PROJECT LOCATION MAP SCALE: N.T.S.

PROJECT BENCHMARK

SITE TBM #1
SET MAG SPIKE SET IN SW SEAM
N: 13783151.3102'
E: 2248762.8673'
ELEV: 683.487'

SITE TBM #2
SET
N: 13785755.7525'
E: 2247995.3607'
ELEV: 685.566'

LEGAL DESCRIPTION

BEING A 24.97 ACRE TRACT OF LAND OUT OF A 94.873 ACRE LOCATED IN THE SARAH DEWITT SURVEY NO. 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, BEING OUT OF THE REMAINDER OF A CALLED 98 ACRE TRACT OF LAND, RECORDED IN VOLUME 373, PAGE 254, DEED RECORDS, GUADALUPE COUNTY, TEXAS. AND A 1.490 ACRE TRACT OF LAND OUT OF A 4.817 ACRE OF LAND SITUATED IN THE SARAH DEWITT SURVEY NO 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, RECORDED IN DOCUMENT NO. 2022, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

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 IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.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 3 DEVELOPMENT.
8. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN ANY SPECIAL FLOOD HAZARD AREA (100 YR. FLOOD), AS DEFINED BY THE GUADALUPE COUNTY, TEXAS, FIRM PANEL NUMBER 48187C0115F EFFECTIVE DATE NOVEMBER 02, 2007, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
9. THIS PROJECT IS NOT LOCATED WITHIN 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 PUBLIC RIGHT-OF-WAY, IF APPLICABLE.

NOTE TO CONTRACTOR:

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

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

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.

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.

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.

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.

KRAFT SUBDIVISION UNIT 3

NEW BRAUNFELS, TEXAS

CIVIL SITE CONSTRUCTION PLANS

LENNAR HOMES OF TEXAS & CONSTRUCTION, LTD

100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TEXAS 78216

REQUIRED PERMITS	NUMBER
1. CITY OF NEW BRAUNFELS	PI2023-0050
2. GBRA (SEWER)	033-139-0003
3. GVSUD (WATER)	N/A

NOVEMBER 2024

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

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.

Christopher P. Van Heerde, P.E.
Christopher P. Van Heerde
P.E. Registration No. 93047

PREPARED BY:

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KRAFT SUBDIVISION, UNIT 3
CIVIL SITE CONSTRUCTION PLANS
HMT # 337.070

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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 SHALL 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 (CONTINUED)

REVISED 03/2020

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/SIDEWALK SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. DETERMINE THE MAXIMUM LIFT THICKNESS BASED ON THE ABILITY OF THE COMPACTING OPERATION AND EQUIPMENT USED TO MEET THE REQUIRED DENSITY. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. UPON COMPLETION OF TESTING THE GEOTECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

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. RIGHT-OF-WAY MUST BE CLEARED FROM MUD, ROCKS, ETC. AT ALL TIMES.

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 SEDIMENT CONTROLS TO BE INSPECTED WEEKLY. TEMPORARY SEDIMENT CONTROLS SHOULD BE MAINTAINED WEEKLY, PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED. CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR SEDIMENT AND EROSION CONTROL ISSUES.
3. CONDUCT SELECT DEMOLITION ACTIVITIES, AS NECESSARY
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 ADDITIONAL DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE AND ESTABLISH A MINIMUM OF 70% VEGETATION PRIOR TO COMPLETION OF THE PROJECT AND PRIOR TO SUBMISSION OF THE GC'S TCEQ NOTICE OF TERMINATION (NOT).
9. REMOVE ALL TEMPORARY SEDIMENT CONTROL MEASURES PRIOR TO SUBMISSION OF THE GC'S TCEQ NOTICE OF TERMINATION (NOT).
10. PER TPDES REQUIREMENTS, EROSION CONTROL AND STABILIZATION MEASURES MUST BE INITIATED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED AND WILL NOT RESUME FOR A PERIOD EXCEEDING FOURTEEN (14) CALENDAR DAYS. STABILIZATION MEASURES THAT PROVIDE A PROTECTIVE COVER MUST BE INITIATED IMMEDIATELY IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED. THE TERM "IMMEDIATELY"IS USED TO DEFINE THE DEADLINE FOR INITIATING STABILIZATION MEASURES. IN THE CONTEXT OF THIS REQUIREMENT, "IMMEDIATELY"MEANS AS SOON AS PRACTICABLE, BUT NO LATER THAN THE END OF THE NEXT WORKDAY, FOLLOWING THE DAY WHEN THE EARTH-DISTURBING ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.SUBMIT TCEQ NOTICE OF TERMINATION (NOT) TO THE TCEQ AND SUBMIT A COPY TO THE LOCAL CITY/MUNICIPALITY AND/OR MS4.

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

GUADALUPE-BLANCO RIVER AUTHORITY (SEWER)	(830) 379-5822
GREEN VALLEY ELECTRIC COMPANY (ELECTRIC)	(830) 223-4832
GREEN VALLEY SPECIAL UTILITY DISTRICT (WATER)	(830) 914-2330
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 GREEN VALLEY ELECTRIC COMPANY PLANS FOR FINAL ELECTRICAL LINE DESIGNS AND LAYOUT.

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

GENERAL NOTES (1 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C0.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbk\337.070_COVER.dwg User: roberb Nov 13, 2024 - 11:14am

GBRA WASTEWATER CONSTRUCTION NOTES REVISED 3/09/18

1. ALL WORK SHALL BE IN ACCORDANCE WITH GBRA STANDARDS AS PUBLISHED AT THE FOLLOWING WEBSITE:HTTP://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. BACKFLOW PREVENTION IN THE FORM OF A REDUCED PRESSURE BACKFLOW ASSEMBLY MUST BE PROVIDED FOR TEMPORARY CONNECTIONS TO EXISTING WATER LINES. BACKFLOW DEVICES SHALL BE TESTED BY A LICENSED BACKFLOW PREVENTION ASSEMBLY TESTER. SUBMIT TEST REPORTS.
6. PVC MALE ADAPTERS ARE NOT ALLOWED.
7. SANITARY TAPPING SADDLES ARE NOT ALLOWED.
8. MANHOLE INTERNAL DROPS ARE NOT ALLOWED.
9. PIPE BELLS SHALL BE INSTALLED IN UPSTREAM DIRECTION.
10. ALL PIPING SHALL BE DESIGNED IN STRAIGHT ALIGNMENT VERTICALLY AND HORIZONTALLY. PIPE CURVATURE AND/OR DEFLECTION ARE NOT ALLOWED.
11. INSTALL CONCRETE THRUST BLOCKING AND MECHANICAL RESTRAINTS FOR PRESSURE PIPING SYSTEMS.
12. MAINTAIN A MINIMUM OF 10 FEET HORIZONTAL AND 12 INCHES VERTICAL CLEARANCE BETWEEN WATER AND WASTEWATER AND OTHER UTILITIES. SHARED TRENCHES ARE NOT ALLOWED.
13. 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.
14. 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.
15. VALVE BOXES, EXPOSED PIPING AND VALVES, AND APPURTENANCES SHALL BE PAINTED. PROVIDE PAINTED CURB CUT MARKINGS AT VALVES AND SERVICES.
16. ALL EXPOSED VERTICAL AND HORIZONTAL CONCRETE EDGES SHALL BE FORMED WITH ¾"CHAMFER STRIPS.
17. 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.
18. 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.
19. 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.
20. 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. ALL GRAVITY WASTEWATER PIPING SHALL BE SUBJECT TO LOW PRESSURE AIR TESTING IN ACCORDANCE WITH TCEQ REQUIREMENTS. INFILTRATION AND EXFILTRATION TESTING ARE NOT ALLOWED.
8. MANDREL TESTING SHALL BE PERFORMED FOR ALL GRAVITY WASTEWATER MAINS PRIOR TO INSTALLATION OF CORROSION MANHOLE LINING.
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.

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.

GBRA NOTES

ALL MODIFICATIONS AND CROSSINGS OF GBRA UTILITIES AND ACCESS EASEMENTS MUST BE INSPECTED AND APPROVED BY GBRA PRIOR TO BACKFILLING OR OTHERWISE COVERING THE WORK. GBRA WILL PERFORM A MAXIMUM OF (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).

COPIES OF EACH CONSTRUCTION SUBMITTAL (SHOP DRAWINGS, PRODUCT DATA, ECT.) SHALL BE PROVIDED FOR GBRA REVIEW AND APPROVAL PRIOR TO FABRICATION. USE CLOUDS, BOXES, ARROWS, ECT., TO CLEARLY MARK ALL PROPOSED OPTIONS AND PART NUMBERS. LIST ANY PROPOSED DEVIATIONS ON THE SUBMITTAL COVER SHEET. ALLOW 21 CALENDAR DAYS FOR REVIEW.

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

GENERAL NOTES (2 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C0.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_COVER.dwg User: roberth Nov 13, 2024 - 11:14am

PLAT NOTES:

1. ALL LOTS WITHIN THE SUBDIVISION WILL BE PROVIDED WATER (GVSUD), SEWER (GBRA) AND ELECTRIC SERVICE (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 CITY LIMITS AND THE ETJ OF NEW BRAUNFELS, TEXAS.

6. THIS SUBDIVISION IS WITHIN THE NEW BRAUNFELS INDEPENDENT SCHOOL DISTRICT.

7. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN AN INDICATED SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE ADOPTED FLOOD MAPS OF THE CITY OF NEW BRAUNFELS, AS DEFINED BY THE GUADALUPE COUNTY, TEXAS, FLOOD INSURANCE RATE MAP NUMBER 48187C0115F, EFFECTIVE DATE SEPTEMBER 2, 2009 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 BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION ALONG:
    A. REDSTART, HOOPOE HILL, WRYNECK PL, GALLIC ROOSTER & WOOD THRUSH.

11. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS ADJACENT TO THE CURB AT THE TIME OF STREET CONSTRUCTION ALONG:
    A. HOOPOE HILL – LOTS 913 & 914
    B. WRYNECK PLACE – LOTS 914 & 915
    C. GALLIC ROOSTER – LOTS 915 & 916

11. 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.

12. 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 156 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.

13. THIS UNIT CONTAINS 156 BUILDABLE RESIDENTIAL LOTS. ALL LOTS MEET THE MINIMUM SQUARE FOOTAGE REQUIREMENT ACCORDING TO THE ZONING ORDINANCE.

14. ALL DRAINAGE EASEMENTS WITHIN THE LOTS WILL BE OWNED AND MAINTAINED BY PROPERTY OWNER.

15. PERMANENT WATER QUALITY CONTROLS ARE REQUIRED FOR THIS SUBDIVISION PLAT IN ACCORDANCE WITH THE CITY OF NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL.

GVSUD NOTES:

EASEMENT CERTIFICATE
THE OWNER OF THE LAND SHOWN ON THIS PLAT AND WHOSE NAME IS SUBSCRIBED HERETO, IN PERSON OR THROUGH A DULY 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 WILL 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 DEEMED 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.

THIS SUBDIVISION PLAT HAS BEEN SUBMITTED TO AND APPROVED FOR EASEMENTS. UPON REQUEST OF THE CUSTOMER AND PAYMENT OF THE REQUIRED FEES, THE DISTRICT WILL PROVIDE DOMESTIC WATER SERVICE TO EACH LOT IN THIS SUBDIVISION, BY AGREEMENT WITH THE DEVELOPER.

_____ _____
GREEN VALLEY SPECIAL UTILITY DISTRICT DATE

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

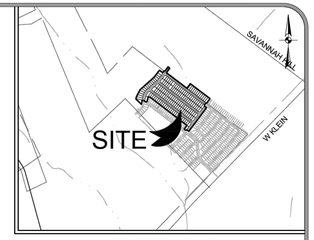
PLAT PREPARED August 1, 2024

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

FINAL PLAT ESTABLISHING

KRAFT SUBDIVISION, UNIT 3

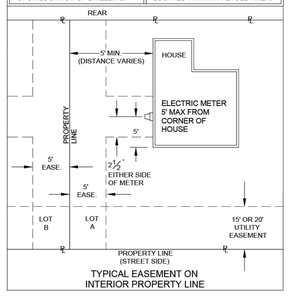
BEING A 24.97 ACRE TRACT OF LAND OUT OF A 94.873 ACRE LOCATED IN THE SARAH DEWITT SURVEY NO. 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, BEING OUT OF THE REMAINDER OF A CALLED 98 ACRE TRACT OF LAND, RECORDED IN VOLUME 373, PAGE 254, DEED RECORDS, GUADALUPE COUNTY, TEXAS, AND A 1.490 ACRE TRACT OF LAND OUT OF A 4.817 ACRE OF LAND SITUATED IN THE SARAH DEWITT SURVEY NO 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, RECORDED IN DOCUMENT NO. 2022, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.



LOCATION MAP
NOT TO SCALE

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
- DRNG = DRAINAGE
- 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

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

GVEC NOTES:

TYPICAL FOR METER LOCATIONS (SKETCH).

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.

GVEC SHALL HAVE ACCESS TO METER LOCATIONS FROM THE FRONT YARD WITH THE LOCATION NOT BEING WITHIN A FENCED AREA.

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.

ALL UTILITY EASEMENTS ARE FOR THE CONSTRUCTION, MAINTENANCE (INCLUDING BUT NOT LIMITED TO REMOVAL OF TREES AND OTHER OBSTRUCTIONS), READING OF METERS, AND REPAIR OF ALL OVERHEAD AND UNDERGROUND UTILITIES.

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 AND MAINTAINING THE ELECTRICAL FACILITIES.

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.

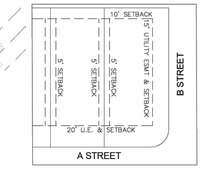
THE COOPERATIVE SHALL ONLY BE REQUIRED TO FILL, GRADE AND RESTORE GROUND COVER BACK TO ORIGINAL GRADE AS A RESULT OF ANY EXCAVATION BY OR ON BEHALF OF THE COOPERATIVE.

GBRA NOTES:

1. THE GUADALUPE-BLANCO RIVER AUTHORITY (GBRA) IS HEREBY DEDICATED THE EASEMENT AND RIGHTS-OF-WAY IN THE AREAS DESIGNATED ON THIS PLAT AS "SANITARY SEWER" AS WELL AS THOSE EASEMENTS AND RIGHTS-OFWAY SPECIFICALLY DEDICATED TO IT FOR THE PURPOSE OF ACCESSING, INSTALLING, CONSTRUCTING, RECONSTRUCTING, OPERATING, MAINTAINING, INSPECTING, REPAIRING, REMOVING, AND RELOCATING BURIED AND/OR EXPOSED SANITARY SEWER FACILITIES AND APPURTENANCES.
2. 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.
3. 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 EASEMENT.
4. 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.
5. MAINTENANCE OF EASEMENTS IS THE RESPONSIBILITY OF THE PROPERTY OWNER.
6. THE PROPERTY OWNER MUST INSTALL 16-FOOT GATES IN ANY FENCES THAT CROSS GBRA UTILITIES; GATES MUST BE CENTERED ACROSS GBRA UTILITIES.
7. CUSTOMER SANITARY SEWER SERVICES SHALL NOT BE INSTALLED WITHIN FENCED AREAS.

THIS SUBDIVISION PLAT HAS BEEN SUBMITTED TO AND APPROVED FOR EASEMENTS. UPON REQUEST OF THE CUSTOMER AND PAYMENT OF THE REQUIRED FEES, GBRA WILL PROVIDE DOMESTIC SEWER SERVICE TO EACH LOT IN THIS SUBDIVISION, BY AGREEMENT WITH THE DEVELOPER.

_____ _____
GUADALUPE-BLANCO RIVER AUTHORITY DATE



TYPICAL BUILDING SETBACK LINE AND UTILITY EASEMENT DIAGRAM
NOT-TO-SCALE

STATE OF TEXAS
COUNTY OF GUADALUPE

I (WE) THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE KRAFT SUBDIVISION – UNIT 2, 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.

_____
LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD
BY: RICHARD MOTT – AUTHORIZED AGENT
1922 DRY CREEK WAY, SUITE 101
SAN ANTONIO, TEXAS 78259

STATE OF TEXAS
COUNTY OF COMAL

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

_____
NOTARY PUBLIC, STATE OF TEXAS
MY COMMISSION EXPIRES: _____

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

_____
CHAIRMAN

APPROVED FOR ACCEPTANCE

_____ _____
DATE PLANNING DIRECTOR

_____ _____
DATE CITY ENGINEER

STATE OF TEXAS
COUNTY OF GUADALUPE

_____
DEPUTY

SHEET 1 OF 4

FOR REFERENCE ONLY

This plat will be submitted to the Planning Division following approval of the construction plans.

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

PLAT (1 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C0.03

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\03a\337.070_PLAT.dwg User: roberth Nov 13, 2024 - 11:14am
Drawing Name: T:\337 - Lennar Homes\070- Kraft Unit 3\Plat\Kraft Tract - Unit 3.dwg User: kolbyp Aug 01, 2024 - 11:24am

FINAL PLAT ESTABLISHING

KRAFT SUBDIVISION, UNIT 3

BEING A 24.97 ACRE TRACT OF LAND OUT OF A 94.873 ACRE LOCATED IN THE SARAH DEWITT SURVEY NO. 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, BEING OUT OF THE REMAINDER OF A CALLED 98 ACRE TRACT OF LAND, RECORDED IN VOLUME 373, PAGE 254, DEED RECORDS, GUADALUPE COUNTY, TEXAS, AND A 1.490 ACRE TRACT OF LAND OUT OF A 4.817 ACRE OF LAND SITUATED IN THE SARAH DEWITT SURVEY NO 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, RECORDED IN DOCUMENT NO. 2022, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

PLAT PREPARED August 1, 2024

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

FOR REFERENCE ONLY

This plat will be submitted to the Planning Division following approval of the construction plans.

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

PLAT (2 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C0.04

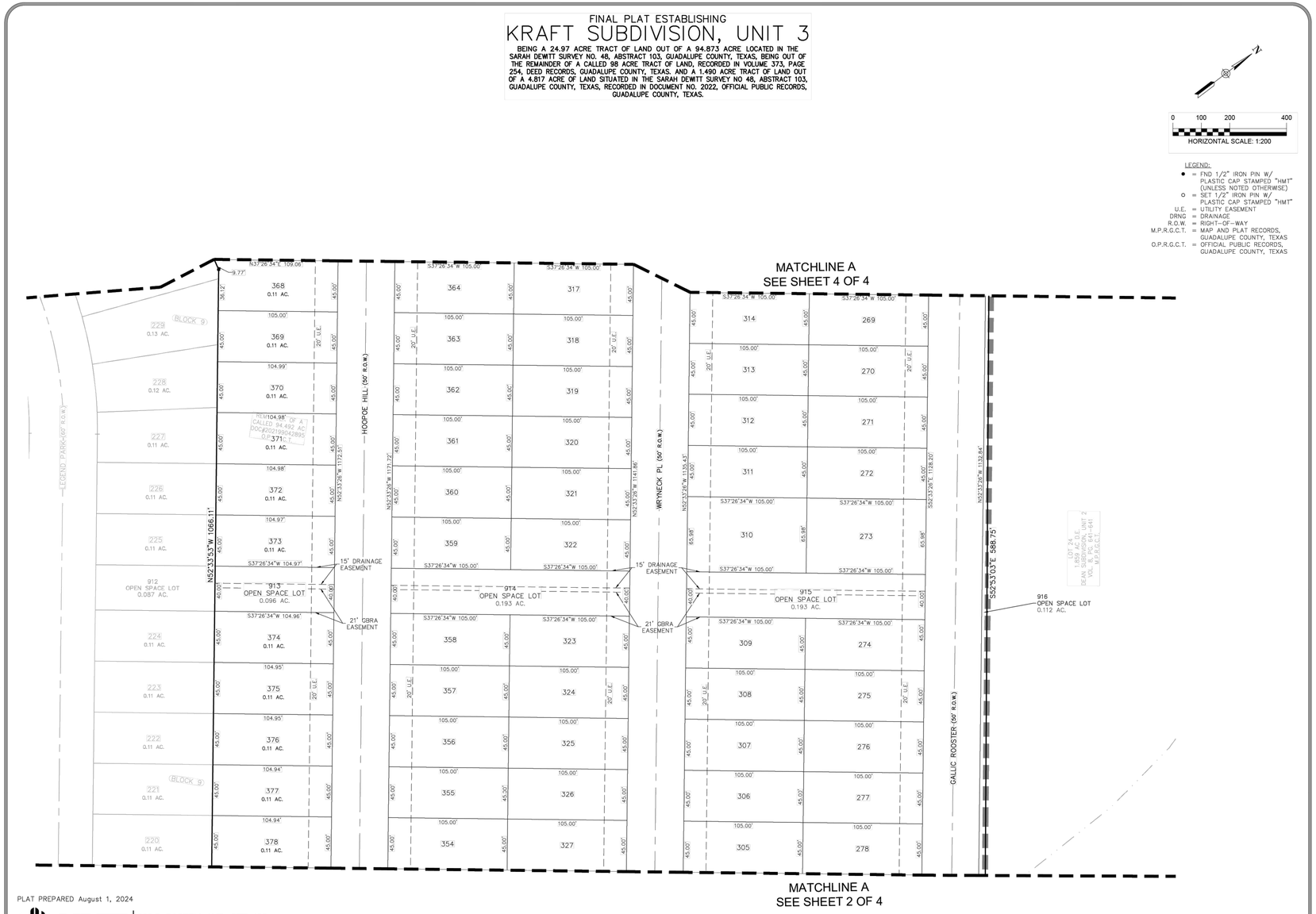
Drawing Name: I:\337 - Lennar Homes\070- Kraft Unit 3\Plat\Kraft Tract - Unit 3.dwg User: kobyp Aug 01, 2024 - 11:24am

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\337.070_PLAT.dwg User: robertb Nov 13, 2024 - 11:14am

FINAL PLAT ESTABLISHING

KRAFT SUBDIVISION, UNIT 3

BEING A 24.97 ACRE TRACT OF LAND OUT OF A 94.873 ACRE LOCATED IN THE SARAH DEWITT SURVEY NO. 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, BEING OUT OF THE REMAINDER OF A CALLED 98 ACRE TRACT OF LAND, RECORDED IN VOLUME 373, PAGE 254, DEED RECORDS, GUADALUPE COUNTY, TEXAS, AND A 1.490 ACRE TRACT OF LAND OUT OF A 4.817 ACRE OF LAND SITUATED IN THE SARAH DEWITT SURVEY NO 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, RECORDED IN DOCUMENT NO. 2022, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.



PLAT PREPARED August 1, 2024

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

SHEET 3 OF 4

FOR REFERENCE ONLY

This plat will be submitted to the Planning Division following approval of the construction plans.

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

PLAT (3 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

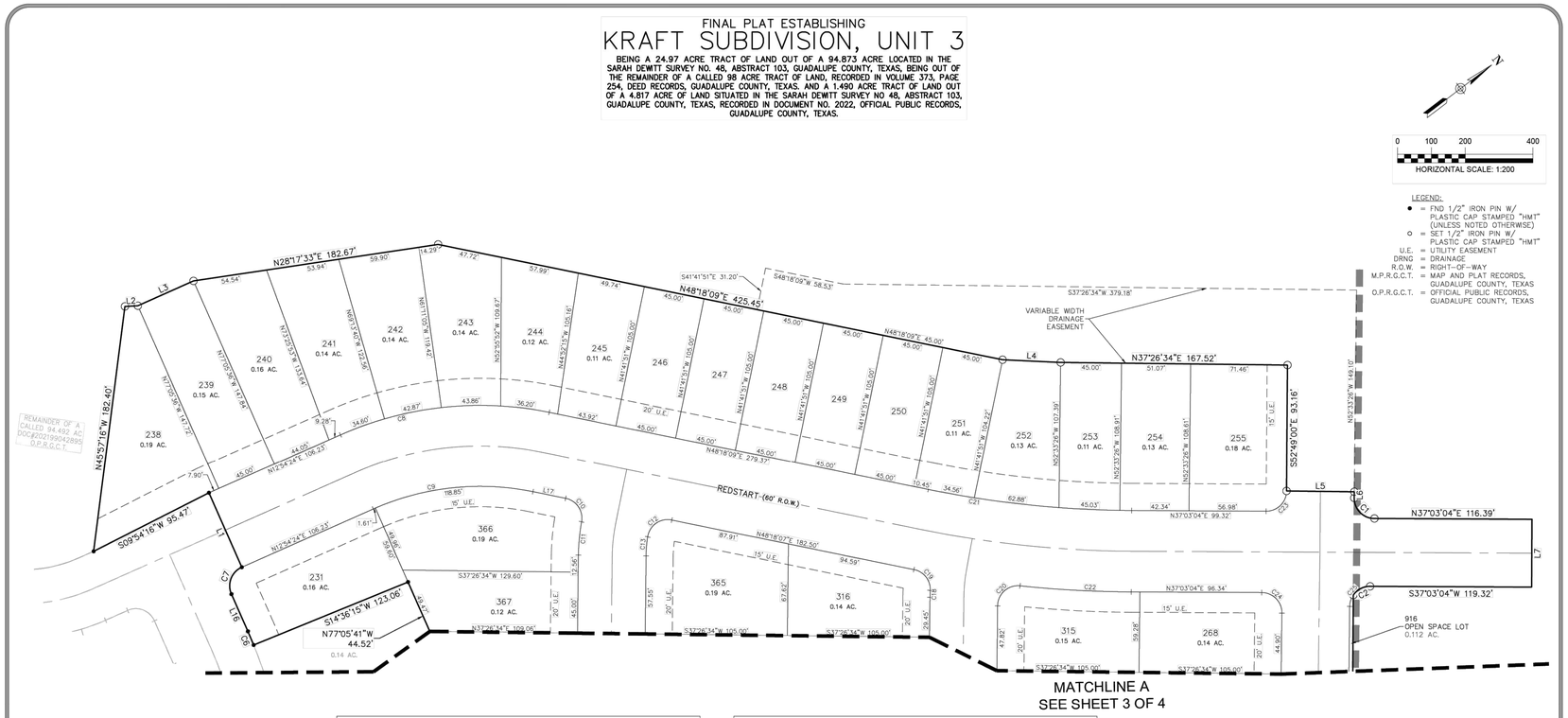
C0.05

Drawing Name: T:\337 - Lennar Homes\070- Kraft Unit 3\Plat\Kraft Tract - Unit 3.dwg User: kolbyp Aug 01, 2024 - 11:24am
Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Obs\337.070_PLAT.dwg User: robertb Nov 13, 2024 - 11:14am

FINAL PLAT ESTABLISHING

KRAFT SUBDIVISION, UNIT 3

BEING A 24.97 ACRE TRACT OF LAND OUT OF A 94.873 ACRE LOCATED IN THE SARAH DEWITT SURVEY NO. 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, BEING OUT OF THE REMAINDER OF A CALLED 98 ACRE TRACT OF LAND, RECORDED IN VOLUME 373, PAGE 254, DEED RECORDS, GUADALUPE COUNTY, TEXAS, AND A 1.490 ACRE TRACT OF LAND OUT OF A 4.817 ACRE OF LAND SITUATED IN THE SARAH DEWITT SURVEY NO 48, ABSTRACT 103, GUADALUPE COUNTY, TEXAS, RECORDED IN DOCUMENT NO. 2022, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.



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LEGEND:
- ● = FND 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT" (UNLESS NOTED OTHERWSE)
- o = SET 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT"
- U.E. = UTILITY EASEMENT
- DRNG = DRAINAGE
- 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

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C1	23.63'	14.93'	090°39'03"	15.10'	21.24'	N82°07'02"E
C2	14.54'	15.00'	055°31'17"	7.90'	13.97'	S09°17'26"W
C3	23.71'	15.00'	090°33'37"	15.15'	21.32'	S82°09'45"W
C4	23.42'	15.00'	089°26'23"	14.85'	21.11'	S07°50'15"E
C5	23.71'	15.00'	090°33'37"	15.15'	21.32'	N82°09'45"E
C6	10.96'	274.79'	002°17'10"	5.48'	10.96'	N76°14'40"W
C7	23.56'	15.00'	090°00'00"	15.00'	21.21'	S32°05'36"E
C8	157.53'	255.00'	035°23'45"	81.37'	155.04'	S30°36'16"W
C9	120.47'	195.00'	035°23'45"	62.22'	118.56'	S30°36'16"W
C10	23.18'	15.00'	088°33'06"	14.63'	20.94'	N87°25'18"W
C11	24.64'	150.00'	009°24'41"	12.35'	24.61'	S47°51'06"E
C12	24.30'	15.00'	092°48'45"	15.75'	21.73'	S01°53'46"W
C13	14.05'	100.00'	008°02'50"	7.03'	14.03'	S48°32'01"E
C14	23.42'	15.00'	089°26'23"	14.85'	21.11'	N07°50'15"W
C15	23.71'	15.00'	090°33'37"	15.15'	21.32'	N82°09'45"E
C16	23.42'	15.00'	089°26'23"	14.85'	21.11'	N07°50'15"W
C17	23.71'	15.00'	090°33'37"	15.15'	21.32'	N82°09'45"E
C18	5.10'	150.00'	001°56'57"	2.55'	5.10'	S51°34'58"E
C19	21.25'	15.00'	081°11'12"	12.85'	19.52'	S88°47'55"W
C20	24.96'	14.97'	095°30'40"	16.49'	22.17'	S04°54'46"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C21	151.21'	770.00'	011°15'05"	75.85'	150.96'	N42°40'36"E
C22	82.29'	830.00'	005°40'50"	41.18'	82.25'	N39°53'29"E
C23	23.53'	15.00'	089°52'04"	14.97'	21.19'	N07°52'58"W
C24	23.66'	15.00'	090°23'30"	15.10'	21.29'	S82°14'49"W
C25	23.46'	15.00'	089°36'30"	14.90'	21.14'	S07°45'11"E

LINE TABLE		
LINE #	LENGTH	DIRECTION
L1	60.00'	N77°05'36"W
L2	9.54'	N33°44'02"E
L3	45.00'	N12°45'25"E
L4	42.91'	N39°25'03"E
L5	50.02'	N37°26'34"E
L6	4.59'	S52°33'26"E
L7	50.00'	S52°56'50"E
L8	2.67'	N52°33'26"W
L9	50.01'	S36°24'15"W
L10	2.54'	S52°33'26"E
L11	9.37'	S36°52'56"W
L12	60.00'	S53°07'04"E
L13	60.00'	N53°07'04"W
L16	30.04'	N77°05'36"W
L17	24.59'	N48°18'09"E

PLAT PREPARED August 1, 2024

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

SHEET 4 OF 4

FOR REFERENCE ONLY

This plat will be submitted to the Planning Division following approval of the construction plans.

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

PLAT (4 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C0.06

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\337.070_PLAT.dwg User: roberb Nov 13, 2024 - 11:14am

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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

0 100 200 400
HORIZONTAL SCALE: 1:200

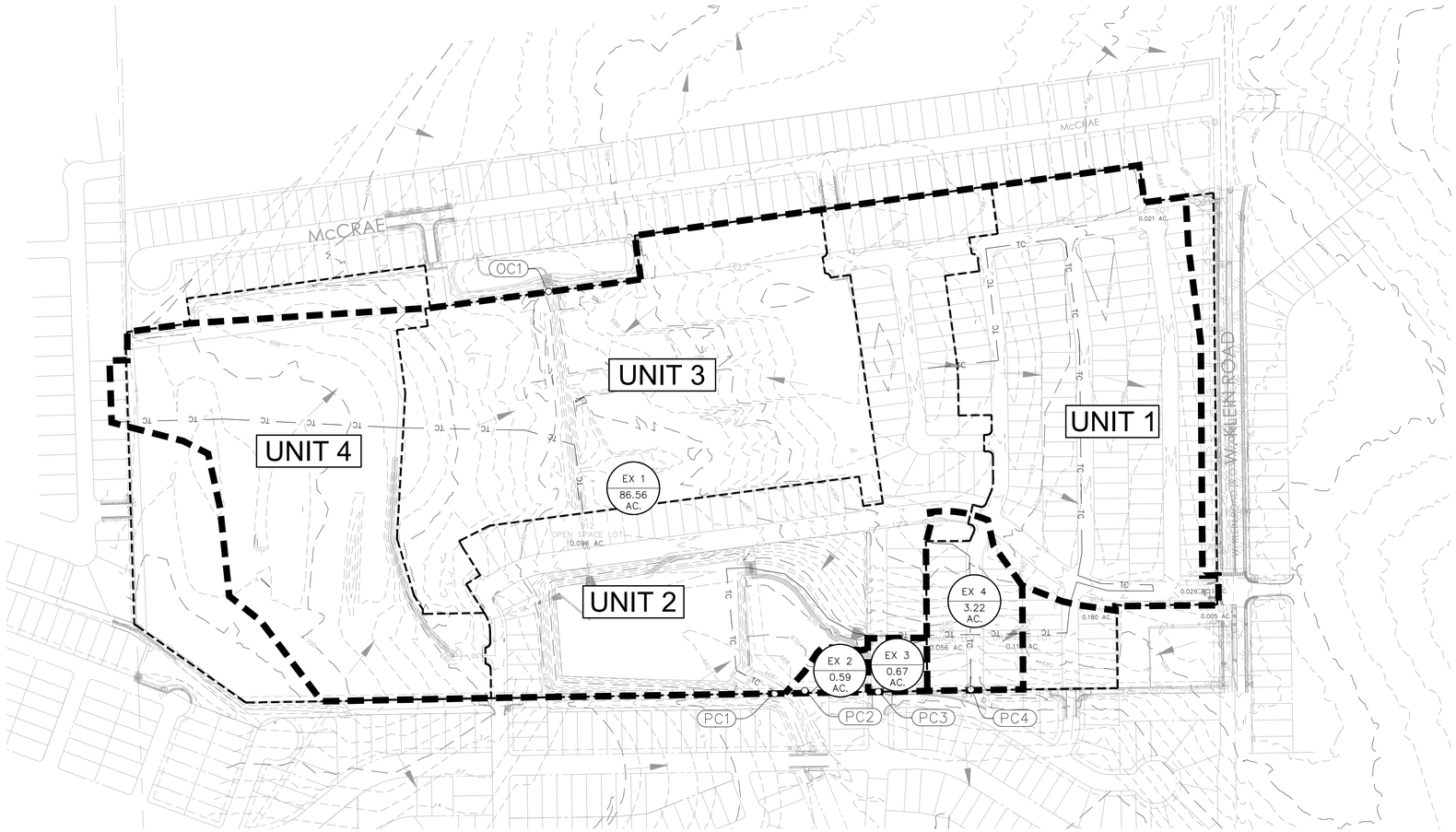

Table 1 - Existing Conditions Hydrology Calculations - City of New Braunfels

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX 1 (Unit 3)	PC 1	86.56	29.30	103.45	173.54	228.19	334.93
EX 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
EX 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
EX 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
EX 5 (Unit 3)	PC 5	5.94	18.76	12.52	20.55	26.59	38.28
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
EX 1 & Offsite	PC 1			142.20	246.25	333.93	503.51

Note: Drainage compliance proven and approved n Master Drainage Report

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

EXISTING DRAINAGE AREA MAP

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C1.01

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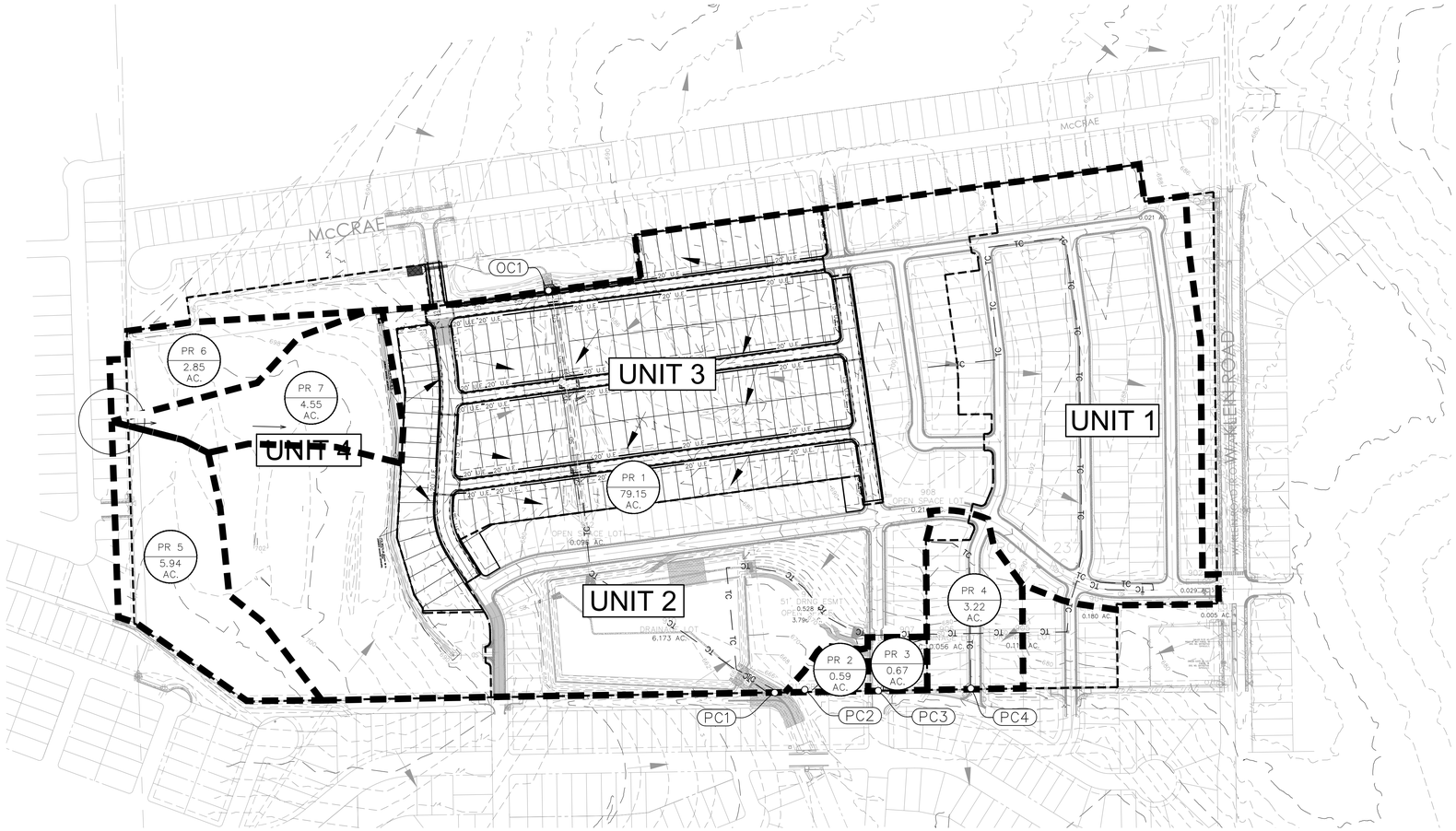

Table 1 - Existing Conditions Hydrology Calculations - City of New Braunfels

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX 1 (Unit 3)	PC 1	86.56	29.30	103.45	173.54	228.19	334.93
EX 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
EX 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
EX 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
EX 5 (Unit 3)	PC 5	5.94	18.76	12.52	20.55	26.59	38.28
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
EX 1 & Offsite	PC 1			142.20	246.25	333.93	503.51

Note: Drainage compliance proven and approved n Master Drainage Report

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

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
PR 1 (Unit 3)	PC 1	86.56	26.33	138.35	228.29	296.60	426.98
PR 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
PR 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
PR 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
PR 5 (Unit 3)	PC 5	5.94	18.76	12.52	20.55	26.59	38.28
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
PR 1 & Offsite	PC 1			151.35	258.01	345.02	511.69

Note: Drainage compliance proven and approved in Master Drainage Report

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

PROPOSED DRAINAGE AREA MAP

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C1.02

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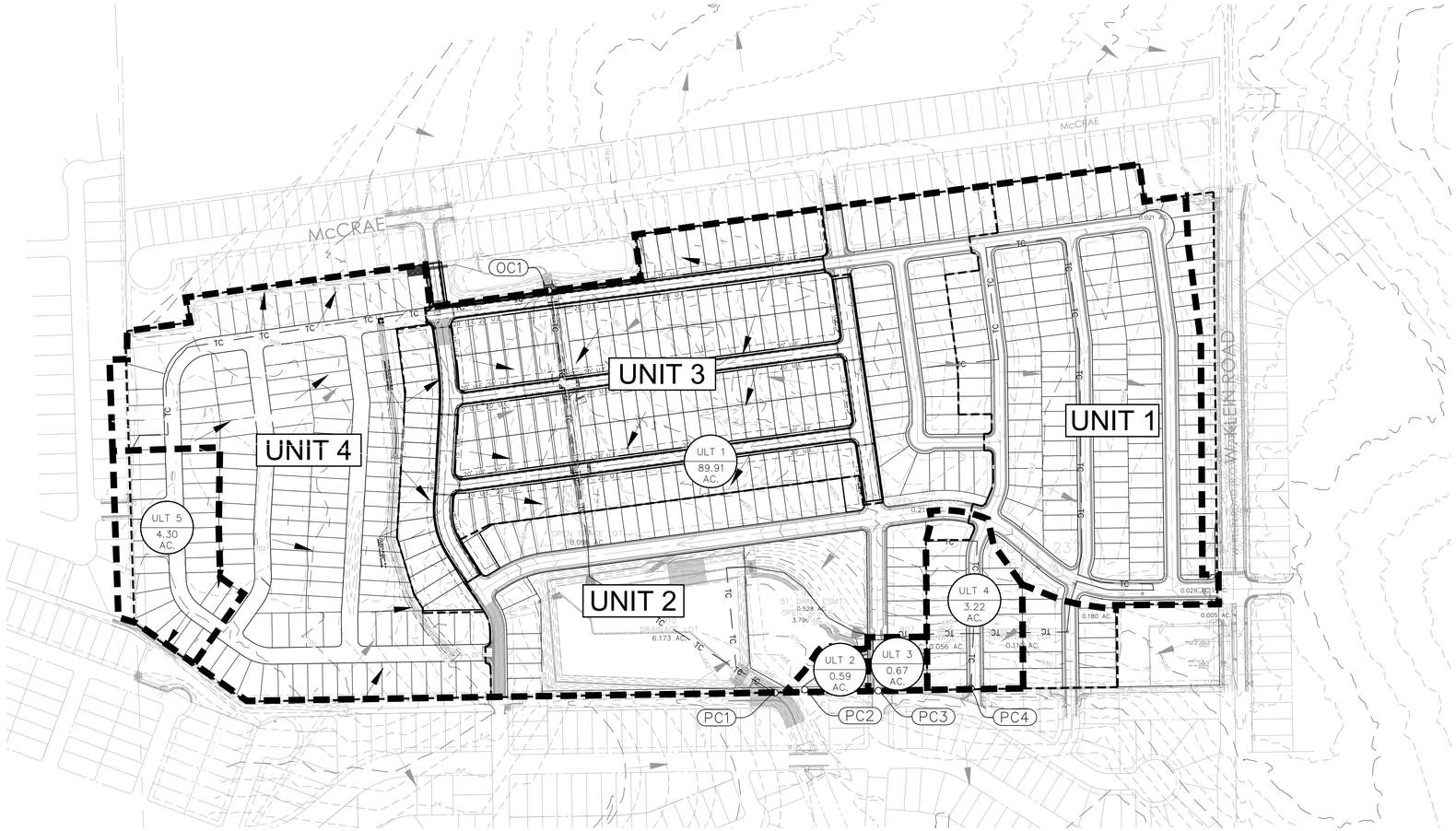

Table 1 - Existing Conditions Hydrology Calculations - City of New Braunfels

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
EX 1 (Unit 3)	PC 1	86.56	29.30	103.45	173.54	228.19	334.93
EX 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
EX 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
EX 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
EX 5 (Unit 3)	PC 5	5.94	18.76	12.52	20.55	26.59	38.28
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
EX 1 & Offsite	PC 1			142.20	246.25	333.93	503.51

Note: Drainage compliance proven and approved n Master Drainage Report

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

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
PR 1 (Unit 3)	PC 1	86.56	26.33	138.35	228.29	296.60	426.98
PR 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
PR 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
PR 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
PR 5 (Unit 3)	PC 5	5.94	18.76	12.52	20.55	26.59	38.28
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
PR 1 & Offsite	PC 1			151.35	258.01	345.02	511.69

Note: Drainage compliance proven and approved in Master Drainage Report

Table 3 - Ultimate Conditions Hydrology Calculations - City of New Braunfels

Drainage Area	Point of Concentration	Drainage Area (ac)	T_c	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{100} (cfs)
ULT 1 (Unit 3)	PC 1	89.91	25.45	168.84	275.59	355.69	507.75
ULT 2 (Unit 3)	PC 2	0.59	13.53	0.78	1.39	1.87	2.83
ULT 3 (Unit 3)	PC 3	0.67	13.48	1.85	3.04	3.94	5.64
ULT 4 (Unit 3)	PC 4	3.22	14.85	7.72	12.73	16.55	23.89
ULT 5 (Unit 3)	PC 5	4.30	14.48	11.55	15.09	24.65	35.24
Offsite Contribution	OC 1	-	-	20.53	42.21	65.16	108.61
ULT 1 & Offsite	PC 1		-	217.20	364.29	481.06	704.57

Note: Drainage compliance proven and approved in Master Drainage Report

HMT ENGINEERING & SURVEYING
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NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

ULTIMATE DRAINAGE AREA MAP

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C1.03

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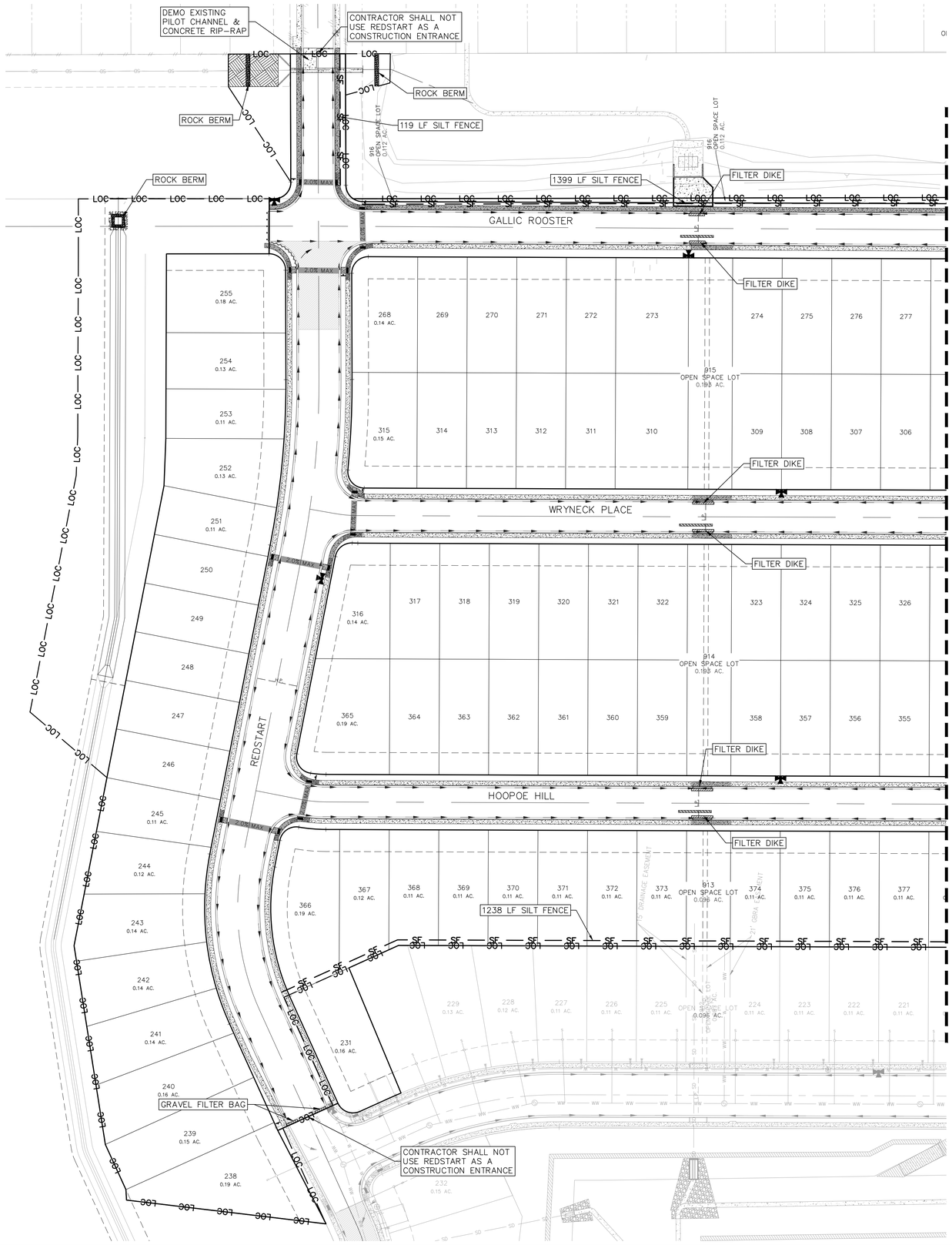

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SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE FLOW DIRECTION
- SF SF SILT FENCE
- LOC LOC LIMIT OF CONSTRUCTION
- 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

REFER TO SHEET C0.01

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

EROSION CONTROL PLAN (1 OF 2)

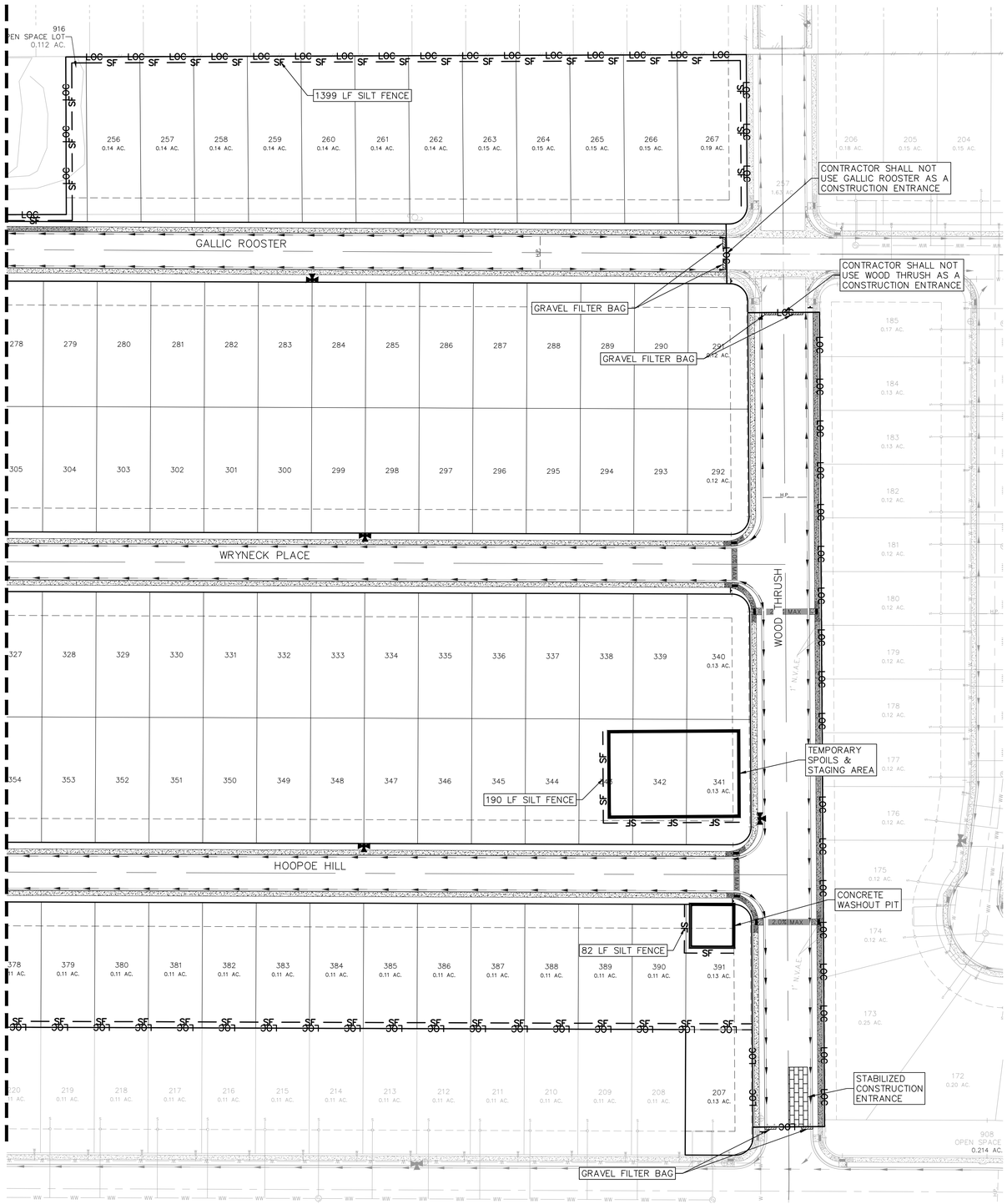
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C2.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbk\337.070_EROS.dwg User: robertb Nov 13, 2024 - 11:16am



0 25 50 100
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE FLOW DIRECTION
- SF SF SILT FENCE
- LOC LOC LIMIT OF CONSTRUCTION
- 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

REFER TO SHEET C0.01

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

EROSION CONTROL PLAN (2 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C2.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_EROS.dwg User: roberb Nov 13, 2024 - 11:16am

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:

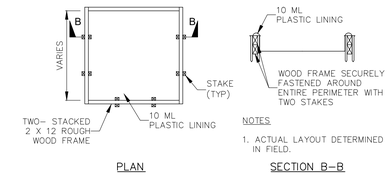
- INCORPORATE REQUIREMENTS FOR CONCRETE WASTE MANAGEMENT INTO MATERIAL SUPPLIER AND SUBCONTRACTOR AGREEMENTS.
- AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
- PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR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

FOR ONSITE WASHOUT:

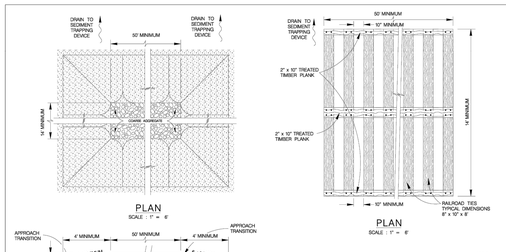
- LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES, OR WATER BODIES. DO NOT ALLOW RUNOFF FROM THIS AREA BY CONSTRUCTING A TEMPORARY PIT OR BERMED AREA LARGE ENOUGH FOR LIQUID AND SOLID WASTE.
- WASH OUT WASTES INTO THE TEMPORARY PIT WHERE THE CONCRETE CAN SET,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

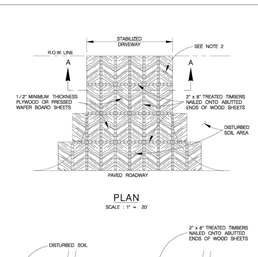
BELOW GRADE CONCRETE WASHOUT FACILITIES ARE TYPICAL. THESE CONSIST OF A LINED EXCAVATION SUFFICIENTLY LARGE TO HOLD EXPECTED VOLUME OF WASHOUT MATERIAL. ABOVE GRADE FACILITIES ARE USED IF EXCAVATION IS NOT PRACTICAL. TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHOULD BE CONSTRUCTED AS SHOWN 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.

