

CITY OF NEW BRAUNFELS

ELIZABETH AVE. STORM WATER TREATMENT

WATER QUALITY RETROFIT

PLANS PREPARED AND RECOMMENDED FOR APPROVAL BY:

DOUCET & ASSOCIATES, INC. Date

FLOODPLAIN NOTE:

THE PROPERTY IS LOCATED WITHIN ZONE "X".
NO PORTION OF THE PROJECT APPEAR TO BE LOCATED INSIDE OF THE
100-YEAR FLOODPLAIN AS SHOWN ON F.I.R.M. PANEL NO. 48091C0435F
OF COMAL COUNTY, TEXAS DATED SEPTEMBER 2, 2009.

EDWARDS AQUIFER JURISDICTIONAL BOUNDARY NOTE:
THE SITE IS LOCATED WITHIN THE EDWARDS AQUIFER TRANSITION
ZONE.

NOTE:

ALL INSPECTIONS ARE TO BE CALLED IN AT 830.221.4068,
OR FAXED IN AT 830.608.2117 OR EMAILED AT
INSPECTION@NBTEXAS.ORG

SURVEY CONTROL:

BASIS OF BEARING IS THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL
ZONE (4204), NORTH AMERICAN DATUM (1983) (NAD83), 2011 ADJUSTMENT
(EPOCH 2010) AND A VERTICAL DATUM OF NAVD88,
GEOD 12B. ALL COORDINATE VALUES AND DISTANCES SHOWN ARE GRID
VALUES.
UNITS: US SURVEY FEET.

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE
COMMITMENT. EASEMENTS OR OTHER MATTERS OF RECORD MAY EXIST
WHERE NONE ARE SHOWN.

BENCHMARK #1
NORTHING = 13,808,469.36
EASTING = 2,244,842.40
ELEVATION = 631.19
BM = MAGNL
DESC = NEAR HISTORICAL SIGN IN FRONT OF WURSTFEST ADMISSION
NORTH ENTRANCE

BENCHMARK #2
NORTHING = 13,808,501.05
EASTING = 2,245,086.88
ELEVATION = 629.49
BM = MAGNL
DESC = EAST OF BENCHMARK #1, NEAR GATE OF ENCLOSED WURSTFEST
STORAGE AREA

BENCHMARK INFORMATION FROM "ELIZABETH AVENUE REALIGNMENT"
CONSTRUCTION DOCUMENTS.

NOTE:
THE WATER QUALITY IMPROVEMENTS WILL BE CONSTRUCTED ALONG SIDE THE
ELIZABETH AVENUE ROADWAY IMPROVEMENTS (BY OTHERS).
PRE-PROJECT CONDITIONS SHOWN FOR THE WATER QUALITY IMPROVEMENTS
REPRESENT, AND INCLUDE, CHANGES TO EXISTING SITE ASSOCIATED WITH
ROADWAY IMPROVEMENTS.

FOR EXISTING CONDITIONS AND ROADWAY IMPROVEMENTS, REFER TO
CONSTRUCTION DOCUMENTS FOR "ELIZABETH AVENUE REALIGNMENT".



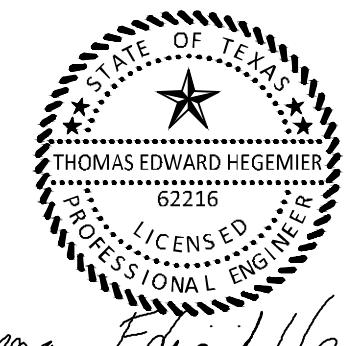
VICINITY MAP

SCALE: 1" = 1,000'

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NOTE:

1. ALL CONSTRUCTION ACTIVITIES SHALL MEET THE CITY OF NEW BRAUNFELS AND/OR TXDOT CONSTRUCTION STANDARDS.
2. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE REMAINS WITH THE ENGINEER WHO PREPARED THEM. IN ACCEPTING THESE PLANS, THE CITY OF NEW BRAUNFELS MUST RELY ON THE ADEQUACY OF THE WORK OF THE DESIGN ENGINEER.
3. PROJECT IS A TYPE 2 DEVELOPMENT.
4. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF CITY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID.
5. THIS PROJECT IS FUNDED BY THE EDWARDS AQUIFER HABITAT CONSERVATION PROGRAM (EAHCP) AND THE CITY OF NEW BRAUNFELS.



Thomas Edward Hegemier
4/20/2021

Scale: 1" =
Designed: GP/OF
Drawn: GP/OF
Reviewed: TEH
Date: 4/20/2021
SHEET

1

1 OF 10

Project No.:
1757-006

COVER SHEET

ELIZABETH AVENUE
CITY OF NEW BRAUNFELS

DOUCET & ASSOCIATES
Civil Engineering - Planning - Geospatial
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www.doucetengineering.com
TBPLS Firm Number: 3937

CONSTRUCTION PLAN NOTES

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

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

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

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

FOR PUBLIC INFRASTRUCTURE PERMIT (SC) OR SITE PREP PERMIT (SD) PROJECTS:

- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068.
- YOU MUST CALL BEFORE 12:00 P.M., 24 TO 48 HOURS PRIOR TO YOUR INSPECTION REQUEST.
- IF YOU LEAVE INCOMPLETE INFORMATION, YOUR REQUEST FOR INSPECTION WILL NOT BE ACCEPTED/SCHEDULED.
- EACH INSPECTION WILL BE ALLOTTED 1 HOUR UNLESS YOU REQUEST FOR MORE TIME.
- ONCE YOUR REQUEST HAS BEEN ACCEPTED, YOU WILL RECEIVE A CALL FROM THE ENGINEERING INSPECTOR.

FOR COMMERCIAL PERMIT (CP) PROJECTS:

- ALL INSPECTIONS ARE TO BE CALLED IN AT 830-221-4068 OR,
- FAXED IN AT 830-608-2117 OR,
- E-MAILED AT INSPECTIONS@NBTEXAS.ORG.

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

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

GROUNDWATER

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

RECORD DRAWINGS

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

CONSTRUCTION NOTE

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

DRAINAGE NOTE

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

FINISHED FLOOR ELEVATIONS

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

SOILS TESTING

PROCTORS SHALL BE SAMPLED FROM ON-SITE MATERIAL (ON-SITE IS DEFINED AS LIMITS OF CONSTRUCTION FOR THIS PLAN SET) AND A COPY OF THE PROCTOR RESULTS SHALL BE DELIVERED TO THE CITY OF NEW BRAUNFELS STREET INSPECTOR PRIOR TO ANY DENSITY TESTS.

ROADWAY

ALL ROADWAY COMPACTION TESTS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FLEXIBLE BASE OR FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED EIGHT-INCHES (8") LOOSE. EACH LAYER OF MATERIAL, INCLUSIVE OF SUBGRADE, SHALL BE COMPACTION 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 STREET INSPECTOR.

ITEM 340

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

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

THE ASPHALTIC CONCRETE SURFACE COURSE SHALL BE PLANT MIXED, HOT LAID TYPE "D" MEETING THE SPECIFICATION REQUIREMENTS OF TXDOT ITEM 340. THE MIX SHALL BE DESIGNED FOR A STABILITY OF AT LEAST 35 AND SHALL BE COMPACTION TO BETWEEN 91 AND 95 PERCENT OF THE MAXIMUM THEORETICAL DENSITY AS DETERMINED BY TXDOT TEST METHOD TEX-227-F. THE ASPHALT CEMENT CONTENT BY PERCENT OF TOTAL MIXTURE WEIGHT SHALL FALL WITHIN A TOLERANCE OF ± 0.5 PERCENT FROM A SPECIFIC MIX DESIGN.

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

ALL UTILITY TRENCH COMPACTION TESTS WITHIN THE STREET PAVEMENT SECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER'S GEOTECHNICAL ENGINEER. FILL MATERIAL SHALL BE PLACED IN UNIFORM LAYERS NOT TO EXCEED TWELVE INCHES (12") LOOSE. EACH LAYER OF MATERIAL SHALL BE COMPACTION 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 STREET INSPECTOR.

CURB CUT DUE TO CONSTRUCTION OF NEW RIGHT-OF-WAY CONSTRUCTION
 (INDICATE THE 2 OPTIONS ON THE CONSTRUCTION PLANS).

1. SAWCUT EXISTING STREET AND MATCH TO NEW CONSTRUCTION.
2. SAWCUT EXISTING CURB TO TIE INTO EXISTING CONSTRUCTION.

CONSTRUCTION STABILIZED ENTRANCE

SAWCUT CURB FOR CONSTRUCTION ENTRANCE.

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

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

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

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

SIGNING AND PAVEMENT MARKING PLAN NOTES

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

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

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

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

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

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 VEGETATION WATERING.

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.

GENERAL NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THE SCOPE OF THE PROJECT SHALL BE APPROVED BY NEW BRAUNFELS UTILITIES AND COMPLY WITH THE CURRENT 'NEW BRAUNFELS UTILITIES WATER SYSTEMS CONNECTION/CONSTRUCTION POLICY'.

2. CONTRACTOR SHALL NOT PROCEED WITH ANY PIPE INSTALLATION WORK UNTIL THEY OBTAIN A COPY OF THE PLANS FROM THE CONSULTANT OR ENGINEER AND NOTIFY NBU WATER SYSTEMS ENGINEERING AT 830-608-8971 WITH AT LEAST TWO (2) WORKING DAYS (48 HOURS) NOTICE. WORK COMPLETED BY THE CONTRACTOR, WHICH HAS NOT RECEIVED A NOTICE TO PROCEED FROM NEW BRAUNFELS UTILITIES WATER SYSTEMS ENGINEERING WILL BE SUBJECT TO REMOVAL AND REPLACEMENT BY AND AT THE EXPENSE OF THE CONTRACTOR.

3. THE DEVELOPER DEDICATES THE WATER / WASTEWATER MAINS UPON COMPLETION BY THE CONTRACTOR AND ACCEPTANCE BY THE NEW BRAUNFELS UTILITIES WATER SYSTEM. NBU WILL OWN AND MAINTAIN SAID WATER / WASTEWATER MAINS WHICH ARE LOCATED WITHIN PLATTED UTILITY EASEMENTS OR PUBLIC ROW OF PROPOSED DEVELOPMENTS. (AS APPLICABLE).

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

5. CONTRACTOR TO CONTACT THE ENGINEER-OF-RECORD (EOR) FOR ANY FIELD CHANGES. ANY REVISIONS OR CHANGES TO THE APPROVED CONSTRUCTION PLANS WILL REQUIRE ADDITIONAL APPROVAL BY NBU IN WRITING.

6. 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 EXCAVATION.

7. CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL OR BETTER CONDITION, ANY DAMAGES DONE TO EXISTING FENCES, CURBS, STREETS, DRIVEWAYS, LANDSCAPING AND STRUCTURES, AND EXISTING UTILITIES (NOT ADJUSTED ON PLANS). COST OF RESTORATIONS, IF ANY, SHALL BE THE CONTRACTOR'S ENTIRE EXPENSE.

8. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN ONE INCH IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN VICINITY OF TREES SHALL PROCEED WITH CAUTION.

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

10. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.

