.
6. IF WORKMANSHIP IS FOUND TO BE BELOW THE REQUIREMENTS SET FORTH HEREIN OR IN THE SPECIFICATIONS AS A RESULT OF TESTING AND/OR VISUAL INSPECTION, THE CONTRACTOR SHALL CORRECT OR REPLACE MATERIALS AT NO ADDITIONAL COST TO THE OWNER.
7. THE CONTRACTOR SHALL COOPERATE AND COORDINATE FULLY WITH THE TESTING LABORATORY AND PROJECT TESTING REQUIREMENTS.

TEMPORARY SHORING, SHEETING AND/OR BRACING NOTES

1. A TEMPORARY SHORING SYSTEMS MAY BE REQUIRED FOR ALL EXCAVATIONS IN EXCESS OF 5'-0" IN DEPTH IN ACCORDANCE WITH CURRENT OSHA REGULATIONS.
2. THE DESIGN OF TEMPORARY SHORING SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE PREPARED, SIGNED, AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF TEXAS.
3. CALCULATIONS AND SHOP DRAWINGS FOR TEMPORARY SHORING SYSTEMS SHALL BE FORWARDED TO THE ENGINEER FOR RECORD.

STRUCTURAL EXCAVATION, BACKFILL AND COMPACTION NOTES

1. BEFORE THE START OF EARTHWORK OPERATIONS, ADEQUATELY PROTECT EXISTING STRUCTURES, UTILITIES, AND OTHER PERMANENT OBJECTS FROM DAMAGE. THE CONTRACTOR IS RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ALL DAMAGED ELEMENTS, AT NO ADDITIONAL COST TO OWNER.
2. EXCAVATION WORK SHALL BE NEAT AND FREE OF DEBRIS AND LOOSE MATERIAL. REFER TO THE SPECIFICATIONS FOR PROTECTION OF EXCAVATIONS.
3. EXCAVATIONS SHALL NOT BE MADE DURING INCLEMENT WEATHER. WATER ACCUMULATION IN EXCAVATIONS EXCEEDING 1 INCH SHALL BE PUMPED OUT BEFORE THE CONCRETE IS PLACED.
4. ALL EXCAVATIONS AND BACKFILL OPERATIONS SHALL BE IN ACCORDANCE WITH THE LATEST OSHA EXCAVATION SAFETY STANDARDS, OSHA 2226 AND 29 CFR PART 1926 SUBPART P. THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN PREPARED BY AN ENGINEER REGISTERED IN THE STATE OF TEXAS. THE EXCAVATION PLAN SHALL INDICATE THE PROCEDURES TO BE USED BY THE CONTRACTOR TO COMPLY WITH THE OSHA REQUIREMENTS. THE EXCAVATION PLAN SHALL IDENTIFY THE "COMPETENT PERSON" AS REQUIRED BY PARAGRAPH 1926.651(k)(1) THAT WILL WORK WITH EACH CREW.
5. ALL SURFICIAL VEGETATION AND OTHER ORGANIC MATERIAL SHALL BE REMOVED BENEATH PROPOSED FOUNDATION, BUILDING AND PAVING AREAS PRIOR TO CONSTRUCTION. PILE IN A LOCATION ACCEPTABLE TO THE OWNER.
6. SELECT NON-EXPANSIVE FILL MATERIAL SHALL BE 3/4" PEAGRAVEL OR A COURSE GRAINED SAND WITH LESS THAN 40% PASSING THE #200 SEVE. OR CEMENT STABILIZED SAND FILL. PLACE MATERIAL IN 12" LOOSE LIFTS AND COMPACT WITH VIBRATORY HAND OPERATED COMPACTION EQUIPMENT.
7. SATISFACTORY FILL MATERIAL SHALL BE FREE OF ROOTS, ORGANIC MATERIALS, LARGE ROCKS OR OTHER DEBRIS. THE EXISTING SITE MATERIALS ARE SUITABLE FOR SATISFACTORY FILL MATERIAL. SATISFACTORY FILL MATERIAL SHALL NOT BE USED UNDER ANY FOUNDATION ELEMENTS OR USED FOR BACKFILL AGAINST ANY BELOW GRADE WALLS OR FOUNDATION GRADE BEAMS. SATISFACTORY FILL MATERIALS MAY BE USED FOR GENERAL SITE FILLING AWAY FROM ANY BUILDINGS OR STRUCTURES WHERE NOTED ON THE DRAWINGS OR AS APPROVED BY THE ENGINEER.
8. IF SEEPAGE OF GROUND WATER INTO EXCAVATIONS OCCURS, REFER TO THE EXCAVATION DEWATERING NOTES AND PROJECT SPECIFICATIONS FOR DEWATERING REQUIREMENTS.
9. STOCKPILE EXCAVATED MATERIALS SUITABLE FOR USE AS SATISFACTORY FILL MATERIAL AT A LOCATION APPROVED BY THE OWNER. PLACE, GRADE, AND SHAPE STOCKPILES FOR PROPER DRAINAGE. EXCESS EXCAVATION MATERIAL AND EXCAVATED MATERIAL UNSUITABLE FOR USE AS SATISFACTORY FILL MATERIAL SHALL BE DISPOSED OF AS DIRECTED BY THE OWNER.

