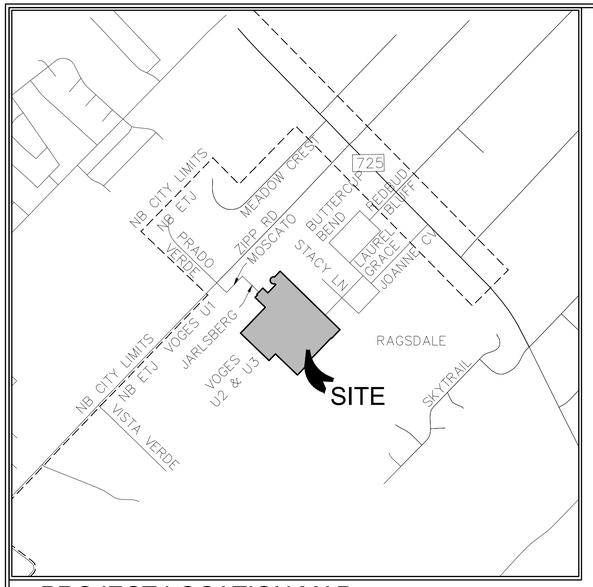

PROJECT LOCATION MAP SCALE: N.T.S.

PROJECT BENCHMARK

SITE TBM #1
SET MAG SPIKE W/ WASHER
N: 13786302.23'
E: 2255456.14'
ELEV: 633.75'

SITE TBM #2
SET MAG SPIKE W/ WASHER
N: 13786880.63'
E: 2256014.00'
ELEV: 627.48'

LEGAL DESCRIPTION

BEING A 23.25 ACRE TRACT SITUATED IN THE SARAH DeWITT SURVEY NO. 48, ABSTRACT NO. 103, GUADALUPE COUNTY, TEXAS, BEING A PORTION OF A 45.004 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025809, AND A PORTION IN A 30.3030 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025812, ALL IN THE OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

VOGES SUBDIVISION UNIT 3

NEW BRAUNFELS, TEXAS

CIVIL SITE CONSTRUCTION PLANS

SAN ANTONIO LD, LLC
9504 INTERSTATE 35, STE. 310
SAN ANTONO, TEXAS 78233

REQUIRED PERMITS:
CITY OF NEW BRAUNFELS
GBRA - WASTEWATER
GVSUD - WATER
GVEC - ELECTIC

DECEMBER 2023

12/21/2023
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

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.

Eric S. Ply
P.E. Registration No. 123317

PREPARED BY:

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ENGINEERING & SURVEYING
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VOGES SUBDIVISION UNIT 3
CIVIL SITE CONSTRUCTION PLANS
HMT # 248.014

GENERAL NOTES:

1. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
2. 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.
3. 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.
4. 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.
   - 4.1 ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
   - 4.2 FAXED IN AT 830-608-2117 OR,
   - 4.3 E-MAILED AT INSPECTIONS@NBTEXAS.ORG.
5. 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.
6. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
7. THIS DEVELOPMENT IS A TYPE III DEVELOPMENT.
8. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE COMAL COUNTY, TEXAS, FIRM PANEL NUMBER 48187C0115F EFFECTIVE DATE NOVEMBER 2, 2007, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
9. THIS PROJECT IS NOT LOCATED WITHIN THE JURISDICTIONAL BOUNDARY OF THE EDWARDS AQUIFER RECHARGE ZONE.
10. 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.

NOTE TO CONTRACTOR:

1. ANY QUANTITIES PROVIDED BY HMT OR OWNER ON THE PLANS, OPINION OF PROBABLE COST, BID SUMMARIES, ETC. ARE FOR CURSORY USE ONLY. CONTRACTOR IS RESPONSIBLE FOR BIDDING SIGNED AND SEALED CONSTRUCTION PLANS. IF A DISCREPANCY EXIST, CONTRACTOR SHALL CONTACT ENGINEER IMMEDIATELY.
2. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE LOCATION AND ELEVATION OF ALL DOWNSTREAM CONNECTION POINTS PRIOR TO CONSTRUCTION. IF A DISCREPANCY EXIST, CONTRACTOR SHALL CONTACT ENGINEER IMMEDIATELY.
3. CONTRACTOR SHALL INSTALL ALL GRAVITY SEWER, GRAVITY STORM SEWER, CURBS AND PAVEMENT FROM THE MOST DOWNSTREAM POINT OF CONNECTION. IF IMPROVEMENTS ARE CONSTRUCTED FROM UPSTREAM TO DOWNSTREAM, THEN THE CONTRACTOR WILL TAKE FULL RISK AND LIABILITY OF ANY ISSUES THAT MIGHT ARISE FROM FLOWLINE ELEVATION DISCREPANCIES, UTILITY CONFLICTS, ETC.
4. CONTRACTOR IS RESPONSIBLE FOR THE STOCKPILING OF ANY EXCESS DIRT. ALL BIDS FROM CONTRACTOR SHOULD ACCOUNT FOR THE REMOVAL AND PLACEMENT OF ALL EARTHWORK TO INCLUDE STOCKPILING, EXPORT, IMPORT, ETC. IF A LOCATION OF PLACEMENT OF EXCESS DIRT IS NOT SHOWN ON THE PLANS, THEN CONTRACTOR SHALL CONTACT ENGINEER IMMEDIATELY TO DETERMINE THE MOST SUITABLE STOCKPILE LOCATION.
5. 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
6. 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 FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES." ALONG WITH CURRENT CITY OF NEW BRAUNFELS AND GUADALUPE 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 UNDERCUT 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 TORCHING 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 PLATTING ORDINANCE SECTION 118-38M.: WHEN ALL 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 (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.

CITY OF NEW BRAUNFELS CONSTRUCTION NOTES REVISED 03/2020

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

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

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 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.

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 TXDOT'S 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 TXDOT'S 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 SUB-SURFACE COURSES 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 60°F. COMPLETE ALL COMPACTION OPERATIONS BEFORE THE PAVEMENT TEMPERATURE DROPS BELOW 160°F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL FALL WITHIN A TOLERANCE OF +0.5 PERCENT FROM A SPECIFIC MIX DESIGN.

CITY OF NEW BRAUNFELS CONSTRUCTION NOTES REVISED 03/2020

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).

1. SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
2. SAWCUT EXISTING CURB TO TIE 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. RIGHTOF-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 MANUAL. ONLY SEED TYPES AND MIXES SPECIFIED FOR THE SAN ANTONIO DISTRICT (DISTRICT 15 IN TABLES 1 AND 2 UNDER ITEM 164 SHALL BE UTILIZED. DURING THE COOL SEASON (SEPT 1-NOV 30, CEREAL RYE AND SEED SPECIES SPECIFIED FOR THE SAN ANTONIO DISTRICT IN TABLE 3 MAY BE USED. FOR COOL SEASON SEEDING APPLICATIONS, COOL SEASON SEED MIXES SHALL BE USED IN CONJUNCTION WITH SEED MIXES FOR THE SAN ANTONIO DISTRICT AS SPECIFIED IN TABLE 1 AND 2 UNDER ITEM 164.

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.

AREAS REQUIRING PERMANENT VEGETATION (EARTHEN CHANNELS, PONDS, ETC.) ARE REQUIRED TO MEET TXDOT SPECIFICATIONS FOR ITEM 160 TOPSOIL. TESTING PER TEX-128-E WILL BE REQUIRED AT THE CITY'S REQUEST.

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 CONTRACTOR/ 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

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.
10. TPDES REQUIREMENTS – DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY WILL BEGIN AGAIN WITHIN 21 DAYS. SEEDING DOES NOT CONSTITUTE AS STABILIZATION.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT ENGINEERING & SURVEYING

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

GENERAL NOTES (1 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET

C0.2

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

GVSUD (WATER)	(830) 914-2331
GUADALUPE-BLANCO RIVER AUTHORITY (SEWER)	(830) 379-5822
GVEC (ELECTRIC)	(830) 223-4832
TIME WARNER CABLE	(830) 625-3408
CENTERPOINT ENERGY (GAS)	(830) 643-6434
AT&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

GBRA CONSTRUCTION NOTES **REVISED 3/09/18**

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE: HTTPS: //WWW.GBRA.ORG/OPERATIONS/DEVELOPER-RESOURCES/
2. COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ETC.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ETC., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.
3. ALL WATER AND WASTEWATER INSTALLATIONS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. THIS INCLUDES CROSSINGS OF WATER AND WASTEWATER BY OTHER UTILITIES. GBRA WILL PERFORM A MAXIMUM OF ONE (1) INSPECTION DAILY FOR ONE (1) HOUR DURATION BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. CALL 830-379-5822 TO SCHEDULE INSPECTIONS (48 HOURS ADVANCE NOTICE IS REQUIRED FOR ALL INSPECTIONS).
4. TRENCH EXCAVATION AND PIPE INSTALLATION WILL NOT BE PERMITTED UNTIL SUBGRADE HAS BEEN ESTABLISHED. SURVEY STAKING MUST BE INSTALLED PRIOR TO AND MAINTAINED DURING TRENCH EXCAVATION AND PIPE INSTALLATION. SURVEY STAKING SHALL INCLUDE HORIZONTAL AND VERTICAL CONTROL AT A MINIMUM OF 50 FOOT STATION INTERVALS. HORIZONTAL OFFSETS SHALL BE 15 FEET MAXIMUM. INSTALL PROPERTY PINS AND STAKES. MARK FINISH GRADE LINES WITH CUT/FILL ON OFFSET STAKES AND PROPERTY STAKES. ALL MARKS SHALL FACE THE PIPELINE. SURVEY STAKING SHALL BE PERFORMED BY THE CONTRACTOR.
5. PVC MALE ADAPTERS ARE NOT ALLOWED.
6. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
7. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
8. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
9. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
10. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
11. WATER AND WASTEWATER PIPE LENGTHS SHALL BE CENTERED AT CROSSINGS WITH ALL OTHER UTILITIES, INCLUDING DRY UTILITY SERVICES. BOTH PIPES SHALL BE CENTERED AT WATER AND WASTEWATER CROSSINGS, INCLUDING WASTEWATER SERVICE LATERALS AND FIRE HYDRANT LEADS.
12. WATER AND WASTEWATER PIPING (INCLUDING MAINS, SERVICES, AND LATERALS) SHALL BE SLEEVED IF LOCATED UNDER CONCRETE CHANNELS, BOX CULVERTS, OR MULTIPLE BARREL STORM SEWER CROSSINGS REGARDLESS OF SIZE AND SINGLE BARRELS 30"OR LARGER.
13. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾"CHAMFER STRIPS.
14. EXISTING FACILITIES THAT ARE DISTURBED SHALL BE RESTORED AND TESTED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS. THE CONTRACTOR SHALL ADJUST EXISTING WATER AND WASTEWATER FACILITIES TO PROPOSED FINISH GRADES INCLUDING BUT NOT LIMITED TO MANHOLES, CLEANOUTS, VALVES, HYDRANTS, APPURTENANCES, ETC.
15. EXISTING MANHOLES THAT ARE DISTURBED SHALL BE RESTORED TO BE IN FULL COMPLIANCE WITH CURRENT GBRA STANDARDS INCLUDING TESTING, CORROSION RESISTANT LINING, RINGS AND COVERS, ETC.
16. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WATER AND WASTEWATER SYSTEMS AT ALL TIMES DURING CONSTRUCTION. ANY WORK INVOLVING POWER OUTAGES, BYPASS PUMPING, PUMP AND HAUL, OR ANY OTHER INTERRUPTION OF FLOW MUST BE PERFORMED BETWEEN 8:00AM AND 5:00PM EXCLUDING WEEKENDS AND HOLIDAYS. ALL NECESSARY TEMPORARY POWER, BYPASS PUMPING, PUMP AND HAUL, TEMPORARY PLUGS, ETC., SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR. COORDINATE AND SCHEDULE ANY SUCH ACTIVITIES WITH GBRA AT LEAST TWO (2) WEEKS IN ADVANCE.
17. EXPLOSIVES AND BLASTING ARE NOT ALLOWED.

MATERIAL NOTES:

1. GRAVITY WASTEWATER PIPE AND FITTINGS SHALL BE GREEN COLOR GASKETED ASTM D3034 SDR26. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
2. MJ TEE BOLTS AND NUTS FOR BURIED LOCATIONS SHALL BE CORTEN, EXCEPT FOR PROJECTS NEAR OR EAST OF INTERSTATE 35 USE TYPE 304 STAINLESS STEEL. FIELD APPLY NICKEL ANTI-SEIZE COMPOUND TO THREADS PRIOR TO ASSEMBLY.
3. ALL OTHER FASTENERS SHALL BE TYPE 304 STAINLESS STEEL (E.G. HARDWARE, SCREWS, ANCHOR BOLTS, RODS, BOLTS, NUTS, ETC. FOR PIPING, VALVES, PUMPS, MOTORS, EQUIPMENT, ETC.) INCLUDING THOSE FOR FACTORY ASSEMBLY OF COMPONENTS. ALL BOLTS AND NUTS SHALL BE HEAVY HEX. ANCHOR BOLTS INSTALLED WITHIN HYDRAULIC STRUCTURES SHALL BE EPOXY TYPE. FIELD APPLY NICKEL ANTI-SEIZE COMPOUND TO THREADS PRIOR TO ASSEMBLY. STAINLESS STEEL ITEMS SHALL NOT BE PAINTED
4. PVC MALE ADAPTERS ARE NOT ALLOWED.

TESTING NOTES:

1. ALL OTHER UTILITIES MUST BE COMPLETE PRIOR TO PERFORMING ANY WATER OR WASTEWATER TESTING.
2. ALL TESTING MUST BE COMPLETE PRIOR TO PAVING STREETS.
3. ALL TESTING MUST BE COMPLETE PRIOR TO PERFORMING TIE-INS TO EXISTING WATER OR WASTEWATER SYSTEMS.
4. CONTRACTOR SHALL PERFORM PRE-TESTING TO VERIFY PASSING RESULTS PRIOR TO REQUESTING GBRA INSPECTION. PROVIDE CONNECTION POINT FOR GBRA DIGITAL TEST GAUGE.
5. ALL TESTING SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY GBRA.
6. PERFORM TRENCH BACKFILL DENSITY TESTING AT INTERVALS SPECIFIED BY THE DESIGN ENGINEER, EXACT LOCATIONS TO BE DESIGNATED BY INSPECTOR. SCHEDULE GBRA TO WITNESS TESTING. PROVIDE COPIES OF REPORTS TO GBRA.
7. FOLLOW AWWA PIPE TESTING PROCEDURES AND ALLOWABLE LEAKAGE FOR WATER LINES.TEST EVERY VALVED SECTION (I.E. TEST AGAINST EVERY VALVE IN CLOSED POSITION). TEST PRESSURE SHALL BE THE MAXIMUM RATING OF MATERIAL INSTALLED. TEST DURATION SHALL BE 2 HOURS.
8. FOLLOW AWWA PROCEDURES FOR FLUSHING AND DISINFECTION OF WATER PIPING. FLUSHING AND DISINFECTION MUST BE COMPLETE PRIOR TO PERFORMING TIE-INS TO EXISTING SYSTEMS.
9. ALL MANHOLES, REGARDLESS OF VEHICULAR TRAFFIC DETOURING, SHALL BE VACUUM TESTED AFTER COMPLETION OF BACKFILL, COMPACTION, AND FINAL GRADING OF ROAD BASE BUT PRIOR TO PAVING STREETS AND PRIOR TO CORROSION RESISTANT MANHOLE LINING. VACUUM TESTING SHALL BE PERFORMED WITH A PLATE TYPE TEST HEAD PLACED ON TOP OF COMPLETED MANHOLE METAL CASTING RING WHICH HAS BEEN INSTALLED AND ENCASED IN CONCRETE AT FINAL GRADE. MANHOLES SHALL BE TESTED AT 10 INCHES OF MERCURY FOR 2 MINUTES DURATION. ALLOWABLE LOSS IS 1 INCH OF MERCURY. INFILTRATION AND EXFILTRATION TESTING ARE NOT ALLOWED.
10. PERFORM VIDEO INSPECTION AND GOLF BALL TESTING OF GRAVITY WASTEWATER PIPING AFTER CORROSION RESISTANT MANHOLE LINING BUT PRIOR TO PAVING STREETS. PIPE AND MANHOLES MUST BE CLEANED FREE OF DIRT, ROCKS, SCALE, MUD, SILT, AND ANY OTHER FOREIGN MATTER PRIOR TO PERFORMING VIDEO INSPECTION AND GOLF BALL TESTING. FLOOD SYSTEM WITH WATER IMMEDIATELY PRIOR TO PERFORMING VIDEO INSPECTION. HANG AND DRAG A GOLF BALL IN FRONT OF CAMERA. PIPE GRADE IS OUT OF TOLERANCE IF GOLF BALL BECOMES FULLY SUBMERGED. SCHEDULE GBRA TO WITNESS VIDEO INSPECTION. PROVIDE DVD'S AND WRITTEN REPORTS TO GBRA.
11. ALL GRAVITY WASTEWATER PIPING SHALL BE SUBJECT TO LOW PRESSURE AIR TESTING IN ACCORDANCE WITH TCEQ REQUIREMENTS. INFILTRATION AND EXFILTRATION TESTING ARE NOT ALLOWED.
12. MANDREL TESTING SHALL BE PERFORMED FOR ALL GRAVITY WASTEWATER MAINS PRIOR TO INSTALLATION OF CORROSION RESISTANT MANHOLE LINING.

DESIGN AND DOCUMENTS:

1. AS-BUILT AND RECORD DRAWINGS: PROVIDE COMPLETE PROJECT DRAWING SETS INCLUDING DRY UTILITIES, ROADS, GRADING, STORM SEWER, SANITARY SEWER, WATER, ETC. SUBMIT ELECTRONIC PRELIMINARY COPIES FOR GBRA REVIEW AND APPROVAL PRIOR TO PRINTING FINAL COPIES. I. CONTRACTOR SHALL PROVIDE ONE (1) PRINTED AND BOUND FULL SIZE COPY OF RED LINED ASBUILT DRAWINGS AND ONE (1) CD/PDF ELECTRONIC COPY, EACH SHEET STAMPED "ASBUILT DRAWING". II. ENGINEER SHALL PREPARE CORRECTED CAD DRAWINGS, EACH SHEET STAMPED "RECORD DRAWING", AND SUBMIT TO GBRA FIVE (5) PRINTED AND BOUND HALF SIZE COPIES AND FIVE (5) CD/PDF SEARCHABLE ELECTRONIC COPIES OF THE CORRECTED CAD DRAWINGS. SCANNED AND/OR PHOTOCOPIES ARE NOT ACCEPTABLE. H. RECORDED PLATS AND EASEMENTS. I. TITLE COMPANY REVIEW FOR RELEASE OF ALL LIENS.

1. ALL WORKMANSHIP AND MATERIALS FOR THE WATER SYSTEM SHALL CONFORM TO THE WATER STANDARDS AND DESIGN CRITERIA OF GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD).
2. PVC MAINS 12-INCHES AND BELOW SHALL CONFORM TO AWWA C-909 PRESSURE CLASS 235 OR ABOVE DEPENDING ON SYSTEM PRESSURES. PVC MAIN GREATER THAN 12 INCHES SHALL CONFORM TO AWWA C-900 DR 18 OR ABOVE DEPENDING ON SYSTEM PRESSURES. WATER MAINS SHALL HAVE AN ABSOLUTE MINIMUM DEPTH OF 5-FEET BELOW ROADWAY LEVEL AND 42-INCHES IN ALL OTHER AREAS.
3. ALL WATER MAIN DUCTILE IRON FITTINGS SHALL BE MECHANICAL JOINT AND CONFORM TO ANSI/AWWA C-153 OR C-110. ALL BOLTS SHALL HAVE KOPR KOTE OR APPROVED EQUAL ANTI-SEIZE CORROSION RESISTANT COATING. VALVES SHALL BE ATTACHED TO TEES BY FOSTER ADAPTOR OR ANCHOR NIPPLE. FOSTER ADAPTER, ANCHOR NIPPLE, OR FORD UNI-FLANGE RETAINER GLANDS AND THRUST BLOCKS SHALL BE USED ON ALL FITTINGS AND VALVES.
4. TRACER WIRE SHALL BE INSTALLED ON ALL PIPELINES INCLUDING SERVICE LINES AND BROUGHT INTO VALVE AND METER BOXES FOR LOCATING PURPOSES. INSULATED WATER PROOF CONNECTORS SHALL BE USED TO SPLICE WIRES TOGETHER. A 12-INCH-WIDE DETECTABLE METAL TAPE SHALL BE PLACED ABOVE BEDDING INITIAL BACKFILL.
5. EXCEEDING MAXIMUM DEFLECTION IS PROHIBITED. THE ANGULAR DEFLECTION AT BELL-SPIGOT JOINTS SHOULD NOT EXCEED ONE (1) DEGREE. THIS WILL PRODUCE A 4-INCH OFFSET FOR EVERY 20-FOOT SECTION OF PIPE. JOINT DEFLECTION IS ACHIEVED AFTER THE JOINT IS ASSEMBLED IN STRAIGHT ALIGNMENT AND DEFLECTED TO THE REFERENCE MARK. THE BELL SHOULD BE BRACED TO ALLOW THE FREE END TO MOVE LATERALLY UNDER STEADY PRESSURE USING A PRY BAR OR OTHER SUITABLE MEANS. CARE SHOULD BE TAKEN NOT TO EXCEED THE MAXIMUM DEFLECTION ALLOWED OR TO DAMAGE THE PIPE WITH MACHINERY. ABRUPT CHANGES IN DIRECTION SHALL BE ACCOMPLISHED WITH FITTINGS.
6. OVER STRESSING THE BELL BY OVER INSERTING THE JOINTS, OVERBELLING, AND PASSING THE INSERTION REFERENCE MARK IS PROHIBITED AND WILL REQUIRE REMOVAL AND REINSTALLATION.
7. STANDARD FIRE HYDRANT SHALL INCLUDE HYDRANT, 6-INCH RESILIENT GATE VALVE AND BOX, ANCHOR FITTINGS, DUCTILE IRON PIPE, AND ALL APPURTENANCES. HYDRANTS SHALL BE LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN. ONLY MUELLER HYDRANTS AND EJ SHALL BE USED IN CITY OF CIBOLO'S JURISDICTION. HYDRANT UPPER BARREL SHALL BE FACTORY PAINTED RED. HYDRANTS SHALL HAVE A STORTZ CONNECTION ON STEAMER NOZZLE. FITTINGS FOR PLUG SHALL BE FULLY RESTRAINED AND TIED TO VALVE.

8. VALVES SHALL BE AWWA APPROVED RESILIENT WEDGE SEATED GATE VALVE, OPEN LEFT, AND LIMITED TO THOSE MANUFACTURED BY MUELLER, AVK, AMERICAN FLOW, CLOW, OR EAST JORDAN.
9. VALVES ARE PROHIBITED IN ADA RAMPS, CURBS, AND ROADWAYS. VALVES ARE PROHIBITED IN SIDEWALKS IN CITY OF NEW BRAUNFELS.
10. METER BOXES ARE PROHIBITED IN ANY SIDEWALKS, DRIVEWAYS, OR ROADWAYS.
11. SMALL SERVICE TAPS SHALL BE EITHER 1-INCH OR 2 INCH AND SHALL BE REHAU MUNICIPEX WITH CTS 200 PSI PLASTIC INSERT. SMALL SERVICE TAPS TO BE MADE WITH SINGLE BRASS STRAP TAPPING SADDLE WITH IRON PIPE THREADS. EXCEPTION: IF LOCATED WITHIN CITY OF CIBOLO- SERVICE TAPS TO BE MADE WITH DOUBLE STAINLESS STRAP EPOXY COATING SADDLES WITH IRON PIPE THREADS.
12. CASING REQUIRED FOR ALL LONG SMALL SERVICES. 1 INCH SERVICE REQUIRES 3 INCH CASING AND 2 INCH SERVICE REQUIRES 4 INCH CASING. CASING SHALL BE PVC SCHEDULE 40 OR APPROVED EQUAL.
13. SINGLE 5/8" & ¾" METER BOXES SHALL BE DFW36C 16" X 11". DUAL 5/8" & ¾" METER BOXES SHALL BE DFW38C 17" X 15". 1-INCH METER BOXES SHALL BE DFW65C-14-1A 15 1/4" X 30 3/8". ALL METER BOXES SHALL BE PLASTIC WITH LIDS HAVING REBAR, ARM, AND KNOCKOUT.
14. THE FORD U BRANCH IS TO BE USED ON ALL DUAL SERVICES (U48-43Q) WITH THE 5/8" X 3/4" FEMALE THREAD ANGLE HEAD. ALL OTHER ANGLE HEADS WILL BE THE FORD Q NUT. ALL CORPORATION STOPS WILL BE IPS X Q NUT. ALL BRASS VALVES TO BE 'BALL' TYPE MINIMUM 200 PSI PRESSURE RATING. "CC" THREADED CORPORATION STOPS PROHIBITED.
15. TAPPING MACHINES UTILIZED FOR INSTALLING ANY TYPE OF TAP 1-INCH TO 2-INCHES WILL BE OF THE PURGE TYPE, WHICH AT THE TIME OF TAPPING SHALL EXPEL ALL CHIPS AND RESIDUE TO ATMOSPHERE THROUGH AN APPROPRIATE OUTLET AND/OR BE ABLE TO RETAIN THE COUPON.
16. ALL WATER MAIN, PIPE, CASINGS, FITTINGS, AND VALVES SHALL BE LAID IN MANUFACTURED SAND EMBEDMENT PER DETAILS. THE SAND SHALL FULLY ENCASE ALL PIPES, INCLUDING FITTINGS AND VALVES, BY A MINIMUM OF 12-INCHES. ALL FITTINGS AND VALVES ARE TO RECEIVE THRUST BLOCKING, FOSTER ADAPTER, ANCHOR NIPPLE, FORD UNI-FLANGE RETAINER GLAND JOINT RESTRAINTS, AND BELL JOINT RESTRAINTS WHEN SPECIFIED BY GVSUD OR THE DISTRICT'S ENGINEER.
17. CONTRACTOR TO CURB CUT V'S FOR VALVES AND X'S FOR METERS.
18. PRIOR TO CONSTRUCTION OF THE SEWER AND WATER MAINS, ALL R.O.W. ROADWAYS AND PARKWAY SHALL HAVE REFERENCE SURVEY STAKING AND BE EXCAVATED OR PROPERLY FILLED TO SUB-GRADE ELEVATION.

19. SURVEY STAKING OFFSETS ARE REQUIRED FOR ALL WATER MAIN AND APPURTENANCES.
20. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM AVAILABLE RECORDS AND ARE NOT GUARANTEED. CONTRACTOR SHALL INVESTIGATE AND FIELD VERIFY UTILITY LOCATIONS A MINIMUM OF 300 LF AHEAD OF CROSSING AND TIE-IN LOCATIONS. THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY DAMAGE TO AND FOR MAINTENANCE PROTECTION OF THE EXISTING UTILITIES, WHETHER THEY ARE SHOWN ON THE PLANS OR NOT.
21. ALL WASTEWATER PIPES CROSSING THE POTABLE WATER DISTRIBUTION SYSTEM WILL BE HELD IN STRICT ACCORDANCE WITH TCEQ RULES AND REGULATIONS. PROPOSED SUB-GRADE LIMITS AND DIMENSIONS MUST BE SHOWN ON THE PLANS, AND CONSTRUCTION PROCEDURES WILL BE INSPECTED TO VERIFY COMPLIANCE WITH TCEQ 290.44(E).
22. OTHER UTILITIES SHALL NOT BE LOCATED CLOSER THAN 3-FEET TO WATER MAINS.
23. THE GREEN VALLEY INSPECTOR SHALL BE NOTIFIED AT LEAST FORTY-EIGHT HOURS PRIOR TO BACK FILLING OR TESTING.
24. A FIELD PRE-CONSTRUCTION MEETING SHALL BE HELD BEFORE CONSTRUCTION BEGINS AND MATERIAL SHALL BE AVAILABLE ON-SITE FOR INSPECTION.
25. CONTRACTOR SHALL CHLORINATE NEW MAINS PER TCEQ AND ANSI/AWWA C651 AND DECHLORINATE DURING FLUSHING PER ANSI/AWWA C655; THE CONTRACTOR SHALL COORDINATE WITH THE GVSUD INSPECTOR TO WITNESS CHLORINATING AND PRESSURE TESTING OF NEW MAINS. ALL TEST RESULTS MUST BE PROVIDED TO GVSUD.
26. OPERATION OF EXISITNG VALVES IN THE GVSUD WATER DISTRIBUTION SYSTEM SHALL ONLY BE AS APPROVED BY GVSUD AND IN THE PRESENCE OF GVSUD PERSONNEL. THE CONTRACTOR SHALL NOTIFY GVSUD WHEN A VALVE NEEDS TO BE OPERATED AND MAY ONLY OPERATE A VALVE IN THE PRESENCE OF THE GVSUD INSPECTOR.
27. NEW WATER MAINS AND APPURTENANCES SHALL PASS PRESSURE TESTING AND PASS THE MINIMUM PUBLIC HEALTH STANDARDS FOR BACTERIOLOGICAL QUALITY TESTING PRIOR TO ANY TIE IN TO THE EXISTING GVSUD WATER SYSTEM AS REQUIRED BY TCEQ AND ANSI/AWWA.
28. HYDROSTATIC PRESSURE TESTING SHALL BE EVERY 200 LF (MAX) OF LINE OR AS APPROVED BY THE ENGINEER. ALL ERRORS OF WORKMANSHIP SHALL BE CORRECTED IMMEDIATELY. ALL PARTS OF THE PIPELINE SHALL BE BACKFILLED AND BRACED SUFFICIENTLY TO PREVENT MOVEMENT UNDER PRESSURE.
29. CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH AND CONFINED SPACE ENTRY SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION AND ALL RELATED WORK. ANY

TRENCH PROTECTION SAFETY VIOLATION WILL BE DOCUMENTED AND WILL RESULT IN AN IMMEDIATE WORK STOPPAGE BY THE GVSUD INSPECTOR AT MINUMUM UNTIL THE NEXT WORKDAY.

30. CONTRACTOR MUST PROTECT ALL UNATTENDED TRENCHES AND EXCAVATIONS WITH TEMPORARY FENCING.
31. NO TREES MAY BE PLANTED IN THE AREAS DESIGNATED AS WATER OR UTILITY EASEMENTS, OR AREAS WHERE WATER MAINS AND WATER SERVICE CROSSINGS EXIST OR ARE PLANNED TO BE CONSTRUCTED.
32. ALL GARBAGE OR SPOIL MATERIAL FROM THE WORK SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.
33. CONTRACTOR SHALL PROVIDE "AS-BUILT" WATER LINE PLANS AT THE PRELIMINARY WALK THRU FOR THE GVSUD INSPECTOR AND ENGINEER. THE PLANS SHALL LIST MATERIAL MANUFACTURERS, LINE LENGTH FROM FITTING TO FITTING, AND TAP LOCATIONS.
34. GPS FILES SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER AND GVSUD INSPECTOR FOR THE PLAN OF RECORD. CONTRACTOR SHALL PROVIDE AN ASCII COMMA DELIMITED OR EXCEL FILE CONTAINING THREE-DIMENSIONAL GPS SURVEY POINTS WITH FOUR (4) DECIMAL PLACES OF PRECISION, LESS THAN FOUR (4) INCHES OF HORIZONTAL POSITION ACCURACY, AND LESS THAN EIGHT (8) INCHES OF VERTICAL POSITION ACCURACY. POINTS SHALL BE PROVIDED FOR A MINIMUM OF THREE (3) CONTROL POINTS AND ALL FITTINGS, APPURTENANCES, ENCASEMENTS, VAULTS, AND TANKS. THE ENGINEER SHALL FURNISH PLAN OF RECORD DRAWINGS TO GVSUD FOR APPROVAL HAVING FINAL MEASUREMENTS AND THAT MATCH THE GPS 'X', 'Y', AND 'Z' COORDINATES.
35. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ALL THE INFORMATION AS REQUIRED SO THAT THE ENGINEER CAN SUPPLY GVSUD THE GIS PACKAGE FOR APPROVAL.
36. A FINAL WALK THRU FOR FINAL FIELD ACCPETANCE WILL BE SCHEDULED WITH THE CONTRACTOR AFTER THE PRELIMINARY WALK THRU PUNCH LIST ITEMS HAVE BEEN COMPLETED AND AFTER THE GIS PACKAGE IS APPROVED AND ACCEPTED BY GVSUD.
37. GVSUD CONTACT NUMBER: 830-914-2330

REVISED: JULY 22,2022

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

GENERAL NOTES (2 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C0.3

Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\07\248.014_COVER-GENERAL NOTES.dwg User: matt-p Dec 21, 2023 - 4:43pm

FINAL PLAT ESTABLISHING
VOGES, UNIT 3

BEING A 23.25 ACRE TRACT SITUATED IN THE SARAH DeWITT SURVEY NO. 48, ABSTRACT NO. 103, GUADALUPE COUNTY, TEXAS. BEING A PORTION OF A 45.004 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025809, AND A PORTION IN A 30.3030 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025812, ALL IN THE OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

PLAT NOTES:

1. ALL LOTS WITHIN THE SUBDIVISION WILL BE PROVIDED WATER SERVICES BY GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD). SEWER SERVICES WILL BE PROVIDED BY GUADALUPE-BLANCO RIVER AUTHORITY (GBRA). ELECTRIC SERVICES WILL BE PROVIDED BY GUADALUPE ELECTRIC COOPERATIVE (GVEC). TELEPHONE AND CABLE SERVICES FOR THE SUBDIVISION WILL BE PROVIDED BY AT&T COMMUNICATIONS AND/OR SPECTRUM.
2. 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.
3. 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.
4. THIS SUBDIVISION IS NOT WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.
5. THIS SUBDIVISION IS WITHIN THE EXTRATERRITORIAL JURISDICTION LIMITS OF THE CITY OF NEW BRAUNFELS, TEXAS.
6. THIS SUBDIVISION IS WITHIN THE NEW BRAUNFELS INDEPENDENT SCHOOL DISTRICT.
7. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE GUADALUPE COUNTY, TEXAS, FLOOD INSURANCE RATE MAP NUMBER 48187C0115F, EFFECTIVE DATE NOVEMBER 2, 2007 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
8. 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 ANY OBSTRUCTIONS PLACED WITHIN THE LIMITS OF SAID DRAINAGE EASEMENTS AND TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS WITHIN SAID DRAINAGE EASEMENTS.
9. FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
10. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ADJACENT TO THE CURB BY THE DEVELOPER AT THE TIME OF STREET CONSTRUCTION ALONG:
    A. CAMEMBERT ST – LOT 923, BLOCK 2.
    B. BURGUNDY TRL – LOT 924, BLOCK 12.
    C. JARLSBERG LN – LOT 923, BLOCK 2, AND LOT 920, BLOCK 4 (UNIT 2).
    D. SYRAH AVE – LOT 904, BLOCK 2(UNIT 1).
    E. CHIANTI RD/TALEGGIO AVE SAC – LOT 924, BLOCK 12.
    F. CABERNET ST – LOT 925, BLOCK 16.
11. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ADJACENT TO THE CURB BY THE HOME BUILDER AT THE TIME OF BUILDING CONSTRUCTION ALONG:SYRAH AVE, CAMEMBERT ST, RAGSDALE WAY, CABERNET ST, JARLSBERG LN, BURGUNDY TRL, BRIE DR, CHIANTI RD, TALEGGIO AVE, AND STILTON AVE.
12. 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 SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE AND SHALL PREVENT WATER FROM LEAVING THE STREET.
13. THIS SUBDIVISION IS SUBJECT TO THE 2018 CITY OF NEW BRAUNFELS PARK LAND DEDICATION AND DEVELOPMENT ORDINANCE. THIS PLAT IS APPROVED FOR ONE DWELLING UNIT(S) PER BUILDABLE LOT WITH A MAXIMUM OF 133 BUILDABLE LOTS. 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.
14. ALL DRAINAGE EASEMENTS WITHIN THE LOTS WILL BE OWNED AND MAINTAINED BY PROPERTY OWNER.
15. LOT 923 (DRAINAGE), BLOCK 2, LOT 924 (DRAINAGE), BLOCK 12, LOT 925 (DRAINAGE), BLOCK 16, WILL BE OWNED AND MAINTAINED BY THE SUBDIVISION PROPERTY OWNER, ITS SUCCESSORS AND/OR ASSIGNS.

GVSUD NOTES:

EASEMENT CERTIFICATE
THE OWNER OF THE LAND SHOWN ON THIS PLAT AND WHOSE NAME IS SUBSCRIBED HERETO, IN PERSON OR THROUGH A DULLY AUTHORIZED AGENT, DEDICATES TO GREEN VALLEY SPECIAL UTILITY DISTRICT OF MARION, TEXAS, ITS SUCCESSORS AND ASSIGNS, A PERPETUAL EASEMENT WIT THE RIGHT TO ERECT, CONSTRUCT, INSTALL AND LAY OVER AND ACROSS THOSE AREAS MARKED AS "WATERLINE EASEMENT" AND IN ALL STREETS AND BYWAYS, SUCH PIPELINES, SERVICE LINES, WATER METERS, AND OTHER WATER SYSTEM APPURTENANCES AS IT REQUIRES, TOGETHER WIT THE RIGHT OF INGRESS AND EGRESS, THE RIGHT TO REMOVE FROM SAID LAND ALL TREES, SHRUBS, GRASSES, PAVEMENTS, FENCES, STRUCTURES, IMPROVEMENTS OR OTHER OBSTRUCTIONS WHICH MAY INTERFERE WITH THE FACILITY OR THE ACCESS THERETO. IT IS AGREED AND UNDERSTOOD THAT NO BUILDING, CONCRETE SLAB OR WALLS WLL BE PLACED WITHIN SAID EASEMENT AREAS. NO OTHER UTILITY LINES MAY BE LOCATED WITHIN 36" PARALLEL TO WATER LINES.

ANY MONETARY LOSS TO GREEN VALLEY SUD RESULTING FROM MODIFICATIONS REQUIRED OF UTILITY EQUIPMENT LOCTED WITHIN SAID EASEMENTS DUE TO GRADE CHANGE OR GROUND ELEVATION ALTERATION SHALL BE CHARGED TO THE PERSON OR PERSONS SEEMED RESPONSIBLE FOR SAID GRADE CHANGES OR GROUND ELEVATION ALTERATIONS. UPON ENTERING IN AND UPON SAID EASEMENT, THE DISTRICT WILL ENDEAVOR TO RESTORE THE LAND SURFACE TO A USEABLE CONDITION BUT IS NOT OBLIGATED TO RESTORE IT TO A PRE-EXISTING CONDITION.

THE EASEMENT CONVEYED HEREIN WAS OBTAINED OR IMPROVED THROUGH FEDERAL FINANCIAL ASSISTANCE. THIS EASEMENT IS SUBJECT TO THE PROVISION OF TITLE VI OF THE CIVIL RIGHTS ACT OF 1964, AND THE REGULATION ISSUED PURSUANT THERETO FOR SO LONG AS THE EASEMENT CONTINUES TO BE USED FOR THE SAME OR SIMILAR PURPOSE FOR WHICH FINANCIAL ASSISTANCE WAS EXTENDED OR FOR AS LONG AS THE GRANTEE OWNS IT, WHICHEVER IS LONGER.

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 MADE ON THE GROUND 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
290 S. CASTELL AVE., SUITE 100, NEW BRAUNFELS, TEXAS 78130

PLAT PREPARED NOVEMBER 28, 2023

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 10153600

GBRA NOTES:

1. PROVIDE DEDICATED EASEMENTS IN THE NAME OF GBRA. EASEMENTS SHALL NOT OVERLAP OR BE WITHIN RESIDENTIAL LOTS.
2. WHERE OUTSIDE OF PUBLIC RIGHT-OF-WAY, PROVIDE DEDICATED EASEMENTS WITH A MINIMUM WIDTH EQUAL TO PIPE OUTSIDE DIAMETER, ROUNDED UP TO THE NEAREST FOOT, PLUS 10 FEET MINIMUM ON EACH SIDE. FOR EASEMENTS WITH MULTIPLE PIPES, PROVIDE 10 FEET MINIMUM HORIZONTAL CLEARANCE BETWEEN PIPES. PROVIDE ADDITIONAL WIDTH FOR EASEMENTS THAT ARE NOT LOCATED ADJACENT TO PUBLIC RIGHT-OF-WAY.
3. THE GUADALUPE-BLANCO RIVER AUTHORITY (GBRA) IS HEREBY DEDICATED THE EASEMENT AND RIGHTS-OF-WAY IN THE AREAS DESIGNATED ON THIS PLAN FOR WASTEWATER FACILITIES FOR THE PURPOSE OF INSTALLING, CONSTRUCTING, RECONSTRUCTING, OPERATING, MAINTAINING, INSPECTING, REPAIRING, REMOVING, AND RELOCATING BURIED AND/OR EXPOSED WASTEWATER FACILITIES AND APPURTENANCES.
4. TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS, GBRA SHALL HAVE THE RIGHT TO REMOVE SAID LANDS OF ALL TREES OR PARTS THEREOF, OR ANY OTHER OBSTRUCTIONS WHICH MAY ENDANGER, OR INTERFERE WITH MAINTENANCE OF THE FACILITIES AND APPURTENANCES.
5. OTHER UTILITIES, STRUCTURES, GRADING, DRAINAGE, DETENTION/RETENTION PONDS, LANDSCAPING, TREES, ROADS, PARKING LOTS, FENCES, WALLS, CONSTRUCTION OF ANY TYPE, OR ANY OTHER IMPROVEMENTS OR OBSTRUCTIONS, ARE NOT ALLOWED WITHIN GBRA EASEMENTS.
6. DESIGNS FOR ANY PROPOSED ALTERATIONS OR CROSSINGS OF GBRA EASEMENTS MUST BE APPROVED IN WRITING BY GBRA AND THE INSTALLATION OF SUCH MUST BE INSPECTED AND APPROVED BY GBRA.
7. MAINTENANCE OF EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
8. THE PROPERTY OWNER MUST INSTALL 16-FOOT GATES IN ANY FENCES THAT CROSS GBRA UTILITIES; GATES MUST BE CENTERED ACROSS GBRA UTILITIES.
9. CUSTOMER WASTEWATER SERVICES SHALL NOT BE INSTALLED WITHIN FENCED AREAS.

STATE OF TEXAS
COUNTY OF GUADALUPE

I (WE) THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE VOGES, UNIT 3 A SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF GUADALUPE, 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.

RAUSCH COLEMAN HOMES SAN ANTONIO, LLC
BY: _____
4059 N. COLLEGE, SUITE 300, BOX 9
FAYETTEVILLE, AR 72703

STATE OF TEXAS
COUNTY OF _____.

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

NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES: _____

GVEC NOTES:

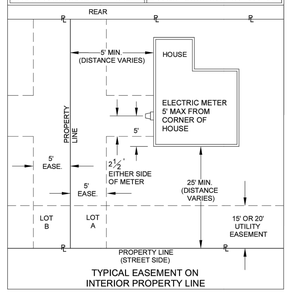
1. WHERE UNDERGROUND SERVICES ARE UTILIZED GVEC WILL POSSESS A 5-FOOT-WIDE EASEMENT TO THE SERVICE METER LOCATION. EASEMENT TO FOLLOW SERVICE LINE AND WILL VARY DEPENDING ON LOCATION OF BUILDING OR STRUCTURE.
2. GVEC SHALL HAVE ACCESS TO METER LOCATIONS FROM THE FRONT YARD WITH THE LOCATION NOT BEING WITHIN A FENCED AREA.
3. ANY EASEMENT DESIGNATED AS A GVEC 20' X 20' UTILITY EASEMENT SHALL REMAIN OPEN FOR ACCESS AT ALL TIMES AND SHALL NOT BE WITHIN A FENCED AREA.
4. ALL UTILITY EASEMENTS ARE FOR THE CONSTRUCTION, UPGRADE, MAINTENANCE (INCLUDING BUT NOT LIMITED TO REMOVAL OF TREES AND OTHER OBSTRUCTIONS), READING OF METERS, AND REPAIR OF ALL OVERHEAD AND UNDERGROUND UTILITIES AND SHALL REMAIN AT FINAL GRADE.
5. ALL ELECTRIC EASEMENTS, FOR BOTH PRIMARY AND SECONDARY ELECTRIC SERVICE, INCLUDE RIGHTS OF INGRESS AND EGRESS ACROSS THE SUBDIVISION FOR THE PURPOSE OF INSTALLING, SERVICING, UPGRADING, AND MAINTAINING THE ELECTRICAL FACILITIES AND SHALL REMAIN AT FINAL GRADE.
6. ANY REQUEST TO SUBSEQUENTLY RELOCATE ANY PORTION OF THE ELECTRIC FACILITIES INSTALLED SHALL BE SUBJECT TO THE COOPERATIVE'S REASONABLE DISCRETION AND THE REQUESTING PARTY SHALL BEAR ALL COSTS ASSOCIATED WITH SUCH RELOCATION.
7. THE COOPERATIVE SHALL ONLY BE REQUIRED TO FILL, GRADE, AND RESTORE GROUND COVER BACK TO ORIGINAL GRADE AS A RESULT OF ANY EXCAVATION BY OR ON BEHALF OF THE COOPERATIVE.

THIS SUBDIVISION PLAT OF VOGES UNIT 3 HAS BEEN SUBMITTED TO AND APPROVED BY GUADALUPE VALLEY ELECTRIC COOPERATIVE, INC. FOR EASEMENTS.

_____
AGENT FOR GUADALUPE VALLEY ELECTRIC COOP., INC.

LOCATION MAP
NOT TO SCALE

NOTE: G.V.E.C. WILL MAINTAIN 5' EASEMENT FOR SERVICE ENTRANCE TO DWELLING. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING.	G.V.E.C. SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARDS WITH THE METER LOCATIONS NOT BEING LOCATED WITHIN A FENCED AREA.



TYPICAL EASEMENT ON INTERIOR PROPERTY LINE

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

STATE OF TEXAS
COUNTY OF GUADALUPE

_____
COUNTY CLERK, GUADALUPE COUNTY, TEXAS

_____
DEPUTY

SHEET 1 OF 2

FOR REFERENCE ONLY
PLAT STATUS IN REVIEW

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

PLAT (1 OF 2)
VOGES SUBDIVISION
UNIT 3

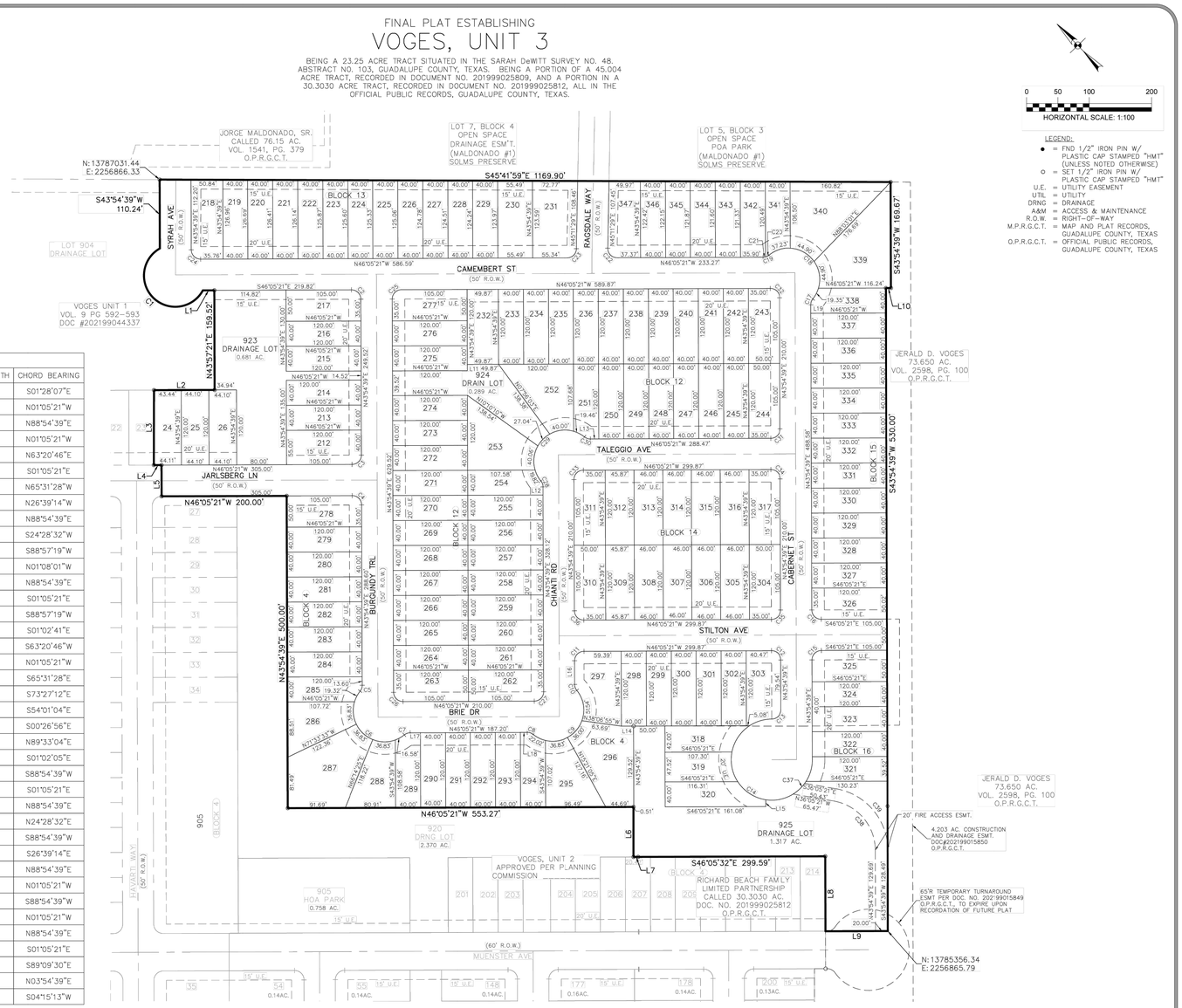
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C0.4

FINAL PLAT ESTABLISHING
VOGES, UNIT 3

BEING A 23.25 ACRE TRACT SITUATED IN THE SARAH DeWITT SURVEY NO. 48, ABSTRACT NO. 103, GUADALUPE COUNTY, TEXAS. BEING A PORTION OF A 45.004 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025809, AND A PORTION IN A 30.3030 ACRE TRACT, RECORDED IN DOCUMENT NO. 201999025812, ALL IN THE OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.



0 50 100 200
HORIZONTAL SCALE: 1:100

LEGEND:
- ● = FND 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT" (UNLESS NOTED OTHERWISE)
- ○ = SET 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT"
- U.E. = UTILITY EASEMENT
- UTIL = UTILITY
- DRNG = DRAINAGE
- A&M = ACCESS & MAINTENANCE
- R.O.W. = RIGHT-OF-WAY
- M.P.R.G.C.T. = MAP AND PLAT RECORDS, GUADALUPE COUNTY, TEXAS
- O.P.R.G.C.T. = OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	18.37'	S46°05'21"E
L2	96.70'	N46°05'21"W
L3	120.00'	S44°13'48"W
L4	12.31'	S46°05'21"E
L5	50.00'	S43°54'39"W
L6	80.00'	N44°08'19"E
L7	7.38'	N46°05'21"W
L8	120.00'	S43°54'28"W
L9	99.94'	S46°05'21"E
L10	8.52'	N46°05'21"W
L11	10.00'	S43°54'39"W
L12	13.12'	S43°54'39"W
L13	13.47'	S46°05'21"E
L14	13.92'	S46°03'52"E
L15	10.77'	S43°54'39"W
L16	38.14'	S43°54'39"W
L17	16.20'	S46°05'21"E
L18	11.00'	S46°05'21"E
L19	13.58'	S43°54'39"W

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C1	185.10'	49.95'	212°18'25"	-172.46'	95.96'	S01°28'07"E
C2	23.56'	15.00'	090°00'00"	15.00'	21.21'	N01°05'21"W
C3	23.56'	15.00'	090°00'00"	15.00'	21.21'	N88°54'39"E
C4	23.56'	15.00'	090°00'00"	15.00'	21.21'	N01°05'21"W
C5	10.18'	15.00'	038°52'15"	5.29'	9.98'	N63°20'46"E
C6	146.38'	50.00'	167°44'30"	465.62'	99.43'	S01°05'21"E
C7	10.18'	15.00'	038°52'15"	5.29'	9.98'	N65°31'28"W
C8	10.18'	15.00'	038°52'15"	5.29'	9.98'	N26°39'14"W
C9	146.38'	50.00'	167°44'30"	465.62'	99.43'	N88°54'39"E
C10	10.18'	15.00'	038°52'15"	5.29'	9.98'	S24°28'32"W
C11	23.54'	15.00'	089°54'40"	14.98'	21.20'	S88°57'19"W
C12	23.54'	15.00'	089°54'40"	14.98'	21.20'	N01°08'01"W
C13	23.56'	15.00'	090°00'00"	15.00'	21.21'	N88°54'39"E
C14	306.31'	65.00'	270°00'00"	-65.00'	91.92'	S01°05'21"E
C15	23.54'	15.00'	089°54'40"	14.98'	21.20'	S88°57'19"W
C16	23.59'	15.00'	090°05'21"	15.02'	21.23'	S01°02'41"E
C17	10.18'	15.00'	038°52'15"	5.29'	9.98'	S63°20'46"W
C18	146.38'	50.00'	167°44'30"	465.62'	99.43'	N01°05'21"W
C19	10.18'	15.00'	038°52'15"	5.29'	9.98'	S65°31'28"E
C20	6.02'	15.00'	023°00'48"	3.05'	5.98'	S73°27'12"E
C21	4.15'	15.00'	015°51'26"	2.09'	4.14'	S54°01'04"E
C22	23.90'	15.00'	091°16'50"	15.34'	21.45'	S00°26'56"E
C23	23.23'	15.00'	088°43'10"	14.67'	20.97'	N89°33'04"E
C24	23.72'	15.04'	090°23'20"	15.14'	21.34'	S01°02'05"E
C25	23.56'	15.00'	090°00'00"	15.00'	21.21'	S88°54'39"W
C26	23.56'	15.00'	090°00'00"	15.00'	21.21'	S01°05'21"E
C27	23.56'	15.00'	090°00'00"	15.00'	21.21'	N88°54'39"E
C28	10.18'	15.00'	038°52'15"	5.29'	9.98'	N24°28'32"E
C29	146.38'	50.00'	167°44'30"	465.62'	99.43'	S88°54'39"W
C30	10.18'	15.00'	038°52'15"	5.29'	9.98'	S26°39'14"E
C31	23.56'	15.00'	090°00'00"	15.00'	21.21'	N88°54'39"E
C32	23.56'	15.00'	090°00'00"	15.00'	21.21'	N01°05'21"W
C33	23.56'	15.00'	090°00'00"	15.00'	21.21'	S88°54'39"W
C34	23.56'	15.00'	090°00'00"	15.00'	21.21'	N01°05'21"W
C35	23.56'	15.00'	090°00'01"	15.00'	21.21'	N88°54'39"E
C36	23.56'	15.00'	090°00'01"	15.00'	21.21'	S01°05'21"E
C37	25.18'	65.00'	022°11'34"	12.75'	25.02'	S89°09'30"E
C38	111.70'	80.00'	080°00'00"	67.13'	102.85'	N03°54'39"E
C39	140.83'	100.02'	080°40'46"	84.94'	129.48'	S04°15'13"W

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SHEET 2 OF 2

FOR REFERENCE ONLY
PLAT STATUS: IN REVIEW

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PLAT (2 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C0.5

Drawing Name: K:\248 - rausch coleman homes\010 - voges subdivision unit 3\Plat\Voges Unit 3 Plat.dwg User: joshuak Nov 29, 2023 - 2:16pm
Drawing Name: M:_Projects\248 - Rausch Coleman Homes\014 - Voges Unit 4\03\248.014_PLAT SHEETS.dwg User: mattr-p Dec 21, 2023 - 4:43pm

Table 1 - Existing Conditions Hydrology Calculations - City of New Braunfels

Point of Concentration	Description	Drainage Area	Area	T_c	Curve Number	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX-1	Drainage Area 1 Comparison	EX-1	174.80	32.00	85	186.81	455.57	654.23	1074.90
EX-2	Drainage Area 2 Comparison	EX-2	38.70	27.00	84	48.39	113.06	161.19	262.41
EX-3	Drainage Area 3 Comparison	EX-3	48.70	34.00	86	59.96	134.43	189.31	304.34
EX-A	Point A Area Comparison	EX-1, EX-2, EX-3	262.20	-	-	282.67	684.94	981.94	1611.22

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EXISTING DRAINAGE MAP

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

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C1.0

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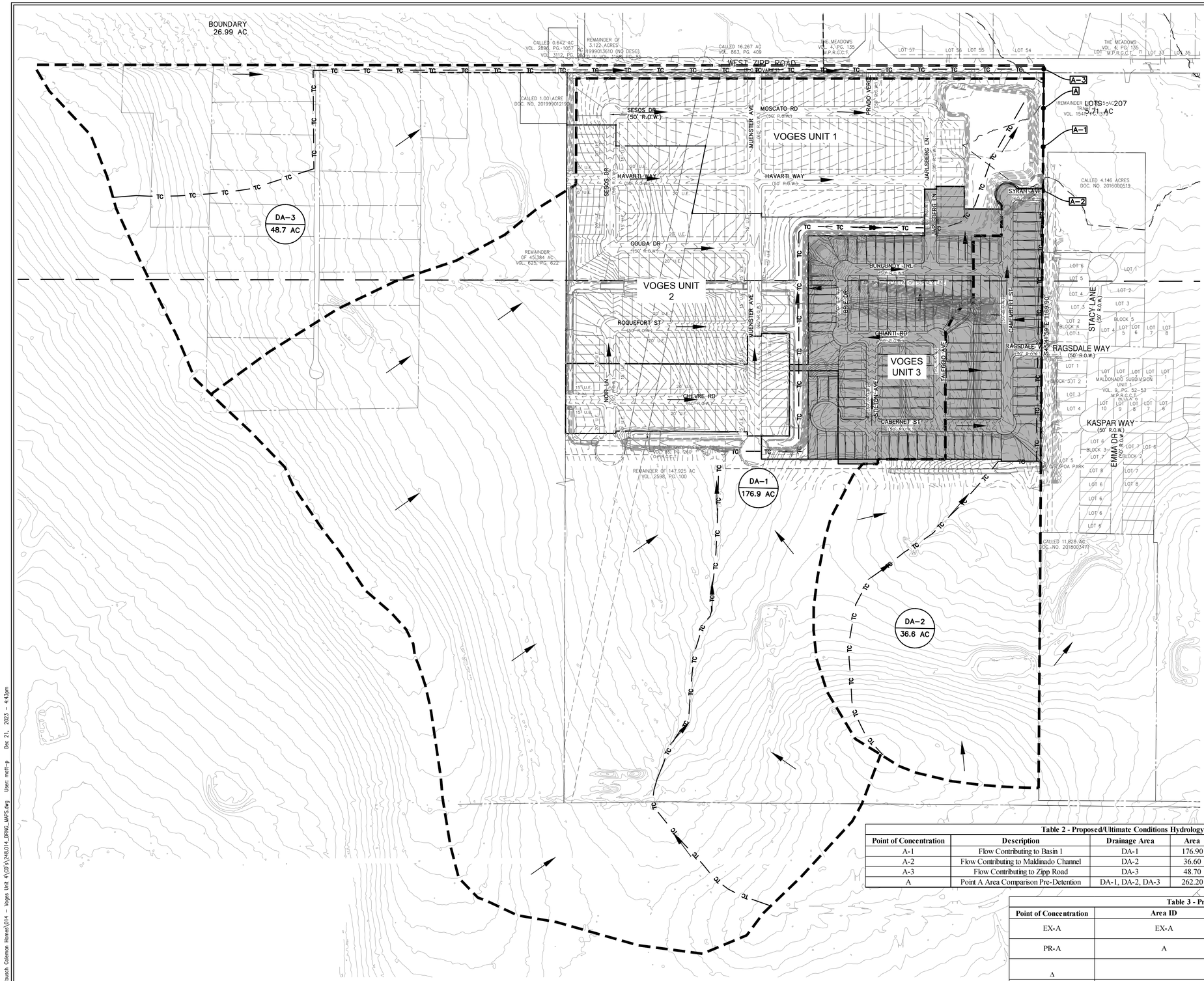

LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE AREA
- TC — TC TIME OF CONCENTRATION
- A-1 POINT OF CONCENTRATION
- DRAINAGE FLOW DIRECTION
- DA / ACRES DRAINAGE AREA LABEL
- VOGES UNIT 3

Table 2 - Proposed/Ultimate Conditions Hydrology Calculations - City of New Braunfels

Point of Concentration	Description	Drainage Area	Area	T_c	Curve Number	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
A-1	Flow Contributing to Basin 1	DA-1	176.90	32.00	85	221.11	506.38	717.68	1161.05
A-2	Flow Contributing to Maldinado Channel	DA-2	36.60	25.00	85	49.89	113.79	161.40	261.28
A-3	Flow Contributing to Zipp Road	DA-3	48.70	34.00	86	59.96	134.43	189.31	304.34
A	Point A Area Comparison Pre-Detention	DA-1, DA-2, DA-3	262.20	-	-	328.52	748.35	1058.90	1710.92

Table 3 - Proposed/Ultimate POC A Comparison Table

Point of Concentration	Area ID	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX-A	EX-A	Pre-Development Flowrates	282.67	684.94	981.94	1611.22
PR-A	A	Post-Development Post-Detention Flowrates	281.98	682.10	979.08	1604.75
Δ			(0.69)	(2.84)	(2.86)	(6.47)
Δ (%)			-0.69%	-2.84%	-2.86%	-6.47%

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PROPOSED-ULTIMATE DRAINAGE MAP

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
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DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

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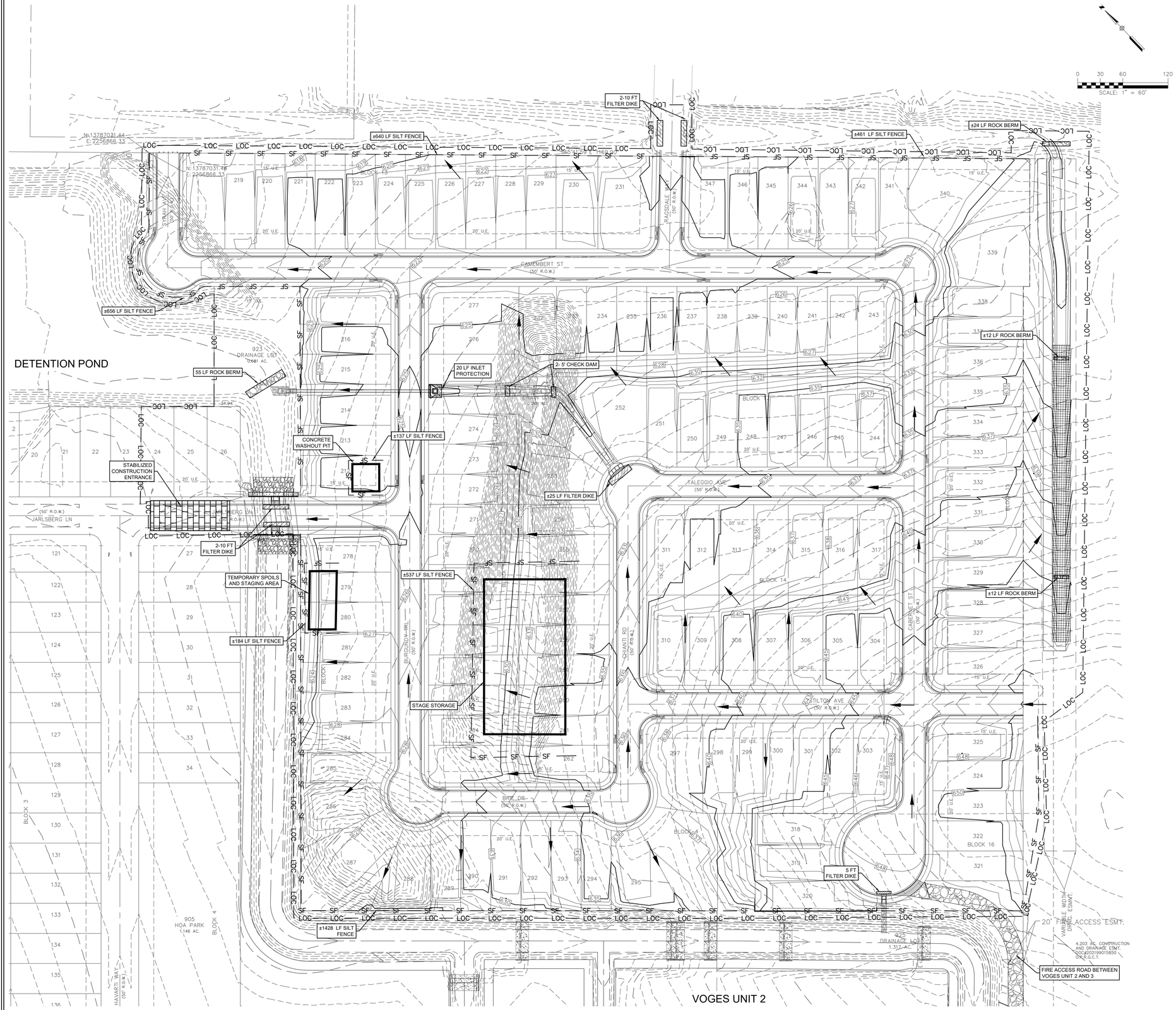

LEGEND

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

NOTE:

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

SILT FENCE AT PROPERTY LINE MAY BE SHOWN GRAPHICALLY OFFSET FROM PROPERTY LINE TO AVOID OVERLAP OF LINEWORK. CONTRACTOR SHALL NOT INSTALL EROSION CONTROL MEASURES BEYOND LIMITS OF CONSTRUCTION REGARDLESS OF GRAPHIC REPRESENTATION.