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

12. THE CONTRACTOR SHALL NOT PLACE ANY MATERIALS ON THE RECHARGE ZONE OF THE EDWARDS AQUIFER WITHOUT AN APPROVED WATER POLLUTION ABATEMENT PLAN FROM THE TCEQ 31 TAC 313.4 AND 31 TAC 313.9.

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

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

15. THE LOCATION OF UTILITIES, EITHER UNDERGROUND OR OVERHEAD, SHOWN WITHIN THE RIGHT OF WAY ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEGINNING CONSTRUCTION OPERATIONS.

16. OSHA REGULATIONS PROHIBIT OPERATIONS THAT WILL BRING PERSONS OR EQUIPMENT WITHIN 10 FEET OF AN ENERGIZED LINE, WHERE WORKMEN AND/OR EQUIPMENT HAVE TO WORK CLOSE TO AN ENERGIZED ELECTRICAL LINE. THE CONTRACTOR SHALL NOTIFY THE ELECTRICAL POWER COMPANY INVOLVED AND MAKE WHATEVER ADJUSTMENTS NECESSARY TO ENSURE THE SAFETY OF THOSE WORKMEN.

17. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE UTILITY SERVICE LINES AS REQUIRED FOR CONSTRUCTION. CONTRACTORS SHALL CALL THE ONE CALL SYSTEM FOR WATER/WASTEWATER LOCATION.

18. DUE TO FEDERAL REGULATIONS TITLE 49, PART 192 (8), GAS COMPANIES 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.

19. THE CONTRACTOR IS FULLY RESPONSIBLE FOR THE TRAFFIC CONTROL AND WILL BE RESPONSIBLE FOR FURNISHING ALL TRAFFIC CONTROL DEVICES, AND FLAGGERS. THE CONSTRUCTION METHODS SHALL BE CONDUCTED TO PROVIDE THE LEAST POSSIBLE INTERFERENCE TO TRAFFIC SO AS TO PERMIT THE CONTINUOUS MOVEMENT OF THE TRAFFIC IN ONE DIRECTION AT ALL TIMES. THE CONTRACTOR SHALL CLEAN UP AND REMOVE FROM THE WORK AREA ANY LOOSE MATERIAL RESULTING FROM CONTRACT OPERATIONS AT THE END OF EACH WORKDAY.

20. PRIOR TO ORDERING MATERIALS TO BE USED IN CONSTRUCTION, CONTRACTOR SHALL PROVIDE THE ENGINEER WITH FOUR (4) COPIES OF THE SOURCE, TYPE, GRADATION, MATERIAL SPECIFICATION DATA AND / OR SHOP DRAWINGS, AS APPLICABLE, TO SATISFY THE REQUIREMENTS OF THE FOLLOWING ITEMS AND ALL MATERIAL ITEMS REFERRED TO IN THESE LISTED ITEMS:

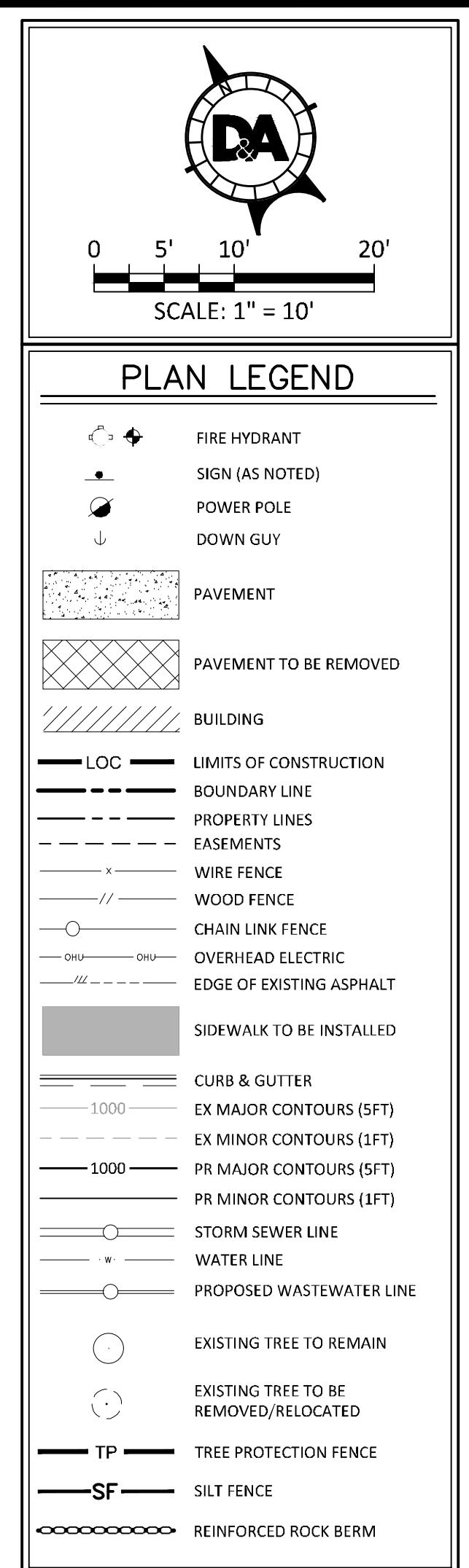
- a. WATER MAINS AND SERVICES
- b. WASTEWATER MAINS AND SERVICES

21. THRUST BLOCKS WILL NOT BE ALLOWED ON THE SYSTEM WITHOUT SPECIAL APPROVAL. JOINTS WILL BE RESTRAINED WITH RESTRAINING SYSTEMS APPROVED BY NBU AND RESTRAINT LENGTH SHALL BE SUBMITTED TO NBU AT THE TIME OF PLAN SUBMITTAL.

22. WATER JETTING THE BACKFILL WITHIN A STREET WILL NOT BE PERMITTED. WASTEWATER TRENCHES SUBJECT TO TRAFFIC SHALL CONFORM TO NBU CONNECTION & CONSTRUCTION POLICY MANUAL.

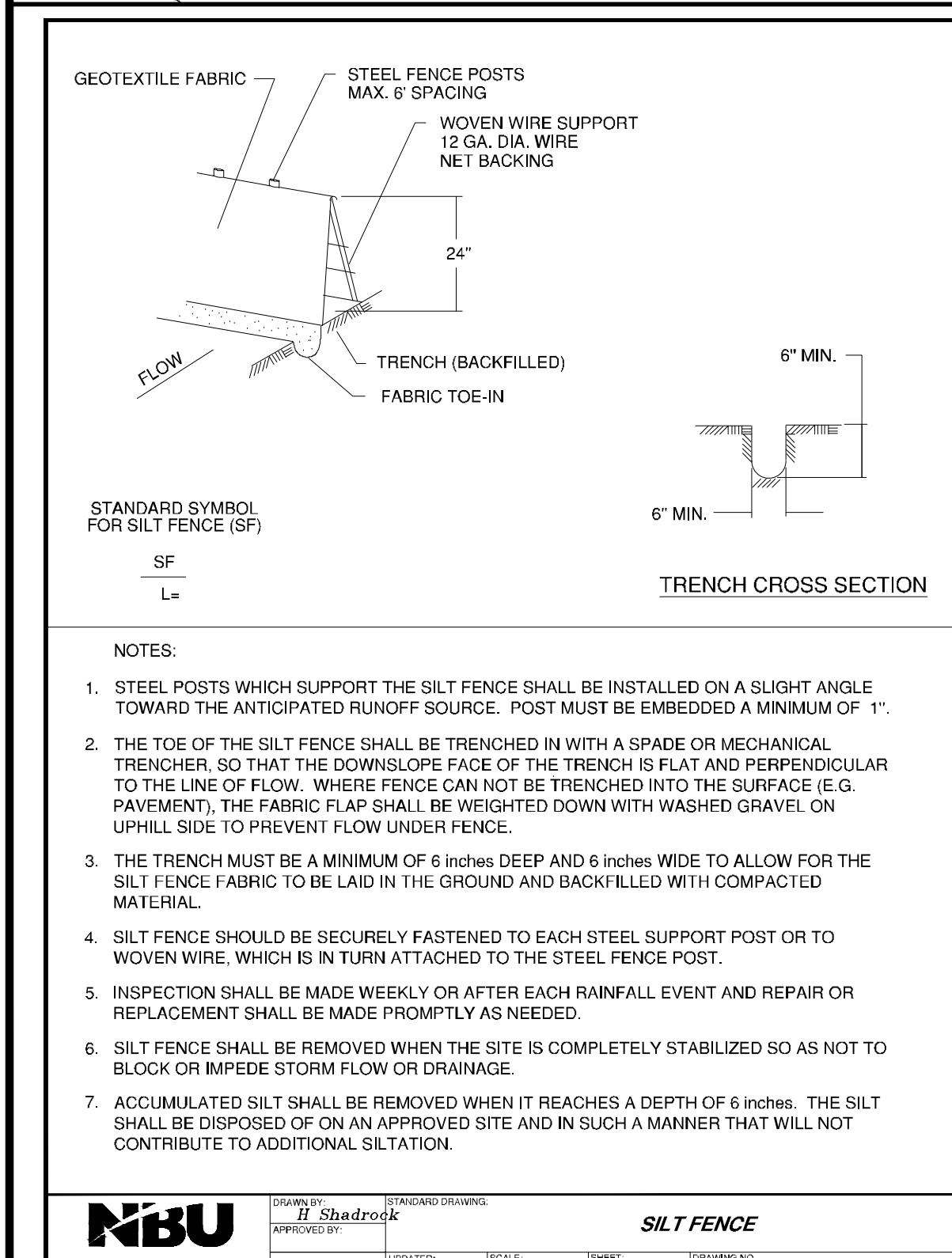
23. WHERE THE MINIMUM 9 FOOT SEPARATION DISTANCE BETWEEN WASTEWATER LINES AND WATER LINES / MAINS CANNOT BE MAINTAINED, THE INSTALLATION OF WASTEWATER LINES SHALL BE IN STRICT ACCORDANCE WITH 30 TAC §217.53 (D) (3) (A).

24. 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 ANTICIP



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.

