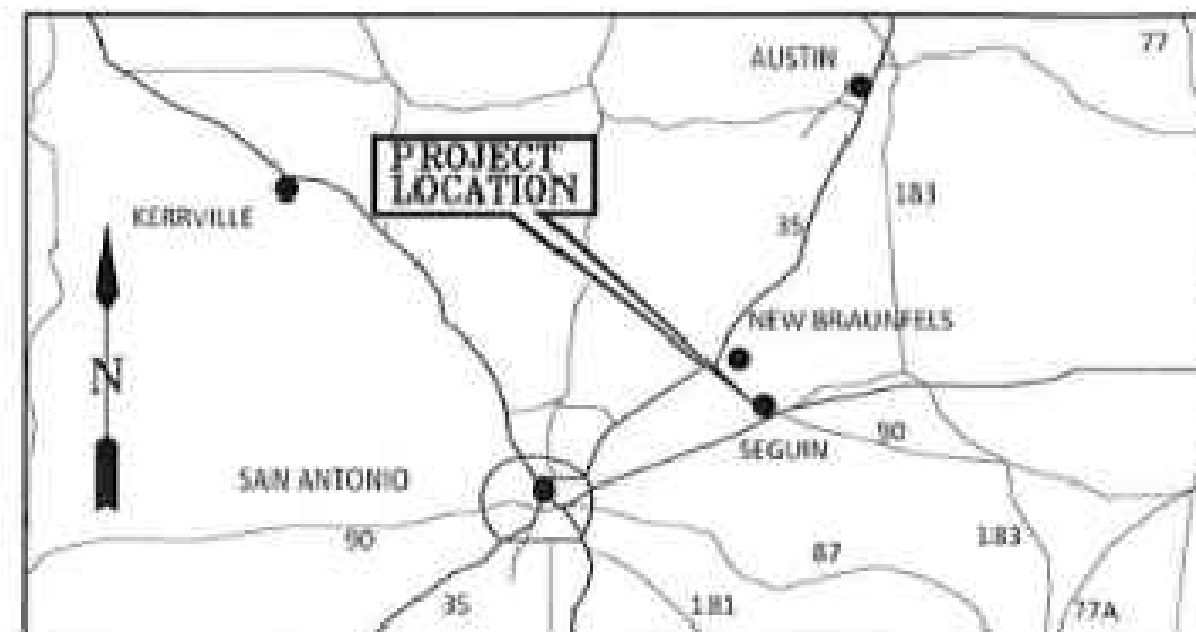


CITY OF SEGUIN, TEXAS

24" WATER TRANSMISSION MAIN

(VETTER BOOSTER STATION TO SH 123 TANK)

CONFORMED SET



VICINITY MAP
NTS

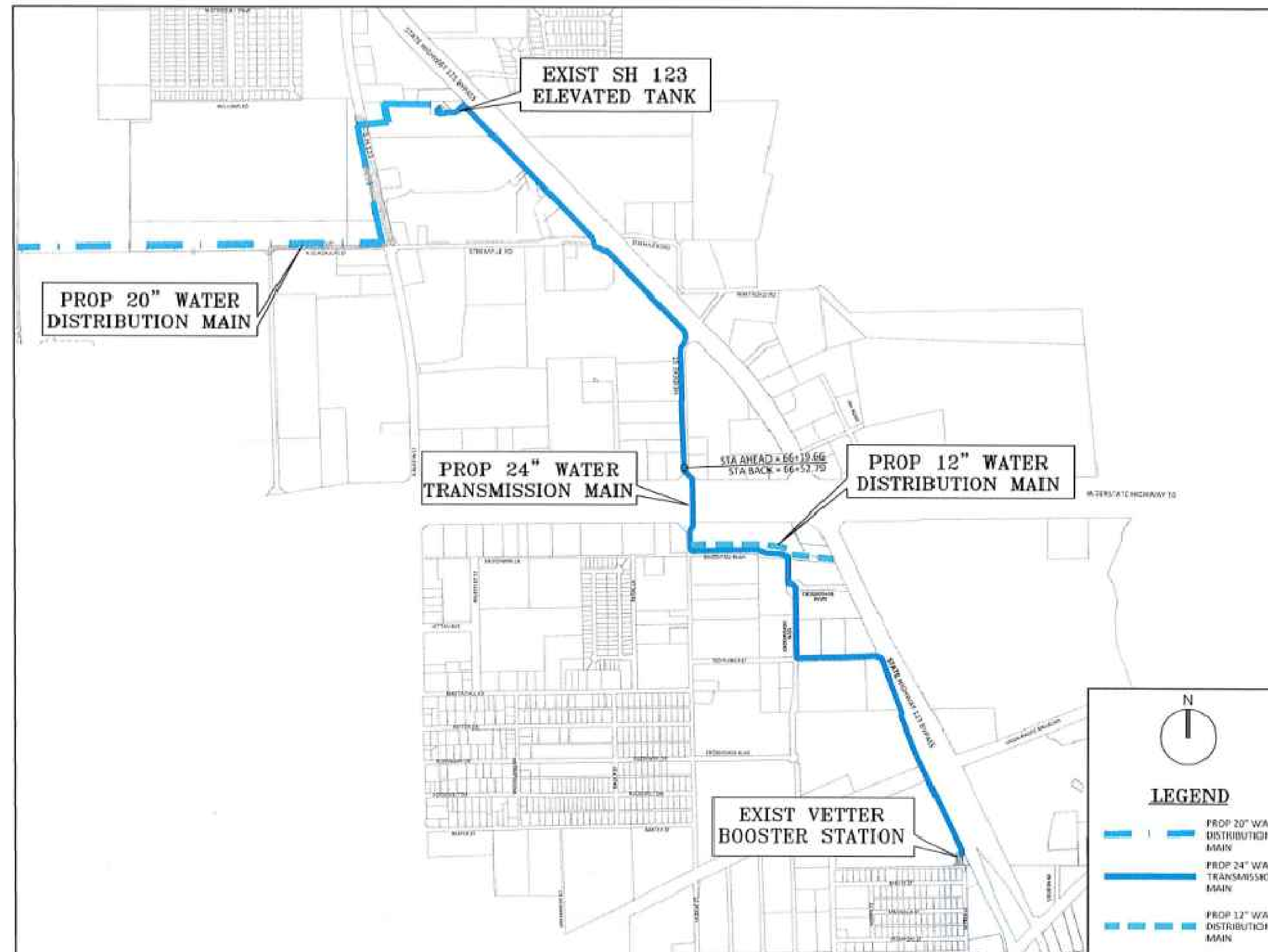
CITY COUNCIL
DONNA DODGEN, MAYOR
MONICA CARTER, MAYOR PRO-TEM

JASON BIESENBACH
PAUL GAYTAN
BILL KELLER
JIM LIEVENS
SONIA MENDEZ
CHRIS RANGEL
JOE REA

CITY MANAGER
STEVE PARKER

DEPUTY CITY MANAGER
RICK CORTES

DIRECTOR OF WATER/WASTEWATER
TIM HOWE



LOCATION MAP
NTS

SUBMITTED FOR APPROVAL BY:

Philip M. Mullan
PHILIP M. MULLAN, P.E.
SEGUIN OFFICE
TRC ENGINEERS, INC.

APPROVED FOR CONSTRUCTION BY:

Tim Howe
TIM HOWE
DIRECTOR OF WATER / WASTEWATER
CITY OF SEGUIN



It's real.



TRC PROJECT NUMBER: 475169

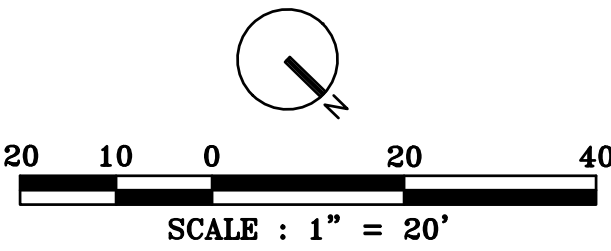
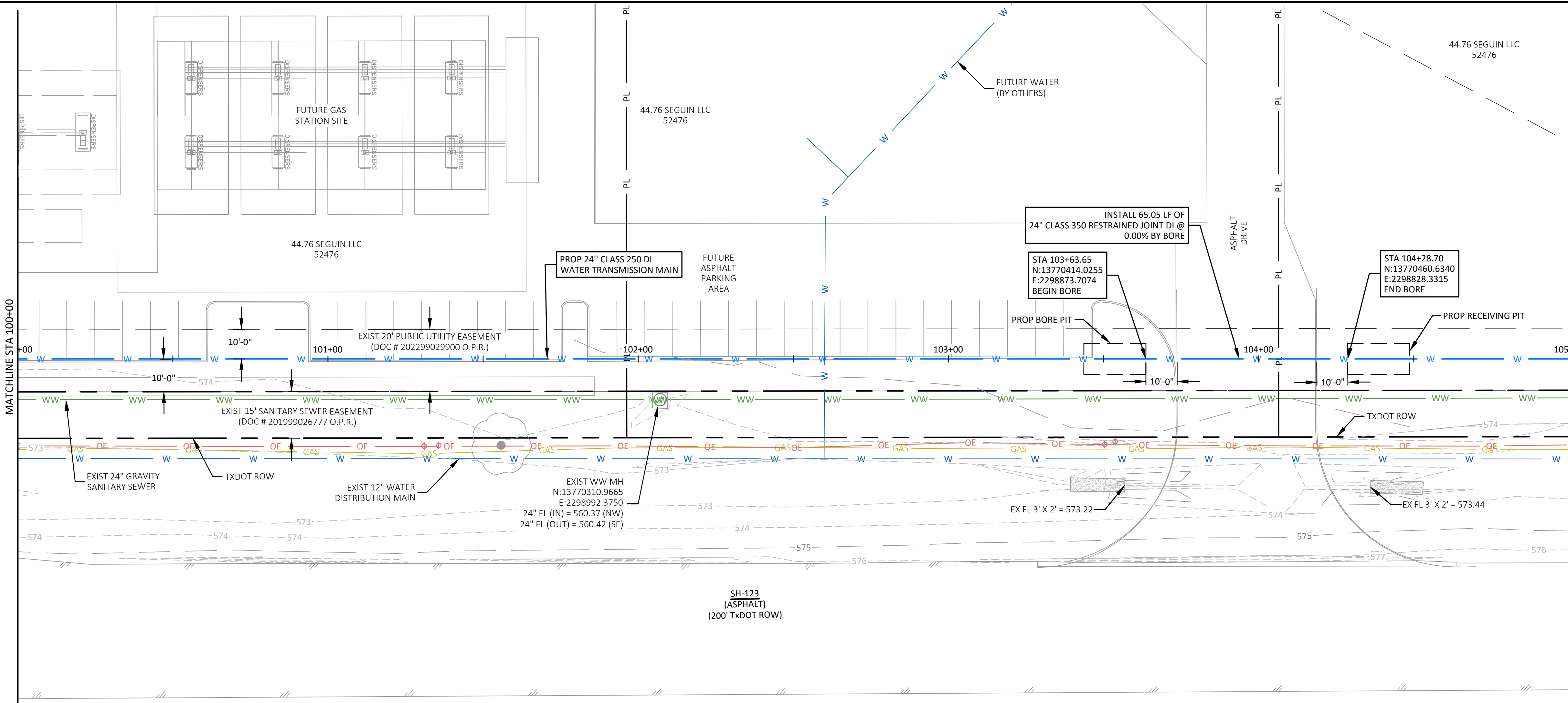