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.

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.

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EROSION CONTROL PLAN

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
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HMT PROJECT NO.:	248.014

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Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\CD's\248.014_EROSION CONTROL PLAN.dwg User: matt-p Dec 21, 2023 - 4:44pm

CONCRETE WASHOUT AREAS

THE PURPOSE OF CONCRETE WASHOUT AREAS IS TO PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORMWATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE, PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA, AND TRAINING EMPLOYEES AND SUBCONTRACTORS.

THE FOLLOWING STEPS WILL HELP REDUCE STORMWATER POLLUTION FROM CONCRETE WASTES:

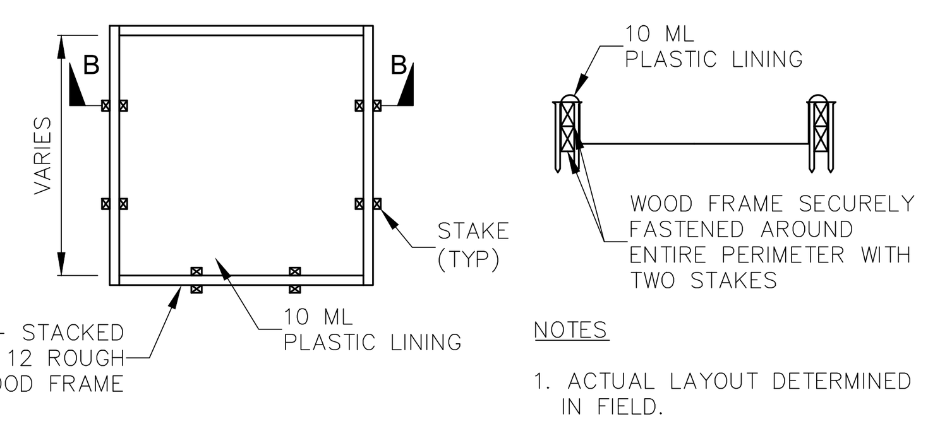
- INCORPORATE REQUIREMENTS FOR CONCRETE WASTE MANAGEMENT INTO MATERIAL SUPPLIER AND SUBCONTRACTOR AGREEMENTS.
- AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
- PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR STREAMS.
- DO NOT ALLOW EXCESS CONCRETE TO BE DUMPED ONSITE, EXCEPT IN DESIGNATED AREAS.

FOR ONSITE WASHOUT:

- LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, OR WATER BODIES. DO NOT ALLOW RUNOFF FROM THIS AREA BY CONSTRUCTING A TEMPORARY PIT OR BERMED AREA LARGE ENOUGH FOR LIQUID AND SOLID WASTE.
- WASH OUT WASTES INTO THE TEMPORARY PIT WHERE THE CONCRETE CAN SET, BE BROKEN UP, AND THEN DISPOSED PROPERLY.

BELOW GRADE CONCRETE WASHOUT FACILITIES ARE TYPICAL. THESE CONSIST OF A LINED EXCAVATION SUFFICIENTLY LARGE TO HOLD EXPECTED VOLUME OF WASHOUT MATERIAL. ABOVE GRADE FACILITIES ARE USED IF EXCAVATION IS NOT PRACTICAL. TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHOULD BE CONSTRUCTED AS SHOWN ON THE DETAILS AT THE END OF THIS SECTION, WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

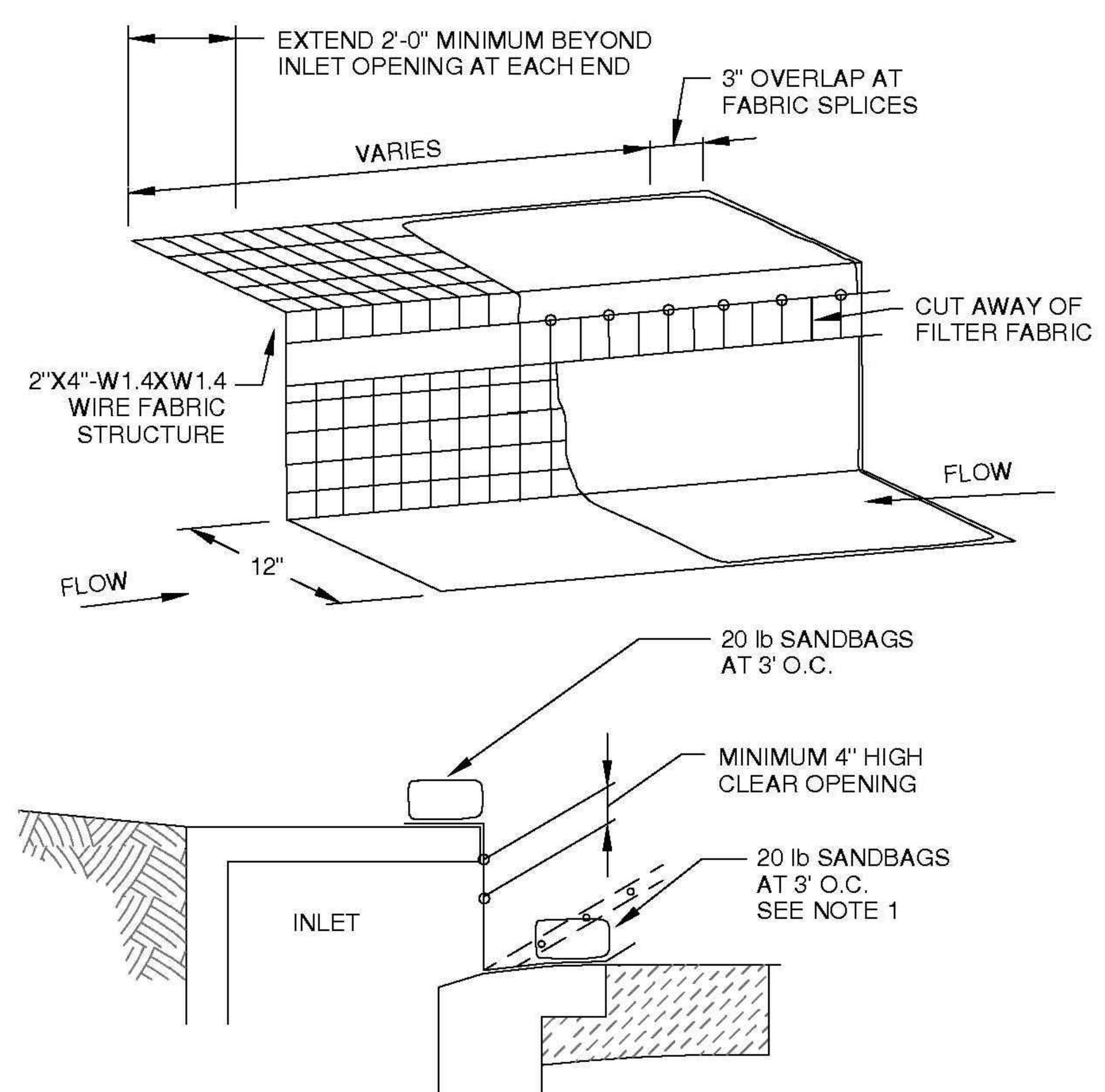


NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.

PLAN | SECTION B–B

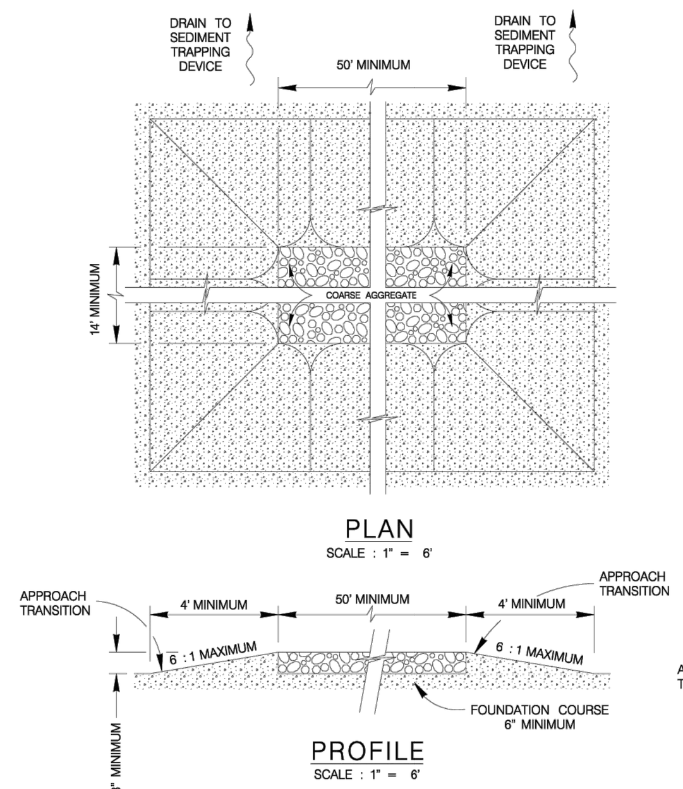
CONCRETE WASHOUT PIT DETAIL
TYPE "ABOVE GRADE"
NOT TO SCALE



NOTES:

1. WHERE MINIMUM CLEARANCES CAUSE TRAFFIC TO DRIVE IN THE GUTTER, THE CONTRACTOR MAY SUBSTITUTE A 1" X 4" BOARD SECURED WITH CONCRETE NAILS 3' O.C. NAILED INTO THE GUTTER IN LIEU OF SANDBAGS TO HOLD THE FILTER DIKE IN PLACE. UPON REMOVAL, CLEAN ANY DIRT/DEBRIS FROM NAILING LOCATIONS, APPLY CHEMICAL SANDING AGENT AND APPLY NON-SHRINK GROUT FLUSH WITH SURFACE OF GUTTER.
2. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL OR AS DIRECTED BY THE ENGINEER OR DESIGNATED REPRESENTATIVE. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.
3. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
4. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVER-TOP THE CURB.
5. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

FILTER DIKE CURB INLET PROTECTION
NOT TO SCALE



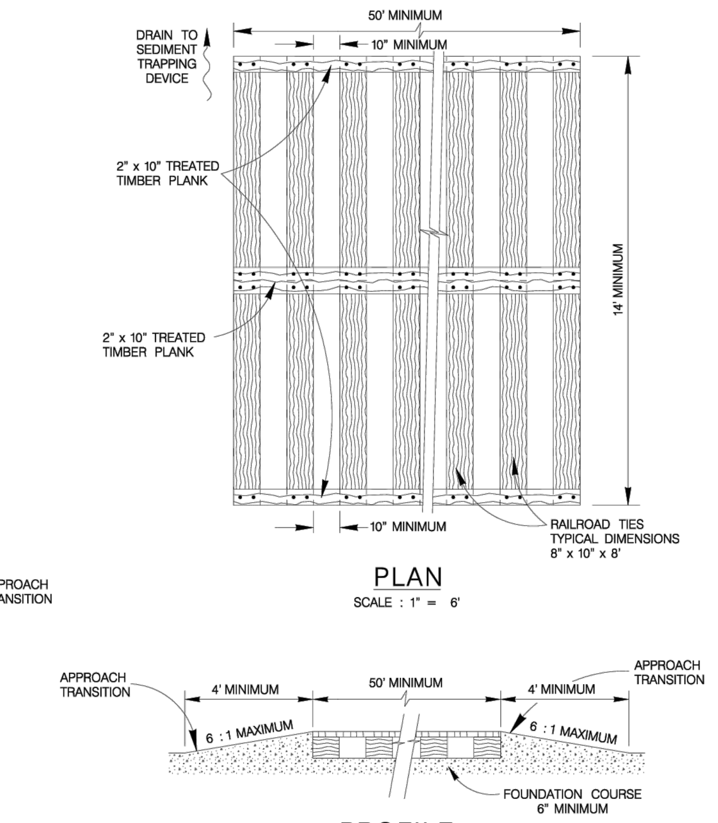
PLAN
SCALE : 1" = 6'

PROFILE
SCALE : 1" = 6'

GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 1



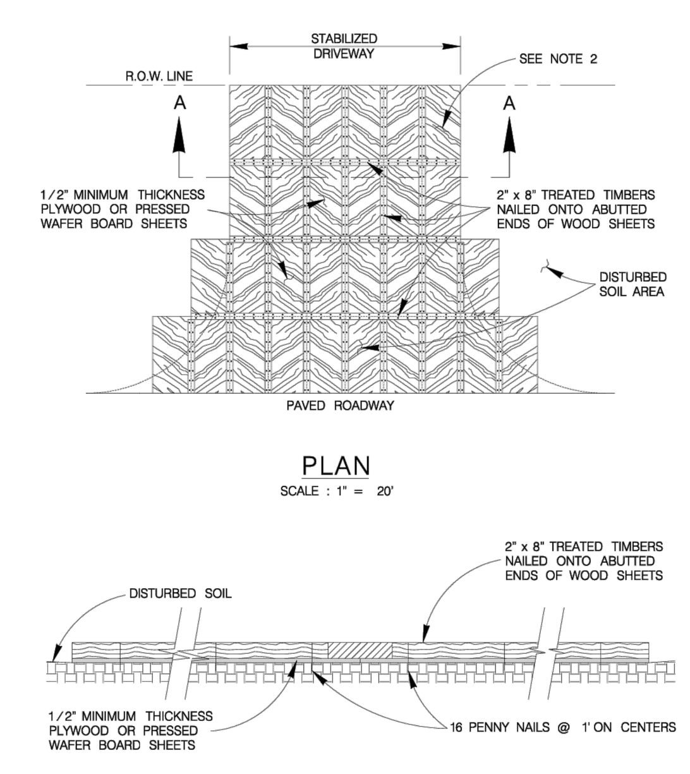
PLAN
SCALE : 1" = 6'

PROFILE
SCALE : 1" = 6'

GENERAL NOTES

1. THE LENGTH OF THE TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE TREATED TIMBER PLANKS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2" x 6" MIN. LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
6. THE CONSTRUCTION EXIT SHOULD BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 2



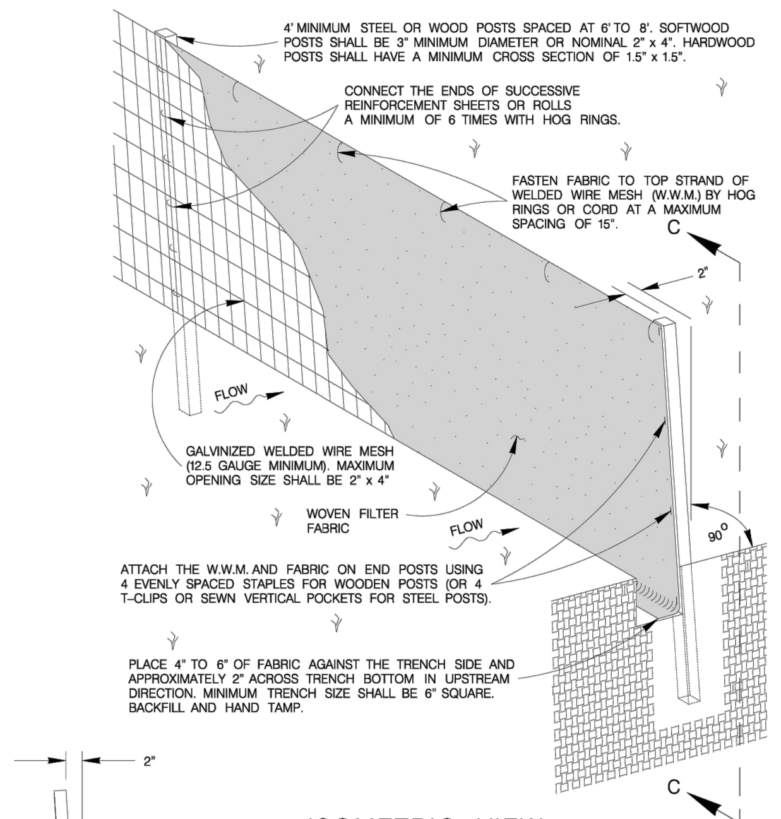
PLAN
SCALE : 1" = 20'

SECTION A–A
SCALE : 1" = 2'

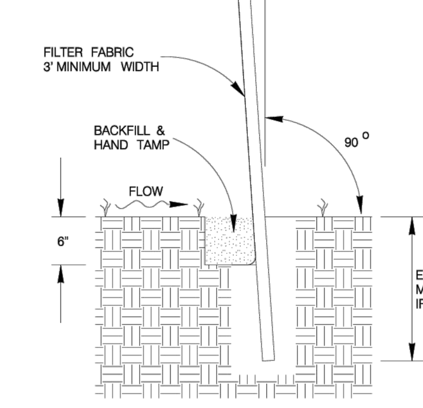
GENERAL NOTES

1. THE LENGTH OF THE TYPE 3 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
2. THE TYPE 3 CONSTRUCTION EXIT MAY BE CONSTRUCTED FROM OPEN GRADED CRUSHED STONE WITH A SIZE OF 2 TO 4 INCHES SPREAD A MINIMUM OF 4 INCHES THICK TO THE LIMITS SHOWN ON THE PLANS.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 3



ISOMETRIC VIEW
SCALE : 1" = 2'



SECTION C–C
SCALE : 1" = 2'

SEDIMENT CONTROL FENCE USAGE GUIDELINES

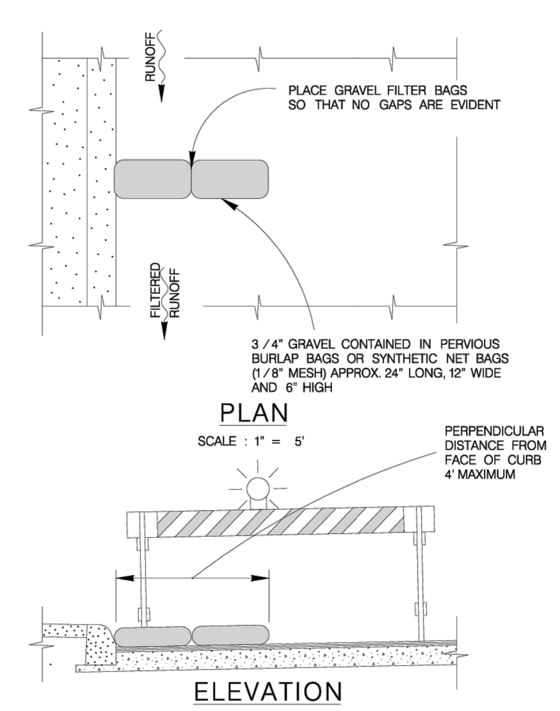
A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.

SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM /FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE

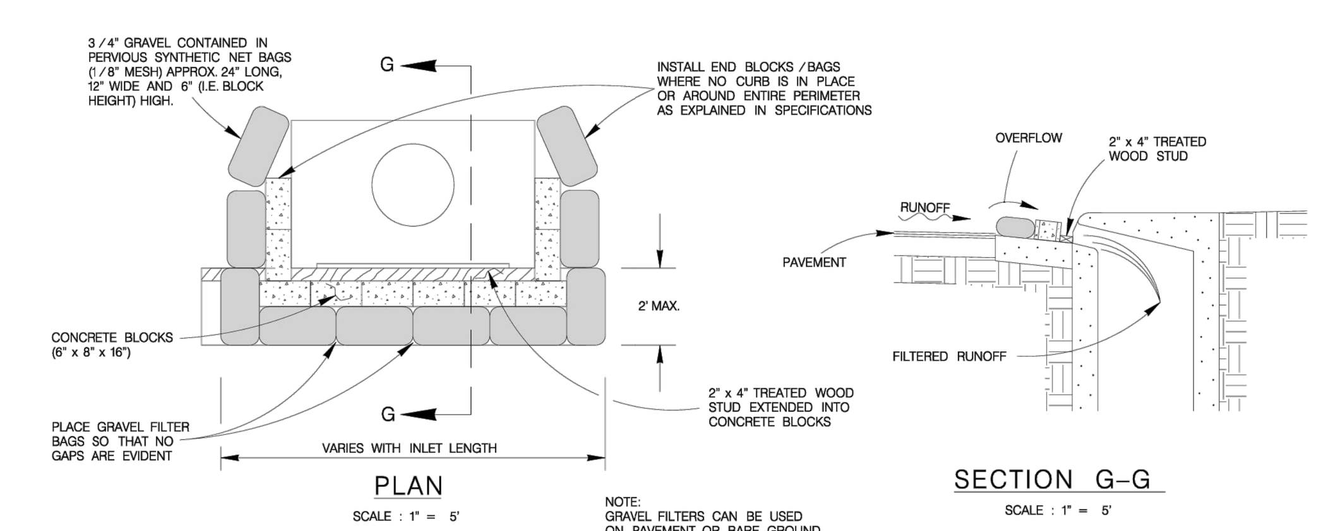


PLAN
SCALE : 1" = 5'

ELEVATION
SCALE : 1" = 5'

NOTE:
STRADDLE GRAVEL FILTER BAGS WITH TYPE 1 BARRICADES MOUNTED WITH TYPE "A" FLASHING WARNING LIGHT. SEE BARRICADE CONSTRUCTION SIGN DETAILS. PLACE FLASHING LIGHTS AWAY FROM GUTTER, FLUSH WITH OUTSIDE EDGE OF BAG CONFIGURATION.

GRAVEL FILTER BAGS



PLAN
SCALE : 1" = 5'

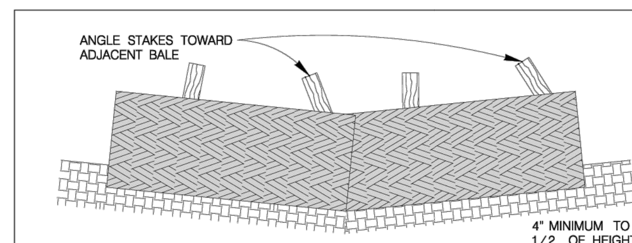
NOTE:
GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND.

SECTION G–G
SCALE : 1" = 5'

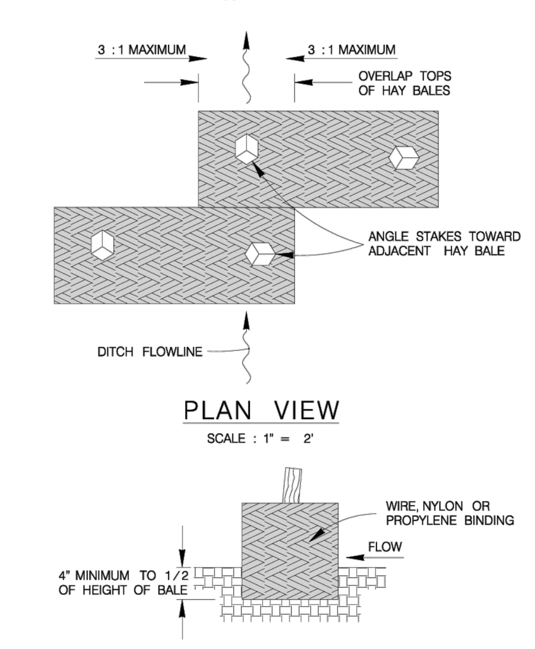
CURB INLET GRAVEL FILTER

JANUARY 2005

CITY OF SAN ANTONIO CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1			
______% SUBMITTAL	PROJECT NO.:______		DATE:______
DRWN. BY: V. VASQUEZ	DSGN. BY:______	CHKD. BY:______	SHEET NO.:____OF____

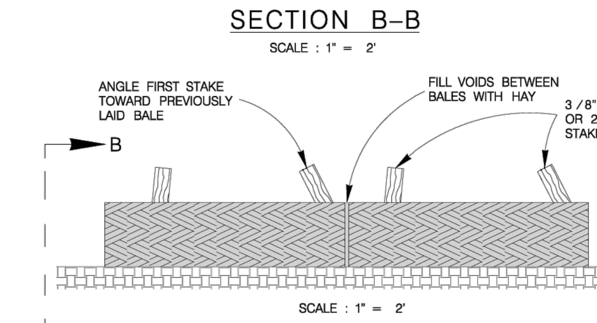


PROFILE VIEW
SCALE : 1" = 2'



PLAN VIEW
SCALE : 1" = 2'

SECTION B–B
SCALE : 1" = 2'



SCALE : 1" = 2'

BALED HAY USAGE GUIDELINES

A BAILED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM /FT SQUARED OF CROSS SECTIONAL AREA. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

1. WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10 %, THE LENGTH OF SLOPE UPSTREAM OF THE BAILED HAY SHOULD BE LESS THAN 50'.
2. WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.
3. WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE.

FOR BALED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONDITIONAL CONSIDERATIONS APPLY:

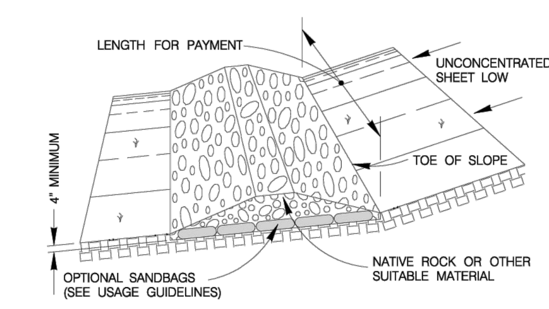
1. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
2. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BAILED HAY.

BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTERGRITY IS ACCELERATED.

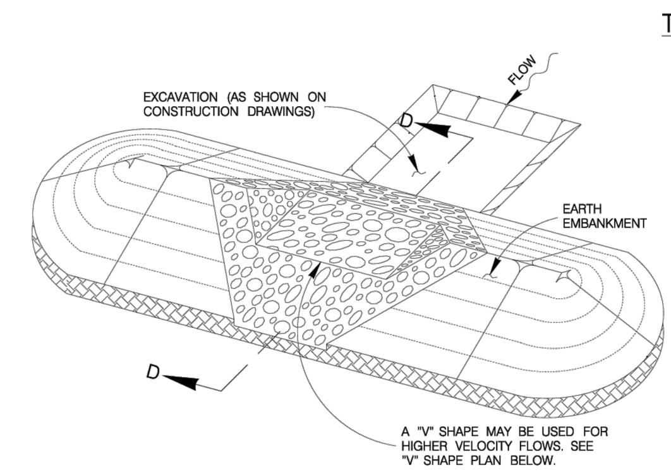
GENERAL NOTES

1. HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
2. HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
3. HAY BALES SHALL BE EMBEDDED IN THE SOIL A MININMUM OF 4" AND, WHERE POSSIBLE, ONE-HALF THE HEIGHT OF THE BALE.
4. HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
5. HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3 /8" DIA. REBAR OR 2" x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

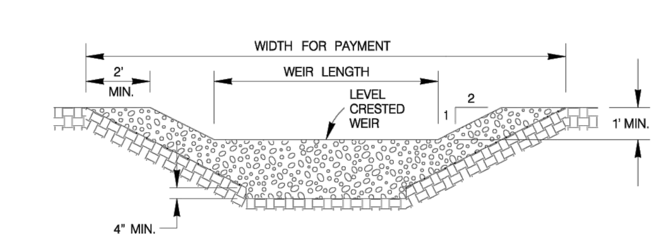
BALED HAY FOR EROSION CONTROL



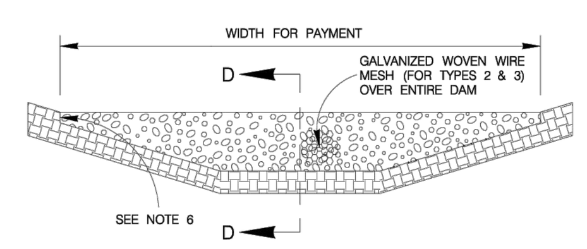
TYPE 1 FILTER DAM AT TOE OF SLOPE
SCALE : 1" = 10'



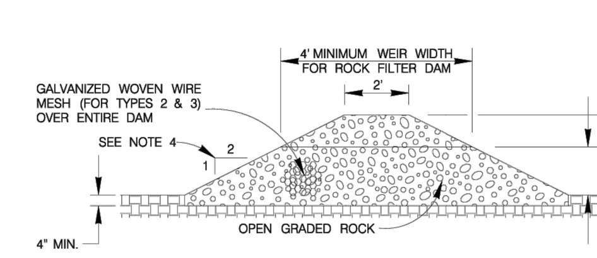
TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP
SCALE : 1" = 10'



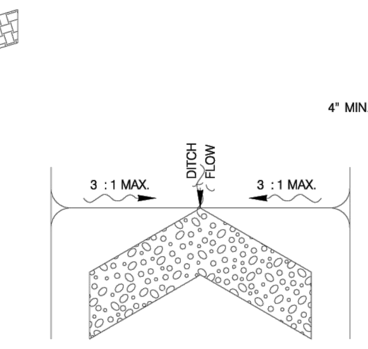
PROFILE OF TYPE 1 & 2 FILTER DAM AT SEDIMENT TRAP
SCALE : 1" = 6'



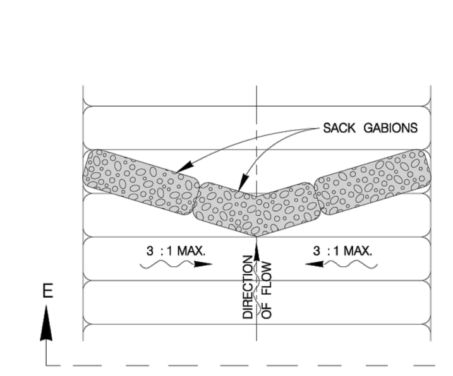
TYPE 1, 2 & 3 FILTER DAM AT CHANNEL SECTIONS
SCALE : 1" = 6'



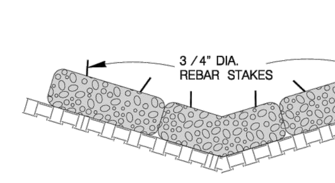
SECTION D–D
SCALE : 1" = 6'



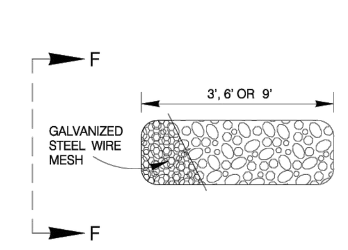
"V" SHAPE PLAN VIEW
NOT TO SCALE



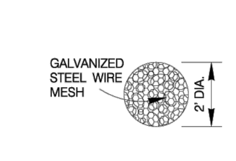
PLAN VIEW
SCALE : 1" = 10'



SECTION E–E
SCALE : 1" = 10'



TYPE 4 SACK GABION DETAIL
SCALE : 1" = 6'



SECTION F–F
SCALE : 1" = 6'

TYPE 4 FILTER DAM AT DITCHES & SMALLER CHANNELS PLAN VIEW

ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND /OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM /FT SQUARED OF CROSS SECTIONAL AREA.. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

TYPE 1 (18" HIGH WITH NO WIRE MESH) :

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH) :

TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH) :

TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

TYPE 4 (SACK GABIONS) :

TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.

GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.
5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 /4" DIA. REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

ROCK FILTER DAMS

JANUARY 2005

CITY OF SAN ANTONIO CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 2			
______% SUBMITTAL	PROJECT NO.:______		DATE:______
DRWN. BY: V. VASQUEZ	DSGN. BY:______	CHKD. BY:______	SHEET NO.:____OF____

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.

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER
[illegible]

EROSION CONTROL DETAILS
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C2.1

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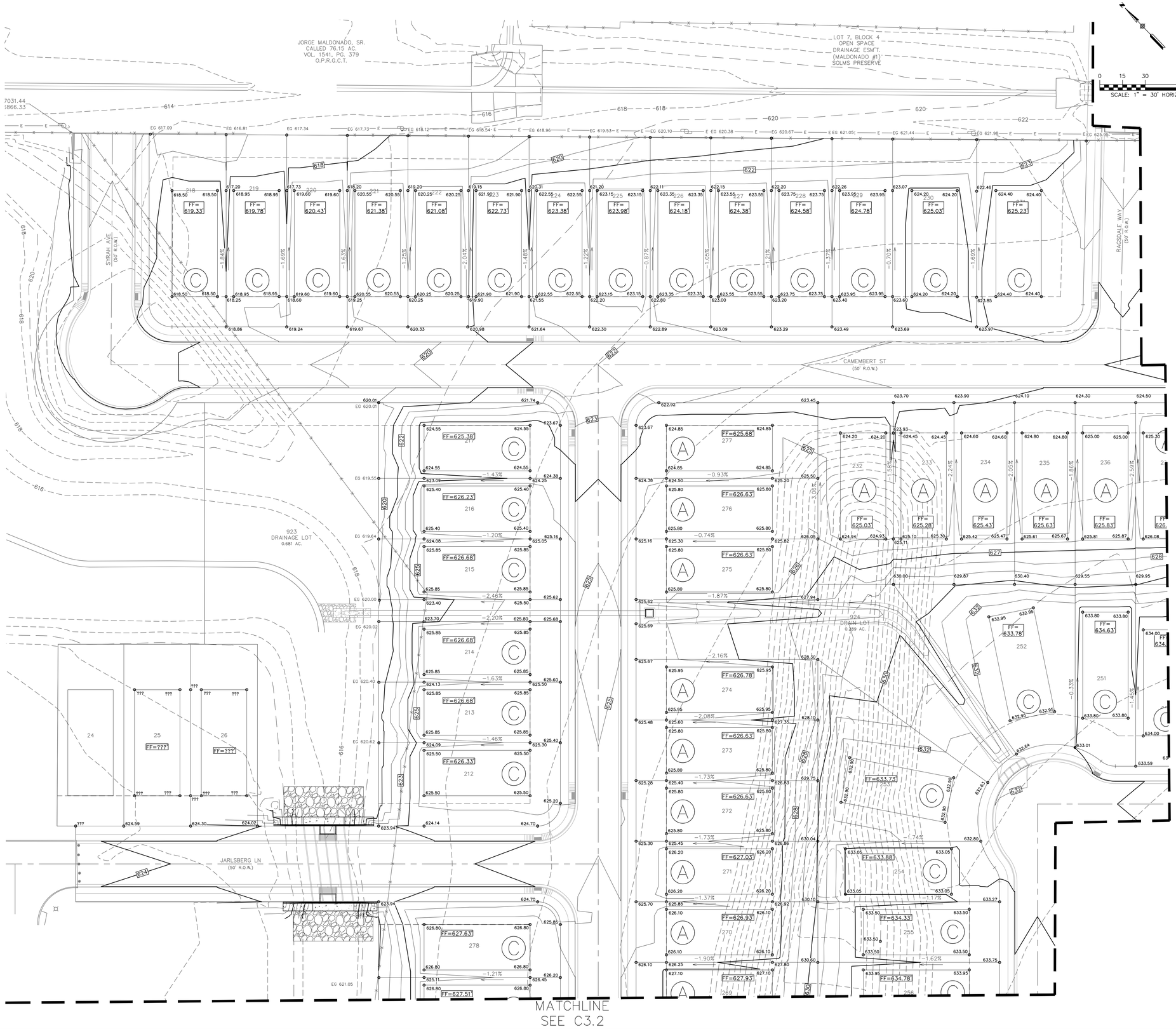

LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	LOT GRADING SEE DETAILS SHEET **9**
	DRAINAGE FLOW DIRECTION
FF=XXX.X	MINIMUM FINISHED FLOOR ELEVATION
	RETAINING WALL

SCALE: 1" = 30' HORIZ.

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. WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
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5. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO OF RETAINING WALL TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO CONSTRUCTING

NOTE TO CONTRACTOR:
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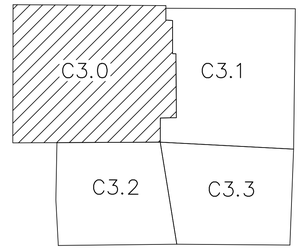

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PROFESSIONAL ENGINEER

GRADING PLAN (1 OF 4)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
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HMT PROJECT NO.:	248.014

SHEET
C3.0

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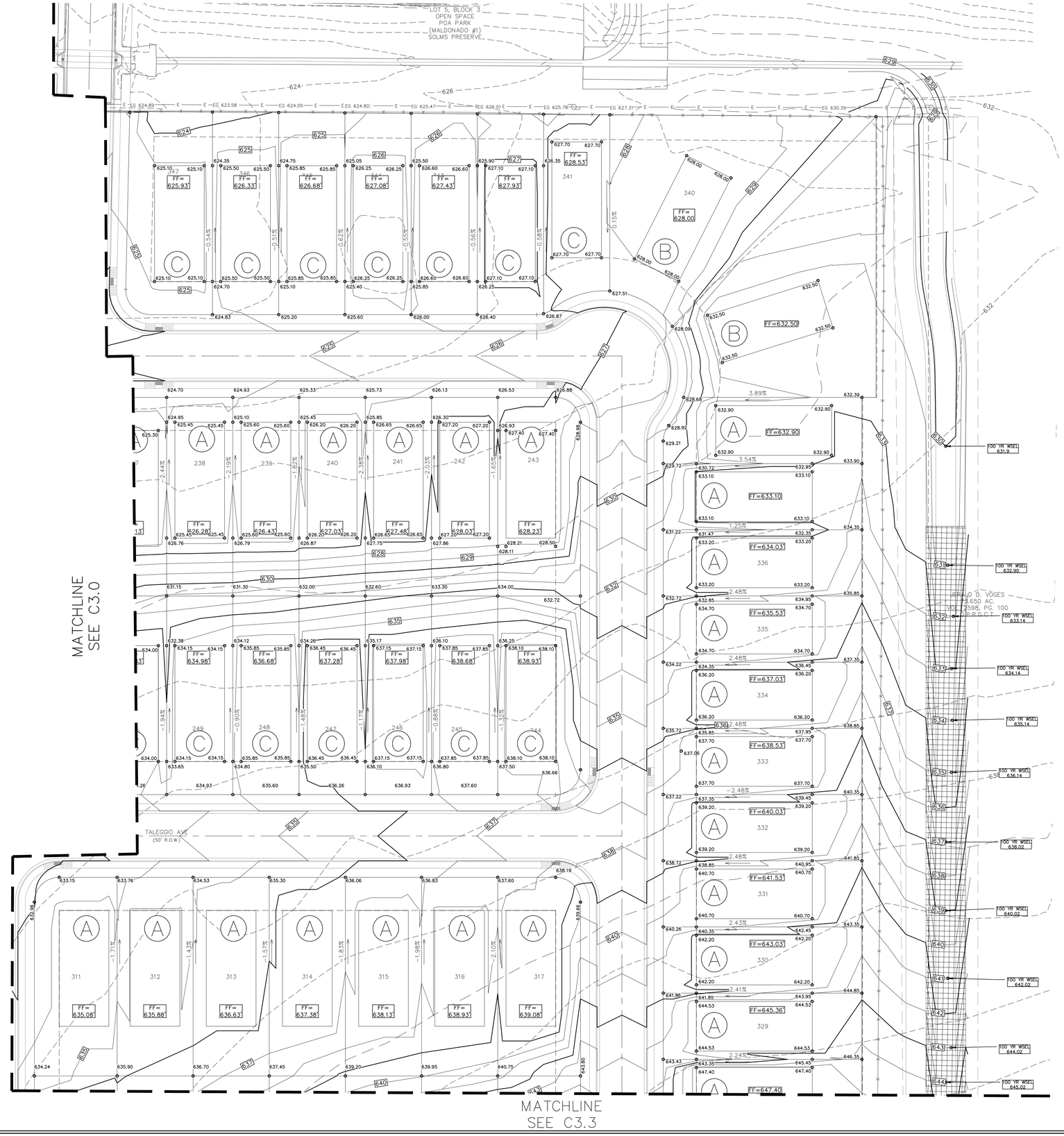

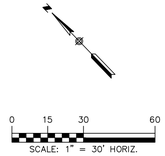

LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
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	DRAINAGE FLOW DIRECTION
FF=XXX.X	MINIMUM FINISHED FLOOR ELEVATION
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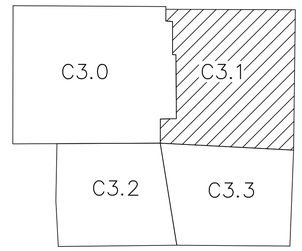

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GRADING PLAN (2 OF 4)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

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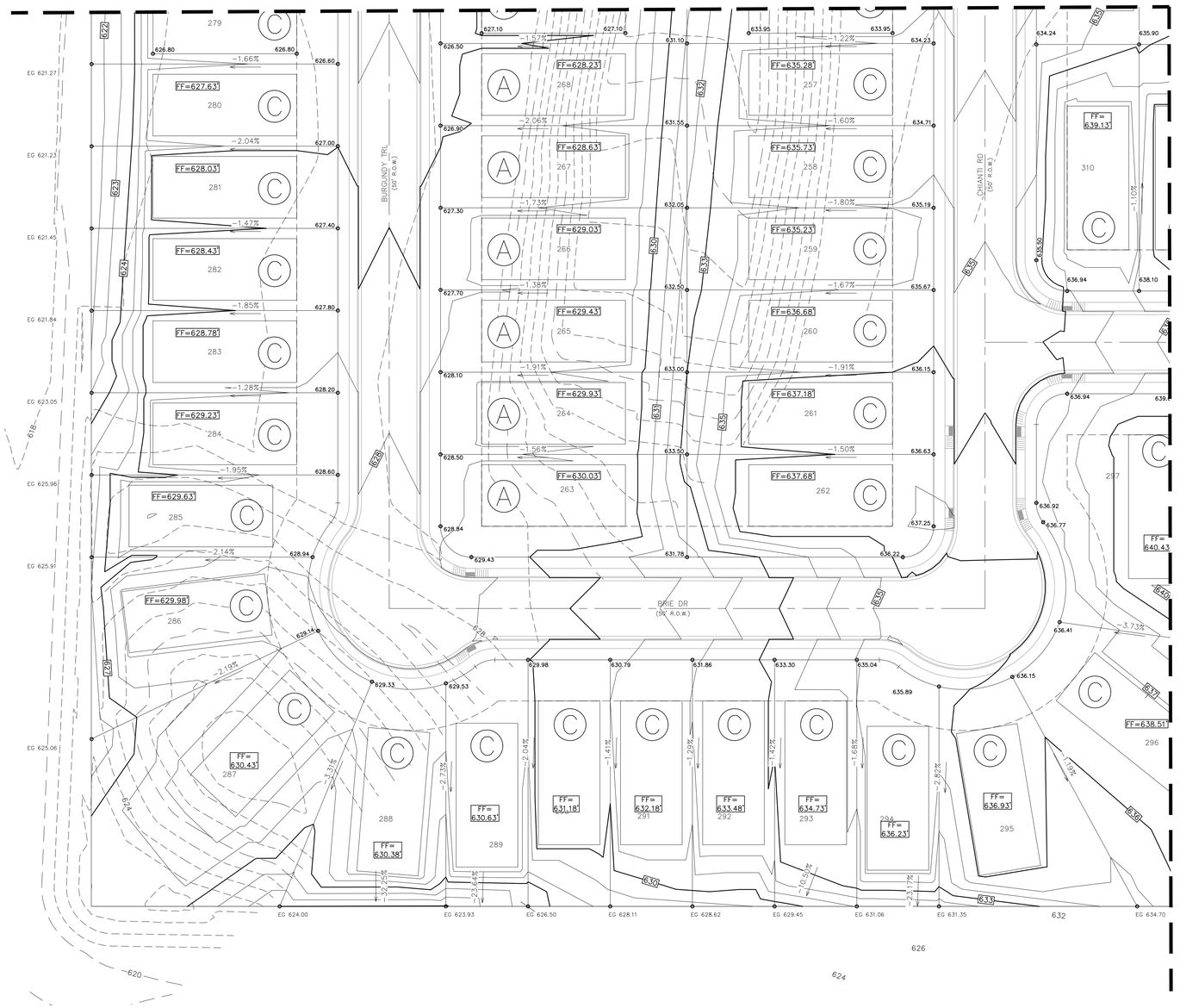

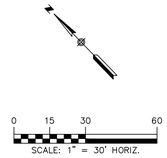

LEGEND

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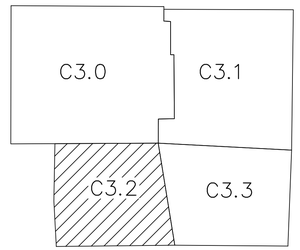

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VOGES SUBDIVISION UNIT 3

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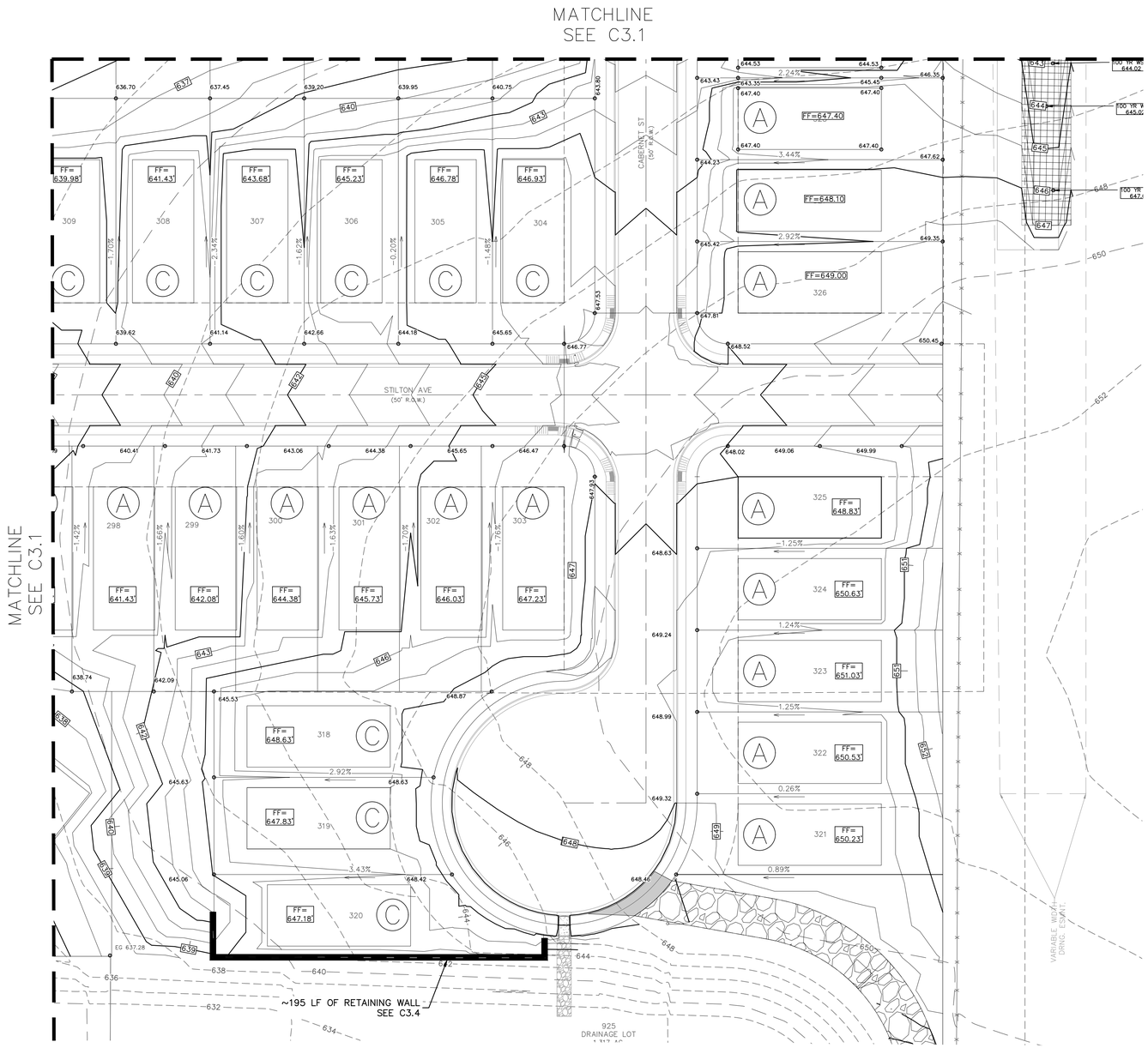

0 15 30 60
SCALE: 1" = 30' HORIZ.

LEGEND

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700	PROPOSED CONTOURS
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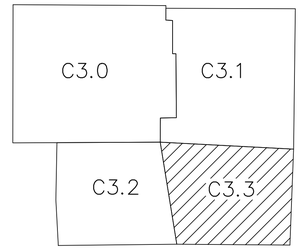

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TBPE FIRM F-10961
TBPLS FIRM 1053600

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12/21/23
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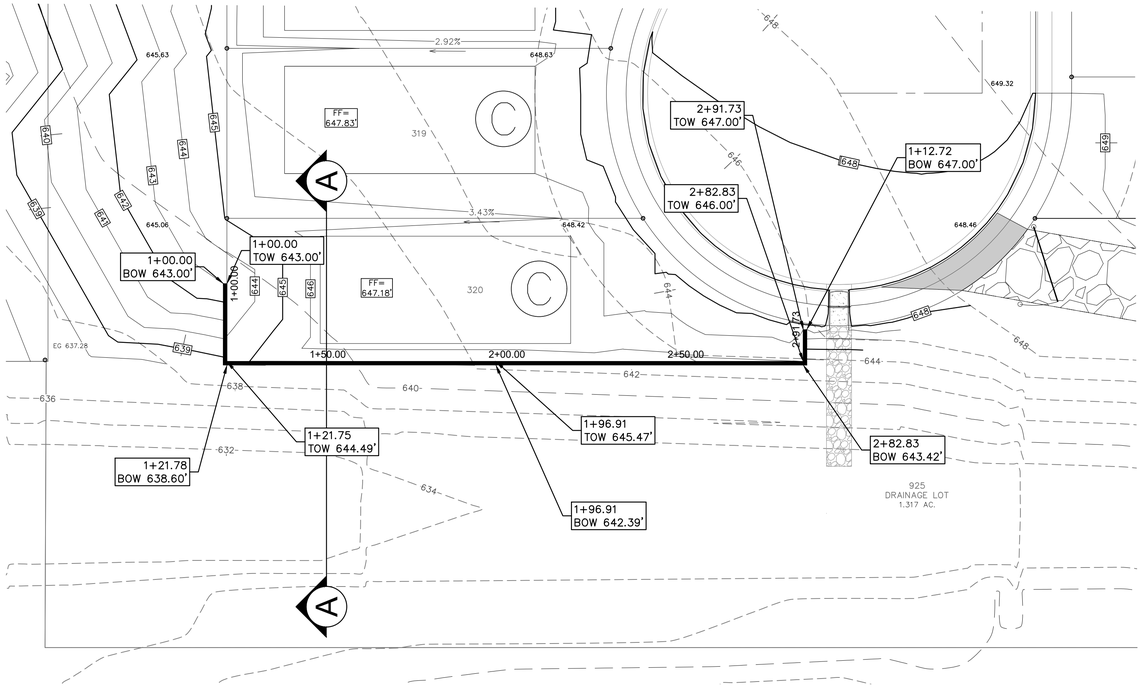
GRADING PLAN (4 OF 4)

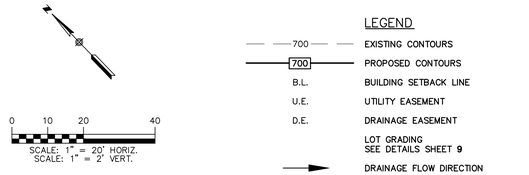
VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C3.3





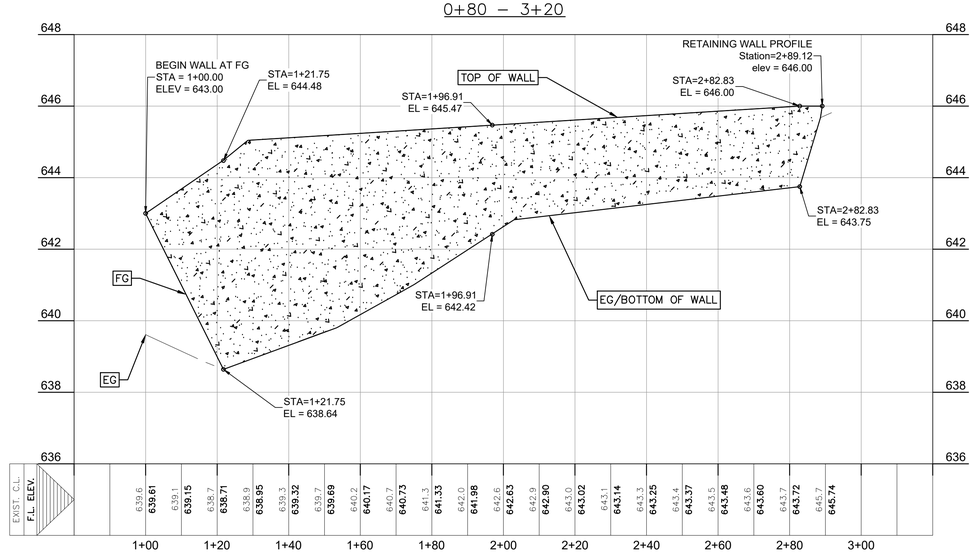
LEGEND

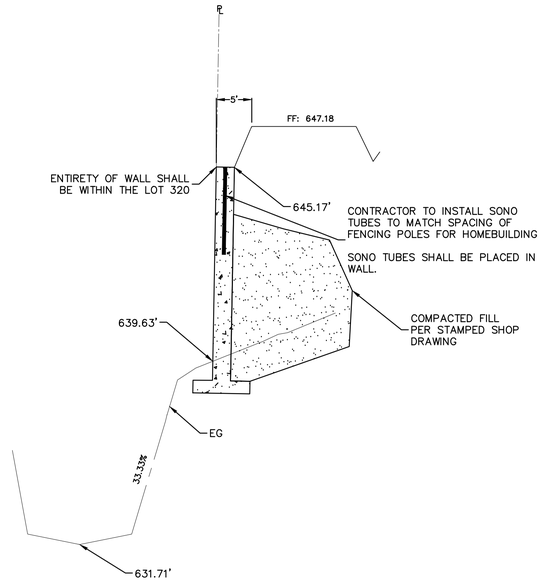
700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	LOT GRADING SEE DETAILS SHEET **9**
	DRAINAGE FLOW DIRECTION
FF=XXX.X	MINIMUM FINISHED FLOOR ELEVATION
	RETAINING WALL

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. WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
3. 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.
4. STRIPPING OF VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE PERIOD OF TIME PER THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC. 12.2(N).
5. CONTRACTOR TO PROVIDE SHOP DRAWINGS TO OF RETAINING WALL TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO CONSTRUCTING

RETAINING WALL PROFILE
0+80 – 3+20





1 SECTION A–A
N.T.S.

NOTE TO CONTRACTOR:
RETAINING WALL DETAILS ARE SCHEMATIC ONLY AND SHALL NOT BE CONSIDERED WITHOUT A STRUCTURAL DETAILS. CONTRACTOR SHALL BID A STRUCTURAL RETAINING WALL. STRUCTURAL DETAILS NOT INCLUDED AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY STRUCTURAL SHOP DRAWINGS FOR REVIEW BY OWNER AND ENGINEER

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.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

RETAINING WALL

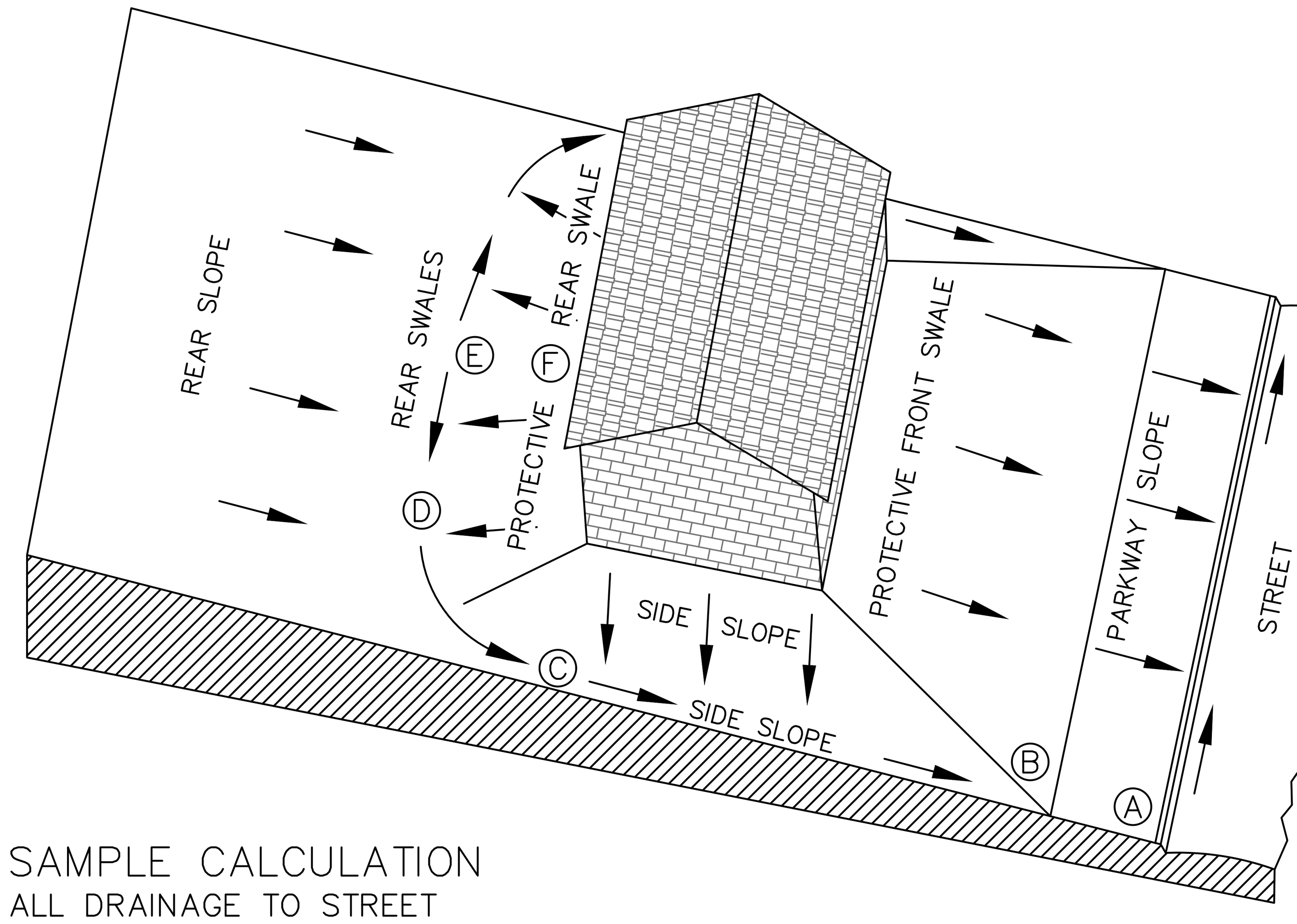
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C3.4

Drawing Name: M:_projects\248 – rousch coleman homes\014 – voges unit 4\C03\248.014_GRADING.dwg User: mattr-p Dec 21, 2023 - 4:44pm



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				
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{BC}$	SIDE SWALE: 85' GRASS AT 1/4"/FT. (2%)	21"	(1.8')	11"	(0.9')
$\overline{CD}$	SWALE TURN WITH 10' RADIUS: 16' GRASS AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{DE}$**	REAR SWALE: 13' GRASS AT 1/4"/FT. (2%)	3"	(0.3')	2"	(0.2')
$\overline{EF}$*	PROTECTIVE REAR SLOPE UP FROM HIGH POINT OF SWALES	3"	(0.3')	3"	(0.3')
SUB-TOTAL $\overline{AF}$ 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')

CALCULATIONS FOR 2% SWALES

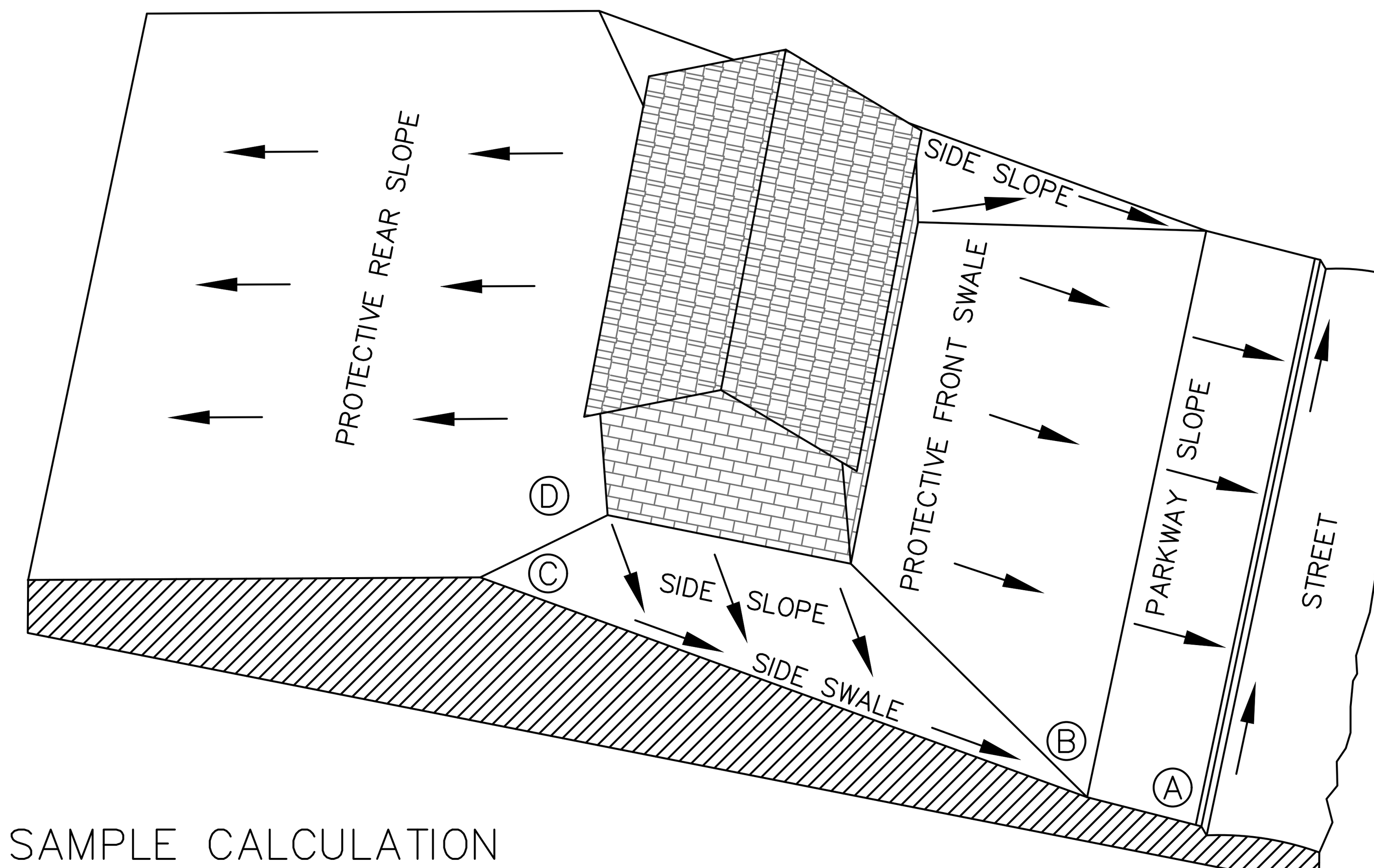
15 x 0.25' = 3¾"
85 x 0.25' = 21¾"
16 x 0.25' = 4"
13 x 0.25' = 3¾"
10 x 0.25' = 2½"
34¾"

CALCULATIONS USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.

