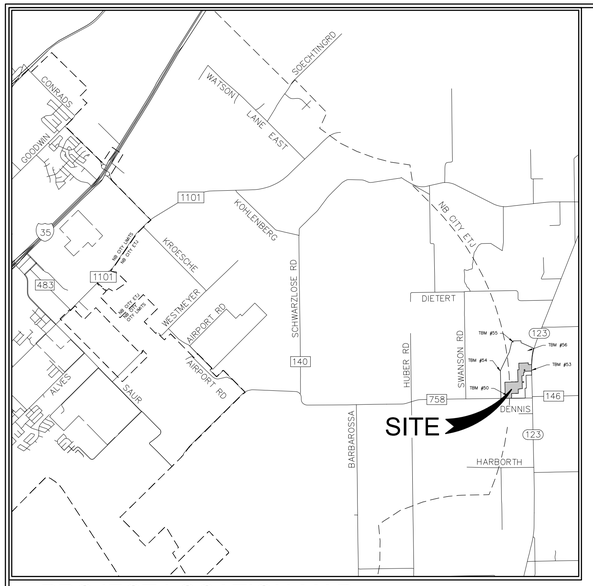
JARO NORTH UNIT 2

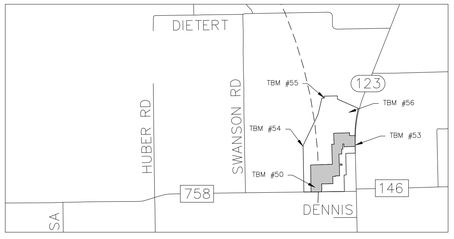
LONE OAK FARM MUNICIPAL UTILITY DISTRICT (MUD)
NEW BRAUNFELS, TX
CIVIL SITE CONSTRUCTION PLANS
LONE OAK FARM MUD
LENNAR HOMES
100 NE LOOP 410, SUITE 1155
SAN ANTONIO, TX 78216



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



REQUIRED PERMITS

	NUMBER
1. CITY OF NEW BRAUNFELS	#
2. CITY OF SEGUIN	#
3. CRYSTAL CLEAR SUD	#

JUNE 2025

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.

06/05/2025
Zoe F. Jasso
P.E. Registration No. 131964

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER

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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LEGAL DESCRIPTION

40.912 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; T

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF 250 PROPOSED RESIDENTIAL LOTS WITH ASSOCIATED GRADING, DRAINAGE STREETS, AND UTILITY IMPROVEMENTS.

Fabio M. Baldini, P.E. 03/11/2025
DISTRICT ENGINEER DATE

DISCLAIMER:

THE DISTRICT'S REVIEW OF THE PLANS IS LIMITED TO ASPECTS CONCERNING WATER, WASTEWATER, DRAINAGE, AND ROADS. THIS REVIEW DOES NOT ENCOMPASS AN ASSESSMENT OF THE OVERALL ADEQUACY OF THE DESIGN FOR THE FACILITIES. IN APPROVING THESE PLANS, THE DISTRICT RELIES SOLELY ON THE ADEQUACY OF THE WORK PERFORMED BY THE DESIGN ENGINEER.

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 VEPOLLC.COM.

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.

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, NEW BRAUNFELS UTILITIES 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 W&WW DESIGN CRITERIA, ANY OTHER GOVERNING ENTITY ORDINANCES OR CODES, AND SOUND ENGINEERING JUDGEMENT.
3. 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.
4. 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.
5. 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 2
CIVIL SITE CONSTRUCTION PLANS
HMT # 337.101

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(2D)\337.101_COVER.dwg User: jsbhudk Jun 04, 2025 - 10:15pm

CITY OF NEW BRAUNFELS GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ORDINARY COMPACTION CONTROL IS REQUIRED ON THIS PROJECT.

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

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

CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO THE NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNERS AND THE ENGINEER AND HIS EMPLOYEES, PARTNERS, OFFICES, DIRECTORS, OR CONSULTANTS, HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF THE WORK ON THIS PROJECT, EXCEPTING FROM LIABILITY ARISING FROM SOLE NEGLIGENCE OF THE OWNER OR ENGINEER, ENGINEER'S DIRECTORS, OFFICERS, EMPLOYEES, OR CONSULTANTS.

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

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

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

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

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

AS PER PLATTING ORDINANCE SECTION 118-38M.: WHEN ALL IMPROVEMENTS ARE FOUND TO BE CONSTRUCTED AND COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND WITH THE CITY'S STANDARDS, AND UPON RECEIPT OF ONE SET OF "RECORD DRAWINGS" PLANS, AND A DIGITAL COPY OF ALL PLANS (AUTOCAD 2000 MINIMUM) THE CITY ENGINEER SHALL ACCEPT SUCH IMPROVEMENTS FOR THE CITY OF NEW BRAUNFELS, SUBJECT TO THE GUARANTY OF MATERIAL AND WORKMANSHIP PROVISIONS IN THIS SECTION.

EROSION / SEDIMENTATION CONTROL

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

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

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

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

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

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.

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 TXDOT'S 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

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
06/05/2025

GENERAL NOTES (1 OF 2)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C0.1

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. TESTING OF WATER AND /OR WASTEWATER LINES; AND,
D. FINAL WALK-THROUGH OF FACILITIES.

2. THE DISTRICT OPERATOR SHALL BE CONTACTED 48 HOURS PRIOR TO:
A. PRE-CONSTRUCTION MEETINGS;
B. BEGINNING EACH PHASE OF CONSTRUCTION;
C. TESTING OF WATER AND/OR WASTEWATER LINES; AND,
D. FINAL WALK-THROUGH OF FACILITIES.

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.

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
06/05/2025

GENERAL NOTES (2 OF 2)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C0.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03\337101_COVER.dwg User: jsthuck Jun 04, 2025 - 10:13pm

FINAL PLAT ESTABLISHING

JARO NORTH, UNIT 2

40.912 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:

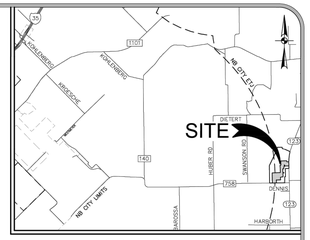
1. ALL LOTS WITHIN THE SUBDIVISION WILL BE PROVIDED WATER BY CRYSTAL CLEAR, SEWER BY CITY OF SEGUIN, AND ELECTRIC SERVICE BY GVEC. TELEPHONE AND CABLE SERVICES FOR THE SUBDIVISION WILL BE PROVIDED BY AT&T COMMUNICATIONS AND/OR SPECTRUM.
2. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE BASED UPON THE 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. A 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. LION CROSSING LOT 901, BLOCK 8.
    B. ALEX GATE LOT 901, BLOCK 8.
    C. GRAND POINT LOT 903, BLOCK 8.
    D. TIGER SKY LOT 904, BLOCK 12, LOT 1, BLOCK 4, LOT 10, BLOCK 3, AND NORTH SIDE OF STREET WEST OF LOT 1, BLOCK 9.
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, TYLER PATH, TIGER SKY, GOLD POINT, LION CROSSING, MOSLEY PASS, CUB WAY, AND ALEX GATE.
12. THE ELEVATION OF THE LOWEST FLOOR OF A STRUCTURE SHALL BE AT LEAST 10 INCHES ABOVE THE FINISHED GRADE OF THE SURROUNDING GROUND, WHICH SHALL BE SLOPED IN A FASHION SO AS TO DIRECT STORMWATER AWAY FROM THE STRUCTURE. PROPERTIES ADJACENT TO STORMWATER CONVEYANCE STRUCTURES MUST HAVE A FLOOR SLAB ELEVATION OR BOTTOM OF FLOOR JOISTS A MINIMUM OF ONE FOOT ABOVE THE 100-YEAR WATER FLOW ELEVATION IN THE STRUCTURE. DRIVEWAYS SERVING HOUSES ON THE DOWNHILL SIDE OF THE STREET SHALL HAVE A PROPERLY SIZED CROSS SWALE PREVENTING RUNOFF FROM ENTERING THE GARAGE AND SHALL PREVENT WATER FROM LEAVING THE STREET.
13. THIS SUBDIVISION IS SUBJECT TO THE 2018 CITY OF NEW BRAUNFELS PARK LAND DEDICATION AND DEVELOPMENT ORDINANCE. THIS PLAT IS APPROVED FOR ONE DWELLING UNIT(S) PER BUILDABLE LOT WITH A MAXIMUM OF 250 BUILDABLE LOTS. AT SUCH TIME THAT ADDITIONAL DWELLING UNITS ARE CONSTRUCTED, THE OWNER OF THE LOT(S) SHALL NOTIFY THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.
14. 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.
15. THIS UNIT CONTAINS 250 BUILDABLE RESIDENTIAL LOTS. ALL LOTS MEET THE MINIMUM SQUARE FOOTAGE REQUIREMENT ACCORDING TO THE ZONING ORDINANCE.
16. ALL DRAINAGE EASEMENTS WITHIN THE LOTS WILL BE OWNED AND MAINTAINED BY PROPERTY OWNER.
17. PERMANENT WATER QUALITY CONTROLS ARE REQUIRED FOR THIS SUBDIVISION PLAT IN ACCORDANCE WITH THE CITY OF NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL.
18. LOT 903, BLOCK 8 (DRAINAGE) AND LOT 904, BLOCK 12 (DRAINAGE) WILL BE OWNED AND MAINTAINED BY THE LONE OAK FARM MUNICIPAL UTILITY DISTRICT (MUD), ITS SUCCESSORS AND/OR ASSIGNS.

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.

CCSUD WATER PLAT NOTES:

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.

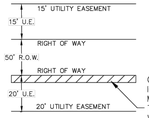


NOT TO SCALE

LINE TABLE		
LINE	LENGTH	DIRECTION
L1	115.00'	S1°42'22"E
L2	50.00'	N88°17'05"E
L3	5.23'	S1°42'55"E
L4	119.96'	N88°17'05"E
L5	60.00'	N88°49'07"E
L6	120.00'	N1°42'55"W
L7	45.00'	S88°17'05"W
L8	50.00'	S88°17'05"W
L9	120.00'	S88°17'05"W
L10	115.00'	N88°17'05"E
L11	50.00'	S1°42'55"E
L12	115.00'	S88°17'05"W
L13	115.00'	S88°17'05"W
L14	50.00'	S88°17'05"W
L15	25.00'	S1°42'55"E
L16	120.00'	S88°17'05"W
L17	115.00'	S88°17'05"W
L18	50.00'	S88°17'05"W
L19	50.00'	S88°17'05"W
L20	11.00'	S88°17'05"W
L21	50.00'	S1°42'55"E
L22	115.00'	S1°42'55"E
L23	66.25'	S4°42'52"W
L24	16.98'	S0°44'41"E
L25	42.43'	S44°15'18"W
L26	50.00'	N88°17'05"E
L27	50.00'	S88°17'05"W
L28	50.00'	S88°17'05"W
L29	115.00'	N88°17'05"E
L30	100.15'	N88°17'05"E
L31	170.00'	N1°42'55"W
L32	7.00'	S88°17'05"W
L33	22.44'	S88°17'05"W
L34	22.59'	S1°42'55"E
L35	28.48'	S1°42'55"E
L36	11.25'	N88°17'05"E

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C2	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C3	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C4	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C5	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C6	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C7	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C8	12.79'	114.00'	6°25'48"	N1°29'59"E	12.79'
C9	32.02'	291.92'	6°17'03"	S1°59'06"W	32.00'
C10	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C11	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C12	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C13	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C14	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C15	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C16	16.94'	50.00'	19°24'29"	S59°00'22"E	16.86'
C17	3.70'	5.00'	42°24'47"	S22°55'19"E	3.62'
C18	12.33'	50.00'	14°08'00"	N37°03'42"W	12.30'
C19	3.70'	5.00'	42°24'47"	N70°30'32"W	3.62'
C20	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C21	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C22	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C23	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'
C24	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C25	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C26	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C27	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C28	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C29	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C30	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C31	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C32	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C33	7.85'	5.00'	90°00'00"	S43°17'05"W	7.07'
C34	7.85'	5.00'	90°00'00"	N46°42'55"W	7.07'
C35	7.85'	5.00'	90°00'00"	S46°42'55"E	7.07'
C36	3.78'	5.00'	43°20'30"	S66°36'50"W	3.69'
C37	154.19'	50.00'	176°41'01"	S46°42'55"E	99.96'
C38	3.78'	5.00'	43°20'30"	N19°57'20"E	3.69'
C39	152.56'	50.00'	174°49'34"	N43°17'05"E	99.90'
C40	7.85'	5.00'	90°00'00"	N43°17'05"E	7.07'



CRYSTAL CLEAR S.U.D. (WATER) IS THE ONLY UTILITY THAT MAY RUN PARALLEL TO THE RIGHT OF WAY WITHIN THE FIRST 5 FT OF THE 20FT PUBLIC UTILITY EASEMENT

THE SUBDIVISION PLAT OF JARO NORTH SUBDIVISION UNIT 2 HAS BEEN SUBMITTED TO AND APPROVED BY THE CRYSTAL CLEAR SPECIAL UTILITIES DISTRICT FOR EASEMENTS

DATE AUTHORIZED AGENT, CRYSTAL CLEAR SPECIAL UTILITIES DISTRICT

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

CHAIRMAN

APPROVED FOR ACCEPTANCE

DATE PLANNING DIRECTOR

DATE CITY ENGINEER

DATE NEW BRAUNFELS UTILITIES

STATE OF TEXAS
COUNTY OF 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: _____

STATE OF TEXAS
COUNTY OF GUADALUPE

COUNTY CLERK, GUADALUPE COUNTY, TEXAS

DEPUTY

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 SEPTEMBER 18, 2024

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

FOR REFERENCE ONLY

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

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

STATE OF TEXAS
ZOE F. JASSO
131964
PROFESSIONAL ENGINEER
06/05/2025

PLAT (1 OF 3)

JARO NORTH UNIT 2

REVISION DESCRIPTION	REVISION DATE	NO.

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

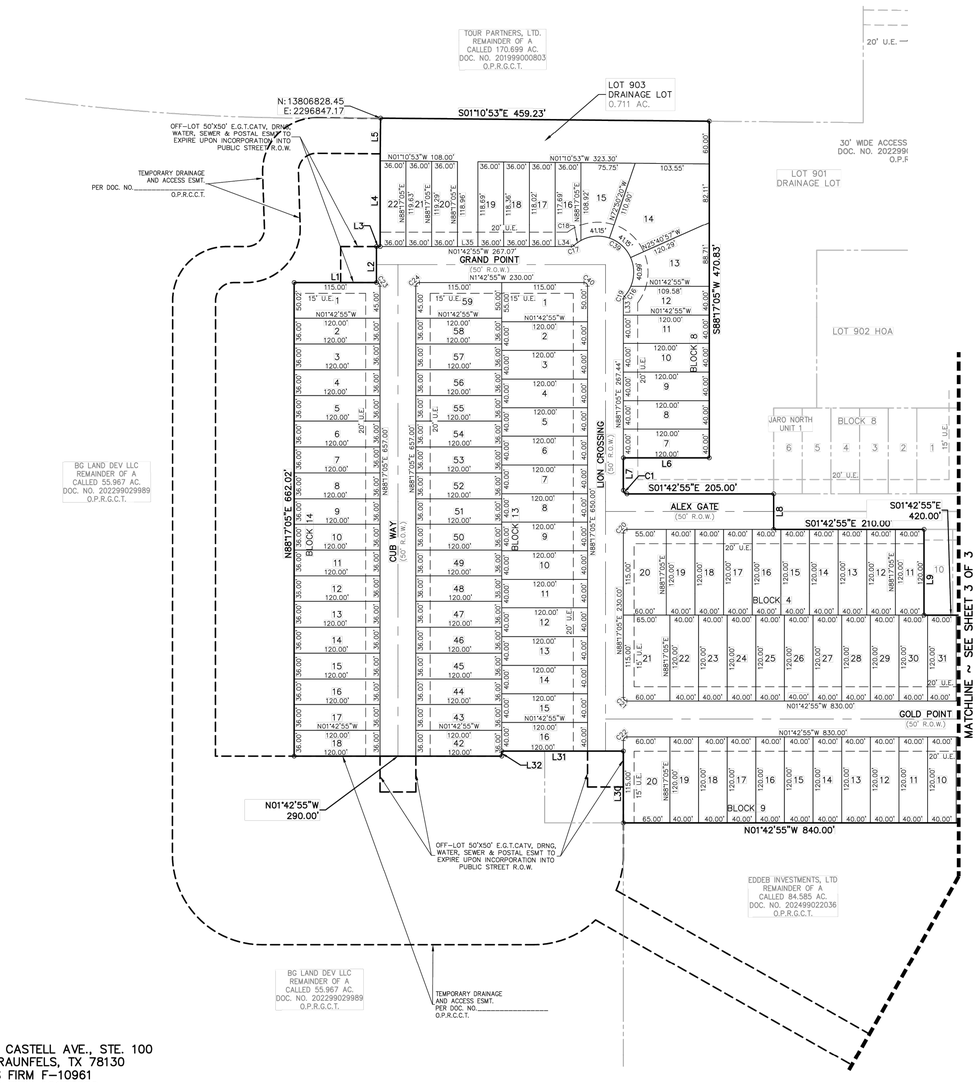
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FINAL PLAT ESTABLISHING

JARO NORTH, UNIT 2

40.912 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. 202299029889, AND A CALLED 84.585 ACRE TRACT RECORDED IN DOCUMENT NO. 202299019628, OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS



0 50 100 200

HORIZONTAL SCALE: 1:100

LEGEND:

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

PLAT PREPARED MAY 1, 2025

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

SHEET 2 OF 3

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
06/05/2025

PLAT (2 OF 3)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C0.4

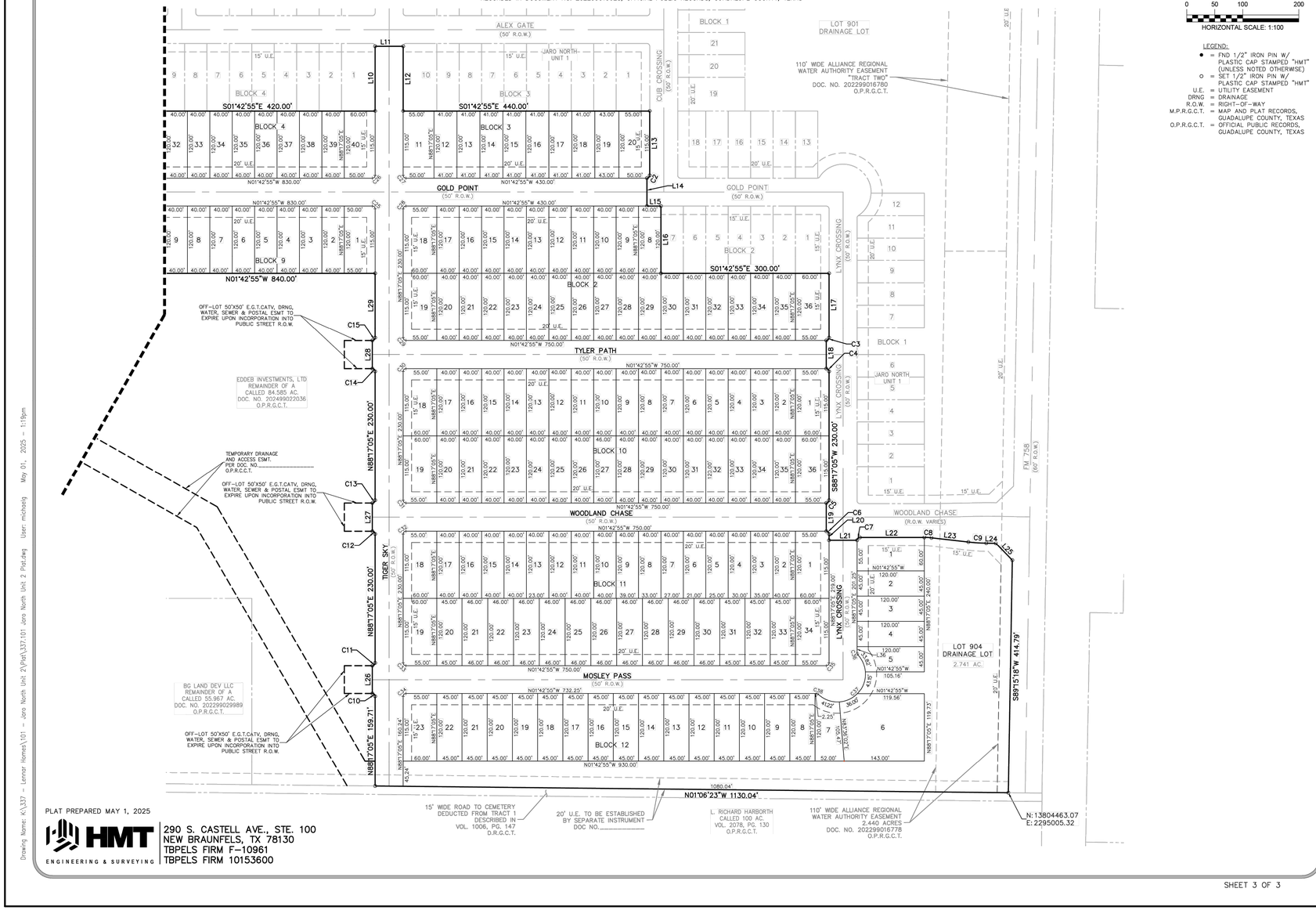
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FINAL PLAT ESTABLISHING

JARO NORTH, UNIT 2

40.912 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



0 50 100 200
HORIZONTAL SCALE: 1:100

LEGEND:
- ● = FND 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT" (UNLESS NOTED OTHERWISE)
- o = SET 1/2" IRON PIN W/ PLASTIC CAP STAMPED "HMT"
- U.E. = UTILITY EASEMENT
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- M.P.R.G.C.T. = MAP AND PLAT RECORDS, GUADALUPE COUNTY, TEXAS
- O.P.R.G.C.T. = OFFICIAL PUBLIC RECORDS, GUADALUPE COUNTY, TEXAS

PLAT PREPARED MAY 1, 2025

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

SHEET 3 OF 3

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
06/05/2025

PLAT (3 OF 3)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C0.5

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Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Dsk\337-101 Jaro North Unit 2 Plat.dwg May 01, 2025 - 1:19pm User: michaelg

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
2/13/22

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

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APPROVED JARO NORTH UNIT 1 EXISTING DRAINAGE MAP
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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
06/05/2025

OVERALL EXISTING DRAINAGE MAP - INK CIVIL

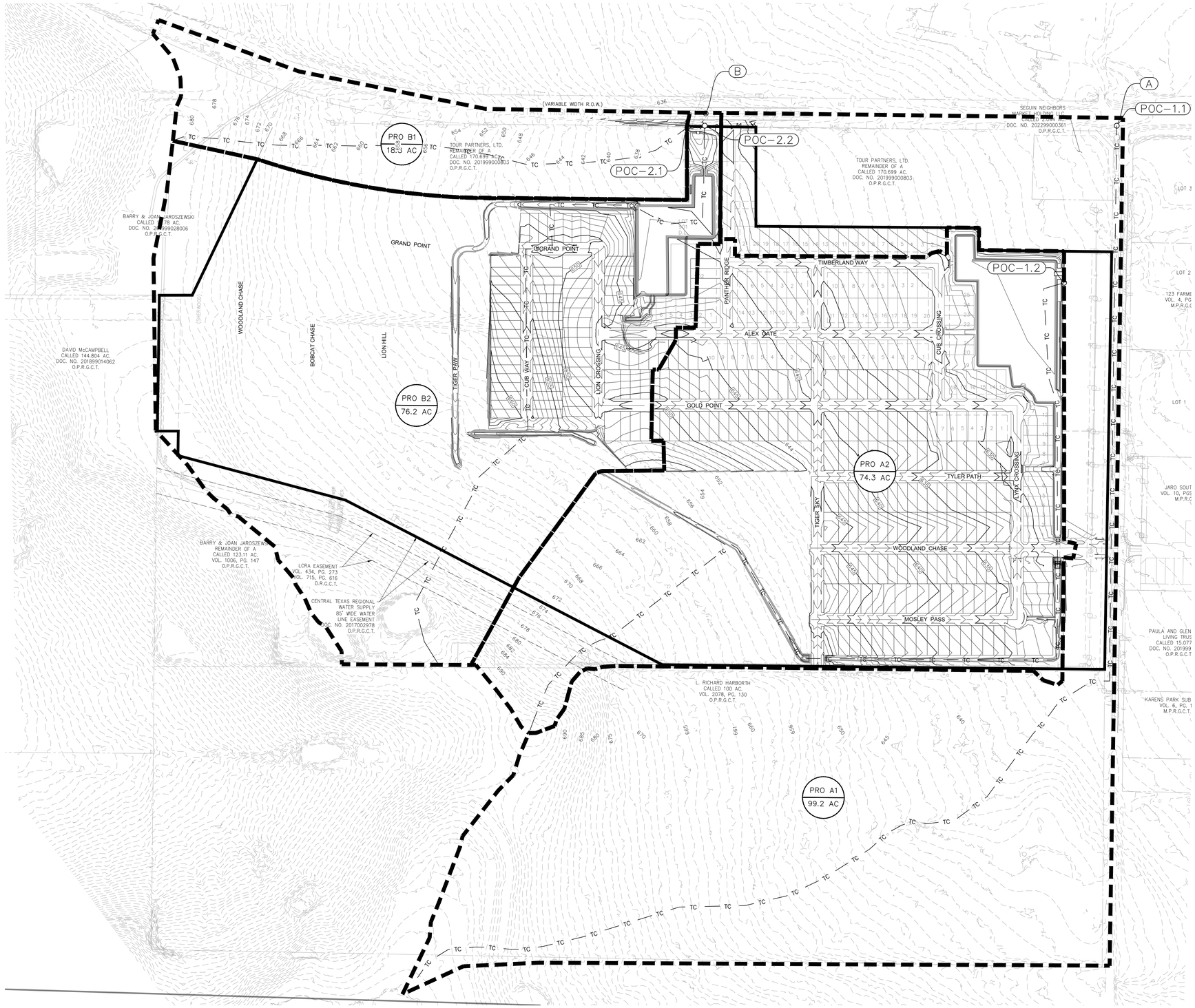
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET C1.0

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\Reports\Drainage\DA Maps\337.101 OVERALL DA MAPS.dwg User: joshuak Jun 04, 2025 - 10:14pm
Drawing Name: N:\Civil\Jobs\JOB #2023 Jaro North Subdivision\Construction Drawings\03 DRAINAGE EXHIBITS\EXISTING DRAINAGE AREA MAP - PROPOSED RDS.dwg User: wesmorris Feb 13, 2022 - 4:19pm



0 100 200 400
HORIZONTAL SCALE: 1:200

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- DRAINAGE AREA
- TIME OF CONCENTRATION
- POINT OF CONCENTRATION
- DRAINAGE FLOW DIRECTION
- DA / ACRES DRAINAGE AREA LABEL

Table 2 - Proposed 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)
PRO A1	POC-1.1	99.20	41.5	54	140.85	284.89	395.64	494.37	607.36
PRO A2	POC-1.2	74.30	24.0	86	140.63	274.5	376.94	468.08	572.34
PRO B1	POC-2.1	18.80	23.8	84	33.30	67.00	93.02	116.21	142.74
PRO B2	POC-2.2	76.20	27.1	84	129.30	260.55	361.30	451.07	554.10

Table 3 - Proposed 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)
PRO A1	POC-1.1	99.2	41.5	84	140.85	284.89	395.64	494.37	607.36
PRO A2 (Pond A)	POC-1.2				105.20	199.85	274.78	354.76	452.65
PRO B1	POC-2.1	18.8	23.8	84	33.30	67.00	93.02	116.21	142.74
PRO B2 (Pond B)	POC-2.2				113.99	230.40	323.00	407.69	505.75
PRO-A(POND A+PRO A1)	A				246.03	483.63	668.43	848.02	1060.02
PRO-B(POND B+PRO B1)	B				141.93	286.77	401.46	507.03	629.11

Table 4 - Proposed POC-A Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
A	Pre-Development Flowrates	250.17	506.03	702.74	878.11	1078.80
	Post-Development Flowrates	246.03	483.63	668.43	848.02	1060.02
Δ		(4.14)	(22.40)	(34.31)	(30.09)	(18.78)
Δ (%)		-1.65%	-4.43%	-4.88%	-3.43%	-1.74%

Table 5 - Proposed POC-B Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
B	Pre-Development Flowrates	175.90	353.96	491.44	613.94	754.08
	Post-Development Flowrates	141.93	286.77	401.46	507.03	629.11
Δ		(33.97)	(67.19)	(89.98)	(106.91)	(124.97)
Δ (%)		-19.31%	-18.98%	-18.31%	-17.41%	-16.57%

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OVERALL PROPOSED DRAINAGE MAP

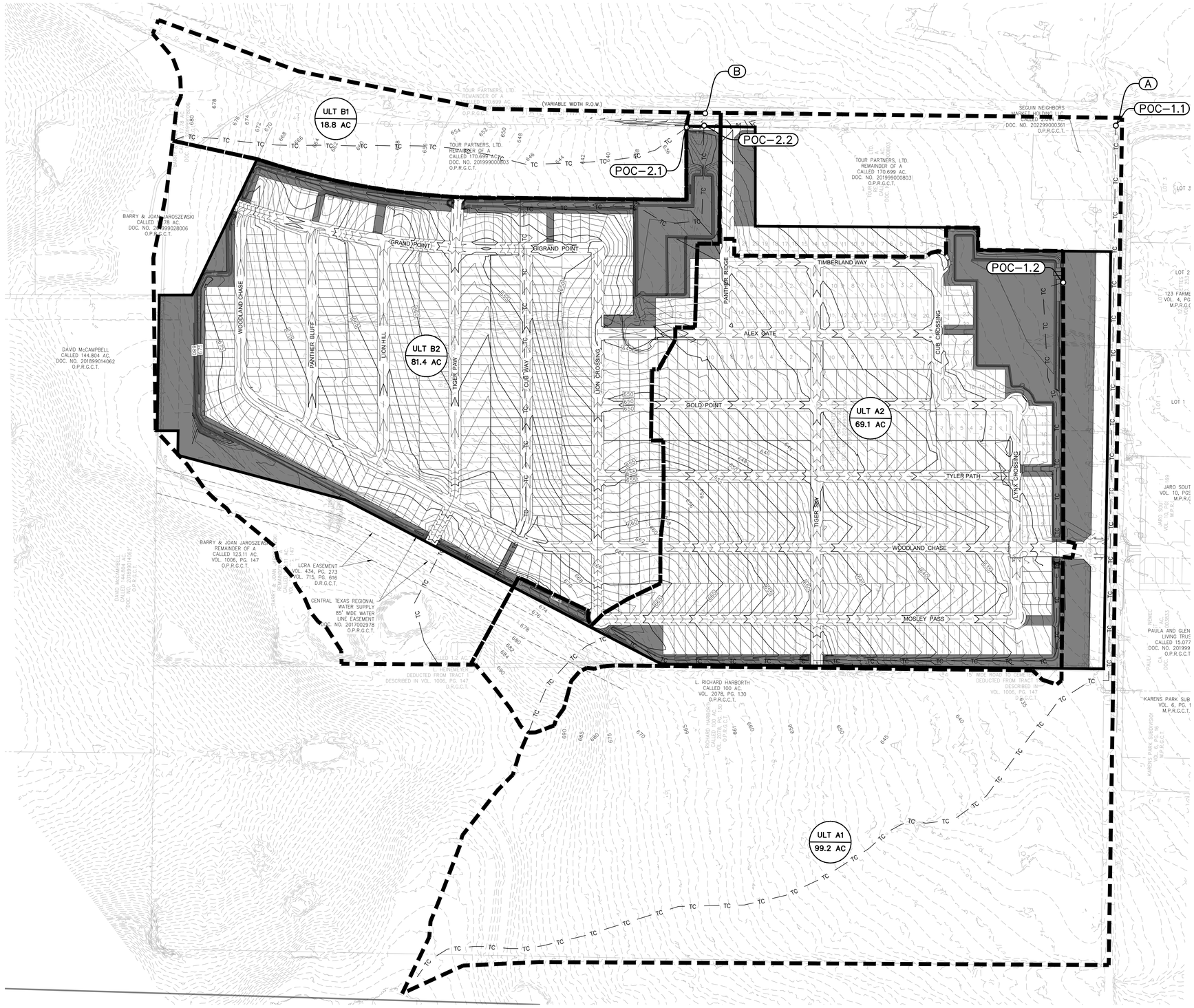
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C1.1

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\(02a)Reports\Drainage\DA Maps\337.101 OVERALL DA MAPS.dwg User: jcshook Jun 04, 2025 - 10:14pm



0 100 200 400

HORIZONTAL SCALE: 1:200

LEGEND

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

Table 6 - Ultimate 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)
ULT A1	POC-1.1	99.20	41.5	84	140.85	284.89	395.64	494.37	607.36
ULT A2	POC-1.2	69.10	18.6	87	152.93	294.37	401.85	497.43	606.76
ULT B1	POC-2.1	18.80	23.8	84	33.30	67.00	93.02	116.21	142.74
ULT B2	POC-2.2	81.40	26.5	86	154.07	300.73	412.96	512.81	627.03

Table 7 - Ultimate 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)
ULT A1	POC-1.1	99.2	41.5	84	140.85	284.89	395.64	494.37	607.36
ULT A2 (Pond A)	POC-1.2				107.88	201.33	275.06	355.23	453.14
ULT B1	POC-2.1	18.8	23.8	84	33.30	67.00	93.02	116.21	142.74
ULT B2 (Pond B)	POC-2.2				133.13	262.13	365.51	459.05	567.27
ULT-A(POND A+PRO A1)	A				247.65	484.35	668.46	844.73	1050.86
ULT-B(POND B+PRO B1)	B				162.75	322.22	449.71	564.52	698.60

Table 8 - Ultimate POC-A Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
A	Pre-Development Flowrates	250.17	506.03	702.74	878.11	1078.80
	Post-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 9 - Ultimate POC-B Comparison Table

Point of Concentration	Description	Q_2 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)
B	Pre-Development Flowrates	175.90	353.96	491.44	613.94	754.08
	Post-Development Flowrates	162.75	322.22	449.71	564.52	698.60
Δ		(13.15)	(31.74)	(41.73)	(49.42)	(55.48)
Δ (%)		-7.48%	-8.97%	-8.49%	-8.05%	-7.36%

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PROFESSIONAL ENGINEER
06/05/2025

OVERALL ULTIMATE DRAINAGE MAP

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C1.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\Reports\Drainage\DA Maps\337.101 OVERALL DA MAPS.dwg User: joshuak Jun 04, 2025 - 10:14pm

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.

0 50 100 200
SCALE: 1" = 100'

LEGEND

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

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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06/05/2025

EROSION CONTROL PLAN

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C2.0

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03s\337101_EROSION.dwg User: joshuark Jun 04, 2025 - 10:14am

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:

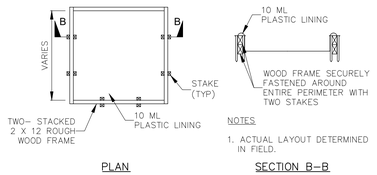
- INCORPORATE REQUIREMENTS FOR CONCRETE WASTE MANAGEMENT INTO MATERIAL SUPPLIER AND SUBCONTRACTOR AGREEMENTS.
- AVOID MIXING EXCESS AMOUNTS OF FRESH CONCRETE.
- PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
- DO NOT WASH OUT CONCRETE TRUCKS INTO STORM DRAINS, OPEN DITCHES, STREETS, OR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

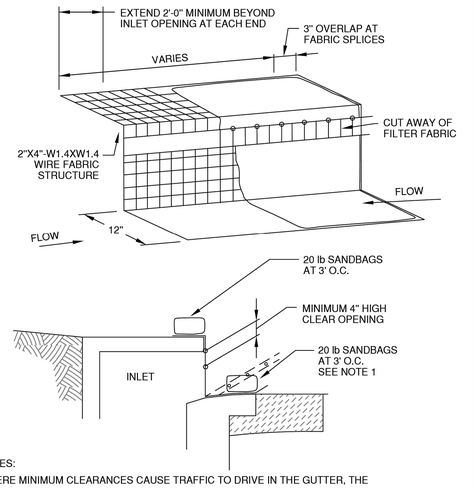
NOTES

1. ACTUAL LAYOUT DETERMINED IN FIELD.

CONCRETE WASHOUT PIT DETAIL

TYPE "ABOVE GRADE"

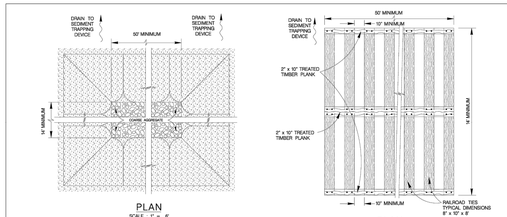
NOT TO SCALE



NOTES:

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

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



GENERAL NOTES

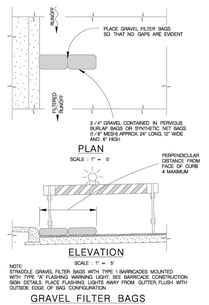
1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION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

CONSTRUCTION EXIT – TYPE 1

GENERAL NOTES

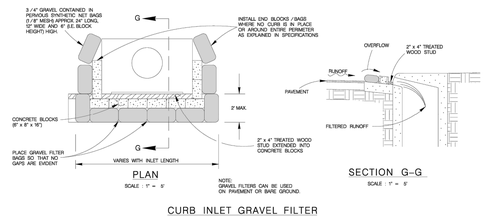
1. THE LENGTH OF THE TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE TREATED TIMBER PLANKS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2" x 8" MIN. LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN. AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
6. THE CONSTRUCTION EXIT SHOULD BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 2

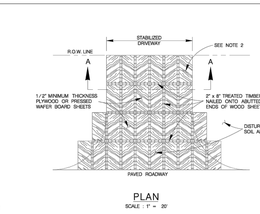


NOTE:
STAGGLE GRAVEL FILTER BAGS WITH TYPE I BARRICADES MOUNTED WITH TYPE "A" FLASHING WARNING LIGHT. SEE BARRICADE CONSTRUCTION SIGN DETAILS. PLACE FLASHING LIGHT FROM GUTTER FLUSH WITH OUTSIDE EDGE OF SAG CONFIGURATION.

GRAVEL FILTER BAGS



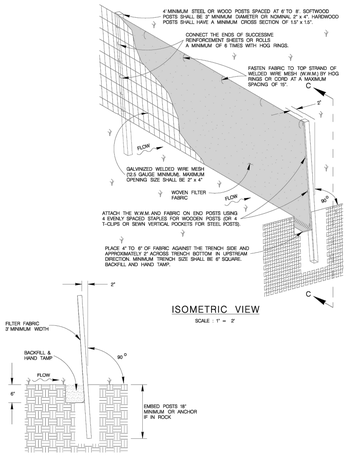
CURB INLET GRAVEL FILTER



GENERAL NOTES

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

CONSTRUCTION EXIT – TYPE 3



SEDIMENT CONTROL FENCE USAGE GUIDELINES

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

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

GENERAL NOTES

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

TEMPORARY SEDIMENT CONTROL FENCE

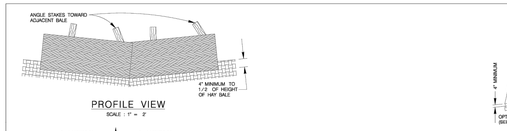
JANUARY 2005

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

TEMPORARY EROSION, SEDIMENT & WATER POLLUTION CONTROL MEASURES STANDARDS 1

% SUBMITTAL	PROJECT NO.:	DATE:	
DRAWN BY: V. VASQUEZ	DSGN. BY:	CHKD. BY:	SHEET NO.: OF



BALED HAY USAGE GUIDELINES

A BALED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE AREA TRIBUTARY SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 0.3 GPM / FT SQUARED. FOR CROSS SECTIONAL AREA, BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

1. WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR A MAXIMUM OF 100 FEET AND WHERE THE AVERAGE SLOPE OF THE AREA TO THE LENGTH OF SLOPE UPSTREAM OF THE BALED HAY SHOULD BE LESS THAN 20 %.
2. WHERE THE INSTALLATION WILL BE REQUIRED FOR LESS THAN 3 MONTHS.
3. WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1 / 2 ACRE.

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

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

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

GENERAL NOTES

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

BALED HAY FOR EROSION CONTROL

ROCK FILTER DAMS

ROCK FILTER DAM USAGE GUIDELINES

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

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

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

TYPE 2 (18" HIGH, WITH WIRE MESH):

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

TYPE 3 (36" HIGH WITH WIRE MESH):

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

TYPE 4 (SACK GABIONS):

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

GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
4. SIDE SLOPES SHOULD BE 3 : 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 A MAXIMUM OPENING SIZE OF 1". THE WIRE MESH SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 /4" DIA. REBAR STAKES.
10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

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

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.

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TBPELS FIRM F-10961
TBPELS FIRM 1053600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

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.

EROSION DETAILS

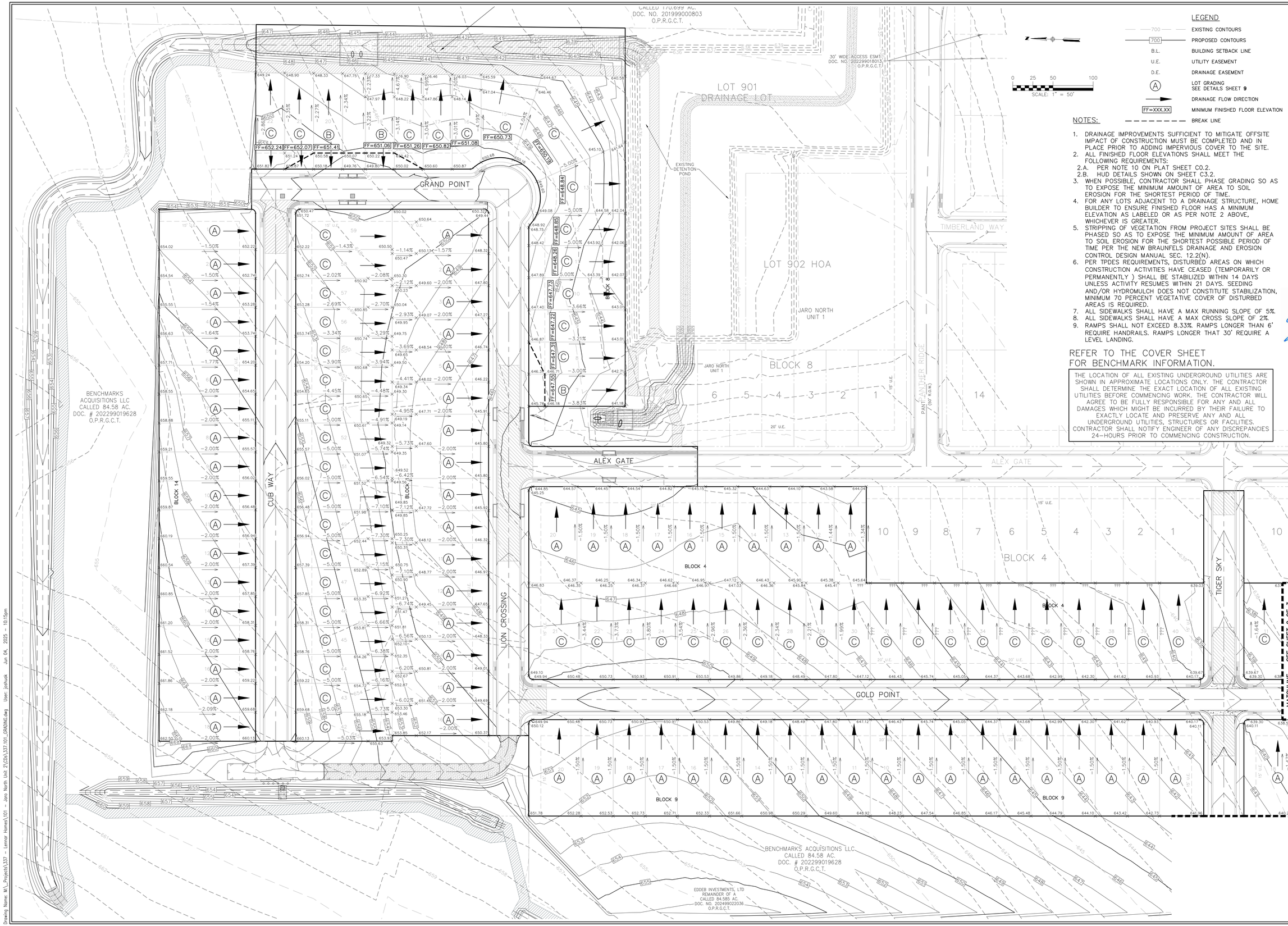
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C2.1

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\Civil\337-101_EROSION.dwg User: jpshuck Jun 04, 2025 – 10:14pm



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

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).
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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.

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131964
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06/05/2025

GRADING PLAN (1 OF 3)

JARO NORTH UNIT 2

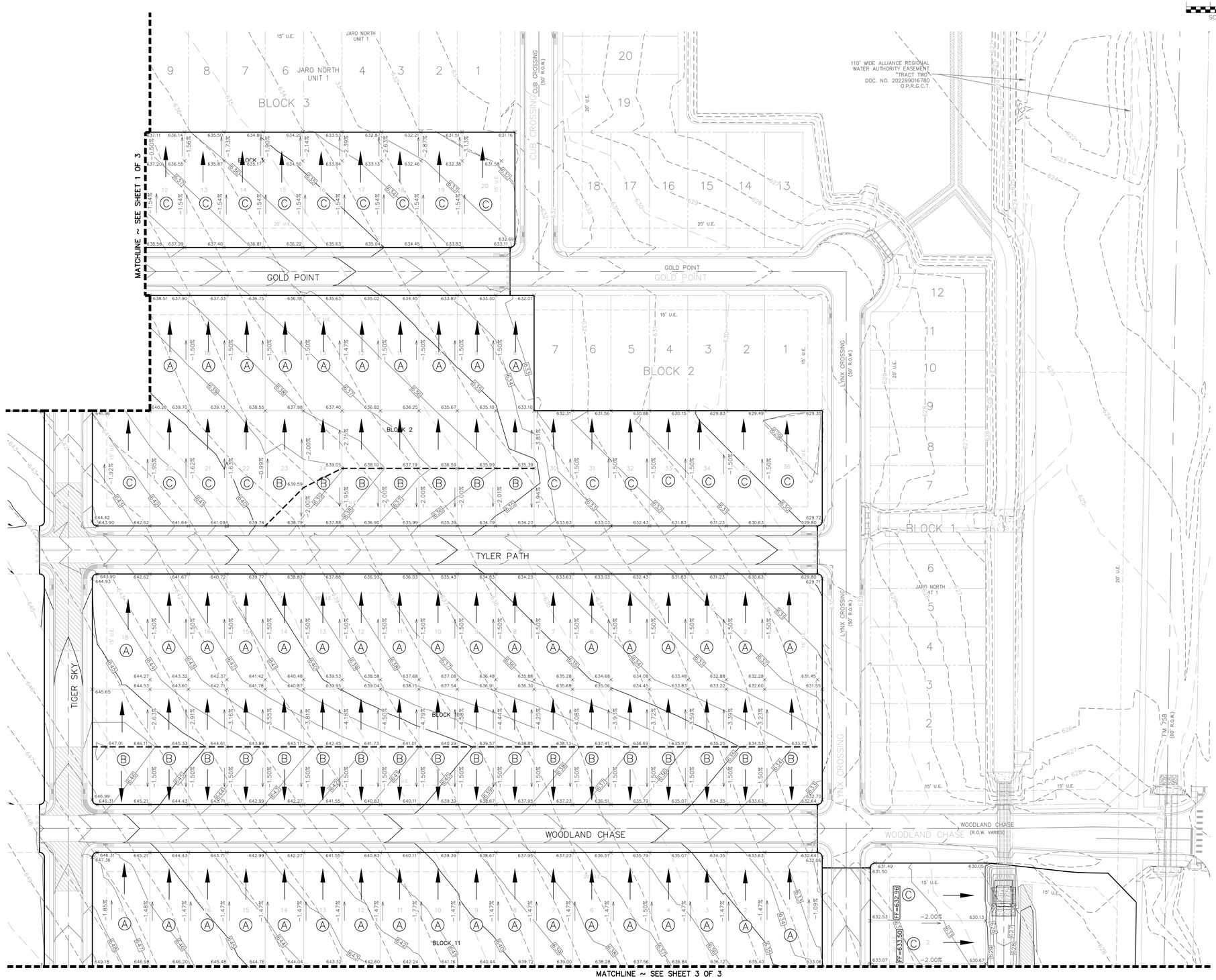
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C3.0

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(2da)\337.101_GRADING.dwg User: jsthook Jun 04, 2025 - 10:15pm



NOTES:

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GRADING PLAN (2 OF 3)

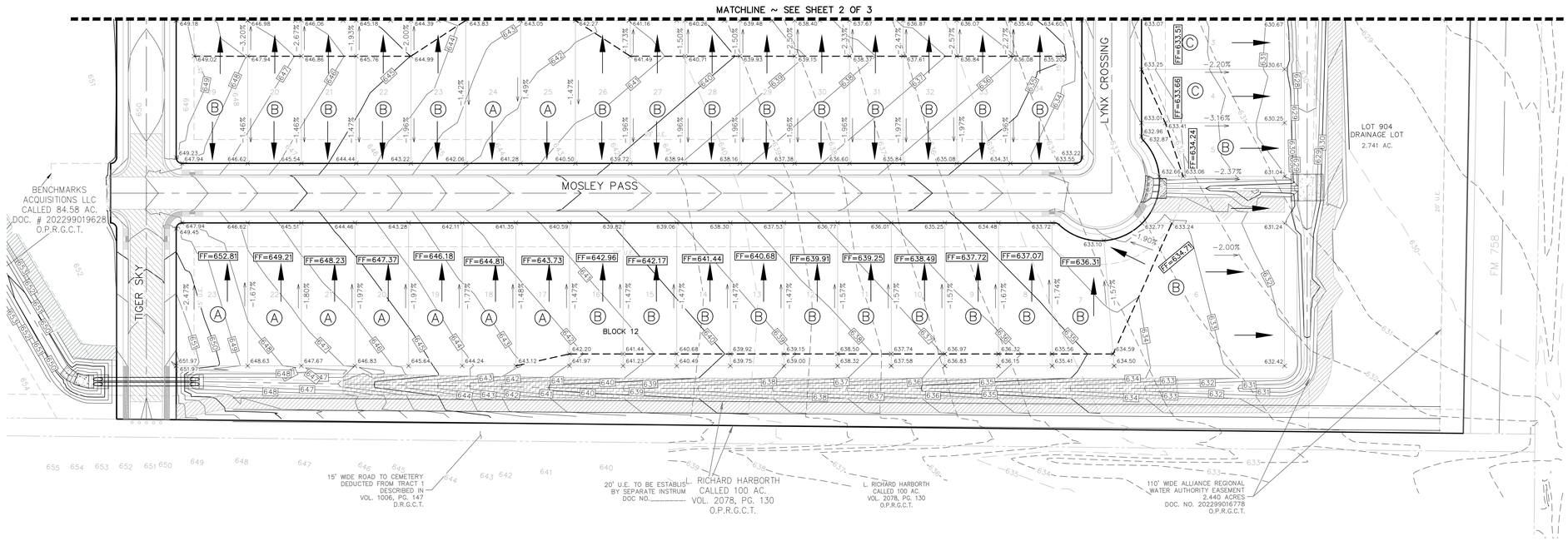
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C3.1

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_GRADING.dwg User: joshuck Jun 04, 2025 - 10:30pm



0 25 50 100
SCALE: 1" = 50'

LEGEND

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

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GRADING PLAN (3 OF 3)

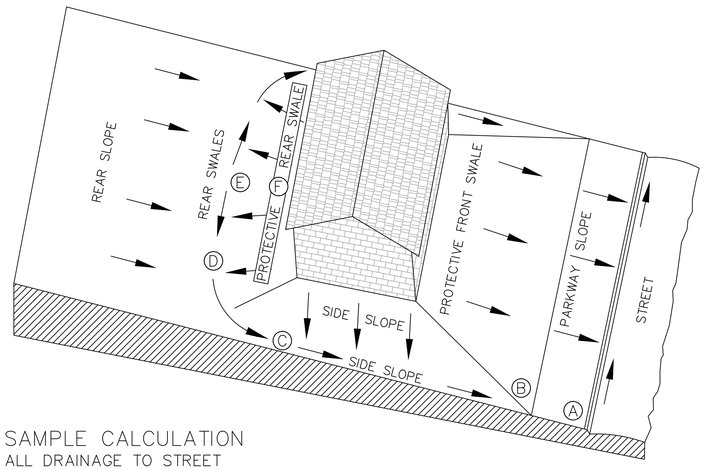
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: **JUNE 2025**
DRAWN BY: **RR**
DESIGNED BY: **JK**
REVIEWED BY: **ZJ**
HMT PROJECT NO.: **337.101**

SHEET
C3.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_GRADING.dwg User: joshuck Jun 04, 2025 - 10:15pm



SAMPLE CALCULATION
ALL DRAINAGE TO STREET

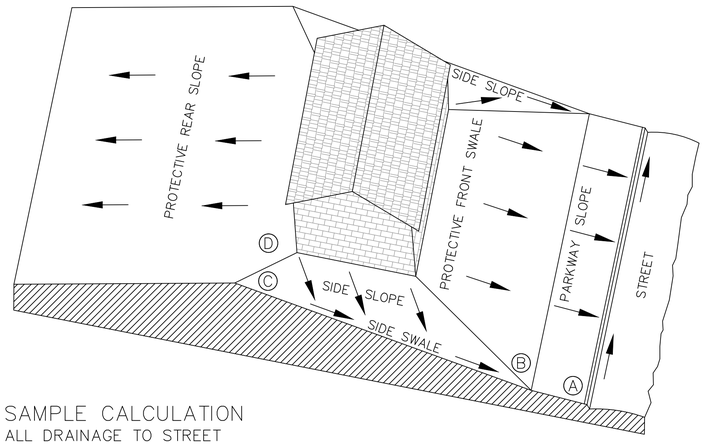
SAMPLE COMPUTATION OF GRADING CONTROL LINE AF FOR A 60' WIDE LOT WITH A 25' BUILDING LINE, 0.5% STREET, WITH 60' BUILDING DEPTH AND 2% SWALES.				RESULTS OF 1% SWALES	
A	CURB–TOP ON LOT LINE EXTENSION AT HIGH LOT CORNER				
$\overline{AB}$	PARKWAY SLOPE: 15' GRASS AND WALK AT 1/4"/FT. (2%)	4"	(0.3')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



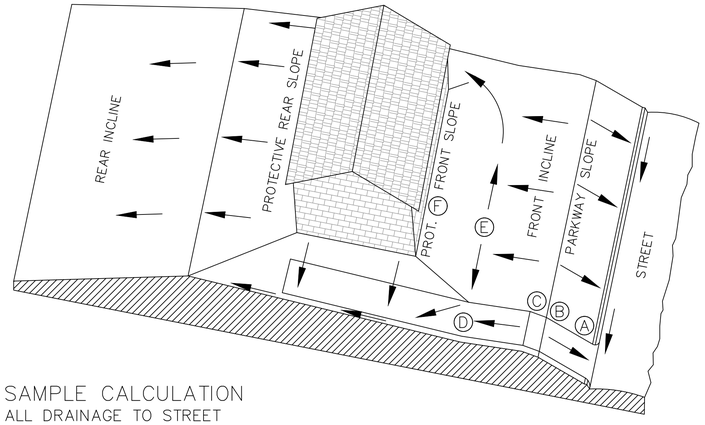
SAMPLE CALCULATION
ALL DRAINAGE TO STREET

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 1⅝"/FT (13.5%)	–18"	(–1.5')	–18"	(–1.5')
$\overline{DE}$	FRONT SWALE: 16' GRASS AT 1/4"/FT. (2%)	4"	(0.3')	2"	(0.2')
$\overline{EF}$*	PROT. FRONT SLOPE UP FROM HIGH POINT OF SWALES	3"	(0.3')	3"	(0.3')
SUB–TOTAL $\overline{AF}$ FROM CURB TOP TO GROUND AT FRONT BLDG WALL		–7"	(–1.0')	–11"	(1.3')
MINIMUM RISE FROM CURB TOP TO SLAB FLOOR: –7" + 8"		1"	(–0.3')	–3"	(0.7')
MINIMUM RISE FOR WOOD FLOOR USING 8" JOISTS: –7" + 19"		12"	(–0.6')	8"	(0.3')

CALCULATIONS FOR SWALES
15 x 0.25' = 3¾"
0 x 0.25' = 0"
–11 x 1.625' = –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.