MARCH 2024

C:\PWORKING-TRC\DM589282\GENERAL CONSTRUCTION NOTES.DWG - 4/30/24

GENERAL NOTES		D. SITE GRADING NOTES		G. SITE SPECIFIC NOTES (CONT.)		I. DETOURS, BARRICADES, WARNING SIGNS, ETC. (CONT.)	
1. BLASTING IS NOT PERMITTED ON THIS PROJECT.		1. THE CONTRACTOR SHALL CONTROL DUST CAUSED BY THE WORK AND COMPLY WITH POLLUTION CONTROL REGULATIONS OF GOVERNING AUTHORITIES. ALLOW AT LEAST FOUR TIMES PER DAY WHEN NEEDED.		11. CONTRACTOR SHALL PROVIDE DUST ABATEMENT AS DIRECTED BY OWNER. NO SEPARATE PAY. THIS SHALL INCLUDE ALL MATERIALS, LABOR AND EQUIPMENT FOR TRANSPORTING, GATHERING, ETC. OF WATER. WATER AT LEAST FOUR TIMES PER DAY WHEN NEEDED, REGARDLESS IF WORK IS TAKING PLACE OR NOT.		13. CONTRACTOR SHALL OPEN NO MORE TRENCH THAN CAN BE COVERED AND TEMPORARILY SURFACED IN A SINGLE DAY. ALL TRENCH SHALL BE BACKFILLED AND RETURNED TO DRIVABLE SURFACE AT THE END OF EACH WORK DAY.	
2. ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.		2. EXCESS EXCAVATED MATERIAL SHALL BE STOCKPILED IN STAGING AREA. 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.		12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING A STAGING AREA FOR EQUIPMENT, MATERIALS, ETC. STAGING WITHIN THE EXISTING R.O.W. IS ALLOWED CONTINGENT UPON IT DOES NOT IMPEDE OR INTERFERE WITH EMERGENCY SERVICES, MAIL DELIVERY, OR ACCESS FOR RESIDENTS DURING NON WORKING HOURS.		J. SANITARY FACILITIES	
3. 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.		3. THE FINISHED GRADE ELEVATIONS SHOWN ARE INTENDED TO PROVIDE DRAINAGE AWAY FROM STRUCTURES. MINOR FIELD CHANGES MAY BE NECESSARY TO PROVIDE ADEQUATE DRAINAGE. GRADE UNIFORMLY BETWEEN ELEVATIONS SHOWN TO PROVIDE DRAINAGE.		13. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND ENGINEER AND HIS EMPLOYEES, PARTNERS, OFFICERS, DIRECTORS, OR CONSULTANTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.		1. THE CONTRACTOR SHALL PROVIDE SUFFICIENT CHEMICAL TOILET FACILITIES FOR THE USE OF HIS FORCES. ADEQUACY OF THESE FACILITIES WILL BE SUBJECT TO THE APPROVAL OF THE ENGINEER & MAINTENANCE OF SAME MUST BE SATISFACTORY TO THE ENGINEER AT ALL TIMES. CONTRACTOR SHALL PROVIDE A MAINTENANCE SCHEDULE TO THE OWNER FOR APPROVAL.	
4. THE TRENCH EXCAVATION AND SHORING SAFETY SYSTEM, AS OUTLINED IN THE TECHNICAL SPECIFICATIONS, WILL BE REQUIRED AS A MINIMUM TRENCH SAFETY MEASURE.		4. ADJUST MANHOLE COVERS, VALVE BOXES, ELECTRICAL MANHOLES, ETC. TO MATCH PROPOSED FINISHED GRADE. <u>NO SEPARATE PAY.</u>		14. CONTRACTOR TO CONTACT THE ENGINEER FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY THE OWNER <u>IN WRITING</u> .		K. SAFETY FENCE NOTES	
5. A PRE-CONSTRUCTION CONFERENCE IS TO BE HELD PRIOR TO BEGINNING CONSTRUCTION. THIS CONFERENCE SHALL TAKE PLACE AT A LOCATION SELECTED BY OWNER & ENGINEER. CONTRACTOR TO ARRANGE A MEETING DATE WITH THE OWNER AT LEAST SEVEN DAYS PRIOR TO THE MEETING TIME.		E. PAVING NOTES		15. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.		1. SAFETY FENCE SHALL BE USED TO PROTECT ALL EXCAVATIONS AND TO SEPARATE CONSTRUCTION ACTIVITIES FROM PEDESTRIAN/NON-CONSTRUCTION ACTIVITIES DURING THE ENTIRE CONSTRUCTION PERIOD.	
6. CONTRACTOR SHALL NOTIFY THE OWNER, OWNER'S REPRESENTATIVE, AND TCEQ BY TELEPHONE A MINIMUM OF 48 HOURS IN ADVANCE OF CONSTRUCTION STARTUP, FOLLOWED BY A LETTER OF CONFIRMATION.		1. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALK DAMAGED OR REMOVED BY THE CONTRACTOR ARE TO BE REPAIRED BY THE CONTRACTOR TO AT LEAST THE PREEXISTING CONDITION AT HIS EXPENSE BEFORE ACCEPTANCE OF THE WORK.		16. OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE. WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRICAL LINE, THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN. <u>NO SEPARATE PAY.</u>		2. ALL SAFETY FENCING SHALL BE PLASTIC, 4'-0" MINIMUM HEIGHT AND ORANGE IN COLOR.	
7. CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN ONLY BE ISSUED TO CONTRACTOR ARE TO BE OBTAINED AT THE CONTRACTOR'S EXPENSE.		2. TRAFFIC CONTROLS DURING CONSTRUCTION TO BE CONTRACTOR'S RESPONSIBILITY AND INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. <u>NO SEPARATE PAY.</u>		17. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES. THE CONTRACTOR'S IMPLEMENTATION OF THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLIES WITH A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.		3. SAFETY FENCE USED WITHIN THE ROADWAY SHALL BE REFLECTORIZED WITH A MINIMUM OF TWO (2) STRIPS OF RETROREFLECTIVE MATERIAL, A MINIMUM OF 1'-0" WIDE THE LENGTH OF THE FENCE OR DELINEATED BY CHANNELIZING DEVICES.	
8. CONTRACTOR SHALL 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.		3. REPLACE EXISTING ROADWAY THAT IS CUT BY PIPE TRENCHES WITH SIMILAR ROADWAY.		18. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192 (8), GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.		4. SAFETY FENCE USED TO SEPARATE SIDEWALKS FROM CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM ENCRoACHMENT TO THE SIDEWALK.	
9. CONTRACTOR SHALL 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 AT LEAST THE PRE-EXISTING CONDITION AT NO ADDITIONAL COST TO OWNER.		4. MAINTAIN ALL MANHOLE FRAMES AND COVERS TO BELOW PAVEMENT SUBGRADE ELEVATION UNTIL PLACEMENT OF PAVEMENT BASE HAS BEEN COMPLETED. RAISE MANHOLE FRAMES AND COVERS TO FINISH PAVEMENT GRADES WHEN BASE IS COMPLETE.		19. ALL WORK WITHIN TXDOT R.O.W. MUST BE IN ACCORDANCE WITH TXDOT REQUIREMENTS. <u>NO SEPARATE PAY.</u>		5. FENCE MATERIAL SHALL BE SUPPORTED FROM 1/4" DIA. NYLON ROPE FROM POSTS SPACED ON MAXIMUM 8 FT. CENTERS. POSTS SHALL EXTEND 4'-0" ABOVE NATURAL GROUND. FENCE MATERIAL SHALL BE SECURED TO POSTS W/ PLASTIC WIRE TIES, MINIMUM 3 PER POST.	
10. 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.		5. CONTRACTOR SHALL COORDINATE ALL ROAD CLOSURES WITH OWNER. THE CONTRACTOR SHALL PROVIDE THE OWNER A MINIMUM 7-DAY ADVANCE NOTICE.		20. THE CONTRACTOR WILL OWN THE PROJECT UNTIL ACCEPTANCE BY THE OWNER. HE SHALL ARRANGE AND PURCHASE INSURANCE FOR FLOOD OR ANY OTHER DAMAGES TO HIS WORK DURING CONSTRUCTION.		6. POSTS SHALL INCLUDE SUPPORT BRACES SUFFICIENT TO HANDLE ALL LOADS.	
11. WHEN UNLOCATED OR INCORRECTLY LOCATED UNDERGROUND PIPING OR A BREAK IN A LINE OR OTHER UTILITIES AND SERVICES ARE ENCOUNTERED DURING SITE WORK OPERATIONS, THE CONTRACTOR SHALL NOTIFY THE APPLICABLE UTILITY COMPANY IMMEDIATELY TO OBTAIN PROCEDURE DIRECTIONS. THE CONTRACTOR SHALL COOPERATE WITH THE APPLICABLE UTILITY COMPANY IN MAINTAINING ACTIVE SERVICES IN OPERATION.		6. CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLES (TO INCLUDE TELEPHONE, SANITARY SEWER, OR OTHER), VALVE COVERS (TO INCLUDE GAS OR OTHER) TO MEET THE GRADE OF THE FINISHED ASPHALT (REF. SPECS). <u>NO SEPARATE PAY.</u>		21. POWER POLES TO BE BRACED AT CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY/COORDINATE WITH THE APPROPRIATE UTILITY COMPANY.		7. PAYMENT FOR SECURITY FENCE SHALL BE CONSIDERED INCIDENTAL WORK (LABOR, MATERIALS, EQUIPMENT, ETC.) <u>NO SEPARATE PAY.</u>	
12. THE CONTRACTOR SHALL MAINTAIN ACCESS TO PUBLIC AND PRIVATE FACILITIES DURING CONSTRUCTION. CONSTRUCTION ACTIVITIES TO BE COORDINATED WITH THE OWNER.		7. FOR ALL CONCRETE/ASPHALT DRIVES, THE CONTRACTOR SHALL MATCH THE PROPOSED TOP OF ASPHALT TO THE TOP OF THE EXISTING DRIVES, WITHOUT ALTERING EXISTING DRAINAGE PATTERNS OR CAUSING AREAS OF PONDING WATER. <u>NO SEPARATE PAY.</u>		22. REMOVE AND REPLACE EXISTING FENCES AS NECESSARY. THE REQUIRED REMOVAL OF ANY TREES, SHRUBS, OR SMALL STRUCTURES SHALL BE SUBSIDIARY TO THE TOTAL COST OF THE PROJECT. TEMPORARY FENCING SHALL BE PROVIDED BY THE CONTRACTOR, AS REQUIRED. <u>NO SEPARATE PAY.</u>		L. COLORED LINES FOR UTILITIES	
13. THE CONTRACTOR SHALL COORDINATE INTERRUPTIONS OF ALL UTILITIES AND SERVICES WITH APPLICABLE UTILITY COMPANY OR COMPANIES. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY COMPANY OR AGENCY INVOLVED.		8. ALL DECORATIVE DRIVEWAYS INCLUDING BUT NOT LIMITED TO PEBBLE SURFACE, BRICK OUT LAYING, ETC. SHALL BE RETURNED TO THEIR ORIGINAL CONDITION. PAYMENT SHALL BE PER THE UNIT PRICE IN THE DRIVEWAY BID ITEM.		23. CONTRACTOR SHALL PROVIDE PRECONSTRUCTION VIDEO/PHOTOS PRIOR TO CONSTRUCTION.		1. THE ORIGINAL PLANS FOR THIS PROJECT HAVE COLORED LINES FOR CERTAIN UTILITIES (GREEN FOR SEWER, BLUE FOR WATER, ETC.) IF THE PLANS ARE PLOTTED BLACK AND WHITE, THE COLORED LINES MAY APPEAR TO BE "FADED OUT" SUCH THAT THE LINES FOR PROPOSED UTILITIES WOULD NOT APPEAR AS DARK OR BOLD LINES. FOR THIS OCCURRENCE THE CONTRACTOR SHALL REFERENCE THE ELECTRONIC DRAWING FILES THAT SHOW THE COLORED LINES.	
14. THE CONTRACTOR SHALL LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, AND CONTROL POINTS. RE-ESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED PUBLIC SURVEYOR IN THE STATE OF TEXAS AT NO ADDITIONAL COST TO OWNER.		9. CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.		24. THERE SHOULD BE AN ASSIGNED 24-HOUR COMPETENT PERSON ON CALL FOR THE OCCURRENCE OF RAIN EVENTS.		M. WATER IMPROVEMENT NOTES	
15. EXISTING PAVING, BUILDINGS, AND OTHER ITEMS SHOWN ON PLANS NOT SPECIFICALLY RELATED TO THE WORK OF THE CONTRACTOR IS FOR INFORMATION ONLY.		F. EROSION/SEDIMENTATION & TREE PROTECTION NOTES		25. A MINIMUM OF 48-HOURS NOTICE SHALL BE GIVEN BY THE CONTRACTOR FOR ANY DISRUPTION TO PRIVATE SERVICE.		1. PROPOSED WATER DISTRIBUTION MAINS AND LATERALS SHALL BE C-900 DR 18 PVC PIPE UNLESS OTHERWISE NOTED IN PLANS.	
16. DEMOLITION PERMITS (IF NEEDED) ARE TO BE OBTAINED BY THE CONTRACTOR.		1. THE CONTRACTOR TO INSTALL AND MAINTAIN EROSION/SEDIMENTATION CONTROLS AND TREE/NATURAL AREA PROTECTIVE FENCING PRIOR TO ANY SITE PREPARATION WORK (CLEARING, GRUBBING, GRADING, OR EXCAVATION). CONTRACTOR TO REMOVE EROSION/SEDIMENTATION CONTROLS AT THE COMPLETION OF PROJECT AND GRASS RESTORATION.		26. ALL FITTINGS FOR THE WATER MAIN SHALL BE RESTRAINED, EQUAL TO MEGA-LUG OR ENGINEER APPROVED EQUAL.		2. PROPOSED WATER TRANSMISSION MAIN SHALL BE POLYETHYLENE ENCASED CLASS 250 DI PIPE UNLESS OTHERWISE NOTED IN PLANS.	
17. EXISTING SURFACE AND SUBSURFACE STRUCTURES (GAS MAINS, WATER MAINS, STORM SEWERS, TELEPHONE CABLES, ETC.) ARE SHOWN ON THE PLANS IF THEIR LOCATION HAS BEEN DETERMINED, BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID DAMAGING THESE EXISTING STRUCTURES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO SHOW ANY OR ALL OF THESE STRUCTURES ON THE PLANS OR TO SHOW THEM IN THEIR EXACT LOCATION. IF ANY STRUCTURE IS DAMAGED BY THE CONTRACTOR, IT SHALL BE HIS RESPONSIBILITY TO REPAIR THE DAMAGE AT HIS OWN EXPENSE AND RESTORE THE STRUCTURE TO ITS ORIGINAL CONDITION.		2. THE PLACEMENT OF EROSION/SEDIMENTATION CONTROLS TO BE IN ACCORDANCE WITH THE PROPOSED SWPPP. DEVIATIONS FROM THE PLAN MUST BE SUBMITTED TO AND APPROVED BY THE OWNER.		H. CONCRETE CONSTRUCTION NOTES		3. ALL PIPE FITTING SHALL HAVE CONCRETE THRUST BLOCKING (SEE SHEET 51).	
18. THE ORIGINAL PLANS FOR THIS PROJECT WERE PREPARED ON FULL SIZE STANDARD SHEETS (24-INCHES X 36-INCHES). THE SPECIFIC SCALE FOR THE INDIVIDUAL UNITS WOULD BE TRUE ONLY ON THE ORIGINAL TRACING. REPRODUCED COPIES, REDUCTIONS OR OTHER METHODS OF PRINTING MAY CHANGE OR ALTER THE SCALE. THE ENGINEER IS NOT RESPONSIBLE FOR SCALE DIMENSIONS UTILIZED BY OTHERS ON THESE PLANS.		3. EROSION AND SEDIMENTATION CONTROLS TO BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILDUP WITHIN TREE DRIPLINES.		1. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI AND SHALL CONTAIN SIX (6) SACKS OF CEMENT PER CUBIC YARD OF CONCRETE (UNLESS OTHERWISE SHOWN). SEE SPECIFICATIONS FOR CONCRETE PAVEMENT COMPRESSIVE STRENGTH.		4. THE CONTRACTOR SHALL OPERATE ALL EXISTING WATER MAIN VALVES FOR ISOLATION PURPOSES. THE CONTRACTOR SHALL PROVIDE THE OWNER A MINIMUM 7-DAY ADVANCE NOTICE PRIOR TO START OF CONSTRUCTION ON ANY WATER FACILITY IN THIS PROJECT. CONTRACTOR SHALL ASSIST OWNER FOR ALL OPERATIONS AND SHUTDOWNS OF EXISTING VALVES. NO SEPARATE PAY.	
19. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS, ELEVATIONS AND DIMENSIONS OF ADJACENT AND/OR CONFLICTING UTILITIES IN ADVANCE OF CONSTRUCTION IN ORDER THAT ADJUSTMENTS CAN BE MADE TO PROVIDE ADEQUATE CLEARANCES, IF REQUIRED. THE CONTRACTOR SHALL PRESERVE AND PROTECT PUBLIC UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO UTILITIES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED AT HIS EXPENSE. THE ENGINEER SHALL BE NOTIFIED WHEN PROPOSED FACILITY GRADES CONFLICT WITH EXISTING UTILITY GRADES.		4. TO AVOID SOIL COMPACTION, NO VEHICULAR TRAFFIC, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS IS ALLOWED IN THE TREE DRIPLINE AREAS.		2. ALL REINFORCING BARS SHALL CONFORM TO ASTM A-615/A 615M, GRADE 60.		5. PIPELINE SHALL BE INSTALLED WITH A MINIMUM 42 INCHES OF COVER.	
20. ALL CONCEPTS, IDEAS, DESIGNS, ARRANGEMENTS, AND PLANS INDICATED OR REPRESENTED BY THESE INSTRUMENTS, AS OUTLINED ON THE TITLE SHEET INDEX, AND BY ANY ADDENDUM ARE OWNED BY AND ARE THE PROPERTY OF TRC ENGINEERS, INC. AND WERE CREATED AND DEVELOPED FOR THE USE ON AND IN CONNECTION WITH THE SPECIFIED PROJECT. THESE CONCEPTS, IDEAS, DESIGNS ARRANGEMENTS OR PLANS SHALL NOT BE USED BY ANY PERSON, FIRM OR CORPORATION FOR ANY PURPOSE WHATSOEVER WITHOUT THE WRITTEN PERMISSION AND CONSENT OF TRC ENGINEERS, INC. OF SEGUIN, TEXAS.		5. TREES SCHEDULED TO BE REMOVED SHALL BE DONE SO IN A MANNER WHICH DOES NOT IMPACT TREES TO BE PRESERVED.		3. ALL CONCRETE AND REINFORCING STEEL SHALL CONFORM TO CURRENT A.C.I. CODE.		6. AS CONSTRUCTION ACTIVITIES APPROACH AN EXISTING UTILITY LINE, THE CONTRACTOR SHALL LOCATE THE LINE, DETERMINE ITS EXACT ELEVATION, AND MAKE GRADE ADJUSTMENTS BY DEFLECTING THE PIPELINE FITTINGS. THE MINIMUM COVER OVER THE PROPOSED WATER LINE SHALL NOT BE LESS THAN 42 INCHES. MAXIMUM FITTING DEFLECTION SHALL BE PER MANUFACTURER'S WRITTEN INSTRUCTIONS. NO SEPARATE PAY.	
B. GENERAL ENVIRONMENTAL NOTES		6. INTENTIONAL RELEASE OF VEHICLE OR EQUIPMENT FLUIDS ONTO THE GROUND IS NOT ALLOWED. CONTAMINATED SOIL RESULTING FROM ACCIDENTAL SPILL TO BE REMOVED AND DISPOSED OF PROPERLY.		4. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED, UNLESS OTHERWISE NOTED. WALL FORMING AND CONCRETE PLACEMENT PLAN, TO ALLOW FOR VERTICAL CONSTRUCTION JOINTS, SHALL BE PREPARED AND SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL VERTICAL CONSTRUCTION JOINTS TO INCLUDE STANDARD KEYWAY AND WATERSTOP.		7. WHERE THE EXISTING SANITARY SEWER IS SHOWN, THE LOCATION IS APPROXIMATE ONLY. THE PROPOSED WATER MAIN SHALL BE INSTALLED A MIN. OF 9 FEET (HORIZONTAL DISTANCE FROM THE OUTSIDE TO OUTSIDE OF THE PIPE) FROM THE EXISTING SANITARY SEWER LINE.	
1. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS REGARDING EXCESS AND WASTE MATERIAL, INCLUDING METHODS OF HANDLING AND DISPOSAL.		7. TREES GREATER THAN 6" Ø SHALL REMAIN, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL CONDUCT THE NECESSARY PRECAUTIONS TO PRESERVE THE INTEGRITY OF THE TREES. TREES TO REMAIN SHALL BE FLAGGED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.		I. DETOURS, BARRICADES, WARNING SIGNS, ETC.		8. CONTRACTOR SHALL BACKFILL VOID FROM WATER MAINS, VALVES, FIRE HYDRANTS, ETC. REMOVAL WITH COMPATIBLE SOIL MATERIALS. THIS MATERIAL SHALL BE FREE OF BRUSH, DEBRIS, AND TRASH, ROCKS, OR STONES HAVING A DIMENSION LARGER THAN 6 INCHES AT THE LARGEST DIMENSION SHALL BE SIFTED OUT AND REMOVED BEFORE THE MATERIAL IS USED FOR BACKFILL. BACKFILL MATERIAL SHALL BE PLACED IN MAXIMUM 12 INCH LOOSE LIFTS. DENSITY TESTING ON 12 INCH LIFTS MAY BE REQUIRED AT THE DIRECTION OF THE CITY.	
2. CONTRACTOR SHALL LOCATE MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.		8. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH (1") IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.		1. A CERTIFIED FLAGGER (REQUIRED WITHIN UPRR R.O.W.) SHALL BE STATIONED WHERE ANY EQUIPMENT IS WORKING ON THE ROAD OR WHERE ANY OTHER HAZARDS DUE TO CONSTRUCTION OPERATIONS EXIST OR AS DIRECTED BY THE ENGINEER.		9. ALL EXISTING SERVICE CONNECTIONS (WATER, SEWER, GAS, ETC.) NOT SHOWN FOR CLARITY.	
3. FUEL STORAGE IS NOT ALLOWED ON THIS PROJECT.		G. SITE SPECIFIC NOTES		2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES THROUGHOUT ALL PHASES OF CONSTRUCTION. ADEQUACY OF ACCESS WILL BE AT THE DISCRETION OF THE ENGINEER. SAFE ENTRANCE AND EXIT TO ALL DRIVEWAYS SHALL BE PROVIDED WITH A MINIMUM OF INCONVENIENCE.		10. EXISTING SURFACE AND SUBSURFACE STRUCTURES (GAS MAINS, WATER MAINS, STORM SEWERS, TELEPHONE CABLES, ETC.) ARE SHOWN ON THE PLANS IF THEIR LOCATION HAS BEEN DETERMINED, BUT IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO AVOID DAMAGING THESE EXISTING STRUCTURES WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR FAILURE TO THEM IN THEIR EXACT LOCATION. IF ANY STRUCTURE IS DAMAGED BY THE CONTRACTOR IT SHALL BE HIS RESPONSIBILITY TO REPAIR THE DAMAGE AT HIS OWN EXPENSE AND RESTORE THE STRUCTURE TO ITS FUNCTIONAL USE AND ORIGINAL CONDITION.	
4. THE CONTRACTOR SHALL REPORT ANY FUEL OR TOXIC MATERIAL SPILLS TO THE APPROPRIATE STATE OR FEDERAL AGENCY, AS WELL AS THE LOCAL FIRE DEPARTMENT. THE OWNER SHALL BE ADVISED IMMEDIATELY, VERBALLY AND IN WRITING, OF ANY FUEL OR TOXIC MATERIALS SPILLS WITHIN THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TO BE TAKEN TO REMEDY THE PROBLEM.		1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARATION AND SUBMITTAL OF THE STORM WATER POLLUTION PREVENTION PLAN (SW3P) AND THE NOTICE OF INTENT (NOI). A COPY OF THE NOI SHALL BE SUBMITTED TO THE CITY. REFERENCE THE SPECIFICATIONS, SECTION SW3P.		3. FOR THIS PROJECT, UNLESS OTHERWISE NOTED IN THE PLANS AND/OR AS DIRECTED BY THE ENGINEER, NO LANE CLOSURES SHALL BE ALLOWED OTHER THAN THOSE IN THE TRAFFIC CONTROL PLAN.		11. CONTRACTOR SHALL LOCATE AND DETERMINE ELEVATION (VERIFY IF DEPTH IS SHOWN ON PLANS) OF ALL EXISTING UNDERGROUND UTILITIES A MINIMUM OF 500 FT AHEAD OF TRENCHING. IF A UTILITY IS FOUND TO BE IN CONFLICT WITH PROPOSED GRADES, THE ENGINEER SHALL BE CONTACTED AND GRADES ADJUSTED TO AVOID CONFLICT.	
5. THE CONTRACTOR SHALL DISPOSE OF FUELS, HAZARDOUS MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.		2. CONTRACTOR TO STRIP 4 - 6 INCHES OF TOPSOIL FROM ALL AREAS TO BE DISTURBED BY CONSTRUCTION. STOCKPILE TOPSOIL AT A LOCATION DESIGNATED BY THE OWNER. SUBSEQUENT TO CONSTRUCTION ACTIVITY, REPLACE TOPSOIL ON EXPOSED AREAS.		4. THE CONTRACTOR SHALL INSTALL AND MAINTAIN AN ADEQUATE NUMBER OF BARRICADES, WARNING AND DIRECTIONAL SIGNS TO DELINEATE TRAFFIC FOR ANY DETOURS.		12. ALL MJ FITTINGS SHALL HAVE MEGA-LUG GLANDS.	
6. NO OPEN BURNING IS ALLOWED WITHIN THE CITY LIMITS. NO VARIANCE WILL BE ALLOWED FOR THIS PROJECT.		3. MANHOLE RIM ELEVATIONS SHOWN ON PLAN AND PROFILE DRAWINGS ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY.		5. ALL CONSTRUCTION TRAFFIC SHALL BE REGULATED SO AS TO CAUSE A MINIMUM OF INCONVENIENCE TO THE TRAVELING PUBLIC. AT POINTS WHERE IT IS NECESSARY FOR TRUCKS TO STOP AND UNLOAD, WARNING SIGNS AND FLAGGERS SHALL BE PROVIDED AS NECESSARY TO ADEQUATELY PROTECT TRAVEL.		13. CONTRACTOR IS REQUIRED TO GIS ALL THE WATER LINE PIPES & APPURTENANCES. CONTRACTOR SHALL REFERENCE THE APPENDIX, "CITY OF SEGUIN GIS DATA STANDARDS" IN THE CONTRACT. CONTRACTOR SHALL PROVIDE GIS FILES OF ALL PIPE & APPURTENANCES PRIOR TO FINAL ACCEPTANCE.	
7. CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS, LABOR, AND EQUIPMENT TO FIX DAMAGED TREES OR ROOTS OF TREES IMPACTED BY CONSTRUCTION ACTIVITIES. ALL EQUIPMENT SHALL BE STERILIZED AFTER CUTTING OF ROOT, BRANCHES, ETC. TO LIMIT POTENTIAL SPREAD OF OAK WILT. OWNER SHALL BE NOTIFIED OF ANY TREE DAMAGE IMMEDIATELY BY THE CONTRACTOR. <u>NO SEPARATE PAY.</u>		4. TRC ENGINEERING, INC. PROVIDED TOPOGRAPHICAL SURVEYING SERVICES FOR THE DESIGN PORTION OF THIS PROJECT. INFORMATION TO THE CONTRACTOR FOR CONSTRUCTION STAKING MAY BE AVAILABLE FROM TRC ENGINEERING, INC. NICK HALL TRC ENGINEERS, INC. 505 E. HUNTLAND DRIVE AUSTIN, TX 78752 PHONE: 512-454-8716		6. THE CONTRACTOR MAY, WITH THE APPROVAL OF AND AS DIRECTED BY THE ENGINEER, BE REQUIRED TO FURNISH ADDITIONAL SIGNS AND BARRICADES TO THOSE INDICATED ON THE PLANS TO MAINTAIN THE SAFE PASSAGE OF TRAFFIC THROUGHOUT THE CONSTRUCTION SITE PARTICULARLY IN THOSE AREAS OF IMMEDIATE WORK.		14. CONTRACTOR SHALL VERIFY PIPE CLASS REQUIREMENTS WITH PIPE MANUFACTURE FOR ALL AREAS WHERE PIPE IS BEING INSTALLED BY BORE.	
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL DEBRIS RELATED TO CONSTRUCTION AT THE END OF EACH DAY FROM THE ROW. USE OF PRIVATE TRASH CANS IS NOT ACCEPTABLE. IF THE CONTRACTOR DOES NOT OWN HIS OWN ROLL OFF FOR DISPOSAL, ONE OF THESE SELECTED COMPANIES SHALL BE USED: REPUBLIC SERVICES, RUDY RODRIGUEZ (210) 648-5222, APACHE DISPOSAL (830) 914-3900, OR PROGRESSIVE WASTE.		5. COORDINATES SHOWN ON THESE PLANS ARE IN TEXAS STATE PLANE COORDINATE SYSTEM , NAD 83 (93), SOUTH CENTRAL ZONE.		7. UPON COMPLETION OF THE WORK AND BEFORE FINAL ACCEPTANCE IS MADE, THE CONTRACTOR SHALL SHAPE AND FINISH SUCH PORTIONS OF THE RIGHT-OF-WAY AS MAY HAVE BEEN DISTURBED IN MAKING THE ABOVE PROVISIONS FOR TRAFFIC AND WILL BE REQUIRED TO LEAVE THE ENTIRE RIGHT-OF-WAY IN A SMOOTH, NEAT AND SIGHTLY CONDITION.			
C. STORM WATER NOTES		6. THE CONTRACTOR WILL PROVIDE ALL CONSTRUCTION STAKING SERVICES FOR THE PROJECT. THE COST OF THESE SERVICES WILL BE REFLECTED IN THE UNIT PRICE AMOUNT BID IN THE PROPOSAL. <u>NO SEPARATE PAYMENT WILL BE MADE.</u>		8. ALL WORK AND MATERIALS REQUIRED BY THESE PROVISIONS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT, UNLESS OTHERWISE INDICATED IN THE PLANS OR SPECIFICATIONS.			
1. THROUGHOUT THE CONSTRUCTION, AND AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL ASSURE THAT DRAINAGE OF STORM WATER RUNOFF IS NOT BLOCKED.		7. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE TELEPHONE AND GAS COMPANIES FOR LOCATION OF ALL EXISTING LINES. <u>NO SEPARATE PAY.</u>		9. CONTRACTOR SHALL HAVE A COMPANY REPRESENTATIVE CERTIFIED IN FLAGGER TRAINING APPROVED BY THE OWNER.			
2. DURING CONSTRUCTION, THE STORM WATER RUNOFF FROM ALL DISTURBED AREAS TO BE FILTERED BY SILT FENCES AND/OR ROCK BERMS. THESE TEMPORARY EROSION AND SEDIMENTATION CONTROLS ARE TO REMAIN IN PLACE UNTIL THE DISTURBED AREAS ARE REVEGETATED 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.		8. THE CONTRACTOR SHALL IMMEDIATELY REMOVE ALL SURFACE OR SEEPAGE WATER FROM SEWERS, DRAINS, DITCHES, AND OTHER SOURCES WHICH MAY ACCUMULATE DURING THE EXCAVATION AND CONSTRUCTION WORK BY PROVIDING THE NECESSARY UNDERDRAINS OR OTHERWISE AND BY DOING THE NECESSARY PUMPING, BAILING OR DRAINING. AT ALL TIMES, THE CONTRACTOR SHALL HAVE AVAILABLE SUFFICIENT EQUIPMENT IN PROPER WORKING ORDER FOR DOING THE WORK HEREIN REQUIRED. ALL WATER REMOVED FROM EXCAVATIONS SHALL BE DISPOSED OF IN AN APPROVED MANNER SO AS TO NOT CREATE UNSANITARY CONDITIONS NOR TO INTERFERE UNDULY WITH THE USE OF STREETS, PRIVATE DRIVEWAYS, OR ENTRANCES, PUMPING, BAILING, DRAINING, UNDERDRAINS, DITCHES, ETC., SHALL BE CONSIDERED AS INCIDENTAL WORK AND WILL NOT BE PAID FOR AS SEPARATE ITEMS, BUT THEIR COST SHALL BE INCLUDED IN THE CONTRACT PRICES BID IN THE PROPOSAL FOR THE VARIOUS BID ITEMS. <u>NO SEPARATE PAY.</u>		10. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES AND FLAGGERS. THE CONSTRUCTION METHODS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF TRAFFIC IN ALL ALLOWABLE DIRECTIONS AT ALL TIMES.			
3. CONTRACTOR SHALL ENSURE EXISTING DRAINAGE PATTERNS ARE MAINTAINED AS SHOWN.		9. CONTRACTOR SHALL ADJUST ALL EXISTING UTILITIES AS REQUIRED FOR THE INSTALLATION OF THE PROPOSED IMPROVEMENTS INCLUDING RELOCATING THE EXISTING UTILITIES IF NECESSARY. <u>NO SEPARATE PAY.</u>		11. THE CONTRACTOR SHALL PROVIDE FOR THE PASSAGE OF TRAFFIC THROUGH THE PROJECT WITH SIGNS, WARNING LIGHTS, BARRICADES, ETC. IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS REQUIRED FOR MAINTENANCE ACTIVITIES AND TO THE SATISFACTION OF THE ENGINEER. ALL BARRICADES, SIGNS, WARNING LIGHTS, ETC. SHALL BE ACCORDING TO THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.			
4. ALL SPRING FLOW DISTURBED AND GROUND WATER ENCOUNTERED DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO RESOLVE AND HANDLE.		10. A GEOTECHNICAL REPORT HAS BEEN PROVIDED AS AN APPENDIX OF THE SPECIFICATIONS. THIS REPORT IS FOR THE CONTRACTOR'S INFORMATION ONLY. THE CITY OR THE ENGINEER DO NOT GUARANTEE OR WARRANT SOIL CONDITIONS THROUGHOUT THE PROJECT LIMITS WILL BE CONSISTENT WITH THE GEOTECHNICAL REPORT. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE SOIL CONDITIONS FOR THE PURPOSE OF PREPARING THIS BID. ALL EXCAVATION WILL BE <u>UNCLASSIFIED</u> .		12. LANE CLOSURES WILL NOT BE ALLOWED UNLESS PRIOR APPROVAL IS GIVEN BY THE ENGINEER. IF LANE CLOSURES ARE APPROVED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER 48 HOURS IN ADVANCE OF THE CLOSURE.			