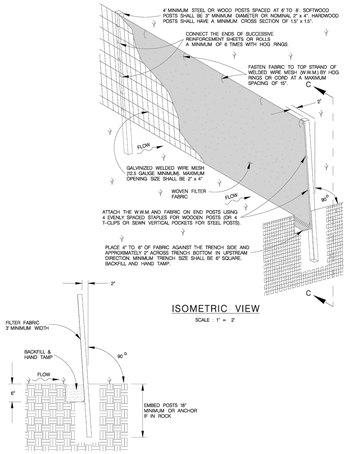
WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE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

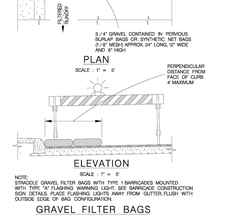


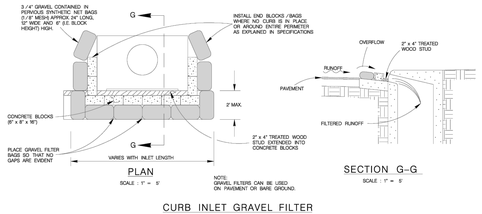
CONCRETE WASHOUT PIT DETAIL
TYPE "ABOVE GRADE"
NOT TO SCALE



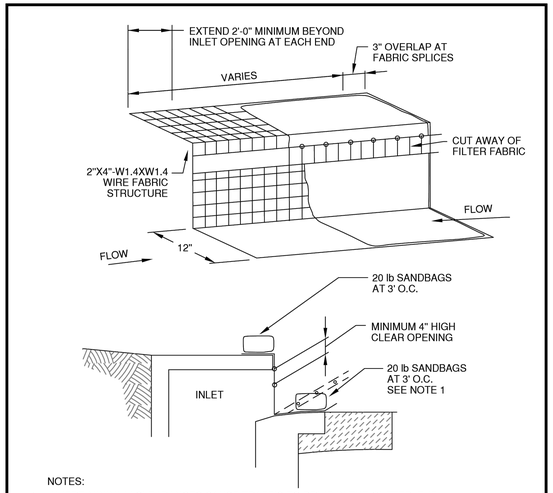






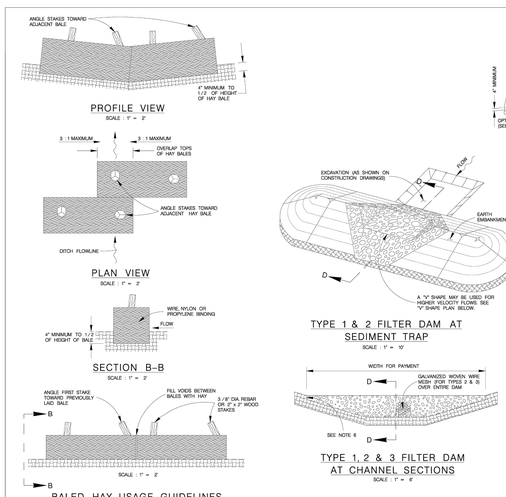


JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1
N: SUBMITTAL PROJECT NO.: _____ DATE: _____
DRAWN BY: V. VASQUEZ DSGN BY: _____ CHKD BY: _____ SHEET NO.: ___OF___



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.

NBU NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING	DRAWN BY: H Shadrock	STANDARD DRAWING:	FILTER DIKE CURB INLET PROTECTION		
	APPROVED BY:	UPDATED: 4-29-03	SCALE: N.T.S.	SHEET: 1 OF 1	DRAWING NO.: 505



BALED HAY USAGE GUIDELINES

A BALED 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 100 GPM /FT SQUARED. THE MAXIMUM 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 BALED 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:

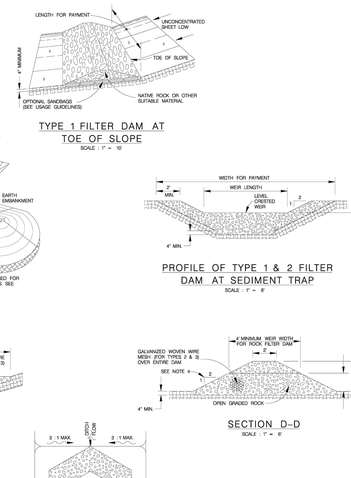
1. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
2. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BALED HAY.

BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTEGRITY 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 MINIMUM 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 /4" 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



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 FLOW IF THE FLOW VELOCITY EXCEEDS 5 FEET PER SECOND. SOME SEDIMENT AND LIGHT WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION OF 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 WIRE MESH. THE ENDS AND SIDES OF THE WIRE 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 FLOW, 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.

JANUARY 2005
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 2
N: SUBMITTAL PROJECT NO.: _____ DATE: _____
DRAWN BY: V. VASQUEZ DSGN BY: _____ CHKD BY: _____ SHEET NO.: ___OF___

LEGEND

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

SEQUENCE OF CONSTRUCTION

REFER TO SHEET C0.01

NOTE:

CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENT) AND SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES IN 21 DAYS, PER TPDES REQUIREMENTS.

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

EROSION CONTROL DETAILS

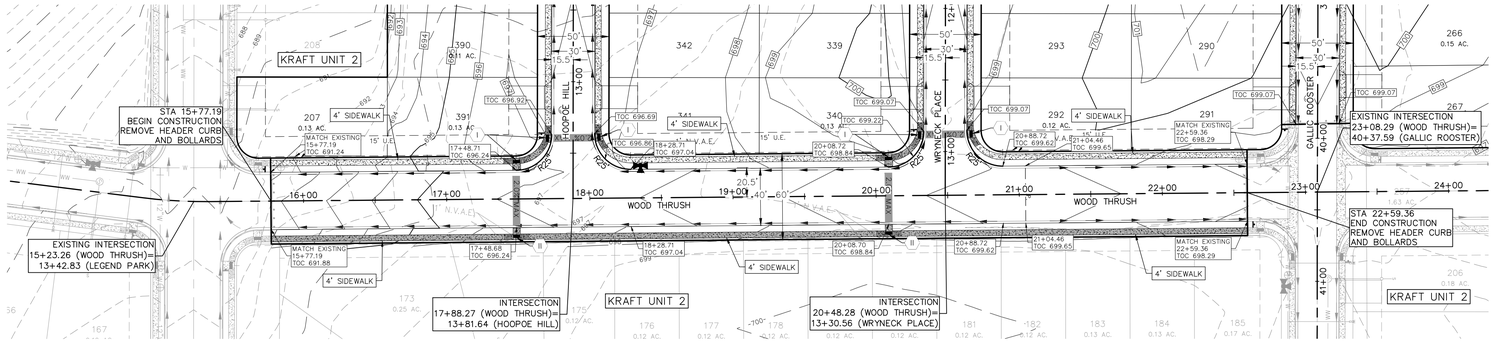
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

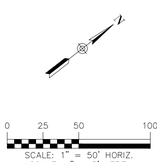
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C2.03

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\03s\337.070_ERDS.dwg User: robertb Nov 13, 2024 – 11:16am





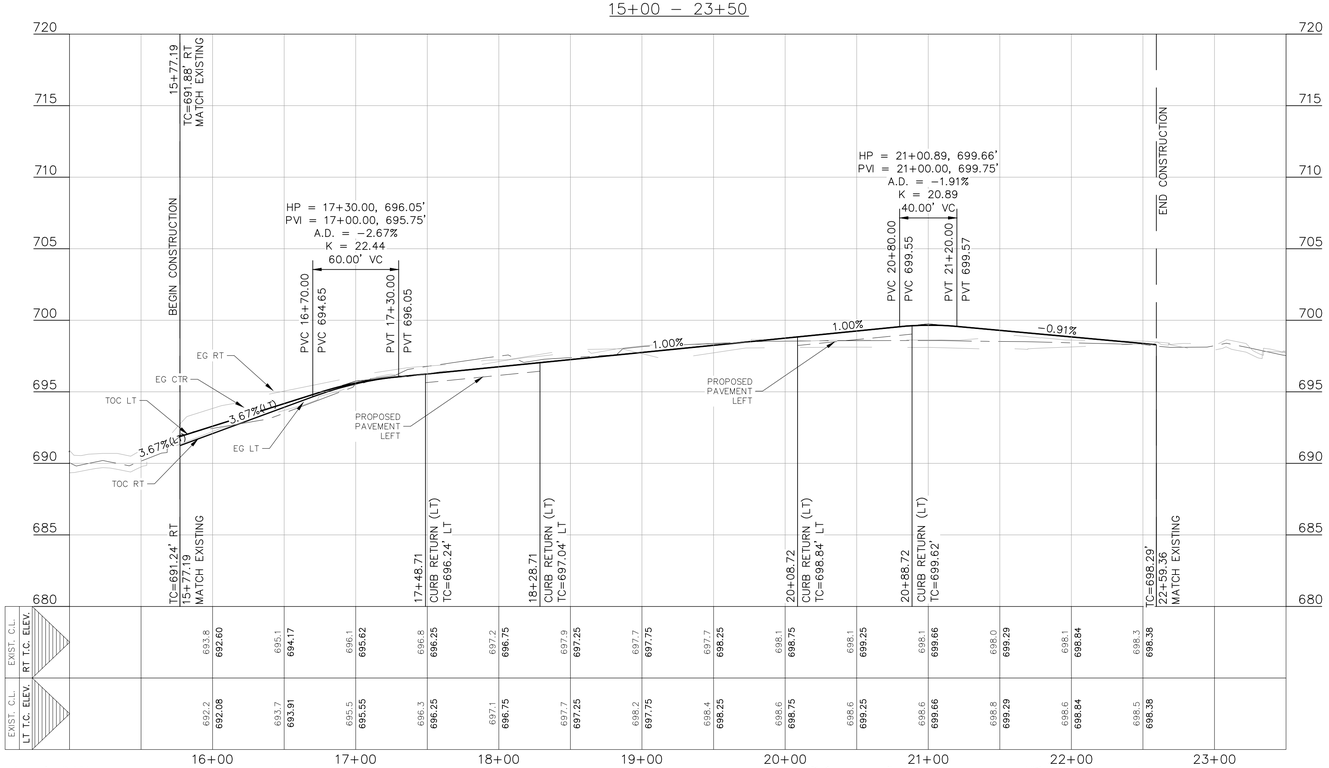
LEGEND

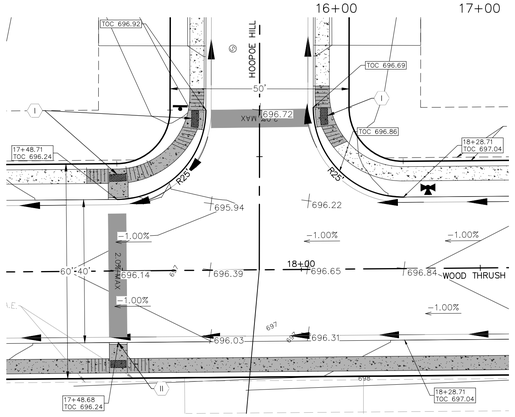
- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET C3.10)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

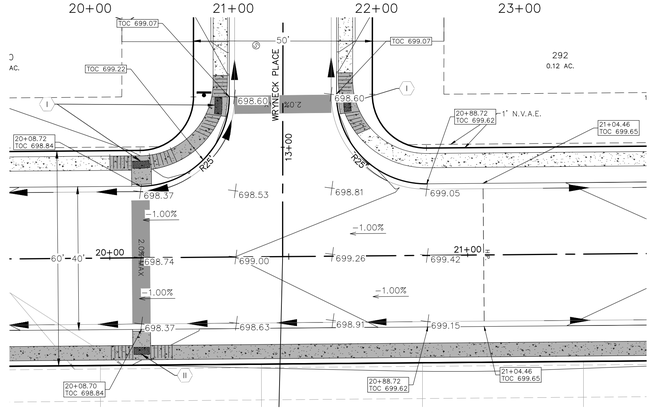
1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 25 MPH.
2. COLLECTOR STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF 30 MPH.
3. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
4. CONTRACTOR TO CONSTRUCT SIDEWALK RAMPS WITH STREETS.
5. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
6. 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'
7. EXISTING TOC ELEVATIONS ARE NOT AS-BUILT. CONTRACTOR TO VERIFY EXISTING TOC MATCHES DESIGN AND ALERT ENGINEER OF RECORD IMMEDIATELY IF ANY DISCREPANCIES ARE FOUND.

WOOD THRUSH
15+00 – 23+50





INTERSECTION DETAIL
WOOD THRUSH / HOOPOE HILL
SCALE: 1"=20'



INTERSECTION DETAIL
WOOD THRUSH / WRYNECK PLACE
SCALE: 1"=20'

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11/8/2024

WOOD THRUSH PLAN & PROFILE

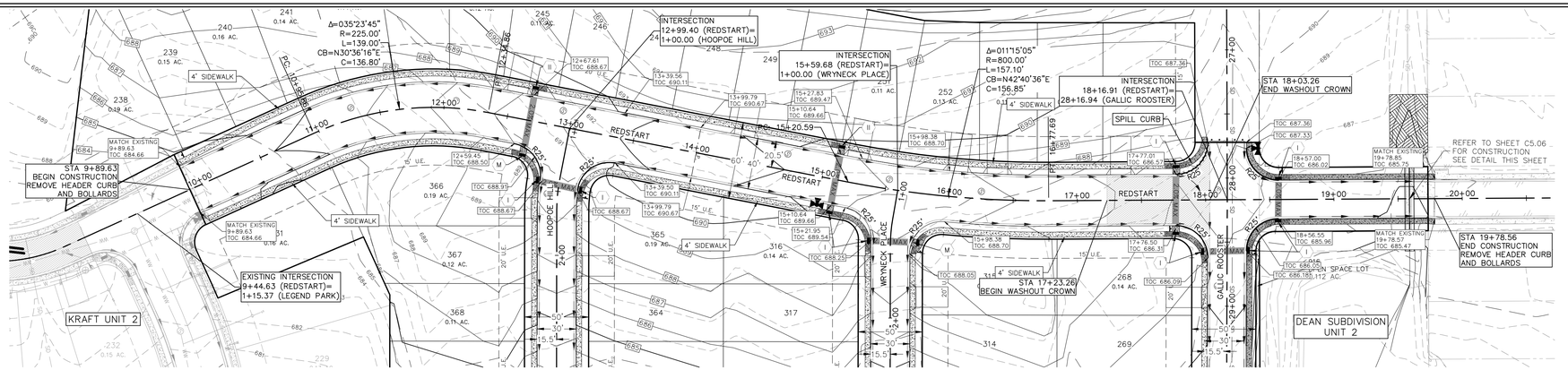
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

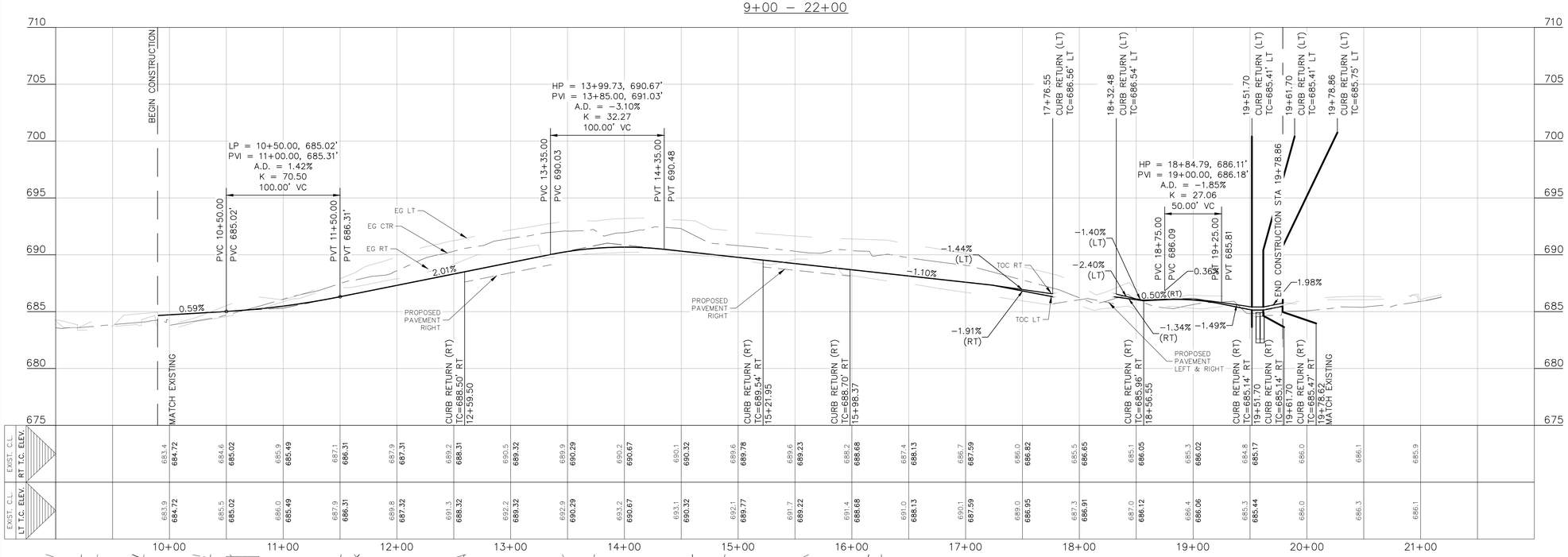
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

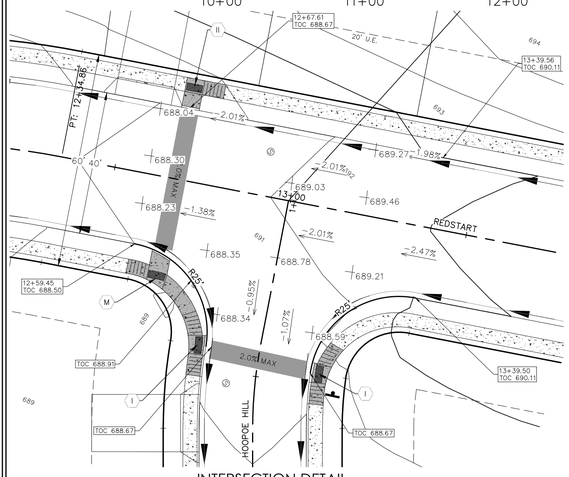
SHEET
C3.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbk\337.070_STREETS N-S.dwg User: roberb Nov 13, 2024 - 11:17am

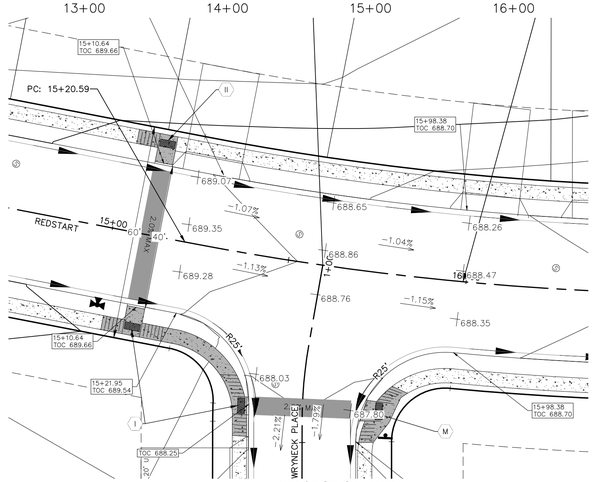


REDSTART
9+00 – 22+00

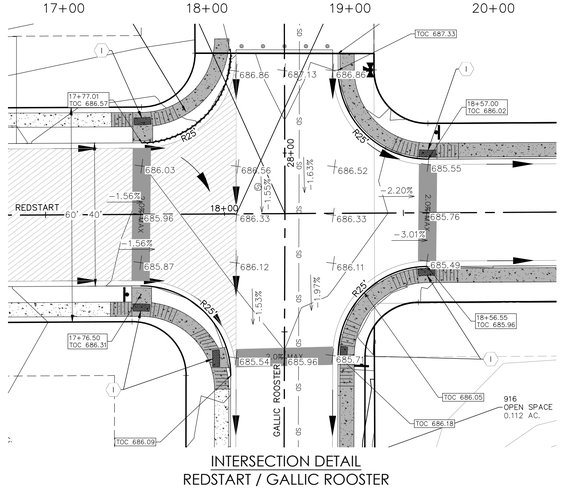




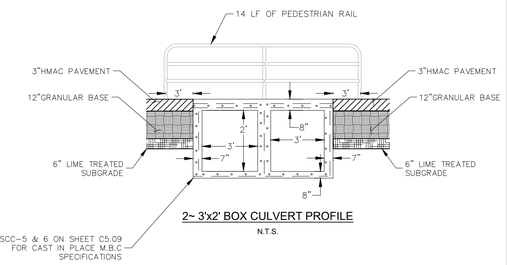
INTERSECTION DETAIL
REDSTART / HOOPOE HILL
SCALE: 1"=20'



INTERSECTION DETAIL
REDSTART / WRYNECK PLACE
SCALE: 1"=20'



INTERSECTION DETAIL
REDSTART / GALLIC ROOSTER
SCALE: 1"=20'



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- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

REDSTART
PLAN & PROFILE

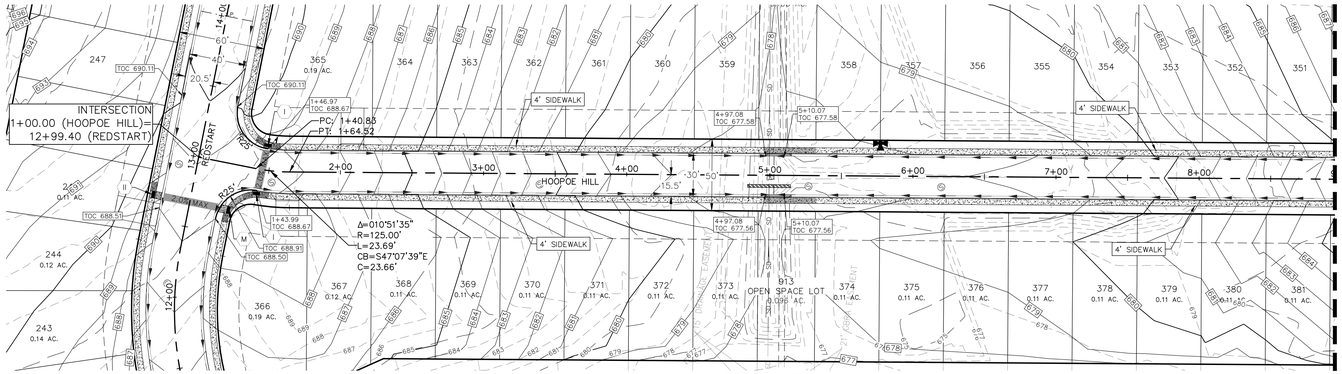
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

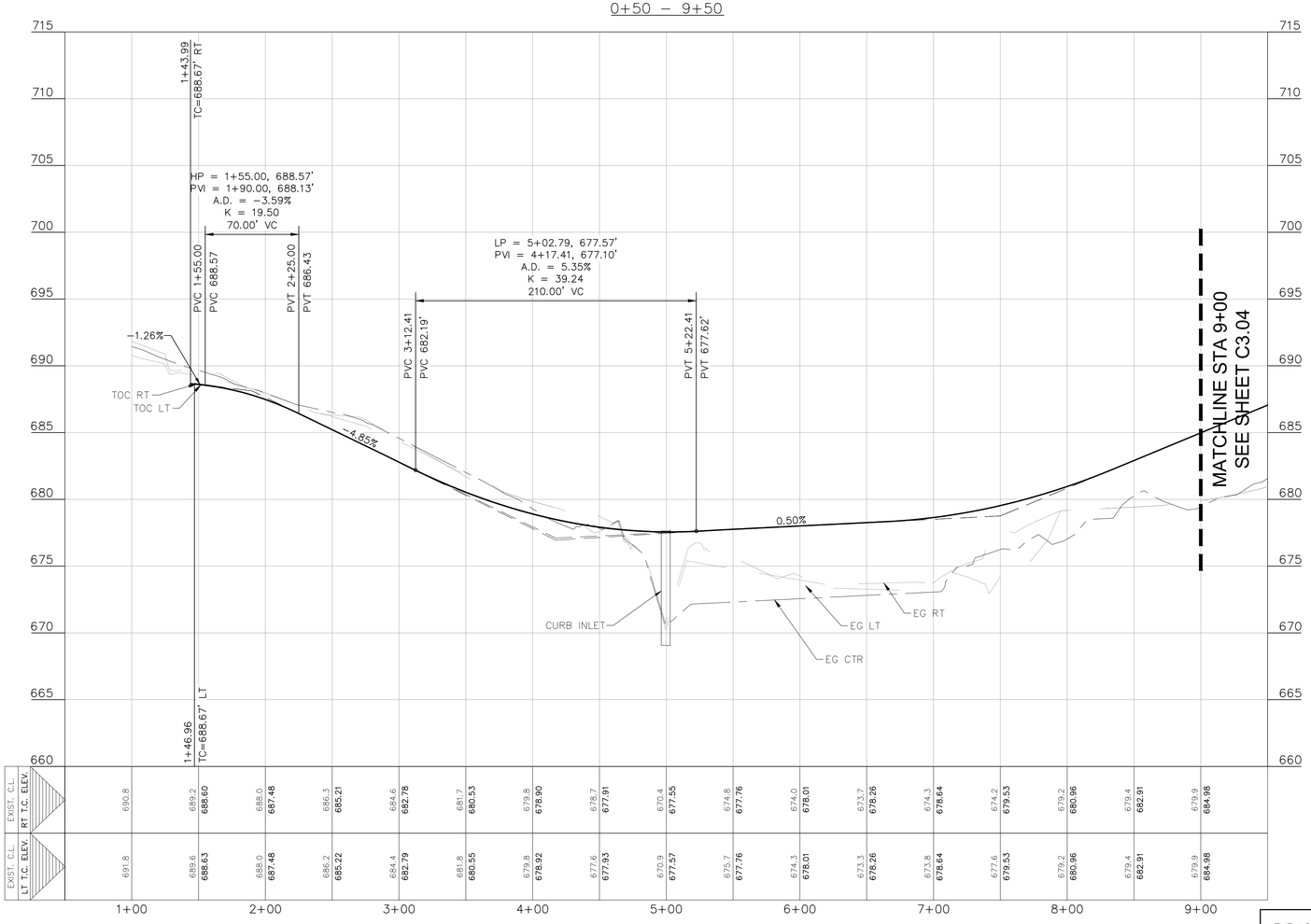
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C3.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\337.070_STREETS N-S.dwg User: robertb Nov 13, 2024 - 11:17am



HOOPOE HILL
0+50 – 9+50



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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HMT
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STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

HOOPOE HILL
PLAN & PROFILE
(1 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
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SHEET
C3.03

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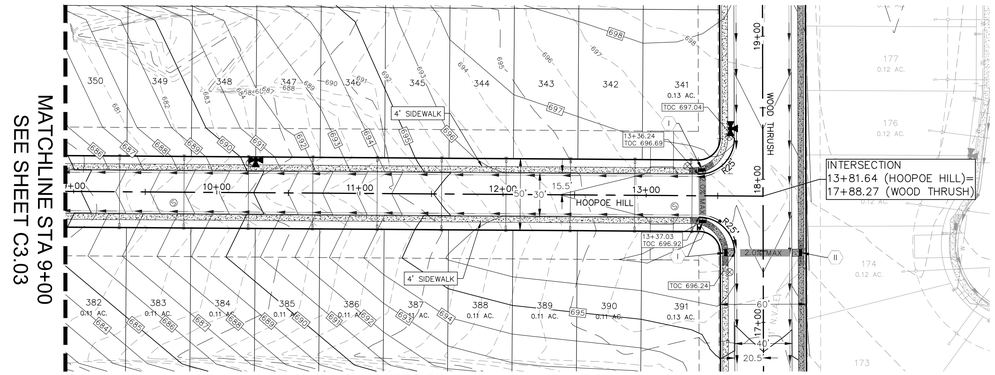
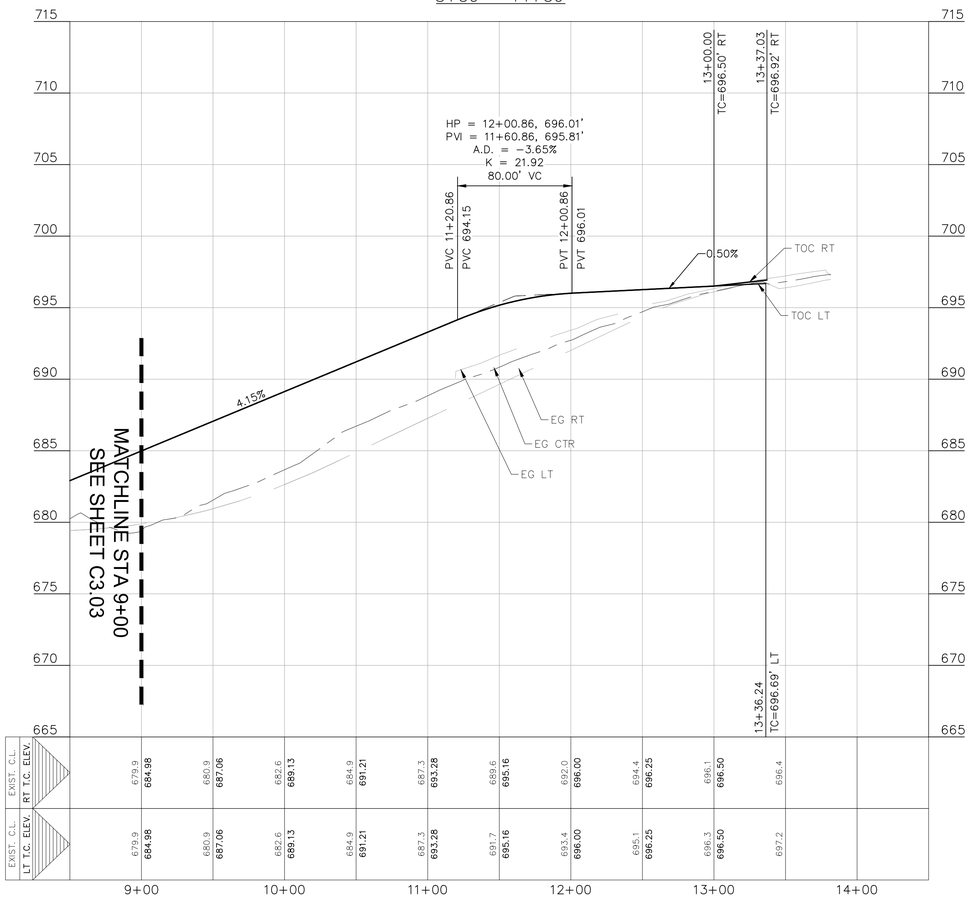


HOOPOE HILL
8+50 – 14+50



LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
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STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

HOOPOE HILL
PLAN & PROFILE
(2 OF 2)

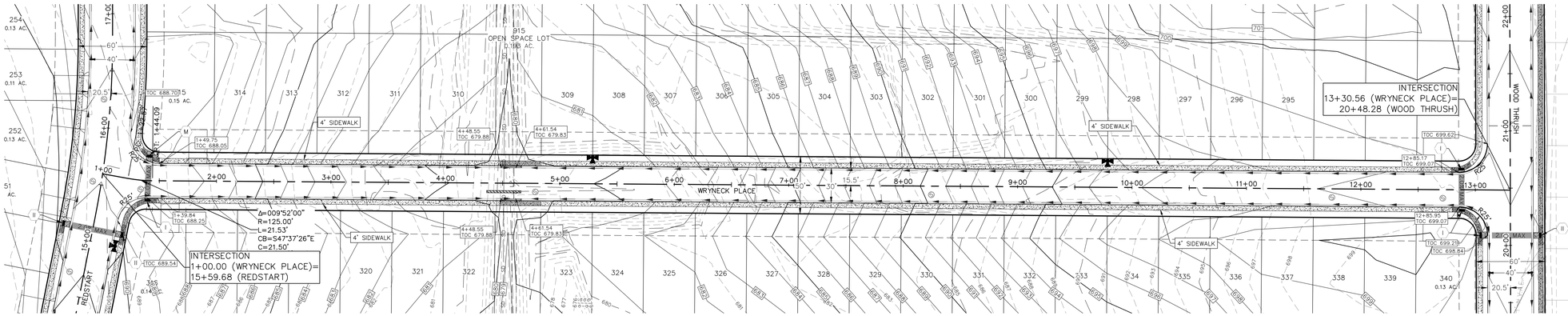
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C3.04

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_STREETS E-W.dwg User: robertb Nov 13, 2024 - 11:18am



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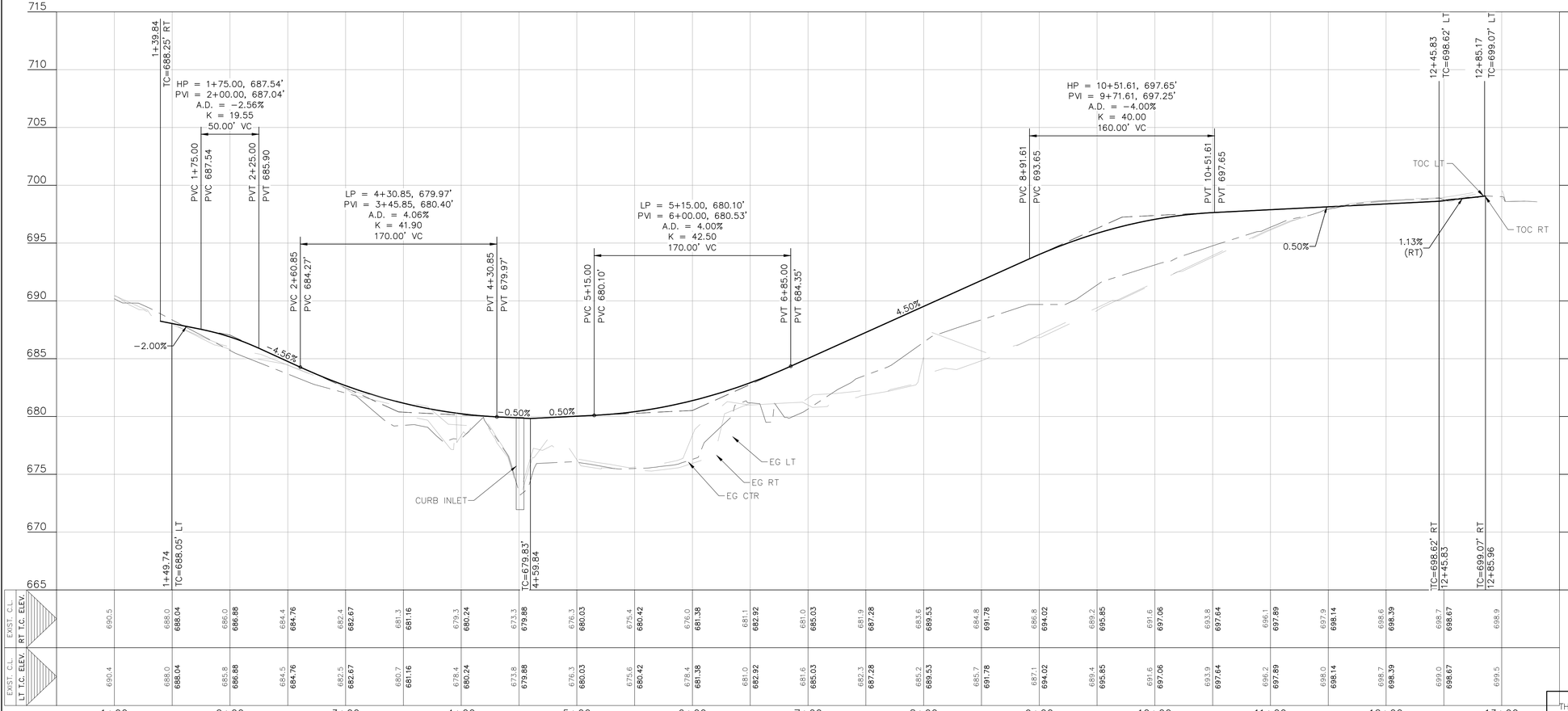
WRYNECK PLACE
0+50 – 13+50



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HMT ENGINEERING & SURVEYING
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NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WRYNECK PLACE
PLAN & PROFILE

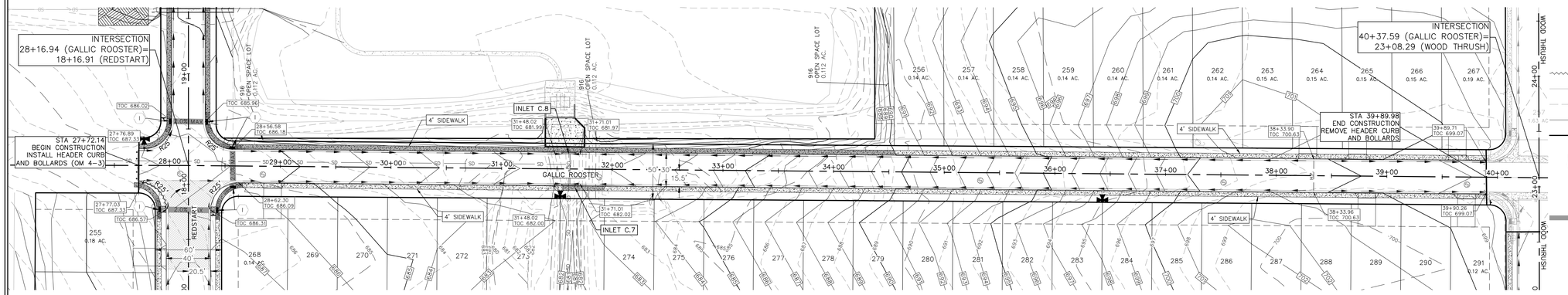
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C3.05

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C3d\337.070_STREETS E-W.dwg User: robertb Nov 13, 2024 - 11:18am



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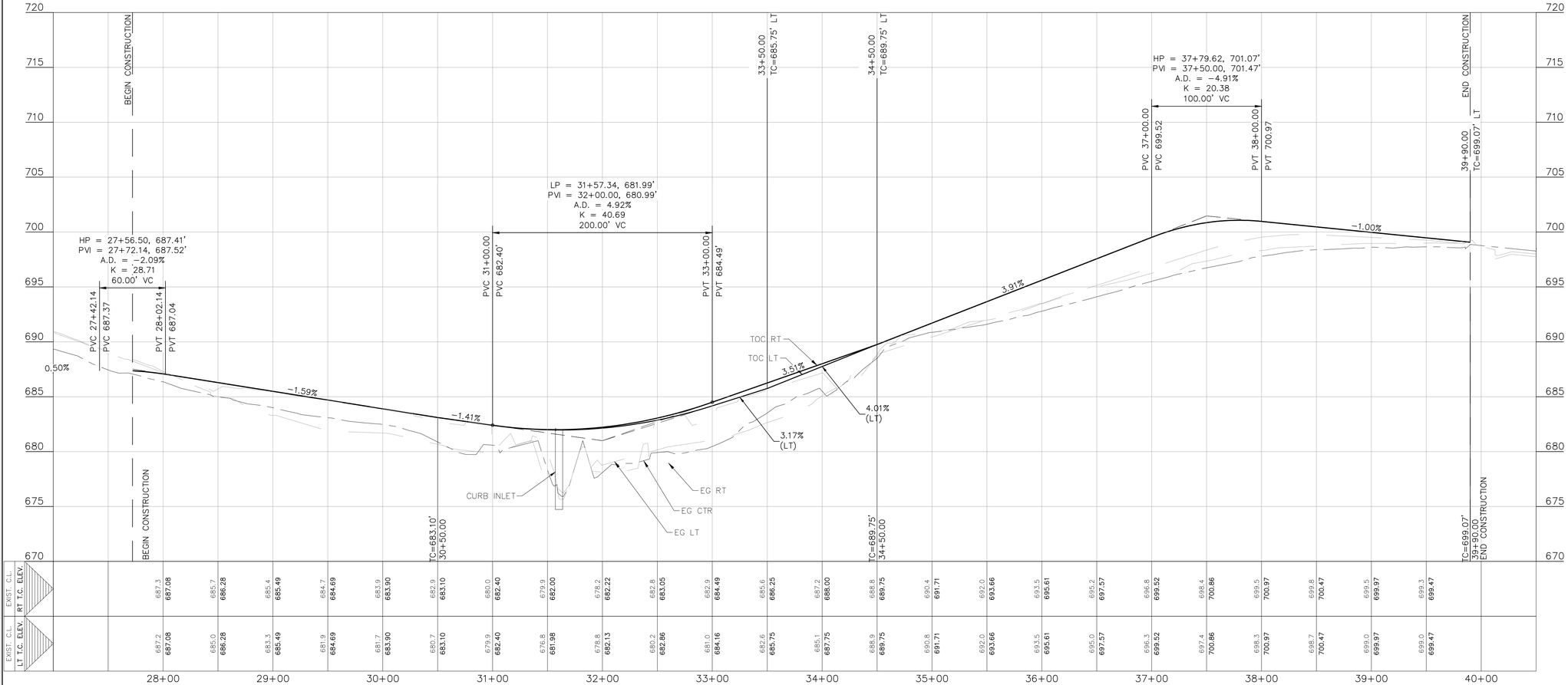
GALLIC ROOSTER
27+00 – 40+50



	28+00	29+00	30+00	31+00	32+00	33+00	34+00	35+00	36+00	37+00	38+00	39+00	40+00
EXIST. C.L. RT T.C. ELEV.	687.3 687.08	685.7 686.28	685.4 685.49	684.7 684.69	683.9 683.90	682.9 683.10	680.0 682.40	679.9 682.00	678.2 682.22	682.8 683.05	682.9 684.49	685.6 686.25	687.2 688.00	688.8 689.75	690.4 691.71	692.0 693.66	693.5 695.61	695.2 697.57	696.8 699.52	698.4 700.86	699.5 700.97	699.8 700.47	699.5 699.97	699.3 699.47
EXIST. C.L. LT T.C. ELEV.	687.2 687.08	685.0 686.28	683.3 685.49	681.9 684.69	681.7 683.90	680.7 683.10	679.9 682.40	676.8 681.98	678.8 682.13	680.2 682.86	681.0 684.16	682.6 685.75	685.1 687.75	688.9 689.75	690.8 691.71	692.0 693.66	693.5 695.61	695.0 697.57	696.3 699.52	697.4 700.86	698.3 700.97	698.7 700.47	699.0 699.97	699.0 699.47

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0 25 50 100
SCALE: 1" = 50' HORIZ.
SCALE: 1" = 5' VERT.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
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CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

GALLIC ROOSTER PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C3.06

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Civil\337.070_STREETS E-W.dwg User: robertb Nov 13, 2024 - 11:18am

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LEGEND

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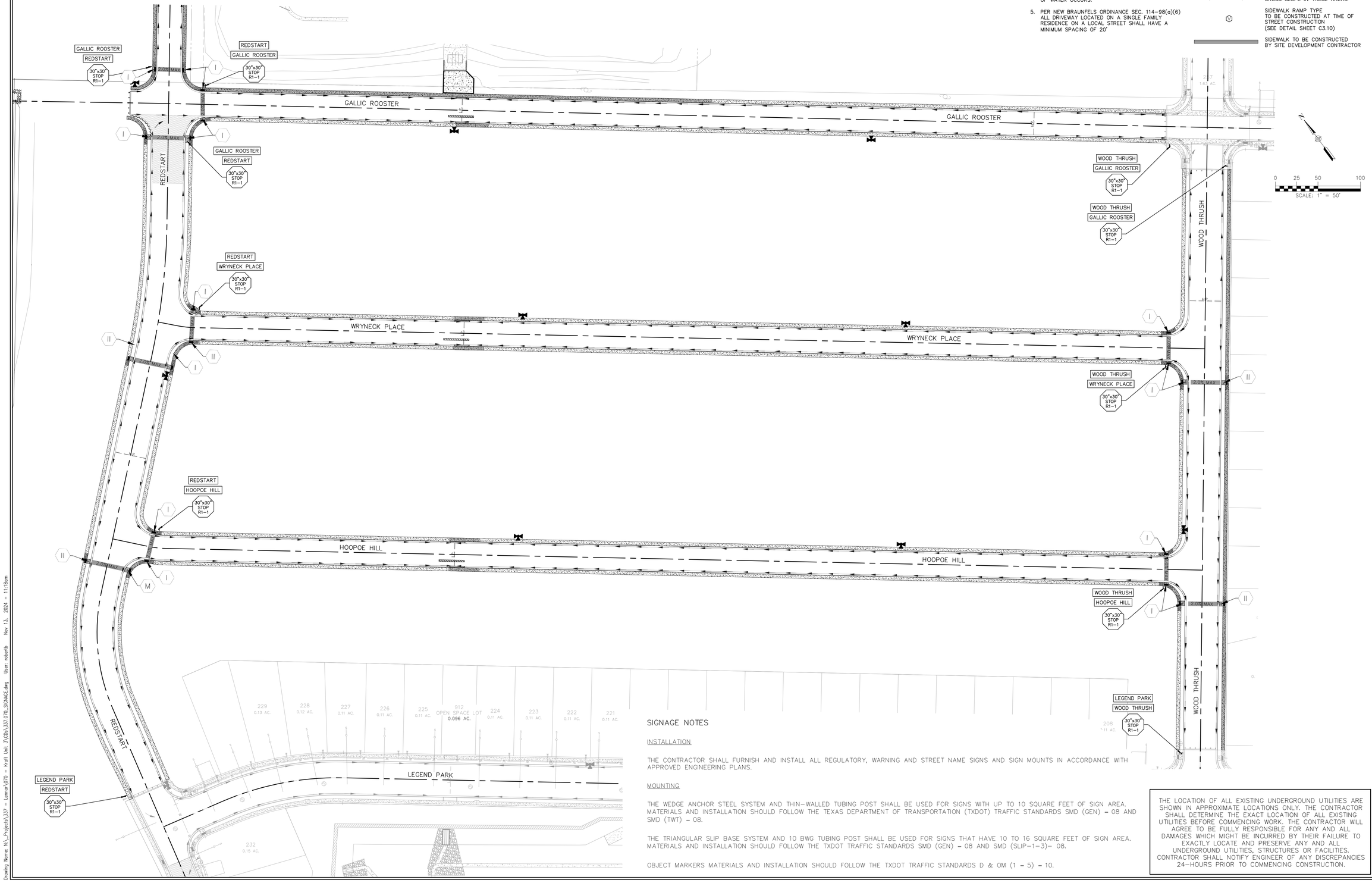

SIGNAGE NOTES

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.

