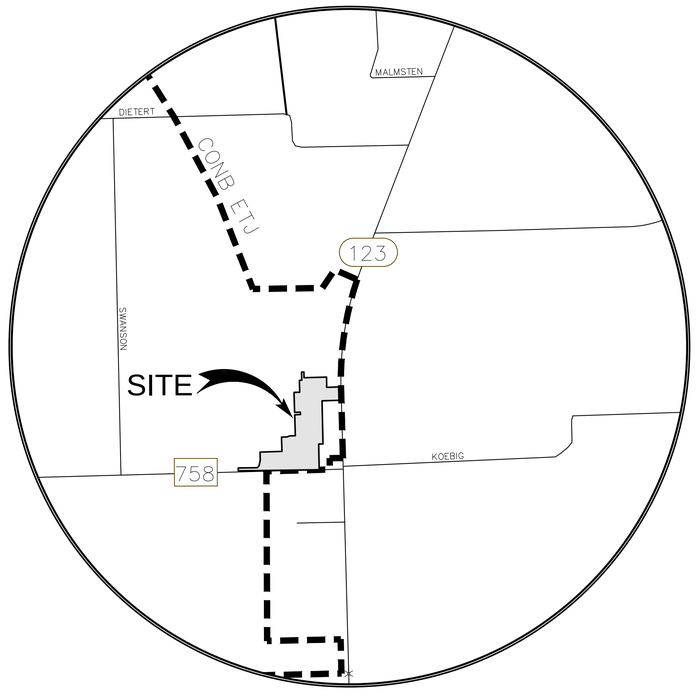
Project Control Points				
Point #	Raw Description	Elevation	Northing	Easting
1	CP IPSC	649.50	13806910.1041'	2297166.1145'
2	CP IPSC	636.16	13806177.9450'	2297174.4322'

JARO NORTH SUBDIVISION UNIT 1

PI2024-0024
LONE OAK FARM MUD

NEW BRAUNFELS, TEXAS
STREETS, DRAINAGE, WATER AND
SANITARY SEWER IMPROVEMENT PROJECT

BEING 36.387 ACRE OF LAND SITUATED IN THE W. J. RAGSDALE SURVEY, ABSTRACT NO. 268 AND THE A. M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, IN GUADALUPE COUNTY, TEXAS, BEING A PORTION OF A 40.00 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999028005, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS, AND A PORTION OF A CALLED 170.699 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999000803, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS.



DESIGN SPEED = 30 MPH

LONE OAK FARM MUD DISCLAIMER AND NOTES:

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

_____
DISTRICT ENGINEER

- THE DISTRICT ENGINEER, JONES–HEROY & ASSOCIATES, INC. (KEN HEROY, PH: 512/989–2200) SHALL BE CONTACTED 48 HOURS PRIOR TO:
  i) PRE–CONSTRUCTION MEETINGS;
  ii) BEGINNING EACH PHASE OF CONSTRUCTION;
  iii) TESTING; AND,
  iv) FINAL WALK–THROUGH OF FACILITIES

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

GPS POINTS SHALL BE REQUIRED FROM THE DEVELOPER CONTRACTOR'S OR ENGINEER. A MINIMUM OF THREE COORDINATE POINTS FOR GEOREFERENCING SHALL BE REQUIRED. THE WATER AND WASTEWATER GPS POINTS SHALL BE TO SURVEY GRADE. THE ELECTRIC GPS POINTS SHALL BE TO MAP GRADE.

WATER
VERTICAL BENDS AND EDGE OF STEEL CASING (IF APPLICABLE) PRIOR TO BACKFILL
HORIZONTAL BENDS PRIOR TO BACKFILL
TEES PRIOR TO BACKFILL
FITTINGS (REDUCERS AND COUPLINGS) PRIOR TO BACKFILL
FIRE HYDRANTS (TOP OF FLANGE)
VALVES
METERS (TOP CENTER OF BOX)
BLOW OFF ASSEMBLY
CORNER SLAB OF WATER TANK & GATE VALVE ON WATER TANK

WASTEWATER
MANHOLES
CLEANOUTS CORNER
SLAB OF LIFT STATION

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

COORDINATE GPS REQUIREMENTS WITH CCSUD AND CITY OF SEGUIN INSPECTOR

GENERAL NOTES:

1. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE–YEAR OF CITY OF NEW BRAUNFELS, CITY OF SEGUIN, AND CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
2. 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.
3. NO PORTION OF THE PROJECT IS LOCATED WITHIN THE EXISTING SPECIAL FLOOD HAZARD ZONE A, 100–YEAR FLOOD BOUNDARY, AS DEFINED BY THE COMAL COUNTY, TEXAS MAP NUMBER 48187C0130F, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, EFFECTIVE DATE NOVEMBER 2, 2007.
4. THIS PROJECT IS NOT LOCATED WITHIN THE EAA JURISDICTIONAL BOUNDARY AND IS NOT LOCATED WITHIN ANY EDWARDS AQUIFER RECHARGE ZONES.
5. THIS PROJECT IS A RESIDENTIAL SUBDIVISION, DEVELOPMENT TYPE 3.
6. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL CONTACT THE CITY OF NEW BRAUNFELS (CONB), CITY OF SEGUIN, AND CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) TO SET A PRE–CONSTRUCTION MEETING. A 48–HOUR ADVANCED NOTIFICATION IS REQUIRED.
   6.1. ALL CONB INSPECTIONS ARE TO BE CALLED IN AT 830–221–4068 (PHONE)
   6.2. FAXED IN AT 830–608–2117 (FAX)
   6.3. EMAILED AT inspections@nbtexas.com (EMAIL).
7. 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 FOLLOWED FOR ALL CONSTRUCTION EXCEPT AS AMENDED BY THE CITY OF NEW BRAUNFELS STANDARD DETAILS.
8. 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.

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.

LOCATION MAP
SCALE: 1" = 1,500'

PREPARED BY:

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

SUBMITTED BY:

JAMES INGALLS, P.E. #107416
INK CIVIL
TBPE FIRM #F-13351
2021 W SH46, STE 105
NEW BRAUNFELS, TX 78132

STATE OF TEXAS · JAMES INGALLS · 107416 · LICENSED PROFESSIONAL ENGINEER

04/17/2025

SUBMITTAL DATE: 12-10-2024

OWNER/DEVELOPER:
NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78132

ENGINEER/SURVEYOR:
INK CIVIL
JAMES INGALLS, P.E. - ENGINEER
2021 SH 46 W. STE 105.
NEW BRAUNFELS, TX. 78130
(830) 358-7127

D.A. MAWYER LAND SURVEYING, INC.
DREW MAWYER, R.P.L.S. - SURVEYOR
5151 W. SH46
NEW BRAUNFELS, TEXAS 78132
(210) 325-0858

Sheet List Table

SHEET NUMBER	SHEET TITLE
0	COVER SHEET
1	GENERAL NOTES
2	MASTER PLAN
3	SUBDIVISION PLAT I
4	SUBDIVISION PLAT II
5	SUBDIVISION PLAT III
6	WOODLAND CHASE PLAN & PROFILE
7	LYNX CROSSING PLAN & PROFILE
8	GOLD POINT AND TIGER SKY PLAN & PROFILE
9	CUB CROSSING PLAN & PROFILE
10	PANTHER RIDGE PLAN & PROFILE
11	ALEX GATE PLAN & PROFILE
12	TIMBERLAND WAY PLAN & PROFILE
13	STREET SECTIONS AND DETAILS I
14	CONB STREET DETAILS
15	TRAFFIC SIGNAGE AND SIDEWALK PLAN I
16	TRAFFIC SIGNAGE AND SIDEWALK PLAN II
17	TRAFFIC SIGNAGE & SIDEWALK DETAILS
18	GRADING PLAN I
19	GRADING PLAN II
20	DRAINAGE AREA MAP - EXISTING
21	DRAINAGE AREA MAP - PROPOSED
22	DRAINAGE AREA MAP - PROPOSED SCS
23	OVERALL DRAINAGE MAP AND MAINTENANCE ACCESS PLAN
24	DETENTION POND A PLAN & NOTES
25	DETENTION POND B PLAN & NOTES
26	DETENTION POND A CROSS-SECTIONS
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28	DETENTION POND STRUCTURES
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30	CHANNEL A4 AND A6 PLAN & PROFILE
31	DRAINAGE DETAILS I
32	OVERALL SANITARY SEWER PLAN I
33	OVERALL SANITARY SEWER PLAN II
34	SANITARY SEWER LINE A BEGIN TO STA 22+00
35	SANITARY SEWER LINE A STA. 22+00 TO 34+00
36	SANITARY SEWER LINES A STA.34+00 TO END B2 STA 10+0 TO END
37	SANITARY SEWER LINE B STA. 10+00 TO 22+00
37A	SANITARY SEWER LINE B STA. 22+00 TO END & LINE G
38	SANITARY SEWER DETAILS I
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40	WATER DISTRIBUTION PLAN I
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42	12in WATER MAIN STA. 10+00 TO 20+00
43	12in WATER MAIN STA. 20+00 TO 32+00
44	12in WATER MAIN STA. 32+00 TO END
45	WATER DETAILS I
46	WATER DETAILS II
46A	WATER DETAILS III
47	EROSION CONTROL PLAN
47A	TEMPORARY SEDIMENT BASIN
48	EROSION CONTROL DETAILS I
49	EROSION CONTROL DETAILS II

NO	DATE	ISSUES AND REVISIONS
2	5/3/2024	REVISED PER CCSUD COMMENTS
3	5/6/2024	UPDATED FLEX BASE THICKNESS
4	5/17/2024	REVISED PER CCSUD COMMENTS
5	5/28/2024	REVISED PER CCSUD COMMENTS
6	5/31/2024	REVISED PER CONB COMMENTS
7	6/17/2024	TEMPORARY SEDIMENT BASIN SHEET ADDED
8	12/6/2024	ADDED 5 LOTS IN BLOCK 8
9	04/16/2025	REVISED PER CCSUD COMMENTS

JARO NORTH SUBDIVISION UNIT 1
PERMIT SET

Drawing Name: N:\Projects\BEAD12 Jaro North Subdivision\Civil\Construction Drawings\0 COVER SHEET.dwg User: jamesingalls Apr 17, 2025 - 7:00am

CITY OF NEW BRAUNFELS – CONSTRUCTION NOTES – REV 3-2020

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 OF RECORD.

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

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

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

5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SEE THAT ALL TEMPORARY AND PERMANENT TRAFFIC CONTROL DEVICES ARE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PLANS AND LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. IF, 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.

6. 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

7. 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 ENGINEERAND 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

8. 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 CITYS 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

9. 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

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

FINISHED FLOOR ELEVATIONS

11. 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

12. 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

13. 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

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

15. 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.

16. 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.

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

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

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

18. CURB CUTS SHALL BE THE FOLLOWING METHODS AND INDICATED ON THE PLANS IN DETAIL WHERE APPLICABLE.
18.1 SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
18.2 SAWCUT EXISTING CURB TO TIE INTO EXISTING CONSTRUCTION.

CONSTRUCTION STABILIZED ENTRANCE

19. SAWCUT CURB FOR CONSTRUCTION ENTRANCE.

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

SIGNING AND PAVEMENT MARKING PLAN NOTES

21. 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.

22. THE CONTRACTOR SHALL INSTALL ALL PAVEMENT MARKINGS IN ACCORDANCE WITH APPROVED ENGINEERING PLANS.

23. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE CITY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

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

1. SEEDING FOR THE PURPOSE OF ESTABLISHING VEGETATION WITHIN CONSTRUCTED EARTHEN CHANNELS, BASINS AND DISTURBED AREAS SHALL BE CONDUCTED IN ACCORDANCE WITH ITEM 164 (SEEDING FOR EROSION CONTROL) OF TXDOT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES MANUAL. ONLY SEED TYPES AND MIXES SPECIFIED FOR THE SAN ANTONIO DISTRICT (DISTRICT 15) IN TABLES 1 AND 2 UNDER ITEM 164 SHALL BE UTILIZED. DURING THE COOL SEASON (SEPT 1-NOV 30), CEREAL RYE AND SEED SPECIES SPECIFIED FOR THE SAN ANTONIO DISTRICT IN TABLE 3 MAY BE USED. FOR COOL SEASON SEEDING APPLICATIONS, COOL SEASON SEED MIXES SHALL BE USED IN CONJUNCTION WITH SEED MIXES FOR THE SAN ANTONIO DISTRICT AS SPECIFIED IN TABLE 1 AND 2 UNDER ITEM 164.

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

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

4. WATERING MAY ALSO BE NECESSARY TO FACILITATE AND EXPEDITE THE SPROUTING AND GROWTH OF VEGETATION. ITEM 168 OF TXDOT'S STANDARD SPECIFICATIONS MANUAL SHALL BE ADHERED TO FOR VEGETATIVE WATERING.

5. IF EXTENDED DROUGHT CONDITIONS EXIST THAT HINDER OR PROHIBIT THE GROWTH AND ESTABLISHMENT OF VEGETATION, THE CONTRACT/ DEVELOPER SHALL PROVIDE A PLAN TO THE CITY OF NEW BRAUNFELS DESCRIBING THE MEASURES THAT WILL BE TAKEN TO STABILIZE EARTHEN DRAINAGE INFRASTRUCTURE UNTIL A TIME WHEN GROWING CONDITIONS BECOME MORE FAVORABLE.

TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. AT A MINIMUM, CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS MEET TCEQ'S "RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS."

2. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)/NSF INTERNATIONAL STANDARD 61 AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI [§290.44(A)(1)].

3. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NSF INTERNATIONAL SEAL OF APPROVAL (NSF-PW) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS [§290.44(A)(2)].
4. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY[§290.44(A)(3)].

5. ALL WATER LINE CROSSINGS OF WASTEWATER MAINS SHALL BE PERPENDICULAR [§290.44(E)(4)(B)].

6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE [§290.44(A)(4)].

7. THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES IS 0.25 PERCENT [§290.44(B)].

8. THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES WITH VENT OPENINGS TO THE ATMOSPHERE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT [§290.44(D)(1)].

9. THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION [§290.44(F)(1)].

10. WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATERLINE SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED [§290.44(F)(2)].

11. PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
O THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

$$Q = \frac{LD\sqrt{P}}{148{,}000}$$

WHERE;
Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
O THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE;

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

WHERE;
L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).

12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLES. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET §290.44(E)(1)-(4).

13. THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT [§290.44(E)(5)].

14. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION [§290.44(E)(6)].

15. SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE [§290.44(E)(7)].

16. WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS [§290.44(E)(8)].

17. THE CONTRACTOR SHALL DISINFECT THE NEW WATERLINES IN ACCORDANCE WITH AWWA STANDARD C651-14 OR MOST RECENT, THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE.
SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATERLINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER [§290.44(F)(3)].

18. DECHLORINATION OF DISINFECTING WATER SHALL BE IN STRICT ACCORDANCE WITH CURRENT AWWA STANDARD C655-09 OR MOST RECENT.

CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) WATER MAIN NOTES

1. 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.

2. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.

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. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS.

6. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900/C905 DR 18, COLORED BLUE.

7. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C150 AND AWWA C151 AND CEMENT LINED.

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. 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.

10. CONSTRUCTION OF ALL CCSUD WATER UTILITY INFRASTRUCTURE MUST ADHERE TO CCSUD'S TECHNICAL SPECIFICATIONS, DETAILS AND APPROVED EQUIPMENT LIST.

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 AND VALVES THAT ARE ABANDONED IN PLACE SHALL BE CUT AND PLUGGED PER SPECIFICATION SECTION 02500 – ABANDONMENT OF WATER INFRASTRUCTURE.

14. REMOVE ONLY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL NECESSARY FOR CONSTRUCTION AND DISPOSE OF OFF SITE.

SEQUENCE OF CONSTRUCTION:

1. OBTAIN CITY APPROVED SITE PREPARATION PLANS, AND TPDES PERMIT (NOT A COPY OF THE TPDES APPLICATION TO TCEQ), IF APPLICABLE.
2. INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
3. BEGIN DEMOLITION ACTIVITIES, IF APPLICABLE.
4. BEGIN SITE CLEARING AND GRADING.
5. INSTALL SEWER AND WATER IMPROVEMENTS.
6. INSTALL ELECTRIC IMPROVEMENTS.
7. INSTALL ROADWAY IMPROVEMENTS (ASPHALT, CURBS, SIDEWALKS, ETC.)
8. RESTORE AND REVEGETATE ALL DISTURBED AREAS NOT UNDER IMPERMEABLE IMPROVEMENTS.
9. COMPLETE ANY REMAINING "PUNCH LIST" ITEMS.
10. CONTRACTOR SHALL REMOVE TEMPORARY EROSION CONTROLS AFTER PERMANENT STABILIZATION IS AT LEAST 70% EVENLY ESTABLISHED. RYE IS NOT ACCEPTED.

STANDARD ABBREVIATIONS

AC	ASBESTOS CONCRETE	HMAC	HOT MIX ASPHALTIC CONCRETE	PCCP	PRESTRESSED CONCRETE CYLINDER PIPE
AH	AHEAD	HRS	HOURS	PL	PROPERTY LINE
ASPH	ASPHALT	IAW	IN ACCORDANCE WITH	R	RADIUS
B-B	BACK TO BACK	I.D.	INSIDE DIAMETER	RR	RAILROAD
BC	BACK OF CURB	IP	IRON PIN	RCP	REINFORCED CONCRETE PIPE
BK	BACK	LF	LINEAR FEET	REQ'D	REQUIRED
BSL	BUILDING SETBACK LINE	LT	LEFT	RT	RIGHT
CI	CAST IRON	L	LENGTH	ROW	RIGHT-OF-WAY
CL	CENTERLINE	LP	LIGHT POLE	RWL	RECYCLE WATER LINE
CONC	CONCRETE	MH	MANHOLE	S	SLOPE
CP	CONTROL PANEL	MAX	MAXIMUM	SS	SANITARY SEWER
CSC	CONCRETE STEEL CYLINDER PIPE	MJ	MECHANICAL JOINT	SE	SOUTHEAST
CORP	CORPORATION	MIN	MINIMUM	SW	SOUTHWEST
CMP	CORRUGATED METAL PIPE	N	NORTH	STA	STATION
CPL	COUPLING	NE	NORTHEAST	STD	STANDARD
DWG	DRAWING	NW	NORTHWEST	SD	STORM SEWER/DRAINAGE
DI	DUCTILE IRON	NA	NOT APPLICABLE	T	TANGENT
E	EAST	NTS	NOT TO SCALE	T/P	TOP OF PIPE
ELEV / EL	ELEVATION	OC	ON CENTER	T/G	TOP OF GROUND
EP	EDGE OF PAVEMENT				
EX / EXIST	EXISTING	OD	OUTER DIAMETER	TEL	TELEPHONE
EW	EACH WAY	OHE	OVERHEAD ELECTRICAL	TBM	TEMPORARY BENCHMARK
EWEF	EACH WAY EACH FACE	OHT	OVERHEAD TELEPHONE	THD	THREADED
FC	FACE OF CURB	OHETC	OVERHEAD ELECTRICAL/TELEPHONE/CABLE	TYP	TYPICAL
FO	FIBER OPTIC	PVMT	PAVEMENT	UG	UNDERGROUND
FH	FIRE HYDRANT	+/-	PLUS OR MINUS	UN	UNLESS NOTED
FL	FLOWLINE	PC	POINT OF CURVATURE	UNK	UNKNOWN
FND	FOUND	PE	PLAIN END	VERT	VERTICAL
GA	GAUGE	PI	POINT OF INTERSECTION	VPI	VERTICAL POINT OF INFLECTION
GI	GALVANIZED IRON	PT	POINT OF TANGENCY	VPC	VERTICAL POINT OF CURVATURE
GPS	GLOBAL POSITION STATION	PVC	POLYVINYL CHLORIDE PIPE	VPT	VERTICAL POINT OF TANGENCY
GRND	GROUND	PSI	POUNDS PER SQUARE INCH	WWF	WELDED WIRE FABRIC
HDPE	HIGH DENSITY POLYETHYLENE PIPE	PP	POWER POLE	TS	TEST STATION
HORZ	HORIZONTAL	PVI	POINT OF VERTICAL INTERSECTION		

NOTE:

CONTRACTOR TO REFERENCE THE UTILITY TRENCH COMPACTION PLAN REF. _____ CONTRACTOR HAS NOT BEEN SELECTED AT THE TIME OF PLAN SUBMITTAL. ONCE THE CONTRACTOR HAS BEEN SELECTED, THE GEOTECHNICAL ENGINEER AND THE CONTRACTOR WILL COORDINATE TO PRODUCE A UTILITY TRENCH COMPACTION PLAN SPECIFIC TO THEIR PROCESSES AND EQUIPMENT. ONCE THIS HAS BEEN COMPLETED, THE PLAN WILL BE SUBMITTED TO THE CITY OF NEW BRAUNFELS ENGINEERING DEPT. AND THIS NOTE WILL BE UPDATED TO REFERENCE THE PLAN.

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

JARO NORTH SUBDIVISION
UNIT 1

GENERAL NOTES

SHEET 1 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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NOTES:

1. THE PROPOSED USE OF THE SUBDIVISION IS FOR SINGLE FAMILY RESIDENTIAL.
2. THE PROPERTY IS OUTSIDE THE CITY LIMITS OF NEW BRAUNFELS, BUT IS LOCATED WITHIN THE ETJ.
3. THE UNIT NUMBERS SHOWN REPRESENT THE ORDER IN WHICH THE UNITS WILL BE DEVELOPED AND PLATTED. THE ACTUAL AREA OF EACH UNIT AND THE LENGTH OF STREETS MAY VARY. UNITS MAY BE PLATTED AND DEVELOPED OUT OF THE NUMBERED SEQUENCE.
4. 4 FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED FOR THIS DEVELOPMENT AT THE BACK OF CURB ADJACENT TO INTERNAL SUBDIVISION STREETS. THE SIDEWALKS ON RESIDENTIAL LOTS WILL BE CONSTRUCTED BY THE HOME BUILDER AT THE TIME OF HOME CONSTRUCTION. ALL OTHER INTERNAL SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER AT THE TIME OF SUBDIVISION CONSTRUCTION. 6 FOOT SIDEWALKS WILL BE CONSTRUCTED ALONG SH 123 AND FM 758 BY THE DEVELOPER AT THE TIME OF SUBDIVISION CONSTRUCTION. THE SIDEWALK LOCATION WILL BE DETERMINED BY TXDOT PERMITTING PROCESS FOR THAT PARTICULAR UNIT.
5. ALL STREETS WILL BE DEDICATED AS PUBLIC RIGHT OF WAYS.
6. THE LOTS DESIGNATED AS H.O.A., O.S. OR D.L. LOTS WILL NOT BE AVAILABLE FOR RESIDENTIAL DEVELOPMENT. THESE LOTS WILL BE MAINTAINED BY THE PROPERTY OWNER'S ASSOCIATION.
7. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN THE EXISTING SPECIAL FLOOD HAZARD ZONE A, 100-YEAR FLOOD BOUNDARY, AS DEFINED BY THE GUADALUPE COUNTY COUNTY, TEXAS COMMUNITY PANEL NUMBER 48187C0130F, AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, EFFECTIVE DATE NOVEMBER 2, 2007.
8. THIS PROPERTY IS NOT LOCATED OVER THE EDWARDS AQUIFER RECHARGE ZONE.
9. ALL LOTS WITHIN THE SUBDIVISION WILL BE SERVED BY THE CITY OF SEGUIN FOR SEWER, CRYSTAL CLEAR FOR WATER, AND GVEC FOR ELECTRIC.
10. ALL DRAINAGE LOTS CAN BE USED FOR DRAINAGE CONVEYANCE.
11. ALL STANDARD CURB AND GUTTER STREET SECTIONS WILL PROVIDE STORM WATER CAPACITY PER CITY OF NEW BRAUNFELS DRAINAGE REQUIREMENTS.
12. THE ENTIRE SUBDIVISION FALLS WITHIN NAVARRO INDEPENDENT SCHOOL DISTRICT.
13. THIS SUBDIVISION IS SUBJECT TO THE 2018 CITY OF NEW BRAUNFELS PARK LAND DEDICATION AND DEVELOPMENT ORDINANCE. THIS PLAT IS APPROVED FOR 1 DWELLING UNIT PER BUILDABLE LOT WITH A TOTAL OF 776 BUILDABLE LOTS. AT SUCH TIME THAT ADDITIONAL DWELLING UNITS ARE CONSTRUCTED; THE OWNER OF THE LOT SHALL CONTACT THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.

    256 RESIDENTIAL UNITS (341 MINUS 85 FROM THE UNIT REMOVED) ARE VESTED UNDER $1,732 PARK DEVELOPMENT FEES. THE REMAINING 522 LOTS WILL PAY THE $2,038 PARK DEVELOPMENT FEE.
14. ELECTRIC AND UTILITY EASEMENT LOCATIONS WILL BE DETERMINED DURING THE ENGINEERING DESIGN PHASE OF THE PROJECT. EASEMENTS WILL BE RECORDED WITH THE FINAL PLAT FOR EACH LOT.
15. EXACT DIMENSIONS AND LOCATION OF DRAINAGE EASEMENTS AND DETENTION POND LOCATIONS WILL BE DETERMINED DURING THE ENGINEERING DESIGN PHASE OF THE PROJECT.
16. CONTOURS SHOWN ARE BASED ON THE CITY OF NEW BRAUNFELS LIDAR GIS DATABASE.
17. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE IN GRID BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM 1983. DISTANCES SHOWN HEREON ARE SURFACE USING COMBINED SCALE FACTOR OF 1.00015.
18. FIRE APPARATUS ROADS WILL BE PROVIDED IN ACCORDANCE CITY ORDINANCE SEC. 54-86 TITLED: INTERNATIONAL FIRE CODE; AND AMENDMENTS AS IT PERTAINS TO SINGLE FAMILY DEVELOPMENT.

TXDOT NOTES:

1. FOR RESIDENTIAL DEVELOPMENT DIRECTLY ADJACENT TO STATE RIGHT-OF-WAY, THE DEVELOPER SHALL BE RESPONSIBLE FOR ADEQUATE SETBACK AND/OR SOUND ABATEMENT MEASURES FOR FUTURE NOISE MITIGATION.
2. THE OWNER/DEVELOPER IS RESPONSIBLE FOR PREVENTING ANY ADVERSE IMPACT TO THE EXISTING DRAINAGE SYSTEM WITHIN THE HIGHWAY RIGHT-OF-WAY. OUTFALLS FOR WATER QUALITY AND/OR DETENTION PONDS TREATING IMPERVIOUS COVER RELATED TO THE DEVELOPMENT AND STRUCTURES FOR REDUCTION OF DISCHARGE VELOCITY WILL NOT ENCROACH BY STRUCTURE OR GRADING INTO STATE ROW OR INTO AREAS OF ROW RESERVATION OR DEDICATION. NO NEW EASEMENTS OF ANY TYPE SHOULD BE LOCATED IN AREAS OF ROW RESERVATION OR DEDICATION.
3. MAXIMUM ACCESS POINTS TO STATE HIGHWAY FROM THIS PROPERTY WILL BE REGULATED AS DIRECTED BY TXDOT'S, "ACCESS MANAGEMENT MANUAL". THE PROPERTY IS ELIGIBLE FOR MAXIMUM COMBINED TOTAL OF 1 (ONE) PUBLIC ACCESS POINT, BASED ON AN OVERALL PLATTED HIGHWAY FRONTAGE OF APPROXIMATELY 930 FEET ON FM 758. THE PROPERTY IS ELIGIBLE FOR MAXIMUM COMBINED TOTAL OF 1 (ONE) PUBLIC ACCESS POINT, BASED ON AN OVERALL PLATTED HIGHWAY FRONTAGE OF APPROXIMATELY 280 FEET ON SH 123. ADDITIONAL ACCESS DEDICATED EXCLUSIVELY TO EMERGENCY SERVICE USE MAY BE GRANTED IF FOUND NECESSARY BY THE EMERGENCY SERVICE OFFICIAL. WHERE TOPOGRAPHY OR OTHER EXISTING CONDITIONS MAKE IT INAPPROPRIATE OR NOT FEASIBLE TO CONFORM TO THE CONNECTION SPACING INTERVALS, THE LOCATION OF REASONABLE ACCESS WILL BE DETERMINED WITH CONSIDERATION GIVEN TO TOPOGRAPHY, ESTABLISHED PROPERTY OWNERSHIPS, UNIQUE PHYSICAL LIMITATIONS, AND/OR PHYSICAL DESIGN CONSTRAINTS. THE SELECTED LOCATION SHOULD SERVE AS MANY PROPERTIES AND INTERESTS AS POSSIBLE TO REDUCE THE NEED FOR ADDITIONAL DIRECT ACCESS TO THE HIGHWAY. IN SELECTING LOCATIONS FOR FULL MOVEMENT INTERSECTIONS, PREFERENCE WILL BE GIVEN TO PUBLIC ROADWAYS THAT ARE ON LOCAL THOROUGHFARE PLANS.
4. IF SIDEWALKS ARE REQUIRED BY APPROPRIATE CITY ORDINANCE, A SIDEWALK PERMIT MUST BE APPROVED BY TXDOT, PRIOR TO CONSTRUCTION WITHIN STATE RIGHT-OF-WAY. LOCATIONS OF SIDEWALKS WITHIN STATE RIGHT OF WAY SHALL BE AS DIRECTED BY TXDOT.
5. ANY TRAFFIC CONTROL MEASURES (LEFT-TURN LANE, RIGHT-TURN LANE SIGNAL, ETC.) FOR ANY ACCESS FRONTING A STATE MAINTAINED ROADWAY SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/OWNER.

ACREAGE SUMMARY (APPROX.)

RESIDENTIAL LOTS AND STREETS	112.5 ACRES
RIGHT-OF-WAY DEDICATION	2.6 ACRES
*HOA (HOME OWNER'S ASSOCIATION)	5.2 ACRES
*O.S. (OPEN SPACE)	20.2 ACRES
TOTAL ACREAGE:	140.5 ACRES
RESIDENTIAL LOT DENSITY (776/140.5):	5.5 LOTS/ACRE

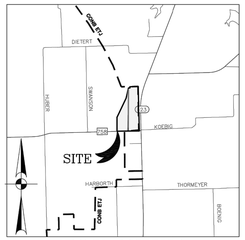
*ALL LOTS SHALL BE OWNED & MAINTAINED BY THE HOME OWNERS ASSOCIATION.

LOT SUMMARY	
UNIT	RESIDENTIAL
UNIT 1	113 LOTS
UNIT 2	72 LOTS
UNIT 3	103 LOTS
UNIT 4	44 LOTS
UNIT 5	99 LOTS
UNIT 6	85 LOTS
UNIT 7	142 LOTS
UNIT 8	118 LOTS
TOTAL	776 LOTS

OWNER/DEVELOPER:
NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78130

ENGINEER/SURVEYOR:
INK CIVIL
JAMES INGALLS, P.E. - ENGINEER
2021 SH 46W, STE 105.
NEW BRAUNFELS, TX. 78132
(830) 358-7127

D.A. MAWYER LAND SURVEYING, INC.
DREW MAWYER, R.P.L.S. - SURVEYOR
5151 SH 46W
NEW BRAUNFELS, TEXAS 78132
(210) 325-0858



LOCATION MAP
SCALE: 1"=5,000'

LEGEND

- UNIT BOUNDARY
- RIGHT-OF-WAY DEDICATION (ROW)
- HOME OWNER'S ASSOCIATION PARK (HOA)
- OPEN SPACE (O.S.)
- 8" WTR — PROPOSED 8" WATER MAIN
- 12" WTR — PROPOSED 12" WATER MAIN
- 8" SS — PROPOSED 8" SANITARY SEWER

LINE TABLE		
LINE	LENGTH	BEARING
L1	91.14'	N89°42'25"W
L2	85.01'	N01°42'55"W
L3	99.20'	N89°07'44"E
L4	133.45'	S01°50'47"E

CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C1	1050.62'	3107.49'	19°22'16"	530.37'	1045.62'	S07°00'28"W

THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF INTERIM REVIEW UNDER THE AUTHORITY OF JAMES INGALLS, P.E. #107416 ON October 26, 2021. IT IS TO BE USED FOR BIDDING AND PERMITTING PURPOSES ONLY. NOT TO BE USED FOR CONSTRUCTION.

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/13/22

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

JARO NORTH SUBDIVISION

DATE: 10/26/2021

MASTER PLAN

SHEET
MP-1 OF MP-1

NO	DATE	ISSUES AND REVISIONS
1		

INK CIVIL
2021 W SH46, STE 105
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CONDITIONALLY APPROVED ON 9/9/21

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

JARO NORTH SUBDIVISION UNIT 1

MASTER PLAN

SHEET
2 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\JBE-AC012 Jaro North Subdivision\Civil\Construction Drawings\2 MASTER PLAN.dwg User: mstevenson Feb 17, 2022 - 5:09pm
Drawing Name: N:\Projects\AC012 Jaro North Subdivision\Planning\Master Plan\JARO NORTH MASTER PLAN Amended Plan.dwg User: jsteegmann Oct 26, 2021 - 8:51am

FINAL PLAT ESTABLISHING

JARO NORTH SUBDIVISION UNIT 1

BEING 36.387 ACRE OF LAND SITUATED IN THE W. J. RAGSDALE SURVEY, ABSTRACT NO. 268 AND THE A. M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, IN GUADALUPE COUNTY, TEXAS, BEING A PORTION OF A 40.00 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999028005, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS, AND A PORTION OF A CALLED 170.699 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999000803, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS.

TXDOT NOTES:

1. FOR RESIDENTIAL DEVELOPMENT DIRECTLY ADJACENT TO STATE RIGHT-OF-WAY, THE DEVELOPER SHALL BE RESPONSIBLE FOR ADEQUATE SETBACK AND/OR SOUND ABATEMENT MEASURES FOR FUTURE NOISE MITIGATION.
2. THE OWNER/DEVELOPER IS RESPONSIBLE FOR PREVENTING ANY ADVERSE IMPACT TO THE EXISTING DRAINAGE SYSTEM WITHIN THE HIGHWAY RIGHT-OF-WAY. OUTFALLS FOR WATER QUALITY AND/OR DETENTION PONDS TREATING IMPERVIOUS COVER RELATED TO THE DEVELOPMENT AND STRUCTURES FOR REDUCTION OF DISCHARGE VELOCITY WILL NOT ENCROACH BY STRUCTURE OR GRADING INTO STATE ROW OR INTO AREAS OF ROW RESERVATION OR DEDICATION. NO NEW EASEMENTS OF ANY TYPE SHOULD BE LOCATED IN AREAS OF ROW RESERVATION OR DEDICATION.
3. MAXIMUM ACCESS POINTS TO STATE HIGHWAY FROM THIS PROPERTY WILL BE REGULATED AS DIRECTED BY TXDOT'S, "ACCESS MANAGEMENT MANUAL". THE PROPERTY IS ELIGIBLE FOR MAXIMUM COMBINED TOTAL OF 1 (ONE) PUBLIC ACCESS POINT, BASED ON AN OVERALL PLATTED HIGHWAY FRONTAGE OF APPROXIMATELY 930 FEET ON FM 748. THE PROPERTY IS ELIGIBLE FOR MAXIMUM COMBINED TOTAL OF 1 (ONE) PUBLIC ACCESS POINT, BASED ON AN OVERALL PLATTED HIGHWAY FRONTAGE OF APPROXIMATELY 280 FEET ON SH 123. ADDITIONAL ACCESS DEDICATED EXCLUSIVELY TO EMERGENCY SERVICE USE MAY BE GRANTED IF FOUND NECESSARY BY THE EMERGENCY SERVICE OFFICIAL. WHERE TOPOGRAPHY OR OTHER EXISTING CONDITIONS MAKE IT INAPPROPRIATE OR NOT FEASIBLE TO CONFORM TO THE CONNECTION SPACING INTERVALS, THE LOCATION OF REASONABLE ACCESS WILL BE DETERMINED WITH CONSIDERATION GIVEN TO TOPOGRAPHY, ESTABLISHED PROPERTY OWNERSHIPS, UNIQUE PHYSICAL LIMITATIONS, AND/OR PHYSICAL DESIGN CONSTRAINTS. THE SELECTED LOCATION SHOULD SERVE AS MANY PROPERTIES AND INTERESTS AS POSSIBLE TO REDUCE THE NEED FOR ADDITIONAL DIRECT ACCESS TO THE HIGHWAY. IN SELECTING LOCATIONS FOR FULL MOVEMENT INTERSECTIONS, PREFERENCE WILL BE GIVEN TO PUBLIC ROADWAYS THAT ARE ON LOCAL THOROUGHFARE PLANS.
4. IF SIDEWALKS ARE REQUIRED BY APPROPRIATE CITY ORDINANCE, A SIDEWALK PERMIT MUST BE APPROVED BY TXDOT, PRIOR TO CONSTRUCTION WITHIN STATE RIGHT-OF-WAY. LOCATIONS OF SIDEWALKS WITHIN STATE RIGHT OF WAY SHALL BE AS DIRECTED BY TXDOT.
5. ANY TRAFFIC CONTROL MEASURES (LEFT-TURN LANE, RIGHT-TURN LANE SIGNAL, ETC.) FOR ANY ACCESS FRONTING A STATE MAINTAINED ROADWAY SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/OWNER.

NOTES:

1. ALL LOTS WITHIN THE SUBDIVISION WILL BE SERVED BY THE CITY OF SEGUIN FOR SEWER, CRYSTAL CLEAR FOR WATER, AND GVEC FOR ELECTRIC.
2. ALL STREETS ARE PROPOSED TO BE OF A LOCAL TYPE FUNCTIONAL CLASSIFICATION WITH 50 FOOT RIGHT-OF-WAYS UNLESS NOTED OTHERWISE. WOODLAND CHASE AND PANTHER RIDGE ARE MINOR COLLECTORS AND HAVE A 60 FOOT RIGHT-OF-WAY WHERE SHOWN.

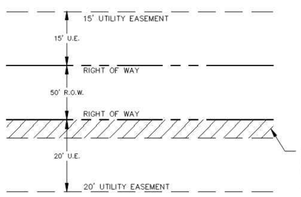
△6

3. SIDEWALK NOTES:
   - 3.1. FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE HOME BUILDER PER CITY STANDARDS AT THE TIME OF BUILDING CONSTRUCTION, UNLESS OTHERWISE NOTED ON THE PLAT, ALONG:
     - WOODLAND CHASE, LYNX CROSSING, GOLD POINT, CUB CROSSING, PANTHER RIDGE, ALEX GATE, TIMBERLAND WAY, TIGER SKY.
   - 3.2 FOUR (4) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
     - LYNX CROSSING – LOT 901 BLOCK 1
     - GOLD POINT – LOT 901 BLOCK 1
     - CUB CROSSING – LOT 901 BLOCK 1
     - PANTHER RIDGE – LOT 901 BLOCK 7, LOT 901 BLOCK 8.
   - 3.3 SIX (6) FOOT WIDE SIDEWALKS WILL BE CONSTRUCTED BY THE DEVELOPER PER CITY STANDARDS AT THE TIME OF SUBDIVISION STREET CONSTRUCTION ALONG:
     - FM 758 – LOT 901 BLOCK 1, PORTION ALONG UNIT BOUNDARY LINE WEST OF WOODLAND CHASE
     - SH 123 – LOT 901 BLOCK 8, LOT 901 BLOCK 7

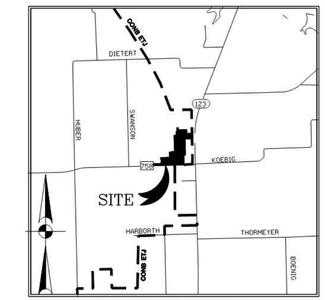
4. LOT 901 BLOCK 1, AND LOT 901 BLOCK 8 ARE DRAINAGE LOTS, LOT 901 BLOCK 7 IS OPEN SPACE AND ARE NON-BUILDABLE LOTS. THESE LOTS WILL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER'S ASSOCIATION, THEIR SUCCESSOR'S OR ASSIGNS, AND SHALL NOT BE THE RESPONSIBILITY OF THE CITY OF NEW BRAUNFELS OR GUADALUPE COUNTY.
5. THE ENTIRE SUBDIVISION IS WITHIN THE NAVARRO INDEPENDENT SCHOOL DISTRICT.
6. ALL BEARINGS AND COORDINATES SHOWN HEREON ARE IN GRID BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS SOUTH CENTRAL ZONE (4204), NORTH AMERICAN DATUM 1983. DISTANCES SHOWN HEREON ARE SURFACE USING COMBINED SCALE FACTOR OF 1.00015.
7. MONUMENTS WERE FOUND OR SET AT EACH CORNER OF THE SURVEY BOUNDARY OF THE SUBDIVISION. MONUMENTS AND MARKERS WILL BE SET WITH 1/2" IRON PIN WITH PLASTIC CAP STAMPED "DAM #5348 PROP. COR." IMMEDIATELY AFTER COMPLETION OF UTILITY INSTALLATION AND STREET CONSTRUCTION UNLESS NOTED OTHERWISE.
8. JARO NORTH SUBDIVISION UNIT 1, DOES NOT FALL WITHIN THE CITY LIMITS OF THE CITY OF NEW BRAUNFELS.
9. THE PROPOSED USE OF THE SUBDIVISION IS FOR SINGLE FAMILY RESIDENTIAL.
10. JARO NORTH SUBDIVISION UNIT 1, ESTABLISHING A TOTAL OF 121 LOTS, WITH 118 BEING BUILDABLE.
11. THIS SUBDIVISION IS SUBJECT TO THE 2018 CITY OF NEW BRAUNFELS PARK LAND AND DEDICATION ORDINANCE. THIS PLAT IS APPROVED FOR 1 DWELLING UNIT PER BUILDABLE LOT WITH A MAXIMUM OF 116 BUILDABLE LOTS. AT SUCH TIME THAT ADDITIONAL DWELLING UNITS ARE CONSTRUCTED, THE OWNER OF THE LOT SHALL CONTACT THE CITY AND COMPLY WITH THE ORDINANCE FOR EACH DWELLING UNIT.
12. 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 DECREASES THE HYDRAULIC CAPACITY OF THE EASEMENT, AS APPROVED, SHALL BE ALLOWED WITHOUT THE APPROVAL OF THE CITY ENGINEER. THE CITY OF NEW BRAUNFELS AND GUADALUPE COUNTY SHALL HAVE THE RIGHT OF INGRESS AND EGRESS OVER GRANTORS 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.
13. 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 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.
14. NO STRUCTURES IN THIS SUBDIVISION SHALL BE OCCUPIED UNTIL CONNECTED TO A PUBLIC WATER AND SEWER SYSTEM WHICH HAS BEEN APPROVED BY CRYSTAL CLEAR AND THE CITY OF SEGUIN.
15. MAINTENANCE OF DRAINAGE EASEMENT DESIGNATED WITHIN A LOT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNERS ASSOCIATION.
16. NO PORTION OF THE SUBDIVISION IS LOCATED WITHIN THE EXISTING SPECIAL FLOOD HAZARD ZONE A, 100-YEAR FLOOD BOUNDARY, AS DEFINED BY THE GUADALUPE COUNTY, TEXAS COMMUNITY PANEL NUMBER 48187C0130F REVISED NOVEMBER 02, 2007 AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.
17. EACH LOT OWNER SHALL BE RESPONSIBLE FOR VERIFYING THE DEPTH OF THE SEWER SERVICE STUB OUT AND DETERMINING THE MINIMUM SERVICEABLE FINISH FLOOR ELEVATION.
18. FUTURE DEVELOPMENT IS SUBJECT TO CHAPTER 114 (STREETS, SIDEWALKS, AND OTHER PUBLIC SPACES) OF THE NEW BRAUNFELS CODE OF ORDINANCES.
19. ANY DRIVEWAY CONSTRUCTION ON COUNTY ROADS WITHIN THE UNINCORPORATED AREAS OF GUADALUPE COUNTY MUST BE PERMITTED BY THE GUADALUPE COUNTY ROAD DEPARTMENT.
20. NO PORTION OF THIS PROPERTY IS WITHIN THE EDWARDS AQUIFER RECHARGE ZONE.

GUADALUPE VALLEY ELECTRIC COOPERATIVE:

1. GVEC WILL MAINTAIN A 5' EASEMENT FOR SERVICE ENTRANCE TO DWELLING. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING.
2. GVEC SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARDS WITH THE METER LOCATIONS NOT BEING LOCATED WITHIN A FENCED AREA.
3. GVEC TO HAVE A 5' WIDE ELECTRIC EASEMENT ON ALL ROAD CROSSINGS IN WHICH ELECTRIC LINES ARE PLACED.
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.



TYPICAL PUBLIC UTILITY EASEMENT ALONG RIGHT OF WAY

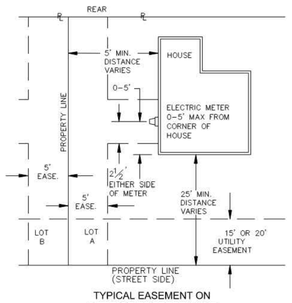


LOCATION MAP

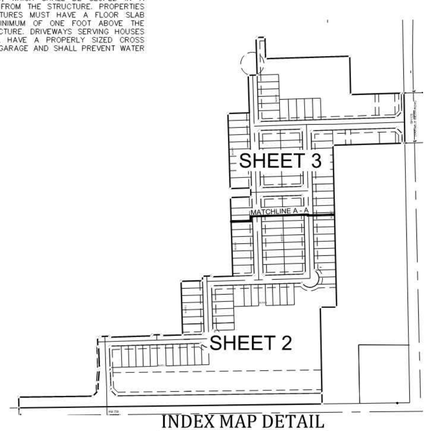
SCALE: 1"=4,000'

NOTE: G.V.E.C. WILL MAINTAIN 5' EASEMENT FOR SERVICE ENTRANCE TO DWELLING. THIS EASEMENT WILL VARY DEPENDING UPON LOCATION OF DWELLING.

G.V.E.C. SHALL HAVE ACCESS TO THE METER LOCATIONS FROM THE FRONT YARDS WITH THE METER LOCATIONS NOT BEING LOCATED WITHIN A FENCED AREA.



TYPICAL EASEMENT ON INTERIOR PROPERTY LINE



INDEX MAP DETAIL

SCALE: 1" = 400'

THE SUBDIVISION PLAT OF JARO NORTH SUBDIVISION UNIT 1 HAS BEEN SUBMITTED TO AND APPROVED BY GUADALUPE VALLEY ELECTRIC COOPERATIVE INC. FOR EASEMENTS.

DATE _____ AGENT FOR GUADALUPE VALLEY ELECTRIC COOP., INC.

THE SUBDIVISION PLAT OF JARO NORTH SUBDIVISION UNIT 1 HAS BEEN SUBMITTED TO AND APPROVED BY CRYSTAL CLEAR SPECIAL UTILITIES DISTRICT FOR EASEMENTS.

DATE _____ AUTHORIZED AGENT, CRYSTAL CLEAR SPECIAL UTILITY DISTRICT

COMMISSIONERS

GREG SEIDENBERGER, PRECINCT 1 _____ DREW ENGELKE, PRECINCT 2

MICHAEL CARPENTER, PRECINCT 3 _____ STEPHEN GERMANN, PRECINCT 4

STATE OF TEXAS
COUNTY OF GUADALUPE

I, _____ COUNTY CLERK OF SAID COUNTY, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE, ON THE _____ DAY OF _____, A.D. 20____ AT _____ M. AND DULY RECORDED THE _____ DAY OF _____, A.D. 20____ AT _____ M. IN THE MAP AND PLAT RECORDS OF GUADALUPE COUNTY, TEXAS IN VOLUME _____, PAGE _____, IN TESTIMONY WHEREOF, WITNESS MY HAND AND OFFICIAL SEAL OF OFFICE, THIS THE _____ DAY OF _____, A.D. 20__.

COUNTY CLERK, GUADALUPE COUNTY, TEXAS

_____
DEPUTY

STATE OF TEXAS
COUNTY OF GUADALUPE

OWNER:
BENCHMARK ACQUISITIONS, LLC
C/O TIM PRUSKI
2714 N. LOOP 1604 E STE 105
SAN ANTONIO, TX 78232

I, THE UNDERSIGNED OWNER OF THE LAND SHOWN ON THIS PLAT, AND DESIGNATED HEREIN AS THE JARO NORTH SUBDIVISION, UNIT 1 TO THE CITY OF NEW BRAUNFELS, COUNTY OF GUADALUPE, TEXAS, AND WHOSE NAME IS SUBSCRIBED HERETO, DO HEREBY SUBDIVIDE SUCH PROPERTY AND DEDICATE TO THE USE OF THE PUBLIC ALL STREETS, ALLEYS, PARKS, DRAINS, EASEMENTS, AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED.

_____

STATE OF TEXAS
COUNTY OF COMAL

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS ___DAY OF_____20___,

BY _____.

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

KNOW ALL MEN BY THESE PRESENTS:

I, THE UNDERSIGNED, DREW A. MAWYER, 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.

_____
DREW A. MAWYER
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 5348
D.A. MAWYER LAND SURVEYING, INC.
5151 W. SH46
NEW BRAUNFELS, TEXAS 78132
FIRM #10191500

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

LEGEND:

P.O.B.	= POINT OF BEGINNING
B.L.	= BUILDING SETBACK LINE
D.L.	= DRAINAGE LOT
U.E.	= UTILITY EASEMENT
R.O.W.	= RIGHT-OF-WAY
O.S.	= OPEN SPACE LOT
	= PAGE MATCH LINE
○	= 1/2" IRON PIN SET WITH CAP STAMPED "DAM #5348 PROP. COR."
●	= IRON PIN FOUND
⊡	= TXDOT MONUMENT FOUND

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION UNIT 1

SUBDIVISION PLAT I

SHEET 3 OF 49

NO	DATE	ISSUES AND REVISIONS
△5	5-2-2024	REVISED PER CCSUD COMMENTS
△6	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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PREPARED: December 10, 2024

APPROVED, BUT NOT RECORDED

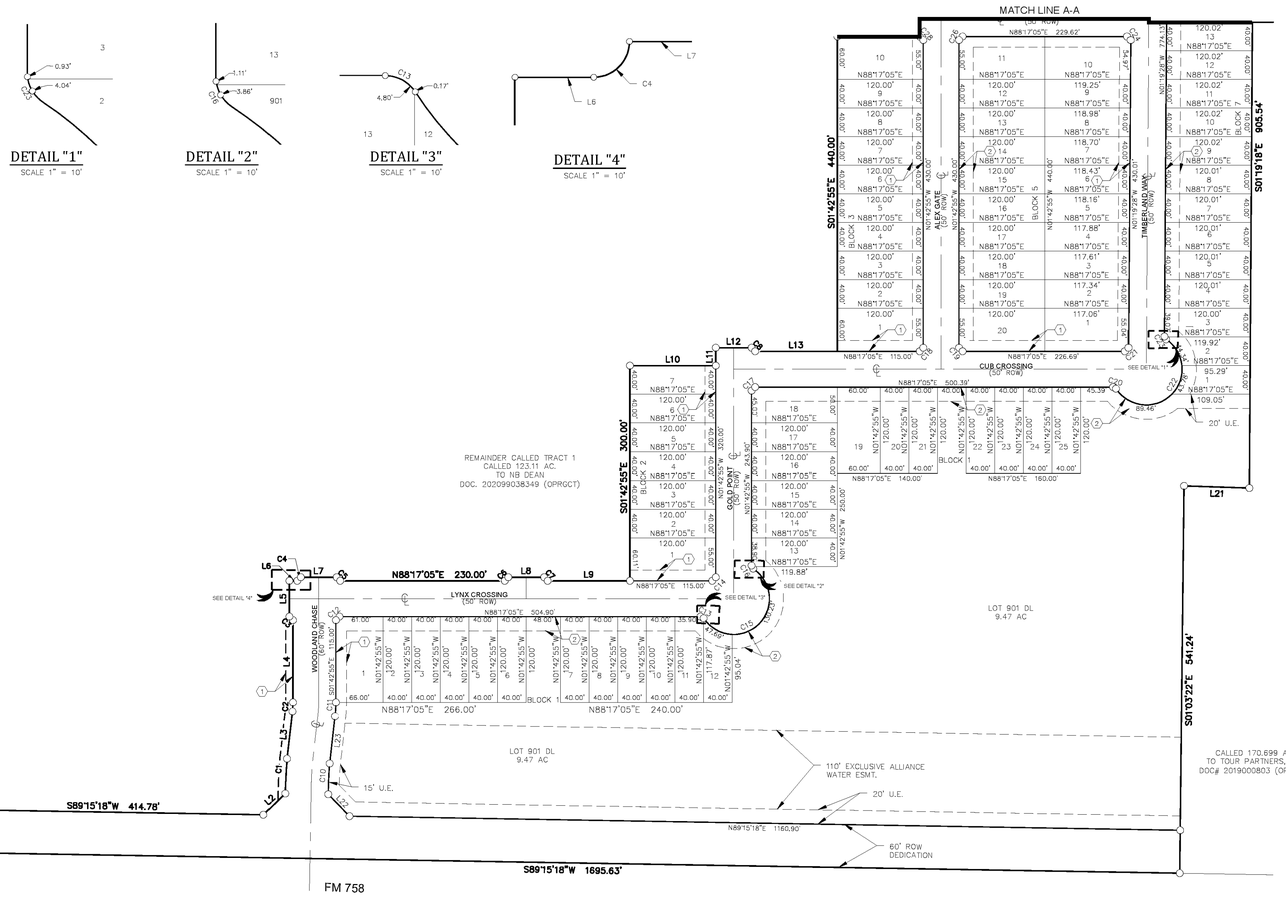
Drawing Name: G:\Users\CHUCKW~1\AppData\Local\Temp\AcPublish_24028\Jaro Subdivision North Unit 1 Plat.dwg User: chuckwere Dec 10, 2024 - 9:43am

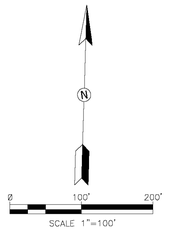
Drawing Name: N:\1Projects\JBE-AC012 Jaro North Subdivision\Civil\Construction Drawings\3 SUBDIVISION PLAT.dwg User: chuckwere Dec 10, 2024 - 11:12am

FINAL PLAT ESTABLISHING

JARO NORTH SUBDIVISION UNIT 1

BEING 36.387 ACRE OF LAND SITUATED IN THE W. J. RAGSDALE SURVEY, ABSTRACT NO. 268 AND THE A. M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, IN GUADALUPE COUNTY, TEXAS, BEING A PORTION OF A 40.00 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999028005, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS, AND A PORTION OF A CALLED 170.699 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999000803, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS.





KEY NOTE:

① 15' U.E.

② 20' U.E.

LEGEND:

P.O.B.	=	POINT OF BEGINNING
B.L.	=	BUILDING SETBACK LINE
D.L.	=	DRAINAGE LOT
U.E.	=	UTILITY EASEMENT
R.O.W.	=	RIGHT-OF-WAY
O.S.	=	OPEN SPACE LOT
	=	PAGE MATCH LINE
○	=	1/2" IRON PIN SET
●	=	IRON PIN FOUND
□	=	TXDOT MONUMENT FOUND

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

PREPARED: February 14, 2022

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/13/22

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

JARO NORTH SUBDIVISION
UNIT 1

SUBDIVISION PLAT II

SHEET 4 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

SUBMITTAL FOR REVIEW

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Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\4 SUBDIVISION PLAT II.dwg User: melaniemorris Feb 14, 2022 - 2:03pm
Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Planning\Platting\Unit 1\Jaro Subdivision North Unit 1 Plat.dwg User: melaniemorris Feb 17, 2022 - 5:09pm

FINAL PLAT ESTABLISHING

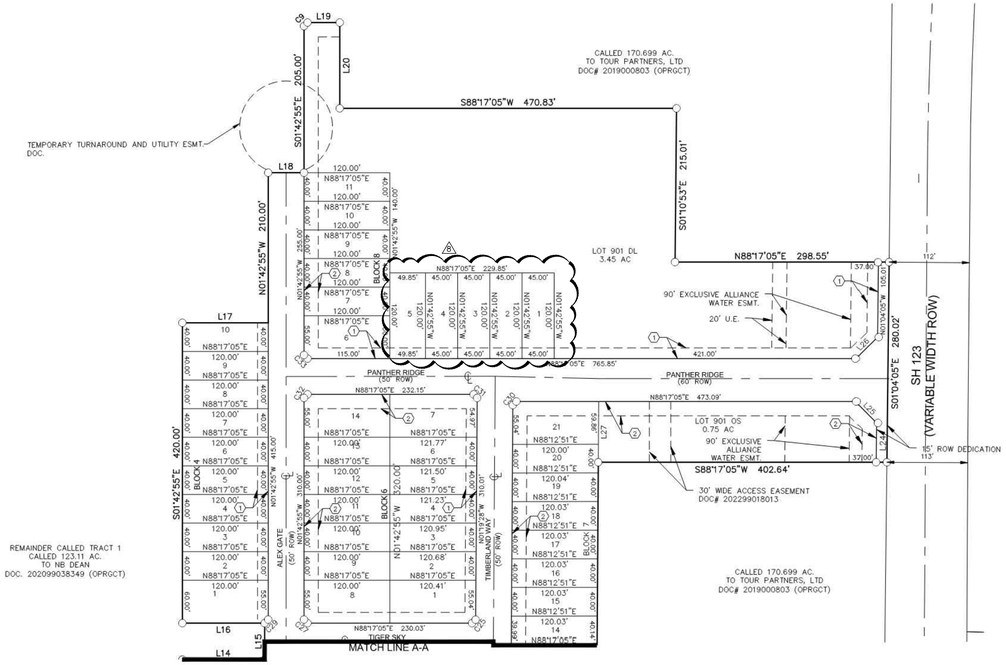
JARO NORTH SUBDIVISION UNIT 1

BEING 36.387 ACRE OF LAND SITUATED IN THE W. J. RAGSDALE SURVEY, ABSTRACT NO. 268 AND THE A. M. ESNAURIZAR SURVEY, ABSTRACT NO. 20, IN GUADALUPE COUNTY, TEXAS, BEING A PORTION OF A 40.00 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999028005, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS, AND A PORTION OF A CALLED 170.699 ACRE TRACT OF LAND, AS CONVEYED TO TOUR PARTNERS, LTD., AND RECORDED IN DOCUMENT NO. 201999000803, OF THE OFFICIAL PUBLIC RECORDS OF GUADALUPE COUNTY, TEXAS.

