

PROJECT LOCATION MAP

SCALE: N.T.S.

PROJECT BENCHMARK

SITE TBM #1
SET SQUARE IN CONCRETE
N: 13818905.33
E: 2260087.48
ELEV: 683.89

SITE TBM #2
SET 'X' IN CONCRETE
N: 13820290.23
E: 2261449.99
ELEV: 679.10

LEGAL DESCRIPTION

BEING 24.02 ACRES OF LAND SITUATED IN THE ORILLA RUSSELL SURVEY NO. 2, ABSTRACT NO. 485, COMAL COUNTY, TEXAS, BEING A PORTION OF A TRACT OF LAND CALLED 77.96 ACRES AS DESCRIBED IN DOCUMENT NO. 201506026160, OFFICAL PUBLIC RECORDS, COMAL COUNT, TEXAS.

PLEASE NOTE: NBU REQUIRES GPS POINTS FOR CERTAIN ELECTRIC, WATER AND WASTEWATER ATTRIBUTES, SOME OF WHICH MUST BE TAKEN PRIOR TO BACKFILL DURING CONSTRUCTION.

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER'S CONTRACTOR 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 ELECTRIC 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

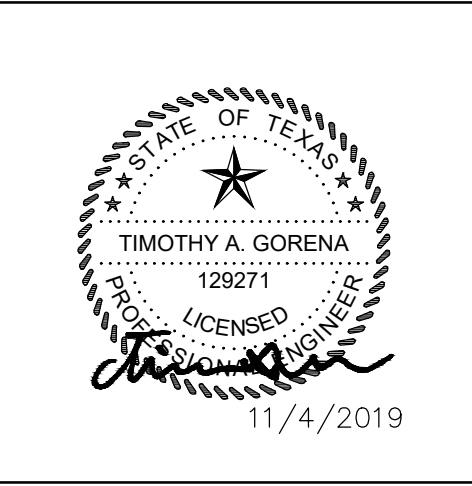
WASTEWATER
MANHOLES
CLEANOUTS
CORNER SLAB OF LIFT STATION

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

COORDINATE GPS REQUIREMENTS WITH NBU INSPECTOR

GENERAL NOTES:

- IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
- 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.
- 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 IN RECORD.
- PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS TO SET A PRE-CONSTRUCTION MEETING. A 48-HOUR ADVANCED NOTIFICATION IS REQUIRED FOR ALL INSPECTION AND MEETING REQUESTS.
 - 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.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
- DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
- THIS DEVELOPMENT IS A TYPE III DEVELOPMENT.
- THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE COMAL COUNTY, TEXAS, FIRM PANEL NUMBER 48091C0455F EFFECTIVE DATE SEPTEMBER 2, 2009, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
- THIS PROJECT IS NOT LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
- GAS UTILITIES ARE NOT INCLUDED IN THE CIVIL CONSTRUCTION PLANS. FINAL GAS UTILITY DESIGN SHALL BE APPROVED BY THE CITY FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY.



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.

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CREEKSIDE FARMS UNIT 3 NEW BRAUNFELS, TEXAS CIVIL SITE CONSTRUCTION PLANS

MOSAIC LAND DEVELOPMENT
1802 NW MILITARY DRIVE, SUITE 100
SAN ANTONIO, TEXAS 78213

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C7.8	WASTEWATER DETAILS (2 OF 2)

NOTE TO CONTRACTOR:

BY THE ACT OF SUBMITTING A BID FOR THIS PROPOSED CONTRACT, THE BIDDER WARRANTS THAT THE BIDDER, AND ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS HE INTENDS TO USE HAVE CAREFULLY AND THOROUGHLY REVIEWED THE DRAWINGS, SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS AND HAVE FOUND THEM COMPLETE AND FREE FROM ANY AMBIGUITIES AND SUFFICIENT FOR THE PURPOSE INTENDED. THE BIDDER FURTHER WARRANTS THAT TO THE BEST OF HIS OR HIS SUBCONTRACTORS' AND MATERIAL SUPPLIERS' KNOWLEDGE, ALL MATERIALS AND PRODUCTS SPECIFIED OR INDICATED HEREIN ARE ACCEPTABLE FOR ALL APPLICABLE CODES AND AUTHORITIES.

THE LOCATION OF ALL EXISTING UTILITIES SHOWN ON THESE PLANS HAS BEEN BASED UPON RECORD INFORMATION ONLY AND MAY NOT MATCH LOCATIONS AND/OR DEPTHS AS CONSTRUCTED. THE CONTRACTOR SHALL CONTACT EACH OF THE INDIVIDUAL UTILITIES FOR ASSISTANCE IN DETERMINING EXISTING UTILITY LOCATIONS AND DEPTHS PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL UTILITY CROSSINGS PRIOR TO BEGINNING ANY CONSTRUCTION.

CITY OF NEW BRAUNFELS GENERAL NOTES

ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THIS CONTRACT SHALL COMPLY WITH:

A. CURRENT CITY OF NEW BRAUNFELS CONSTRUCTION SPECIFICATIONS AND STANDARDS AS OF THE DATE OF THIS CONTRACT

B. THE MOST CURRENT EDITION OF TEXAS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES".

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST CURRENT TEXAS DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS OF HIGHWAYS, STREETS, AND BRIDGES" ALONG WITH CURRENT CITY OF NEW BRAUNFELS AND COMAL COUNTY SPECIFICATIONS. ANY DISCREPANCIES BETWEEN SPECIFICATIONS SHALL BE RESOLVED BY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

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

ANY EXISTING OFF-SITE IMPROVEMENTS THAT ARE DAMAGED OR UNDERBID BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE OWNER OF THE EXISTING IMPROVEMENT AT THE CONTRACTOR'S EXPENSE. (NO SEPARATE PAY ITEM)

WORK COMPLETED BY THE CONTRACTOR WHICH HAS NOT RECEIVED A WORK ORDER OR CONSENT OF THE OWNER OR ENGINEER WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

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

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.

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

WHEN MATCHING EXISTING PAVEMENTS, CURBS, DRIVES, AND WALKS, THEY SHALL BE SAW CUT FULL DEPTH AND REMOVED TO ALLOW FOR PROPOSED CONSTRUCTION. IF ANY EXISTING JOINT IS ENCOUNTERED, PRECAUTION SHALL BE TAKEN DURING REMOVAL OF CONCRETE SO AS NOT TO DAMAGE EXISTING DOWELS. ALL EXISTING DOWELS SHALL BE EXPOSED AND CLEANED.

ITEM OF WORK DESIGNATED "BY OTHERS" SHALL NOT BE CONSIDERED PART OF THIS CONTRACT.

ALL "COMPACTED SUBGRADE" SHALL CONSIST OF NATIVE MATERIAL SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES AND COMPACTED TO 95% DENSITY ACCORDING TO DENSITY TEST METHOD TEX-115E OR ACCORDING TO ASTM D-698 AND TESTED BY ASTM D-2922.

ALL "FLEXIBLE BASE" SHALL BE TYPE "A", GRADE 4, ACCORDING TO TXDOT ITEM 247, COMPACTED TO 95% MODIFIED DENSITY AT A MOISTURE CONTENT BETWEEN -2 AND +3 OF OPTIMUM PERCENT MOISTURE ACCORDING TO ASTM D-1557 (MODIFIED PROCTOR) AND TESTED BY ASTM D-2922.

ASPHALT PAVEMENT SHALL BE THE TYPE SPECIFIED ON THE PLANS AND ACCORDING TO TXDOT ITEM 340 "HOT MIX ASPHALT CONCRETE PAVEMENT".

PRIME COAT USING MC-30 AT A RATE OF 0.2 GALLONS PER SQUARE YARD SHALL BE PLACED OVER PREPARED BASE AT LEAST ONE DAY PRIOR TO LAYING ASPHALTIC CONCRETE PAVEMENT. ANY NECESSARY TACK COAT SHALL BE MC-30 AT 0.05 GALLONS PER SQUARE YARD. IT IS REQUIRED THAT BOTH THE PRIME COAT AND THE TACK COAT BE APPLIED AT THE TEMPERATURE SPECIFIED UNDER TXDOT ITEM 300.3.

CONCRETE SHALL BE CLASS "A" ACCORDING TO TXDOT ITEM 421 UNLESS OTHERWISE ON PLANS.

REINFORCING STEEL SHALL BE FROM NEW BILLET AND SHALL CONFORM TO TXDOT ITEM 440. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS EXCEPT WHEN REFERRING TO CLEARANCE.

ALL SAWED JOINTS SHALL BE SAWED WITHIN 24 HOURS OF POURING.

ABSOLUTELY NO WELDING OF REINFORCING BARS OR TORSION TO BEND REINFORCING BARS SHALL BE ALLOWED WITHOUT THE SPECIFIC APPROVAL OF THE ENGINEER.

ORDINARY COMPACTION CONTROL IS REQUIRED ON THIS PROJECT.

ALL ROLLING FOR COMPACTION OF ASPHALTIC CONCRETE PAVEMENT SHALL BE COMPLETED BEFORE THE MIXTURE TEMPERATURE DROPS BELOW 175 DEG. (F).

ALL FILL MATERIAL SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.

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. THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO THE NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER AND HIS EMPLOYEES, PARTNERS, OFFICES, 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.

ALL CMP (CORRUGATED METAL PIPE) USED ON THIS PROJECT SHALL HAVE A MANNING'S "N" VALUE OF 0.024, UNLESS OTHERWISE SHOWN ON PLANS.

CONTRACTOR WILL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTING PER CURRENT CITY OF NEW BRAUNFELS REQUIREMENTS. ALL TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL. ENGINEER AND OWNER RESERVE THE RIGHT TO HAVE THE CONTRACTOR REMOVE AND REPLACE ANY MATERIAL THAT WAS NOT TESTED OR FAILED TESTING. ALL COST ASSOCIATED WITH THE REMOVAL, REPLACEMENT AND TESTING SHALL BE PAID BY THE CONTRACTOR.

ALL PVC SLEEVES SHALL BE INSTALLED 3 FEET BELOW FINISHED GRADE AND ENDS SHALL BE MARKED SO THAT LOCATIONS OF SLEEVES CAN BE EASILY IDENTIFIED.

PRE-CONSTRUCTION CONFERENCE IS REQUIRED. ENGINEER WILL ARRANGE SUCH CONFERENCE IN COORDINATION WITH CITY OF NEW BRAUNFELS STREET INSPECTOR & NEW BRAUNFELS UTILITIES INSPECTOR. NO CONSTRUCTION MAY BEGIN PRIOR TO THE PRE-CONSTRUCTION CONFERENCE.

CONTRACTOR SHALL COORDINATE WITH DRY UTILITY INSTALLERS AND SHARED TRENCHING SHALL BE UTILIZED. CUTTING THE STREETS AFTER COMPLETION BY DRY UTILITIES SHALL NOT BE ACCEPTABLE.

AS PER PLATING ORDINANCE SECTION 118-38M: WHEN ALL IMPROVEMENTS ARE 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 DRAWINGS" PLANS, AND A DIGITAL COPY OF ALL PLANS (AUTOCAD 2000 MINIMUM) 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.

EROSION / SEDIMENTATION CONTROL

AT A MINIMUM, THESE CONTROLS SHALL CONSIST OF ROCK BERMS AND/OR SILT FENCES CONSTRUCTED PARALLEL TO AND DOWN GRADIENT FROM THE TRENCHES. THE ROCK BERM OR SILT FENCES SHALL BE INSTALLED IN A MANNER SUCH THAT ANY RAINFALL RUNOFF SHALL BE FILTERED. HAY BALES SHALL NOT BE USED FOR TEMPORARY EROSION AND SEDIMENTATION CONTROLS.

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS MUST BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE MAINTAINED DURING CONSTRUCTION BY THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE THE CONTROLS WHEN VEGETATION IS ESTABLISHED AND THE CONSTRUCTION AREA IS STABILIZED [31 TAC 313.5 (C)(12)]. ADDITIONAL PROTECTION MAY BE REQUIRED IF EXCESSIVE SOLIDS ARE BEING DISCHARGED FROM THE SITE.

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY THE OWNER/ENGINEER.

PLACEMENT OF TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS. ACTUAL LOCATIONS MAY VARY SLIGHTLY FROM THE PLANS, BUT WILL BE VERIFIED BY THE ENGINEER/INSPECTOR IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INSPECT THE CONTROLS AT WEEKLY INTERVALS AND AFTER EVERY SIGNIFICANT RAINFALL TO INSURE DISTURBANCE OF THE STRUCTURES HAS NOT OCCURRED. SEDIMENT DEPOSITED AFTER A RAINFALL SHALL BE REMOVED FROM THE SITE OR PLACED IN AN ENGINEER APPROVED DESIGNATED DISPOSAL AREA.

CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THAT NO EROSION CONTROL MEASURES BLOCK THE DRAINAGE SYSTEM FROM WORKING AS DESIGNED.

UTILITIES

LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION, INCLUDING THOSE NOT SHOWN ON THE DRAWINGS. ANY EXISTING UTILITIES, ON OR OFF THE SITE, THAT ARE DAMAGED OR UNDERCUT BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR SHALL NOTIFY APPROPRIATE UTILITY COMPANIES AND GOVERNMENTAL AGENCIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AT:

THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES 48 HOURS PRIOR TO EXCAVATION

NEW BRAUNFELS UTILITIES (WATER AND SEWER)	(830) 608-8971
NEW BRAUNFELS UTILITIES (ELECTRIC)	(830) 608-8951
TIME WARNER CABLE	(830) 625-3408
CENTERPOINT ENERGY (GAS)	(830) 643-6434
ATA&T	(830) 303-1333
TEXAS ONE CALL SYSTEM	(800) 245-4545
ENERGY TRANSFER (PETROLEUM PIPELINE)	(210) 262-2486

CONTRACTOR SHALL REFERENCE NEW BRAUNFELS UTILITIES PLANS FOR FINAL ELECTRICAL LINE DESIGNS AND LAYOUT.

WASTEWATER NOTES

- THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION.
- A MINIMUM OF 8" WASTEWATER PIPE AND FITTING (P.V.C. SDR-26, ASTM, D-3034, D-3212, F-477) ARE REQUIRED ON NEW INSTALLATION.
- ALL RESIDENTIAL WASTEWATER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND A CLEANSOUT 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.
- PIPE BEDDING OF WASTEWATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SPECIFICATIONS.
- 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.
- ALL WASTEWATER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS AS PER 30 TAC §217.53 (C) (2). FOR WASTEWATER LINES LESS THAN 24" IN DIAMETER, SELECT INITIAL BACKFILL MATERIAL SHALL BE PLACED IN TWO LIFTS.
 - 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.
 - 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.
- 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 (C).
- 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 ARE, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
- ALL NEW MANHOLES, UNLESS APPROVED BY NBU ENGINEERING, ARE TO HAVE COVERS WITH 32" OPENINGS.
- WASTEWATER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS OR MECHANICAL "BOOT TYPE" JOINT AS APPROVED BY NBU.
- WASTEWATER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
- IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM, IT SHALL BE THE CONTRACTOR'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).
- 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. 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 §290.44 (E)(5).
- NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE WASTEWATER LINES. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
 - FULL MANHOLE
 - PERFORM AIR TEST
 - CLEANING OF ANY DEBRIS
 - FLUSHING OF SYSTEM
 - TV INSPECTION (WITHIN 72 HOURS OF FLUSHING)
- 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.
- WASTEWATER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLE IN ACCORDANCE WITH NBU CONNECTION & CONSTRUCTION POLICY MANUAL.
- TCEQ AND EPA REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF WASTEWATER COLLECTION SYSTEMS. THE ENGINEER'S DESIGN 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.
- ALL MANHOLES NOT WITHIN PAVED STREETS SHALL HAVE LOCKING CONCRETE COLLAR TO SECURE RING AND COVER TO MANHOLE COVER PER DETAIL DRAWING #329.
- 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.

WATER NOTES

- ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
- WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
- WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- WATER MAIN SHALL HAVE A MINIMUM OF 42 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
- EACH UNIT IN A DUPLEX, TRIPLEX, FOURPLEX, OR CONDOMINIUM SHALL BE PROVIDED WITH AN INDIVIDUAL WATER METER. A MASTER METER AND COVER FOR SEPARATE BUILDINGS, HOWEVER, THOSE BUILDINGS MUST BE PLUMBED TO ALLOW SEPARATE METERS FOR FUTURE CONSIDERATION.
- CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
- INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- 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.
- HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
- 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.
- 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.
- ACCEPTABLE METER BOXES ARE D15-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 MATERIAL LAYOUT.
- 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.
- 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.

CITY OF NEW BRAUNFELS CONSTRUCTION NOTES

IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.

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.

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.

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

FOR PUBLIC INFRASTRUCTURE PERMIT (SG) OR SITE PREP PERMIT (SD) PROJECTS:

- 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.

FOR COMMERCIAL PERMIT (CP) PROJECTS:

- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
- FAKED IN AT 830-608-2117 OR,
- E-MAILED AT INSPECTIONS@NBUTEXAS.ORG.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPRESENTATIVE AND THE CONSTRUCTION INSPECTOR, THE BARRICADES AND SIGNS DO NOT CONFORM TO ESTABLISHED STANDARDS OR ARE INCORRECTLY PLACED OR ARE INSUFFICIENT IN QUANTITY TO PROTECT THE GENERAL PUBLIC, THE CONSTRUCTION INSPECTOR SHALL HAVE THE OPTION TO STOP OPERATIONS UNTIL SUCH TIME AS THE CONDITIONS ARE CORRECTED. IF THE NEED ARISES, ADDITIONAL TEMPORARY TRAFFIC CONTROL DEVICES MAY BE ORDERED BY THE ENGINEERING REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

A TXDOT TYPE I 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.

GROUNDWATER

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER, 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.

RECORD DRAWINGS

AS PER PLATING 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 DRAWINGS" 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.

CONSTRUCTION NOTE

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 NOTE

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

FINISHED FLOOR ELEVATIONS

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 FLOOD 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.

SOILS TESTING

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.

ROADWAY

ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S 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 TXDOTS SPECIFICATION ITEM 247. EACH LAYER OF MATERIAL, INCLUSIVE OF SUBGRADE, SHALL BE COMPACTED AS SPECIFIED 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. 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.

ITEM 340

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

THE CITY OF NEW BRAUNFELS WILL NOT ACCEPT THE USE OF RECYCLED ASPHALT PAVEMENT (RAP) OR RECYCLED ASPHALT 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.

THE ASPHALTIC CONCRETE PAVEMENT SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "D" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE ASPHALTIC CONCRETE PAVEMENT SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "B" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE MIXTURE SHALL BE DESIGNED PER THE DESIGN REQUIREMENTS SPECIFIED IN TXDOT ITEM 340 AND SHALL BE COMPACTED TO BETWEEN 91 AND 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-227-F. PLACE THE MIXTURE WHEN THE ROADWAY SURFACE TEMPERATURE IS AT OR ABOVE 60F. COMPLETE ALL COMPACTION OPERATIONS BEFORE THE PAVEMENT TEMPERATURE DROPS BELOW 160F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL FALL WITHIN A TOLERANCE OF +0.5 PERCENT FROM A SPECIFIC MIX DESIGN.

UTILITY TRENCH COMPACTION (ADDED TO THE CONSTRUCTION PLANS ON ALL UTILITY PLAN SHEETS).

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'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.

CURB CUT DUE TO CONSTRUCTION OF NEW RIGHT-OF-WAY CONSTRUCTION

- (INDICATE THE 2 OPTIONS ON THE CONSTRUCTION PLANS).
- SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
 - SAWCUT EXISTING CURB TO THE INTO EXISTING CONSTRUCTION.

CONSTRUCTION STABILIZED ENTRANCE

SAWCUT CURB FOR CONSTRUCTION ENTRANCE. STABILIZED CONSTRUCTION AREA SHALL BE CONSTRUCTED OF 3'X5' ROCK TO BE PLACED A MINIMUM LENGTH OF 25'-FT. AND MAINTAINED SO THAT CONSTRUCTION DEBRIS DOES NOT FALL WITHIN THE CITY RIGHT-OF-WAY. RIGHT-OF-WAY MUST BE CLEARED FROM MUD, ROCKS, ETC. AT ALL TIMES.

(NOTES TO BE PLACED ON ALL WW PLAN & DETAIL SHEETS)

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.

SIGNING AND PAVEMENT MARKING PLAN NOTES

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REGULATORY AND WARNING SIGNS, STREETS NAME SIGNS AND SIGN MOUNTS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS. THE CITY WILL INSPECT ALL SIGNS AT FINAL INSPECTION.

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 AND ESTABLISHMENT OF VEGETATION WITHIN EARTHEN CHANNELS, STORMWATER BASINS AND DISTURBED AREAS

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. MAXIMUM 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.

IT MAY BE DEEMED NECESSARY TO INCORPORATE TOPSOIL AND SOIL AMENDMENTS (I.E. COMPOST/ FERTILIZER) INTO EXISTING SOIL IN ORDER TO FACILITATE VEGETATION GROWTH. TOPSOIL, COMPOST AND FERTILIZER ADDITIONS SHALL BE CONDUCTED ACCORDING TO ITEMS 160, 161 AND 166 OF TXDOT'S STANDARD SPECIFICATIONS MANUAL, RESPECTIVELY.

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.

SEQUENCE OF CONSTRUCTION

- INSTALL EROSION CONTROLS PER APPROVED PLAN.
- TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED. CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
- CONDUCT DEMOLITION ACTIVITIES, IF APPLICABLE.
- CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
- CONSTRUCT CURB INLET PROTECTION AT THE TIME OF CURB INLET INSTALLATION.
- CONSTRUCT DEVELOPER PER APPROVED PLANS.
- INSTALL STREETScape AND/OR LANDSCAPING IMPROVEMENTS.
- CONTRACTOR SHALL STABILIZE DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 65% VEGETATION PRIOR TO COMPLETION.
- REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
- TPDES REQUIREMENTS - DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY WILL BEGIN AGAIN WITHIN 21 DAYS

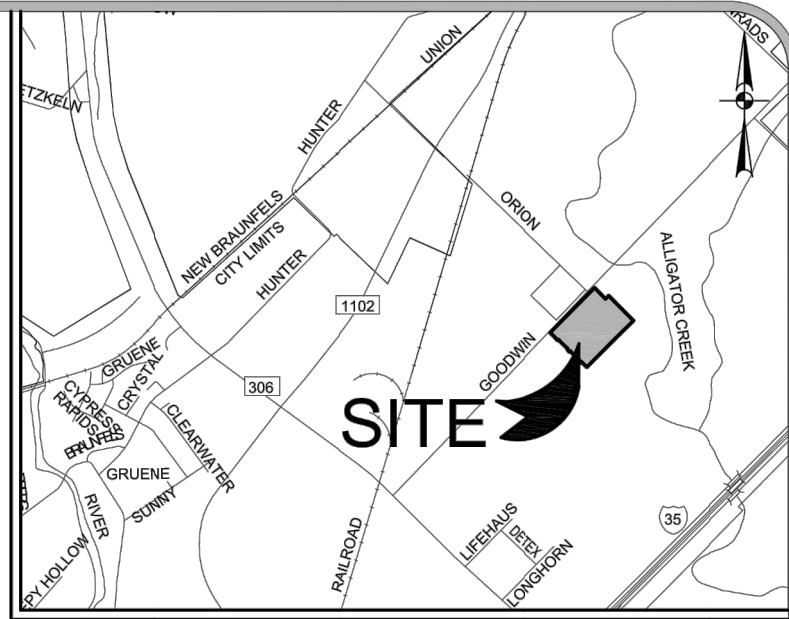
GENERAL NBU NOTES

REVISED 3/31/11

- 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 POLICY.
- 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 TWO (2) WORKING DAYS (48 NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.
- THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE CONTRACTOR AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER / WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UTILITY EASEMENTS OR PUBLIC ROW OF PROPOSED DEVELOPMENTS. (AS APPLICABLE).
- CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT AND TO MAINTAIN THE 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.
- CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE PLANS SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL.
- 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.
- CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO THE 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.
- 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.
- 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.
- 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.
- THE 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.
- 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.
- BARRICADES AND WARNING SIGNS SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TR

PRELIMINARY PLAT ESTABLISHING
CREEKSIDE FARMS SUBDIVISION, UNIT 3

BEING 24.02 ACRES OF LAND SITUATED IN THE ORILLA RUSSELL SURVEY NO. 2,
ABSTRACT NO. 485, COMAL COUNTY, TEXAS, BEING A PORTION OF A TRACT OF LAND
CALLED 77.96 ACRES AS DESCRIBED IN DOCUMENT NO. 201506026160, OFFICIAL
PUBLIC RECORDS, COMAL COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE

PLAT NOTES:

- ALL LOTS WITHIN THE SUBDIVISION WILL BE PROVIDED WATER, SEWER AND ELECTRIC SERVICE BY NEW BRAUNFELS UTILITIES, TELEPHONE AND CABLE SERVICES FOR THE SUBDIVISION WILL BE PROVIDED BY AT&T COMMUNICATIONS AND/OR SPECTRUM.
- ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED UPON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM 1983, GRID. DISTANCES SHOWN HEREON ARE BASED UPON SURFACE MEASUREMENTS. TO CONVERT SURFACE DISTANCES TO GRID, APPLY A COMBINED SCALE FACTOR OF 1.00015.
- MONUMENTS WERE FOUND OR SET AT EACH CORNER OF THE SURVEY BOUNDARY OF THE SUBDIVISION. MONUMENTS AND LOT MARKERS WILL BE SET WITH 1/2" IRON PINS WITH PLASTIC CAP STAMPED "HMT" IMMEDIATELY AFTER COMPLETION OF UTILITY INSTALLATION AND STREET CONSTRUCTION UNLESS NOTED OTHERWISE.
- THIS SUBDIVISION IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
- THIS SUBDIVISION IS WITHIN THE CITY LIMITS OF NEW BRAUNFELS, TEXAS.
- THIS SUBDIVISION IS WITHIN THE COMAL INDEPENDENT SCHOOL DISTRICT.
- A PORTION OF THE SUBDIVISION IS LOCATED WITHIN THE SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE COMAL COUNTY, TEXAS, FLOOD INSURANCE RATE MAP NUMBER 48091C0455F, EFFECTIVE DATE SEPTEMBER 2, 2009 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
- NO STRUCTURES, WALLS OR OTHER OBSTRUCTIONS OF ANY KIND SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THIS PLAT. NO LANDSCAPING, FENCES, OR OTHER TYPE OF MODIFICATIONS WHICH ALTER THE CROSS SECTIONS OF THE DRAINAGE EASEMENTS OR DECREASE THE HYDRAULIC CAPACITY OF THE EASEMENT, AS APPROVED, SHALL BE ALLOWED WITHOUT THE APPROVAL OF THE CITY ENGINEER. THE CITY OF NEW BRAUNFELS SHALL HAVE THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT PROPERTY TO REMOVE PLAT OBSTRUCTIONS PLACED WITHIN THE LIMITS OF SAID DRAINAGE EASEMENTS AND TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS WITHIN SAID DRAINAGE EASEMENTS.
- FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
- 6' WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS AT LEAST 4' FROM THE EDGE OF PAVEMENT ALONG GOODWIN LANE BY THE DEVELOPER AT THE TIME OF SUBDIVISION CONSTRUCTION. 4' WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ALONGSIDE AND ADJACENT TO THE CURB BY THE OWNER AT THE TIME OF DEVELOPMENT ALONG ORION, BROGAN CREEK, PANTHER SPRING, WOLF CREEK, AND TRINITY SPRING. 4' WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ALONGSIDE AND ADJACENT TO THE CURB BY THE DEVELOPER AT THE TIME OF STREET CONSTRUCTION FOR LOTS 902 AND 903, BLOCK 17, AND LOT 904, BLOCK 9 ALONG ORION DR; LOTS 904 AND 905, BLOCK 9 AND LOT 906, BLOCK 16 ALONG WOLF CREEK; LOT 906, BLOCK 16 ALONG PANTHER SPRING; AND LOTS 907, BLOCK 14 AND 908, BLOCK 13 ALONG TRINITY SPRING.
- THE ELEVATION OF THE LOWEST FLOOR OF A STRUCTURE 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 A 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 SLOPE PREVENTING RUNOFF FROM ENTERING THE GARAGE AND SHALL PREVENT WATER FROM LEAVING THE STREET.
- THIS SUBDIVISION IS SUBJECT TO THE 2006 CITY OF NEW BRAUNFELS PARK LAND DEDICATION AND DEVELOPMENT ORDINANCE. THIS PLAT IS APPROVED FOR ONE (1) DWELLING UNIT PER BUILDABLE LOT WITH A MAXIMUM OF 135 BUILDABLE LOTS WHERE FEES ARE DUE AT THE TIME OF RECORDATION. AT SUCH TIME THAT ADDITIONAL DWELLING UNITS ARE CONSTRUCTED, THE OWNER OF THE LOT(S) SHALL NOTIFY THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.
- THIS UNIT CONTAINS 135 BUILDABLE RESIDENTIAL LOTS. ALL LOTS MEET THE MINIMUM SQUARE FOOTAGE REQUIREMENT ACCORDING TO THE ZONING ORDINANCE.
- ALL DRAINAGE EASEMENTS WITHIN THE LOTS WILL BE OWNED AND MAINTAINED BY PROPERTY OWNER.
- PERMANENT WATER QUALITY CONTROLS ARE REQUIRED FOR THIS SUBDIVISION PLAT IN ACCORDANCE WITH THE CITY OF NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL.
- FINISH FLOOR ELEVATION OF EACH LOT SHALL BE AT LEAST TWO (2) FEET ABOVE BASE FLOOD ELEVATION PER COMAL COUNTY STANDARDS.

NEW BRAUNFELS UTILITIES NOTES:

- MAINTENANCE OF DEDICATED UTILITY EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER. ANY USE OF AN EASEMENT OR ANY PORTION OF IT, INCLUDING LANDSCAPING OR DRAINAGE FEATURES, IS SUBJECT TO AND SHALL NOT CONFLICT WITH THE TERMS AND CONDITIONS IN THE EASEMENT. NO EASEMENT MUST NOT ENDANGER OR INTERFERE WITH THE RIGHTS GRANTED BY THE EASEMENT TO NEW BRAUNFELS UTILITIES, ITS SUCCESSORS AND ASSIGNS, AND SHALL BE SUBJECT TO APPLICABLE PERMIT REQUIREMENTS OF THE CITY OF NEW BRAUNFELS OR ANY OTHER GOVERNING BODY. THE PROPERTY OWNER MUST OBTAIN, IN ADVANCE, WRITTEN AGREEMENT WITH THE UTILITIES TO UTILIZE THE EASEMENT, OR ANY PART OF IT.
- UTILITIES WILL POSSESS A 5' WIDE SERVICE EASEMENT TO THE DWELLING ALONG THE SERVICE LINE TO THE SERVICE ENTRANCE. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING AND SERVICE.
- UTILITIES SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARD AND METER LOCATIONS SHALL NOT BE LOCATED WITHIN A FENCED AREA.
- EACH LOT MUST HAVE ITS OWN WATER AND SEWER SERVICE AT THE OWNER'S/DEVELOPER'S EXPENSE.
- DO NOT COMBINE ANY NEW UTILITY EASEMENTS (U.E.) WITH DRAINAGE EASEMENTS (D.E.) OR MAKE CHANGES IN GRADE WITHIN THE UTILITY EASEMENTS (U.E.) WITHOUT WRITTEN APPROVAL FROM NEW BRAUNFELS UTILITIES. IF A UTILITY EASEMENT (U.E.) IS COMBINED WITH A LANDSCAPE EASEMENT (L.E.), THE UTILITY EASEMENT (U.E.) WILL TAKE PRECEDENCE OVER THE LANDSCAPE EASEMENT (L.E.).

KNOW ALL MEN BY THESE PRESENTS:

I, THE UNDERSIGNED DOROTHY J. TAYLOR, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF TEXAS, HEREBY CERTIFY THAT THIS PLAT IS TRUE AND CORRECTLY MADE UNDER MY SUPERVISION AND IN COMPLIANCE WITH CITY AND STATE SURVEY REGULATIONS AND LAWS AND THAT THE CORNER MONUMENTS WERE PROPERLY PLACED UNDER MY SUPERVISION.

PRELIMINARY. THIS DOCUMENT SHALL NOT BE RECORDED FOR ANY PURPOSE.

DOROTHY J. TAYLOR
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 6295
410 N. SEGUN AVENUE, NEW BRAUNFELS, TEXAS 78130

PLAT REVISED OCTOBER 23, 2018
PLAT PREPARED SEPTEMBER 26, 2018



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STATE OF TEXAS
COUNTY OF COMAL

I, THE UNDERSIGNED OWNER OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS CREEKSIDE FARMS SUBDIVISION, UNIT 3, A SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

SA KOSTA BROWNE, LTD.
DBA MOSAIC LAND DEVELOPMENT
BLAKE YANTIS - AUTHORIZED AGENT
1802 NW MILITARY DR, SUITE 100
SAN ANTONIO, TEXAS 78213

STATE OF TEXAS
COUNTY OF COMAL

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS
____ DAY OF _____, 20____,

BY _____

NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES: _____

APPROVED THIS THE _____ DAY OF _____, 20____,
BY THE PLANNING COMMISSION OF THE CITY OF NEW
BRAUNFELS, TEXAS.

CHAIRMAN

APPROVED FOR ACCEPTANCE

____ DATE _____ PLANNING DIRECTOR _____

____ DATE _____ CITY ENGINEER _____

____ DATE _____ NEW BRAUNFELS UTILITIES _____

STATE OF TEXAS
COUNTY OF COMAL

I, _____ DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WAS FILED FOR RECORD IN THE MAP AND PLAT RECORDS, DOC# _____ OF COMAL COUNTY ON THE _____ DAY OF _____, 20____, AT _____ M.

WITNESS MY HAND AND OFFICIAL SEAL THIS THE ____ DAY OF _____, 20____

COUNTY CLERK, COMAL COUNTY, TEXAS

DEPUTY

SUBDIVISION PLAT
(1 OF 2)
CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	REVISION DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

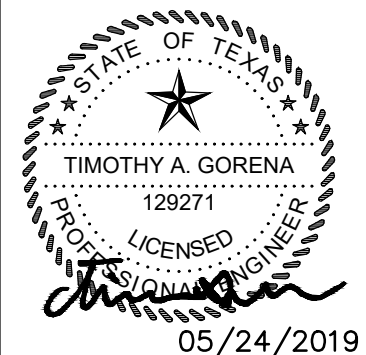
HMT PROJECT NO.:

164.012

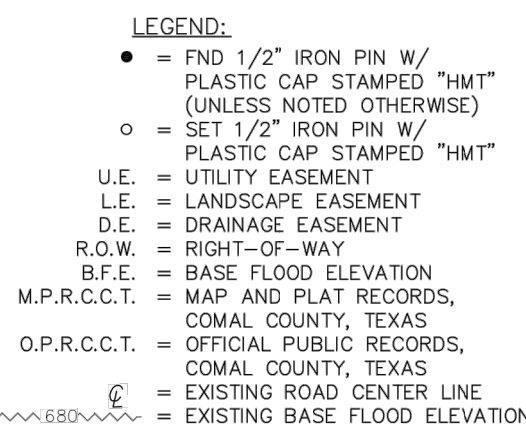
SHEET

C0.3

410 N. SEGUN AVE.
NEW BRAUNFELS, TX 78130
HMTNB.COM
P(830)625-8555 • F(830)625-8556
TBPE FIRM F-10961
TBPLS FIRM 10153600



BEING 24.02 ACRES OF LAND SITUATED IN THE ORILLA RUSSELL SURVEY NO. 2, ABSTRACT NO. 485, COMAL COUNTY, TEXAS. BEING A PORTION OF A TRACT OF LAND CALLED 77.96 ACRES AS DESCRIBED IN DOCUMENT NO. 201506026160, OFFICIAL PUBLIC RECORDS, COMAL COUNTY, TEXAS.



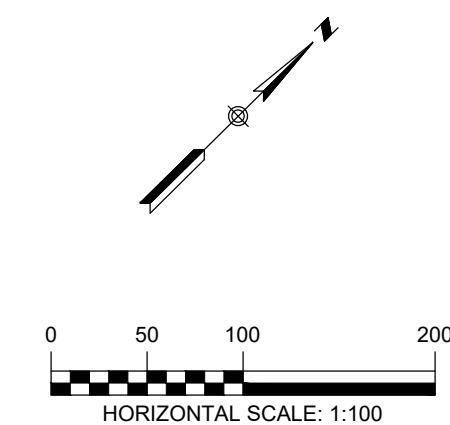
CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C1	23.57'	15.00'	090°01'27"	15.01'	21.22'	N00°21'22"W
C2	26.12'	15.00'	099°46'10"	17.80'	22.94'	S84°44'50"W
C3	22.20'	15.00'	084°48'06"	13.70'	20.23'	N02°58'00"W
C4	25.32'	15.00'	096°43'16"	16.87'	22.42'	S86°16'18"W
C5	3.74'	15.00'	014°16'25"	1.88'	3.73'	N32°17'51"E
C6	22.20'	15.00'	084°48'08"	13.70'	20.23'	N02°58'01"W
C7	23.56'	15.00'	089°58'34"	14.99'	21.21'	S89°38'38"W
C8	11.12'	100.00'	006°22'08"	5.56'	11.11'	S41°28'17"W
C9	22.86'	15.00'	087°20'13"	14.32'	20.71'	S05°22'53"E
C10	44.46'	330.00'	004°25'13"	12.74'	25.45'	S46°50'24"E
C11	101.55'	270.00'	021°32'57"	51.38'	100.95'	S55°24'16"E
C12	120.00'	330.00'	020°50'06"	60.67'	119.34'	N55°45'42"W
C13	156.26'	330.00'	027°07'49"	79.62'	154.80'	N31°46'44"W
C14	78.41'	170.00'	026°25'40"	39.92'	77.72'	S31°25'40"E
C15	95.20'	230.00'	023°42'53"	48.29'	94.52'	S31°50'34"E
C16	26.14'	15.00'	099°49'56"	17.82'	22.95'	S69°54'05"E
C17	27.10'	100.00'	015°31'35"	13.63'	27.02'	N22°55'09"E
C18	23.56'	15.00'	089°58'32"	14.99'	21.21'	S89°38'37"W
C19	23.57'	15.00'	090°01'26"	15.01'	21.22'	N00°21'22"W
C20	25.35'	15.00'	089°58'34"	14.99'	21.21'	S89°38'38"W
C21	23.57'	15.00'	090°01'26"	15.01'	21.22'	S00°21'22"E
C22	21.99'	150.00'	080°24'05"	11.02'	21.98'	N40°27'19"E
C23	21.06'	15.00'	081°13'25"	12.86'	19.53'	N76°15'59"E
C24	21.06'	330.00'	003°39'25"	10.54'	21.06'	S64°21'02"E
C25	66.22'	270.00'	014°03'07"	33.28'	66.05'	S59°09'11"E
C26	25.34'	15.00'	090°46'59"	16.89'	22.43'	S04°30'08"E
C27	23.56'	15.00'	090°00'00"	15.00'	21.21'	N89°39'21"E
C28	127.85'	270.00'	027°07'49"	65.15'	126.66'	N31°46'44"W
C29	21.99'	15.00'	084°00'41"	13.51'	20.08'	N23°47'31"E
C30	55.35'	150.00'	021°08'30"	27.99'	55.04'	S55°13'36"W

LINE TABLE		
LINE #	LENGTH	DIRECTION
L3	11.46'	N44°38'30"W
L4	11.31'	N84°38'28"W
L5	42.99'	S45°19'39"W
L6	45.40'	N86°02'17"W
L7	11.22'	S44°38'30"E
L8	15.00'	N45°14'42"W
L9	20.00'	N44°39'13"E
L10	15.00'	S45°14'42"E
L11	20.00'	S44°39'21"W


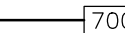







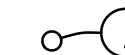
PAGE 2 OF 2

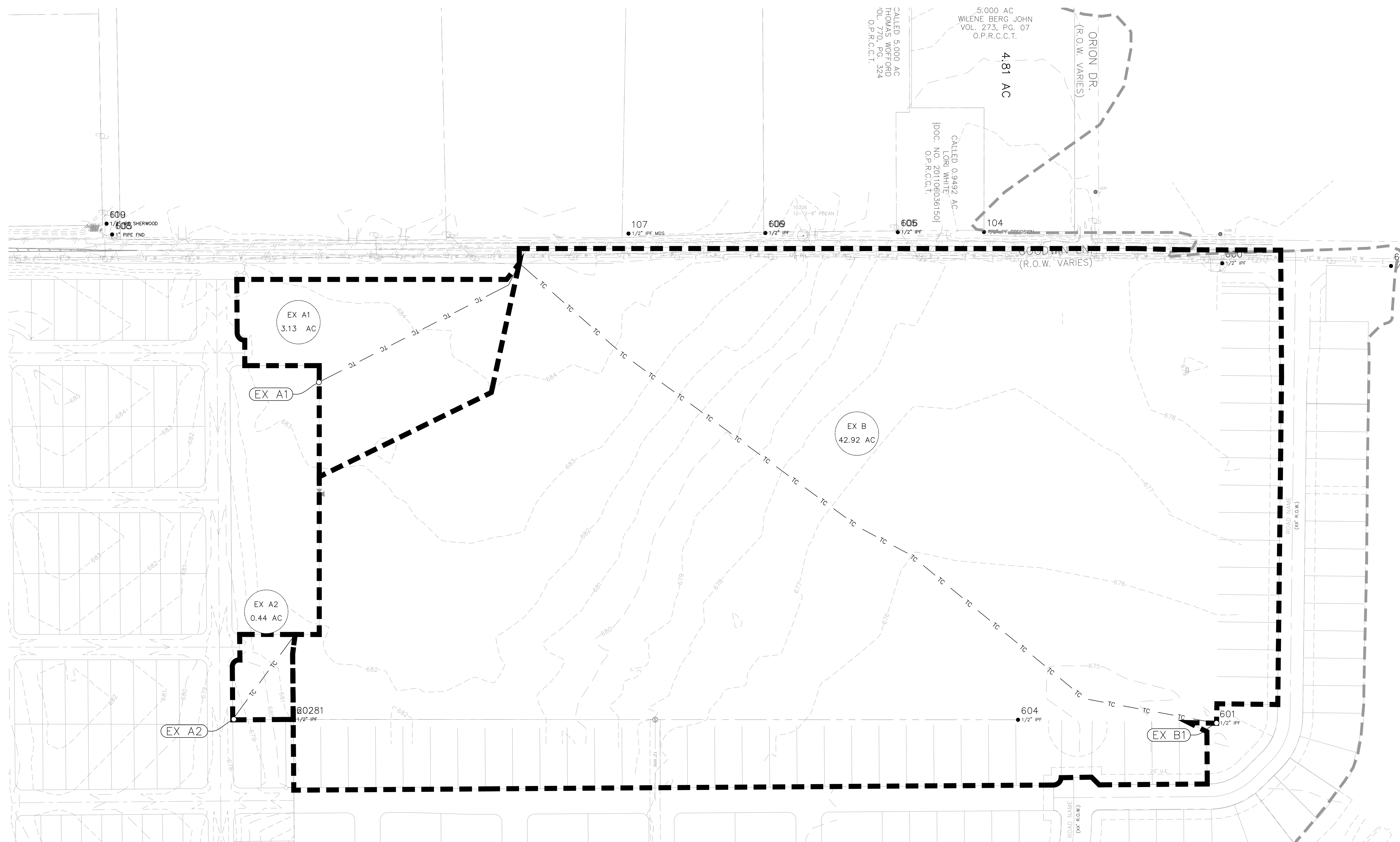
FOR REFERENCE ONLY
APPROVED ON NOVEMBER 7, 2018

Point of Concentration	Drainage Area	Area (Acre)	T _c	C	I (2yr)	I (10yr)	I (25yr)	I (100yr)	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₁₀₀ (cfs)
EX A1	EX A1	3.13	27.30	0.30	3.08	4.57	5.47	7.15	2.90	4.29	5.14	6.71
EX A2	EX A2	0.44	21.62	0.30	3.51	5.22	6.24	8.15	0.46	0.69	0.82	1.08
EX B	EX B	42.92	30.88	0.28	2.87	4.25	5.09	6.65	34.39	50.94	60.97	79.74



- LEGEND**

	EXISTING CONTOURS
	PROPOSED CONTOURS
	BUILDING SETBACK LINE
	UTILITY EASEMENT
	DRAINAGE EASEMENT
	DRAINAGE AREA
	TIME OF CONCENTRATION
	POINT OF CONCENTRATION
	DRAINAGE FLOW DIRECTION
	DRAINAGE AREA LABEL



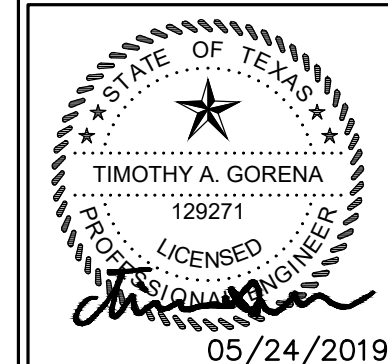
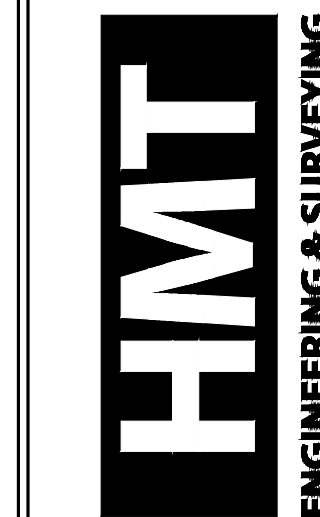
**EXISTING DRAINAGE
AREA MAP**
**CREEKSIDE FARMS
UNIT 3 & 4**

[illegible]

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: 164.012

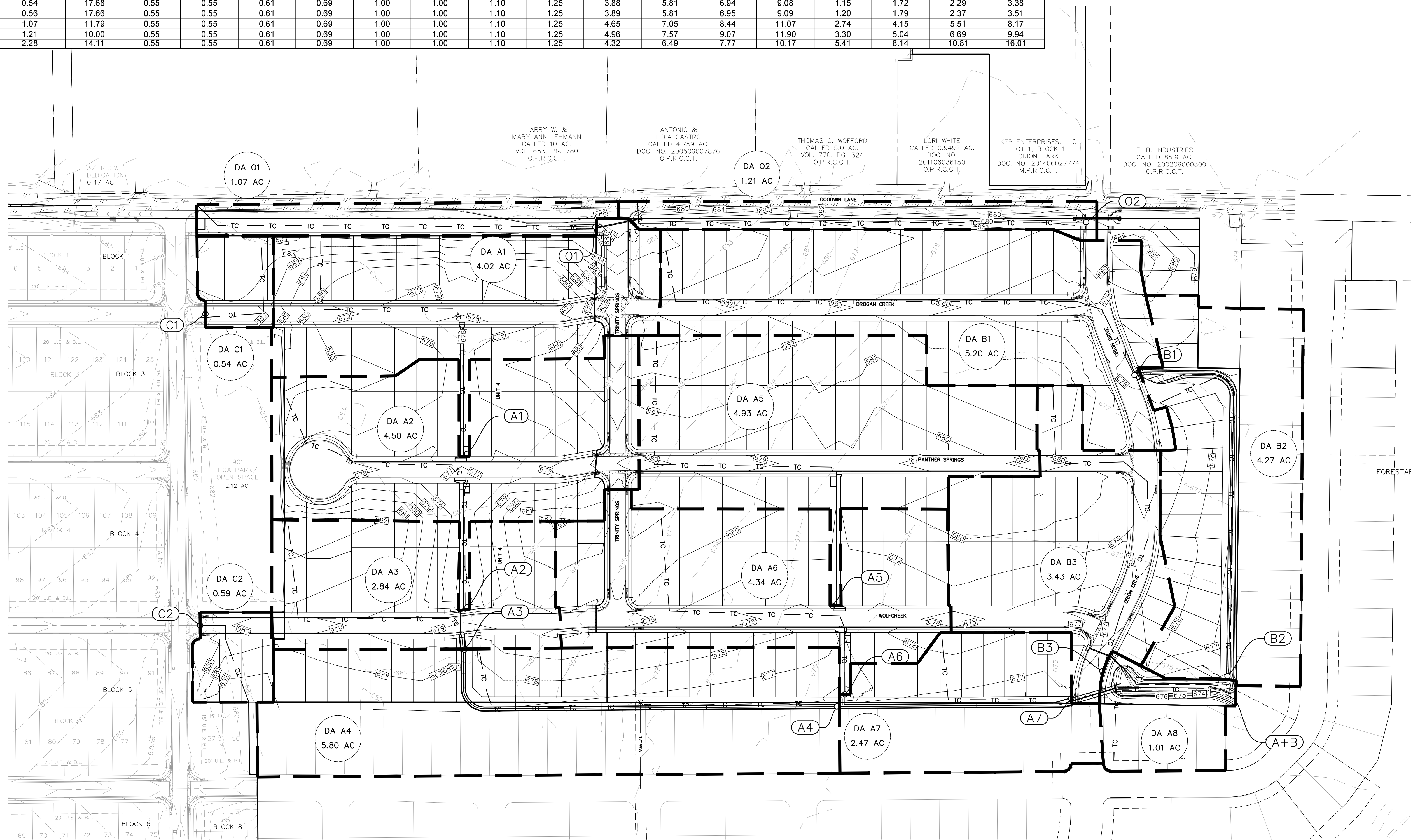
SHEET
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TBPLS FIRM 10153600













Point of Concentration	Drainage Area	Area (AC)	T _c	C	I (2yr)	I (10yr)	I (25yr)	I (100yr)	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₁₀₀ (cfs)
EX A1	EX A1	3.13	27.30	0.30	3.08	4.57	5.47	7.15	2.90	4.29	5.14	6.71
EX A2	EX A2	0.44	21.62	0.30	3.51	5.22	6.24	8.15	0.46	0.69	0.82	1.08
EX B	EX B	42.92	30.88	0.30	2.87	4.25	5.09	6.65	36.93	54.72	65.49	85.65

Table 2 - Ultimate Proposed Conditions Hydrology Calculations - City of New Braunfels																			
Point of Concentration	Drainage Area	Area (AC)	T _c	C (2yr)	C (10yr)	C (25yr)	C (100yr)	K (2yr)	K (10yr)	K (25yr)	K (100yr)	I (2yr)	I (10yr)	I (25yr)	I (100yr)	Q ₂ (cfs)	Q ₁₀ (cfs)	Q ₂₅ (cfs)	Q ₁₀₀ (cfs)
A1	A1	4.02	21.48	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.52	5.23	6.26	8.18	7.78	11.57	15.35	22.70
A2	A2	4.5	21.57	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.51	5.22	6.25	8.17	8.69	12.93	17.15	25.36
A1+A2	A1+A2	8.52	22.26	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.45	5.13	6.14	8.03	16.18	24.05	31.91	47.18
A3	A3	2.84	21.63	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.51	5.21	6.24	8.15	5.48	8.15	10.80	15.98
A4	A4	5.80	18.88	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.76	5.61	6.71	8.77	12.00	17.90	23.74	35.12
A1-A4	A1-A4	17.16	25.97	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.17	4.71	5.63	7.36	29.94	44.41	58.92	87.14
A5	A5	4.93	23.26	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.37	5.01	5.99	7.83	9.14	13.58	18.02	26.65
A6	A6	4.34	22.28	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.45	5.13	6.14	8.02	8.24	12.25	16.24	24.02
A5+A6	A5+A6	9.27	23.72	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.34	4.96	5.93	7.75	17.01	25.26	33.51	49.56
A7	A7	2.47	17.80	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.87	5.79	6.92	9.05	5.26	7.86	10.43	15.42
A1-A7	A1-A7	28.9	25.82	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.18	4.72	5.65	7.38	50.59	75.05	99.57	147.23
A+B	A8	1.01	17.83	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.87	5.78	6.91	9.04	2.15	3.21	4.26	6.30
B1	B1	5.2	29.18	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	2.97	4.40	5.26	6.88	8.48	12.57	16.68	24.68
B2	B2	4.27	18.80	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.77	5.62	6.72	8.79	8.85	13.21	17.52	25.91
B1+B2	B1+B2	9.47	33.81	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	2.72	4.02	4.82	6.30	14.14	20.95	27.82	41.17
B3		3.43	25.10	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.23	4.80	5.74	7.50	6.10	9.05	12.01	17.76
A+B	A+B (A1-A8 + B1-B3)	42.81	27.70	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.06	4.53	5.42	7.09	71.98	106.72	141.61	209.43
C1	C1	0.54	17.68	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.88	5.81	6.94	9.08	1.15	1.72	2.29	3.38
C2	C2	0.56	17.66	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	3.89	5.81	6.95	9.09	1.20	1.79	2.37	3.51
O1	O1	1.07	11.79	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	4.65	7.05	8.44	11.07	2.74	4.15	5.51	8.17
O2	O2	1.21	10.00	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	4.96	7.57	9.07	11.90	3.30	5.04	6.69	9.94
O1+O2	O1+O2	2.28	14.11	0.55	0.55	0.61	0.69	1.00	1.00	1.10	1.25	4.32	6.49	7.77	10.17	5.41	8.14	10.81	16.01



LEGEND

	EXISTING CONTOURS
	PROPOSED CONTOURS
	BUILDING SETBACK LINE
	UTILITY EASEMENT
	DRAINAGE EASEMENT
	DRAINAGE AREA
	TIME OF CONCENTRATION
	POINT OF CONCENTRATION
	DRAINAGE FLOW DIRECTION
	DRAINAGE AREA LABEL

410 N. SEGUN AVENUE
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TBPE FIRM F-10961
TBPLS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
TIMOTHY A. GORENA
129271
PROFESSIONAL ENGINEER
05/24/2019

**PROPOSED AND ULTIMATE
DRAINAGE AREA MAP**

CREEKSIDE FARMS
UNIT 3

[illegible]

DATE: MAY 2019

DRAWN BY: MA

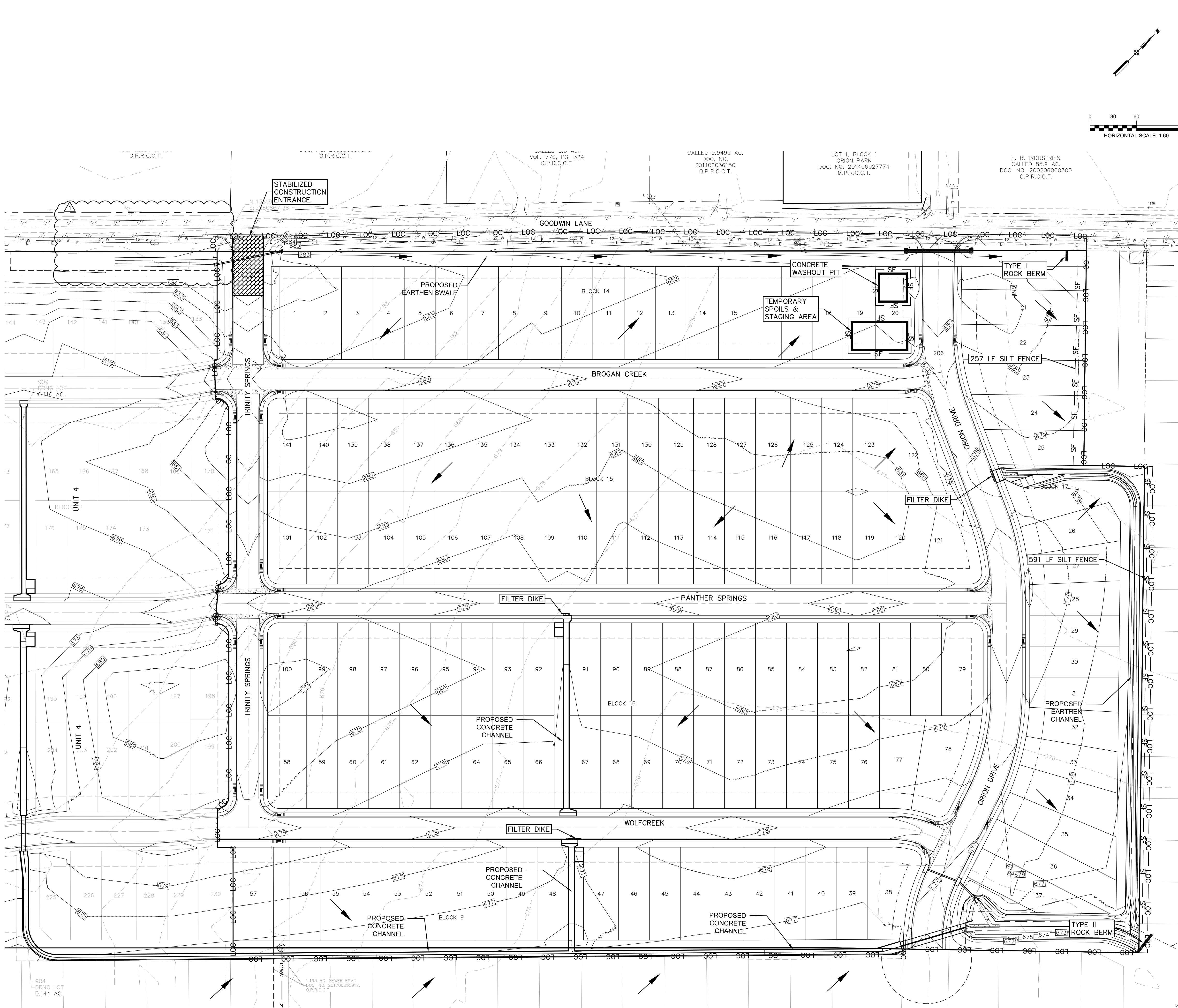
DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NC

SHEET

C1.1



LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- > — DRAINAGE FLOW DIRECTION
- SF — SF — SILT FENCE
- LOC — LOC — LIMIT OF CONSTRUCTION
- [Pattern] — STABILIZED CONSTRUCTION ENTRANCE
- [Pattern] — FILTER DIKE CURB INLET PROTECTION
- [Pattern] — ROCK BERM

- SEQUENCE OF CONSTRUCTION**
1. INSTALL EROSION CONTROLS PER APPROVED PLAN.
 2. TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS. AND AFTER RAINFALL EVENTS, AS NEEDED, CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
 3. CONDUCT DEMOLITION ACTIVITIES, IF APPLICABLE.
 4. CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
 5. CONSTRUCT CURB INLET PROTECTION AT THE TIME OF CURB INLET INSTALLATION.
 6. CONSTRUCT DEVELOPMENT PER APPROVED PLANS.
 7. INSTALL STREETScape AND/OR LANDSCAPING IMPROVEMENTS.
 8. CONTRACTOR TO VEGETATE ANY DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 70% VEGETATION PRIOR TO COMPLETION. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.
 9. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.

NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENT) AND SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES IN 21 DAYS, PER TPDES REQUIREMENTS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

410 N. SEGUN AV.
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HMTNB.COM
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TBPB FIRM F-10961
TBPB FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
TIMOTHY A. GORENA
128271
LICENSED PROFESSIONAL ENGINEER
11/04/2019

EROSION CONTROL PLAN

CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019

DATE: **MAY 2019**

DRAWN BY: MA

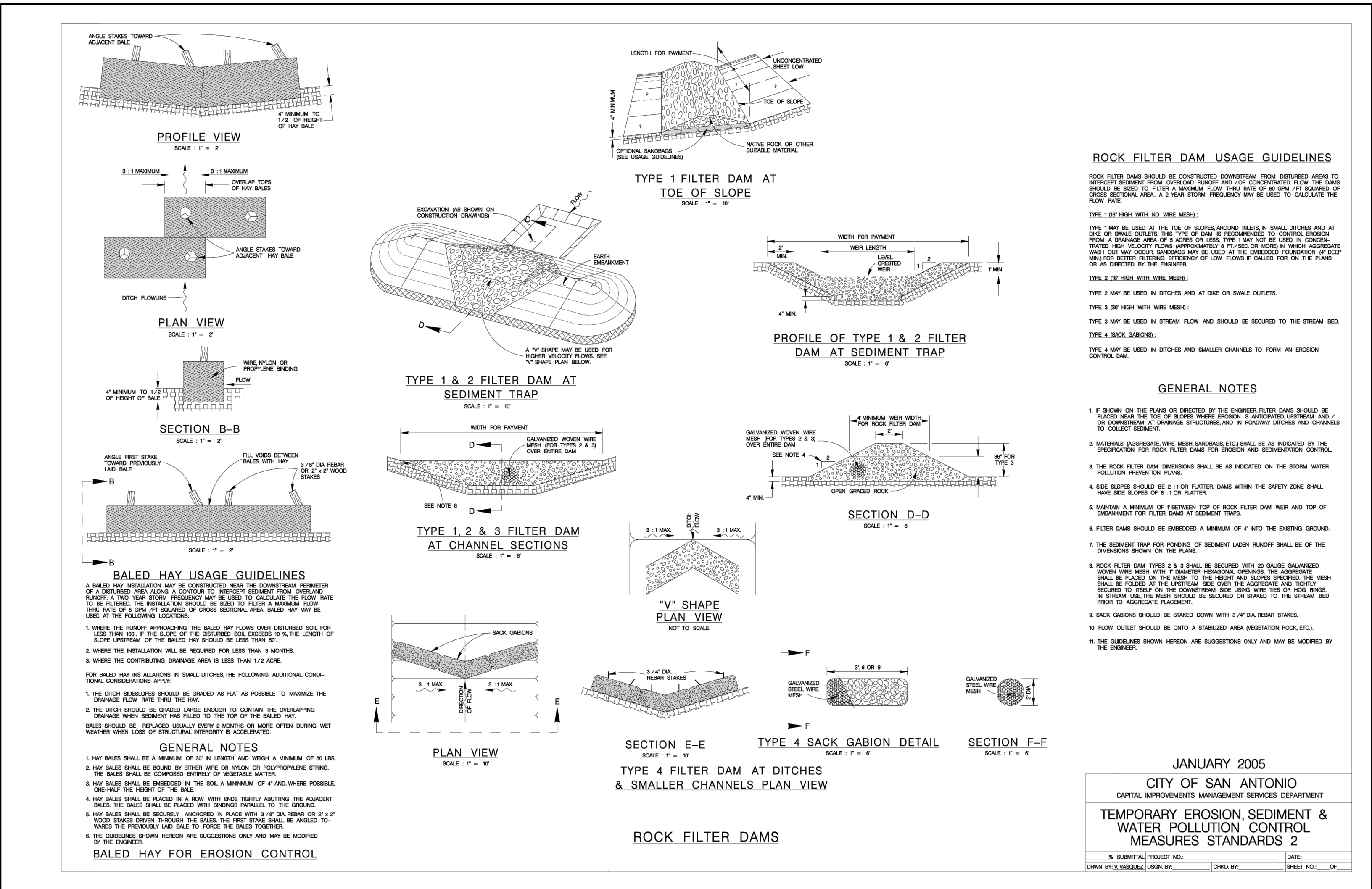
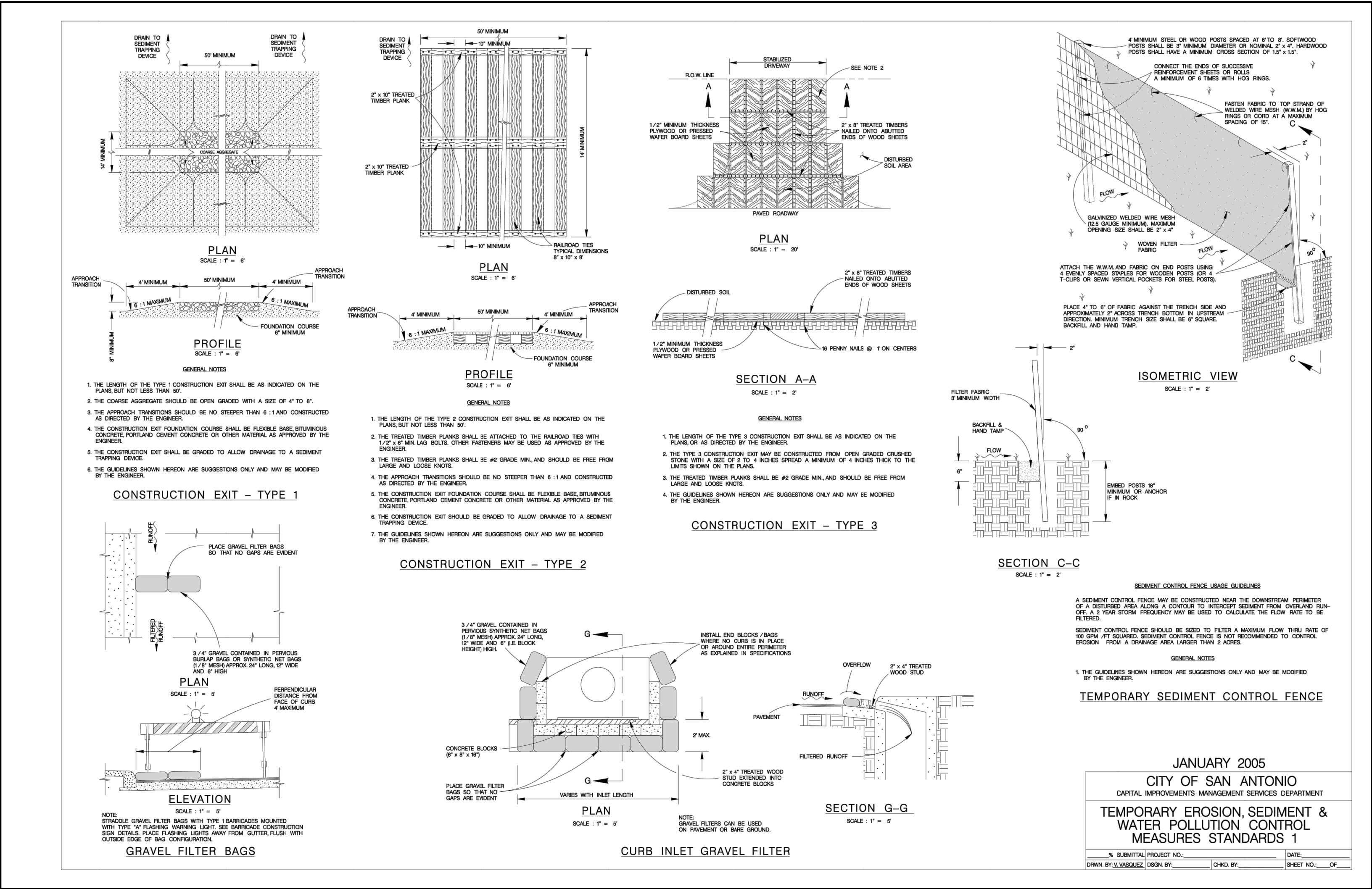
DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.: 164.012

SHEET

C2.0

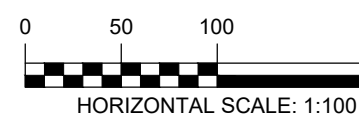


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REVISION	DESCRIPTION	DATE
NO.		

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC

HMT PROJECT NO.: 164.012

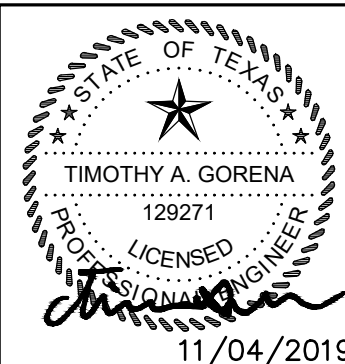


- LEGEND**
- | | |
|---------|---------------------------------------|
| — 700 — | EXISTING CONTOURS |
| — 700 — | PROPOSED CONTOURS |
| B.L. | BUILDING SETBACK LINE |
| U.E. | UTILITY EASEMENT |
| D.E. | DRAINAGE EASEMENT |
| (A) | LOT GRADING
SEE DETAILS SHEET C3.1 |
| → | DRAINAGE FLOW DIRECTION |

NOTES:

1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
2. ALL FINISHED FLOOR ELEVATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
 2.A. PER NOTE 11 ON PLAT SHEET C0.2.
 2.B. HUD DETAILS SHOWN IN PLAT SHEET C3.1.
3. WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
4. FOR ANY LOTS ADJACENT TO A DRAINAGE STRUCTURE, HOME BUILDER TO ENSURE FINISHED FLOOR HAS A MINIMUM ELEVATION AS LABELED OR AS PER NOTE 2 ABOVE, WHICHEVER IS GREATER.

EARTHWORK VOLUME UNIT 3 & 4	
EXCAVATION & EMBANKMENT	VOLUME (CY)
CUT	72,688
FILL	72,688
NET	0



MASS GRADING PLAN

CREEKSIDE FARMS
UNIT 3

[illegible]

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.

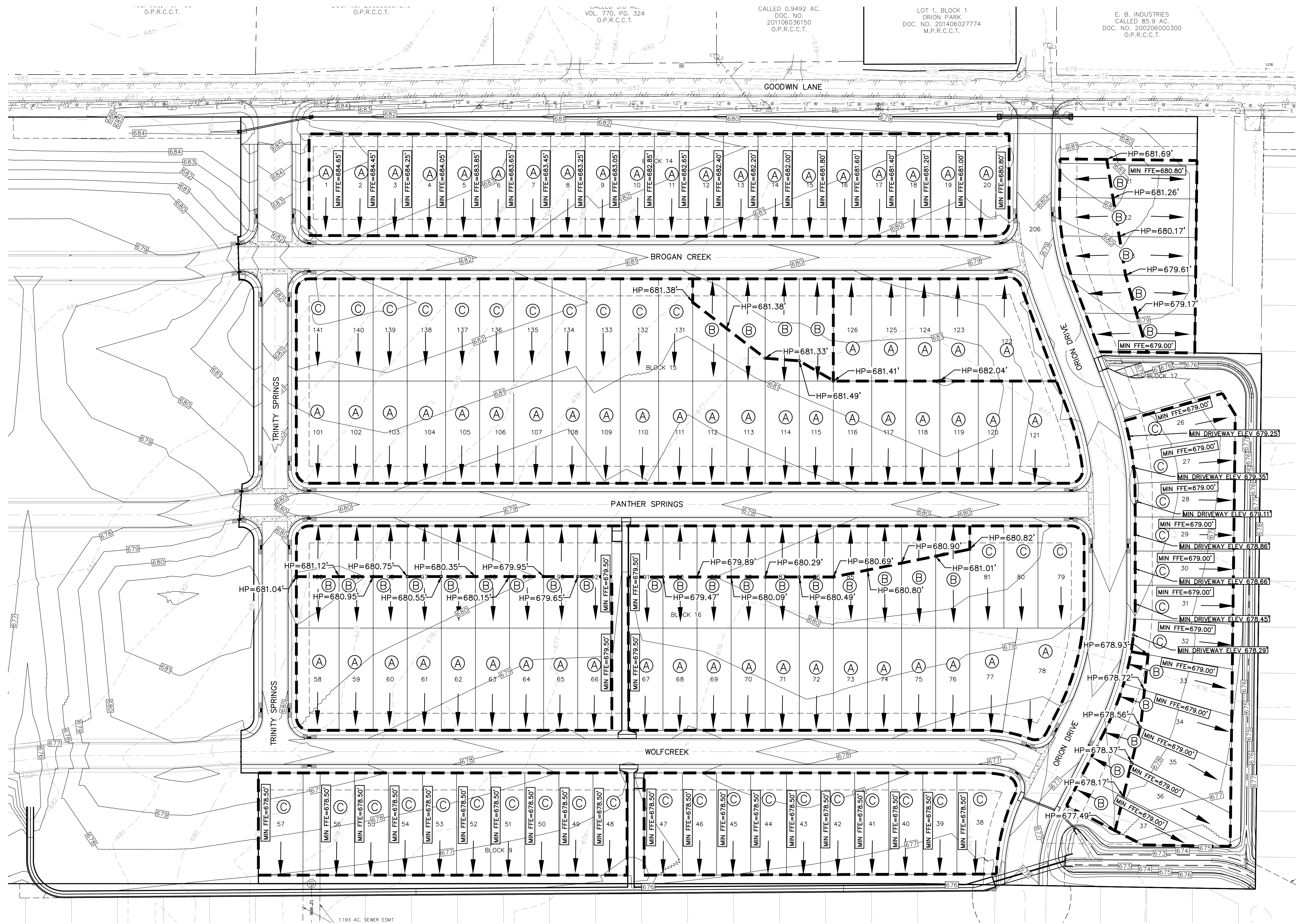
SHEET

C3.0 A

REFER TO THE COVER SHEET
FOR BENCHMARK INFORMATION.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

2



LEGEND

- 700 EXISTING CONTOURS
- 700 PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- (A) LOT GRADING SEE DETAILS SHEET C3.1
- DRAINAGE FLOW DIRECTION

NOTES:

- DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
- ALL FINISHED FLOOR ELEVATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
 - 2.A. PER NOTE 11 ON PLAT SHEET C0.2.
 - 2.B. HUD DETAILS SHOWN ON SHEET C3.1.
- WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
- FOR ANY LOTS ADJACENT TO A DRAINAGE STRUCTURE, HOME BUILDER TO ENSURE FINISHED FLOOR HAS A MINIMUM ELEVATION AS LABELED OR AS PER NOTE 2 ABOVE, WHICHEVER IS GREATER.