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SIGNAGE PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

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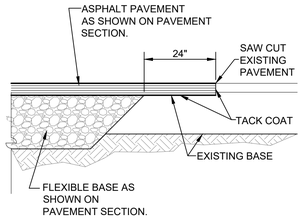
SHEET

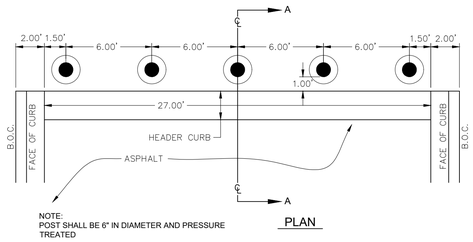
C3.07

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\(0)s\337.070_SIGNAGE.dwg User: roberth Nov 13, 2024 - 11:18am

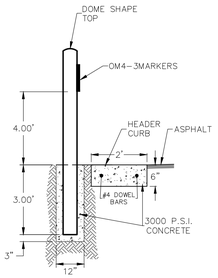


NEW PAVEMENT TO EXISTING

NOT TO SCALE



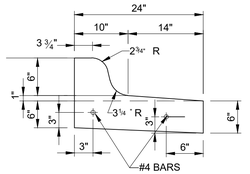
PLAN



SECTION A-A

BOLLARD DETAIL

NOT TO SCALE



SPILL CURB DETAIL

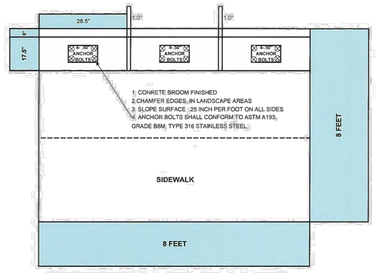
NOT TO SCALE

FLEXIBLE PAVEMENTS	COLLECTOR	LOCAL
PAVEMENT MATERIAL		
TYPE "D" HMAC	3"	3"
GRANULAR BASE COURSE	15"	12"
LIME TREATED SUBGRADE	8"	8"
GEOGRID	NO	NO

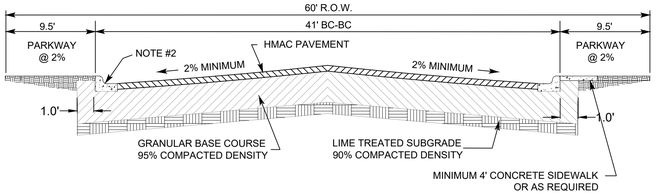
NOTE:

1. ALL PAVEMENT CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE TO THE "PAVEMENT DESIGN REPORT, KRAFT SUBDIVISION", BY TTL, INC. OF SAN ANTONIO, DATED JANUARY 5, 2022.
2. ALL PAVEMENT SECTIONS SHOWN ON THE ABOVE TABLE SHALL SUPERCEDE ANY STANDARD DETAILS WITH RESPECT TO DEPTH OF MATERIALS ASSOCIATED WITH THIS PROJECT.
3. THE SUBGRADE SHOULD BE STABILIZED USING LIME IN ACCORDANCE WITH THE GEOTECHNICAL REPORT IN ORDER TO ACHIEVE THE FOLLOWING:
   3.1. PLASTICITY INDEX (REFER TO SECTION 4.2 OF PAVEMENT DESIGN REPORT)
   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.
5. REFERENCE GEOTECHNICAL REPORT FOR LIME STABILIZATION NOTES
6. CONTRACTOR SHALL BE RESPOSIBLE TO ATTAIN A COPY OF THE GEOTECH REPORT AND THE CONTENTS OF THE REPORT.

UNITED STATES POSTAL SERVICE

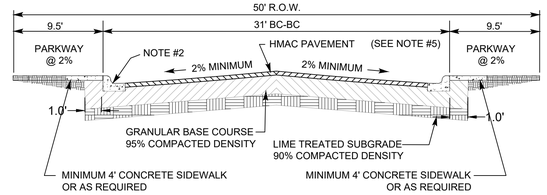


1 CBU 8' DEEP X 4' WIDE TO INCLUDE SIDEWALK.
2 CBU'S 8' DEEP X 6' WIDE TO INCLUDE SIDEWALK
3 CBU'S 8' DEEP X 8' WIDE TO INCLUDE SIDEWALK
4 CBU'S 8' DEEP X 11' WIDE TO INCLUDE SIDEWALK



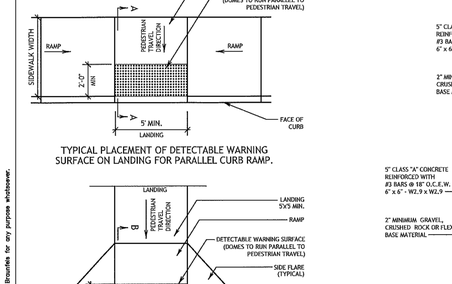
COLLECTOR STREET PAVEMENT SECTION (60' R-O-W)

NOT TO SCALE
REDSTART STA:9+89.63 TO STA:18+16.91
WOOD THRUSH STA:15+77.19 TO STA:22+59.36

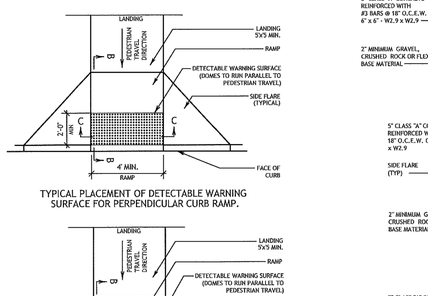


LOCAL STREET PAVEMENT SECTION (50' R-O-W)

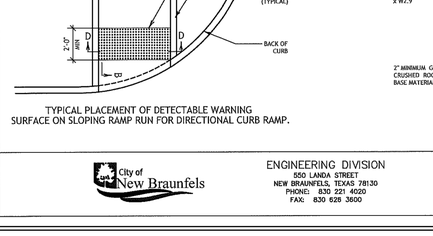
ALL STREETS EXCEPT FOR REDSTART STA: 9+89.63 TO STA: 18+16.91 &
WOOD THRUSH STA:15+77.19 TO STA:22+59.36



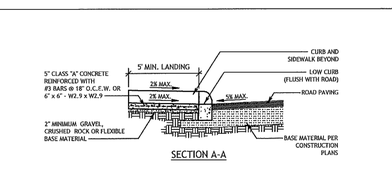
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



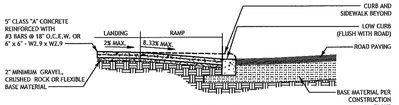
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



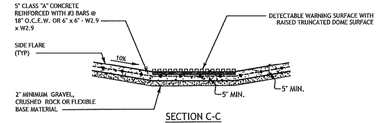
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



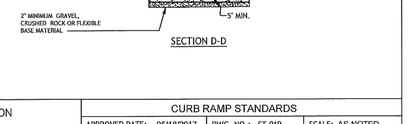
SECTION A-A



SECTION B-B



SECTION C-C



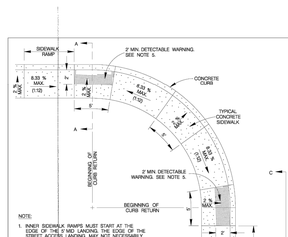
SECTION D-D

CURB RAMP NOTES

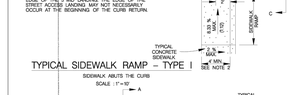
1. ALL SLOPES ARE MAXIMUM ALLOWABLE, THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF CURB RAMPS ARE TO BE SHOWN ON THE CONSTRUCTION PLANS. ALL ACCESSIBLE 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% (1V:12H), MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
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% (1V:10H) 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 DMG 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.



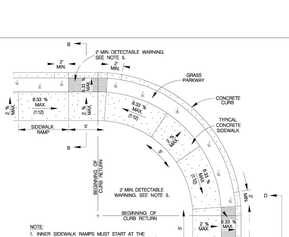
TYPICAL SIDEWALK RAMP – TYPE I



TYPICAL SIDEWALK RAMP – TYPE II

USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB

SCALE : 1"=10'



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

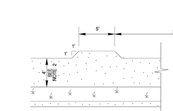
SCALE : 1"=10'

GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE,ALLOWING A MINIMUM 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 BE 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). 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-08,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 "505 - 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.

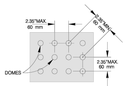
DETECTABLE WARNING SURFACE

SCALE : 1"=4'



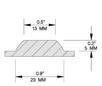
SIDEWALK PASSING SPACE

SCALE : 1"=10'



PLAN DETAIL

NO SCALE



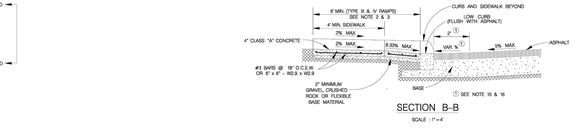
DOME SECTION

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.

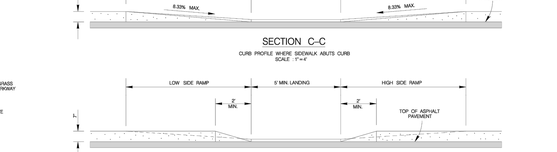
SECTION A–A

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'

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

CURB RAMP STANDARDS

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

City of New Braunfels
ENGINEERING DIVISION
550 LANDA STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3600

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.

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\CDs\337.070_STREETS DETAILS.dwg User: roberth Nov 13, 2024 – 12:00pm

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STREET DETAILS (1 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C3.08

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

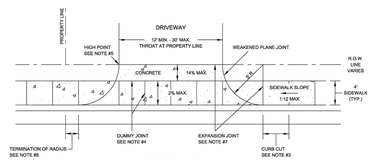
WHEELCHAIR RAMP STANDARDS

SUBMITTAL PROJECT NO.: DATE:

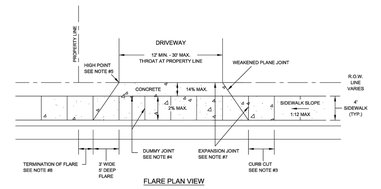
DRAWN BY: J. VASQUEZ CKD BY: CHKD BY: S.S. HOSSEINI, P.E. SHEET NO.: OF

Missing or invalid reference
File: F:\!Civil Resources\Details\City of New Braunfels\ST-013 Curb & Gutter.pdf
Sheet: 1

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



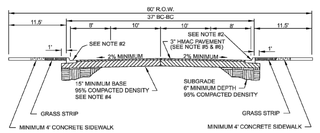
RADIUS PLAN VIEW



FLARE PLAN VIEW

DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.	City of New Braunfels	ENGINEERING DEPARTMENT
	SHEET: 1 OF 2			
FILENAME: ROADWAY (RESIDENTIAL - ONE OR TWO FAMILY)				

RESIDENTIAL COLLECTOR
PARKING BOTH SIDES

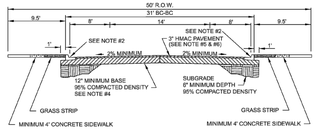


NOTES:

1. STRUCTURAL SECTION REQUIRES DETAILED ENGINEERING DESIGN, SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. CITY WILL ACCEPT DESIGNS THAT INCORPORATE BIAXIAL GEOGRID.
2. CITY WILL ACCEPT CURB AND GUTTER OR STAND-ALONE GUTTER. SEE CURB DETAIL ST-013 (CURB & GUTTER) & ST-013a (STAND-ALONE GUTTER).
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. IN NO CASE SHALL THE HMAC SECTION BE LESS THAN THAT SHOWN.
7. BASE MUST EXTEND 1' BEYOND BACK OF CURB, 12" MINIMUM THICKNESS.

City of New Braunfels ENGINEERING DIVISION	STANDARD CONSTRUCTION DETAIL	SCALE: N.T.S.	
		APPROVED DATE:	
		STANDARD NO.: ST-007	

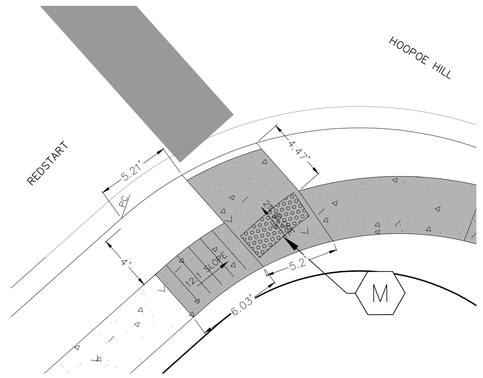
ONE & TWO FAMILY RESIDENTIAL
LOCAL
PARKING BOTH SIDES



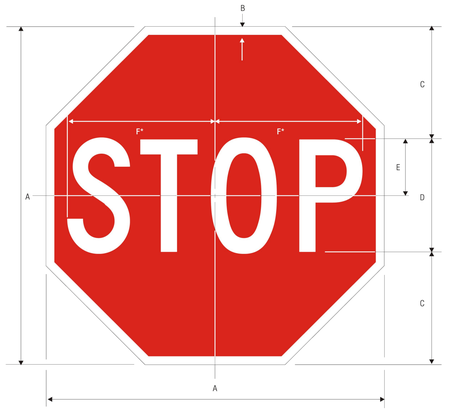
NOTES:

1. STRUCTURAL SECTION REQUIRES DETAILED ENGINEERING DESIGN, SUBJECT TO THE APPROVAL OF THE CITY ENGINEER. CITY WILL ACCEPT DESIGNS THAT INCORPORATE BIAXIAL GEOGRID.
2. CITY WILL ACCEPT CURB AND GUTTER OR STAND-ALONE CURB. SEE CURB DETAIL ST-013 (CURB & GUTTER) & ST-013a (STAND-ALONE CURB).
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. IN NO CASE SHALL THE HMAC SECTION BE LESS THAN THAT SHOWN.
7. BASE MUST EXTEND 1' BEYOND BACK OF CURB, 8" MINIMUM THICKNESS

City of New Braunfels ENGINEERING DIVISION	STANDARD CONSTRUCTION DETAIL	SCALE: N.T.S.	
		APPROVED DATE:	
		STANDARD NO.: ST-011	



CURB RETURN DETAIL - M
SCALE: 1"=5'



R1-1
STOP

*Reduce spacing 40%

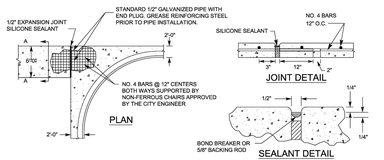
	A	B	C	D	E	F
C	18	.375	6	6 C	3	7.75
	24	.625	8	8 C	4	10
	30	.75	10	10 C	5	12.5
	36	.875	12	12 C	6	15
	48	1.25	16	16 C	8	20

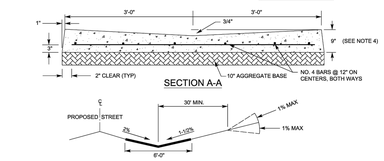
COLORS: LEGEND — WHITE (RETROREFLECTIVE)
BACKGROUND — RED (RETROREFLECTIVE)

1-1

Missing or invalid reference
File: f:\!civil resources\details\city of new braunfels\street\ST-014.2 Driveway Apron (Residential One or Two Family).pdf
Sheet: 1

CROSS GUTTER





TYPICAL PROFILE AT LOCAL RESIDENTIAL STREET INTERSECTION

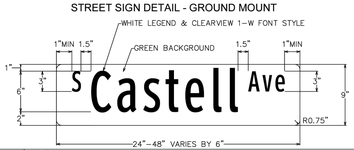
NOTES:

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: 07/2008	DWG. NO: ST-020	SCALE: N.T.S.	City of New Braunfels	ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1			
FILENAME: CROSS GUTTER				

Missing or invalid reference
File: F:\Civil Resources\Details\City of New Braunfels\ST-016 Sidewalk (Residential).pdf
Sheet: 1

STREET SIGN DETAIL - GROUND MOUNT

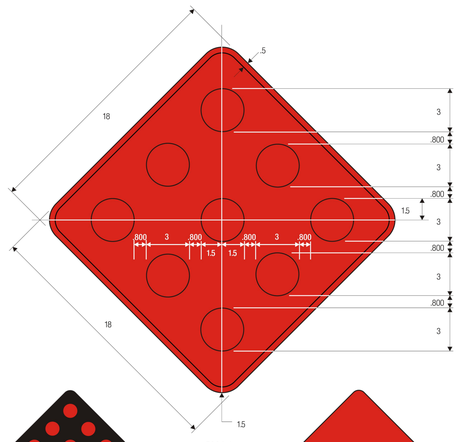


Height	9"
Length	24" min 48" max 6" increments in length
Thickness	0.080"
Substrate	Flat aluminum sheeting with ¾" radius circular fillets at corners conforming to the requirements of ASTM B 209, Alloys 6061-T-6, or 5052-H38.
Sign Face Materials	Green film over High Intensity Prismatic sheeting
Legend	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 13" slot. All other street name signs center mounted on top of sign post shall be mounted on post top bracket with 5 ½" 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 4620 FAX: 830 626 3000
ISSUE DATE: February 2013	DWG. NO: ST-024	SCALE: N.T.S.		
DRAWN BY: RAS	CONTACT: GF	SHEET: 1 OF 1		
P:\2013 ENGINEERING-AUTOCAD\DETAILS\NB-PUBLIC WORKS DETAILS\NB-UNAPPROVED DETAILS-2013\ST-2013.024 STREET SIGN DETAIL - GROUND MOUNT.DWG				



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

R1-4
ALL WAY

*Series 2000 Standard Alphabets.

	A	B	C	D	E	F	G	H
C	18	6	.5	1.5	3 C	1.5	7	1.5
	24	9	.5	2	5 C	2	11	1.5
	30	12	.75	3	6 C	3	13.25	1.875
	36	15	.75	4	7 C	4	15.771	2.25
	48	18	1	4.5	9 C	4.5	20.415	3

COLORS: LEGEND — WHITE (RETROREFLECTIVE)
BACKGROUND — RED (RETROREFLECTIVE)

1-5

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STREET DETAILS (2 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C3.09

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\337-070_STREETS DETAILS.dwg User: robertb Nov 13, 2024 - 12:06pm

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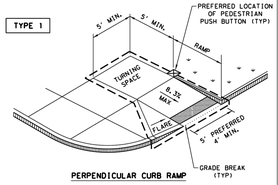
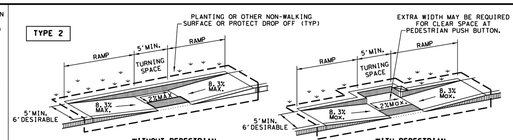
DATE:
FILE:

TYPE 1



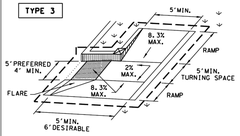
PERPENDICULAR CURB RAMP

TYPE 2

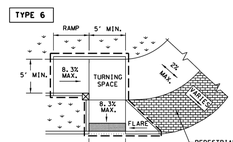


PARALLEL CURB RAMP

TYPE 3

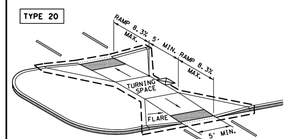


TYPE 6



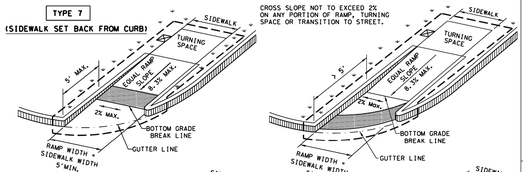
COMBINATION CURB RAMPS

TYPE 20

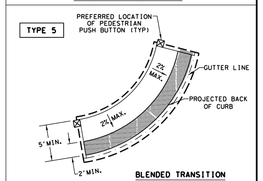


CURB RAMPS AT MEDIAN ISLANDS

TYPE 7
(SIDEWALK SET BACK FROM CURB)



TYPE 5



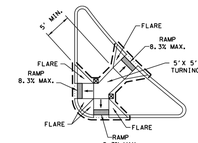
BLENDED TRANSITION
(FLUSH LANDING)

TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.

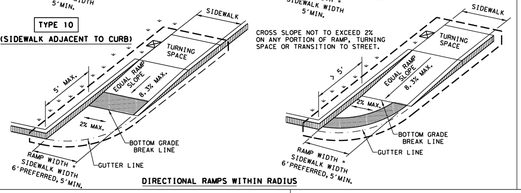
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

TYPE 10
(SIDEWALK ADJACENT TO CURB)



DIRECTIONAL RAMPS WITHIN RADIUS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.

TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: DN018	DN:TxDOT	CK:	DW:	CK:
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2022	DIST	COUNTY		SHEET NO.
REVISED 05.2024				
REVISED 01.2018				

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DATE:
FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances.
   5' x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. 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 align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. 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.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches 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.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

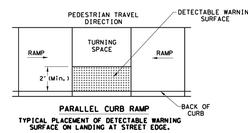
DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

SIDEWALKS

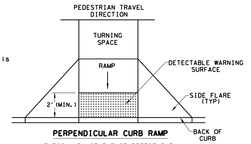
27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

DETECTABLE WARNING SURFACE DETAILS



PARALLEL CURB RAMP

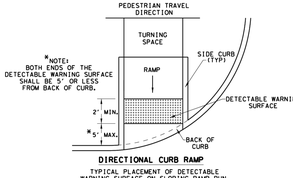
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS



DIRECTIONAL CURB RAMP

TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

SHEET 2 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: DN018	DN:TxDOT	CK:	DW:	CK:
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2022	DIST	COUNTY		SHEET NO.
REVISED 05.2024				
REVISED 01.2018				

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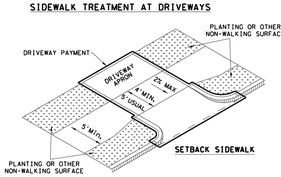
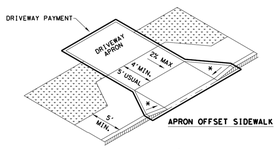
DATE:
FILE:

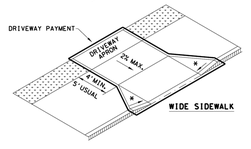
SIDEWALK TREATMENT AT DRIVEWAYS



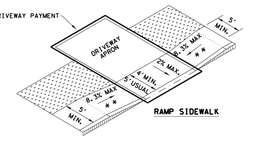
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



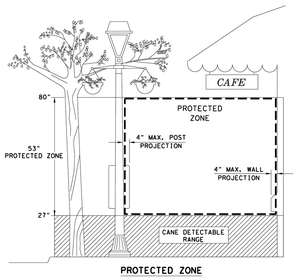
WIDE SIDEWALK



RAMP SIDEWALK

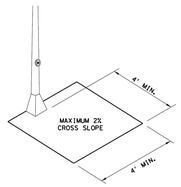
NOTES:
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.

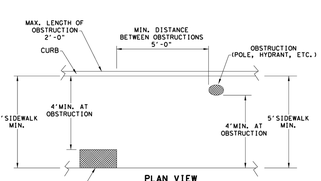


PROTECTED ZONE

NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



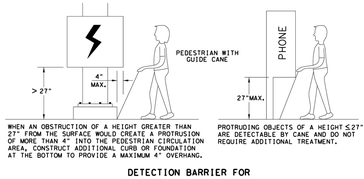
CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



PLAN VIEW

PLACEMENT OF STREET FIXTURES

NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.

PROTRUDING OBJECTS OF A HEIGHT ≤27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

SHEET 3 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

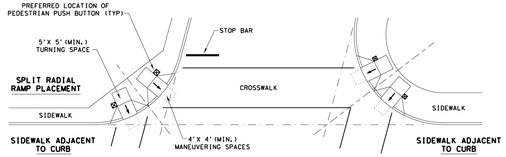
PED-18

FILE: DN018	DN:TxDOT	CK:	DW:	CK:
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2022	DIST	COUNTY		SHEET NO.
REVISED 05.2024				
REVISED 01.2018				

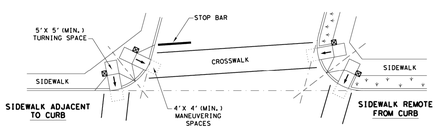
DISCLAIMER:
THE USE OF THIS STANDARD IS GOVERNED BY THE "TEXAS ENGINEERING PRACTICE ACT". NO WARRANTY OF ANY KIND IS MADE BY TXDOT FOR ANY PURPOSE WHATSOEVER. TXDOT ASSUMES NO RESPONSIBILITY FOR THE CONVERSION OF THIS STANDARD TO OTHER FORMATS OR FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.

DATE:
FILE:

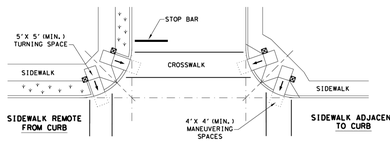
TYPICAL CROSSING LAYOUTS
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



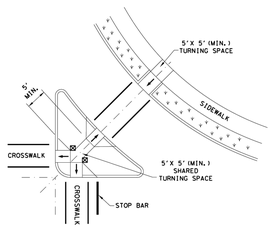
SKEWED INTERSECTION WITH "LARGE" RADIUS



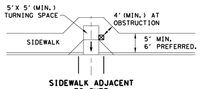
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



SIDEWALK ADJACENT TO CURB

SIDEWALK REMOTE FROM CURB

MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE).

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

SHEET 4 OF 4

Texas Department of Transportation | Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: DN018	DN:TxDOT	CK:	DW:	CK:
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08.2022	DIST	COUNTY		SHEET NO.
REVISED 05.2024				
REVISED 01.2018				

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STREET DETAILS (3 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C3.10

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C3D\337.070_STREETS DETAILS.dwg User: roberth Nov 13, 2024 - 12:00pm

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

Maximum Wingwall Height (Ht)	W	X	Y	Z	Variable Reinforcing Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of wing length (Two-Wings) Reinf (Lb/Ft)	Conc (CY/Ft)
3'-0"	2'- 5"	3'- 1"	0'- 0"	9"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'- 5"	3'- 1"	0'- 0"	9"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'- 5"	3'- 1"	0'- 0"	9"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'- 5"	3'- 1"	0'- 0"	9"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	2'- 5"	3'- 1"	0'- 0"	9"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'- 2"	3'- 1"	6"	1'- 0"	#5	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'- 2"	3'- 1"	6"	1'- 0"	#5	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'- 2"	3'- 1"	6"	1'- 0"	#5	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'- 2"	3'- 1"	6"	1'- 0"	#5	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'- 2"	3'- 2"	0'- 0"	1'- 6"	#8	#5	1'-0"	#4	60.19	0.486
9'-0"	4'- 2"	3'- 2"	0'- 0"	1'- 6"	#8	#4	6"	#4	67.61	0.593
10'-0"	5'- 2"	3'- 2"	0'- 0"	2'- 0"	#8	#5	6"	#4	0"	97.25
11'-0"	5'- 2"	3'- 2"	0'- 0"	2'- 0"	#8	#6	6"	#5	6"	133.45
12'-0"	6'- 2"	3'- 3"	0'- 0"	2'- 6"	#9	#7	6"	#5	6"	162.29

Maximum Wingwall Height (Ht)	Estimated Quantities per ft of wing length (Two-Wings) Reinf (Lb/Ft)	Conc (CY/Ft)
3'-0"	33.73	0.248
3'-0"	37.07	0.261
3'-6"	37.74	0.273
4'-0"	38.41	0.285
4'-6"	41.75	0.330
5'-0"	45.09	0.343
5'-6"	45.75	0.355
6'-0"	46.42	0.367
7'-0"	52.77	0.414
8'-0"	60.19	0.486
9'-0"	67.61	0.593
10'-0"	97.25	0.584
11'-0"	133.45	0.634
12'-0"	162.29	0.721

TABLE OF WINGWALL REINFORCING (Two-Wings)

Bar	Size	No.	Spa
D	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
M	#4	4	–
P	#4	–	1'-0"
R	#5	6	–
S	#4	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
K	#4	–	1'-0"
N	#5	6	–
G	#4	1	–
Reinf (Lb/Ft)			2.45
Conc (CY/Ft)			0.031

TABLE OF ESTIMATED ANCHOR TOEWALL QUANTITIES

Bar	Size	No.	Spa
K	#4	–	1'-0"
N	#5	6	–
OL	#4	6	–
Reinf (Lb/Ft)			9.82
Conc (CY/Ft)			0.074

1. Extend Bars P 3'-0" Min into bottom slab of box culvert.
2. Adjust to fit as necessary to maintain 1 1#2" clear cover and 4" Min between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings multiply the tabulated values by Le.
4. Recommended values of slope are: 3:1, 4:1, and 6:1. Provide 3:1 or flatter slope.
5. When shown elsewhere on the plans, construct 5" deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap." Unless otherwise shown on the plans or directed by the Engineer, extend construction joints or grooved joints, oriented in the direction of flow, across the full thickness of the riprap, at intervals of approximately 20'. When such areas is provided, the culvert toewall shown in SECTION B-B is not required.
6. At Contractor's option, end the culvert toewall flush with wingwall toewall. Adjust reinforcing as needed.
7. 3" Min to 5'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to Extended Curb Details (ECD) standard sheet.
8. For vehicle safety, reduce curbs height, if necessary, to provide a maximum 3" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.
9. See Table of Maximum Wing Heights for various slopes. Height is limited based on a 33'-0" maximum safety pipe runner length.

TABLE OF MAXIMUM WING HEIGHTS (9)

Side Slope	Ht= Max
3:1	11'- 9"
4:1	8'-10"
6:1	6'- 1"

WING DIMENSION CALCULATIONS:

Ht = H + T + C – 0.250 (9)
Le = (Ht – 0.333) (SL)

For cast-in-place culverts:
Lte = (N) (S) + (N + 1) (z)
Le = For precast culverts:
Lte = (N) (2) + S) + (N – 1) (0.500)

Lc = (Lte) – (2z)
Ate = Lc
Total Wingwall Area (two wings – SF)
= (Ht + 0.333) Le

Ht = Height of wingwall (feet)
SL:1= Side slope ratio (horizontal : 1 vertical)
Le = Length of wingwall (feet)
Lte = Culvert toewall length (feet)
Lc = Culvert curb between wings (feet)
Ate = Actual toewall length (feet)
N = Number of culvert spans
See applicable box culvert standard for H, S, T, and U values. See Table of Maximum Wall Heights for limits on Ht.

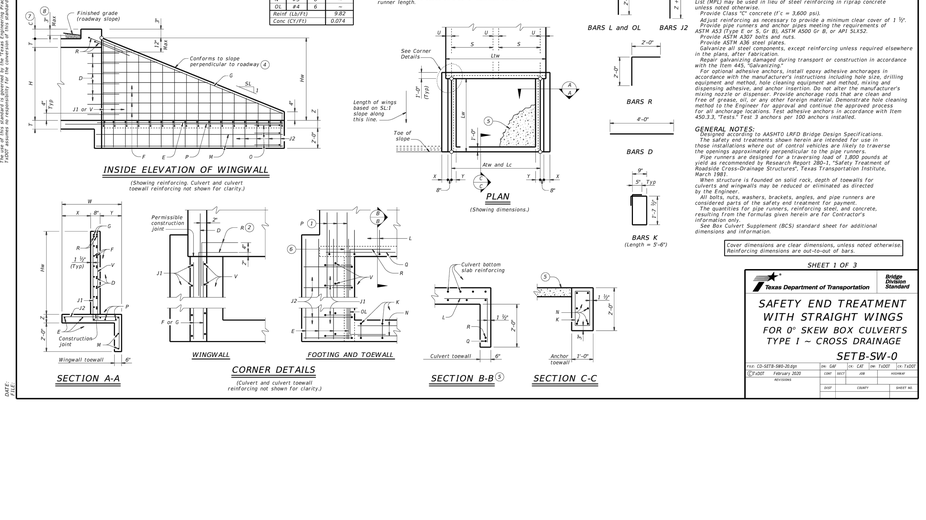
MATERIAL NOTES:

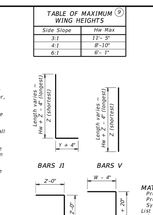
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
"Fibers for Concrete" and "Synthetic Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide Class "C" concrete (f'_c = 3,600 psi).
Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½", 2" Maximum, except for Type II wingwalls meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5L X52.
Provide ASTM A307 bolts and nuts.
Provide ASTM A36 steel plates.
Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after fabrication.
Protect concrete against damage during transport or construction in accordance with the Item 440, "Galvanizing."
For optional adhesive anchors, install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's recommended hole size. Clean holes of dust, concrete chips, water, and ice free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications. The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the culvert. Wingwalls are designed for a 2'-0" Min fill height. Fore runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatments of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
All bolts, nuts, washers, brackets, angles, and fore runners are considered parts of the safety end treatment for payment.
The quantities for pipe runners, reinforcing steel, and concrete, resulting from the formulas given herein are for Contractor's information only.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

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



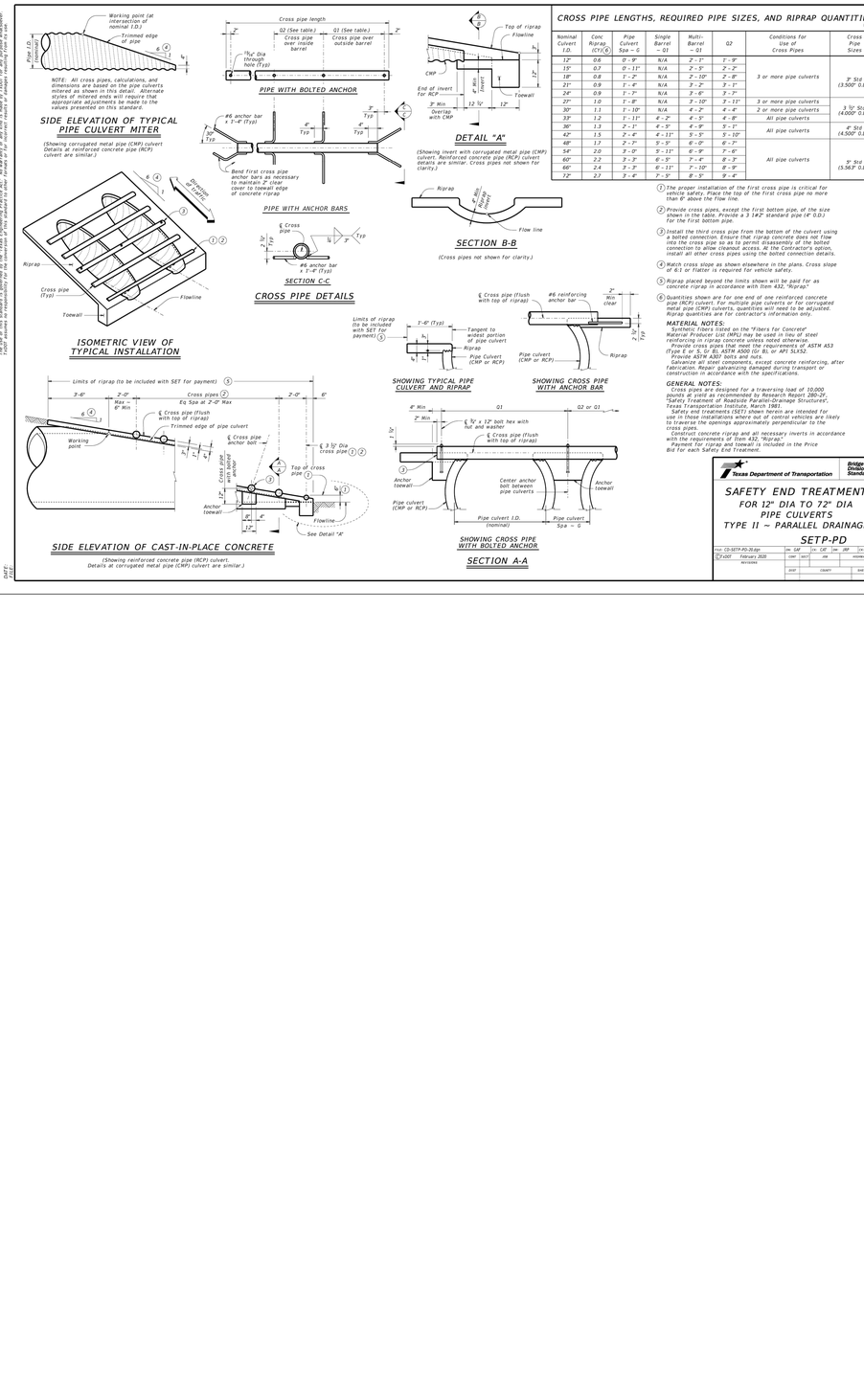


Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT WITH STRAIGHT WINGS
FOR 0° SKEW BOX CULVERTS
TYPE I ~ CROSS DRAINAGE
SETB-SW-0

Proj. CO-SDTB-SW0-20.dgn	dw: GAF	ck: CAT	pw: TJOT	ck: TJOT
07-2021 February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

DATE PLOTTED:



CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY) (6)	Pipe Culvert Spa – G	Single Barrel – Q1	Multi-Barrel – Q1	Q2	Conditions For Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0'- 9"	N/A	2'- 1"	1'- 9"	3 or more pipe culverts	3" Std. (3.500" O.D.)
15"	0.7	0'- 11"	N/A	2'- 5"	2'- 2"		
18"	0.8	1'- 2"	N/A	2'- 10"	2'- 8"		
21"	0.9	1'- 4"	N/A	3'- 2"	3'- 1"		
24"	0.9	1'- 7"	N/A	3'- 6"	3'- 7"		
27"	1.0	1'- 9"	N/A	3'- 10"	3'- 11"	3 or more pipe culverts	4" Std. (4.500" O.D.)
30"	1.1	1'- 10"	N/A	4'- 2"	4'- 4"	2 or more pipe culverts	
33"	1.2	1'- 11"	4'- 2"	4'- 6"	4'- 8"	All pipe culverts.	
36"	1.3	2'- 1"	4'- 9"	4'- 9"	5'- 1"		
42"	1.5	2'- 4"	4'- 11"	5'- 5"	5'- 10"	All pipe culverts	5" Std. (5.563" O.D.)
48"	1.7	2'- 7"	5'- 3"	6'- 0"	6'- 5"		
54"	2.0	3'- 0"	5'- 11"	6'- 9"	7'- 6"		
60"	2.2	3'- 3"	6'- 5"	7'- 4"	8'- 3"		
66"	2.4	3'- 7"	6'- 11"	7'- 10"	8'- 9"		
72"	2.7	3'- 4"	7'- 5"	8'- 5"	9'- 4"		

1. The proper installation of the first cross pipe is critical for the performance of the culvert. Set the first cross pipe no more than 6" above the flow line.
2. Provide cross pipes, except the first bottom pipe, of the size shown in the table. Provide a 3 1#2" standard pipe (4" O.D.) for the first bottom pipe.
3. Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
4. Match cross slope as shown elsewhere in the plans. Cross slope of 0.1 or flatter is required for vehicle safety.
5. Riprap placed beyond the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap."
6. Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

"Synthetic Fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5L X52.
Provide ASTM A307 bolts and nuts.
Galvanize all steel components, except concrete reinforcing, after fabrication. Repair any galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
Concrete concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap."
Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT
FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE
SETP-PD

Proj. CO-SDTP-PD-20.dgn	dw: GAF	ck: CAT	pw: JRP	ck: GAF
07-2021 February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS — CHRISTOPHER P. VAN HEERDE — 93047 — LICENSED PROFESSIONAL ENGINEER

11/8/2024

STREET DETAILS (4 OF 4)

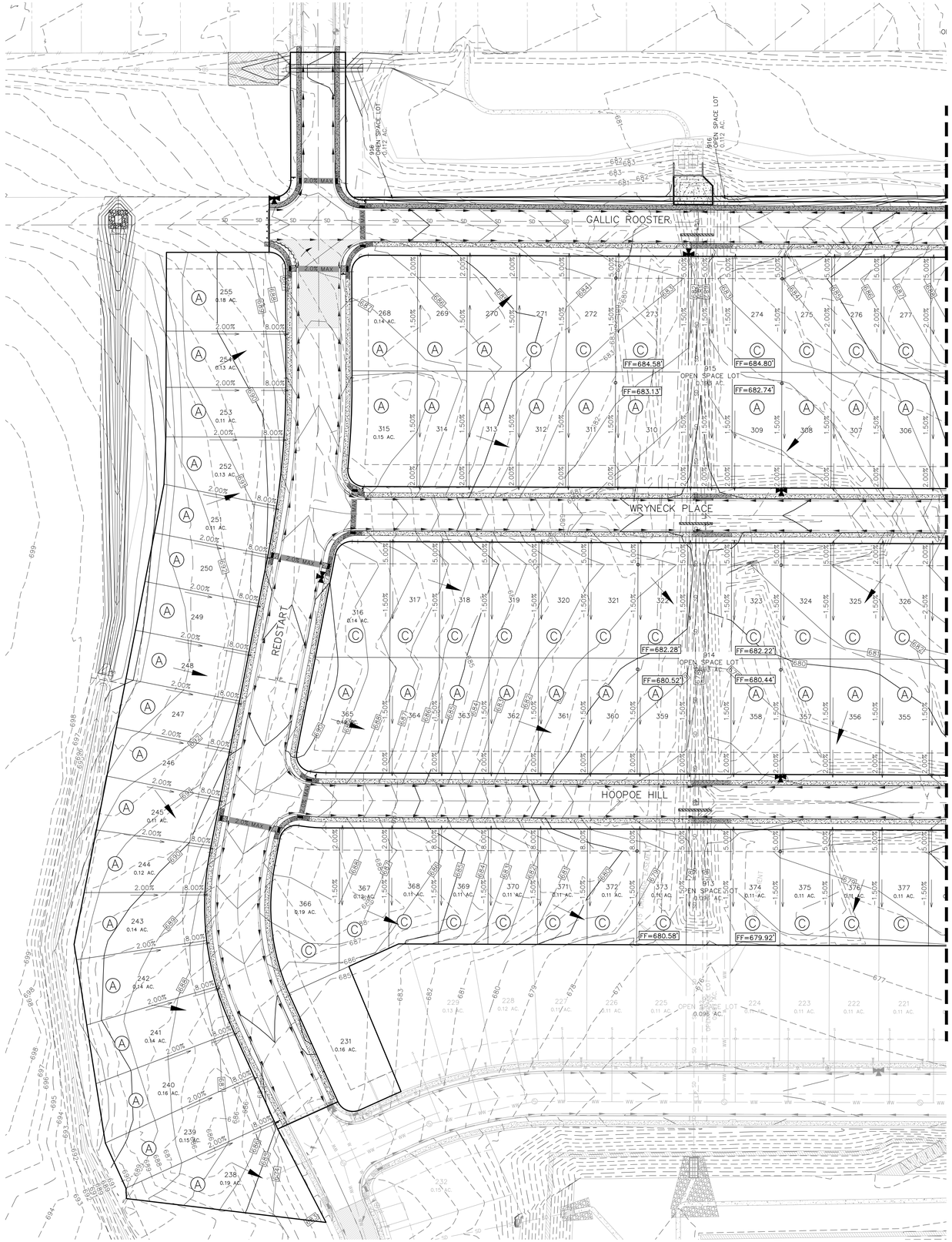
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C3.11

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\CDs\337.070_STREETS DETAILS.dwg User: robertb Nov 13, 2024 - 12:01pm



LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
A	LOT GRADING SEE DETAILS SHEET **C4.03**
	DRAINAGE FLOW DIRECTION
FF=XXX.X'	MINIMUM FINISHED FLOOR ELEVATION

NOTES:

1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
2. ALL FINISHED FLOOR ELEVATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
   2.A. PER NOTE 10 ON PLAT SHEET C0.03.
   2.B. HUD DETAILS SHOWN ON SHEET C0.03.
3. WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
4. FOR ANY LOTS ADJACENT TO A DRAINAGE STRUCTURE, HOME BUILDER TO ENSURE FINISHED FLOOR HAS A MINIMUM ELEVATION AS LABELED OR AS PER NOTE 2 ABOVE, WHICHEVER IS GREATER.
5. 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).
6. ALL SIDEWALKS SHALL HAVE A MAX RUNNING SLOPE OF 5%.
7. ALL SIDEWALKS SHALL HAVE A MAX CROSS SLOPE OF 2%.
8. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAT 30' REQUIRE A LEVEL LANDING.

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL GRADING PLAN (1 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C4.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0s\337.070_GRAD.dwg User: roberth Nov 13, 2024 - 12:01pm

0 25 50 100
SCALE: 1" = 50'

LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
A	LOT GRADING SEE DETAILS SHEET C4.03
	DRAINAGE FLOW DIRECTION
FF=XXX.X	MINIMUM FINISHED FLOOR ELEVATION

NOTES:

1. DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE OFFSITE IMPACT OF CONSTRUCTION MUST BE COMPLETED AND IN PLACE PRIOR TO ADDING IMPERVIOUS COVER TO THE SITE.
2. ALL FINISHED FLOOR ELEVATIONS SHALL MEET THE FOLLOWING REQUIREMENTS:
   2.A. PER NOTE 10 ON PLAT SHEET C0.03.
   2.B. HUD DETAILS SHOWN ON SHEET C0.03.
3. WHEN POSSIBLE, CONTRACTOR SHALL PHASE GRADING SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST PERIOD OF TIME.
4. FOR ANY LOTS ADJACENT TO A DRAINAGE STRUCTURE, HOME BUILDER TO ENSURE FINISHED FLOOR HAS A MINIMUM ELEVATION AS LABELED OR AS PER NOTE 2 ABOVE, WHICHEVER IS GREATER.
5. 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).
6. ALL SIDEWALKS SHALL HAVE A MAX RUNNING SLOPE OF 5%.
7. ALL SIDEWALKS SHALL HAVE A MAX CROSS SLOPE OF 2%.
8. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAT 30' REQUIRE A LEVEL LANDING.

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL GRADING PLAN (2 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

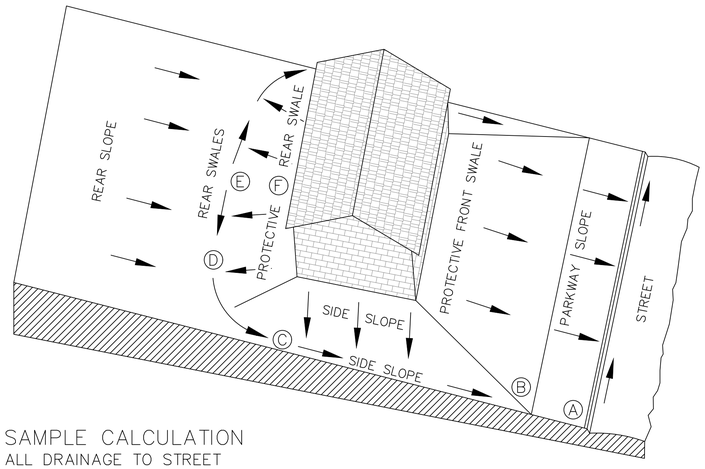
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C4.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_GRAD.dwg User: robertb Nov 13, 2024 - 12:01pm



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')

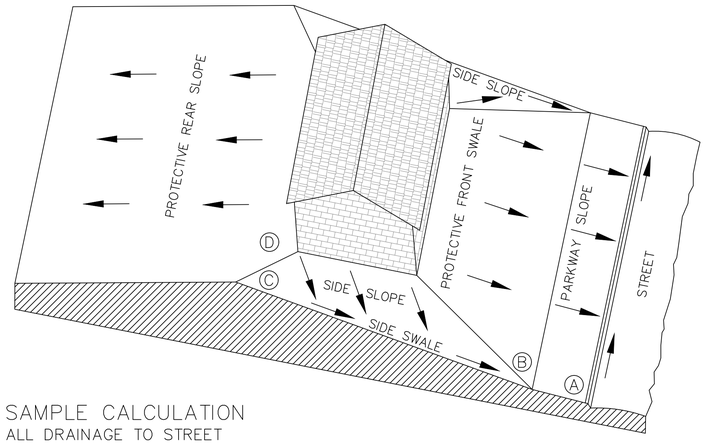
CALCULATIONS FOR 2% SWALES
15 x 0.25' = 3¾"
85 x 0.25' = 21¼"
16 x 0.25' = 4"
13 x 0.25' = 3¼"
10 x 0.25' = 2½"
34¾"

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

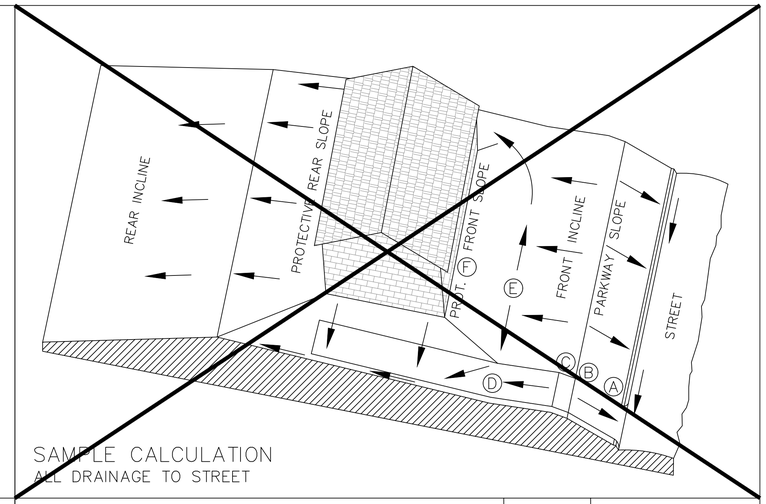
SAMPLE COMPUTATION OF GRADING CONTROL LINE AF FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 0.5% STREET, WITH 60' BUILDING DEPTH AND 2% SWALES.			RESULTS OF 1% SWALES	
A	CURB–TOP ON LOT LINE EXTENSION AT HIGH LOT CORNER			
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4" (0.3')	2"	(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' = 21¼"
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 1⅜"/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')

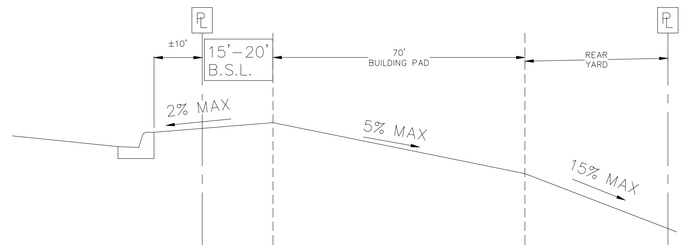
CALCULATIONS FOR SWALES
15 x 0.25' = 3¾"
0 x 0.25' = 0"
–11 x 1.625' = –17⅞"
16 x 0.25' = 4"
10 x 0.25' = 2½"
–7½"

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 Ⓒ

REFER TO DETAIL BELOW FOR "C" LOT GRADING. CALCULATIONS FOR SWALES STILL APPLY TO LOT GRADING REQUIREMENTS.