* WHERE THERE IS A HIGH BANK NEARBY OR A LONG SLOPE TOWARD HOUSE, A MINIMUM 6" PROTECTIVE SLOPE IS REQUIRED.

** LENGTH $\overline{DE}$ = [1/2(LOT WIDTH – (2x SWALE TURN RADIUS))] – [LOT WIDTH x (STREET GRADIENT x SWALE GRADIENT)]

LOT TYPE Ⓐ



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				
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{BC}$	SIDE SWALE: 85' GRASS AT 1/4"/FT. (2%)	21"	(1.8')	11"	(0.9')
$\overline{CD}$*	PROTECTIVE SIDE SLOPE @ REAR BLDG. WALL EXTENSION	3"	(0.3')	3"	(0.3')
SUB-TOTAL $\overline{AD}$ FROM CURB TOP TO GROUND AT REAL BLDG WALL		27"	(2.4')	16"	(1.4')
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: 27" + 8"		35"	(2.9')	24"	(2.0')
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: 35" + 9"		46"	(3.8')	35"	(2.9')

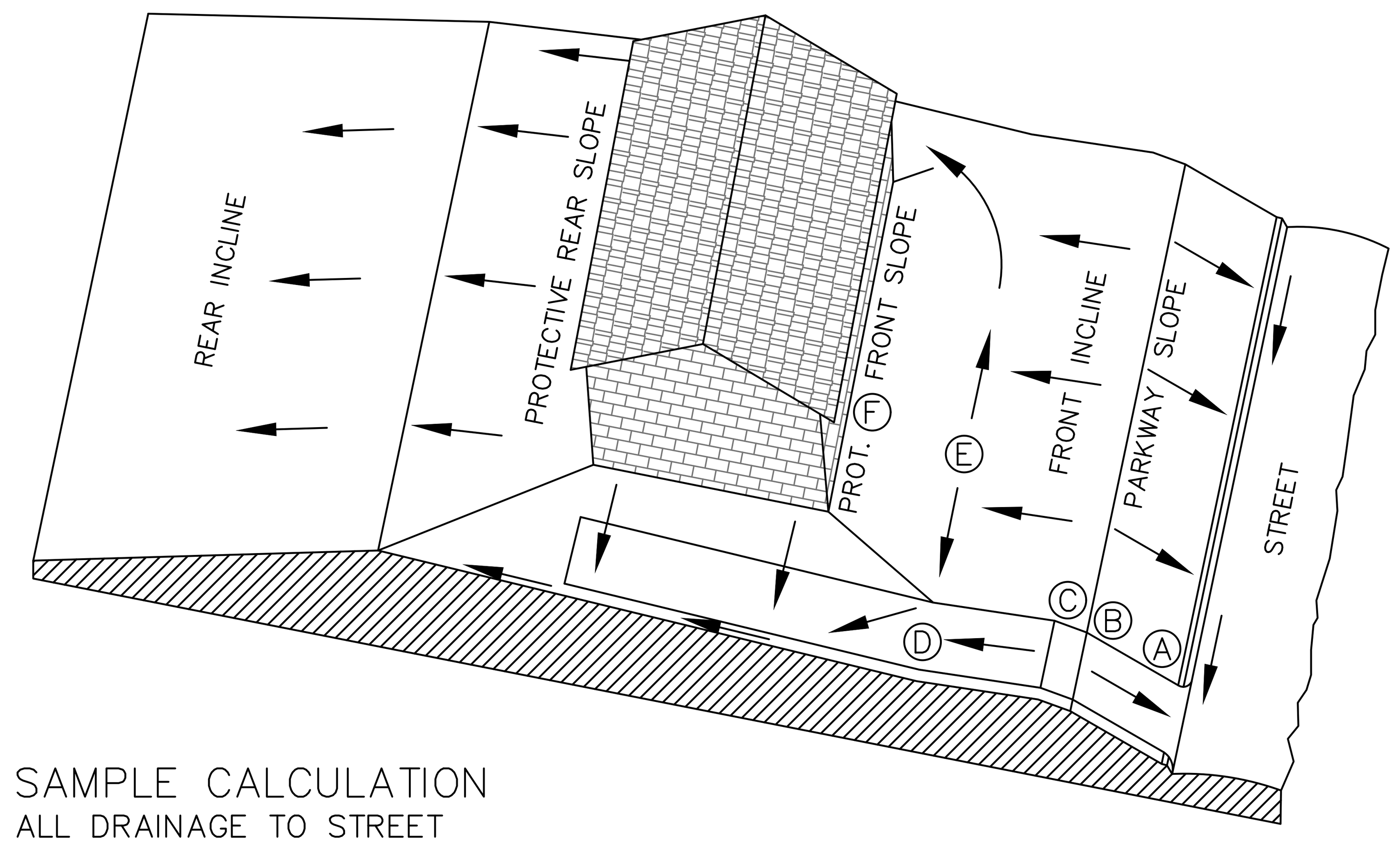
CALCULATIONS FOR 2% SWALES

15 x 0.25' = 3¾"
85 x 0.25' = 21¾"
6 x 0.25' = 1½"
26½"

CALCULATIONS USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.

* WHERE THERE IS A HIGH BANK NEARBY OR A LONG SLOPE TOWARD HOUSE, A MINIMUM 6" PROTECTIVE SLOPE IS REQUIRED.

LOT TYPE Ⓑ



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	
A	CURB-TOP HIGH SIDE OF DRIVE NEAR LOW LOT CORNER				
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{BC}$	DRIVEWAY GRADE CHANGE: 4' VERTICAL CURVE FROM UP-GRADE DRIVE IN STREET TO DOWN-GRADE DRIVE ON LOT	0"	(0.0')	0"	(0.0')
$\overline{CD}$	DRIVEWAY DOWN-GRADE TO POINT 10 FEET OUT FROM FRONT OF BUILDING: –11' AT 1⅝"/FT (13.5%)	–18"	(–1.5')	–18"	(–1.5')
$\overline{DE}$	FRONT SWALE: 16' GRASS AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{EF}$*	PROT. FRONT SLOPE UP FROM HIGH POINT OF SWALES	3"	(0.3')	3"	(0.3')
SUB-TOTAL $\overline{AF}$ FROM CURB TOP TO GROUND AT FRONT BLDG WALL		–7"	(–1.0')	–11"	(1.3')
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: –7" + 8"		1"	(–0.3')	–3"	(0.7')
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: –7" + 19"		12"	(–0.6')	8"	(0.3')

CALCULATIONS FOR SWALES

15 x 0.25'	= 3¾"
0 x 0.25'	= 0"
–11 x 1.625'	= –17¾"
16 x 0.25'	= 4"
10 x 0.25'	= 2½"
	–7½"

CALCULATION:

USE 0.25" PER FOOT GRADIENT FOR A 2% SWALE.

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 Ⓒ

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 OR SCARIFYING 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 THD-TEX-113-E COMPACTION PROCEDURE. ALL AREAS EXCEEDING (6") SIX INCHES IN DEPTH, MUST MEET WITH FHA/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 COMAPCTION 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.

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

COMPACTION 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. COMPACTION 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.

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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER
[illegible]

GRADING DETAILS

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C3.5

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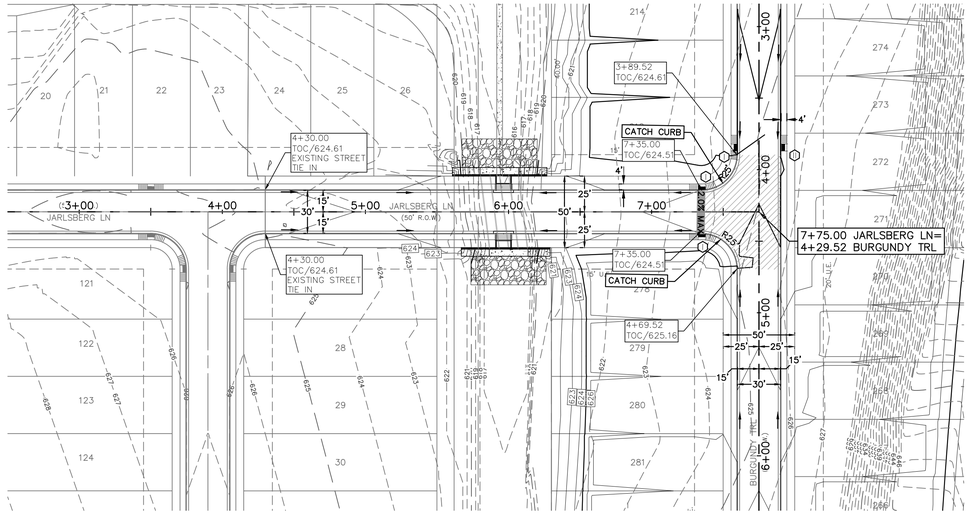
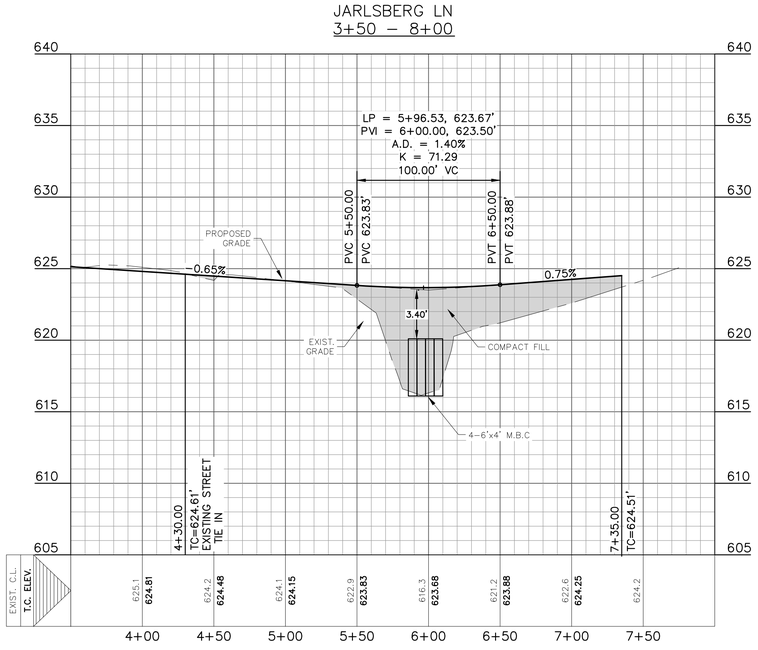
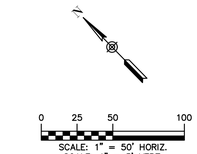






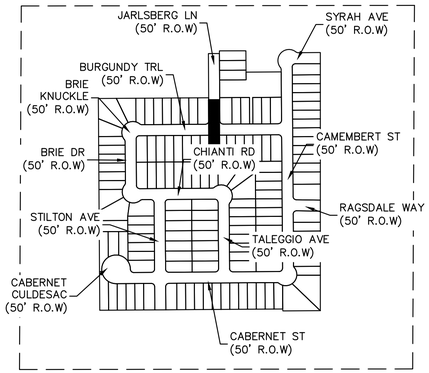
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.17)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

KEY MAP



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TBPLS FIRM 1053600

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12/21/23
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ERIC S. PLY
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LICENSED
PROFESSIONAL ENGINEER

JARLSBERG LN
P&P

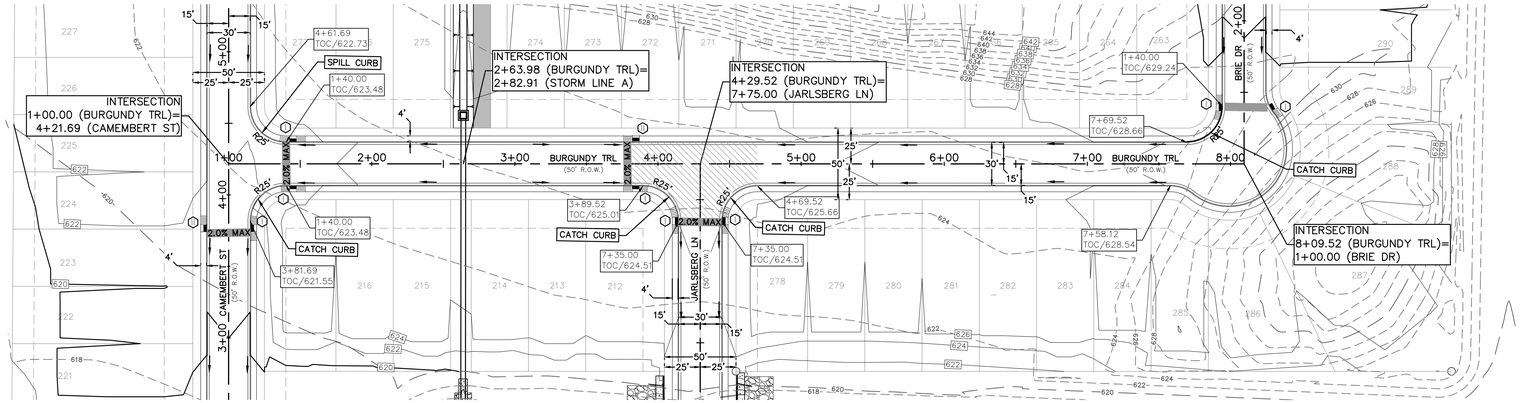
VOGES SUBDIVISION
UNIT 3

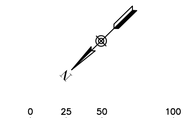
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C4.0





LEGEND

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- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.15)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

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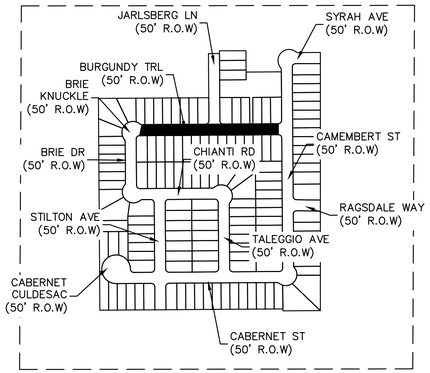
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

KEY MAP



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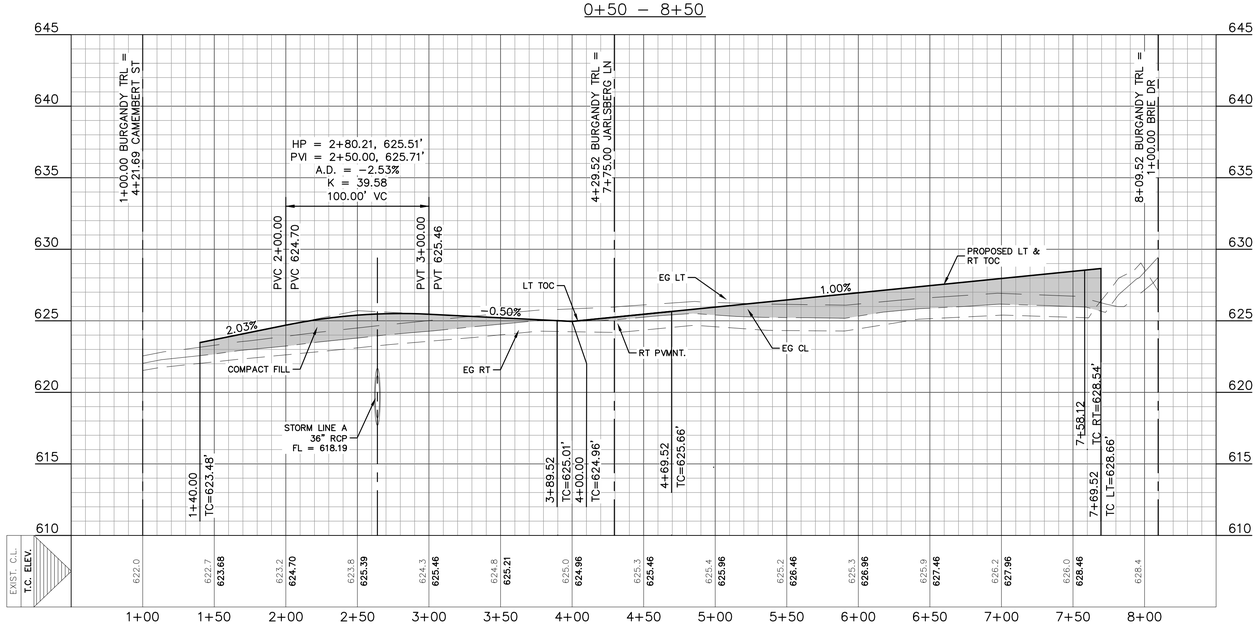

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BURGUNDY TRLP&P

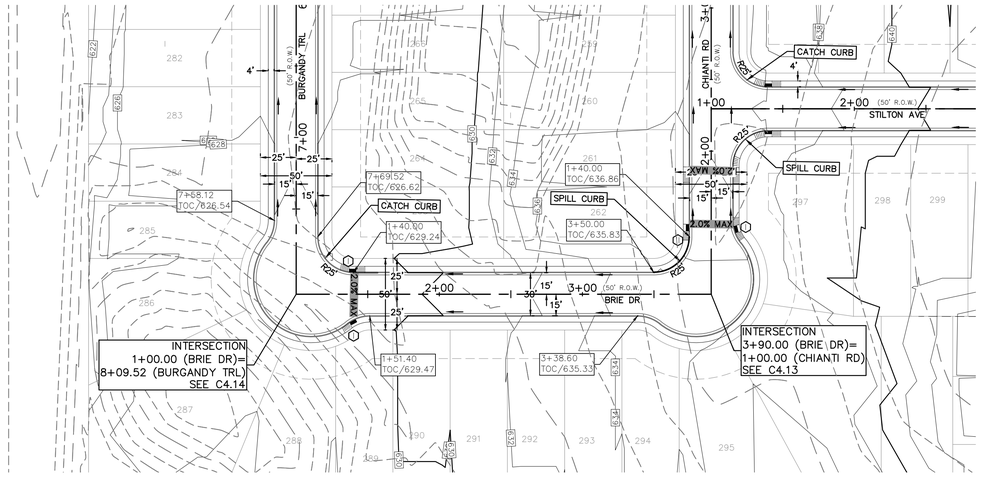
VOGES SUBDIVISION UNIT 3

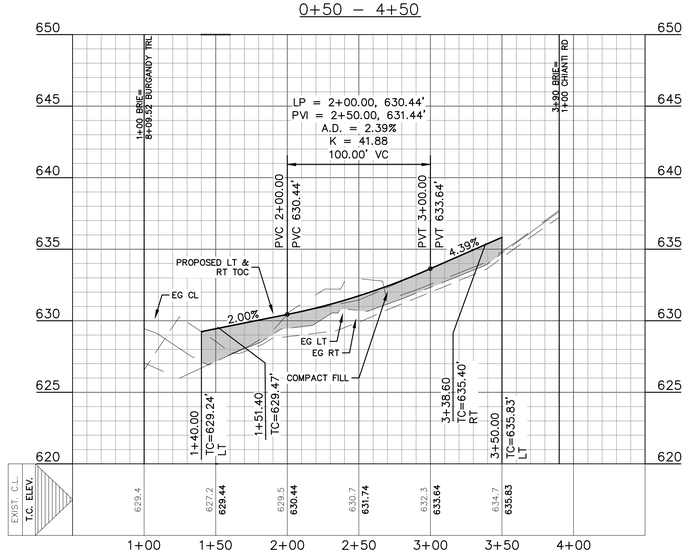
NO.	REVISION DESCRIPTION	REVISION DATE

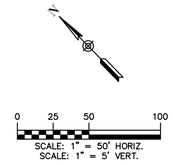
DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C4.1







LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
	FLOW ARROW
	WASHOUT CROWN AREAS
	SPILL CURB
	EXISTING GROUND LEFT (EG LT)
	EXISTING GROUND RIGHT (EG RT)
	EXISTING GROUND CENTER (EG CTR)
	PROPOSED TOP OF CURB (PR TC)
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
1	SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.17)
	SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

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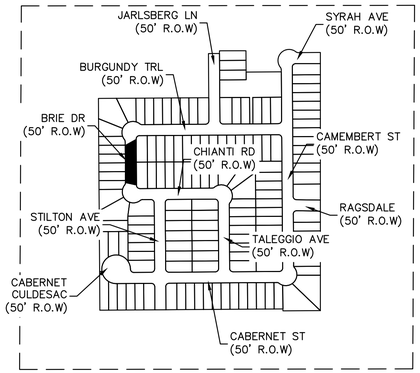
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

KEY MAP



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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600
HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

BRIE DR P&P

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
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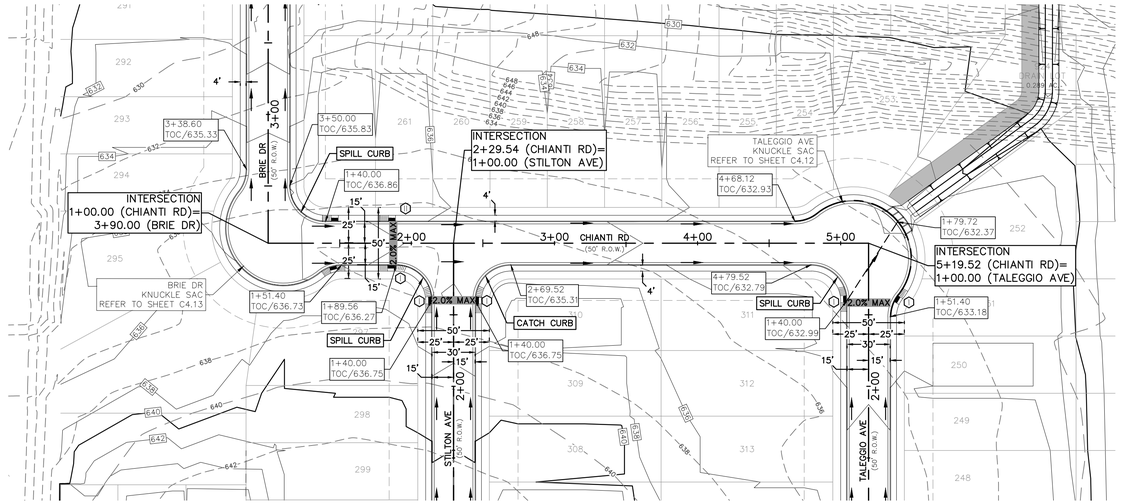
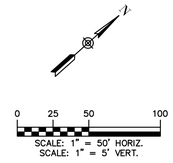
SHEET
C4.2





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
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- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
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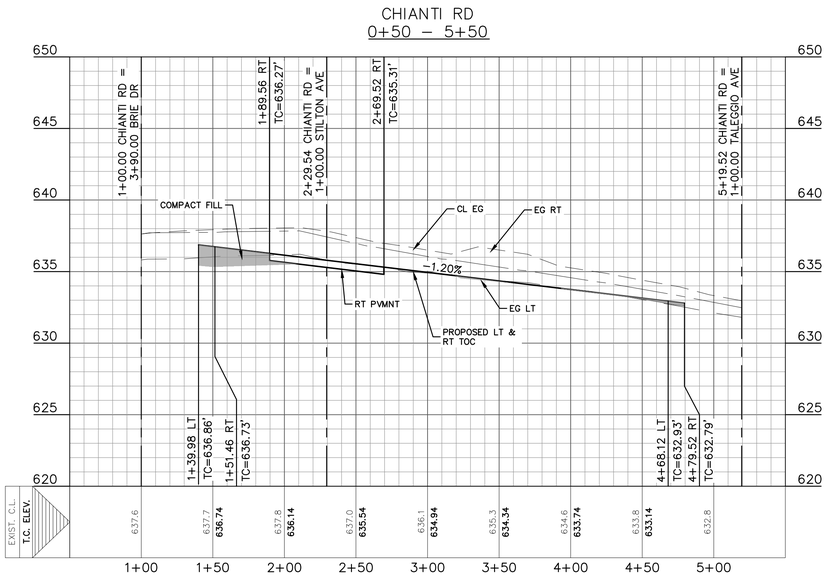
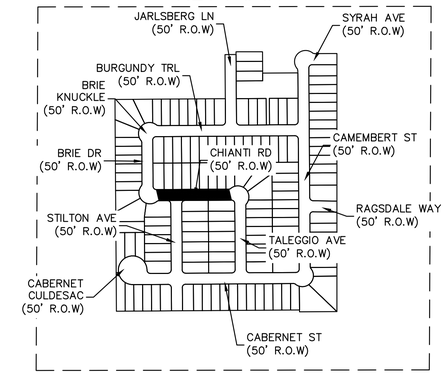


KEY MAP



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NEW BRAUNFELS, TX 78130
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TBPLS FIRM 1053600
HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

CHIANTI RD P&P

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

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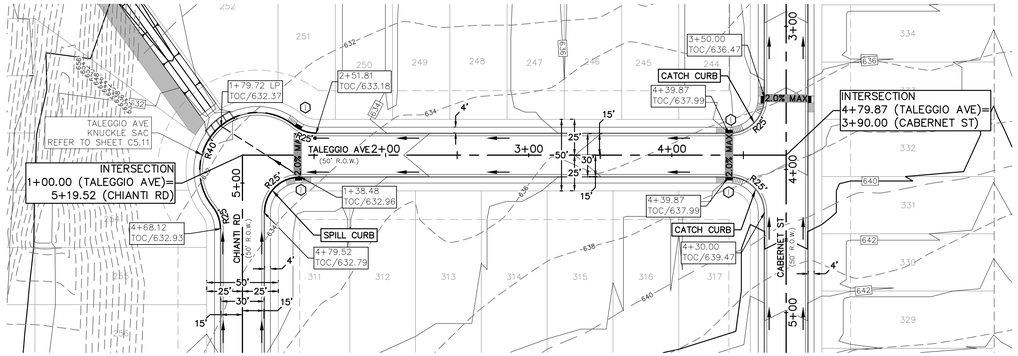
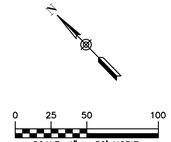
SHEET
C4.3





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
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
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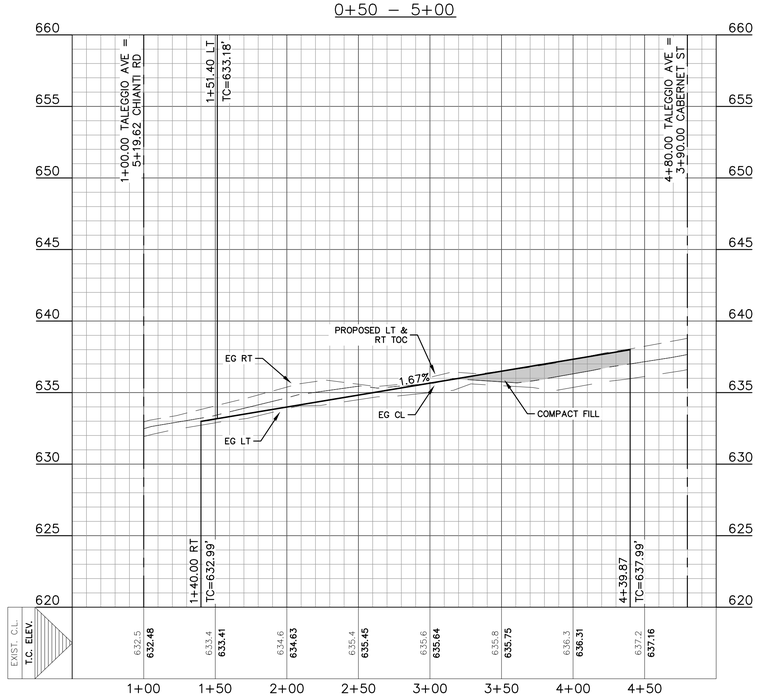
KEY MAP

N.T.S

TALEGGIO AVE
0+50 – 5+00



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TALEGGIO AVE P&P

VOGES SUBDIVISION UNIT 3

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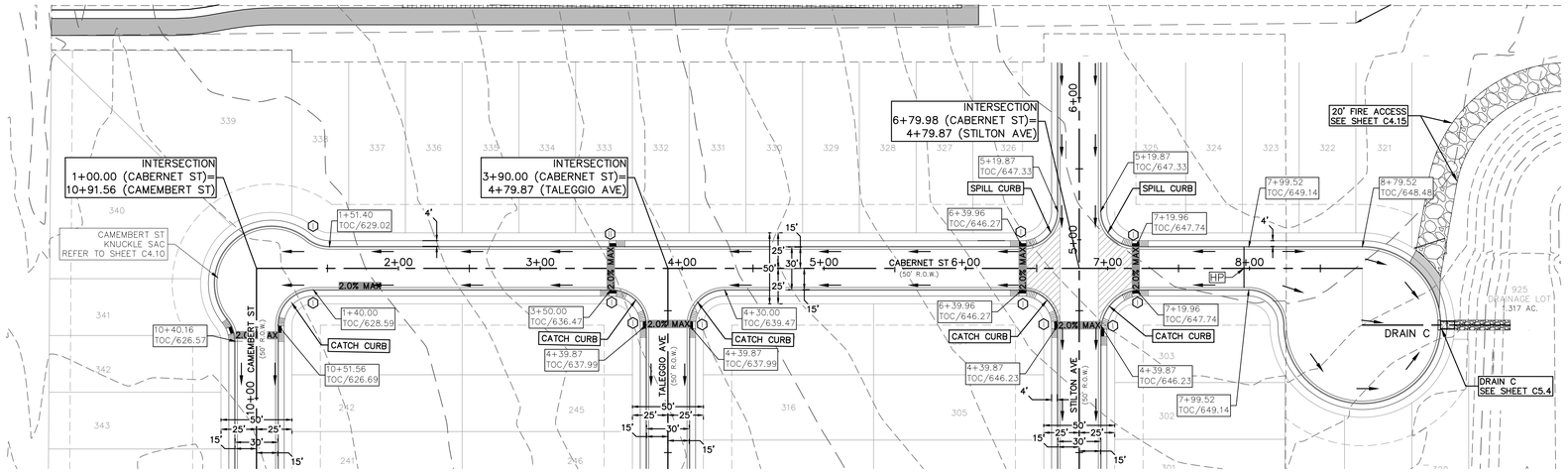
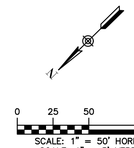
SHEET

C4.4





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
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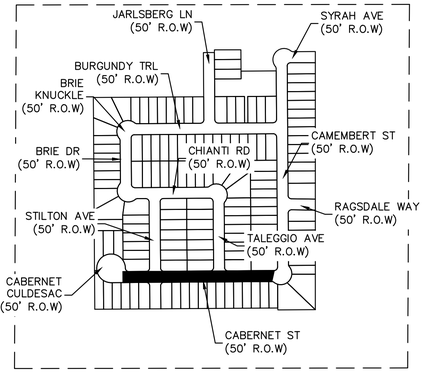
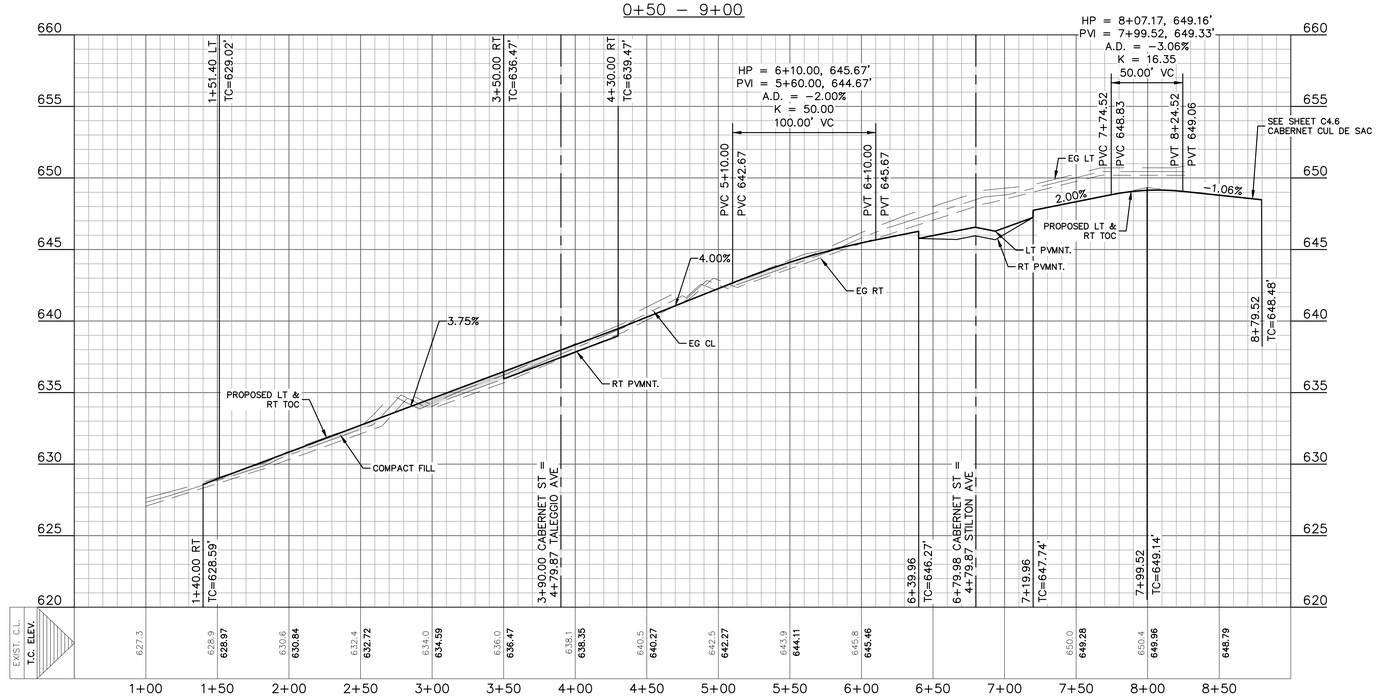
KEY MAP



N.T.S

CABERNET ST
0+50 – 9+00



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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

CABERNET ST P&P

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

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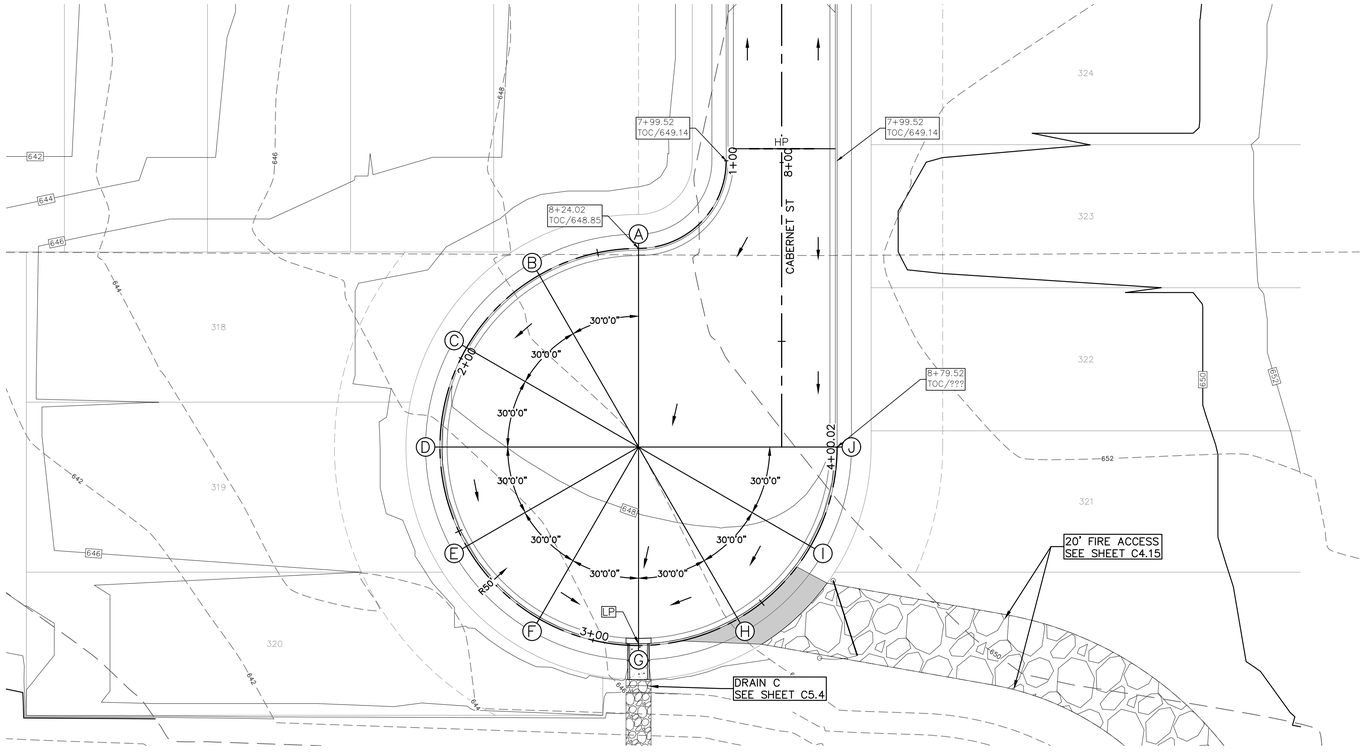
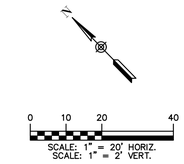
SHEET
C4.5





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
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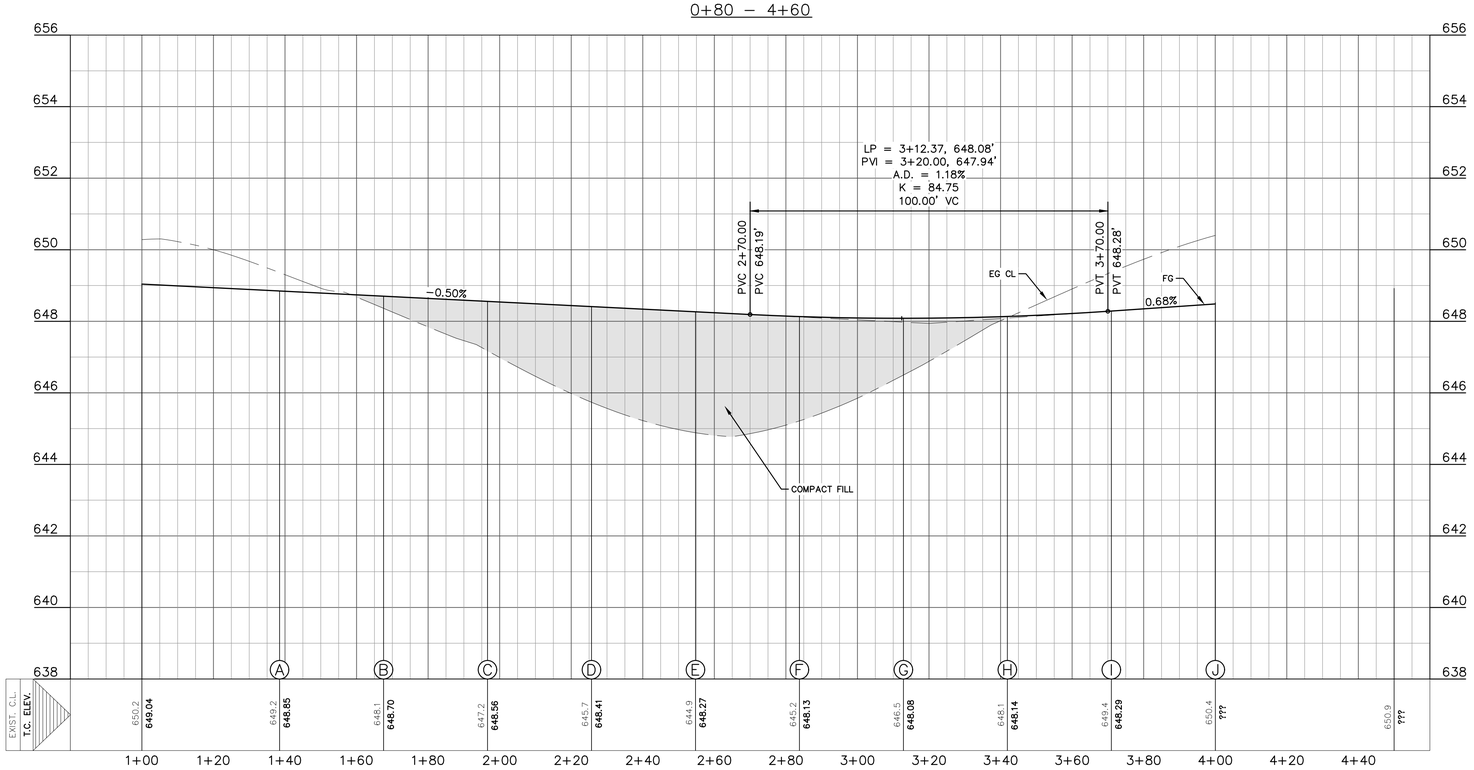
KEY MAP

N.T.S

Cabernet Culdesac
0+80 – 4+60



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12/21/23
STATE OF TEXAS
ERIC S. PLY
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LICENSED
PROFESSIONAL ENGINEER

CABERNET CUL DE SAC

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

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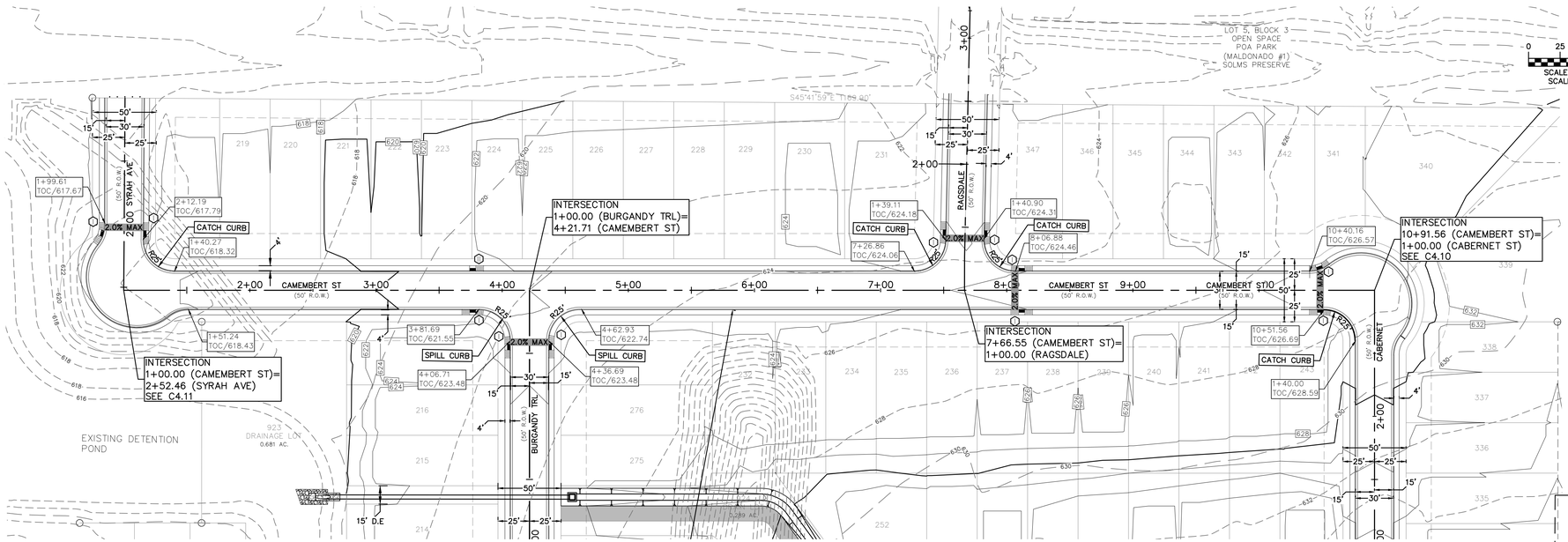
SHEET
C4.6



LEGEND

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- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
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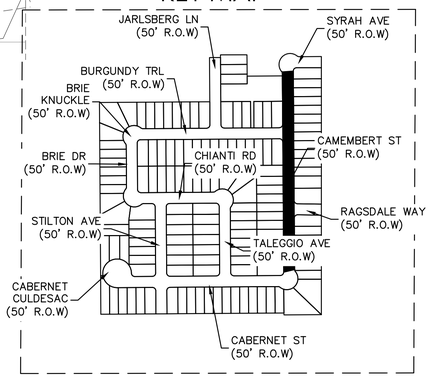
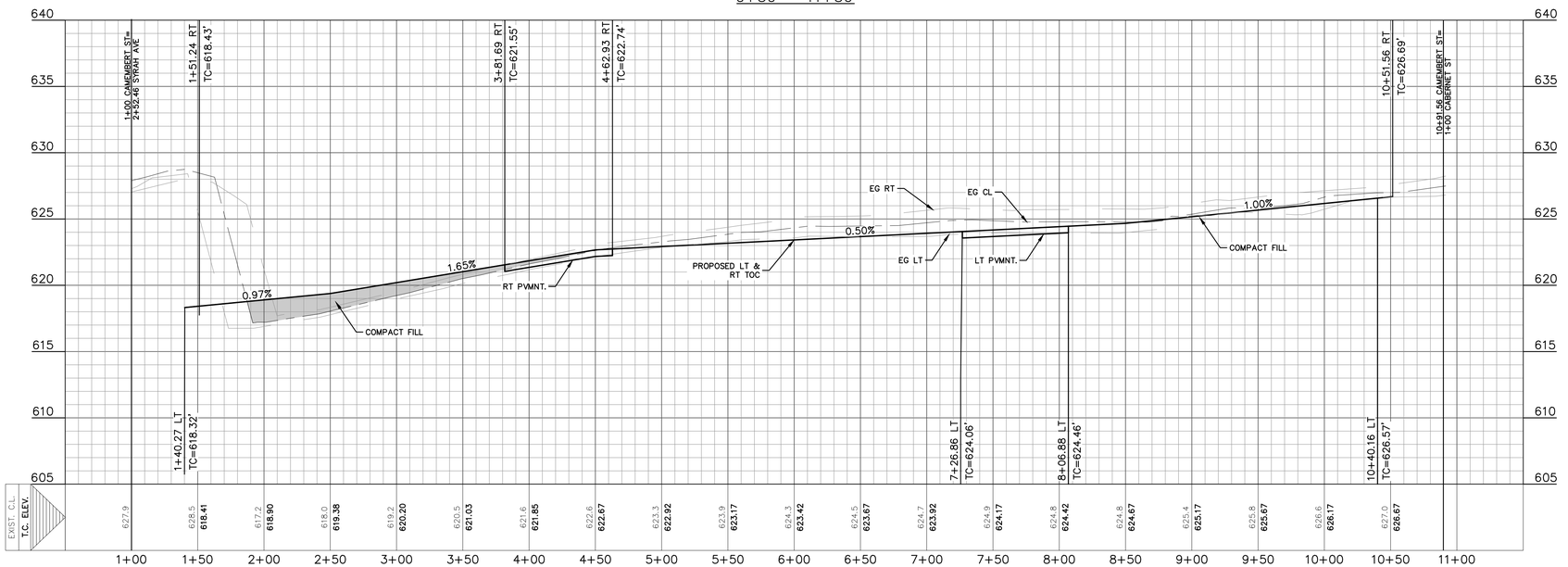
KEY MAP



N.T.S

CAMEMBERT ST
0+50 – 11+50



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HMT ENGINEERING & SURVEYING

12/21/23
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LICENSED
PROFESSIONAL ENGINEER

CAMEMBERT ST P&P

VOGES SUBDIVISION UNIT 3

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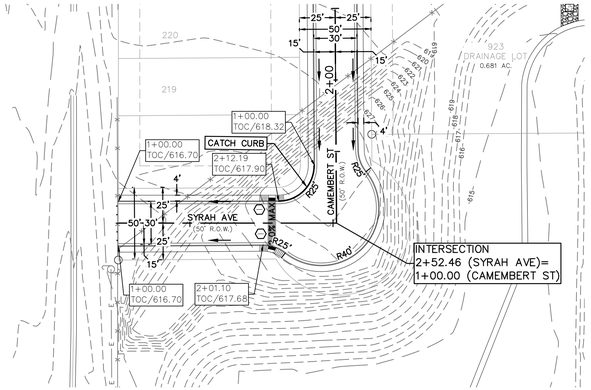
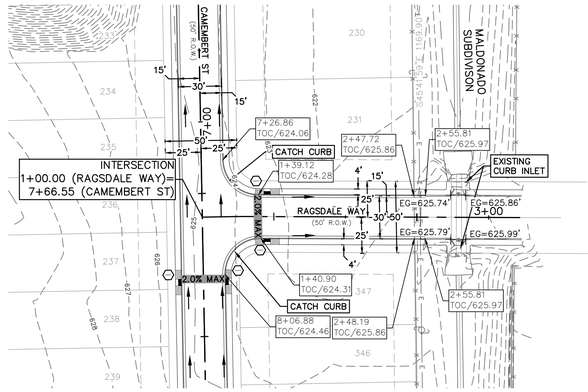
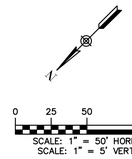
SHEET

C4.7







LEGEND

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- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.15)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

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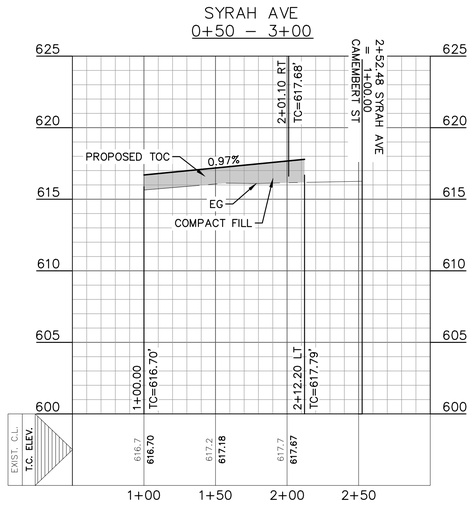
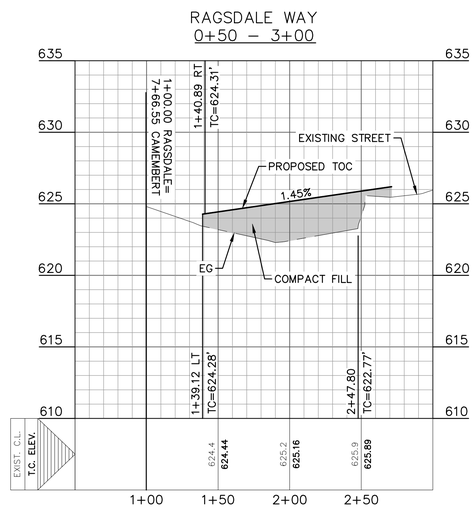
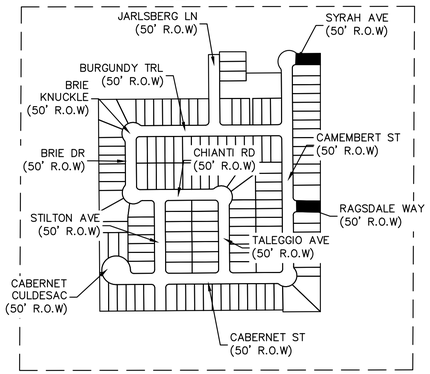




KEY MAP



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HMT
ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

SYRAH AVE AND RAGSDALE WAY P&P

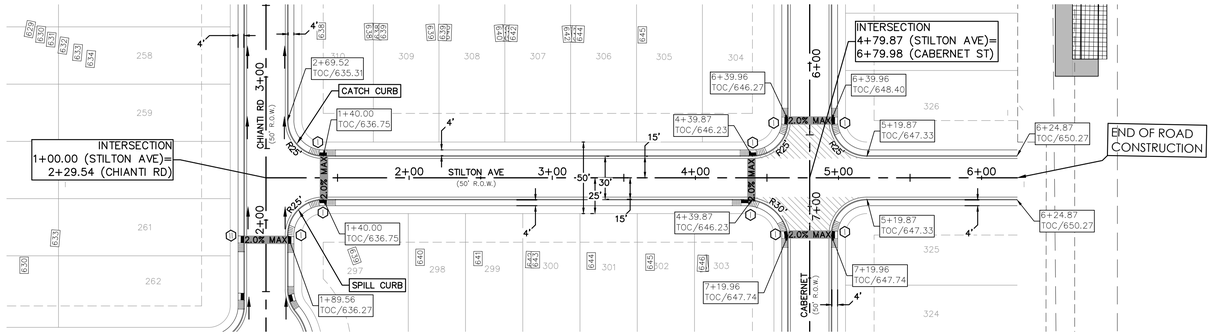
VOGES SUBDIVISION
UNIT 3

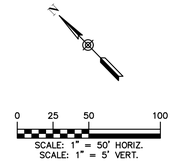
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C4.8





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
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- PROPOSED TOP OF CURB (PR TC)
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KEY MAP

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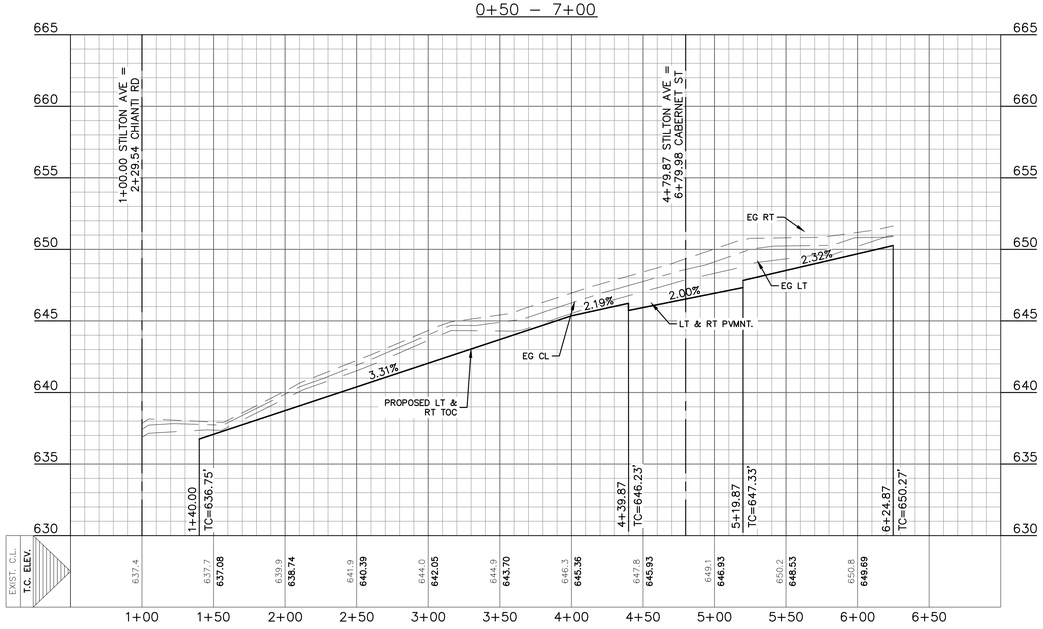

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HMT
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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

STILTON AVE P&P

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.9

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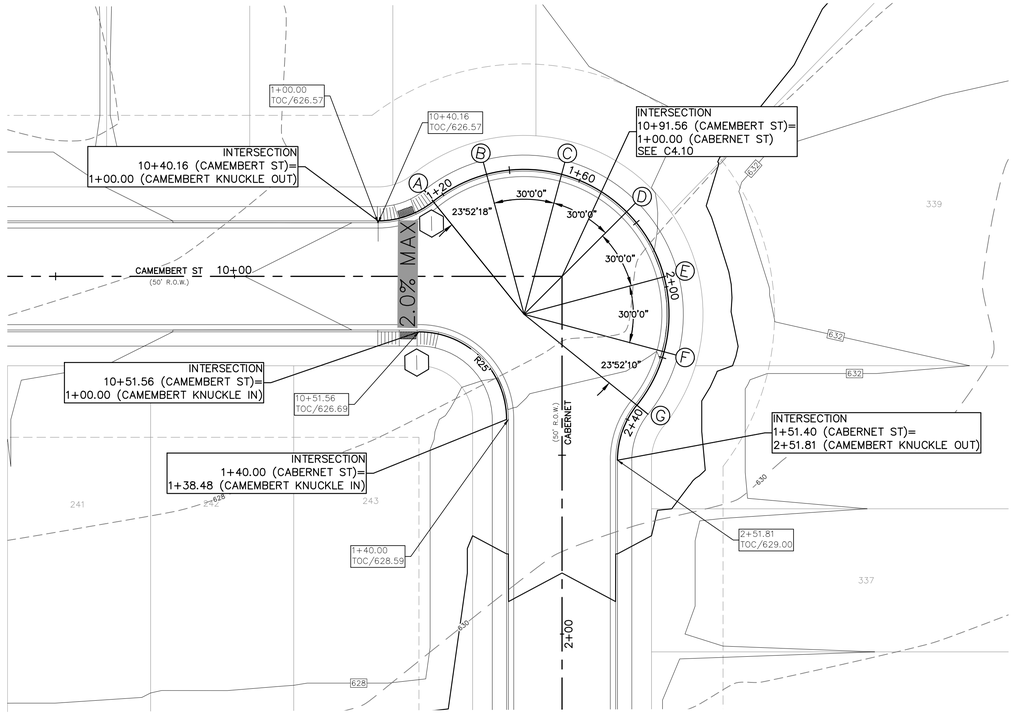

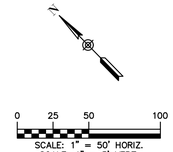

LEGEND

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- 700 — PROPOSED CONTOURS
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- D.E. — DRAINAGE EASEMENT
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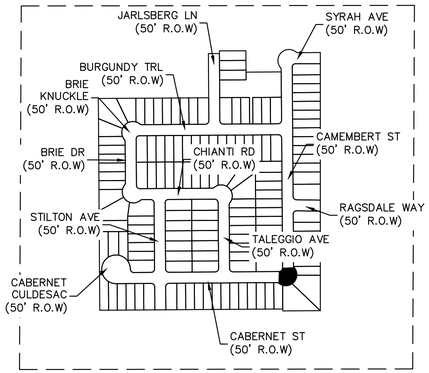
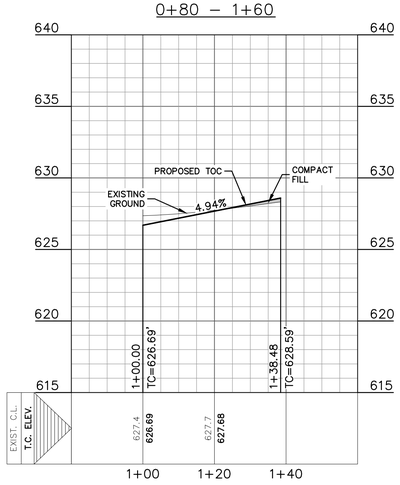
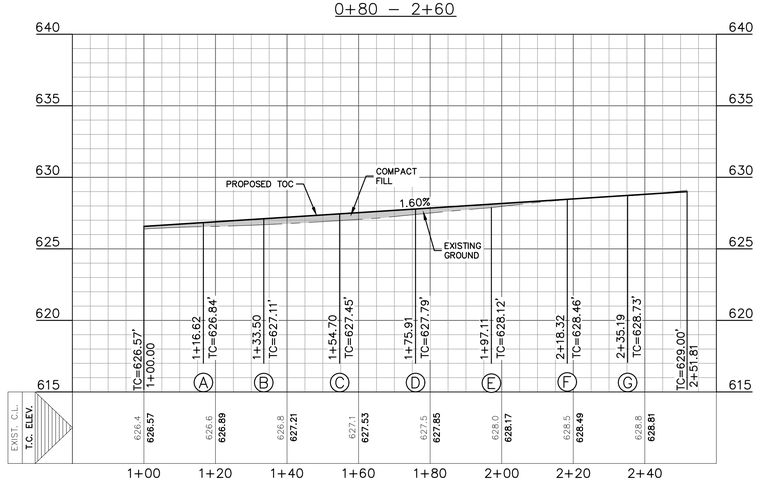


N.T.S

CAMEMBERT KNUCKLE IN
0+80 – 1+60



CAMEMBERT KNUCKLE OUT
0+80 – 2+60



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STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

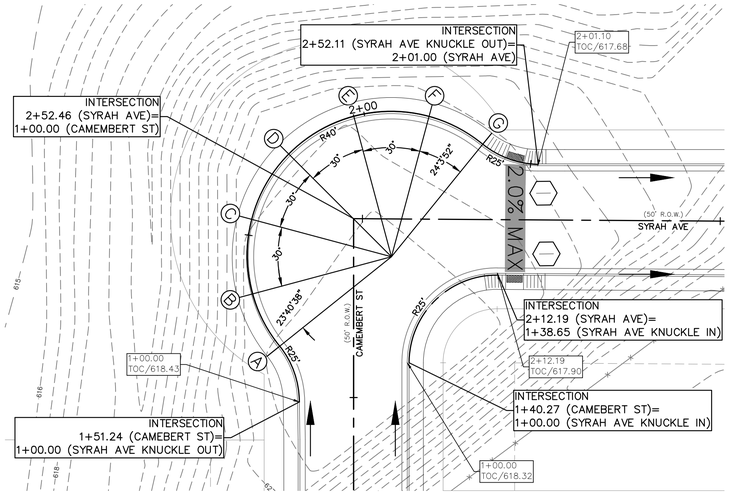
CAMEMBERT AND CABERNET KNUCKLE P&P

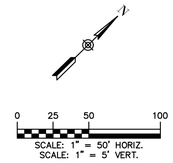
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C4.10





LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
	FLOW ARROW
	WASHOUT CROWN AREAS
	SPILL CURB
	EXISTING GROUND LEFT (EG LT)
	EXISTING GROUND RIGHT (EG RT)
	EXISTING GROUND CENTER (EG CTR)
	PROPOSED TOP OF CURB (PR TC)
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
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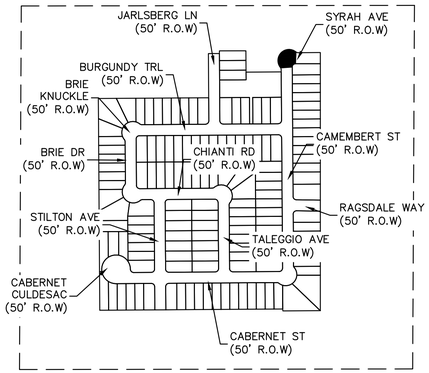
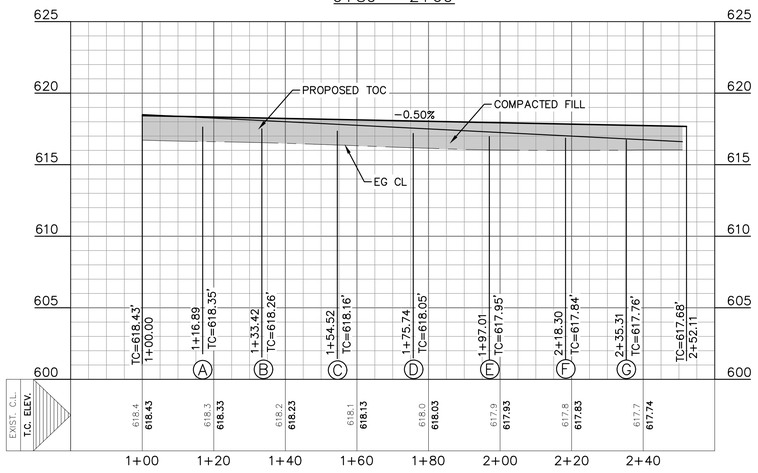
KEY MAP