EARTHWORK VOLUME UNIT 3 & 4

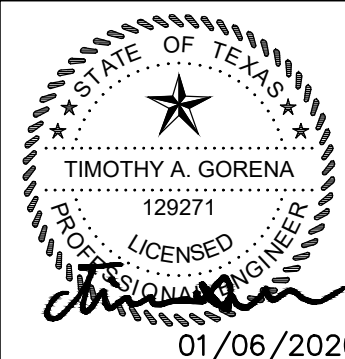
EXCAVATION & EMBANKMENT	VOLUME (CY)
CUT	72,688
FILL	72,688
NET	0

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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ENGINEERING & SURVEYING



LOT GRADING PLAN

CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE
1	POST PERMIT	REVISION 1	11/04/2019
2	POST PERMIT	REVISION 2	01/06/2020

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

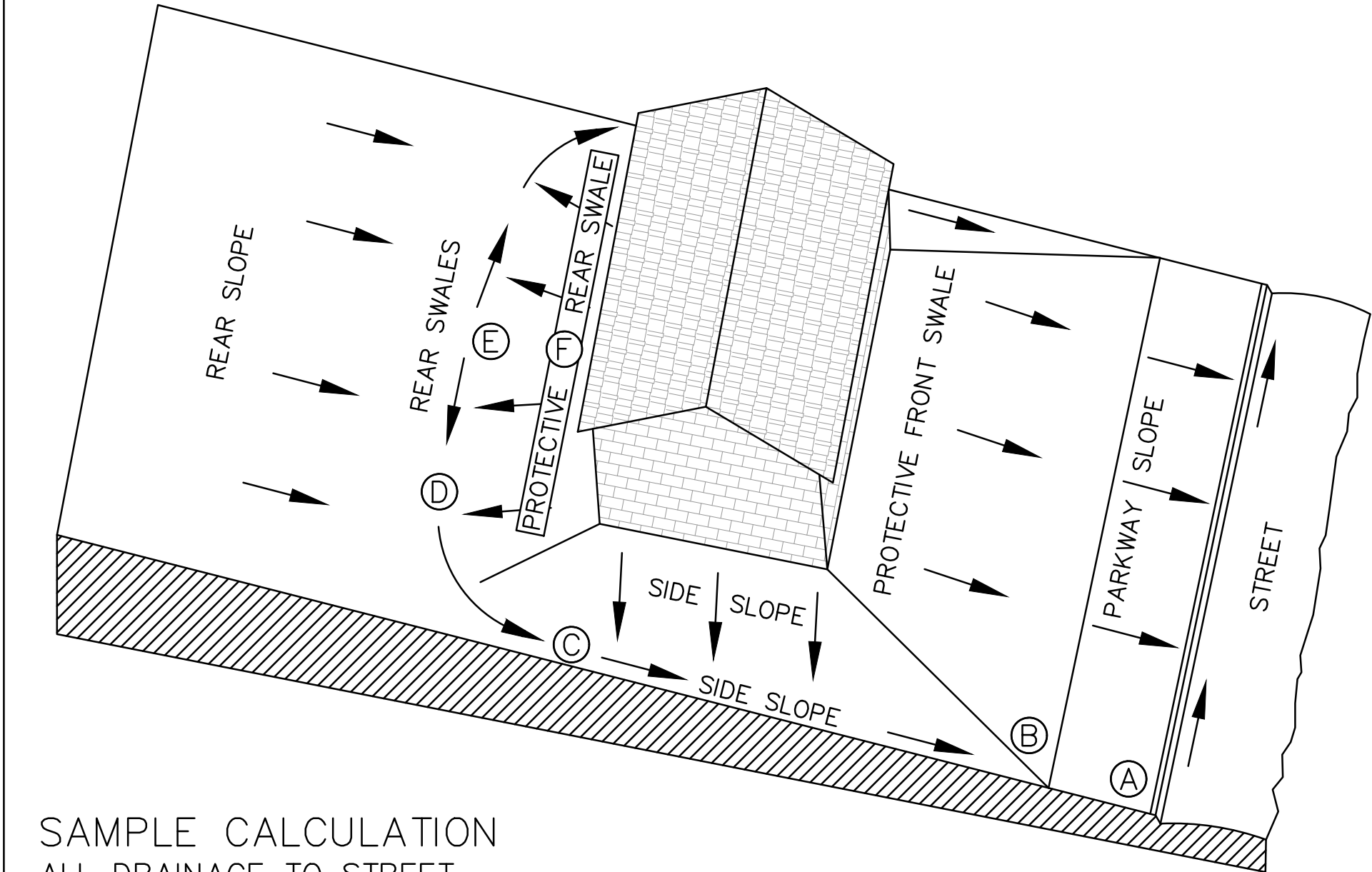
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HMT PROJECT NO.:

164.012

SHEET

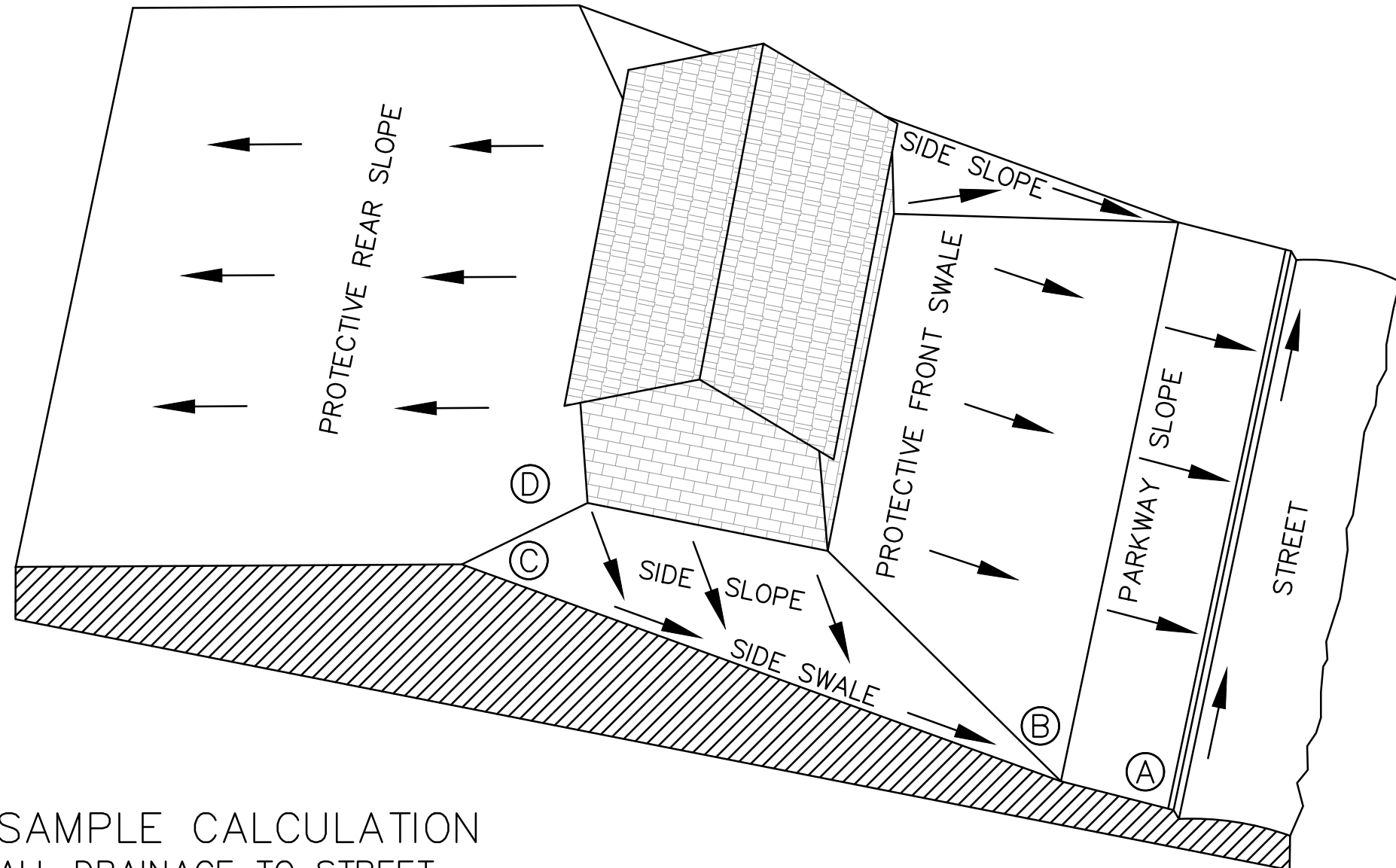
C3.0 B



SAMPLE CALCULATION
ALL DRAINAGE TO STREET

SAMPLE COMPUTATION OF GRADING CONTROL LINE AF FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 0.5% STREET, WITH 60' BUILDING DEPTH AND 2% SWALES.					RESULTS OF 1% SWALES			
A	CURB—TOP ON LOT LINE EXTENSION AT HIGH LOT CORNER						<div>CALCULATIONS FOR 2% SWALES</div> <div>15 x 0.25' = 3¾"</div> <div>85 x 0.25' = 21¼"</div> <div>16 x 0.25' = 4"</div> <div>13 x 0.25' = 3¾"</div> <div>10 x 0.25' = 2½"</div> <div>34¾"</div> <div>CALCULATIONS USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.</div>	
AB	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')			
BC	SIDE SWALE: 85' GRASS AT 1/4"/FT. (2%)	21"	(1.8')	11"	(0.9')			
CD	SWALE TURN WITH 10' RADIUS:16' GRASS AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')			
DE**	REAR SWALE: 13' GRASS AT 1/4"/FT. (2%)	3"	(0.3')	2"	(0.2')			
EF*	PROTECTIVE REAR SLOPE UP FROM HIGH POINT OF SWALES	3"	(0.3')	3"	(0.3')			
SUB—TOTAL AF FROM CURB TOP TO GROUND AT REAL BLDG WALL				35"	(3.0')	20"		(1.7')
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: 35" + 8"				43"	(3.6')	28"		(2.3')
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: 35" + 9"				54"	(4.5')	39"	(3.3')	
* WHERE THERE IS A HIGH BANK NEARBY OR A LONG SLOPE TOWARD HOUSE, A MINIMUM 6" PROTECTIVE SLOPE IS REQUIRED								
** LENGTH DE = [1/2(LOT WIDTH - (2x SWALE TURN RADIUS))] - [LOT WIDTH x (STREET GRADIENT x SWALE GRADIENT)]								

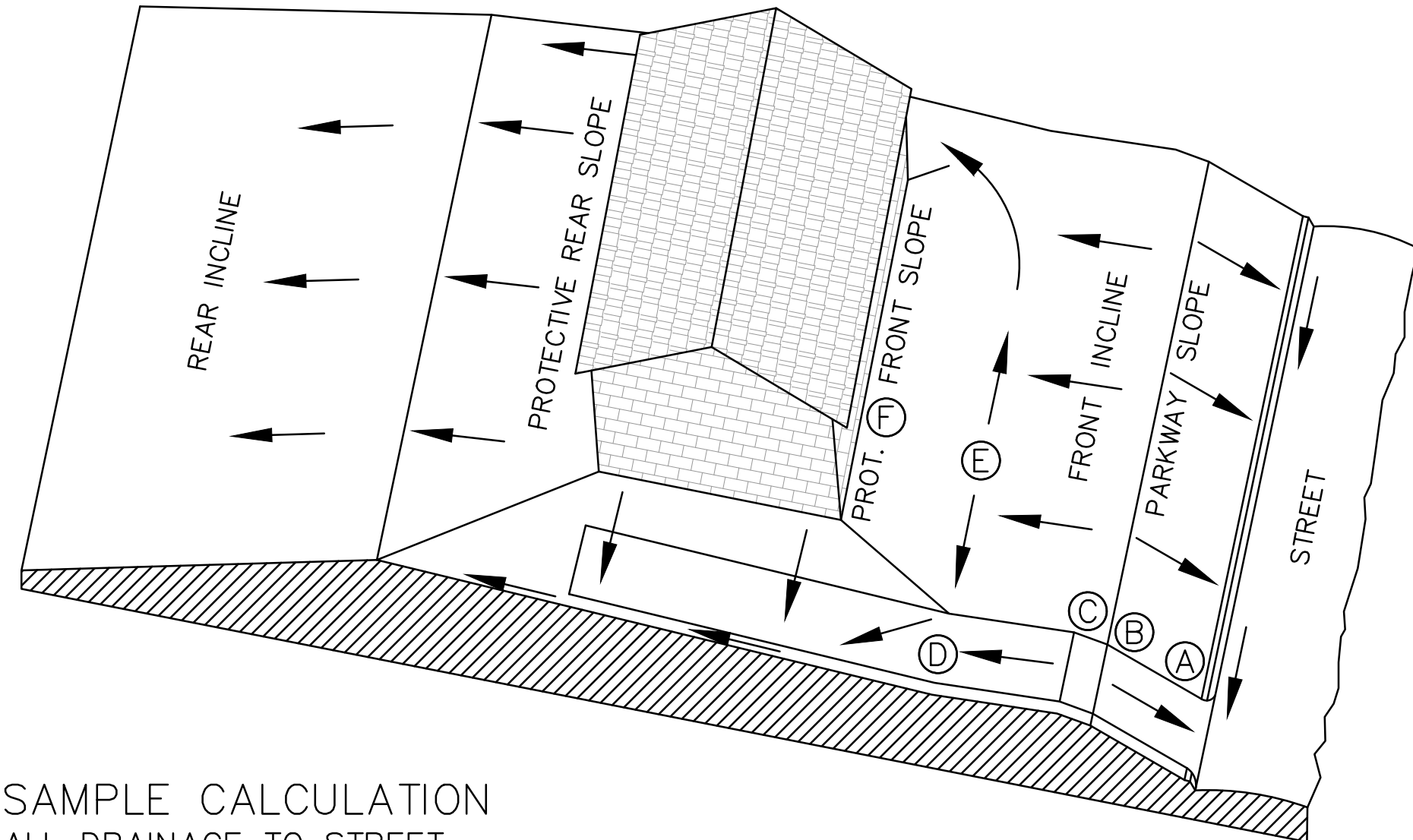
LOT TYPE ①



SAMPLE CALCULATION
ALL DRAINAGE TO STREET

SAMPLE COMPUTATION OF GRADING CONTROL LINE AF FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 0.5% STREET, WITH 60' BUILDING DEPTH AND 2% SWALES.				RESULTS OF 1% SWALES		CALCULATIONS FOR 2% SWALES
A	CURB--TOP ON LOT LINE EXTENSION AT HIGH LOT CORNER					
AB	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)			4" (0.3')	2" (0.2')	15 x 0.25' = 3 3/4"
BC	SIDE SWALE: 85' GRASS AT 1/4"/FT. (2%)			21" (1.8')	11" (0.9')	85 x 0.25' = 21 1/4"
CD*	PROTECTIVE SIDE SLOPE @ REAR BLDG. WALL EXTENSION			3" (0.3')	3" (0.3')	6 x 0.25' = 1 1/2"
SUB--TOTAL AD FROM CURB TOP TO GROUND AT REAL BLDG WALL				27" (2.4')	16" (1.4')	26 1/2"
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: 27" + 8"				35" (2.9')	24" (2.0')	CALCULATIONS USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: 35" + 9"				46" (3.8')	35" (2.9')	
* WHERE THERE IS A HIGH BANK NEARBY OR A LONG SLOPE TOWARD HOUSE, A MINIMUM 6" PROTECTIVE SLOPE IS REQUIRED.						

LOT TYPE ②



SAMPLE CALCULATION
ALL DRAINAGE TO STREET

SAMPLE COMPUTATION OF GRADING CONTROL LINE \overline{AF} FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 13.5% DRIVEWAY, AND 16' FRONT SWALE \overline{DE} AT 2.0%.				RESULTS OF 1% SWALES		CALCULATIONS FOR SWALES
A	CURB—TOP HIGH SIDE OF DRIVE NEAR LOW LOT CORNER					$15 \times 0.25' = 3\frac{3}{4}"$
\overline{AB}	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4" (0.3')	2" (0.2')			$0 \times 0.25' = 0"$
\overline{BC}	DRIVEWAY GRADE CHANGE: 4' VERTICAL CURVE FROM UP—GRADE DRIVE IN STREET TO DOWN—GRADE DRIVE ON LOT	0" (0.0')	0" (0.0')			$-11 \times 1.625' = -17\frac{3}{4}"$
\overline{CD}	DRIVEWAY DOWN—GRADE TO POINT 10 FEET OUT FROM FRONT OF BUILDING: -11' AT 1 $\frac{1}{8}$ "/FT (13.5%)	-18" (-1.5')	-18" (-1.5')			$16 \times 0.25' = 4"$
\overline{DE}	FRONT SWALE: 16' GRASS AT 1/4"/FT. (2%)	4" (0.3')	2" (0.2')			$10 \times 0.25' = 2\frac{1}{2}"$
\overline{EF}^*	PROT. FRONT SLOPE UP FROM HIGH POINT OF SWALES	3" (0.3')	3" (0.3')			$-7\frac{1}{2}"$
SUB—TOTAL \overline{AF} FROM CURB TOP TO GROUND AT FRONT BLDG WALL		-7" (-1.0')	-11" (1.3')			CALCULATION:
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: -7" + 8"		1" (-0.3')	-3" (0.7')			USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: -7" + 19"		12" (-0.6')	8" (0.3')			USE 1.625" PER FOOT GRADIENT FOR A 13.5% SWALE.
* WHERE THERE IS A HIGH BANK NEARBY OR A LONG SLOPE TOWARD HOUSE, A MINIMUM 6" PROTECTIVE SLOPE IS REQUIRED.						

LOT TYPE ③

GENERAL SPECIFICATIONS FOR SITE PREPARATION

GENERAL DESCRIPTION

THIS ITEM SHALL CONSIST OF ALL CLEARING AND PREPARATION OF LAND TO BE FILLED, FILLING OF THE LAND, SPREADING, COMPACTION TESTING AND INSPECTION OF THE FILL, AND ALL SUBSIDIARY WORK NECESSARY TO COMPLETE THE GRADING OF THE CUT AND FILL AREAS TO CONFORM WITH THE LINES, GRADES AND SLOPES AS SHOWN ON THE APPROVED PLANS.

SCARIFYING THE AREA TO BE FILLED

ALL ORGANIC MATTER SHALL BE REMOVED FROM THE SURFACE UPON WHICH THE FILL IS TO BE PLACED, AND SURFACE SHALL BE DISKED OR SCARIFIED TO A MINIMUM DEPTH OF SIX INCHES (6"), ALL SURFACE RUTS OR OTHER UNEVEN FEATURES WILL BE LEVELED PRIOR TO FIELD DENSITY TESTING.

COMPACTING THE AREA TO BE FILLED

FOLLOWING THE CLEARING AND DISKING OF THE FILL AREA, IT SHALL BE BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS. THE AREA SHALL BE BROUGHT TO ADEQUATE MOISTURE CONTENT AND COMPACTED (TYPICALLY) TO NOT LESS THAN NINETY PERCENT (90%) OF MAXIMUM DENSITY IN ACCORDANCE WITH THE CURRENT ASTM D 1557 COMPACTION PROCEDURE, OR 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH THE TxDOT-TEX-113-E COMPACTION PROCEDURE. ALL AREAS EXCEEDING (6") SIX INCHES IN DEPTH, MUST MEET WITH FHWA/HUD HANDBOOK 4140.30 SPECIFICATIONS FOR LAND DEVELOPMENTS ON CONTROLLED EARTHWORK, DATASHEET 79G.

FILL MATERIALS

THE MATERIALS USED SHALL BE FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES, SUCH AS TREES, BRUSH AND RUBBISH.

DEPTH AND MIXING OF FILL LAYERS

THE SELECTED FILL MATERIAL SHALL BE PLACED IN LEVEL, UNIFORM LAYERS WHICH, WHEN COMPACTED, SHALL HAVE A DENSITY CONFORMING TO THE STIPULATED ABOVE. EACH LAYER SHALL BE THOROUGHLY MIXED DURING THE SPREADING TO ENSURE UNIFORMITY OF MATERIAL IN EACH LAYER. COMPACTED LAYER THICKNESS MAY VARY DEPENDING ON THE COMPACTION EQUIPMENT OF THE DEMONSTRATED CAPABILITY.

ROCK

WHEN FILL MATERIAL INCLUDES ROCK, THE MAXIMUM ROCK SIZE SHALL BE AS APPROVED BY THE GEOTECHNICAL ENGINEER. NO LARGE ROCKS SHALL BE ALLOWED TO NEST AND ALL VOIDS MUST BE FILLED WITH SMALL STONES OR SOIL AND ADEQUATELY COMPACTED.

COMPACTON OF FILL LAYER

COMPACTON EQUIPMENT SHALL BE CAPABLE OF COMPACTING THE FILL TO THE SPECIFIED DENSITY. COMPACTON SHALL BE ACCOMPLISHED WHILE THE FILL MATERIAL IS AT OR NEAR THE APPROPRIATE MOISTURE CONTENT. COMPACTON OF EACH LAYER SHALL BE CONTINUOUS OVER THE ENTIRE STRUCTURAL AREA (BENEATH PROPOSED STRUCTURES).

COMPACTON OF SLOPES

THE FACES OF FILL SLOPES SHALL BE COMPACTED. COMPACTING OPERATIONS SHALL BE CONTINUED UNTIL THE SLOPE FACES ARE STABLE BUT NOT TO DENSE FOR PLANTING ON THE SLOPES. COMPACTON OF THE SLOPE FACE MAY BE DONE PROGRESSIVELY IN INCREMENTS OF THREE TO FIVE FEET (3' TO 5') IN FILL HEIGHT AS THIS FILL PROGRESSES OR AFTER THE FILL HAS BEEN BROUGHT TO ITS TOTAL HEIGHT.

DENSITY TEST

FIELD DENSITY TESTS SHALL BE PERFORMED ON ALL LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE TWELVE INCHES (12"). ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION SCHEDULE. NOTIFICATION BY THE CONTRACTOR TO CONDUCT TESTS SHALL BE AT LEAST THE DAY BEFORE. THIS NOTIFICATION SHALL INCLUDE THE FILL AREA LOCATION (LOT AND BLOCK), THE LIFT OR HEIGHT OF FILL AND APPROXIMATED DESIRED TIME OF TESTING. WHEN THESE TEST INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED AND RETESTED AT THE EXPENSE OF THE CONTRACTOR UNLESS THE CONTRACTOR CAN SHOW EVIDENCE THAT CIRCUMSTANCES BEYOND HIS CONTROL REQUIRED THE RETESTING. GENERALLY, THE SPECIFIC TESTING WILL BE AS FOLLOWS AND CONDUCTED BY A GEO-TECHNICAL ENGINEER OR STAFF.

1. THE LAND TO BE FILLED (PREPARED SUBGRADE) SHALL BE PREPARED AND TESTED AT A FREQUENCY AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
2. THE FIRST LIFT OF COMPACTED FILL (GENERALLY 8-12 IN.) SHALL BE TESTED AS DETERMINED BY THE GEOTECHNICAL ENGINEER. ANY AREAS SUPPORTING THE PROPOSED STRUCTURES REQUIRING FILL SHALL BE TESTED FOR DENSITY COMPLIANCE.
3. FILLS SHALL BE TESTED AT A MAXIMUM OF EACH TWELVE INCHES (12") OF FILL.
4. TEST RESULTS WILL BE PROVIDED BY THE FIELD TECHNICIAN TO THE CONTRACTOR WHEN POSSIBLE; HOWEVER, ALL TEST RESULTS ARE TO BE REVIEWED BY THE GEOTECHNICAL ENGINEER FOR COMPLIANCE. THE ENGINEER WILL NOTIFY THE CONTRACTOR OF ALL TEST RESULTS.

CUT/FILL LOTS

AREAS INVOLVING CUT ON THE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6 IN., AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES. HUD 79-G HUD 79-G REQUIREMENT FOR FILL MATERIAL OF 6 INCHES AND MORE WILL BE CONDUCTED. ALL CUT AREAS WILL ALSO MEET THE REQUIREMENTS FOR HUD 79-G COMPACTION TESTING. IN ADDITION, ENGINEERS MUST PROVIDE VERIFICATION OF ALL AREAS WHICH DO NOT REQUIRE HUD 79-G. AFTER SITE GRADING IS COMPLETED, GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CONTRACTOR AND OWNER A 79-G LETTER.

DRAINAGE NOTE

FINISHED FLOOR ELEVATIONS

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.

GRADING DETAILS

CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

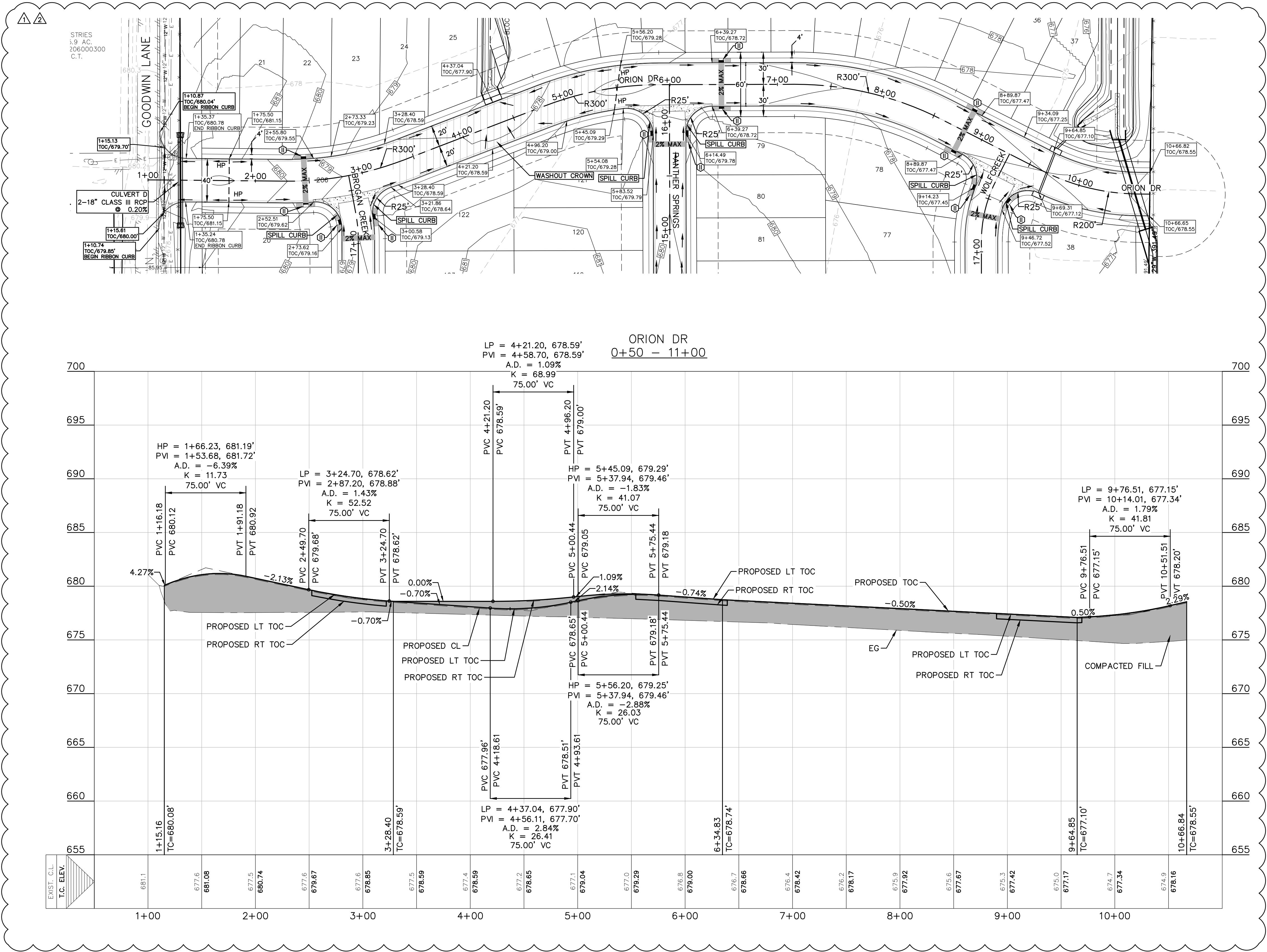
HMT PROJECT NO.:

164.012

SHEET

C3.1

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- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - A.D.A. RAMP
 - FLOW ARROW
 - WASHOUT CROWN AREAS
 - EXISTING GROUND CENTER (EG)
 - PROPOSED GROUND CENTER (PR TO)
 - ACCESSIBLE CROSSING AREA
CONTRACTOR TO ENSURE MAX 2%
CROSS SLOPE IN THESE AREAS
 - SIDEWALK RAMP TYPE
(SEE DETAIL SHEET C3.10)
 - SIDEWALK TO BE CONSTRUCTED
BY SITE DEVELOPMENT CONTRACTOR

- NOTES**
- STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
 - IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
 - CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
 - CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.

**ORION DRIVE
PLAN & PROFILE
CREEKSIDE FARMS
UNIT 3**

NO.	REVISION DESCRIPTION	REVISION DATE	
		POST PERMIT	REVISION
1	POST PERMIT	11/04/2019	1
2	POST PERMIT	01/06/2020	2

DATE: **MAY 2019**

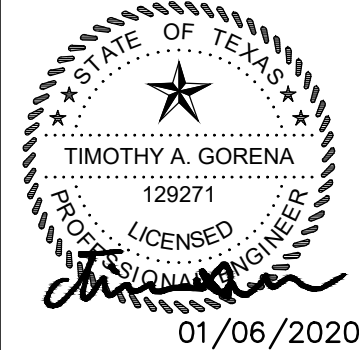
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DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.: **164.012**

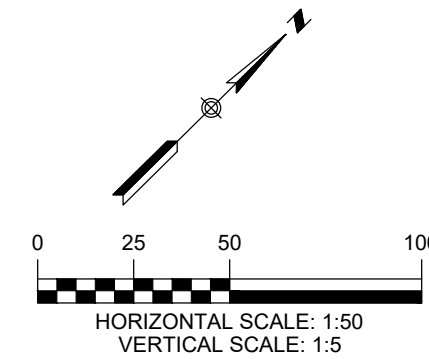
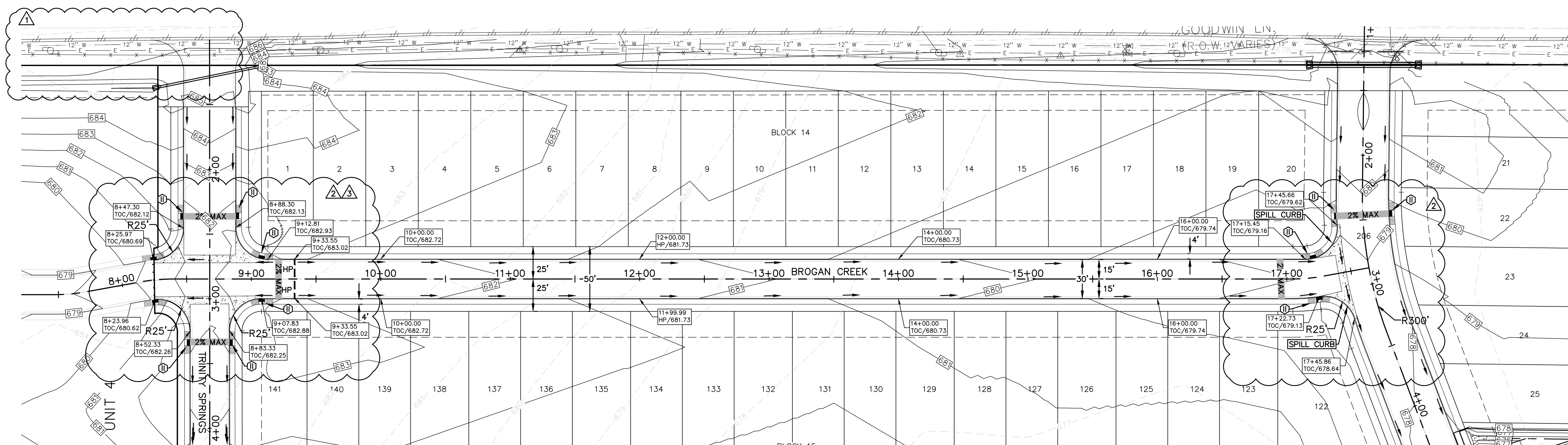
**SHEET
C4.0**



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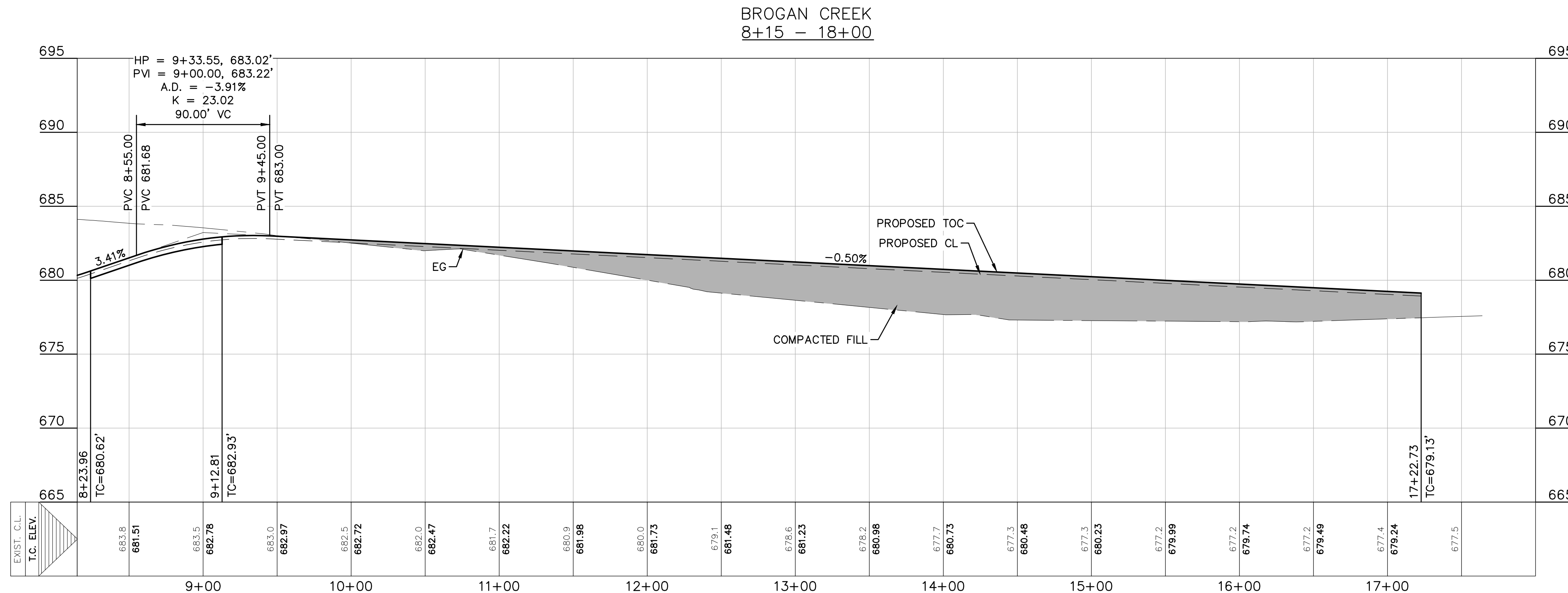
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- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - A.D.A. RAMP
 - FLOW ARROW
 - WASHOUT CROWN AREAS
 - EXISTING GROUND CENTER (EG)
 - PROPOSED GROUND CENTER (PR TC)
 - ACCESSIBLE CROSSING AREA
CONTRACTOR TO ENSURE MAX 2%
CROSS SLOPE IN THESE AREAS
 - SIDEWALK RAMP TYPE
(SEE DETAIL SHEET C3.10)
 - SIDEWALK TO BE CONSTRUCTED
BY SITE DEVELOPMENT CONTRACTOR

NOTES

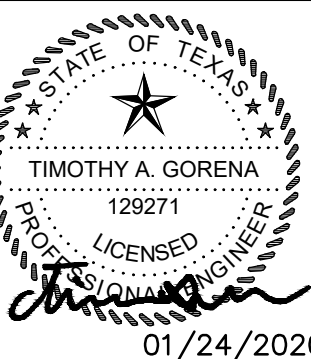
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**BROGAN CREEK
PLAN & PROFILE**
CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020
3	IRRIGATION METER AND TRINITY SPRINGS REV	01/24/2020

DATE: **MAY 2019**

DRAWN BY: MA

DESIGNED BY: TG

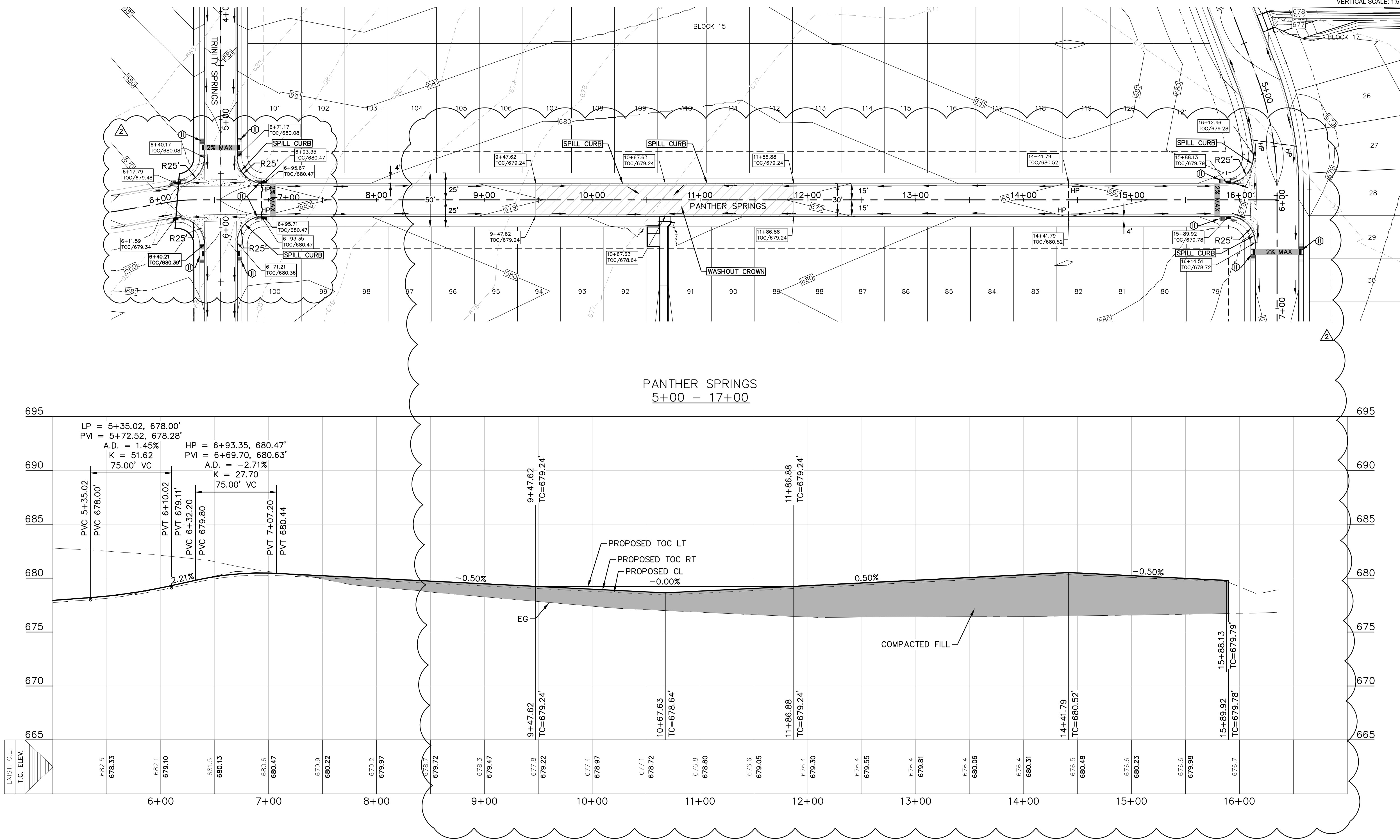
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HMT PROJECT NO.:

164.012

SHEET

C4.1



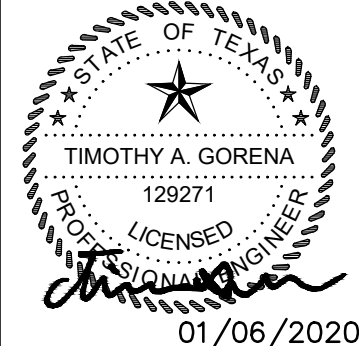
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**PANTHER SPRINGS
PLAN & PROFILE
CREEKSIDE FARMS
UNIT 3**

NO.	REVISION	DESCRIPTION	REVISION DATE
1	POST PERMIT	REVISION 1	11/04/2019
2	POST PERMIT	REVISION 2	01/06/2020

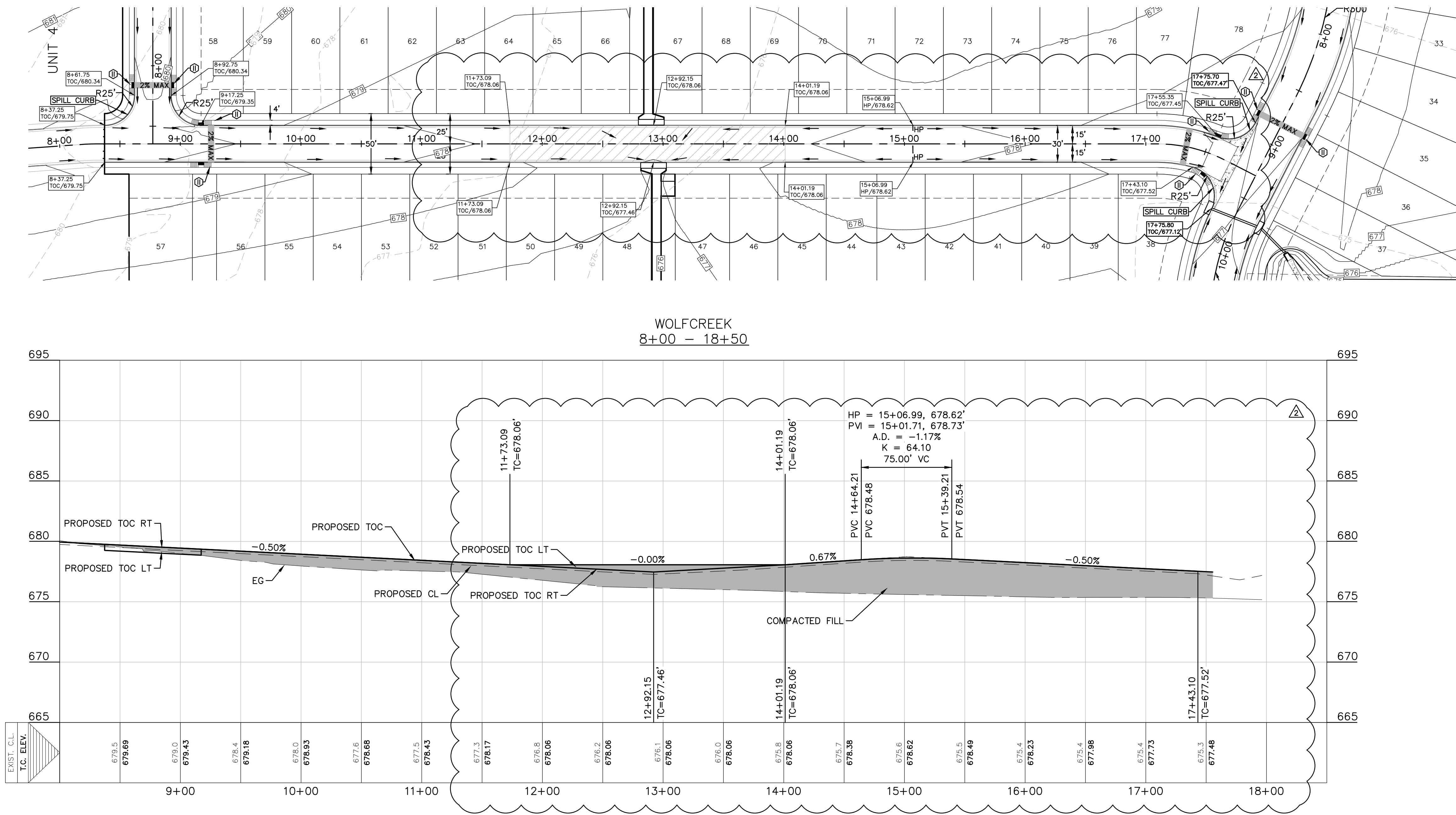
DATE: **MAY 2019**
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: **164.012**

**SHEET
C4.2**



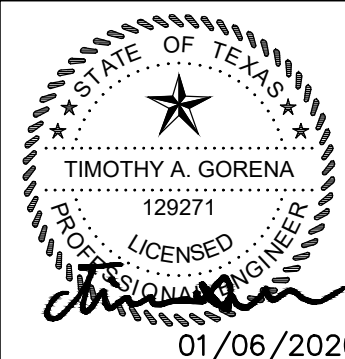
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TBPLS FIRM 10153600

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TBPLS FIRM 10153600

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WOLFCREEK
PLAN & PROFILE
CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: **MAY 2019**

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

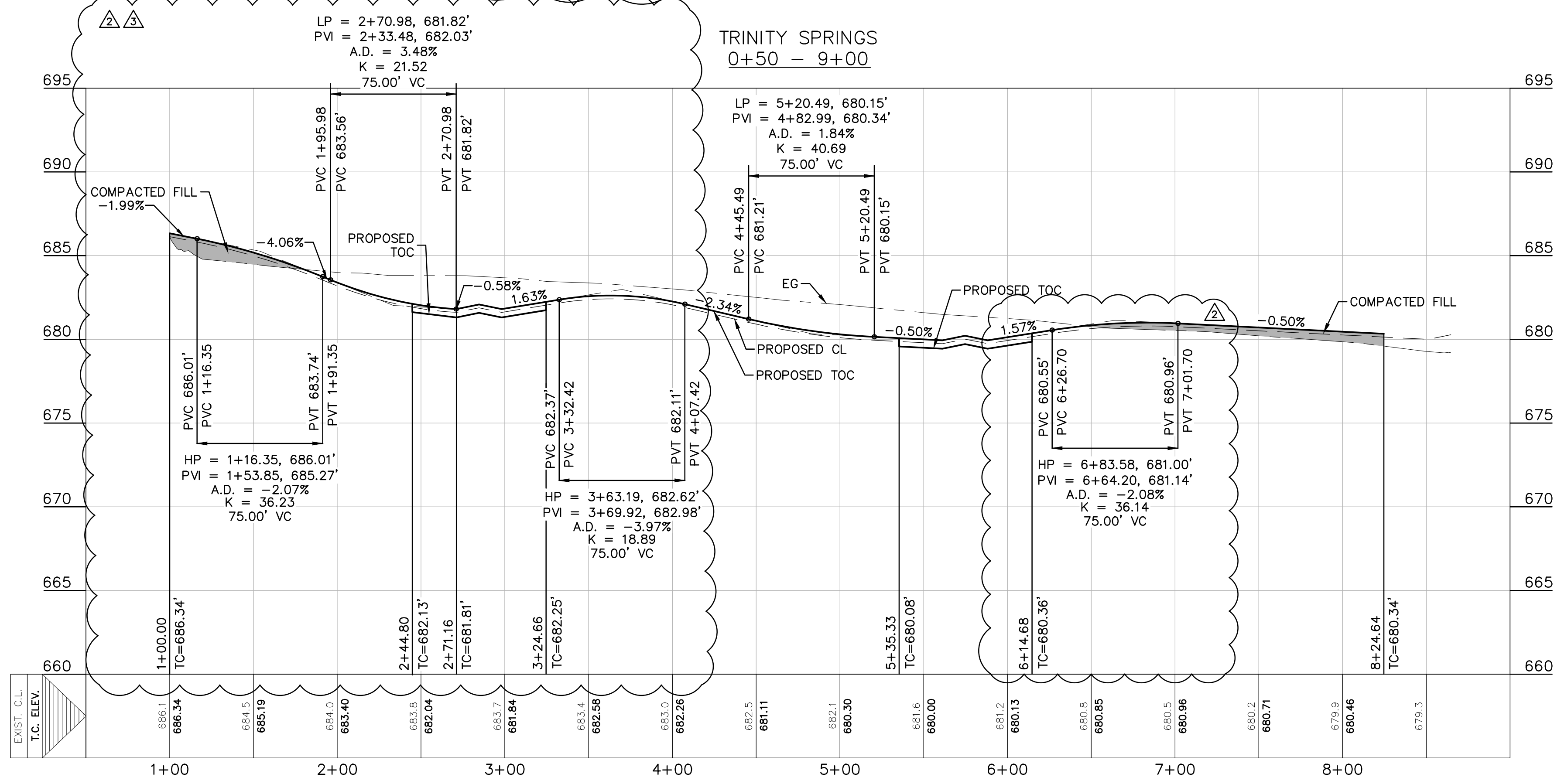
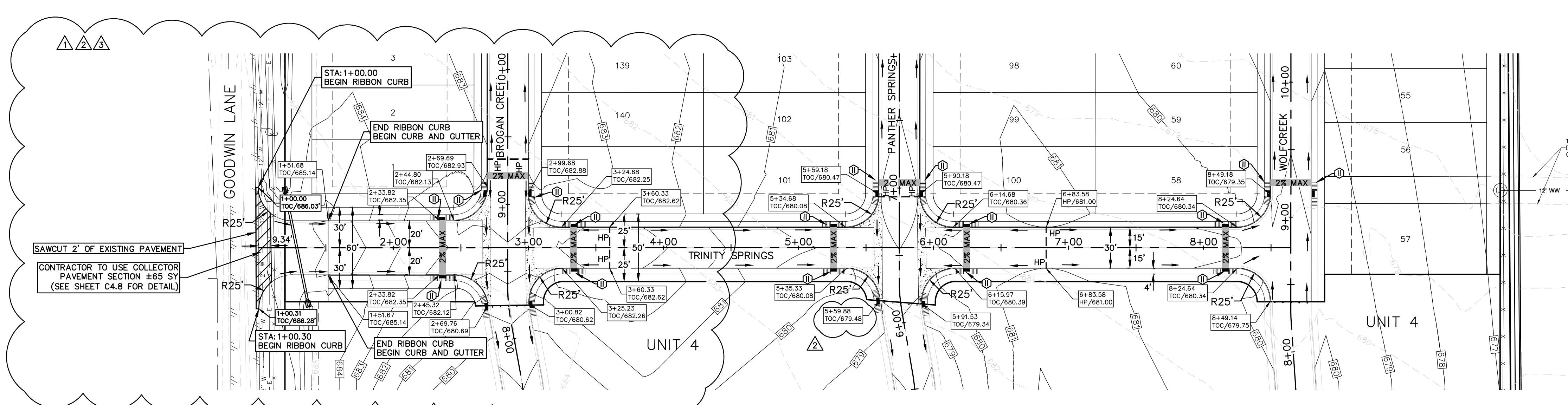
HMT PROJECT NO.:

164.012

SHEET

C4.3

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.



- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - A.D.A. RAMP
 - FLOW ARROW
 - WASHOUT CROWN AREAS
 - EXISTING GROUND CENTER (EG)
 - PROPOSED GROUND CENTER (PR TC)
 - ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
 - SIDEWALK RAMP TYPE (SEE DETAIL SHEET C3.10)
 - SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

- NOTES**
- STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
 - IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
 - CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
 - CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.

**TRINITY SPRINGS
PLAN & PROFILE
CREEKSIDE FARMS
UNIT 3**

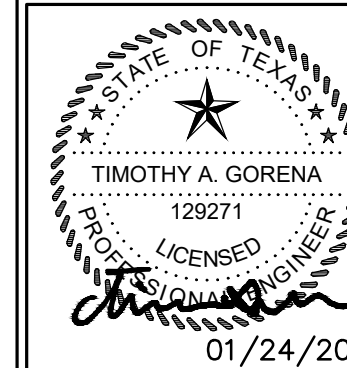
NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020
3	IRRIGATION METER AND TRINITY SPRINGS REV	01/24/2020

DATE: **MAY 2019**
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC

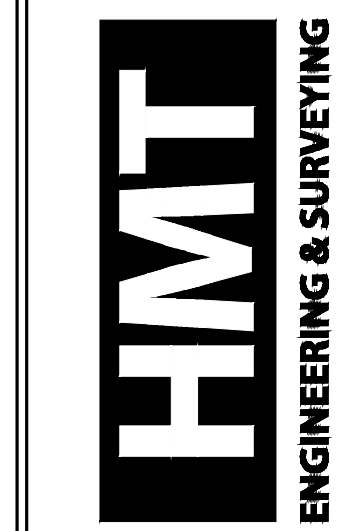
HMT PROJECT NO.:
164.012

**SHEET
C4.4**

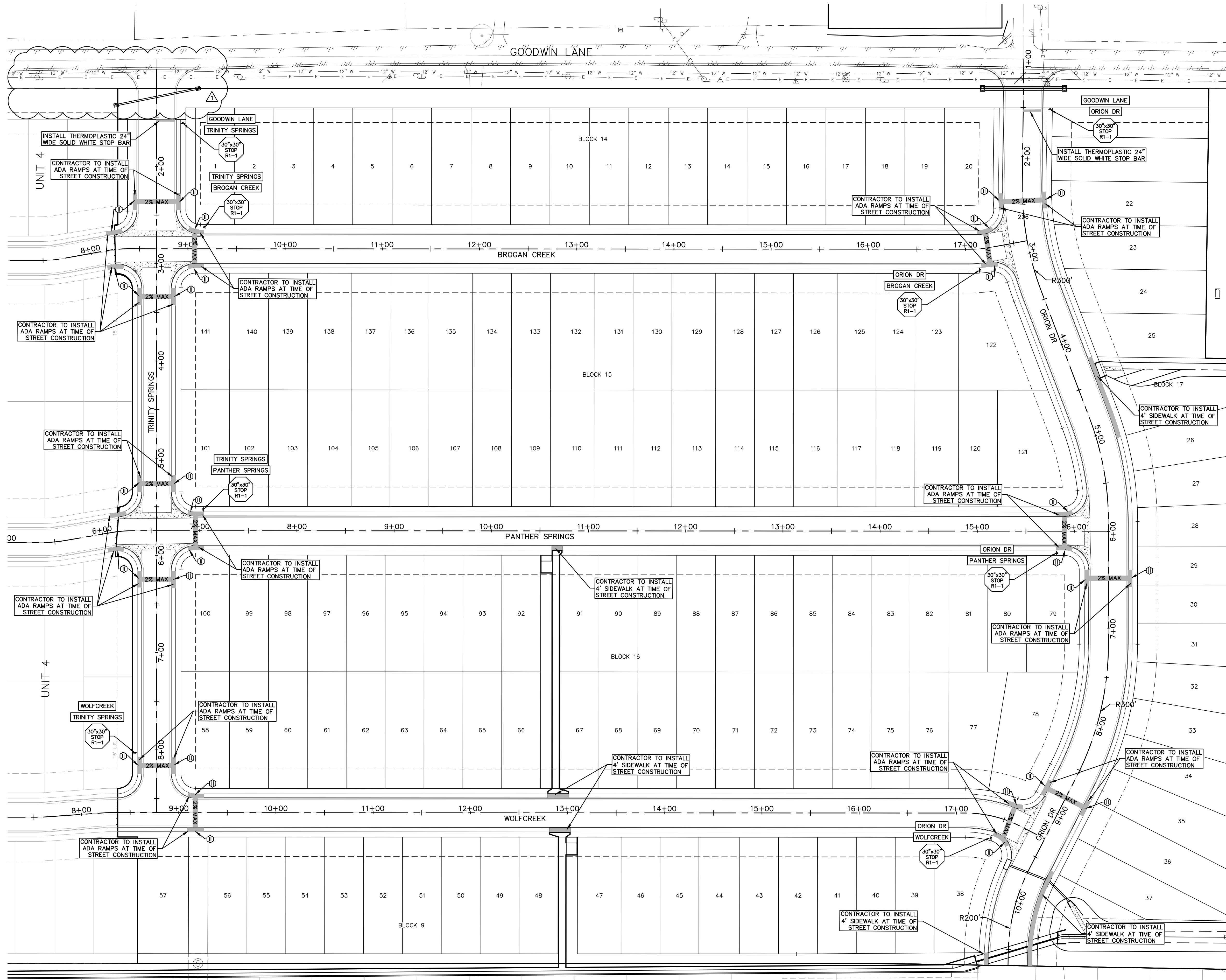
THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.



410 N. SEGUN AVE.
NEW BRAUNFELS, TX 78130
HMTNB.COM
PH: 830/625-8555 • F: 830/625-8556
TBE FIRM F-10961
TBE FIRM 10153600

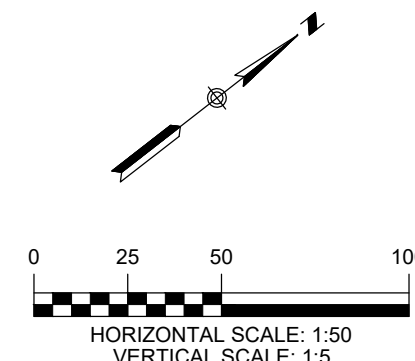


Drawing Name: K:_project\164 - creekside farms unit 3\CDs\164.012-STREET 2.dwg User: matia Nov 05, 2019 - 10:06am



- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - FLOW ARROW
 - EXISTING GROUND LEFT (EG LT)
 - EXISTING GROUND RIGHT (EG RT)
 - EXISTING GROUND CENTER (EG CTR)
 - PROPOSED TOP OF CURB (PR TC)

- NOTES:**
- STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
 - ALL A.D.A. RAMPS ARE TO BE CONSTRUCTED BY THE SITE DEVELOPMENT CONTRACTOR AT THE TIME OF STREET CONSTRUCTION.



SIGNAGE NOTES

INSTALLATION

THE CONTRACTOR SHALL FURNISH AND INSTALL ALL REGULATORY, WARNING AND STREET NAME SIGNS AND SIGN MOUNTS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS.

MOUNTING

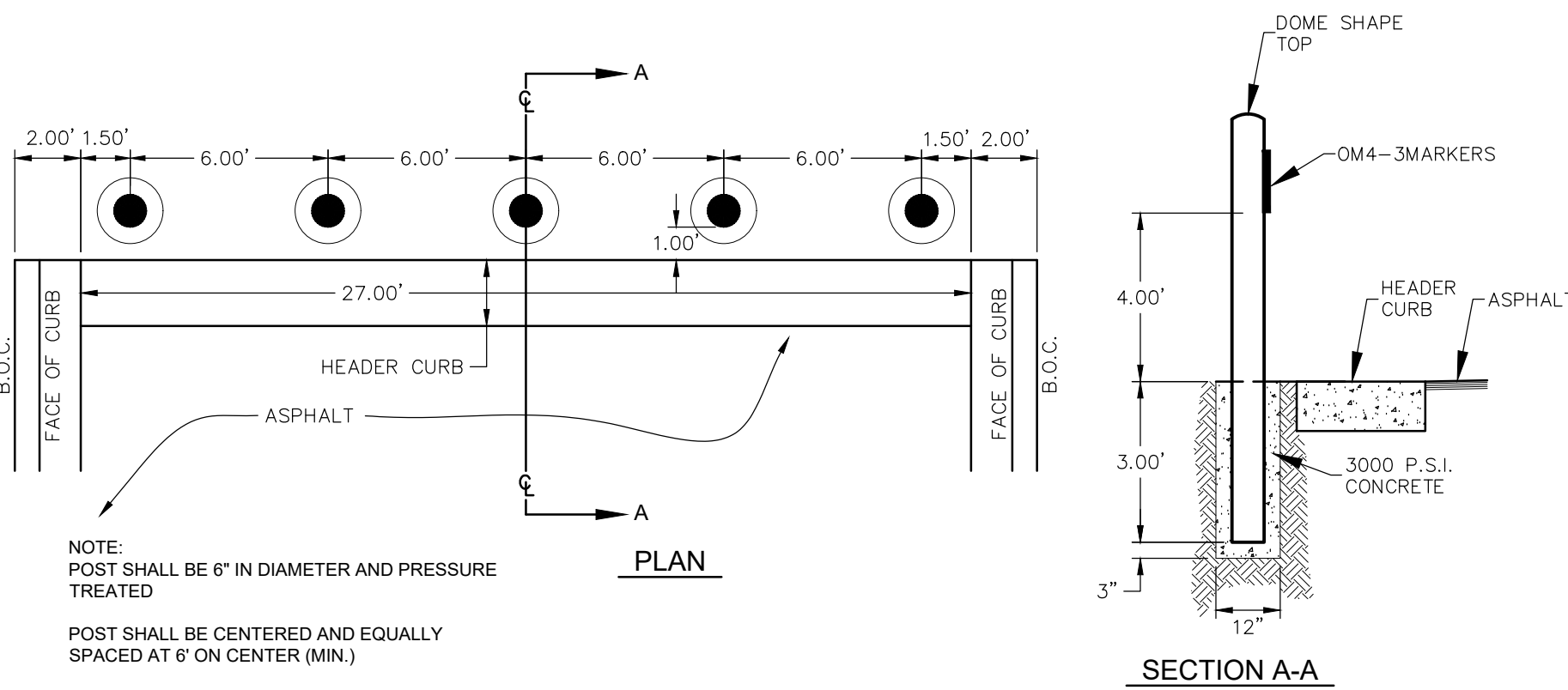
THE WEDGE ANCHOR STEEL SYSTEM AND THIN-WALLED TUBING POST SHALL BE USED FOR SIGNS WITH UP TO 10 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TEXAS DEPARTMENT OF TRANSPORTATION (TXDOT) TRAFFIC STANDARDS SMD (GEN) - 08 AND SMD (TWT) - 08.

THE TRIANGULAR SLIP BASE SYSTEM AND 10 BWG TUBING POST SHALL BE USED FOR SIGNS THAT HAVE 10 TO 16 SQUARE FEET OF SIGN AREA. MATERIALS AND INSTALLATION SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS SMD (GEN) - 08 AND SMD (SLIP-1-3) - 08.