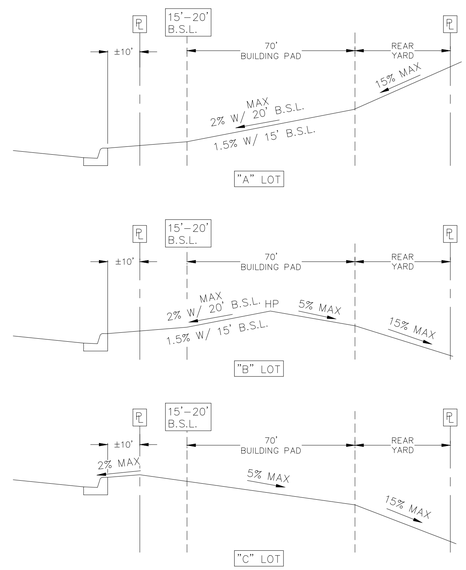
DENSITY TEST
FIELD DENSITY TESTS SHALL BE PERFORMED ON ALL LAYERS OF FILL WHEN THE FILL IS BEING PLACED AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE MAXIMUM FILL HEIGHT BETWEEN DENSITY TESTING SHALL BE TWELVE INCHES (12"). ALL TESTING SHALL BE REQUESTED BY THE CONTRACTOR TO MEET THE CONTRACTOR'S CONSTRUCTION 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

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ZOE F. JASSO
131964
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06/05/2025

GRADING DETAILS

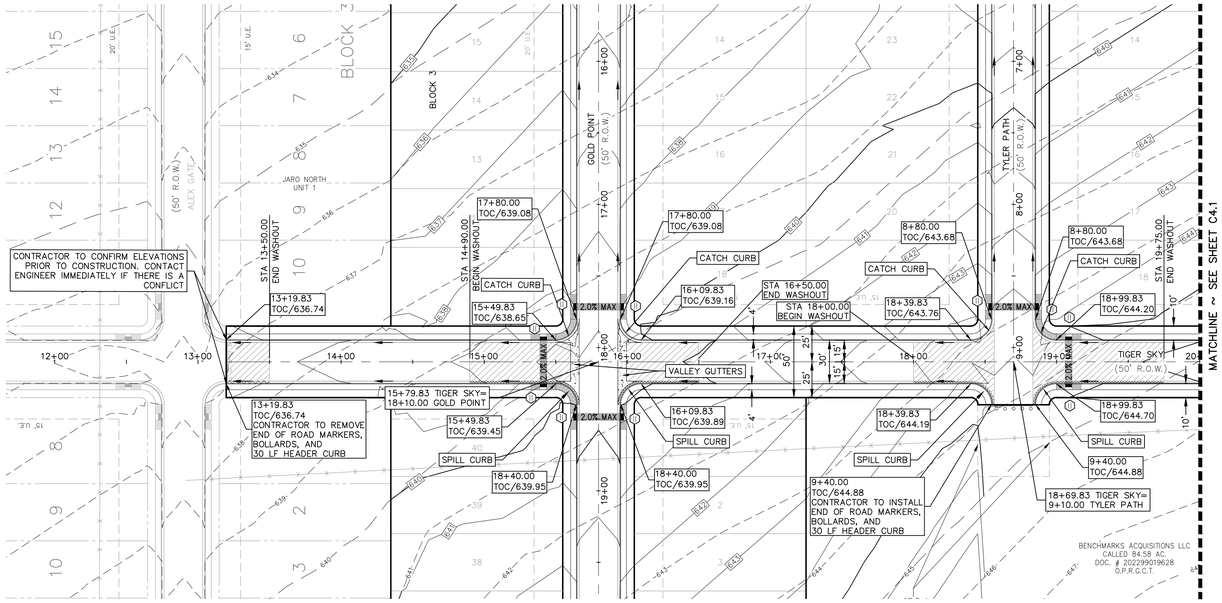
JARO NORTH UNIT 2

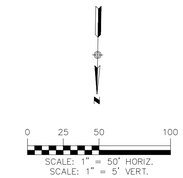
REVISION DATE	REVISION DESCRIPTION	NO.

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C3.3

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(26x36)\337.101_GRAD_DETAILS.dwg User: joshuck Jun 04, 2025 - 10:15pm





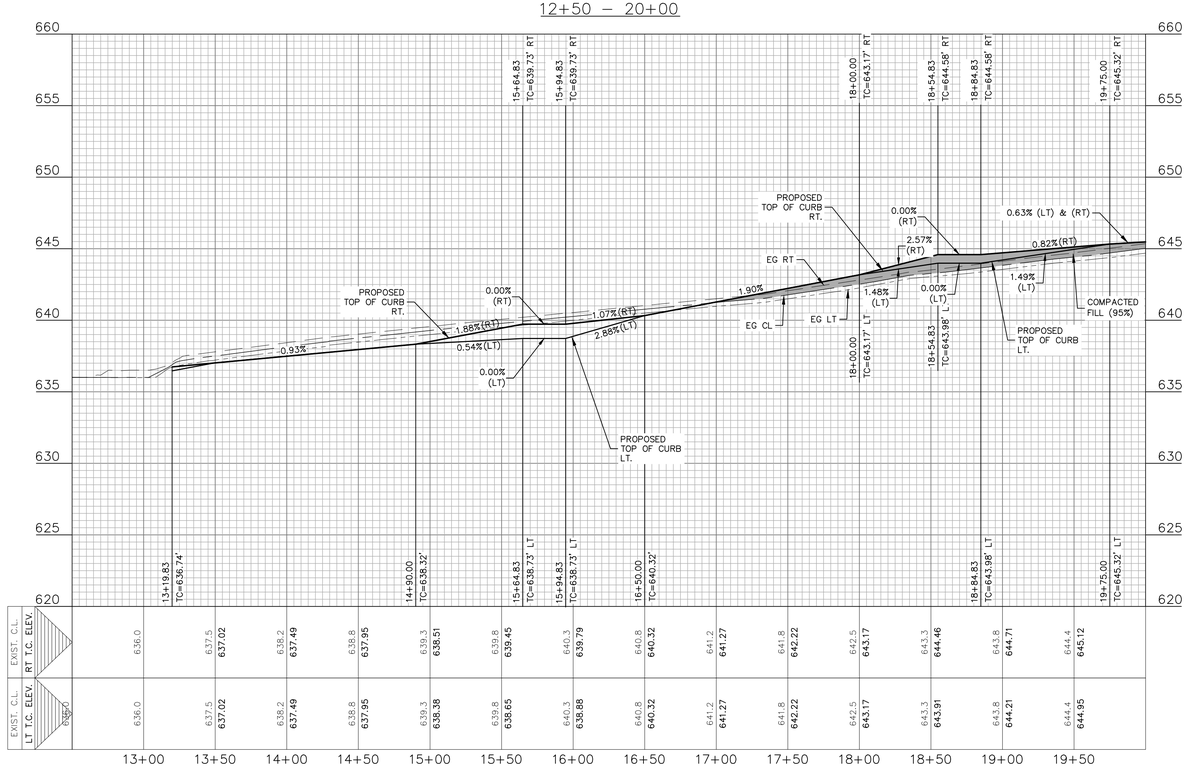
LEGEND

- 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

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TIGER SKY
12+50 – 20+00



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NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

TIGER SKY PLAN & PROFILE (1 OF 2)

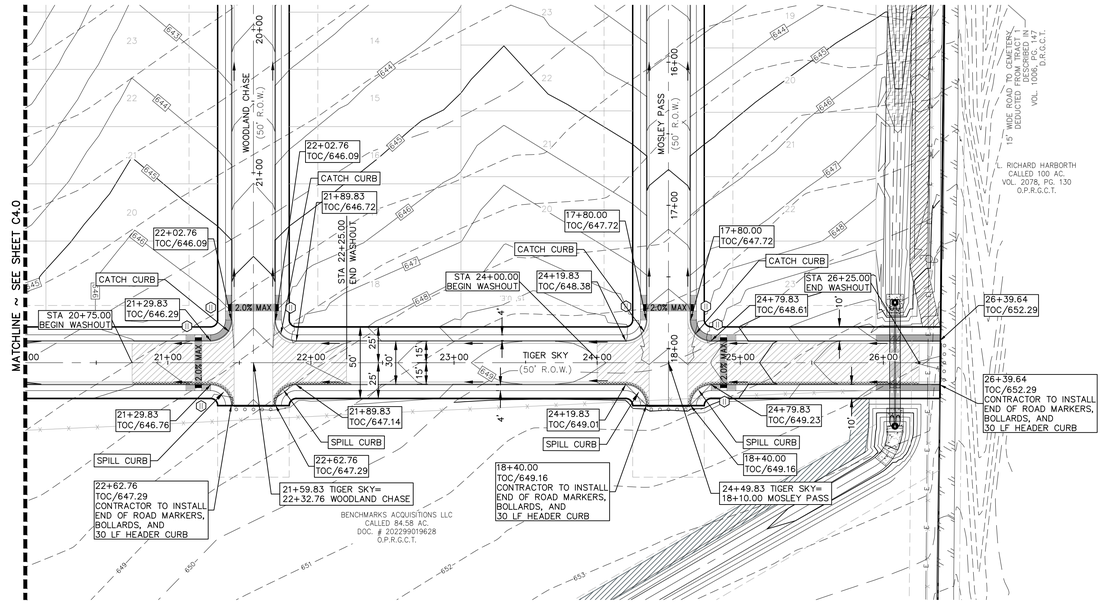
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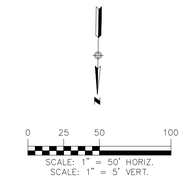
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.0

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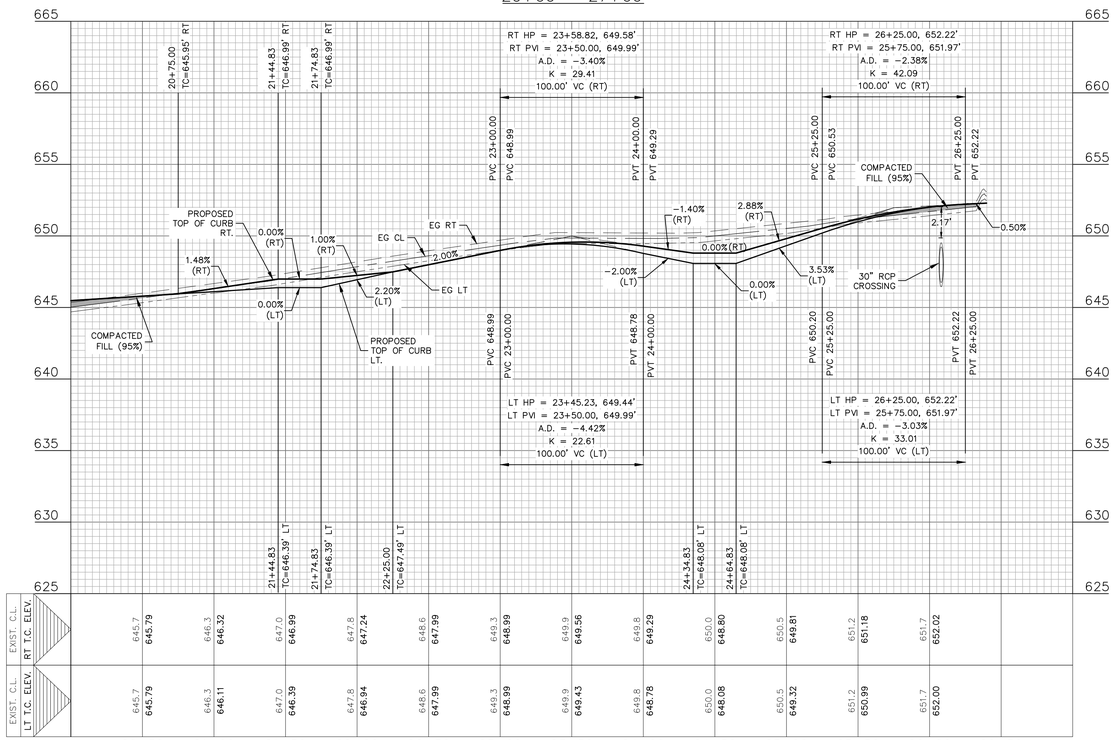
LEGEND

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TIGER SKY
20+00 – 27+00



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TBPELS FIRM F-10961
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TIGER SKY PLAN & PROFILE
(2 OF 2)

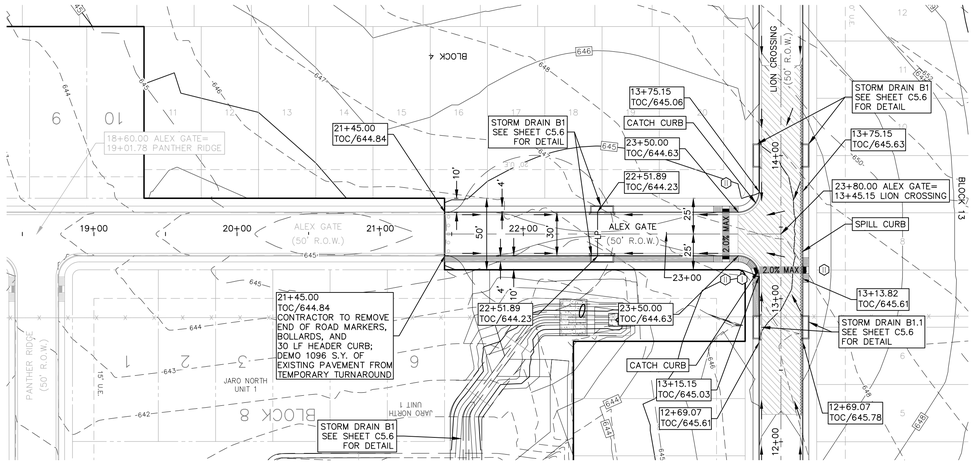
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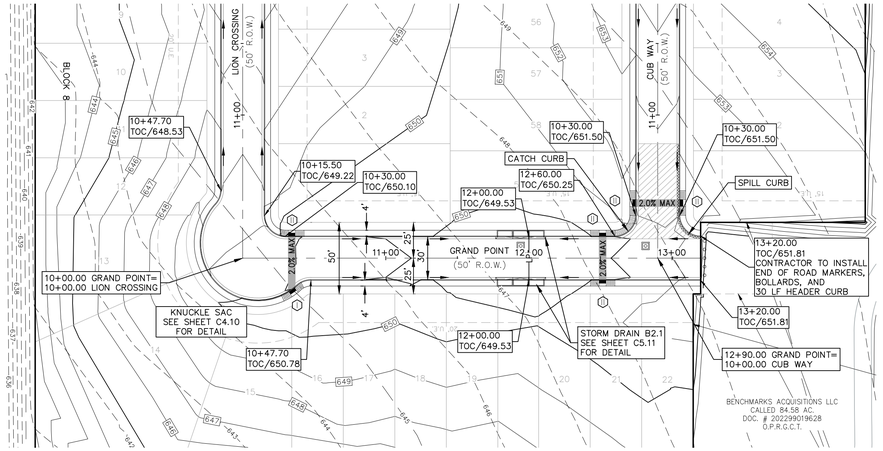
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: **JUNE 2025**
DRAWN BY: **RR**
DESIGNED BY: **JK**
REVIEWED BY: **ZJ**
HMT PROJECT NO.: **337.101**

SHEET
C4.1

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_TIGER SKY.dwg User: joshuck Jun 04, 2025 - 10:15pm





LEGEND

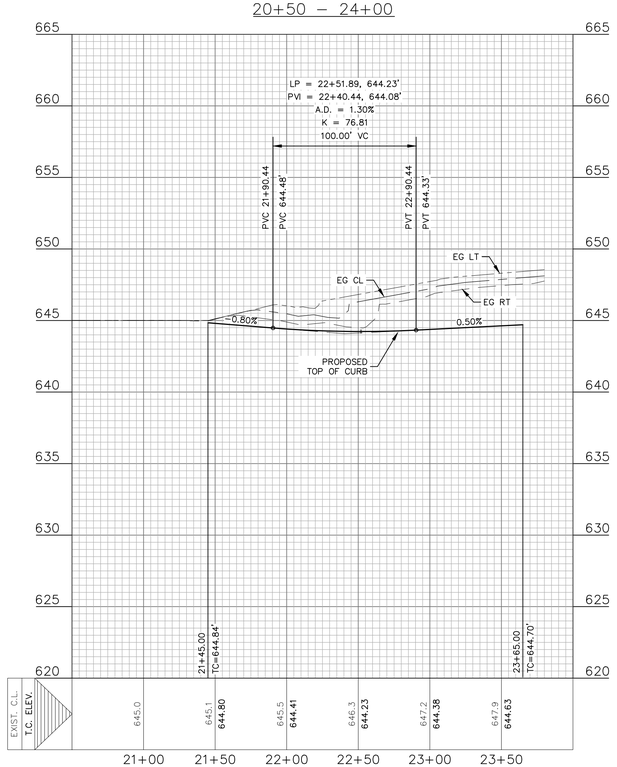
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SCALE: 1" = 50' HORIZ.
SCALE: 1" = 5' VERT.

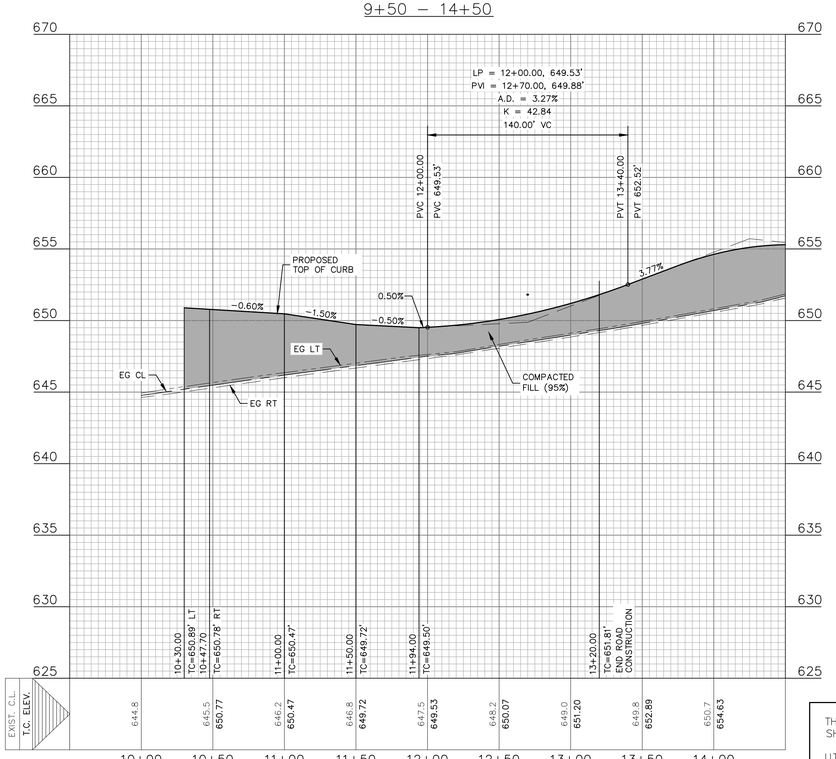
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ALEX GATE
20+50 – 24+00



GRAND POINT
9+50 – 14+50



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TBPELS FIRM F-10961
TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
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06/05/2025

ALEX GATE & GRAND POINT PLAN & PROFILE

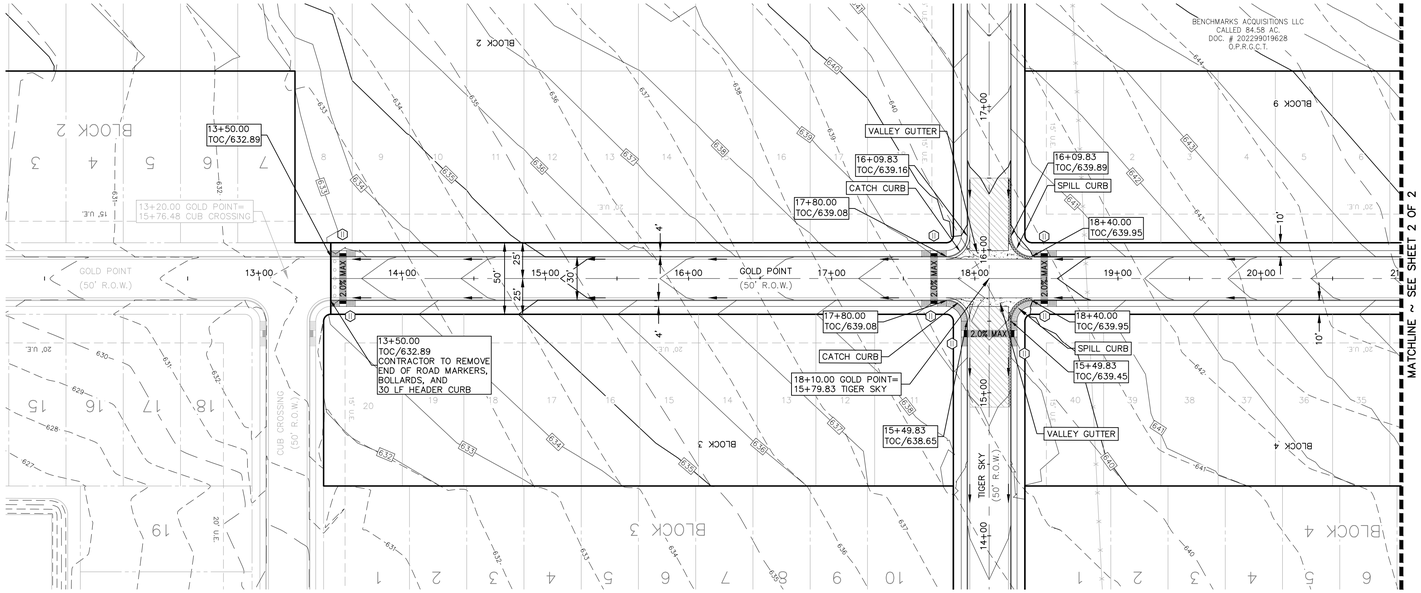
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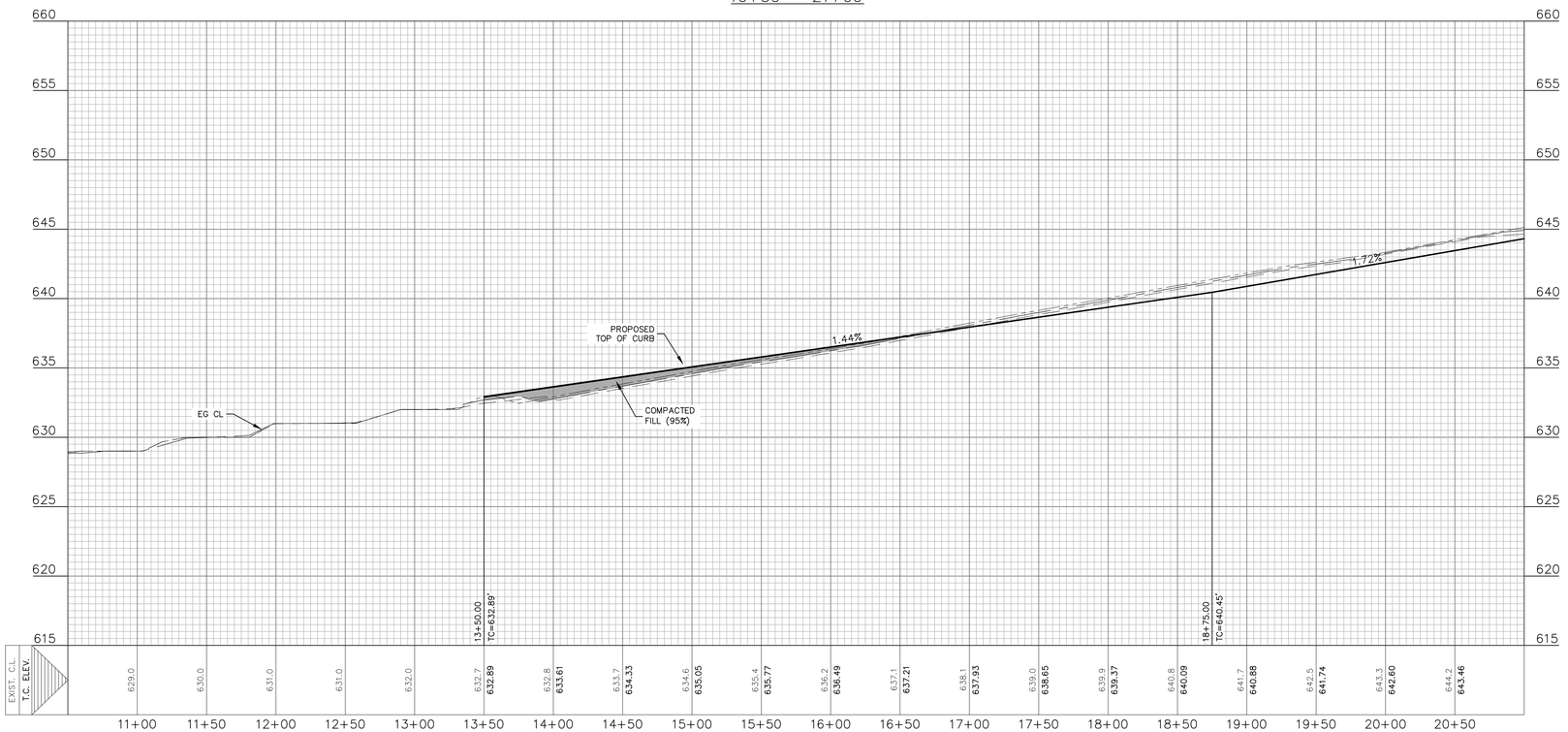
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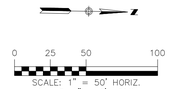
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C4.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_ALEX GATE-GRAND POINT.dwg User: joshuak Jun 04, 2025 - 10:16pm







LEGEND

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GOLD POINT PLAN & PROFILE (1 OF 2)

JARO NORTH UNIT 2

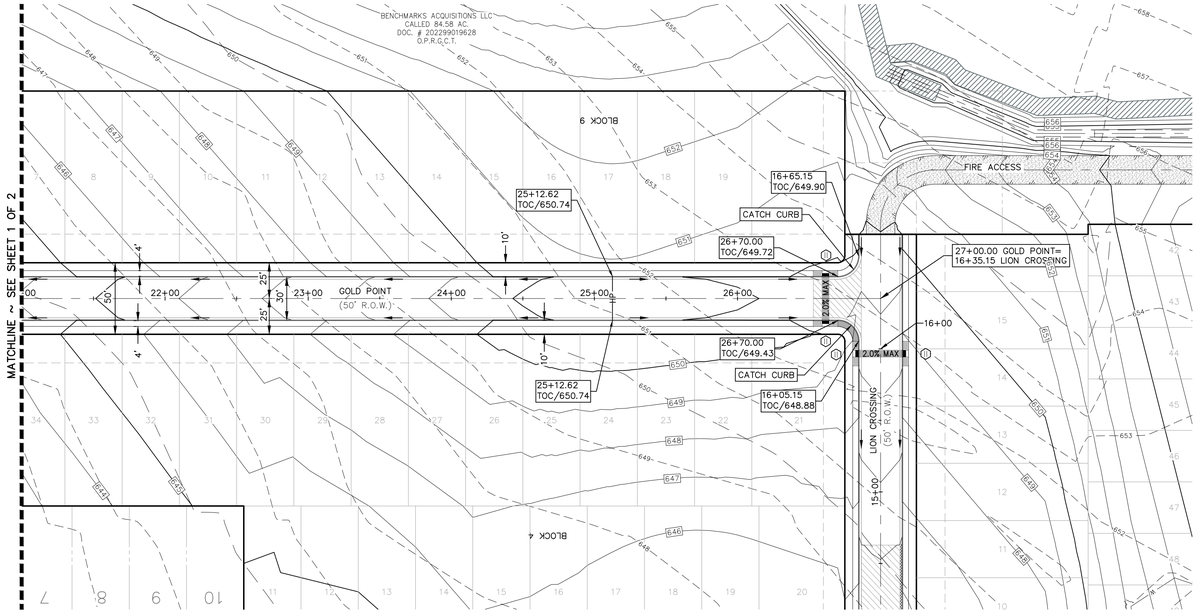
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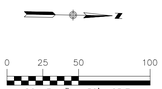
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C4.3

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_GOLD POINT.dwg User: joshuck Jun 04, 2025 - 10:16pm





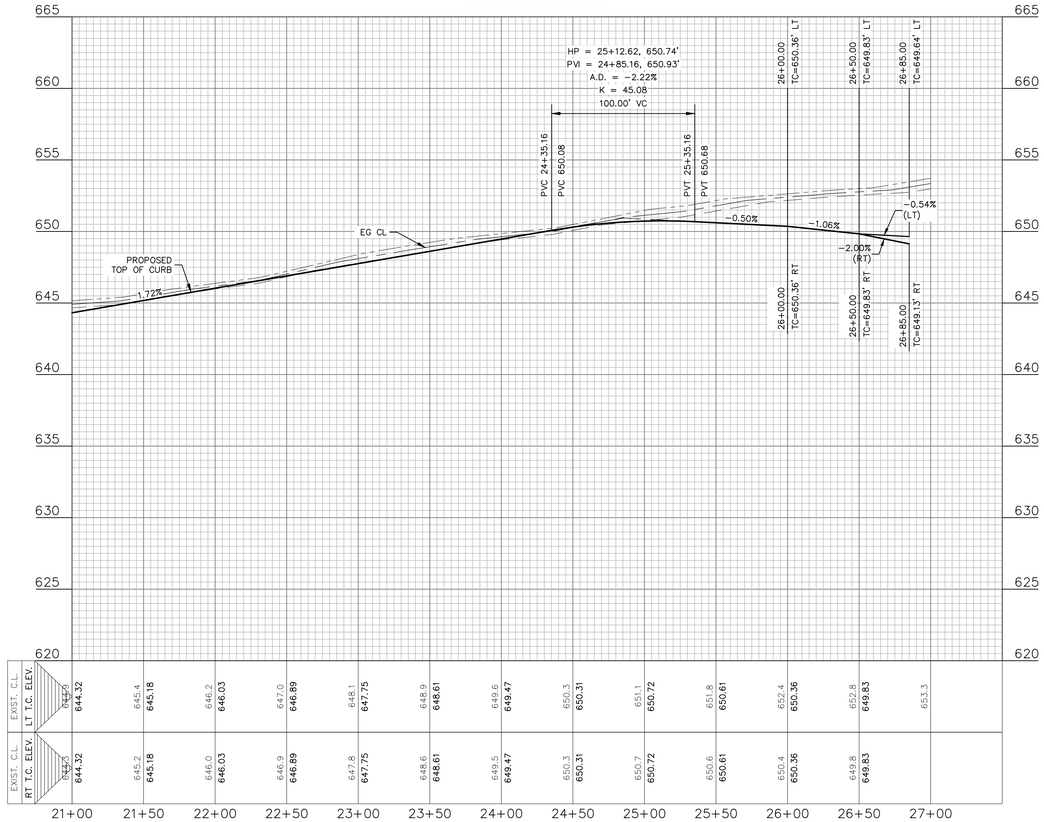
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- SPILL CURB
- EXISTING GROUND LEFT (EG LT)
- EXISTING GROUND RIGHT (EG RT)
- EXISTING GROUND CENTER (EG CTR)
- PROPOSED TOP OF CURB (PR TC)
- 2.0% MAX — ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
- (1) — SIDEWALK RAMP TYPE (1) 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.
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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'

GOLD POINT
21+00 – 27+50



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290 S. CASTELL AVE., STE. 100
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TBPELS FIRM F-10961
TBPELS FIRM 1053600
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ZOE F. JASSO
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06/05/2025

GOLD POINT PLAN & PROFILE (2 OF 2)

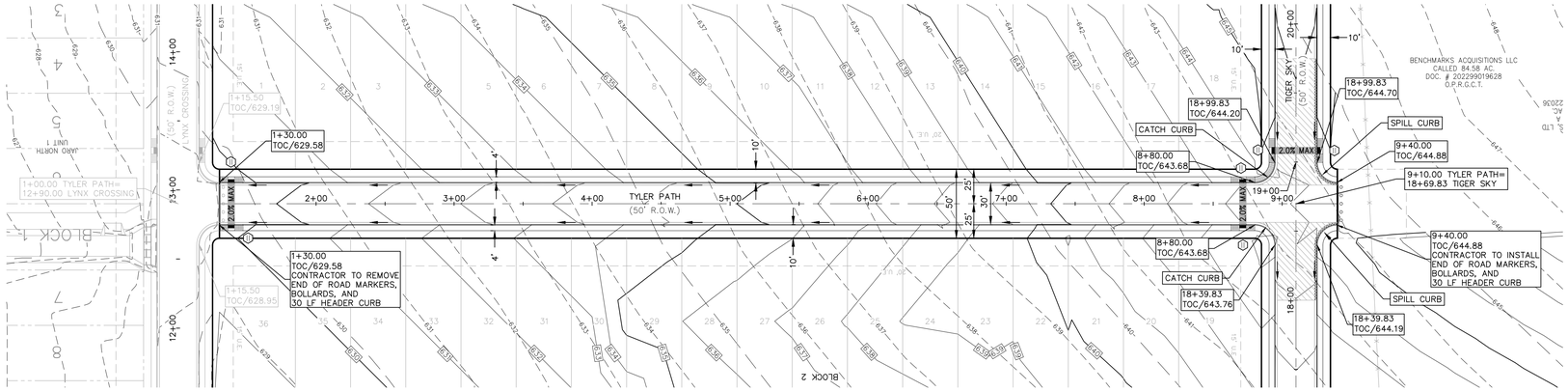
JARO NORTH UNIT 2

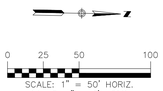
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.4

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_GOLD POINT.dwg User: joshuck Jun 04, 2025 - 10:16pm



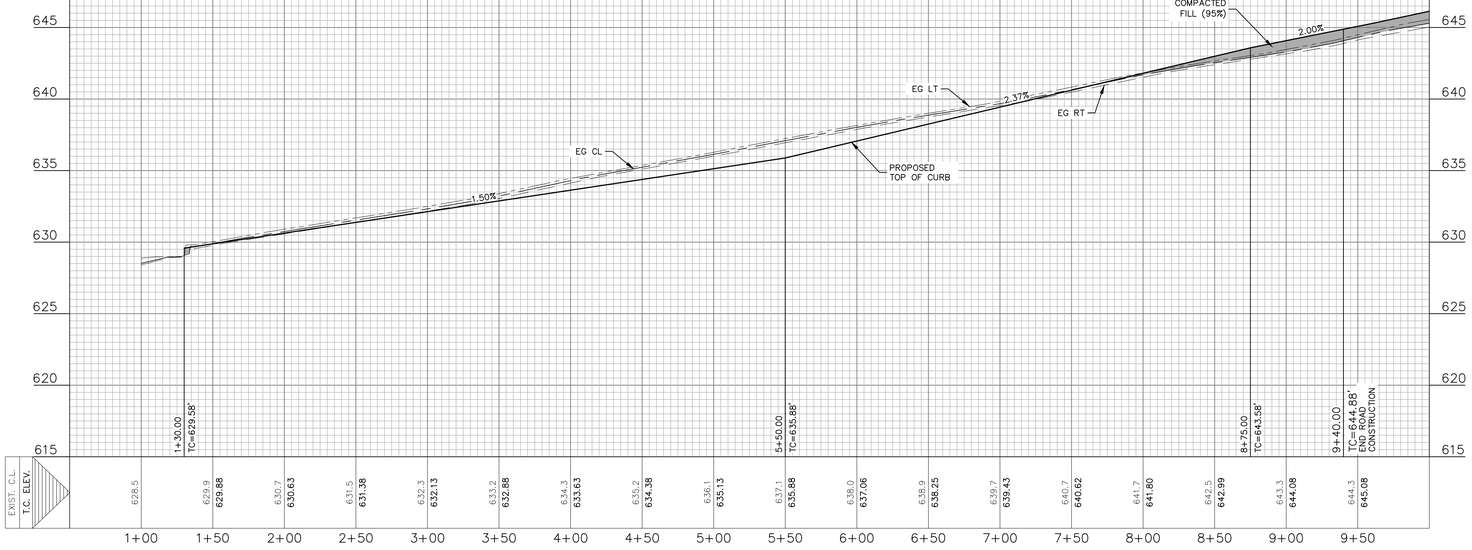


LEGEND

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- 700 — PROPOSED CONTOURS
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- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
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06/05/2025

TYLER PATH
PLAN & PROFILE

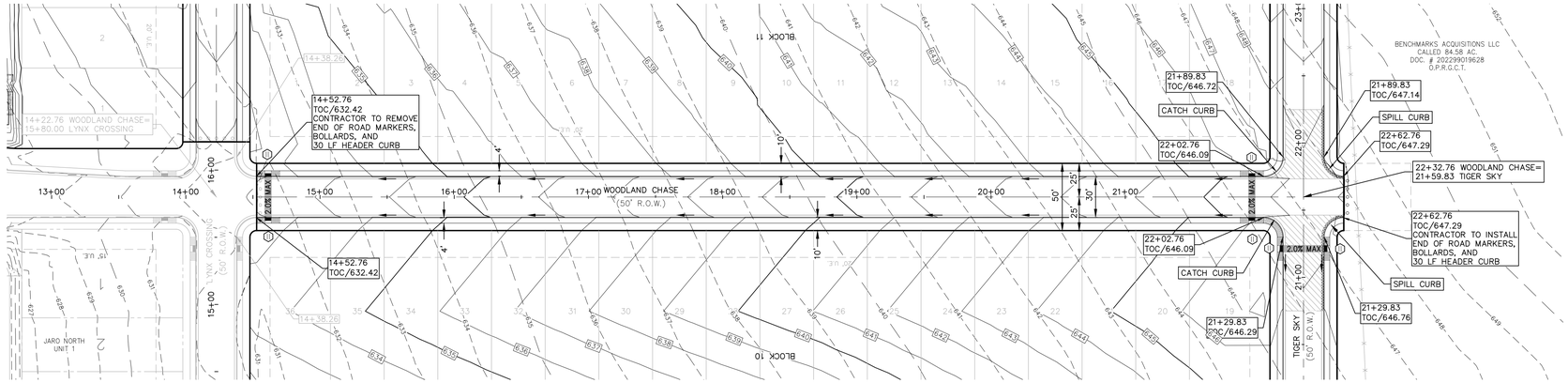
JARO NORTH UNIT 2

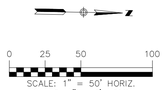
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: **JUNE 2025**
DRAWN BY: **RR**
DESIGNED BY: **JK**
REVIEWED BY: **ZJ**
HMT PROJECT NO.: **337.101**

SHEET
C4.5

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03s\337.101_TYLER PATH.dwg User: joshsuk Jun 04, 2025 - 10:16pm



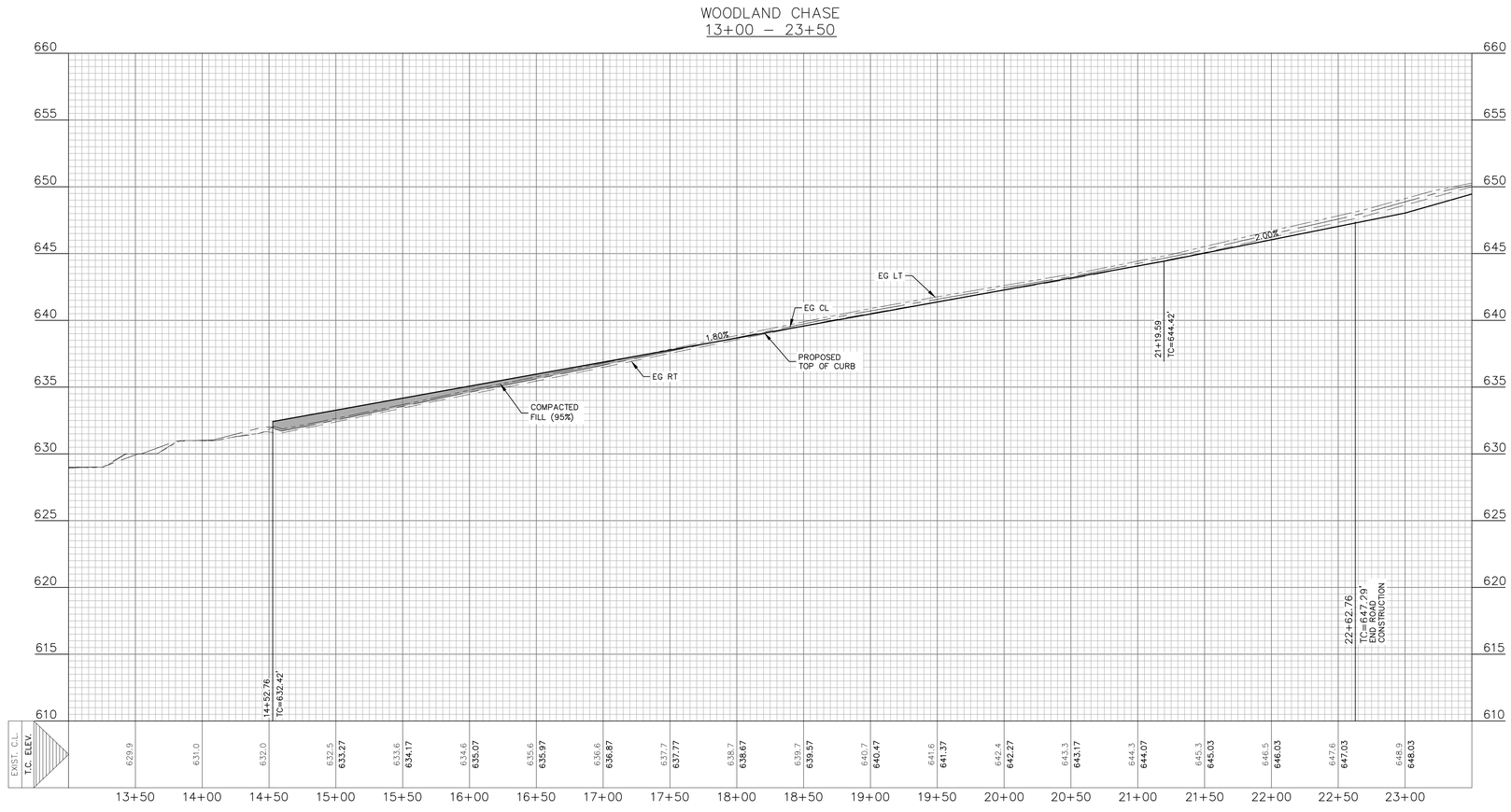


LEGEND

- 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 PLAN & PROFILE

JARO NORTH UNIT 2

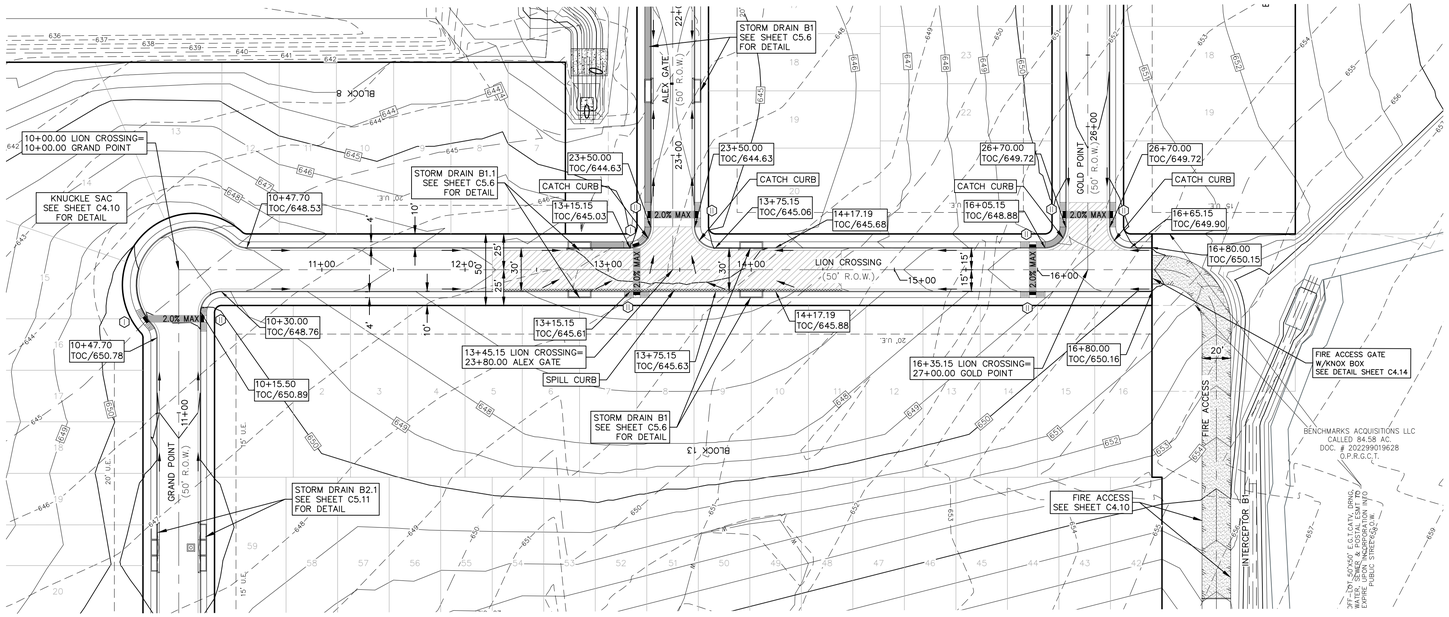
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C4.6

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_WOODLAND CHASE.dwg User: joshuck Jun 04, 2025 - 10:17pm



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SCALE: 1" = 5' VERT.

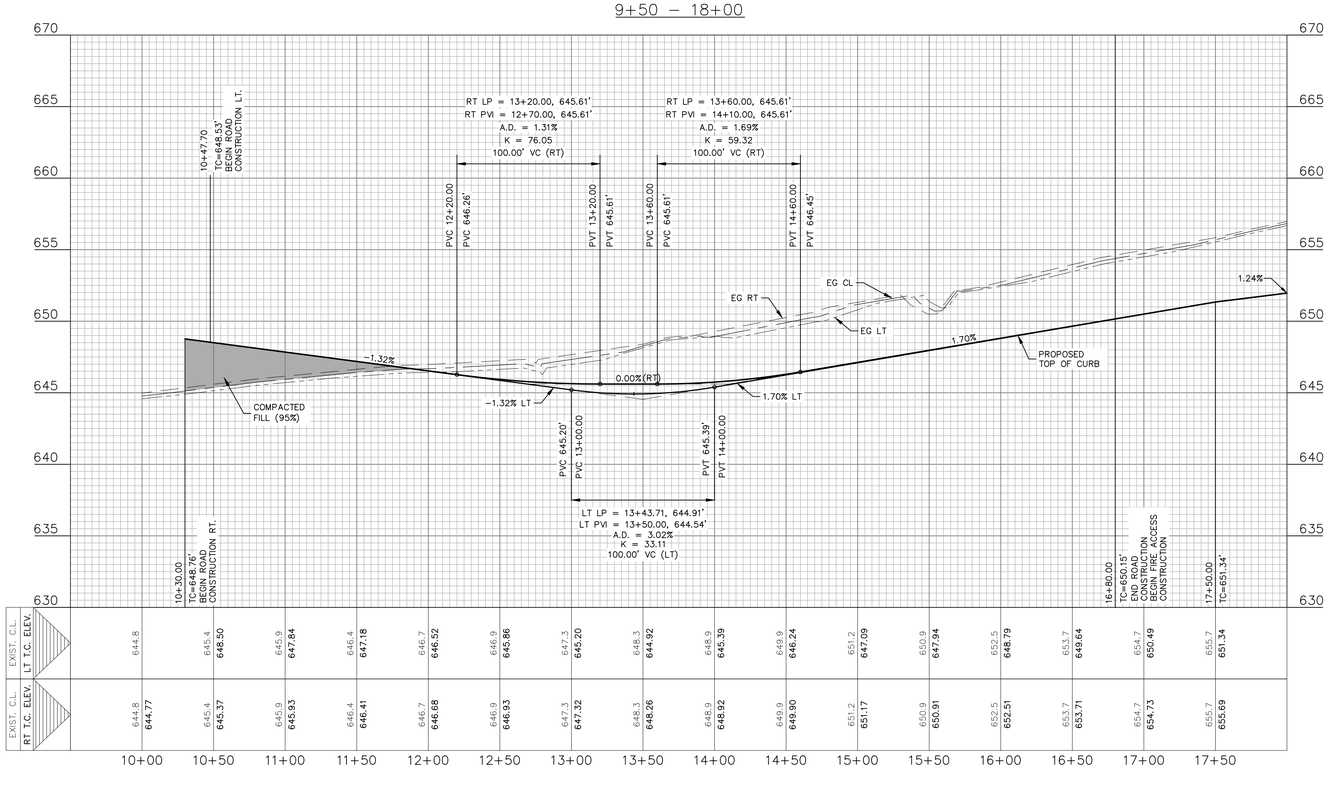
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
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LION CROSSING
9+50 – 18+00



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ZOE F. JASSO
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LICENSED
PROFESSIONAL ENGINEER
06/05/2025

LION CROSSING PLAN & PROFILE

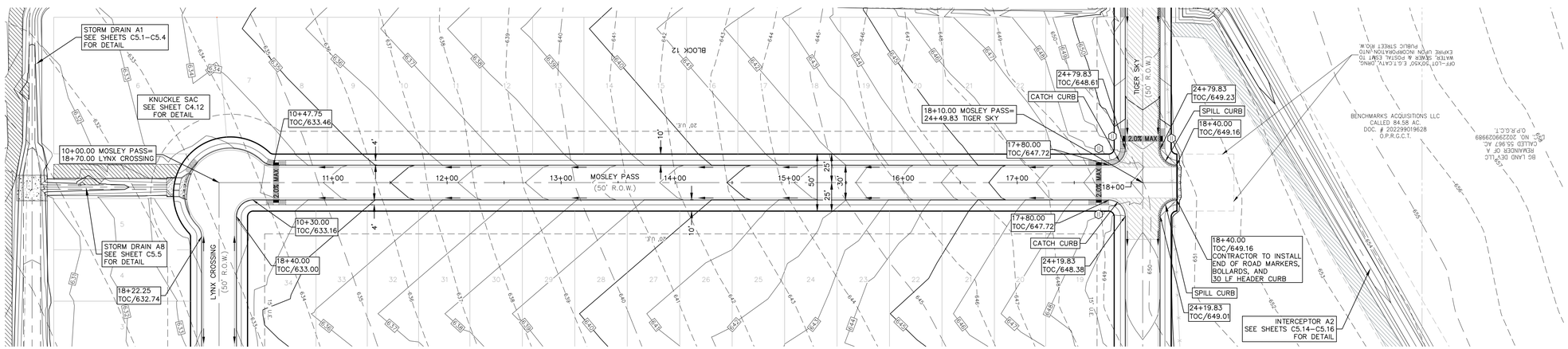
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: **JUNE 2025**
DRAWN BY: **RR**
DESIGNED BY: **JK**
REVIEWED BY: **ZJ**
HMT PROJECT NO.: **337.101**

SHEET
C4.7

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_LION CROSSING.dwg User: joshuck Jun 04, 2025 - 10:17pm



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SCALE: 1" = 5' VERT.