"C" LOT

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 790.

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.

HMT ENGINEERING & SURVEYING
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TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

GRADING DETAILS

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C4.03

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\03a\337.070_GR00.dwg User: robertb Nov 13, 2024 – 12:01 pm

148 SY CLASS I TRM PYRAMAT SEE DETAIL SHEET C5.10

RE-START CULVERTS

EXISTING DETENTION POND

INLET G.1

STORM LINE G

GALLIC ROOSTER

EXISTING POND OUTFALL

INLET C.8

INLET C.7

INLET C.6

24" STEEL ENCASMENT

INLET C.5

STORM LINE C

INLET C.4

INLET C.3

EXISTING CHANNEL

CHANNEL H

12' WIDE MAINTENANCE ACCESS
2% MAX CROSS SLOPE

VARIABLE WIDTH DRAINAGE EASEMENT

RAMP SLOPE

RE-START (50' R.O.W.)

HOOPOE HILL

WRYNECK PL

OPEN SPACE LOT 0.12 AC.

OPEN SPACE LOT 0.098 AC.

15' DRAINAGE EASEMENT

21' GBRA EASEMENT

STORM SEWER TIE-IN POINT 0.11 AC.

EXISTING STORM LINE C

EXISTING INLET C.2

EXISTING INLET C.1

EXISTING END TREATMENT

EXISTING DETENTION AND WATER QUALITY BASIN

LEGEND

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

0 25 50 100
SCALE: 1" = 50'

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.

B. ACCUMULATED PAPER, TRASH, AND DEBRIS SHALL BE REMOVED EVERY 6 MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.

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.

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OVERALL STORM PLAN

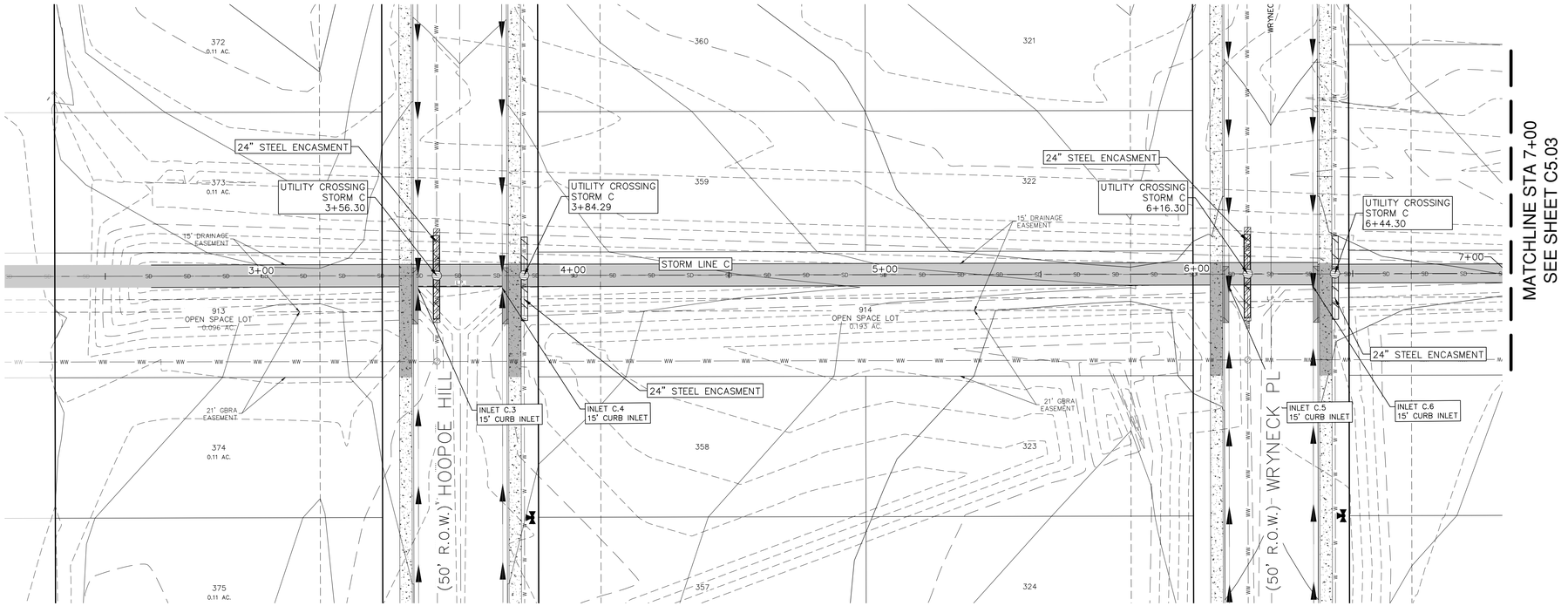
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

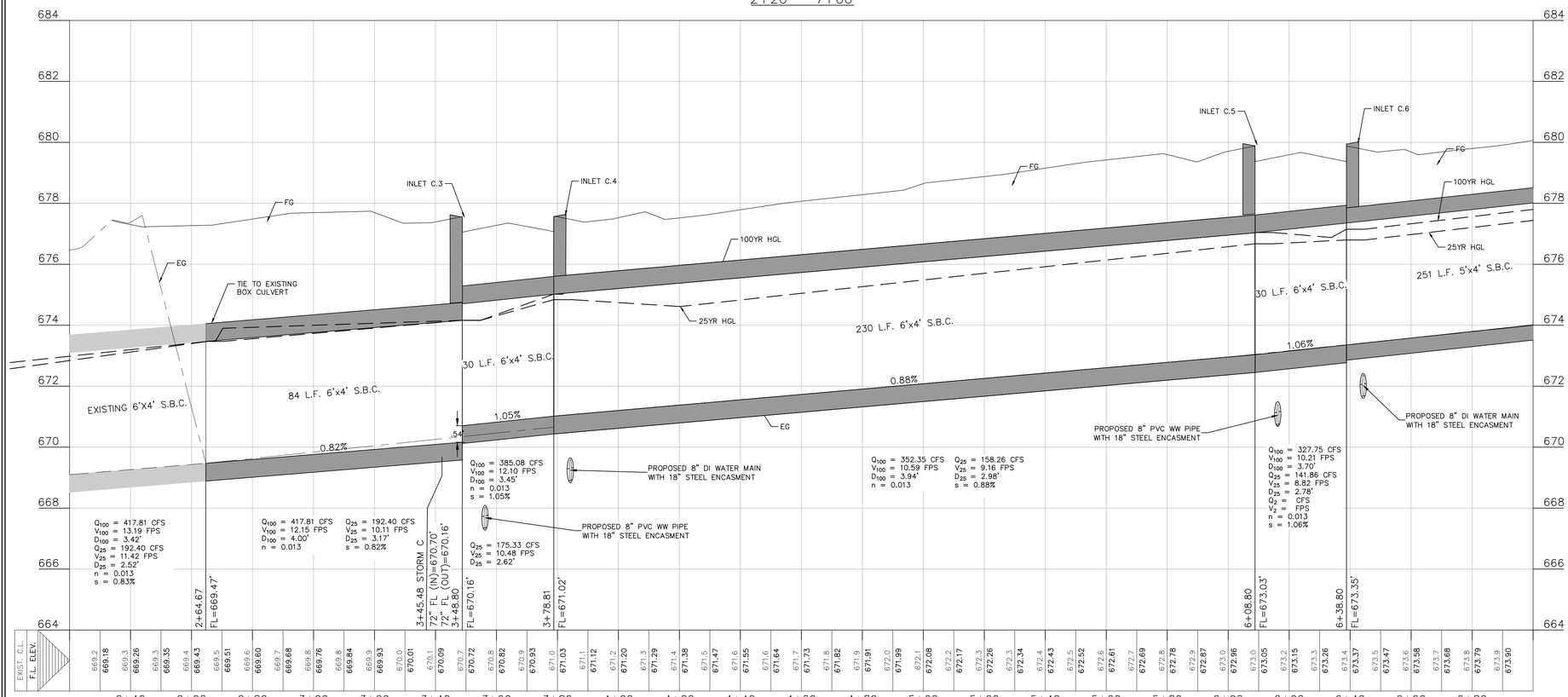
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbk\337.070_STRM.dwg User: robertb Nov 13, 2024 - 12:02pm



STORM C (1)
2+20 – 7+00



MATCHLINE STA 7+00
SEE SHEET C5.03

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
	FLOW ARROW

0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

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.

B. ACCUMULATED PAPER, TRASH, AND DEBRIS SHALL BE REMOVED EVERY 6 MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.

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.

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11/8/2024

STORM LINE C PLAN & PROFILE (1 OF 2)

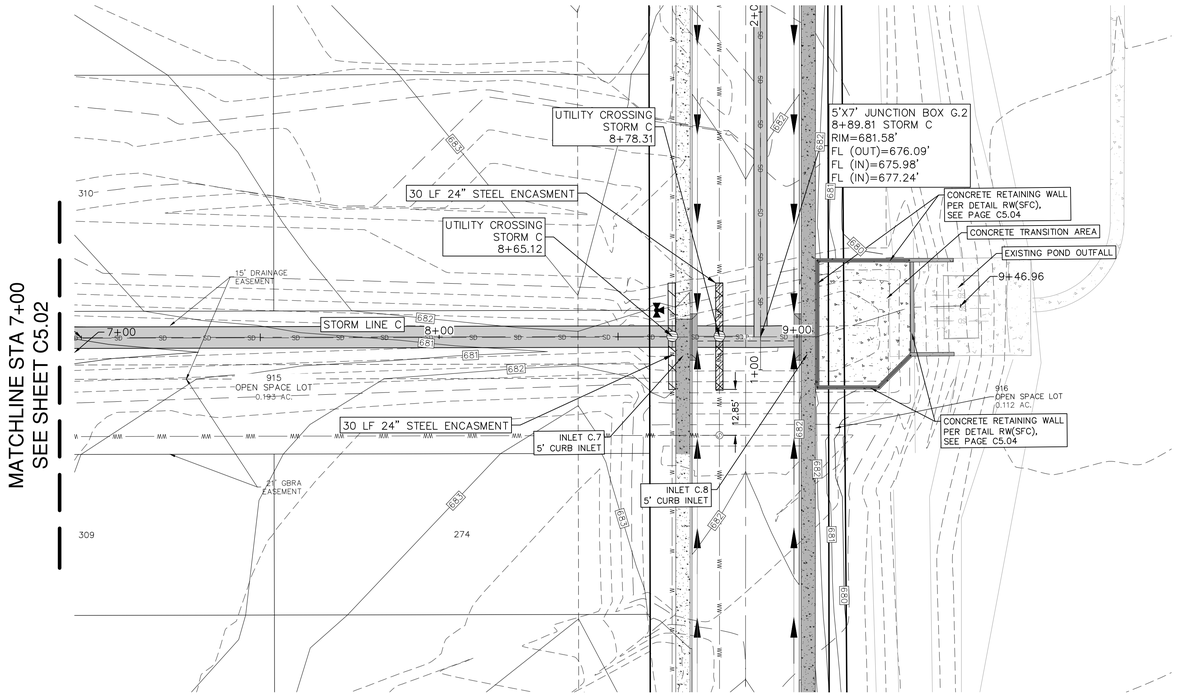
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

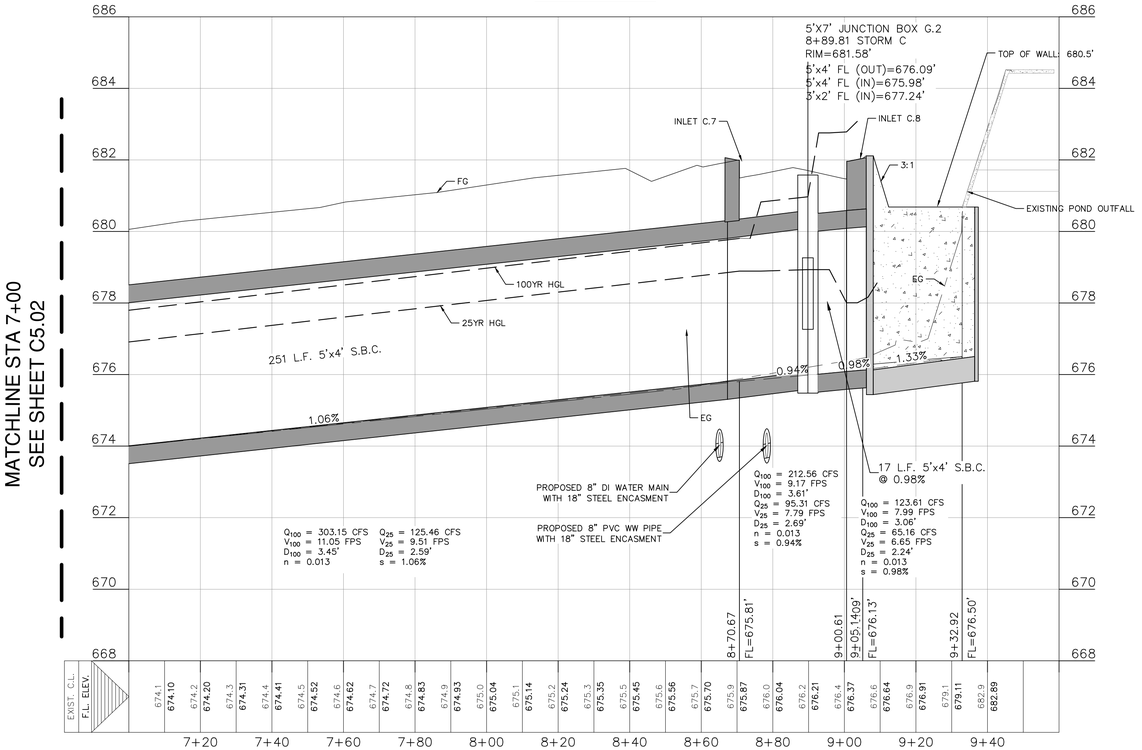
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C5\337.070_STRM.dwg User: robertb Nov 13, 2024 - 12:02pm



STORM C (2)
7+00 – 9+60



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
	FLOW ARROW

0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

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.

B. ACCUMULATED PAPER, TRASH, AND DEBRIS SHALL BE REMOVED EVERY 6 MONTHS OR AS NECESSARY TO MAINTAIN PROPER OPERATION.

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.

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STORM LINE C PLAN & PROFILE (2 OF 2)

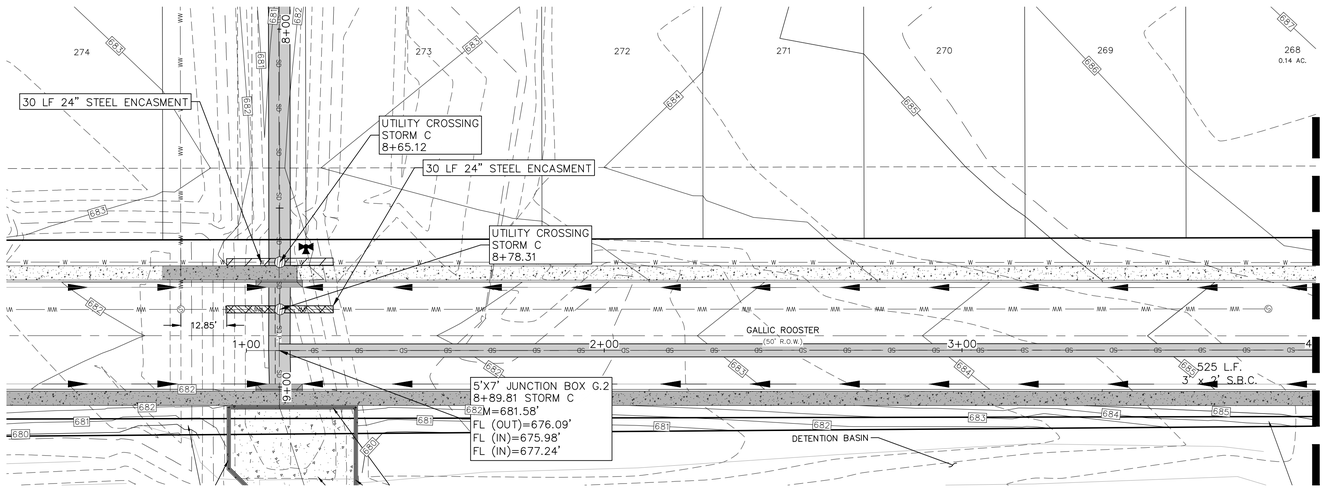
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

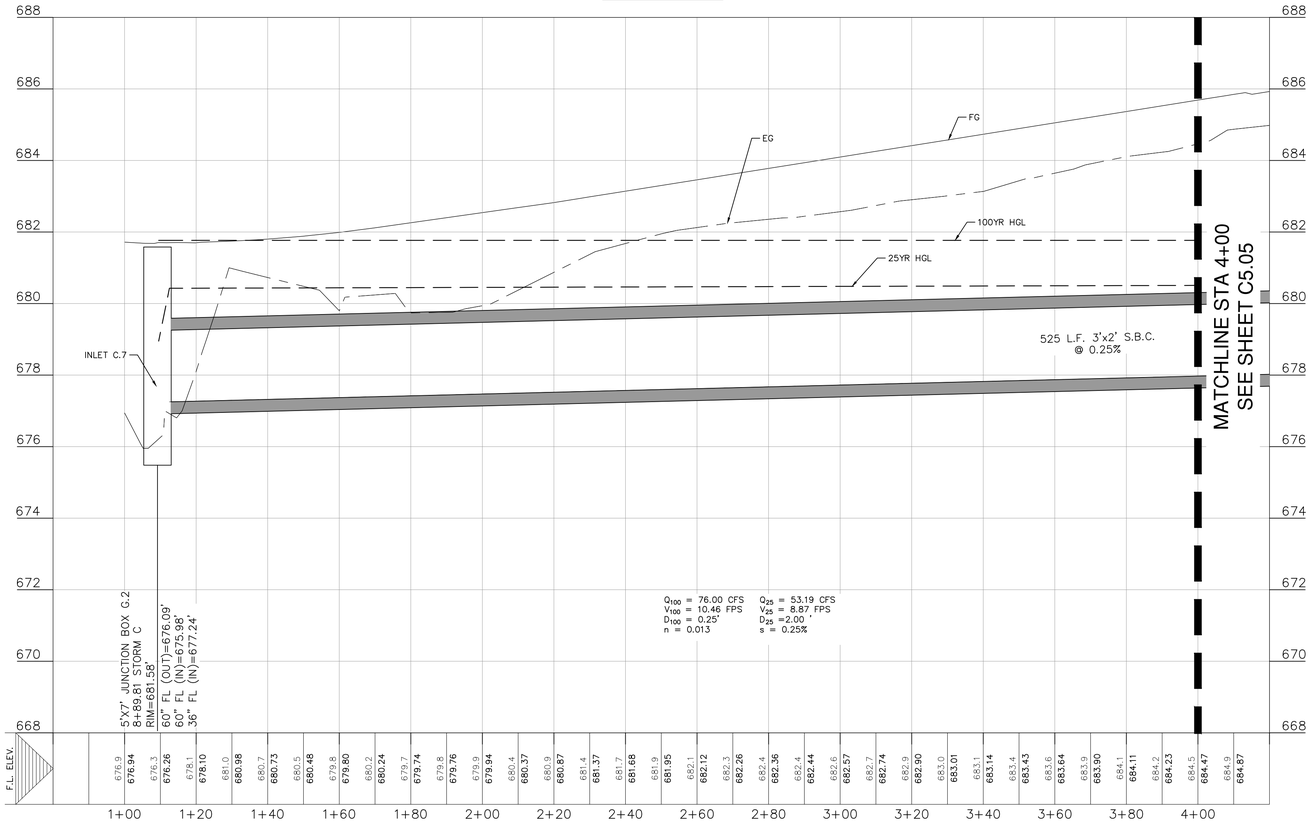
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.03

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\03s\337070_STRM.dwg User: robertb Nov 13, 2024 – 12:02pm



STORM LINE G.
0+80 – 4+20



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
	FLOW ARROW

0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

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11/8/2024

STORM LINE G PLAN & PROFILE (1 OF 2)

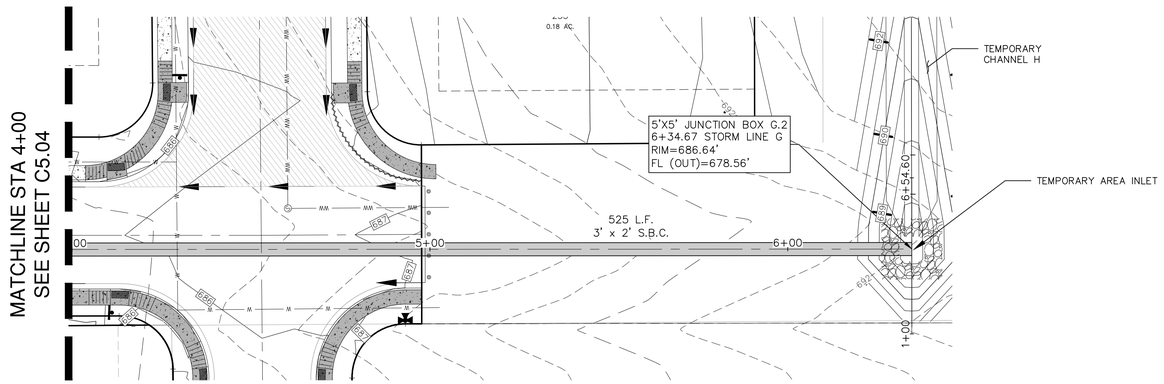
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

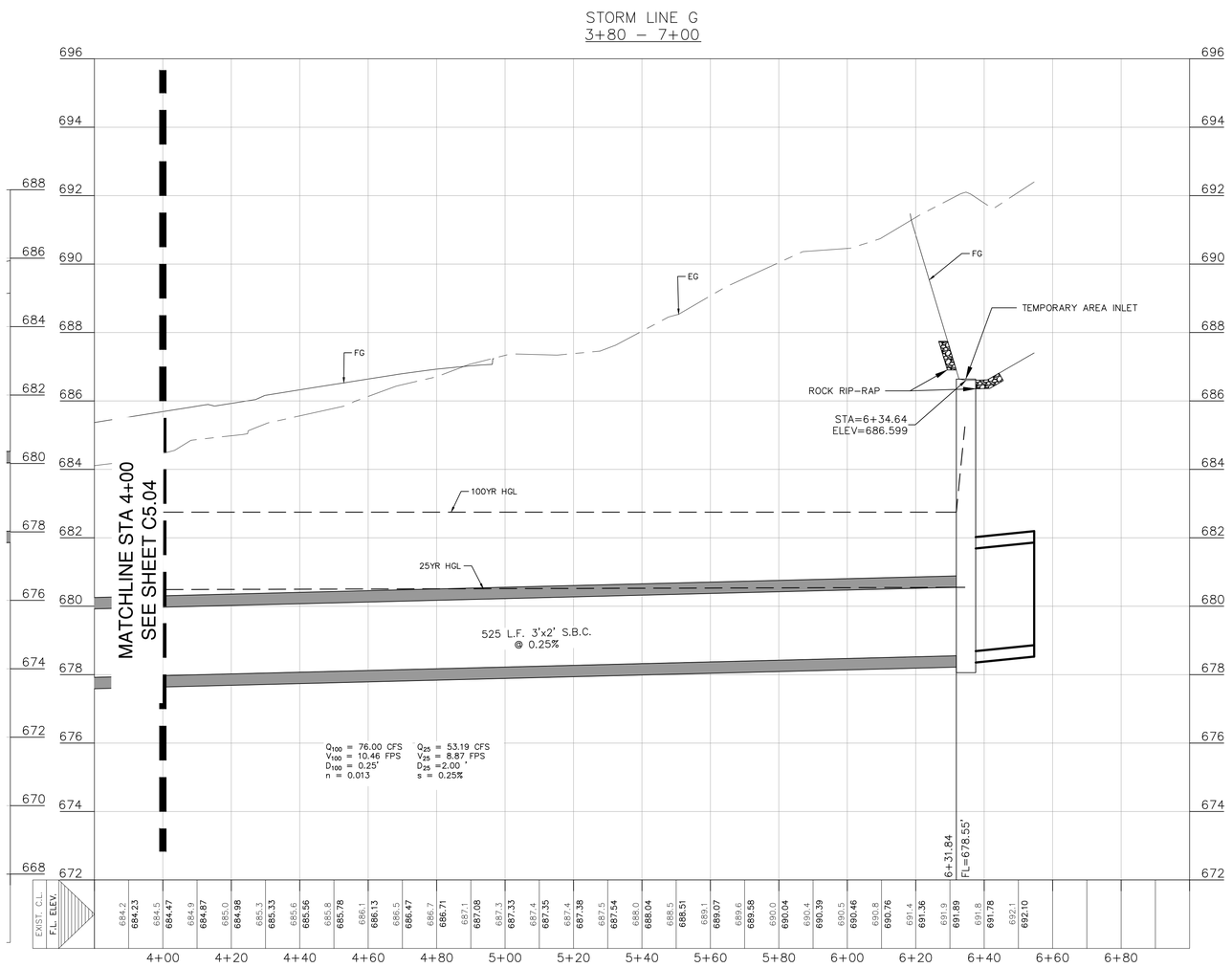
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.04

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\C0s\337.070_STRM.dwg User: robertb Nov 13, 2024 – 12:02pm





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
	FLOW ARROW

0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

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LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STORM LINE G PLAN & PROFILE (2 OF 2)

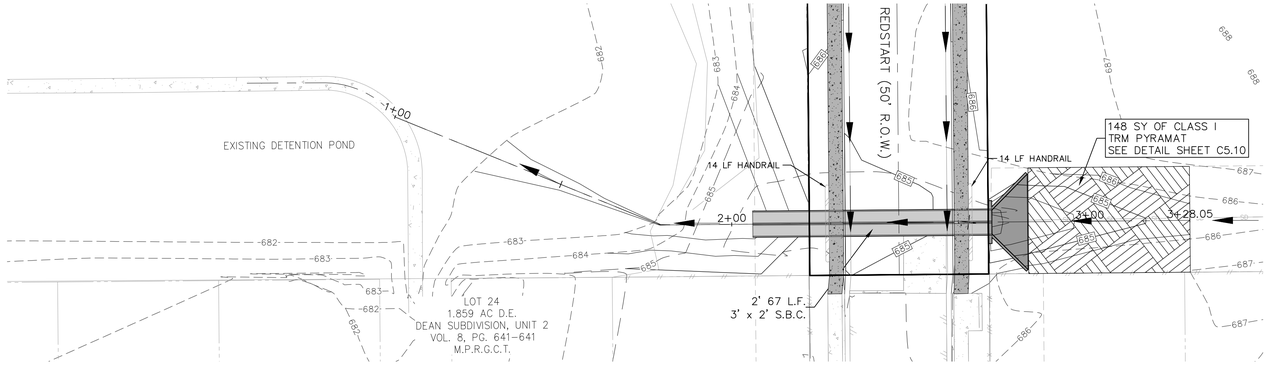
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.05

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C05\337.070_STRM.dwg User: robertb Nov 13, 2024 - 12:02pm

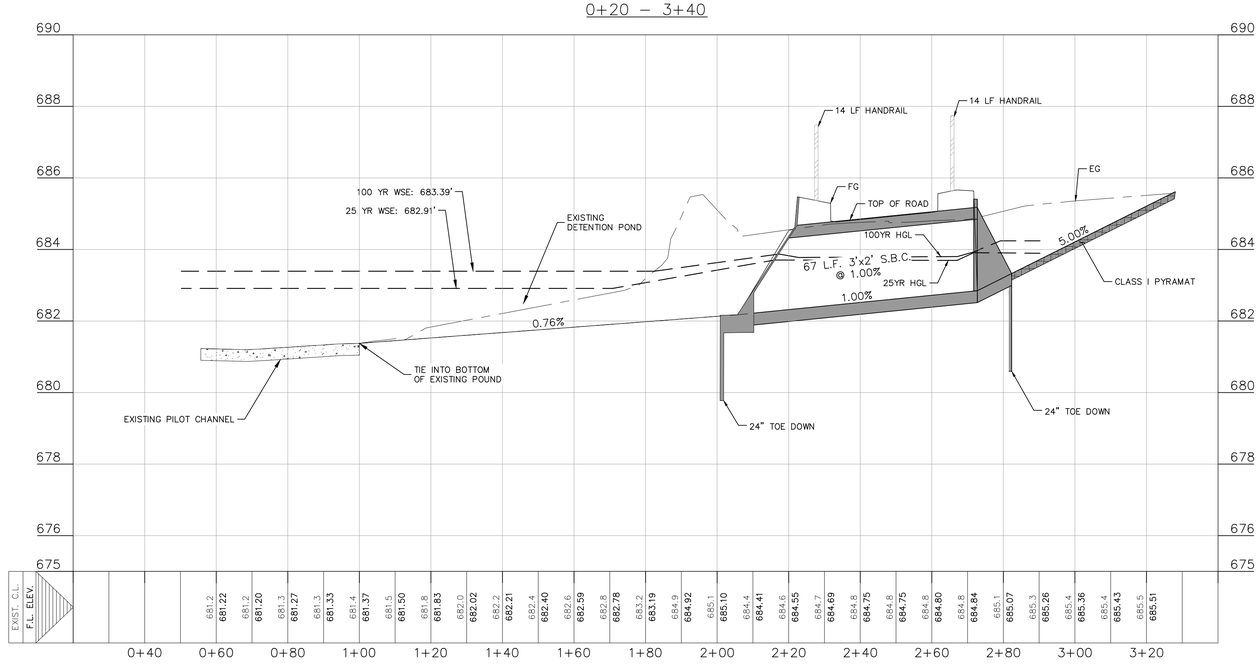


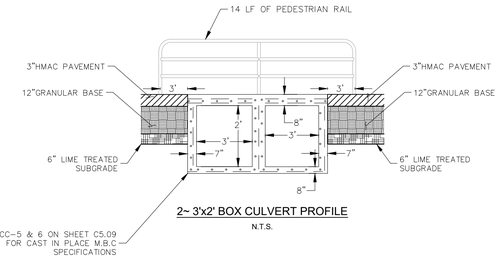
LEGEND

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
	FLOW ARROW

0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

REDSTART CULVERT
0+20 – 3+40





2- 3'x2' BOX CULVERT PROFILE
N.T.S.

DRAINAGE FEATURES, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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LICENSED
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11/8/2024

REDSTART CULVERT PLAN & PROFILE

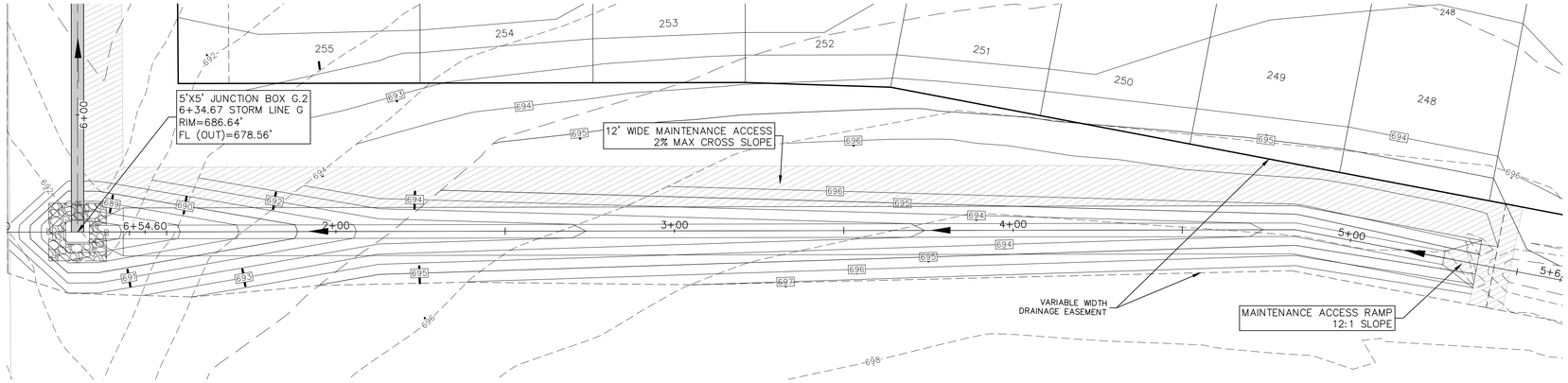
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.06

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Civil\337.070_STRM.dwg User: robertb Nov 13, 2024 - 12:02pm

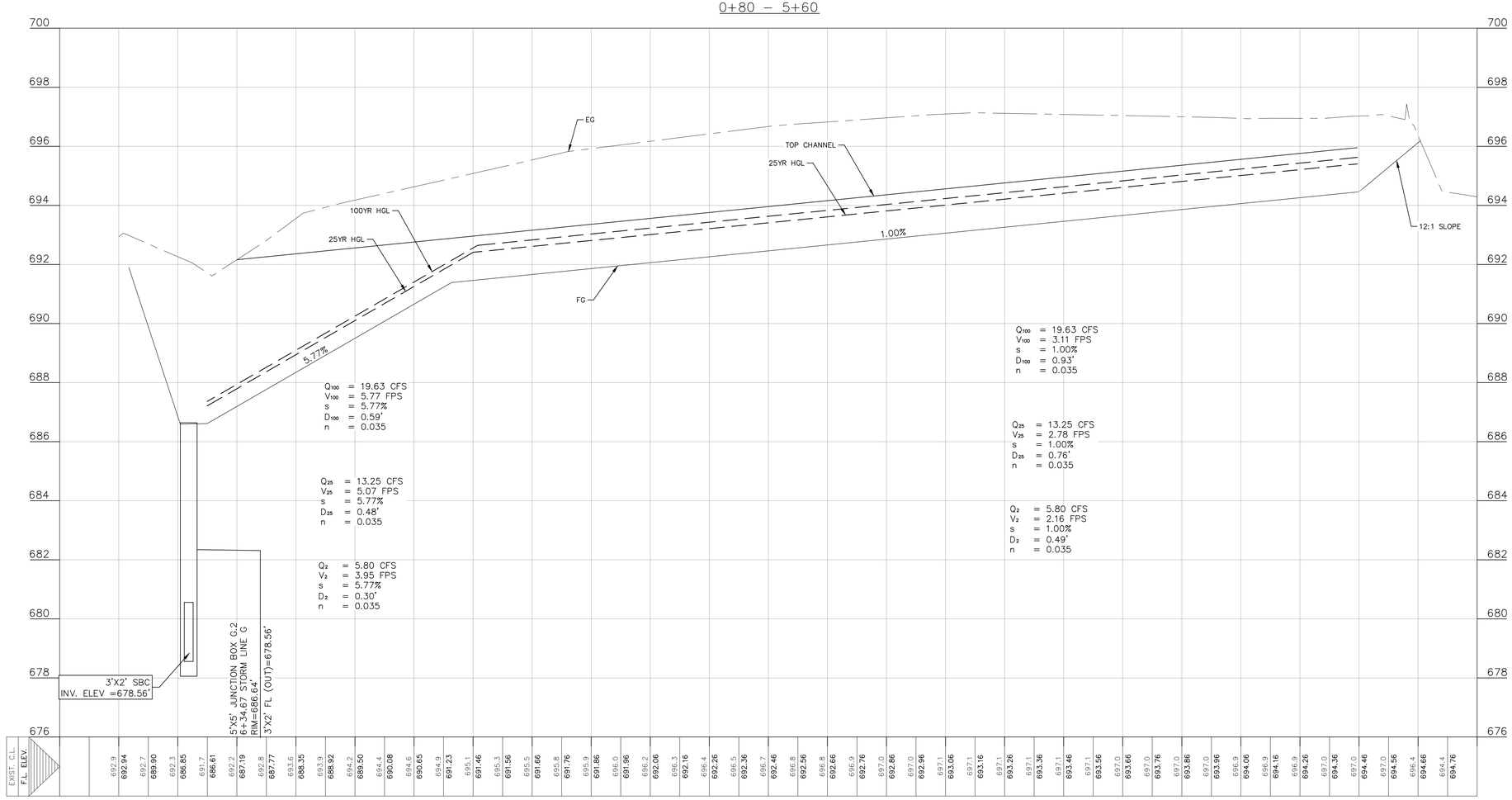


LEGEND

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
	FLOW ARROW

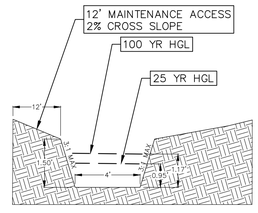
0 10 20 40
SCALE: 1" = 20' HORZ.
1" = 2' VERT.

CHANNEL H
0+80 – 5+60



EXIST. C.L.	692.9	692.7	692.3	692.2	691.7	692.2	692.8	693.6	693.9	694.2	694.4	694.6	694.9	695.1	695.3	695.5	695.8	695.9	696.0	696.2	696.3	696.4	696.5	696.7	696.8	696.9	697.0	697.0	697.1	697.1	697.1	697.0	697.0	697.0	697.0	696.9	696.9	697.0	696.4	694.4
FL. ELEV.	692.94	692.7	689.90	686.85	686.61	687.19	687.77	688.35	688.92	689.50	690.08	690.65	691.23	691.46	691.56	691.66	691.76	691.86	691.96	692.06	692.16	692.26	692.36	692.46	692.56	692.66	692.76	692.86	692.96	693.06	693.16	693.26	693.36	693.46	693.56	693.66	693.76	693.86	693.96	694.06	694.16	694.26	694.36	694.46	694.56	694.66	694.76

1+00 1+20 1+40 1+60 1+80 2+00 2+20 2+40 2+60 2+80 3+00 3+20 3+40 3+60 3+80 4+00 4+20 4+40 4+60 4+80 5+00 5+20 5+40



CHANNEL H CROSS-SECTION
N.T.S.

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11/8/2024

CHANNEL H PLAN & PROFILE

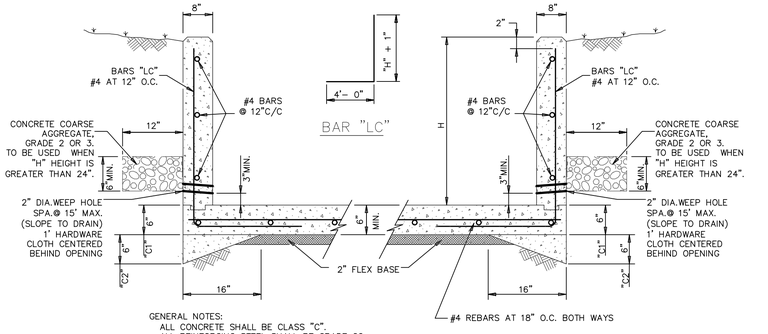
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C5.07

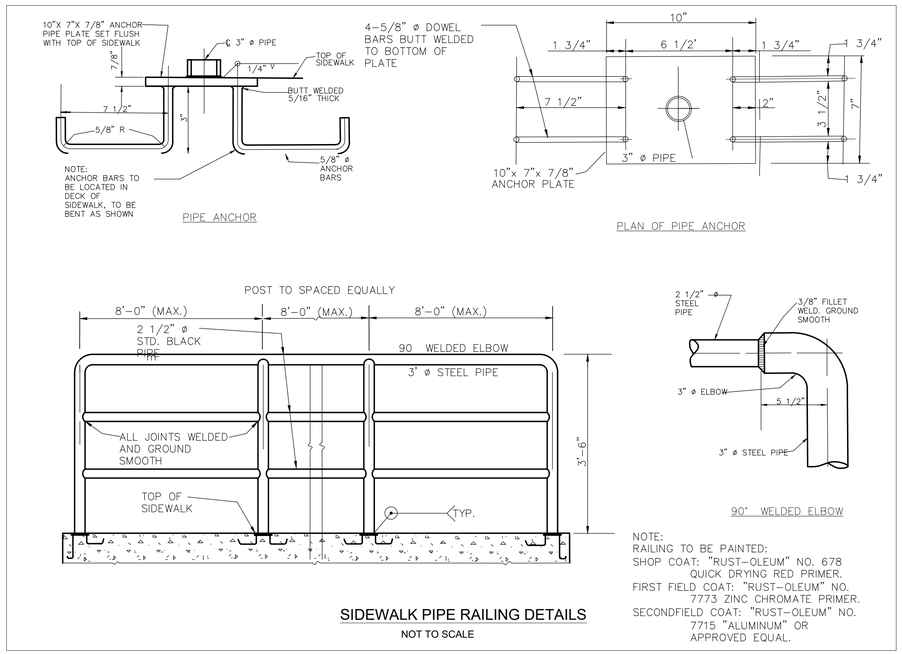
Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0s\337.070_STRM.dwg User: robertb Nov 13, 2024 - 12:03pm



GENERAL NOTES:
ALL CONCRETE SHALL BE CLASS "C".
ALL REINFORCING STEEL SHALL BE GRADE 60.

CONCRETE CHANNEL DETAIL

C1 – 6" TO 36"
C2 – 36" TO 48"



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.

SIDEWALK PIPE RAILING DETAILS

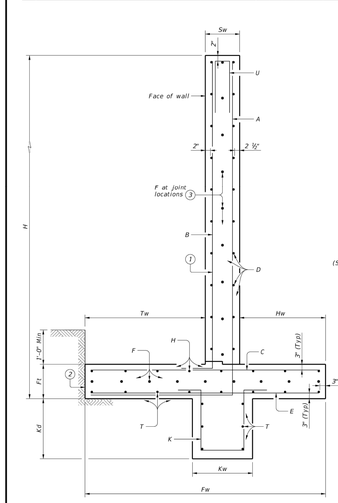
NOT TO SCALE

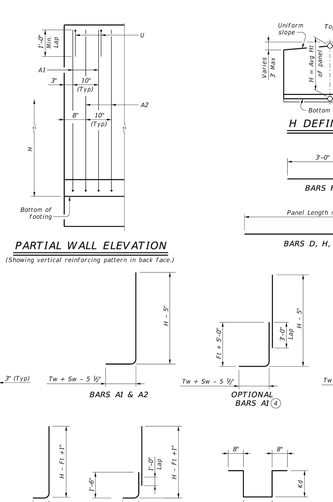
DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for incorrect results or damages resulting from its use.

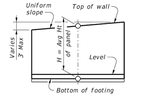
DATE:
FILE:

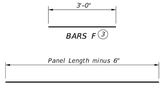
PROPERTIES / REINFORCING STEEL FOR ONE 32' PANEL (DESIGN C)

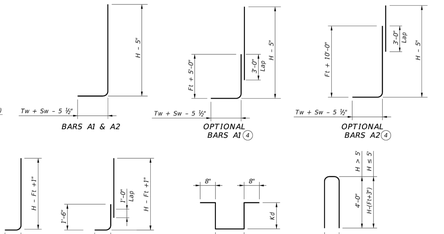
Wall Height "H"	WALL DIMENSIONS							MAX SOIL PRESS	Bars A1				Bars A2			Bars B			Bars C			Bars E			Bars K			D (#5) at 12" Max.	Dowel F at 12" Max.	H (#5) at 12" Max.	T (#5) at 12" Max.	U – 39 #5 at 10" Max	QUANTITY FOR ONE 32' PANEL		Wall Height "H"
(Ft)	Fw	Tw	Sw	Hw	Ft	Kw	Kd	T/SF	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	No.	Size	Spa	Length	Weight	No. Weight	No. Weight	No. Weight	No. Weight	Length	Weight	Conc (CY)	REINF (LB)	(Ft)
2	5'-0"	1'-0"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.218	39	#4	10"	3'-2"	83	39	#4	10"	3'-2"	83	39	#4	10"	1'-11"	50	39	#4	10"	4'-6"	118	39	#4	10"	3'-10"	100	4 132	8 65	6 198	6 198	2'-0" 82	8.3	1227	2
4	5'-0"	1'-0"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.321	39	#4	10"	5'-2"	135	39	#4	10"	5'-2"	135	39	#4	10"	3'-11"	103	39	#4	10"	4'-6"	118	39	#4	10"	3'-10"	100	8 263	10 81	6 198	6 198	6'-0" 245	10.7	1694	4
6	5'-6"	1'-6"	1'-0"	3'-0"	1'-0"	1'-0"	1'-0"	0.395	39	#4	10"	7'-8"	200	39	#4	10"	7'-8"	200	39	#4	10"	5'-11"	155	39	#4	10"	5'-0"	131	39	#4	10"	3'-10"	100	12 393	12 97	6 198	6 198	8'-5" 343	13.7	2148	6
8	7'-4"	1'-9"	1'-1"	4'-6"	1'-0"	1'-0"	1'-0"	0.500	39	#4	10"	10'-0"	261	39	#4	10"	10'-0"	261	39	#4	10"	7'-11"	207	39	#4	10"	6'-10"	179	39	#4	10"	3'-10"	100	16 526	16 129	8 263	8 263	8'-6" 346	18.9	2714	8
10	8'-8"	2'-4"	1'-1"	5'-3"	1'-2"	1'-6"	1'-6"	0.590	39	#5	10"	12'-7"	512	39	#4	10"	12'-7"	328	39	#4	10"	9'-9"	255	39	#5	10"	8'-2"	333	39	#4	10"	8'-2"	213	20 658	20 161	10 329	10 329	8'-6" 346	26.0	3603	10
12	10'-4"	2'-11"	1'-2"	6'-3"	1'-4"	1'-9"	1'-9"	0.684	39	#5	10"	15'-3"	621	39	#4	10"	15'-3"	398	39	#4	10"	11'-7"	302	39	#5	10"	9'-10"	400	39	#4	10"	9'-10"	257	39 #4 10" 6'-1" 159	24 785	23 185	11 362	11 362	8'-7" 350	34.8	4185	12
14	11'-8"	3'-6"	1'-4"	6'-10"	1'-7"	2'-0"	2'-0"	0.769	39	#5	10"	18'-0"	733	39	#4	10"	18'-0"	469	39	#4	10"	13'-4"	348	39	#5	10"	11'-2"	455	39	#4	10"	11'-2"	291	39 #4 10" 6'-10" 179	28 920	27 217	13 428	13 428	8'-9" 356	46.3	4824	14
16	13'-1"	4'-0"	1'-6"	7'-7"	1'-9"	2'-0"	2'-0"	0.853	39	#5	10"	20'-8"	841	39	#4	10"	15'-2"	396	39	#6	10"	12'-7"	738	39	#4	10"	12'-7"	329	39	#4	10"	6'-10"	179	32 1052	30 241	14 460	14 460	8'-11" 363	57.3	5900	16
18	14'-2"	4'-6"	1'-8"	8'-5"	1'-9"	2'-0"	2'-0"	0.937	39	#6	10"	23'-4"	1367	39	#5	10"	23'-4"	950	39	#4	10"	17'-2"	448	39	#7	10"	14'-1"	1124	39	#4	10"	14'-1"	368	39 #4 10" 6'-10" 179	36 1183	34 273	16 526	16 526	9'-1" 370	67.1	7314	18
20	16'-5"	5'-0"	1'-10"	9'-7"	2'-0"	2'-0"	2'-0"	1.039	39	#6	10"	26'-0"	1524	39	#6	10"	26'-0"	1524	39	#4	10"	18'-11"	493	39	#7	10"	17'-11"	1429	39	#4	10"	17'-11"	467	39 #4 10" 6'-10" 179	38 1249	36 289	17 559	17 559	9'-3" 377	82.8	8649	20











1. Place vertical bars inside of horizontal bars (Typical both faces).
2. Place footing toe against undisturbed soil.
3. See Retaining Wall Miscellaneous Details (RWISF)) standard for size.
4. Optional bars splices not included in above table.

MATERIAL NOTES:

Provide Class C concrete (f'c=3,600 psi.)
Provide Grade 60 reinforcing steel.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
Walls are designed assuming unit weight of soil = 120 pcf and a friction angle = 30 degrees for foundation and retained soil.
See Retaining Wall Miscellaneous Details (RWISF)) standard for details and notes not shown.
These details provide designs for wall heights of 2 to 20 feet. For heights not shown, round up "H" to determine wall dimensions and reinforcing. (For example, a 9-foot high wall would use the 10-foot high dimensions and reinforcing.)
Quantities are based on "H" being average height of panel.
Retaining walls are designed to be coded as follows on Retaining Wall Layout Sheets:

C – 15 – 32
- Panel length – 32 ft. is standard; 28 ft. requires special quantities.
- Average height (H) of panel.
- Design A = No surcharge or slope above wall.
- Design B = No surcharge; slope is 3:1.
- Design C = Traffic surcharge; no slope above wall.

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

Texas Department of Transportation — Bridge Division Standard

SPREAD FOOTING RETAINING WALL

RW(SFC)

FILE:	RW-SFC-22.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT	June 2022	CONT	SECT	JOB	HIGHWAY
REVISIONS					
8-22 Constructability updates		DIST	COUNTY		SHEET NO.

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

Maximum Wingwall Height Hw	W	X	Y	Z	Variable Reinforcing Bars J1 Size	J1 Spa	Bars J2 Size	J2 Spa	Estimated Quantities (3) per ft of wing length (2-wings) Reinf (LB/Ft)	Conc (CY/Ft)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.248
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.355
6'-0"	3'-2"	1'-6"	1'-0"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-8"	1'-9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-0"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-8"	2'-3"	1'-9"	8"	#4	6"	#4	6"	81.49	0.535
10'-0"	5'-2"	2'-6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-8"	2'-9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-0"	2'-6"	9"	#3	6"	#5	6"	162.29	0.721
13'-0"	6'-8"	3'-3"	2'-9"	11"	#7	6"	#5	6"	178.80	0.856
14'-0"	7'-2"	3'-6"	3'-0"	1'-0"	#8	6"	#5	6"	216.78	0.959
15'-0"	7'-8"	4'-0"	3'-0"	1'-1"	#9	6"	#6	6"	283.06	1.068
16'-0"	8'-2"	4'-6"	3'-0"	1'-3"	#9	6"	#6	6"	297.02	1.234

TABLE OF WINGWALL REINFORCING (2-wings)

Bar	Size	No.	Spa
D	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
M	#4	4	–
P	#4	–	1'-0"
R	#5	6	–
V	#4	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	–	1'-6"
Q	#4	1	–
Reinf (LB/Ft)			2.45
Conc (CY/Ft)			0.037

WING DIMENSION FORMULAS:

(All values are in feet.)

