

# CONSTRUCTION PLANS FOR NEW BRAUNFELS UTILITIES GOODWIN-CONRAD'S WATER AND SEWER CONFLICT RELOCATION PROJECT BID SET



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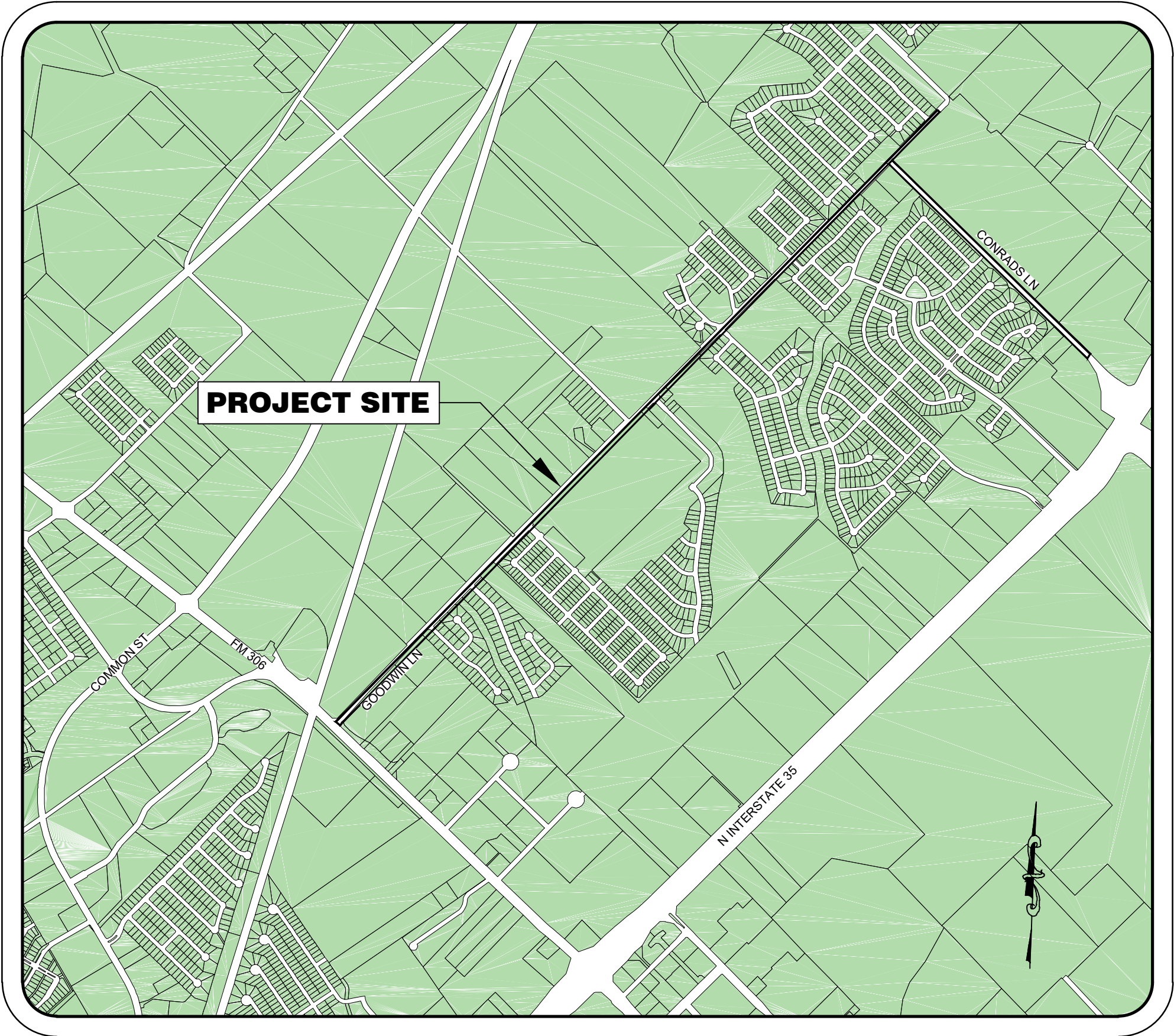
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THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER  
THE TEXAS ENGINEERING PRACTICE ACT.

**NOTES:**

- ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- PROJECT IS A TYPE 1 DEVELOPMENT
- ACCORDING TO FLOOD INSURANCE RATE MAP FOR COMAL COUNTY, PANEL 455 COMMUNITY MAP NO. 48091C0455F EFFECTIVE 9/2/2009, A PORTION OF THIS PROJECT LIES WITHIN THE 100-YEAR FLOODPLAIN.
- THE PROJECT IS NOT LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
- WATER IS A PRECIOUS COMMODITY IN THE STATE OF TEXAS AND NEW BRAUNFELS UTILITIES (NBU) IS PASSIONATE ABOUT PROTECTING THE LOCAL RESOURCE. NBU'S CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ACQUIRING A FIRE HYDRANT METER SO THAT ALL WATER USED FOR CONSTRUCTION OR TESTING PURPOSES ARE PROPERLY ACCOUNTED FOR. NBU WILL NOT TOLERATE ANY WATER THEFT, REGARDLESS OF THE AMOUNT. IF WATER THEFT IS DISCOVERED NBU'S CONTRACTOR SHALL BE SUBJECT TO MONETARY PENALTIES, CRIMINAL CHARGES, AND STOPPAGE OF ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROJECT. COSTS ASSOCIATED WITH ANY WORK STOPPAGE RESULTING FROM WATER THEFT SHALL BE AT THE FULL EXPENSE OF THE CONTRACTOR



**LOCATION MAP**  
N.T.S.

**OWNER:**  
NEW BRAUNFELS UTILITIES  
263 Main Plaza, New Braunfels, TX 78130  
Phone: 830-629-8400  
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PLEASE NOTE: NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRICAL, WATER AND WASTEWATER ATTRIBUTES. SOME OF WHICH MUST BE TAKEN PRIOR TO BACKFILL DURING CONSTRUCTION. REFERENCE NBU'S WATER WASTEWATER CAD DELIVERABLES SUBMISSION STANDARDS.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER CONTRACTOR'S OR ENGINEER. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE. THE ELECTRICAL GPS POINTS SHALL BE TO MAP GRADE.

**WATER**  
VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL  
HORIZONTAL BENDS PRIOR TO BACKFILL  
TEES PRIOR TO BACKFILL  
FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL  
FIRE HYDRANTS (TOP OF FLANGE)  
VALVES  
METERS (TOP CENTER OF BOX)  
BLOW OFF ASSEMBLY  
CORNER SLAB OF WATER TANK & GATE VALVE ON WATER TANK

**WASTEWATER**  
MANHOLES  
CLEANOUTS CORNER  
SLAB OF LIFT STATION

**ELECTRIC**  
POLES TRANSFORMERS, BOTH ABOVE AND UNDERGROUND (FRONT LOCK)  
STREET LIGHTS

COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR



THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES, INCLUDING SERVICE LATERALS, AND DRAINAGE STRUCTURES SHOWN ON THE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION AND DEPTHS OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION WHETHER SHOWN ON PLANS OR NOT, AND TO PROTECT THE SAME DURING CONSTRUCTION.

THE MOST CURRENT EDITIONS OF THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS AND THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES SHALL BE FOLLOWED FOR ALL CONSTRUCTION EXCEPT AS AMENDED BY THE CITY OF NEW BRAUNFELS STANDARD DETAILS.

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS TO SCHEDULE A PRECONSTRUCTION MEETING.

- FOR INSPECTIONS, YOU MUST CALL BEFORE 12:00 P.M., 48 HOURS PRIOR TO YOUR INSPECTION REQUEST.
- EACH INSPECTION WILL BE ALLOTTED 1 HOUR UNLESS YOU REQUEST FOR MORE TIME.
- ONCE YOUR REQUEST HAS BEEN ACCEPTED, YOU WILL RECEIVE A CALL FROM THE CITY OF NEW BRAUNFELS INSPECTOR.

- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
- FAXED IN AT 830-608-2117 OR,
- E-MAILED AT [INSPECTIONS@NBTEXAS.ORG](mailto:INSPECTIONS@NBTEXAS.ORG).

A TXDOT TYPE II B-B BLUE REFLECTIVE RAISED PAVEMENT MARKER SHALL BE INSTALLED IN THE CENTER OF THE ROADWAY ADJACENT TO ALL FIRE HYDRANTS. IN LOCATIONS WHERE HYDRANTS ARE SITUATED ON CORNERS, BLUE REFLECTIVE RAISED PAVEMENT MARKERS SHALL BE INSTALLED ON BOTH APPROACHES WHICH FRONT THE HYDRANT. THE RAISED PAVEMENT MARKER SHALL MEET TXDOT MATERIAL, EPOXY AND ADHESIVE SPECIFICATIONS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, SUBCONTRACTORS, BUILDERS, GEO-TECHNICAL ENGINEER, AND PROJECT ENGINEER TO IMMEDIATELY NOTIFY THE OFFICE OF THE CITY ENGINEER AND PROJECT ENGINEER IF THE PRESENCE OF GROUNDWATER WITHIN THE SITE IS EVIDENT. UPON NOTIFICATION THE PROJECT ENGINEER SHALL RESPOND WITH PLAN REVISIONS FOR THE MITIGATION OF THE GROUNDWATER ISSUE. THE CITY ENGINEER SHALL RESPOND WITHIN TWO (2) BUSINESS DAYS UPON RECEIPT OF THE MITIGATION PLAN. ALL CONSTRUCTION ACTIVITY, IMPACTED BY THE DISCOVERY OF GROUNDWATER, SHALL BE SUSPENDED UNTIL THE CITY ENGINEER GRANTS A WRITTEN APPROVAL OF THE GROUNDWATER MITIGATION PLAN.

AS PER PLATTING ORDINANCE SECTION 118-38M: WHEN ALL OF THE IMPROVEMENTS ARE FOUND TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND WITH THE CITY'S STANDARDS, AND UPON RECEIPT OF ONE SET OF "RECORD DRAWING" PLANS, AND A DIGITAL COPY OF ALL PLANS (PDF COPY) THE CITY ENGINEER SHALL ACCEPT SUCH IMPROVEMENTS FOR THE CITY OF NEW BRAUNFELS, SUBJECT TO THE GUARANTY OF MATERIAL AND WORKMANSHIP PROVISIONS IN THIS SECTION.

ENGINEER OF RECORD IS RESPONSIBLE TO ENSURE THAT EROSION CONTROL MEASURES AND STORMWATER CONTROL SUFFICIENT TO MITIGATE OFF SITE IMPACTS ARE IN PLACE AT ALL STAGES OF CONSTRUCTION.

DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE THE IMPACT OF CONSTRUCTION SHALL BE INSTALLED PRIOR TO ADDING IMPERVIOUS COVER.

THE ELEVATION OF THE LOWEST FLOOR SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORMWATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO STORMWATER CONVEYANCE STRUCTURES MUST HAVE FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE A PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE

PROCTORS SHALL BE SAMPLED FROM ON-SITE MATERIAL (ON-SITE IS DEFINED AS LIMITS OF CONSTRUCTION FOR THIS PLAN SET) AND A COPY OF THE PROCTOR RESULTS SHALL BE DELIVERED TO THE CITY OF NEW BRAUNFELS STREET INSPECTOR PRIOR TO ANY DENSITY TESTS.

ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS GEOTECHNICAL ENGINEER. FLEXIBLE BASE OR FILL/EMBANKMENT MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED EIGHT INCHES (8") LOOSE. THE REQUIRED DENSITY FOR THE FILL/EMBANKMENT MATERIAL SHALL MEET THE REQUIREMENTS OF TxDOT'S SPECIFICATION ITEM 132. THE REQUIRED DENSITY FOR THE FLEXIBLE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF TxDOT'S SPECIFICATION ITEM 247. EACH LAYER OF MATERIAL, INCLUSIVE OF SUBGRADE, SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE CONTENT. DENSITY TESTS SHALL BE TESTED TO 15X-110000 PER 100000 CUBIC FEET OF MATERIAL. REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT. UPON COMPLETION OF TESTING, THE GEOTECHNICAL ENGINEER WILL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FLEXIBLE BASE, AND FILL MATERIAL, AND SUBGRADE, HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

ASPHALTIC CONCRETE PAVEMENT SHALL BE THE TYPE OF HOT MIX ASPHALT AS DEFINED IN TXDOT'S STANDARD SPECIFICATIONS FOR CURRENT TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET AND BRIDGES.

SHINGLES (RAS) IN ASPHALT MIXTURES FOR NEW ROADWAYS. ANY DEBRIS INCLUSIONS WITHIN NEW ASPHALT PAVEMENTS WILL RESULT IN ASPHALT REMOVAL AND REPLACEMENT FROM CURB TO CURB FOR LIMITS TO BE DETERMINED BY THE CITY OF NEW BRAUNFELS.

CURB CUT DUE TO CONSTRUCTION OF NEW RIGHT-OF-WAY CONSTRUCTION  
(INDICATE THE 2 OPTIONS ON THE CONSTRUCTION PLANS).

CONSTRUCTION STABILIZED ENTRANCE  
SAWCUT CURB FOR CONSTRUCTION ENTRANCE.

## SIGNING AND PAVEMENT MARKING PLAN NOTES

THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE CITY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

SEEDING FOR THE PURPOSE OF ESTABLISHING VEGETATION WITHIN CONSTRUCTED EARTHEN CHANNELS, BASINS AND DISTURBED AREAS SHALL BE CONDUCTED IN ACCORDANCE WITH ITEM 164 (SEEDING FOR EROSION CONTROL) OF TxDOT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES MANUAL. ONLY SEED TYPES AND MIXES SPECIFIED FOR THE SAN ANTONIO DISTRICT (DISTRICT 15) IN TABLES 1 AND 2 UNDER ITEM 164 SHALL BE UTILIZED. DURING THE COOL SEASON (SEPT 1-NOV 30), CEREAL RYE AND SEED SPECIES SPECIFIED FOR THE SAN ANTONIO DISTRICT IN TABLE 3 MAY BE USED. FOR COOL SEASON SEEDING APPLICATIONS, COOL SEASON SEED MIXES SHALL BE USED IN CONJUNCTION WITH SEED MIXES FOR THE SAN ANTONIO DISTRICT AS SPECIFIED IN TABLE 1 AND 2 UNDER ITEM 164.

WATERING MAY ALSO BE NECESSARY TO FACILITATE AND EXPEDITE THE SPROUTING AND GROWTH OF VEGETATION. ITEM 168 OF TXDOT'S STANDARD SPECIFICATIONS MANUAL SHALL BE ADHERED TO FOR VEGETATIVE WATERING.

IF EXTENDED DROUGHT CONDITIONS EXIST THAT HINDER OR PROHIBIT THE GROWTH AND ESTABLISHMENT OF VEGETATION, THE CONTRACT/ DEVELOPER SHALL PROVIDE A PLAN TO THE CITY OF NEW BRAUNFELS DESCRIBING THE MEASURES THAT WILL BE TAKEN TO STABILIZE EARTHEN DRAINAGE INFRASTRUCTURE UNTIL A TIME WHEN GROWING CONDITIONS BECOME MORE FAVORABLE.

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D:\Projects\2024 New Braunfels Utilities - Goodwin-Conrads Water and Sewer Conflict Resolution\CON Shared\GENERAL NOTES.dwg TSS: GENERAL NOTES 2 of 2 PLOTTED: 9/20/2024 11:21 AM BY: DUSTIN W

NBU GENERAL CONSTRUCTION NOTES

1.

ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THE PROJECT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURRENT "NEW BRAUNFELS UTILITIES WATER SYSTEMS CONNECTION/CONSTRUCTION POLICIES WATER SYSTEMS".
2.

CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NBU WATER SYSTEMS ENGINEERING AT 830-608-8971 WITH AT LEAST THREE (3) WORKING DAYS (72 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED WITH NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
3.

THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE DEVELOPER AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER / WASTEWATER MAINS WHICH ARE LOCATED WITHIN SAID PARTICULAR SUBDIVISION. (AS APPLICABLE).
4.

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 THE ENGINEER AND HIS EMPLOYEES, PARTNERS, OFFICERS, DIRECTORS, OR CONSULTANTS HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE 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.
5.

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.
6.

CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND EXISTING UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE.
7.

THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.
8.

CONTRACTOR SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES, FEES AND TAXES AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
9.

NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
10.

CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL WASTE MATERIALS UPON PROJECT COMPLETION. THE CONTRACTOR SHALL NOT PERMANENTLY PLACE ANY WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT.
11.

THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ 31 TAC 313.4 AND 31 TAC 313.9.
12.

BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
13.

CONTRACTOR IS REQUIRED TO VERIFY PROJECT ELEVATIONS. THE TERM "MATCH EXISTING" SHALL BE UNDERSTOOD TO SIGNIFY BOTH HORIZONTAL AND VERTICAL ALIGNMENT.
14.

THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE RIGHT OF WAY ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OPERATIONS.
15.

OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR 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.
16.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. UTILITY COMPANIES ARE ALSO PREVIOUSLY MENTIONED IN "UTILITY COMPANY NOTIFICATION".
17.

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.
18.

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 THE TRAFFIC IN ONE DIRECTION AT ALL TIMES. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORKDAY.
19.

PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:

a.

WATER MAINS AND SERVICES

b.

SEWER MAINS AND SERVICES
20.

NO METER BOXES TO BE SET IN DRIVEWAYS. ANY METER BOXES SET IN DRIVEWAYS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
21.

WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN SEWER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF SEWER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ.
22.

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 AS 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.
23.

UTILITY TRENCH COMPACTION WITH STREET R.O.W.

a.

ALL UTILITY TRENCH COMPACTION TEST WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR GEO-TECHNICAL ENGINEER.

b.

FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE.

c.

EACH LAYER OF MATERIAL SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEXT METHODS TEX-113-E, TEX-114-E, TEX-115-E.

d.

THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEO-TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR.

e.

UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

SEQUENCE OF CONSTRUCTION:

1.
- CONTRACTOR TO ATTEND PRE-CONSTRUCTION MEETING
2.
- NOTIFY CITY OF NEW BRAUNFELS, NBU, AND TxDOT AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION
3.
- CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS
4.
- CONTRACTOR TO INSTALL CONSTRUCTION STAKING
5.
- INSTALLATION OF PERIMETER CONTROLS (E.G SILT FENCE) AS PROVIDED ON THE CITY OF NEW BRAUNFELS 2019 BOND PROJECT: GOODWIN/CONRADS LANE - CONTRACT #NB 19-002
6.
- CLEARING & GRUBBING ONLY ONLY IN AREAS OF SITE
7.
- INSTALLATION OF GRAVITY MAINS, WATER MAINS, AND INSTALLATION OF ALL APPURTENANCES
8.
- COMPLETE ALL TESTING AS REQUIRED BY THE CONTRACT
9.
- REMOVAL OF ALL TEMPORARY SEDIMENT & EROSION CONTROL MEASURES AFTER REVEGETATION IS ESTABLISHED
10.
- PREPARE AS-BUILT MARKUPS OF ALL GRAVITY MAINS, WATER MAINS, BENDS, AND STRUCTURES. THEN SUBMIT TO NBU FOR ACCEPTANCE
11.
- SUBMIT FOR FINAL PAYMENT

NBU SEWER NOTES

1.

THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION.
2.

A MINIMUM OF 8" WASTEWATER PIPE AND FITTINGS (P.V.C. SDR-26, ASTM, D- 3034, D-3212, F-477) ARE REQUIRED ON NEW INSTALLATION.
3.

ALL RESIDENTIAL WASTEWATER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND A CLEANOUT SHALL BE INSTALLED AT THE PROPERTY LINE. SERVICES TO LOTS WILL EXTEND FOUR (4) FEET PAST THE UNDERGROUND ELECTRIC CONDUIT IF ELECTRIC IS INSTALLED IN THE FRONT EASEMENT. ALL SEWER CLEANOUTS THAT LEAD TO NBU MAINS SHALL BE INSTALLED WITH A PROTECTIVE UTILITY SHROUD AND PIVOTING MARKER POLE DURING TIME OF CONSTRUCTION.
4.

PIPE BEDDING OF WASTEWATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SPECIFICATIONS.
5.

SECONDARY BACKFILL OF WASTEWATER LINES SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH, NO ROCKS OR STONES HAVING ANY DIMENSION LARGER THAN 6 INCHES AT THE LARGEST DIMENSION.
6.

ALL WASTEWATER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS AS PER 30 TAC §217.53 (C) (2).
7.

FOR WASTEWATER LINES LESS THAN 24" IN DIAMETER, SELECT INITIAL BACKFILL MATERIAL SHALL BE PLACED IN TWO LIFTS.

a.

THE FIRST LIFT SHALL BE SPREAD UNIFORMLY AND SIMULTANEOUSLY ON EACH SIDE AND UNDER THE SHOULDERS OF THE PIPE TO THE MID POINT OR SPRING LINE OF THE PIPE.

b.

THE SECOND LIFT SHALL BE PLACED TO A DEPTH AS SHOWN ON THE PIPE BACKFILL DETAIL. FOR PIPES LARGER THAN 24", 12" MAXIMUM LIFTS SHALL BE USED.
8.

ALL MANHOLES MUST BE WATER TIGHT, EITHER MONOLITHIC, CAST-IN-PLACE CONCRETE STRUCTURES OR PREFABRICATED MANHOLES SPECIFICALLY APPROVED BY NBU. THE MANHOLES SHALL HAVE WATER-TIGHT RINGS AND COVERS. WHEREVER THEY ARE WITHIN THE 100 YEAR FLOODPLAIN, THE MANHOLE COVERS SHALL BE BOLTED. EVERY THIRD MANHOLE IN SEQUENCE SHALL HAVE AN ALTERNATE MEANS OF VENTING. 30 TAC §213.5 (C) (3) (A) AND 30 TAC §217.55 (O).
9.

ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS TWO INCHES (2") ABOVE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREA. IN PAVED AREAS, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
10.

ALL NEW MANHOLES, UNLESS APPROVED BY NBU ENGINEERING, ARE TO HAVE COVERS WITH 32" OPENINGS.
11.

WASTEWATER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS OR MECHANICAL "BOOT TYPE" JOINT AS APPROVED BY NBU.
12.

WASTEWATER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
13.

IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM, IT SHALL BE THE CONTACTOR'S RESPONSIBILITY TO TEST THE EXISTING MANHOLES BEFORE CONSTRUCTION. AFTER THE PROPOSED MANHOLE(S) HAS BEEN BUILT, THE CONTRACTOR SHALL RE-TEST THE EXISTING SYSTEM TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. (NO SEPARATE PAY ITEM).
14.

WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC §217.53 (D) (3) (A) (I).
15.

NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE WASTEWATER LINES. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:

a.

PULL MANDREL

b.

PERFORM AIR TEST

c.

CLEANING OF ANY DEBRIS

d.

FLUSHING OF SYSTEM

e.

TV INSPECTION (WITHIN 72 HOURS OF FLUSHING)
16.

A MINIMUM OF 3 FEET OF COVER IS TO BE MAINTAINED OVER THE WASTEWATER MAIN AND LATERALS AT SUBGRADE, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
17.

WASTEWATER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLE IN ACCORDANCE WITH NBU CONNECTION & CONSTRUCTION POLICY MANUAL.
18.

TCEQ AND EPA REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF WASTEWATER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTES ON THE PROJECT'S PLAN AND PROFILE SHEETS. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY NBU WATER SYSTEMS.
19.

ALL MANHOLES NOT WITHIN PAVED STREETS SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE CONE PER NBU DETAIL DRAWING #329.
20.

ALL MANHOLES OVER THE EDWARDS AQUIFER RECHARGE ZONE SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE CONE PER NBU DETAIL DRAWING #329.

NBU WATER NOTES

1.

ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
2.

WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
3.

WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
4.

WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
5.

EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER CAN BE CONSIDERED FOR SEPARATE BUILDINGS, HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
6.

CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
7.

INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
8.

SECONDARY BACKFILL OF WATER LINES SHALL GENERALLY CONSIST OF MATERIAL REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH OR STONES HAVING ANY DIMENSION LARGER THAN 6" INCHES AT THE LARGEST DIMENSION.
9.

HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
10.

NO METER BOXES TO BE SET IN DRIVEWAYS OR SIDEWALKS. ANY METER BOXES SET IN DRIVEWAYS OR SIDEWALKS WILL BE RELOCATED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
11.

METER BOXES MUST BE SET AT THE PROPOSED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED AT CONTRACTOR'S AND/OR DEVELOPER'S EXPENSE.
12.

ACCEPTABLE METER BOXES ARE D13-BAMR AND D15-BAMR. **NEW RESIDENTIAL LOTS ARE REQUIRED TO USE THE D15-BAMR METER BOXES (DOUBLE AMR).** COMMERCIAL LOTS SHOULD CHOOSE WHICH BOX APPLIES TO THE DOMESTIC AND/OR IRRIGATION METER LAYOUT.
13.

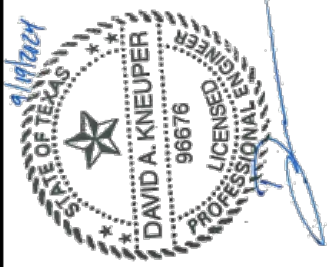
THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.
14.

CONTRACTOR SHALL PLACE TRACER WIRE ON TOP OF THE WATER MAINS. TRACER WIRE SHOULD RUN FROM VALVE TO VALVE AND EXIT AT THE VALVE BOX. THE TRACER WIRE SHOULD BE ATTACHED TO THE TOP OF THE PIPE USING TAPE. EXCESS WIRE SHOULD BE LEFT WITHIN VALVE BOXES TO BE PLACED WITHIN LID OF COVER.
15.

WATER QUALITY SHALL BE PROTECTED WITH APPROPRIATE BACKFLOW PREVENTION ASSEMBLIES INSTALLED ON ALL IRRIGATION SYSTEMS, FIRE SUPPRESSION SYSTEMS AND MULTI-UNIT COMPLEXES ALONG WITH MULTI-LEVEL PROPERTIES ON THE DOMESTIC METER CONTAINMENT. NBU CAN ASSIST WITH THE DECISION ON APPROPRIATE BACKFLOW ASSEMBLIES ON A CASE BY CASE BASIS. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
16.

ALL BACKFLOW PREVENTION ASSEMBLIES SHALL BE TESTED UPON INSTALLATION AND REPORT SENT TO NBU VIA THE ONLINE TRACKING SYSTEM, CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM
17.

ALL RESIDENTIAL AND COMMERCIAL PROPERTIES SHALL HAVE A CUSTOMER SERVICE INSPECTION CERTIFICATE (CSI INSPECTION) COMPLETED UPON COMPLETION OF THE BUILDING OR HOME STRUCTURE. CONTACT NBU BACKFLOW PREVENTION SPECIALIST FOR MORE DETAILS. EMAIL QUESTIONS TO CROSSCONNECTION@NBUTEXAS.COM



NEW BRAUNFELS UTILITIES GOODWIN-CONRADS WATER AND SEWER CONFLICT RELOCATION									
GENERAL NOTES 2 OF 2									
									DATE
									APPD.
									REVISIONS
									NO.

SCALE:

DATE:

PROJECT NO: 8029-03

DESIGNED BY: AR

DRAWN BY: AR

CHECKED BY: DK

SHEET NO.