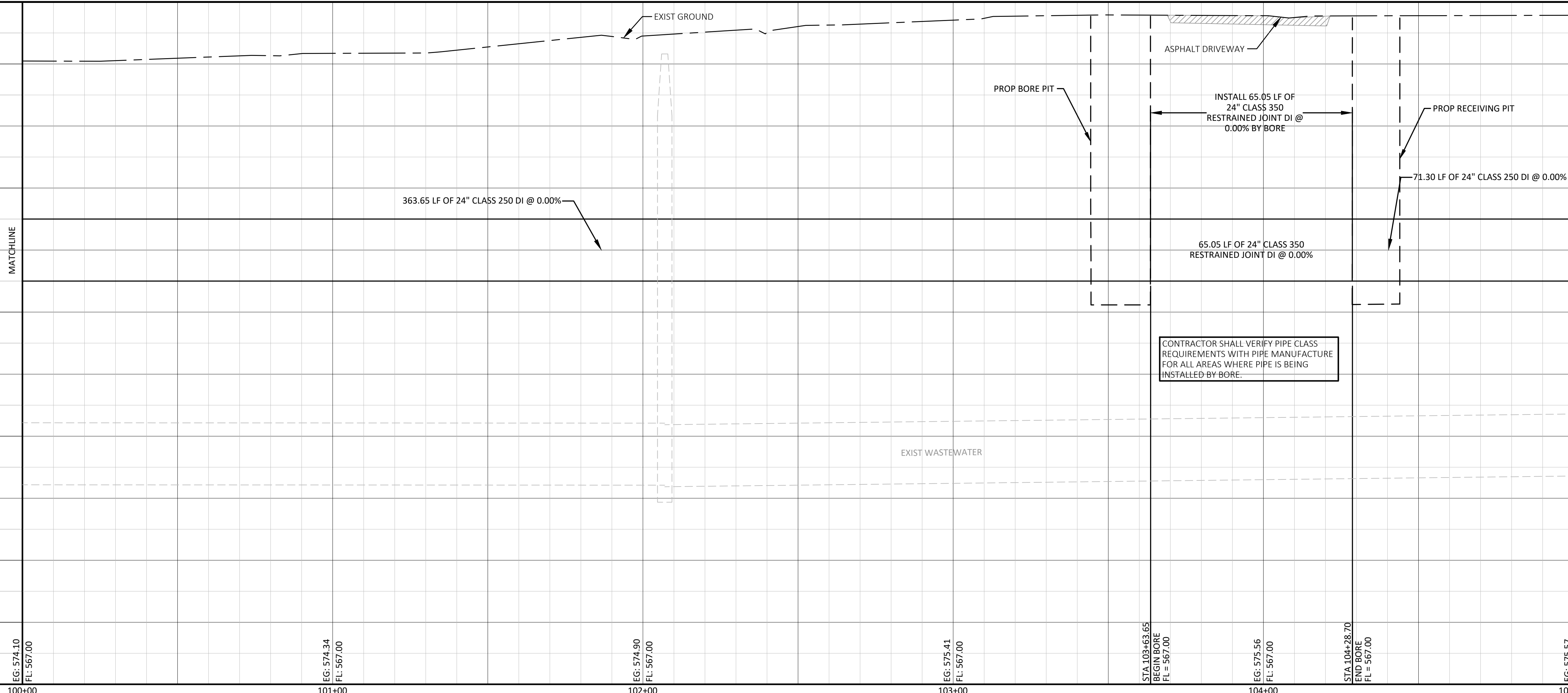
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- WATER NOTES:
1. PROPOSED WATER MAINS SHALL BE DR 18 C-900 PVC, UNLESS OTHERWISE NOTED IN PLANS.
 4. ALL PIPE FITTINGS SHALL HAVE CONCRETE THRUST BLOCKING AND RESTRAINED PIPE SECTIONS. (SEE SHEET 51.)
 5. CONTRACTOR SHALL LOCATE AND DETERMINE ELEVATION (VERIFY IF DEPTH IS SHOWN ON PLANS) OF ALL EXISTING UNDERGROUND UTILITIES A MINIMUM OF 500 FT AHEAD OF TRENCHING. IF A UTILITY IS FOUND TO BE IN CONFLICT WITH PROPOSED GRADES, THE ENGINEER SHALL BE CONTACTED AND GRADES ADJUSTED TO AVOID CONFLICT.