EXCAVATION DEWATERING NOTES

1. AS THE CONDITIONS OF WORK MAY REQUIRE, PROVIDE AND MAINTAIN IN GOOD OPERATING CONDITION SUCH EQUIPMENT AS MAY BE REQUIRED TO PREVENT WATER FROM ENTERING ANY EXCAVATION. REFER TO THE PROJECT SPECIFICATIONS FOR DETAILED REQUIREMENTS.
2. COMPLETE BACKFILLING OPERATIONS PRIOR TO SUSPENDING DEWATERING OPERATIONS.
3. WATER REMOVED FROM EXCAVATIONS SHALL BE DISPOSED OF IN SUCH A MANNER AS TO PREVENT DAMAGE TO ADJACENT PROPERTY OR OTHER WORK UNDER CONSTRUCTION AND IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.
4. DAMAGE OF WHATEVER NATURE CAUSED BY DEWATERING OPERATIONS OR FAILURE TO DEWATER EXCAVATIONS PROPERLY SHALL BE REPAIRED OR REMEDIED BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER.



PUBLIC UTILITIES BOARD
1125 N. VILLA
BROWNSVILLE, TEXAS 77821
1-800-869-2922
Water and Wastewater
Engineering Department
561-843-4215
(361) 981-4220

Public Utilities Board
1425 Kohnwood Drive
Brownsville, Texas 77821
1-800-869-2922
Water and Wastewater
Engineering Department
561-843-4215
(361) 981-4220