3

OF 28 SHEETS



- (A) AN OWNER MAY STOP A TEST IF NO PRESSURE LOSS HAS OCCURRED DURING THE FIRST 25% OF THE CALCULATED TESTING TIME.
- (B) IF ANY PRESSURE LOSS OR LEAKAGE HAS OCCURRED DURING THE FIRST 25% OF A TESTING PERIOD, THEN THE TEST MUST CONTINUE FOR THE ENTIRE TEST DURATION AS OUTLINED ABOVE OR UNTIL FAILURE.
- (F) WASTEWATER COLLECTION SYSTEM PIPES WITH A 27 INCH OR LARGER AVERAGE INSIDE DIAMETER MAY BE AIR TESTED AT EACH JOINT INSTEAD OF FOLLOWING THE PROCEDURE OUTLINED IN THIS SECTION.
- (G) A TESTING PROCEDURE FOR PIPE WITH AN INSIDE DIAMETER GREATER THAN 33 INCHES MUST BE APPROVED BY THE EXECUTIVE DIRECTOR.
- (2) INFILTRATION TEST:
  - (A) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 20 FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE.
  - (B) AN OWNER SHALL USE AN INFILTRATION TEST IN LIEU OF AN EXFILTRATION TEST WHEN PIPES ARE INSTALLED BELOW THE GROUNDWATER LEVEL.
  - (C) THE TOTAL EXFILTRATION, AS DETERMINED BY A HYDROSTATIC HEAD TEST, MUST NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF TWO FEET ABOVE THE CROWN OF A PIPE AT AN UPSTREAM MANHOLE, OR AT LEAST TWO FEET ABOVE EXISTING GROUNDWATER LEVEL, WHICHEVER IS GREATER.
  - (D) FOR CONSTRUCTION WITHIN A 25-YEAR FLOOD PLAIN, THE INFILTRATION OR EXFILTRATION MUST NOT EXCEED 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT THE SAME MINIMUM TEST HEAD AS IN SUBPARAGRAPH (C) OF THIS PARAGRAPH.
  - (E) IF THE QUANTITY OF INFILTRATION OR EXFILTRATION EXCEEDS THE MAXIMUM QUANTITY SPECIFIED, AN OWNER SHALL UNDERTAKE REMEDIAL ACTION IN ORDER TO REDUCE THE INFILTRATION OR EXFILTRATION TO AN AMOUNT WITHIN THE LIMITS SPECIFIED. AN OWNER SHALL RETEST A PIPE FOLLOWING A REMEDIATION ACTION.
  - (f) IF A GRAVITY COLLECTION PIPE IS COMPOSED OF FLEXIBLE PIPE, DEFLECTION TESTING IS ALSO REQUIRED. THE FOLLOWING PROCEDURES MUST BE FOLLOWED:
    - (1) FOR A COLLECTION PIPE WITH INSIDE DIAMETER LESS THAN 27 INCHES, DEFLECTION MEASUREMENT REQUIRES A RIGID MANDREL.
- (A) MANDREL SIZING:
  - (i) A RIGID MANDREL MUST HAVE AN OUTSIDE DIAMETER (OD) NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER (ID) OR AVERAGE ID OF A PIPE, AS SPECIFIED IN THE APPROPRIATE STANDARD BY THE ASTM'S, AMERICAN WATER WORKS ASSOCIATION, UNI-BELL, OR AMERICAN NATIONAL STANDARDS INSTITUTE, OR ANY RELATED APPENDIX.
  - (ii) IF A MANDREL SIZING DIAMETER IS NOT SPECIFIED IN THE APPROPRIATE STANDARD, THE MANDREL MUST HAVE AN OD EQUAL TO 95% OF THE ID OF A PIPE, IN THIS CASE, THE ID OF THE PIPE, FOR THE PURPOSE OF DETERMINING THE OD OF THE MANDREL, MUST EQUAL BE THE AVERAGE OUTSIDE DIAMETER MINUS TWO MINIMUM WALL THICKNESSES FOR OD CONTROLLED PIPE AND THE AVERAGE INSIDE DIAMETER FOR ID CONTROLLED PIPE.
  - (iii) ALL DIMENSIONS MUST MEET THE APPROPRIATE STANDARD.
- (B) MANDREL DESIGN:
  - (i) A RIGID MANDREL MUST BE CONSTRUCTED OF A METAL OR A RIGID PLASTIC MATERIAL THAT CAN WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
  - (ii) A MANDREL MUST HAVE NINE OR MORE ODD NUMBER OF RUNNERS OR LEGS.
  - (iii) A BARREL SECTION LENGTH MUST BE EQUAL AT LEAST 75% OF THE INSIDE DIAMETER OF A PIPE.
  - (iv) EACH SIZE MANDREL MUST USE A SEPARATE PROVING RING.
- (C) METHOD OPTIONS:
  - (i) AN ADJUSTABLE OR FLEXIBLE MANDREL IS PROHIBITED.
  - (ii) A TEST MAY NOT USE TELEVISION INSPECTION AS A SUBSTITUTE FOR A DEFLECTION TEST.
  - (iii) IF REQUESTED, THE EXECUTIVE DIRECTOR MAY APPROVE THE USE OF A DEFLECTOMETER OR A MANDREL WITH REMOVABLE LEGS OR RUNNERS ON A CASE-BY-CASE BASIS.
- (2) FOR A GRAVITY COLLECTION SYSTEM PIPE WITH AN INSIDE DIAMETER 27 INCHES AND GREATER, OTHER TEST METHODS MAY BE USED TO DETERMINE VERTICAL DEFLECTION.
  - (1) A DEFLECTION TEST METHOD MUST BE ACCURATE TO WITHIN PLUS OR MINUS 0.2% DEFLECTION.
  - (4) AN OWNER SHALL NOT CONDUCT A DEFLECTION TEST UNTIL AT LEAST 30 DAYS AFTER THE FINAL BACKFILL.
  - (5) GRAVITY COLLECTION SYSTEM PIPE DEFLECTION MUST NOT EXCEED FIVE PERCENT (5%)
  - (6) IF A PIPE SECTION FAILS A DEFLECTION TEST, AN OWNER SHALL CORRECT THE PROBLEM AND CONDUCT A SECOND TEST AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS.

$$T = \frac{0.085 \times D \times K}{Q}$$

17. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(c)(3)(ii). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.

Pipe Diameter (inches)	Minimum Time (seconds)	Maximum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

- $$Q = \frac{LD\sqrt{P}}{148,000}$$

- Q = the quantity of makeup water in gallons per hour,
- L = the length of the pipe section being tested, in feet,
- D = the nominal diameter of the pipe in inches, and
- P = the average test pressure during the hydrostatic test in pounds per square inch (psi).

- The hydrostatic leakage rate for ductile iron (DI) pipe and appurtenances shall not exceed the amount allowed or recommended by formulas in America Water Works Association (AWWA) C-600 as required in 30 TAC §290.44(a)(5). Please ensure that the formula for this calculation is correct and most current formula is in use;

$$L = \frac{SD\sqrt{P}}{148,000}$$

- L = the quantity of makeup water in gallons per hour,
- S = the length of the pipe section being tested, in feet,
- D = the nominal diameter of the pipe in inches, and
- P = the average test pressure during the hydrostatic test in pounds per square inch (psi).

12. The contractor shall maintain a minimum separation distance in all directions of nine feet between the proposed waterline and wastewater collection facilities including manholes. If this distance cannot be maintained, the contractor must immediately notify the project engineer for further direction. Separation distances, installation methods, and materials utilized must meet §290.44(e)(1)-(4).
13. The separation distance from a potable waterline to a wastewater main or lateral manifold or cleanout shall be a minimum of nine feet. Where the nine-foot separation distance cannot be achieved, the potable waterline shall be encased in a joint of at least 150 psi pressure class pipe at least 18 feet long and two nominal sizes larger than the conveyance. The space around the carrier pipe shall be supported at five-foot intervals with spacers or be filled to the springline with washed sand. The encasement pipe shall be centered on the crossing and both ends sealed with cement grout or manufactured sealant [§290.44(e)(5)].
14. Fire hydrants shall not be installed within nine feet vertically or horizontally of any wastewater line, wastewater lateral, or wastewater service line regardless of construction [§290.44(e)(6)].
15. Suction mains to pumping equipment shall not cross wastewater mains, wastewater laterals, or wastewater service lines. Raw water supply lines shall not be installed within five feet of any tile or concrete wastewater main, wastewater lateral, or wastewater service line [§290.44(e)(7)].
16. Waterlines shall not be installed closer than ten feet to septic tank drainfields [§290.44(e)(8)].
17. The contractor shall disinfect the new waterlines in accordance with AWWA Standard C651-14 or most recent, then flush and sample the lines before being placed into service. Samples shall be collected for microbiological analysis to check the effectiveness of the disinfection procedure which shall be repeated if contamination persists. A minimum of one sample for each 1,000 feet of completed waterline will be required or at the next available sampling point beyond 1,000 feet as designated by the design engineer [§290.44(f)(3)].
18. Dechlorination of disinfecting water shall be in strict accordance with current AWWA Standard C655-09 or most recent.

Austin Regional Office 12100 Park 35 Circle, Building A Austin, Texas 78753-1808 Phone (512) 339-2929 Fax (512) 339-3795	San Antonio Regional Office 14250 Judson Road San Antonio, Texas 78233-4480 Phone (210) 490-3096 Fax (210) 545-4329
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NEW BRAUNFELS UTILITIES  
GOODWIN-CONRADS WATER AND SEWER  
CONFLICT RELOCATION

TCEQ NOTES

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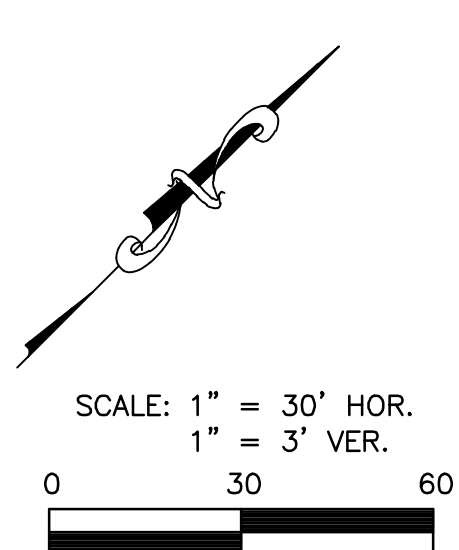
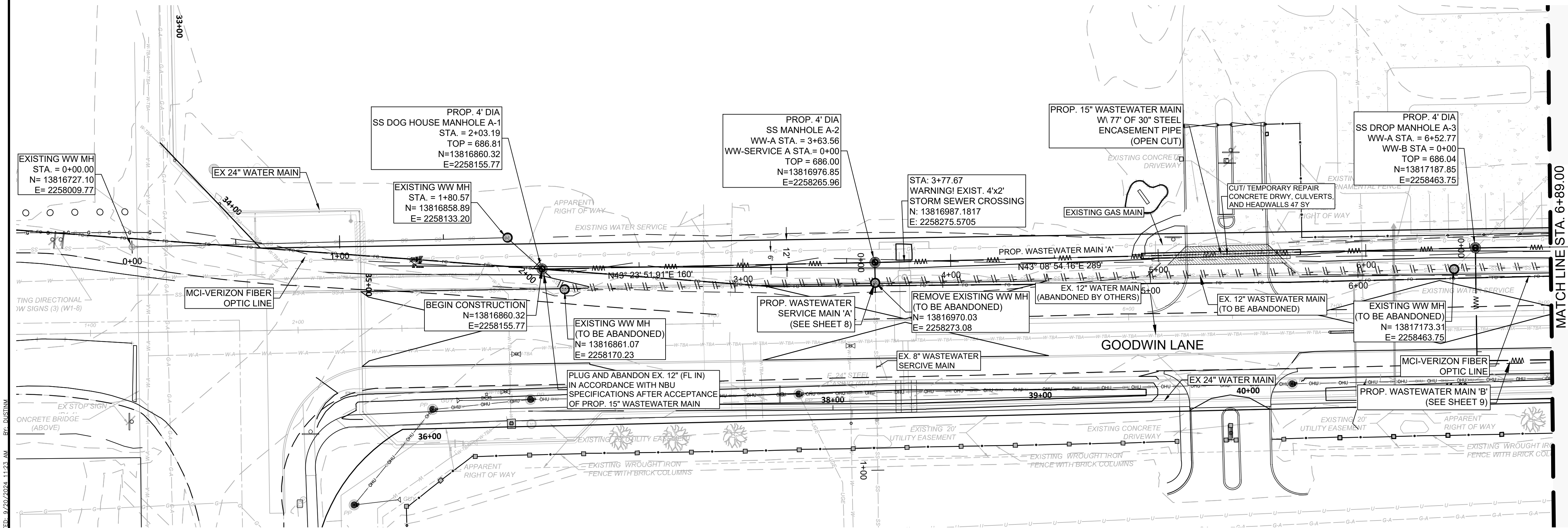
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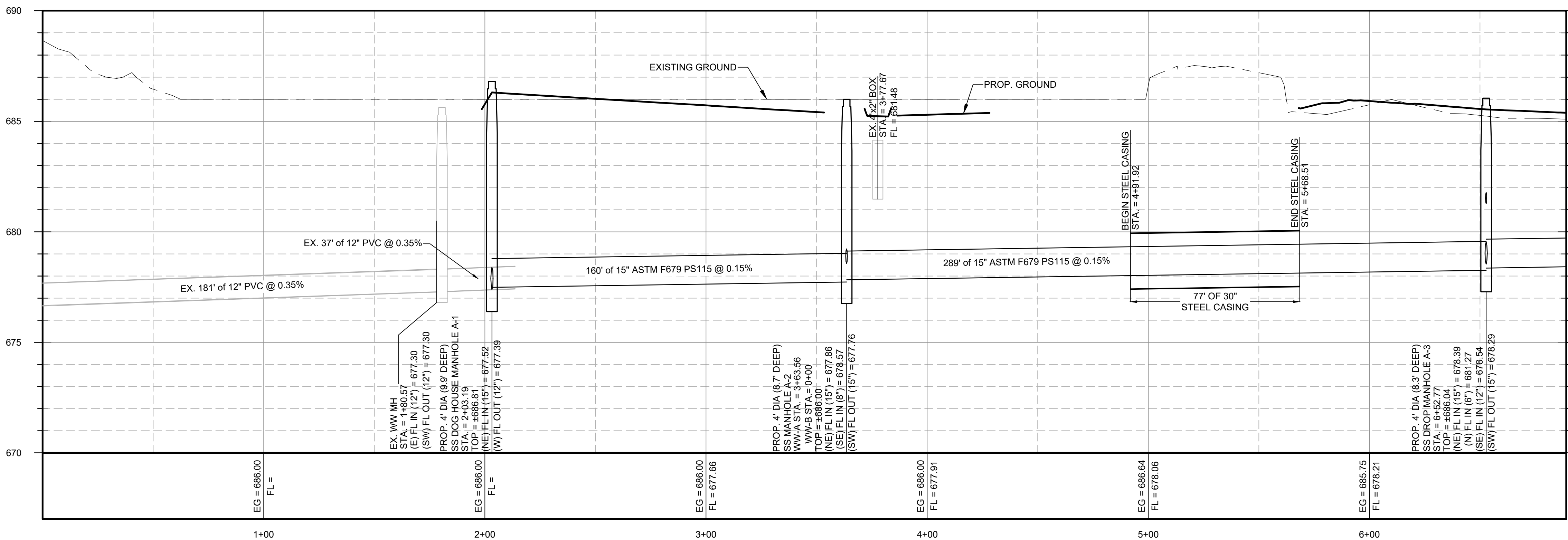


FILE: E:\Projects\2024 New Braunfels Utilities - Goodwin-Sanibel Water and Sewer Collection Relocation\DWG\Sheet\WMA Alignment A STA. 0+00.00 - 6+89.00 - 13+14.38.dwg TBS: 7 WASTEWATER MAIN A STA. 0+00.00 - 6+89.00 PLOTTER: 9/20/2024 1:23 AM BY: JUSTIN



LEGEND	
PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
EXISTING WASTEWATER LINE	
PROP. WATER LINE	
EX. WATER MAIN	
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SILT FENCE	
FIBER OPTIC	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
EXISTING CHAINLINK FENCE	
EXISTING WOOD FENCE	
EXISTING CONTOUR	
PROPOSED ABANDONMENT	
EXISTING ABANDONMENT	
FEMA FLOODPLAIN	
ASPHALT PAVEMENT REPAIR	

- NOTES:
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS, MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
  - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
  - CONTRACTOR TO JOINT RESTRAIN ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
  - ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED RIGHT-OF-WAY AND UTILITY EASEMENTS.
  - TOPOGRAPHY PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KFW ENGINEERS).
  - CONTRACTOR TO RESTORE ALL DAMAGED AND DISTURBED AREAS INCLUDING BUT NOT LIMITED TO SURFACE AND SUBSURFACE FEATURES, TOPSOIL, REVEGETATION, AND EROSION CONTROLS.
  - ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
  - NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
  - ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
  - CONTRACTOR TO PREPARE PROPOSED A BYPASS PUMPING PLAN TO BE APPROVED BY ENGINEER AND NBU PRIOR TO CONSTRUCTION.
  - TRAFFIC CONTROL NOTE:  
THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGER. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
  - TRENCH SAFETY NOTE:  
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 ON THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE 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.
  - ALL WATER AND WASTEWATER ABANDONMENT IN ACCORDANCE WITH NBU SPECIFICATIONS.
  - FOR PROPOSED MANHOLES IN FUTURE PAVEMENT CONTRACTOR TO ADJUST AS REQUIRED.
  - CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
  - ALL EXISTING WATER LINES TO REMAIN IN SERVICE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY OWNER. EXISTING WATER LINE TO BE ABANDONED IN PLACE AFTER ALL CONNECTIONS ARE MADE. ABANDON VALVES AND FIRE HYDRANTS PER OWNER'S INSTRUCTION.
  - CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
  - PIPING TO HAVE A MINIMUM COVER OF 48", UNLESS OTHERWISE INDICATED IN THE PLANS.
  - ALL BURIED PIPING JOINTS, FITTINGS AND VALVES MUST BE MECHANICALLY RESTRAINED UNLESS OTHERWISE INDICATED IN THE PLANS.
  - OPEN-CUT INSTALLATION OF THE WATERLINE ACROSS GOODWIN LANE SHALL BE DONE BETWEEN THE HOURS OF 8:30 AM THROUGH 3:00 PM TO MINIMIZE IMPACT TO DRIVERS.
  - ALL WATER SERVICES BENEATH ROADWAYS SHALL BE CASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.



WASTEWATER MAIN A PROFILE VIEW

UTILITY  
ENGINEERING  
GROUP  
PLLC

181 N. DICK AVE. NEW BRAUNFELS, TEXAS 78130 PH: (833) 24-0261  
Texas Engineering Firm E-18712

GOODWIN-CONRAD'S WATER AND SEWER CONFLICT  
RELOCATION

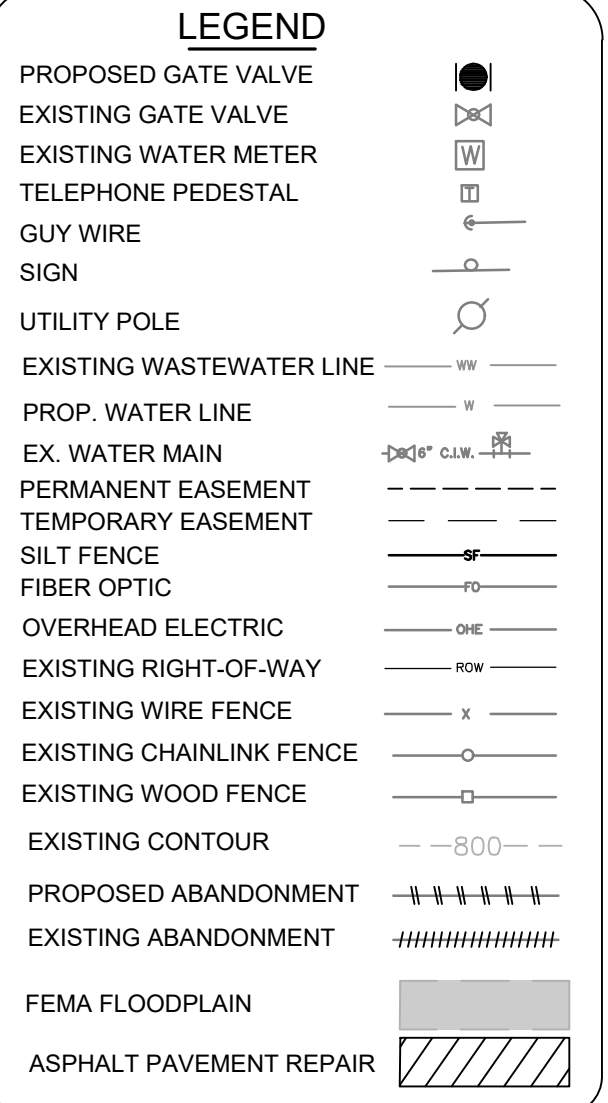
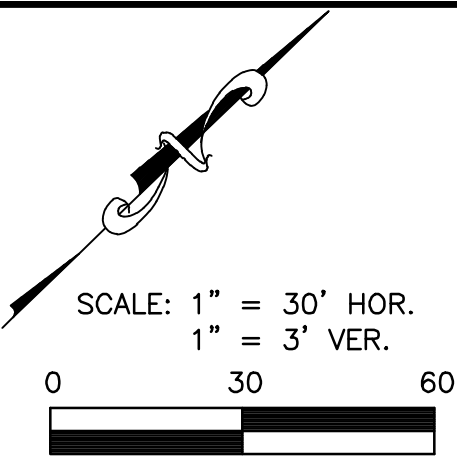
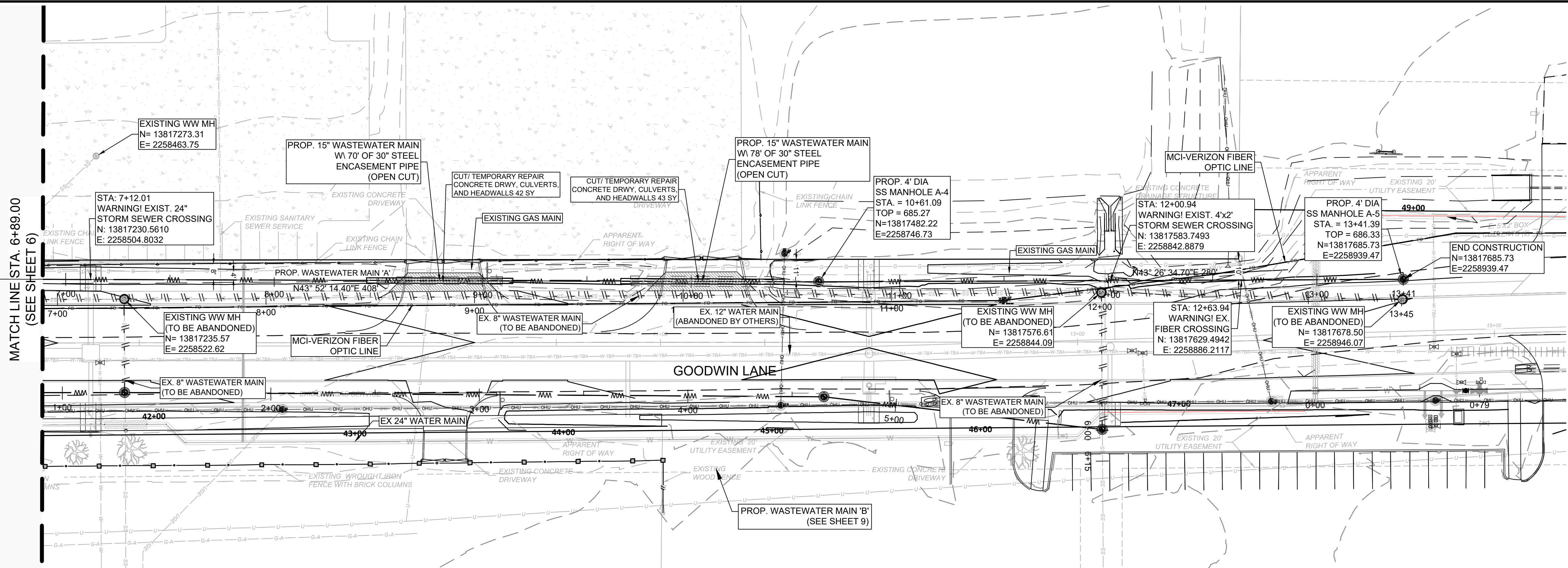
WASTEWATER MAIN A STA. 0+00.00 - 6+89.00

NO.	REVISIONS	APPD.	DATE

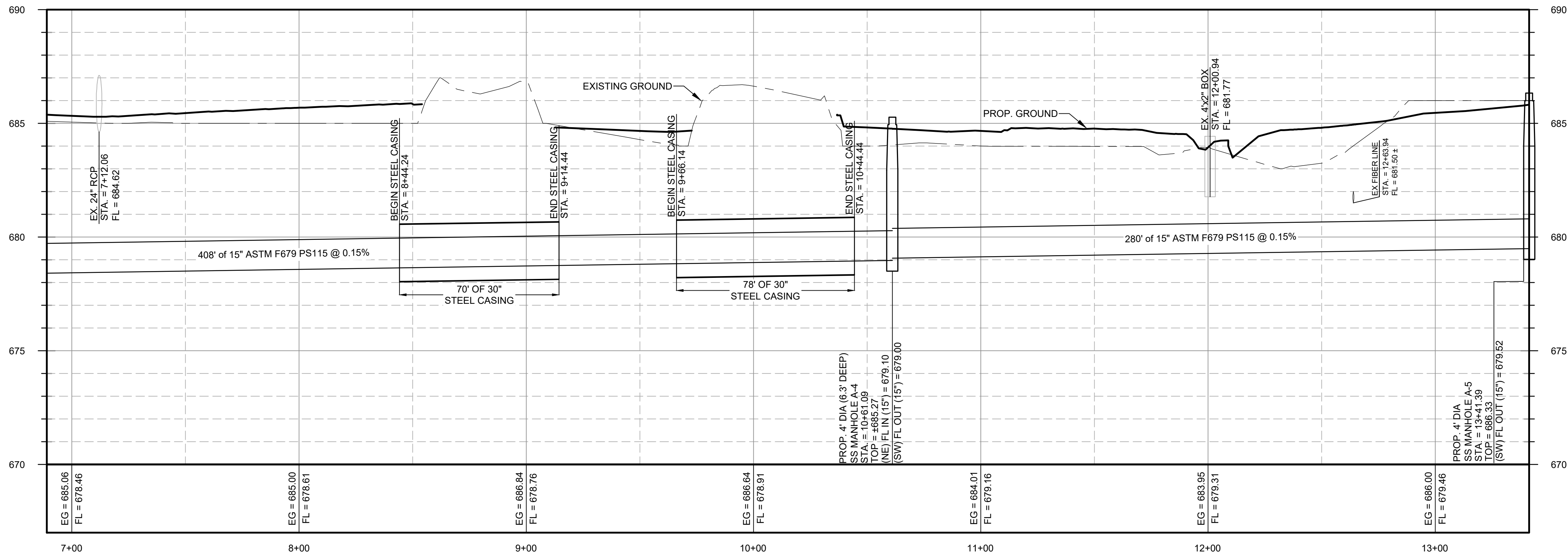
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PROJECT NO:0209-03  
DESIGNED BY:AR  
DRAWN BY:AR  
CHECKED BY:DK  
SHEET NO.  
6  
OF 28 SHEETS



D:\Projects\2024\New Braunfels\Utilities\Goodwin-Contrads Water and Sewer Relocation\Goodwin-Contrads Water and Sewer Relocation\DWG\Goodwin-Contrads Water and Sewer Relocation\WWSA\WWSA.dwg PLOT: 12/20/2024 11:23 AM BY: DUSTIN



- NOTES:**
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS, MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
  - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
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  - TRAFFIC CONTROL NOTE:  
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  - ALL WATER AND WASTEWATER ABANDONMENT IN ACCORDANCE WITH NBU SPECIFICATIONS.
  - FOR PROPOSED MANHOLES IN FUTURE PAVEMENT CONTRACTOR TO ADJUST AS REQUIRED.
  - CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
  - ALL EXISTING WATER LINES TO REMAIN IN SERVICE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY OWNER. EXISTING WATER LINE TO BE ABANDONED IN PLACE AFTER ALL CONNECTIONS ARE MADE. ABANDON VALVES AND FIRE HYDRANTS PER OWNER'S INSTRUCTION.
  - CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
  - PIPING TO HAVE A MINIMUM COVER OF 48", UNLESS OTHERWISE INDICATED IN THE PLANS.
  - ALL BURIED PIPING JOINTS, FITTINGS AND VALVES MUST BE MECHANICALLY RESTRAINED UNLESS OTHERWISE INDICATED IN THE PLANS.
  - OPEN-CUT INSTALLATION OF THE WATERLINE ACROSS GOODWIN LANE SHALL BE DONE BETWEEN THE HOURS OF 8:30 AM THROUGH 3:00 PM TO MINIMIZE IMPACT TO DRIVERS.
  - ALL WATER SERVICES BENEATH ROADWAYS SHALL BE CASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.