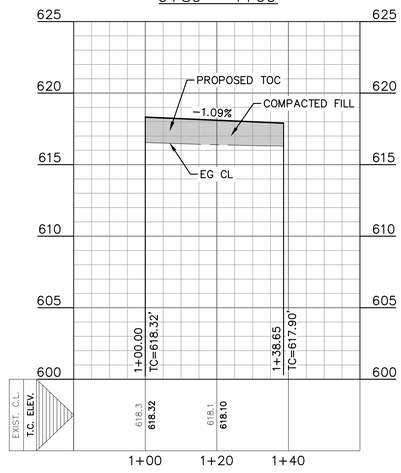


N.T.S

SYRAH AVE KNUCKLE OUT
0+80 – 2+60



SYRAH AVE KNUCKLE IN
0+80 – 1+60



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NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

CAMEMBERT AND SYRAH KNUCKLE P&P

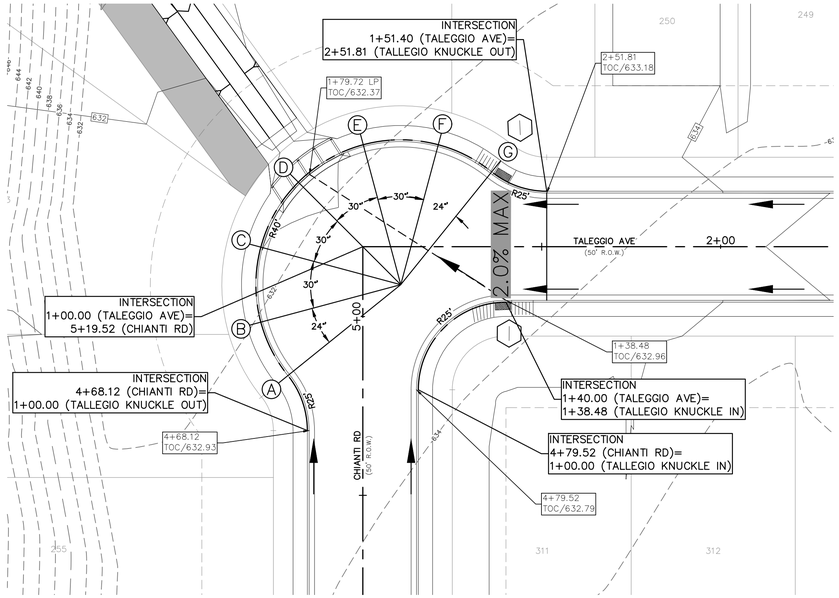
VOGES SUBDIVISION
UNIT 3

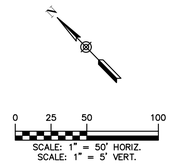
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C4.11





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
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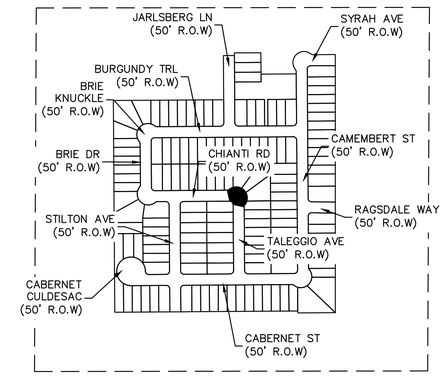
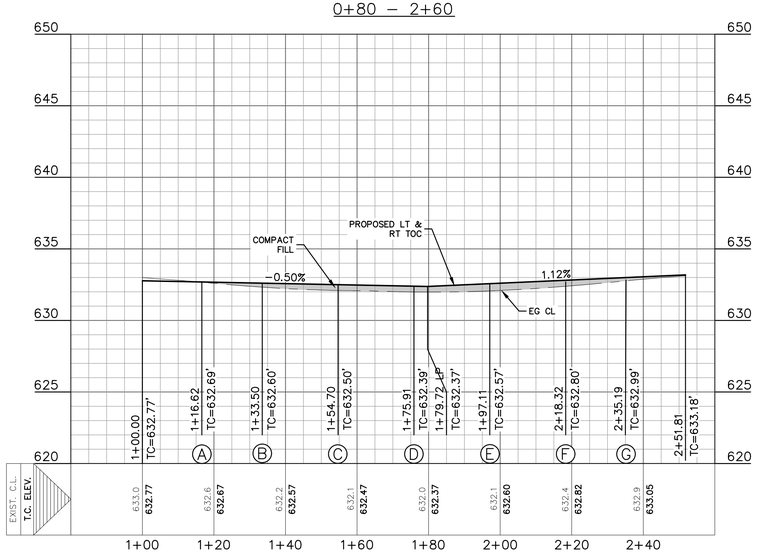
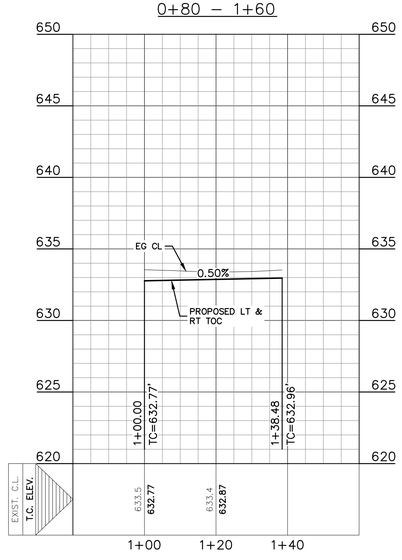


N.T.S

TALLEGIO KNUCKLE OUT
0+80 – 2+60



TALLEGIO KNUCKLE IN
0+80 – 1+60



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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

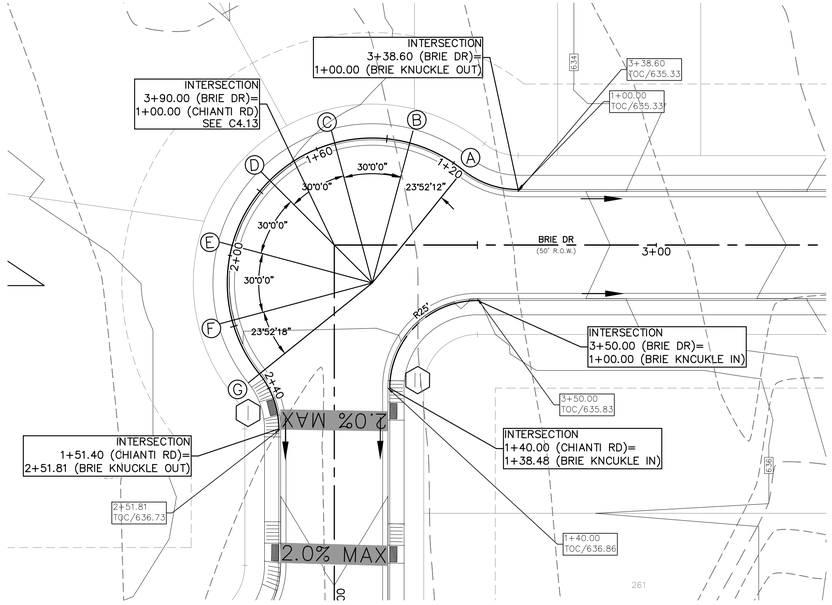
TALEGGIO AND CHIANTI KNUCKLE P&P

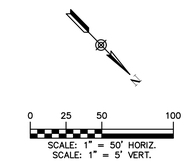
VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.12





LEGEND

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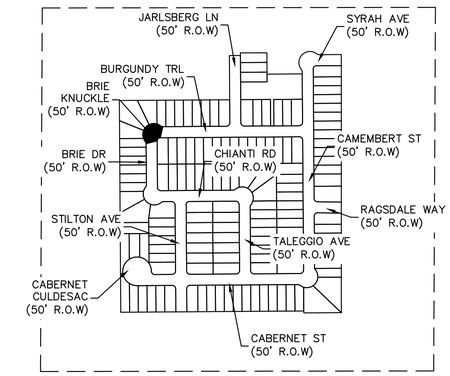
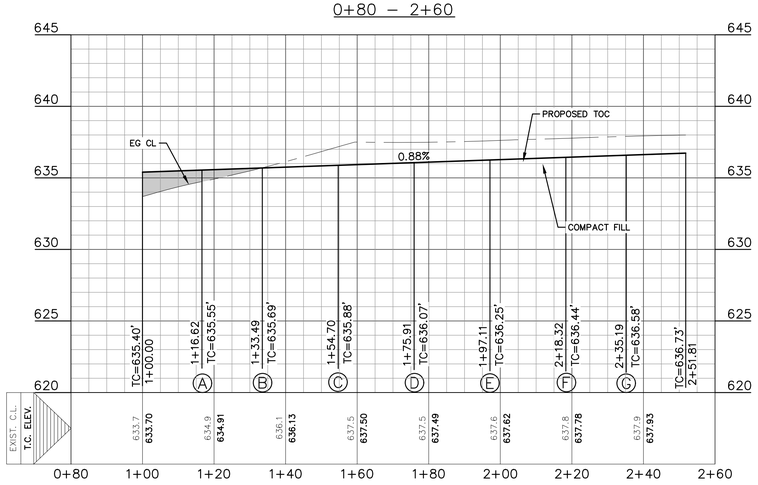


N.T.S

BRIE KNUCKLE OUT
0+80 – 2+60



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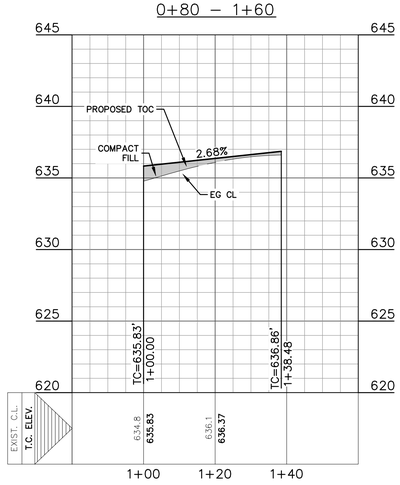

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123317
LICENSED
PROFESSIONAL ENGINEER

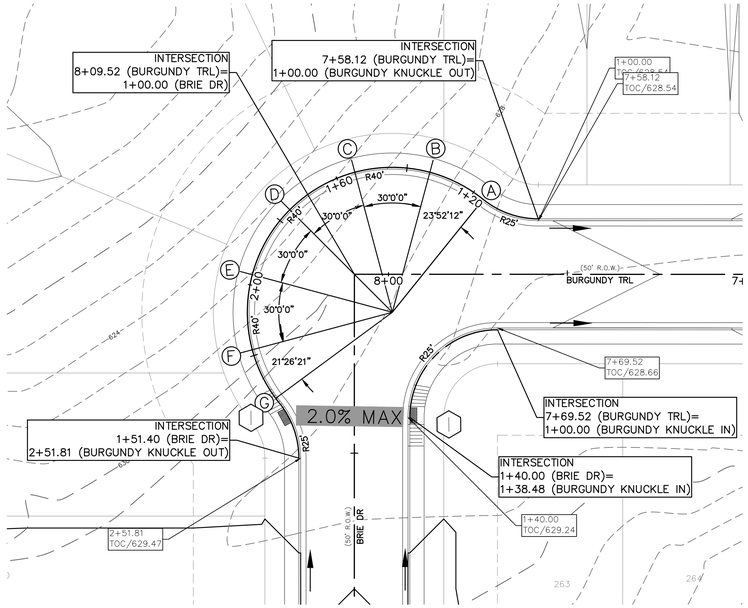
BRIE AND CHIANTI KNUCKLE P&P

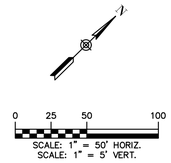
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.13





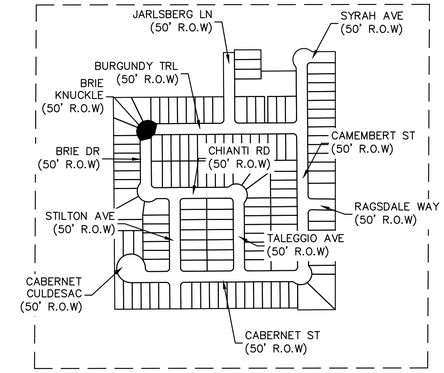
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- 1 — SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.17)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

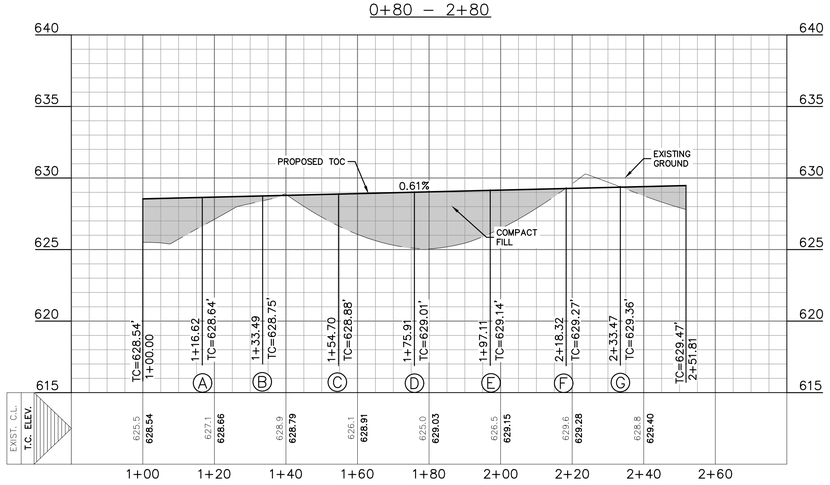
1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

KEY MAP

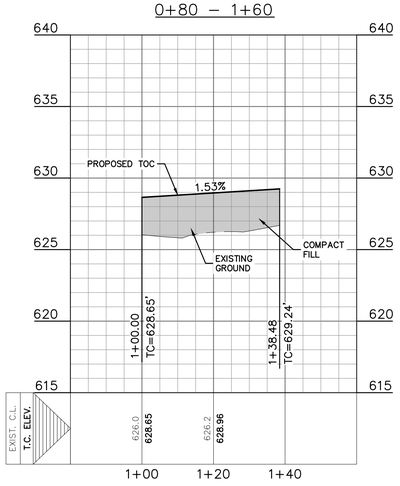


N.T.S

BURGUNDY KNUCKLE OUT
0+80 – 2+80



BURGUNDY KNUCKLE IN
0+80 – 1+60



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.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600
HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

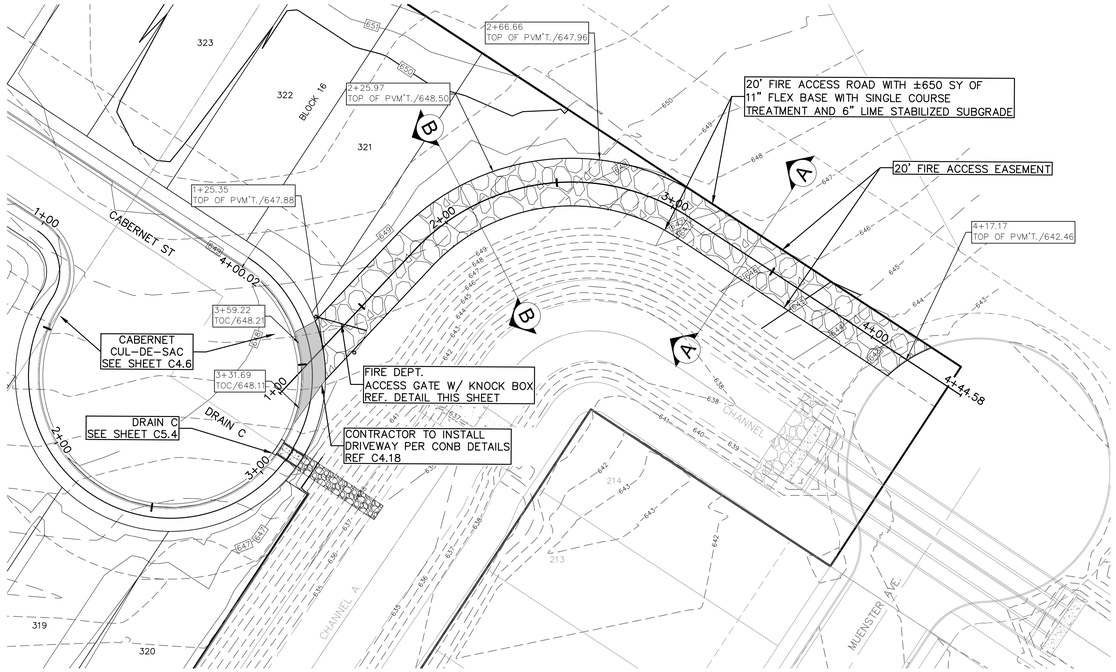
BURGUNDY AND BRIE KNUCKLE P&P

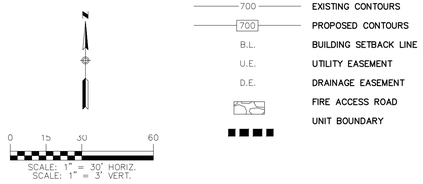
VOGES SUBDIVISION UNIT 3

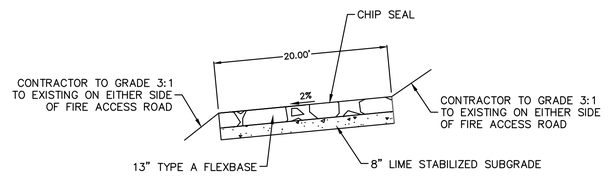
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.14

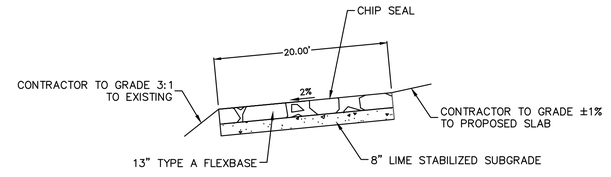






SECTION A–A
STA. 2+60 TO STA. 4+00

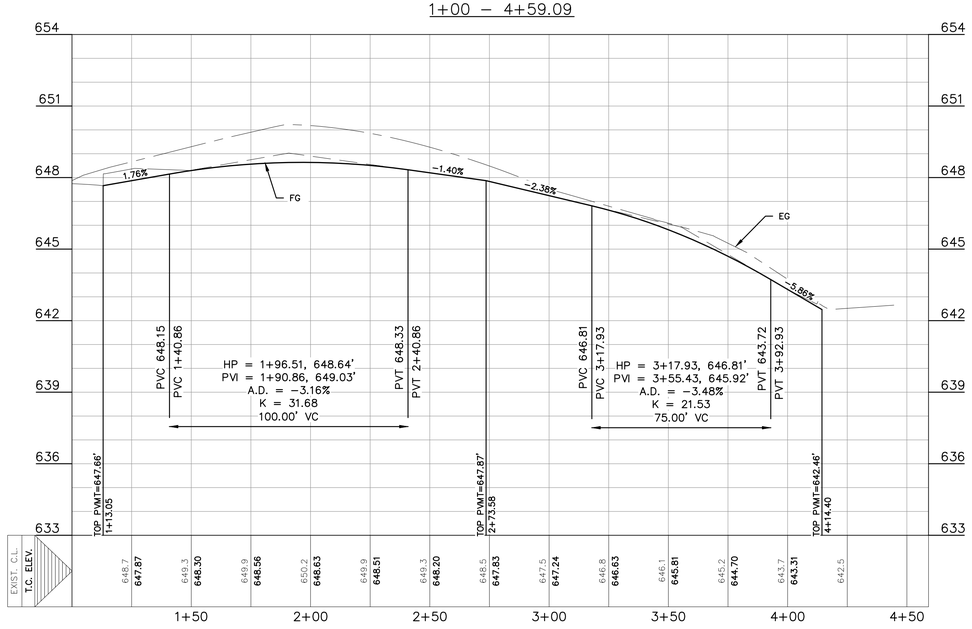
SCALE: N.T.S.
(SEE SHEET C4.18 FOR PAVEMENT SECTION DETAILS)

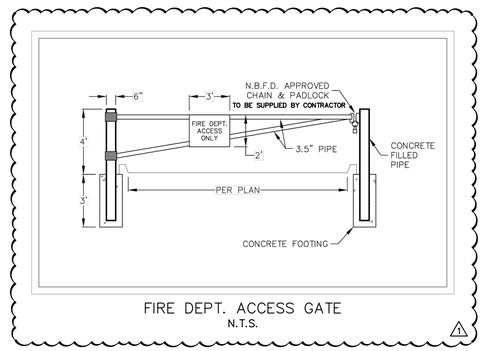


SECTION B–B
STA. 1+50 TO STA. 2+60

SCALE: N.T.S.
(SEE SHEET C4.18 FOR PAVEMENT SECTION DETAILS)

20' ACCESS ROAD
1+00 – 4+59.09





FIRE DEPT. ACCESS GATE
N.T.S.

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.

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HMT
ENGINEERING & SURVEYING

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

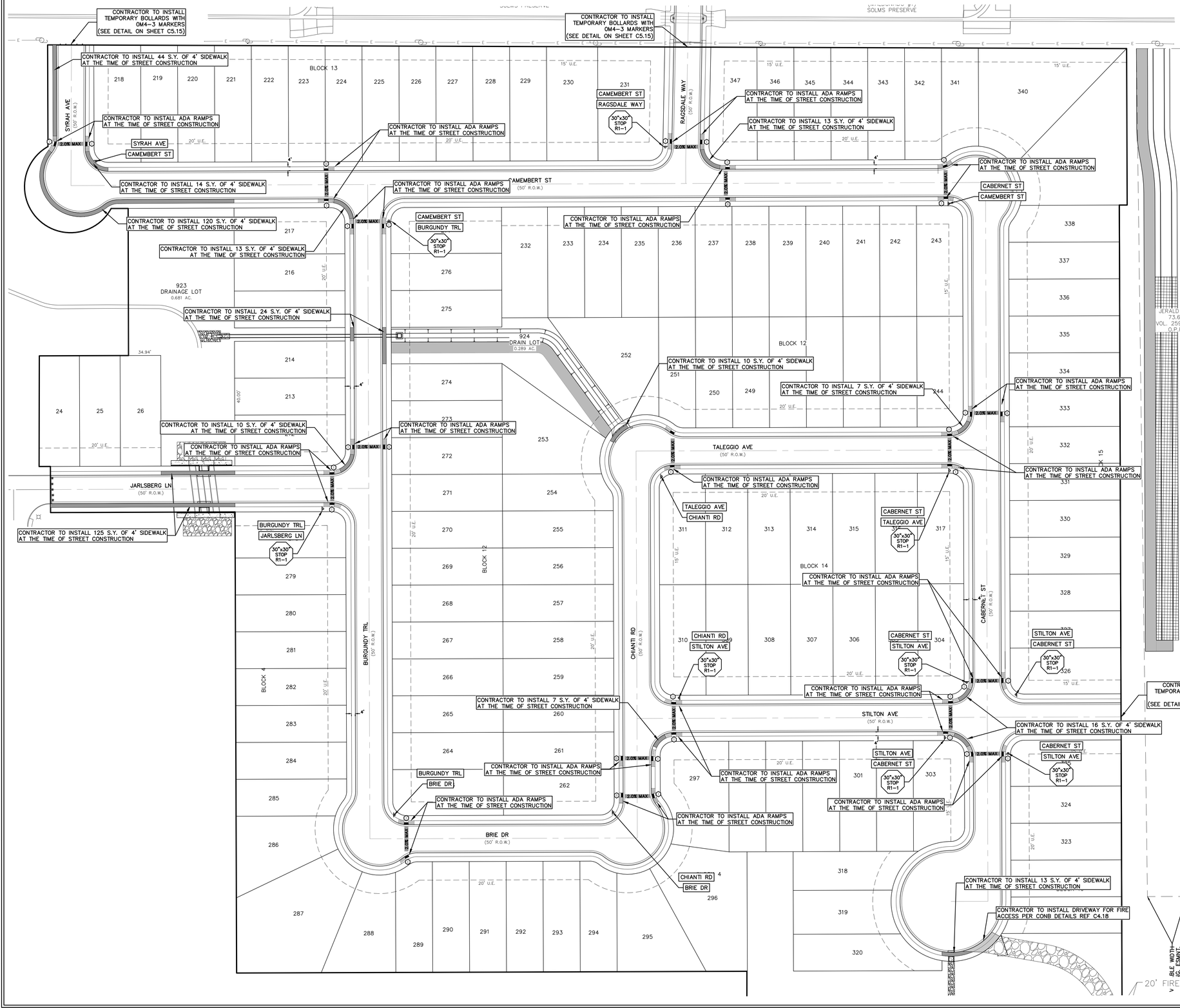
FIRE ACCESS ROAD P&P

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	CITY COMMENTS	10/25/2023

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.15



LEGEND

B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
	SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.17)
	SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR
	TEMPORARY BOLLARDS

NOTES

1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF **25** MPH.
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

0 25 50 100
HORIZONTAL SCALE: 1:50

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.

290 S. CASTELL AVE., STE. 100
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12/21/23
STATE OF TEXAS
ERIC S. PLY
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LICENSED
PROFESSIONAL ENGINEER

SIGNAGE PLAN

VOGES SUBDIVISION
UNIT 3

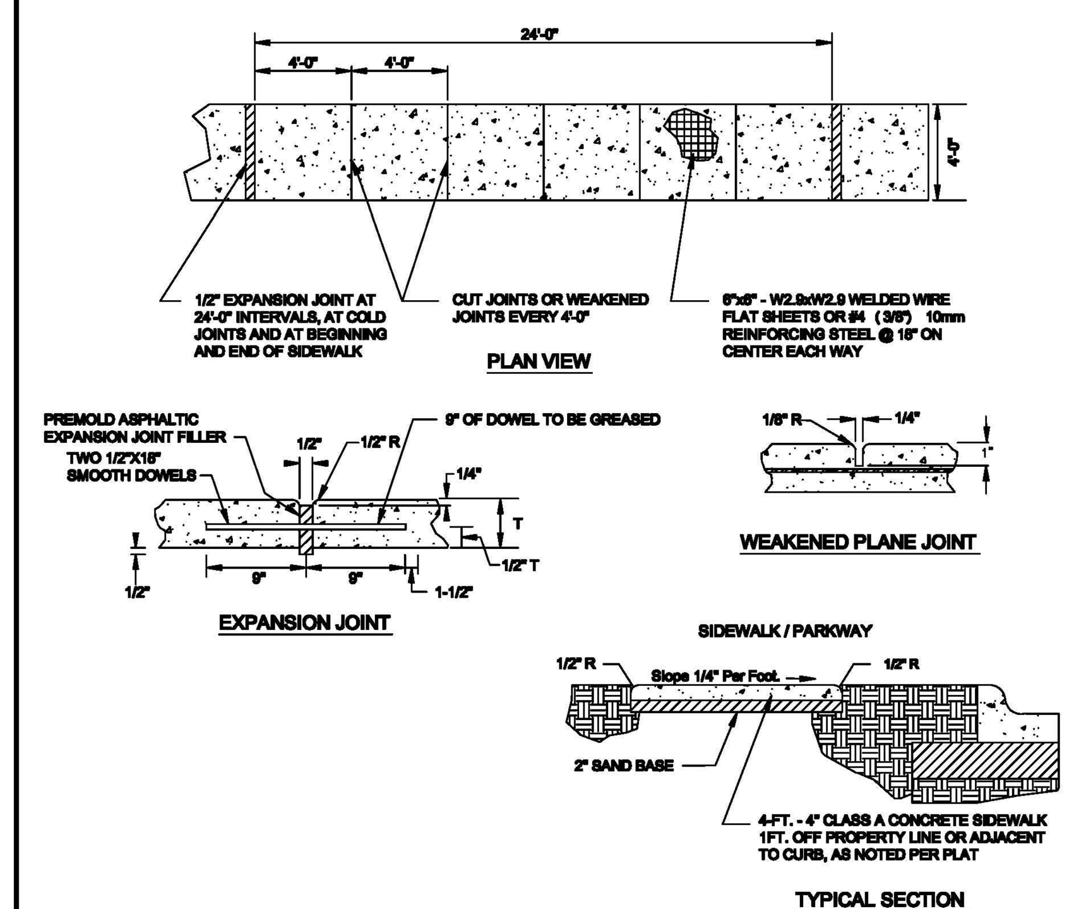
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.16

Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\03\248.014_SIGNAGE.dwg User: matt-p Dec 21, 2023 - 4:48pm

SIDEWALK
(RESIDENTIAL)

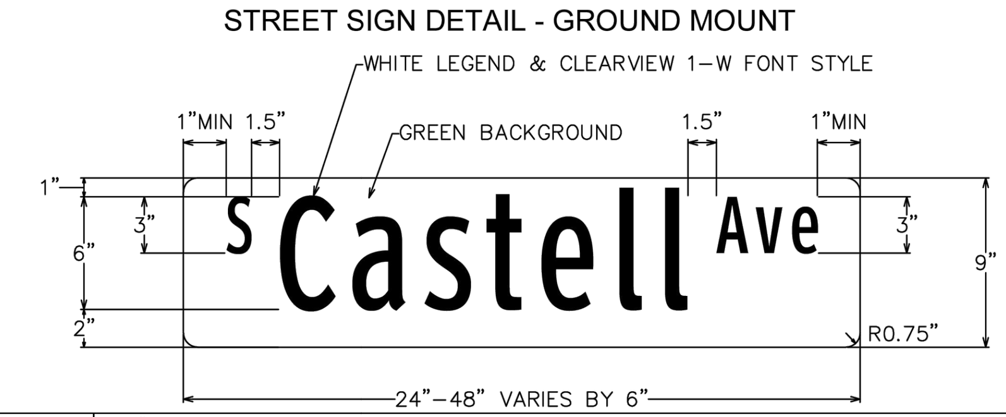


NOTES:

1. EXPANSION JOINTS ARE TO BE USED BETWEEN CONCRETE DRIVEWAY AND SIDEWALK.
2. SCORED JOINTS DENOTE SIDEWALK ACROSS THE DRIVEWAY AND ARE TO BE PLACED AT LEAST 1/3 rd. THROUGH THE SLAB THICKNESS.
3. ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.

DATE APPROVED: 7/08	DWG. NO: ST-016	SCALE: N.T.S.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: SIDEWALK (Residential)			
P:\CURRENT NEW BRAUNFELS DETAILS\2008\			

STREET SIGN DETAIL - GROUND MOUNT



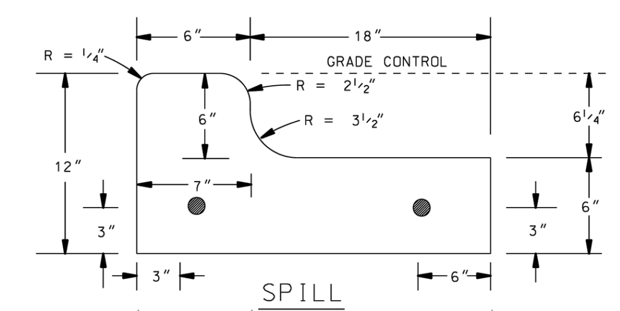
Height	9"
Length	24" min 48" max 6" increments in length
Thickness	0.080"
Substrate	Flat aluminum sheeting with ¾" radius circular fillets at corners conforming to the requirements of ASTM B 209, Alloys 6061-T-6, or 5052-H38.
Sign Face Materials	Green film over High Intensity Prismatic sheeting
Legend	Legends shall be Clearview 1-W font style. Reduced spacing between the letters or words should not be used as a means of reducing the overall size of a street name sign unless approved by the City Traffic Engineer.
Color	White legend on green background

Notes:

1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall be mounted on sign post. The sign assembly shall meet minimum height requirements as required in the Texas Manual on Uniform Traffic Control Devices (TMUTCD). When required, DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall also be mounted on the sign post.
3. Street name signs greater than 36" long and center mounted on top of sign post shall be mounted on post top bracket with 12" slot. All other street name signs center mounted on top of sign post shall be mounted on post top bracket with 5 ¼" slot.
4. Street name signs mounted on sign post shall be mounted with double-sided round pole brackets. Two holes should be punched in the center of the 9" street name sign blank 1" from edge of the blank with 7"spacing between holes.
5. The lettering for names of streets shall be composed of a combination of lower-case letters with initial upper-case letters. Acceptable abbreviations per TMUTCD may be used except for the street name itself.
6. Red background (red film over High Intensity Prismatic) should be used for private street name signs.

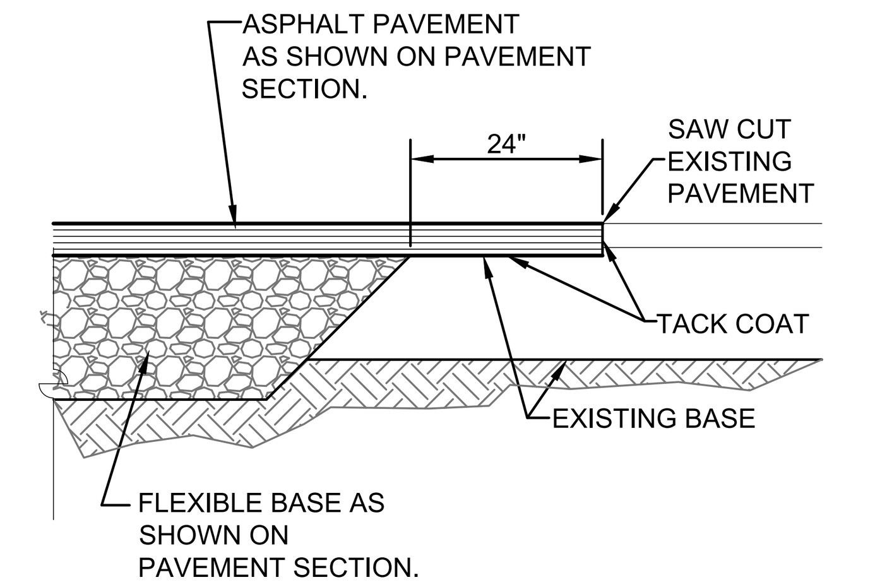
Street Sign Detail - Ground Mount			City of New Braunfels ENGINEERING DIVISION 424 S. CASTELL AVE. NEW BRAUNFELS, TEXAS 78130 PHONE: 830 221 4020 FAX: 830 626 3600
ISSUE DATE: February 2013	DWG. NO: ST-024	SCALE: N.T.S.	
DRAWN BY: RAS	CONTACT: GF	SHEET: 1 OF 1	

P:\2010 ENGINEERING-AUTOCAD\DETAILS\NB-PUBLIC WORKS DETAILS\NB-UNAPPROVED DETAILS-2013\ST-2013.024 STREET SIGN DETAIL - GROUND MOUNT.DWG



SPILL CURB DETAIL

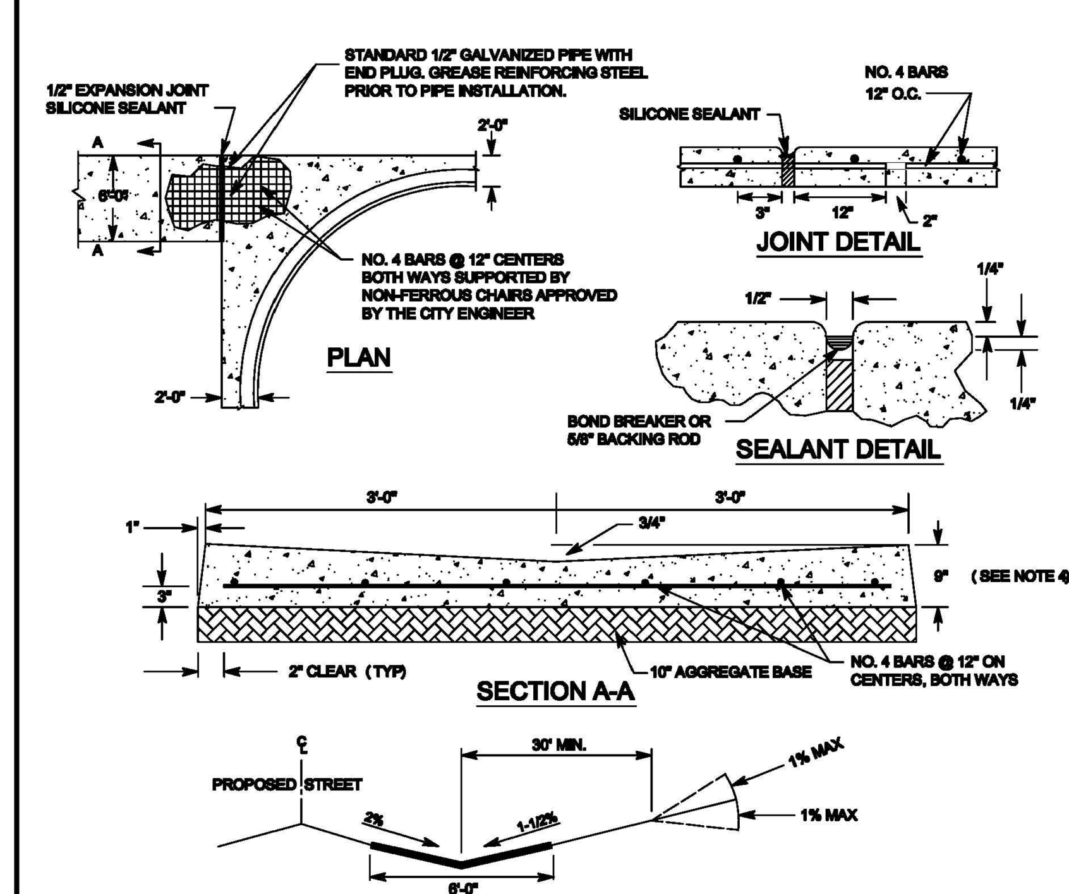
NOT TO SCALE



NEW PAVEMENT TO EXISTING

NOT TO SCALE

CROSS GUTTER



TYPICAL PROFILE AT LOCAL RESIDENTIAL STREET INTERSECTION

NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" 3,000 PSI.
2. FINISHED ASPHALT CONCRETE SURFACE TO BE FLUSH WITH CROSS GUTTER LIP.
3. CONSTRUCTION OF CROSS GUTTER IS NOT ALLOWED ACROSS MAJOR COLLECTOR OR ARTERIAL STREETS.
4. ADJACENT SPANDREL SHALL BE 9" THICK CLASS "A" 3,000 PSI CONCRETE.

DATE APPROVED: 7/08	DWG. NO: ST-020	SCALE: N.T.S.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: CROSS GUTTER			
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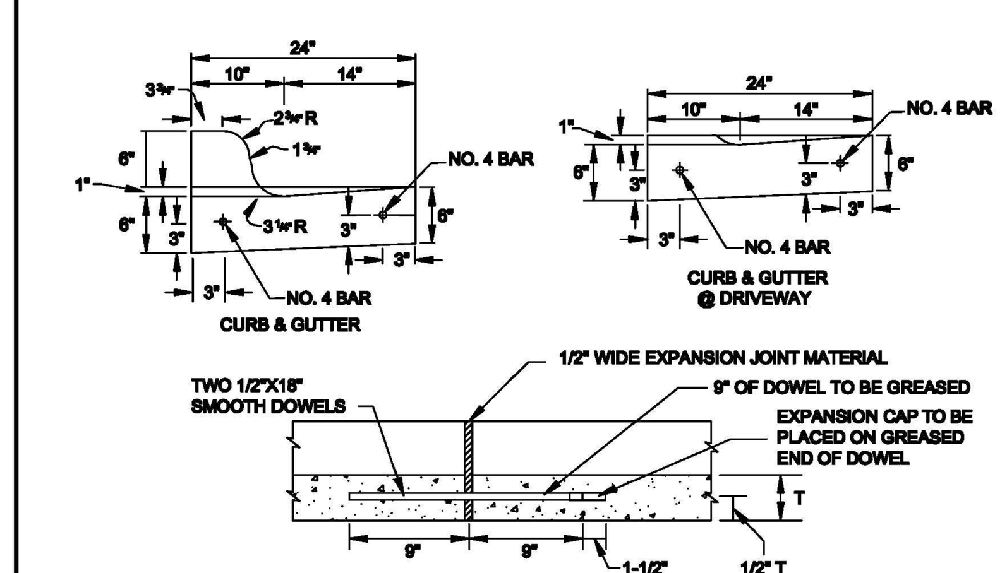
CURB AND GUTTER

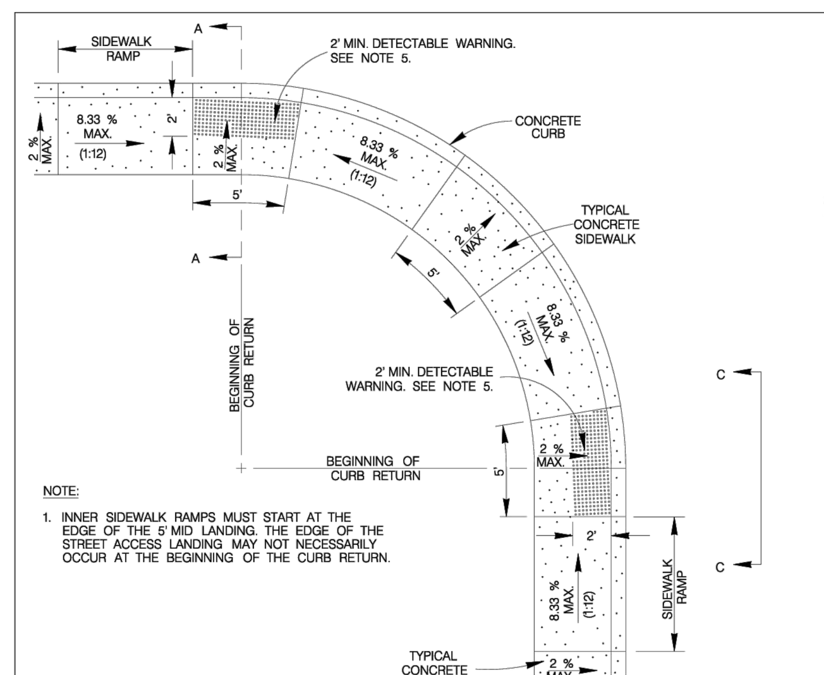


LONGITUDINAL SECTION THRU CURB AND GUTTER SHOWING TYPICAL EXPANSION JOINT DETAILS. REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS. STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

NOTES:

1. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 18".
2. CURB AND GUTTER SHALL HAVE FORMED TOOLED OR SAWED CONTRACTION JOINTS AT ± 10'. THE DEPTH OF THESE JOINTS SHALL BE SUFFICIENT TO ENSURE CRACKING AT THE JOINTS.
3. CURB OR CURB AND GUTTER SHALL HAVE EXPANSION JOINTS AT POINTS OF CURVATURE, AT INTERVALS NO GREATER THAN 100' AND AT ALL ADJACENT STRUCTURES.
4. UNLESS OTHERWISE SHOWN, TRANSITIONS BETWEEN CURBS OR CURBS AND GUTTER OF DIFFERING CROSS SECTION SHALL BE ACCOMPLISHED OVER A 10' LENGTH OR AS APPROVED BY THE CITY ENGINEER.
5. ALL CONCRETE TO BE CLASS "A" 3000 PSI CONCRETE.
6. ALL EXPOSED CONCRETE SURFACES TO BE BRUSHED SMOOTH AND UNIFORM.

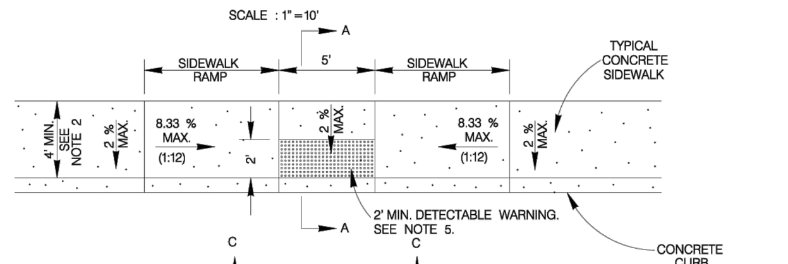
DATE APPROVED: 7/08	DWG. NO: ST-013	SCALE: N.T.S.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: Curb & Gutter			
P:\CURRENT NEW BRAUNFELS DETAILS\2008\			



NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

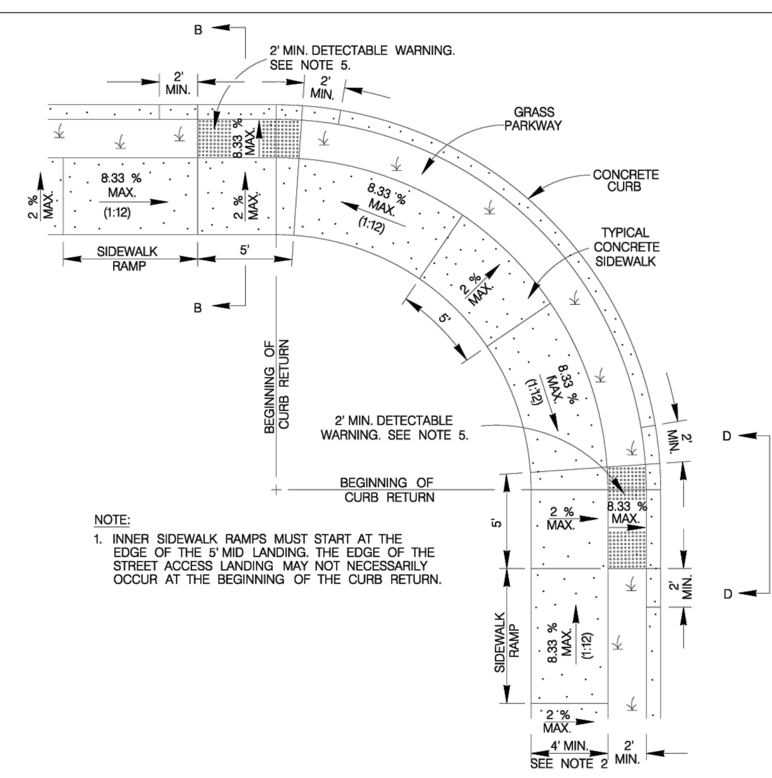
TYPICAL SIDEWALK RAMP – TYPE I

SIDEWALK ABUTS THE CURB
SCALE : 1" = 10'



TYPICAL SIDEWALK RAMP – TYPE II

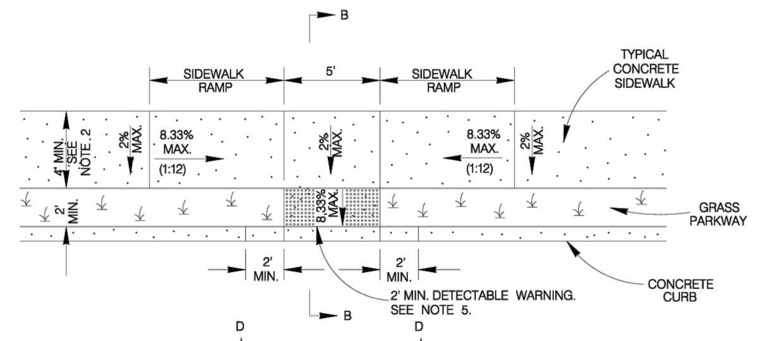
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE : 1" = 10'



NOTE:
1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

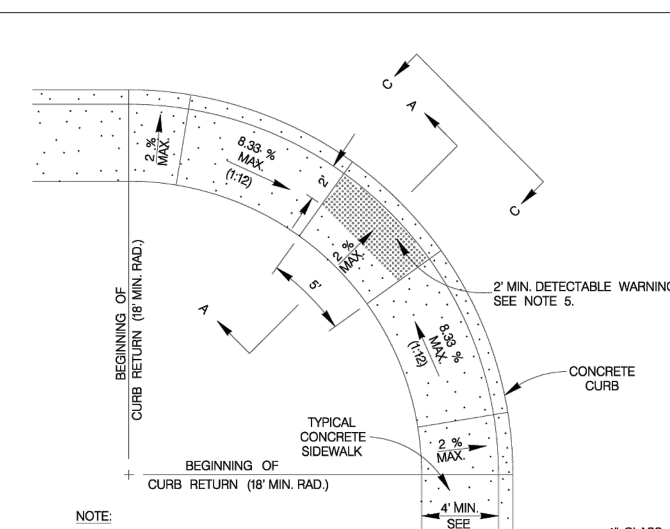
TYPICAL SIDEWALK RAMP – TYPE III

SIDEWALK SEPARATED FROM CURB
SCALE : 1" = 10'



TYPICAL SIDEWALK RAMP – TYPE IV

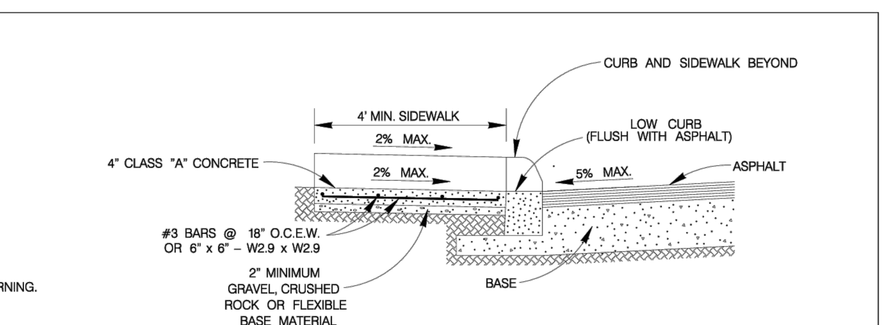
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1" = 10'



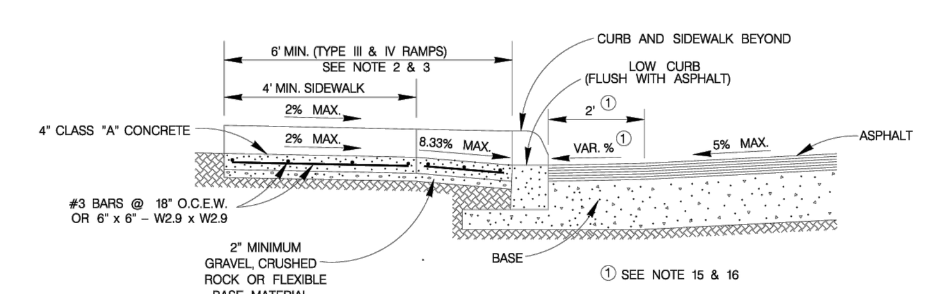
NOTE:
1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 18' MIN. RADIUS.

TYPICAL SIDEWALK RAMP – TYPE V

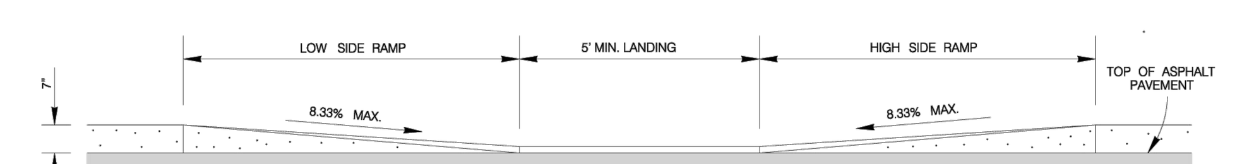
SIDEWALK ABUTS CURB
SCALE : 1" = 10'



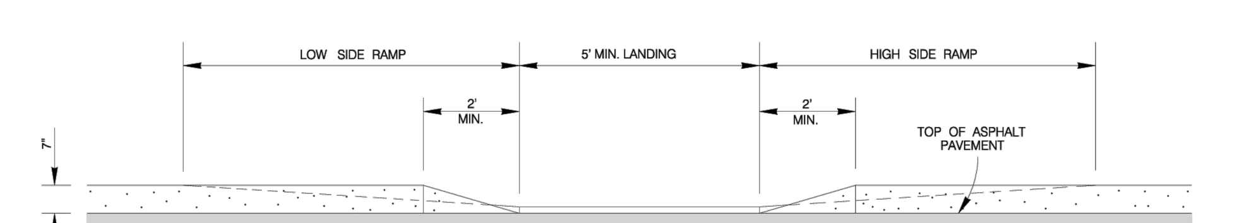
SECTION A–A
SCALE : 1" = 4'



SECTION B–B
SCALE : 1" = 4'



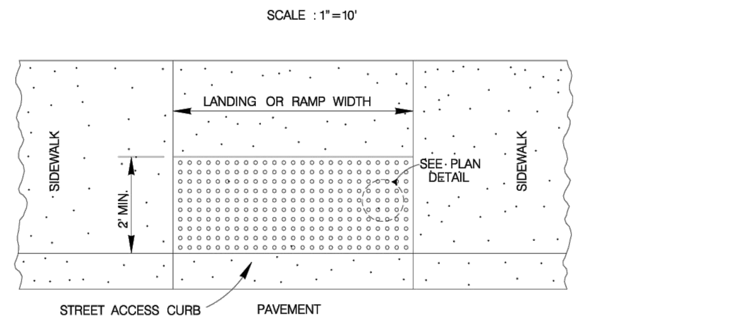
SECTION C–C
CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE : 1" = 4'



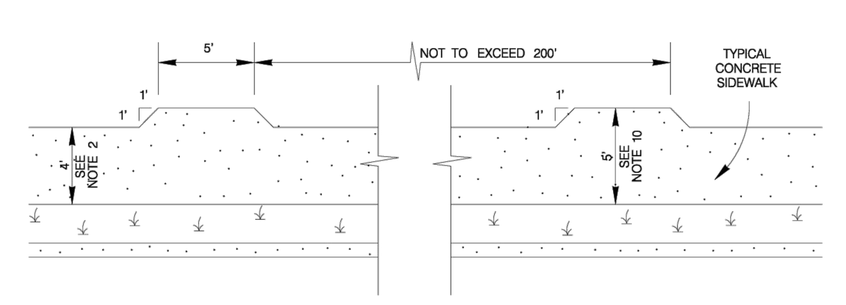
SECTION D–D
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE : 1" = 4'

GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MININMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB-RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23 MM), A HEIGHT OF NOMINAL 0.2 INCHES (5 MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE A CAST-IN-PLACE TILE CONFORMING TO THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS OR PAVERS CONFORMING TO TXDOT STANDARD PED-05, PEDESTRIAN FACILITIES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER" AND / OR "502 – CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6" x 6" – W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. 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 5%.
16. 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.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT.
18. ALL CROSSWALKS SHALL HAVE A MAXIMUM CROSS SLOPE OF 2.0%

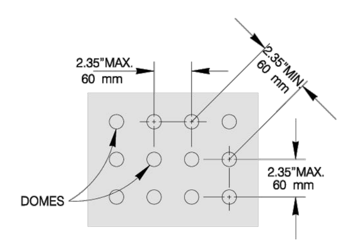


DETECTABLE WARNING SURFACE
SCALE : 1" = 4'

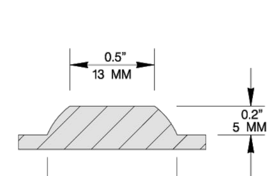


SIDEWALK PASSING SPACE
SCALE : 1" = 10'

TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'–6"	7'–2"
2%	5'–0"	8'–4"
3%	4'–6"	10'–0"
4%	4'–2"	12'–6"
5%	3'–10"	16'–8"



PLAN DETAIL
NO SCALE



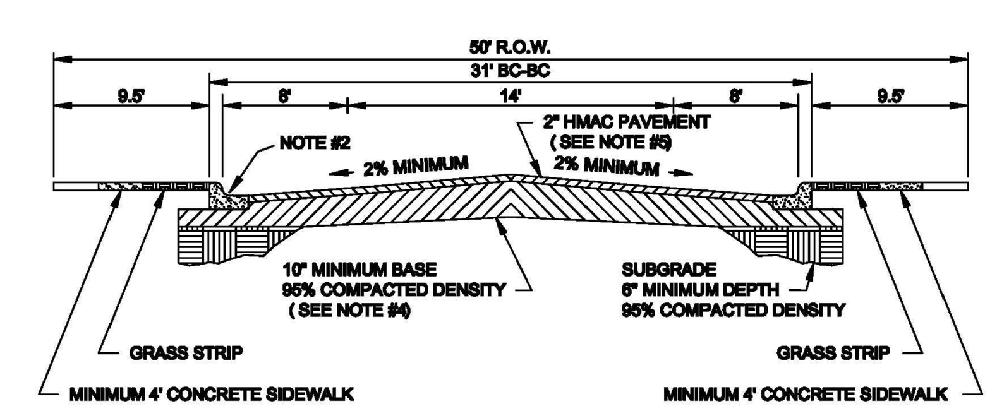
DOME SECTION
NO SCALE

NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED TO BE USED FOR DETECTABLE WARNING ON WHEELCHAIR RAMPS. CONTRACTOR MUST SUBMIT TRUNCATED DOME INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS

_____% SUBMITTAL PROJECT NO.:_____ DATE:_____
DRWN. BY: V. VASQUEZ DSGN. BY:_____ CHKD. BY: R.S. HOSSEINI, P.E. SHEET NO.:____OF____

ONE & TWO FAMILY RESIDENTIAL
LOCAL
PARKING BOTH SIDES



NOTES:

1. STRUCTURAL SECTION REQUIRES DETAILED ENGINEERING DESIGN, SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. CITY WILL ACCEPT DESIGNS THAT INCORPORATE BIAXIAL GEOGRID.
2. SEE CURB DETAIL ST-013.
3. ROADWAY MEASUREMENT SHOWN FROM BACK OF CURB (BC) .
4. FLEXIBLE BASE MATERIAL SHALL BE TYPE "A" GRADE 2 PER TXDOT STD.
5. ASPHALT CONCRETE PAVEMENT SHALL BE TYPE "D" HOT MIX PER TXDOT ITEM 340 (2004) .
6. STRUCTURAL SECTION SHOWN IS BASED ON A CBR VALUE OF 3. THE FOLLOWING ALTERNATIVE SECTIONS MAY BE APPROVED IF SUPPORTED BY ENGINEERING ANALYSIS BASED ON SOILS TESTING.
   A. 6" MINIMUM BASE OVER 6" MINIMUM LIME TREATED SUBGRADE USED IN LIEU OF 10" BASE AS SHOWN.
   B. FOR CBR VALUES GREATER THAN 6.5 - 8" MINIMUM BASE USED IN LIEU OF 10" BASE AS SHOWN.
   C. PROPOSALS FOR ALTERNATIVE ROAD STRUCTURE WITH SUPPORTING ENGINEERING DOCUMENTATION MAY BE SUBMITTED TO THE CITY ENGINEER FOR CONSIDERATION AND APPROVAL.
7. FOR SECTIONS PROVIDING ACCESS TO LESS THAN 40 UNITS 1-1/2" OF HMAC PAVEMENT MAY BE USED IN LIEU OF 2" HMAC PAVEMENT AS SHOWN.
8. IN NO CASE SHALL THE HMAC SECTION BE LESS THAN THAT SHOWN, OR AS PROVIDED IN NOTE 7.
9. BASE MUST EXTEND 1' BEYOND BACK OF CURB, 6" MINIMUM THICKNESS

DATE APPROVED: 7/08	DWG. NO: ST-011	SCALE: N.T.S.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: One & Two Family Residential (Parking)			
P:\CURRENT NEW BRAUNFELS DETAILS\2008\			

ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS, PROPOSED NEW STREETS, ROLLING VALLEY UNIT 12", BY INTEC OF SAN ANTONIO, LP, DATED JANUARY 23, 2013.

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 10153600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED PROFESSIONAL ENGINEER
[illegible]

STREET DETAILS (1 OF 4)

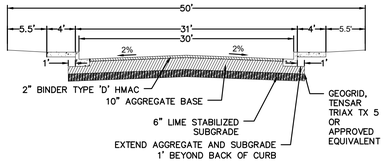
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C4.17

Drawing Name: M:_Projects\248 – Rausch Coleman Homes\014 – Voges Unit 4\CD's\248.014_STREET DETAILS.dwg User: matt-p Dec 21, 2023 – 4:48pm



RESIDENTIAL LOCAL PAVEMENT SECTION

Summary Table A – Summary of Recommended Options – Flexible Pavement **
Minimum Flexible Pavement Recommendations – CBR = 2.0 **

Classification	Surface Course	Aggregate Base, Inches	Cement Treated Aggregate Base	Geogrid	Subgrade, Inches	Structural Number
Emergency Access	Chip Seal	13.00	-	No	8*	2.46
	Chip Seal	-	10.00	No	8*	2.74
	Chip Seal	10.00	-	Yes	8*	2.91
	2.0" Type D Asphalt	8.00	-	No	6*	2.48

FIRE ACCESS PAVEMENT SECTION

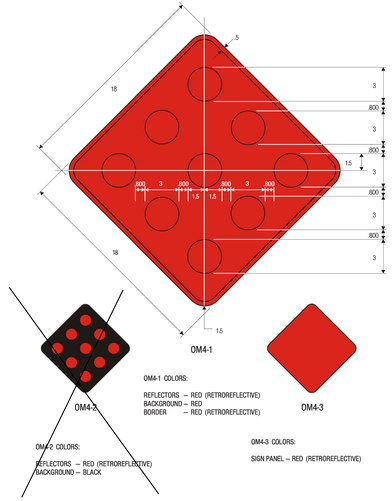
Summary of Recommended Options – Flexible Pavement **
Minimum Flexible Pavement Recommendations – CBR = 2.0 **

Classification	Hot Mix Asphaltic Concrete Thickness inches	Aggregate Base Thickness inches	Geogrid	Subgrade Thickness inches	Structural Number
Residential Local	2.00 Type D	10.00	Yes	6*	2.96
~~Residential Local~~	~~3.00 Type D~~	~~8.00~~	~~Yes~~	~~6*~~	~~3.09~~
Residential Collector	3.00 Type D	16.50	Yes	6*	4.53

NOTE:

1. ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS, PROPOSED NEW STREETS, VOGES SUBDIVISION, UNITS 1,2,3,4 NEW BRAUNFELS, TEXAS", BY INTEC OF SAN ANTONIO, LP, DATED SEPTEMBER 27, 2019.
2. THE SUBGRADE SHOULD BE STABILIZED USING LIME TO A DEPTH OF 6 INCHES. LIME CONTENT OF 7.0 PERCENT OF THE DRY WEIGHT OF THE SOIL TO BE TREATED IS RECOMMENDED; A UNIT WEIGHT OF THE CLAY OF 100 LBS PER CUBIC FEET MAY BE USED.
   2.1. LIME CONTENT FOR 6 INCH STABILIZATION - 30 LBS PER SQ YARD
3. THE SUBGRADE SHOULD BE STABILIZED USING LIME IN ACCORDANCE WITH THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE FOLLOWING:
   3.1. PLASTICITY INDEX OF 20 OR LESS
   3.2. PH OF 12.4 OR GREATER
4. THE SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULPHATE CONTENT PRIOR TO INSTALLATION OF THE LIME OR CEMENT.