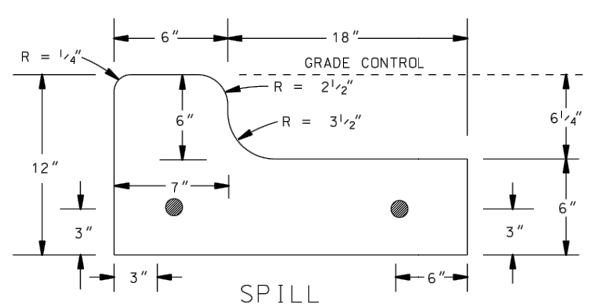
OBJECT MARKERS MATERIALS AND INSTALLATION SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS D & OM (1 - 5) - 10.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

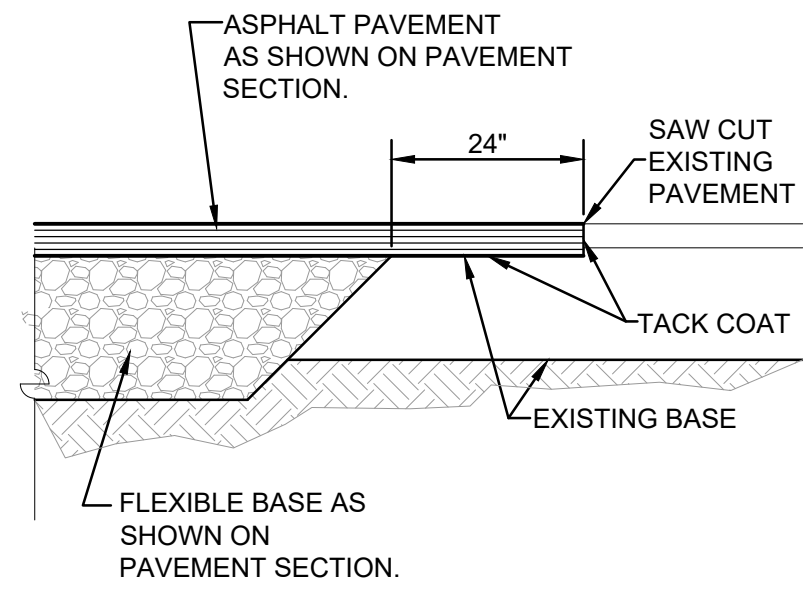
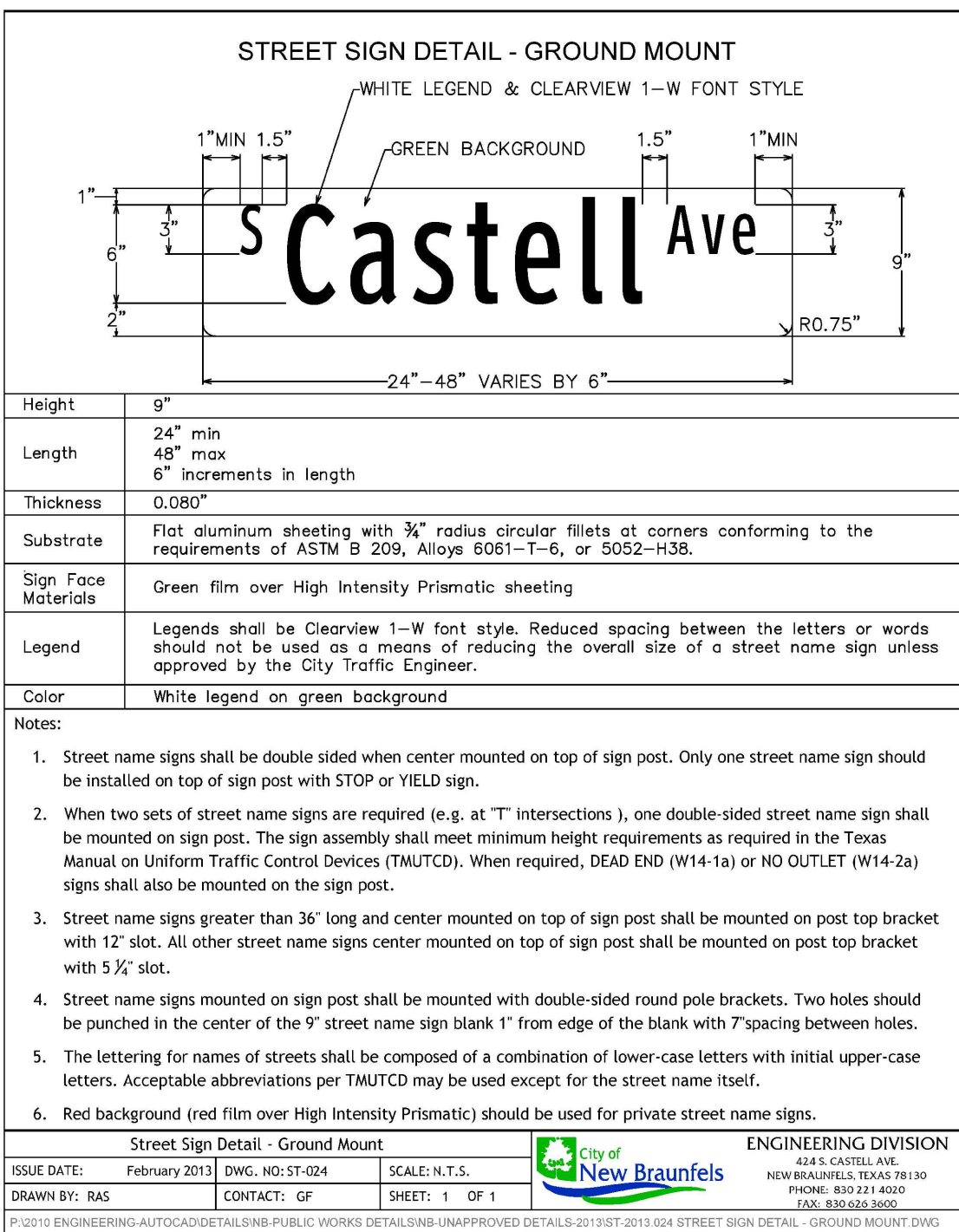
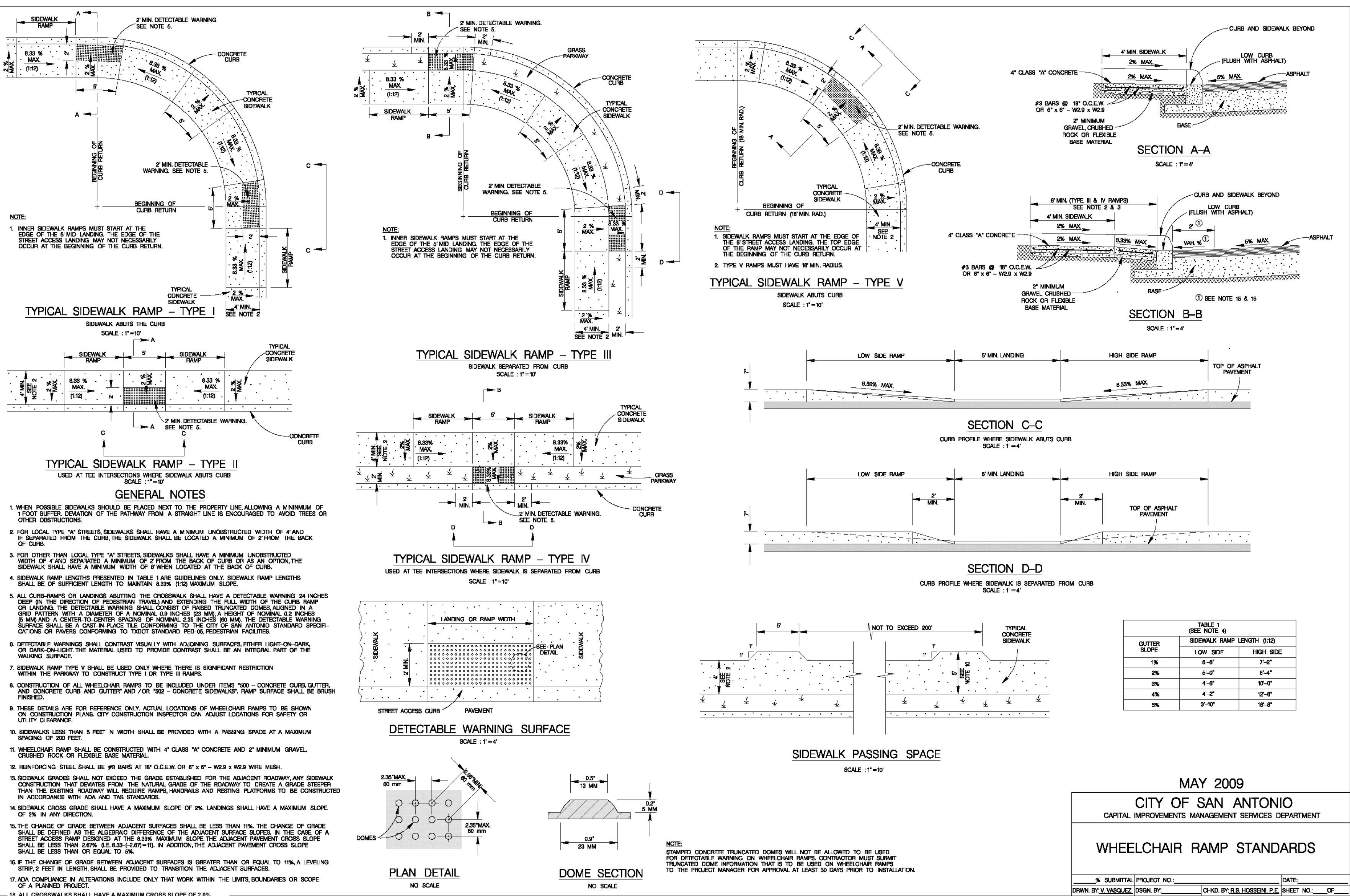
410 N. SEGUIN AVE
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F: 361-685-8556
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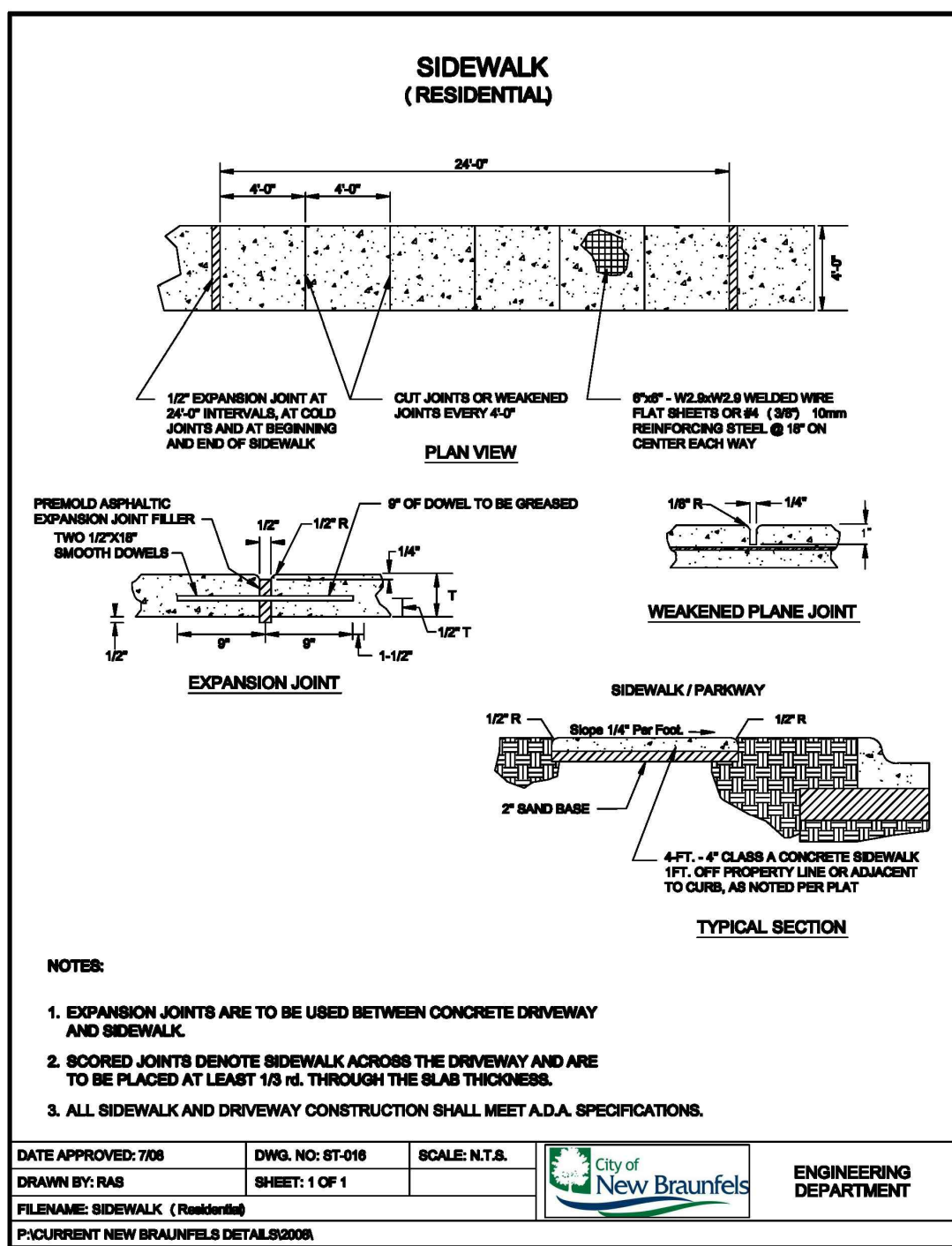
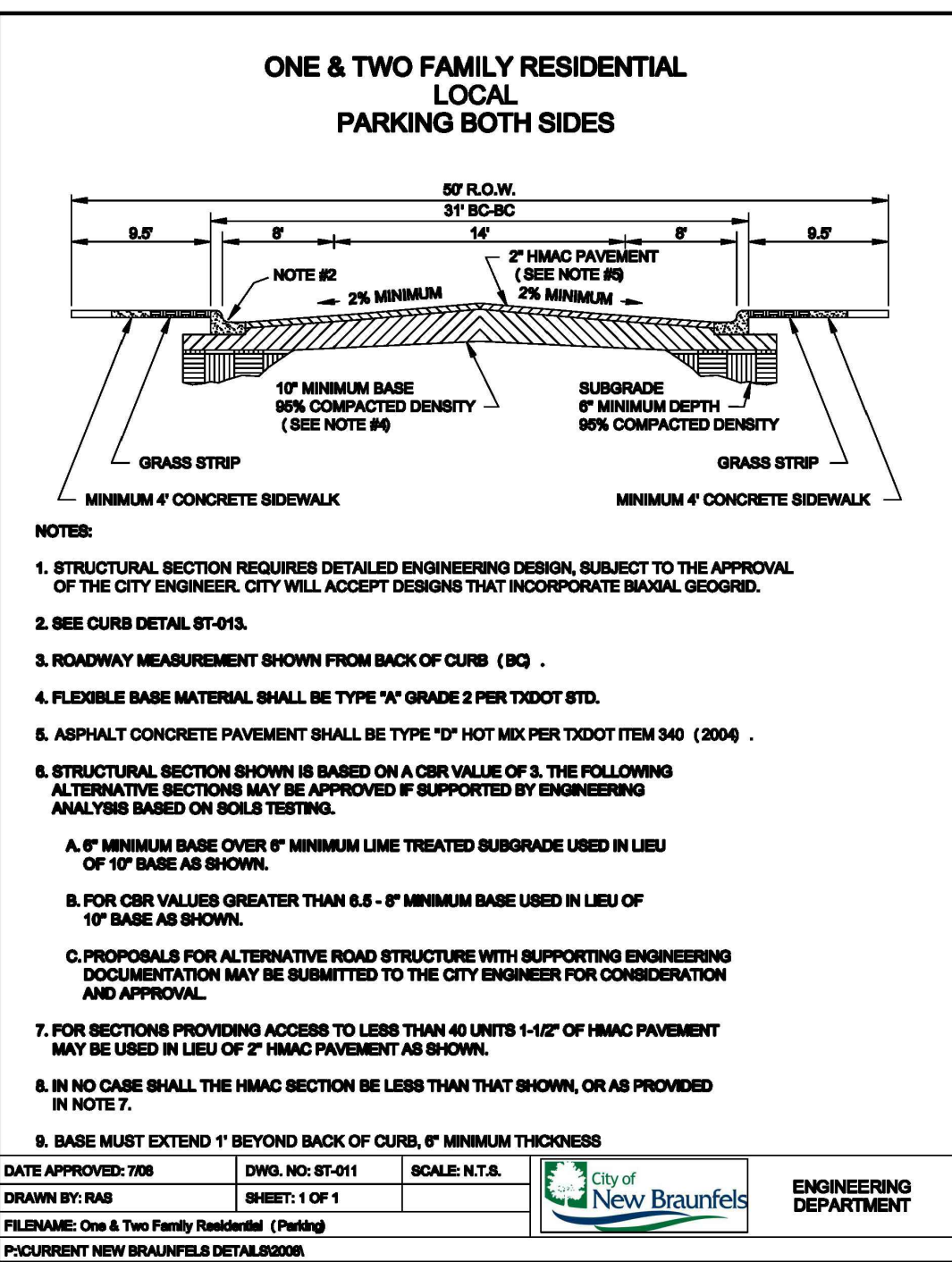
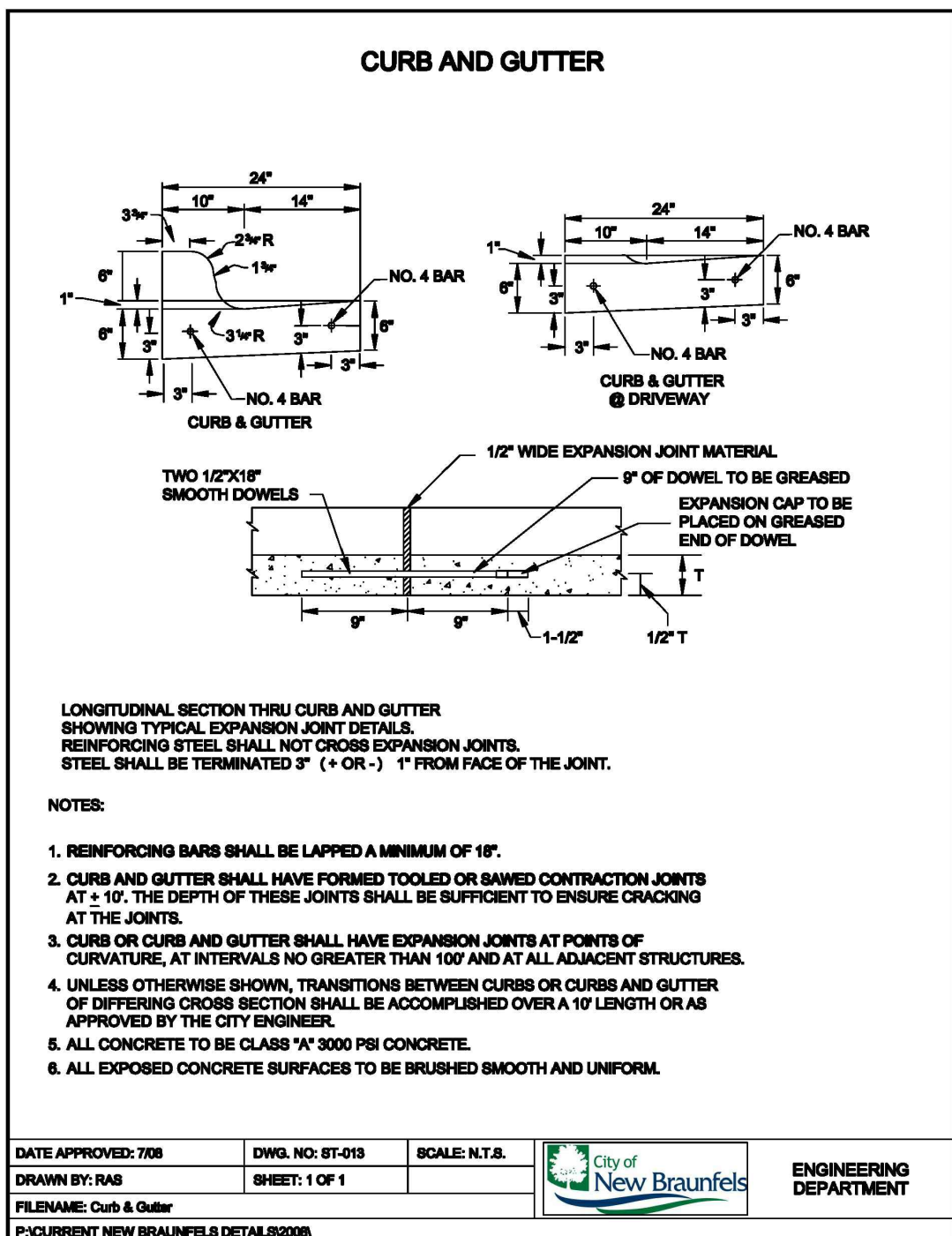
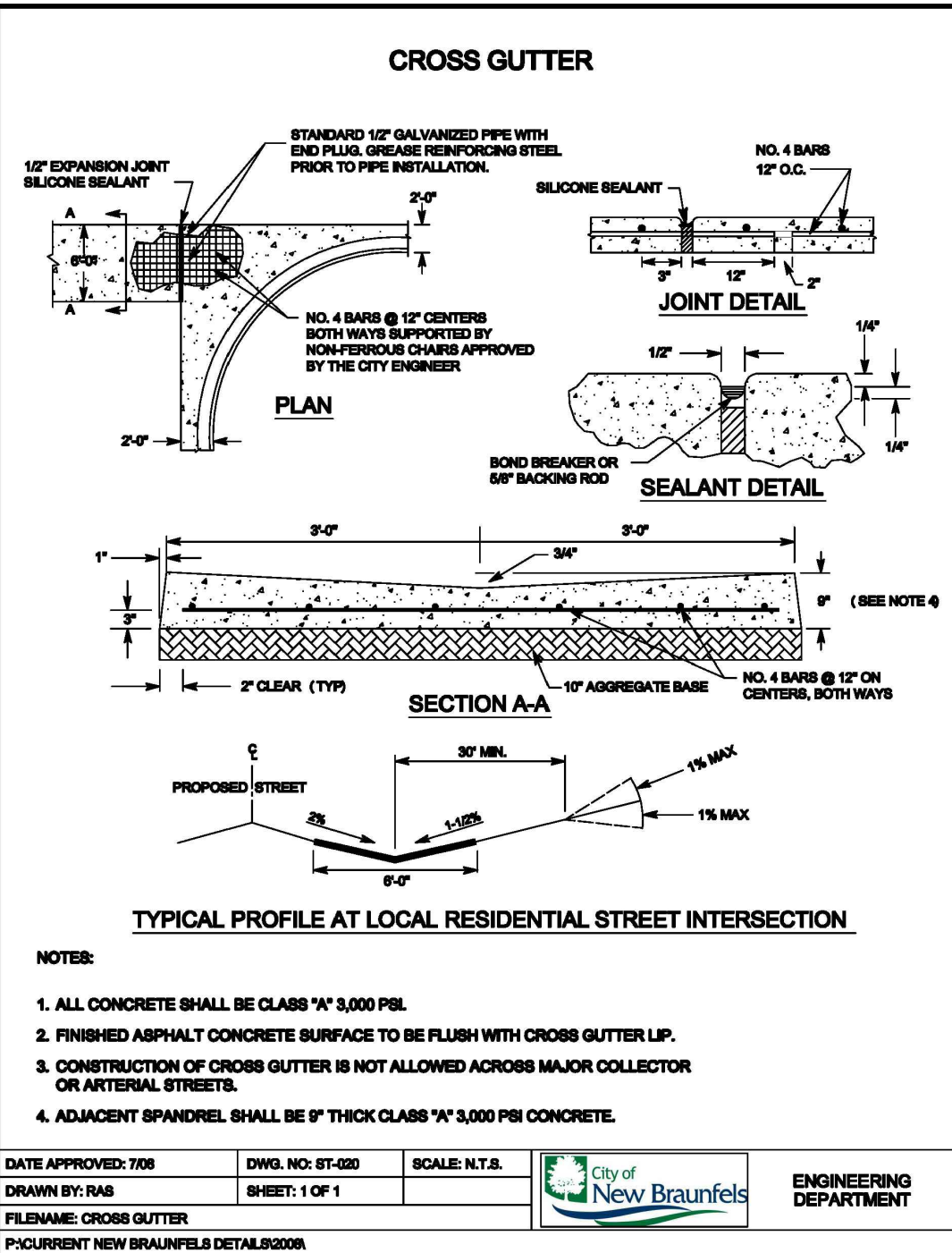
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NOT TO SCALE

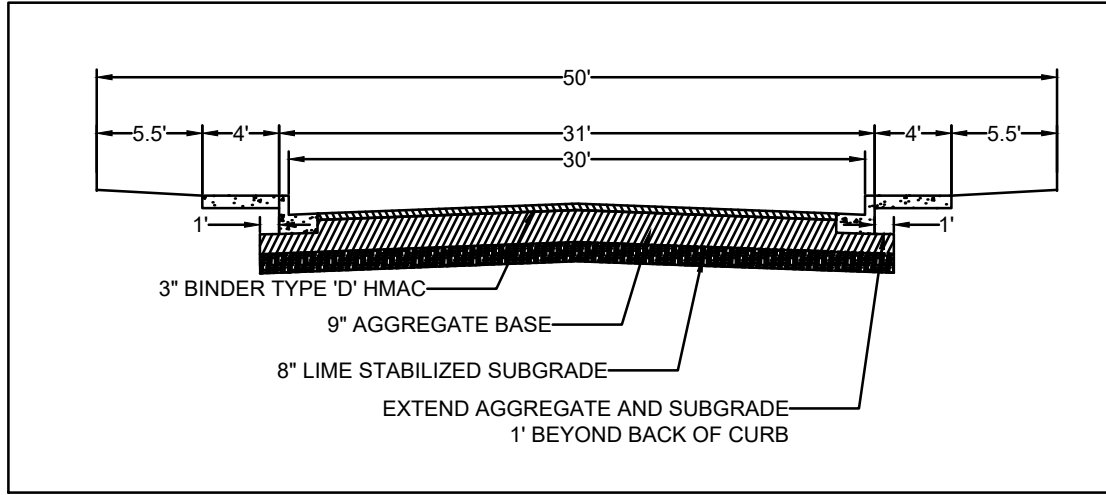


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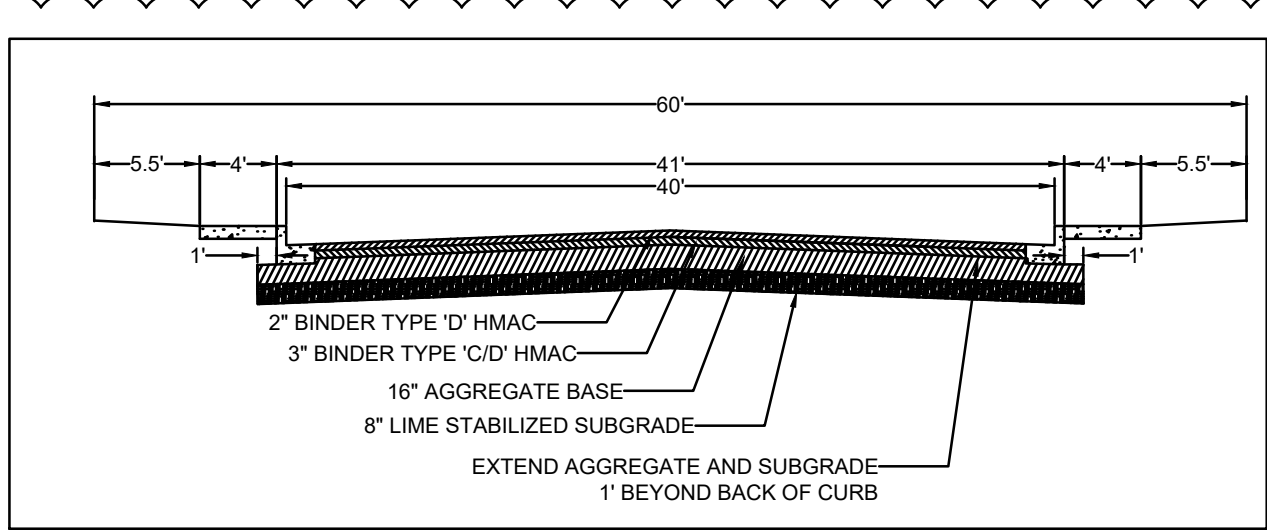


NEW PAVEMENT TO EXISTING
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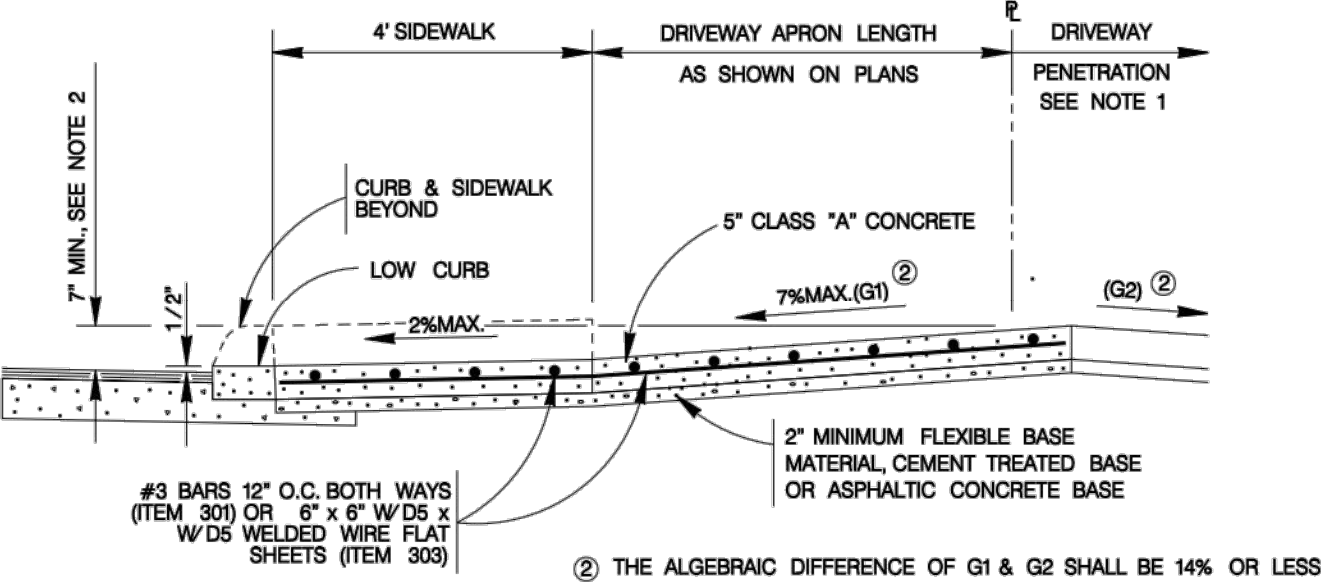




LOCAL A PAVEMENT SECTION



LOCAL B PAVEMENT SECTION



TYPE 'C' LOT DRIVEWAY DETAIL

LOCAL TYPE A WITHOUT BUSSES	
PAVEMENT MATERIAL	
TYPE "D" HMA	3.0"
CRUSHED LIMESTONE FLEXIBLE BASE, IN.	9"
LIME TREATED SUBGRADE	8"
TENSAR TX-5 GEOGRID	NO

NOTE:

- ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "GEOTECHNICAL ENGINEERING STUDY FOR CREEKSIDE FARMS, UNITS 1 AND 2" BY RABA KISTNER CONSULTANTS, DATED NOVEMBER 17, 2017.
- ALL PAVEMENT SECTIONS SHOWN ON THE ABOVE TABLE SHALL SUPERCEDE ANY STANDARD DETAILS WITH RESPECT TO DEPTH OF MATERIALS ASSOCIATED WITH THIS PROJECT.
- THE SUBGRADE SHOULD BE STABILIZED USING LIME IN ACCORDANCE WITH THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE FOLLOWING:
 - PLASTICITY INDEX OF 20 OR LESS
 - PH OF 12.4 OR GREATER
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

LOCAL TYPE B	
PAVEMENT MATERIAL	
TYPE "D" HMA	2"
TYPE "C/D" HMA	3"
CRUSHED LIMESTONE FLEXIBLE BASE, IN.	16"
LIME TREATED SUBGRADE	8"
TENSAR TX-5 GEOGRID	NO

NOTE:

- ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "GEOTECHNICAL ENGINEERING STUDY FOR OAK CREEK, UNITS 4 AND 5" BY RABA KISTNER CONSULTANTS, DATED JUNE 19, 2017, WITH SUPPLEMENTAL INFORMATION PROVIDED JULY 27, 2017.
- ALL PAVEMENT SECTIONS SHOWN ON THE ABOVE TABLE SHALL SUPERCEDE ANY STANDARD DETAILS WITH RESPECT TO DEPTH OF MATERIALS ASSOCIATED WITH THIS PROJECT.
- THE SUBGRADE SHOULD BE STABILIZED USING LIME IN ACCORDANCE WITH THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE FOLLOWING:
 - PLASTICITY INDEX OF 20 OR LESS
 - PH OF 12.4 OR GREATER
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

TYPICAL PAVEMENT SECTION

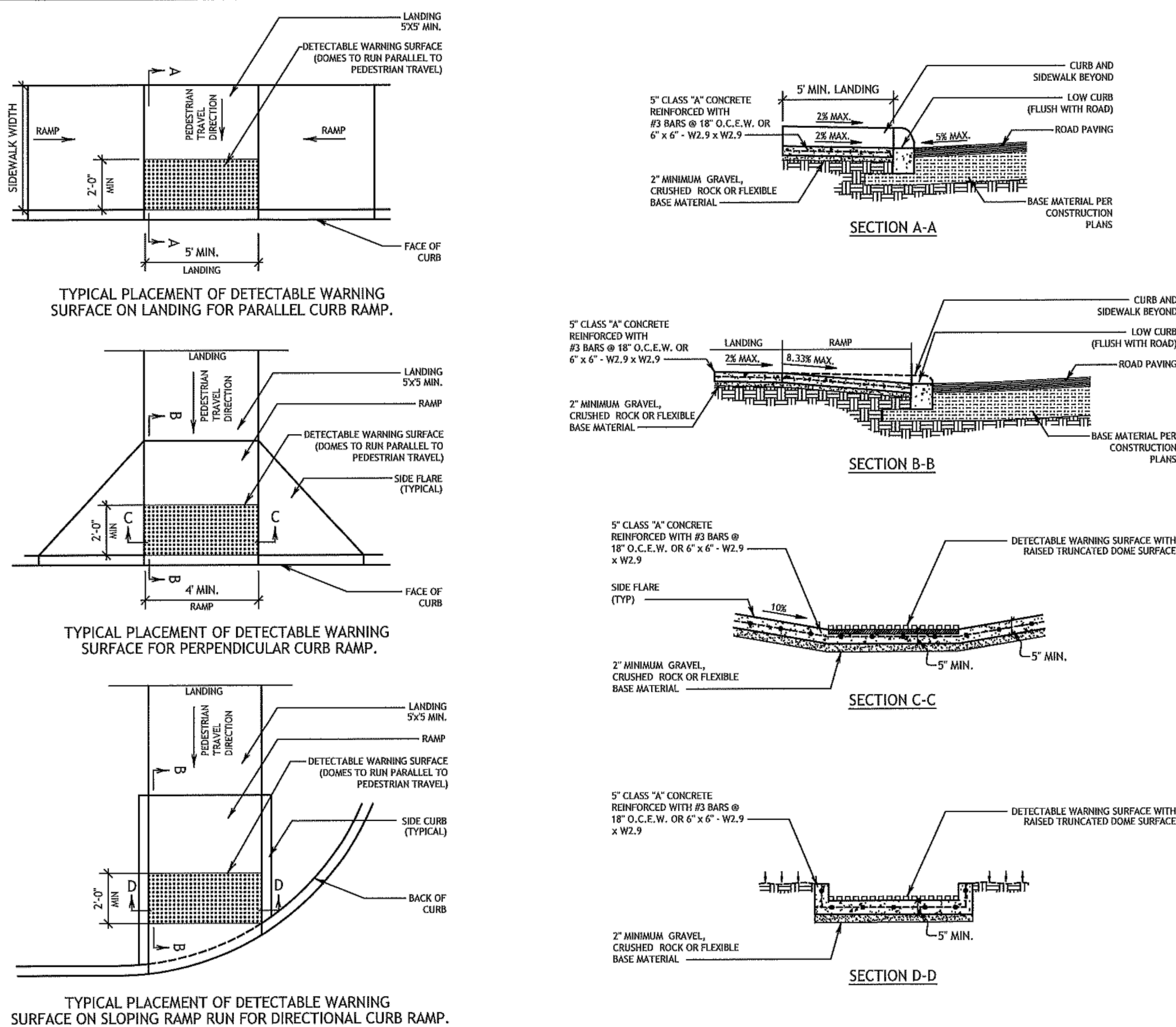
LOCAL TYPE B SECTION TO BE USED ALONG ORION DRIVE, ALL OTHER PAVEMENTS TO BE LOCAL TYPE A

COLLECTOR	
PAVEMENT MATERIAL	
TYPE "D" HMA	2"
TYPE "C/D" HMA	3"
CRUSHED LIMESTONE FLEXIBLE BASE, IN.	18"
LIME TREATED SUBGRADE	8"
TENSAR TX-5 GEOGRID	NO

NOTE:

- ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "GEOTECHNICAL ENGINEERING STUDY FOR OAK CREEK, UNITS 4 AND 5" BY RABA KISTNER CONSULTANTS, DATED JUNE 19, 2017, WITH SUPPLEMENTAL INFORMATION PROVIDED JULY 27, 2017.
- ALL PAVEMENT SECTIONS SHOWN ON THE ABOVE TABLE SHALL SUPERCEDE ANY STANDARD DETAILS WITH RESPECT TO DEPTH OF MATERIALS ASSOCIATED WITH THIS PROJECT.
- THE SUBGRADE SHOULD BE STABILIZED USING LIME IN ACCORDANCE WITH THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE FOLLOWING:
 - PLASTICITY INDEX OF 20 OR LESS
 - PH OF 12.4 OR GREATER
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

DISCLAIMER: The use of any material is made by the City of New Braunfels for any purpose whatsoever. No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.



ENGINEERING DIVISION
850 LAND STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 628 3600

CURB RAMP STANDARDS

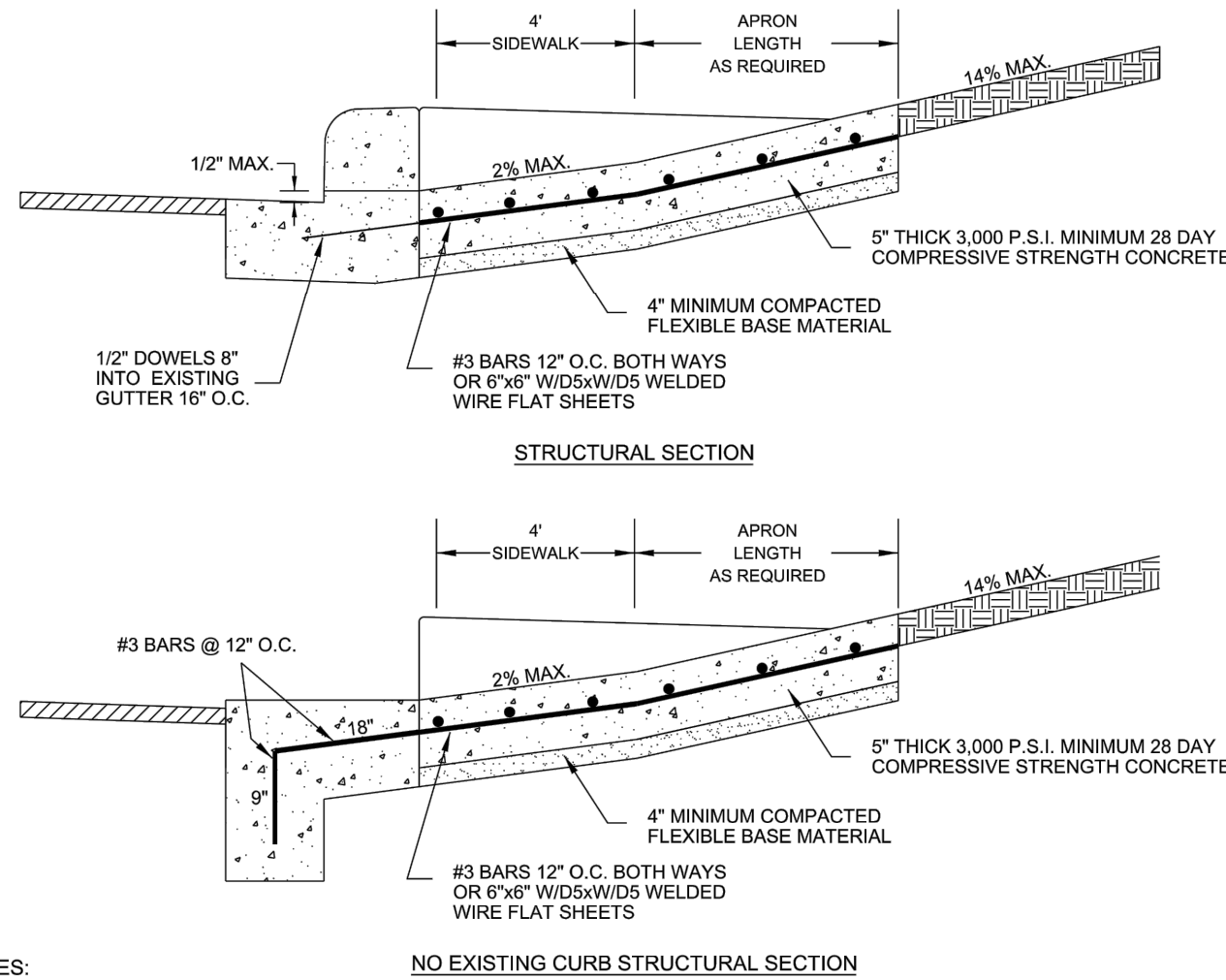
APPROVED DATE: 05/18/2017	DWG. NO.: ST-019	SCALE: AS NOTED
DRAWN BY: RC	CONTACT: GF	SHEET: 1 OF 1

- #### CURB RAMP NOTES
- ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
 - THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMP ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE AMERICAN WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS). CITY ENGINEER OR BUILDING OFFICIAL MAY ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
 - THE MINIMUM STANDARD SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 118-49 OF THE NEW BRAUNFELS CODE OF ORDINANCES.
 - ALL LANDINGS WHERE REQUIRED SHALL BE 5' x 5' (60"x60") MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
 - RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1V:12H). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
 - SIDEWALK GRADIENTS SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
 - PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1V:10H) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED INSTEAD OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
 - HANDRAILING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' x 4' (48"x48") WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
 - CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RETURNS MAY BE USED INSTEAD OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
 - EXISTING FEATURES THAT COMPLY WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
 - HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
 - SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PRE-MOLD OR BOARD JOINT OF 1/2" UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
 - PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
 - THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(2.67)-11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 3%.
 - IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
 - ADA RAMP SHALL BE CONSTRUCTED WITH 5' CLASS "A" CONCRETE WITH 2" MINIMUM GRAVEL/CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" W2.9 W2.9 WIRE MESH.
 - THE EXTENTS OF ADA COMPLIANCE IN ALTERATIONS SHALL BE WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

- CURB RAMPS OR LANDINGS ADJUTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF BASED TRUNCATED DOMES COMPLYING WITH SECTION 905 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJACING SURFACES, INCLUDING SIDE FLARES, TURNED DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
- DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
- ALSO TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
- DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
- DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALONG THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADII.
- DETECTABLE WARNING MATERIALS MUST MEET TxDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. NOTAL PRODUCTS IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
- DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

DRIVEWAY APRON (RESIDENTIAL - ONE OR TWO FAMILY)



NOTES:

- WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1" DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.
- PLACEMENT OF SIDEWALK SHOWN IS TYPICAL. HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED PROVIDED CROSS SLOPE OF SIDEWALK IS NO GREATER THAN 2%.
- CURB CUT LENGTH NO GREATER THAN AS REQUIRED TO MATCH SLOPE OF ADJACENT SIDEWALK.
- DUMMY JOINTS TO BE PROVIDED AT MINIMUM 4-FT. INTERVALS PERPENDICULAR TO THE CURB LINE WITHIN THE SIDEWALK AREA AND PARALLEL TO THE SIDEWALK AREA.
- PROVIDE A MINIMUM 7" HIGH POINT. HIGH POINT HEIGHT SHALL BE MEASURED FROM THE GUTTER FLOW LINE TO THE DRIVEWAY APRON. NOTE HIGH POINT MAY OCCUR OUTSIDE OF ROW.
- DRIVEWAY THROAT TRANSITION MAY OCCUR OUTSIDE OF ROW.
- PROVIDE EXPANSION JOINTS AT ALL SIDEWALK AND DRIVEWAY THROAT JOINTS. EXPANSION JOINTS SHALL BE PLACED USING 1/2" ASPHALTIC MATERIAL WITH 1/2" DOWELS 18" O.C.
- THE TANGENT POINT OF THE DRIVEWAY CURB RETURN AT THE PUBLIC ROADWAY LINE OR FLARE SHALL BE A MINIMUM DISTANCE OF 1' OFF THE PROPERTY PROJECTED PERPENDICULAR TO THE STREET CENTERLINE. EXCEPT SINGLE FAMILY ZERO LOT LINE LOTS WHERE THE DRIVE IS ON THE ZERO LOT LINE, THE TANGENT POINT OR FLARE SHALL BE NO GREATER THAN 3' BEYOND THE ADJOINING PROPERTY LINE PROJECTED PERPENDICULAR TO THE STREET CENTERLINE.

DATE APPROVED: 04/2016

DRAWN BY: RAS

FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)

DWG. NO: ST-014.2

SHEET: 2 OF 2

SCALE: N.T.S.

ENGINEERING DEPARTMENT

DATE APPROVED: 04/2016

DRAWN BY: RAS

FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)

SCALE: N.T.S.

ENGINEERING DEPARTMENT

STREET DETAILS

(2 OF 5)

CREEKSIDE FARMS
UNIT 3

REVISION DATE
11/04/2019

REVISION DESCRIPTION
POST PERMIT REVISION 1

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:

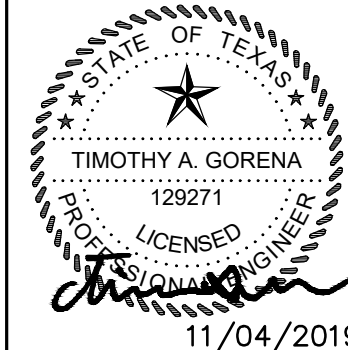
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SHEET

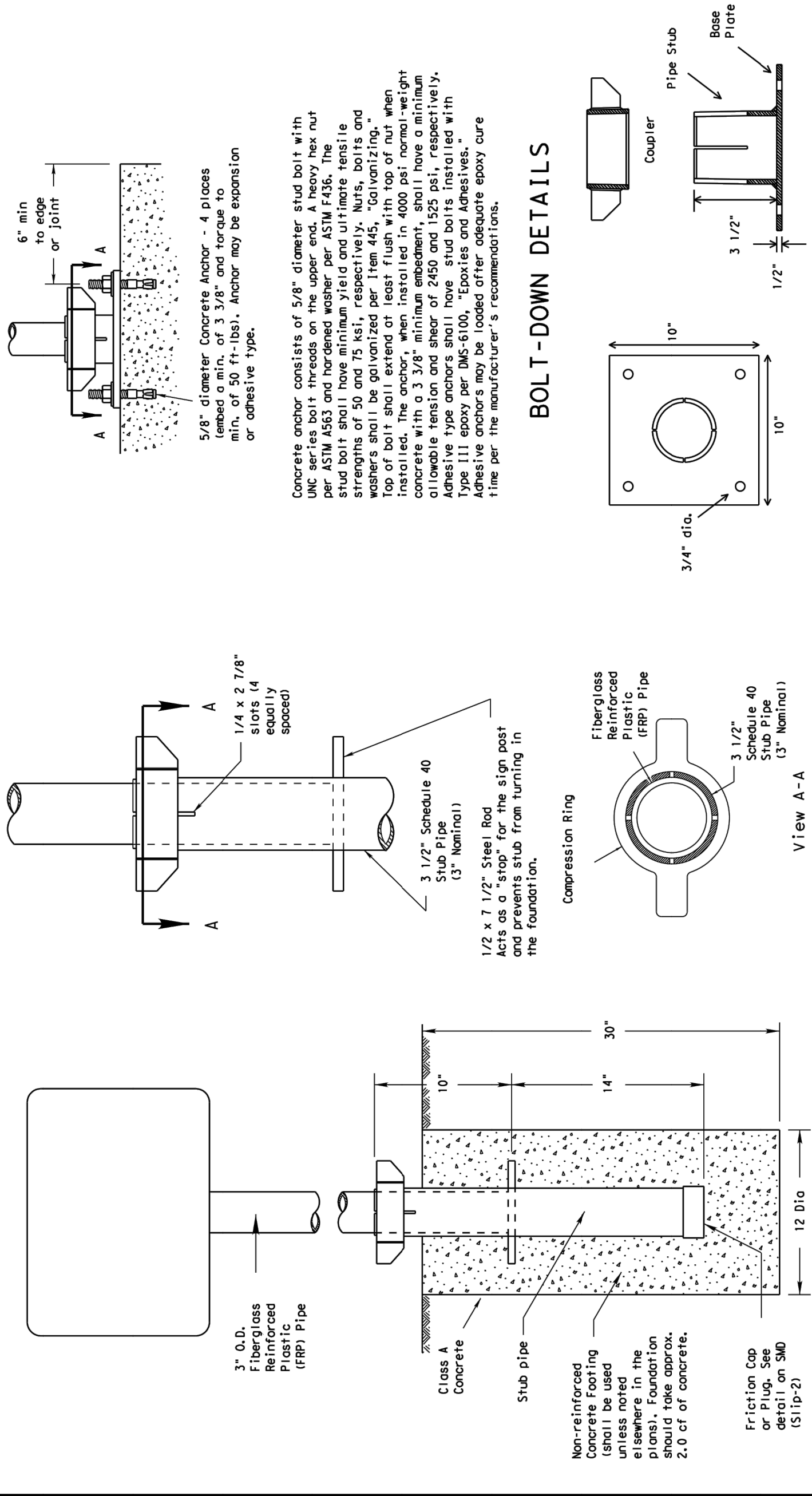
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410 N. SEGUN AVENUE
NEW BRAUNFELS, TX 78130
HMTNB.COM
PIG30625-8555 • F(830)825-8556
T(830)825-8555 • F(830)825-8556
T(830)825-8555 • F(830)825-8556
T(830)825-8555 • F(830)825-8556

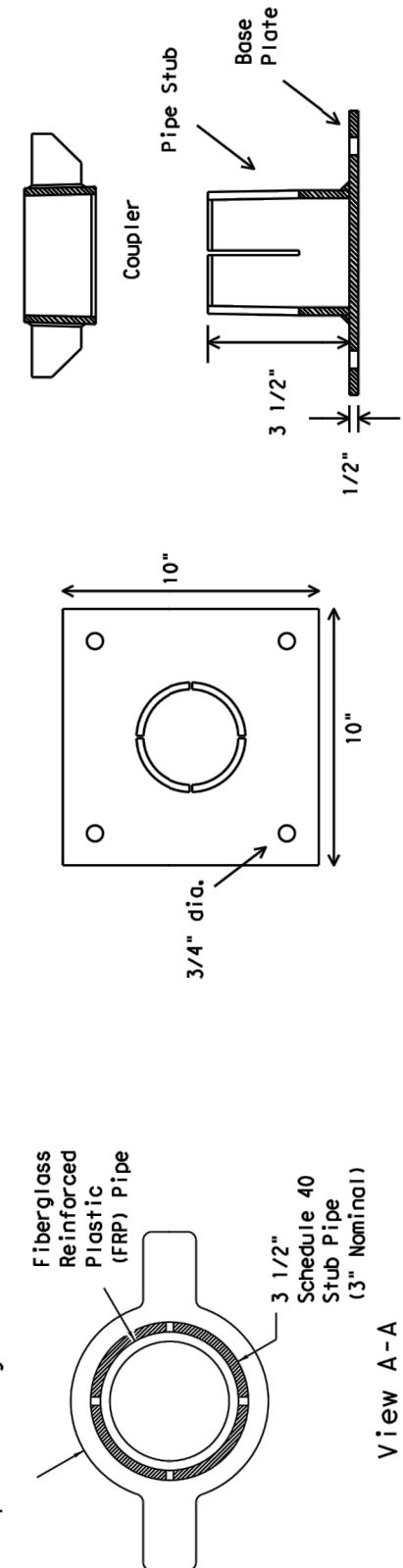
HMT
ENGINEERING & SURVEYING



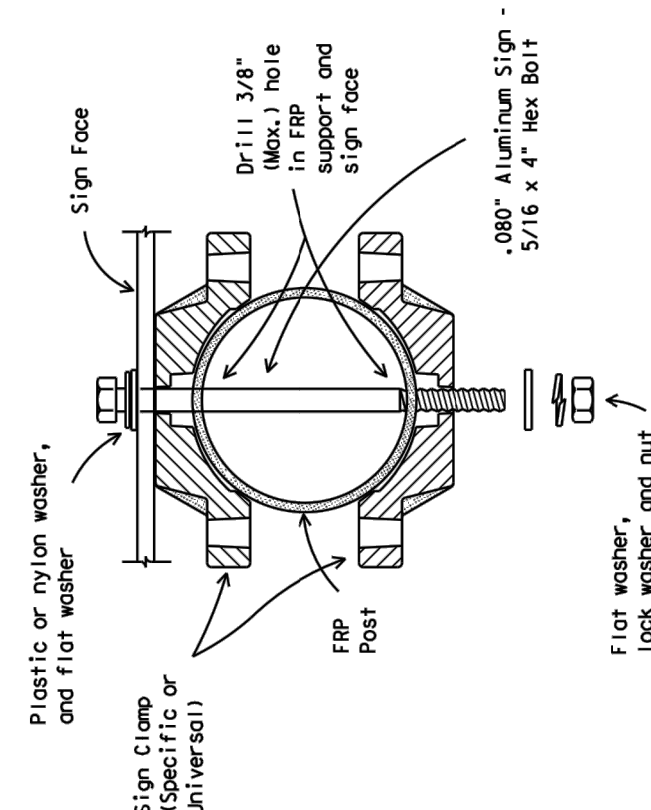
Universal Anchor System
with Fiberglass Reinforced Plastic (FRP) Post



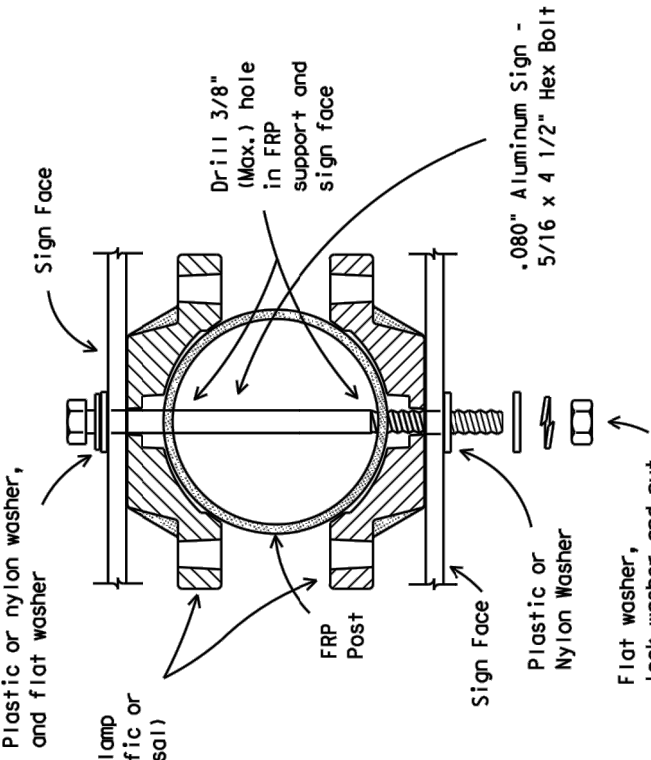
BOLT-DOWN DETAILS



Typical Sign Mounting Detail
for FRP Support with Single Sign



Typical Sign Mounting Detail
for FRP Support with Back-to-Back Signs



GENERAL NOTES:

1. FRP sign supports for a single-type sign support may be used for signs up to 16 sq. ft. and for a double-type sign support may be used for signs up to and including 32 sq. ft. See the Traffic Operations Division website for detailed drawings of sign details.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign details.

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification MS-4410 and will be furnished in a yellow or gray color as specified.
2. Thickness of FRP sign support is 0.125" ± 0.031", ± 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division.

Prequalification procedures are obtained by writing:

Traffic Operations Division
125 East 11th Street
Austin, Texas 78701-2483

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES

1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum of 18". The hole shall be 12" in diameter. If the hole is not 12" in diameter, the hole shall be enlarged to 12" in diameter. If the hole is not 12" in diameter, the hole shall be enlarged to 12" in diameter. If the hole is not 12" in diameter, the hole shall be enlarged to 12" in diameter.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be used for the foundation hole. The concrete shall be Class A.
3. Insert base post in foundation hole to depth shown and fill hole with concrete. The concrete shall be Class A.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set for a minimum of 4 days, unless otherwise directed by Engineer.
5. Attach sign post to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the level with top of base post. The coupler is firmly seated. Top of coupler should be level with top of base post. In most instances, the coupler is firmly seated.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post. In most instances, the coupler is firmly seated.
8. Check sign to ensure there is no twist. If loose, increase the tightening of the coupler.

BOLT-DOWN SIGN SUPPORT

1. Position base plate with coupler on existing concrete.
2. Drill holes into concrete and insert the 5/8" diameter bolts with wedge anchors, and tighten nuts.
3. Position sign post on base plate.
4. Insert bottom of sign post into pipe stub.
5. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post. In most instances, the coupler is firmly seated.
6. Check sign to ensure there is no twist. If loose, increase the tightening of the coupler.

SIGN MOUNTING DETAILS
SMALL ROADSIDE SIGNS
UNIVERSAL ANCHOR SYSTEM
WITH FRP POST

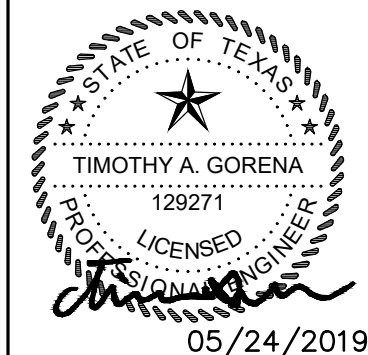
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9-08	REVISIONS	DATE	BY	CHK'D	DATE	BY
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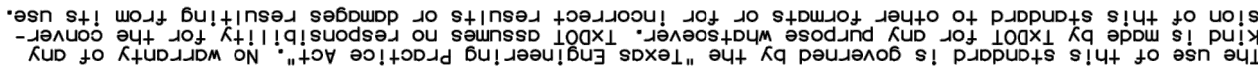
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NO.	REVISION DESCRIPTION	REVISION DATE

STREET DETAILS
(4 OF 5)
CREEKSIDE FARMS
UNIT 3

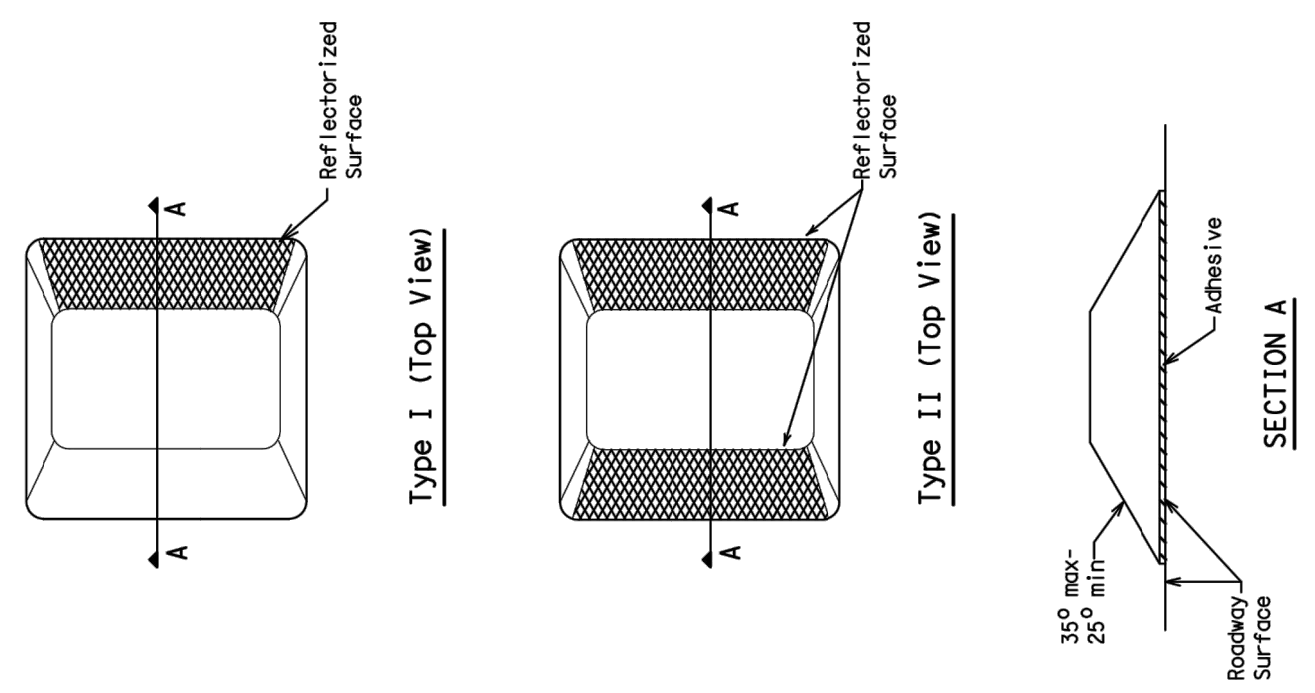
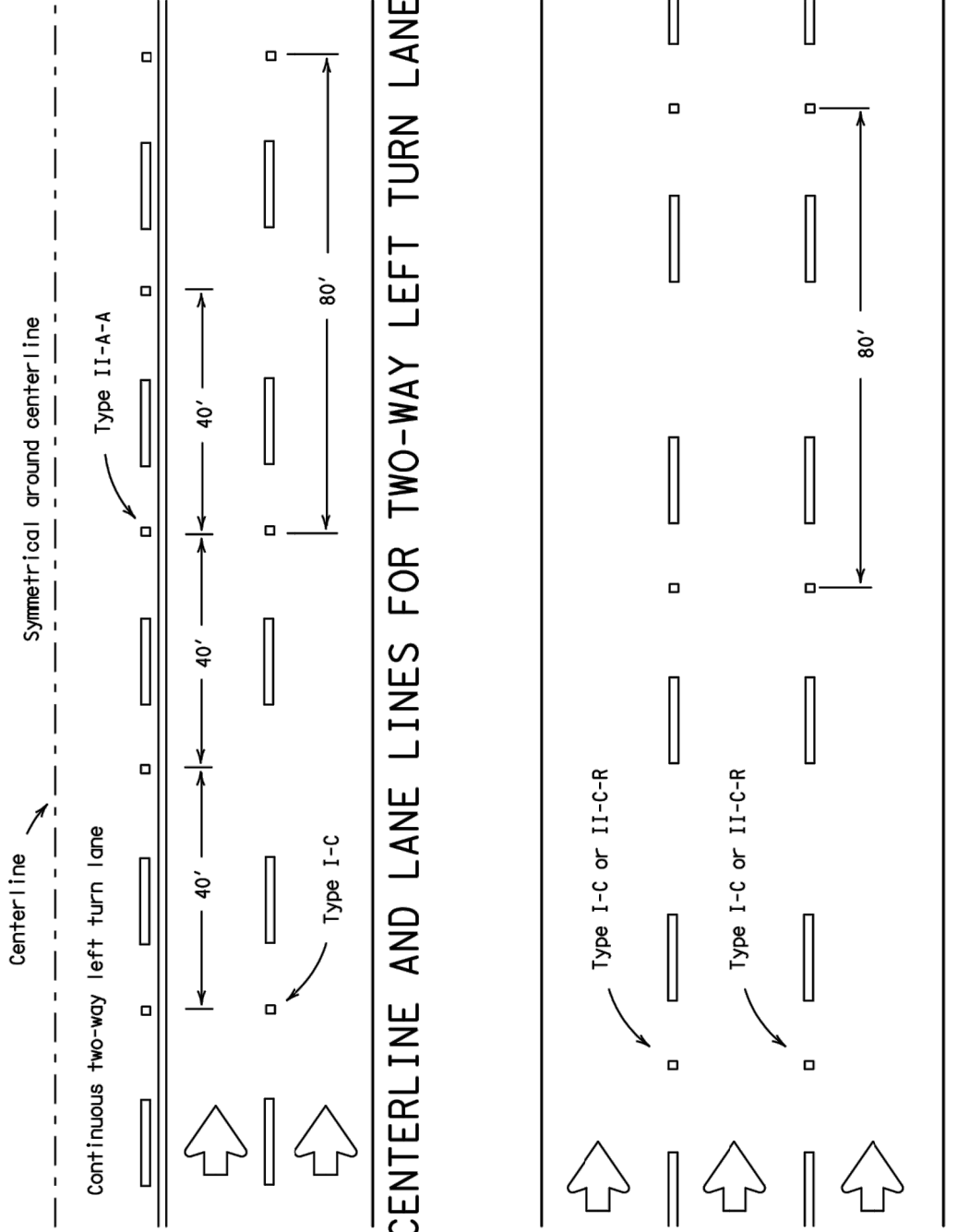
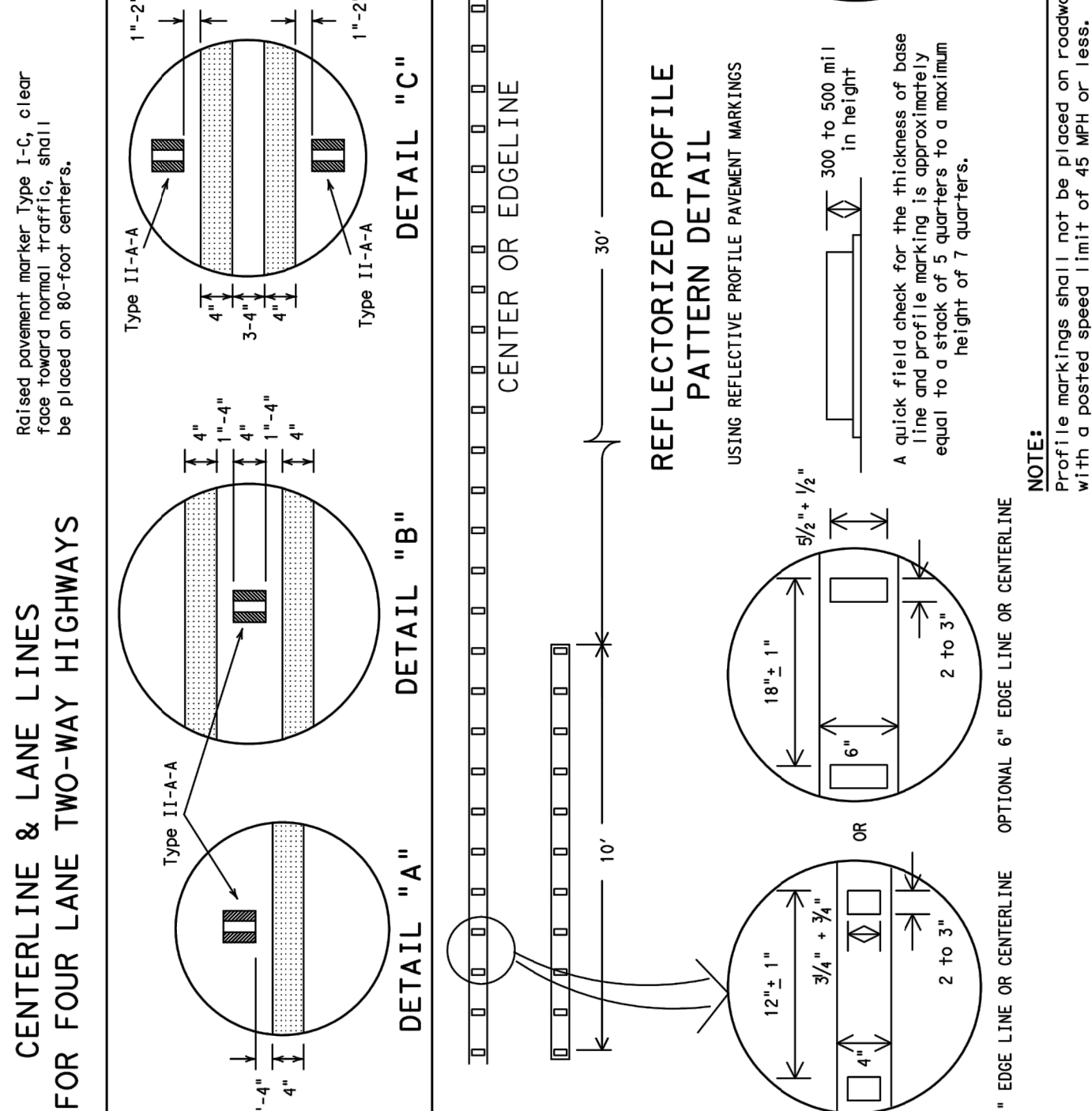
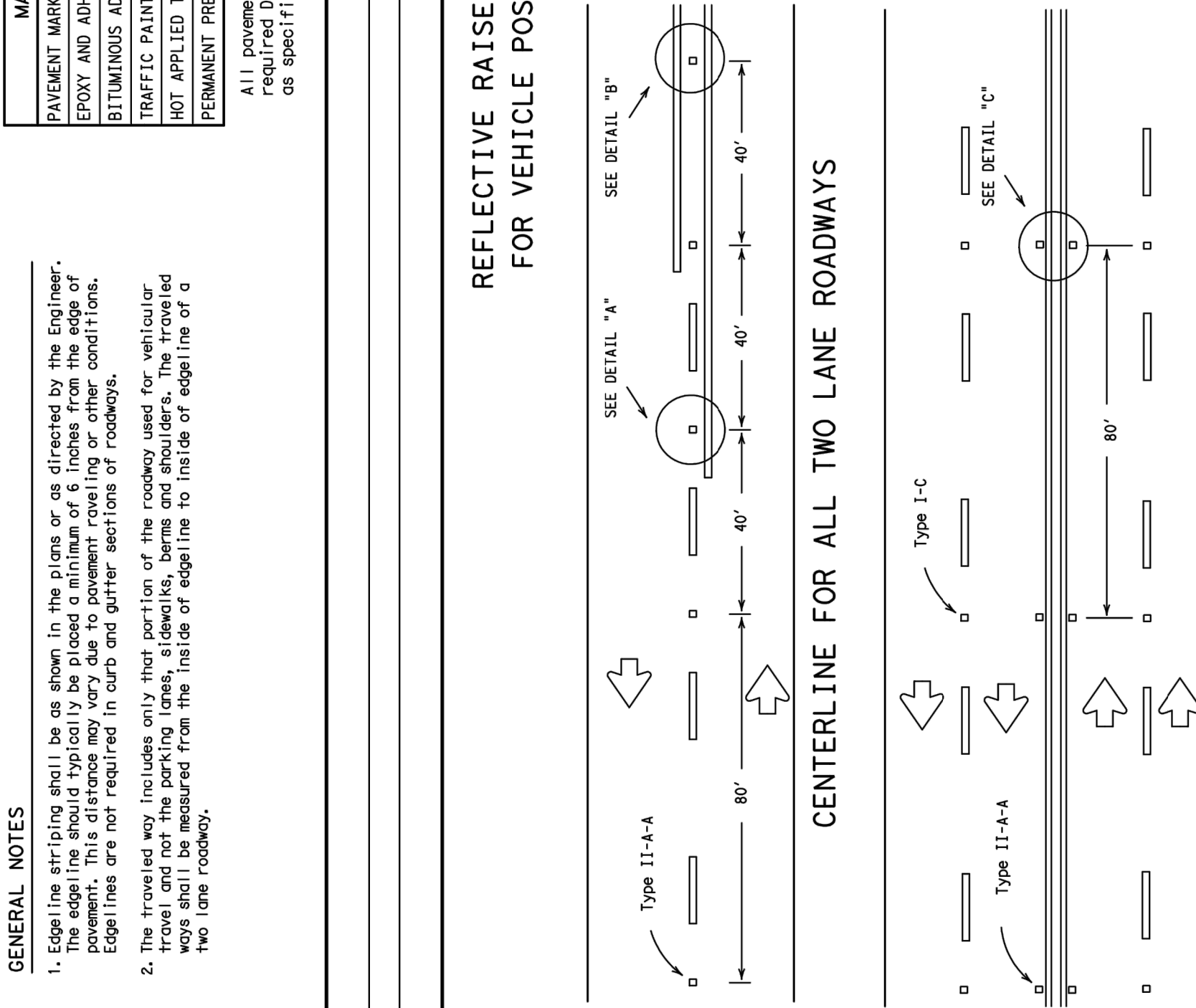
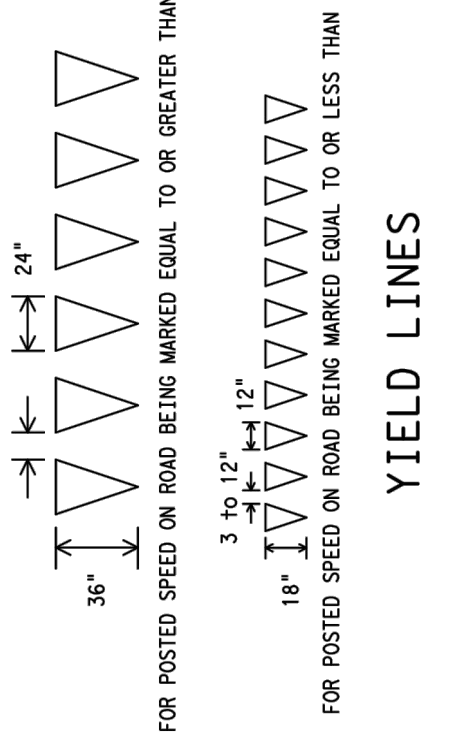


410 N. SEGUN AVE.
NEW BRAUNFELS, TX 78130
HMT@HMT.COM
P(830)625-8555-F(830)625-8556
TBPE FRM F-10961
TBPLS FRM 10153600



MATERIAL SPECIFICATIONS
PAVEMENT MARKERS (REFLECTORIZED)
EPOXY AND ADHESIVES
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS
TRAFFIC PAINT
HOT APPLIED THERMOPLASTIC
PERMANENT PREFABRICATED PAVEMENT MARKINGS

TYPICAL STANDARD PAVEMENT MARKINGS	PM(1) - 12	
	8-95 2-12 8-00 8-00 3-03	
⑥ TxDOT November 1978 REVISIONS	NEW TPOOT COUNTY JOB DIST	EX. TPOOT COUNTY JOB DIST
SHEET NO.	COUNTY	SHEET NO.



MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

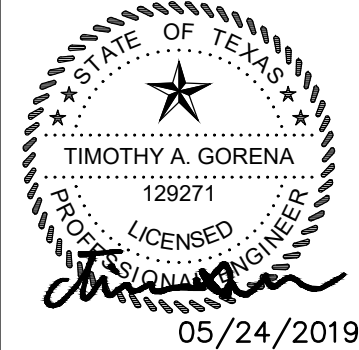
⑥ TAXI April 1977		REVIEWS		CHL TAXI	CHL TAXI	CHL TAXI	CHL TAXI
CONT	SECT	JOB	HIGHWAY				
4-92	2-10						
5-00	2-12						
8-00							
2-08							
2-08							

Texas Department of Transportation
Traffic Operations Division

POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS

PM(2)-12

STREET DETAILS
(5 OF 5)
CREEKSIDE FARMS
UNIT 3

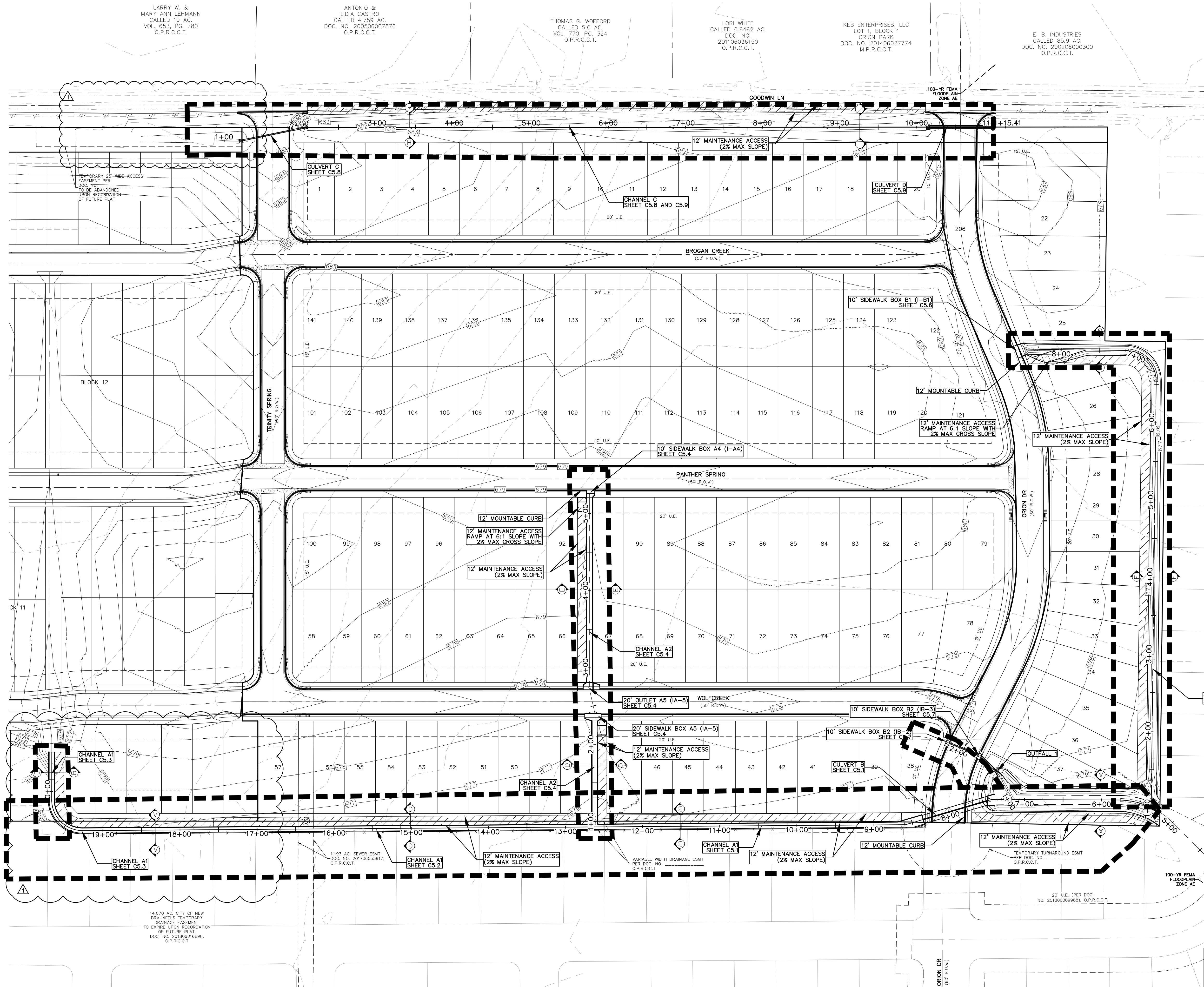


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TBPE FIRM F-10961
TBPLS FIRM 10153600



HMT
ENGINEERING & SURVEYING

Drawing Name: N:_projects\164 - mossack farms unit 3\CD\164.012-STORM.dwg User: matia Nov 05, 2019 - 2:29pm



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NOTES:

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CHANNEL MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

- A. SILT SHALL BE REMOVED AND THE CHANNELS RETURNED TO ORIGINAL LINES AND GRADES WHEN STANDING WATER CONDITIONS OCCUR.
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- D. CHANNELS SHALL BE MOWED ANNUALLY BETWEEN THE MONTHS OF JUNE AND SEPTEMBER.
- E. EROSION ALONG PILOT CHANNEL SHALL BE MAINTAINED AS NEEDED.

