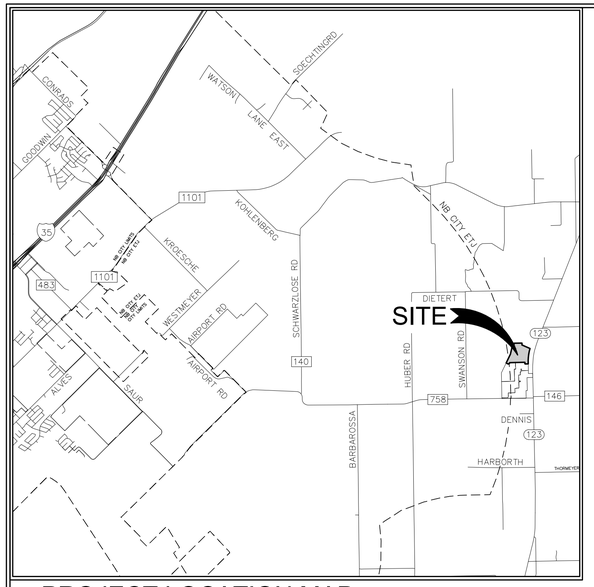
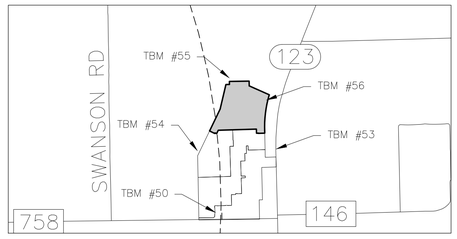


PROJECT LOCATION MAP SCALE: N.T.S.

PROJECT BENCHMARK

TBM #50	TBM #53	TBM #54	TBM #55	TBM #56
MAG SPIKE "HMT"	MAG "HMT"	1/2" IRON PIN	1/2" IRON PIN	1/2" IRON PIN
N: 13804456.295	N: 13806228.366	"HMT CONTROL"	"HMT CONTROL"	"HMT CONTROL"
E: 2295458.372	E: 2297181.418	N: 13806185.289	N: 13808217.593	N: 13807596.146
ELEV: 628.12:	ELEV: 637.68	E: 2294956.991	E: 2295845.639	E: 2296905.896
		ELEV: 665.30	ELEV: 685.34	ELEV: 661.96



LEGAL DESCRIPTION

38.301 TOTAL ACRES OF LAND LOCATED IN THE A.M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, AND THE W.J. RAGSDALE SURVEY, ABSTRACT NO. 268, GUADALUPE COUNTY, TEXAS, CONSISTING OF A CALLED 55.967 ACRE TRACT RECORDED IN DOCUMENT NO. 202299029989, AND A CALLED 84.585 ACRE TRACT RECORDED IN DOCUMENT NO. 202299019628, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF 216 PROPOSED RESIDENTIAL LOTS WITH ASSOCIATED GRADING, DRAINAGE STREETS, AND UTILITY IMPROVEMENTS.

MUNICIPAL UTILITY DISTRICT (M.U.D.)

REVIEW OF THE PLANS BY THE DISTRICT IS LIMITED TO DISTRICT-OWNED FACILITIES, AND DOES NOT INDICATE A REVIEW OF THE ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN PROFESSIONAL.

_____
DISTRICT ENGINEER DATE

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 IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.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 830-372-1031 OR,
    4.2 FAXED IN AT 830-372-0067 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 48187C0130F EFFECTIVE DATE NOVEMBER, 02, 2007, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
9. THIS PROJECT IS NOT LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE, TRANSITION OR CONTRIBUTING 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.
11. THE ENGINEER OF RECORD ACKNOWLEDGES THAT ALL PROPOSED WATER AND WASTEWATER IMPROVEMENTS MUST COMPLY WITH TCEQ, CITY OF SEGUIN WASTEWATER, CRYSTAL CLEAR SUD WATER CONNECTION POLICY, SOUND ENGINEERING JUDGEMENT AND ANY OTHER GOVERNING ENTITY ORDINANCES OR CODES.

JARO NORTH UNIT 4

LONE OAK FARM MUNICIPAL UTILITY DISTRICT

NEW BRAUNFELS, TX

CIVIL SITE CONSTRUCTION PLANS

LENNAR HOMES

100 NE LOOP 410, SUITE 1155

SAN ANTONIO, TX 78216

REQUIRED PERMITS	NUMBER
2. CITY OF NEW BRAUNFELS	#
3. CITY OF SEGUIN	#
4. CRYSTAL CLEAR SUD	#

APRIL 2026

04/15/2026

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

_____
Zoe F. Jasso
P.E. Registration No. 131964

PREPARED BY:

HMT
ENGINEERING & SURVEYING
290 S. CASTELL AVE., STE. 100
NEW BRAUNFELS, TX 78130
HMTNB.COM
P(830)625-8555*F(830)625-8556
TBPELS FIRM F-10961
TBPELS FIRM 10153600

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C0.2	GENERAL NOTES (2 OF 2)
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C0.4	PLAT (2 OF 2)
C1.0	OVERALL PRE-DEVELOPED CONDITIONS SCS DRAINAGE MAP - INK CIVIL
C1.1	OVERALL EXISTING SCS DRAINAGE MAP
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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.

ADDITIONAL NOTE TO CONTRACTOR:

1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, UTILITY PROVIDERS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
2. THE ENGINEER OF RECORD ACKNOWLEDGES THAT ALL PROPOSED WATER OR WASTEWATER IMPROVEMENTS MUST COMPLY WITH CRITERIA FROM THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, THE CITY OF NEW BRAUNFELS, CITY OF SEGUIN WW DESIGN CRITERIA, AND CRYSTAL CLEAR SUD WATER CONNECTION POLICY
3. ANY OTHER GOVERNING ENTITY ORDINANCES OR CODES, AND SOUND ENGINEERING JUDGEMENT.
4. THE ENGINEER OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR THE CCSUD WATER SYSTEM IS THE MAIN SIDE OF THE SERVICE/LATERAL/LEAD FROM THE CUSTOMER'S METER, BACKFLOW PREVENTER, OR EASEMENT EDGE. THE CUSTOMER IS RESPONSIBLE FOR THE DESIGN, PERMITTING, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER THE INSTALLATION.
5. THE ENGINEER OF RECORD ACKNOWLEDGES THAT THE POINT OF DELIVERY FOR A CITY OF SEGUIN WASTEWATER SYSTEM IS THE MAIN SIDE OF THE SERVICE LATERAL FROM THE CUSTOMER'S CLEAN OUT OR PROPERTY LINE, WHICHEVER IS NEARER. THE CUSTOMER IS RESPONSIBLE FOR THE DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE BEYOND THE POINT OF DELIVERY AND HAS SOLE CONTROL AND SUPERVISION OVER ITS INSTALLATION.
6. WATER IS A PRECIOUS COMMODITY IN THE STATE OF TEXAS AND THE CITY OF SEGUIN IS PASSIONATE ABOUT PROTECTING THE LOCAL RESOURCE. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING A FIRE HYDRANT METER SO THAT ALL WATER USED FOR CONSTRUCTION OR TESTING PURPOSES IS PROPERLY ACCOUNTED FOR. NBU WILL NOT TOLERATE ANY WATER THEFT, REGARDLESS OF THE AMOUNT. IF WATER THEFT IS DISCOVERED, THE CONTRACTOR SHALL BE SUBJECT TO MONETARY PENALTIES, CRIMINAL CHARGES, AND STOPPAGE OF ALL CONSTRUCTION ACTIVITIES RELATED TO THE PROJECT. COSTS ASSOCIATED WITH ANY WORK STOPPAGE RESULTING FROM WATER THEFT SHALL BE AT THE FULL EXPENSE OF THE CONTRACTOR.

JARO NORTH UNIT 4
CIVIL SITE CONSTRUCTION PLANS
HMT # 337.147

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GENERAL NOTES

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

A. CURRENT CITY OF SEGUIN 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 SEGUIN 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 SEGUIN 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 SEGUIN PROJECT MANAGER AND 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.

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 SEGUIN, SUBJECT TO THE GUARANTY OF MATERIAL AND WORKMANSHIP PROVISIONS IN THIS SECTION.

EROSION / SEDIMENTATION CONTROL

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

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

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

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

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

UTILITIES

LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HERE ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION, INCLUDING THOSE NOT SHOWN ON THE DRAWINGS.
ANY EXISTING UTILITIES, ON OR OFF THE SITE, THAT ARE DAMAGED OR UNDERCUT BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE ENGINEER AND APPROVED BY THE RESPECTIVE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
CONTRACTOR SHALL NOTIFY APPROPRIATE UTILITY COMPANIES AND GOVERNMENTAL AGENCIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION AT:

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

CRYSTAL CLEAR SUD (WATER)	(830) 372-1031
CITY OF SEGUIN (SEWER)	(830) 401-2222
GUADALUPE VALLEY ELECTRIC COMPANY (ELECTRIC)	(830) 857-1200
TIME WARNER CABLE SPECTRUM	(830) 625-3408
AT&T	(830) 303-1333
TEXAS ONE CALL SYSTEM	(800) 245-4545

DUE TO FEDERAL REGULATIONS TITLE 49, PART 192(8), GAS COMPANIES MUST MAINTAIN ACCESS TO GAS VALVES AT ALL TIMES. THE CONTRACTOR MUST PROTECT THE WORK AROUND ANY GAS VALVES THAT ARE IN THE PROJECT AREA.

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

WASTEWATER NOTES — REVISION DATE: 3/31/11

1. THE CONTRACTOR SHALL MAINTAIN SERVICE TO EXISTING WASTEWATER SYSTEM AT ALL TIMES DURING CONSTRUCTION.
2. A MINIMUM OF 8" WASTEWATER PIPE AND FITTING (P.V.C. SDR-26, ASTM, D-3034, D-3212, F-477) ARE REQUIRED ON NEW INSTALLATION.
3. ALL RESIDENTIAL WASTEWATER SERVICE LATERALS SHALL BE EXTENDED TO THE PROPERTY LINE AND A CLEANOUT SHALL BE INSTALLED AT THE PROPERTY LINE. SERVICES TO LOTS WILL EXTEND FOUR (4) FEET PAST THE UNDERGROUND ELECTRIC CONDUIT IF ELECTRIC IS INSTALLED IN THE FRONT EASEMENT.
4. PIPE BEDDING OF WASTEWATER LINES SHALL BE MANUFACTURED No. 67 CRUSHED STONE.
5. SECONDARY BACKFILL OF WASTEWATER LINES SHALL GENERALLY CONSIST OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE FROM BRUSH, DEBRIS AND TRASH, NO ROCKS OR STONES HAVING ANY DIMENSION LARGER THAN 6 INCHES AT THE LARGEST DIMENSION.
6. ALL WASTEWATER PIPES SHALL HAVE COMPRESSION OR MECHANICAL JOINTS AS PER 30 TAC §217.53 (C)(2).
7. FOR WASTEWATER LINES LESS THAN 24" IN DIAMETER, SELECT INITIAL BACKFILL MATERIAL SHALL BE PLACED IN TWO LIFTS.
   7.1. THE FIRST LIFT SHALL BE SPREAD UNIFORMLY AND SIMULTANEOUSLY ON EACH SIDE AND UNDER THE SHOULDERS OF THE PIPE TO THE MID POINT OR SPRING LINE OF THE PIPE.
   7.2. 8.2 THE SECOND LIFT SHALL BE PLACED TO A DEPTH AS SHOWN ON THE PIPE BACKFILL DETAIL. FOR PIPES LARGER THAN 24", 12" MAXIMUM LIFTS SHALL BE USED.
8. ALL MANHOLES MUST BE WATER TIGHT, EITHER MONOLITHIC, CAST-IN-PLACE CONRETE STRUCTURES OR PREFABRICATED MANHOLES SPECIFICALLY APPROVED BY CITY OF SEGUIN. THE MANHOLES SHALL HAVE WATER-TIGHT RINGS AND COVERS. WHEREEVER THEY ARE WITHIN THE 100 YEAR FLOODPLAIN, THE MANHOLE COVERS SHALL BE BOLTED. EVERY THIRD MANHOLE IN SEQUENCE SHALL HAVE AN ALTERNATE MEANS OF VENTING. 30 TAC §213.5 (C)(3)(A) AND 30 TAC §217.55 (O).
9. ALL MANHOLES SHALL BE CONSTRUCTED SO THAT THE TOP OF THE RING IS TWO INCHES (2") ABOVE SURROUNDING GROUND EXCEPT WHEN LOCATED IN PAVED AREA. IN PAVED ARES, THE MANHOLE RING SHALL BE FLUSH WITH PAVEMENT.
10. ALL NEW MANHOLES, UNLESS APPROVED BY CITY ENGINEERING, ARE TO HAVE COVERS WITH 32"OPENINGS.
11. WASTEWATER PIPE CONNECTIONS TO PRE-CAST MANHOLES WILL BE COMPRESSION JOINTS OR MECHANICAL "BOOT TYPE" JOINT AS APPROVED BY CITY OF SEGUIN.
12. WASTEWATER LINES SHALL BE TESTED FROM MANHOLE TO MANHOLE.
13. IN AREAS WHERE A NEW WASTEWATER MANHOLE IS TO BE CONSTRUCTED OVER AN EXISTING WASTEWATER SYSTEM, IT SHALL BE THE CONTACTOR'S RESPONSIBILITY TO TEST THE EXISTING MANHOLES BEFORE CONSTRUCTION. AFTER THE PROPOSED MANHOLE(S) HAS BEEN BUILT, THE CONTRACTOR SHALL RE-TEST THE EXISTING SYSTEM TO THE SATISFACTION OF THE CONSTRUCTION INSPECTOR. (NO SEPARATE PAY ITEM).
14. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH TCEQ. THE WASTEWATER LINE SHALL BE CONSTRUCTED OF CAST IRON, DUCTILE IRON OR PVC MEETING THE ASTM SPECIFICATION FOR BOTH PIPES AND JOINTS OF 150 PSI AND SHALL BE IN ACCORDANCE WITH 30 TAC §217.53 (D) (3) (A) (I).
15. NO TESTING WILL BE PERFORMED PRIOR TO 30 DAYS FROM COMPLETE INSTALLATION OF THE WASTEWATER LINES. THE FOLLOWING SEQUENCE WILL BE STRICTLY ADHERED TO:
   15.1. PULL MANDREL
   15.2. PERFORM AIR TEST
   15.3. CLEANING OF ANY DEBRIS
   15.4. FLUSHING OF SYSTEM
   15.5. TV INSPECTION (WITHIN 72 HOURS OF FLUSHING)
16. A MINIMUM OF 5 FEET OF COVER IS TO BE MAINTAINED OVER THE WASTEWATER MAIN AND LATERALS AT SUBGRADE.
17. WASTEWATER MAIN CONNECTIONS MADE DIRECTLY TO EXISTING MANHOLES WILL REQUIRE SUCCESSFUL TESTING OF THE MANHOLE IN ACCORDANCE WITH CITY OF SEGUIN CONSTRUCTION POLICY MANUAL.
18. TCEQ AND EPA REQUIRE EROSION AND SEDIMENTATION CONTROL FOR CONSTRUCTION OF WASTEWATER COLLECTION SYSTEMS. DEVELOPER OR AUTHORIZED REPRESENTATIVE SHALL PROVIDE EROSION AND SEDIMENTATION CONTROL AS NOTES ON THE PROJECT'S PLAN AND PROFILE SHEETS. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS SHALL BE REMOVED BY THE CONTRACTOR AT FINAL ACCEPTANCE OF THE PROJECT BY CITY OF SEGUIN.

CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) WATER MAIN NOTES — REVISED 01-2025

1. CONSTRUCTION OF ALL CCSUD WATER UTILITY INFRASTRUCTURE MUST ADHERE TO CCSUD'S TECHNICAL SPECIFICATIONS, DETAILS AND APPROVED EQUIPMENT LIST.
2. REMOVE ONLY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL NECESSARY FOR CONSTRUCTION AND DISPOSE OF OFF SITE.
3. THE CONNECTION LOCATIONS LISTED IN THE PLANS ARE BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD LOCATE EXISTING WATER MAIN LOCATIONS AT ALL TIE-IN LOCATIONS TO VERIFY SIZE, ELEVATION, AND MATERIAL PRIOR TO ORDERING MATERIALS FOR CONNECTION.
4. THE CONTRACTOR SHALL MAINTAIN MINIMUM SEPARATION BETWEEN UTILITIES PER TCEQ STANDARDS.
5. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900 DR 18, COLORED BLUE IN ACCORDANCE WITH SPECIFICATION SECTION 02650 – PVC PIPE FOR WATER MAINS.
6. ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS CONFORMING TO AWWA C151 AND CEMENT LINED.
7. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS. THRUST BLOCKING IS REQUIRED AT ALL FITTINGS AND BENDS IN ACCORDANCE WITH THE THRUST BLOCKING DETAIL PROVIDED AND SPECIFICATION SECTION 02680 – JOINT RESTRAINTS AND THRUST BLOCKING.
8. LOCATIONS OF COMBINATION AIR VALVES SHOWN ARE APPROXIMATE. INSTALL AIR RELEASE VALVES AT THE HIGH POINT IN THE WATER MAIN FOR THE LOCATIONS GIVEN.
9. THE CONTRACTOR SHALL COORDINATE PRESSURE TESTING OF NEW WATER MAINS WITH OWNER AND ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR. PRESSURE TESTING REQUIREMENTS ARE INCLUDED IN THE SPECIFICATIONS.
10. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.
11. THE OWNER SHALL SUPPLY ALL WATER NEEDED FOR CONSTRUCTION TESTING AND DISINFECTION. THE CONTRACTOR SHALL NOT BE REQUIRED TO PAY FOR THIS WATER.
12. UNLESS NOTED OTHERWISE, ALL WATER MAIN P.I.'S SHALL BE ACHIEVED USING THE WATER MAIN MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
13. WATER MAINS, FIRE HYDRANTS, APPURTENANCES, AND VALVES THAT ARE ABANDONED SHALL BE CUT AND PLUGGED PER SPECIFICATION SECTION 02500 – ABANDONMENT OF WATER INFRASTRUCTURE.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING 98% COMPACTION ON ALL TRENCH BACKFILL AND PAYING FOR THE TESTS TO BE PERFORMED BY A THIRD PARTY. COMPACTION TESTS WILL BE DONE AT ONE LOCATION POINT RANDOMLY SELECTED OR AS INDICATED BY CCSUD INSPECTOR/TEST ADMINISTRATOR, PER EACH 12-INCH LOOSE LIFT 400 LINEAR FEET AT A MINIMUM. PERMITS WILL NOT BE ACCEPTED AND FINALIZED BY CCSUD WITHOUT THIS REQUIREMENT BEING MET AND VERIFIED BY PROVIDING ALL NECESSARY DOCUMENTED TEST RESULTS.

CONSTRUCTION NOTES

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.

DRAINAGE NOTE

DRAINAGE IMPROVEMENTS SUFFICIENT TO MITIGATE THE IMPACT OF CONSTRUCTION SHALL BE INSTALLED PRIOR TO INCREASING RUNOFF FROM THE SITE. DURING CONSTRUCTION COMPLIANCE WITH THE SWPPP MUST BE MET AT ALL TIMES.

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.

ROADWAY

ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FLEXIBLE BASE OR FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED SIX-INCHES (6") COMPACTED. 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 GEO-TECHNICAL ENGINEER AND APPROVED BY THE CITY STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER WILL PROVIDE THE CITY OF SEGUIN 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.

ITEM 340

ASPHALTIC CONCRETE PAVEMENT SHALL BE TYPE "D" HOT MIX ASPHALT AS DEFINED IN TXDOTS STANDARD SPECIFICATIONS FOR TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET AND BRIDGES, 2004 OR LATEST EDITION.

THE CITY OF SEGUIN 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 SEGUIN.

THE ASPHALTIC CONCRETE SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "D" MEETING THE SPECIFICATION REQUIREMENTS OF 2004 TXDOT ITEM 340. THE MIX SHALL BE DESIGNED FOR A STABILITY OF AT LEAST 35 AND SHALL BE COMPACTED TO BETWEEN 91 AND 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-227-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.

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

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 OFSEGUIN 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 SEGUIN STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

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.

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

ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.

NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.

SIGNING AND PAVEMENT MARKING PLAN NOTES

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

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

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.

MATERIALS

SIGN MATERIALS INCLUDING ALUMINUM SIGN BLANKS AND SIGN FACE MATERIALS SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS TSR (1 - 5) - 08 AND DEPARTMENTAL MATERIAL SPECIFICATIONS DMS-7110 AND DMS-8300.

THE CITY OF SEGUIN WILL INSPECT ALL SIGNS AT FINAL INSPECTION.

SEQUENCE OF CONSTRUCTION

1. INSTALL EROSION CONTROLS PER APPROVED PLAN.
2. TEMPORARY CONTROLS TO BE INSPECTED AND MAINTAINED WEEKLY AND PRIOR TO ANTICIPATED RAINFALL EVENTS, AND AFTER RAINFALL EVENTS, AS NEEDED. CONTRACTOR/OWNER SHALL PROVIDE A CONTACT NAME AND NUMBER FOR EROSION CONTROL ISSUES.
3. CONDUCT DEMOLITION ACTIVITIES, IF APPLICABLE.
4. CONSTRUCT DRAINAGE IMPROVEMENTS, IF APPLICABLE.
5. CONSTRUCT CURB INLET PROTECTION AT THE TIME OF CURB INLET INSTALLATION.
6. CONSTRUCT DEVELOPMENT PER APPROVED PLANS.
7. INSTALL STREETSCAPE AND/OR LANDSCAPING IMPROVEMENTS.
8. CONTRACTOR TO VEGETATE ANY DISTURBED AREAS ONCE FINAL GRADING IS COMPLETE, AND ESTABLISH A MIN OF 70% VEGETATION PRIOR TO COMPLETION
9. REMOVE ALL TEMPORARY EROSION CONTROL MEASURES.
10. TPDES REQUIREMENTS – DISTURBED AREAS ON WITCH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY WILL BEGIN AGAIN WITHIN 21 DAYS

MUNICIPAL UTILITY DISTRICT (MUD) NOTES:

1. THE DISTRICT ENGINEER, JONES-HEROY & ASSOCIATES, INC. (KEN HEROY, PH:512-989-2200) SHALL BE CONTACTED 48 HOURS PRIOR TO:

A. PRE-CONSTRUCTION MEETINGS;
B. BEGINNING EACH PHASE OF CONSTRUCTION;
C.

CITY OF NEW BRAUNFELS CONSTRUCTION NOTES REVISED 03/2020

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

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

ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.

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

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

FOR COMMERCIAL PERMIT (CP) PROJECTS:
- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
- FAXED IN AT 830-608-2117 OR,
- E-MAILED AT INSPECTIONS@NBTEXAS.ORG.

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

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

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

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

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

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

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

SOILS TESTING
PROCTORS SHALL BE SAMPLED FROM ON-SITE MATERIAL (ON-SITE IS DEFINED AS LIMITS OF CONSTRUCTION FOR THIS

-PLAN SET) AND A COPY OF THE PROCTOR RESULTS SHALL BE DELIVERED TO THE CITY OF NEW BRAUNFELS STREET INSPECTOR PRIOR TO ANY DENSITY TESTS.

ROADWAY
ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FLEXIBLE BASE OR FILL/EMBANKMENT MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED EIGHT INCHES (8") LOOSE. THE REQUIRED DENSITY FOR THE FILL/EMBANKMENT MATERIAL SHALL MEET THE REQUIREMENTS OF TXDOT'S SPECIFICATION ITEM 132. THE REQUIRED DENSITY FOR THE FLEXIBLE BASE MATERIAL SHALL MEET THE REQUIREMENTS OF TXDOT'S SPECIFICATION ITEM 247. EACH LAYER OF MATERIAL, INCLUSIVE OF SUBGRADE, SHALL BE COMPACTED AS SPECIFIED AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200 LF FOR EACH LIFT. UPON COMPLETION OF TESTING, THE GEOTECHNICAL ENGINEER WILL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FLEXIBLE BASE, AND FILL MATERIAL, AND SUBGRADE, HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.

ITEM 340
ASPHALTIC CONCRETE PAVEMENT SHALL BE THE TYPE OF HOT MIX ASPHALT AS DEFINED IN TXDOT'S STANDARD SPECIFICATIONS FOR CURRENT TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREET AND BRIDGES.

THE CITY OF NEW BRAUNFELS WILL NOT ACCEPT THE USE OF RECYCLED ASPHALT PAVEMENT (RAP) OR RECYCLED ASPHALT SHINGLES (RAS) IN ASPHALT MIXTURES FOR NEW ROADWAYS. ANY DEBRIS INCLUSIONS WITHIN NEW ASPHALT PAVEMENTS WILL RESULT IN ASPHALT REMOVAL AND REPLACEMENT FROM CURB TO CURB FOR LIMITS TO BE DETERMINED BY THE CITY OF NEW BRAUNFELS.

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

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

STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

GENERAL NOTES (2 OF 2)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C0.2

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\03b\337.147_COVER.dwg User: zdavar Apr 14, 2026 - 4:09pm

FINAL PLAT ESTABLISHING

JARO NORTH, UNIT 4

38.301 TOTAL ACRES OF LAND LOCATED IN THE A.M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, AND THE W.J. RAGSDALE SURVEY, ABSTRACT NO. 268, GUADALUPE COUNTY, TEXAS, CONSISTING OF A CALLED 55.967 ACRE TRACT RECORDED IN DOCUMENT NO. 202299029989, AND A CALLED 84.585 ACRE TRACT RECORDED IN DOCUMENT NO. 202299019628, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS.

PLAT NOTES:

1. ALL LOTS WITHIN THE SUBDIVISION WILL BE PROVIDED WATER BY CRYSTAL CLEAR, SEWER BY CITY OF SEGUIN, AND ELECTRIC SERVICE BY 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 NOT WITHIN THE CITY LIMITS OF NEW BRAUNFELS, TEXAS.
6. THIS SUBDIVISION IS WITHIN THE NAVARRO 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 48187C0130F, EFFECTIVE DATE NOVEMBER 2, 2007, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
8. NO STRUCTURES, WALLS OR OTHER OBSTRUCTIONS OF ANY KIND SHALL BE PLACED WITHIN THE LIMITS OF THE DRAINAGE EASEMENTS SHOWN ON THIS PLAT. NO LANDSCAPING, FENCES, OR OTHER TYPE OF MODIFICATIONS WHICH ALTER THE CROSS SECTIONS OF THE DRAINAGE EASEMENTS OR DECREASE THE HYDRAULIC CAPACITY OF THE EASEMENT, AS APPROVED, SHALL BE ALLOWED WITHOUT THE APPROVAL OF THE CITY ENGINEER. THE CITY OF NEW BRAUNFELS SHALL HAVE THE RIGHT OF INGRESS AND EGRESS OVER GRANTOR'S ADJACENT PROPERTY TO REMOVE ANY OBSTRUCTIONS PLACED WITHIN THE LIMITS OF SAID DRAINAGE EASEMENTS AND TO MAKE ANY MODIFICATIONS OR IMPROVEMENTS WITHIN SAID DRAINAGE EASEMENTS.
9. FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
10. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ADJACENT TO THE CURB BY THE DEVELOPER AT THE TIME OF STREET CONSTRUCTION ALONG:
    A. TIGER PAW LOT 906, BLOCK 8, LOT 907, BLOCK 17, LOT 908, BLOCK 22, AND LOT 909, BLOCK 21.
    B. WOODLAND CHASE LOT 909, BLOCK 21.
    C. GRAND POINT LOT 908, BLOCK 22
11. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED PER CITY STANDARDS ADJACENT TO THE CURB BY THE HOME BUILDER AT THE TIME OF BUILDING CONSTRUCTION ALONG: WOODLAND CHASE, BOBCAT CHASE, TIGER PAW, GRAND POINT, AND LION HILL.
12. THE ELEVATION OF THE LOWEST FLOOR OF A STRUCTURE SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORMWATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO STORMWATER CONVEYANCE STRUCTURES MUST HAVE A FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE A PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE AND SHALL PREVENT WATER FROM LEAVING THE STREET.
11. 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 216 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.
12. NON-RESIDENTIAL USE SUBDIVISIONS ARE NOT SUBJECT TO THE PARK LAND DEDICATION AND DEVELOPMENT REQUIREMENTS. HOWEVER, AT SUCH TIME ANY DWELLING UNITS ARE CONSTRUCTED, THE OWNER OF THE LOT SHALL CONTACT THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.
13. THIS UNIT CONTAINS 216 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 THE LONE OAK FARM MUD.
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.
16. LOT 906, BLOCK 8, LOT 907, BLOCK 17, LOT 908, BLOCK 22, AND LOT 909, BLOCK 21 (DRAINAGE) WILL BE OWNED AND MAINTAINED BY THE LONE OAK MUD, ITS SUCCESSORS AND/OR ASSIGNS.

CCSUD WATER PLAT NOTES: REV. 12/2022

1. WATER IS TO BE SUPPLIED BY CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD).
2. CCSUD SHALL HAVE ACCESS TO ALL METERS. METERS SHALL BE LOCATED IN THE FRONT YARD, WITHIN EASEMENT AND NOT WITHIN A FENCED AREA.
3. ANY EASEMENT DESIGNATED FOR PLACEMENT OF A CCSUD UTILITY SHALL REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. ONLY SIDE LOT EASEMENTS MAY BE WITHIN A FENCED AREA. NO UTILITIES MAY BE INSTALLED WITHIN REAR LOT EASEMENTS.
4. ALL CCSUD EASEMENTS ARE FOR CONSTRUCTION, MAINTENANCE (INCLUDING BUT NOT LIMITED TO REMOVAL OF TREES AND OTHER OBSTRUCTIONS), READING OF METERS, AND REPAIR OF ANY CCSUD INFRASTRUCTURE LOCATED WITHIN THE UTILITY EASEMENT.
5. NO CONCRETE OR PAVEMENT MAY BE PLACED OVER CCSUD WATER INFRASTRUCTURE EXCEPT AT PERPENDICULAR CROSSINGS. IN AREAS WHERE A WATER MAIN CROSSES A ROADWAY, THE WATER MAIN MUST BE ENCASED OR CONSTRUCTED OF DUCTILE IRON PIPE. SERVICE LINES MUST BE ENCASED PER CCSUD STANDARD CONSTRUCTION DETAILS.

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 MAY 14, 2025

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

CURVE TABLE				
CURVE	LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C1	1050.61'	3107.49'	S7°00'28"W	1045.62'
C2	180.00'	3167.49'	S14°33'01"W	179.98'
C3	299.62'	3167.49'	S9°56'27"W	299.51'
C4	266.00'	3167.49'	S4°10'26"W	265.92'
C5	109.00'	3167.49'	S1°40'40"E	108.99'
C6	113.80'	3337.49'	S0°10'31"E	113.80'
C7	113.24'	3287.49'	N0°11'40"W	113.23'
C8	7.90'	5.00'	N46°03'15"E	7.10'
C9	7.90'	5.00'	N43°25'20"W	7.10'
C10	7.81'	5.00'	S46°34'23"W	7.04'
C11	7.81'	5.00'	S43°56'28"E	7.04'
C12	5.56'	105.00'	N89°48'01"E	5.55'
C13	8.20'	155.00'	S89°48'01"W	8.20'
C14	7.81'	5.00'	S38°58'30"E	7.04'
C15	7.81'	5.00'	S51°32'21"W	7.04'
C16	21.63'	155.00'	N87°43'00"W	21.62'
C17	14.66'	105.00'	S87°43'00"E	14.64'
C18	7.81'	5.00'	S33°56'44"E	7.04'
C19	7.81'	5.00'	S56°34'08"W	7.04'
C20	35.24'	155.00'	N85°12'07"W	35.17'
C21	23.87'	105.00'	S85°12'07"E	23.82'
C22	7.81'	5.00'	S28°51'58"E	7.04'
C23	33.18'	105.00'	S82°39'44"E	33.04'
C24	48.98'	155.00'	N82°39'44"W	48.78'
C25	7.81'	5.00'	S61°38'53"W	7.04'
C26	16.44'	3337.49'	S17°02'47"W	16.44'
C27	235.97'	3337.49'	S13°51'05"W	235.92'

CURVE TABLE				
CURVE	LENGTH	RADIUS	CHORD DIRECTION	CHORD LENGTH
C28	233.07'	3337.49'	S8°47'49"W	233.02'
C29	229.36'	3337.49'	S3°47'56"W	229.32'
C30	874.80'	3287.48'	S9°27'46"W	872.22'
C31	43.90'	150.00'	S83°19'49"E	43.75'
C32	17.16'	100.00'	N86°47'55"W	17.14'
C33	6.92'	5.00'	N65°24'23"E	6.38'
C34	9.39'	5.00'	N28°03'42"W	8.07'
C35	7.85'	5.00'	S70°45'30"W	7.07'
C36	7.85'	5.00'	S19°14'32"E	7.07'
C37	7.85'	5.00'	N70°45'30"E	7.07'
C38	71.93'	150.00'	S77°58'43"E	71.24'
C39	47.95'	100.00'	N77°58'43"W	47.49'
C40	7.85'	5.00'	N19°14'30"W	7.07'
C41	7.85'	5.00'	N70°45'30"E	7.07'
C42	71.93'	150.00'	S77°58'43"E	71.24'
C43	47.95'	100.00'	N77°58'43"W	47.49'
C44	7.85'	5.00'	N19°14'30"W	7.07'
C45	190.98'	175.00'	S57°01'17"W	181.64'
C46	136.41'	125.00'	N57°01'17"E	129.74'
C47	9.11'	175.00'	S86°47'39"W	9.10'
C48	5.58'	125.00'	N87°00'18"E	5.58'
C49	15.57'	3287.49'	N12°47'11"E	15.57'
C50	1.84'	175.00'	S26°03'35"W	1.84'
C51	109.00'	3167.48'	S1°40'40"E	108.99'

LINE TABLE		
LINE	LENGTH	DIRECTION
L1	99.20'	N89°07'44"E
L2	85.01'	N1°42'55"W
L3	133.45'	S1°50'47"E
L4	35.79'	S1°10'53"E
L5	60.00'	S88°49'07"W
L6	119.98'	S88°17'05"W
L7	5.23'	N1°42'55"W
L8	50.00'	S88°17'05"W
L9	115.00'	N1°42'22"W
L10	105.06'	S25°45'30"W
L11	50.00'	N64°14'30"W
L12	18.99'	S25°45'30"W
L13	160.00'	N64°14'30"W
L14	8.47'	S73°36'32"E
L15	4.74'	N78°41'18"W
L16	4.74'	N78°41'18"W
L17	11.05'	N83°43'05"W
L18	11.05'	N83°43'05"W
L19	16.69'	N88°41'02"W
L20	16.69'	N88°41'02"W
L21	2.14'	N88°17'05"E
L22	4.96'	N64°14'30"W
L23	4.96'	S64°14'30"E
L24	4.96'	N64°14'30"W
L25	4.96'	S64°14'30"E
L26	120.00'	S77°20'57"E
L27	29.91'	S88°17'05"W
L28	23.56'	S66°10'17"E
L29	18.75'	N88°17'05"E
L30	0.45'	S88°17'05"W
L31	10.06'	N1°42'55"W
L32	35.01'	S1°10'53"E
L33	8.47'	N73°36'32"W
L34	18.89'	S88°17'05"W
L35	12.64'	N88°17'05"E
L36	19.41'	S88°17'05"W
L37	31.65'	N88°17'05"E
L38	47.30'	S33°50'44"W
L39	44.65'	S14°15'15"W
L40	51.92'	S34°07'58"W
L41	45.51'	N14°16'10"E
L42	41.63'	S33°42'07"W
L43	46.46'	S15°54'23"W
L44	34.40'	N2°05'49"E
L45	31.05'	N20°51'25"E
L46	31.61'	N1°38'27"W
L47	36.48'	N15°42'25"E
L48	30.23'	N8°09'27"W
L49	32.23'	N11°11'10"E
L50	38.12'	N11°27'59"W

SITE VISIBILITY RESTRICTION:

NO STRUCTURE, OBJECT OR PLANT OF ANY TYPE SHALL OBSTRUCT VISION FROM A HEIGHT OF TWENTY-FOUR (24) INCHES TO A HEIGHT OF TEN (10) FEET ABOVE THE TOP OF THE CURB, INCLUDING, BUT NOT LIMITED TO, BUILDINGS, FENCES, WALKS, SIGNS, TREE, SHRUBS, CARS, TRUCKS, ETC., IN THE SIGHT VISIBILITY EASEMENT AS SHOWN ON THE PLAT. THESE SIGHT VISIBILITY EASEMENTS WILL REMAIN IN EFFECT UNTIL VACATED BY ORDINANCE ADOPTED BY THE CITY COUNCIL AND THE PROPERTY REPLATTED.

THE SUBDIVISION PLAT OF JARO NORTH SUBDIVISION UNIT 4 HAS BEEN SUBMITTED TO AND APPROVED BY CRYSTAL CLEAR SPECIAL UTILITY DISTRICT FOR EASEMENTS

_____ DATE

_____ AUTHORIZED AGENT, CRYSTAL CLEAR SPECIAL UTILITY DISTRICT

STATE OF TEXAS
COUNTY OF GUADALUPE

I (WE) THE UNDERSIGNED OWNER(S) OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE LANDING A SUBDIVISION TO THE CITY OF NEW BRAUNFELS, COUNTY OF COMAL/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.,
A TEXAS LIMITED PARTNERSHIP

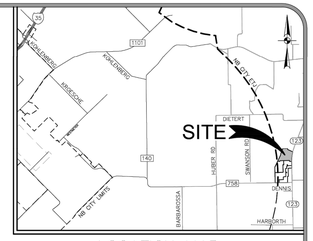
BY: U.S. HOME LLC, A DELAWARE LIMITED
LIABILITY COMPANY (AS SUCCESSOR-IN-INTEREST
BY CONVERSION TO U.S. HOME CORPORATION,
A DELAWARE CORPORATION), ITS GENERAL PARTNER

BY: LENNAR HOMES OF TEXAS LAND AND CONSTRUCTION, LTD
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216
NAME: RICHARD MOTT
TITLE: VICE PRESIDENT OF LAND DEVELOPMENT

STATE OF TEXAS
COUNTY OF _____.

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

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

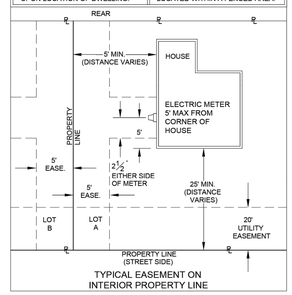


LOCATION MAP
NOT TO SCALE

GVEC NOTES:

1. GVEC WILL POSSESS A 5-FOOT WIDE EASEMENT TO THE SERVICE METER LOCATION. EASEMENT TO FOLLOW SERVICE LINE AND WILL VARY DEPENDING ON LOCATION OF BUILDING OR STRUCTURE.
2. GVEC SHALL HAVE ACCESS TO METER LOCATIONS FROM THE FRONT YARD WITH THE LOCATION NOT BEING WITHIN A FENCED AREA.
3. ANY EASEMENT DESIGNATED AS A GVEC 20'x20' UTILITY EASEMENT SHALL REMAIN OPEN FOR ACCESS AT ALL TIMES AND SHALL NOT BE WITHIN A FENCED AREA.
4. ALL UTILITY EASEMENTS ARE FOR THE CONSTRUCTION, MAINTENANCE (INCLUDING BUT NOT LIMITED TO REMOVAL OF TREES AND OTHER OBSTRUCTIONS), READING OF METERS, AND REPAIR OF ALL OVERHEAD AND UNDERGROUND UTILITIES.

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



TYPICAL EASEMENT ON
INTERIOR PROPERTY LINE

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

_____
CHAIRMAN

APPROVED FOR ACCEPTANCE

_____ _____
DATE PLANNING DIRECTOR

_____ _____
DATE CITY ENGINEER

STATE OF TEXAS
COUNTY OF GUADALUPE

_____
COUNTY CLERK, GUADALUPE COUNTY, TEXAS

_____
DEPUTY

SHEET 1 OF 2

FOR REFERENCE ONLY

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 1053600

STATE OF TEXAS
ZOE F. JASSO
130964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

PLAT (1 OF 2)
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

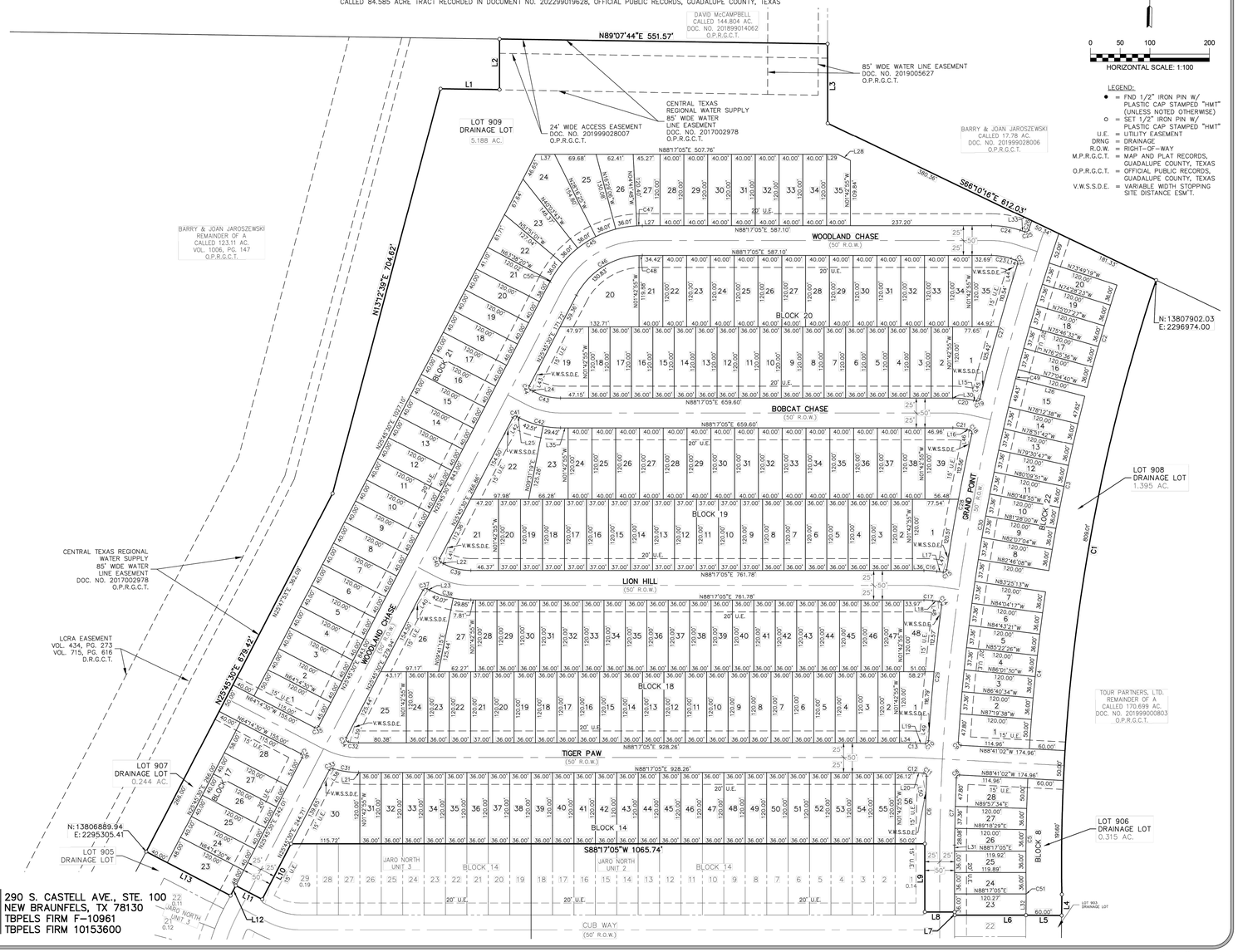
SHEET
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Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_PLAT.dwg User: adrianr Apr 14, 2026 - 4:09pm
Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Plotting\337.147 Jaro North Unit 4 Plat.dwg User: adrianr Apr 08, 2026 - 4:37pm

FINAL PLAT ESTABLISHING

JARO NORTH, UNIT 4

38.301 TOTAL ACRES OF LAND LOCATED IN THE A.M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, AND THE W.J. RAGSDALE SURVEY, ABSTRACT NO. 268, GUADALUPE COUNTY, TEXAS, CONSISTING OF A CALLED 55.967 ACRE TRACT RECORDED IN DOCUMENT NO. 202299029989, AND A CALLED 84.585 ACRE TRACT RECORDED IN DOCUMENT NO. 202299019628, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS



PLAT PREPARED MAY 14, 2025

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

SHEET 2 OF 2

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 1053600

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

PLAT (2 OF 2)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET

C0.4

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\(20s)\337.147_PLAT.dwg User: adrianr Apr 08, 2026 - 4:37pm
Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Plotting\337.147 Jaro North Unit 4 Plat.dwg User: adrianr Apr 14, 2026 - 4:09pm

Jaro North Subdivision Unit 1 - Existing Conditions Hydrology SCS Calculations										
Point	AREA ID	Area (ac)	CN	T_c (min)	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)	Location
A	EX-A	176.20	84	41	250.17	506.03	702.74	878.11	1078.80	Existing culvert at the intersection of FM 758 & SH 123
B	EX-B	92.30	84	23	175.90	353.96	491.44	613.94	754.08	Existing culvert at SH 123



EXISTING CONDITIONS
SCALE: 1"=200'

0 200' 400'
SCALE: 1"=200'

LEGEND

- LIMITS OF DRAINAGE AREA
- LIMITS OF SUB-DRAINAGE AREA
- TC — TC — TIME OF CONCENTRATION
- 900 EXISTING CONTOURS
- 900 PROPOSED CONTOURS
- FLOW ARROWS
- A / 9.0 DRAINAGE BASIN LABEL / BASIN AREA (AC)
- A1 / 2.0 SUB-DRAINAGE AREA LABEL / SUB-DRAINAGE AREA (AC)
- A1 INLET LABEL
- A1 ANALYSIS POINT LABEL

STATE OF TEXAS
JAMES INGALLS
107418
LICENSED
PROFESSIONAL ENGINEER
2/3/22

NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78130

JARO NORTH SUBDIVISION
UNIT 1

DRAINAGE AREA MAP -
EXISTING

SHEET 20 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

INK CIVIL
2021 W SH46, STE 105
NEW BRAUNFELS, TX. 78132
PH: 830-358-7127 ink-civil.com
TBPE FIRM F-13351

© COPYRIGHT 2021

APPROVED JARO NORTH UNIT 1 EXISTING DRAINAGE MAP
FOR REFERENCE ONLY

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

OVERALL PRE-DEVELOPED CONDITIONS SCS DRAINAGE MAP - INK CIVIL

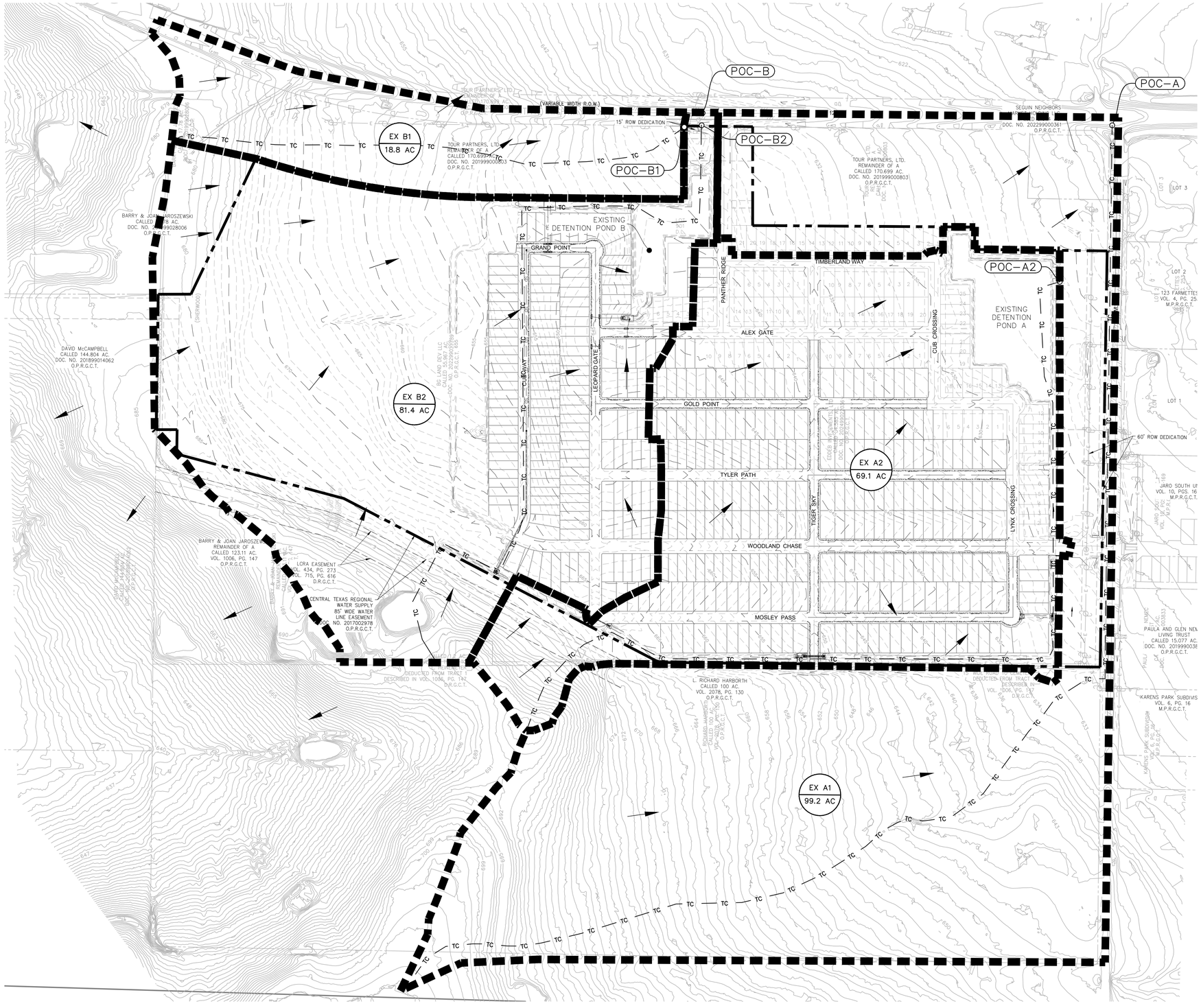
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C1.0

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147 OVERALL DA MAPS.dwg User: cdolcer Apr 14, 2026 - 4:10pm
Plotted: Home: k:\Projects\DESIGN\3 Jaro North Subdivision\Civil\Construction Drawings\20 DRAINAGE AREA MAP - PROPOSED.dgn Layout: existconditions Apr 13, 2022 - 4:10pm



0 100 200 400

HORIZONTAL SCALE: 1:200

LEGEND

- PROPOERTY LINE
- 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

Table 2 - Existing Conditions(Pre-Detention) Hydrology Calculations (SCS)

Area ID	Point of Concentration	Area (ac)	T_c (min)	CN	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
EXA1	POC-A	99.20	41.5	84	140.85	284.89	395.64	494.37	607.36
EXA2	POC-A2	69.10	18.6	87	152.93	294.37	401.85	497.43	606.76
EXB1	POC-B1	18.80	23.8	84	33.30	67.00	93.02	116.21	142.74
EXB2	POC-B2	81.40	26.5	85	149.12	295.49	407.97	508.11	622.67

Table 3 - Existing Conditions(Post-Detention) Hydrology Calculations (SCS)

Area ID	Point of Concentration	Area (ac)	T_c (min)	CN	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
EXA1	POC-A	99.2	41.5	84	140.85	284.89	395.64	494.37	607.36
EXA2	POC-A2				107.88	201.33	275.06	355.23	453.14
EXB1	POC-B1	18.8	23.8	84	33.30	67.00	93.02	116.21	142.74
EXB2 (Pond B)	POC-B1				128.87	257.51	360.80	454.60	563.19
EXA(POND A+EXA1)	POC-A				247.65	484.35	668.46	844.73	1050.86
EXB(POND B+EXB1)	POC-B1				158.49	317.45	445.00	559.91	694.32

Table 4 - Existing POC-A Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
POC-A	Pre-Development Flowrates	250.17	506.03	702.74	878.11	1078.80
POC-A	Existing-Development Flowrates	247.65	484.35	668.46	844.73	1050.86
Δ		(2.52)	(21.68)	(34.28)	(33.38)	(27.94)
Δ (%)		-1.01%	-4.28%	-4.88%	-3.80%	-2.59%

Table 5 - Existing POC-B Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
POC-B	Pre-Development Flowrates	175.90	353.96	491.44	613.94	754.08
POC-B	Existing-Development Flowrates	158.49	317.45	445.00	559.91	694.32
Δ		(17.41)	(36.51)	(46.44)	(54.03)	(59.76)
Δ (%)		-9.90%	-10.31%	-9.45%	-8.80%	-7.92%