KEY NOTE:
① 15' U.E.
② 20' U.E.

N

0 100' 200'
SCALE 1"=100'



CURVE TABLE						
CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD LENGTH	CHORD BEARING
C1	32.02'	291.92'	6°17'03"	16.03'	32.00'	S01°59'06"W
C2	12.79'	114.00'	6°25'48"	6.40'	12.79'	S01°29'59"W
C3	7.85'	5.00'	90°00'00"	5.00'	7.07'	N46°42'55"W
C4	7.85'	5.00'	90°00'00"	5.00'	7.07'	N43°17'05"E
C5	7.85'	5.00'	90°00'00"	5.00'	7.07'	S46°42'55"E
C6	7.85'	5.00'	90°00'00"	5.00'	7.07'	N43°17'05"E
C7	7.85'	5.00'	90°00'00"	5.00'	7.07'	S46°42'55"E
C8	7.85'	5.00'	90°00'00"	5.00'	7.07'	N46°42'55"W
C9	7.85'	5.00'	90°00'00"	5.00'	7.07'	S43°17'05"W
C10	6.20'	174.01'	2°02'34"	3.10'	6.20'	S01°45'27"E
C11	5.12'	276.00'	1°03'49"	2.56'	5.12'	S02°14'49"E
C12	7.85'	5.00'	90°00'00"	5.00'	7.07'	S43°17'05"W
C13	4.97'	5.00'	56°56'39"	2.71'	4.77'	N63°14'35"W
C14	7.85'	5.00'	90°00'00"	5.00'	7.07'	N43°17'05"E
C15	177.93'	50.00'	203°53'19"	236.36'	97.83'	N43°17'05"E
C16	4.97'	5.00'	56°56'39"	2.71'	4.77'	S30°11'15"E
C17	7.85'	5.00'	90°00'00"	5.00'	7.07'	S43°17'05"W
C18	7.85'	5.00'	90°00'00"	5.00'	7.07'	N43°17'05"E
C19	7.85'	5.00'	90°00'00"	5.00'	7.07'	S46°42'55"E
C20	4.97'	5.00'	56°56'44"	2.71'	4.77'	N63°14'38"W
C21	7.82'	5.00'	89°36'32"	4.97'	7.05'	N43°28'49"E
C22	177.59'	50.00'	203°29'51"	240.41'	97.90'	N43°28'49"E
C23	4.97'	5.00'	56°56'39"	2.71'	4.77'	S29°47'47"E
C24	7.89'	5.00'	90°23'28"	5.03'	7.10'	N46°31'11"W
C25	7.82'	5.00'	89°36'32"	4.97'	7.05'	N43°28'49"E
C26	7.85'	5.00'	90°00'00"	5.00'	7.07'	S43°17'05"W
C27	7.85'	5.00'	90°00'00"	5.00'	7.07'	S46°42'55"E
C28	7.85'	5.00'	90°00'00"	5.00'	7.07'	N46°42'55"W
C29	7.85'	5.00'	90°00'00"	5.00'	7.07'	N43°17'05"E
C30	7.82'	5.00'	89°36'38"	4.97'	7.05'	S43°28'46"W
C31	7.89'	5.00'	90°23'28"	5.03'	7.10'	N46°31'11"W
C32	7.85'	5.00'	90°00'00"	5.00'	7.07'	S43°17'05"W

LINE TABLE		
LINE	LENGTH	BEARING
L1	60.00'	N01°06'15"W
L2	42.43'	S44°15'18"W
L3	66.25'	S04°42'52"W
L4	115.00'	S01°42'55"E
L5	50.00'	S01°42'55"E
L6	11.00'	S88°17'05"W
L7	50.00'	N88°17'05"E
L8	50.00'	S88°17'05"W
L9	115.00'	S88°17'05"W
L10	120.00'	S88°17'05"W
L11	25.00'	S01°42'55"E
L12	50.00'	S88°17'05"W
L13	115.00'	S88°17'05"W
L14	115.00'	S88°17'05"W
L15	50.00'	S01°42'55"E
L16	115.00'	N88°17'05"E
L17	120.00'	S88°17'05"W
L18	50.00'	N88°17'05"E
L19	45.00'	S88°17'05"W
L20	120.00'	N01°42'55"W
L21	91.14'	N89°48'17"W
L22	42.43'	S45°44'42"E
L23	89.17'	S02°46'44"E
L24	55.01'	N01°04'05"W
L25	42.19'	S46°23'30"E
L26	42.67'	N43°36'30"E
L27	85.00'	N01°20'47"W

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LEGEND:
P.O.B. = POINT OF BEGINNING
B.L. = BUILDING SETBACK LINE
D.E. = DRAINAGE LOT
U.E. = UTILITY EASEMENT
R.O.W. = RIGHT-OF-WAY
O.S. = OPEN SPACE LOT
= PAGE MATCH LINE
○ = 1/2" IRON PIN SET
● = IRON PIN FOUND
▣ = TXDOT MONUMENT FOUND

PREPARED: December 10, 2024

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION
UNIT 1

SUBDIVISION PLAT III

SHEET 5 OF 49

NO	DATE	ISSUES AND REVISIONS
1	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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SUBMITTAL FOR REVIEW

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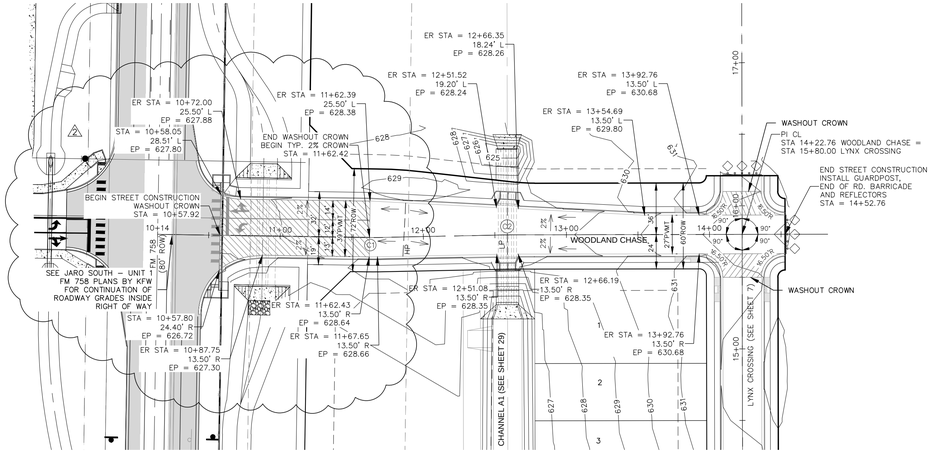
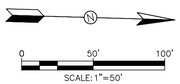
Drawing Name: C:\Users\CHUCKW~1\AppData\Local\Temp\AcPublish_24928\Jaro Subdivision North Unit 1 Plat.dwg User: chuckware Dec 10, 2024 - 9:43am
Drawing Name: N:\Projects\BE-KC012 Jaro North Subdivision\Civil\Construction Drawings\3. SUBDIVISION PLAT III.dwg User: chuckware Dec 10, 2024 - 11:11am

CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
3. SEE SHEET 16 FOR STREET SIGNAGE.
4. SEE SHEET 14 FOR SIDEWALK RAMP DETAILS.
5. SIDEWALKS AND SIDEWALK RAMPS SHOWN SHALL BE CONSTRUCTED WITH STREET CONSTRUCTION.
6. ALL CURB & GUTTER IS CATCH CURB UNLESS OTHERWISE NOTED.
7. ALL RAMPS AND ANY SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

Curve Table						
Curve #	Radius	Length	Delta	Tangent	Chord Length	Chord Direction
C1	150.00	5.33	2°02'03"	2.66'	5.33'	N01° 45' 42.31"W
C2	300.00	5.57	1°03'49"	2.78'	5.57'	N02° 14' 49.46"W





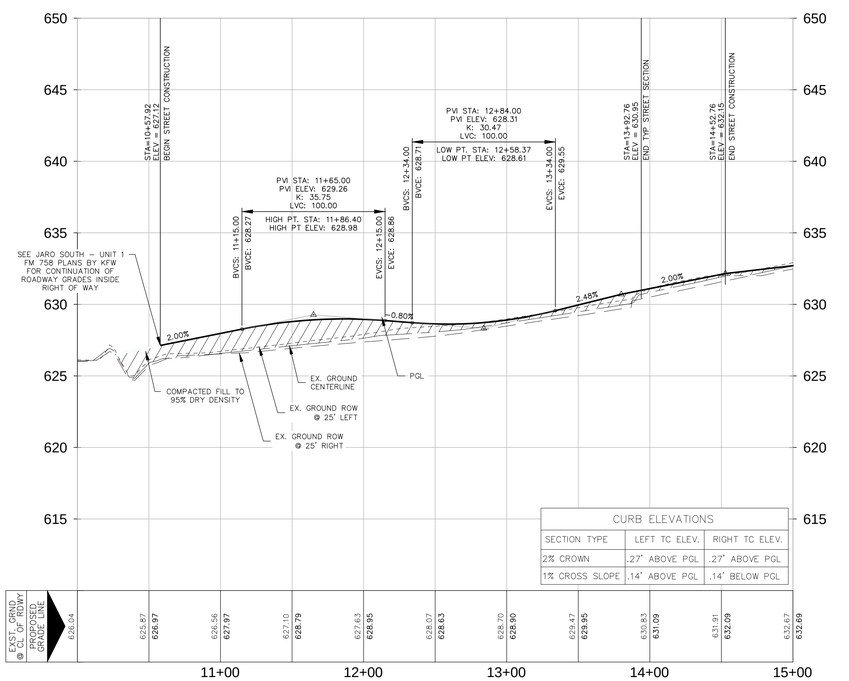
LEGEND

VERTICAL PAVEMENT TRANSITION (WASHOUT CROWN)

VALLEY GUTTER

WOODLAND CHASE

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



CURB ELEVATIONS		
SECTION TYPE	LEFT TC ELEV.	RIGHT TC ELEV.
2% CROWN	.27" ABOVE PGL	.27" ABOVE PGL
1% CROSS SLOPE	.14" ABOVE PGL	.14" BELOW PGL

EXIST. GROUND @ C/L OF ROW	626.04	625.87	626.56	627.10	627.63	628.07	628.70	629.47	630.83	631.91	632.67	
PROPOSED GRADE LINE		626.97	627.97	628.79	628.95	628.63	628.80	629.95	631.09	632.09	632.69	

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-656-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

TELEPHONE LOCATOR

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

TRENCH EXCAVATION SAFETY PROTECTION

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.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/18/22

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

JARO NORTH SUBDIVISION
UNIT 1

WOODLAND CHASE
PLAN & PROFILE

SHEET 6 OF 49

NO	DATE	ISSUES AND REVISIONS
1	3/14/22	ADDED WASHOUT CROWN
2	7/13/22	TXDOT REVISION

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TBPE FIRM F-13351

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Drawing Name: N:\Projects\WEA012 Jaro North Subdivision\Civil\Construction Drawings\6 WOODLAND CHASE PLAN & PROFILE.dwg User: jamesingalls Jul 15, 2022 - 8:22am

CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
3. SEE SHEET 16 FOR STREET SIGNAGE.
4. SEE SHEET 14 FOR SIDEWALK RAMP DETAILS.
5. SIDEWALKS AND SIDEWALK RAMPS SHOWN SHALL BE CONSTRUCTED WITH STREET CONSTRUCTION.
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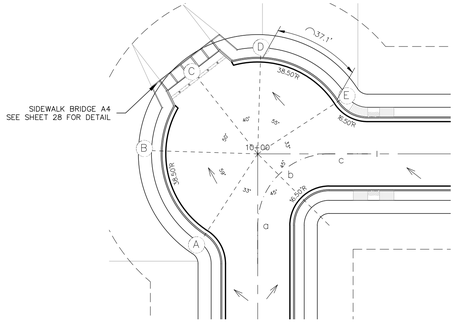
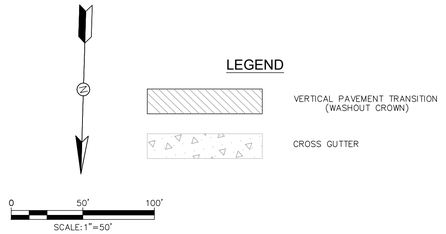


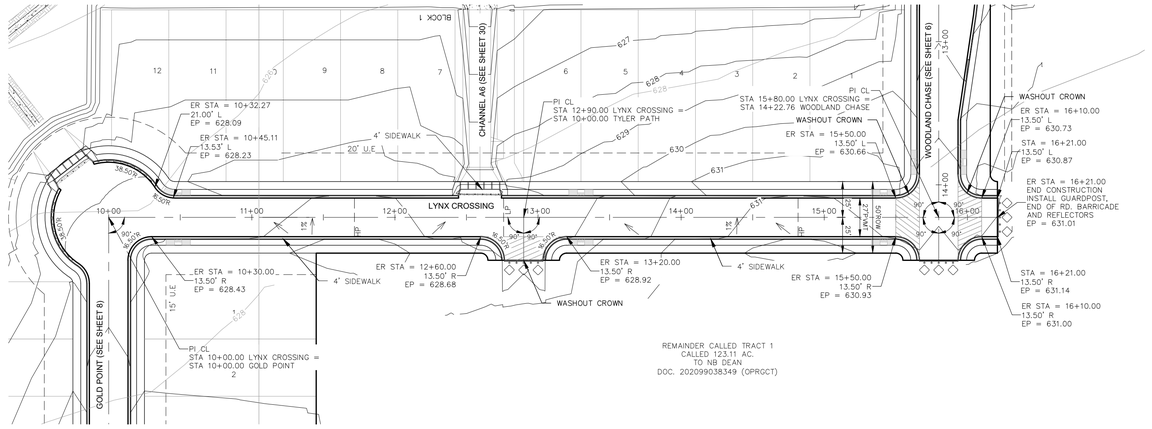
KNUCKLE SAC HUB ELEV	
HUB	EP
A	628.10
B	627.78
C	627.52
D	627.75
E	628.10
a	628.63
b	628.57
c	628.51

UPDATED BY JAMES INGALLS, PE #107416
1/21/2025



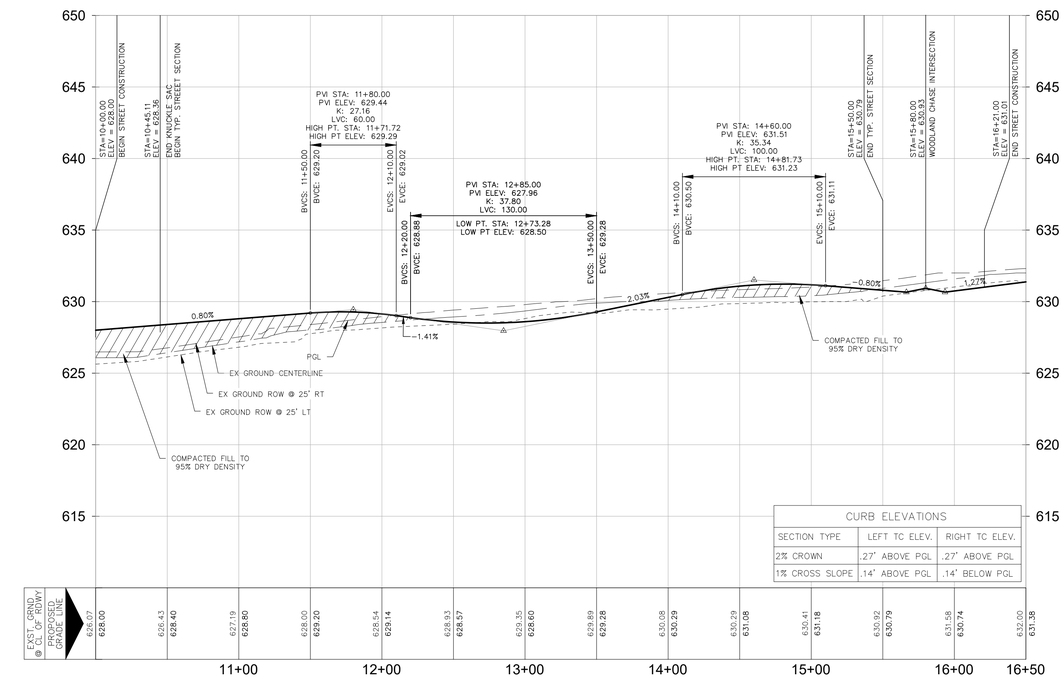
KNUCKLE SAC
LYNX CROSSING AND GOLD POINT AT STREET C
SCALE: 1"=30'

NOTE: SEE SHEET 13 FOR TYPICAL DRIVEWAY SPACING DETAIL



LYNX CROSSING

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



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Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
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NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78130

JARO NORTH SUBDIVISION
UNIT 1

LYNX CROSSING
PLAN & PROFILE

SHEET 7 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\JEA2012 Jaro North Subdivision\Civil\Construction Drawings\7 LYNX CROSSING PLAN & PROFILE.dwg User: melaniemorris Feb 18, 2022 - 8:48am

CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
3. SEE SHEET 16 FOR STREET SIGNAGE.
4. SEE SHEET 14 FOR SIDEWALK RAMP DETAILS.
5. SIDEWALKS AND SIDEWALK RAMPS SHOWN SHALL BE CONSTRUCTED WITH STREET CONSTRUCTION.
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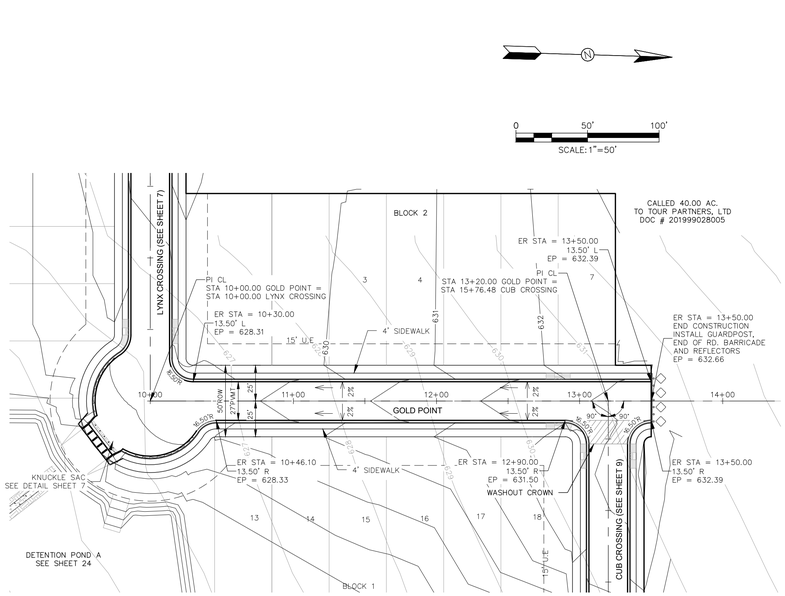
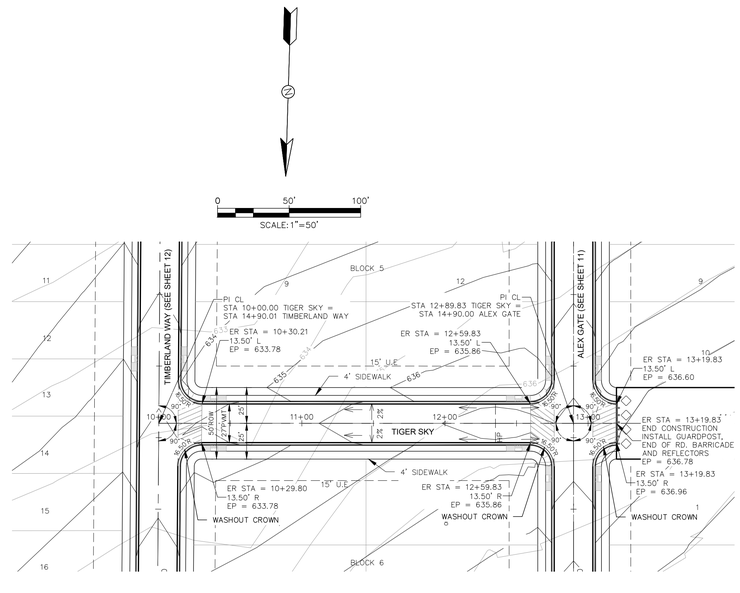
7. ALL RAMPS AND ANY SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

LEGEND

VERTICAL PAVEMENT TRANSITION (WASHOUT CROWN)

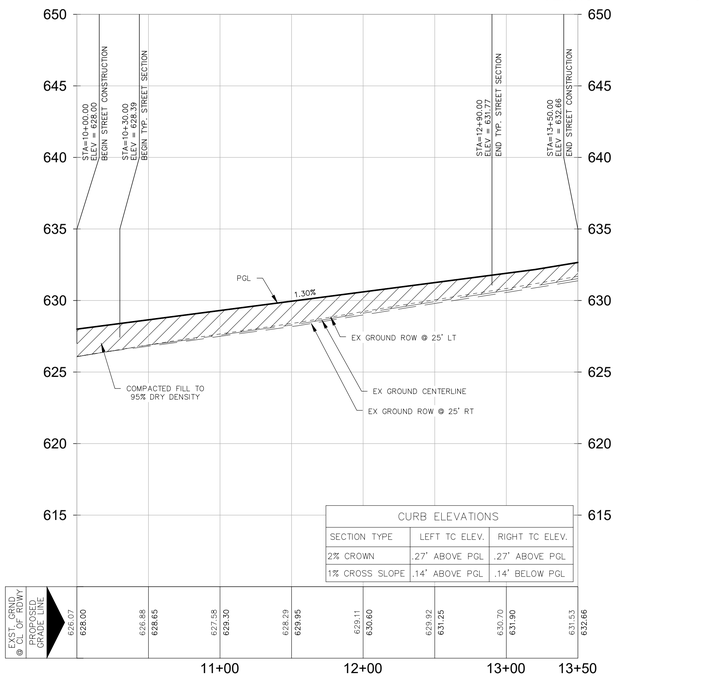
CROSS GUTTER





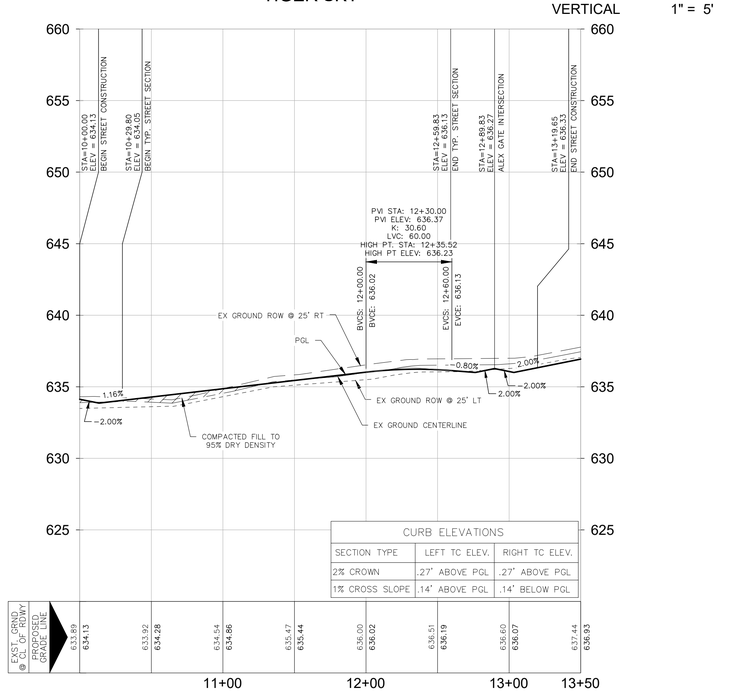
GOLD POINT

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



TIGER SKY

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/13/22

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

JARO NORTH SUBDIVISION
UNIT 1

GOLD POINT AND TIGER SKY
PLAN & PROFILE

SHEET 8 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\BE-KC012 Jaro North Subdivision\Civil\Construction Drawings\8 GOLD POINT AND TIGER SKY PLAN & PROFILE.dwg User: melanieruns Feb 17, 2022 - 5:12pm

CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
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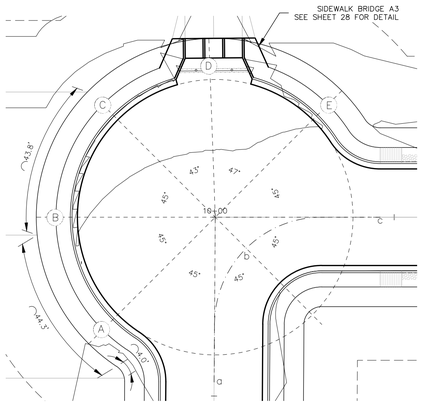
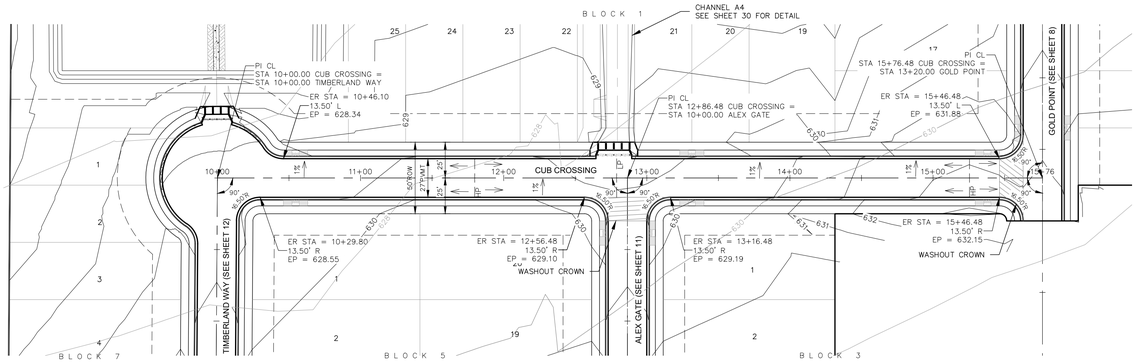


KNUCKLE SAC HUB ELEV	
HUB	EP
A	628.21
B	627.96
C	627.73
D	627.51
E	627.96
a	628.67
b	628.57
c	628.47

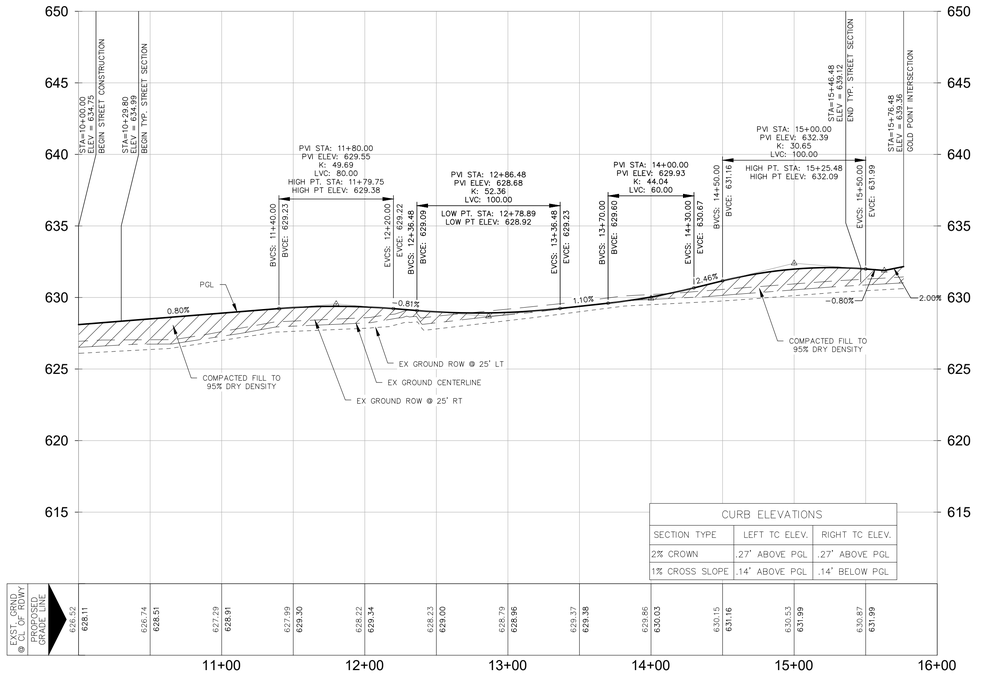
KNUCKLE SAC
CUB CROSSING AND TIMBERLAND WAY
SCALE: 1"=20'

NOTE: SEE SHEET 13 FOR TYPICAL DRIVEWAY SPACING DETAIL



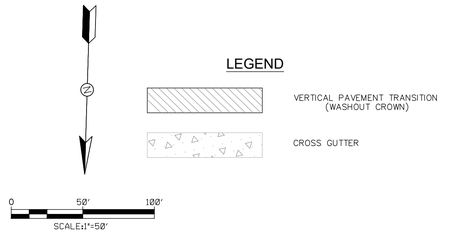
CUB CROSSING

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



CURB ELEVATIONS		
SECTION TYPE	LEFT TC ELEV.	RIGHT TC ELEV.
2% CROWN	.27' ABOVE PGL	.27' ABOVE PGL
1% CROSS SLOPE	.14' ABOVE PGL	.14' BELOW PGL

EXIST. GRND @ C.L. OF ROW	626.52	626.74	627.29	627.99	628.22	628.23	628.79	629.37	629.86	630.15	630.53	630.87
PROPOSED GRADE LINE	628.11	628.51	628.91	629.30	629.34	629.00	628.96	629.38	630.03	631.16	631.99	631.99



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

JARO NORTH SUBDIVISION
UNIT 1

CUB CROSSING
PLAN & PROFILE

SHEET 9 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
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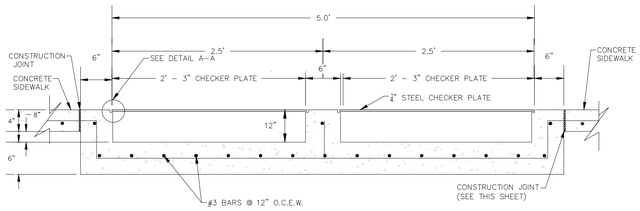
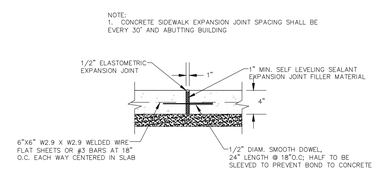


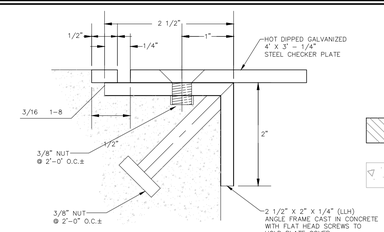
SIDEWALK OVER DRAIN WITH STEEL CHECKER PLATE

NOT TO SCALE



CONCRETE SIDEWALK EXPANSION JOINT

NOT TO SCALE



DETAIL A-A

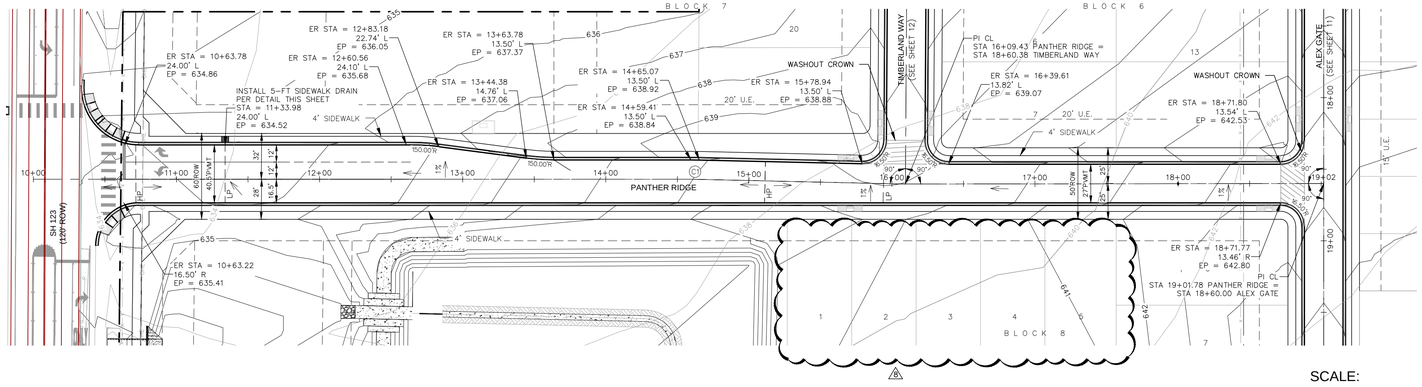
NOT TO SCALE

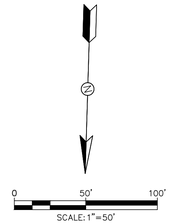
LEGEND

VERTICAL PAVEMENT TRANSITION (WASHOUT CROWN)

CROSS GUTTER

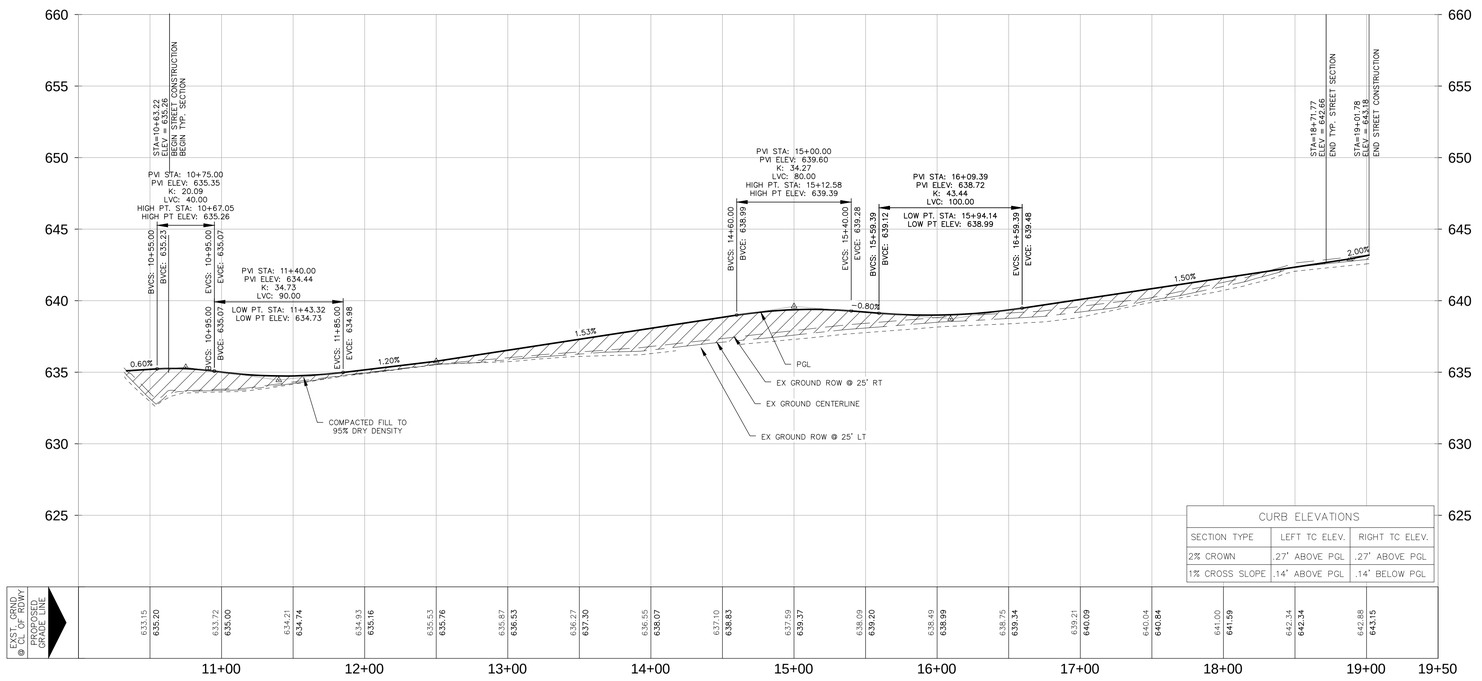
Curve Table						
Curve #	Radius	Length	Delta	Tangent	Chord Length	Chord Direction
C1	350.000	5.663	0°55'37"	2.83'	5.66'	S89° 08' 21.14"W





PANTHER RIDGE

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



CURB ELEVATIONS		
SECTION TYPE	LEFT TC ELEV.	RIGHT TC ELEV.
2% CROWN	.27' ABOVE PGL	.27' ABOVE PGL
1% CROSS SLOPE	.14' ABOVE PGL	.14' BELOW PGL

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

JARO NORTH SUBDIVISION
UNIT 1

PANTHER RIDGE
PLAN & PROFILE

SHEET 10 OF 49

NO	DATE	ISSUES AND REVISIONS
A	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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

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Drawing Name: N:\Projects\08\A012 Jaro North Subdivision\Civil\Construction Drawings\10 PANTHER RIDGE PLAN & PROFILE.dwg User: chuckwere Dec 09, 2024 - 12:53pm

CONSTRUCTION NOTES:

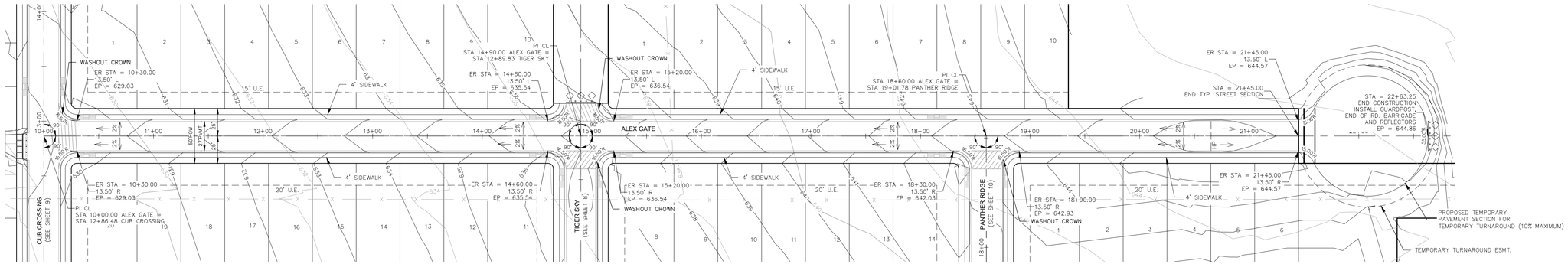
1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
3. SEE SHEET 16 FOR STREET SIGNAGE.
4. SEE SHEET 14 FOR SIDEWALK RAMP DETAILS.
5. SIDEWALKS AND SIDEWALK RAMPS SHOWN SHALL BE CONSTRUCTED WITH STREET CONSTRUCTION.
6. ALL CURB & GUTTER IS CATCH CURB UNLESS OTHERWISE NOTED.
7. ALL RAMPS AND ANY SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

0 50' 100'
SCALE:1"=50'

LEGEND

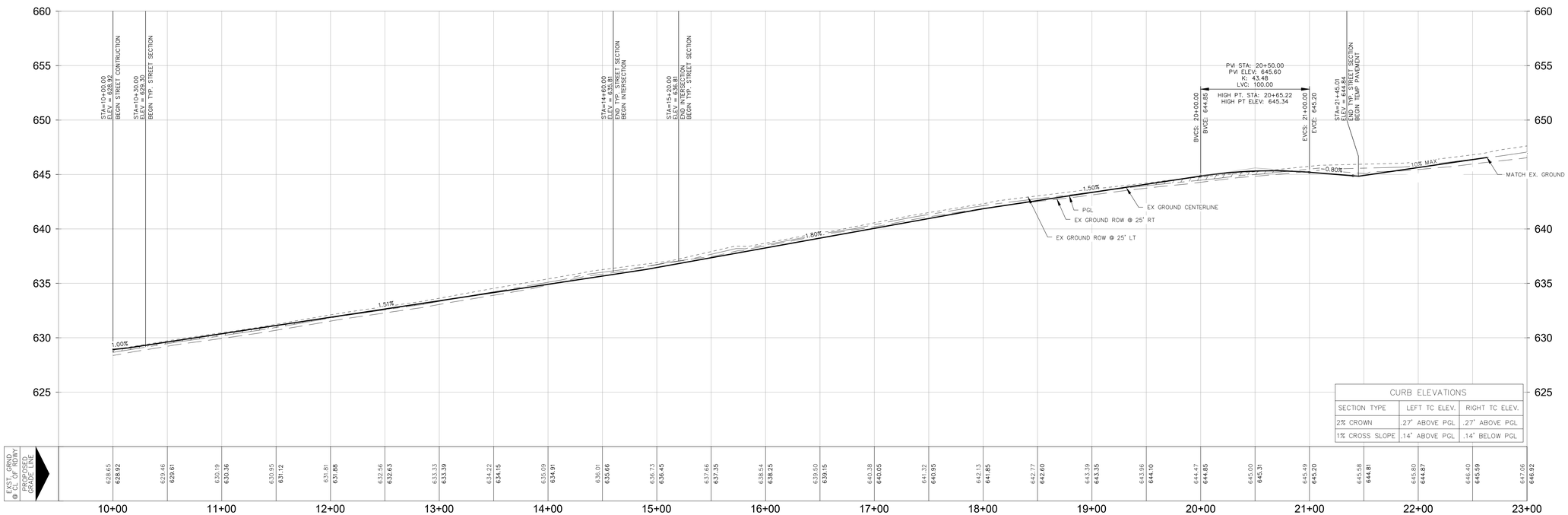
VERTICAL PAVEMENT TRANSITION (WASHOUT CROWN)

CROSS GUTTER



SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

ALEX GATE



CURB ELEVATIONS

SECTION TYPE	LEFT TC ELEV.	RIGHT TC ELEV.
2% CROWN	.27" ABOVE PGL	.27" ABOVE PGL
1% CROSS SLOPE	.14" ABOVE PGL	.14" BELOW PGL

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/18/22

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

JARO NORTH SUBDIVISION UNIT 1

ALEX GATE PLAN & PROFILE

SHEET 11 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\11 ALEX GATE PLAN & PROFILE.dwg User: mstevenorris Feb 18, 2022 - 8:49am

CONSTRUCTION NOTES:

1. DIMENSIONS SHOWN ARE TYPICALLY TO EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. SEE STREET SECTIONS AND CURB DETAILS FOR ADDITIONAL DETAIL.
2. SEE SHEET 13 FOR STREET SECTIONS AND DETAILS.
3. SEE SHEET 16 FOR STREET SIGNAGE.
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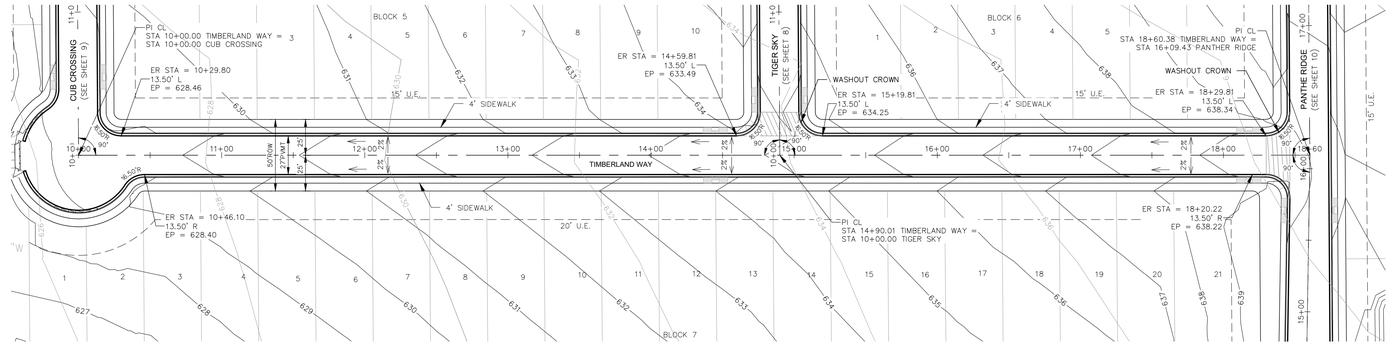
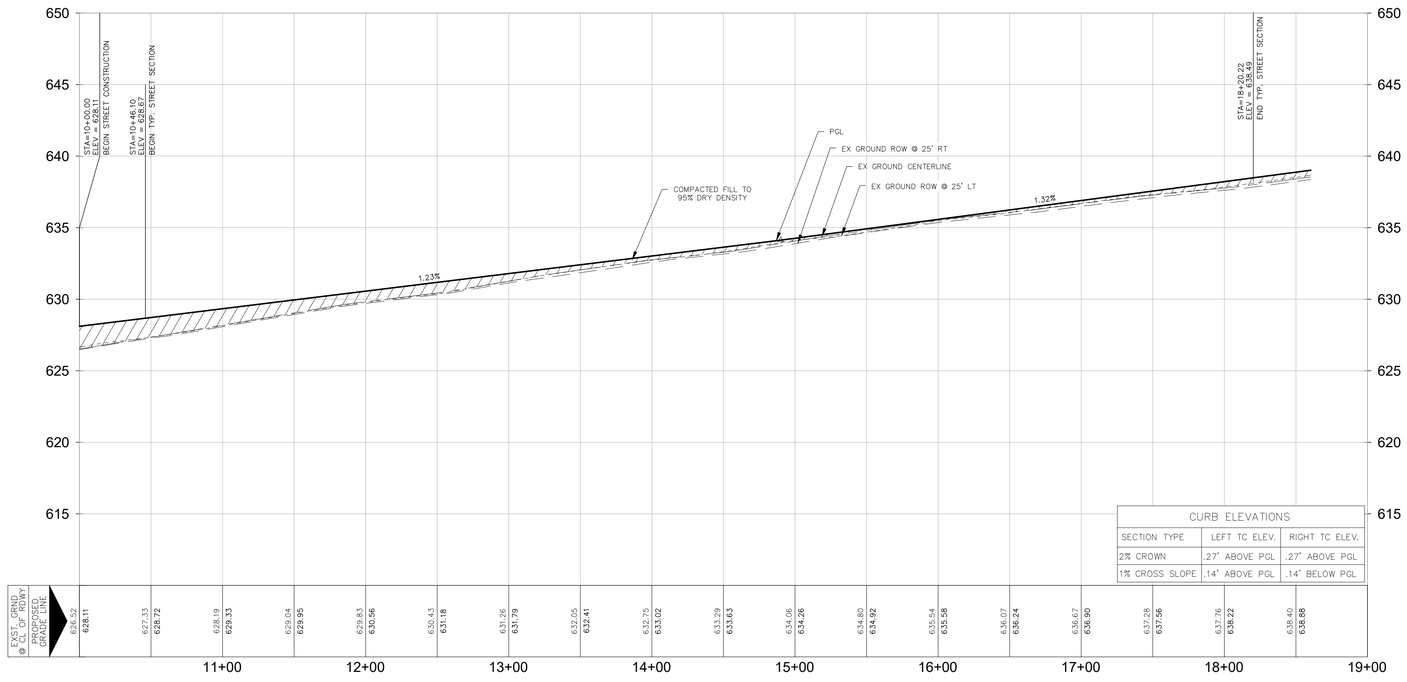
7. ALL RAMPS AND ANY SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH STREET CONSTRUCTION.

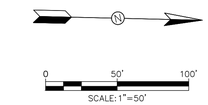


SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

TIMBERLAND WAY



CURB ELEVATIONS		
SECTION TYPE	LEFT TC ELEV.	RIGHT TC ELEV.
2% CROWN	.27' ABOVE PGL	.27' ABOVE PGL
1% CROSS SLOPE	.14' ABOVE PGL	.14' BELOW PGL



LEGEND

VERTICAL PAVEMENT TRANSITION (WASHOUT CROWN)

VALLEY GUTTER

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

JARO NORTH SUBDIVISION
UNIT 1

TIMBERLAND WAY
PLAN & PROFILE

SHEET 12 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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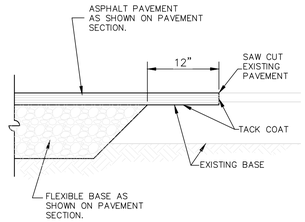
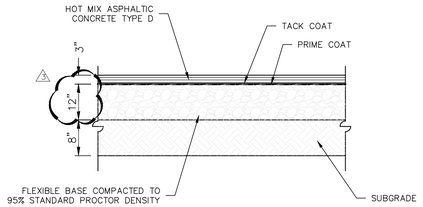
Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\12 TIMBERLAND WAY PLAN & PROFILE.dwg User: mmontemorris Feb 18, 2022 - 8:45am



NEW PAVEMENT TO EXISTING

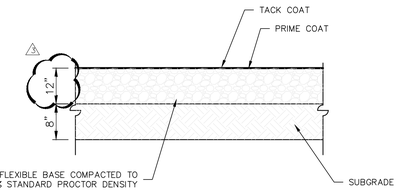
SCALE: NTS



TYPICAL PAVEMENT SECTION - LOCAL TYPE A

NOTE: PAVEMENT SECTION MEETS THE MINIMUM REQUIREMENTS AS PER CITY OF NEW BRAUNFELS

Scale: NTS



TEMPORARY TURN AROUND SECTION

Scale: NTS

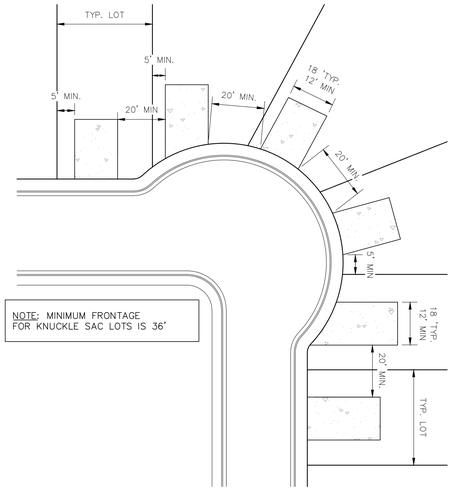
NOTE:

1. RESIDENTIAL LOCAL PAVEMENT SECTION LIMITS – ALL STREETS
2. CONTRACTOR TO REFERENCE GEOTECHNICAL ENGINEERING STUDY "SUBSURFACE EXPLORATION AND PAVEMENT ANALYSIS PROPOSED NEW STREETS JARO NORTH SUBDIVISION, UNIT 1" PREPARED BY INTEC DATED OCTOBER 21, 2021.
3. SUBGRADE SOILS SHOULD BE TESTED FOR SOLUBLE SULFATE CONTENT PRIOR TO TREATMENT.

3

FLEXIBLE PAVEMENT SECTION TABLE

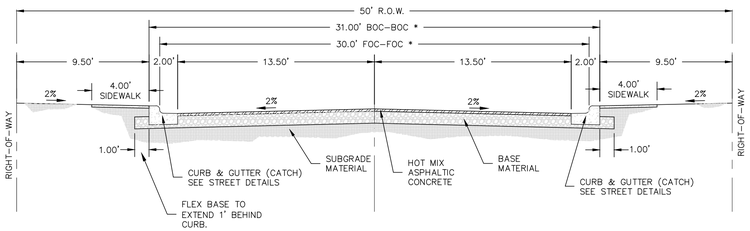
Classification	Hot Mix Asphaltic Concrete Thickness, Inches	Aggregate Base Thickness, Inches	Geogrid	Subgrade Thickness, Inches	Structural Number
Residential Local	3.00 Type D	12.00	No	8" LS	3.08
~~Residential Local~~	~~2.00 Type D~~	~~8.00~~	~~Yes~~	~~8" LS~~	~~2.88~~
Residential Collector	2.00 Type D + 2.00 Type C	18.00	No	8" LS	4.92
~~Residential Collector~~	3.00 Type D	17.00	Yes	8" LS	4.85



TYPICAL KNUCKLE SAC DRIVEWAY SPACING

N.T.S.

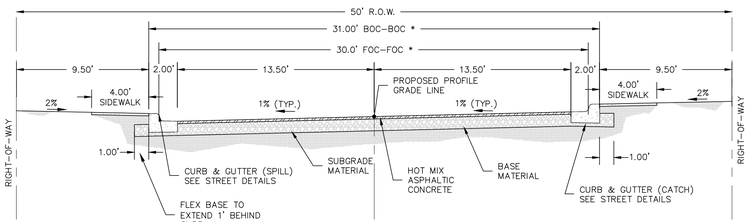
NOTE: THIS DETAIL IS FOR REFERENCE ONLY. CONTRACTOR TO FOLLOW CONB DRIVEWAY DETAIL AND MEET SPACING REQUIREMENTS.



CROWN SECTION 50' R.O.W.

Scale: 1" = 5'

*FOC – FACE OF CURB
*BOC– BACK OF CURB



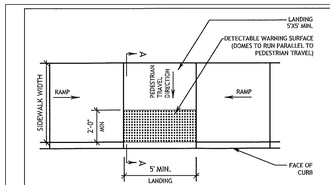
CROSS SLOPE SECTION 50' R.O.W.

Scale: 1" = 5'

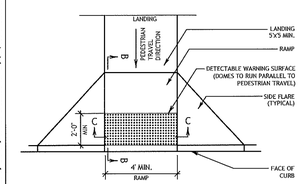
TYPICAL STREET CROSS SECTIONS

STREET SECTION NOTES:

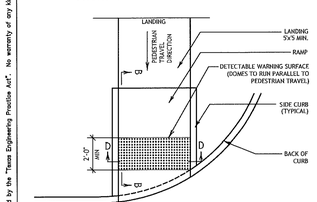
1. ALL CONCRETE CURBING SHALL BE CONCRETE CURB AND GUTTER, (I.E. CATCH OR SPILL) UNLESS OTHERWISE SPECIFIED ON THE PLANS (I.E. RIBBON CURB)
2. CROSS SLOPE VARIES WITHIN VERTICAL TRANSITIONS. THE TYPICAL CROSS SLOPE SHALL BE 1% UNLESS OTHERWISE SPECIFIED ON PLANS.
3. BASE MATERIAL SHALL EXTEND 12" BEHIND BACK OF CURB.
4. SEE GRADING PLAN FOR LOT GRADING BEYOND RIGHT OF WAY LINE.



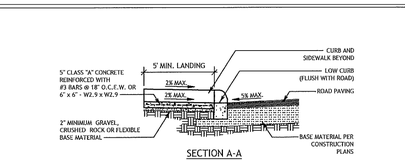
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING FOR PARALLEL CURB RAMP.



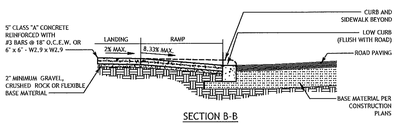
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE FOR PERPENDICULAR CURB RAMP.



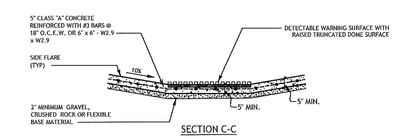
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN FOR DIRECTIONAL CURB RAMP.