WASTEWATER MAIN A PROFILE VIEW



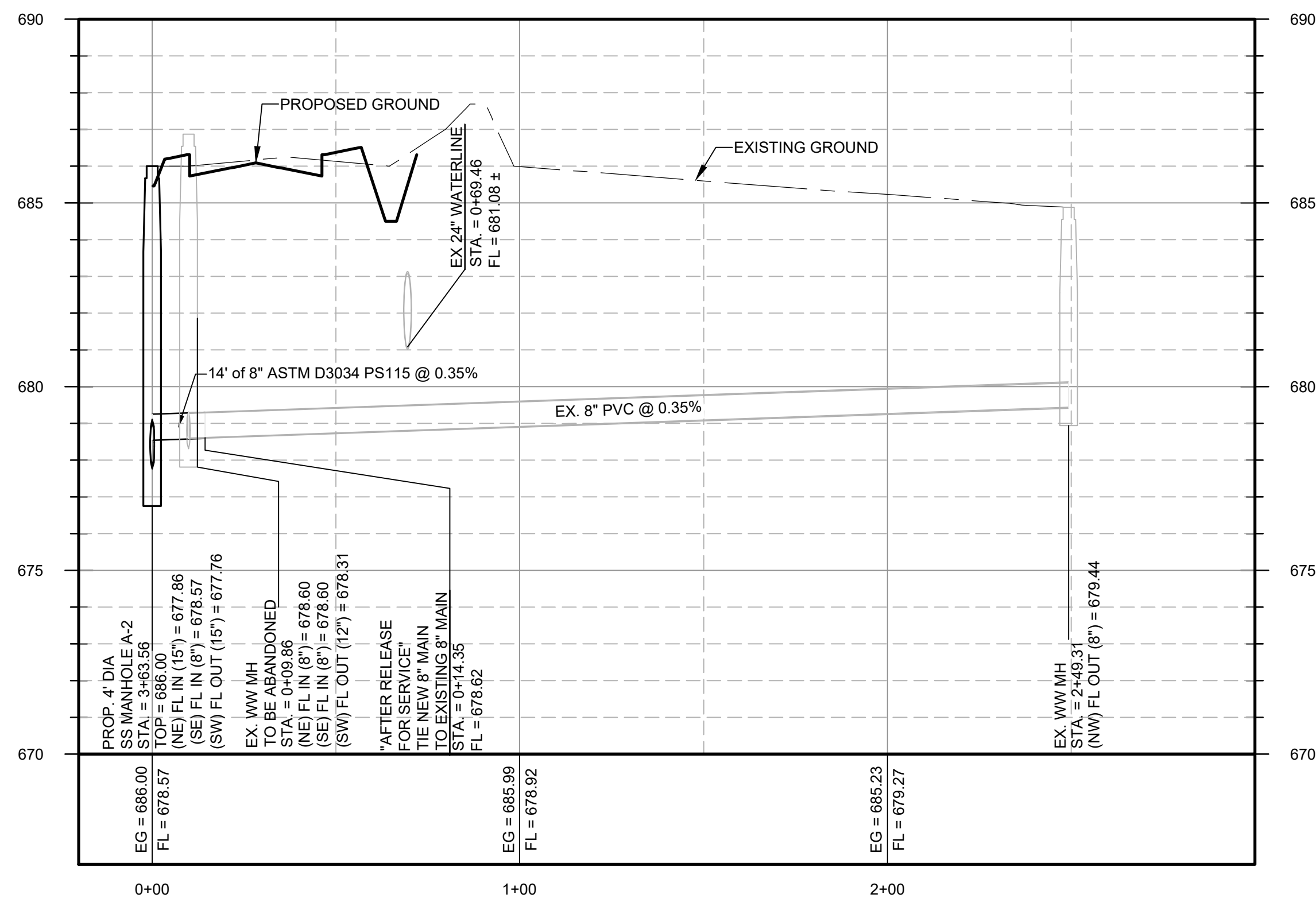
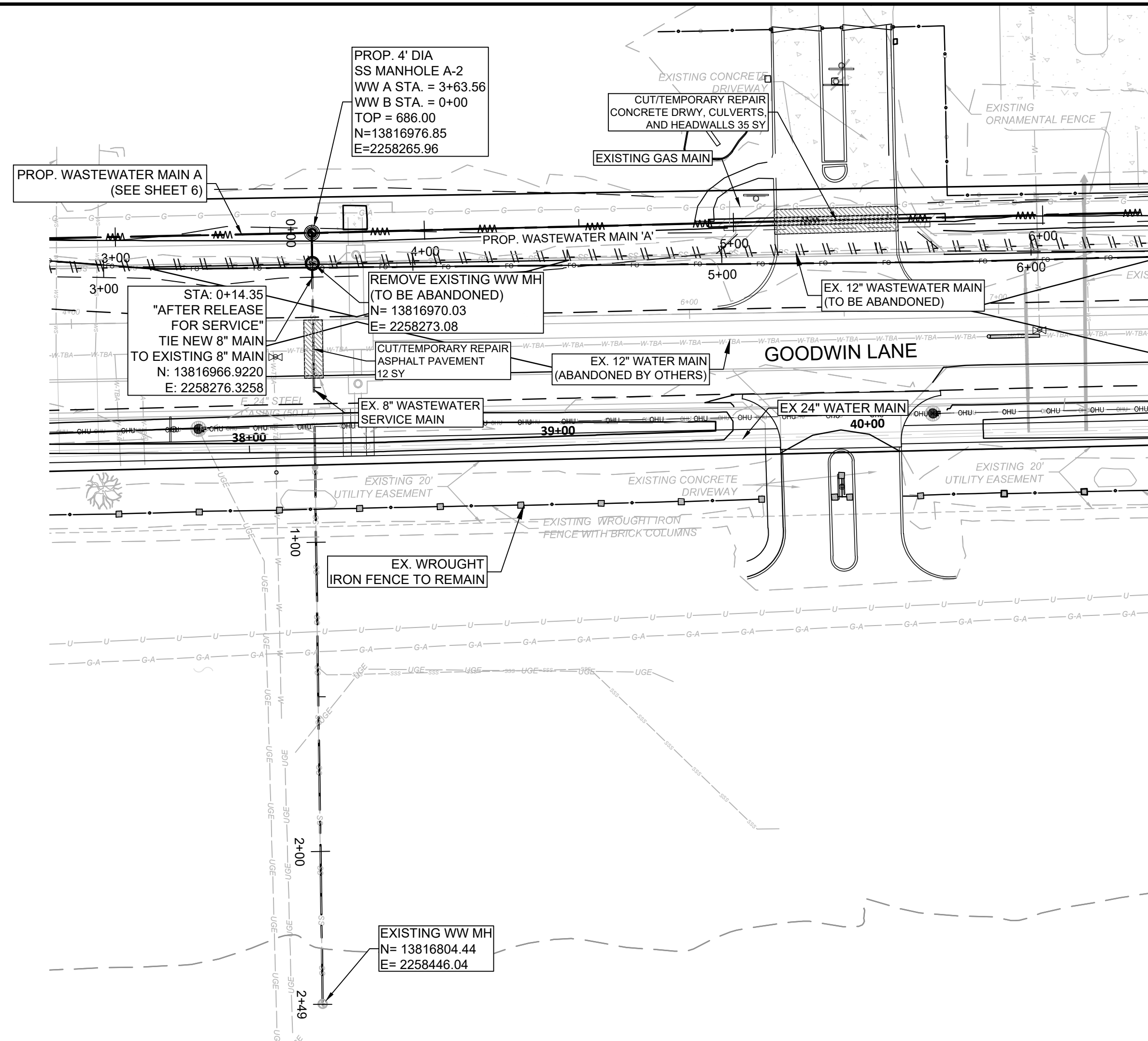
NEW BRAUNFELS UTILITIES  
GOODWIN-CONTRADS WATER AND SEWER CONFLICT  
RELOCATION

WASTEWATER MAIN A STA. 6+89.00 - 13+41.39

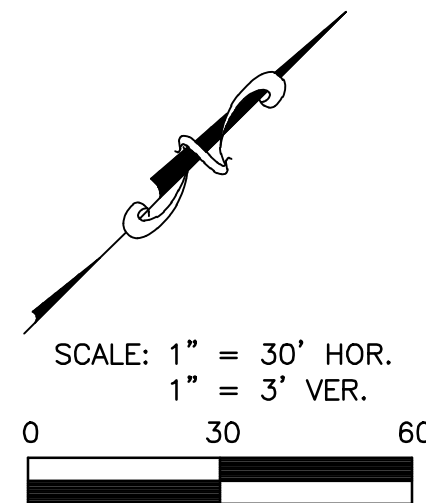
NO.	REVISIONS	APPD.	DATE

SCALE:  
DATE:  
PROJECT NO: 8029-03  
DESIGNED BY: AR  
DRAWN BY: AR  
CHECKED BY: DK  
SHEET NO.  
**7**





## WASTEWATER SERVICE MAIN A PROFILE VIEW



## LEGEND

PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
EXISTING WASTEWATER LINE	
PROP. WATER LINE	
EX. WATER MAIN	
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SILT FENCE	
FIBER OPTIC	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
EXISTING CHAINLINK FENCE	
EXISTING WOOD FENCE	
EXISTING CONTOUR	
PROPOSED ABANDONMENT	
EXISTING ABANDONMENT	
FEMA FLOODPLAIN	
ASPHALT PAVEMENT REPAIR	

NOTES:

- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS, MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
- CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL UTILITIES IN THE PROJECT AREA.
- CONTRACTOR TO JOIN RESTRAINT ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
- ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED 15' WIDE-AND-TWO-FOOT EASEMENT.
- TOPOGRAPHY PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KFW ENGINEERS).
- CONTRACTOR TO RESTORE ALL DAMAGED AND DISTURBED AREAS INCLUDING BUT NOT LIMITED TO SURFACE AND SUBSURFACE FEATURES, TOPSOIL, REVEGETATION, AND EROSION CONTROL.
- ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A D SPECIFICATIONS.
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
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- ALL WATER AND WASTEWATER ABANDONMENT IN ACCORDANCE WITH NBU SPECIFICATIONS
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- CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
- PIPING SHALL HAVE A MINIMUM 4" UNLESS OTHERWISE INDICATED IN THE PLANS.
- ALL BURIED PIPING JOINTS, FITTINGS AND VALVES MUST BE MECHANICALLY RESTRAINED UNLESS OTHERWISE INDICATED IN THE PLANS.
- OPEN-CUT INSTALLATION OF THE WATERLINE ACROSS GOODWIN LANE SHALL BE DONE BETWEEN THE HOURS OF 8:30 AM TO 3:00 PM TO MINIMIZE IMPACT TO DRIVERS.
- ALL EXISTING DRIVEWAYS AND SIDEWALKS SHALL BE CEASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.

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PROJECT NO:8029-03

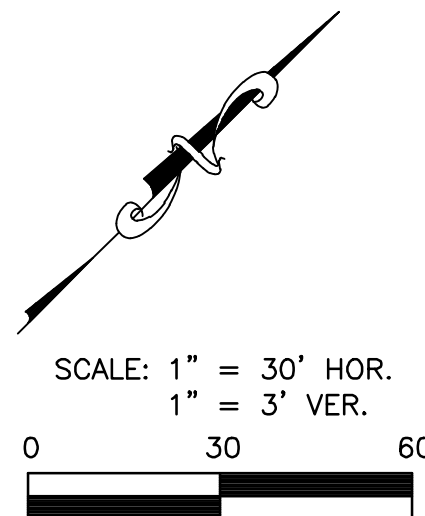
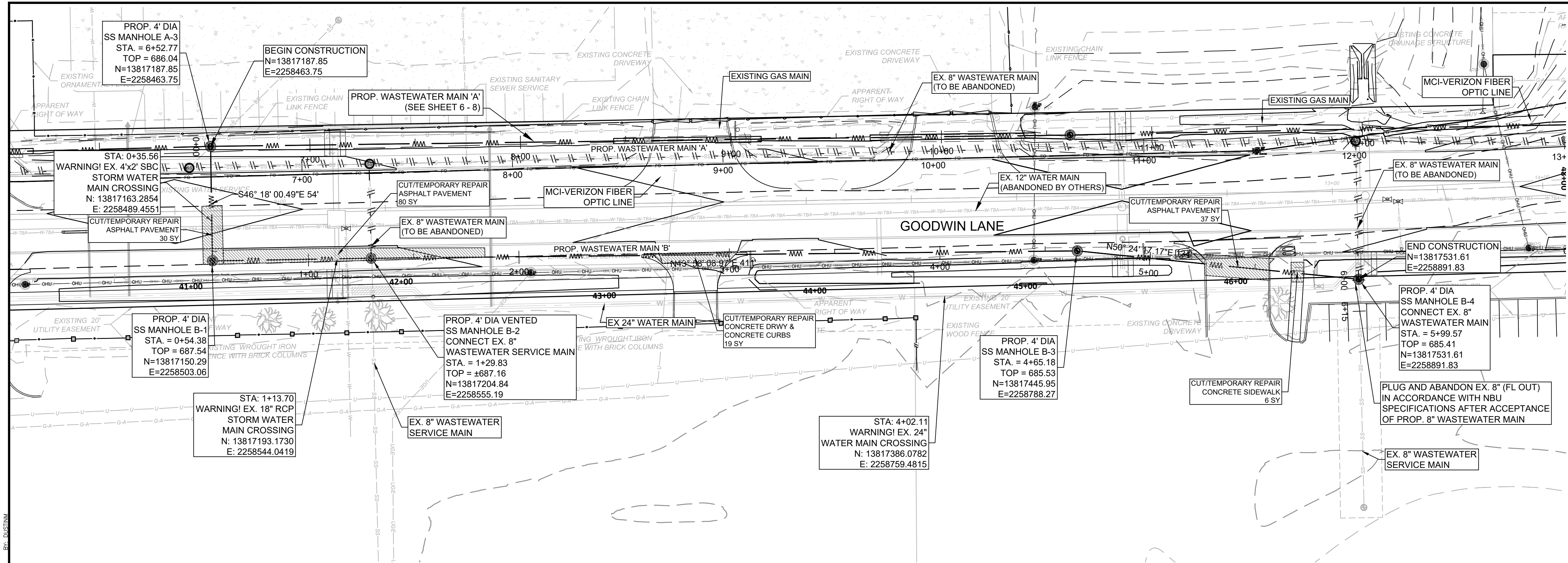
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DRAWN BY:AR

CHECKED BY:DK
SHEET NO.

8  
OF 28 SHEETS

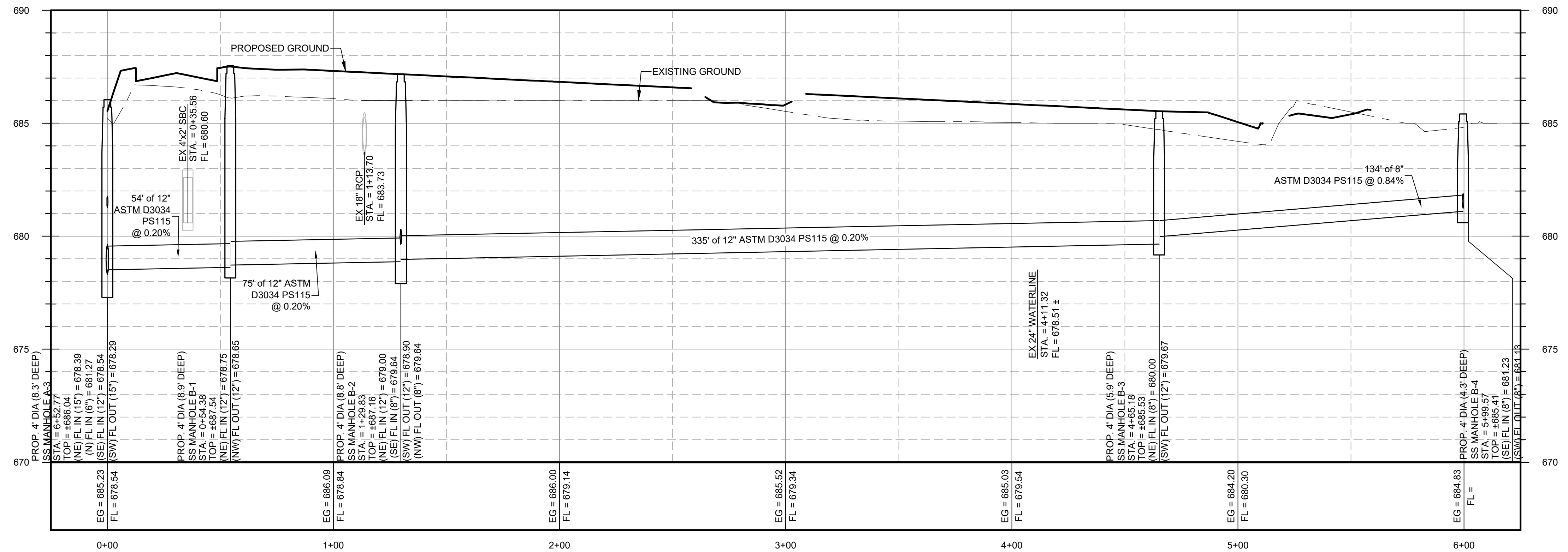


D:\Projects\2024\New Braunfels\Utilities\Goodwin-Conflicts\Water and Sewer\Goodwin-Conflicts\Wastewater Main B STA 0+00.00 - 6+12.98.dwg PLOTTED: 5/20/2024 1:24 AM BY: DUSTIN



LEGEND	
PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
EXISTING WASTEWATER LINE	
PROP. WATER LINE	
EX. WATER MAIN	
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SILT FENCE	
FIBER OPTIC	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
EXISTING CHAINLINK FENCE	
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WASTEWATER MAIN B PROFILE VIEW

UTILITY  
ENGINEERING  
GROUP, PLLC

181 N. DICKINSON AVE., NEW BRAUNFELS, TEXAS 78130 PH: (833) 244-0261  
Texas Engineering Firm E-18712

DAVID A. KNEUPER  
REGISTERED PROFESSIONAL ENGINEER  
NO. 13817531.61  
EXPIRATION DATE 09/01/2025

NEW BRAUNFELS UTILITIES  
GOODWIN-CONRAD'S WATER AND SEWER CONFLICT  
RELOCATION  
WASTEWATER MAIN B

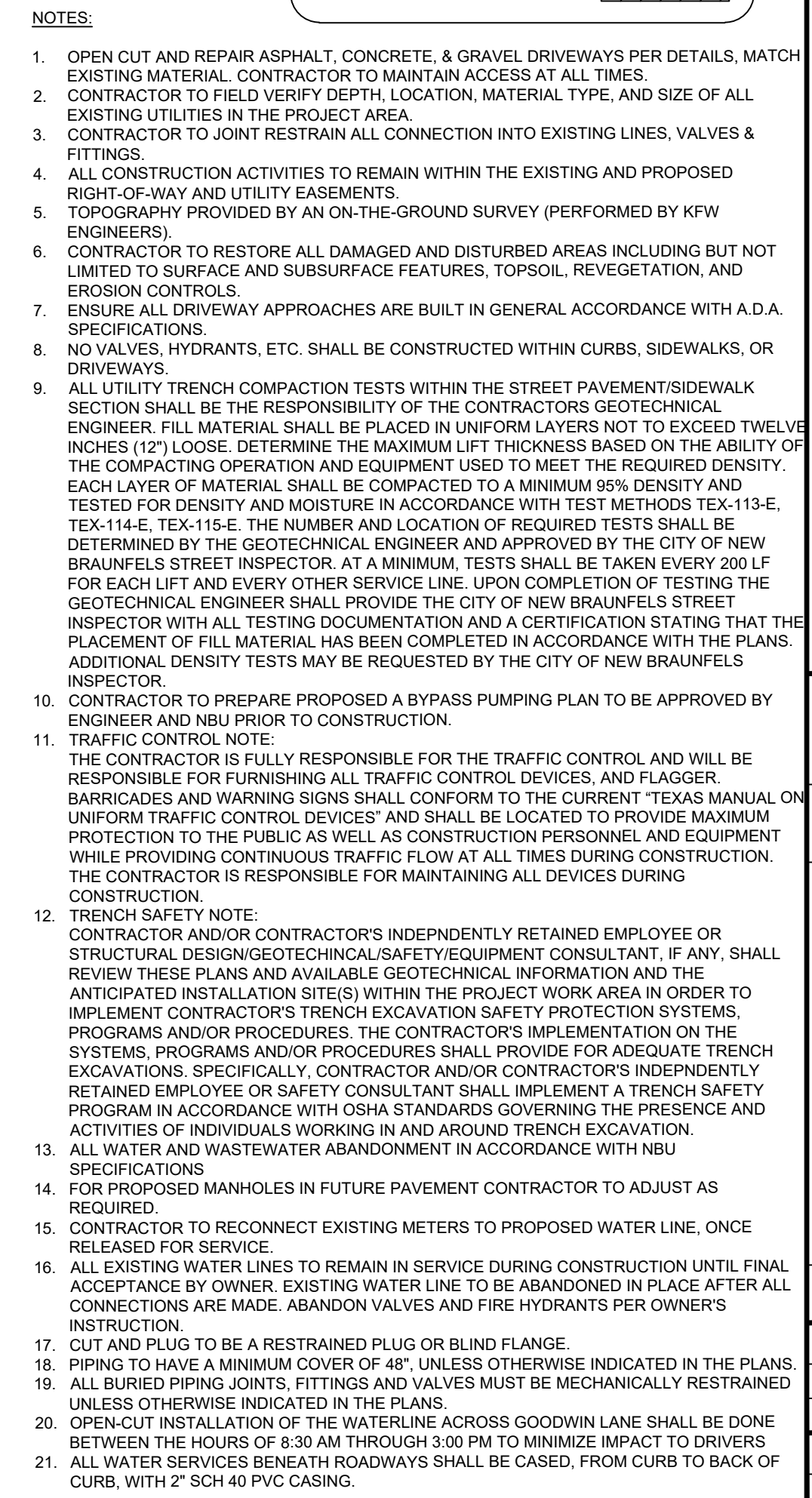
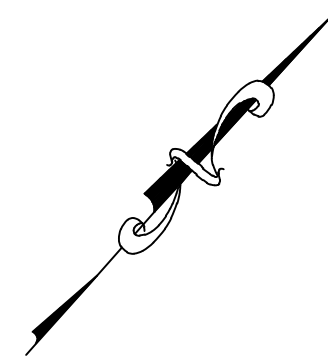
NO.	REVISIONS	APPD.	DATE

SCALE:  
DATE:  
PROJECT NO: 8029-03  
DESIGNED BY: AR  
DRAWN BY: AR  
CHECKED BY: DK  
SHEET NO.  
9  
OF 28 SHEETS





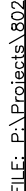




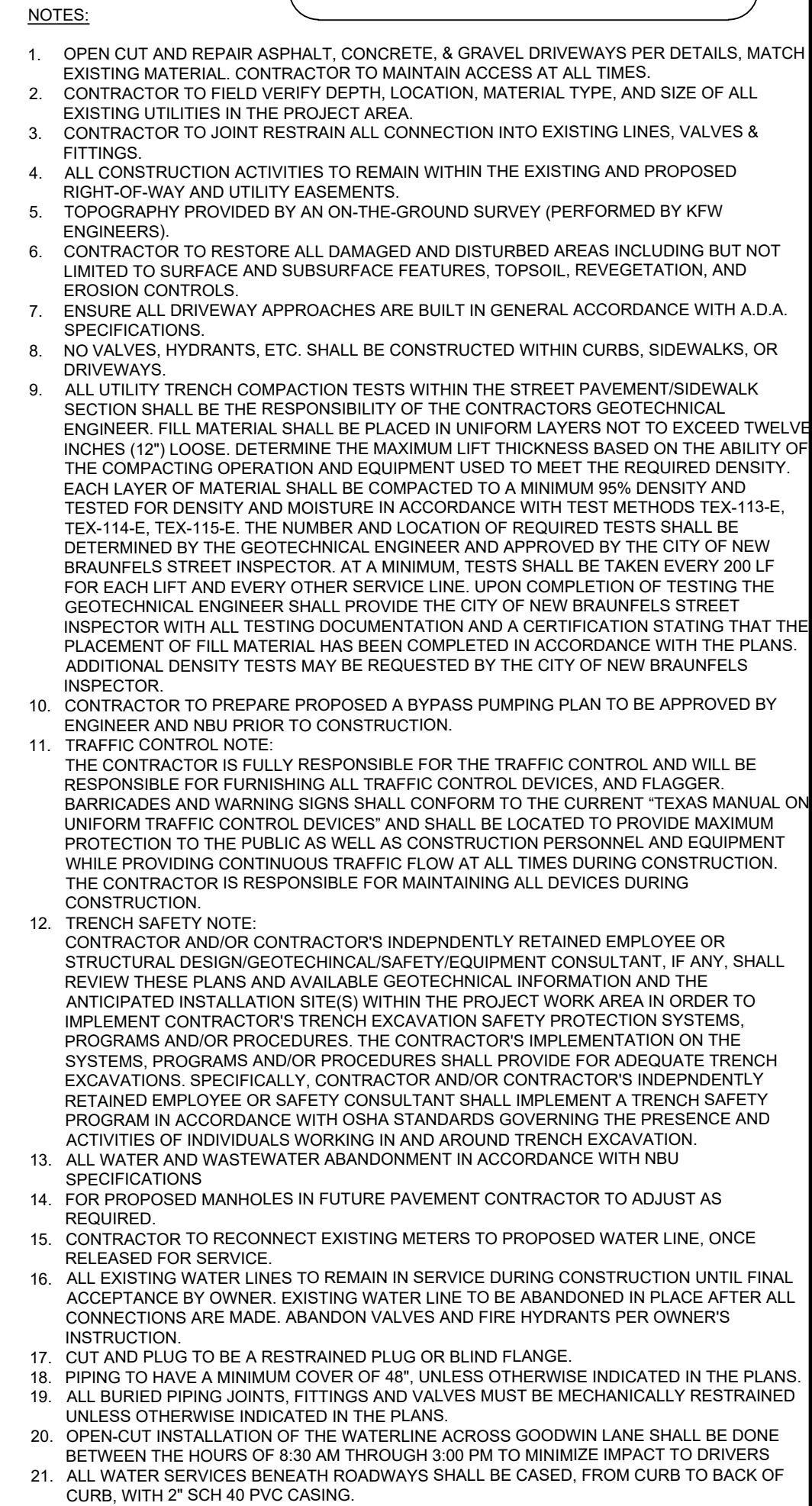




## WASTEWATER ADJUSTMENTS NUMBER 4



## WASTEWATER ADJUSTMENTS NUMBER 4

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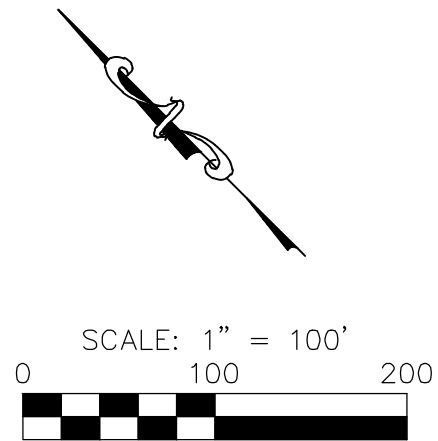
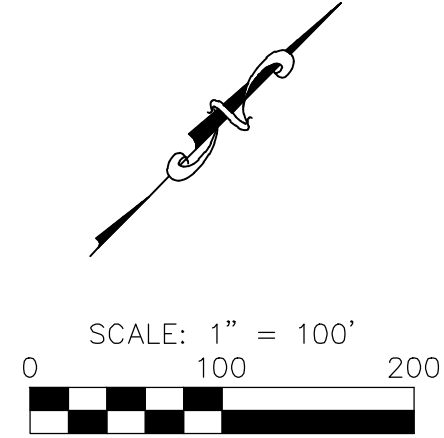