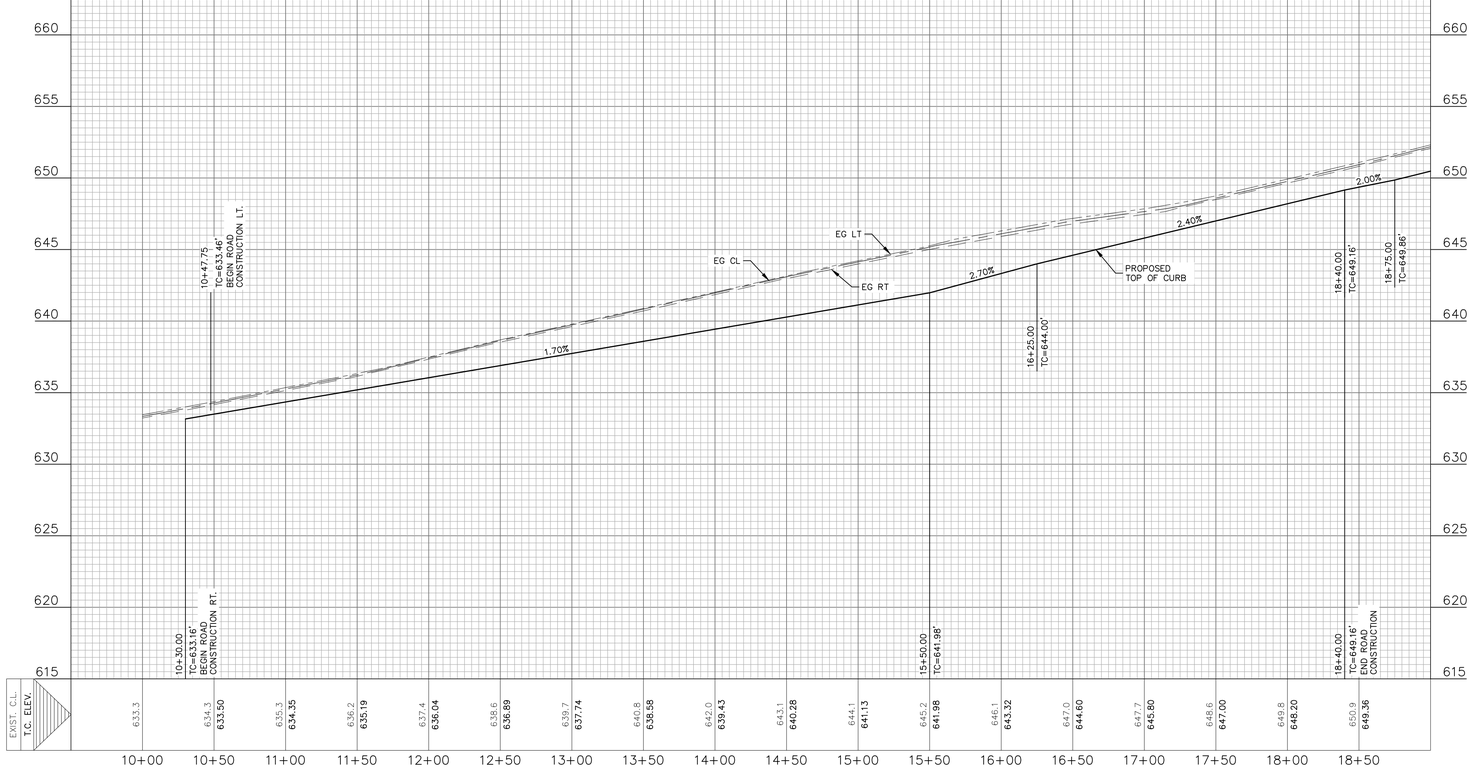
LEGEND

- 700 — EXISTING CONTOURS
- 700 — PROPOSED CONTOURS
- B.L. — BUILDING SETBACK LINE
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MOSLEY PASS
9+50 – 19+00



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STATE OF TEXAS
ZOE F. JASSO
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PROFESSIONAL ENGINEER
06/05/2025

MOSLEY PASS
PLAN & PROFILE

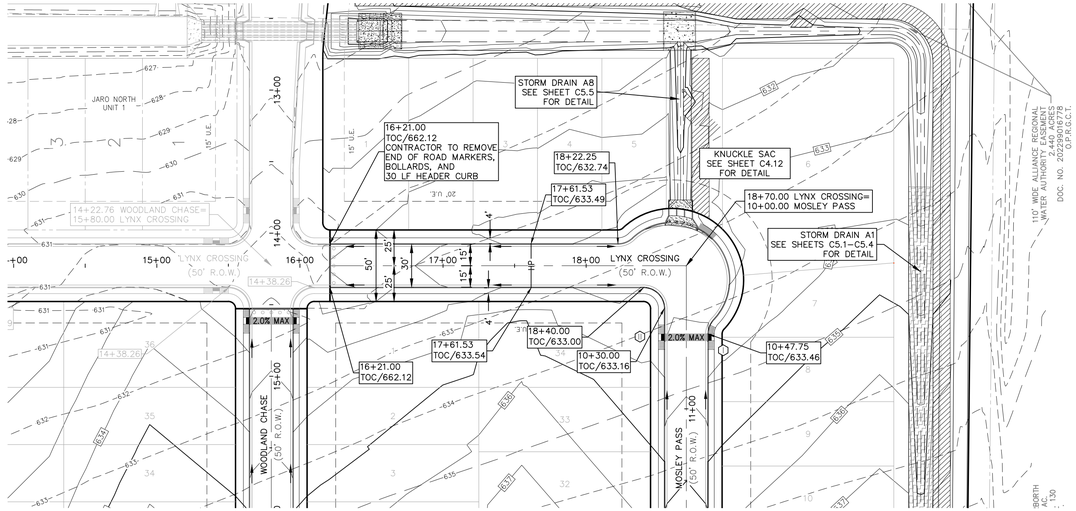
JARO NORTH UNIT 2

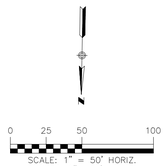
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.8

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_MOSLEY PASS.dwg User: joshuak Jun 04, 2025 - 10:17pm



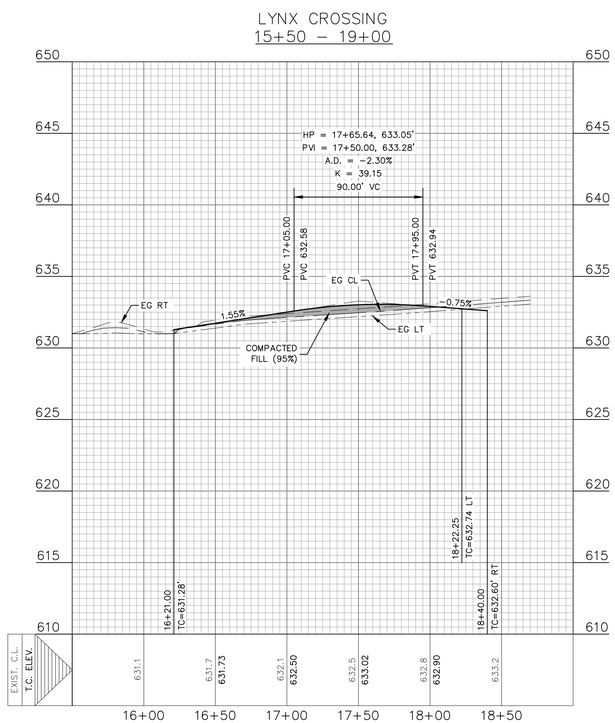


LEGEND

700	EXISTING CONTOURS
700	PROPOSED CONTOURS
B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
	FLOW ARROW
	WASHOUT CROWN AREAS
	SPILL CURB
	EXISTING GROUND LEFT (EG LT)
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ZOE F. JASSO
131964
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06/05/2025

LYNX CROSSING PLAN & PROFILE

JARO NORTH UNIT 2

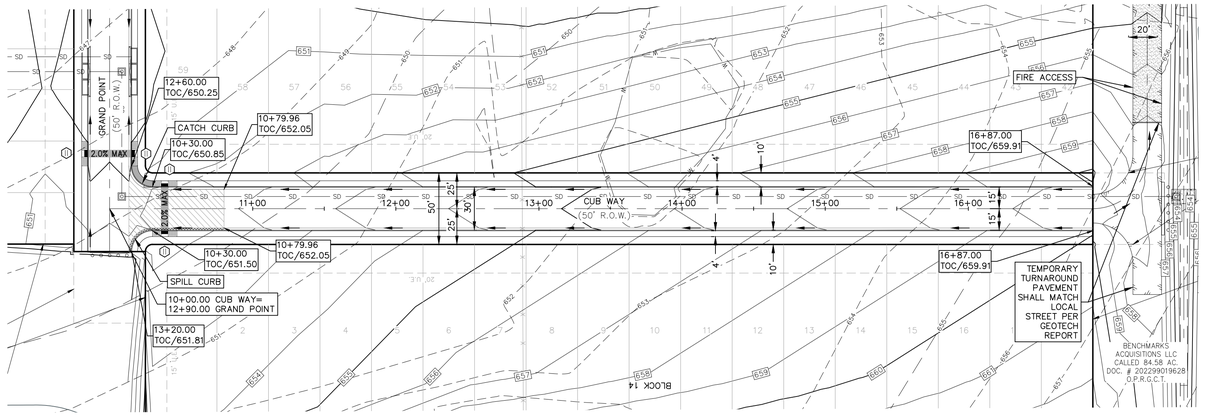
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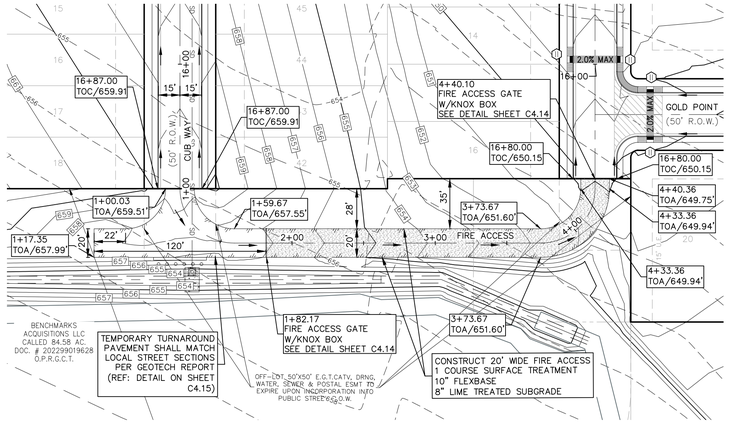
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C4.9

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_LYNX CROSSING.dwg User: joshuck Jun 04, 2025 - 10:18pm





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

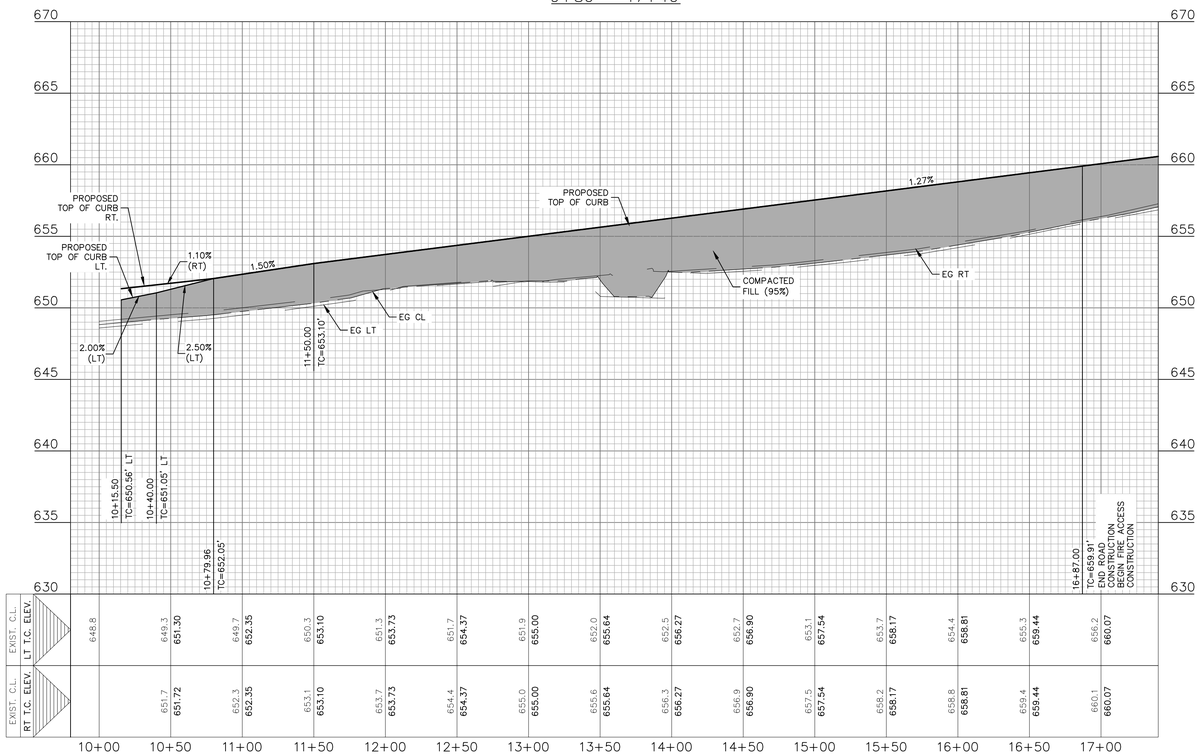
LEGEND

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- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

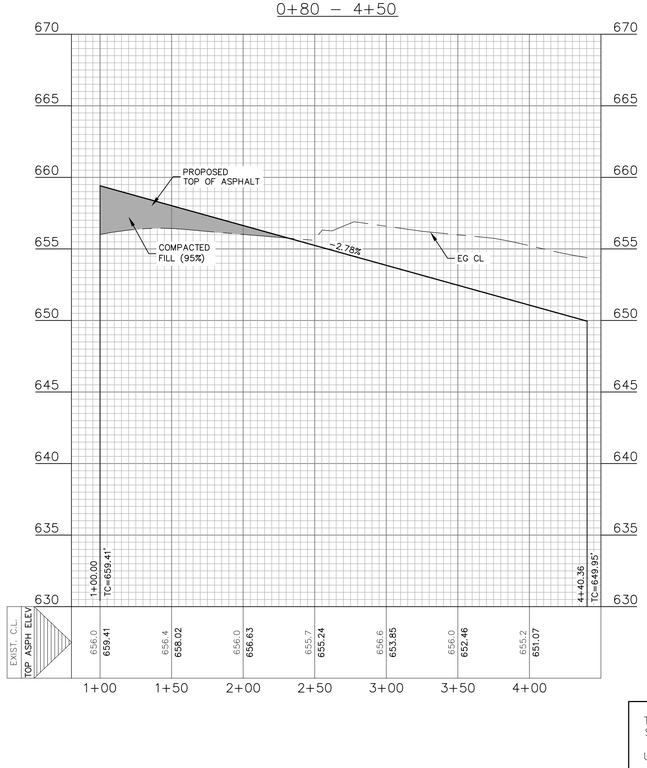
NOTES

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'

CUB WAY
9+80 – 17+40



FIRE ACCESS
0+80 – 4+50



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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
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

CUB WAY & FIRE ACCESS PLAN & PROFILE

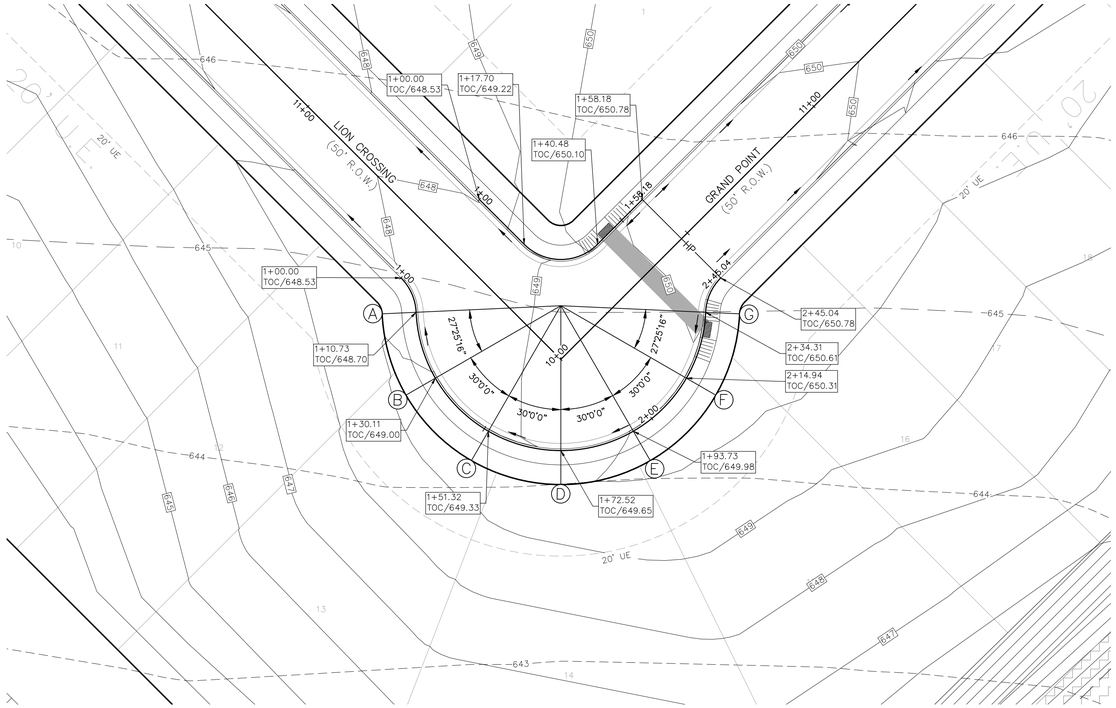
JARO NORTH UNIT 2

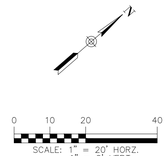
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.10

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_CUB WAY.dwg User: joshuak Jun 04, 2025 - 10:18pm

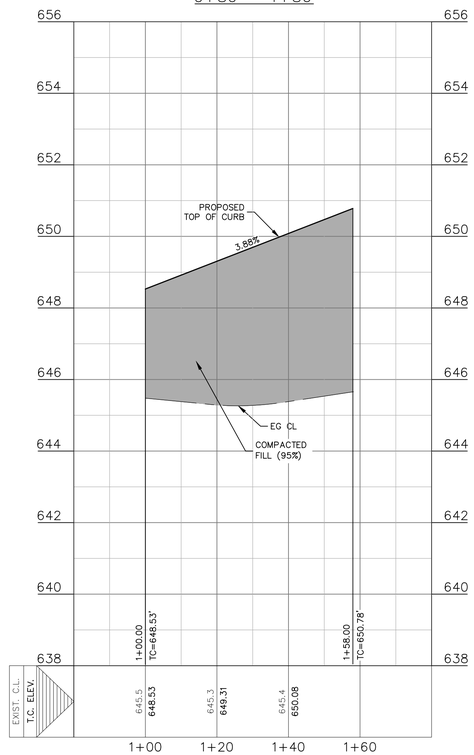




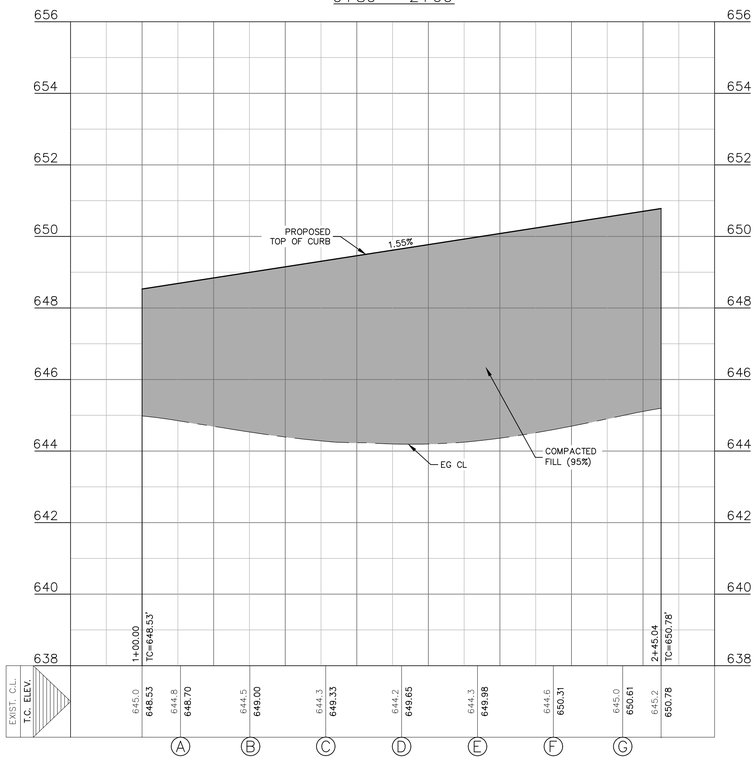
LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
- WASHOUT CROWN AREAS
- EXISTING GROUND CENTER (EG CL)
- 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
- FLOODPLAIN BOUNDARY

LION CROSSING–GRAND POINT KNUCKLE INNER
0+80 – 1+80



LION CROSSING–GRAND POINT KNUCKLE OUTER
0+80 – 2+60



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131964
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06/05/2025

LION CROSSING-GRAND POINT KNUCKLE SAC

JARO NORTH UNIT 2

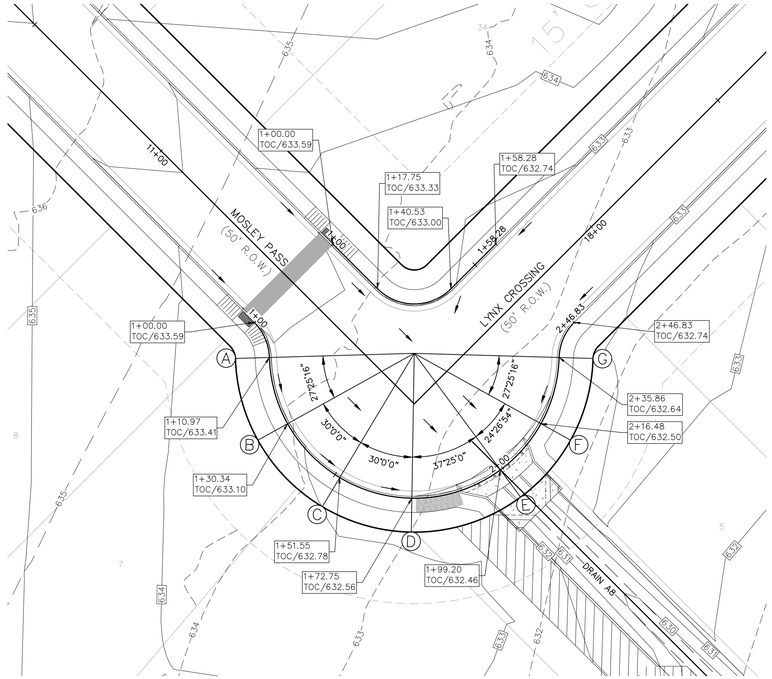
NO.	REVISION DESCRIPTION	REVISION DATE

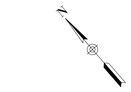
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C4.11

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_KNUCKLE SAC.dwg User: jsthuck Jun 04, 2025 - 10:18pm

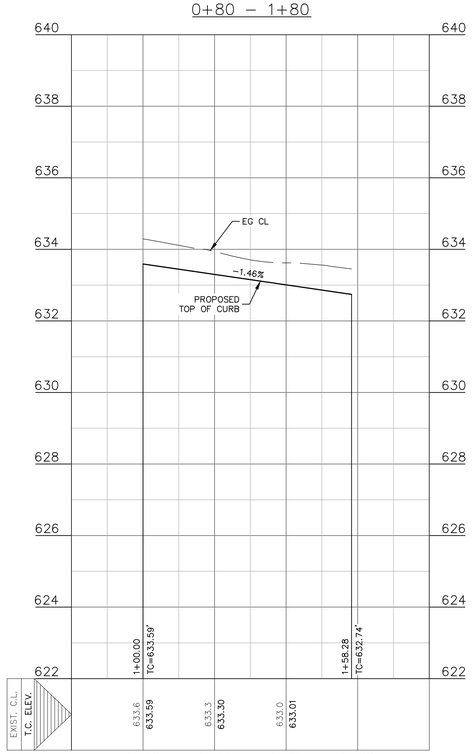




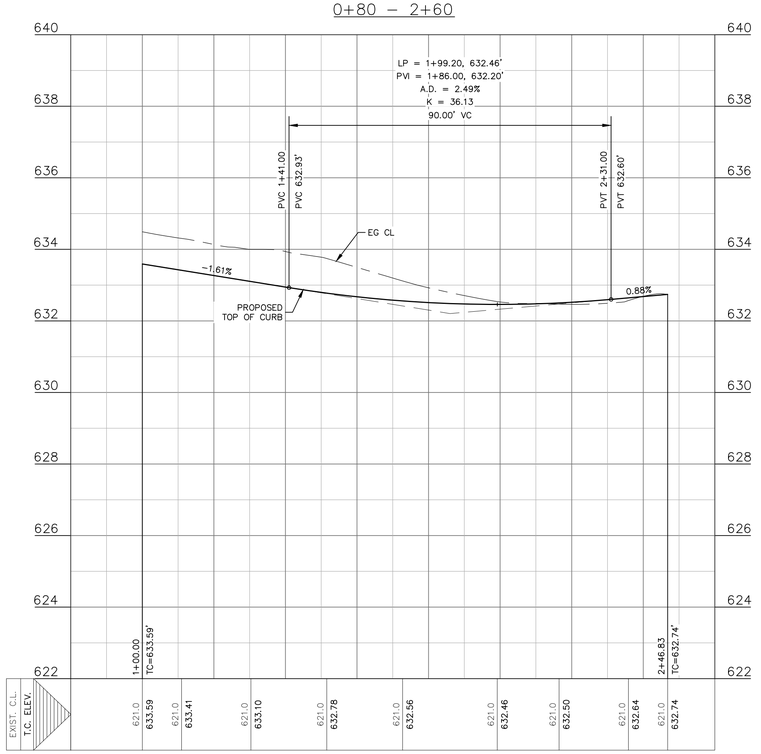
LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- A.D.A. RAMP
- FLOW ARROW
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- SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR
- FLOODPLAIN BOUNDARY

LYNX–MOSLEY SAC INNER
0+80 – 1+80



LYNX–MOSLEY SAC OUTER
0+80 – 2+60



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06/05/2025

LYNX CROSSING-MOSLEY PASS KNUCKLE SAC

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C4.12

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_KNUCKLE SAC.dwg User: joshuck Jun 04, 2025 - 10:19pm

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.

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.

SCALE: 1" = 100'

LEGEND

B.L.	BUILDING SETBACK LINE
U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
	A.D.A. RAMP
2.0% MAX	ACCESSIBLE CROSSING AREA CONTRACTOR TO ENSURE MAX 2% CROSS SLOPE IN THESE AREAS
	SIDEWALK RAMP TYPE TO BE CONSTRUCTED AT TIME OF STREET CONSTRUCTION (SEE DETAIL SHEET **C4.14**)
	SIDEWALK TO BE CONSTRUCTED BY SITE DEVELOPMENT CONTRACTOR

NOTES

1. LOCAL STREETS WERE DESIGNED TO POSTED SPEED LIMIT OF **25** MPH.
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4. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM STREET STUB OUT ENDS SO THAT NO "PONDING" OF WATER OCCURS.
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STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

SIGNAGE & DRAINAGE PLAN

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

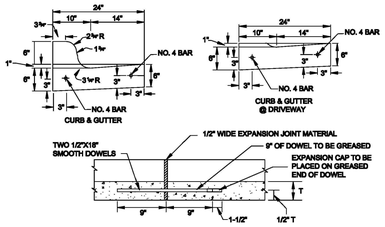
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET

C4.13

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(03x)337101_SIGNAGE.dwg User: joshuak Jun 04, 2025 - 10:19pm

CURB AND GUTTER



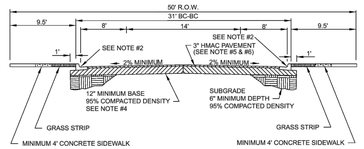
LONGITUDINAL SECTION THRU CURB AND GUTTER
SHOWING TYPICAL EXPANSION JOINT DETAILS.
REINFORCING STEEL SHALL NOT CROSS EXPANSION JOINTS.
STEEL SHALL BE TERMINATED 3" (+ OR -) 1" FROM FACE OF THE JOINT.

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: RAB	SHEET: 1 OF 1			
FILENAME: Curb & Gutter				
P:\CURRENT NEW BRAUNFELS DETAILS\2008\				

ONE & TWO FAMILY RESIDENTIAL LOCAL PARKING BOTH SIDES



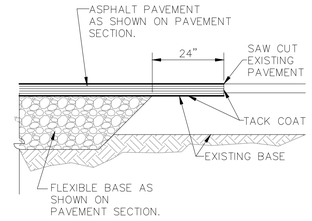
NOTES:

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

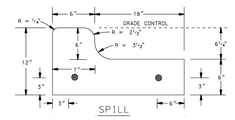
City of New Braunfels ENGINEERING DIVISION	STANDARD CONSTRUCTION DETAIL	SCALE: N.T.S.	
		APPROVED DATE:	
		STANDARD NO. ST-011	

PAVEMENT DEPTHS SHOWN IN DETAIL ABOVE REFLECT MINIMUM CITY REQUIREMENTS.
CONTRACTOR TO FOLLOW "RESIDENTIAL LOCAL PAVEMENT SECTION DETAIL" ON SHEET C4.15
FOR PAVEMENT THICKNESS REQUIRED BY THE JARO NORTH GEOTECHNICAL REPORT

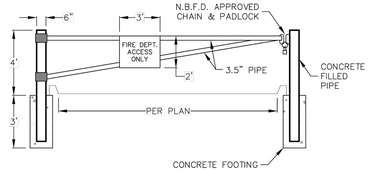
CONTRACTOR TO TEST SUB GRADE SOILS FOR SOLUBLE SULFATE CONTENT PRIOR TO LIME TREATMENT



NEW PAVEMENT TO EXISTING
NOT TO SCALE

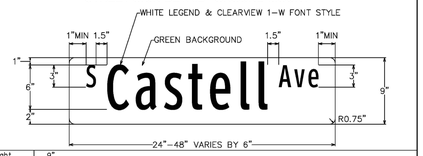


SPILL CURB DETAIL
NOT TO SCALE



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 5½" 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 550 S. CASTELL AVE. NEW BRAUNFELS, TEXAS 78130 PHONE: 830.221.4520 FAX: 830.629.3600
ISSUE DATE: February 2013	DWG. NO: ST-024	SCALE: N.T.S.		
DRAWN BY: RAS	CONTACT: GF	SHEET: 1 OF 1		
P:\2010 ENGINEERING-AUTOCAD\DETAILS\NB-PUBLIC WORKS DETAILS\NB-UNAPPROVED DETAILS\2013\ST-2013-024 STREET SIGN DETAIL - GROUND MOUNT.DWG				

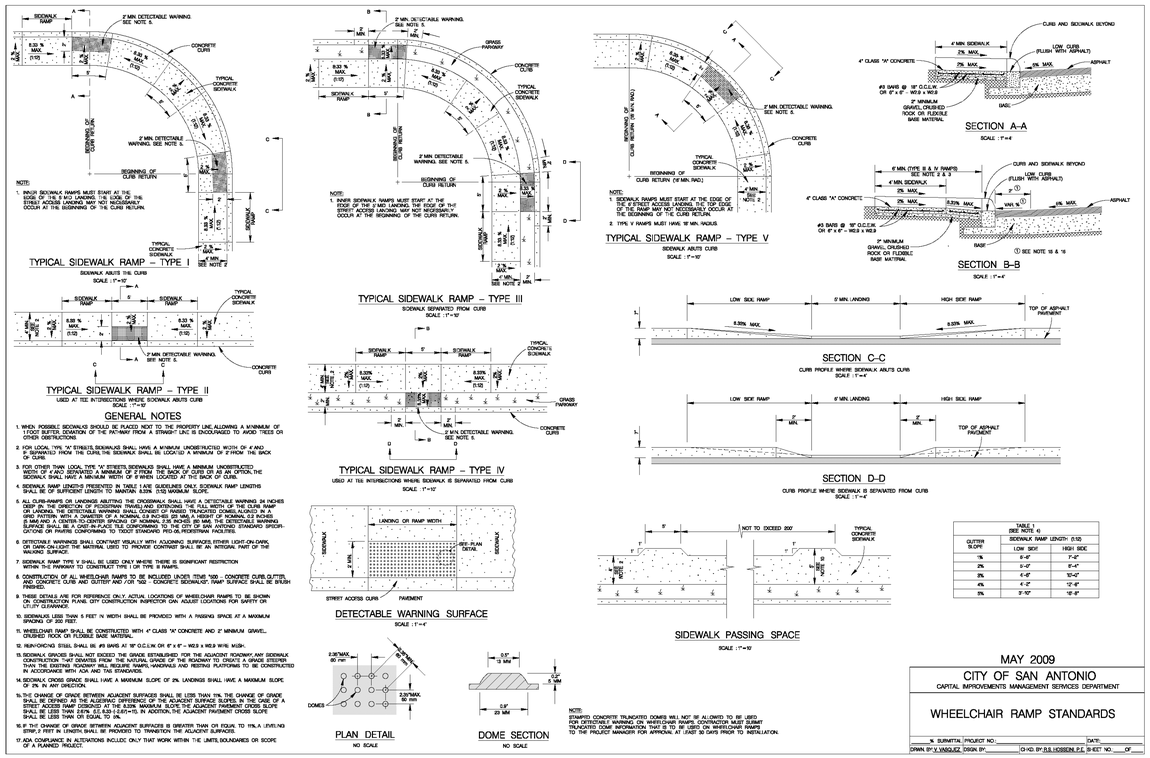


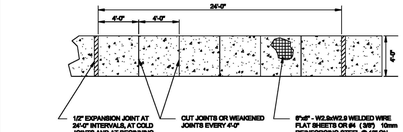
TABLE 1 (SEE NOTE 4)		
GUTTER SLOPE	SIDEWALK RAMP LENGTH: 0.12	
	LOW SIDE	HIGH SIDE
1%	6'-0"	7'-0"
2%	5'-0"	6'-4"
3%	4'-0"	5'-0"
4%	4'-0"	5'-0"
5%	3'-10"	4'-8"

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

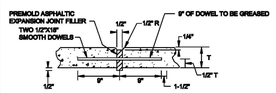
WHEELCHAIR RAMP STANDARDS

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

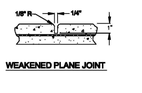
SIDEWALK (RESIDENTIAL)



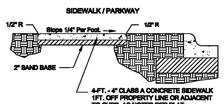
PLAN VIEW



EXPANSION JOINT



WEAKENED PLANE JOINT



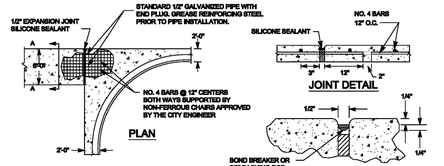
TYPICAL SECTION

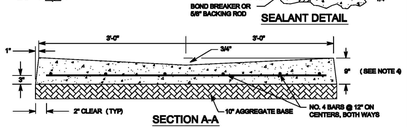
NOTES:

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.

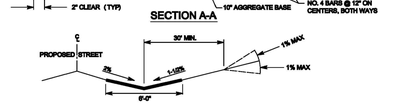
DATE APPROVED: 7/08	DWG. NO: ST-010	SCALE: N.T.S.	City of New Braunfels	ENGINEERING DEPARTMENT
DRAWN BY: RAS	SHEET: 1 OF 1			
FILENAME: SIDEWALK (Residential)				
P:\CURRENT NEW BRAUNFELS DETAILS\2020\				

CROSS GUTTER





SECTION A-A



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\2020\				

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
06/05/2025

STREET DETAILS (1 OF 4)

JARO NORTH UNIT 2

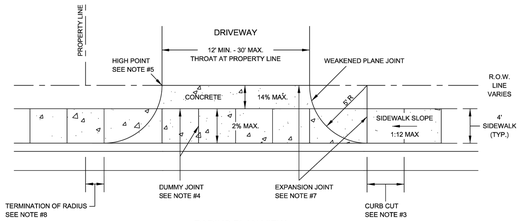
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

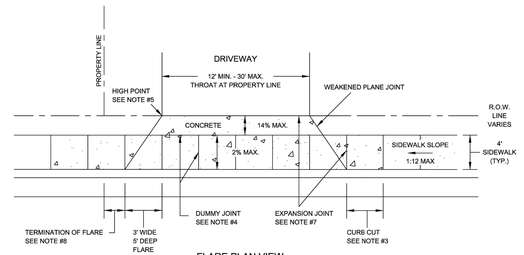
SHEET
C4.14

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\CDs\337-101_STREET DETAILS.dwg User: jashook Jun 04, 2025 – 10:19pm

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



RADIUS PLAN VIEW

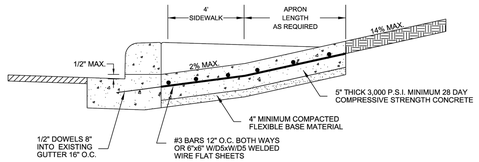


FLARE PLAN VIEW

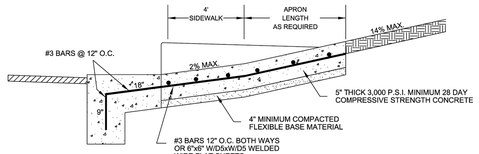
DATE APPROVED: 04/2016	DWG. NO. ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - ONE OR TWO FAMILY)



STRUCTURAL SECTION



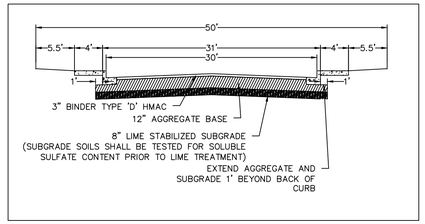
NO EXISTING CURB STRUCTURAL SECTION

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.

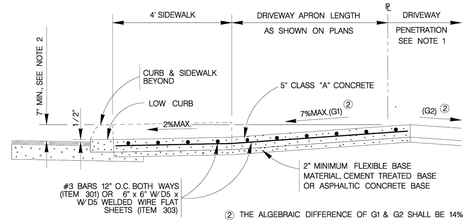
DATE APPROVED: 04/2016	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (RESIDENTIAL - ONE OR TWO FAMILY)		

City of New Braunfels — ENGINEERING DEPARTMENT



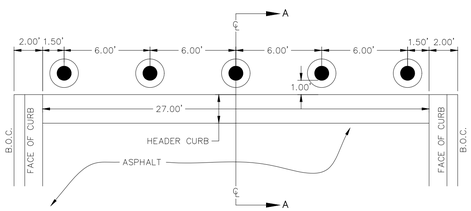
RESIDENTIAL LOCAL PAVEMENT SECTION

CONTRACTOR TO REFERENCE GEOTECHNICAL ENGINEERING STUDY "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS PROPOSED NEW STREETS JARO NORTH SUBDIVISION, PHASE 1" PREPARED BY INTERTEC PSI DATED JANUARY 27, 2025.



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

TYPE 'C' LOT DRIVEWAY DETAIL

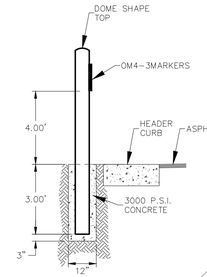


PLAN

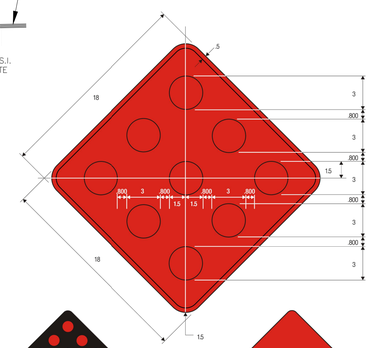
NOTE:
POST SHALL BE 6" IN DIAMETER AND PRESSURE TREATED

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

BOLLARD DETAIL
NOT TO SCALE



SECTION A-A



OM4-1

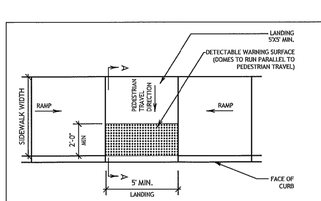
OM4-1 COLORS:
REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – RED
BORDER – RED (RETROREFLECTIVE)

OM4-2

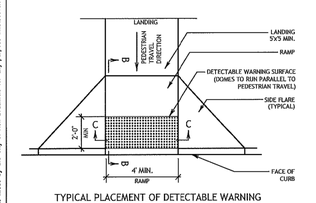
OM4-2 COLORS:
REFLECTORS – RED (RETROREFLECTIVE)
BACKGROUND – BLACK

OM4-3

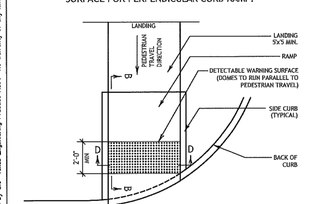
OM4-3 COLORS:
SIGN PANEL – RED (RETROREFLECTIVE)



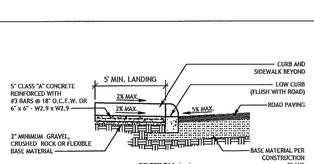
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



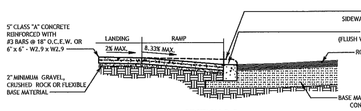
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



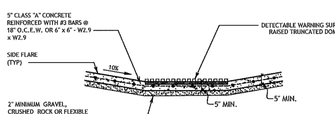
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



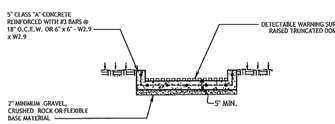
SECTION A-A



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% (1Y:12I). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1Y:50I).
6. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1Y: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 3600

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

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
06/05/2025

STREET DETAILS (2 OF 4)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.15

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cbk\337.101_STREET DETAILS.dwg User: joshuok Jun 04, 2025 - 10:19pm

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SIGN SUPPORT DESCRIPTIVE CODES

(Descriptive Codes correspond to project estimate and quantities sheets)

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

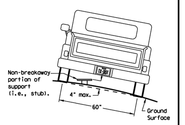
Post Type
- FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))
- TWT = Thin-Walled Tubing (see SMD(TWT))
- 10BWG = 10 BWG Tubing (see SMD(SLIP-1) to (SLIP-3))
- SBO = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))

Number of Posts (1 or 2)

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

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

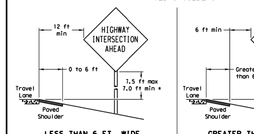
REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT



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

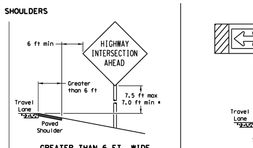
SIGN LOCATION

PAVED SHOULDERS



LESS THAN 6 FT. WIDE

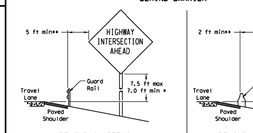
When the shoulder is 6 ft. or less in width, the sign must be placed at least 12 ft. from the edge of the travel lane.



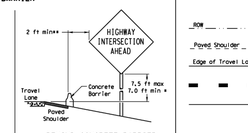
GREATER THAN 6 FT. WIDE

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.

BEHIND BARRIER



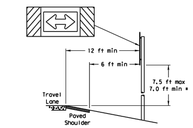
BEHIND GUARDRAIL



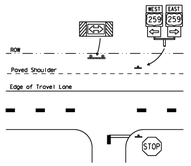
BEHIND CONCRETE BARRIER

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

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.



* 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

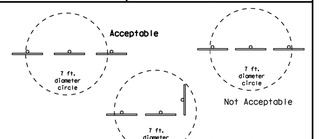
(2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.

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

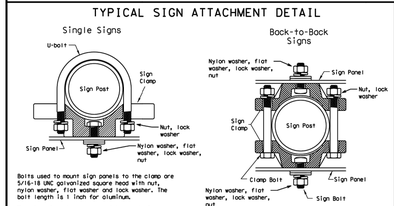
See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

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

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



TYPICAL SIGN ATTACHMENT DETAIL



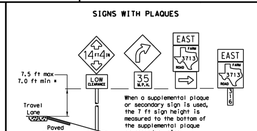
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

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

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

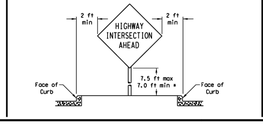
Pipe Diameter	Approximate Bolt Length	
	Specific Clamp	Universal Clamp
2" nominal	3"	3 or 3 1/2"
2 1/2" nominal	3 or 3 1/2"	3 1/2 or 4"
3" nominal	3 1/2 or 4"	4 1/2"

SIGNS WITH PLAQUES



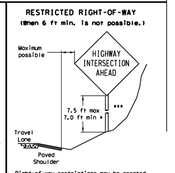
When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

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, forests, buildings, a narrow island, or other factors.

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

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

Texas Department of Transportation
Traffic Operations Division

SIGN MOUNTING DETAILS SMALL ROADSIDE SIGNS GENERAL NOTES & DETAILS

SMD(GEN)-08

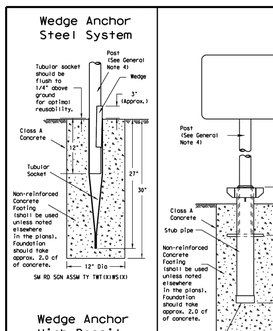
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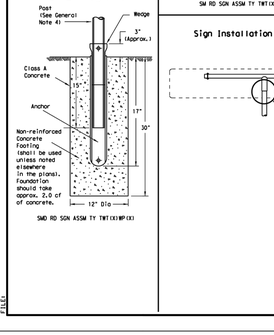
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Wedge Anchor Steel System



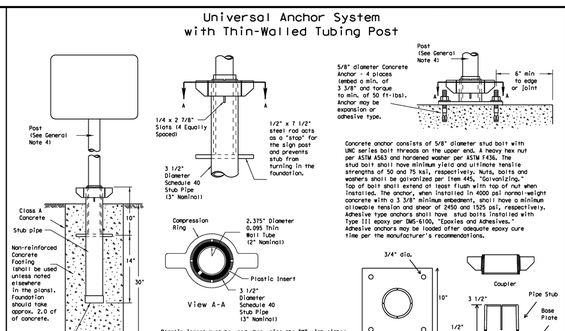
SM RD SGN ASSM TY TWT(1)(2)(3)(X)

Wedge Anchor High Density Polyethylene (HDPE) System



SMD RD SGN ASSM TY TWT(1)HP(X)

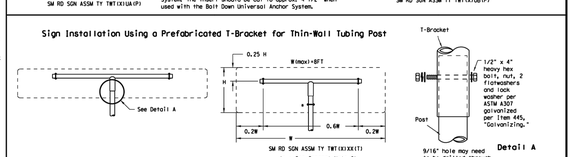
Universal Anchor System with Thin-Walled Tubing Post



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

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

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



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

Universal Anchor System with Thin Wall Tubing Post

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 113 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 as post with this system shall conform to the following specifications:
   13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Seamless or electric-resistance welded steel tubing
   Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
   Other steels may be used if they meet the 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 2.365" to 2.381"
   Galvanization per ASTM 123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
5. Sign blanks shall be the sizes and shapes shown on the plans.
6. Additional sign clamp required on the "T-bracket" post for 24" high signs. Place clamp at least 3" above bottom of sign when possible.
7. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
8. See the Traffic Operations Division website for detailed drawings of sign clamps and Wedge Anchor System components. The website address is: http://www.txdot.gov/publications/traffic.htm

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

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

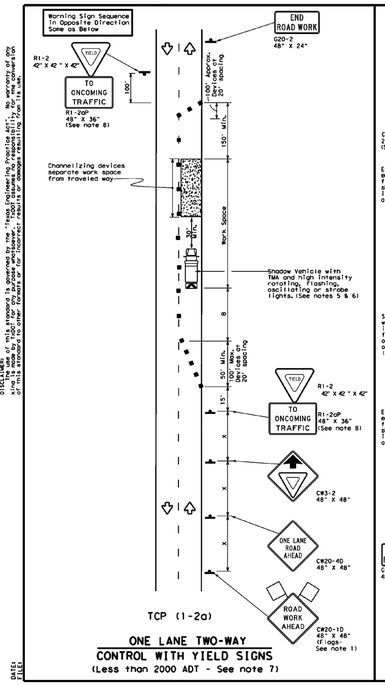
SMD(TWT)-08

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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	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Tangent	On a Taper	Minimum Sign Spacing Distance	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
	✓	✓	✓	

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 shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning area 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 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 half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 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 horizontal 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

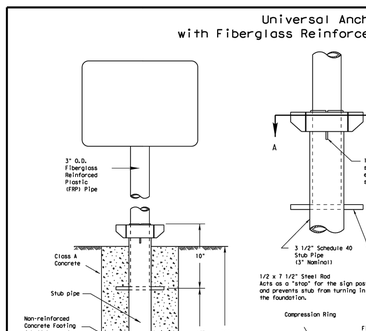
TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

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©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
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2-94 2-12				
8-95 2-18				

1 of 1

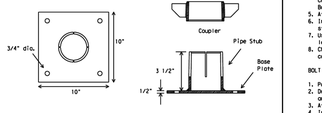
Universal Anchor System with Fiberglass Reinforced Plastic (FRP) Post



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

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

BOLT-DOWN DETAILS



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

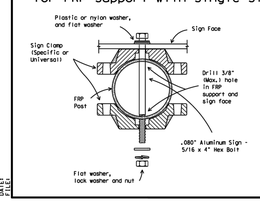
GENERAL NOTES:
1. FRP sign supports for a single type sign support may be used for signs up to and including 12 square feet. Dual post installation may be used for signs up to and including 32 square feet.
2. All nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing."
3. See the Traffic Operations Division website for detailed drawings of sign clamps. The website address is: https://www.txdot.gov/publications/traffic.htm

FRP POST REQUIREMENTS
1. Materials shall conform to the requirements of Departmental Material Specification DMS-4610 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" + 0.01", - 0.0".
3. FRP sign supports are prequalified by the Traffic Operations Division.
   Prequalification procedures are detailed in writing:
   Texas Department of Transportation
   Traffic Operations Division
   125 East 11th Street
   Austin, Texas 78701-2483

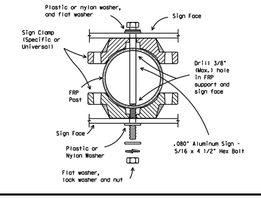
UNIVERSAL ANCHOR SYSTEM INSTALLATION PROCEDURES
1. Dig foundation hole. Where solid rock is encountered at ground level, the foundation shall be a minimum depth of 18". When solid rock is encountered below ground level, the foundation shall extend in the solid rock a minimum depth of 18" or provide a minimum foundation depth of 30". If solid rock is encountered, the socket/stub may be reduced in length as required to a minimum length of 18". Any material removed from the socket/stub shall be from the bottom and the clearance requirements given on SMD(GEN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
3. Insert base post in foundation hole to depths shown and fill hole with concrete. Cut base post from bottom and ensure a minimum of 18" embedment if inserted 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

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NEW BRAUNFELS, TX 78130
TBPELS FIRM F-10961
TBPELS FIRM 1053600

HMT
ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

STREET DETAILS (3 OF 4)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

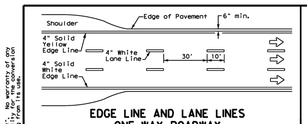
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.16

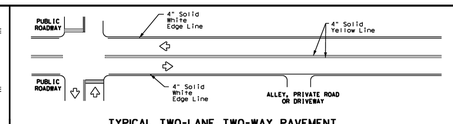
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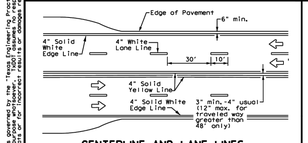
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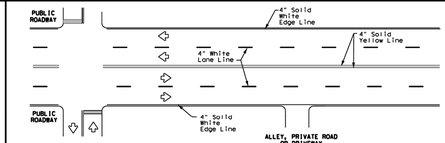
EDGE LINE AND LANE LINES
ONE-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



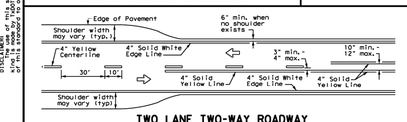
TYPICAL TWO-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS



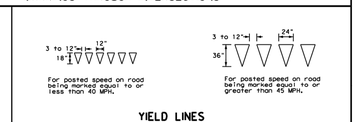
CENTERLINE AND LANE LINES
FOUR LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



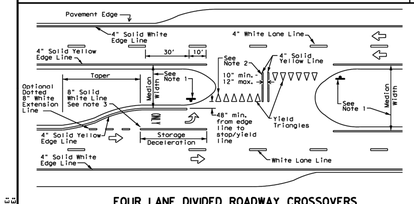
TYPICAL MULTI-LANE, TWO-WAY PAVEMENT
MARKINGS THROUGH INTERSECTIONS



TWO LANE TWO-WAY ROADWAY
WITH OR WITHOUT SHOULDERS



YIELD LINES



FOUR LANE DIVIDED ROADWAY CROSSOVERS

NOTES

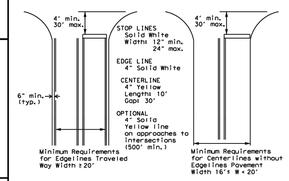
1. Where divided highways are separated by median widths at the median opening itself of 30 feet or more, median openings shall be signed as two separate intersections. Each median opening has two width measurements, with one measurement for each approach. The narrow median width will be the controlling width to determine if signs are required. Yield signs are the typical intersection control. Stop signs are optional as determined by the Engineer.
2. Install median striping (double yellow centerlines and stop bars/yield triangles) when a 50' or greater median centerline can be placed. Stop bars shall only be used with stop signs. Yield tralngles shall only be used with yield signs.
3. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer.

GENERAL NOTES

1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to the inside of edgeline of a two lane roadway.

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

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



GUIDE FOR PLACEMENT OF STOP LINES,
EDGE LINE & CENTERLINE
Based on Traveled Way and Pavement Widths
for Undivided Highways

Texas Department of Transportation — Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS

PM(1)-20

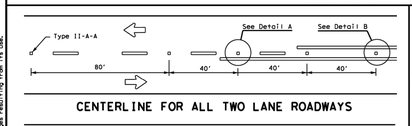
FILE:	pm1-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS					
5-00 2-10		DIST	COUNTY		SHEET NO.
8-00 6-20					

1-95 7

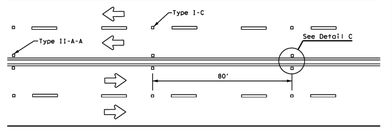
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DATE:
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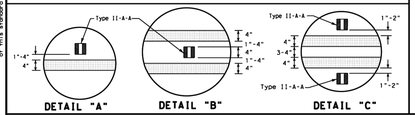
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE

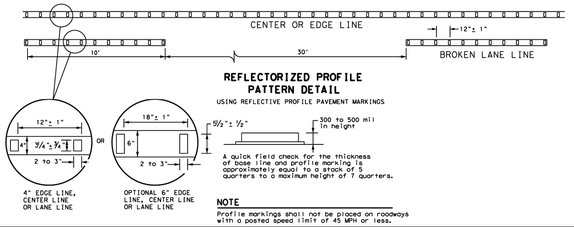


CENTERLINE FOR ALL TWO LANE ROADWAYS

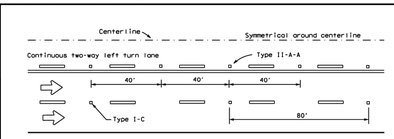


CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS

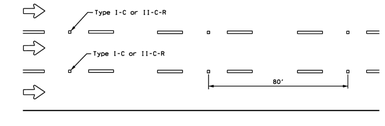




NOTE
Profile markings shall not be placed on roadways with a posted speed limit of 45 MPH or less.



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



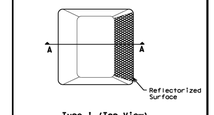
LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)
Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic.

