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STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

LIST OF ROADWAY  
STANDARDS

EFF. 01-16-2024  
REV.

2024 ROADWAY STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference here by are considered a part of these plans:

STD. NO.	TITLE
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 12, and 14 of 15)
862.02	Guardrail Installation (Use Details in Lieu of Standards for Sheets 5 of 9)
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

CONTRACT: DN01090

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

HELENE  
EMERGENCY REPAIRS

COUNTY TRANSYLVANIA  
PROJECT DESCRIPTION 1 SITE ON BECKY MOUNTAIN RD



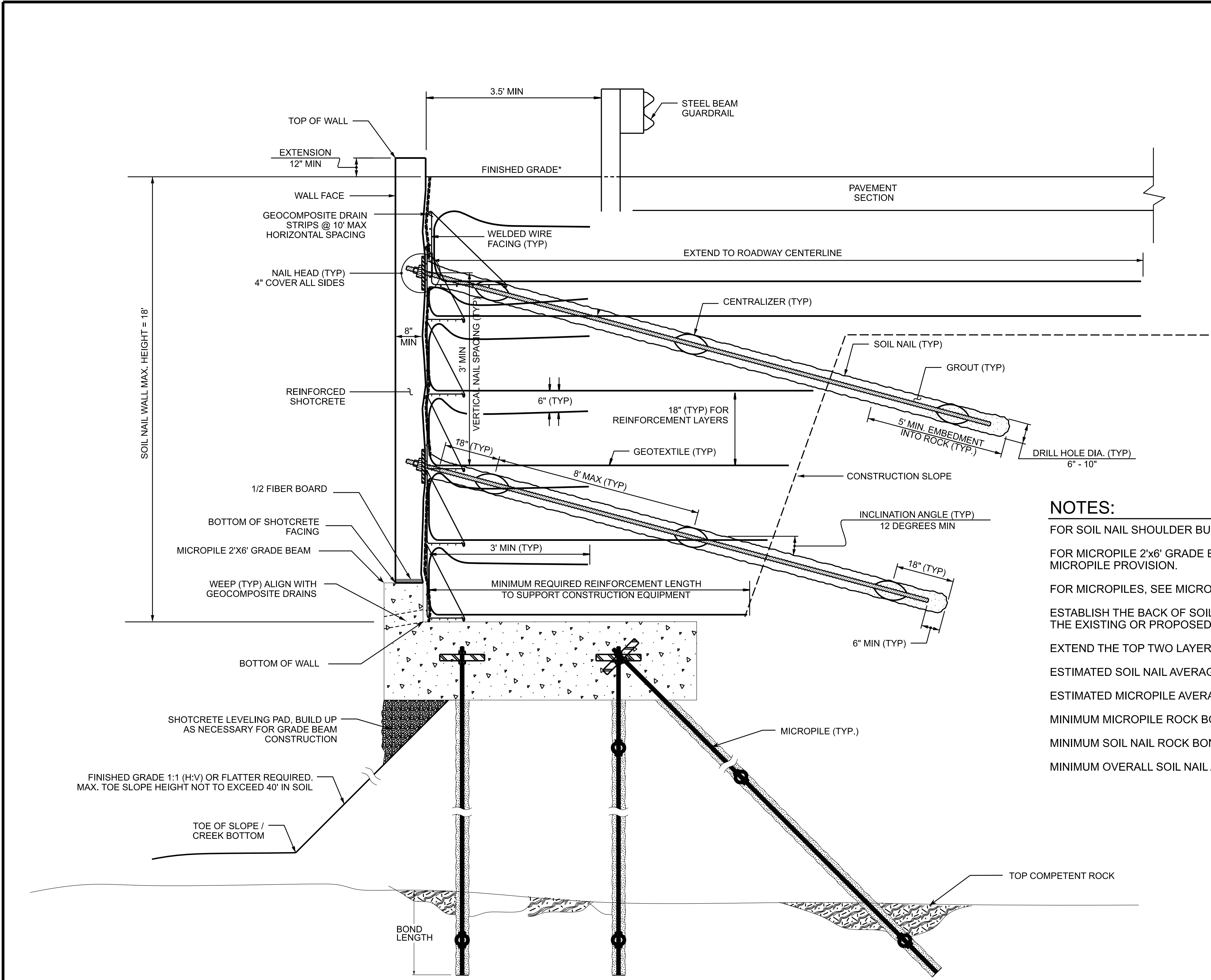
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*J. Dean Hardister* 12/02/2024  
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SIGNATURE DATE

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UNLESS ALL SIGNATURES COMPLETED

ROUTE	SITE #	SITE LATITUDE	SITE LONGITUDE	REPAIR OPTION 1	REPAIR OPTION 2	REPAIR OPTION 3
SR-1538 Becky Mountain Road	25	35.19865434	-82.71416048	Soil Nail Shoulder Buildout		