UTILITY NOTE:
UTILITY LOCATIONS SHOWN HEREON ARE APPROXIMATE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT VERTICAL AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO COMMENCING CONSTRUCTION. NO REPRESENTATION IS MADE THAT ALL EXISTING UTILITIES ARE SHOWN HEREON. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR UTILITIES NOT SHOWN OR UTILITIES NOT SHOWN IN THEIR PROPER LOCATION. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION. ANY UTILITIES DAMAGED DURING CONSTRUCTION MUST BE REPAIRED IMMEDIATELY AND TO THE OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.

TRENCH SAFETY NOTE:
CONTRACTOR AND / OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION



DATE	4-30-2024
REVISION	CONFORMED SET
NO.	1
DESIGN BY:	SHOROWITZ
DRAWN BY:	DOARWYPLE
CHECKED BY:	PAULAN
SCALE:	H: 1" = 20' V: 1" = 2'
JOB NUMBER:	475169

TRC
TRC ENGINEERS, INC.
505 E. HARRIS AVE. SUITE 100
DALLAS, TEXAS 75202
TEL: 972.444.8716 FAX: 972.444.8717

Mike Miller
Professional Engineer
State of Texas
License No. 8112

CITY OF SEGUIN, TEXAS

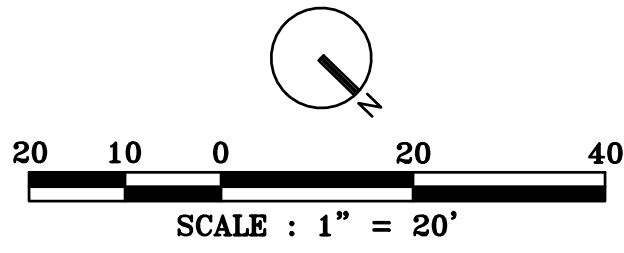
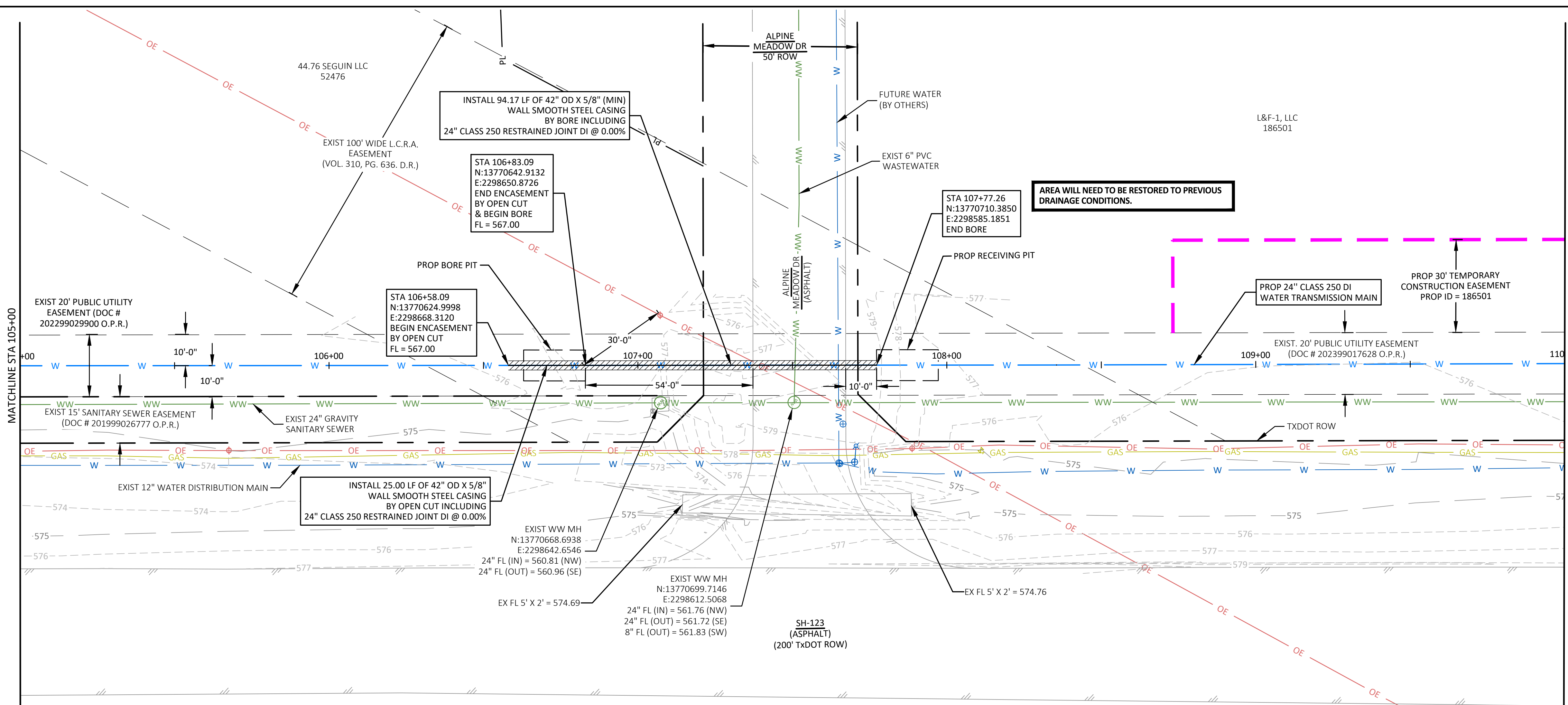
24" WATER TRANSMISSION MAIN

24" STA 100+00 TO 105+00

SEGUIN
TEXAS
It's real.

SHEET	27
MARCH 2024	

C:\PWORKING-TRD\01320061P&P SHEETS 3.DWG - 4/30/24



WATER NOTES:

1. PROPOSED WATER MAINS SHALL BE DR 18 C-900 PVC, UNLESS OTHERWISE NOTED IN PLANS.
4. ALL PIPE FITTINGS SHALL HAVE CONCRETE THRUST BLOCKING AND RESTRAINED PIPE SECTIONS. (SEE SHEET 5.1.)
5. CONTRACTOR SHALL LOCATE AND DETERMINE ELEVATION (VERIFY IF DEPTH IS SHOWN ON PLANS) OF ALL EXISTING UNDERGROUND UTILITIES A MINIMUM OF 500 FT AHEAD OF TRENCHING. IF A UTILITY IS FOUND TO BE IN CONFLICT WITH PROPOSED GRADES, THE ENGINEER SHALL BE CONTACTED AND GRADES ADJUSTED TO AVOID CONFLICT.

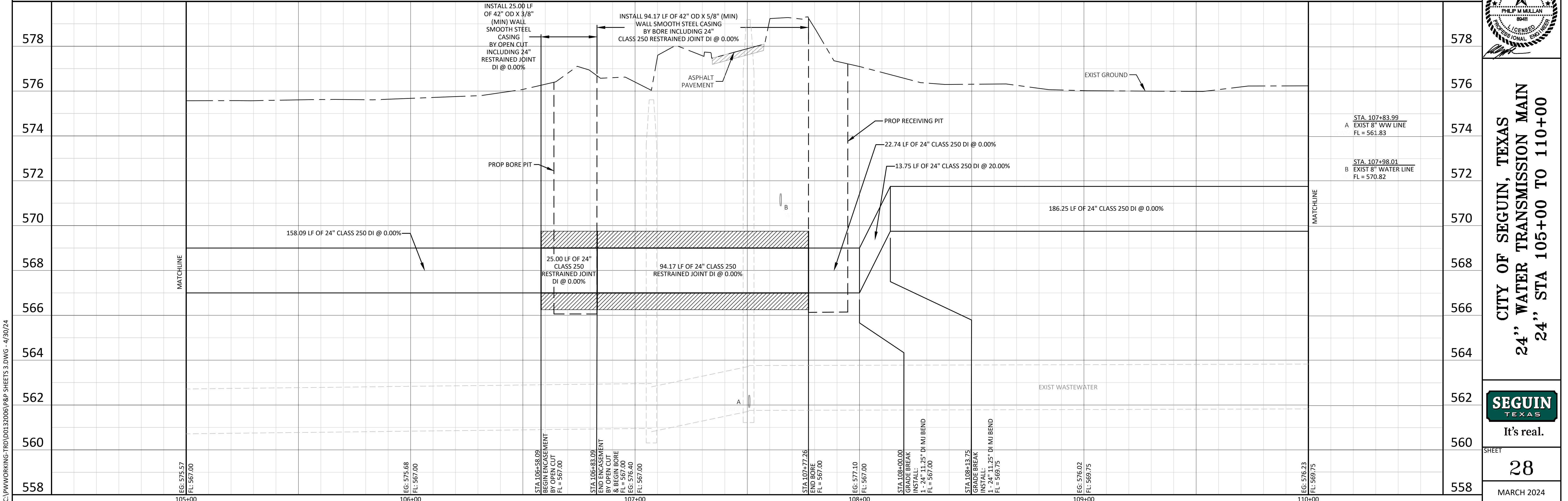
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ENCASEMENT NOTE: CONTRACTOR SHALL ENCASE WASTEWATER LINE AS PER TCEQ CH. 217. 53 (D) (5) (A).