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MATCH LINE  
(SEE THIS SHEET)



NEW BRAUNFELS UTILITIES  
GOODWIN-CONRADS WATER AND SEWER CONFLICT  
RELOCATION PROJECT

WATER INDEX SHEET 2 OF 2

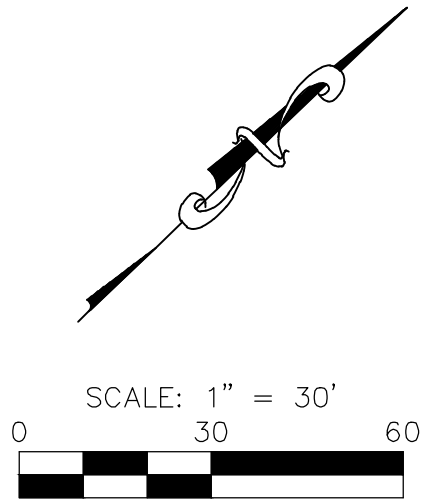
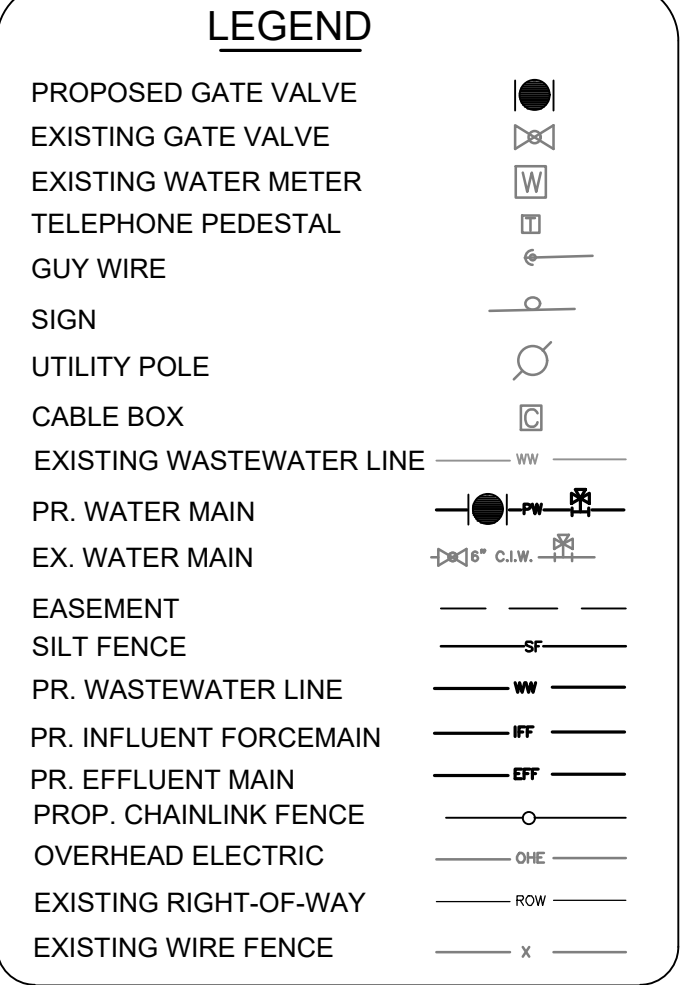
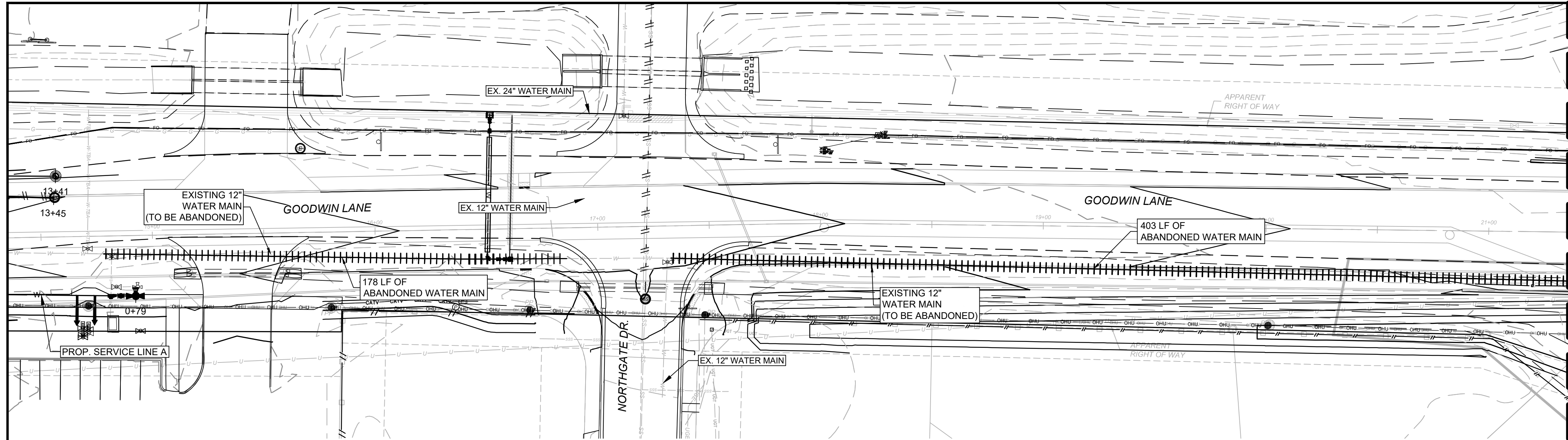
**UTILITY ENGINEERING GROUP PLLC**  
181 N. DICK AVE NEW BRAUNFELS, TEXAS 78130 PH: (832) 244-0261  
Texas Engineering Firm F-18712

DAVID A. KNEPPER  
Professional Engineer  
No. 96676  
State of Texas

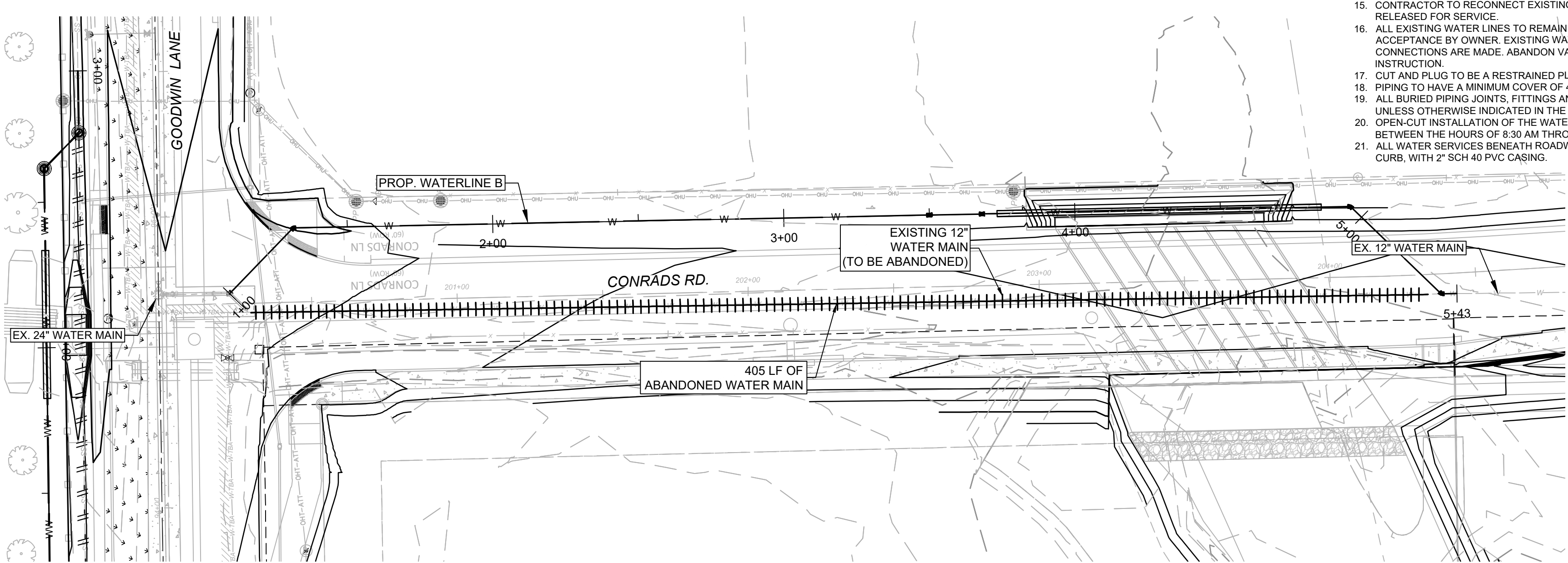
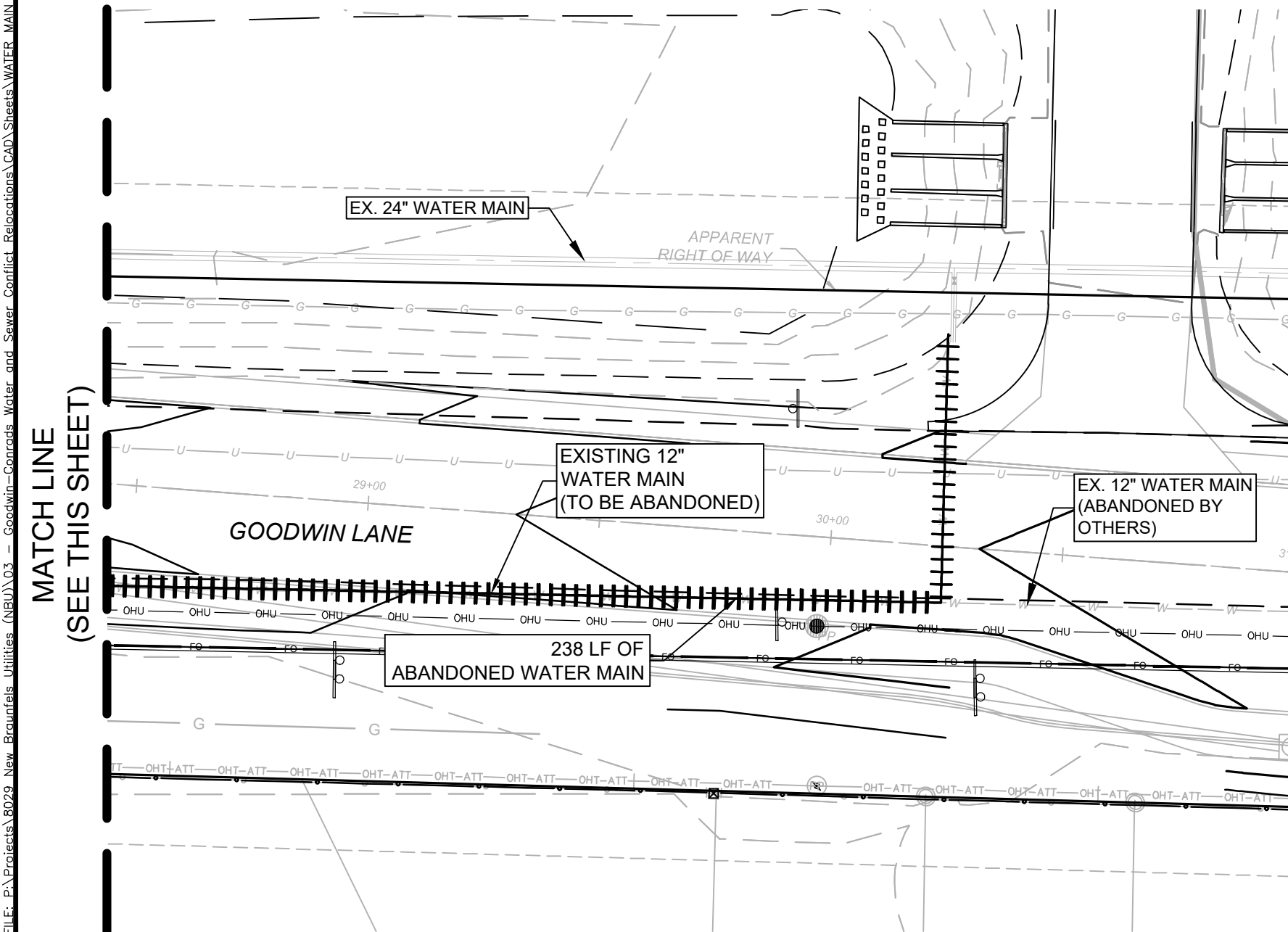
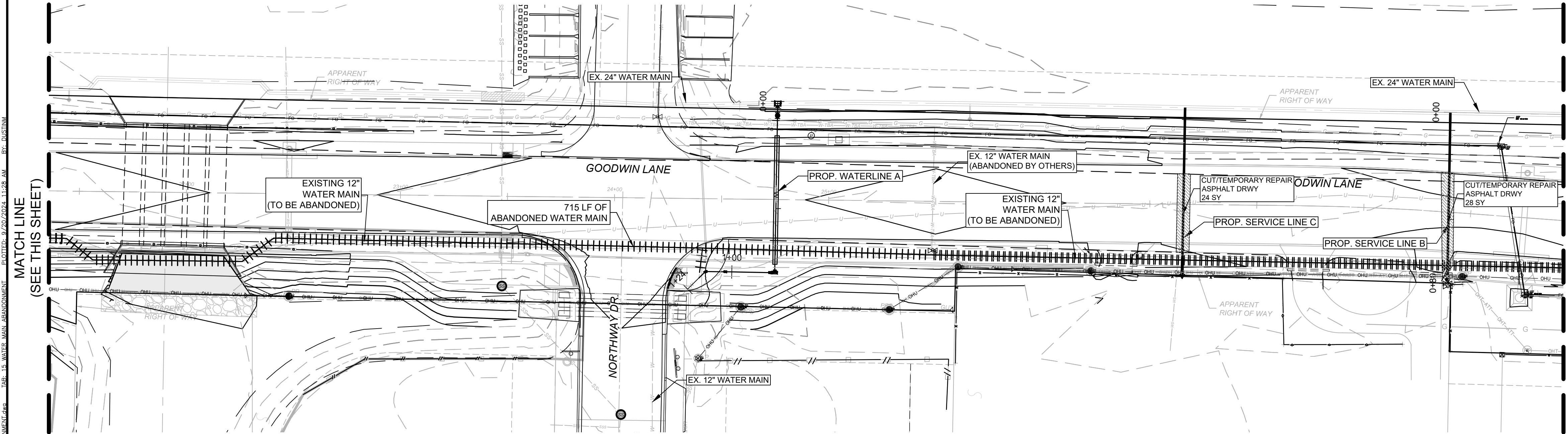
NO.	REVISIONS	APPD.	DATE

SCALE:  
DATE: 20 September, 2024  
PROJECT NO: 2029-03  
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DRAWN BY: AR  
CHECKED BY: DK  
SHEET NO.  
**14**  
OF 28 SHEETS





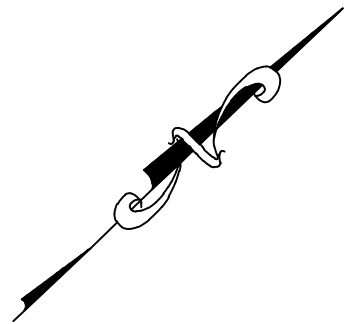
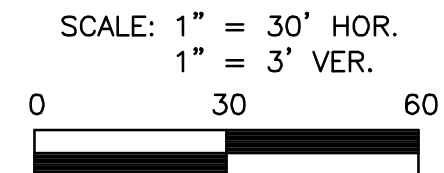
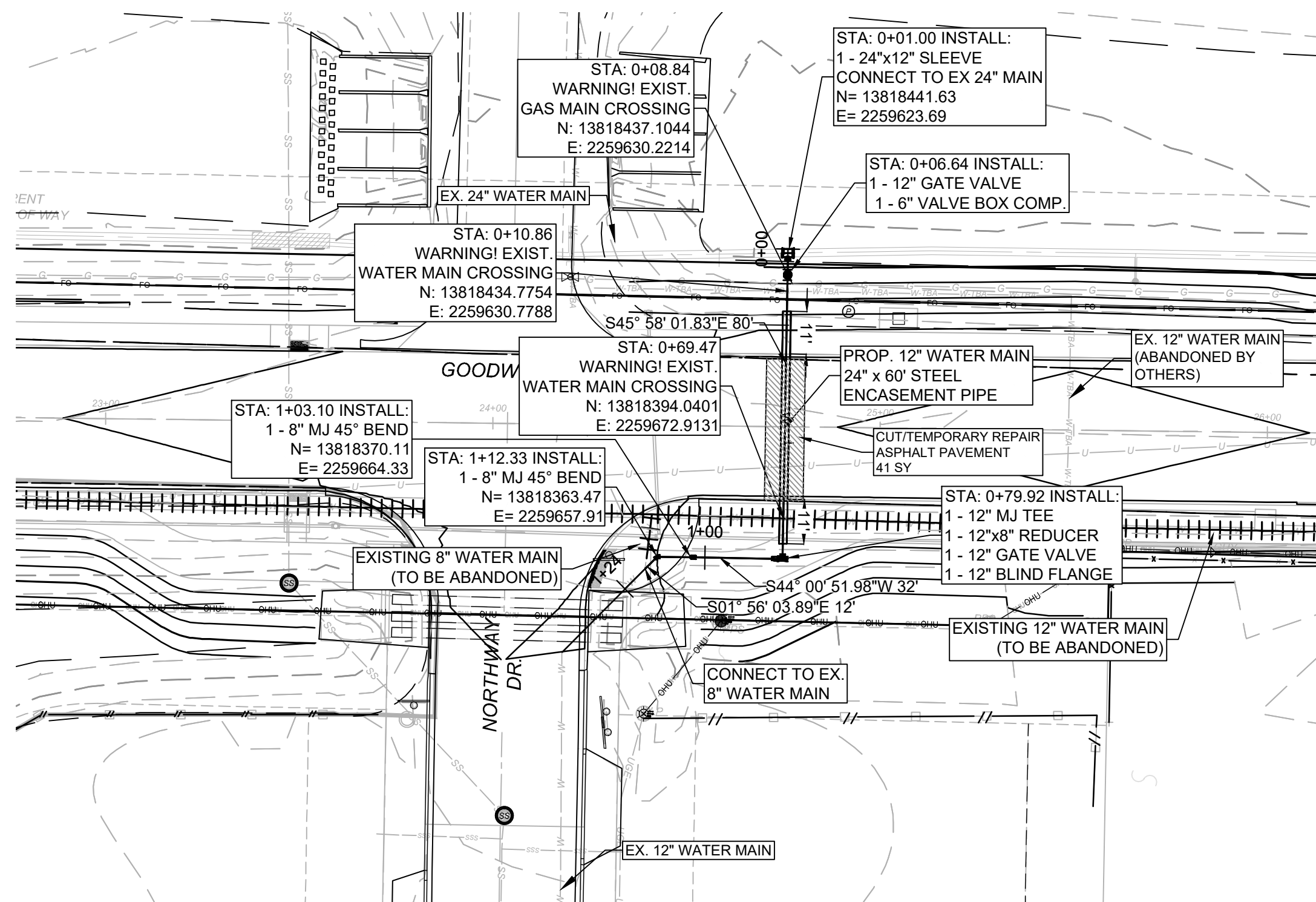
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  8. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
  9. ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
  10. CONTRACTOR TO PREPARE PROPOSED A BYPASS PUMPING PLAN TO BE APPROVED BY ENGINEER AND NBH PRIOR TO CONSTRUCTION.
  11. TRAFFIC CONTROL NOTE:  
THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGER. BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE CURRENT TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
  12. TRENCH SAFETY NOTE:  
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 ON THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE 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.
  13. ALL WATER AND WASTEWATER ABANDONMENT IN ACCORDANCE WITH NBH SPECIFICATIONS.
  14. FOR PROPOSED MANHOLES IN FUTURE PAVEMENT CONTRACTOR TO ADJUST AS REQUIRED.
  15. CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
  16. ALL EXISTING WATER LINES TO REMAIN IN SERVICE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY OWNER. EXISTING WATER LINE TO BE ABANDONED IN PLACE AFTER ALL CONNECTIONS ARE MADE. ABANDON VALVES AND FIRE HYDRANTS PER OWNERS INSTRUCTION.
  17. CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
  18. PIPING TO HAVE A MINIMUM COVER OF 48", UNLESS OTHERWISE INDICATED IN THE PLANS.
  19. ALL BURIED PIPING JOINTS, FITTINGS AND VALVES MUST BE MECHANICALLY RESTRAINED UNLESS OTHERWISE INDICATED IN THE PLANS.
  20. OPEN-CUT INSTALLATION OF THE WATERLINE ACROSS GOODWIN LANE SHALL BE DONE BETWEEN THE HOURS OF 8:30 AM THROUGH 3:00 PM TO MINIMIZE IMPACT TO DRIVERS.
  21. ALL WATER SERVICES BENEATH ROADWAYS SHALL BE CASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.



NO.	REVISIONS	APPD.	DATE

SCALE:  
DATE:  
PROJECT NO:8029-03  
DESIGNED BY:AR  
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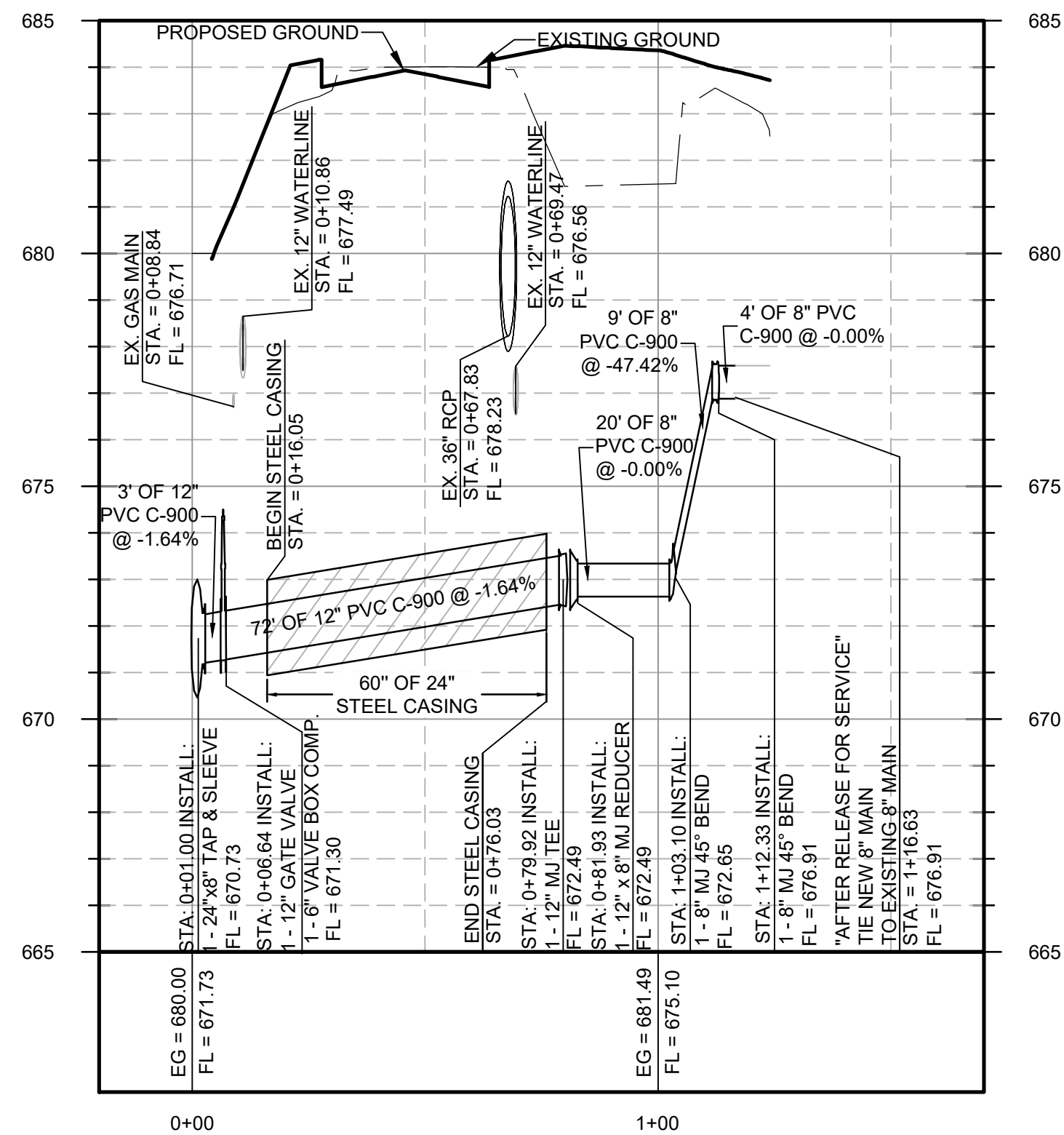


## LEGEND

PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
CABLE BOX	
EXISTING WASTEWATER LINE	
PR. WATER MAIN	
EX. WATER MAIN	
EASEMENT	
SILT FENCE	
PR. WASTEWATER LINE	
PR. INFLUENT FORCEMAIN	
PR. EFFLUENT MAIN	
PROP. CHAINLINK FENCE	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
SERVICE RELOCATE	
100 YEAR FLOODPLAIN	
EXISTING CONTOUR	

## NOTES

1. OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS. MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
2. CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES WITHIN THE PROJECT AREA.
3. CONTRACTOR TO JOINT RESTRAIN ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
4. ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED RIGHT-OF-WAY AND UTILITY EASEMENTS.
5. TOPOGRAPHY TO BE PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KFW ENGINEERS).
6. CONTRACTOR TO RESTORE ALL DAMAGED AND DISTURBED AREAS INCLUDING BUT NOT LIMITED TO SURFACE AND SUBSURFACE FEATURES, TOPSOIL, REVEGETATION, AND EROSION CONTROLS.
7. EXISTING RAINFALL DRAINAGE APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
8. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
9. ALL UTILITY TRENCH CONSTRUCTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING EQUIPMENT AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE CITY OF NEW BRAUNFELS AND THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING INFORMATION AND A CERTIFICATE OF ACCEPTANCE. THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
10. CONTRACTOR TO PREPARE PROPOSED A BYPASS PUMPING PLAN TO BE APPROVED BY ENGINEER AND NBU PRIOR TO CONSTRUCTION.
11. TRAFFIC CONTROL NOTE:  
THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND ALL TRAFFIC CONTROL DEVICES, INCLUDING WARNING SIGNS SHALL CONFORM TO THE CURRENT "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE LOCATED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
12. TRENCH SAFETY NOTE:  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL SHOW THE PLAN LOCATION OF ALL EXISTING UTILITY 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 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 WORKING MEN AND WORKING MEN AROUND TRENCH EXCAVATIONS.
13. ALL WATER AND WASTEWATER ABANDON IN ACCORDANCE WITH NBU SPECIFICATIONS
14. FOR PROPOSED MANHOLES IN FUTURE PAVEMENT CONTRACTOR TO ADJUST AS REQUIRED.
15. CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
16. EXISTING WATER LINES TO REMAIN IN SERVICE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY OWNER. EXISTING WATER LINE TO BE ABANDONED IN ORDER FOR ADEQUATE TRENCH EXCAVATIONS. MAKE, ABANDON VALVES AND FIRE HYDRANTS PER OWNER'S INSTRUCTION.
17. CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
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21. ALL WATER SERVICES BENEATH ROADWAYS SHALL BE CASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.



