NOTES:

FOR SOLDIER PILE RETAINING WALLS, SEE SOLDIER PILE RETAINING WALLS SPECIAL PROVISION.

FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.

DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL #2.

USE A SOLDIER PILE RETAINING WALL WITH PRECAST CONCRETE PANELS THAT MEET SECTION 1077 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL #2.

BEFORE BEGINNING SOLDIER PILE RETAINING WALL DESIGN FOR RETAINING WALL #2, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

DESIGN RETAINING WALL #2 FOR THE FOLLOWING:
1) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
2) DESIGN LIFE = 75 YEARS
3) MINIMUM WALL EMBEDMENT DEPTH = 1 FT
4) ASSUMED BORROW MATERIAL PARAMETERS, SEE SECTION 1018 OF THE STANDARD SPECIFICATIONS
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, f = 30 DEGREES
   COHESION, c = 0 PSF
5) IN-SITU ASSUMED MATERIAL PARAMETERS COLLUVIAL SOIL:
   UNIT WEIGHT, γ = 110 PCF
   FRICTION ANGLE, f = 26 DEGREES
   COHESION, c = 0 PSF
6) IN-SITU ASSUMED MATERIAL PARAMETERS RESIDUAL SOIL:
   UNIT WEIGHT, γ = 120 PCF
   FRICTION ANGLE, f = 30 DEGREES
   COHESION, c = 0 PSF
7) IN-SITU ASSUMED MATERIAL PARAMETERS WEATHERED ROCK:
   UNIT WEIGHT, γ = 130 PCF
   FRICTION ANGLE, f = 34 DEGREES
   COHESION, c = 2,000 PSF
8) IN-SITU ASSUMED MATERIAL PARAMETERS CRYSTALLINE ROCK:
   UNIT WEIGHT, γ = 170 PCF
   FRICTION ANGLE, f = 40 DEGREES
   COHESION, c = 5,000 PSF

DESIGN SOLDIER PILE RETAINING WALL AND MICROPILE GRADE BEAM TO SUPPORT EMBANKMENT AND IMPROVE GLOBAL STABILITY FOR RETAINING WALL # 2. FOR MICROPILE GRADE BEAM, SEE MICROPILE GRADE BEAM SPECIAL PROVISION.

DESIGN RETAINING WALL #2 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DESIGN RETAINING WALL #2 FOR 300 LB/FT HORIZONTAL TRAFFIC IMPACT LOAD.

DESIGN SYSTEM FOR ESTIMATED DESIGN FAILURE PLANES AS SHOWN ON SHEETS W-1 THROUGH W-3.

RETAINING WALL #2 CONSTRUCTION WILL REQUIRE GROUND TO BE CREATED TO REACH GRADE ELEVATION AT SOME LOCATIONS ALONG THE WALL ALIGNMENT. CONSTRUCTION OF THE CREATED GROUND SHOULD BE ACCOUNTED FOR IN THE SOLDIER PILE RETAINING WALL DESIGN.

AT THE TIME OF PREPARATION OF THESE PLANS, IT WAS NOT ANTICIPATED THAT ANCHORED WALL WOULD BE REQUIRED. HOWEVER, IF MAY BE DETERMINED IN THE FIELD THAT ANCHORED WALL, OR OTHER WORK WILL BE NECESSARY TO PROPERLY COMPLETE THE INTENDED RETAINING WALL #2 WORK. THE CONTRACTOR SHALL BE PREPARED TO PERFORM SUCH WORK IN A TIMELY MANNER, AS DETERMINED IN THE FIELD. SUCH WORK SHALL BE CONSIDERED EXTRA WORK AND SHALL BE ADDRESSED AS PER ARTICLE 104-7 OF THE STANDARD SPECIFICATIONS. PROJECT SPECIAL PROVISIONS THAT OUTLINE REQUIREMENTS FOR THESE POTENTIAL ADDITIONAL WORK ITEMS HAVE BEEN PROVIDED IN PROJECT DOCUMENTS, BUT NO QUANTITIES HAVE BEEN LISTED. ACTUAL PAY ITEMS, QUANTITIES, AND COSTS WILL BE ESTABLISHED, AS REQUIRED, IF EXTRA WORK IS ENCOUNTERED.

FOR ANCHORED WALL, SEE ANCHORED WALL SPECIAL PROVISION.

