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## NOTES

FOR GABION RETAINING WALLS, SEE GABION RETAINING WALL PROVISION.

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

IF THE BACK OF THE GABION IS LESS THAN 4 FEET AWAY FROM BACK OF PROPOSED GUARDRAIL, 8 FEET POSTS ON 3'-1/2" SPACING SHALL BE USED.

BEFORE BEGINNING GABION RETAINING WALL DESIGN, SURVEY EXISTING GROUND ELEVATIONS SHOWN ON THE WALL PROFILE VIEW (WALL ENVELOPE) AND SUBMIT A REVISED WALL ENVELOPE FOR REVIEW. DO NOT START DESIGN UNTIL THIS ENVELOPE IS ACCEPTED.

DESIGN THE RETAINING WALL FOR A TRAFFIC IMPACT LOAD OF 300 LB/FT.

TEMPORARY SHORING IS REQUIRED IN ACCORDANCE WITH THE TEMPORARY SHORING PROVISIONS. SEE TRAFFIC CONTROL PLANS.

THE MINIMUM EMBEDMENT FOR THE WALL IS 2 FEET BELOW THE PROPOSED OR EXISTING GROUND ELEVATIONS.

TRANSITION ENDS OF WALL BY SPILLING ADJACENT SLOPE SOILS AROUND FACE OF WALL AS DIRECTED BY ENGINEER.

WHERE THE GABION RETAINING WALL INTERSECTS DRAINAGE PIPES, SUBMIT PENETRATION REINFORCEMENT DETAILS FOR APPROVAL PRIOR TO ORDERING MATERIALS OR BEGINNING CONSTRUCTION. SEE DRAINAGE PLANS FOR ADDITIONAL INFORMATION.

THE TOP OF WALL LOCATION, AS SHOWN IN DETAIL, CORRESPONDS TO WALL LOCATION AS SHOWN IN ROADWAY PLANS. THE CONTRACTOR/DESIGNER IS RESPONSIBLE FOR LOCATING THE FACE OF THE BOTTOM OF WALL SO THE TOP OF WALL LINES UP WITH THE CORRECT OFFSET AS SHOWN ON THE PLANS.

SEE ROADWAY PLANS FOR FINISH GRADE DETAILS.

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL POSTS, PAVEMENTS, PIPES, INLETS, OR UTILITIES MAY INTERFERE WITH THE REINFORCEMENT FOR GABION RETAINING WALLS.

DO NOT PLACE LEVELING PAD STONE, SELECT MATERIAL UNTIL OBTAINING APPROVAL OF THE EXCAVATION DEPTH AND FOUNDATION MATERIAL.