## WATER MAIN A PROFILE VIEW



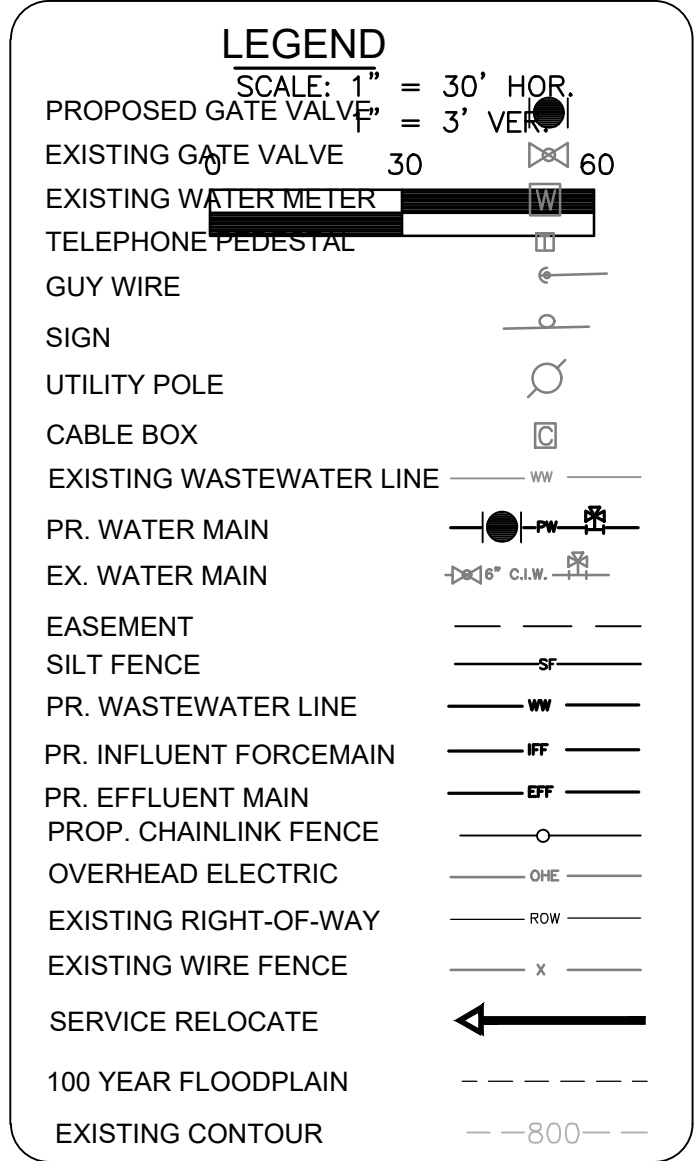
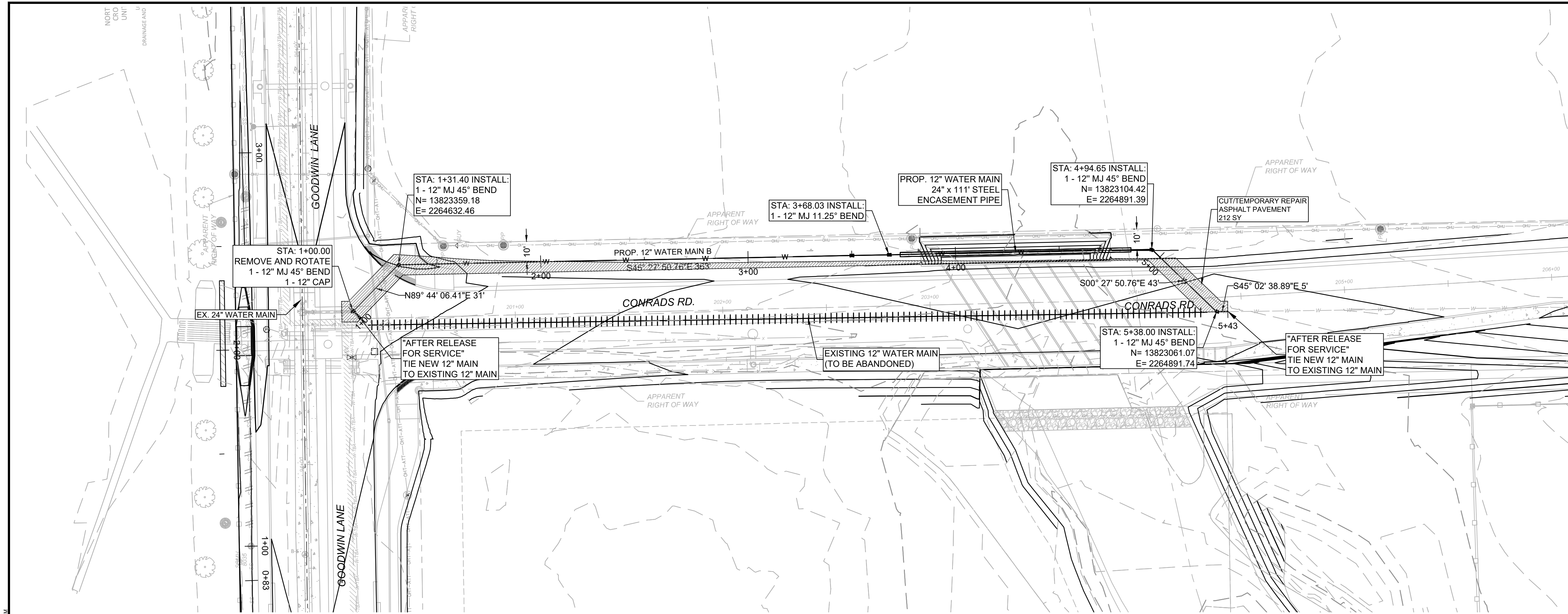
NEW BRAUNFELS UTILITIES  
GOODWIN-CONRADS WATER AND SEWER CONFLICT  
RELOCATION

WATER MAIN A

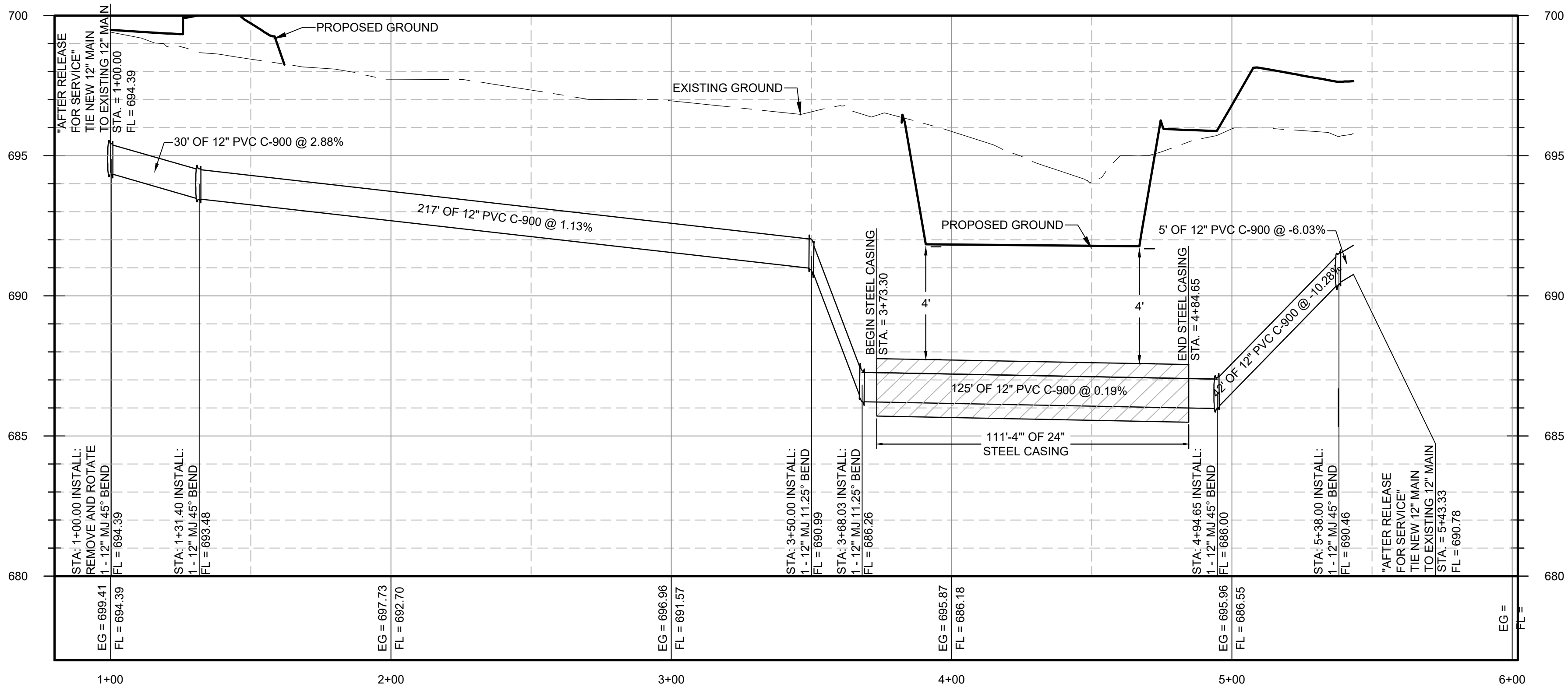

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DATE:
PROJECT NO:8029-03
DESIGNED BY:AR
DRAWN BY:AR
CHECKED BY:DK
SHEET NO.



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- NOTES:**
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS. MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
  - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
  - CONTRACTOR TO JOINT RESTRAIN ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
  - ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED RIGHT-OF-WAY AND UTILITY EASEMENTS.
  - TOPOGRAPHY PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KFW ENGINEERS).
  - CONTRACTOR TO RESTORE ALL DAMAGED AND DISTURBED AREAS INCLUDING BUT NOT LIMITED TO SURFACE AND SUBSURFACE FEATURES, TOPSOIL, REVEGETATION, AND EROSION CONTROLS.
  - ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
  - NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
  - ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
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  - CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
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WATER MAIN B - (1) PROFILE VIEW



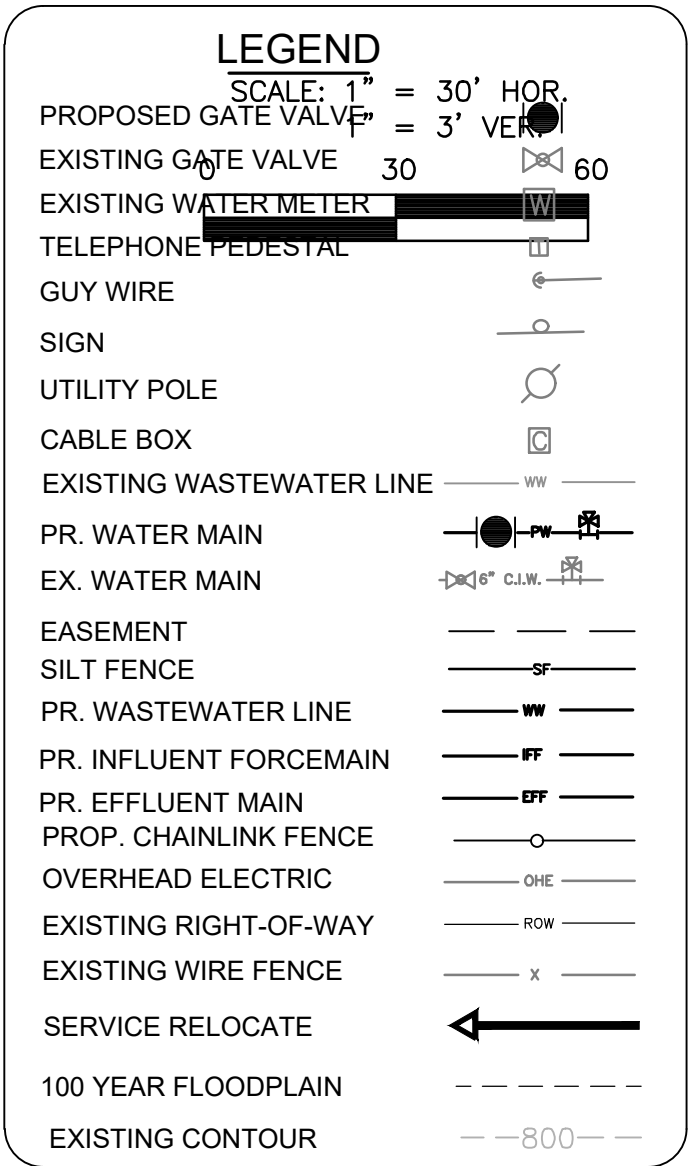
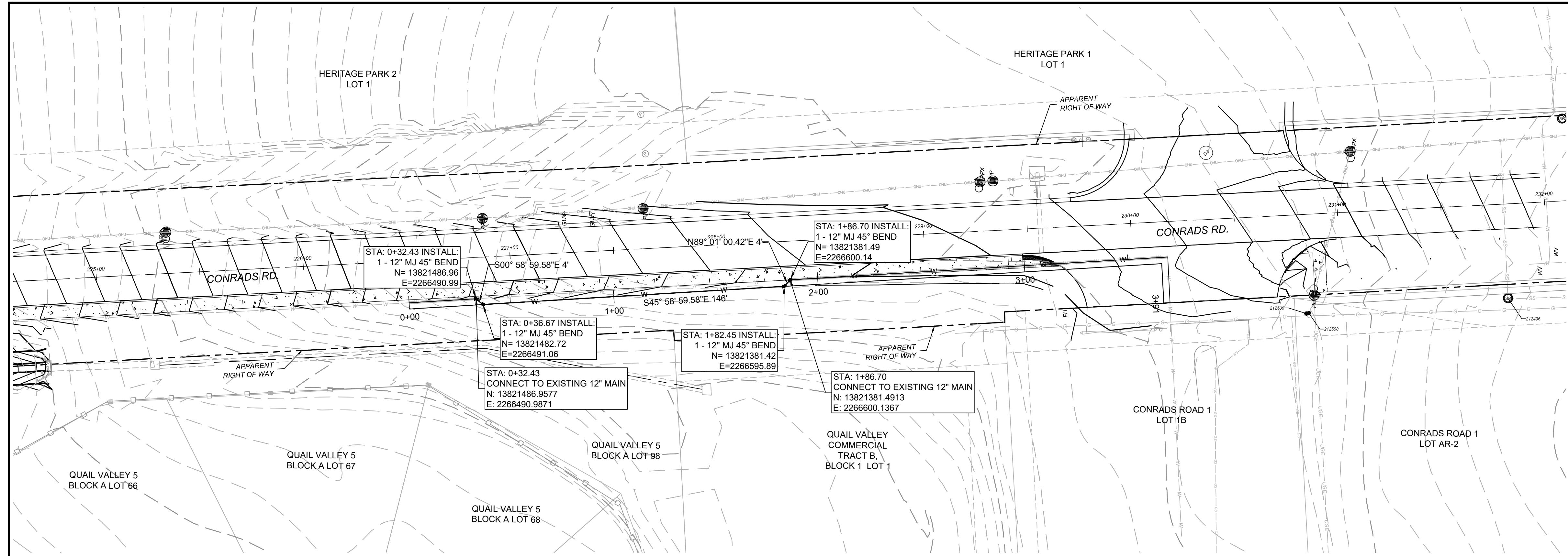
NEW BRAUNFELS UTILITIES  
GOODWIN-CONRAD'S WATER AND SEWER CONFLICT  
RELOCATION

WATER MAIN B

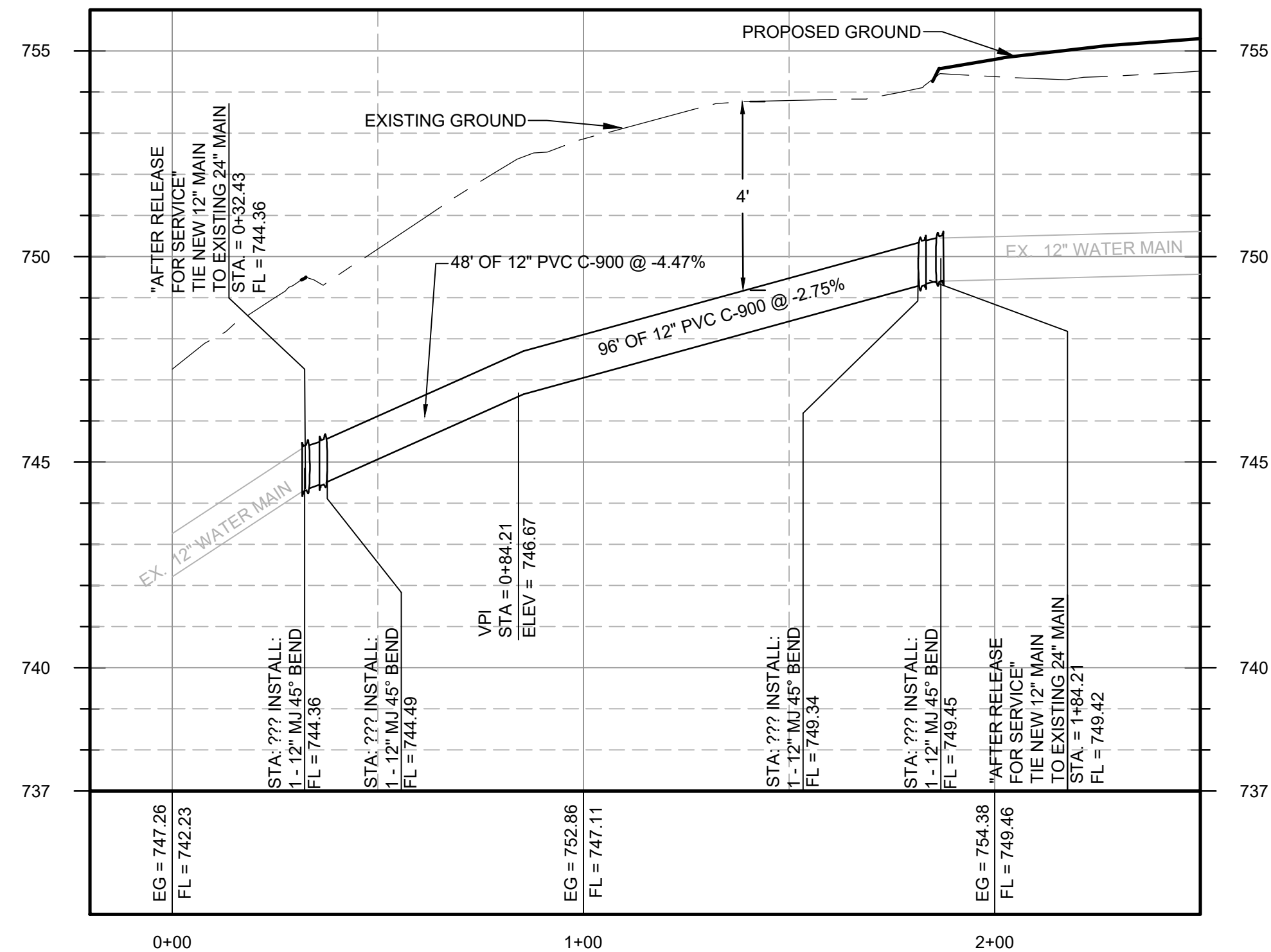
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- NOTES:**
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS. MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
  - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
  - CONTRACTOR TO JOINT RESTRAIN ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
  - ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED RIGHT-OF-WAY AND UTILITY EASEMENTS.
  - TOPOGRAPHY PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KFW ENGINEERS).
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CONRADS 12" WATER MAIN PROFILE VIEW



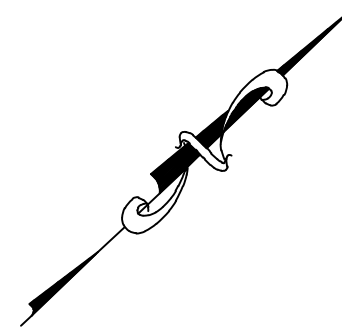
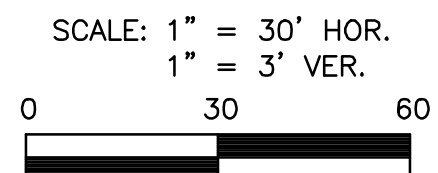
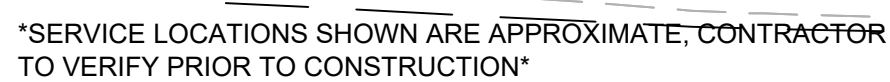
NEW BRAUNFELS UTILITIES  
GOODWIN-CONRADS WATER AND SEWER CONFLICT  
RELOCATION

WATER MAIN C
























NO.	REVISIONS	APPD.	DATE

SCALE:  
DATE:  
PROJECT NO:8029-03  
DESIGNED BY:AR  
DRAWN BY:AR  
CHECKED BY:DK  
SHEET NO.





## LEGEND

PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
CABLE BOX	
EXISTING WASTEWATER LINE	
PR. WATER MAIN	
EX. WATER MAIN	
EASEMENT	
SILT FENCE	
PR. WASTEWATER LINE	
PR. INFLUENT FORCEMAIN	
PR. EFFLUENT MAIN	
PROP. CHAINLINK FENCE	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
SERVICE RELOCATE	
100 YEAR FLOODPLAIN	
EXISTING CONTOUR	

NOTES:

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8. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITH CURBS, SIDEWALKS, OR DRIVEWAYS.
9. ALL UTILITY TRENCH COMPLETION TESTS WITHIN THE STREET  
P.A.V.E. SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTORS GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM FILL THICKNESS BASED ON THE ABILITY OF THE COMPACTING EQUIPMENT AND THE SOIL TYPE. THE FILL SHALL BE PLACED IN A MINIMUM OF THREE LAYERS OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING INFORMATION AND RECORDS. THE CITY OF NEW BRAUNFELS STREET INSPECTOR WILL FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
10. CONTRACTOR TO PREPARE PROPOSED A BYPASS PUMPING PLAN TO BE APPROVED BY ENGINEER AND NBU PRIOR TO CONSTRUCTION.
11. TRAFFIC CONTROL NOTE:  
THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGMEN TO MAINTAIN AND MAINTAIN SIGNAGE TO FULLY CONFORM TO THE CURRENT "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND SHALL BE ALLOWED TO PROVIDE MAXIMUM PROTECTION TO THE PUBLIC AS WELL AS CONSTRUCTION PERSONNEL AND EQUIPMENT WHILE PROVIDING CONTINUOUS TRAFFIC FLOW AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL DEVICES DURING CONSTRUCTION.
12. TRENCH SAFETY NOTE:  
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL, DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL PROVIDE THE TRENCH WORKING AREA WITH THE REQUIRED SAFETY 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 ON THE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROTECT THE TRENCH WORKING AREA FROM 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 PERSONNEL WORKING IN AND AROUND A TRENCH EXCAVATION.
13. ALL WATER AND WASTEWATER ABANDONMENT IN ACCORDANCE WITH NBU SPECIFICATIONS
14. FOR PROPOSED MANHOLES IN EXISTING PAVEMENT CONTRACTOR TO ADJUST AS REQUIRED.
15. CONTRACTOR TO RECONNECT EXISTING METERS TO PROPOSED WATER LINE, ONCE RELEASED FOR SERVICE.
16. ALL EXISTING WATER LINES TO REMAIN IN SERVICE DURING CONSTRUCTION UNTIL FINAL ACCEPTANCE BY OWNER. EXISTING WATER LINE TO BE ABANDONED IN PLACE AFTER ALL CONNECTIONS HAVE BEEN MADE. ABANDON VALVES AND FIRE HYDRANTS PER OWNER'S INSTRUCTION.
17. CUT AND PLUG TO BE A RESTRAINED PLUG OR BLIND FLANGE.
18. PIPING TO HAVE A MINIMUM COVER OF 48", UNLESS OTHERWISE INDICATED IN THE PLANS.
19. ALL BURIED PIPING JOINTS, FITTINGS AND VALVES MUST BE MECHANICALLY RESTRAINED UNLESS OTHERWISE INDICATED IN THE PLANS.
20. OPEN-CUT INSTALLATION OF THE WATERLINE ACROSS GOODWIN LANE SHALL BE DONE BETWEEN THE HOURS OF 8:30 AM THROUGH 3:00 PM TO MINIMIZE IMPACT TO DRIVERS.
21. ALL CURB SERVICES BENEATH ROADWAYS SHALL BE CAVED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.