GENERAL NOTES

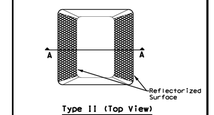
1. All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.
2. On concrete pavements the raised pavement markers should be placed to one side of the longitudinal joints.

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

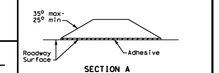
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



SECTION A

RAISED PAVEMENT MARKERS

Texas Department of Transportation — Traffic Safety Division Standard

POSITION GUIDANCE USING RAISED MARKERS RELECTORIZED PROFILE MARKINGS

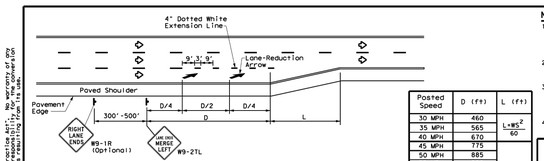
PM(2)-20

FILE:	pm2-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	April 1977	CONT	SECT	JOB	HIGHWAY
REVISIONS					
5-00 2-10		DIST	COUNTY		SHEET NO.
8-00 6-20					

1-95 7

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DATE:
FILE:

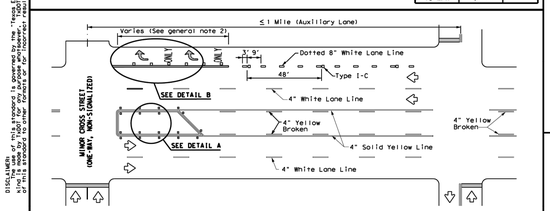


LANE REDUCTION

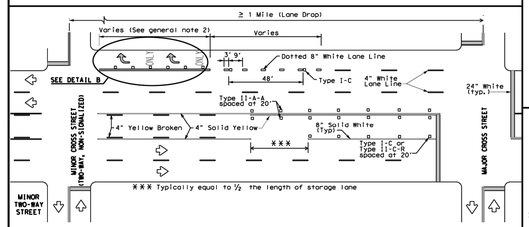
Posted Speed	D (ft)	L (ft)
30 MPH	460	$L=\frac{WS^2}{60}$
35 MPH	565	
40 MPH	670	
45 MPH	775	L=WS
50 MPH	885	
55 MPH	990	
60 MPH	1,100	
65 MPH	1,200	
70 MPH	1,250	
75 MPH	1,350	

NOTES

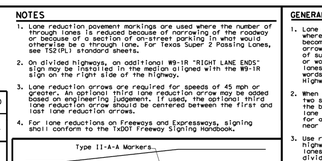
1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or the elimination of a through lane. For parallel parking it shall normally be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
2. On divided highways, an additional R9-1R "RIGHT LANE ENDS" sign may be installed in the median aligned with the R9-1R sign on the right side of the highway.
3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
4. For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

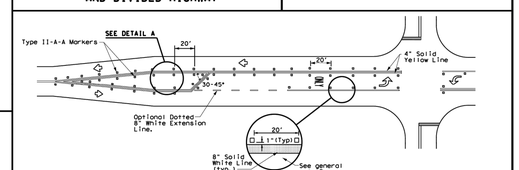


TYPICAL TWLTL AT TWO-WAY CROSS STREET AND RIGHT TURN LANE DROP

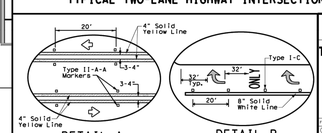


A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

TYPICAL TRANSITION FOR TWLTL
AND DIVIDED HIGHWAY



TYPICAL TWO-LANE HIGHWAY INTERSECTION WITH LEFT TURN BAYS



Texas Department of Transportation — Traffic Safety Division Standard

TWO-WAY LEFT TURN LANES, RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

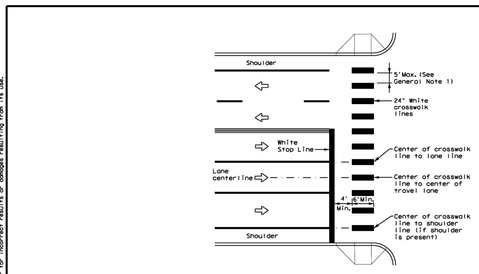
PM(3)-20

FILE:	pm3-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	April 1998	CONT	SECT	JOB	HIGHWAY
REVISIONS					
5-00 2-10		DIST	COUNTY		SHEET NO.
8-00 6-20					
3-03 6-20					

1-95 7

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DATE:
FILE:



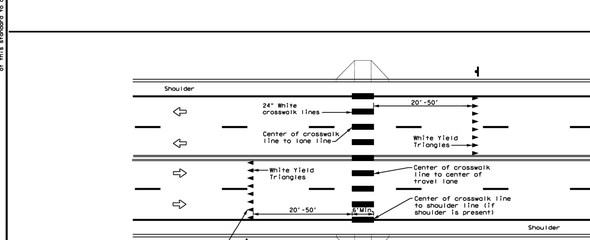
HIGH-VISIBILITY LONGITUDINAL CROSSWALK
AT CONTROLLED APPROACH

GENERAL NOTES

1. Longitudinal crosswalk lines should not be placed in the wheel path of vehicles. Center the crosswalk lines on travel lanes, lane lines, and shoulder lines (if present).
2. A minimum 6' clear distance shall be provided to the curb face. If the last crosswalk line falls into this distance it must be omitted.
3. For divided roadways, adjustments in spacing of the crosswalk lines should be made in the median so that the crosswalk lines are maintained in their proper location across the travel portion of the roadway.
4. At skewed crosswalks, the crosswalk lines are to remain parallel to the lane lines.
5. Each crosswalk shall be a minimum of 6' wide.
6. The High-Visibility Longitudinal Crosswalk is the preferred crosswalk pattern on State Highways. Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used. All crosswalk designs and dimension shall comply with the "Texas Manual on Uniform Traffic Control Devices."
7. Final placement of Stop Bar/Yield Trlangles and Crosswalk shall be approved by the Engineer in the field.

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

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



UNSIGNALIZED MID BLOCK HIGH-VISIBILITY
LONGITUDINAL CROSSWALK

NOTES

1. Use yield trlangles with "Yield Here to Pedestrians" signs at unsignalized mid block crosswalks.
2. Use stop bars with "Stop Here on Red" signs at mid block crosswalks controlled by traffic signals or pedestrian hybrid beacons.

Texas Department of Transportation — Traffic Safety Division Standard

CROSSWALK PAVEMENT MARKINGS

PM(4)-20

FILE:	pm4-20.dgn	DN:	CK:	DW:	CK:
©TxDOT	June 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS					
		DIST	COUNTY		SHEET NO.

1-95 7

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
06/05/2025

STREET DETAILS (4 OF 4)

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C4.17

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337-101_STREET DETAILS.dwg User: joshuak Jun 04, 2025 - 10:19pm

CHANNEL B/ INTERCEPTOR B ACCESS RAMP (SEE SHEET C5.12–C5.13)

CHANNEL B (SEE SHEET C5.12–C5.13)

CHANNEL B ACCESS RAMP (SEE SHEET C5.12–C5.13)

DRAIN B2.1 (SEE SHEET C5.11)

DRAIN B2 (SEE SHEET C5.8–C5.10)

INTERCEPTOR B2 (SEE SHEET C5.19–C5.21)

INTERCEPTOR B2 ACCESS RAMP (SEE SHEET C5.17–C5.18)

POND B ACCESS RAMP (SEE SHEET C5.6–C5.7)

DRAIN B1 ACCESS RAMP (SEE SHEET C5.6–C5.7)

DRAIN B1,B1.1 & B1.2 (SEE SHEET C5.6–C5.7)

INTERCEPTOR A2 ACCESS RAMP (SEE SHEET C5.14–C5.16)

INTERCEPTOR B1 (SEE SHEET C5.17–C5.18)

INTERCEPTOR B1 ACCESS RAMP (SEE SHEET C5.17–C5.18)

INTERCEPTOR B2 ACCESS RAMP (SEE SHEET C5.17–C5.18)

INTERCEPTOR A2 (SEE SHEET C5.14–C5.16)

DRAIN A8 (SEE SHEET C5.5)

CHANNEL A1 (SEE SHEET C5.1–C5.4)

LOT 903 DRAINAGE LOT 0.711 AC.

LOT 904 DRAINAGE LOT 0.741 AC.

TOUR PARTNERS, LTD. REMAINDER OF A CALLED 170.699 AC. DOC. NO. 201999000803 O.P.R.G.C.T.

BG LAND DEV LLC REMAINDER OF A CALLED 55.967 AC. DOC. NO. 202299029989 O.P.R.G.C.T.

EDDEB INVESTMENTS, LTD REMAINDER OF A CALLED 84.585 AC. DOC. NO. 202499022036 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.

L. RICHARD HARBORTH CALLED 100 AC. VOL. 2078, PG. 130 O.P.R.G.C.T.

15' WIDE ROAD TO CEMETERY DEDUCTED FROM TRACT 1 DESCRIBED IN VOL. 1006, PG. 147 D.R.G.C.T.

30' WIDE ACCESS ESMT. DOC. NO. 202299018013 O.P.R.G.C.T.

EXISTING DETENTION POND

110' WIDE ALLIANCE REGIONAL WATER AUTHORITY EASEMENT "TRACT TWO" DOC. NO. 202299016780 O.P.R.G.C.T.

110' WIDE ALLIANCE REGIONAL WATER AUTHORITY EASEMENT 2.440 ACRES DOC. NO. 202299016778 O.P.R.G.C.T.

20' U.E. TO BE ESTABLISHED BY SEPARATE INSTRUMENT DOC NO._____

OFF-LOT 50'X50' E.G.T.CATV, DRNG, WATER, SEWER & POSTAL ESMT TO EXPIRE UPON INCORPORATION INTO PUBLIC STREET R.O.W.

TEMPORARY DRAINAGE AND ACCESS ESMT. PER DOC. NO._____ O.P.R.C.C.T.

GRAND POINT

GOLD POINT (50' R.O.W.)

TYLER PATH (50' R.O.W.)

WOODLAND CHASE (50' R.O.W.)

MOSLEY PASS (50' R.O.W.)

ALEX GATE (50' R.O.W.)

TIGER SKY (50' R.O.W.)

LYNX CROSSING (50' R.O.W.)

CUB CROSSING (50' R.O.W.)

FM 755 (60' R.O.W.)

JARO NORTH UNIT 1

BLOCK 2, BLOCK 3, BLOCK 4, BLOCK 8, BLOCK 9, BLOCK 10, BLOCK 11, BLOCK 12, BLOCK 13, BLOCK 14

DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

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

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

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

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

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

0 50 100 200
SCALE: 1" = 100'

LEGEND

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

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.

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
06/05/2025

OVERALL STORM

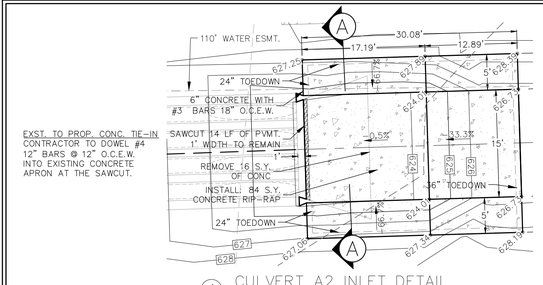
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

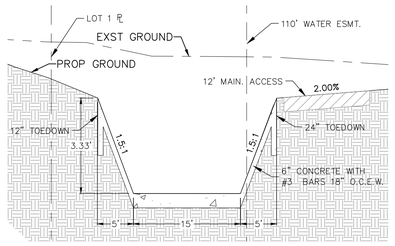
SHEET
C5.0

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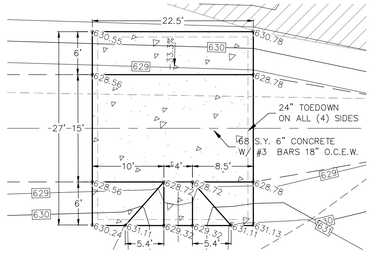
1 CULVERT A2 INLET DETAIL

SCALE: 1"=10'



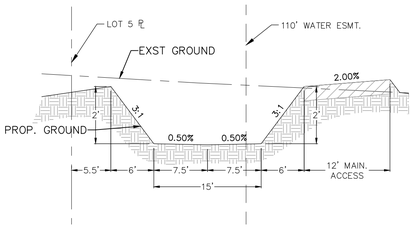
2 CULVERT A2 INLET | SECTION A–A

HORIZONTAL SCALE: 1"=10' / VERTICAL SCALE: 1"=2.5'



3 DRAIN A8 OUTFALL

SCALE: 1"=10'



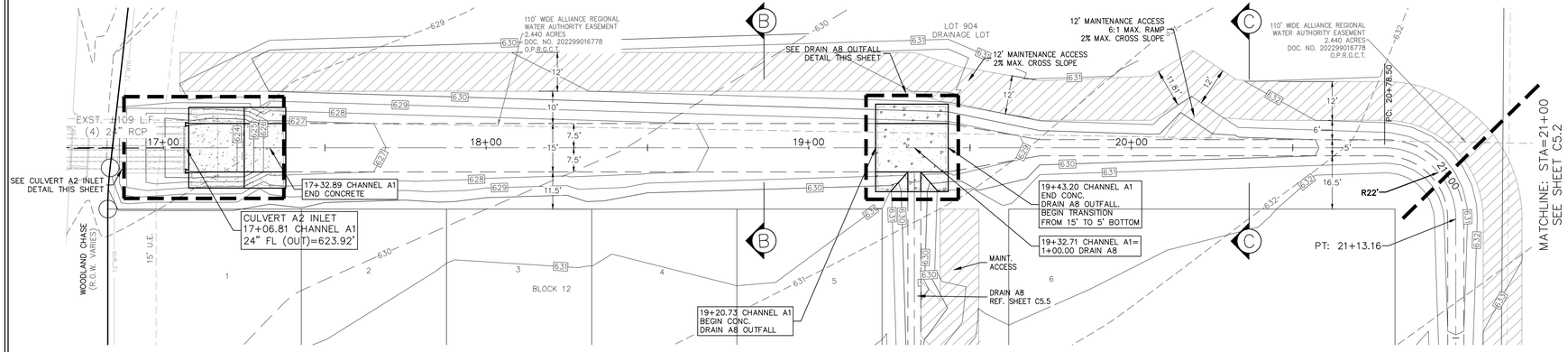
4 CHANNEL A1 | SECTION B–B

HORIZONTAL SCALE: 1"=10' / VERTICAL SCALE: 1"=2.5'

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

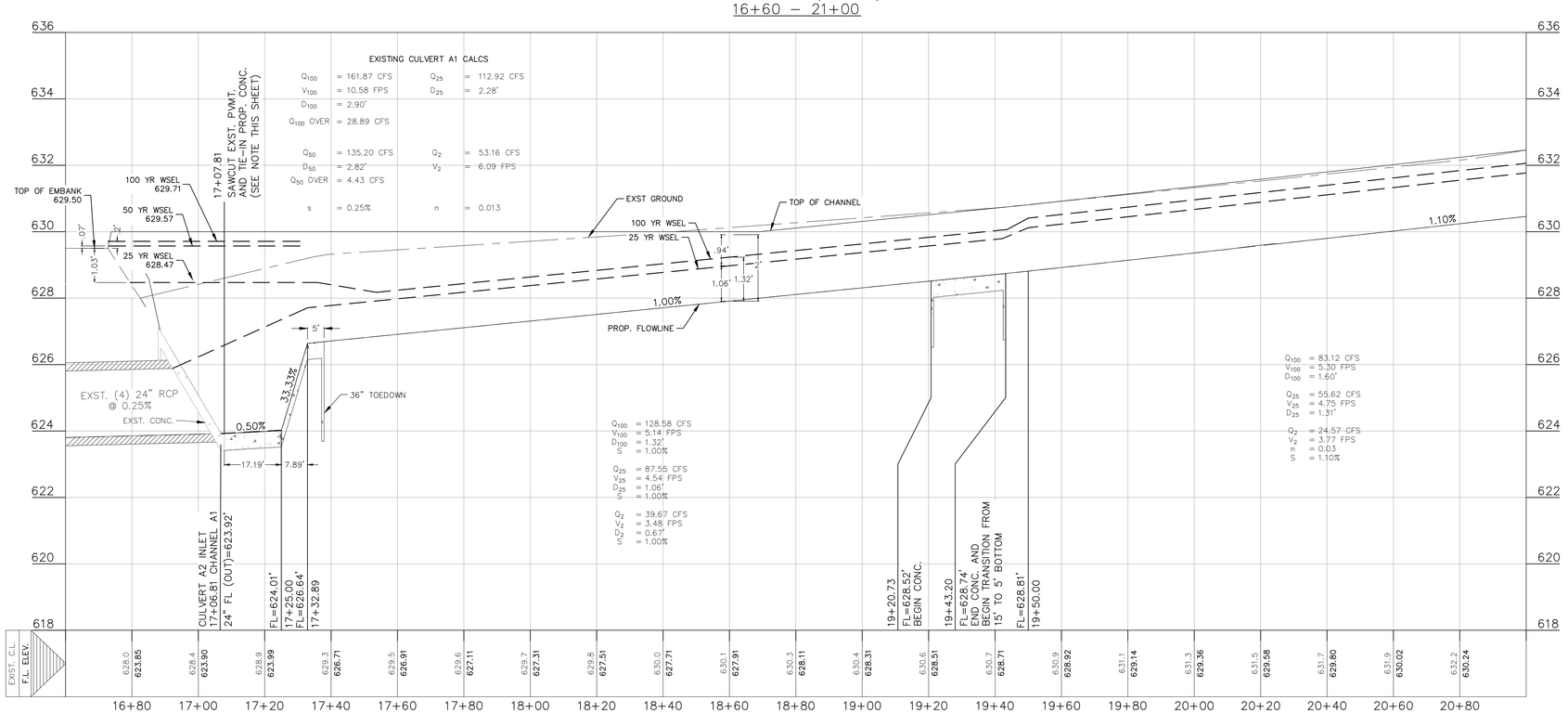
LEGEND

- 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



SECTION C–C
SEE SHEET C5.2
FOR DETAILS

CHANNEL A1 (1 OF 4)
16+60 – 21+00



DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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F. MAINTENANCE VEHICLE FOR POND AND 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.

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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
06/05/2025

CHANNEL A1 PLAN & PROFILE (1 OF 4)

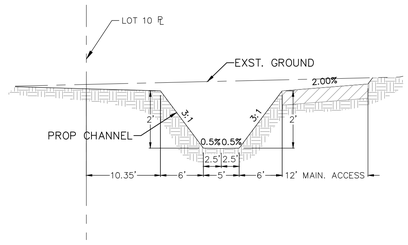
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

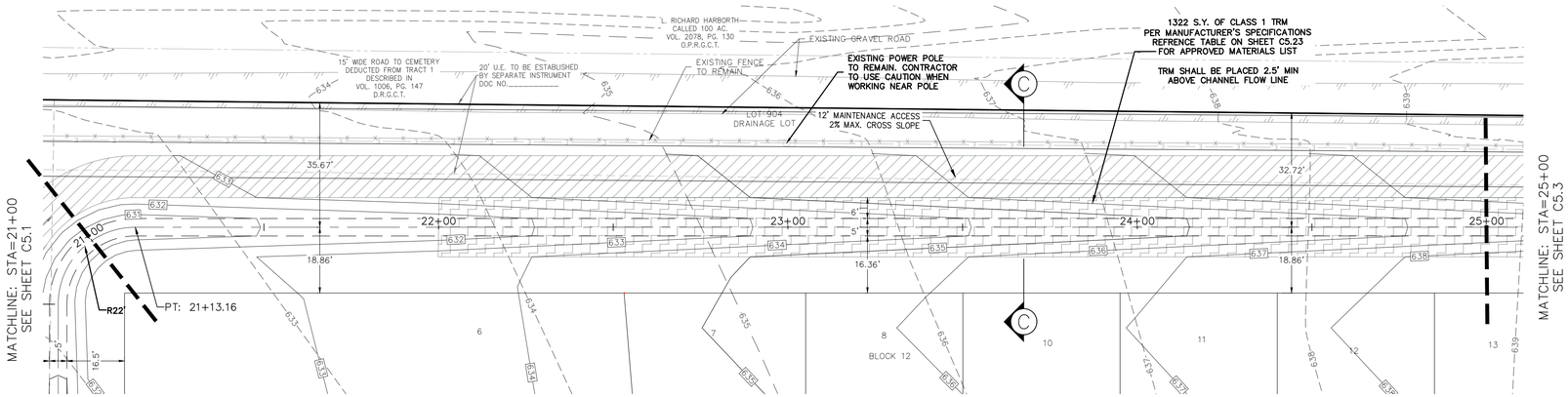
SHEET
C5.1

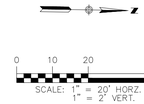
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⑤ CHANNEL A1 | SECTION C–C

HORIZONTAL SCALE: 1"=10' / VERTICAL SCALE: 1"=2.5'

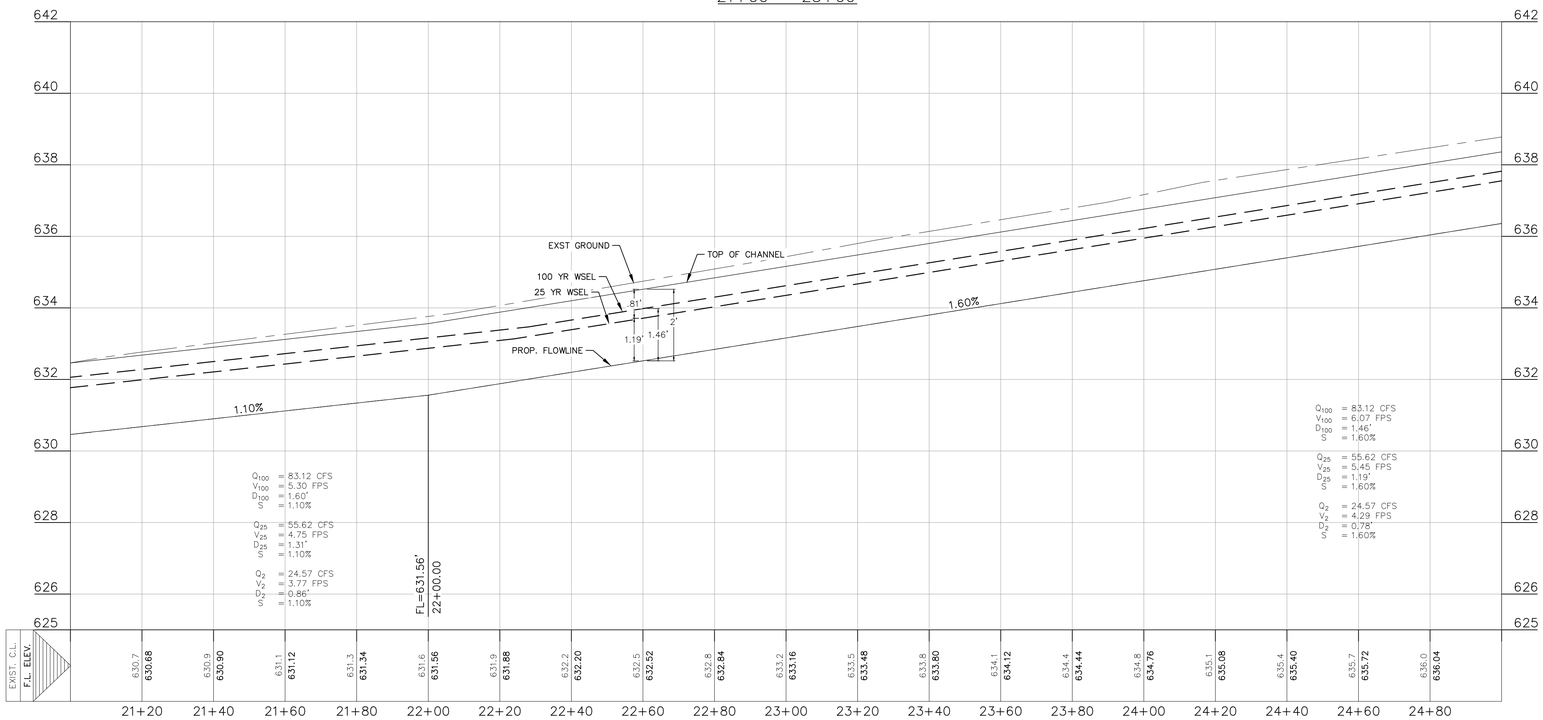




LEGEND

- 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
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

CHANNEL A1 (2 OF 4)
21+00 – 25+00



DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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TBPELS FIRM F-10961
TBPELS FIRM 1053600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

CHANNEL A1 PLAN & PROFILE (2 OF 4)

JARO NORTH UNIT 2

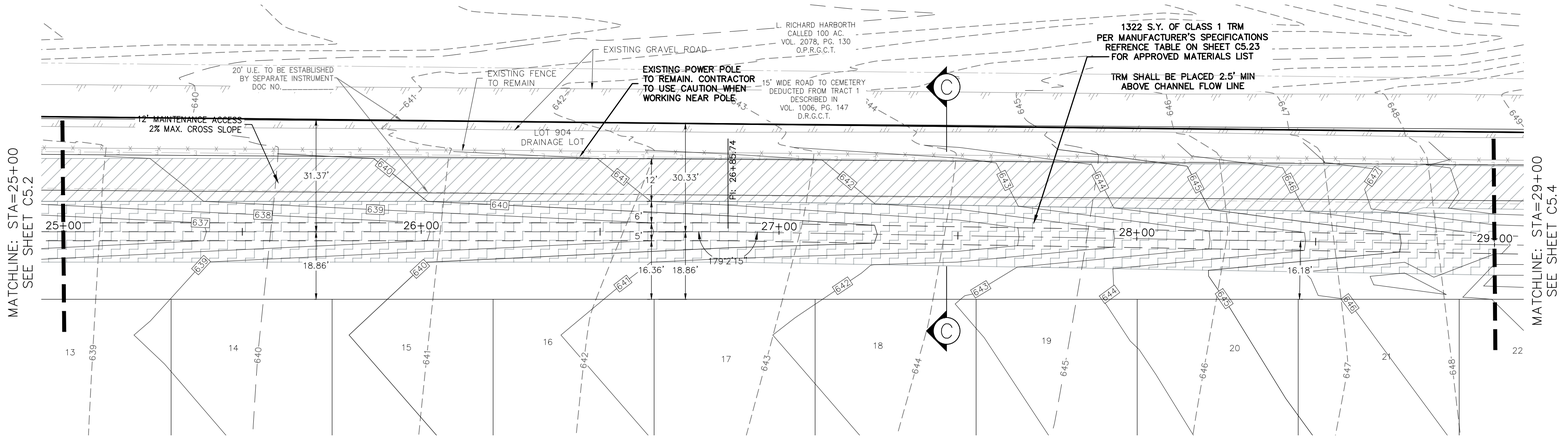
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

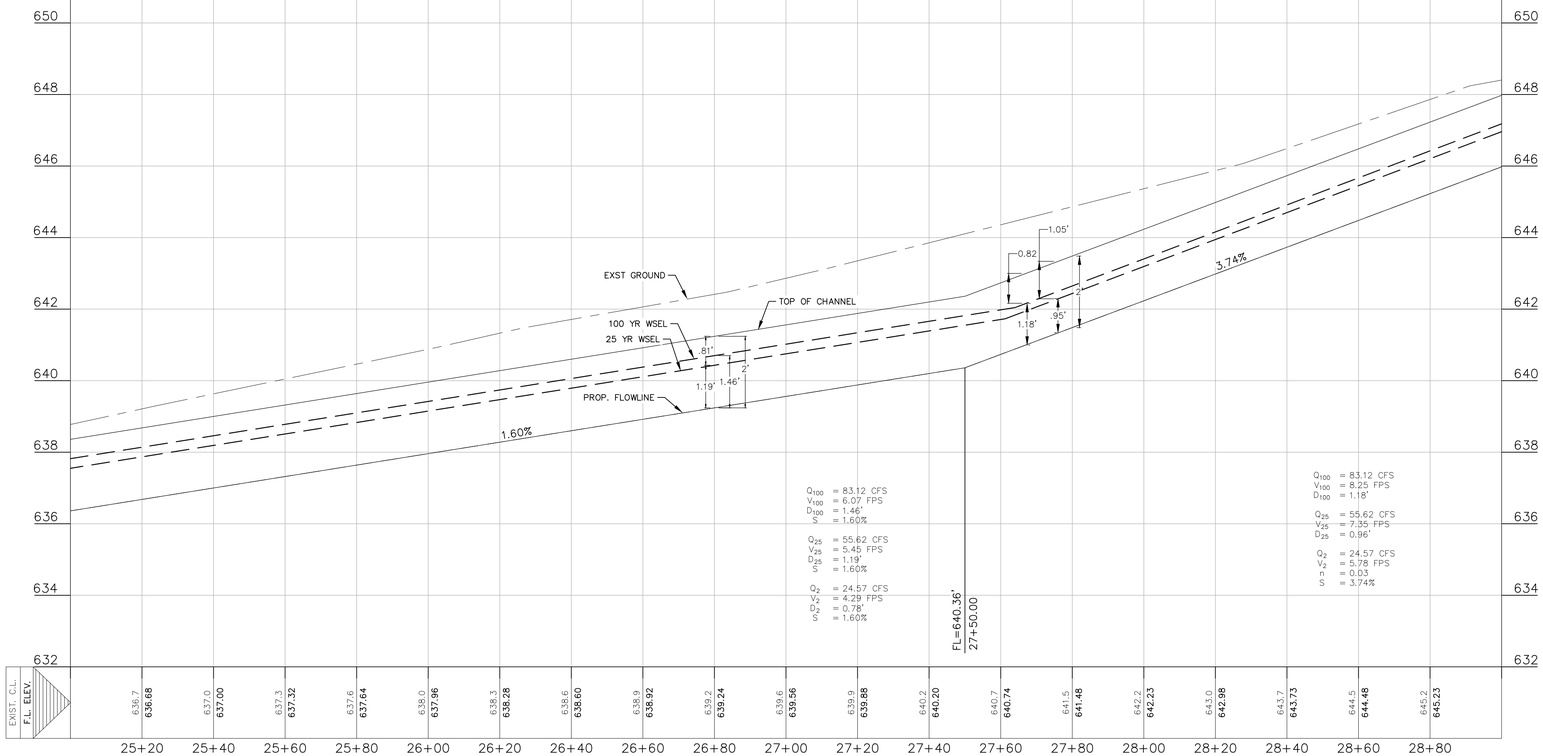
SHEET
C5.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_CHANNEL A1.dwg User: joshuak Jun 04, 2025 - 10:20pm

SECTION C–C
SEE SHEET C5.2
FOR DETAILS



CHANNEL A1 (3 OF 4)
25+00 – 29+00



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

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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STATE OF TEXAS
ZOE F. JASSO
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LICENSED PROFESSIONAL ENGINEER
06/05/2025

CHANNEL A1 PLAN & PROFILE (3 OF 4)

JARO NORTH UNIT 2

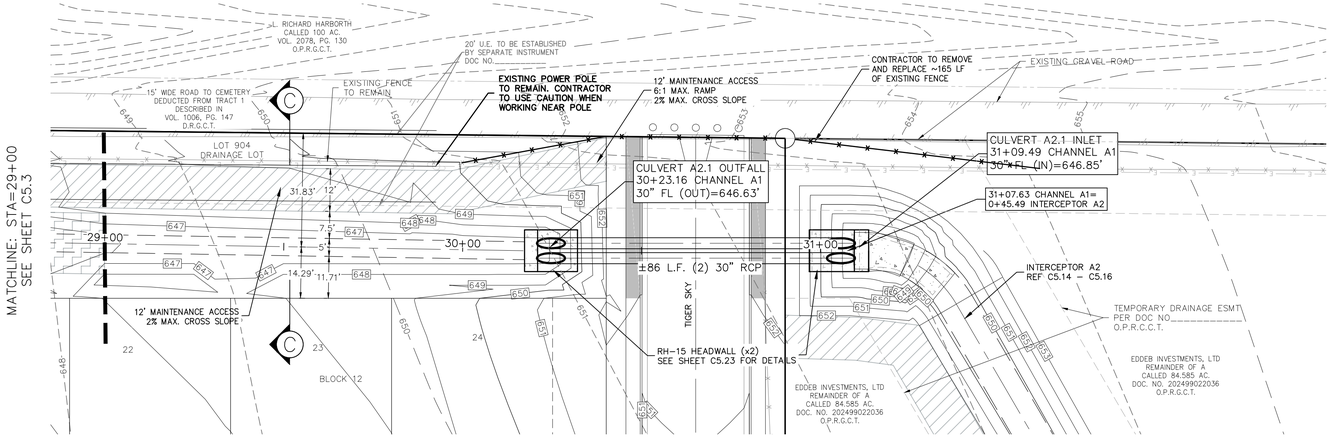
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
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DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

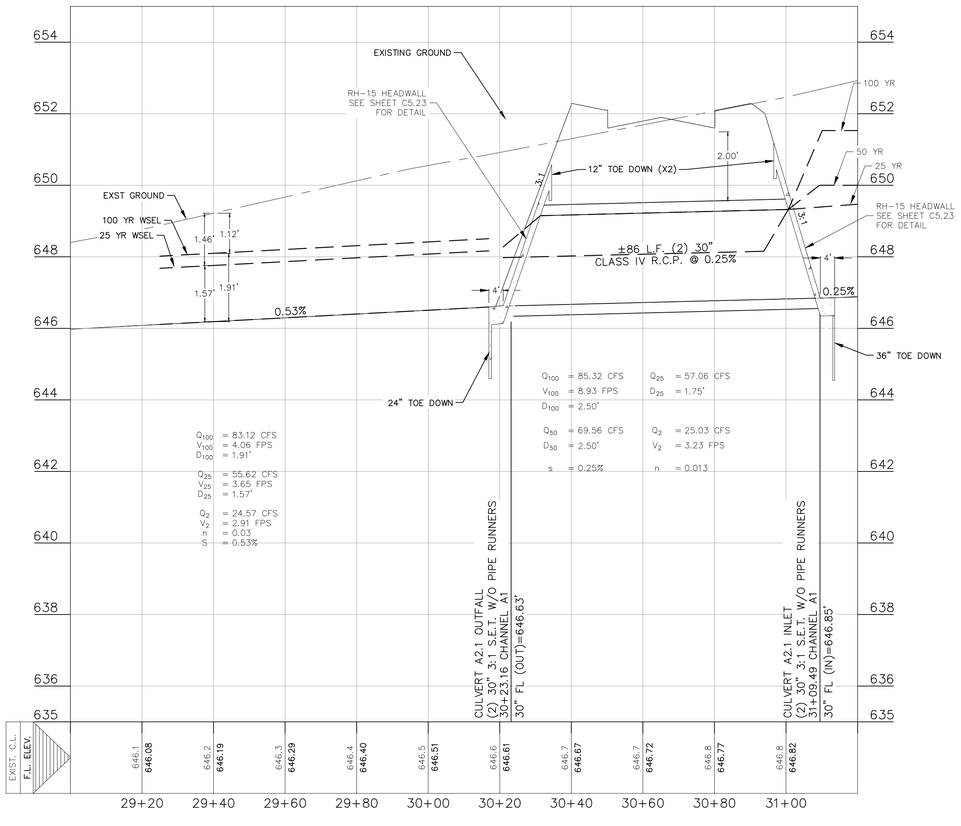
SHEET
C5.3

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_CHANNEL A1.dwg User: joshbuck Jun 04, 2025 - 10:20pm

SECTION C–C
SEE SHEET C5.2
FOR DETAILS



CHANNEL A1 (4 OF 4)
29+00 – 31+20



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
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06/05/2025

CHANNEL A1 PLAN & PROFILE (4 OF 4)

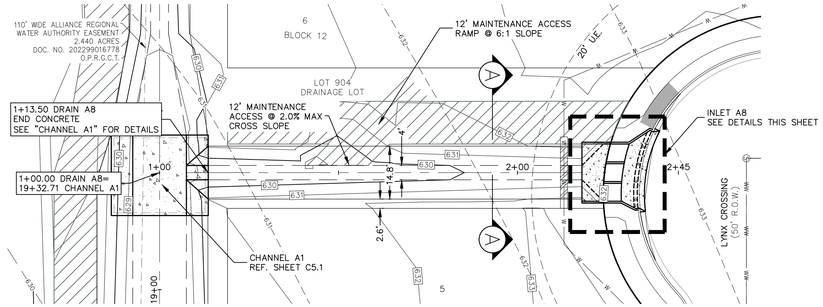
JARO NORTH UNIT 2

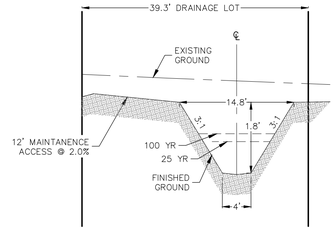
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.4

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\CDs\337.101_CHANNEL A1.dwg User: joshuak Jun 04, 2025 – 10:20pm





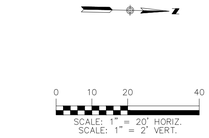
1 DRAIN A8 SECTION A–A

N.T.S.

Q_{100} = 61.40 CFS
V_{100} = 4.77 FPS
D_{100} = 1.51'
S = 1.0%

Q_{25} = 42.79 CFS
V_{25} = 4.31 FPS
D_{25} = 1.27'
S = 1.0%

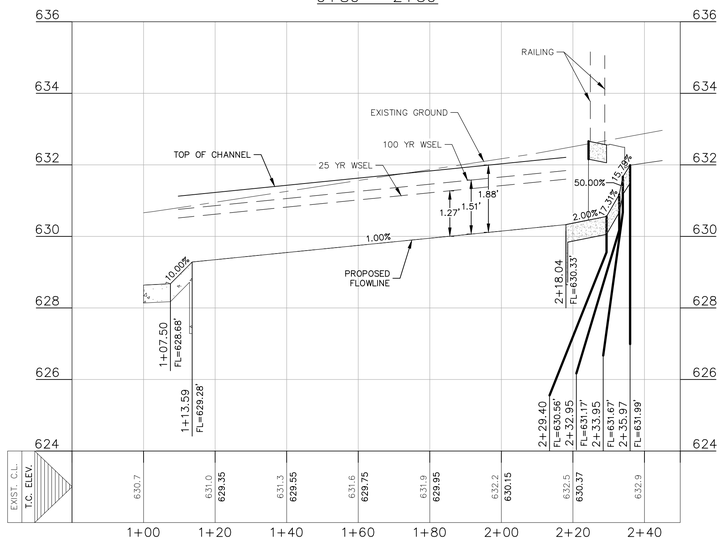
Q_2 = 20.21 CFS
V_2 = 3.51 FPS
D_2 = 0.87'
S = 1.0%

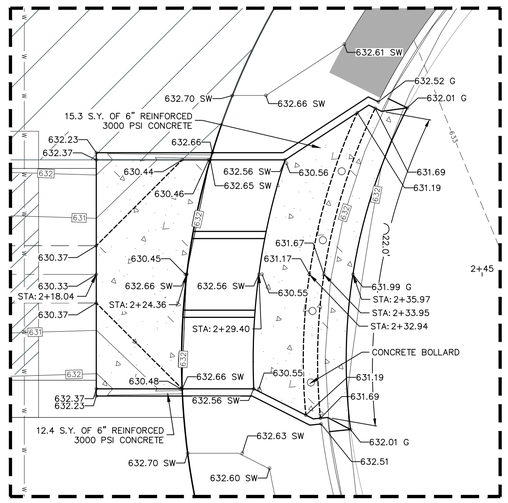


LEGEND

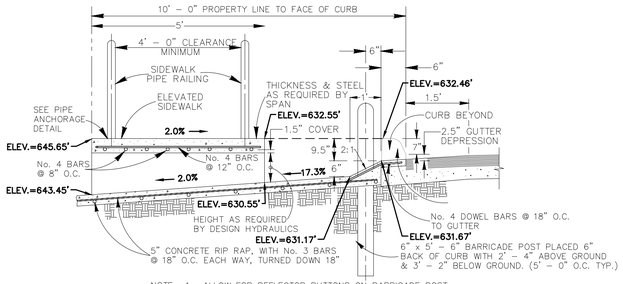
- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
- PROPOSED WASTEWATER LINE
- PROPOSED WATER LINE
- EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

DRAIN A8
0+80 – 2+50





INLET A8 – ELEVATED SIDEWALK & DROP CURB DETAIL



NOTE: 1. ALLOW FOR REFLECTOR BUTTONS ON BARRICADE POST. USE ONE 3 / 4" BUTTON PER POST.
2. POST SHALL RECEIVE TWO COATS OF ALUMINUM PAINT.
3. DESIGN HYDRAULICS REQUIRE 1.5' HEIGHT FOR ELEVATED SIDEWALK

INLET A8 – ELEVATED SIDEWALK & DROP CURB SECTION

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DRAIN A8 PLAN & PROFILE

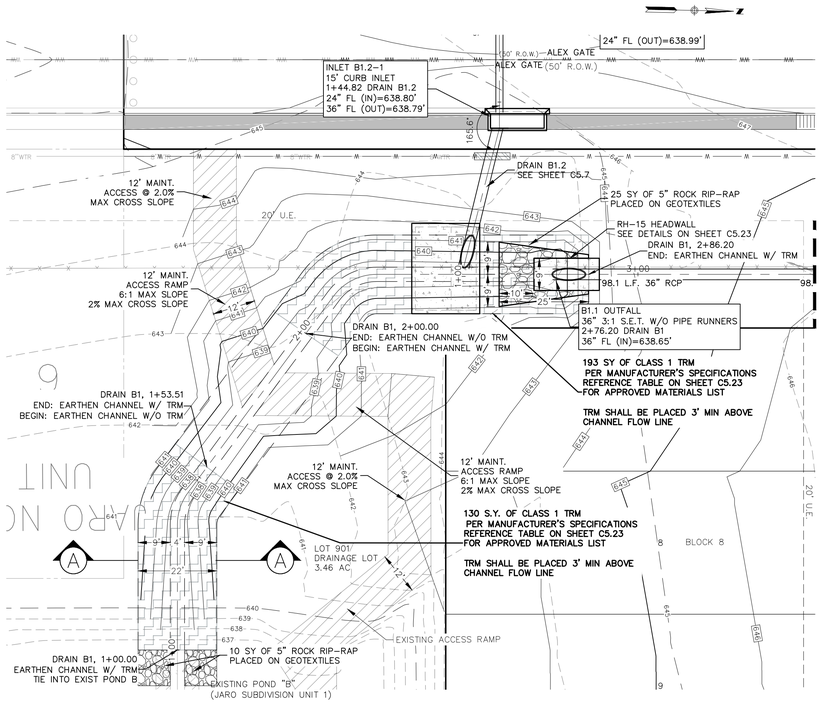
JARO NORTH UNIT 2

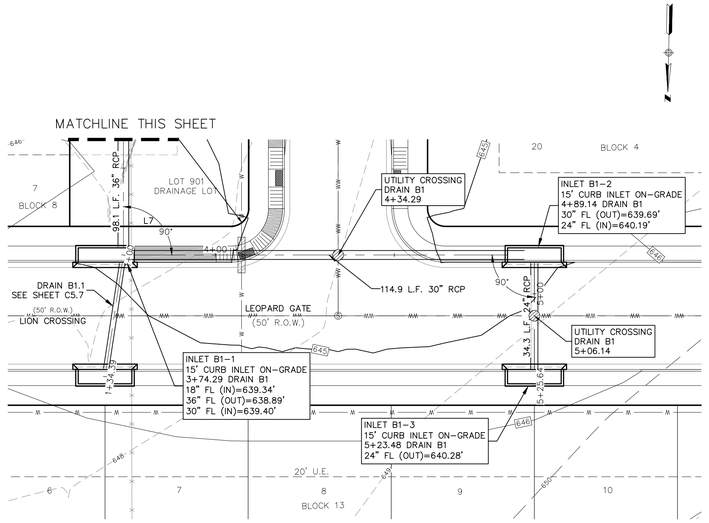
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.5

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_DRAIN A8.dwg User: joshuak Jun 04, 2025 - 10:21pm





TRENCH EXCAVATION SAFETY PROTECTION

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

UTILITY TRENCH COMPACTION

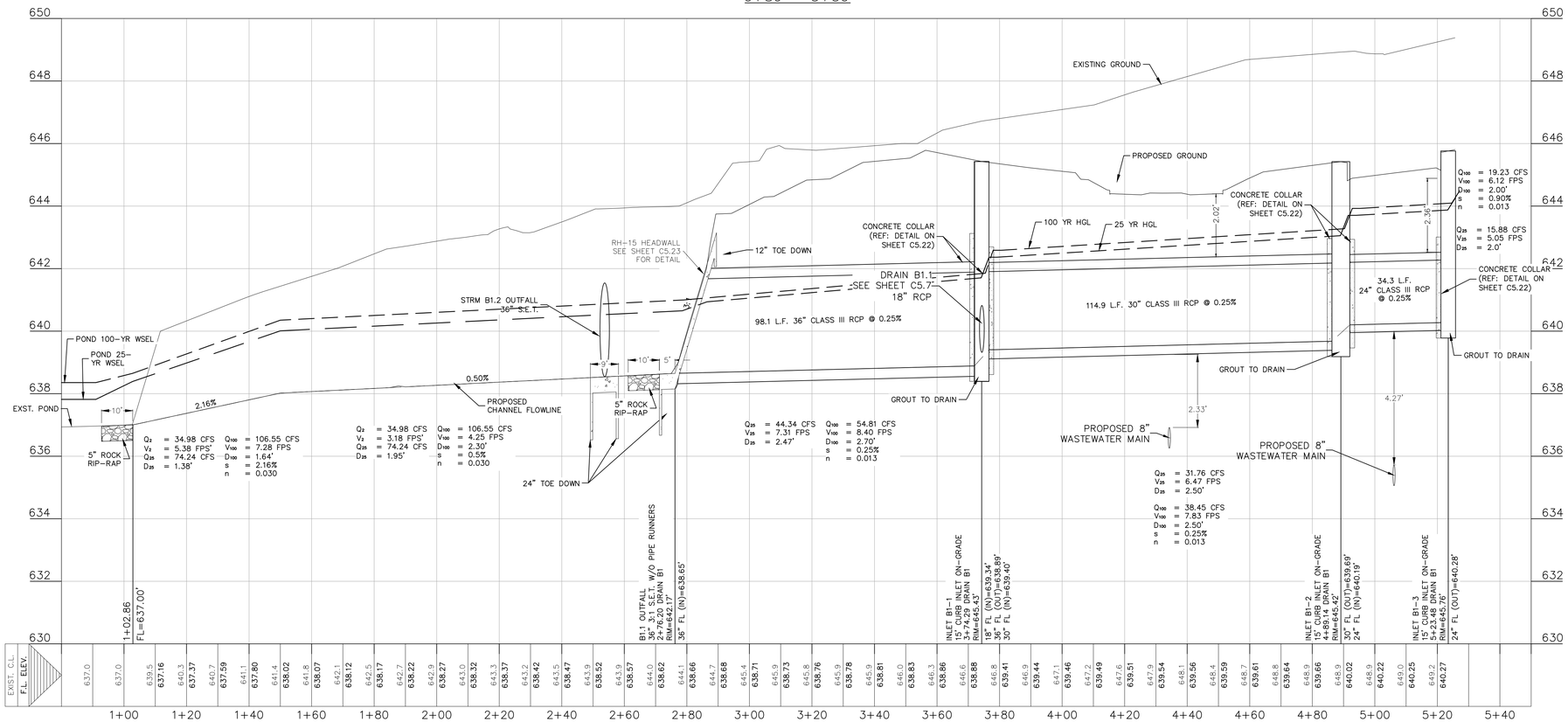
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

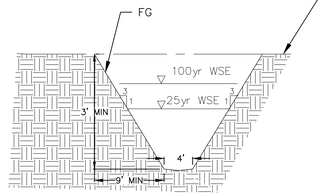
0 10 20 40
SCALE: 1" = 20' HORIZ.
SCALE: 1" = 2' VERT.

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
- X — X — X — EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

DRAIN B1
0+80 – 5+50





1 CHANNEL B SECTION A–A
N.T.S.

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

GROUT TO DRAIN NOTE
BOTTOM OF DRAIN BOXES SHALL BE GROUTED UP TO PIPE INVERT TO ENSURE POSITIVE DRAINAGE

MAINTENANCE (MAIN.) ACCESS PATH
MAIN. ACCESS PATH MUST BE 12' MIN. WIDTH. IT SHALL NOT EXCEED 6:1 GRADING AND 2% CROSS SLOPE.

REFER TO THE COVER SHEET FOR BENCHMARK INFORMATION.