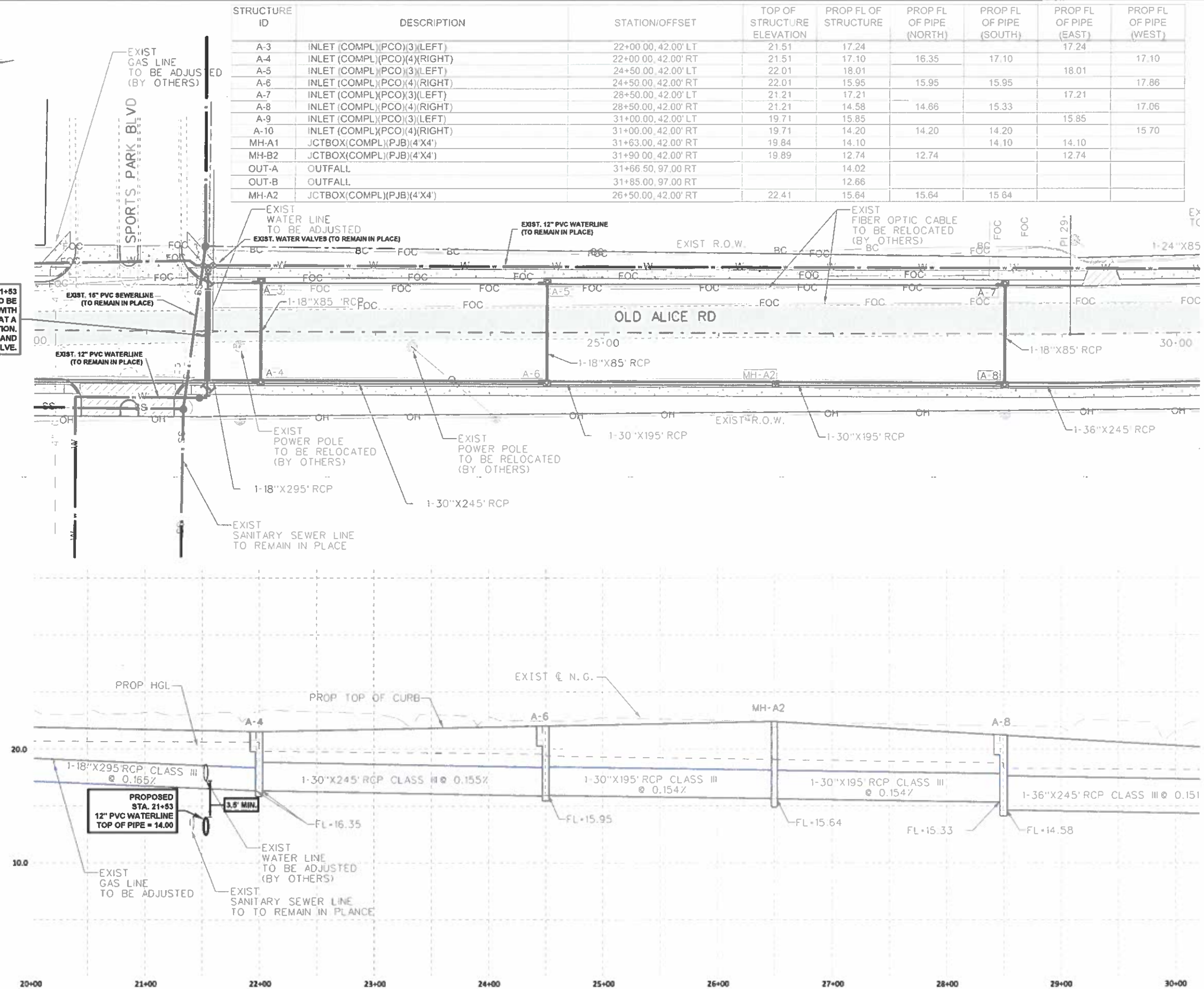
OLD ALICE RD.
EXISTING WATERLINE RELOCATION
PROJECT

STRUCTURAL NOTES

Date: January 2025
Scale:
Designed: Luis Martinez
Drawn: Luis Martinez
Approved: Ben Asanah, PE, Outside Brownsville, TX
Approved: Maria Lopez, PE
Project #: 8003-25

BENCH MARK
S&B MONU-CP3
N=16534148.71
E=1308493.69
ELEV.=21.07
STA. 77+43.44
O/S. 80.04' LT

26"x12" REBAR w/
S&B PLASTIC CAP
SET IN CONCRETE



BROWNVILLE
PUBLIC UTILITIES BOARD

Public Utilities Board
1425 Robinson Drive
Brownsville, Texas 78521
1-800-469-2922
Water and Wastewater
Engineering Department
(361) 943-4215
FAX: (361) 943-4220

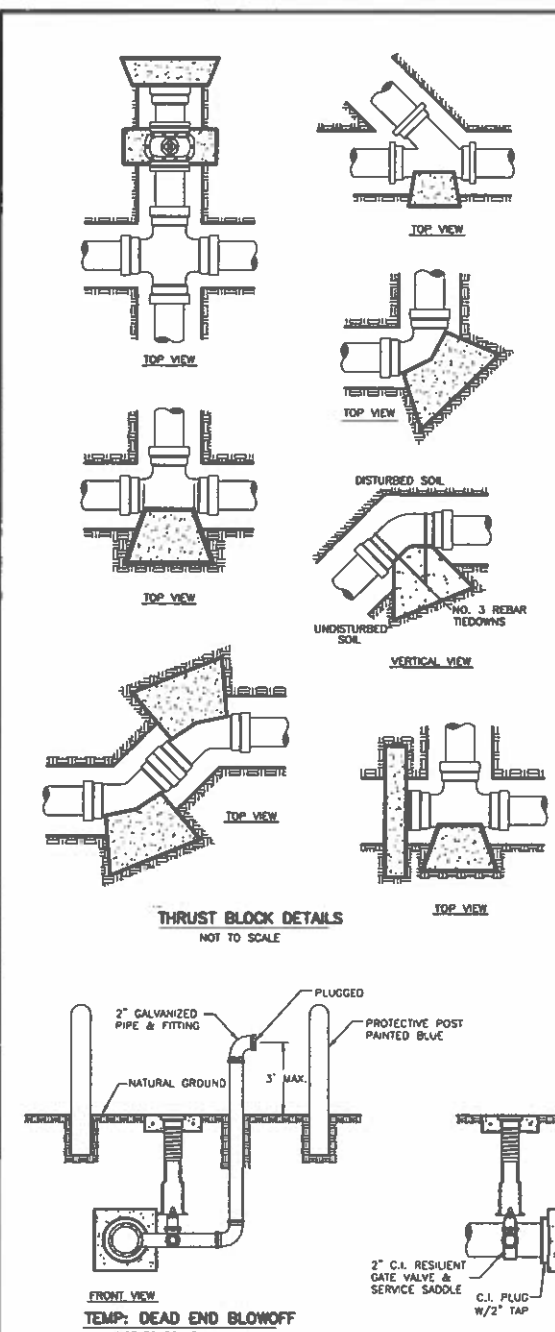
Maria C. Lora
Professional Engineer
No. 1111111111
State of Texas
Exp. 12/31/2025