TYPICAL PAVEMENT SECTION



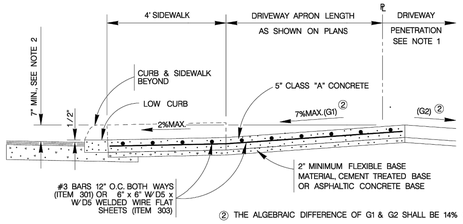
OM4-1 COLORS:
REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – RED
BORDER – RED (RETROREFLECTIVE)

OM4-2 COLORS:
REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – BLACK

OM4-3 COLORS:
SIGN PANEL – RED (RETROREFLECTIVE)

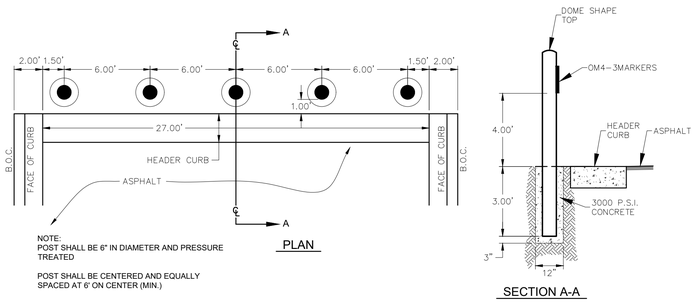
11-4

OM4-3 DETAIL



② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPE 'C' LOT DRIVEWAY DETAIL



NOTE:
POST SHALL BE 6" IN DIAMETER AND PRESSURE TREATED

POST SHALL BE CENTERED AND EQUALLY SPACED AT 6' ON CENTER (MIN.)

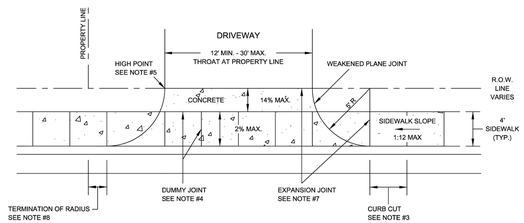
PLAN

SECTION A-A

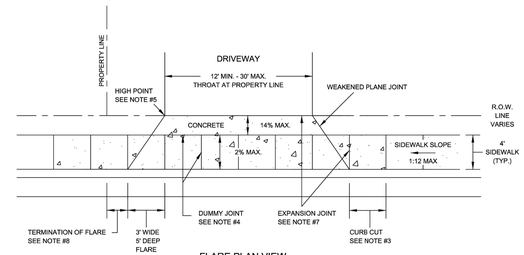
END OF ROAD MARKERS

NOT TO SCALE

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



RADIUS PLAN VIEW

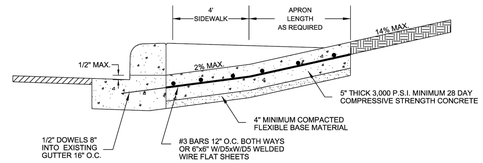


FLARE PLAN VIEW

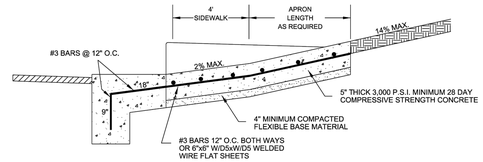
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



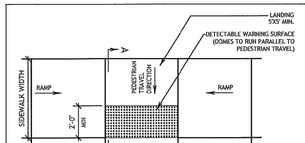
NO EXISTING CURB STRUCTURAL SECTION

NOTES:

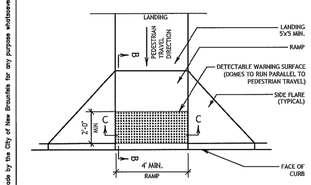
1. WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.
2. PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED PROVIDED CROSS SLOPE OF SIDEWALK IS NO GREATER THAN 2%.
3. CURB CUT LENGTH NO GREATER THAN AS REQUIRED TO MATCH SLOPE OF ADJACENT SIDEWALK.
4. 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.
5. 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.
6. DRIVEWAY THROAT TRANSITION MAY OCCUR OUTSIDE OF ROW.
7. PROVIDE EXPANSION JOINTS AT ALL SIDEWALK AND DRIVEWAY THROAT JOINTS. EXPANSION JOINTS SHALL BE PLACED USING 1/2" ASPHALTIC MATERIAL WITH 1/2" DOWELS 16" O.C.
8. 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 OR ZERO LOT LINE LOTS. ON 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	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

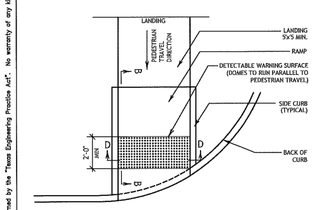
City of New Braunfels ENGINEERING DEPARTMENT



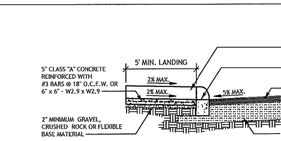
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



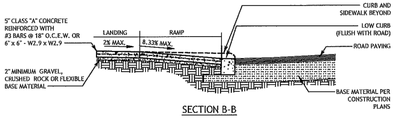
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



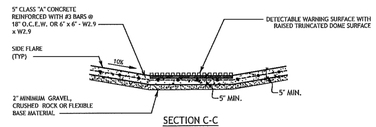
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



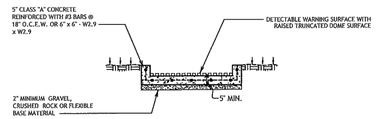
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

CURB RAMP NOTES

1. 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.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMPS ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE WALK WAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN THE AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS). CITY ENGINEER OR BUILDING OFFICIAL MAY ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.
3. THE MINIMUM STANDARD SIDEWALKS SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 118-49 OF THE NEW BRAUNFELS CODE OF ORDINANCES.
4. ALL LANDINGS WHERE REQUIRED SHALL BE 5'X 5' (60"X60") MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
5. RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1Y:12ft). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1Y:50ft).
6. SIDEWALK GRADES 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.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1Y:10ft) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED IN-LIEU 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.
8. MANEUVERING 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.
9. 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 RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
10. EXISTING FEATURES THAT COMPLY WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
11. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
12. 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.
13. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
14. 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 5%.
15. 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.
16. 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 X W2.9 WIRE MESH.
17. 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

1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. 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.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN 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 RADIUS.
6. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

City of New Braunfels

ENGINEERING DIVISION
550 LANDA 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

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the City of New Braunfels for any purpose whatsoever.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

STREET DETAILS (2 OF 4)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C4.18

Drawing Name: M:_Projects\248 – Rausch Coleman Homes\014 – Voges Unit 4\03\248.014_STREET DETAILS.dwg User: matt-p Dec 21, 2023 - 4:48pm

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

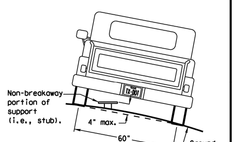
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SBO = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

Anchor Type
- UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))
- UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))
- WS = Wedge Anchor Steel - (see SMD(TWT))
- WP = Wedge Anchor Plastic (see SMD(TWT))
- SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))
- SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))

Sign Mounting Designation
- P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))
- T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))
- U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))
  IF REQUIRED
  (EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))
- BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))
- WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))
- EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

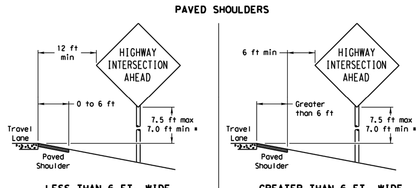
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

SIGN LOCATION

PAVED SHOULDERS



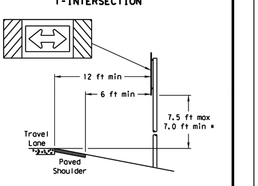
LESS THAN 6 FT. WIDE

When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.

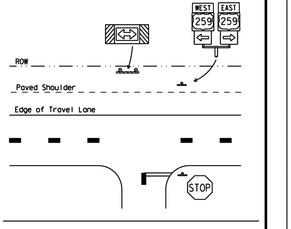
GREATER THAN 6 FT. WIDE

When the shoulder is greater than 6 ft in width, the sign must be placed at least 6 ft. from the edge of the shoulder.

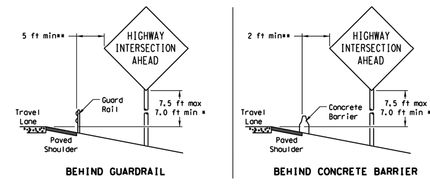
T-INTERSECTION



When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.



BEHIND BARRIER



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

**Sign clearance based on distance required for proper guard rail or concrete barrier performance.

* Signs shall be mounted using the following condition that results in the greatest sign elevation:

(1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or

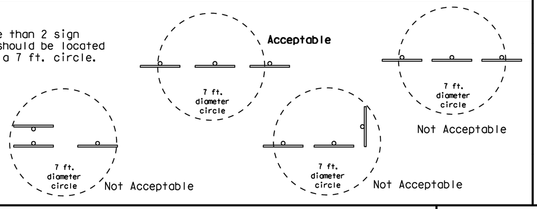
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

The maximum values may be increased when directed by the Engineer.

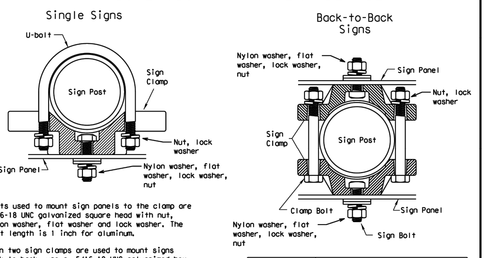
See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:
http://www.txdot.gov/publications/traffic.htm

No more than 2 sign posts should be located within a 7 ft. circle.



TYPICAL SIGN ATTACHMENT DETAIL



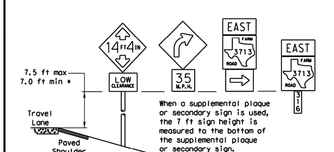
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

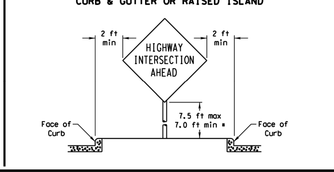
Sign clamps may be either the specific size clamp or the universal clamp.

Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES

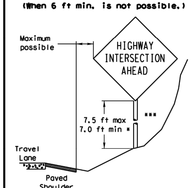


CURB & GUTTER OR RAISED ISLAND



RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

*** Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS SMD(GEN)-08

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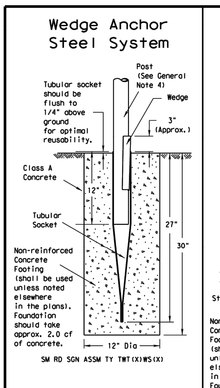
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26A

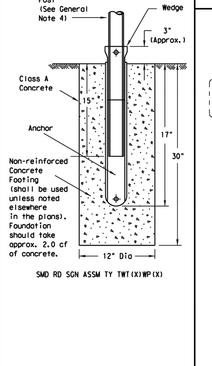
DATE:
FILE:

Wedge Anchor Steel System



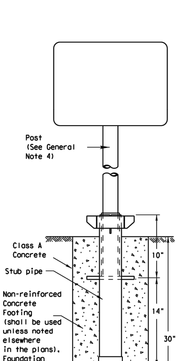
SM RD SGN ASSM TY TWT(X)WS(X)

Wedge Anchor High Density Polyethylene (HDPE) System

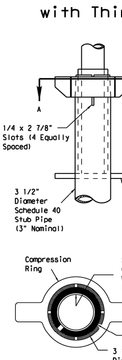


SM RD SGN ASSM TY TWT(X)WP(X)

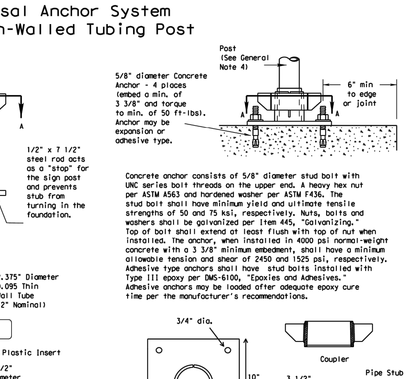
Universal Anchor System with Thin-Walled Tubing Post



SM RD SGN ASSM TY TWT(X)UA(P)

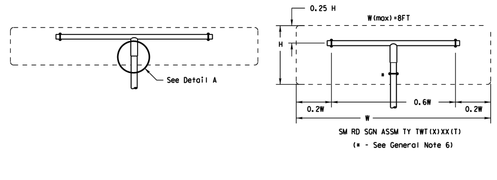


Plastic insert must be used when using the TWT with either the Universal Anchor System or the Bolt Down Universal Anchor System. The insert should be approx. 10" long and cover the tubing from just above the top of the stub pipe to the bottom of the sign post when using the Universal Anchor System. The insert should be cut to approx. 4 1/2" when used with the Bolt Down Universal Anchor System.



SM RD SGN ASSM TY TWT(X)UB(P)

Sign Installation Using a Prefabricated T-Bracket for Thin-Wall Tubing Post



SM RD SGN ASSM TY TWT(X)XX(T)
(* - See General Note 6)

NOTE

The devices shall be installed per manufacturer's recommendations. Installation procedures shall be provided to the Engineer by Contractor.

GENERAL NOTES:
1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .099"
   Outside diameter (uncoated) shall be within the range of 2.369" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For preapated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE
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 depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Place concrete into hole until it is approximately flush with the ground. Concrete shall be Class A.
3. Insert tubular socket into concrete until top of socket is approximately 1/4 " above the concrete footing.
4. Plumb the socket. Allow a minimum 4 days for concrete to set, unless otherwise directed by Engineer..
5. Attach the sign to the sign post.
6. Insert the sign post into socket and align sign face with roadway.
7. Drive the wedge into the socket to secure post. This will leave approximately 3 inches of the wedge exposed.

UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURE
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 depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. Insert base post in hole to depths shown and backfill hole with concrete.
3. Level and plumb the base post using a torpedo level and allow concrete adequate time to set. The bottom of the slots provided in the stub pipe shall remain above the top of the concrete foundation.
4. Attach the sign to the sign post.
5. Install plastic insert around bottom of post.
6. Insert sign post into base post. Lower until the post comes to rest on steel rod.
7. Seat compression ring using a hamer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
8. Check sign post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST SMD(TWT)-08

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9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26E

DATE:
FILE:

SHEET C4.19

HMT PROJECT NO.: 248.014
REVIEWED BY: ESP
DESIGNED BY: MP
DRAWN BY: MP
DATE: DECEMBER 2023

NO.	REVISION DESCRIPTION	REVISION DATE

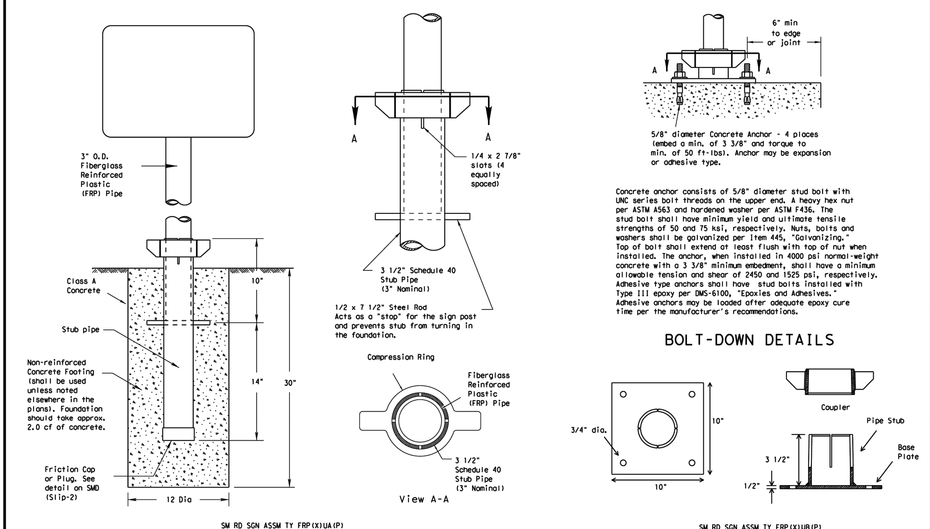
STREET DETAILS (3 OF 4)

VOGES SUBDIVISION
UNIT 3

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

DATE:
FILE:

Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



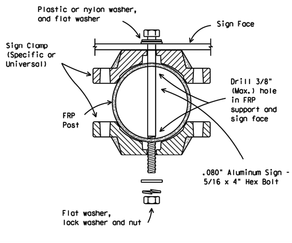
Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper ends. A heavy hex nut per ASTM A563 and hardened washer per ASTM F436. The stud bolt shall have minimum yield and ultimate tensile strengths of 50 and 75 ksi, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Top of bolt shall extend at least flush with top of nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 3 3/8" minimum embedment, shall have a minimum allowable tension and shear of 2450 and 1525 psi, respectively. Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxies and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations.

BOLT-DOWN DETAILS

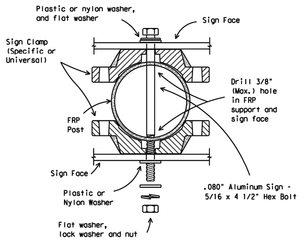
SM RD SGN ASSM TY FRP(X1)UA(P)

SM RD SGN ASSM TY FRP(X1)UB(P)

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 and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
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 clamps. The website address is: http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS

1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
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:
   Texas Department of Transportation
   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 depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if installed in solid rock.
4. Level and plumb the base post with coupler using a torpedo level and let concrete set a minimum of 4 days, unless otherwise directed by Engineer. Bottom of base post slots shall be above the concrete footing.
5. Attach sign to FRP post.
6. Insert sign post into base post. Lower until the post comes to rest on the steel rod.
7. Use hammer to ensure the coupler is firmly seated. Top of coupler should be level with top of base post in most instances.
8. Check sign to ensure there is no twist. If loose, increase the tightening of 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. Attach sign to FRP post.
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.
6. Check sign to ensure there is no twist. If loose, increase the tightening of coupler.

Texas Department of Transportation
Traffic Operations Division

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

SMD(FRP)-08

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9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26F

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

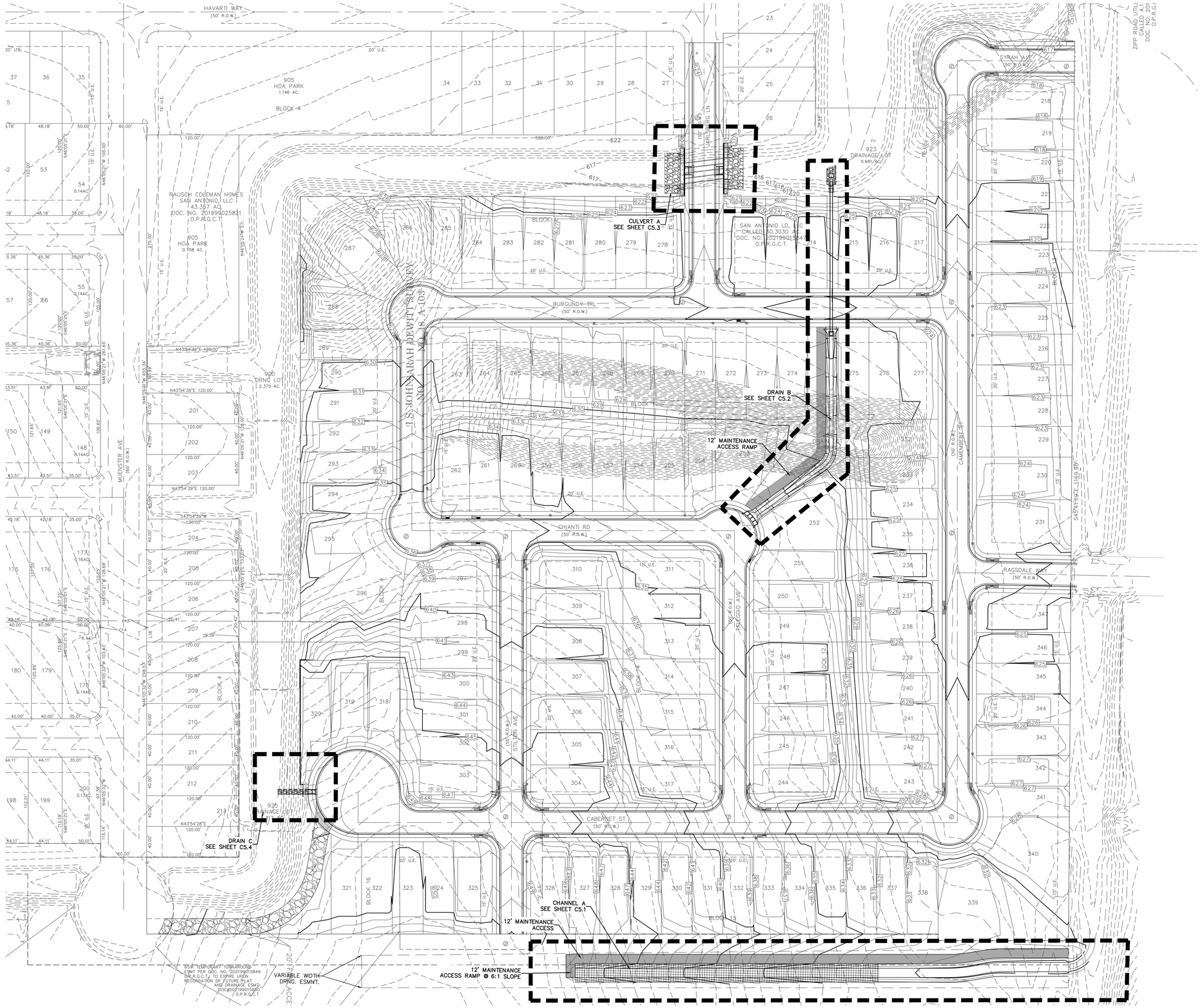
SHEET C4.20

STREET DETAILS (4 OF 4)

VOGES SUBDIVISION
UNIT 3

ERIC S. PEW 125317 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600



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

N

0 30 60 120

SCALE: 1" = 60'

DRAINAGE FEATURES, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

SILT SHALL BE REMOVED AND THE BASIN RETURNED TO ORIGINAL LINES AND GRADES WHEN STANDING WATER CONDITIONS OCCUR OR THE BASIN STORAGE VOLUME IS REDUCED BY MORE THAN 10%.

A. TO LIMIT EROSION, NO UNVEGETATED AREA SHALL EXCEED 10 SQ. FT. IN EXTENT.

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C. BASINS SHALL BE MOWED ANNUALLY BETWEEN THE MONTHS OF JUNE AND SEPTEMBER.

D. CORRECTIVE MAINTENANCE IS REQUIRED ANY TIME A BASIN DOES NOT DRAIN COMPLETELY WITHIN 60 HOURS OR CESSATION OF INFLOW (IE: NO STANDING WATER IS ALLOWED).

E. STRUCTURAL INTEGRITY OF BASINS SHALL BE MAINTAINED AT ALL TIMES.

F. MAINTENANCE VEHICLE FOR POND ACCESS SHOULD BE A BOBCAT S175 SKID STEER LOADER OR VEHICLE OF EQUAL TO LESSER SIZE.

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.

HMT
ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL STORM

VOGES SUBDIVISION
UNIT 3

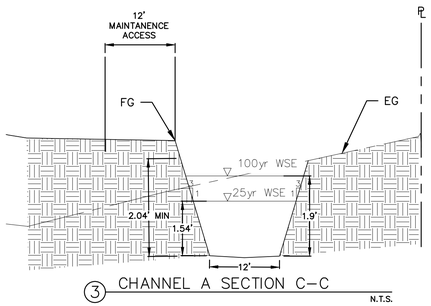
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

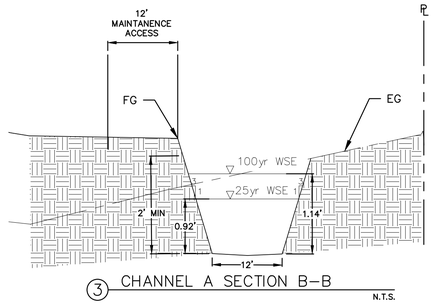
SHEET

C5.0

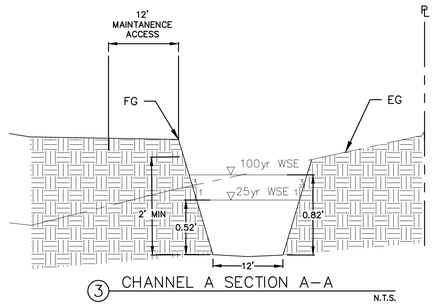
Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\03\248.014_OVERALL STORM.dwg User: matt-p Dec 21, 2023 - 4:49pm



3 CHANNEL A SECTION C–C
N.T.S.



3 CHANNEL A SECTION B–B
N.T.S.

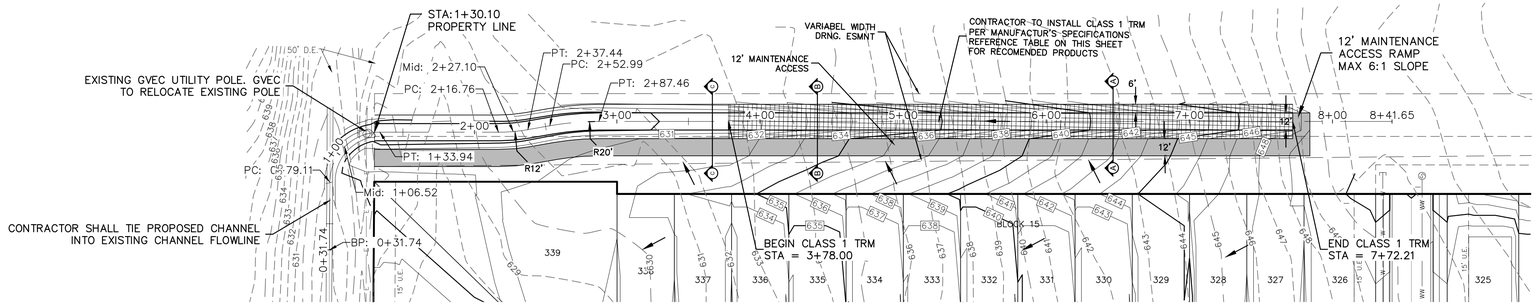


3 CHANNEL A SECTION A–A
N.T.S.

LEGEND

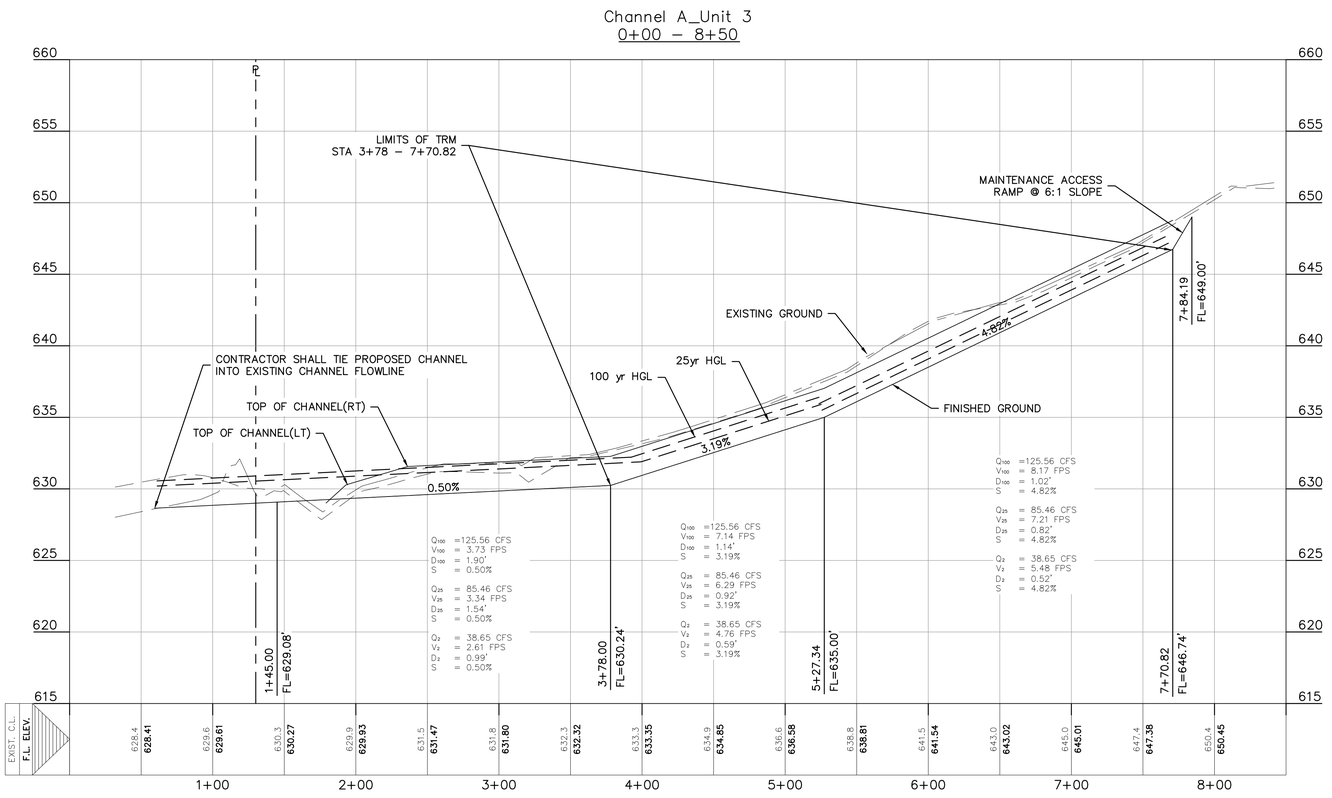
700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
S.B.C.	SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
	UTILITY CROSSING

SCALE: 1" = 50' HORIZ.
1" = 5' VERT.



Permanent Turf Reinforcement Mat	Class	Max Shear (vegitated)	Max Velocity	Manning's N (unveg)*
Landlok 435	1	8	12	0.025
Futerra 7010 Green Armor	1	8	16	.025 - .045
EroNet P300	1	8	16	.020 - .034
Landlok 450	2	10	18	0.025
VMax P350	2	10	20	.012 - .041
VMax P550	2	12	22	.023 - .029
Futerra 7020 Green Armor	3	17	20	.025 - .045
Futerra R45 (HP-TRM)	3	20	30	-

Note: Contractor to select permanent turf reinforcement mat from list above based on class. If an alternate mat is preferred, contact the engineer on record to approve any unlisted erosion control mats. Installation of turf reinforcement mat shall be in accordance with manufacturers specifications



DRAINAGE FEATURES AND EQUIPMENT ACCESS REQUIREMENTS:

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HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

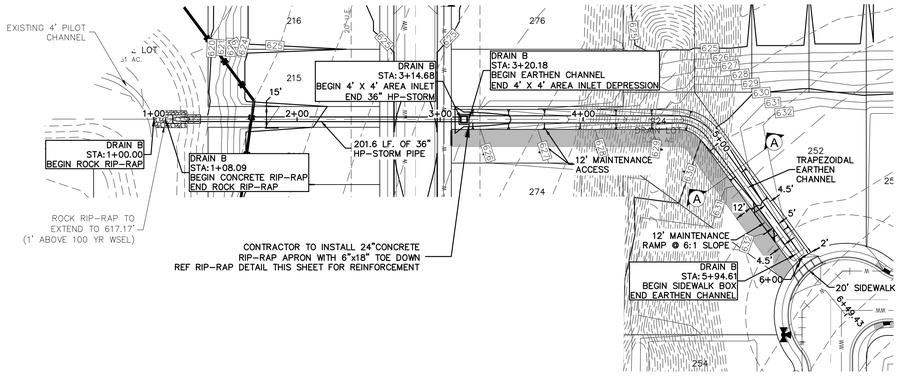
CHANNEL A P&P

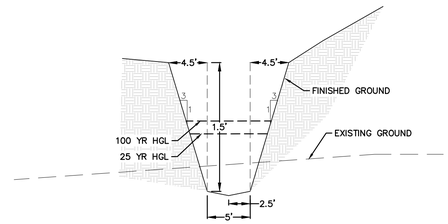
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C5.1





1 DRAIN B SECTION A–A
N.T.S.

Q_{100} =33.68 CFS
V_{100} = 5.51 FPS
D_{100} = 0.82'
S = 2.48%

Q_{25} = 23.09 CFS
V_{25} = 4.92 FPS
D_{25} = 0.67'
S = 2.48%

Q_2 = 10.54 CFS
V_2 = 3.79 FPS
D_2 = 0.44'
S = 2.48%

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LEGEND

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700	PROPOSED CONTOURS
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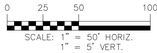
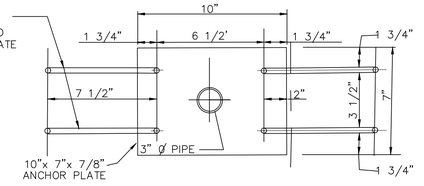
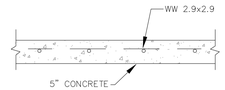
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
S.B.C.	SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
	UTILITY CROSSING

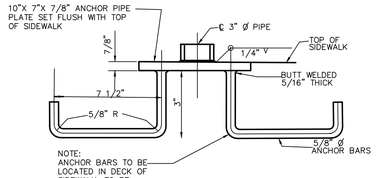




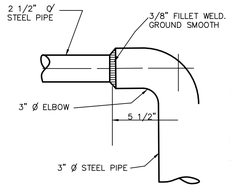
PLAN OF PIPE ANCHOR



A RIP–RAP SECTION
N.T.S.

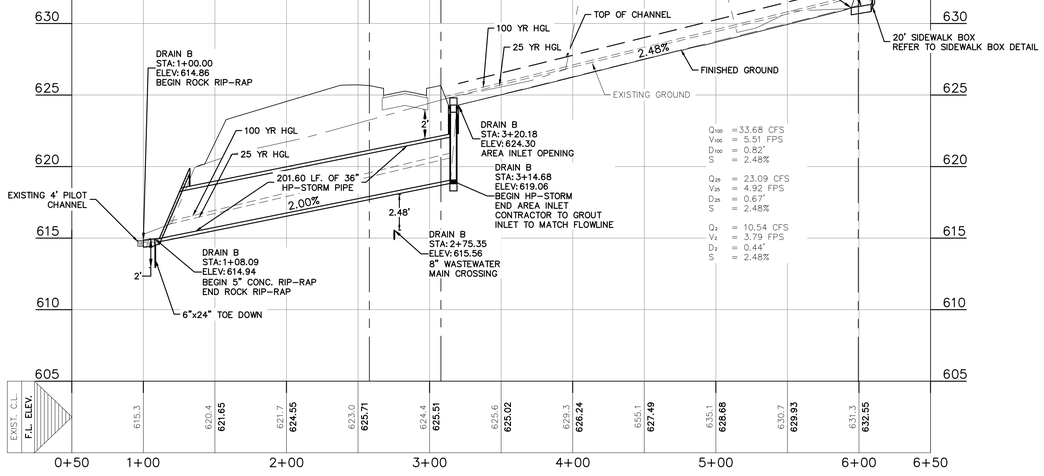


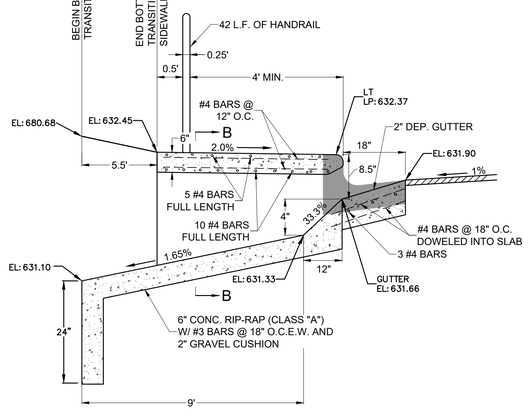
PIPE ANCHOR



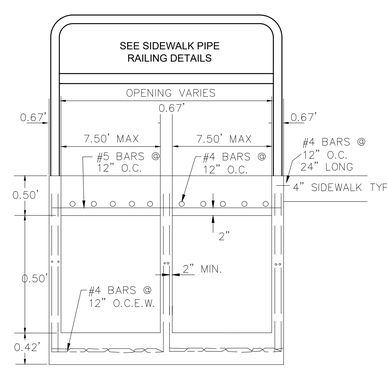
NOTE:
RAILING TO BE PAINTED:
SHOP COAT: "RUST–OLEUM" NO. 678 QUICK DRYING RED PRIMER.
FIRST FIELD COAT: "RUST–OLEUM" NO. 7773 ZINC CHROMATE PRIMER.
SECONDFIELD COAT: "RUST–OLEUM" NO. 7715 "ALUMINUM" OR APPROVED EQUAL.

90° WELDED ELBOW





SECTION "A-A"
N.T.S.



SECTION "B-B"
N.T.S.

1 SIDEWALK BOX SECTION DETAIL
N.T.S.

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PROFESSIONAL ENGINEER

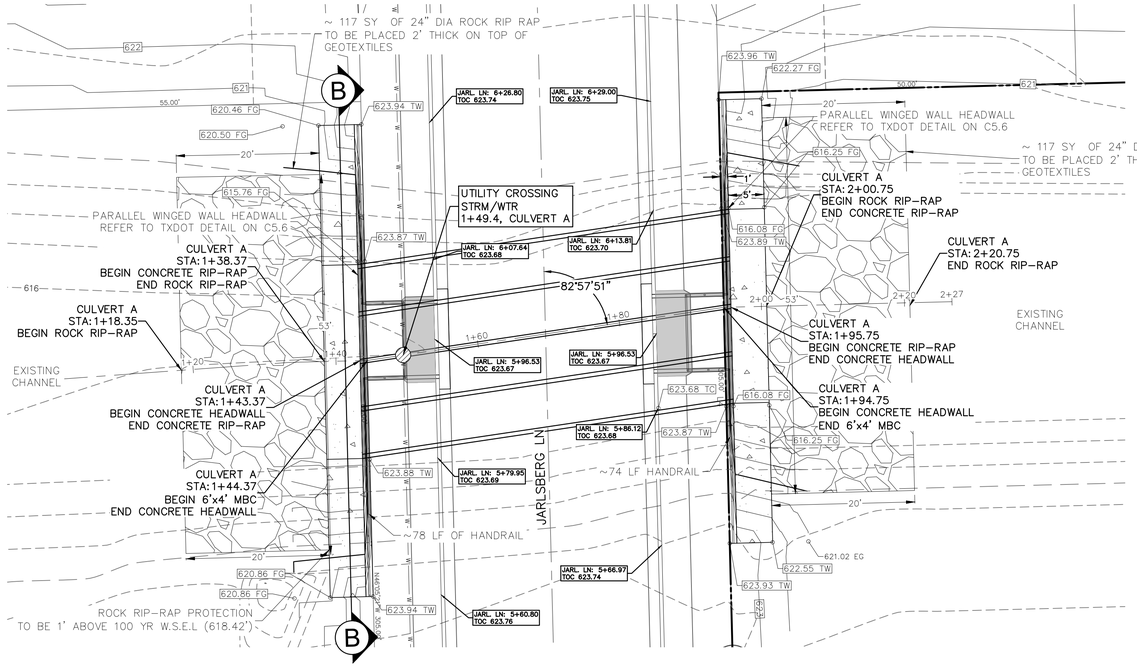
DRAIN B P&P

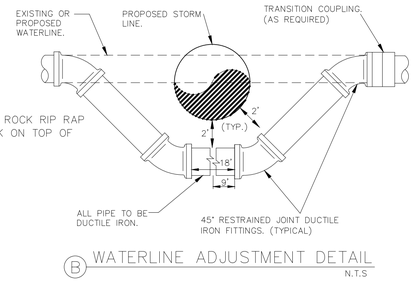
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C5.2





B WATERLINE ADJUSTMENT DETAIL
N.T.S

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LEGEND

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700	PROPOSED CONTOURS
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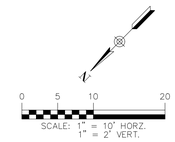
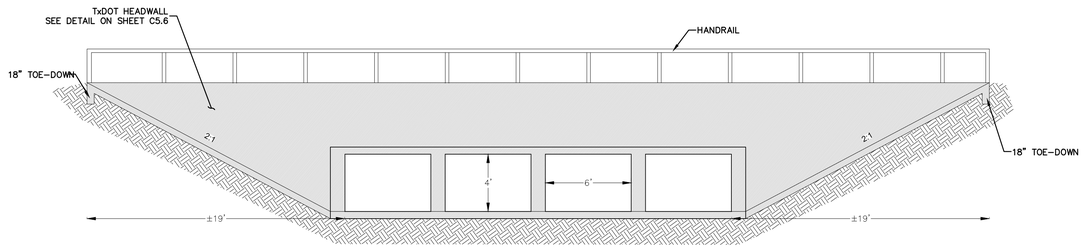
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
S.B.C.	SINGLE BOX CULVERT
	PROPOSED STORM DRAIN LINE
	UTILITY CROSSING

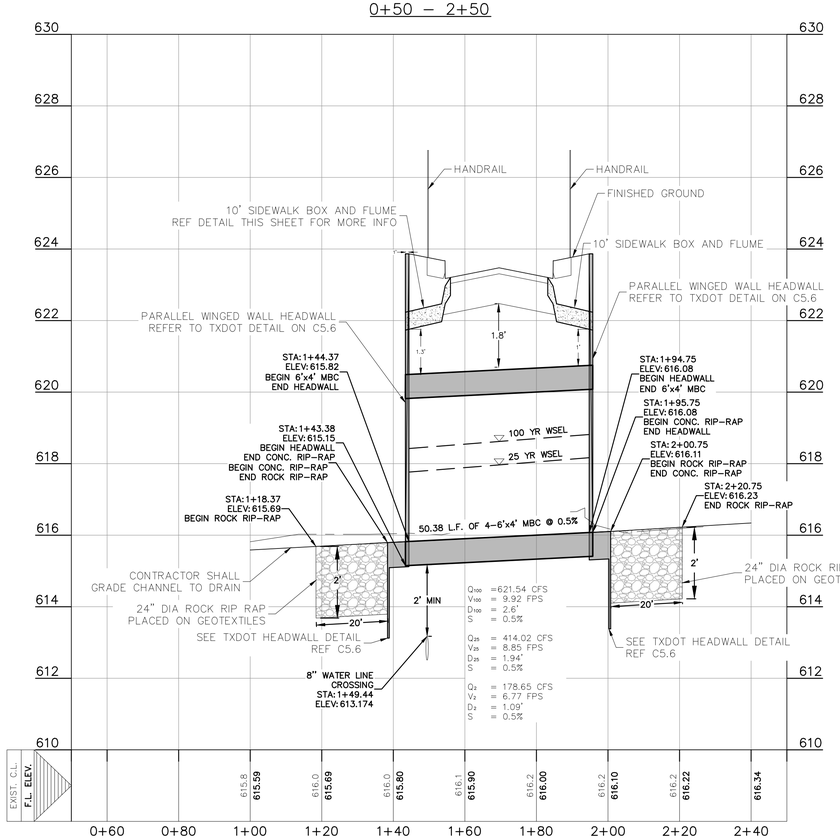


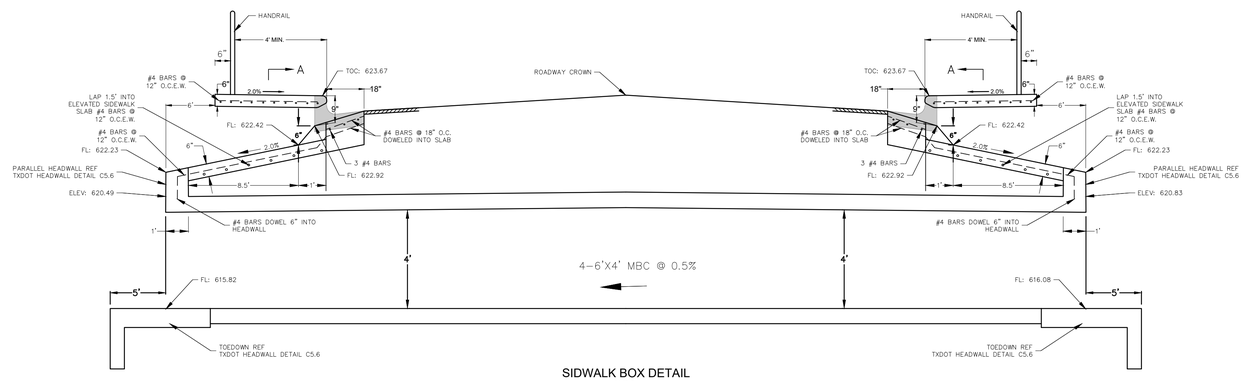
NOTE:
TXDOT NBI # IS 15-095-0-B099-22-001



SECTION B-B
CULVERT CROSSING DETAIL
N.T.S.

CULVERT A1
0+50 – 2+50





SIDWALK BOX DETAIL
N.T.S.

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PROFESSIONAL ENGINEER

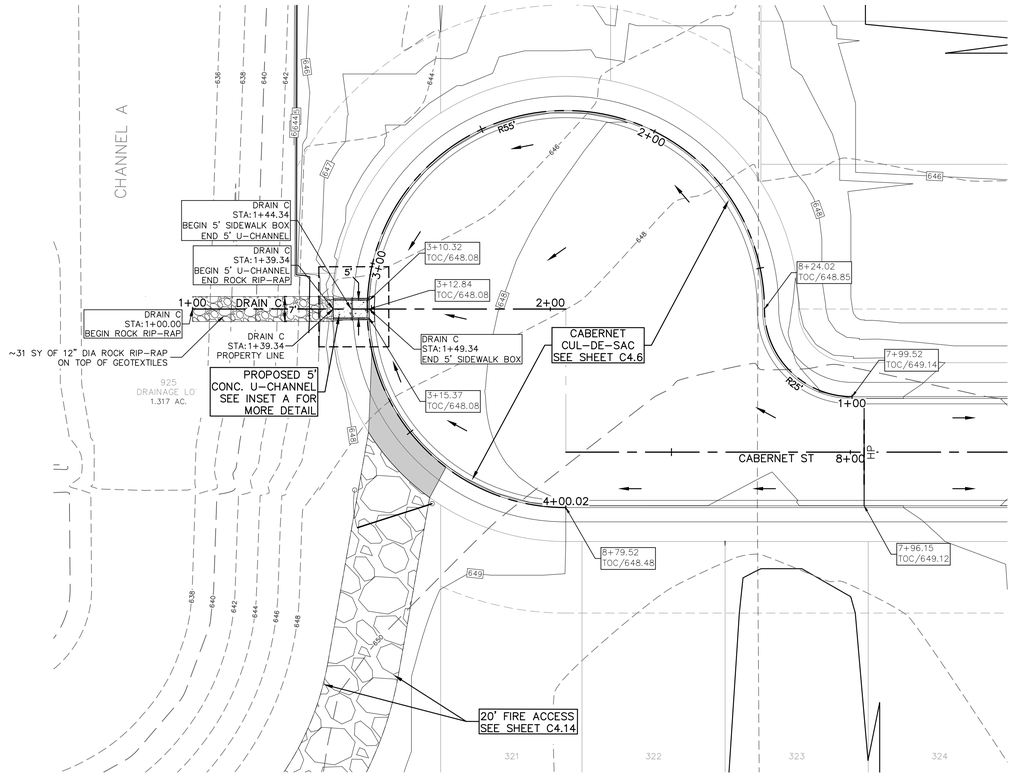
CULVERT A P&P

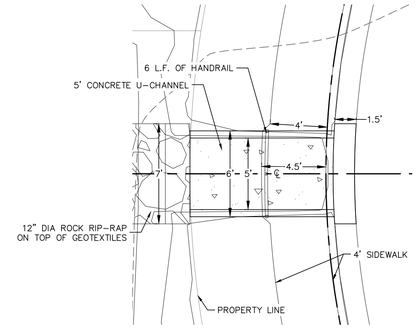
VOGES SUBDIVISION
UNIT 3

NO.	REVISION NOTES	REVISION DESCRIPTION	DATE	REVISION DATE

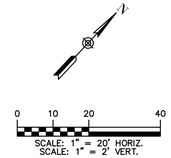
DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C5.3





INSET A
SCALE 1": 5'



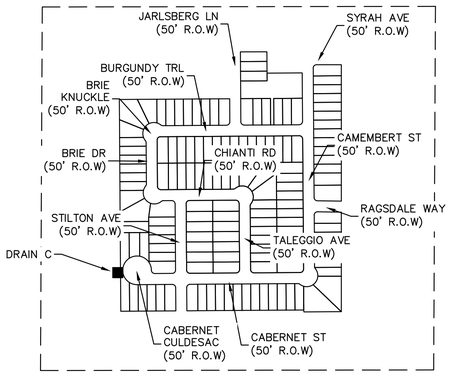
LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
	FLOW ARROW
	WASHOUT CROWN AREAS
	SPILL CURB
	EXISTING GROUND LEFT (EG LT)
	EXISTING GROUND RIGHT (EG RT)
	EXISTING GROUND CENTER (EG CTR)
	PROPOSED TOP OF CURB (PR TC)
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
1	SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C4.17)
	SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

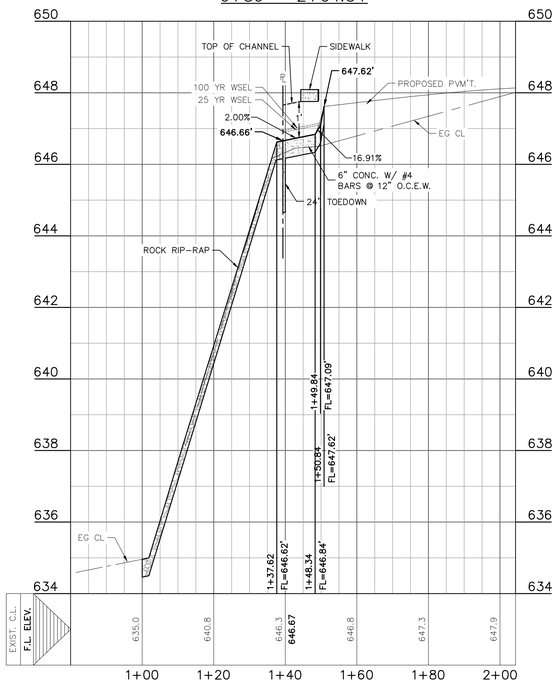
1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
5. PER NEW BRAUNFELS ORDINANCE SEC. 114-98(a)(6) ALL DRIVEWAY LOCATED ON A SINGLE FAMILY RESIDENCE ON A LOCAL STREET SHALL HAVE A MINIMUM SPACING OF 20'

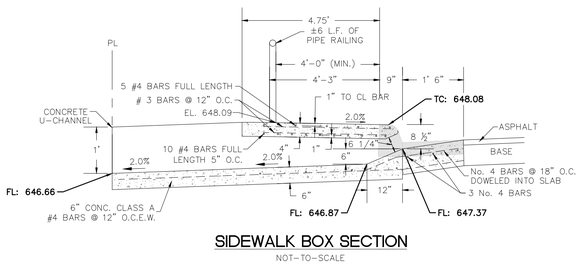
KEY MAP



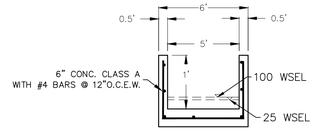
N.T.S

DRAIN C
0+80 – 2+04.34





SIDEWALK BOX SECTION
NOT-TO-SCALE



CHANNEL SECTION
N.T.S

Q_{100} = 5.75 CFS
V_{100} = 5.23 FPS
D_{100} = 0.22'
S = 2.00%

Q_{25} = 3.89 CFS
V_{25} = 4.68 FPS
D_{25} = 0.17'
S = 2.00%

Q_2 = 1.77 CFS
V_2 = 3.22 FPS
D_2 = 0.11'
S = 2.00%

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NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600
HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

DRAIN C P&P

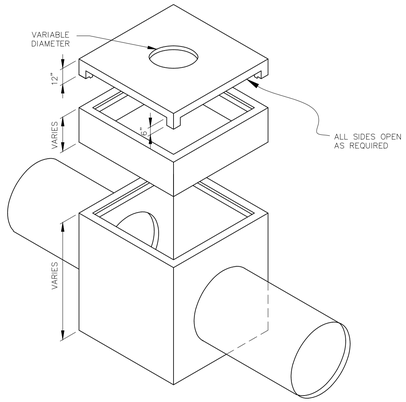
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

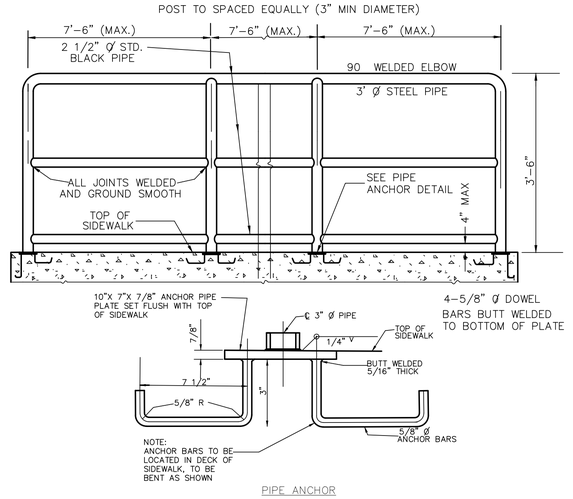
DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C5.4

Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\03-\248.014 DRAIN C P&P.dwg User: mattr-p Dec 21, 2023 - 4:50pm



TYPICAL 4-WAY INLET DETAIL

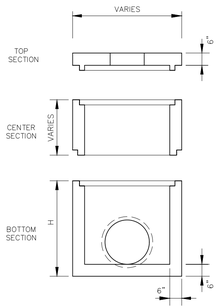


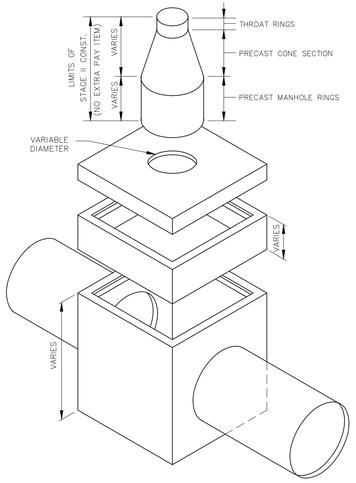
PIPE ANCHOR

SIDEWALK PIPE RAILING DETAILS

N.T.S.

NOTE: RAILING TO BE PAINTED: SHOP COAT: "RUST-OLEUM" NO. 678 QUICK DRYING RED PRIMER. FIRST FIELD COAT: "RUST-OLEUM" NO. 7773 ZINC CHROMATE PRIMER. SECONDFIELD COAT: "RUST-OLEUM" NO. 7715 "ALUMINUM" OR APPROVED EQUAL.

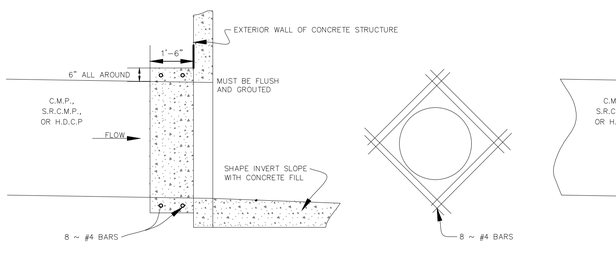




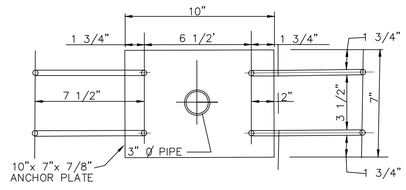
NOTES:

1. REFERENCE RESPECTIVE DRAIN PLAN & PROFILE FOR TYPE AND SIZE
2. STANDARD STRUCTURAL DESIGN IS BASED ON AASHTO HS 20 WHEEL LOADING
3. MATERIAL SPECIFICATIONS:
   CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 4500 P.S.I.
   REINFORCING TO COMPLY WITH ASTM A615 GRADE 60, A706 GRADE 60 OR A497 GRADE 70; BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS
4. STRUCTURE TO LIE ON COMPACTED GRANULAR BASE TO INSURE UNIFORM DISTRIBUTION OF SOIL PRESSURES
5. SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED (NO EXTRA PAY ITEM)
6. COORDINATE PIPE OPENINGS WITH MANUFACTURER
7. PRECAST BOXES BY OLDCASTLE OR APPROVED EQUAL

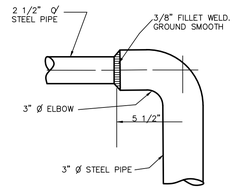
TYPICAL DETAIL



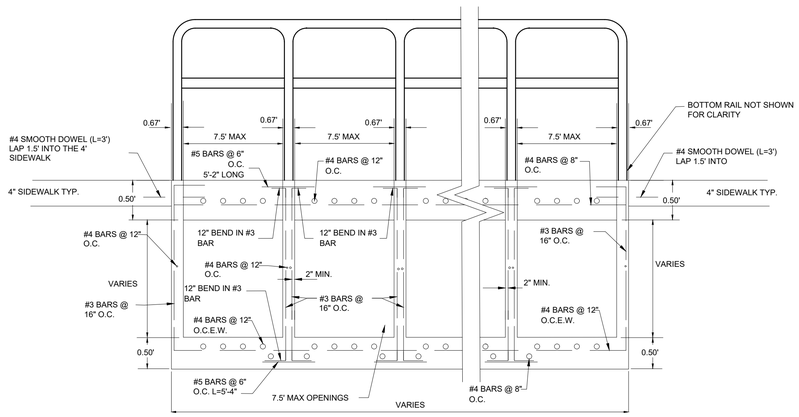
CONCRETE COLLAR DETAIL



PLAN OF PIPE ANCHOR



90° WELDED ELBOW



SIDEWALK BOX SECTION "A-A"

N.T.S.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600
HMT ENGINEERING & SURVEYING

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

STORM DETAILS (1 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

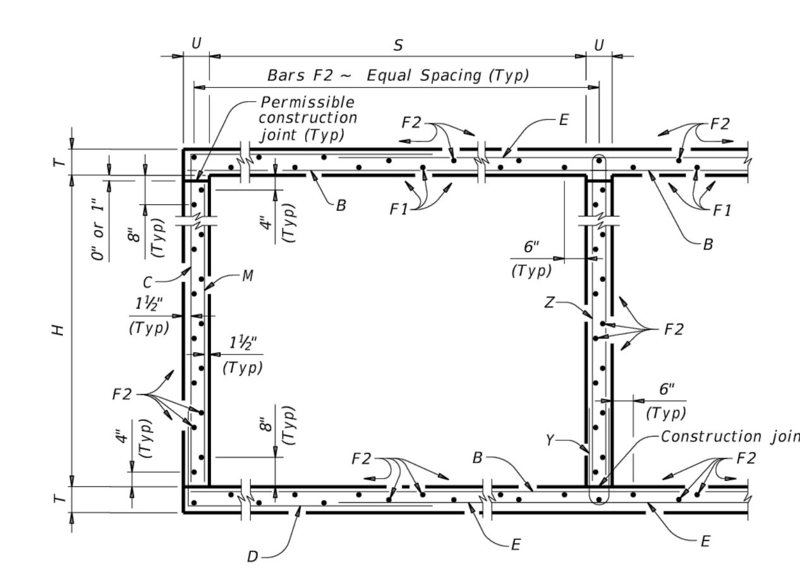
DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

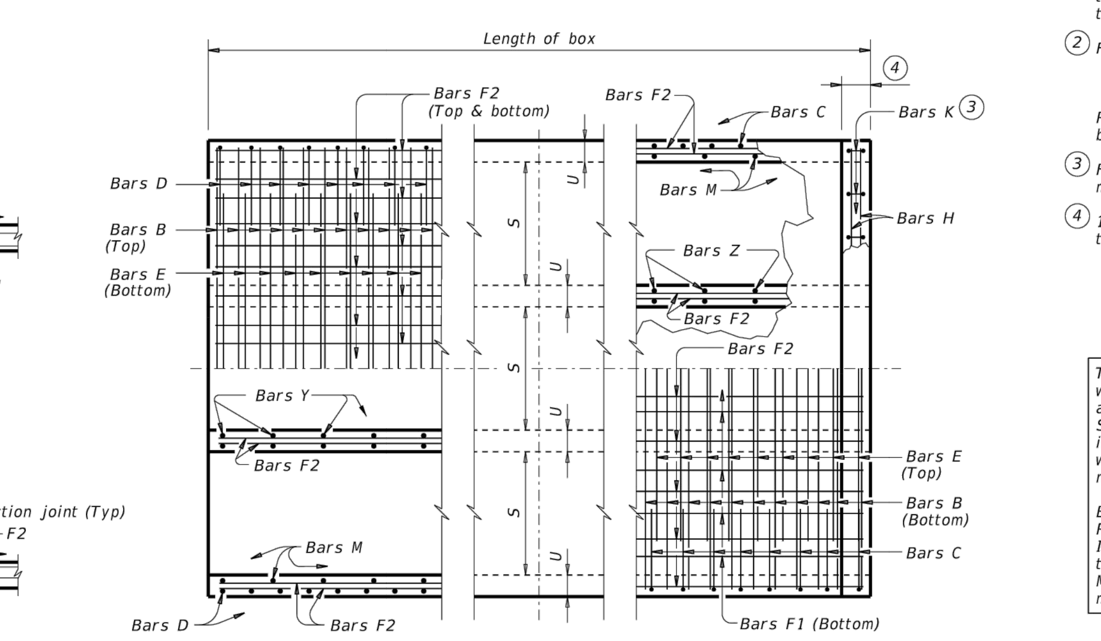
C5.5

Drawing Name: M:_projects\248 - musch coleman homes\014 - voges unit 4\03\248.014_STORM DETAILS.dwg User: matt-p Dec 21, 2023 - 4:50pm

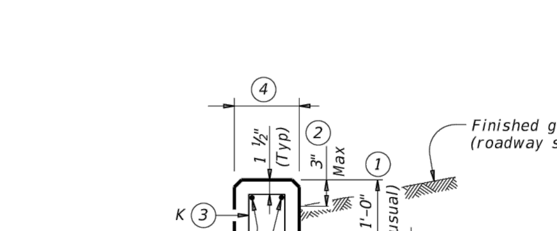
MULTIPLE BOX CULVERTS CAST-IN-PLACE — SHEET 1 OF 2



TYPICAL SECTION



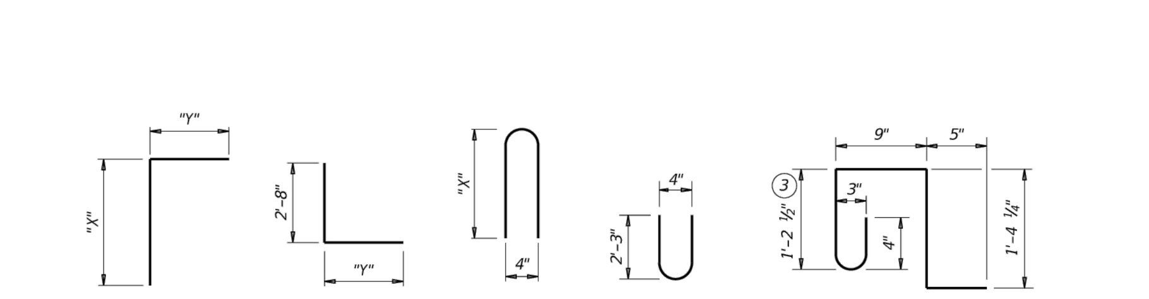
PART PLANS



SECTION THRU CURB

TABLE OF BAR DIMENSIONS

H	"X"	"Y"
2'-0"	2'-7 ½"	4'-1"
3'-0"	3'-7 ½"	4'-1"
4'-0"	4'-7 ½"	4'-1"
5'-0"	5'-7 ½"	4'-1"
6'-0"	6'-7 ½"	4'-1"



(1) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0", refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Rail Anchorage Curb (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(2) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(3) 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.

(4) 1'-0" typical. 2'-3" when the Rail Anchorage Curb (RAC) standard sheet is referred to elsewhere in the plans.

The Contractor may replace Bars B, C, D, E, F1, F2, M, Y, and/or Z with deformed welded wire reinforcement (WWR) meeting the requirements of ASTM A1064. The area of required reinforcement may be reduced by the ratio of 60 ksi / 70 ksi. Spacing of WWR is limited to 4" Min and 18" Max. When required, provide lap splices in the WWR of the same length required for the equivalent bar size, rounded up for wire sizes between conventional bar sizes. The lap length required for WWR is never less than the lap length required for uncoated #4 bars.