Hw = H + T + C - 0.250
Lw = (Hw - 0.333) (Sl.)

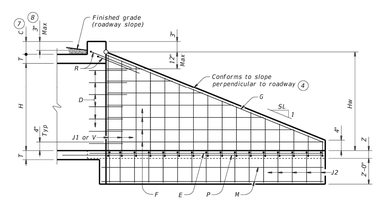
For cast-in-place culverts:
Ltw = (N) (Sl) + (N + 1) (U)

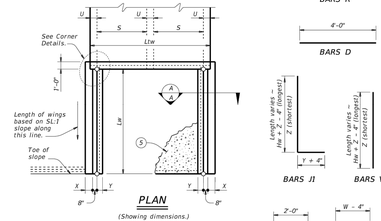
For precast culverts:
Ltw = (N) (2U + Sl) + (N - 1) (0.5')

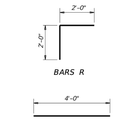
Total Wingwall Area (two wings – SF) = (Hw + 0.333) (Lw)

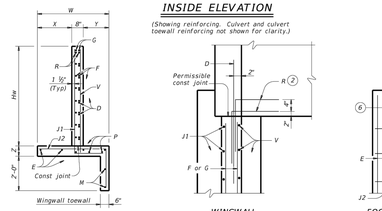
Hw = Height of wingwall
Sl.:1 = Side slope ratio (horizontal:1 vertical)
Lw = Length of wingwall
Ltw = Culvert toewall length
N = Number of culvert spans

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









CORNER DETAILS

1. Extend Bars P 3'-0" minimum into bottom slab of box culvert.
2. Adjust as necessary to maintain 1 1#2" clear cover and 4" minimum between bars.
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings, multiply the tabulated values by Lw.
4. Recommended values of side slope are: 2:1, 3:1, 4:1, and 6:1.
5. When shown elsewhere on the plans, construct 5' deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap". Unless otherwise shown on the plans or directed by the Engineer, provide a 6" wide by 1'-0" deep reinforced concrete toewall along all edges of the riprap adjacent to natural ground; reinforce the toewall by extending typical riprap reinforcing into the toewall; and extend construction joints or grooved joints oriented in the direction of flow across the full distance of the riprap at intervals of approximately 20'. When such riprap is provided, the culvert toewall shown in SECTION B-B will not be required.
6. At Contractor's option, culvert toewall may be ended flush with wingwall toewall. Adjust reinforcing as needed.
7. 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 T631SS rail, refer to the Mounting Details for T631 & T631SS Rail (T631-CM) standard sheet. Refer to the Box Culvert Rail Mounting Details (RAC) standard sheet for structures with bridge rail other than T631 or T631SS.
8. 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.

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.
In riprap concrete, synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing unless noted otherwise.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
When structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
The quantities for concrete and reinforcing steel resulting from the formulas given on this sheet are for Contractor's information only.

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

Texas Department of Transportation — Bridge Division Standard

CONCRETE WINGWALLS WITH STRAIGHT WINGS FOR 0° SKEW BOX CULVERTS

SW-O

FILE:	sw-0skw-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT	February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS					
8-22 Constructability updates		DIST	COUNTY		SHEET NO.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STORM DETAILS (1 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C5.08

Drawing Name: N:_Projects\337 – Lennon\070 – Kraft Unit 3\Cbs\337.070_STRM DETAILS.dwg User: robertb Nov 13, 2024 – 12:03pm

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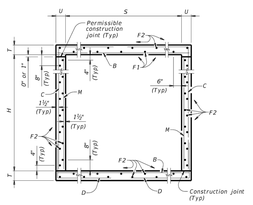
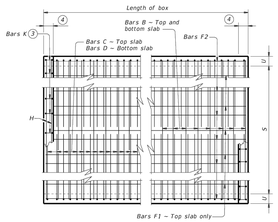
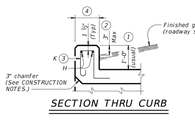


TYPICAL SECTION



PLAN OF REINF STEEL


Finished grade (roadway slope)
3" chamfer. (See CONSTRUCTION NOTES.)
K
H
T
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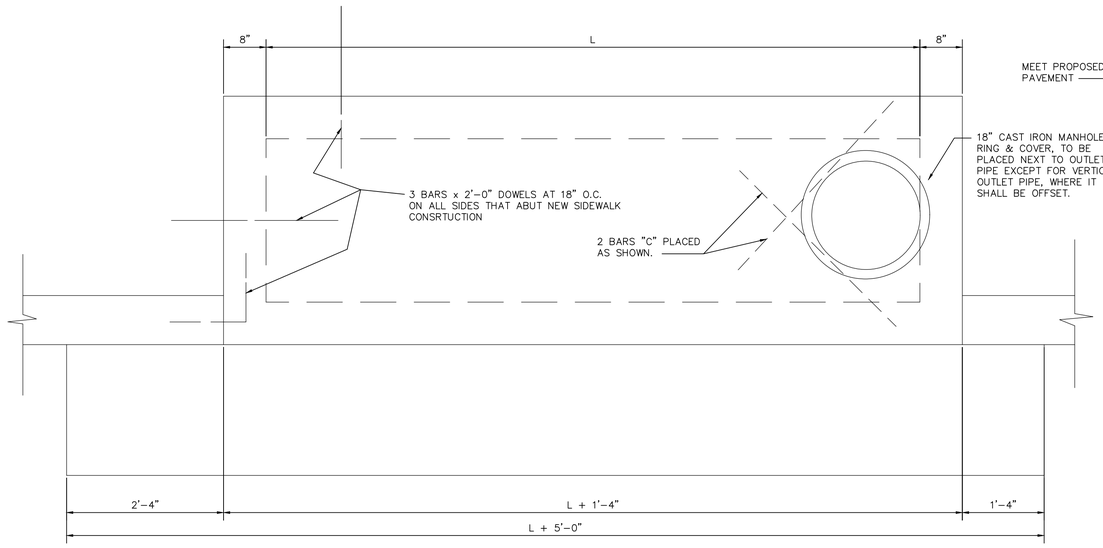
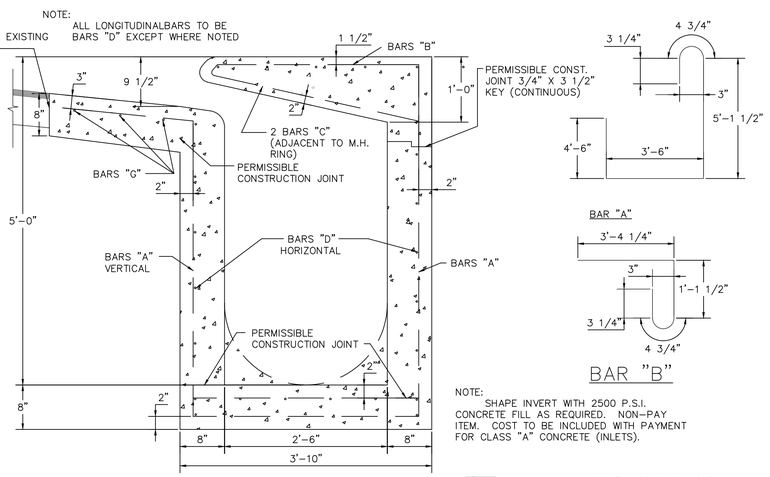


PLAN VIEW

SCALE: N.T.S.

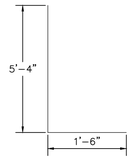


SECTION A–A

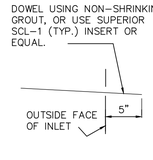
SCALE: N.T.S.

BAR "B"

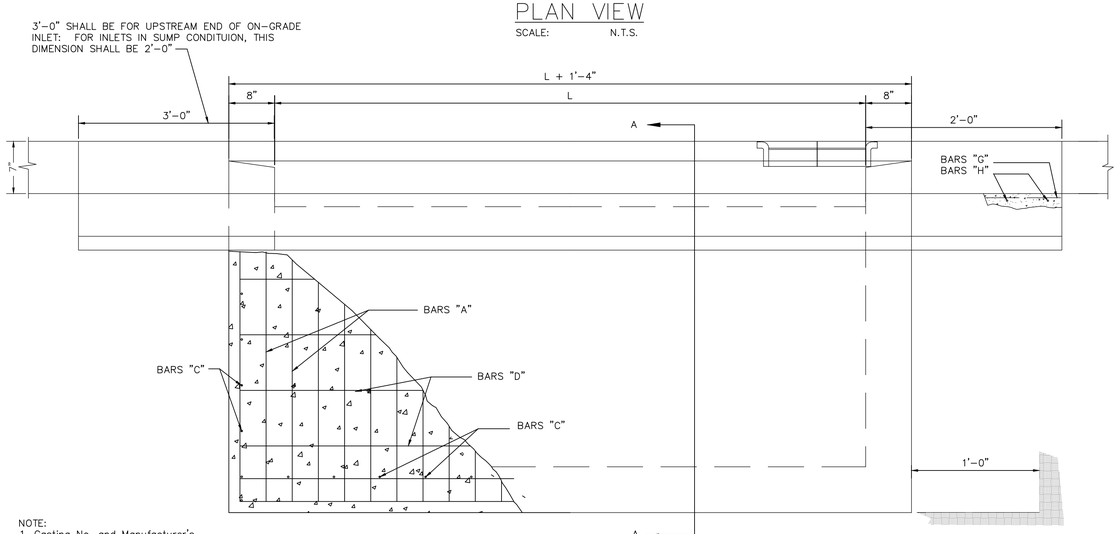
NOTE:
SHAPE INVERT WITH 2500 P.S.I. CONCRETE FILL AS REQUIRED. NON-PAY ITEM. COST TO BE INCLUDED WITH PAYMENT FOR CLASS "A" CONCRETE (INLETS).



BAR "E"

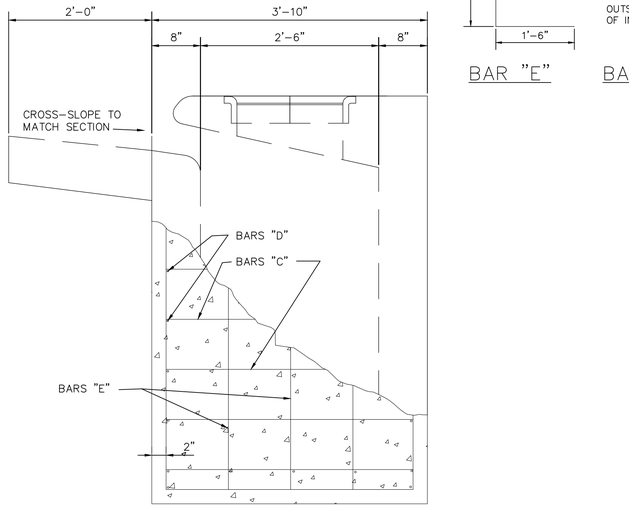


BAR "F"



FRONT VIEW

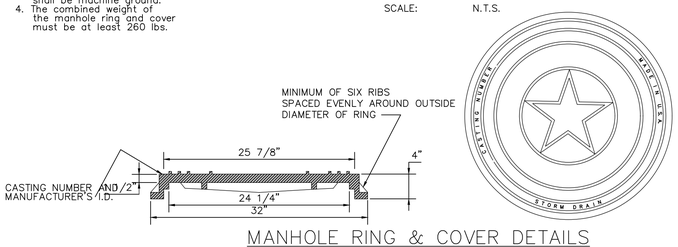
SCALE: N.T.S.



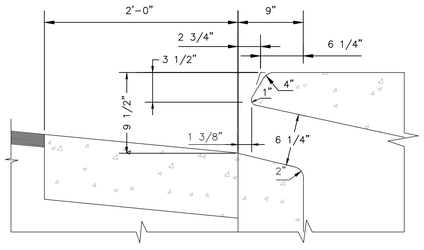
SIDE VIEW

SCALE: N.T.S.

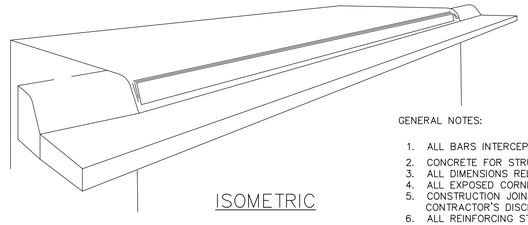
NOTE:
1. Casting No. and Manufacturer's I.D. on lid and ring.
2. Load bearing capability of N-20 minimum.
3. The load bearing surface shall be machine ground.
4. The combined weight of the manhole ring and cover must be at least 260 lbs.



MANHOLE RING & COVER DETAILS



OPENING DETAIL FOR CURB SECTION



ISOMETRIC

GENERAL NOTES:

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

Reinforcing Steel Schedule

	BAR	NO.	SIZE	SPA.	LENGTH	WEIGHT
L=5'-00"	A	15	4	5"OC	13"-9 1/2"	138
	B	15	4	5"	5'-1"	52
	C	23	4	9"	3'-6"	54
	D	22	4	10"	6'-1"	89
	E	10	4	10 1/2"	6'-10"	46
	F	6	5	12"	2'-3"	14
	G	3	4	12"	9'-8"	20
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=3.53 CY. MANHOLE CASTING=100 LBS. STEEL TOTAL=422 LBS.						
10'	A	27	4	5"OC	13"-9 1/2"	249
	B	27	4	5"	5'-1"	93
	C	30	4	9"	3'-6"	70
	D	22	4	10"	11'-1"	163
	E	10	4	10 1/2"	6'-10"	46
	F	12	5	12"	2'-3"	27
	G	3	4	12"	14'-8"	30
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=5.75CY MANHOLE CASTING=100LBS. STEEL TOTAL=687LBS						
15'	A	39	4	5"OC	13"-9 1/2"	359
	B	39	4	5"	5'-1"	134
	C	36	4	9"	3'-6"	84
	D	22	4	10"	16'-1"	236
	E	10	4	10 1/2"	6'-10"	46
	F	17	5	12"	2'-3"	38
	G	3	4	12"	19'-8"	40
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=7.97CY. MANHOLE CASTING=100LBS STEEL TOTAL=946LBS						
20'	A	51	4	5"OC	13"-9 1/2"	470
	B	51	4	5"	5'-1"	175
	C	43	4	9"	3'-6"	101
	D	22	4	10"	6'-1"	310
	E	10	4	10 1/2"	6'-10"	46
	F	22	5	12"	2'-3"	50
	G	3	4	12"	9'-8"	50
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=10.19CY MANHOLE CASTING=100LBS STEEL TOTAL=1211LBS						
25'	A	63	4	5"OC	13"-9 1/2"	580
	B	63	4	5"	5'-1"	217
	C	50	4	9"	3'-6"	117
	D	22	4	10"	6'-1"	383
	E	10	4	10 1/2"	6'-10"	46
	F	27	5	12"	2'-3"	61
	G	3	4	12"	9'-8"	60
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=12.41CY. MANHOLE CASTING=100LBS STEEL TOTAL=1473LB						
30'	A	75	4	5"OC	13"-9 1/2"	691
	B	75	4	5"	5'-1"	258
	C	56	4	9"	3'-6"	131
	D	22	4	10"	6'-1"	457
	E	10	4	10 1/2"	6'-10"	46
	F	32	5	12"	2'-3"	72
	G	3	4	12"	9'-8"	70
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=14.63CY MANHOLE CASTING=100LBS STEEL TOTAL=1734LB						

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

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STORM DETAILS (3 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C5.10

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_STRM DETAILS.dwg User: roberth Nov 13, 2024 - 12:03pm

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

Maximum Wingwall Height Hw (6)	Dimensions W	X	Y	Z	Variable Reinforcing Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per ft of wing length (Two-Wings) Reinf (lb/Ft)	Conc (CY/Ft) (2)
2'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	33.73	0.240
3'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.07	0.261
3'-6"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	37.74	0.273
4'-0"	2'-5"	1'-0"	9"	7"	#4	1'-0"	#4	1'-0"	38.41	0.285
4'-6"	3'-1"	2'-1"	6"	7"	#4	1'-0"	#4	1'-0"	41.75	0.330
5'-0"	3'-1"	2'-1"	6"	7"	#4	1'-0"	#4	1'-0"	45.09	0.343
5'-6"	3'-1"	2'-1"	6"	7"	#4	1'-0"	#4	1'-0"	45.75	0.355
6'-0"	3'-1"	2'-1"	6"	7"	#4	1'-0"	#4	1'-0"	46.42	0.367
7'-0"	3'-1"	8'-1"	9"	1'-3"	7"	#4	1'-0"	#4	1'-0"	52.77	0.414
8'-0"	4'-2"	2'-1"	6"	1'-6"	8"	#5	1'-0"	#4	1'-0"	60.19	0.486
9'-0"	4'-1"	8'-1"	3"	1'-9"	8"	#6	6"	#4	6"	81.49	0.535
10'-0"	5'-1"	2'-1"	6"	2'-0"	8"	#5	6"	#4	6"	97.25	0.584
11'-0"	5'-1"	8'-2"	9"	2'-3"	8"	#6	6"	#5	6"	133.65	0.634
12'-0"	6'-2"	3'-1"	0"	2'-6"	9"	#7	6"	#5	6"	162.29	0.721

TABLE OF WINGWALL REINFORCING (Two-Wings)

Bar	Size	No.	Spa
D	#5	–	1'-0"
E	#4	–	1'-0"
F	#4	–	1'-0"
G	#6	4	–
H	#4	4	–
P	#4	–	1'-0"
R	#5	6	–
V	#4	–	1'-0"

TABLE OF ESTIMATED CULVERT TOEWALL QUANTITIES

Bar	Size	No.	Spa
L	#4	–	1'-0"
Q	#4	1	–
Reinf (lb/Ft)			2.45
Conc (CY/Ft)			0.037

TABLE OF ESTIMATED ANCHOR TOEWALL QUANTITIES

Bar	Size	No.	Spa
K	#4	–	1'-0"
N	#5	6	–
OL	#4	6	–
Reinf (lb/Ft)			9.82
Conc (CY/Ft)			0.074

TABLE OF MAXIMUM WING HEIGHTS (9)

Side Slope	Hw Max
3:1	13'- 5"
4:1	9'-10"
6:1	6'- 1"

1. Extend Bars P 3'-0" Min into bottom slab of box culvert.
2. Adjust to fit as necessary to maintain 1 1#2" clear cover
3. Quantities shown are based on an average wing height for two wings (one structure end). To determine total quantities for two wings multiply the tabulated values by Lw.
4. Recommended values of slope are: 3:1, 4:1, and 6:1. Provide 3:1 or flatter slope.
5. When shown elsewhere on the plans, construct 5' deep concrete riprap. Payment for riprap is as required by Item 432, "Riprap." Unless otherwise shown on the plans or directed by the Engineer, construct riprap to the dimensions shown in the direction of flow, across the full distance of the riprap, at intervals of approximately 20'. When such riprap is provided, the toewall toewall shown in SECTION B-B is not required.
6. At Contractor's option, end the culvert toewall flush with wingwall toewall. Adjust reinforcing as needed.
7. J1 Min to S'-0" Max. Estimated curb heights are shown elsewhere in the plans. For structures without railing and curbs taller than 1'-0", refer to Extended Curb Details (ECD) standard sheet.
8. For vehicle safety, reduce curbs height, if necessary, to provide a maximum 7" projection above finished grade. No changes will be made in quantities and no additional compensation will be allowed for this work.
9. See Table of Maximum Wing Heights for various slopes. Height is limited based on a 33'-6" maximum safety pipe runner length.

WING DIMENSION CALCULATIONS:

Hw = H + T + C – 0.250 (9)
Lw = (Hw – 0.333') (SL)

For cast-in-place culverts:
Llw = (N) (S) + (N + 1) (U)
For precast culverts:
Llw = (N) (2U + S) + (N – 1) (0.500')

Lc = (Llw) – (2U)
Atw = Lc
Total Wingwall Area (two wings – SF)
= (Hw + 0.333') (Lw)

Hw = Height of wingwall (feet)
SL:1= Side slope (Horizontal : 1 vertical)
Lw = Length of wingwall (feet)
Llw = Length of culvert (feet)
Lc = Culvert between wings (feet)
Atw = Anchor toewall length (feet)
N = Number of culvert spans

See applicable box culvert standard for H, S, T, and U values. See Table of Maximum Wall Heights for limits on Hw.

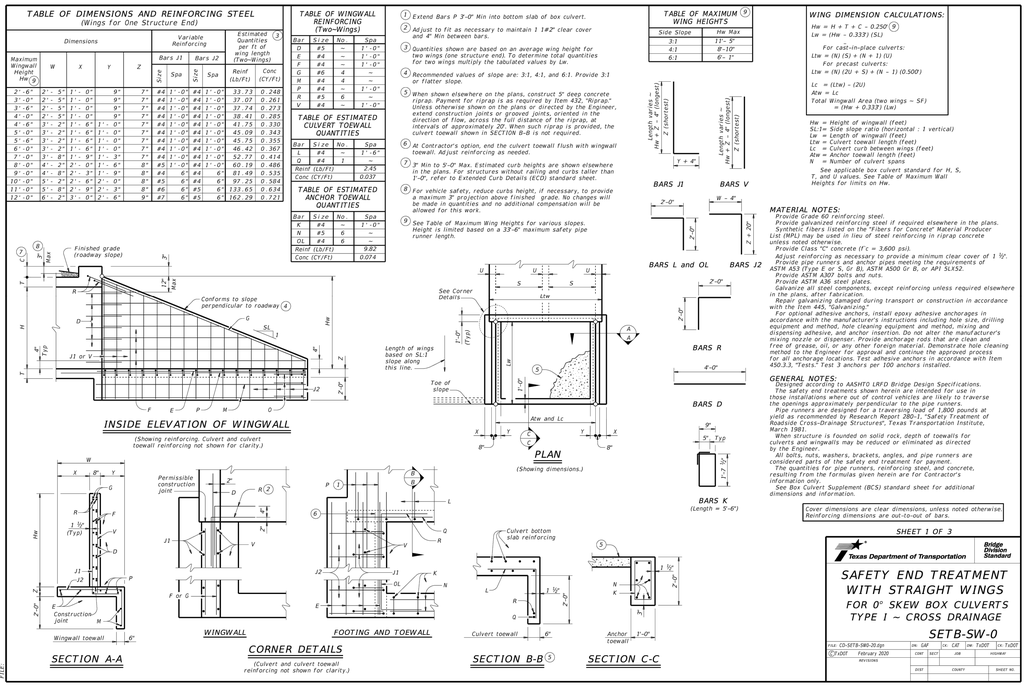
MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide Class "C" concrete (f'c = 3,600 psi).
Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½".
Provide pipe runners and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5L|X52.
Provide ASTM A307 bolts and nuts.
Provide ASTM A307 anchors.
Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with the Item 445, "Galvanizing."
For optional adhesive anchors, install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Provide anchorage rods that are clean and free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the pipe runners.
Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
Pipe structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
All bolts, nuts, washers, brackets, angles, and pipe runners are considered parts of the safety end treatment for payment.
The quantities for pipe runners, reinforcing steel, and concrete, resulting from the formulas given herein are for Contractor's information only.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

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



INSIDE ELEVATION OF WINGWALL
(Showing reinforcing. Culvert and culvert toewall reinforcing not shown for clarity.)

PLAN
(Showing dimensions.)

SECTION A-A

WINGWALL
CORNER DETAILS
(Culvert and culvert toewall reinforcing not shown for clarity.)

FOOTING AND TOEWALL

SECTION B-B (5)

SECTION C-C

DISCLAIMER:
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE:
FILE:

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT WITH STRAIGHT WINGS
FOR 0° SKEW BOX CULVERTS
TYPE I ~ CROSS DRAINAGE
SETB-SW-0

File: CD-SETB-SW-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

SHEET 1 OF 3

WING DIMENSION CALCULATIONS:

Hw = H + T + C – 0.250 (9)
Lw = (Hw – 0.333') (SL)

For cast-in-place culverts:
Llw = (N) (S) + (N + 1) (U)
For precast culverts:
Llw = (N) (2U + S) + (N – 1) (0.500')

Lc = (Llw) – (2U)
Atw = Lc
Total Wingwall Area (two wings – SF)
= (Hw + 0.333') (Lw)

Hw = Height of wingwall (feet)
SL:1= Side slope (Horizontal : 1 vertical)
Lw = Length of wingwall (feet)
Llw = Length of culvert (feet)
Lc = Culvert between wings (feet)
Atw = Anchor toewall length (feet)
N = Number of culvert spans

See applicable box culvert standard for H, S, T, and U values. See Table of Maximum Wall Heights for limits on Hw.

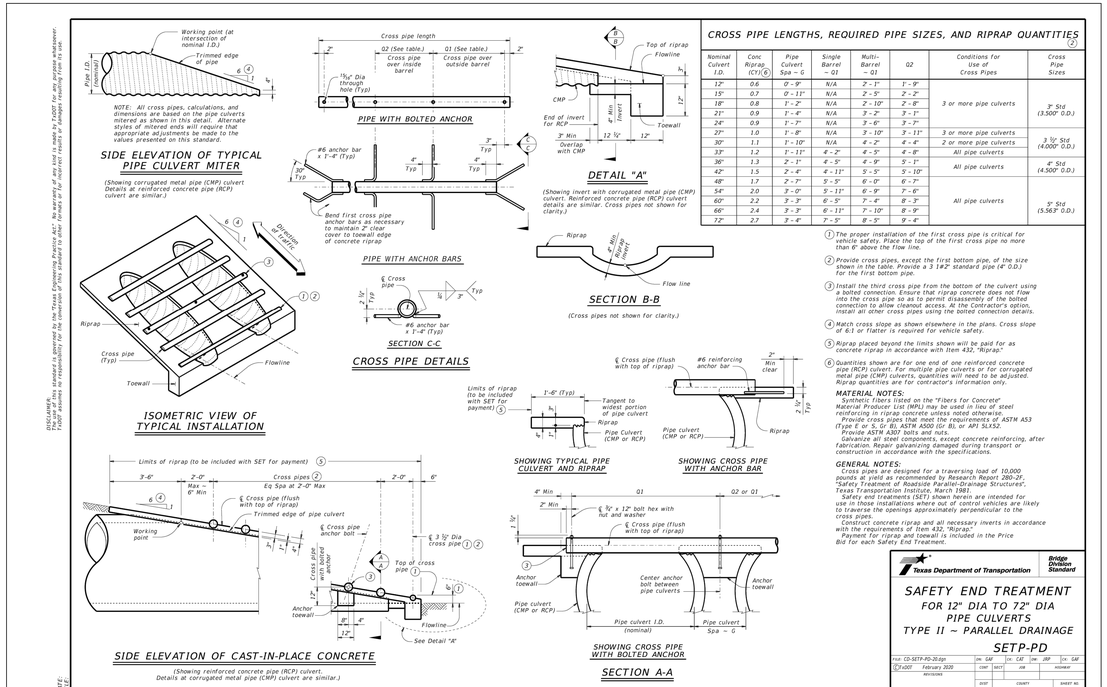
MATERIAL NOTES:

Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide Class "C" concrete (f'c = 3,600 psi).
Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½".
Provide pipe runners and anchor pipes meeting the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 Gr B, or API 5L|X52.
Provide ASTM A307 bolts and nuts.
Provide ASTM A307 anchors.
Galvanize all steel components, except reinforcing unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with the Item 445, "Galvanizing."
For optional adhesive anchors, install epoxy adhesive anchorages in accordance with the manufacturer's instructions including hole size, drilling equipment and method, hole cleaning equipment and method, mixing and dispensing adhesive, and anchor insertion. Do not alter the manufacturer's mixing nozzle or dispenser. Provide anchorage rods that are clean and free of grease, oil, or any other foreign material. Demonstrate hole cleaning method to the Engineer for approval and continue the approved process for all anchorage locations. Test adhesive anchors in accordance with Item 450.3.3, "Tests." Test 3 anchors per 100 anchors installed.

GENERAL NOTES:

Designed according to AASHTO LRFD Bridge Design Specifications.
The safety end treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the pipe runners.
Pipe runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.
Pipe structure is founded on solid rock, depth of toewalls for culverts and wingwalls may be reduced or eliminated as directed by the Engineer.
All bolts, nuts, washers, brackets, angles, and pipe runners are considered parts of the safety end treatment for payment.
The quantities for pipe runners, reinforcing steel, and concrete, resulting from the formulas given herein are for Contractor's information only.
See Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.

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



DISCLAIMER:
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DATE:
FILE:

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, AND RIPRAP QUANTITIES (2)

Nominal Culvert I.D.	Conc Riprap (CY/€)	Pipe Culvert Spa – G	Single Barrel – Q1	Multi-Barrel – Q1	Q2	Conditions for Use of Cross Pipes	Cross Pipe Sizes
12"	0.6	0' – 9"	N/A	2' – 1"	1' – 9"		
15"	0.7	0' – 11"	N/A	2' – 5"	2' – 2"		
18"	0.8	1' – 2"	N/A	2' – 10"	2' – 8"	3 or more pipe culverts	
21"	0.9	1' – 4"	N/A	3' – 2"	3' – 1"		5" Std (3.500" O.D.)
24"	0.9	1' – 7"	N/A	3' – 6"	3' – 7"		
27"	1.0	1' – 8"	N/A	3' – 10"	3' – 11"	3 or more pipe culverts	
30"	1.1	1' – 10"	N/A	4' – 2"	4' – 4"	2 or more pipe culverts	5 ½" Std (4.000" O.D.)
33"	1.2	1' – 11"	4' – 2"	4' – 5"	4' – 8"	All pipe culverts	
36"	1.3	2' – 1"	4' – 5"	4' – 9"	5' – 1"	All pipe culverts	6" Std (4.500" O.D.)
42"	1.5	2' – 4"	4' – 11"	5' – 5"	5' – 10"		
48"	1.7	2' – 7"	5' – 5"	6' – 0"	6' – 7"		
54"	2.0	3' – 0"	5' – 11"	6' – 9"	7' – 6"	All pipe culverts	5" Std (5.563" O.D.)
60"	2.2	3' – 3"	6' – 5"	7' – 4"	8' – 3"		
66"	2.4	3' – 3"	6' – 11"	7' – 10"	8' – 9"		
72"	2.7	3' – 4"	7' – 5"	8' – 5"	9' – 4"		

1. The proper installation of the first cross pipe is critical for vehicle safety. Place the top of the first cross pipe no more than 0" above the flow line.
2. Provide cross pipes, except the first bottom pipe of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
3. Install the third cross pipe from the bottom of the culvert using a bolted connection. Ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, install all other cross pipes using the bolted connection details.
4. Match cross slope as shown elsewhere in the plans. Cross slope of 6:1 or flatter is required for vehicle safety.
5. Riprap placed on the limits shown will be paid for as concrete riprap in accordance with Item 432, "Riprap."
6. Quantities shown are for one end of one reinforced concrete pipe (RCP) culvert. For multiple pipe culverts or for corrugated metal pipe (CMP) culverts, quantities will need to be adjusted. Riprap quantities are for contractor's information only.

MATERIAL NOTES:

Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise.
Provide cross pipes that meet the requirements of ASTM A53 (Type E or S, Gr B), ASTM A500 (Gr B), or API 5L|X52.
Provide ASTM A307 bolts and nuts.
Galvanize all steel components, except concrete reinforcing, after fabrication. Repair galvanizing damaged during transport or construction in accordance with the specifications.

GENERAL NOTES:

Cross pipes are designed for a traversing load of 10,000 pounds as yield as recommended by Research Report 280-2F, "Safety Treatment at Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.
Safety end treatments (SET) shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the cross pipes.
Construct concrete riprap and all necessary inverts in accordance with the requirements of Item 432, "Riprap."
Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT
FOR 12" DIA TO 72" DIA
PIPE CULVERTS
TYPE II ~ PARALLEL DRAINAGE
SETP-PD

File: CD-SETP-PD-20.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

STORM DETAILS (4 OF 4)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C5.11

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\C0ds\337.070_STRM DETAILS.dwg User: roberth Nov 13, 2024 – 12:03pm

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 GVEC PLANS FOR FINAL ELECTRICAL LINE DESIGNS AND LAYOUT.

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.

UTILITY TRENCH COMPACTION

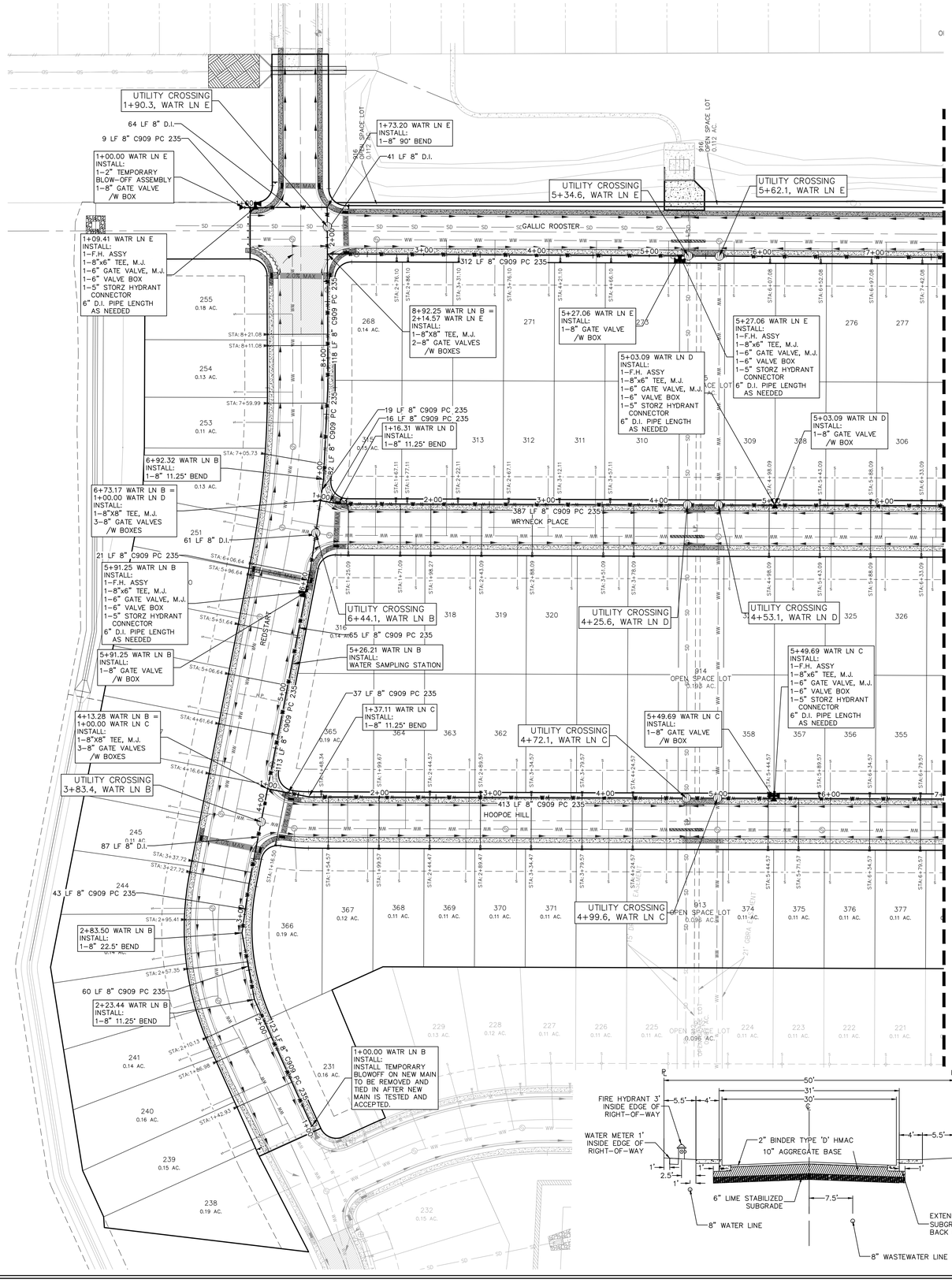
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO–TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND 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

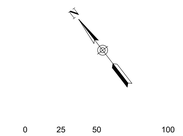
CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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 TO 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.

Ⓐ WATERLINE ADJUSTMENT DETAIL
N.T.S



MATCHLINE
SEE SHEET C4.02



LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
EX W	EXISTING WATER LINE
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, SIDEWALKS OR DRIVEWAYS.
3. ALL WATER SERVICES ARE TO BE 1–INCH SERVICES AND METERS LOCATED 2–FEET FROM THE PROPERTY LINE.
4. ALL DIMENSIONS ARE FROM FACE OF CURB.
5. REFER TO COVER SHEET FOR BENCHMARK INFORMATION.
6. FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.
7. CONTRACTOR TO COORDINATE WITH GVSUD ON TIMING OF TIE–INS AND ABANDONMENT.
8. CONTRACTOR TO CURB CUT V'S FOR ADJACENT VALVES AND X'S FOR ADJACENT METER BOXES.
9. CONTRACTOR TO VERIFY LOCATION OF EXISTING WATER MAIN A MINIMUM OF 300 LF AHEAD OF NEW MAIN INSTALLATION AT ALL TIE–IN LOCATIONS OR CROSSINGS, AND NOTIFY GVSUD INSPECTOR.
10. CONTRACTOR MUST PROTECT ALL UNATTENDED TRENCHES AND EXCAVATIONS WITH TEMPORARY FENCING OR OTHER APPROVED MEANS.
11. CONTRACTOR TO UTILIZE APPROVED WATER LINE STOPS AND/OR MUELLER INSERTION–VALVES TO MINIMIZE WATER OUTAGES AS REQUIRED BY GVSUD DURING CONSTRUCTION.
12. DISINFECTION SHALL BE BY MACHINE CHLORINATION.
13. MOISTURE DENSITY COMPACTION TESTING FREQUENCY– WATER MAIN TRENCHES REQUIRED EVERY 300 LF FOR EACH VERTICAL FOOT OF COMPLETED BACKFILL. SERVICES RANDOMLY SELECTED AS REQUIRED BY GVSUD INSPECTOR.
14. ALL TESTING AND TEST REPORTS SHALL BE COORDINATED WITH GVSUD INSPECTOR BY THE CONTRACTOR.
15. ALL DUCTILE IRON PIPE TO BE AMERICAN, ZINC COATED, AWWA/ANSI C–151.

Kraft Unit 3 Quantities

Item	Quantity	Unit
8" Water Main	4712	LF
8" Ductile Iron Pipe	357	LF
8" Tee	5	EA
8" 11.25° Bend	4	EA
8" 22.5° Bend	1	EA
8" Gate Valve	23	EA
3/4" Long Water Service	80	EA
3/4" Short Water Service	73	EA
Fire Hydrant Assembly	9	EA
2" Temp. Blow-Off Assembly	5	EA

EDU Count

Lots	Services	EDU
154	153	153

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 TO 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.

TCEQ WATER MAIN/ WASTEWATER CROSSING NOTES:

WHERE A POTABLE WATERLINE CROSSES A WASTEWATER MAIN OR LATERAL ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER MAIN OR LATERAL AT THE CROSSING SHALL BE PRESSURE RATED PIPE (ASTM 224) WITH A MINIMUM RATING OF 160 PSI, WHENEVER POSSIBLE THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL.

THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOIN ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL WATER PLAN (1 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C6.01

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\C0s\337.070_WATR.dwg User: robertb Nov 13, 2024 – 11:28am

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 GVEC PLANS FOR FINAL ELECTRICAL LINE DESIGNS AND LAYOUT.

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.

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.

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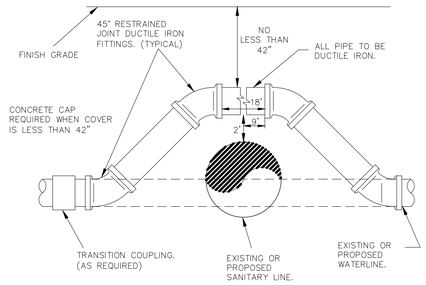

A WATERLINE ADJUSTMENT DETAIL
N.T.S

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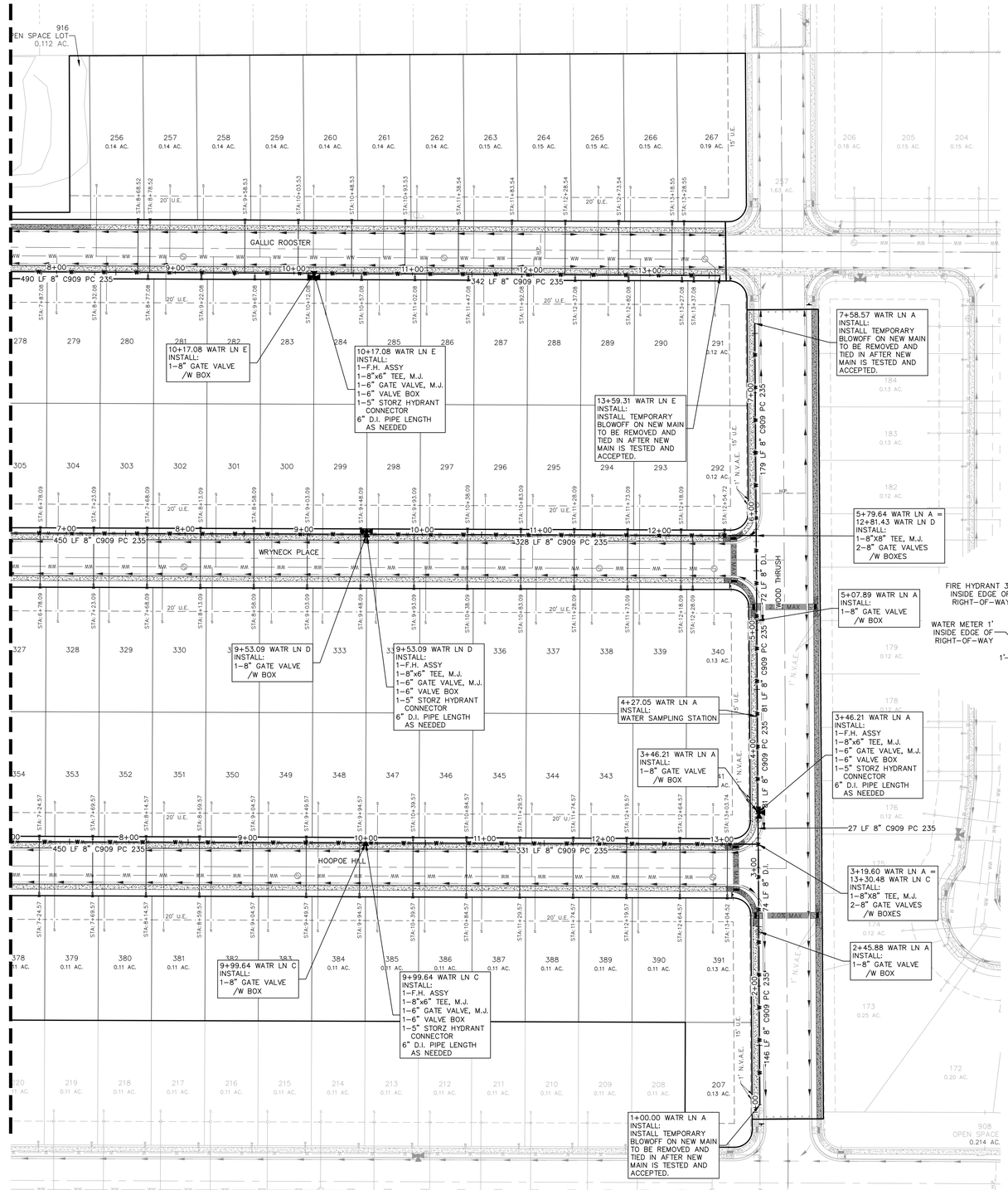

0 25 50 100
HORIZONTAL SCALE: 1:50

LEGEND

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U.E.	UTILITY EASEMENT
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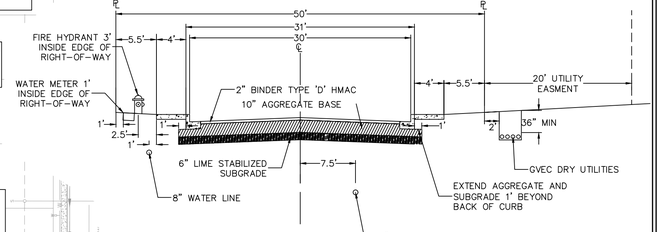

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HMT ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL WATER PLAN (2 OF 2)

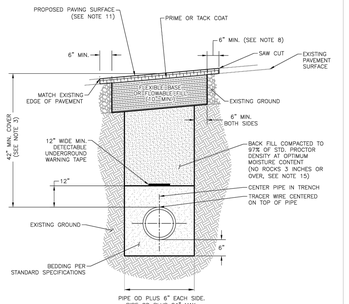
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C6.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\03s\337.070_WATR.dwg User: roberth Nov 13, 2024 - 11:28am

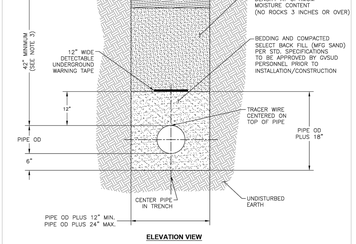


GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS	TRENCH DETAIL FOR PAVED AREAS (1 OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-1

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 PAVING SURFACES 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 02779.
    - 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 (2 OF 2)	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-1

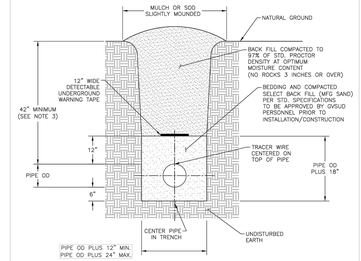


ELEVATION VIEW

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



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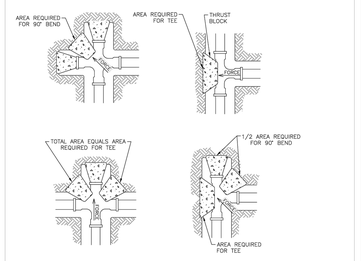
7. PLACE IN 12 INCH LIFTS AFTER PIPE IS LAID TO 12 INCHES ABOVE THE PIPE.
8. SELECT BACKFILL MATERIAL PLACED TO REQUIRED HEIGHT IN 6 INCH LIFTS.

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

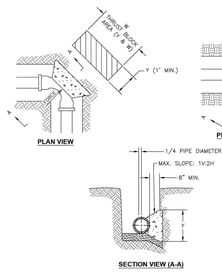


MINIMUM THRUST BLOCK AREA REQUIRED (Y AND W)		
PIPE SIZE	WATER PIPE TEE, DEAD END, 90° BEND	WATER PIPE 45° AND 22.5° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 SQ. FEET	3 SQ. FEET
8"	6 SQ. FEET	3 SQ. FEET
10"	9 SQ. FEET	5 SQ. FEET
12"	13 SQ. FEET	7 SQ. FEET
16"	23 SQ. FEET	12 SQ. FEET
18"	29 SQ. FEET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

STREAM / STORM SEWER 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 CREEK CROSSING OR DRAINAGE DITCH THE PIPE SHALL BE STEEL ENCASED AND HAVE A MINIMUM OF 3 FEET OF COVER FROM THE BOTTOM OF THE CREEK/STREAM.
5. SEE ENCASEMENT DETAIL WITH ENCASEMENT SPACER DETAIL W-6.
6. ANNULAR SPACE TO BE FILLED WITH SAND-CEMENT SLURRY.
7. MINIMUM DEPTH BETWEEN CASING PIPE AND BOX CULVERTS OR STORM SEWER PIPE IS 2 FEET.

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 STREAMS / STORM SEWERS	
REVISED: AUGUST 2023	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	DETAIL NO. W-8

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

NOTES:

1. VALVE BOX COVER SHALL BE EJ GROUP, INC. ST1 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

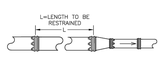
NOTES:

1. SUBGRADE SHALL BE COMPACTED PER SPECIFICATIONS, SUBGRADE PREPARATION.
2. VALVE BOXES SHALL BE ADJUSTED TO GRADE AFTEEN 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.

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

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



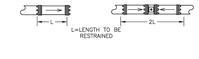
RESTRAINED LENGTH FOR REDUCERS

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	60
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



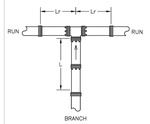
RESTRAINED LENGTH FOR DEAD ENDS/INLINE VALVES

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



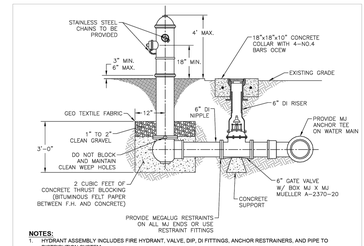
RESTRAINED LENGTH FOR TEES

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	77
8	6	5	26
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	79
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	25	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

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.

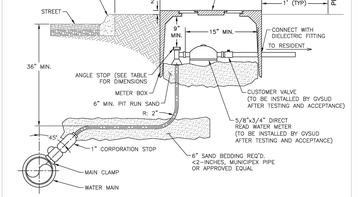
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | TEE RESTRAINED LENGTH DESIGN
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-21



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 3-6 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 #PP868802.

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

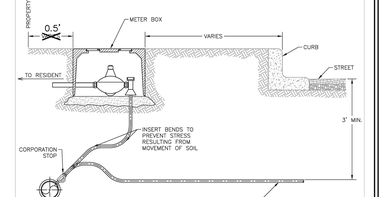


MAIN SIZE	METER SIZE	MAIN SADDLE	CORPORATION	ANGLE STOP
12"	5/8" OR 3/4"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"x 3/4"
12"	1"	S-91804 IP	H-15028 IP 1"	B-24258N: 1"X1"

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.