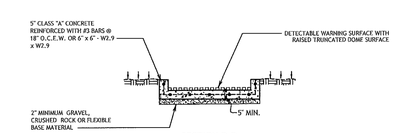
SECTION A-A



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") ABINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
5. RAMP LENGTHS SHALL BE SUFFICIENT TO MAINTAIN A MAXIMUM SLOPE OF 8.33% (1V:12H). MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2% (1V:50H).
6. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE GRADE OF THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND LANDINGS IN ACCORDANCE WITH CURRENT ADA AND TAS REQUIREMENTS.
7. PROVIDE FLARED RAMP SIDES WITH A MAXIMUM SLOPE OF 10% (1V:10H) MEASURED ALONG THE CURB LINE. CURB RETURNS MAY BE USED IN-LIEU OF SIDE FLARES IN AREAS NOT NORMALLY WALKED ACROSS BY PEDESTRIANS, BECAUSE THE ADJACENT SURFACE IS VEGETATION OR OTHER NON-WALKING SURFACE OR WHERE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
8. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X 4' (48"X48") WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
9. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
10. EXISTING FEATURES THAT COMPLY WITH CURRENT TAS REQUIREMENTS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
11. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
12. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PRE-MOLD OR BOARD JOINT OF 1/2" UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER OR BUILDING OFFICIAL.
13. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33-(-2.67)=11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.
15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
16. ADA RAMP SHALL BE CONSTRUCTED WITH 5" CLASS "A" CONCRETE WITH 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x6" - W2.9 X W2.9 WIRE MESH.
17. THE EXTENTS OF ADA COMPLIANCE IN ALTERATIONS SHALL BE WITHIN THE LIMITS, BOUNDARIES OR SCOPE OF A PLANNED PROJECT AND AS DETERMINED BY THE CITY BUILDING OFFICIAL.

DETECTABLE WARNING NOTES

1. CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK MUST HAVE A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
5. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
6. DETECTABLE WARNING MATERIALS MUST MEET TXDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
7. DETECTABLE WARNING PAVERS SHALL NOT BE PERMITTED WITHOUT THE APPROVAL BY THE PUBLIC WORKS DEPARTMENT.

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

City of New Braunfels

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

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
05/06/2024

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

JARO NORTH SUBDIVISION
UNIT 1

STREET SECTIONS AND DETAILS I

SHEET 13 OF 49

NO	DATE	ISSUES AND REVISIONS
1	5-6-2024	REVISED FLEX BASE THICKNESS

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

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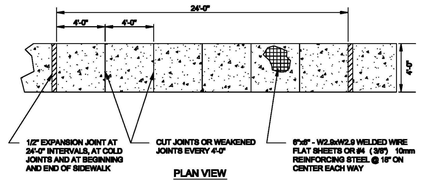
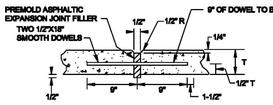
Drawing Name: N:\Projects\BEA0012 Jaro North Subdivision\Civil\Construction Drawings\13 STREET SECTIONS AND DETAILS I.dwg User: jamesingalls May 06, 2024 - 11:25am

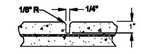
SIDEWALK
(RESIDENTIAL)



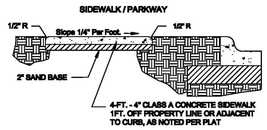
PLAN VIEW



EXPANSION JOINT



WEAKENED PLANE JOINT



TYPICAL SECTION

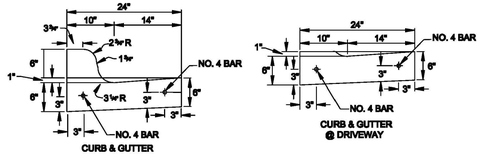
NOTES:

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-016	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: SIDEWALK (Residential)		
P:\CURRENT NEW BRAUNFELS DETAILS\2008\		

City of New Braunfels — ENGINEERING DEPARTMENT

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.

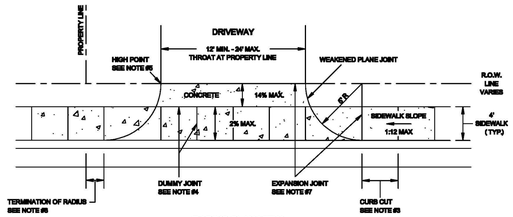
NOTES:

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.

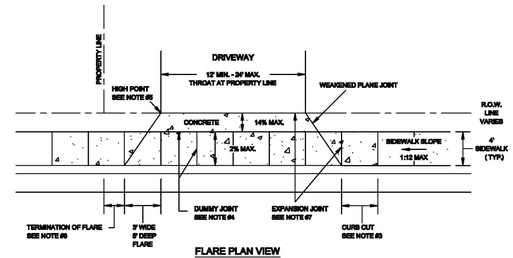
DATE APPROVED: 7/08	DWG. NO: ST-013	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 1	
FILENAME: Curb & Gutter		
P:\CURRENT NEW BRAUNFELS DETAILS\2008\		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(RESIDENTIAL - RADIAL/FLARED)



RADIUS PLAN VIEW

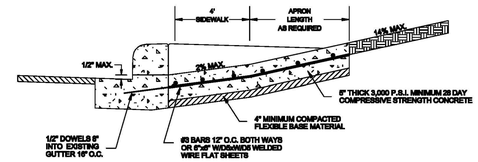


FLARE PLAN VIEW

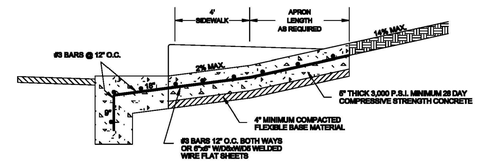
DATE APPROVED: 7/08	DWG. NO: ST-014.1	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 1 OF 2	
FILENAME: DRIVEWAY (Residential - Radial/Flared)		
P:\CURRENT NEW BRAUNFELS DETAILS\2008\		

City of New Braunfels — ENGINEERING DEPARTMENT

DRIVEWAY APRON
(ONE OR TWO FAMILY RESIDENTIAL)



STRUCTURAL SECTION



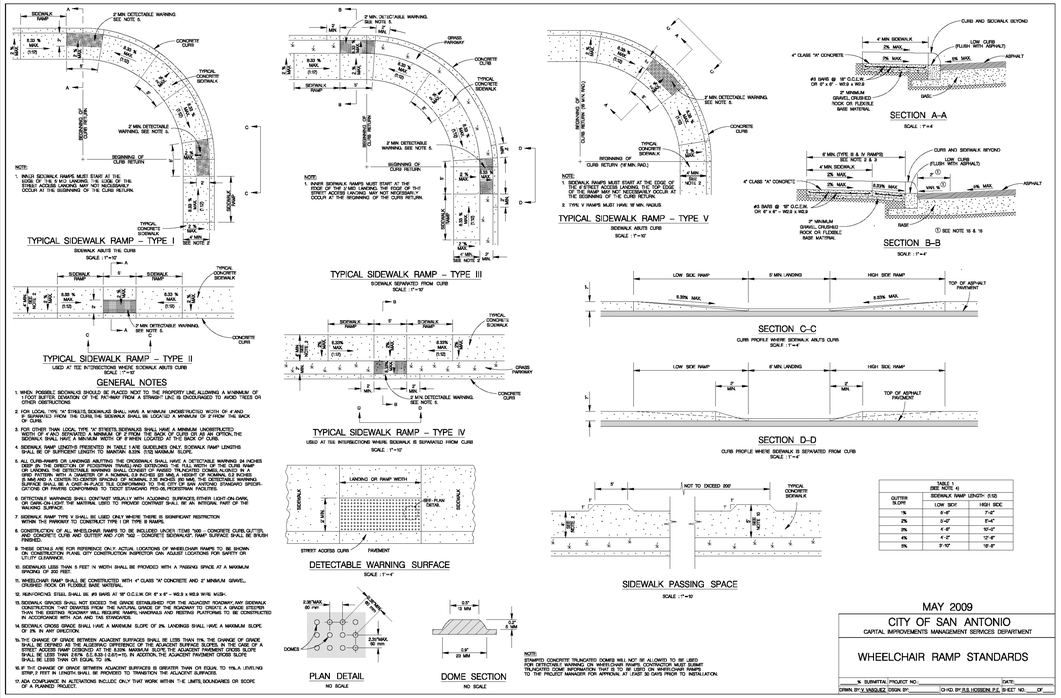
NO EXISTING CURB STRUCTURAL SECTION

NOTES:

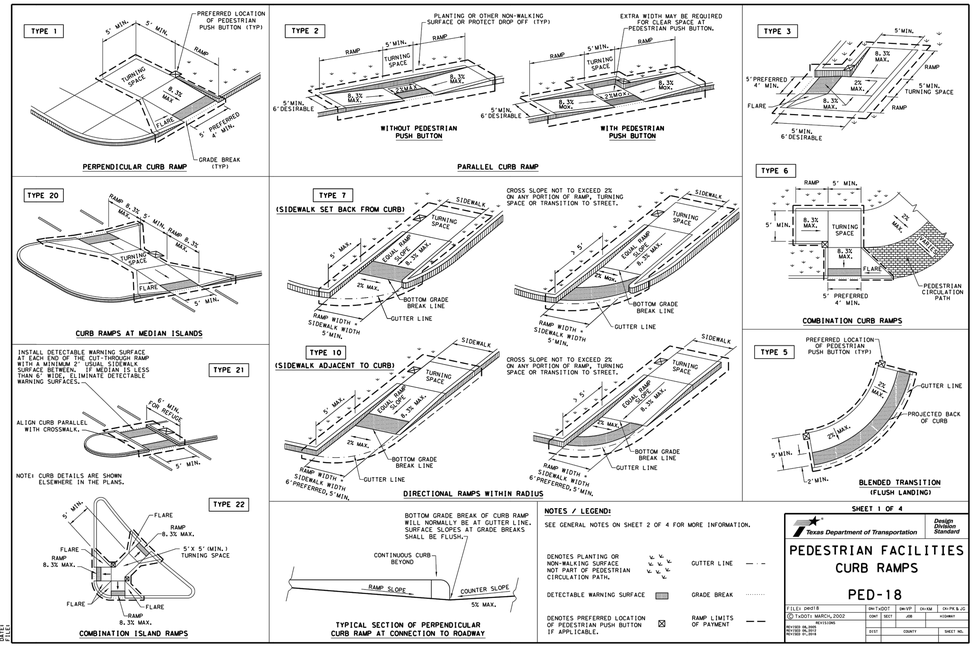
1. WHERE GUTTER DOES NOT EXIST DRIVEWAY APRON SHALL EXTEND TO EDGE OF ASPHALT AND SHALL HAVE A MINIMUM 6" WIDE 1' DEEP GRADE BEAM MONOLITHIC AND REINFORCED SIMILAR TO APRON.
2. PLACEMENT OF SIDEWALK SHOWN IS TYPICAL; HOWEVER, ALTERNATIVE SIDEWALK PLACEMENT COMMON TO DRIVEWAY APRON WILL BE CONSIDERED 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 18" 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.
9. ALL SIDEWALK AND DRIVEWAY CONSTRUCTION SHALL MEET A.D.A. SPECIFICATIONS.

DATE APPROVED: 7/08	DWG. NO: ST-014.2	SCALE: N.T.S.
DRAWN BY: RAS	SHEET: 2 OF 2	
FILENAME: DRIVEWAY (Residential - Radial/Flared)		
P:\CURRENT NEW BRAUNFELS DETAILS\2008\		

City of New Braunfels — ENGINEERING DEPARTMENT


SIDEWALK RAMP
2" MIN. DETECTABLE WARNING. SEE NOTE 5
CONCRETE CURB
TYPICAL CONCRETE SIDEWALK
BEGINNING OF CURB RETURN
2" MIN. DETECTABLE WARNING. SEE NOTE 5
BEGINNING OF CURB RETURN
TYPICAL CONCRETE SIDEWALK
CONCRETE CURB
NOTE:
1. MAJOR SIDEWALK RAMPS MUST START AT THE TWO OF THE 2 NO LANDING THE LOW OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
TYPICAL SIDEWALK RAMP – TYPE I
SIDEWALK ABUTS THE CURB
SCALE: 1"=10'
SIDEWALK RAMP
TYPICAL CONCRETE SIDEWALK
CONCRETE CURB
TYPICAL SIDEWALK RAMP – TYPE II
USED AT TEE INTERSECTIONS WHERE SIDEWALK ABUTS CURB
SCALE: 1"=10'
GENERAL NOTES
1. WHEN POSSIBLE, SIDEWALK SHOULD BE PLACED NEXT TO THE PROPERTY LINE ALLOWING A MINIMUM OF 4' FOOT BUFFER ZONE/OPEN OF THE PRIMARY PATH FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.
2. FOR LOCAL TYPE "A" STREETS, SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4' AND BE SEPARATED FROM THE CURB BY THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 3' FROM THE BACK OF CURB.
3. FOR OTHER THAN LOCAL TYPE "A" STREETS SIDEWALKS SHALL HAVE A MINIMUM UNOBSTRUCTED WIDTH OF 4 AND SEPARATED BY A MINIMUM OF 3' FROM THE BACK OF CURB OR AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' FROM BACK OF CURB.
4. SIDEWALK RAMP DIRECTION SHOULD BE ALONG LANE DIRECTION OF TRAVEL. SIDEWALK RAMP LENGTHS SHALL BE AS SHOWN ON THE TYPICAL SIDEWALK RAMP DETAILS.
5. ALL CURB RAMPS OR UNSIGNED ELECTRIC TYPE CROSSWALK SHALL HAVE A DETECTABLE WARNING, 24 INCHES WIDE ON THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES ACCORDING TO A PATTERN WITH DOMES HAVING A BASE DIAMETER OF 9 INCHES, A HEIGHT OF 0.2 INCHES, AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 INCHES (60 MM). THE DETECTABLE WARNING SURFACE SHALL BE A CONTRASTING COLOR FROM ADJACENT SURFACES TO THE SATISFACTION OF THE ENGINEER. STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS, AND BRIDGES.
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE II SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
8. CONSTRUCTION OF ALL SIDEWALK RAMPS TO BE INCLUDED LOCATE ITEMS 7608 – CONCRETE CURB, GUTTER, AND CONCRETE CURB AND GUTTER AND FOR 7609 – CONCRETE SIDEWALKS. RAMP SURFACE SHALL BE BRUSH FINISHED.
9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCES.
10. SIDEWALKS LESS THAN 5 FEET IN WIDTH SHALL BE PROVIDED WITH A PASSING SPACE AT A MAXIMUM SPACING OF 200 FEET.
11. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.
12. HUMPS/CROSS STEEL SHALL BE #3 BARS AT 18" O.C.E.W. OR 6"x 6" - W2.9 x W2.9 WIRE MESH.
13. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY. ANY SIDEWALK RAMP THAT IS NOT CONSTRUCTED AT THE TIME OF THE ROADWAY CONSTRUCTION AND IS CONSTRUCTED LATER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.
14. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2% LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
15. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11% THE CHANGE OF GRADE SHALL BE DETERMINED AT THE GUTTER LINE AND SHALL BE CALCULATED BY DIVIDING THE DIFFERENCE IN SLOPE BY THE LENGTH OF A 6 FOOT LONG TRANSITION. THE TRANSITION SHALL BE SYMMETRICAL ABOUT THE GRADE BREAK. SLOPES SHALL BE LESS THAN 2.67% (S1-A)/(-1.67+S1), IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 2%.
16. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11% A (1/16) INCH STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.
17. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS/BOUNDARIES OR SCOPE OF A PLANNED PROJECT.
TYPICAL SIDEWALK RAMP – TYPE III
SIDEWALK SEPARATED FROM CURB
SCALE: 1"=10'
SIDEWALK RAMP
TYPICAL CONCRETE SIDEWALK
CONCRETE CURB
GRASS PARKWAY
TYPICAL SIDEWALK RAMP – TYPE IV
USED AT TEE INTERSECTIONS WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=10'
LANDING OR RAMP WIDTH
SIDEWALK
SEE PLAN DETAIL
4" MIN.
STREET ACCESS CURB
PAVEMENT
DETECTABLE WARNING SURFACE
SCALE: 1"=4"
9"
NOT TO EXCEED 99"
TYPICAL CONCRETE SIDEWALK
SIDEWALK PASSING SPACE
SCALE: 1"=10
CURB AND SIDEWALK BEYOND
LOW CURB (FLUSH WITH ASPHALT)
4" CLASS "A" CONCRETE
2% MAX.
6% MAX.
#3 BARS @ 18" O.C.E.W. OR 6"x 6" - W2.9 x W2.9
ASPHALT
GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL
SECTION A–A
SCALE: 1"=4"
4" MIN. SIDEWALK
2" MINIMUM GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL
SECTION B–B
SCALE: 1"=4"
SECTION C–C
CURB PROFILE WHERE SIDEWALK ABUTS CURB
SCALE: 1"=4"
SECTION D–D
CURB PROFILE WHERE SIDEWALK IS SEPARATED FROM CURB
SCALE: 1"=4"
TABLE 1 (SEE NOTE 4)
GUTTER SLOPE
SIDEWALK RAMP LENGTH- (LS)
LOW SIDE
HIGH SIDE
1%
6'-6"
7'-0"
2%
6'-0"
6'-6"
3%
5'-6"
10'-0"
4%
4'-6"
12'-6"
5%
3'-10"
18'-8"
TYPICAL SIDEWALK RAMP – TYPE V
SIDEWALK ABUTS CURB
SCALE: 1"=10'
NOTE:
1. SIDEWALK SLOPE MUST START AT THE EDGE OF THE ROADWAY. THE LOW POINT OF THE LANDING AT THE TOP OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.
2. TYPE V RAMPS MUST HAVE 18" MIN. VARIOUS
3" DETAIL
3.25"MAX. 60 mm
DOMES
PLAN DETAIL
NO SCALE
0.6" 15 MM
0.2" 5 MM
DOME SECTION
NO SCALE
NOTE:
STAMPED CONCRETE TRUNCATED DOMES WILL NOT BE ALLOWED. TO BE USED ON PUBLIC RIGHT-OF-WAY. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ALL PRECAST RAMPS. THE SHOP DRAWINGS SHALL CONTAIN INFORMATION THAT IS TO BE USED ON WHEELCHAIR RAMPS TO THE PROJECT MANAGER FOR APPROVAL AT LEAST 30 DAYS PRIOR TO INSTALLATION.

MAY 2009
CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT
WHEELCHAIR RAMP STANDARDS
N. SUBMITTAL PROJECT NO.: DATE:
DRWN. BY: V. VASQUEZ DSGN. BY: CHKD. BY: R.S. HOSSEIN, P.E. SHEET NO. OF



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

TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

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

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

DETECTABLE WARNING SURFACE — GRADE BREAK

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE. — RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation — Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS
PED-18

FILE: pm18	DN:TxDOT	CK:VPT	DW:KM	CK:PK & JC
©TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISED: 08.2005				
REVISED: 08.2010				
REVISED: 05.2013	DIST	COUNTY		SHEET NO.

STATE OF TEXAS — JAMES INGALLS — 107416 — LICENSED PROFESSIONAL ENGINEER — 2/2/22

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

JARO NORTH SUBDIVISION
UNIT 1

CONB STREET DETAILS

SHEET 14 OF 49

NO	DATE	ISSUES AND REVISIONS

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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DATE PLOTTED:

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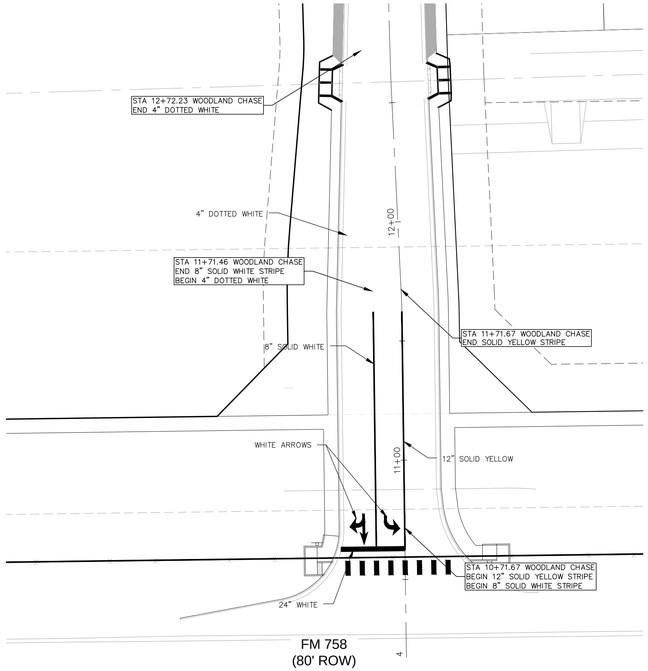
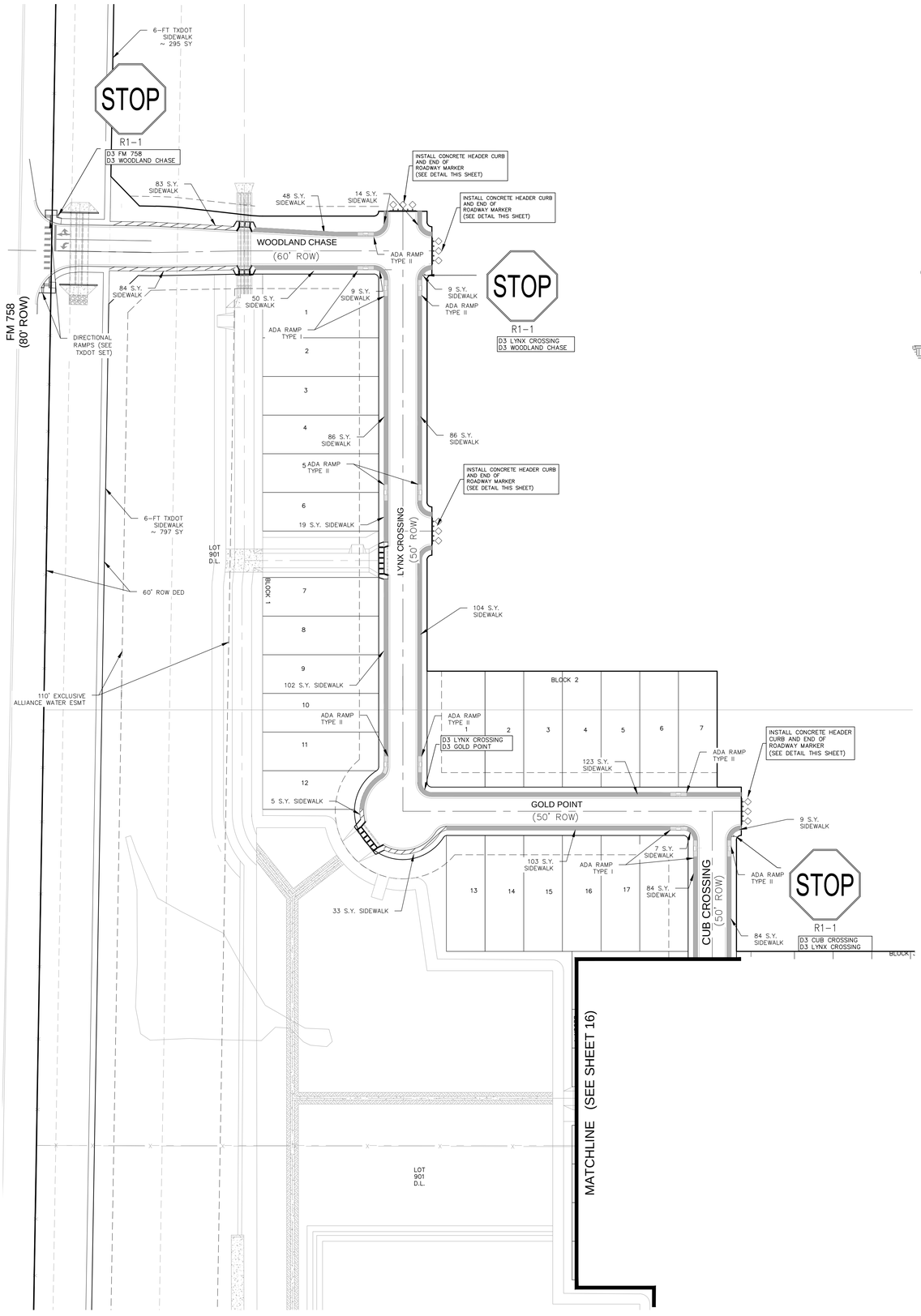
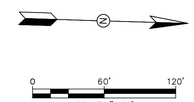


STRIPING DETAIL
SCALE: 1"=30'

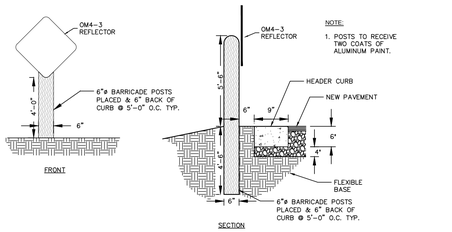




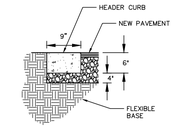
LEGEND

4' SIDEWALK TO BE INSTALLED BY THE DEVELOPER

4' SIDEWALK TO BE INSTALLED BY THE HOME BUILDER



END OF ROADWAY MARKER
Scale: NTS



HEADER CURB
Scale: NTS

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

JARO NORTH SUBDIVISION
UNIT 1

TRAFFIC SIGNAGE AND SIDEWALK PLAN I

SHEET 15 OF 49

NO	DATE	ISSUES AND REVISIONS
1	8/19/2022	REVISED SIDEWALK RAMPS PER TXDOT

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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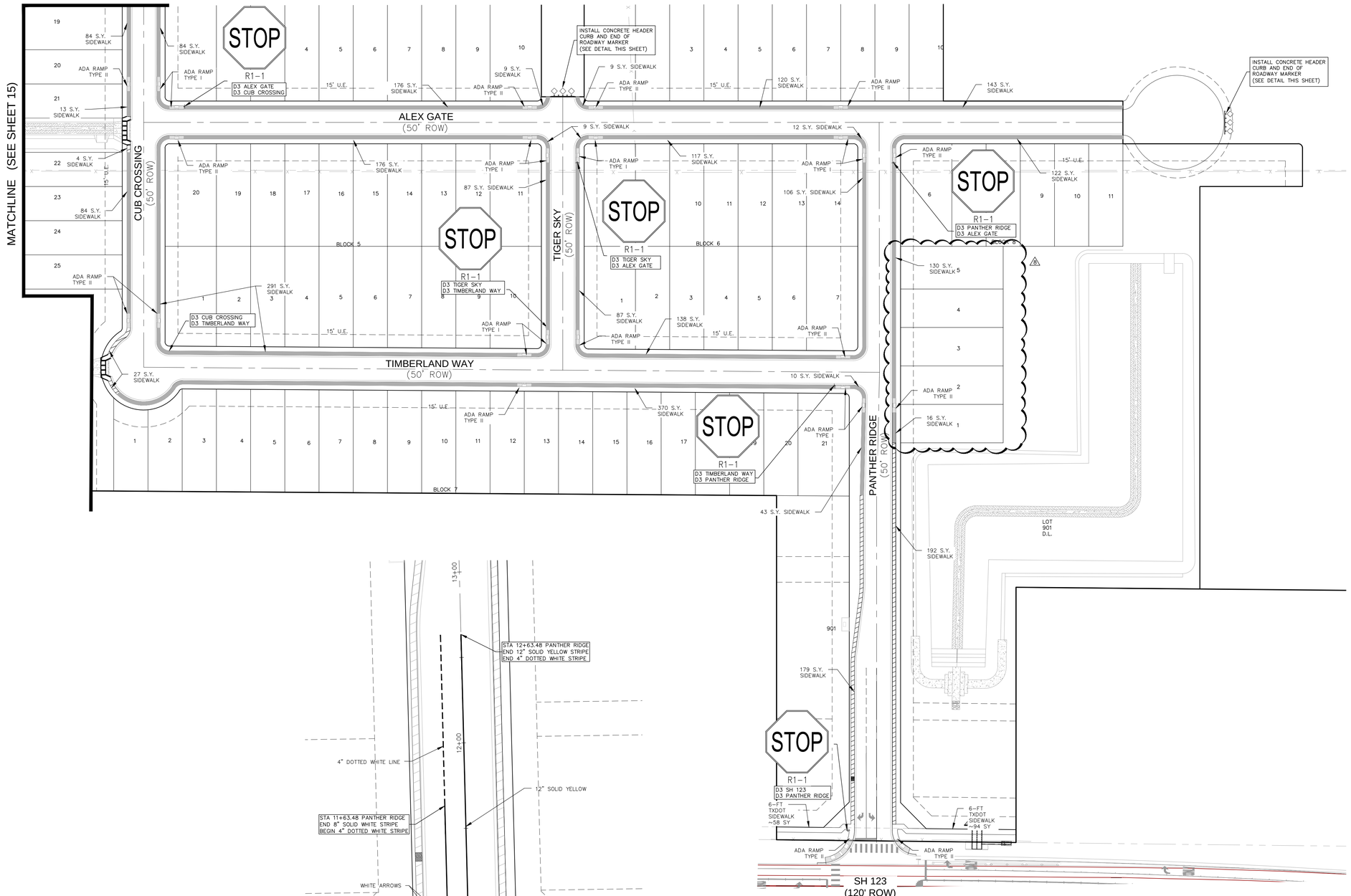
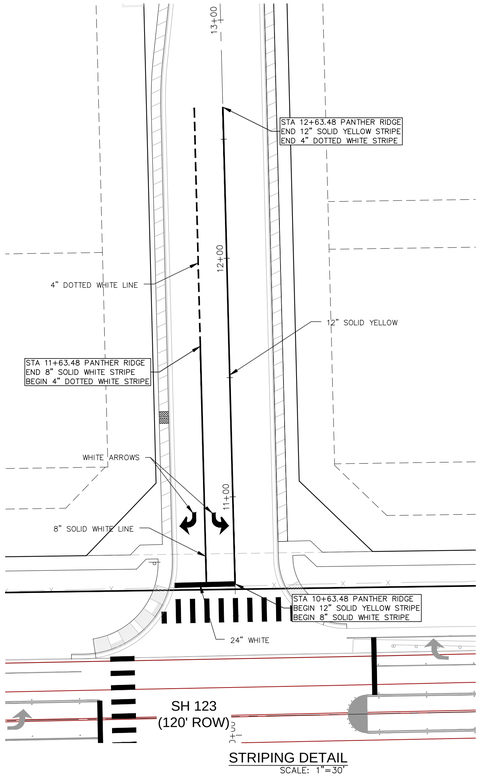
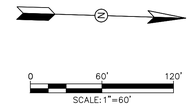
Drawing Name: N:\Projects\BEADO2 Jaro North Subdivision\Civil\Construction Drawings\17 TRAFFIC SIGNAGE & SIDEWALK DETAILS.dwg User: jimeninglalls Aug 23, 2022 - 9:03am





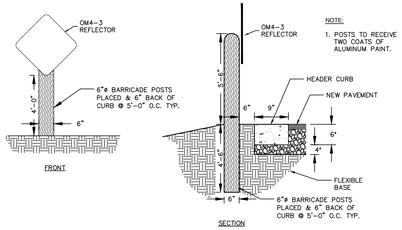
STRIPING DETAIL
SCALE: 1"=30'



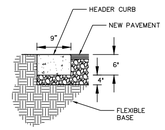
LEGEND

4' SIDEWALK TO BE INSTALLED BY THE DEVELOPER

4' SIDEWALK TO BE INSTALLED BY THE HOME BUILDER



END OF ROADWAY MARKER
Scale: NTS



HEADER CURB
Scale: NTS

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION UNIT 1

TRAFFIC SIGNAGE AND SIDEWALK PLAN II

SHEET 16 OF 49

NO	DATE	ISSUES AND REVISIONS
1	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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Drawing Name: N:\Projects\BEA002 Jaro North Subdivision\Civil\Construction Drawings\17 TRAFFIC SIGNAGE & SIDEWALK DETAILS.dwg User: chuckwere Dec 09, 2024 - 1:54pm

REFLECTOR UNIT SIZES FOR DELINEATORS AND OBJECT MARKERS

	SIZE 1	SIZE 2	SIZE 3	SIZE 4
DEVICE	3" x 1⅛"	4" x 1⅛"	6" x 1⅛"	3" x 1⅛"
SHEETING	Yellow, White or Red Type B or C reflective sheeting			
NOTE	1. Size 1 and 4 - Direct applied reflective sheeting for use on flexible post (fix). 2. Size 2 and 3 - For use on wing channel (wc) post only. Use approved metal, plastic or fiberglass backplate with 17/64" mounting holes.			

DELINEATORS

	SINGLE		DOUBLE	
DEVICE	1-Size 2 reflector unit	1-Size 1 reflector unit	2-Size 2 reflector units	2-Size 1 reflector units
SHEETING	Yellow, White or Red Type B or C Reflective Sheeting			
POST TYPE	WC	FLX	WC	FLX
MOUNT TYPE	GND	GND, SRF	GND	GND, SRF

D & OM DESCRIPTIVE CODES

INSTL DEL ASSM (D-XX)SZ X (XXX)XXX(XX)

NUMBER OF REFLECTORS
S = Single
D = Double

COLOR OF REFLECTORS
W = White
Y = Yellow
R = Red

REFLECTOR UNIT SIZE
1 or 2

TYPE OF POST OR DELINEATOR
WC = Wing Channel Post
FLX = Flexible Post
BRF = Barrier Reflector

TYPE OF MOUNT
GND = Embedded (drivable or set in concrete)
CTB = Concrete Barrier Mount
GF1 or GF2 = Guard Fence Attachment
SRF = Surface Mount

DIRECTION
If Required
BI = Bi-Directional
BR = Bi-Directional with red on back

INSTL OM ASSM (OM-XX) (XXX)XXX(XX)

TYPE OF OBJECT MARKER
1, 2, 3, or 4

NUMBER OF REFLECTORS OR DIRECTION
X = 1-Size 2 reflector units (Type 2 only)
Y = 1-Size 1 reflector unit (Type 2 only)
Z = 1-Size 2 or 1-Size 4 reflector unit(s) (Type 2 only)
L = Left Side (Type 3 Object Marker only)
R = Right Side (Type 3 Object Marker only)
C = Center (Type 3 Object Marker only)

TYPE OF POST
WC = Wing Channel Post
FLX = Flexible Post
TWT = Thin Walled Tubing

TYPE OF MOUNT
GND = Embedded (drivable)
SRF = Surface Mount
WAS = Wedge Anchor Steel
WAP = Wedge Anchor Plastic

DIRECTION
If Required
BI = Bi-Directional

OBJECT MARKERS

	Type 1 (OM-1)		Type 2 (OM-2)		Type 3 (OM-3)			Type 4 (OM-4)
	OM-1	OM-2X	OM-2Y	OM-2Z	OM-3L	OM-3R	OM-3C	OM-4
DEVICE	18" x 18"	4" x 4" x 18" Max	6" x 12"	3" x 12"	12" x 36"	12" x 36"	12" x 36"	18" x 18"
		3-Size 2 reflector units	1-Size 3 reflector unit	3-Size 1 reflector units or 1-Size 4 reflector unit				
SHEETING	Yellow-Type B_1 or C_1 Sheeting	Yellow - Type B or C Sheeting			Alternating acrylic black and retroflective yellow - Type B_1 or C_1 Sheeting			Red -Type B_1 or C_1 Sheeting
POST TYPE	TWT	WC	WC	FLX	TWT			TWT
MOUNT TYPE	WAS, WAP	GND	GND	GND, SRF	WAS, WAP			WAS, WAP

DEPARTMENTAL MATERIAL SPECIFICATIONS

FLEXIBLE DELINEATOR & OBJECT MARKER POSTS (EMBEDDED & SURFACE MOUNT TYPES)	DMS-4400
SIGN FACE MATERIALS	DMS-8300
DELINEATORS, OBJECT MARKERS AND BARRIER REFLECTORS	DMS-8600

BARRIER REFLECTORS (BRF)

	GF1	GF2	CTB
DEVICE			
	1. Barrier reflectors shall meet the requirements of DMS 8600. 2. Approved Barrier Reflectors are listed on the "Barrier Reflectors" Material Producer List at: www.txdot.gov.		
SHEETING	Yellow, White, Red		
NOTE	1. Minimum 9 square inches of reflective sheeting surface area.		

CHEVRONS

DEVICE — W1-8

SIZE (W x L)	18"x 24" (Conventional)	24"x 30" (Conventional Oversize)	30"x 36" (Expressway)	36" x 48" (Freeway)
MOUNTING HEIGHT	4'-0" or 7'-0"		7'-0" Only	
NOTE	1. CHEVRON (W1-8) signs and ONE DIRECTION LARGE ARROW (W1-6) Signs shall be installed per Sign Mounting Details (SMD) Standard Sheets and paid under Item 644 (Small Roadside Sign Assemblies). 2. The Texas version of the ONE DIRECTION LARGE ARROW sign (W1-9T) may be used instead of the ONE DIRECTIONAL LARGE ARROW (W1-6).			

ONE DIRECTION LARGE ARROW

DEVICE — W1-6

SIZE (W x L)	48" x 24" (Conventional)	60" x 30" (Expressway & Freeway)
MOUNTING HEIGHT	7'-0"	

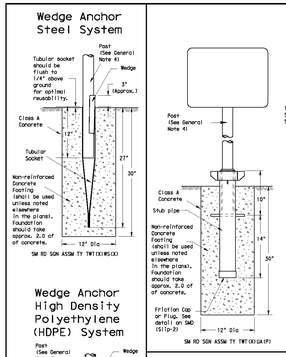
NOTE:
Delineator and object marker backplates and sign substrates shall be .080" Aluminum sign blank to conform to ASTM B-209 Alloy 6061-T6 or approved alternative.

Texas Department of Transportation — Traffic Operations Division Standard

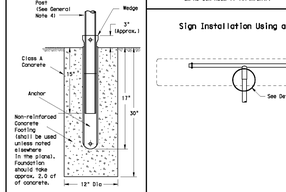
DELINEATOR & OBJECT MARKER MATERIAL DESCRIPTION
D & OM(1)-15

FILE: dom1-15.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
©TxDOT August 2004	CONT	SECT	JOB	HIGHWAY
REVISIONS				
10-09 3-15	DIST	COUNTY		SHEET NO.
4-10				

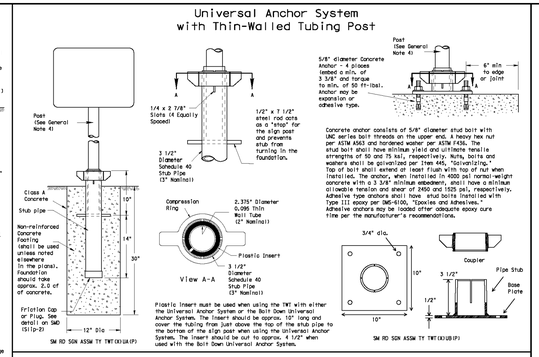
Wedge Anchor Steel System



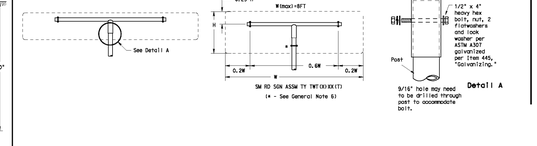
Wedge Anchor High Density Polyethylene (HDPE) System



Universal Anchor System with Thin-Walled Tubing Post



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



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

GENERAL NOTES:
1. The Wedge Anchor System and the Universal Anchor System with thin wall tubing post may be used to support up to 10 square feet of sign area.
2. The tubular socket, wedge and prefabricated T-bracket shall be permanently marked to indicate manufacturer. Methods, designs, and location of marking are subject to the approval of the TxDOT Traffic Standards Engineer.
3. Except for posts (13 BWG Tubing), clamps, nuts and bolts, all components shall be prequalified. A list of prequalified vendors may be obtained from the Material Producer List web page. The website address is: http://www.txdot.gov/business/producer list.htm
4. Material used on post with this system shall conform to the following specifications 13 BWG Tubing (2.375" outside diameter) (TWT)
   0.095" nominal wall thickness
   Steel shall be ASTM A500 Grade B structural welded steel tubing
   Steel shall be ASTM A572 Gr 50 per ASTM A1001 or ASTM A1008
   Other steels may be used if they meet the following:
   55,000 PSI minimum yield strength
   70,000 PSI minimum tensile strength
   18% minimum elongation in 2"
   Wall thickness (uncoated) shall be within the range of .083" to .098"
   Outside diameter (uncoated) shall be within the range of 2.369" 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 slip clamp required on the "T-bracket" post for 24" high signs. Place clamps at least 3" above bottom of sign when possible.
7. Sign support shall not be spliced except where shown. Sign support posts shall be one piece.
8. See the Traffic Operations Division website for detailed drawings of slip 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(SGN) must be followed. The inner surfaces of the socket/stub must remain free of concrete or other debris.
2. 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 slip pipe shall remain above the top of the concrete foundation.
3. Attach the sign to the slip post.
4. Install foundation tube. Insert bottom of post.
5. Slide slip post into tubular socket. Lower until the post comes to rest on steel rod.
6. Seat compression ring using a hammer. Typically, the top of compression ring will be approximately level with top of stub post when optimally installed.
7. Check slip post by hand to ensure it is unable to turn. If loose, increase the tightening of the compression ring.

ALL PROPOSED SIDEWALKS ARE 4' IN WIDTH.

NOTE:
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.

ALL RAMPS AND ANY PROPOSED SIDEWALKS THAT DO NOT FRONT PROPOSED RESIDENTIAL LOTS ARE REQUIRED TO BE CONSTRUCTED WITH THE STREET CONSTRUCTION.

Texas Department of Transportation — Traffic Operations Division

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

©TxDOT July 2022	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS	CONT	SECT	JOB	HIGHWAY
9-08	DIST	COUNTY		SHEET NO.

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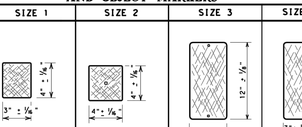
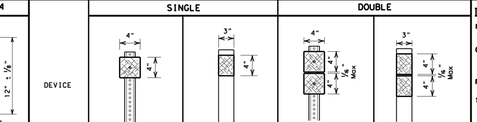
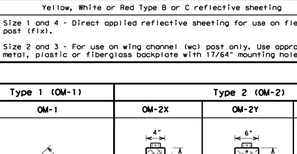
EDGE LINE AND LANE LINES ONE-WAY ROADWAY WITH OR WITHOUT SHOULDERS



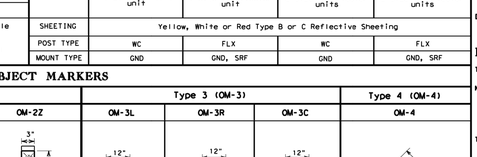
TYPICAL TWO-LANE, TWO-WAY PAVEMENT MARKINGS THROUGH INTERSECTIONS



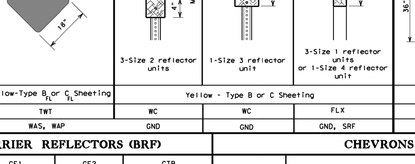
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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

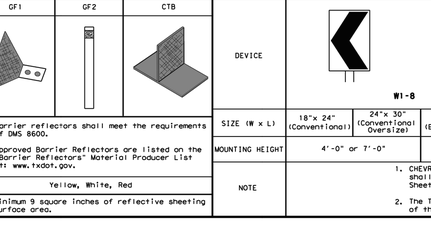


TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



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 traingles 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

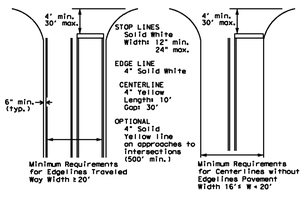
1. Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should not be placed less less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.
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

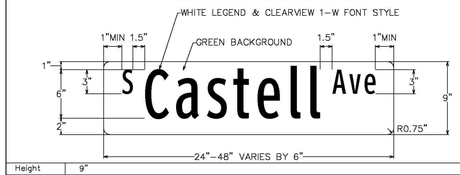


Texas Department of Transportation — Traffic Safety Division Standard

TYPICAL STANDARD PAVEMENT MARKINGS
PM(1)-20

FILE: pm1-20.dgn	DN:	CK:	DW:	CK:
©TxDOT November 1978	CONT	SECT	JOB	HIGHWAY
REVISIONS				
6-95 3-03	DIST	COUNTY		SHEET NO.
5-00 2-12				
8-00 6-20				

STREET SIGN DETAIL - GROUND MOUNT



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

Notes:
1. Street name signs shall be double sided when center mounted on top of sign post. Only one street name sign should be installed on top of sign post with STOP or YIELD sign.
2. When two sets of street name signs are required (e.g. at "T" intersections), one double-sided street name sign shall be mounted on sign post. The sign assembly shall meet minimum height requirements as required in the Texas Manual on Uniform Traffic Control Devices (TMUTCD). When required, DEAD END (W14-1a) or NO OUTLET (W14-2a) signs shall also be mounted on the sign post.
3. Street name signs greater than 36" long and center mounted on top of sign post shall be mounted on post top bracket with 12" slot. All other street name signs center mounted on top of sign post shall be mounted on post top bracket with 5 ½" slot.
4. Street name signs mounted on sign post shall be mounted with double-sided round pole brackets. Two holes should be punched in the center of the 9" street name sign blank 1" from edge of the blank with 7"spacing between holes.
5. The lettering for names of streets shall be composed of a combination of lower-case letters with initial upper-case letters. Acceptable abbreviations per TMUTCD may be used except for the street name itself.
6. Red background (red film over High Intensity Prismatic) should be used for private street name signs.

Street Sign Detail - Ground Mount			
ISSUE DATE: February 2013	DWG. NO: ST-024	SCALE: N.T.S.	
DRAWN BY: RAS	CONTACT: GF	SHEET: 1 OF 1	

City of New Braunfels — ENGINEERING DIVISION
424 S. CASTELL AVE.
NEW BRAUNFELS, TEXAS 78130
PHONE: 830.221.4020
FAX: 830.626.3600

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

SIGN REQUIREMENTS

1. TRAFFIC SIGNS SHALL BE USED IN ACCORDANCE WITH THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND WHERE JUSTIFIED BY ENGINEERING JUDGMENT OR STUDY. TRAFFIC SIGNS INCLUDE REGULATOR SIGNS, WARNING SIGNS, STREET NAME SIGNS AND OBJECT MARKERS.
2. ALL SIGNS SHALL BE SHOWN IN THE ENGINEERING PLANS FOR REVIEW AND APPROVAL AS PART OF THE PLAN AND PROFILE SHEET OR SEPARATE SIGNING AND PAVEMENT MARKING LAYOUT SHEET. THE ENGINEERING PLANS SHALL INCLUDE SIGN LOCATION, NAME, DESIGNATION AND SIZE. SIGN STANDARDS SHALL BE INCLUDED IN THE ENGINEERING PLANS.

INSTALLATION

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

MOUNTING

1. 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.
2. 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.
3. OBJECT MARKERS MATERIALS AND INSTALLATION SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS D&OM(1-5)-10.

MATERIALS

1. SIGN MATERIALS INCLUDING ALUMINUM SING BLANKS AND SIGN FACE MATERIALS SHOULD FOLLOW THE TXDOT TRAFFIC STANDARDS TSR(1-5)-08 AND DEPARTMENTAL MATERIAL SPECIFICATIONS DMS-7110 AND DMS-8300.
2. THE CITY OF NEW BRAUNFELS WILL INSPECT ALL SIGNS AT FINAL INSPECTION.

PAVEMENT MARKING REQUIREMENTS

1. PAVEMENT MARKINGS SHALL BE USED IN ACCORDANCE WITH THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) AND WHERE JUSTIFIED BY ENGINEERING JUDGMENT OR STUDY.
2. ALL PAVEMENT MARKINGS SHALL BE SHOWN IN THE ENGINEERING PLANS FOR REVIEW AND APPROVAL AS PART OF THE PLAN AND PROFILE SHEET OR SEPARATE SIGNING AND PAVEMENT MARKING LAYOUT SHEET. DESIGN, MATERIALS AND INSTALLATION SHOULD FOLLOW TXDOT TRAFFIC STANDARDS PM(1-4)-12. CITY OF SAN ANTONIO TRAFFIC ENGINEERING STANDARDS FOR PAVEMENT MARKINGS DESIGNATING TRAFFIC LANES, LANE USAGE AND LANE REGULATIONS AND PEDESTRIAN/BICYCLIST ACCOMMODATIONS MAY BE USED FOR ADDITIONAL STANDARD DESIGN DETAILS. MARKING STANDARDS SHALL BE INCLUDED IN THE ENGINEERING PLANS.
3. ALL PAVEMENT MARKINGS SHALL BE TYPE I HOT APPLIED THERMOPLASTIC AND MEET TXDOT DEPARTMENTAL MATERIAL SPECIFICATIONS DMS-8200.
4. THE CONTRACTOR SHALL NOTIFY THE CITY OF NEW BRAUNFELS AT LEAST TWENTY-FOUR (24) HOURS PRIOR TO THE INSTALLATION OF ALL SEALER AND FINAL MARKINGS. THE CONTRACTOR MAY BE RESPONSIBLE FOR PLACING SPOT TABS BEFORE MARKING APPLICATION. THE CITY WILL INSPECT ALL MARKINGS AT FINAL APPLICATION.

STATE OF TEXAS — JAMES INGALLS — 107416 — LICENSED — PROFESSIONAL ENGINEER — 2/2/22

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

JARO NORTH SUBDIVISION UNIT 1

TRAFFIC SIGNAGE & SIDEWALK DETAILS

SHEET 17 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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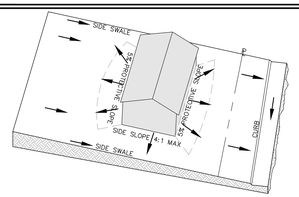
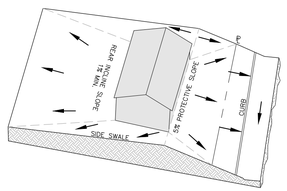
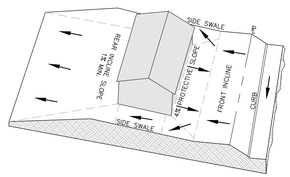
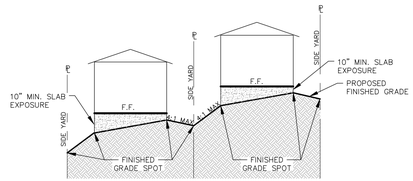
DATE/FILES:
Drawing Name: N:\Projects\BEACO 2 Jaro North Subdivision\Civil\Construction Drawings\17 TRAFFIC SIGNAL & SIDEWALK DETAILS.dwg User: mehrdevrois Feb 17, 2022 - 5:17pm









TYPICAL SIDE YARD GRADING

NOT TO SCALE

Project Control Points				
Point #	Raw Description	Elevation	Northing	Easting
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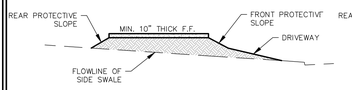
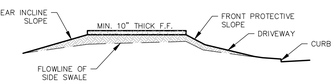
2	CP IPSC	636.16	13806177.9450'	2297174.4322'



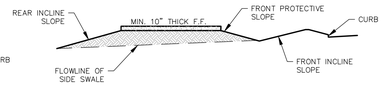
TYPE A LOT GRADING

NOT TO SCALE



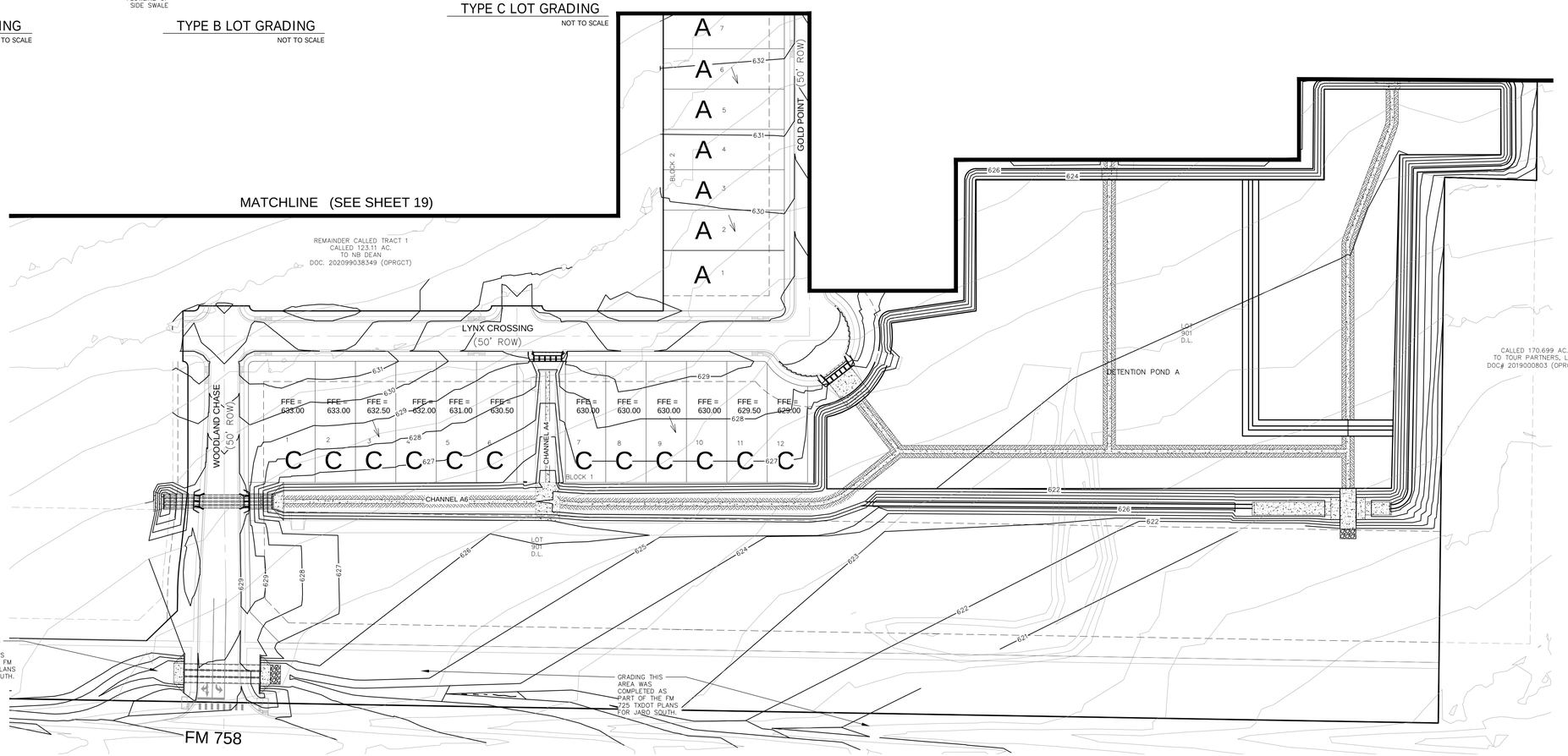
TYPE B LOT GRADING

NOT TO SCALE



TYPE C LOT GRADING

NOT TO SCALE



Ø 60' 120'

SCALE: 1"=60'

LEGEND

- 900 PROPOSED CONTOUR
- 900 EXISTING CONTOUR
- DRAINAGE FLOW ARROW
- GRADE BREAK/SWALE

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

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TRENCH EXCAVATION SAFETY PROTECTION

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

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.

GRADING NOTES:

1. 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).
2. GRADING SHOWN ON THIS GRADING PLAN IS FOR MASS GRADING PURPOSES ONLY. FINAL GRADING AROUND HOMES, SETTING FINISHED FLOOR ELEVATIONS, ETC. WILL BE DONE AS PART OF EACH BUILDING PERMIT PROCESSED FOR THE INDIVIDUAL HOMES.
3. IN ALL FILL AREAS, LOOSE OR ORGANIC MATTER SHALL BE STRIPPED AND REMOVED FROM THE SITE UPON WHICH THE FILL IS TO BE PLACED AND THE AREA SHALL BE BROUGHT TO THE PROPER GRADE GRADE WITH ADEQUATE MOISTURE CONTENT AND COMPACTED TO NOT LESS THAN 90% DENSITY.
4. CONTRACTOR TO INSURE THAT ALL LOTS FILLED WILL HAVE POSITIVE DRAINAGE TO PREVENT ANY PONDING OF WATER AND PROVIDE A MINIMUM FINAL GRADE OF 1.2% WITHIN THE LOT.
5. CONTRACTOR TO CONTACT OWNER PRIOR TO ANY LOT FILLING TO DETERMINE IF TREES WITHIN THE FILL AREA CAN BE SAVED.
6. ALL LARGE ROCKS 10" OR LARGER SHALL BE KEPT OUT OF THE FILL SITE UNLESS INSTRUCTED BY THE OWNER TO PLACE SUCH ROCKS ON THE SITE.
7. CONTRACTOR TO ENSURE POSITIVE DRAINAGE FOR ALL GRADING WITHIN LIMITS OF PROJECT.
8. FINISHED FLOOR ELEVATION FOR HOMES WILL BE A MINIMUM OF 12" ABOVE THE TOP OF CURB FRONTING THE LOT, AND ON C LOTS' DRIVEWAY SWALE FLOWLINE WILL BE A MINIMUM OF 6" BELOW THE FINISHED FLOOR OF THE HOUSE.

GENERAL SPECIFICATIONS FOR SITE PREPARATION

GENERAL DESCRIPTION
THIS ITEM SHALL CONSIST OF ALL CLEARING AND PREPARATION OF LAND TOO 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.