Example conversion: Replacing No. 6 Gr 60 at 6" Spacing with WWR
Required WWR = (0.44 sq. in. per 0.5 ft.) x (60 ksi / 70 ksi) = 0.755 sq. in. per ft.
If D30.6 wire is used to meet the 0.755 sq. in. per ft. requirement in this example, the required spacing = (0.306 sq. in.) / (0.755 sq. in. per ft.) x (12 in. per ft.) = 4.86" Max spacing. Required lap length for the provided D30.6 wire is 2'-1" (the same minimum lap length required for uncoated #5 bars, as listed under MATERIAL NOTES).

CONSTRUCTION NOTES:
Do not use permanent forms.
Chamfer the bottom edge of the top slab 3" at the entrance.
Optionally, raise construction joints shown at the flow line by a maximum of 6". If this option is taken, Bars M may be cut off or raised, Bars C and D may be reversed, and Bars Y and Z may be reversed.

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Provide Class C concrete (f'c = 3,600 psi) for culvert barrel and curb, with the following exceptions: provide Class S concrete (f'c = 4,000 psi) for top slabs of:
- culverts with overlay,
- culverts with 1-to-2 course surface treatment, or
- culverts with the top slab as the final riding surface.

Provide bar laps, where required, as follows:
- Uncoated or galvanized ~ #4 = 1'-8" Min
- Uncoated or galvanized ~ #5 = 2'-1" Min
- Uncoated or galvanized ~ #6 = 2'-6" Min

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications for the range of fill heights shown.
See the Multiple Box Culverts Cast-In-Place Miscellaneous Detail (MC-MD) standard sheet for details pertaining to skewed ends, angle sections, and lengthening.

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

DATE:
FILE:

HL93 LOADING SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS
CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

FILE: mc616ste-20.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT
©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.

MULTIPLE BOX CULVERTS CAST-IN-PLACE — SHEET 2 OF 2

BILLS OF REINFORCING STEEL (For Box Length = 40 feet) / **QUANTITIES**

Number of Spans	S	H	T	U	Bars B No.	Bars B Size	Bars B Spa	Bars B Length	Bars B Wt	Bars C & D No.	Size	Spa	Bars C Length	Bars C Wt	Bars D Length	Bars D Wt	Bars E No.	Bars E Size	Bars E Spa	Bars E Length	Bars E Wt	Bars F1 ~ #4 No.	Spa	Length	Wt	Bars F2 ~ #4 No.	Spa	Length	Wt	Bars M ~ #4 No.	Spa	Length	Wt	Bars Y & Z ~ #4 No.	Spa	Bars Y Length	Bars Y Wt	Bars Z Length	Bars Z Wt	Bars H 4 ~ #4 Length	Wt	Bars K No.	Wt	Per Foot of Barrel Conc (CY)	Reinf (Lb)	Curb Conc (CY)	Reinf (Lb)	Total Conc (CY)	Reinf (Lb)
2	6' - 0"	2' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	44	18"	39' - 9"	1,168	108	9"	2' - 0"	144	54	9"	4' - 9"	171	5' - 5"	195	13' - 6"	36	30	84	0.894	182.4	1.0	120	36.8	7,414
3	6' - 0"	2' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	63	18"	39' - 9"	1,673	108	9"	2' - 0"	144	108	9"	4' - 9"	343	5' - 5"	391	20' - 1"	54	44	122	1.302	260.9	1.5	176	53.6	10,611
4	6' - 0"	2' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	82	18"	39' - 9"	2,177	108	9"	2' - 0"	144	162	9"	4' - 9"	514	5' - 5"	586	26' - 8"	71	56	156	1.711	339.4	2.0	227	70.4	13,801
5	6' - 0"	2' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	101	18"	39' - 9"	2,682	108	9"	2' - 0"	144	216	9"	4' - 9"	685	5' - 5"	782	33' - 3"	89	70	195	2.120	417.9	2.5	284	87.3	16,999
6	6' - 0"	2' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	6' - 8"	751	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	120	18"	39' - 9"	3,186	108	9"	2' - 0"	144	270	9"	4' - 9"	857	5' - 5"	977	39' - 10"	106	82	228	2.529	496.4	3.0	334	104.1	20,189
2	6' - 0"	3' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	50	18"	39' - 9"	1,328	108	9"	3' - 0"	216	54	9"	4' - 9"	171	7' - 5"	268	13' - 6"	36	30	84	0.958	192.8	1.0	120	39.3	7,832
3	6' - 0"	3' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	71	18"	39' - 9"	1,885	108	9"	3' - 0"	216	108	9"	4' - 9"	343	7' - 5"	535	20' - 1"	54	44	122	1.389	274.4	1.5	176	57.1	11,152
4	6' - 0"	3' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	92	18"	39' - 9"	2,443	108	9"	3' - 0"	216	162	9"	4' - 9"	514	7' - 5"	803	26' - 8"	71	56	156	1.819	356.1	2.0	227	74.7	14,469
5	6' - 0"	3' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	113	18"	39' - 9"	3,000	108	9"	3' - 0"	216	216	9"	4' - 9"	685	7' - 5"	1,070	33' - 3"	89	70	195	2.250	437.7	2.5	284	92.5	17,790
6	6' - 0"	3' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	7' - 8"	864	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	134	18"	39' - 9"	3,558	108	9"	3' - 0"	216	270	9"	4' - 9"	857	7' - 5"	1,338	39' - 10"	106	82	228	2.681	519.3	3.0	334	110.2	21,107
2	6' - 0"	4' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	50	18"	39' - 9"	1,328	108	9"	4' - 0"	289	54	9"	4' - 9"	171	9' - 5"	340	13' - 6"	36	30	84	1.023	199.2	1.0	120	41.9	8,089
3	6' - 0"	4' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	71	18"	39' - 9"	1,885	108	9"	4' - 0"	289	108	9"	4' - 9"	343	9' - 5"	679	20' - 1"	54	44	122	1.475	282.6	1.5	176	60.5	11,481
4	6' - 0"	4' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	92	18"	39' - 9"	2,443	108	9"	4' - 0"	289	162	9"	4' - 9"	514	9' - 5"	1,019	26' - 8"	71	56	156	1.927	366.1	2.0	227	79.1	14,870
5	6' - 0"	4' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	113	18"	39' - 9"	3,000	108	9"	4' - 0"	289	216	9"	4' - 9"	685	9' - 5"	1,359	33' - 3"	89	70	195	2.380	449.5	2.5	284	97.7	18,264
6	6' - 0"	4' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	8' - 8"	976	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	134	18"	39' - 9"	3,558	108	9"	4' - 0"	289	270	9"	4' - 9"	857	9' - 5"	1,698	39' - 10"	106	82	228	2.832	533.0	3.0	334	116.2	21,652
2	6' - 0"	5' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	56	18"	39' - 9"	1,487	108	9"	5' - 0"	361	54	9"	4' - 9"	171	11' - 5"	412	13' - 6"	36	30	84	1.088	209.6	1.0	120	44.5	8,505
3	6' - 0"	5' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	79	18"	39' - 9"	2,098	108	9"	5' - 0"	361	108	9"	4' - 9"	343	11' - 5"	824	20' - 1"	54	44	122	1.562	296.2	1.5	176	64.0	12,024
4	6' - 0"	5' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	102	18"	39' - 9"	2,708	108	9"	5' - 0"	361	162	9"	4' - 9"	514	11' - 5"	1,235	26' - 8"	71	56	156	2.035	382.7	2.0	227	83.4	15,536
5	6' - 0"	5' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	125	18"	39' - 9"	3,319	108	9"	5' - 0"	361	216	9"	4' - 9"	685	11' - 5"	1,647	33' - 3"	89	70	195	2.509	469.3	2.5	284	102.8	19,056
6	6' - 0"	5' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	9' - 8"	1,089	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	148	18"	39' - 9"	3,930	108	9"	5' - 0"	361	270	9"	4' - 9"	857	11' - 5"	2,059	39' - 10"	106	82	228	2.983	555.9	3.0	334	122.3	22,570
2	6' - 0"	6' - 0"	9"	7"	108	#6	9"	13' - 6"	2,190	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	10' - 2"	1,649	10	18"	39' - 9"	266	62	18"	39' - 9"	1,646	108	9"	6' - 0"	433	54	9"	4' - 9"	171	13' - 5"	484	13' - 6"	36	30	84	1.153	220.0	1.0	120	47.1	8,921
3	6' - 0"	6' - 0"	9"	7"	108	#6	9"	20' - 1"	3,258	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	16' - 9"	2,717	15	18"	39' - 9"	398	87	18"	39' - 9"	2,310	108	9"	6' - 0"	433	108	9"	4' - 9"	343	13' - 5"	968	20' - 1"	54	44	122	1.648	309.7	1.5	176	67.4	12,565
4	6' - 0"	6' - 0"	9"	7"	108	#6	9"	26' - 8"	4,326	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	23' - 4"	3,785	20	18"	39' - 9"	531	112	18"	39' - 9"	2,974	108	9"	6' - 0"	433	162	9"	4' - 9"	514	13' - 5"	1,452	26' - 8"	71	56	156	2.144	399.4	2.0	227	87.7	16,204
5	6' - 0"	6' - 0"	9"	7"	108	#6	9"	33' - 3"	5,394	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	29' - 11"	4,853	25	18"	39' - 9"	664	137	18"	39' - 9"	3,638	108	9"	6' - 0"	433	216	9"	4' - 9"	685	13' - 5"	1,936	33' - 3"	89	70	195	2.639	489.1	2.5	284	108.0	19,849
6	6' - 0"	6' - 0"	9"	7"	108	#6	9"	39' - 10"	6,462	108	#5	9"	10' - 8"	1,202	6' - 9"	760	108	#6	9"	36' - 6"	5,921	30	18"	39' - 9"	797	162	18"	39' - 9"	4,302	108	9"	6' - 0"	433	270	9"	4' - 9"	857	13' - 5"	2,420	39' - 10"	106	82	228	3.134	578.9	3.0	334	128.3	23,488

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DATE:
FILE:

HL93 LOADING SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

MULTIPLE BOX CULVERTS
CAST-IN-PLACE
6'-0" SPAN
0' TO 16' FILL

MC-6-16

FILE: mc616ste-20.dgn | DN: TBE | CK: BMP | DW: TxDOT | CK: TxDOT
©TxDOT February 2020 | CONT | SECT | JOB | HIGHWAY
REVISIONS | DIST | COUNTY | SHEET NO.

CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS

TABLE OF DIMENSIONS AND REINFORCING STEEL
(Wings for one structure end)

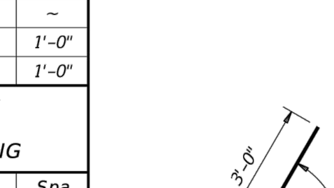
Maximum Wingwall Height Hw	W	X	Y	Z	Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Est. Quantities per ft of wing (2~wings) (4) Reinf (Lb/Ft)	Conc (CY/Ft)	Est. Quantities per ft of Toewall (1~toewall) Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.77	0.532	6.85	0.071
4'-6"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-6"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-6"	6'-5"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.27	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING
(2~wings)

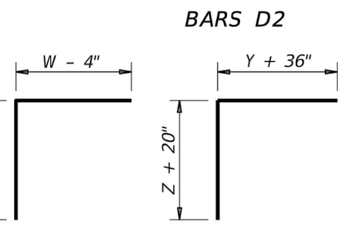
Bar	Size	No.	Spa
D1	#6	~	1'-0"
D2	#6	~	1'-0"
E1	#4	~	1'-0"
F	#4	~	1'-0"
G	#6	~	8"
M1	#4	4	~
P	#4	~	1'-0"
V	#4	~	1'-0"

TABLE OF TOEWALL REINFORCING

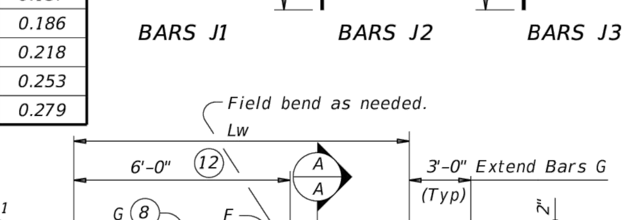
Bar	Size	No.	Spa
J3	#4	~	1'-0"
M2	#4	2	~
E2	#4	~	1'-0"



BARS D1



BARS D2



WING DIMENSION FORMULAS:

(All values are in feet.)

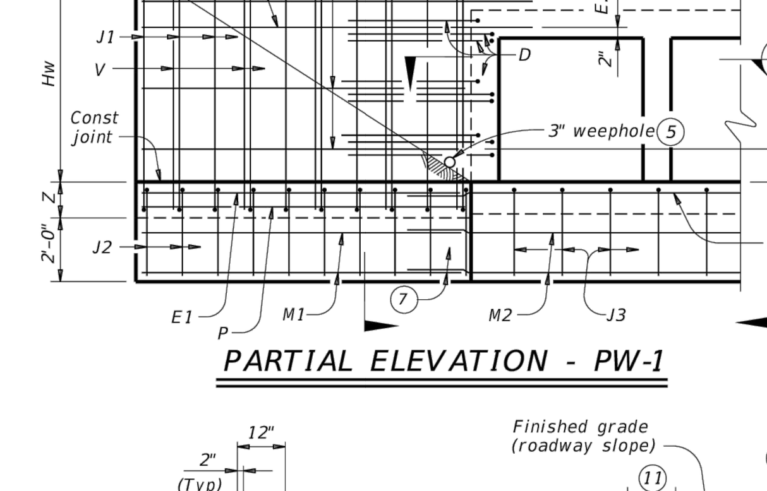
Hw = H + T + C
Lw = (Hw) (SL) ÷ cosine (θ) for Type PW-1
= (Hw - 1') (SL) ÷ cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) ÷ cosine (θ) for Type PW-2 and Hw < 4'

For cast-in-place culverts:
Ltw = [(N) (S) + (N + 1) (U)] ÷ cosine (θ)

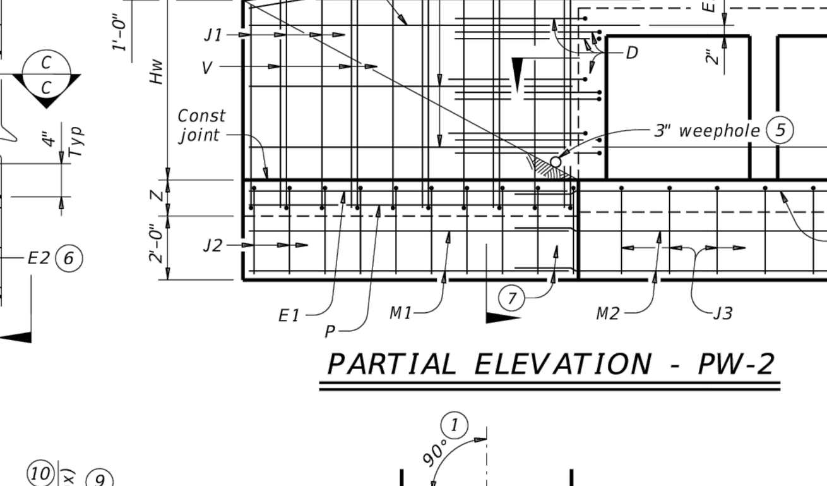
For precast culverts:
Ltw = [(N) (2 U + S) + (N - 1) (0.5')] ÷ cosine (θ)
Total Wingwall Area (two wings ~ SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw < 4'

Hw = Height of wingwall
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans
SL:1 = Channel slope ratio. (horizontal: 1 vertical, usual value is 2:1)
θ = Culvert skew

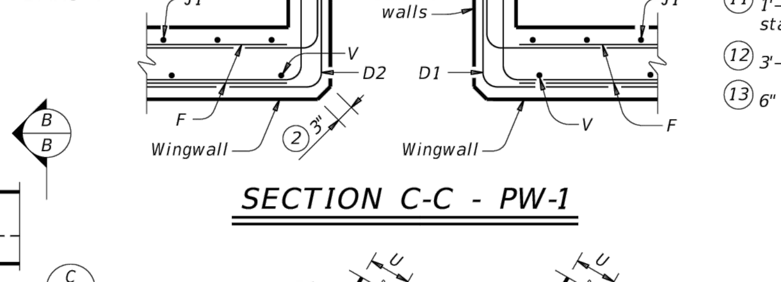
See applicable box culvert standard sheet for S, H, T, and U values.



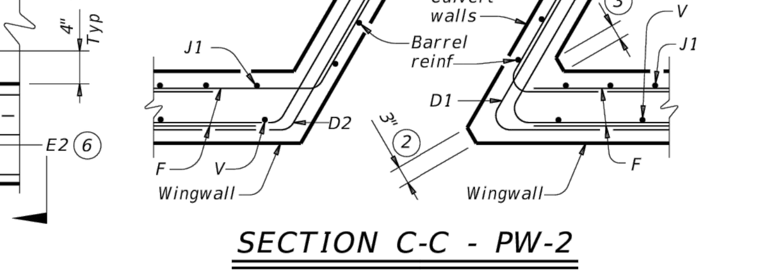
PARTIAL ELEVATION - PW-1



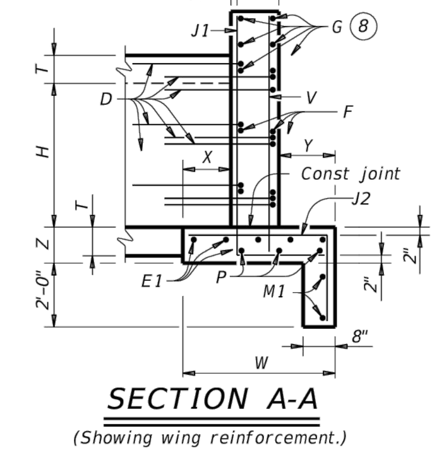
PARTIAL ELEVATION - PW-2



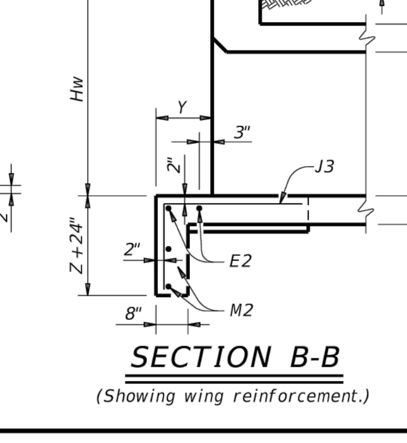
SECTION C-C - PW-1



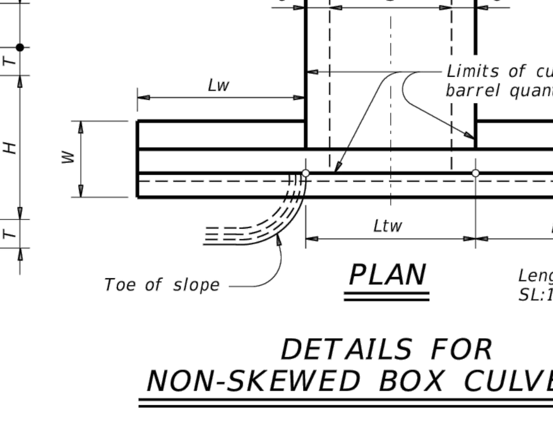
SECTION C-C - PW-2



SECTION A-A
(Showing wing reinforcement.)

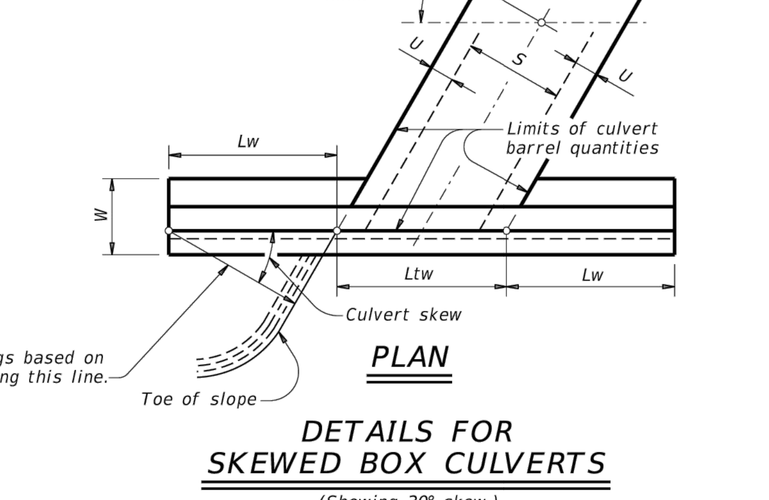


SECTION B-B
(Showing wing reinforcement.)



PLAN

DETAILS FOR
NON-SKEWED BOX CULVERTS



PLAN

DETAILS FOR
SKEWED BOX CULVERTS
(Showing 30° skew.)

(1) Skew = 0°

(2) At discharge end, chamfer may be ¾" minimum.

(3) For 15° skew ~ 1"
For 30° skew ~ 2"
For 45° skew ~ 3"

(4) Quantities shown are for two Type PW-1 wings. Adjust concrete volume for Type PW-2 wings. To determine estimated quantities for two wings, multiply the tabulated values by Lw. Quantities shown do not include weight of Bars D.

(5) Provide weepholes for Hw = 5'-0" and greater. Fill around weepholes with coarse gravel.

(6) Extend Bars E2 1'-6" minimum into the wingwall footing.

(7) Lap Bars M1 1'-6" minimum with Bars M2.

(8) Place Bars G as shown, equally spaced at 8" maximum. Provide at least two pairs of Bars G per wing.

(9) 0" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures with pedestrian rail or curbs taller than 1'-0, refer to the Extended Curb Details (ECD) standard sheet. For structures with T631 or T631LS bridge rail, refer to the Mounting Details for T631 & T631LS Rails (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631LS.

(10) For vehicle safety, the following requirements must be met:
- For structures without bridge rail, construct curbs no more than 3" above finished grade.
- For structures with bridge rail, construct curbs flush with finished grade.

Reduce curb heights, if necessary, to meet the above requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(11) 1'-0" typical. 2'-3" when the Box Culvert Rail Mounting Details (RAC) standard sheet is referred to elswhere in the plans.

(12) 3'-0" for Hw < 4'.

(13) 6" for Hw < 4'.

DESIGNER NOTES:
Type PW-1 can be used for all applications and must be used if railing is to be mounted to the wingwall.
Type PW-2 can only be used for applications without a railing mounted to the wingwall.

MATERIAL NOTES:
Provide Class C concrete (f'c=3,600 psi).
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.

GENERAL NOTES:
Designed in accordance with AASHTO LRFD Bridge Design Specifications.
Depth of toewalls for wingwalls and culverts may be reduced or eliminated when founded on solid rock, when directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for wingwall type and additional dimensions and information.
Quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for the Contractor's information only.

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

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Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS
WITH PARALLEL WINGS FOR
BOX CULVERTS
TYPES PW-1 AND PW-2

PW

FILE: pwstde01-20.dgn | DN: GAF | CK: CAT | DW: TxDOT | CK: TxDOT
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REVISIONS | DIST | COUNTY | SHEET NO.

Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\CD's\248.014_STORM DETAILS.dwg User: matt-p Dec 21, 2023 - 4:50pm

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

[illegible]

STORM DETAILS (2 OF 2)

VOGES SUBDIVISION
UNIT 3

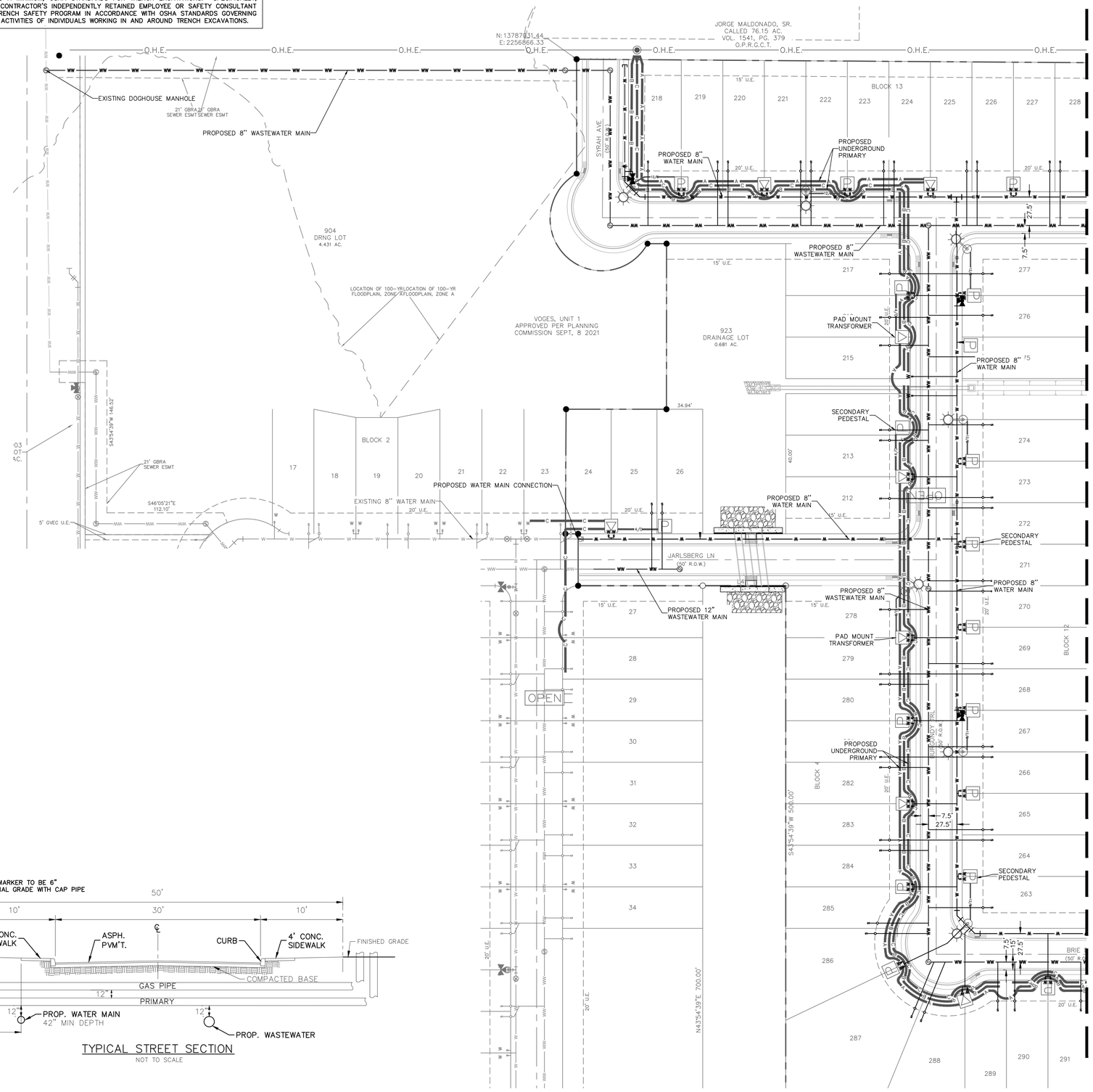
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C5.6

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.



MATCHLINE (SEE SHEET C8.1)

LEGEND

B.L.	BUILDING SETBACK LINE
E.G.T.TV.E	ELEC., GAS, TELE. & CABLE TV EASEMENT
D.E.	DRAINAGE EASEMENT
WW WW	EXISTING WASTEWATER LINE
	PROPOSED WASTEWATER LINE
	PROPOSED WASTEWATER SERVICE
W W	EXISTING WATER LINE
W W	PROPOSED WATER LINE
	PROPOSED WATER SERVICE
	EXISTING FIRE HYDRANT
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	UTILITY CROSSING
	PROPOSED POLE
	PROPOSED POLE WITH RISER
	STREET LIGHT
	3 PH. PAD MOUNT XFMR
P	SECONDARY PEDESTAL
SW	SWITCH
A	PHASE A UNDERGROUND PRIMARY
B	PHASE B UNDERGROUND PRIMARY
C	PHASE C UNDERGROUND PRIMARY
S	UNDERGROUND SECONDARY

0 25 50 100
HORIZONTAL SCALE: 1:50

○ = OFF-LOT 50'x50' E.G.T.CATV, DRNG, WATER, SEWER & POSTAL ESMT TO EXPIRE UPON INCORPORATION INTO PUBLIC STREET R.O.W. (0.057 AC.)

○ = OFF-LOT E.G.T.CATV, DRNG, WATER, SEWER & POSTAL ESMT TO EXPIRE UPON INCORPORATION INTO PUBLIC STREET R.O.W. (0.736 AC.)

DRY UTILITY NOTES:

1. OVERALL UTILITY PLAIN IS PROVIDED AS A LOCATION REFERENCE FOR THE PURPOSE OF DRY UTILITY TRENCHING, CONDUIT PLACEMENT AND TRANSFORMER / ENCLOSURE PAD INSTALLATION. CONTRACTOR SHALL REFER TO APPROPRIATE UTILITY PROVIDER CONSTRUCTION PLANS FOR DRY UTILITY CONSTRUCTION.
2. TELEPHONE AND CABLE LINES SHALL NOT GO IN JOINT TRENCH WITH GVEC.
3. CONDUITS WILL BE REQUIRED FOR CPS ENERGY UTILITY CROSSINGS WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION. CONDUIT FOR CROSSINGS AS FOLLOWS:
   ELECTRIC CROSSINGS - SCHEDULE 80 "GRAY" *
   GAS CROSSINGS - SCHEDULE 80 "GRAY" *
4. CONDUITS WILL BE REQUIRED FOR UNDERGROUND TELEPHONE AND CABLE T.V. IF ABOVE APPLIES. CONDUIT FOR CROSSINGS AS FOLLOWS:
   PRIMARY - 4" SCHEDULE 40 "GRAY" **
   SECONDARY - 4" SCHEDULE 40 "GRAY" **
5. DRY UTILITY CONDUIT TO EXTEND 2' OUTSIDE OF R.O.W.

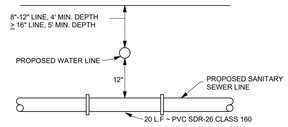
* CHANGES TO SCHEDULE AND COLOR MAY BE ALLOWED WITH CPS APPROVAL.

** CHANGES TO SCHEDULE AND COLOR MAY BE ALLOWED WITH AT&T AND SPECTRUM APPROVAL.

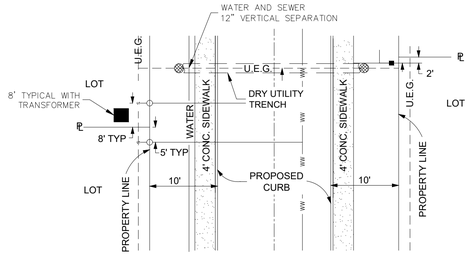
PRIVATE CONDUIT NOTES:

1. CONTRACTOR TO COORDINATE WITH OWNER PRIOR TO CONSTRUCTION.
2. PRIVATE CONDUIT SHALL BE "WHITE" SCHEDULE 40 PVC CONDUIT WITH 90° SWEEPS TO 6" ABOVE GRADE WITH CAP PIPE.

TYPICAL STREET SECTION
NOT TO SCALE



TYPICAL
SANITARY SEWER/WATER CROSSING DETAIL



METER BOX DETAIL WHEN SERVICE
PARALLELS DRY UTILITY CROSSING

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.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL UTILITY (1 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

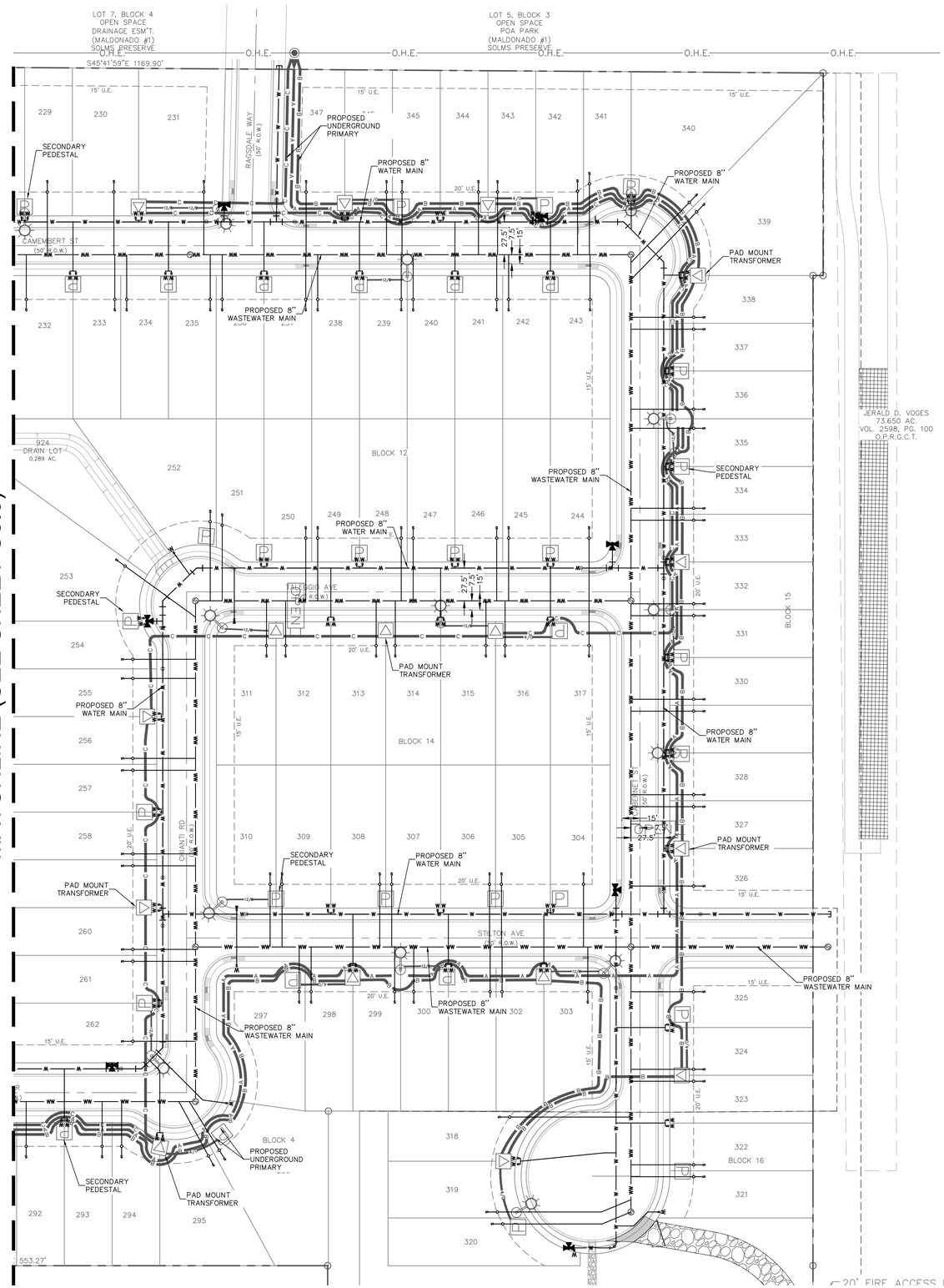
DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C6.0

Drawing Name: M:_projects\248 - rausch coleman homes\014 - voges unit 4\03-x\248.014_OVERALL UTILITY.dwg User: matt-p Dec 21, 2023 - 4:50pm

TRENCH EXCAVATION SAFETY PROTECTION

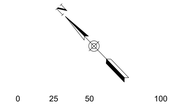
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S 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.



MATCHLINE (SEE SHEET C8.0)

LEGEND

B.L.	BUILDING SETBACK LINE		PROPOSED POLE
E.G.T.TV.E	ELEC., GAS, TELE. & CABLE TV EASEMENT		PROPOSED POLE WITH RISER
D.E.	DRAINAGE EASEMENT		STREET LIGHT
WW WW	EXISTING WASTEWATER LINE		3 PH. PAD MOUNT XFMR
	PROPOSED WASTEWATER LINE	P	SECONDARY PEDESTAL
	PROPOSED WASTEWATER SERVICE	SW	SWITCH
W W	EXISTING WATER LINE	A	PHASE A UNDERGROUND PRIMARY
W W	PROPOSED WATER LINE	B	PHASE B UNDERGROUND PRIMARY
	PROPOSED WATER SERVICE	C	PHASE C UNDERGROUND PRIMARY
	EXISTING FIRE HYDRANT	S	UNDERGROUND SECONDARY
	PROPOSED FIRE HYDRANT		
	PROPOSED WATER VALVE		
	UTILITY CROSSING		



○ = OFF-LOT 50'x50' E.G.T.CATV, DRNG, WATER, SEWER & POSTAL ESMT TO EXPIRE UPON INCORPORATION INTO PUBLIC STREET R.O.W. (0.057 AC.)

○ = OFF-LOT E.G.T.CATV, DRNG, WATER, SEWER & POSTAL ESMT TO EXPIRE UPON INCORPORATION INTO PUBLIC STREET R.O.W. (0.736 AC.)

DRY UTILITY NOTES:

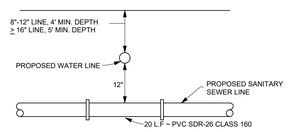
1. OVERALL UTILITY PLAIN IS PROVIDED AS A LOCATION REFERENCE FOR THE PURPOSE OF DRY UTILITY TRENCHING, CONDUIT PLACEMENT AND TRANSFORMER / ENCLOSURE PAD INSTALLATION. CONTRACTOR SHALL REFER TO APPROPRIATE UTILITY PROVIDER CONSTRUCTION PLANS FOR DRY UTILITY CONSTRUCTION.
2. TELEPHONE AND CABLE LINES SHALL NOT GO IN JOINT TRENCH WITH GVEC.
3. CONDUITS WILL BE REQUIRED FOR CPS ENERGY UTILITY CROSSINGS WHEN STREET OR DRAIN CONSTRUCTION PRECEDES UTILITY INSTALLATION. CONDUIT FOR CROSSINGS AS FOLLOWS:
   ELECTRIC CROSSINGS - SCHEDULE 80 "GRAY" *
   GAS CROSSINGS - SCHEDULE 80 "GRAY" *
4. CONDUITS WILL BE REQUIRED FOR UNDERGROUND TELEPHONE AND CABLE T.V. IF ABOVE APPLIES. CONDUIT FOR CROSSINGS AS FOLLOWS:
   PRIMARY - 4" SCHEDULE 40 "GRAY" **
   SECONDARY - 4" SCHEDULE 40 "GRAY" **
5. DRY UTILITY CONDUIT TO EXTEND 2' OUTSIDE OF R.O.W.

* CHANGES TO SCHEDULE AND COLOR MAY BE ALLOWED WITH CPS APPROVAL.

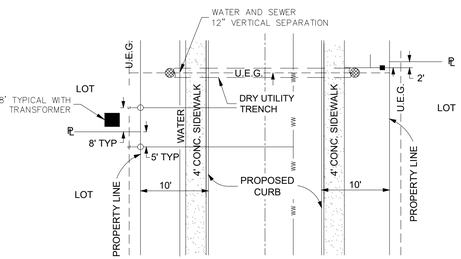
** CHANGES TO SCHEDULE AND COLOR MAY BE ALLOWED WITH AT&T AND SPECTRUM APPROVAL.

PRIVATE CONDUIT NOTES:

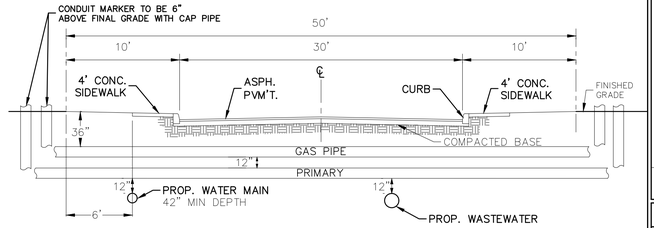
1. CONTRACTOR TO COORDINATE WITH OWNER PRIOR TO CONSTRUCTION.
2. PRIVATE CONDUIT SHALL BE "WHITE" SCHEDULE 40 PVC CONDUIT WITH 90° SWEEPS TO 6" ABOVE GRADE WITH CAP PIPE.



TYPICAL
SANITARY SEWER/WATER CROSSING DETAIL



METER BOX DETAIL WHEN SERVICE
PARALLELS DRY UTILITY CROSSING



TYPICAL STREET SECTION
NOT TO SCALE

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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL UTILITY (2 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C6.1

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

GVSUD (WATER)	(830) 914-2331
GUADALUPE-BLANCO RIVER AUTHORITY (SEWER)	(830) 379-5822
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TIME WARNER CABLE	(830) 625-3408
CENTERPOINT ENERGY (GAS)	(830) 643-6434
AT&T	(830) 303-1333
TEXAS ONE CALL SYSTEM	(800) 245-4545
ENERGY TRANSFER (PETROLEUM PIPELINE)	(210) 262-2486

C.P.E. LOCATOR

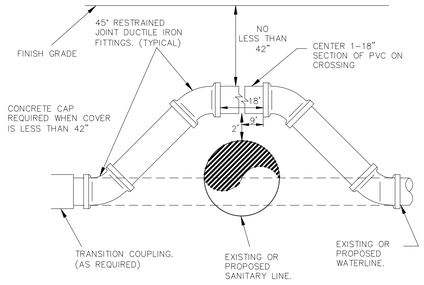
CALL CENTER POINT ENERGY LOCATOR AT 1-800-545-6005, 48HRS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, CENTER POINT ENERGY MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT AND WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

TELEPHONE LOCATOR

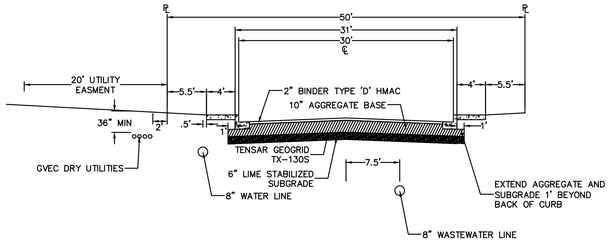
THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION AT 1-800-545-6005,, CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT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



Ⓐ WATERLINE ADJUSTMENT DETAIL
N.T.S



UTILITY TRENCH COMPACTION

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DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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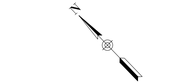

LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W W	EXISTING WATER LINE
W W	PROPOSED WATER LINE
	PROPOSED WATER SERVICE
	UTILITY CROSSING

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
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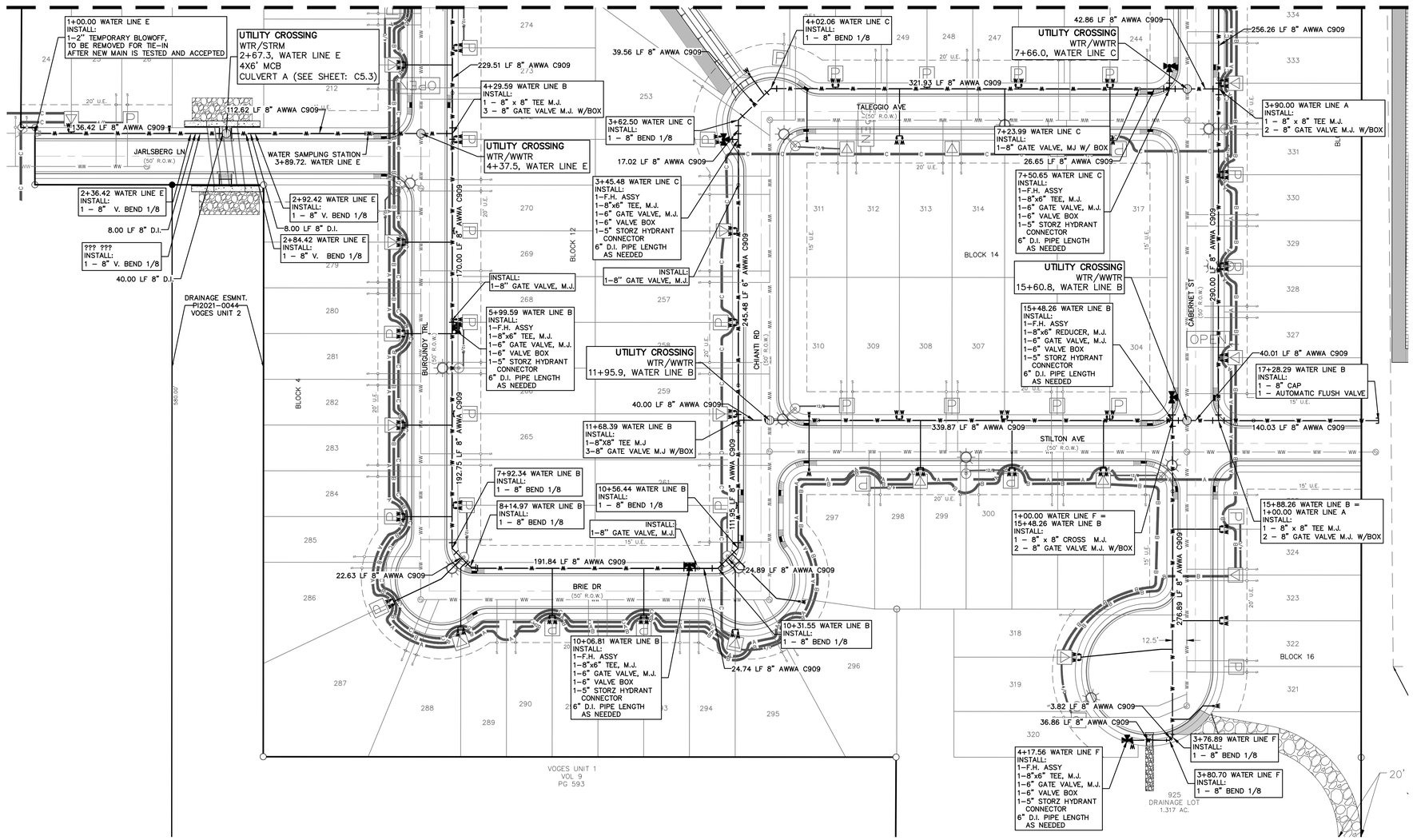
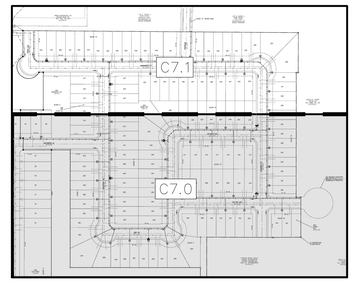
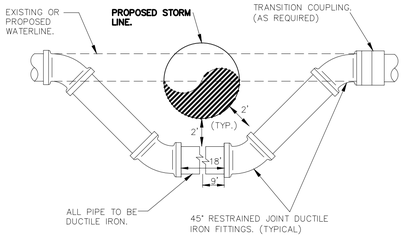
3. ALL WATER SERVICES ARE TO BE 1-INCH SERVICES AND METERS LOCATED 1-FOOT FROM THE PROPERTY LINE.
4. ALL DIMENSIONS ARE FROM FACE OF CURB.
5. REFER TO COVER SHEET FOR BENCHMARK INFORMATION.
6. MACHINE CHLORINATION SHALL BE USED FOR DISINFECTION.
7. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 LF FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.
8. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.

MATCHLINE (SEE SHEET C7.1)





SHEET INDEX



Ⓑ WATERLINE ADJUSTMENT DETAIL
N.T.S

WATER TOTAL MATERIALS QUANTITIES

ITEM	DESCRIPTION	UNIT	EST/QTY
1	8" C909 WATER LINE	LF	4,808
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3	FIRE HYDRANT ASSEMBLY (W/ TEE AND GATE VALVE)	EA	10
4	1" DUAL SHORT WATER SERVICE	EA	38
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6	1" DUAL LONG WATER SERVICE	EA	26
7	1" SINGLE LONG WATER SERVICE	EA	6
8	METER BOXES	EA	75
9	TIE-IN	EA	2
10	AUTOMATIC FLUSH VALVE	EA	2
11	TEMPORARY BLOW-OFF	EA	2
12	8" X 8" CROSS	EA	1
13	8" X 8" TEES	EA	6
14	1/8 BENDS	EA	12
15	8" CAPS	EA	2
16	8" GATE VALVE, M.J. W/BOX	EA	24
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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL WATER PLAN (1 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C7.0

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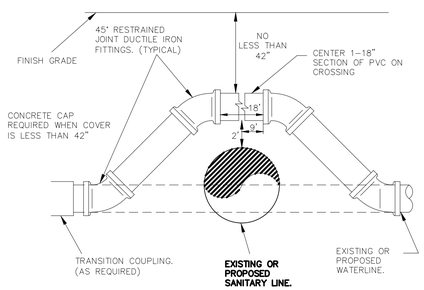

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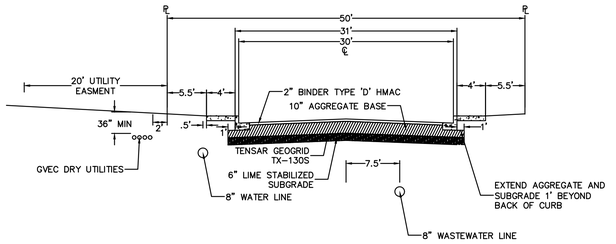

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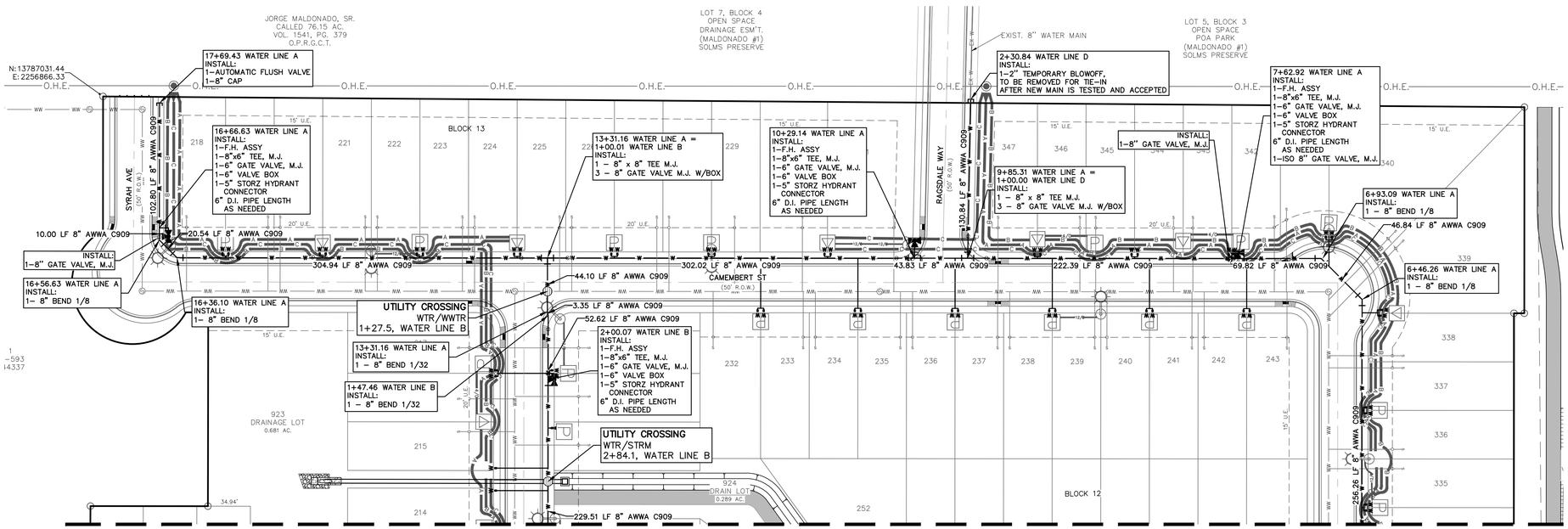

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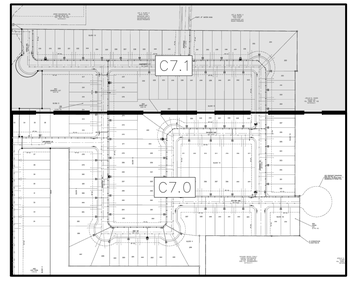

SHEET INDEX

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OVERALL WATER PLAN (2 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C7.1

Drawing Name: M:_projects\248 - rousch coleman homes\014 - voges unit 4\07's\248.014_OVERALL WATER.dwg User: mattr-p Dec 21, 2023 - 4:51pm

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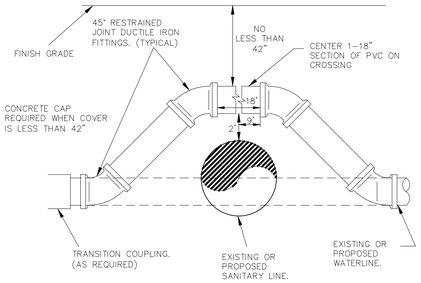
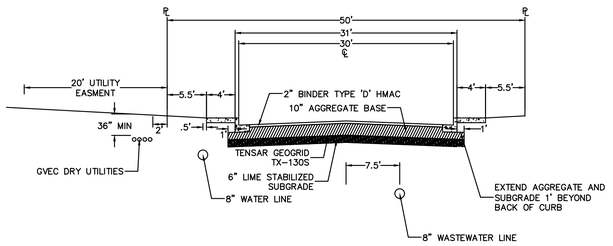
TRENCH EXCAVATION SAFETY PROTECTION

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.



A WATERLINE ADJUSTMENT DETAIL
N.T.S



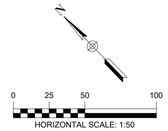
UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. 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 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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.



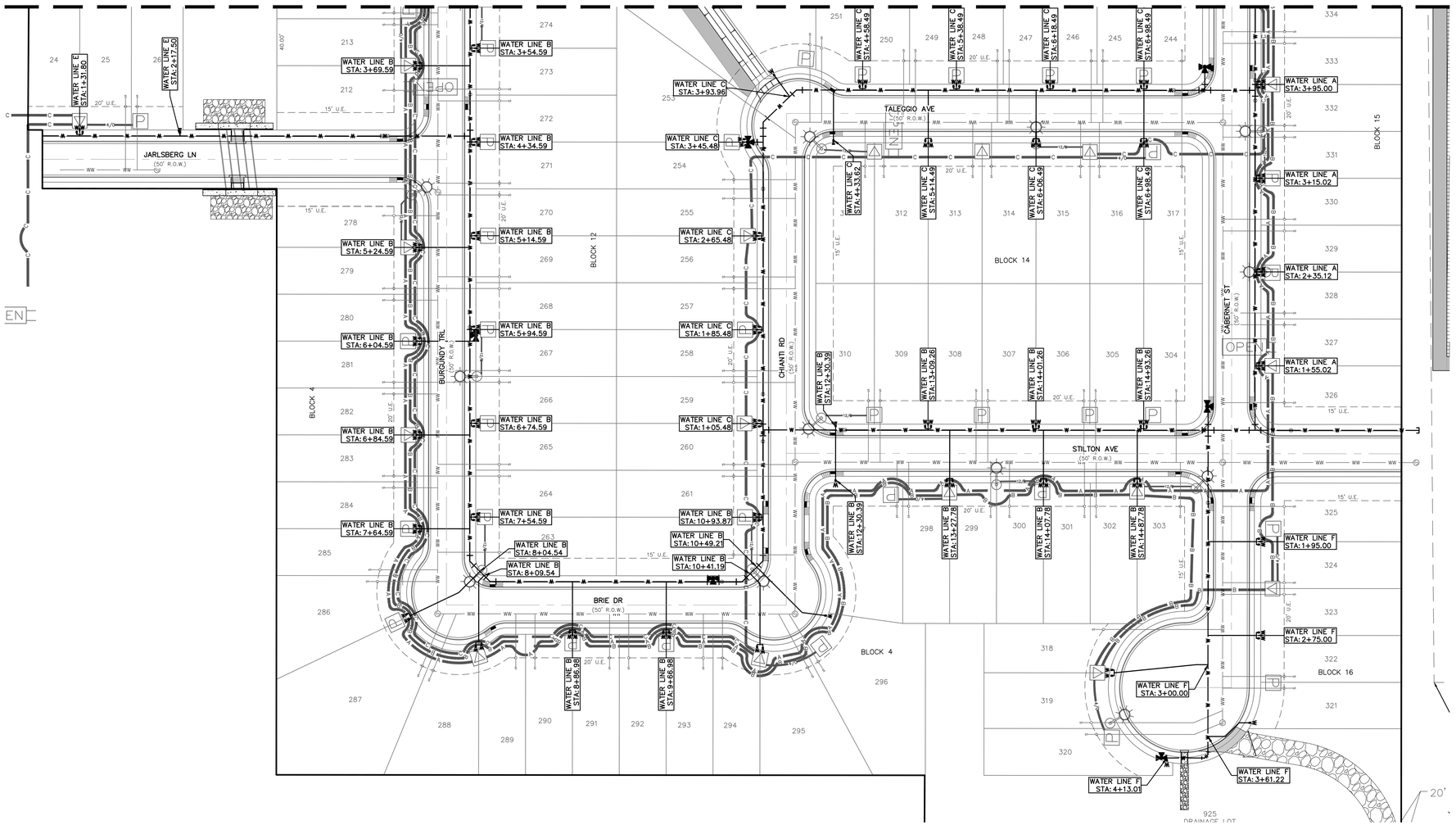
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- W — W — EXISTING WATER LINE
- W — W — PROPOSED WATER LINE
- PROPOSED WATER SERVICE
- UTILITY CROSSING

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, RAMPS, SIDEWALKS OR DRIVEWAYS.
3. ALL WATER SERVICES ARE TO BE 1-INCH SERVICES AND METERS LOCATED 1-FOOT FROM THE PROPERTY LINE.
4. ALL DIMENSIONS ARE FROM FACE OF CURB.
5. REFER TO COVER SHEET FOR BENCHMARK INFORMATION.
6. MACHINE CHLORINATION SHALL BE USED FOR DISINFECTION.
7. MOISTURE DENSITY COMPACTION TESTING FREQUENCY-WATER MAIN TRENCHES REQUIRED EVERY 300 LF FOR EACH VERTICAL FOOT OF COMPACTED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.
8. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.

MATCHLINE (SEE SHEET C7.1)



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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

WATER LATERALS (1 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C7.2

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

GVSUD (WATER)	(830) 914-2331
GUADALUPE-BLANCO RIVER AUTHORITY (SEWER)	(830) 379-5822
GVEC (ELECTRIC)	(830) 223-4832
TIME WARNER CABLE	(830) 625-3408
CENTERPOINT ENERGY (GAS)	(830) 643-6434
AT&T	(830) 303-1333
TEXAS ONE CALL SYSTEM	(800) 245-4545
ENERGY TRANSFER (PETROLEUM PIPELINE)	(210) 262-2486

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 192.181, 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.