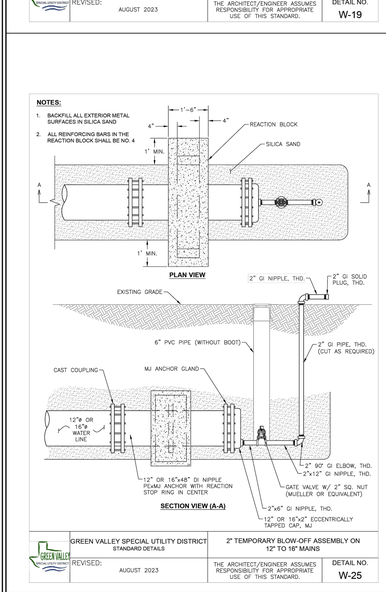
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | STANDARD SERVICE CONNECTION
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-23



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

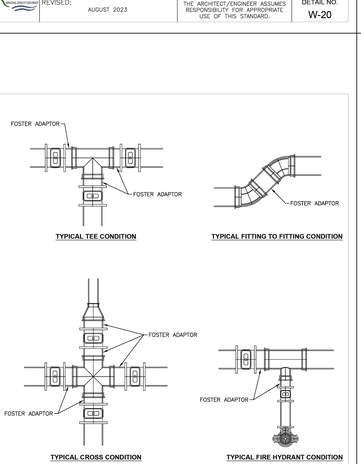
NOTES:

1. BACKFILL ALL EXTERIOR METAL SURFACES IN SILICA SAND
2. ALL REINFORCING BARS IN THE REACTION BLOCK SHALL BE NO. 4



SECTION VIEW (A-A)

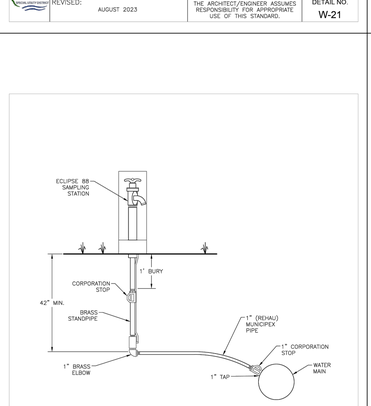
GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | 2" TEMPORARY BLOW-OFF ASSEMBLY ON 12" TO 16" MAINS
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-25



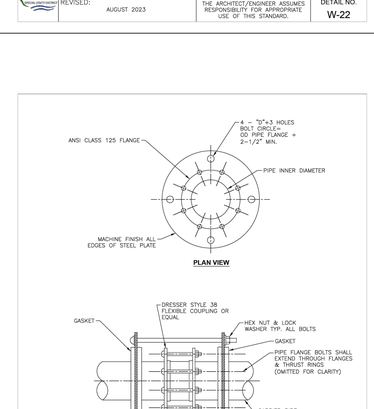
NOTE:

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 GVSU'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



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



NOTES:

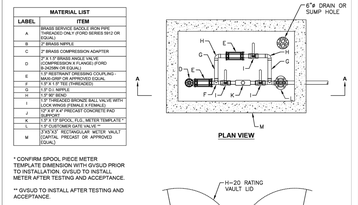
1. A MINIMUM OF 2 TIE RODS SHALL BE USED FOR CARRIER PIPES 6 INCHES OR LESS. PIPES GREATER THAN 6 INCHES SHALL HAVE A MINIMUM OF 4 TIE RODS.
2. TIE RODS SHALL HAVE MINIMUM DIAMETER OF 3/4 INCH FOR PIPES 6 INCHES OR LESS, AND 1 INCH FOR PIPES GREATER THAN 6 INCHES.

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

MATERIAL LIST	
LABEL	ITEM
A	BRASS SERVICE SADDLE (IRON PIPE THREADED ONLY (FORD SERIES SB12 OR EQUAL)
B	2" BRASS NIPPLE
C	2" BRASS COMPRESSION ADAPTER
D	2" X 1" BRASS ANGLE VALVE, COMPRESSION (FORD B-24258N-QT OR EQUAL)
E	1.5" RESTRAINT GREENSAID COUPLING - (FORD COUPLING OR EQUAL
F	1.5" X 5.5" NSF THREADED PIPE
G	1.5" S.C. NIPPLE
H	1.5" 90° BEND
I	1.5" THREADED BRONZE BALL VALVE WITH LOCKWING (FORD B44-666-WG)
J	12" X 6" X 6" PRECAST CONCRETE AND CAST IRON VAULT
K	1.5" S.C. SPOOL, P.I.G. METER TEMPLATE *
L	1.5" GVSU METER GATE VALVE **
M	4'X5.5' RECTANGULAR METER VAULT (CAPITAL PRECAST OR APPROVED EQUAL)

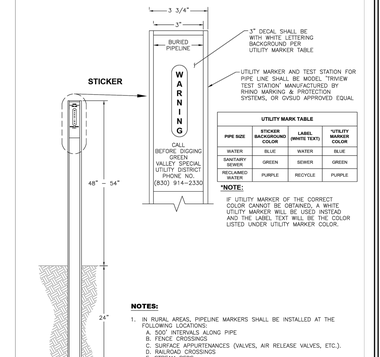
* CONFIRM SPOOL PIECE METER TEMPLATE DIMENSION WITH GVSUD PRIOR TO INSTALLATION. GVSUD TO INSTALL METER AFTER TESTING AND ACCEPTANCE.

** GVSUD TO INSTALL AFTER TESTING AND ACCEPTANCE.



SECTION A-A
3'x5'x3' CONCRETE VAULT

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | 1.5-INCH METER INSTALLATION
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-35



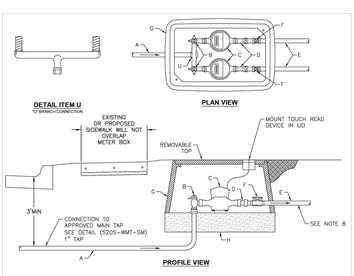
UTILITY MARK TABLE			
PIPE SIZE	STICKER BACKGROUND COLOR	LABEL (WHITE TEXT)	*UTILITY MARKER COLOR
WATER	BLUE	WATER	BLUE
SANITARY SEWER	GREEN	SEWER	GREEN
RECLAIMED WATER	PURPLE	RECYCLE	PURPLE

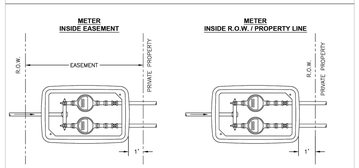
***NOTE:**
IF UTILITY MARKER OF THE CORRECT COLOR CANNOT BE OBTAINED, A WHITE UTILITY MARKER WILL BE USED INSTEAD AND THE LABEL TEXT WILL BE THE COLOR LISTED UNDER UTILITY MARKER COLOR.

NOTES:

1. IN RURAL AREAS, PIPELINE MARKERS SHALL BE INSTALLED AT THE FOLLOWING LOCATIONS:
   A. 500' INTERVALS ALONG PIPE
   B. FENCE CROSSINGS
   C. SURFACE APPURTENANCES (VALVES, AIR RELEASE VALVES, ETC.).
   D. RAILROAD CROSSINGS
   E. STREAM BEDS
   F. OTHER UTILITY CROSSINGS
   G. LOCATIONS OF MAJOR CHANGES IN DIRECTION (OUT OF PAVEMENT).
2. IN URBAN AREAS, PIPELINE MARKERS SHALL BE INSTALLED ONLY WHEN REQUIRED PER APPROVED PLANS.
3. PIPELINE MARKERS SHALL BE CONNECTED TO WATER MAIN TRACER WIRE.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | PIPE LINE MARKER
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-39





GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | 5/8", & 3/4" DUAL METER SERVICE CONNECTIONS (IRRIGATION OR DOMESTIC) (1 OF 2)
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-40

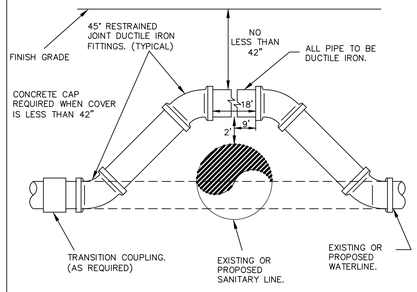
MATERIAL LIST			
LABEL	ITEMS	METER SIZE	
		5/8"	3/4"
A*	TUBING SHALL BE REHAU MUNICIPEX WITH CTS 200 PSI PLASTIC INSERT	1"	1"
B	APPROVED ANGLE METER STOP WITH PADLOCK WING. (FORD TYPE Q COMPRESSION FITTING OR APPROVED EQUIVALENT.)	5/8"	3/4"
C	WATER METER	5/8"	3/4"
D	WATER METER COUPLING - CONNECTION SWIVEL NUT	5/8"	3/4"
E	CUSTOMER YARD PIPE - AS SPECIFIED		
F	CUT-OFF VALVE **		
G	PLASTIC METER BOX AND LID WITH REBAR, ARM, AND KNOCKOUT		
H	6" COMPACTED SAND		
U	"U" BRANCH CONNECTION (COMPRESSION - TYPE FITTING)	1"X3/4"	1"X3/4"

* ALL FITTING CONNECTED TO POLYETHYLENE PIPE WILL REQUIRE A STAINLESS STEEL INSERT.
** TO BE INSTALLED BY GVSUD AFTER TESTING AND ACCEPTANCE

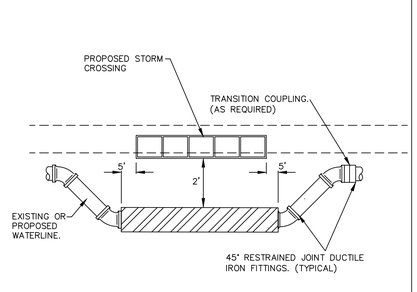
NOTES:

1. REFERENCE GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAIL W-23 FOR METER AND METER BOX DIMENSIONS.
2. TOP OF METER BOX SHALL BE 1" ABOVE GRADE AFTER REVEGETATION OR FLUSH WITH PAVEMENT SURFACE. METER BOX ARE PROHIBITED IN ANY SIDEWALKS, DRIVEWAYS, OR ROADWAYS.
3. FOR PIPES AND FITTINGS OUTSIDE THE METER BOX SHALL BE EMBEDDED AND BACKFILLED, 6" SAND BEDDING MINIMUM, WITHIN THE R.O.W. OR EASEMENT.
4. WATER METER WILL BE HORIZONTALLY CENTERED WITH THE METER BOX.
5. TAP TO CITY WATER LINE SHALL HAVE A 1" CORPORATION STOP AND A 1" TAP TO THE MAIN.
6. CUT-OFF VALVE AND CONNECTION TO YARD PIPING TO BE SUBMITTED FOR APPROVAL.
7. METERS TO BE SUPPLIED BY CONTRACTOR FOR COMMERCIAL ACCOUNTS.
8. ALL PARTS WILL BE PER THE CURRENT GREEN VALLEY SPECIAL UTILITY DISTRICT WATER STANDARDS AND DESIGN CRITERIA.

GREEN VALLEY SPECIAL UTILITY DISTRICT STANDARD DETAILS | 5/8", & 3/4" DUAL METER SERVICE CONNECTIONS (IRRIGATION OR DOMESTIC) (2 OF 2)
REVISED: AUGUST 2023 | THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD. | DETAIL NO. W-40



Ⓐ WATERLINE ADJUSTMENT DETAIL
N.T.S



Ⓑ 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.

A UTILITY COMPACTION PLAN WILL BE REQUIRED AND MUST BE SUBMITTED FOR APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

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 GVEC PLANS FOR FINAL ELECTRICAL LINE DESIGNS AND LAYOUT.

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.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WATER DETAILS (2 OF 2)

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

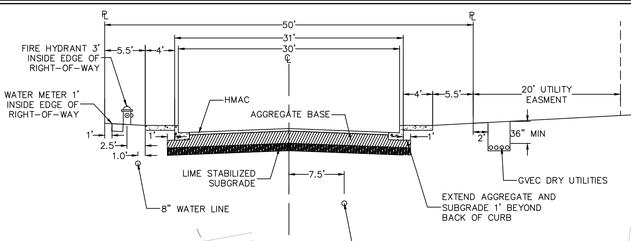
DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C6.04

Drawing Name: N:_Projects\337 - Lennon\070 - Kraft Unit 3\Cib\337.070_WATR-WWTR DETAILS.dwg User: roberth Nov 13, 2024 - 11:29am

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

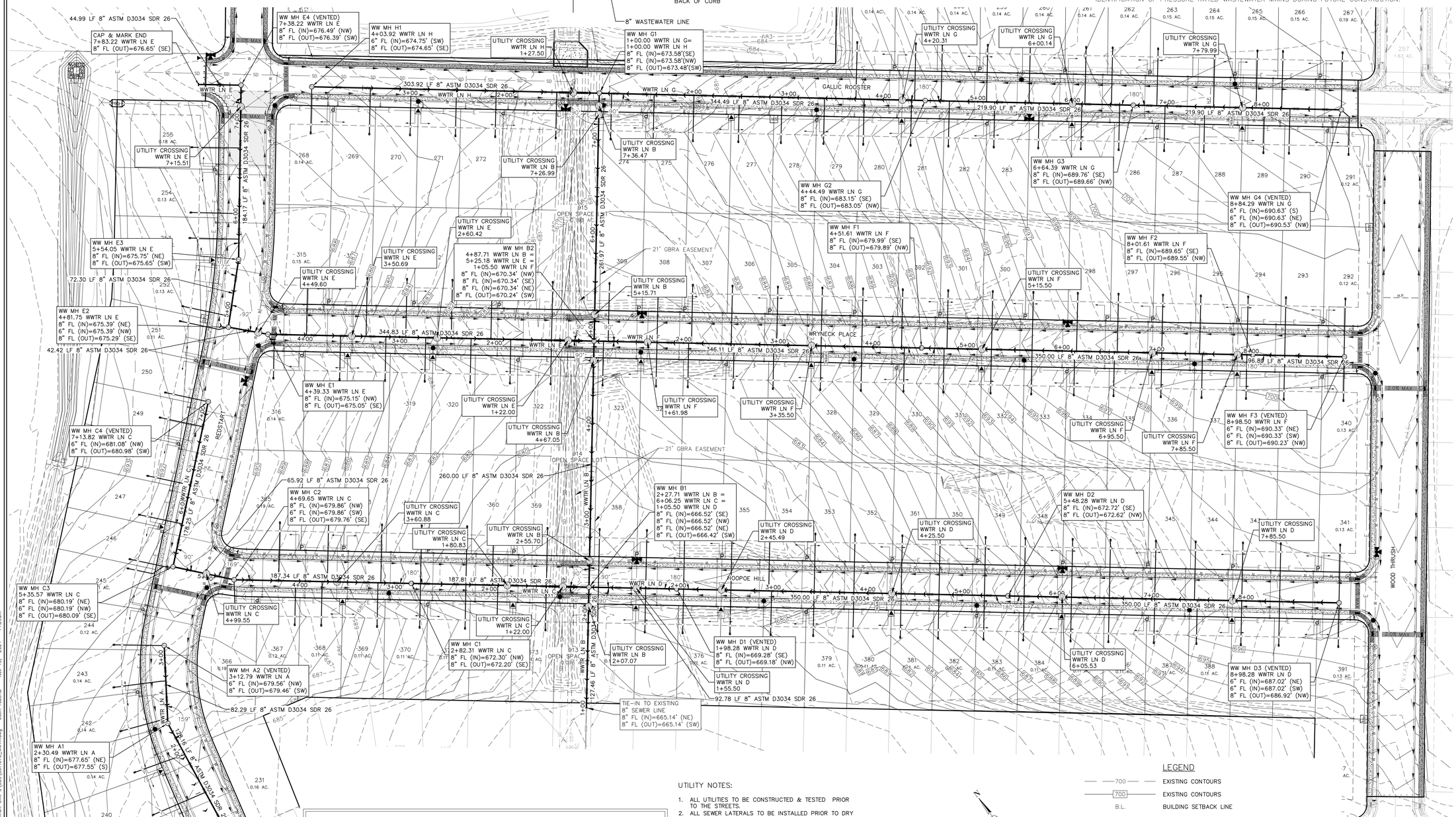
CITY REQUIREMENTS FOR TESTING SHALL BE ADHERED TO, IN CASES WHERE TRENCH DEPTHS DO NOT ALLOW TECHNICIANS ACCESS, METHODS FOR TESTING SHALL BE PROPOSED AND APPROVED PRIOR TO CONSTRUCTION COMMENCING.

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 TO 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.

TCEQ WATER MAIN/ WASTEWATER CROSSING NOTES:

WHERE A POTABLE WATERLINE CROSSES A WASTEWATER MAIN OR LATERAL ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER MAIN OR LATERAL AT THE CROSSING SHALL BE PRESSURE RATED PIPE (ASTM 224) WITH A MINIMUM RATING OF 160 PSI. WHENEVER POSSIBLE THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL.

THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOIN ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE 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 NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED & TESTED PRIOR TO THE STREETS.
2. ALL SEWER LATERALS TO BE INSTALLED PRIOR TO DRY UTILITIES.
3. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
4. ALL SEWER PIPE ATSM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
5. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
6. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
7. REFER TO ALL GBRA NOTES ON SHEET C0.02.
8. FOR LIFT STATION IMPROVEMENTS REFER TO SHEETS C9.01-C9.03.

0 25 50 100
SCALE: 1" = 50'

LEGEND

- EXISTING CONTOURS
- EXISTING CONTOURS
- BUILDING SETBACK LINE (B.L.)
- UTILITY EASEMENT (U.E.)
- DRAINAGE EASEMENT (D.E.)
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING
- PROPOSED STREET LIGHT
- PROPOSED TRANSFORMER
- PROPOSED PEDISTOOL

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL WASTEWATER PLAN

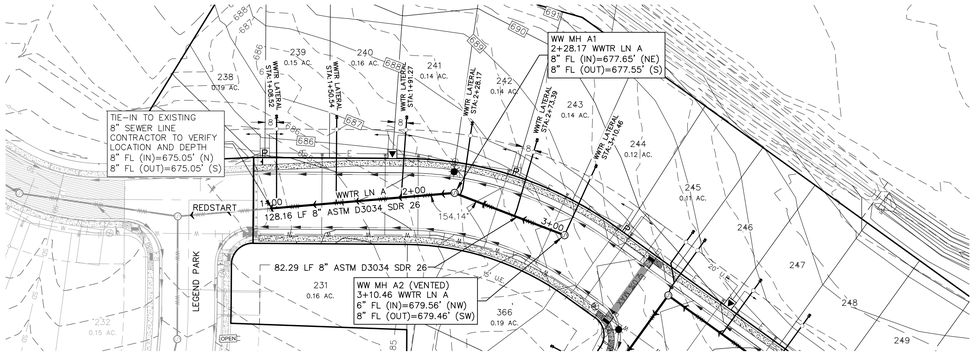
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

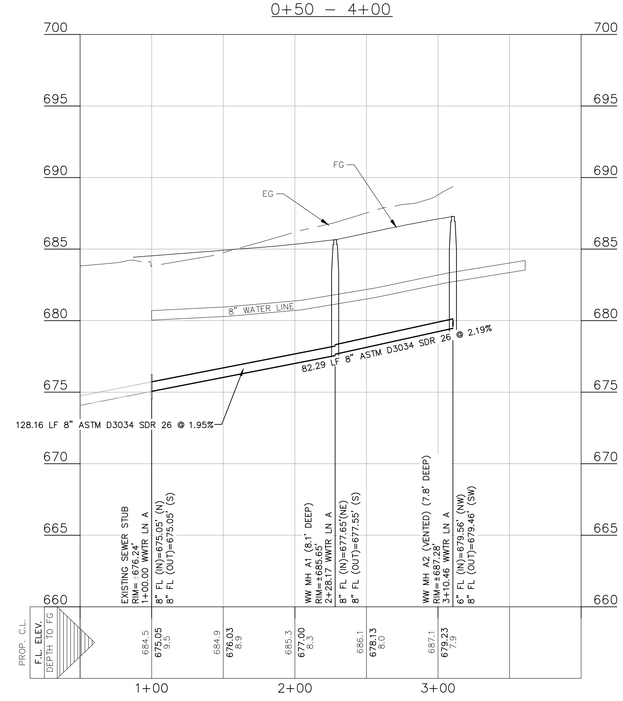
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0x\337.070_WWTR.dwg Nov 13, 2024 - 11:29am User: robertb



WWTR LN A
0+50 – 4+00



LEGEND

- EXISTING CONTOURS
- EXISTING CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING
- PROPOSED STREET LIGHT
- PROPOSED TRANSFORMER
- PROPOSED PEDISTOOL

UTILITY NOTES:

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2. ALL SEWER LATERALS TO BE INSTALLED PRIOR TO DRY UTILITIES.
3. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
4. ALL SEWER PIPE ATSM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
5. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
6. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
7. REFER TO ALL GBRA NOTES ON SHEET C0.02.

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 TO 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.

TCEQ WATER MAIN/ WASTEWATER CROSSING NOTES:

WHERE A POTABLE WATERLINE CROSSES A WASTEWATER MAIN OR LATERAL ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER MAIN OR LATERAL AT THE CROSSING SHALL BE PRESSURE RATED PIPE (ASTM 224) WITH A MINIMUM RATING OF 160 PSI. WHENEVER POSSIBLE THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL.

THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOIN ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

REFER TO THE COVER SHEET
FOR BENCHMARK INFORMATION.

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER LINE A PLAN & PROFILE

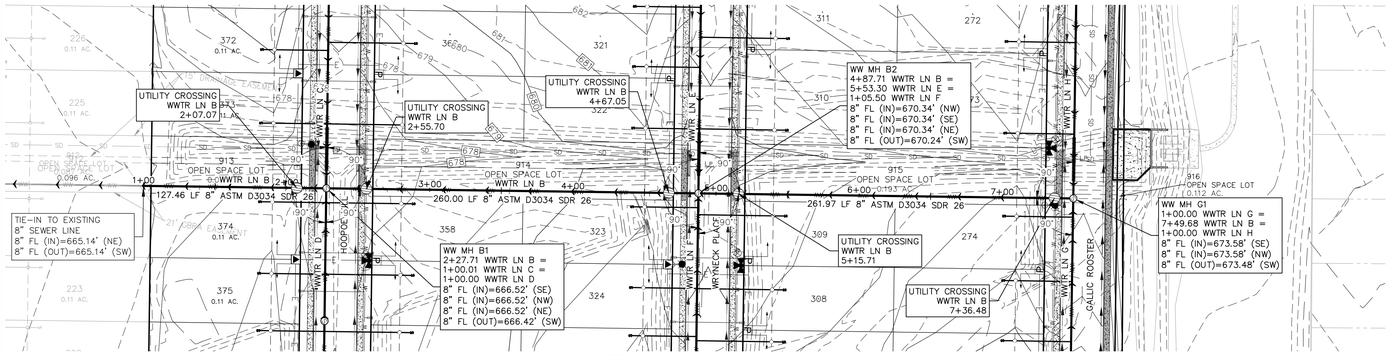
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.02

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\Cds\337.070_WWTR LN A.dwg User: roberb Nov 13, 2024 – 11:30am



WWTR LN B
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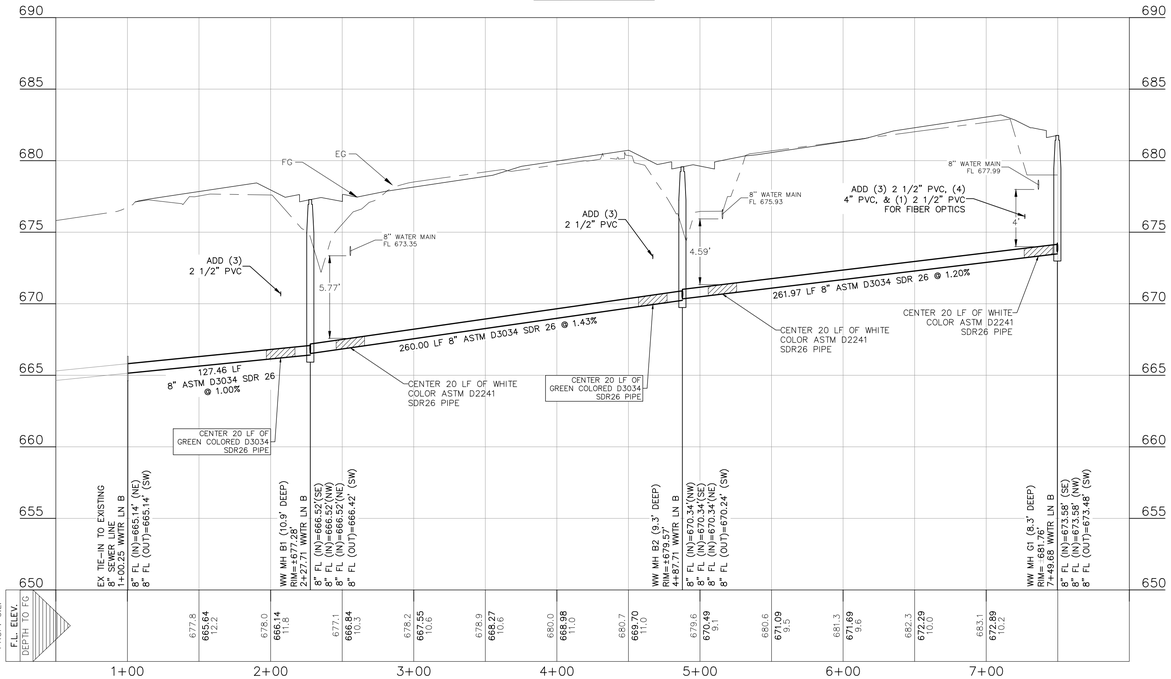

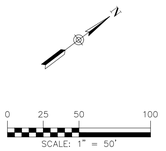

LEGEND

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

UTILITY NOTES:

1. ALL UTILITIES TO BE CONSTRUCTED & TESTED PRIOR TO THE STREETS.
2. ALL SEWER LATERALS TO BE INSTALLED PRIOR TO DRY UTILITIES.
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6. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
7. REFER TO ALL GBRA NOTES ON SHEET C0.02.

UTILITY TRENCH COMPACTION

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REFER TO THE COVER SHEET
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TBPELS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER LINE B PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.03

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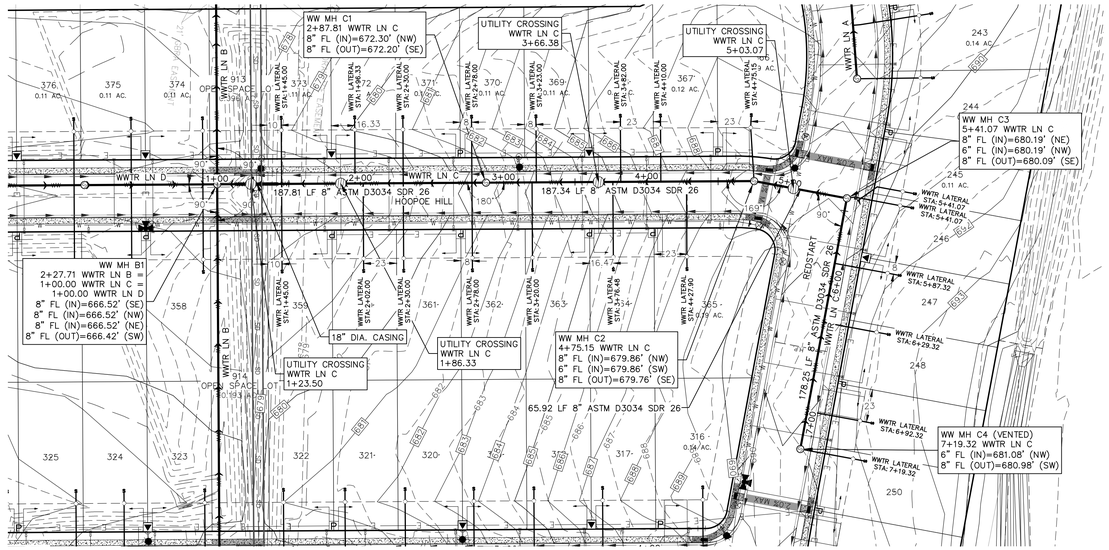

WWTR LN C
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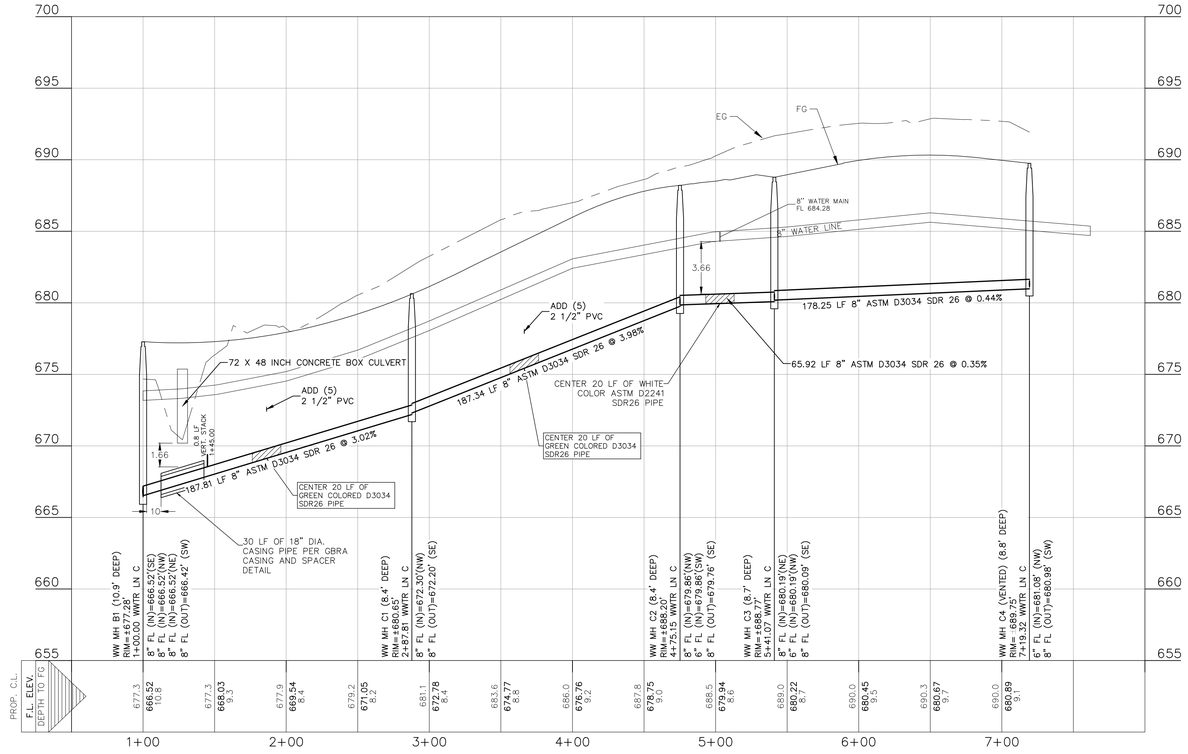

LEGEND

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
	PROPOSED STREET LIGHT
	PROPOSED TRANSFORMER
	PROPOSED PEDISTOOL

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER LINE C PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.04

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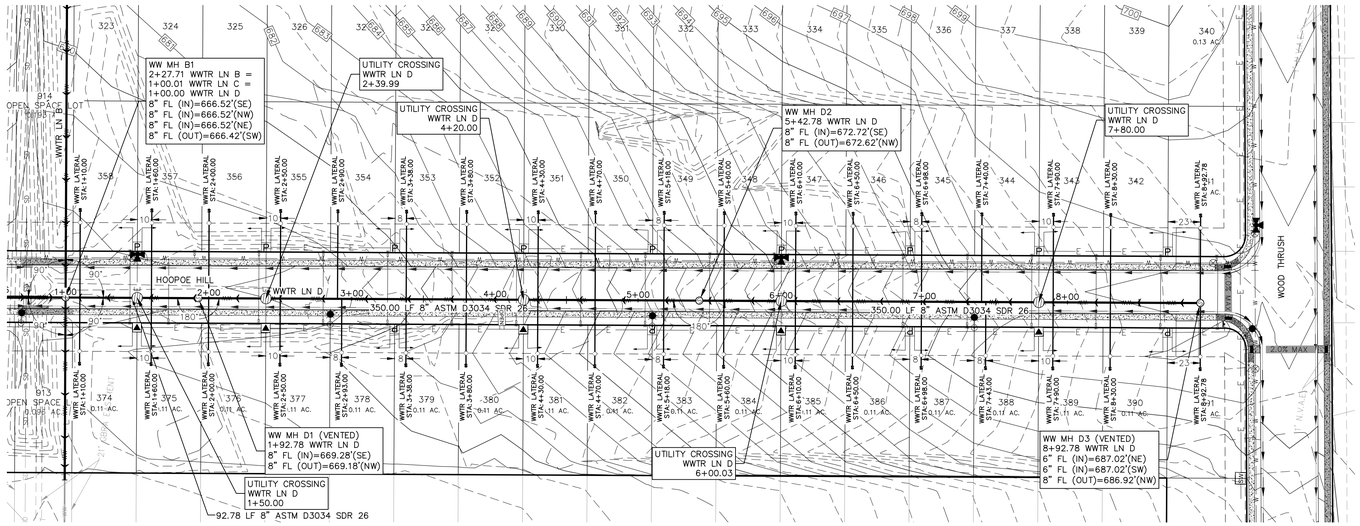

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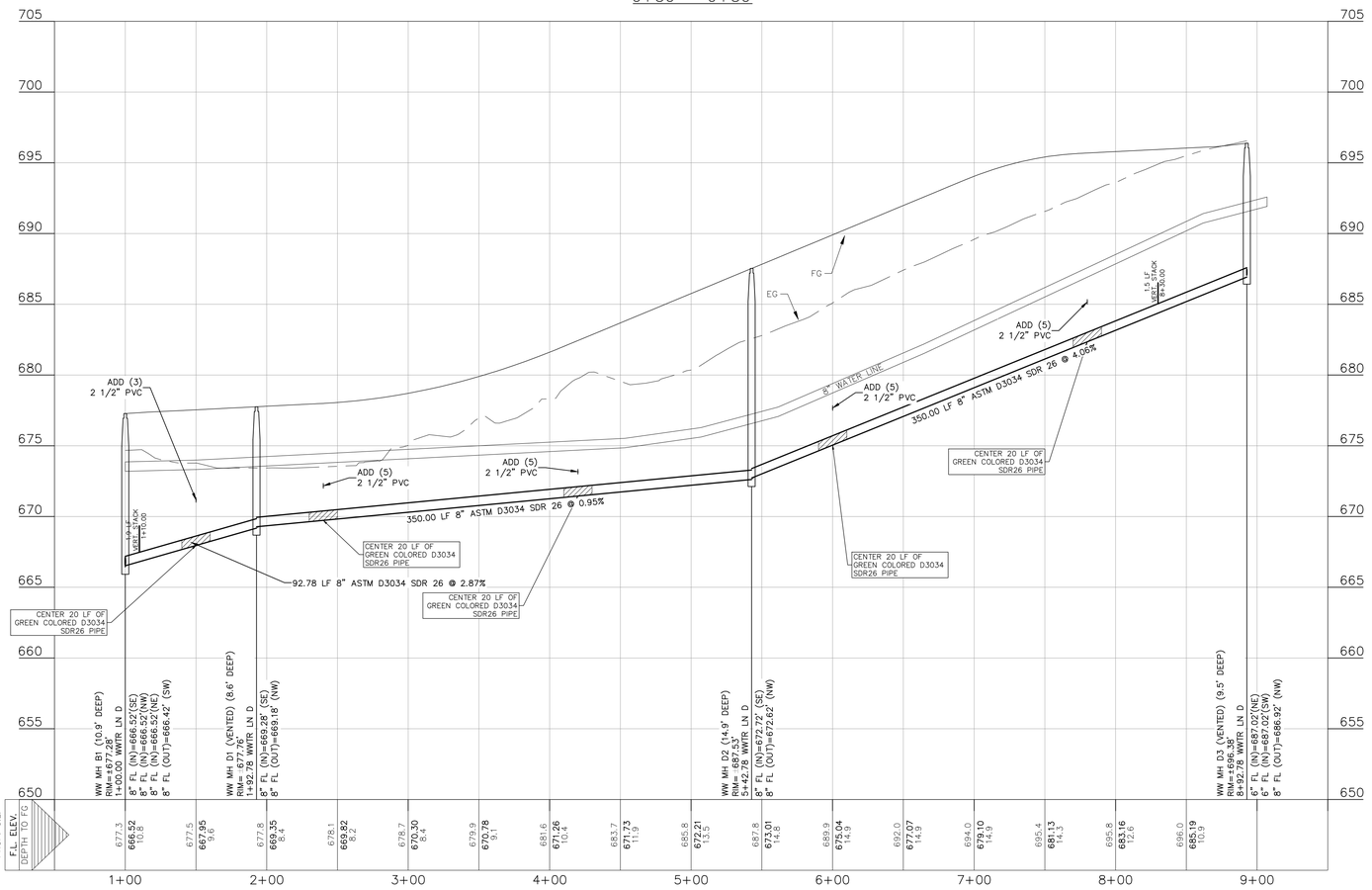

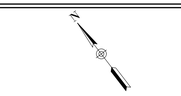

LEGEND

- EXISTING CONTOURS
- EXISTING CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER LINE
- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING
- PROPOSED STREET LIGHT
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- PROPOSED PEDISTOOL

UTILITY NOTES:

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7. REFER TO ALL GBRA NOTES ON SHEET C0.2.

UTILITY TRENCH COMPACTION

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WASTEWATER LINE D PLAN & PROFILE

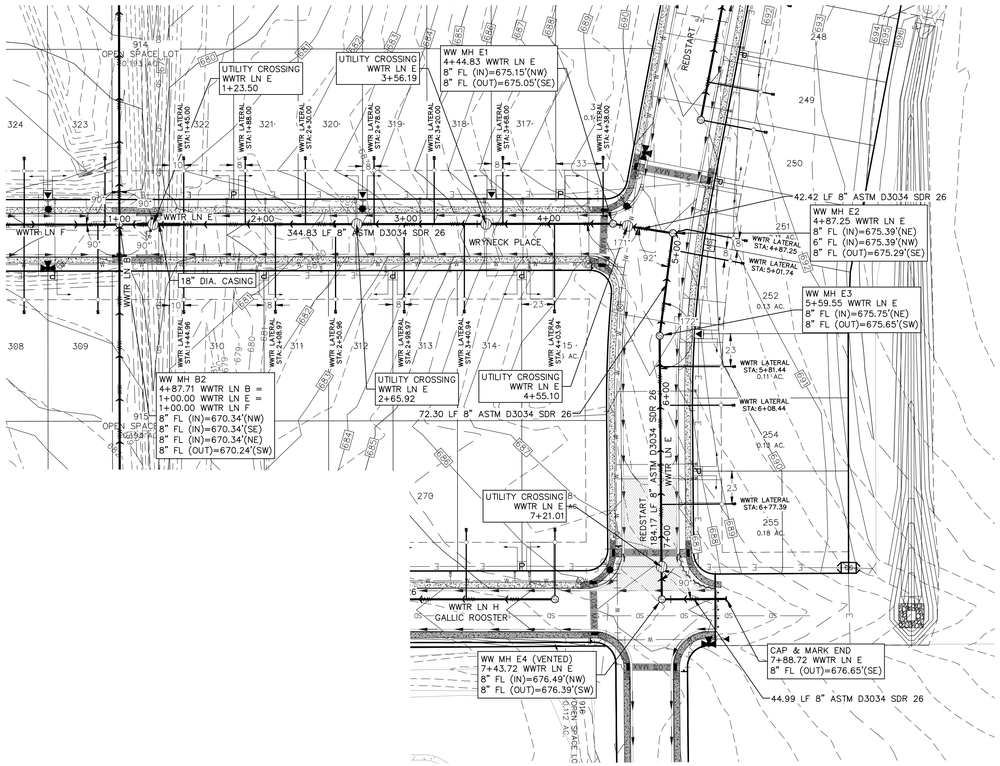
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.05

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\Civil\337.070_WWTR LN D.dwg User: roberb Nov 13, 2024 – 11:32am



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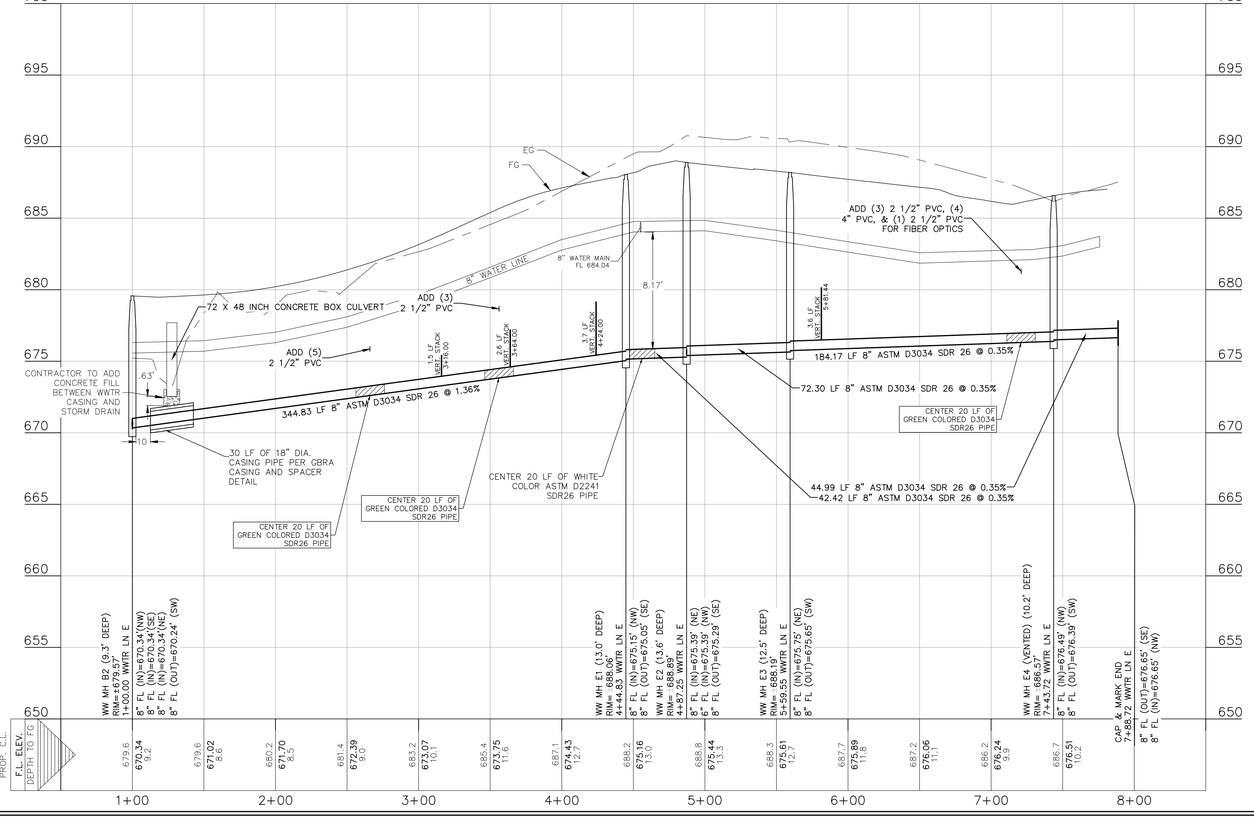

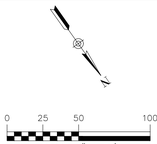

LEGEND

- EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
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3. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
4. ALL SEWER PIPE ATSM D3034(TYPICAL OF OTHER SHEETS) (115 PSI) SDR 26 UNLESS CALLED OUT OTHERWISE.
5. REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.
6. AT WATER CROSSINGS INCLUDING FIRE HYDRANT LEADS, WHITE COLOR GASKETED ASTM D2241 SDR 26 PIPE AND FITTINGS SHALL BE USED FOR MAINS AND LATERALS.
7. REFER TO ALL GBRA NOTES ON SHEET C0.02.

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.