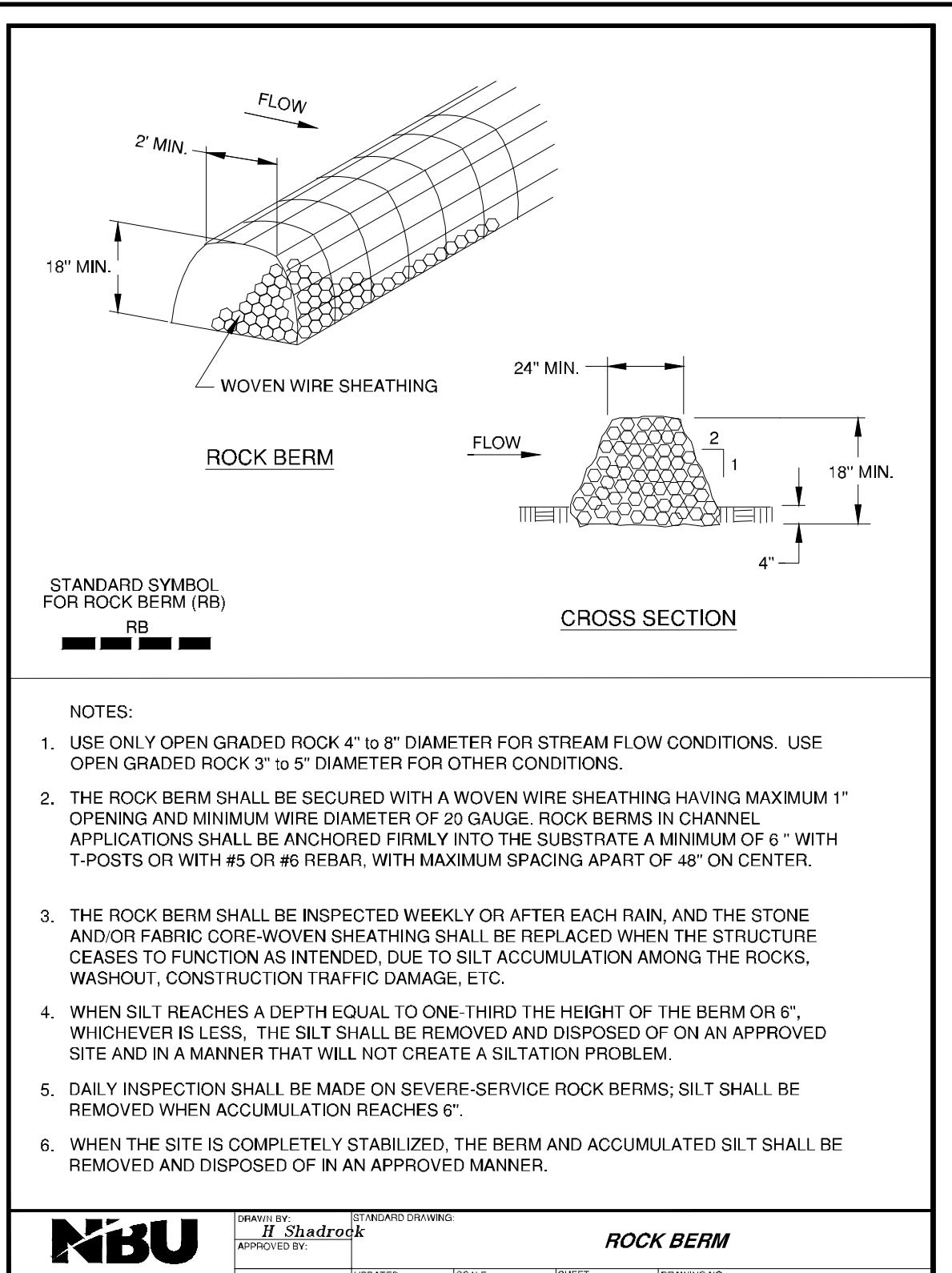
All spoils are to be hauled off from the site immediately upon excavation.



NOTES:

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF 1".
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW, WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT), THE FABRIC FLAP SHALL BE WEIGHTED DOWN WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 inches DEEP AND 6 inches WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.
5. INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 inches. THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTATION.

DRAWN BY: *H. Shadrock* DRAWING NO: 501
APPROVED BY: *H. Shadrock* SHEET 1 OF 1
NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING
4-29-03 N.T.S. DRAWING NO: 501

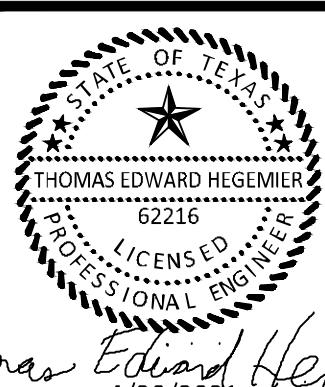


DRAWN BY: *H. Shadrock* DRAWING NO: 502
APPROVED BY: *H. Shadrock* SHEET 1 OF 1
NEW BRAUNFELS UTILITIES
WATER SYSTEMS ENGINEERING
4-29-03 N.T.S. DRAWING NO: 502

NOTE:
THE WATER QUALITY IMPROVEMENTS WILL BE CONSTRUCTED ALONG SIDE THE ELIZABETH AVENUE ROADWAY IMPROVEMENTS (BY OTHERS). PRE-PROJECT CONDITIONS SHOWN FOR THE WATER QUALITY IMPROVEMENTS REPRESENT, AND INCLUDE, CHANGES TO EXISTING SITE ASSOCIATED WITH ROADWAY IMPROVEMENTS.

FOR EXISTING CONDITIONS AND ROADWAY IMPROVEMENTS, REFER TO CONSTRUCTION DOCUMENTS FOR "ELIZABETH AVENUE REALIGNMENT".

ELIZABETH AVENUE CITY OF NEW BRAUNFELS



Thomas Edward Hegemer
4/20/2021

Designed: GP/OF
Drawn: GP/OF
Reviewed: TEH
Date: 4/20/2021
SHEET
3
3 OF 10
Project No.: 1757-006

ELIZABETH AVENUE
CITY OF NEW BRAUNFELS



THOMAS EDWARD HEGEMER
 62216

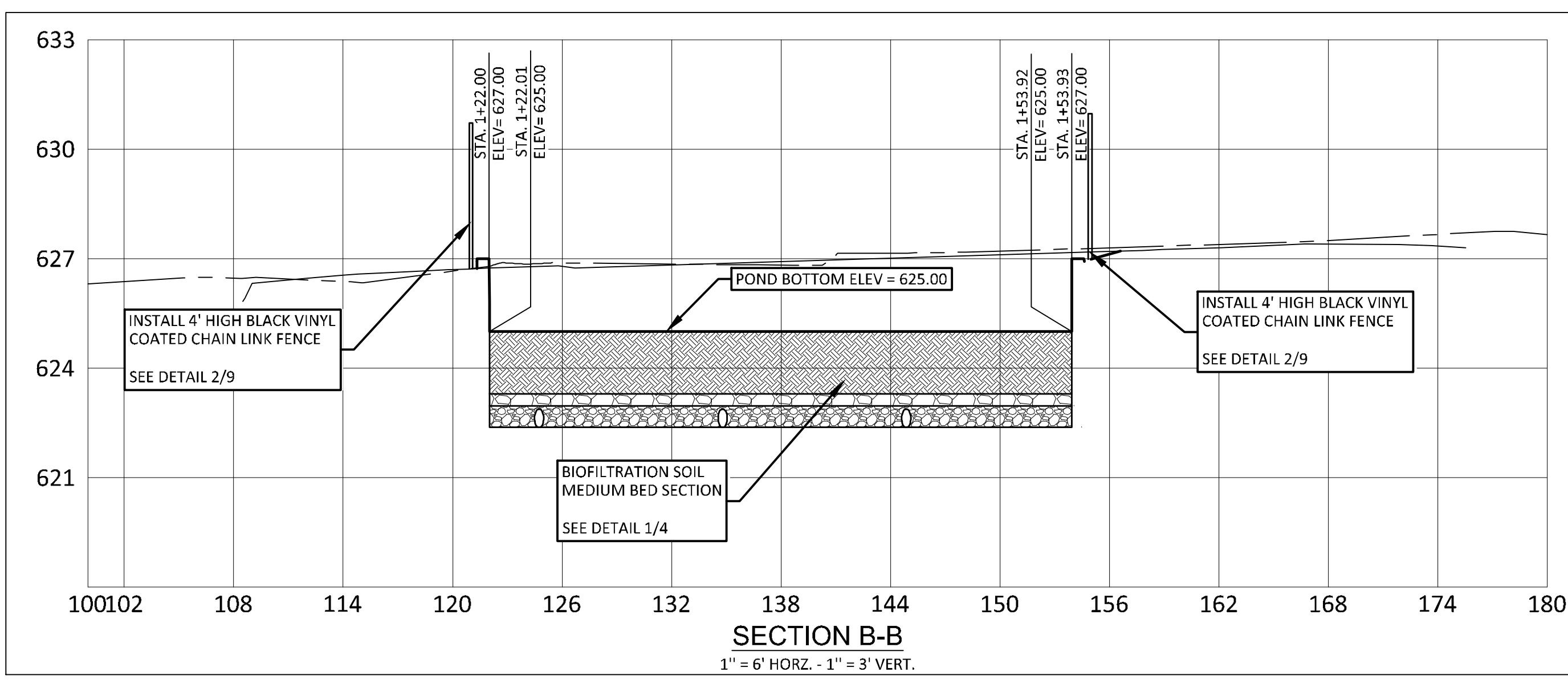
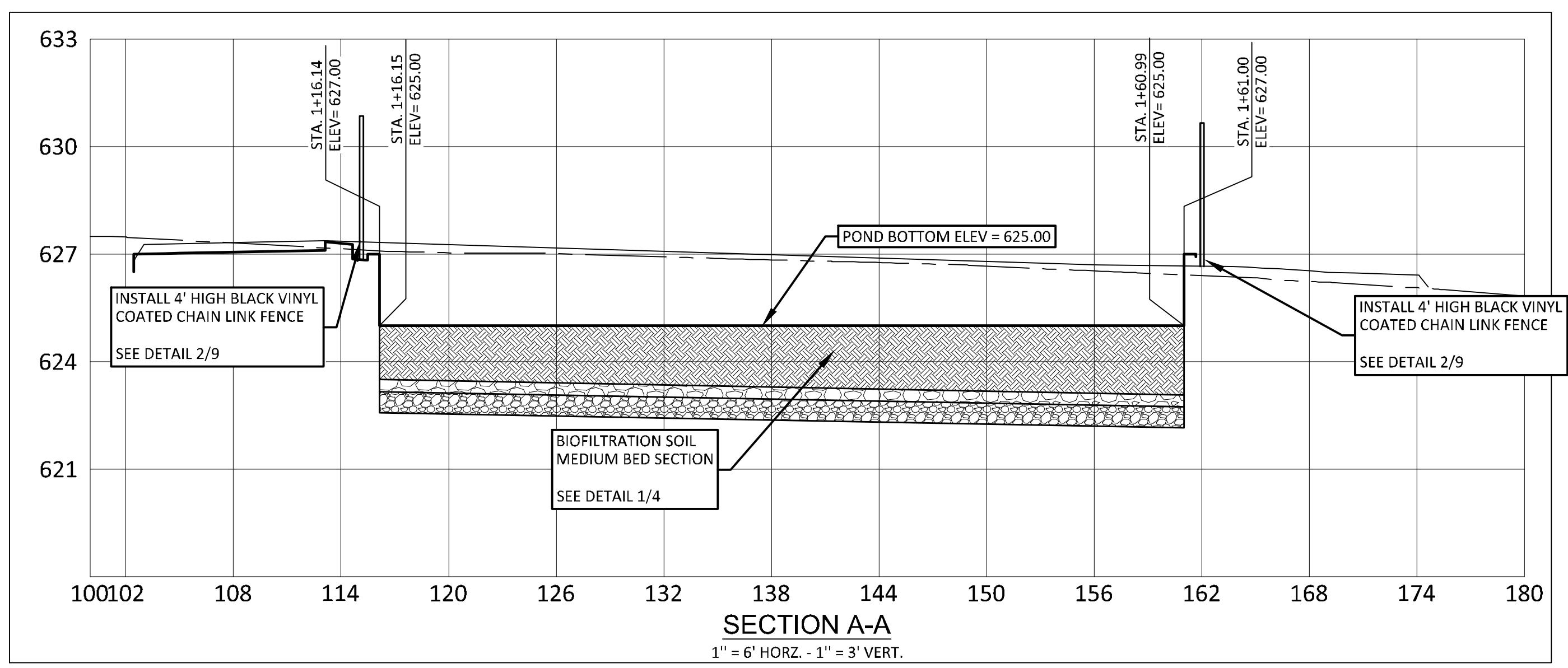
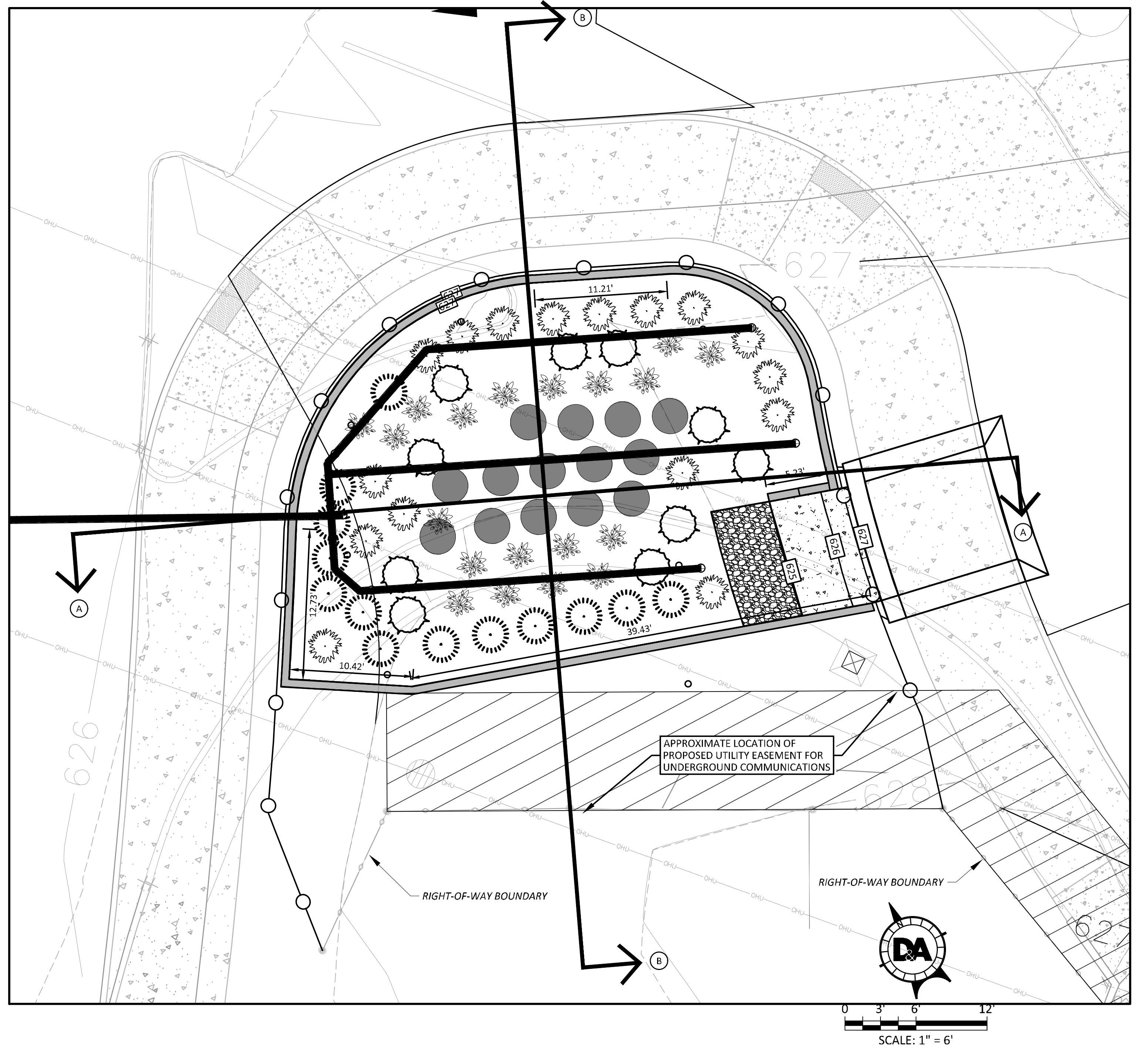
LICENSURE NO. 62216