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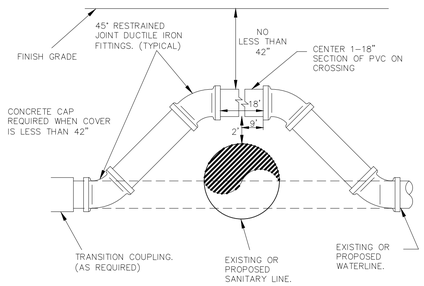
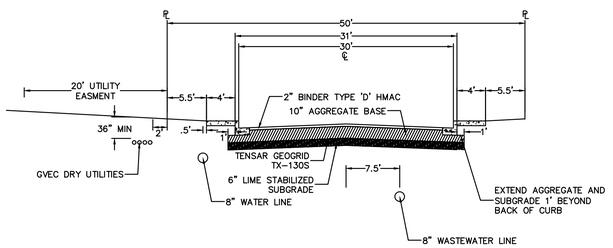


Ⓐ WATERLINE ADJUSTMENT DETAIL
N.T.S



UTILITY TRENCH COMPACTION

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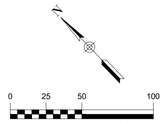

LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W W	EXISTING WATER LINE
W W	PROPOSED WATER LINE
	PROPOSED WATER SERVICE
	UTILITY CROSSING

UTILITY NOTES:

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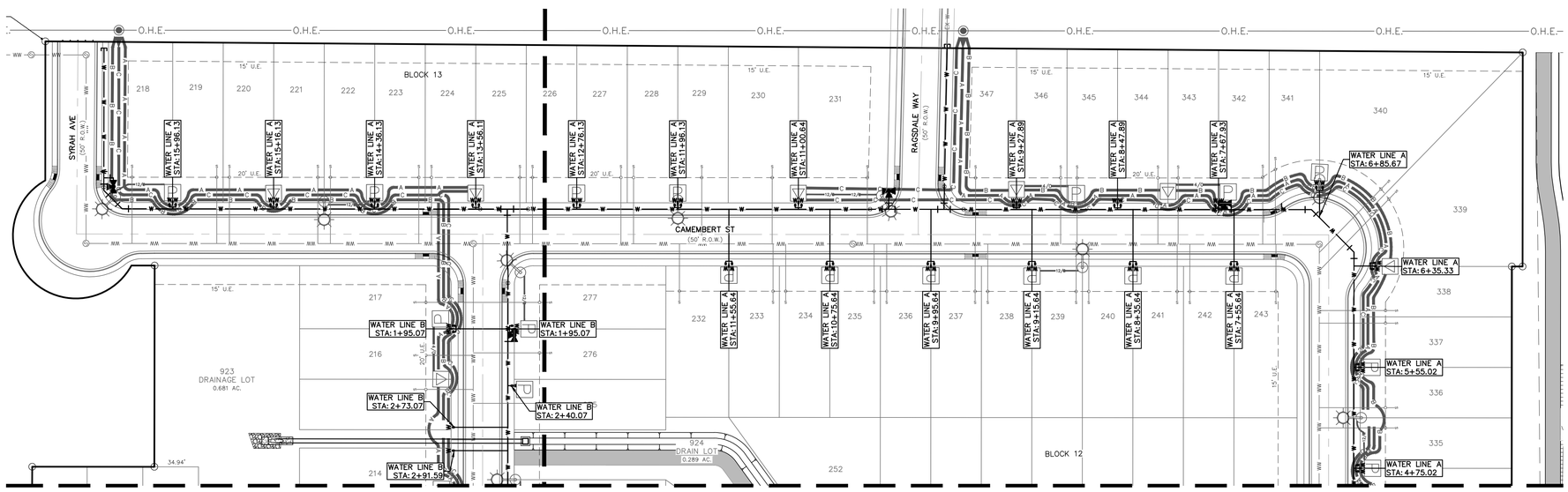

MATCHLINE (SEE SHEET C7.2)

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

WATER LATERALS (2 OF 2)

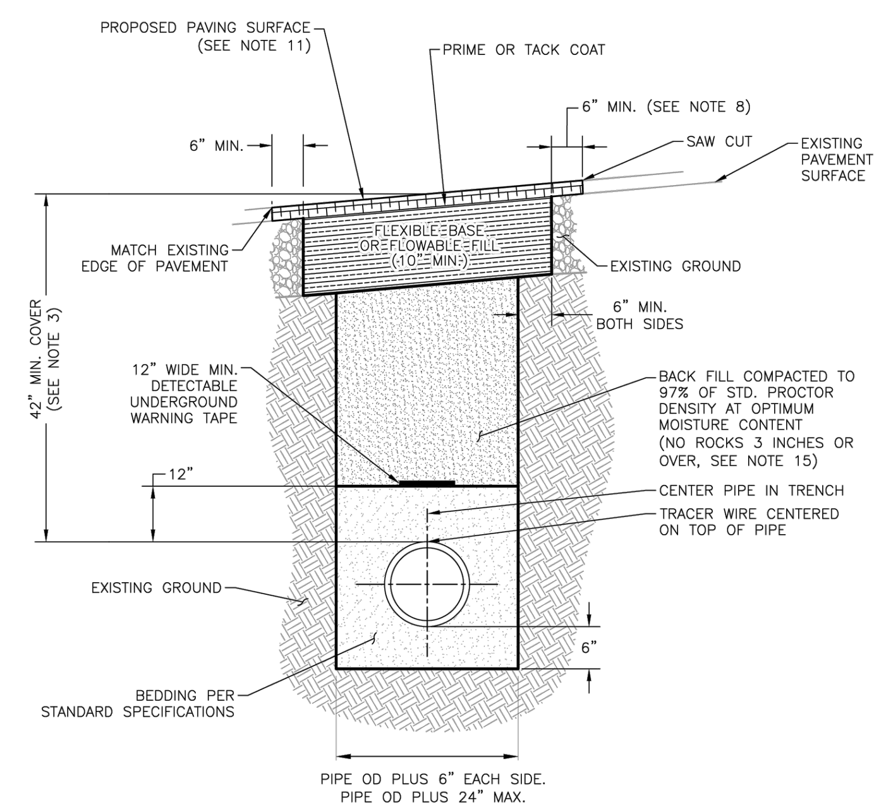
VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C7.3

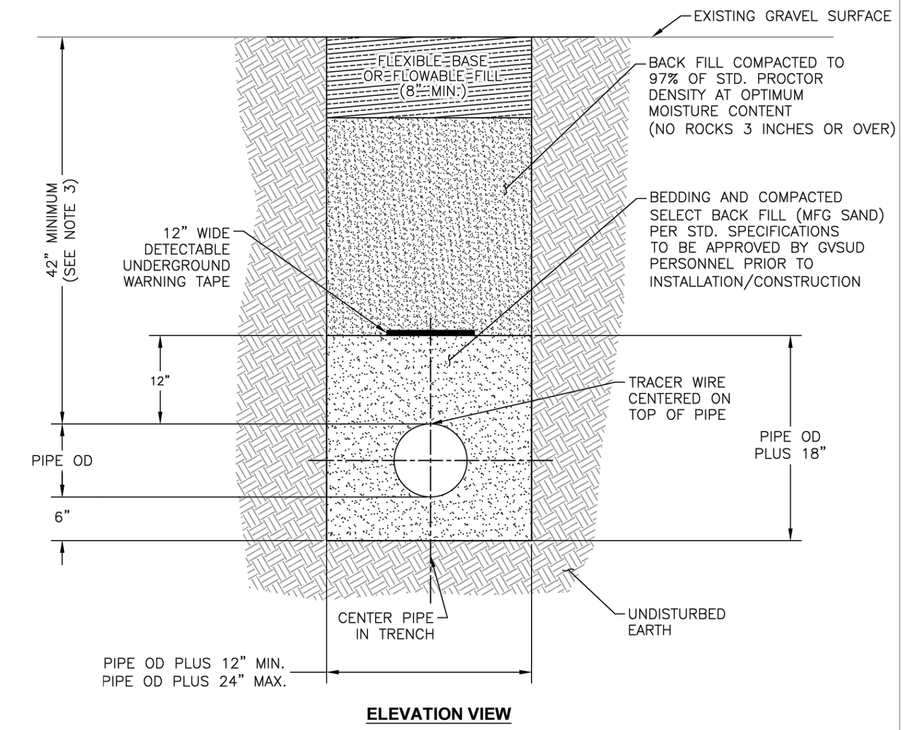


NOTES:

1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE SHALL BE USED IN WASTEWATER WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI WATER PVC PIPING SHALL BE BLUE IN COLOR.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN SHALL HAVE 42 INCH MINIMUM COVER AND 72 INCH MAXIMUM COVER. WASTEWATER GRAVITY LINES SHALL HAVE 42 INCH MINIMUM COVER AND 15 FOOT MAXIMUM COVER.
4. GENERAL CONTRACTOR SHALL CONTACT THE APPROPRIATE STREET OWNER AND PROCESS, POST FISCAL SURETY, AND HAVE STREET CUT PERMIT ISSUED IN THEIR NAME.
5. CONTRACTOR TO REPAIR PAVED AREA TO STREET OWNER'S ROAD STANDARDS FOR ALL DISTURBED AREA. GREEN VALLEY SPECIAL UTILITY DISTRICT PAYS FOR QUANTITY OF REPAIR SHOWN IN DETAIL.
6. CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TRENCH ALLOWED AS INDICATED IN THE PLANS AND SPECIFICATIONS.
7. THE EXISTING PAVED SURFACE SHALL BE SAW CUT IN A STRAIGHT LINE, A MINIMUM OF 12 INCHES WIDER THAN UNDISTURBED SIDES OF THE TRENCH AND SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
8. ANY CONCRETE PAVING SHALL BE CUT 6 INCHES WIDER THAN UNDISTURBED SIDES OF EXCAVATION.
9. IF EXCAVATION AREA IS OPEN FOR TEMPORARY PUBLIC USE, THE SURFACE SHALL BE MAINTAINED LEVEL WITH ADJACENT RIDING SURFACE WITH TEMPORARY COLD MIX ASPHALT CONCRETE OR TEMPORARY HOT MIXED ASPHALT CONCRETE. TEMPORARY MIX SHALL BE PLACED OVER FLEXIBLE BASE.
10. FLEXIBLE BASE SHALL BE REPLACED IN KIND WITH BASE AND PAVEMENT THICKNESS WITH BASE EQUAL TO EXISTING BASE THICKNESS PLUS 3 INCHES, BUT IN NO CASE LESS THAN 10 INCHES.
11. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A MINIMUM OF 2 INCHES HOT MIXED ASPHALT CONCRETE AND A BASE OF 10 INCHES OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER.
12. TACK COAT ALL EXPOSED EDGES AND SURFACES.
13. TYPE AND THICKNESS OF PROPOSED PAVING SURFACE SHALL BE AS FOLLOWS:
    - TWO COURSE SURFACE TREATMENT: SHALL MATCH EXISTING SURFACE AND SHALL BE IN ACCORDANCE WITH SPECIFICATION 02770.
    - ASPHALT PAVING: SHALL BE IN ACCORDANCE WITH SPECIFICATION 02740. HOT MIXED ASPHALT CONCRETE TYPE 'D' SHALL BE USED FOR LIFT THICKNESS UP TO 2 INCHES, AND TYPE 'C' FOR LIFT THICKNESS OVER 2 INCHES AND UP TO 3 INCHES. LIFT THICKNESS SHALL NOT BE MORE THAN 3 INCHES.
14. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND ABOVE BEDDING, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE DETECTABLE UNDERGROUND WARNING TAPE SHALL CONFORM TO THE SPECIFICATIONS AND COLOR CODED IN ACCORDANCE WITH THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM COLOR CODE.
15. PIPE BEDDING SHALL BE PLACED BEFORE PIPING IS LAID, UP TO BOTTOM OF PIPE, AND COMPACTED TO 97% STANDARD PROCTOR DENSITY.
16. PLACE PIPE BEDDING IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
17. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TRENCH DETAIL FOR PAVED AREAS (I OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-1

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TRENCH DETAIL FOR PAVED AREAS (2 OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-1

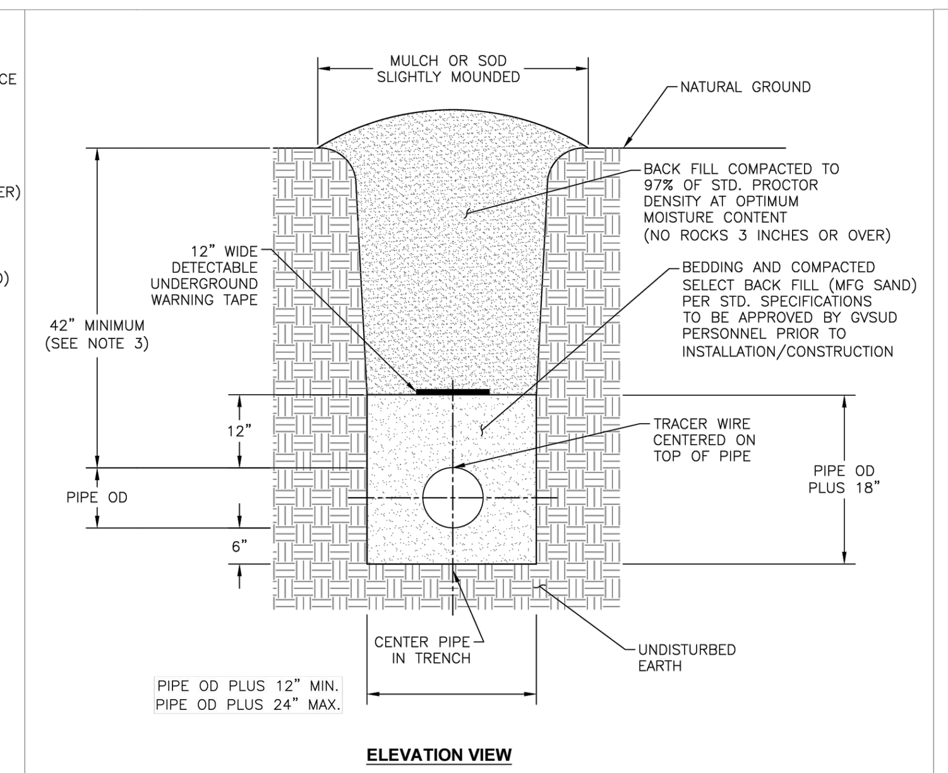


ELEVATION VIEW

NOTES:

1. ALL WASTEWATER PVC PIPING SHALL BE GREEN IN COLOR. NO WATER DESIGNATED PIPE WILL BE USED IN WASTEWATER.
2. ALL WATER PIPING SHALL HAVE A MINIMUM PRESSURE CLASS OF 235 PSI. WATER PVC PIPING SHALL BE COLOR CODED BLUE.
3. ALL WATER LINES AND WASTEWATER FORCEMAIN SHALL HAVE 42 INCHES MINIMUM COVER AND 72 INCHES MAXIMUM COVER. WASTEWATER GRAVITY LINES SHALL HAVE 42 INCHES MINIMUM COVER AND 15 FEET MAXIMUM COVER.
4. CONTRACTOR SHALL NOT EXCEED THE MAXIMUM TRENCH ALLOWED AS INDICATED IN THE PLANS AND SPECIFICATIONS.
5. DETECTABLE UNDERGROUND WARNING TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE AND ABOVE BEDDING, IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. THE TAPE SHALL CONFORM TO THE SPECIFICATIONS AND COLOR CODED IN ACCORDANCE WITH APWA UNIFORM COLOR CODE.
6. PIPE BEDDING PLACED BEFORE PIPING IS LAID UP TO BOTTOM OF PIPE COMPACTED TO 95% ASHTO DENSITY.
7. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
8. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TRENCH DETAIL FOR GRAVEL SURFACED AREAS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-2



ELEVATION VIEW

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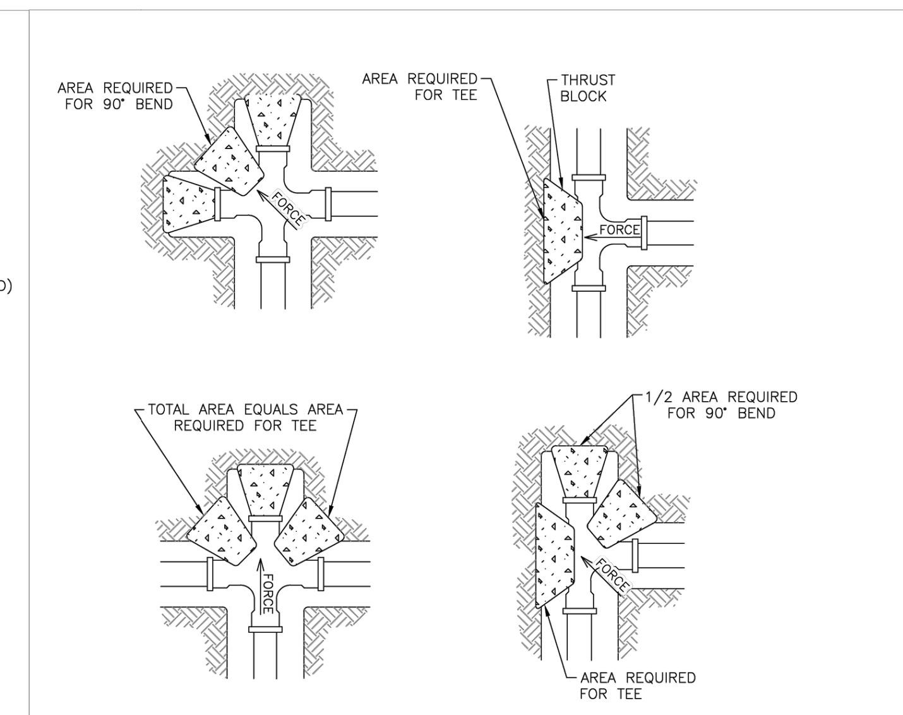
7. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
8. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TRENCH DETAIL FOR NON-PAVED AREAS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-3

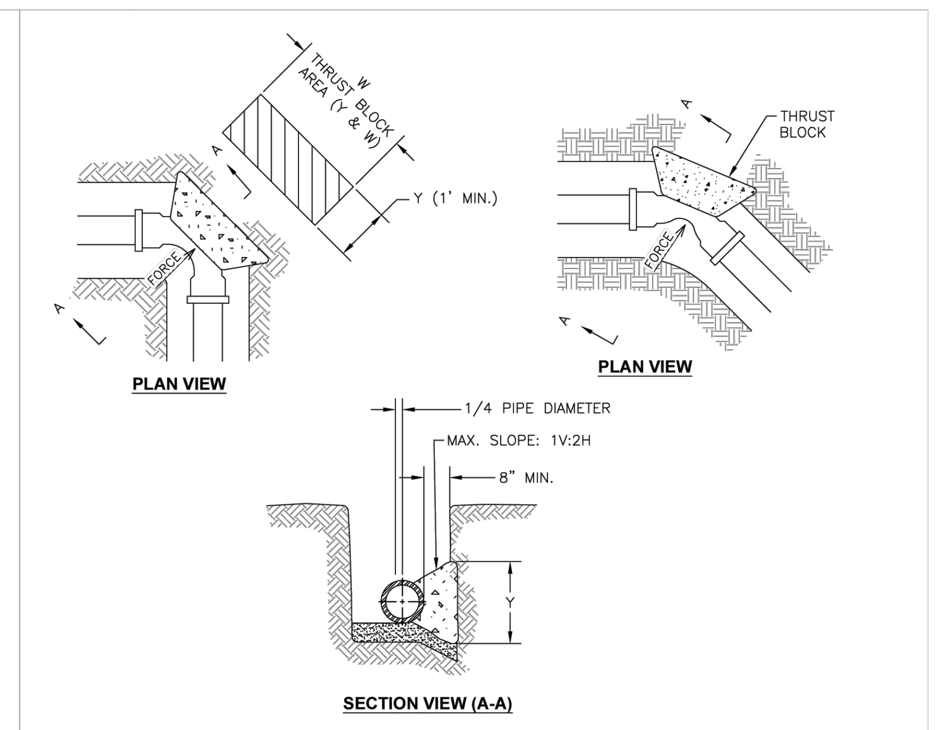


MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
	WATER PIPE	
PIPE SIZE	TEE, DEAD END, 90° BEND	45° AND 22.5° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET	15 SQ. FEET

NOTES:

1. TABLE IS BASED ON SOILS WITH A MINIMUM BEARING CAPACITY OF 3,000 PSF. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18 INCHES SHALL BE RESTRAINED.
3. THRUST BLOCKS SHALL EXTEND TO UNDISTURBED GROUND. CONCRETE SHALL BE CLASS "C" (MIN. 2,500 PSI).
4. FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT WITH A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA A21.10/C110 OR A21.53/C153.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	CONCRETE THRUST BLOCKING (1 OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-4



MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
	WATER PIPE	
PIPE SIZE	TEE, DEAD END, 90° BEND	45° AND 22.5° BENDS
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6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
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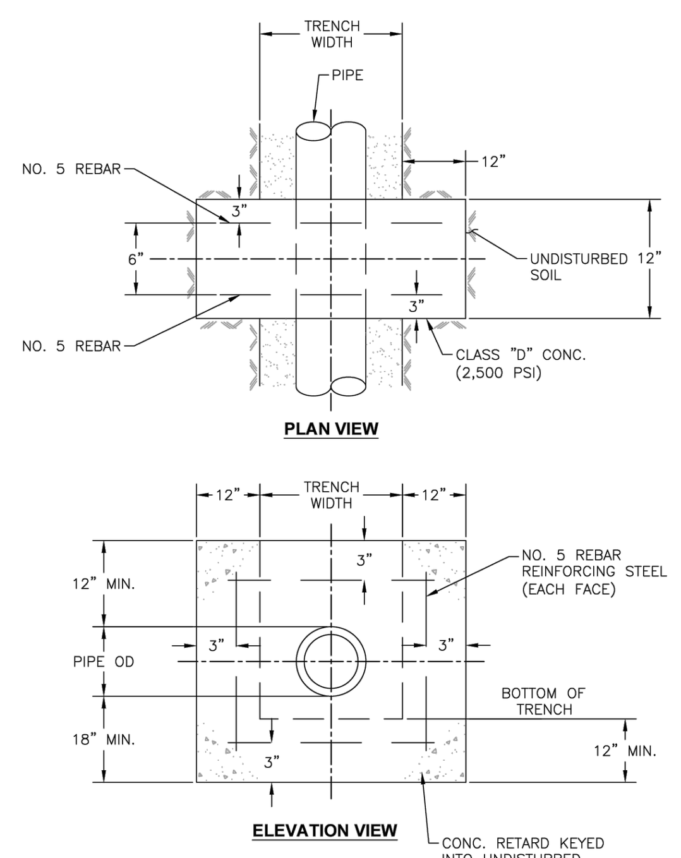
2. AREAS FOR PIPE LARGER THAN 18 INCHES SHALL BE RESTRAINED.
3. THRUST BLOCKS SHALL EXTEND TO UNDISTURBED GROUND. CONCRETE SHALL BE CLASS "C" (MIN. 2,500 PSI).
4. FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT WITH A MINIMUM PRESSURE RATING OF 250 PSI AND SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA A21.10/C110 OR A21.53/C153.

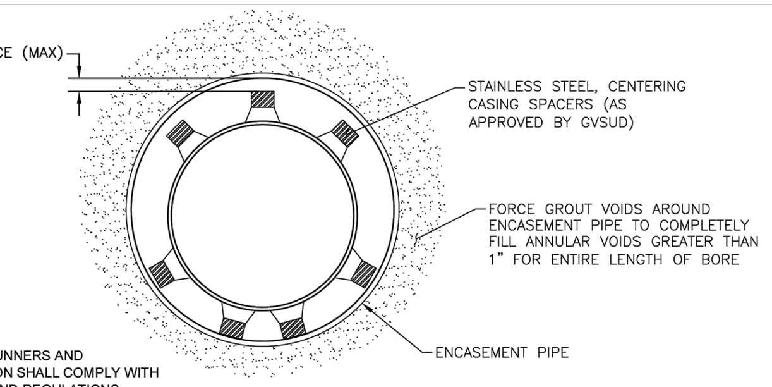
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	CONCRETE THRUST BLOCKING (2 OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-4



NOTES:

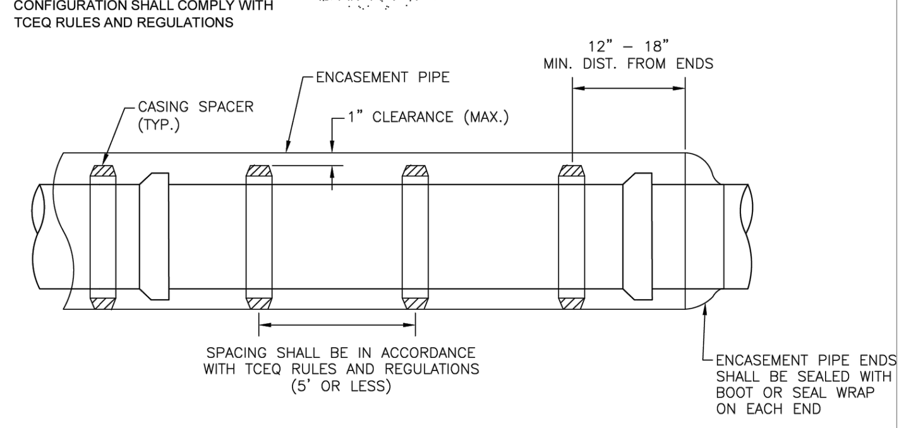
1. TO BE PLACED ON SLOPES GREATER THAN 10% WITH MAXIMUM SPACING OF 20 FEET.
2. WHEN TRENCHING IN ROCK CONDITIONS, WIDTH MAY BE REDUCED FROM 12 INCHES DOWN TO 6 INCHES.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	CONCRETE RETARD	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-5



NOTE:

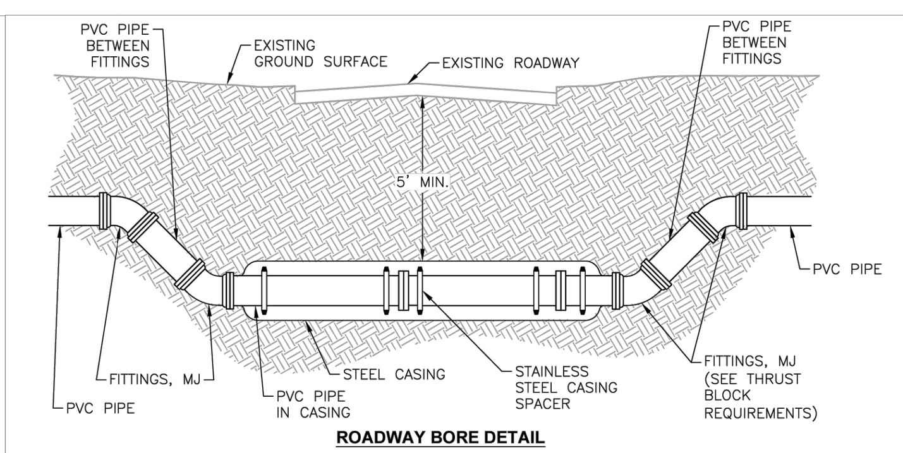
NUMBER OF RUNNERS AND CONFIGURATION SHALL COMPLY WITH TCEQ RULES AND REGULATIONS



NOTES:

1. TCEQ RULES AND REGULATIONS ON SANITARY SEWER, STORM SEWER AND WATER MAIN CROSSING AND SEPARATIONS WILL BE STRICTLY ENFORCED TO TAC, CHAPTER 290, SUBCHAPTER D.
2. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED AT JOINTS FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
3. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE PIPE SHALL BE ENCASED IN STEEL PIPE AND HAVE A MINIMUM OF 3 FEET OF COVER FROM THE BOTTOM OF THE CREEK/STREAM.
4. AT ANY ROADWAY CROSSING THE MAIN SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 5 FEET OF COVER FROM THE BOTTOM OF THE BASE MATERIAL.
5. BORE SHALL HAVE SUFFICIENT ROOM FOR 2" PVC O.D. (MIN) FOR FORCE GROUTING AS REQUIRED.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	ENCASEMENT DETAIL WITH ENCASEMENT SPACERS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-6



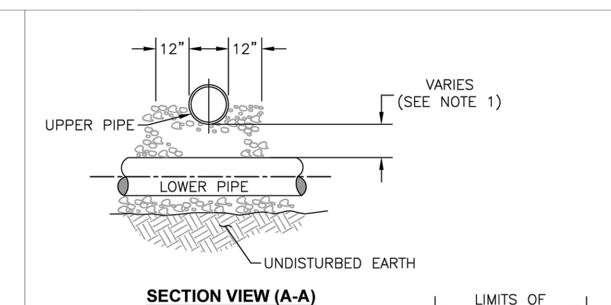
ROADWAY BORE DETAIL

NOTES:

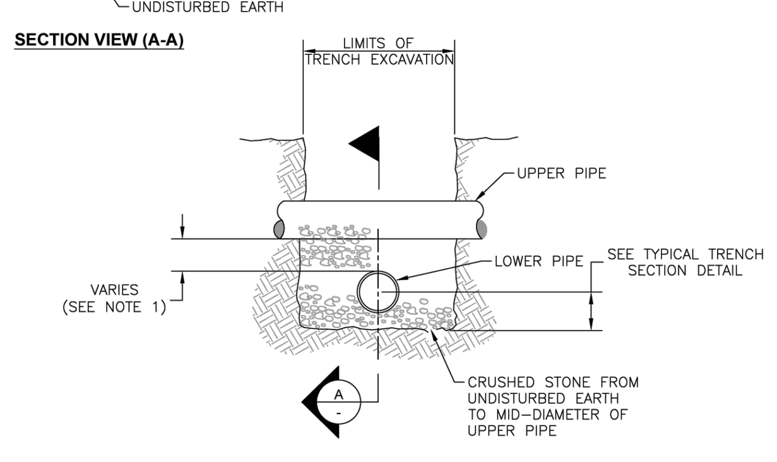
1. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED WITH AN APPROVED METHOD FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
2. FOR A PIPE 20 FEET IN LENGTH, A MINIMUM OF 4 SPACERS ARE REQUIRED. FOR A PIPE 13 FEET IN LENGTH, A MINIMUM OF 3 SPACERS ARE REQUIRED.
3. FOR ENCASED PIPE LOCATED IN PROXIMITY TO SANITARY SEWERS, SPACERS SHALL CONFORM TO TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290, SUBCHAPTER D.
4. AT ANY ROADWAY CROSSING THE PIPE SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 5 FEET OF COVER FROM THE BOTTOM OF THE BASE MATERIAL.
5. FOR ROAD WAY CROSSINGS, THE ENDS OF THE CASING PIPE SHALL EXTEND TO THE RIGHT OF WAY LINES.
6. ALL PIPE FITTINGS, VALVES, AND APPURTENANCES SHALL MATCH OR EXCEED CLASS RATING OF PIPE AS SHOWN ON THE PLANS.
7. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
8. DUCTILE IRON PIPE,AMERICAN ZINC COATED AWWA/ANSI C-151 MAY BE USED IN LIEU OF STEEL CASING WHEN APPROVED BY GVSUD.

WATER LINE IN ENCASEMENT PIPE			
WATER LINE SIZE (INCHES)	NOM. DIA. STEEL (INCHES)	ENCASEMENT PIPE THICKNESS (INCHES)	PIPE WEIGHT (LBS./FT.)
6	18	0.375	70.59
8	24	0.375	94.62
12	24	0.375	94.62
16	30	0.375	118.65
20	36	0.438	166.19
24	42	0.438	194.02
30	48	0.50	259.02
36	54	0.50	291.07

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER ROADS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-7



SECTION VIEW (A-A)

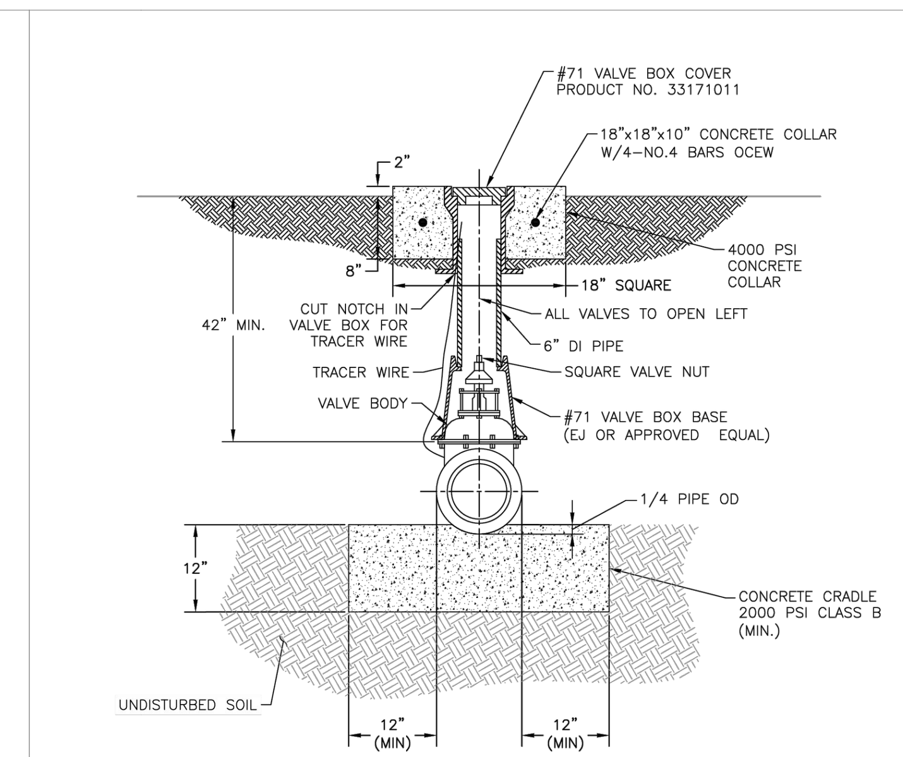


TYPICAL SECTION

NOTES:

1. MAINTAIN A MINIMUM 5 FOOT HORIZONTAL AND 2 FOOT VERTICAL SEPARATION FROM BETWEEN UTILITIES AND WATER AND WASTEWATER PIPES AND SERVICES. GAS, ELECTRIC, CABLE, ETC. TO BE LOCATED OPPOSITE SIDES OF PROPERTIES.
2. UTILITY CROSSINGS SEPARATED BY LESS THAN 5 FEET SHALL BE ENCASED WITH A MINIMUM OF 6 INCHES OF CONCRETE.
3. SPECIFICATIONS: BEDDING MATERIAL MUST BE APPROVED BY AUTHORIZED GVSUD PERSONNEL, BEFORE START OF JOB.
4. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE MAIN SHALL BE ENCASED WITH STEEL PIPE AND/OR 6 INCHES CONCRETE ENCASEMENT TO WITHIN 10 FEET OUTSIDE OF CREEK OR DRAINAGE DITCH AREA.
5. PIPE JOINTS SHALL BE AT LEAST 9 FEET HORIZONTALLY FROM CROSSINGS.

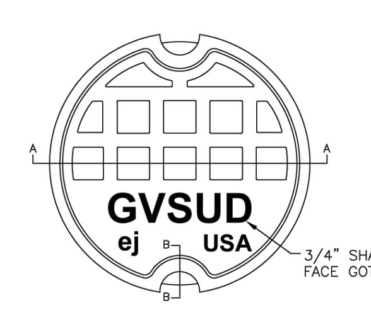
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	UTILITIES CROSSING DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-10



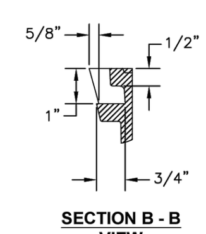
NOTES:

1. WELD 2 1/2 INCH X 2 INCH DEEP SOCKET TO 1 INCH (SCHEDULE 40) ROUND STEM EXTENSION AND ON OPERATING NUT. FOR PIPE EXTENSIONS OVER 10 FEET, STEM EXTENSION SHALL BE A SCHEDULE 80 PIPE.
2. VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES THAT EXCEED 3 FEET DEEP FROM FINISHED GRADE. VALVE EXTENSIONS SHALL BE PLACED SUCH THAT THE EXTENSION NUT IS BETWEEN 18 TO 24 INCHES FROM FINISHED GRADE.
3. CONCRETE COLLARS TO BE INSTALLED ON ALL VALVE BOXES LOCATED OUTSIDE PAVEMENT. SEE APPROPRIATE VALVE BOX ADJUSTMENT DETAILS.
4. GATE VALVES SHALL BE MUELLER TYPE OR APPROVED EQUAL.
5. FOR VALVE DEEPER THAN 5 FEET, ADD EXTENSION.
6. VALVE TURNS UNDERNEATH CAP.

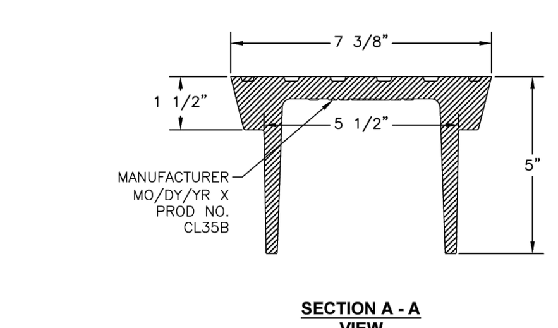
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	NON-RISING STEM VERTICAL GATE VALVE WITH BOX ASSEMBLY	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-11



PLAN VIEW



SECTION B - B VIEW

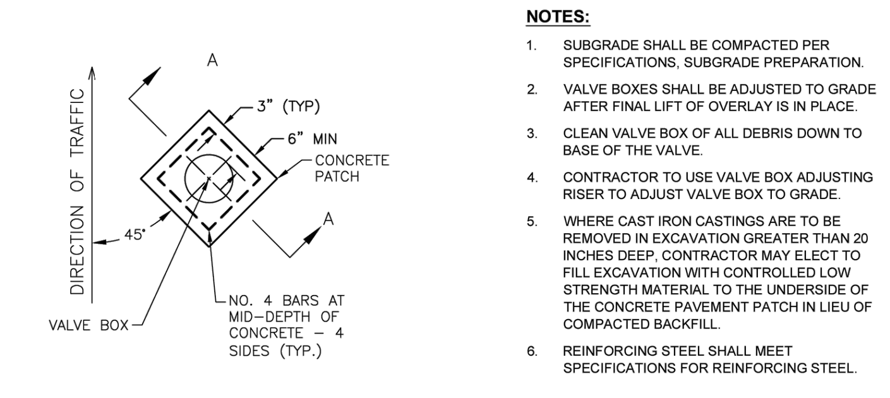


SECTION A - A VIEW

NOTES:

1. VALVE BOX COVER SHALL BE EJ GROUP, INC. $71 VALVE BOX COVER PRODUCT NUMBER 33171011, OR APPROVED EQUIVALENT WITH GVSUD LOGO.
2. TYPICAL FILLET IS 3/16 INCH RADIUS.
3. LETTERING SHALL BE 3/4 INCH SHARP FACE GOTHIC AND LOCATED AS SHOWN.
4. LID REQUIRES TWO (2) PICK SLOTS.
5. THE MANUFACTURER'S IDENTIFICATION, CASTING NUMBER, AND THE COUNTRY WHERE CAST, SHALL BE DISTINCTLY CAST ONTO EACH LID.
6. DRAFT AND SHRINKAGE ALLOWANCE SHALL BE IN ACCORDANCE WITH NORMAL FOUNDRY PRACTICE.
7. FINISH BY REMOVING FINS AND FLASHING AND PAINT WITH BLACK ASPHALT COATING.

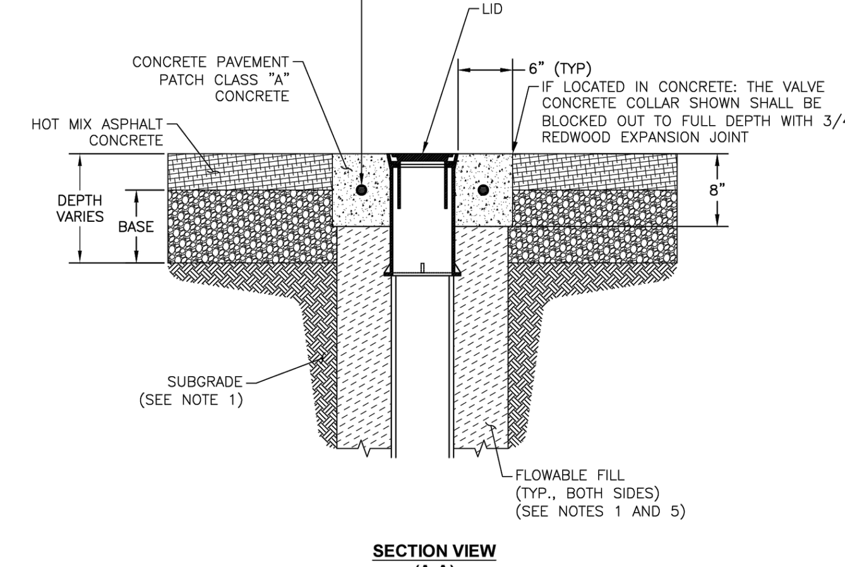
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	VALVE BOX CASTING LID	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-12



PLAN VIEW

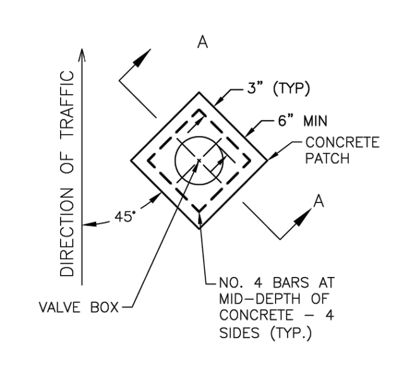
NOTES:

1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE BOXES SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO BASE OF THE VALVE.
4. CONTRACTOR TO USE VALVE BOX ADJUSTING RISER TO ADJUST VALVE BOX TO GRADE.
5. WHERE CAST IRON CASTINGS ARE TO BE REMOVED IN EXCAVATION GREATER THAN 20 INCHES DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPECIFICATIONS FOR REINFORCING STEEL.



SECTION VIEW (A-A)

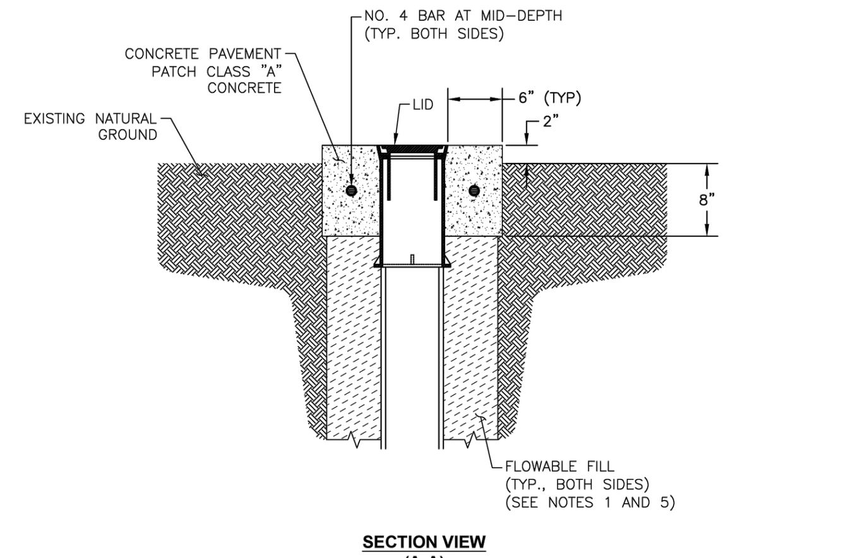
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	VALVE BOX ADJUSTMENT IN PAVEMENT	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-13



PLAN VIEW

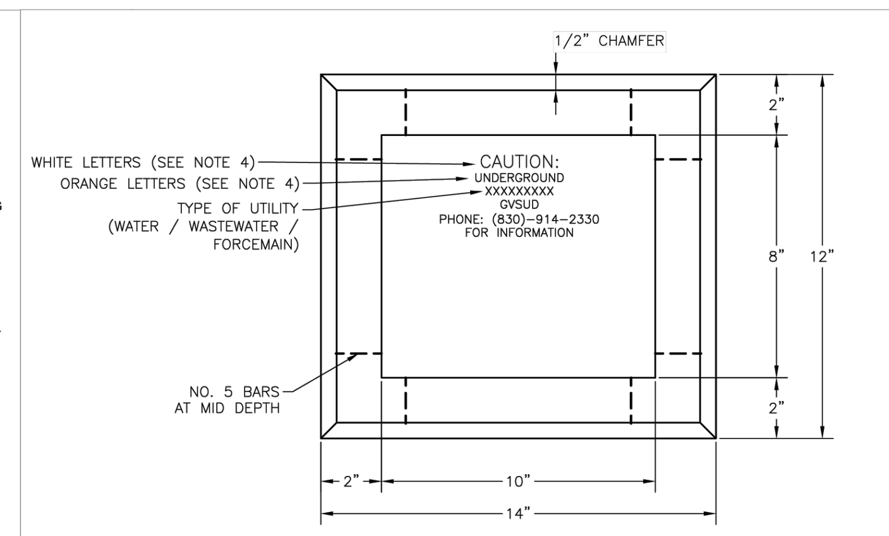
NOTES:

1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
3. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO BASE OF THE VALVE.
4. CONTRACTOR TO USE VALVE BOX ADJUSTING RISER TO ADJUST VALVE BOX TO GRADE.
5. WHERE CAST IRON CASTINGS ARE TO BE REMOVED IN EXCAVATION GREATER THAN 20 INCHES DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVEMENT PATCH IN LIEU OF COMPACTED BACKFILL.
6. REINFORCING STEEL SHALL MEET SPECIFICATIONS FOR REINFORCING STEEL.



SECTION VIEW (A-A)

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	VALVE BOX ADJUSTMENT OUTSIDE OF PAVEMENT	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-14

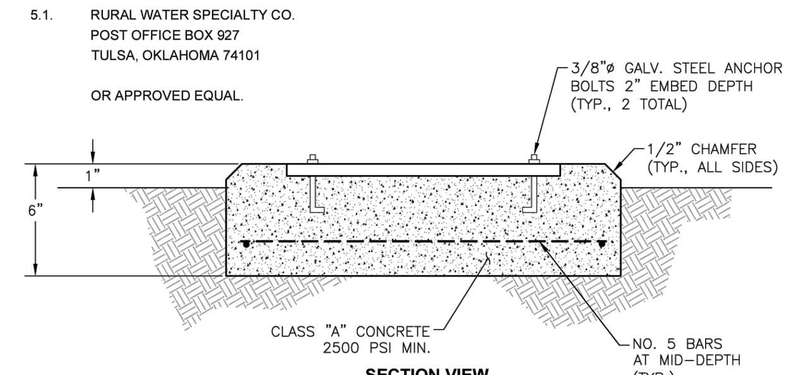


PLAN VIEW

NOTES:

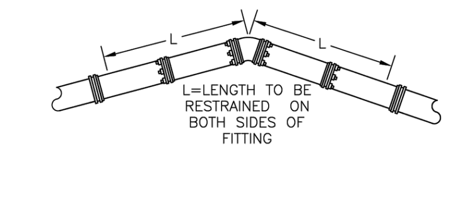
1. MARKERS SHALL BE PLACED AT VALVES, AIR VALVES, AND ACCESS PORTS.
2. PLACE WATER/WASTEWATER LINE MARKERS AT EVERY FENCE, ROAD CROSSING, AND AT 500' INTERVALS ALONG THE PIPELINE.
3. SIGNS SHALL BE 20 GA. WITH BLACK BACKGROUND FINISH.
4. LETTERS USED FOR "CAUTION" SHALL BE WHITE. ALL REMAINING LETTERS SHALL BE ORANGE.
5. MARKERS SHALL BE OBTAINED FROM:
   5.1. RURAL WATER SPECIALTY CO.
   POST OFFICE BOX 927
   TULSA, OKLAHOMA 74101

   OR APPROVED EQUAL.



SECTION VIEW

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	UTILITY MARKER DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-16



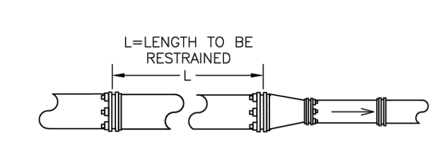
RESTRAINED LENGTH FOR BENDS

PIPE SIZE (INCHES)	BEND ANGLE (DEG)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	90	23
6	45	9
6	22.5	5
6	11.25	2
8	90	30
8	45	12
8	22.5	6
8	11.25	3
12	90	43
12	45	18
12	22.5	8
12	11.25	4
16	90	63
16	45	26
16	22.5	13
16	11.25	7
24	90	85
24	45	35
24	22.5	17
24	11.25	9

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	BEND RESTRAINED LENGTH DESIGN	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-18



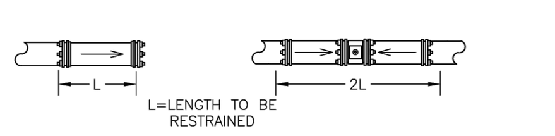
RESTRAINED LENGTH FOR REDUCERS

PIPE SIZE (INCHES)	SMALL SIZE (INCHES)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	4	30
8	4	55
8	6	32
12	4	95
12	6	80
12	8	58
16	4	131
16	6	120
16	8	104
16	12	60
24	16	110

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	REDUCER RESTRAINED LENGTH DESIGN	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-19



RESTRAINED LENGTH FOR DEAD ENDS/INLINE VALVES

PIPE SIZE (INCHES)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
4	42
6	59
8	77
12	109
16	142
24	202

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY. DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	VALVE AND DEAD END RESTRAINED LENGTH DESIGN	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-20

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED PROFESSIONAL ENGINEER

WATER DETAILS (1 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	UPDATED GVSUD DETAILS	10/25/2023

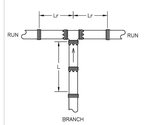
DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C7.4

Drawing Name: M:_Projects\248 – Rausch Coleman Homes\014 – Voges Unit 4\CD's\248.014_OVERALL WATER DETAILS.dwg User: matt-p Dec 21, 2023 – 4:51pm

RESTRAINED LENGTH FOR TEES

PIPE SIZE (INCHES)	BRANCH SIZE (INCHES)	LENGTH OF RUN (FEET)	RESTRAINED LENGTH IN FEET, WHEN TEST PRESSURE = 200 PSI
6	4	0	42
6	4	5	7
6	4	10	1
6	6	0	59
6	6	5	35
6	6	10	11
8	4	0	42
8	4	5	1
8	6	0	59
8	6	5	28
8	6	10	1
8	8	0	77
8	8	5	53
8	8	10	30
8	8	15	6
12	4	0	42
12	4	5	1
12	6	0	59
12	6	5	13
12	6	10	1
12	8	0	77
12	8	5	42
12	8	10	7
12	8	15	1
12	12	0	109
12	12	5	86
12	12	10	63
12	12	15	39
16	4	0	42
16	4	5	1
16	6	0	59
16	6	5	1
16	8	0	78
16	8	5	39
16	8	10	1
16	12	0	110
16	12	5	84
16	12	10	59
16	12	15	33
16	12	20	7
16	16	0	142
16	16	5	123
16	16	10	104
16	16	15	85
16	16	20	65
24	24	5	169
24	24	10	136
24	24	15	103
24	24	20	70

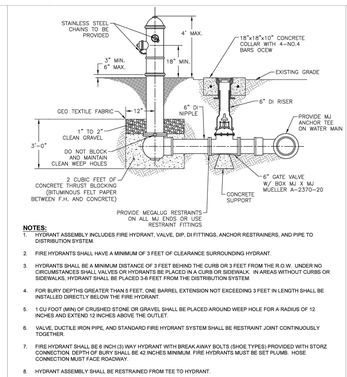


L=r+LENGTH OF PIPE ALONG THE RUN FREE OF JOINTS.
L=LENGTH TO BE RESTRAINED

NOTES:

1. RESTRAINED LENGTH CALCULATIONS FOR P.V.C PIPE BEDDED IN COMPACTED GRANULAR MATERIAL EXTENDING TO THE TOP OF THE PIPE. NATIVE SOIL MATERIAL IS ASSUMED TO BE INORGANIC CLAY OF HIGH PLASTICITY, DEPTH OF BURY IS ASSUMED TO BE 4 FEET.
2. THESE CALCULATIONS ARE PROVIDED FOR REFERENCE. THE RESTRAINED LENGTH SHALL BE DESIGNED BASED UPON THE CONDITIONS ENCOUNTERED DURING INSTALLATION.
3. CONTRACTOR SHALL RESTRAIN ALL JOINTS WITHIN THE REQUIRED RESTRAINT DISTANCE PLUS THE NEXT JOINT OUTSIDE THE REQUIRED RESTRAINT DISTANCE.

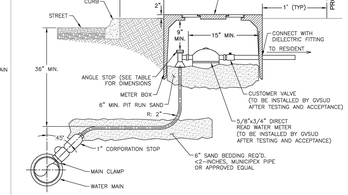
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TEE RESTRAINED LENGTH DESIGN	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-21



NOTES:

1. HYDRANT ASSEMBLY INCLUDES FIRE HYDRANT, VALVE, DIP, DI FITTINGS, ANCHOR RESTRAINERS, AND PIPE TO DISTRIBUTION SYSTEM
2. FIRE HYDRANTS SHALL HAVE A MINIMUM OF 3 FEET OF CLEARANCE SURROUNDING HYDRANT.
3. HYDRANTS SHALL BE A MINIMUM DISTANCE OF 3 FEET BEHIND THE CURB OR 3 FEET FROM THE R.O.W. UNDER NO CIRCUMSTANCES SHALL VALVES OR HYDRANTS BE PLACED IN A CURB OR SIDEWALK. IN AREAS WITHOUT CURBS OR SIDEWALKS, HYDRANT SHALL BE PLACED 5-8 FEET FROM THE DISTRIBUTION SYSTEM.
4. FOR BURY DEPTHS GREATER THAN 5 FEET, ONE BARREL EXTENSION NOT EXCEEDING 3 FEET IN LENGTH SHALL BE INSTALLED DIRECTLY BELOW THE FIRE HYDRANT.
5. 1 CU FOOT (MIN) OF CRUSHED STONE OR GRAVEL SHALL BE PLACED AROUND WEEP HOLE FOR A RADIUS OF 12 INCHES AND EXTEND 12 INCHES ABOVE THE OUTLET.
6. VALVE, DUCTILE IRON PIPE, AND STANDARD FIRE HYDRANT SYSTEM SHALL BE RESTRAINT JOINT CONTINUOUSLY TOGETHER.
7. FIRE HYDRANT SHALL BE 6 INCH (S) WAY HYDRANT WITH BREAK AWAY BOLTS (SHOE TYPES) PROVIDED WITH STORZ CONNECTION. DEPTH OF BURY SHALL BE 42 INCHES MINIMUM. FIRE HYDRANTS MUST BE SET PLUMB. HOSE CONNECTION MUST FACE ROADWAY.
8. HYDRANT ASSEMBLY SHALL BE RESTRAINED FROM TEE TO HYDRANT.
9. IN THE CITY OF CIBOLO'S CITY LIMITS, FIRE HYDRANTS SHALL BE MUELLER TYPE AND SHALL BE 1 FOOT MINIMUM AND 7 FEET MAXIMUM FROM THE BACK OF CURB
10. HYDRANTS UPPER BARREL SHALL BE FACTORY PAINTED RED WITH BONNET AND CAPS COATED PER CURRENT NFPA 291 STANDARDS.
11. HYDRANTS LOCATED IN RURAL AREAS SHALL HAVE 6" TALL POLLARD WATER FLEXIFLAG #PF66802.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	STANDARD HYDRANT ASSEMBLY INSTALLATION	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-22

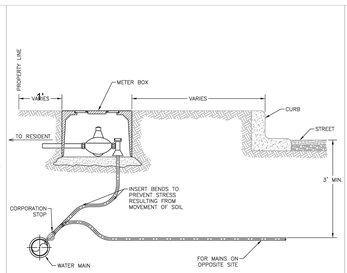


MAIN SIZE	METER SIZE	MAIN SADDLE	CORPORATION	ANGLE STOP
<1'2"	5/8" OR 3/4"	B-91804 IP	H-15028 IP 1"	B-24258N 1"X 3/4"
<1'2"	1"	B-91804 IP	H-15028 IP 1"	B-24258N 1"X1"

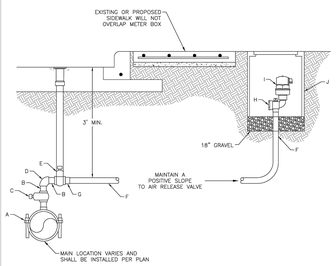
NOTES:

1. FITTINGS SHALL BE MUELLER OR APPROVED EQUAL
2. A TRACER WIRE SHALL BE INSTALLED ON THE SERVICE LINE TAPED AT 10-INCH INCREMENTS.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	STANDARD SERVICE CONNECTION	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-23



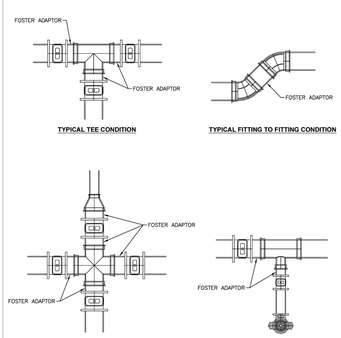
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TYPICAL SERVICE LOCATION DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-24



MATERIAL LIST***	
LABEL	ITEM
A*	2" TAPPING SADDLE/SLEEVE
B	2" BRASS NIPPLE - THREADED
C**	2" BRASS CORPORATION STOP, MIP X FIP
D	2" BRASS 90° BEND, FIP
E	2" VALVE, RESILIENT WEDGE GATE, IRON BODY, FIP X FIP, WITH VALVE BOX
F	2" MUNICIPEX WATER SERVICE LINE
G	2" BRASS ADAPTER, MIP X CTS COMPRESSION
H	2" BRASS STOP, ANGLED OR STRAIGHT, CTS COMPRESSION X FIP
I	2" AIR RELEASE VALVE
J	DFW38CNP-226-AF1MS VALVE BOX

* SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
** ALL FITTING CONNECTED TO POLYETHYLENE PIPE WILL REQUIRE A STAINLESS STEEL INSERT.
*** MATERIAL LIST TO BE IN ACCORDANCE WITH GVSUD STANDARD PRODUCT LIST.

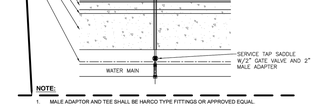
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	2" AIR RELEASE VALVE	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-30



NOTE:

1. FOSTER ADAPTORS, OR APPROVED EQUAL, REQUIRED AT ALL FITTING TO FITTING CONNECTIONS AND FITTING TO VALVE CONNECTIONS.
2. ANCHOR COUPLINGS MAY BE SUBSTITUTED FOR FOSTER ADAPTORS AT GVSUD'S DISCRETION.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	MECHANICAL JOINT ADAPTOR DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-31

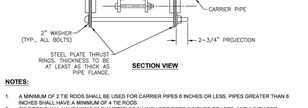


NOTE:

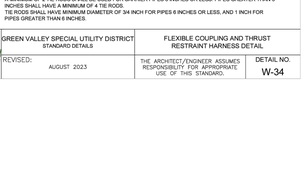
1. MALE ADAPTOR AND TEE SHALL BE HARCO TYPE FITTINGS OR APPROVED EQUAL.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	MULTI-DWELLING UNIT WATER SERVICE DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-32

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	WATER SAMPLING STATION DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-33



PLAN VIEW



SECTION VIEW

NOTES:

1. A MINIMUM OF 2 TIE RODS SHALL BE USED FOR CARRIER PIPES 6 INCHES OR LESS. PIPES GREATER THAN 6 INCHES SHALL HAVE A MINIMUM OF 4 TIE RODS.
2. TIE RODS SHALL HAVE MINIMUM DIAMETER OF 3/4 INCH FOR PIPES 6 INCHES OR LESS, AND 1 INCH FOR PIPES GREATER THAN 6 INCHES.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	FLEXIBLE COUPLING AND THRUST RESTRAINT HARNESS DETAIL	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-34

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

WATER DETAILS (2 OF 2)

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE
1	UPDATED GVSUD DETAILS	10/25/2023

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C7.5

Drawing Name: M:_Projects\248 - Rausch Coleman Homes\014 - Voges Unit 4\03-1\248.014_OVERALL WATER DETAILS.dwg User: matt-p Dec 21, 2023 - 4:51pm

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

GVSUD (WATER)	(830) 914–2331
GUADALUPE–BLANCO RIVER AUTHORITY (SEWER)	(830) 379–5822
GVEC (ELECTRIC)	(830) 223–4832
TIME WARNER CABLE	(830) 625–3408
CENTERPOINT ENERGY (GAS)	(830) 643–6434
AT&T	(830) 303–1333
TEXAS ONE CALL SYSTEM	(800) 245–4545
ENERGY TRANSFER (PETROLEUM PIPELINE)	(210) 262–2486

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 192.181, 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.

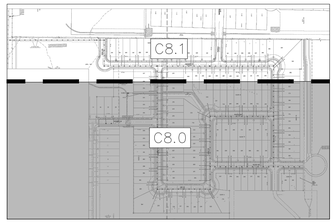
UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO–TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. 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 100LF FOR EACH LIFT, UPON COMPLETION OF TESTING THE GEO–TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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.



SHEET INDEX

UTILITY NOTES:

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3. ALL SEWER PIPE ASTM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
4. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
5. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
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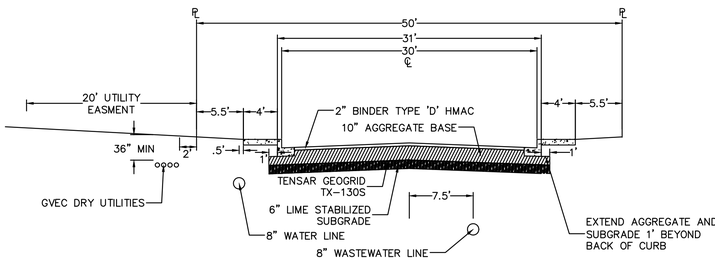

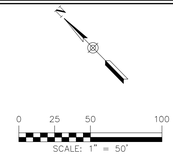

LEGEND

- 700 — EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EX WW — EX WW — EXISTING WASTEWATER LINE
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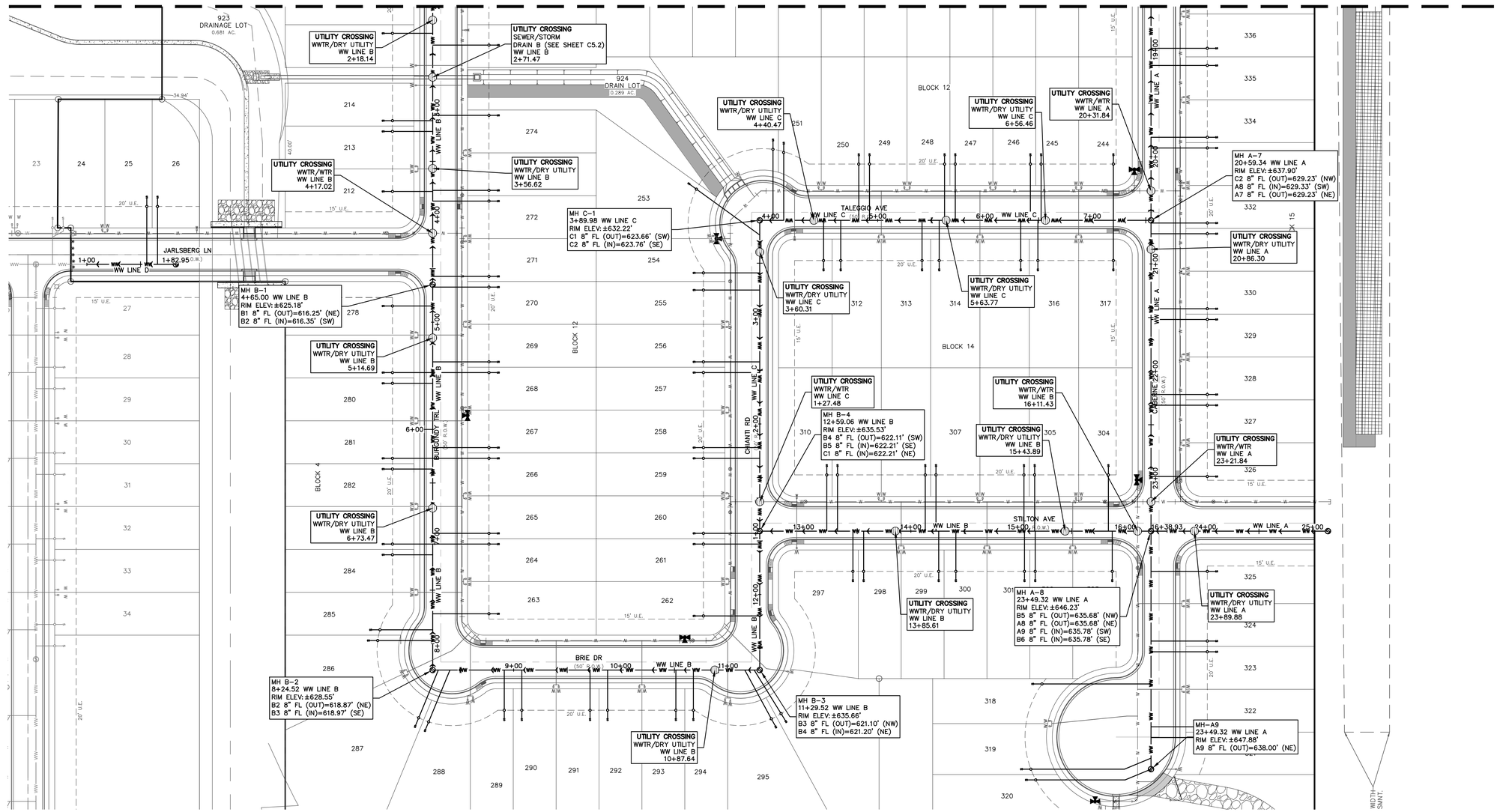

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
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TBPLS FIRM 1053600

HMT ENGINEERING & SURVEYING

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL WASTEWATER PLAN (1 OF 2)

VOGES SUBDIVISION UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C8.0

Drawing Name: M:_Projects\248 – Rausch Coleman Homes\014 – Voges Unit 4\C0's\248.014_OVERALL WASTEWATER.dwg User: matt-p Dec 21, 2023 - 4:52pm

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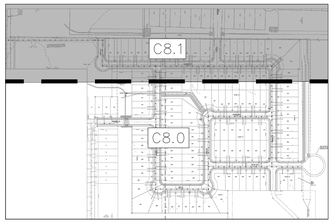

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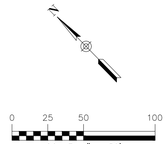

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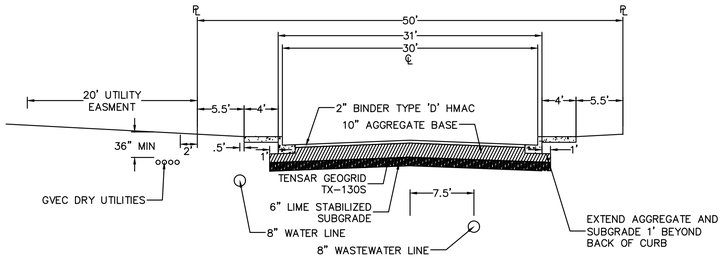

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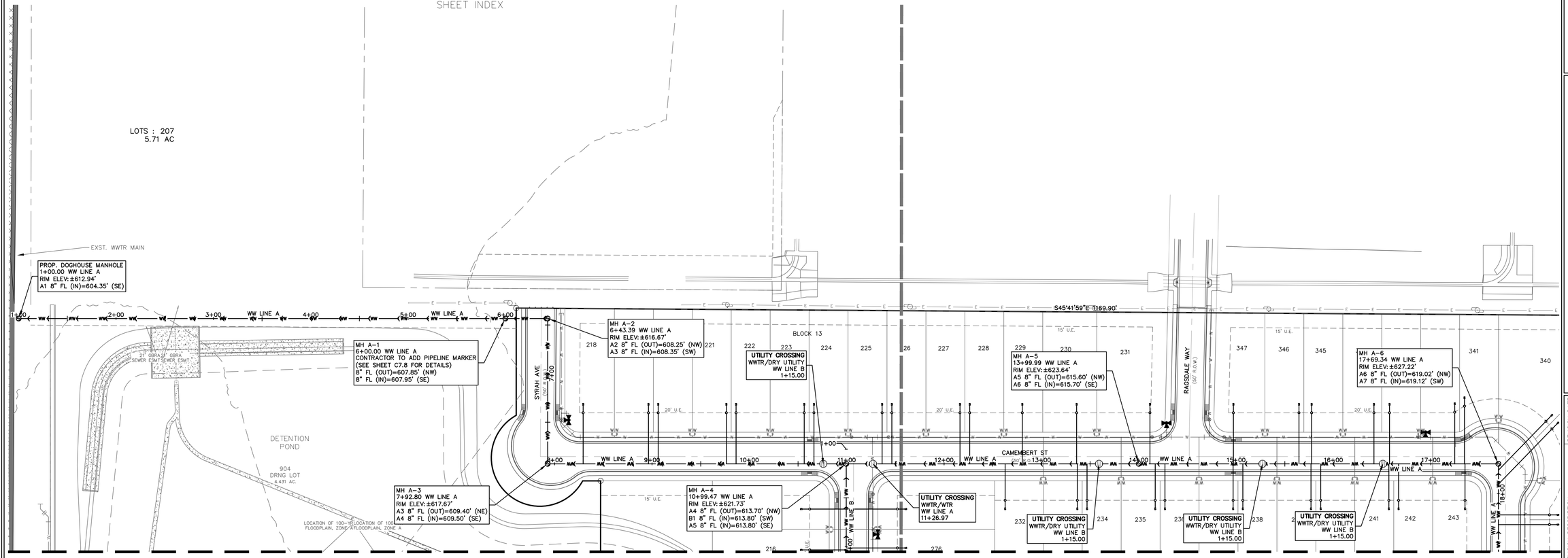

MATCHLINE (SEE SHEET C8.0)

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT ENGINEERING & SURVEYING

12/21/23

STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

OVERALL WASTEWATER PLAN (2 OF 2)

VOGES SUBDIVISION
UNIT 3

REVISION DATE	REVISION DESCRIPTION	NO.