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

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

DRAIN B1 PLAN & PROFILE

JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.6

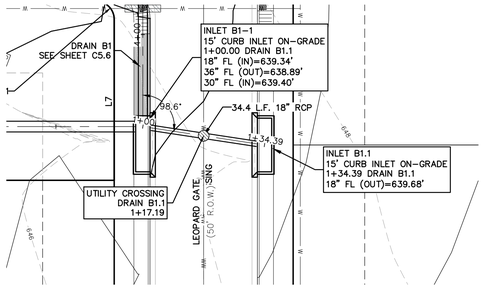
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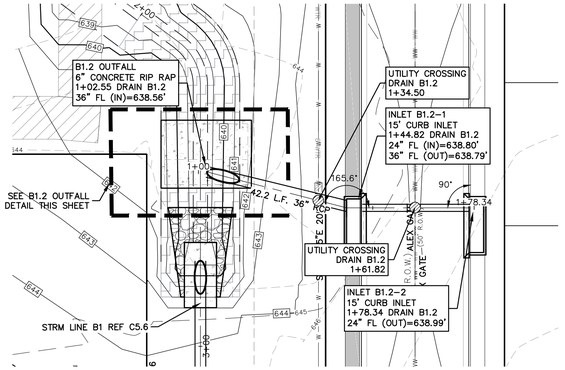
TRENCH EXCAVATION SAFETY PROTECTION

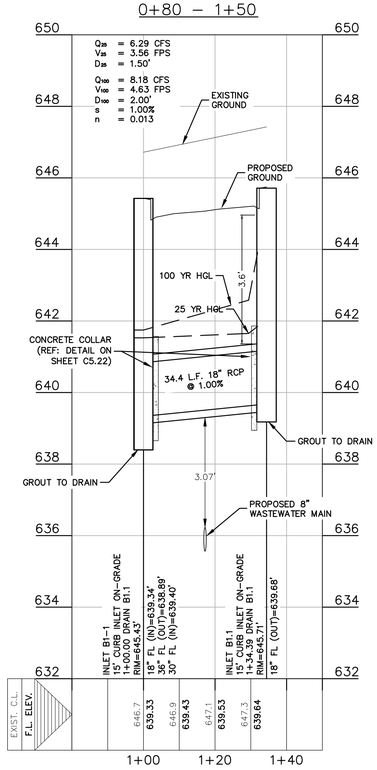
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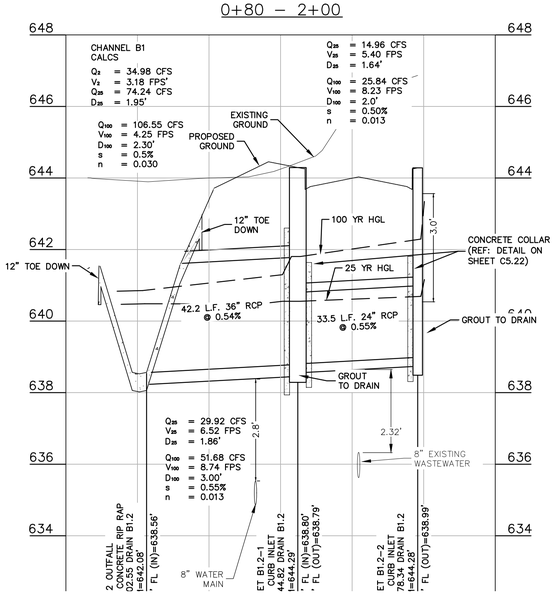
UTILITY TRENCH COMPACTION

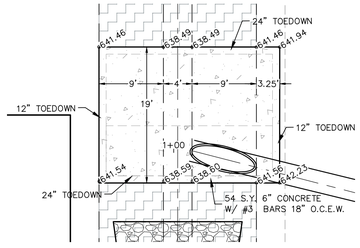
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1 B1.2 OUTFALL DETAIL
SCALE: 1"=10'

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

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
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- TURF REINFORCEMENT MAT

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06/05/2025

DRAIN B1.1 & B1.2 PLAN & PROFILE

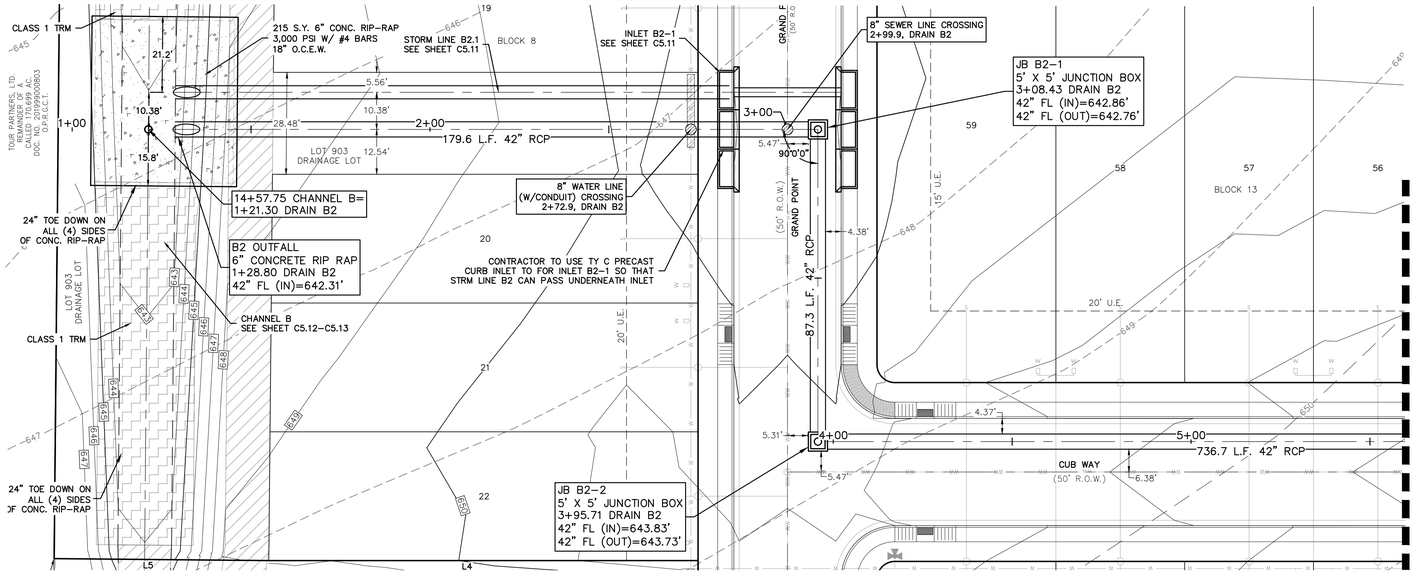
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

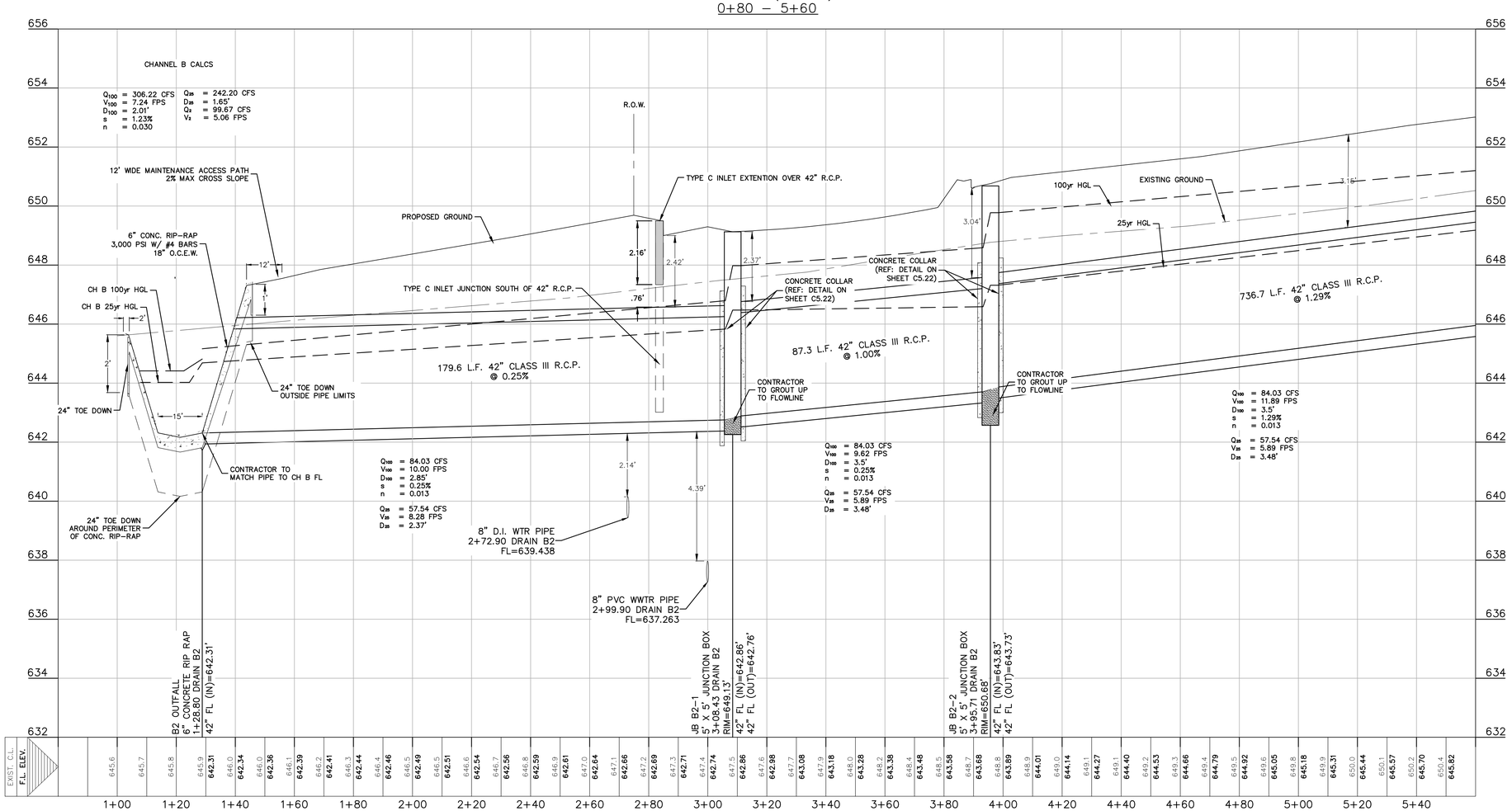
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.7

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(Civil)\337.101_DRAIN B1.dwg User: michaelg Jun 05, 2025 - 1:41pm



DRAIN B2 (1 OF 3)
0+80 – 5+60



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

LEGEND

- 700 — EXISTING CONTOURS
- 700 — 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
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STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

DRAIN B2 PLAN & PROFILE (1 OF 3)

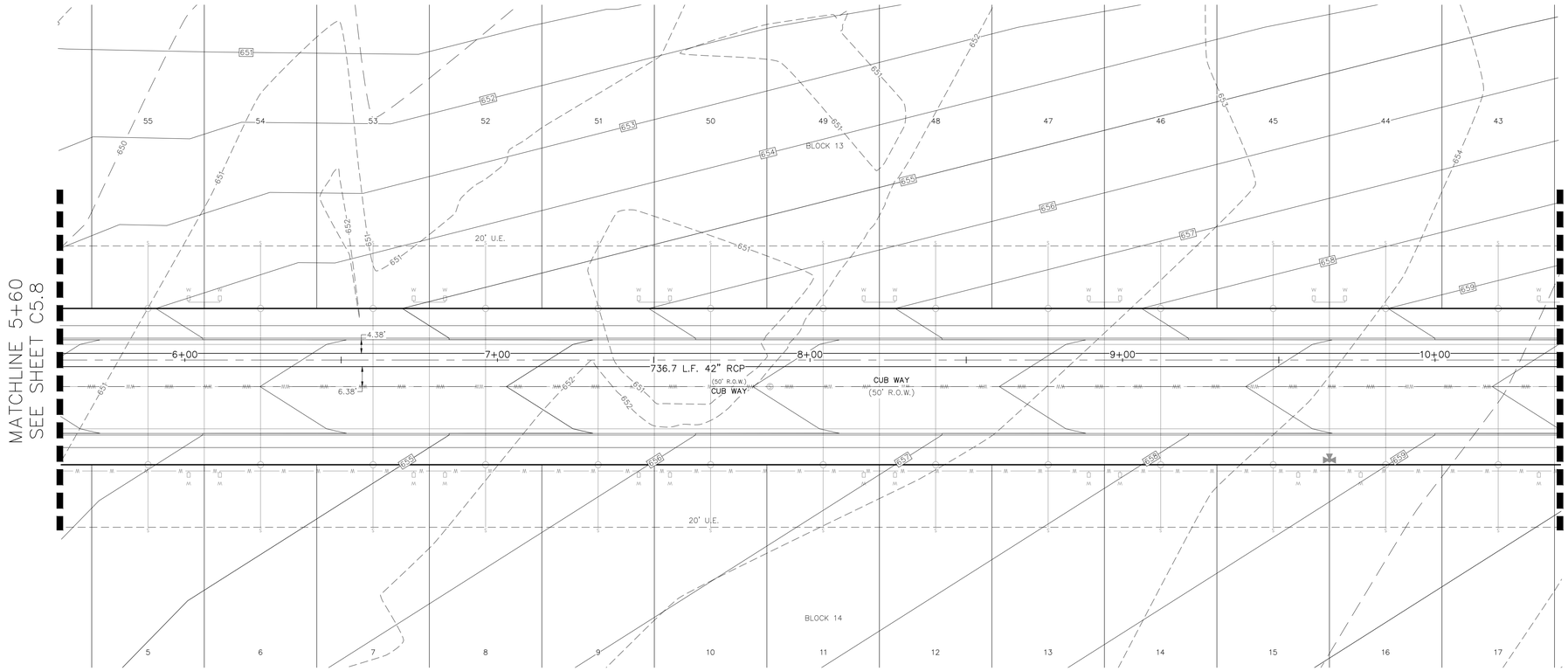
JARO NORTH UNIT 2

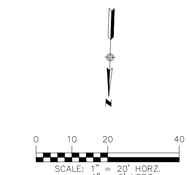
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.8

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_DRAIN B2.dwg User: michaelg Jun 05, 2025 - 1:41pm





LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
- PROPOSED STORM DRAIN LINE
- UTILITY CROSSING
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- PROPOSED WATER LINE
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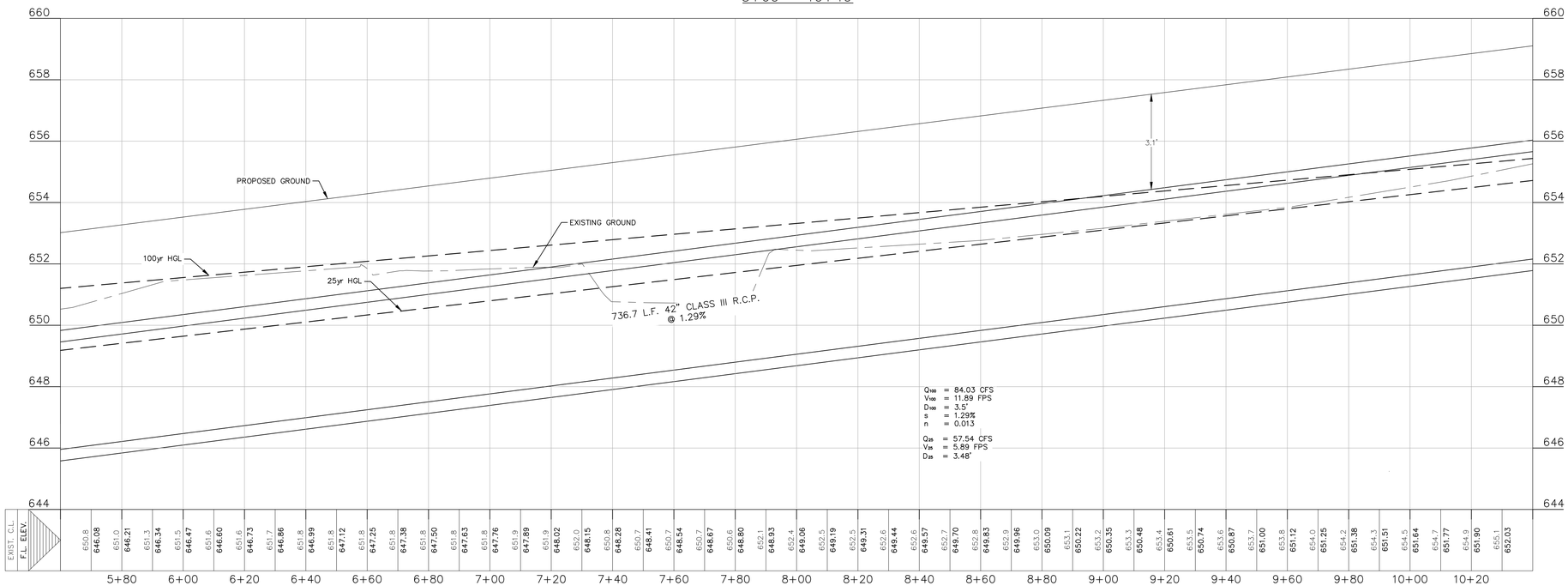
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DRAIN B2 (2 OF 3)
5+60 – 10+40



290 S. CASTELL AVE., STE. 100
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DRAIN B2 PLAN & PROFILE (2 OF 3)

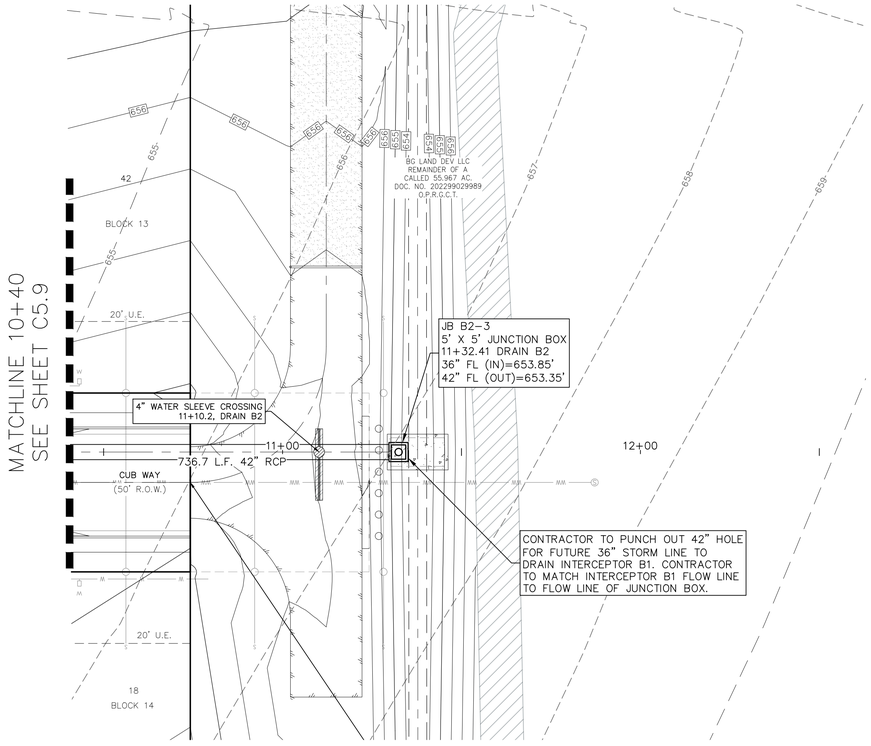
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

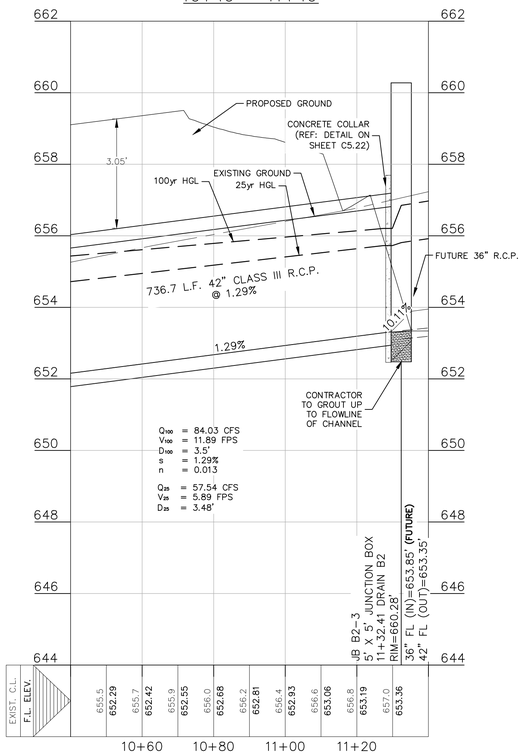
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

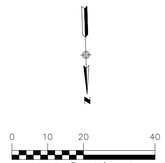
SHEET
C5.9

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\20s\337.101_DRAIN B2.dwg User: joshuck Jun 04, 2025 - 10:22pm



DRAIN B2 (3 OF 3)
10+40 – 11+40





LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- U.E. UTILITY EASEMENT
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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. BASINS AND CHANNELS SHALL BE MOWED ANNUALLY BETWEEN THE MONTHS OF JUNE AND SEPTEMBER.

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

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

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

GROUT TO DRAIN NOTE
BOTTOM OF DRAIN BOXES SHALL BE GROUTED UP TO PIPE INVERT TO ENSURE POSITIVE DRAINAGE

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
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

DRAIN B2 PLAN AND PROFILE (3 OF 3)

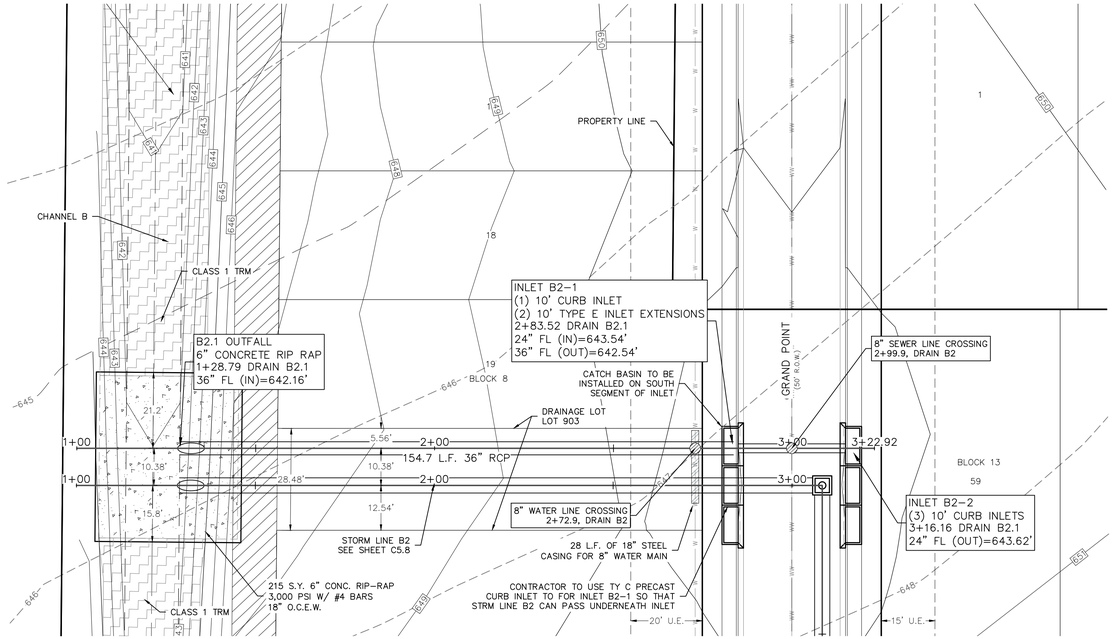
JARO NORTH UNIT 2

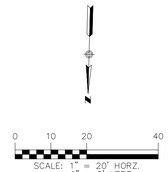
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.10

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_DRAIN B2.dwg User: joshuak Jun 04, 2025 - 10:22pm





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

UTILITY TRENCH COMPACTION

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO-TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND TESTED FOR DENSITY AND MOISTURE IN ACCORDANCE WITH TEST METHODS TEX-113-E, TEX-114-E, TEX-115-E. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 100LF FOR EACH LIFT. UPON COMPLETION OF TESTING THE GEO-TECHNICAL ENGINEER SHALL PROVIDE THE CITY OF NEW BRAUNFELS STREET INSPECTOR WITH ALL TESTING DOCUMENTATION AND A CERTIFICATION STATING THAT THE PLACEMENT OF FILL MATERIAL HAS BEEN COMPLETED IN ACCORDANCE WITH THE PLANS.

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.

DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

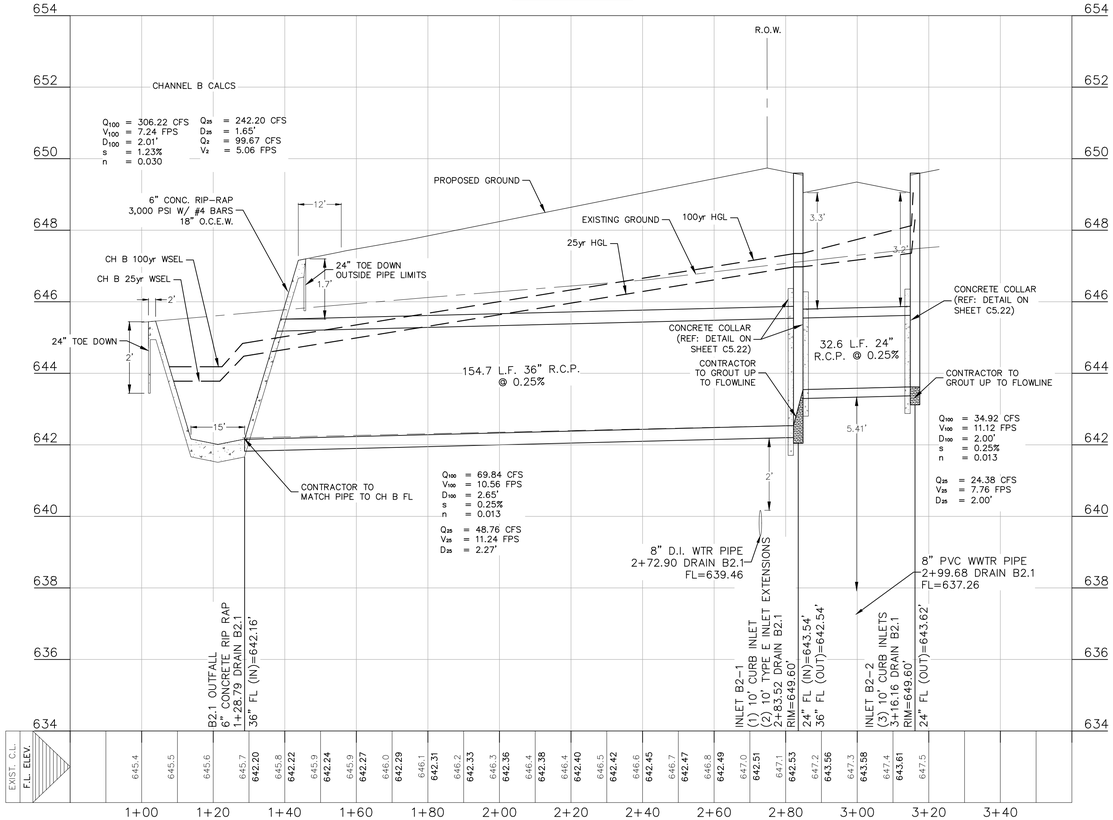
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DRAIN B2.1
0+80 – 3+60



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TBPELS FIRM 1053600
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ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

DRAIN B2.1 PLAN & PROFILE

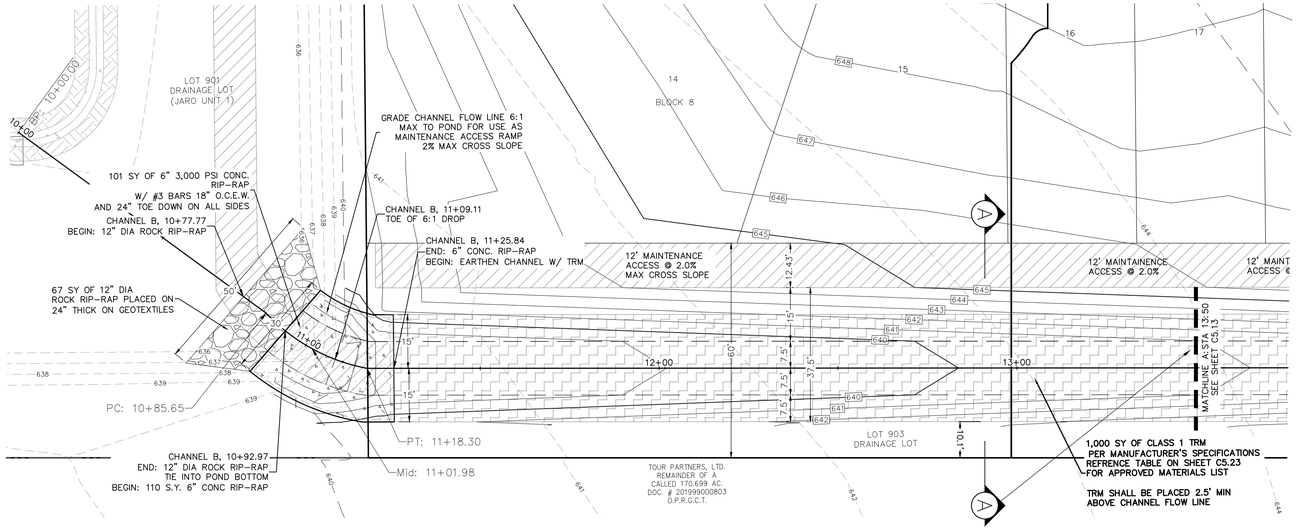
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

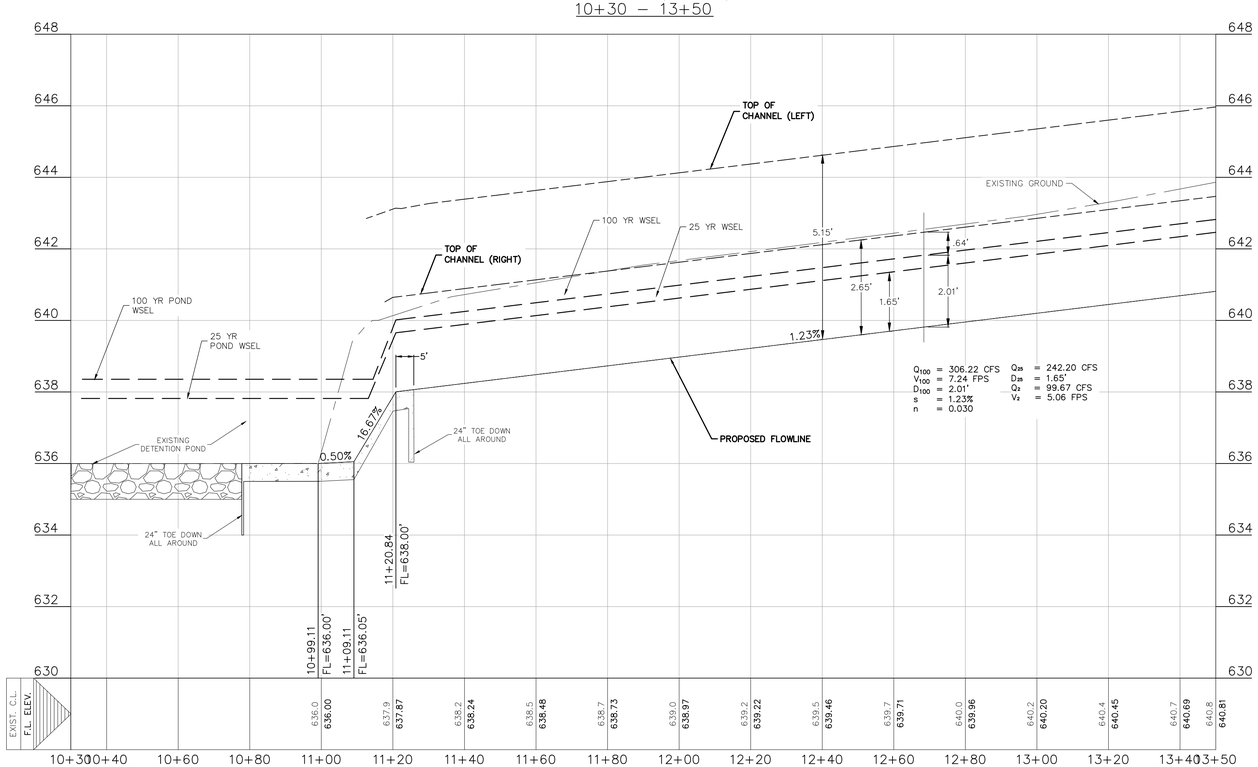
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

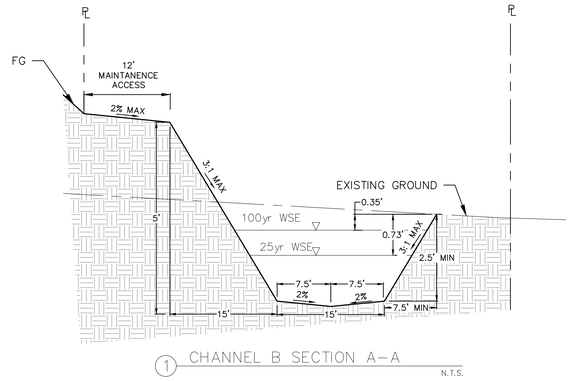
SHEET
C5.11

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\(03a)337101_DRAIN B2.1.dwg User: joshuck Jun 04, 2025 - 10:22pm



CHANNEL B (1 OF 2)
10+30 – 13+50





1 CHANNEL B SECTION A–A
N.T.S.

Q_{100} = 306.22 CFS
V_{100} = 7.24 FPS
D_{100} = 2.01'
s = 1.23%
n = 0.030

Q_{25} = 212.60 CFS
D_{25} = 1.65'
Q_2 = 99.67 CFS
V_2 = 5.06 FPS

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 — PROPOSED WASTEWATER LINE
- w — PROPOSED WATER LINE
- E — EXISTING ELECTRIC LINE
- PROPERTY BOUNDARY
- EASEMENT
- x — EXISTING FENCE
- MAINTENANCE ACCESS
- TURF REINFORCEMENT MAT

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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
06/05/2025

CHANNEL B PLAN & PROFILE (1 OF 2)

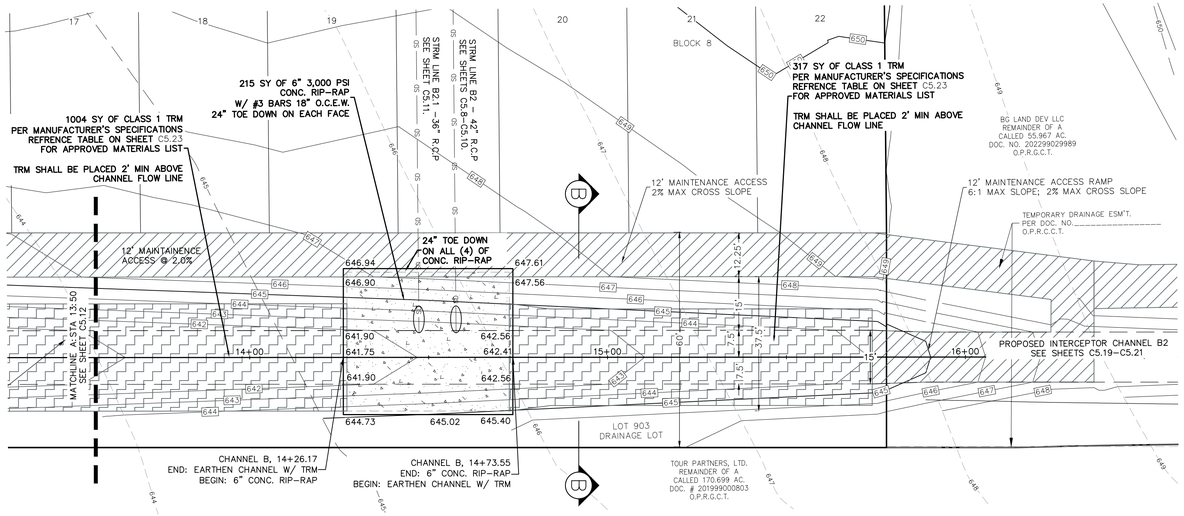
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

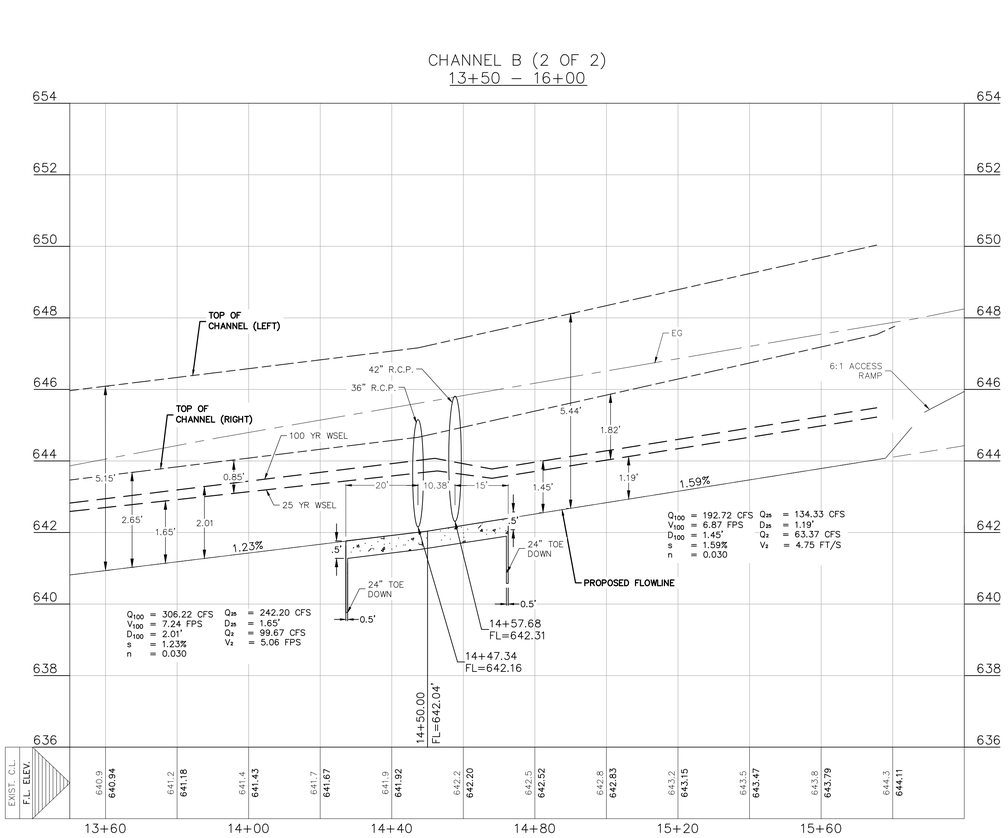
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

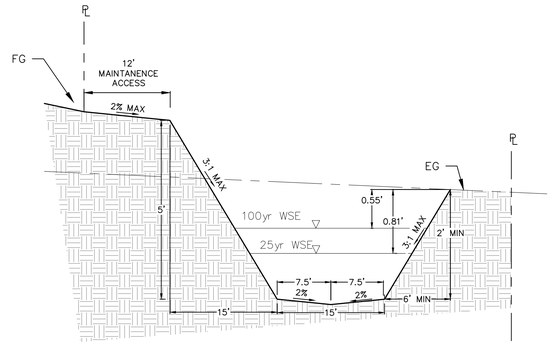
SHEET
C5.12

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_CHANNEL B.dwg User: joshuak Jun 04, 2025 - 10:23pm



CHANNEL B (2 OF 2)
13+50 – 16+00

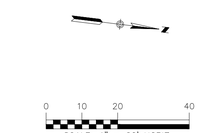




② CHANNEL B SECTION B–B
N.T.S.

Q_{100} = 192.72 CFS
V_{100} = 6.87 FPS
D_{100} = 1.45'
s = 1.59%
n = 0.030

Q_{25} = 134.33 CFS
D_{25} = 1.19'
Q_2 = 63.37 CFS
V_2 = 4.75 FT/S



LEGEND

- 700 — EXISTING CONTOURS
- 700 — 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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TBPELS FIRM 1053600

HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

CHANNEL B PLAN & PROFILE (2 OF 2)

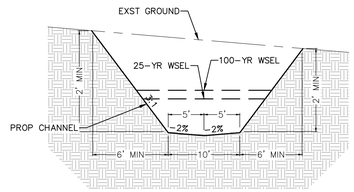
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C5.13

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337-101_CHANNEL B.dwg User: joshuck Jun 04, 2025 - 10:23pm

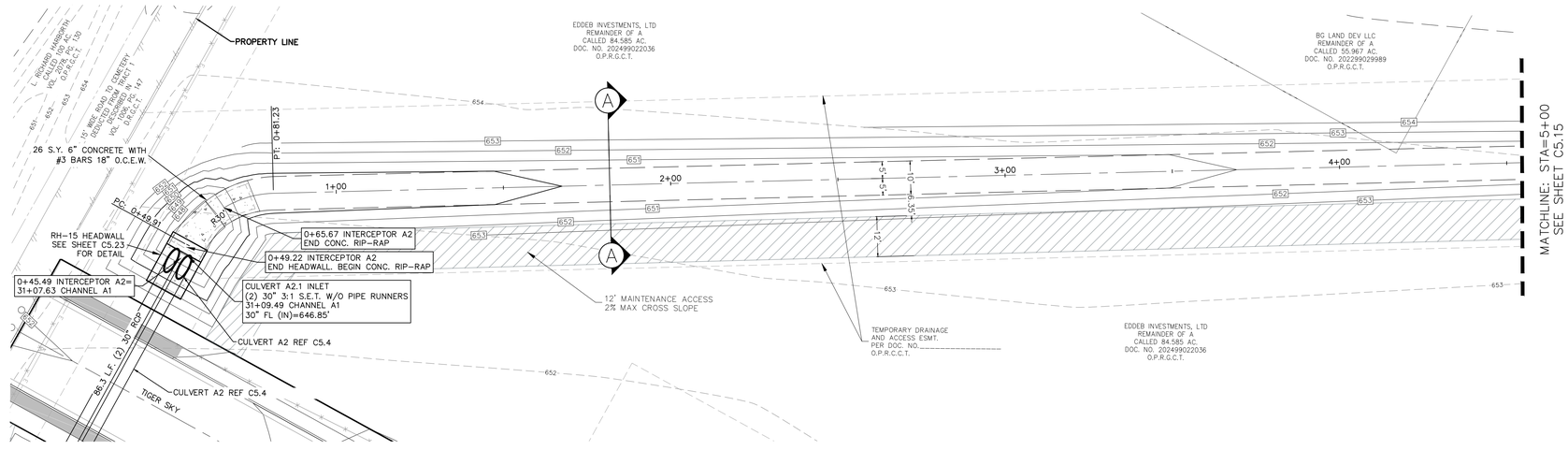


Q_{100} = 85.32 CFS
V_{100} = 3.79 FPS
D_{100} = 1.54'
s = 0.50%
n = 0.030

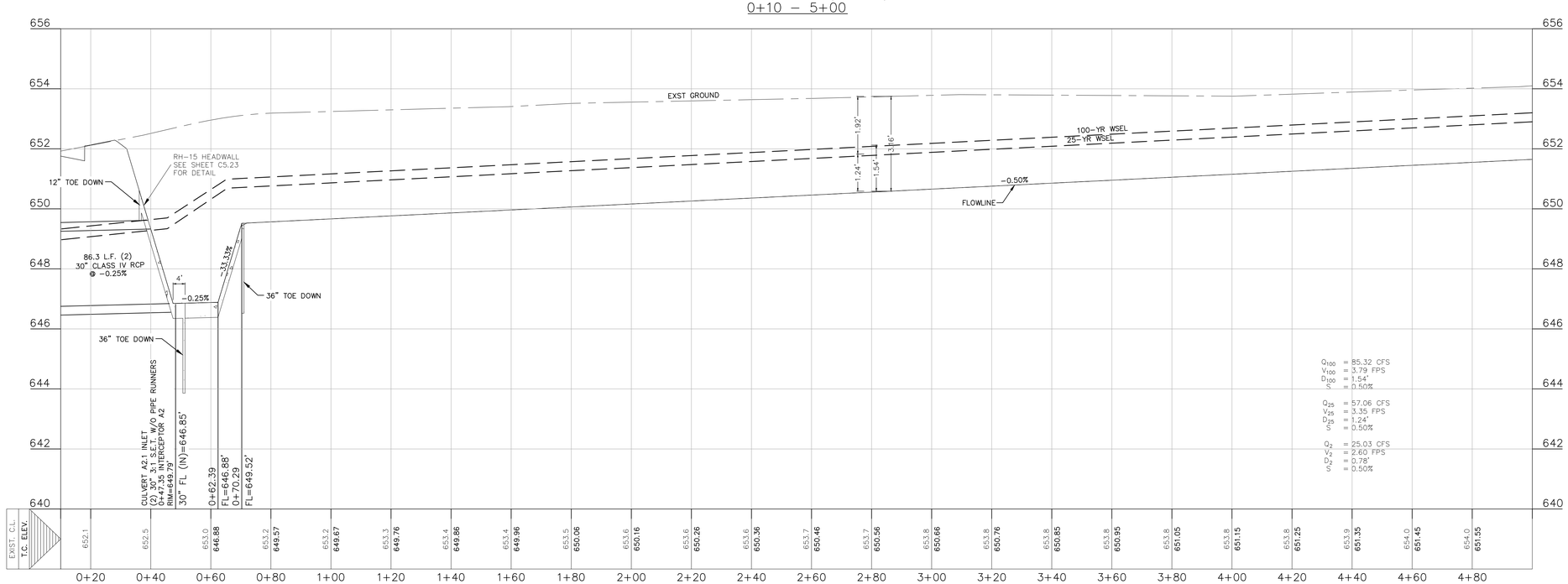
Q_{25} = 57.06 CFS
V_{25} = 3.35 FPS
D_{25} = 1.24'

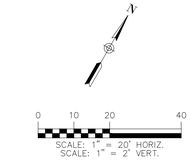
1 INTERCEPTOR A2 | SECTION A-A

HORIZONTAL: 1"=10' / VERTICAL: 1"=2.5'



INTERCEPTOR A2 (1 OF 3)
0+10 – 5+00





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
- EDGE OF ASPHALT

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PROFESSIONAL ENGINEER
06/05/2025

INTERCEPTOR A2 - PLAN & PROFILE (1 OF 3)

JARO NORTH UNIT 2

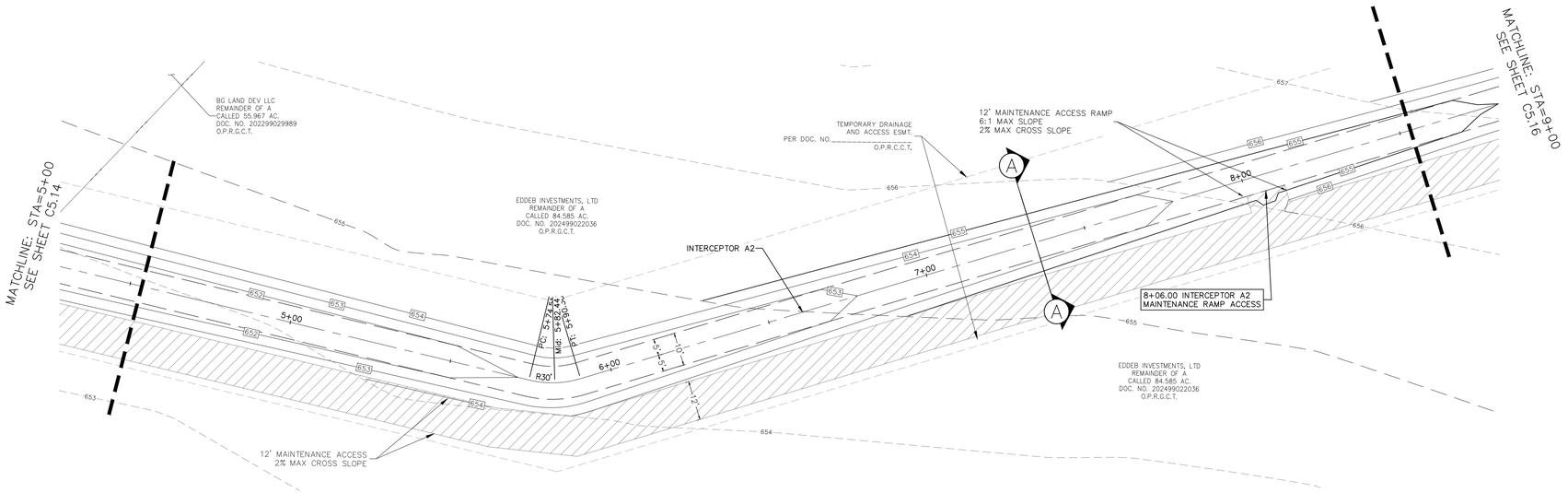
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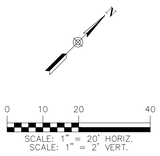
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.14

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuok Jun 04, 2025 - 10:23pm

SECTION A–A
SEE SHEET C5.14
FOR DETAILS

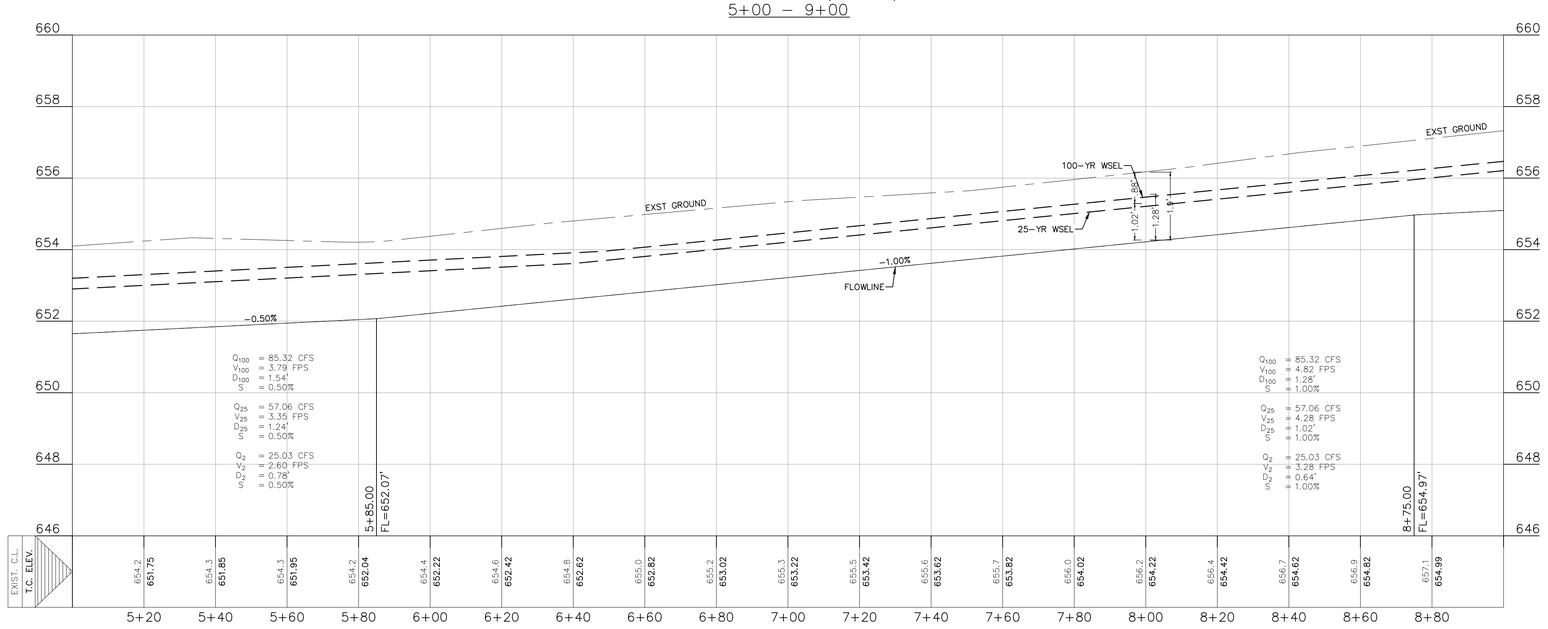




LEGEND

- 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
- EDGE OF ASPHALT

INTERCEPTOR A2 (2 OF 3)
5+00 – 9+00



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TBPELS FIRM 1053600

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131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

INTERCEPTOR A2 - PLAN & PROFILE (2 OF 3)

JARO NORTH UNIT 2

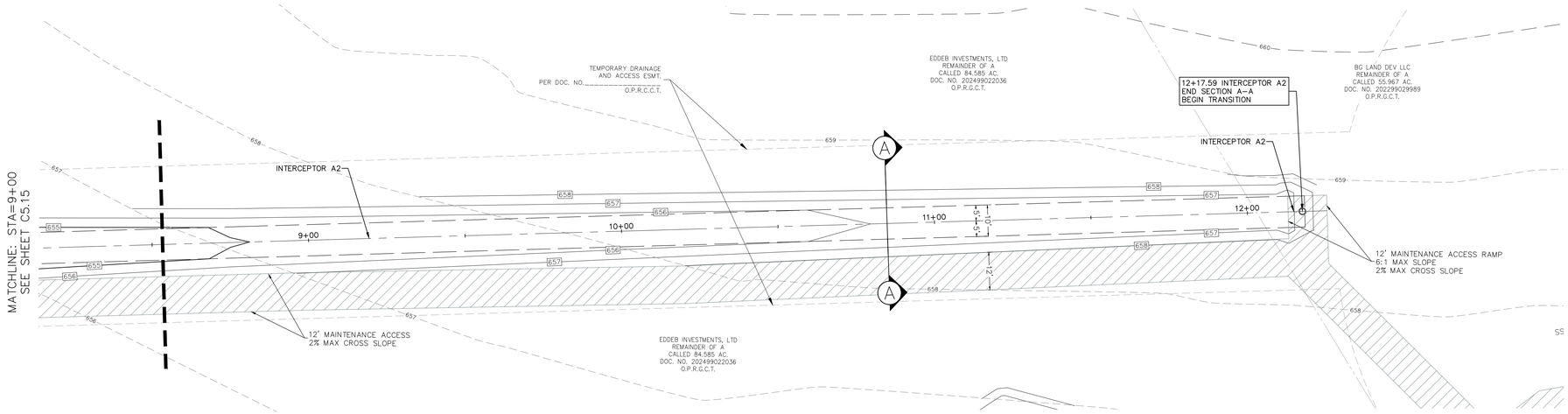
NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C5.15

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuak Jun 04, 2025 - 10:23pm

SECTION A–A
SEE SHEET C5.14
FOR DETAILS

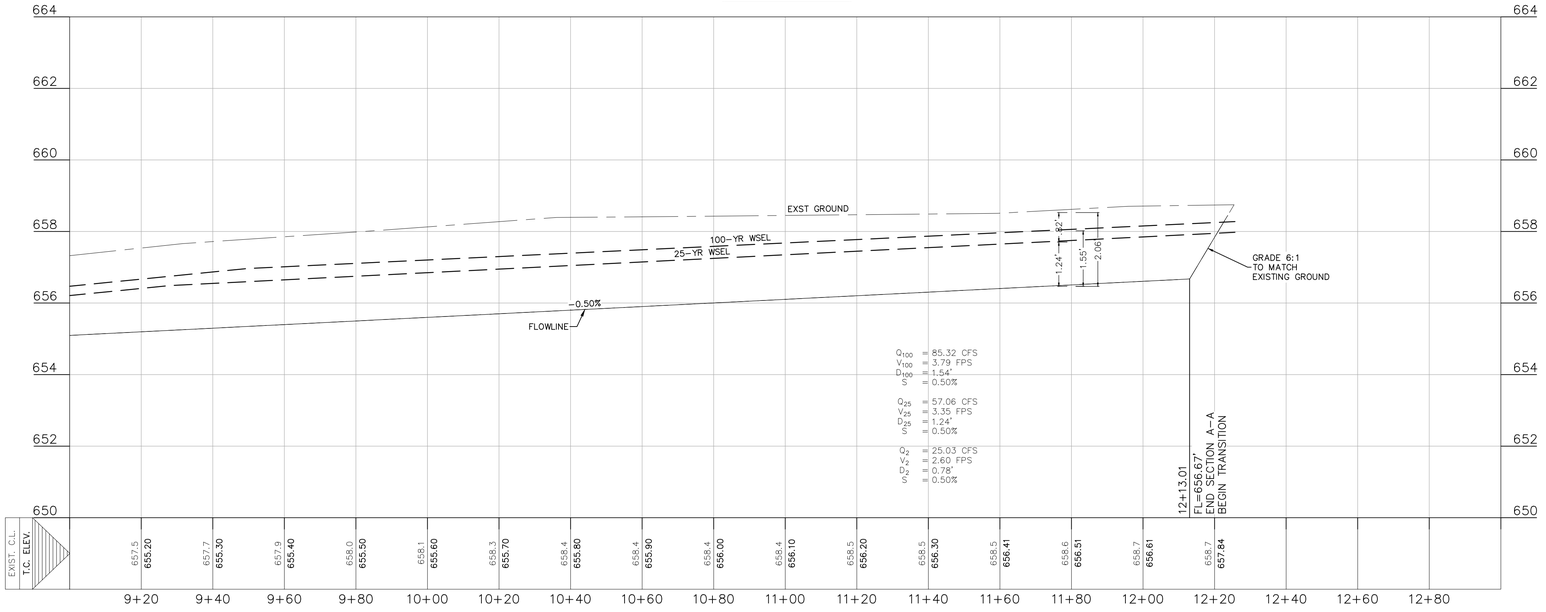


0 10 20 40
SCALE: 1" = 20' HORIZ.
SCALE: 1" = 2' VERT.