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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.

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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.

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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.

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STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
05/31/2024

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

JARO NORTH SUBDIVISION
UNIT 1

GRADING PLAN I

SHEET 18 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL

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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Drawing Name: N:\Projects\BEA002 Jaro North Subdivision\Civil\Construction Drawings\19 GRADING PLAN II.dwg User: jonesingalls May 31, 2024 3:58pm

Project Control Points			
Point #	Raw Description	Northing	Easting
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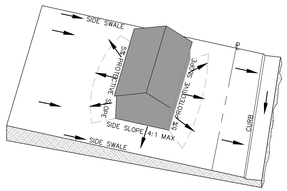
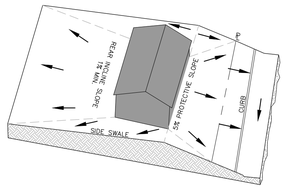
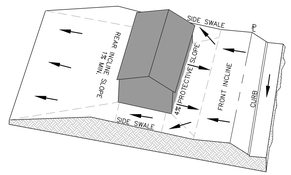
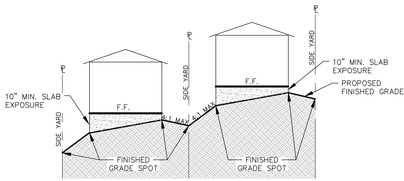
2	CP IPSC	13806177.9450'	2297174.4322'









TYPICAL SIDE YARD GRADING

NOT TO SCALE

TYPE A LOT GRADING

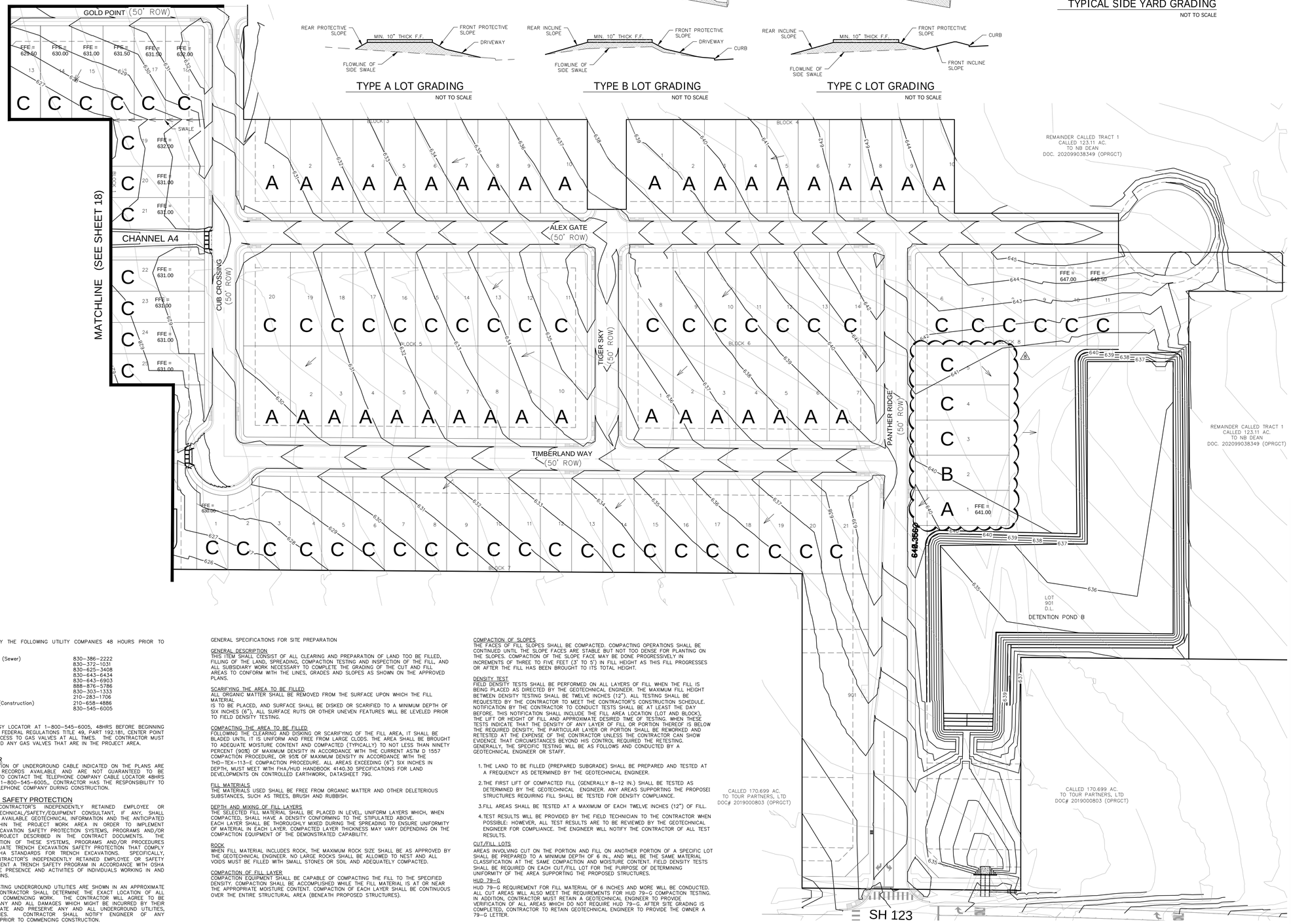
NOT TO SCALE

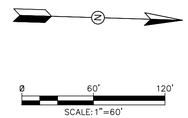
TYPE B LOT GRADING

NOT TO SCALE

TYPE C LOT GRADING

NOT TO SCALE





LEGEND

- 900 — PROPOSED CONTOUR
- 900 — EXISTING CONTOUR
- DRAINAGE FLOW ARROW
- GRADE BREAK/SWALE

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
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NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78130

JARO NORTH SUBDIVISION
UNIT 1

GRADING PLAN II

SHEET 19 OF 49

NO	DATE	ISSUES AND REVISIONS
1	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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Drawing Name: N:\Projects\NEA0012 Jaro North Subdivision\Civil\Construction Drawings\19 GRADING PLAN II.dwg User: chuckware Dec 09, 2024 - 2:01pm

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
107416
LICENSED
PROFESSIONAL ENGINEER
2/18/22

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
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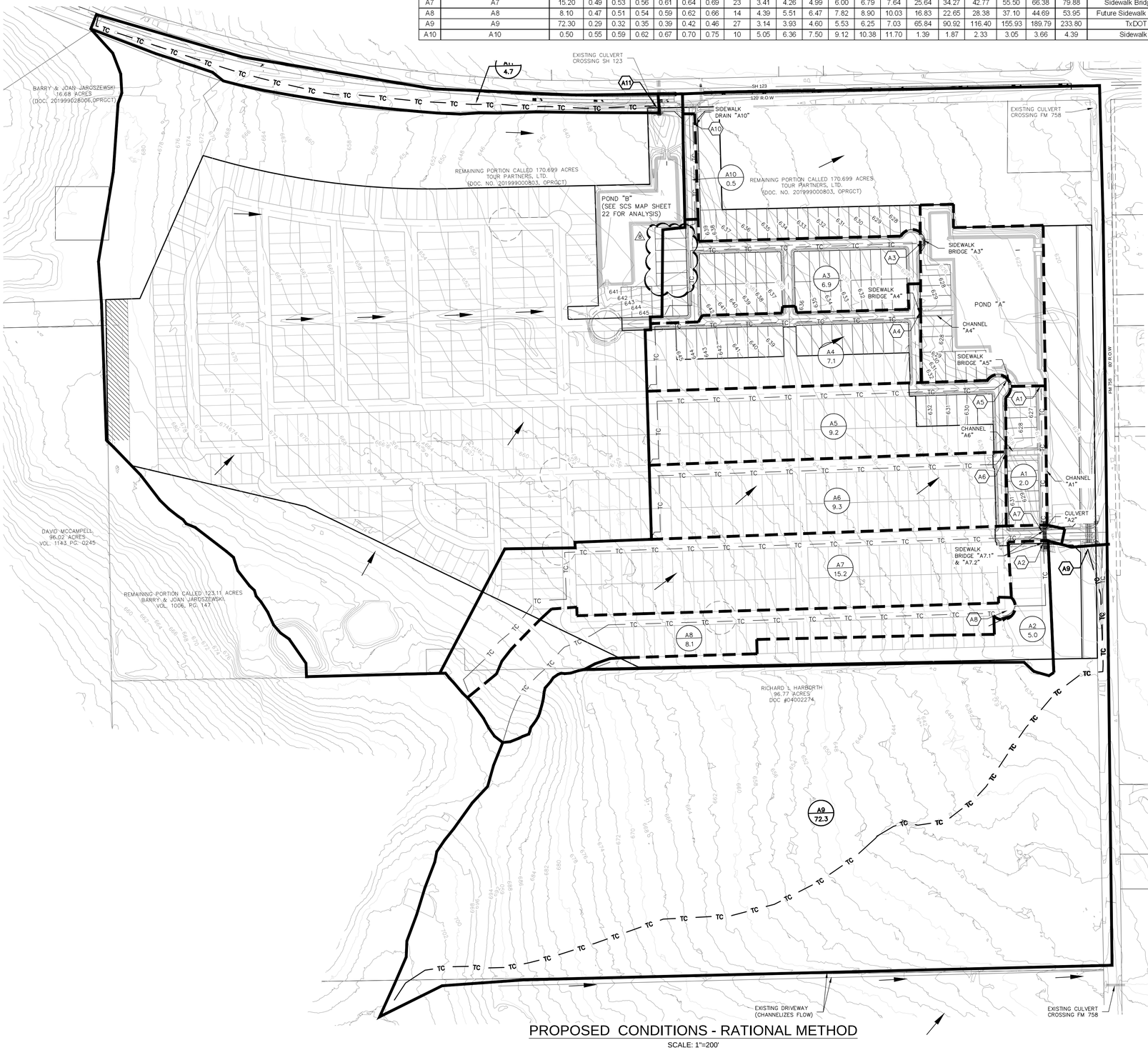
Jaro Subdivision North Unit 1 - Proposed Conditions Hydrology Calculations

Point	AREA ID	Area (ac)	C_2	C_5	C_{10}	C_{25}	C_{50}	C_{100}	T_c (min)	I_2 (in/hr)	I_5 (in/hr)	I_{10} (in/hr)	I_{25} (in/hr)	I_{50} (in/hr)	I_{100} (in/hr)	Q_2 (cfs)	Q_5 (cfs)	Q_{10} (cfs)	Q_{25} (cfs)	Q_{50} (cfs)	Q_{100} (cfs)	Location
A1	A1+A2+A6+A7+A8	39.60	0.48	0.51	0.55	0.59	0.63	0.67	13	4.54	5.71	6.72	8.13	9.25	10.42	86.19	116.15	145.83	190.69	229.53	276.84	Channel A1
A2	A2+A8	13.10	0.47	0.51	0.54	0.59	0.62	0.66	15	4.24	5.32	6.24	7.52	8.56	9.64	26.29	35.36	44.27	57.70	69.51	83.86	Culvert A2
A3	A3	6.90	0.53	0.56	0.60	0.64	0.68	0.72	13	4.54	5.71	6.72	8.13	9.25	10.42	16.47	22.11	27.66	36.01	43.23	51.96	Sidewalk Bridge A3
A4	A4	7.10	0.55	0.58	0.62	0.66	0.70	0.75	12	4.70	5.92	6.97	8.45	9.61	10.83	18.26	24.50	30.62	39.87	47.79	57.38	Sidewalk Bridge A4 & Channel A4
A5	A5	9.20	0.55	0.58	0.62	0.66	0.70	0.74	13	4.54	5.71	6.72	8.13	9.25	10.42	22.77	30.52	38.13	49.56	59.43	71.34	Sidewalk Bridge A5
A6	9.3	9.30	0.54	0.58	0.61	0.66	0.70	0.74	13	4.54	5.71	6.72	8.13	9.25	10.42	22.90	30.70	38.36	49.87	59.82	71.82	Sidewalk Bridge A6 & Channel A6
A7	A7	15.20	0.49	0.53	0.56	0.61	0.64	0.69	23	3.41	4.26	4.99	6.00	6.79	7.64	25.64	34.27	42.77	55.50	66.38	79.88	Sidewalk Bridge A7.1 & A7.2
A8	A8	8.10	0.47	0.51	0.54	0.59	0.62	0.66	14	4.39	5.51	6.47	7.82	8.90	10.03	16.83	22.65	28.38	37.10	44.69	53.95	Future Sidewalk Bridge & Channel
A9	A9	72.30	0.29	0.32	0.35	0.39	0.42	0.46	27	3.14	3.93	4.60	5.53	6.25	7.03	65.84	90.92	116.40	155.93	189.79	233.80	TxDOT Channel
A10	A10	0.50	0.55	0.59	0.62	0.67	0.70	0.75	10	5.05	6.36	7.50	9.12	10.38	11.70	1.39	1.87	2.33	3.05	3.66	4.39	Sidewalk Drain A10



PROPOSED CONDITIONS - RATIONAL METHOD

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
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

NB DEAN, LLC
1286 RIVER RD
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JARO NORTH SUBDIVISION
UNIT 1

DRAINAGE AREA MAP - PROPOSED

SHEET 21 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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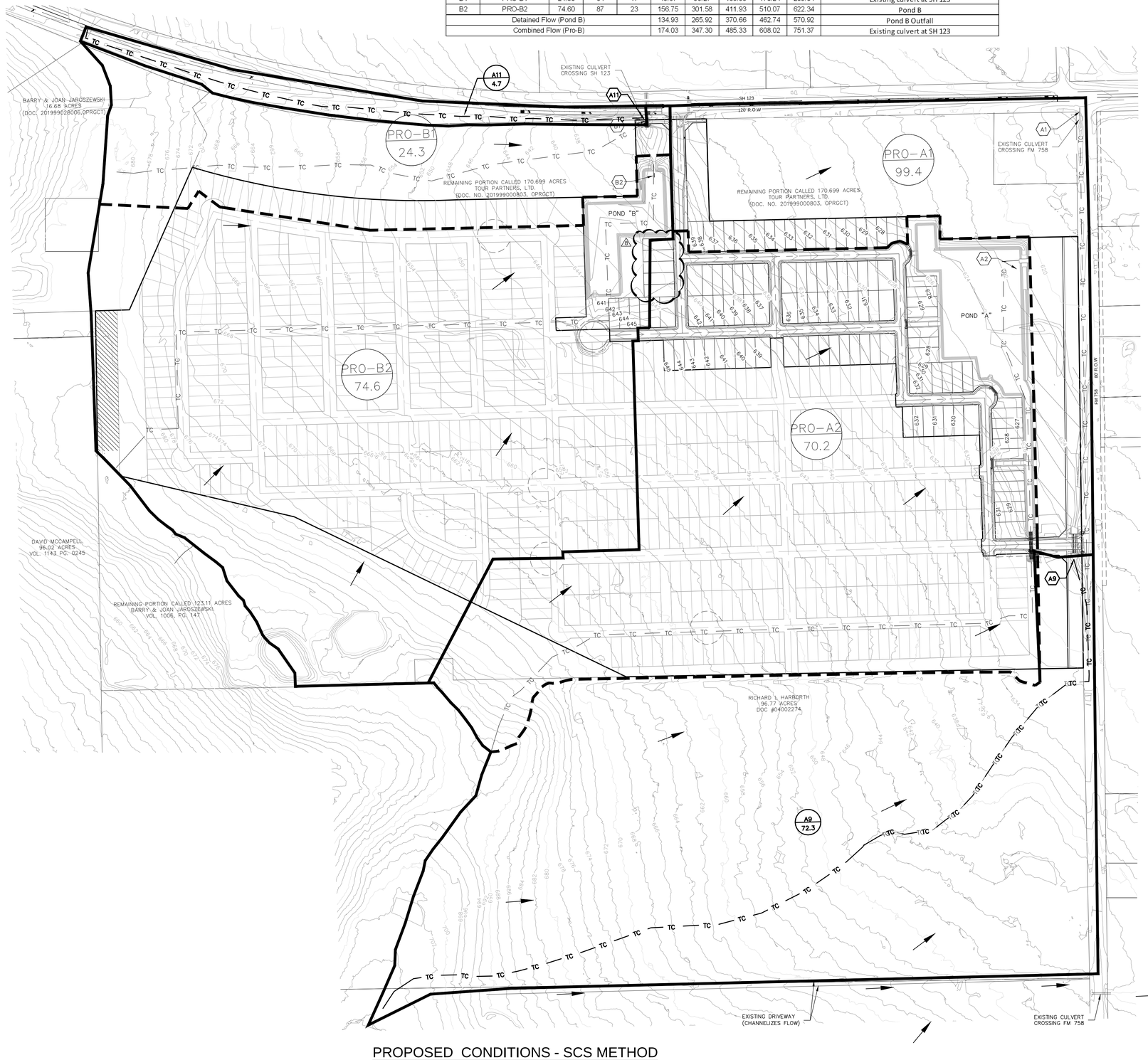
Jaro North Subdivision Unit 1 - Proposed Conditions Hydrology SCS Calculations

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
A1	PRO-A1	99.40	84	41	141.13	285.47	396.44	495.37	608.59	Existing culvert at the intersection of FM 758 & SH 123
A2	PRO-A2	70.20	87	18	155.36	299.06	408.25	505.34	616.42	Pond A
Detained Flow (Pond A)					109.58	204.42	279.88	362.23	462.04	Pond A Outfall
Combined Flow (Pro-A)					249.59	488.00	674.01	852.48	1060.34	Existing culvert at the intersection of FM 758 & SH 123
B1	PRO-B1	24.30	84	17	48.67	98.27	136.33	170.24	209.04	Existing culvert at SH 123
B2	PRO-B2	74.60	87	23	156.75	301.58	411.93	510.07	622.34	Pond B
Detained Flow (Pond B)					134.93	265.92	370.66	462.74	570.92	Pond B Outfall
Combined Flow (Pro-B)					174.03	347.30	485.33	608.02	751.37	Existing culvert at SH 123



PROPOSED CONDITIONS - SCS METHOD

SCALE: 1"=200'

0 200' 400'

SCALE: 1"=200'

LEGEND

- LIMITS OF DRAINAGE AREA
- LIMITS OF SUB-DRAINAGE AREA
- TC — TC — TIME OF CONCENTRATION
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STATE OF TEXAS
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12/10/2024

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JARO NORTH SUBDIVISION
UNIT 1

DRAINAGE AREA MAP -
PROPOSED SCS

SHEET 22 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL

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DRAINAGE INFRASTRUCTURE MAINTENANCE AND MONITORING GUIDELINES

- ACCESS – DRIVE OVER TOP OF CURB FOR MOWING AND MAINTENANCE OF DETENTION POND.

CHANNEL A1
12' MAINTENANCE ACCESS PROVIDED ADJACENT TO THE CHANNEL ALONG THE SOUTH SIDE. THIS CAN BE ACCESSED FROM STREET A.

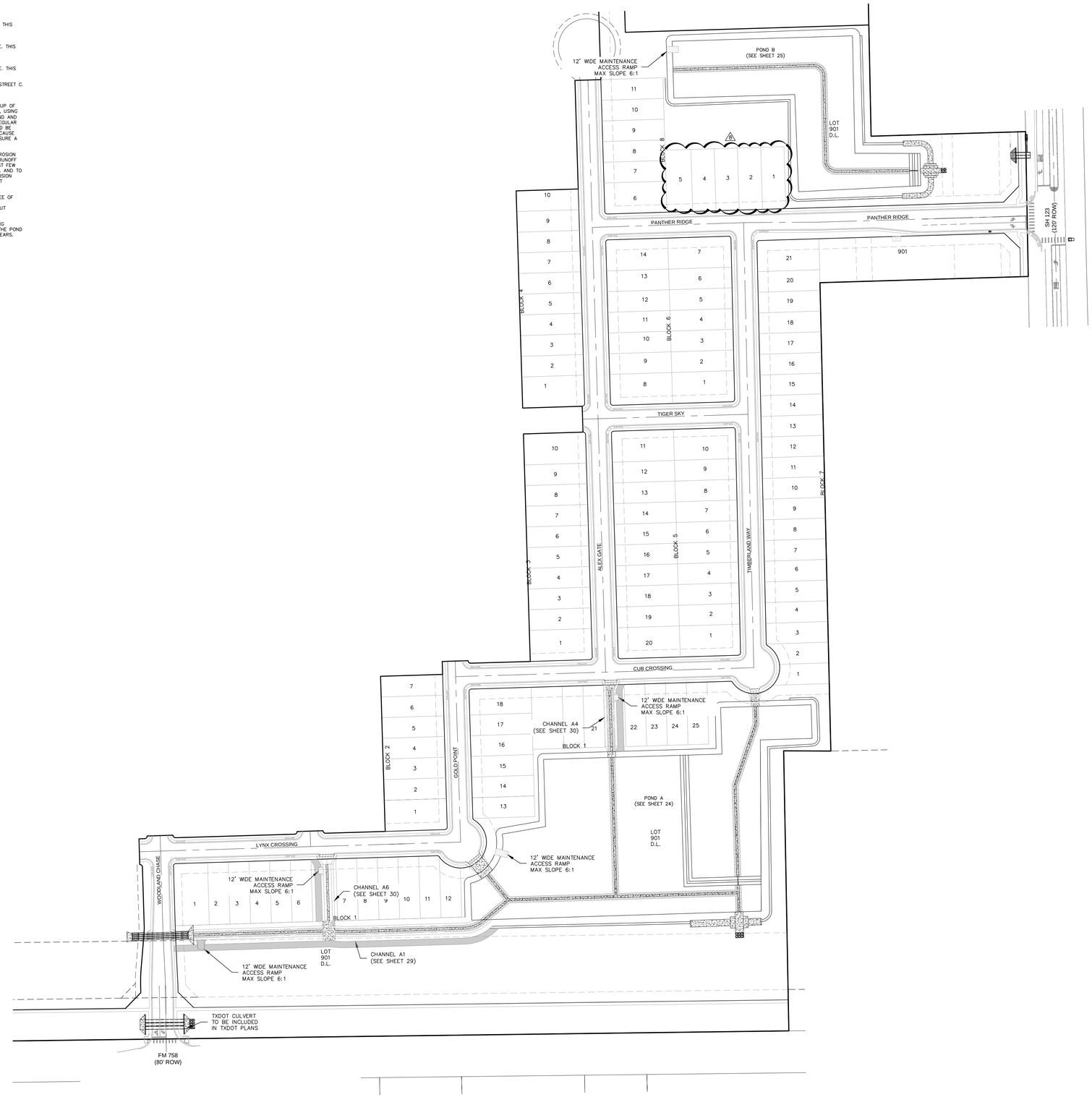
CHANNEL A4
12' MAINTENANCE ACCESS IS PROVIDED ADJACENT TO THE CHANNEL ALONG THE EAST SIDE. THIS CHANNEL CAN BE ACCESSED FROM STREET D.

CHANNEL A6
12' MAINTENANCE ACCESS IS PROVIDED ADJACENT TO THE CHANNEL ALONG THE WEST SIDE. THIS CHANNEL CAN BE ACCESSED FROM STREET B.

DETENTION POND A – WILL BE ACCESSED FROM RAMP OFF THE KNUCKLE SAC AT STREET B & STREET C.

DETENTION POND B – WILL BE ACCESSED FROM STREET F.

- SEASONAL MOWING AND LAWN CARE – IF THE DETENTION POND AND CHANNELS ARE MADE UP OF TURF GRASS, IT SHOULD BE MOWED AS NEEDED TO LIMIT VEGETATION HEIGHT TO 18 INCHES, USING A MULCHING MOWER (OR REMOVAL OF CLIPPINGS). IF NATIVE GRASSES ARE USED, THE POND AND CHANNELS MAY REQUIRE LESS FREQUENT MOWING, BUT A MINIMUM OF TWICE ANNUALLY. REGULAR MOWING SHOULD ALSO INCLUDE WEED CONTROL PRACTICES, HOWEVER HERBICIDE USE SHOULD BE KEPT TO A MINIMUM. HEALTHY GRASS CAN BE MAINTAINED WITHOUT USING FERTILIZERS BECAUSE RUNOFF USUALLY CONTAINS SUFFICIENT NUTRIENTS. IRRIGATION OF THE SITE CAN HELP ASSURE A DENSE AND HEALTHY VEGETATIVE COVER.
- INSPECTION – INSPECT DETENTION POND AND CHANNELS AT LEAST TWICE ANNUALLY FOR EROSION OR DAMAGE TO VEGETATION; HOWEVER, ADDITIONAL INSPECTION AFTER PERIODS OF HEAVY RUNOFF IS MOST DESIRABLE. MORE FREQUENT INSPECTIONS OF THE GRASS COVER DURING THE FIRST FEW YEARS AFTER ESTABLISHMENT WILL HELP TO DETERMINE IF ANY PROBLEMS ARE DEVELOPING, AND TO PLAN FOR LONG-TERM RESTORATIVE MAINTENANCE NEEDS. BARE SPOTS AND AREAS OF EROSION IDENTIFIED DURING SEMI-ANNUAL INSPECTIONS MUST BE REPLANTED AND RESTORED TO MEET SPECIFICATIONS.
- DEBRIS AND LITTER REMOVAL – THE DETENTION POND AND CHANNELS SHOULD BE KEPT FREE OF OBSTRUCTIONS TO REDUCE FLOATABLES BEING FLUSHED DOWNSTREAM, AND FOR AESTHETIC REASONS. THE NEED FOR THIS PRACTICE IS DETERMINED THROUGH PERIODIC INSPECTION, BUT SHOULD BE PERFORMED NO LESS THAN 2 TIMES PER YEAR.
- SEDIMENT REMOVAL – SEDIMENT MAY ACCUMULATE WITHIN THE DETENTION POND, PREVENTING UNIFORM OVERLAND FLOW. SEE ATTACHED EXHIBIT FOR SEDIMENT MARKER LOCATION NEAR THE POND OUTFALL. SEDIMENT IS TO BE REMOVED WHEN THE ACCUMULATED OR AT LEAST EVERY 10 YEARS.



LEGEND

- 12' MAINTENANCE ACCESS (2% MAX)
- 12' MAINTENANCE ACCESS RAMP (6:1 MAX)
- FLOW ARROWS
- D.L. DRAINAGE LOT

N

0 100' 200'
SCALE: 1"=100'

STATE OF TEXAS
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PROFESSIONAL ENGINEER
12/10/2024

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JAROS NORTH SUBDIVISION UNIT 1

OVERALL DRAINAGE MAP AND MAINTENANCE ACCESS PLAN

SHEET 23 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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DETENTION POND NOTES

EARTHFILL

1. SCOPE
THE WORK CONSISTS OF THE CONSTRUCTION OF EARTH EMBANKMENTS, OTHER EARTHFILLS, AND EARTH BACKFILLS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

EARTHFILL IS COMPOSED OF NATURAL EARTH MATERIALS THAT CAN BE PLACED AND COMPACTED BY CONSTRUCTION EQUIPMENT OPERATED IN A CONVENTIONAL MANNER.

EARTH BACKFILL IS COMPOSED OF NATURAL EARTH MATERIAL PLACED AND COMPACTED IN CONFINED SPACES OR ADJACENT TO STRUCTURES (INCLUDING PIPES) BY HAND TAMPING, MANUALLY DIRECTED POWER TAMPERS OR VIBRATING PLATES, OR THEIR EQUIVALENT.

2. MATERIAL
FILL MATERIALS SHALL CONTAIN NO FROZEN SOIL, SOD, BRUSH, ROOTS, OR OTHER PERISHABLE MATERIAL. UNLESS OTHERWISE NOTED ON THE PLANS, ROCK PARTICLES LARGER THAN 6" SHALL BE REMOVED PRIOR TO COMPACTION OF THE FILL.

THE TYPES OF MATERIAL USED IN THE VARIOUS FILLS SHALL BE AS LISTED AND DESCRIBED IN THE SPECIFICATIONS AND DRAWINGS.

3. FOUNDATION PREPARATION
FOUNDATIONS FOR EARTHFILL SHALL BE STRIPPED TO REMOVE VEGETATION AND OTHER UNSUITABLE MATERIAL OR SHALL BE EXCAVATED AS SPECIFIED.

EXCEPT AS OTHERWISE SPECIFIED, EARTH FOUNDATION SURFACES SHALL BE GRADED TO REMOVE SURFACE IRREGULARITIES AND SHALL BE SCARIFIED PARALLEL TO THE AXIS OF THE FILL OR OTHERWISE ACCEPTABLY SCORED AND LOOSENED TO A MINIMUM DEPTH OF 2 INCHES. THE MOISTURE CONTENT OF THE LOOSENED MATERIAL SHALL BE CONTROLLED AS SPECIFIED FOR THE EARTHFILL, AND THE SURFACE MATERIAL OF THE FOUNDATION SHALL BE COMPACTED AND BONDED WITH THE FIRST LAYER OF EARTHFILL AS SPECIFIED OR SUBSEQUENT LAYERS OF EARTHFILL.

EARTH ABUTMENT SURFACES SHALL BE FREE OF LOOSE, UNCOMPACTED EARTH IN EXCESS OF 2 INCHES IN DEPTH NORMAL TO THE SLOPE AND SHALL BE AT SUCH A MOISTURE CONTENT THAT THE EARTHFILL CAN BE COMPACTED AGAINST THEM TO PRODUCE A GOOD BOND BETWEEN THE FILL AND THE ABUTMENTS.

ROCK FOUNDATION AND ABUTMENT SURFACES SHALL BE CLEARED OF ALL LOOSE MATERIAL BY HAND OR OTHER EFFECTIVE MEANS AND SHALL BE FREE OF STANDING WATER WHEN FILL IS PLACED UPON THEM. OCCASIONAL ROCK OUTCROPS IN EARTH FOUNDATIONS FOR EARTHFILL, EXCEPT IN DAMS AND OTHER STRUCTURES DESIGNED TO RESTRAIN THE MOVEMENT OF WATER, SHALL NOT REQUIRE SPECIAL TREATMENT IF THEY DO NOT INTERFERE WITH COMPACTION OF THE FOUNDATION AND INITIAL LAYERS OF THE FILL OR THE BOND BETWEEN THE FOUNDATION AND THE FILL.

FOUNDATION AND ABUTMENT SURFACES SHALL BE NO STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL UNLESS OTHERWISE SPECIFIED. TEST PITS OR OTHER CAVITIES SHALL BE FILLED WITH COMPACTED EARTHFILL CONFORMING TO THE SPECIFICATIONS FOR THE EARTHFILL TO BE PLACED UPON THE FOUNDATION.

4. PLACEMENT
EARTHFILL SHALL BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS. THE THICKNESS OF EACH LAYER BEFORE COMPACTION SHALL NOT EXCEED THE MAXIMUM THICKNESS SPECIFIED AS SHOWN ON THE DRAWINGS. MATERIALS PLACED BY DUMPING IN PILES OR WINDOWS SHALL BE SPREAD UNIFORMLY TO NOT MORE THAN THE SPECIFIED THICKNESS BEFORE BEING COMPACTED.

HAND COMPACTED EARTH BACKFILL SHALL BE PLACED IN LAYERS WHOSE THICKNESS BEFORE COMPACTION DOES NOT EXCEED THE MAXIMUM THICKNESS SPECIFIED FOR LAYERS OF EARTH BACKFILL COMPACTED BY MANUALLY DIRECTED POWER TAMPERS.

EARTH BACKFILL SHALL BE PLACED IN A MANNER THAT PREVENTS DAMAGE TO THE STRUCTURES AND ALLOWS THE STRUCTURES TO ASSUME THE LOADS FROM THE EARTH BACKFILL GRADUALLY AND UNIFORMLY. THE HEIGHT OF THE EARTH BACKFILL ADJACENT TO A STRUCTURE SHALL BE INCREASED AT APPROXIMATELY THE SAME RATE ON ALL SIDES OF THE STRUCTURE.

EARTHFILL AND EARTH BACKFILL IN DAMS, LEVEES, AND OTHER STRUCTURES DESIGNED TO RESTRAIN THE MOVEMENT OF WATER SHALL BE PLACED TO MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:

(a) THE DISTRIBUTION OF MATERIALS THROUGHOUT EACH ZONE SHALL BE ESSENTIALLY UNIFORM, AND THE EARTHFILL SHALL BE FREE FROM LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE, MOISTURE CONTENT, OR GRADATION FROM THE SURROUNDING MATERIAL. ZONE EARTHFILLS SHALL BE CONSTRUCTED CONCURRENTLY UNLESS OTHERWISE SPECIFIED.

(b) IF THE SURFACE OF ANY LAYER BECOMES TOO HARD AND SMOOTH FOR PROPER BOND WITH THE SUCCEEDING LAYER, IT SHALL BE SCARIFIED PARALLEL TO THE AXIS OF THE FILL TO A DEPTH OF NOT LESS THAN 2 INCHES BEFORE THE NEXT LAYER IS PLACED.

(c) THE TOP SURFACE OF EMBANKMENTS SHALL BE MAINTAINED APPROXIMATELY LEVEL DURING CONSTRUCTION WITH TWO EXCEPTIONS: A CROWN OR CROSS-SLOPE OF ABOUT 2 PERCENT SHALL BE MAINTAINED TO ENSURE EFFECTIVE DRAINAGE, OR AS OTHERWISE SPECIFIED FOR DRAINFILL OR SECTIONAL ZONES.

(d) DAM EMBANKMENTS SHALL BE CONSTRUCTED IN CONTINUOUS LAYERS FROM ABUTMENT TO ABUTMENT EXCEPT WHERE OPENINGS TO FACILITATE CONSTRUCTION OR TO ALLOW THE PASSAGE OF STREAM FLOW DURING CONSTRUCTION ARE SPECIFICALLY AUTHORIZED IN THE CONTRACT.

(e) EMBANKMENTS BUILT AT DIFFERENT LEVELS AS DESCRIBED UNDER (C) OR (D) ABOVE SHALL BE CONSTRUCTED SO THAT THE SLOPE OF THE BONDING SURFACES BETWEEN EMBANKMENT IN PLACE AND EMBANKMENT TO BE PLACED IS NOT STEEPER THAN 3 FEET HORIZONTAL TO 1 FOOT VERTICAL. THE BONDING SURFACE OF THE EMBANKMENT IN PLACE SHALL BE STRIPPED OF ALL MATERIAL NOT MEETING THE REQUIREMENTS OF THIS SPECIFICATION AND SHALL BE SCARIFIED, MOISTENED, AND RECOMPACTED WHEN THE NEW EARTHFILL IS PLACED AGAINST IT. THIS ENSURES A GOOD BOND WITH THE NEW EARTHFILL AND OBTAINS THE SPECIFIED MOISTURE CONTENT AND DENSITY AT THE CONTACT OF THE INPLACE AND NEW EARTHFILLS.

(f) THE FILL MATERIAL SHALL BE FREE OF ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIAL. PLACING AND SPREADING OF FILL SHALL BEGIN ON THE LOWEST PART OF THE WORKING AREA AND CONTINUE IN HORIZONTAL LAYERS OF APPROXIMATE UNIFORM THICKNESS, NOT EXCEEDING 9 INCHES BEFORE COMPACTION. WHERE THE BORROW YIELDS MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED TOWARD THE WATERSIDE OF THE BERM. THE CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREA OF EACH LAYER IN A MANNER TO BREAK UP LARGE CLODS AND OBTAIN COMPACTION.

5. CONTROL OF MOISTURE CONTENT
DURING PLACEMENT AND COMPACTION OF EARTHFILL AND EARTH BACKFILL, THE MOISTURE CONTENT OF THE MATERIAL BEING PLACED SHALL BE MAINTAINED WITHIN THE SPECIFIED RANGE.

THE APPLICATION OF WATER TO THE EARTHFILL MATERIAL SHALL BE ACCOMPLISHED AT THE BORROW AREAS INSOFAR AS PRACTICABLE. WATER MAY BE APPLIED BY SPRINKLING THE MATERIAL AFTER PLACEMENT ON THE EARTHFILL, IF NECESSARY. UNIFORM MOISTURE DISTRIBUTION SHALL BE OBTAINED BY DISKING.

MATERIAL THAT IS TOO WET WHEN DEPOSITED ON THE EARTHFILL SHALL EITHER BE REMOVED OR BE DRIED TO THE SPECIFIED MOISTURE CONTENT PRIOR TO COMPACTION.

IF THE TOP SURFACE OF THE PRECEDING LAYER OF COMPACTED EARTHFILL OR A FOUNDATION OR ABUTMENT SURFACE IN THE ZONE OF CONTACT WITH THE EARTHFILL BECOMES TOO DRY TO PERMIT SUITABLE BOND, IT SHALL EITHER BE REMOVED OR SCARIFIED AND MOISTENED BY SPRINKLING TO AN ACCEPTABLE MOISTURE CONTENT BEFORE PLACEMENT OF THE NEXT LAYER OF EARTHFILL.

6. COMPACTION
EARTHFILL – EARTHFILL SHALL BE COMPACTED ACCORDING TO THE FOLLOWING REQUIREMENTS FOR THE CLASS OF COMPACTION SPECIFIED:

CLASS A COMPACTION – EACH LAYER OF EARTHFILL SHALL BE COMPACTED AS NECESSARY TO PROVIDE THE DENSITY OF THE EARTHFILL MATRIX NOT LESS THAN THE MINIMUM DENSITY SPECIFIED ON THE DRAWINGS. THE EARTHFILL MATRIX IS DEFINED AS THE PORTION OF THE EARTHFILL MATERIAL FINER THAN THE MAXIMUM PARTICLE SIZE USED IN THE COMPACTION TEST METHOD SPECIFIED.

7. REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE EARTHFILL
EARTHFILL PLACED AT DENSITIES LOWER THAN THE SPECIFIED MINIMUM DENSITY OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED ACCEPTABLE RANGE OF MOISTURE CONTENT OR OTHERWISE NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE REWORKED TO MEET THE REQUIREMENTS OR REMOVED AND REPLACED BY ACCEPTABLE EARTHFILL. THE REPLACEMENT EARTHFILL AND THE FOUNDATION, ABUTMENT, AND EARTHFILL SURFACES UPON WHICH IT IS PLACED SHALL CONFORM TO ALL REQUIREMENTS OF THIS SPECIFICATION FOR FOUNDATION PREPARATION, APPROVAL, PLACEMENT, MOISTURE CONTROL, AND COMPACTION.

8. TESTING
DURING THE COURSE OF THE WORK, THE CONTRACTOR WILL PERFORM QUALITY CONTROL TEST REQUIRED TO IDENTIFY MATERIAL; DETERMINE COMPACTION CHARACTERISTICS; DETERMINE MOISTURE CONTENT; AND DETERMINE DENSITY OF EARTHFILL IN PLACE. TESTS PERFORMED WILL BE SUBMITTED TO THE ENGINEER OF RECORD TO VERIFY THAT THE EARTHFILLS CONFORM TO CONTRACT REQUIREMENTS OF THE SPECIFICATIONS.

DENSITIES OF EARTHFILL REQUIRING CLASS A COMPACTION WILL BE DETERMINED IN ACCORDANCE WITH ASTM D 698, D 1556, D 2167, D 2922, OR D 2937 EXCEPT THAT THE VOLUME AND MOIST WEIGHT OF INCLUDED ROCK PARTICLES LARGER THAN THOSE USED IN THE COMPACTION TEST METHOD SPECIFIED FOR THE TYPE OF FILL WILL BE DETERMINED AND DEDUCTED FROM THE VOLUME AND MOIST WEIGHT OF THE TOTAL SAMPLE BEFORE COMPUTATION OF DENSITY OR, IF USING THE NUCLEAR GAUGE, ADDED TO THE SPECIFIED DENSITY TO BRING IT TO THE MEASURE OF EQUIVALENT COMPOSITION FOR COMPARISON (SEE ASTM D 4718). THE DENSITY SO COMPUTED IS USED TO DETERMINE THE PERCENT COMPACTION OF THE EARTHFILL MATRIX. UNLESS OTHERWISE SPECIFIED, MOISTURE CONTENT IS DETERMINED BY ONE OF THE FOLLOWING METHODS: ASTM D 2216, D 3017, D 4643, D 4944, OR D 4959.

EXTENDED DETENTION POND NOTES

CONSTRUCTION SPECIFICATION – TOP SOIL

1. VEGETATION OF POND BOTTOM – THE WORK CONSISTS OF PLACEMENT OF TOP SOIL ON NEW EARTH EMBANKMENTS, OTHER EARTHFILLS, AND EARTH BACKFILLS REQUIRED BY THE DRAWINGS.

2. MATERIAL – THE TOPSOIL SHALL BE FERTILE SOIL, CONSISTING PRIMARILY OF CLAY AND CLAYEY MATERIALS, WITH A PLASTICITY INDEX GREATER THAN 15, AND SHALL BE FREE OF LARGE ORGANIC OR ROCK MATERIAL.

3. APPLICATION – TOPSOIL SHALL BE PLACED AT GRADES INDICATED ON THE PLANS AND ROLLED TO REDUCE EROSION. PERIODIC INSPECTION ARE REQUIRED AND ADDITIONAL TOPSOIL ADDED AS NEEDED UNTIL VEGETATION HAS ESTABLISHED

CONSTRUCTION SPECIFICATION – VEGETATION

1. VEGETATION OF EMBANKMENT – THE WORK CONSISTS OF ESTABLISHING VEGETATION ON NEW EARTH EMBANKMENTS, OTHER EARTHFILLS, AND EARTH BACKFILLS REQUIRED BY THE DRAWINGS.

2. MATERIAL – VEGETATION SHALL CONSIST OF "NATIVE SUN TURF GRASS" AS SUPPLIED BY NATIVE AMERICAN SEED IN JUNCTION, TX, CONSISTING OF 34% BLUE GRAMA AND 64% BUFFALO GRASS, OR ENGINEER APPROVED EQUAL. SEED MIXTURE SHALL CONSIST OF A PURE LIVE SEED OF 90-95%.

3. APPLICATION – THE SEED MIXTURE SHALL BE INSTALLED PER DISTRIBUTORS RECOMMENDATIONS AT A RATE OF 1 LB PER 400 SQFT. SEED MIXTURE SHALL BE WATERED AS REQUIRED UNTIL VEGETATION IS ESTABLISHED.

IMPERVIOUS CORE COMPACTION NOTE:
COMPACTED CLAY CORE TO BE PLACED A MINIMUM OF 2' BELOW EXISTING GRADE ALONG THE ENTIRE LENGTH OF THE BERM. MATERIAL TO HAVE A PI OF 30 OR GREATER, MINIMUM COMPACTED DRY DENSITY OF 90% AND GROUND CONTENT NO MORE THAN 5% BY WEIGHT LARGER THAN NO.4 SIEVE.

DETENTION POND NOTES:
CONSTRUCTION SPECIFICATION – TOP SOIL

1. VEGETATION OF POND BOTTOM – THE WORK CONSISTS OF PLACEMENT OF TOP SOIL ON NEW EARTH EMBANKMENTS, OTHER EARTHFILLS, AND EARTH BACKFILLS REQUIRED BY THE DRAWINGS.

2. MATERIAL – THE TOPSOIL SHALL BE FERTILE SOIL, CONSISTING PRIMARILY OF CLAY AND CLAYEY MATERIALS, WITH A PLASTICITY INDEX GREATER THAN 15, AND SHALL BE FREE OF LARGE ORGANIC OR ROCK MATERIAL.

3. APPLICATION – TOPSOIL SHALL BE PLACED AT GRADES INDICATED ON THE PLANS AND ROLLED TO REDUCE EROSION. PERIODIC INSPECTION ARE REQUIRED AND ADDITIONAL TOPSOIL ADDED AS NEEDED UNTIL VEGETATION HAS ESTABLISHED

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DRAINAGE INFRASTRUCTURE MAINTENANCE AND MONITORING GUIDELINES

- ACCESS – DRIVE OVER TOP OF CURB FOR MOWING AND MAINTENANCE OF DETENTION POND.

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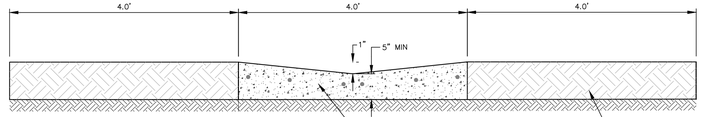
900	PROPOSED CONTOUR
	DRAINAGE FLOW ARROW
	GRADE BREAK/SWALE
	SOIL RETENTION BLANKET
D.L.	DRAINAGE LOT



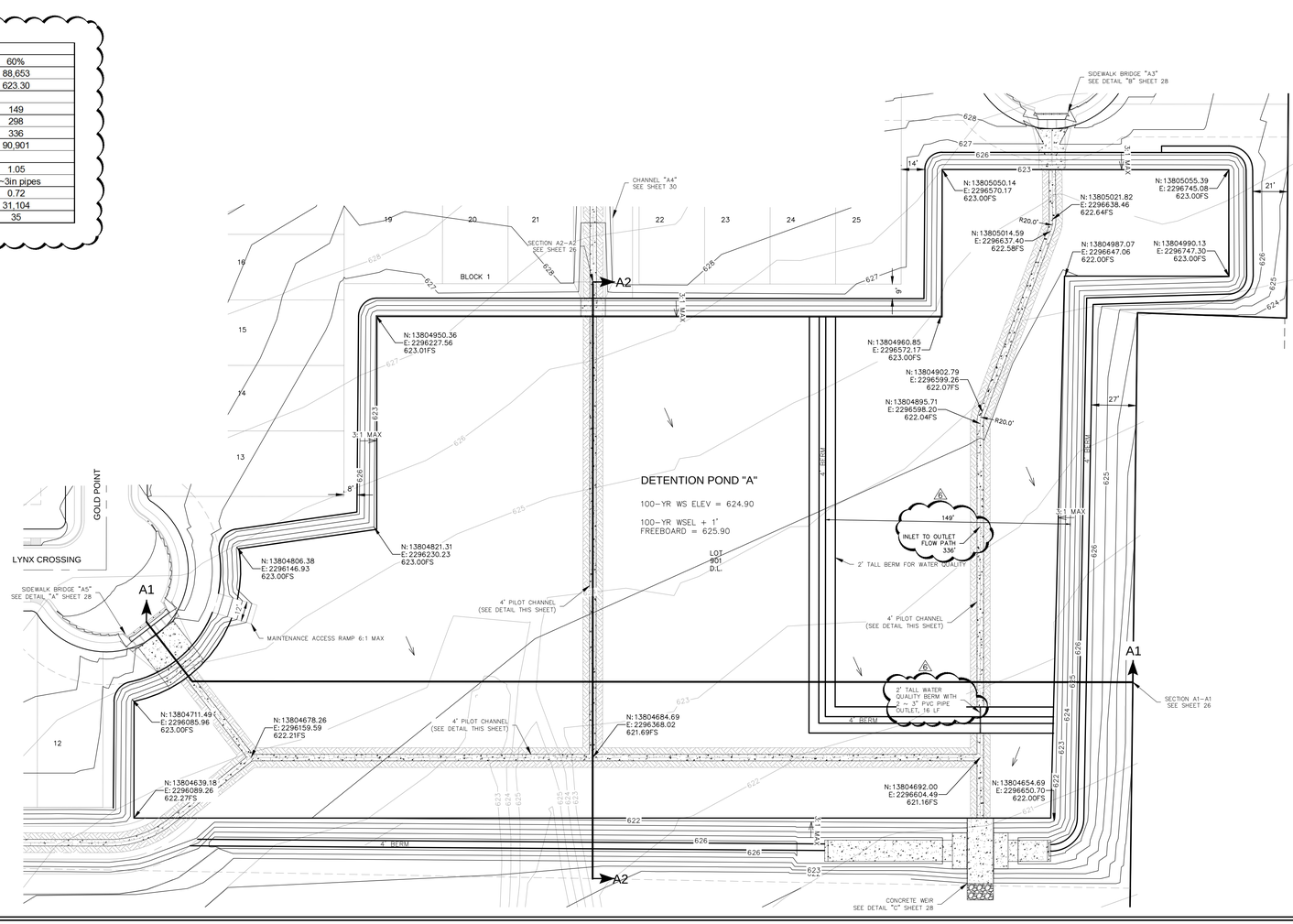
PILOT CHANNEL DETAIL
NOT TO SCALE

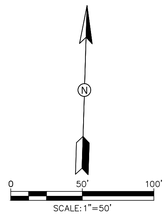
Detention Pond A Hydraulics				
Storm Event	Q (CFS)	Water Surface Elevation	V (FT/S)	T (HRS)
2	109.58	622.62	4.23	27.47
10	204.42	623.45	5.30	27.63
25	279.88	624.02	5.83	27.73
50	362.23	624.46	5.04	27.77
100	462.04	624.90	4.87	27.83

Detention Pond A Storage Summary				
Elev	Stage (ft)	Area (sf)	Incremental Storage	Total Storage
621.0	0.00	0	0	0
622.0	1.00	72,234	36,117	36,117
623.0	2.00	152,235	112,235	148,352
624.0	3.00	157,367	154,801	303,153
625.0	4.00	162,551	159,959	463,112
626.0	5.00	167,789	165,170	628,282
626.5	5.50	170,443	84,558	712,840

Overflow Weir Calculations Pond A	Q(cfs)
Proposed 25-yr Flow	408.25
Detained Outfall @ 100yr WSEL	462.04
Total Outfall Flow to Top of Berm	870.29
Emergency Overflow Release Above 100yr WSEL	413.48

Pond A - Water Quality	
Water Quality Volume %	60%
Water Quality Volume Needed	88,653
Water Quality Elevation	623.30
WQ Basin Width (ft)	149
WQ Basin Length Required (Inlet to Outlet) (ft)	298
WQ Basin Length Provided (Inlet to Outlet) (ft)	336
Water Quality Volume Provided (CF)	90,901
Flow to Empty WQV in 24 hr (cfs)	1.05
Outlet size (in)	2 -3in pipes
Outlet flow (cfs)	0.72
WQV Drained in 12 hr (cf)	31,104
Time to drain to empty pond (hrs)	35





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

JARO NORTH SUBDIVISION
UNIT 1

DETENTION POND A PLAN & NOTES

SHEET 24 OF 49

NO	DATE	ISSUES AND REVISIONS
6	5/31/2024	REVISED PER CONB COMMENTS

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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Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\06 DETENTION POND A CROSS-SECTIONS.dwg User: Jamesingalls May 31, 2024 - 4:01pm

DETENTION POND NOTES

EARTHFILL

1. SCOPE
THE WORK CONSISTS OF THE CONSTRUCTION OF EARTH EMBANKMENTS, OTHER EARTHFILLS, AND EARTH BACKFILLS REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

EARTHFILL IS COMPOSED OF NATURAL EARTH MATERIALS THAT CAN BE PLACED AND COMPACTED BY CONSTRUCTION EQUIPMENT OPERATED IN A CONVENTIONAL MANNER.

EARTH BACKFILL IS COMPOSED OF NATURAL EARTH MATERIAL PLACED AND COMPACTED IN CONFINED SPACES OR ADJACENT TO STRUCTURES (INCLUDING PIPES) BY HAND TAMPING, MANUALLY DIRECTED POWER TAMPERS OR VIBRATING PLATES, OR THEIR EQUIVALENT.

2. MATERIAL
FILL MATERIALS SHALL CONTAIN NO FROZEN SOIL, SOD, BRUSH, ROOTS, OR OTHER PERISHABLE MATERIAL. UNLESS OTHERWISE NOTED ON THE PLANS, ROCK PARTICLES LARGER THAN 6" SHALL BE REMOVED PRIOR TO COMPACTION OF THE FILL.

THE TYPES OF MATERIAL USED IN THE VARIOUS FILLS SHALL BE AS LISTED AND DESCRIBED IN THE SPECIFICATIONS AND DRAWINGS.

3. FOUNDATION PREPARATION
FOUNDATIONS FOR EARTHFILL SHALL BE STRIPPED TO REMOVE VEGETATION AND OTHER UNSUITABLE MATERIAL OR SHALL BE EXCAVATED AS SPECIFIED.

EXCEPT AS OTHERWISE SPECIFIED, EARTH FOUNDATION SURFACES SHALL BE GRADED TO REMOVE SURFACE IRREGULARITIES AND SHALL BE SCARIFIED PARALLEL TO THE AXIS OF THE FILL OR OTHERWISE ACCEPTABLY SCORED AND LOOSENED TO A MINIMUM DEPTH OF 2 INCHES. THE MOISTURE CONTENT OF THE LOOSENED MATERIAL SHALL BE CONTROLLED AS SPECIFIED FOR THE EARTHFILL, AND THE SURFACE MATERIAL OF THE FOUNDATION SHALL BE COMPACTED AND BONDED WITH THE FIRST LAYER OF EARTHFILL AS SPECIFIED OR SUBSEQUENT LAYERS OF EARTHFILL.

EARTH ABUTMENT SURFACES SHALL BE FREE OF LOOSE, UNCOMPACTED EARTH IN EXCESS OF 2 INCHES IN DEPTH NORMAL TO THE SLOPE AND SHALL BE AT SUCH A MOISTURE CONTENT THAT THE EARTHFILL CAN BE COMPACTED AGAINST THEM TO PRODUCE A GOOD BOND BETWEEN THE FILL AND THE ABUTMENTS.

ROCK FOUNDATION AND ABUTMENT SURFACES SHALL BE CLEARED OF ALL LOOSE MATERIAL BY HAND OR OTHER EFFECTIVE MEANS AND SHALL BE FREE OF STANDING WATER WHEN FILL IS PLACED UPON THEM. OCCASIONAL ROCK OUTCROPS IN EARTH FOUNDATIONS FOR EARTHFILL, EXCEPT IN DAMS AND OTHER STRUCTURES DESIGNED TO RESTRAIN THE MOVEMENT OF WATER, SHALL NOT REQUIRE SPECIAL TREATMENT IF THEY DO NOT INTERFERE WITH COMPACTION OF THE FOUNDATION AND INITIAL LAYERS OF THE FILL OR THE BOND BETWEEN THE FOUNDATION AND THE FILL.

FOUNDATION AND ABUTMENT SURFACES SHALL BE NO STEEPER THAN ONE HORIZONTAL TO ONE VERTICAL UNLESS OTHERWISE SPECIFIED. TEST PITS OR OTHER CAVITIES SHALL BE FILLED WITH COMPACTED EARTHFILL CONFORMING TO THE SPECIFICATIONS FOR THE EARTHFILL TO BE PLACED UPON THE FOUNDATION.

4. PLACEMENT
EARTHFILL SHALL BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS. THE THICKNESS OF EACH LAYER BEFORE COMPACTION SHALL NOT EXCEED THE MAXIMUM THICKNESS SPECIFIED AS SHOWN ON THE DRAWINGS. MATERIALS PLACED BY DUMPING IN PILES OR WINDOWS SHALL BE SPREAD UNIFORMLY TO NOT MORE THAN THE SPECIFIED THICKNESS BEFORE BEING COMPACTED.

HAND COMPACTED EARTH BACKFILL SHALL BE PLACED IN LAYERS WHOSE THICKNESS BEFORE COMPACTION DOES NOT EXCEED THE MAXIMUM THICKNESS SPECIFIED FOR LAYERS OF EARTH BACKFILL COMPACTED BY MANUALLY DIRECTED POWER TAMPERS.

EARTH BACKFILL SHALL BE PLACED IN A MANNER THAT PREVENTS DAMAGE TO THE STRUCTURES AND ALLOWS THE STRUCTURES TO ASSUME THE LOADS FROM THE EARTH BACKFILL GRADUALLY AND UNIFORMLY. THE HEIGHT OF THE EARTH BACKFILL ADJACENT TO A STRUCTURE SHALL BE INCREASED AT APPROXIMATELY THE SAME RATE ON ALL SIDES OF THE STRUCTURE.

EARTHFILL AND EARTH BACKFILL IN DAMS, LEVEES, AND OTHER STRUCTURES DESIGNED TO RESTRAIN THE MOVEMENT OF WATER SHALL BE PLACED TO MEET THE FOLLOWING ADDITIONAL REQUIREMENTS:

(a) THE DISTRIBUTION OF MATERIALS THROUGHOUT EACH ZONE SHALL BE ESSENTIALLY UNIFORM, AND THE EARTHFILL SHALL BE FREE FROM LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE, MOISTURE CONTENT, OR GRADATION FROM THE SURROUNDING MATERIAL. ZONE EARTHFILLS SHALL BE CONSTRUCTED CONCURRENTLY UNLESS OTHERWISE SPECIFIED.

(b) IF THE SURFACE OF ANY LAYER BECOMES TOO HARD AND SMOOTH FOR PROPER BOND WITH THE SUCCEEDING LAYER, IT SHALL BE SCARIFIED PARALLEL TO THE AXIS OF THE FILL TO A DEPTH OF NOT LESS THAN 2 INCHES BEFORE THE NEXT LAYER IS PLACED.