PROFESSIONAL ENGINEER

4/20/2021

Thomas Edward Hegemer

4/20/202



CONTRACTOR NOTES:

EXISTING UNDERGROUND & OVERHEAD UTILITIES IN VICINITY. CONTRACTOR TO CONTACT UTILITY COMPANIES PRIOR TO CONSTRUCTION.

CONTRACTOR TO CALL 811 FOR UTILITY LOCATES PRIOR TO EXCAVATION. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS & DEPTH PRIOR TO BEGINNING CONSTRUCTION.

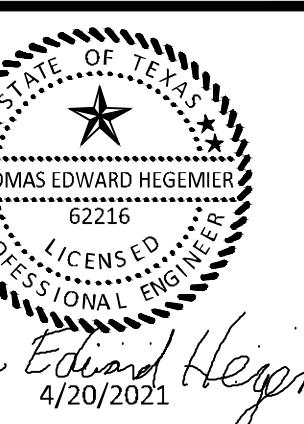
CONTRACTOR SHALL CONSIDER PROPOSED UTILITY IMPROVEMENTS AND PROVIDE ADEQUATE HORIZONTAL AND VERTICAL CLEARANCE DURING INSTALLATION OF ALL UTILITY INFRASTRUCTURE.

DOUCET & ASSOCIATES
 Civil Engineering, Planning, Geospatial
 7401 B. Highway 71 W, Suite 160
 Austin, TX 78735, Tel: (512)-583-2600
 www.doucetengineers.com
 TPLS Firm Number: 3937
 TPLS Firm Number: 10105800

POND SECTIONS

ELIZABETH AVENUE

CITY OF NEW BRAUNFELS

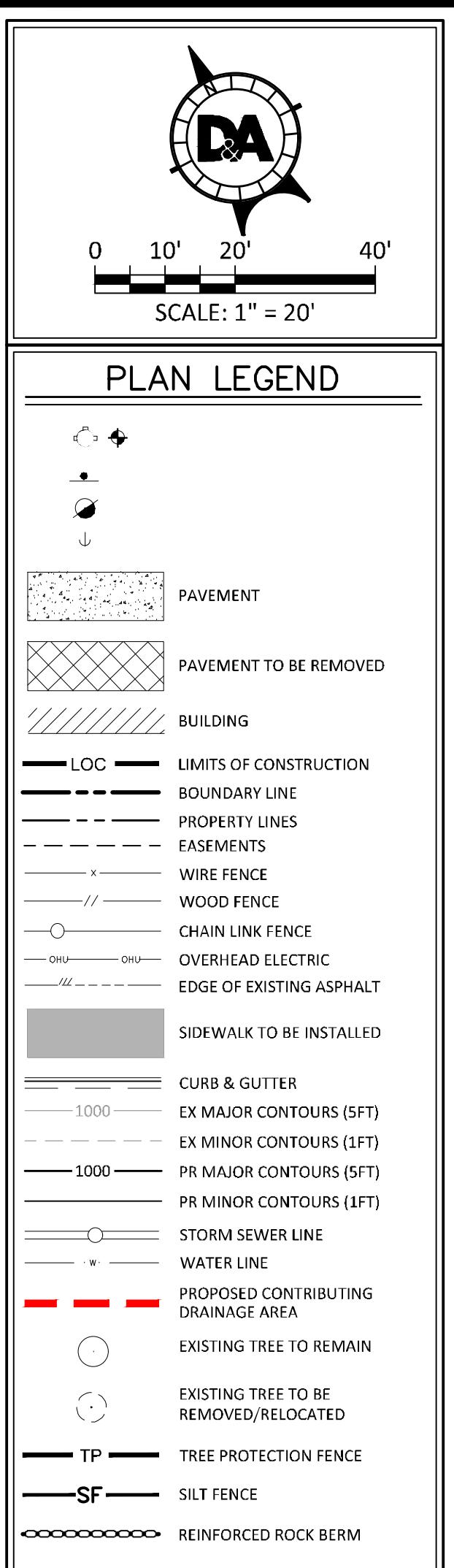
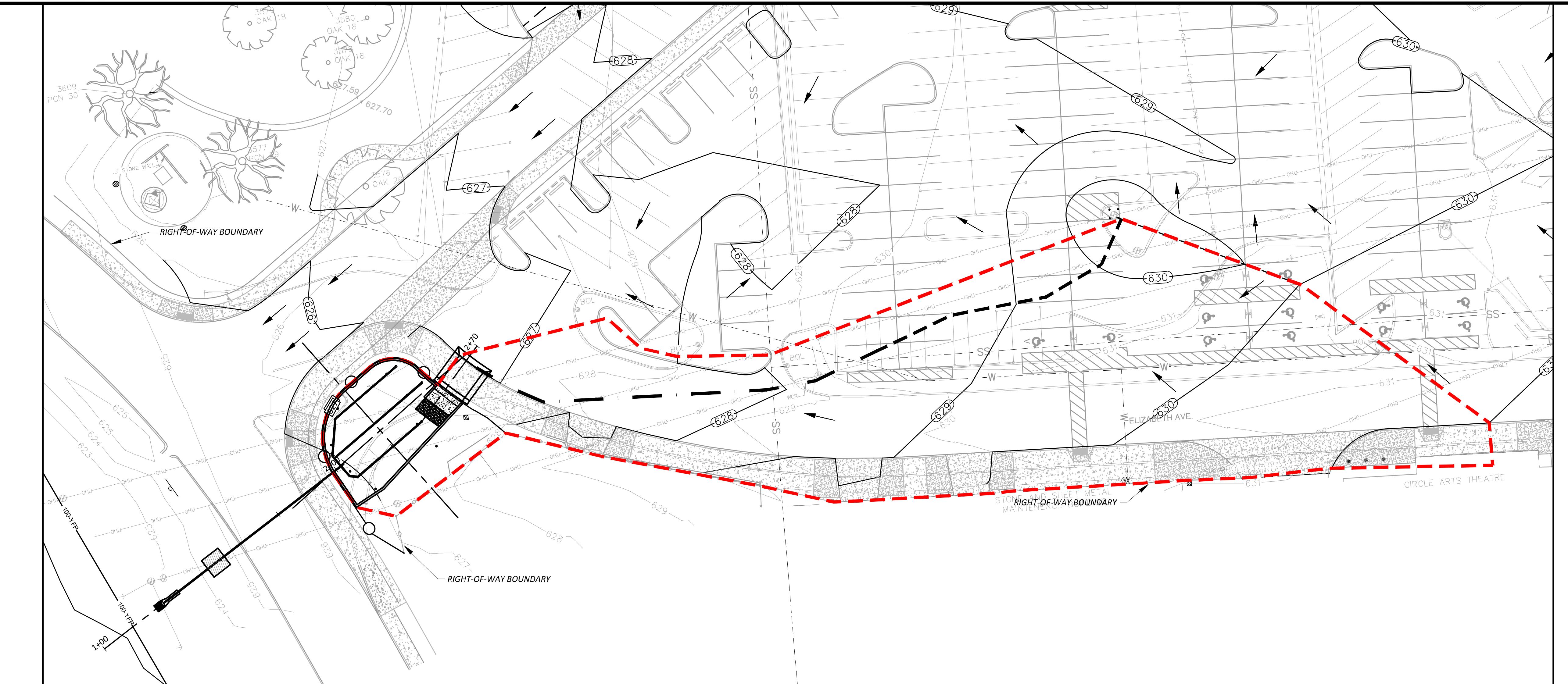