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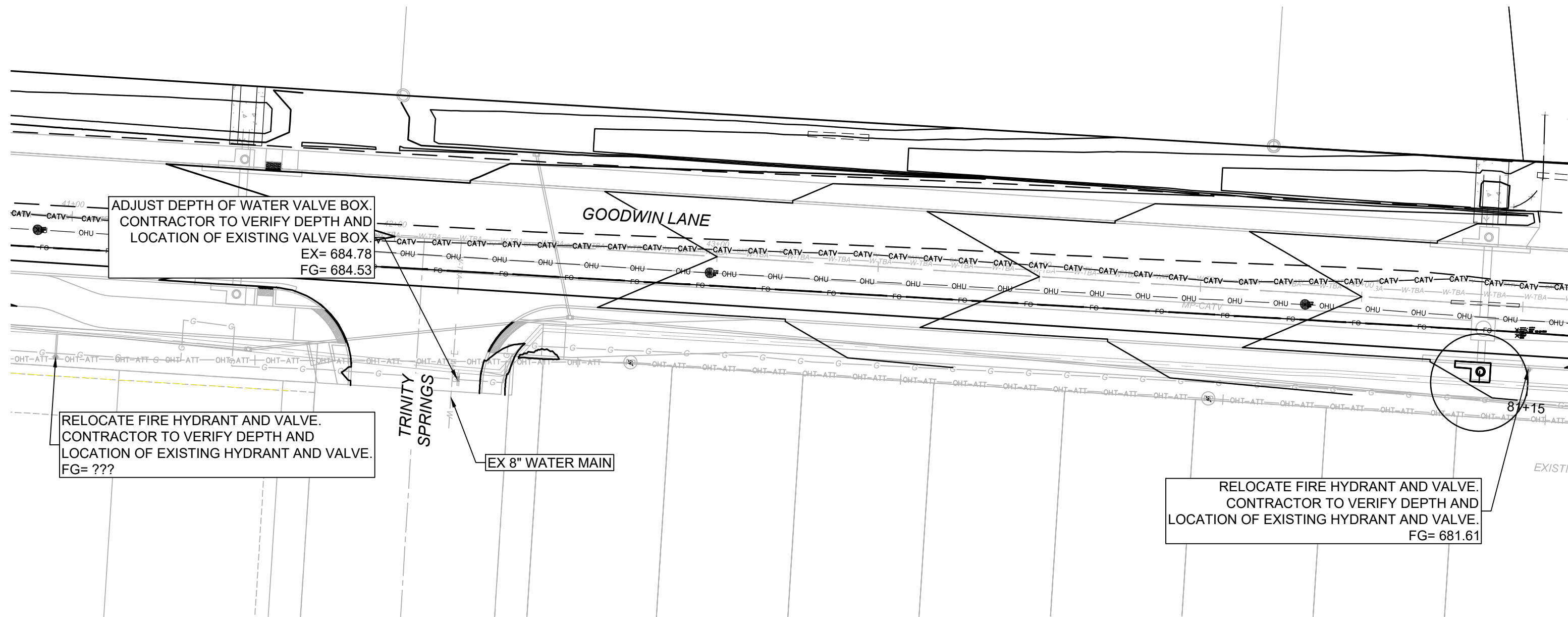
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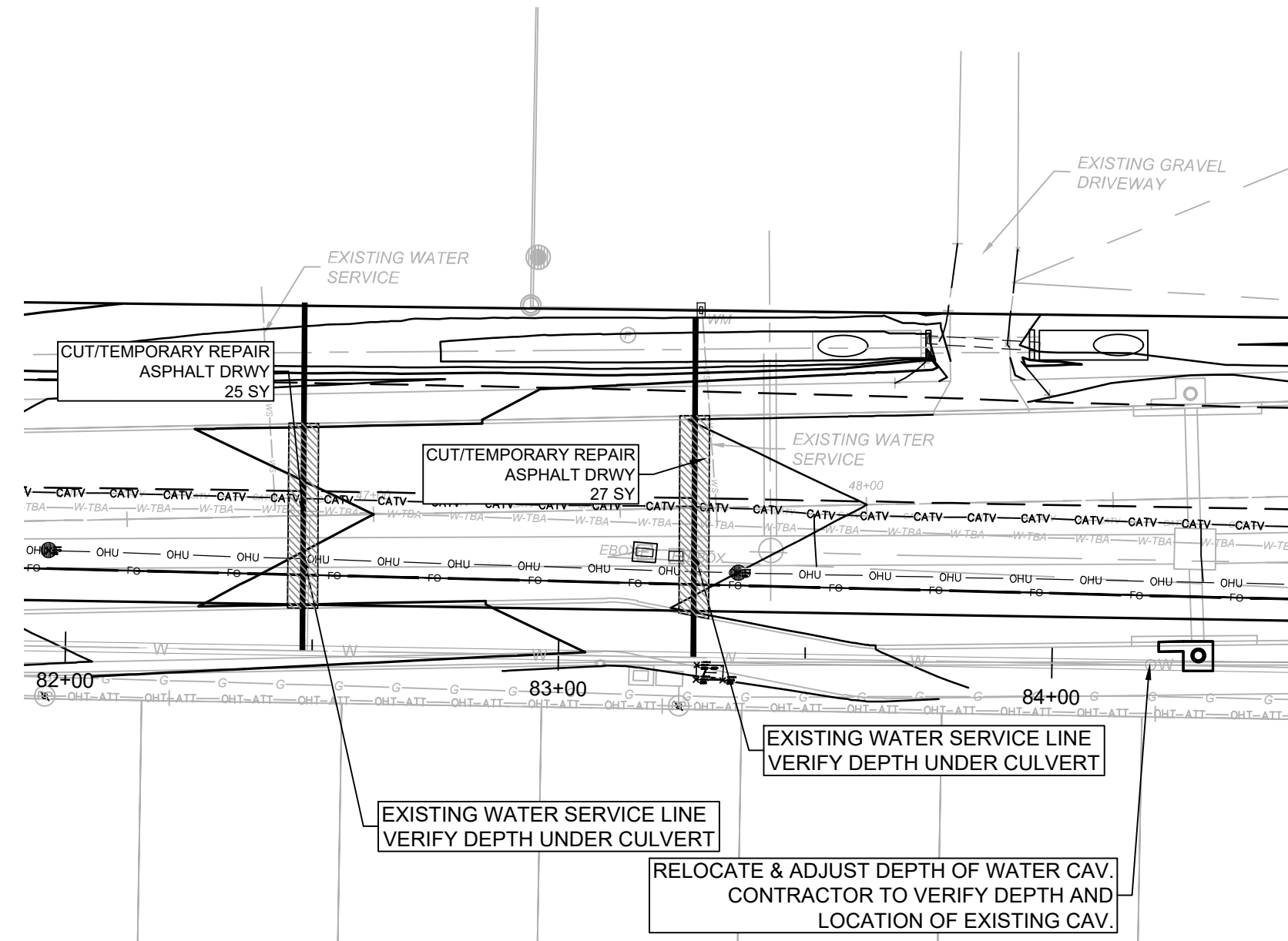




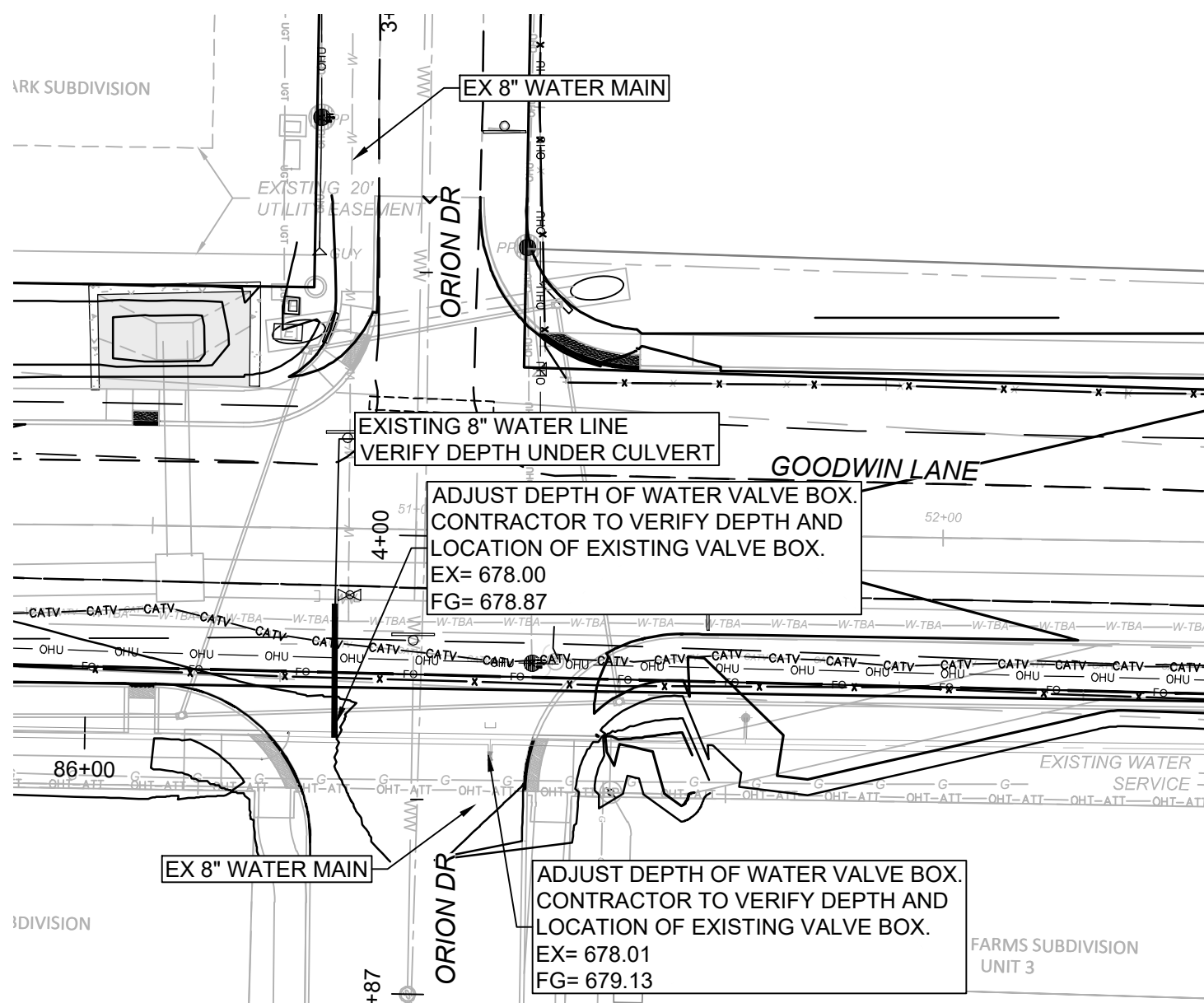
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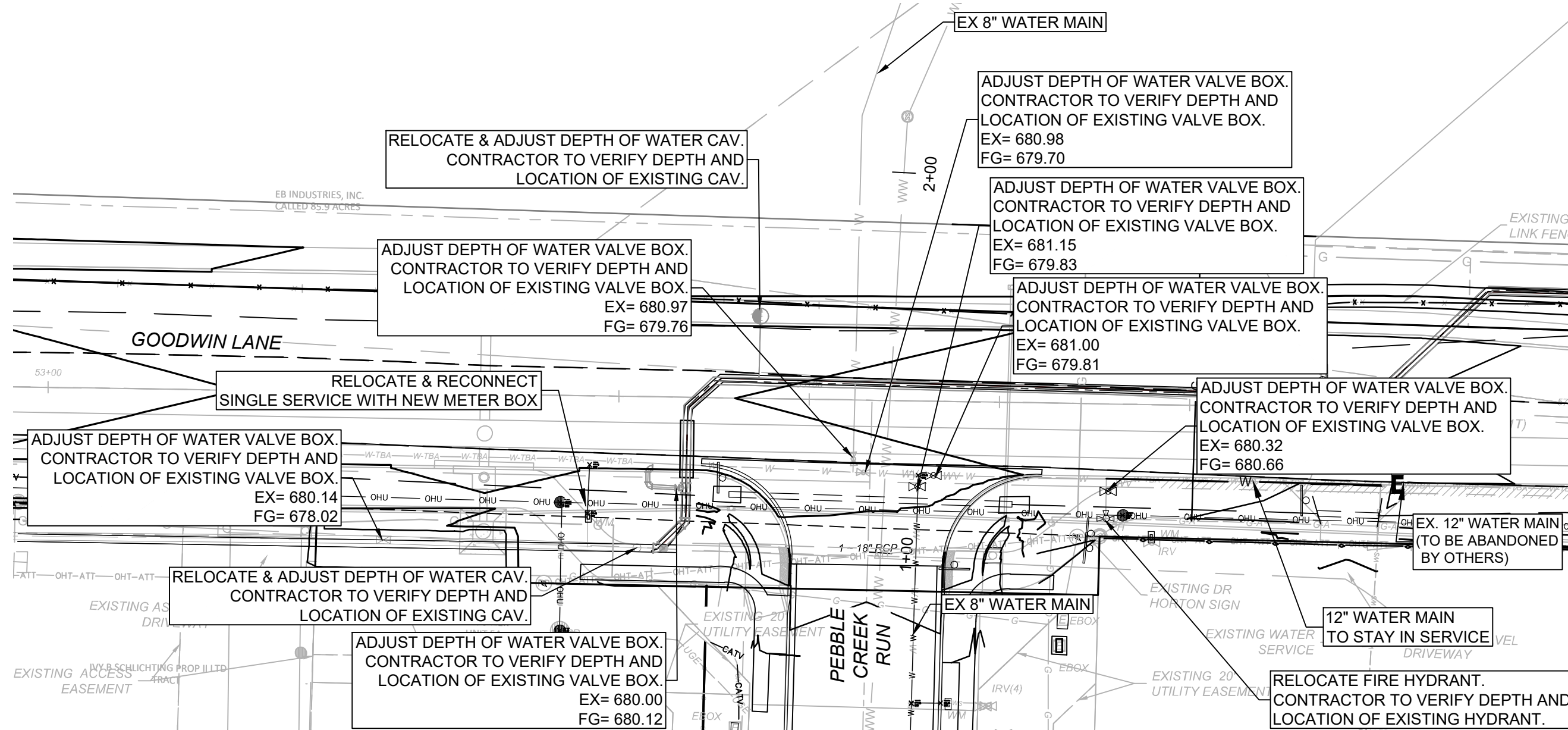
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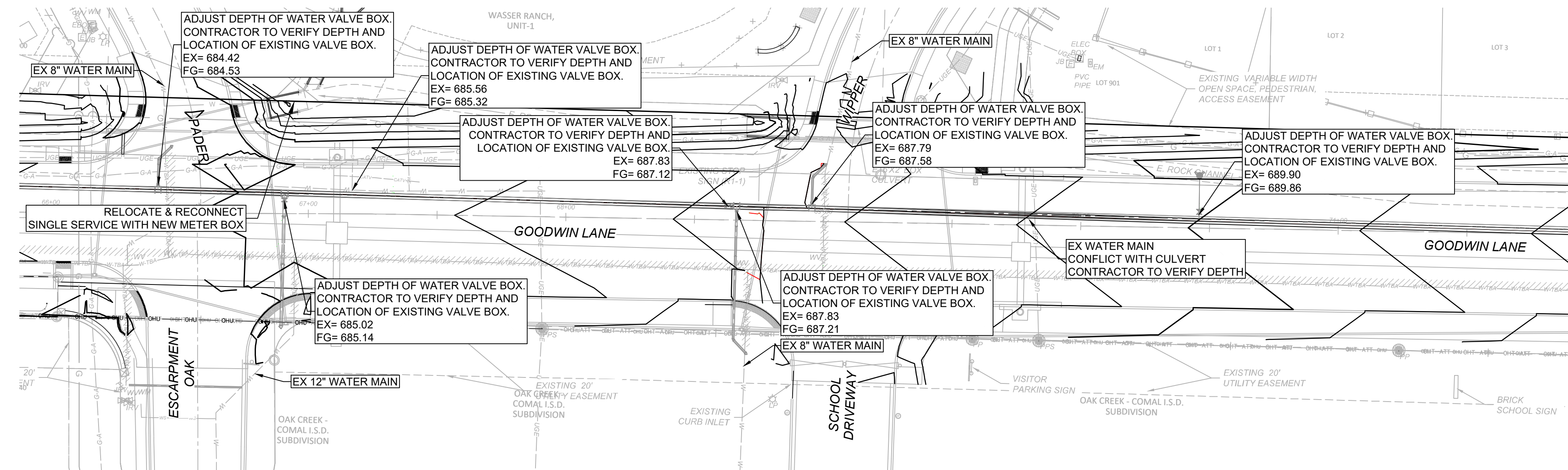
WATER ADJUSTMENTS NUMBER 7



WATER ADJUSTMENTS NUMBER 8



WATER ADJUSTMENTS NUMBER 9



WATER ADJUSTMENTS NUMBER 10

SCALE: 1" = 30' HOR.  
1" = 3' VER.

0 30 60

LEGEND

- PROPOSED GATE VALVE
- EXISTING GATE VALVE
- EXISTING WATER METER
- TELEPHONE PEDESTAL
- GUY WIRE
- SIGN
- UTILITY POLE
- EXISTING WASTEWATER LINE
- PROP. WATER LINE
- EX. WATER MAIN
- PERMANENT EASEMENT
- TEMPORARY EASEMENT
- SILT FENCE
- FIBER OPTIC
- OVERHEAD ELECTRIC
- EXISTING RIGHT-OF-WAY
- EXISTING WIRE FENCE
- EXISTING CHAINLINK FENCE
- EXISTING WOOD FENCE
- EXISTING CONTOUR
- PROPOSED ABANDONMENT
- EXISTING ABANDONMENT
- FEMA FLOODPLAIN
- ASPHALT PAVEMENT REPAIR

NOTES.

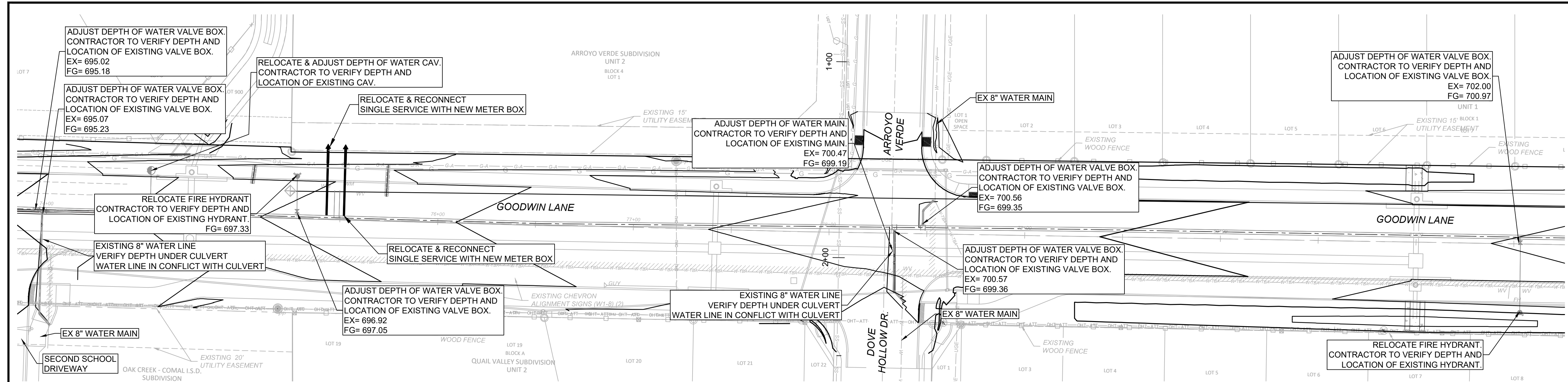
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS, MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
- CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
- CONTRACTOR TO JOINT RESTRAIN ALL CONNECTION INTO EXISTING LINES, VALVES & FITTINGS.
- ALL CONSTRUCTION ACTIVITIES TO REMAIN WITHIN THE EXISTING AND PROPOSED RIGHT-OF-WAY AND UTILITY EASEMENTS.
- TOPOGRAPHY PROVIDED BY AN ON-THE-GROUND SURVEY (PERFORMED BY KPW ENGINEERS).
- CONTRACTOR TO RESTORE ALL DAMAGED AND DISTURBED AREAS INCLUDING BUT NOT LIMITED TO SURFACE AND SUBSURFACE FEATURES, TOPSOIL, REVEGETATION, AND EROSION CONTROLS.
- ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
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NO.	REVISIONS	APPD.	DATE

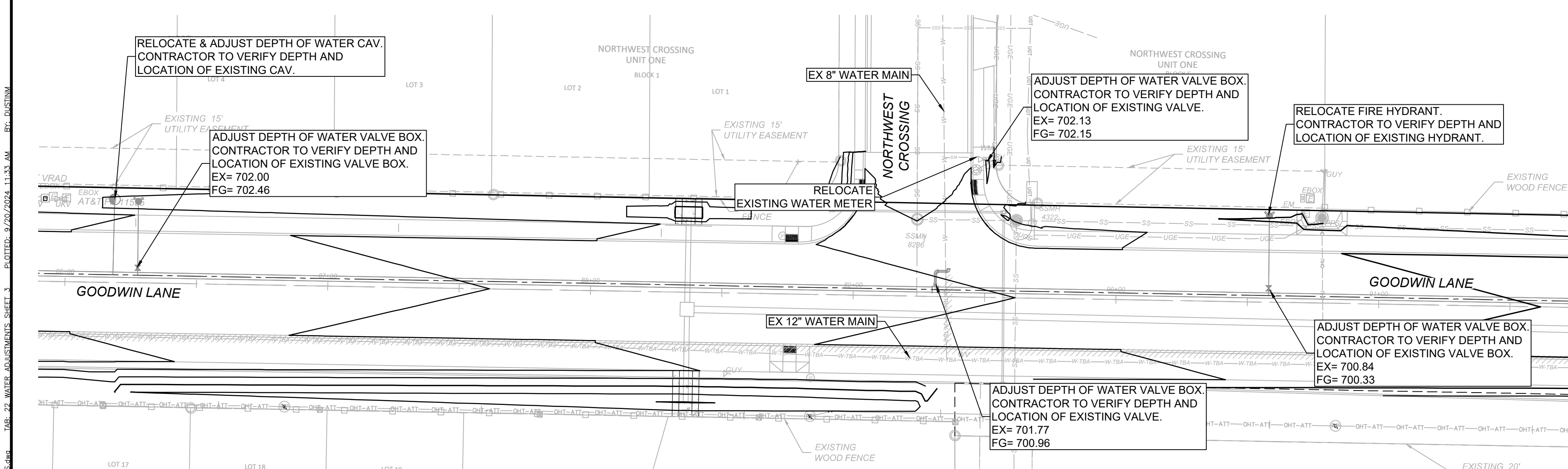
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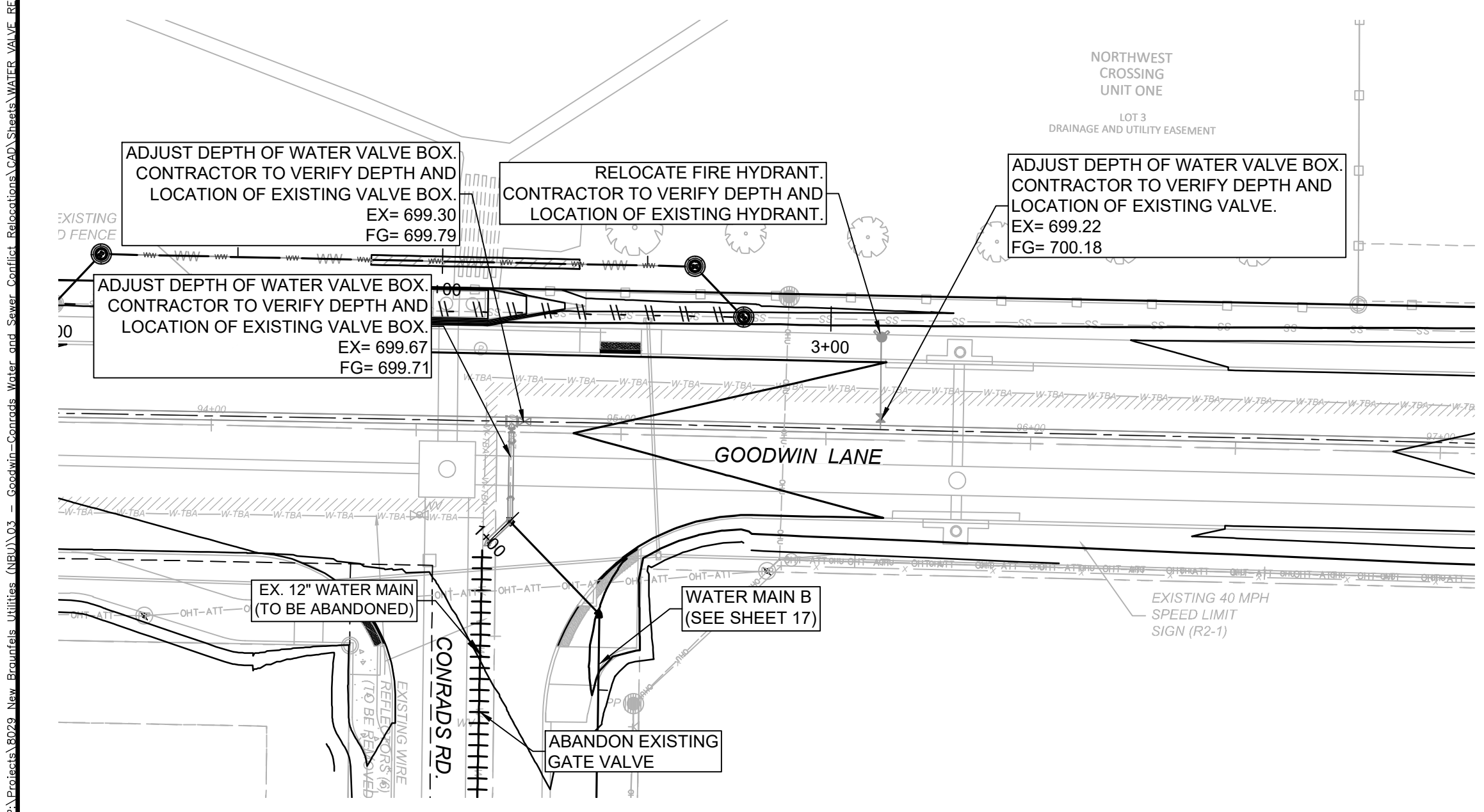
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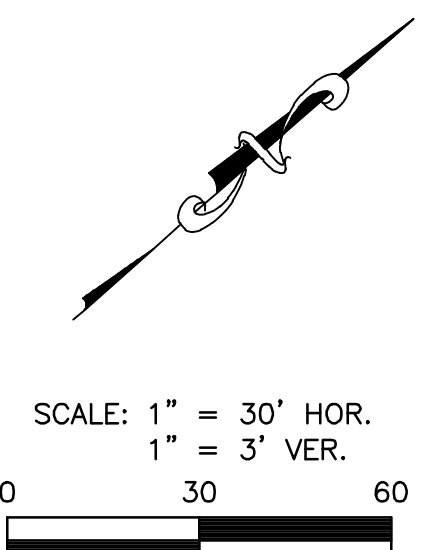
WATER ADJUSTMENTS NUMBER 11



WATER ADJUSTMENTS NUMBER 12



WATER ADJUSTMENTS NUMBER 13



LEGEND	
PROPOSED GATE VALVE	
EXISTING GATE VALVE	
EXISTING WATER METER	
TELEPHONE PEDESTAL	
GUY WIRE	
SIGN	
UTILITY POLE	
EXISTING WASTEWATER LINE	
PROP. WATER LINE	
EX. WATER MAIN	
PERMANENT EASEMENT	
TEMPORARY EASEMENT	
SILT FENCE	
FIBER OPTIC	
OVERHEAD ELECTRIC	
EXISTING RIGHT-OF-WAY	
EXISTING WIRE FENCE	
EXISTING CHAINLINK FENCE	
EXISTING WOOD FENCE	
EXISTING CONTOUR	
PROPOSED ABANDONMENT	
EXISTING ABANDONMENT	
FEMA FLOODPLAIN	
ASPHALT PAVEMENT REPAIR	

- NOTES:
- OPEN CUT AND REPAIR ASPHALT, CONCRETE, & GRAVEL DRIVEWAYS PER DETAILS, MATCH EXISTING MATERIAL. CONTRACTOR TO MAINTAIN ACCESS AT ALL TIMES.
  - CONTRACTOR TO FIELD VERIFY DEPTH, LOCATION, MATERIAL TYPE, AND SIZE OF ALL EXISTING UTILITIES IN THE PROJECT AREA.
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  - ALL WATER SERVICES BENEATH ROADWAYS SHALL BE CASED, FROM CURB TO BACK OF CURB, WITH 2" SCH 40 PVC CASING.

UTILITY  
ENGINEERING  
GROUP, PLLC

181 N. DICK AVE. NEW BRAUNFELS, TEXAS 78130 PH: (833) 944-0261  
Texas Engineering Firm E-18712

NEW BRAUNFELS UTILITIES  
GOODWIN-CONRAD'S WATER AND SEWER CONFLICT  
RELOCATION

WATER ADJUSTMENTS SHEET 3

NO.	REVISIONS	APPD.	DATE

SCALE:

DATE:

PROJECT NO:8029-03

DESIGNED BY:AR

DRAWN BY:AR

CHECKED BY:DK

SHEET NO.