(c) THE TOP SURFACE OF EMBANKMENTS SHALL BE MAINTAINED APPROXIMATELY LEVEL UNLESS ONE OF TWO EXCEPTIONS: A CROWN OR CROSS-SLOPE OF ABOUT 2 PERCENT SHALL BE MAINTAINED TO ENSURE EFFECTIVE DRAINAGE, OR AS OTHERWISE SPECIFIED FOR DRAINFILL OR SECTIONAL ZONES.

(d) DAM EMBANKMENTS SHALL BE CONSTRUCTED IN CONTINUOUS LAYERS FROM ABUTMENT TO ABUTMENT EXCEPT WHERE OPENINGS TO FACILITATE CONSTRUCTION OR TO ALLOW THE PASSAGE OF STREAM FLOW DURING CONSTRUCTION ARE SPECIFICALLY AUTHORIZED IN THE CONTRACT.

(e) EMBANKMENTS BUILT AT DIFFERENT LEVELS AS DESCRIBED UNDER (C) OR (D) ABOVE SHALL BE CONSTRUCTED SO THAT THE SLOPE OF THE BONDING SURFACES BETWEEN EMBANKMENT IN PLACE AND EMBANKMENT TO BE PLACED IS NOT STEEPER THAN 3 FEET HORIZONTAL TO 1 FOOT VERTICAL. THE BONDING SURFACE OF THE EMBANKMENT IN PLACE SHALL BE STRIPPED OF ALL MATERIAL NOT MEETING THE REQUIREMENTS OF THIS SPECIFICATION AND SHALL BE SCARIFIED, MOISTENED, AND RECOMPACTED WHEN THE NEW EARTHFILL IS PLACED AGAINST IT. THIS ENSURES A GOOD BOND WITH THE NEW EARTHFILL AND OBTAINS THE SPECIFIED MOISTURE CONTENT AND DENSITY AT THE CONTACT OF THE INPLACE AND NEW EARTHFILLS.

(f) THE FILL MATERIAL SHALL BE FREE OF ORGANIC MATTER AND OTHER OBJECTIONABLE MATERIAL. PLACING AND SPREADING OF FILL SHALL BEGIN ON THE LOWEST PART OF THE WORKING AREA AND CONTINUE IN HORIZONTAL LAYERS OF APPROXIMATE UNIFORM THICKNESS, NOT EXCEEDING 9 INCHES BEFORE COMPACTION. WHERE THE BORROW YIELDS MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED TOWARD THE WATERSIDE OF THE BERM. THE CONSTRUCTION EQUIPMENT SHALL BE OPERATED OVER THE AREA OF EACH LAYER IN A MANNER TO BREAK UP LARGE CLODS AND OBTAIN COMPACTION.

5. CONTROL OF MOISTURE CONTENT
DURING PLACEMENT AND CONSTRUCTION OF EARTHFILL AND EARTH BACKFILL, THE MOISTURE CONTENT OF THE MATERIAL BEING PLACED SHALL BE MAINTAINED WITHIN THE SPECIFIED RANGE.

THE APPLICATION OF WATER TO THE EARTHFILL MATERIAL SHALL BE ACCOMPLISHED AT THE BORROW AREAS INSOFAR AS PRACTICABLE. WATER MAY BE APPLIED BY SPRINKLING THE MATERIAL AFTER PLACEMENT ON THE EARTHFILL, IF NECESSARY. UNIFORM MOISTURE DISTRIBUTION SHALL BE OBTAINED BY DISKING.

MATERIAL THAT IS TOO WET WHEN DEPOSITED ON THE EARTHFILL SHALL EITHER BE REMOVED OR BE DRIED TO THE SPECIFIED MOISTURE CONTENT PRIOR TO COMPACTION.

IF THE TOP SURFACE OF THE PRECEDING LAYER OF COMPACTED EARTHFILL OR A FOUNDATION OR ABUTMENT SURFACE IN THE ZONE OF CONTACT WITH THE EARTHFILL BECOMES TOO DRY TO PERMIT SUITABLE BOND, IT SHALL EITHER BE REMOVED OR SCARIFIED AND MOISTENED BY SPRINKLING TO AN ACCEPTABLE MOISTURE CONTENT BEFORE PLACEMENT OF THE NEXT LAYER OF EARTHFILL.

6. COMPACTION
EARTHFILL – EARTHFILL SHALL BE COMPACTED ACCORDING TO THE FOLLOWING REQUIREMENTS FOR THE CLASS OF COMPACTION SPECIFIED:

CLASS A COMPACTION – EACH LAYER OF EARTHFILL SHALL BE COMPACTED AS NECESSARY TO PROVIDE THE DENSITY OF THE EARTHFILL MATRIX NOT LESS THAN THE MINIMUM DENSITY SPECIFIED ON THE DRAWINGS. THE EARTHFILL MATRIX IS DEFINED AS THE PORTION OF THE EARTHFILL MATERIAL FINER THAN THE MAXIMUM PARTICLE SIZE USED IN THE COMPACTION TEST METHOD SPECIFIED.

7. REWORKING OR REMOVAL AND REPLACEMENT OF DEFECTIVE EARTHFILL
EARTHFILL PLACED AT DENSITIES LOWER THAN THE SPECIFIED MINIMUM DENSITY OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED ACCEPTABLE RANGE OF MOISTURE CONTENT OR OTHERWISE NOT CONFORMING TO THE REQUIREMENTS OF THE SPECIFICATIONS SHALL BE REWORKED TO MEET THE REQUIREMENTS OR REMOVED AND REPLACED BY ACCEPTABLE EARTHFILL. THE REPLACEMENT EARTHFILL AND THE FOUNDATION, ABUTMENT, AND EARTHFILL SURFACES UPON WHICH IT IS PLACED SHALL CONFORM TO ALL REQUIREMENTS OF THIS SPECIFICATION FOR FOUNDATION PREPARATION, APPROVAL, PLACEMENT, MOISTURE CONTROL, AND COMPACTION.

8. TESTING
DURING THE COURSE OF THE WORK, THE CONTRACTOR WILL PERFORM QUALITY CONTROL TEST REQUIRED TO IDENTIFY MATERIAL; DETERMINE COMPACTION CHARACTERISTICS; DETERMINE MOISTURE CONTENT; AND DETERMINE DENSITY OF EARTHFILL IN PLACE. TESTS PERFORMED WILL BE SUBMITTED TO THE ENGINEER OF RECORD TO VERIFY THAT THE EARTHFILLS CONFORM TO CONTRACT REQUIREMENTS OF THE SPECIFICATIONS.

DENSITIES OF EARTHFILL REQUIRING CLASS A COMPACTION WILL BE DETERMINED IN ACCORDANCE WITH ASTM D 698, D 1556, D 2167, D 2922, OR D 2937 EXCEPT THAT THE VOLUME AND MOIST WEIGHT OF INCLUDED ROCK PARTICLES LARGER THAN THOSE USED IN THE COMPACTION TEST METHOD SPECIFIED FOR THE TYPE OF FILL WILL BE DETERMINED AND DEDUCTED FROM THE VOLUME AND MOIST WEIGHT OF THE TOTAL SAMPLE BEFORE COMPUTATION OF DENSITY OR, IF USING THE NUCLEAR GAUGE, ADDED TO THE SPECIFIED DENSITY TO BRING IT TO THE MEASURE OF EQUIVALENT COMPOSITION FOR COMPARISON (SEE ASTM D 4718). THE DENSITY SO COMPUTED IS USED TO DETERMINE THE PERCENT COMPACTION OF THE EARTHFILL MATRIX. UNLESS OTHERWISE SPECIFIED, MOISTURE CONTENT IS DETERMINED BY ONE OF THE FOLLOWING METHODS: ASTM D 2216, D 3017, D 4643, D 4944, OR D 4959.

EXTENDED DETENTION POND NOTES

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IMPERVIOUS CORE COMPACTION NOTE:
COMPACTED CLAY CORE TO BE PLACED A MINIMUM OF 2' BELOW EXISTING GRADE ALONG THE ENTIRE LENGTH OF THE BERM. MATERIAL TO HAVE A PI OF 30 OR GREATER, MINIMUM COMPACTED DRY DENSITY OF 90% AND GROUND CONTENT NO MORE THAN 5% BY WEIGHT LARGER THAN NO.4 SIEVE.

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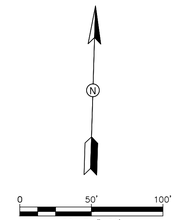

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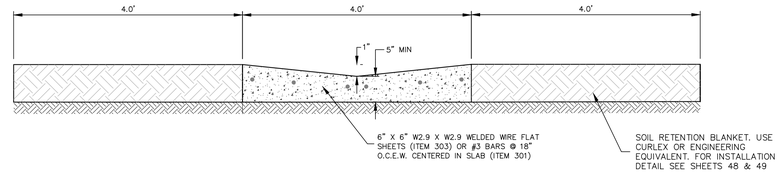


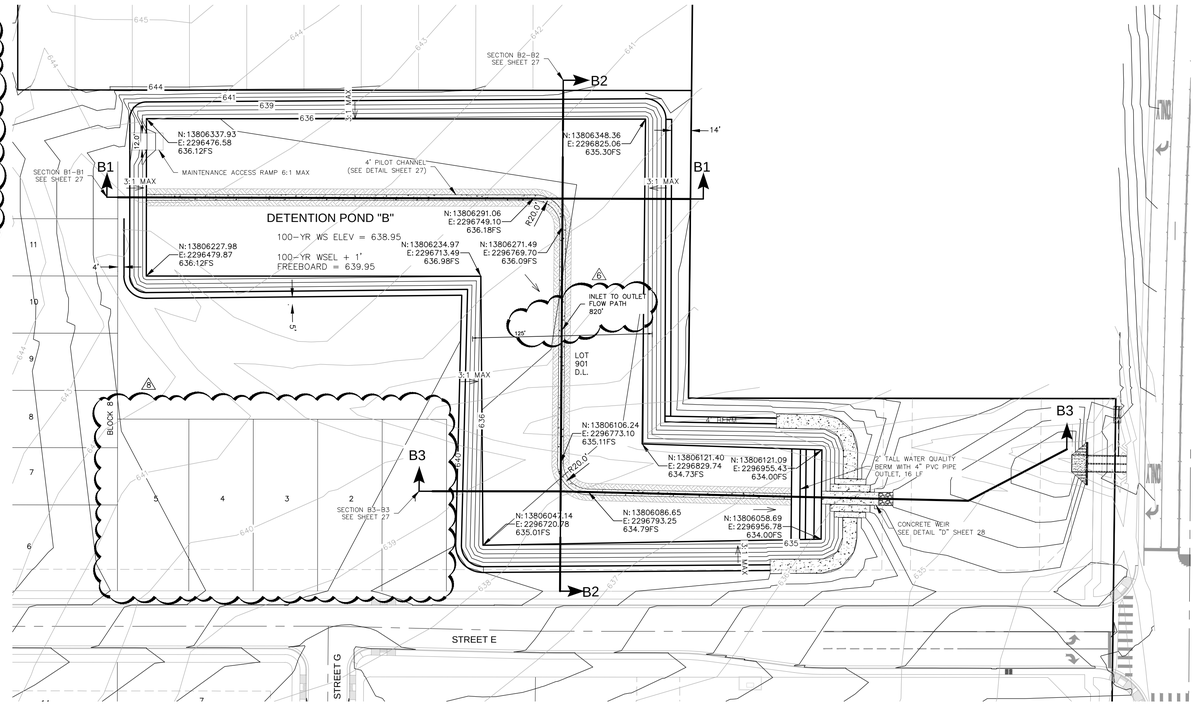
PILOT CHANNEL DETAIL
NOT TO SCALE

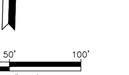
Detention Pond B Storage Summary				
Elev	Stage (ft)	Area (sf)	Incremental Storage	Total Storage
634.0	0.00	0	0	0
635.0	1.00	14,872	7,436	7,436
636.0	2.00	40,808	27,840	35,276
637.0	3.00	74,673	57,741	93,017
638.0	4.00	79,442	77,058	170,074
639.0	5.00	84,232	81,837	251,911
640.0	6.00	89,085	86,659	338,570

Detention Pond B Hydraulics				
Storm Event	Q (CFS)	Water Surface Elevation	V (FT/S)	T (HRS)
2	134.93	636.54	3.47	26.27
10	265.92	637.49	4.20	26.37
25	370.66	638.05	4.65	26.40
50	462.74	638.48	4.97	26.43
100	570.92	638.95	5.30	26.47

Overflow Weir Calculations Pond B	Q(cfs)
Proposed 25-yr Flow	411.93
Detained Outfall @ 100yr WSEL	569.87
Total Outfall Flow to Top of Berm	981.80
Emergency Overflow Release Above 100yr WSEL	426.43

Pond B - Water Quality	
Water Quality Volume %	40%
Water Quality Volume Needed	59,102
Water Quality Elevation	636.00
WQ Basin Width (ft)	110
WQ Basin Length Required (Inlet to Outlet) (ft)	220
WQ Basin Length Provided (Inlet to Outlet) (ft)	820
Water Quality Volume Provided (CF)	66,629
Flow to Empty WQV in 24 hr (cfs)	0.77
Outlet size (in)	4
Outlet flow (cfs)	0.64
WQV Drained in 12 hr (cf)	27,648
Time to drain to empty pond (hrs)	29





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

JARO NORTH SUBDIVISION
UNIT 1

DETENTION POND B
PLAN & NOTES

SHEET 25 OF 49

NO	DATE	ISSUES AND REVISIONS
6	5/31/2024	REVISED PER CONB COMMENTS
8	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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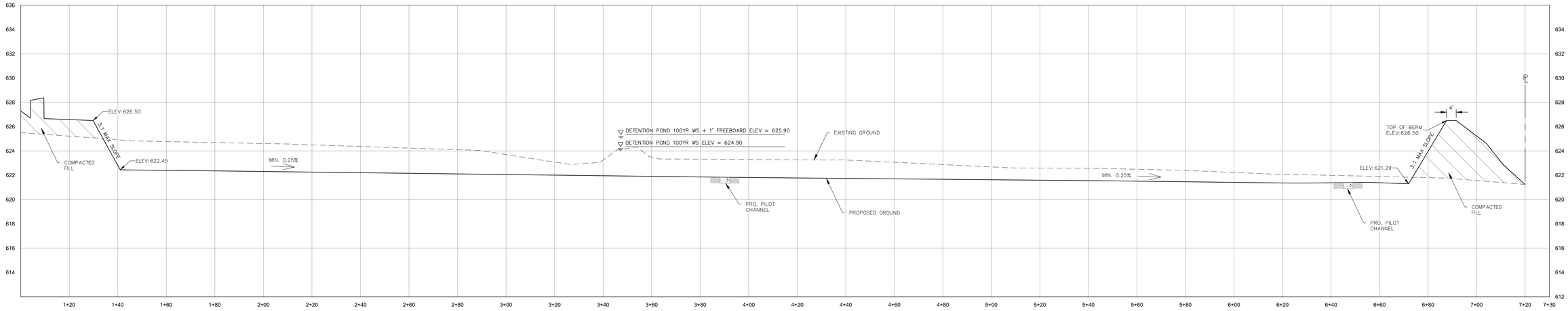
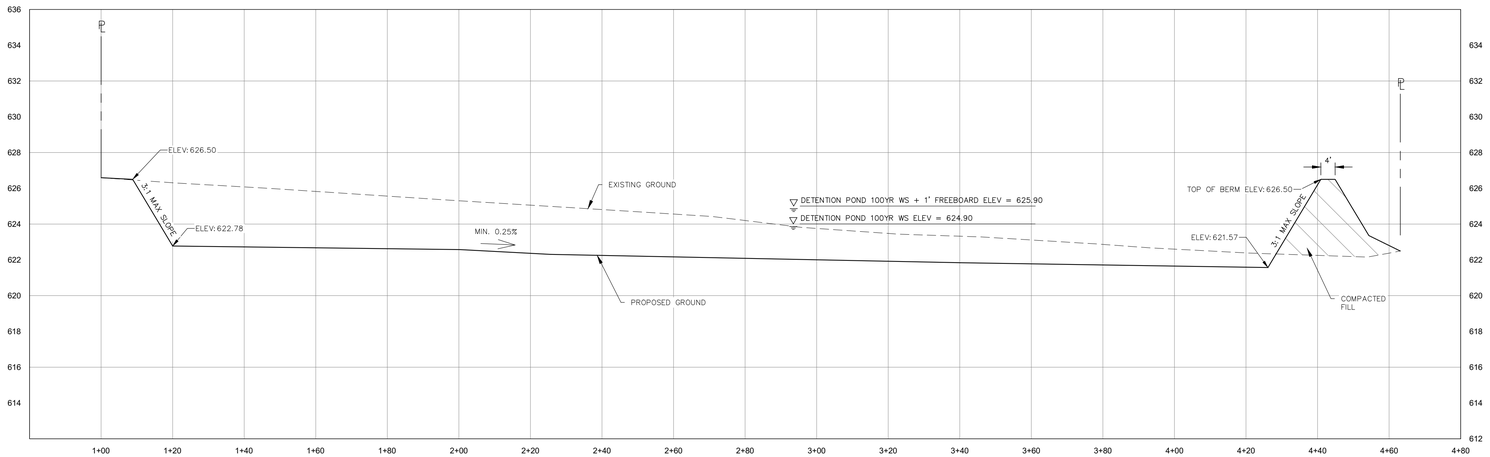
Drawing Name: N:\Projects\BEACH12 Jaro North Subdivision\Civil\Construction Drawings\27 DETENTION POND B CROSS SECTIONS.dwg User: chuckware Dec 09, 2024 - 2:46pm

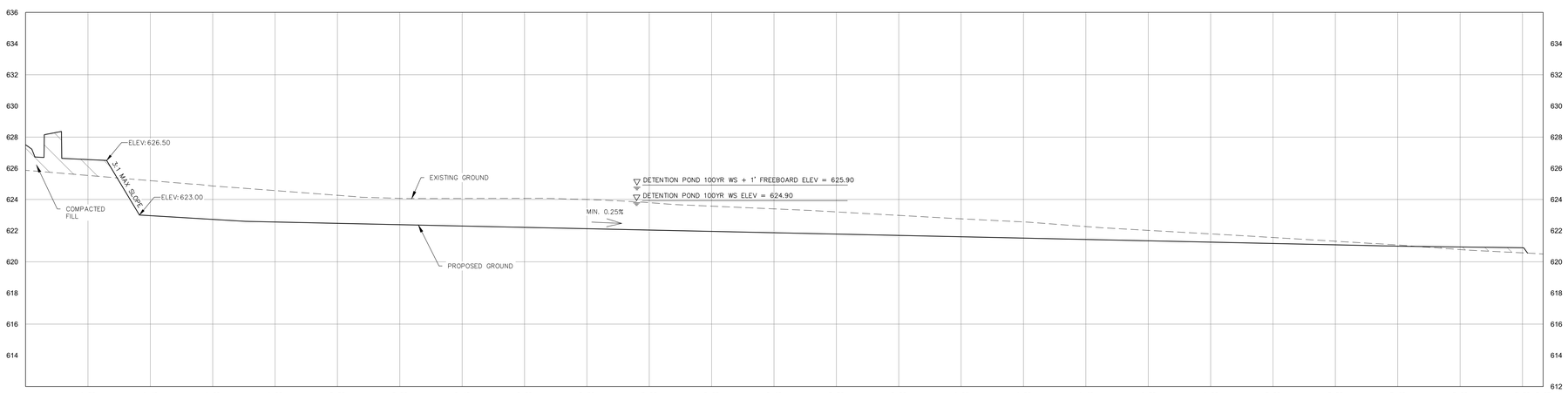
SECTION A1-A1



SECTION A2-A2



SECTION A3-A3



SEE SHEET 24 - DETENTION POND A PLAN & NOTES FOR SECTION MARKER LOCATIONS

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/13/22

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

JARO NORTH SUBDIVISION
UNIT 1

DETENTION POND A
CROSS-SECTIONS

SHEET 26 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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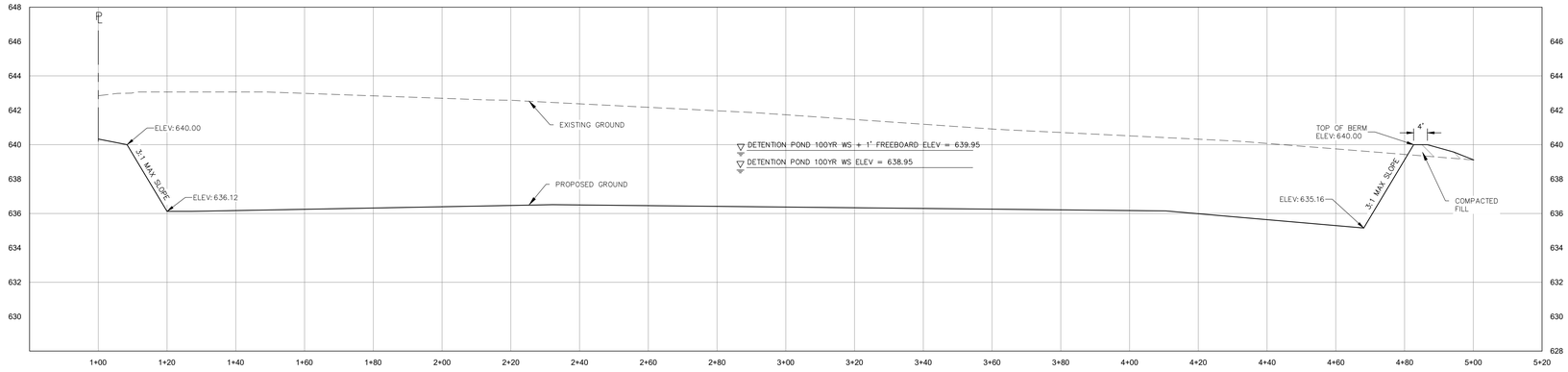
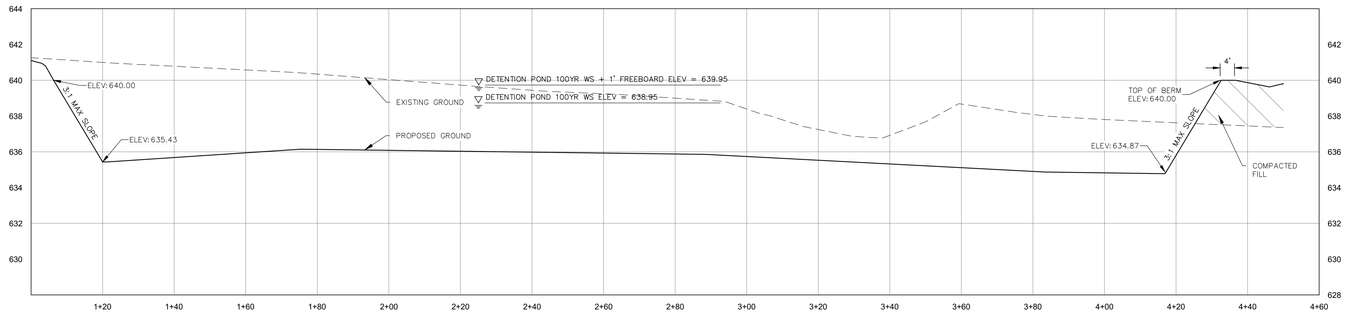
SEE SHEET 25 - DETENTION POND B PLAN & NOTES FOR SECTION MARKER LOCATIONS

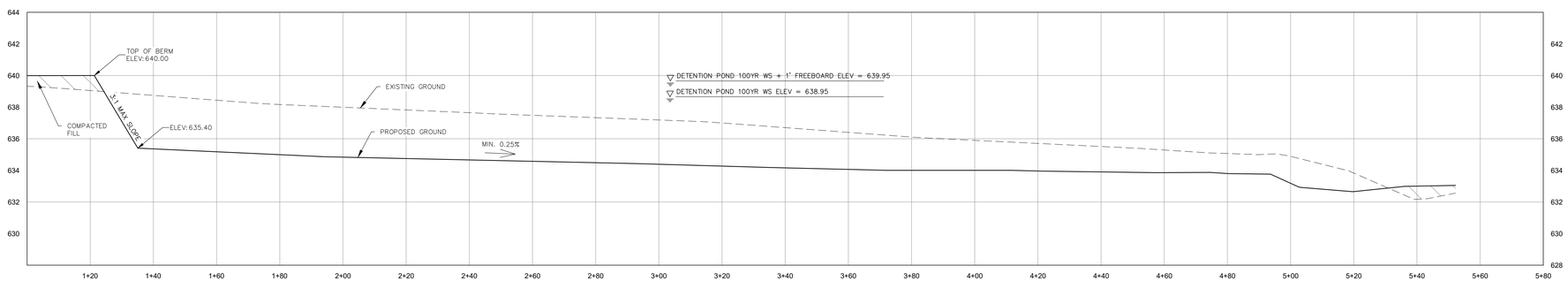
SECTION B1-B1



SECTION B2-B2



SECTION B3-B3



SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 4'

STATE OF TEXAS
JAMES INCALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/13/22

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

JARO NORTH SUBDIVISION
UNIT 1

DETENTION POND B
CROSS SECTIONS

SHEET 27 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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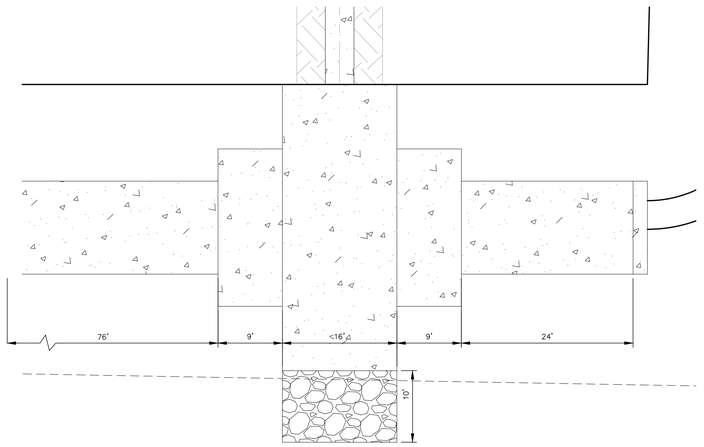
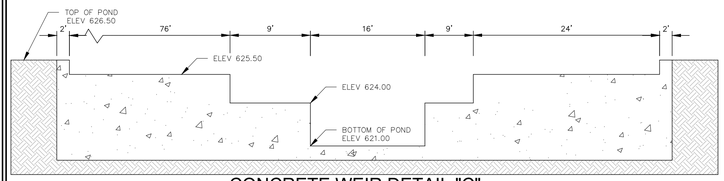
Drawing Name: N:\Projects\BE-ACO12 Jaro North Subdivision\Civil\Construction Drawings\07 DETENTION POND B CROSS SECTIONS.dwg User: mejonkeers Feb 17, 2022 - 5:20pm



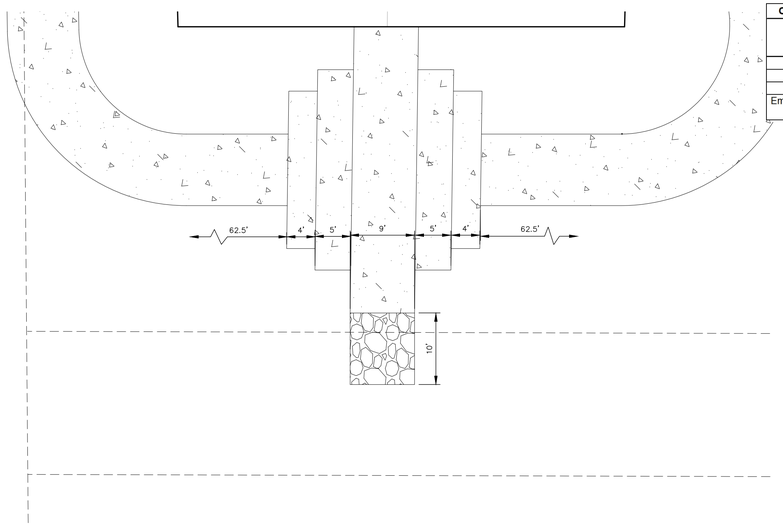
CONCRETE WEIR DETAIL "C"

SCALE: 1" = 10'



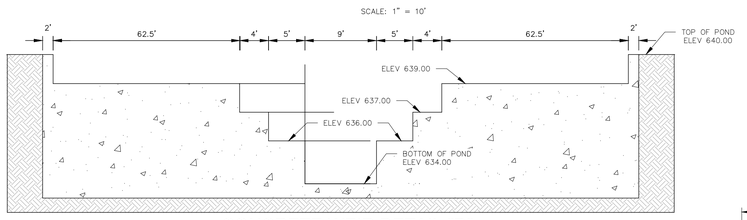
CONCRETE WEIR DETAIL "C"

NOT TO SCALE



CONCRETE WEIR DETAIL "D"

SCALE: 1" = 10'



CONCRETE WEIR DETAIL "D"

NOT TO SCALE

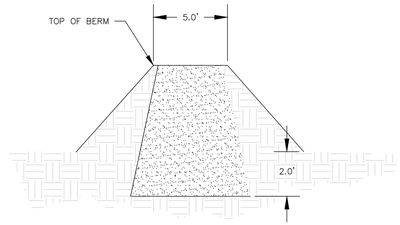
Overflow Weir Calculations Pond A	Q(cfs)
Proposed 25-yr Flow	408.25
Detained Outfall @ 100yr WSEL	462.04
Total Outfall Flow to Top of Berm	870.29
Emergency Overflow Release Above 100yr WSEL	413.48

Overflow Weir Calculations Pond B	Q(cfs)
Proposed 25-yr Flow	411.93
Detained Outfall @ 100yr WSEL	541.65
Total Outfall Flow to Top of Berm	953.58
Emergency Overflow Release Above 100yr WSEL	426.43

CONCRETE NOTES:
1. ALL CONCRETE SHALL BE CLASS "A" (3000 PSI).
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL REINFORCING SHALL HAVE A MINIMUM COVER OF 2 INCHES.
4. UNLESS OTHERWISE NOTED, ALL BARS SHALL BE CENTERED WITHIN CONCRETE THICKNESS.
5. NON-SHRINKING GROUT OR APPROVED EPOXY SHALL BE USED WITH DOWEL BARS. IN LIEU OF DRILLING AND GROUTING, DOWELS MAY BE PLACED WITH FIRST STRUCTURE OR APRON CONSTRUCTED.

IMPERVIOUS CORE COMPACTION NOTE

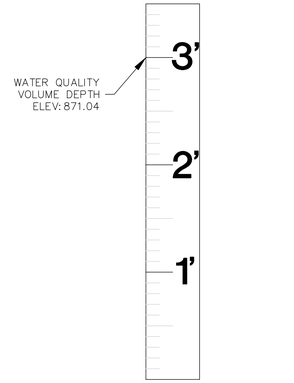
COMPACTED CLAY CORE TO BE PLACED A MINIMUM OF 2' BELOW EXISTING GRADE ALONG THE ENTIRE LENGTH OF THE BERM. MATERIAL TO HAVE A PI OF 30 OR GREATER, MINIMUM COMPACTED DRY DENSITY OF 90% AND GROUND CONTENT NO MORE THAN 5% BY WEIGHT LARGER THAN NO.4 SIEVE.



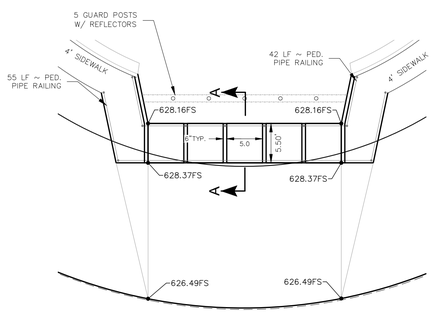
FILL BERM SECTION (TYP)

Scale: NTS

NOTE: IMPERVIOUS CLAY BERM CORE AND CLAY LINER SHOWN ARE TO BE CONSIDERED SUBSIDIARY TO POND EXCAVATION. (NO SEPARATE PAY ITEM)

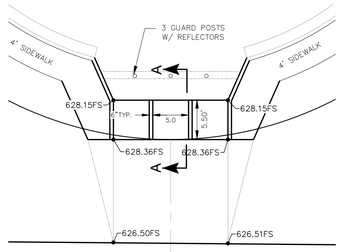


SEDIMENT DEPTH MARKER



SIDEWALK BRIDGE "A5" DETAIL "A"

SCALE: 1" = 10'



SIDEWALK BRIDGE "A3" DETAIL "B"

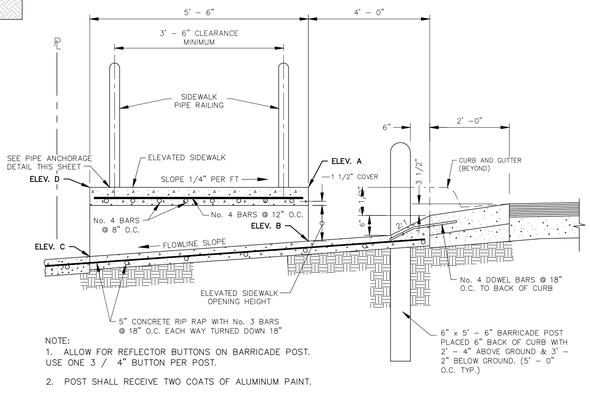
SCALE: 1" = 10'

SIDEWALK BRIDGE "A3" SUMMARY						
STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	3 - 5' X 1'	627.45	27.66	3.90	0.00	27.66
100-YEAR		627.84	51.96	4.81	0.00	51.96

SIDEWALK BRIDGE "A5" SUMMARY						
STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	5 - 5' X 1'	627.37	38.13	4.22	0.00	38.13
100-YEAR		627.72	71.34	5.12	0.00	71.34

SIDEWALK BRIDGE ELEVATION SUMMARY TABLE (SEE DETAIL THIS SHEET)

SIDEWALK BRIDGE	STREET	OPENING HEIGHT	ELEVATION A	ELEVATION B	ELEVATION C	ELEVATION D
A3	CUL-DE-SAC @ TIMBERLAND WAY & CUB CROSSING	1-FT	628.15	626.69	626.64	628.36
A4	CUB CROSSING	1-FT	629.42	627.96	627.90	629.63
A5	CUL-DE-SAC @ GOLD POINT & LYNX CROSSING	1-FT	628.16	626.71	626.66	628.37
A6	LYNX CROSSING	1-FT	628.87	628.00	627.25	629.08
A7.1	WOODLAND CHASE	1-FT	629.17	627.70	627.67	629.38
A7.2	WOODLAND CHASE	1-FT	629.02	627.56	627.54	629.23



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.

SECTION A-A ELEVATED SIDEWALK

NOT TO SCALE

SCALE: 1" = 10'

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

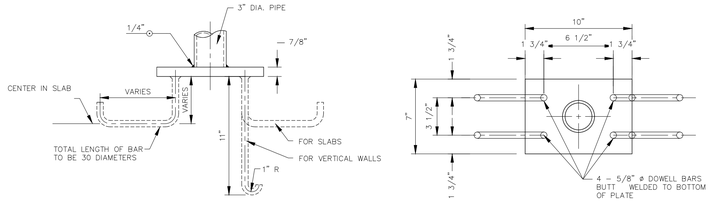
TELEPHONE LOCATOR

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

TRENCH EXCAVATION SAFETY PROTECTION

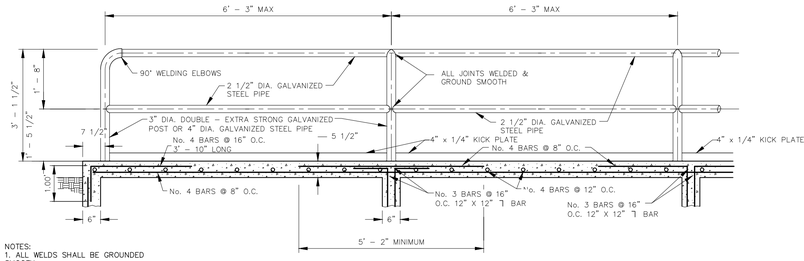
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S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

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.



PIPE ANCHORAGE DETAILS

NOT TO SCALE



NOTES:
1. ALL WELDS SHALL BE GROUNDED SMOOTH.
2. HANDRAIL SHALL BE PRIMED W/RED OXIDE AND PAINTED W/(2) COATS OF AN EXTERIOR RATED LATEX ENAMEL, COLOR TO BE DETERMINED BY OWNER.
3. ALL EXPOSED CONCRETE EDGES TO BE CHAMFERED ¾".

TYPICAL SIDEWALK BRIDGE & SIDEWALK PIPE RAILING SECTION

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/18/22

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NEW BRAUNFELS, TX 78130

JARO NORTH SUBDIVISION
UNIT 1

DETENTION POND STRUCTURES

SHEET 28 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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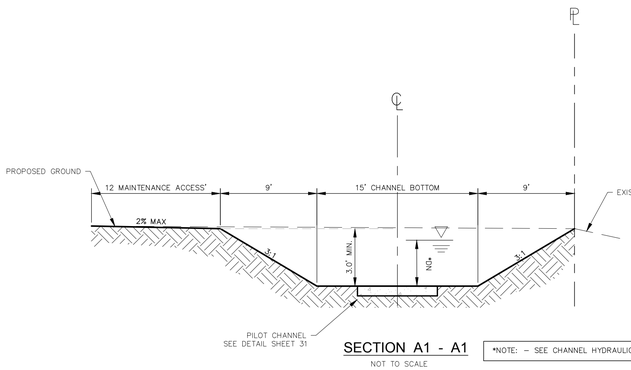
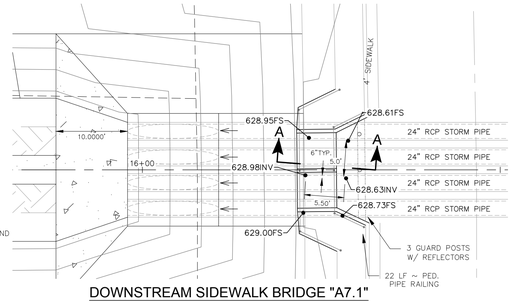


SECTION A1 - A1

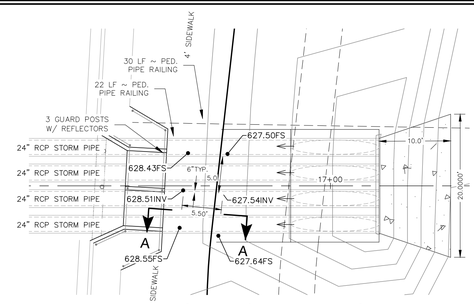
NOT TO SCALE

*NOTE: – SEE CHANNEL HYDRAULIC TABLE THIS SHEET



DOWNSTREAM SIDEWALK BRIDGE "A7.1" AND CONCRETE RIP RAP DETAIL

SCALE: 1" = 10'



UPSTREAM SIDEWALK BRIDGE "A7.2" AND CONCRETE RIP RAP DETAIL

SCALE: 1" = 10'

SIDEWALK BRIDGE "A7.1" SUMMARY

STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	2 - 5' X 1'	628.62	21.69	4.36	0.00	21.69
100-YEAR		629.1	39.94	5.35	0.00	39.94

SIDEWALK BRIDGE "A7.2" SUMMARY

STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	2 - 5' X 1'	628.40	21.39	4.36	0.00	21.39
100-YEAR		628.88	39.94	5.35	0.00	39.94

NOTE:
SIDEWALK BRIDGE SECTION A-A
SEE SHEET 28

0 50' 100'

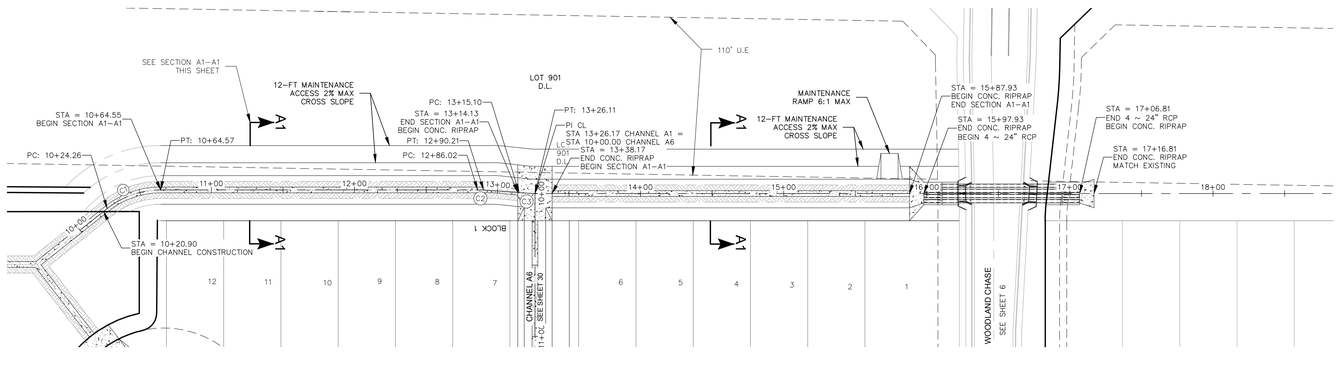
SCALE: 1"=50'

LEGEND

- COMPACTED FILL
- CONCRETE
- ROCK RIP-RAP
- ROAD WIDENING
- CHANNEL CENTERLINE
- D.L. DRAINAGE LOT

PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITES AND REPORT ANY DISCREPANCIES TO ENGINEER

Curve Table						
Curve #	Radius	Length	Delta	Tangent	Chord Length	Chord Direction
C1	60.00	40.31	38°29'24"	20.95'	39.55'	S69° 02' 22.61"W
C2	60.00	4.18	3°59'45"	2.09'	4.18'	N89° 43' 02.62"W
C3	3089.45	11.01	0°12'15"	5.51'	11.01'	N88° 57' 50.34"W



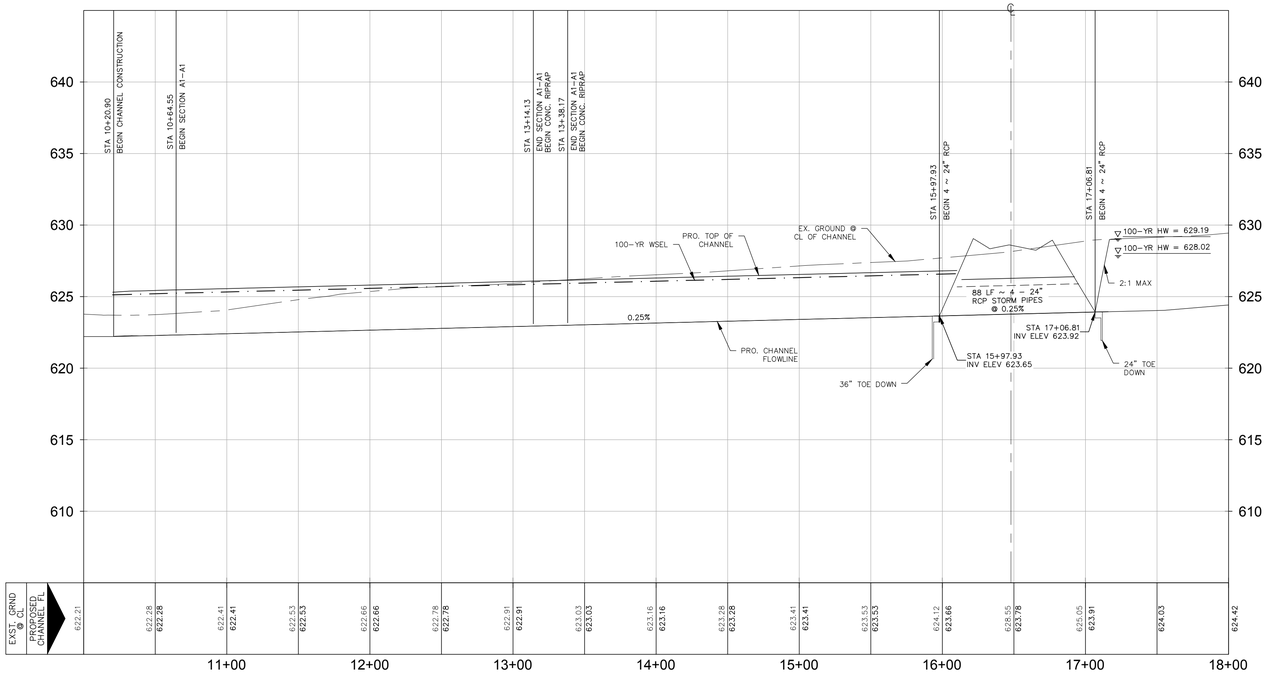
CHANNEL A1

CHANNEL "A1" HYDRAULICS - SECTION A1-A1

Q_2 (CFS)	S (%)	n	V_2 (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
86.19	0.25	0.038	2.31	1.51	29.08	0.00	n/a	1.51	3.00
Q_{25} (CFS)	S (%)	n	V_{25} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
190.69	0.25	0.038	2.94	2.38	34.27	0.00	0.50	2.88	3.00
Q_{100} (CFS)	S (%)	n	V_{100} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
276.84	0.25	0.038	3.28	2.92	37.54	0.00	n/a	2.92	3.00

CULVERT A2

STORM EVENT	CULVERT SIZE	H.W. ELEV	T.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
2-YEAR	4 ~ 24" RCP	625.81	624.62	39.1	5.41	0.00	39.10
25-YEAR		627.17	625.17	85.4	7.69	0.00	85.44
50-YEAR		628.02	625.34	102.7	8.70	0.00	102.70
100-YEAR		629.19	625.53	123.8	10.11	0.00	123.81



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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

TELEPHONE LOCATOR

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

TRENCH EXCAVATION SAFETY PROTECTION

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.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
05/31/2024

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

JARO NORTH SUBDIVISION
UNIT 1

CHANNEL A1 PLAN & PROFILE

SHEET 29 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
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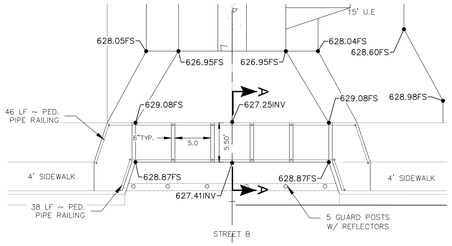
Drawing Name: N:\Projects\JEA012 Jaro North Subdivision\Civil\Construction Drawings\29 CHANNEL A1 PLAN & PROFILE.dwg User: bryanders May 31, 2024 - 2:16pm



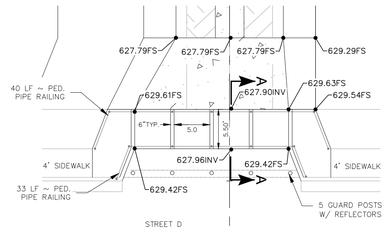
SIDEWALK BRIDGE "A6" AND UPSTREAM RIPRAP DETAIL "A"

SCALE 1"= 10'

NOTE:
SIDEWALK BRIDGE SECTION A-A
SEE SHEET 28

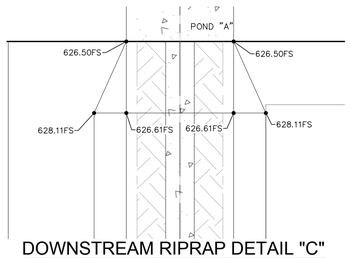
SIDEWALK BRIDGE "A6" SUMMARY						
STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	5 - 5' X 1'	628.08	38.36	5.40	0.00	38.36
100-YEAR		628.42	71.34	6.30	0.00	71.34

SIDEWALK BRIDGE "A4" SUMMARY						
STORM EVENT	CULVERT SIZE	H.W. ELEV	CULVERT Q (CFS)	CULVERT V (FT/S)	WEIR Q (CFS)	TOTAL Q (CFS)
10-YEAR	4 - 5' X 1'	629.74	30.62	3.49	0.00	30.62
100-YEAR		630.02	46.69	4.22	10.70	57.39



SIDEWALK BRIDGE "A4" AND UPSTREAM RIPRAP DETAIL "B"

SCALE 1"= 10'



DOWNSTREAM RIPRAP DETAIL "C"

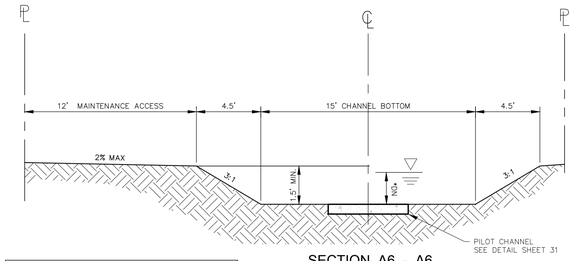
SCALE 1"= 10'

LEGEND

- COMPACTED FILL
- CONCRETE
- ROCK RIP-RAP
- ROAD WIDENING
- CHANNEL CENTERLINE
- D.L. DRAINAGE LOT

PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING 8" SANITARY SEWER MAIN AND REPORT ANY DISCREPANCIES TO ENGINEER

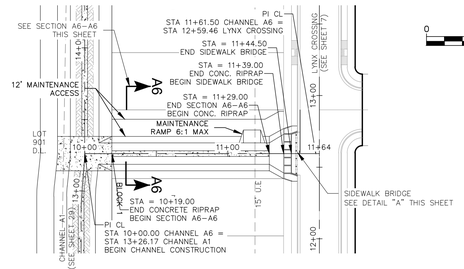
PRIOR TO CONSTRUCTION CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITES AND REPORT ANY DISCREPANCIES TO ENGINEER

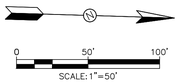


SECTION A6 - A6

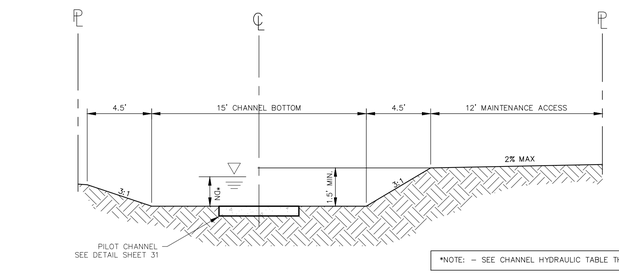
NOT TO SCALE

*NOTE: – SEE CHANNEL HYDRAULIC TABLE THIS SHEET





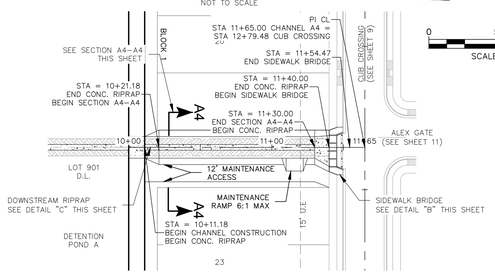
CHANNEL "A6" HYDRAULICS - SECTION A6-A6									
Q_2 (CFS)	S (%)	n	V_2 (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
22.90	3.00	0.04	3.98	0.42	17.39	0.00	n/a	0.42	1.50
Q_{25} (CFS)	S (%)	n	V_{25} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
49.87	3.00	0.04	4.48	0.66	18.93	0.00	0.50	1.16	1.50
Q_{100} (CFS)	S (%)	n	V_{100} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
71.82	3.00	0.04	5.08	0.81	19.86	0.00	n/a	0.81	1.50

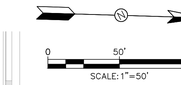


*NOTE: – SEE CHANNEL HYDRAULIC TABLE THIS SHEET

SECTION A4 - A4

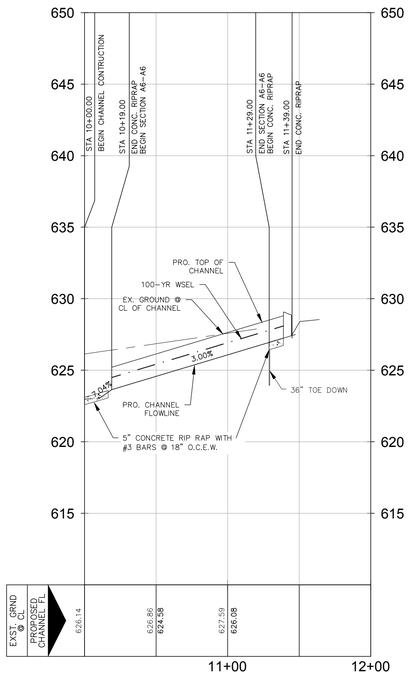
NOT TO SCALE





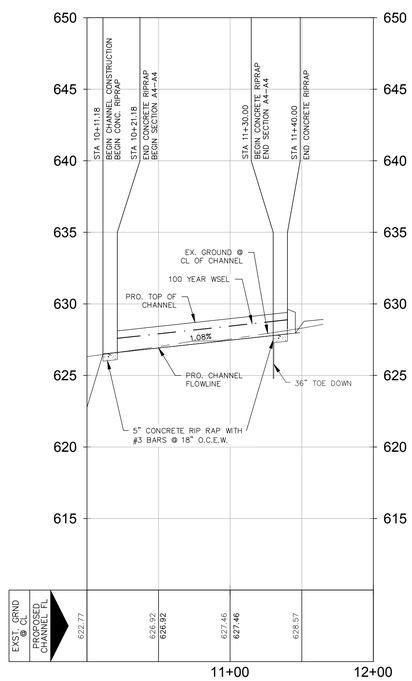
CHANNEL "A4" HYDRAULICS - SECTION A4-A4									
Q_2 (CFS)	S (%)	n	V_2 (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
18.26	1.00	0.04	2.20	0.50	18.01	0.00	n/a	0.50	1.50
Q_{25} (CFS)	S (%)	n	V_{25} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
39.87	1.00	0.04	2.90	0.79	19.75	0.00	0.50	1.29	1.50
Q_{100} (CFS)	S (%)	n	V_{100} (FT/S)	dn (FT)	Tw (FT)	ΔH (FT)	REQUIRED FREEBOARD	REQUIRED DEPTH (dr) (FT)	DEPTH PROVIDED (D) (FT)
57.38	1.00	0.04	3.27	0.98	20.87	0.00	n/a	0.98	1.50

CHANNEL A6



SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

CHANNEL A4



SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

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

JARO NORTH SUBDIVISION
UNIT 1

CHANNEL A4 AND A6 PLAN & PROFILE

SHEET 30 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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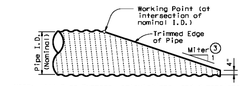
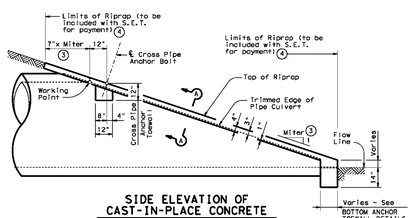
Drawing Name: N:\Projects\BEA012 Jaro North Subdivision\Civil\Construction Drawings\30 CHANNEL A4 AND A6 PLAN & PROFILE.dwg User: brysenders May 31, 2024 - 2:16pm



NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

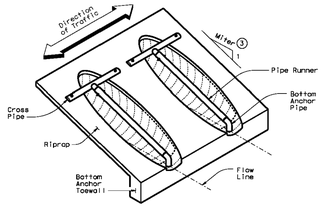
SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert. Details of Concrete Pipe Culvert are similar.)



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert. Details of Corrugated Metal Pipe Culvert are similar. Pipe Runners not shown for clarity)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

(Showing installation with no skew.)