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 Reviewed: TEH
 Date: 4/20/2021

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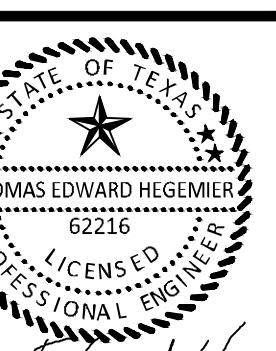
6 OF 10

Project No.: 1757-006



WATER QUALITY CALCULATIONS

ELIZABETH AVENUE



4/20/2021

7
7 OF 10

Project No.: 1757-006

ELIZABETH AVENUE - WATER QUALITY RETROFIT

Water Quality Pond 1 Summary - Bioretention

Date: 2/26/2021

Project No: 1757-006

Pond: 1

BASIN DATA		
Parameter	Pre-Project	Post-Project
Basin ID	Greenfield	1
Basin Area (Acres)	0.50	0.50
Impervious (Acres)	0.00	0.45
Permeable (Acres)	0.50	0.05
IC (%)	0.00	89.1%

BMP DATA		
BMP	Bioretention	
BMP Efficiency	89%	

TSS CALC DATA		
Load Removed - LR (lbs)	LM (lbs) Desired	F _s
456	365	0.80
		1.08
		0.77

DESIGN DATA		
County	Comal	P _i
		33
Treatment Level	80%	

WATER QUALITY VOLUME DATA		
WQV (CF)	1.435	Capture Vol. (120% WQV)
	1.722	

Post-Project Impervious Cover Calculations		
Post-Project Area:	0.50	Ac.
IC Type	Sq. Ft	Acres
Structures	0	0.00
Parking	19,531	0.45
Other Paved	0	0.00
	0.45	89.1%

VOLUME PROVIDED		
STAGE STORAGE DATA		
Elevation	Area (SF)	Volume (CF)
625	1,248.08	0
625.5	1,271.92	630
626	1,293.94	641
626.37	1,310.14	1,271

RG-348 References
1 - P-Table 3-3
2 - LM-Equation 3.2
3 - BMP Eff. Table 3-4
4 - LM-Equation 3.2
5 - F. Equation 3.0
6 - Rainfall Depth - Table 3-5
7 - Runoff Coeff. Eq. 3.11
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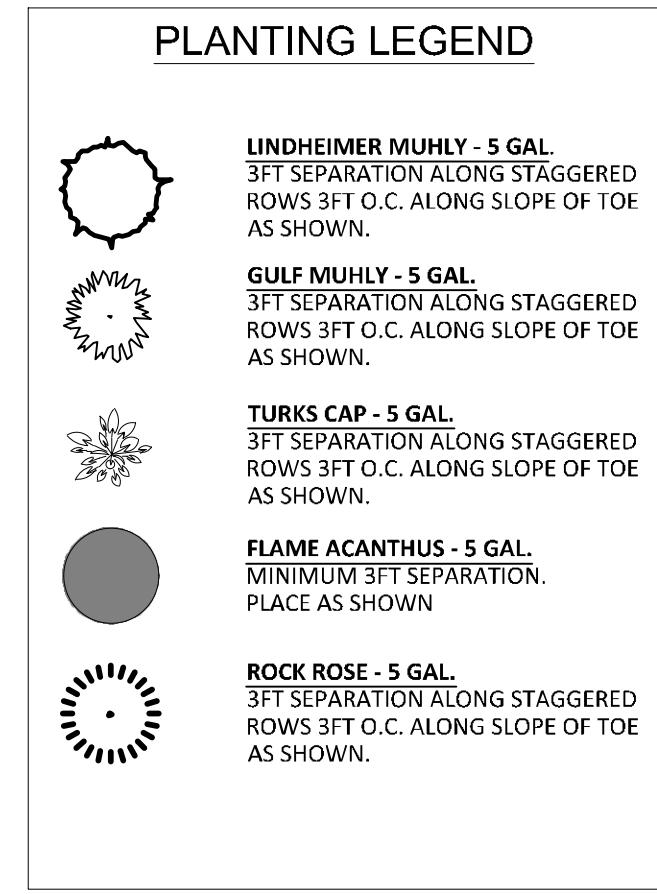
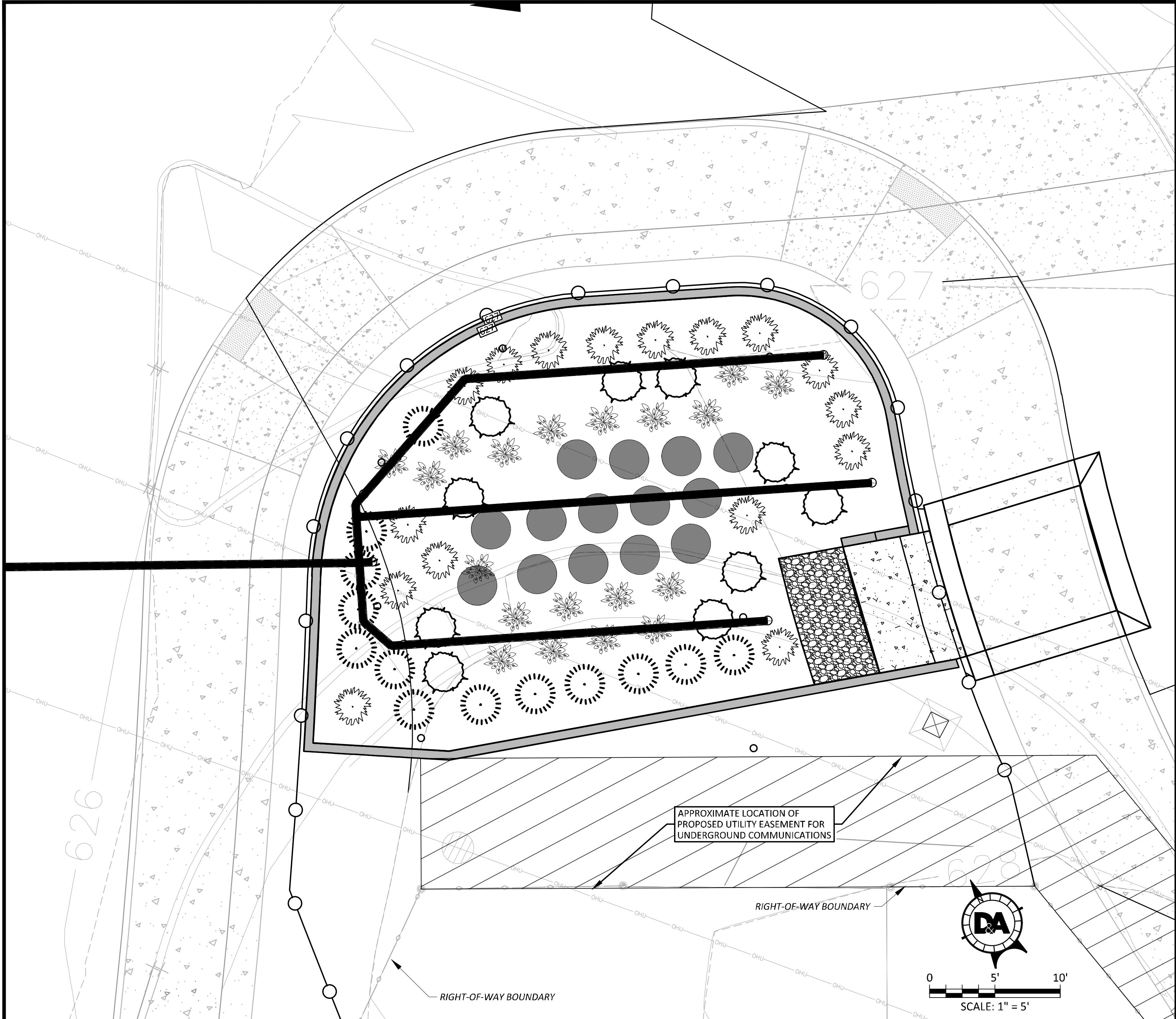
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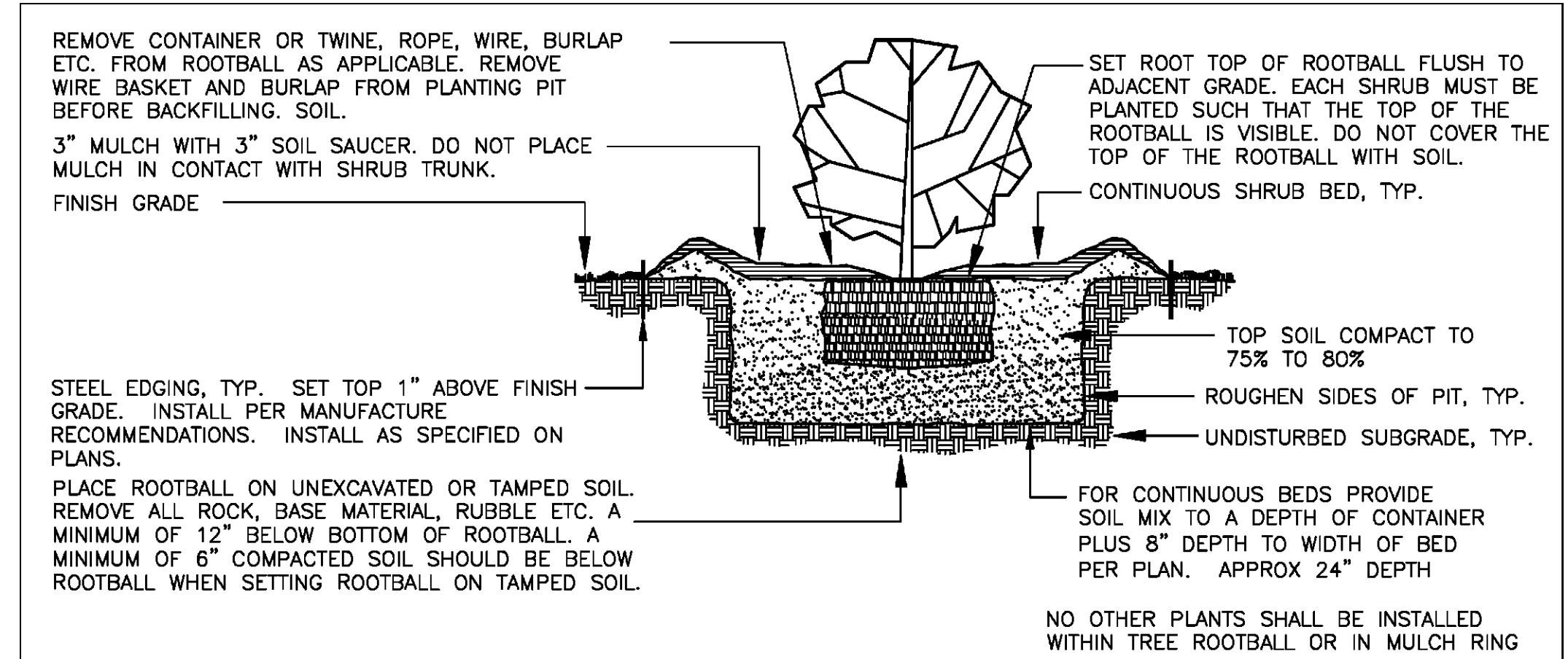
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7 - Run