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

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

OVERALL EXISTING SCS DRAINAGE MAP

JARO NORTH UNIT 3

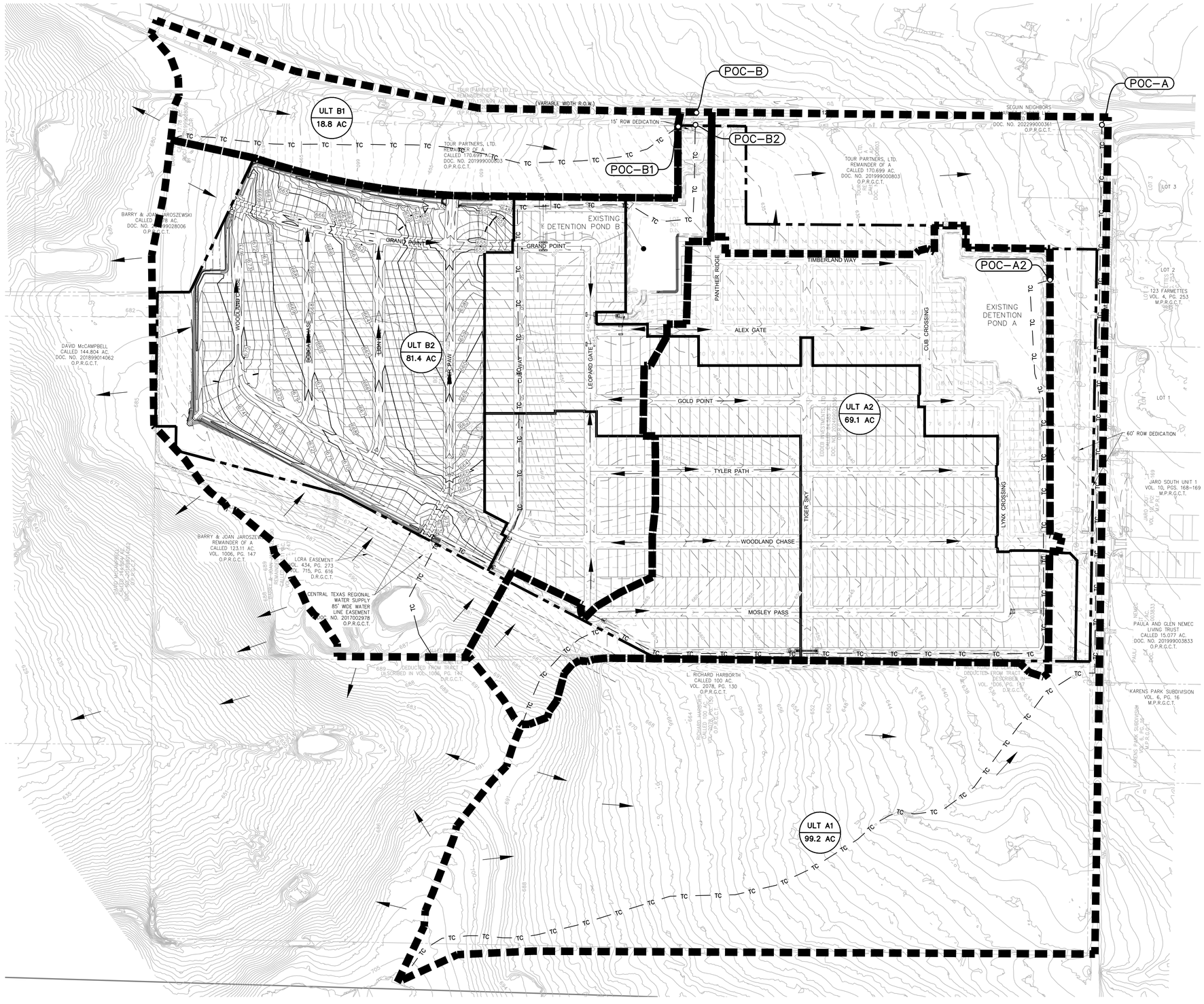
NO.	REVISION DESCRIPTION	REVISION DATE

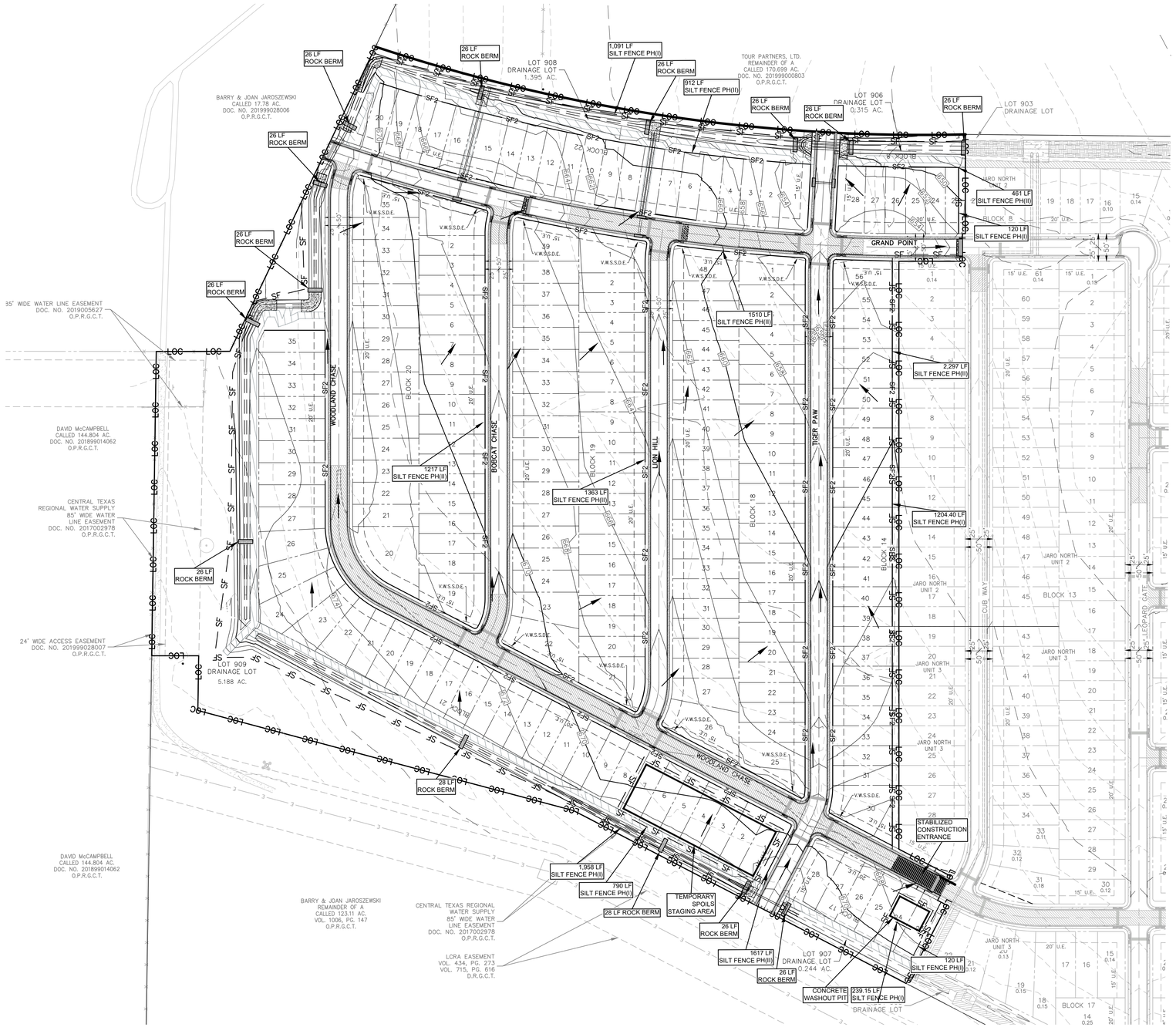
DATE: April 26
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.102

SHEET

C1.1

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Civil\337.102 EXISTING DA MAPS.dwg User: odrisor Apr 14, 2026 - 4:10pm


POC-A
POC-B
POC-B1
POC-B2
POC-A2
ULT A1
99.2 AC
ULT A2
69.1 AC
ULT B1
18.8 AC
ULT B2
81.4 AC
EXISTING DETENTION POND A
EXISTING DETENTION POND B
TOUR PARTNERS, LTD.
REMAINDER OF A
CALLED 170.699 AC.
DOC. NO. 201999000803
O.P.R.G.C.T.
SEQUIN NEIGHBORS
DOC. NO. 202299000361
O.P.R.G.C.T.
(VARIABLE WIDTH R.O.W.)
15' ROW DEDICATION
60' ROW DEDICATION
GRAND POINT
TIMBERLAND WAY
PANTHER RIDGE
ALEX GATE
CUB CROSSING
LEOPARD GATE
GOLD POINT
TYLER PATH
TIGER SKY
LYNX CROSSING
WOODLAND CHASE
MOSLEY PASS
WOODLAND CREEK
BOBCAT BASE
LANIER
JAY WAY
CUB WAY
BARRY & JOAN JAROSZEWSKI
CALLED 123.78 AC.
DOC. NO. 2019029028006
O.P.R.G.C.T.
DAVID McCAMPBELL
CALLED 144.804 AC.
DOC. NO. 201899014062
O.P.R.G.C.T.
BARRY & JOAN JAROSZEWSKI
REMAINDER OF A
CALLED 123.11 AC.
VOL. 1006, PG. 147
O.P.R.G.C.T.
LCRA EASEMENT
VOL. 434, PG. 273
VOL. 715, PG. 616
D.R.G.C.T.
CENTRAL TEXAS REGIONAL
WATER SUPPLY
85' WIDE WATER
LINE EASEMENT
NO. 2017002978
O.P.R.G.C.T.
DEDUCTED FROM TRACT 1
DESCRIBED IN VOL. 1006, PG. 147
O.P.R.G.C.T.
L. RICHARD HARBORTH
CALLED 100 AC.
VOL. 2078, PG. 130
O.P.R.G.C.T.
EDGES INVESTMENTS
DOC. NO. 202400000
O.P.R.G.C.T.
123 FARMETTES
VOL. 4, PG. 253
M.P.R.G.C.T.
JARO SOUTH UNIT 1
VOL. 10, PGS. 168-169
M.P.R.G.C.T.
PAULA AND GLEN NEMEC
LIVING TRUST
CALLED 15.077 AC.
DOC. NO. 201999003833
O.P.R.G.C.T.
KARENS PARK SUBDIVISION
VOL. 6, PG. 16
M.P.R.G.C.T.
LOT 1
LOT 2
LOT 3
TC
682
684
686
688
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692
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760



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 (PH I) DONE BY GC AT START OF PROJECT
- SF2 — SILT FENCE (PH II) DONE BY HOME BUILDER (NOT IN BID TO GC)
- LOC — LOC — LIMIT OF CONSTRUCTION
- STABILIZED CONSTRUCTION ENTRANCE
- FILTER DIKE CURB INLET PROTECTION
- ROCK BERM
- EARTHEN CHECK BERM

SEQUENCE OF CONSTRUCTION

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

NOTE:

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.

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
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STATE OF TEXAS
ZOE F. JASSO
PE 134964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

EROSION CONTROL PLAN

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C2.0

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_EROSION.dwg User: ddrorr Apr 14, 2026 - 4:11pm

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:

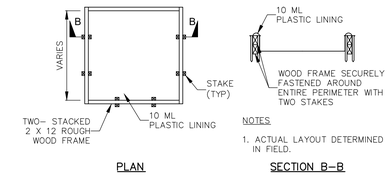
- INCORPORATE REQUIREMENTS FOR CONCRETE WASTE MANAGEMENT INTO MATERIAL SUPPLIER AND SUBCONTRACTOR AGREEMENTS.
- AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
- PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR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



PLAN

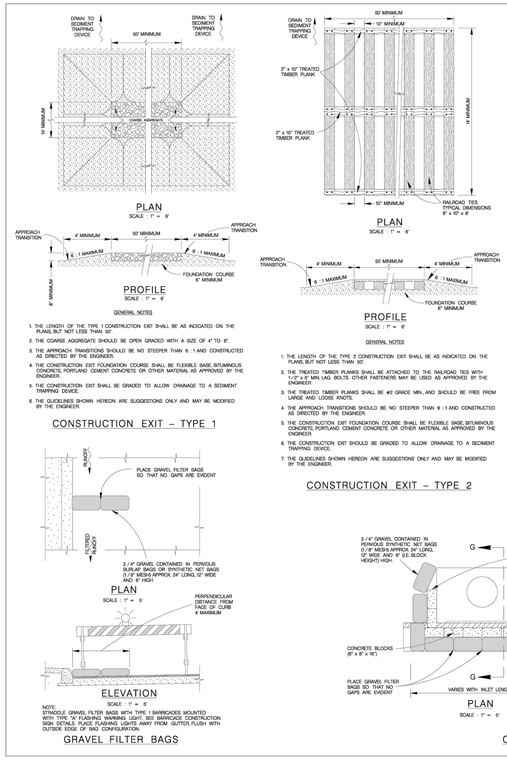
SECTION B–B

NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.

CONCRETE WASHOUT PIT DETAIL

TYPE "ABOVE GRADE"
NOT TO SCALE

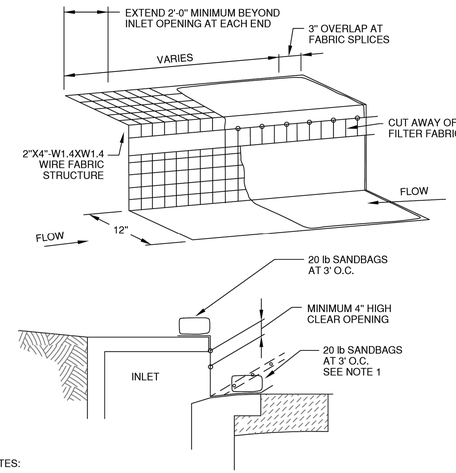


SEQUENCE OF CONSTRUCTION

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

NOTE:

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

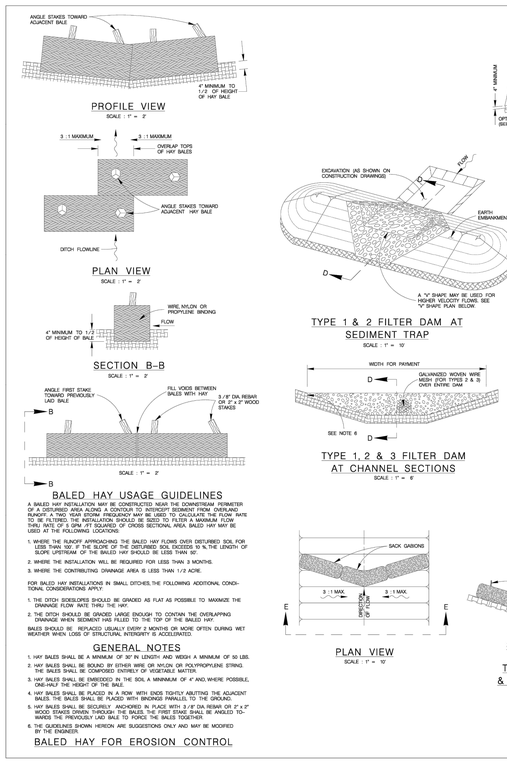


NOTES:

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
APPROVED BY:
STANDARD DRAWING:
FILTER DIKE CURB INLET PROTECTION
UPDATED: 4-29-03 SCALE: N.T.S. SHEET: 1 OF 1 DRAWING NO.: 505



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 SLOPE UPSTREAM OF THE FUNCTIONAL 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 END OF SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./ SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP TRENCH) TO ENSURE THE 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 ON THE TOE OF SLOPES WHERE ERODIBLE IS ANTICIPATED UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.
5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY FASTENED TO THE OPPOSITE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 /4" DIA REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

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

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

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

EROSION CONTROL DETAILS

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C2.1

Drawing Name: M:_Projects\337 – Lennar Homes\147 – Jaro North Unit 4\C2x\337.147_EROSION DETAILS.dwg User: odrion Apr 14, 2026 – 4:11pm

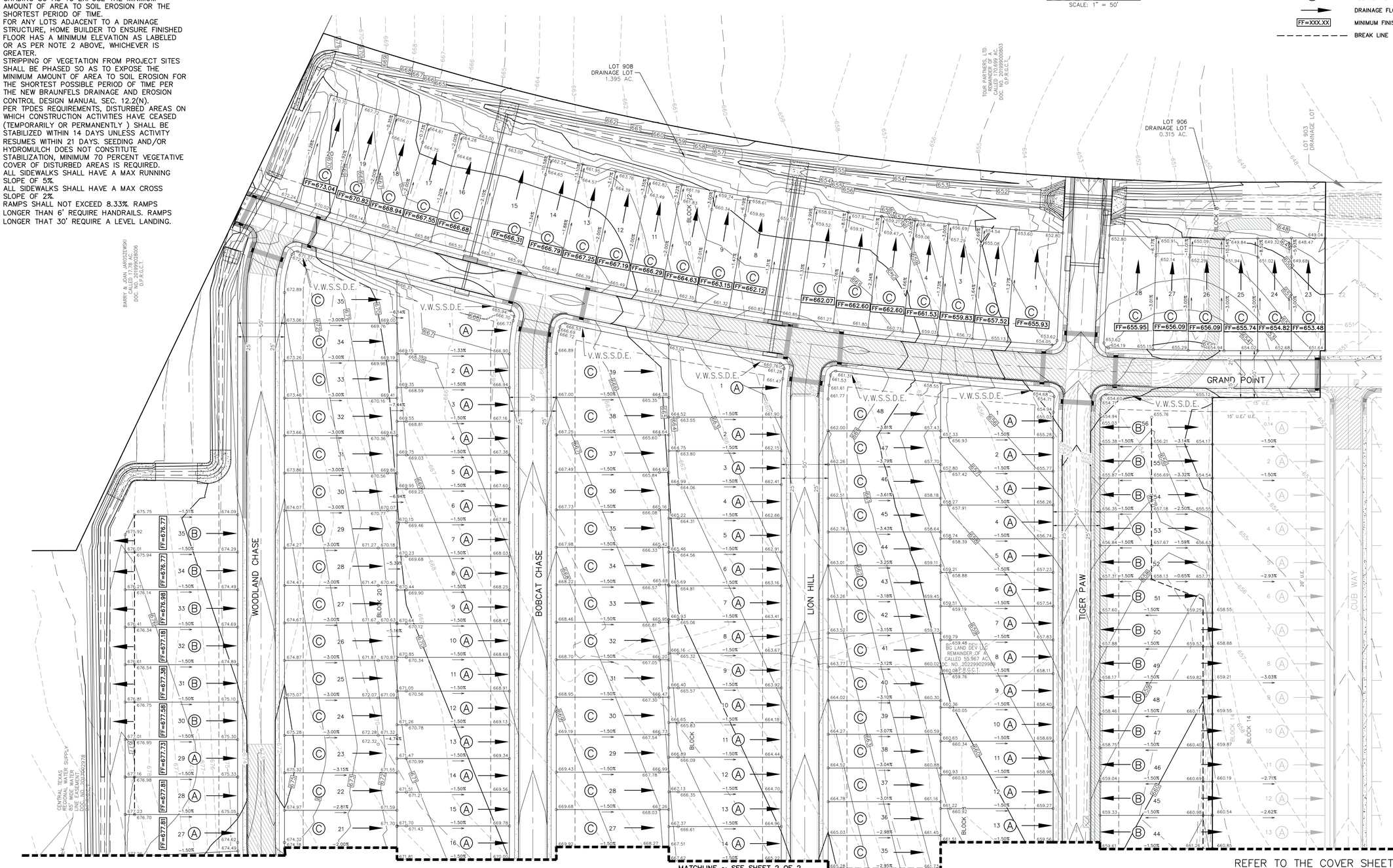
NOTES:

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 C0.2.
   2.B. HUD DETAILS SHOWN ON SHEET C3.2.
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. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING AND/OR HYDROMULCH DOES NOT CONSTITUTE STABILIZATION, MINIMUM 70 PERCENT VEGETATIVE COVER OF DISTURBED AREAS IS REQUIRED.
7. ALL SIDEWALKS SHALL HAVE A MAX RUNNING SLOPE OF 5%.
8. ALL SIDEWALKS SHALL HAVE A MAX CROSS SLOPE OF 2%.
9. RAMPS SHALL NOT EXCEED 8.33%. RAMPS LONGER THAN 6' REQUIRE HANDRAILS. RAMPS LONGER THAT 30' REQUIRE A LEVEL LANDING.

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- (A) LOT GRADING SEE DETAILS SHEET 9
- DRAINAGE FLOW DIRECTION
- FF=XXX.XX MINIMUM FINISHED FLOOR ELEVATION
- BREAK LINE

SCALE: 1" = 50'



MATCHLINE ~ SEE SHEET 2 OF 2

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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STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
131984
04/15/2026

GRADING PLAN (1 OF 2)

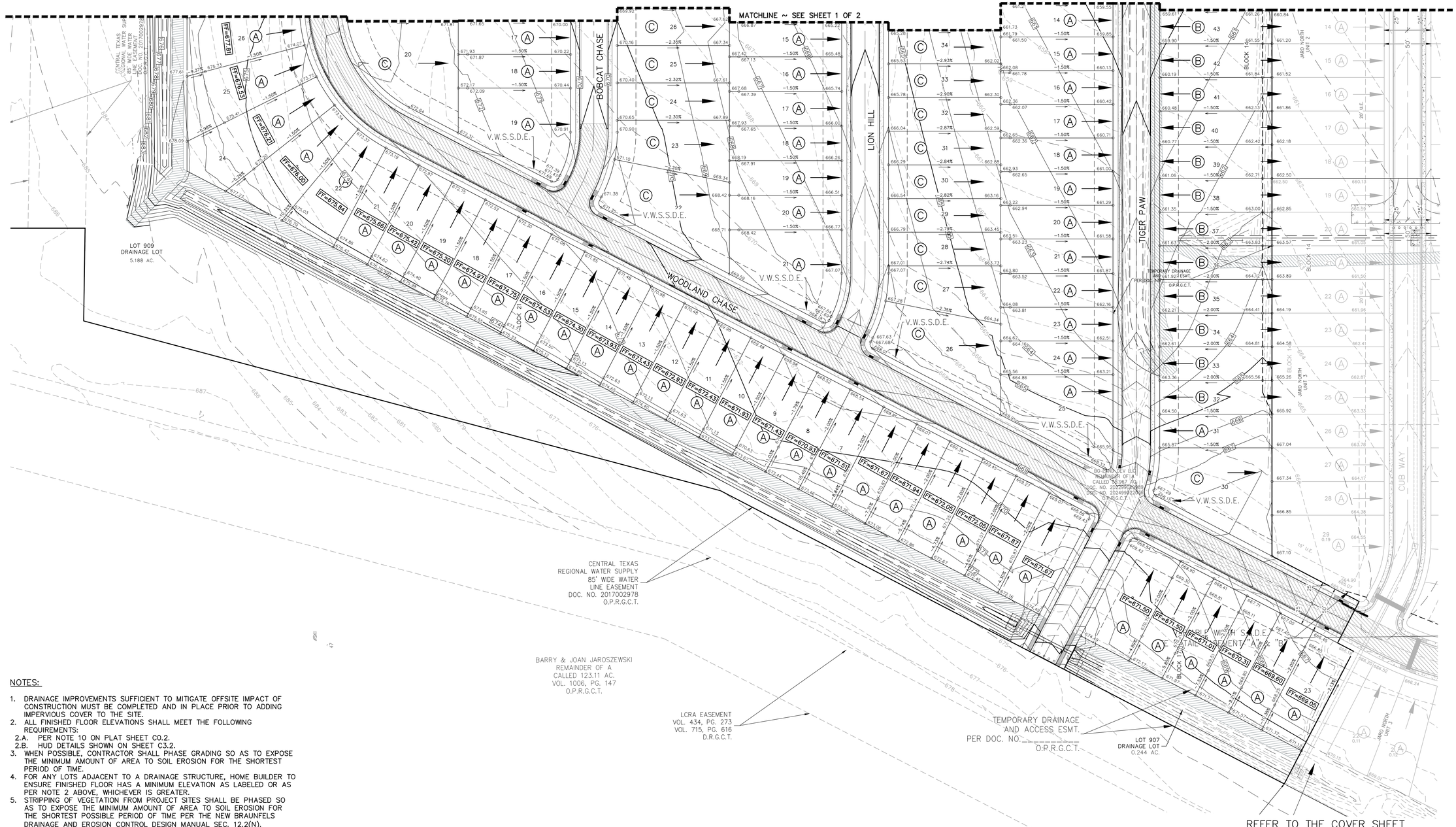
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
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SHEET
C3.0

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\02a\337.147_GROUNG.dwg User: adrianr Apr 14, 2026 - 4:57pm



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 C0.2.
   2.B. HUD DETAILS SHOWN ON SHEET C3.2.
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. PER TPDES REQUIREMENTS, DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITIES HAVE CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITY RESUMES WITHIN 21 DAYS. SEEDING AND/OR HYDROMULCH DOES NOT CONSTITUTE STABILIZATION, MINIMUM 70 PERCENT VEGETATIVE COVER OF DISTURBED AREAS IS REQUIRED.
7. ALL SIDEWALKS SHALL HAVE A MAX RUNNING SLOPE OF 5%.
8. ALL SIDEWALKS SHALL HAVE A MAX CROSS SLOPE OF 2%.
9. 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
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290 S. CASTELL AVE., STE. 100
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TBPELS FIRM F-10961
TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

GRADING PLAN (2 OF 2)

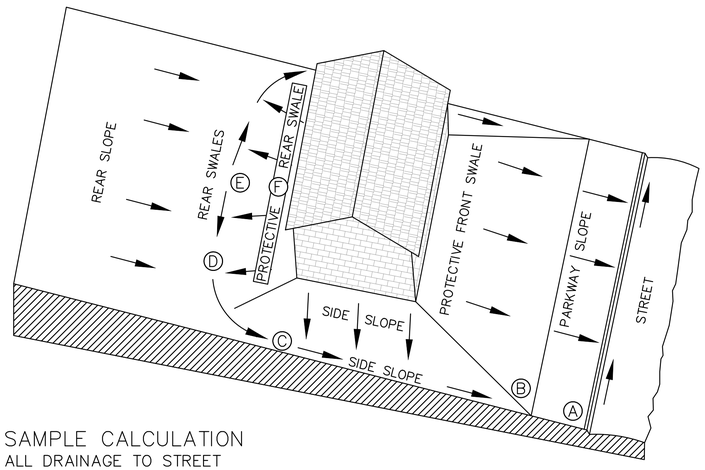
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C3.1

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\C0s\337.147_GRADING.dwg User: odinor Apr 14, 2026 - 4:59pm



SAMPLE CALCULATION
ALL DRAINAGE TO STREET

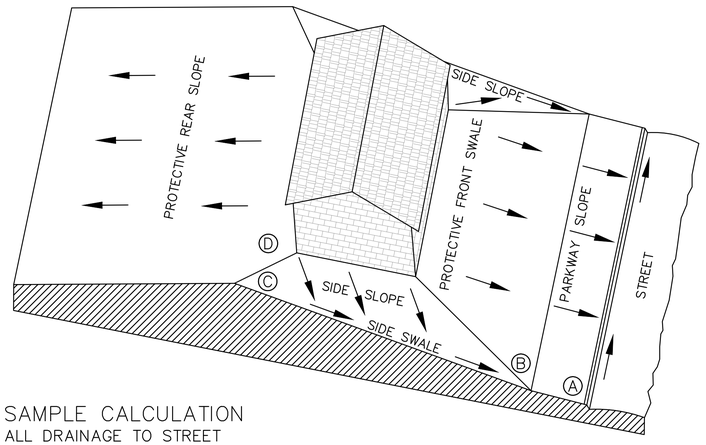
SAMPLE COMPUTATION OF GRADING CONTROL LINE AF FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 0.5% STREET, WITH 60' BUILDING DEPTH AND 2% SWALES.				RESULTS OF 1% SWALES	
A	CURB–TOP ON LOT LINE EXTENSION AT HIGH LOT CORNER				
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')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



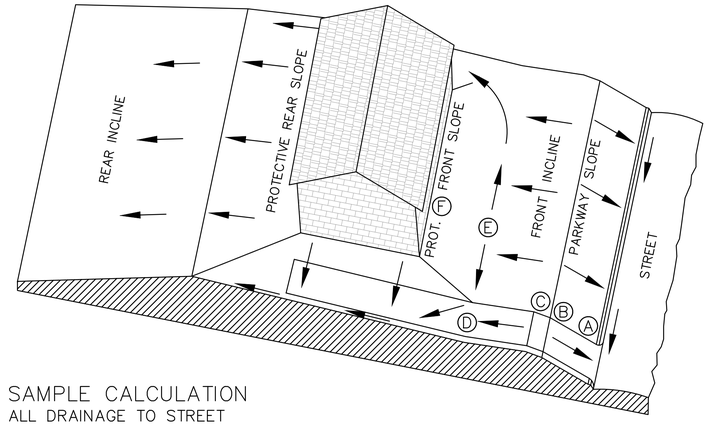
SAMPLE CALCULATION
ALL DRAINAGE TO STREET

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 Ⓒ

GENERAL SPECIFICATIONS FOR SITE PREPARATION

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

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

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

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

DEPTH AND MIXING OF FILL LAYERS

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

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

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

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

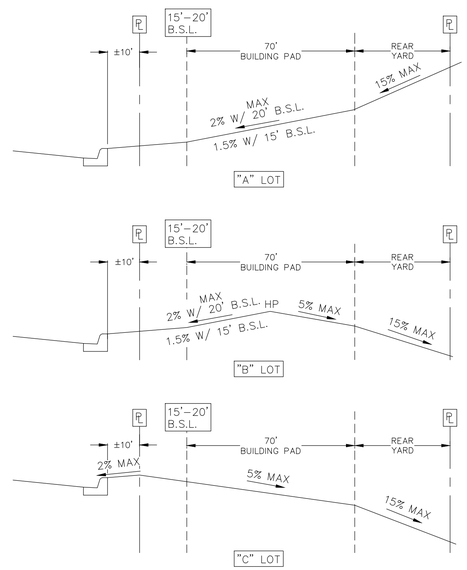
DENSITY TEST
FIELD DENSITY TESTS SHALL BE PERFORMED ON ALL LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE TWELVE INCHES (12"). ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION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

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

CUT/FILL LOTS
AREAS INVOLVING CUT ON THE PORTION AND FILL ON ANOTHER PORTION OF A SPECIFIC LOT SHALL BE PREPARED TO A MINIMUM DEPTH OF 6 IN., AND WILL BE THE SAME MATERIAL CLASSIFICATION AT THE SAME COMPACTION AND MOISTURE CONTENT. FIELD DENSITY TESTS SHALL BE REQUIRED ON EACH CUT/FILL LOT FOR THE PURPOSE OF DETERMINING UNIFORMITY OF THE AREA SUPPORTING THE PROPOSED STRUCTURES.

HUD 79–G
HUD 79–G REQUIREMENT FOR FILL MATERIAL OF 6 INCHES AND MORE WILL BE CONDUCTED. ALL CUT AREAS WILL ALSO MEET THE REQUIREMENTS FOR HUD 79–G COMPACTION TESTING. IN ADDITION, ENGINEERS MUST PROVIDE VERIFICATION OF ALL AREAS WHICH DO NOT REQUIRE HUD 79–G. AFTER SITE GRADING IS COMPLETED, GEO–TECHNICAL ENGINEER SHALL PROVIDE THE CONTRACTOR AND OWNER A 79–G LETTER.

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



LENNAR LOT GRADING STANDARDS

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

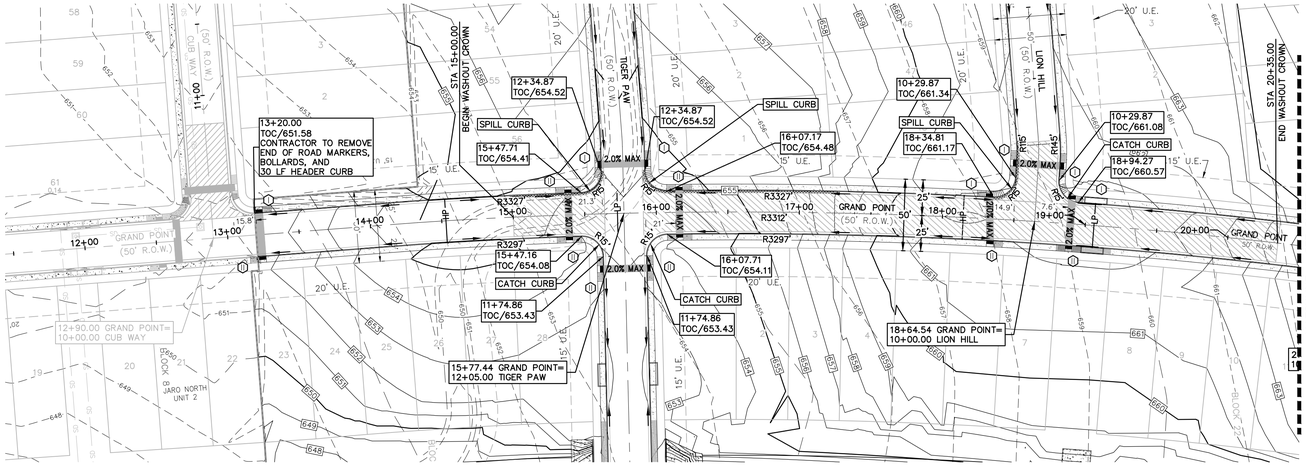
GRADING DETAILS
JARO NORTH UNIT 4

REVISION DESCRIPTION	REVISION DATE
NO.	

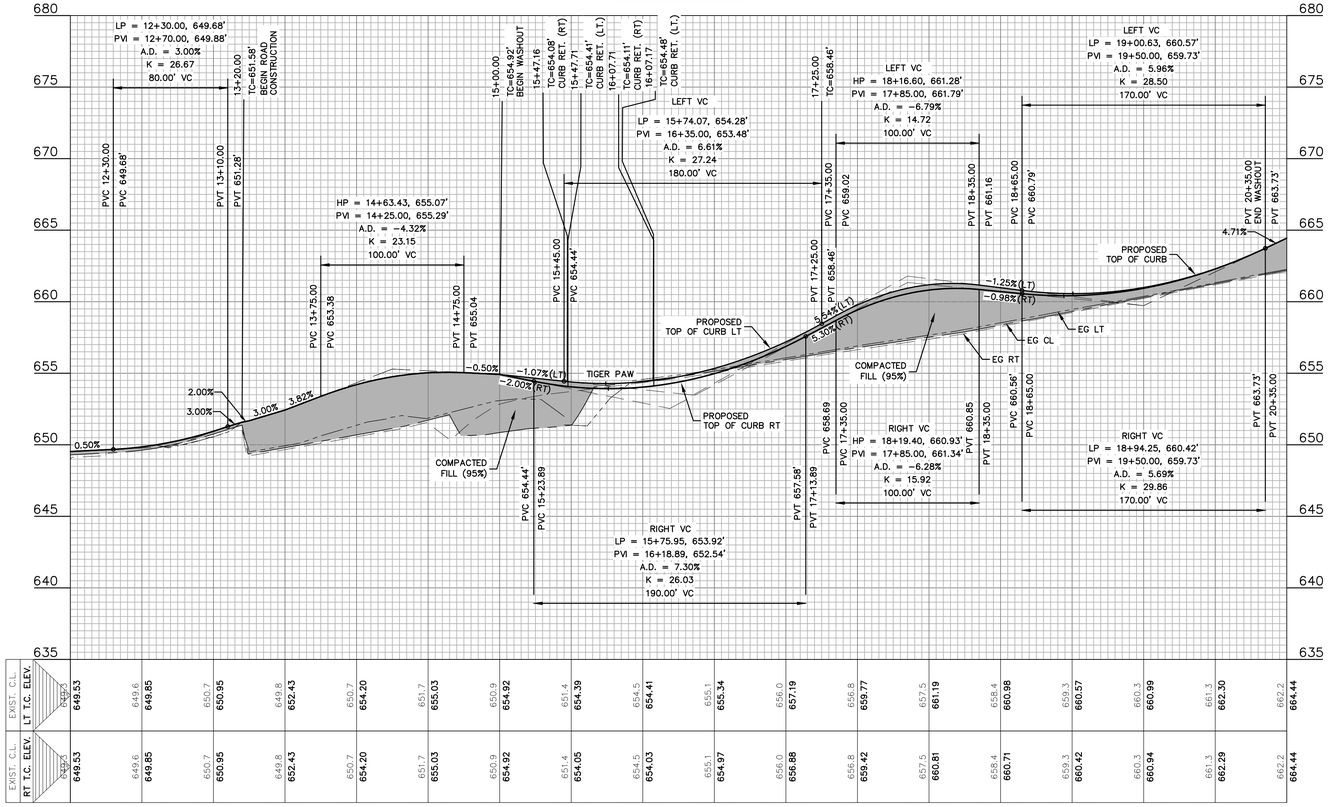
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C3.2

Drawing Name: M:_Projects\337 – Lennar Homes\147 – Jaro North Unit 4\COS\337.147_GRAD DETAILS.dwg User: adhorr Apr 14, 2026 – 4:12pm



GRAND POINT
12+00 – 20+50





LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET **C4.14**)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

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

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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TBPELS FIRM F-10961
TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
No. 134964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

GRAND POINT PLAN & PROFILE (1 OF 2)

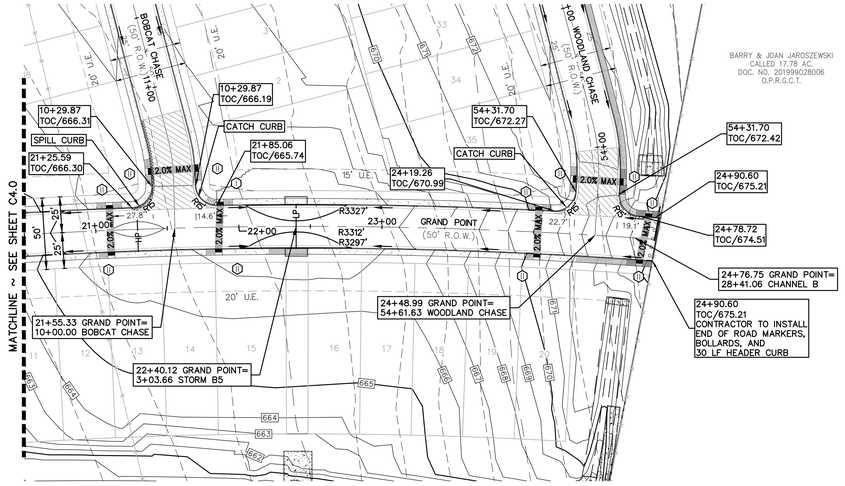
JARO NORTH UNIT 4

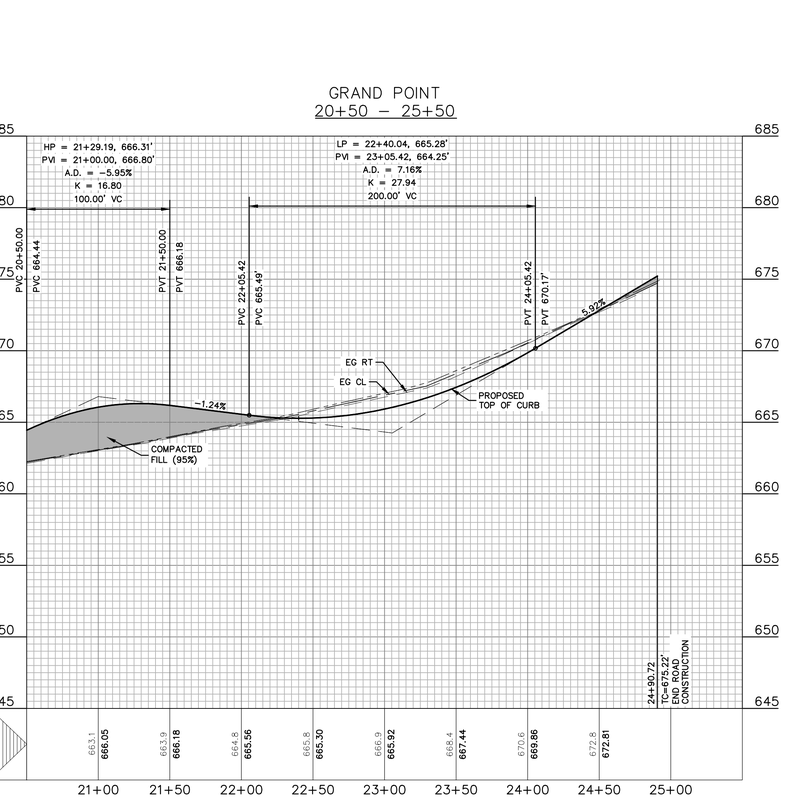
NO.	REVISION DESCRIPTION	REVISION DATE

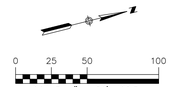
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SHEET
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Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cbk\337.147_GRAND POINT.dwg User: adrianr Apr 14, 2026 - 4:13pm







LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
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- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET **C4.14**)
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NOTES

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DRAINAGE FEATURES AND CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

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LICENSED
PROFESSIONAL ENGINEER
No. 134964
04/15/2026

GRAND POINT PLAN & PROFILE (2 OF 2)

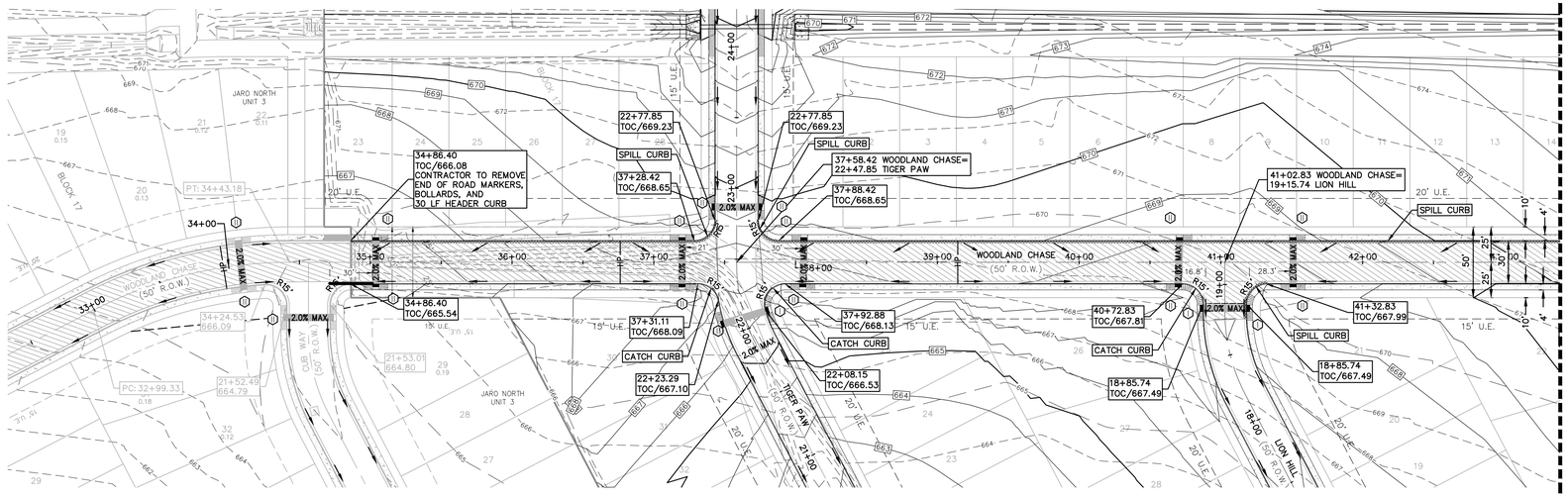
JARO NORTH UNIT 4

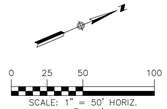
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C4.1

Drawing Name: M:_Projects\337 – Lennar Homes\147 – Jaro North Unit 4\CDs\337.147_GRAND POINT.dwg User: adfarr Apr 14, 2026 - 4:13pm





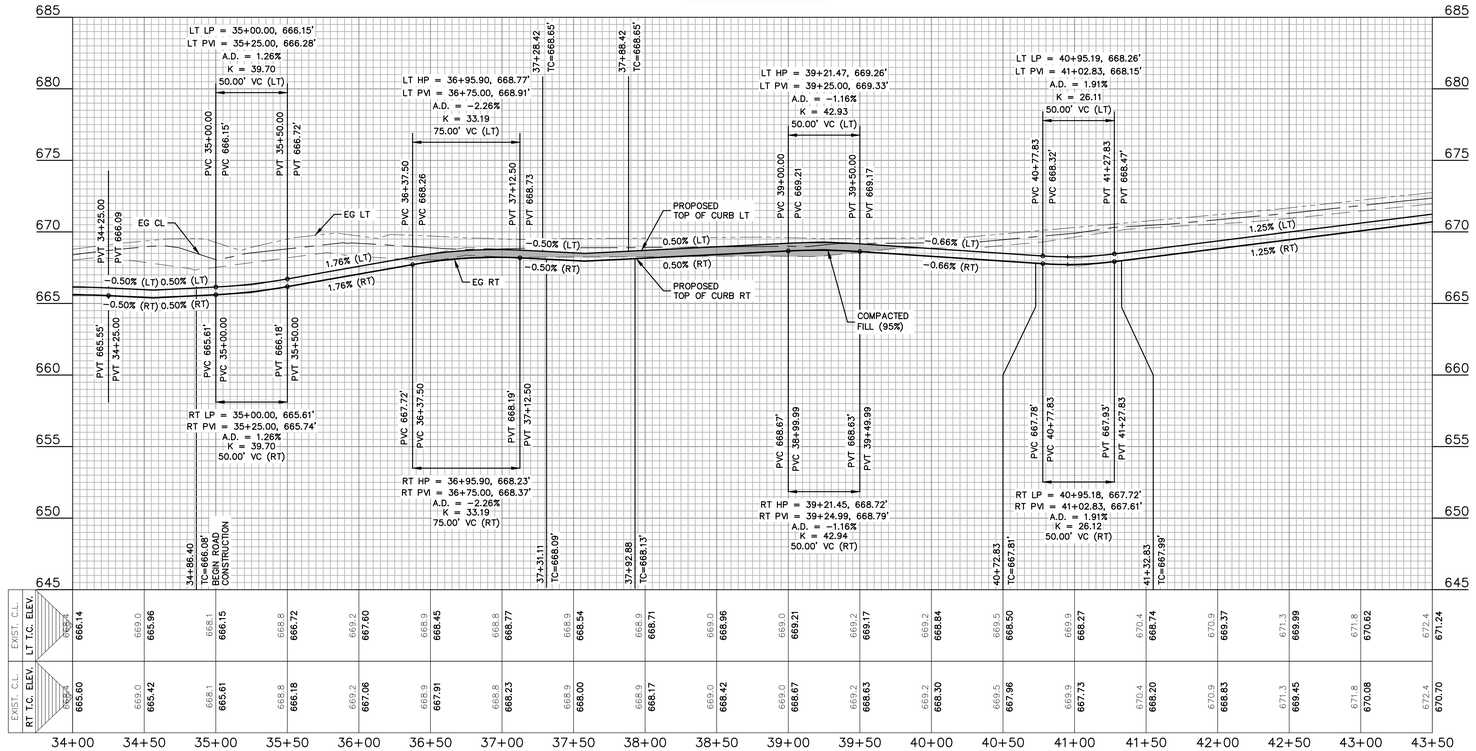
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
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WOODLAND CHASE
34+00 – 43+50



	34+00	34+50	35+00	35+50	36+00	36+50	37+00	37+50	38+00	38+50	39+00	39+50	40+00	40+50	41+00	41+50	42+00	42+50	43+00	43+50
EXIST. C.L. ELEV.	669.0	669.0	668.1	668.8	669.2	668.9	668.8	668.9	668.9	669.0	669.0	669.2	669.2	669.5	669.9	670.4	670.9	671.3	671.8	672.4
LT T.C. ELEV.	666.14	665.96	666.15	666.72	667.60	668.45	668.77	668.54	668.71	668.96	669.21	669.17	668.84	668.50	668.27	668.74	669.37	669.99	670.62	671.24
EXIST. C.L. ELEV.	669.0	669.0	668.1	668.8	669.2	668.9	668.8	668.9	668.9	669.0	669.0	669.2	669.2	669.5	669.9	670.4	670.9	671.3	671.8	672.4
RT T.C. ELEV.	665.60	665.42	665.61	666.18	667.06	667.91	668.23	668.00	668.17	668.42	668.67	668.63	668.30	667.96	667.73	668.20	668.83	669.45	670.08	670.70

DRAINAGE FEATURES AND CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WOODLAND CHASE PLAN & PROFILE (1 OF 2)

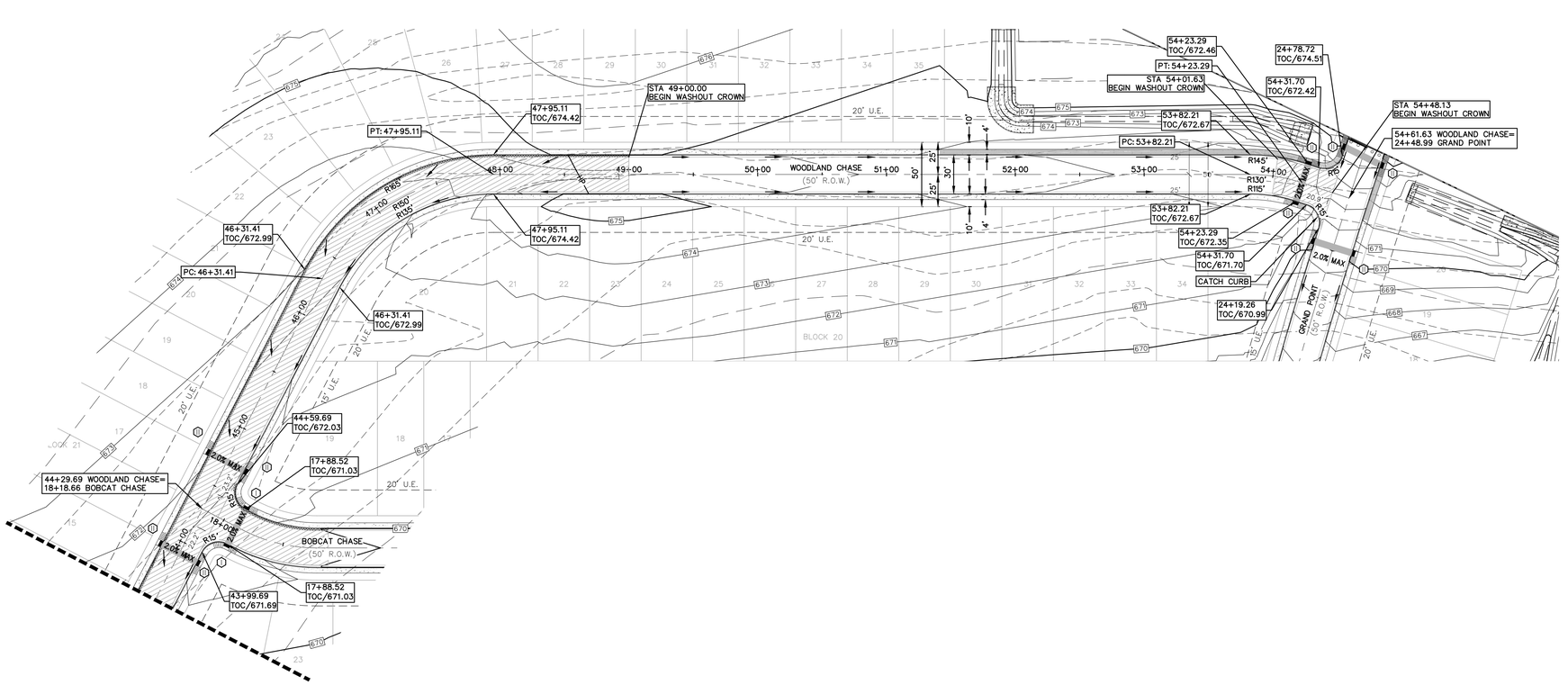
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C4.2

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_WOODLAND CHASE.dwg User: adonnr Apr 14, 2026 - 4:13pm