CROSS PIPE LENGTHS & PIPE RUNNER LENGTHS ①②

Nominal Culvert I.D.	Pipe Culvert Spa ~ G	Cross Pipe Length	Pipe Runner Length													
			3:1 Side Slope				4:1 Side Slope				6:1 Side Slope					
			0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
24"	1'- 7"	3'- 5"	N/A	N/A	N/A	5'-10"	N/A	N/A	N/A	8'- 1"	N/A	N/A	N/A	12'- 9"
27"	1'- 8"	3'- 8"	N/A	N/A	5'- 5"	6'-11"	N/A	N/A	7'- 7"	9'- 7"	N/A	N/A	11'-11"	14'-11"
30"	1'-10"	3'-11"	N/A	N/A	6'- 4"	8'- 0"	N/A	N/A	8'- 9"	11'- 0"	N/A	N/A	13'- 8"	17'- 0"
33"	1'-11"	4'- 2"	6'- 2"	6'- 5"	7'- 3"	9'- 1"	8'- 6"	8'-10"	10'- 0"	12'- 5"	13'- 3"	13'- 9"	15'- 5"	19'- 2"
36"	2'- 1"	4'- 5"	6'-11"	7'- 3"	8'- 2"	10'- 2"	9'- 6"	9'-11"	11'- 2"	13'-10"	14'- 9"	15'- 3"	17'- 2"	21'- 3"
42"	2'- 4"	4'-11"	8'- 6"	8'-10"	9'-11"	12'- 4"	11'- 7"	12'- 0"	13'- 6"	16'- 8"	17'- 9"	18'- 5"	20'- 8"	25'- 7"
48"	2'- 7"	5'- 5"	10'- 1"	10'- 5"	11'- 9"	N/A	13'- 7"	14'- 2"	15'-10"	N/A	20'- 9"	21'- 6"	24'- 2"	N/A
54"	3'- 0"	5'-11"	11'- 8"	12'- 1"	N/A	N/A	15'- 8"	16'- 3"	N/A	N/A	23'-10"	24'- 7"	N/A	N/A
60"	3'- 3"	6'- 5"	13'- 3"	N/A	N/A	N/A	17'- 9"	N/A	N/A	N/A	26'-10"	N/A	N/A	N/A

TYPICAL PIPE CULVERT MITERS ③

Side Slope	0° Skew	15° Skew	30° Skew	45° Skew
3:1	3:1	3.106:1	3.464:1	4.243:1
4:1	4:1	4.141:1	4.619:1	5.657:1
6:1	6:1	6.212:1	6.928:1	8.485:1

CONDITIONS WHERE PIPE RUNNERS ② ARE NOT REQUIRED

Nominal Culvert I.D.	Single Pipe Culvert	Multiple Pipe Culverts
12" thru 21"	Skews thru 45°	Skews thru 45°
24"	Skews thru 45°	Skews thru 30°
27"	Skews thru 30°	Skews thru 15°
30"	Skews thru 15°	Skews thru 15°
33"	Skews thru 15°	Always required
36"	Normal (No Skew)	Always required
42" to 60"	Always required	Always required

STANDARD PIPE SIZES & ① MAX PIPE RUNNER LENGTHS

Pipe Size	Pipe O.D.	Pipe I.D.	Max Pipe Runner Length
2" STD	2.375"	2.067"	N/A
3" STD	3.500"	3.068"	10'- 0"
4" STD	4.500"	4.026"	19'- 8"
5" STD	5.563"	5.047"	34'- 2"

ESTIMATED CONCRETE RIPRAP QUANTITIES (CY) ⑤

Nominal Culvert I.D.	3:1 Side Slope				4:1 Side Slope				6:1 Side Slope			
	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew	0° Skew	15° Skew	30° Skew	45° Skew
12"	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
15"	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9
18"	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0
21"	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	1.0	1.2
24"	0.6	0.7	0.7	0.8	0.8	0.8	0.8	1.0	1.0	1.0	1.1	1.3
27"	0.7	0.7	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.1	1.2	1.4
30"	0.8	0.8	0.8	0.9	0.9	0.9	1.0	1.2	1.2	1.2	1.3	1.6
33"	0.8	0.8	0.9	1.0	1.0	1.0	1.1	1.3	1.3	1.4	1.5	1.7
36"	0.9	0.9	0.9	1.1	1.1	1.1	1.2	1.4	1.4	1.5	1.6	1.8
42"	1.0	1.0	1.1	1.3	1.2	1.3	1.3	1.6	1.6	1.7	1.8	2.1
48"	1.1	1.1	1.2	N/A	1.4	1.4	1.5	N/A	1.9	1.9	2.1	N/A
54"	1.3	1.3	N/A	N/A	1.6	1.6	N/A	N/A	2.1	2.1	N/A	N/A
60"	1.4	N/A	N/A	N/A	1.7	N/A	N/A	N/A	2.3	N/A	N/A	N/A

① Size of Pipe Runner shall be as shown in the tables. Cross Pipe shall be the same size as the Pipe Runner. Cross Pipe Stub Out and Bottom Anchor Pipe shall be the next smaller size pipe as shown in the STANDARD PIPE SIZES table.

② This standard allows for the placement of only one pipe runner across each culvert pipe opening. In order to limit the clear opening to be traversed by an errant vehicle, the following conditions must be met:

For 60" culvert pipes, the skew must not exceed 0°.
For 54" culvert pipes, the skew must not exceed 15°.
For 48" culvert pipes, the skew must not exceed 30°.
For all culvert pipe sizes 42" and less, the skew must not exceed 45°.

If the above conditions cannot be met, the designer should consider using a safety end treatment with flared wings. For further information, refer to the TxDOT "Hydraulic Design Manual".

③ Miter ~ Slope of Mitered Pipe Culvert End

④ Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

⑤ Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple Pipe Culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

SHEET 1 OF 2

Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II ~ CROSS DRAINAGE

SETP-CD

FILE:	setpcdxx.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT	February 2010	CONT	SECT	JOB	HIGHWAY
	REVISIONS				
	11-20: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.

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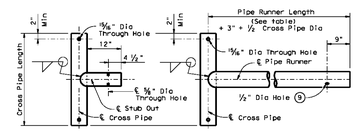
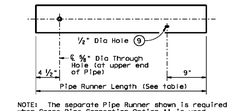


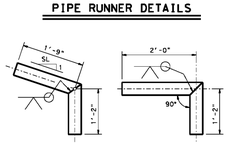
OPTION A1 OPTION A2

CROSS PIPE AND CONNECTIONS DETAILS



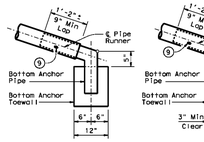
NOTE: The separate Pipe Runner shown is required when Cross Pipe Connection Option A1 is used.

PIPE RUNNER DETAILS



OPTION B1 OPTION B2

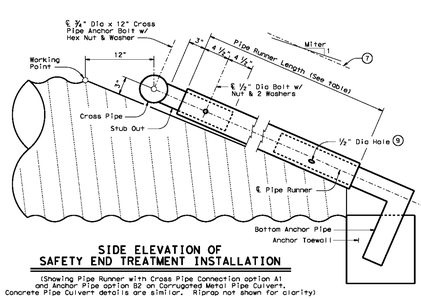
BOTTOM ANCHOR PIPE DETAILS ⑩



OPTION B1 OPTION B2

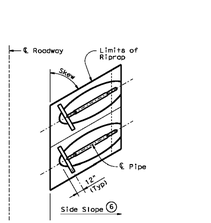
BOTTOM ANCHOR TOEWALL DETAILS

(Culvert & Riprap not shown for clarity)

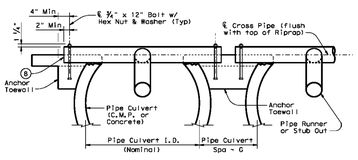


SIDE ELEVATION OF SAFETY END TREATMENT INSTALLATION

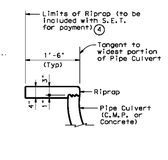
(Showing Pipe Runner with Cross Pipe Connection option A1 and Anchor Pipe option B2 on Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Riprap not shown for clarity)



PLAN OF SKEWED INSTALLATION



SHOWING CROSS PIPE & ANCHOR TOEWALL



SHOWING TYPICAL PIPE CULVERT & RIPRAP

SECTION A-A

④ Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

⑥ Recommended values of side slope are 3:1, 4:1, & 6:1. All quantities, calculations, and dimensions shown herein are based on these recommended values. Slope of 3:1 or flatter is required for vehicle safety.

⑦ Note that actual slope of Pipe Runner may vary slightly from Side Slope of Riprap and trimmed Culvert Pipe edge.

⑧ Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access.

⑨ After installation, the ½" hole shall be inspected to ensure that the top of the Pipe Runner with the Bottom Anchor Pipe is adequate.

⑩ At fabricator's option, a heat bend to a smooth 5" radius or a manufactured elbow (of the same material as the Runner) may be substituted for the mitered and welded joint in the Bottom Anchor Pipe.

GENERAL NOTES:

Pipe Runners are designed for a traversing load of 1,800 pounds at yield as recommended by Research Report 280-1, "Safety Treatment of Roadside Cross-Drainage Structures", Texas Transportation Institute, March 1981.

The Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Pipe Runners.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

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

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Pipe Runners, Cross Pipes, and Anchor Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5L.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damage during transport or construction shall be repaired in accordance with the specifications.

SHEET 2 OF 2

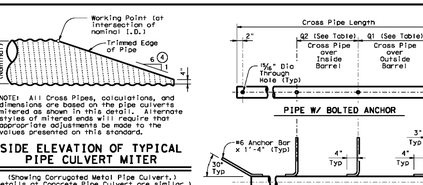
Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 60" DIA PIPE CULVERTS TYPE II ~ CROSS DRAINAGE

SETP-CD

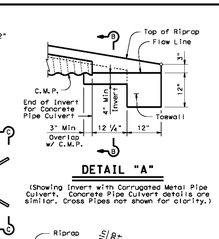
FILE:	setpcdxx.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT	February 2010	CONT	SECT	JOB	HIGHWAY
	REVISIONS				
	11-20: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.



NOTE: All Pipe Runners, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

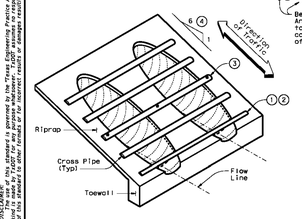
SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert.) (Details of Concrete Pipe Culvert are similar.)

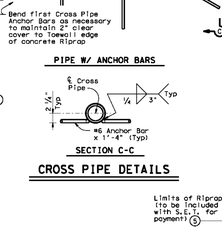


DETAIL "A"

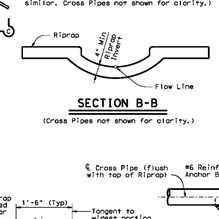
(Showing Invert with Corrugated Metal Pipe Culvert. Concrete Pipe Culvert details are similar. Cross Pipes not shown for clarity.)



ISOMETRIC VIEW OF TYPICAL INSTALLATION

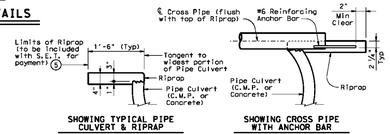


CROSS PIPE DETAILS



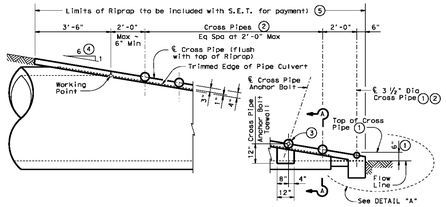
SECTION B-B

(Cross Pipes not shown for clarity.)



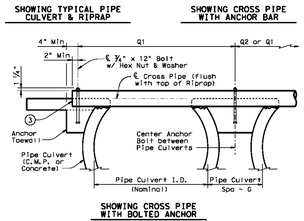
SHOWING TYPICAL PIPE CULVERT & RIPRAP

SHOWING CROSS PIPE WITH ANCHOR BAR



SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

(Showing Concrete Pipe Culvert.) (Details of Corrugated Metal Pipe Culvert are similar.)



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, & RIPRAP QUANTITIES ②

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

① The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.

② Size of Cross Pipes, except the first bottom pipe, shall be as shown in the PIPE SIZE table. The first bottom pipe shall be 3 ½" Standard Pipe (4" O.D.).

③ The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, all other Cross Pipes may also be installed using the bolted connection details.

④ Match Cross Slope as shown elsewhere in the plans. Cross Slope of 6:1 or flatter is required for vehicle safety.

⑤ Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".

⑥ Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple pipe culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

GENERAL NOTES:

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981.

Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes.

Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap".

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

Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment.

Cross Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52.

Bolts and nuts shall conform to ASTM A307.

All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damage during transport or construction shall be repaired in accordance with the specifications.

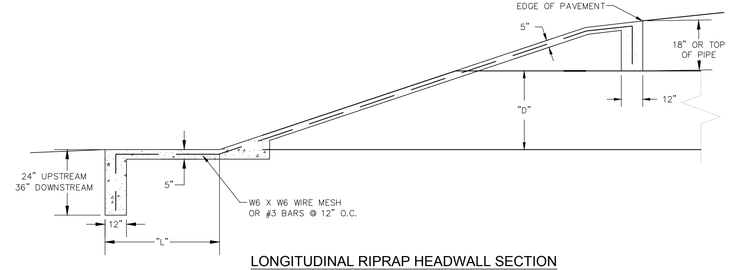
Texas Department of Transportation — Bridge Division Standard

SAFETY END TREATMENT

FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

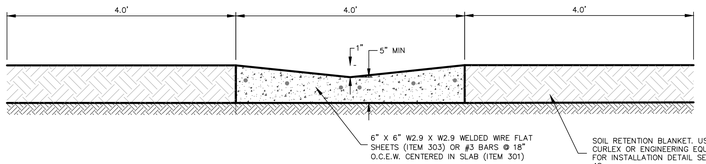
SETP-PD

FILE:	setppdxx.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT	February 2010	CONT	SECT	JOB	HIGHWAY
	REVISIONS				
	11-20: Add note for synthetic fibers.	DIST	COUNTY		SHEET NO.



LONGITUDINAL RIPRAP HEADWALL SECTION

NOT TO SCALE



PILOT CHANNEL DETAIL

NOT TO SCALE

CONCRETE NOTES:

1. ALL CONCRETE SHALL BE CLASS "A" (3000 PSI).
2. ALL REINFORCING STEEL SHALL BE GRADE 60.
3. ALL REINFORCING SHALL HAVE A MINIMUM COVER OF 2 INCHES.
4. UNLESS OTHERWISE NOTED, ALL BARS SHALL BE CENTERED WITHIN CONCRETE THICKNESS.
5. NON-SHRINKING GROUT OR APPROVED EPOXY SHALL BE USED WITH DOWEL BARS. IN LIEU OF DRILLING AND ROUTING, DOWELS MAY BE PLACED WITH FIRST STRUCTURE OR APRON CONSTRUCTED.

STATE OF TEXAS — JAMES INGALLS — 107416 — LICENSED PROFESSIONAL ENGINEER

05/31/2024

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

JARO NORTH SUBDIVISION
UNIT 1

DRAINAGE DETAILS I

SHEET 31 OF 49

NO	DATE	ISSUES AND REVISIONS

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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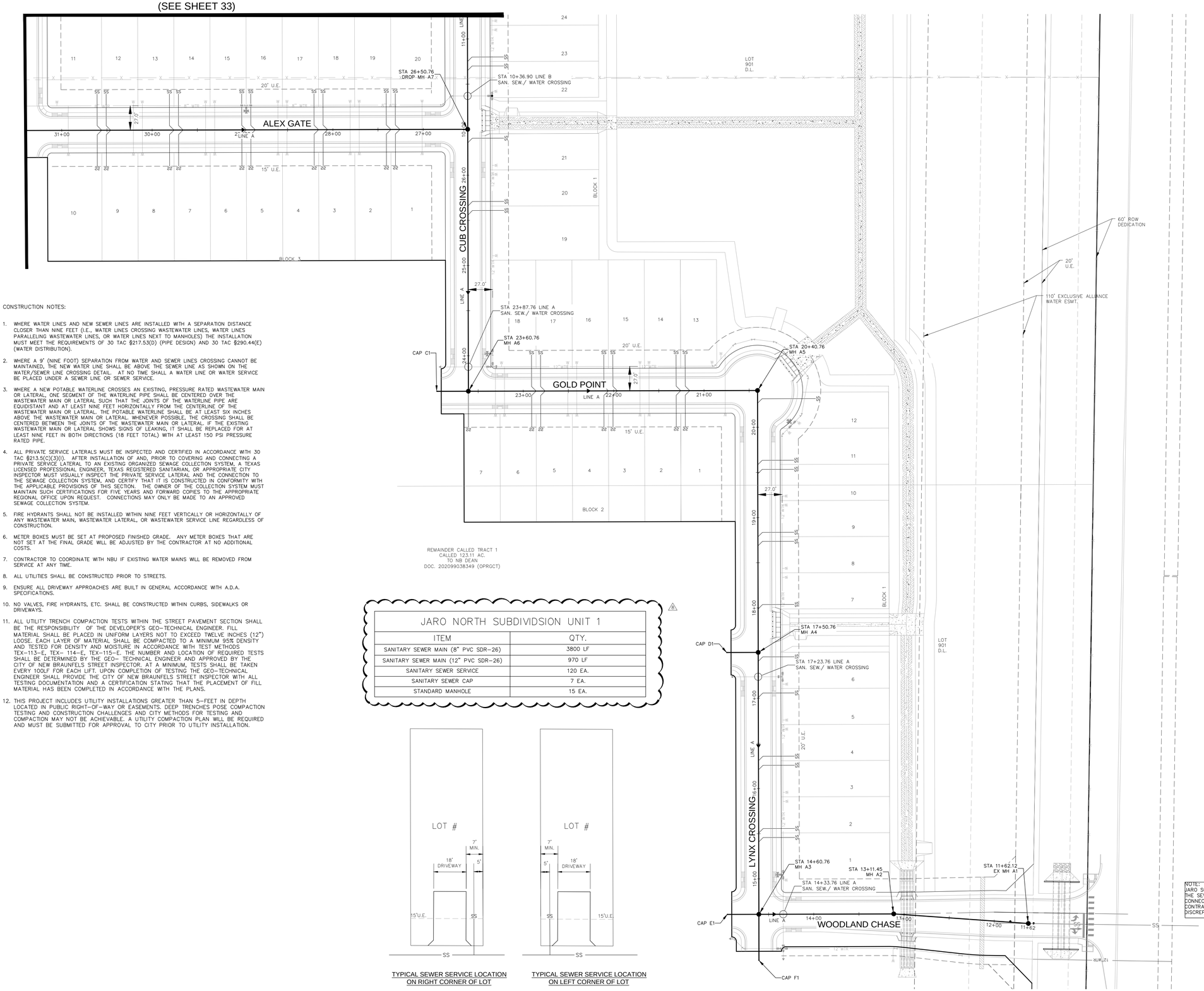
Drawing Name: N:\Projects\BEA012 Jaro North Subdivision\Civil\Construction Drawings\31 DRAINAGE DETAILS 1.dwg User: bryandeers May 31, 2024 - 2:19pm

MATCHLINE A - A
(SEE SHEET 33)



0 50' 100'
SCALE: 1"=50'

LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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 GEO- TECHNICAL 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.
12. 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.

JARO NORTH SUBDIVIDSION UNIT 1	
ITEM	QTY.
SANITARY SEWER MAIN (8" PVC SDR-26)	3800 LF
SANITARY SEWER MAIN (12" PVC SDR-26)	970 LF
SANITARY SEWER SERVICE	120 EA.
SANITARY SEWER CAP	7 EA.
STANDARD MANHOLE	15 EA.

TYPICAL SEWER SERVICE LOCATION
ON RIGHT CORNER OF LOT

TYPICAL SEWER SERVICE LOCATION
ON LEFT CORNER OF LOT

NOTE:
JARO SOUTH SUBDIVISION IS CONSTRUCTING THE SEWER THAT WILL PROVIDE THE CONNECTION FOR THIS DEVELOPMENT. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES.

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION
UNIT 1

OVERALL SANITARY
SEWER PLAN I

SHEET
32 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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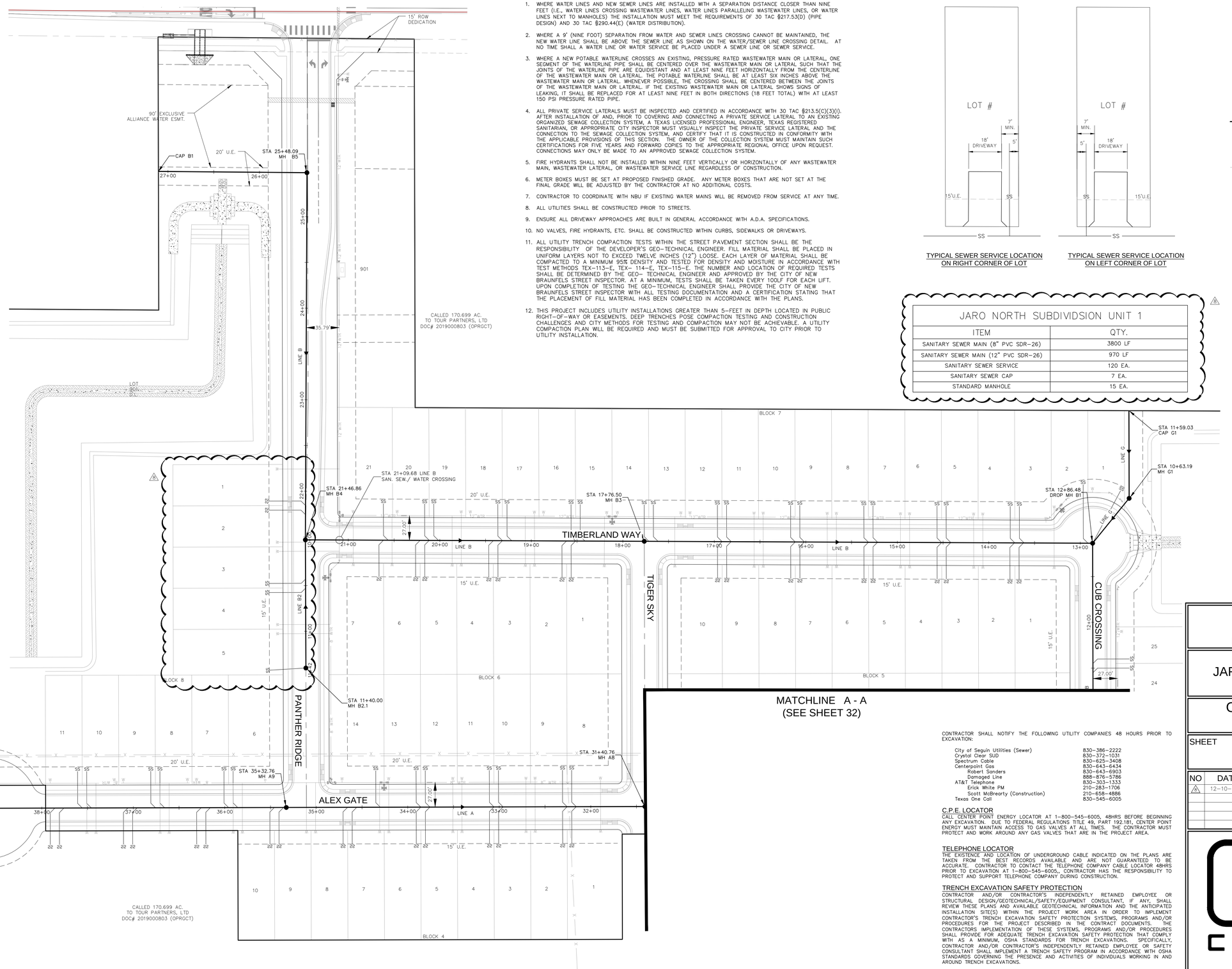
Drawing Name: N:\Projects\GEA2012 Jaro North Subdivision\Civil\Construction Drawings\33 OVERALL SANITARY SEWER PLAN II.dwg User: chuckwire Dec 10, 2024 - 12:01pm



CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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 GEO- TECHNICAL 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.
12. 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.

TYPICAL SEWER SERVICE LOCATION ON RIGHT CORNER OF LOT

TYPICAL SEWER SERVICE LOCATION ON LEFT CORNER OF LOT

JARO NORTH SUBDIVIDSION UNIT 1	
ITEM	QTY.
SANITARY SEWER MAIN (8" PVC SDR-26)	3800 LF
SANITARY SEWER MAIN (12" PVC SDR-26)	970 LF
SANITARY SEWER SERVICE	120 EA.
SANITARY SEWER CAP	7 EA.
STANDARD MANHOLE	15 EA.

0 50' 100'
SCALE: 1"=50'

LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

TELEPHONE LOCATOR

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

TRENCH EXCAVATION SAFETY PROTECTION

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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STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION UNIT 1

OVERALL SANITARY SEWER PLAN II

SHEET 33 OF 49

NO	DATE	ISSUES AND REVISIONS
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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Drawing Name: N:\Projects\DEA2012 Jaro North Subdivision\Civil\Construction Drawings\33 OVERALL SANITARY SEWER PLAN II.dwg User: dhuckeare Dec 10, 2024 - 11:39am

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

City of Seguin Utilities (Sewer)	830-386-2222
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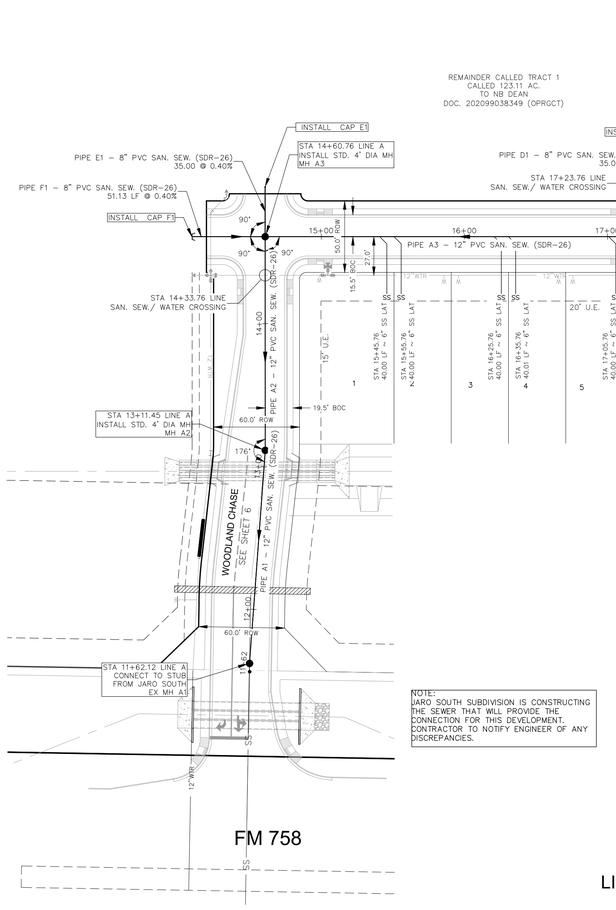
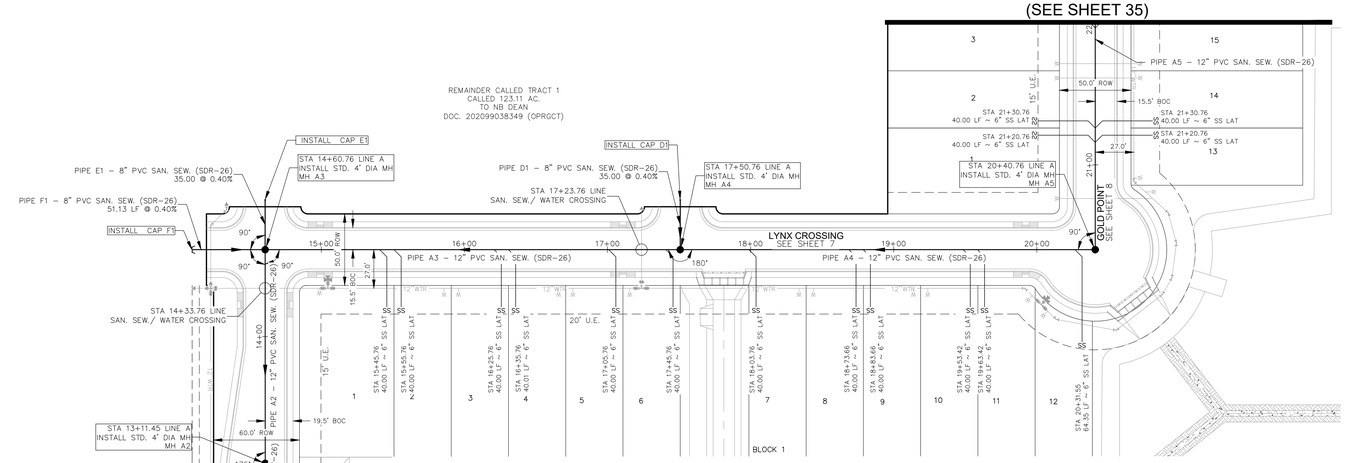
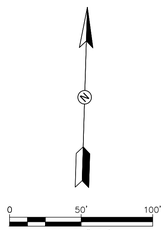


NOTE:
JARO SOUTH SUBDIVISION IS CONSTRUCTING THE SEWER THAT WILL PROVIDE THE CONNECTION FOR THIS DEVELOPMENT. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES.

MATCHLINE STA. 22+00.00 LINE A
(SEE SHEET 35)

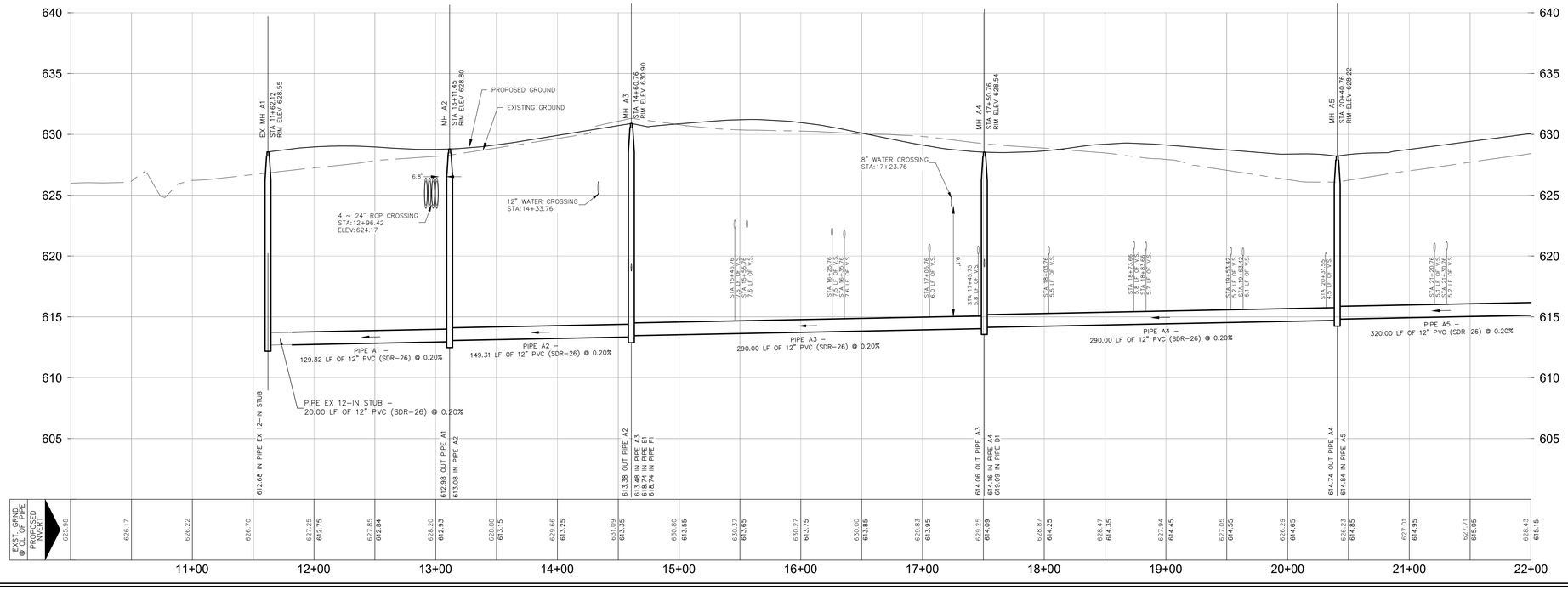




Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe A1	181.97	12	0.20	113	70.6	715.1	1.3	2.55	YES
Pipe A2	149.39	12	0.20	113	70.6	715.1	1.3	2.55	YES
Pipe A3	290.00	12	0.20	113	70.6	715.1	1.3	2.55	YES
Pipe A4	290.00	12	0.20	107	66.9	715.1	1.3	2.48	YES
Pipe A5	320.00	12	0.30	101	63.1	875.81	1.5	2.19	YES

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

LINE A - BEGIN TO 22+00.00



LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER MAIN
- NEW DOUBLE METERED DUAL WATER SERVICE
- NEW FIRE HYDRANT

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
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NB DEAN, LLC
1286 RIVER RD
NEW BRAUNFELS, TX 78130

JARO NORTH
SUBDIVISION UNIT 1

SANITARY SEWER LINE A
BEGIN TO STA 22+00

SHEET
34 OF 49

NO	DATE	ISSUES AND REVISIONS
△		

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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Drawing Name: N:\Projects\JR\24012 Jaro North Subdivision\Civil\Construction Drawings\34 SANITARY SEWER LINE A BEGIN TO STA 22+00.dwg User: mdelatorre Feb 17, 2022 - 5:23pm

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City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
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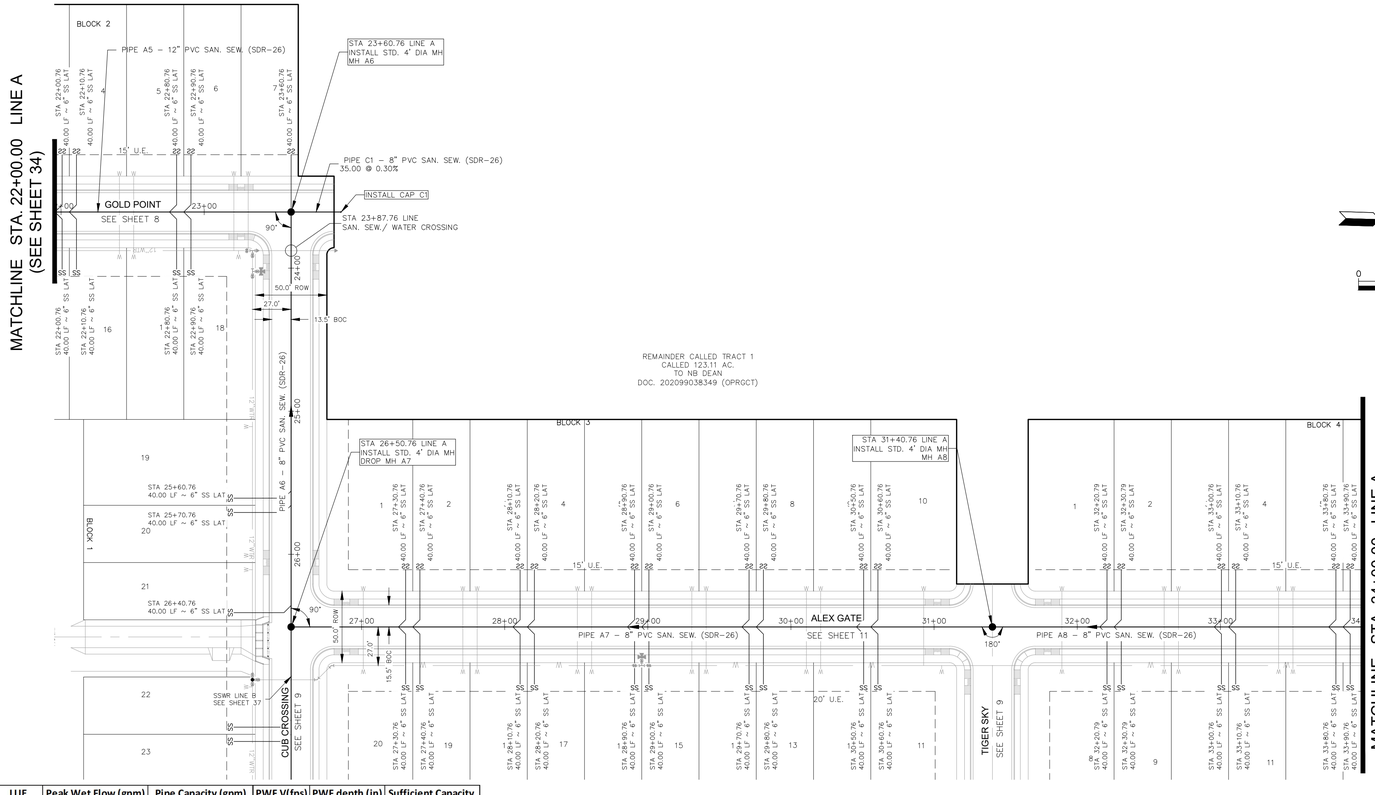

Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe A5	320.00	12	0.30	101	63.1	875.81	1.5	2.19	YES
Pipe A6	290.00	8	0.35	88	55.0	320.85	1.5	2.24	YES
Pipe A7	490.00	8	1.50	43	26.9	664.23	2.1	1.10	YES
Pipe A8	392.00	8	1.00	23	14.4	542.34	1.5	0.90	YES

LINE A - STA. 22+00 TO 34+00

SCALE:
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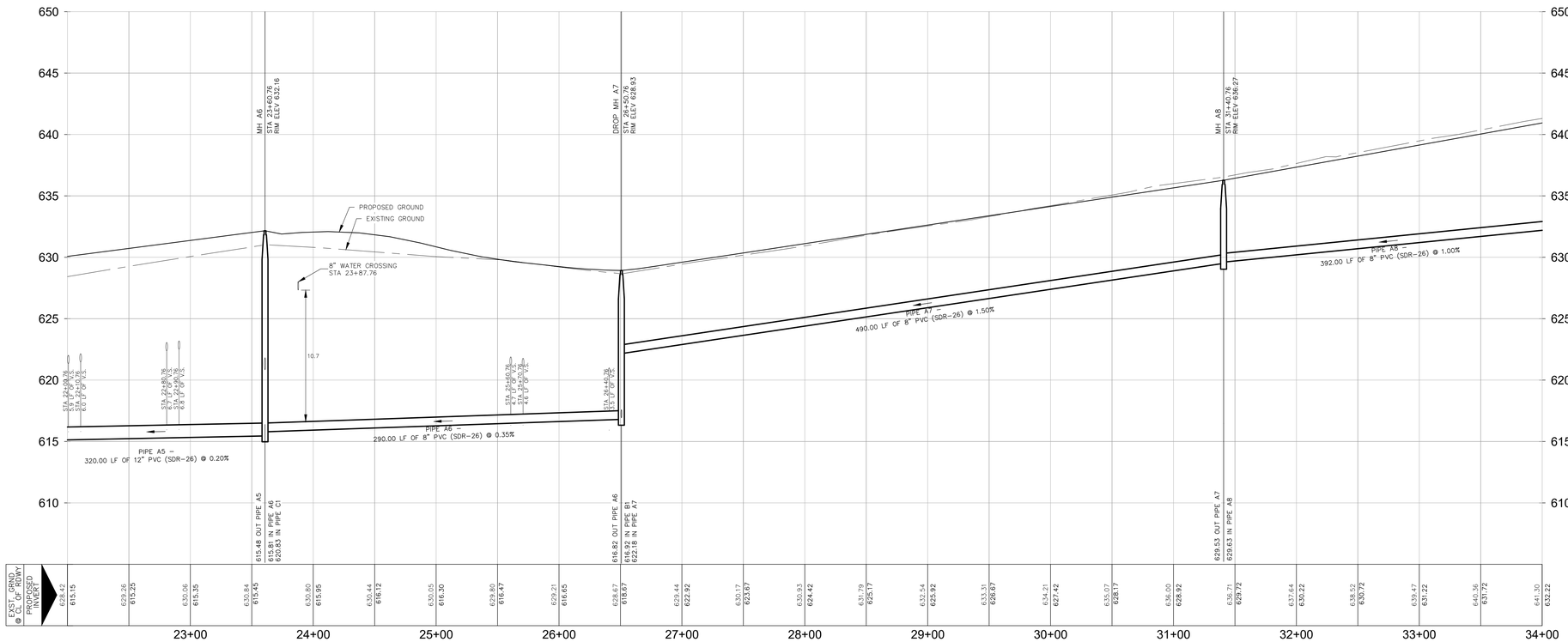

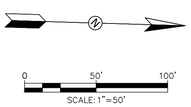

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6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAYS APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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 GEO-TECHNICAL 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.
12. 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.

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

JARO NORTH
SUBDIVISION UNIT 1

SANITARY SEWER LINE A
STA. 22+00 TO 34+00

SHEET
35 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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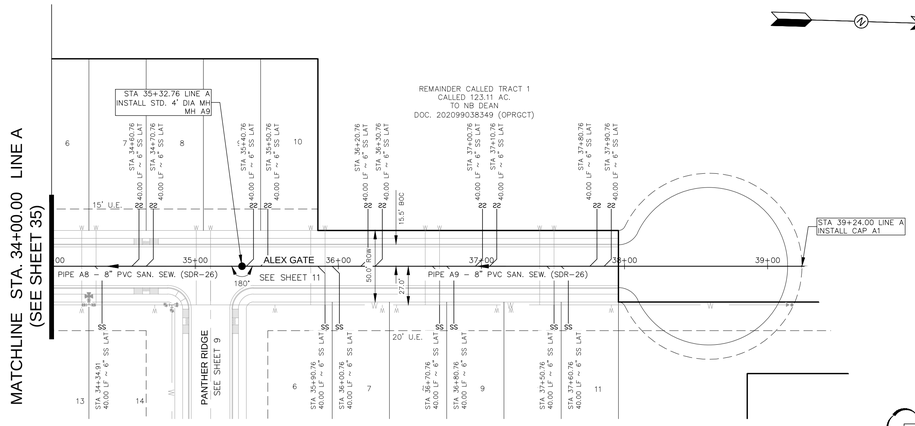
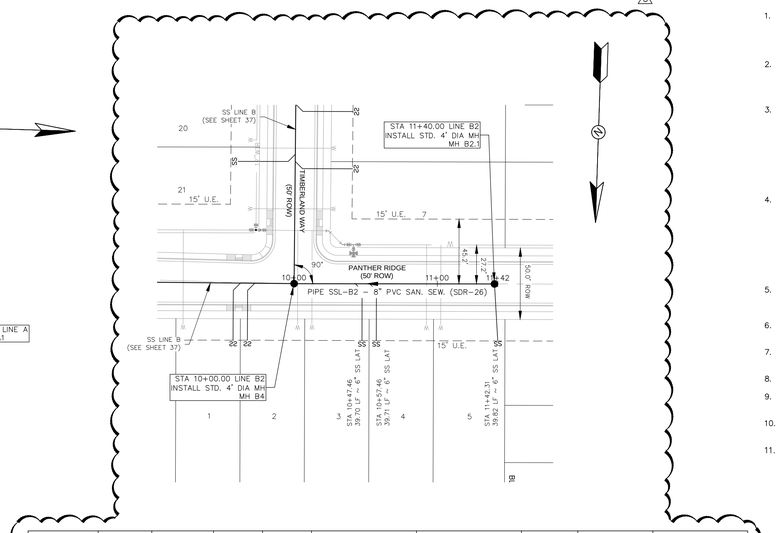
Drawing Name: N:\Projects\BEA0312 Jaro North Subdivision\Civil\Construction Drawings\35 SANITARY SEWER LINE A STA. 22+00 TO 34+00.dwg User: mbrotherton Feb 17, 2022 - 5:24pm



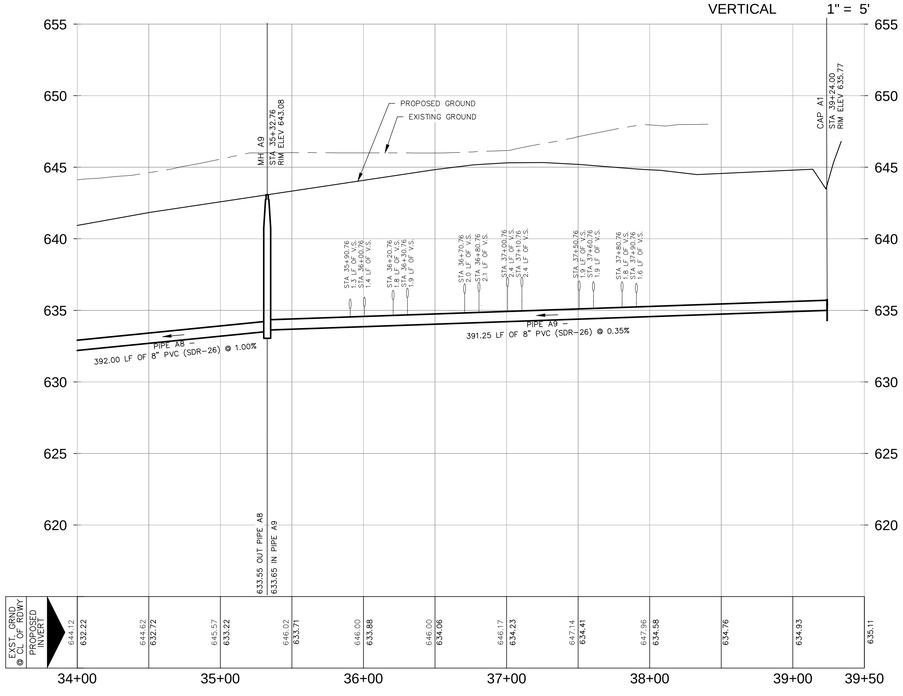


Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V (fps)	PWF depth (in)	Sufficient Capacity
SSL B2	140	8	4.25	0	N/A	320.85	N/A	N/A	YES

Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe A8	392.00	8	1.00	23	14.4	542.34	1.5	0.90	YES
Pipe A9	391.25	8	0.35	8	5.0	320.85	0.8	0.7	YES

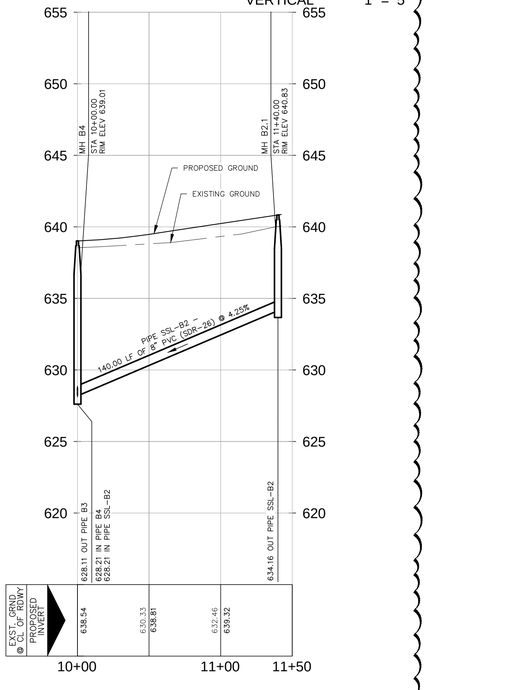
LINE A - STA. 34+00 TO END

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



LINE B2 - STA. 10+00 TO END

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



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

City of Seguin Utilities (Sewer)	830–386–2222
Crystal Clear SUD	830–372–1031
Spectrum Cable	830–625–3408
Centerpoint Gas	830–643–6434
Robert Sanders	830–643–6903
Damaged Line	888–876–5786
AT&T Telephone	830–303–1333
Erick White PM	210–283–1706
Scott McBrearty (Construction)	210–658–4886
Texas One Call	830–545–6005

C.P.E. LOCATOR

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

TELEPHONE LOCATOR

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

TRENCH EXCAVATION SAFETY PROTECTION

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.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.

0 50' 100'
SCALE: 1"=50'

LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER MAIN
- NEW DOUBLE METERED DUAL WATER SERVICE
- NEW FIRE HYDRANT

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
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STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH
SUBDIVISION UNIT 1

SANITARY SEWER LINES A STA.34+00 TO END B2 STA 10+0 TO END

SHEET
36 OF 49

NO	DATE	ISSUES AND REVISIONS
1	12–10–2024	ADDED 5 LOTS IN BLOCK B

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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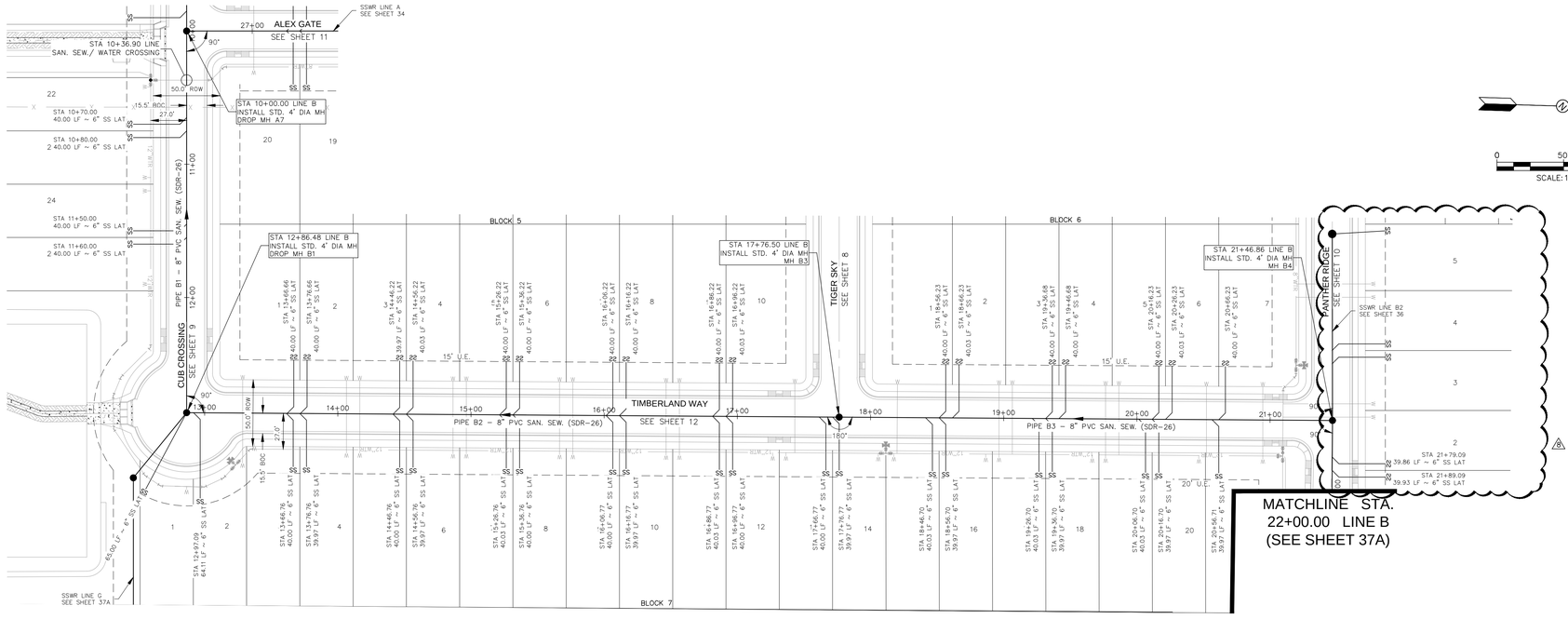
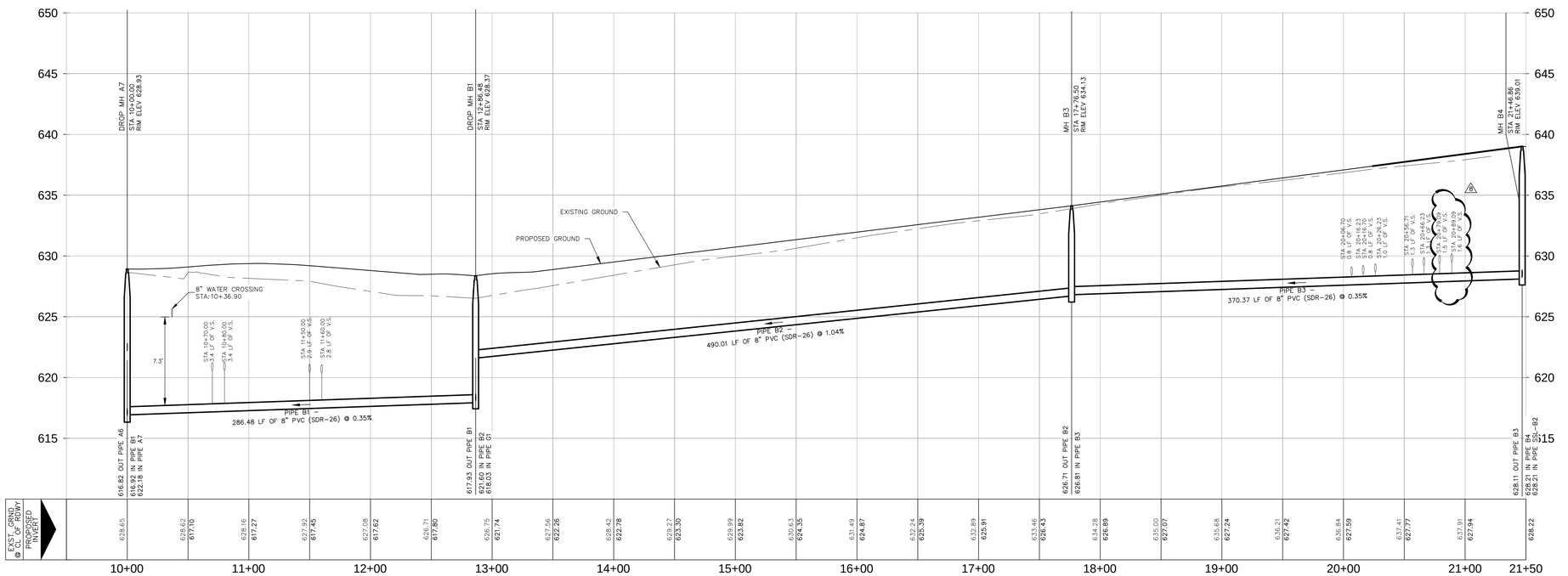
Drawing Name: N:\Projects\NB\24012 Jaro North Subdivision\Civil\Construction Drawings\36 SANITARY SEWER LINES A STA.34+00 TO END B2 STA 10+0 TO END.dwg User: chuckwire Dec 10, 2024 - 2:19pm



Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe B1	286.48	8	0.35	42	26.3	320.85	1.2	1.55	YES
Pipe B2	490.01	8	1.04	38	23.8	453.76	1.5	1.25	YES
Pipe B3	370.37	8	0.35	14	8.8	320.85	0.8	0.7	YES

LINE B

SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'



LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER MAIN
- NEW DOUBLE METERED DUAL WATER SERVICE
- NEW FIRE HYDRANT

0 50' 100'
SCALE: 1"=50'

CONSTRUCTION NOTES:

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STATE OF TEXAS
JAMES INGALLS
107410
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH
SUBDIVISION UNIT 1

SANITARY SEWER LINE B
STA. 10+00 TO 22+00

SHEET 37 OF 49

NO	DATE	ISSUES AND REVISIONS
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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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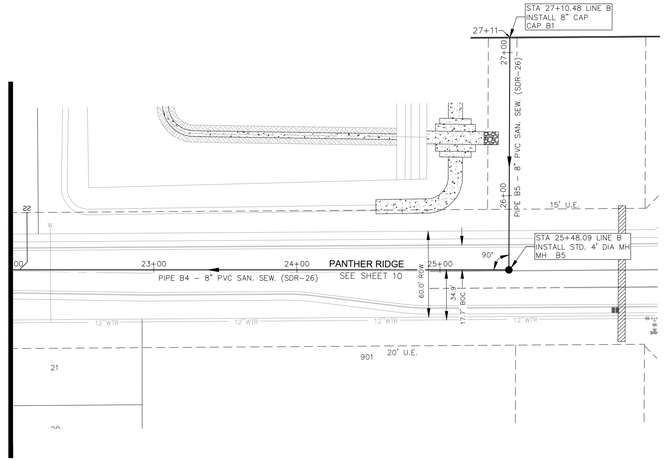
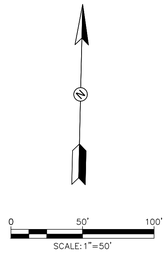
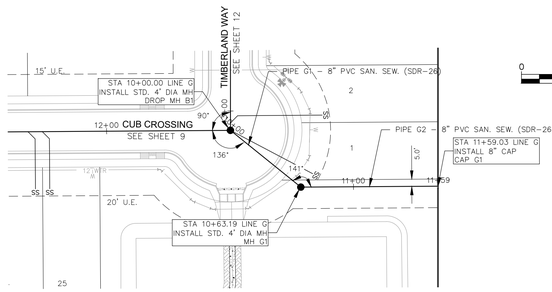
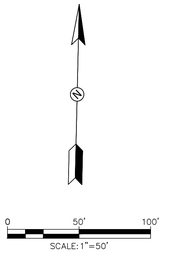
Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\37 SANITARY SEWER LINE B STA. 10+00 TO 22+00.dwg User: chuckwere Dec 09, 2024 - 3:50pm





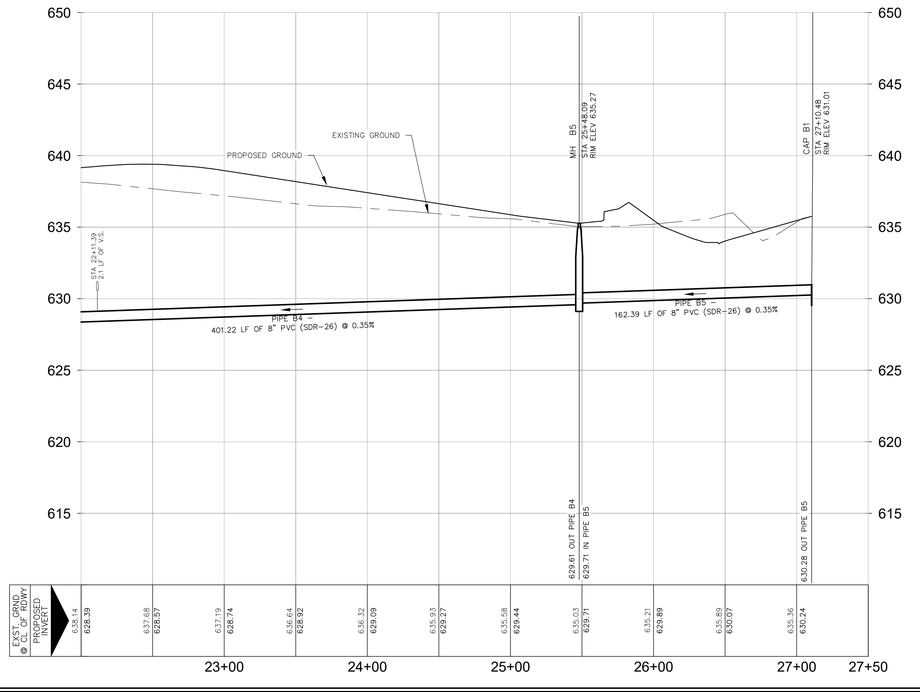




SCALE:
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

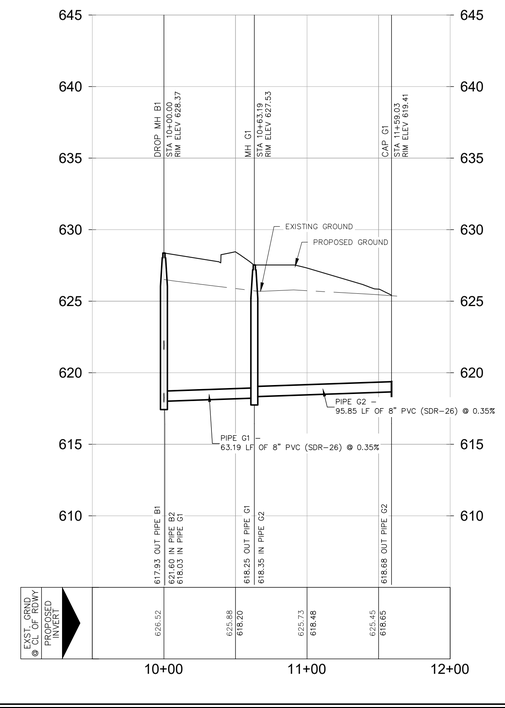
Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe B4	154.76	8	0.35	0	n/a	320.85	n/a	n/a	YES
Pipe B5	35.55	8	0.35	0	n/a	320.85	n/a	n/a	YES

LINE B STA 22+00 TO END



Pipe Segment	Length (ft)	Pipe Dia (in)	Slope (%)	LUE	Peak Wet Flow (gpm)	Pipe Capacity (gpm)	PWF V(fps)	PWF depth (in)	Sufficient Capacity
Pipe G1	63.19	8	0.35	0	n/a	320.85	n/a	n/a	YES
Pipe G2	95.85	8	0.35	0	n/a	320.85	n/a	n/a	YES

LINE G



LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER MAIN
- NEW DOUBLE METERED DUAL WATER SERVICE
- NEW FIRE HYDRANT

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAYS APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A. SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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 GEO-TECHNICAL 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.
12. 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.