CONTRACTOR NOTES:
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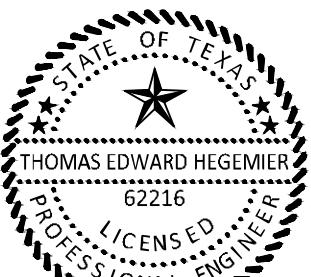


1
8
SCALE: NONE

SHRUB PLANTING DETAIL

PLANTING SCHEDULE		
TYPE	SIZE	QUANTITY
LINDHEIMER MUHY	5-GAL	10
GULF MUHY	5-GAL	16
TURKS CAP	5-GAL	19
FLAME ACANTHUS	5-GAL	14
ROCK ROSE	5-GAL	13

ELIZABETH AVENUE
CITY OF NEW BRAUNFELS

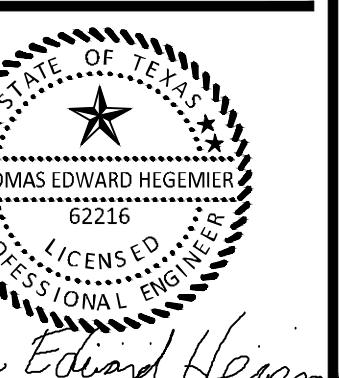


Designed: GP/OF
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Project No.: 1757-006

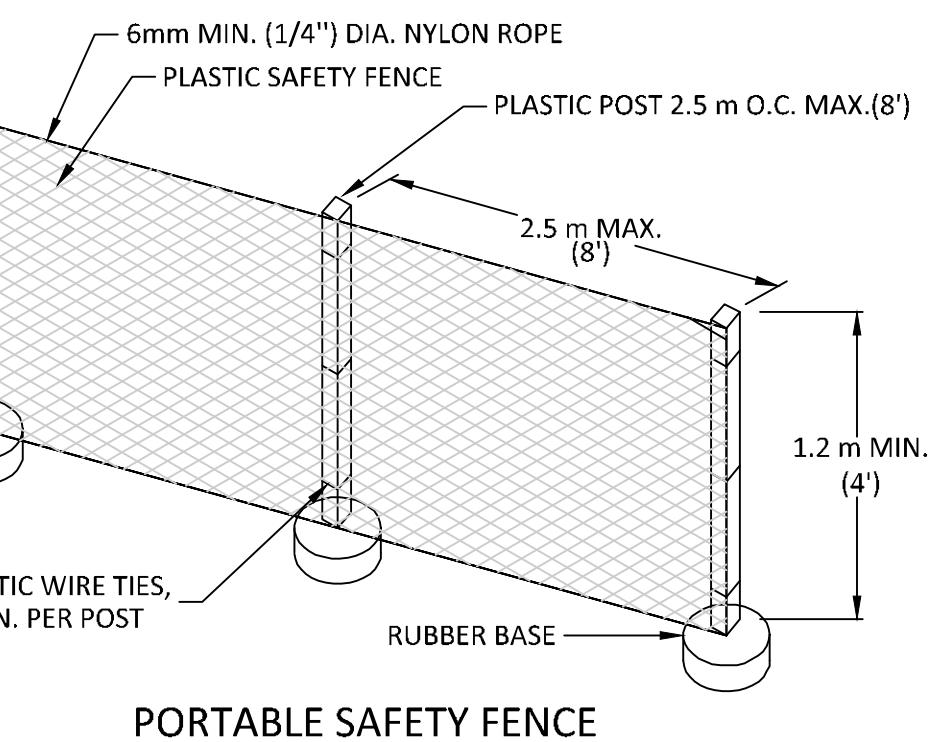
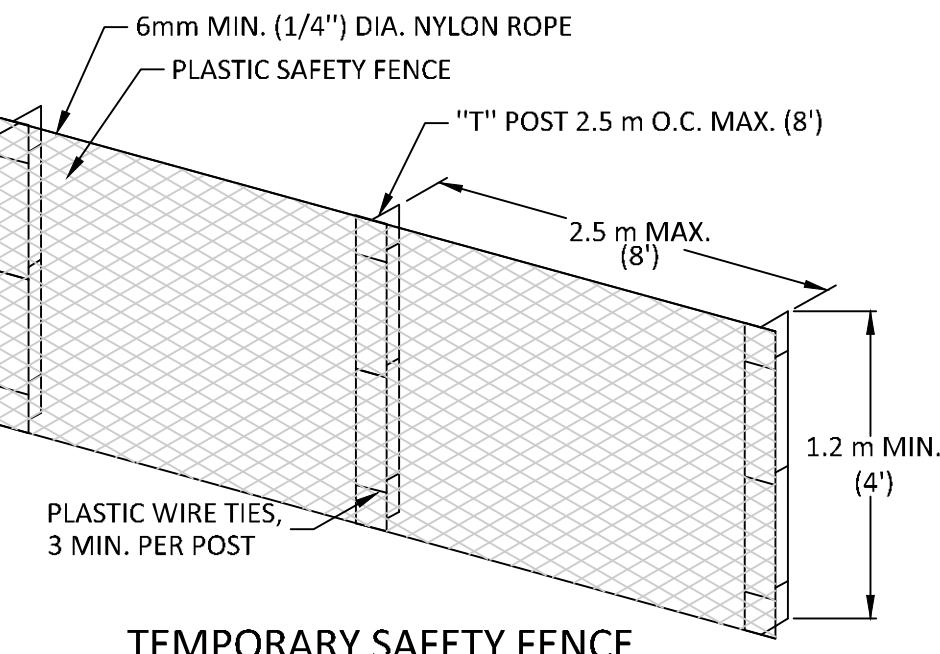
DETAILS SHEET 1

ELIZABETH AVENUE

CITY OF NEW BRAUNFELS



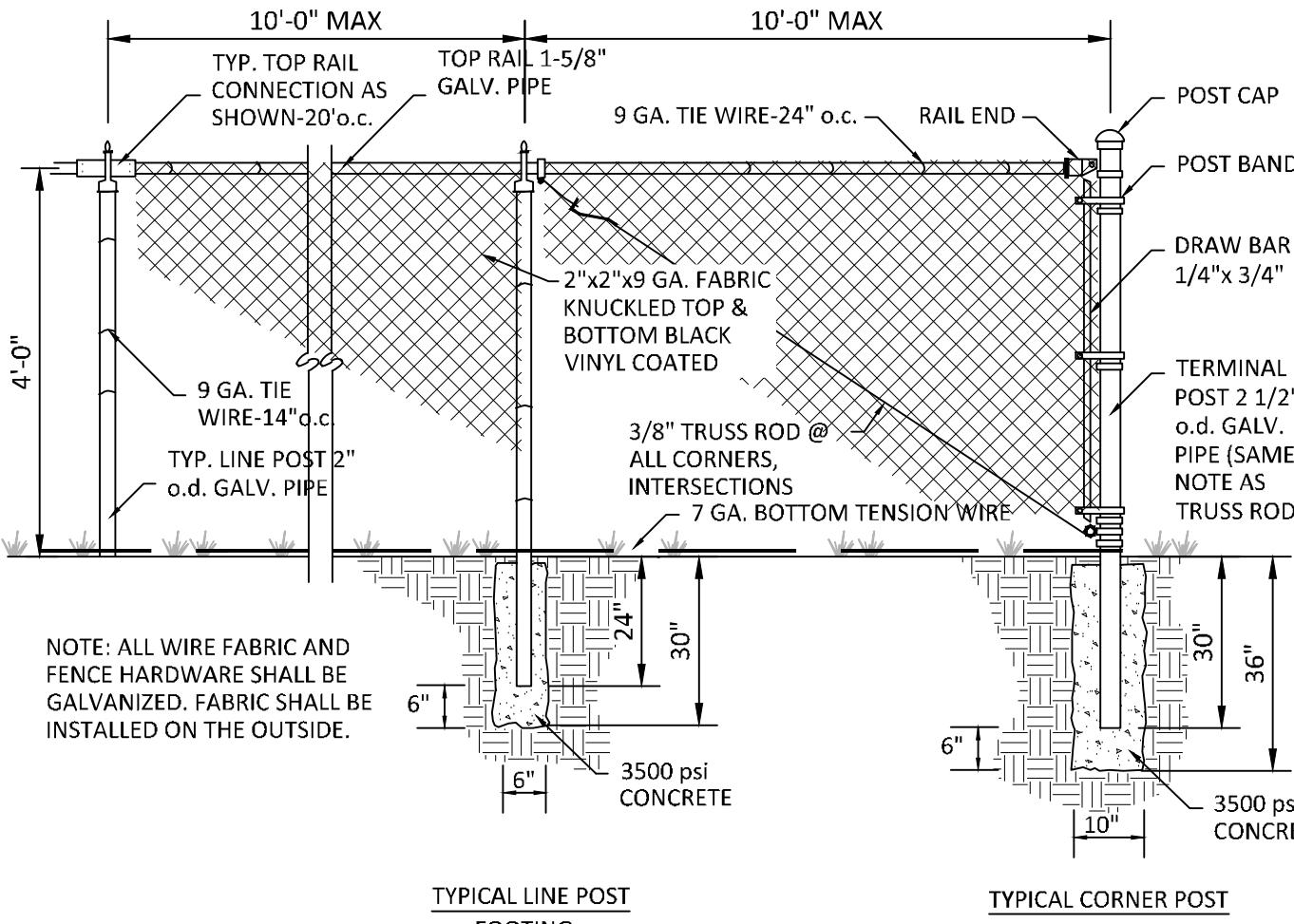
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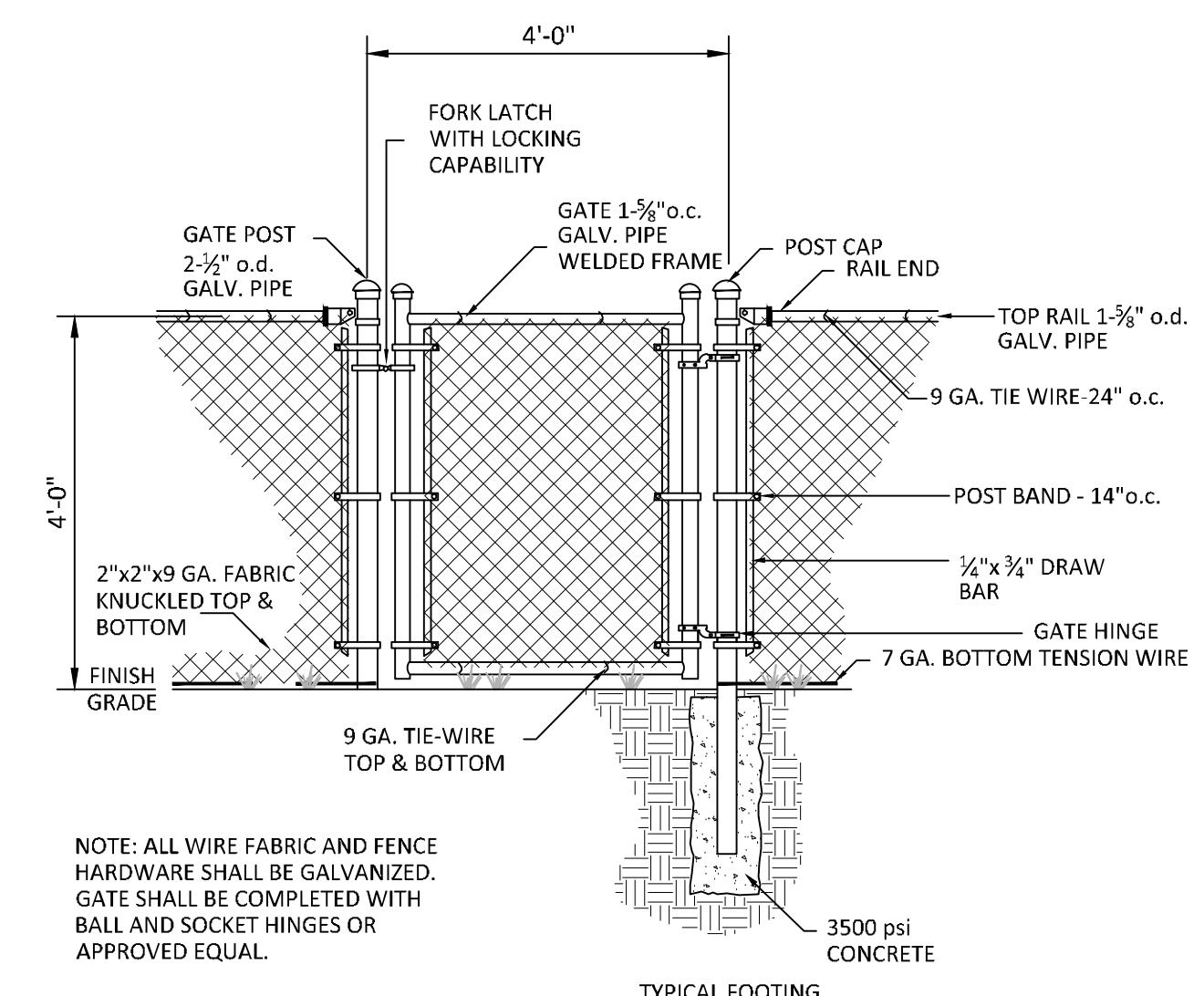
1 ORANGE SAFETY FENCE
 SCALE: NONE CUST- 443