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
- EDGE OF ASPHALT

INTERCEPTOR A2 (3 OF 3)
9+00 – 13+00



DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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INTERCEPTOR A2 - PLAN & PROFILE (3 OF 3)

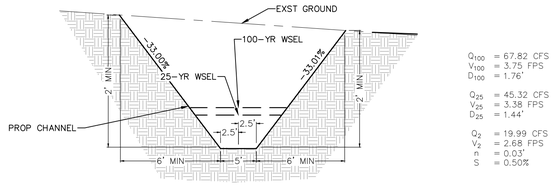
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C5.16

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337101_INTERCEPTORS A2, B1 & B2.dwg User: joshuck Jun 04, 2025 - 10:23pm



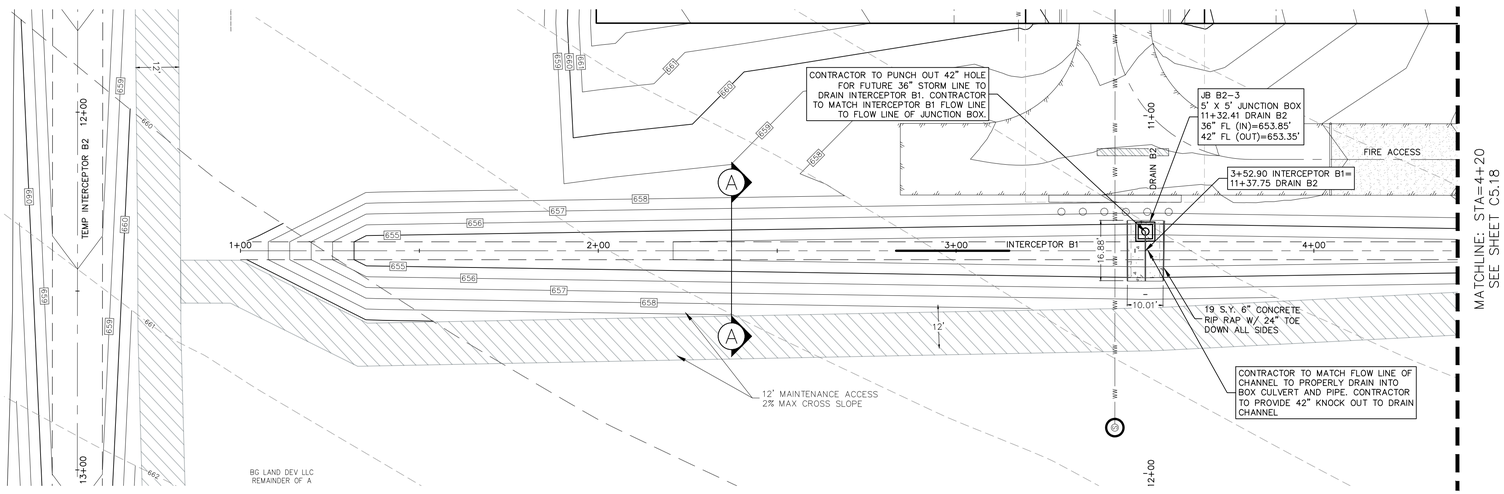
Q_{100} = 67.82 CFS
V_{100} = 3.75 FPS
D_{100} = 1.76'

Q_{25} = 45.32 CFS
V_{25} = 3.38 FPS
D_{25} = 1.44'

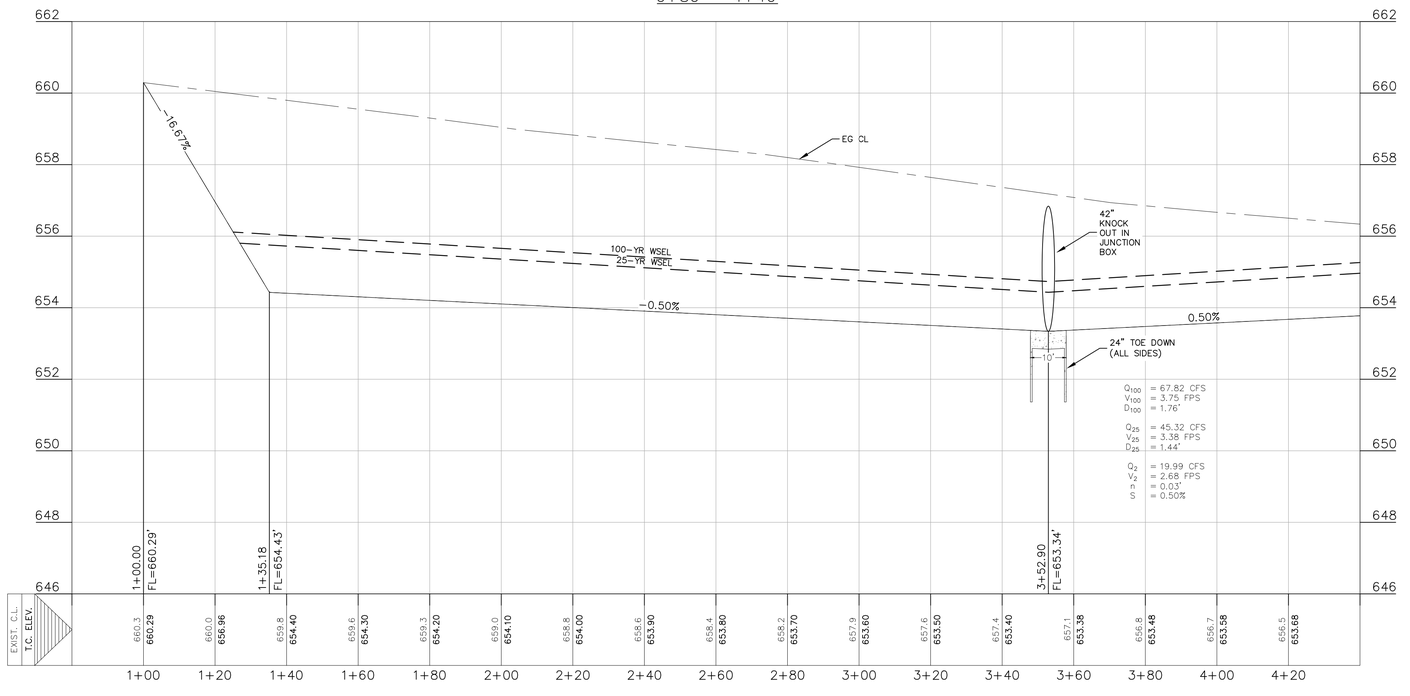
Q_2 = 19.99 CFS
V_2 = 2.68 FPS
n = 0.03'
S = 0.50%

① INTERCEPTOR B1 | SECTION A-A

HORIZONTAL: 1"=10' / VERTICAL: 1"=2.5'



INTERCEPTOR B1 (1 OF 2)
0+80 – 4+40



Q_{100} = 67.82 CFS
V_{100} = 3.75 FPS
D_{100} = 1.76'

Q_{25} = 45.32 CFS
V_{25} = 3.38 FPS
D_{25} = 1.44'

Q_2 = 19.99 CFS
V_2 = 2.68 FPS
n = 0.03'
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0 10 20 40
SCALE: 1" = 20' HORIZ.
SCALE: 1" = 2' VERT.

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
- EDGE OF ASPHALT

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TBPELS FIRM 1053600

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STATE OF TEXAS
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131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

INTERCEPTOR B1 - PLAN & PROFILE (1 OF 2)

JARO NORTH UNIT 2

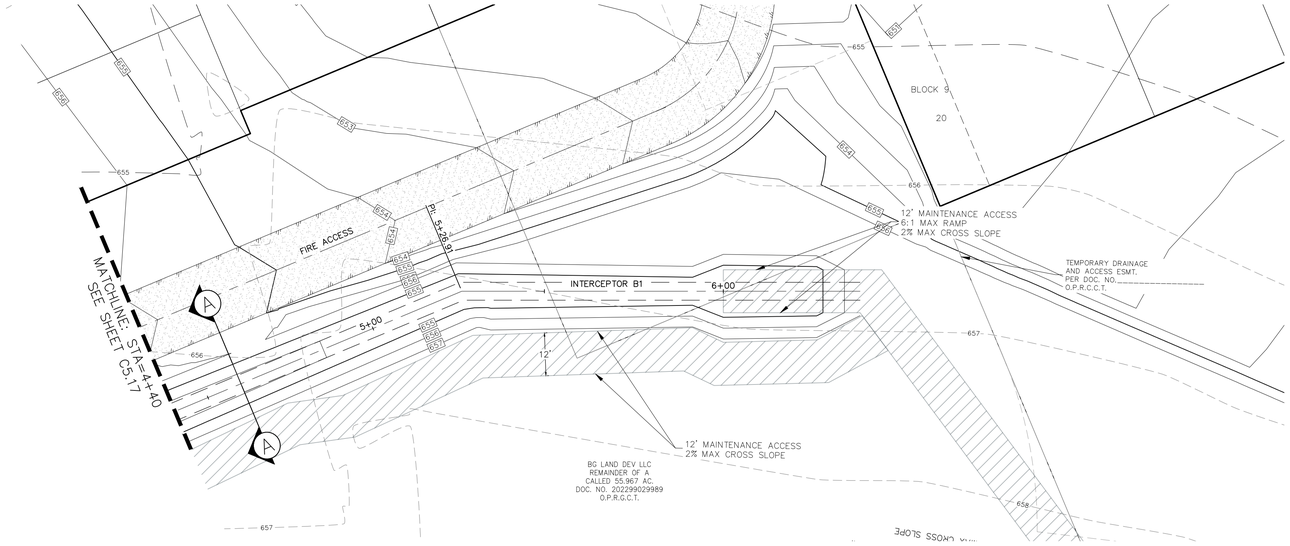
NO.	REVISION DESCRIPTION	REVISION DATE

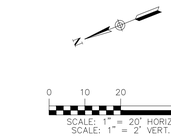
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.17

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuck Jun 04, 2025 - 10:23pm

SECTION A–A
SEE SHEET C5.17
FOR DETAILS

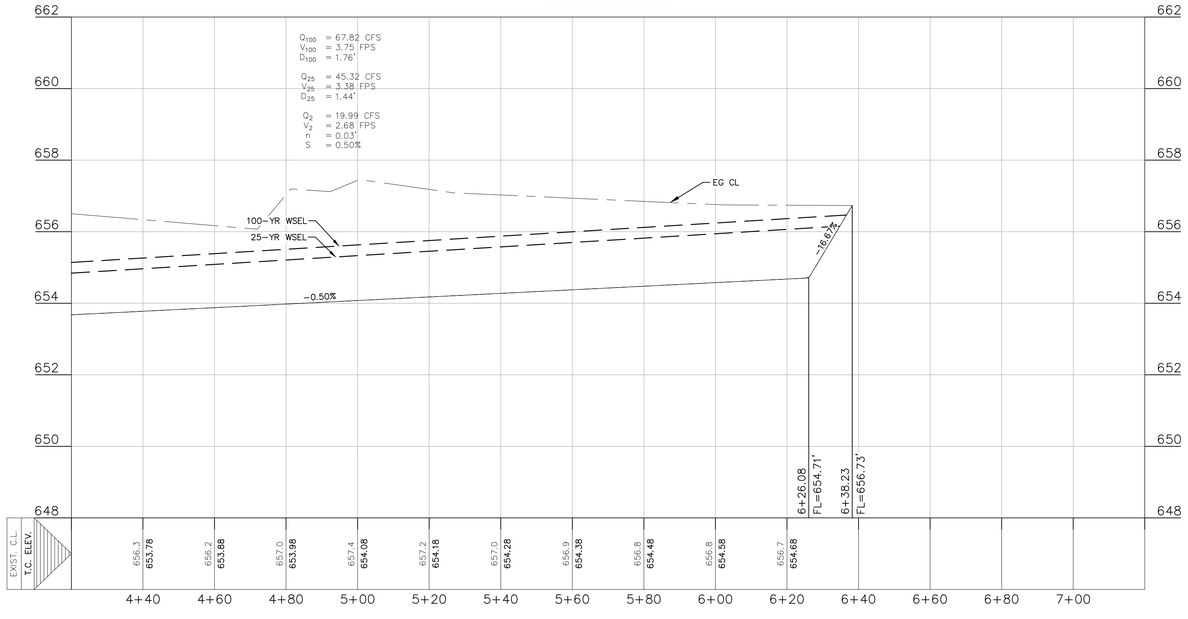




LEGEND

- 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
- EDGE OF ASPHALT

INTERCEPTOR B1 (2 OF 2)
4+20 – 7+20



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ZOE F. JASSO
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PROFESSIONAL ENGINEER
06/05/2025

INTERCEPTOR B1 - PLAN & PROFILE (2 OF 2)

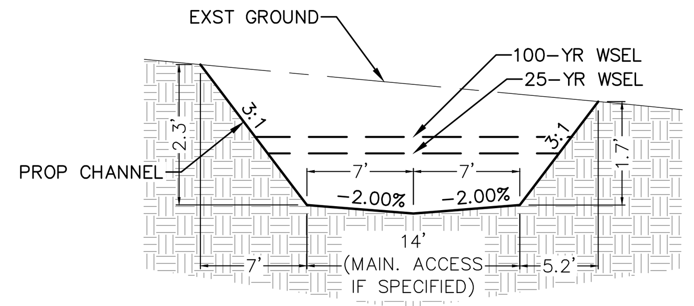
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.18

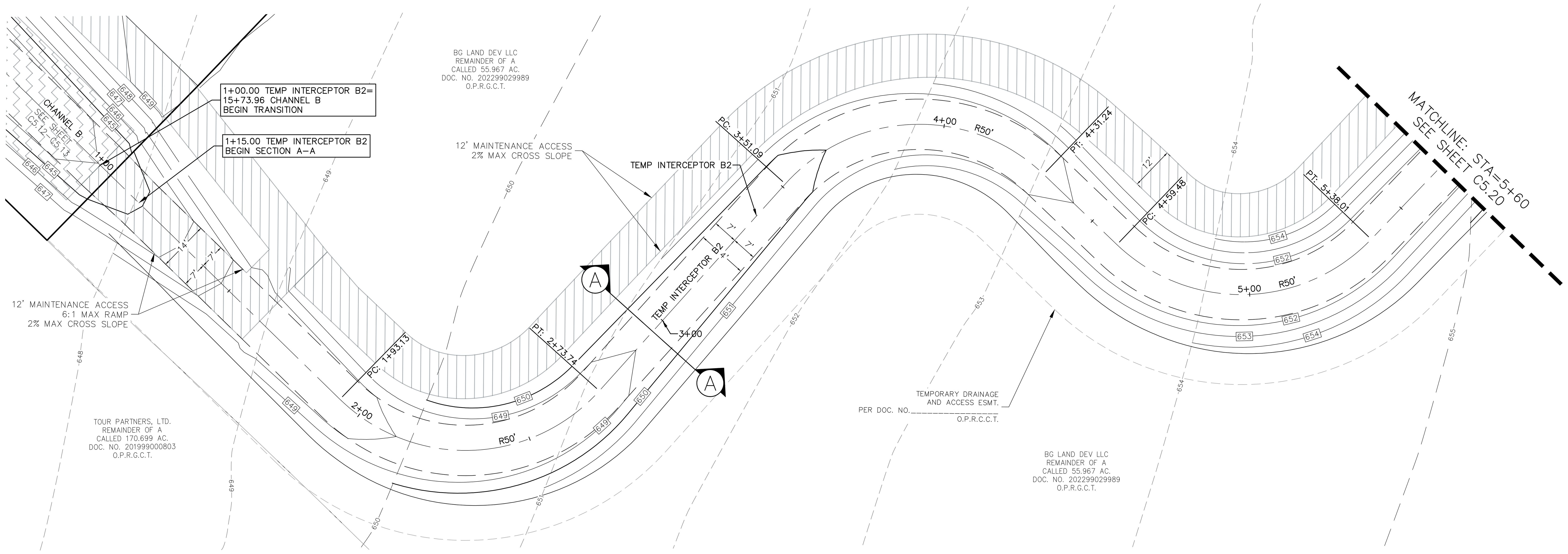
Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuok Jun 04, 2025 - 10:23pm



Q_{100} = 126.39 CFS
V_{100} = 5.64 FPS
D_{100} = 1.26'
s = 1.30%
n = 0.030

Q_{25} = 82.29 CFS
V_{25} = 4.90 FPS
D_{25} = 0.99'

1 INTERCEPTOR B2 | SECTION A–A
HORIZONTAL: 1"=10' / VERTICAL: 1"=2.5'

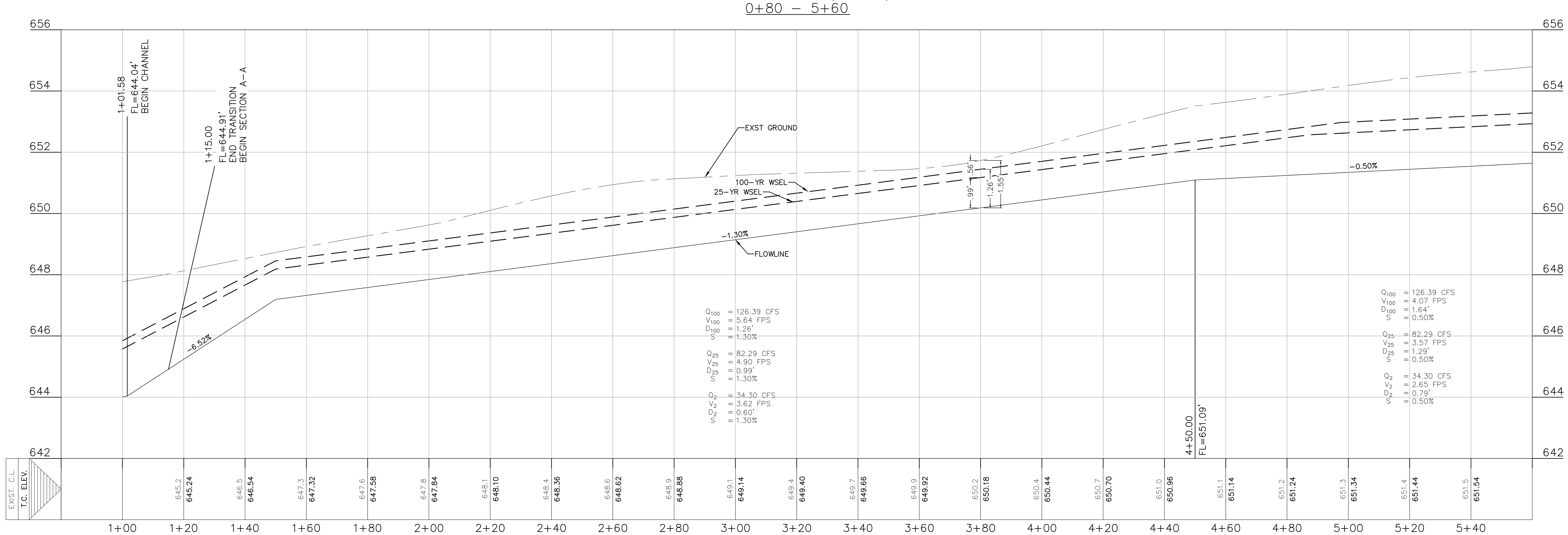


SCALE: 1" = 20' HORIZ.
SCALE: 1" = 2' VERT.

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
- EDGE OF ASPHALT

INTERCEPTOR B2 (1 OF 3)
0+80 – 5+60



Q_{100} = 126.39 CFS
V_{100} = 5.64 FPS
D_{100} = 1.26'
S = 1.30%

Q_{25} = 82.29 CFS
V_{25} = 4.90 FPS
D_{25} = 0.99'
S = 1.30%

Q_2 = 34.30 CFS
V_2 = 3.62 FPS
D_2 = 0.60'
S = 1.30%

Q_{100} = 126.39 CFS
V_{100} = 4.07 FPS
D_{100} = 1.64'
S = 0.50%

Q_{25} = 82.29 CFS
V_{25} = 3.57 FPS
D_{25} = 1.29'
S = 0.50%

Q_2 = 34.30 CFS
V_2 = 2.65 FPS
D_2 = 0.79'
S = 0.50%

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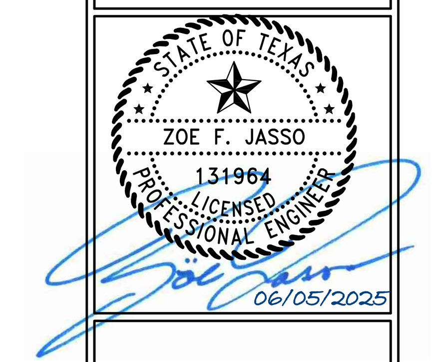
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INTERCEPTOR B2 - PLAN & PROFILE (1 OF 3)

JARO NORTH UNIT 2

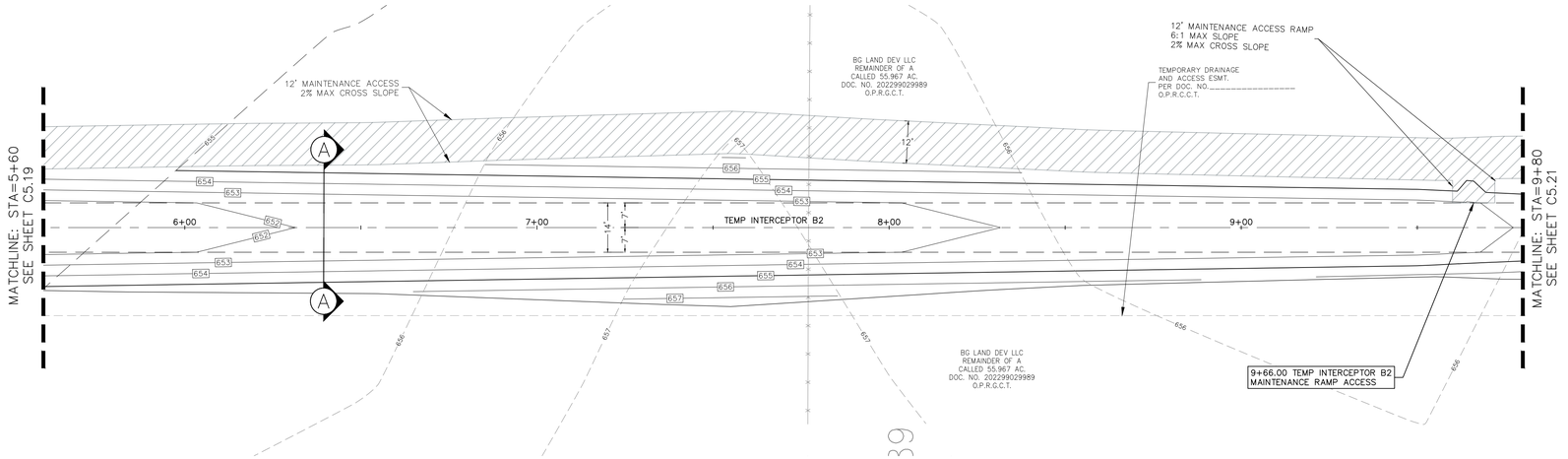
NO.	REVISION DESCRIPTION	REVISION DATE

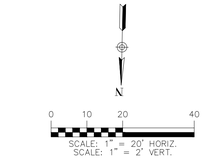
DATE:	JUNE 2025
DRAWN BY:	RR
DESIGNED BY:	JK
REVIEWED BY:	ZJ
HMT PROJECT NO.:	337.101

SHEET
C5.19

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\CDs\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuak Jun 04, 2025 - 10:24pm

SECTION A–A
SEE SHEET C5.19
FOR DETAILS

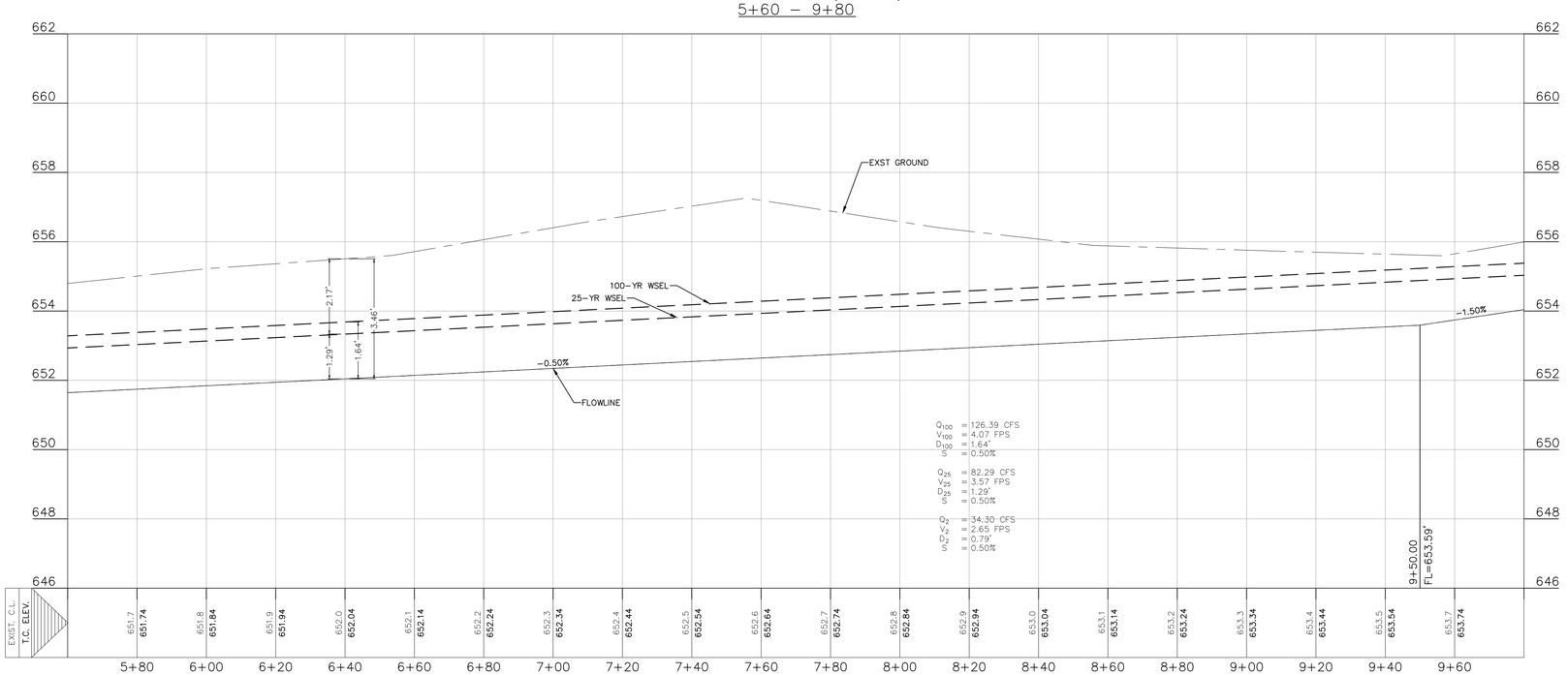




LEGEND

- EXISTING CONTOURS
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- U.E. UTILITY EASEMENT
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INTERCEPTOR B2 (2 OF 3)
5+60 – 9+80



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INTERCEPTOR B2 - PLAN & PROFILE (2 OF 3)

JARO NORTH UNIT 2

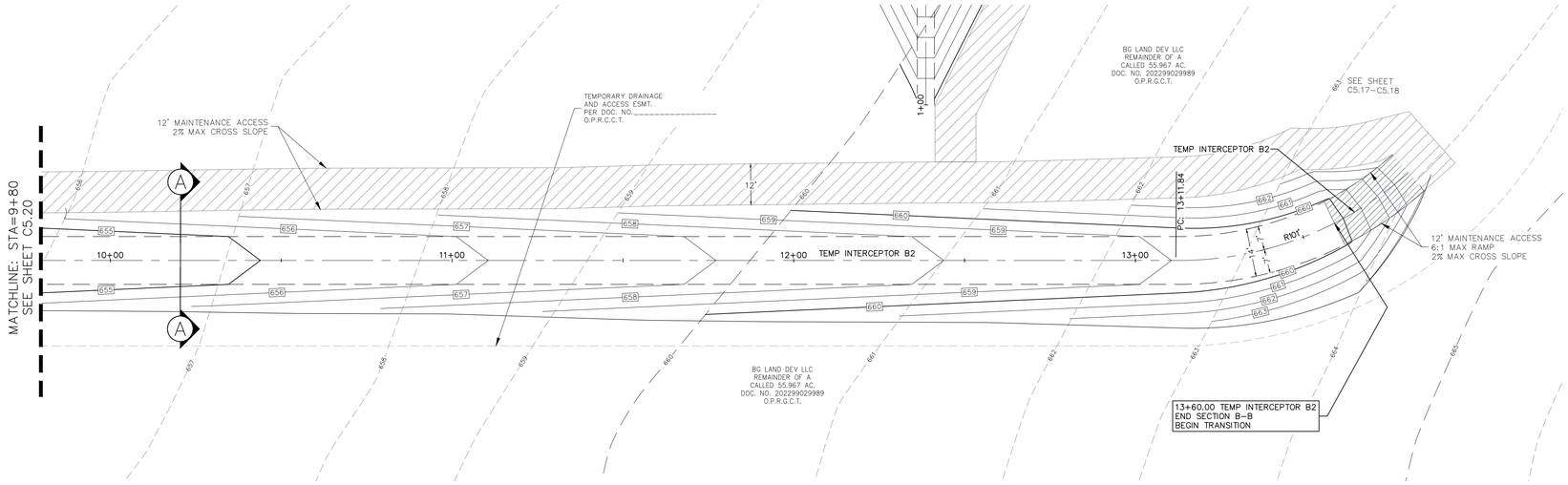
NO.	REVISION DESCRIPTION	REVISION DATE

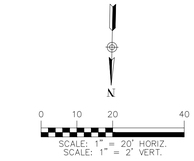
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.20

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuak Jun 04, 2025 - 10:24am

SECTION A–A
SEE SHEET C5.19
FOR DETAILS

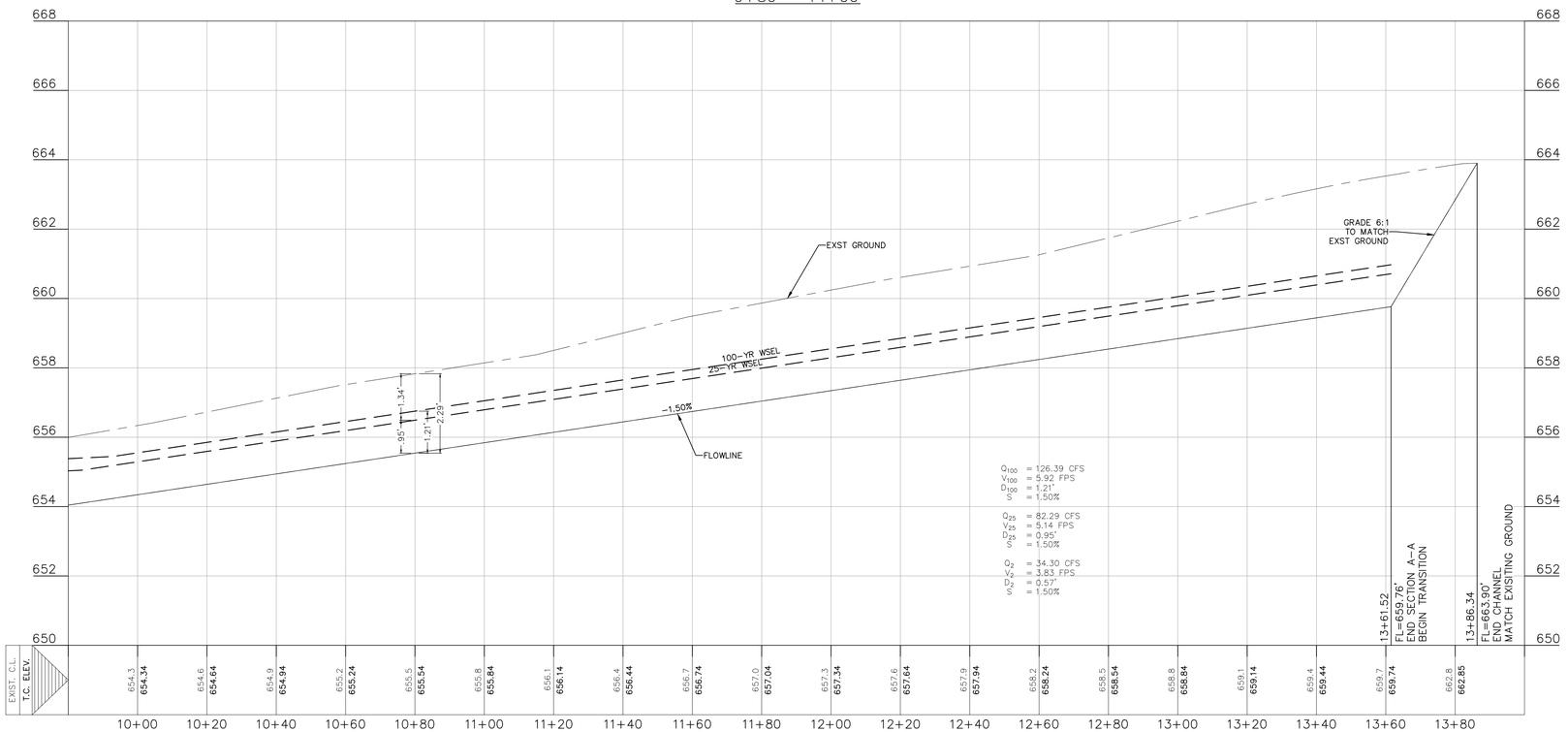




LEGEND

- 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
- EDGE OF ASPHALT

INTERCEPTOR B2 (3 OF 3)
9+80 – 14+00



DRAINAGE FEATURES, CHANNELS, DETENTION BASIN MAINTENANCE AND EQUIPMENT ACCESS REQUIREMENTS:

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

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

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

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

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

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

F. MAINTENANCE VEHICLE FOR POND AND 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.

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
06/05/2025

INTERCEPTOR B2 - PLAN & PROFILE (3 OF 3)

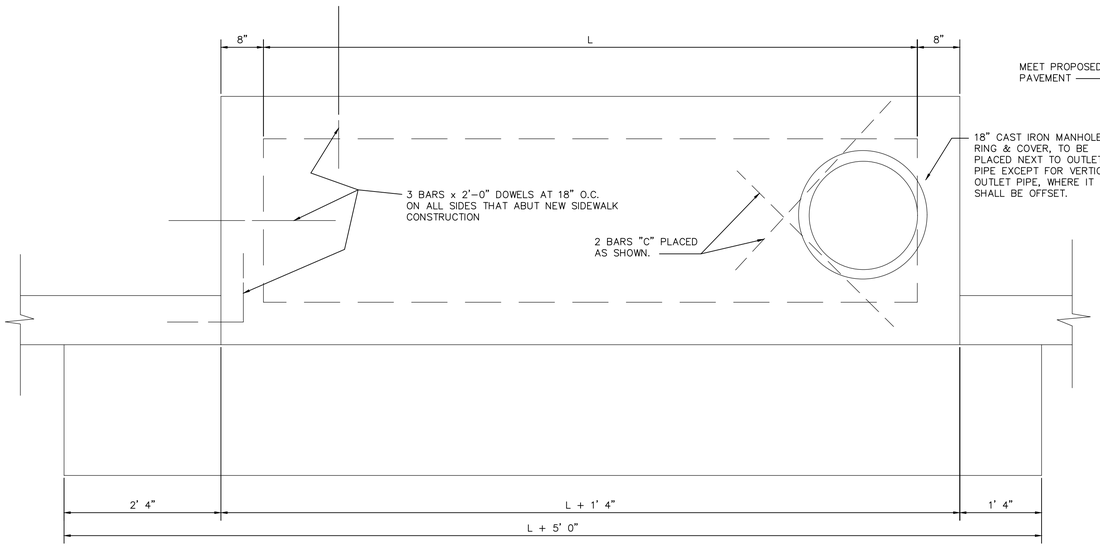
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

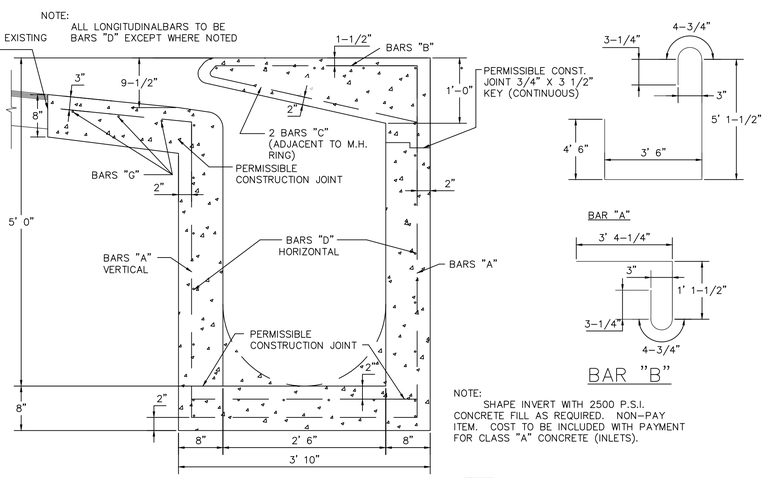
SHEET
C5.21

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_INTERCEPTORS A2, B1 & B2.dwg User: joshuok Jun 04, 2025 - 10:24pm



PLAN VIEW

SCALE: N.T.S.

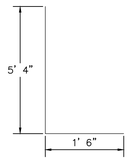


SECTION A-A

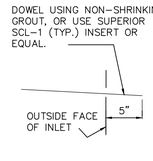
SCALE: N.T.S.

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).



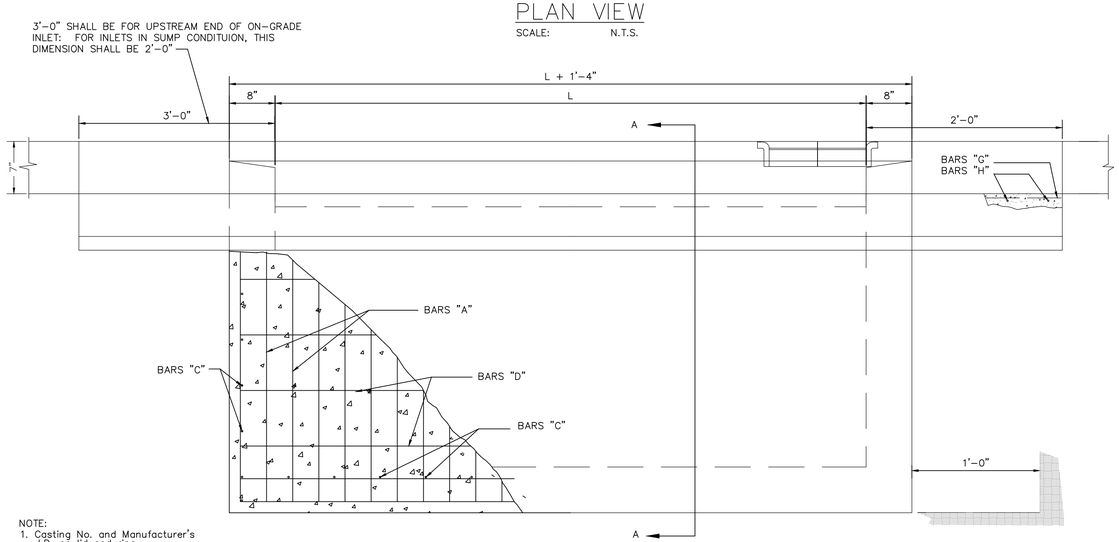
BAR "E"



BAR "F"

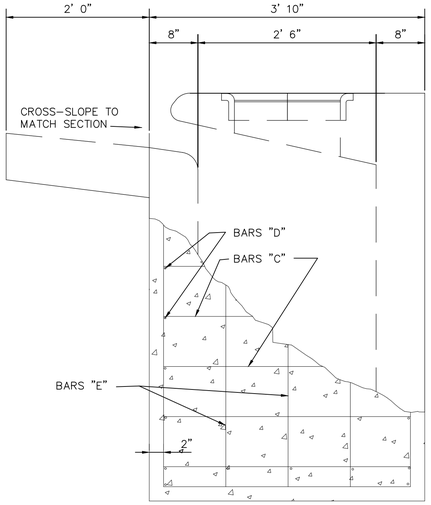
Reinforcing Steel Schedule						
	BAR	NO.	SIZE	SPA.	LENGTH	WEIGHT
L=5'-00"	A	15	4	5"OC	13"-9 1/2"	138
	B	15	4	5"	5'-1"	52
	C	23	4	9"	3'-6"	54
	D	22	4	10"	6'-1"	89
	E	10	4	10 1/2"	6'-10"	46
	F	6	5	12"	2'-3"	14
	G	3	4	12"	9'-8"	20
	H	5	5	12"	1'-8"	9
*CONCRETE TOTAL=353 CY. MANHOLE CASTING=100 LBS. STEEL 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.



FRONT VIEW

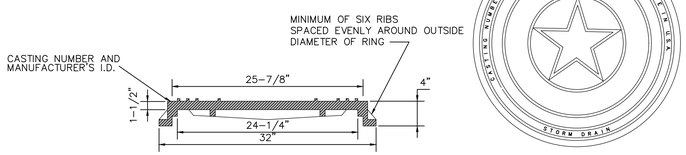
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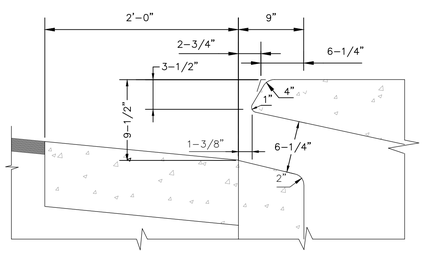
SIDE VIEW

SCALE: N.T.S.

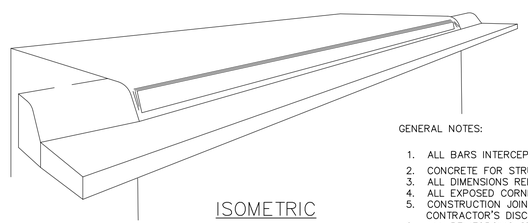
NOTE:
1. Casting No. and Manufacturer's I.D. on lid and ring.
2. Load bearing capability of N-20 minimum.
3. The load bearing surface shall be machine ground.
4. The combined weight of the manhole ring and cover must be at least 260 lbs.



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.

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STORM DRAIN DETAILS (1 OF 3)

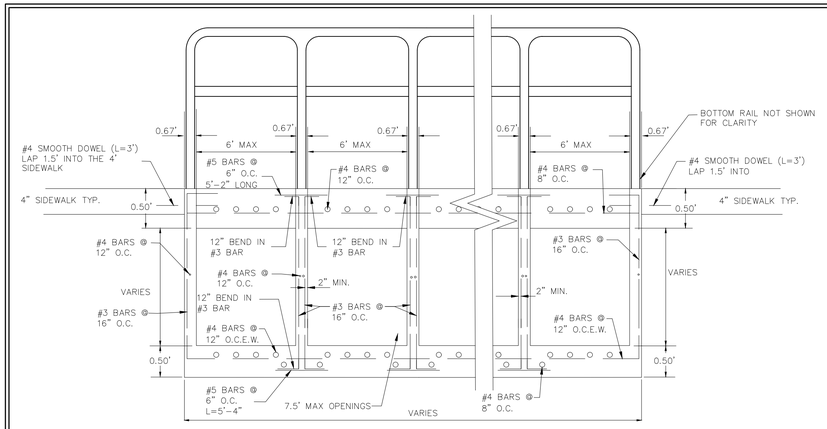
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

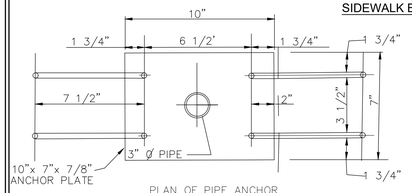
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.22

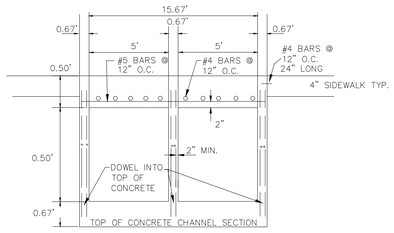
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SIDEWALK BOX SECTION "A-A"



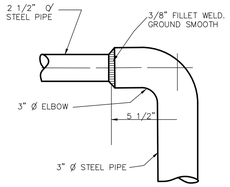
PLAN OF PIPE ANCHOR



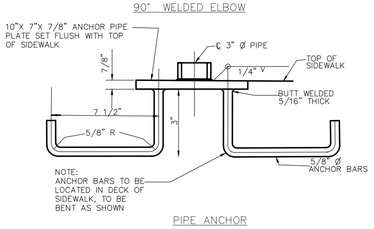
SIDEWALK BOX OUTLET

N.T.S.

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

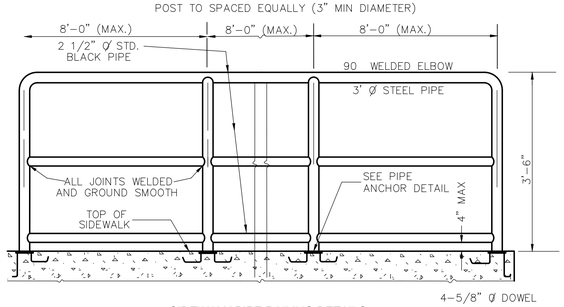


90° WELDED ELBOW



PIPE ANCHOR

N.T.S.



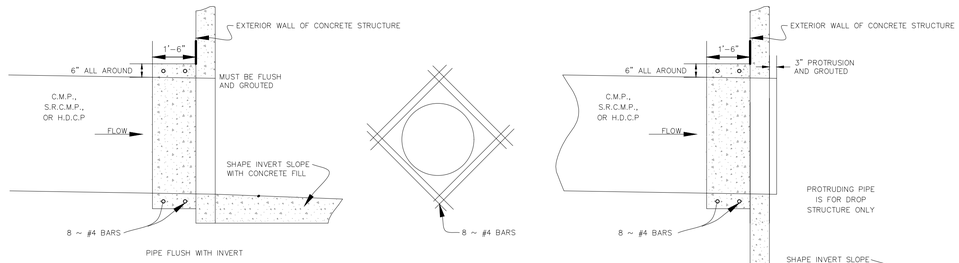
SIDEWALK PIPE RAILING DETAILS

N.T.S.

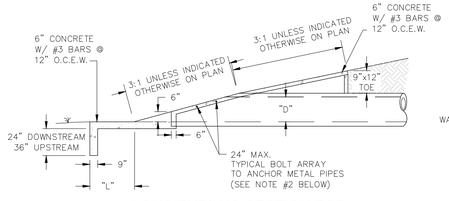
4-5/8" Ø DOWEL BARS BUTT WELDED TO BOTTOM OF PLATE

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

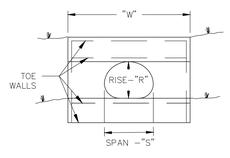


CONCRETE COLLAR DETAIL



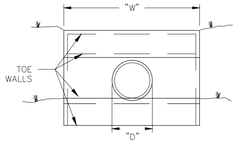
LONGITUDINAL SECTION FOR CIRCULAR & ARCH PIPES

NOT-TO-SCALE



SINGLE C.M.P. ARCH PIPE CULVERT

NOT-TO-SCALE



SINGLE CIRCULAR PIPE CULVERT

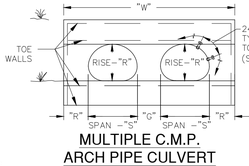
(CMP OR RCP)

NOT-TO-SCALE

DIMENSIONS FOR CIRCULAR (CMP AND RCP) PIPE CULVERT

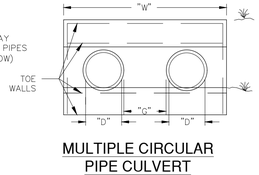
"D" INSIDE DIA. OF PIPE	"L"	"G"		SINGLE	DOUBLE	TRIPLE	QUADRUPLE
		CGM	RCP	"W"			
18"	2'-0"	1'-2"	0'-9"	4'-6"	7'-2"	9'-10"	12'-6"
21"	2'-6"	1'-3"	0'-10"	5'-3"	8'-4"	11'-4"	13'-4"
24"	3'-0"	1'-5"	0'-11"	6'-0"	9'-5"	12'-10"	16'-3"
30"	4'-0"	1'-8"	1'-1"	7'-6"	11'-8"	15'-10"	20'-0"
36"	5'-0"	1'-11"	1'-3"	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.		"L"	"G"	SINGLE	DOUBLE	TRIPLE	QUADRUPLE
	RISE "R"	SPAN "S"			"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

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
06/05/2025

STORM DETAILS (2 OF 3)

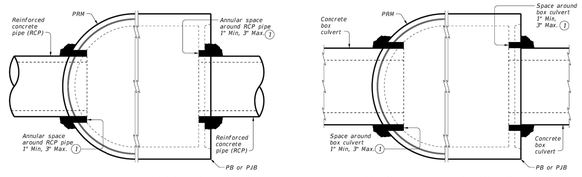
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C5.23

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Dsn\337-101_STORM DETAILS.dwg User: joshuak Jun 04, 2025 - 10:24pm



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

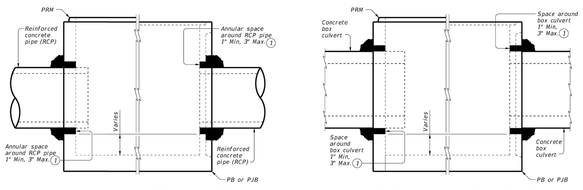
PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

TYPICAL HALF PLAN

PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

TYPICAL HALF PLAN



PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

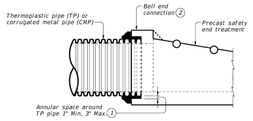
PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

TYPICAL HALF ELEVATION

PRECAST ROUND MANHOLE (PRM) WITH THROUGH-HOLE

PRECAST BASE (PB) OR PRECAST JUNCTION BOX (PJB) WITH THIN-WALL KNOCK-OUT

TYPICAL HALF ELEVATION



TYPICAL PARTIAL ELEVATION OF PRECAST SAFETY END TREATMENTS

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

(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.

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)
Provide Concrete Box Culverts 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 466, "Thermoplastic Pipe Culverts and Drains".
Payment for grouted connections is considered subsidiary to other bid items.

Texas Department of Transportation — Bridge Division Standard

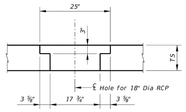
PIPE AND BOX GROUTED CONNECTIONS FOR PRECAST STRUCTURES

PBGC

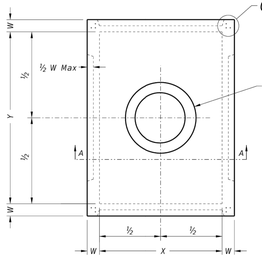
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©TxDOT February 2020	CONT	SECT	JOB	HIGHWAY
REVISIONS				
08-2024: Update notes	DIST	COUNTY		SHEET NO.

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

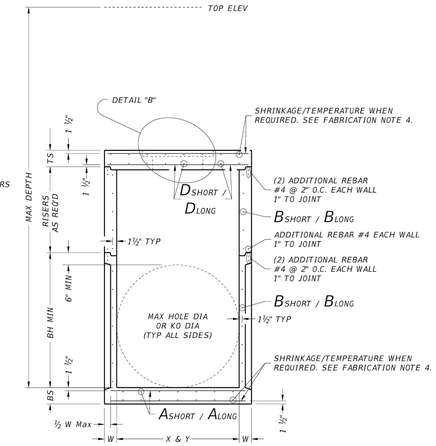
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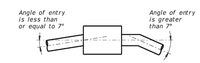
DETAIL "B"



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 ½".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PJD for sizes, dimensions, and reinforcing steel not shown.
10. Provide hole in below grade slab only when PJB is installed with inlet type POD.

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 boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/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 PJD 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

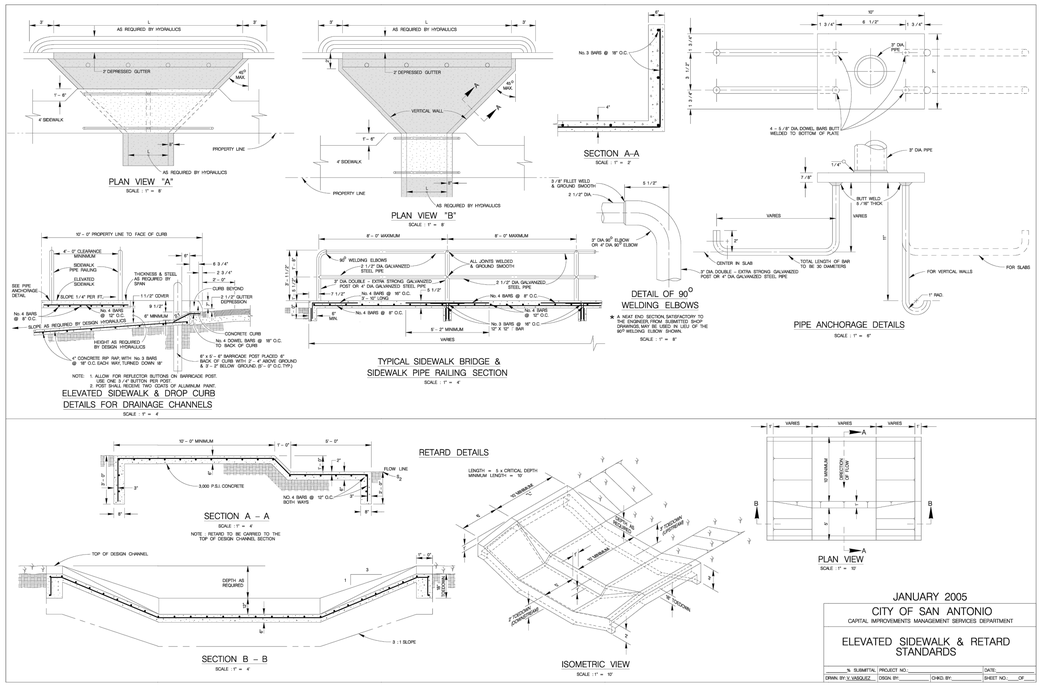
PRECAST JUNCTION BOX

PJB

File: CO-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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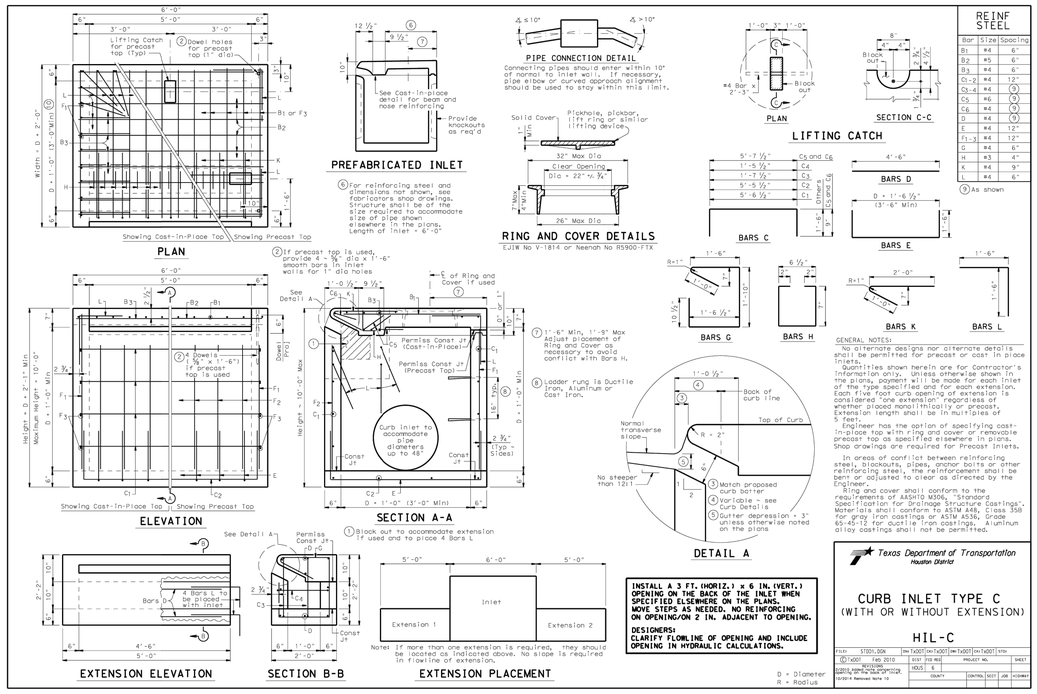


JANUARY 2005

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

ELEVATED SIDEWALK & RETARD STANDARDS

% SUBMITTAL	PROJECT NO.:	DATE:
DRAWN BY: V. HINOJOZ	DESIGN BY:	CHKD. BY:	SHEET NO.: OF



Texas Department of Transportation — Houston District

CURB INLET TYPE C (WITH OR WITHOUT EXTENSION)

HIL-C

File: 57001_004	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT FEB 2010	DIST	FED.RD. DIV.NO.	PROJECT NO.	SHEET
REVISIONS 02/2012: Added Bar Sizes to Table 03/2022: Removed Note 12	HOU	6		
	COUNTY		CONTROL	SECT.	JOB	HIGHWAY

TY C INLET TO BE USED FOR INLET B2-1.