OLD ALICE RD.
EXISTING WATERLINE RELOCATION PROJECT

Sta. 21+53
Existing 12" PVC Waterline Adjustment

Scale:	Date: January 2023
Designed:	Luis Martinez
Drawn:	Luis Martinez
Approved:	Ben Aranda, EIT, Daniel Benavides, EIT
Approved:	Maria Lora, PE
Project #:	8013-23

SHEET
4
OF 7

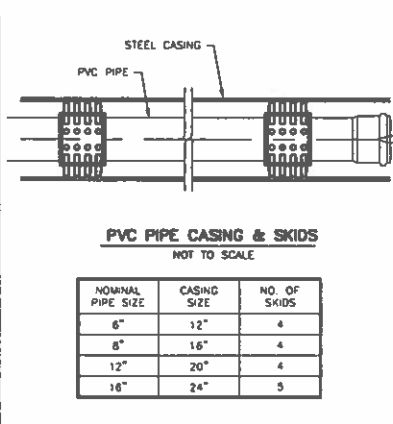


STEEL CASING WALL THICKNESS CHART

MINIMUM THICKNESS	DIAMETER OF CASING PIPE
1/4"	12" OR LESS
5/16"	OVER 12" - 18"
3/8"	OVER 18" - 22"
7/16"	OVER 22" - 28"
1/2"	OVER 28" - 34"
9/16"	OVER 34" - 42"
5/8"	OVER 42" - 48"

OVER 48" MUST BE APPROVED BY B.P.U.B.

NOTE: THIS CHART IS ONLY FOR SMOOTH STEEL CASING PIPES WITH MINIMUM YIELD STRENGTH OF 35,000 PSI



ALL WJ FITTINGS WILL REQUIRE RESTRAINERS (MEGA LUGS) WITH THRUST BLOCKS

NOTES ON THRUST BLOCKING:

1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED HAND DUG SOIL, AND SHALL BE CONCRETE HAVING A MINIMUM 28 DAY STRENGTH OF 2000 LBS. PER SQUARE INCH.
2. THRUST CALCULATIONS TO BE BASED ON THRUST DUE TO WATER PRESSURE AT 100% OF TEST PRESSURE. THRUST = 2 AP SIN 1/2θ WHERE A = AREA OF PIPE, P = WATER PRESSURE, θ = DEFLECTION ANGLE.
3. VERTICAL UPLIFT BLOCKS SHALL BE DESIGNED ON THE BASIS OF 150 LBS. PER CU. FT. FOR CONCRETE AND SOIL AT 120 LBS. PER FT. OVER THE AREAF BLOCK.
4. VERTICAL DOWN THRUST BLOCKS SHALL BE DESIGNED ON THE BASIS OF 2000 LBS. PER SQ. FT. ALLOWABLE SOIL BEARING PRESSURE. DIMENSION MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO ALLOWABLE BEARING VALUE.
5. THRUST BLOCKS ON HORIZONTAL BENDS, TEES, CROSSES, AND REDUCERS SHALL BE SIZED BASED ON 24000 LBS. PER SQ. FT. OF BLOCKING SURFACE AREA IN CONTACT WITH UNDISTURBED SOIL. BLOCK DIMENSIONS MAY BE DECREASED WITH APPROVAL OF THE ENGINEER IF MEASURED SOIL CONDITIONS PERMIT. IN POOR SOIL CONDITIONS, BLOCK DIMENSIONS SHALL BE INCREASED IN PROPORTION TO THE ALLOWABLE BEARING VALUE.
6. ALL BLOCKING SHALL HAVE A MINIMUM SOIL COVER OF 1 FT.
7. ADDITIONAL REINFORCING MAY BE REQUIRED FOR HORIZONTAL BLOCKING TO HANDLE UNUSUAL SHEAR LOADING CONDITIONS.