LEGEND

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- 700 — PROPOSED CONTOURS
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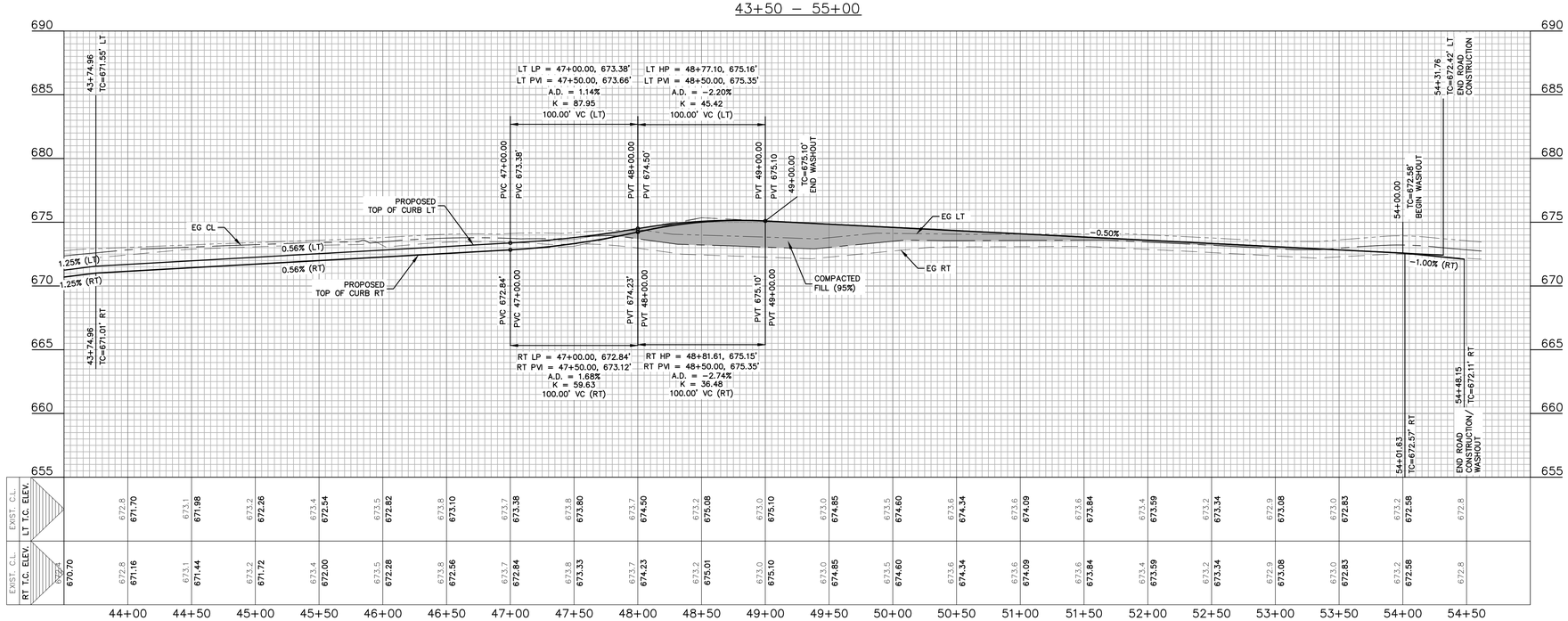
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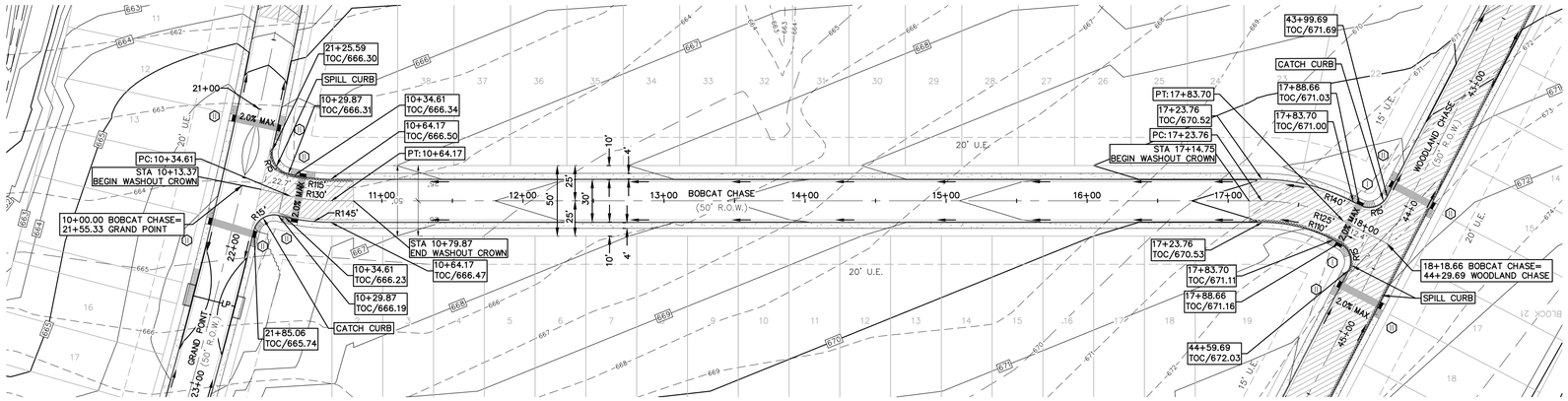
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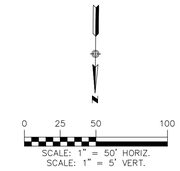
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WOODLAND CHASE
43+50 – 55+00



| | | |





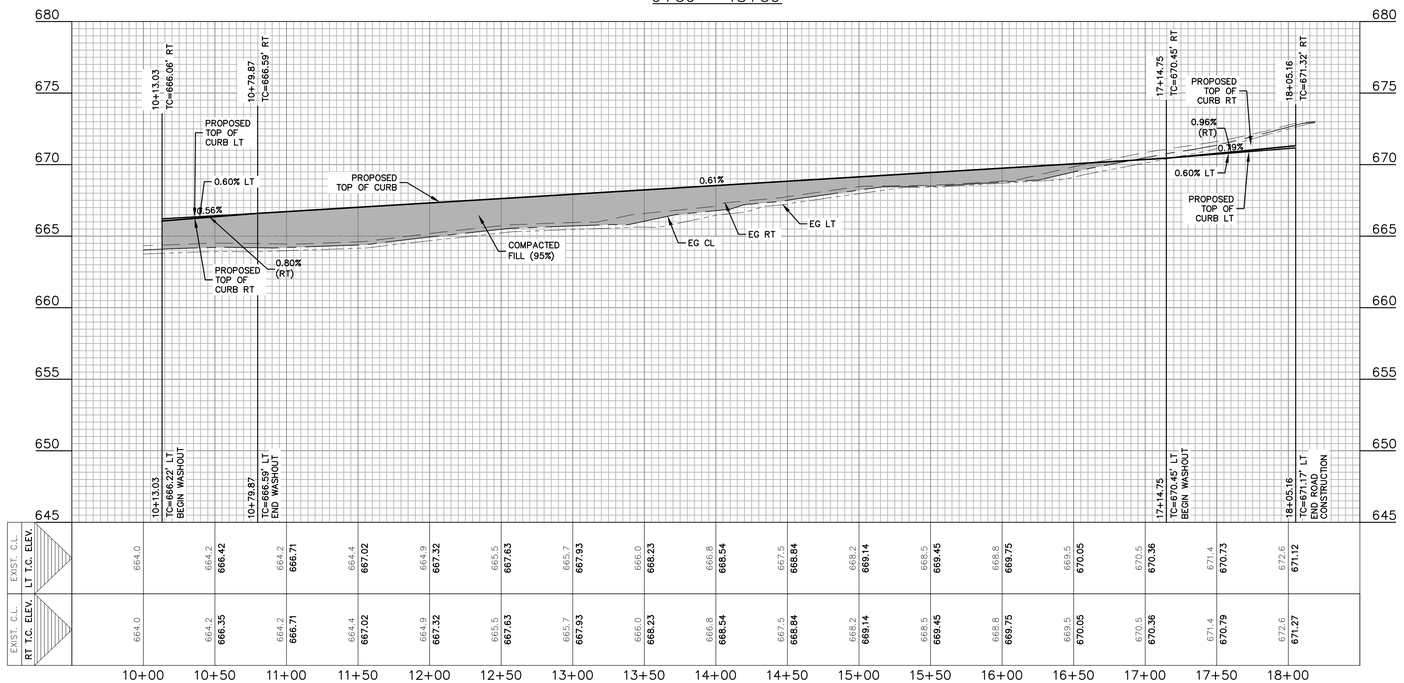
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BOBCAT CHASE
9+50 – 18+50



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290 S. CASTELL AVE., STE. 100
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TBPELS FIRM F-10961
TBPELS FIRM 1053600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
NO. 134964
04/15/2026

BOBCAT CHASE
PLAN & PROFILE

JARO NORTH UNIT 4

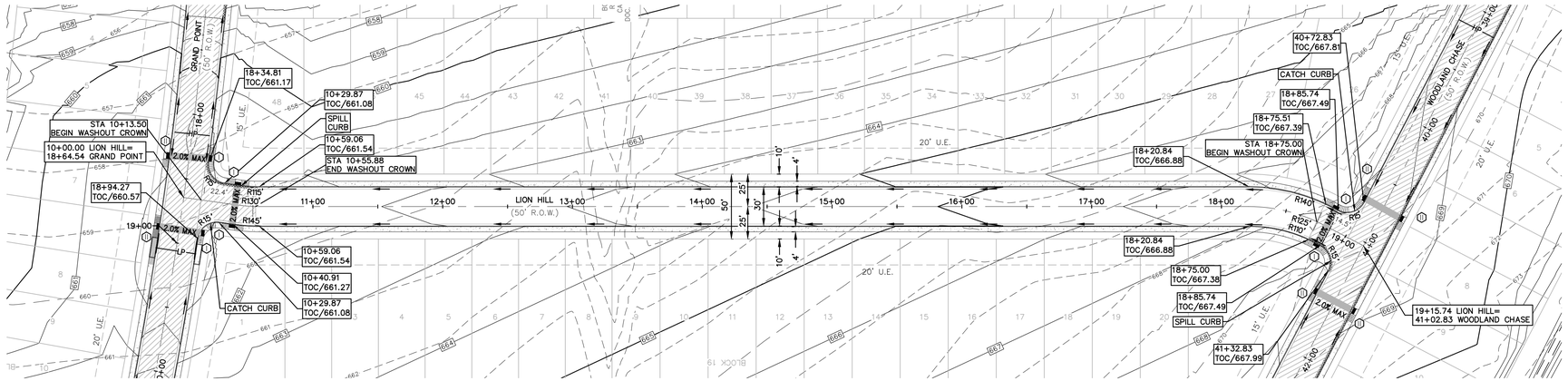
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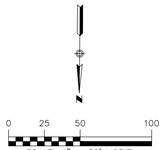
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET

C4.4

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\CDs\337.147_BOBCAT CHASE.dwg User: adrianr Apr 14, 2026 - 4:14pm





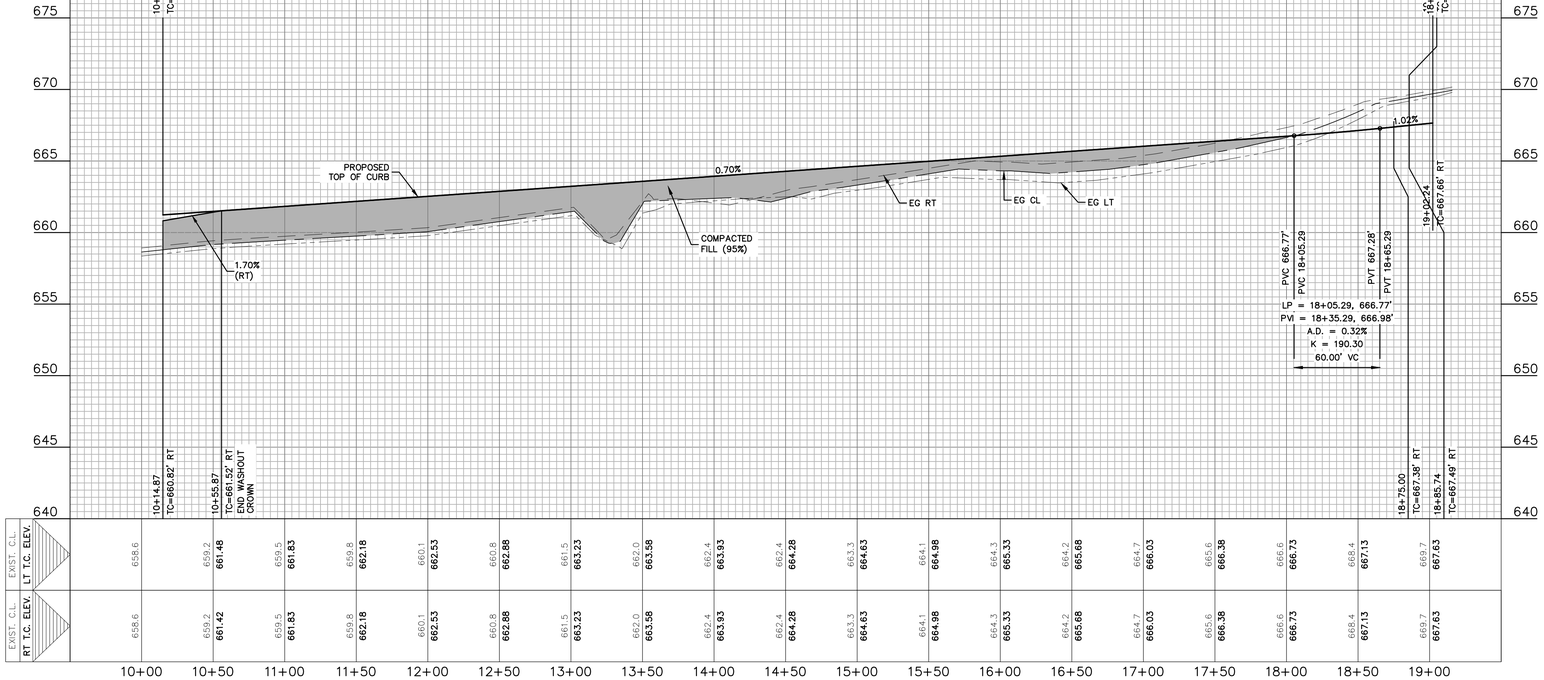
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LION HILL
9+50 – 19+50



	10+00	10+50	11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+50	15+00	15+50	16+00	16+50	17+00	17+50	18+00	18+50	19+00
EXIST. C.L.	658.6	659.2	659.5	659.8	660.1	660.8	661.5	662.0	662.4	662.4	663.3	664.1	664.3	664.2	664.7	665.6	666.6	668.4	669.7
LT T.C. ELEV.		661.48	661.83	662.18	662.53	662.88	663.23	663.58	663.93	664.28	664.63	664.98	665.33	665.68	666.03	666.38	666.73	667.13	667.63
EXIST. C.L.	658.6	659.2	659.5	659.8	660.1	660.8	661.5	662.0	662.4	662.4	663.3	664.1	664.3	664.2	664.7	665.6	666.6	668.4	669.7
RT T.C. ELEV.		661.42	661.83	662.18	662.53	662.88	663.23	663.58	663.93	664.28	664.63	664.98	665.33	665.68	666.03	666.38	666.73	667.13	667.63

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HMT
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STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

LION HILL PLAN & PROFILE

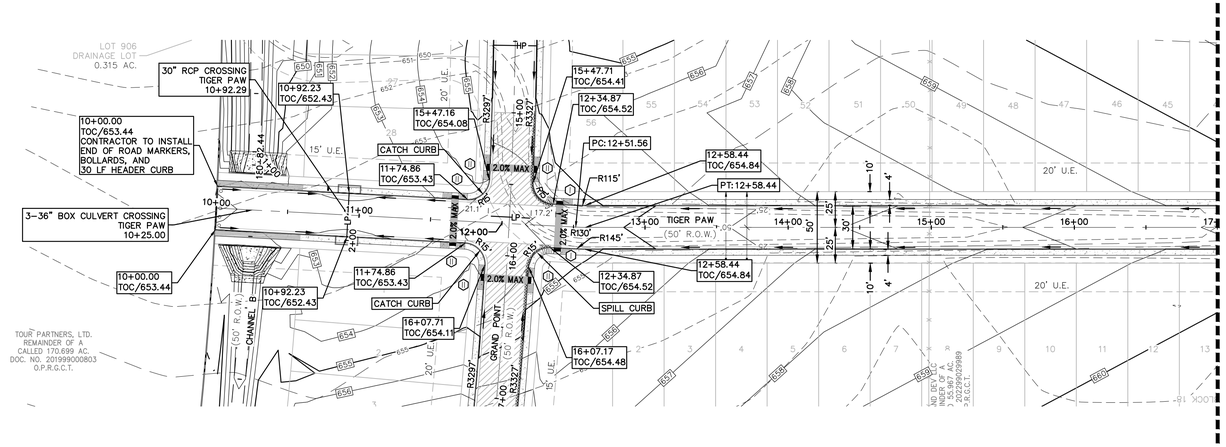
JARO NORTH UNIT 4

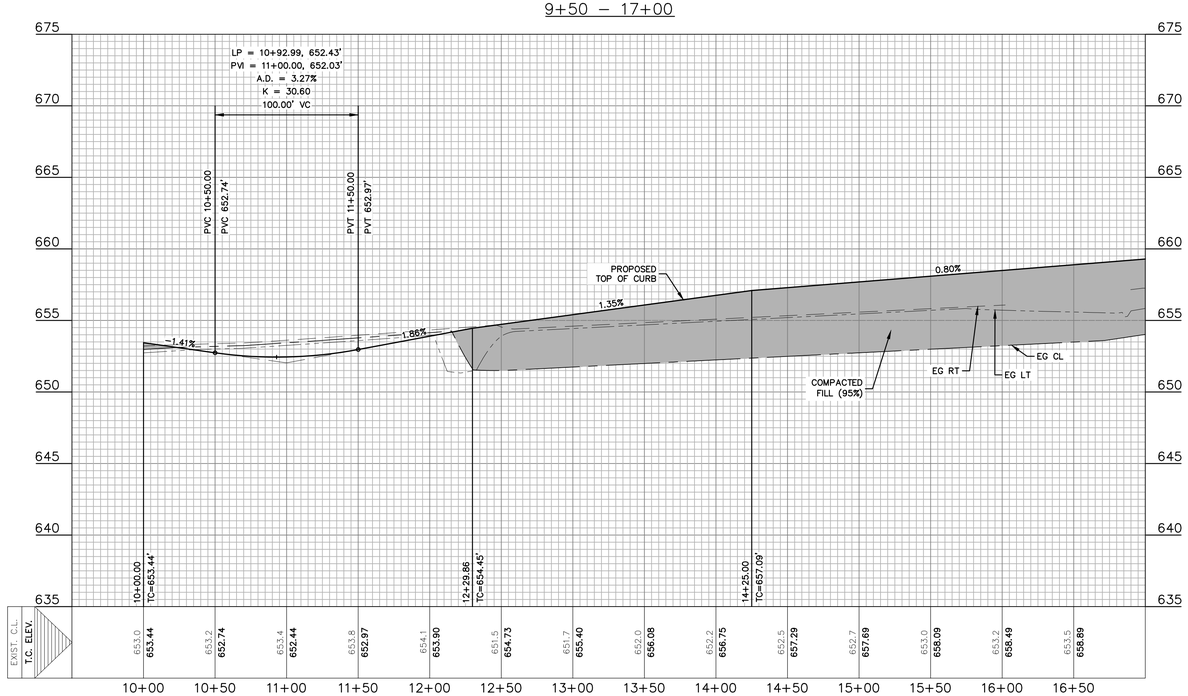
NO.	REVISION DESCRIPTION	REVISION DATE

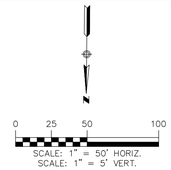
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C4.5

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cbk\337.147_LION HILL.dwg User: adriarr Apr 14, 2026 - 4:15pm







LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
	FLOW ARROW
	WASHOUT CROWN AREAS
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	EXISTING GROUND LEFT (EG LT)
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TIGER PAW
PLAN & PROFILE
(1 OF 2)

JARO NORTH UNIT 4

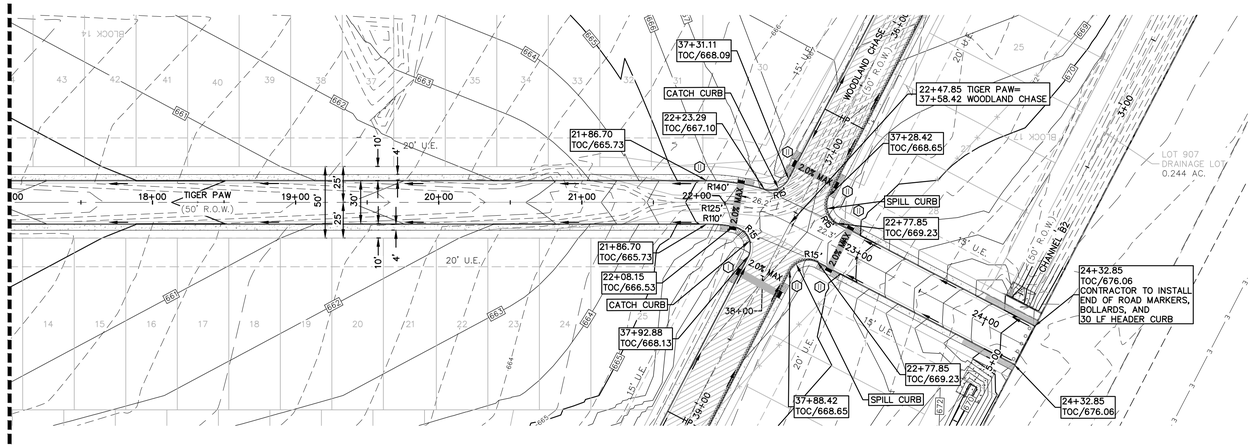
NO.	REVISION DESCRIPTION	REVISION DATE

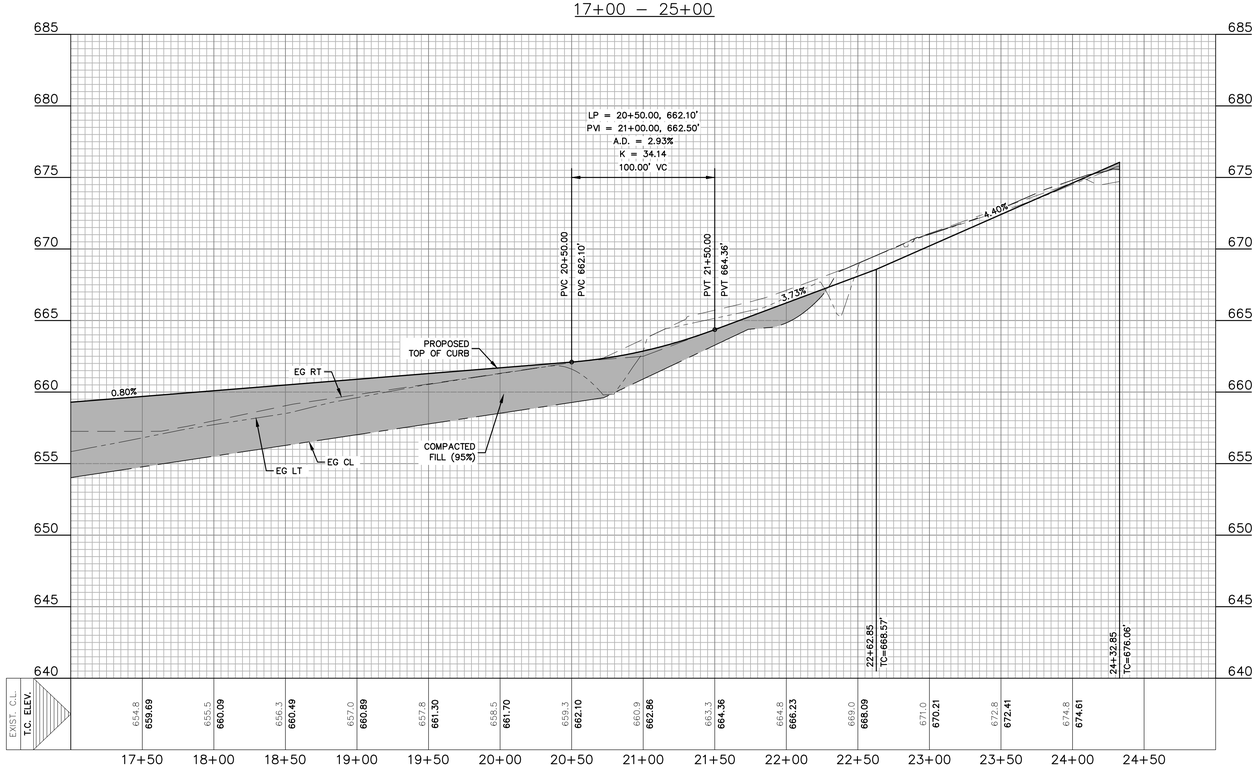
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

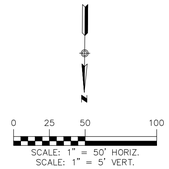
SHEET

C4.6

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_TIGER PAW.dwg User: zdolcer Apr 14, 2026 - 4:15pm







LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET **C4.14**)
- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

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

DRAINAGE FEATURES AND CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

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 1053600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
NO. 134964
04/15/2026

TIGER PAW
PLAN & PROFILE
(2 OF 2)

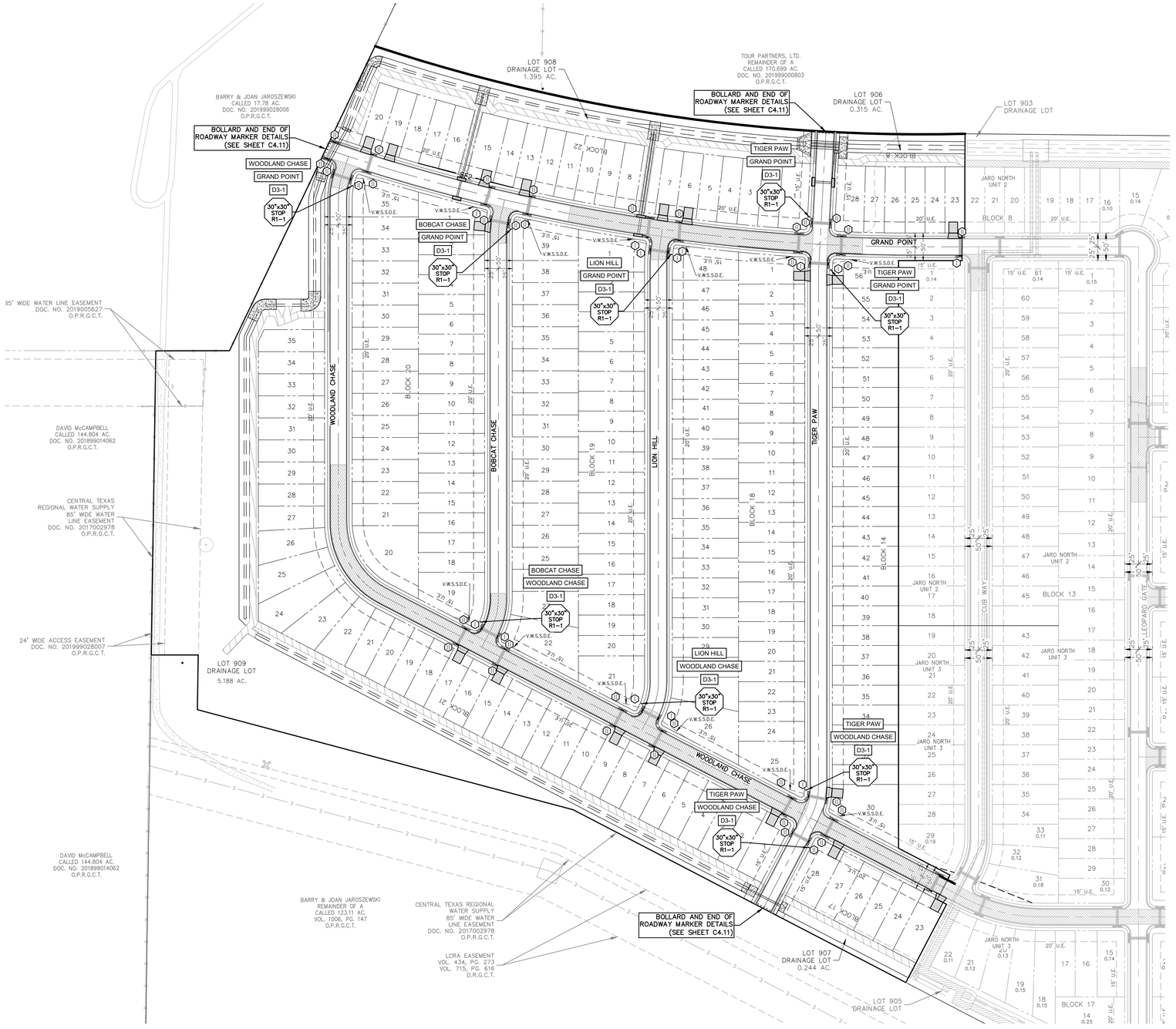
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C4.7

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\CDs\337.147_TIGER PAW.dwg User: cdriver Apr 14, 2026 - 4:16pm



LEGEND

B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
①	SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET **C4.10**)
	SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF **25** MPH.
2. IN WASHOUT CROWN AREAS, THE CURB ON THE HIGH SIDE OF THE STREET SHOULD BE SPILL CURB AS DESIGNATED ON THE PLANS.
3. SIDEWALKS SHALL BE INSTALLED IN FRONT OF ALL BUILDABLE LOTS AT THE TIME OF HOME CONSTRUCTION FOR LOTS WITH NO BUILDING IMPROVEMENTS SIDEWALKS SHALL BE CONSTRUCTED WITH STREETS.
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'

SIGNAGE NOTES

INSTALLATION

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

MOUNTING

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

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

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

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

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

SIGNAGE PLAN

JARO NORTH UNIT 4

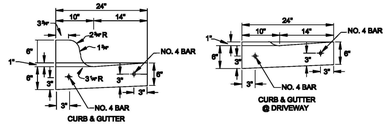
NO.	REVISION DESCRIPTION	REVISION DATE

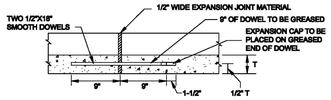
DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C4.8

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cbs\337.147_SIGNAGE PLAN.dwg User: adrianr Apr 14, 2026 - 5:22pm

CURB AND GUTTER





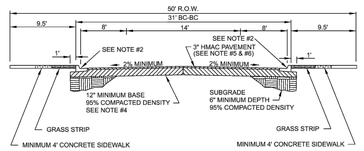
LONGITUDINAL SECTION THRU CURB AND GUTTER
SHOWING TYPICAL EXPANSION JOINT DETAILS.
REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS.
STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

NOTES:

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

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

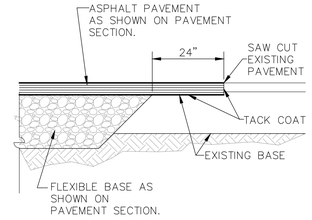
ONE & TWO FAMILY RESIDENTIAL LOCAL PARKING BOTH SIDES



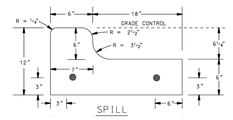
NOTES:

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, 9" MINIMUM THICKNESS

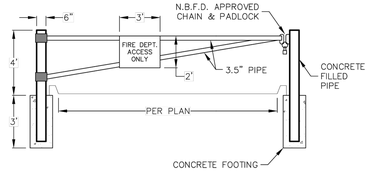
City of New Braunfels ENGINEERING DIVISION	STANDARD CONSTRUCTION DETAIL	SCALE: N.T.S. APPROVED DATE: STANDARD NO. ST-011



NEW PAVEMENT TO EXISTING
NOT TO SCALE

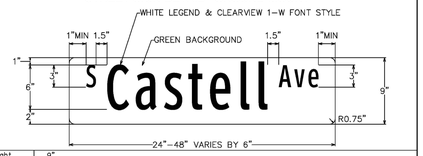


SPILL CURB DETAIL
NOT TO SCALE



SCALE: N.T.S. FIRE DEPT. ACCESS GATE

STREET SIGN DETAIL - GROUND MOUNT



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

Notes:

1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall be mounted on sign post. The sign assembly shall meet minimum height requirements as required in the Texas Manual on Uniform Traffic Control Devices (TMUTCD). When required, DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall also be mounted on the sign post.
3. Street name signs greater than 36' long and center mounted on top of sign post shall be mounted on post top bracket with 12" slot. All other street name signs center mounted on top of sign post shall be mounted on post top bracket with 5 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: 830.221.4520 FAX: 830.629.3400
ISSUE DATE: February 2013	DWG. NO: ST-024	SCALE: N.T.S.	
DRAWN BY: RAS	CONTACT: GF	SHEET: 1 OF 1	

P:\2010 ENGINEERING-AUTOCAD\DETAILS\NB-PUBLIC WORKS DETAILS\NB-UNAPPROVED DETAILS 2013\ST-2013-024 STREET SIGN DETAIL - GROUND MOUNT.DWG

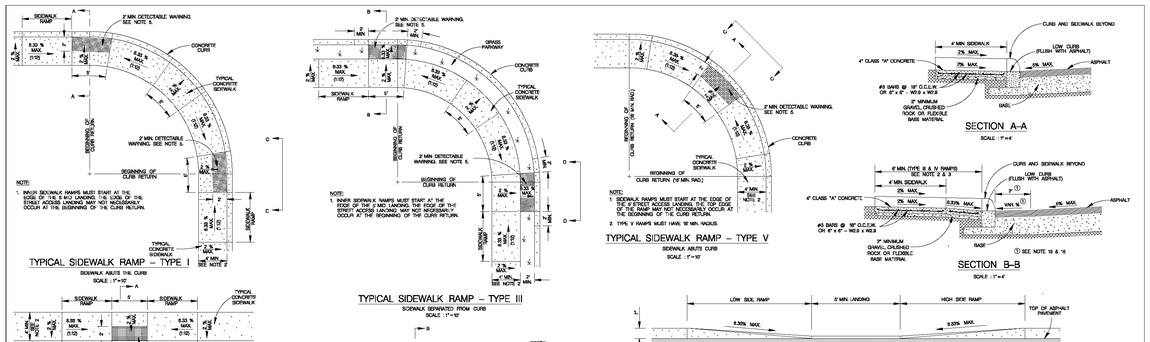


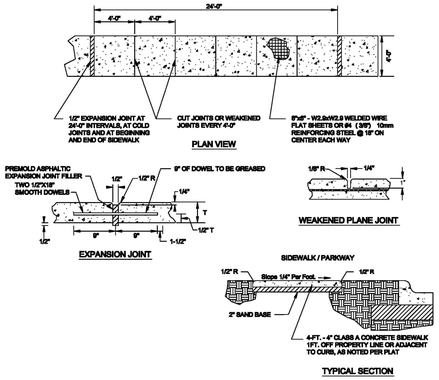
TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH: 0.10	
	LOW SIDE	HIGH SIDE
1%	5'-0"	7'-0"
2%	5'-0"	8'-4"
3%	4'-8"	10'-0"
4%	4'-1"	12'-8"
5%	3'-10"	15'-8"

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

WHEELCHAIR RAMP STANDARDS

N SUBMITTAL	PROJECT NO.:		DATE:
DRAWN BY: V. VASQUEZ	DSGN BY:	CHKD. BY: R.S. HOSSEIN, P.E.	SHEET NO. ___OF___

SIDEWALK (RESIDENTIAL)

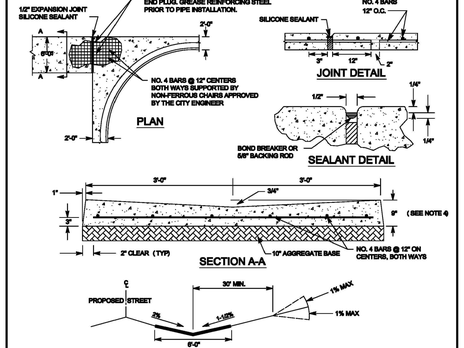


NOTES:

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

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

CROSS GUTTER



TYPICAL PROFILE AT LOCAL RESIDENTIAL STREET INTERSECTION

NOTES:

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

DATE APPROVED: 7/08	DWG. NO: ST-020	SCALE: N.T.S.	City of New Braunfels ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1		
FILENAME: CROSS GUTTER			
P:\CURRENT NEW BRAUNFELS DETAILS\2008\			

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

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

STREET DETAILS (1 OF 3)

JARO NORTH UNIT 4

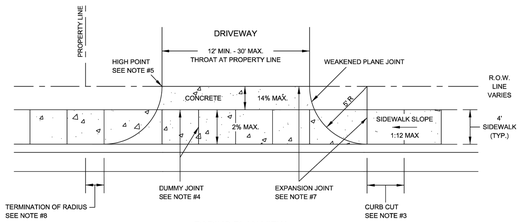
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

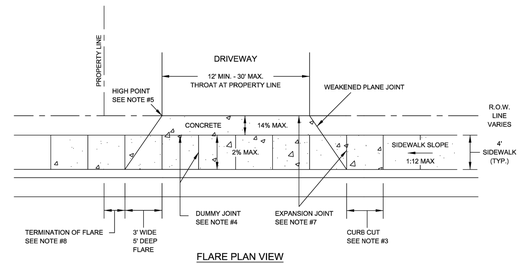
SHEET
C4.10

Drawing Name: M:_Projects\337 – Lennar Homes\147 – Jaro North Unit 4\C0x\137.147_STREET DETAILS.dwg User: cdriver Apr 14, 2026 – 4:16pm

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



RADIUS PLAN VIEW

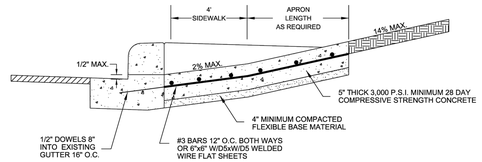


FLARE PLAN VIEW

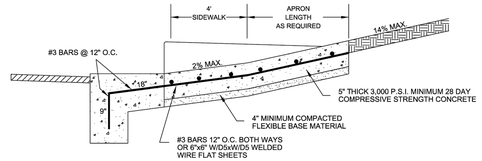
DATE APPROVED: 04/2016	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



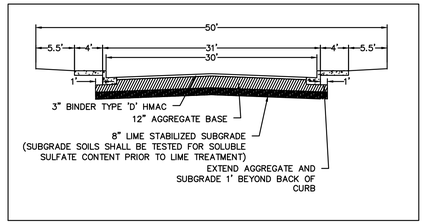
NO EXISTING CURB STRUCTURAL SECTION

NOTES:

1. WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.
2. PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED PROVIDED CROSS SLOPE OF SIDEWALK IS NO GREATER THAN 2%.
3. CURB CUT LENGTH NO GREATER THAN AS REQUIRED TO MATCH SLOPE OF ADJACENT SIDEWALK.
4. DUMMY JOINTS TO BE PROVIDED AT MINIMUM 4-FT. INTERVALS PERPENDICULAR TO THE CURB LINE WITHIN THE SIDEWALK AREA AND PARALLEL TO THE SIDEWALK AREA.
5. PROVIDE A MINIMUM 7" HIGH POINT. HIGH POINT HEIGHT SHALL BE MEASURED FROM THE GUTTER FLOW LINE TO THE DRIVEWAY APRON. NOTE HIGH POINT MAY OCCUR OUTSIDE OF ROW.
6. DRIVEWAY THROAT TRANSITION MAY OCCUR OUTSIDE OF ROW.
7. PROVIDE EXPANSION JOINTS AT ALL SIDEWALK AND DRIVEWAY THROAT JOINTS. EXPANSION JOINTS SHALL BE PLACED USING 1/2" ASPHALTIC MATERIAL WITH 1/2" DOWELS 16" O.C.
8. THE TANGENT POINT OF THE DRIVEWAY CURB RETURN AT THE PUBLIC ROADWAY LINE OR FLARE SHALL BE A MINIMUM DISTANCE OF 1' OFF THE PROPERTY PROJECTED PERPENDICULAR TO THE STREET CENTERLINE, EXCEPT SINGLE FAMILY OR ZERO LOT LINE LOTS. ON SINGLE FAMILY ZERO LOT LINE LOTS WHERE THE DRIVE IS ON THE ZERO LOT LINE, THE TANGENT POINT OR FLARE SHALL BE NO GREATER THAN 3' BEYOND THE ADJOINING PROPERTY LINE PROJECTED PERPENDICULAR TO THE STREET CENTERLINE.

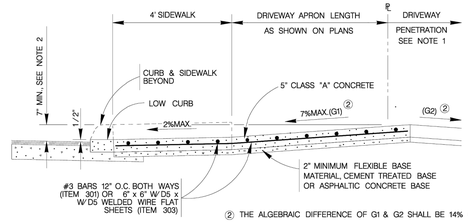
DATE APPROVED: 04/2016	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels — ENGINEERING DEPARTMENT



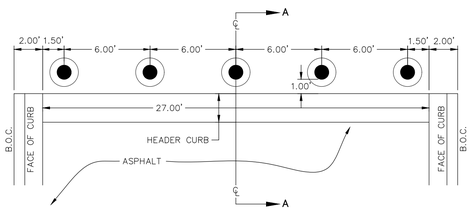
RESIDENTIAL LOCAL PAVEMENT SECTION

CONTRACTOR TO REFERENCE GEOTECHNICAL ENGINEERING STUDY "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS PROPOSED NEW STREETS JARO NORTH SUBDIVISION, UNIT 1" PREPARED BY INTEC DATED OCTOBER 21, 2021.



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

TYPE 'C' LOT DRIVEWAY DETAIL

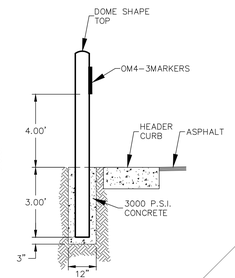


NOTE:
POST SHALL BE 6" IN DIAMETER AND PRESSURE TREATED

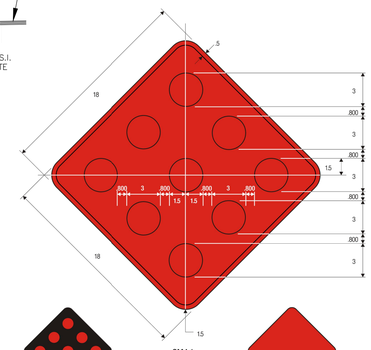
POST SHALL BE CENTERED AND EQUALLY SPACED AT 6' ON CENTER (MIN.)

PLAN

BOLLARD DETAIL
NOT TO SCALE



SECTION A-A



OM4-1

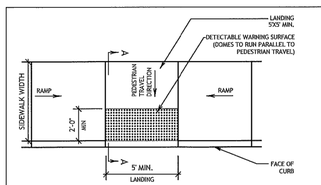
OM4-2

OM4-3

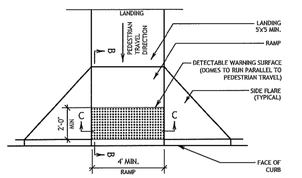
OM4-1 COLORS:
REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – RED
BORDER – RED (RETROREFLECTIVE)

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

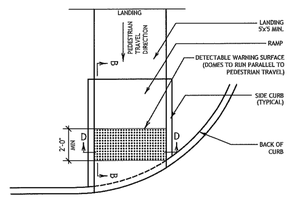
OM4-3 COLORS:
SIGN PANEL – RED (RETROREFLECTIVE)



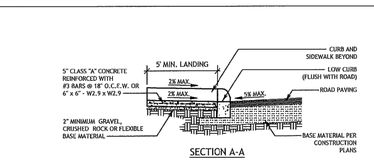
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



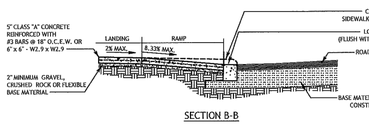
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



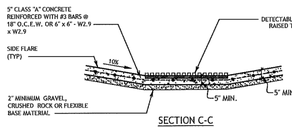
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



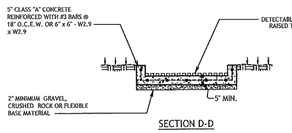
SECTION A-A



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 DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

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.

City of New Braunfels

ENGINEERING DIVISION
550 LANDA STREET
NEW BRAUNFELS, TEXAS 78130
PHONE: 830 221 4020
FAX: 830 626 3500

CURB RAMP STANDARDS

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

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

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

STREET DETAILS (2 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C4.11

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_STREET DETAILS.dwg User: odionr Apr 14, 2026 - 4:16pm

SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

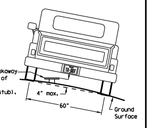
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

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

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

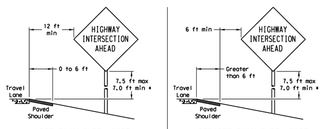
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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

SIGN LOCATION

PAVED SHOULDERS



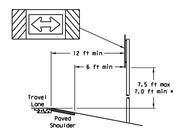
LESS THAN 6 FT. WIDE

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

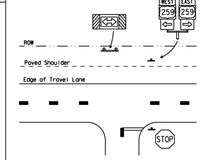
GREATER THAN 6 FT. WIDE

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

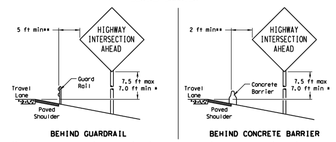
T-INTERSECTION



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



BEHIND BARRIER



BEHIND GUARDRAIL

BEHIND CONCRETE BARRIER

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

- Signs shall be mounted using the following condition that results in the greatest sign elevations
  - (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

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

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

TYPICAL SIGN ATTACHMENT DETAIL

Single Signs

Back-to-Back Signs

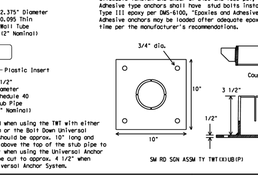
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

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

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

SIGNS WITH PLAQUES

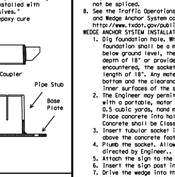


When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

CURB & GUTTER OR RAISED ISLAND

RESTRICTED RIGHT-OF-WAY

(When 6 ft min. is not possible.)



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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

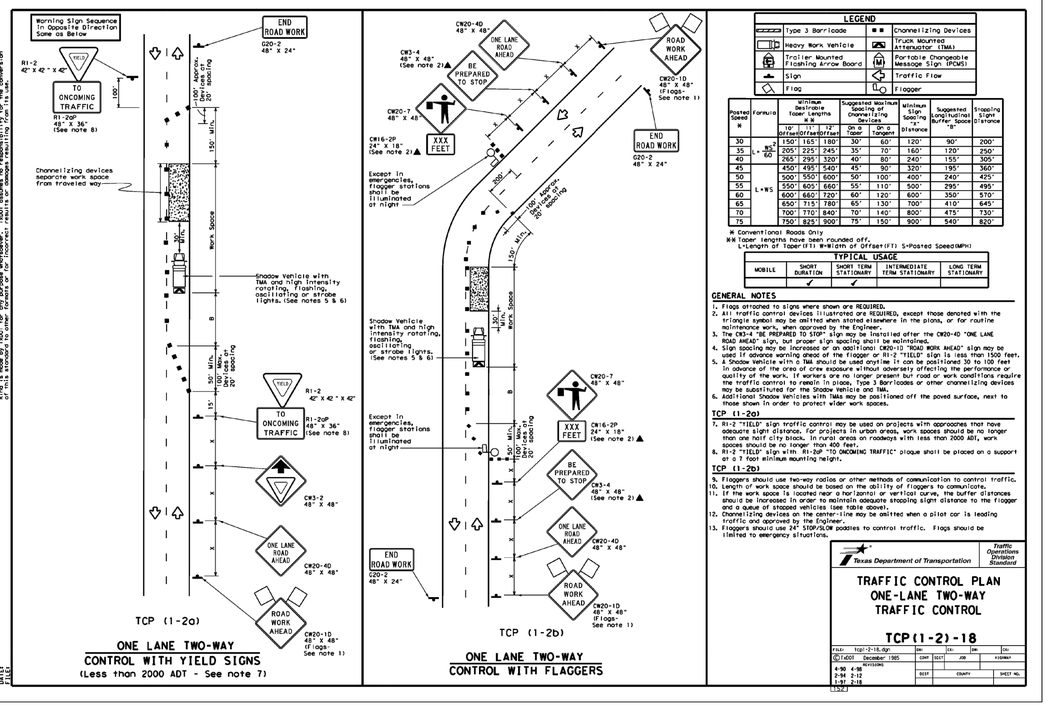
SMD(GEN)-08

©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26A

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by the Texas Department of Transportation for any errors or omissions or for the fitness of this standard for any purpose whatsoever, whether express or implied, or for incorrect results or damages resulting from its use.

DATE/FILE:



LEGEND			
	Type 3 Barricade	■■	Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	12' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices *** On a Tangent	On a Curve	Minimum Sign Spacing	Suggested Longitudinal Buffer Space	Stopping Sight Distance
30		150'	165'	180'	30'	60'	120'	90'	200'
35	L = WS² / 60	205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55	L = WS	550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L = Length of Taper (FT) W = Width of Offset (FT) S = Posted Speed (MPH)

TYPICAL USAGE

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓ and high intensity	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing must be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of the crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance, for projects in urban areas, work spaces should be no longer than one mile city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 4000 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a hill or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation — *Traffic Operations Division Standard*

TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985 REVISIONS 4-98 4-18 2-10 5-12 1-18	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

(1of2)

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

STATE OF TEXAS — ZOE F. JASSO — 131964 — LICENSED PROFESSIONAL ENGINEER — 04/15/2026

STREET DETAILS (3 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

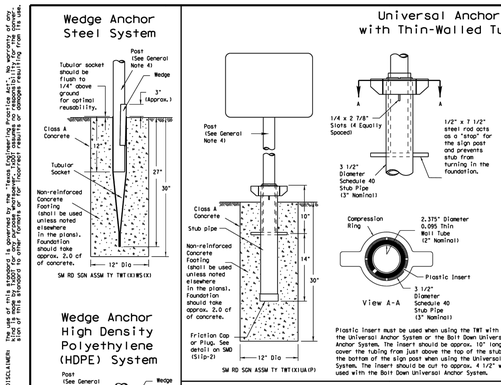
DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

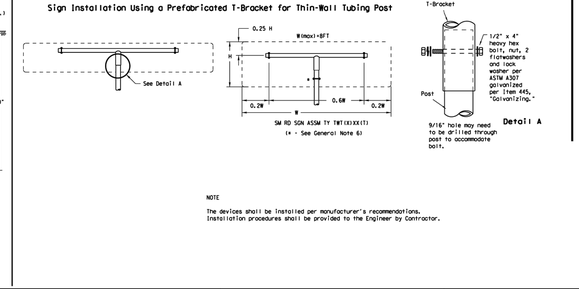
SHEET

C4.12

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DATE/FILE:





GENERAL NOTES:
1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Method, design, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts 11.5 BWG tubings, clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used on post with this system shall conform to the following specifications:
   - 10 BWG Tubing (0.375" outside diameter) (TWT)
     - 0.095" nominal wall thickness
     - Seamless or electric-resistance welded steel tubing
     - Steel shall be HSLAS or 55 per ASTM A1011 or ASTM A1008
     - Other steels may be used if they meet the followings
       - 55,000 PSI minimum yield strength
       - 70,000 PSI minimum tensile strength
       - 18% minimum elongation in 2"
     - Wall thickness (uncoated) shall be within the range of .083" to .099"
     - Outside diameter (uncoated) shall be within the range of 2.368" to 2.381"
     - Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), repaint tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be splices except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

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

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS WEDGE & UNIVERSAL ANCHOR WITH THIN WALL TUBING POST

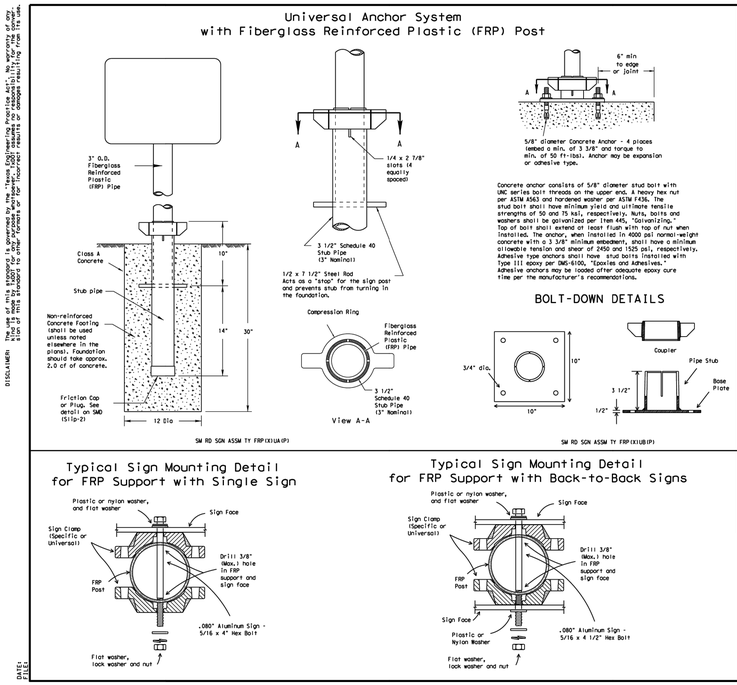
SMD(TWT)-08

©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26C

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DATE/FILE:



GENERAL NOTES:
1. FRP sign supports for a single type sign support may be used for signs up to and including 16 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: http://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS
1. Materials shall conform to the requirements of Departmental Material Specification DMS-4410 and will be furnished in a yellow or gray color as specified elsewhere in the plans.
2. Thickness of FRP sign support is 0.125" + 0.031", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division. Prequalification procedures are obtained by writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

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

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

Typical Sign Mounting Detail for FRP Support with Single Sign

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

Texas Department of Transportation
Traffic Operations Division

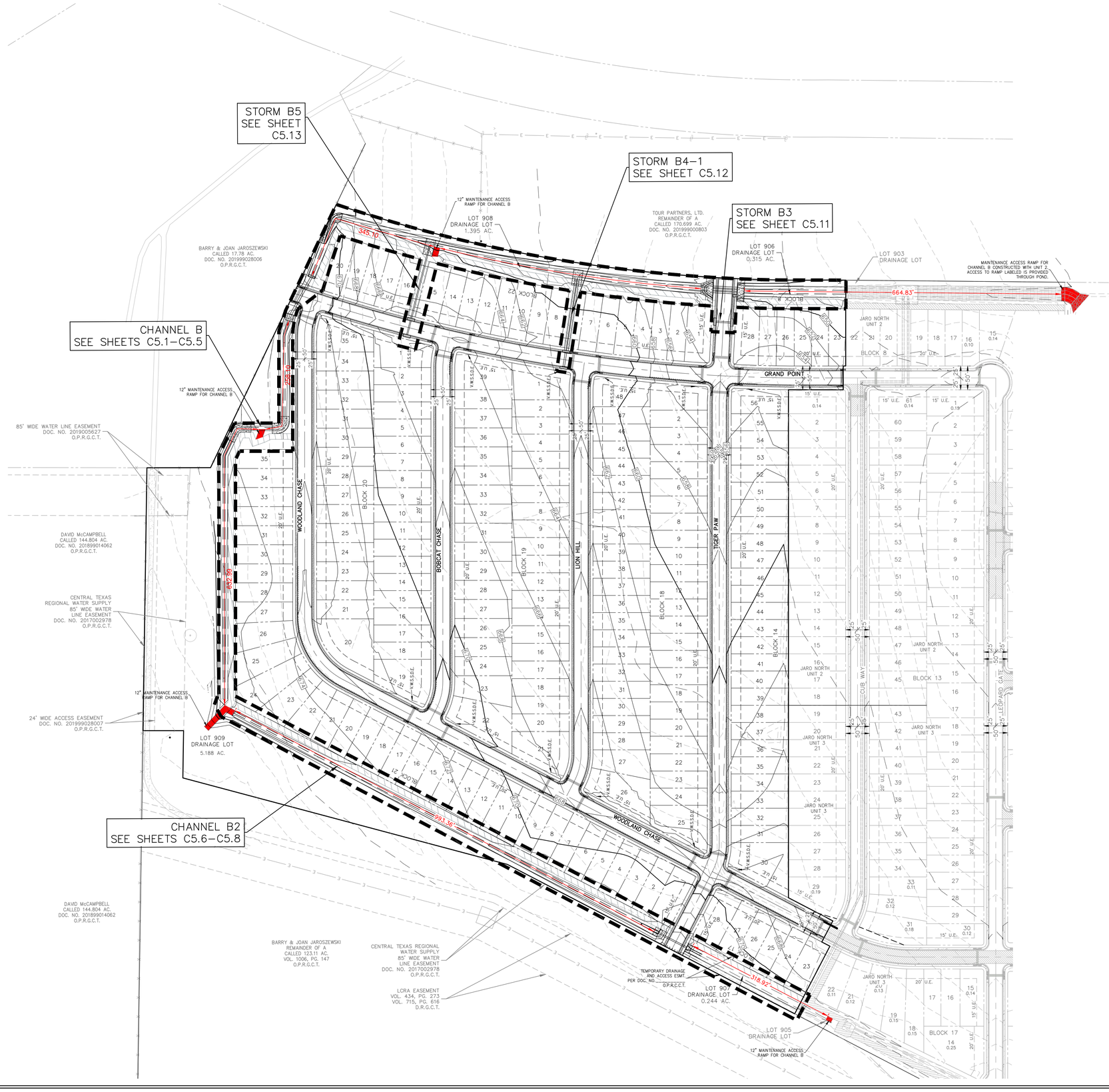
SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS UNIVERSAL ANCHOR SYSTEM WITH FRP POST

SMD(FRP)-08

©TxDOT July 2002	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
9-08 REVISIONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

26F

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cbk\337147_STREET DETAILS.dwg User: adrianr Apr 14, 2026 - 4:17pm



LEGEND

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

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 SEGUIN 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 SEGUIN STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

DRAINAGE FEATURES AND CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

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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ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

OVERALL STORM

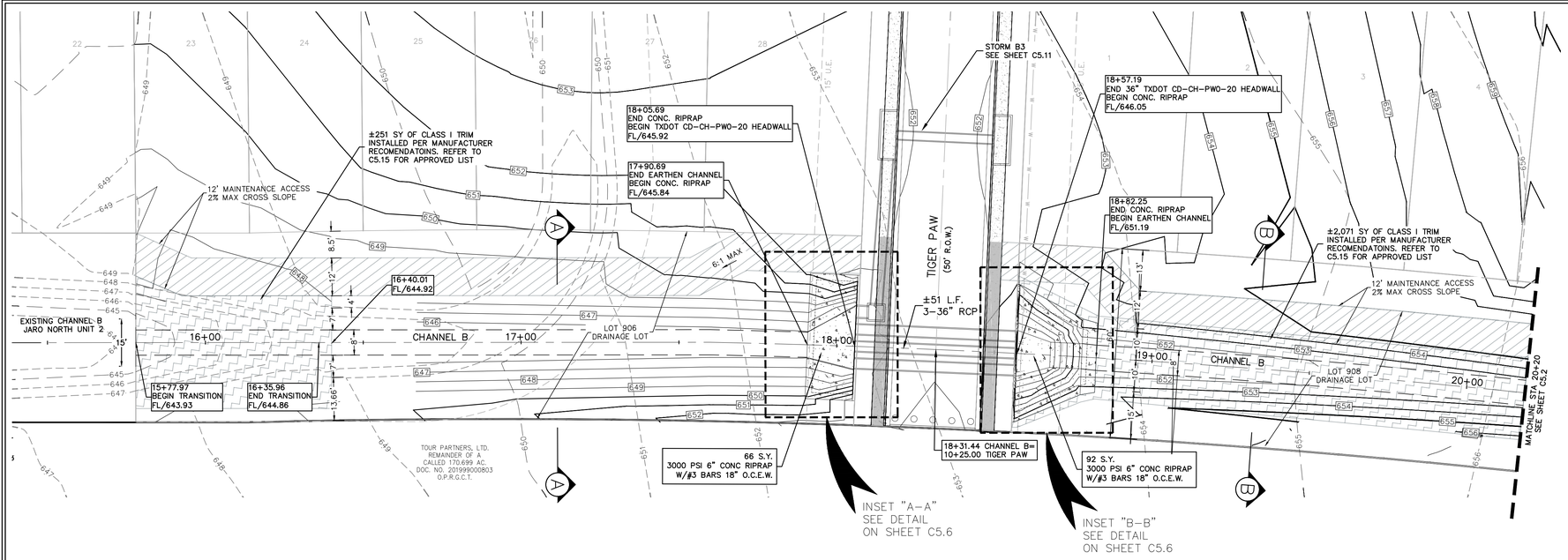
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C5.0

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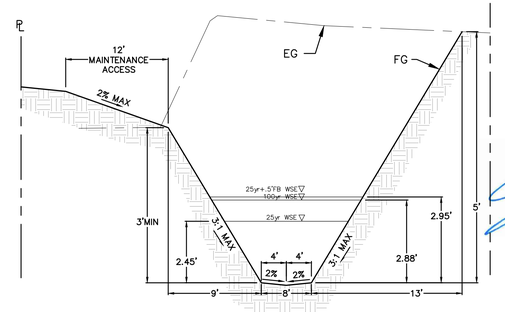


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SCALE: 1" = 20' HORIZ.
SCALE: 1" = 2' VERT.