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

JARO NORTH
SUBDIVISION UNIT 1

SANITARY SEWER LINE B
STA. 22+00 TO END & LINE G

SHEET
37A OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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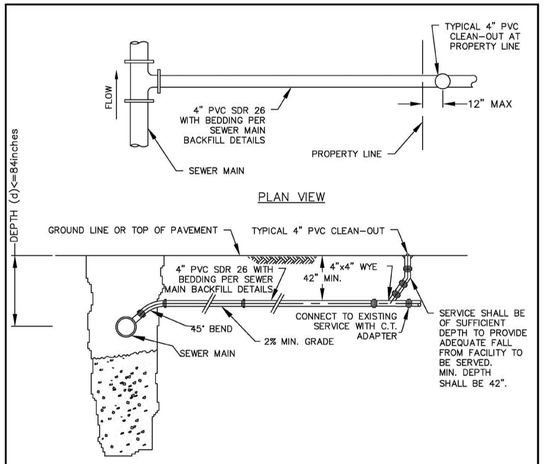
Drawing Name: N:\Projects\BEAC012 Jaro North Subdivision\Civil\Construction Drawings\37A SANITARY SEWER LINE B STA. 22+00 TO END & LINE G.dwg User: mstevenson Feb 17, 2022 - 5:26pm



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'.

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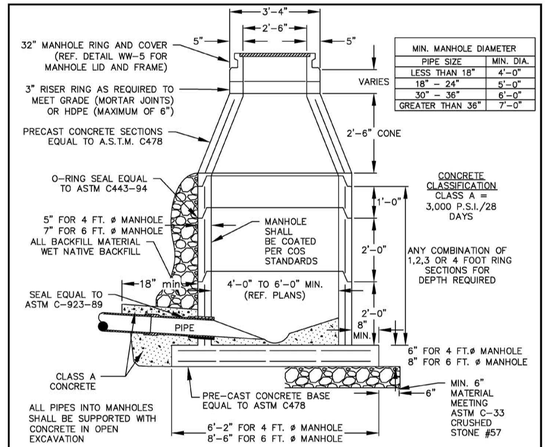
DATE ISSUED:	JUNE 1, 2013		
REVISION	DATE	BY
1ST REVISION	8/10/18	DB
2ND REVISION	6/18/20	DB

TITLE: SHALLOW SANITARY SEWER RESIDENTIAL SERVICE CONNECTION

SCALE: N.T.S. | DRAWING No. WW-1



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

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

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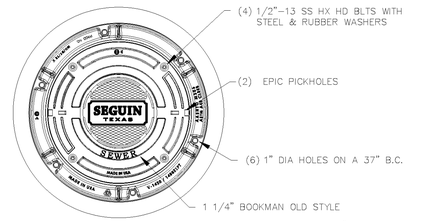
DATE ISSUED:	JUNE 1, 2013		
REVISION	DATE	BY
1ST REVISION	7/29/15	TN
2ND REVISION	8/10/18	DB

TITLE: SANITARY SEWER PRECAST CONCRETE MANHOLE

SCALE: N.T.S. | DRAWING No. WW-2



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. INFLOW PROTECTION INSERT, MINIMUM THICKNESS OF ONE-EIGHT INCH (1/8"), MADE OF HDPE MEETING ASTM D 1248 CLASS A, CATEGORY 5, TYPE 111. INSERT SHALL INCLUDE A LIFT STRAP AND VENT HOLE WITH VENT DISK AS MANUFACTURED BY KNUTSON MANHOLE INSERTS OR APPROVED OTHER.
6. MANHOLE SHALL BE ENCASED PER DETAIL ON SHT. WW-6, MANHOLE RING ENCASEMENT DETAIL.
7. INSTALL BOLTED COVER FOR STRUCTURES LOCATED OUTSIDE OF PAVED AREAS. INSTALL UN-BOLTED COVERS WHEN PLACED WITHIN THE STREET OR PAVED AREAS.
8. FRAME AND COVER ARE MANUFACTURED BY EAST JORDAN IRON COMPANY.
   8.1: BOLTED: COVER V1430APT RING: V1420/1480Z1PT
   8.2: NON-BOLTED: COVER: V1430 RING: V1420/1480Z1

SEGUIN TEXAS

DATE ISSUED:	JUNE 1, 2013		
REVISION	DATE	BY
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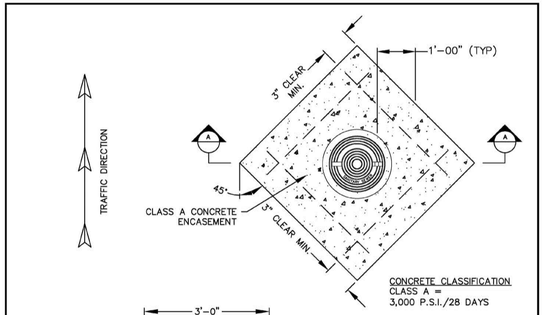
2ND REVISION	12/24/15	AM
3RD REVISION	03/05/19	MS

TITLE: CAST IRON MANHOLE LID AND FRAME

SCALE: N.T.S. | DRAWING No. WW-5



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.

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DATE ISSUED:	JUNE 1, 2013		
REVISION	DATE	BY
1ST REVISION	7/29/15	TN
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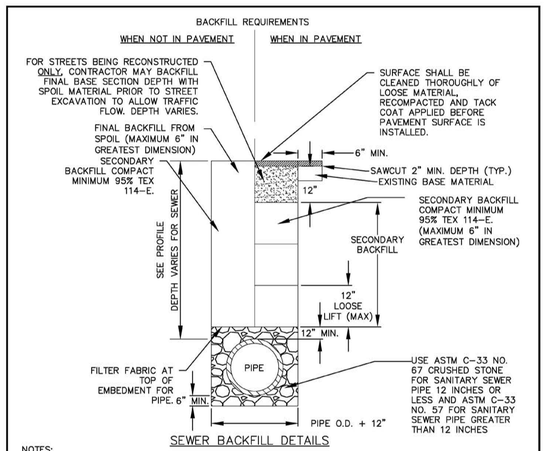
TITLE: MANHOLE RING ENCASEMENT DETAILS

SCALE: N.T.S. | DRAWING No. WW-6



SEWER BACKFILL DETAILS

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

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DATE ISSUED:	JUNE 1, 2013		
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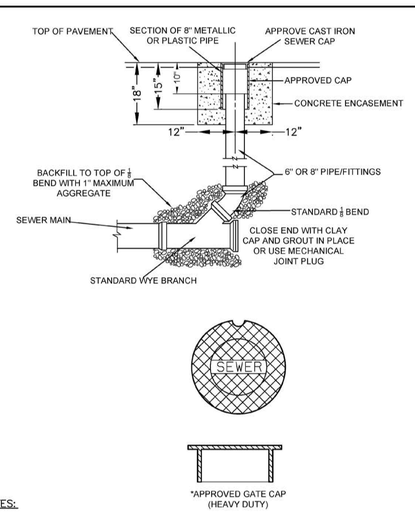
2ND REVISION	12/11/15	AM
3RD REVISION	5/25/18	DB

TITLE: SEWER BACKFILL DETAIL

SCALE: N.T.S. | DRAWING No. WW-8



NOTES:

1. DEPENDING UPON THE TYPE OF SERVICE THAT AN 8 INCH LATERAL (ON A DEAD END MAIN) IS PROVIDING, A STANDARD MANHOLE IN LIEV OF IS CLEANOUT MAY BE REQUIRED. CONSULT WITH THE INSPECTOR.

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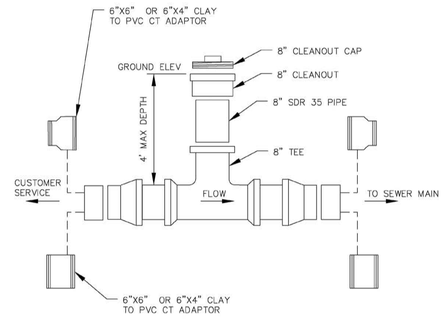
DATE ISSUED:	FEBRUARY 1, 2019		
REVISION	DATE	BY

TITLE: TYPICAL 6" TO 8" CLEANOUT DETAIL (ON DEAD-END MAIN)

SCALE: N.T.S. | DRAWING No. WW-20



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DATE ISSUED:	JUNE 1, 2013		
REVISION	DATE	BY
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2ND REVISION	5/25/18	DB

TITLE: WASTEWATER SAMPLING SITE

SCALE: N.T.S. | DRAWING No. WW-15

STATE OF TEXAS — JAMES INGALLS — 107416 — LICENSED PROFESSIONAL ENGINEER — 2/12/22

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

JARO NORTH SUBDIVISION
UNIT 1

SANITARY SEWER DETAILS I

SHEET 38 OF 49

NO	DATE	ISSUES AND REVISIONS
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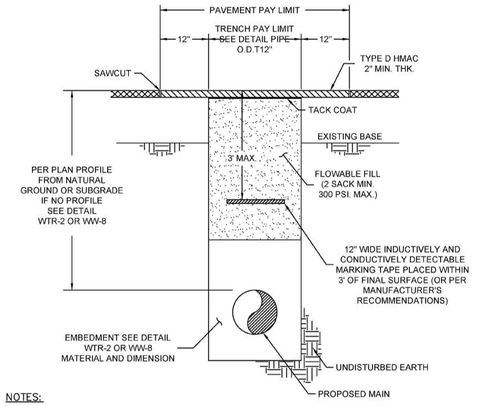
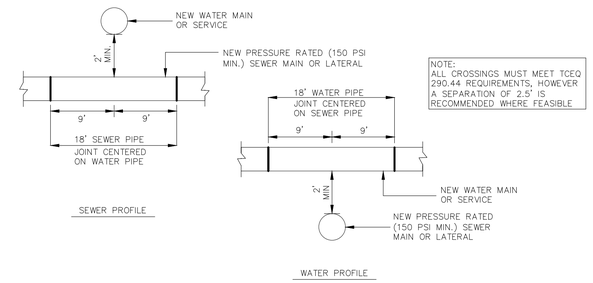


NOTES:

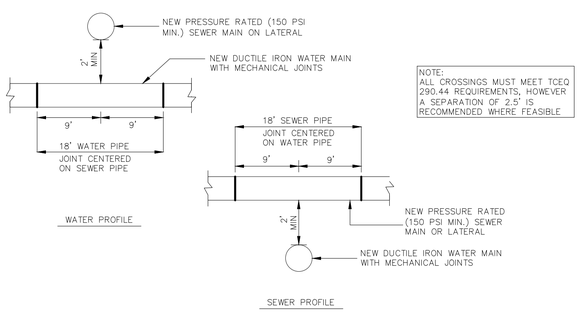
1. THE EXISITING PAVED SURFCE SHALL BE SAW CUT IN A STRAIGHT LINE A MINIMUM OF 12" WIDER THAN THE UNDISTURBED SIDES OF THE TRENCH, SYMMETRICAL ABOUT THE CENTER LINE OF THE EXCAVATION.
2. ALL DAMAGED AREAS OF THE PAVEMENT OUTSIDE THE TRENCH CUT SHALL BE REMOVED AND REPLACED WITH MINIMUM OF 8" OF BASE OR MATCH EXISTING THICKNESS AND 2" HMAC, WHICHEVER IS GREATER.

SEGUIN TEXAS It's real.	DATE ISSUED:	JUNE 1, 2013	TITLE	STREET TRENCH FLOWABLE FILL
	REVISION	DATE / BY		
			SCALE:	DRAWING No.
			SCALE: N.T.S.	WW-19



NEW WATER OVER NEW SEWER CROSSING DETAIL

Scale: NTS



NEW SEWER OVER NEW WATER CROSSING DETAIL

Scale: NTS

Drawing Name: N:\Projects\BEACH12 Jaro North Subdivision\Civil\Construction Drawings\39 SANITARY SEWER DETAILS II.dwg User: mdrivenbark Feb 17, 2022 - 5:26pm

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED PROFESSIONAL ENGINEER
2/18/22

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

JARO NORTH SUBDIVISION
UNIT 1

SANITARY SEWER DETAILS II

SHEET 39 OF 49

NO	DATE	ISSUES AND REVISIONS
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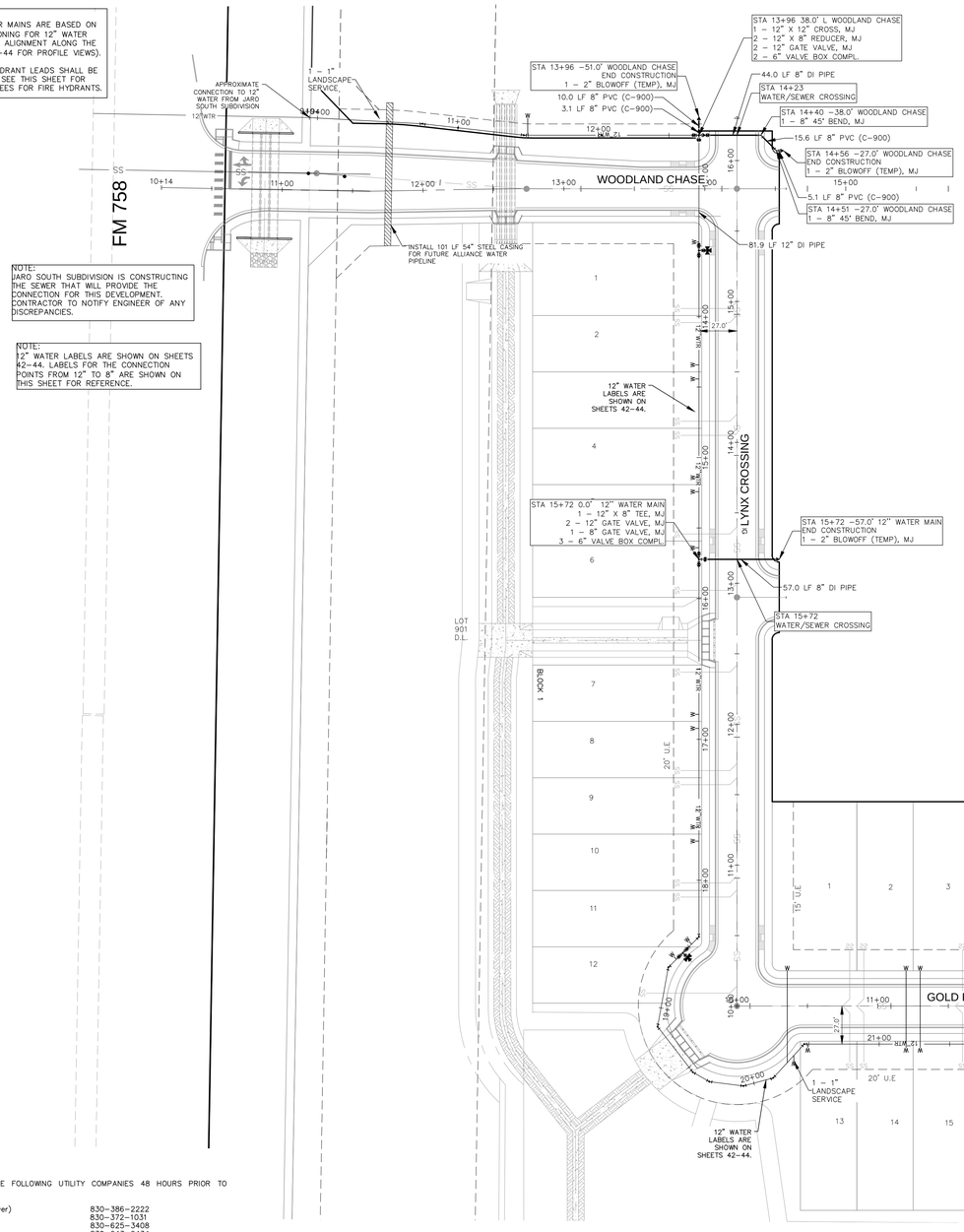
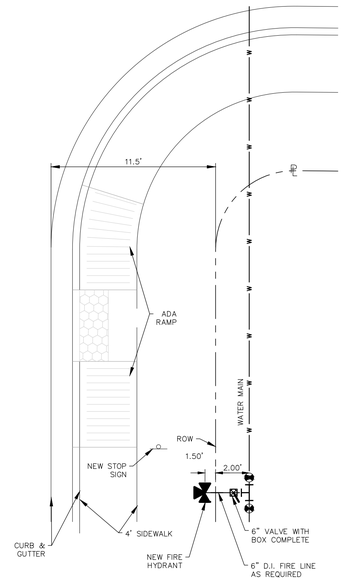
NOTES:
1. STATIONING FOR 8" WATER MAINS ARE BASED ON ROAD ALIGNMENTS. STATIONING FOR 12" WATER MAINS ARE BASED ON AN ALIGNMENT ALONG THE 12" MAIN (SEE SHEET 42–44 FOR PROFILE VIEWS).
2. GATE VALVES ON FIRE HYDRANT LEADS SHALL BE RESTRAINED AT THE TEE. SEE THIS SHEET FOR CALLOUTS FOR ANCHOR TEES FOR FIRE HYDRANTS.





FIRE HYDRANT LOCATION DETAIL
SCALE: NTS

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

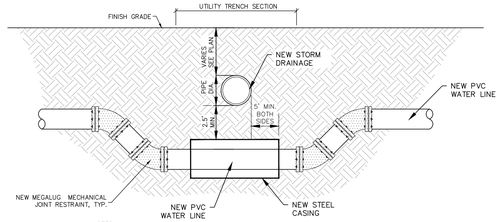
City of Seguin Utilities (Sewer)	830–386–2222
Crystal Clear SUD	830–372–1031
Spectrum Cable	830–625–3408
Centerpoint Gas	830–643–6434
Robert Sanders	830–643–6903
Damaged Line	888–876–5786
AT&T Telephone	830–303–1333
Erick White PM	210–283–1706
Scott McBrearty (Construction)	210–658–4886
Texas One Call	830–545–6005

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

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

TRENCH EXCAVATION SAFETY PROTECTION
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.

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.



NOTES:
1. MECHANICAL JOINTS SHALL CONFORM TO THE AWWA C–600 INSTALLATION PROCEDURES.
2. REFERENCE THE SPECIFICATIONS FOR MECHANICALLY RESTRAINED JOINTS FOR ADDITIONAL INFORMATION.
3. RECOMPACT ALL PIPE BEDDING AROUND NEW AND EXISTING PIPES AND REPAIR OR RECONSTRUCT FINISH GRADE MATERIAL.

WATER LINE / STORM DRAINAGE CROSSING DETAIL
(NOT TO SCALE)

CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) WATER MAIN NOTES

1. 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.
2. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.
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. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS.
6. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900/C905 DR 18, COLORED BLUE.
7. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C150 AND AWWA C151 AND CEMENT LINED.
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. 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.
10. THE OWNER SHALL SUPPLY ALL WATER NEEDED FOR CONSTRUCTION TESTING AND DISINFECTION. THE CONTRACTOR SHALL NOT BE REQUIRED TO PAY FOR THIS WATER.
11. UNLESS NOTED OTHERWISE, ALL WATER MAIN P.I.'S SHALL BE ACHIEVED USING THE WATER MAIN MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
12. WATER MAINS AND VALVES THAT ARE ABANDONED IN PLACE SHALL BE CUT AND PLUGGED PER SPECIFICATION SECTION 02500 –ABANDONMENT OF WATER INFRASTRUCTURE.
13. REMOVE ONLY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL NECESSARY FOR CONSTRUCTION AND DISPOSE OF OFF SITE.
14. CONSTRUCTION OF ALL CCSUD WATER UTILITY INFRASTRUCTURE MUST ADHERE TO CCSUD'S TECHNICAL SPECIFICATIONS, DETAILS AND APPROVED EQUIPMENT LIST.

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH CCSUD IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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. 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 GEO– TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. 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. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
12. 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.

0 50' 100'
SCALE: 1"=50'

LEGEND

SS	NEW SANITARY SEWER
	NEW MANHOLE
S	NEW SEWER LATERAL
W	NEW WATER SERVICE
	NEW SINGLE METERED WATER SERVICE
	NEW FIRE HYDRANT
OHE	EXISTING OVERHEAD ELECTRIC
8" SS	EXISTING 8" SANITARY SEWER
// // //	EXISTING WOOD FENCE
X X X	EXISTING BARBWIRE FENCE
	EXISTING TRAFFIC GUARDRAIL
	EXISTING SIGN
	EXISTING SANITARY SEWER MANHOLE
	EXISTING UTILITY POLE
	EXISTING GUY

JARO NORTH SUBDIVISION UNIT 1	
ITEM	QTY.
WATER MAIN (8" PVC C–900)	1312 LF
WATER MAIN (12" PVC C–900)	3365 LF
WATER MAIN (8" DUCTILE IRON)	468 LF
WATER MAIN (12" DUCTILE IRON)	67 LF
WATER SERVICES	124 EA. (2)
IRRIGATION SERVICES	3 EA. (2)
WATER METERS	127 EA. (2)
FIRE HYDRANTS	9 EA.
FIRE LINES	90 LF

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

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

JARO NORTH SUBDIVISION UNIT 1

WATER DISTRIBUTION PLAN I

SHEET
40 OF 49

NO	DATE	ISSUES AND REVISIONS
1	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL
2	12–10–2024	ADDED 5 LOTS TO BLOCK 8

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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Drawing Name: N:\Projects\JEA2012 Jaro North Subdivision\Civil\Construction Drawings\40_WATER DISTRIBUTION PLAN I.dwg User: chuckware Dec 10, 2024 - 12:10pm

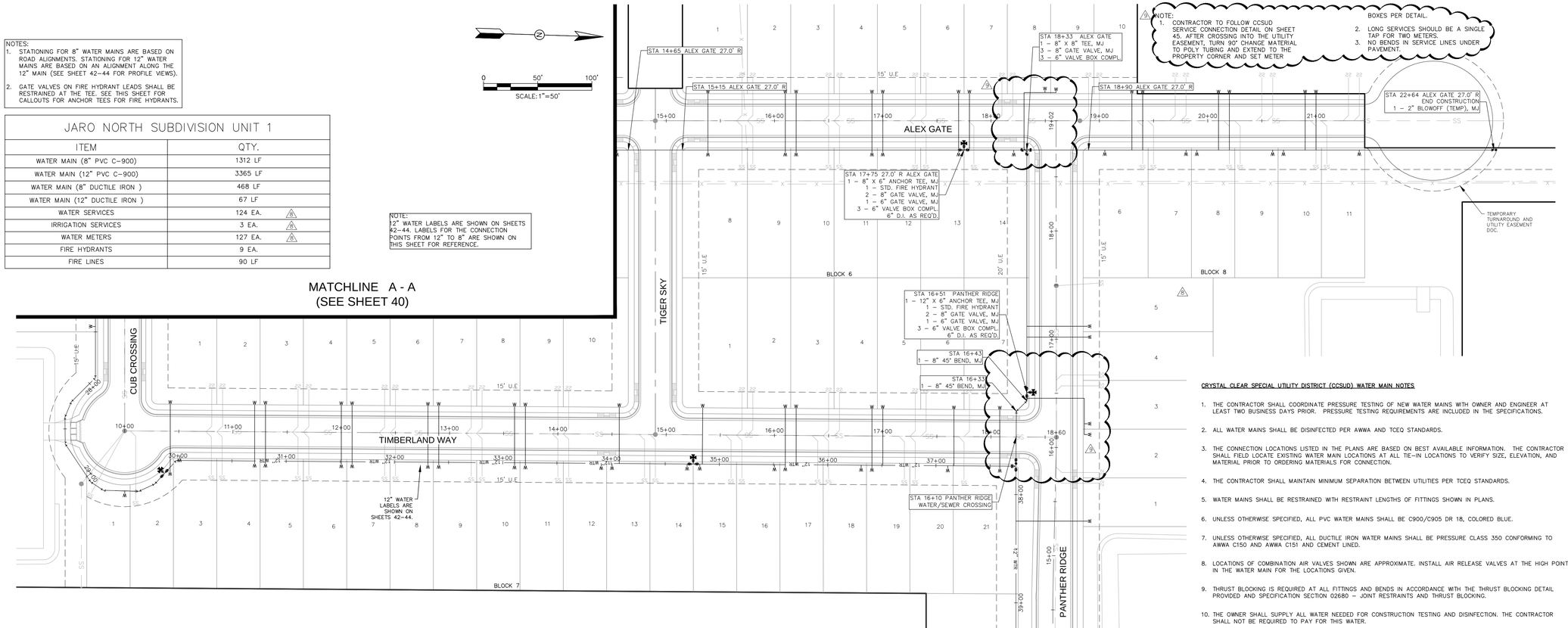
NOTES:
1. STATIONING FOR 8" WATER MAINS ARE BASED ON ROAD ALIGNMENTS. STATIONING FOR 12" WATER MAINS ARE BASED ON AN ALIGNMENT ALONG THE 12" MAIN (SEE SHEET 42-44 FOR PROFILE VIEWS).
2. GATE VALVES ON FIRE HYDRANT LEADS SHALL BE RESTRAINED AT THE TEE. SEE THIS SHEET FOR CALLOUTS FOR ANCHOR TEES FOR FIRE HYDRANTS.

JARO NORTH SUBDIVISION UNIT 1	
ITEM	QTY.
WATER MAIN (8" PVC C-900)	1312 LF
WATER MAIN (12" PVC C-900)	3365 LF
WATER MAIN (8" DUCTILE IRON)	468 LF
WATER MAIN (12" DUCTILE IRON)	67 LF
WATER SERVICES	124 EA. 8
IRRIGATION SERVICES	3 EA. 8
WATER METERS	127 EA. 8
FIRE HYDRANTS	9 EA.
FIRE LINES	90 LF

NOTE:
12" WATER LABELS ARE SHOWN ON SHEETS 42-44. LABELS FOR THE CONNECTION POINTS FROM 12" TO 8" ARE SHOWN ON THIS SHEET FOR REFERENCE.

0 50' 100'
SCALE: 1"=50'

MATCHLINE A - A
(SEE SHEET 40)



NOTE:
1. CONTRACTOR TO FOLLOW CCSUD SERVICE CONNECTION DETAIL ON SHEET 45. AFTER CROSSING INTO THE UTILITY EASEMENT, TURN 90° CHANGE MATERIAL TO POLY TUBING AND EXTEND TO THE PROPERTY CORNER AND SET METER BOXES PER DETAIL.
2. LONG SERVICES SHOULD BE A SINGLE TAP FOR TWO METERS.
3. NO BENDS IN SERVICE LINES UNDER PAVEMENT.

LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT
- EXISTING OVERHEAD ELECTRIC
- EXISTING 8" SANITARY SEWER
- EXISTING WOOD FENCE
- EXISTING BARBWIRE FENCE
- EXISTING TRAFFIC GUARDRAIL
- EXISTING SIGN
- EXISTING SANITARY SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY

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

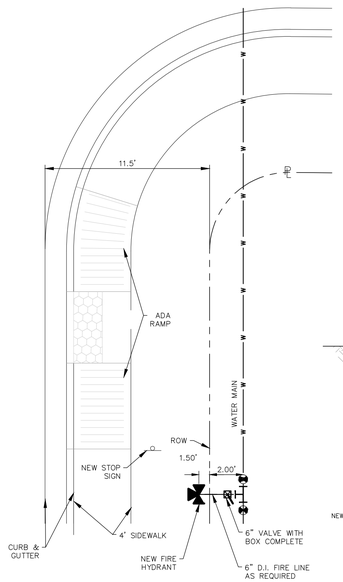
City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

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

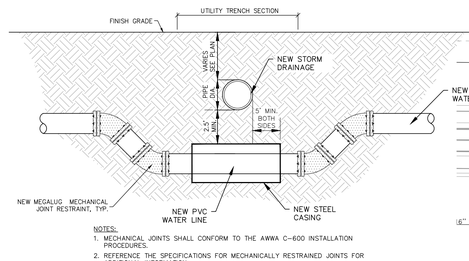
TELEPHONE LOCATOR
THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION OR AT 1-800-545-6005,. CONTRACTOR HAS THE RESPONSIBILITY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

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

THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN 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.



FIRE HYDRANT LOCATION DETAIL
SCALE: NTS



NOTES:
1. MECHANICAL JOINTS SHALL CONFORM TO THE AWWA C-600 INSTALLATION PROCEDURES.
2. REFERENCE THE SPECIFICATIONS FOR MECHANICALLY RESTRAINED JOINTS FOR ADDITIONAL INFORMATION.
3. RECOMPACT ALL PIPE BEDDING AROUND NEW AND EXISTING PIPES AND REPAIR OR RECONSTRUCT FINISH GRADE MATERIAL.

WATER LINE / STORM DRAINAGE CROSSING DETAIL
(NOT TO SCALE)

CRYSTAL CLEAR SPECIAL UTILITY DISTRICT (CCSUD) WATER MAIN NOTES

1. 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.
2. ALL WATER MAINS SHALL BE DISINFECTED PER AWWA AND TCEQ STANDARDS.
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. WATER MAINS SHALL BE RESTRAINED WITH RESTRAINT LENGTHS OF FITTINGS SHOWN IN PLANS.
6. UNLESS OTHERWISE SPECIFIED, ALL PVC WATER MAINS SHALL BE C900/C905 DR 18, COLORED BLUE.
7. UNLESS OTHERWISE SPECIFIED, ALL DUCTILE IRON WATER MAINS SHALL BE PRESSURE CLASS 350 CONFORMING TO AWWA C150 AND AWWA C151 AND CEMENT LINED.
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. 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.
10. THE OWNER SHALL SUPPLY ALL WATER NEEDED FOR CONSTRUCTION TESTING AND DISINFECTION. THE CONTRACTOR SHALL NOT BE REQUIRED TO PAY FOR THIS WATER.
11. UNLESS NOTED OTHERWISE, ALL WATER MAIN P.I.'S SHALL BE ACHIEVED USING THE WATER MAIN MANUFACTURER'S ALLOWABLE JOINT DEFLECTION.
12. WATER MAINS AND VALVES THAT ARE ABANDONED IN PLACE SHALL BE CUT AND PLUGGED PER SPECIFICATION SECTION 02500 –ABANDONMENT OF WATER INFRASTRUCTURE.
13. REMOVE ONLY VEGETATION, TREES, STUMPS, RUBBISH, AND OTHER MATERIAL NECESSARY FOR CONSTRUCTION AND DISPOSE OF OFF SITE.
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2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
8. ALL UTILITIES SHALL BE CONSTRUCTED PRIOR TO STREETS.
9. ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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. 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 GEO- TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. 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. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
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STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
04/17/2025

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

JARO NORTH SUBDIVISION UNIT 1

WATER DISTRIBUTION PLAN II

SHEET 41 OF 49

NO	DATE	ISSUES AND REVISIONS
1	5-28-2024	REVISED PER CCSUD COMMENTS
2	12-10-2024	ADDED 5 LOTS TO BLOCK 8
3	04-16-2025	REVISED PER CCSUD COMMENTS

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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Drawing Name: N:\Projects\BEACO\2 Jaro North Subdivision\Civil\Construction Drawings\41 WATER DISTRIBUTION PLAN II.dwg User: jamesingalls Apr 17, 2025 - 7:32am

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
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9. ENSURE ALL DRIVEWAY APPROACHES ARE BUILT IN GENERAL ACCORDANCE WITH A.D.A SPECIFICATIONS.
10. NO VALVES, FIRE HYDRANTS, ETC. SHALL BE CONSTRUCTED WITHIN CURBS, SIDEWALKS OR DRIVEWAYS.
11. 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. 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 GEO- TECHNICAL ENGINEER AND APPROVED BY THE CITY OF NEW BRAUNFELS STREET INSPECTOR. AT A MINIMUM, TESTS SHALL BE TAKEN EVERY 200LF FOR EACH LIFT AND EVERY OTHER SERVICE LINE. 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. ADDITIONAL DENSITY TESTS MAY BE REQUESTED BY THE CITY OF NEW BRAUNFELS INSPECTOR.
12. 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.

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

City of Seguin Utilities (Sewer)	830-386-2222
Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

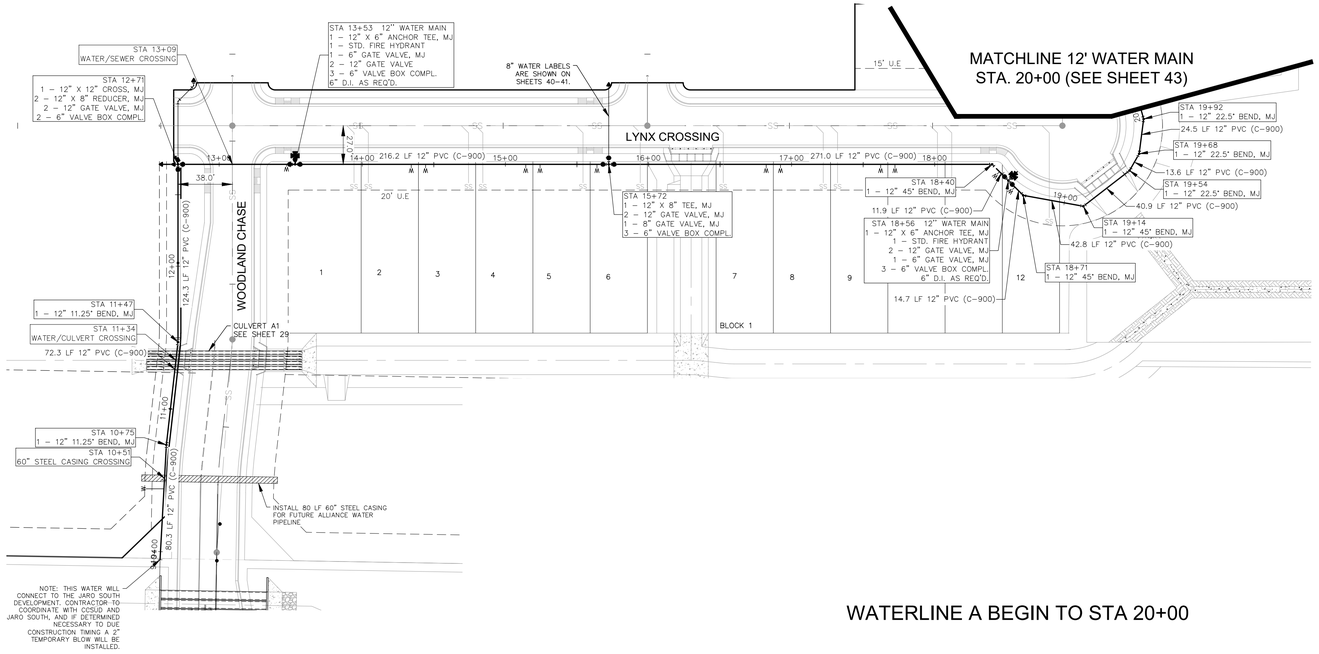
TELEPHONE LOCATOR

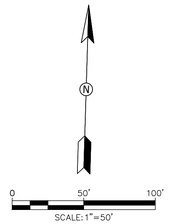
THE EXISTENCE AND LOCATION OF UNDERGROUND CABLE INDICATED ON THE PLANS ARE TAKEN FROM THE BEST RECORDS AVAILABLE AND ARE NOT GUARANTEED TO BE ACCURATE. CONTRACTOR TO CONTACT THE TELEPHONE COMPANY CABLE LOCATOR 48HRS PRIOR TO EXCAVATION AT 1-800-545-6005,. CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT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

TRENCH EXCAVATION SAFETY PROTECTION

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.

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



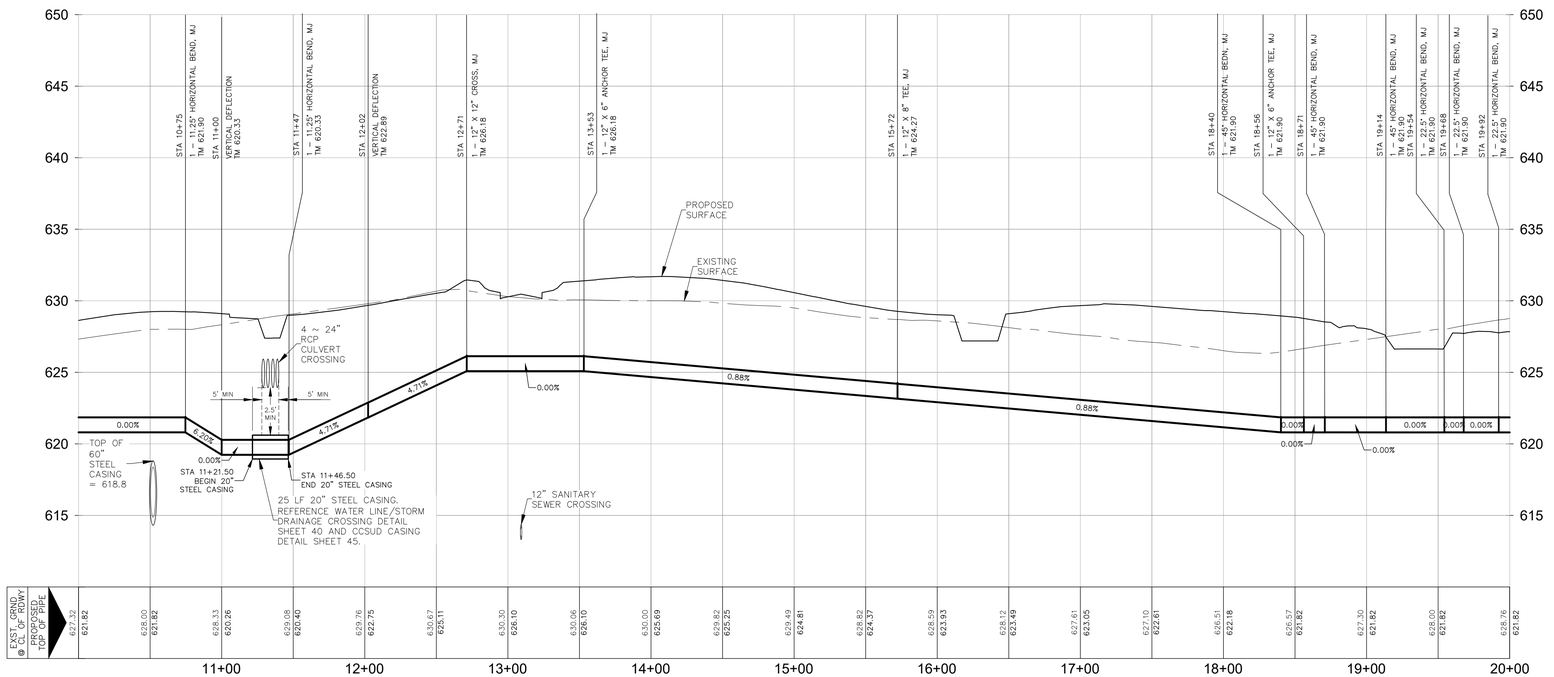


LEGEND

- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT
- EXISTING OVERHEAD ELECTRIC
- EXISTING 8" SANITARY SEWER
- EXISTING WOOD FENCE
- EXISTING BARBWIRE FENCE
- EXISTING TRAFFIC GUARDRAIL
- EXISTING SIGN
- EXISTING SANITARY SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY

NOTE:
8" WATER LABELS ARE SHOWN ON SHEETS 40-41. LABELS FOR THE CONNECTION POINTS FROM 12" TO 8" ARE SHOWN ON THIS SHEET FOR REFERENCE.

WATERLINE A BEGIN TO STA 20+00



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

JARO NORTH SUBDIVISION
UNIT 1

12in WATER MAIN
STA. 10+00 TO 20+00

SHEET
42 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\BEAC012 Jaro North Subdivision\Civil\Construction Drawings\42 12in WATER MAIN STA. 10+00 TO 20+00.dwg User: mdanderra Feb 17, 2022 - 5:32pm

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
2. WHERE A 9' (NINE FOOT) SEPARATION FROM WATER AND SEWER LINES CROSSING CANNOT BE MAINTAINED, THE NEW WATER LINE SHALL BE ABOVE THE SEWER LINE AS SHOWN ON THE WATER/SEWER LINE CROSSING DETAIL. AT NO TIME SHALL A WATER LINE OR WATER SERVICE BE PLACED UNDER A SEWER LINE OR SEWER SERVICE.
3. WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. IF THE EXISTING WASTEWATER MAIN OR LATERAL SHOWS SIGNS OF LEAKING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.
4. ALL PRIVATE SERVICE LATERALS MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH 30 TAC §213.5(C)(3)(I). AFTER INSTALLATION OF AND, PRIOR TO COVERING AND CONNECTING A PRIVATE SERVICE LATERAL TO AN EXISTING ORGANIZED SEWAGE COLLECTION SYSTEM, A TEXAS LICENSED PROFESSIONAL ENGINEER, TEXAS REGISTERED SANITARIAN, OR APPROPRIATE CITY INSPECTOR MUST VISUALLY INSPECT THE PRIVATE SERVICE LATERAL AND THE CONNECTION TO THE SEWAGE COLLECTION SYSTEM, AND CERTIFY THAT IT IS CONSTRUCTED IN CONFORMITY WITH THE APPLICABLE PROVISIONS OF THIS SECTION. THE OWNER OF THE COLLECTION SYSTEM MUST MAINTAIN SUCH CERTIFICATIONS FOR FIVE YEARS AND FORWARD COPIES TO THE APPROPRIATE REGIONAL OFFICE UPON REQUEST. CONNECTIONS MAY ONLY BE MADE TO AN APPROVED SEWAGE COLLECTION SYSTEM.
5. FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
6. METER BOXES MUST BE SET AT PROPOSED FINISHED GRADE. ANY METER BOXES THAT ARE NOT SET AT THE FINAL GRADE WILL BE ADJUSTED BY THE CONTRACTOR AT NO ADDITIONAL COSTS.
7. CONTRACTOR TO COORDINATE WITH NBU IF EXISTING WATER MAINS WILL BE REMOVED FROM SERVICE AT ANY TIME.
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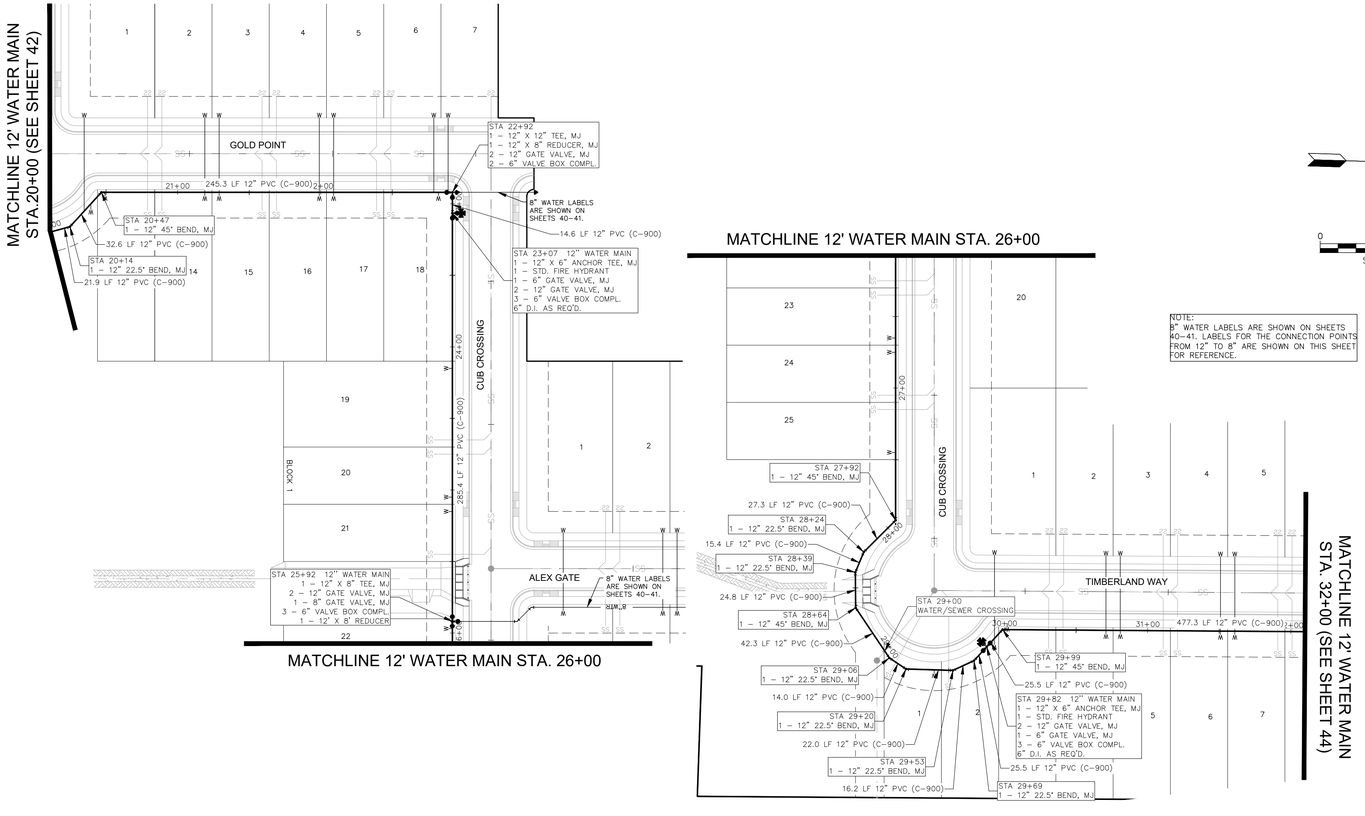
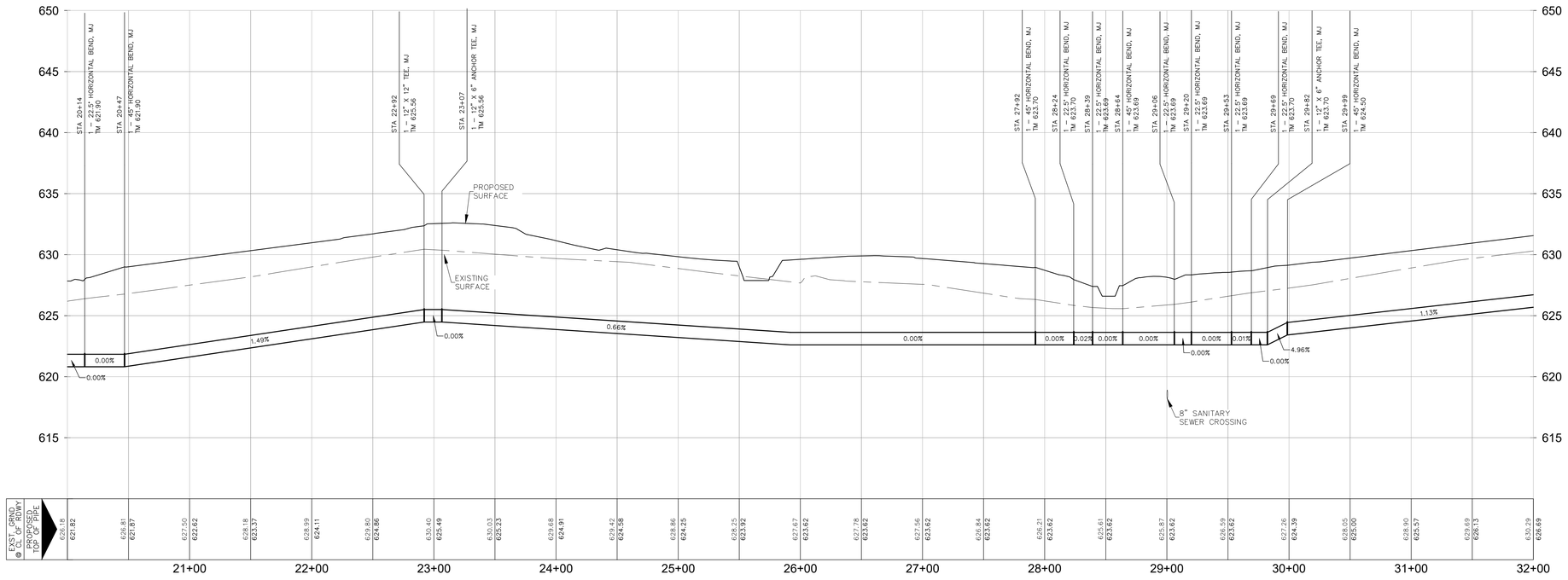


LEGEND

- SS — NEW SANITARY SEWER
- NEW MANHOLE
- SS — NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT
- OHE — EXISTING OVERHEAD ELECTRIC
- 8" SS — EXISTING 8" SANITARY SEWER
- EXISTING WOOD FENCE
- X — EXISTING BARBWIRE FENCE
- EXISTING TRAFFIC GUARDRAIL
- EXISTING SIGN
- EXISTING SANITARY SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY

WATERLINE A STA 20+00 TO STA 32+00



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

JARO NORTH SUBDIVISION
UNIT 1

12in WATER MAIN STA.
20+00 TO 32+00

SHEET 43 OF 49

NO	DATE	ISSUES AND REVISIONS
1		

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Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\43 12in WATER MAIN STA. 20+00 TO 32+00.dwg User: mdelamerjanty Feb 17, 2022 - 5:32pm

CONSTRUCTION NOTES:

1. WHERE WATER LINES AND NEW SEWER LINES ARE INSTALLED WITH A SEPARATION DISTANCE CLOSER THAN NINE FEET (I.E., WATER LINES CROSSING WASTEWATER LINES, WATER LINES PARALLELING WASTEWATER LINES, OR WATER LINES NEXT TO MANHOLES) THE INSTALLATION MUST MEET THE REQUIREMENTS OF 30 TAC §217.53(D) (PIPE DESIGN) AND 30 TAC §290.44(E) (WATER DISTRIBUTION).
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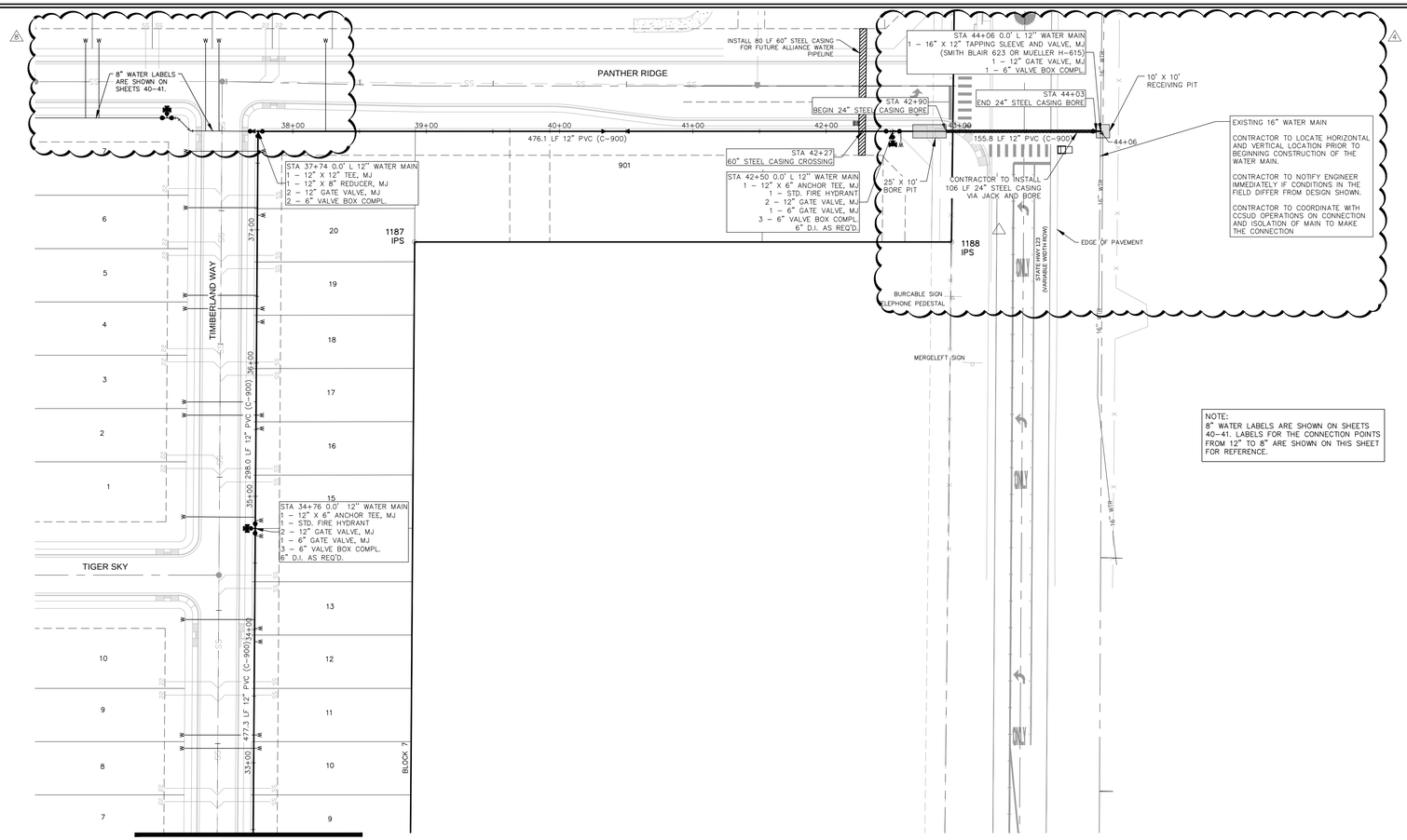


MATCHLINE 12' WATER MAIN
STA.32+00 (SEE SHEET 43)

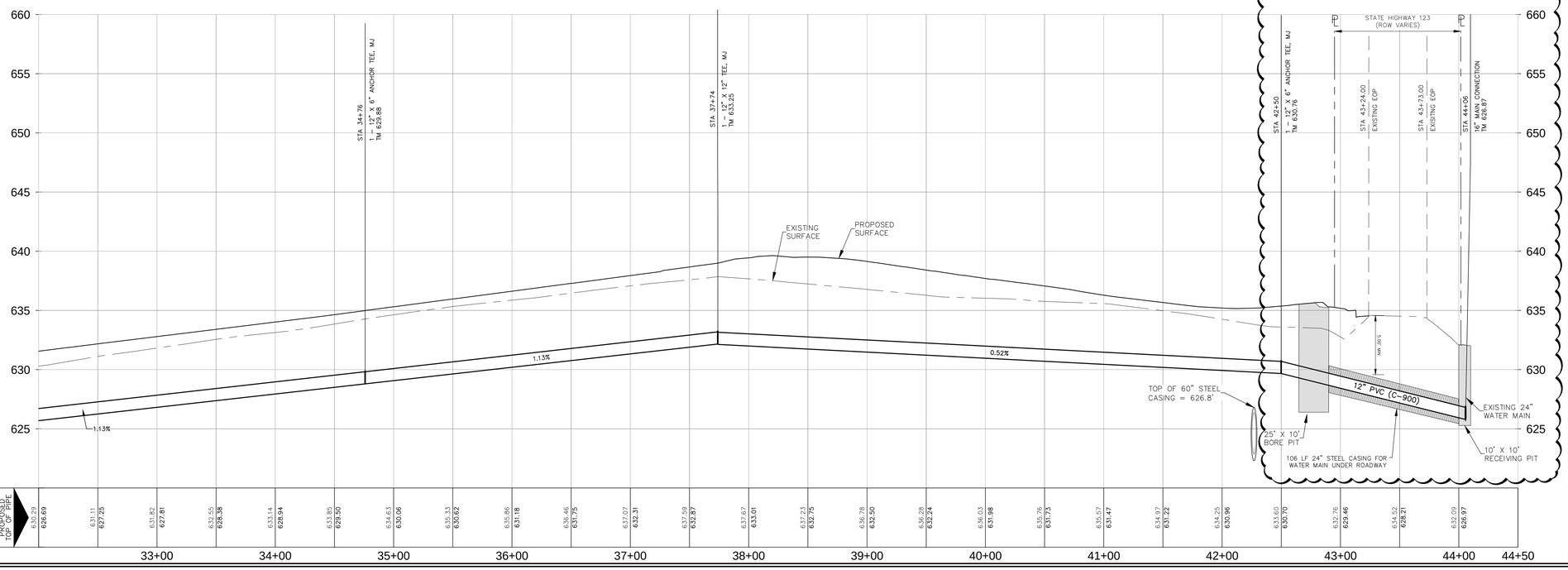
NOTE:
8" WATER LABELS ARE SHOWN ON SHEETS 40-41. LABELS FOR THE CONNECTION POINTS FROM 12" TO 8" ARE SHOWN ON THIS SHEET FOR REFERENCE.