22

OF 28 SHEETS











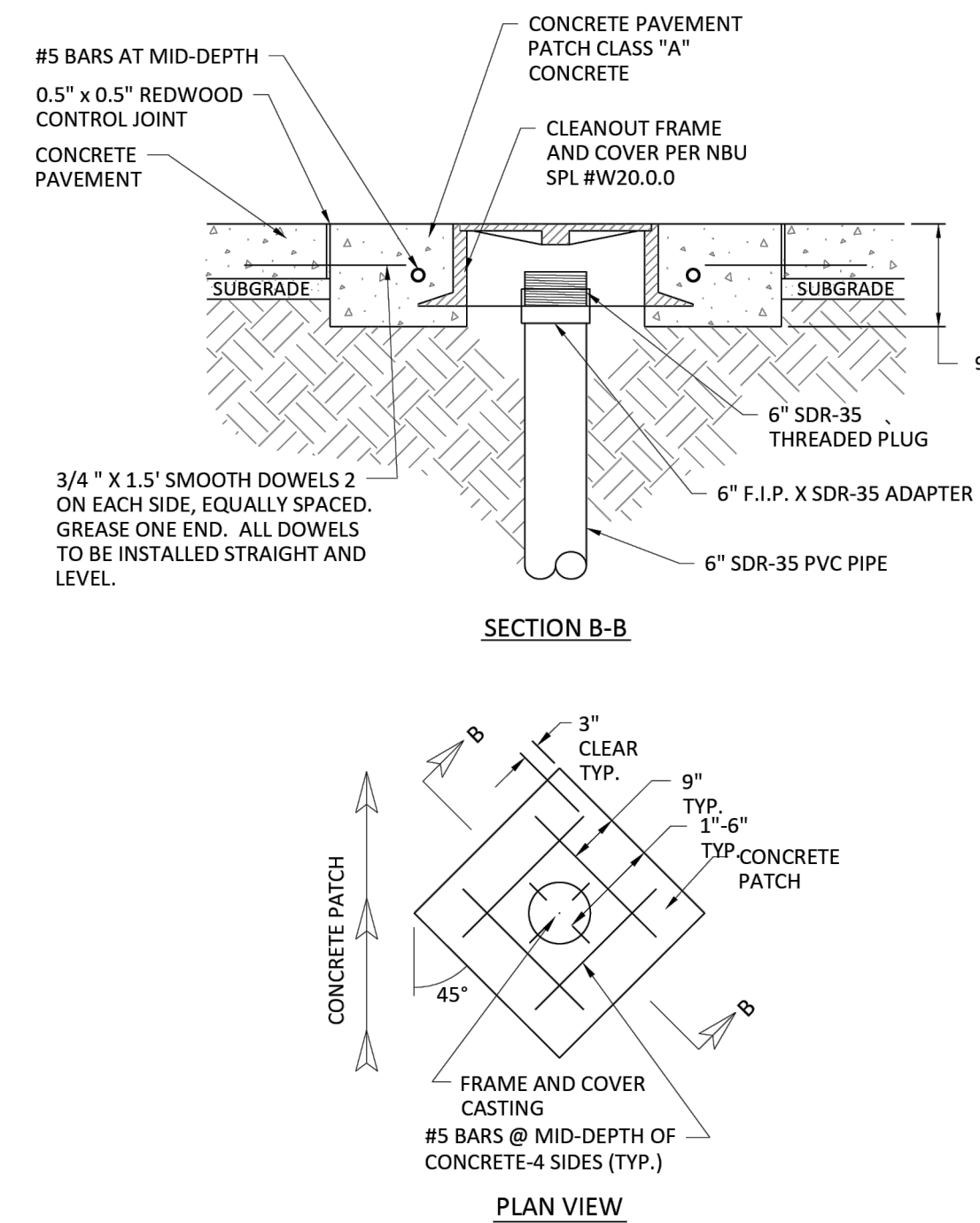




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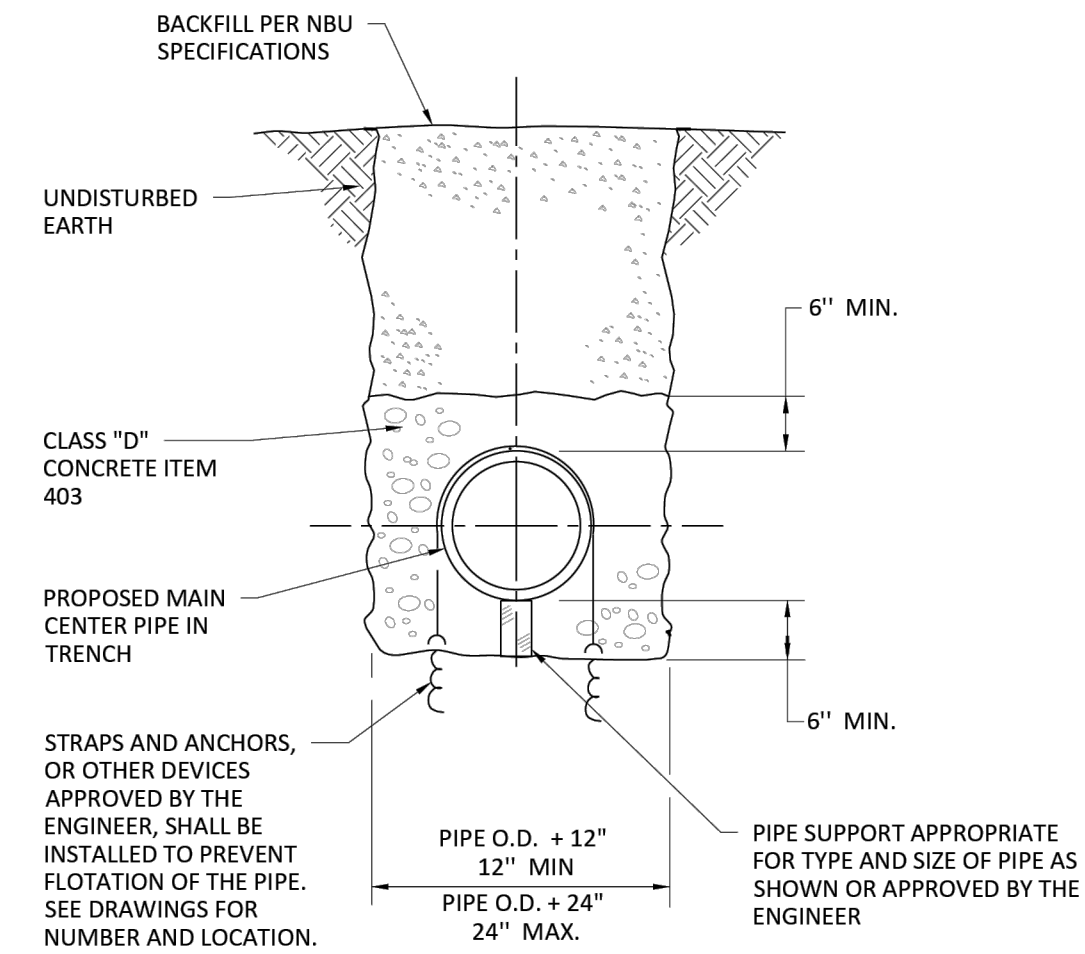
- NOTES:
- UTILITY CONTRACTOR, DURING SUBDIVISION CONSTRUCTION, SHALL INSTALL WASTEWATER CONNECTION TO MAIN, 6" STUB WITH 6" SERVICE BRANCH WITH 2-WAY CLEANOUT, CONCRETE SUPPORT (MIN. 18"Wx18"Lx6"H), RISER FOR CLEAN OUT (CAPPED), UTILITY SHROUD, 7" EXTENSION, AND PLUG. ALL WASTEWATER PIPING SHALL HAVE ELASTOMERIC GASKET TYPE JOINTS AND SHALL SLOPE DOWNWARD TO MAIN AT A MINIMUM 2% SLOPE,  $\frac{1}{8}$ " PER FOOT, MINIMUM TO 45" MAXIMUM. DEPTH OF SERVICE STUB AT PROPERTY LINE WILL BE SHOWN ON PLANS BY ENGINEER OR DESIGNATED REPRESENTATIVE IF GREATER THAN 6'; OTHERWISE, THE INSTALLED DEPTH WILL TYPICALLY BE 4' TO 6'. IF WASTEWATER SERVICE LINE TO MAIN REQUIRES DEFLECTION EXCEEDING 45", REFER TO DETAIL 301. ALL INSTALLATIONS SHALL BE MADE IN ACCORDANCE WITH INFORMATION SHOWN ON APPLICABLE STANDARD DRAWINGS AND WILL BE INSPECTED BY NBU CONSTRUCTION INSPECTION PERSONNEL.
  - CUSTOMER SHALL REMOVE PLUG, INSTALL 4" WASTEWATER LINE [EXTEND 4" PIPE 6" MINIMUM INTO 6" PIPE AND JOINT WITH FLEXIBLE ADAPTOR], IF WASTEWATER WILL NOT SATISFACTORILY FLOW BY GRAVITY TO SEWER MAIN ADJACENT TO PROPERTY. PUMP EQUIPMENT MUST BE PROVIDED BY THE CUSTOMER AS PART OF CUSTOMER'S WASTEWATER SYSTEM.
  - CUSTOMER IS RESPONSIBLE FOR PIPING SYSTEM UNTIL WASTEWATER IS CONNECTED. ANY MISSING OR DAMAGED PARTS SHALL BE REINSTALLED BY CUSTOMER WHO SHALL GUARANTEE, FOR A PERIOD OF TWO (2) YEARS FROM DATE OF FINAL ACCEPTANCE, THAT CONNECTIONS TO NBU SYSTEMS ARE FREE FROM DEFECTS IN WORKMANSHIP OR MATERIALS. CUSTOMER MUST ENSURE THAT 2-WAY CLEANOUTS REMAIN CLEAR OF SIDEWALKS AND OTHER OBSTRUCTIONS.
  - NBU ACTIVITY IS LIMITED TO INSPECTION OF CONNECTIONS TO NBU'S WASTEWATER SYSTEM. NBU'S MAINTENANCE RESPONSIBILITY ENDS AT THE CUSTOMER'S WASTEWATER CONNECTION TO THE 2-WAY CLEANOUT OR THE PROPERTY LINE, WHICHEVER IS CLOSER TO WASTEWATER MAIN.
  - PIPING IN STREET RIGHT-OF-WAY AND IN EASEMENT AREA SHALL BE BEDDED IN GRANULAR MATERIALS AND BACKFILLED AS REQUIRED BY NBU STANDARD SPECIFICATIONS. SERVICE LINES IN THESE AREAS SHALL HAVE A MINIMUM COVER BELOW FINAL STREET GRADE OF 42"; ANY EXCEPTION MUST BE SPECIFICALLY APPROVED BY NBU WATER ENGINEERING.

<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	SINGLE WASTEWATER SERVICE CONNECTION DETAIL		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 2 OF 2
				DRAWING NO. 302

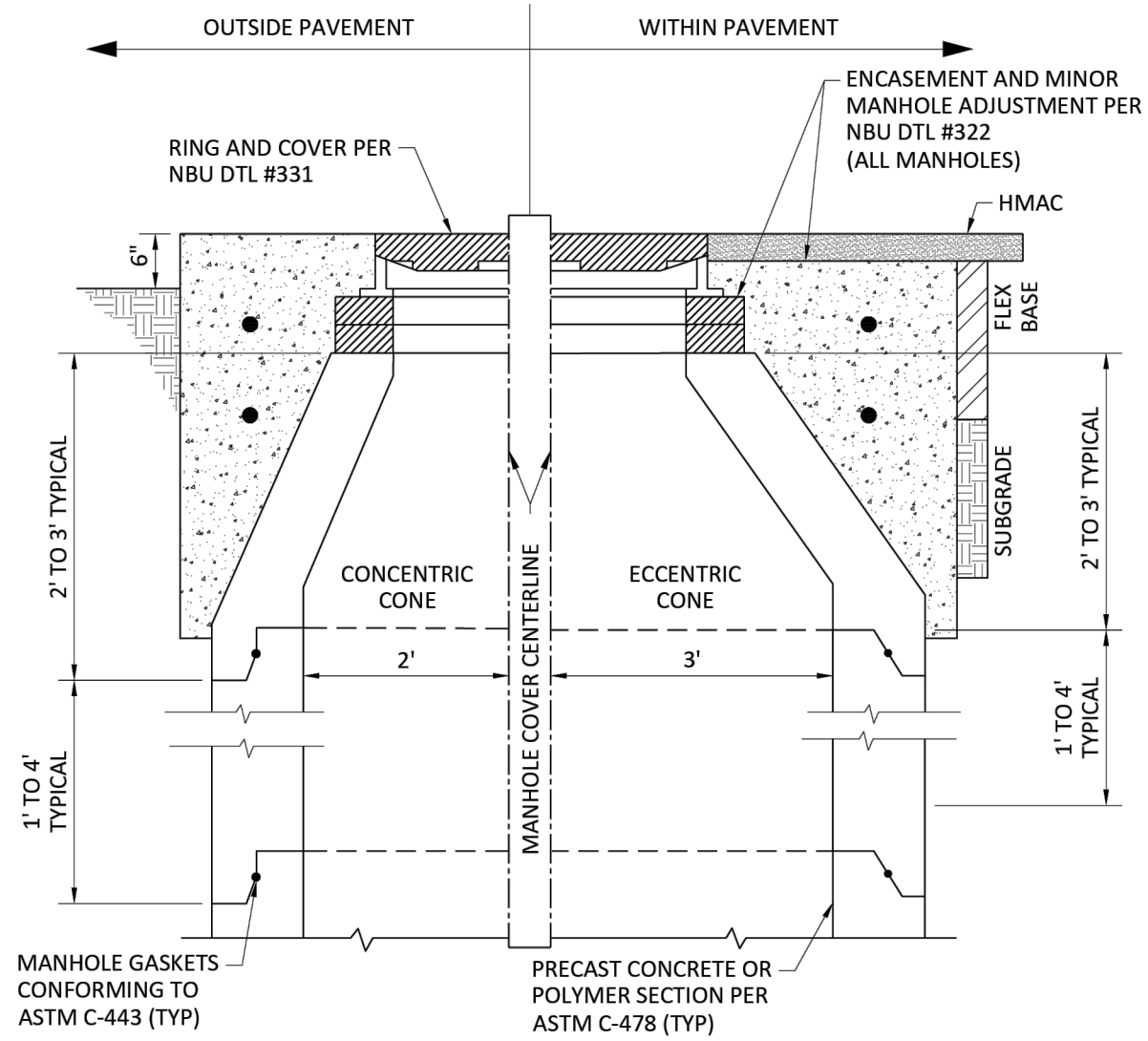


- NOTES:
- SERVICES MUST BE DESIGNED TO AVOID PLACEMENT WITHIN SIDEWALK AND DRIVEWAYS. DETAIL APPROVED FOR USE ON EXISTING SERVICES ONLY.
  - SUBGRADE SHALL BE COMPACTED PER CITY OF NEW BRAUNFELS SPECIFICATIONS.

<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	WASTEWATER CLEANOUT ADJUSTMENT TO GRADE IN DRIVEWAYS		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 306

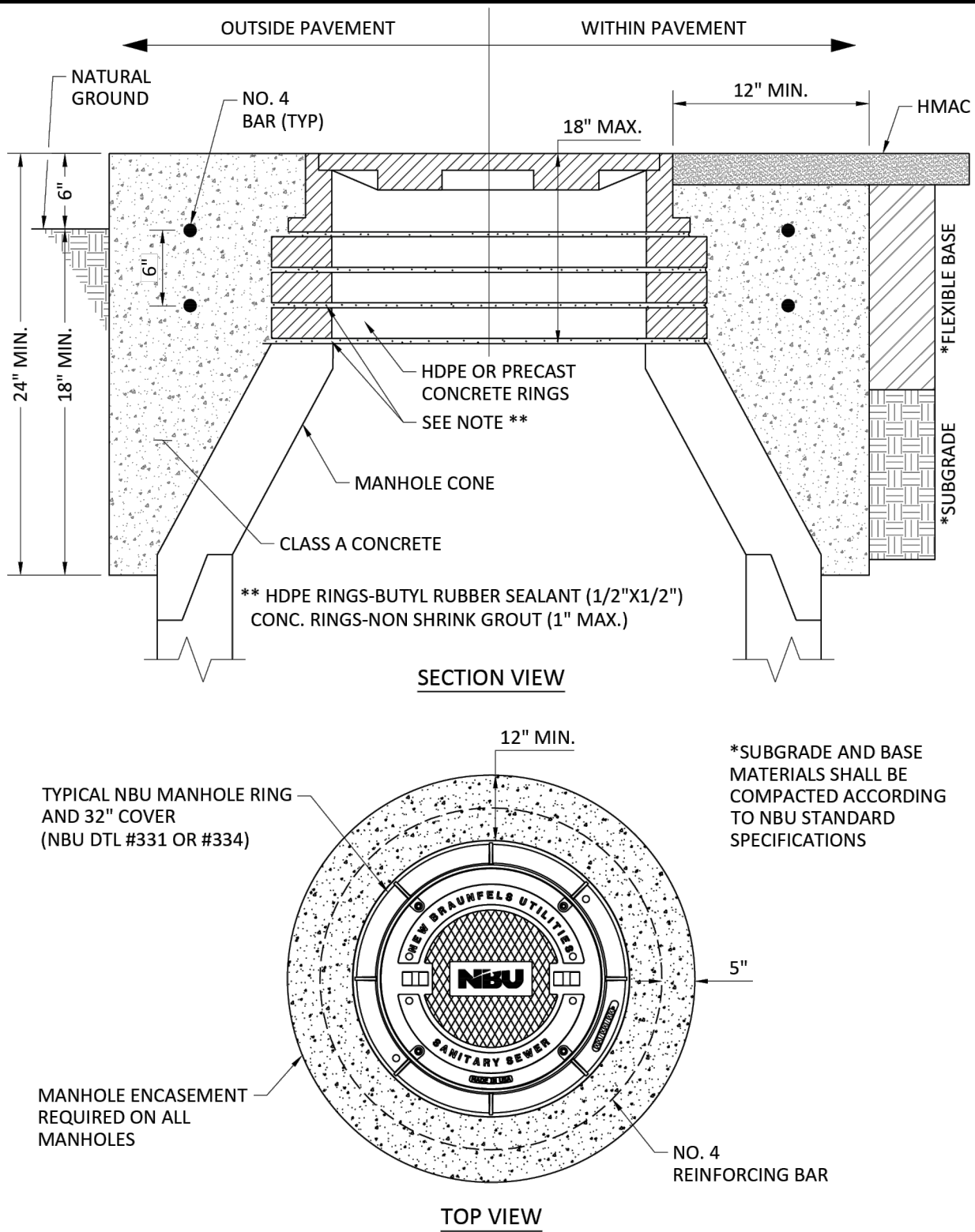


<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	CONCRETE ENCASEMENT		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 310

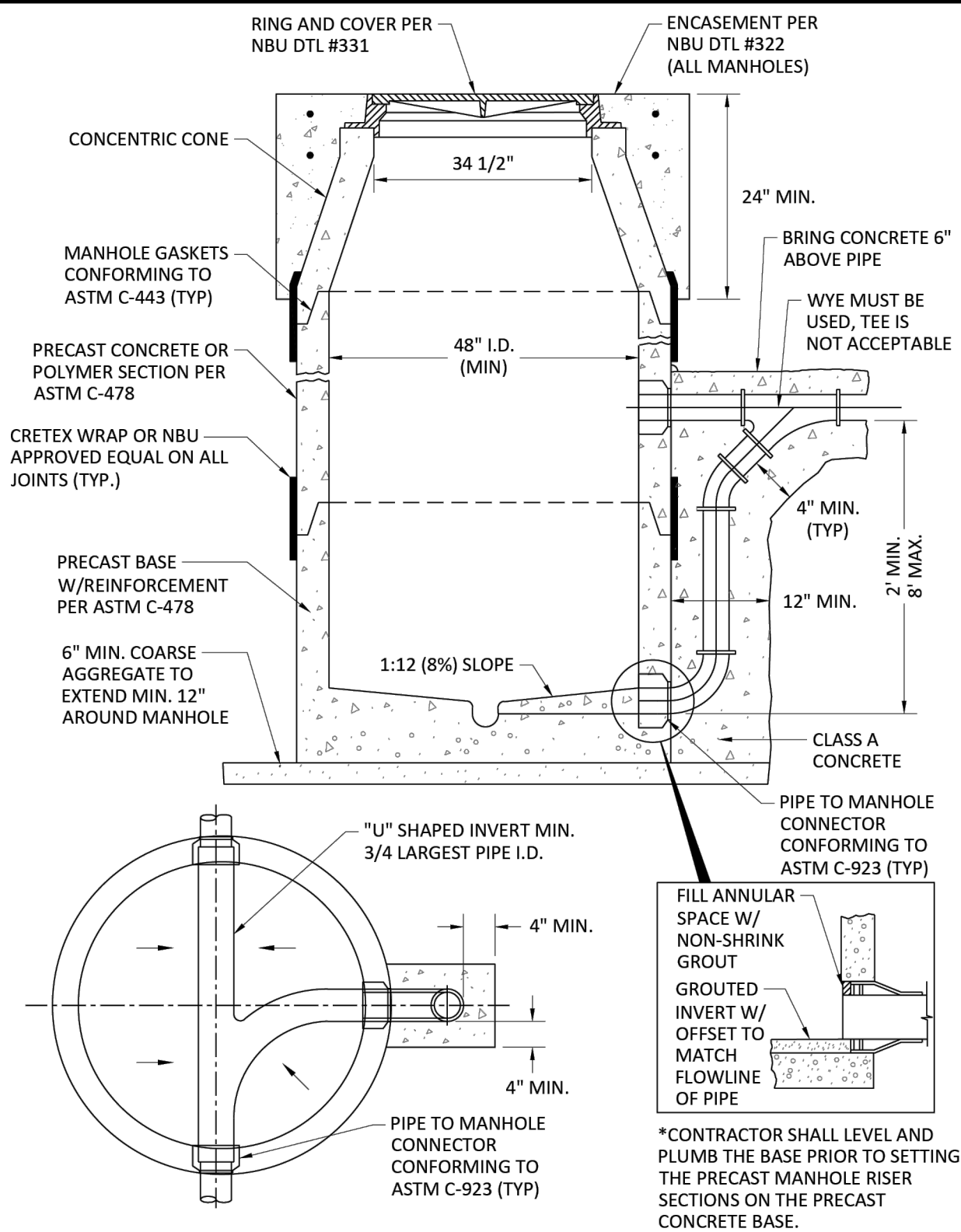


- NOTES:
- MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED ONLY WITH THE WRITTEN APPROVAL OF THE INSPECTOR. GASKETS SHALL NOT BE REUSED.
  - ANY COMBINATION OF REMOVING THE CONCRETE RINGS, AND / OR THE MANHOLE CONE, AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR ROADWAY RECONSTRUCTION.
  - WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF STEEL SUITABLE TO SUPPORT ALL IMPOSED LOADS SHALL BE USED TO COVER THE OPENING. THE STEEL PLATE SHALL BE SET IN MORTAR TO PREVENT LEAKAGE.
  - SUBGRADE AND BASE MATERIALS SHALL BE COMPACTED TO 95% AND 100% DENSITIES, RESPECTIVELY, COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED.
  - MANHOLE SHALL BE SET SO RING AND COVER MATCH STREET SLOPE.

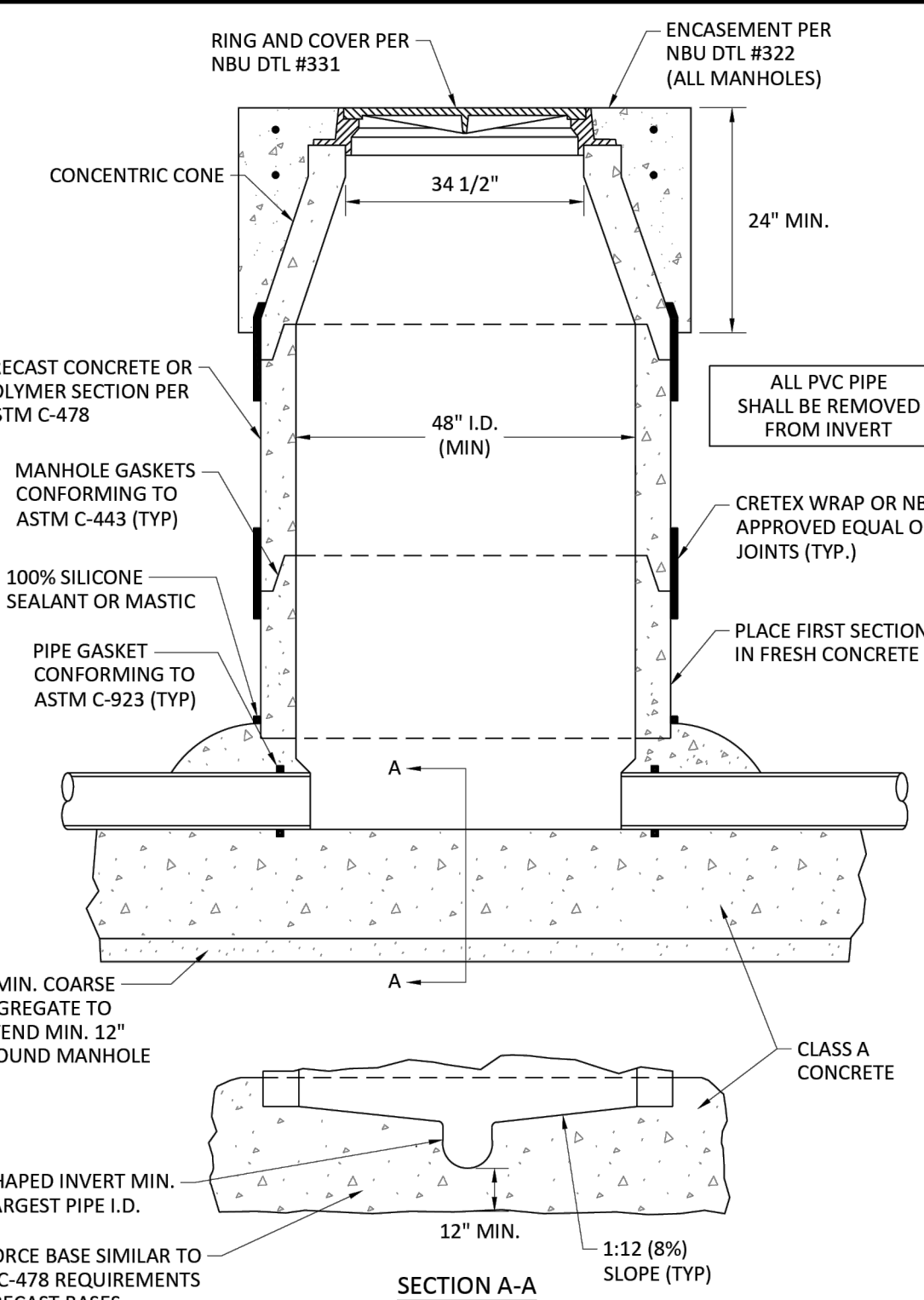
<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	MAJOR MANHOLE ADJUSTMENT		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 321



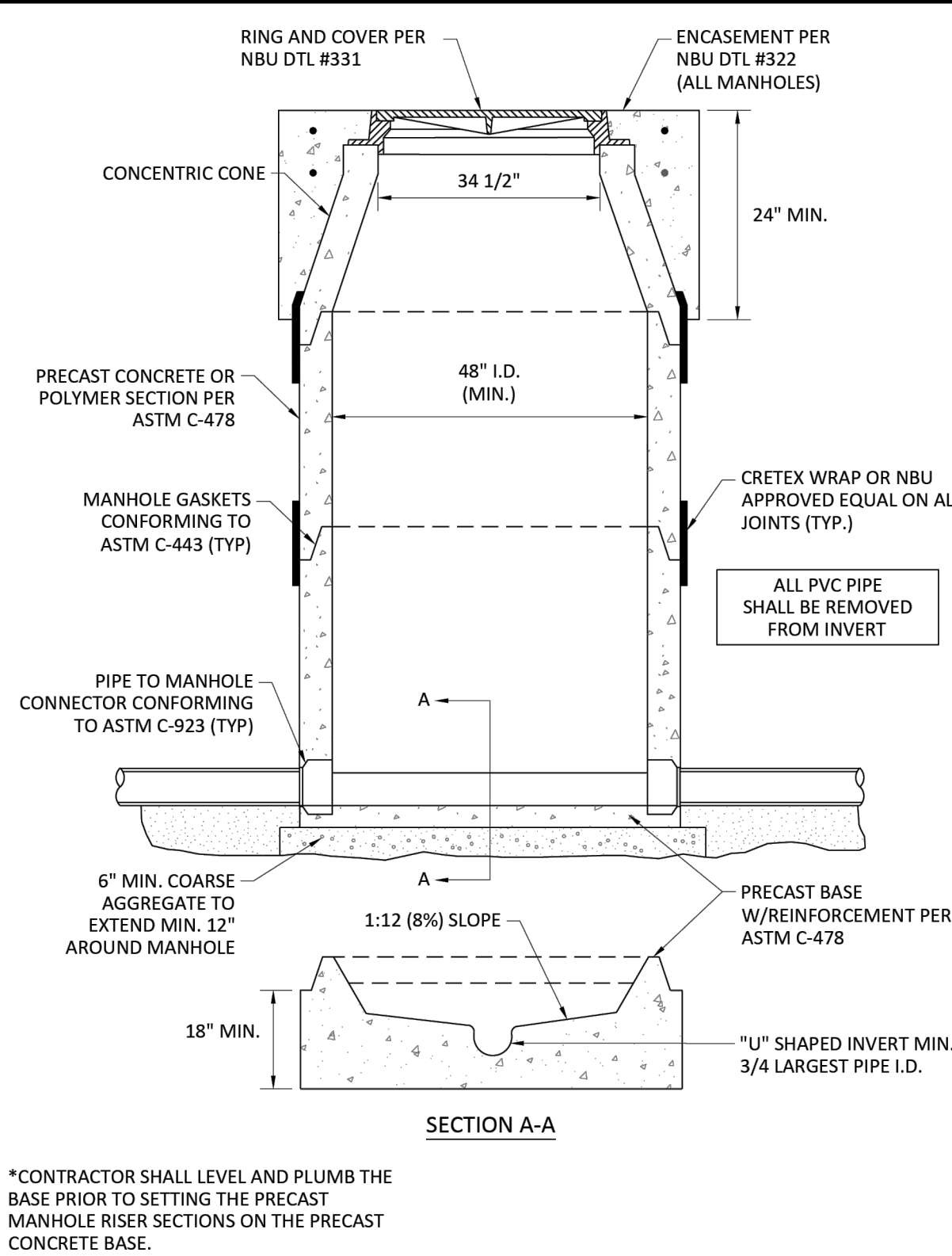
<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENT		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 322