DATE	4-30-2024
REVISION	CONFORMED SET
NO.	1
DESIGN BY:	SHROVITZ
DRAWN BY:	DOARWYPLE
CHECKED BY:	PAULAN
SCALE:	H: 1" = 20' V: 1" = 2'
JOB NUMBER:	475169

TRC ENGINEERS, INC.
505 E. IRLAND AVE. SUITE 100
IRLAND, TEXAS 75652
TEL: 409.454.8716

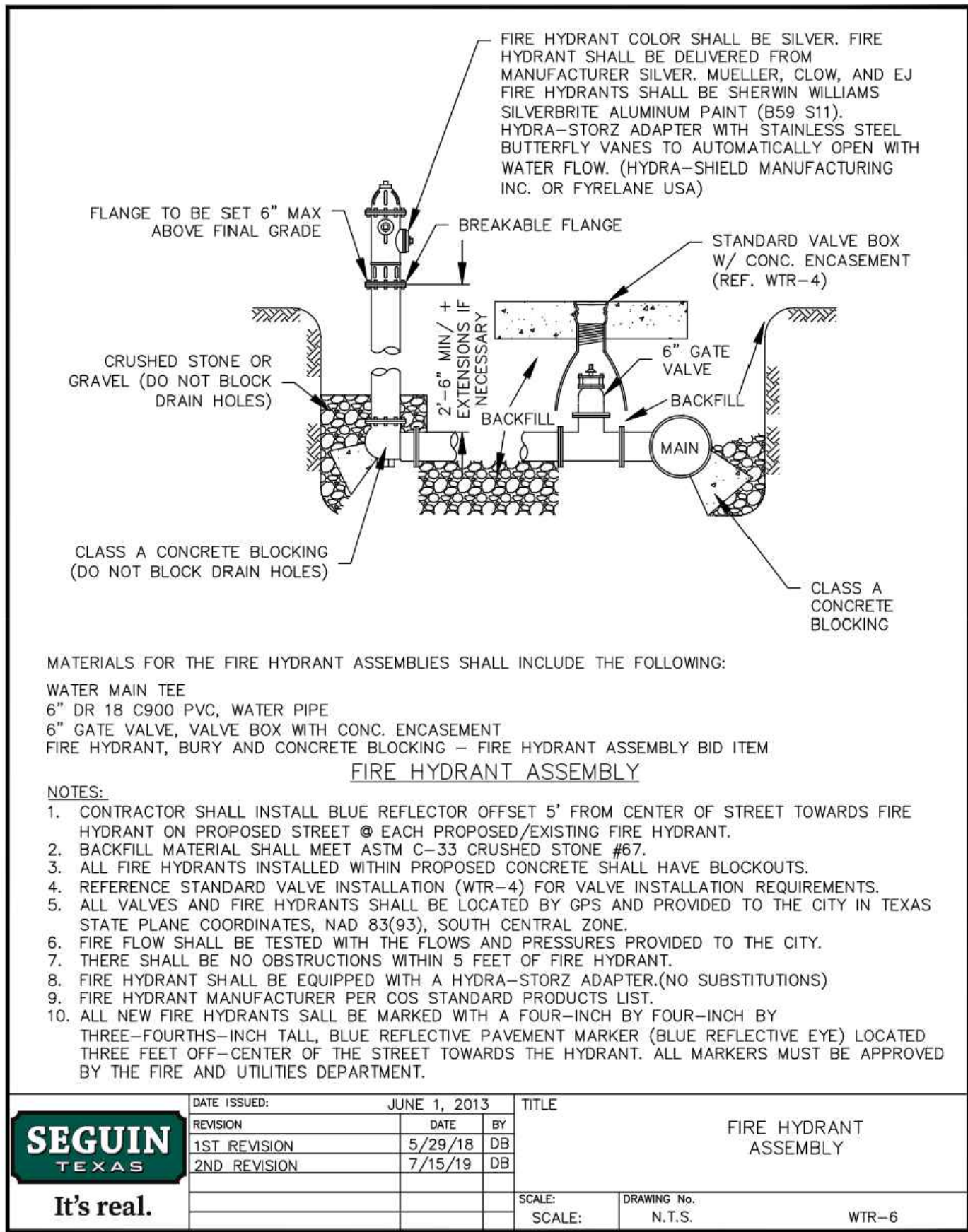
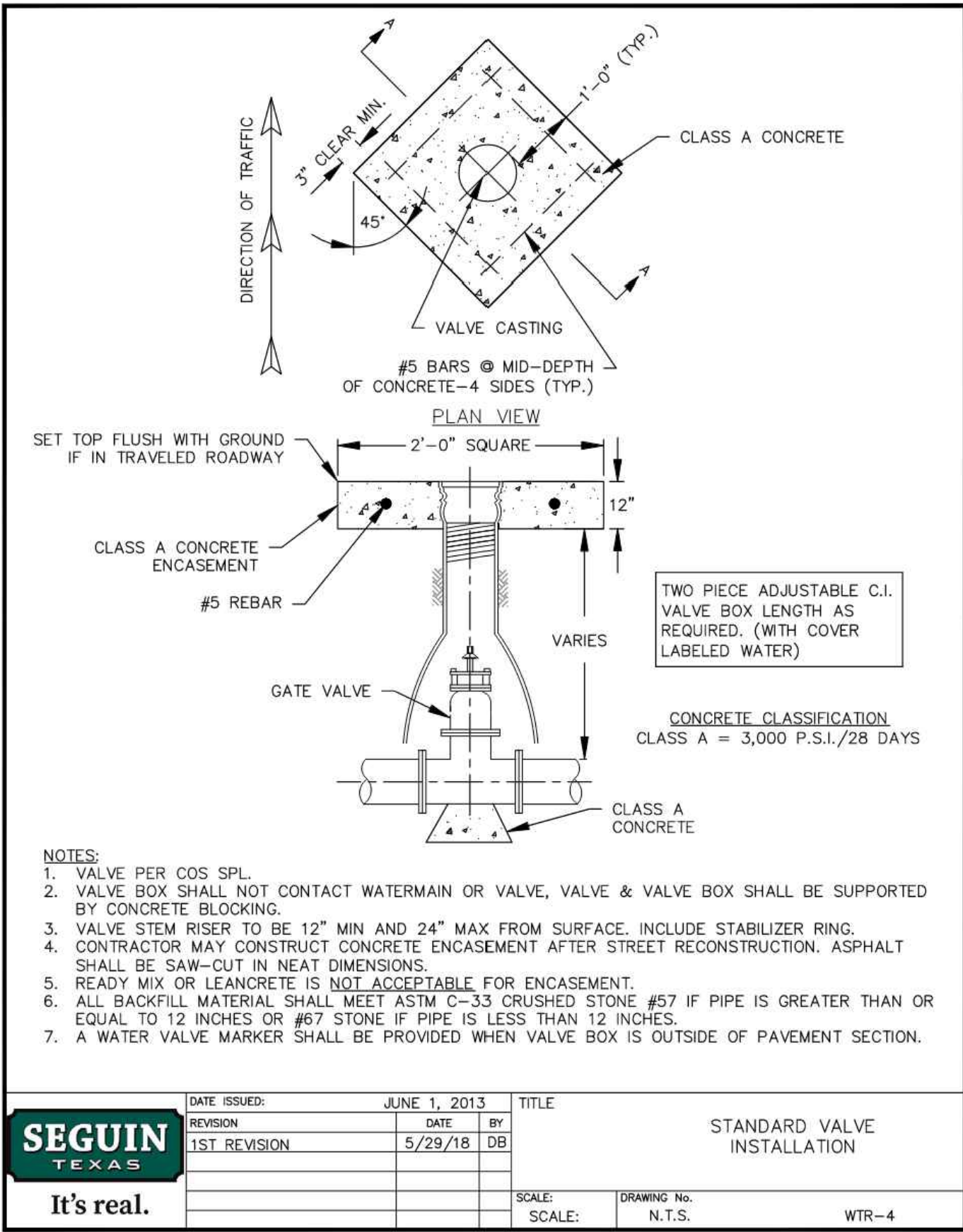
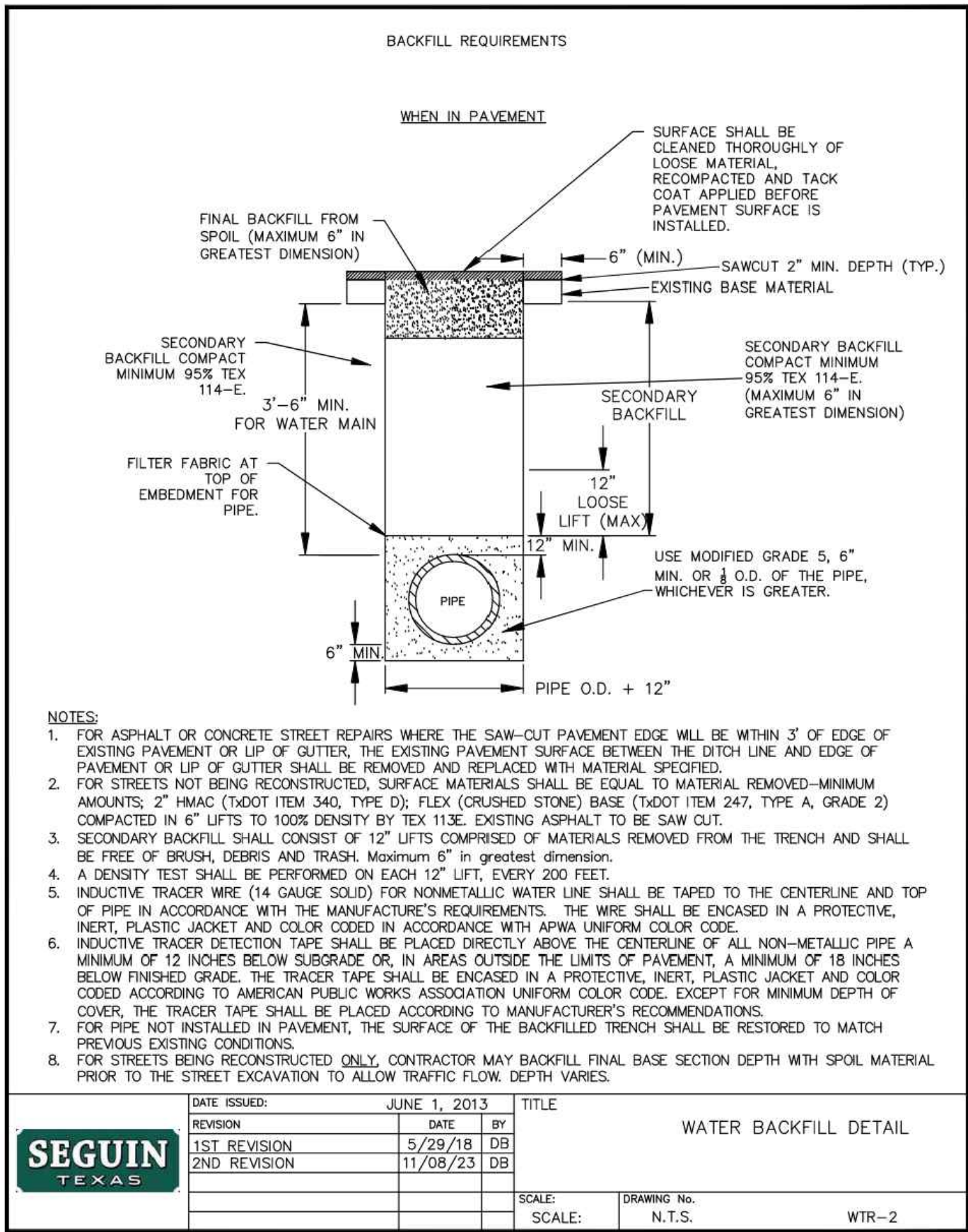
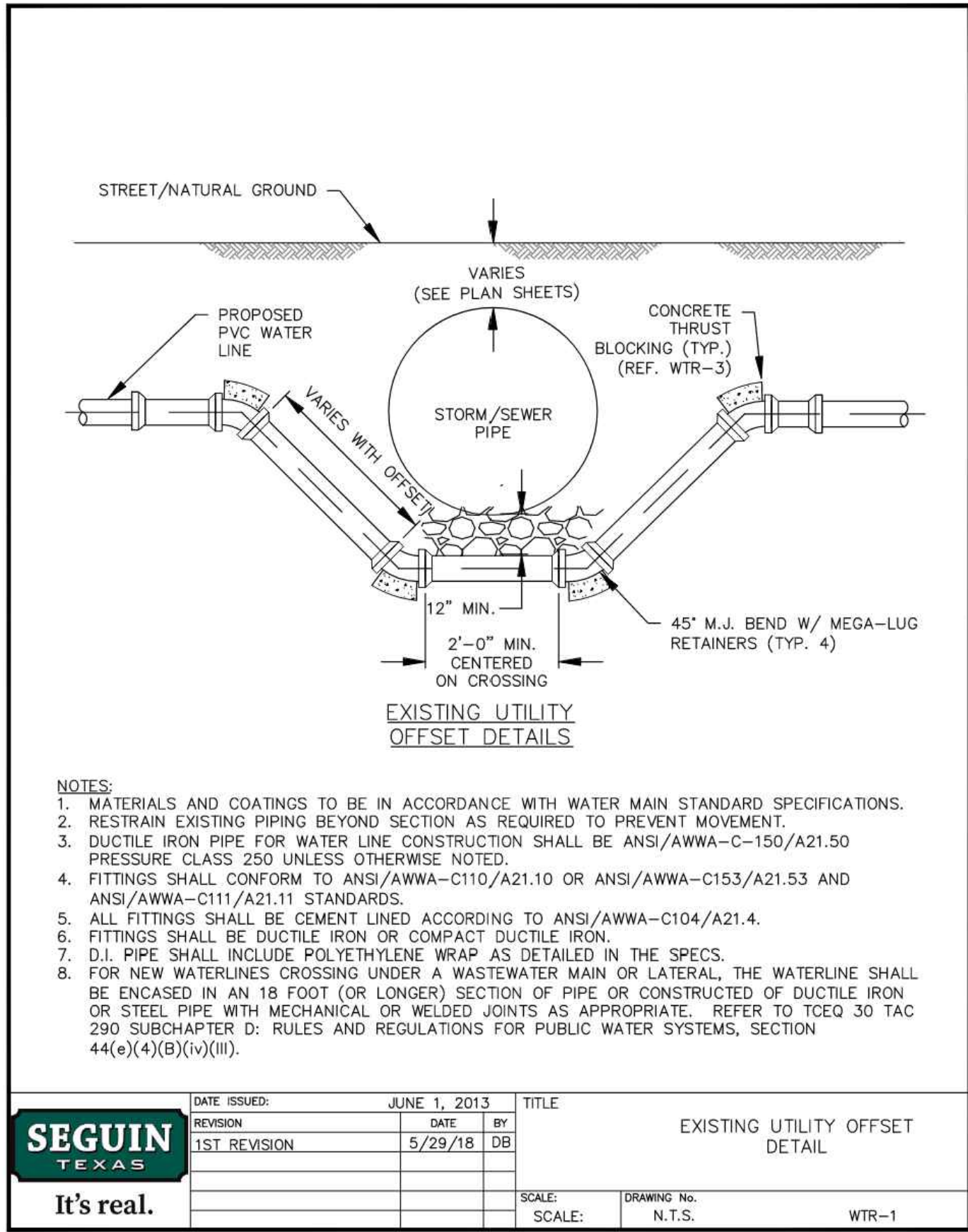
CITY OF SEGUIN, TEXAS

24" WATER TRANSMISSION MAIN

24" STA 105+00 TO 110+00

It's real.