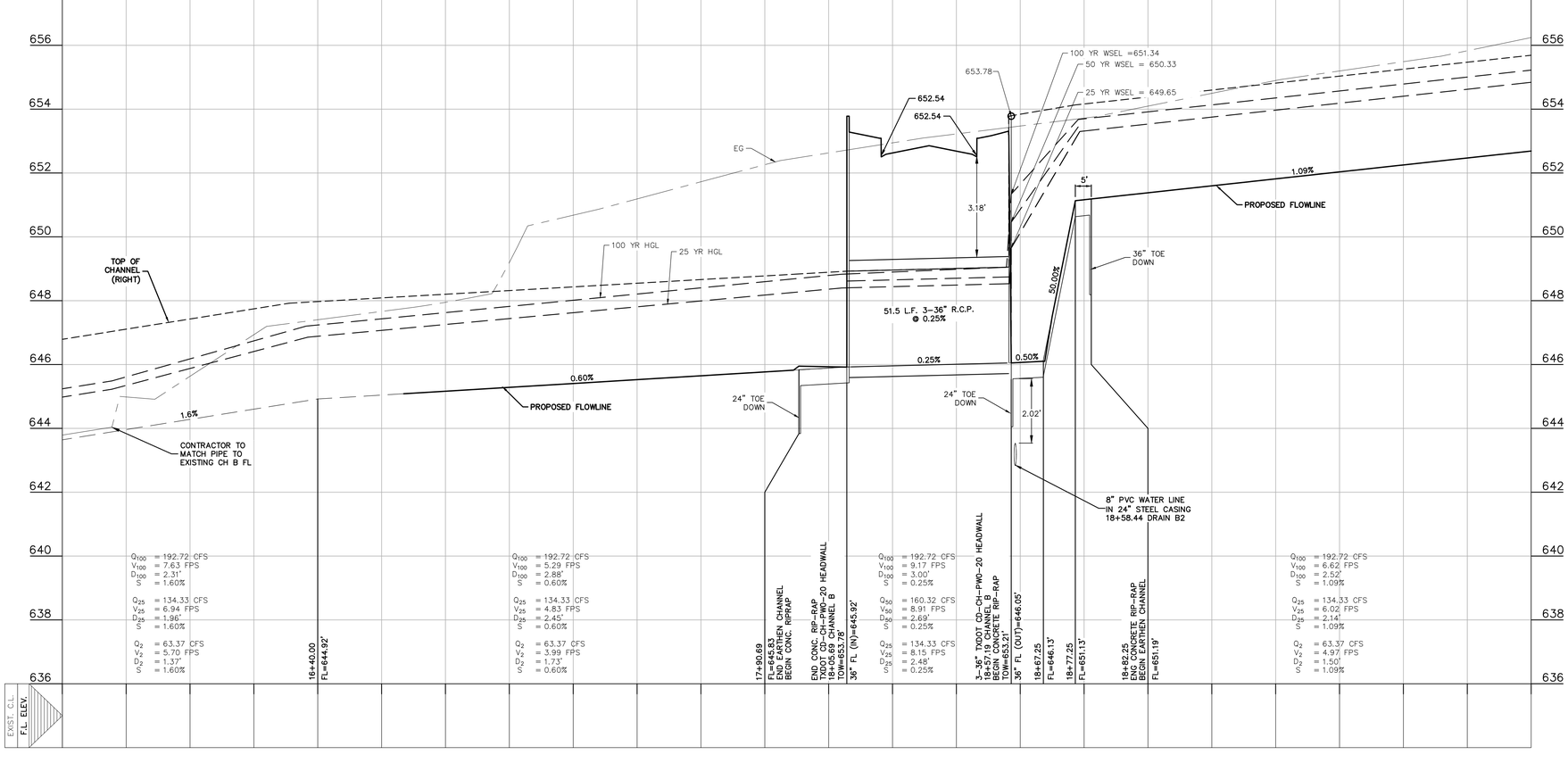
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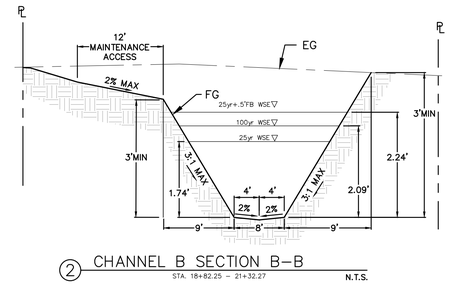
- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



1 CHANNEL B SECTION A-A
STA. 16+35.96 – 17+90.69 N.T.S.

CHANNEL B
15+60 – 20+20





2 CHANNEL B SECTION B-B
STA. 18+82.25 – 21+32.27 N.T.S.

DRAINAGE FEATURES, CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

E. MAINTENANCE VEHICLE FOR CHANNEL 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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ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B PLAN & PROFILE (1 OF 5)

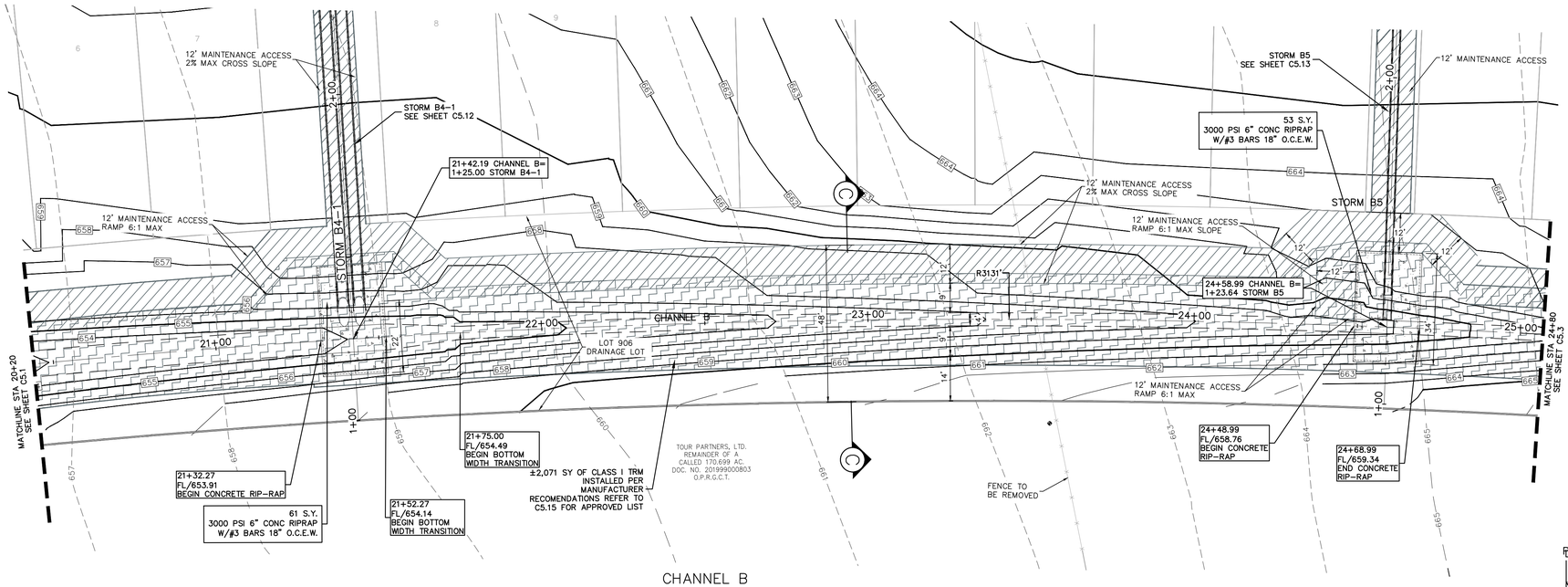
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

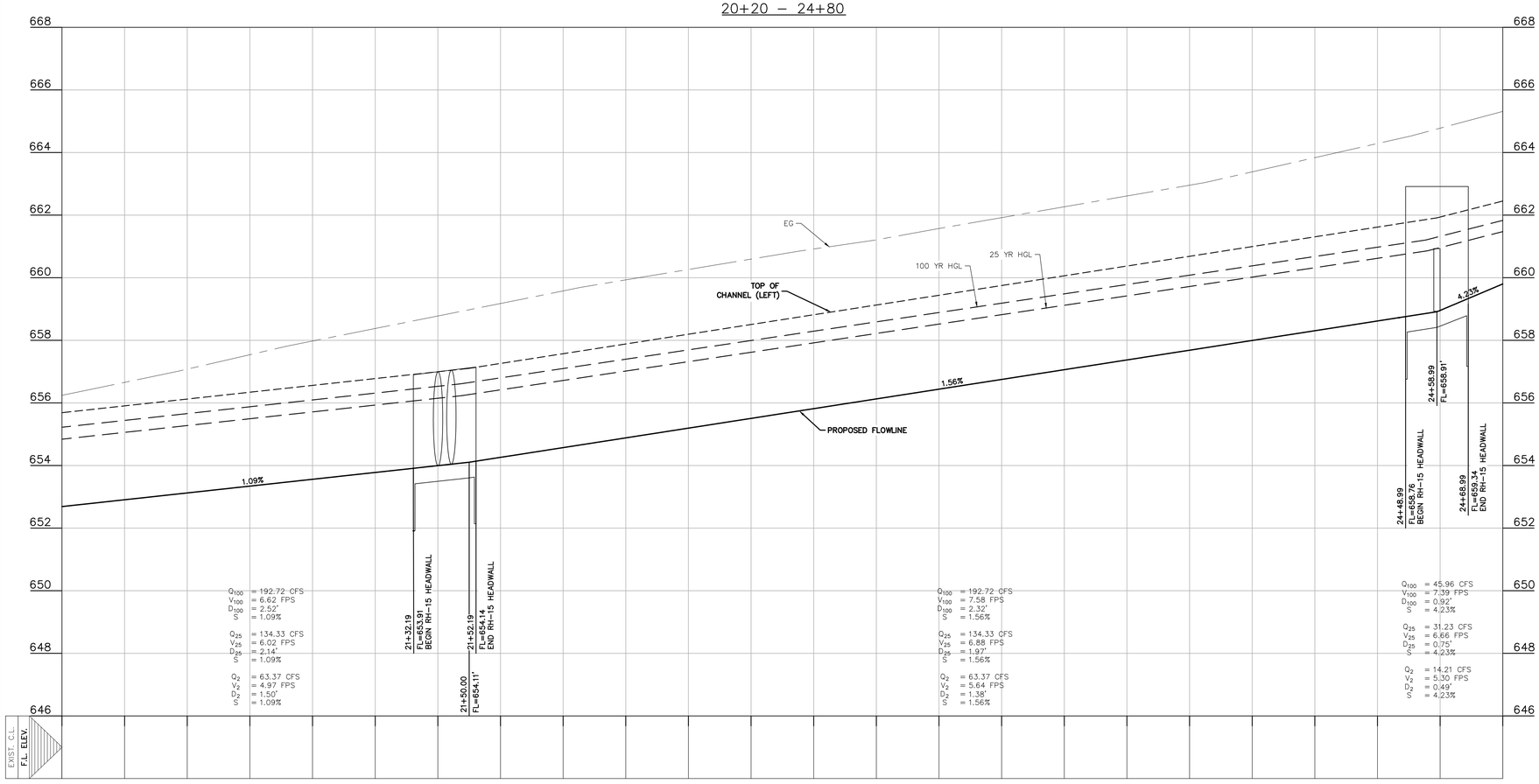
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

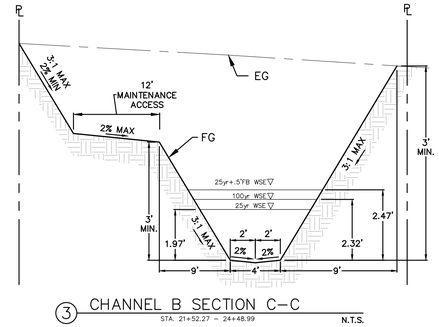
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CHANNEL B
20+20 – 24+80





3 CHANNEL B SECTION C–C
STA. 21+52.27 – 24+48.99 N.T.S.

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

LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- WW — WW — PROPOSED WASTEWATER LINE
- W — W — PROPOSED WATER LINE
- E — E — EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

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04/16/2026

CHANNEL B PLAN & PROFILE (2 OF 5)

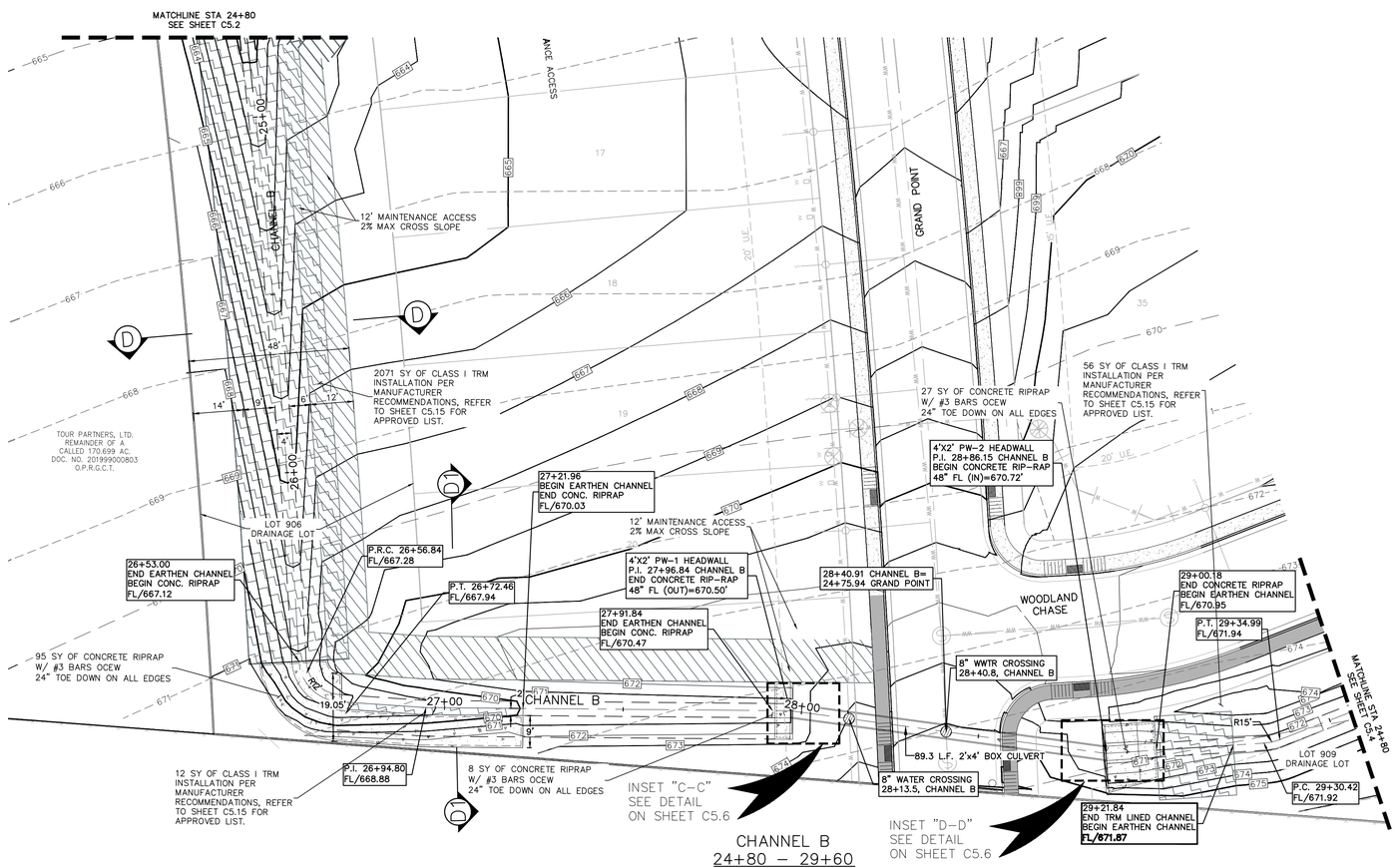
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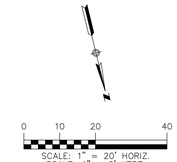
NO.	REVISION DESCRIPTION	REVISION DATE

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DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.2

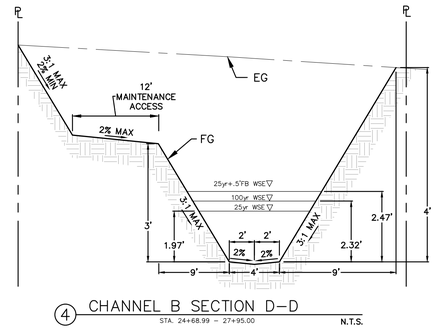
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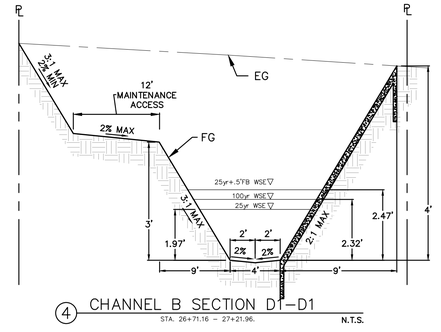


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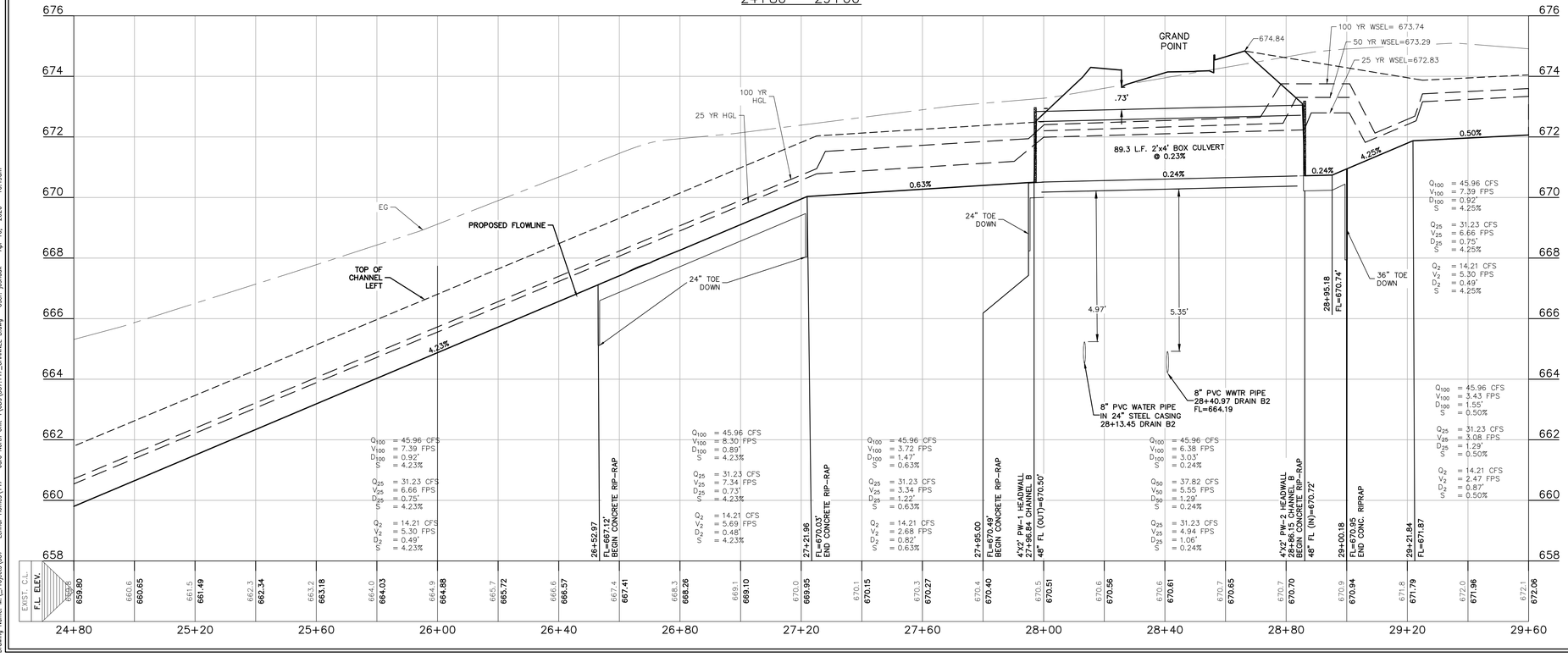
- EXISTING CONTOURS
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- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



4 CHANNEL B SECTION D-D
STA. 24+68.99 – 27+95.00 N.T.S.



4 CHANNEL B SECTION D1-D1
STA. 26+71.16 – 27+21.96. N.T.S.



DRAINAGE FEATURES, CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

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

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED
PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B PLAN & PROFILE (3 OF 5)

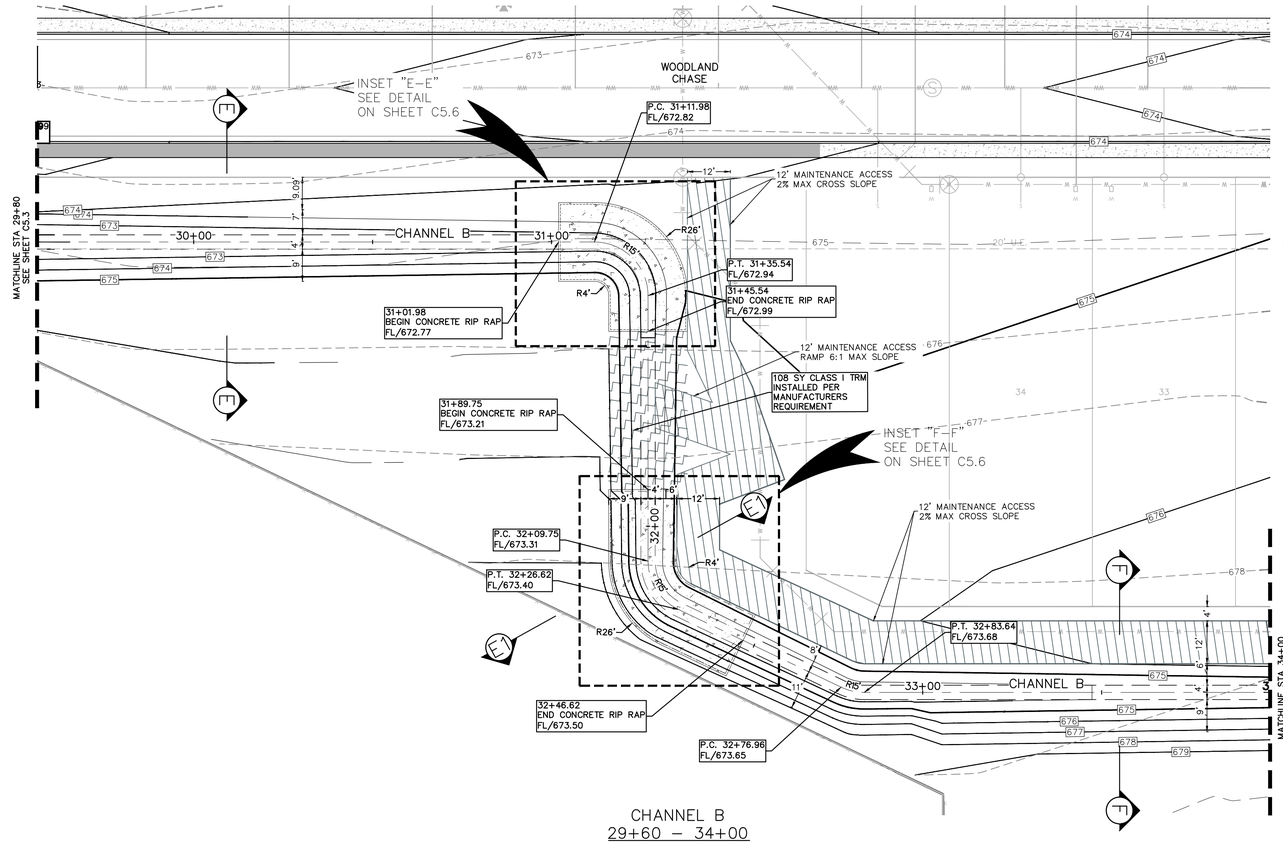
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

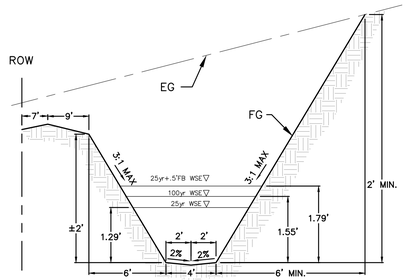
SHEET
C5.3

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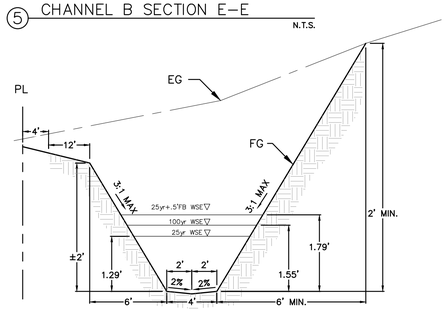


CHANNEL B
29+60 – 34+00

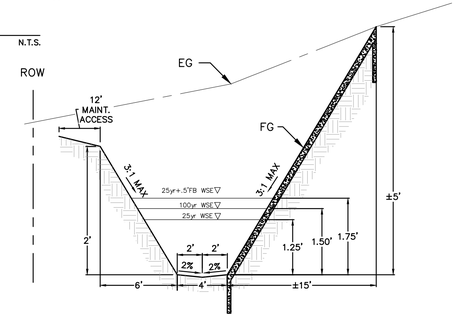




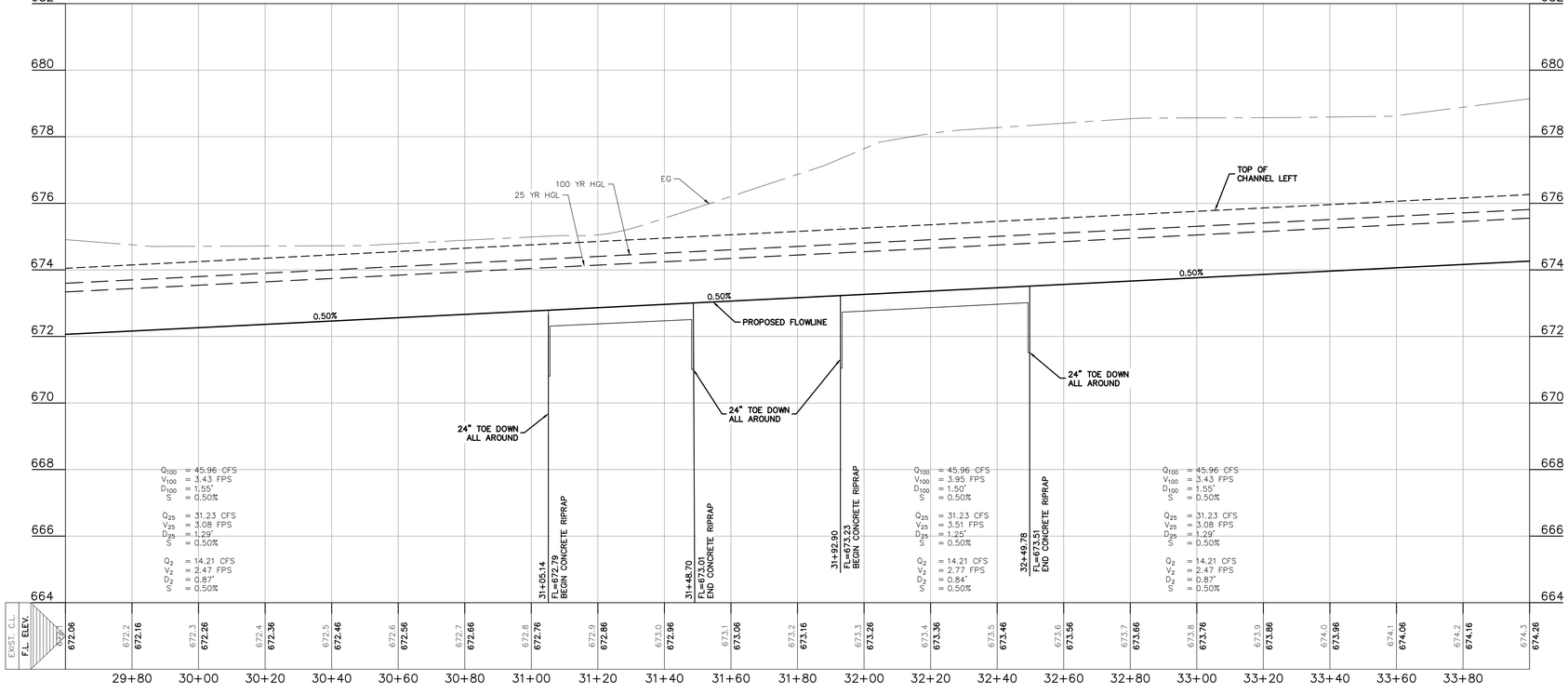
5 CHANNEL B SECTION E–E
N.T.S.



6 CHANNEL B SECTION F–F
N.T.S.



6 CHANNEL B SECTION E1–E1
N.T.S.



LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

DRAINAGE FEATURES, CHANNELS, MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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HMT
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STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED
PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B
PLAN & PROFILE
(4 OF 5)

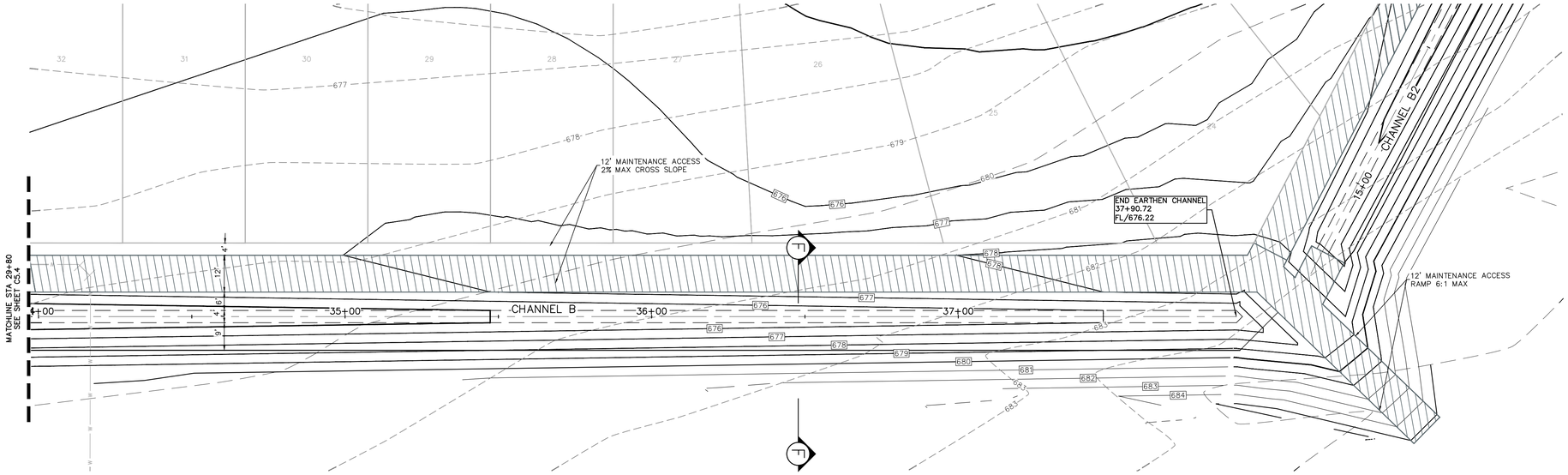
JARO NORTH UNIT 4

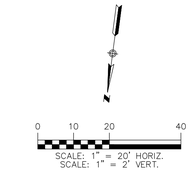
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.4

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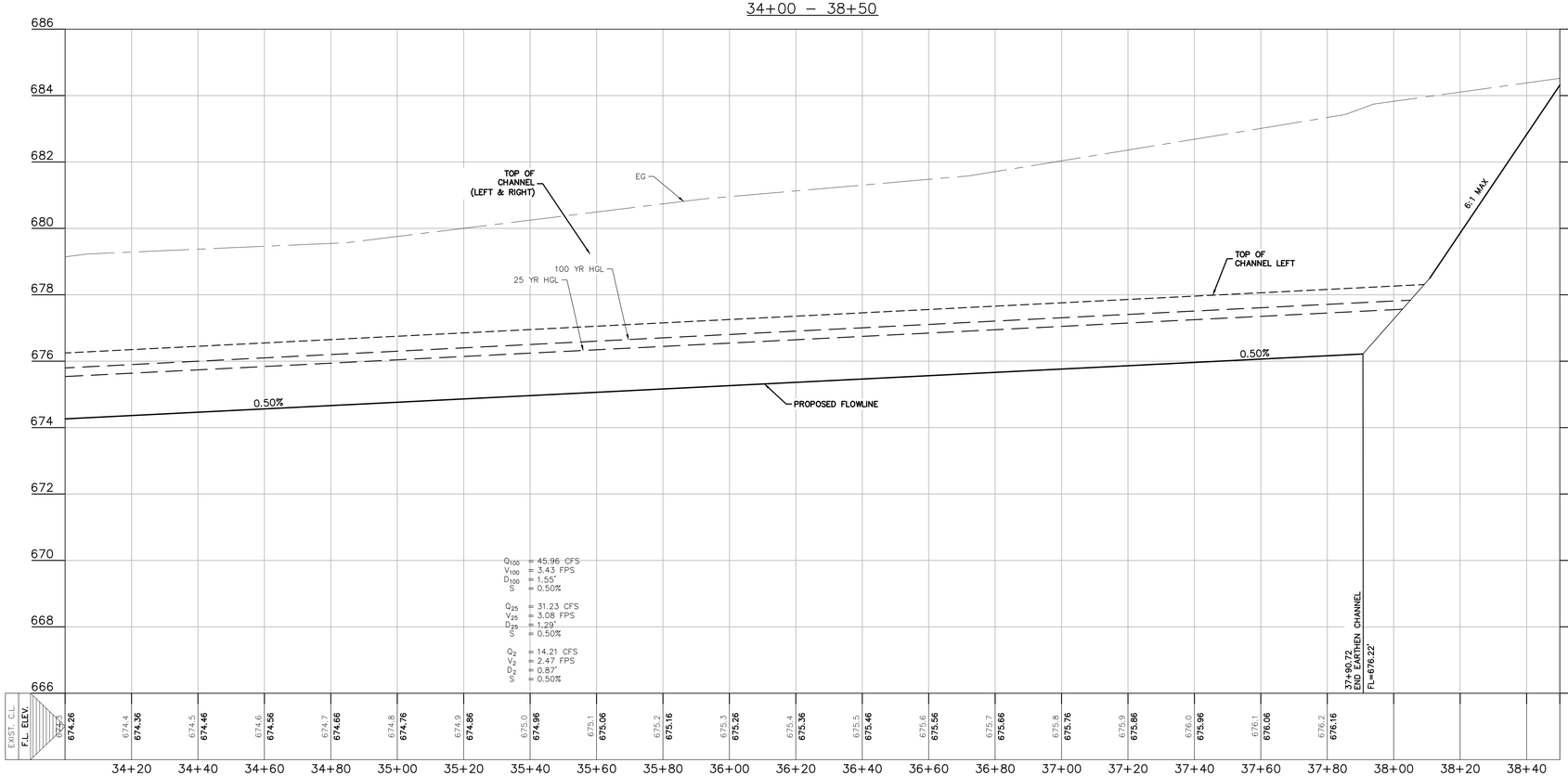


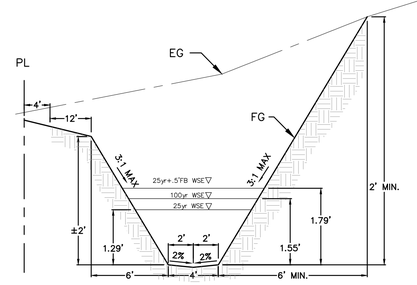


LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

CHANNEL B
34+00 – 38+50





⑥ CHANNEL B SECTION F–F
N.T.S.

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STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B PLAN & PROFILE (5 OF 5)

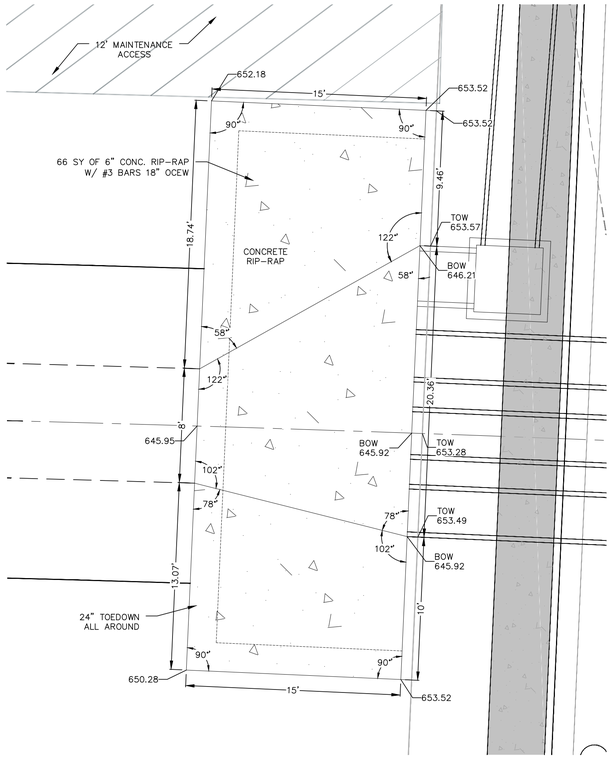
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

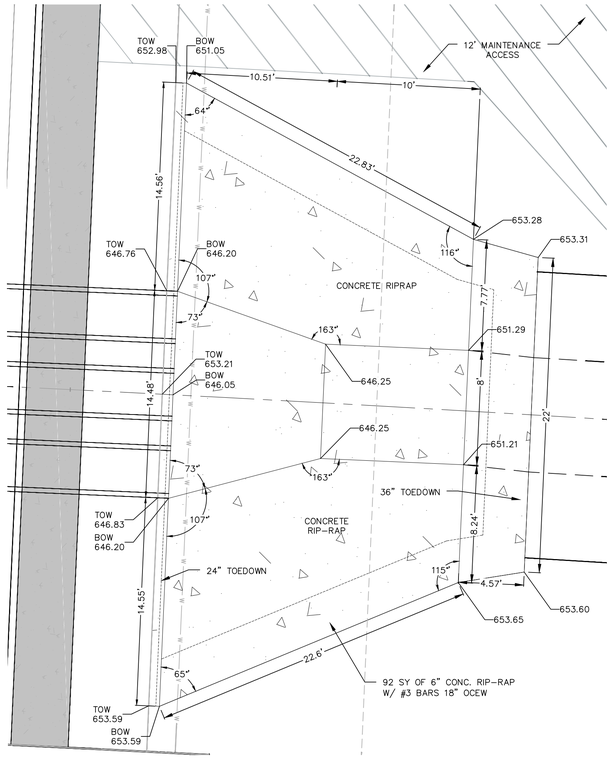
SHEET
C5.5

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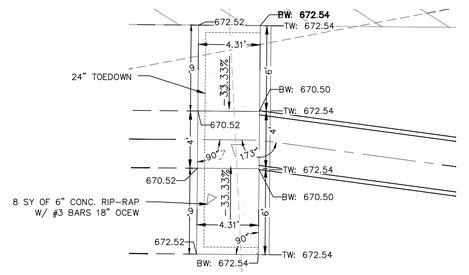
1 CHANNEL B INSET A–A

SCALE: 1"=5'



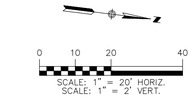
2 CHANNEL B INSET B–B

SCALE: 1"=5'



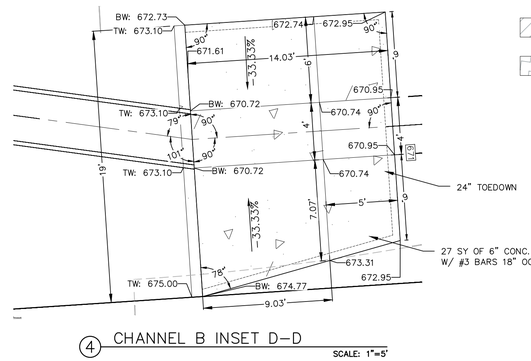
3 CHANNEL B INSET C–C

SCALE: 1"=5'



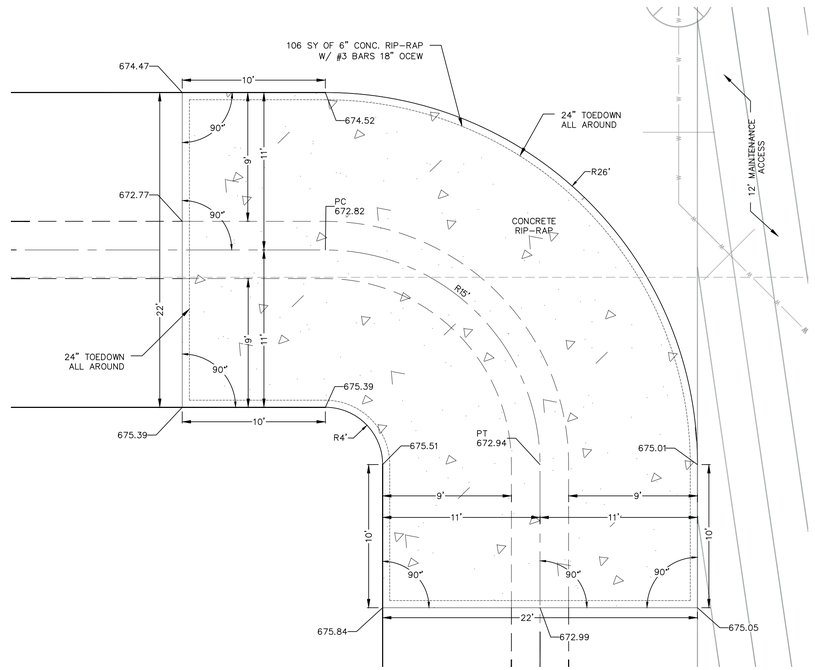
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- WW — PROPOSED WASTEWATER LINE
- W — PROPOSED WATER LINE
- E — EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



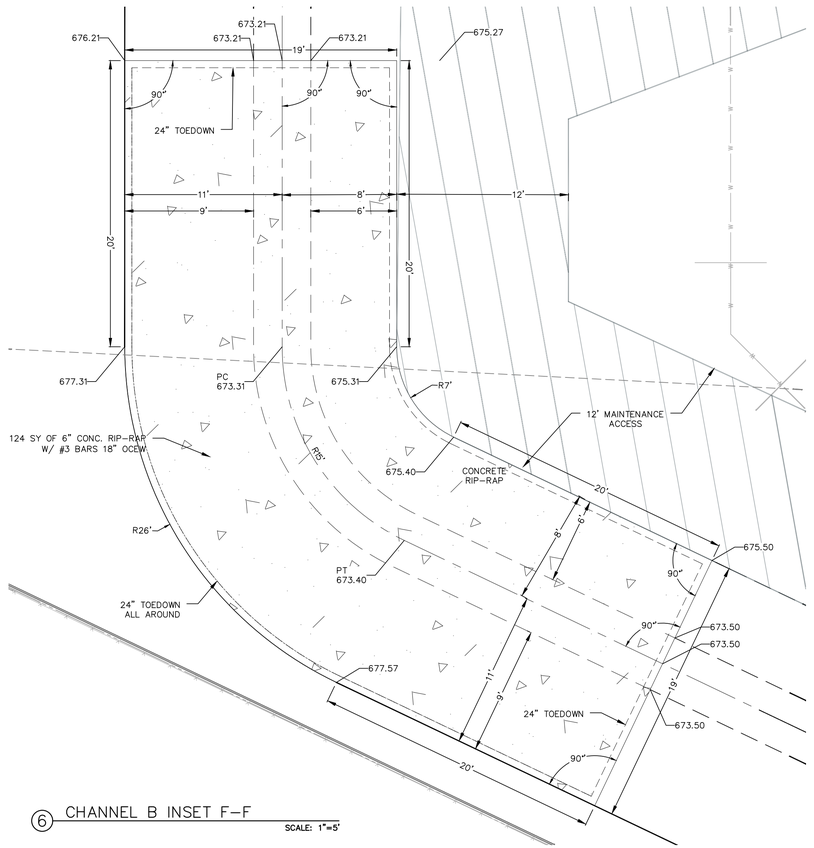
4 CHANNEL B INSET D–D

SCALE: 1"=5'



5 CHANNEL B INSET E–E

SCALE: 1"=5'



6 CHANNEL B INSET F–F

SCALE: 1"=5'

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HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
113964
LICENSED PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B DETAILS

JARO NORTH UNIT 4

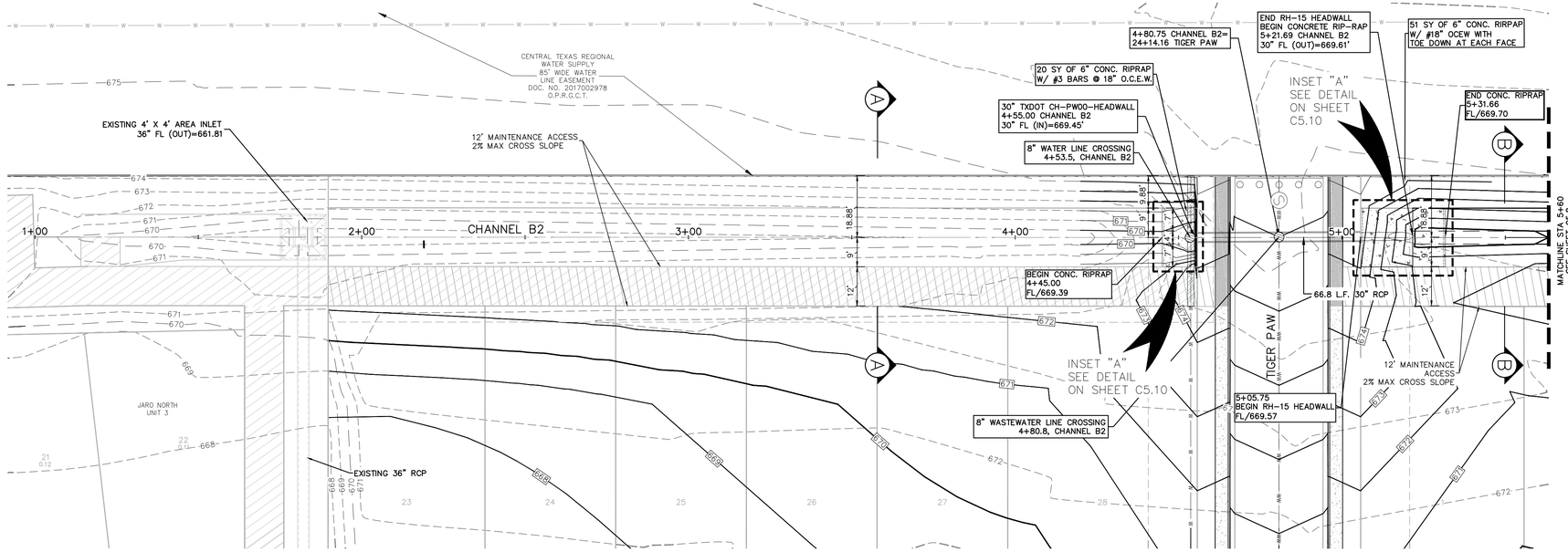
NO.	REVISION DESCRIPTION	REVISION DATE

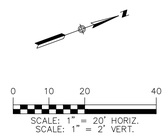
DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET

C5.6

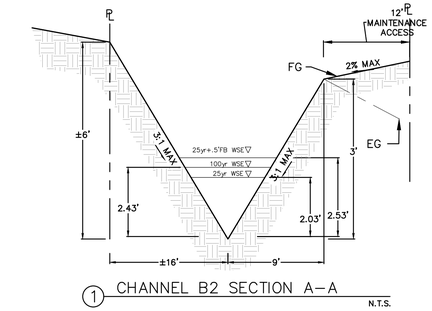
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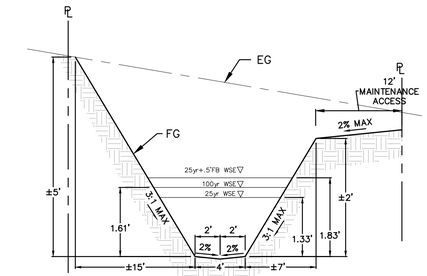


LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

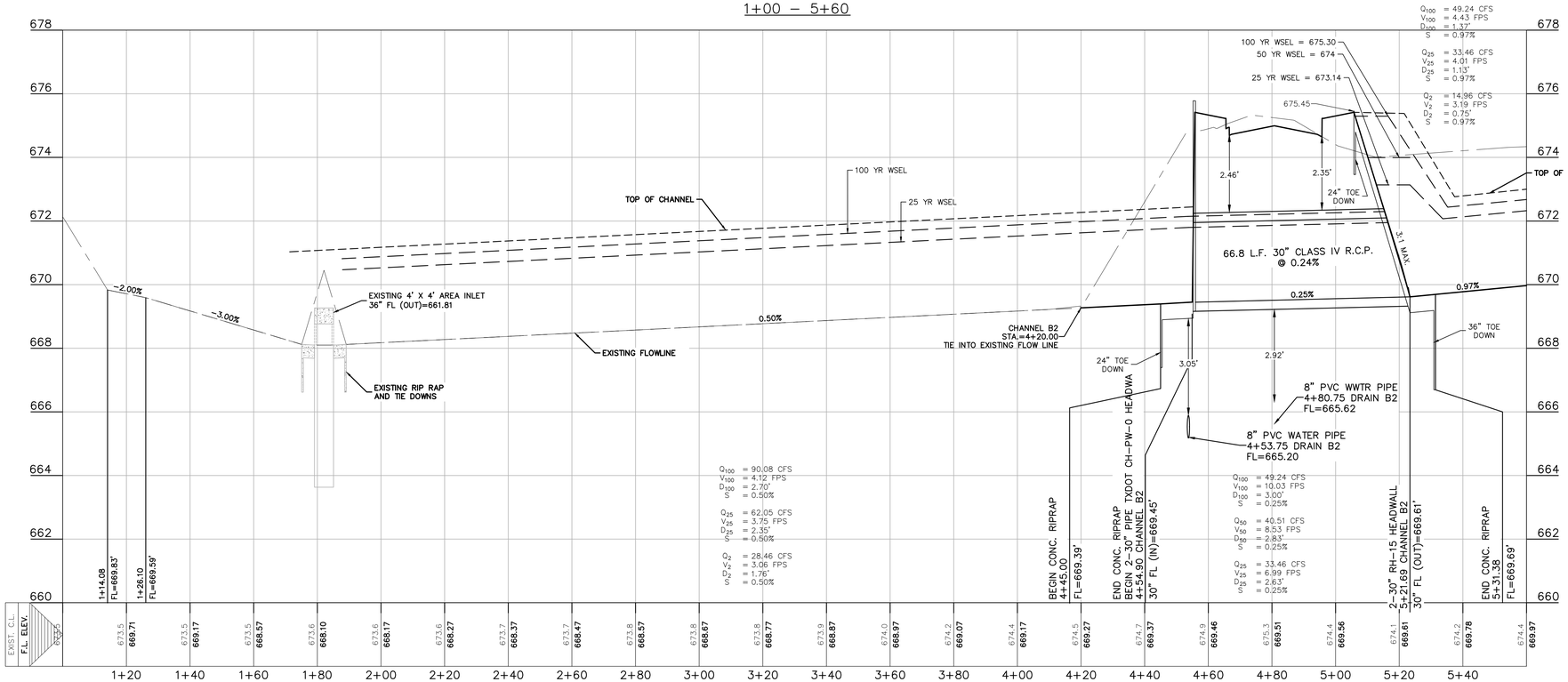


1 CHANNEL B2 SECTION A–A
N.T.S.



2 CHANNEL B2 SECTION B–B
N.T.S.

CHANNEL B2
1+00 – 5+60



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TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B2 PLAN & PROFILE (1 OF 3)

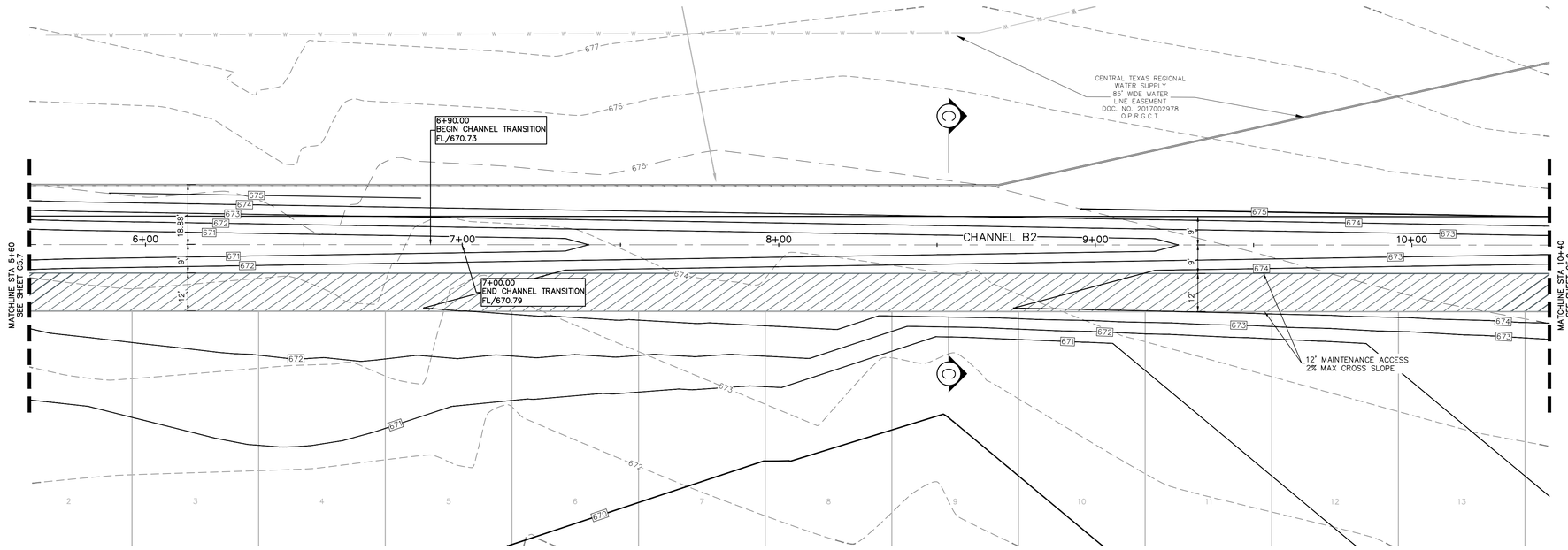
JARO NORTH UNIT 4

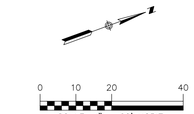
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.7

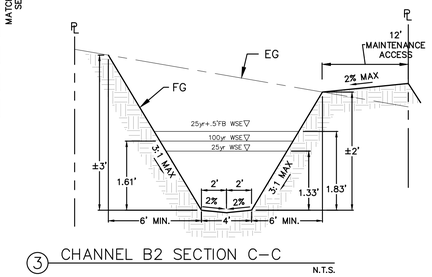
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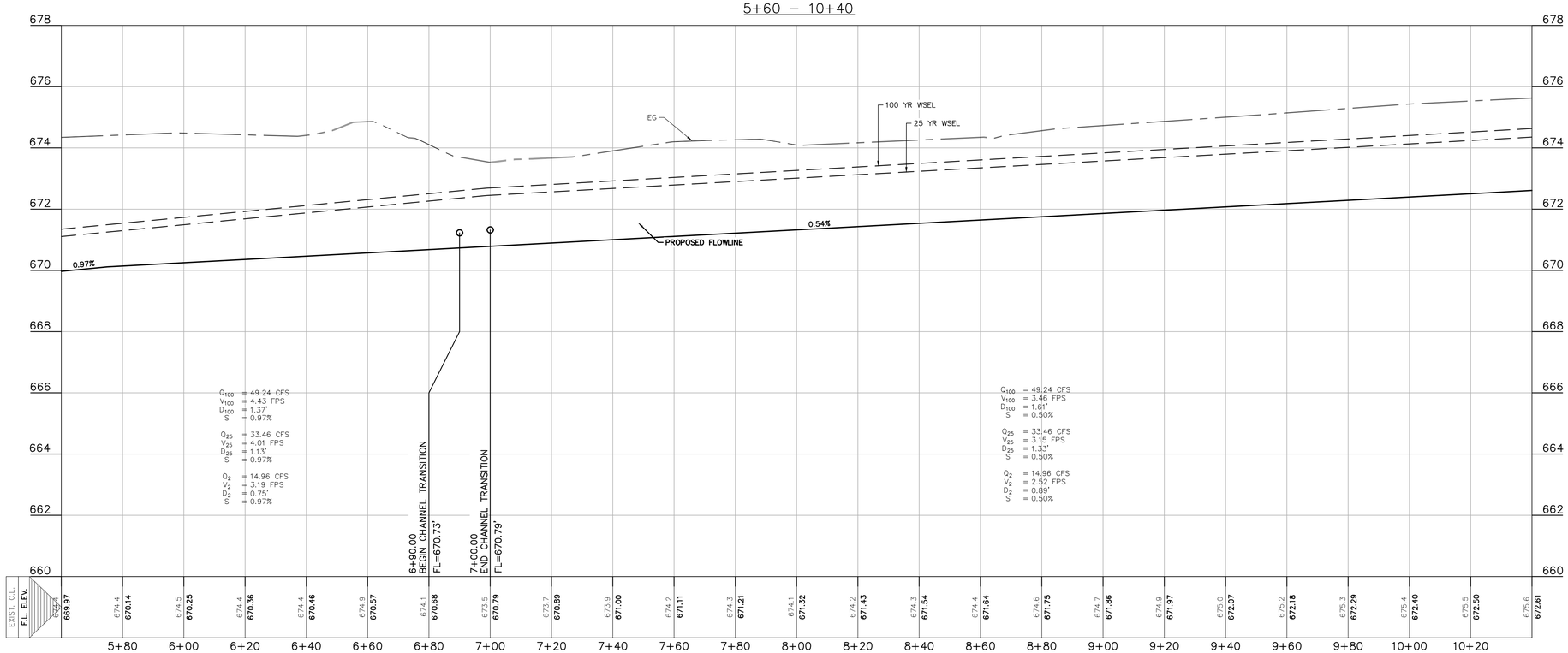
LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



3 CHANNEL B2 SECTION C–C
N.T.S.

CHANNEL B2
5+60 – 10+40



EXIST. C.L.	669.97	674.4	670.14	674.5	670.25	674.4	670.36	674.4	670.46	674.9	670.57	674.1	670.68	673.5	670.79	673.7	670.89	673.9	671.00	674.2	671.11	674.3	671.21	674.1	671.32	674.2	671.43	674.3	671.54	674.4	671.64	674.6	671.75	674.7	671.86	674.9	671.97	675.0	672.07	675.2	672.18	675.3	672.29	675.4	672.40	675.5	672.50	675.6	672.61
F.L. ELEV.																																																
STA		5+80		6+00		6+20		6+40		6+60		6+80		7+00		7+20		7+40		7+60		7+80		8+00		8+20		8+40		8+60		8+80		9+00		9+20		9+40		9+60		9+80		10+00		10+20			

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

D. STRUCTURAL INTEGRITY OF CHANNELS SHALL BE MAINTAINED AT ALL TIMES.

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

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TBPELS FIRM F-10961
TBPELS FIRM 1053600

HMT
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ZOE F. JASSO
103964
LICENSED
PROFESSIONAL ENGINEER
04/16/2026

CHANNEL B2
PLAN & PROFILE
(2 OF 3)

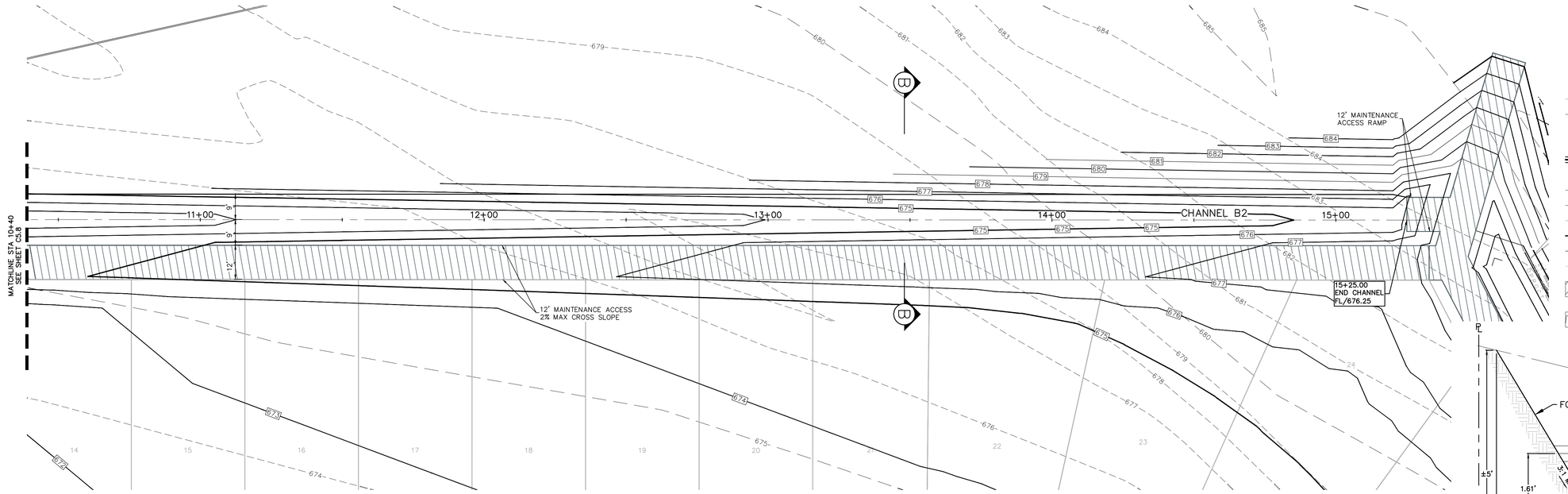
JARO NORTH UNIT 4

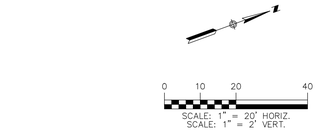
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.8

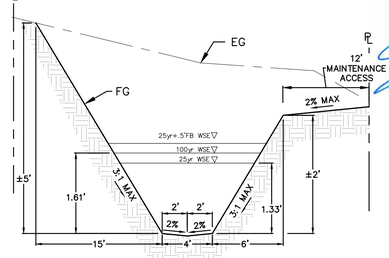
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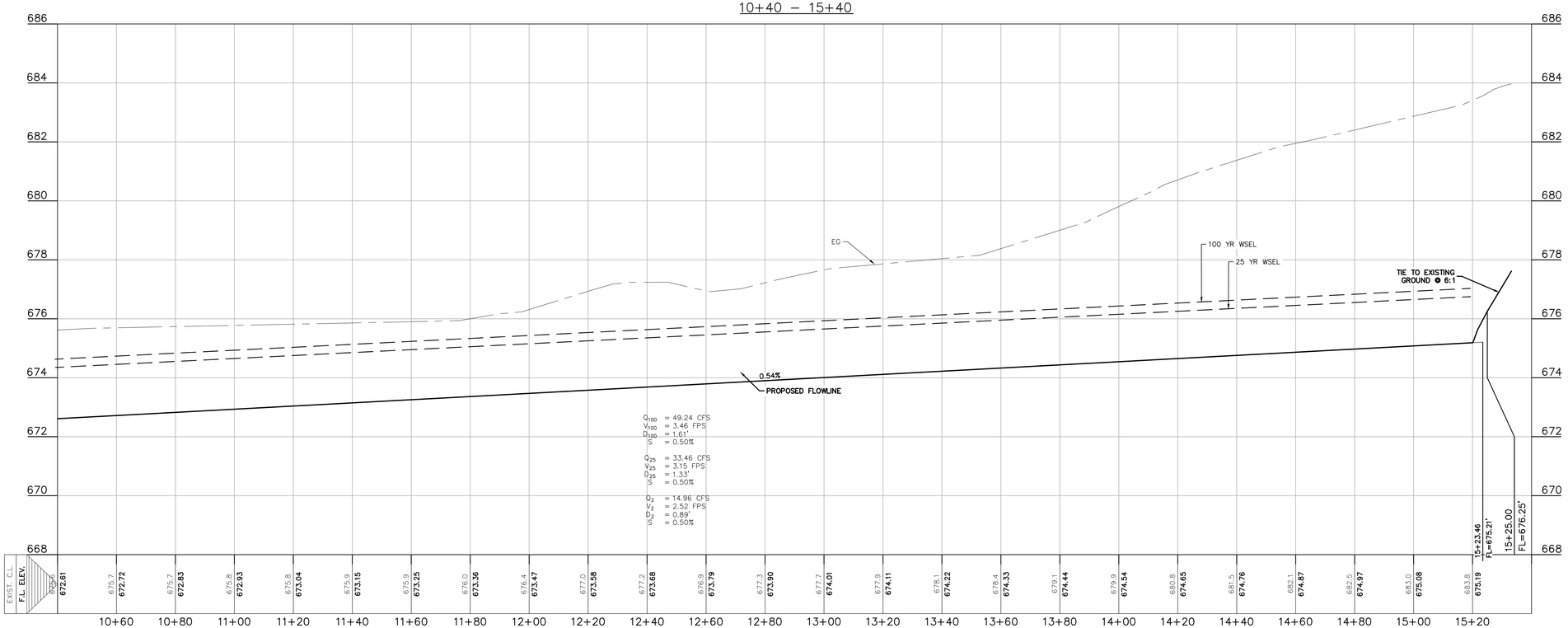
LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



② CHANNEL B2 SECTION B–B
N.T.S.

CHANNEL B2
10+40 – 15+40



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CHANNEL B2 PLAN & PROFILE (3 OF 3)

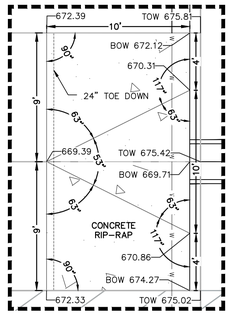
JARO NORTH UNIT 4

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DATE: APRIL 2026
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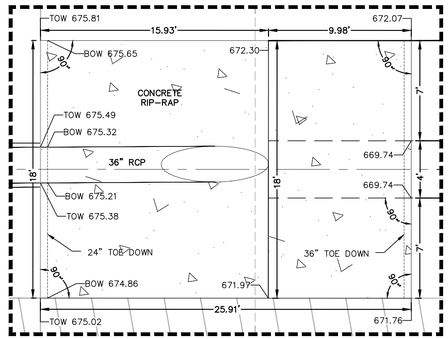
SHEET
C5.9

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1 CHANNEL B2 INSET A

SCALE: 1"=5'



2 CHANNEL B2 INSET B

SCALE: 1"=5'

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
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- TURF REINFORCEMENT MAT

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CHANNEL B2 DETAILS

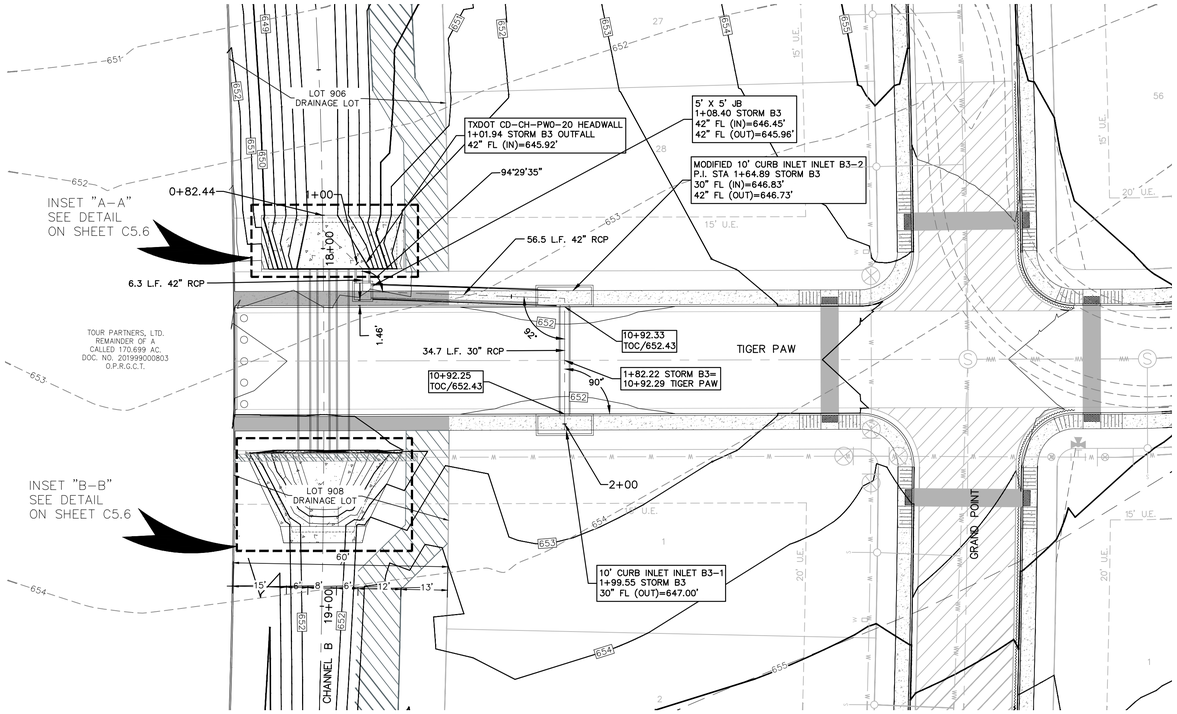
JARO NORTH UNIT 4

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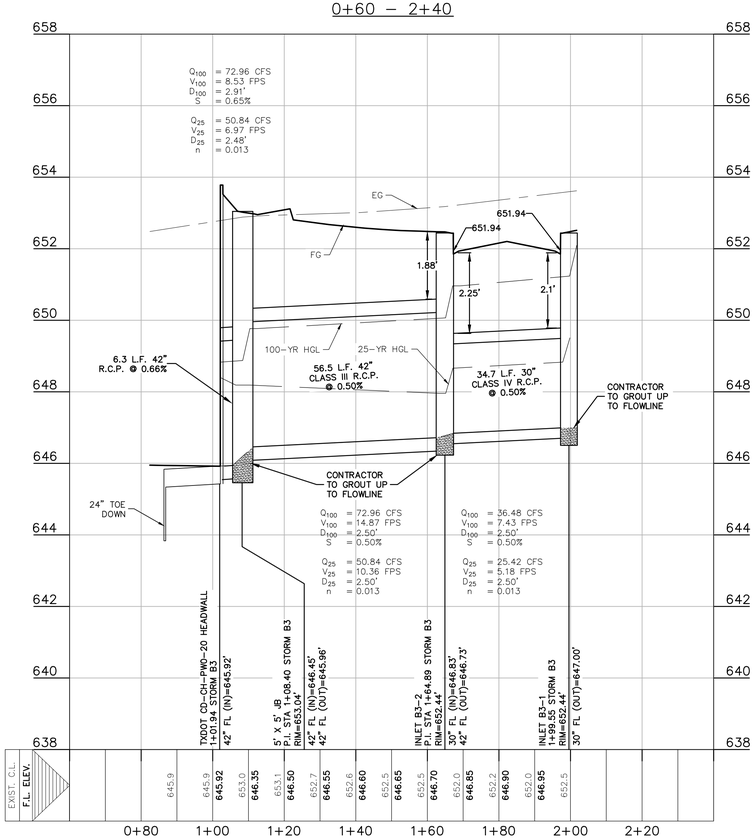
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SHEET
C5.10

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STORM B3
0+60 – 2+40



LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

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STORM B3 PLAN & PROFILE

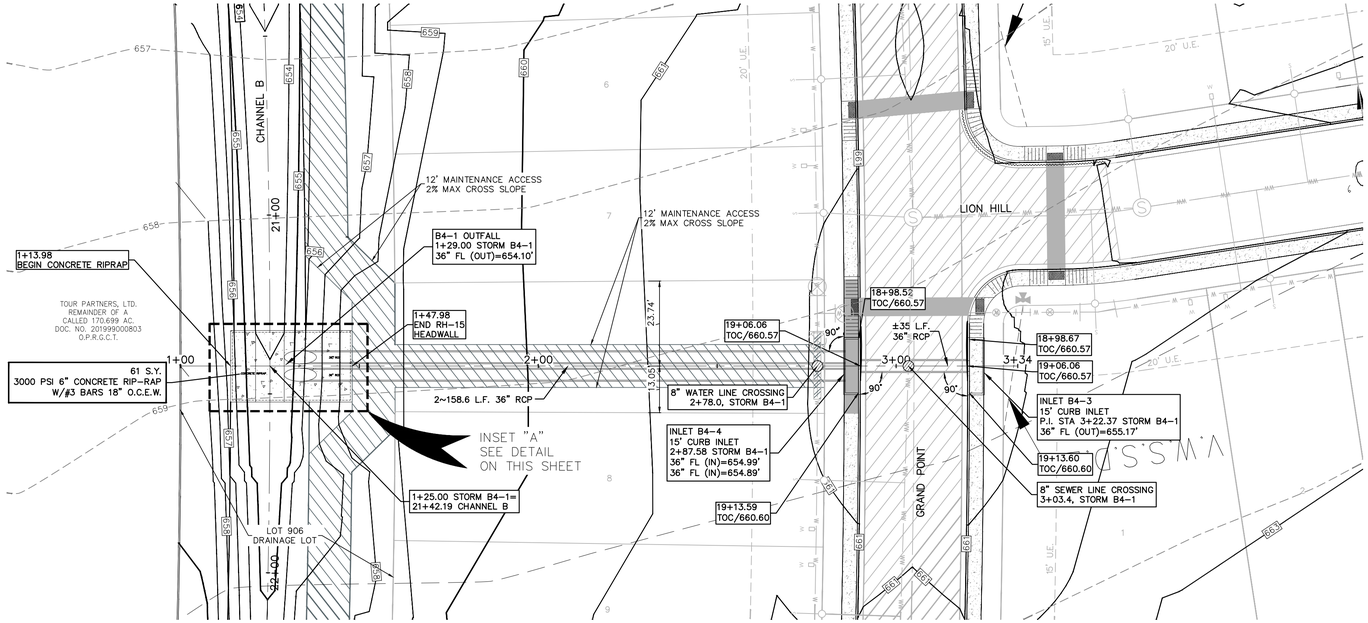
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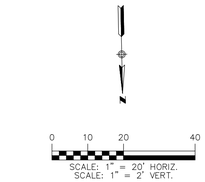
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SHEET
C5.11

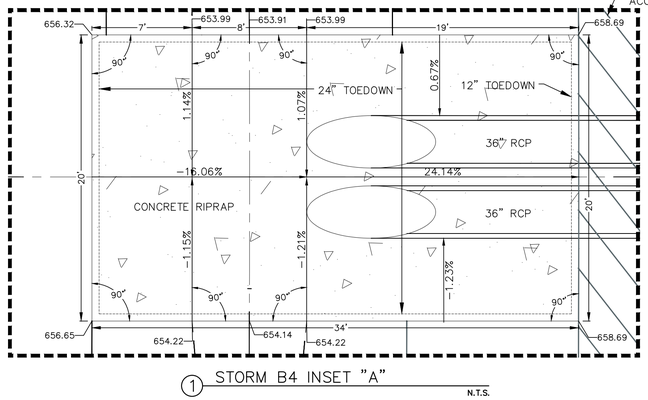
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LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
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- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT



1 STORM B4 INSET "A"
N.T.S.

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STORM B4-1 PLAN & PROFILE

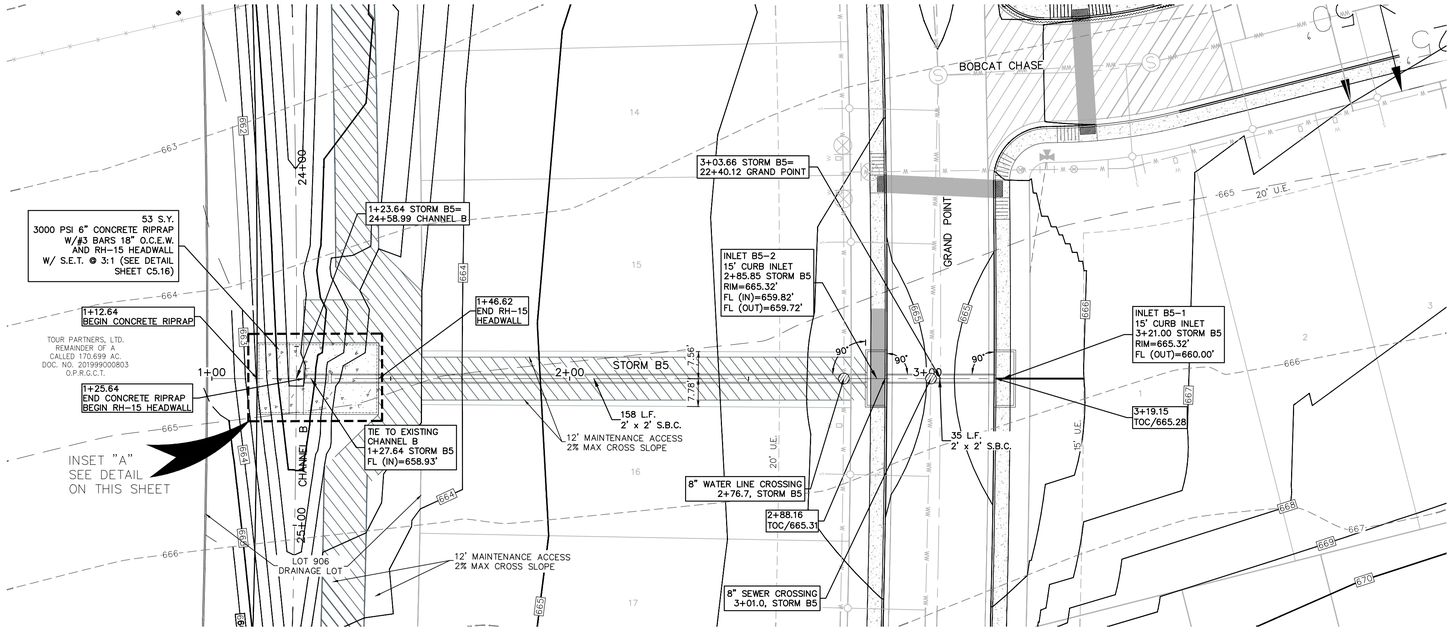
JARO NORTH UNIT 4

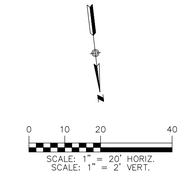
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.12

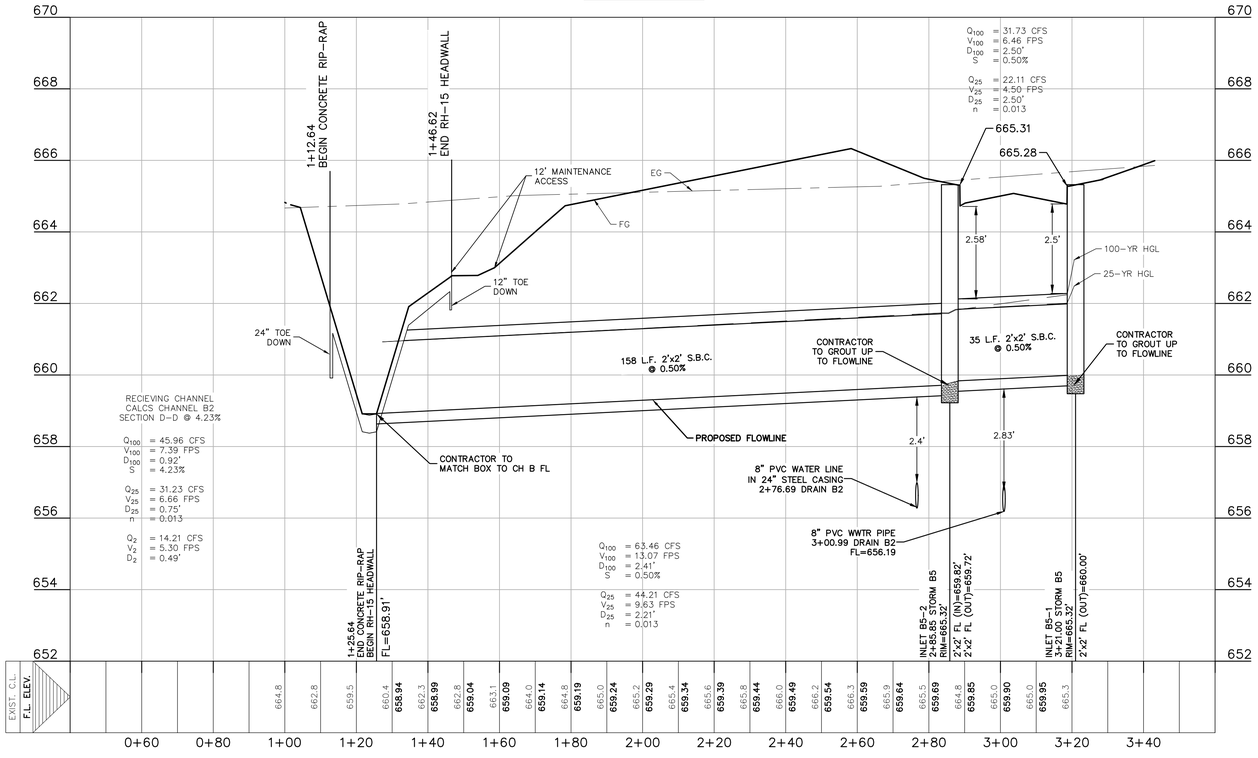
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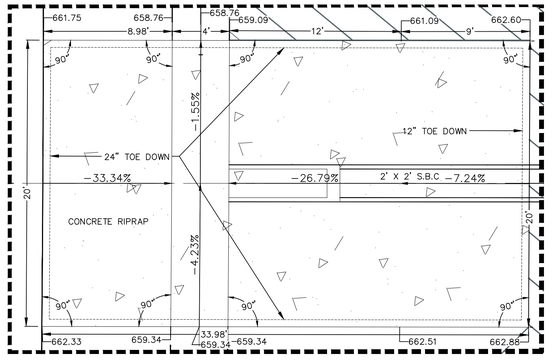




LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT





1 STORM B5 INSET "A"
N.T.S.

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STORM B5 PLAN & PROFILE

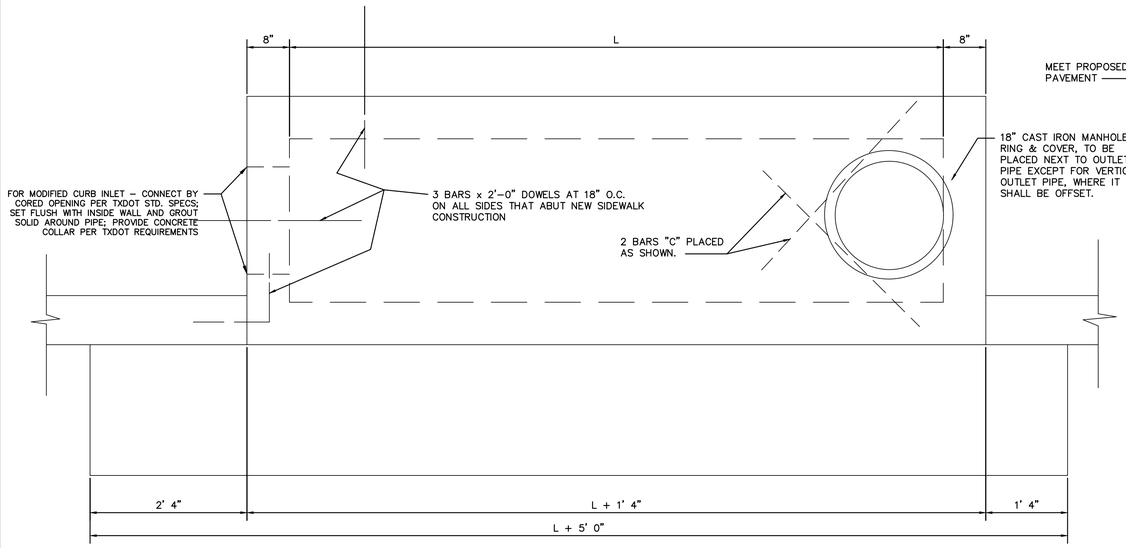
JARO NORTH UNIT 4

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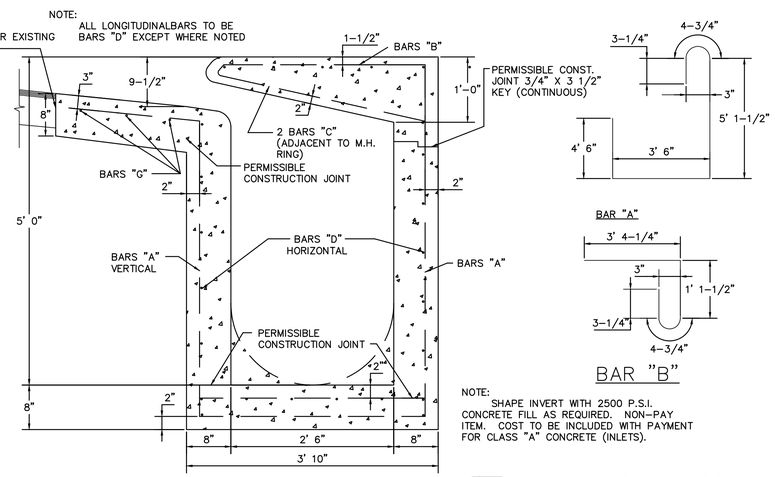
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DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C5.13

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\(20)\337.147_STORM B5.dwg User: joshuck Apr 16, 2026 - 10:49am



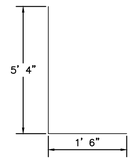
PLAN VIEW
SCALE: N.T.S.



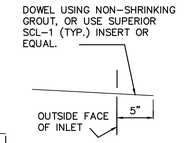
SECTION A–A
SCALE: N.T.S.

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).

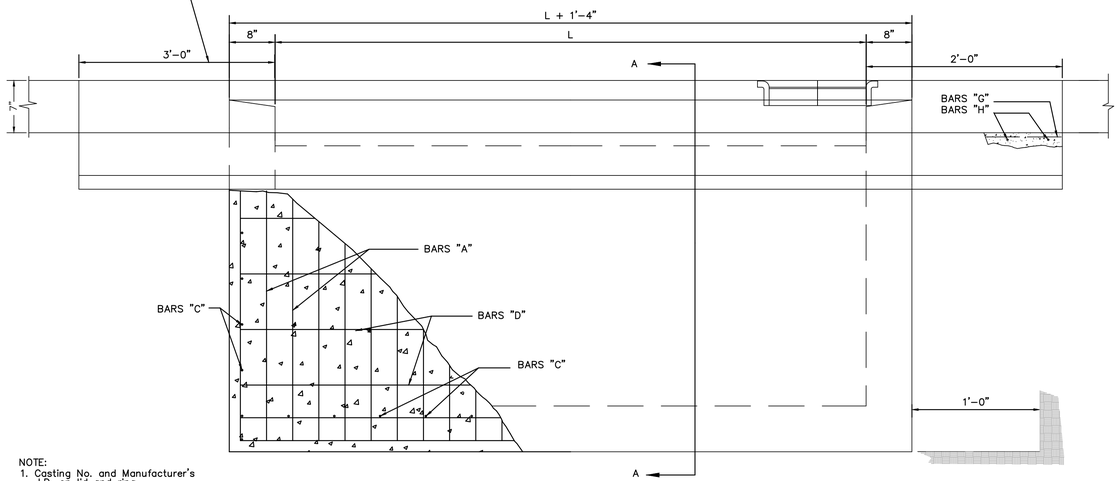


BAR "E"

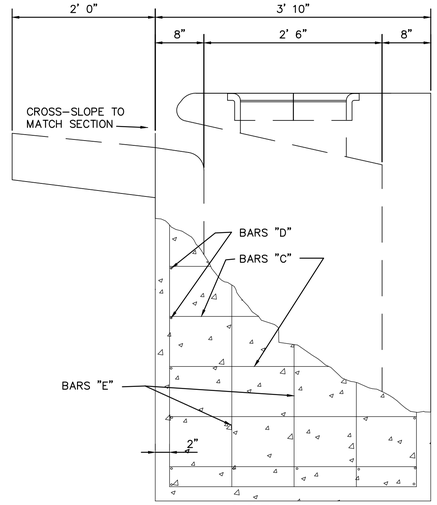


BAR "F"

3'-0" SHALL BE FOR UPSTREAM END OF ON-GRADE INLET: FOR INLETS IN SUMP CONDITUION, THIS DIMENSION SHALL BE 2'-0"

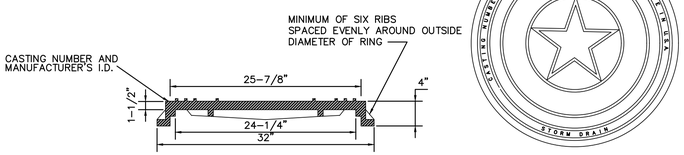


FRONT VIEW
SCALE: N.T.S.

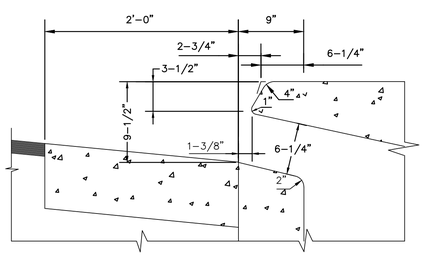


SIDE VIEW
SCALE: N.T.S.

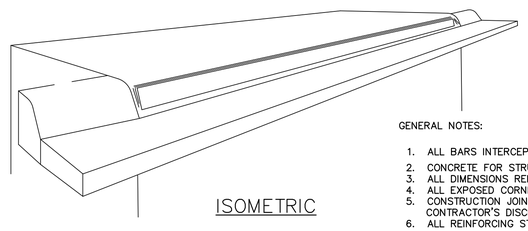
NOTE:
1. Casting No. and Manufacturer's I.D. on lid and ring.
2. Load bearing capability of N-20 minimum.
3. The load bearing surface shall be machine ground.
4. The combined weight of the manhole ring and cover must be at least 260 lbs.



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=353 CY. MANHOLE CASTING=100 LBS. STEEL TOTAL=422 LBS.						
10'	A	27	4	5"OC	13"-9 1/2"	249
	B	27	4	5"	5'-1"	93
	C	30	4	9"	3'-6"	70
	D	22	4	10"	11'-1"	163
	E	10	4	10 1/2"	6'-10"	46
	F	12	5	12"	2'-3"	27
	G	3	4	12"	14'-8"	30
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=5.75CY MANHOLE CASTING=100LBS. STEEL TOTAL=687LBS						
15'	A	39	4	5"OC	13"-9 1/2"	359
	B	39	4	5"	5'-1"	134
	C	36	4	9"	3'-6"	84
	D	22	4	10"	16'-1"	236
	E	10	4	10 1/2"	6'-10"	46
	F	17	5	12"	2'-3"	38
	G	3	4	12"	19'-8"	40
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=7.97CY. MANHOLE CASTING=100LBS STEEL TOTAL=946LBS						
20'	A	51	4	5"OC	13"-9 1/2"	470
	B	51	4	5"	5'-1"	175
	C	43	4	9"	3'-6"	101
	D	22	4	10"	6'-1"	310
	E	10	4	10 1/2"	6'-10"	46
	F	22	5	12"	2'-3"	50
	G	3	4	12"	9'-8"	50
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=10.19CY MANHOLE CASTING=100LBS STEEL TOTAL=1211LBS						
25'	A	63	4	5"OC	13"-9 1/2"	580
	B	63	4	5"	5'-1"	217
	C	50	4	9"	3'-6"	117
	D	22	4	10"	6'-1"	383
	E	10	4	10 1/2"	6'-10"	46
	F	27	5	12"	2'-3"	61
	G	3	4	12"	9'-8"	60
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=12.41CY. MANHOLE CASTING=100LBS STEEL TOTAL=1473LB						
30'	A	75	4	5"OC	13"-9 1/2"	691
	B	75	4	5"	5'-1"	258
	C	56	4	9"	3'-6"	131
	D	22	4	10"	6'-1"	457
	E	10	4	10 1/2"	6'-10"	46
	F	32	5	12"	2'-3"	72
	G	3	4	12"	9'-8"	70
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=14.63CY MANHOLE CASTING=100LBS STEEL TOTAL=1734LB						

*These figures do not 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 1053600

STATE OF TEXAS
ZOE F. JASSO
No. 134964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

STORM DETAILS (1 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

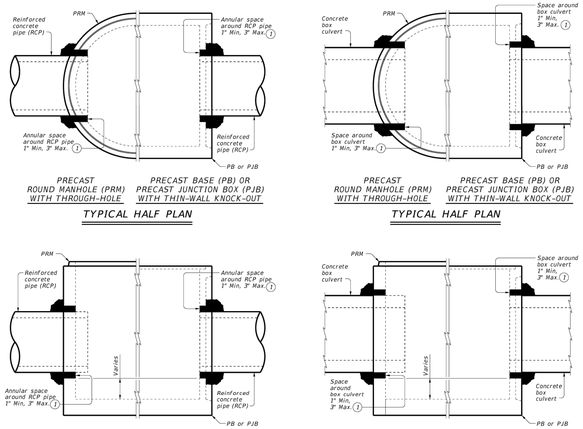
SHEET
C5.14

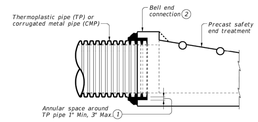
Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\03s\337-147_STORM DETAILS.dwg Apr 14, 2026 - 4:24pm User: ddolzer

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

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TYPICAL PARTIAL ELEVATION OF PRECAST SAFETY END TREATMENTS

Showing square PSET for parallel drainage, cross drainage shown similar.

CONSTRUCTION NOTES:
Do not grout rubber gasket joints without Manufacturer's recommendations.
Do not use bricks, masonry blocks, native stone, or similar materials in conjunction with grouted connections when filling void spaces around pipes or box culverts.

MATERIAL NOTES:
Provide grouted connections in accordance with DMS-4675, "Cementitious Grouts and Mortars for Miscellaneous Application."

GENERAL NOTES:
See applicable standards for notes and details not shown:
Precast Base (PB)
Precast Junction Box (PJB)
Precast Round Manhole (PRM)
Precast Safety End Treatments C/D Square (PSET-SC)
Precast Safety End Treatments P/D Square (PSET-SP)
Pipe bedding and backfill shall be in accordance with Item 462, "Concrete Box Culverts and Drains."
Provide Reinforced Concrete Pipe (RCP) in accordance with Item 464, "Reinforced Concrete Pipe."
Provide Thermoplastic Pipe (TP) in accordance with Item 468, "Thermoplastic Pipe Culverts and Drains".
Payment for grouted connections is considered subsidiary to other bid items.

(1) Completely fill the void between the precast structure and the connecting pipe or box with cementitious grouts and mortars in accordance with DMS-4675 "Cementitious Grouts and Mortars for Miscellaneous Application."

(2) For thermoplastic pipe, do not use bell or spigot for grouted connections. Remove the bell or spigot from the pipe by cutting between two exterior corrugations of the pipe before connecting and grouting the thermoplastic pipe to the structure.

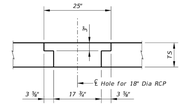
Texas Department of Transportation — Bridge Division Standard

PIPE AND BOX GROUTED CONNECTIONS FOR PRECAST STRUCTURES

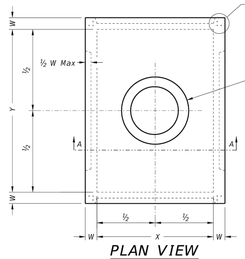
PBGC

FILE: CD-PBGC-24.dgn	DN: TxDOT	CK: TAR	DW: JTR	CK: TAR
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS 06-2024: Updated notes	DIST	COUNTY		SHEET NO.

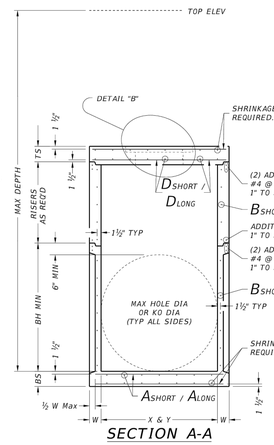
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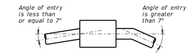
DETAIL "B"



PLAN VIEW



SECTION A-A



PIPE CONNECTION DETAIL

Connect pipes within 7° of normal to PJB wall. If necessary, use pipe elbow or curved approach alignment to stay within this limit.

FABRICATION NOTES:
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 ½" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in²/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is ¾".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.
10. Provide hole in below grade slab only when PJB is installed with inlet type PDD.

INSTALLATION NOTES:
1. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to junction box.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or ½ the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max., 2" Min larger than pipe OD.
5. For flexible pipe, consult bedding/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install bedding/seal per Manufacturer's specification.

GENERAL NOTES:
1. Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for junction box is per Item 465 "Junction Boxes, Manholes, and Inlets" by type and size.

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

Texas Department of Transportation — Bridge Division Standard

PRECAST JUNCTION BOX

PJB

FILE: CD-PJB-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

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

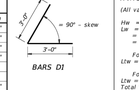
Maximum Wingwall Height Hw	W	X	Y	Z	Variable Reinforcing: Bars J1 Size	Bars J1 Spa	Bars J2 Size	Bars J2 Spa	Estimated Quantities per Pt of Wingwall (2-wings) (4) Reinf (lb/Ft)	Conc (CY/Ft)	Estimated Quantities per Ft of Toewall (1-toewall) Reinf (Lb/Ft)	Conc (CY/Ft)
2'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	48.64	0.406	6.85	0.071
2'-9"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.31	0.424	6.85	0.071
3'-0"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	49.98	0.444	6.85	0.071
3'-3"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.32	0.462	6.85	0.071
3'-6"	2'-10"	10"	1'-0"	7"	#4	1'-0"	#4	1'-0"	53.98	0.480	6.85	0.071
4'-0"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	55.71	0.532	6.85	0.071
4'-3"	3'-2"	1'-2"	1'-0"	7"	#4	1'-0"	#4	1'-0"	59.77	0.568	6.85	0.071
5'-0"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	63.45	0.632	6.96	0.075
5'-6"	3'-9"	1'-7"	1'-2"	7"	#4	1'-0"	#4	1'-0"	67.46	0.668	6.96	0.075
6'-0"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	80.67	0.730	7.07	0.078
6'-6"	4'-4"	2'-0"	1'-4"	7"	#5	1'-0"	#5	1'-0"	85.05	0.768	7.07	0.078
7'-0"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	92.15	0.864	8.07	0.093
7'-6"	5'-0"	2'-3"	1'-9"	8"	#5	1'-0"	#5	1'-0"	96.54	0.902	8.07	0.093
8'-0"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	139.04	0.962	8.13	0.095
8'-6"	5'-6"	2'-8"	1'-10"	8"	#5	6"	#5	6"	144.47	1.000	8.13	0.095
9'-0"	6'-0"	2'-10"	2'-2"	9"	#5	6"	#5	6"	156.93	1.136	8.41	0.110
10'-0"	6'-3"	3'-0"	2'-5"	9"	#6	6"	#5	6"	196.22	1.234	8.57	0.117
11'-6"	7'-2"	3'-6"	2'-8"	11"	#6	6"	#6	6"	230.13	1.438	9.52	0.140
12'-6"	7'-8"	3'-9"	2'-11"	1'-0"	#7	6"	#6	6"	283.41	1.592	9.74	0.157
13'-6"	8'-2"	4'-0"	3'-2"	1'-2"	#8	6"	#6	6"	348.72	1.804	10.02	0.186
14'-6"	8'-10"	4'-5"	3'-5"	1'-4"	#9	6"	#6	6"	432.94	2.046	10.30	0.218
15'-6"	9'-6"	4'-10"	3'-8"	1'-6"	#9	6"	#7	6"	489.52	2.302	11.24	0.253
16'-0"	9'-11"	5'-0"	3'-11"	1'-7"	#9	6"	#7	6"	505.72	2.448	11.47	0.279

TABLE OF WINGWALL REINFORCING (2-wings)

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

TABLE OF TOEWALL REINFORCING

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



WING DIMENSION FORMULAS:
(All values are in feet.)

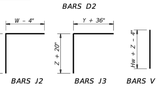
Hw = H + T + C
Lw = (Hw) (SL) + cosine (θ) for Type PW-1
= (Hw - 1') (SL) + cosine (θ) for Type PW-2 and Hw ≥ 4'
= (Hw - 0.5') (SL) + cosine (θ) for Type PW-2 and Hw < 4'

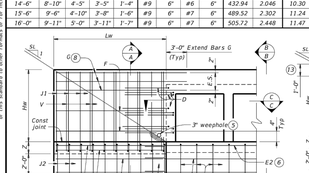
For cast-in-place culverts:
Ltw = ((N) (2 U + S) + (N - 1) (0.5)) + cosine (θ)
Total Wingwall Area (two wings – SF)
= (2)(Hw)(Lw) for Type PW-1
= (2)(Hw)(Lw) - 6 SF for Type PW-2 and Hw ≥ 4'
= (2)(Hw)(Lw) - 1.5 SF for Type PW-2 and Hw < 4'

For precast culverts:
Ltw = ((N) (2 U + S) + (N + 1) (0.5)) + cosine (θ)

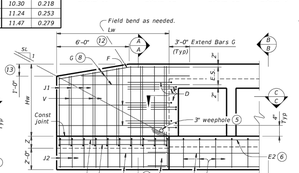
See applicable box culvert standard sheet for S, H, T, and U values.