WHEN MULTIPLE REPAIR OPTIONS ARE AVAILABLE AT A SITE LOCATION, THE CONTRACTOR SHALL PROCEED IN SEQUENTIAL ORDER AND CHOOSE THE FIRST OPTION THAT FITS WITHIN SITE CONSTRAINTS

PRIOR TO CONSTRUCTING THE GEOTECHNICAL REPAIRS, AN ON-SITE MEETING WITH THE PRIME CONTRACTOR, THE GEOTECHNICAL SPECIALTY SUBCONTRACTOR (IF APPLICABLE), THE DIVISION CONSTRUCTION REPRESENTATIVE AND THE GEOTECHNICAL OPERATIONS GROUP REPRESENTATIVE SHALL BE CONDUCTED



- NOTES:**
- FOR SOIL NAIL SHOULDER BUILD-OUT, SEE SOIL NAIL WALL PROVISION.
  - FOR MICROPILE 2'x6' GRADE BEAM, SEE SLOPE STABILIZATION GRADE BEAM PLANS AND MICROPILE PROVISION.
  - FOR MICROPILES, SEE MICROPILE PROVISION.
  - ESTABLISH THE BACK OF SOIL NAIL WALL FACE AT A 3.5' OR GREATER OFFSET FROM THE BACK OF THE EXISTING OR PROPOSED GUARDRAIL POST.
  - EXTEND THE TOP TWO LAYERS OF GEOTEXTILE TO CENTERLINE OF ROAD.
  - ESTIMATED SOIL NAIL AVERAGE LENGTH = 20'
  - ESTIMATED MICROPILE AVERAGE LENGTH = 15'
  - MINIMUM MICROPILE ROCK BOND LENGTH = 5'
  - MINIMUM SOIL NAIL ROCK BOND LENGTH = 5'
  - MINIMUM OVERALL SOIL NAIL AND MICROPILE LENGTH = 10'

GEOTECHNICAL  
ENGINEER

DocuSigned by:  
*Dean Hardister* 12/02/2024  
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SIGNATURE DATE

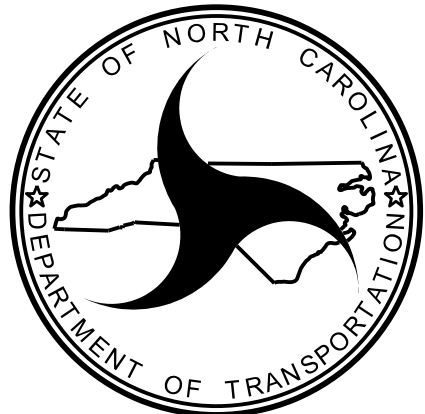
ENGINEER

SIGNATURE DATE

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PREPARED BY: MS	DATE: 10/24
REVIEWED BY:	DATE:

DO NOT USE THESE DETAILS UNLESS  
DIRECTED BY THE ENGINEER



NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

GEOTECHNICAL  
ENGINEERING UNIT

CONTRACT NO.: DN01090

HURRICANE HELENE EMERGENCY REPAIRS

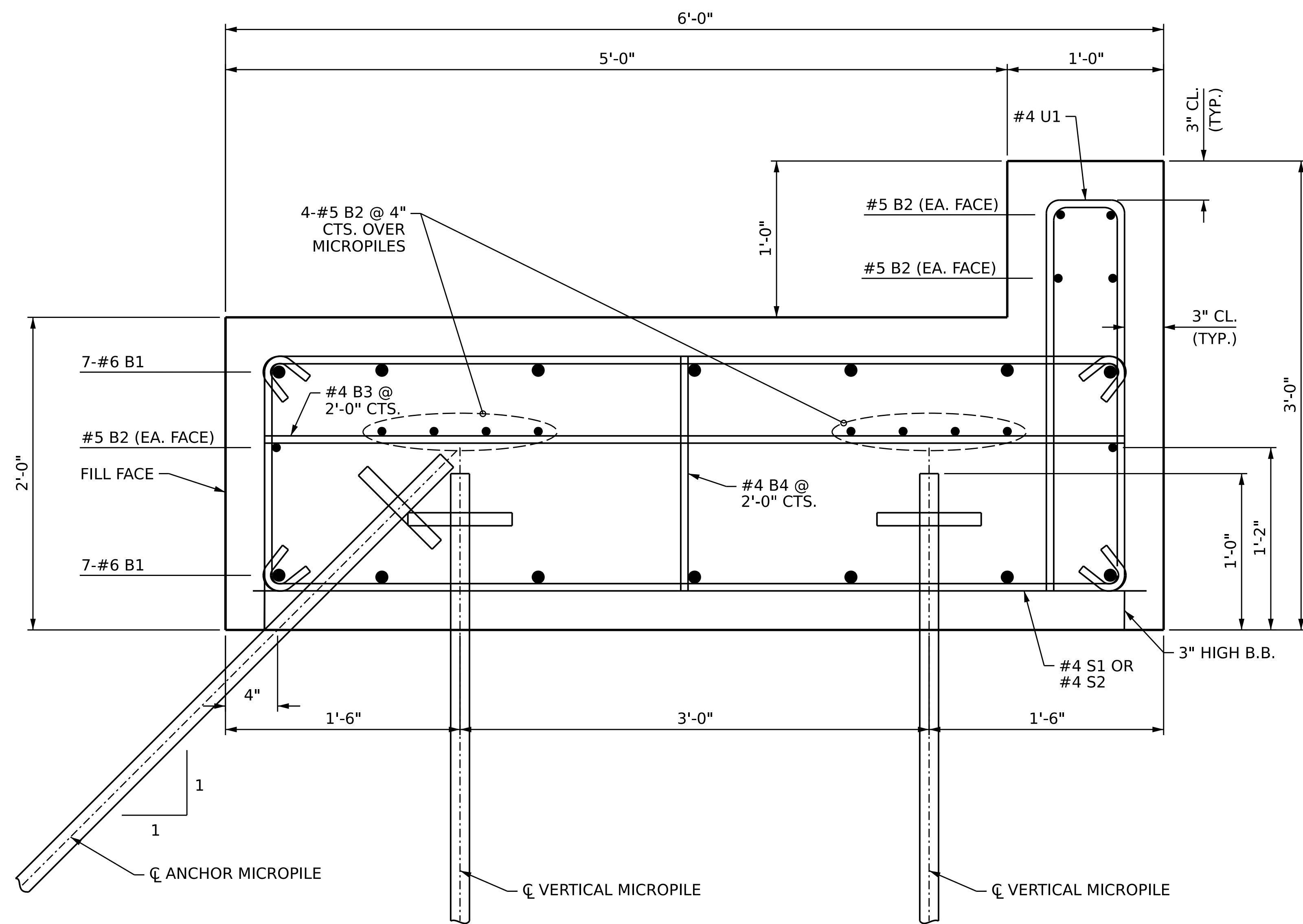
SOIL NAIL SHOULDER BUILD-OUT

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET  
NO.  
1 OF 2







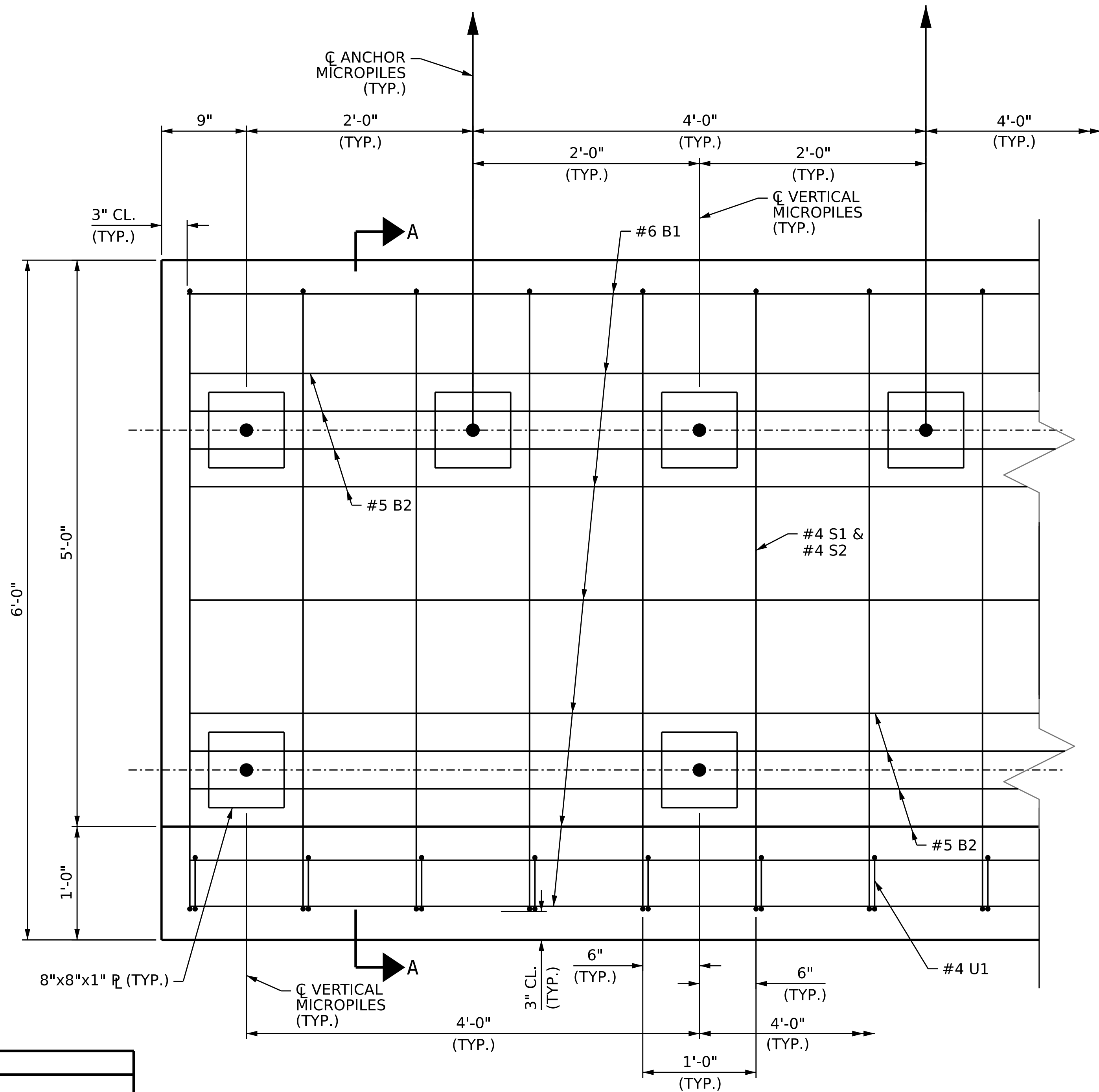
SECTION A-A

GRADE 75  
MICROPILE BAR  
W/ DOUBLE NUT  
(TYP.)

8"x8"x1"  
BEARING  
PLATE

MICROPILE DETAIL

BAR TYPES			
ALL BAR DIMENSIONS ARE OUT TO OUT			
BILL OF MATERIAL			
BAR	SIZE	TYPE	LENGTH
B1	#7	STR.	-
B2	#5	STR.	-
B3	#4	STR.	5'-6"
B4	#4	STR.	2'-6"
-	-	-	-
S1	#4	1	9'-5"
S2	#4	2	6'-5"
-	-	-	-
U1	#4	3	5'-6"
REINFORCING STEEL =			64 LBS./LIN.FT.
CLASS A CONCRETE =			0.5 CU.YD./LIN.FT.



PLAN

## NOTES

## DESIGN ASSUMPTIONS:

- ANCHOR/VERTICAL MICROPILE LOAD OF 55 KIPS.
- VERTICAL LOAD OF 4.6 KIPS/SQFT.