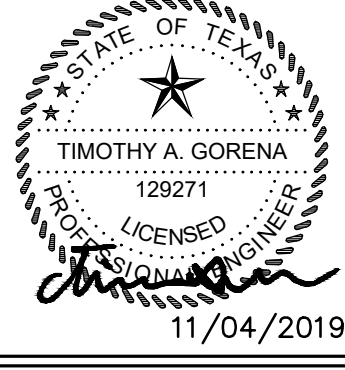
OVERALL
STORM PLAN
CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE
1	POST PERMIT	REVISION 1	11/04/2019

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC

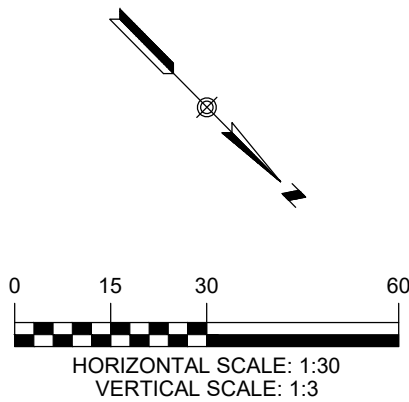
HMT PROJECT NO.: 164.012





SHEET
C5.0



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T(830)625-8557 • F(830)625-8558
T(830)625-8559 • F(830)625-8560



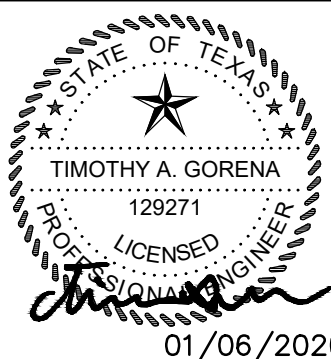
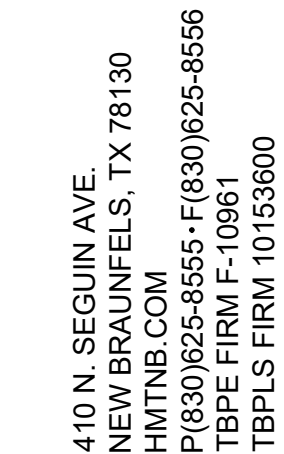
- | <u>LEGEND</u> | |
|---|---------------------------|
|  | EXISTING CONTOURS |
|  | PROPOSED CONTOURS |
| B.L. | BUILDING SETBACK LINE |
| U.E. | UTILITY EASEMENT |
| D.E. | DRAINAGE EASEMENT |
| S.B.C. | SINGLE BOX CULVERT |
|  | PROPOSED STORM DRAIN LINE |
|  | UTILITY CROSSING |
| TOW | TOP OF WALL |
| FL | FLOWLINE |

NOTES:

1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.

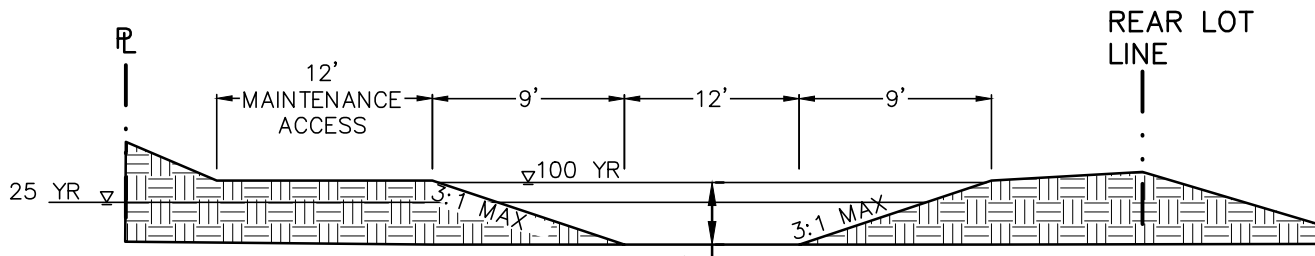
CHANNEL MAINTENANCE AND EQUIPMENT ACCESS
REQUIREMENTS:

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- E. EROSION ALONG PILOT CHANNEL SHALL BE MAINTAINED AS NEEDED.



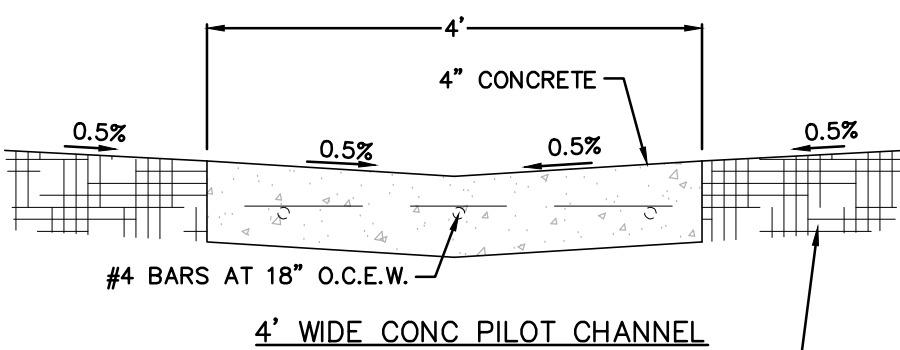
CHANNEL A1
(1 OF 3)

CREEKSIDE FARMS
UNIT 3



CHANNEL "A" ULTIMATE CALCULATIONS

H= 3.20FT	H= 3.20FT	H= 3.20FT
Q ₂ = 71.98CFS	Q ₂₅ = 141.61CFS	Q _∞ = 209.43CFS
n= 0.035	n= 0.035	n= 0.035
S= 0.20%	S= 0.20%	S= 0.20%
Dn= 1.80FT	Dn= 2.57FT	Dn= 3.13FT
Vn= 2.45FPS	Vn= 2.95FPS	Vn= 3.27FPS



CONTRACTOR TO REVEGETATE 4' TO
EITHER SIDE OF PILOT CHANNEL

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NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: MAY 2019

DRAWN BY: MA

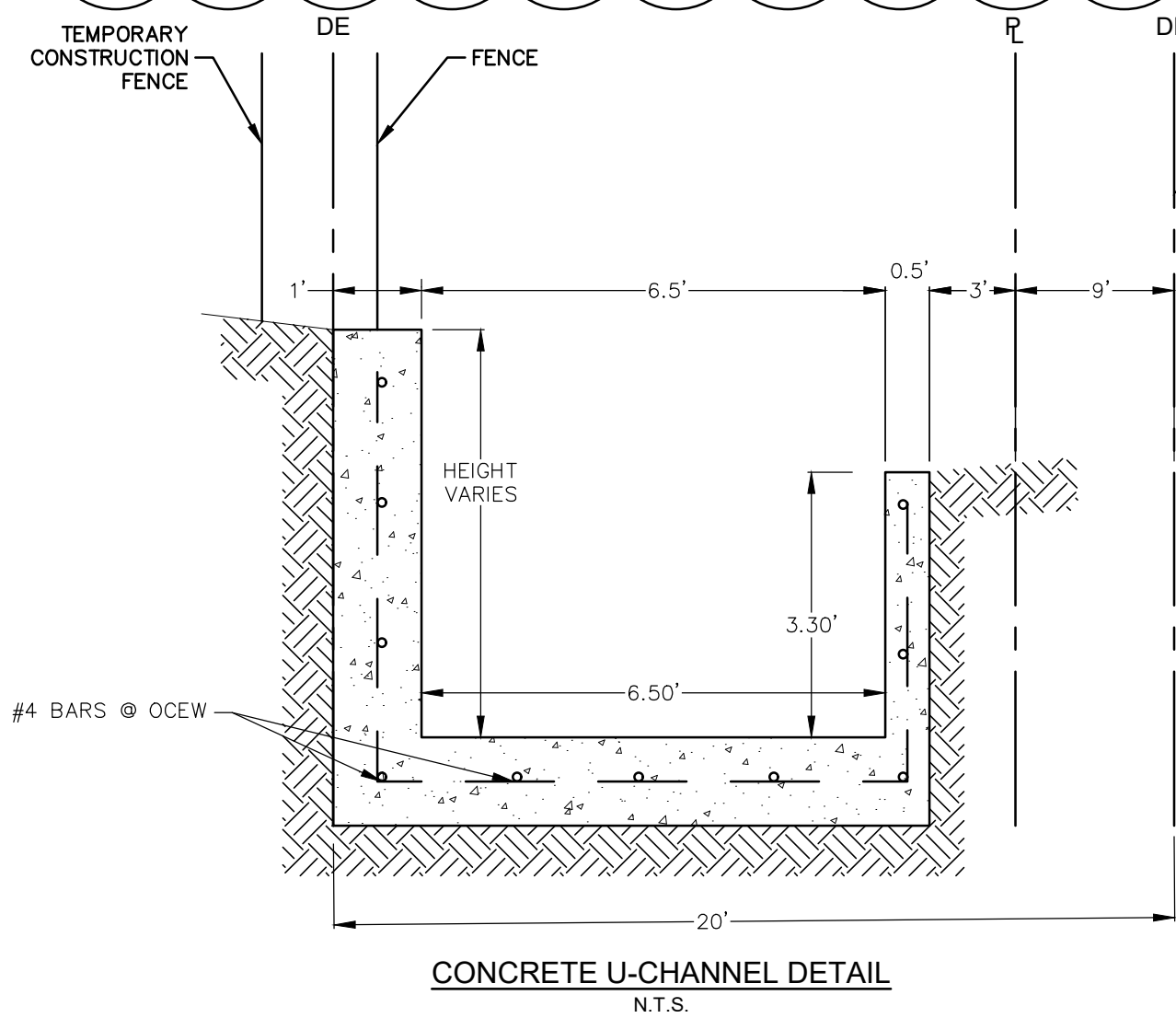
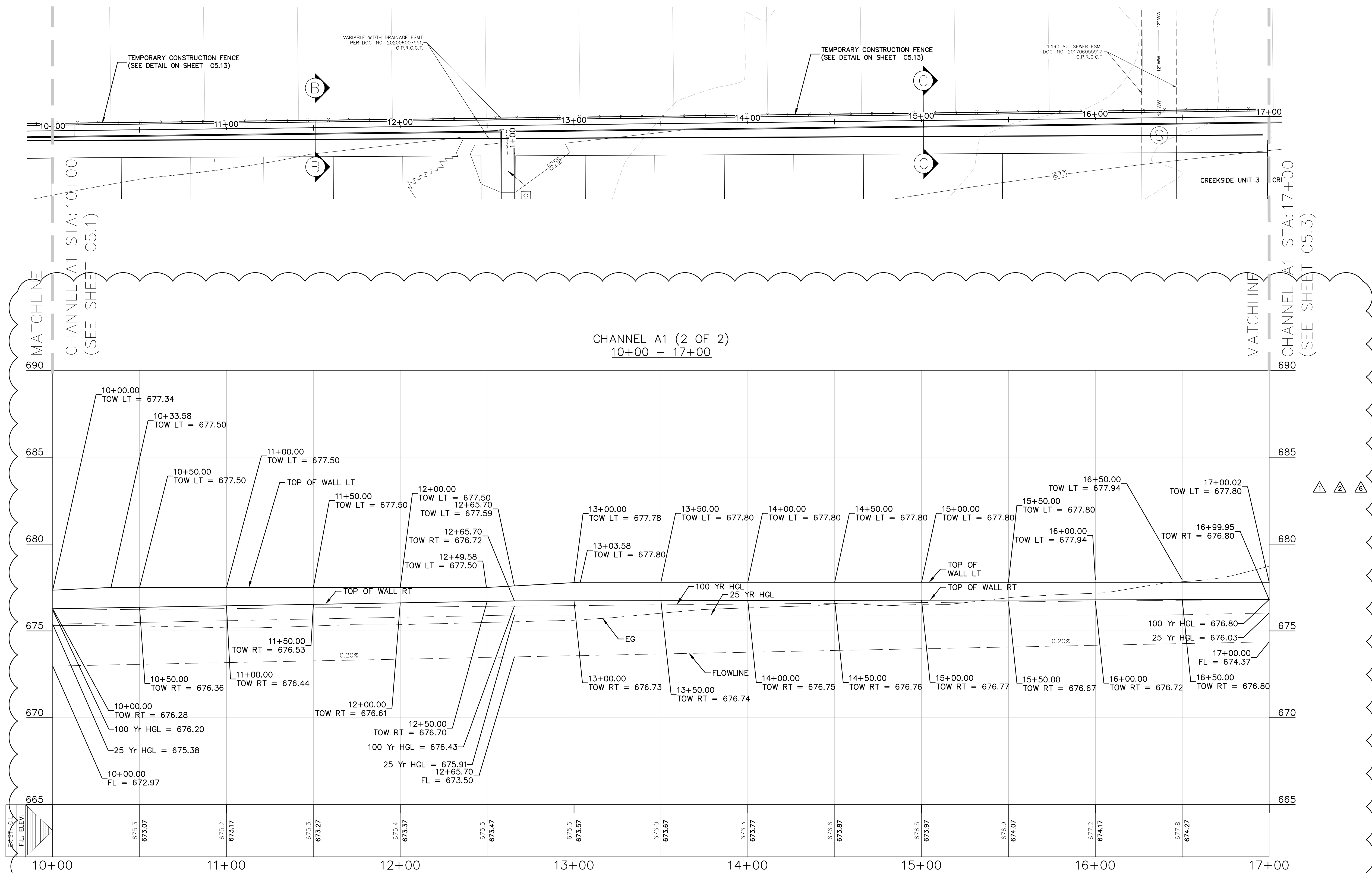
DESIGNED BY: TG

REVIEWED BY: CO

164.012

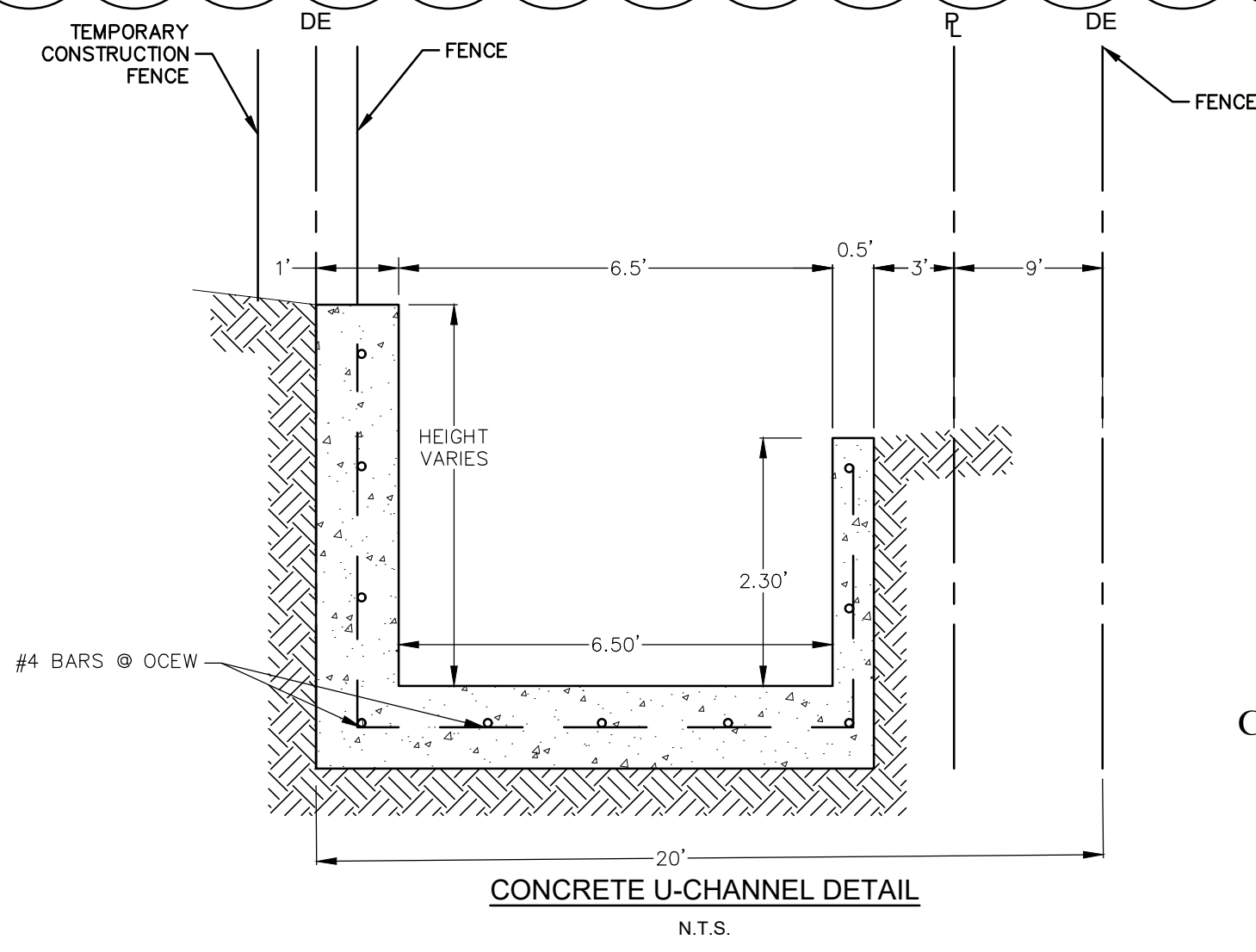
SHEET

C5.1



CHANNEL SECTION "B" CALCULATIONS

H= 3.30FT	H= 3.30FT	H= 3.30FT
Q _s = 50.59 CFS	Q _s = 99.57 CFS	Q _s = 147.23 CFS
BW= 6.5FT	BW= 6.5FT	BW= 6.5FT
n= 0.013	n= 0.013	n= 0.013
S= 0.20%	S= 0.20%	S= 0.20%
Vn= 1.50FT	Vn= 2.41FT	Vn= 3.22FT
Vn= 5.20 FPS	Vn= 6.56 FPS	Vn= 7.04 FPS



CHANNEL SECTION "C" CALCULATIONS

H= 2.30FT	H= 2.30FT	H= 2.30FT
Q _s = 29.94 CFS	Q _s = 58.92 CFS	Q _s = 87.14 CFS
BW= 6.5FT	BW= 6.5FT	BW= 6.5FT
n= 0.013	n= 0.013	n= 0.013
S= 0.20%	S= 0.20%	S= 0.20%
Vn= 1.05FT	Vn= 1.68FT	Vn= 2.19FT
Vn= 4.38 FPS	Vn= 5.45 FPS	Vn= 6.12 FPS

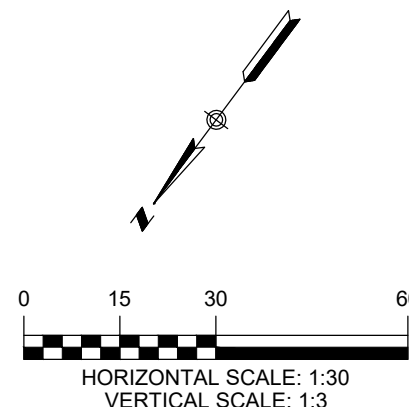
LEGEND	
---	EXISTING CONTOURS
- - -	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
S.B.C.	SINGLE BOX CULVERT
---	PROPOSED STORM DRAIN LINE
⊗	UTILITY CROSSING
TOW	TOP OF WALL
FL	FLOWLINE

NOTES:

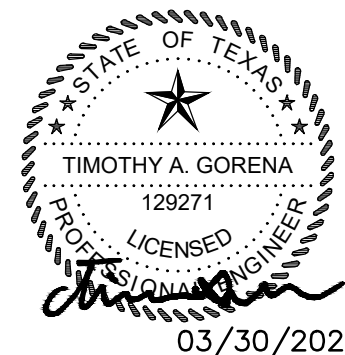
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TBE FIRM F-10153600



CHANNEL A1
(2 OF 3)
CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020
3	IRRIGATION METER AND TRINITY SPRINGS REV	01/24/2020
4	FIRE HYDRANT REVISION	02/27/2020
5	WASTEWATER LINE REVISION	03/13/2020
6	CHANNEL A1 LEFT AND RIGHT TOP OF WALL STATION AND ELEVATIONS	03/30/2020

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

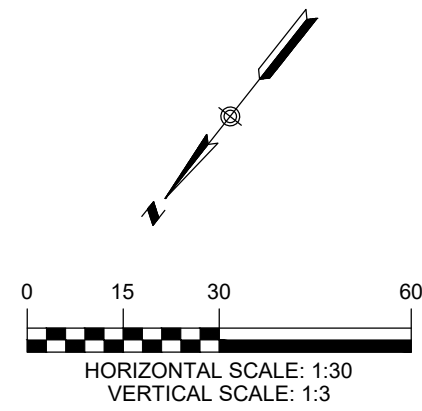
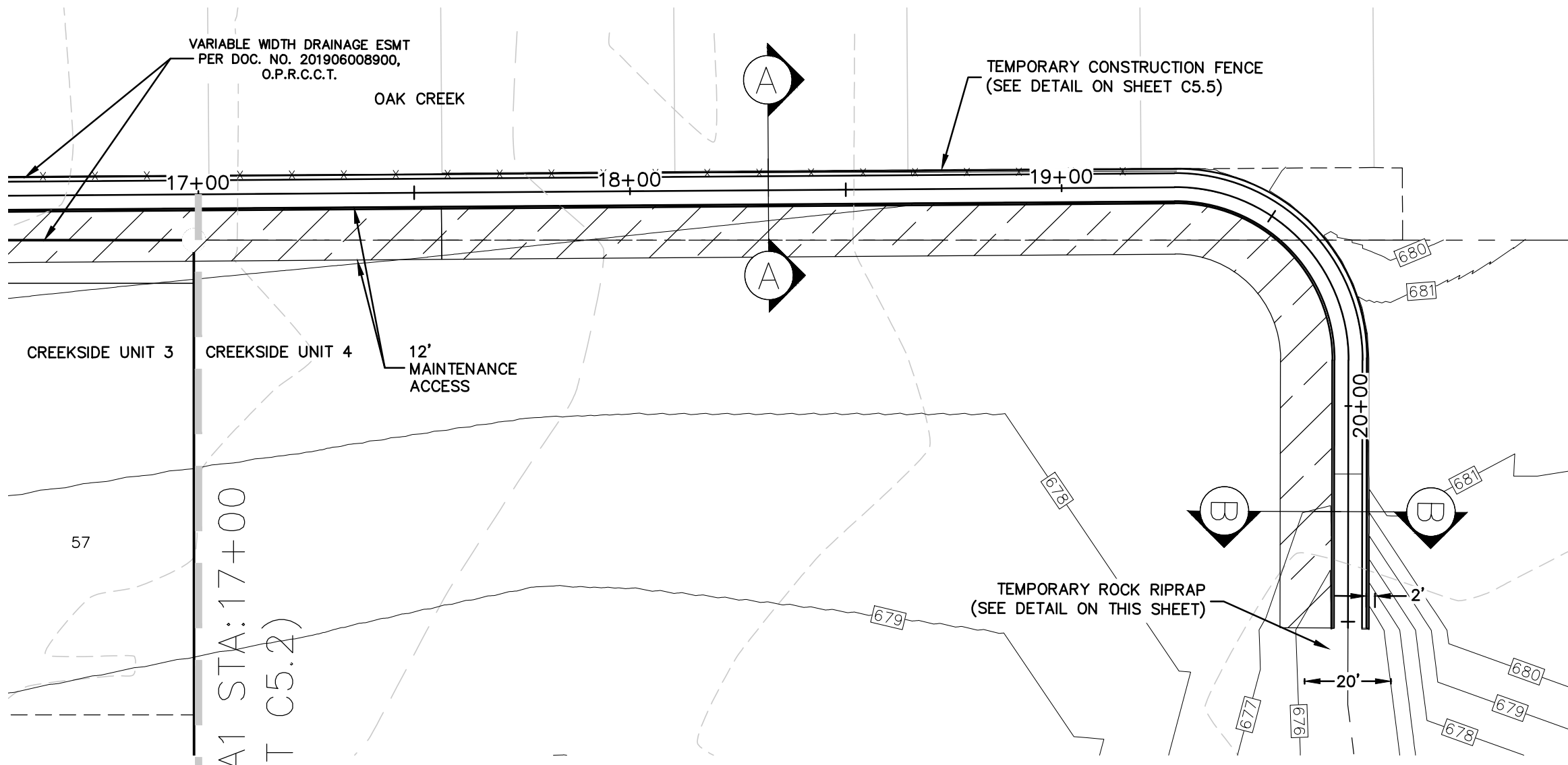
HMT PROJECT NO.:

164.012

SHEET

C5.2

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NOTES:

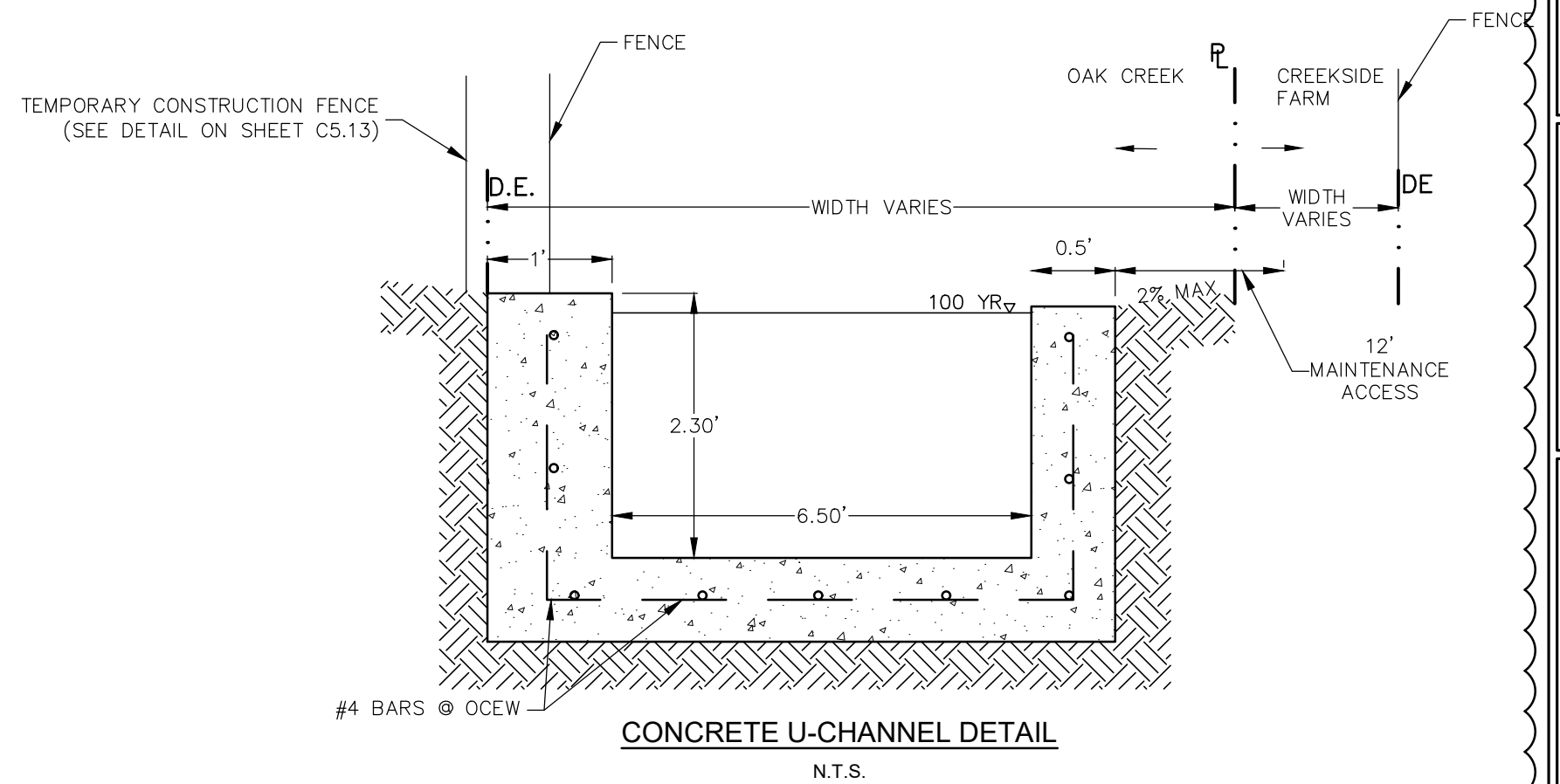
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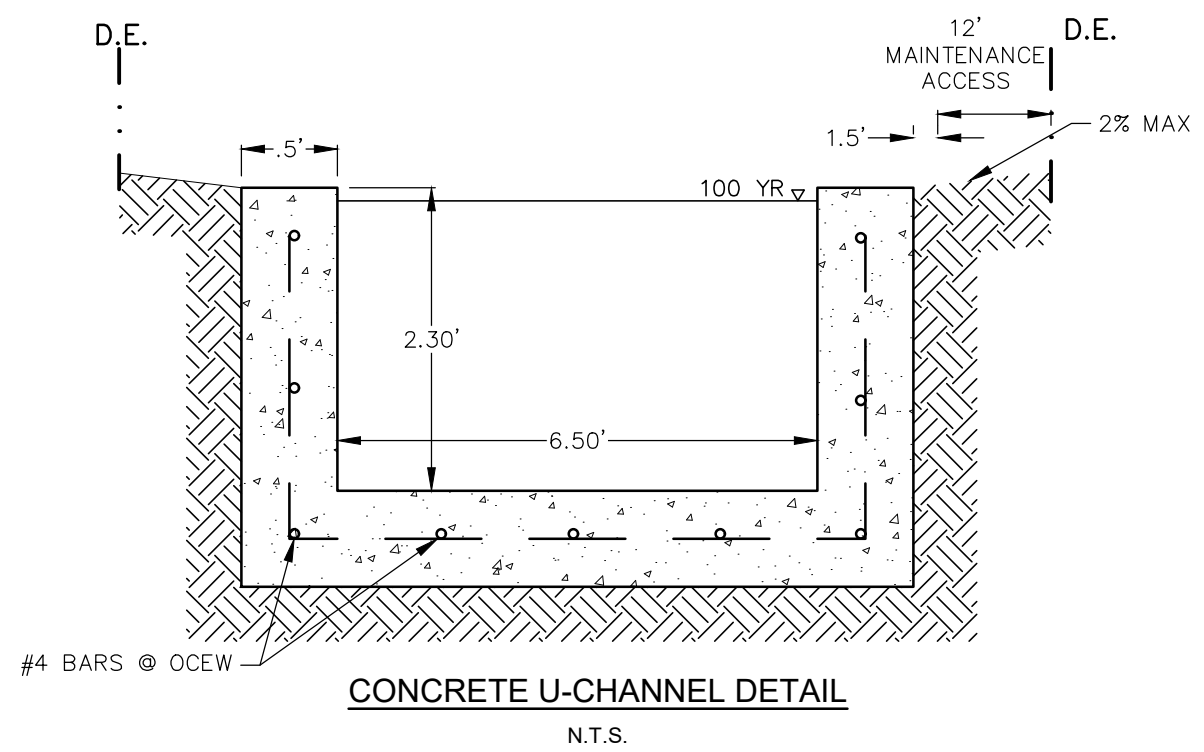
LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- S.B.C. SINGLE BOX CULVERT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- TOW TOP OF WALL
- FL FLOWLINE



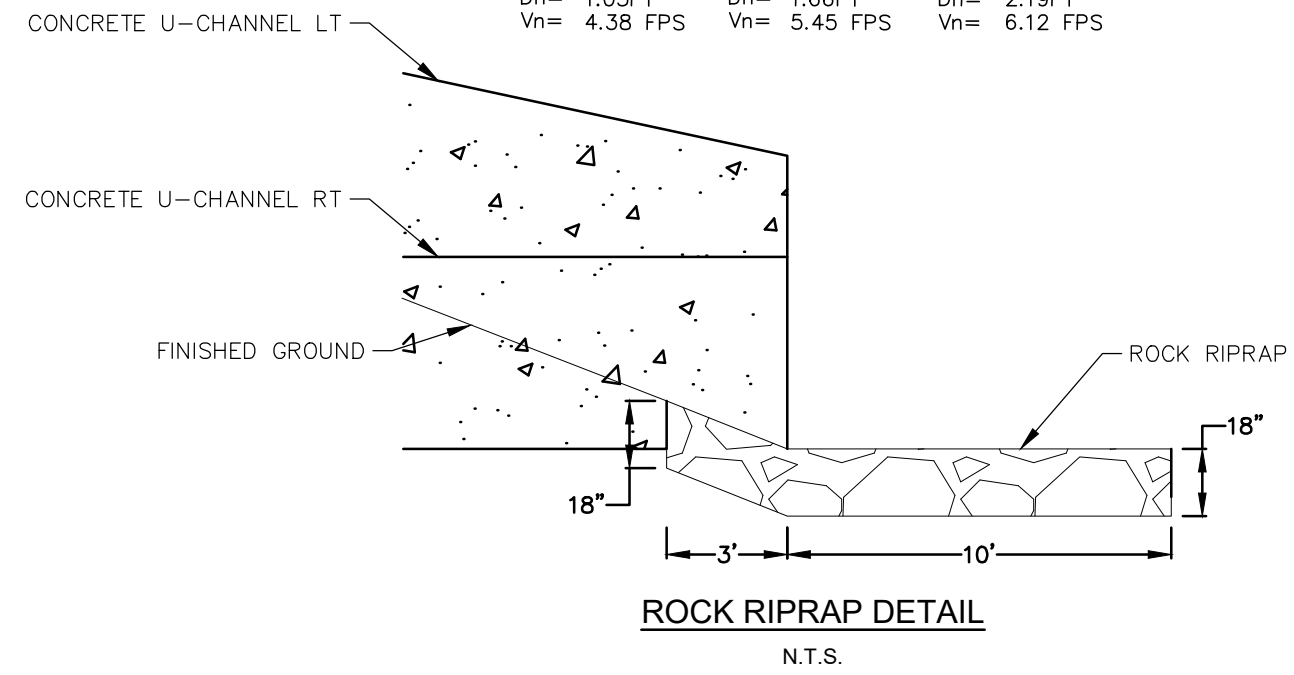
CHANNEL "A" CALCULATIONS

H= 2.30FT	H= 2.30FT	H= 2.30FT
Q _s = 29.94 CFS	Q _u = 58.92 CFS	Q _u = 87.14 CFS
BW= 6.5FT	BW= 6.5FT	BW= 6.5FT
n= 0.013	n= 0.013	n= 0.013
S= 0.20%	S= 0.20%	S= 0.20%
D _n = 1.05FT	D _n = 1.66FT	D _n = 2.19FT
V _n = 4.38 FPS	V _n = 5.45 FPS	V _n = 6.12 FPS



CHANNEL "B" CALCULATIONS

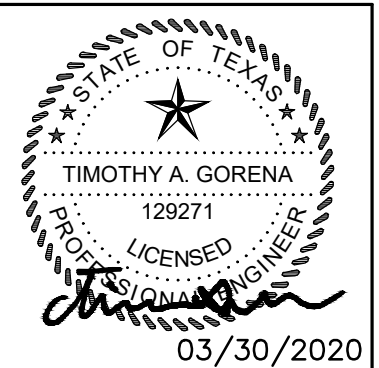
H= 2.30FT	H= 2.30FT	H= 2.30FT
Q _s = 29.94 CFS	Q _u = 58.92 CFS	Q _u = 87.14 CFS
BW= 6.50 FT	BW= 6.50 FT	BW= 6.50 FT
n= 0.013	n= 0.013	n= 0.013
S= 0.20%	S= 0.20%	S= 0.20%
D _n = 1.05FT	D _n = 1.66FT	D _n = 2.19FT
V _n = 4.38 FPS	V _n = 5.45 FPS	V _n = 6.12 FPS



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TBE FIRM F-10153600

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CHANNEL A1
(3 OF 3)
CREEKSIDE FARMS
UNIT 3

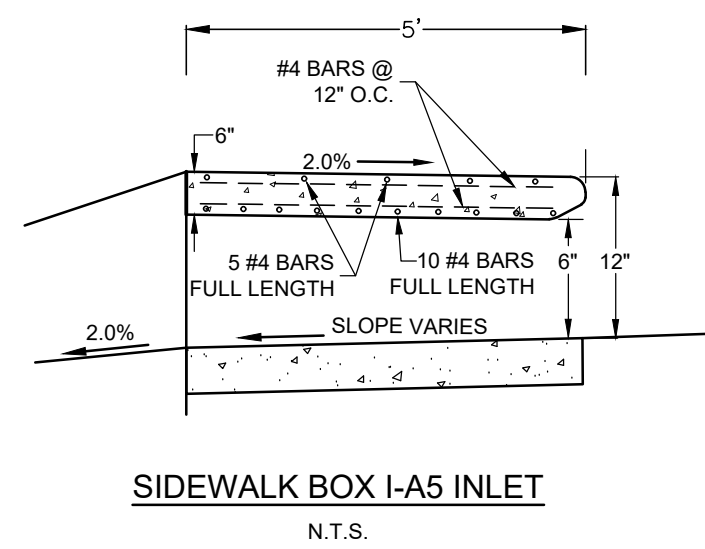
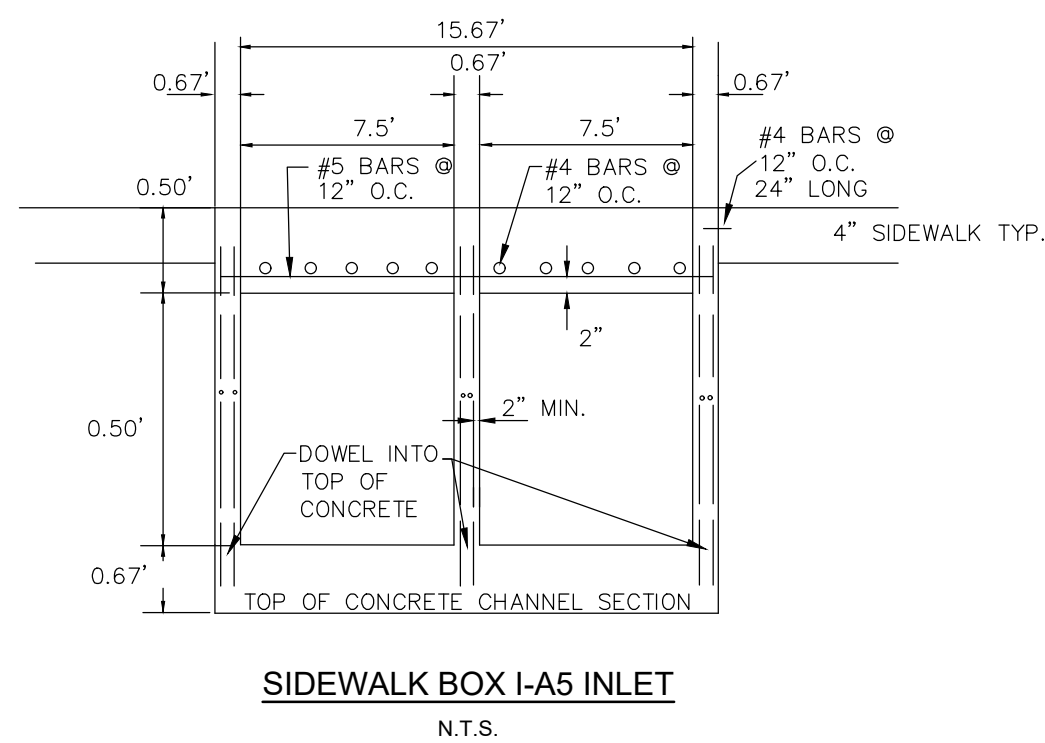
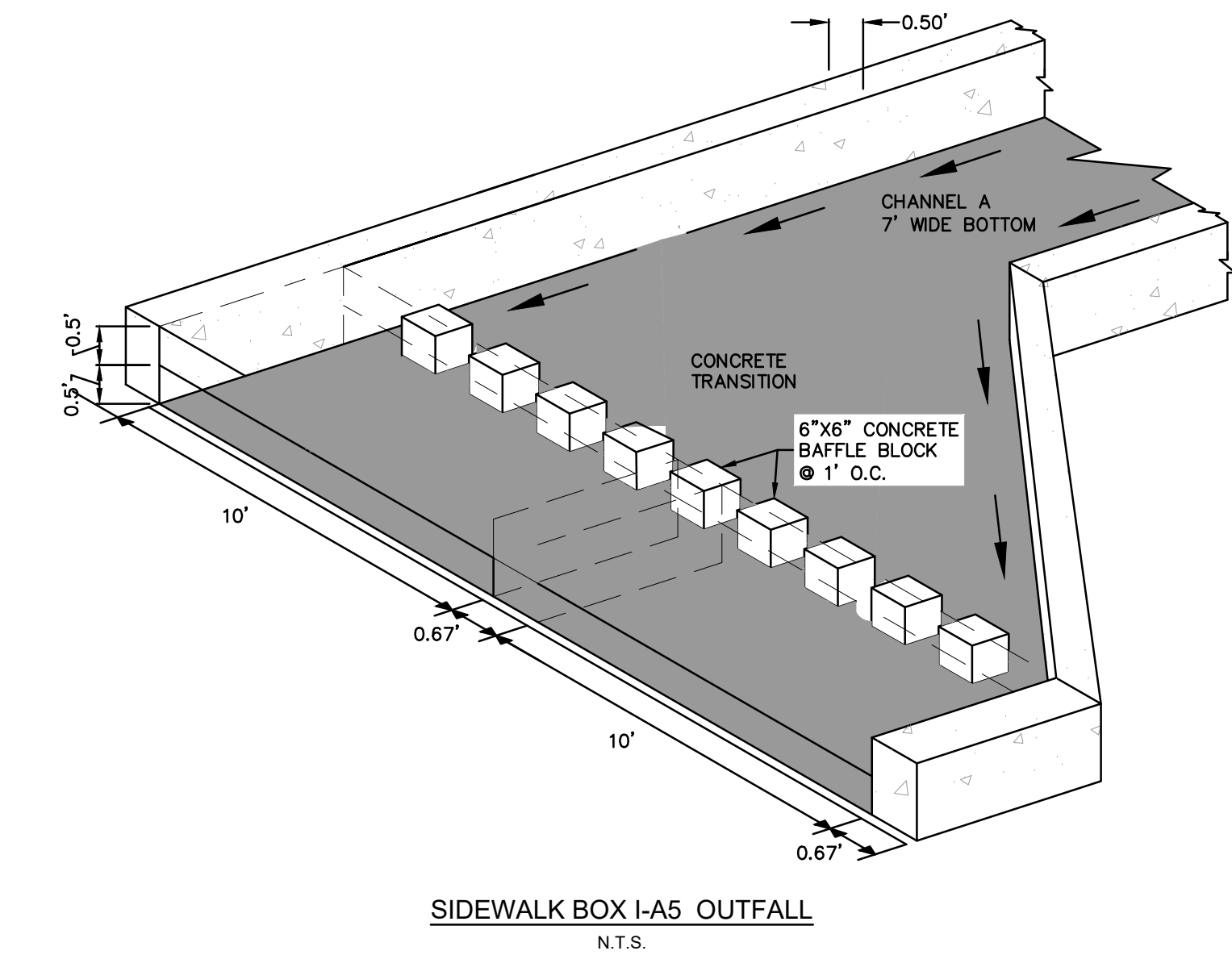
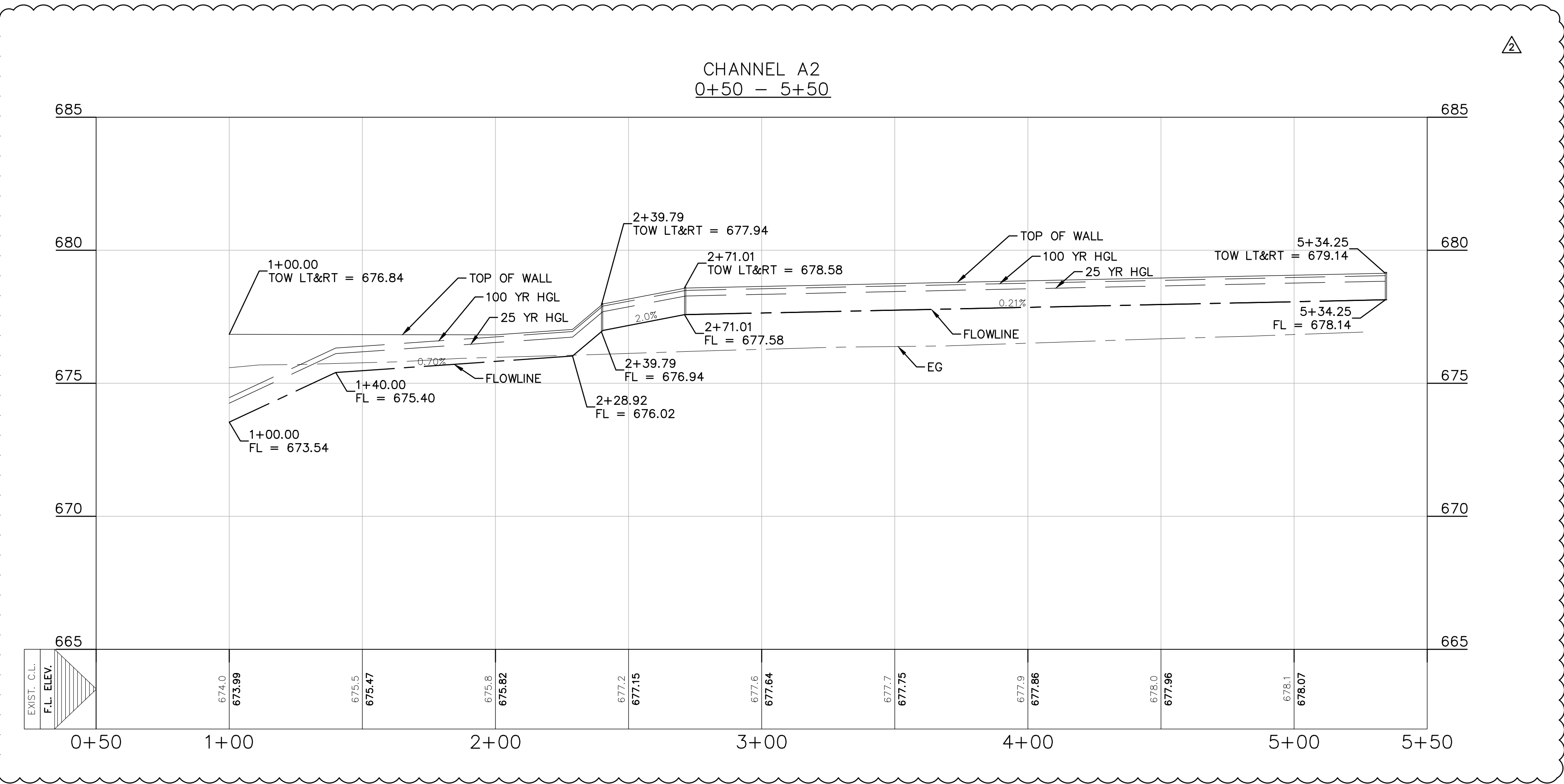
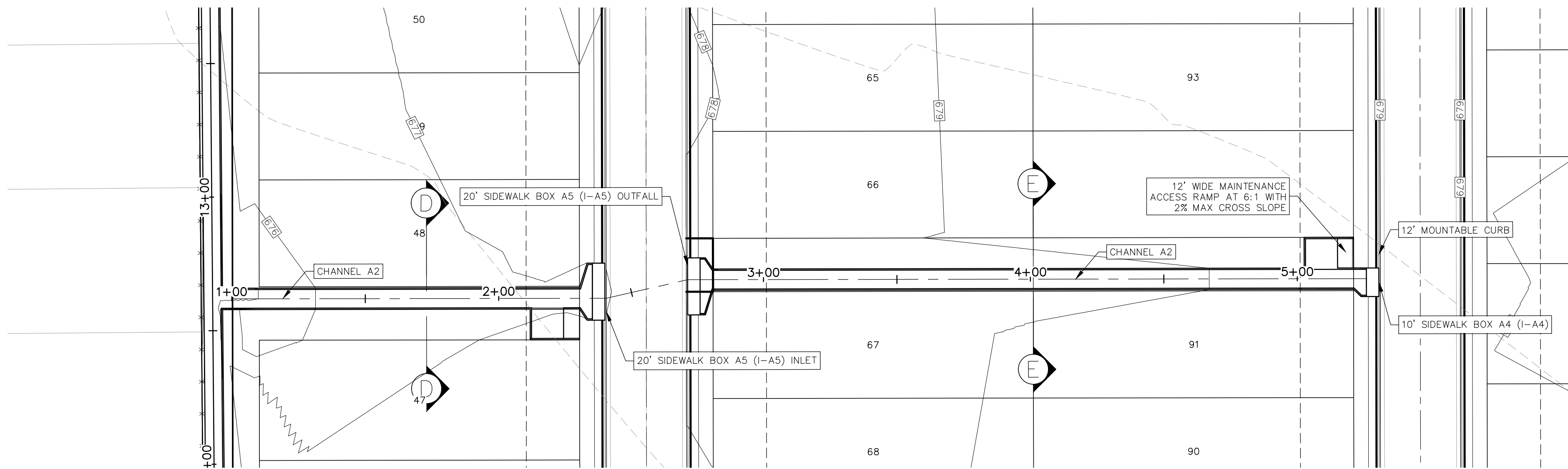
NO.	REVISION	DESCRIPTION	DATE
1	POST PERMIT	REVISION 1	11/04/2019
2	POST PERMIT	REVISION 2	01/06/2020
3	IRRIGATION METER	AND TRINITY SPRINGS REV	01/24/2020
4	FIRE HYDRANT	REVISION	02/27/2020
5	WASTEWATER LINE	REVISION	03/13/2020
6	CHANNEL A1 LEFT AND RIGHT TOP OF WALL STATION		03/30/2020

DATE: **MAY 2019**
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC

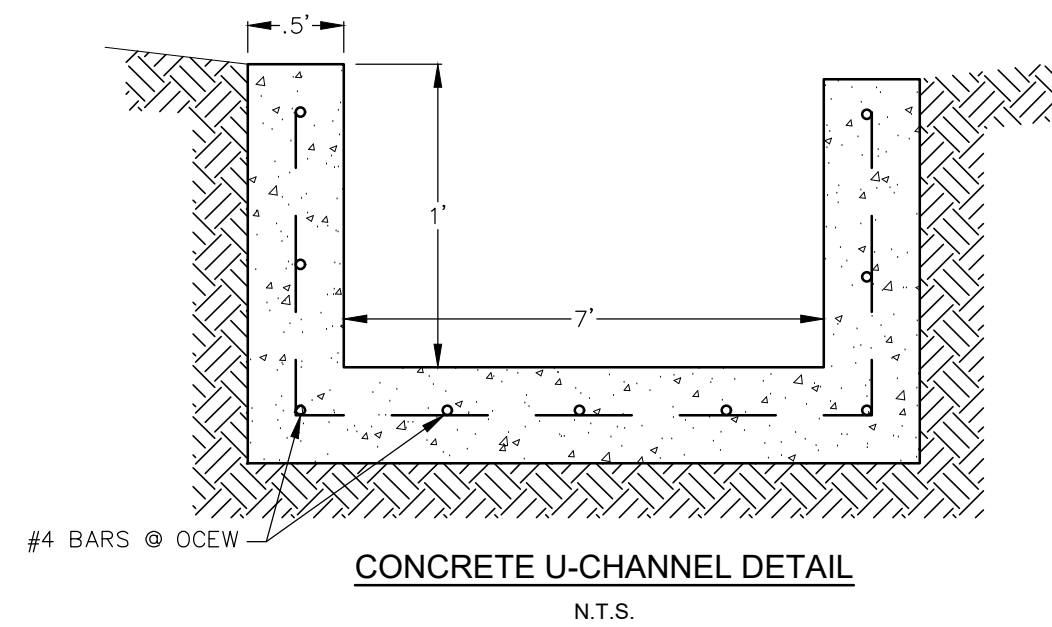
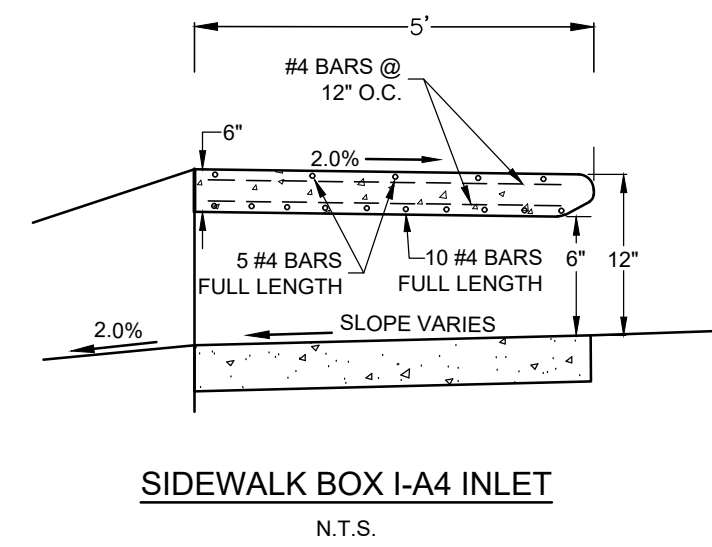
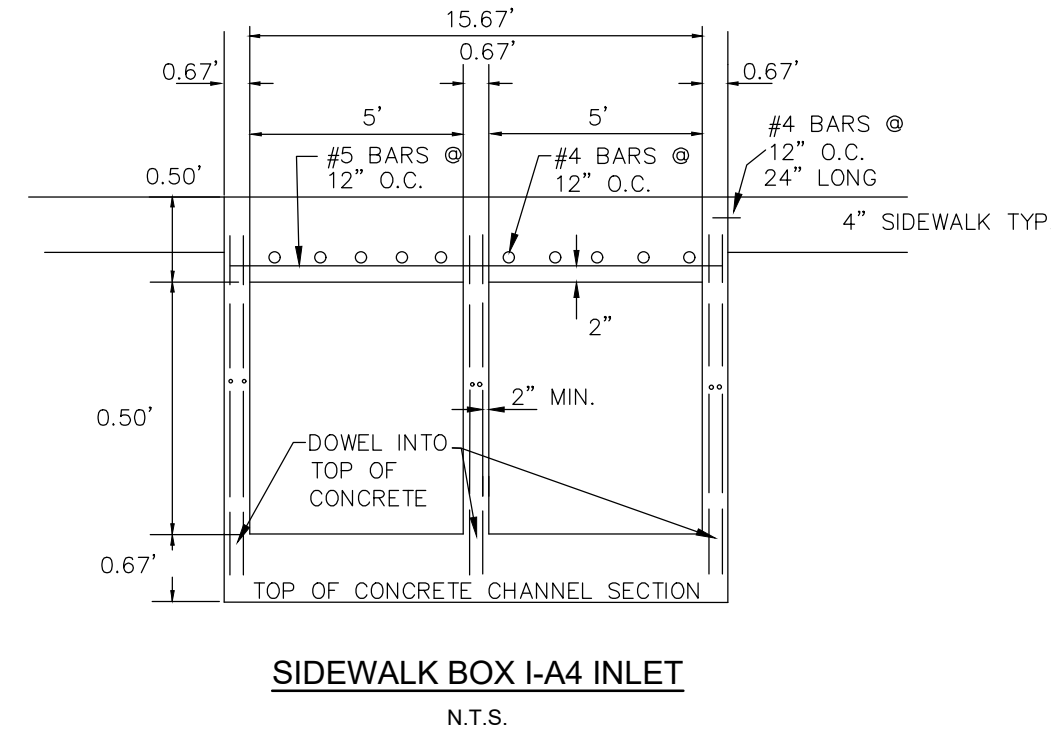
HMT PROJECT NO.:
164.012

SHEET
C5.3

Drawing Name: N:_projects\164 - mossack farms unit 3\CD\164-012-STORM.dwg Jan 06, 2020 - 3:03pm User: matia

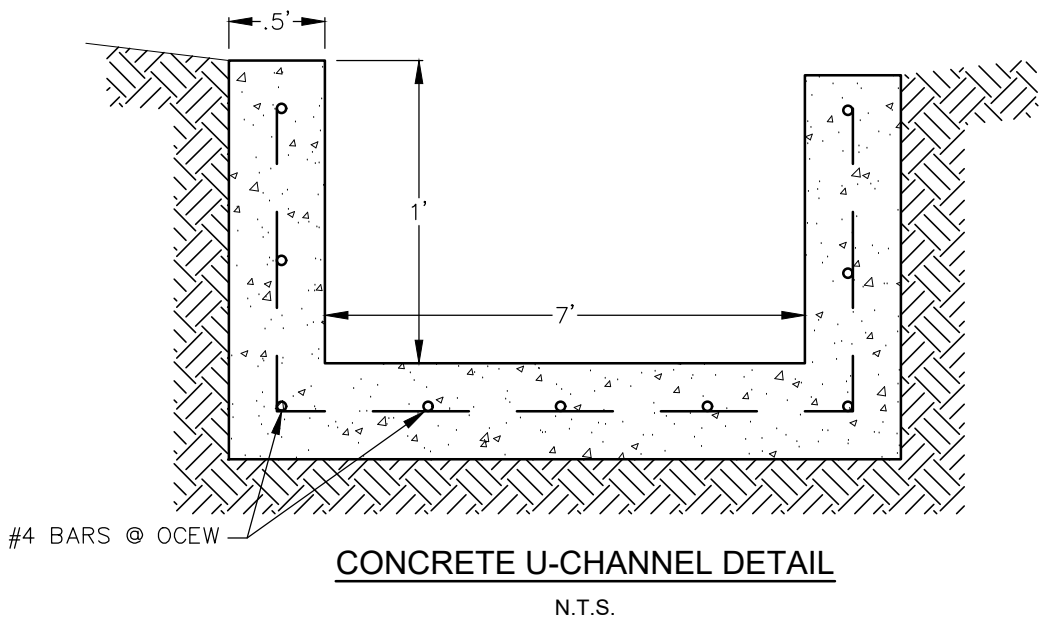


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CHANNEL "D" CALCULATIONS

H= 1FT MIN.	H= 1FT MIN.	H= 1FT MIN.
Q _u = 17.01 CFS	Q _u = 33.51 CFS	Q _u = 49.56 CFS
BW= 7FT	BW= 7FT	BW= 7FT
n= 0.013	n= 0.013	n= 0.013
S= 0.70%	S= 0.70%	S= 0.70%
Dn= 0.46FT	Dn= 0.71FT	Dn= 0.92FT
Vn= 5.26 FPS	Vn= 6.74 FPS	Vn= 7.73 FPS



CHANNEL "E" CALCULATIONS

H= 1FT MIN.	H= 1FT MIN.	H= 1FT MIN.
Q _u = 9.14 CFS	Q _u = 18.02 CFS	Q _u = 26.65 CFS
BW= 7FT	BW= 7FT	BW= 7FT
n= 0.013	n= 0.013	n= 0.013
S= 0.21%	S= 0.21%	S= 0.21%
Dn= 0.46FT	Dn= 0.70FT	Dn= 0.91FT
Vn= 2.86 FPS	Vn= 3.66 FPS	Vn= 4.21 FPS

LEGEND	
700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
S.B.C.	SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
TOW	UTILITY CROSSING
FL	TOP OF WALL
FL	FLOWLINE

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HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
TIMOTHY A. GORENA
128271
LICENSED PROFESSIONAL ENGINEER
01/06/2020

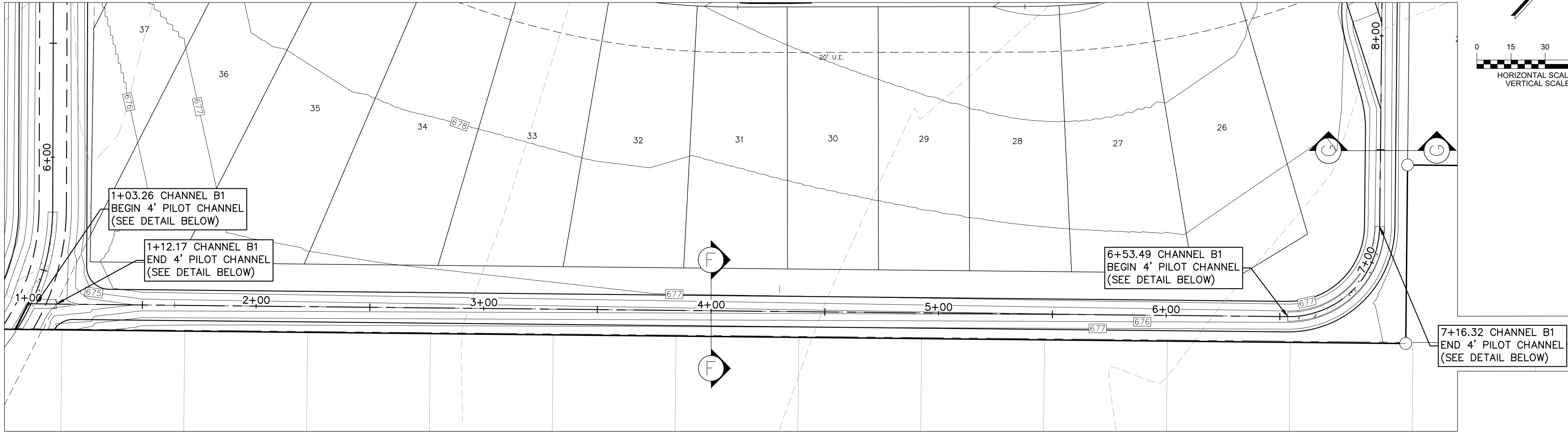
CHANNEL A2 CREEKSIDE FARMS UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: 164.012

SHEET
C5.4

Drawing Name: N:_projects\164 - creekside farms unit 3\CDA\164.012-STORM.dwg User: matia Jan 06, 2020 - 3:03pm



- LEGEND**
- EXISTING CONTOURS
 - PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - S.B.C. SINGLE BOX CULVERT
 - PROPOSED STORM DRAIN LINE
 - UTILITY CROSSING
 - TOW TOP OF WALL
 - FL FLOWLINE

NOTES:

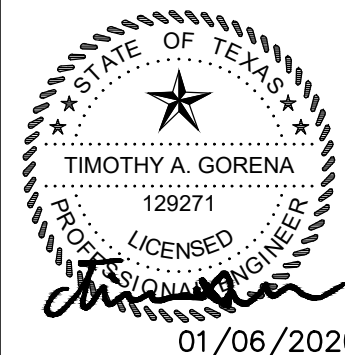
- DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.

CHANNEL MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

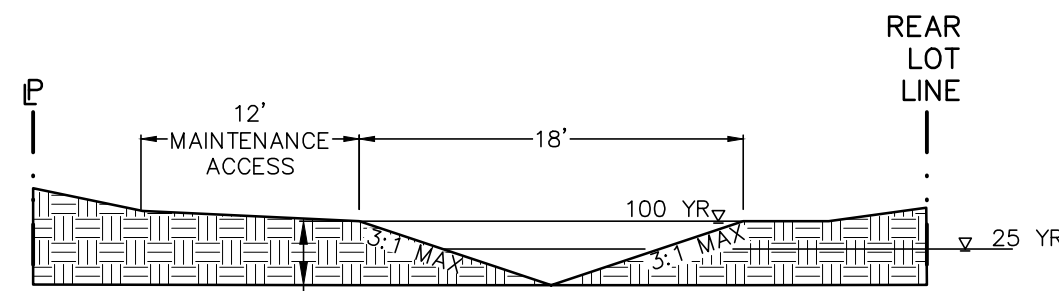
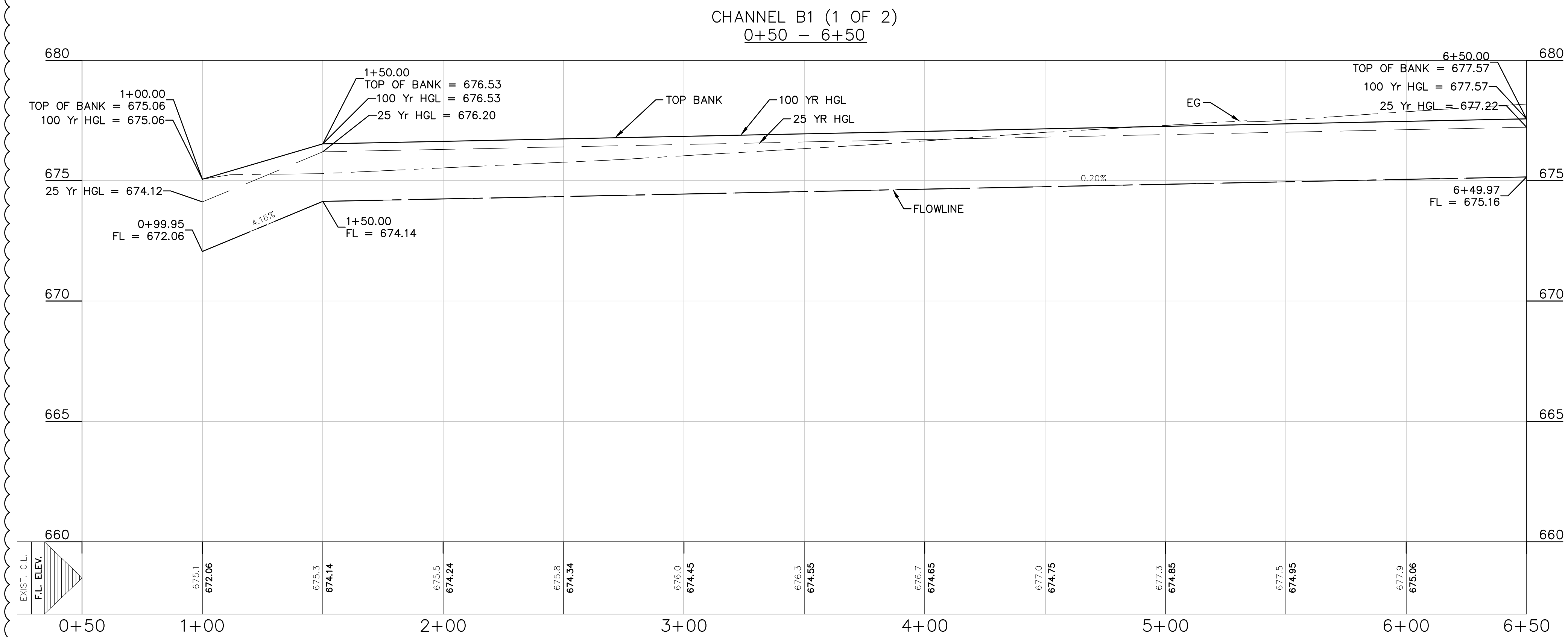
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- TO LIMIT EROSION, NO UNVEGETATED AREA SHALL EXCEED 10 SQ. FT. IN EXTENT.
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- CHANNELS SHALL BE MOWED ANNUALLY BETWEEN THE MONTHS OF JUNE AND SEPTEMBER.
- EROSION ALONG PILOT CHANNEL SHALL BE MAINTAINED AS NEEDED.