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

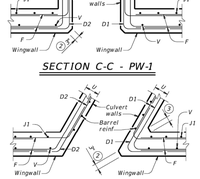




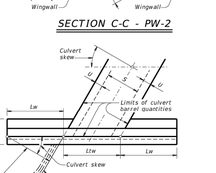
PARTIAL ELEVATION - PW-1



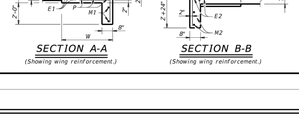
PARTIAL ELEVATION - PW-2



SECTION C-C - PW-1

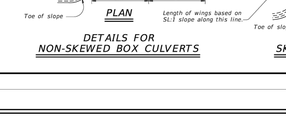


SECTION C-C - PW-2

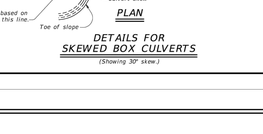


SECTION A-A
(Showing wing reinforcement.)

SECTION B-B
(Showing wing reinforcement.)



PLAN
DETAILS FOR NON-SKEWED BOX CULVERTS



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

(1) Skew = 0°

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

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

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

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

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

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

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

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

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

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

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

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

(13) 6" for Hw < 4'.

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

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

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

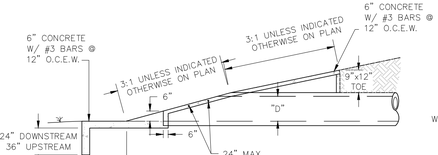
Cover dimensions are clear dimensions, unless noted otherwise. Reinforcing dimensions are out-to-out of bars.

Texas Department of Transportation — Bridge Division Standard

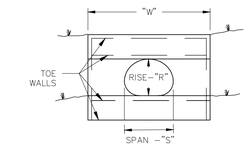
CONCRETE WINGWALLS WITH PARALLEL WINGS FOR BOX CULVERTS TYPES PW-1 AND PW-2

PW

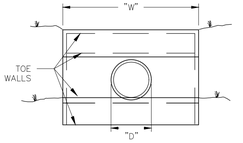
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REVISIONS	DIST	COUNTY		SHEET NO.



LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES
NOT-TO-SCALE



SINGLE C.M.P. ARCH PIPE CULVERT
NOT-TO-SCALE

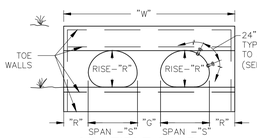


SINGLE CIRCULAR PIPE CULVERT
(CMP OR RCP)
NOT-TO-SCALE

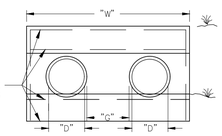
DIMENSIONS FOR CIRCULAR (CMP AND RCP) PIPE CULVERT

"ID" INSIDE DIA. OF PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	9'-0"	13'-11"	18'-10"	23'-9"
42"	6'-0"	2'-2"	1'-5"	10'-6"	16'-2"	21'-10"	27'-6"
48"	7'-0"	2'-5"	1'-7"	12'-0"	18'-5"	24'-10"	31'-3"
54"	8'-0"	2'-10"	1'-11"	13'-6"	20'-10"	28'-2"	35'-6"
60"	9'-0"	3'-2"	2'-0"	15'-0"	23'-2"	31'-4"	39'-6"

"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.



MULTIPLE C.M.P. ARCH PIPE CULVERT
NOT-TO-SCALE



MULTIPLE CIRCULAR PIPE CULVERT
(CMP OR RCP)
NOT-TO-SCALE

DIMENSIONS FOR C.M.P. ARCH PIPE CULVERTS

DESIGN SIZE	APPROX ARCH DIM. RISE "R"	APPROX ARCH DIM. SPAN "S"	"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
					"W"			
2	21"	15"	2'-0"	1'-2"	4'-3"	7'-2"	10'-1"	13'-0"
3	28"	20"	3'-0"	1'-5"	5'-8"	9'-5"	13'-2"	16'-11"
4	35"	24"	4'-0"	1'-8"	6'-11"	11'-6"	16'-1"	20'-8"
5	42"	29"	5'-0"	1'-11"	8'-4"	13'-9"	19'-2"	24'-7"
6	49"	33"	6'-0"	2'-2"	9'-7"	15'-10"	22'-1"	28'-4"
7	57"	38"	7'-0"	2'-5"	11'-1"	18'-3"	25'-5"	32'-7"
8	64"	43"	8'-0"	2'-10"	12'-5"	20'-8"	28'-10"	37'-0"
9	71"	47"	9'-0"	3'-2"	13'-9"	22'-10"	31'-11"	41'-0"

BASED ON 2-2/3" X 1/2" CORRUGATION
"G" IS MEASURED BETWEEN THE OTHER SURFACES OF THE PIPES.

NOTES:
1. CONCRETE SHALL BE CLASS "A" 3000 PSI
2. ALL METAL PIPES (CIRCULAR AND/OR ARCH) SHALL HAVE 5/8" X 6" GALVANIZED BOLTS WITH 2 HEX NUTS AT 24" CENTERS TO ANCHOR THE PIPE TO THE CONCRETE. THIS WILL BE SUBSIDIARY TO THE RIPRAP HEADWALL.
3. FOR CONCRETE ARCH PIPES THE CMP ARCH PIPE CULVERT DIMENSIONS WILL HAVE TO BE ADJUSTED FOR THE PIPE WALL THICKNESS.
4. FOR PIPES LARGER THAN SHOWN, USE THE CLEAR DISTANCE BETWEEN PIPES SHOWN IN TXDOT ITEMS 460 AND/OR 464.
5. IF THE SIDES OF THE HEADWALL IS ADJACENT TO A RIPRAP SLOPE AND IF THE TOP OF THE HEADWALL IS ADJACENT TO THE ROADWAY FOUNDATION OR RIPRAP SLOPE, THE SIDE AND TOP TOE WALLS MAY BE ELIMINATED IF APPROVED BY THE ENGINEER.

RH-15 HEADWALL

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

STORM DETAILS (2 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.15

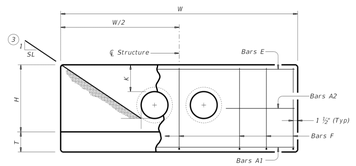
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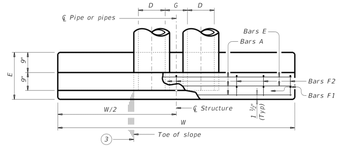
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TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (5)

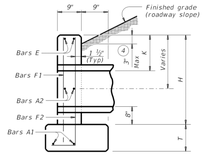
Slope (SL)	Dia of Pipe	Values for One Pipe: W	Reinf (Lbs) (1)	Conc (CY) (2)	Values To Be Added for Each Add'l Pipe: W	Reinf (Lbs) (1)	Conc (CY) (2)
2:1	12"	9' - 0"	122	1.1	1' - 9"	15	0.2
	15"	10' - 3"	136	1.3	2' - 2"	16	0.2
	18"	11' - 6"	163	1.5	2' - 8"	19	0.3
	21"	12' - 9"	200	1.8	3' - 1"	31	0.4
	24"	14' - 0"	217	2.1	3' - 7"	34	0.4
	27"	15' - 3"	294	2.4	3' - 11"	37	0.5
	30"	16' - 6"	272	2.7	4' - 4"	40	0.6
	33"	17' - 9"	314	3.1	4' - 8"	43	0.6
	36"	19' - 0"	371	3.9	5' - 1"	46	0.8
	42"	21' - 6"	442	4.9	5' - 10"	52	1.0
	48"	25' - 0"	569	6.4	6' - 7"	59	1.3
	54"	27' - 6"	701	7.5	7' - 6"	82	1.6
	60"	30' - 0"	794	8.8	8' - 3"	90	1.8
	66"	32' - 6"	894	10.2	8' - 9"	96	2.0
	72"	35' - 0"	1,055	11.7	9' - 4"	103	2.3
3:1	12"	13' - 0"	175	1.6	1' - 9"	14	0.2
	15"	14' - 9"	193	1.9	2' - 2"	17	0.2
	18"	16' - 6"	228	2.2	2' - 8"	19	0.3
	21"	18' - 3"	299	2.6	3' - 1"	31	0.4
	24"	20' - 0"	323	3.0	3' - 7"	33	0.4
	27"	21' - 9"	371	3.5	3' - 11"	37	0.5
	30"	23' - 6"	415	4.0	4' - 4"	40	0.5
	33"	25' - 3"	469	4.6	4' - 8"	43	0.6
	36"	27' - 0"	556	5.7	5' - 1"	46	0.8
	42"	30' - 6"	675	7.1	5' - 10"	52	1.0
	48"	35' - 6"	837	9.2	6' - 7"	59	1.3
	54"	39' - 0"	1,015	11.0	7' - 6"	84	1.6
	60"	42' - 6"	1,171	12.9	8' - 3"	91	1.8
	66"	46' - 0"	1,298	14.9	8' - 9"	98	2.0
	72"	49' - 6"	1,561	17.1	9' - 4"	103	2.3
4:1	12"	17' - 0"	229	2.0	1' - 9"	15	0.2
	15"	19' - 3"	266	2.4	2' - 2"	17	0.2
	18"	21' - 6"	308	2.9	2' - 8"	19	0.3
	21"	23' - 9"	382	3.5	3' - 1"	31	0.3
	24"	26' - 0"	430	3.9	3' - 7"	34	0.4
	27"	28' - 3"	486	4.7	3' - 11"	37	0.5
	30"	30' - 6"	539	5.2	4' - 4"	40	0.6
	33"	32' - 9"	603	6.0	4' - 8"	42	0.6
	36"	35' - 0"	738	7.5	5' - 1"	47	0.8
	42"	39' - 6"	881	9.3	5' - 10"	52	1.0
	48"	46' - 0"	1,102	12.1	6' - 7"	61	1.3
	54"	50' - 6"	1,364	14.4	7' - 6"	84	1.6
	60"	55' - 0"	1,547	16.9	8' - 3"	91	1.8
	66"	59' - 6"	1,741	19.5	8' - 9"	98	2.0
	72"	64' - 0"	2,077	22.4	9' - 4"	102	2.3
6:1	12"	25' - 0"	336	3.0	1' - 9"	14	0.2
	15"	28' - 3"	384	3.6	2' - 2"	17	0.2
	18"	31' - 6"	452	4.2	2' - 8"	19	0.3
	21"	34' - 9"	581	5.1	3' - 1"	31	0.4
	24"	38' - 0"	644	5.8	3' - 7"	34	0.4
	27"	41' - 3"	737	6.9	3' - 11"	37	0.5
	30"	44' - 6"	807	7.7	4' - 4"	39	0.6
	33"	47' - 9"	912	8.9	4' - 8"	44	0.6
	36"	51' - 0"	1,108	11.0	5' - 1"	48	0.8
	42"	57' - 6"	1,318	13.7	5' - 10"	54	1.0
	48"	67' - 0"	1,682	17.9	6' - 7"	59	1.3
	54"	73' - 6"	2,072	21.3	7' - 6"	83	1.6
	60"	80' - 0"	2,351	24.9	8' - 3"	89	1.8
	66"	86' - 6"	2,643	28.9	8' - 9"	96	2.0
	72"	93' - 0"	3,121	33.1	9' - 4"	101	2.3



ELEVATION



PLAN OF NON-SKEWED PIPES



SECTION AT CENTER OF PIPE

TABLE OF CONSTANT DIMENSIONS

Dia of Pipe (D)	G	K (5)	H	T	E
12"	0' - 9"	1' - 0"	2' - 8"	0' - 9"	1' - 9"
15"	0' - 11"	1' - 0"	2' - 11"	0' - 9"	1' - 9"
18"	1' - 2"	1' - 0"	3' - 2"	0' - 9"	1' - 9"
21"	1' - 4"	1' - 0"	3' - 5"	0' - 9"	2' - 0"
24"	1' - 7"	1' - 0"	3' - 8"	0' - 9"	2' - 0"
27"	1' - 8"	1' - 0"	3' - 11"	0' - 9"	2' - 3"
30"	1' - 10"	1' - 0"	4' - 2"	0' - 9"	2' - 3"
33"	1' - 11"	1' - 0"	4' - 5"	0' - 9"	2' - 6"
36"	2' - 1"	1' - 0"	4' - 8"	1' - 0"	2' - 6"
42"	2' - 4"	1' - 0"	5' - 2"	1' - 0"	2' - 9"
48"	2' - 7"	1' - 3"	5' - 11"	1' - 0"	3' - 0"
54"	3' - 0"	1' - 3"	6' - 5"	1' - 0"	3' - 3"
60"	3' - 3"	1' - 3"	6' - 11"	1' - 0"	3' - 6"
66"	3' - 3"	1' - 3"	7' - 5"	1' - 0"	3' - 9"
72"	3' - 4"	1' - 3"	7' - 11"	1' - 0"	4' - 0"

TABLE OF REINFORCING STEEL (6)

Bar	Size	Spa	No.
A1	#5	–	2
A2	#5	1' - 6"	–
E	#5	–	2
F	#5	1' - 0"	–

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

GENERAL NOTES:
Designed according to AASHTO LRFD Bridge Design Specifications.
Do not mount bridge rails of any type directly to these culvert headwalls.
This standard may not be used for wall heights, H, exceeding the values shown.

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



BARS F2

(1) Total quantities include one 3'-1" lap for bars over 60' in length.

(2) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(3) Indicated slope is perpendicular to centerline pipe or pipes.

(4) For vehicle safety, construct curbs no more than 3" above finished grade. Reduce curb heights, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(5) Dimensions shown are usual and maximum.

(6) Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation — Bridge Division Standard

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: CD-CH-PW0-20.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
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REVISIONS	DIST	COUNTY		SHEET NO.

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

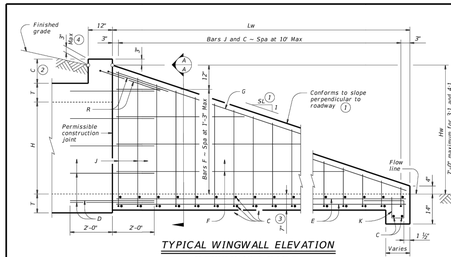
STORM DETAILS (3 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

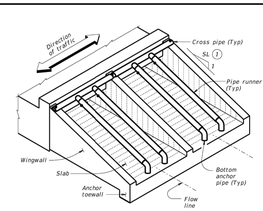
DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C5.16



TYPICAL WINGWALL ELEVATION

(Pipe runners not shown for clarity.)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

WING DIMENSION CALCULATIONS:

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

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

Total Wingwall Area (SF)
= (0.5) (Hw + 0.333') (Lw) (N + 1)
Total Concrete Volume (CY)
= ((Wingwall Area) (0.583') +
(Lw) (Atw) (0.583') +
(Atw) (1.167') (1.167' – 0.583')) ÷ (27)

PIPE RUNNER DIMENSION CALCULATIONS:

Pipe Runner Length
= (Lw) (K1) - (1.917')
Total Reinforcing (Lb)
= (1.55) (Lw) (Atw) +
(4.43) (Atw) +
(K2) (Hw) (N + 1) (√LRr)

C = Height of curb above top of top slab (feet)
Hw = Height of wingwall (feet)
K = Constant value for use in formulas

Slope SL:1	K1	K2
2:1	1.054	7.45
3:1	1.034	10.50
4:1	1.034	10.50

Atw = Anchor toewall length (feet)
Lw = Length of wingwall (feet)
N = Number of culvert barrels
SL:1 = Side slope ratio (horizontal : 1 vertical)

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

MATERIAL NOTES:
Provide Grade 60 reinforcing steel.
Provide galvanized reinforcing steel if required elsewhere in the plans.
Adjust reinforcing as necessary to provide a minimum clear cover of 1 ½".
Provide Class "C" concrete (f'c = 3,600 psi).
Provide pipe runners, cross pipes, 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.
Galvanize all steel components, except the concrete reinforcing, unless required elsewhere in the plans, after fabrication.
Repair galvanizing damaged during transport or construction in accordance with the Item 445, "Galvanizing."

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.
The quantities for pipe runners, reinforcing steel, and concrete resulting from the formulas given herein are for Contractor's information only.
See the Box Culvert Supplement (BCS) standard sheet for additional dimensions and information.
Alternate design drawings bearing the seal of a professional engineer will be acceptable for precast construction of the safety end treatments.

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

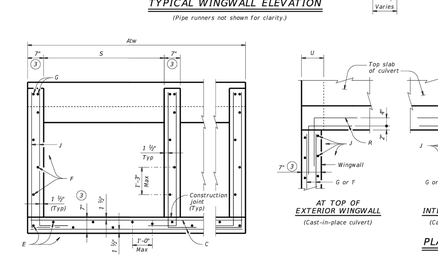
SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ CROSS DRAINAGE

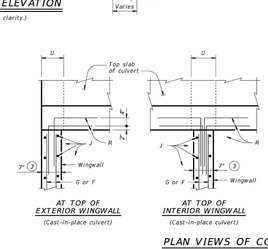
SETB-CD

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

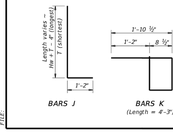


SECTION A-A

(Showing typical wingwall and wing slab reinforcing. Pipe runners not shown for clarity.)



PLAN VIEWS OF CORNER DETAILS



BARS K
(Length = 4'-3")

Bar	Size	Spacing
C	#4	10" Max
D	#4	Match F and E
E	#4	1'-0" Max
F	#4	1'-3" Max
G	#6	As shown
J	#4	10" Max
K	#4	1'-0" Max
R	#4	As shown

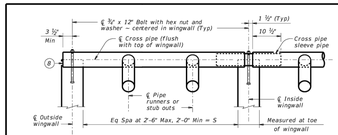
(1) Recommended values of slope are: 3:1, 4:1, and 6:1. Provide 3:1 or flatter slope.

(2) 0" 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 the Extended Curb Details (ECD) standard sheet.

(3) Wingwall and slab thicknesses may be the same as the adjacent culvert wall and slab thicknesses (7" minimum). If thicknesses greater than the minimum (7") are used, no changes will be made in quantities and no additional compensation will be allowed.

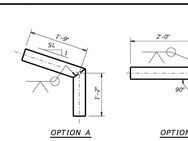
(4) For vehicle safety, reduce curb height, if necessary, to provide a maximum 3" projection. No changes will be made in quantities and no additional compensation will be allowed for this work.

(5) For culverts with C = 0", the precast culvert reinforcing may extend 1'-0" minimum into wingwall. Wingwall Bars D and R may be omitted. Otherwise, refer to the Wingwall Connection detail on the Box Culvert Precast Miscellaneous Details (SCP-MD) standard sheet.



NOTE: At Contractor's option, make the cross pipe continuous across the inside wingwalls. If option is selected, omit the sleeve pipe and make a 9/16" diameter through hole in the cross pipe to accept the anchor bolt at the centerline of each inside wingwall.

CROSS PIPE INSTALLATION DETAILS



BOTTOM ANCHOR PIPE DETAILS (10)

(6) Cross pipe is the same size as the pipe runner. Cross pipe stub out is the same size as the anchor pipe.

(7) Note that actual slope of safety pipe runner may vary slightly from side slope.

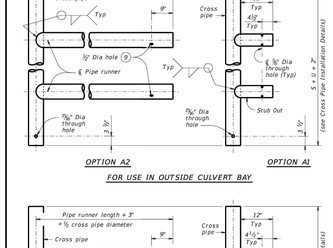
(8) Take care to ensure that riprap concrete does not flow into the cross pipe so as to permit disassembly of the bolted connection to allow cleanout access.

(9) After installation, inspect the 1¼" hole to ensure that the lap of the safety pipe runner with the bottom anchor pipe is adequate.

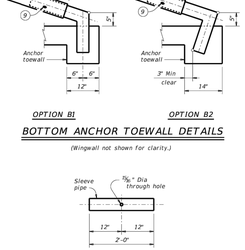
(10) At fabricator's option, a heat bend to a smooth 5' radius or a manufactured elbow (of the same material as the runner) may be substituted for the mitered and welded joint in the bottom anchor pipe.

MAXIMUM PIPE RUNNER LENGTHS AND REQUIRED PIPE RUNNER AND ANCHOR PIPE SIZES (6)

Maximum Pipe Runner Length	Required Pipe Runner Size: Pipe Size	Pipe O.D.	Pipe I.D.	Required Anchor Pipe Size: Pipe Size	Pipe O.D.	Pipe I.D.
19'- 0"	3" STD	3.500"	3.068"	2" STD	2.375"	2.067"
19'- 8"	4" STD	4.500"	4.026"	3" STD	3.500"	3.068"
34'- 2"	5" STD	5.563"	5.047"	4" STD	4.500"	4.026"



CROSS PIPE AND CONNECTIONS DETAILS

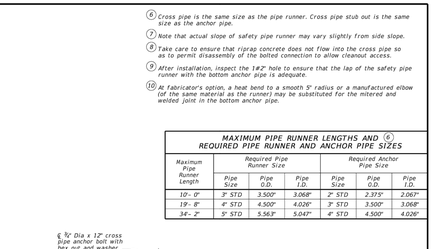


BOTTOM ANCHOR TOEWALL DETAILS

(Wingwall not shown for clarity.)

PIPE RUNNER DETAILS

NOTE: The separate pipe runner shown is required when Cross Pipe Connection Option A1 is used.



SIDE ELEVATION

(Showing pipe runner with Cross Pipe Connection Option A1 and Bottom Anchor Toewall Option B2. Wingwall not shown for clarity.)

SHEET 2 OF 2

Texas Department of Transportation — Bridge Division Standard

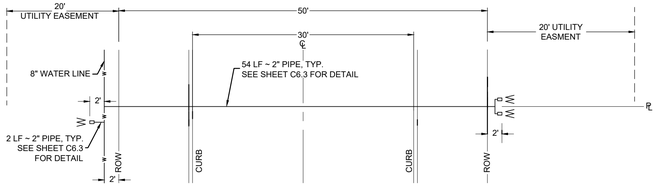
SAFETY END TREATMENT FOR 0° SKEW BOX CULVERTS (MAXIMUM Hw = 7'-0") TYPE I ~ CROSS DRAINAGE

SETB-CD

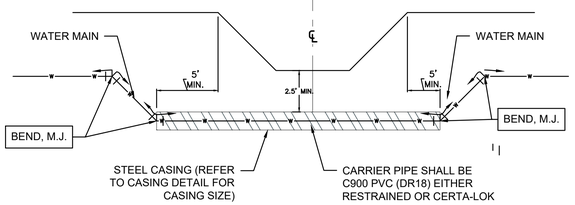
FILE: CD-SETBCD-20.dgn	DN: GAF	CK: CAT	DW: TxDOT	CK: TxDOT
©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY		SHEET NO.

UTILITY NOTES:

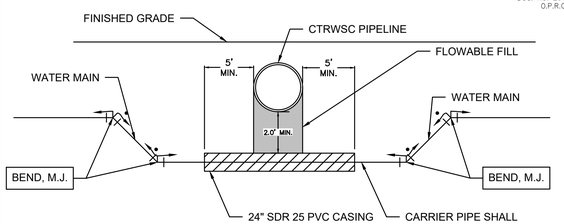
1. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO THE STREETS.
2. NO VALVES, HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
3. CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
4. FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.



LATERAL DETAIL
N.T.S



CHANNEL CROSSING DETAIL
N.T.S



WATER PIPE CROSSING DETAIL
N.T.S

RESTRAINED LENGTH NOTES:
1. CONTRACTOR TO COORDINATE WITH CRYSTAL CLEAR SPECIAL UTILITIES DISTRICT (C.C.S.U.D.) FOR WATER SERVICE TO THE SITE.
2. ALL IN-LINE VALVES, BENDS & PLUGS SHALL BE RESTRAINED, RESTRAINT TO BE PROVIDED ON EACH SIDE OF THE VALVE, FITTING OR ANY REQUIRED JOINT.
3. RL=RESTRAINT LENGTH
4. CONTRACTOR SHALL DETERMINE RESTRAINT LENGTH REQUIRED FOR HORIZONTAL VERTICAL FITTINGS BASED ON RESTRAINT LENGTH TABLE SHOWN BELOW.

RESTRAINED LENGTH FOR PIPE

PIPE INSIDE DIAMETER	MATERIAL	HORIZONTAL BENDS				VERTICAL BENDS						DEAD END/ INLINE VALVES
						UPPER			LOWER			
		90°	45°	22.5°	11.25°	45°	22.5°	11.25°	45°	22.5°	11.25°	
8"	PVC	32	14	7	4	37	18	9	10	5	3	88
8"	DUCTILE IRON	27	11	6	3	24	12	6	8	4	2	57

TEE

PIPE INSIDE DIAMETER OF RUN	PIPE INSIDE DIAMETER OF BRANCH	MATERIAL	FT.
8"	8"	PVC	77
8"	8"	DUCTILE IRON	50

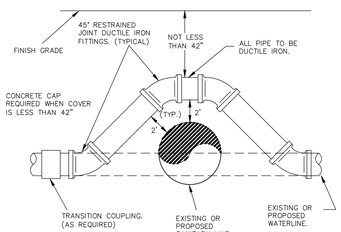
NOTES:

LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:

1) SAFETY FACTOR = 1.5 TO 1
2) TEST PRESSURE = 200psi.
3) SOIL DESIGNATION = INORGANIC CLAY OF HIGH PLASTICITY (CH, GRAN. FILL)
4) DEPTH OF COVER = 4 FEET (TYPICAL AND UPPER BEND)
5) DEPTH OF COVER = 5 FEET (LOWER BEND)
6) LENGTH ALONG RUN = 2 FEET

0 30 60 120
SCALE: 1" = 60'

WATERLINE ADJUSTMENT DETAIL
N.T.S



LEGEND

- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- EXISTING WATER LINE
- PROPOSED WATER LINE (ENCASED) (STEEL CASING)
- PROPOSED WASTEWATER LINE
- PROPOSED ⅝" WATER SERVICE
- UTILITY CROSSING
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED WATER FITTING
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE WATER SERVICE WITH ¾" SERVICE LINE
- WASTEWATER LATERAL

99 LF 8" C900
4'X2' SBC CROSSING ±15 LF OF 24" STEEL CASING SEE DETAIL SHEET C6.3 WATER LINE B 15+35.35
15+53.31 WATER LINE B INSTALL: 8" X 2" ECCENTRICALLY TAPPED CAP, MJ 1-2" PERMANENT FLUSH VALVE
8" WWTR MAIN CROSSING WATER LINE F 42+01.14
41+72.05 WATER LINE F INSTALL: 1-8" 45° BEND, M.J. 1-8" GATE VALVE, M.J.
41+61.05 WATER LINE F 1-8" 22.5° BEND, M.J.
41+46.05 WATER LINE F 1-8" 45° BEND, M.J.
41+22.86 WATER LINE F INSTALL: 1-8" 45° BEND, M.J.
39+60.76 WATER LINE F INSTALL: 2-8" GATE VALVES, M.J. 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
0+52.00 WATER LINE O INSTALL: 1-8" GATE VALVE
15 LF 8" C900
0+66.86 WATER LINE O 1-8" 45° BEND, M.J.
31 LF 8" C900
0+97.39 WATER LINE O 1-8" 45° BEND, M.J.
1+67.36 WATER LINE O 1-8" 45° BEND, M.J.
70 LF 8" C900
29 LF 8" C900
1+96.46 WATER LINE O 1-8" 45° BEND, M.J.
85' WIDE WATER LINE EASEMENT DOC. NO. 2019005627 O.P.R.G.C.T.
5+16.47 WATER LINE O INSTALL: 8" X 2" ECCENTRICALLY TAPPED CAP, MJ 1-2" PERMANENT FLUSH VALVE
60" WATER CROSSING 15 LF OF 24" SCH DR 25 PVC CASING SEE DETAIL THIS SHEET REFER TO C6.4 FOR VISTA RIDGE CROSSING REQUIREMENTS WATER LINE O 4+96.47
DAVID McCAMPBELL CALLED 144.804 AC. DOC. NO. 2018990140621 O.P.R.G.C.T.
CENTRAL TEXAS REGIONAL WATER SUPPLY 85' WIDE WATER LINE EASEMENT DOC. NO. 2017002978 O.P.R.G.C.T.
24' WIDE ACCESS EASEMENT DOC. NO. 2019990280O7 O.P.R.G.C.T.
3+34.42 WATER LINE O 1-8" 45° BEND, M.J.
3+39.86 WATER LINE O 1-8" 45° BEND, M.J.
177 LF 8" C900
CHANNEL CROSSING ±35 LF OF 24" STEEL CASING SEE DETAIL SHEET C6.3 WATER LINE O 3+53.59
BARRY & JOAN JAROSZEWSKI CALLED 17.78 AC. DOC. NO. 2019990280O6 O.P.R.G.C.T.
14+54.23 WATER LINE B = 42+26.03 WATER LINE F INSTALL: 1-8" X 8" TEE, M.J. 3-8" GATE VALVE, M.J. W/BOX
205 LF 8" C900
15+00
14+00
13+00
12+00
11+00
10+00
9+00
8+00
7+00
6+00
5+00
4+00
3+00
2+00
1+00
0+00
54 LF 8" DI PIPE
11 LF 8" C900
15 LF 8" C900
23 LF 8" C900
STA: 40+85.76
STA: 40+75.76
183 LF 8" C900
22 LF 8" C900
STA: 1+93.04
1+79.08 WATER LINE L INSTALL: 1-8" 22.5° BEND, M.J.
39+10.76 WATER LINE F = 0+00.00 WATER LINE O INSTALL: 1-8" X 8" TEE, M.J. 3-8" GATE VALVES, M.J. W/BOXES
52 LF 8" DI PIPE
15 LF 8" C900
38+95.94 WATER LINE F 1-8" 45° BEND, M.J.
8" WWTR MAIN CROSSING WATER LINE F 38+58.45
38+20.97 WATER LINE F 1-8" 45° BEND, M.J. 1-8" GATE VALVE, M.J.
343 LF 8" C900
75 LF 8" DI PIPE
334 LF 8" C900
5 LF 8" C900
138 LF 8" C900
WOODLAND CHASE
WATER LINE F
5+22.03 WATER LINE L INSTALL: 2-8" GATE VALVES W/ BOXES 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
348 LF 8" C900
30" RCP CROSSING ±15 LF OF 24" STEEL CASING SEE DETAIL SHEET C6.3 WATER LINE B 13+06.58
12+48.73 WATER LINE B = 1+00.00 WATER LINE L INSTALL: 1-8" X 8" TEE, M.J. 3-8" GATE VALVES, M.J. W/BOXES
2-36" RCP CROSSING ±20 LF OF 24" STEEL CASING SEE DETAIL SHEET C6.3 WATER LINE B 9+75.10
288 LF 8" C900
R=3285.49'
8" WWTR MAIN CROSSING WATER LINE L 1+25.92
21 LF 8" C900
1+78.44 WATER LINE K INSTALL: 1-8" 11.25° BEND, M.J.
1+57.04 WATER LINE L INSTALL: 2-8" GATE VALVE, M.J. 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
5+72.38 WATER LINE K INSTALL: 2-8" GATE VALVES W/ BOXES 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
394 LF 8" C900
387 LF 8" C900
LOT 908 DRAINAGE LOT 1.395 AC.
TOUR PARTNERS, LTD. REMAINDER OF A CALLED 170.699 AC. DOC. NO. 2019990020803 O.P.R.G.C.T.
1+00.00 WATER LINE J INSTALL: 8" X 2" ECCENTRICALLY TAPPED CAP, MJ 1-2" PERMANENT FLUSH VALVE
9+60.27 WATER LINE B = 1+00.00 WATER LINE K INSTALL: 1-8" X 8" TEE, M.J. 3-8" GATE VALVES, M.J. W/BOXES
178 LF 8" C900
6+76.01 WATER LINE B = 2+78.01 WATER LINE J INSTALL: 1-8" X 8" CROSS, M.J. 4-8" GATE VALVE, M.J. W/BOX
284 LF 8" C900
9+00 WATER LINE B
58 LF 8" DI PIPE
8" WWTR MAIN CROSSING WATER LINE K 1+25.93
10 LF 8" C900
3+46.24 WATER LINE J INSTALL: 1-8" 11.25° BEND, M.J.
1+57.52 WATER LINE K INSTALL: 2-8" GATE VALVE, M.J. 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
8+10.89 WATER LINE J INSTALL: 2-8" GATE VALVES W/BOXES 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
465 LF 8" C900
LION HILL
TIGER PAW
BOBCAT CHASE
WATER LINE L
WATER LINE K
CONC. RIP RAP CROSSING ±51 LF OF 24" STEEL CASING SEE DETAIL THIS SHEET WATER LINE J 1+25.09
6+25.56 WATER LINE B INSTALL: 1-8" GATE VALVE, M.J. W/BOX 1-8" 11.25° BEND, M.J.
120 LF 8" C900
5+05.82 WATER LINE B INSTALL: 1-8" 11.25° BEND, M.J.
50 LF 8" DI PIPE
108 LF 8" C900
8" WWTR MAIN CROSSING WATER LINE J 3+03.94
58 LF 8" DI PIPE
3+97.60 WATER LINE B REMOVE 2" FLUSH VALVE B2 & TIE TO EXISTING 8" TEE, M.J.
3+35.86 WATER LINE J INSTALL: 2-8" GATE VALVES, M.J. 1-F.H. ASSY 1-8"x6" TEE, M.J. 1-6" GATE VALVE, M.J. 1-6" VALVE BOX 1-5" STORZ HYDRANT CONNECTOR 6" D.I. PIPE LENGTH AS NEEDED
JARO NORTH UNIT 2
BLOCK 14
CIR WAY (50' R.O.W.)
15' U.E.
20' U.E.
GRAND POINT

MATCHLINE ~ SEE SHEET C6.1 (2 OF 2)

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTORS IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/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.

UTILITY TRENCH COMPACTION (DEEP)

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

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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

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

STATE OF TEXAS
ZOE F. JASSO
137964
LICENSED PROFESSIONAL ENGINEER
04/16/2026

OVERALL WATER PLAN (1 OF 2)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

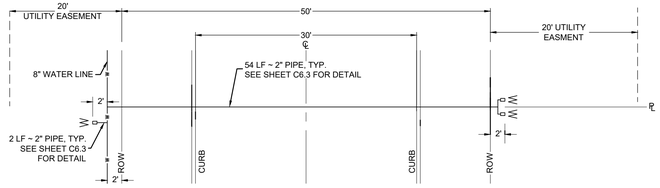
DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C6.0

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\CD\337.147_WATR.dwg User: joshuck Apr 16, 2026 - 10:48am

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. CONTRACTOR TO VERIFY EXISTING LATERAL HAS A MINIMUM LONGITUDINAL SLOPE OF 2%.
4. FIRE HYDRANTS ARE TO BE INSTALLED OUTSIDE OF THE SIDEWALK AND NO GREATER THAN 9 FEET FROM THE BACK OF CURB.



LATERAL DETAIL
N.T.S

RESTRAINED LENGTH NOTES:
1. CONTRACTOR TO COORDINATE WITH CRYSTAL CLEAR SPECIAL UTILITIES DISTRICT (C.C.S.U.D.) FOR WATER SERVICE TO THE SITE.
2. ALL IN-LINE VALVES, BENDS & PLUGS SHALL BE RESTRAINED, RESTRAINT TO BE PROVIDED ON EACH SIDE OF THE VALVE, FITTING OR ANY REQUIRED JOINT.
3. RL=RESTRAINT LENGTH
4. CONTRACTOR SHALL DETERMINE RESTRAINT LENGTH REQUIRED FOR HORIZONTAL VERTICAL FITTINGS BASED ON RESTRAINT LENGTH TABLE SHOWN BELOW.

RESTRAINED LENGTH FOR PIPE

PIPE INSIDE DIAMETER	MATERIAL	HORIZONTAL BENDS				VERTICAL BENDS						DEAD END/ INLINE VALVES
						UPPER			LOWER			
		90°	45°	22.5°	11.25°	45°	22.5°	11.25°	45°	22.5°	11.25°	
8"	PVC	32	14	7	4	37	18	9	10	5	3	88
8"	DUCTILE IRON	27	11	6	3	24	12	6	8	4	2	57

TEE

PIPE INSIDE DIAMETER OF RUN	PIPE INSIDE DIAMETER OF BRANCH	MATERIAL	FT.
8"	8"	PVC	77
8"	8"	DUCTILE IRON	50

0 30 60 120
SCALE: 1" = 60'

NOTES:

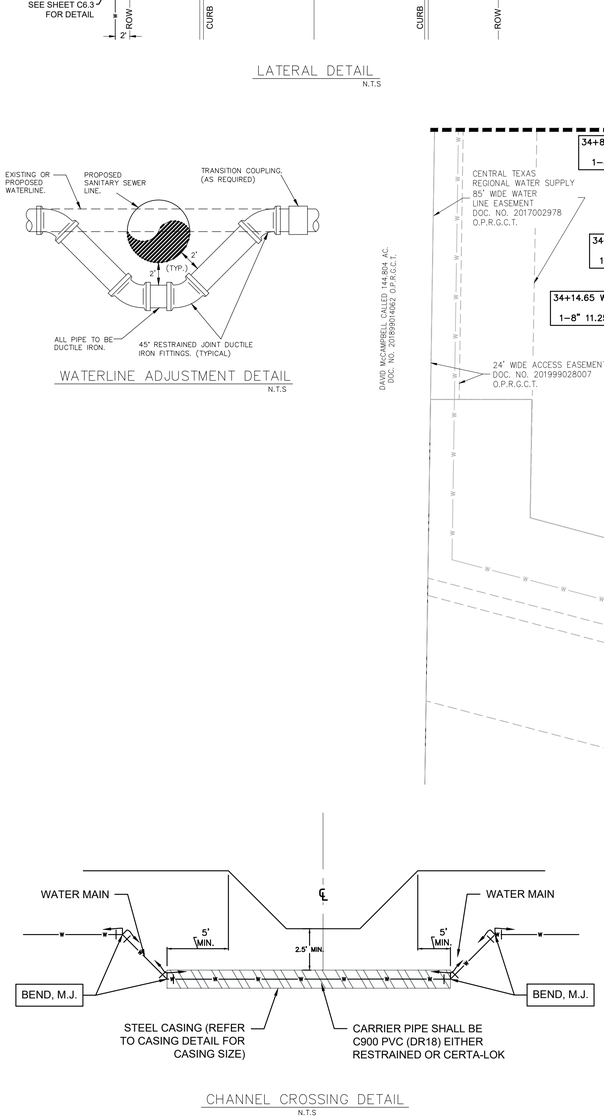
LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWNG VALUES:

1) SAFETY FACTOR = 1.5 TO 1
2) TEST PRESSURE = 200psi.
3) SOIL DESIGNATION = INORGANIC CLAY OF HIGH PLASTICITY (CH, GRAN. FILL)
4) DEPTH OF COVER = 4 FEET (TYPICAL AND UPPER BEND)
5) DEPTH OF COVER = 5 FEET (LOWER BEND)
6) LENGTH ALONG RUN = 2 FEET

LEGEND

- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- EXISTING WATER LINE
- PROPOSED WATER LINE (ENCASED) (STEEL CASING)
- PROPOSED WASTEWATER LINE
- PROPOSED ⅝" WATER SERVICE
- UTILITY CROSSING
- PROPOSED FIRE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED WATER FITTING
- PROPOSED DUAL WATER SERVICE
- PROPOSED SINGLE WATER SERVICE WITH ¾" SERVICE LINE
- WASTEWATER LATERAL

WATERLINE ADJUSTMENT DETAIL
N.T.S



CHANNEL CROSSING DETAIL
N.T.S

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTORS IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT/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.

UTILITY TRENCH COMPACTION (DEEP)

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

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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

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

STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

OVERALL WATER PLAN (2 OF 2)

JARO NORTH UNIT 4

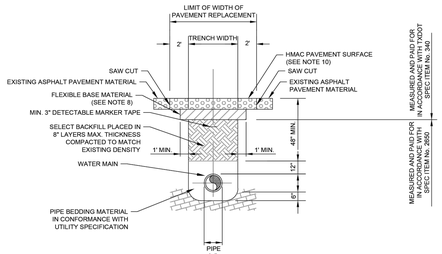
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C6.1

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\C0s\337.147_WATR.dwg User: adrianr Apr 14, 2026 - 4:25pm

Date: Aug 11, 2022, 7:04am User ID: kvogler
File: S:\Standards\D2 Details\D7 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Asphalt Pavement and Driveway Trench Repair.dwg



TRENCH AND BACKFILL NOTES:

1. ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
2. THE ROADWAY SHALL BE CUT ONLY WHERE REQUIRED.
3. NO MORE THAN HALF OF THE WIDTH OF THE ROAD SHALL BE CUT & OPENED AT ONE TIME.
4. REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS
5. BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.
6. THE EXISTING PAVING SURFACE SHALL BE SAW-CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN UNDISTURBED SIDE OF THE TRENCH ASYMMETRICAL ABOVE THE CENTER LINE OF THE EXCAVATION.
7. ANY CONCRETE PAVING SHALL BE SAW CUT 6" WIDER THAN UNDISTURBED SIDES OF THE EXCAVATION.
8. LOCAL STREETS SHALL BE 10" AND MAJOR/MINOR STREETS SHALL BE 12" THICK. BASE MATERIAL SHALL BE PLACED 2' WIDER THAN TRENCH WIDTH ON BOTH SIDES. FLEXIBLE BASE SHALL BE TXDOT ITEM 247 TYPE A, GRADE 1.
9. DAMAGED PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH A BASE. THICKNESS OF 10" OR A THICKNESS MATCHING EXISTING, WHICHEVER IS GREATER, AT NO ADDITIONAL COST TO THE OWNER
10. REPLACEMENT AC SURFACE LAYER SHALL BE OF THE TYPE AND THICKNESS BASED ON FUNCTIONAL CLASSIFICATION.
    A. MIN. 2" HMAC SHALL BE TXDOT ITEM 340, TYPE D FOR TRENCH REPAIR IN LOCAL/RESIDENTIAL STREETS AND DRIVEWAYS.
    B. MIN. 3" HMAC SHALL BE TXDOT ITEM 340, TYPE D FOR TRENCH REPAIR IN COLLECTION/ARTERIAL STREETS.

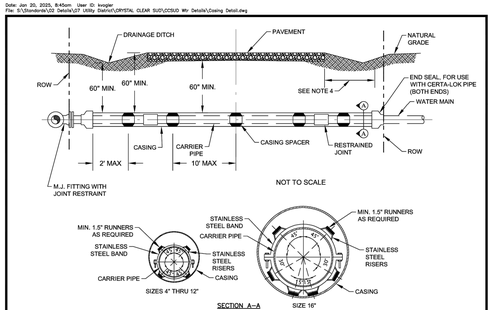
TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	ASPHALT PAVEMENT AND DRIVEWAY (TRENCH REPAIR)	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	OCTOBER 2018	OCTOBER 2018
			SHEET 1 OF 1	

Date: Jan 20, 2025, 8:45am User ID: kvogler
File: S:\Standards\D2 Details\D7 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Casing Detail.dwg



SECTION A–A

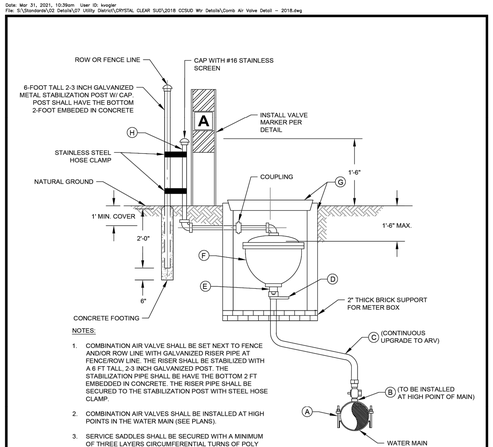
Carrier Pipe (DR 18)	Casing Size	Steel Casing (0.375 IN Wall)	PVC Casing (DR 25)	HDPE Casing (DR 21)	Casing Spacers	
Nominal Size (IN)		Inside Diameter (IN)			Min. Band Width (IN)	No. of Runners Per Tie
4	16	15.25	15.92	13.755	7	2 TOP, 2 BOTTOM
6	16	15.25	15.92	15.643	7	2 TOP, 2 BOTTOM
8	24	23.25	23.61	19.419	7	2 TOP, 2 BOTTOM
12	24	23.25	23.61	23.195	7	2 TOP, 2 BOTTOM
16	30	29.25	29.29	28.769	7	2 TOP, 4 BOTTOM

NOTES:

1. POLYVINYL CHLORIDE (PVC) CARRIER PIPE THAT IS 4-INCH IN DIAMETER SHALL BE C900 DR 18, FULLY RESTRAINED THROUGH THE CASING. POLYVINYL CHLORIDE (PVC) CARRIER PIPE SHALL BE CERTA-LOK C900/RJIB (DR 18) FOR 6-INCH TO 12-INCH AND CERTA-LOK C905/RJ (OR APPROVED EQUAL) FOR 16-INCH TO 24-INCH PIPE DIAMETERS.
2. STEEL CASING SHALL BE STANDARD WEIGHT OR HEAVIER PIPE CONFORMING TO ASTM A-36, ASTM A-568, ASTM A-135, ASTM A-139 OR OTHER ACCEPTABLE STANDARD SPECIFICATION. PIPE JOINTS SHALL BE WELDED IN ACCORDANCE WITH AWWA C-206. HDPE CASING MAY BE USED IN LIEU OF STEEL CASING PER FIGURE: 43 TAC §21.40(a)(2)(A).
3. SUBSEQUENT CASING SPACERS ARE REQUIRED FOR 4" TO 14" PIPE SIZES TO BE AT 10 FEET APART AND FOR 16" TO 30" PIPE SIZES TO BE AT 8 FEET APART WITHIN THE CASING WITH AT LEAST 3 SPACERS PER JOINT ON PIPE. ONE CASING SPACER SHALL BE REPLACED WITHIN 2 FEET OF ENDS OF CASING FOR ALL PIPE SIZES.
4. LENGTHS OF ENCASEMENT SHALL BE PER TAC §21.40(a)(2)(A). THE LENGTHS OF ANY ENCASEMENT SHALL EXTEND, AS APPLICABLE, TO WITHIN 5 FEET OF THE RIGHT OF WAY, TWO FEET OF A CONNECTING LONGITUDINAL LINE, OR FIVE FEET BEYOND THE FACE OF THE CURB, WHICHEVER IS GREATEST. THESE LENGTHS OF ENCASEMENT INCLUDE AREAS UNDER CENTER MEDIANS AND OUTER SEPARATIONS.
5. CASING SPACERS SHALL BE MADE FROM T-304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS.
6. CASING SPACERS SHALL HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER.
7. CASING SPACERS SHALL HAVE A MIN. 1.5" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER FROM THE CASING.
8. CASING END SEALS SHALL BE MADE OF 1/8" THICK NEOPRENE RUBBER AND INCLUDE 1/2" WIDE T-304 STAINLESS STEEL BANDINGS.

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	CASING DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	JUNE 2015	JULY 2024
			SHEET 1 OF 1	

Date: Mar 31, 2021, 10:39am User ID: kvogler
File: S:\Standards\D2 Details\D7 Utility Details\CRYSTAL CLEAR SUD\2018 CCSUD Wtr Details\Combi Air Valve Detail – 2018.dwg



NOTES:

1. COMBINATION AIR VALVE SHALL BE SET NEXT TO FENCE AND/OR ROW LINE WITH GALVANIZED RISER PIPE AT FENCE/ROW LINE. THE RISER SHALL BE STABILIZED WITH A 6 FT TALL, 2-3 INCH GALVANIZED POST. THE STABILIZATION PIPE SHALL BE HAVE THE BOTTOM 2 FT EMBEDDED IN CONCRETE. THE RISER PIPE SHALL BE SECURED TO THE STABILIZATION POST WITH STEEL HOSE CLAMP.
2. COMBINATION AIR VALVES SHALL BE INSTALLED AT HIGH POINTS IN THE WATER MAIN (SEE PLANS).
3. SERVICE SADDLES SHALL BE SECURED WITH A MINIMUM OF THREE LAYERS CIRCUMFERENTIAL TURNS OF POLY TAPE.

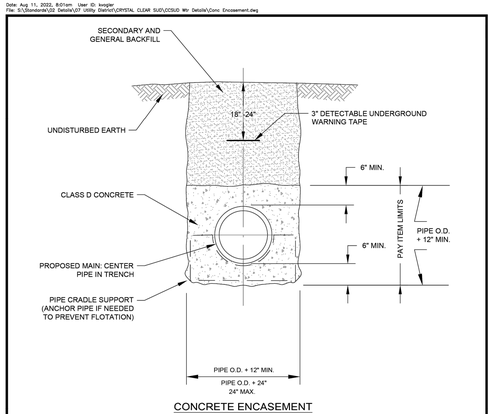
TAP MATERIAL LIST		MATERIAL LIST SIZES	
LABEL	ITEM	1-INCH TAP	2-INCH TAP
A	APPROVED TAPPING SADDLE	1"	2"
B	CORPORATION STOP	1"	2"
C	CTS SDR9 HDPE TUBING	1"	2"
D	BRASS BALL VALVE WITH LEVER	1"	2"
E	BRASS NIPPLE THREADED	1"	2"
F	COMBINATION AIR VALVE	PER AEL*	
G	METER BOX AND LID	DFW3630FD OR DFW2836FD**	
H	GALVANIZED IRON PIPE AND FITTINGS	1"	2"

* AEL = APPROVED EQUIPMENT LIST
** METER BOX TO BE INSTALLED AS NECESSARY TO COVER FULL DEPTH OF COMBINATION AIR RELEASE VALVE.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	COMBINATION AIR VALVE DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | STRUCTURAL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	JUNE 2015	OCTOBER 2020
			SHEET 1 OF 1	

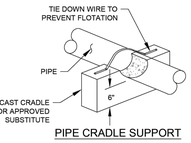
Date: Aug 11, 2022, 8:07am User ID: kvogler
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CONCRETE ENCASEMENT

NOTES:

1. ALL CONCRETE ENCASEMENT SHALL BE POURED AT A PLANE 6" ABOVE THE PIPE BETWEEN EXCAVATED TRENCH WALL.
2. CONCRETE ENCASEMENT WILL BE USED ONLY WHERE CALLED OUT IN THE PLANS AND LIMITS OF PAYMENT WILL BE PER THIS DETAIL.
3. BACKFILL AND RESTORATION WORK WILL BE PER APPROPRIATE TRENCH DETAIL WITH EMBEDMENT FOLLOWING THIS DETAIL.
4. SUPPORTS ARE SUBSIDIARY TO CONCRETE ENCASEMENT

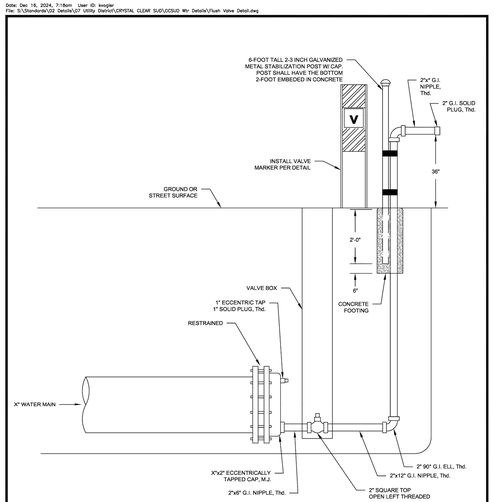


PIPE CRADLE SUPPORT

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	CONCRETE ENCASEMENT DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	MAY 2016	FEB 2022
			SHEET 1 OF 1	

Date: Dec 16, 2024, 7:18am User ID: kvogler
File: S:\Standards\D2 Details\D7 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Flush Valve Detail.dwg



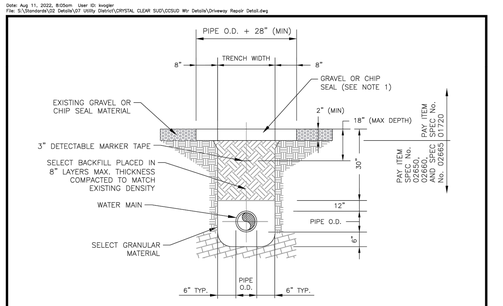
NOTE:

1. BURIED PIPING, FITTINGS, AND FITTINGS JOINTS SHALL BE WRAPPED IN POLYWRAP.
2. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
3. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
4. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	FLUSH VALVE DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	OCTOBER 2020	DECEMBER 2024
			SHEET 1 OF 1	

Date: Aug 11, 2022, 8:05am User ID: kvogler
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NOTES

1. GRAVEL OR CHIP SEAL (MATCH EXISTING PAVEMENT TYPE) SHALL BE A MINIMUM OF 2" THICK.
2. ROAD BASE AND SURFACE MATERIALS IN THE TRENCH CUT SHALL BE REPLACED IN KIND, OF EQUAL THICKNESS

TRENCHING NOTES

1. ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
2. THE DRIVEWAY SHALL BE CUT ONLY WHERE REQUIRED BY THE ENGINEER.
3. DRIVEWAY SHALL REMAIN ACCESSIBLE AT ALL TIMES.
4. REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS
5. BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PRIVATE DRIVEWAYS.