TOTAL STRUCTURE QUANTITIES - SOLDIER PILE RETAINING WALL #2

DF18314.2045222: SITE 642		DF18314.2045211: SITE 670	
SOLDIER PILE RETAINING WALL	4,450 SQ FT	SOLDIER PILE RETAINING WALL	7,850 SQ FT
MICROPILE GRADE BEAM	400 LN FT	MICROPILE GRADE BEAM	500 LN FT
HORIZONTAL DRAINS	525 LN FT	HORIZONTAL DRAINS	575 LN FT
DF18314.2045223: SITE 644		**DF18314.2045220: SITE 643**	
SOLDIER PILE RETAINING WALL	8,950 SQ FT	SOLDIER PILE RETAINING WALL	5,800 SQ FT
MICROPILE GRADE BEAM	700 LN FT	MICROPILE GRADE BEAM	500 LN FT
HORIZONTAL DRAINS	650 LN FT	HORIZONTAL DRAINS	400 LN FT
DF18314.2045224: SITE 641			
SOLDIER PILE RETAINING WALL	6,400 SQ FT		
MICROPILE GRADE BEAM	650 LN FT		
HORIZONTAL DRAINS	525 LN FT		

RETAINING WALL #2

STA. -L3-	TOP OF WALL ELEVATION (FT)	GRADE ELEVATION (FT)	BOTTOM OF WALL ELEVATION (FT)	WALL DESIGN HEIGHT "H" (FT)*
10+62.00	2,602.73	2,601.73	2,598.43	3.30
11+64.38	2,602.18	2,601.18	2,599.83	1.35
12+06.54	2,601.71	2,600.71	2,595.90	4.81
13+44.60	2,600.83	2,599.83	2,585.96	13.87
14+21.48	2,600.24	2,599.24	2,594.34	7.90
15+29.03	2,595.46	2,594.46	2,589.41	5.05
15+87.96	2,591.27	2,590.27	2,585.15	8.12
16+58.37	2,586.63	2,585.63	2,578.31	10.32
17+27.13	2,582.54	2,581.54	2,577.99	6.55
18+38.13	2,576.76	2,575.76	2,568.58	7.18
19+46.87	2,573.21	2,572.21	2,565.15	7.06
20+47.71	2,571.74	2,570.74	2,556.53	14.21
21+99.75	2,565.88	2,564.88	2,556.74	8.14
22+37.92	2,564.15	2,563.15	2,554.47	8.68
22+72.18	2,562.65	2,561.65	2,551.65	10.00
24+07.52	2,557.45	2,556.45	2,547.66	8.79
24+93.32	2,553.29	2,552.29	2,543.05	9.24
25+29.41	2,551.32	2,550.32	2,546.32	4.00
26+90.21	2,540.04	2,539.04	2,522.98	16.06
27+10.14	2,539.12	2,538.12	2,526.81	11.31
27+57.36	2,537.54	2,536.54	2,519.93	16.61
28+16.50	2,535.66	2,534.66	2,523.50	11.16
29+11.45	2,534.46	2,533.46	2,526.10	7.36
29+66.49	2,534.58	2,533.58	2,528.24	5.34
31+05.78	2,533.26	2,532.26	2,523.91	8.35
31+74.16	2,531.44	2,530.44	2,521.79	8.65
32+56.91	2,530.13	2,529.13	2,521.62	7.51
32+92.23	2,529.68	2,528.68	2,527.05	1.63
33+48.03	2,528.25	2,527.25	2,517.18	10.07
34+13.82	2,525.50	2,524.50	2,512.54	11.96
35+56.84	2,519.36	2,518.36	2,498.16	20.20
36+02.61	2,518.23	2,517.23	2,501.53	18.70
37+05.61	2,516.87	2,515.87	2,507.22	11.65
37+76.05	2,516.35	2,515.35	2,506.38	11.97
38+52.62	2,515.28	2,514.28	2,499.09	15.19
38+91.90	2,514.56	2,513.56	2,501.95	11.61
39+61.09	2,513.12	2,512.12	2,502.02	10.10
40+00.80	2,512.11	2,511.11	2,501.56	9.55
40+37.83	2,511.03	2,510.03	2,498.97	11.06
40+59.32	2,510.31	2,509.31	2,498.10	11.21
41+69.81	2,506.64	2,505.64	2,495.47	10.17
42+06.17	2,505.82	2,504.82	2,486.84	17.98
42+25.13	2,505.57	2,504.57	2,491.20	13.37
43+03.83	2,504.55	2,503.55	2,499.37	4.18
43+28.97	2,504.25	2,503.25	2,500.65	2.60

*CALCULATED WALL DESIGN HEIGHT INCLUDES MIN 36 INCH EMBEDMENT, WHERE APPLICABLE. ELEVATIONS ESTIMATED BASED ON PROVIDED PROJECT PLANS.

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 042642 ENGINEER ROBERT E. KOAL

Signed by: Robert E. Koal
AAF88FF3D2E4E1...
SIGNATURE DATE 03/20/2026

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO.: W03294

HENDERSON COUNTY

RETAINING WALL #2: -L3- STA. 10+62.00 TO 43+28.97, LT

SHEET 6 OF 8

Prepared in the Office of:

CAROLINAS GEOTECHNICAL GROUP
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CHARLOTTE, NC 28270
(980) 339-8684

SOLDIER PILE RETAINING WALL #2

REVISIONS

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

SHEET NO. W-6

PREPARED BY: KND	DATE: 03/26
REVIEWED BY: REK	DATE: 03/26