- LATERAL LOAD OF 4.9 KIPS/SQFT.

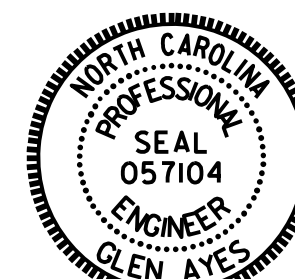
INVERT ALTERNATE STIRRUPS AS SHOWN.

STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR MICROPILES.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE MCP DETAILS.

BEARING PLATES SHALL BE GRADE 50STEEL.

CONTRACT NO. : DN01090



Designed by:  
*Glen Ayes*  
44DA323C8B8A488...  
12/04/2024

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**SLOPE STABILIZATION**  
**2'-0" X 6'-0"**  
**GRADE BEAM**

DRAWN BY : \_\_\_\_\_ DATE : \_\_\_\_\_  
CHECKED BY : \_\_\_\_\_ DATE : \_\_\_\_\_  
DESIGN ENGINEER OF RECORD: \_\_\_\_\_ DATE : \_\_\_\_\_

11/20/2024  
S:\DEV\Squad.D\EDS Documents\Emergency BridgeRepairs\Drawings\SlopeStabilizationGradeBeam.dgn  
napierce

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SIGNATURES COMPLETED

REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	
1			3	TOTAL SHEETS
2			4	