<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	WASTEWATER MANHOLE W/DROP INLET ON CAST IN PLACE BASE		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 325



<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	WASTEWATER MANHOLE ON CAST IN PLACE FOUNDATION		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 327

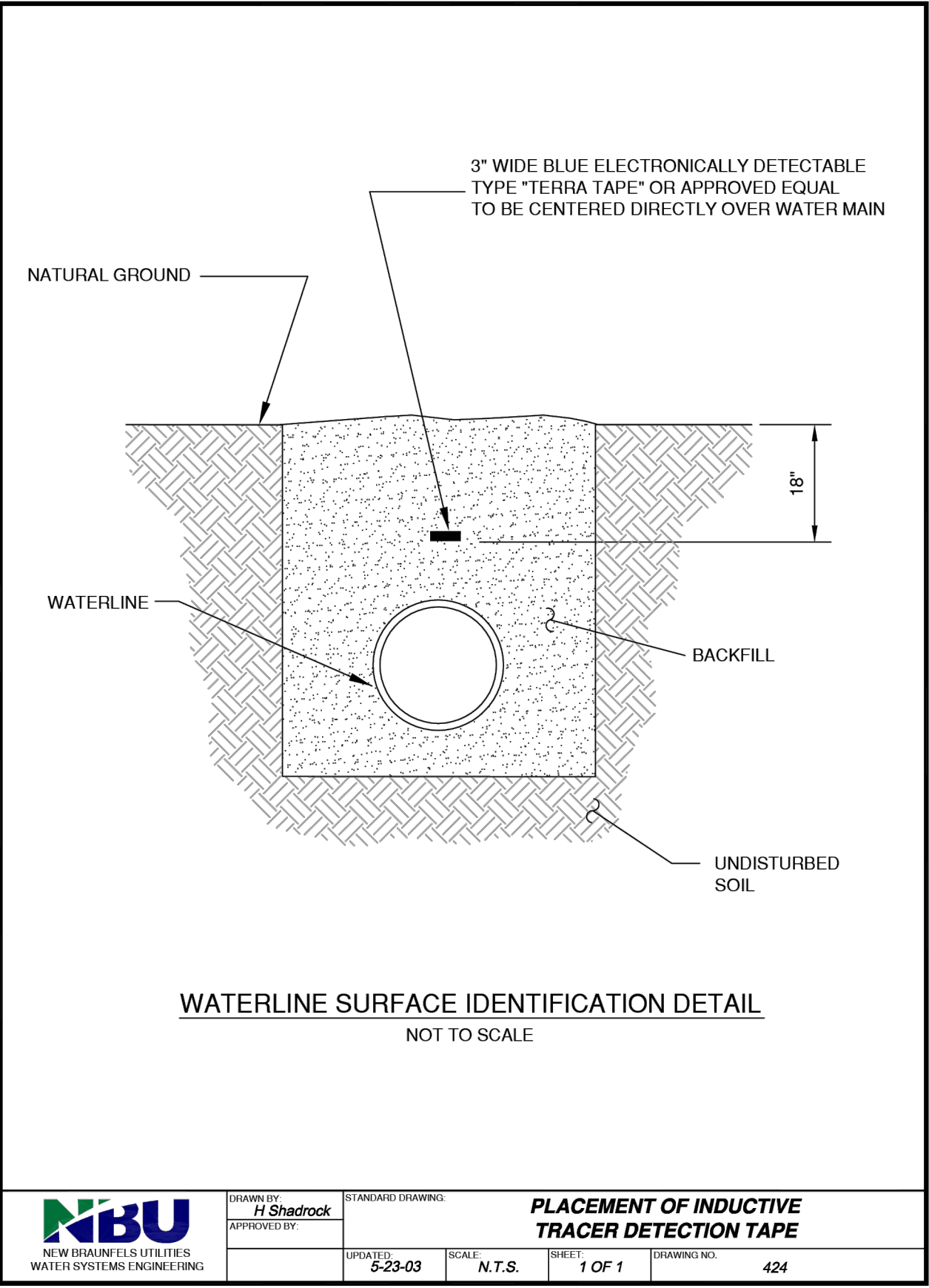
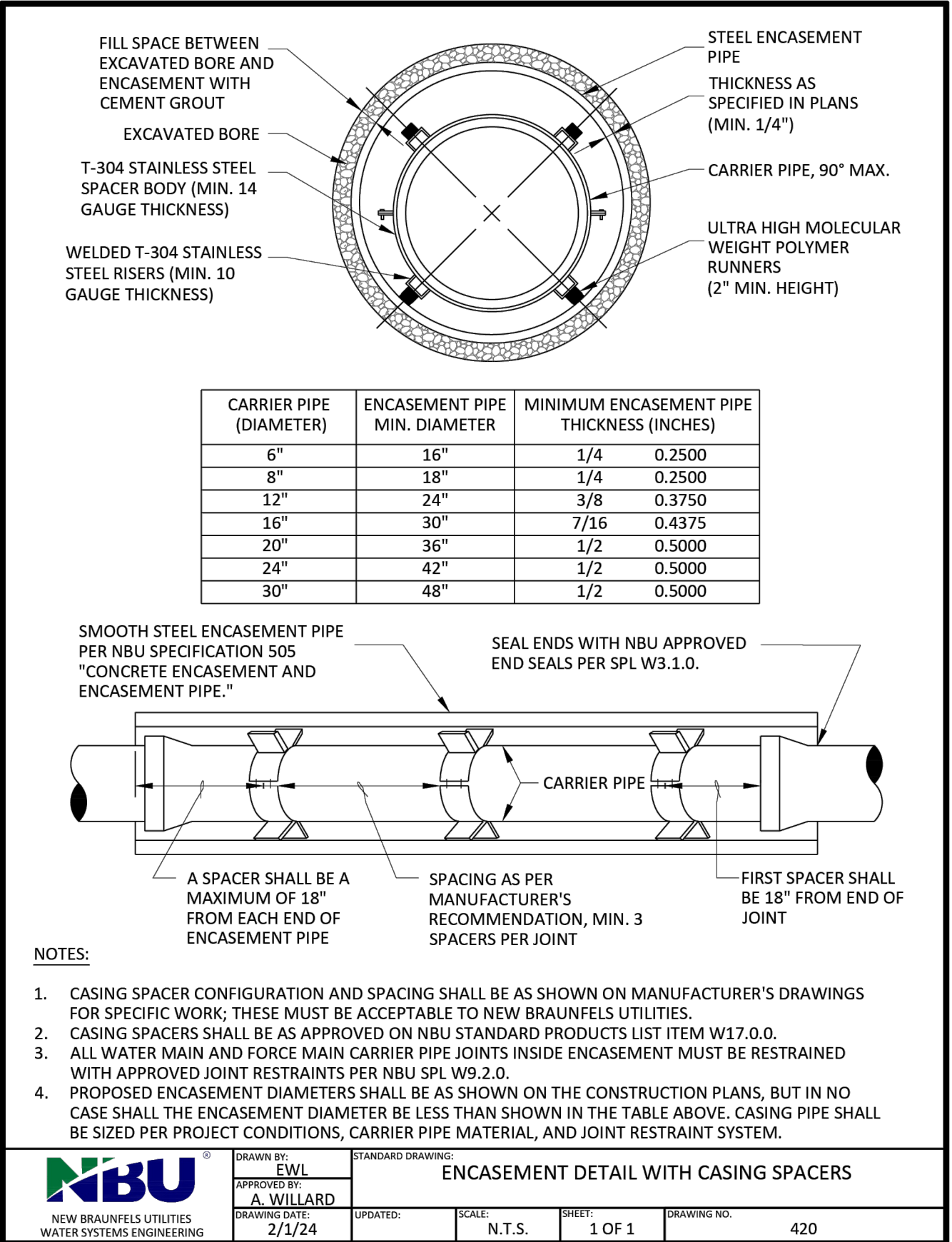
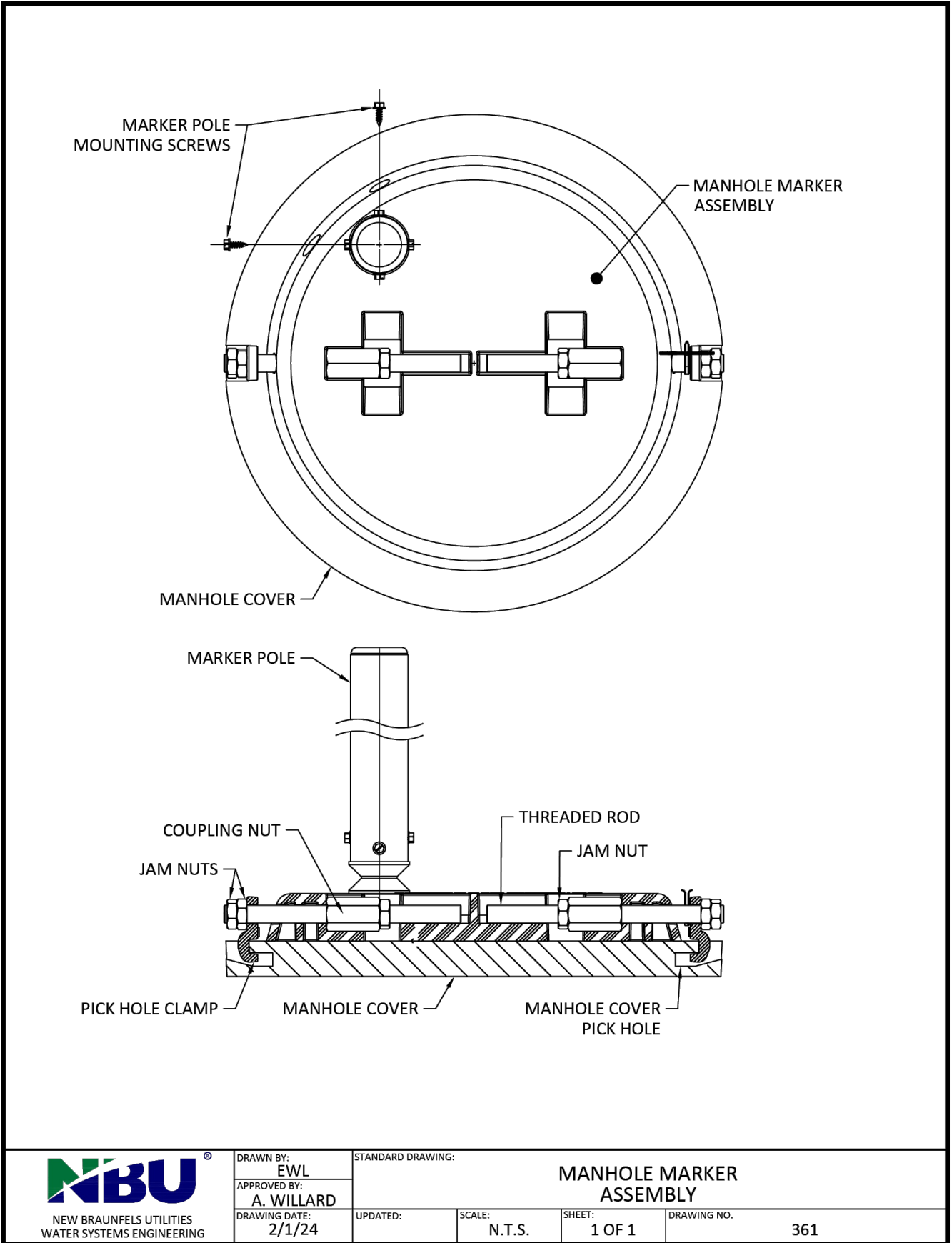
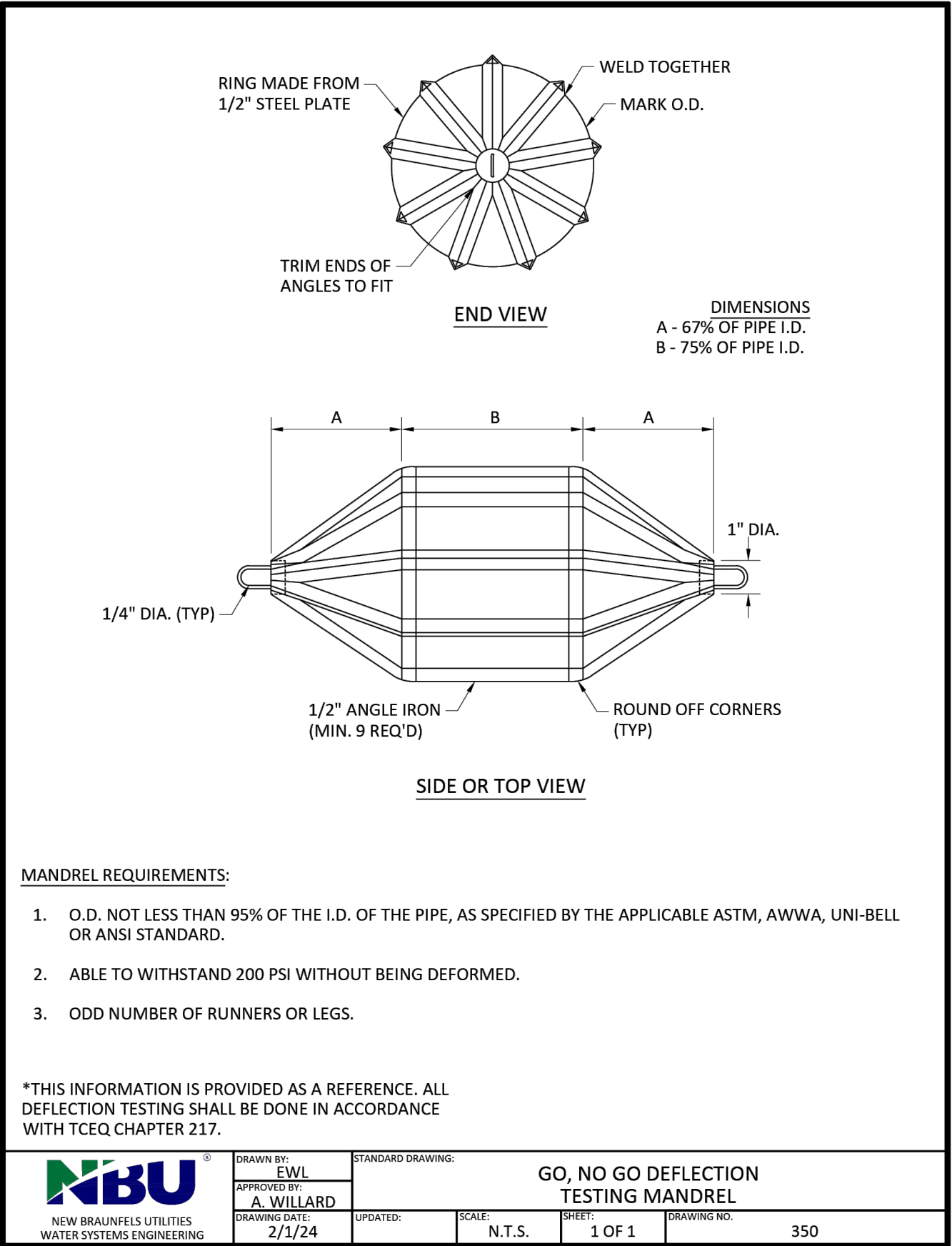
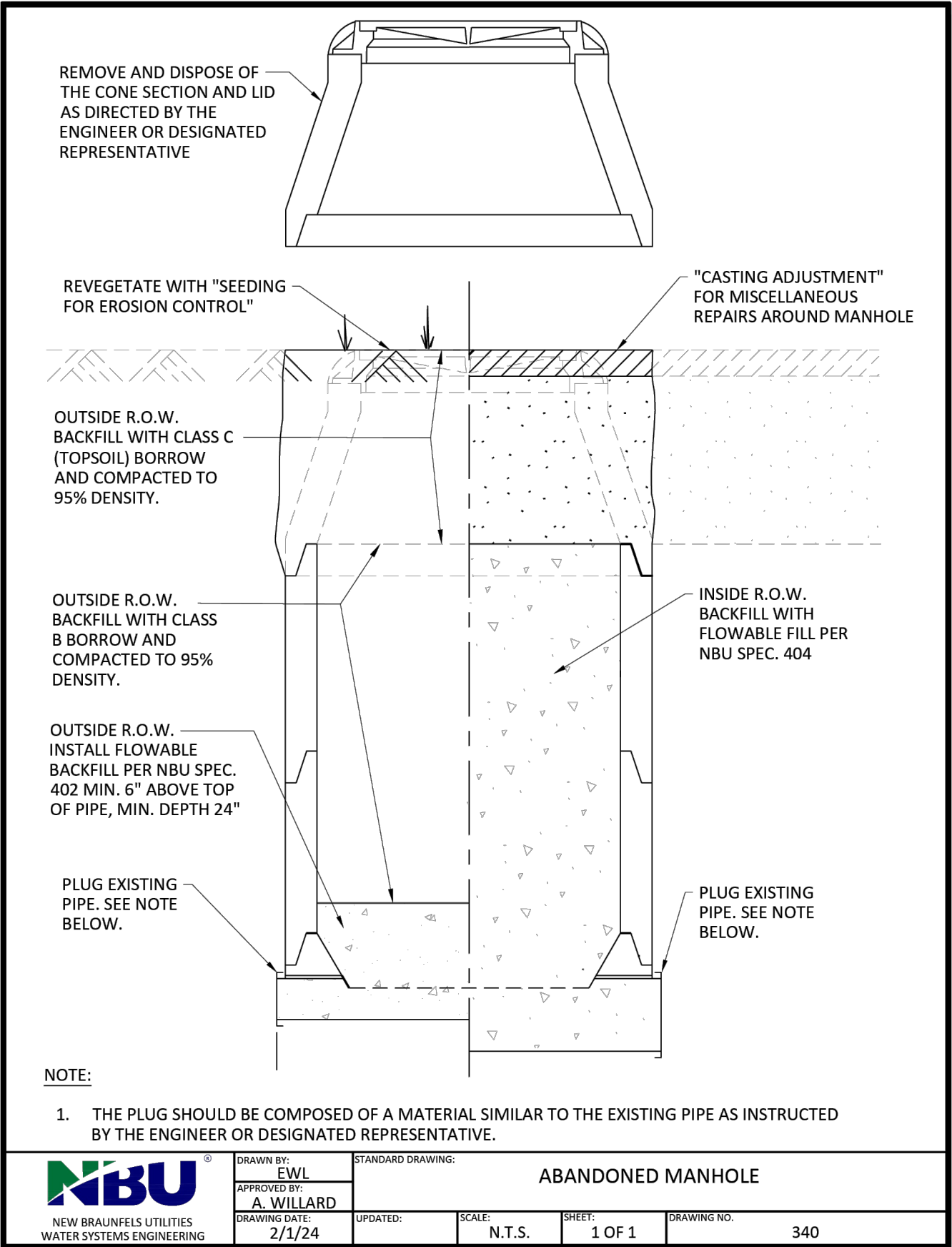
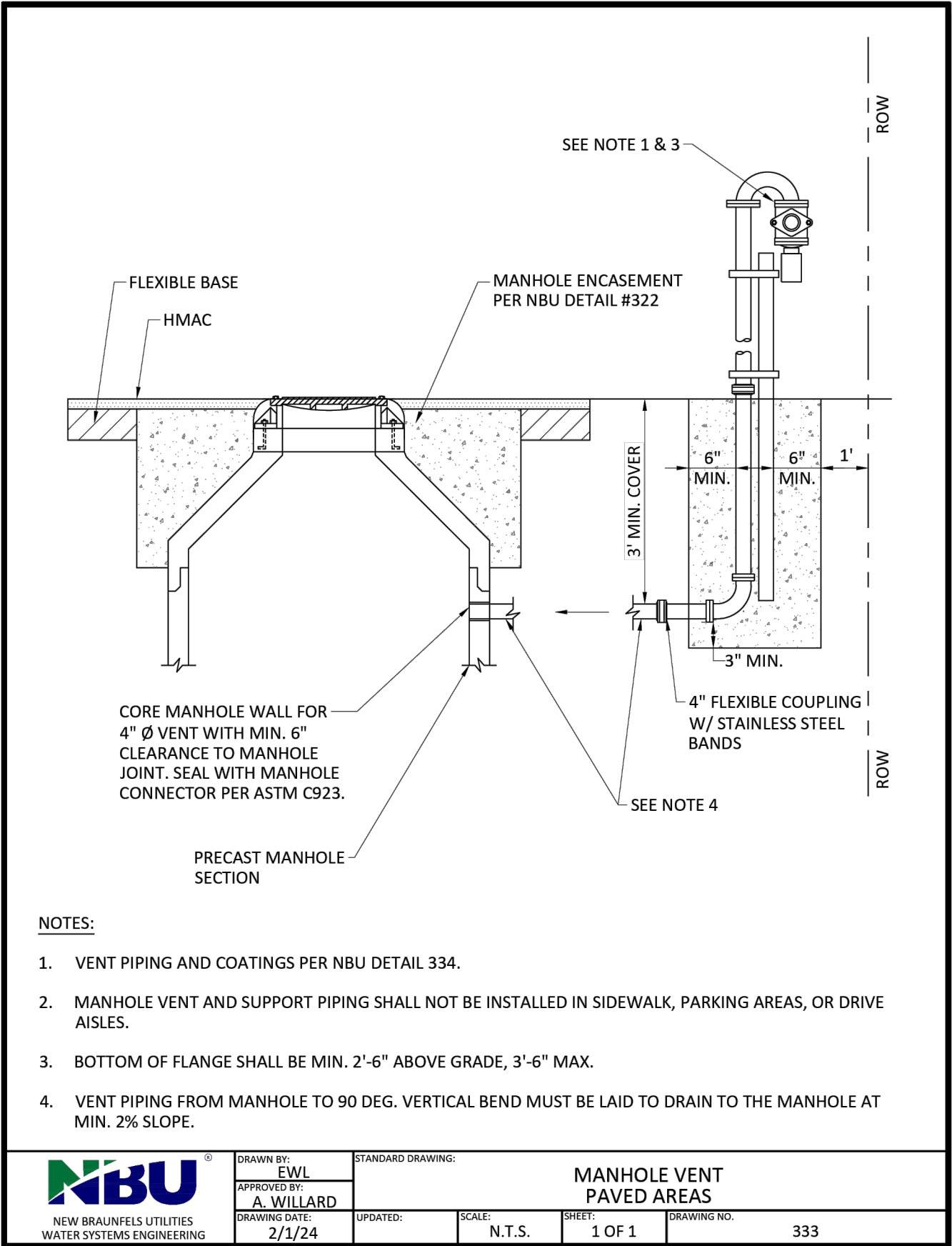
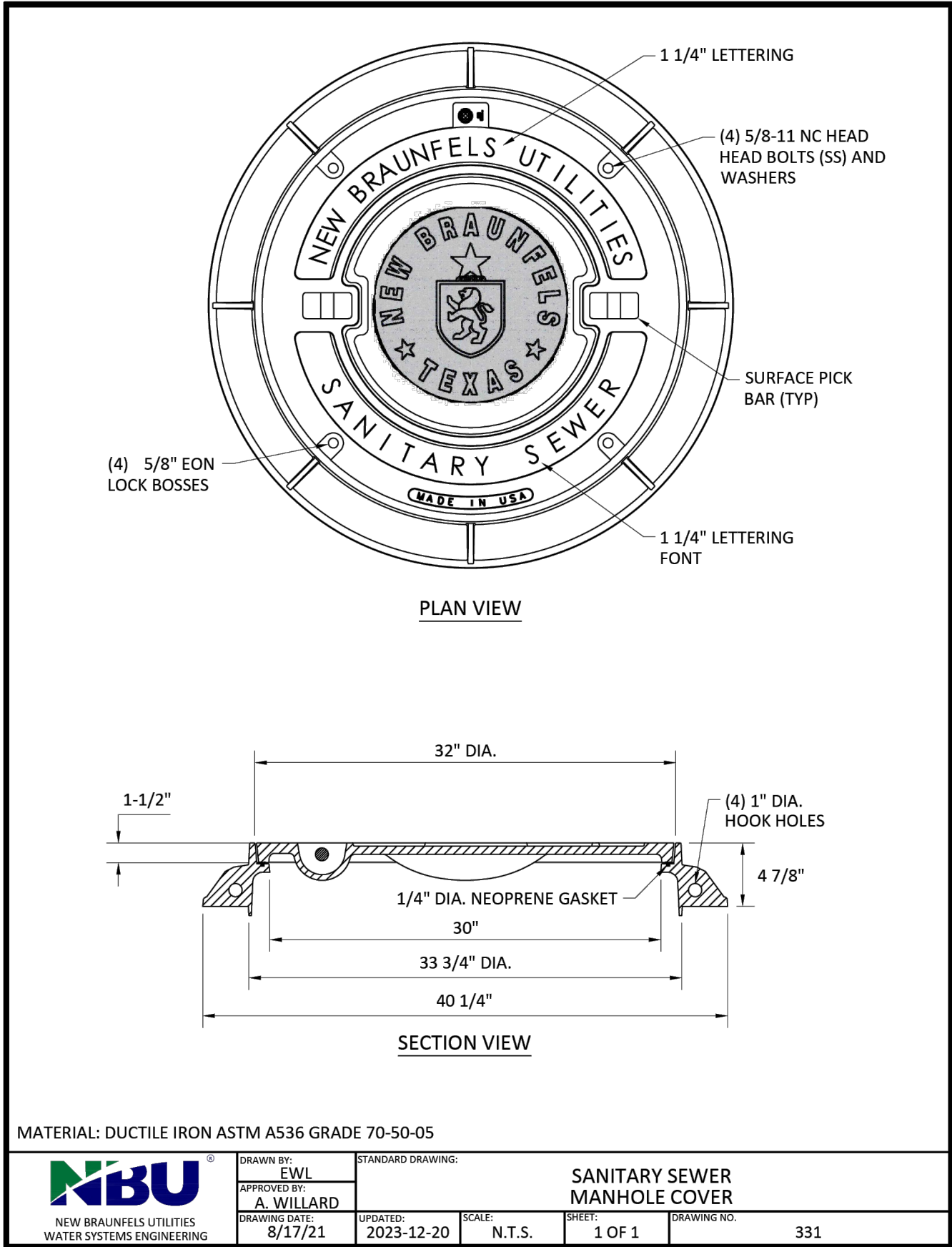


<b>NBU</b> NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: EWL	STANDARD DRAWING:		
	APPROVED BY: A. WILLARD	WASTEWATER MANHOLE ON PRECAST BASE		
	DRAWING DATE: 2/1/24	UPDATED:	SCALE: N.T.S.	SHEET: 1 OF 1
				DRAWING NO. 328

NO.	REVISIONS	APPD.	DATE



FILE: E:\Projects\2023 New Braunfels Utilities\03 Details\2023-03 Details.dwg TAB: 27 DETAILS SHEET 4 OF 5 PLOTTED: 2/20/2024 11:54 AM BY: DUSTIN



NO.	REVISIONS	APPD.	DATE