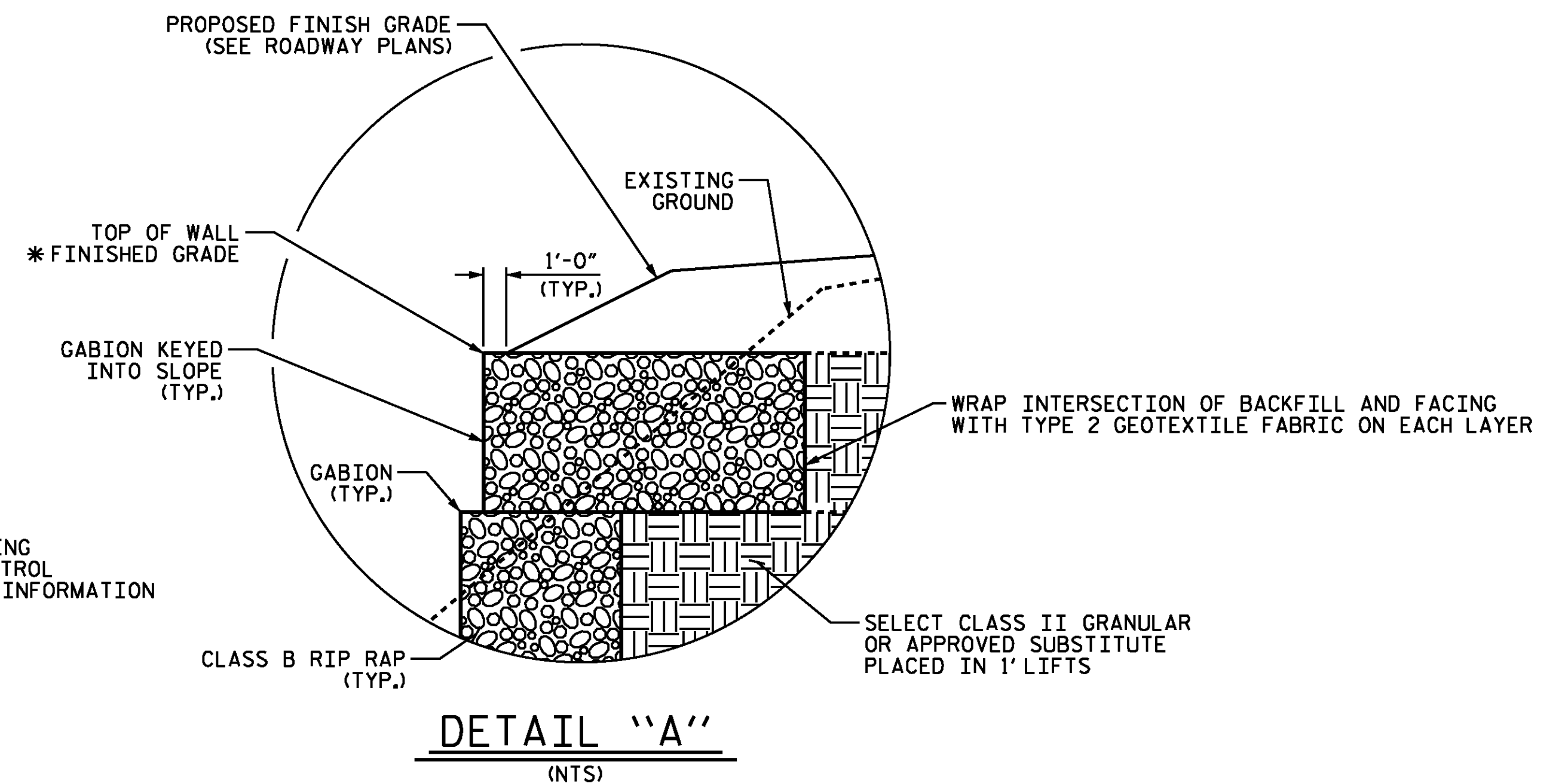
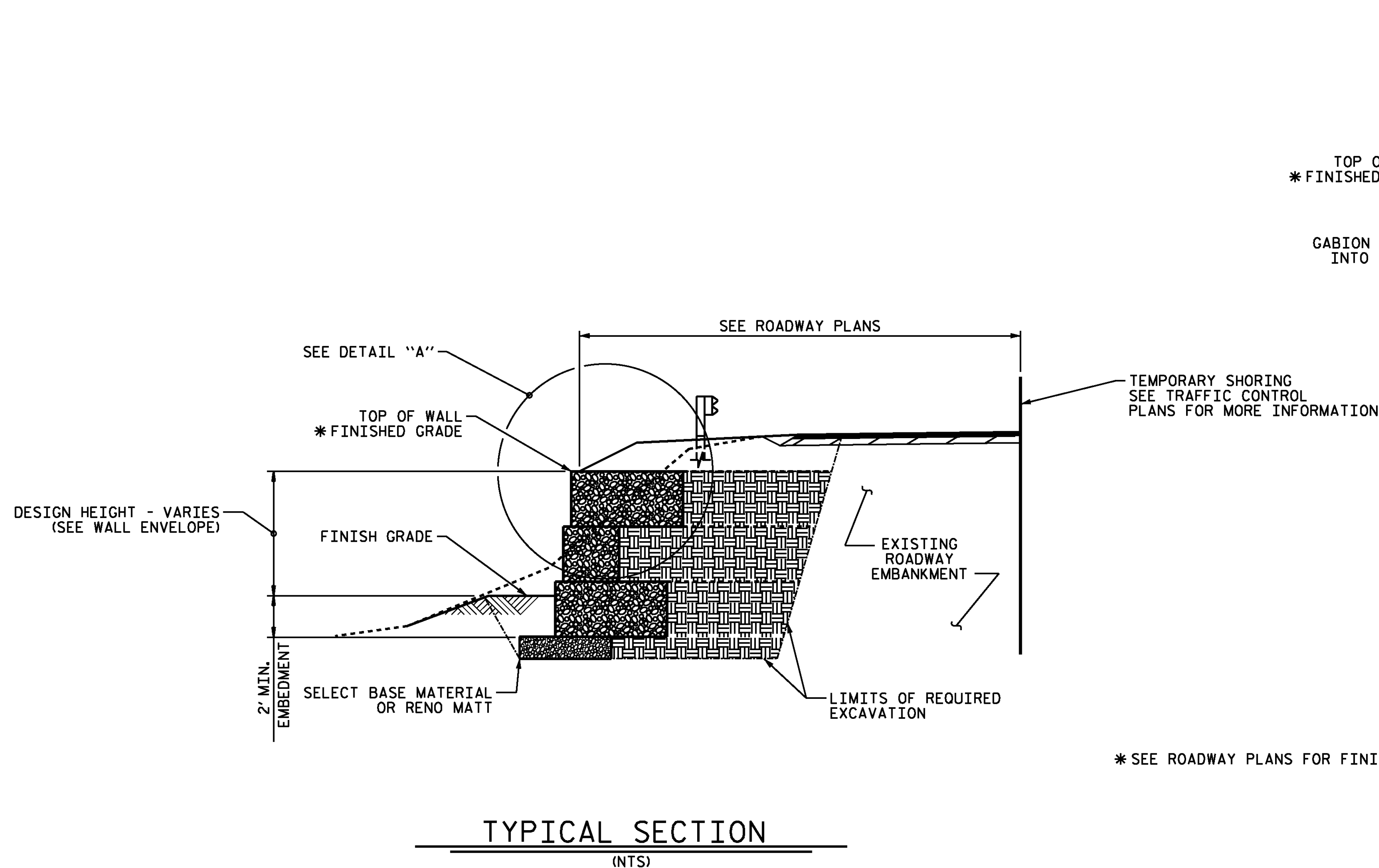
DESIGN GABION RETAINING WALL FOR A HEIGHT EQUAL TO DESIGN HEIGHT AND EMBEDMENT.