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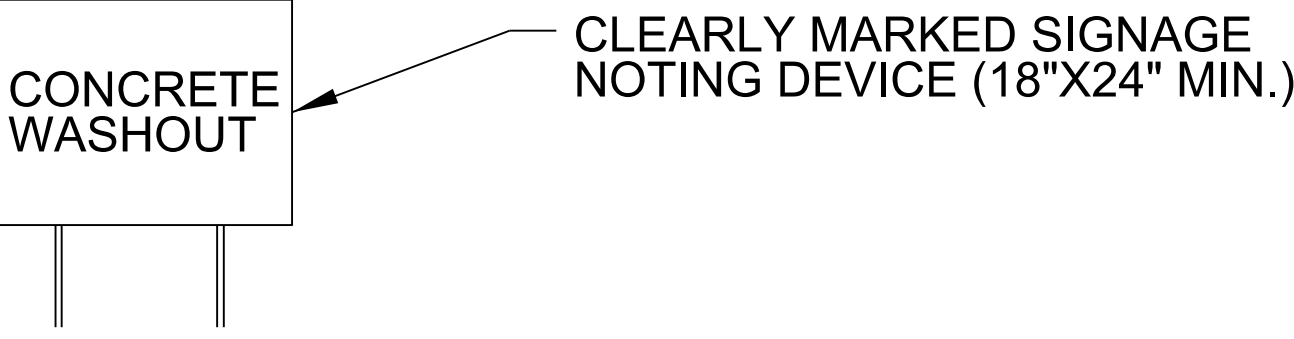
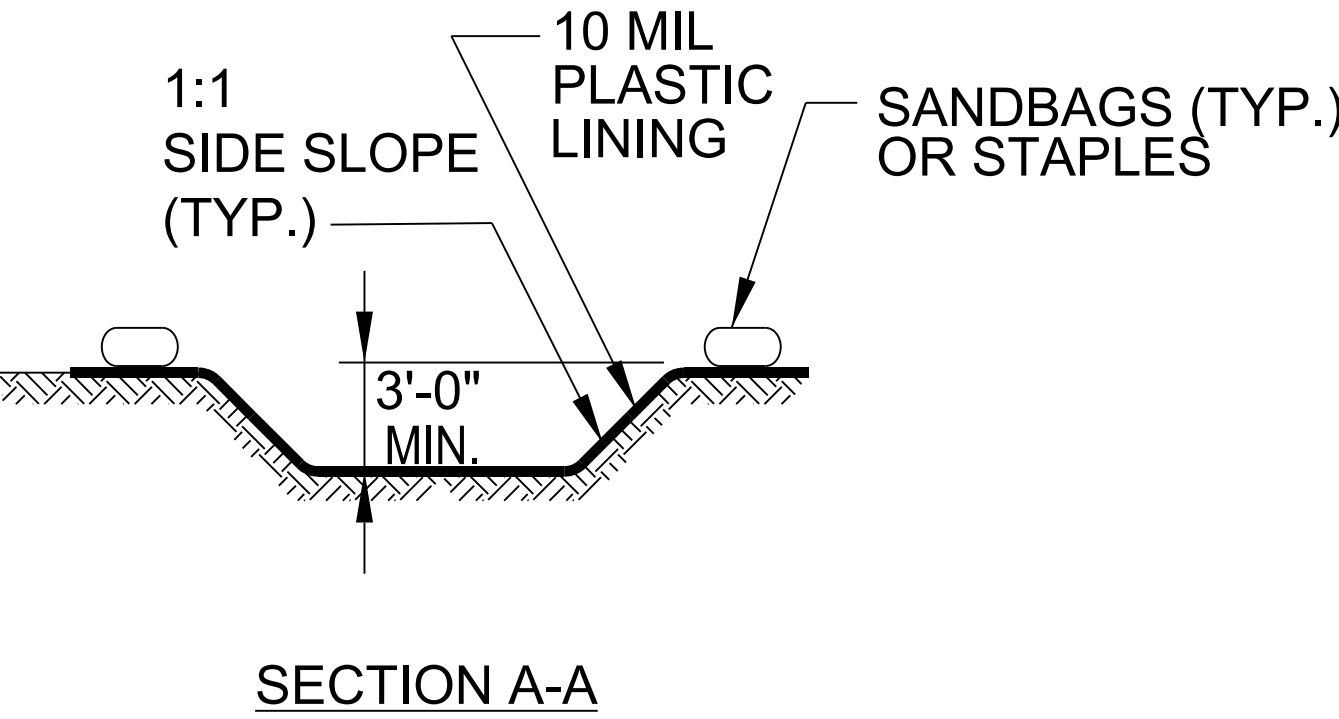
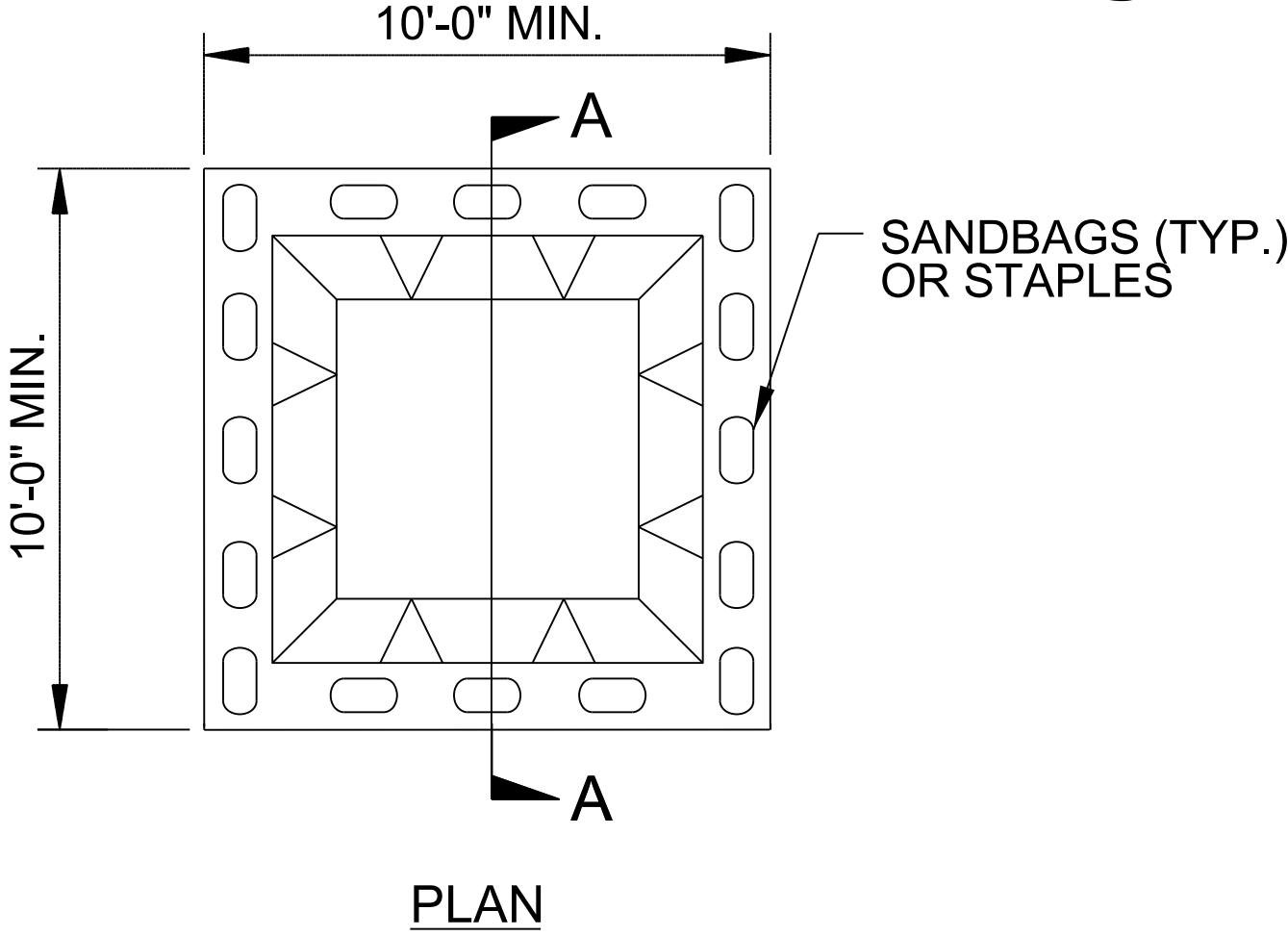
ROUTE	NAME	SITE	SIGN	MUTCD CODE	QUANTITY	SIZE	5' U-CHANNEL STUB QUANTITY	U-CHANNEL POST SIZE	POST QUANTITY
SR-1538	Becky Mtn	025	Left Turn Warning	W1-1	1	30"x30"	1	13'	1
SR-1538	Becky Mtn	025	15 MPH Speed Advisory	W13-1P	1	18"x18"	0	0	0
SR-1538	Becky Mtn	025	Winding Road Warning	W1-5	1	30"x30"	1	13'	1
SR-1538	Becky Mtn	025	15 MPH Speed Advisory	W13-1P	1	18"x18"	0	0	0