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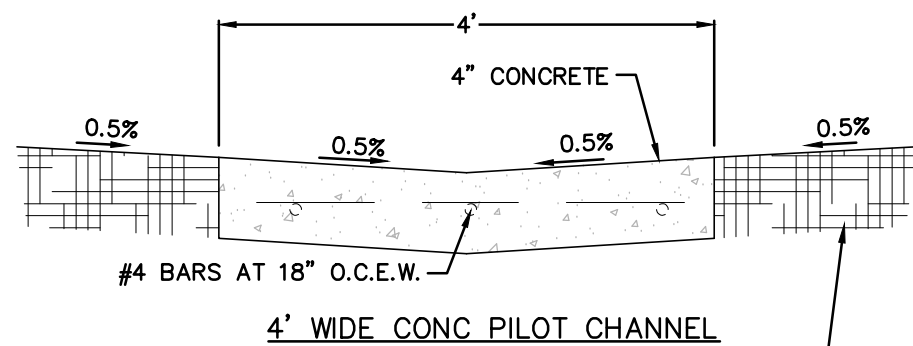


**CHANNEL B1
(1 OF 2)**
CREEKSIDE FARMS
UNIT 3



CHANNEL "F" PROPOSED CALCULATIONS

H= 2.40FT	H= 2.40FT	H= 2.40FT
Q _u = 14.14CFS	Q _u = 27.82CFS	Q _u = 41.17CFS
n= 0.035	n= 0.035	n= 0.035
S= 0.20%	S= 0.20%	S= 0.20%
Dn= 1.60FT	Dn= 2.06FT	Dn= 2.39FT
Vn= 1.84FPS	Vn= 2.18FPS	Vn= 2.41FPS



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NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: **MAY 2019**

DRAWN BY: MA

DESIGNED BY: TG

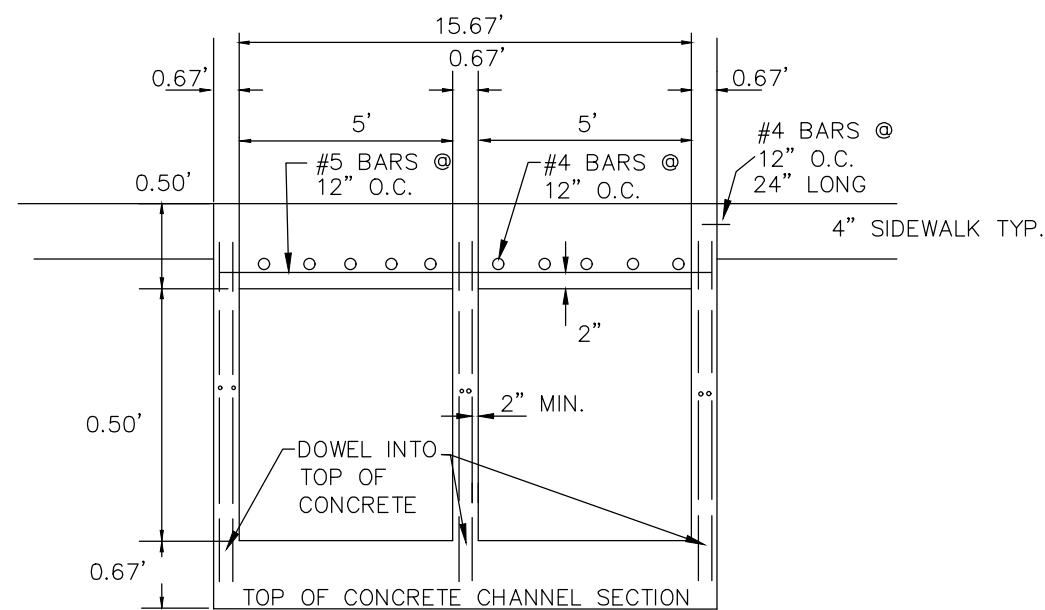
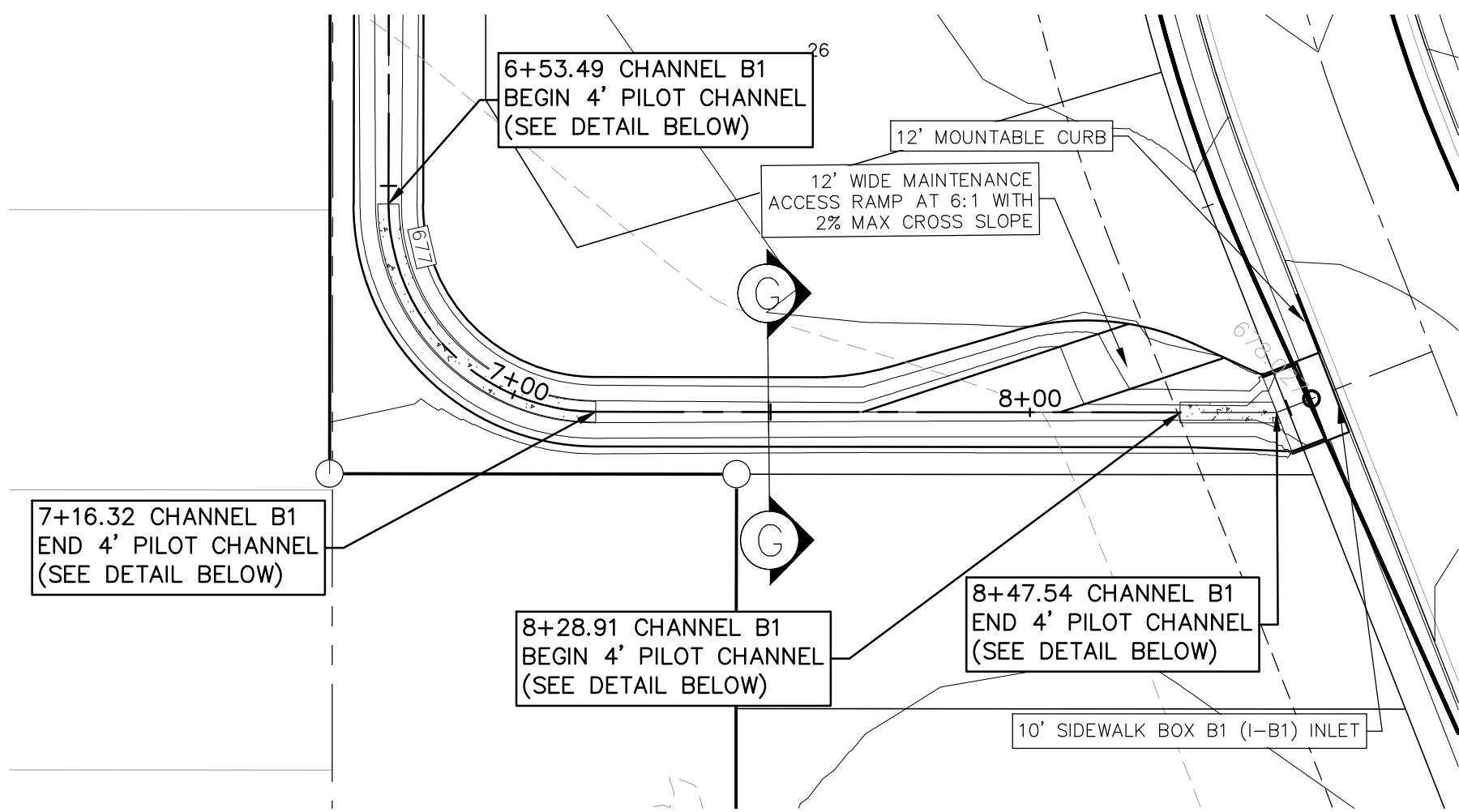
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

SHEET
C5.5

Drawing Name: N:_projects\164 - mossac\012 - creekside farms unit 3\CD\164.012-STORM.dwg User: matia Jan 06, 2020 - 3:03pm



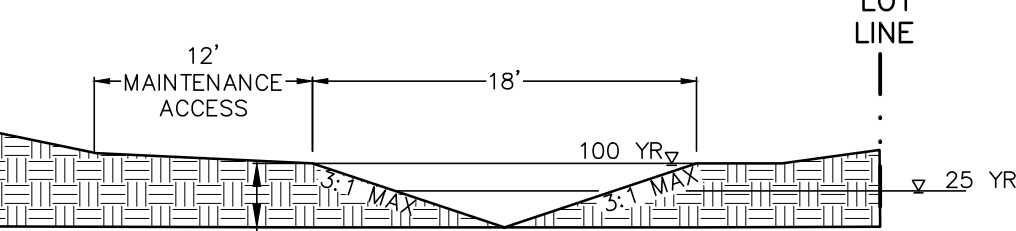
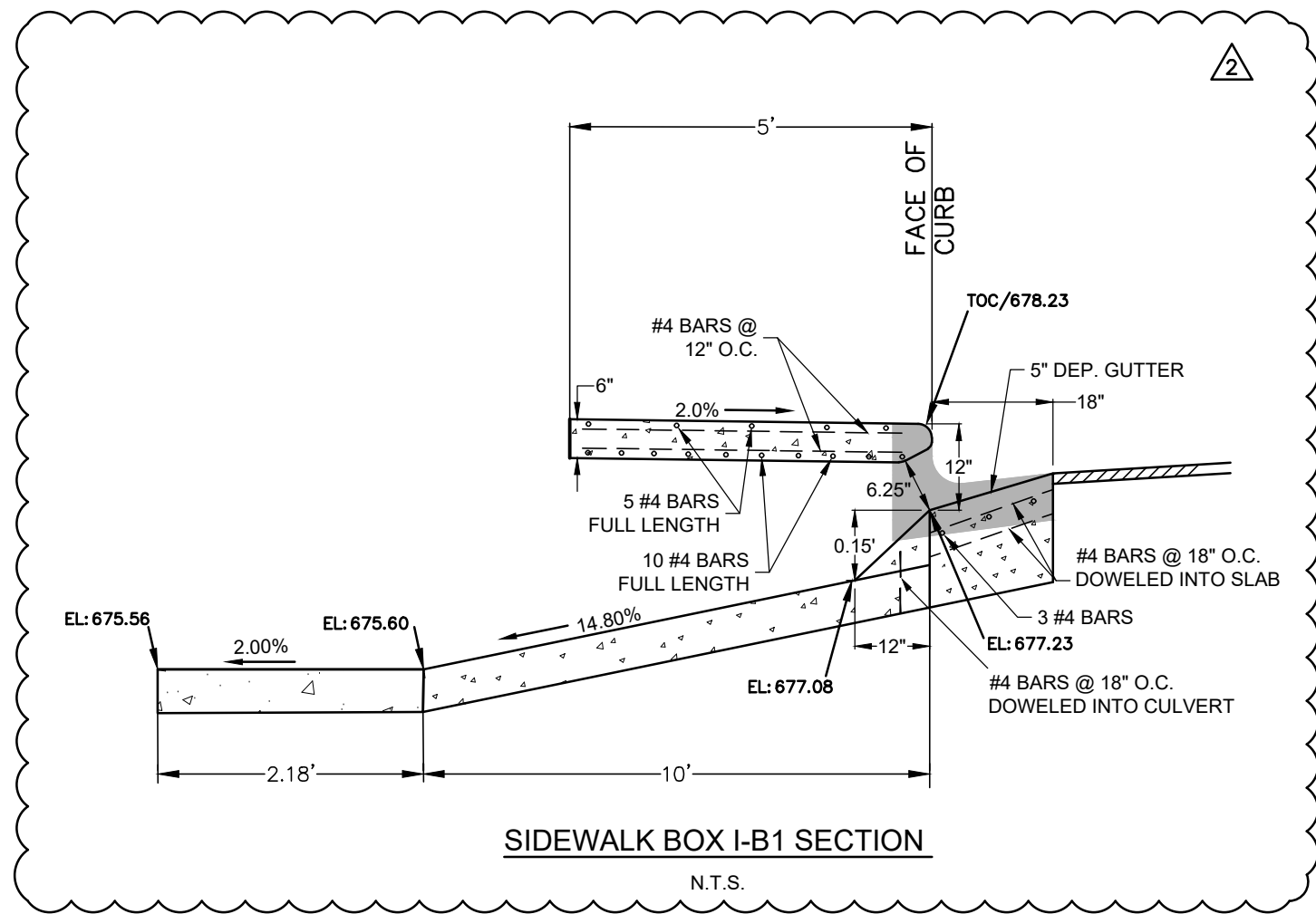
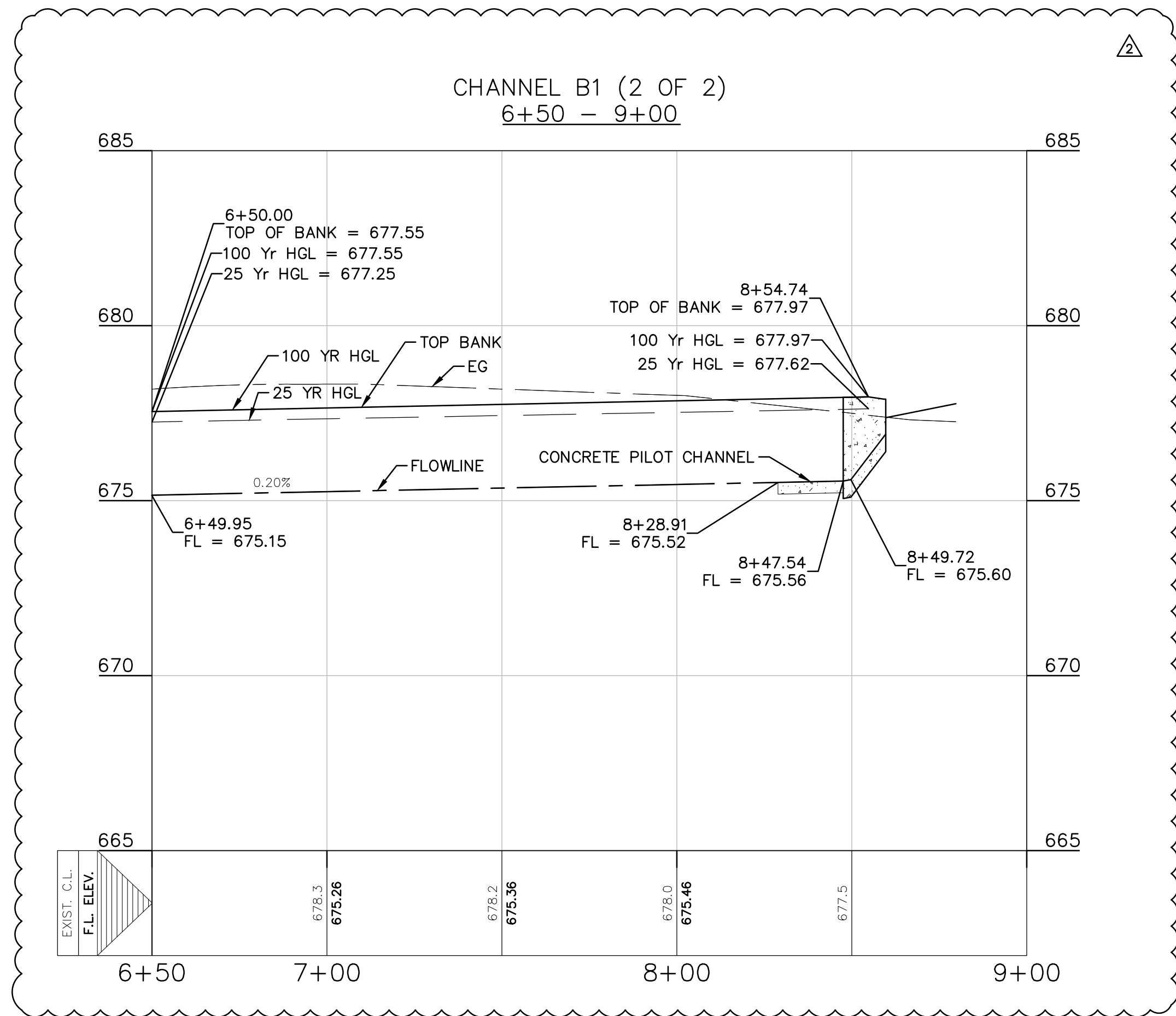
SIDEWALK BOX I-B1 INLET
N.T.S.

NOTES:

1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.

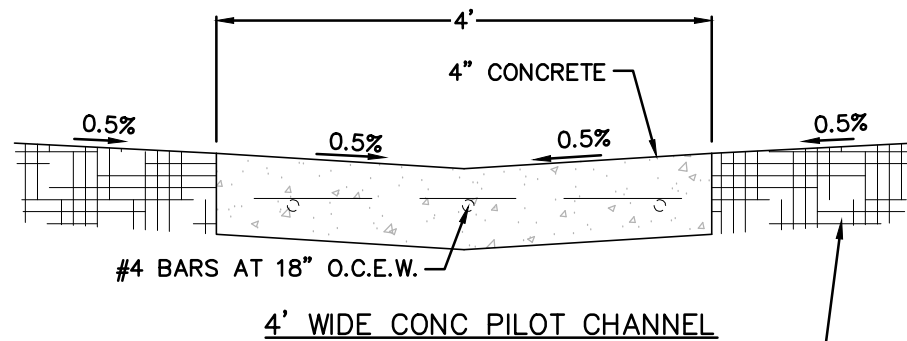
CHANNEL MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

- A. SILT SHALL BE REMOVED AND THE CHANNELS RETURNED TO ORIGINAL LINES AND GRADES WHEN STANDING WATER CONDITIONS OCCUR.
- B. TO LIMIT EROSION, NO UNVEGETATED AREA SHALL EXCEED 10 SQ. FT. IN EXTENT.
- C. ACCUMULATED PAPER, TRASH, AND DEBRIS SHALL BE REMOVED EVERY 6 MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.
- D. CHANNELS SHALL BE MOWED ANNUALLY BETWEEN THE MONTHS OF JUNE AND SEPTEMBER.
- E. EROSION ALONG PILOT CHANNEL SHALL BE MAINTAINED AS NEEDED.



CHANNEL "G" PROPOSED CALCULATIONS

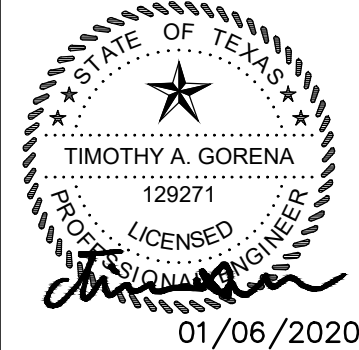
H= 2.40FT	H= 2.40FT	H= 2.40FT
Q _u = 14.14CFS	Q _u = 27.82CFS	Q _u = 41.70CFS
n= 0.035	n= 0.035	n= 0.035
S= 0.20%	S= 0.20%	S= 0.20%
Dn= 1.60FT	Dn= 2.06FT	Dn= 2.39FT
Vn= 1.84FPS	Vn= 2.18FPS	Vn= 2.41FPS



CONTRACTOR TO REVEGETATE 4' TO EITHER SIDE OF PILOT CHANNEL

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CHANNEL B1
(2 OF 2)
CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

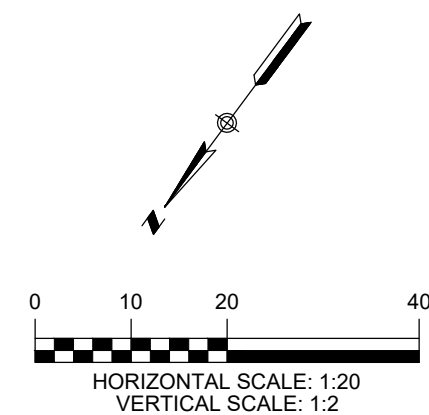
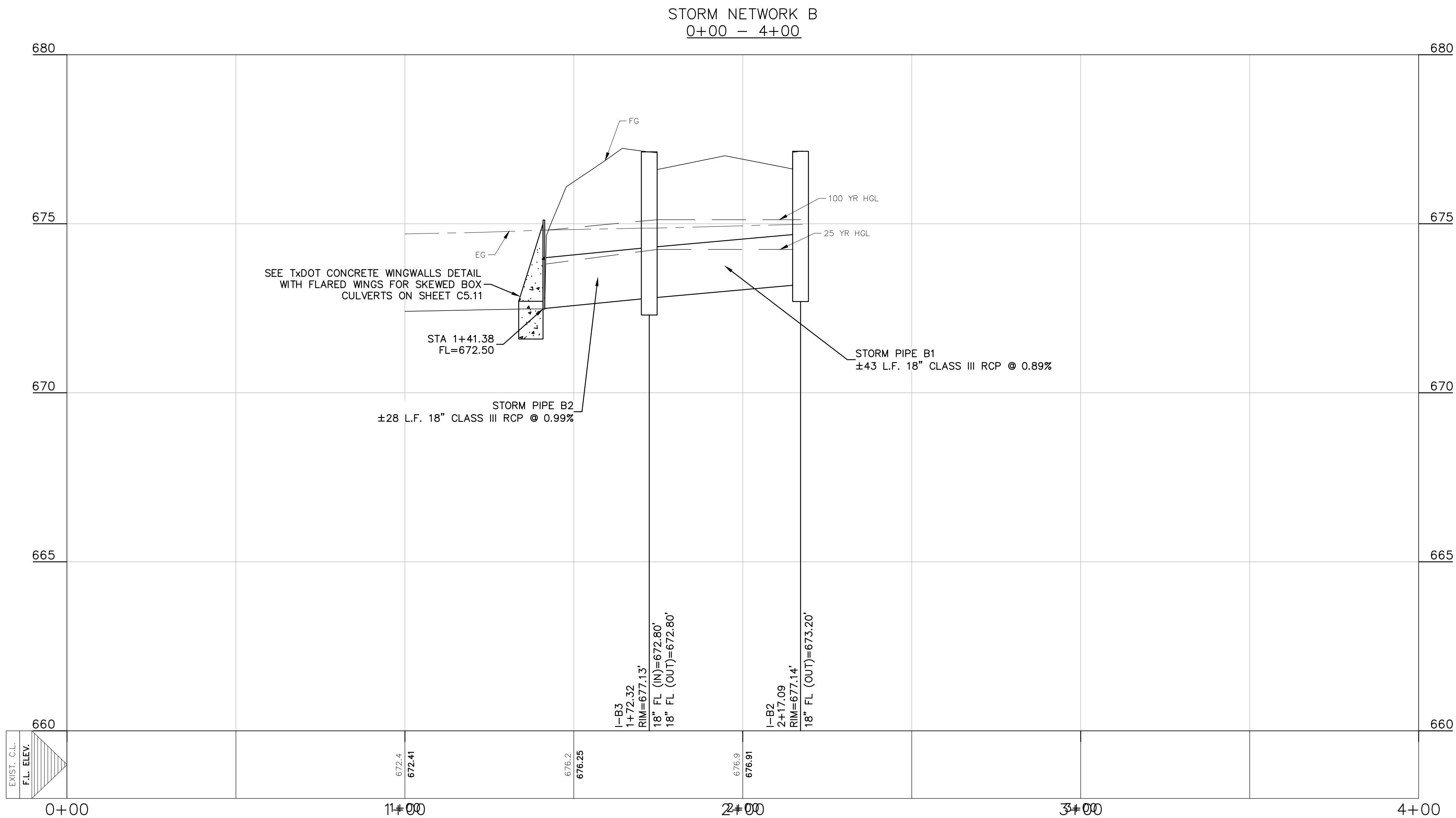
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

SHEET
C5.6

Drawing Name: N:_projects\164 - mossaic farms unit 3\CD\164.012-STORM.dwg User: matia Nov 04, 2019 - 6:01pm



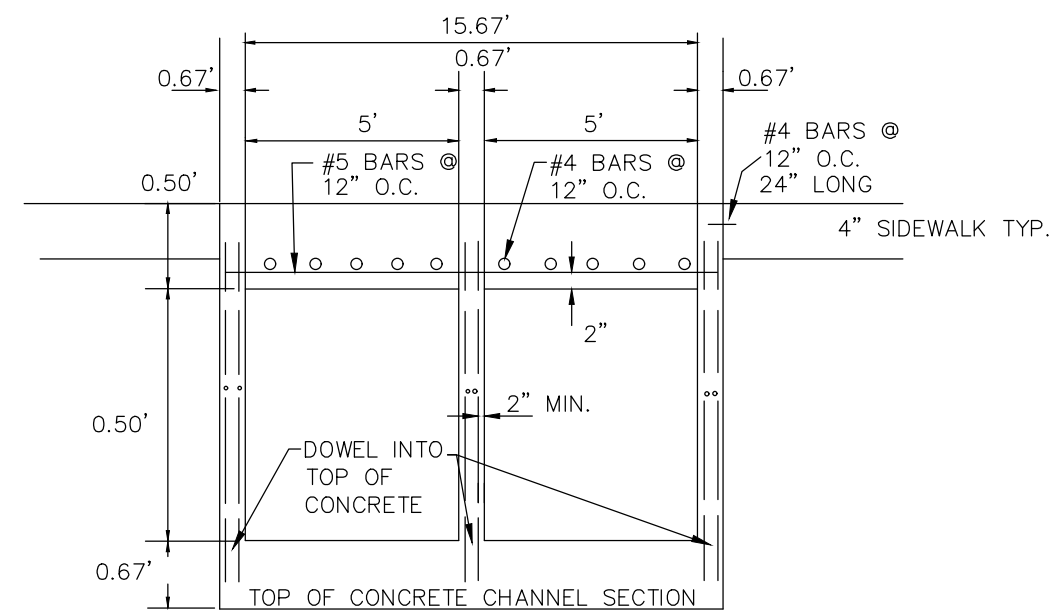
LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	B.L. BUILDING SETBACK LINE
	U.E. UTILITY EASEMENT
	D.E. DRAINAGE EASEMENT
	S.B.C. SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
	UTILITY CROSSING

NOTES:

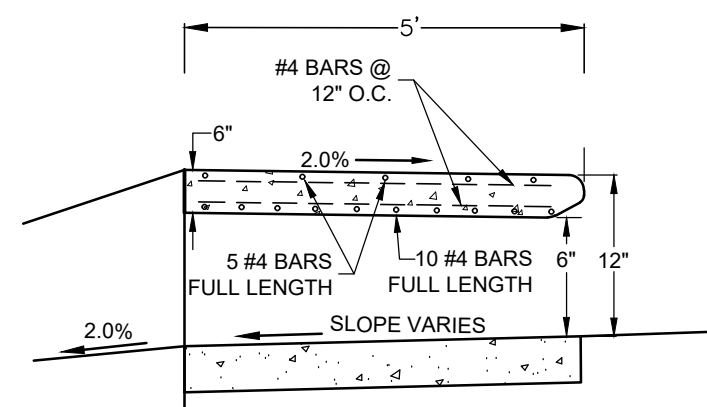
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CHANNEL MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

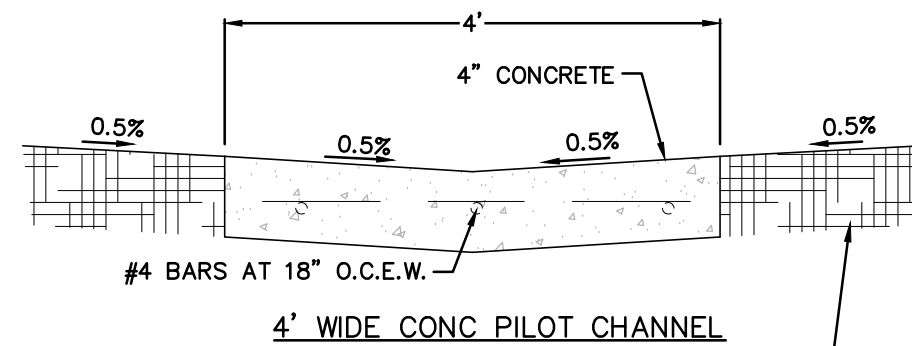
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SIDEWALK BOX I-B2 INLET
N.T.S.



SIDEWALK BOX I-B2 INLET
N.T.S.

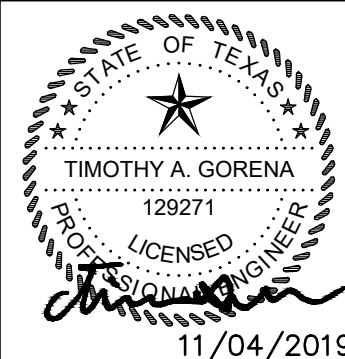


CONTRACTOR TO REVEGETATE 4' TO EITHER SIDE OF PILOT CHANNEL

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T(830)625-8559 • F(830)625-8560

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STORM NETWORK B
CREEKSIDE FARMS
UNIT 3

REVISION DATE
11/04/2019

REVISION DESCRIPTION
POST PERMIT REVISION 1

DATE: MAY 2019

DRAWN BY: MA

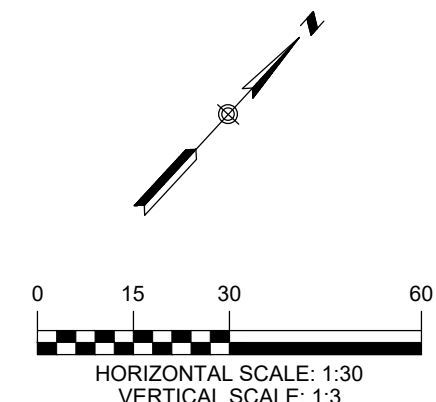
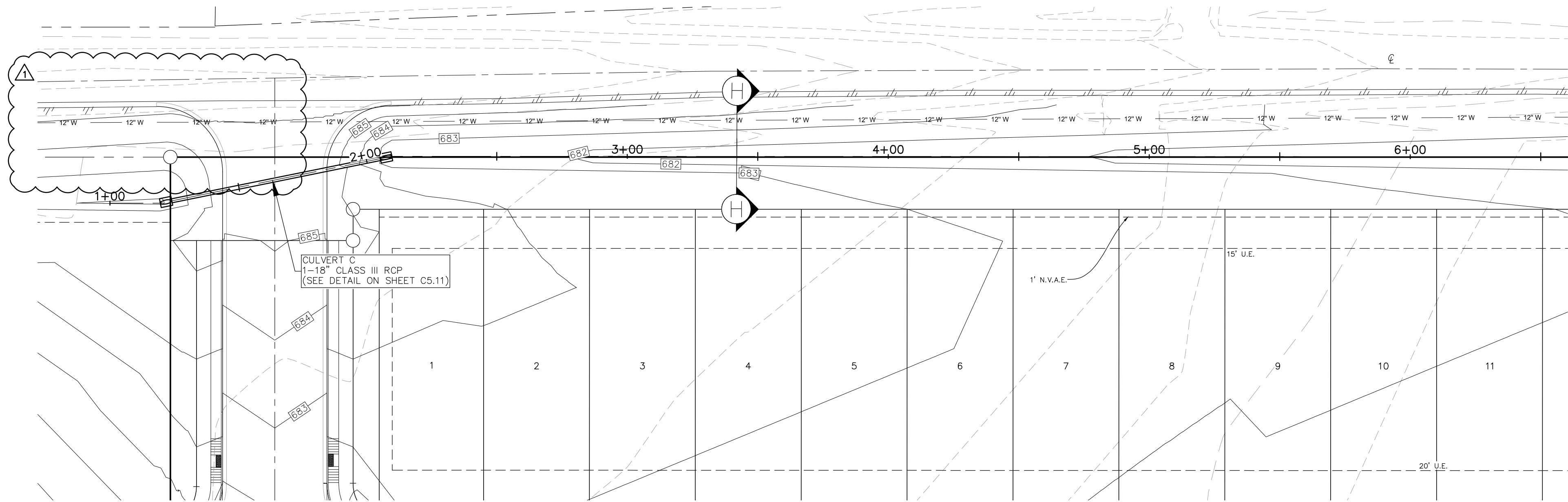
DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:
164.012

SHEET
C5.7

Drawing Name: N:_projects\64 - mossack farms unit 3\CD\164.012-STORM.dwg User: matia Jan 06, 2020 - 3:03pm



LEGEND	
	EXISTING CONTOURS
	PROPOSED CONTOURS
	B.L. BUILDING SETBACK LINE
	U.E. UTILITY EASEMENT
	D.E. DRAINAGE EASEMENT
	S.B.C. SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
	UTILITY CROSSING
	TOW TOP OF WALL
	FL FLOWLINE

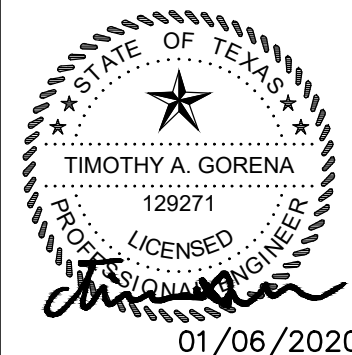
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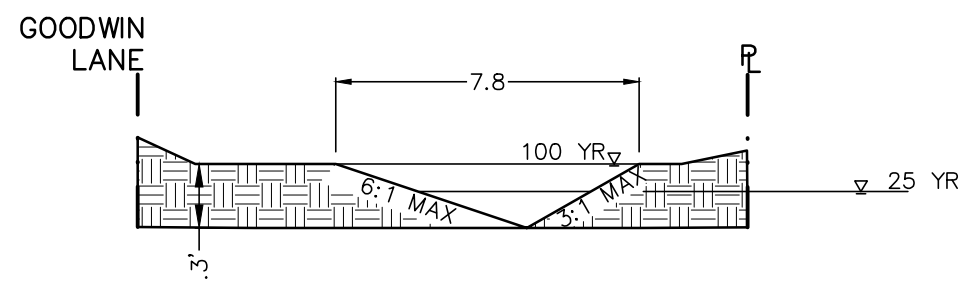
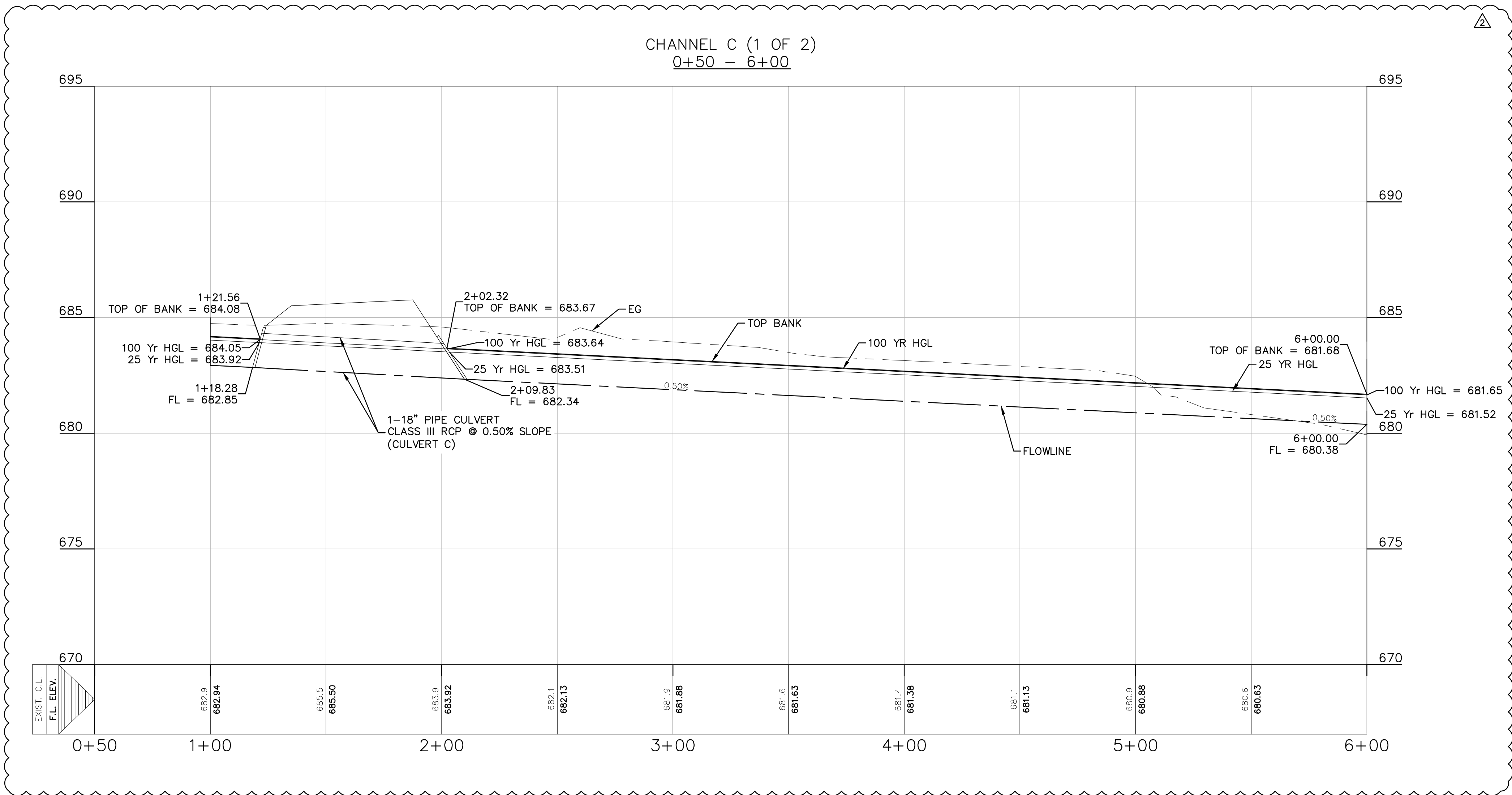
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CHANNEL C
(1 OF 2)
CREEKSIDE FARMS
UNIT 3



CHANNEL "H" PROPOSED CALCULATIONS

H= 1.30FT	H= 1.30FT	H= 1.30FT
Q _s = 5.41CFS	Q _s = 10.81CFS	Q _s = 16.01CFS
n= 0.035	n= 0.035	n= 0.035
S= 0.50%	S= 0.50%	S= 0.50%
Dn= 0.80FT	Dn= 1.04FT	Dn= 1.20FT
Vn= 1.87FPS	Vn= 2.22FPS	Vn= 2.45FPS

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REVISION DATE	
NO.	REVISION DESCRIPTION
1	POST PERMIT REVISION 1
2	POST PERMIT REVISION 2

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

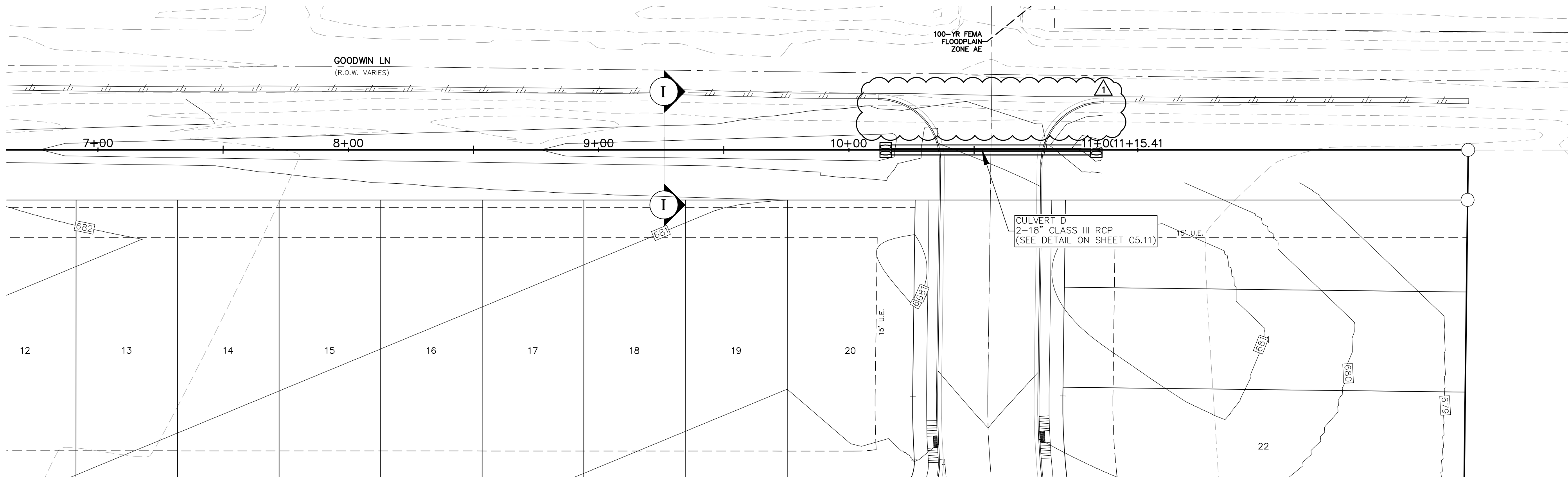
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

SHEET
C5.8

Drawing Name: N:_projects\164 - creekside farms unit 3\CD\164-012-STORM.dwg User: matia Jan 06, 2020 - 3:03pm



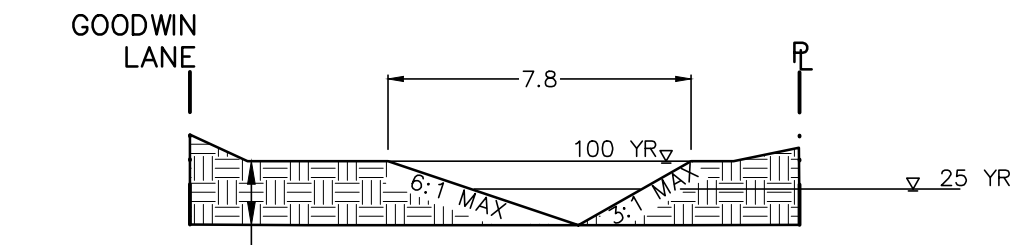
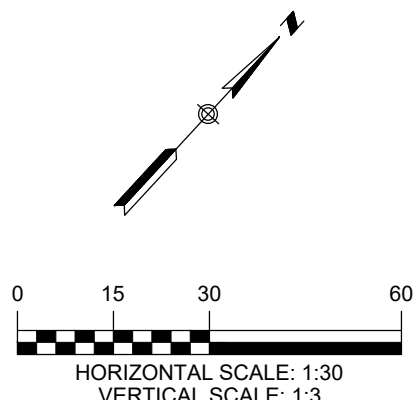
- LEGEND**
- 700 EXISTING CONTOURS
 - 700 PROPOSED CONTOURS
 - B.L. BUILDING SETBACK LINE
 - U.E. UTILITY EASEMENT
 - D.E. DRAINAGE EASEMENT
 - S.B.C. SINGLE BOX CULVERT
 - PROPOSED STORM DRAIN LINE
 - UTILITY CROSSING
 - TOW TOP OF WALL
 - FL FLOWLINE

NOTES:

- DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.

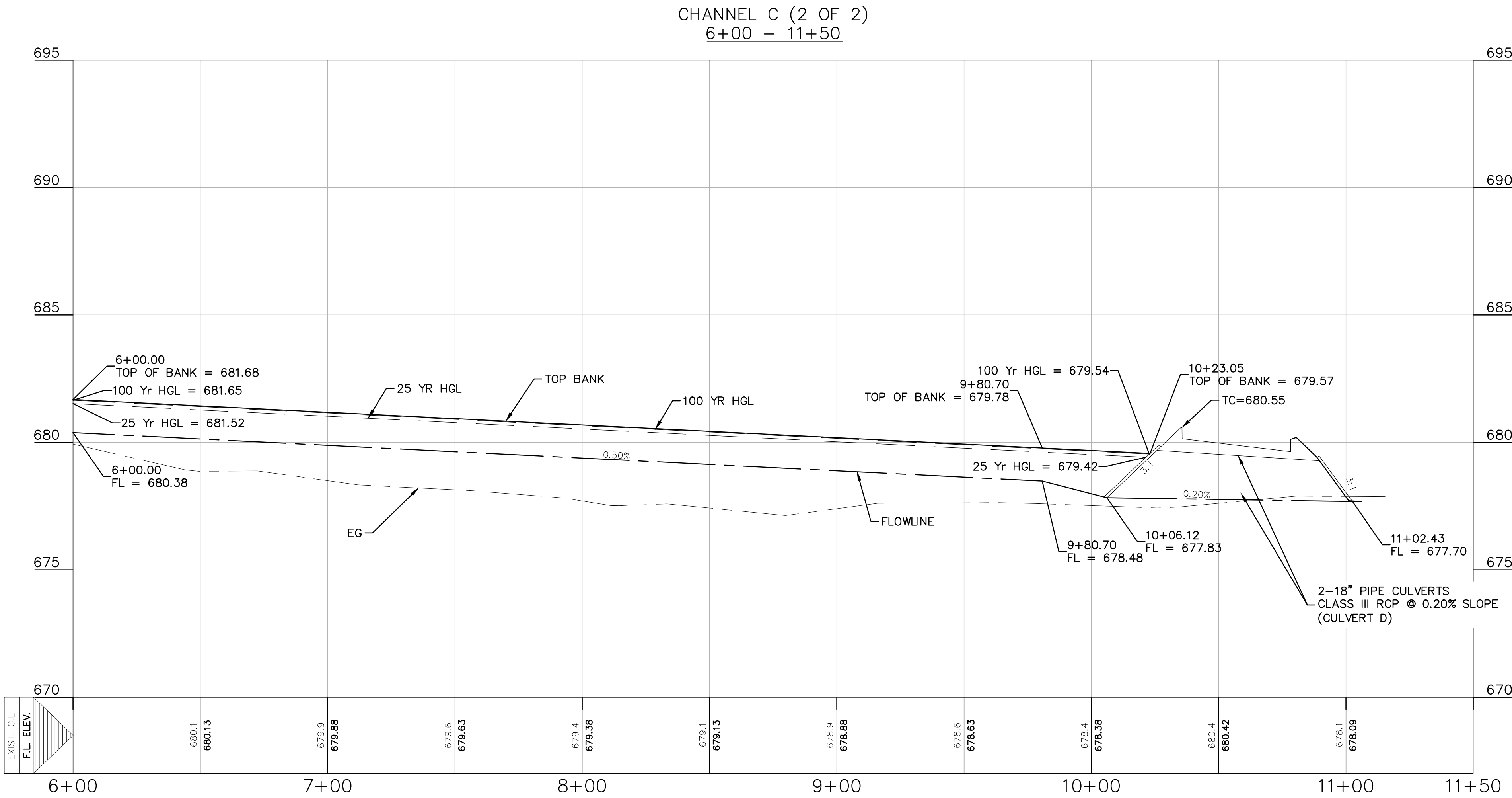
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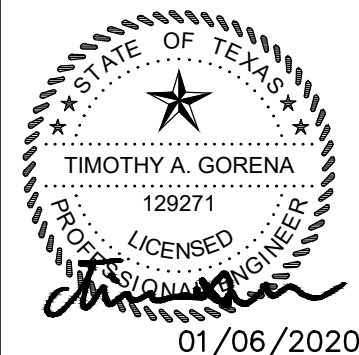
CHANNEL "I" PROPOSED CALCULATIONS

H= 1.30FT	H= 1.30FT	H= 1.30FT
Q _s = 5.41CFS	Q _s = 10.81CFS	Q _{so} = 16.01CFS
n= 0.035	n= 0.035	n= 0.035
S= 0.50%	S= 0.50%	S= 0.50%
Dn= 0.80FT	Dn= 1.04FT	Dn= 1.20FT
Vn= 1.87FPS	Vn= 2.22FPS	Vn= 2.45FPS



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**CHANNEL C
(2 OF 2)
CREEKSIDE FARMS
UNIT 3**

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020

DATE: MAY 2019

DRAWN BY: MA

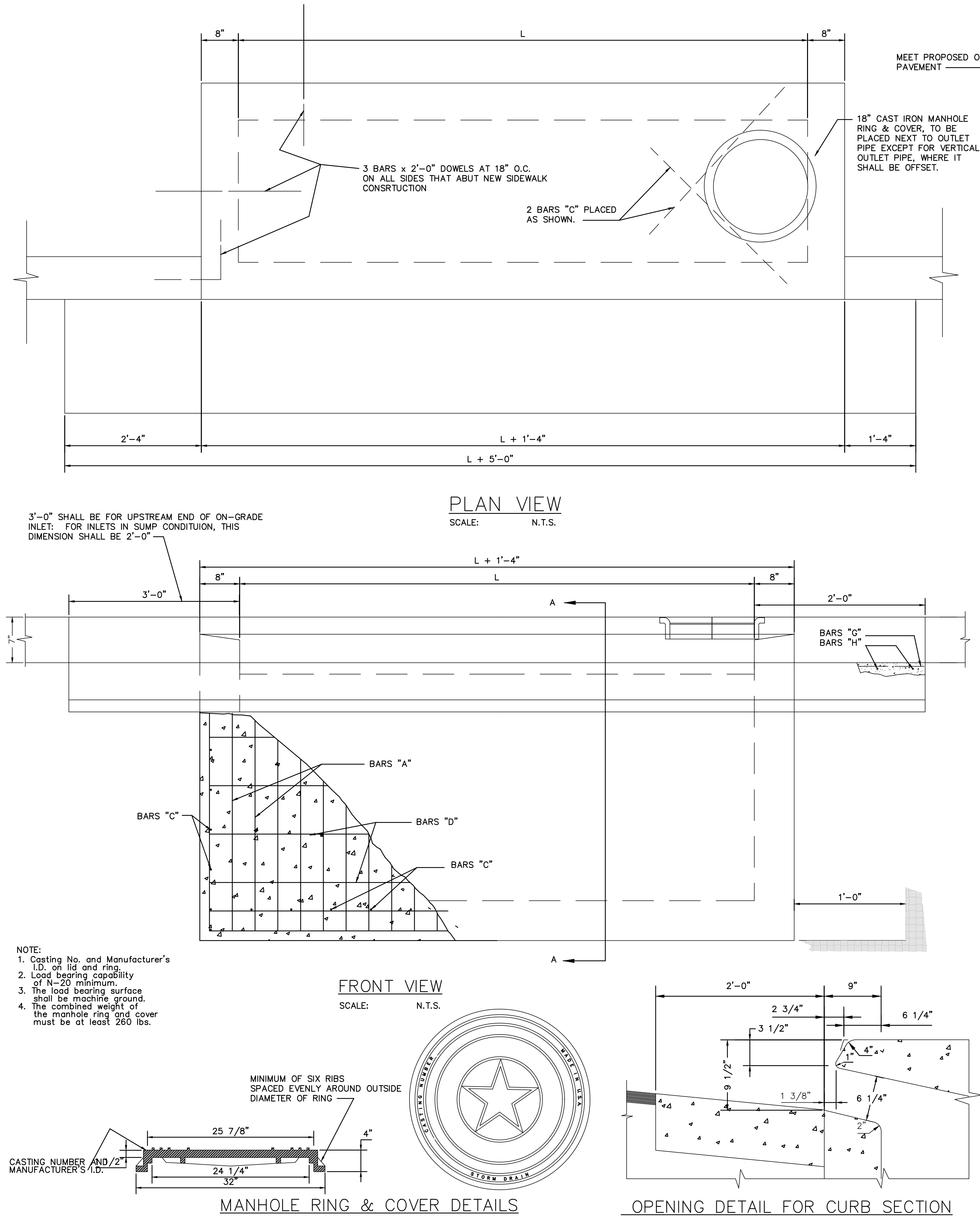
DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:

164.012

**SHEET
C5.9**



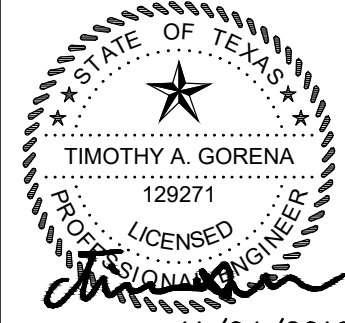
Reinforcing Steel Schedule						
BAR	NO.	SIZE	SPA.	LENGTH	WEIGHT	
L=5'-00"						
A	15	4	5"OC	13'-9 1/2"	138	
B	15	4	5"	5'-1"	52	
C	23	4	9"	3'-6"	54	
D	22	4	10"	6'-1"	89	
E	10	4	10 1/2"	6'-10"	46	
F	6	5	12"	2'-3"	14	
G	3	4	12"	9'-8"	20	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=353 CY. MANHOLE CASTING=100 LBS. STEEL TOTAL=422 LBS.						
10'						
A	27	4	5"OC	13'-9 1/2"	249	
B	27	4	5"	5'-1"	93	
C	30	4	9"	3'-6"	70	
D	22	4	10"	11'-1"	163	
E	10	4	10 1/2"	6'-10"	46	
F	12	5	12"	2'-3"	27	
G	3	4	12"	14'-8"	30	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=5.75CY. MANHOLE CASTING=100LBS. STEEL TOTAL=687LBS						
15'						
A	39	4	5"OC	13'-9 1/2"	359	
B	39	4	5"	5'-1"	134	
C	36	4	9"	3'-6"	84	
D	22	4	10"	16'-1"	236	
E	10	4	10 1/2"	6'-10"	46	
F	17	5	12"	2'-3"	38	
G	3	4	12"	19'-8"	40	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=7.97CY. MANHOLE CASTING=100LBS. STEEL TOTAL=946LBS						
20'						
A	51	4	5"OC	13'-9 1/2"	470	
B	51	4	5"	5'-1"	175	
C	43	4	9"	3'-6"	101	
D	22	4	10"	6'-1"	310	
E	10	4	10 1/2"	6'-10"	46	
F	22	5	12"	2'-3"	50	
G	3	4	12"	9'-8"	50	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=10.19CY. MANHOLE CASTING=100LBS. STEEL TOTAL=1211LBS						
25'						
A	63	4	5"OC	13'-9 1/2"	580	
B	63	4	5"	5'-1"	217	
C	50	4	9"	3'-6"	117	
D	22	4	10"	6'-1"	383	
E	10	4	10 1/2"	6'-10"	46	
F	27	5	12"	2'-3"	61	
G	3	4	12"	9'-8"	60	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=12.41CY. MANHOLE CASTING=100LBS. STEEL TOTAL=1473LB						
30'						
A	75	4	5"OC	13'-9 1/2"	691	
B	75	4	5"	5'-1"	258	
C	56	4	9"	3'-6"	131	
D	22	4	10"	6'-1"	457	
E	10	4	10 1/2"	6'-10"	46	
F	32	5	12"	2'-3"	72	
G	3	4	12"	9'-8"	70	
H	5	5	12"	1'-8"	9	
*CONCRETE TOTAL=14.63CY. MANHOLE CASTING=100LBS. STEEL TOTAL=1734LB						

*These figures do not include concrete and steel intercepted by Manhole and Reinforced Concrete Pipe.
*Includes concrete gutter for on-grade inlet. Reduce by .05 cy for inlets in sump.

GENERAL NOTES:

1. ALL BARS INTERCEPTING MANHOLE RING & REINFORCING CONCRETE PIPE SHALL BE FIELD CUT.
2. CONCRETE FOR STRUCTURES SHALL BE CLASS "A", 3000 P.S.I. IN 28 DAYS.
3. ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
4. ALL EXPOSED CORNERS SHALL BE CHAMFERED TO 3/4"
5. CONSTRUCTION JOINT SHOWN AT FLOWLINE MAY BE RAISED A MAXIMUM OF 6" AT THE CONTRACTOR'S DISCREION. ADJUST LENGTH OF VERTICAL STEEL AS REQUIRED.
6. ALL REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A-615, GRADE 60.

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STORM DETAILS (1 OF 4)

CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE
1	POST PERMIT	REVISION 1	11/04/2019

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:

164.012

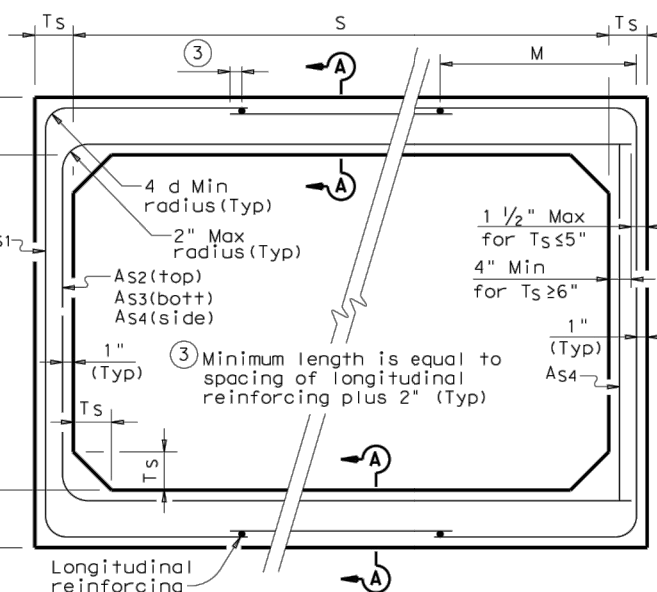
SHEET
C5.10

DISCLAIMER:
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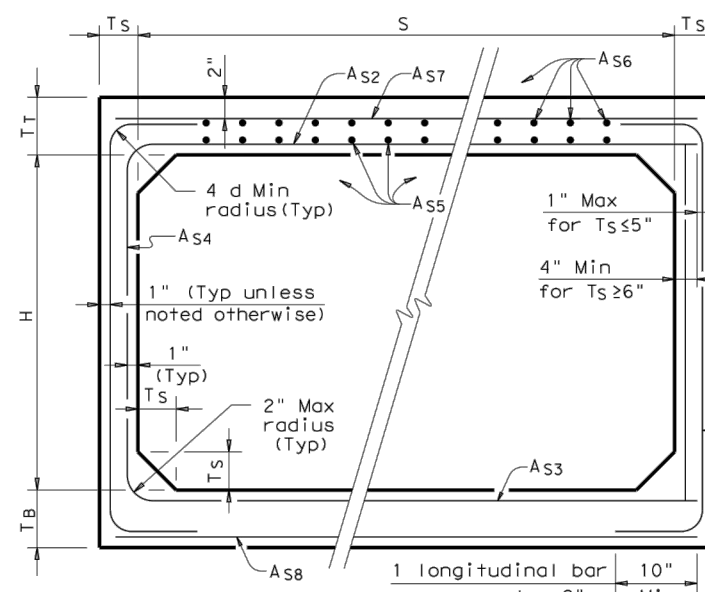
DATE:
FILE:

BOX DATA															
SECTION DIMENSIONS					F ₁₁₁ Height (in)	M (in)	REINFORCING (in ² /ft)								① Left Weight (Tons)
S (ft)	H (ft)	T ₁ (in)	T ₂ (in)	T ₃ (in)			A _{s1}	A _{s2}	A _{s3}	A _{s4}	A _{s5}	A _{s6}	A _{s7}	A _{s8}	
5	3	6	6	6	2<3	45	0.19	0.31	0.21	0.14	0.19	0.19	0.17	6.6	
5	3	6	6	6	3-5	36	0.14	0.21	0.16	0.14	-	-	-	5.7	
5	3	6	6	6	10	36	0.14	0.16	0.17	0.14	-	-	-	5.7	
5	3	6	6	6	15	35	0.16	0.21	0.22	0.14	-	-	-	5.7	
5	3	6	6	6	20	35	0.21	0.27	0.28	0.14	-	-	-	5.7	
5	3	6	6	6	25	35	0.26	0.34	0.34	0.14	-	-	-	5.7	
5	3	6	6	6	30	35	0.31	0.41	0.41	0.14	-	-	-	5.7	
5	4	8	7	6	2<3	-	0.19	0.33	0.24	0.14	0.19	0.19	0.17	7.2	
5	4	6	6	6	2<3	45	0.16	0.27	0.22	0.14	-	-	-	6.3	
5	4	6	6	6	3-5	45	0.14	0.19	0.18	0.14	-	-	-	6.3	
5	4	6	6	6	10	36	0.14	0.18	0.18	0.14	-	-	-	6.3	
5	4	6	6	6	15	35	0.14	0.23	0.24	0.14	-	-	-	6.3	
5	4	6	6	6	20	35	0.17	0.30	0.31	0.14	-	-	-	6.3	
5	4	6	6	6	25	35	0.21	0.37	0.38	0.14	-	-	-	6.3	
5	4	6	6	6	30	35	0.25	0.44	0.45	0.14	-	-	-	6.3	
5	5	8	7	6	2<3	-	0.19	0.35	0.26	0.14	0.19	0.19	0.17	7.8	
5	5	6	6	6	2<3	45	0.14	0.29	0.24	0.14	-	-	-	6.9	
5	5	6	6	6	3-5	45	0.14	0.21	0.20	0.14	-	-	-	6.9	
5	5	6	6	6	10	45	0.14	0.19	0.20	0.14	-	-	-	6.9	
5	5	6	6	6	15	36	0.14	0.24	0.25	0.14	-	-	-	6.9	
5	5	6	6	6	20	35	0.15	0.31	0.32	0.14	-	-	-	6.9	
5	5	6	6	6	25	35	0.18	0.38	0.39	0.14	-	-	-	6.9	
5	5	6	6	6	30	35	0.21	0.46	0.47	0.14	-	-	-	6.9	
5	2	8	7	6	2<3	-	0.20	0.31	0.20	0.14	0.22	0.19	0.17	6.0	
5	2	6	6	6	30	44	0.39	0.33	0.34	0.14	-	-	-	5.1	

- ① For Box Length = 8'-0"
- ② A_{s1} thru A_{s4}, A_{s7} and A_{s8} are minimum required areas of reinforcement per linear foot of box length. A_{s5} and A_{s6} are minimum required areas of reinforcement per linear foot of box width.
- ③ These designs were created by TxDOT and are not shown in the ASTM Specifications.



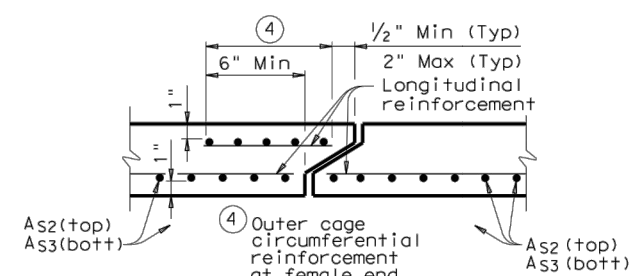
CORNER OPTION "A"



CORNER OPTION "B"

FILL HEIGHT 2 FT AND GREATER

FILL HEIGHT LESS THAN 2 FT



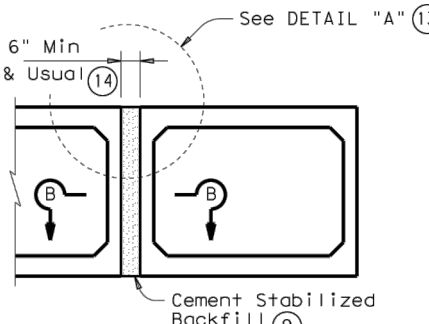
SECTION A-A

(TOP AND BOTTOM SLAB JOINT REINFORCEMENT)

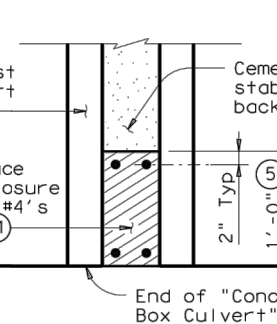
GENERAL NOTES:
Designs shown conform to ASTM C1577. Refer to ASTM C1577 for information or details not shown.
All concrete shall be Class "H" Concrete with a minimum compressive strength of 5,000 psi.
See SC-MD standard sheet for miscellaneous details and notes not shown.
In lieu of furnishing the designs shown on this sheet, the contractor may furnish an alternate design that is equal to or exceeds the box design for the design fill height in the table. Shop plans for alternate designs shall be submitted in accordance with Item "Precast Concrete Structural Members (Fabrication)".

HL93 LOADING

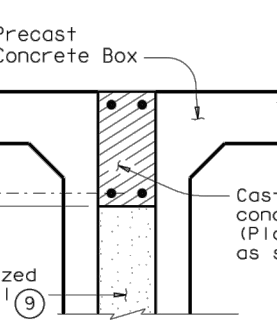
Texas Department of Transportation Bridge Division Standard											
SINGLE BOX CULVERTS PRECAST 5'-0" SPAN											
SCP-5											
FILE	SC5RCL.dgn	DN	GA	DN	LR	DN	BN	TDOT	CC	GA	FILE
DATE	February 2010	COMP	SACT	JAE	NOVEMBER						
REVISIONS		DATE		COUNTY							



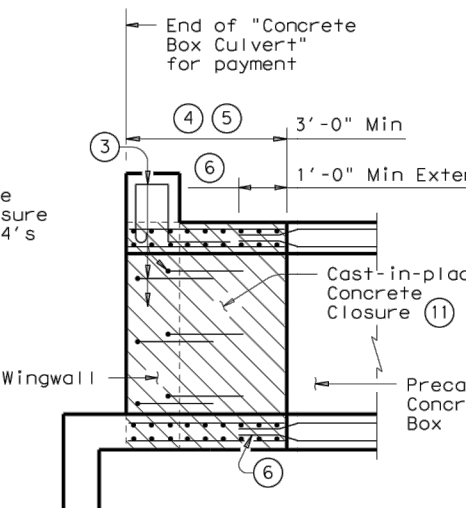
MULTIPLE UNIT PLACEMENT



SECTION B-B

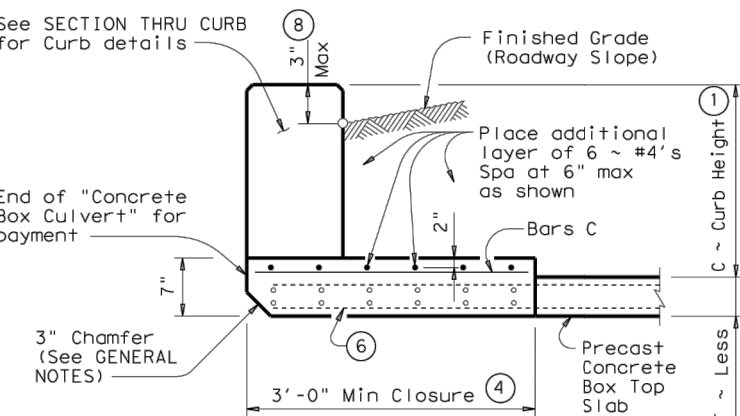


DETAIL "A"

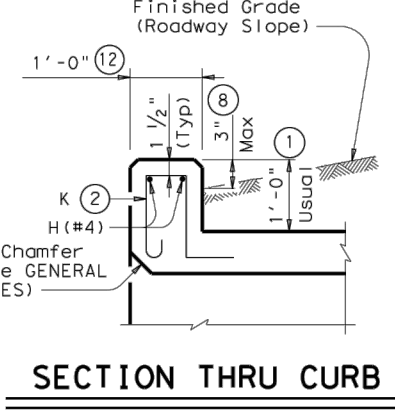


WINGWALL CONNECTION

(Also applies to Safety End Treatment)



SECTION THRU TOP SLABS LESS THAN 7'

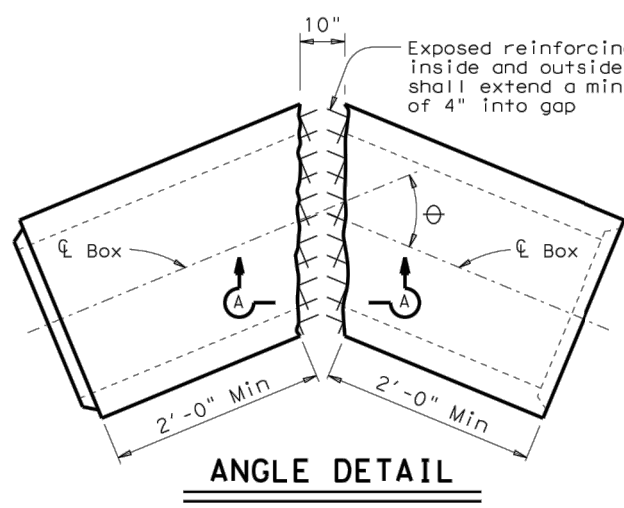


SECTION THRU CURB

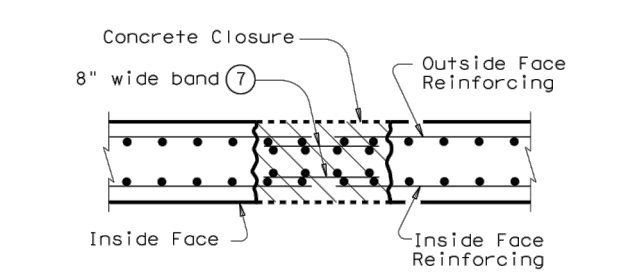
(10) QUANTITIES PER FOOT OF CURB	
Reinforcing Steel	4.18 Lb
Concrete	0.037 CY

BARS C ~ #4 (Spa = 1'-0" Max)

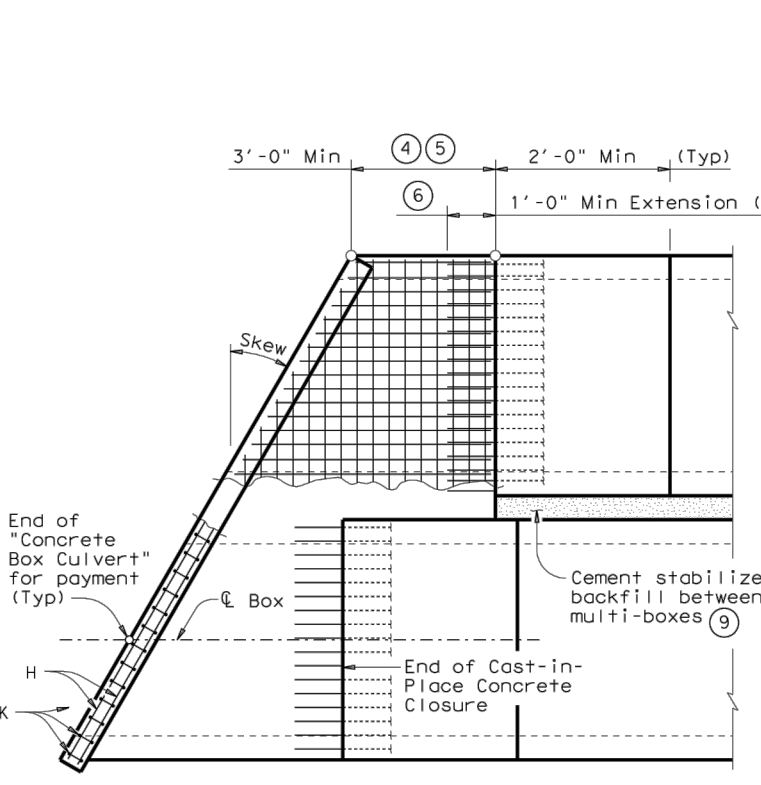
BARS K ~ #4 (Spa = 1'-0" Max) (Length = 4'-3")



ANGLE DETAIL



SECTION A-A



PLAN OF SKEWED ENDS

(Showing multi-box placement)

- ① 0" min to 5'-0" max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail, bicycle rail or curbs taller than 1'-0", refer to ECD standard. For structures with T6 traffic rail, refer to T6-01 standard. For structures with traffic rail, other than T6, refer to RAC standard.
- ② For curbs less than 1'-0" high, tilt Bars K or reduce bar height as necessary to maintain cover. For curbs less than 3' high, Bars K may be omitted.
- ③ Curb, Wingwall or Safety End Treatment reinforcing shall extend into concrete closure. Any reinforcing that does not fit into the closure shall be bent or trimmed as necessary.
- ④ Cast-in-place concrete closure shall be 3'-0" min. Boxes shall be cast short or broken back in the field. All reinforcing in the closure shall be the same size and spacing as in the precast box section. Except where shown otherwise, the cast-in-place closure shall be flush with the inside and outside faces of the precast box section.
- ⑤ For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0". See Section B-B detail when interior walls are cast full length.
- ⑥ Precast box reinforcing shall extend a minimum of 1'-0" into concrete closure (Typ).
- ⑦ Bands of reinforcing matching the inside and outside face reinforcing shall be placed in the gaps of the top and bottom slabs. A band matching the outside face reinforcing of the wall shall be placed in the gaps of the walls (placed in the outside face only). The bands shall be tack welded to the exposed reinforcing at each point of contact.
- ⑧ For vehicle safety, the following requirements must be met:
- For structures without bridge rail, curbs shall project no more than 3" above finished grade.
- For structures with bridge rail, curbs shall be flush with finished grade.
Curb heights shall be reduced, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.
- ⑨ Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.
- ⑩ All curb concrete and reinforcing is considered part of the Box Culvert for payment.
- ⑪ Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.
- ⑫ 1'-0" typical. 2'-0" when RAC standard is referred to elsewhere in the plans.
- ⑬ For multiple unit placement with overlay, with 1 to 2 course surface treatment, or with the top slab as the final riding surface, provide wall closure as shown in DETAIL "A".
- ⑭ This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked in accordance with Item 476, "Jacking, Boring, or Tunneling Pipe or Box". No payment will be made for any additional material in the gap between adjacent boxes.

GENERAL NOTES:
Designed according to AASHTO LRFD Specifications.
All closure concrete shall be Class "C" with a minimum compressive strength of 3600 psi and shall be placed according to the Item, "Concrete Substructures".
Any additional concrete required for the closures shall be considered as subsidiary to the Concrete Box Culvert.
Refer to the Single Box Culverts Precast standard for details not shown.
The bottom edge of the top slab closure shall be chamfered 3 inches at the entrance.

HL93 LOADING

Texas Department of Transportation Bridge Division Standard											
BOX CULVERTS PRECAST MISCELLANEOUS DETAILS											
SCP-MD											
FILE	SC5RCL.dgn	DN	GA	DN	LR	DN	BN	TDOT	CC	GA	FILE
DATE	February 2010	COMP	SACT	JAE	NOVEMBER						
REVISIONS		DATE		COUNTY							

STORM DETAILS (2 OF 4)

CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT	11/04/2019

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:

164.012

SHEET

C5.11

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
TIMOTHY A. GORENA
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LICENSED PROFESSIONAL ENGINEER
11/04/2019

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TBPE FIRM T-10961
TBPLUS FIRM 10153600

DISCLAIMER: The use of this standard is governed by the Texas Engineering Practices Act. No part of any standard or this standard is to be used in any manner that would result in a design resulting from its use.

DATE: FILE:

Culvert Station and/or Creek name followed by applicable end (Lt, Rt or Both)	Description of Box Culvert	Max Fill Height	Applicable Box Culvert Standard ①	Applicable Wingwall or End Treatment Standard	Skew Angle (0°, 15°, 30° or 45°)	Side Slope or Channel Slope Ratio (S:L:1)	T Culvert Top Slab Thickness (in)	U Culvert Wall Thickness (in)	C Estimated Curb Height (ft)	① Hw Height of Wingwall (ft)	A Curb to End of Wingwall (ft)	B Offset of End of Wingwall (ft)	Lw Length of Longest Wingwall (ft)	Ltw Culvert Towall Length (ft)	Atw Anchor Towall Length (ft)	Riprap Apron (C.Y.)	Class ② "C" Conc (Curb) (C.Y.)	Class ③ "C" Conc (Wingwall) (C.Y.)	Total Wingwall Area (S.F.)
	No. Spans ~ Span X Height	(ft)																	
CULVERT B 8+35.33 LT	2-5 x 3	2.9'	SCP-5	SCP-MD	0°	N/A	6"	6"	1.0	5.02	N/A	N/A	N/A	N/A	N/A	=====	=====	=====	=====
CULVERT B 8+35.33 RT	3-5 x 3	2.9'	SCP-5	SCP-MD	0°	N/A	6"	6"	2.7	3.33	N/A	N/A	N/A	N/A	N/A	=====	=====	=====	=====
CULVERT B 7+47.45 LT	2-5 x 3	2.9'	SCP-5	FW-S	0°	3:1	6"	6"	1.0	4.31	12.93	N/A	14.93	13.45	N/A	=====	=====	=====	=====
CULVERT B 7+47.45 RT	3-5 x 3	2.9'	SCP-5	FW-S	15°	3:1	6"	6"	1.0	4.31	13.39	7.73	14.93	13.45	N/A	=====	=====	=====	=====
			</																

NOTES:
Skew Angle = 0° for SW-0, FW-0, SEB-0, SEB-SW-0, and SEB-FW-0 standards.
30° Maximum for Safety End Treatment.
Sx1 = Horizontal:Vertical
Side Slope at culvert for Flared or Straight Wingwalls. Channel Slope for Parallel Wingwalls.
Slope shall be 3:1 or flatter for Safety End Treatments.
T = Box Culvert Top Slab Thickness. Dimension can be found on the applicable Box Culvert Standard.
U = Box Culvert Wall Thickness. Dimension can be found on the applicable Box Culvert Standard.
C = Curb Height.
See applicable wing or end treatment standards for calculations of Hw, A, B, Lw, Ltw, Atw, and Total Wingwall Area.
Hw = Height of Wingwall.
A = Distance from Toe of Curb to End of Wingwall (Not applicable to Parallel or Straight Wingwalls).
B = Offset of End of Wingwall (Not applicable to Parallel or Straight Wingwalls).
Lw = Length of Longest Wingwall.
Ltw = Length of Culvert Towall (Not applicable when using Riprap Apron).
Atw = Length of Anchor Towall (Applicable to Safety End Treatment only).
Total Wingwall Area = Wingwall area in S.F. for two wingwalls (one structure end) if Lt or Rt.
Area for four wingwalls (two structure ends) if Both.

- The wall heights shown will be rounded to the nearest Foot for blading purposes.
- Concrete volume shown is for box culvert curb only. For curbs using the RAC standard, quantities shown must be increased by a factor of 2. If Class "S" concrete is required for the top slab of the culvert, the curb concrete shall also be Class "S". Curb concrete is considered part of the Box Culvert for payment.
- Concrete volume shown is total of wing, footing, culvert towall (if any), anchor towall (if any) and wingwall towall. Riprap apron, culvert and curb quantities are not included.
- Regardless of the type of culvert shown on this sheet, the Contractor shall have the option of furnishing cast-in-place or precast culverts unless otherwise shown elsewhere on the plans. If the Contractor elects to provide culverts of a different type than those shown on this sheet, it shall be the Contractor's responsibility to make the necessary adjustments to the dimensions and quantities shown.

SPECIAL NOTE:
This sheet is a supplement to the Box Culvert standards. It is to be filled out by the culvert specifier and provides dimensions for the construction of the Box Culvert Wingwalls and Safety End Treatments.
An Excel 97 spreadsheet to assist in completing this table can be downloaded from the Bridge Standards (English) web page on the TxDOT web site. The completed sheet shall be signed, sealed, and dated by a licensed Professional Engineer.