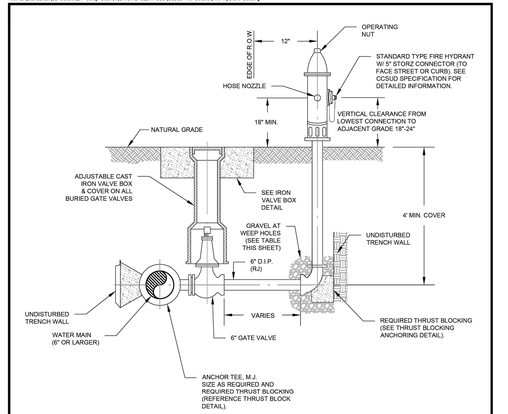
TRENCH SAFETY NOTES

1. TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.
3. ALL EXCAVATION GREATER THAN 5' DEEP SHALL MEET TRENCH SAFETY NOTE.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL GRAVEL/CHIP SEAL DRIVEWAY REPAIR DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	JULY 2019	AUGUST 2022
			SHEET 1 OF 1	

Date: Aug 11, 2022, 8:05am User ID: kvogler
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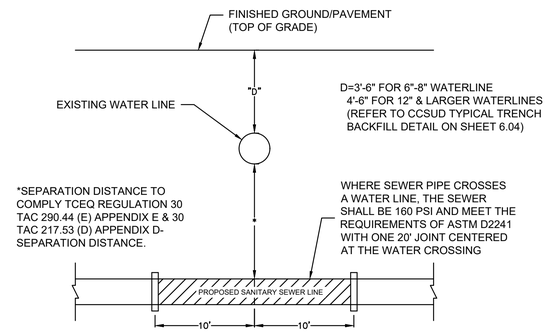
GRAVEL AT WEEPHOLE	
LENGTH OF HYDRANT RISER	CU. FT. OF GRAVEL REQUIRED
3'	2.5
4'	3
5'	3.5
6'	4
>6'	TBD BY CCSUD

NOTE:

1. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
2. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
3. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.
4. 12"x12"x4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL VALVES, FITTINGS, ETC.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	FIRE HYDRANT ASSEMBLY DETAIL (NEW BRAUNFELS)	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-3394 | TBPELS FIRM #10153600 WWW.MSENGR.COM | (830) 558-5995	JUNE 2015	NOV 2021
			SHEET 1 OF 1	



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT TO SCALE

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

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
137964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WATER DETAILS (1 OF 3)

JARO NORTH UNIT 4

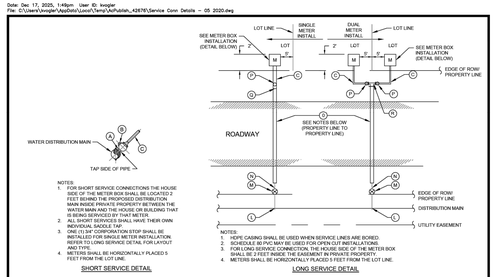
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C6.2

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337147_WATER DETAILS.dwg User: cdonor Apr 14, 2026 - 4:25pm

Date: Dec 17, 2025, 1:49pm User ID: kvogler
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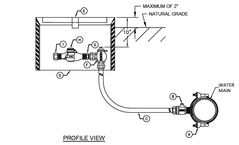


NOTES:
1. FOR SHORT SERVICE CONNECTIONS THE HOUSE SIDE OF THE METER BOX SHALL BE LOCATED 2 FEET BEHIND THE PROPOSED DISTRIBUTION MAIN INSIDE PRIVATE PROPERTY BETWEEN THE WATER MAIN AND THE HOUSE OR BUILDING THAT IS BEING SERVICED BY THAT METER.
2. EACH SERVICE CONNECTION SHALL HAVE THEIR OWN INDIVIDUAL SADDLE TAP.
3. ONE (1) 3/4" CORPORATION STOP SHALL BE INSTALLED FOR SINGLE METER INSTALLATION REFER TO LONG SERVICE DETAIL FOR LAYOUT AND TYPE.
4. METERS SHALL BE HORIZONTALLY PLACED 5 FEET FROM THE LOT LINE.

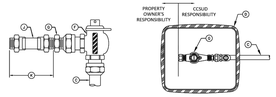
SHORT SERVICE DETAIL

NOTES:
1. HDPE CASING SHALL BE USED WHEN SERVICE LINES ARE BORED. SCHEDULE 80 PVC MAY BE USED FOR OPEN CUT INSTALLATIONS.
2. FOR LONG SERVICE CONNECTION, THE HOUSE SIDE OF THE METER BOX SHALL BE 2 FEET INSIDE THE EASEMENT IN PRIVATE PROPERTY.
4. METERS SHALL BE HORIZONTALLY PLACED 5 FEET FROM THE LOT LINE.

LONG SERVICE DETAIL



PROFILE VIEW



PRIOR TO METER INSTALLATION

PLAN VIEW

MATERIAL LIST*		
	SHORT SERVICE	LONG SERVICE
A	3/4" SERVICE SADDLE FORD #881 OR SIMILAR MUELLER MODEL 311	-
B	3/4" CORP. STOP FORD FB1000-3-NL #FB1700-3-G-NL	-
C	3/4" POLYETHYLENE AWWA, C901-SDR 9	
D	PLASTIC METER BOX, MODEL NO. DFW18B1322-12 OR DFW18DX-12-12	
E	METER BOX LID, MODEL NO. DFW12B1 (OLD) OR	
F	3/4" BALL VALVE (METER CONV. x COMP.) FORD #B44S-332W-G-NL	
G	BRASS METER BUSHING	
H	5/8" x 3/4" WATER METER (BY CCSUD)	
I	BRASS METER COUPLING MALE IPT x SWIVEL COUPLING NUT	
J	1" THREADED NIPPLE	
K	TEMPORARY METER SPACER (7 1/2" IN LENGTH)	
L	-	2" SERVICE SADDLE FORD #825
M	-	2" GATE VALVE
N	-	2" HARCO ADAPTOR OR BRASS/GALVANIZED NIPPLE WITH SIDE BOLT CONSISTER
O	-	2" PVC SCH 80 INSIDE 4" PVC SCH 40
P	-	MALE END 24" CORP. STOP
Q	-	2" x 3/4" PVC ADAPTER (SINGLE SERVICE)
R	-	2" x 3/4" x 3/4" TEE (DUAL SERVICE)

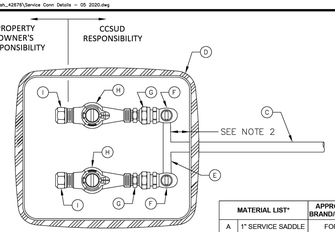
NOTES:
1. METER BOX SHALL BE SET INTO GROUND TO SIT SLIGHTLY ABOVE NATURAL GRADE (NO MORE THAN 2").
2. BACKFILL TO TOP SOIL TO BACKFILL TO EDGE OF METER BOX LID. BACKFILL TO NATURAL GRADE.

*MATERIALS SHALL BE PER THE APPROVED EQUIPMENT LIST (AEL) OR APPROVED EQUIVALENT.

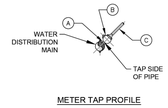
NOT TO SCALE

PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	STANDARD SERVICE CONNECTION DETAILS	M&S ENGINEERING POWER & UTILITY ENGINEERS TWDB FIRM #9-1356 | TBPELS FIRM# 4151439500 www.MSENGR.com | 830-228-1648	APPROVED	REVISION
			JUN 2015	DEC 2025
			SHEET 1 OF 2	

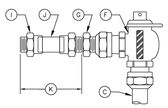
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File: C:\Users\kvogler\AppData\Local\Temp\AcPublish_42876\Service Conn Details – 05 2020.dwg



PLAN VIEW



METER TAP PROFILE



PRIOR TO METER INSTALLATION

MATERIAL LIST*		APPROVED BRAND/MODEL
A	1" SERVICE SADDLE	FORD
B	1" CORPORATION STOP	FORD
C	POLYETHYLENE AWWA, C901-SDR 9	CONTINENTAL
D	METER BOX AND LID	DFW PLASTICS
E	1"x3/4"x7 1/2" U BRANCH MANIFOLD CONNECTION	MUELLER
F	LOCKABLE 3/4" ANGLE METER STOP WITH PADLOCK	
G	BRASS METER BUSHING	KAMSTRUP
H	WATER METER INSTALLED BY CCSUD	FORD
I	BRASS METER COUPLING MALE IPT X SWIVEL COUPLING NUT	
J	1" THREADED NIPPLE	
K	TEMPORARY METER SPACER (7 1/2" IN LENGTH)	

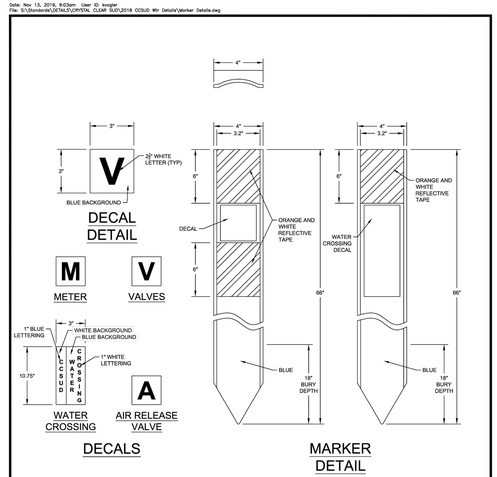
*MATERIALS SHALL BE PER THE APPROVED EQUIPMENT LIST (AEL) OR APPROVED EQUIVALENT.

NOTES:
1. METER BOXES SHALL NOT BE PLACED IN SIDEWALKS, DRIVEWAYS, PARKING AREAS, OR VEHICULAR TRAFFIC AREAS.
2. ANGLE STOP PLACED A MAXIMUM OF 4" FROM BACK OF BOX THAT FACES CURB.
3. SERVICES FOR NON-RESIDENTIAL CUSTOMERS OR IRRIGATION USES SHALL BE EQUIPPED WITH A BACKFLOW PREVENTION ASSEMBLY AS REQUIRED BY CCSUD CROSS-CONNECTION AND BACKFLOW PREVENTION PROGRAM. BYPASS NOT PERMITTED ON SERVICES THAT ARE IRRIGATION ONLY.

NOT TO SCALE

PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	STANDARD SERVICE CONNECTION WITH IRRIGATION METER DETAILS		APPROVED	REVISION
			JUN 2015	DEC 2025
			SHEET 2 OF 2	

Date: Nov 13, 2018, 9:03am User ID: kvogler
File: S:\Standards\DETAILS\CRYSTAL CLEAR SUD\2018 CCSUD Wtr Details\Marker Details.dwg



NOTES:
1. MARKERS SHALL BE 66" COMPOSITE POSTS SIMILAR TO RHINO FIBERCURVE COMPOSITE MARKER POST.
2. MARKERS SHALL BE PLACED AT ALL GATE VALVES, FLUSHING VALVES, & AIR RELEASE VALVES PER ITEM DETAIL.
3. MARKERS SHALL BE PLACED AT WATER METERS AS SPECIFIED ON PLANS
4. PIPELINE MARKERS SHALL BE PLACED ON R.O.W./FENCE LINE AT ALL ROAD CROSSINGS.

NOT TO SCALE

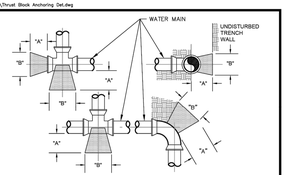
PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	MARKER DETAILS	M&S ENGINEERING CIVIL | ELECTRICAL | STRUCTURAL | MEP TEXAS FIRM #9-1356 | TBPELS FIRM# 4151439500 www.MSENGR.com | (830) 228-1648	APPROVED	REVISION
			JUNE 2015	NOVEMBER 2019
			SHEET 1 OF 1	

Date: Jul 22, 2024, 1:38pm User ID: kvogler
File: S:\Standards\02 Details\07 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Thrust Block Anchoring Det.dwg

PIPE SIZE	DIMENSION "B" (SQUARE) PLUGS & TEES	90° BENDS	45° BENDS	22 1/2° BENDS	VALVES
4"&6"	1'-3"	1'-6"	1'-0"	9"	1'-3"
8"	1'-9"	2'-0"	1'-6"	1'-0"	1'-6"
10"	2'-10"	2'-0"	1'-9"	1'-3"	2'-0"
12"	2'-6"	3'-0"	2'-3"	1'-6"	2'-3"
16"	3'-3"	4'-6"	2'-9"	2'-0"	2'-9"
20"	3'-9"	4'-6"	3'-3"	2'-3"	3'-3"

DIMENSION "A" SHALL BE A MINIMUM OF 1'-0" BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.

NOTES:
1. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
2. CONCRETE SHALL BE PLACED SO THAT FITTING, VALVES AND PIPE JOINTS ARE ACCESSIBLE FOR REPAIR OR REPLACEMENT.
3. ALL THRUST BLOCKS SHALL CONTAIN A MINIMUM OF 1 1/2 CUBIC YARDS OF CONCRETE.
4. CONCRETE SHALL BE 3000 P.S.I. AT 28 DAYS MINIMUM.
5. ALL FITTINGS AND FITTING JOINTS MUST BE WRAPPED W/ POLYWRAP. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.
6. 12"x12"x4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL FITTINGS.



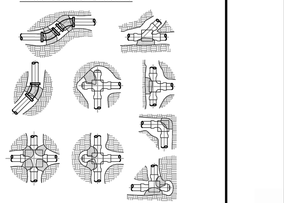
THRUST BLOCK DIMENSIONING



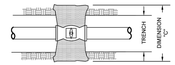
PLAN
POUR BASE AFTER HYDRANT HAS BEEN PLACED

ELEVATION

THRUST BLOCK FOR HYDRANTS DETAIL

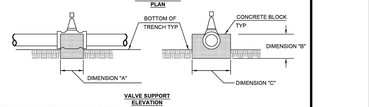


THRUST BLOCK FOR FITTINGS DETAIL



VALVE SUPPORT PLAN

VALVE THRUST BLOCK DIMENSIONS AND NOTES:
1. DIMENSION "A" = WIDTH OF THE VALVE BODY.
2. DIMENSION "B" = PIPE DIAMETER PLUS D3 DEPTH FROM TRENCH BACKFILL DETAIL.
3. DIMENSION "C" = TRENCH WIDTH PLUS TWO TIMES THE PIPE DIAMETER.
4. CONCRETE THRUST BLOCKS SHALL NOT COVER VALVE ENDS, BONNET, STEM, NUTS OR BOLTS. THEY SHALL COVER THE VALVE BODY ONLY PER THE GIVEN DIMENSIONS.



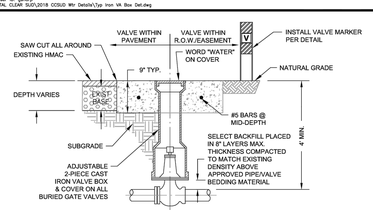
VALVE SUPPORT ELEVATION

THRUST BLOCK FOR VALVES DETAIL

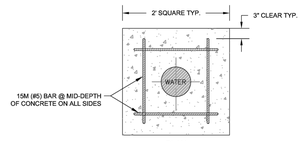
NOT TO SCALE

PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	THRUST BLOCKING DETAILS	M&S ENGINEERING CIVIL | ELECTRICAL | CIVIL | MEP TEXAS FIRM #9-1356 | TBPELS FIRM# 4151439500 www.MSENGR.com | (830) 228-1648	APPROVED	REVISION
			JUNE 2015	JULY 2024
			SHEET 1 OF 1	

Date: Jan 09, 2020, 8:18am User ID: gshorp
File: S:\Standards\DETAILS\CRYSTAL CLEAR SUD\2018 CCSUD Wtr Details\Typ Iron Vlv Box Det.dwg



PROFILE



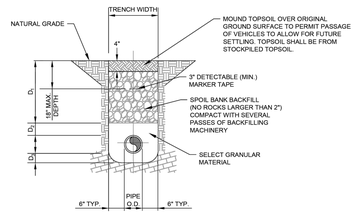
PLAN

NOTES:
1. VALVE BOXES SHALL BE FITTED WITH PLASTIC VALVE ID TAGS (BLUE EMEDCO 3-1/2" X 3-3/4") INDICATING OWNER (CCSUD) VALVE SIZE, YEAR OF INSTALLATION AND # OF TURNS TO OPEN.
2. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS
3. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
4. CLEAN VALVE BOX OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
5. REMOVE EXISTING RISER PIPE DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND A COLLAR CASTING.
6. WHEN CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20" 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.
7. REINFORCING STEEL SHALL MEET SPECIFICATIONS.
8. VALVE BOXES MUST BE INSTALLED IN A STRAIGHT, VERTICAL POSITION.
9. VALVE MARKERS SHALL BE INSTALLED BEHIND EACH VALVE BOX WHEN VALVE IS LOCATED WITHIN EASEMENT OR R.O.W.

NOT TO SCALE

PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL IRON VALVE BOX DETAILS	M&S ENGINEERING POWER & UTILITY ENGINEERS	APPROVED	REVISION
			JUNE 2015	AUGUST 2018
			SHEET 1 OF 1	

Date: Oct 11, 2022, 9:46am User ID: kvogler
File: S:\Standards\02 Details\07 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Typ Trench Backfill.dwg



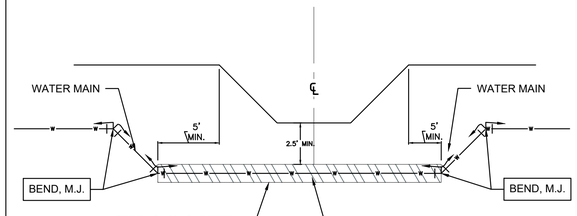
	D_1	D_2	D_3
4" OR SMALLER	36"	6"	4"
6"-8"	30"	12"	6"
12" OR LARGER	42"	12"	6"

TRENCHING NOTES
1. ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
2. REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS.
3. BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.

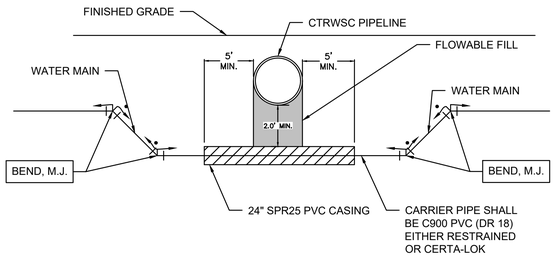
TRENCH SAFETY NOTES
1. TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

NOT TO SCALE

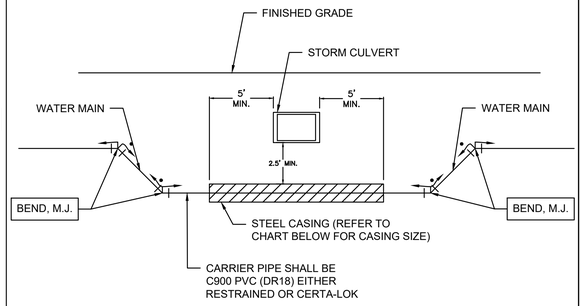
PROPERTY OF CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL TRENCH BACKFILL DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TEXAS FIRM #9-1356 | TBPELS FIRM# 4151439500 www.MSENGR.com | (830) 228-1648	APPROVED	REVISION
			JUNE 2015	NOV 2021
			SHEET 1 OF 1	



CHANNEL CROSSING DETAIL
N.T.S



WATER PIPE CROSSING DETAIL
N.T.S



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

INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER STORM SEWERS

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

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
13464
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WATER DETAILS (2 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C6.3

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\03a\337.147_WATER DETAILS.dwg User: cdolcorr Apr 14, 2026 - 4:25pm

Requester's Contact Information:
Name of Proposed Crossing:
CTRWSC Parcel Number(s):
Owner Contact: TBD
Design Engineer:

CTRWSC Contact information:
Owner: Central Texas Regional Water Supply Corporation (CTRWSC)
Operator: Stefan Schuster, EPCOR – (512) 718–9298
Legal: Will Jones, Jones Law Firm – (512) 590–9696
Engineering: Chris Noe, PE, Pape–Dawson Engineers – (210) 375–9000

Easement Considerations:
The Vista Ridge (VR) water main is actively carrying 31,000 to 33,000 gpm. It provides 20% of San Antonio's water supply.
The pipe along this portion of the route is either 54" or 60" diameter C200 Pipe or C303 Pipe. It is a jointed pipe, so trenchless installation of utilities needs to be made when crossing under the pipe.
The pipe is embedded in sand up to 70% of the pipe. Select backfill is present from sand embedment up to 12" above the pipeline. The remaining backfill is free rocks greater than 2" in diameter. The top 18" of backfill is native soil. There is water main marking tape. The minimum cover over the Vista Ridge pipeline should be a depth of 5 feet. See special notes below when working near the water line.
There is a fiber optic line that runs parallel for the entire length of the pipeline. It is a dedicated line that provides communication to the various pump stations along its 142–mile route. The fiber line should be installed approximately 4 feet below ground surface.
The VR pipeline also has an active cathodic protection system. Any crossings with metal pipe (casing or other) will need to incorporate a foreign crossing test station.
The record drawings are based on contractor supplied information. The Requester will need to field verify the location and depths of the pipeline and fiber optic line and include those findings in the plans submitted for CTRWSC review.

Encroachment Agreement and Work Plan:

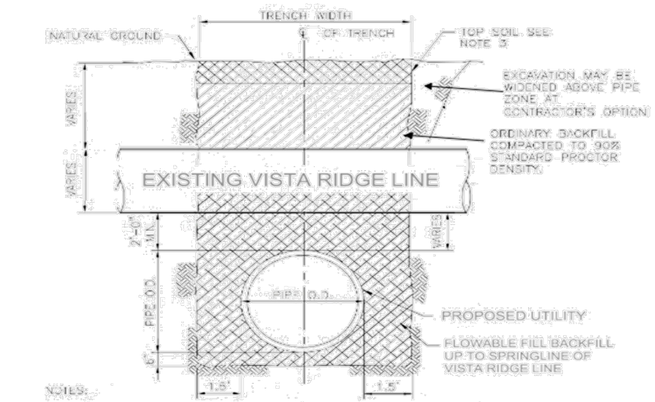
- The Contractor is to supply work plan for crossing under Vista Ridge pipe and notification per encroachment agreement before commencing work within or over Vista Ridge easement.

General design notes for encroachments of VR easement:

- The design engineer is to field verify fiber optic and water line at locations where proposed infrastructure crosses the Vista Ridge easement.
- No mechanical excavation within 10' of the VR waterline and fiber optic line.
- Provide plan and profile for all utilities (dry and wet), roadways, drainage swales, or other improvements encroaching within the Vista Ridge easement.
- For crossing under the VR pipeline, trenchless methods (with casing) will be required.
- Regardless of the installation method and whether the crossing is going above or below the VR pipeline, the proposed utility will maintain a minimum 2–feet of clearance.
- See exhibit a for examples of crossing by open–cut methods over and under the Vista Ridge line.
- No structures are allowed within the VR easement.
- All grade changes within easement must be shown on plan and profile. This includes changes to the grade from roads, sidewalks, ditches, etc. Traffic loads may require design engineer sealed calculations that verify loads won't adversely affect the VR pipeline. The VR pipeline is designed to handle HS–20 loading with up to 10 feet of cover. A minimum of 5 feet of cover is required over the VR pipe inclusive of pavement thickness.
- Must observe all terms and conditions of the CTRWSC easement. please contact epcor for easement information.

1. The Contractor is to submit a work plan for crossing the Vista Ridge pipe and notification per encroachment agreement before commencing work within or over Vista Ridge easement. the work plan will provide details on construction methods, pipe protection, restoration, and coordination with CTRWSC. the work plan require written approval by CTRWSC 14 days before working within or crossing the Vista Ridge easement.
2. The work plan must provide a crossing plan that clearly shows designated areas where heavy equipment will cross over the Vista Ridge easement and provide details for pipeline protection including the associated fiber optic and cathodic protection infrastructure. The Contractor will clearly delineate crossing locations in the field using construction fence or similar materials.
3. No mechanical excavation within ten feet (10') of the centerline of the Vista Ridge pipeline unless approved in writing by CTRWSC. Any agreement should be part of the work plan provided by The Contractor.
4. CTRWSC will designate a representative for field observation during any crossing of the VR line. The contractor will coordinate with CTRWSC's designated representative 3 business days before crossing the VR pipeline. The Contractor will make arrangements with CTRWSC to pay for observer time including travel time to the site.
5. No temporary stockpiling or stationing of materials, equipment or facilities within easement.
6. If crossing over the VR pipeline, The Contractor will have field verified both the fiber optic line and the water line.
7. The Contractor is to provide protection from equipment and trucks traveling over vista ridge pipe which meets or exceed HS–20 loading criteria.
8. For crossing under the VR pipeline, a trenchless method is required. Trenchless methods still require an observer to be onsite. Additionally, Contractor will use a hydrovac or similar piece of equipment to create a hole alongside of the VR pipeline so that the observer and contractor can witness the auger or drill passing under the bottom of the VR pipeline at the appropriate spacing.
9. If metallic pipe such as ductile iron crosses the Vista Ridge easement, Engineer will provide cathodic protection devices that protect the Vista Ridge pipe. Details to be coordinated with CTRWSC.
10. Contractor shall take necessary precaution to protect Vista Ridge cathodic protection system components and pipe protective coating.
11. Backfill according to typical trench backfill detail, see sheet C6.1.

EXIHIBIT A - CROSSING EXAMPLE



PROPOSED UTILITY UNDER VISTA RIDGE
FLOWABLE FILL ENCASEMENT AT CROSSING
(A) NOT TO SCALE

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WATER DETAILS (3 OF 3)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C6.4

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_WATER DETAILS.dwg User: cdrorr Apr 14, 2026 - 4:25pm

CONSTRUCTION NOTES:

1. NO VALVES, HYDRANTS, CLEAN-OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL SEWER PIPE ASTM 3034 (115 PSI) SDR 26
3. ALL MANHOLES SHALL BE 48" DIAMETER, MINIMUM.
4. ALL RING AND COVER SHALL MEET CITY OF SEGUIN STANDARDS.
5. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY SEWER TIE-INS AND CONSTRUCT SEWER FROM DOWNSTREAM TO UPSTREAM.
6. ALL DIMENSIONS ARE FROM FACE OF CURB.
7. MANHOLES MUST BE BOLTED UNLESS WAIVED BY UTILITY ENGINEER.
8. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
9. ALL SANITARY SEWER SERVICE LATERALS SHALL BE 6 INCH DIAMETER PER CITY OF SEGUIN STANDARDS.
10. ALL SS SOURCE LATERALS TO BE MODELED AT 2% MINIMUM

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 SEGUIN 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 SEGUIN STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

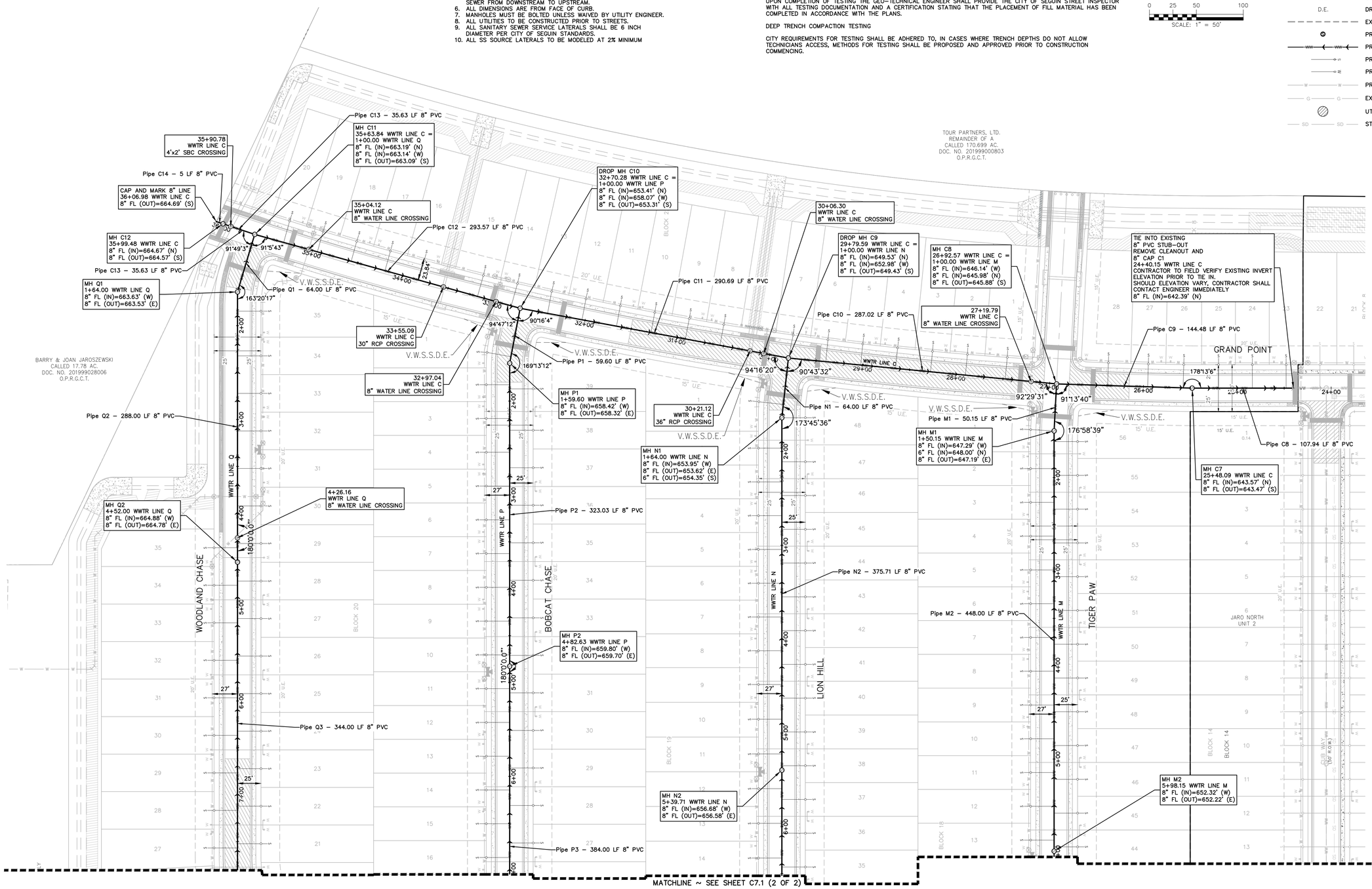
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0 25 50 100
SCALE: 1" = 50'

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 6" WASTEWATER SERVICE
- PROPOSED 5/8" WATER SERVICE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- UTILITY CROSSING
- STORM SEWER



TRENCH EXCAVATION SAFETY PROTECTION

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

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
131964
04/15/2026

OVERALL WASTEWATER PLAN (1 OF 2)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C7.0

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_WWTR.dwg User: adrianr Apr 14, 2026 - 4:25pm

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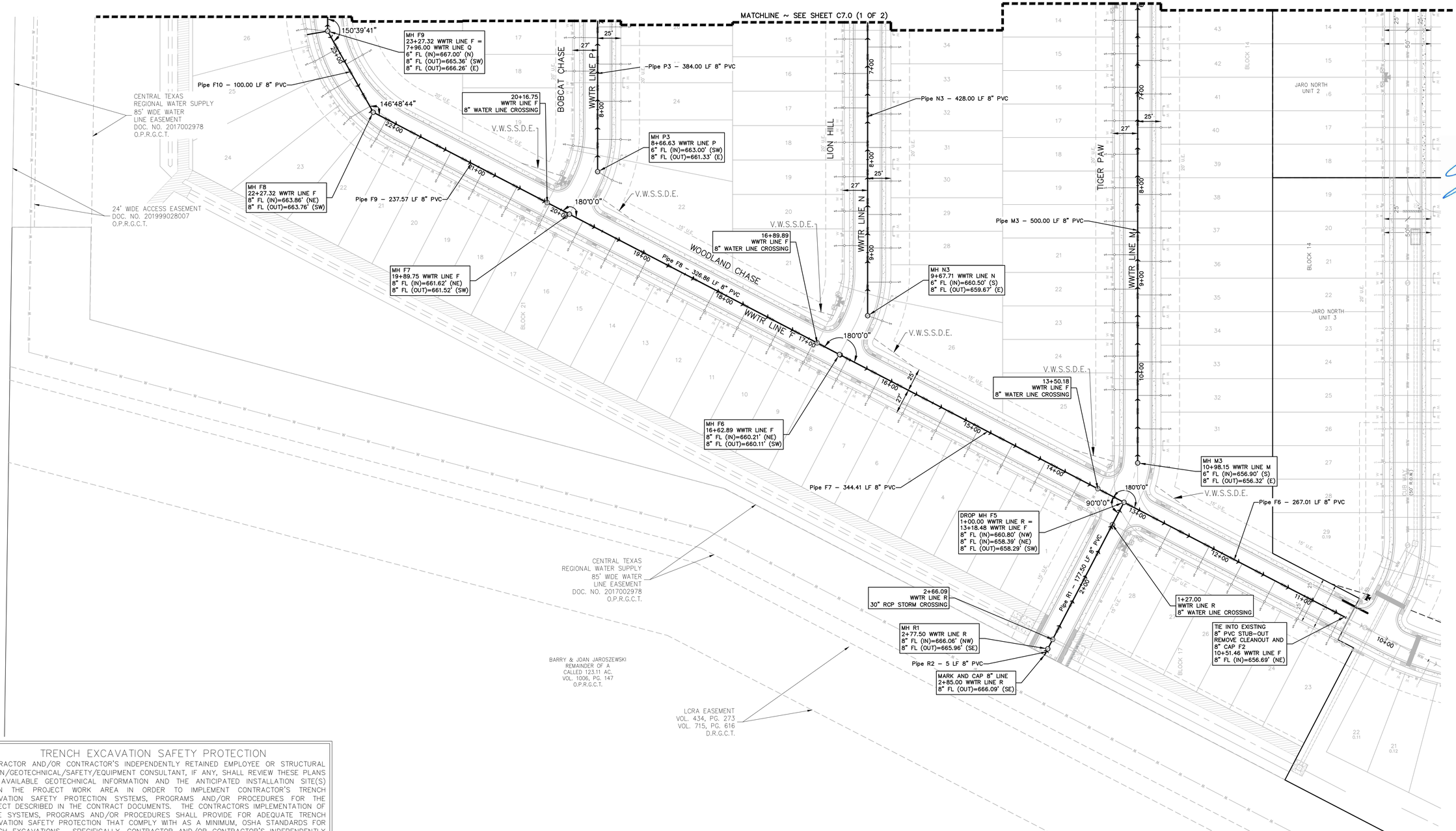
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HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
No. 134964
04/15/2026

OVERALL WASTEWATER PLAN (2 OF 2)

JARO NORTH UNIT 4

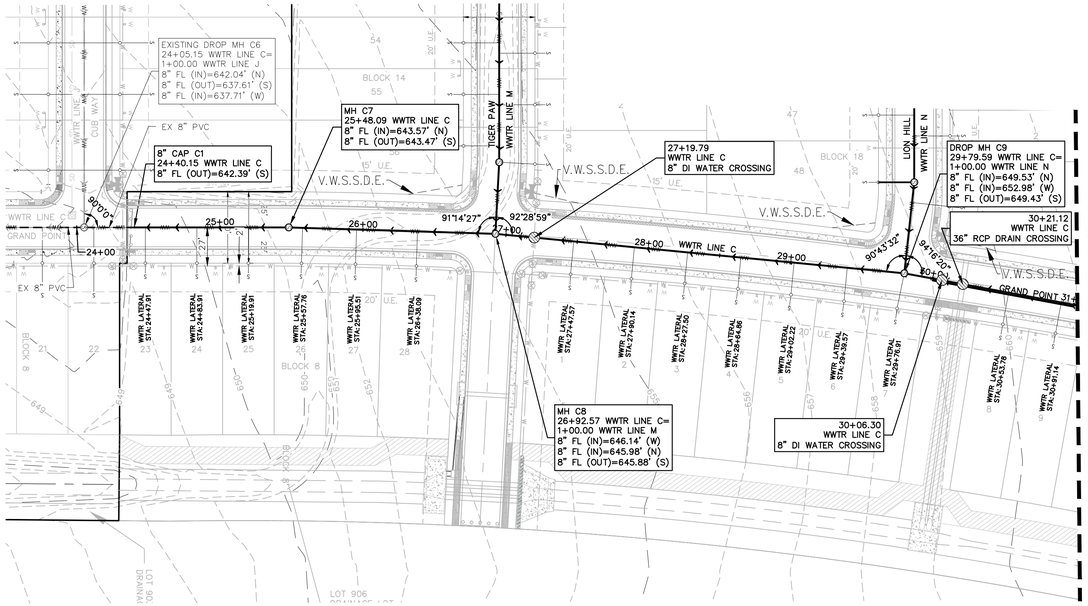
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C7.1

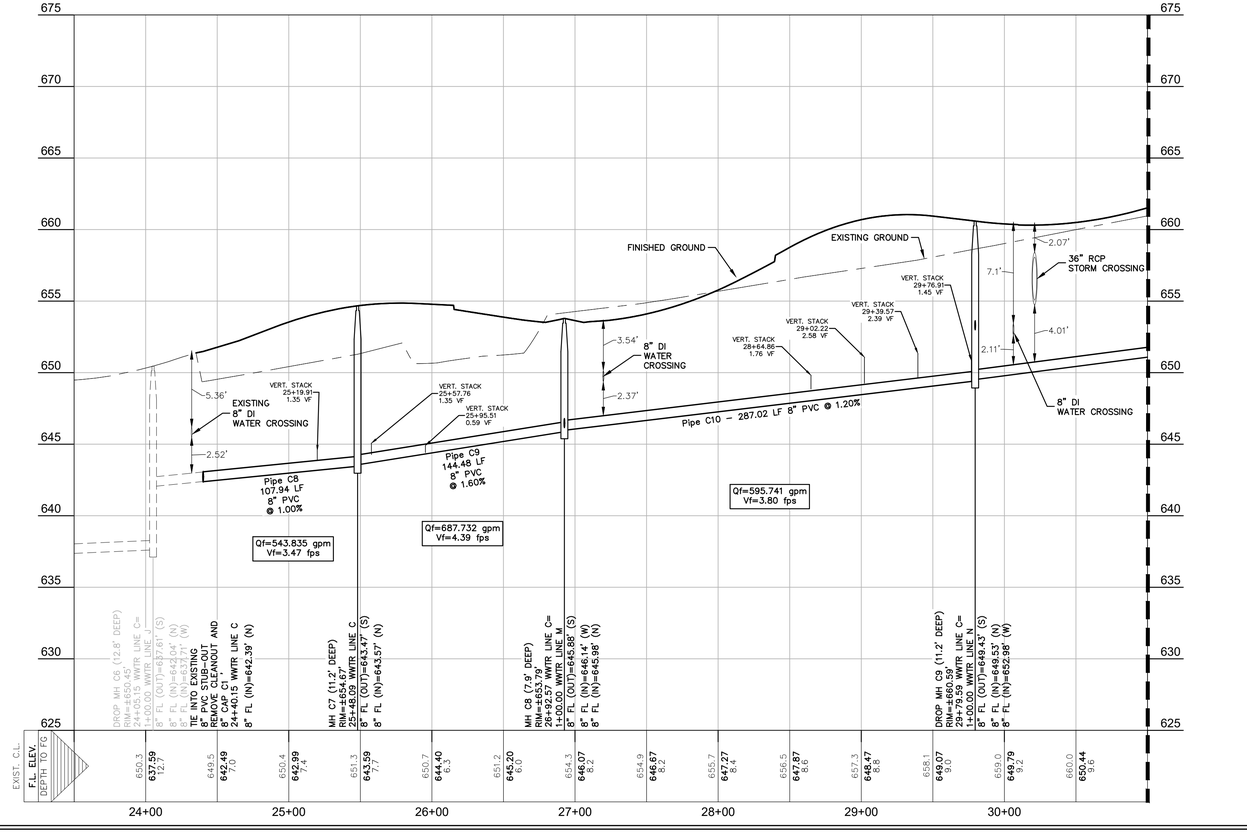
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Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
C8	8	1.00%	183	18.07	0.04	1.21	2.20	1.27	Yes
C9	8	0.40%	180	16.02	0.04	0.77	1.95	1.77	Yes
C10	8	1.10%	125	13.97	0.03	1.27	1.70	0.93	Yes
C11	8	1.30%	74	9.15	0.02	1.38	1.12	0.56	Yes
C12	8	3.30%	31	4.97	0.01	2.20	0.61	0.19	Yes
C13	8	3.80%	0	0.00	0.00	2.36	0.00	0.00	Yes



WWTR LINE C
23+50 – 31+00

MATCHLINE A:STA 31+00
SEE SHEET C7.3



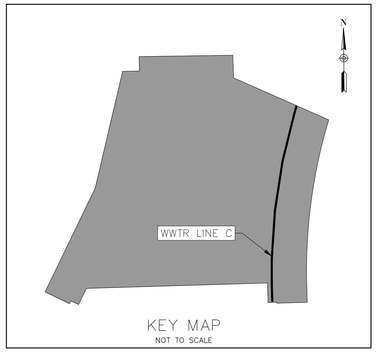
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0 25 50 100
SCALE: 1" = 50' HORIZ.
SCALE: 1" = 5' VERT.

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KEY MAP
NOT TO SCALE

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HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE C
PLAN & PROFILE (1 OF 2)

JARO NORTH UNIT 4

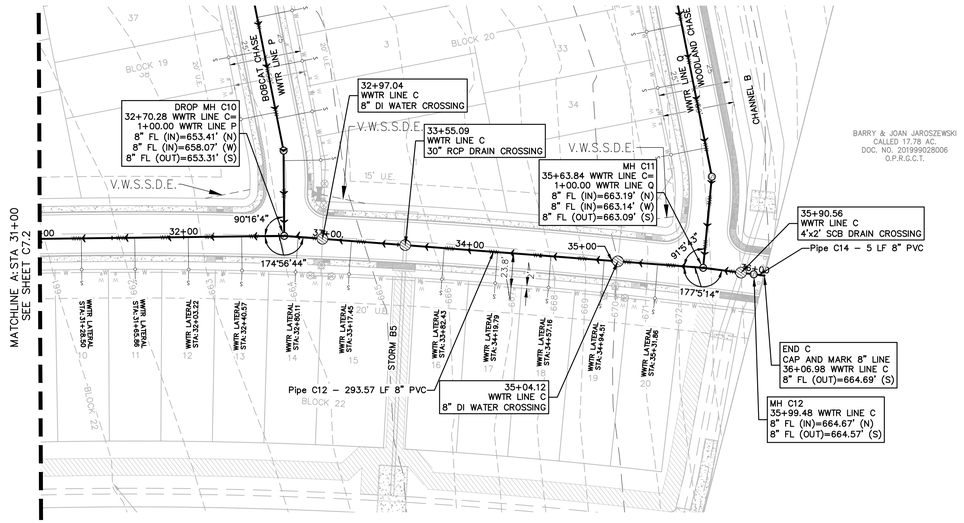
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C7.2

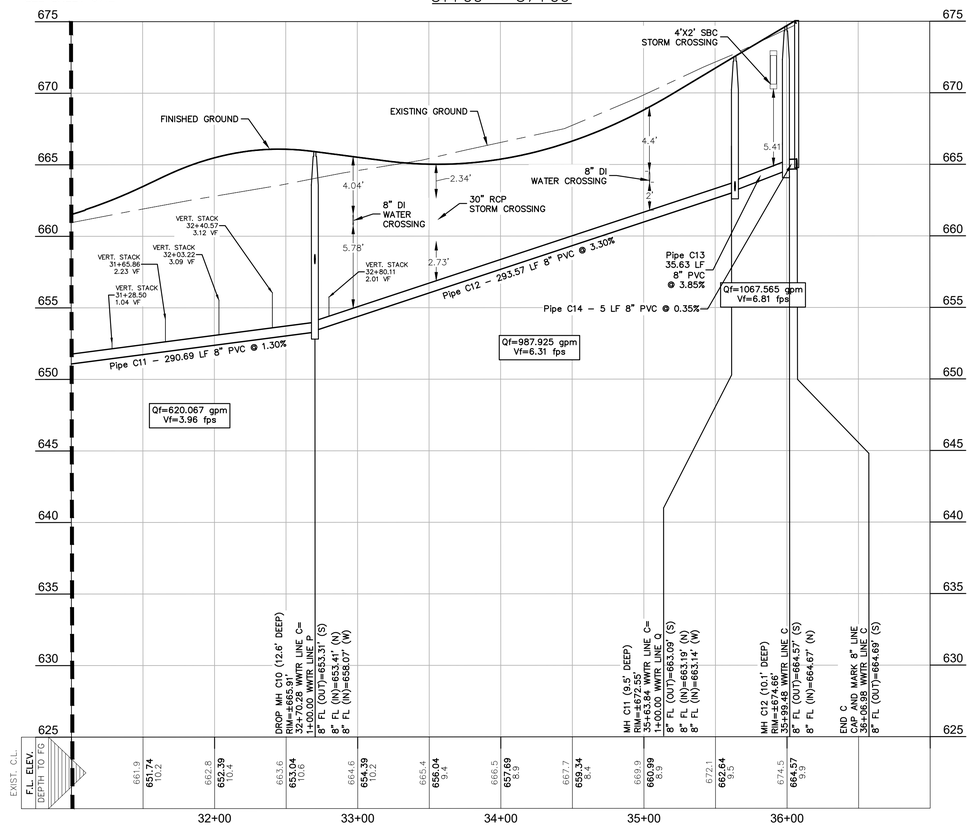
Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\03s\337147_WWTR LINE C.dwg User: zdolnar Apr 14, 2026 - 4:26pm

Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
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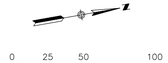
MATCHLINE A:STA 31+00
SEE SHEET C7.2

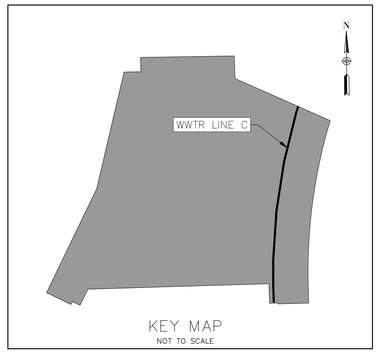
WWTR LINE C
31+00 – 37+00



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ENGINEERING & SURVEYING

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PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE C
PLAN & PROFILE (2 OF 2)

JARO NORTH UNIT 4

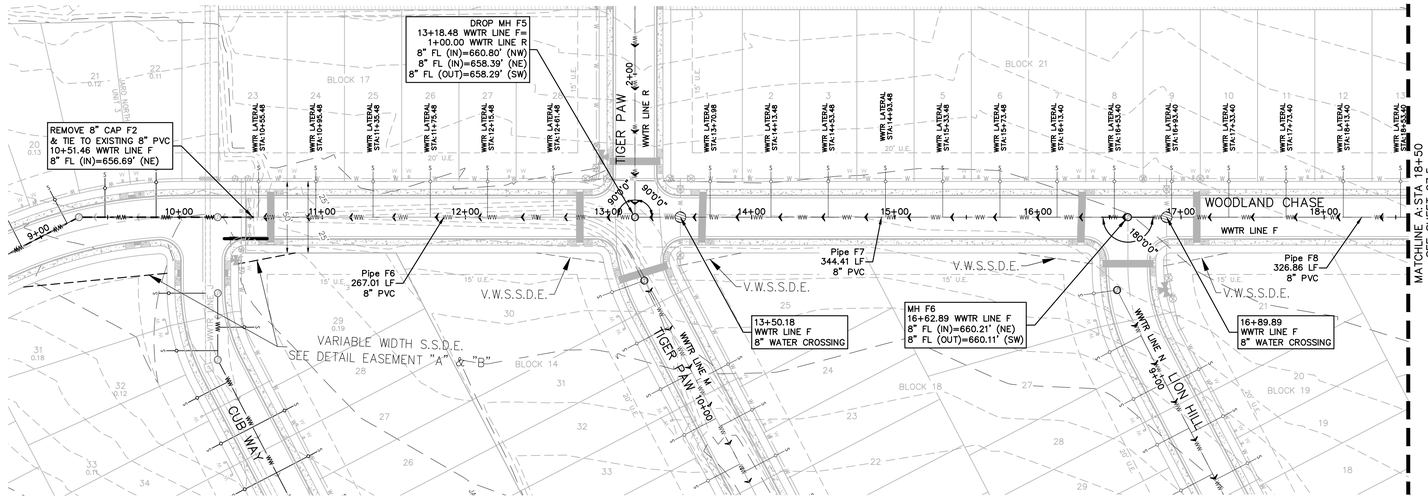
NO.	REVISION DESCRIPTION	REVISION DATE

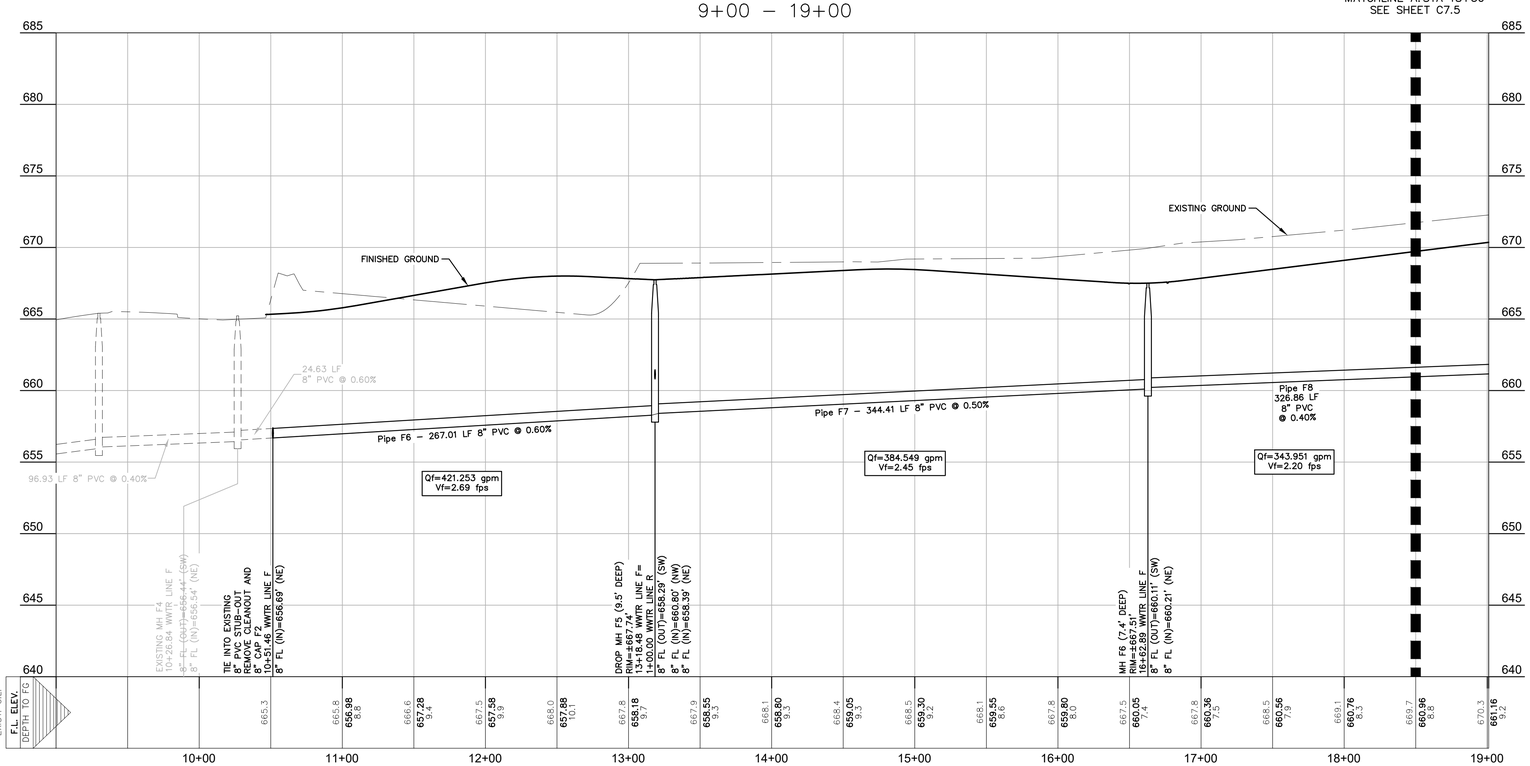
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REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

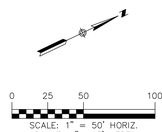
SHEET
C7.3

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Civil\337.147_WWTR LINE C.dwg User: adixon Apr 14, 2026 - 4:27pm

Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
F6	8	0.60%	33	22.81	0.05	0.94	2.78	2.06	Yes
F7	8	0.50%	27	18.75	0.04	0.86	2.28	1.86	Yes
F8	8	0.40%	19	13.29	0.03	0.77	1.62	1.47	Yes
F9	8	0.90%	11	7.76	0.02	1.15	0.95	0.57	Yes
F10	8	1.50%	5	3.56	0.01	1.48	0.43	0.20	Yes







LEGEND

- 700 — EXISTING CONTOURS
- 700 — 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 6" WASTEWATER SERVICE
- PROPOSED 5/8" WATER SERVICE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- UTILITY CROSSING
- SD — STORM SEWER

UTILITY TRENCH COMPACTION

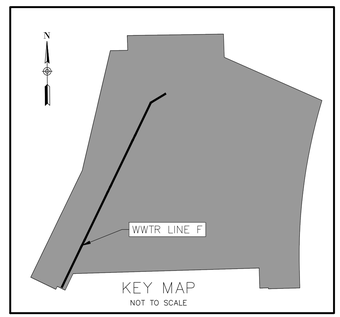
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CONSTRUCTION NOTES:

1. NO VALVES, HYDRANTS, CLEAN–OUTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS, OR DRIVEWAYS.
2. ALL SEWER PIPE ASTM 3034 (115 PSI) SDR 26
3. ALL MANHOLES SHALL BE 48" DIAMETER, MINIMUM.
4. ALL RING AND COVER SHALL MEET CITY OF SEGUIN STANDARDS.
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10. LATERALS SHALL EXTEND TO U.E.