\*Field locations to be determined by Division 14 Traffic Engineer



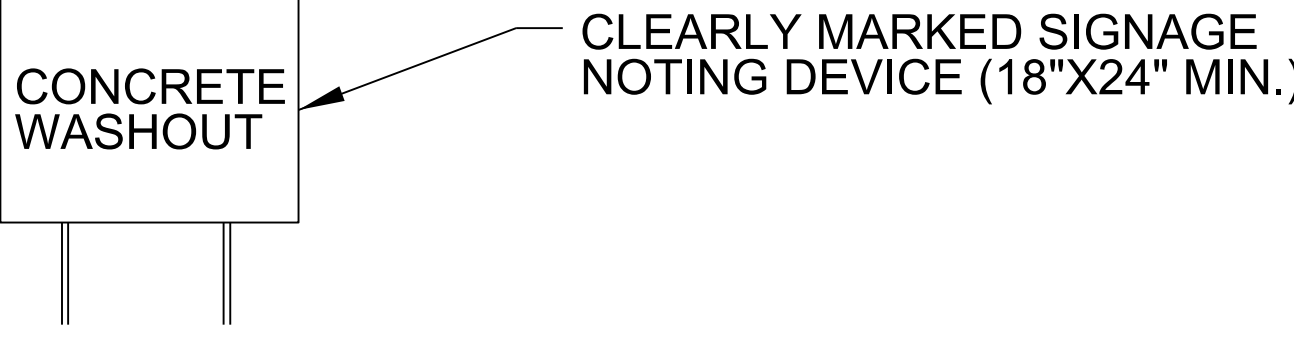
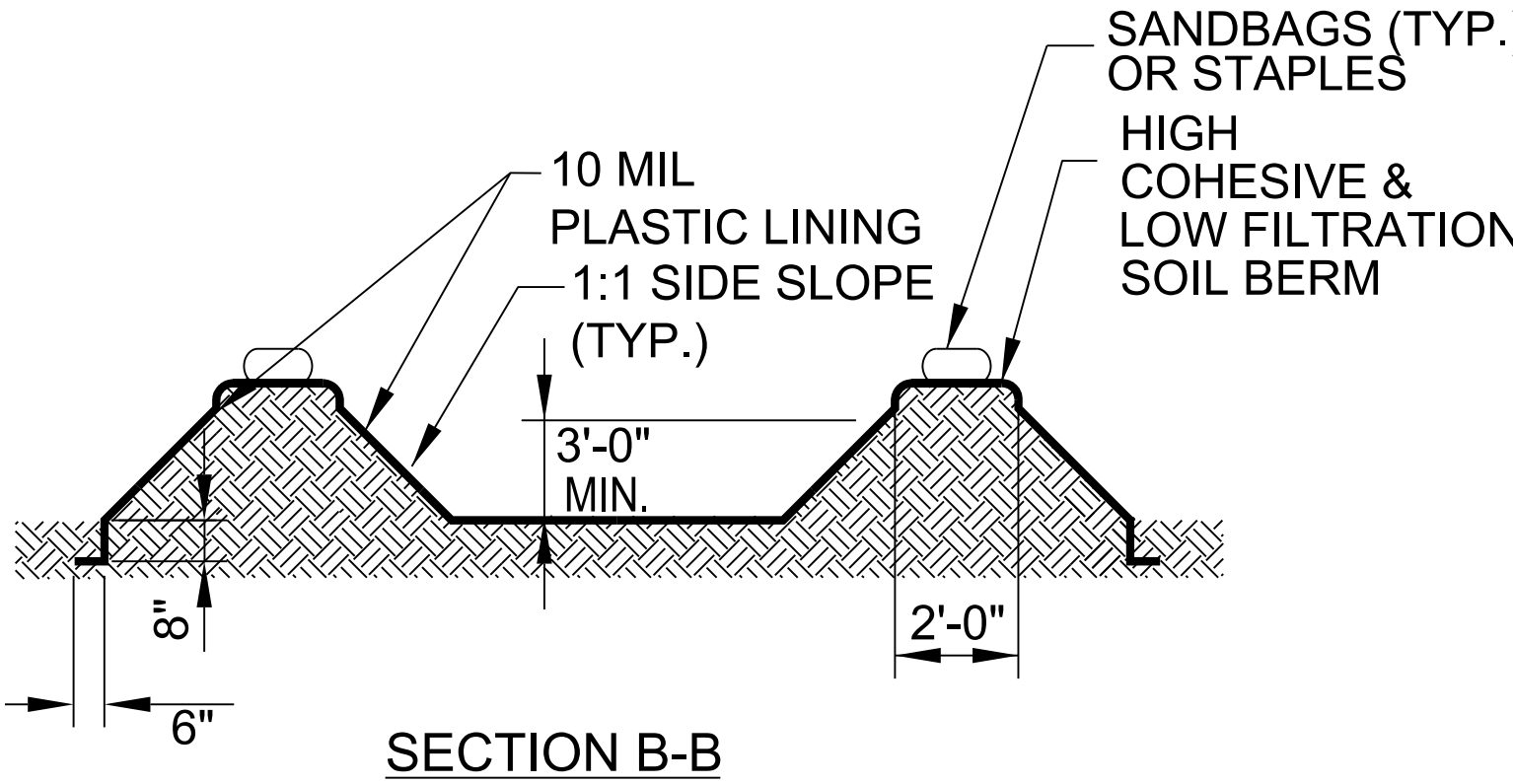
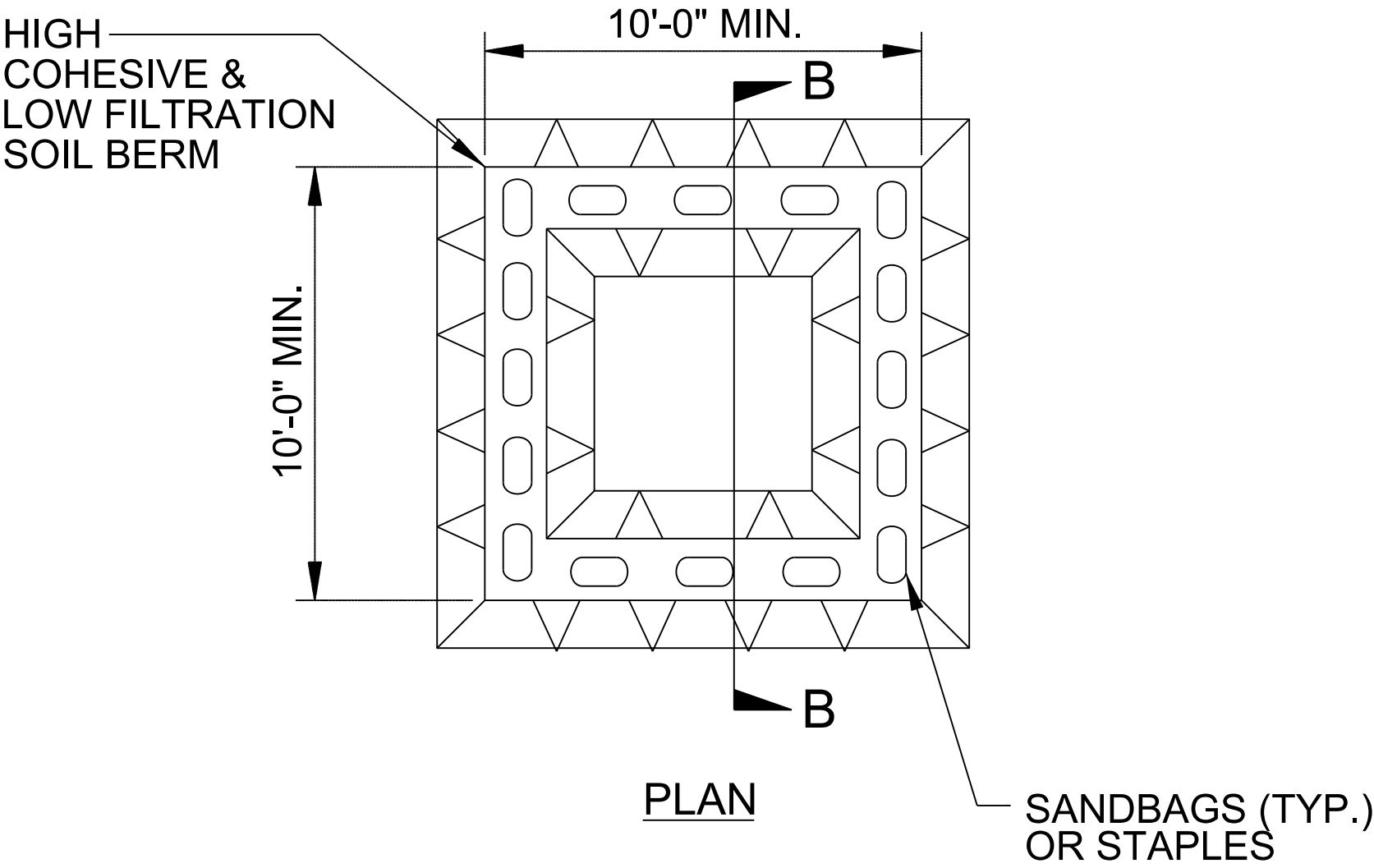
# ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.		SHEET NO.
X-XXXX		EC-XX
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER



BELOW GRADE WASHOUT STRUCTURE  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.



ABOVE GRADE WASHOUT STRUCTURE  
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
  2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
  3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

## SUMMARY OF QUANTITIES

[illegible]

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[illegible]

## SUMMARY OF QUANTITIES

[illegible]



THERMOPLASTIC AND PAINT QUANTITIES

										4457000000-N	4810000000-E	4810000000-E
PROJECT NO	COUNTY	MAP NO	ROUTE	LANES	LANE TYPE	LENGTH	WIDTH	BEGIN MP	END MP	TEMPORARY TRAFFIC CONTROL	4" YELLOW PAINT	4" WHITE PAINT
						MI	FT			LS	LF	LF
DF18314.2088022	Transylvania	25	SR-1538 / BECKY MOUNTAIN RD	2	2WD	0.06	20	0.7	0.76	1	1,200	1,200
TOTAL FOR MAP NO. 25						0.06				1	1,200	1,200
TOTAL FOR PROJ NO. DF18314.2088022						0.06				1	1,200	1,200
GRAND TOTAL						0.06				1	1,200	1,200

## SUMMARY OF QUANTITIES

[illegible]