SHEET	28
MARCH 2024	

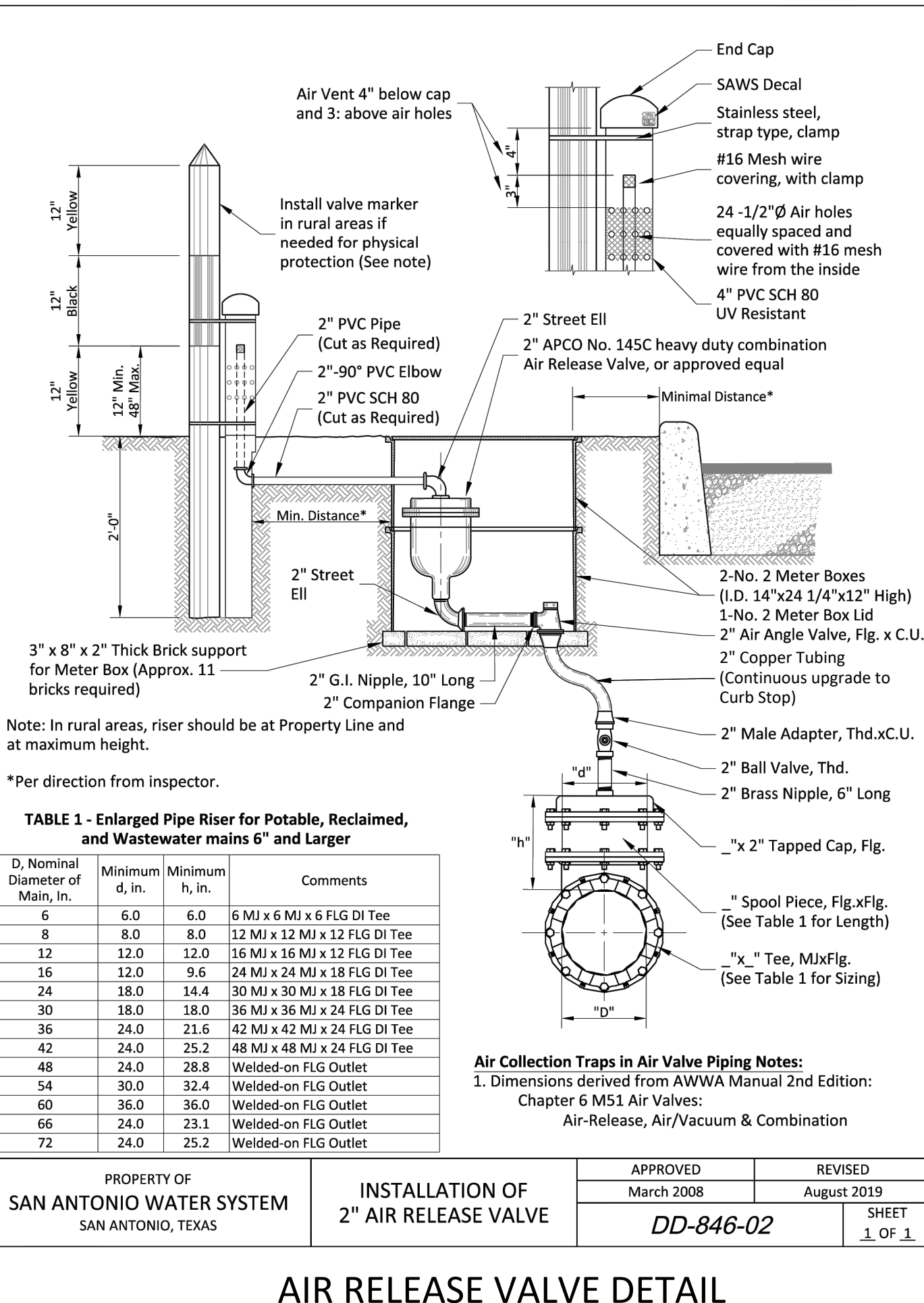
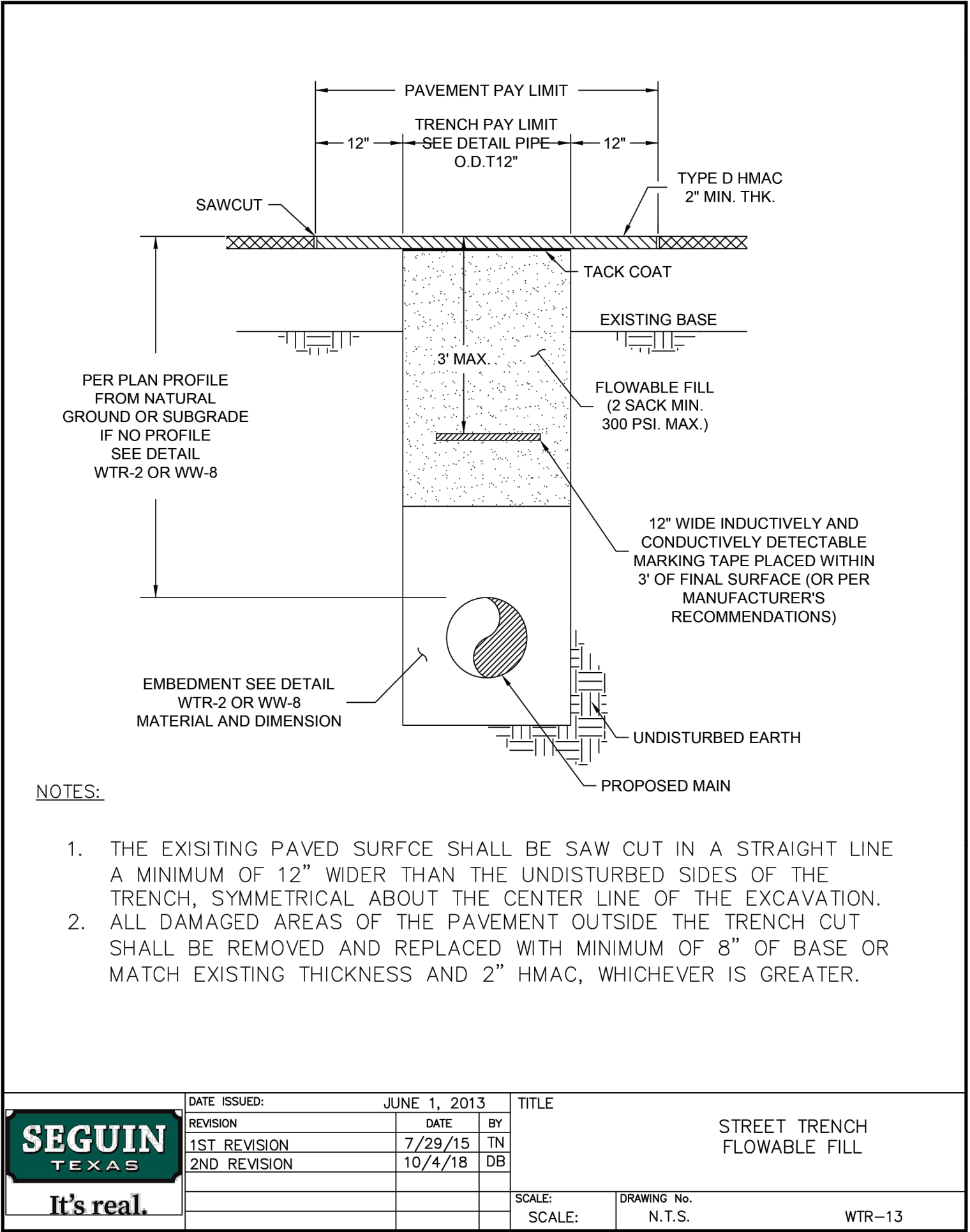
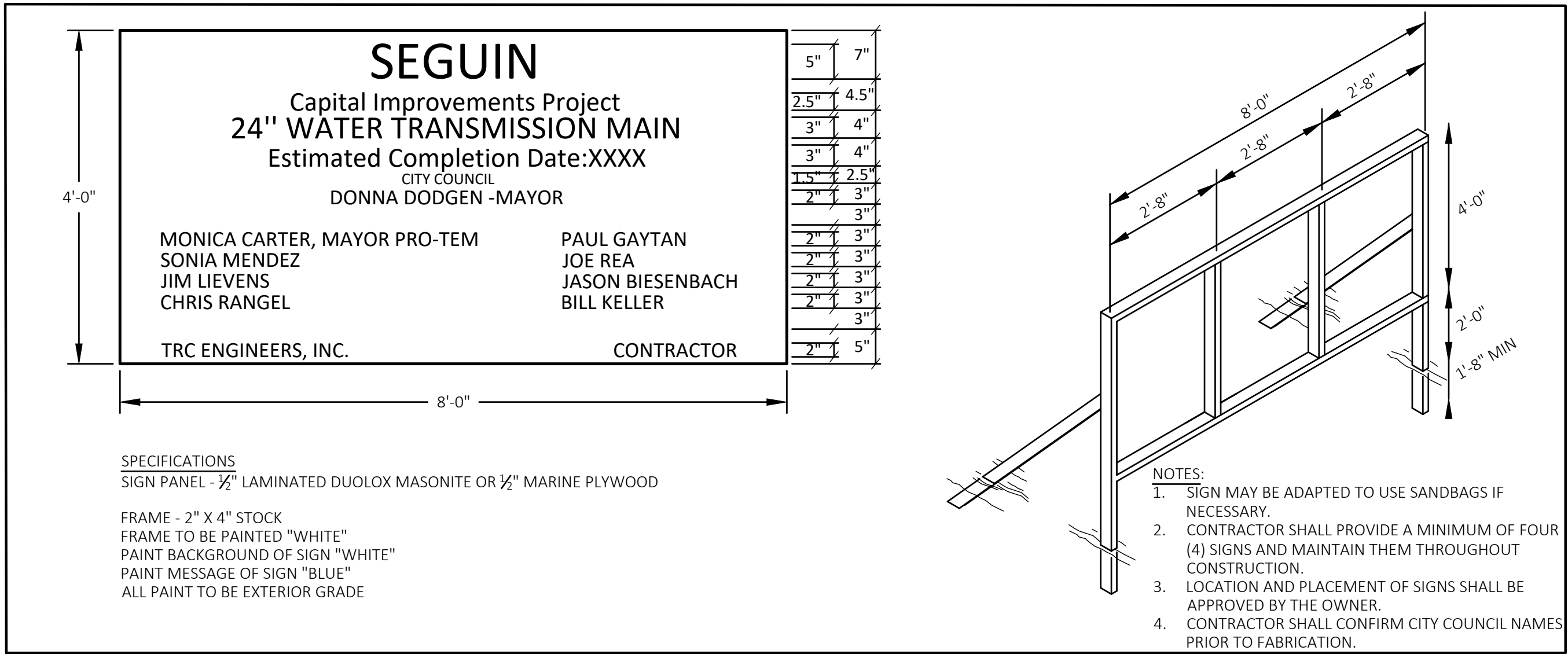


NOTE:

1. WHEN BACKFILLING UNDER STREETS OR STREET CROSSINGS REFER TO WTR-13.

NOTE:

1. VALVE SHALL BE GATE OR BUTTERFLY AS SHOWN ON THE PLAN/PROFILE SHEETS.



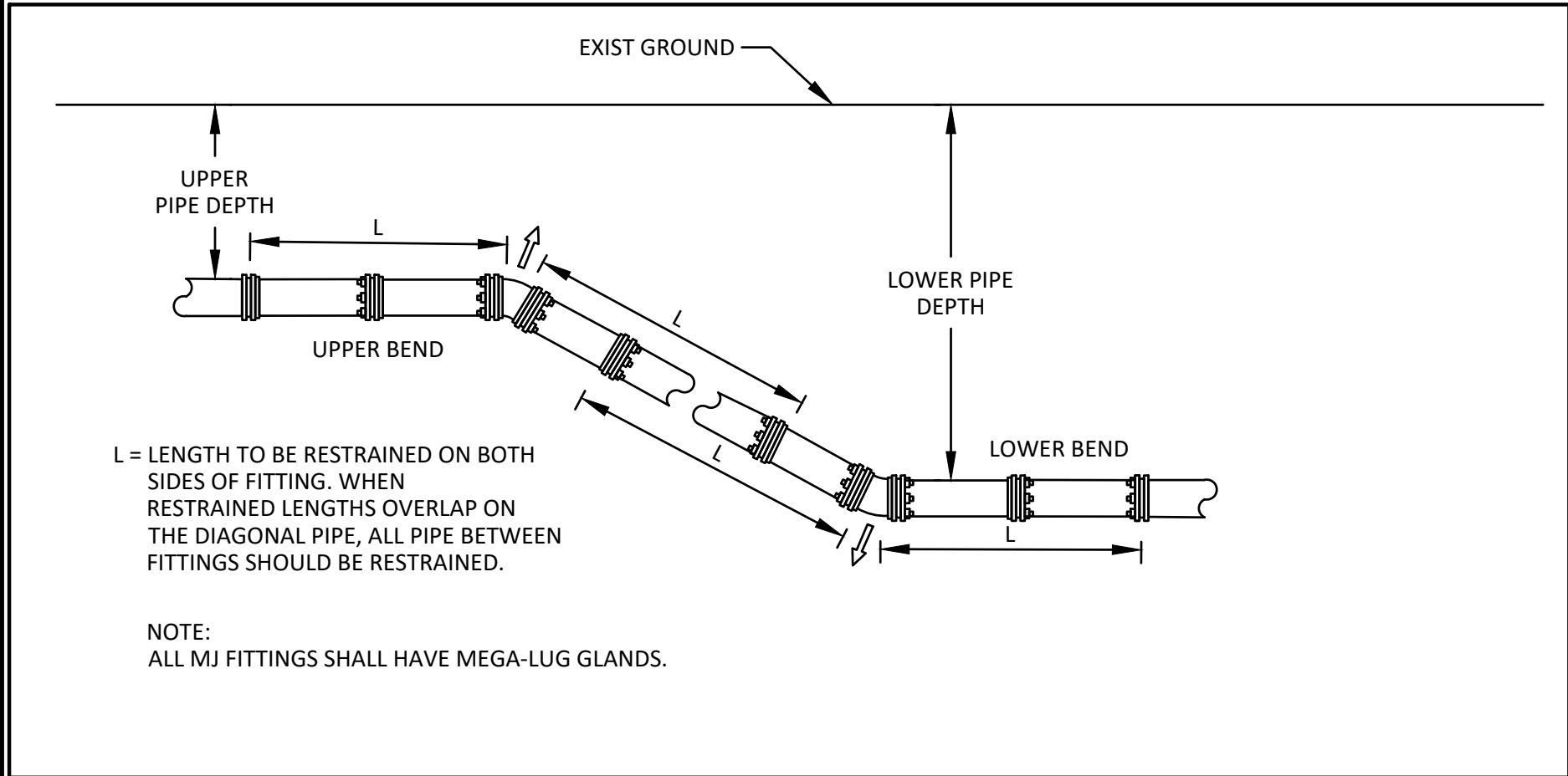
CITY OF SEGUIN, TEXAS

24" WATER TRANSMISSION MAIN

DETAILS 1



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THRUST RESTRAINT SUMMARY TABLE							
VERTICAL BENDS							
BEND TYPE	PIPE DIAMETER, INCHES	BEND ANGLE, DEGREES	PIPE DEPTH, FT		THRUST RESTRAINT LENGTH*, FT		Sheet Reference
			UPPER SIDE	LOWER SIDE	UPPER SIDE	LOWER SIDE	
VERTICAL	24"	22.5	7	18	48	9	SHEET 8
		11.25	4	20	78	8	SHEET 9
			6	11	27	7	SHEET 20
VERTICAL	20"	45	4	9	39	9	SHEET 28
			4	12	138	23	SHEET 32
			4	13	138	21	SHEET 32
		22.5	6.25	12.15	93	22	SHEET 43
			6	12	96	23	SHEET 43
			7	18	40	8	SHEET 8
		11.25	4	20	66	7	SHEET 9
			6	11	23	6	SHEET 20
			4	9	33	7	SHEET 28

*THRUST RESTRAINT LENGTH IS DIMENSION "L" IN THE GRAPHIC

BEND TYPE	PIPE MATERIAL	FITTING TYPE	FITTING SIZE	DEPTH OF BURY (FT)	THRUST RESTRAINT LENGTH, FT (L)	SHEET REFERENCE
HORIZONTAL	DUCTILE IRON	BUTTERFLY VALVE	24"	3.5	435	9,12, 18, 20, 25
HORIZONTAL	DUCTILE IRON	TEE	24"x6"	3.5	1	9, 12, 18, 20, 25, 30
HORIZONTAL	DUCTILE IRON	PLUG	24"	3.5	321	31
HORIZONTAL	DUCTILE IRON	PLUG	20"	5	372	31
HORIZONTAL	DUCTILE IRON	BUTTERFLY VALVE	20"	6	372	32, 34, 36, 38, 40
HORIZONTAL	DUCTILE IRON	TEE	20"x20"	6	305	32
HORIZONTAL	DUCTILE IRON	TEE	20"x6"	6	1	36
HORIZONTAL	DUCTILE IRON	TEE	20"x6"	4	1	43
HORIZONTAL	DUCTILE IRON	REDUCER	20"x16"	6	131	32
HORIZONTAL	DUCTILE IRON	REDUCER	24"x20"	7	71	45
HORIZONTAL	DUCTILE IRON	GATE VALVE	12"	4	212	46
HORIZONTAL	DUCTILE IRON	TEE	12"x6"	4	1	46
HORIZONTAL	DUCTILE IRON	TEE	12"x6"	5	1	47, 48
HORIZONTAL	DUCTILE IRON	TEE	12"x6"	3.5	1	49
HORIZONTAL	DUCTILE IRON	GATE VALVE	8"	3.5	169	49
HORIZONTAL	DUCTILE IRON	REDUCER	12"x8"	3.5	127	49

NON-BEND FITTING THRUST RESTRAINT NOTES:

- FOR TEE FITTINGS, THE "LENGTH ALONG PIPE RUN" (L_R) IS ASSUMED TO BE 10 FEET.
- BUTTERFLY VALVES AND GATE VALVES ARE ASSUMED TO BE "DEAD ENDS" WITH THE RESTRAINTS TO BE PLACED ON THE UPSTREAM SIDE OF THE VALVES.