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.

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

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
No. 134964
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE F
PLAN & PROFILE (1 OF 2)

JARO NORTH UNIT 4

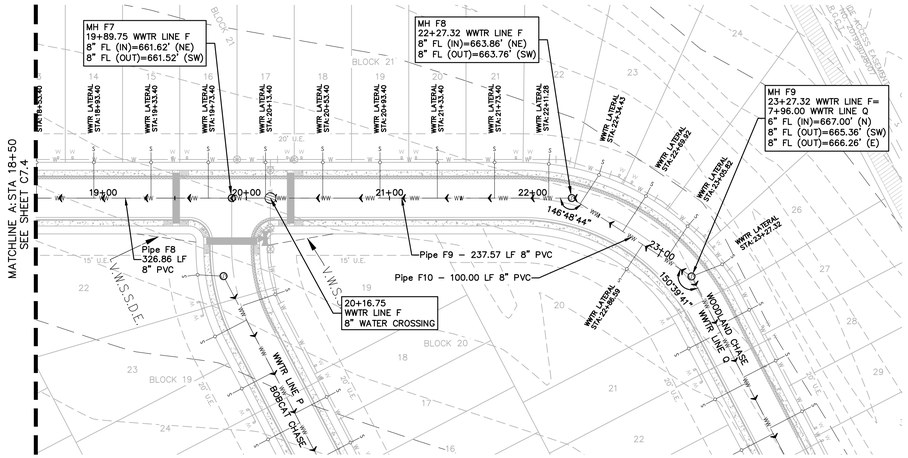
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

SHEET
C7.4

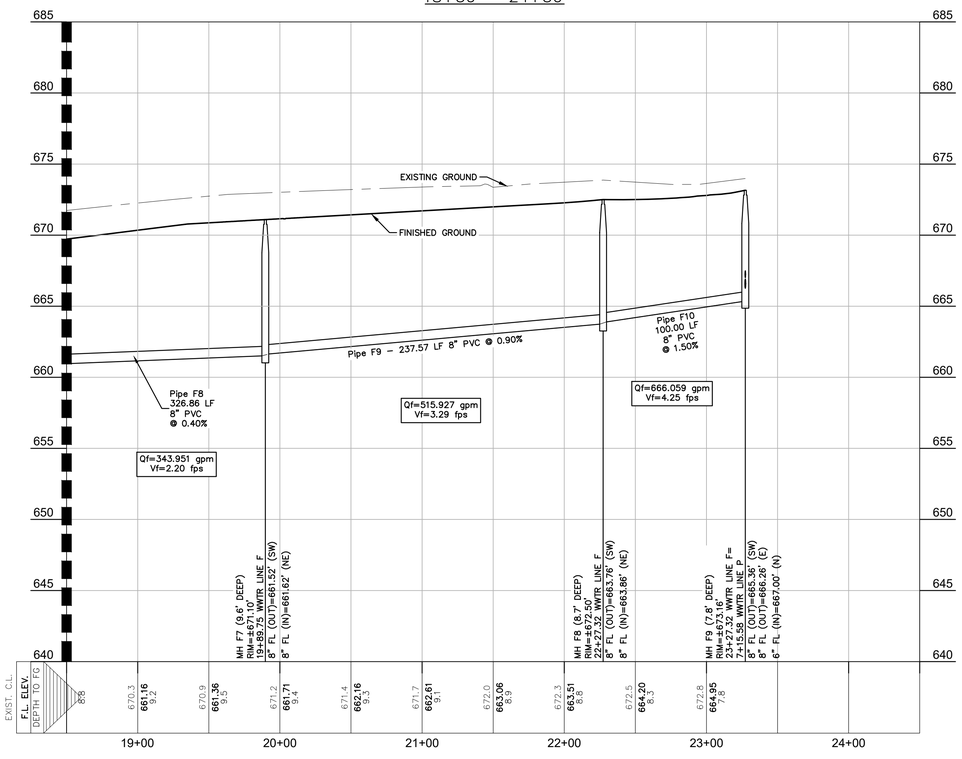
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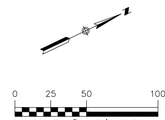
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MATCHLINE A:STA 18+50
SEE SHEET C7.4

WWTR LINE F
18+50 – 24+50





LEGEND

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- B.L. BUILDING SETBACK LINE
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- STORM SEWER

UTILITY TRENCH COMPACTION

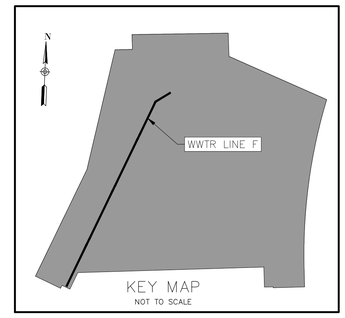
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TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
NO. 134964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE F PLAN & PROFILE (2 OF 2)

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

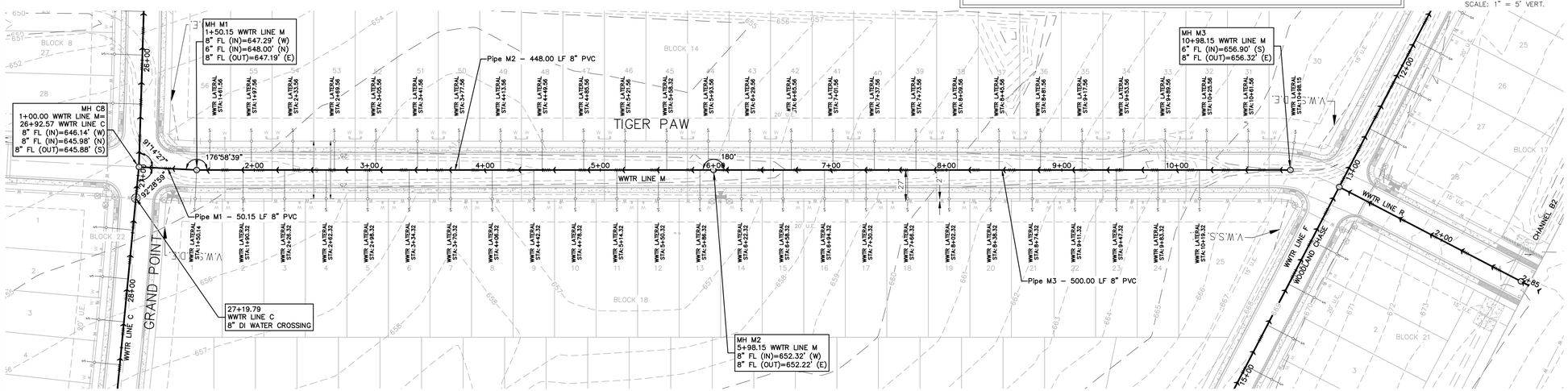
SHEET
C7.5

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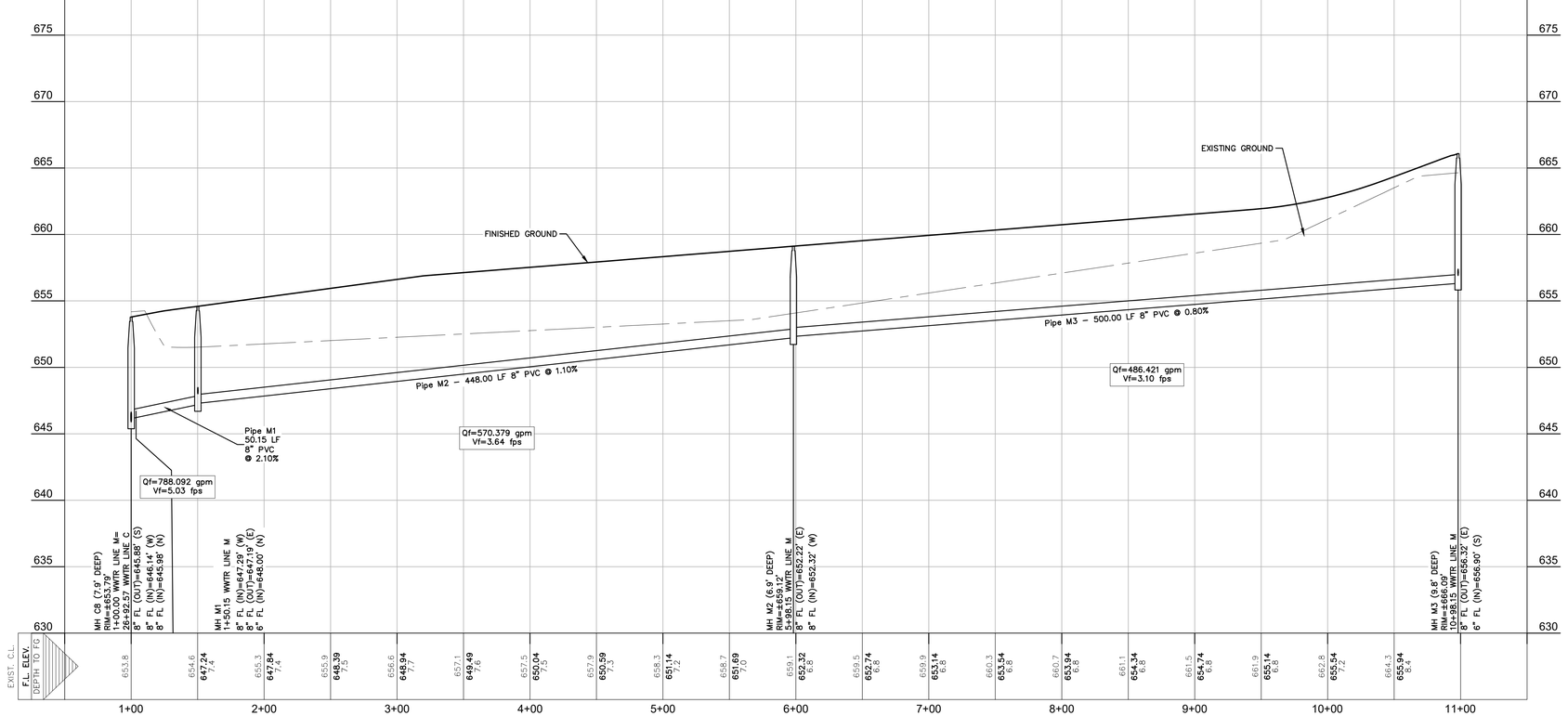
Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
M1	8	1.30%	52	35.51	0.08	1.38	4.33	2.18	Yes
M2	8	1.10%	51	34.85	0.08	1.27	4.25	2.33	Yes
M3	8	0.80%	26	18.07	0.04	1.08	2.20	1.42	Yes

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WWTR LINE M
0+50 – 11+50



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

LEGEND

- EXISTING CONTOURS
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UTILITY TRENCH COMPACTION

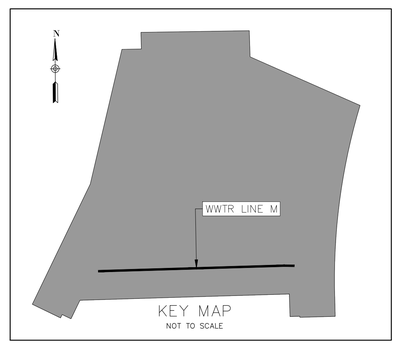
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HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
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PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE M PLAN & PROFILE

JARO NORTH UNIT 4

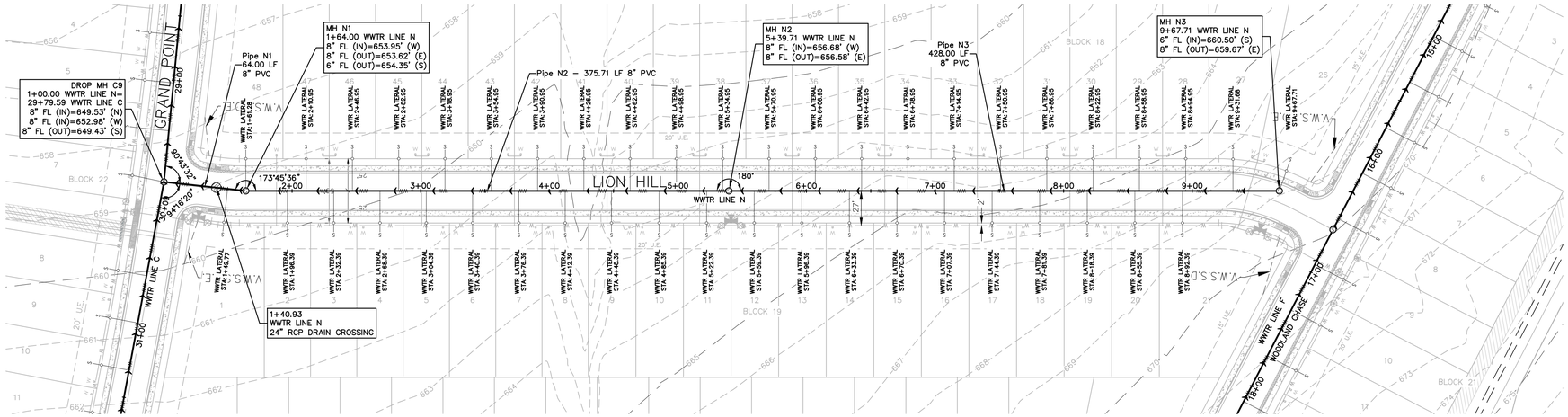
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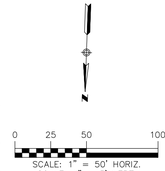
DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C7.6

Drawing Name: M:_Projects\337 – Lennar Homes\147 – Jaro North Unit 4\CDs\337.147_WWTR LINE M.dwg User: adrian Apr 14, 2026 - 4:29pm

Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWf V (fps)	PWF Depth (in)	Sufficient Capacity
N1	8	1.00%	44	30.19	0.07	1.21	3.68	2.11	Yes
N2	8	0.70%	42	28.85	0.06	1.01	3.52	2.42	Yes
N3	8	0.70%	22	15.34	0.03	1.01	1.87	1.28	Yes





LEGEND

- EXISTING CONTOURS
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- B.L. BUILDING SETBACK LINE
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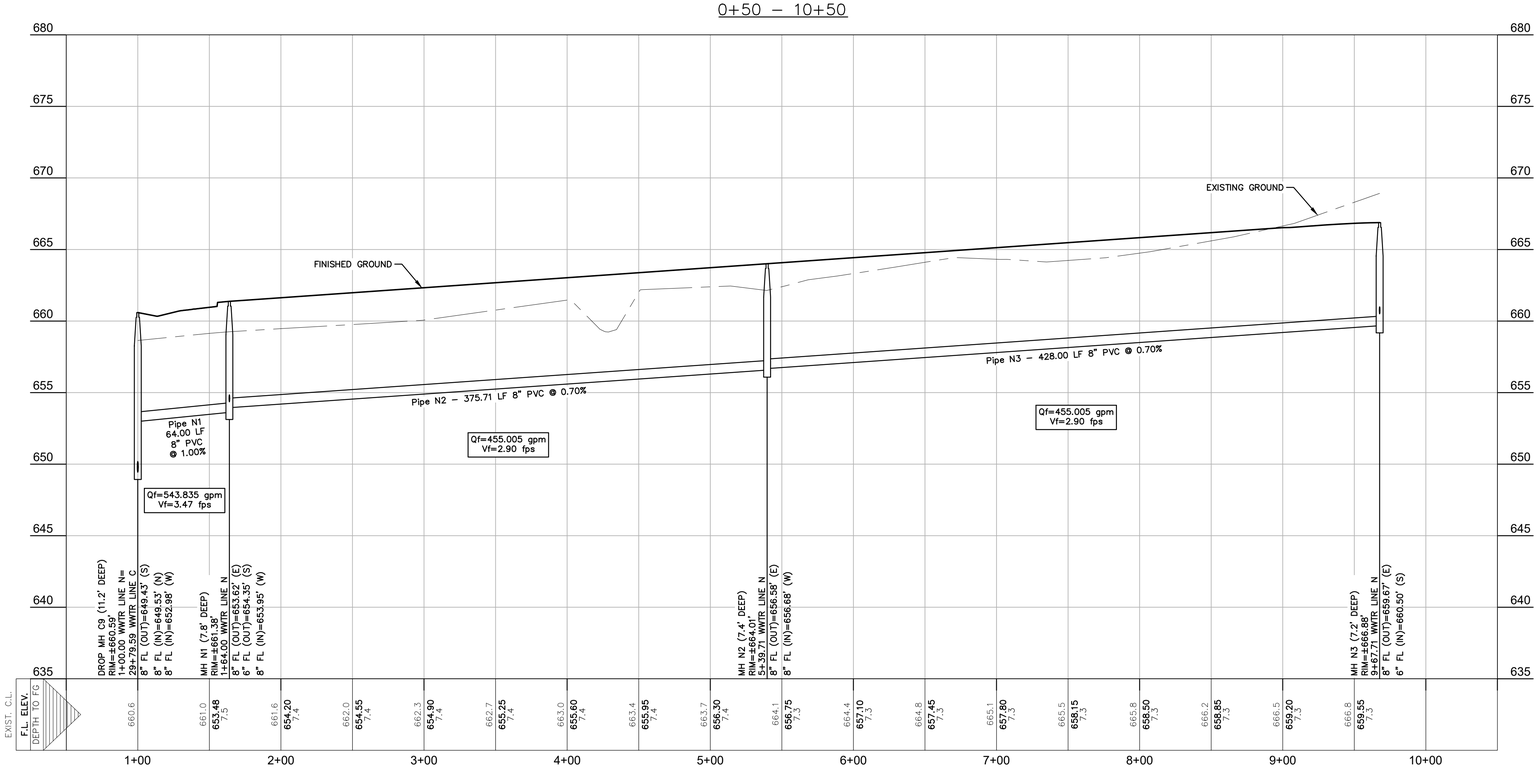
DEEP TRENCH COMPACTION TESTING

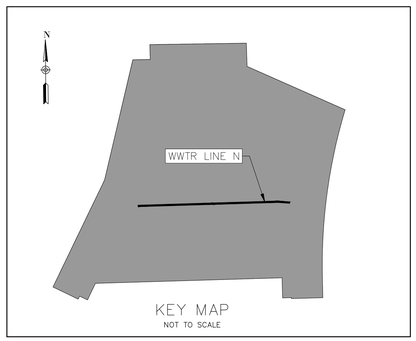
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5. CONTRACTOR TO FIELD VERIFY EXISTING SANITARY SEWER TIE–INS AND CONSTRUCT SEWER FROM DOWNSTREAM TO UPSTREAM.
6. ALL DIMENSIONS ARE FROM FACE OF CURB.
7. MANHOLES MUST BE BOLTED UNLESS WAIVED BY UTILITY ENGINEER.
8. ALL UTILITIES TO BE CONSTRUCTED PRIOR TO STREETS.
9. ALL SANITARY SEWER SERVICE LATERALS SHALL BE 6 INCH DIAMETER PER CITY OF SEGUIN STANDARDS.
10. LATERALS SHALL EXTEND TO U.E.

WWTR LINE N
0+50 – 10+50





TRENCH EXCAVATION SAFETY PROTECTION

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

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
No. 134964
04/15/2026

WASTEWATER LINE N PLAN & PROFILE

JARO NORTH UNIT 4

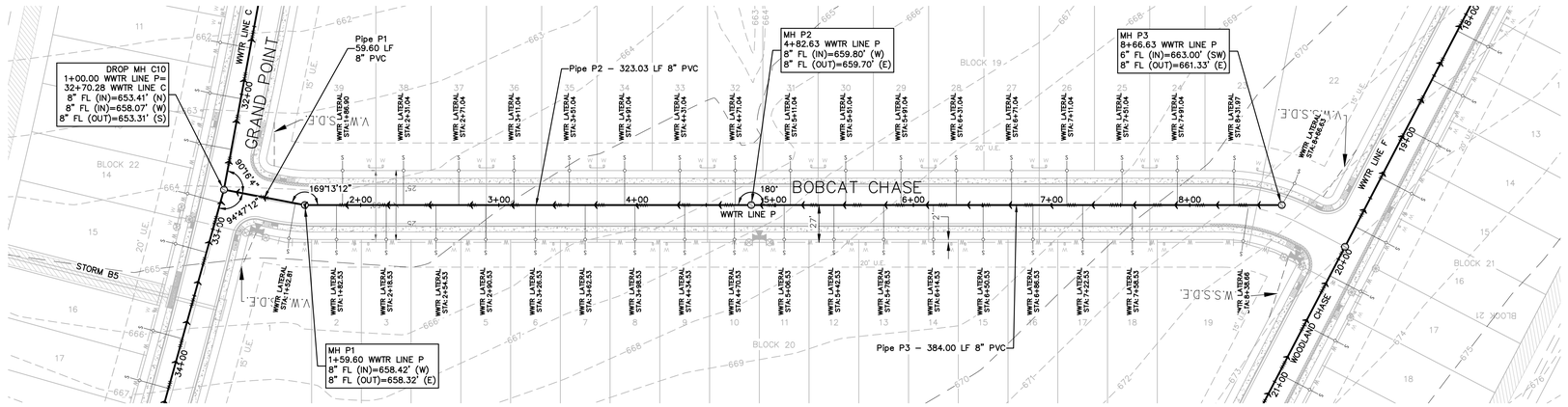
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

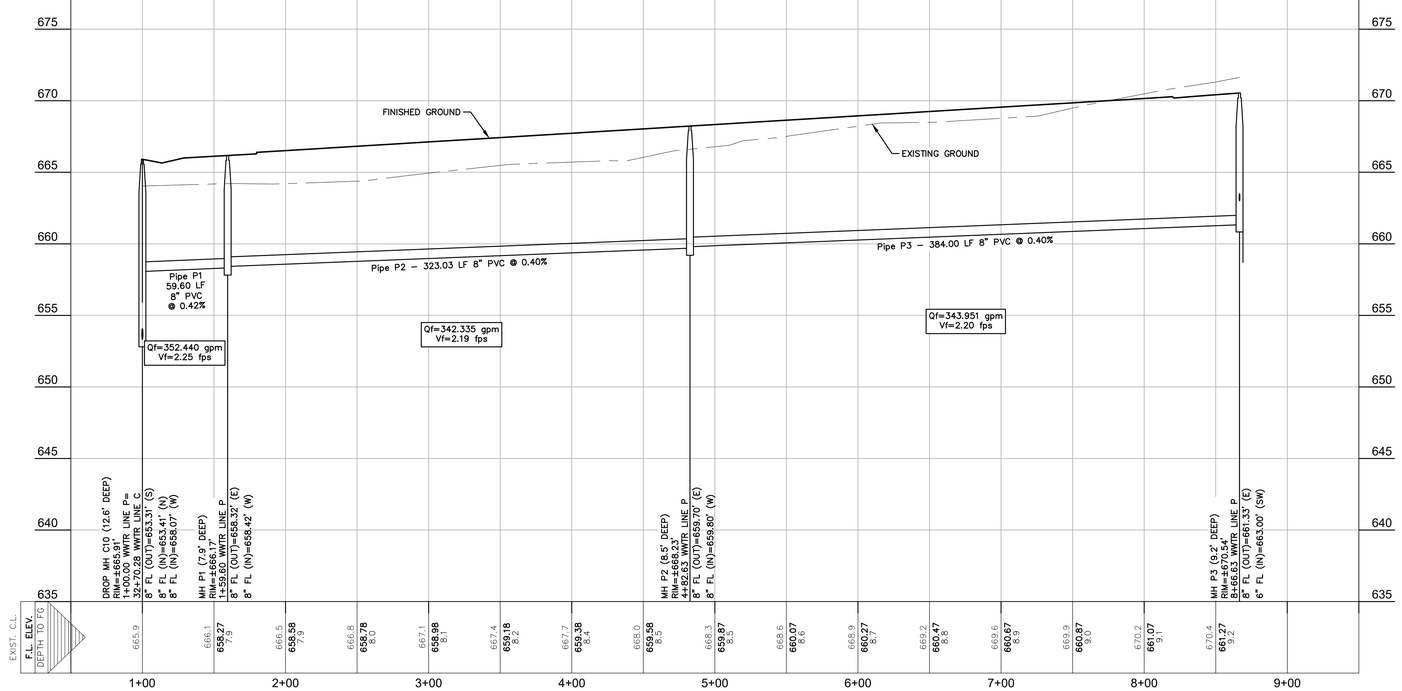
SHEET
C7.7

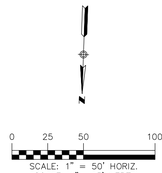
Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_WWTR LINE N.dwg User: cdonor Apr 14, 2026 - 4:29pm

Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
P1	8	0.40%	37	25.50	0.06	0.77	3.11	2.82	Yes
P2	8	0.40%	36	24.83	0.06	0.77	3.03	2.75	Yes
P3	8	0.40%	19	13.29	0.03	0.77	1.62	1.47	Yes



WWTR LINE P
0+50 – 9+50





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 6" WASTEWATER SERVICE
- PROPOSED 5/8" WATER SERVICE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- UTILITY CROSSING
- STORM SEWER

UTILITY TRENCH COMPACTION

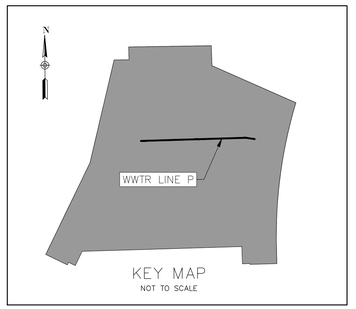
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ZOE F. JASSO
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04/15/2026

WASTEWATER LINE P PLAN & PROFILE

JARO NORTH UNIT 4

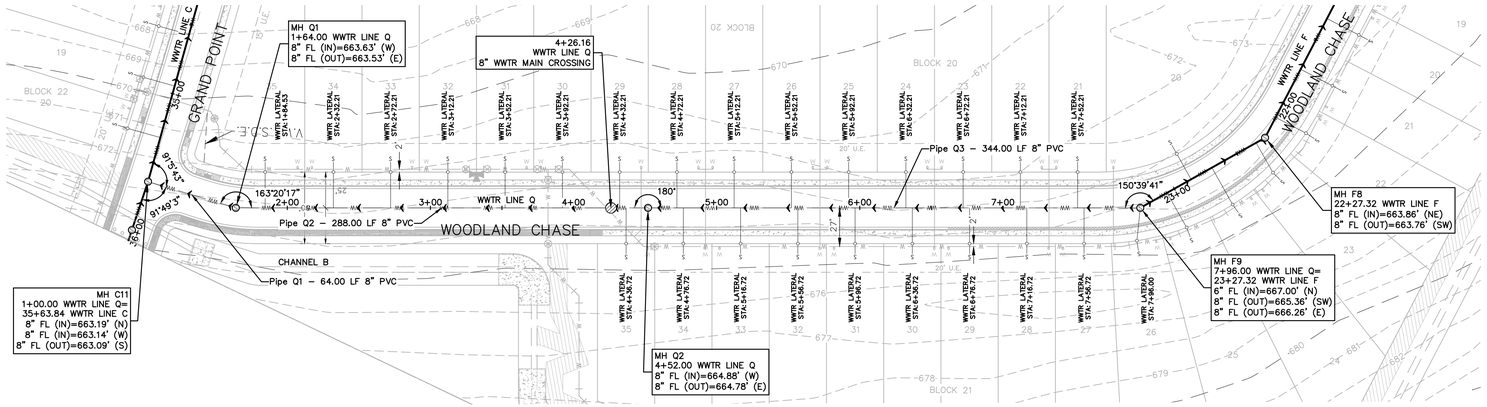
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	APRIL 2026
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.147

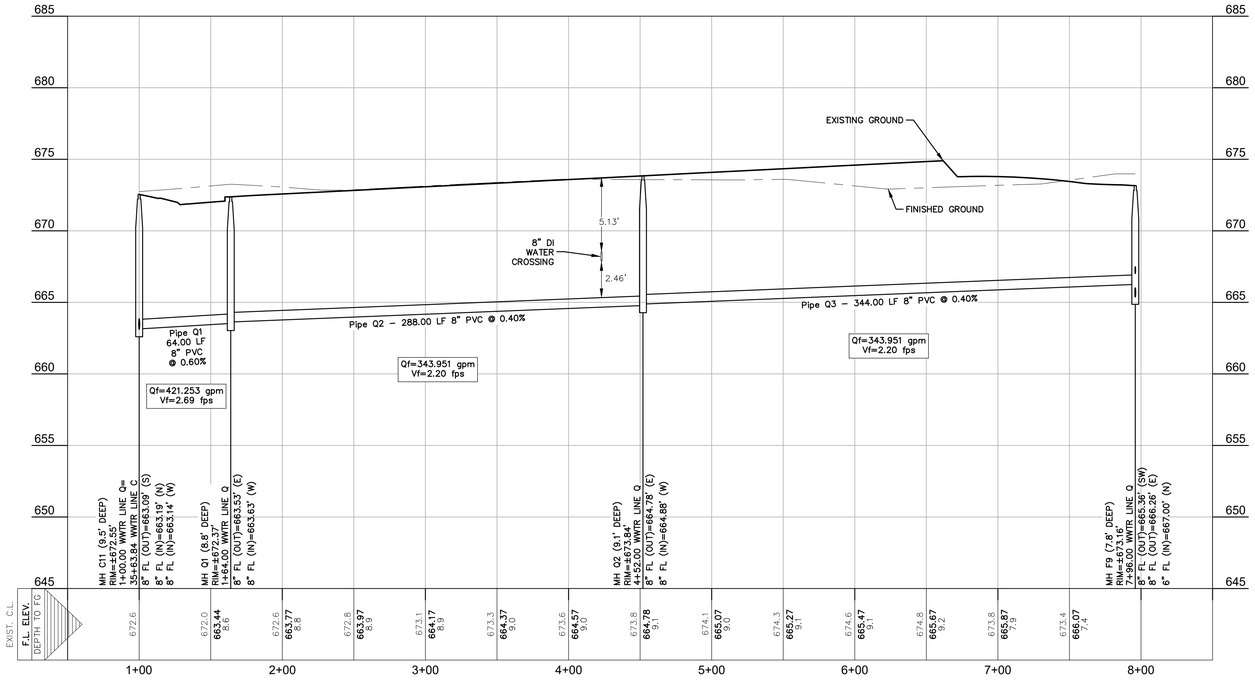
SHEET
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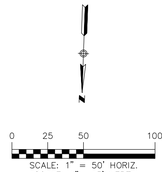
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Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
Q1	8	0.60%	25	17.39	0.04	0.94	2.12	1.57	Yes
Q2	8	0.40%	8	5.67	0.01	0.77	0.69	0.63	Yes
Q3	8	0.40%	17	11.91	0.03	0.77	1.45	1.32	Yes



WWTR LINE Q
0+50 – 8+50





LEGEND

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- PROPOSED WASTEWATER MANHOLE
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- PROPOSED 5/8" WATER SERVICE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- UTILITY CROSSING
- STORM SEWER

UTILITY TRENCH COMPACTION

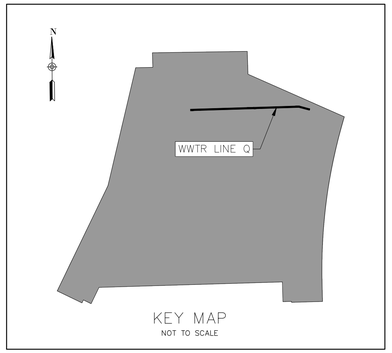
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HMT
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STATE OF TEXAS
ZOE F. JASSO
LICENSED
PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER LINE Q PLAN & PROFILE

JARO NORTH UNIT 4

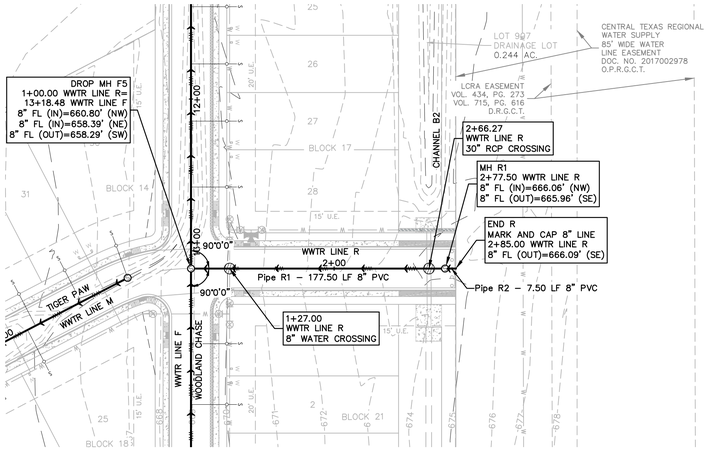
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

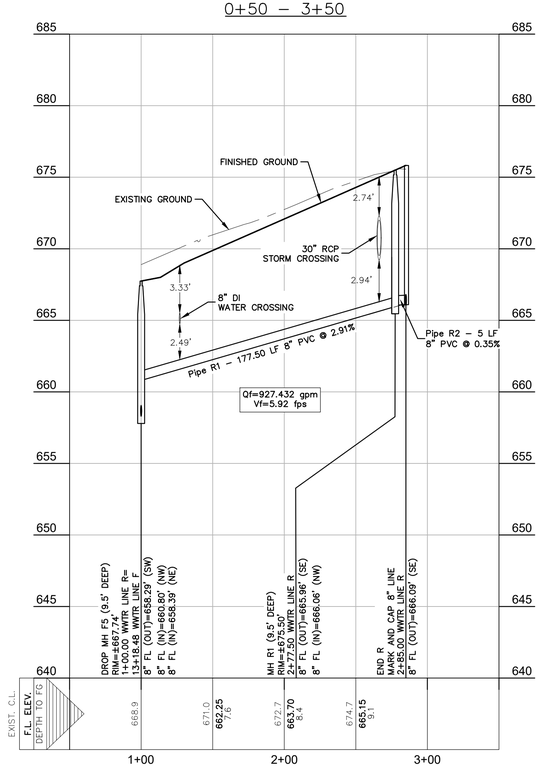
SHEET
C7.9

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\Cds\337.147_WWTR LINE Q.dwg User: cdonor Apr 14, 2026 - 4:31pm

Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
R1	8	2.90%	0	0.00	0.00	2.06	0.00	0.00	Yes

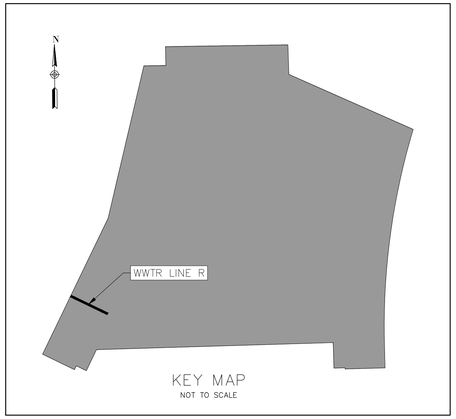


WWTR LINE R
0+50 – 3+50

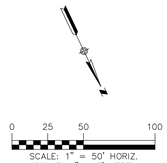


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KEY MAP
NOT TO SCALE



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 6" WASTEWATER SERVICE
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WASTEWATER LINE R
PLAN & PROFILE

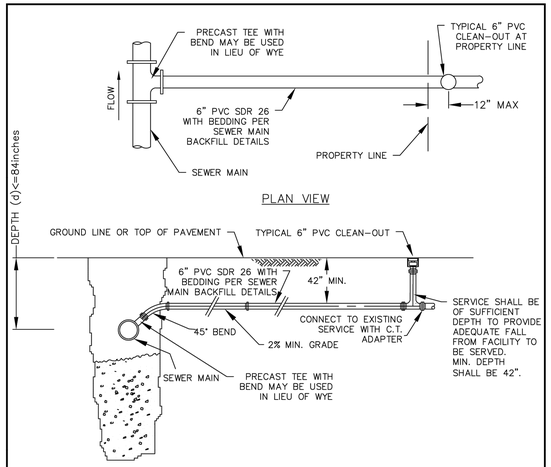
JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C7.10

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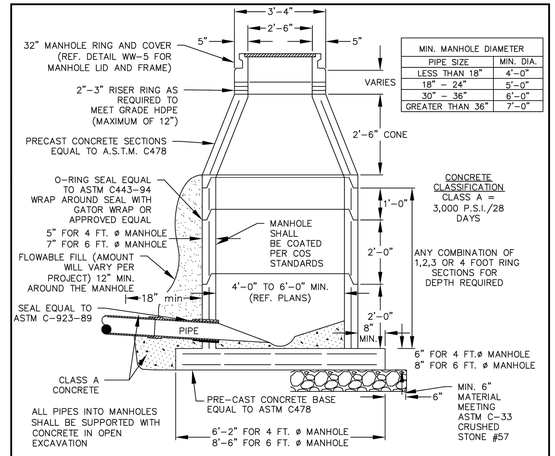


SHALLOW SANITARY SEWER RESIDENTIAL SERVICE CONNECTION

NOTE:
1. SEWER SERVICE LINE BACKFILL SHALL BE IDENTICAL TO SEWER MAIN (WW-8).
2. CITY INSPECTOR SHALL APPROVE DEPTHS UNDER 42" (MIN.)
3. LATERAL DEPTH TO BE 42" MINIMUM TO ENSURE POSITIVE FLOW.
4. SDR 26 PRESSURE RATED PIPE SHALL BE USED IF TRENCH DEPTH IS OVER 15'
5. DUPLEXES, TRIPLEXES AND QUADPLEXES MUST HAVE INDIVIDUAL SERVICE CONNECTIONS PER EACH LIVING UNIT.(DUAL OR SHARED CONNECTIONS TO A SINGLE LATERAL IS NO LONGER ACCEPTED).

SEGUIN TEXAS

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SHALLOW SANITARY SEWER RESIDENTIAL SERVICE CONNECTION
1ST REVISION	8/10/18	DB	
2ND REVISION	6/19/20	DB	
3RD REVISION	10/21/21	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-1

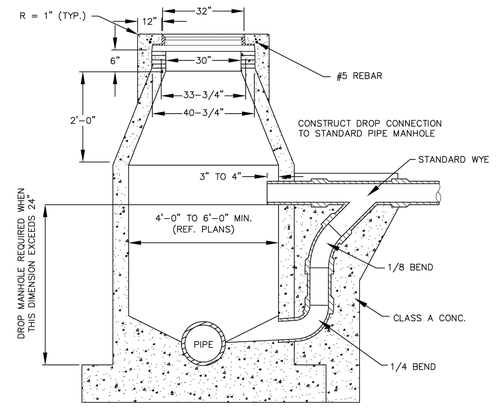


MIN. MANHOLE DIAMETER	
PIPE SIZE	MIN. DIA.
LESS THAN 18"	4'-0"
18" - 24"	5'-0"
30" - 36"	6'-0"
GREATER THAN 36"	7'-0"

NOTES:
1. MANHOLE INVERTS: THE BOTTOM OF THE MANHOLE SHALL BE PROVIDED WITH A "U" SHAPED CHANNEL THAT IS AS MUCH AS POSSIBLE A SMOOTH CONTINUATION OF THE INLET AND OUTLET PIPES. FOR MANHOLES CONNECTED TO PIPES LESS THAN 15 INCHES IN DIAMETER THE CHANNEL DEPTH SHALL BE AT LEAST HALF THE LARGEST PIPE DIAMETER. FOR MANHOLES CONNECTED TO PIPES 15 TO 24 INCHES IN DIAMETER THE CHANNEL DEPTH SHALL BE AT LEAST THREE FOURTHS THE LARGEST PIPE DIAMETER. IN MANHOLES WITH PIPES OF DIFFERENT SIZES, THE TOES OF THE PIPES SHALL BE PLACED AT THE SAME ELEVATION AND FLOW CHANNELS IN THE INVERT SLOPED ON AN EVEN SLOPE FROM PIPE TO PIPE. THE BENCH PROVIDED ABOVE THE CHANNEL SHALL BE SLOPED AT A MINIMUM OF 0.5 INCH PER FOOT.
2. CONTRACTOR SHALL GROUT THE INTERNAL AND EXTERNAL JOINTS FOR EACH RING SECTION.
3. 0.1' DROP SHALL BE PROVIDED WITHIN THE MANHOLE.
4. MANHOLE SHALL BE COATED PER APPROVED MANUFACTURER'S SPECIFICATIONS OUTLINED IN COS STANDARD PRODUCTS LIST.
5. ALL MANHOLES SHALL BE BOLTED, UNLESS WAIVED BY THE UTILITY ENGINEER.

SEGUIN TEXAS

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SANITARY SEWER PRECAST CONCRETE MANHOLE
1ST REVISION	7/29/15	TN	
2ND REVISION	8/10/18	DB	
3RD REVISION	12/08/20	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-2

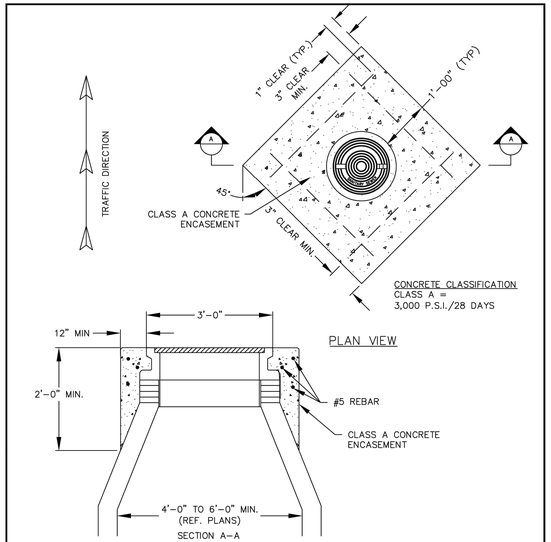


NOTES:
1. CONTRACTOR SHALL GROUT THE INTERNAL AND EXTERNAL JOINTS FOR EACH RING SECTION.
2. DROP SECTION OF PIPE SHALL BE SAME DIAMETER AS SEWER MAIN.
3. PER TCEQ, CHAPTER 217, SECTION 55.L.2.H., "A WASTEWATER COLLECTION SYSTEM PIPE ENTERING A MANHOLE MORE THAN 24 INCHES ABOVE AN INVERT MUST HAVE A DROP PIPE."

SEGUIN TEXAS

It's real.

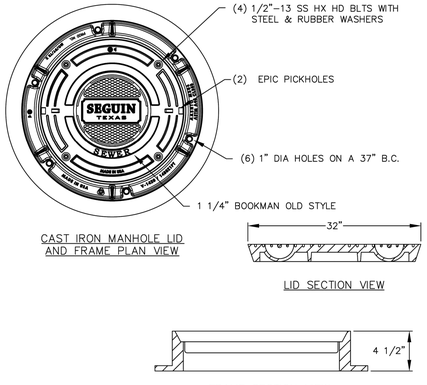
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SANITARY SEWER DROP MANHOLE
1ST REVISION	7/29/15	TN	
2ND REVISION	12/24/15	AM	
3RD REVISION	5/24/18	DB	SCALE: N.T.S. DRAWING No. WW-3



NOTES:
1. CONCRETE ENCASEMENT SHALL BE INSTALLED AFTER FINAL PAVEMENT HAS BEEN INSTALLED.
2. MANHOLES SHALL BE LOCATED BY GPS AND PROVIDED TO THE CITY IN TEXAS STATE PLANE COORDINATES, NAD 83 (93), SOUTH CENTRAL ZONE.
3. CONCRETE ENCASEMENT SHALL ALSO BE INSTALLED IN MANHOLES LOCATED IN NATURAL GROUND.

SEGUIN TEXAS

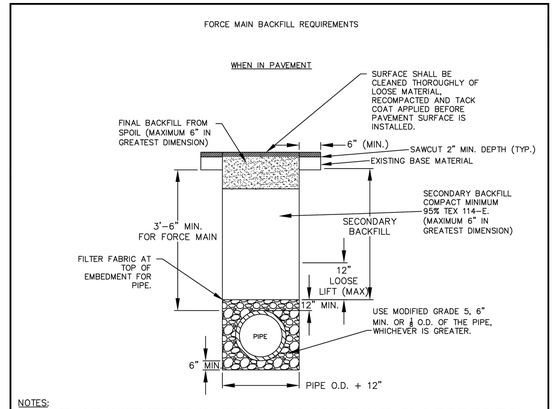
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	MANHOLE RING ENCASEMENT DETAILS
1ST REVISION	7/29/15	TN	
2ND REVISION	12/24/15	AM	
3RD REVISION	5/24/18	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-6



NOTES:
1. MANHOLE LID SHALL BE SOLID AND PROVIDED WITH PICK SLOTS ONLY.
2. 32" HEAVY DUTY MANHOLE FRAME AND COVER IS TO BE CAST 400 LBS WITH A DESIGN STRENGTH OF 4,000 PSI.
3. THE HORIZONTAL BEARING SURFACES ARE TO BE MACHINE FINISHED.
4. THE SOLID LID WILL BE PROVIDED WITH MANUFACTURER'S STANDARD LETTERING SHOWING "SANITARY SEWER".
5. MANHOLE SHALL BE ENCASED PER DETAIL ON SHT. WW-6, MANHOLE RING ENCASEMENT DETAIL.
6. ALL MANHOLES SHALL BE BOLTED, UNLESS WAIVED BY THE UTILITY ENGINEER.
7. FRAME AND COVER ARE MANUFACTURED BY EAST JORDAN IRON COMPANY.
   8.1: BOLTED: COVER V1430APT RING: V1420/1480Z1PT
   8.2: NON-BOLTED: COVER: V1430 RING: V1420/1480Z1

SEGUIN TEXAS

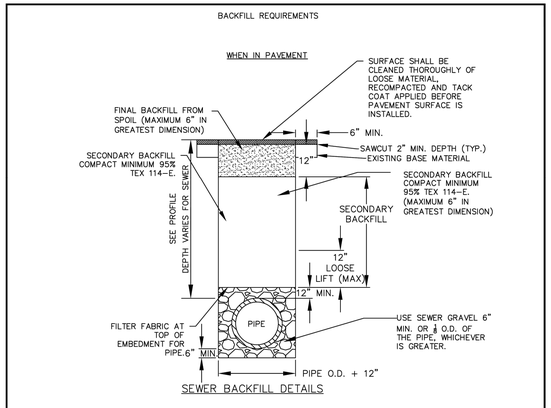
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	CAST IRON MANHOLE LID AND FRAME
1ST REVISION	06/12/15	TN	
2ND REVISION	12/24/15	AM	
3RD REVISION	03/05/19	MS	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-5



NOTES:
1. FOR ASPHALT OR CONCRETE STREET REPAIRS WHERE THE SAW-CUT PAVEMENT EDGE WILL BE WITHIN 3' OF EDGE OF EXISTING PAVEMENT OR LIP OF GUTTER, THE EXISTING PAVEMENT SURFACE BETWEEN THE DITCH LINE AND EDGE OF PAVEMENT OR LIP OF GUTTER SHALL BE REMOVED AND REPLACED WITH MATERIAL SPECIFIED.
2. FOR STREETS NOT BEING RECONSTRUCTED, SURFACE MATERIALS SHALL BE EQUAL TO MATERIAL REMOVED--MINIMUM AMOUNTS; 2" HMAC (TxDOT ITEM 340, TYPE D); FLEX (CRUSHED STONE) BASE (TxDOT ITEM 247, TYPE A, GRADE 2) COMPACTED IN 6" LIFTS TO 100% DENSITY BY TEX 113E. EXISTING ASPHALT TO BE SAW CUT.
3. SECONDARY BACKFILL SHALL CONSIST OF 12" LIFTS COMPRISED OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE OF BRUSH, DEBRIS AND TRASH. MAXIMUM 6" IN GREATEST DIMENSION.
4. A DENSITY TEST SHALL BE PERFORMED ON EACH 12" LIFT, EVERY 200 FEET.
5. INDUCTIVE TRACER DETECTION TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF ALL NON-METALLIC PIPE A MINIMUM OF 12" BELOW SUBGRADE OR, IN AREAS OUTSIDE THE LIMITS OF PAVEMENT, A MINIMUM OF 18" BELOW FINISHED GRADE. THE TRACER TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED ACCORDING TO THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM COLOR CODE. EXCEPT FOR MINIMUM DEPTH OF COVER, THE TRACER TAPE SHALL BE PLACED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.
6. FOR PIPE NOT INSTALLED IN PAVEMENT, THE SURFACE OF THE BACKFILLED TRENCH SHALL BE RESTORED TO MATCH PREVIOUS EXISTING CONDITIONS.
7. FOR STREETS BEING RECONSTRUCTED ONLY CONTRACTOR MAY BACKFILL FINAL BASE SECTION DEPTH WITH SPOIL MATERIAL PRIOR TO STREET EXCAVATION TO ALLOW TRAFFIC FLOW. DEPTH VARIES.

SEGUIN TEXAS

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	FORCE MAIN BACKFILL DETAIL
1ST REVISION	5/29/18	DB	
2ND REVISION	11/08/23	DB	
3RD REVISION	05/06/24	DB	SCALE: N.T.S. DRAWING No. WW-7

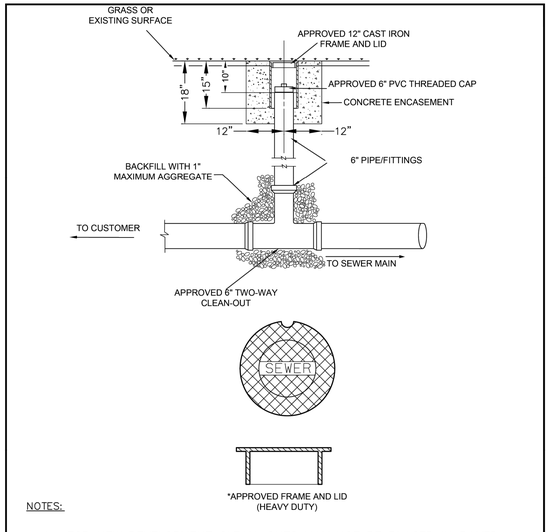


SEWER BACKFILL DETAILS

NOTES:
1. FOR ASPHALT OR CONCRETE STREET REPAIRS WHERE THE SAW-CUT PAVEMENT EDGE WILL BE WITHIN 3' OF EDGE OF EXISTING PAVEMENT OR LIP OF GUTTER, THE EXISTING PAVEMENT SURFACE BETWEEN THE DITCH LINE AND EDGE OF PAVEMENT OR LIP OF GUTTER SHALL BE REMOVED AND REPLACED WITH MATERIAL SPECIFIED.
2. FOR STREETS NOT BEING RECONSTRUCTED, SURFACE MATERIALS SHALL BE EQUAL TO MATERIAL REMOVED--MINIMUM AMOUNTS; 2" HMAC (TxDOT ITEM 340, TYPE D); FLEX (CRUSHED STONE) BASE (TxDOT ITEM 247, TYPE A, GRADE 2) COMPACTED IN 6" LIFTS TO 100% DENSITY BY TEX 113E. EXISTING ASPHALT TO BE SAW CUT.
3. SECONDARY BACKFILL SHALL CONSIST OF 12" LIFTS COMPRISED OF MATERIALS REMOVED FROM THE TRENCH AND SHALL BE FREE OF BRUSH, DEBRIS AND TRASH. MAXIMUM 6" IN GREATEST DIMENSION.
4. A DENSITY TEST SHALL BE PERFORMED ON EACH 12" LIFT, EVERY 200 FEET.
5. INDUCTIVE TRACER DETECTION TAPE SHALL BE PLACED DIRECTLY ABOVE THE CENTERLINE OF ALL NON-METALLIC PIPE A MINIMUM OF 12" BELOW SUBGRADE OR, IN AREAS OUTSIDE THE LIMITS OF PAVEMENT, A MINIMUM OF 18" BELOW FINISHED GRADE. THE TRACER TAPE SHALL BE ENCASED IN A PROTECTIVE, INERT, PLASTIC JACKET AND COLOR CODED ACCORDING TO THE AMERICAN PUBLIC WORKS ASSOCIATION UNIFORM COLOR CODE. EXCEPT FOR MINIMUM DEPTH OF COVER, THE TRACER TAPE SHALL BE PLACED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.
6. FOR PIPE NOT INSTALLED IN PAVEMENT, THE SURFACE OF THE BACKFILLED TRENCH SHALL BE RESTORED TO MATCH PREVIOUS EXISTING CONDITIONS.
7. FOR STREETS BEING RECONSTRUCTED ONLY CONTRACTOR MAY BACKFILL FINAL BASE SECTION DEPTH WITH SPOIL MATERIAL PRIOR TO STREET EXCAVATION TO ALLOW TRAFFIC FLOW. DEPTH VARIES.

SEGUIN TEXAS

DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SEWER BACKFILL DETAIL
1ST REVISION	6/12/15	TN	
2ND REVISION	12/11/15	AM	
3RD REVISION	5/25/18	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-8



NOTES:

1. FOR NEW DEVELOPMENT CLEAN-OUTS MAY NOT BE PLACED IN PAVED AREAS I.E. SIDEWALKS, DRIVEWAYS, OR PARKING LOTS, AND MUST BE LOCATED A MINIMUM OF 6" FROM ALL PAVED AREAS.

SEGUIN TEXAS

DATE ISSUED:	FEBRUARY 1, 2019		TITLE
REVISION	DATE	BY	TYPICAL 6" CLEANOUT DETAIL
1ST REVISION	11/08/23	DB	
			SCALE: N.T.S. DRAWING No. WW-20

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

STATE OF TEXAS
ZOE F. JASSO
103964
LICENSED PROFESSIONAL ENGINEER
04/15/2026

WASTEWATER DETAILS

JARO NORTH UNIT 4

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: APRIL 2026
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.147

SHEET
C7.11

Drawing Name: M:_Projects\337 - Lennar Homes\147 - Jaro North Unit 4\CD\337.147_WWTR DETAILS.dwg User: adfoor Apr 14, 2026 - 4:32pm