0 50' 100'
SCALE: 1"=50'

LEGEND

- PROPERTY LINE
- NEW SANITARY SEWER
- NEW MANHOLE
- NEW SEWER LATERAL
- NEW WATER SERVICE
- NEW SINGLE METERED WATER SERVICE
- NEW FIRE HYDRANT
- EXISTING OVERHEAD ELECTRIC
- EXISTING 8" SANITARY SEWER
- EXISTING WOOD FENCE
- EXISTING BARBWIRE FENCE
- EXISTING TRAFFIC GUARDRAIL
- EXISTING SIGN
- EXISTING SANITARY SEWER MANHOLE
- EXISTING UTILITY POLE
- EXISTING GUY

WATERLINE A STA 32+00 TO END



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

JARO NORTH SUBDIVISION
UNIT 1

12in WATER MAIN
STA. 32+00 TO END

SHEET
44 OF 49

NO	DATE	ISSUES AND REVISIONS
1	5-17-2024	REVISED PER CCSUD COMMENTS
2	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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Drawing Name: N:\Projects\08\EAC012 Jaro North Subdivision\Civil\Construction Drawings\44 12in WATER MAIN STA 32+00 TO END.dwg User: chuckwere Dec 09, 2024 - 3:32pm

Date: Apr 26, 2024, 8:27am User ID: kvogler
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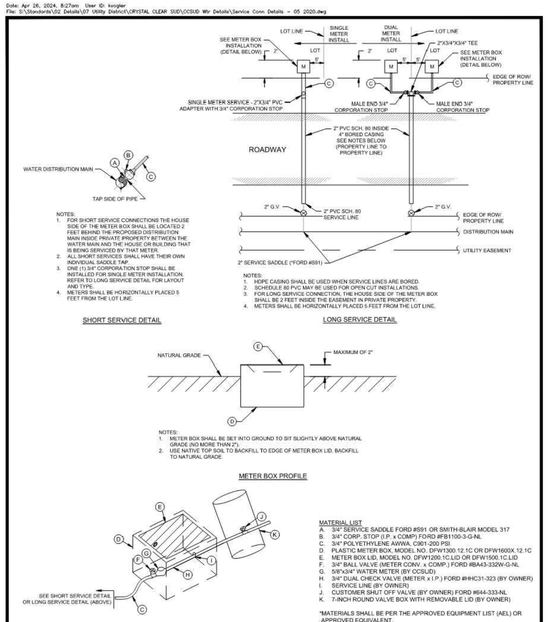


NOTES:
1. FOR SHORT SERVICE CONNECTIONS THE HOUSE SHALL BE OF THE METER BOX SHALL BE LOCATED 2 FEET BEHIND THE PROPOSED DISTRIBUTION MAIN INSIDE PRIVATE PROPERTY BETWEEN THE WATER MAIN AND THE HOUSE OR BUILDING THAT IS BEING SERVICED BY THAT METER.
2. ALL SHORT SERVICES SHALL HAVE THEIR OWN INDIVIDUAL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

NOTES:
1. EDPE 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.

SHORT SERVICE DETAIL

LONG SERVICE DETAIL

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

METER BOX PROFILE

MATERIAL LIST
- A. 3/4" SERVICE SADDLE FORD #S91 OR SMITH-BLAIR MODEL 317
- B. 3/4" CORP. STOP (I.P. x COMP.) FORD #FB1100-3-G-NL
- C. 3/4" POLYETHYLENE AWWA, C901-200 PSI
- D. PLASTIC METER BOX, MODEL NO. DFW1300.12.1C OR DFW1600X.12.1C
- E. METER BOX LID, MODEL NO. DFW1200.1C.LID OR DFW1500.1C.LID
- F. 3/4" BALL VALVE (METER CONV. x COMP.) FORD #BA43-332W-G-NL
- G. 5/8"x3/4" WATER METER (BY CCSUD)
- H. 3/4" DUAL CHECK VALVE (METER x I.P.) FORD #HHC31-323 (BY OWNER)
- I. SERVICE LINE (BY OWNER)
- J. CUSTOMER SHUT OFF VALVE (BY OWNER) FORD #644-333-NL
- K. 7-INCH ROUND VALVE BOX WITH REMOVABLE LID (BY OWNER)

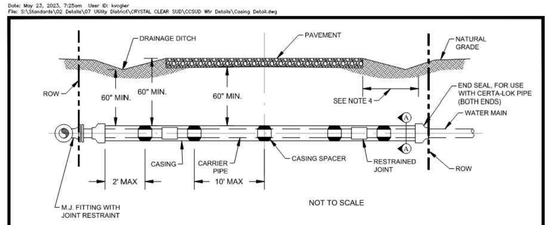
*MATERIALS SHALL BE PER THE APPROVED EQUIPMENT LIST (AEL) OR APPROVED EQUIVALENT.

METER BOX INSTALLATION DETAIL

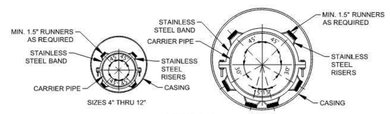
NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	SERVICE CONNECTION DETAILS	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPE/TBPELS FIRM # F-1356 | TBPELS FIRM #10318000 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	APRIL 2024
			SHEET 1 OF 1	

Date: May 23, 2023, 7:25am User ID: kvogler
File: S:\Standards\02 Details\07 Utility Distrct\CRYSTAL CLEAR SUD\CCSUD Wtr Details\Casing Detail.dwg



NOT TO SCALE



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

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	CASING DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPE/TBPELS FIRM # F-1356 | TBPELS FIRM #10318000 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	MAY 2023
			SHEET 1 OF 1	

Date: Nov 03, 2021, 10:01am User ID: kvogler
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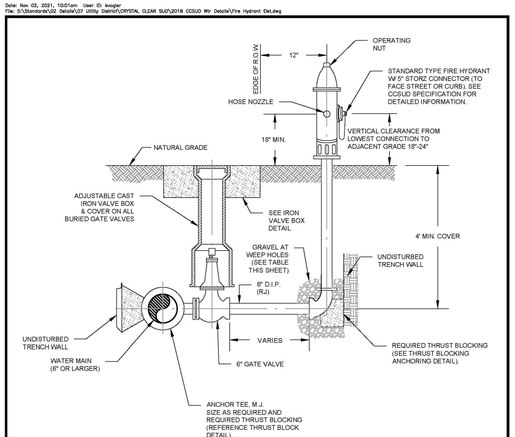

GRAVEL AT WEEPHOLE	
LENGTH OF HYDRANT RISER	CU. FT. OF GRAVEL REQUIRED
3'	2.5
4'	3
5'	3.5
6'	4
>6'	TBD BY CCSUD

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

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	FIRE HYDRANT ASSEMBLY DETAIL (NEW BRAUNFELS)	M&S ENGINEERING CIVIL | ELECTRICAL | STRUCTURAL | MEP TBPE/TBPELS FIRM # F-1356 | TBPELS FIRM #10318000 WWW.MSENGR.COM | (830) 228-5446	JUNE 2015	NOV 2021
			SHEET 1 OF 1	

RESTRAINED LENGTH FOR PVC PIPE											
PIPE INSIDE DIA.	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"	19	8	4	2	25	12	6	7	4	2	60
12"	27	12	6	3	36	17	9	9	5	3	85

NOTES:
LENGTHS SHOWN ABOVE WERE COMPUTED BASED ON THE FOLLOWING VALUES:
a. SAFETY FACTOR = 1.5 TO 1
b. TEST PRESSURE = 200 psi
c. SOIL DESIGNATION – WELL GRADED GRAVLES AND GRAVEL–SAND MIXTURES, LITTLE OR NO FINES (PEA GRAVEL)
d. DEPTH OF COVER – 4 feet (TYPICAL AND UPPER BEND)
e. DEPTH OF COVER – 5 feet (LOWER BEND)

Date: Oct 12, 2023, 2:41pm User ID: kvogler
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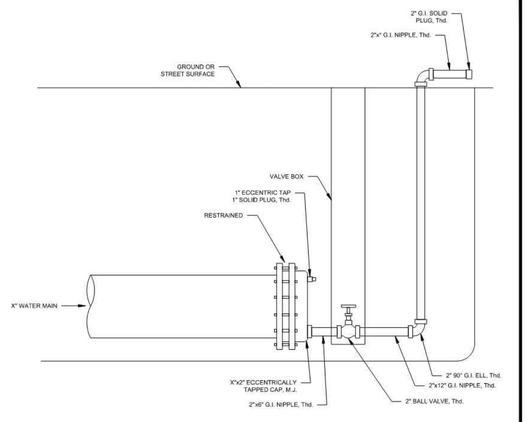
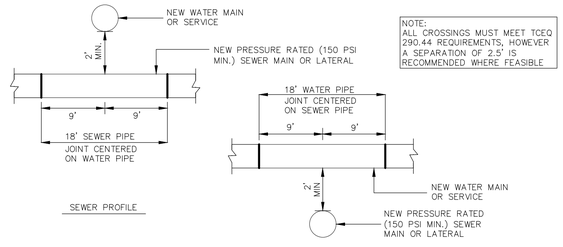


NOTE:
1. BURIED PIPING, FITTINGS, AND FITTINGS JOINTS SHALL BE WRAPPED IN POLYWRAP.
2. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
3. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
4. POLYWRAP SHALL BE SECURED WITH A MINIMUM OF THREE CIRCUMFERENTIAL TURNS OF POLY TAPE.

NOT TO SCALE

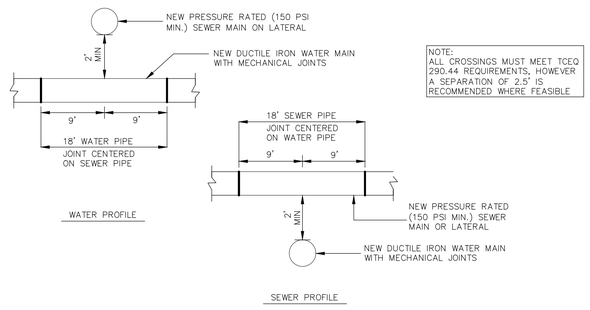
PROPERTY OF			APPROVED	REVISION
CRYSTAL CLEAR SPECIAL UTILITY DISTRICT	FLUSH VALVE DETAIL	M&S ENGINEERING ELECTRICAL | CIVIL | MEP TBPE/TBPELS FIRM # F-1356 | TBPELS FIRM #10318000 WWW.MSENGR.COM | (830) 228-5446	OCTOBER 2020	OCTOBER 2023
			SHEET 1 OF 1	



NOTE:
ALL CROSSINGS MUST MEET TCEQ 290.44 REQUIREMENTS, HOWEVER A SEPARATION OF 2.5' IS RECOMMENDED WHERE FEASIBLE

NEW WATER OVER NEW SEWER CROSSING DETAIL

Scale: NTS



NOTE:
ALL CROSSINGS MUST MEET TCEQ 290.44 REQUIREMENTS, HOWEVER A SEPARATION OF 2.5' IS RECOMMENDED WHERE FEASIBLE

NEW SEWER OVER NEW WATER CROSSING DETAIL

Scale: NTS

05/03/2024

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

JARO NORTH SUBDIVISION
UNIT 1

WATER DETAILS I

SHEET 45 OF 49

NO	DATE	ISSUES AND REVISIONS
1	5-3-2024	REVISED PER CCSUD COMMENTS

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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Drawing Name: N:\Projects\WEA012 Jaro North Subdivision\Civil\Construction Drawings\46 WATER DETAILS II.dwg User: jamesingalls May 03, 2024 - 2:31pm

Date: Nov 13, 2018, 8:03am User ID: kvogler
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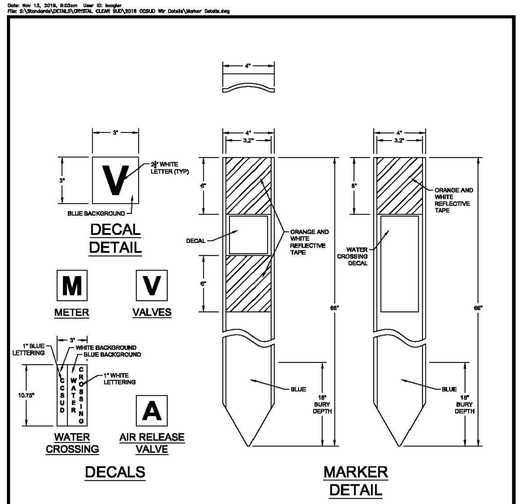

NOTES:

1. MARKERS SHALL BE 6ft" 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. FIPELINE 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 2018
			SHEET 1 OF 1	

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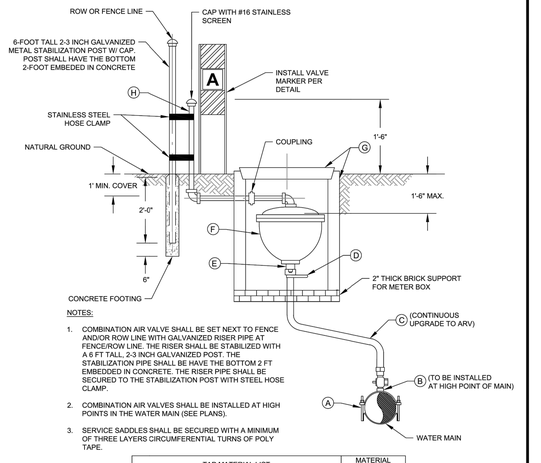

NOTES:

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	DFW2830FD 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	JUNE 2015	OCTOBER 2020
			SHEET 1 OF 1	

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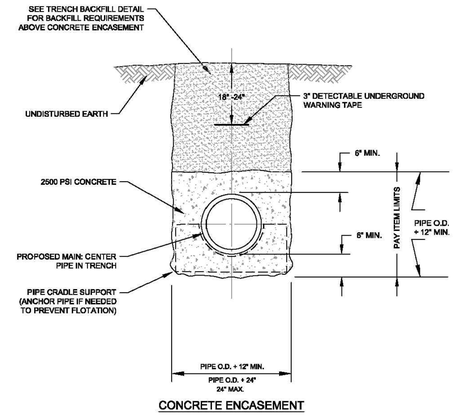
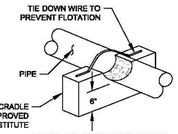


CONCRETE ENCASEMENT

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 CIVIL | ELECTRICAL | STRUCTURAL | MEP	MAY 2016	AUGUST 2018
			SHEET 1 OF 1	

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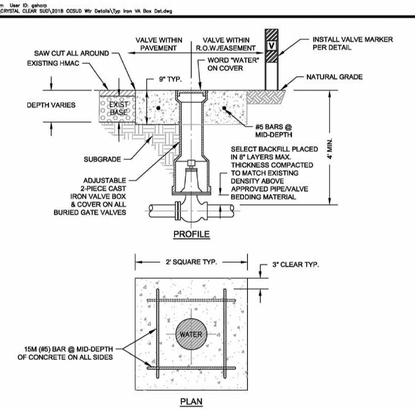

NOTES:

1. VALVE BOXES SHALL BE FITTED WITH PLASTIC VALVE ID TAGS (BLUE EMEDCO 3-1/2" X 2-3/4") 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	

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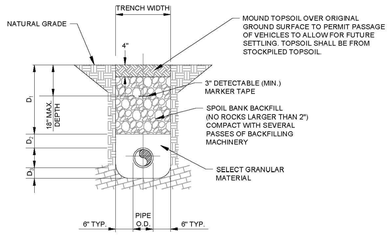


	D_1	D_2	D_3
4" OR SMALLER	36"	6"	4"
6"-8"	30"	12"	6"
12" OR LARGER	42"	12"	6"

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.

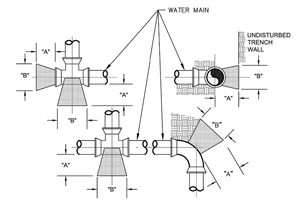
NOT TO SCALE

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

Date: Dec 10, 2020, 3:16pm User ID: gshorp
File: S:\Standards\02 Details\07 Utility District\CRYSTAL CLEAR SUD\2018 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'-9"	1'-0"	9"	1'-3"
8"	1'-9"	2'-0"	1'-6"	1'-0"	1'-6"
10"	2'-10"	2'-0"	1'-9"	1'-3"	2'-0"
12"	2'-6"	3'-0"	2'-3"	1'-6"	2'-3"
16"	3'-3"	4'-0"	2'-9"	2'-0"	2'-9"
20"	3'-9"	4'-6"	3'-3"	2'-3"	3'-3"

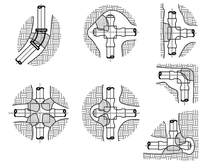
DIMENSION "A" SHALL BE A MINIMUM OF 1'-0" BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.



THRUST BLOCK DIMENSIONING

NOTES:

1. THE EARTHBEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
2. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
3. ALL THRUST BLOCKS SHALL CONTAIN A MINIMUM OF 1 1/2 CUBIC YARDS OF CONCRETE.
4. CONCRETE SHALL BE 2000 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 VALVES, FITTINGS, ETC.



THRUST BLOCK ANCHORING DETAIL

NOT TO SCALE

PROPERTY OF			APPROVED	REVISION
	THRUST BLOCK ANCHORING DETAILS	M&S ENGINEERING CIVIL | ELECTRICAL | STRUCTURAL | MEP	JUNE 2015	DECEMBER 2020
			SHEET 1 OF 1	

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/12/22

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

JARO NORTH SUBDIVISION
UNIT 1

WATER DETAILS II

SHEET 46 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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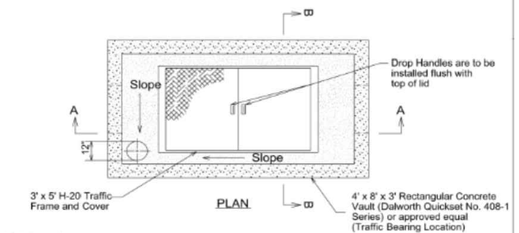

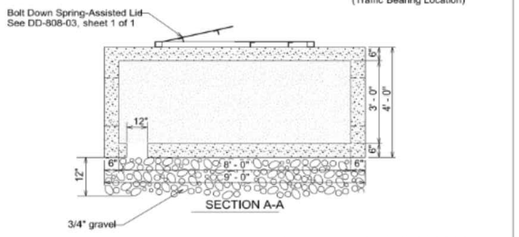

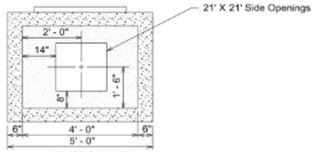

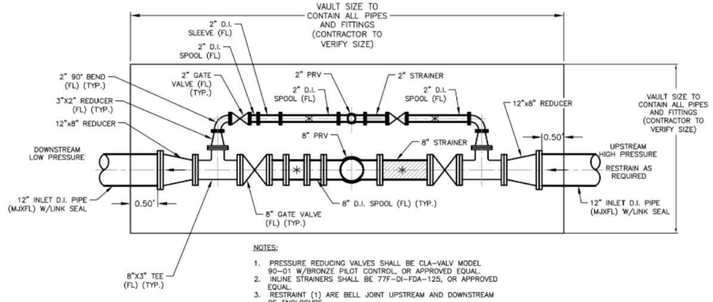

NOTES:

1. PRESSURE REDUCING VALVES SHALL BE CLA-VALV MODEL 90-01 W/BRONZE PILOT CONTROL, OR APPROVED EQUAL.
2. INLINE STRAINERS SHALL BE 77F-DI-FDA-125, OR APPROVED EQUAL.
3. RESTRAINT (1) ARE BELL JOINT UPSTREAM AND DOWNSTREAM OF ENCLOSURE.
4. D.I. SPOOLS SHALL BE SIZED AS NEEDED.

∗ – PIPE SUPPORT

PIPING PLAN

NTS

PROPERTY OF	CONCRETE VAULT FOR	APPROVED	REVISED
SAN ANTONIO WATER SYSTEM SAN ANTONIO, TEXAS	10" x 12" DETECTOR CHECK INSTALLATION	MARCH 2008	MAY 2013
		DD-808-08	SHEET 1 OF 1

05/29/2024

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

JARO NORTH SUBDIVISION
UNIT 1

WATER DETAILS III

SHEET 46A OF 49

NO	DATE	ISSUES AND REVISIONS
1	5-2-2024	REVISED PER CCSUD COMMENTS
2	5-28-2024	REVISED PER CCSUD COMMENTS

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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Drawing Name: N:\Projects\BEA002 Jaro North Subdivision\Civil\Construction Drawings\46 WATER DETAILS II.dwg User: bryanrobers May 29, 2024 - 9:18am

SEQUENCE OF CONSTRUCTION:

1. OBTAIN CITY APPROVED SITE PREPARATION PLANS, AND TPDES PERMIT (NOT A COPY OF THE TPDES APPLICATION TO TCEQ), IF APPLICABLE.
2. INSTALL TEMPORARY EROSION AND SEDIMENTATION CONTROLS.
3. BEGIN DEMOLITION ACTIVITIES, IF APPLICABLE.
4. BEGIN SITE CLEARING AND GRADING.
5. RESTORE AND REVEGETATE ALL DISTURBED AREAS NOT UNDER IMPERMEABLE IMPROVEMENTS.
6. COMPLETE ANY REMAINING "PUNCH LIST" ITEMS.
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12. 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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INSPECTION AND MAINTENANCE GUIDELINES:

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2. AREAS DAMAGED BY STORMS OR NORMAL CONSTRUCTION ACTIVITIES SHOULD BE REGRADED AND HYDRAULIC MULCH REAPPLIED AS SOON AS PRACTICAL.

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

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Crystal Clear SUD	830-372-1031
Spectrum Cable	830-625-3408
Centerpoint Gas	830-643-6434
Robert Sanders	830-643-6903
Damaged Line	888-876-5786
AT&T Telephone	830-303-1333
Erick White PM	210-283-1706
Scott McBrearty (Construction)	210-658-4886
Texas One Call	830-545-6005

C.P.E. LOCATOR

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

TELEPHONE LOCATOR

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TRENCH EXCAVATION SAFETY PROTECTION

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

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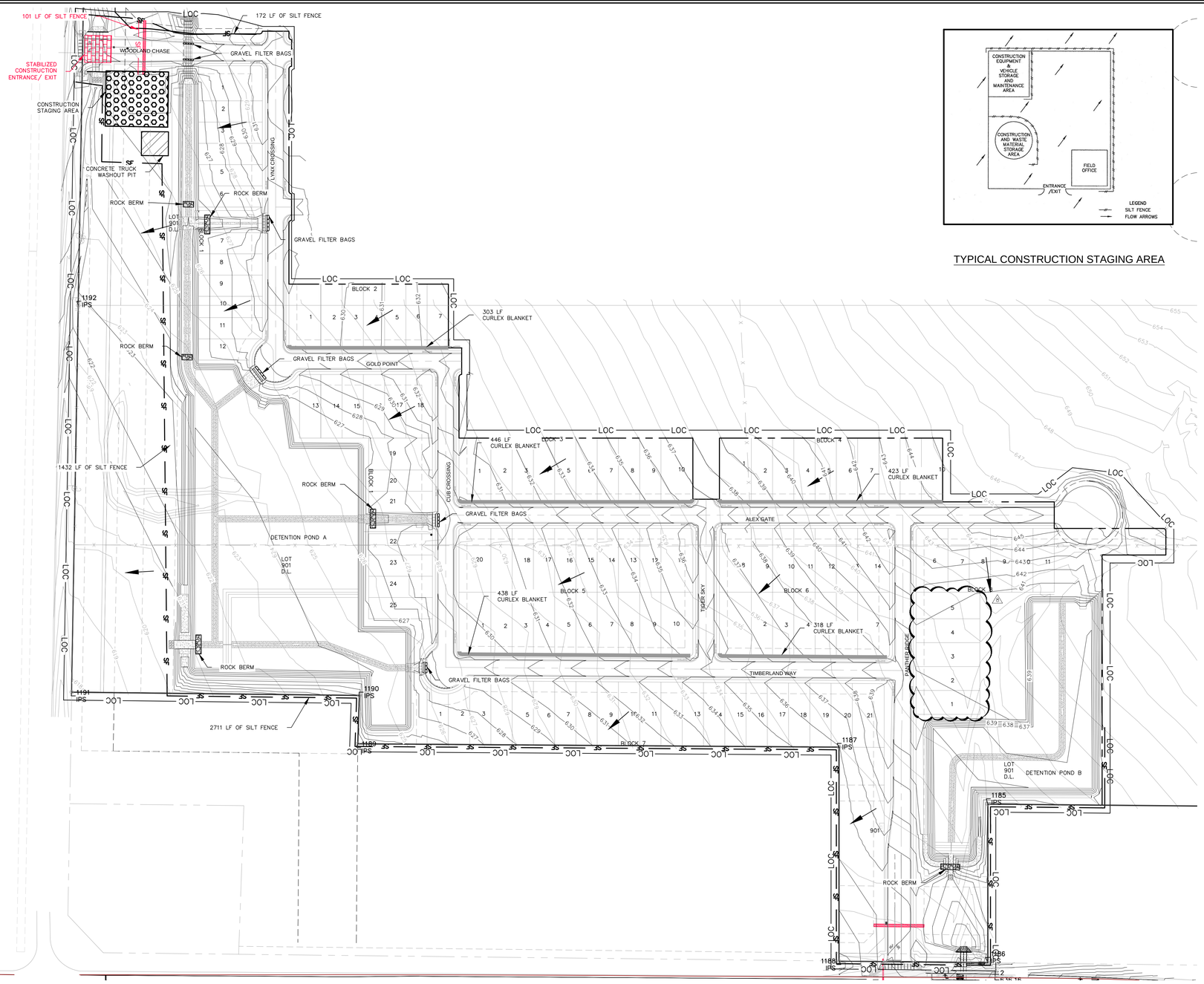
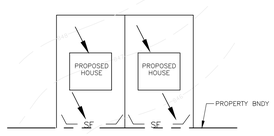


TYPICAL CONSTRUCTION STAGING AREA

0 100' 200'
SCALE: 1"=100'

LEGEND

- SILT FENCE
- LIMITS OF CONSTRUCTION
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EDGE OF PAVEMENT
- FLOW ARROWS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING TREE
- STABLIZED CONSTRUCTION ENTRANCE/EXIT
- TRUCK WASH OUT PIT
- CONSTRUCTION STAGING AREA
- ROCK BERM
- SOIL RETENTION BLANKET
- GRAVEL FILTER BAGS
- CURLEX BLANKET



TYPICAL SILT FENCE AT RESIDENTIAL LOT

NOTE:
RESIDENTIAL LOT CONSTRUCTION MUST MEET THE REQUIREMENTS OF THIS WPAP AS WELL AS WITH LOCAL, STATE, AND FEDERAL REGULATIONS. TEMPORARY BMPS MUST BE IN PLACE PRIOR TO ANY RESIDENTIAL LOTS CONSTRUCTION.

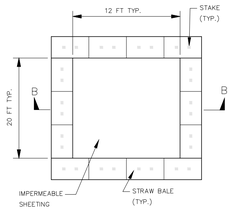
RESIDENTIAL LOT STABILIZATION

1. CURELX BLANKET (I) (4' MIN WIDTH) OR ENGINEER APPROVED EQUAL
2. CURLEX MUST BE INSTALLED PER MANUFACTURER SPECIFICATIONS.
3. MAX SLOPE FOR CURLEX (I) < 2H : 1V

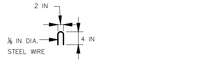
SOIL STABILIZATION NOTE

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.

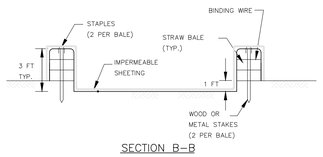
SUBSTANTIAL GRADING IS PROPOSED WITH THIS UNIT. PER THE NEW BRAUNFELS DRAINAGE AND EROSION CONTROL DESIGN MANUAL SEC. 13.2(N), STRIPPING OF VEGETATION FROM PROJECT SITES SHALL BE PHASED SO AS TO EXPOSE THE MINIMUM AMOUNT OF AREA TO SOIL EROSION FOR THE SHORTEST POSSIBLE TIME.



PLAN



STAPLE DETAIL



SECTION B-B

TYPICAL CONCRETE TRUCK WASHOUT PIT

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
12/10/2024

NB DEAN, LLC	
1286 RIVER RD	
NEW BRAUNFELS, TX 78130	
JARO NORTH SUBDIVISION UNIT 1	
EROSION CONTROL PLAN	
SHEET	47 OF 49

NO	DATE	ISSUES AND REVISIONS
1	3/14/22	REMOVED SH 123 CONSTRUCTION ENTRANCE
2	9/21/22	UPDATE FM 758 RAMPS PER TXDOT APPROVAL
3	12-10-2024	ADDED 5 LOTS IN BLOCK 8

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

© COPYRIGHT 2021

Drawing Name: N:\Projects\JAR-FC012 Jaro North Subdivision\Civil\Construction Drawings\07 EROSION CONTROL PLAN.dwg User: chuckwire Dec 09, 2024 - 3:45pm

SEQUENCE OF CONSTRUCTION:

1. OBTAIN CITY APPROVED SITE PREPARATION PLANS, AND TPDES PERMIT (NOT A COPY OF THE TPDES APPLICATION TO TCEQ), IF APPLICABLE.
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3. BEGIN DEMOLITION ACTIVITIES, IF APPLICABLE.
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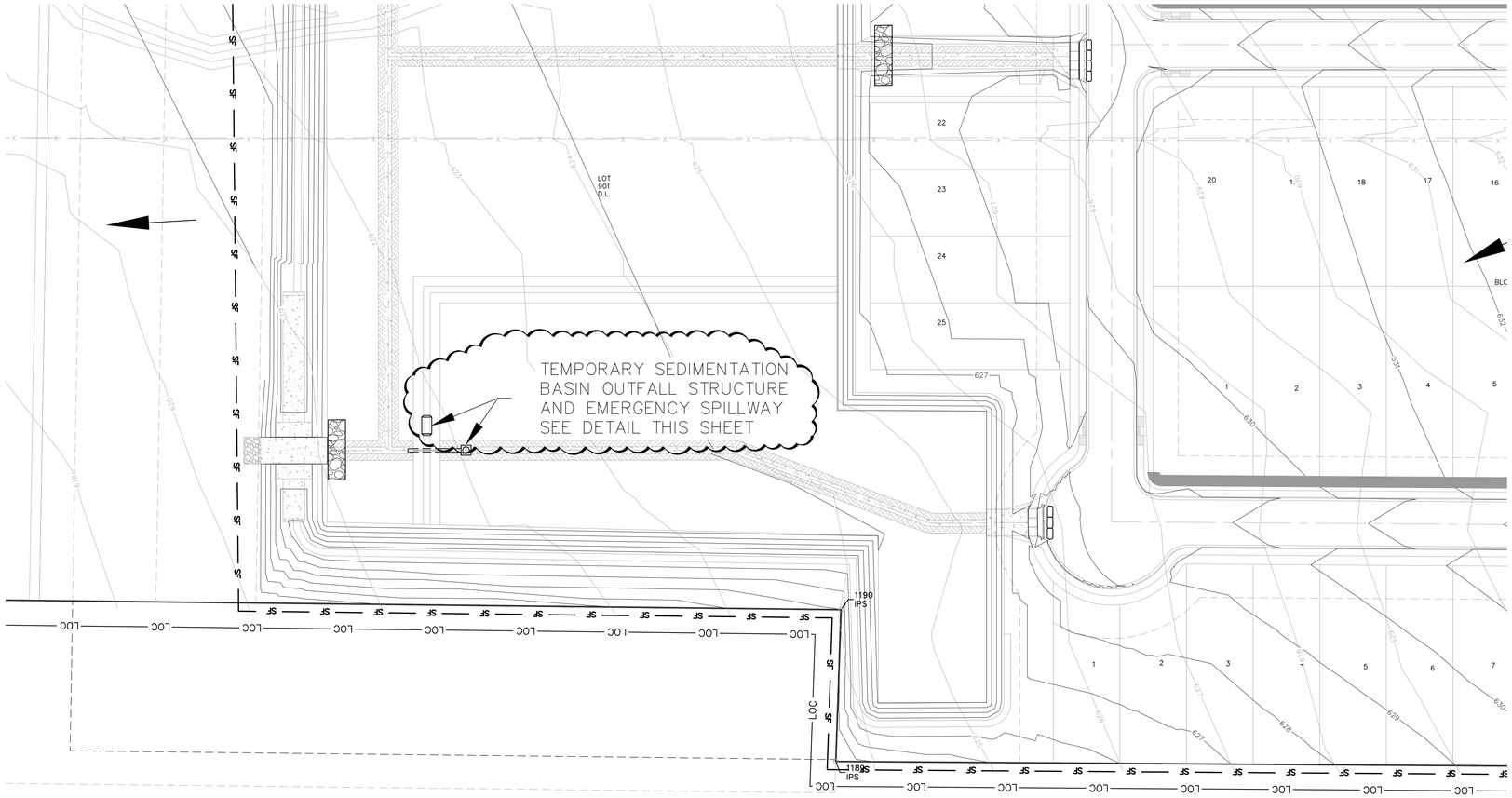
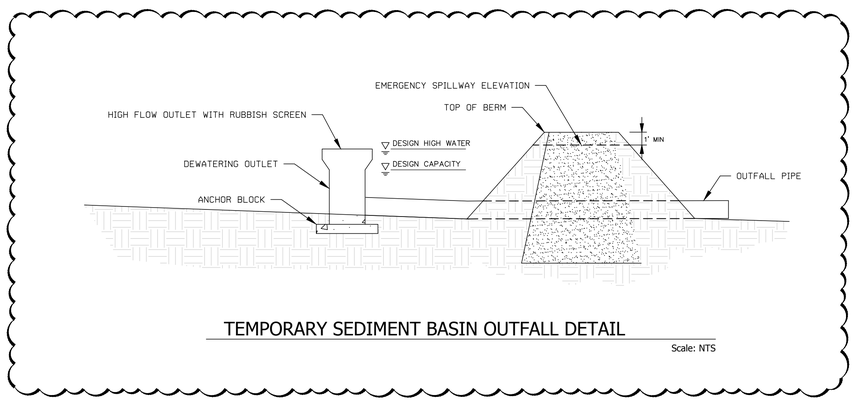


LEGEND

- SF — SILT FENCE
- LOC — LIMITS OF CONSTRUCTION
- 900 — EXISTING CONTOURS
- 900 — PROPOSED CONTOURS
- EDGE OF PAVEMENT
- FLOW ARROWS
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EXISTING TREE
- STABLIZED CONSTRUCTION ENTRANCE/EXIT
- TRUCK WASH OUT PIT
- CONSTRUCTION STAGING AREA
- ROCK BERM
- SOIL RETENTION BLANKET
- GRAVEL FILTER BAGS
- CURLEX BLANKET



TEMPORARY SEDIMENT BASIN OUTFALL DETAIL

Scale: NTS

STATE OF TEXAS
JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
06/17/2024

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

JARO NORTH SUBDIVISION
UNIT 1

TEMPORARY SEDIMENT BASIN

SHEET 47A OF 49

NO	DATE	ISSUES AND REVISIONS
1	6/17/24	TEMPORARY SEDIMENT BASIN SHEET ADDED

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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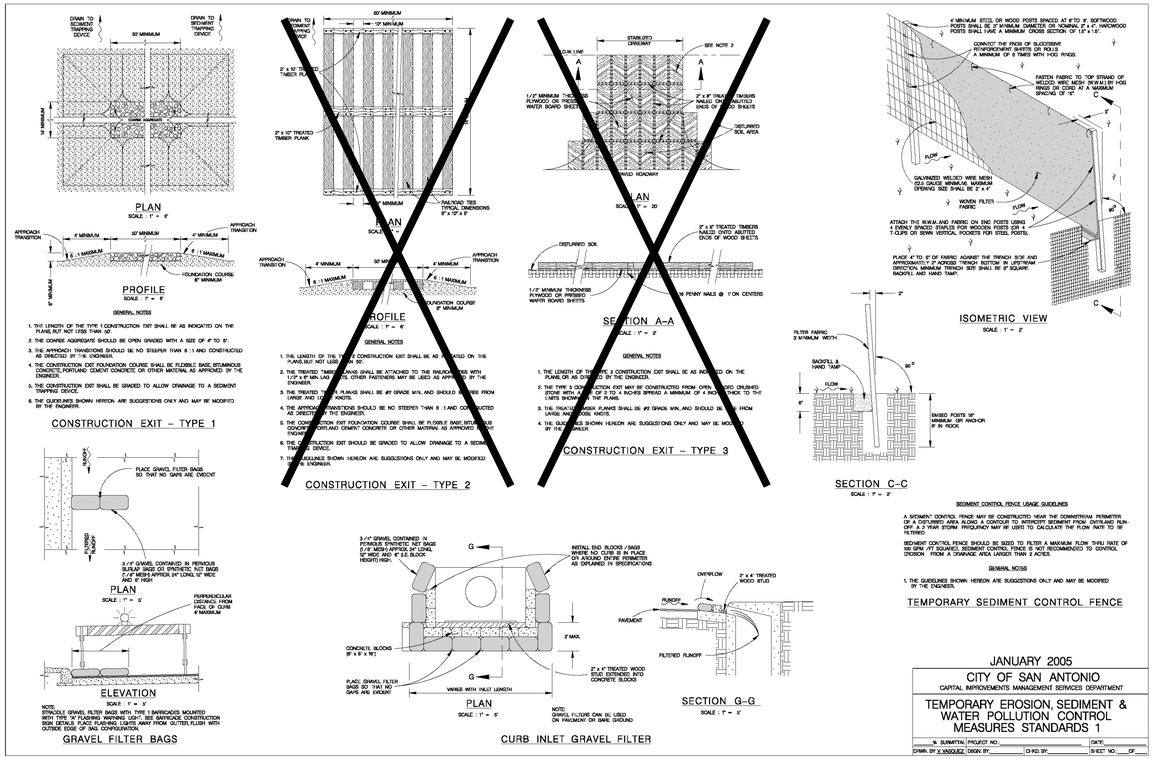
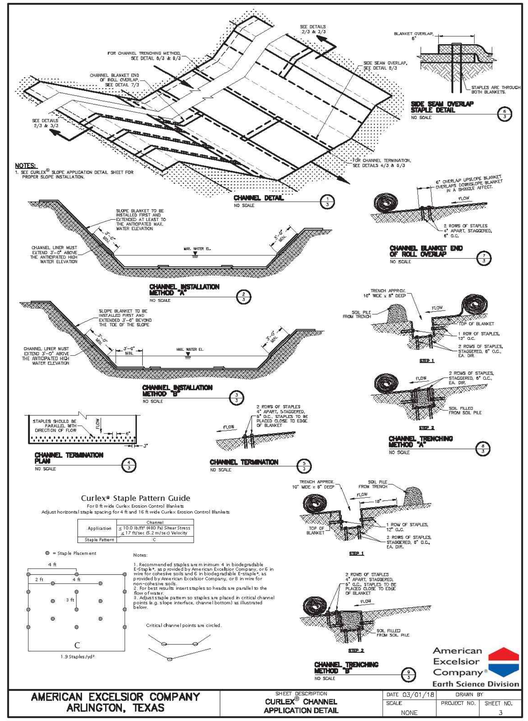
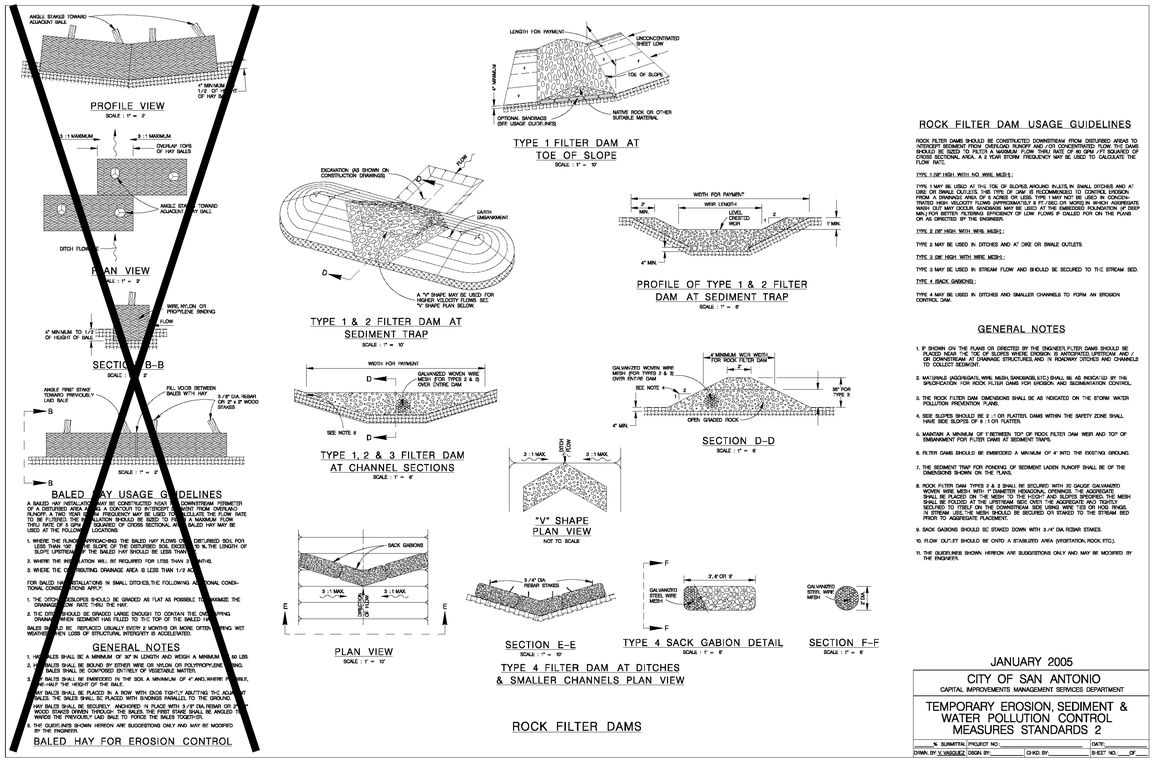
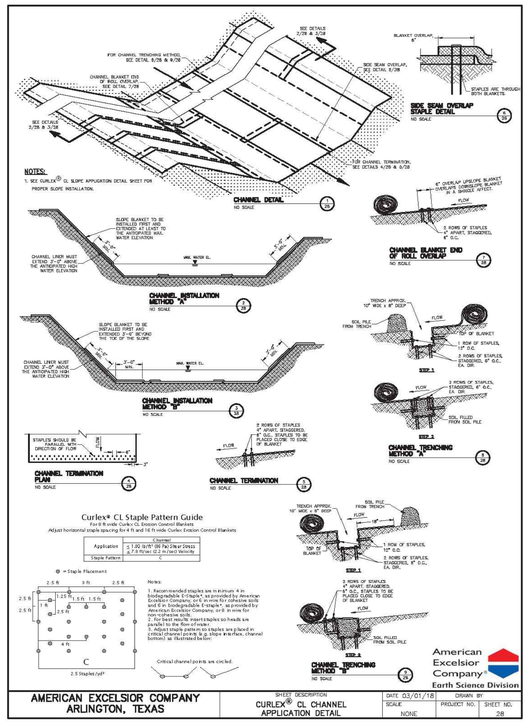
Drawing Name: N:\Projects\BEA2012 Jaro North Subdivision\Civil\Construction Drawings\47 EROSION CONTROL PLAN.dwg User: tyreeders Jun 17, 2024 - 12:28pm









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JAMES INGALLS
107416
LICENSED
PROFESSIONAL ENGINEER
2/8/22

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

JARO NORTH SUBDIVISION
UNIT 1

EROSION CONTROL DETAILS I

SHEET 48 OF 49

NO	DATE	ISSUES AND REVISIONS

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NEW BRAUNFELS, TX. 78132
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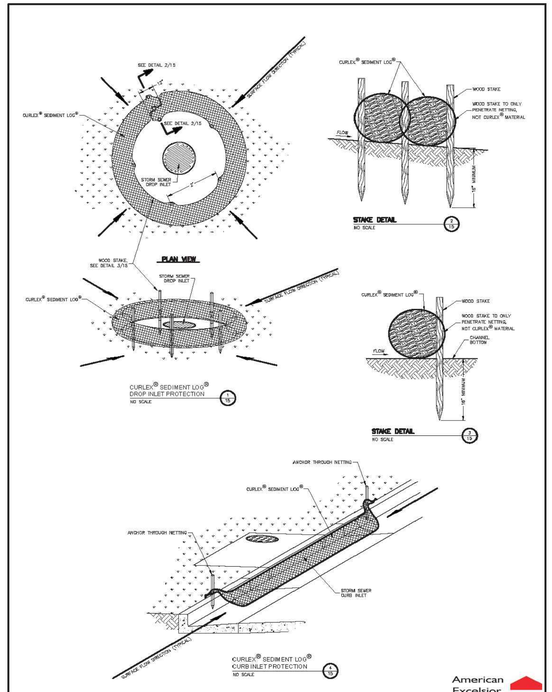
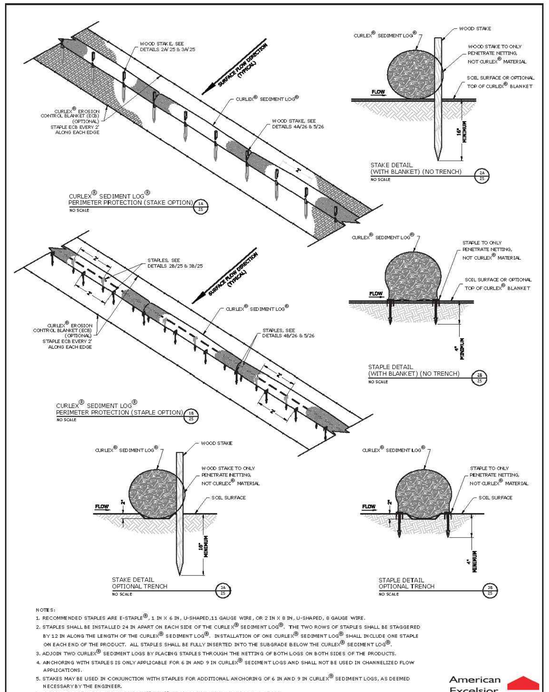
Drawing Name: N:\Projects\#EAC012 Jaro North Subdivision\Civil\Construction Drawings\V9 EROSION CONTROL DETAILS.dwg User: mstevenson Feb 17, 2022 - 5:06pm

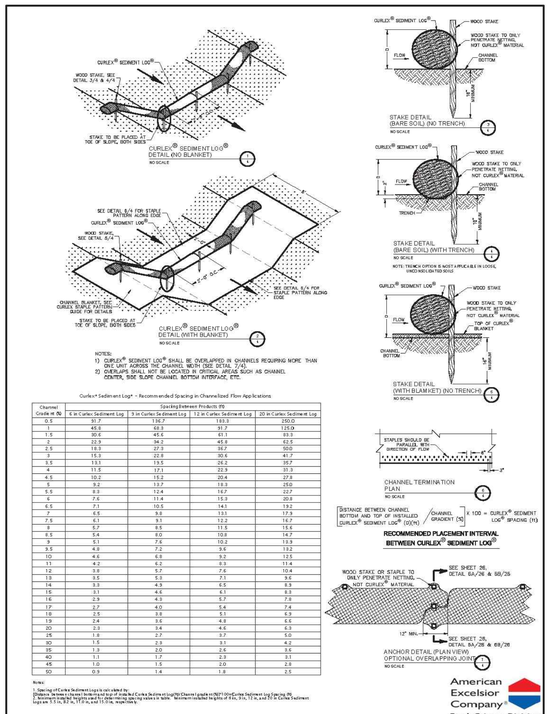


AMERICAN EXCELSIOR COMPANY ARLINGTON, TEXAS	SHEET DESCRIPTION: CURLEX® SEDIMENT LOG® INLET PROTECTION DETAILS	DATE: 3/27/17	DRAWN BY
		SCALE: NONE	PROJECT NO.
			SHEET NO.: 15



NOTES:
1. RECOMMENDED STAPLES ARE E-STAPLE®, 1 IN X 6 IN, U-SHAPED,11 GAUGE WIRE, OR 2 IN X 8 IN, U-SHAPED, 8 GAUGE WIRE.
2. STAPLES SHALL BE INSTALLED 24 IN APART ON EACH SIDE OF THE CURLEX® SEDIMENT LOG®. THE TWO ROWS OF STAPLES SHALL BE STAGGERED BY 12 IN ALONG THE LENGTH OF THE CURLEX® SEDIMENT LOG®. INSTALLATION OF ONE CURLEX® SEDIMENT LOG® SHALL INCLUDE ONE STAPLE ON EACH END OF THE PRODUCT. ALL STAPLES SHALL BE FULLY INSERTED INTO THE SUBGRADE BELOW THE CURLEX® SEDIMENT LOG®.
3. ADJOIN TWO CURLEX® SEDIMENT LOGS BY PLACING STAPLES THROUGH THE NETTING OF BOTH LOGS ON BOTH SIDES OF THE PRODUCTS.
4. ANCHORING WITH STAPLES IS ONLY APPLICABLE FOR 6 IN AND 9 IN CURLEX® SEDIMENT LOGS AND SHALL NOT BE USED IN CHANNELIZED FLOW APPLICATIONS.
5. STAKES MAY BE USED IN CONJUNCTION WITH STAPLES FOR ADDITIONAL ANCHORING OF 6 IN AND 9 IN CURLEX® SEDIMENT LOGS, AS DEEMED NECESSARY BY THE ENGINEER.
6. RECOMMENDED WOODEN STAKES ARE 1 ½" × 1 ½" × 30" FOR 6", 9", AND 12" SEDIMENT LOGS.
7. RECOMMENDED WOODEN STAKES ARE 1 ½" × 1 ½" × 48" FOR 20" SEDIMENT LOGS.
8. CURLEX® SEDIMENT LOG® PERIMETER CONTROL DETAILS CONTINUE ON SHEET 26.

AMERICAN EXCELSIOR COMPANY ARLINGTON, TEXAS	SHEET DESCRIPTION: CURLEX® SEDIMENT LOG® PERIMETER CONTROL DETAILS	DATE: 5/15/17	DRAWN BY
		SCALE: NONE	PROJECT NO.
			SHEET NO.: 25

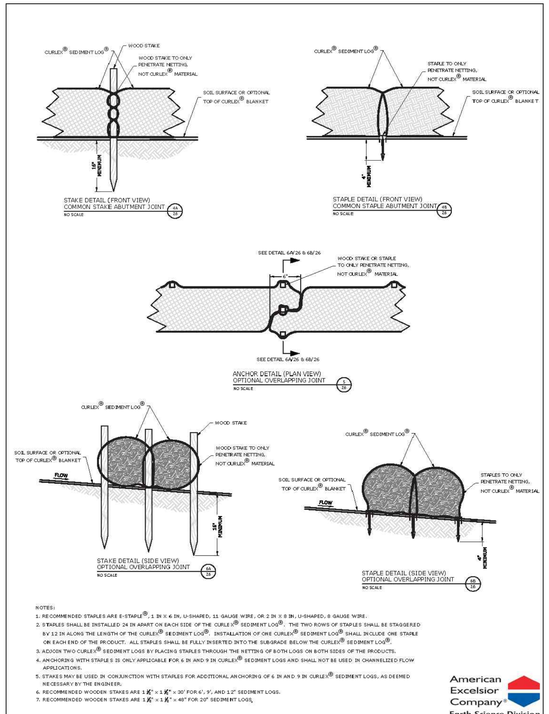


Curlex® Sediment Log® - Recommended Spacing in Channelized Flow Applications

Channel Gradient (%)	Spacing Between Products (ft)			
	6 in Curlex Sediment Log	9 in Curlex Sediment Log	12 in Curlex Sediment Log	20 in Curlex Sediment Log
0.5	91.7	136.7	183.3	250.0
1	45.8	68.3	91.7	125.0
1.5	30.6	45.4	61.1	83.3
2	22.9	34.2	45.8	62.5
2.5	18.3	27.3	36.7	50.0
3	15.3	22.8	30.6	41.7
3.5	13.1	13.5	26.2	35.7
4	11.5	17.1	22.9	31.3
4.5	10.2	15.2	20.4	27.8
5	9.2	13.7	18.3	25.0
5.5	8.3	12.4	16.7	22.7
6	7.6	11.4	15.3	20.8
6.5	7.1	10.5	14.1	19.2
7	6.5	9.8	13.1	17.9
7.5	6.1	9.1	12.2	16.7
8	5.7	8.5	11.5	15.6
8.5	5.4	8.0	10.8	14.7
9	5.1	7.6	10.2	13.9
9.5	4.8	7.2	9.6	13.2
10	4.6	6.8	9.2	12.5
11	4.2	6.2	8.3	11.4
12	3.8	5.7	7.6	10.4
13	3.5	5.3	7.1	9.6
14	3.3	4.9	6.5	8.9
15	3.1	4.6	6.1	8.3
16	2.9	4.3	5.7	7.8
17	2.7	4.0	5.4	7.4
18	2.5	3.8	5.1	6.9
19	2.4	3.6	4.8	6.6
20	2.3	3.4	4.6	6.3
25	1.8	2.7	3.7	5.0
30	1.5	2.3	3.1	4.2
35	1.3	2.0	2.6	3.6
40	1.1	1.7	2.3	3.1
45	1.0	1.5	2.0	2.8
50	0.9	1.4	1.8	2.5

Notes:
1. Spacing of Curlex Sediment Logs is calculated by:
[Distance between channel bottom and top of installed Curlex Sediment Log(ft)] Divided by [Channel Gradient (%)] * 100 = Curlex Sediment Log Spacing (ft)
2. Spacing is rounded to the nearest tenth of a foot. Minimum recommended spacing is 10 ft. Values in bold are for Curlex Sediment Logs per 1.0 ft, 2.0 ft, 2.7 ft, 3.3 ft and 3.7 ft, respectively.

AMERICAN EXCELSIOR COMPANY ARLINGTON, TEXAS	SHEET DESCRIPTION: CURLEX® SEDIMENT LOG® DITCH/CHANNEL APPLICATION DETAIL	DATE: 03/01/18	DRAWN BY
		SCALE: NONE	PROJECT NO.
			SHEET NO.: 4



NOTES:
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AMERICAN EXCELSIOR COMPANY ARLINGTON, TEXAS	SHEET DESCRIPTION: CURLEX® SEDIMENT LOG® PERIMETER CONTROL DETAILS	DATE: 5/8/17	DRAWN BY
		SCALE: NONE	PROJECT NO.
			SHEET NO.: 26

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2/2/22

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NEW BRAUNFELS, TX 78130

JARO NORTH SUBDIVISION
UNIT 1

EROSION CONTROL DETAILS II

SHEET 49 OF 49

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