NOTES:
 1. SAFETY FENCE SHALL BE USED TO PROTECT ALL EXCAVATIONS.
 2. SAFETY FENCES SHALL BE USED TO SEPARATE CONSTRUCTION ACTIVITIES FROM PEDESTRIAN.
 3. ALL SAFETY FENCING SHALL BE PLASTIC, 1,200 mm (48") MINIMUM HEIGHT AND ORANGE IN COLOR.
 4. SAFETY FENCE USED WITHIN THE ROADWAY SHALL BE REFLECTORIZED WITH A MINIMUM OF TWO (2) STRIPS OF RETROREFLECTIVE MATERIAL, A MINIMUM OF 25 mm (1") WIDE, THE LENGTH OF THE FENCE OR DELINEATED BY CHANNELIZING DEVICES.
 5. SAFETY FENCE USED TO SEPARATE SIDEWALKS FROM CONSTRUCTION ACTIVITIES SHALL HAVE MINIMUM ENCROACHMENT TO THE SIDEWALK.
 6. AS A MINIMUM, SAFETY FENCING IS REQUIRED IN AREAS ADJACENT TO EXCAVATIONS GREATER THAN OR EQUAL TO 150 mm (6").

FENCE SPECIFICATIONS:
 FABRIC — 2"x2" x 9 GA. KNUCKLE / KNUCKLE BLACK VINYL COATED
 POSTS — SCH. 40 GALVANIZED STEEL
 LINE POSTS - 2" MIN.
 TERMINAL POSTS - 2 1/2" MIN.
 TOP RAIL - 1 1/2" MIN
 TENSION WIRE - BOTTOM, 7 GA. COILED SPRING
 TRUSS — 3/8"



FENCE SPECIFICATIONS:
 FABRIC — 2"x2" x 9 GA. KNUCKLE / KNUCKLE BLACK VINYL COATED
 POSTS — SCH. 40 GALVANIZED STEEL
 LINE POSTS - 2" MIN.
 TERMINAL POSTS - 2 1/2" MIN.
 TOP RAIL - 1 1/2" MIN
 TENSION WIRE - BOTTOM, 7 GA. COILED SPRING
 TRUSS — 3/8"



2 4' HIGH BLACK VINYL COATED CHAIN LINK FENCE
 SCALE: NONE CUST-339-1B

NOTES:
 ALL WIRE FABRIC AND FENCE HARDWARE SHALL BE GALVANIZED. FABRIC SHALL BE INSTALLED ON THE OUTSIDE.

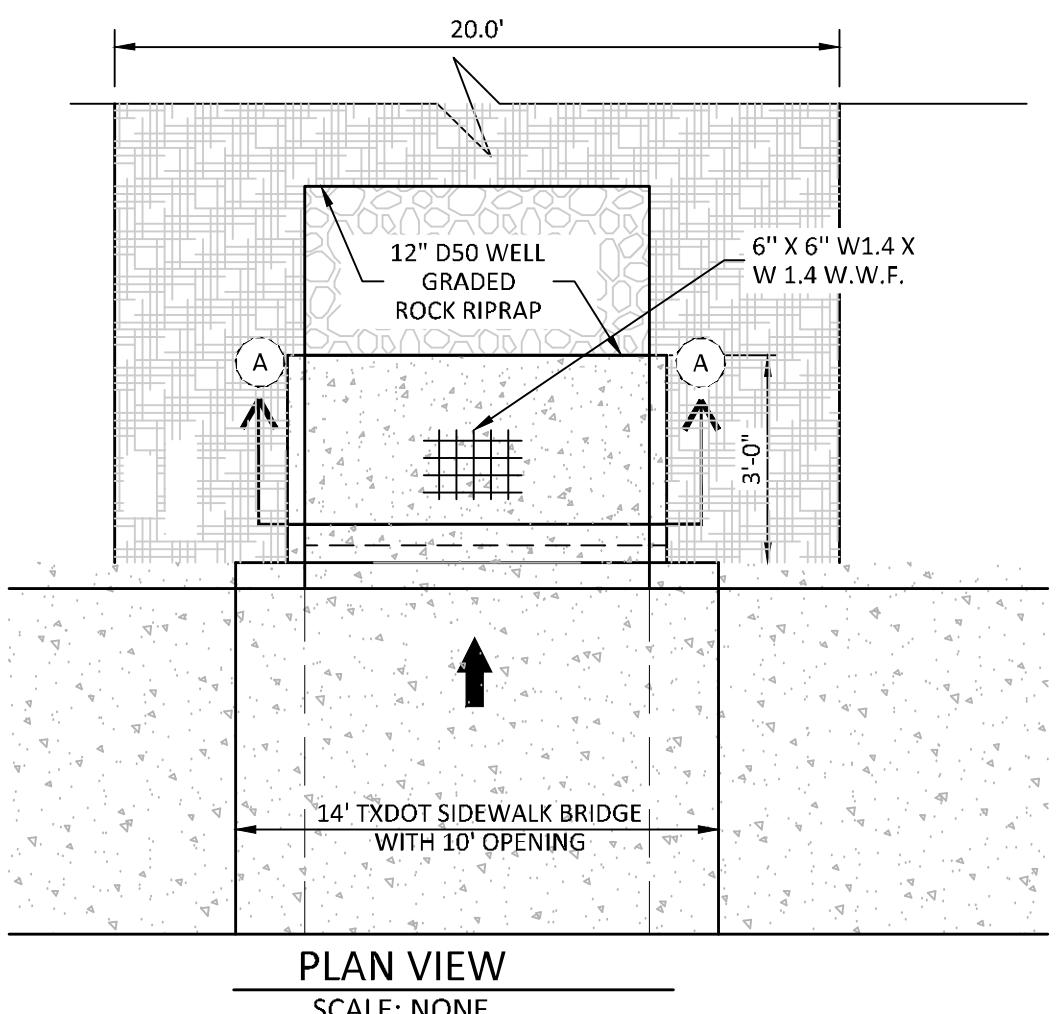
TYPICAL LINE POST FOOTING

TYPICAL CORNER POST FOOTING

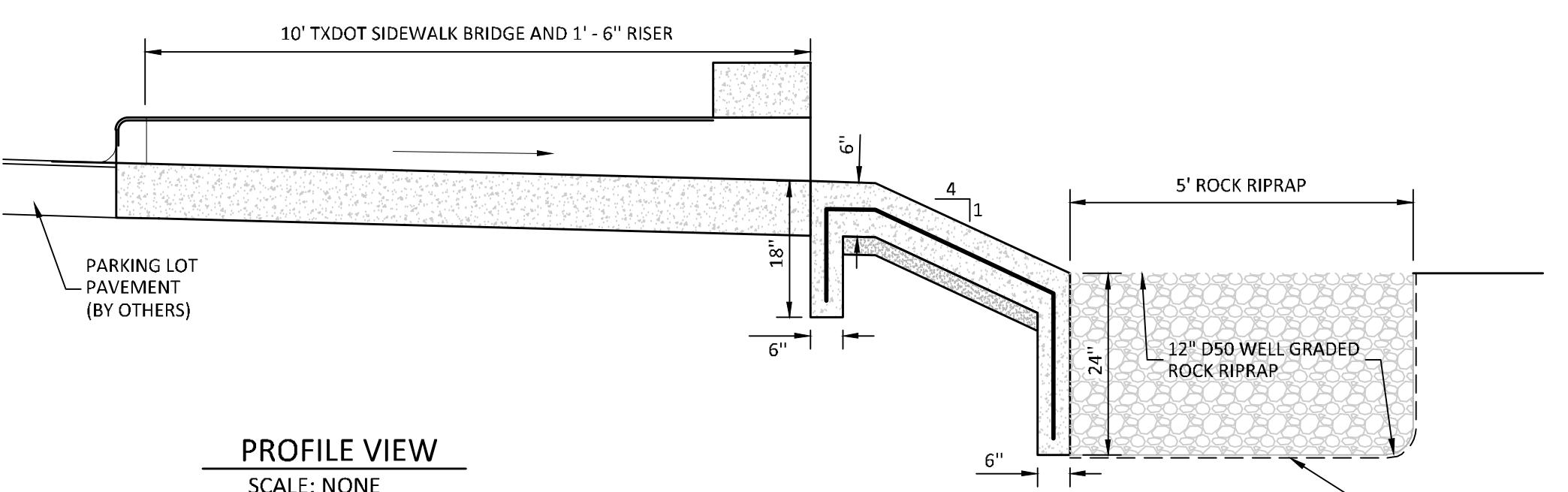
ALTERNATE MOUNTING DETAIL
 (TOP OF CONCRETE WALL) CUST- 449

NOTES:
 ALL WIRE FABRIC AND FENCE HARDWARE SHALL BE GALVANIZED. GATE SHALL BE COMPLETED WITH BALL AND SOCKET HINGES OR APPROVED EQUAL.