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THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOIN ON EACH END. THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

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HMT
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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER LINE E PLAN & PROFILE

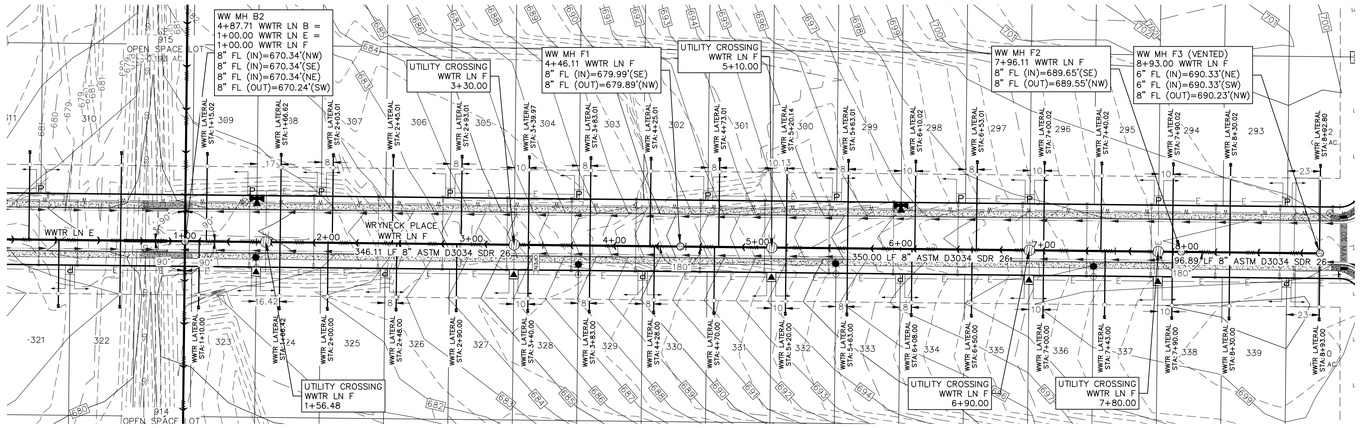
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

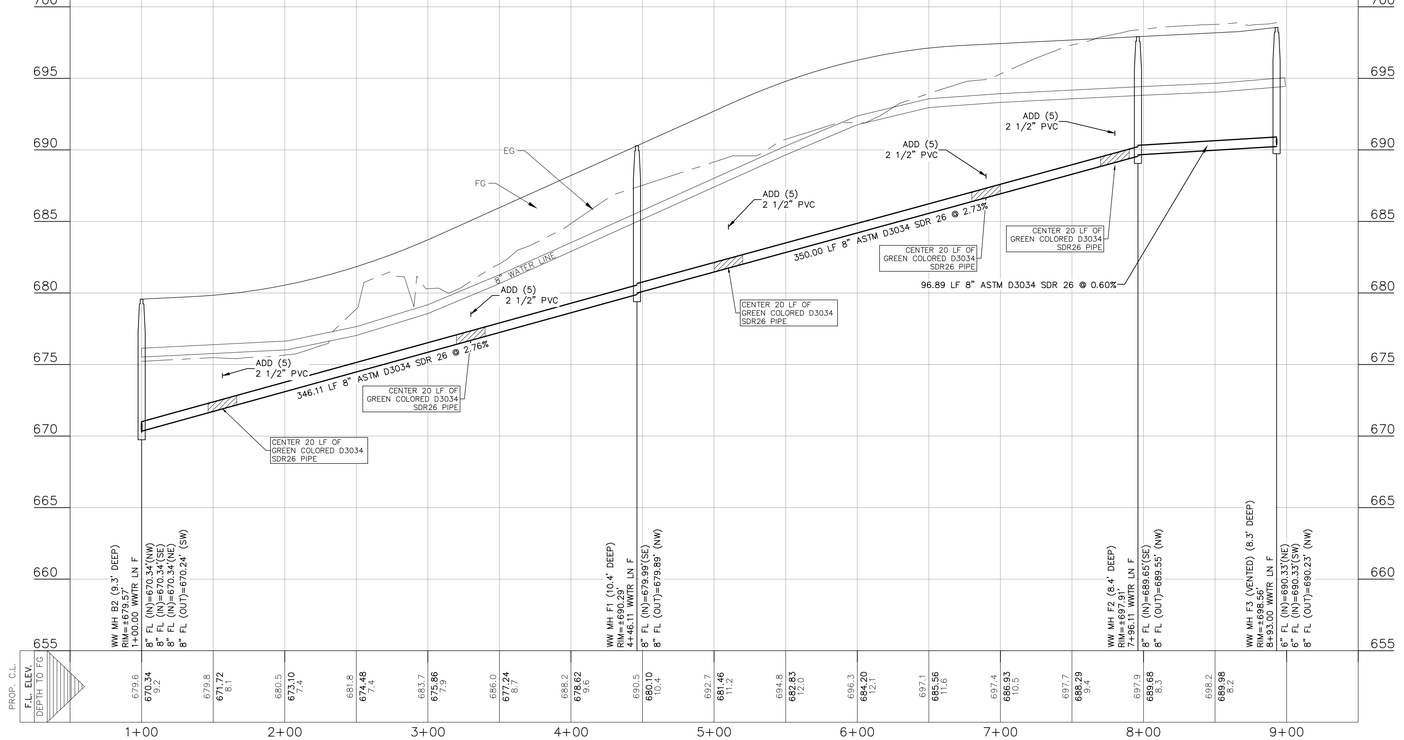
NO.	REVISION DESCRIPTION	REVISION DATE

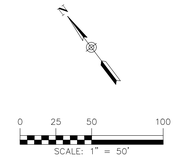
DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET
C7.06

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_WWTR LN E.dwg User: robertb Nov 13, 2024 - 11:32am







LEGEND

- EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
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- PROPOSED WASTEWATER SERVICE
- UTILITY CROSSING
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STATE OF TEXAS
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11/8/2024

WASTEWATER LINE F PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C7.07

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0s\337.070_WWTR LN F.dwg User: robertb Nov 13, 2024 - 11:33am

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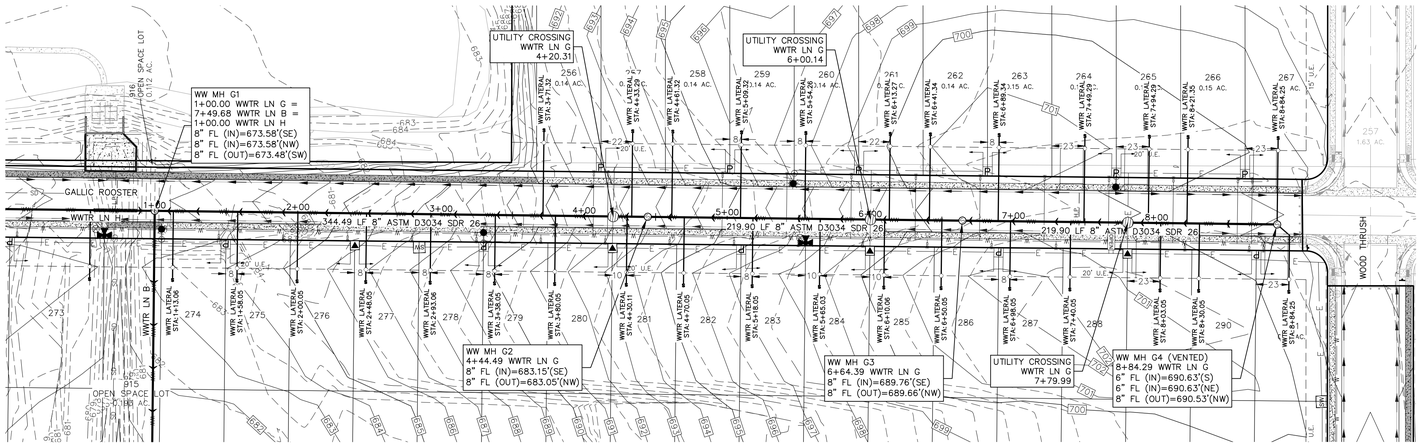
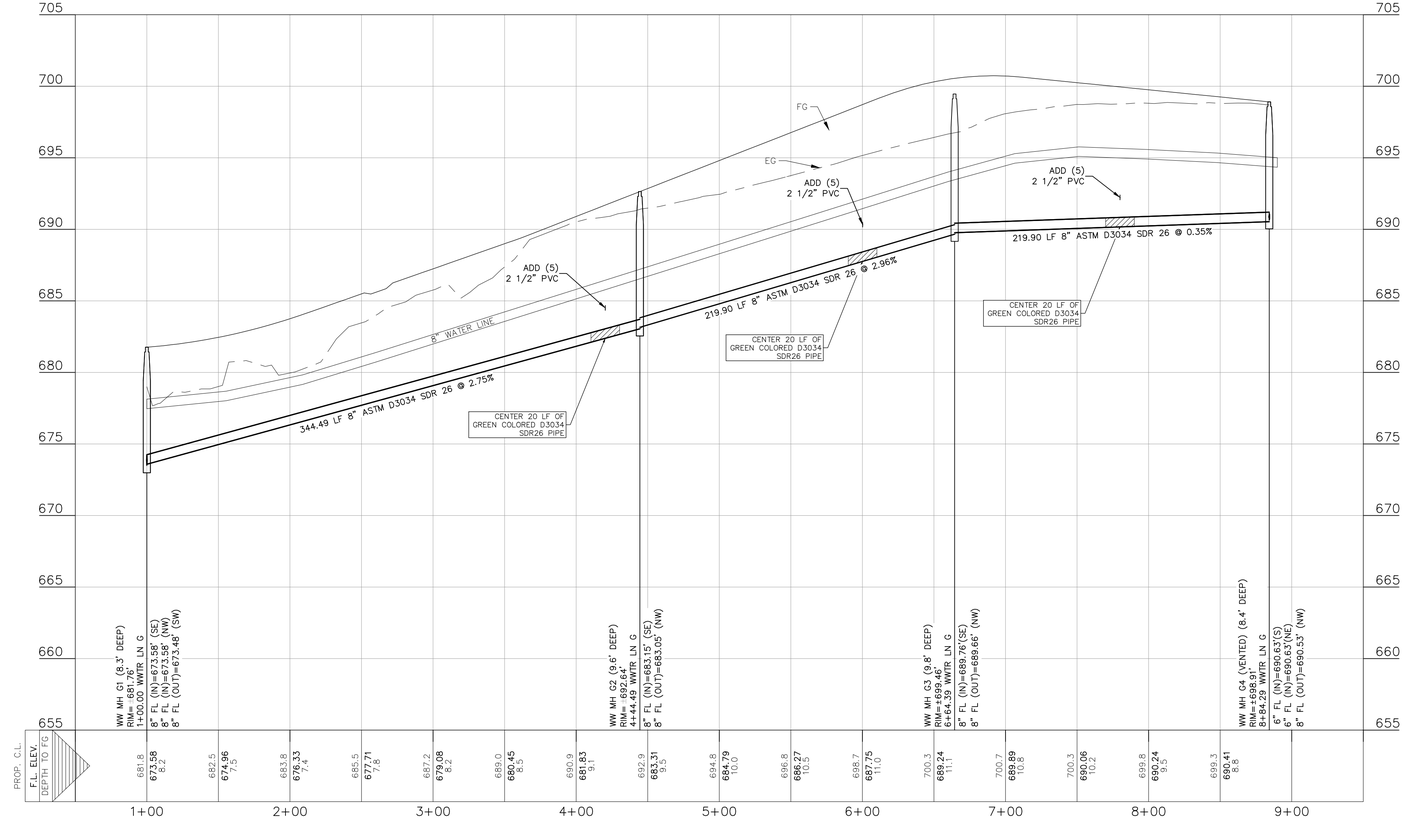
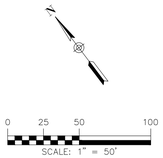


WWTR LN G
0+50 - 9+50





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
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STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER LINE G
PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C7.08

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0s\337.070_WWTR LN G.dwg User: roberth Nov 13, 2024 - 11:34am

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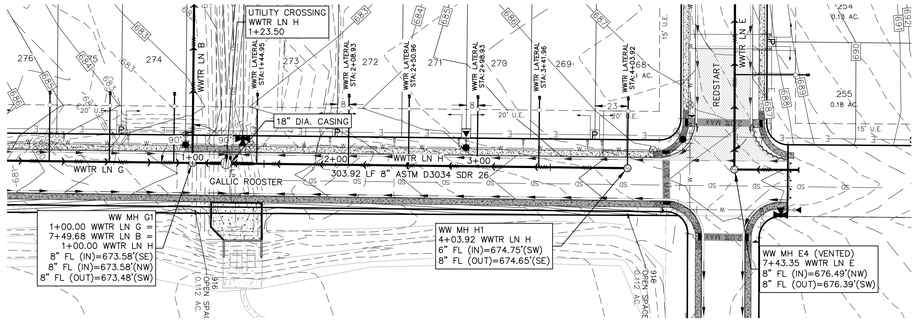

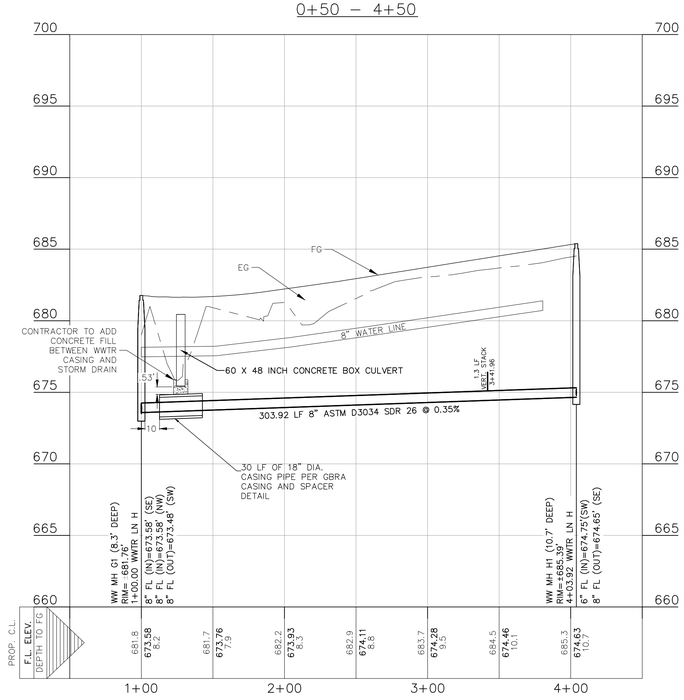

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WASTEWATER LINE H PLAN & PROFILE

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

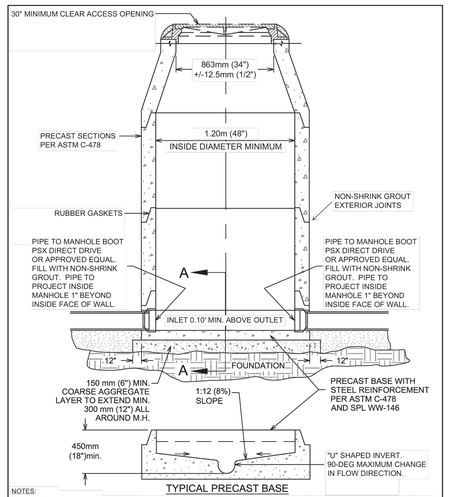
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C7.09

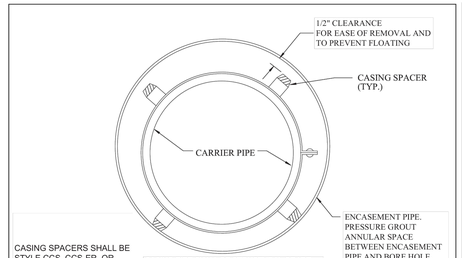
Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cds\337.070_WWTR LN H.dwg User: roberth Nov 13, 2024 - 11:34am



TYPICAL PRECAST BASE

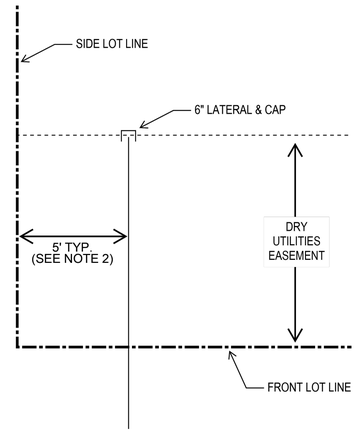
NOTES:
1. MANHOLE BASE SHALL BE BEDDED ON A 6" MINIMUM LAYER OF TXDOT GRADE 4 CRUSHED STONE COARSE AGGREGATE. BASE SHALL BE LEVEL/PLUMB PRIOR TO INSTALLING RISER SECTIONS.
2. SAND BLAST AND LINE ALL INTERIOR SURFACES OF ALL MANHOLES (INCLUDING INVERTS) WITH SEWPERCOAT, REFRATTA HAC 100, OR APPROVED EQUAL 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



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.

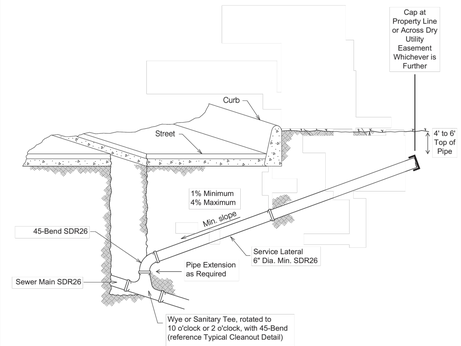
Guadalupe-Blanco River Authority	**CASING AND SPACERS DETAIL**	STANDARD NO.
C. LEWIS JAN. 28, 2018	THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	



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.

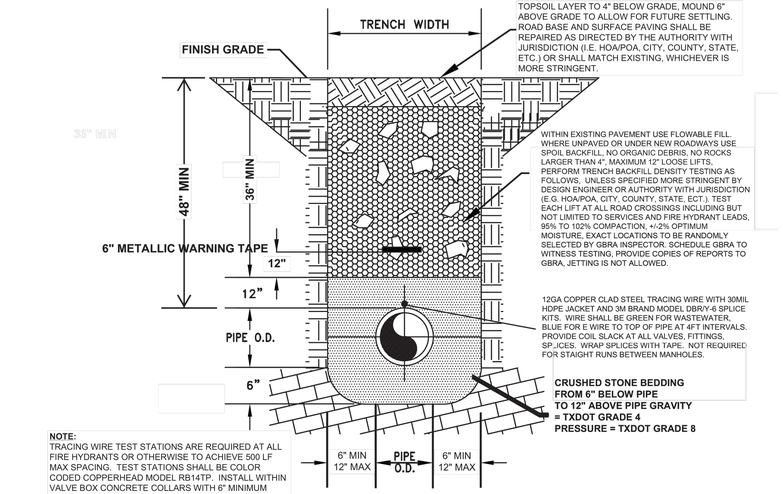
WASTEWATER LATERAL LAYOUT DETAIL (N.T.S.)
GUADALUPE-BLANCO RIVER AUTHORITY, 12/15/2021

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.



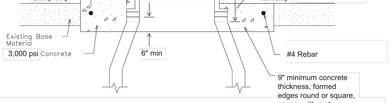
NOTES:
1) Install double services where indicated on design drawings.
2) Cleanout to be installed by customer plumber.
3) Pipe and fittings shall be gasketed. Tees and 90-bends are not allowed.
4) Pressure rated pipe and fittings shall be installed for sewer mains and laterals that cross water lines (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



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.

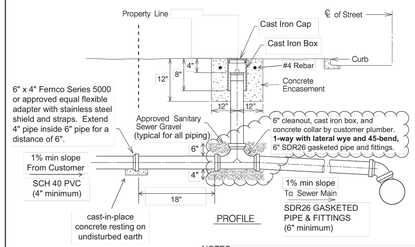
TYPICAL PIPE TRENCH
Guadalupe-Blanco River Authority, 02/05/2018



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

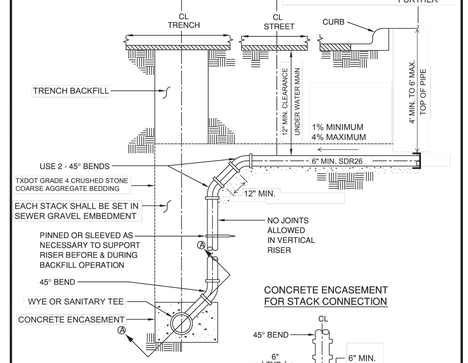
PLAN



PROFILE

NOTES:
1) Cleanouts are not allowed within driveways.
2) Tapping saddles are not allowed.
3) Cleanout risers shall be installed plumb/level. Top of concrete shall be 2" above finish grade. Vertical and horizontal edges of exposed concrete shall be formed with 3/4" chamfer strips.
4) Customer plumber must install a separate 2-way cleanout (4" minimum size) at customer facility.
5) Use TXDOT Grade 4 crushed stone coarse aggregate bedding for all piping, 4" minimum below pipe, 6" minimum above pipe.
6) Obtain GBRA inspection prior to backfill (830-379-5822). Minimum 48-hours notice is required.

Guadalupe-Blanco River Authority	TYPICAL CLEANOUT DETAIL	APPROVED C. LEWIS	REVISED JAN. 28, 2018 SHEET



SECTION A - A

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 UPDATED: JAN. 28, 2018	STANDARD DRAWING: SCALE: SHEET:	**WASTEWATER LATERAL VERTICAL STACK DETAIL** DRAWING NO.

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WASTEWATER DETAILS

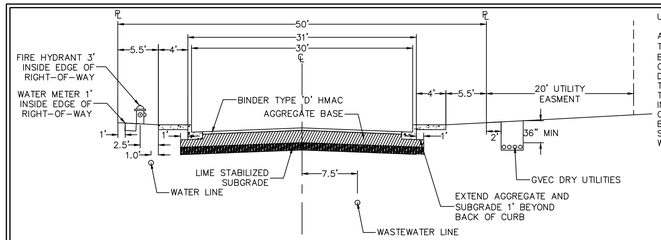
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C7.10

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\C0a\337.070_MATR-WWTR DETAILS.dwg User: roberth Nov 13, 2024 - 11:35am



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 FRO APPROVAL TO CITY PRIOR TO UTILITY INSTALLATION.

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.

0 25 50 100
SCALE: 1" = 50'

LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER LINE
- PROPOSED MANHOLE
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED STREET LIGHT
- PROPOSED TRANSFORMER

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

GVSUD(Water)	830-914-2331
Time Warner Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Lines	888-876-5786
AT&T Telephone	830-303-1333
GVEC(Electric)	830-223-4832
Guadalupe-Blanco River Authority(Sewer)	830-379-5822
Texas One Call	830-545-6005

C.P.E. LOCATOR

CALL CENTER POINT ENERGY LOCATOR AT 1-800-545-6005, 48HRS BEFORE BEGINNING ANY EXCAVATION. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192.181, 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

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

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL UTILITY PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C8.01

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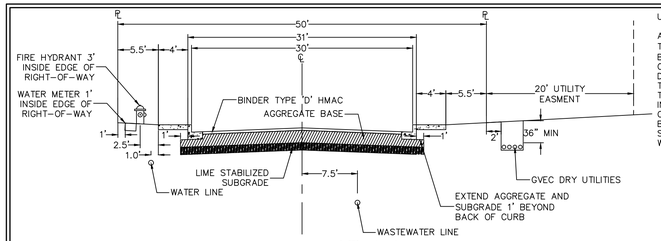

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0 25 50 100
SCALE: 1" = 50'

LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- ww — EXISTING WASTEWATER LINE
- ww — PROPOSED WASTEWATER LINE
- PROPOSED MANHOLE
- W — EXISTING WATER LINE
- W — PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED STREET LIGHT
- PROPOSED TRANSFORMER

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Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
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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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REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
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HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

DRY UTILITY PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C8.02

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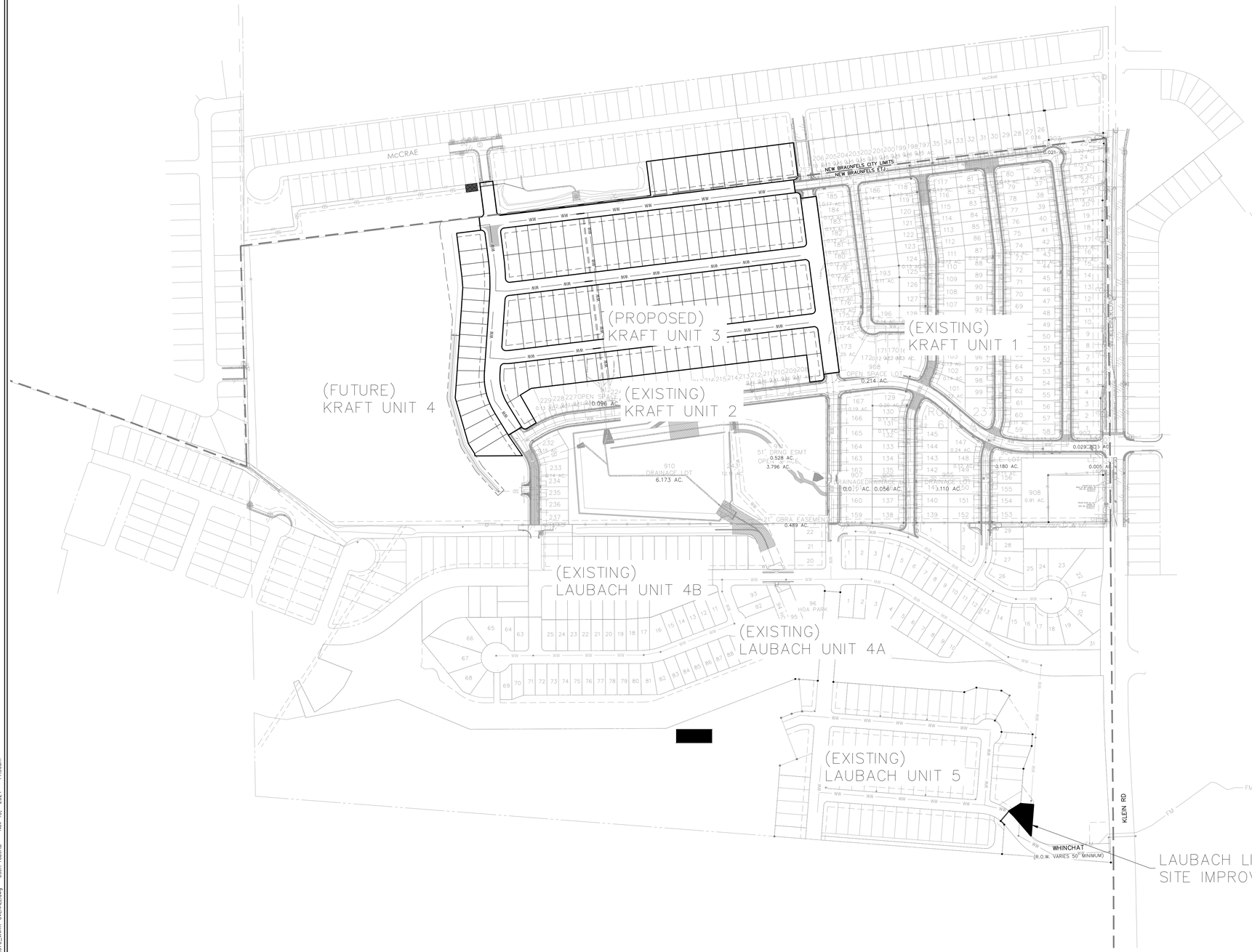

LEGEND

- EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER LINE
- UTILITY CROSSING
- PROPOSED STREET LIGHT
- PROPOSED TRANSFORMER
- PROPOSED PEDISTOOL

N

0 100 200 400

SCALE: 1" = 200'

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

OVERALL LIFT STATION PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

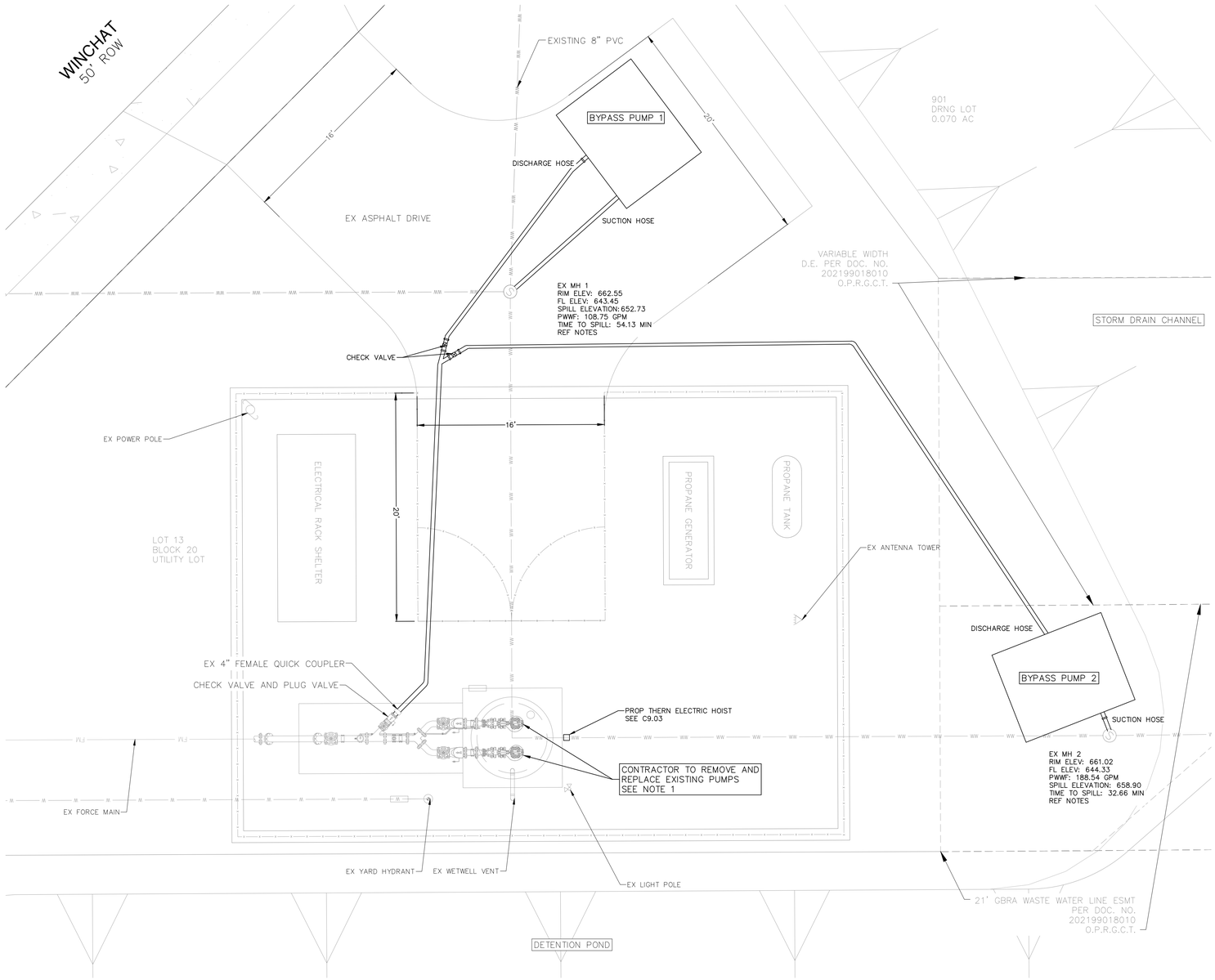
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C9.01

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\CDs\Lift Station\337.070_WWTR-OVERALL.dwg User: robertb Nov 13, 2024 - 11:36am



0 2.5 5

SCALE: 1" = 5'

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- EXISTING WATER LINE
- PROPOSED WATER LINE
- PROPOSED WATER SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER FITTING
- UTILITY CROSSING
- EXISTING SEWER LINE
- PROPOSED SEWER LINE
- PROPOSED SEWER SERVICE
- PROPOSED SEWER MANHOLE
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED SWITCHGEAR
- PROPOSED TRANSFORMER
- PROPOSED PEDESTAL
- PROPOSED STREETLIGHT
- EXISTING POWER POLE

NOTES:

1. POSITION OF BYPASS PUMP AND PIPING SHALL BE TO THE DISCRETION OF THE CONTRACTOR. CONTRACTOR TO SUBMIT BYPASS PUMPING PLAN TO ENGINEER AND GBRA FOR REVIEW AND APPROVAL. PUMPS SHALL OPERATE SEPERATELY BASED ON THE WATER SURFACE ELEVATION ON EACH MANHOLE. CONTRACTOR SHALL HAVE 2 SPARE PUMPS ONSITE INCASE OF PUMP OUTAGE
2. THE CONTRACTOR SHALL PROVIDE A BYPASS PUMPING PLAN FOR GBRA AND ENGINEER FOR REVIEW, COMMENT, AND APPROVAL. GBRA AND ENGINEER MAY REQUIRE MINIMUM CAPACITY REQUIREMENTS FOR BYPASS PUMPING SYSTEMS, HOWEVER THE USE OF THIS INFORMATION IS AT THE SOLE RISK OF THE CONTRACTOR. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY BYPASS PUMPING, PLUGS, AND ASSOCIATED APPURTENANCES INCLUDING 24-HOUR ONSITE PUMP WATCH PERSONNEL TO ENSURE THAT NO OVERFLOWS OR SPILLS OCCUR. CONTRACTOR MAY SUBMIT PLAN TO ENGINEER/GBRA DETAILING REMOTE MONITORING SYSTEM IN LIEU OF 24-HOUR ONSITE PUMP WATCH. APPROVAL OF REMOTE MONITORING WILL BE CONTINGENT ON REACTION TIME AND PERSONNEL DISTANCE FROM SITE. PUMPING SYSTEMS MUST BE RATED FOR PEAK FLOW WITH THE LARGEST PUMP OUT OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CLEANUP AND REPORTING EFFORTS DUE TO FAILURE OF EQUIPMENT OR ACTIVITIES ASSOCIATED WITH THE BYPASS PUMPING OPERATIONS CONTRIBUTING TO EITHER A SURCHARGE OR SANITARY SEWER OVERFLOW (SSO). THE COST OF ANY RELATED FINES, PENALTIES, OR DAMAGES AND THE COST OF ANY EFFORT BY GBRA OR OTHER THIRD PARTIES TO MITIGATE DAMAGES RESULTING FROM ANY SURCHARGING OR SSOS SHALL BE THE DIRECT AND SOLE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR TO CONSULT ENGINEER ON BYPASS PUMP SIZING. SYSTEM CURVES WILL BE PROVIDED BY ENGINEER UPON REQUEST.
3. CONTRACTOR TO COORDINATE WITH GBRA ON DISPOSAL OF EXISTING PUMPS
4. REFERENCE REPORT TITLED "KRAFT SUBDIVISION UNIT 3 – LAUBACH LIFT STATION UPGRADES ENGINEERING DESIGN REPORT", DATED APRIL 2024, FOR INFORMATION REGARDING TIME TO SPILL CALCULATIONS
5. CONTRACTOR SHALL COORDINATE WITH GBRA INSPECTOR TO ADD SUFFICIENT PROTECTION AGAINST STORM RUNNOFF AND FALLING HAZARDS

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
TBPELS FIRM F-10961
TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

LIFT STATION SITE PLAN AND BYPASS PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

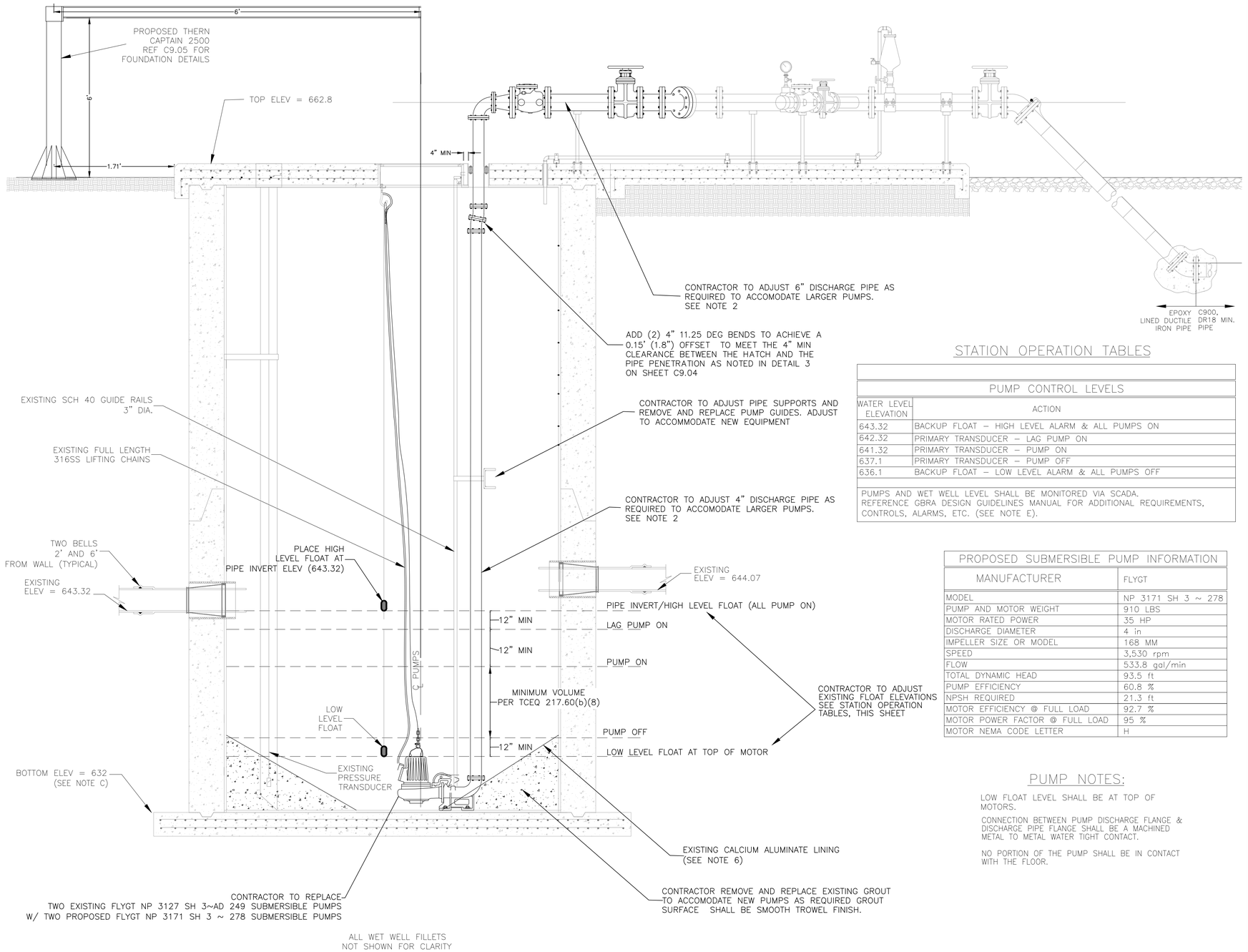
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

SHEET

C9.02

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\Lift Station\337.070_LIFT STATION UPGRADES.dwg User: robertb Nov 13, 2024 - 11:36am



STATION OPERATION TABLES

PUMP CONTROL LEVELS	
WATER LEVEL ELEVATION	ACTION
643.32	BACKUP FLOAT – HIGH LEVEL ALARM & ALL PUMPS ON
642.32	PRIMARY TRANSDUCER – LAG PUMP ON
641.32	PRIMARY TRANSDUCER – PUMP ON
637.1	PRIMARY TRANSDUCER – PUMP OFF
636.1	BACKUP FLOAT – LOW LEVEL ALARM & ALL PUMPS OFF
PUMPS AND WET WELL LEVEL SHALL BE MONITORED VIA SCADA. REFERENCE GBRA DESIGN GUIDELINES MANUAL FOR ADDITIONAL REQUIREMENTS, CONTROLS, ALARMS, ETC. (SEE NOTE E).	

PROPOSED SUBMERSIBLE PUMP INFORMATION	
MANUFACTURER	FLYGT
MODEL	NP 3171 SH 3 ~ 278
PUMP AND MOTOR WEIGHT	910 LBS
MOTOR RATED POWER	35 HP
DISCHARGE DIAMETER	4 in
IMPELLER SIZE OR MODEL	168 MM
SPEED	3,530 rpm
FLOW	533.8 gal/min
TOTAL DYNAMIC HEAD	93.5 ft
PUMP EFFICIENCY	60.8 %
NPSH REQUIRED	21.3 ft
MOTOR EFFICIENCY @ FULL LOAD	92.7 %
MOTOR POWER FACTOR @ FULL LOAD	95 %
MOTOR NEMA CODE LETTER	H

PUMP NOTES:

LOW FLOAT LEVEL SHALL BE AT TOP OF MOTORS.

CONNECTION BETWEEN PUMP DISCHARGE FLANGE & DISCHARGE PIPE FLANGE SHALL BE A MACHINED METAL TO METAL WATER TIGHT CONTACT.

NO PORTION OF THE PUMP SHALL BE IN CONTACT WITH THE FLOOR.

STATIONARY CRANE NOTES:

1. CONTRACTOR TO COORDINATE WITH GBRA ON DISPOSAL OF EXISTING CRANE
2. PROPOSED CRANE SHALL BE AN ELECTRIC MOTOR THERN CAPTAIN 2500 OR EQUIVELANT WITH EPOXY FINISH, 316SS HARDWARE AND FASTENERS, 316SS WIRE ROPE AND CHAIN GRIP EYE. SEE APPROVED ASSEMBLY BELOW:
   a. CRANE ITEM NO. 5FT25X–M2X
   b. ELECTRIC WINCH ITEM NO. ED400–DW09
   c. WIRE ROPE ASSEMBLY ITEM NO. WSS19–36NS

NOTES:

1. CONTRACTOR SHALL REPLACE EXISTING PUMPS
2. ALL PUMP DISCHARGE PIPE AND FITTINGS WITHIN WET WELL SHALL BE FLANGED AND SHALL RECEIVE AFTER INSTALLATION A COAL TAR EPOXY COATING SYSTEM IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
3. ALL PUMP DISCHARGE PIPE, VALVES AND FITTINGS OUTSIDE THE WET WELL, EXCEPT 316SS AND PVC, SHALL RECEIVE AFTER INSTALLATION A WHITE COLOR HIGH BUILD EPOXY COATING SYSTEM WITH A GREY PANTONE #431–U COLOR TOP COAT OF POLYURETHANE IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.
4. ALL FASTENERS AND ANCHOR BOLTS SHALL BE 316SS WITH FIELD APPLIED NICKEL ANTI–SEIZE COMPOUND. ANCHOR BOLTS INSIDE WET WELL SHALL BE EPOXY TYPE. DO NOT PAINT NUTS AND BOLTS.
5. CONTRACTOR TO VERIFY THE SIZE AND LOCATION OF THE WET WELL HATCHES ACCORDING TO THE SELECTED PUMP AND HATCH MANUFACTURERS' REQUIREMENTS (37'X58' MIN.).
6. IF DEMO OF GROUT IS REQUIRED TO PLACE PUMP, SAND BLAST AND LINE INTERIOR OF WET WELL WITH SEWPERCOAT, REFRATTA HAC 100, OR APPROVED EQUAL MINIMUM 1" THICKNESS. SMOOTH TROWEL FINISH. SPRAY CURING COMPOUND.
7. CONTRACTOR SHALL CONFIRM THE SIZE AND LOCATION OF WET WELL HATCHES PER SELECTED PUMP, MIXER, AND VALVE MANUFACTURERS' REQUIREMENTS, PROVIDE 4" MIN CLEARANCE IN ALL DIRECTIONS FROM PUMPS AND MIXERS TO HATCH CLEAR OPENING. PRIOR TO ORDERING HATCHES AND PIPING CONTRACTOR SHALL SUBMIT DIMENSIONED LAYOUT, DRAWINGS OF WET WELL TOP SLAB AND VALVE PAD, INCLUDING PIPE/VALVE LAY LENGTHS AND CONDUIT ROUTING, DEMONSTRATING ALL REQUIRED CLEARANCES BETWEEN PUMPS, MIXERS, PIPING, VALVES, HATCHES, TOP SLAB PENETRATIONS, ETC.
8. THE PUMP MOTOR SHALL BE PREMIUM EFFICIENCY RATED WITH A 1.15 SERVICE FACTOR.

SUBMERSIBLE LIFT STATION CONFIGURATION PROFILE VIEW

REVISION JAN 2018

OPERATIONS & MAINTENANCE ENGINEERING

PROPERTY OF
GUADALUPE–BLANCO RIVER AUTHORITY
SEGUIN, TEXAS

LS–02

290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
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HMT ENGINEERING & SURVEYING

STATE OF TEXAS
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11/8/2024

LIFT STATION EXISTING WETWELL

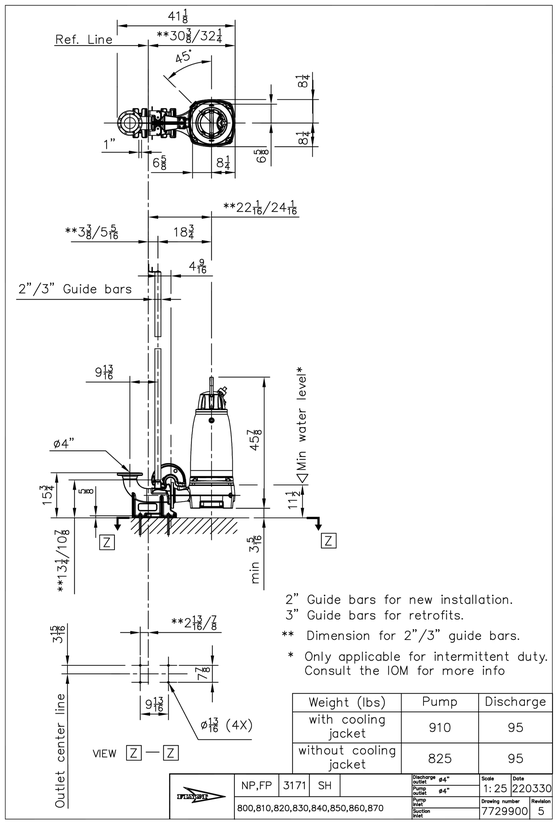
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C9.03

Drawing Name: N:_Projects\337 – Lennar\070 – Kraft Unit 3\CIVIL\Lift Station\337.070_LIFT STATION UPGRADES.dwg User: robertb Nov 13, 2024 – 11:36am



Weight (lbs)	Pump	Discharge
with cooling jacket	910	95
without cooling jacket	825	95

FLYGT a xylem brand	NP,FP	3171	SH		Discharge #4" Suction #6"	Scale 1:25	Date 220330
	800,810,820,830,840,850,860,870				Pump start Duration start	Drawing number 7729900	Revision 5

FLYGT a xylem brand

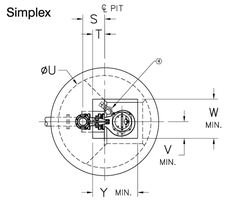
Issued: 11/11 Supersedes: 2/09

FP/NP-3171

NOTES:

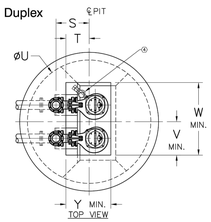
1. CONFIGURATION AND DIMS. SHOWN ARE SUGGESTED REQUIREMENTS ONLY. ALL DETAILS, INCLUDING SIZING OF PIT, TYPE, LOCATION AND ARRANGEMENT OF VALVES AND PIPING, ETC. ARE TO BE SPECIFIED BY THE CONSULTING ENGINEER AND ARE SUBJECT TO THEIR APPROVAL.
2. REFERENCE GENERIC DUPLEX LIFT STATION LAYOUT FOR ELEVATION VIEW.
3. LOCATE ANCHOR BOLTS USING INSIDE EDGE OF CLEAR OPENING AND PUMP CENTERLINE AS REFERENCE POINT. BOLT LOCATIONS MUST BE HELD TO MAINTAIN EXACT POSITION OF PUMP TO CLEAR OPENING.
4. FLYGT MIX–FLUSH VALVE.

Simplex

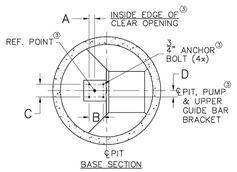


TOP VIEW

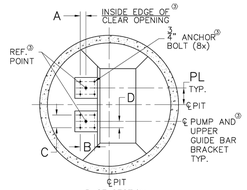
Duplex



TOP VIEW



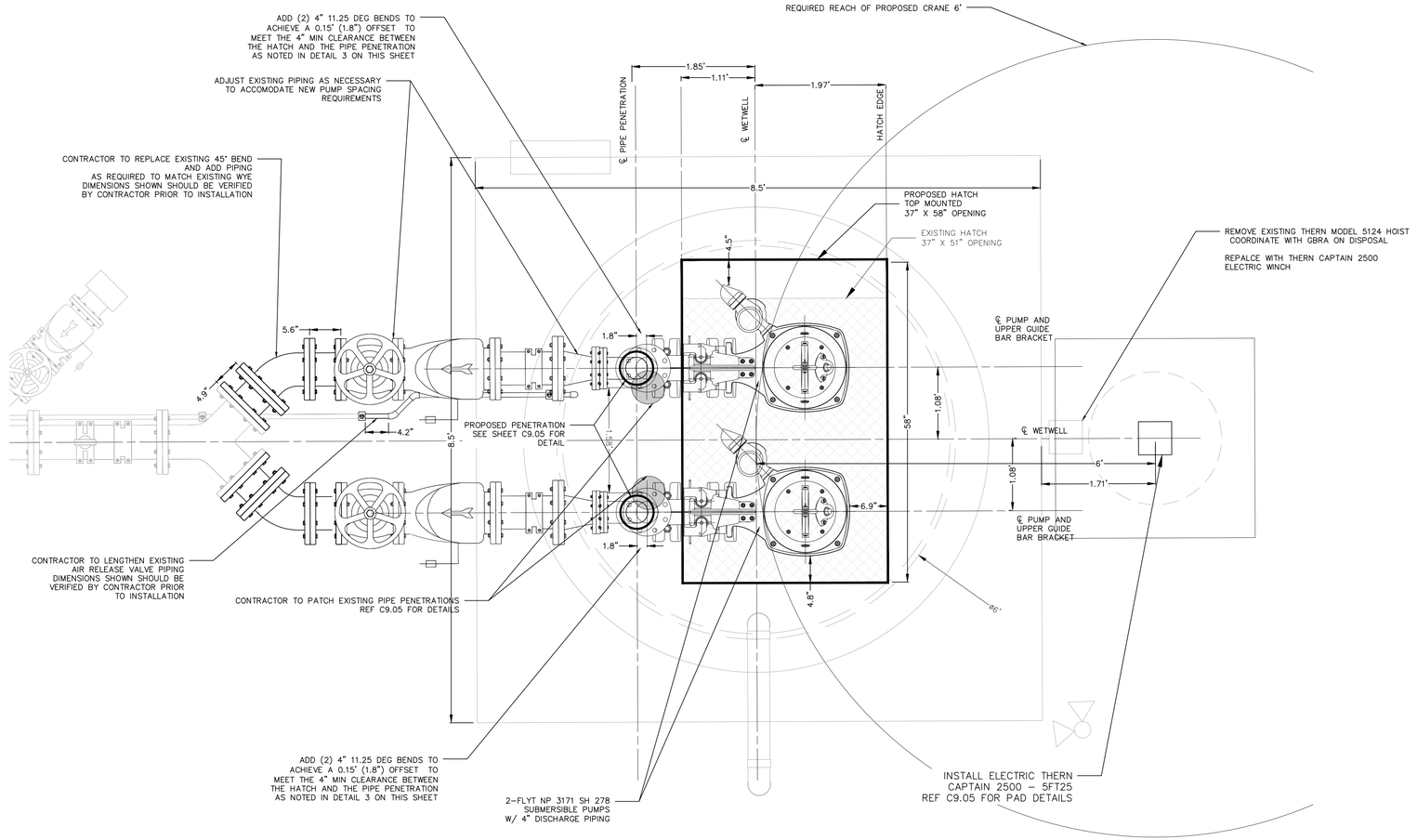
BASE SECTION



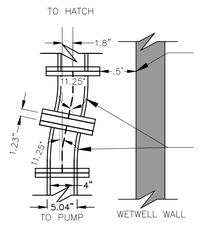
BASE SECTION

ALL DIMENSIONS ARE IN INCHES

MODEL	NOM. SIZE	VERSION	GUIDE BAR SIZE	A	B	C	D	SIMPLEX S	T	U	V	W	Y	DUPLEX S	T	U	PL	V	W	Y
NP	4"	SH	2"	23	9½	8	4	19⅞	13½	72	9½	27¾	32	22½	15⅞	84	13	22½	53½	32
NP	4"	SH	3"	23	9½	8	4	19⅞	15½	72	9½	27¾	34	22½	17⅞	84	13	22½	53½	34
FP/NP	4"	HT	2"	23	9½	8	4	19⅞	13½	72	12	29¾	33	22½	15⅞	84	13	25	55½	33
FP/NP	4"	HT	3"	23	9½	8	4	19⅞	15½	72	12	29¾	35	22½	17⅞	84	13	25	55½	35
FP/NP	6"	MT	2"	28	11	10	5	17	9⅞	72	13	30¾	35	25⅞	18⅛	96	13	26	56½	35
FP/NP	6"	MT	3"	28	11	10	5	17	11⅛	72	13	30¾	37	25⅞	20⅛	96	13	26	56½	37
NP	10"	LT	2"	16⅛	19⅞	10	5	23⅞	13	96	17⅞	37	43	28⅛	17⅞	120	22	39½	81	43
NP	10"	LT	3"	16⅛	19⅞	10	5	23⅞	14⅞	96	17⅞	37	45	28⅛	19⅛	120	22	39½	81	45



SCALE
1"=1'



1.8"± OFFSET DETAIL

SCALE
1"=1'

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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TBPELS FIRM 10153600

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

WETWELL PLAN VIEW

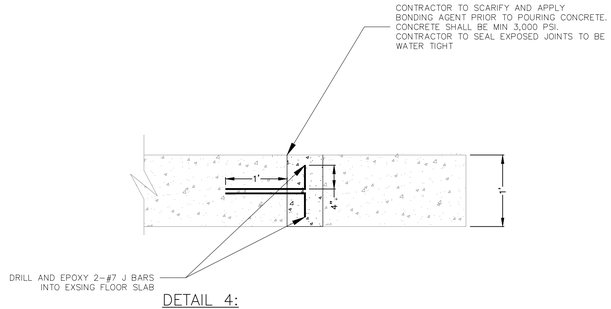
KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	September 2024
DRAWN BY:	KWP
DESIGNED BY:	RDB
REVIEWED BY:	CVH
HMT PROJECT NO.:	337.070

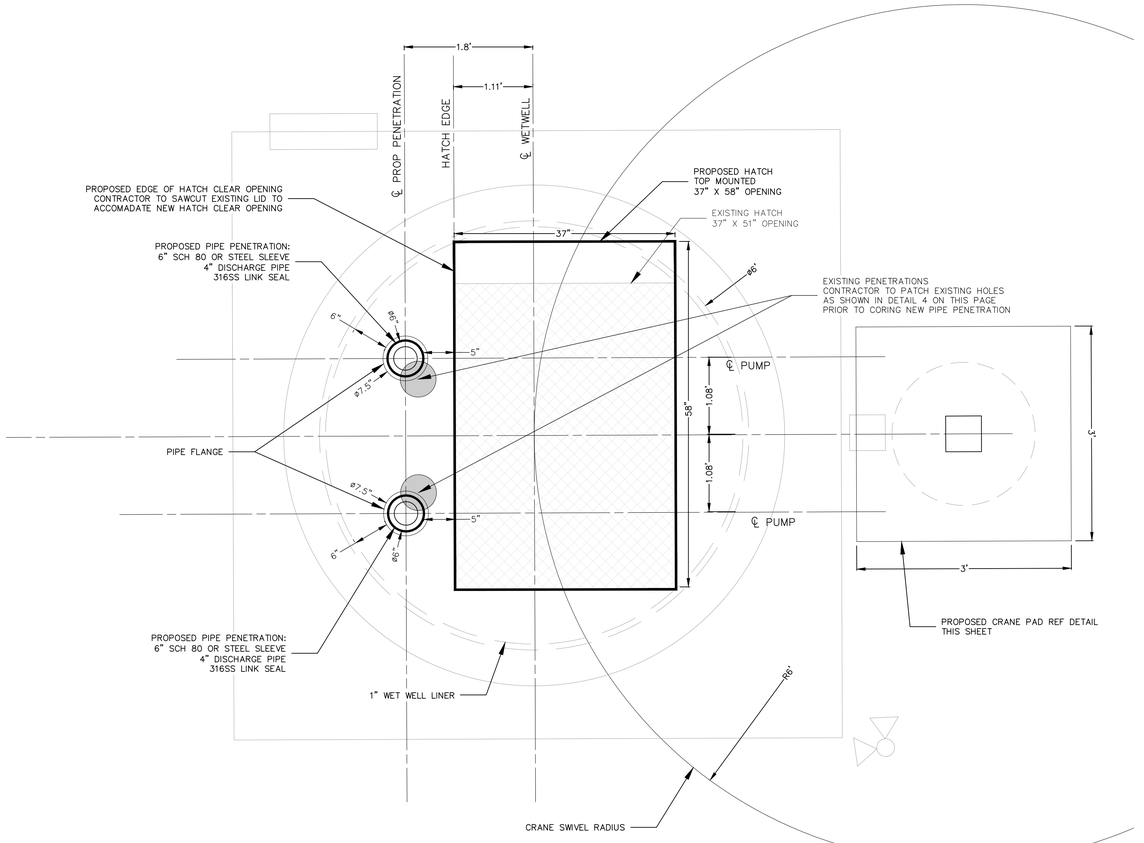
SHEET
C9.04

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Civil\Lift Station\337.070_LIFT STATION UPGRADES.dwg User: robertb Nov 13, 2024 - 11:37am



DETAIL 4:
PATCHING OF EXISTING PIPE PENETRATIONS

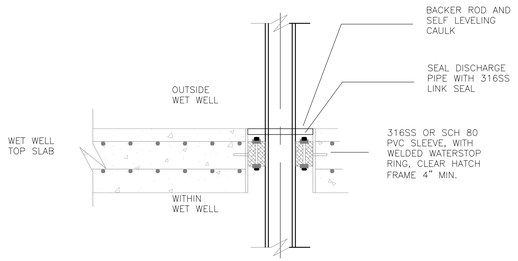
NOTE: CONTRACTOR MAY CHOOSE TO SUBMIT ALTERNATE PLAN FOR THE PATCHING OF EXISTING PIPE PENETRATIONS FOR REVIEW/APPROVAL BY THE ENGINEER AND GBRA.