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

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STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

STORM DETAILS (3 OF 3)

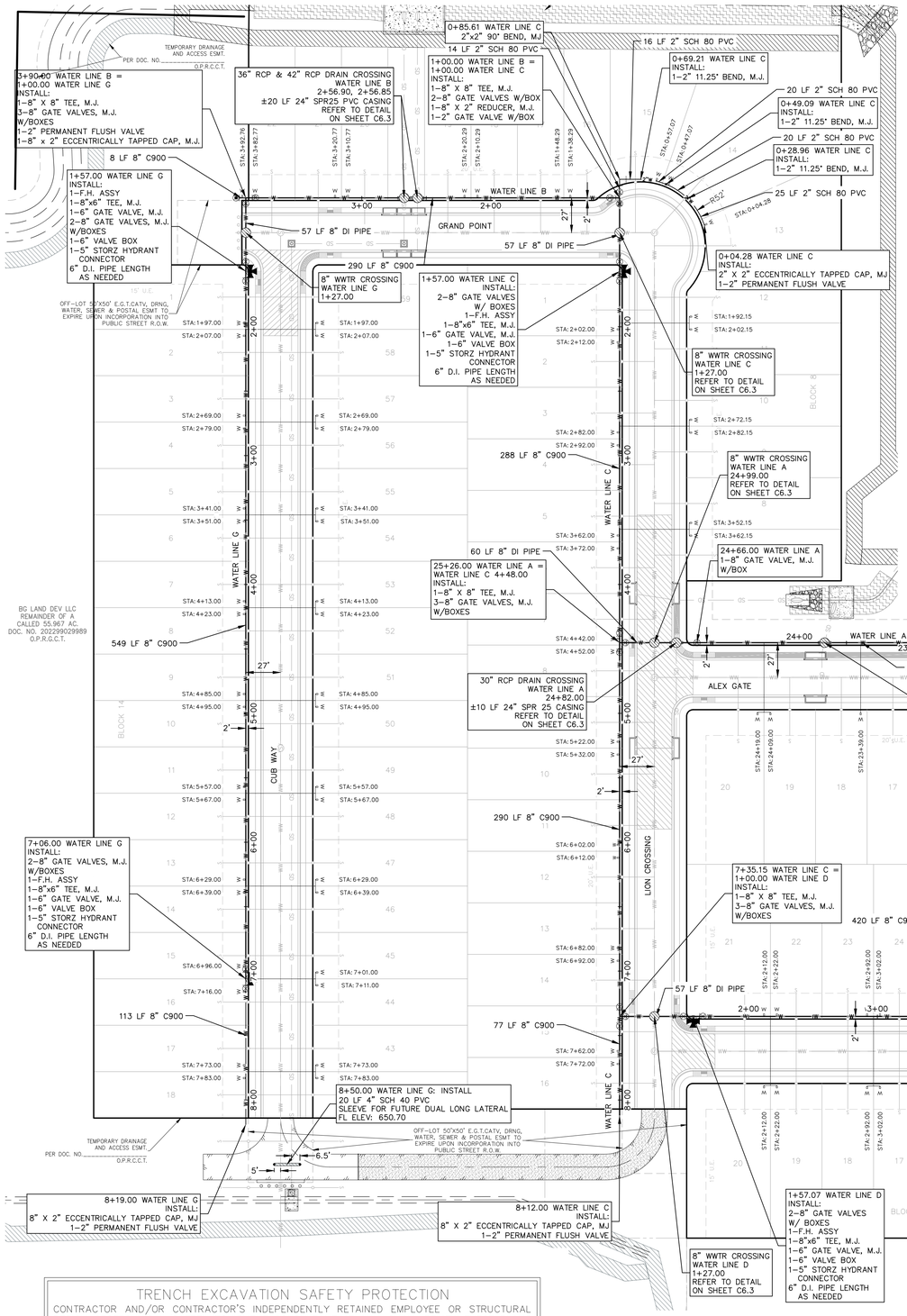
JARO NORTH UNIT 2

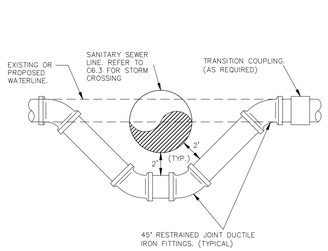
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

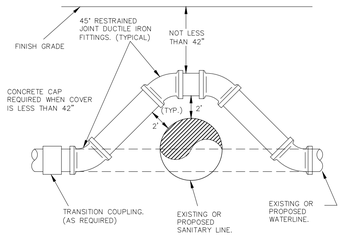
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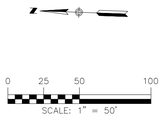




WATERLINE ADJUSTMENT DETAIL
N.T.S



WATERLINE ADJUSTMENT DETAIL
N.T.S

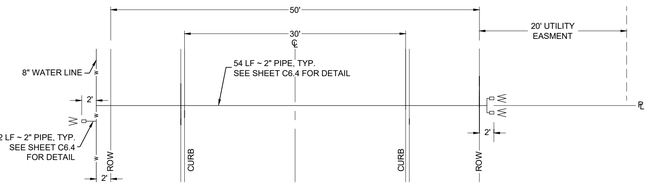


LEGEND

- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- EXISTING WATER LINE
- PROPOSED WATER LINE (ENCASED) (SDR25 PVC 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

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:
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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

TRENCH EXCAVATION SAFETY PROTECTION

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

UTILITY 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.

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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
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06/05/2025

OVERALL WATER (1 OF 3)

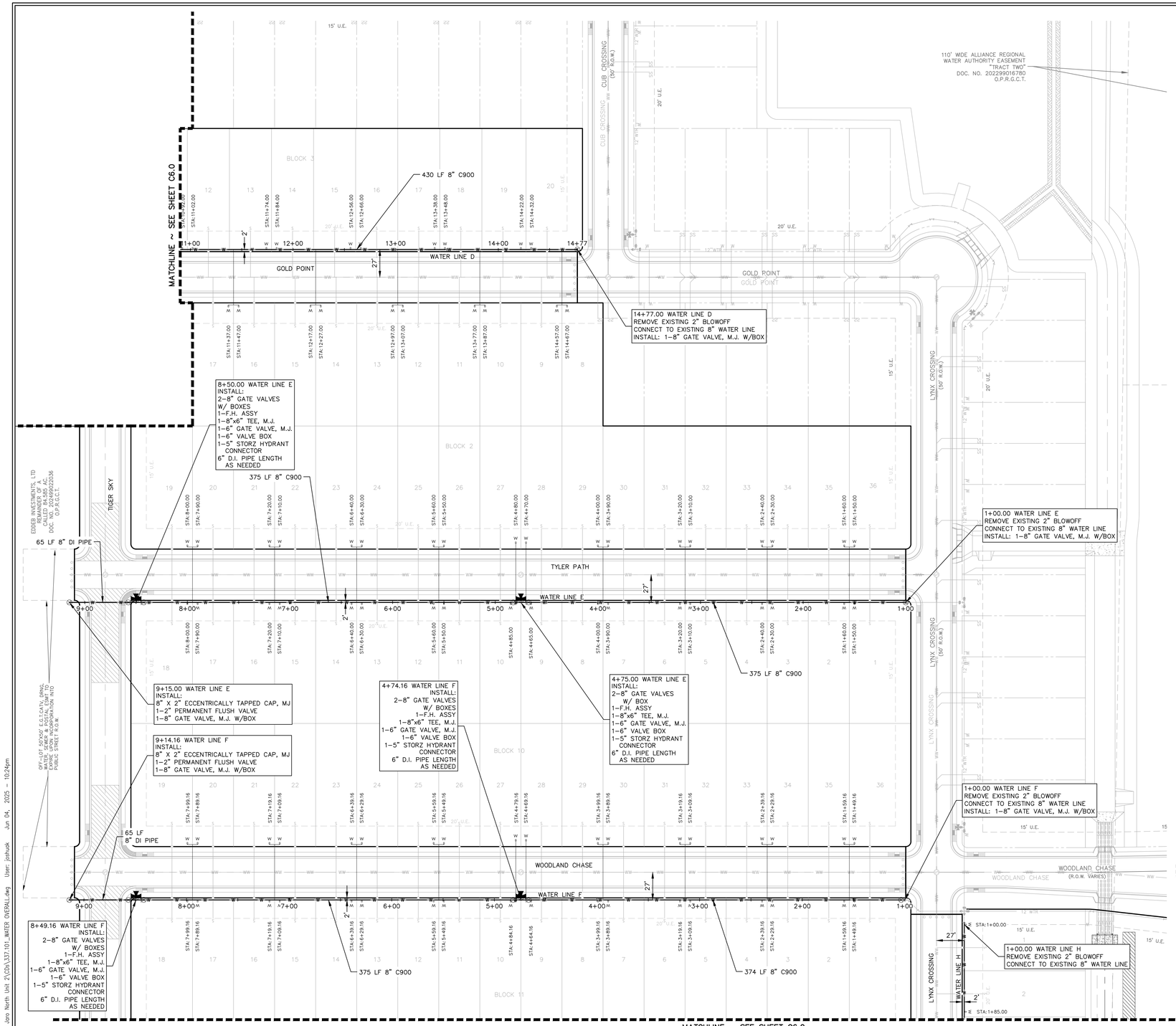
JARO NORTH UNIT 2

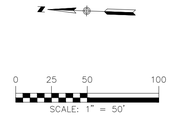
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
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Drawing Name: M:_Projects\337 - Lennar Homes\01 - Jaro North Unit 2\Civ\337.101_WATER OVERALL.dwg User: jsthook Jun 04, 2025 - 10:24pm





LEGEND

- U.E. — UTILITY EASEMENT
- D.E. — DRAINAGE EASEMENT
- EXISTING WATER LINE
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						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

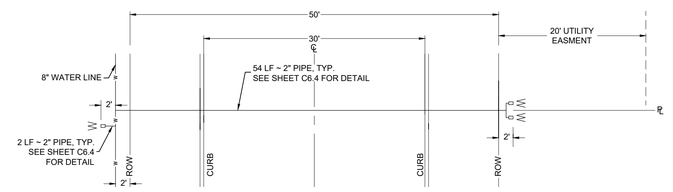
TEE

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8"	8"	PVC	77
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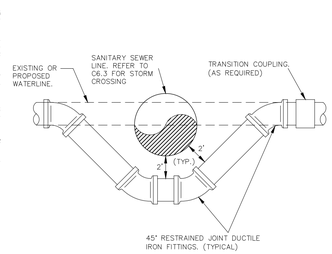
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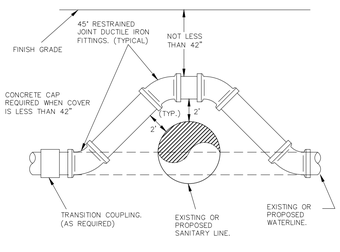
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LATERAL DETAIL
N.T.S



WATERLINE ADJUSTMENT DETAIL
N.T.S



WATERLINE ADJUSTMENT DETAIL
N.T.S

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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
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

OVERALL WATER (2 OF 3)

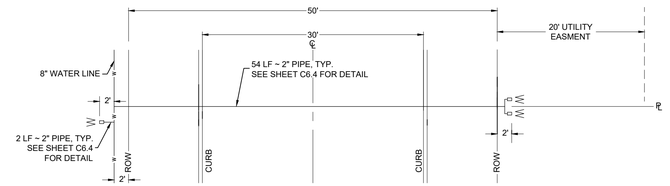
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

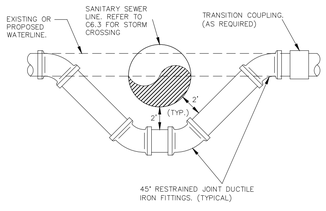
DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C6.1

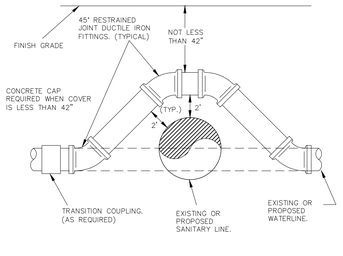
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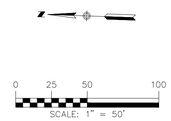
LATERAL DETAIL
N.T.S



WATERLINE ADJUSTMENT DETAIL
N.T.S



WATERLINE ADJUSTMENT DETAIL
N.T.S



LEGEND

U.E.	UTILITY EASEMENT
D.E.	DRAINAGE EASEMENT
W W	EXISTING WATER LINE
W W	PROPOSED WATER LINE (ENCASED) (SDR25 PVC CASING)
WW WW	PROPOSED WASTEWATER LINE
W	PROPOSED ⅝" WATER SERVICE
	UTILITY CROSSING
	PROPOSED FIRE HYDRANT
	PROPOSED GATE VALVE
	PROPOSED WATER FITTING
W W W	PROPOSED DUAL WATER SERVICE
W	PROPOSED SINGLE WATER SERVICE WITH ¾" SERVICE LINE

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.

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

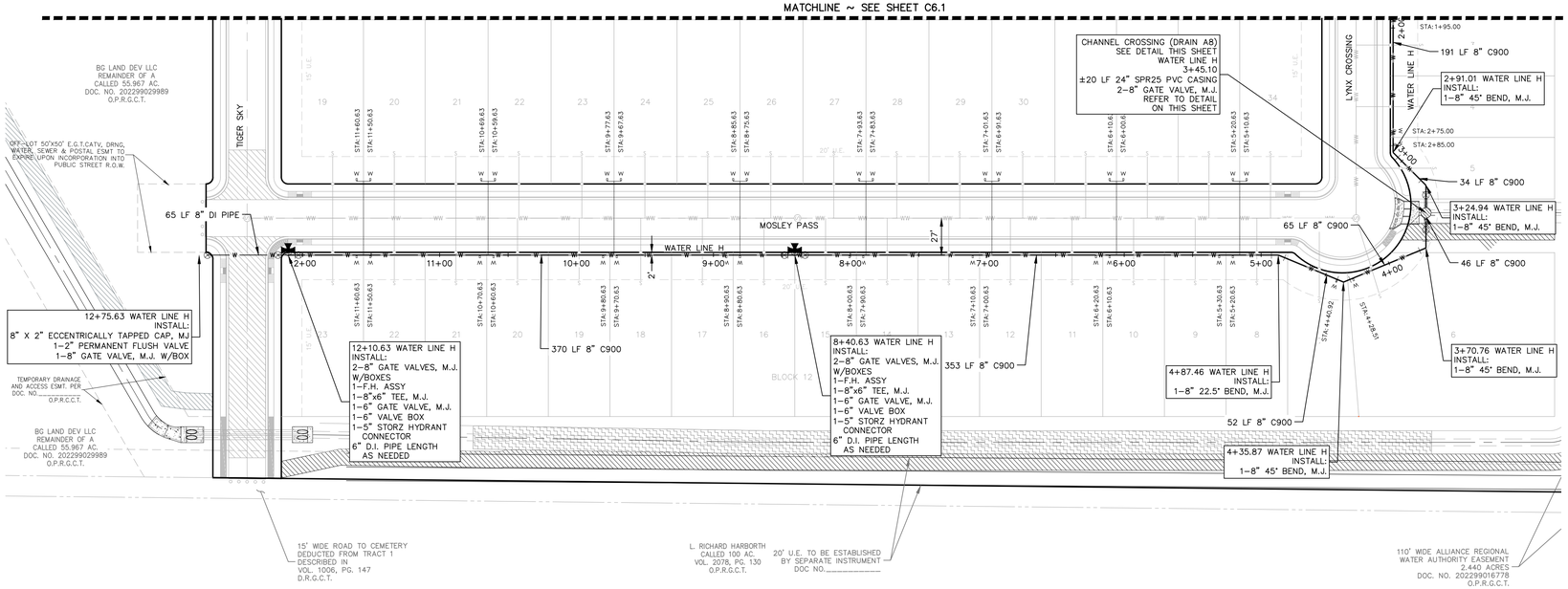
PIPE INSIDE DIAMETER OF RUN	PIPE INSIDE DIAMETER OF BRANCH	MATERIAL	FT.
8"	8"	PVC	77
8"	8"	DUCTILE IRON	50

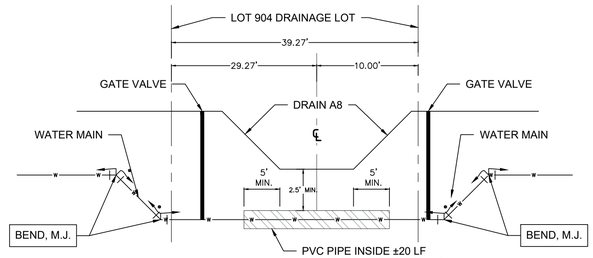
NOTES:

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

MATCHLINE ~ SEE SHEET C6.1





CHANNEL CROSSING DETAIL
N.T.S

WATER LINE IN ENCASEMENT PIPE	
WATER LINE SIZE (INCHES)	NOM. DIA. CASING (INCHES)
6	18
8	24
12	24
16	30
20	36
24	42
30	48
36	54

INSTALLATION OF PIPE IN ENCASEMENT UNDER STORM SEWERS

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.

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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
06/05/2025

OVERALL WATER (3 OF 3)

JARO NORTH UNIT 2

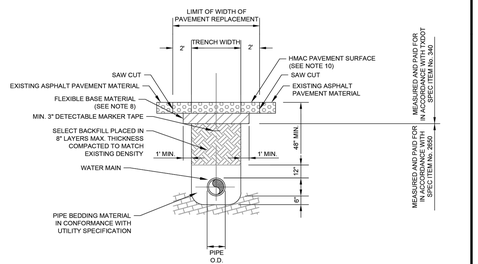
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C6.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_WATER OVERALL.dwg User: joshuok Jun 04, 2025 - 10:24pm

Date: Aug 11, 2022, 7:04am User ID: kvogler
File: S:\Standards\02 Details\07 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.

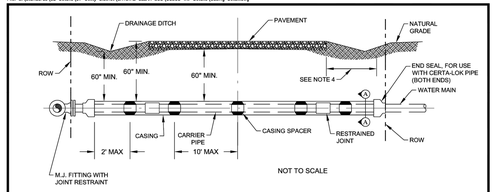
TRENCH SAFETY NOTES

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-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	OCTOBER 2018	OCTOBER 2018
			SHEET 1 OF 1	

Date: Jun 20, 2025, 8:45am User ID: kvogler
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SECTION A–A

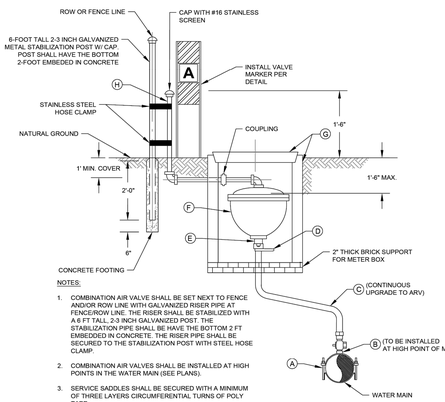
Carrier Pipe (DR 18)	Casing Size	Steel Casing (0.375 IN Wall)	PVC Casing (DR 25)	HDPE Casing (DR 21)	Casing Spacers	
Nominal Size (IN)		Inside Diameter (IN)			Min. Band Width (IN)	No. of Runners Per Tie
4	16	15.25	15.92	13.755	7	2 TOP, 2 BOTTOM
6	16	15.25	15.92	15.643	7	2 TOP, 2 BOTTOM
8	24	23.25	23.61	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-668, 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-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	JULY 2024
			SHEET 1 OF 1	

Date: Mar 31, 2021, 10:39am User ID: kvogler
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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.

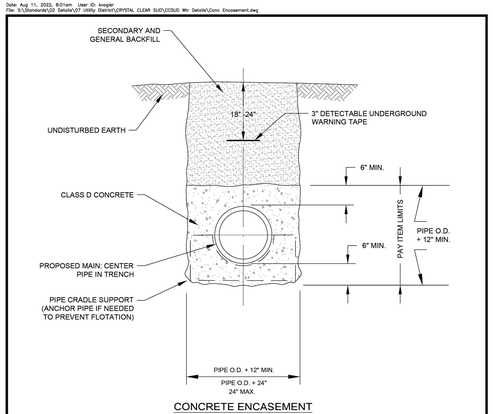
TAP MATERIAL LIST		MATERIAL LIST SIZES	
LABEL	ITEM	1-INCH TAP	2-INCH TAP
A	APPROVED TAPPING SADDLE	1"	2"
B	CORPORATION STOP	1"	2"
C	CTS SDR9 HDPE TUBING	1"	2"
D	BRASS BALL VALVE WITH LEVER	1"	2"
E	BRASS NIPPLE THREADED	1"	2"
F	COMBINATION AIR VALVE	PER AEL*	
G	METER BOX AND LID	DFW3630FD OR DFW2836FD**	
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 CIVIL | ELECTRICAL | STRUCTURAL | MEP TBPELS FIRM # F-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	OCTOBER 2020
			SHEET 1 OF 1	

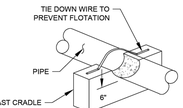
Date: Aug 11, 2022, 8:01am User ID: kvogler
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CONCRETE ENCASEMENT

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

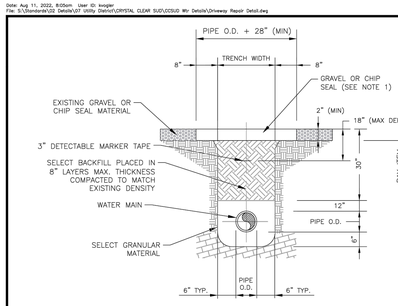


PIPE CRADLE SUPPORT

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	CONCRETE ENCASEMENT DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	MAY 2016	FEB 2022
			SHEET 1 OF 1	

Date: Aug 11, 2022, 8:05am User ID: kvogler
File: S:\Standards\02 Details\07 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Typ. Hydrant Det.dwg



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

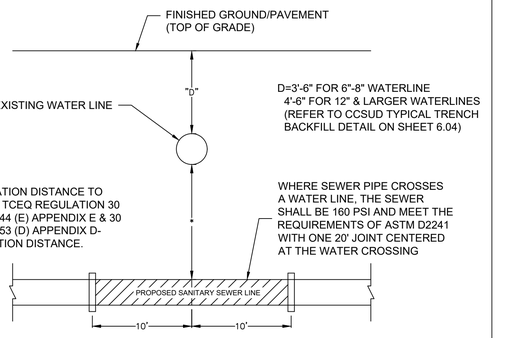
1. ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
2. THE DRIVEWAY SHALL BE CUT ONLY WHERE REQUIRED BY THE ENGINEER.
3. DRIVEWAY SHALL REMAIN ACCESSIBLE AT ALL TIMES.
4. REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS
5. BACKFILL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

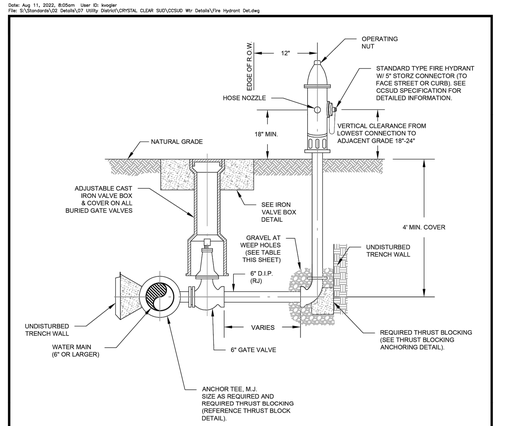
PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL GRAVEL/CHIP SEAL DRIVEWAY REPAIR DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPELS FIRM # F-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	JULY 2019	AUGUST 2022
			SHEET 1 OF 1	



TYPICAL SANITARY SEWER/WATER CROSSING DETAIL

NOT TO SCALE

Date: Aug 11, 2022, 8:05am User ID: kvogler
File: S:\Standards\02 Details\07 Utility Details\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Fire Hydrant Det.dwg



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-10961 | TBPLS FIRM #10105900 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	NOV 2021
			SHEET 1 OF 1	

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
06/05/2025

WATER DETAILS (1 OF 2)

JARO NORTH UNIT 2

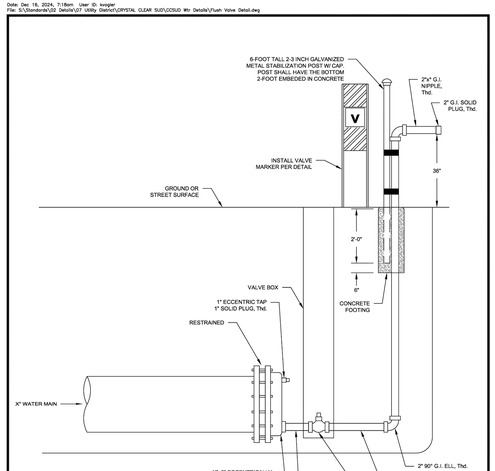
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C6.3

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_WATER DETAILS.dwg User: joshuok Jun 04, 2025 - 10:25pm

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

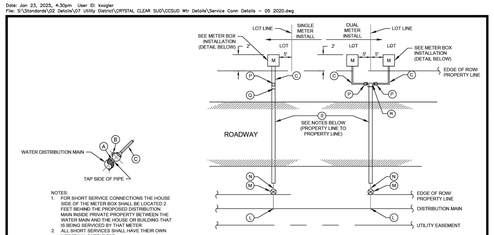


NOTE:
1. BURIED PIPING, FITTINGS, AND FITTINGS JOINTS SHALL BE WRAPPED IN POLYWRAP.
2. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
3. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
4. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	FLUSH VALVE DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP	OCTOBER 2020	DECEMBER 2024
			SHEET 1 OF 1	

Date: Jan 23, 2025, 4:30pm User ID: kvogler
File: S:\Standards\UD Details\D7 Utility Distrivt\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Service Conn Details – 05 2020.dwg

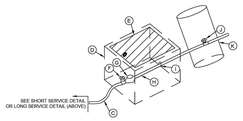


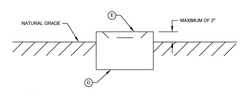
NOTES:
1. FOR SHORT SERVICE CONNECTIONS THE HOUSE SIDE OF THE METER BOX SHALL BE LOCATED 2 FEET BEHIND THE PROPOSED DISTRIBUTION MAIN INSIDE PRIVATE PROPERTY BETWEEN THE PROPERTY LINE AND THE HOUSE OR BUILDING THAT IS BEING SERVICED BY THAT METER.
2. ALL SHORT SERVICES SHALL HAVE THEIR OWN INDIVIDUAL SADDLE TAP.
3. ONE (1) 3/4" CORPORATION STOP SHALL BE USED FOR ALL SHORT SERVICE 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.
2. SCHEDULE 80 PVC MAY BE USED FOR OPEN CUT INSTALLATIONS.
3. 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





NOTES:
1. METER BOX SHALL BE SET INTO GROUND TO SIT SLIGHTLY ABOVE NATURAL GRADE (MAXIMUM OF 2").
2. USE NATIVE TOP SOIL TO BACKFILL TO EDGE OF METER BOX LID. BACKFILL TO NATURAL GRADE.

METER BOX PROFILE

MATERIAL LIST		
	SHORT SERVICE	LONG SERVICE
A	3/4" SERVICE SADDLE FORD #BSX-FIP-NL OR MUELLER MODEL H-10	-
B	3/4" CORP. STOP (FIP CONNECTION) #FB1000-NL	-
C	3/4" POLYETHYLENE AWWA, C901-200 PSI	
D	PLASTIC METER BOX, MODEL NO. DFW1330 12 OC OR EQUAL	
E	METER BOX LID, MODEL NO. DFW1330 TCLID OR DFW1000 1C LID	
F	3/4" BALL VALVE (METER CONV.) x COMP.) FORD #B44-333-NL	
G	5/8" x 3/4" WATER METER (BY OSWUS)	
H	3/4" DUAL CHECK VALVE (METER x LF) FORD #HC41C-333-NL	
I	SERVICE LINE (BY OWNER)	
J	CUSTOMER SHUT OFF VALVE (BY OWNER) FORD #B44-333-NL	
K	7" ROUND VALVE BOX WITH REMOVABLE LID (BY OWNER)	
L	-	2" SERVICE SADDLE FORD
M	-	2" BRASS NIPPLE
N	-	2" HARCO ADAPTOR OR BRASS/GALVANIZED NIPPLE WITH SIDE BOLT DRESSER
O	-	2" PVC SCH 80 INVERT 4" COUPLING
P	-	MALE END 90° CORP. STOP
Q	-	2" x 3/4" PVC ADAPTER
R	-	3/4" COPPER TUBE
S	-	2" x 24" x 24" SQ. (DUAL SERVICE)

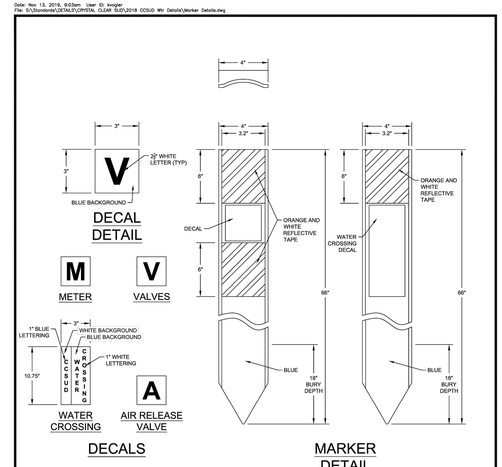
*MATERIALS SHALL BE PER THE APPROVED EQUIPMENT LIST (AEL) OR APPROVED EQUIVALENT.

METER BOX INSTALLATION DETAIL

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	SERVICE CONNECTION DETAILS	M&S ENGINEERING ELECTRICAL | CIVIL | MEP	JUNE 2015	JANUARY 2025
			SHEET 1 OF 1	

Date: Nov 13, 2018, 9:03am User ID: kvogler
File: S:\Standards\UD 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

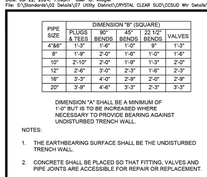
PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	MARKER DETAILS	M&S ENGINEERING CIVIL | ELECTRICAL | STRUCTURAL | MEP	JUNE 2015	NOVEMBER 2019
			SHEET 1 OF 1	

Date: Jul 22, 2024, 1:39pm User ID: kvogler
File: S:\Standards\UD 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'-3"	1'-3"	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'-0"	2'-6"	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.



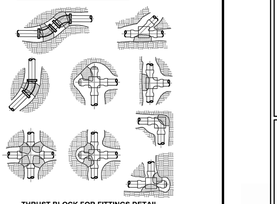
THRUST BLOCK DIMENSIONING



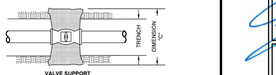
PLAN
POUR BASE AFTER HYDRANT HAS BEEN PLACED

ELEVATION

THRUST BLOCK FOR HYDRANTS DETAIL

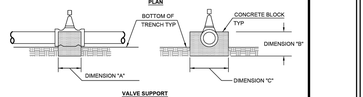


THRUST BLOCK FOR FITTINGS DETAIL



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.



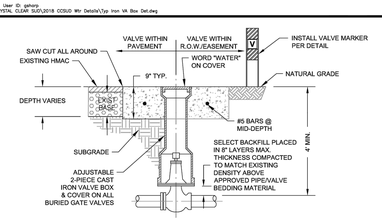
VALVE SUPPORT ELEVATION

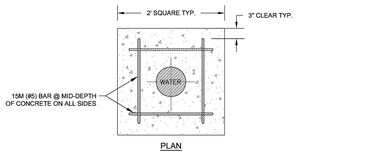
THRUST BLOCK FOR VALVES DETAIL

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	THRUST BLOCKING DETAILS	M&S ENGINEERING ELECTRICAL | CIVIL | MEP	JUNE 2015	JULY 2024
			SHEET 1 OF 1	

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



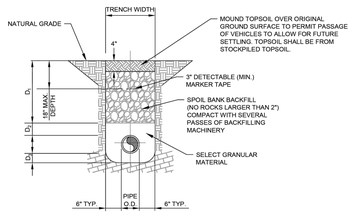


NOTES:
1. VALVE BOXES SHALL BE FITTED WITH PLASTIC VALVE ID TAGS (BLUE EMEDCO 3-1/2" X 3-3/4") INDICATING OWNER (CCSUD) VALVE SIZE, YEAR OF INSTALLATION AND # OF TURNS TO OPEN.
2. SUBGRADE SHALL BE COMPACTED AS PER SPECIFICATIONS
3. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY 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			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL IRON VALVE BOX DETAILS	M&S ENGINEERING CIVIL | ELECTRICAL | STRUCTURAL | MEP	JUNE 2015	AUGUST 2018
			SHEET 1 OF 1	

Date: Oct 11, 2022, 9:46am User ID: kvogler
File: S:\Standards\UD Details\D7 Utility Distrivt\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Typ Trench Backfill.dwg



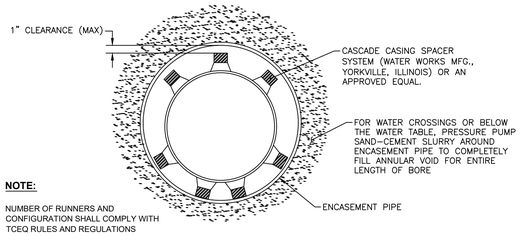
	D_1	D_2	D_3
4" OR SMALLER	36"	6"	4"
6"-8"	30"	12"	6"
12" OR LARGER	42"	12"	6"

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.

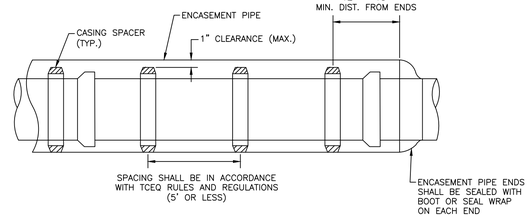
TRENCH SAFETY NOTES
1. TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	TYPICAL TRENCH BACKFILL DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP	JUNE 2015	NOV 2021
			SHEET 1 OF 1	



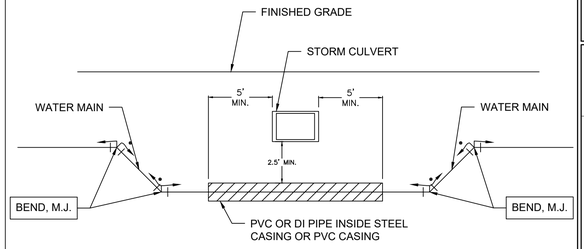
NOTE:
NUMBER OF RUNNERS AND CONFIGURATION SHALL COMPLY WITH TCEQ RULES AND REGULATIONS



NOTES:
1. TCEQ RULES AND REGULATIONS ON SANITARY SEWER, STORM SEWER AND WATER MAIN CROSSING AND SEPARATIONS WILL BE STRICTLY ENFORCED TO TAC, CHAPTER 290, SUBCHAPTER D.
2. ALL PIPE IN ENCASEMENT PIPE SHALL BE RESTRAINED AT JOINTS FOR ENTIRE LENGTH OF THE ENCASEMENT PIPE PLUS 10 FEET ON EACH SIDE.
3. AT ANY CREEK CROSSING OR DRAINAGE DITCH THE PIPE SHALL BE ENCASED IN STEEL PIPE AND HAVE A MINIMUM OF 2.5 FEET OF COVER FROM THE BOTTOM OF THE CREEK/STREAM.

ENCASEMENT DETAIL WITH ENCASEMENT SPACERS

INSTALLATION OF PIPE IN STEEL ENCASEMENT UNDER STORM SEWERS



WATER LINE IN ENCASEMENT PIPE			
WATER LINE SIZE (INCHES)	NOM. DIA. CASING (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

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LICENSED PROFESSIONAL ENGINEER
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WATER DETAILS (2 OF 2)

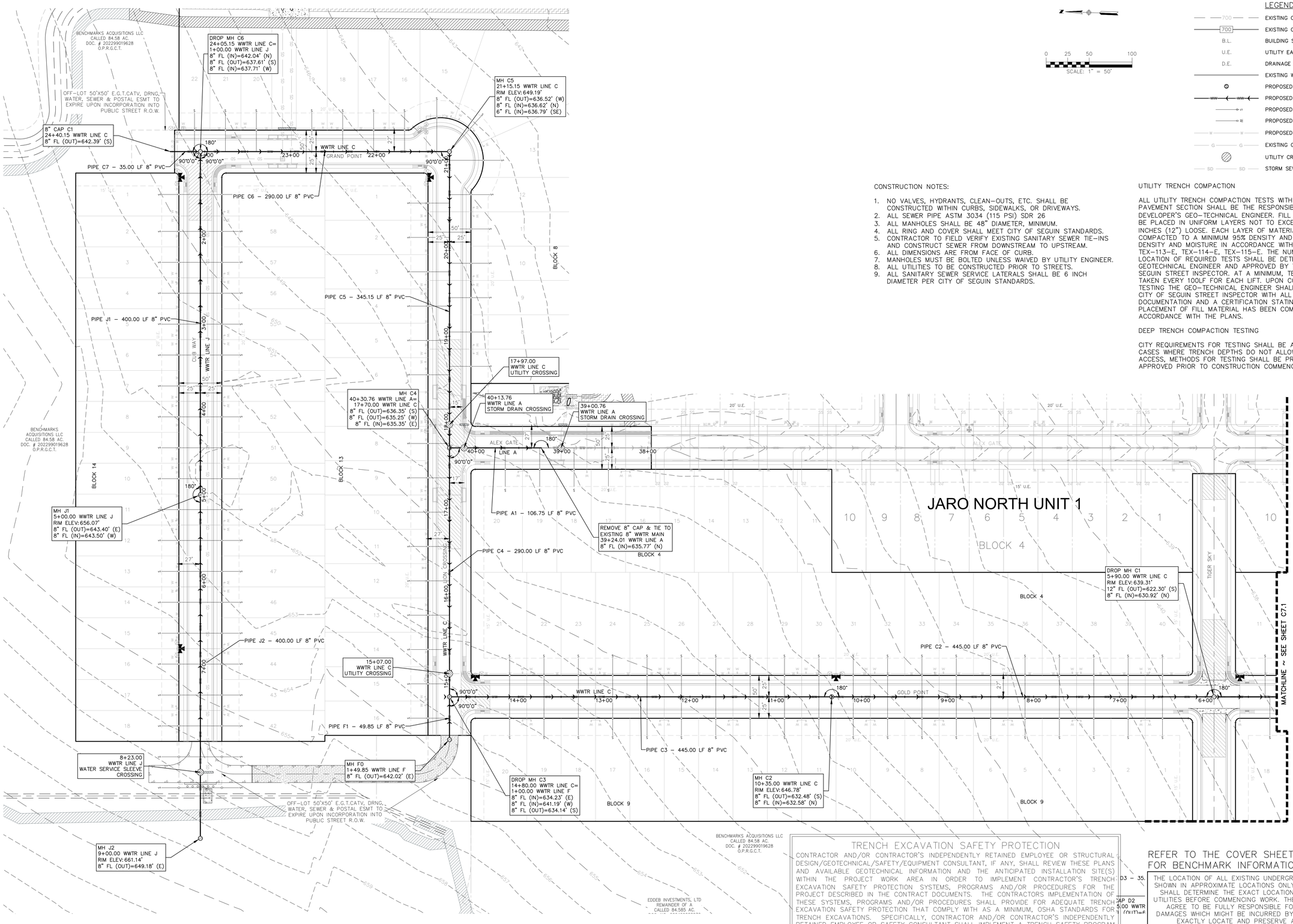
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C6.4

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_WATER DETAILS.dwg User: joshuok Jun 04, 2025 - 10:25pm



0 25 50 100
SCALE: 1" = 50'

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
- STORM SEWER

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.

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.

DEEP TRENCH COMPACTION TESTING

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

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.

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
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PROFESSIONAL ENGINEER
06/05/2025

OVERALL WASTEWATER (1 OF 3)

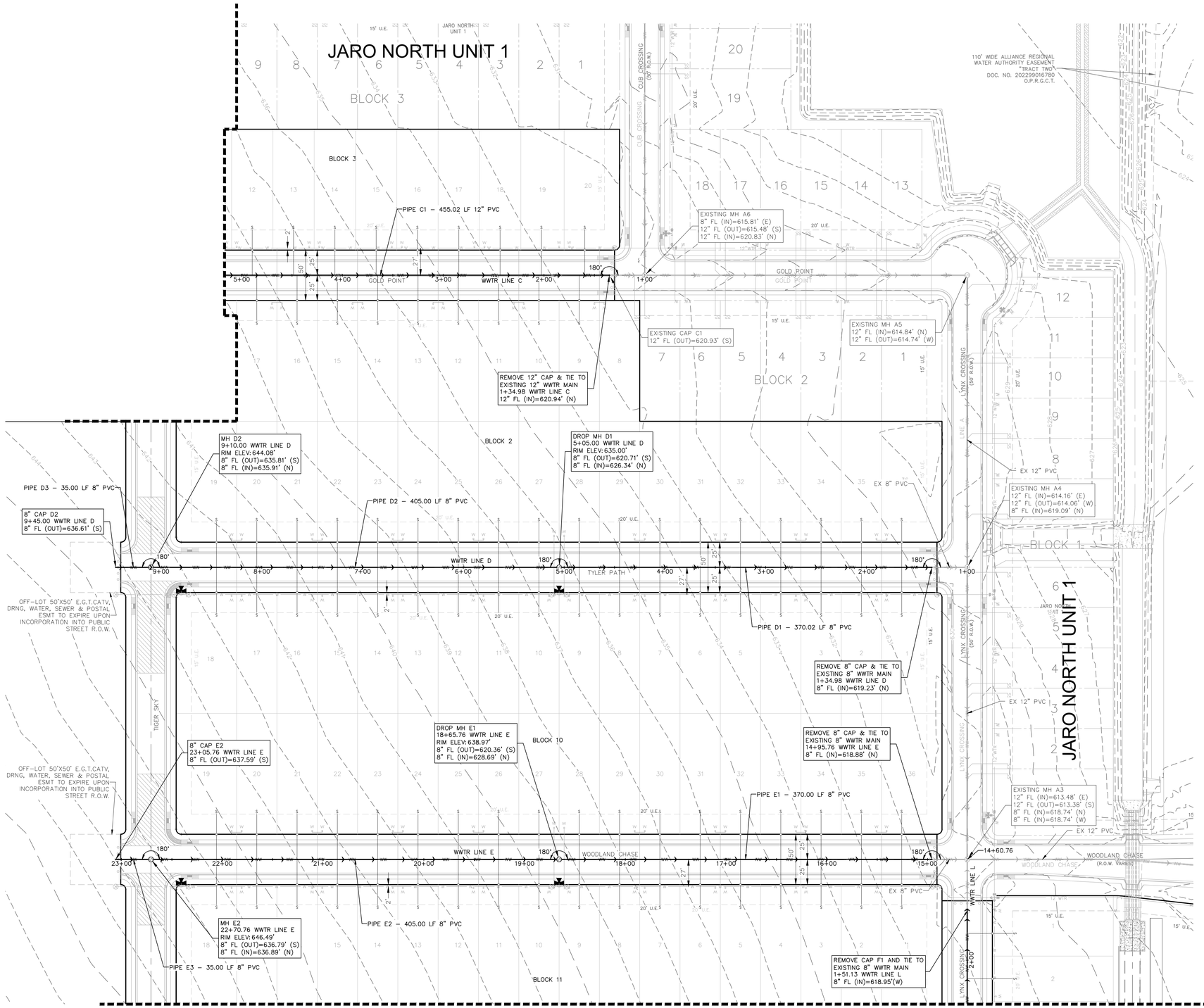
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.0

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Civil\337.101_WWTR OVERALL.dwg User: joshuak Jun 04, 2025 - 10:25pm



0 25 50 100
SCALE: 1" = 50'

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
- STORM SEWER

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.

DEEP TRENCH COMPACTION TESTING

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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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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
06/05/2025

OVERALL WASTEWATER (2 OF 3)

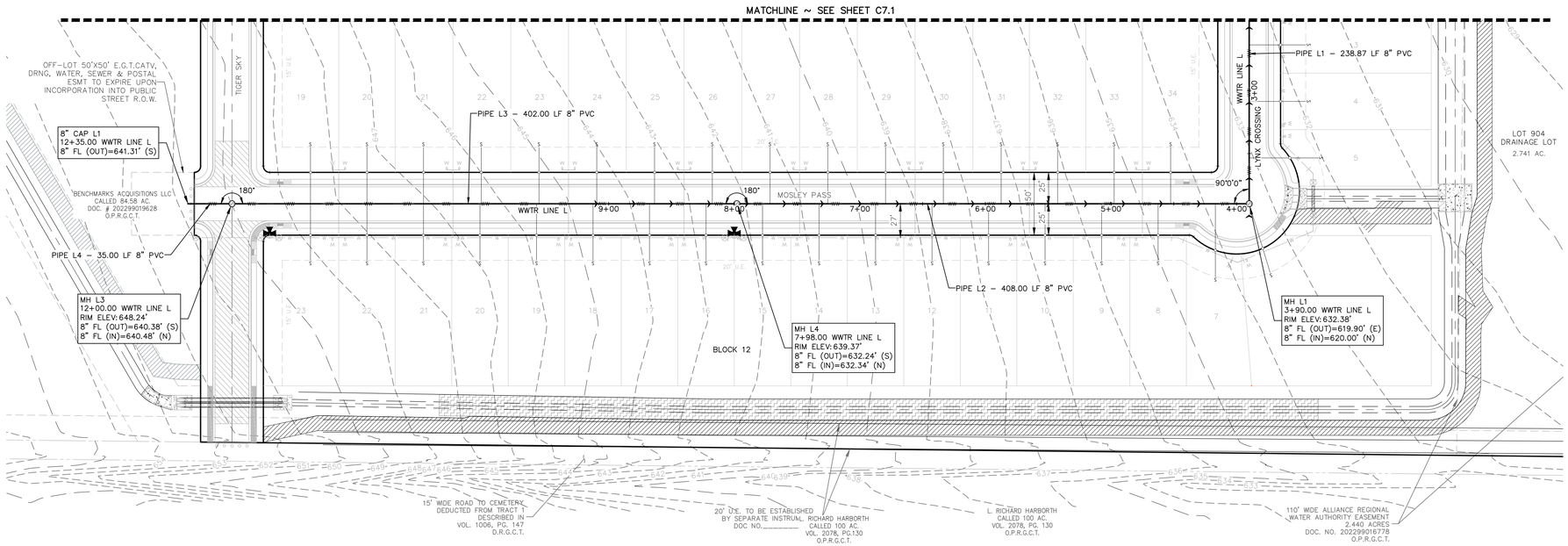
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
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REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.1

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cbs\337.101_WWTR OVERALL.dwg User: joshuck Jun 04, 2025 - 10:25pm



0 25 50 100
SCALE: 1" = 50'

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06/05/2025

OVERALL WASTEWATER (3 OF 3)

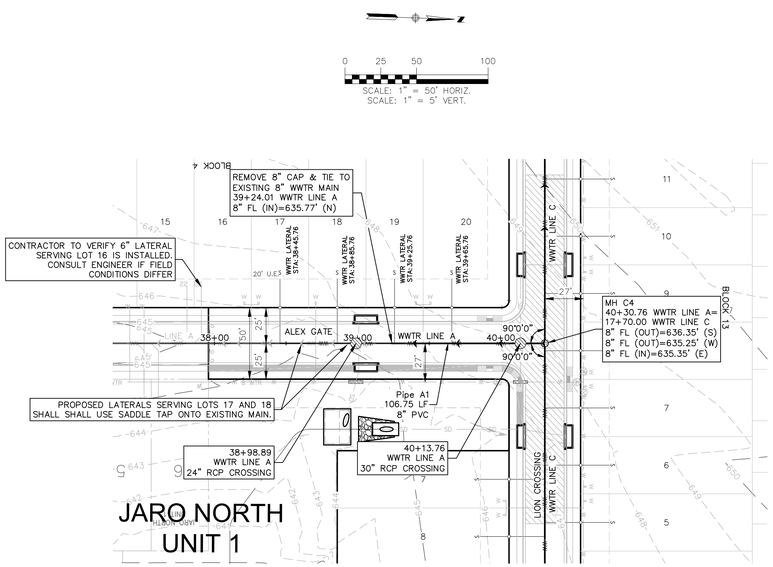
JARO NORTH UNIT 2

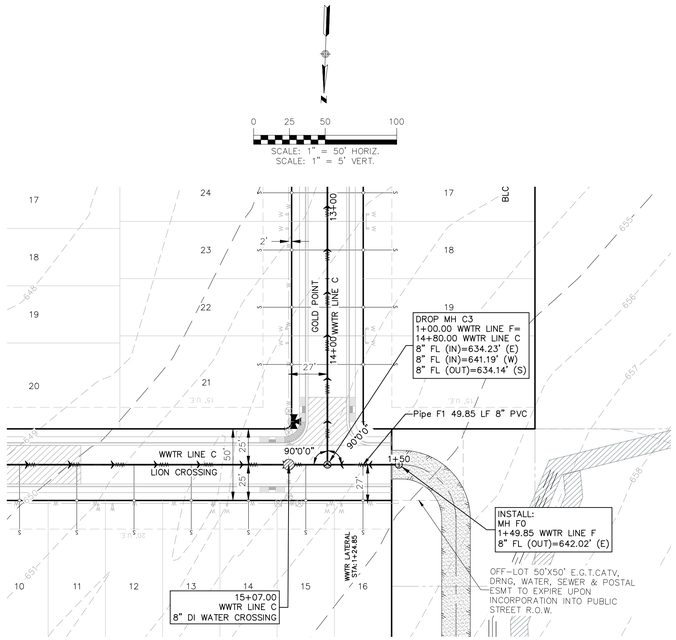
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DATE: JUNE 2025
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DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.2

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_WWTR OVERALL.dwg User: joshuck Jun 04, 2025 - 10:25pm





LEGEND

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- G EXISTING GAS LINE
- UTILITY CROSSING
- SD STORM SEWER

UTILITY TRENCH COMPACTION

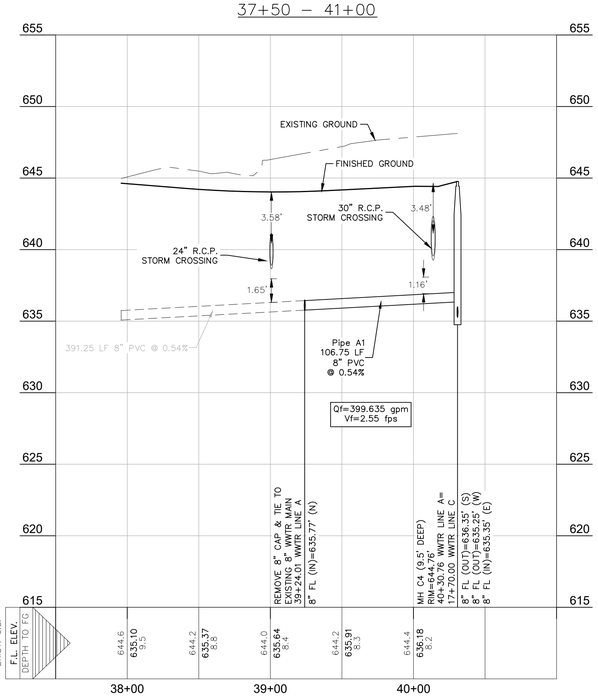
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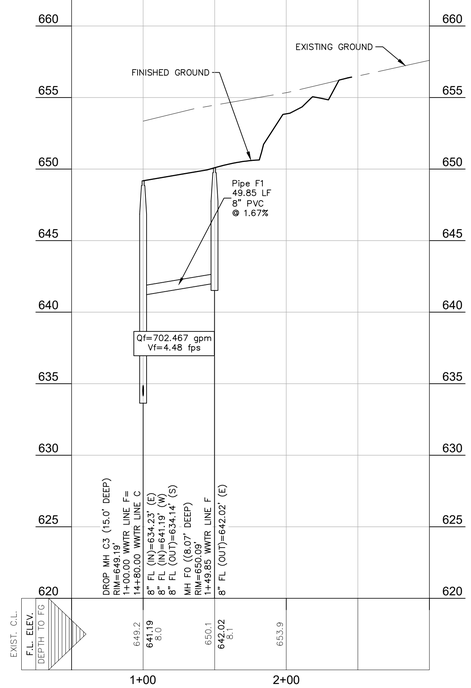
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Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
A1	8	0.54%	4	2.85	0.01	0.89	1.17	0.78	Yes

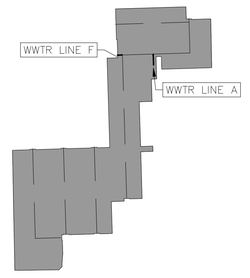
Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
F1	8	1.67%	53	36.18	0.08	1.57	2.20	1.06	Yes





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KEY MAP
NOT TO SCALE

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HMT ENGINEERING & SURVEYING

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WASTEWATER LINES A & F PLAN & PROFILE

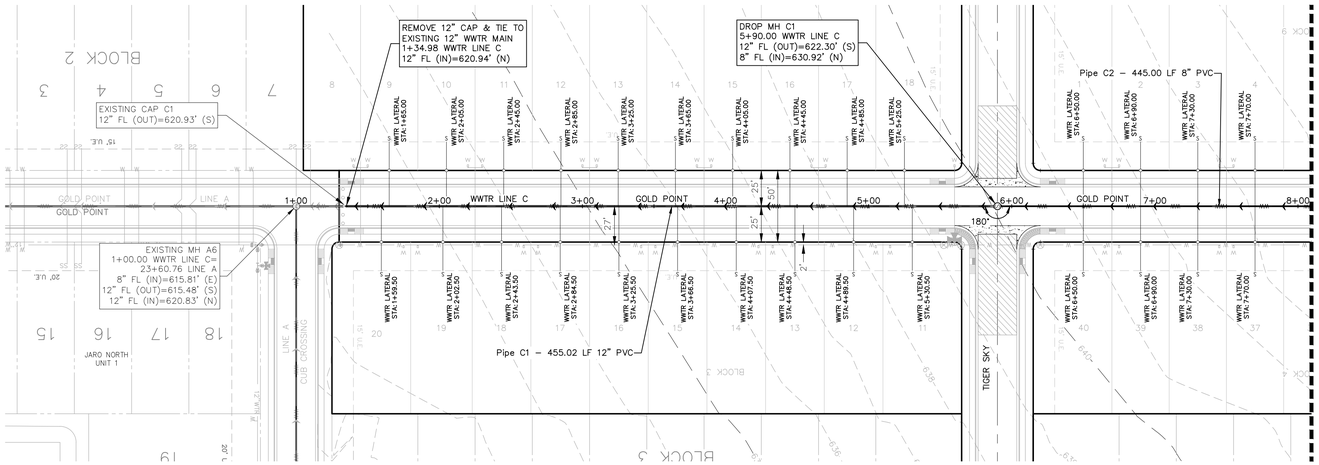
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