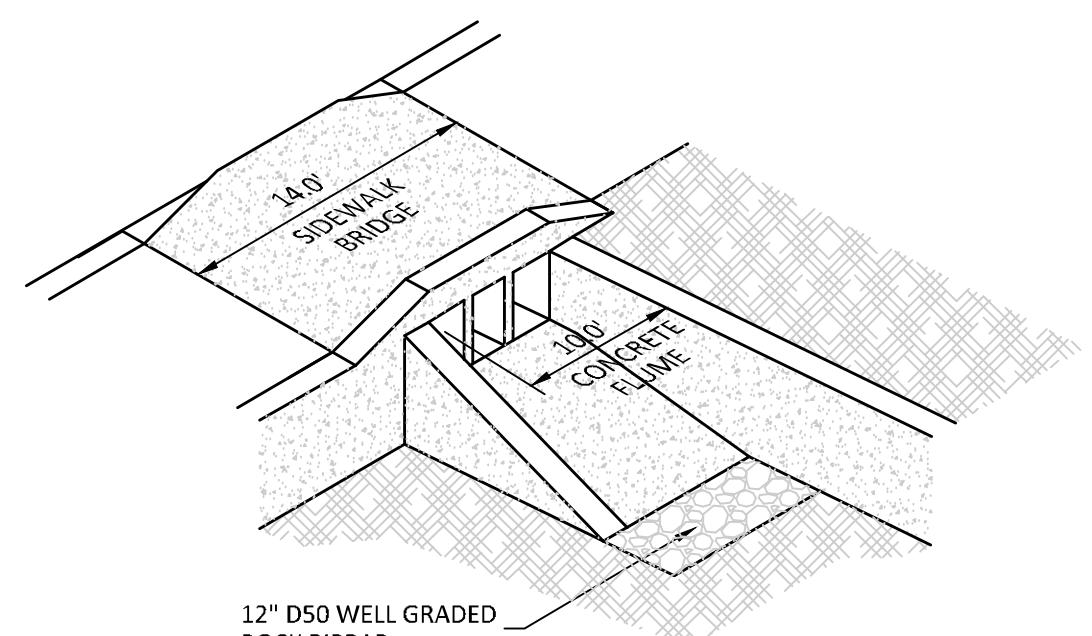
3 TYPICAL SWING GATE
 SCALE: NONE CUST-338



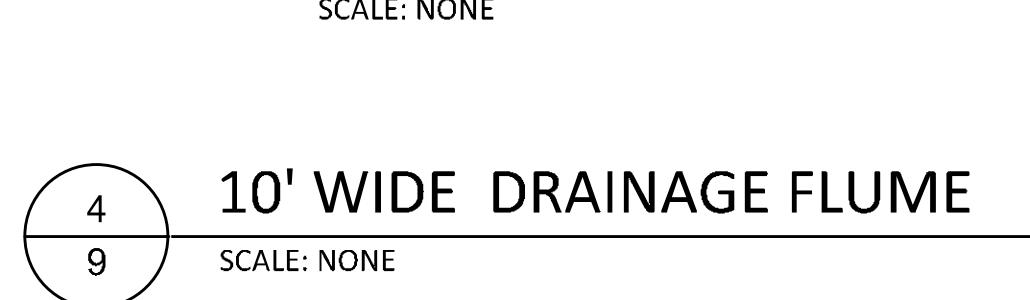
PLAN VIEW
 SCALE: NONE



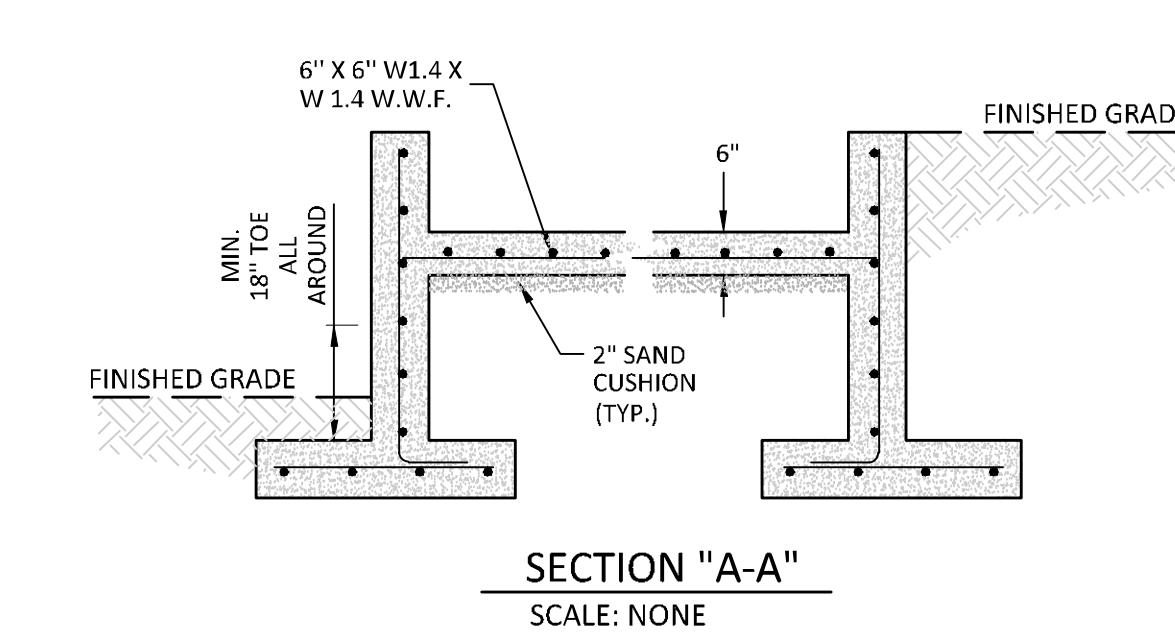
PROFILE VIEW
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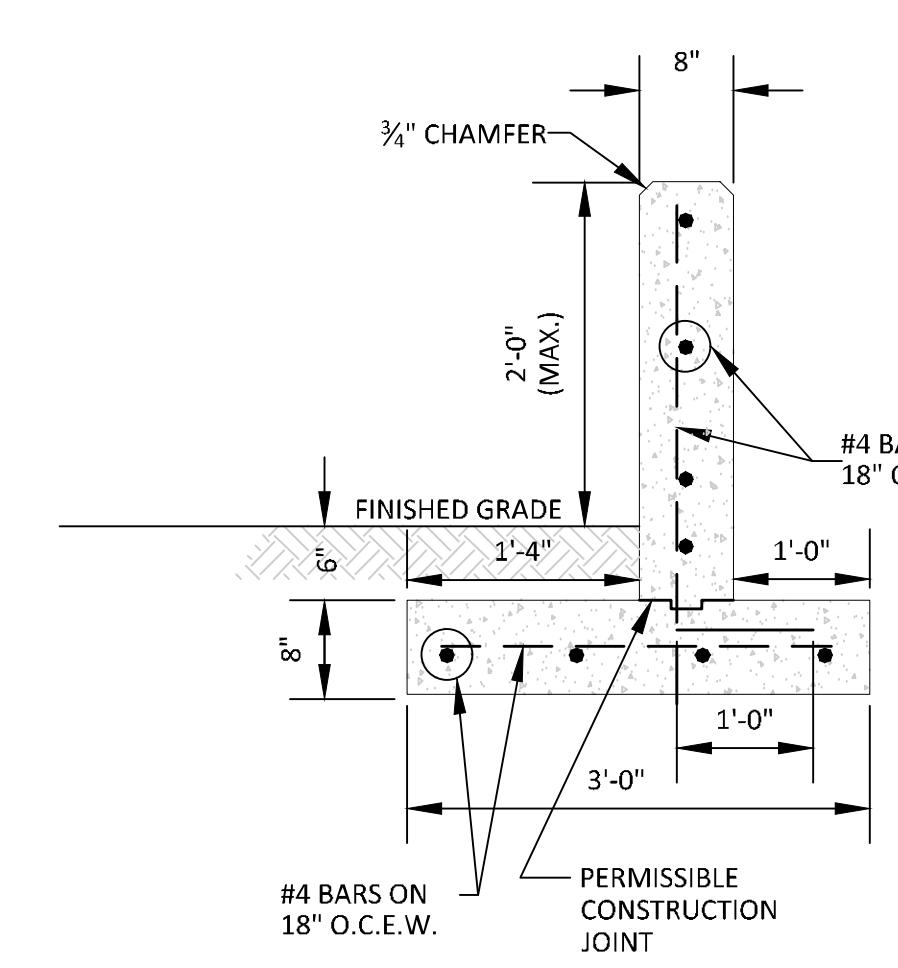
ISOMETRIC VIEW
 SCALE: NONE



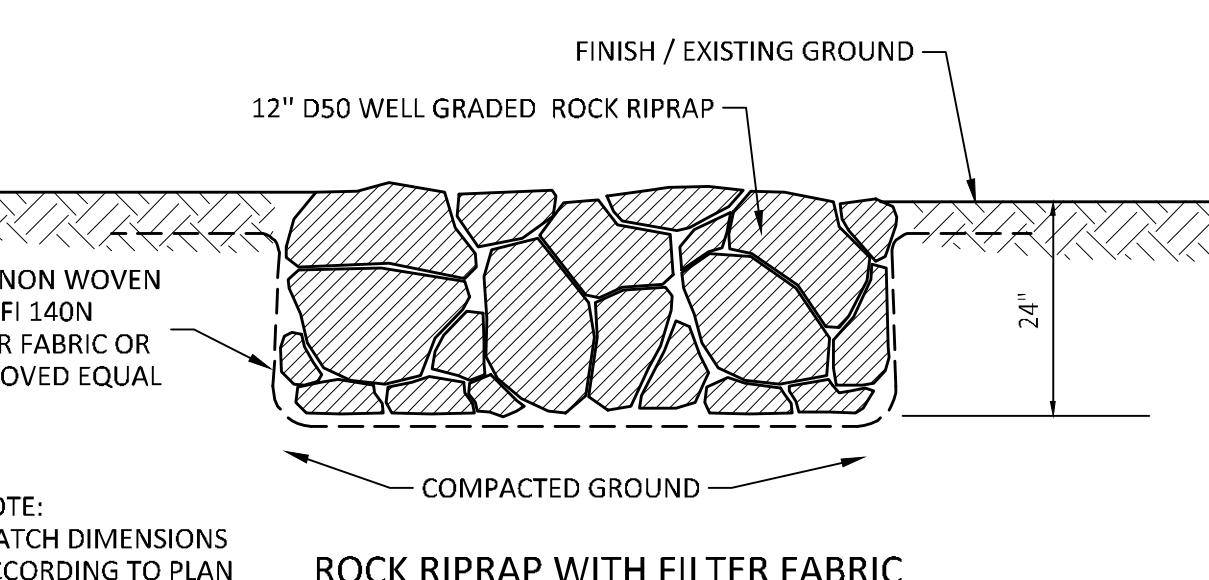
4 10' WIDE DRAINAGE FLUME
 SCALE: NONE



SECTION "A-A"
 SCALE: NONE



5 ROCK RIPRAP DETAIL
 SCALE: NONE CUST-001



NOTE:
 MATCH DIMENSIONS
 ACCORDING TO PLAN

ROCK RIPRAP WITH FILTER FABRIC