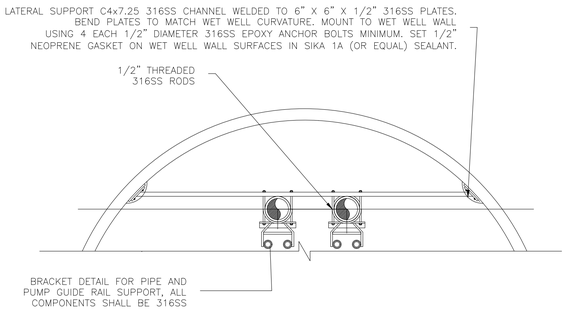
WET WELL PENETRATIONS
AND HATCH DETAIL

SCALE

1"=1'



DETAIL 3:
TYPICAL PIPE PENETRATION DETAIL



NOTE: ALL MATERIAL SHALL BE 316SS, ALL NUTS SHALL BE LOCK NUTS, INSTALL FLAT WASHERS FOR ALL BOLTS AND NUTS

WET WELL PIPING SUPPORT DETAIL

REFER TO THE COVER SHEET
FOR BENCHMARK INFORMATION.

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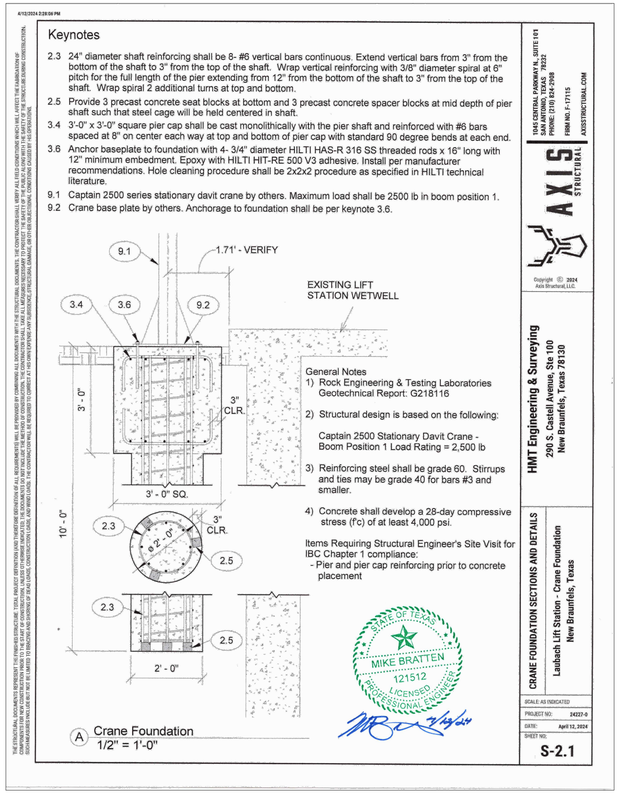

Keynotes

2.3 24" diameter shaft reinforcing shall be 8- #6 vertical bars continuous. Extend vertical bars from 3" from the bottom of the shaft to 3" from the top of the shaft. Wrap vertical reinforcing with 3/8" diameter spiral at 6" pitch for the full length of the pier extending from 12" from the bottom of the shaft to 3" from the top of the shaft. Wrap spiral 2 additional turns at top and bottom.

2.5 Provide 3 precast concrete seat blocks at bottom and 3 precast concrete spacer blocks at mid depth of pier shaft such that steel cage will be held centered in shaft.

3.4 3'-0" x 3'-0" square pier cap shall be cast monolithically with the pier shaft and reinforced with #6 bars spaced at 8" on center each way at top and bottom of pier cap with standard 90 degree bends at each end.

3.6 Anchor baseplate to foundation with 4- 3/4" diameter HILTI HAS-R 316 SS threaded rods x 16" long with 12" minimum embedment. Epoxy with HILTI HIT-RE 500 V3 adhesive. Install per manufacturer recommendations. Hole cleaning procedure shall be 2x2x2 procedure as specified in HILTI technical literature.

9.1 Captain 2500 series stationary davit crane by others. Maximum load shall be 2500 lb in boom position 1.

9.2 Crane base plate by others. Anchorage to foundation shall be per keynote 3.6.

9.1
1.71' - VERIFY
EXISTING LIFT STATION WETWELL
3.4
3.6
9.2
3'-0"
3" CLR.
3'-0" SQ.
10'-0"
2.3
3'-0"
3" CLR.
2.5
2.3
2.5
2'-0"

General Notes

1) Rock Engineering & Testing Laboratories Geotechnical Report: G218116

2) Structural design is based on the following:

Captain 2500 Stationary Davit Crane - Boom Position 1 Load Rating = 2,500 lb

3) Reinforcing steel shall be grade 60. Stirrups and ties may be grade 40 for bars #3 and smaller.

4) Concrete shall develop a 28-day compressive stress (f'c) of at least 4,000 psi.

Items Requiring Structural Engineer's Site Visit for IBC Chapter 1 compliance:
- Pier and pier cap reinforcing prior to concrete placement

STATE OF TEXAS
MIKE BRATTEN
121512
LICENSED
PROFESSIONAL ENGINEER
12/9/24

A Crane Foundation
1/2" = 1'-0"

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3345 CENTRAL PARKWAY E., SUITE 101
SAN ANTONIO, TX 78232
PHONE: (210) 824-2908
FIRM NO. F-17115
AXISSTRUCTURAL.COM

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HMT Engineering & Surveying
290 S. Castell Avenue, Ste 100
New Braunfels, Texas 78130

CRANE FOUNDATION SECTIONS AND DETAILS
Laubach Lift Station - Crane Foundation
New Braunfels, Texas

SCALE: AS INDICATED
PROJECT NO: 24222-0
DATE: April 12, 2024
SHEET NO.
S-2.1

290 S. CASTELL AVE., STE. 100
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TBPELS FIRM F-10961
TBPELS FIRM 10153600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
CHRISTOPHER P. VAN HEERDE
93047
LICENSED
PROFESSIONAL ENGINEER

11/8/2024

LIFT STATION DETAILS

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: September 2024
DRAWN BY: KWP
DESIGNED BY: RDB
REVIEWED BY: CVH
HMT PROJECT NO.: 337.070

SHEET
C9.05

Drawing Name: N:_Projects\337 - Lennar\070 - Kraft Unit 3\Cbs\Lift Station\337.070_LIFT STATION UPGRADES.dwg User: roberth Nov 13, 2024 - 11:37am

PLAN LEGEND

	EQUIPMENT CONNECTION
	CONNECT TO EXISTING
J	JUNCTION OR CONNECTION BOX
LC	STARTER OR LIGHTING CONTACTOR
	DISCONNECT SWITCH
MH	MANHOLE
HH	HANDHOLE
#	KEYED NOTE. NUMBER MATCHES NOTE NUMBER
$	TOGGLE SWITCH, WALL MOUNTED, SINGLE POLE SINGLE THROW. MOUNTED 54 IN. AFF. UNLESS OTHERWISE NOTED.
$4	TOGGLE SWITCH, WALL MOUNTED, FOUR WAY. MOUNTED 54 IN. AFF. UNLESS OTHERWISE NOTED.
$M	SWITCH MOTOR RATED WITH TERMINAL OVERLOADS
OS	OCCUPANCY SENSOR
	TERMINAL BOARD
	TELEPHONE OUTLET, PRIVATE. MOUNTED 12 IN. AFF.
	DATA OUTLET, SURFACED MOUNTED
#	MOTOR LOAD, NUMBER INDICATES HORSEPOWER
	POLE
	TRANSFORMER , DRY TYPE, KVA RATING MAY BE DISPLAYED NEXT TO SYMBOL
	ANTENNA
###	HOMERUN, LETTERS INDICATE PANELBOARD, NUMBERS INDICATE CIRCUIT NUMBER IN PANELBOARD
E	CONDUIT CAPPED FOR FUTURE USE
E	CONDUIT GOING DOWN
E	CONDUIT GOING UP
	CONDUIT ABOVE GROUND
E	CONDUIT RUN UNDERGROUND OR CONCEALED
	CONDUIT RUN BELOW CONCRETE
	LIQUID TIGHT FLEXIBLE CONDUIT
	SURFACE MOUNT
	120V RECEPTACLE FLUSH MOUNTED
	120V RECEPTACLE SURFACE MOUNTED
	120V QUAD RECEPTACLE FLUSH MOUNTED
	120V QUAD RECEPTACLE SURFACE MOUNTED
	208V RECEPTACLE FLUSH MOUNTED
	208V RECEPTACLE SURFACE MOUNTED
	WELDING OUTLET
T	THERMOSTAT
	PANELBOARD FLUSH MOUNTED
	PANELBOARD SURFACE MOUNTED
N	NORTH ARROW
TS	TORQUE SWITCH
SV	SOLENOID SWITCH
LS	LIMIT SWITCH
AS	AMMETER SWITCH
VS	VOLTMETER SWITCH
PS	PRESSURE SWITCH
LC	LIGHTING CONTACTOR
PC	PHOTOCELL

ONE-LINE AND CONTROL SCHEMATIC LEGEND

	GROUND CONNECTION
	NORMALLY OPEN RELAY OR CONTACTOR CONTACTS
	NORMALLY CLOSED RELAY OR CONTACTOR CONTACTS
	CONDUCTOR CONNECTION
TEXT	CIRCUIT BREAKER, MOLDED CASE, TRIP CURRENT AND QUANTITY OF POLES (P) SHOWN NEXT TO SYMBOL
TEXT	DISCONNECT SWITCH NON-FUSED, LOAD BREAK. CONTINUOUS CURRENT RATING, QUANTITY OF POLES (P) SHOWN NEXT TO SYMBOL
TEXT	DISCONNECT SWITCHED FUSED, LOAD BREAK. CONTINUOUS CURRENT RATING, QUANTITY OF POLES (P), AND FUSE RATING SHOWN NEXT TO SYMBOL
TEXT	FUSE. RATING SHOWN NEXT TO SYMBOL
	MOTOR STARTER THERMAL OVERLOAD PROTECTOR
CR##	CONTACTOR OR RELAY COIL. LETTERS AND NUMBERS MATCH CONTACTS CONTROLLED
	LIMIT SWITCH NORMALLY CLOSED
	LIMIT SWITCH NORMALLY OPEN
	MOTOR OPERATED VALVE GEARED LIMIT SWITCH
	PRESSURE SWITCH NORMALLY CLOSED OPEN ON INCREASING PRESSURE
	PRESSURE SWITCH NORMALLY OPEN CLOSES ON INCREASING PRESSURE
	LEVEL SWITCH NORMALLY CLOSED OPEN ON INCREASING LEVEL
	LEVEL SWITCH NORMALLY OPEN CLOSES ON INCREASING LEVEL
	FLOW SWITCH NORMALLY CLOSED OPENS WITH FLOW
	FLOW SWITCH NORMALLY OPEN CLOSES ON PRESENCE OF FLOW
	SPACEHEATER
ØF	PHASE FAILURE RELAY
START STOP	MAINTAINED CONTACT START/STOP PUSHBUTTON
OFF HAND AUTO AUTO HAND	MAINTAINED CONTACT HAND-OFF-AUTO SELECTOR SWITCH
	NORMALLY CLOSED MOMENTARY CONTACT PUSHBUTTON
	NORMALLY OPEN MOMENTARY CONTACT PUSHBUTTON

WYE	WYE TRANSFORMER CONNECTION
DELTA	DELTA TRANSFORMER CONNECTION
CT ###:#	CURRENT TRANSFORMER WITH RATIO SHOWN
AIT	ANALYTICAL TRANSMITTER
FS	FLOW OR FLOAT SWITCH
LT	LEVEL TRANSMITTER
PT	PRESSURE TRANSMITTER
SV	SOLENOID VALVE
MOV	MOTOR OPERATED VALVE
ETM	ELAPSED TIME METER
TD 0-10 MIN. TOE	TIME DELAY RELAY. TIMES OUT AFTER ENERGIZATION. ADJUSTABLE TIME DELAY TIME INDICATED NEXT TO SYMBOL.
TD 0-10 MIN. TOD	TIME DELAY RELAY. TIMES OUT AFTER DE-ENERGIZATION. ADJUSTABLE TIME DELAY TIME INDICATED NEXT TO SYMBOL.
XXX###	CONDUIT TAG
	PILOT LIGHT. R=RED, B=BLUE, G-GREEN, A=AMBER, Y=YELLOW
480V 120V	CONTROL POWER TRANSFORMER. PRIMARY AND SECONDARY VOLTAGE INDICATED
PT	CPT = CONTROLS POWER/INSTRUMENT TRANSFORMER
15 KVA 480V 120/240V	PT = POWER TRANSFORMER. VOLTAGE AND KVA RATING AS SHOWN
TV	TELEVISION CAMERA
TQ	TORQUE SWITCH
A	AMMETER
V	VOLTMETER
LA	LIGHTING ARRESTOR
CAP	SURGE CAPACITOR
MCP SIZE 1 FVNR	MOTOR STARTER FVNR = FULL VOLTAGE NON-REVERSING FVR = FULL VOLTAGE REVERSING MCP = MOTOR CIRCUIT PROTECTOR RVNR = REDUCED VOLTAGE NON-REVERSING RVSS = REDUCED VOLTAGE SOFT START SIZE = NEMA STARTER SIZE

LIGHTING FIXTURE LEGEND

"A"	LED STRIP LIGHT; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE
"A"	LED STRIP LIGHT WITH BATTERY BACKUP; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE
	LED FIXTURE, SURFACE OR SUSPENDED, CEILING MOUNTED
	LED FIXTURE, STANCHION MOUNTED
	LED FIXTURE, WALL MOUNTED
"X"	LED LIGHTED EXIT SIGN; LETTER IN OR BESIDE FIXTURE IDENTIFIES IN FIXTURE SCHEDULE
"D"	REMOTE EMERGENCY LIGHTS

"D"	POLE MOUNTED LED LUMINAIRE. SEE SCHEDULE OR NOTES FOR FIXTURE TYPE. ORIENT FIXTURE FOR CUT-OFF TOWARDS AREA TO BE LIT. ORIENT HOUSE SHIELD TOWARDS BUILDING. SEE DETAILS FOR POLE BASE. PROVIDE POLE CASE GROUND ROD.
"E"	EMERGENCY LED LIGHT FIXTURE, SELF CONTAINED, BATTERY OPERATED
"D"	PAR LAMP HOLDER. NUMBER OF TRIANGLES INDICATE NUMBER OF FIXTURES.
"D"	POLE MOUNTED FLOOR LIGHT. NUMBER OF TRIANGLES INDICATE NUMBER OF FIXTURES. ARROW DENOTES FLOODING AND DIRECTION POLE FOLDS DOWN.

ABBREVIATIONS

1/C	ONE CONDUCTOR
3/C	THREE CONDUCTOR
A	AMPERES OR TRIP AMPERES
AC	ALTERNATING CURRENT
A/C	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	SYMMETRICAL AMPERES INTERRUPTING CAPACITY
BLDG	BUILDING
BKR	BREAKER
C	CONDUIT
CAP	CAPACITOR
CKT	CIRCUIT
CONT'D	CONTINUED
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRNASFORMER
CU	COPPER
DBL	DOUBLE
DISC SW.	DISCONNECT SWITCH
DC	DIRECT CURRENT
EMER.	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
ENCL.	ENCLOSURE
EP	EXPLOSION PROOF
EQUIP.	EQUIPMENT
FS	FLOAT SWITCH
G	GROUND WIRE
GALV.	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER CIRCUIT
GND	GROUND
HDG	HOT DIPPED GALVANIZED
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
HZ	HERTZ
INST.	INSTRUMENT
KV	KILOVOLTS
KVA	KILOVOLTS AMPERES
KWH	KILOWATT HOURS
LA	LIGHTNING ARRESTOR
LPR	LIGHTING PROTECTION RELAY
L-L	LINE TO LINE
L-N	LINE TO NEUTRAL

MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MIN.	MINIMUM
MPR	MOTOR PROTECTION RELAY
MTD	MOUNTED
MTG	MOUNTING
MRCT	MULTI-RATIO CURRENT TRANSFORMER
MV	MERCURY VAPOR
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
NEUT.	NEUTRAL
N.O.	NORMALLY OPEN
N.T.S.	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
P	POLE
PC	PHOTOCELL
PH	PHASE
PNL	PANEL
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
REQ'D	REQUIRED
SCH	SCHEDULE
SEC	SECONDARY
S/N	SOLID NEUTRAL
SPACE	SPACE(S) ONLY - NO BREAKER OR DEVICE
SPARE	SPARE BREAKER OR DEVICE
SPECS	SPECIFICATIONS
S.D. BARE	SOFT DRAWN BARE
SS HDWE	STAINLESS STEEL HARDWARE
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
TB	TERMINAL BLOCK
TYP.	TYPICAL
UL	UNDERWRITERS LABORATORIES
V	VOLTS
VA	VOLT AMPERES
W	WATTS
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER

LEGEND & GENERAL NOTES:

1. BRANCH CIRCUIT NUMBERS MAY BE SHOWN NEXT TO SYMBOLS IN MULTIWIRE CIRCUITS.
2. SYMBOL SIZE DOES NOT IMPLY EQUIPMENT SIZE UNLESS OTHERWISE NOTED.
3. LOWER CASE LETTERS NEXT TO SYMBOLS INDICATE FIXTURE(S) CONTROLLED BY THE SWITCH DISPLAYING THE SAME LETTER.
4. THIS IS A STANDARD LEGEND LIST ALL SYMBOLS MAY NOT BE USED.
5. INSTALLATION SHALL BE PER LATEST VERSION OF NATIONAL ELECTRICAL CODE, SAWS, STANDARDS, AND ALL APPLICABLE LOCAL CODES. ORDINANCES. NOT ALL CODE AND STANDARD REQUIREMENTS MAY BE SHOWN ON PLANS. CONTRACTOR SHALL ADHERE TO CODES AND STANDARDS REGARDLESS OF BEING SHOWN ON PLANS OR SPECIFICATIONS IN DETAILED FASHION.

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ELECTRICAL SYMBOLS AND ABBREVIATIONS

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: August 2024
DRAWN BY: CS
DESIGNED BY: CS
REVIEWED BY: JC
HMT PROJECT NO.: 337.070

SHEET
E-01

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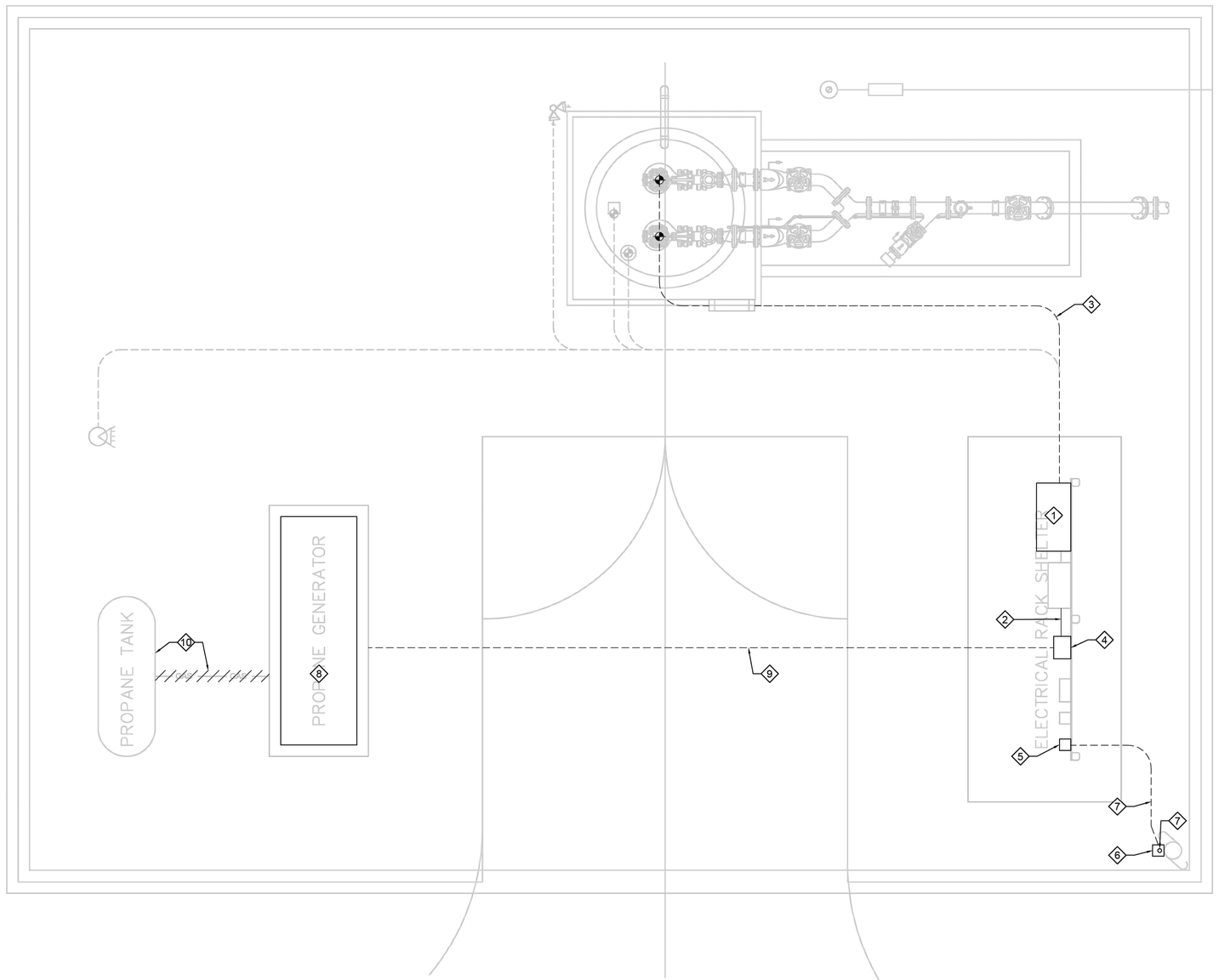

ELECTRICAL SITE PLAN

SCALE: 3/8" = 1'-0"

KEYED NOTES:

1. REPLACE EXISTING LIFT PUMPS CONTROL PANEL IN ITS ENTIRETY. RE: ELECTRICAL SHEET E-03, E-04 AND E-05.
2. REPLACE EXISTING LIFT PUMPS CONTROL PANEL FEEDER. RE: ELECTRICAL SHEET E-03 AND E-05.
3. REPLACE EXISTING PUMP FEEDER CONDUCTORS TO LIFT PUMPS.
4. REPLACE EXISTING ATS WITH 480V, 200A, 3P, OPEN-TRANSITION AUTOMATIC TRANSFER SWITCH IN NEMA 4X 316 STAINLESS STEEL ENCL. RE: SPECIFICATIONS FOR DETAILS.
5. REPLACE SERVICE ENTRANCE DISCONNECT SWITCH WITH 600V, 200A, 3P SERVICE ENTRANCE RATED ENCLOSED CIRCUIT BREAKER IN NEMA 4X 316 STAINLESS STEEL ENCL. WITH PAD LOCKING PROVISIONS. REPLACE EXISTING CONDUCTORS THRU WIREWAY AS INDICATED ON ELECTRICAL SHEET E-03.
6. REPLACE UTILITY METER DISCONNECT SWITCH WITH 600V, 200A, 3P ENCLOSED CIRCUIT BREAKER IN NEMA 4X 316 STAINLESS STEEL ENCL. WITH PAD LOCKING PROVISIONS.
7. REPLACE EXISTING SERVICE ENTRANCE CONDUCTORS IN EXISTING CONDUIT WITH CONDUCTORS AS INDICATED ON ELECTRICAL SHEETS E-03 AND E-05.
8. REPLACE EXISTING PROPANE GENERATOR WITH 125kW, 480/277V, 3PH. STANDBY DIESEL GENERATOR IN LEVEL 2 SOUND-ATTENUATING ENCL. RECONNECT TO EXISTING GROUND CONNECTIONS. MODIFY EXISTING GENERATOR PAD TO ACCOMMODATE PROPOSED GENERATOR DIMENSIONS, IF REQUIRED. RECONNECT EXISTING GENERATOR START/ STOP, ALARM AND POWER CIRCUITS TO PROPOSED GENERATOR. GAS DETECTOR CONDUCTORS SHALL BE REDESIGNATED AS SPARES.
9. REPLACE EXISTING GENERATOR EMERGENCY CIRCUIT CONDUCTORS IN EXISTING CONDUIT TO ATS PER ELECTRICAL SHEETS E-03 AND E-05.
10. REMOVE EXISTING PROPANE TANK. DEMOLISH EXISTING PROPANE FUEL GAS LINE IN ITS ENTIRETY.

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ELECTRICAL SITE PLAN

KRAFT SUBDIVISION, UNIT 3
NEW BRAUNFELS, TEXAS

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SHEET
E-02

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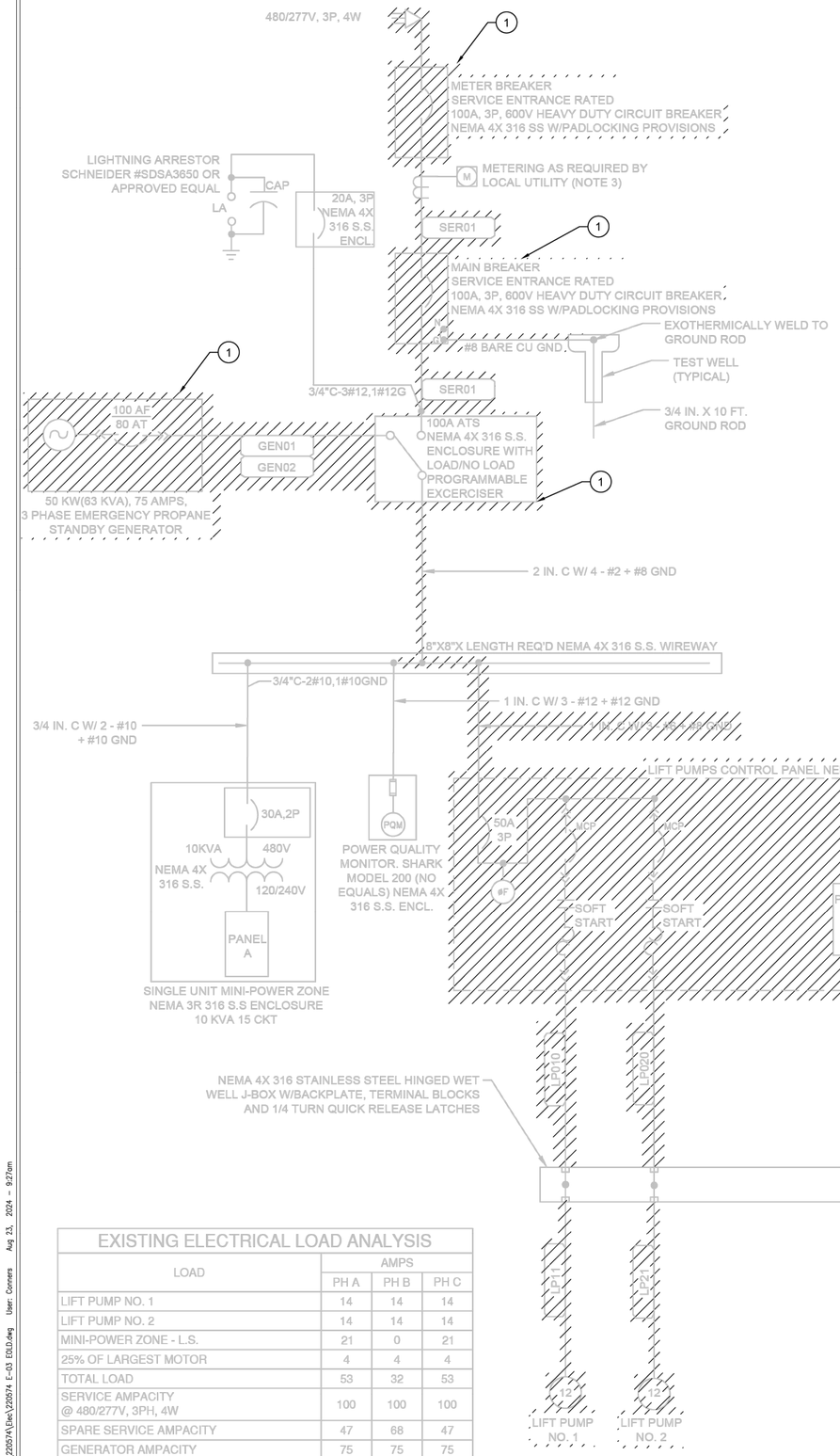
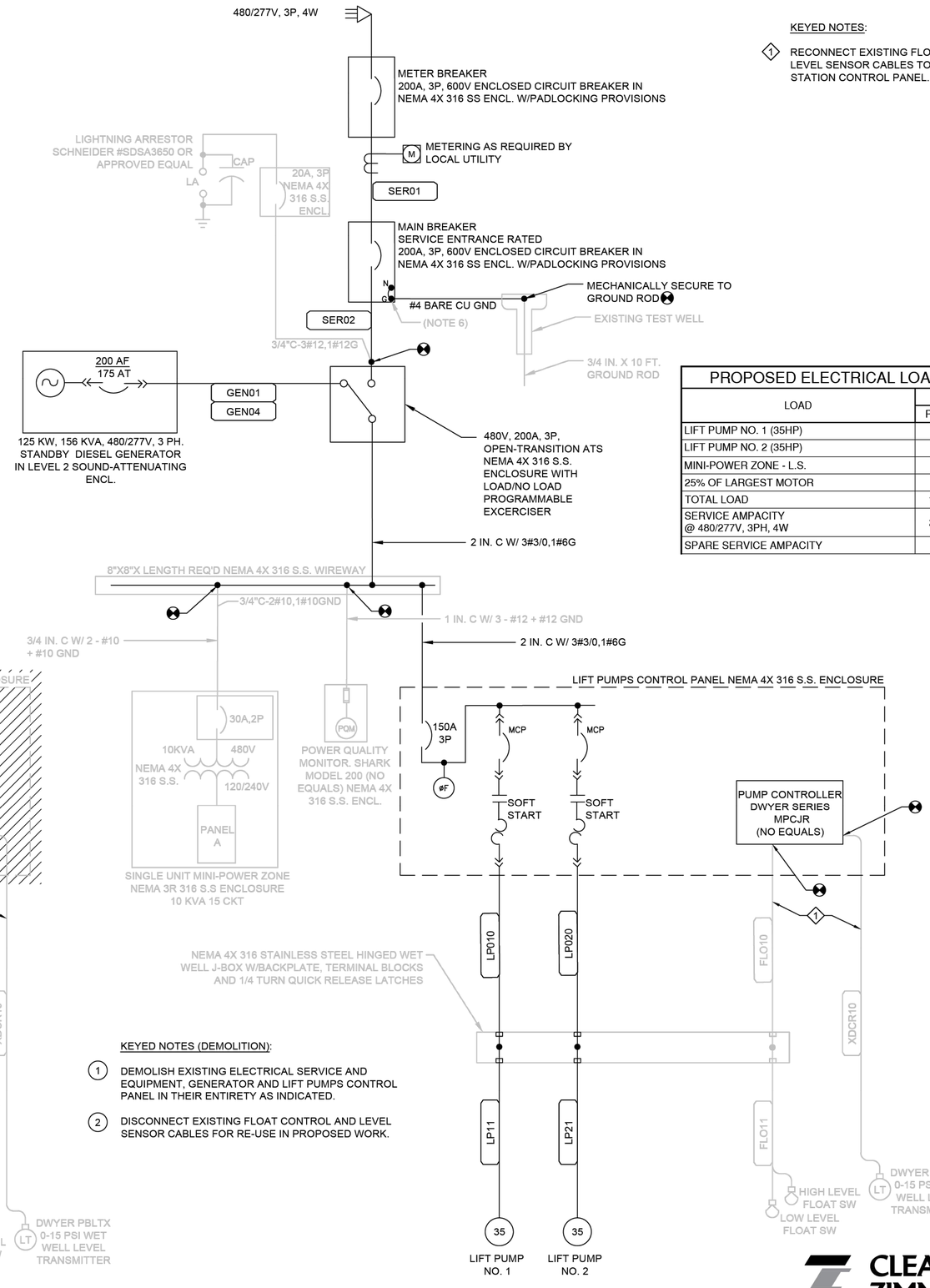


EXISTING ELECTRICAL LOAD ANALYSIS

LOAD	AMPS		
	PH A	PH B	PH C
LIFT PUMP NO. 1	14	14	14
LIFT PUMP NO. 2	14	14	14
MINI-POWER ZONE - L.S.	21	0	21
25% OF LARGEST MOTOR	4	4	4
TOTAL LOAD	53	32	53
SERVICE AMPACITY @ 480/277V, 3PH, 4W	100	100	100
SPARE SERVICE AMPACITY	47	68	47
GENERATOR AMPACITY	75	75	75

EXISTING ELECTRICAL ONE-LINE DIAGRAM

SCALE: NTS



PROPOSED ELECTRICAL LOAD ANALYSIS

LOAD	AMPS		
	PH A	PH B	PH C
LIFT PUMP NO. 1 (35HP)	37	37	37
LIFT PUMP NO. 2 (35HP)	37	37	37
MINI-POWER ZONE - L.S.	21	0	21
25% OF LARGEST MOTOR	10	10	10
TOTAL LOAD	105	84	105
SERVICE AMPACITY @ 480/277V, 3PH, 4W	200	200	200
SPARE SERVICE AMPACITY	95	116	95

PROPOSED ELECTRICAL ONE-LINE DIAGRAM

SCALE: NTS

KEYED NOTES:

1. RECONNECT EXISTING FLOAT CONTROL AND LEVEL SENSOR CABLES TO PROPOSED LIFT STATION CONTROL PANEL.

KEYED NOTES (DEMOLITION):

1. DEMOLISH EXISTING ELECTRICAL SERVICE AND EQUIPMENT, GENERATOR AND LIFT PUMPS CONTROL PANEL IN THEIR ENTIRETY AS INDICATED.
2. DISCONNECT EXISTING FLOAT CONTROL AND LEVEL SENSOR CABLES FOR RE-USE IN PROPOSED WORK.

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ELECTRICAL ONE-LINE DIAGRAM

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SHEET
E-03

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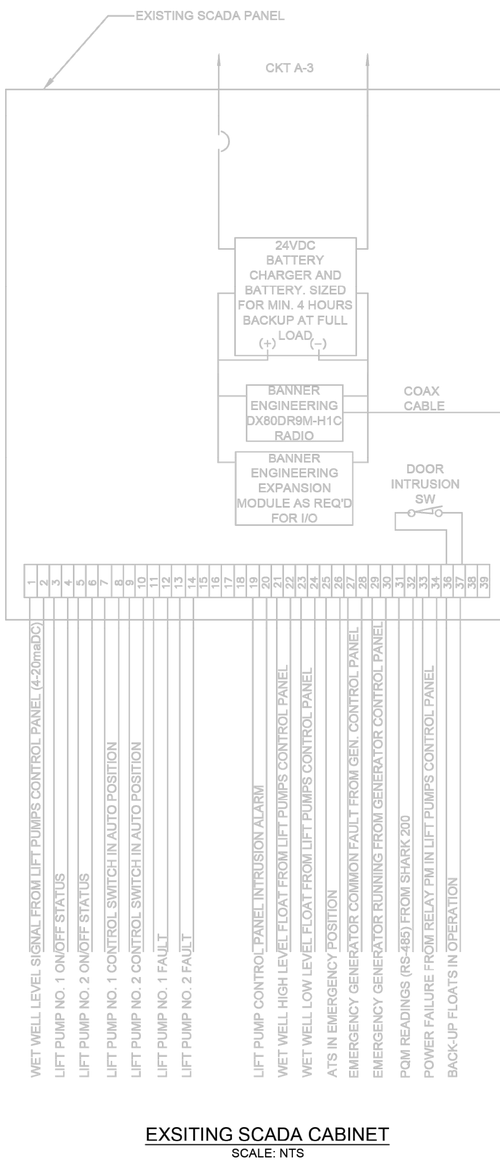
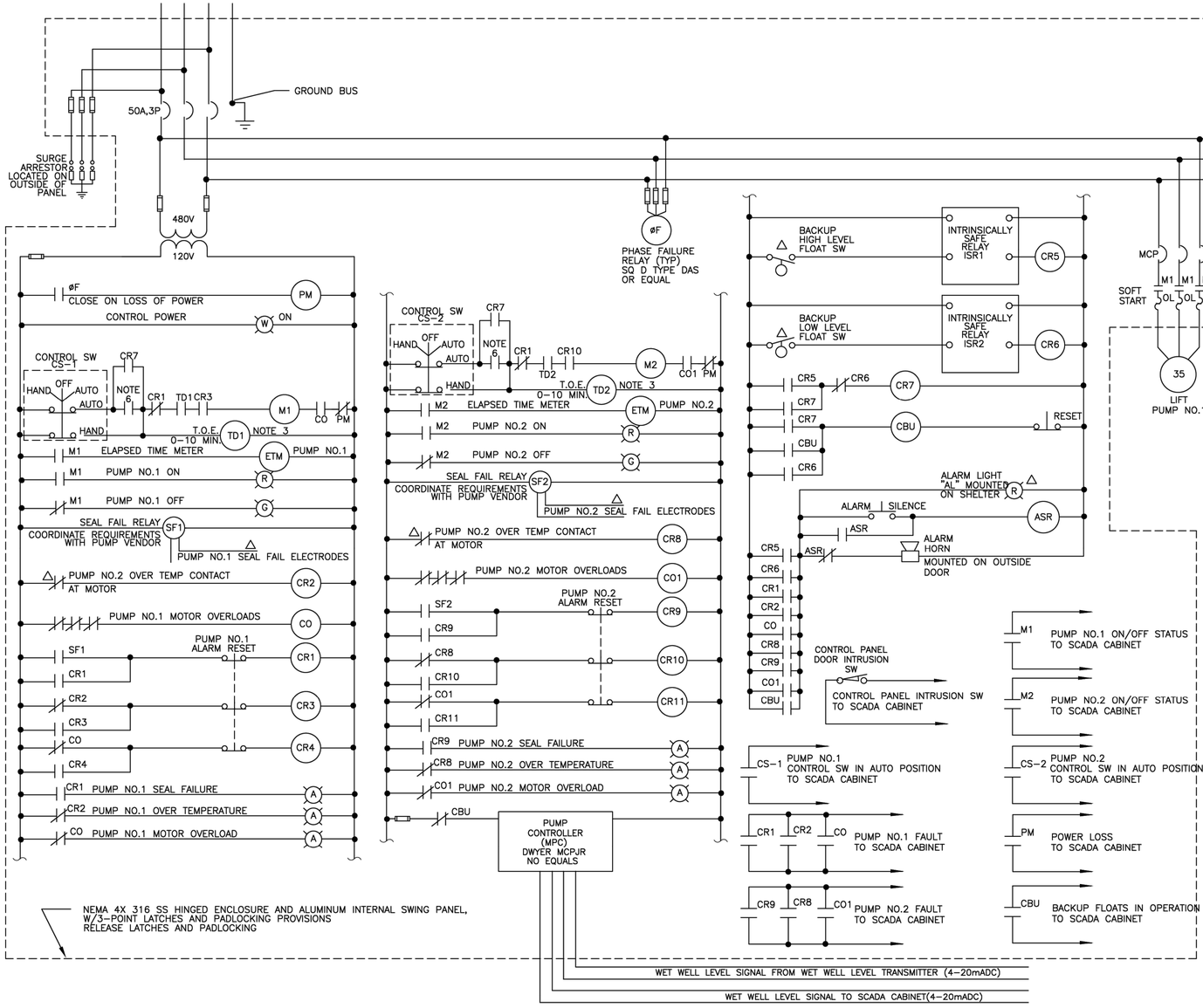


EXSITING SCADA CABINET
SCALE: NTS



△ – DENOTES DEVICE LOCATED REMOTELY FROM CONTROL PANEL

NOTES:
1. CONTRACTOR TO INSTALL ALL SAFETY AND ACCESSORIES REQUIRED BY PUMP VENDOR
2. STARTER IS SOLID STATE SOFT START W/PUMP CONTROL FEATURE
3. COORDINATE TIME DELAY RELAY SETTING SO THAT ONLY ONE PUMP WILL BE IN START MODE AT ONE TIME
4. INSTALL WARNING SIGN THAT PANEL IS ENERGIZED FROM MULTIPLE SOURCES
5. ALL INDICATING LIGHTS TO BE LED PUSH TO TEST
6. AUTO START/STOP FROM PUMP CONTROLLER (MPC)
7. ALL SWITCHES, INDICATING LIGHTS, PUSHBUTTONS TO BE MOUNTED ON INTERNAL SWING PANEL

LIFT PUMP CONTROL PANEL
(ONE REQUIRED)

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ELECTRICAL WIRING DIAGRAM SHEET 1

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SHEET
E–04

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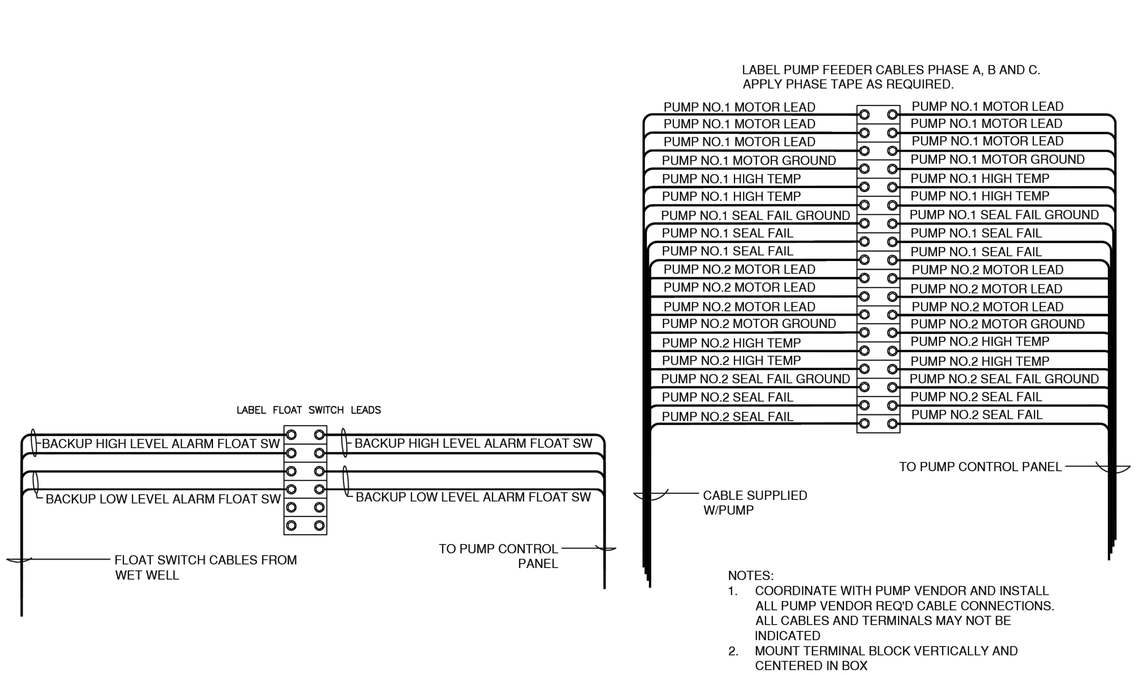
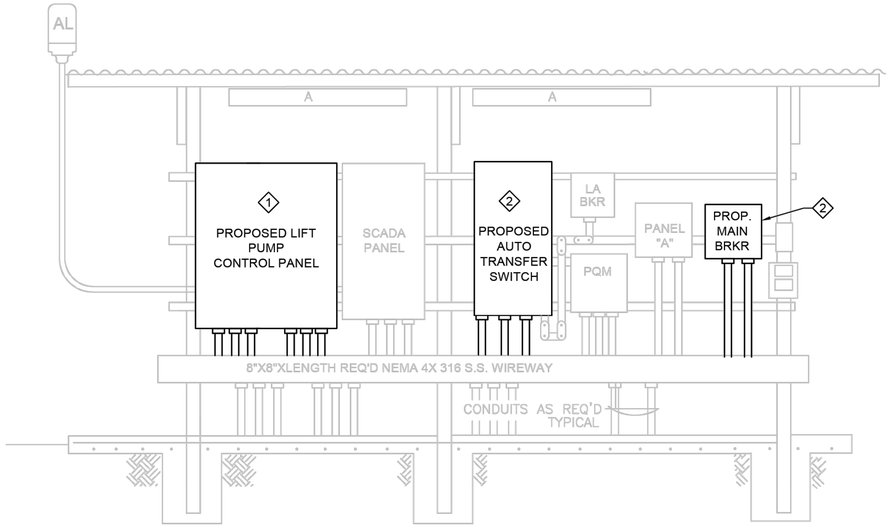
CABLE AND CONDUIT SCHEDULE							
CABLE/CONDUIT TAG	CONDUIT QUANTITY	CONDUIT SIZE	FROM	TO	CONDUCTOR (EACH CONDUIT)	CABLE TYPE	DESCRIPTION
ANT01	1	2 IN.	SCADA PANEL	ANTENNA TOWER	COAX CABLE	UV RATED	RADIO COMMUNICATIONS
FLO10	1	1 1/2 IN.	PUMP PANEL	WET WELL J-BOX	4-#12 + #12 GND	XHHW-2	FLOAT CABLES
FLO11	1	1 1/2 IN.	WET WELL J-BOX	FLOATS	MANUFACTURERS CABLES	-	SIZE CONDUIT AS RECOMMENDED BY MANUFACTURER
GAS01	1	2 IN.	EMERGENCY GENERATOR	PROPANE TANK	STEEL PIPE	-	REFER TO CIVIL DRAWINGS
GEN01	**1**	**2 IN.**	AUTOMATIC TRANSFER SWITCH	EMERGENCY GENERATOR	**3 - #3/0 + #6 GND**	XHHW-2	EMERGENCY POWER
GEN02	1	2 IN.	MINI POWER ZONE	EMERGENCY GENERATOR	8 - #12 + #12 GND	XHHW-2	GENERATOR HEATER, LIGHTS, GAS DETECTOR, BATT CHARGER
GEN03	1	1 IN.	EMERGENCY GENERATOR	SCADA PANEL	4-#12 + #12 GND	XHHW-2	COMMON FAULT ALARM, GENERATOR RUNNING
GEN04	1	1 IN.	AUTOMATIC TRANSFER SWITCH	EMERGENCY GENERATOR	2 - #12 + #12 GND	XHHW-2	AUTO START/STOP
LP010	**1**	**2 IN.**	LIFT STATION CONTROL PANEL	WET WELL J-BOX	**3#8, 6-#10 + #10 GND**	XHHW-2	PUMP POWER, TEMP, SEAL FAIL
LP011	**1**	**2 IN.**	WET WELL J-BOX	LIFT STATION PUMP	MANUFACTURERS CABLES	-	PUMP CABLES
LP020	**1**	**2 IN.**	LIFT STATION CONTROL PANEL	WET WELL J-BOX	**3#8, 6-#10 + #10 GND**	XHHW-2	PUMP POWER, TEMP, SEAL FAIL
LP021	**1**	**2 IN.**	WET WELL J-BOX	LIFT STATION PUMP	MANUFACTURERS CABLES	-	PUMP CABLES
LTG01	1	1 IN.	MINI POWER ZONE	SITE LIGHT	4-#12 + #12 GND	XHHW-2	SITE LIGHT AND RECEPT
SER01	**1**	**2 IN.**	UTILITY SERVICE	SERVICE ENTRANCE DISCONNECT BREAKER	**4 - #3/0**	XHHW-2	ELECTRICAL SERVICE
SER02	**1**	**2 IN.**	SERVICE ENTRANCE DISCONNECT BREAKER	ATS	**3 - #3/0 + #6 GND**	XHHW-2	ELECTRICAL SERVICE
WIN010	1	1 IN.	MINI-POWER ZONE	LIFT STATION WINCH RECPT	4-#12 + #12 GND	XHHW-2	HOIST POWER W/ ON/OFF CONTROL IN WEATHER RATED ENCLOSURE
XDCR01	1	1 1/2 IN.	PUMP PANEL	STILLING WELL	MANUFACTURERS CABLES	-	TRANSMITTER (PROVIDE ADEQUATE LENGTH CABLE)

BOLD INDICATES CHANGES TO CONDUCTORS/CONDUITS



NOTES:
1. COORDINATE WITH PUMP VENDOR AND INSTALL ALL PUMP VENDOR REQ'D CABLE CONNECTIONS. ALL CABLES AND TERMINALS MAY NOT BE INDICATED
2. MOUNT TERMINAL BLOCK VERTICALLY AND CENTERED IN BOX

WET WELL J-BOX TERMINAL BLOCK INSTALLATION DETAIL
SCALE: NTS



FRONT VIEW

ELECTRICAL EQUIPMENT RACK INSTALLATION DETAIL
SCALE: NTS

KEYED NOTES:

1. REPLACE EXISTING LIFT PUMPS CONTROL PANEL. PANEL WIDTH SHALL BE LIMITED TO 36" MAXIMUM.
2. REPLACE EXISTING ATS AND ENCLOSED CIRCUIT BREAKER.

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ELECTRICAL CONDUIT/CABLE SCHEDULES & DETAILS

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NO.	REVISION DESCRIPTION	REVISION DATE

DATE: August 2024
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SHEET
E-05

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