Texas Department of Transportation		Bridge Division Standard	
BOX CULVERT SUPPLEMENT WINGS AND END TREATMENTS			
BCS			
Plan: bcsstd1.dwg	Rev: TxDOT	Rev: TxDOT	Rev: TxDOT
CONF: February 2010	CONF: February 2010	CONF: February 2010	CONF: February 2010
REVISED:	REVISED:	REVISED:	REVISED:
DATE:	DATE:	DATE:	DATE:
SHEET 01	SHEET 01	SHEET 01	SHEET 01

TABLE OF DIMENSIONS & REINFORCING STEEL (Wings for One Structure End)

Dimensions		Variable Reinforcing		Estimated Quantities per ft of wing length (2-Wings)	
W	X	Y	Z	Bars J1	Bars J2
2'-6"	2'-5"	1'-0"	0"	7"	#4 1'-0"
3'-0"	2'-5"	1'-0"	0"	7"	#4 1'-0"
3'-6"	2'-5"	1'-0"	0"	7"	#4 1'-0"
4'-0"	2'-5"	1'-0"	0"	7"	#4 1'-0"
4'-6"	3'-2"	1'-0"	0"	7"	#4 1'-0"
5'-0"	3'-2"	1'-0"	0"	7"	#4 1'-0"
5'-6"	3'-2"	1'-0"	0"	7"	#4 1'-0"
6'-0"	3'-2"	1'-0"	0"	7"	#4 1'-0"
6'-6"	3'-2"	1'-0"	0"	7"	#4 1'-0"
7'-0"	3'-2"	1'-0"	0"	7"	#4 1'-0"
7'-6"	3'-2"	1'-0"	0"	7"	#4 1'-0"
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5 1'-0"
8'-6"	4'-2"	2'-0"	1'-6"	8"	#5 1'-0"
9'-0"	4'-2"	2'-0"	1'-6"	8"	#5 1'-0"
9'-6"	4'-2"	2'-0"	1'-6"	8"	#5 1'-0"
10'-0"	5'-2"	2'-0"	2'-0"	8"	#5 1'-0"
10'-6"	5'-2"	2'-0"	2'-0"	8"	#5 1'-0"
11'-0"	5'-2"	2'-0"	2'-0"	8"	#5 1'-0"
11'-6"	5'-2"	2'-0"	2'-0"	8"	#5 1'-0"
12'-0"	6'-2"	2'-0"	2'-0"	8"	#5 1'-0"
12'-6"	6'-2"	2'-0"	2'-0"	8"	#5 1'-0"
13'-0"	6'-2"	2'-0"	2'-0"	8"	#5 1'-0"
13'-6"	6'-2"	2'-0"	2'-0"	8"	#5 1'-0"
14'-0"	7'-2"	2'-0"	2'-0"	8"	#5 1'-0"
14'-6"	7'-2"	2'-0"	2'-0"	8"	#5 1'-0"
15'-0"	7'-2"	2'-0"	2'-0"	8"	#5 1'-0"
15'-6"	7'-2"	2'-0"	2'-0"	8"	#5 1'-0"
16'-0"	8'-2"	2'-0"	2'-0"	8"	#5 1'-0"

TABLE OF WINGWALL REINFORCING (2-Wings)

Bar	Size	No.	Spa
DL	#5	~	1'-0"
DS	#5	~	1'-0"
E	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	4
M	#4	~	4
P	#4	~	1'-0"
RS	#5	~	3
RL	#5	~	3
V	#4	~	1'-0"

WING DIMENSION CALCULATIONS:

Formulas: (All values are in Feet)
Hw = H + T + C - 0.250'
A = (Hw - 0.333') (SL)
B = (A) (Tangent (θ + 15°))
Lw = (A) ÷ (Cosine (θ + 15°))
For Cast-In-place culverts:
Ltw = ((N) (S) + (N+1) (U)) ÷ (Cosine θ)
For Precast culverts:
Ltw = ((N) (2U + S) + (N+1) (0.500') ÷ (Cosine θ)
Total Wingwall Area (Two Wings = S.F.) =
(0.5) (Hw + 0.333') (Lw + A)

Hw = Height of Wingwall
SL1 = Side Slope Ratio (Horizontal: Vertical)
A = Length of Short Wingwall
Lw = Length of Long Wingwall
Ltw = Culvert Towall Length
N = Number of Culvert Spans
θ = Culvert Skew

See applicable box culvert standard for H, S, T, and U values.

TABLE OF ESTIMATED CULVERT TOWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	~	1'-6"
Reinf (Lb/Ft)			2.48
Conc (CY/Ft)			0.037

INSIDE ELEVATION

(Showing reinforcing, Culvert and Culvert Towall reinforcing not shown for clarity.)

PLAN

(Showing dimensions and 30° Skew.)

SECTION A-A

(Culvert and Culvert Towall reinforcing not shown for clarity.)

SECTION B-B

(Culvert and Culvert Towall reinforcing not shown for clarity.)

WINGWALL

CORNER DETAILS

(Culvert and Culvert Towall reinforcing not shown for clarity.)

FOOTING AND TOWALL

SECTION B-B

(Culvert and Culvert Towall reinforcing not shown for clarity.)

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.
All reinforcing steel shall be Grade 60.
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.
All reinforcing bars shall be adjusted to provide a minimum of 1 1/4" clear cover.
When structure is founded on solid rock, depth of towalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See BCS sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

FW-S

Plan	Rev	DATE	Rev	DATE	Rev	DATE	Rev	DATE
FW-S	1	February 2010	CONF	CONF	CONF	CONF	CONF	CONF
REVISED:								
DATE:								
SHEET 01								

STORM DETAILS (3 OF 4)

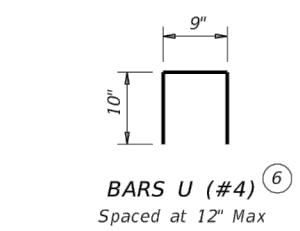
NO.	REVISION	DATE
1	POST PERMIT REVISION 1	11/04/2019

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC

HMT PROJECT NO.: 164.012

SHEET
C5.12

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- 1) "T" is equal to the culvert top slab thickness. For precast boxes with a height of 7' this is the HP-MD standard for additional details.
- 2) Adjust normal culvert slab bars as necessary to clear obstructions.
- 3) Place bars L as shown. Tilt hook as necessary to maintain cover.
- 4) Place normal culvert curb bars H#4 as shown. Adjust as necessary to clear obstructions.
- 5) Additional bars H#4 as required to maintain 6" slab spacing.
- 6) Replace normal culvert curb bars K with one bar M and two bars V as shown spaced at 12" Max. Adjust length of bars V as necessary to maintain clear cover.
- 7) Optional bars L are to be used only for precast box culverts with 3'-0" closure pour.
- 8) Quantities shown are for Contractor's information only. Quantities are per linear foot curb length. The values in table can be interpolated for intermediate values of curb height. "C" quantity includes bars K (when applicable).

Curb Height "C"	Conc (C/LF)	Reinf Steel (Lb/LF)
1'-0"	0.037	8.9
1'-6"	0.056	14.3
2'-0"	0.074	15.4
2'-6"	0.093	17.7
3'-0"	0.111	18.8
3'-6"	0.130	21.2
4'-0"	0.148	22.2
4'-6"	0.167	24.6
5'-0"	0.185	25.6


CONSTRUCTION NOTES:
Adjust reinforcing steel as necessary to provide 1 1/4" cover.
For vehicle safety, top of the curb must not project more than 3" above the finished grade.

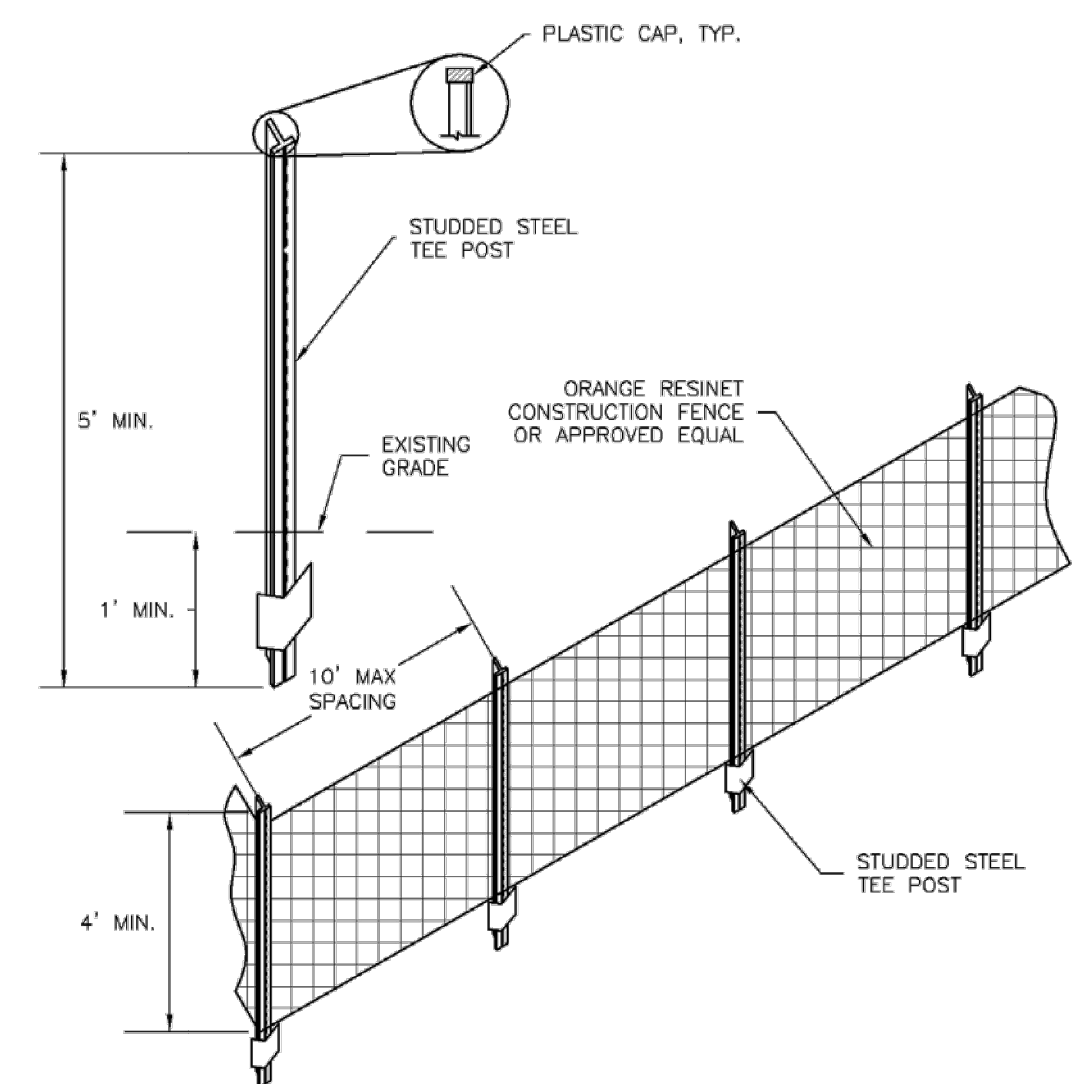
MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class "C" concrete ($f'_c = 3,600$ psi) minimum for curbs.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide Class "C" concrete ($f'_c = 3,600$ psi) minimum for curbs.

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
These extended curb details have sufficient strength to allow for future retrofit of Type T631 or T631LS railing. These details are suitable for use with PR1, PR2 and PR3 type rails. These details are not suitable for the mounting of other rail types. For new construction using T631 or T631LS railing, use the T631-CM standard.
This Curb is considered as part of the Box Culvert for payment.

Cover dimensions are clear dimensions, unless noted otherwise.
Reinforcing bar dimensions shown are out-to-out of bar.

 Texas Department of Transportation	Bridge Division Standard															
<h1 style="margin: 0;">EXTENDED CURB DETAILS</h1> <p style="margin: 10px 0 0 0;">FOR BOX CULVERTS WITH CURBS OVER 1'-0" TO 5'-0" TALL</p>																
<h2 style="margin: 0;">ECD</h2>																
File: ecdstd1.dgn																
① TxDOT February 2002 REVISED:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;">DWG</td> <td style="width: 15%;">GAF</td> <td style="width: 15%;">Ck: TxDOT</td> <td style="width: 15%;">DW: TxDOT</td> <td style="width: 15%;">Ck: GAF</td> </tr> <tr> <td>CONF</td> <td>SECT</td> <td>JOB</td> <td colspan="2">HOLDING</td> </tr> <tr> <td colspan="2">DISP</td> <td colspan="2">COUNTY</td> <td>SHEET NO.</td> </tr> </table>	DWG	GAF	Ck: TxDOT	DW: TxDOT	Ck: GAF	CONF	SECT	JOB	HOLDING		DISP		COUNTY		SHEET NO.
DWG	GAF	Ck: TxDOT	DW: TxDOT	Ck: GAF												
CONF	SECT	JOB	HOLDING													
DISP		COUNTY		SHEET NO.												
80-10 General Notes revised 7-8-1 OK																



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CONSTRUCTION FENCE MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION AND THEREBY NECESSitates MAINTENANCE.
 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
 5. WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE FENCE AND MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE:** MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UFDC STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED. WHEN

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N.D.	REVISION DESCRIPTION	REVISION DATE
A	POST PERMIT REVISION 1	11/04/2019

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: 164.012

SHEET
C5.13

CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES 48 HOURS PRIOR TO EXCAVATION:

New Braunfels Utilities
Time Warner Cable
Centerpoint Gas
Robert Sanders
Damaged Lines
AT&T Telephone
Eric White PM
Scott McBrearty (Construction)
Texas One Call

830-629-8400
830-625-3408
830-643-6434
830-643-6013
888-876-5786
830-303-1333
210-283-1708
210-658-4886
830-545-6005

C.P.E. LOCATOR

CALL CENTER POINT ENERGY LOCATOR AT 1-800-545-6005, 48HRS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.101, CENTER POINT ENERGY 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.

TELEPHONE LOCATOR

THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION AT 1-800-545-6005, CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT TELEPHONE COMPANY DURING CONSTRUCTION.

TRENCH EXCAVATION SAFETY PROTECTION

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 FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTORS IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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 EXCAVATIONS.

WATER STRUCTURE TOTALS					
PIPE SIZE	PIPE LENGTH	DOMESTIC METER SIZE	DOMESTIC METERS	FIRE HYDRANTS	FIRE LINES
8"	4682'	5/8"	142	9	0

2

RESTRAINED LENGTH NOTES:

- CONTRACTOR TO COORDINATE WITH NEW BRAUNFELS UTILITIES (N.B.U.) FOR WATER, SEWER, AND ELECTRIC SERVICE TO THE SITE.
- ALL IN-LINE VALVES, BENDS & PLUGS SHALL BE RESTRAINED, RESTRAINT TO BE PROVIDED ON EACH SIDE OF THE VALVE, FITTING OR ANY REQUIRED JOINT.
- RL=RESTRAINT LENGTH
- CONTRACTOR SHALL DETERMINE RESTRAINT LENGTH REQUIRED FOR HORIZONTAL VERTICAL FITTINGS BASED ON RESTRAINT LENGTH TABLE SHOWN BELOW.

RESTRAINT LENGTH FOR PIPE										
PIPE INSIDE DIAMETER	MATERIAL	HORIZONTAL BENDS				VERTICAL BENDS				DEAD END/ INCLINE VALVES
		90°	45°	22.5°	11.25°	UPPER	22.5°	45°	LOWER	
8"	PVC	32	14	7	4	37	18	9	10	5
8"	DUCTILE IRON	27	11	6	3	33	16	8	12	6
12"	PVC	45	19	9	5	52	25	13	14	7

TEE			
PIPE INSIDE DIAMETER	PIPE INSIDE DIAMETER OF BRANCH	MATERIAL	FT.
8"	8"	PVC	77
8"	8"	DUCTILE IRON	50
12"	8"	PVC	72

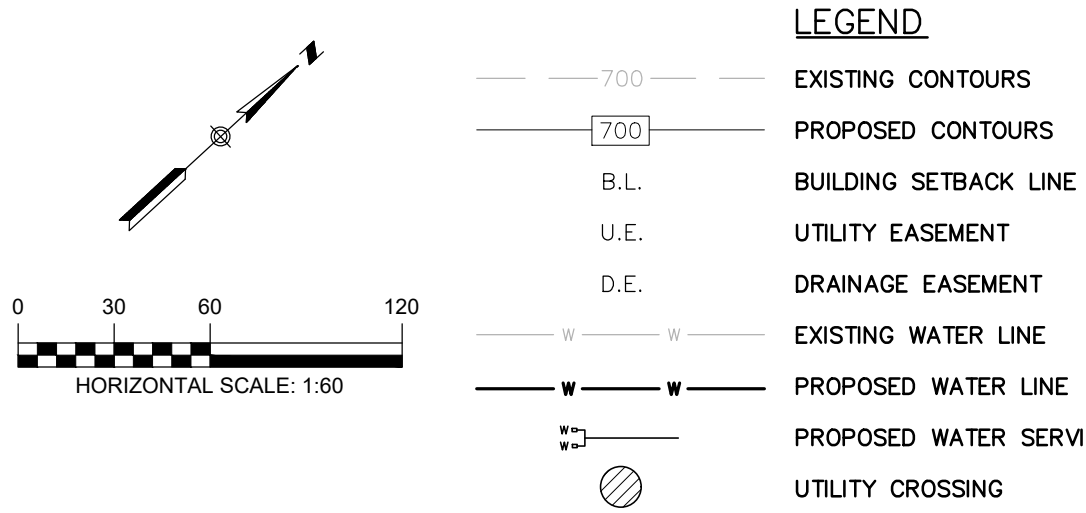
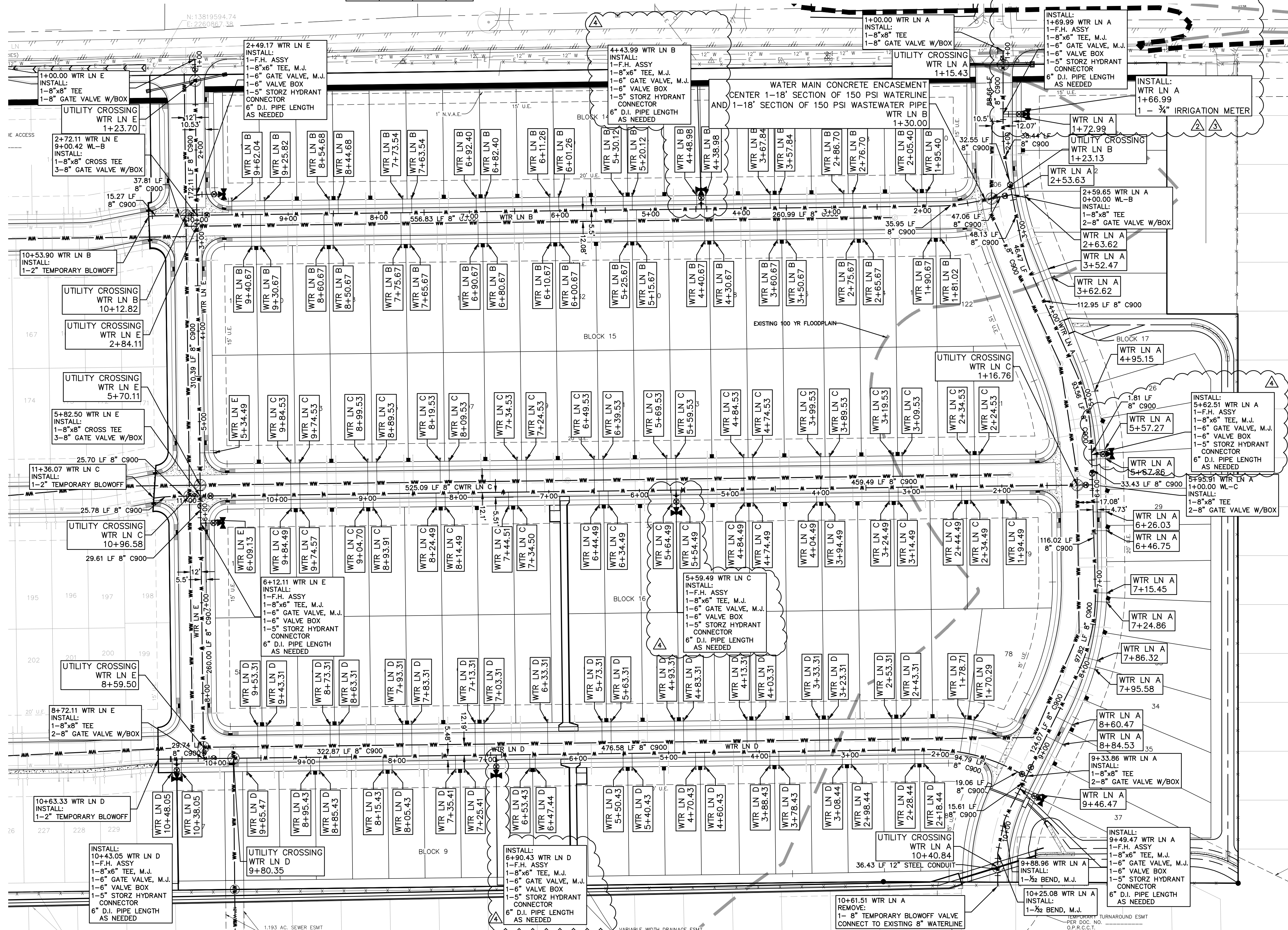
NOTES:

LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:

- SAFETY FACTOR = 1.5 TO 1
- TEST PRESSURE = 200psi
- SOIL DESIGNATION = IN ORGANIC CLAY OF HIGH PLASTICITY
- DEPTH OF COVER = 3.5 FEET (TYPICAL AND UPPER BEND)
- DEPTH OF COVER = 5 FEET (LOWER BEND)
- LENGTH ALONG RUN = 2 FEET

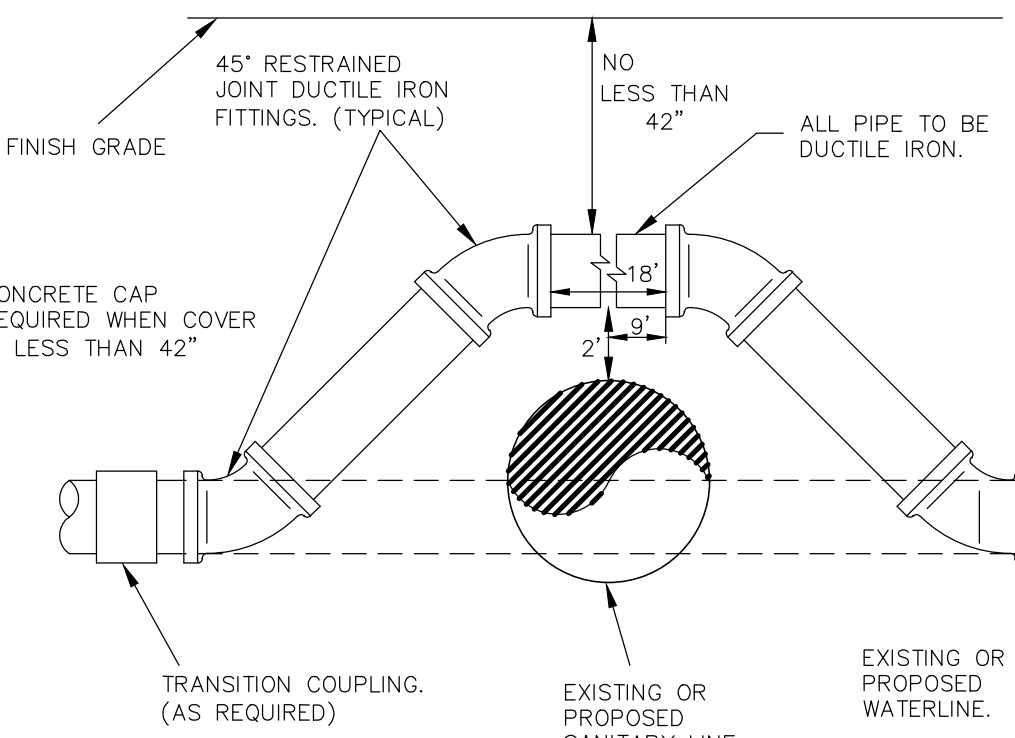
CONSTRUCTION NOTES:

- ALL WATER MAINS SHALL BE AWWA C900 (CLASS 150 OR GREATER).
- WATER SERVICES SHALL BE SINGLE 1" COPPER TUBING.
- WATER LINE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- WATER MAIN SHALL HAVE A MINIMUM OF 48 INCHES OF COVER, OTHERWISE CONCRETE ENCASEMENT WILL BE REQUIRED.
- 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.
- CONTRACTOR WILL KEEP THE AREA ON TOP OF AND AROUND THE WATER METER BOX FREE OF ALL OBJECTS AND DEBRIS.
- INITIAL BACKFILL OF WATER LINES SHALL BE MANUFACTURED SAND OR PEA GRAVEL AS PER NBU SYSTEMS CONNECTION & CONSTRUCTION POLICY.
- 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.
- HYDROSTATIC TESTING IS DONE FROM VALVE TO VALVE.
- 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.
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- 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.
- 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.
- 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.
- 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 UDL OF COVER.
- ALL VALVES, HYDRANTS, AND METERS ARE SHOWN SCHEMATICALLY AND SHALL BE INSTALLED ACCORDING TO THE DETAILS.
- NBU WILL REQUIRE CONTRACTORS TO TAKE AN OUTAGE DURING CONSTRUCTION IF SYSTEM VALVES ARE NOT AVAILABLE OR EXISTING VALVES DO NOT FUNCTION. LINE STOPPERS WILL BE REQUIRED BASED ON THE FOLLOWING CRITERIA:
 - IF THE NUMBER OF RESIDENTIAL CUSTOMERS AFFECTED IS GREATER THAN 20 AND EXPECTED TO LAST MORE THAN 4 HOURS.
 - IF ANY COMMERCIAL CUSTOMERS ARE AFFECTED BY THE OUTAGE THEN THE USE OF LINE STOPPERS WILL BE DETERMINED ON A CASE BY CASE BASIS.
 - IF ANY CRITICAL CARE CUSTOMERS ARE AFFECTED BY THE OUTAGE THEN THE USE OF LINE STOPPERS WILL BE DETERMINED ON A CASE BY CASE BASIS.
- SYSTEM CONDITIONS MAY REQUIRE A LINE STOPPER AND MAY NOT BE KNOWN UNTIL CONSTRUCTION COMMENCES.

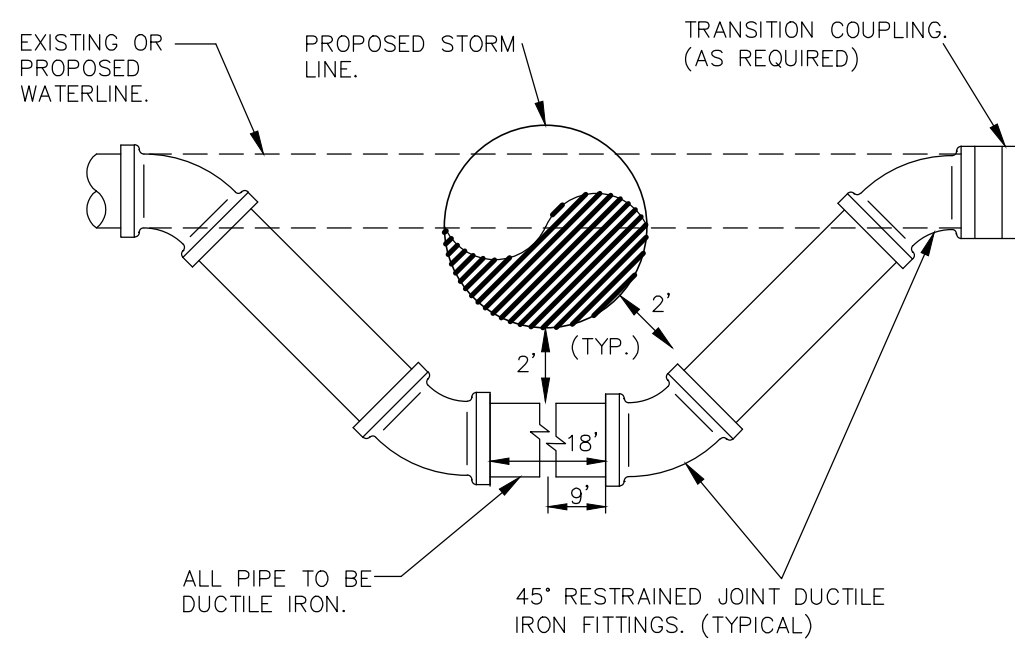


UTILITY NOTES:

- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
- NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
- THIS SITE IS IN THE KOHLBERG PRESSURE ZONE. ACCORDING TO NEW BRAUNFELS UTILITIES PRESSURE RECORDER LOCATIONS.
- CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
- POINT OF DELIVERY SHALL BE IN ACCORDANCE WITH NBU WATER AND WASTEWATER DESIGN CRITERIA MANUAL, SECTION 2.3.0.
- ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
- THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5- FEET IN DEPTH LOCATED IN PUBLIC ROW OR EASEMENTS. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.



A WATERLINE ADJUSTMENT DETAIL N.T.S.



B WATERLINE ADJUSTMENT DETAIL N.T.S.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'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 COMPACTION OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR MOISTURE. TESTING 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 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.

DEEP TRENCH COMPACTION TESTING

THIS PROJECT INCLUDES UTILITY INSTALLATIONS GREATER THAN 5 FEET IN DEPTH LOCATED IN PUBLIC RIGHT OF WAY OR EASEMENTS. DEEP TRENCHES POSE COMPACTION TESTING AND CONSTRUCTION CHALLENGES AND CITY METHODS FOR TESTING AND COMPACTION MAY NOT BE ACHIEVABLE. A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

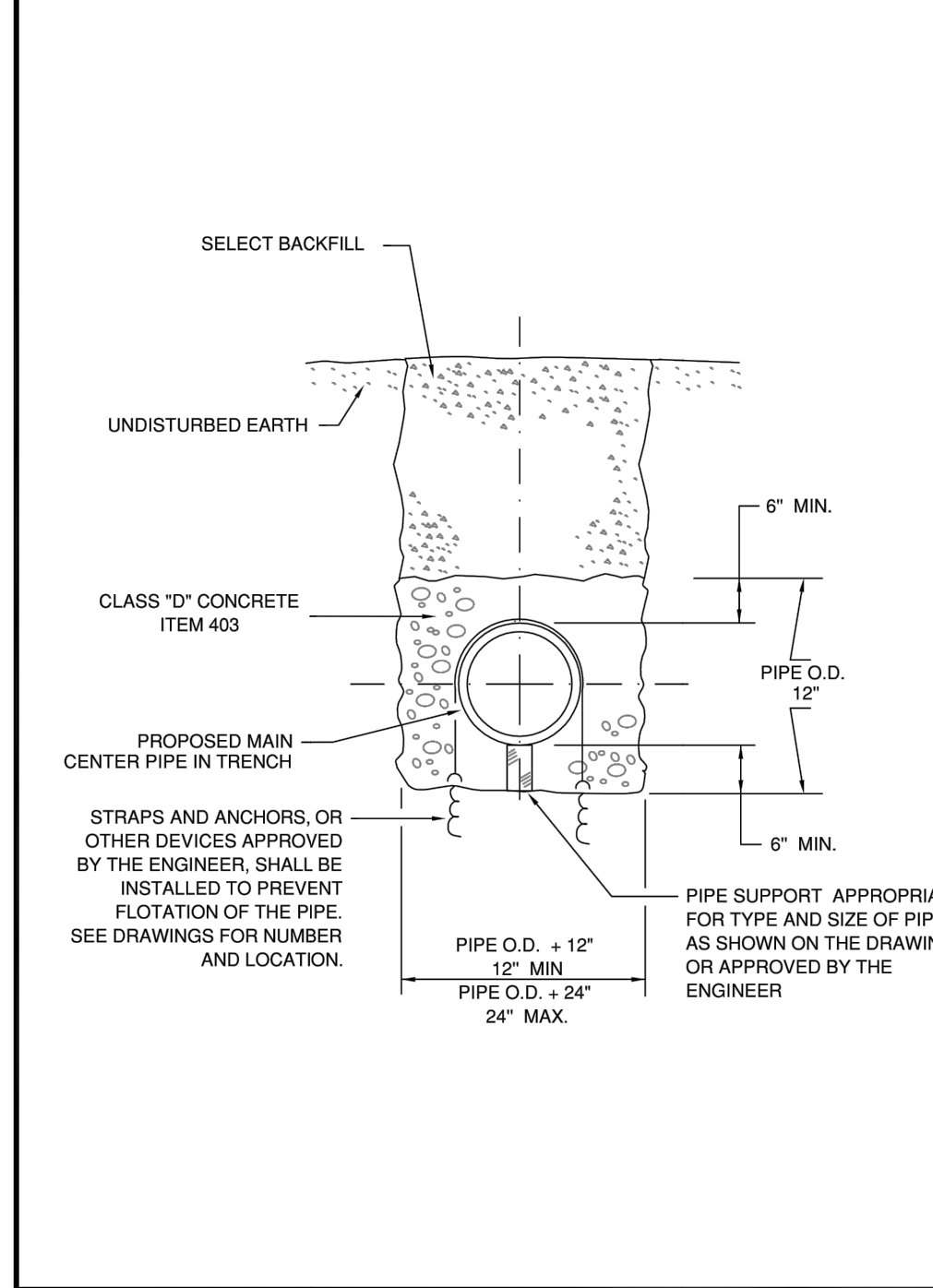
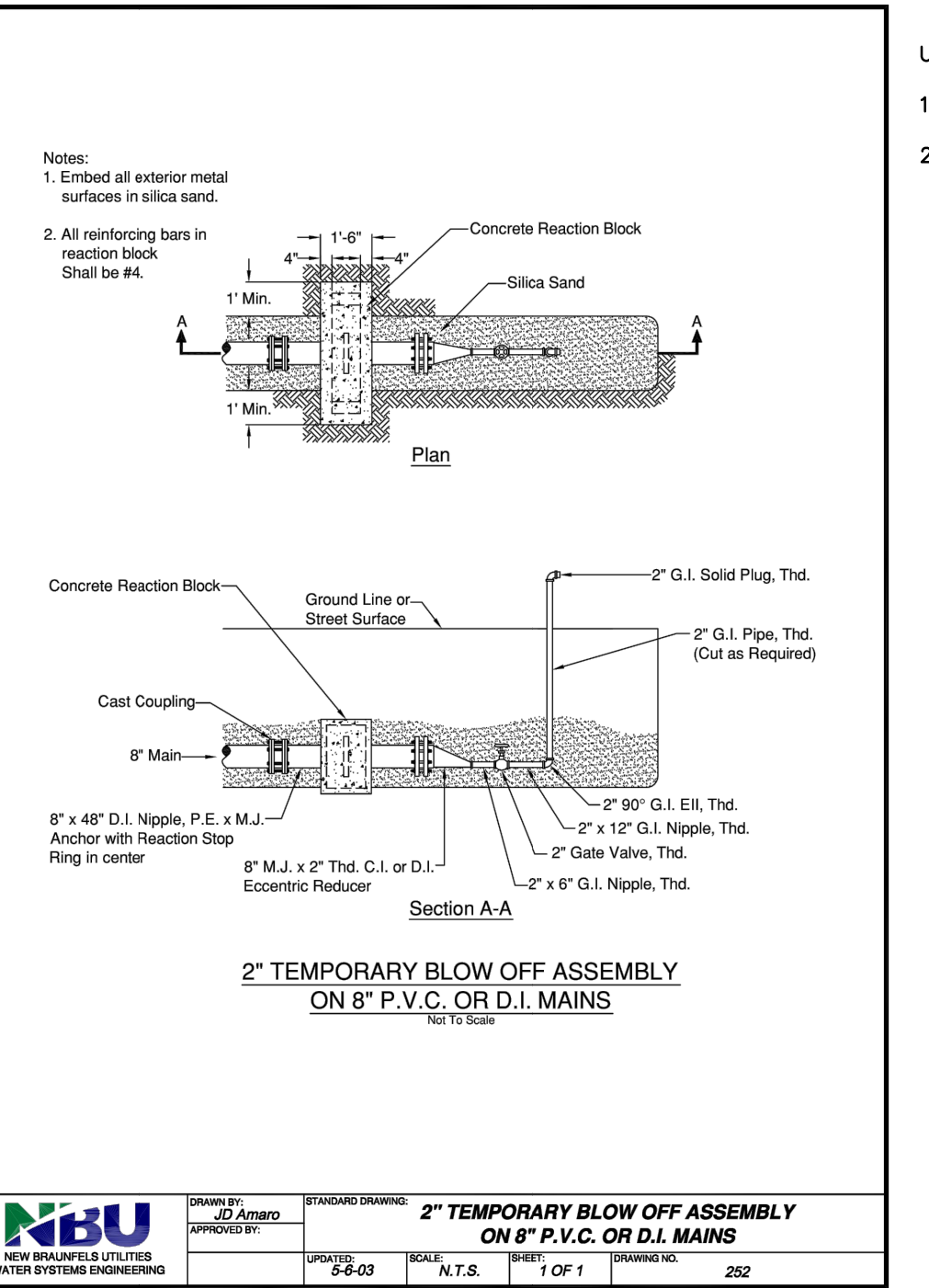
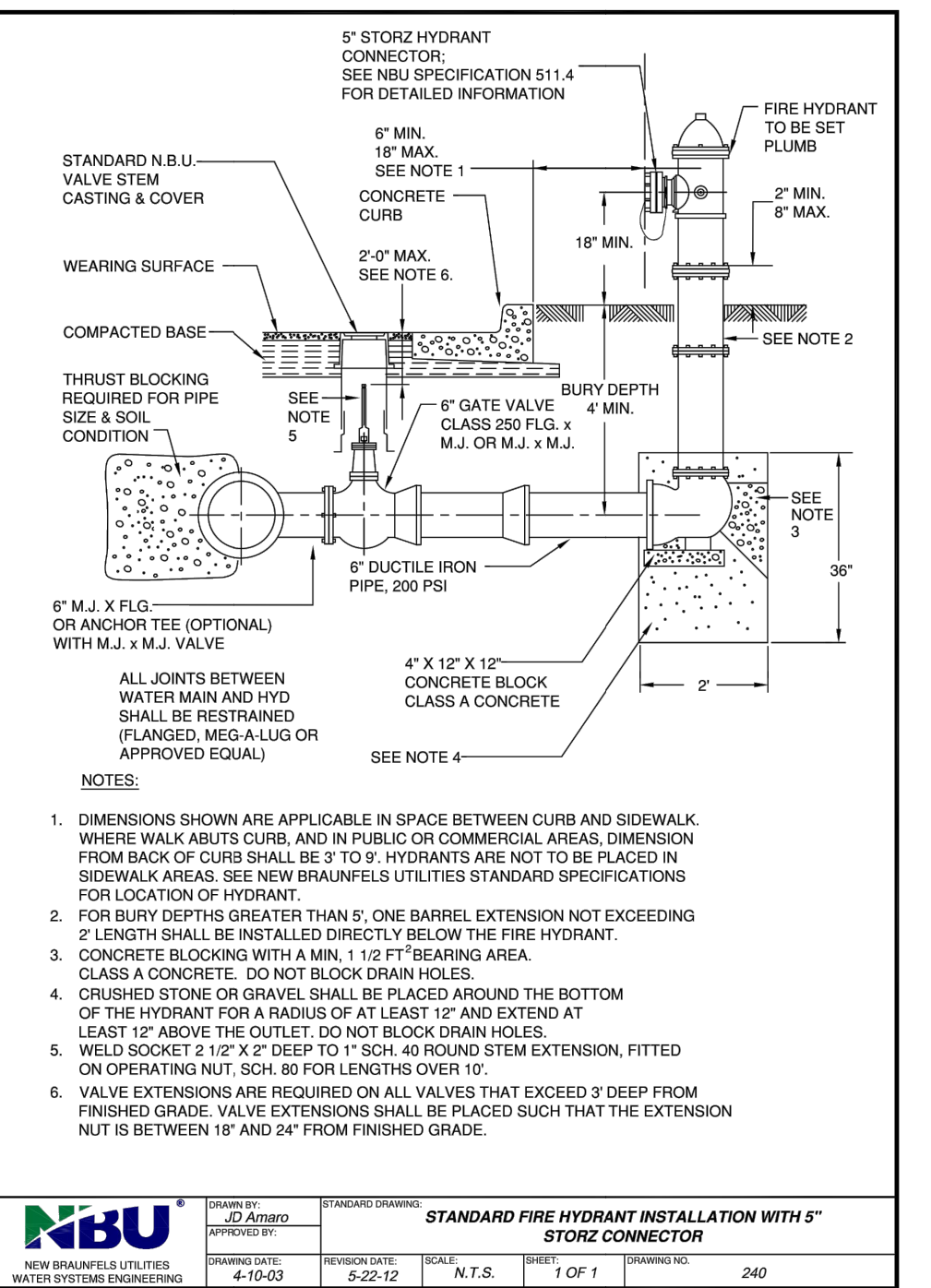
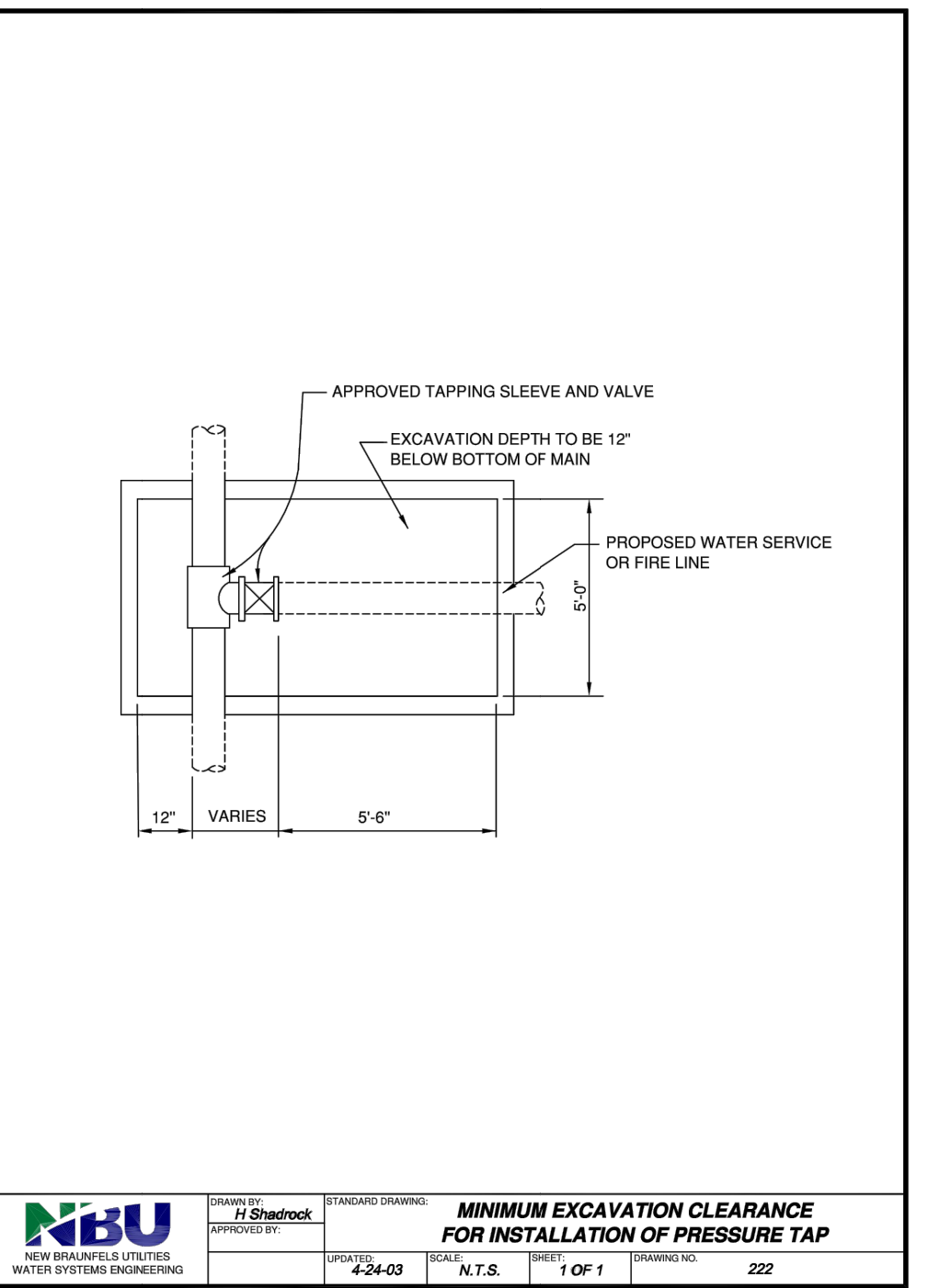
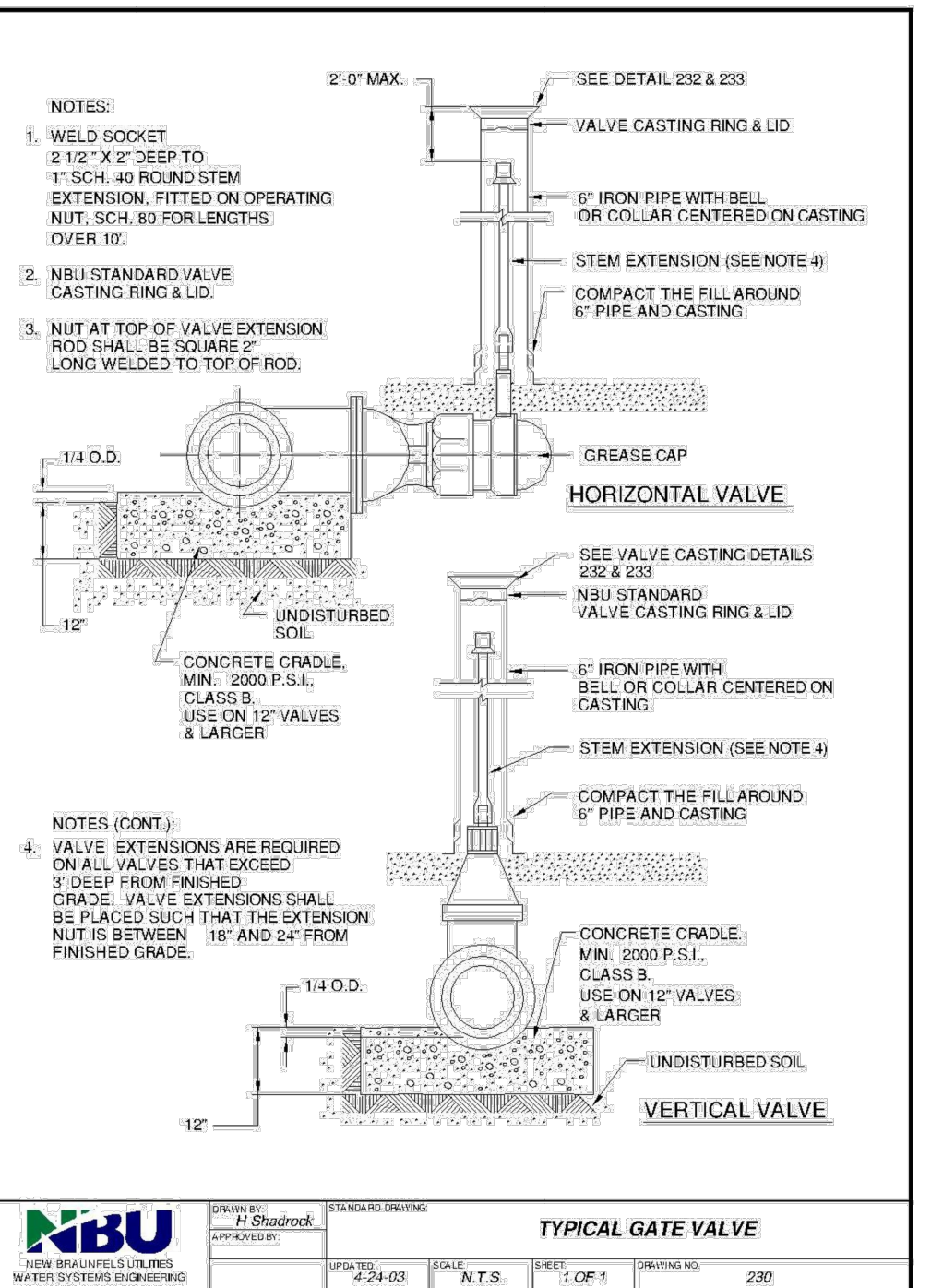
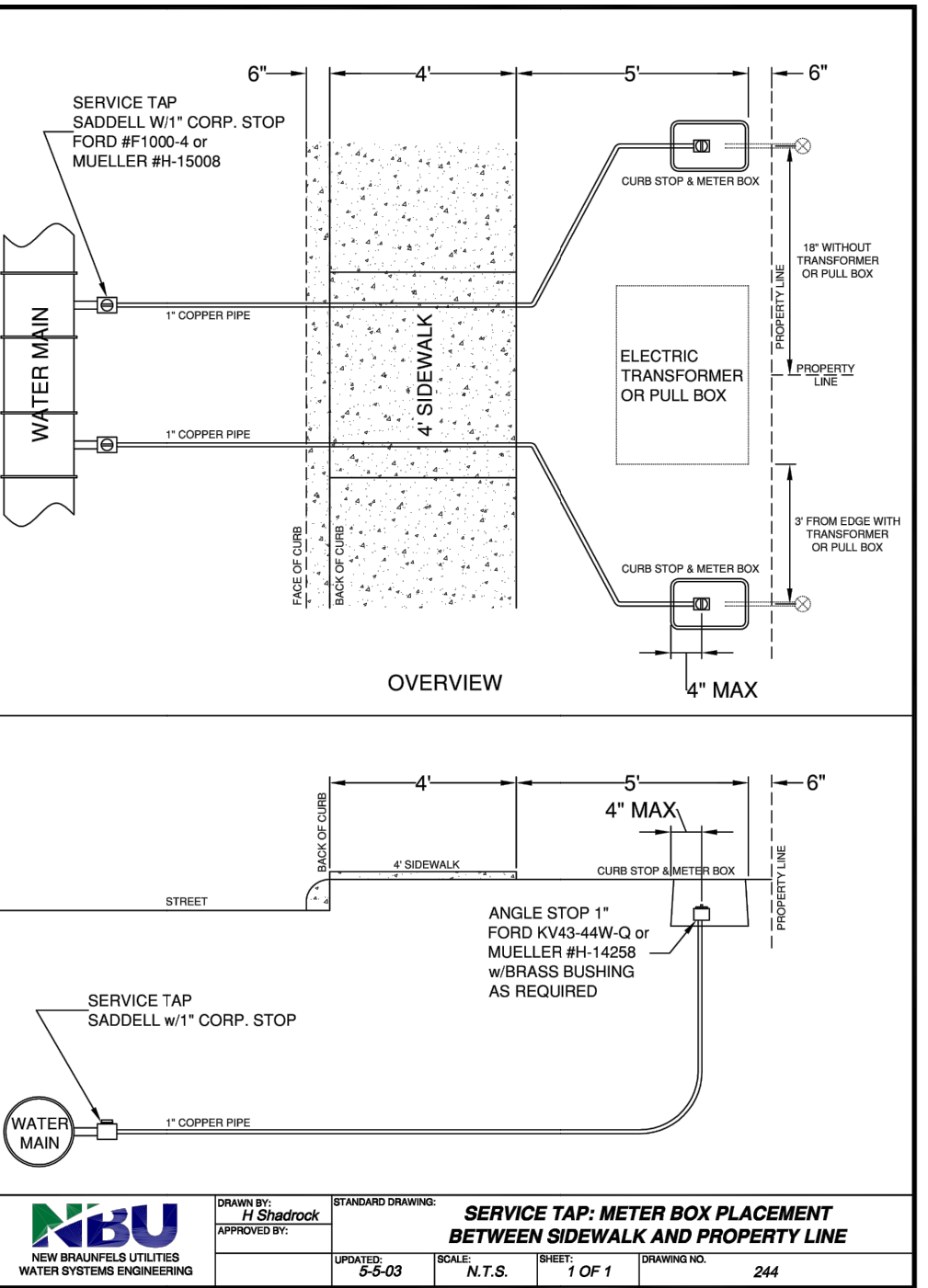
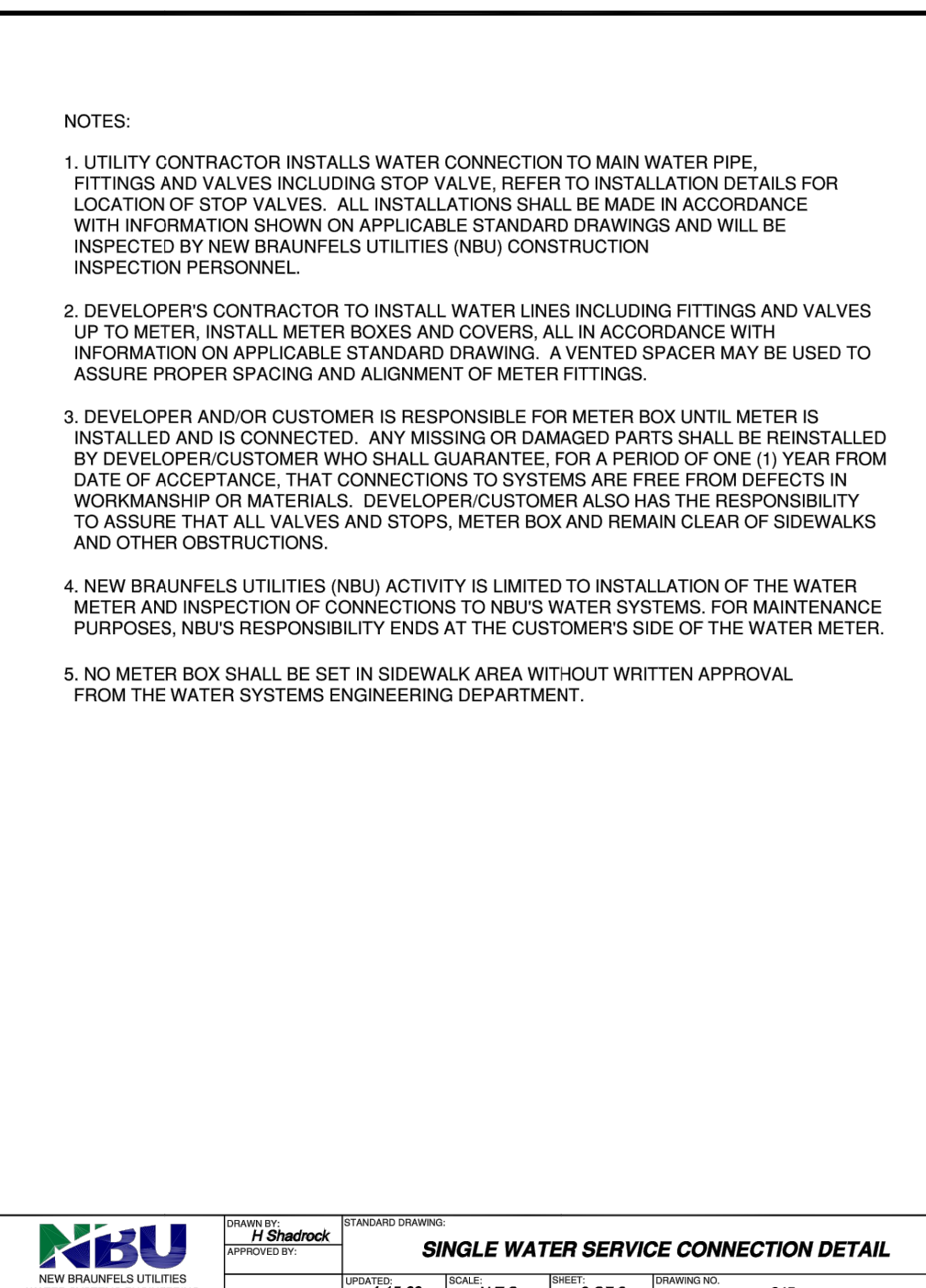
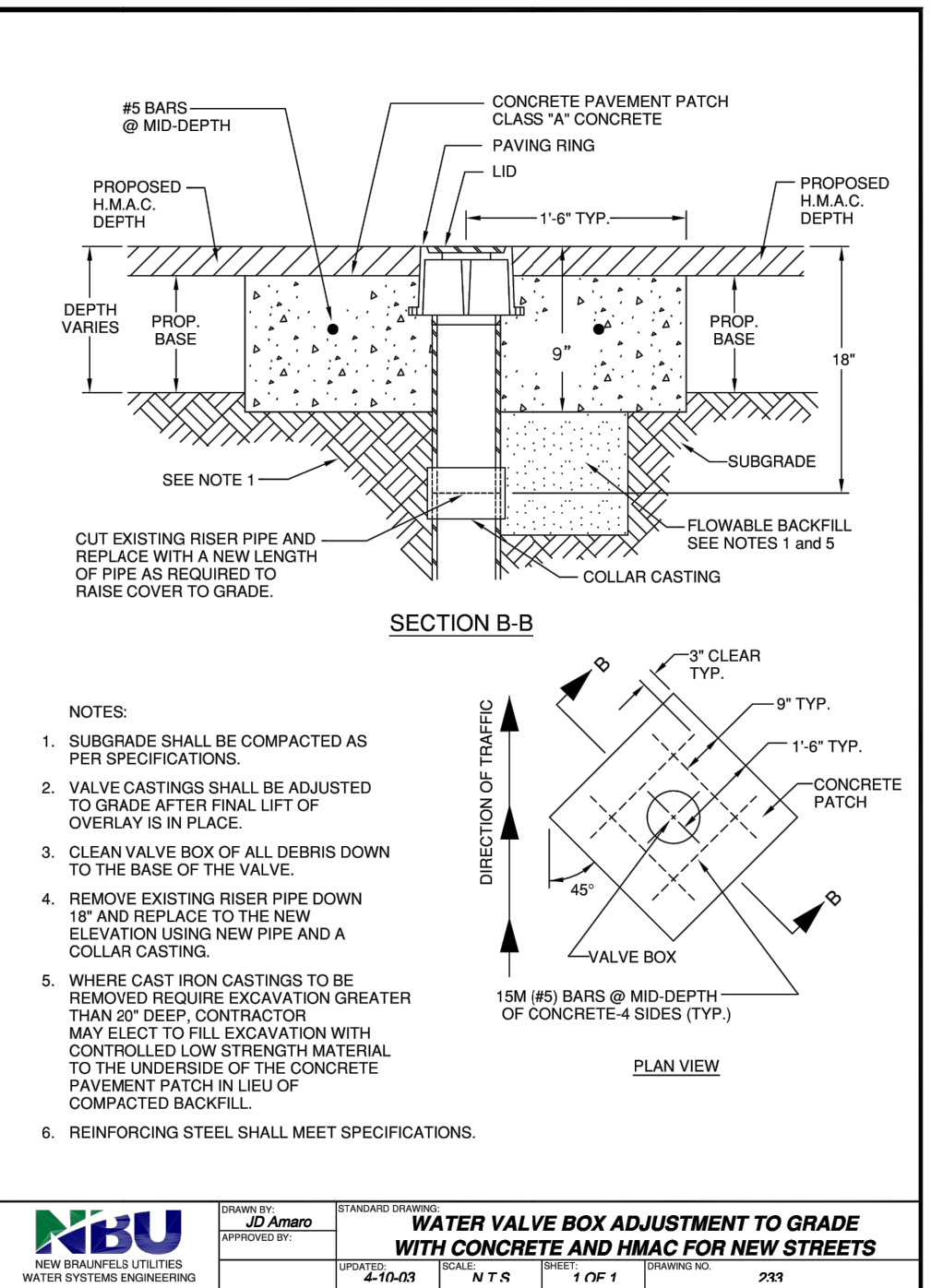
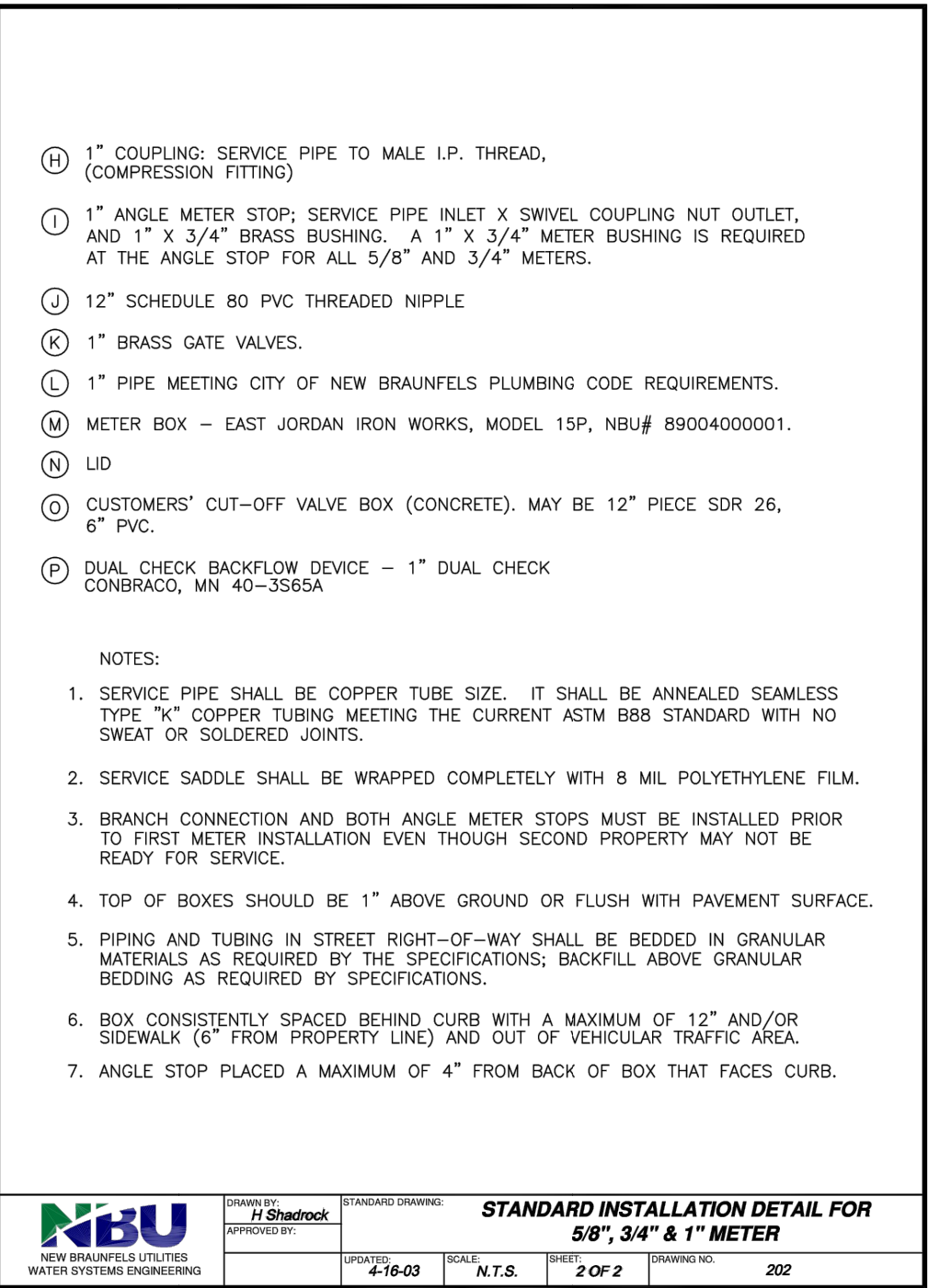
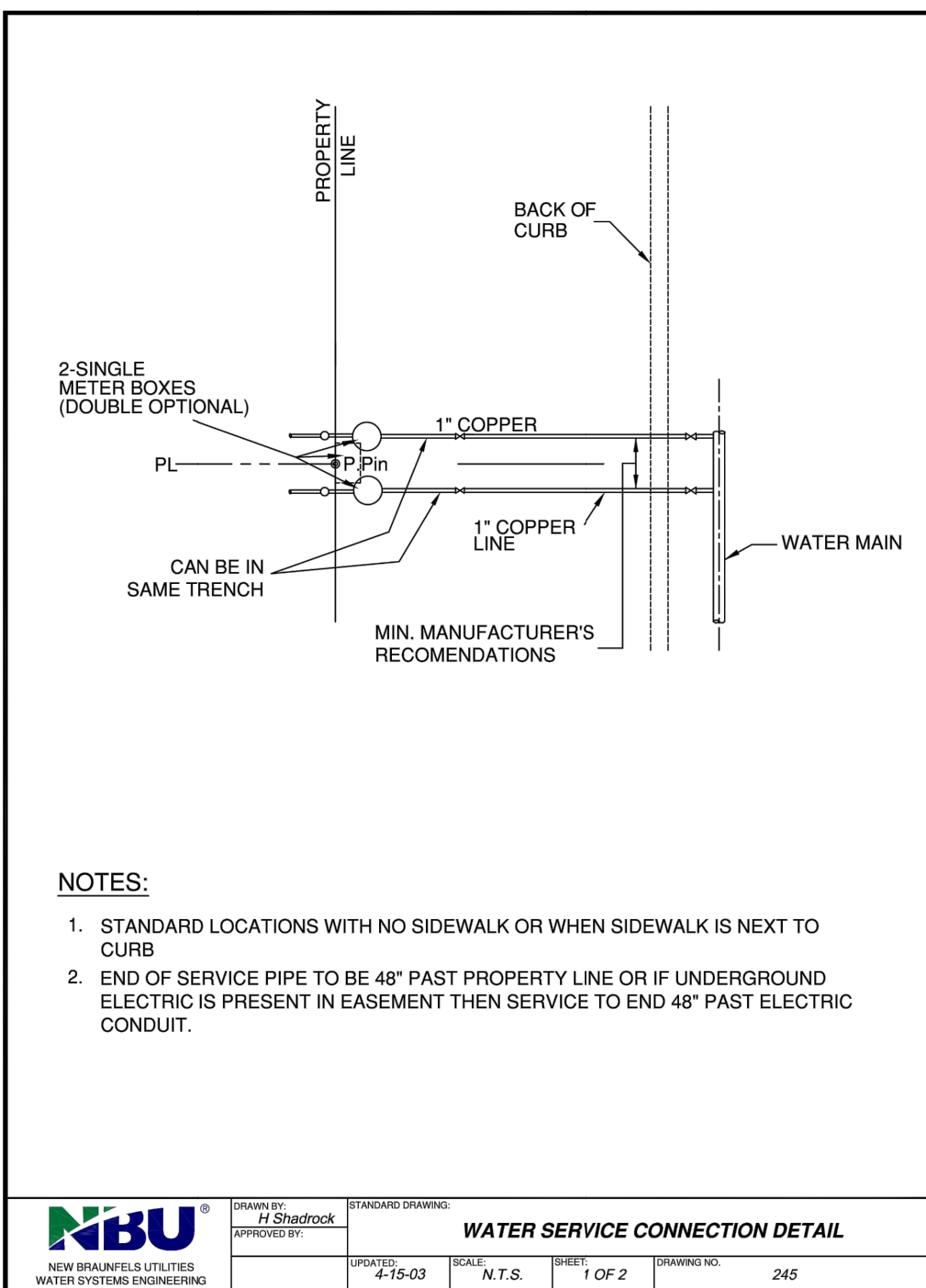
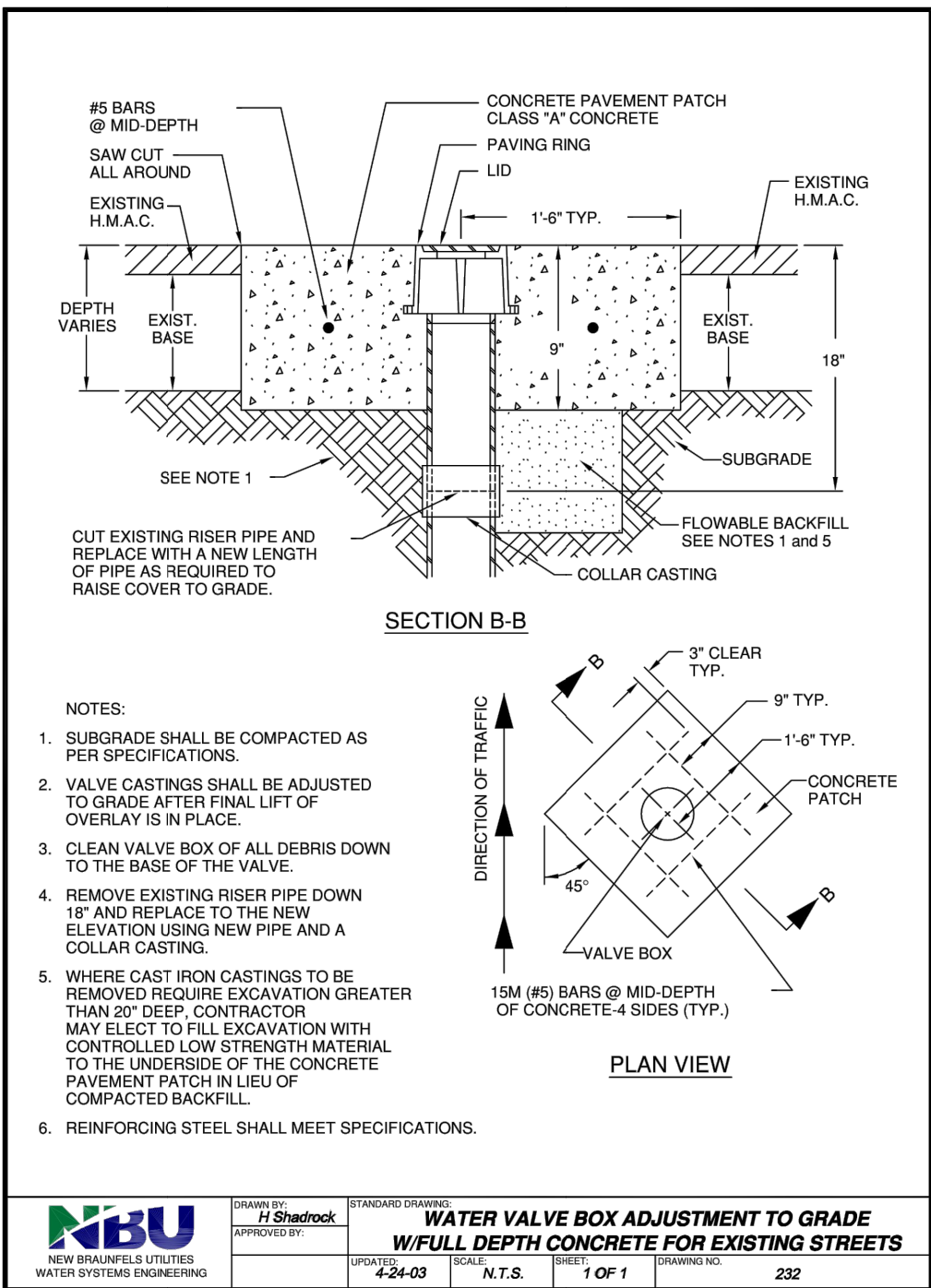
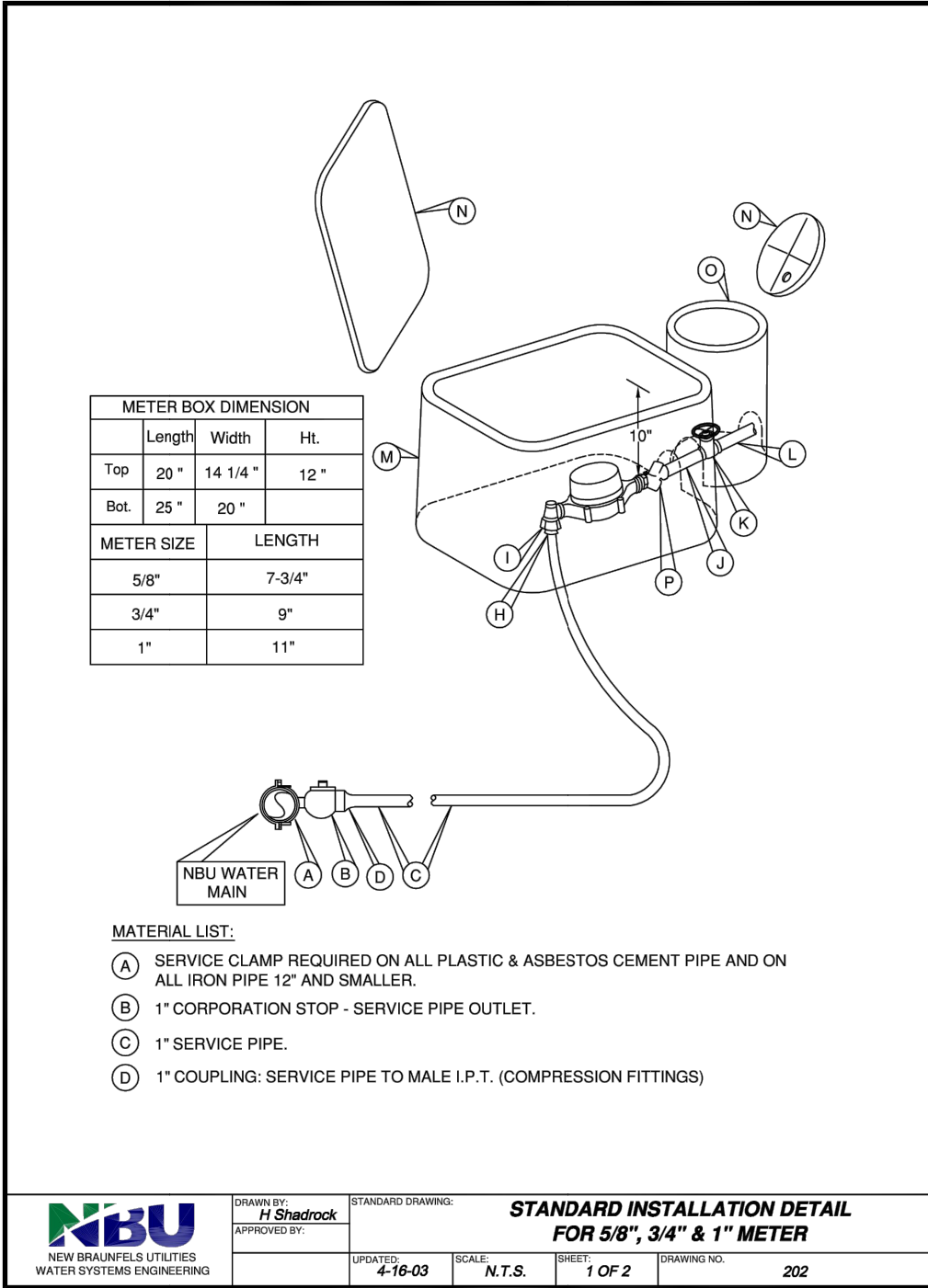
REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

OVERALL WATER PLAN

CREEKSIDE FARMS UNIT 3

REVISION		DATE	DESCRIPTION
NO.	REVISION	DATE	DESCRIPTION
1	POST PERMIT REVISION 1	11/04/2019	
2	POST PERMIT REVISION 2	01/06/2020	
3	IRRIGATION METER AND TRINITY SPRINGS REV	01/24/2020	
4	FIRE HYDRANT REVISION	02/27/2020	
DATE: MAY 2019			
DRAWN BY: MA			
DESIGNED BY: TG			
REVIEWED BY: CC			
HMT PROJECT NO.: 164.012			
SHEET C6.0			



410 N. SEGUN AVENUE
NEW BRAUNFELS, TX 78130
HMTNB.COM
P(830)625-8555 • F(830)625-8556
T(830)625-8557 • F(830)625-8558
T(830)625-8559 • F(830)625-8560
T(830)625-8561 • F(830)625-8562
T(830)625-8563 • F(830)625-8564
T(830)625-8565 • F(830)625-8566
T(830)625-8567 • F(830)625-8568
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T(830)625-8597 • F(830)625-8598
T(830)625-8599 • F(830)625-8600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
TIMOTHY A. GORENA
129271
LICENSED PROFESSIONAL ENGINEER
05/24/2019

WATER DETAILS

CREEKSIDE FARMS
UNIT 3

REVISION	DATE	DESCRIPTION
NO.		

DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: 164.012

SHEET
C6.1

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'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.

DEEP TRENCH COMPACTION TESTING

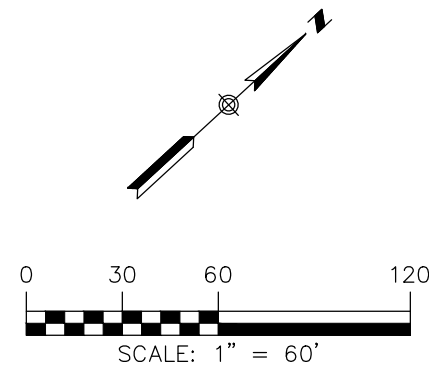
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CONSTRUCTION NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
2. NO VALVES, HYDRANTS, CLEAN-OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
3. ALL SEWER PIPE ASTM 3034 (115 PSI)
4. ALL MANHOLES SHALL BE 48" DIAMETER.
5. ALL RING AND COVER SHALL BE 32" DIAMETER.
6. EXISTING MANHOLES, RIM AND FLOWLINE ELEVATIONS SURVEYED BY HMT ENGINEERING & SURVEYING DATED DECEMBER, 2014.
7. CONTRACTOR TO FIELD VERIFY THE EXISTING SANITARY SEWER INVERT ELEVATIONS.
8. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.

TRENCH EXCAVATION SAFETY PROTECTION

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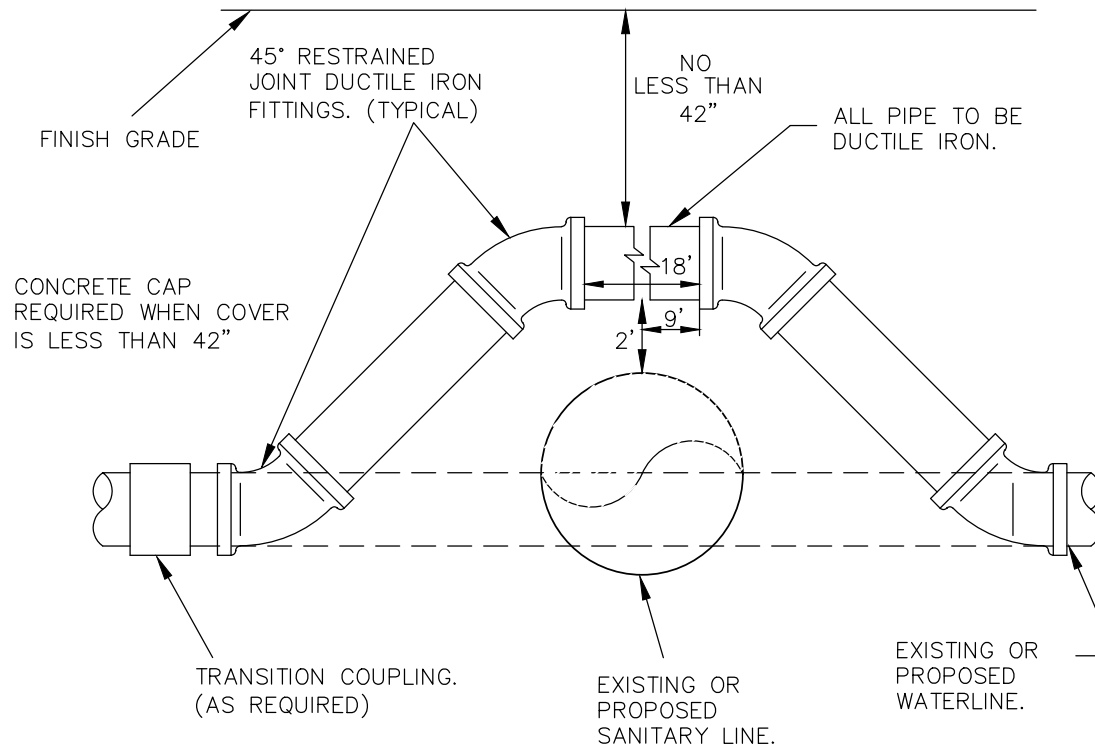


LEGEND

- 700 EXISTING CONTOURS
- 700 PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING
- ELECTRICAL INFRASTRUCTURE

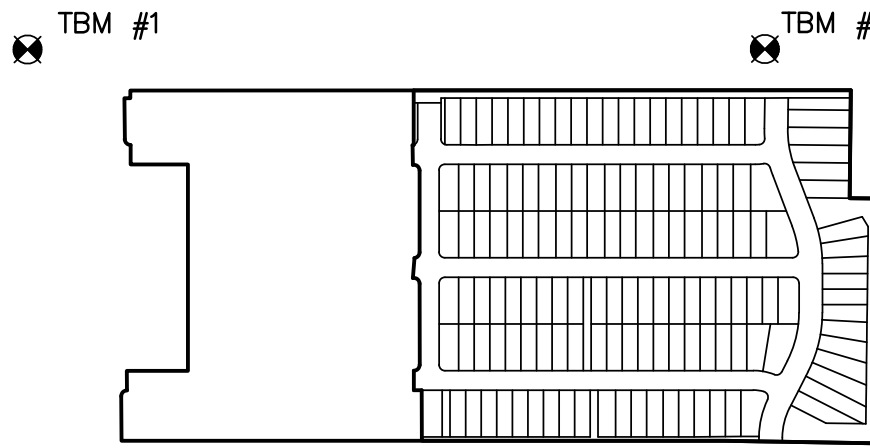
UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.



WATERLINE ADJUSTMENT DETAIL
N.T.S.

WASTEWATER STRUCTURE TOTALS		
	QUANTITY	UNITS
8" PIPE	4258'	LF
48" MANHOLE	17	EA
6" LATERALS	141	EA



PROJECT BENCHMARK

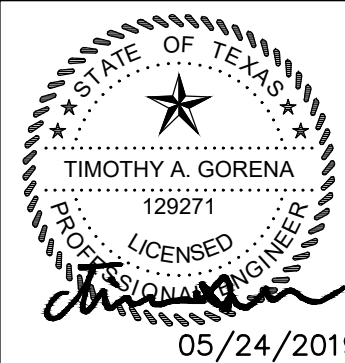
SITE TBM #1
SET SQUARE IN CONCRETE
N: 13818905.33
E: 2260087.48
ELEV: 683.89

SITE TBM #2
SET 'X' IN CONCRETE
N: 13820290.23
E: 2261449.99
ELEV: 679.10

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

410 N. SEGUN AVENUE
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T: 361-25-1015360

HMT
ENGINEERING & SURVEYING



OVERALL WASTEWATER

PLAN

CREEKSIDE FARMS
UNIT 3

REVISION	DESCRIPTION	DATE
NO.		

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

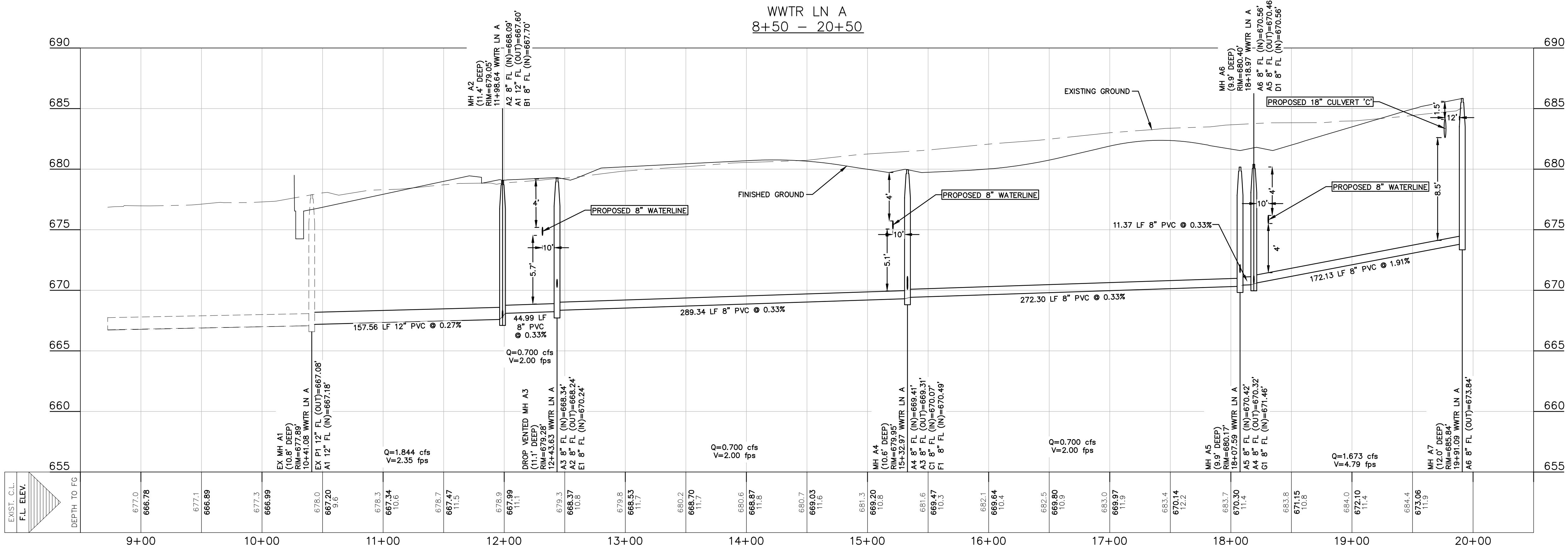
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

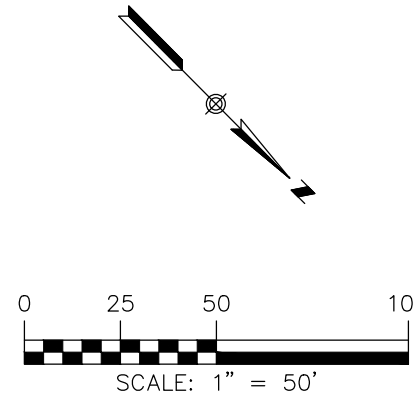
SHEET

C7.0



TRENCH EXCAVATION SAFETY PROTECTION

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- UTILITY CROSSING

UTILITY NOTES:

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VUL. 653, Pg. 780
O.P.R.C.C.T.

UTILITY CROSSING
WWTR LN A
19+76.88

MH A7
RIM ELEV=685.84'
19+91.09 WWTR LN A
A6 8" FL (OUT)=673.84'

N:13819594.74
E:2260867.38

UTILITY TRENCH COMPACTION

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WASTEWATER LINE A

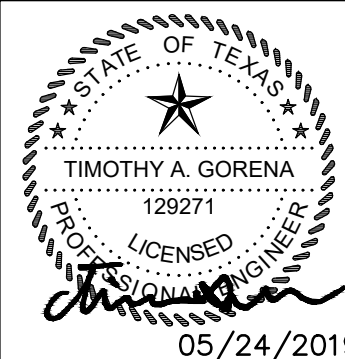
PLAN & PROFILE

CREEKSIDE FARMS

UNIT 3

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T(830)625-8559 • F(830)625-8560

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NO.	REVISION	DESCRIPTION	DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

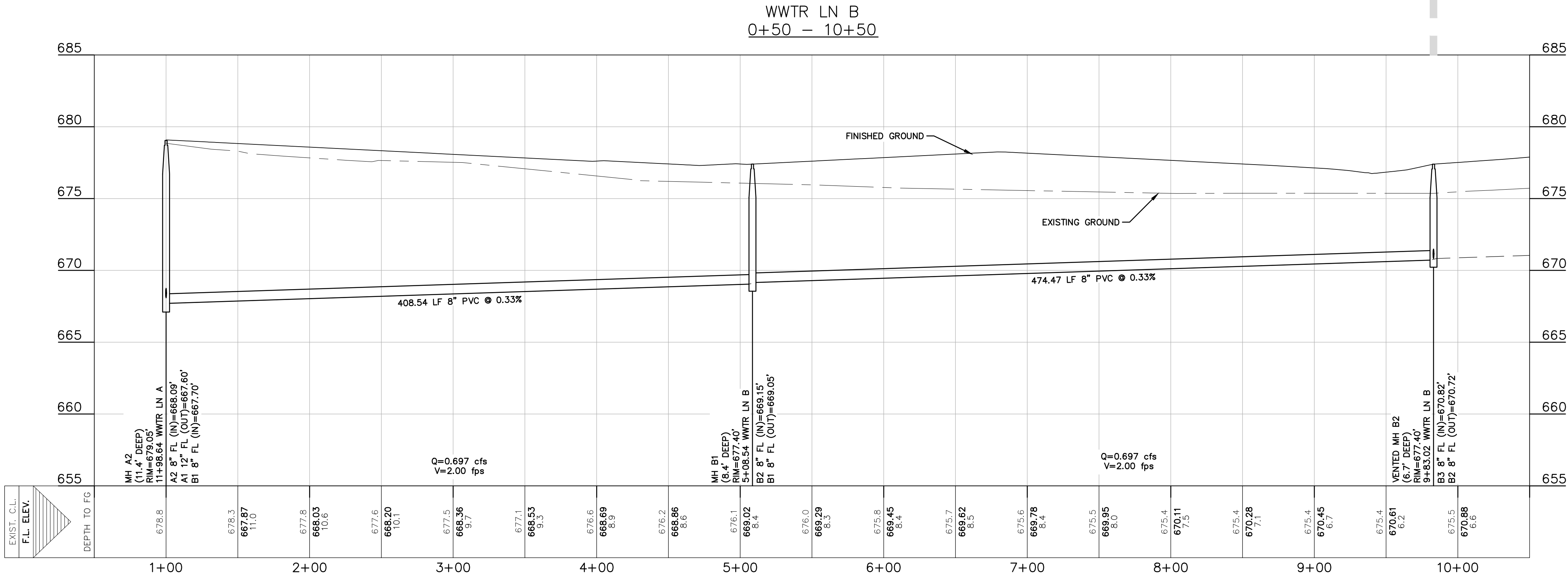
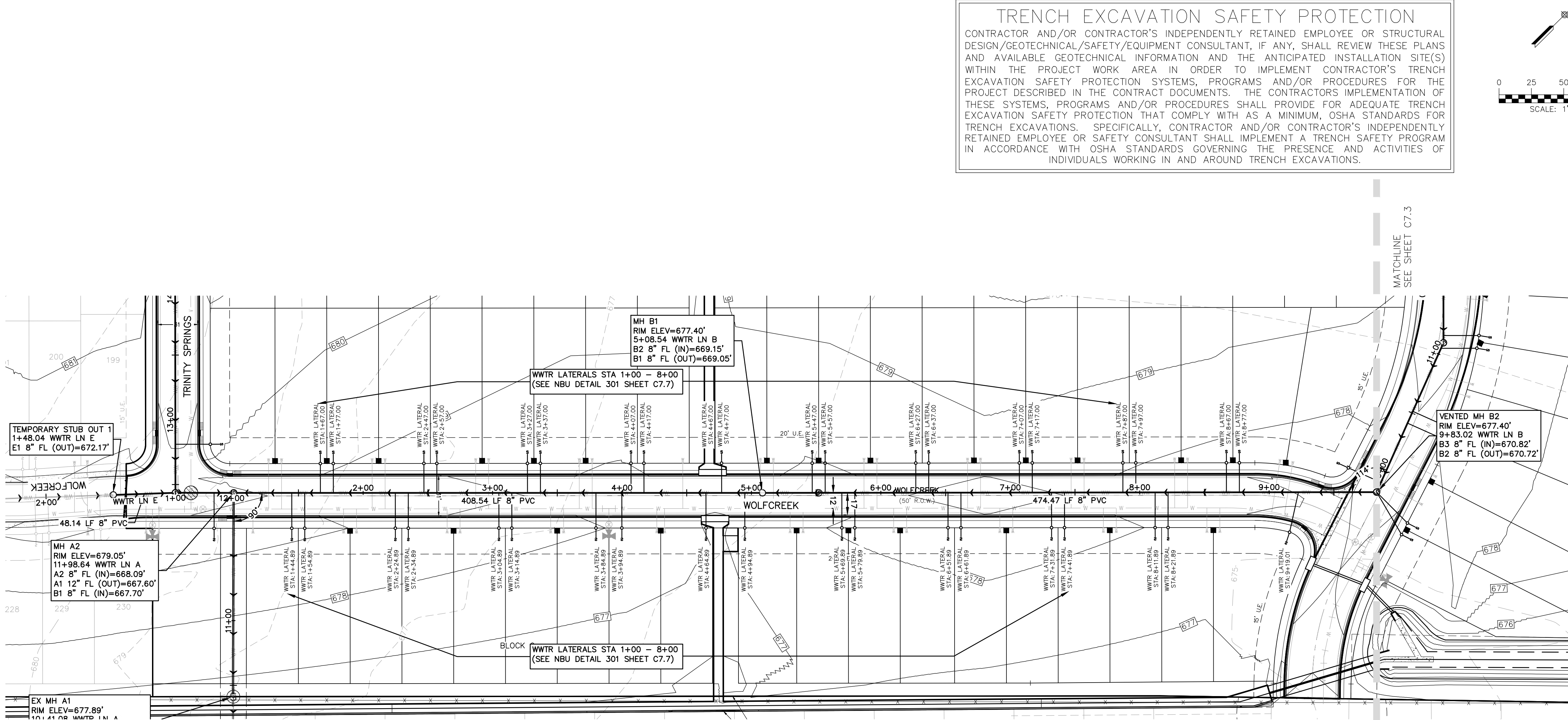
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

SHEET

C7.1



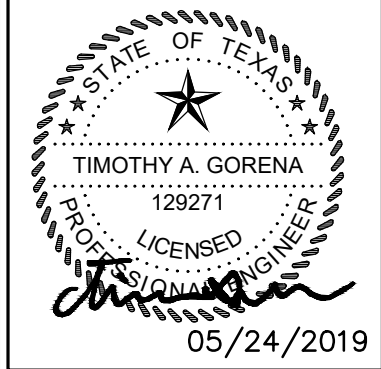
**WASTEWATER LINE B
PLAN & PROFILE (1 OF 2)**

CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE

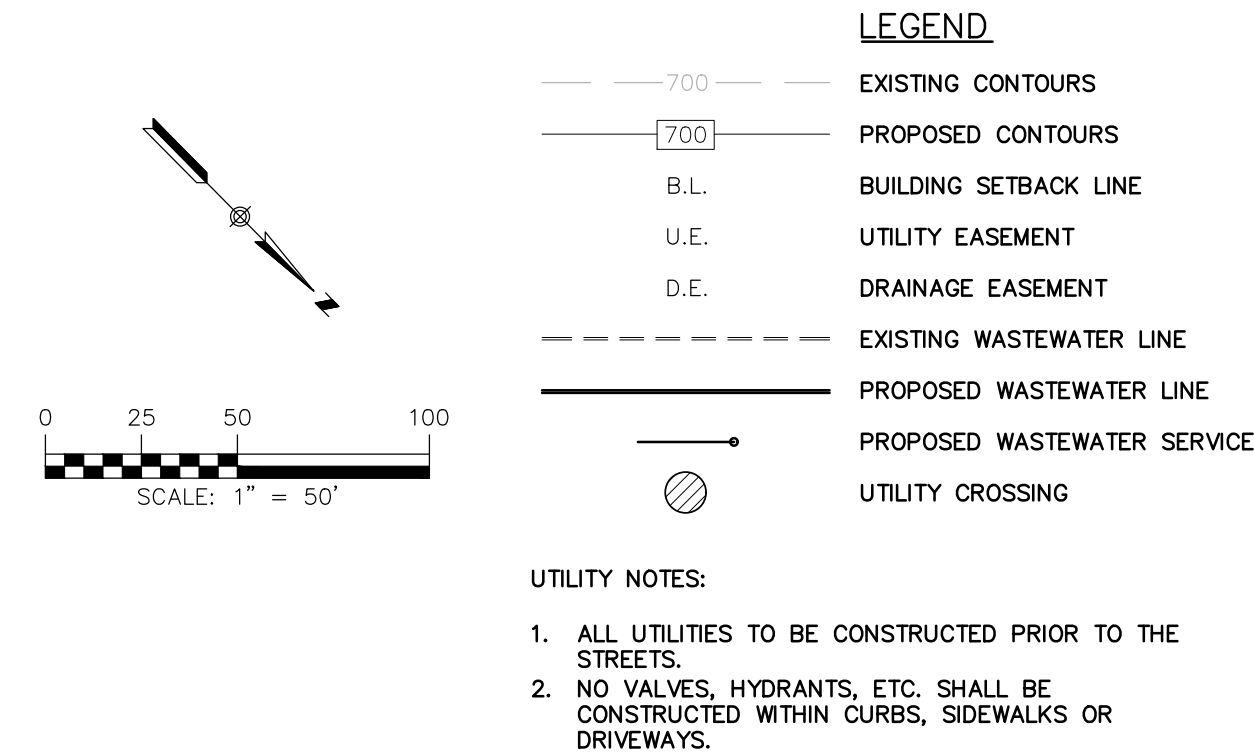
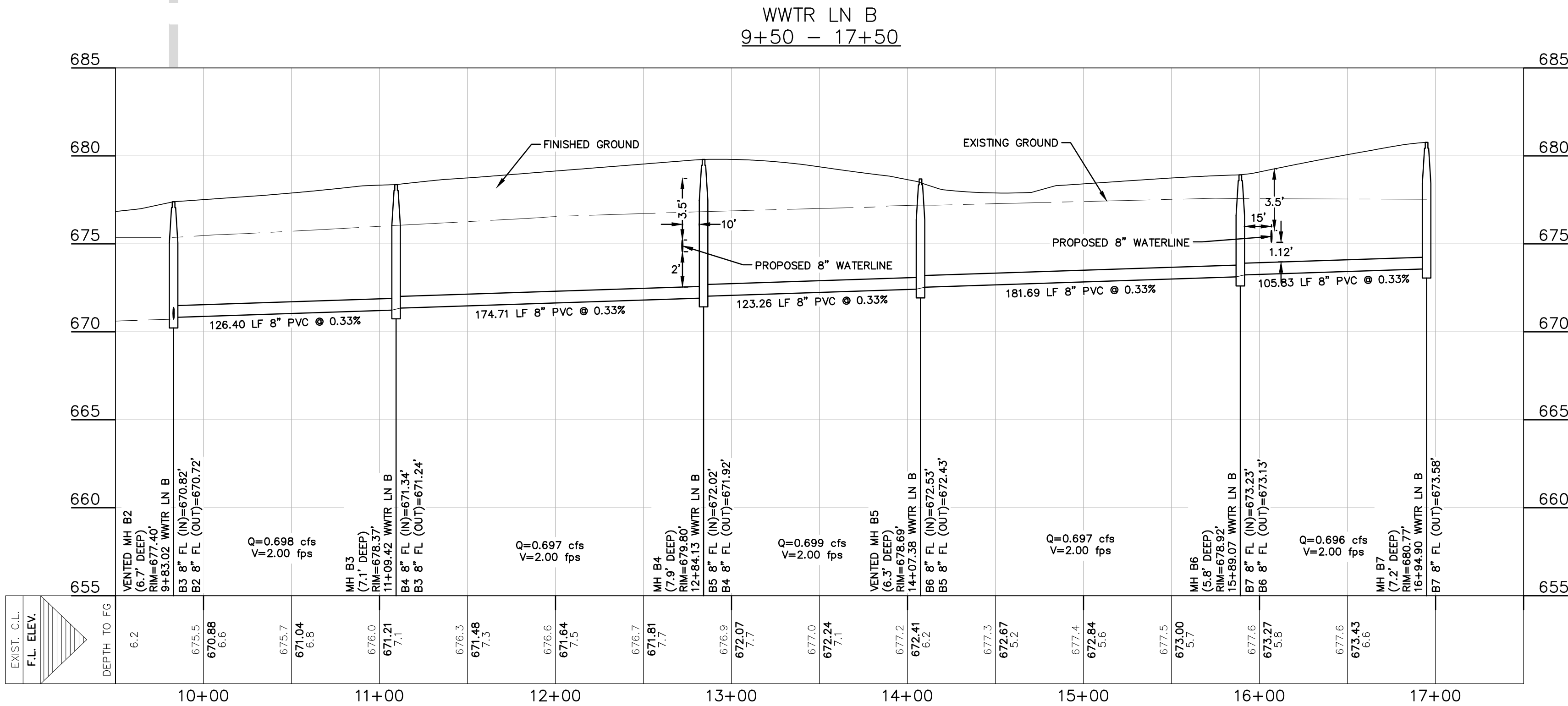
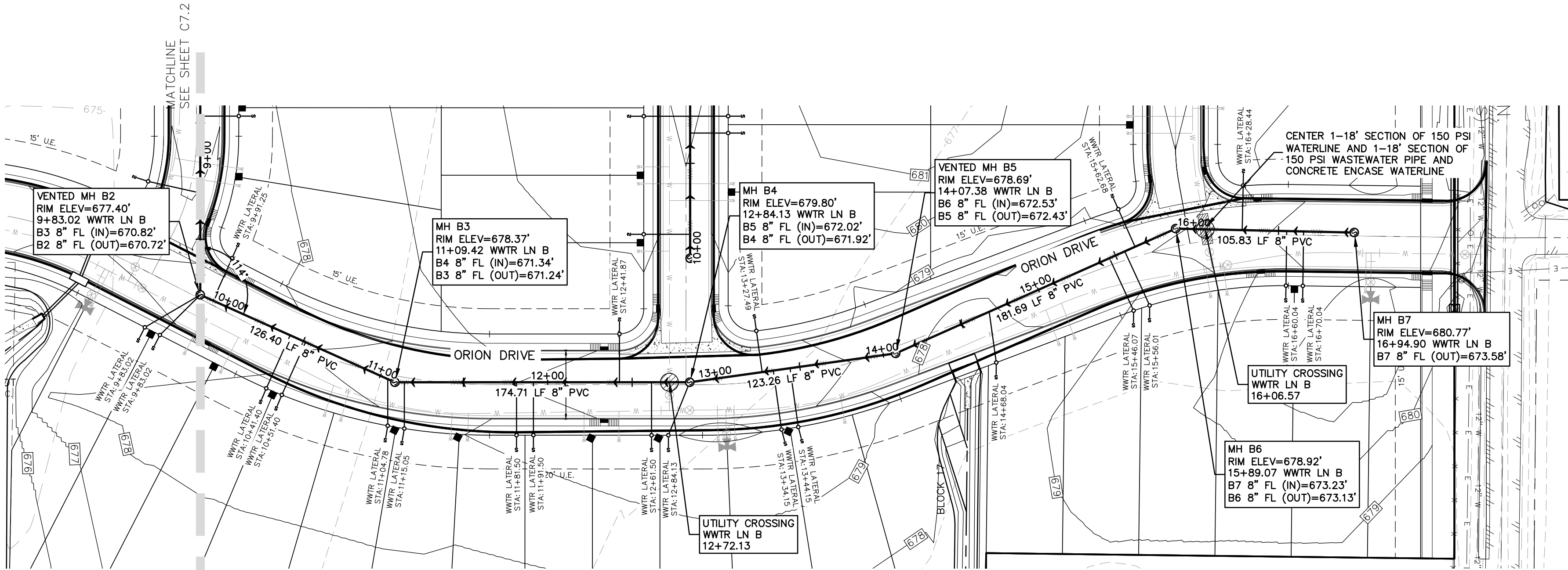
DATE: MAY 2019
DRAWN BY: MA
DESIGNED BY: TG
REVIEWED BY: CC
HMT PROJECT NO.: 164.012

**SHEET
C7.2**



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WASTEWATER LINE B PLAN & PROFILE (2 OF 2) CREEKSIDE FARMS UNIT 3

NO.	REVISION	DESCRIPTION	DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

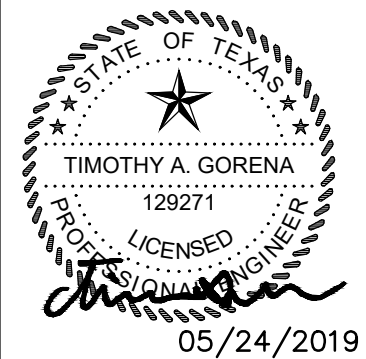
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HMT PROJECT NO.:

164.012

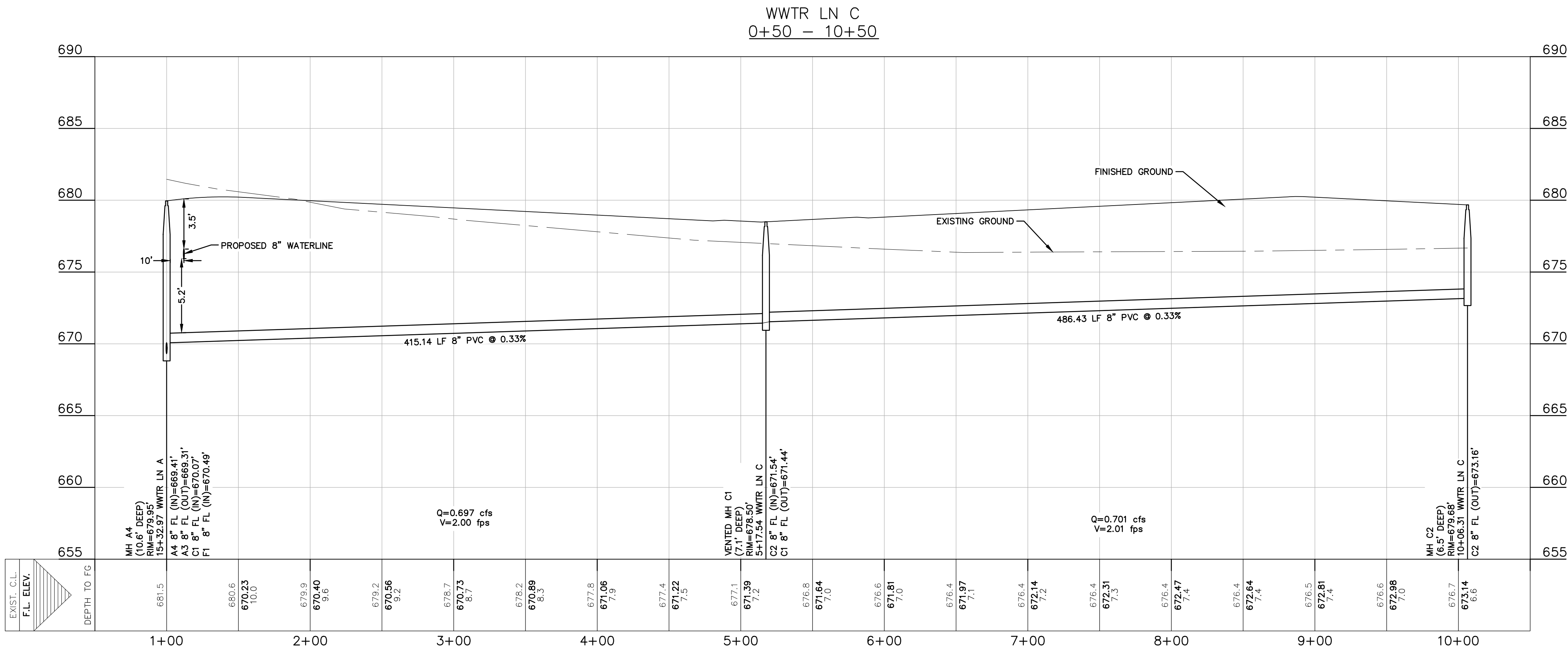
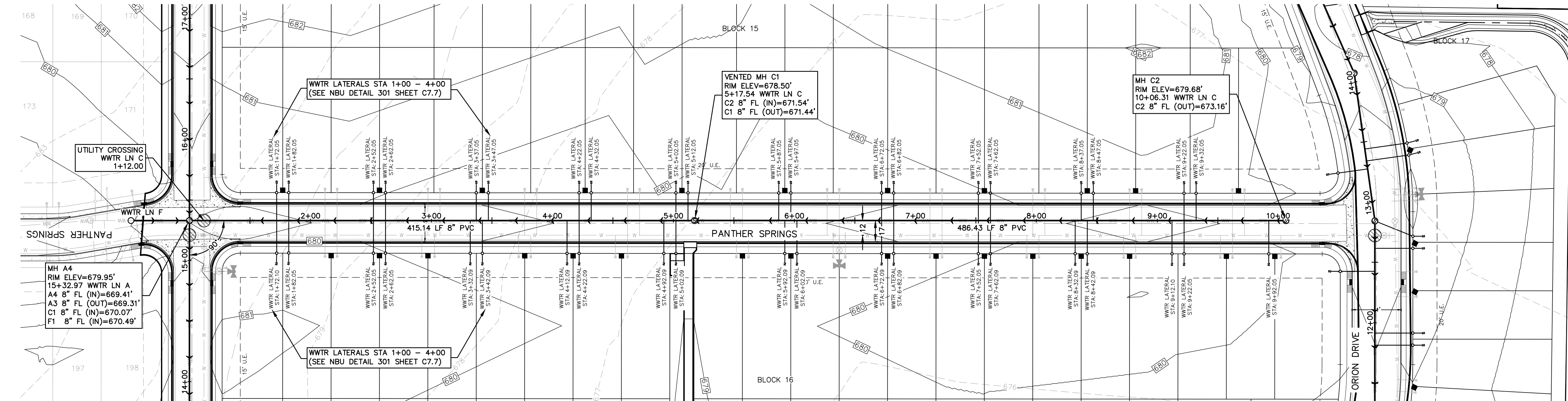
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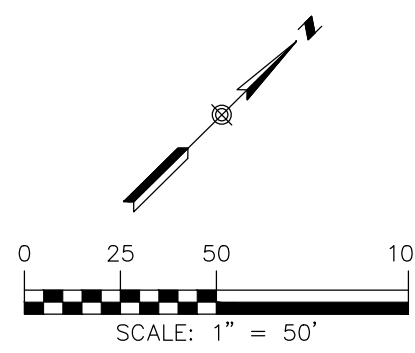
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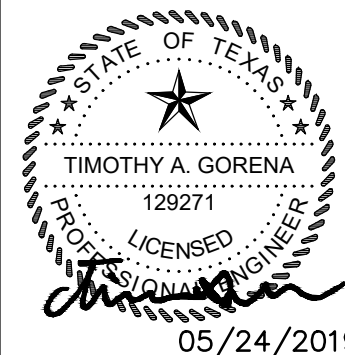
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WASTEWATER LINE C
PLAN & PROFILE
CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

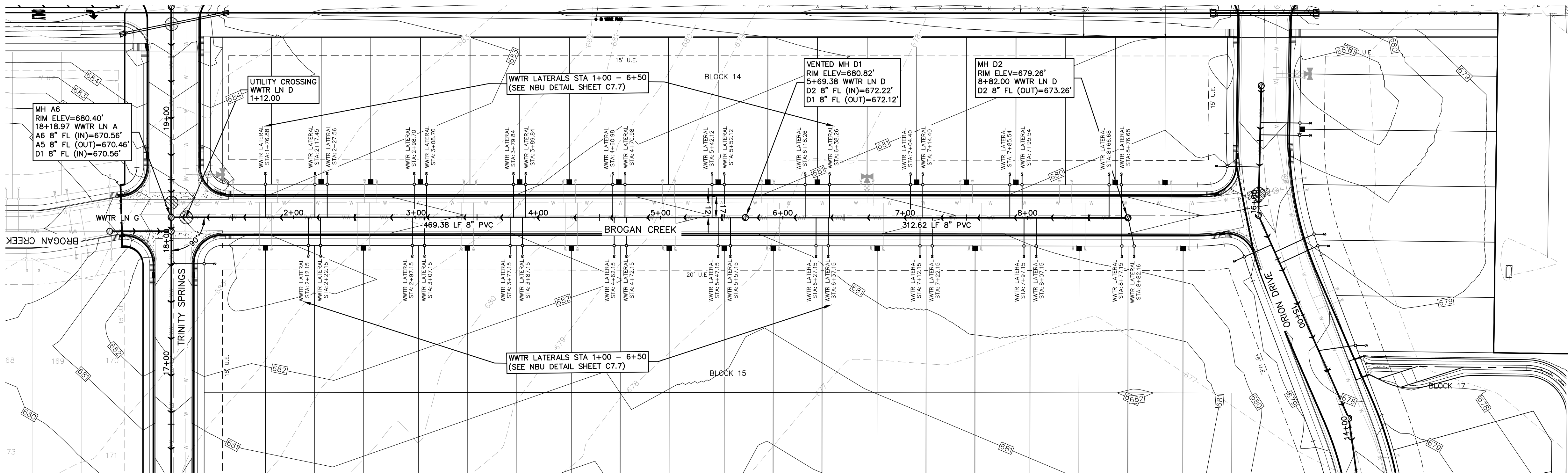
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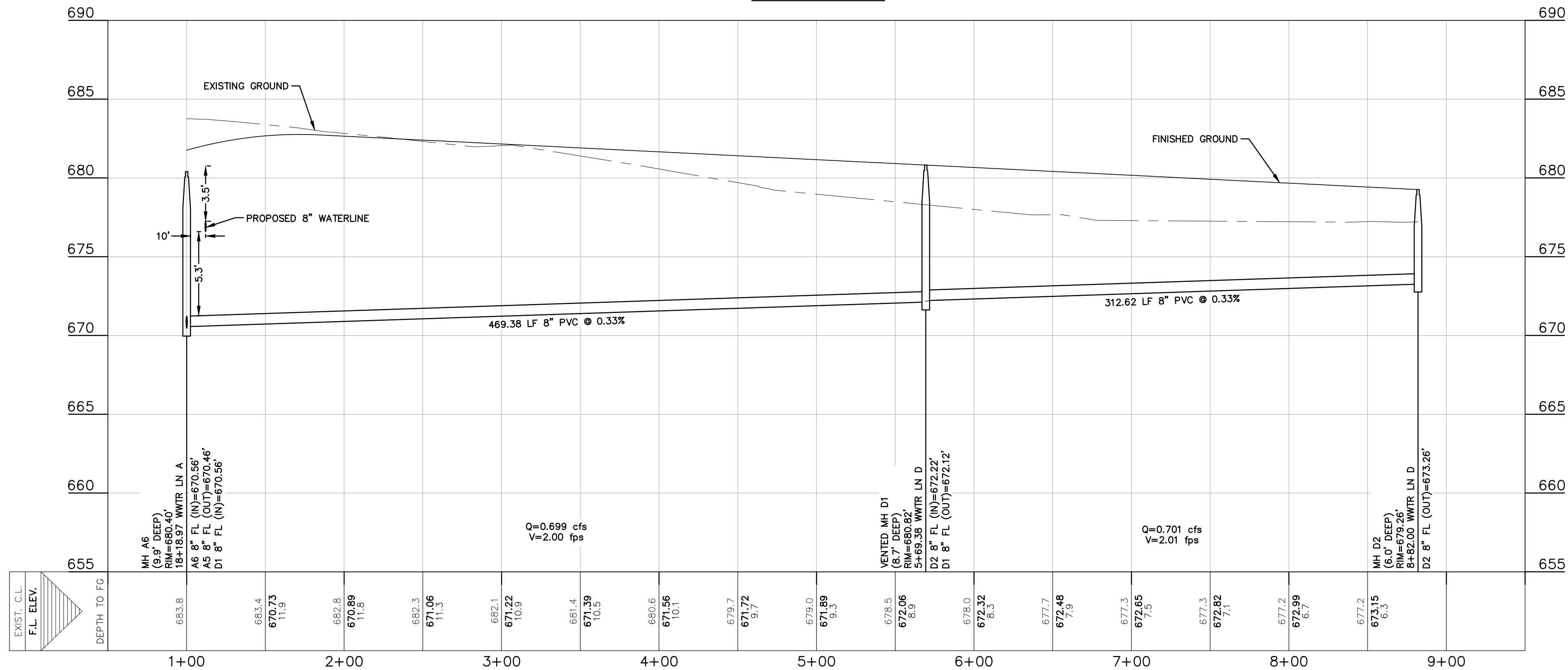
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SHEET

C7.4

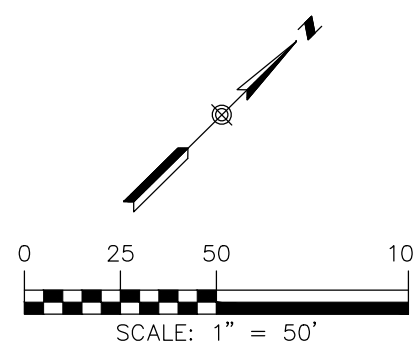


WWTN LN D
0+50 - 9+50



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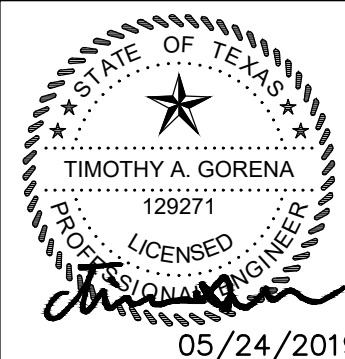
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- NO VALVES, HYDRANTS, CLEAN-OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
- ALL SEWER PIPE ASTM 3034 (115 PSI)
- ALL MANHOLES SHALL BE 48" DIAMETER.
- ALL RING AND COVER SHALL BE 32" DIAMETER.
- EXISTING MANHOLES, RIM AND FLOWLINE ELEVATIONS SURVEYED BY HMT ENGINEERING & SURVEYING DATED DECEMBER, 2014.
- CONTRACTOR TO FIELD VERIFY THE EXISTING SANITARY SEWER INVERT ELEVATIONS.

REFER TO THE COVER SHEET
FOR BENCHMARK INFORMATION.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR WILL AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES, STRUCTURES OR FACILITIES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES 24-HOURS PRIOR TO COMMENCING CONSTRUCTION.

410 N. SEGUN AVE.
NEW BRAUNFELS, TX 78130
HMTNB.COM
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T:830/625-8557 • F:830/625-8558
T:830/625-8559 • F:830/625-8560

HMT
ENGINEERING & SURVEYING



**WASTEWATER LINE D
PLAN & PROFILE**
CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

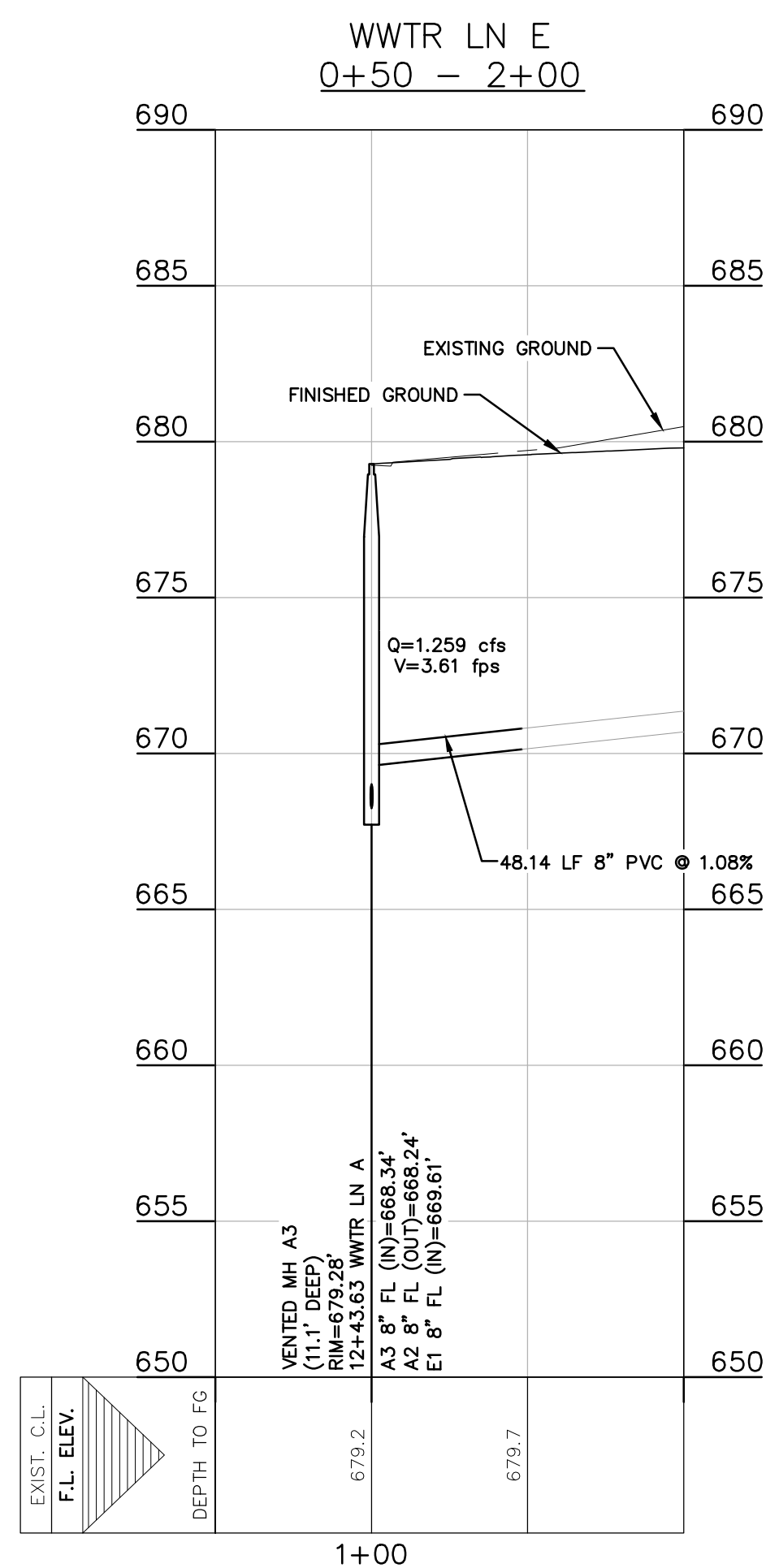
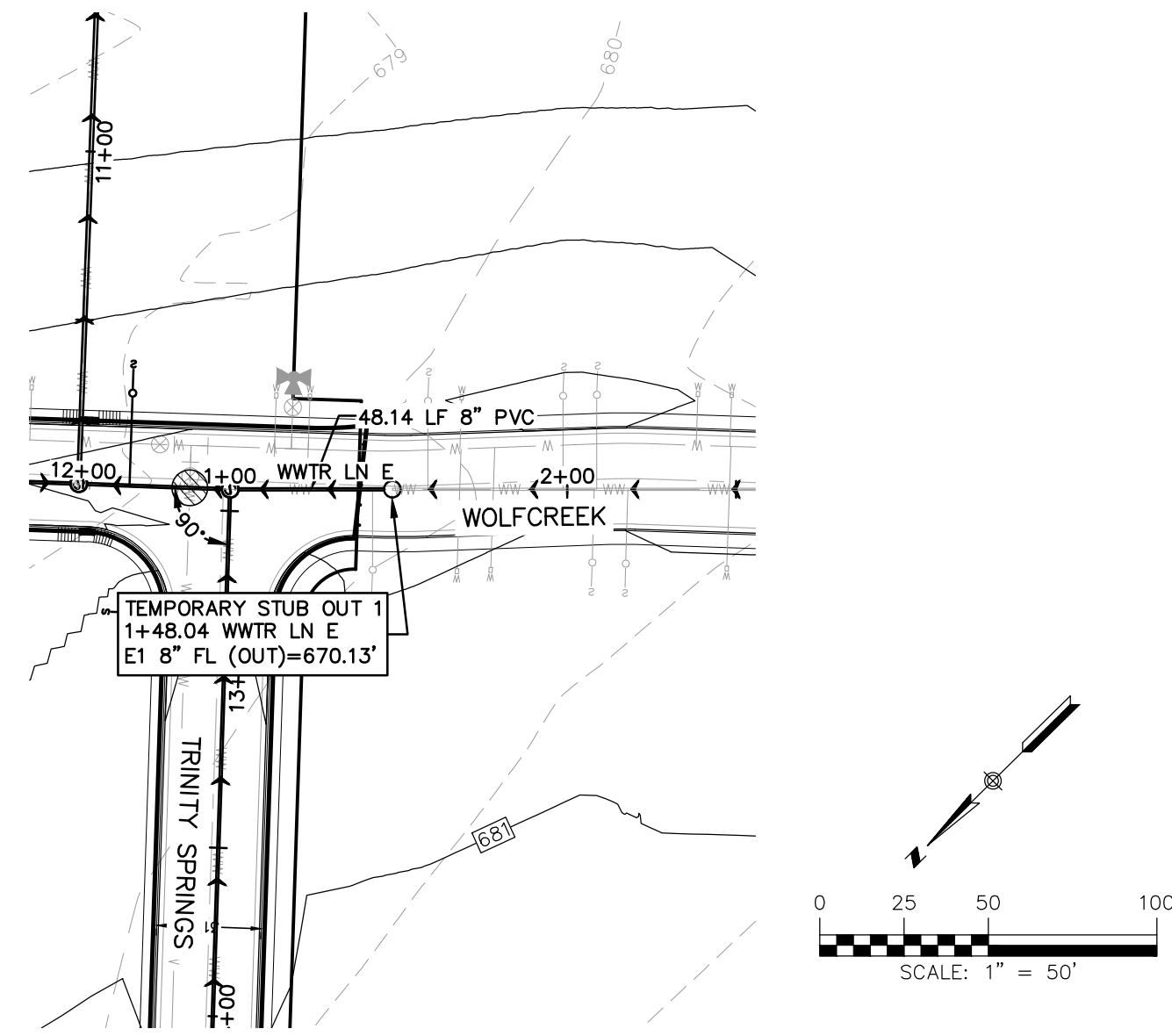
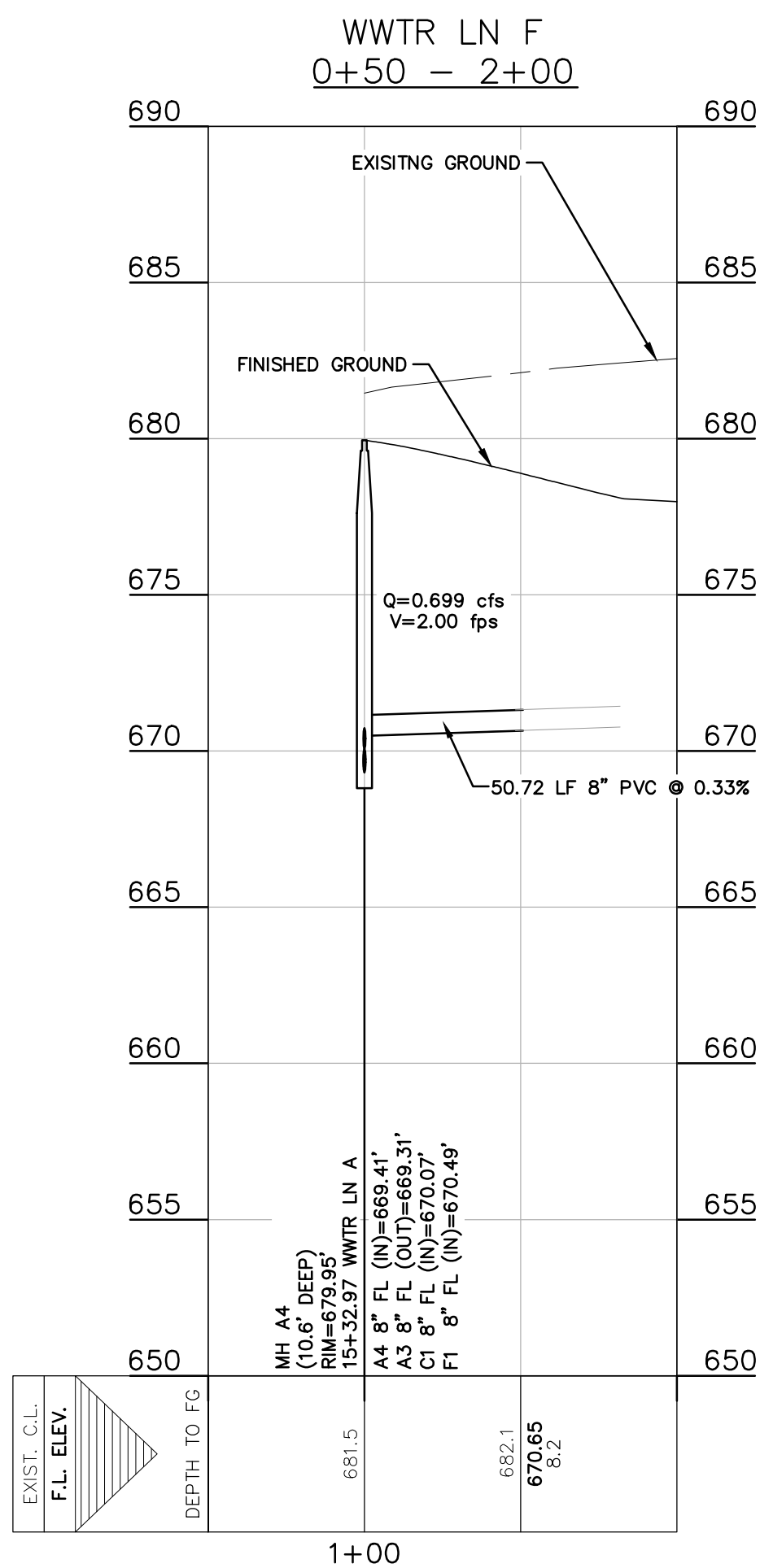
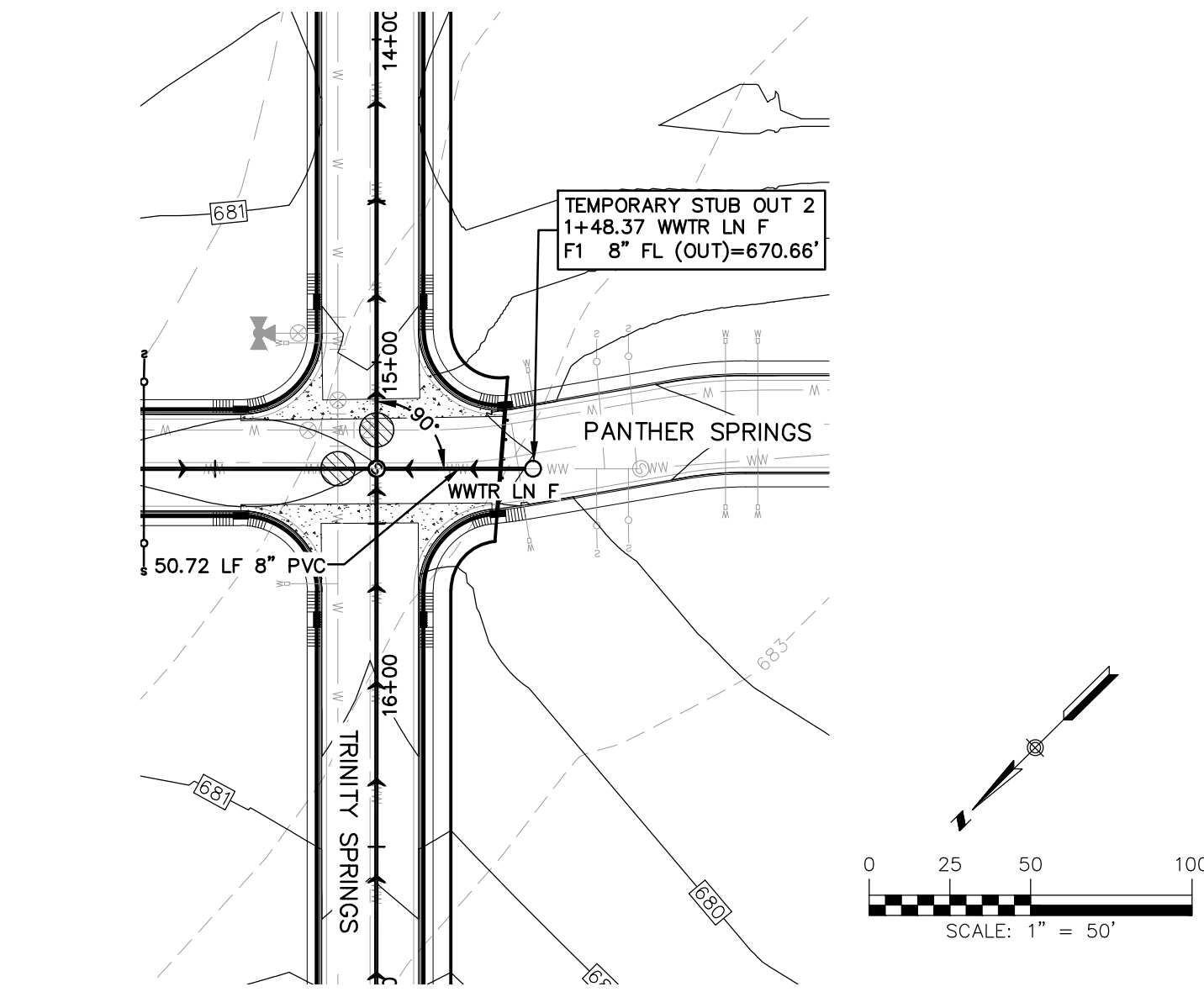
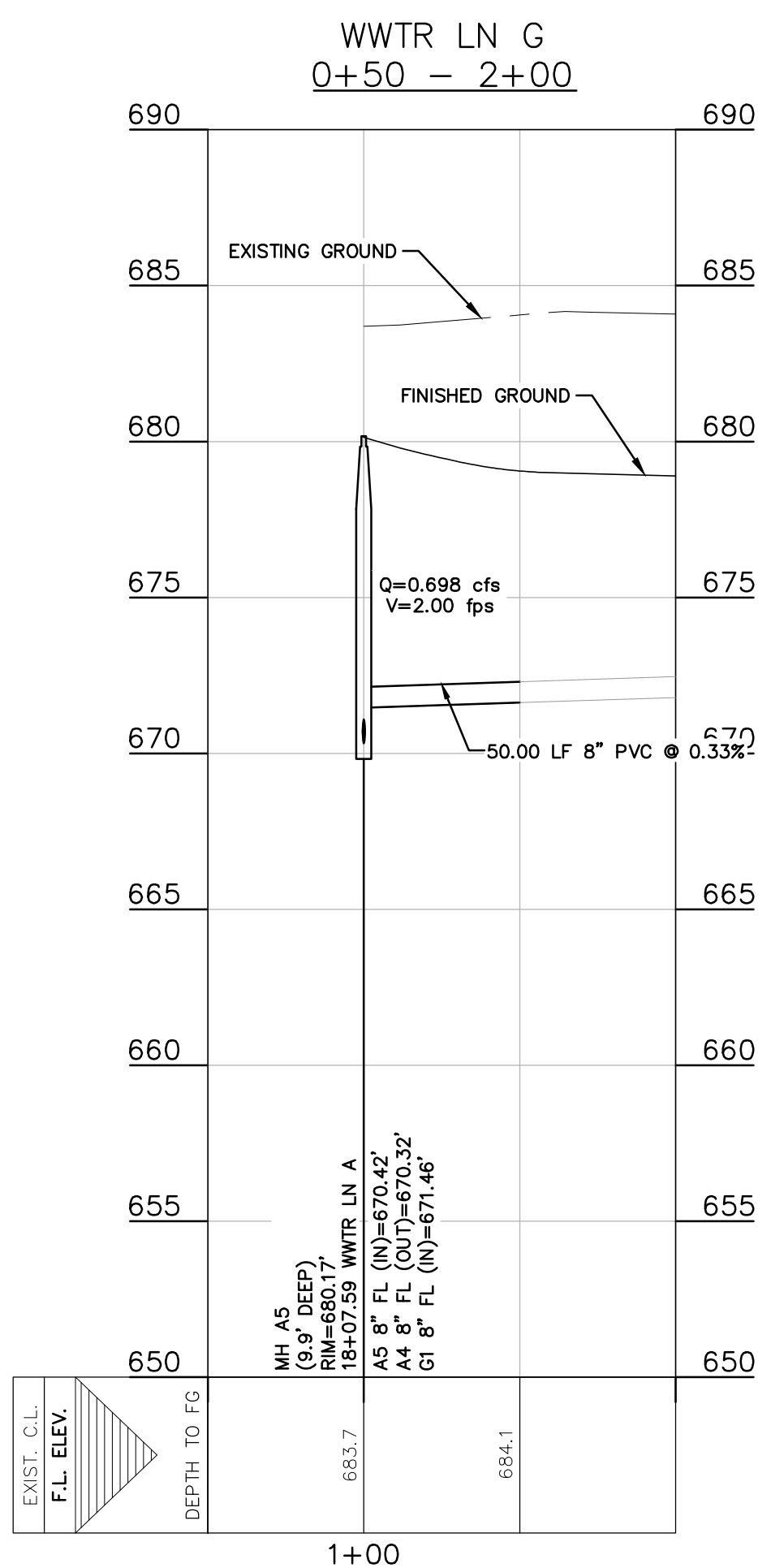
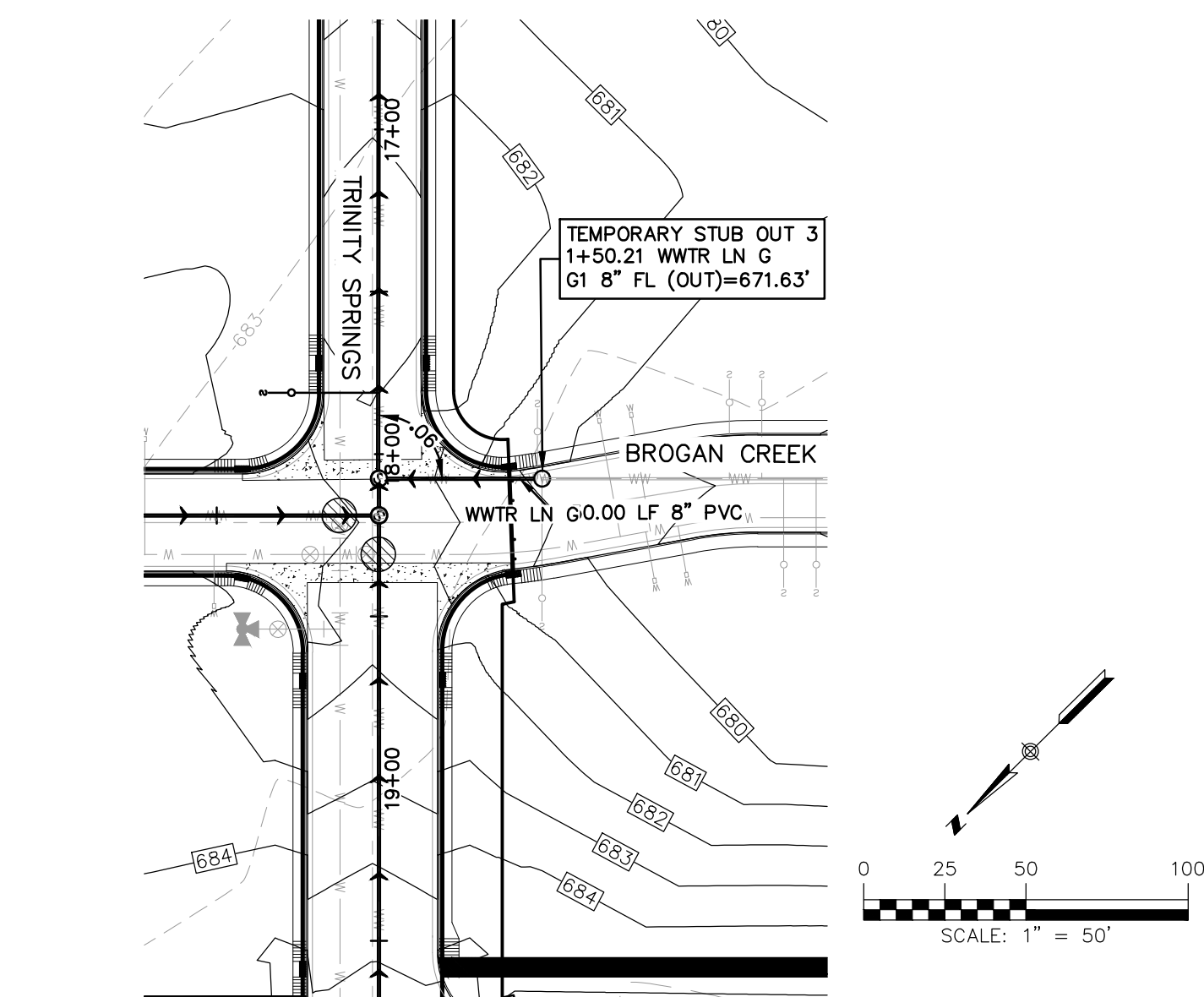
REVIEWED BY: CC

HMT PROJECT NO.:

164.012

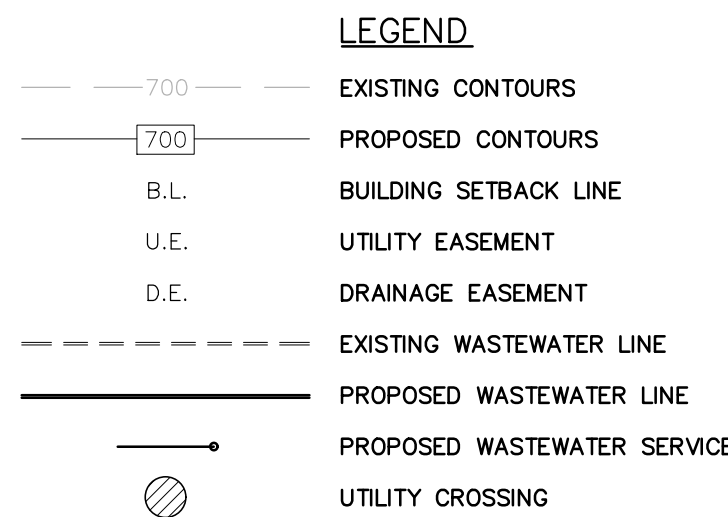
SHEET

C7.5



TRENCH EXCAVATION SAFETY PROTECTION

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 FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY 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 EXCAVATIONS.



UTILITY NOTES:

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UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'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.