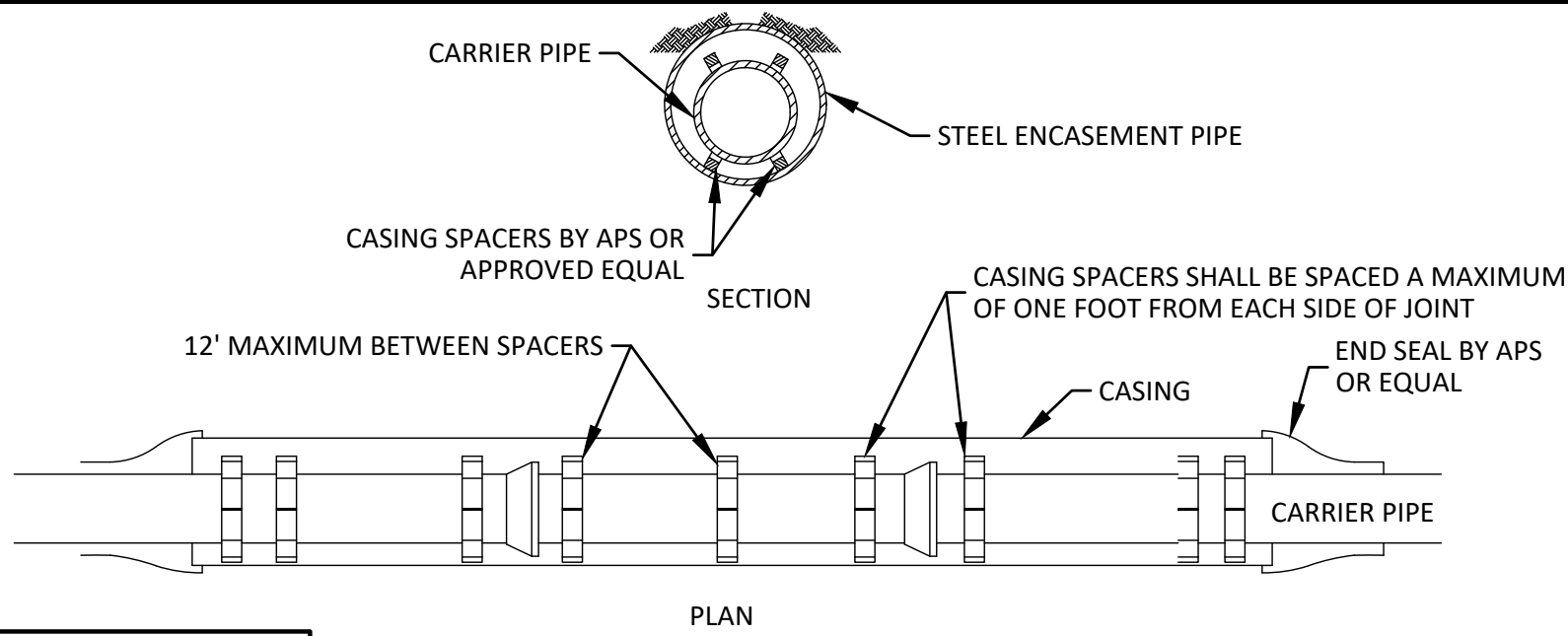
HORIZONTAL BENDS					
BEND TYPE	PIPE DIAMETER, INCHES	Pipe Material	BEND ANGLE, DEGREES	THRUST RESTRAINT LENGTH, FT (L)	Sheet Reference
HORIZONTAL	24"	DUCTILE IRON	11.25	19	SHEET 15, 16, 21, 22 & 23
			22.5	37	SHEET 7, 12, 15, 22, 23, 26
			45	77	SHEET 10, 11, 13, 15, 16, 18, 20, 25, 26, 30, & 31
HORIZONTAL	20"	DUCTILE IRON	45	66	SHEET 45
			11.25	13	SHEET 40, 43, 44
			45	54	SHEET 32, 40, 43, 44
HORIZONTAL	12"	DUCTILE IRON	11.25	11	SHEET 46
			22.5	21	SHEET 46, 47
			45	44	SHEET 47

THRUST RESTRAINT NOTES:

- DUCTILE IRON PIPE TO BE POLYETHYLENE WRAPPED.
- PIPE MATERIAL FOR THE VERTICAL BEND TYPE IS DUCTILE IRON.
- SOIL TYPE IS "CH, GRANULAR FILL".
- THE SAFETY FACTOR IS 2.5.
- THE TRENCH TYPE IS 3.
- THE PIPE DEPTH FOR HORIZONTAL BENDS IS 3.5 FEET.
- THE TEST PRESSURE IS 150 PSI.

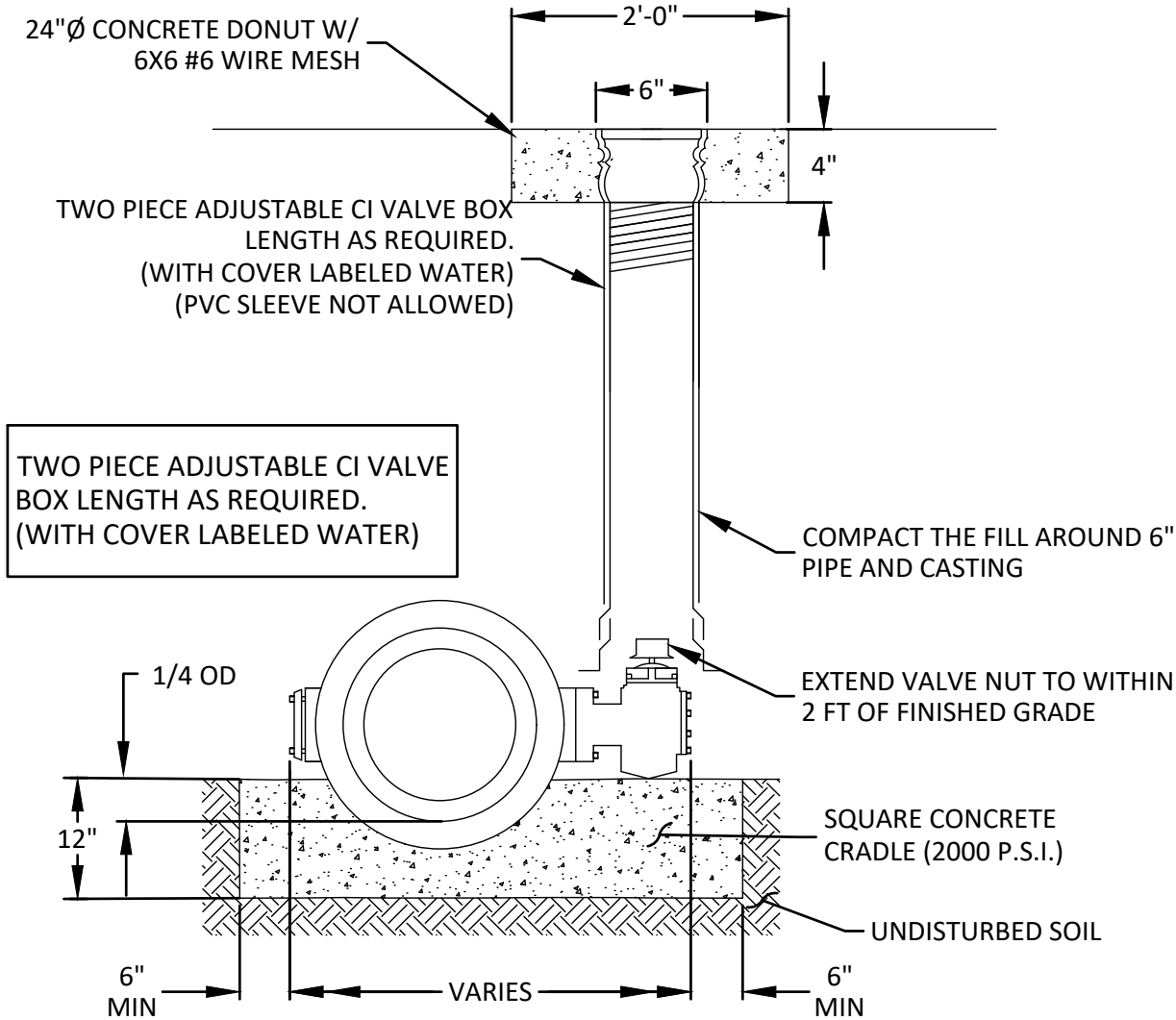
THRUST RESTRAINT TABLE

NTS



BORE AND CASING DETAIL

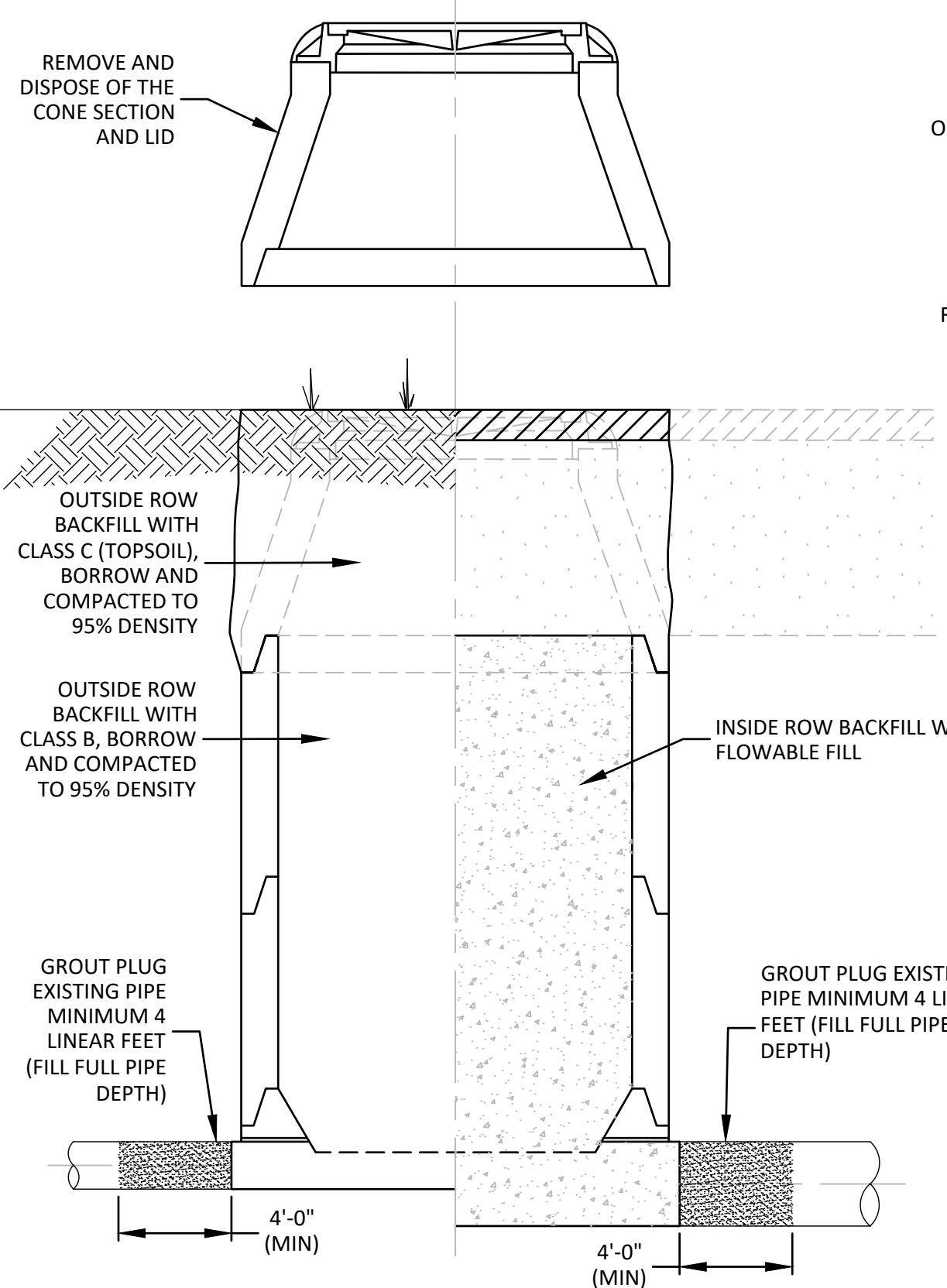
NTS



- NOTES:
- VALVE BOX SHALL NOT CONTACT WATERMAIN OR VALVE, VALVE & VALVE BOX SHALL BE SUPPORTED BY CONCRETE BLOCKING.
 - VALVE STEM RISER TO BE WITHIN 3' OF SURFACE.
 - READY MIX OR LEANCRETE IS NOT ACCEPTABLE FOR ENCASEMENT.
 - VALVE SHALL BE RESTRAINED ON BOTH SIDES W/ EBAA IRON SERIES 1100 MEGALUG MJ RESTRAING

BUTTERFLY VALVE DETAIL

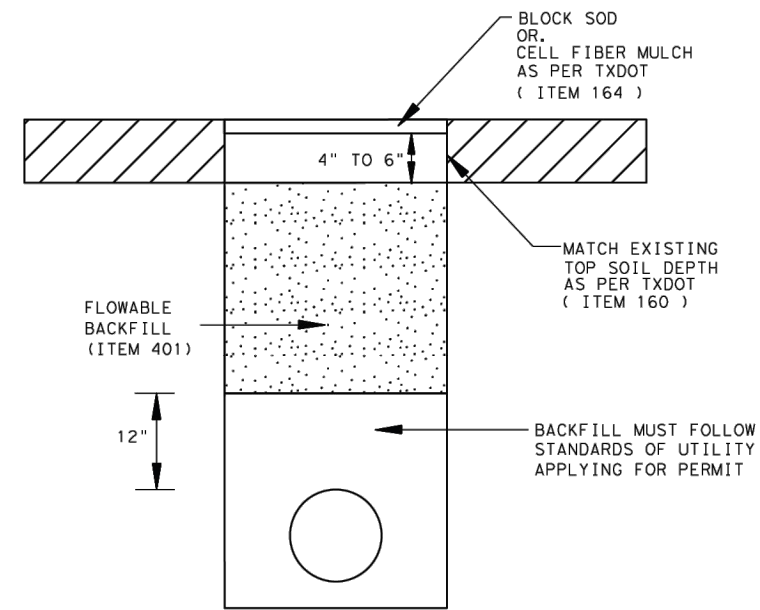
NTS



- NOTE:
- THE PLUG SHALL BE COMPOSED OF A MATERIAL SIMILAR TO THE EXISTING PIPE AS INSTRUCTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE.