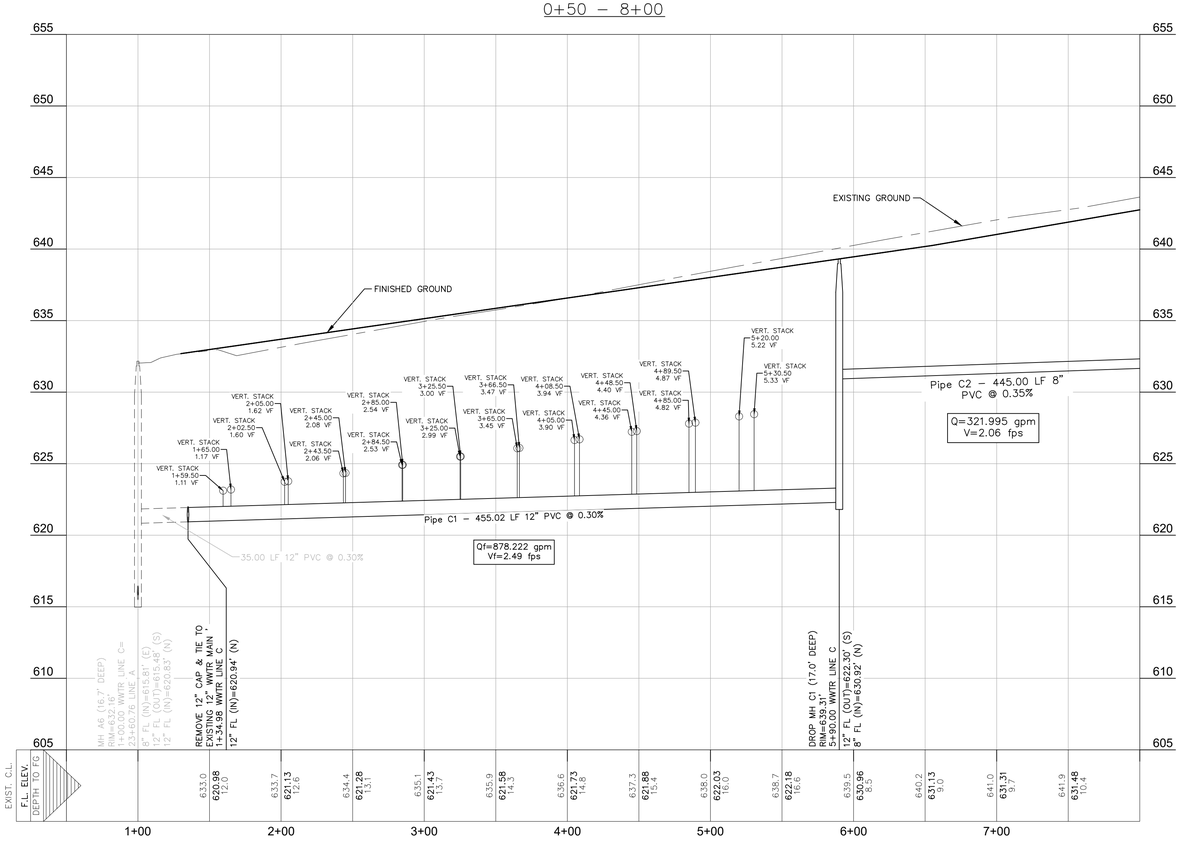
SHEET
C7.3

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03s\337.101_WWTR LINE A & F.dwg User: joshuck Jun 04, 2025 - 10:26pm



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
C1	12	0.30%	385	240.12	0.53	1.96	1.63	3.69	Yes
C2	8	0.35%	364	227.84	0.51	0.72	1.99	5.19	Yes
C3	8	0.35%	343	215.50	0.48	0.72	1.94	4.95	Yes
C4	8	0.35%	272	173.28	0.39	0.72	1.74	4.13	Yes
C5	8	0.34%	264	168.47	0.38	0.71	1.70	4.08	Yes
C6	8	0.34%	249	159.42	0.36	0.71	1.66	3.90	Yes
C7	8	1.00%	180	117.21	0.26	1.21	2.12	2.09	Yes

WWTR LINE C
0+50 – 8+00



LEGEND

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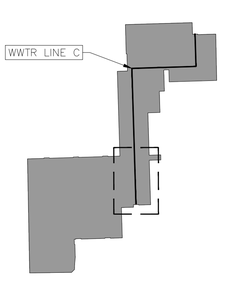
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WASTEWATER LINE C PLAN & PROFILE (1 OF 3)

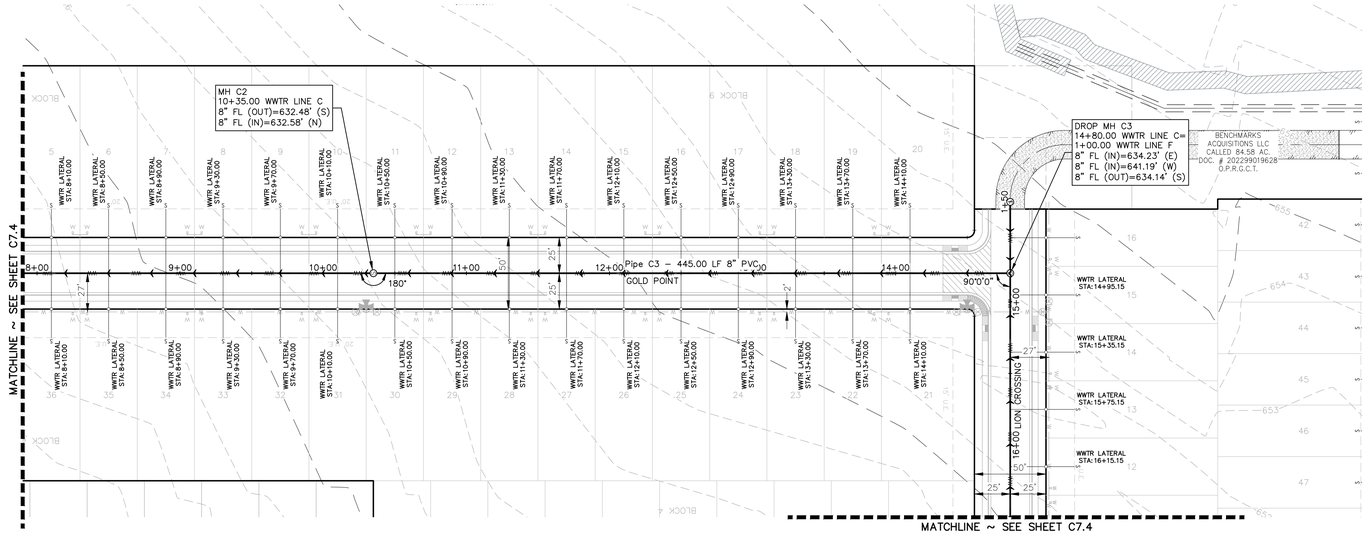
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REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

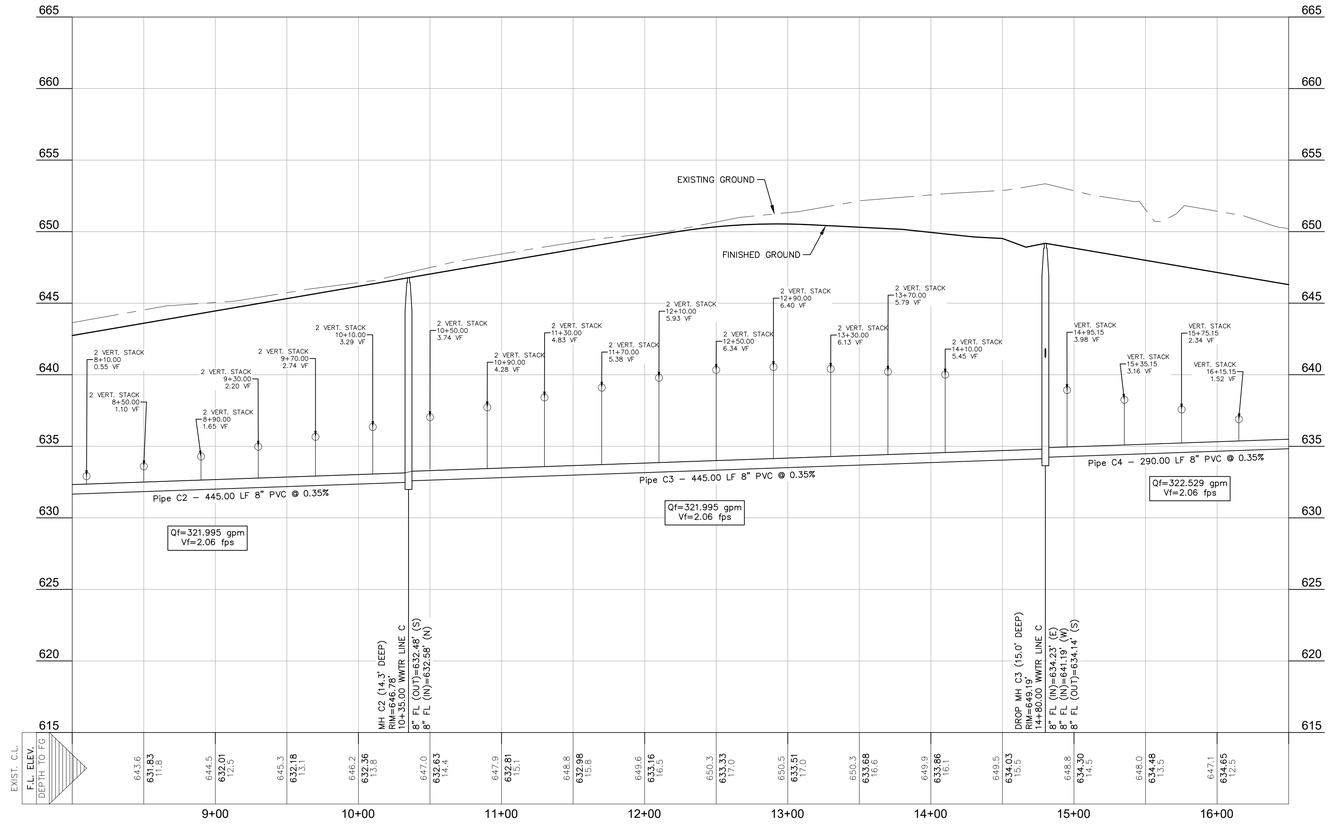
SHEET
C7.4

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\(20s)\337.101_WWTR LINE C.dwg User: joshuak Jun 04, 2025 – 10:26pm



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
C1	12	0.30%	385	240.12	0.53	1.96	1.63	3.69	Yes
C2	8	0.35%	364	227.84	0.51	0.72	1.99	5.19	Yes
C3	8	0.35%	343	215.50	0.48	0.72	1.94	4.95	Yes
C4	8	0.35%	272	173.28	0.39	0.72	1.74	4.13	Yes
C5	8	0.34%	264	168.47	0.38	0.71	1.70	4.08	Yes
C6	8	0.34%	249	159.42	0.36	0.71	1.66	3.90	Yes
C7	8	1.00%	180	117.21	0.26	1.21	2.12	2.09	Yes

WWTR LINE C
8+00 – 16+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

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

UTILITY TRENCH COMPACTION

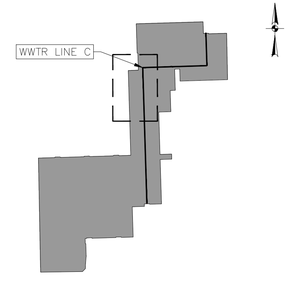
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KEY MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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REFER TO THE COVER SHEET
FOR BENCHMARK INFORMATION.

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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
06/05/2025

WASTEWATER LINE C
PLAN & PROFILE (2 OF 3)

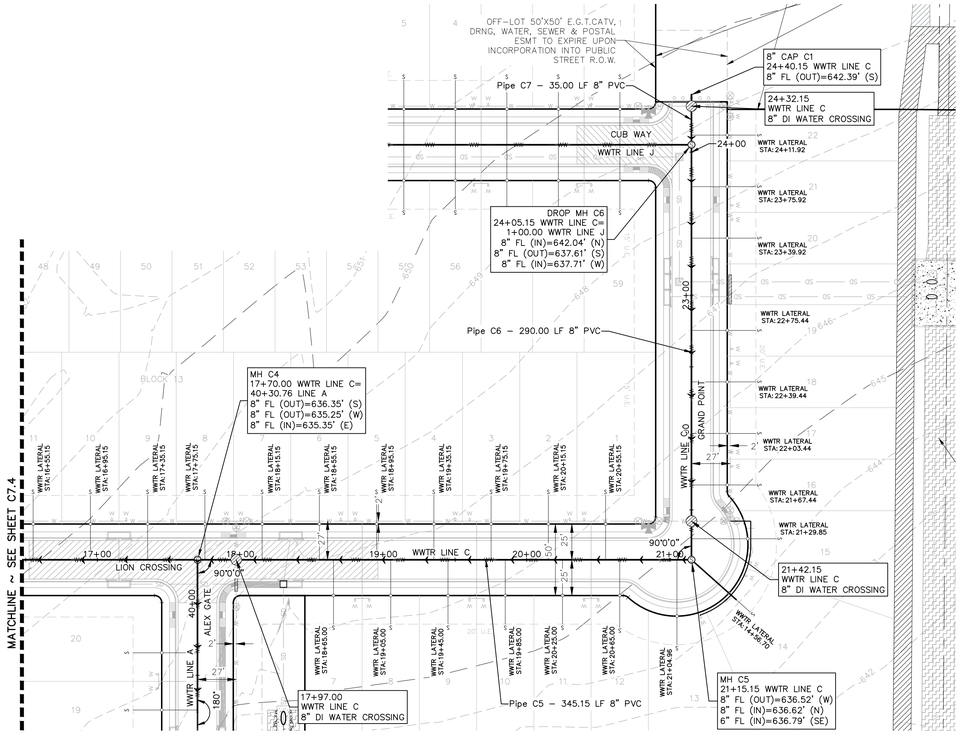
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

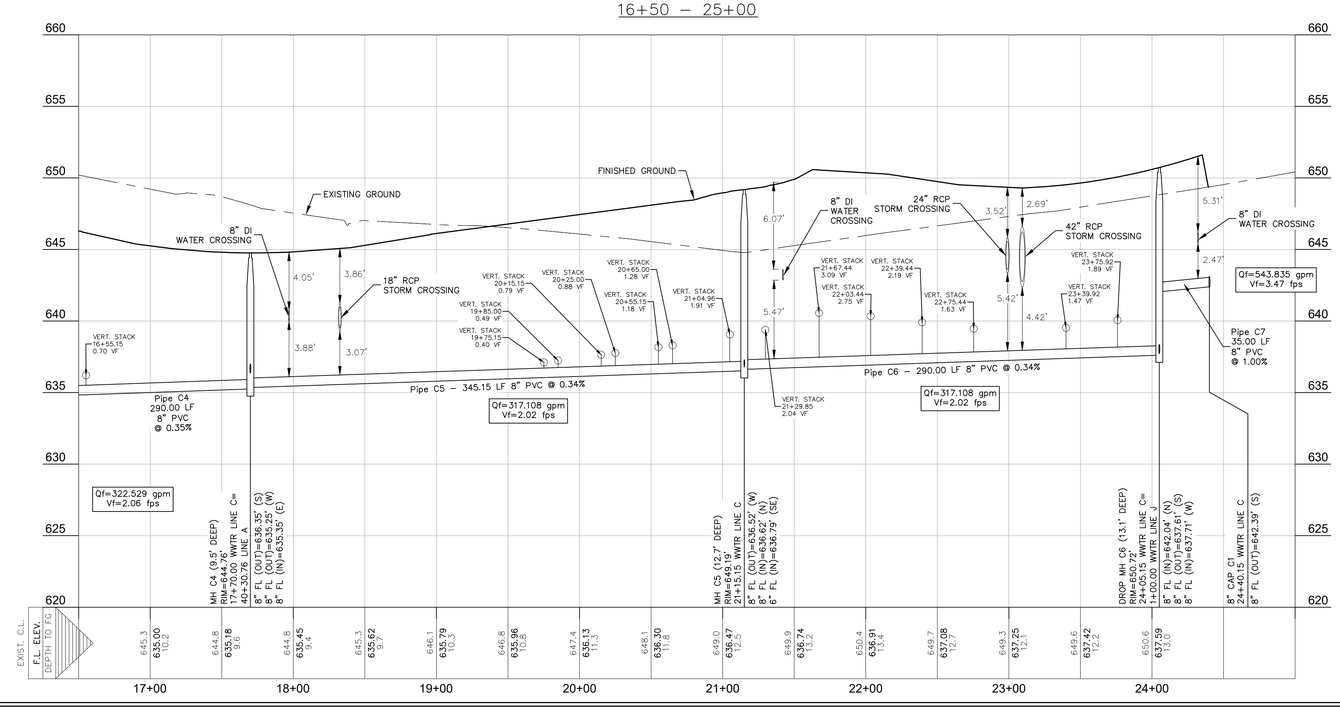
SHEET
C7.5

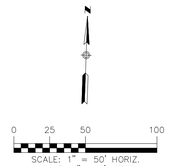
Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\CDs\337.101_WWTR LINE C.dwg User: jsstucki Jun 04, 2025 – 10:26pm



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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WWTR LINE C
16+50 – 25+00





LEGEND

- EXISTING CONTOURS
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- D.E. DRAINAGE EASEMENT
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- UTILITY CROSSING
- STORM SEWER

UTILITY TRENCH COMPACTION

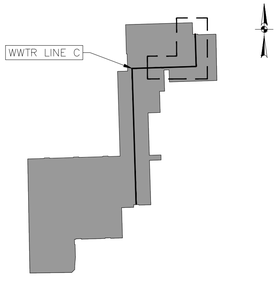
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KEY MAP
NOT TO SCALE

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TBPELS FIRM 1053600
HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

WASTEWATER LINE C PLAN & PROFILE (3 OF 3)

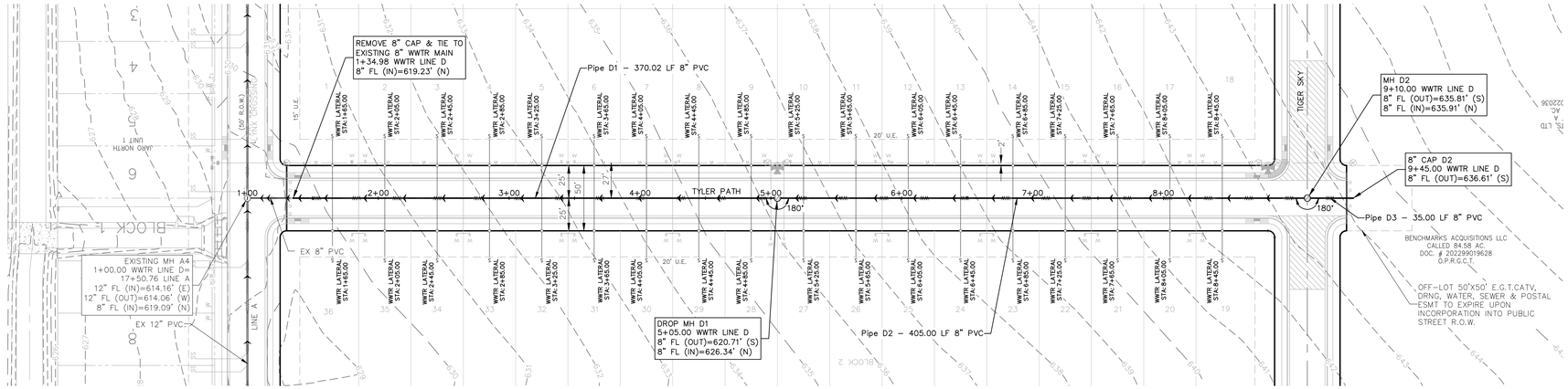
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.6

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\03a\337-101_WWTR LINE C.dwg User: jsthook Jun 04, 2025 - 10:27pm

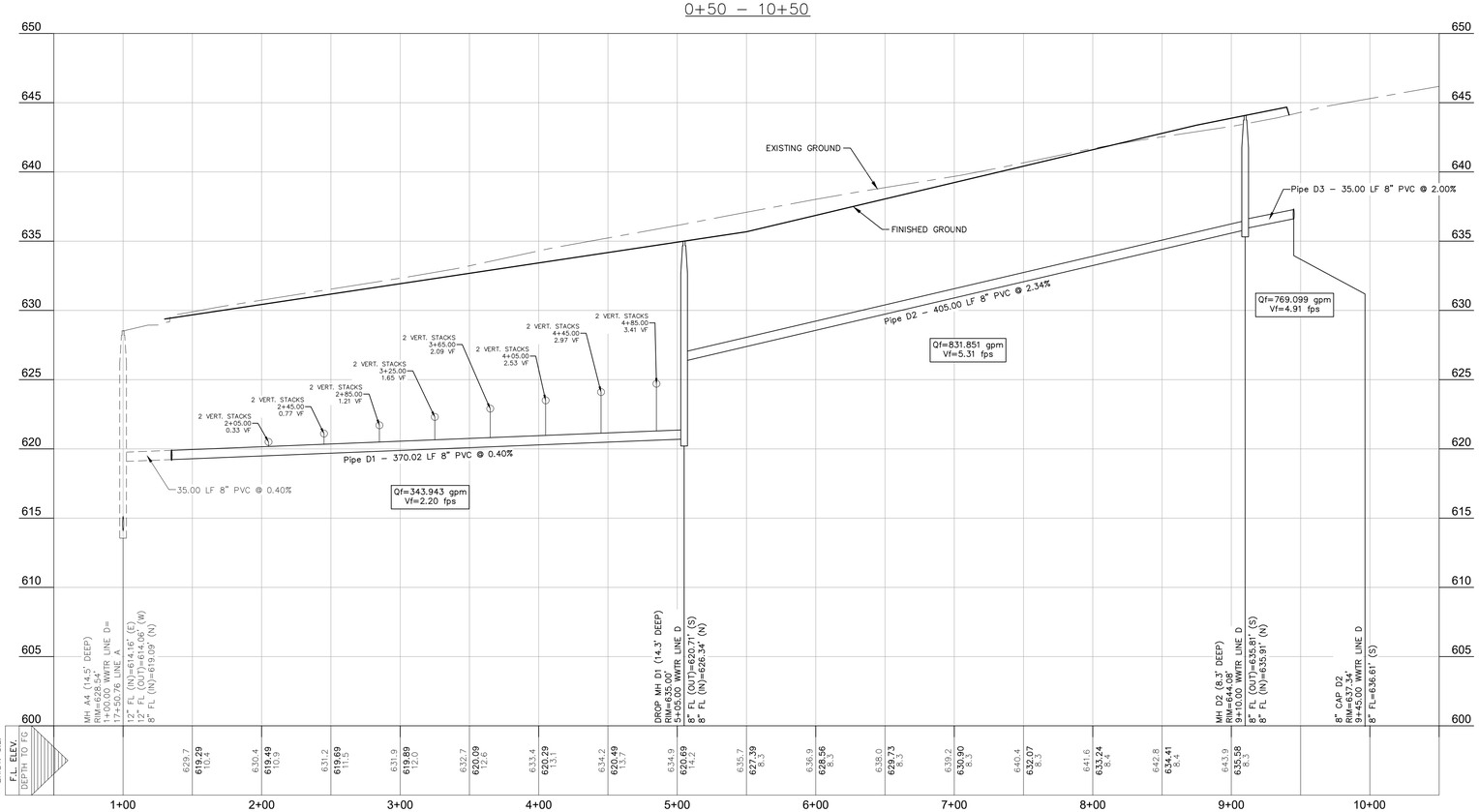


LEGEND

- EXISTING CONTOURS
- EXISTING CONTOURS
- B.L. BUILDING SETBACK LINE
- U.E. UTILITY EASEMENT
- D.E. DRAINAGE EASEMENT
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- 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

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
D1	8	0.40%	76	51.28	0.11	0.77	1.23	1.68	Yes
D2	8	2.34%	58	39.48	0.09	1.85	2.59	1.04	Yes
D3	8	2.00%	40	27.52	0.06	1.71	2.35	0.96	Yes

WWTR LINE D
0+50 – 10+50



UTILITY TRENCH COMPACTION

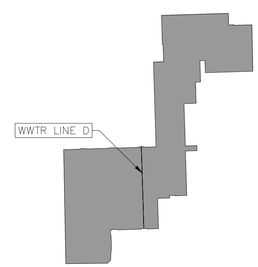
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HMT ENGINEERING & SURVEYING

STATE OF TEXAS
ZOE F. JASSO
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LICENSED
PROFESSIONAL ENGINEER
06/05/2025

WASTEWATER LINE D PLAN & PROFILE

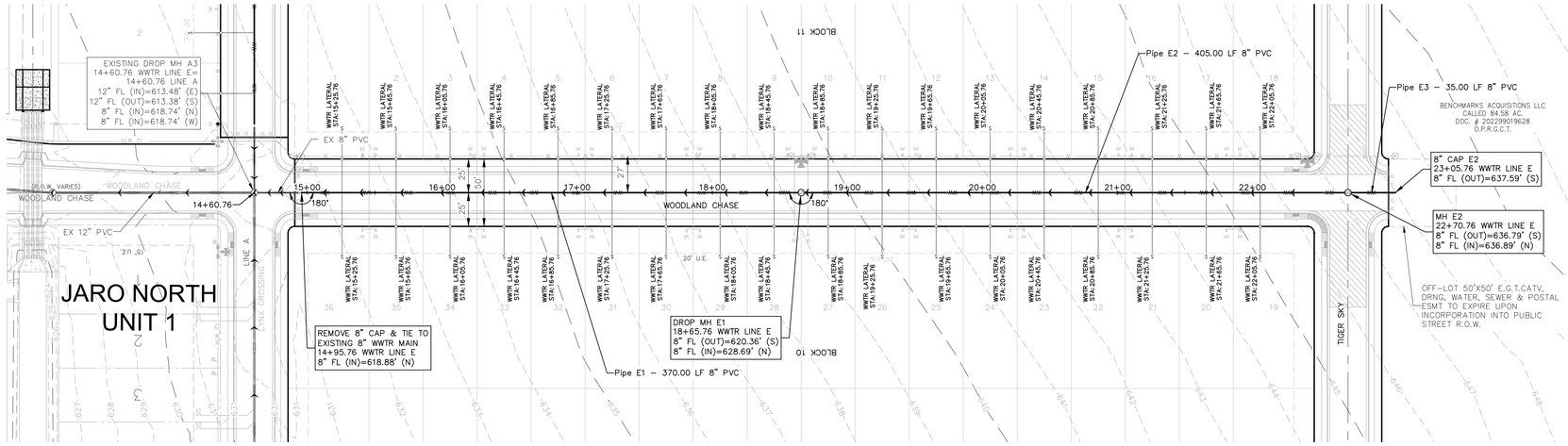
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.7

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\CDs\337.101_WWTR LINE D.dwg User: joshuck Jun 04, 2025 – 10:27pm





LEGEND

- EXISTING CONTOURS
- EXISTING CONTOURS
- BUILDING SETBACK LINE (B.L.)
- UTILITY EASEMENT (U.E.)
- DRAINAGE EASEMENT (D.E.)
- EXISTING WASTEWATER LINE
- PROPOSED WASTEWATER MANHOLE
- PROPOSED WASTEWATER LINE
- PROPOSED 6" WASTEWATER SERVICE
- PROPOSED 5/8" WATER SERVICE
- PROPOSED WATER LINE
- EXISTING GAS LINE
- UTILITY CROSSING
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UTILITY TRENCH COMPACTION

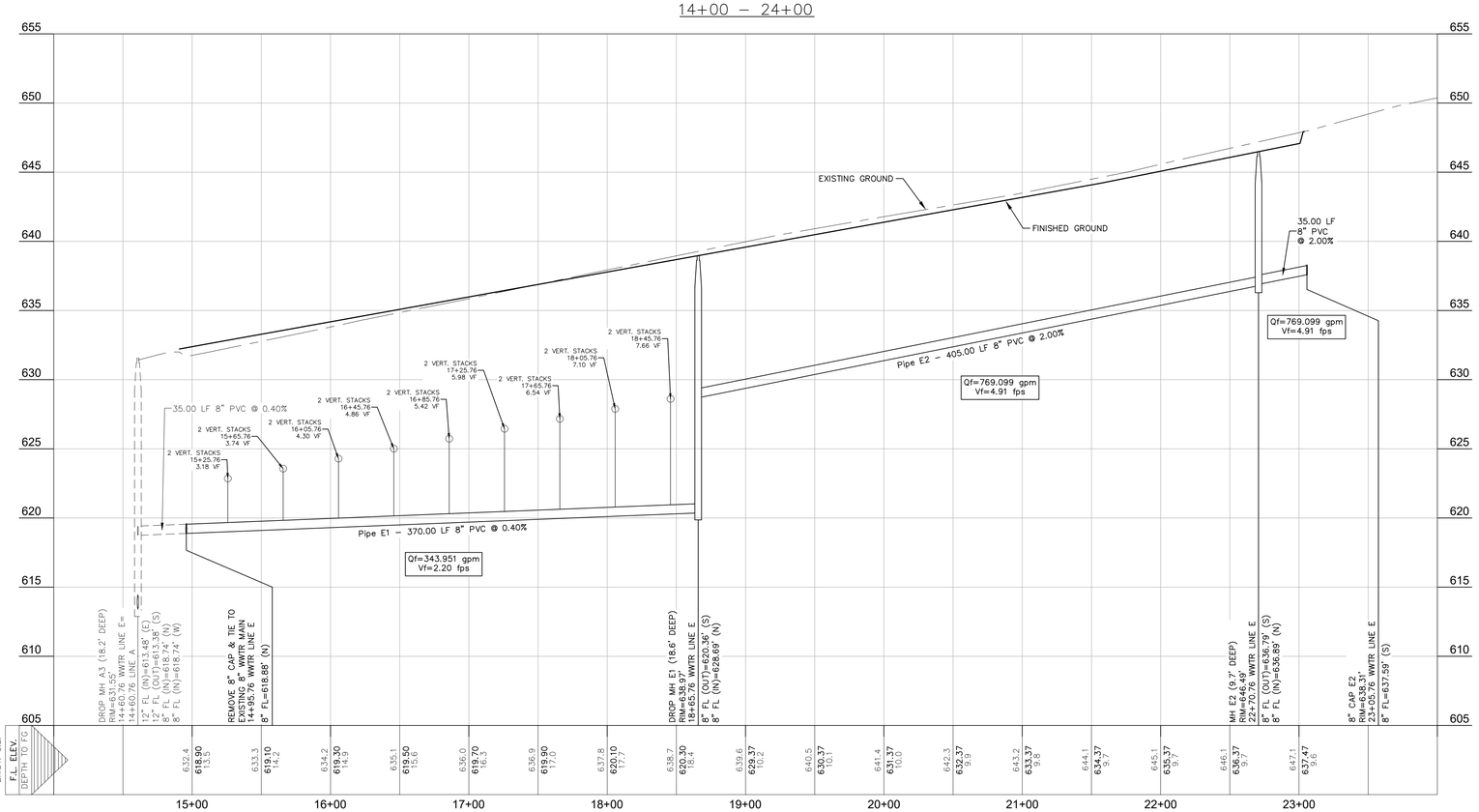
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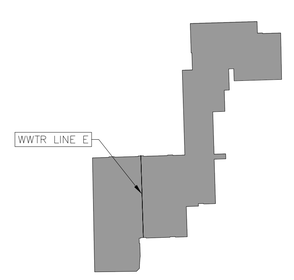
Pipe Segment	Pipe Dia (in)	Slope	LUE	Peak Wet Flow (gpm)	Peak Wet Flow (CFS)	Pipe Capacity (CFS)	PWF V (fps)	PWF Depth (in)	Sufficient Capacity
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WWTR LINE E
14+00 – 24+00



CONSTRUCTION NOTES:

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KEY MAP
NOT TO SCALE

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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FOR BENCHMARK INFORMATION.

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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
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

WASTEWATER LINE E PLAN & PROFILE

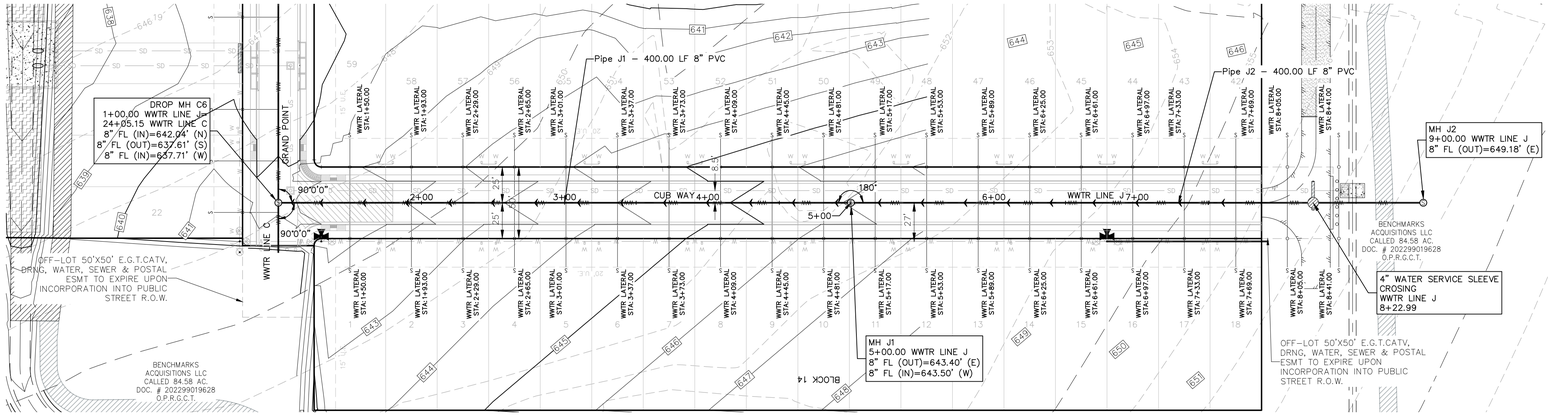
JARO NORTH UNIT 2

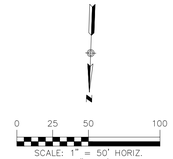
NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.8

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\02a\337.101_WWTR LINE E.dwg User: joshuak Jun 04, 2025 – 10:27pm



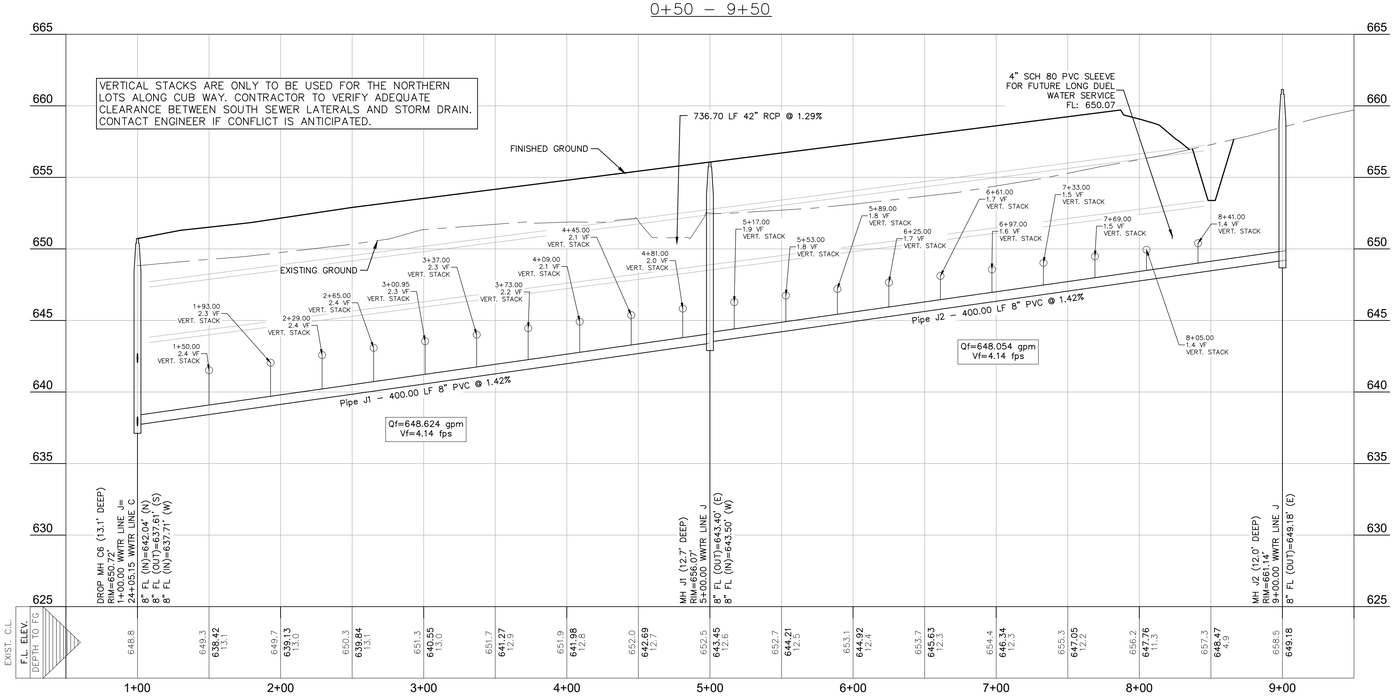


LEGEND

- 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

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
J1	8	1.42%	60	40.80	0.09	1.44	2.06	1.13	Yes
J2	8	1.42%	40	27.52	0.06	1.44	2.00	1.00	Yes

WWTR LINE J
0+50 – 9+50



UTILITY TRENCH COMPACTION

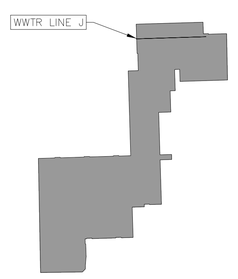
ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEO–TECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY AND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

DEEP TRENCH COMPACTION TESTING

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

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.



KEY MAP
NOT TO SCALE

TRENCH EXCAVATION SAFETY PROTECTION

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HMT ENGINEERING & SURVEYING
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TBPELS FIRM F-10961
TBPELS FIRM 1053600

STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED
PROFESSIONAL ENGINEER
06/05/2025

WASTEWATER LINE J PLAN & PROFILE

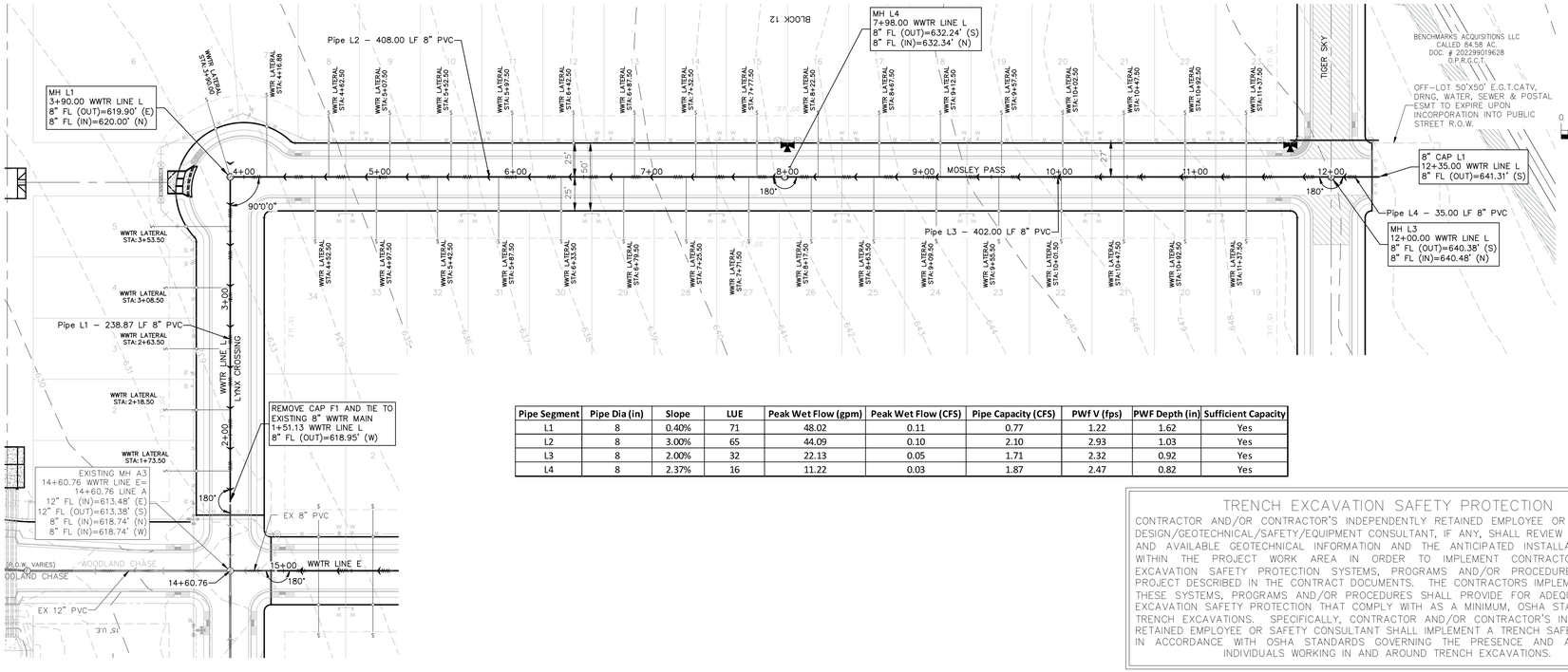
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.9

Drawing Name: M:_Projects\337 – Lennar Homes\101 – Jaro North Unit 2\03a\337101_WWTR LINE J.dwg User: joshuck Jun 04, 2025 - 10:28am



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
L1	8	0.40%	71	48.02	0.11	0.77	1.22	1.62	Yes
L2	8	3.00%	65	44.09	0.10	2.10	2.93	1.03	Yes
L3	8	2.00%	32	22.13	0.05	1.71	2.32	0.92	Yes
L4	8	2.37%	16	11.22	0.03	1.87	2.47	0.82	Yes

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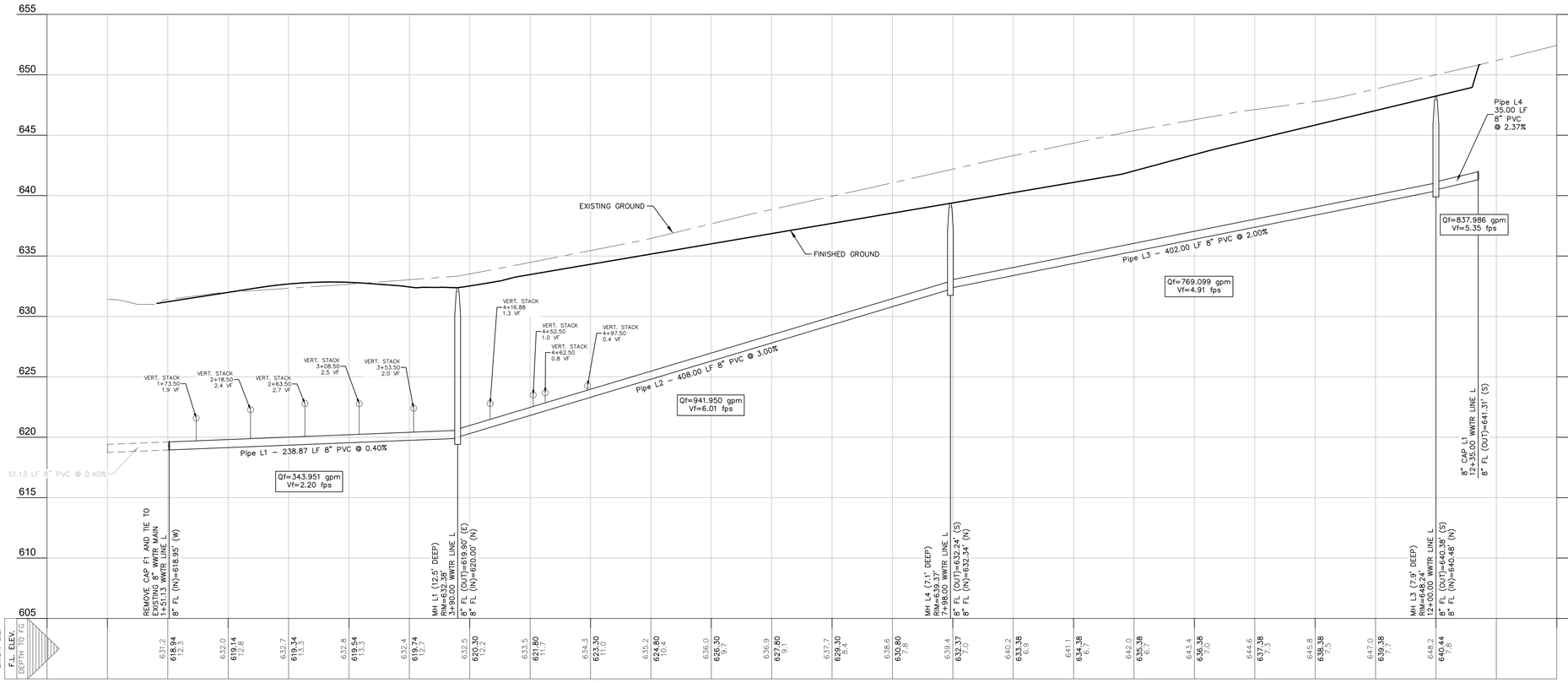
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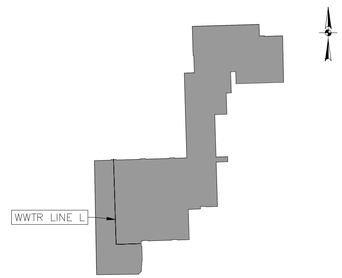
STATE OF TEXAS
ZOE F. JASSO
131964
LICENSED PROFESSIONAL ENGINEER
06/05/2025

WWTR LINE L
0+50 – 13+00



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WASTEWATER LINE L PLAN & PROFILE

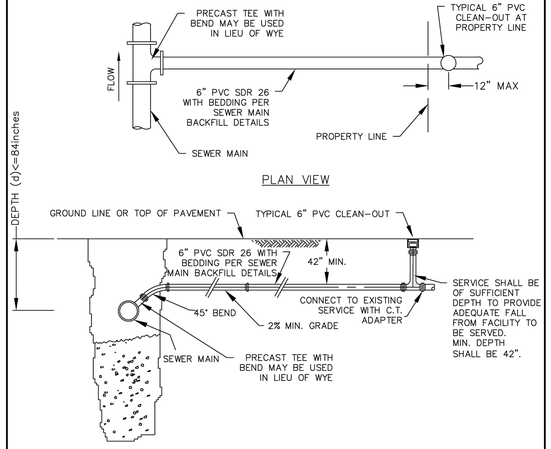
JARO NORTH UNIT 2

NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.10

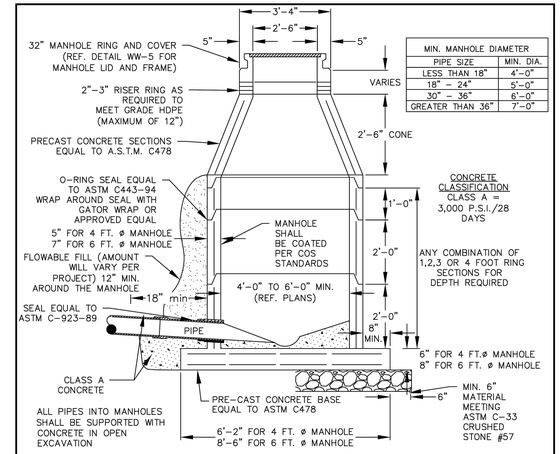
Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\Cds\337.101_WWTR LINE L.dwg User: joshuak Jun 04, 2025 - 10:28pm



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).

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



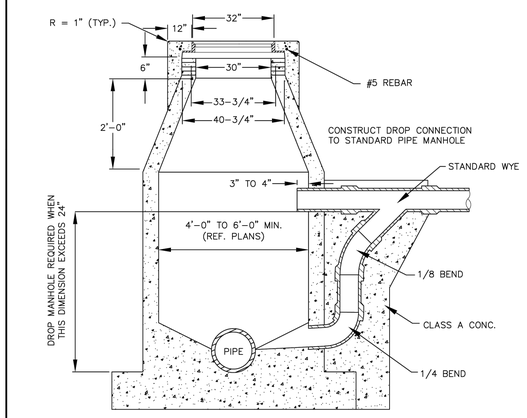
MIN. MANHOLE DIAMETER	
PIPE SIZE	MIN. DIA.
LESS THAN 18"	4'-0"
18" - 24"	5'-0"
30" - 36"	6'-0"
GREATER THAN 36"	7'-0"

CONCRETE CLASSIFICATION
CLASS A = 3,000 P.S.I./28 DAYS

ANY COMBINATION OF 1,2,3 OR 4 FOOT RING SECTIONS FOR DEPTH REQUIRED

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.

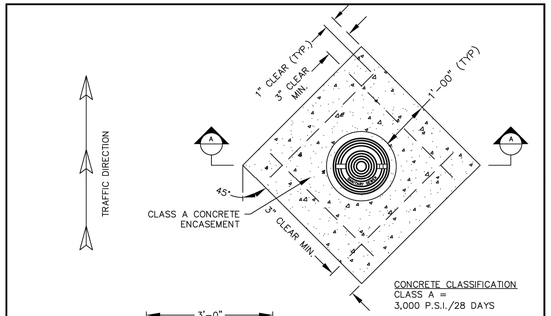
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SANITARY SEWER PRECAST CONCRETE MANHOLE
1ST REVISION	7/29/15	TN	
2ND REVISION	8/10/18	DB	
3RD REVISION	12/08/20	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-2



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."

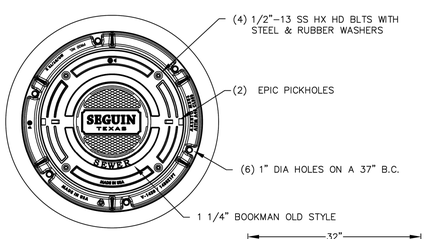
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	SANITARY SEWER DROP MANHOLE
1ST REVISION	7/29/15	TN	
2ND REVISION	12/24/15	AM	
3RD REVISION	5/24/18	DB	SCALE: N.T.S. DRAWING No. WW-3

It's real.

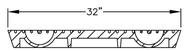


NOTES:
1. CONCRETE ENCASEMENT SHALL BE INSTALLED AFTER FINAL PAVEMENT HAS BEEN INSTALLED.
2. MANHOLES SHALL BE LOCATED BY GPS AND PROVIDED TO THE CITY IN TEXAS STATE PLANE COORDINATES, NAD 83 (93), SOUTH CENTRAL ZONE.
3. CONCRETE ENCASEMENT SHALL ALSO BE INSTALLED IN MANHOLES LOCATED IN NATURAL GROUND.

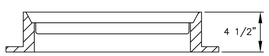
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	MANHOLE RING ENCASEMENT DETAILS
1ST REVISION	7/29/15	TN	
2ND REVISION	12/24/15	AM	
3RD REVISION	5/24/18	DB	
4TH REVISION	11/08/23	DB	SCALE: N.T.S. DRAWING No. WW-6



CAST IRON MANHOLE LID AND FRAME PLAN VIEW



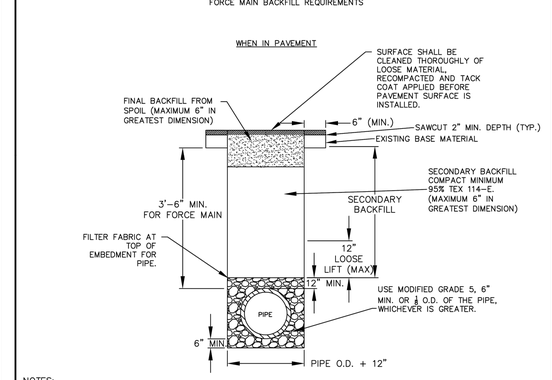
LID SECTION VIEW



FRAME SECTION VIEW

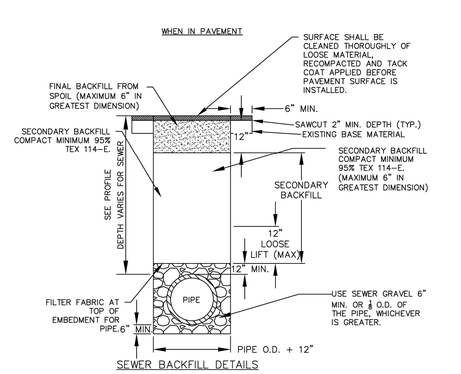
NOTES:
1. MANHOLE LID SHALL BE SOLID AND PROVIDED WITH PICK SLOTS ONLY.
2. 32" HEAVY DUTY MANHOLE FRAME AND COVER IS TO BE CAST 400 LBS WITH A DESIGN STRENGTH OF 4,000 PSI.
3. THE HORIZONTAL BEARING SURFACES ARE TO BE MACHINE FINISHED.
4. THE SOLID LID WILL BE PROVIDED WITH MANUFACTURER'S STANDARD LETTERING 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

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 (1XDOT ITEM 340, TYPE D); FLEX (CRUSHED STONE) BASE (1XDOT 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.

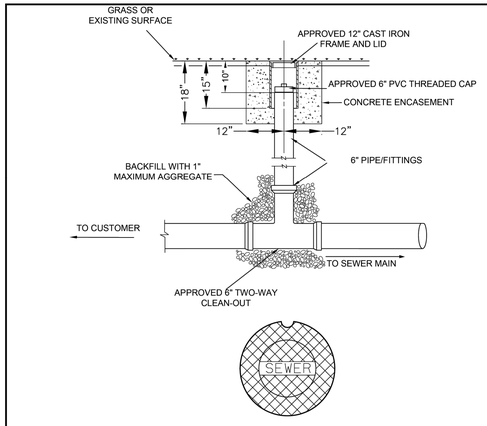
DATE ISSUED:	JUNE 1, 2013		TITLE
REVISION	DATE	BY	FORCE MAIN BACKFILL DETAIL
1ST REVISION	5/29/18	DB	
2ND REVISION	11/08/23	DB	
3RD REVISION	05/06/24	DB	SCALE: N.T.S. DRAWING No. WW-7



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 (1XDOT ITEM 340, TYPE D); FLEX (CRUSHED STONE) BASE (1XDOT 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.

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.

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

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
PROFESSIONAL ENGINEER
06/05/2025

WASTEWATER DETAILS

JARO NORTH UNIT 2

REVISION NO.	REVISION DESCRIPTION	REVISION DATE

DATE: JUNE 2025
DRAWN BY: RR
DESIGNED BY: JK
REVIEWED BY: ZJ
HMT PROJECT NO.: 337.101

SHEET
C7.11

Drawing Name: M:_Projects\337 - Lennar Homes\101 - Jaro North Unit 2\02d\337.101_WWTR DETAILS.dwg User: joshuak Jun 04, 2025 - 10:28pm