GENERAL DATA FOR BLOCKING STANDARD FITTING

PIPE SIZE	FLUG	TEE	90° BEND	45° BEND	22-1/2° BEND	1/4" BEND
6"	0.83	0.63	3.88	3.48	0.25	0.12
8"	1.40	1.40	2.00	1.08	0.55	0.28
10"	2.50	2.50	3.55	1.92	0.96	0.48
12"	3.93	3.93	5.65	3.00	1.63	0.77
14"	5.85	5.65	8.00	4.33	2.21	1.11
16"	7.70	7.70	10.88	5.88	3.00	1.51
18"	10.65	10.02	14.21	7.68	3.85	1.97
20"	12.70	12.70	17.99	9.74	4.96	2.49
22"	15.71	15.71	22.22	12.02	6.13	3.08
24"	22.67	22.67	32.00	17.31	8.83	4.43
27"	28.63	28.63	40.48	21.91	11.17	5.61
30"	36.35	36.35	50.00	27.08	13.79	6.93
36"	50.90	50.90	72.98	38.95	19.99	9.95
42"	69.27	69.27	97.97	53.03	27.33	13.58
48"	90.48	90.48	127.98	69.25	35.30	17.74
54"	114.51	114.51	161.94	87.64	44.58	22.45

WATER MAIN - SANITARY SEWER CROSSINGS

PRIMARY CONDITION	PROPOSED WATER EXISTING SANITARY SEWER		PROPOSED WATER EXISTING WATER PROPOSED SANITARY SEWER	
	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER	WATER OVER SANITARY SEWER	WATER UNDER SANITARY SEWER
IF THE CLEARANCE IS	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'	LESS THAN 2'	GREATER THAN 2' BUT LESS THAN 9'
*PROTECTION REQUIREMENT	1	2	3	4

*PROTECTION REQUIREMENTS FOR SANITARY SEWER CROSSINGS (UNLESS VARIANCE IS GRANTED BY THE TCEQ)

1. CENTER ONE (1) 20-FOOT JOINT OF C-900 PVC DR18, CLASS 150, WATERLINE PIPE OVER SANITARY SEWER; 6-INCH ABSOLUTE MINIMUM CLEARANCE.
2. IF NO EVIDENCE OF SANITARY SEWER LEAKAGE, CENTER ONE JOINT OF WATER LINE OVER SANITARY SEWER; 24-INCH ABSOLUTE MINIMUM CLEARANCE. IF THE SEWER LINE IS LEAKING, THE SEWER LINE SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.
3. SEWER LINE SHALL BE ENCASED. THE CASING PIPE SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE PIPE CLASS PIPE, AT LEAST 18 FEET LONG, SEALED IN BOTH ENDS WITH CEMENT GROUT OR A MANUFACTURED SEAL AT LEAST 2 NOMINAL SIZES LARGER THAN THE WASTEWATER COLLECTION PIPE. AN ABSOLUTE MINIMUM SEPARATION OF ONE FOOT BETWEEN WATER LINE AND ENCASING PIPE, OR WATER LINE SHALL BE CONSTRUCTED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATER LINE AND WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED.
4. AUGER 9-FEET MINIMUM EACH SIDE OF SANITARY SEWER. PLACE ONE 20-FOOT JOINT OF C900 PVC, 150 PSI, CENTERED UNDER SANITARY SEWER. FILL BORED HOLE WITH BENTONITE/CLAY MIXTURE. 2-FOOT ABSOLUTE MINIMUM CLEARANCE OR REPLACE THE EXISTING SANITARY SEWER WITH 150 PSI LINED DUCTILE IRON OR PVC PIPE WITH APPROPRIATE ADAPTERS ON ALL PORTIONS OF THE SANITARY WITHIN 9-FEET OF THE WATER MAIN.
5. WHERE A NEW POTABLE WATER LINE CROSSES A NEW, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATER LINE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTE WATER LINE SUCH THAT THE JOINTS OF THE WATERLINE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATER LINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

IF CLEARANCE IS BETWEEN 2 TO 9- FEET
A. CENTER A MINIMUM 18-FOOT JOINT OF 150 PSI LINED DUCTILE IRON OR PVC PIPE AT WATER LINE.
B. CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE. BASED ON LOOSE DRY WEIGHT VOLUME NOT LESS THAN 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE. THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BRIDGELORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