EXISTING MANHOLE ABANDONMENT DETAIL

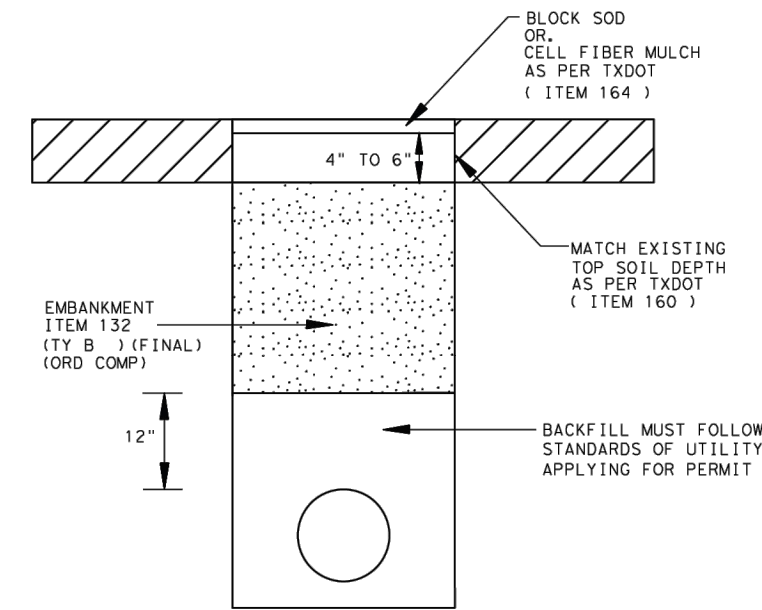
NTS



TRENCH DETAIL (NON PAVEMENT)
LESS THAN OR EQUAL TO 10' FROM
CURB/OR EDGE OF PAVEMENT

NOTES:

- PIPE 24" OR LESS USE 1' FROM O/D OF PIPE TO EXCAVATED WALLS
- PIPE 24" OR GREATER USE 2' FROM O/D OF PIPE TO EXCAVATED WALLS

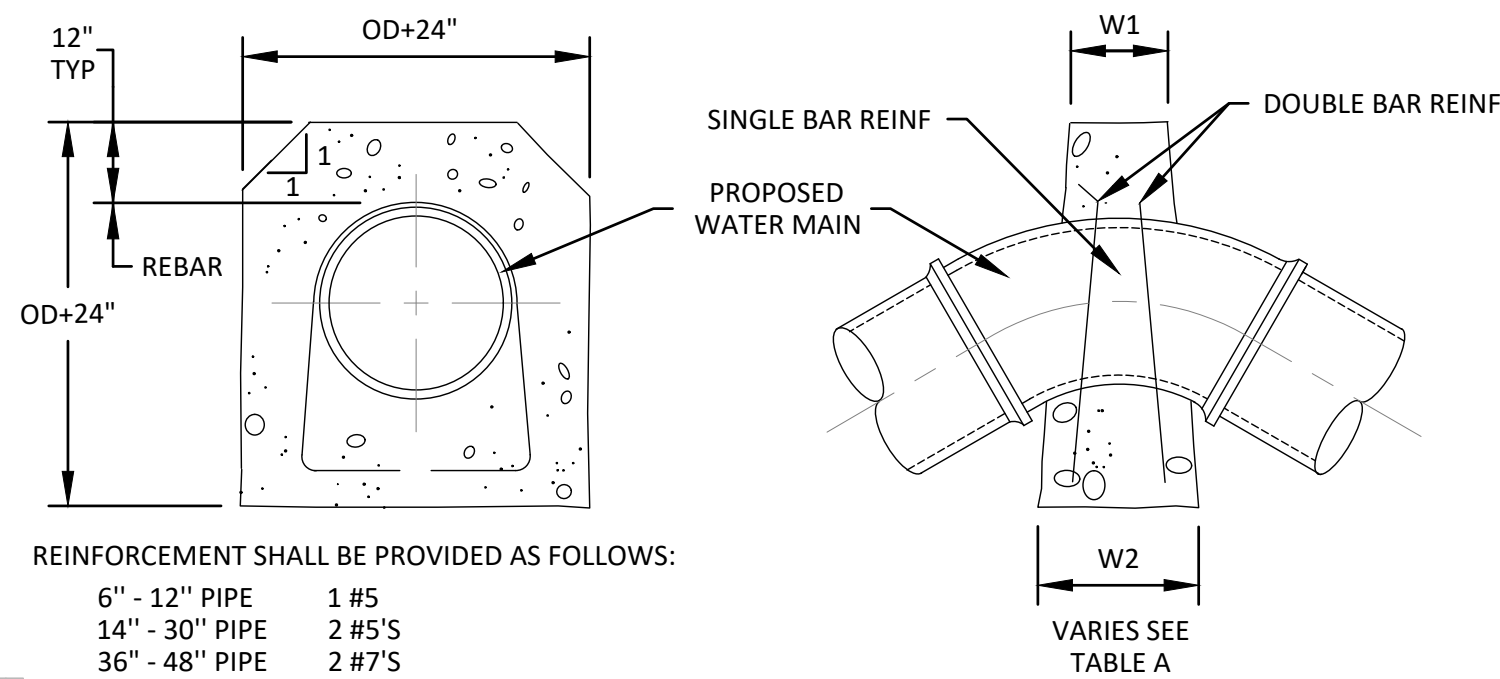


TRENCH DETAIL (NON PAVEMENT)
MORE THAN 10' FROM
CURB/OR EDGE OF PAVEMENT

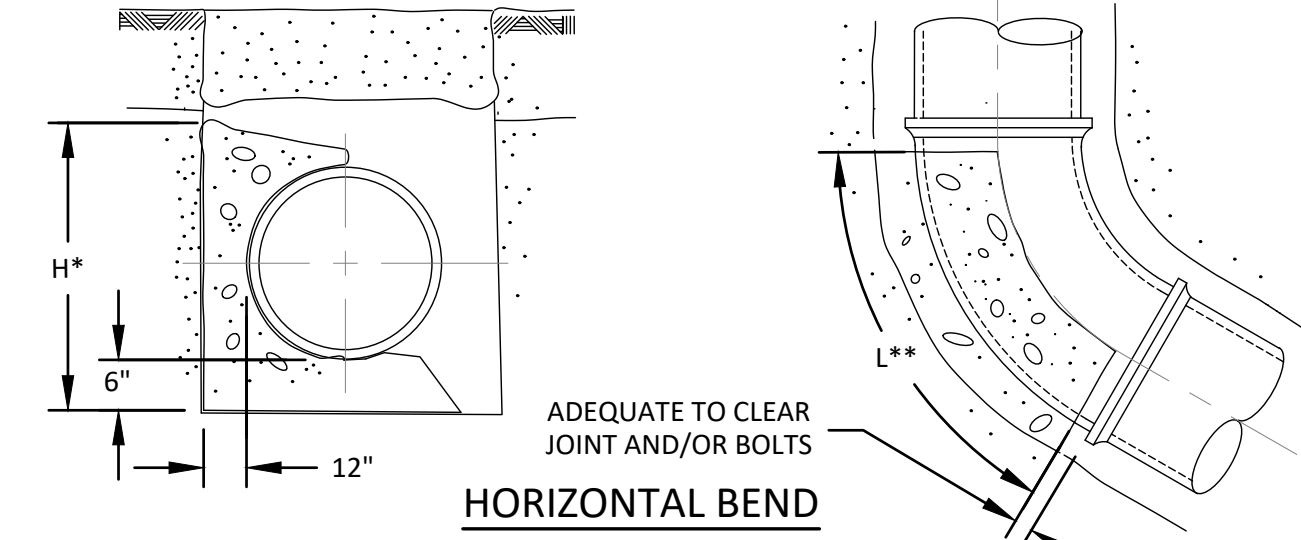
REVISED: JUNE 28, 2018

Texas Department of Transportation
SAN ANTONIO DISTRICT
TRENCH BACKFILL DETAIL
NON PAVEMENT

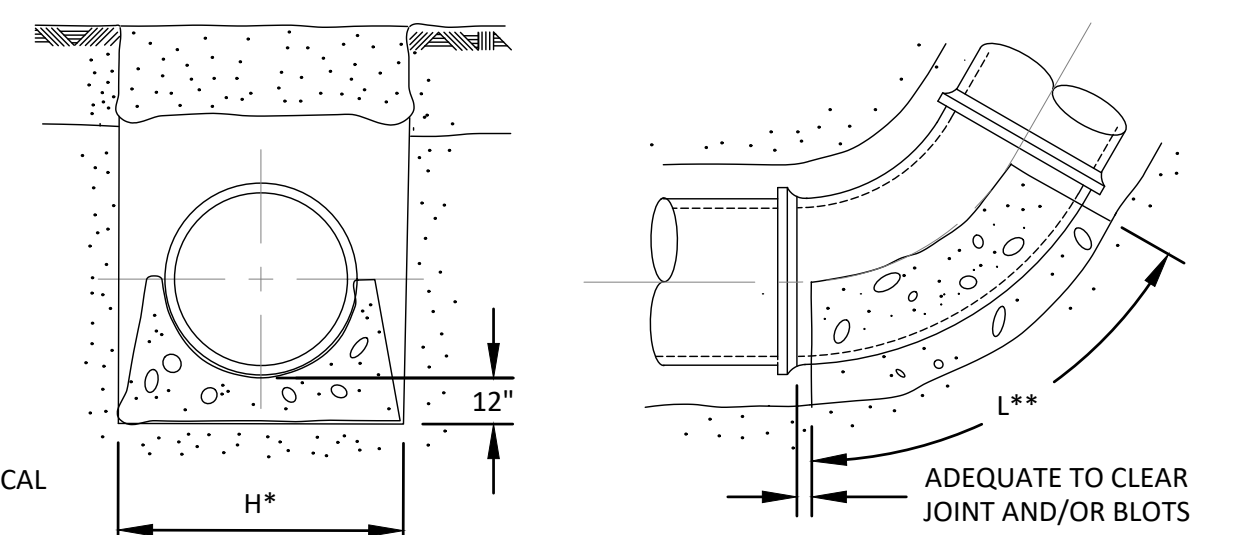
TXDOT TRENCH BACKFILL DETAIL



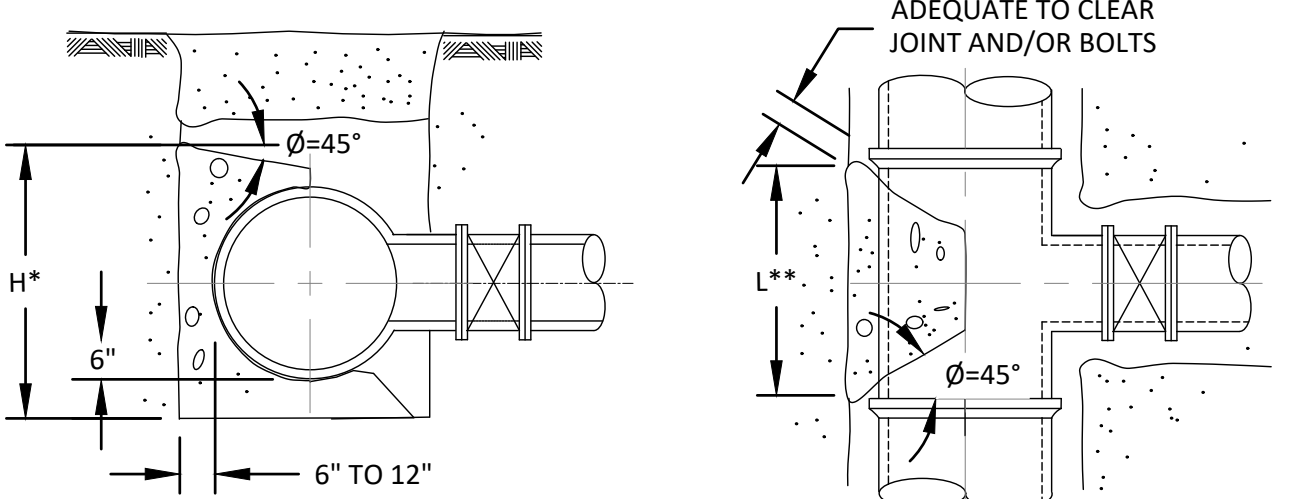
VERTICAL DOWN BEND



HORIZONTAL BEND



VERTICAL BEND UPWARD



TEE / OUTLET

- NOTES:
- FOR ANGLES GREATER THAN THOSE INDICATED, MEGA-LUG RESTRAINED JOINTS SHALL BE INSTALLED.
 - FOR JOINT DEFLECTIONS LESS THAN 5 DEGREES, NO HORIZONTAL OR VERTICAL THRUST RESTRAINT IS REQUIRED FOR PIPES LESS THAN 42" IN DIAMETER.

- THRUST BLOCK DESIGN AS FOLLOWS:
- PRESSURE OF 150 PSI (ACTUAL IF HIGHER) + 50 % SURGE ALLOWANCE
 - MAXIMUM SOIL BEARING SEE TABLE BELOW

PRESSURE
LOOSE OR SPONGY SOIL
UNDISTURBED SOIL, CALICHE
LIMESTONE ROCK

SOIL TYPES
1500 LB/SQ FT
2000 LB/SQ FT
4000 LB/SQ FT

- * THE DIMENSION FOR "H" MUST BE GREATER THAN DIAMETER OF THE PIPE
** LENGTH "L" ALONG THE BEND MUST BE GREATER THAN "H" AND LESS THAN 2 TIMES "H"

CONCRETE THRUST BLOCKING DETAIL

NTS

DATE	4-30-2024
REVISION	CONFORMED SET
NO.	CONFORMED SET
DESIGN BY:	SHKORWITZ
DRAWN BY:	DOARWYPLE
CHECKED BY:	PAULLAN
SCALE:	NONE
JOB NUMBER:	475169

TRC ENGINEERS, INC.
505 E. HARRIS STREET, SUITE 100
SAN ANTONIO, TEXAS 78202
TEL: 214.591.8716

CITY OF SEGUIN, TEXAS
24" WATER TRANSMISSION MAIN
DETAILS 2

It's real.

SHEET	51
MARCH 2024	