DEEP TRENCH COMPACTION TESTING

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WASTEWATER LINE E, F & G PLAN & PROFILE

CREEKSIDE FARMS
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	POST PERMIT REVISION 1	11/04/2019
2	POST PERMIT REVISION 2	01/06/2020
3	IRRIGATION METER AND TRINITY SPRINGS REV	01/24/2020
4	FIRE HYDRANT REVISION	02/27/2020
5	WASTEWATER LINE REVISION	03/13/2020

DATE: MAY 2019

DRAWN BY: MA

DESIGNED BY: TG

REVIEWED BY: CC

HMT PROJECT NO.:

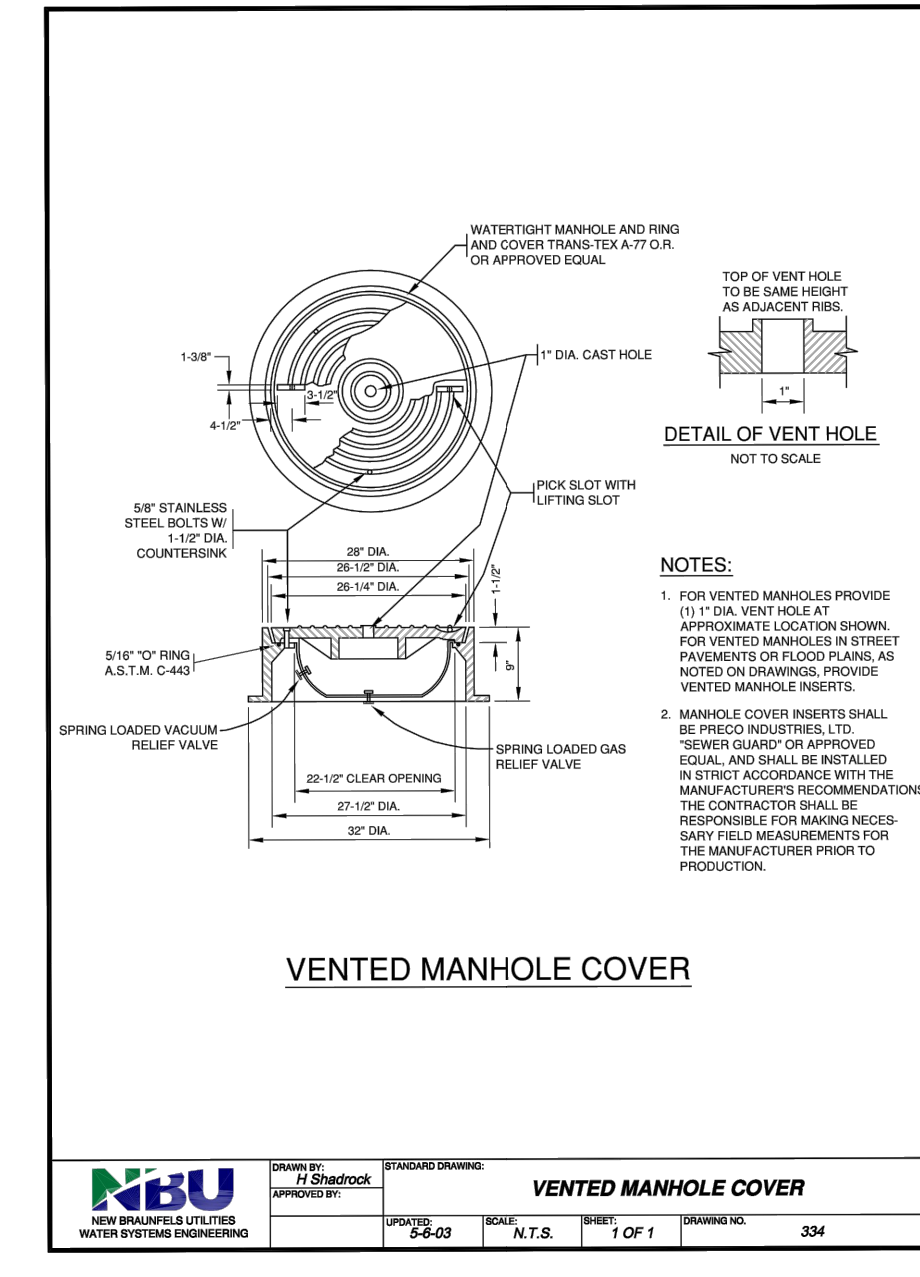
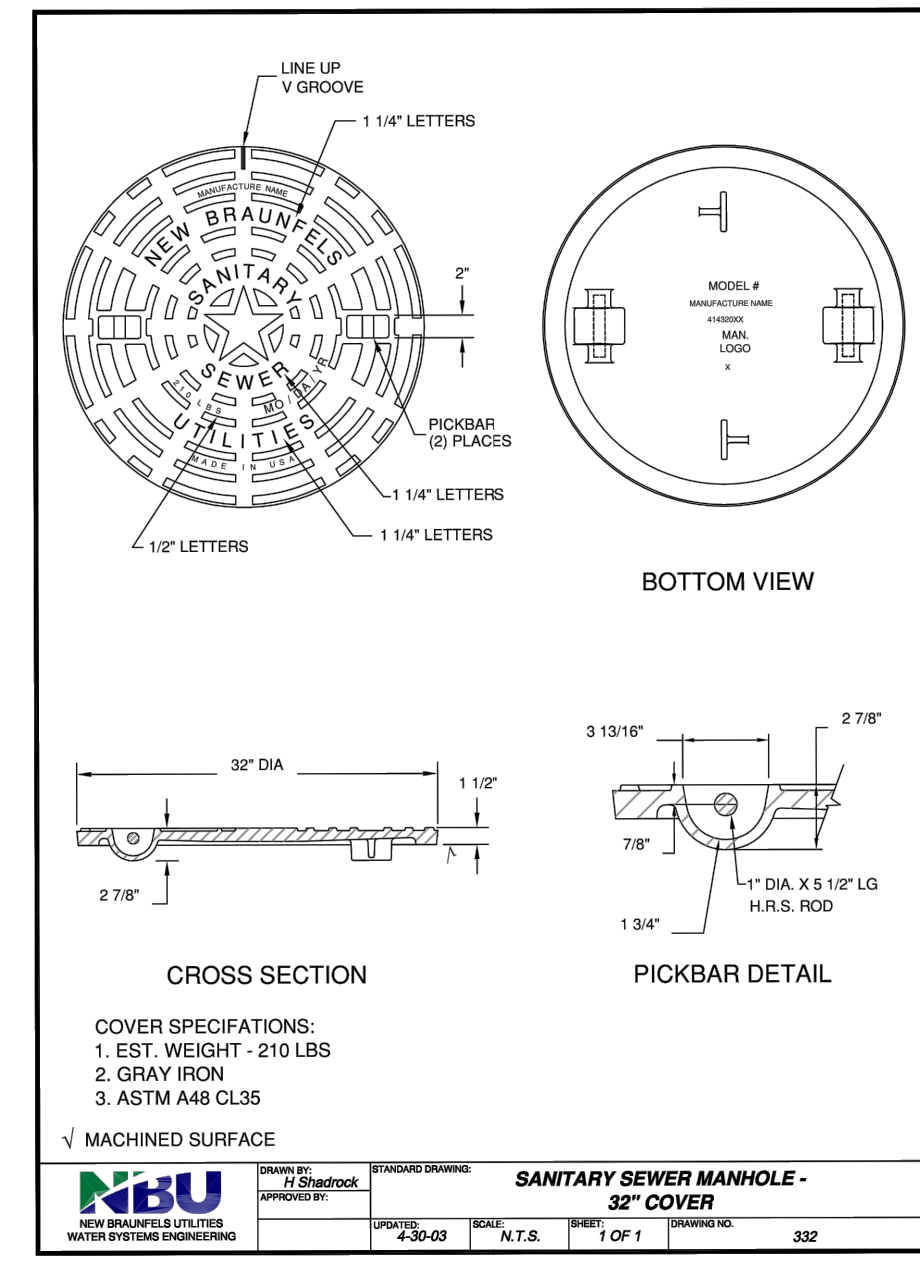
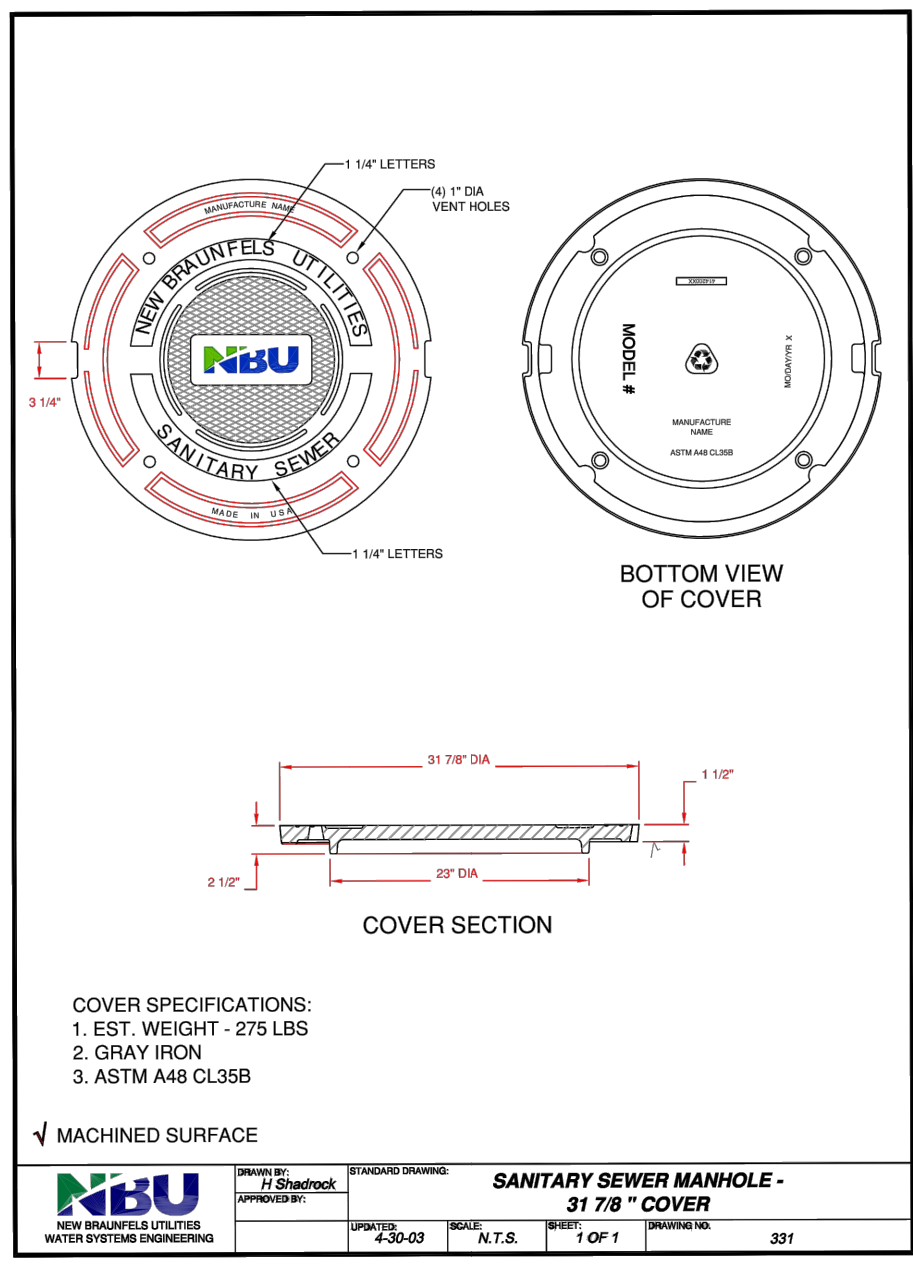
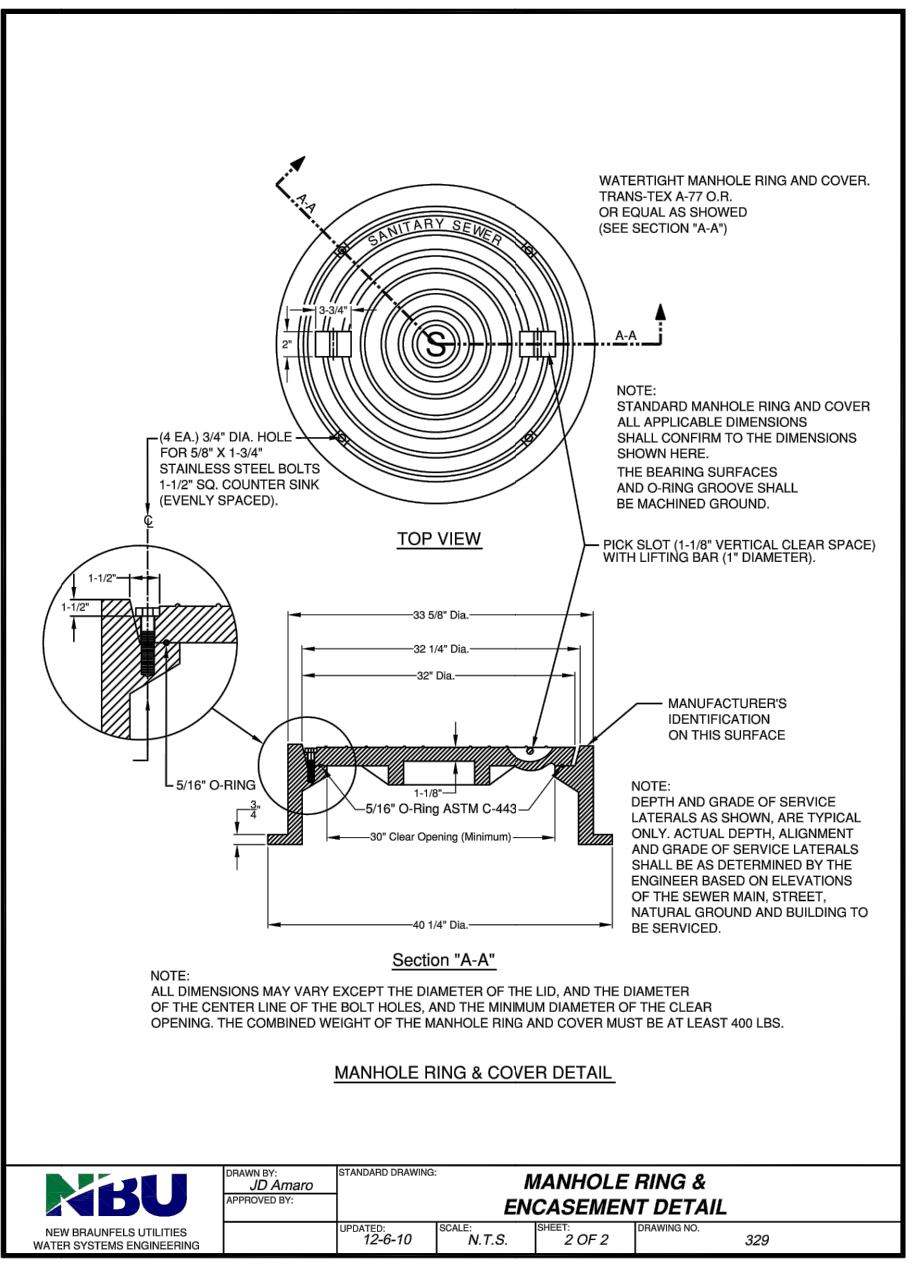
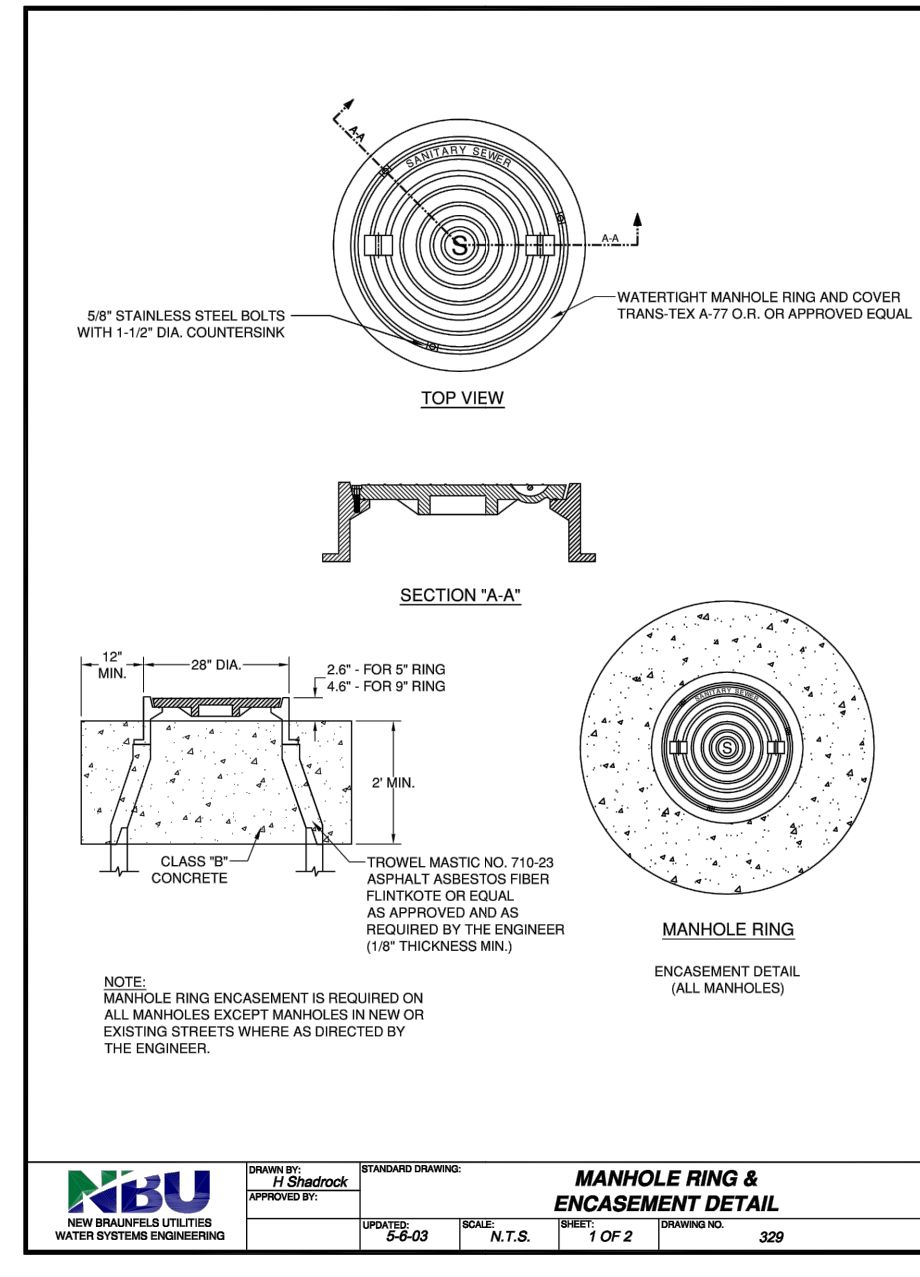
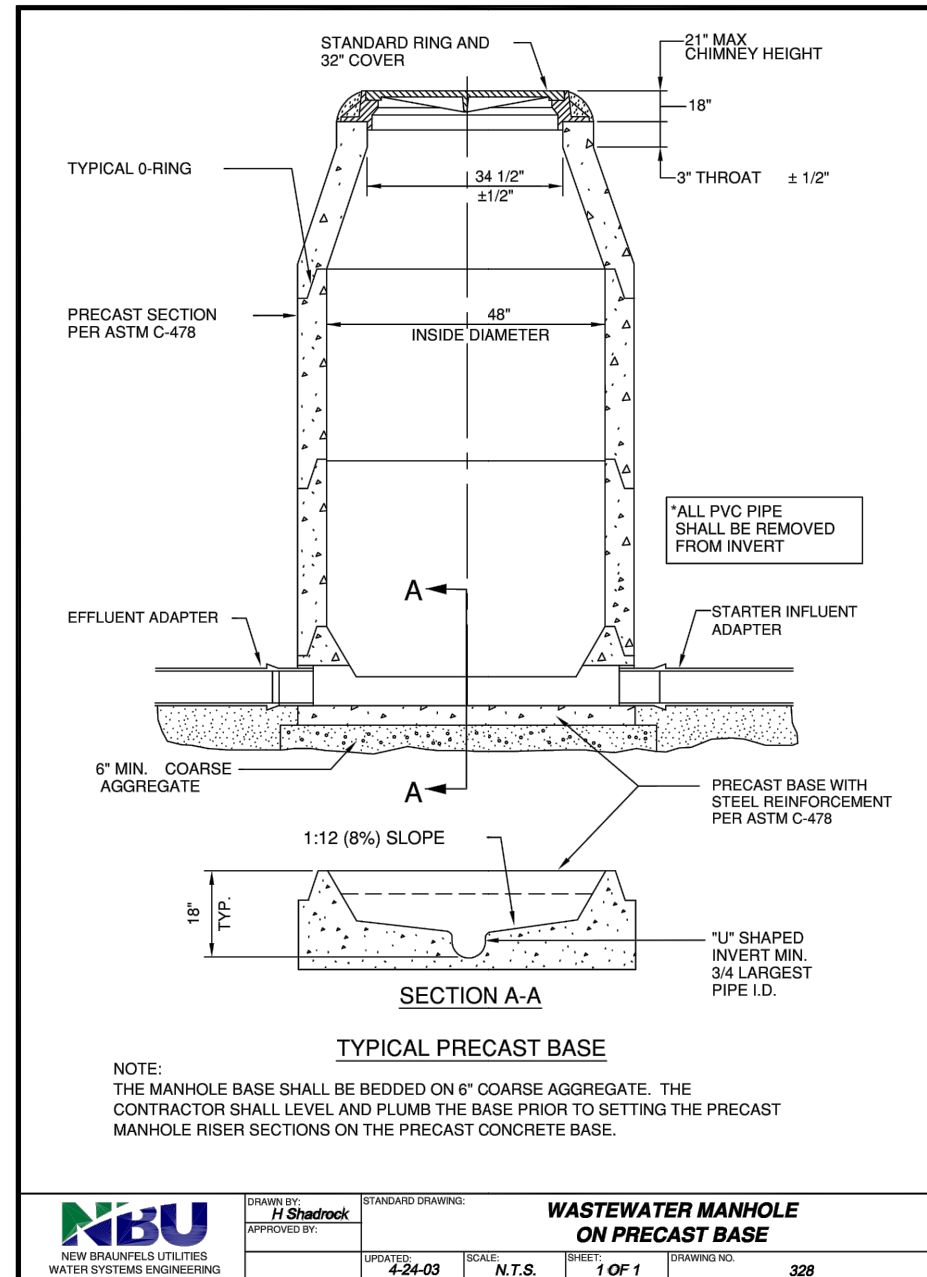
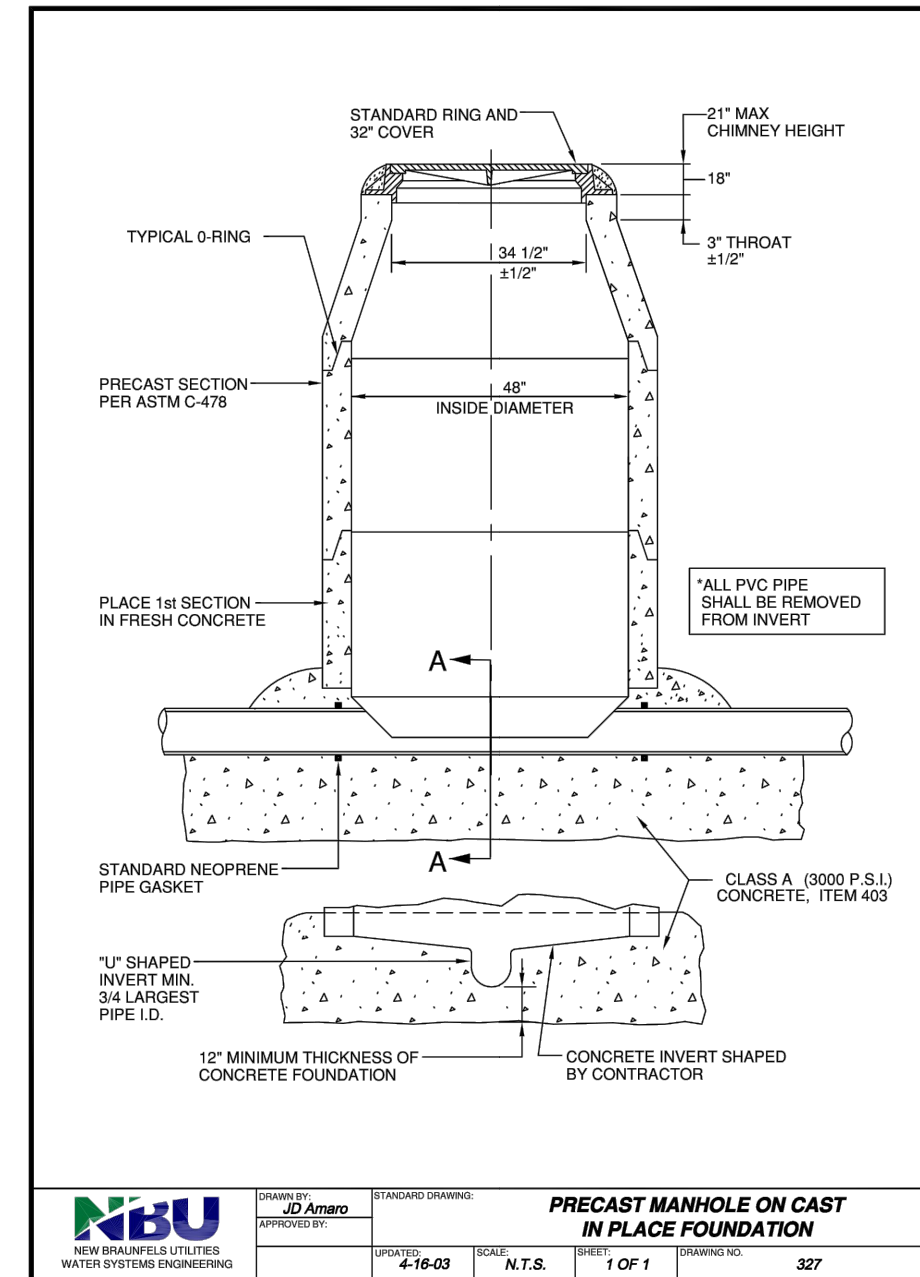
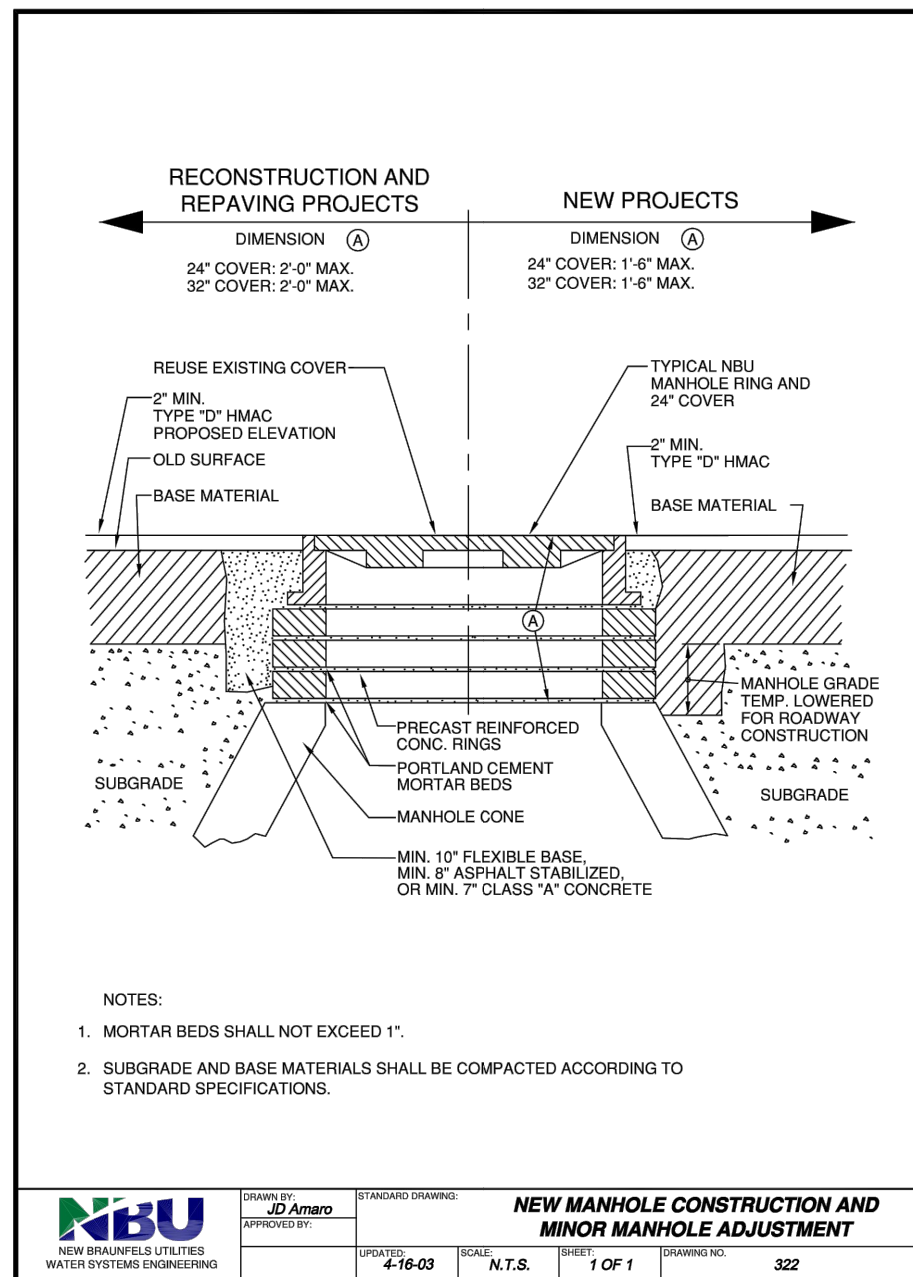
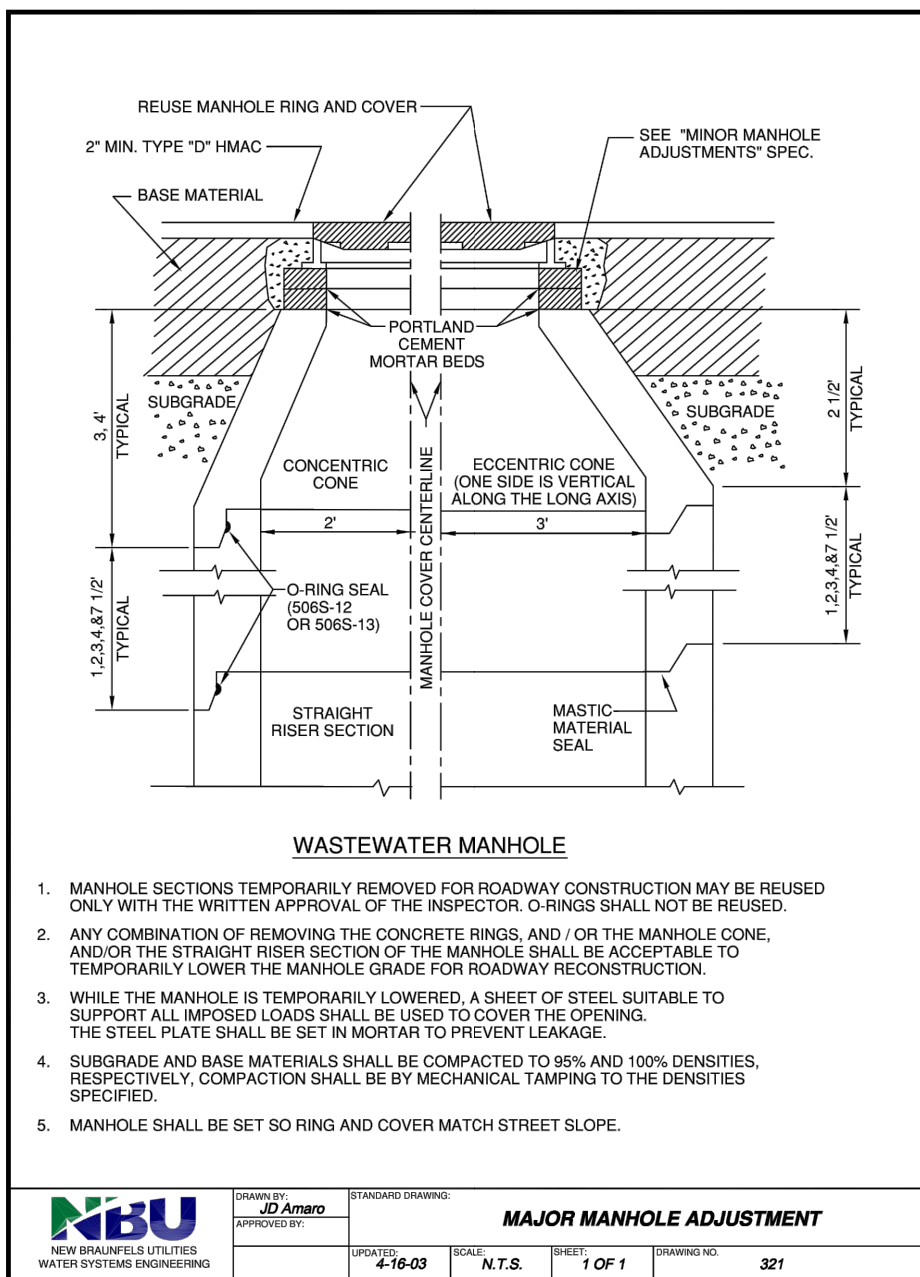
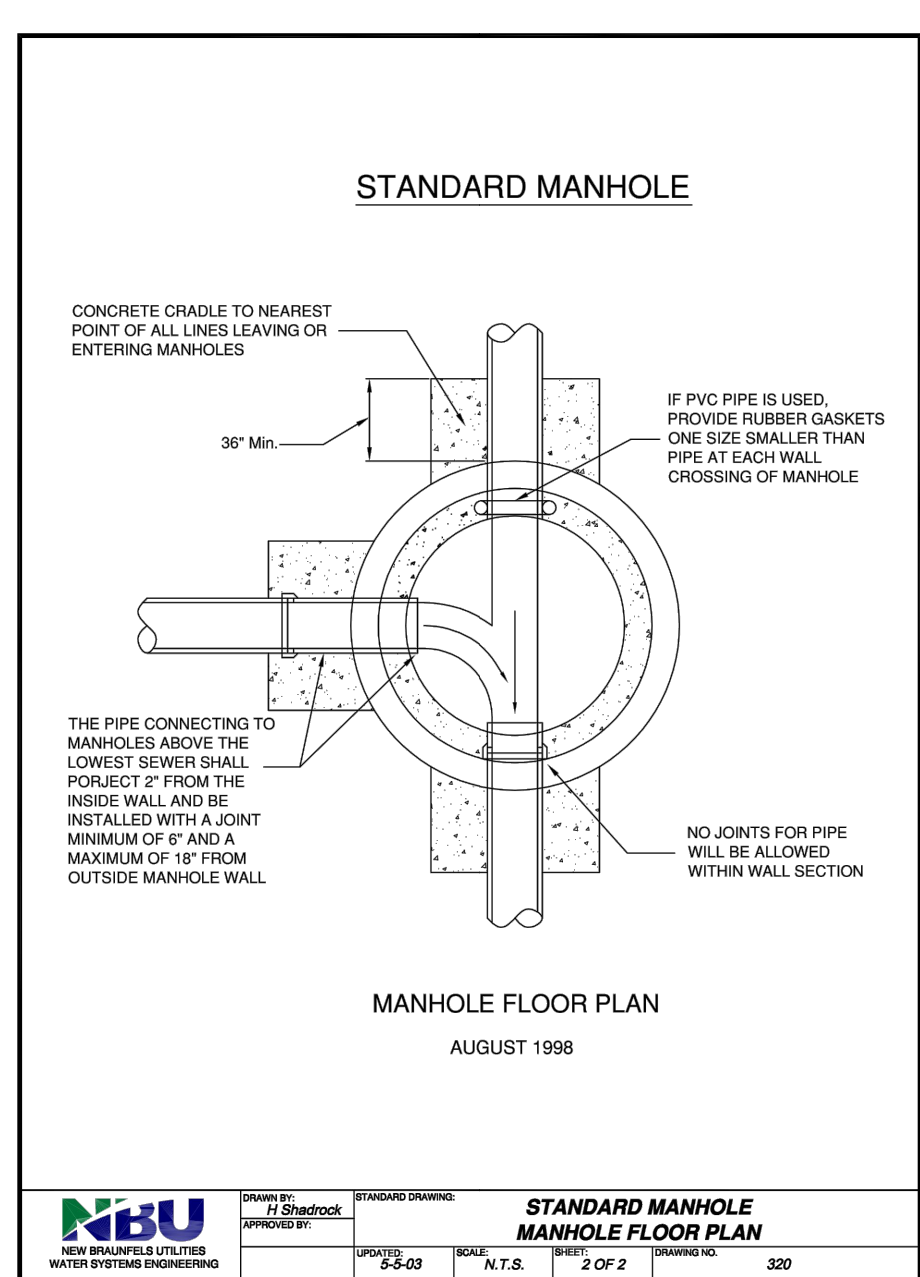
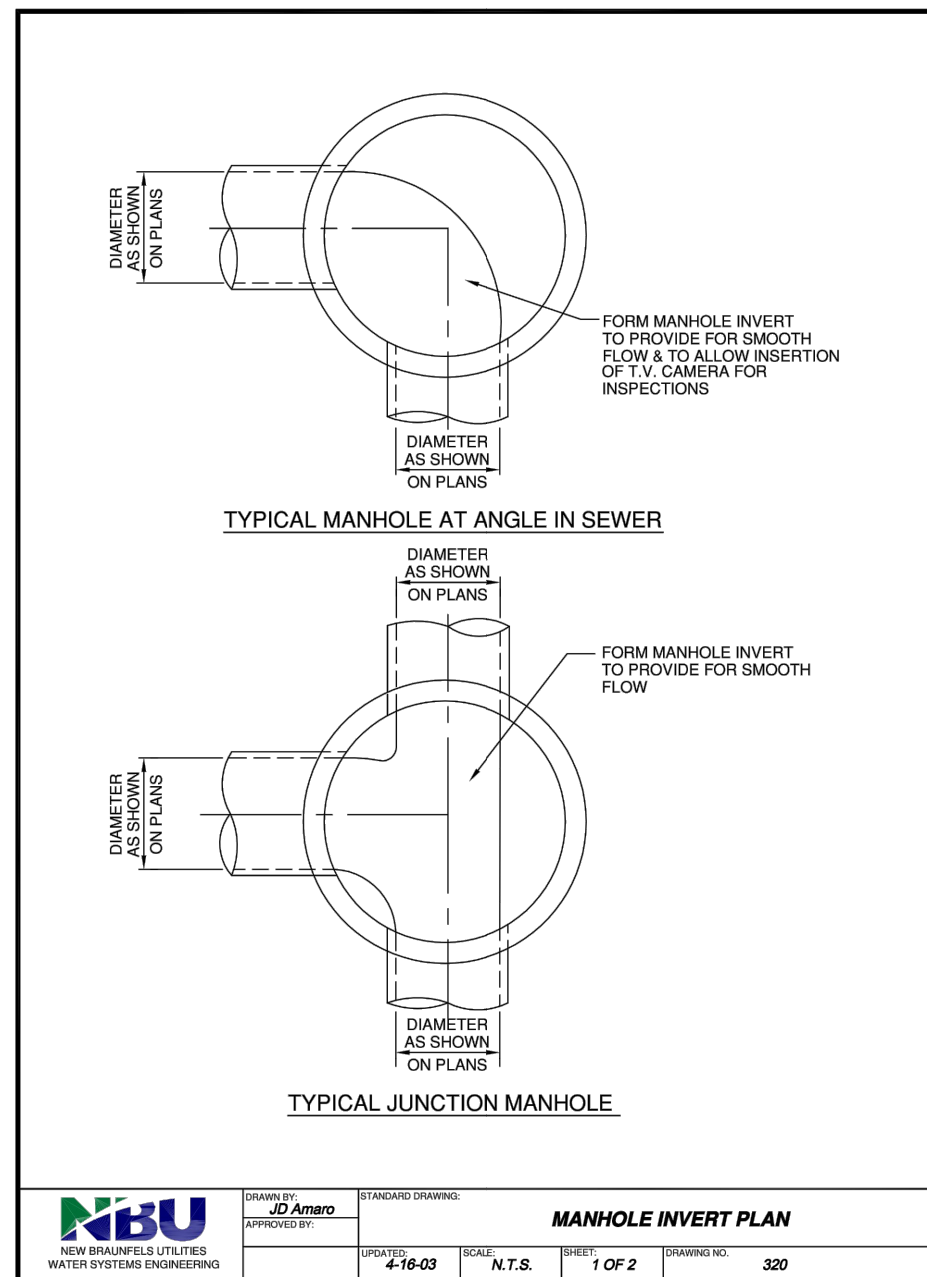
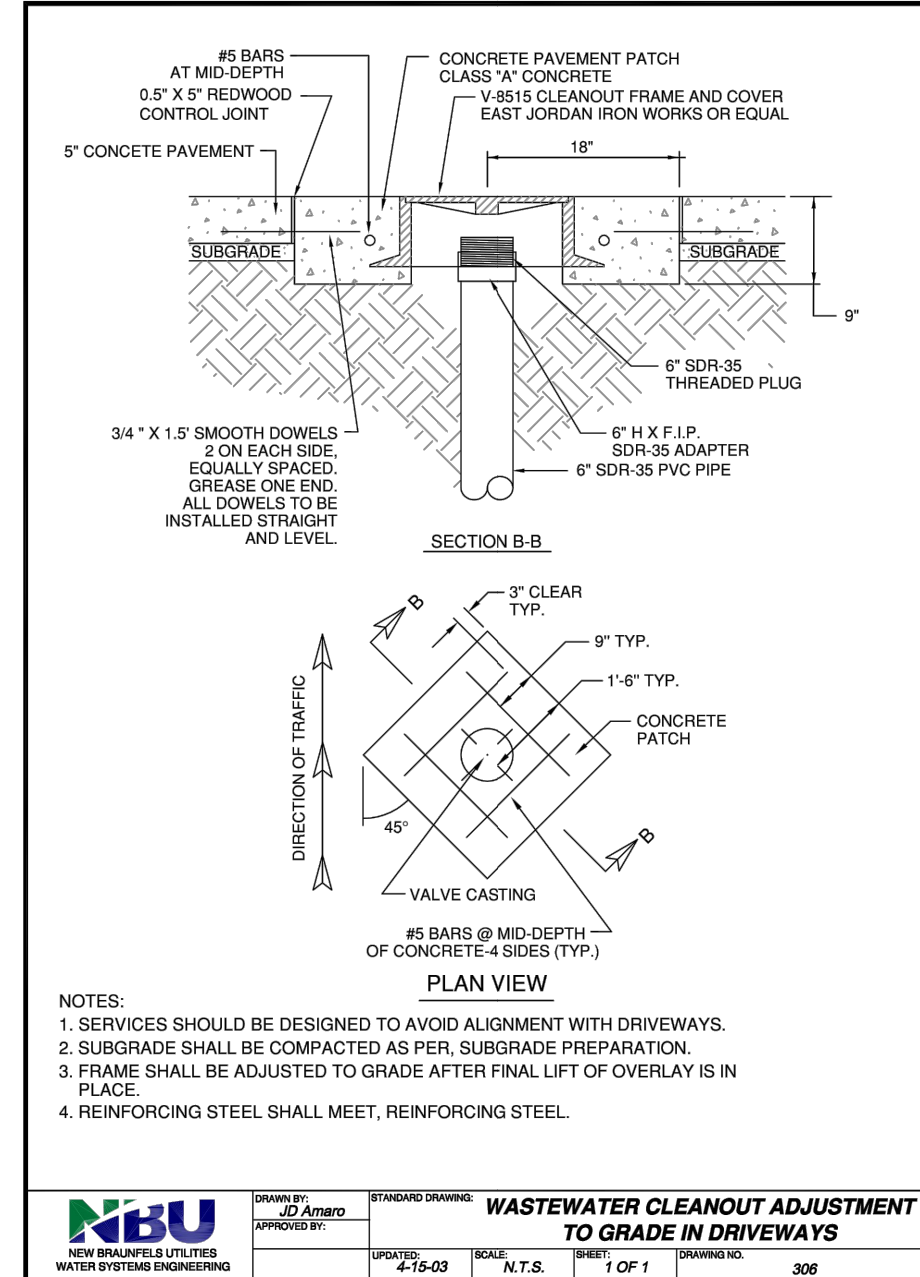
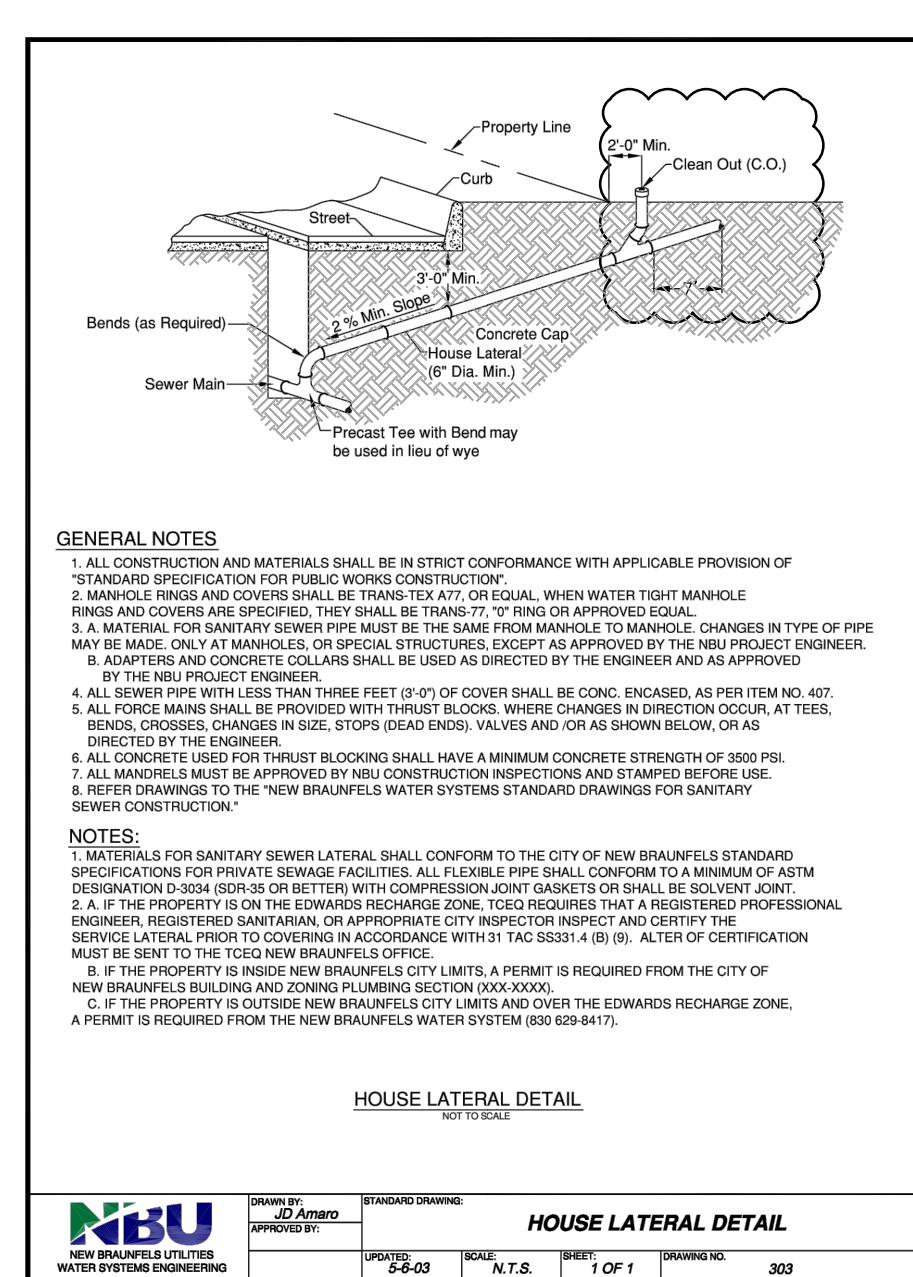
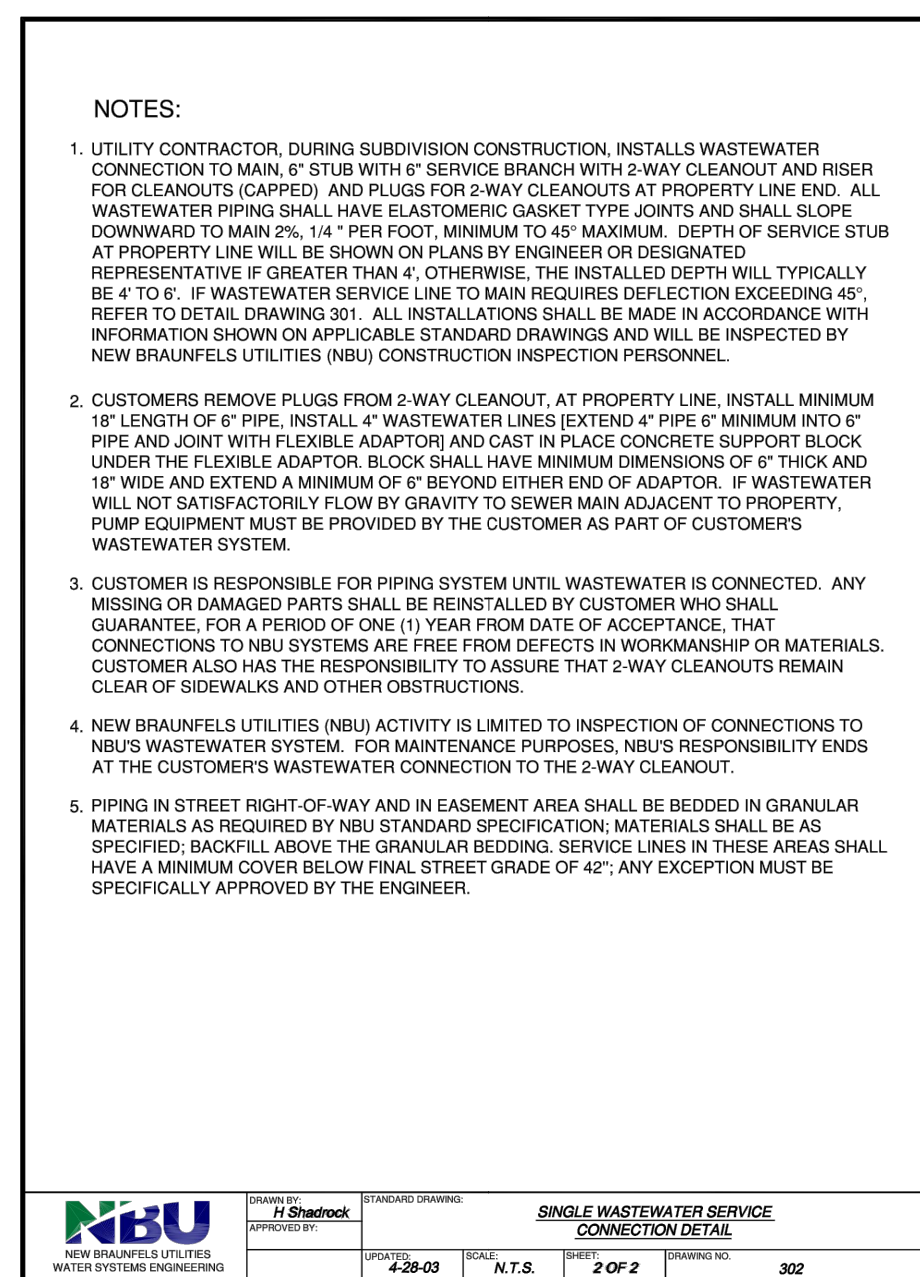
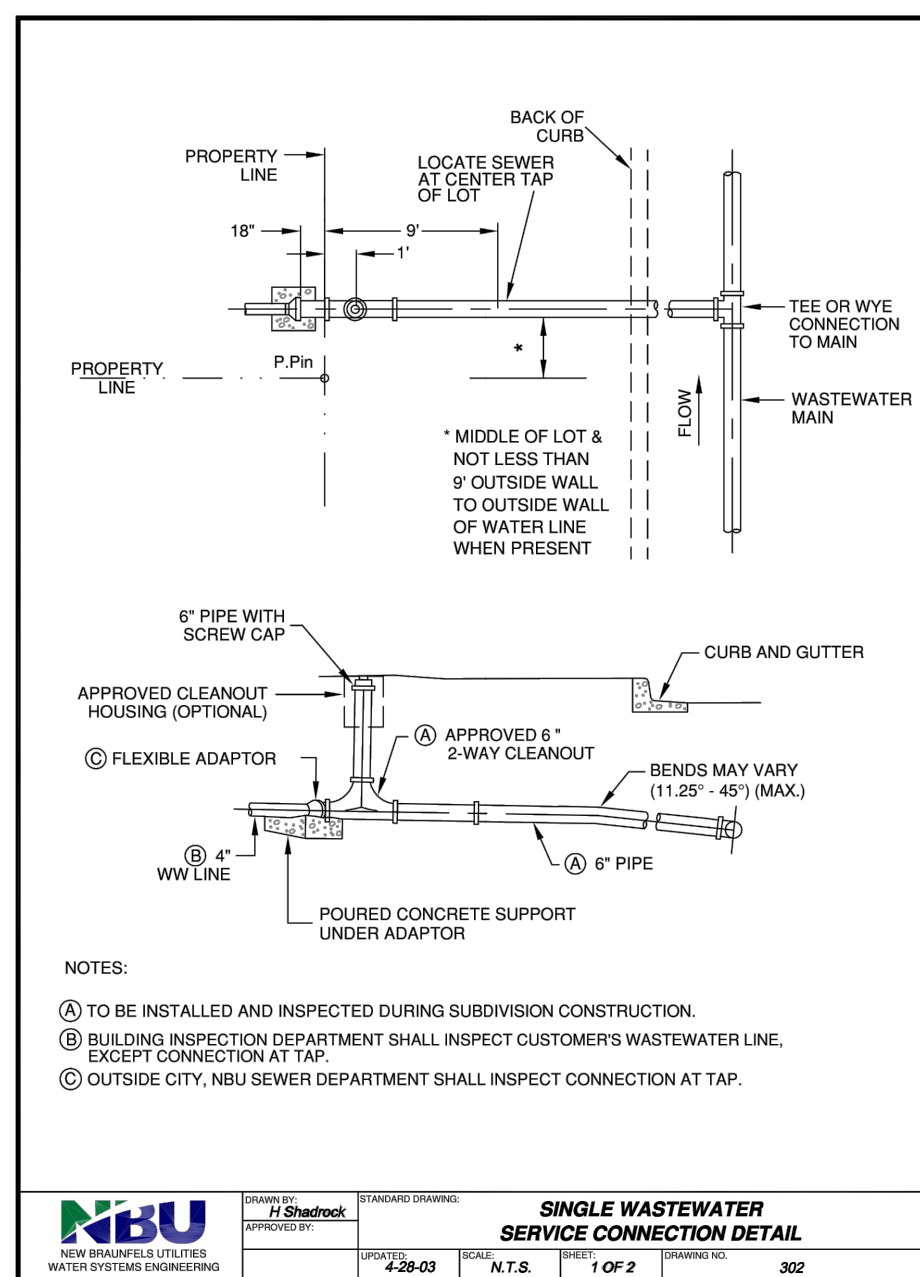
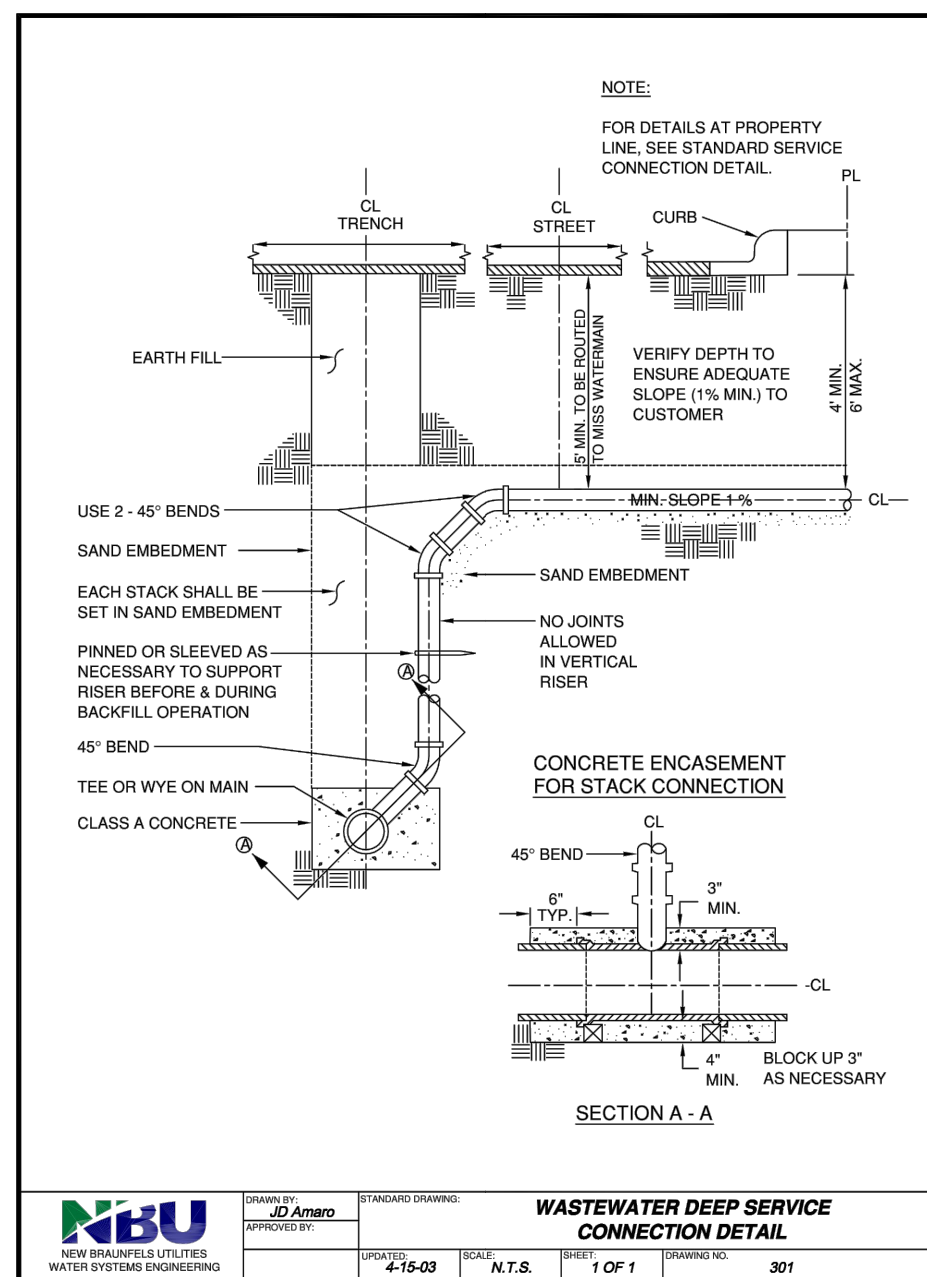
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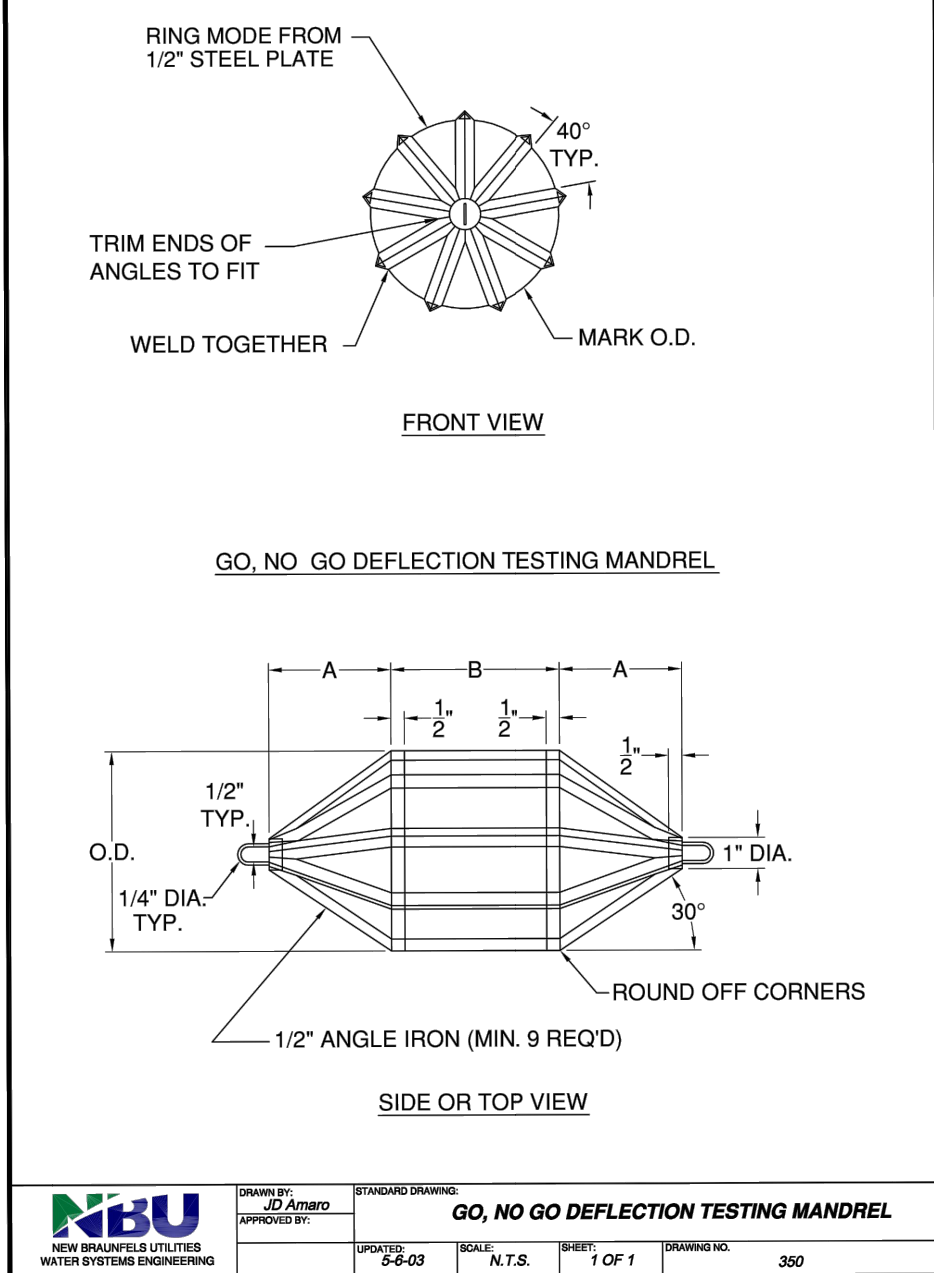
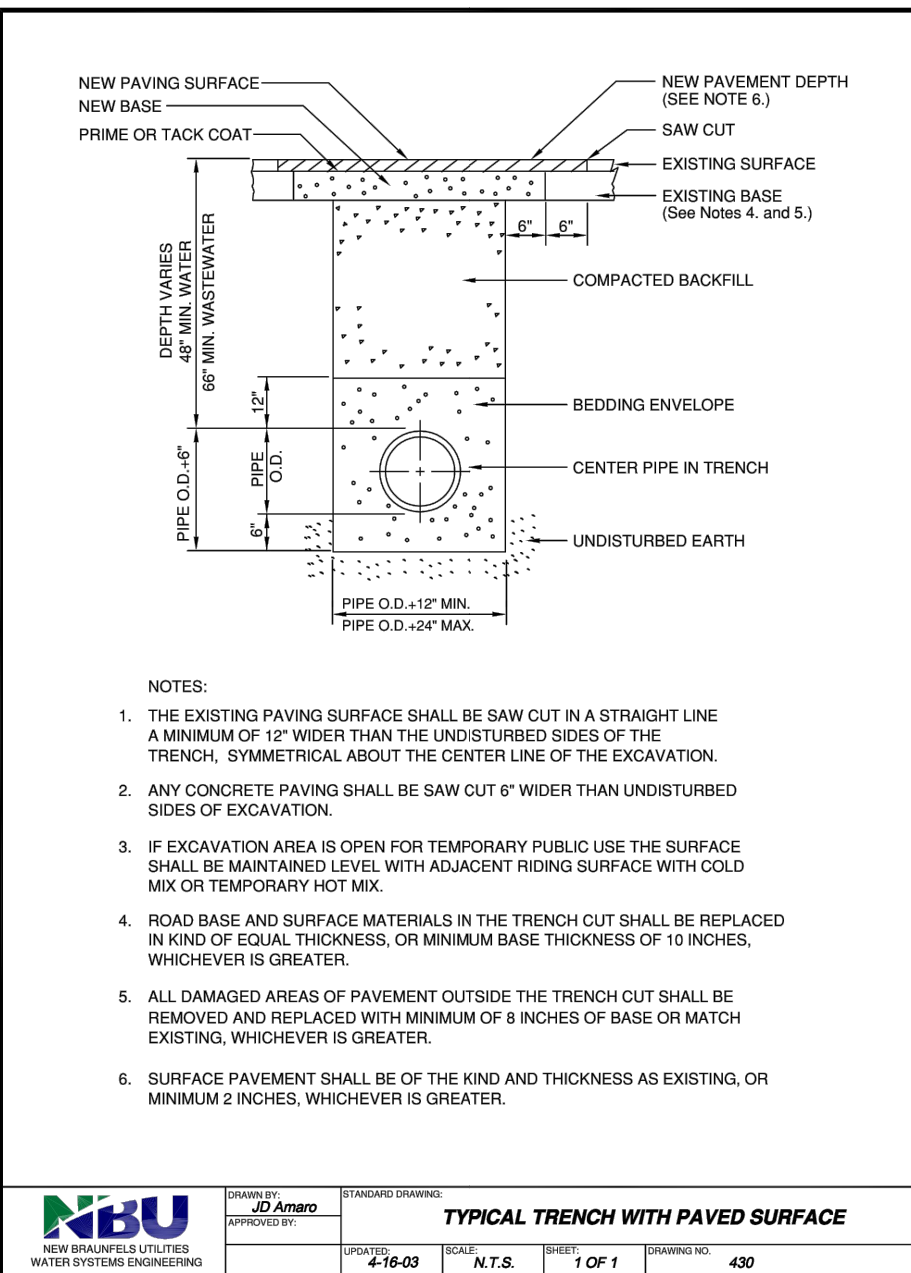
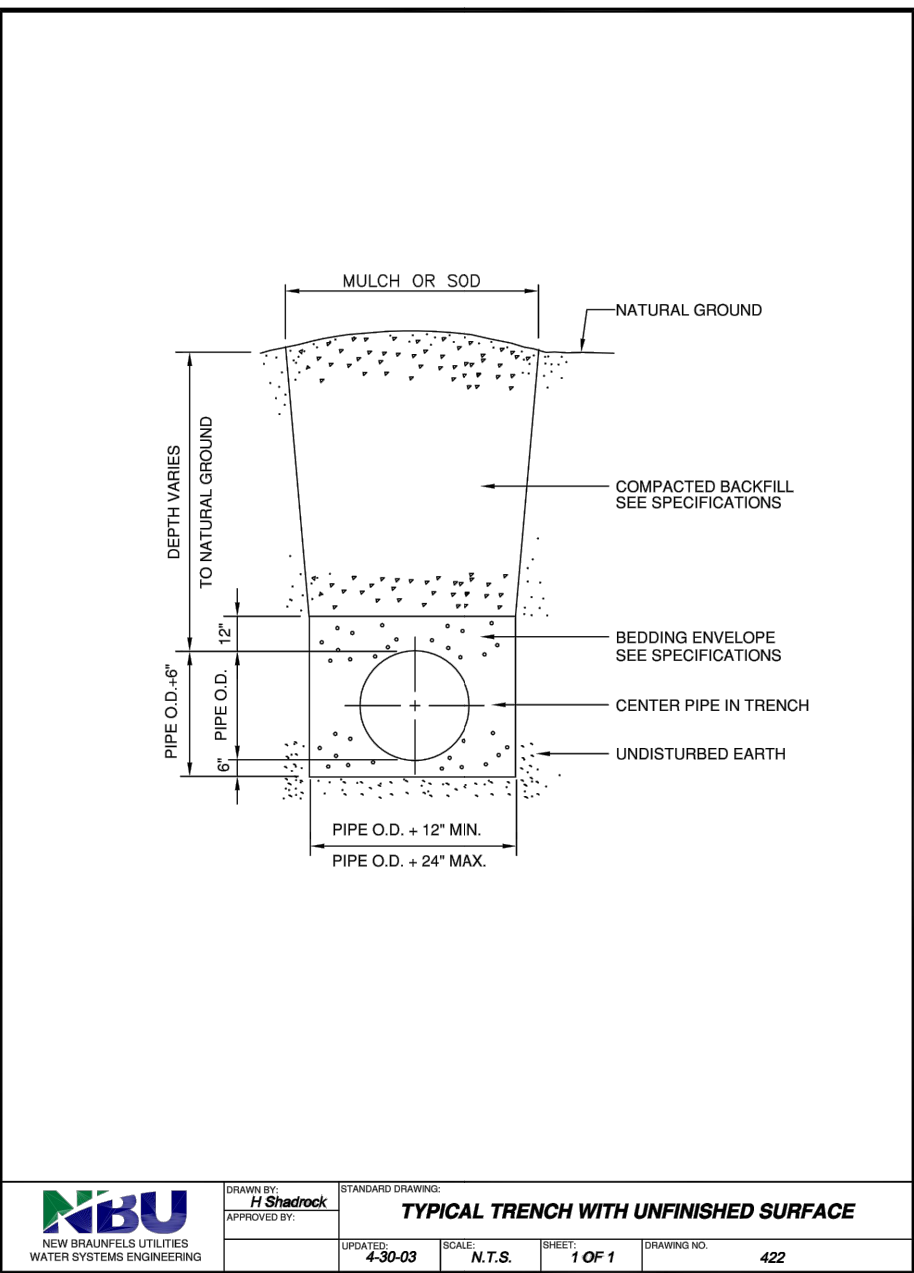
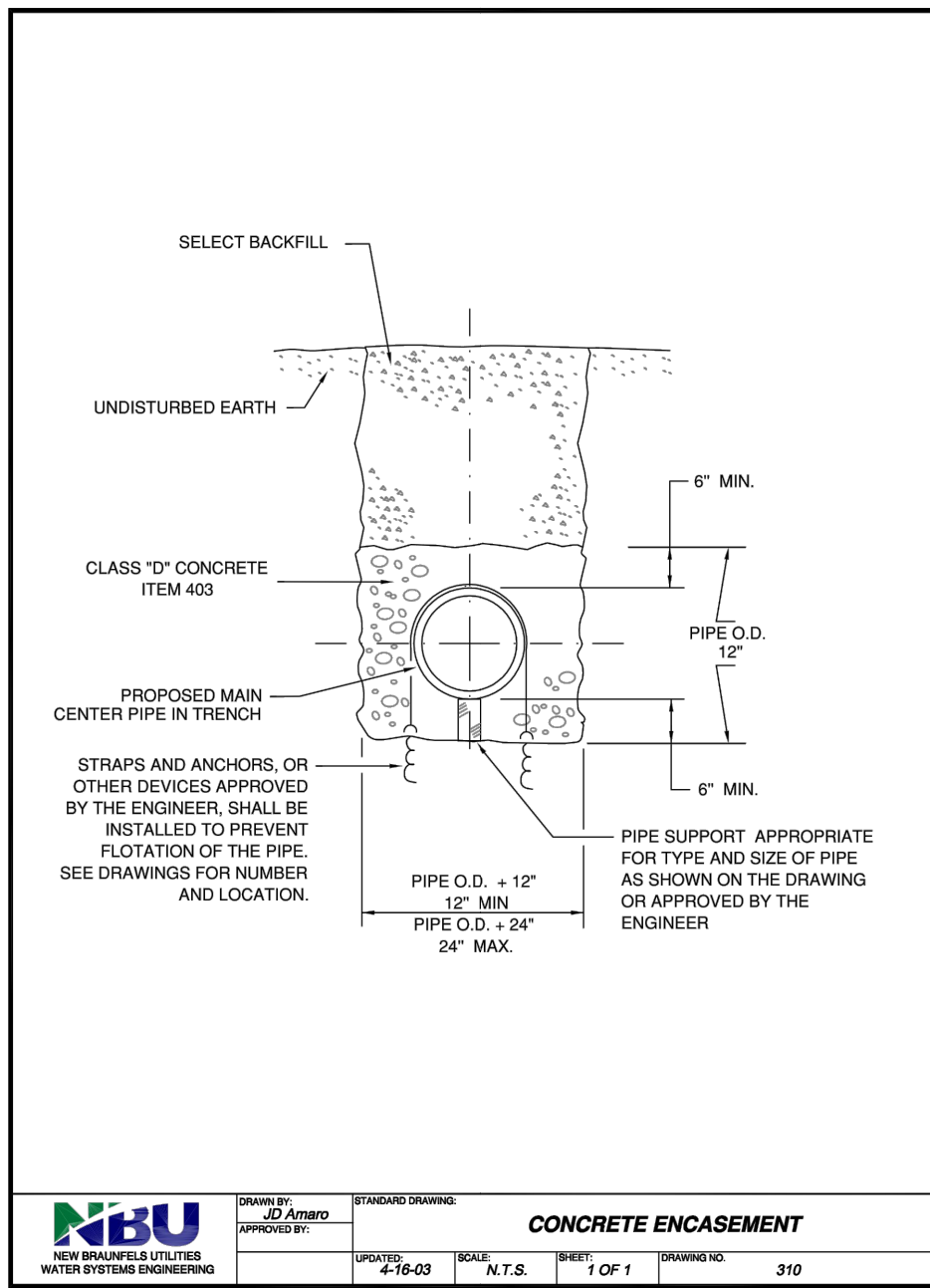
SHEET

C7.6

410 N. SEGUN AVE.
NEW BRAUNFELS, TX 78130
HMTNB.COM
P16301625-8655-F16301625-8656
TYPE FIRM F-10961
TEPLS FIRM 10153600







WASTEWATER DETAILS
(2 OF 2)
CREEKSIDE FARMS
UNIT 3

NO.	REVISION	DESCRIPTION	DATE

DATE: **MAY 2019**

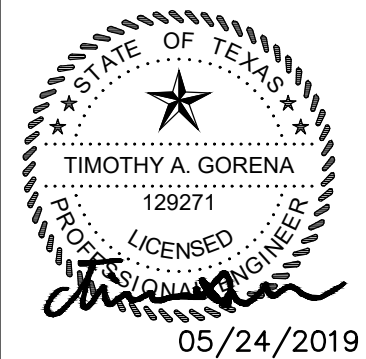
DRAWN BY: **MA**

DESIGNED BY: **TG**

REVIEWED BY: **CC**

HMT PROJECT NO.: **164.012**

SHEET
C7.8



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TBPE FIRM F-10961
TBPLS FIRM 10153600