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET

C8.1

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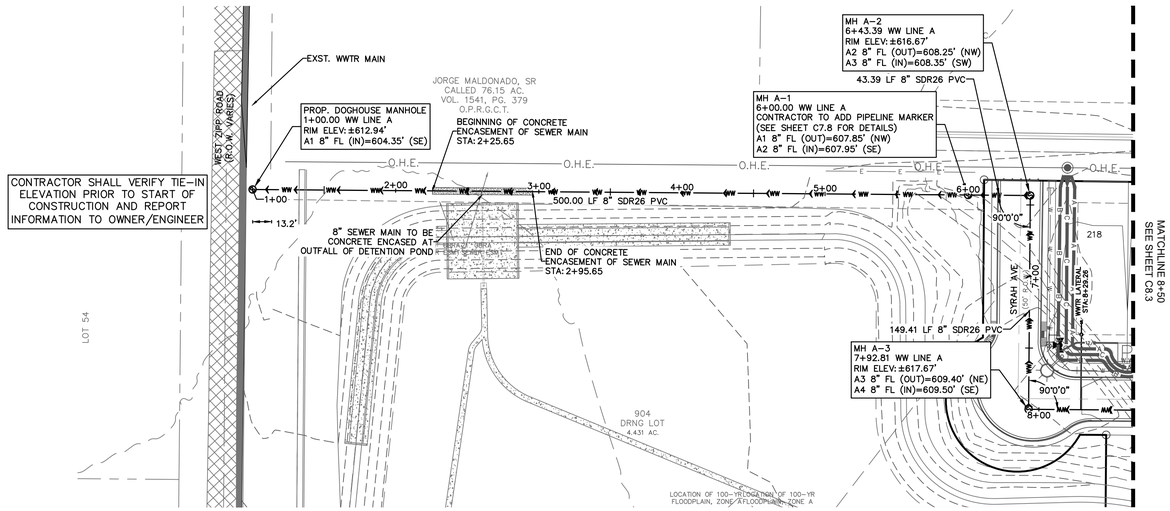

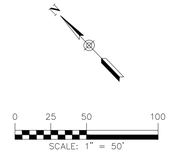

LEGEND

700	EXISTING CONTOURS
700	EXISTING CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
EX WW / EX WW	EXISTING WASTEWATER LINE
	PROPOSED WASTEWATER MANHOLE
WW / WW	PROPOSED WASTEWATER LINE
	PROPOSED WASTEWATER SERVICE
	UTILITY CROSSING

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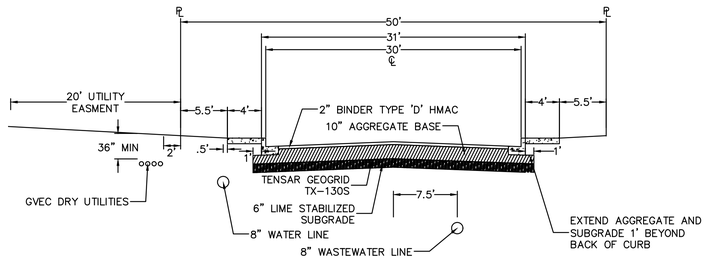
WW LINE A
0+50 - 8+50



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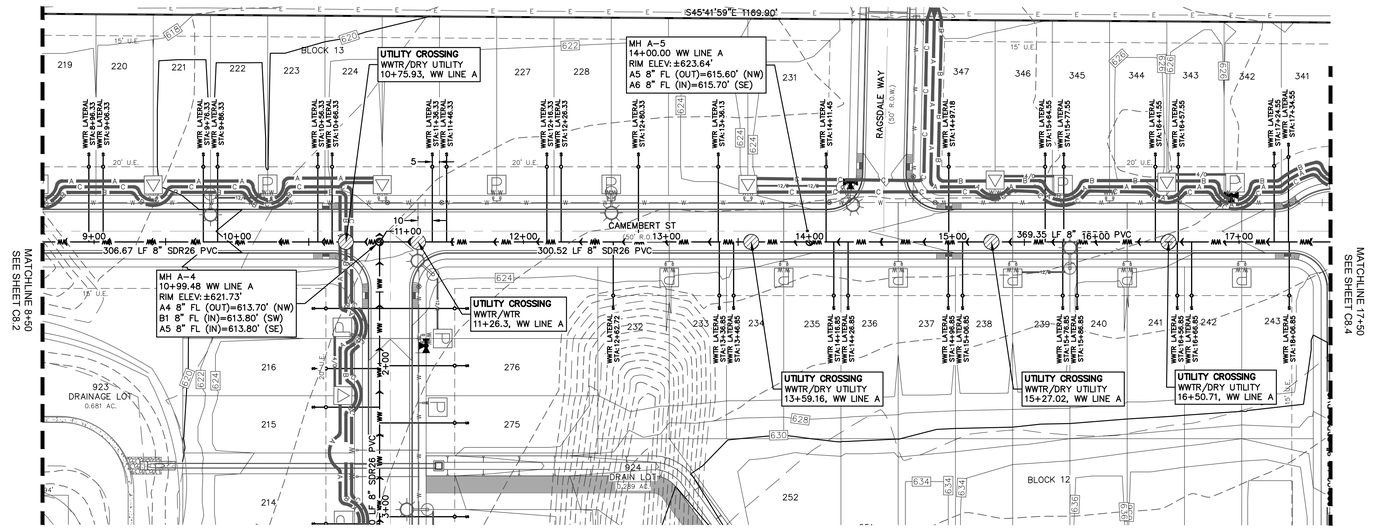
WW LINE A P&P (1 OF 3)

VOGES SUBDIVISION
UNIT 3

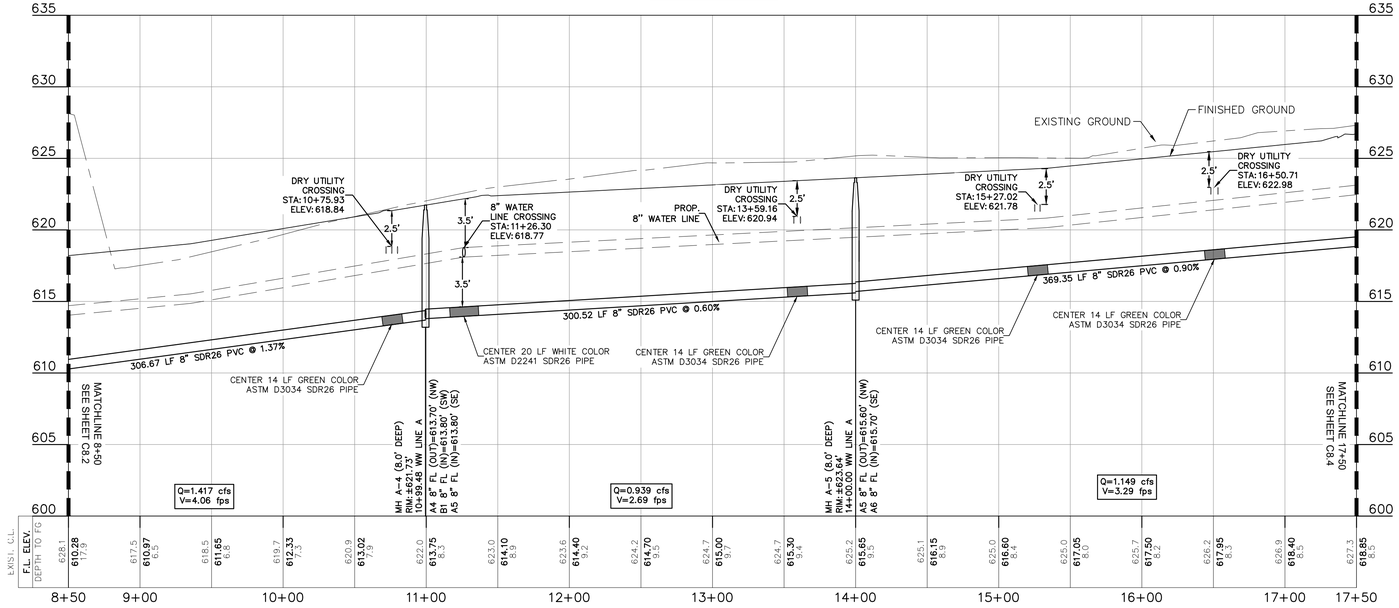
NO.	REVISION DESCRIPTION	REVISION DATE

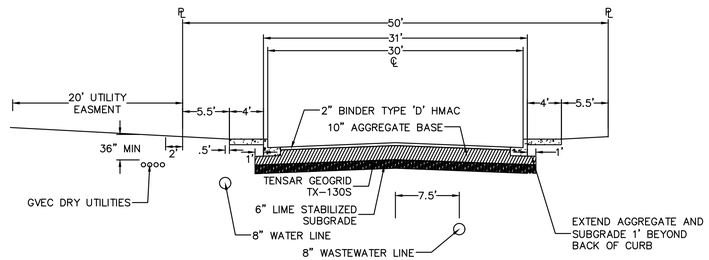
DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C8.2



WW LINE A
8+50 – 17+50





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WW	PROPOSED WASTEWATER LINE
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0 25 50 100
SCALE: 1" = 50'

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12/21/23
STATE OF TEXAS
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LICENSED
PROFESSIONAL ENGINEER

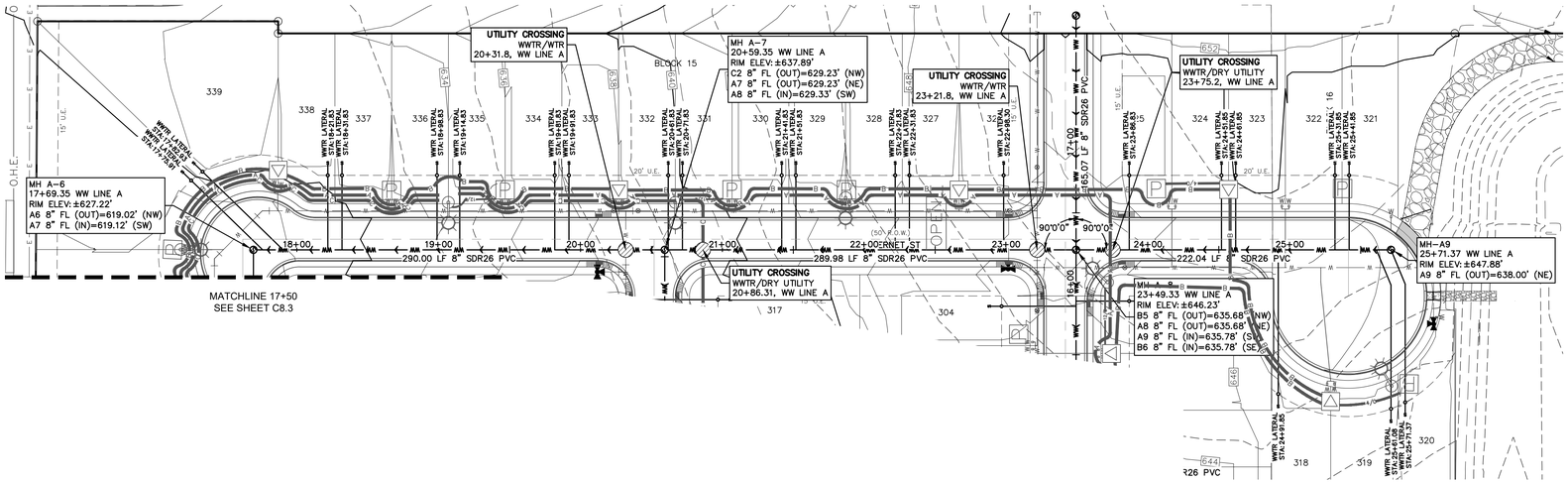
WW LINE A P&P (2 OF 3)

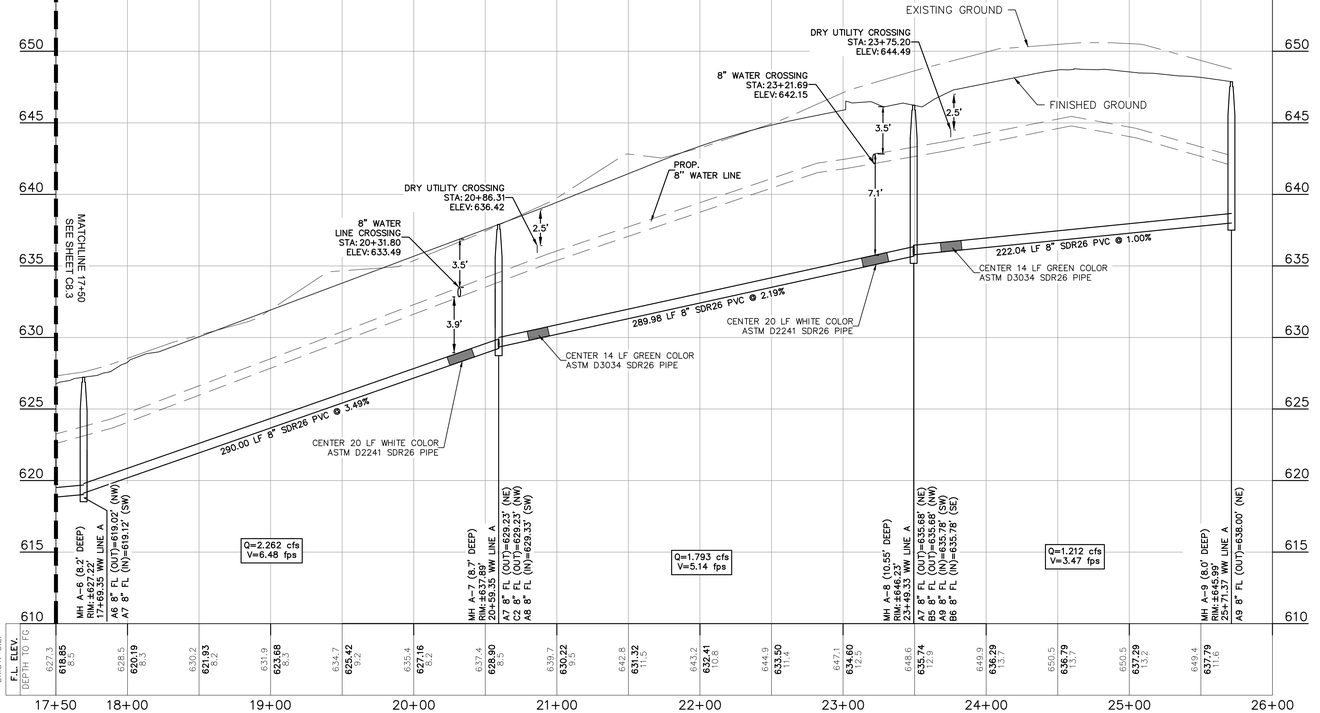
VOGES SUBDIVISION
UNIT 3

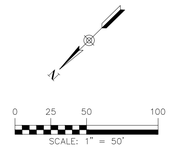
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C8.3







LEGEND

- 700 — EXISTING CONTOURS
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- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
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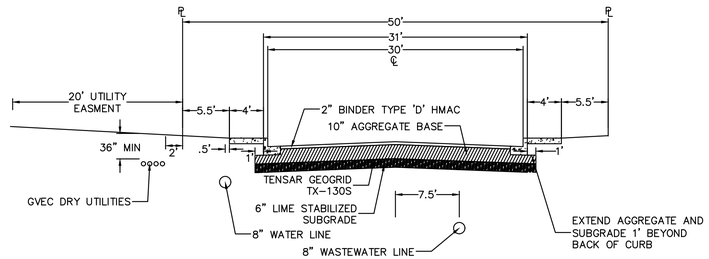

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NO.	REVISION DESCRIPTION	REVISION DATE

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SHEET
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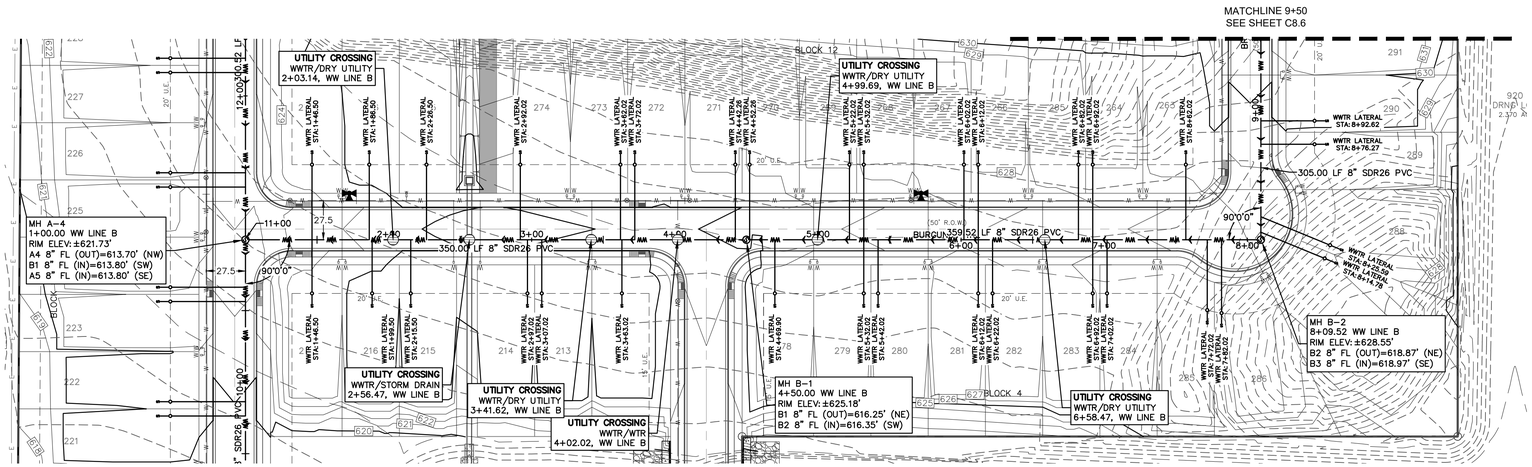

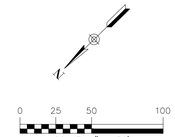

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- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EX WW — EX WW — EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- WW — WW — PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED & TESTED PRIOR TO THE STREETS.
2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
3. ALL SEWER PIPE ATSM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
4. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
5. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
6. REFER TO ALL GBRA NOTES ON SHEET C0.1.

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

GVSUD (WATER)	(830) 914-2331
GUADALUPE-BLANCO RIVER AUTHORITY (SEWER)	(830) 379-5822
GVEC (ELECTRIC)	(830) 223-4832
TIME WARNER CABLE	(830) 625-3408
CENTERPOINT ENERGY (GAS)	(830) 643-6434
AT&T	(830) 303-1333
TEXAS ONE CALL SYSTEM	(800) 245-4545
ENERGY TRANSFER (PETROLEUM PIPELINE)	(210) 262-2486

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 192.181, 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.

UTILITY TRENCH COMPACTION

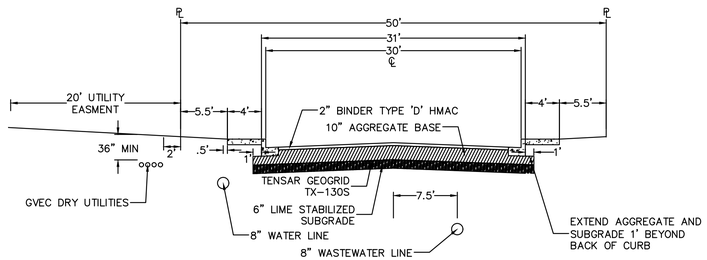
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND 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 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

DEEP TRENCH COMPACTION TESTING

CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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.

WW LINE B
0+50 - 9+50



REFER TO THE COVER SHEET
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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

HMT
ENGINEERING & SURVEYING

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

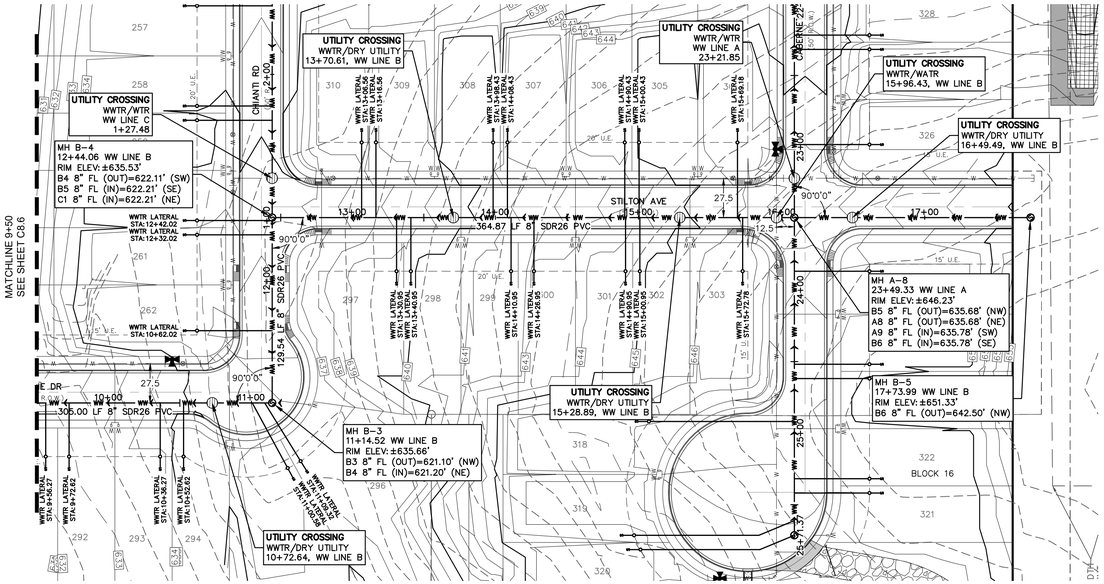
WW LINE B P&P (1 OF 2)

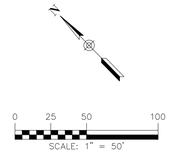
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

SHEET
C8.5





LEGEND

- EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
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WW LINE B
9+50 – 18+00

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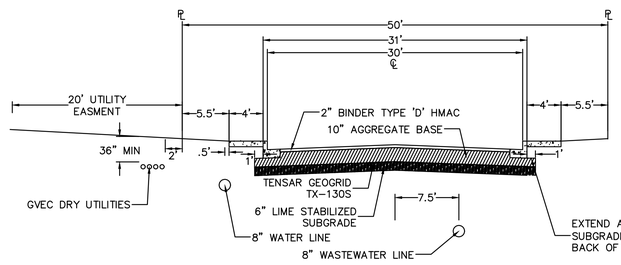

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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

WW LINE B P&P (2 OF 2)

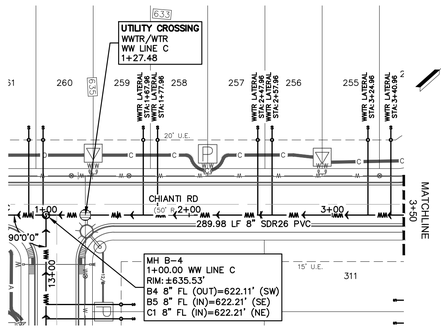
VOGES SUBDIVISION
UNIT 3

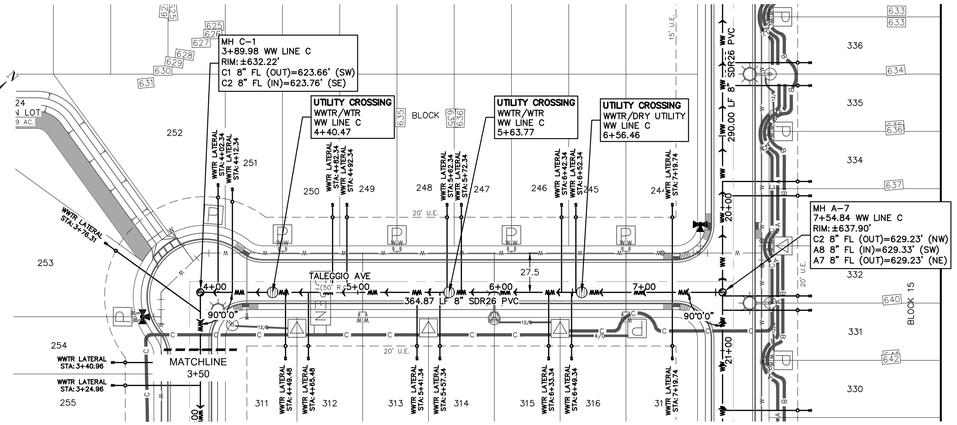
NO.	REVISION DESCRIPTION	REVISION DATE

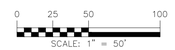
DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C8.6

Drawing Name: M:_projects\248 - roush coleman homes\014 - voges unit 4\C0\248.014_WW LINE B P&P.dwg User: matt-p Dec 21, 2023 - 4:53pm







LEGEND

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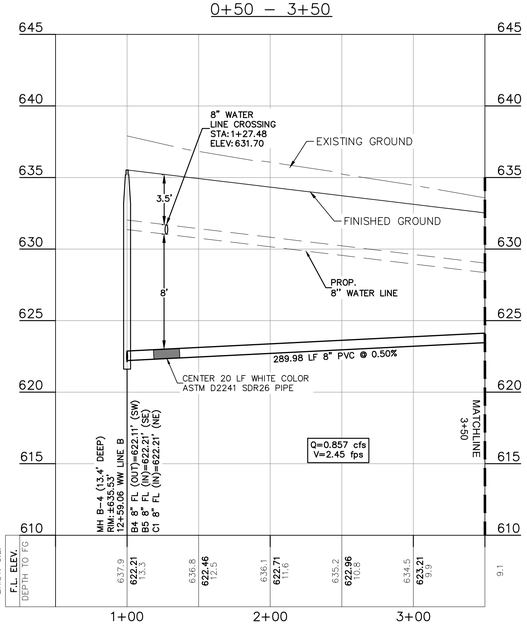
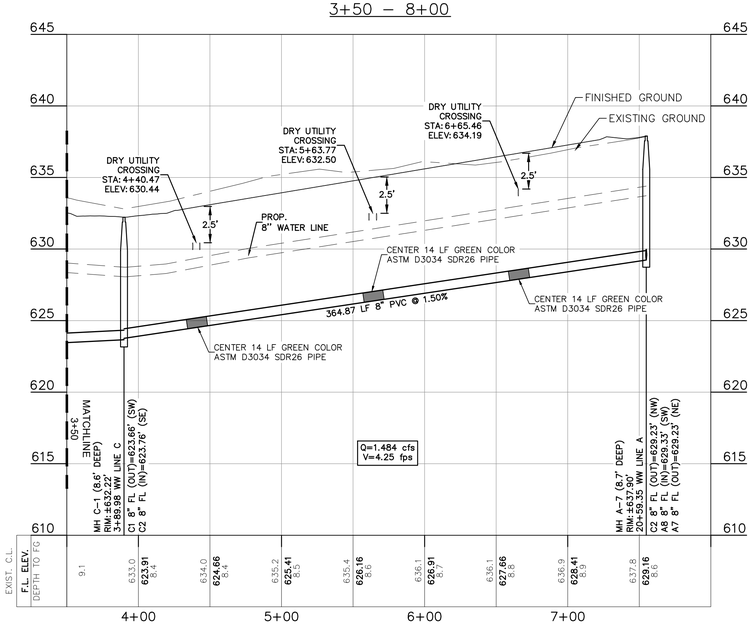
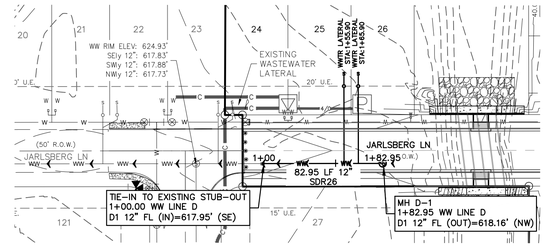
WW LINE C
0+50 – 3+50

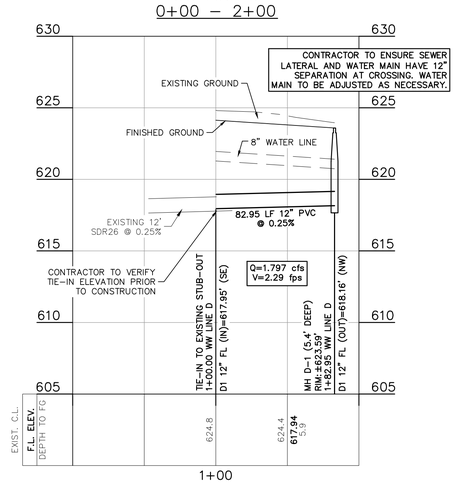


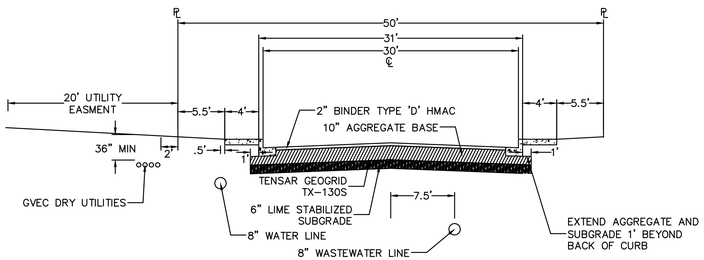
WW LINE C
3+50 – 8+00





WW LINE D
0+00 – 2+00





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12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER

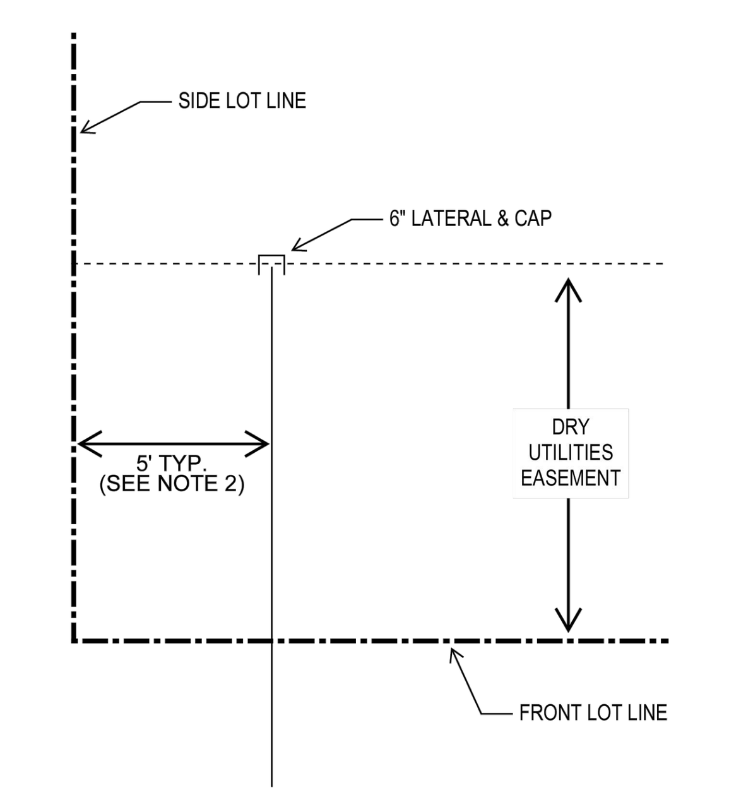
WW LINE C & D P&P

VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	DECEMBER 2023
DRAWN BY:	MP
DESIGNED BY:	MP
REVIEWED BY:	ESP
HMT PROJECT NO.:	248.014

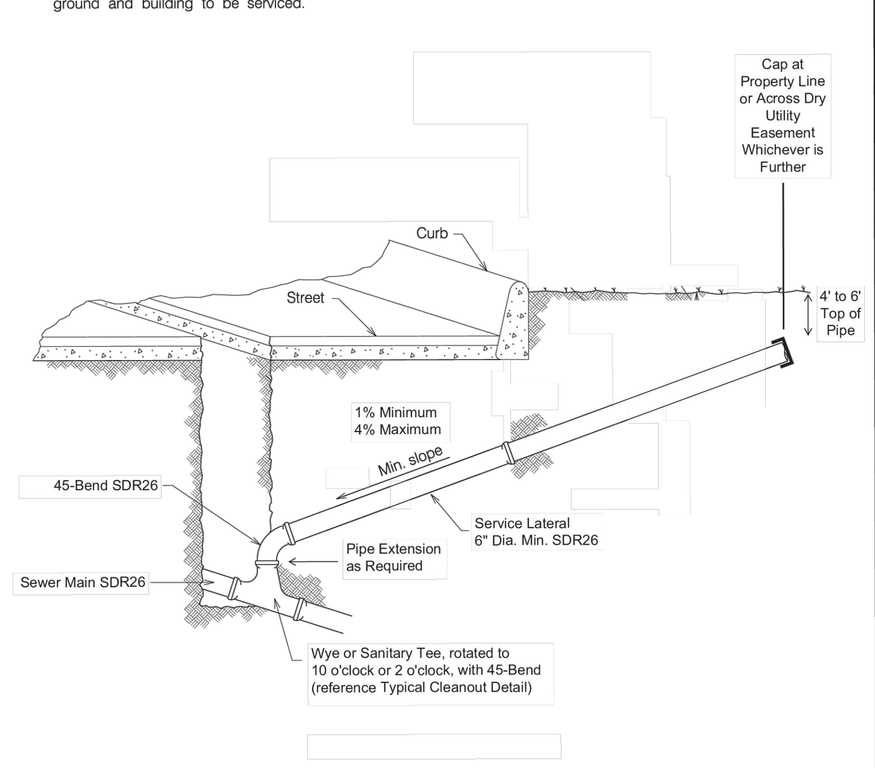
SHEET
C8.7



NOTES:
1. REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.
2. PROVIDE 8 FT WHERE LOT CORNER IS SHARED WITH DRY UTILITIES AND 10 FT WHERE SHARED WITH FIRE HYDRANT OR AIR RELEASE VALVE.

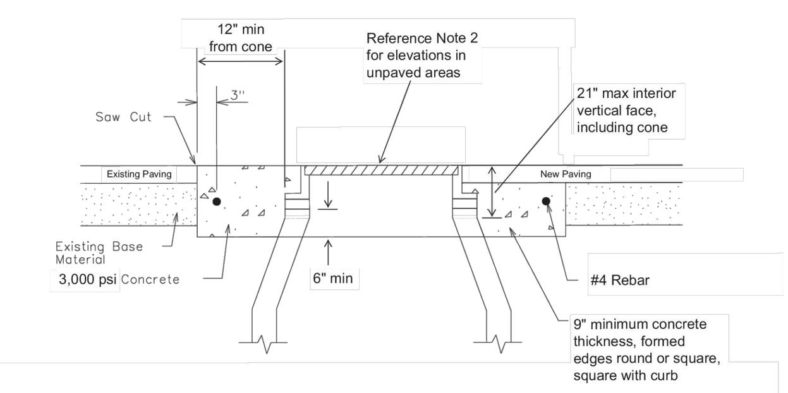
WASTEWATER LATERAL LAYOUT DETAIL (N.T.S.)
GUADALUPE-BLANCO RIVER AUTHORITY, 12/15/2021

Depth and grade of service laterals as shown, are typical only. Actual depth, alignment and grade of service laterals shall be determined by the Engineer based on the elevations of the sewer main, street, natural ground and building to be serviced.



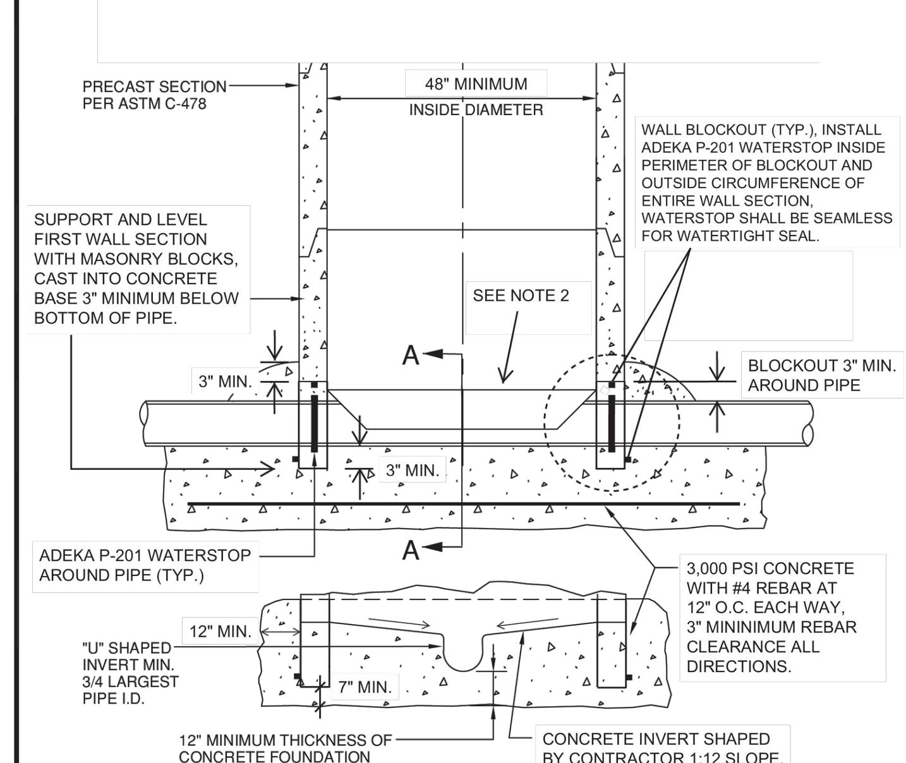
NOTES:
1) Install double services where indicated on design drawings.
2) Cleanout to be installed by customer plumber.
3) Pipe and fittings shall be gasketed. Tees and 90-bends are not allowed.
4) Pressure rated pipe and fittings shall be installed for sewer mains and laterals that cross water lines (use ASTM D2241 SDR26). Center both water and sewer pipe lengths at all crossings. Comply with TCEQ Rules.
5) Tapping saddles are not allowed.

Guadalupe-Blanco River Authority | LATERAL DETAIL | APPROVED: C. LEWIS | REVISED: JAN. 28, 2018 | SHEET



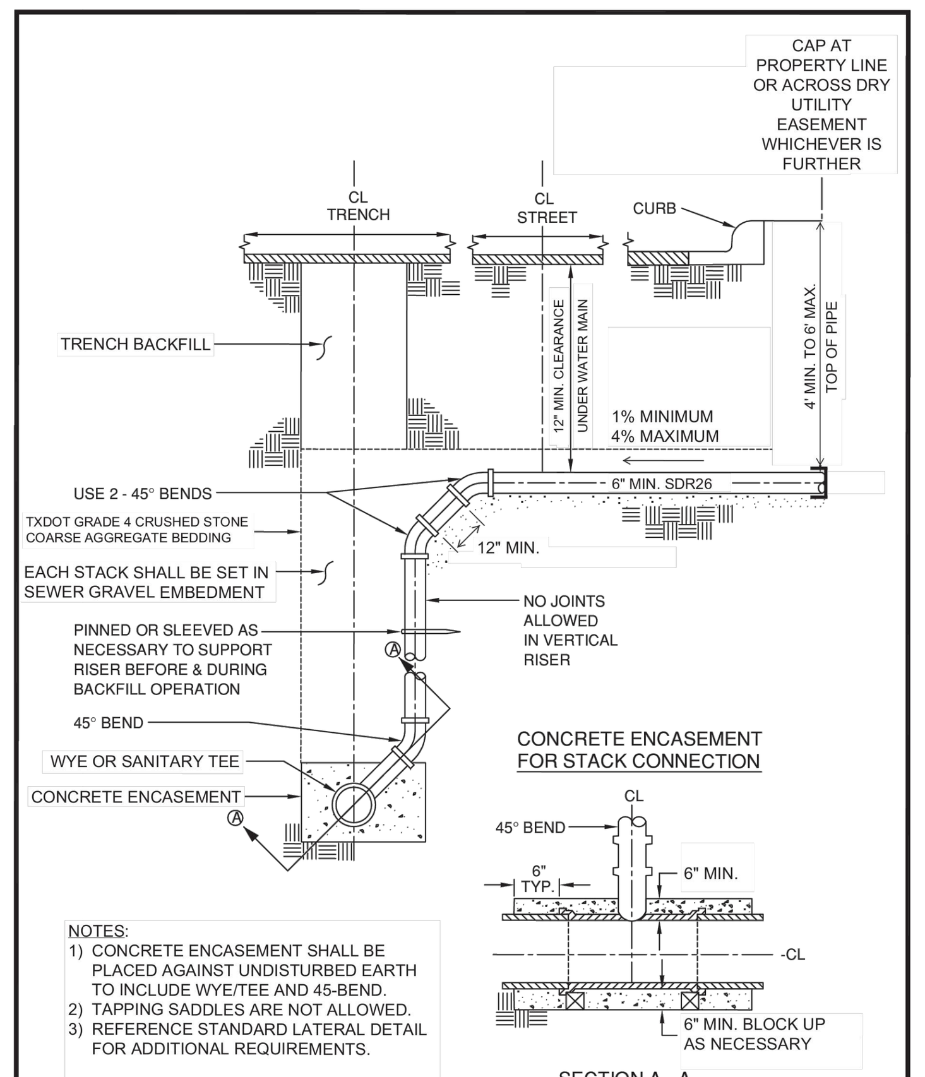
NOTES:
1) Manhole ring concrete encasement is required for all manholes.
2) Manhole rim elevations shown in plan and profile views are approximate. Manholes located in unpaved areas shall be installed with top of concrete encasement 2" above finish grade and covers 2" above top of concrete encasement. Square with curb. All exposed vertical and horizontal concrete edges shall be formed with 3/4" chamfer.
3) Use non-shrink grout for grade ring installation. Grade rings shall be precast concrete.
4) Manhole rings and covers shall be East Jordan Product Number 42432109W01.
5) All manhole rings shall have 30" minimum clear access opening.
6) All manhole covers shall have pick bars.
7) All manhole covers shall be stamped "SANITARY SEWER" only without any city references.
8) All manholes shall have traffic rated bolted and gasketed watertight rings and covers. Bolts, nuts, and flat washers shall be 316SS, apply nickel or aluminum anti-seize compound to threads prior to assembly. Bolts shall include gasket washers. Schedule GBRA to witness final bolting of manholes.
9) Install vented covers where required by TCEQ.

Guadalupe-Blanco River Authority | MANHOLE RING ENCASEMENT DETAIL | APPROVED: C. LEWIS | REVISED: JAN. 28, 2018 | SHEET



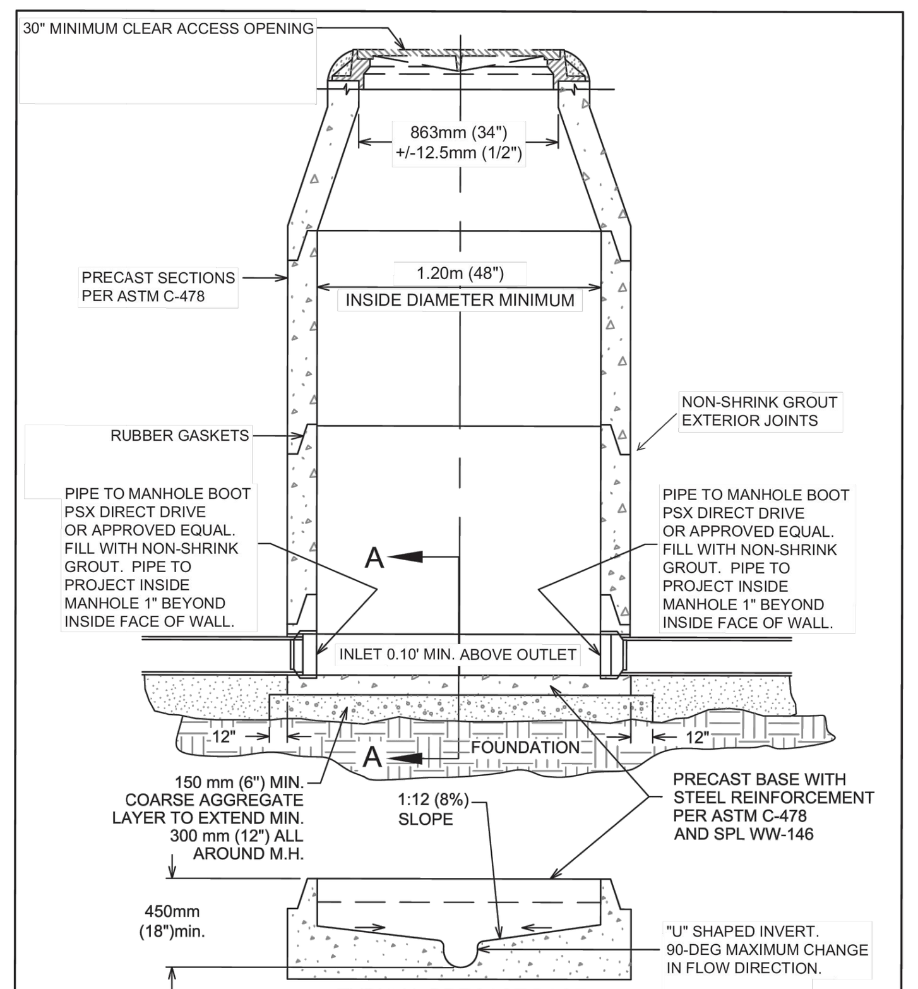
NOTES:
1. THIS DETAIL SHALL BE USED TO INSTALL MANHOLES ON EXISTING MAINS ONLY.
2. REMOVE ENTIRE EXISTING PIPE AND SHAPE INVERTS FOR NEW AND EXISTING PIPES.
3. REFERENCE STANDARD PRECAST MANHOLE DETAIL FOR ADDITIONAL REQUIREMENTS.

Guadalupe-Blanco River Authority | DRAWN BY: | APPROVED BY: C. LEWIS | STANDARD DRAWING: **MANHOLE CAST IN PLACE BASE** | UPDATED: JAN. 28, 2018 | SCALE: N.T.S. | SHEET: | DRAWING NO.



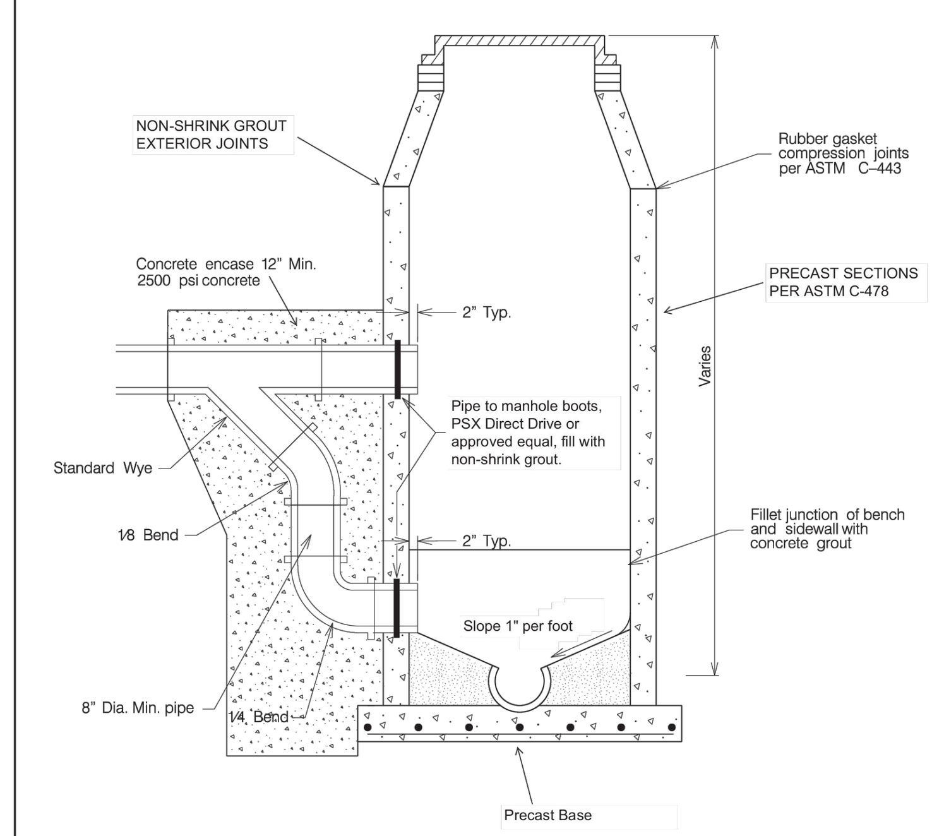
NOTES:
1) CONCRETE ENCASEMENT SHALL BE PLACED AGAINST UNDISTURBED EARTH TO INCLUDE WYE/TEE AND 45-BEND.
2) TAPPING SADDLES ARE NOT ALLOWED.
3) REFERENCE STANDARD LATERAL DETAIL FOR ADDITIONAL REQUIREMENTS.

GUADALUPE-BLANCO RIVER AUTHORITY | APPROVED BY: C. LEWIS | STANDARD DRAWING: **WASTEWATER LATERAL VERTICAL STACK DETAIL** | UPDATED: JAN. 28, 2018 | SCALE: | SHEET: | DRAWING NO.



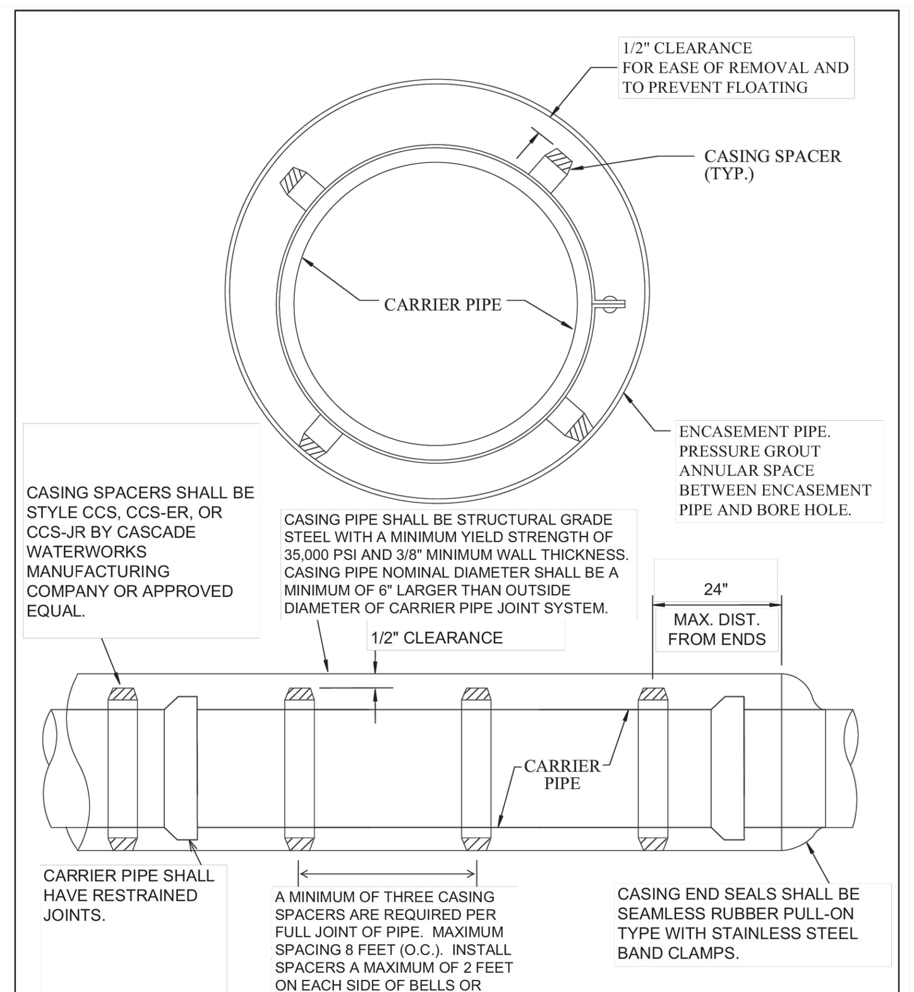
NOTES:
1. MANHOLE BASE SHALL BE BEDDED ON A 6" MINIMUM LAYER OF TXDOT GRADE 4 CRUSHED STONE COARSE AGGREGATE. BASE SHALL BE LEVEL/PLUMB PRIOR TO INSTALLING RISER SECTIONS.
2. SAND BLAST AND LINE ALL INTERIOR SURFACES OF ALL MANHOLES (INCLUDING INVERTS) WITH SEWPERCOAT, REFRATTA HAC 100, OR APPROVED EQUAL CALCIUM ALUMINATE MATERIAL. PROPOSED SUBSTITUTES MUST BE EQUAL IN COMPOSITION AND MANUFACTURER WARRANTY. PRODUCT MUST BE INSTALLED BY A MANUFACTURER CERTIFIED APPLICATOR. MINIMUM 1/2" THICKNESS. SMOOTH TROWEL FINISH. SPRAY CURING COMPOUND.

Guadalupe-Blanco River Authority | **WASTEWATER MANHOLE ON PRECAST BASE** | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD | C. LEWIS JAN. 28, 2018



NOTES:
1) A wastewater collection system pipe, including service laterals, entering a manhole more than 24" above the manhole out invert must have an external drop pipe. Internal drops are not allowed.
2) Reference standard precast manhole detail for additional requirements.

Guadalupe-Blanco River Authority | **DROP MANHOLE** | APPROVED: C. LEWIS | REVISED: JAN. 28, 2018 | SHEET

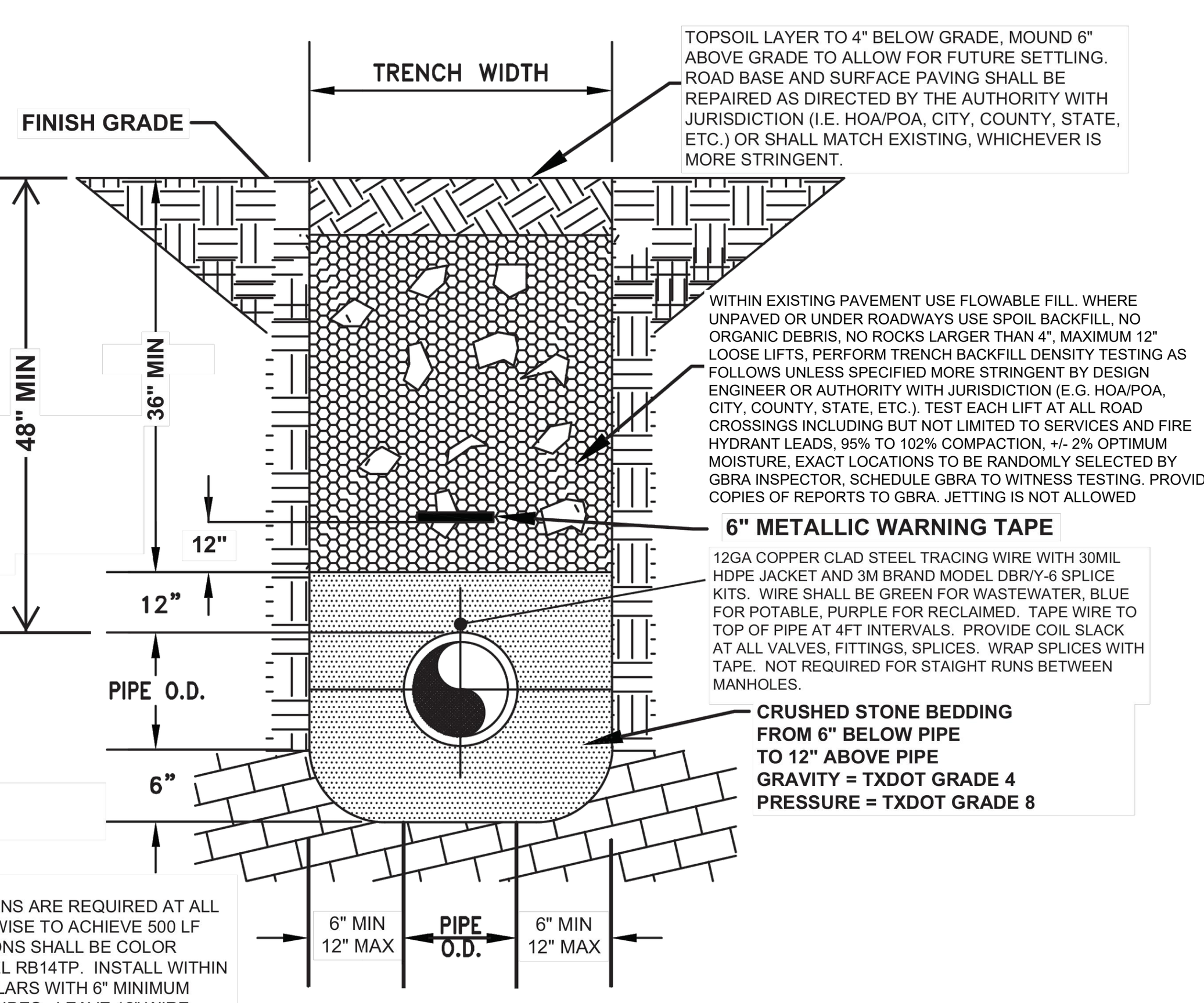


NOTE:
THE MATERIALS SHOWN APPLY TO JACK AND BORE INSTALLATIONS AND STREAM/RIVER CROSSINGS. OPEN CUT SLEEVING OF SUBDIVISION UTILITIES UNDER STORM SEWER MAY BE C900/905 DR18 CASING (COLOR TO MATCH CARRIER PIPE) AND HDPE SPACERS WITH STAINLESS STEEL HARDWARE. THE CLEARANCES AND DIMENSIONS SHOWN APPLY TO ALL INSTALLATIONS.

Guadalupe-Blanco River Authority | **CASING AND SPACERS DETAIL** | C. LEWIS | JAN. 28, 2018 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | STANDARD NO.

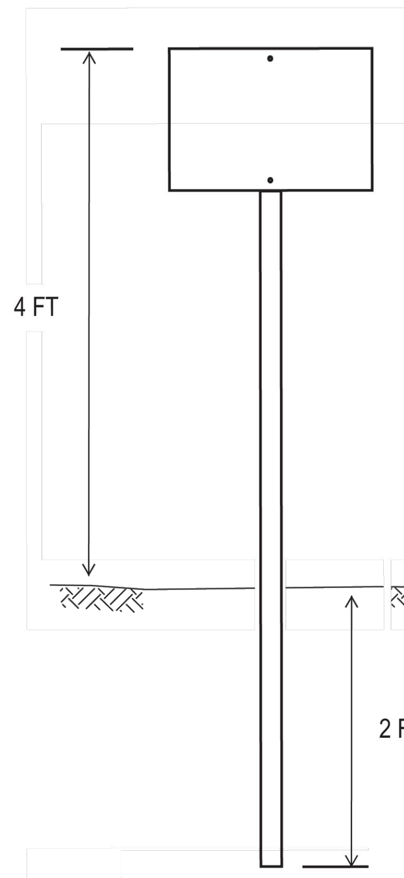
UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED & TESTED PRIOR TO THE STREETS.
2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
3. ALL SEWER PIPE ATSM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
4. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
5. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
6. REFER TO ALL GBRA NOTES ON SHEET C0.1.

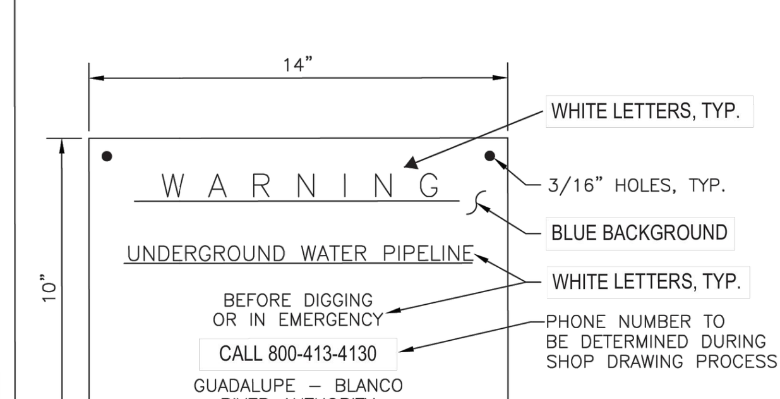


NOTE:
TRACING WIRE TEST STATIONS ARE REQUIRED AT ALL FIRE HYDRANTS OR OTHERWISE TO ACHIEVE 500 LF MAX SPACING. TEST STATIONS SHALL BE COLOR CODED COPPERHEAD MODEL RB14TP. INSTALL WITHIN VALVE BOX CONCRETE COLLARS WITH 6" MINIMUM CONCRETE COVER ON ALL SIDES. LEAVE 12" WIRE SLACK INSIDE TEST STATIONS. NOT REQUIRED FOR STRAIGHT RUNS BETWEEN MANHOLES.

TYPICAL PIPE TRENCH
Guadalupe-Blanco River Authority, 02/05/2018



TYPE 1 MARKER NOTES:
1) REFERENCE TYPE 2 MARKER DETAIL FOR SIGN REQUIREMENTS. ATTACHMENT HOLES WILL DIFFER.
2) POST SHALL BE DRIVE-IN TYPE GALVANIZED U-CHANNEL (MCMASTER-CARR 5735T61 OR EQUAL).
3) USE 1/4" DIAMETER STAINLESS STEEL BOLTS, FLAT WASHERS, AND LOCK NUTS TO ATTACH SIGN TO POST. INSTALL FLAT WASHERS ON BOLTS AND NUTS. DO NOT OBSTRUCT LETTERING.
4) TYPE 1 MARKERS ARE REQUIRED IN UNPAVED AREAS AT ALL MANHOLES, MAIN LINE BENDS, VALVES, AIR RELEASE VALVES, TEST STATIONS, BLOW-OFF/DRAIN VALVES, HYDRANTS, LINE PLUGS OR CAPS, AND AT ANY OTHER LOCATIONS INDICATED ON THE DRAWINGS, OR AS DIRECTED BY GBRA.



TYPE 2 MARKER NOTES:
1) MARKERS SHALL BE 0.080" THICK ALUMINUM WITH PAINTED BACKGROUND AND PAINTED LETTERING.
2) INSTALL TYPE 2 MARKERS ON PIPE CENTERLINE AT ALL GATE AND FENCE CROSSINGS AND AT ANY OTHER LOCATIONS INDICATED ON THE DRAWINGS, OR AS DIRECTED BY GBRA.
3) ATTACH TO GATES AND FENCES WITH 14 GAUGE STAINLESS STEEL WIRE.
4) COLORS AND LABELS SHOWN ARE FOR POTABLE WATER. FOR WASTEWATER CHANGE BACKGROUND TO GREEN AND CHANGE "WATER" TO "SEWER". FOR RECLAIMED CHANGE BACKGROUND TO PURPLE AND CHANGE "WATER" TO "RECLAIMED".

PIPELINE MARKERS
Guadalupe-Blanco River Authority, 01/30/2018

Drawing Name: M:_Projects\248 – Rausch Coleman Homes\014 – Voges Unit 4\CD's\248.014_OVERALL WASTEWATER DETAILS.dwg User: matt-p Dec 21, 2023 – 4:54pm

HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPE FIRM F-10961
TBPLS FIRM 1053600

12/21/23
STATE OF TEXAS
ERIC S. PLY
123317
LICENSED
PROFESSIONAL ENGINEER
[illegible]

WASTEWATER DETAILS
VOGES SUBDIVISION
UNIT 3

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: DECEMBER 2023
DRAWN BY: MP
DESIGNED BY: MP
REVIEWED BY: ESP
HMT PROJECT NO.: 248.014

SHEET
C8.8