MINIMUM SERVICE LIFE = 75 YEARS

ALLOWABLE BEARING CAPACITY = 2000 PSF.

IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT ( $\gamma$ ) LB/CF	FRICTION ANGLE ( $\phi$ ) DEGREES	COHESION ( $c$ ) LB/SF
BACKFILL	120	32	0
FOUNDATION	110	28	0



PROJECT NO. 17BP.14.R.87  
CHEROKEE COUNTY  
 STATION: 13+25.00 to  
15+90.00

SHEET 1 OF 4

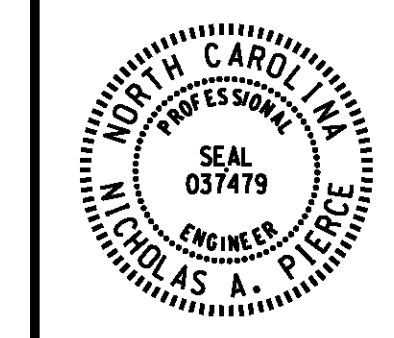
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GABION  
 RETAINING WALL  
 DETAILS**

DESIGN ENGINEER OF RECORD:  
*Nicholas A. Pierce*  
 DATE: 11/2/2017

wsp

WSP USA Inc.  
 434 FAYETTEVILLE STREET  
 SUITE 1500  
 RALEIGH, NC 27601  
 TEL: 919.856.4040  
 WSP.COM  
 LICENSE NO. F-0165



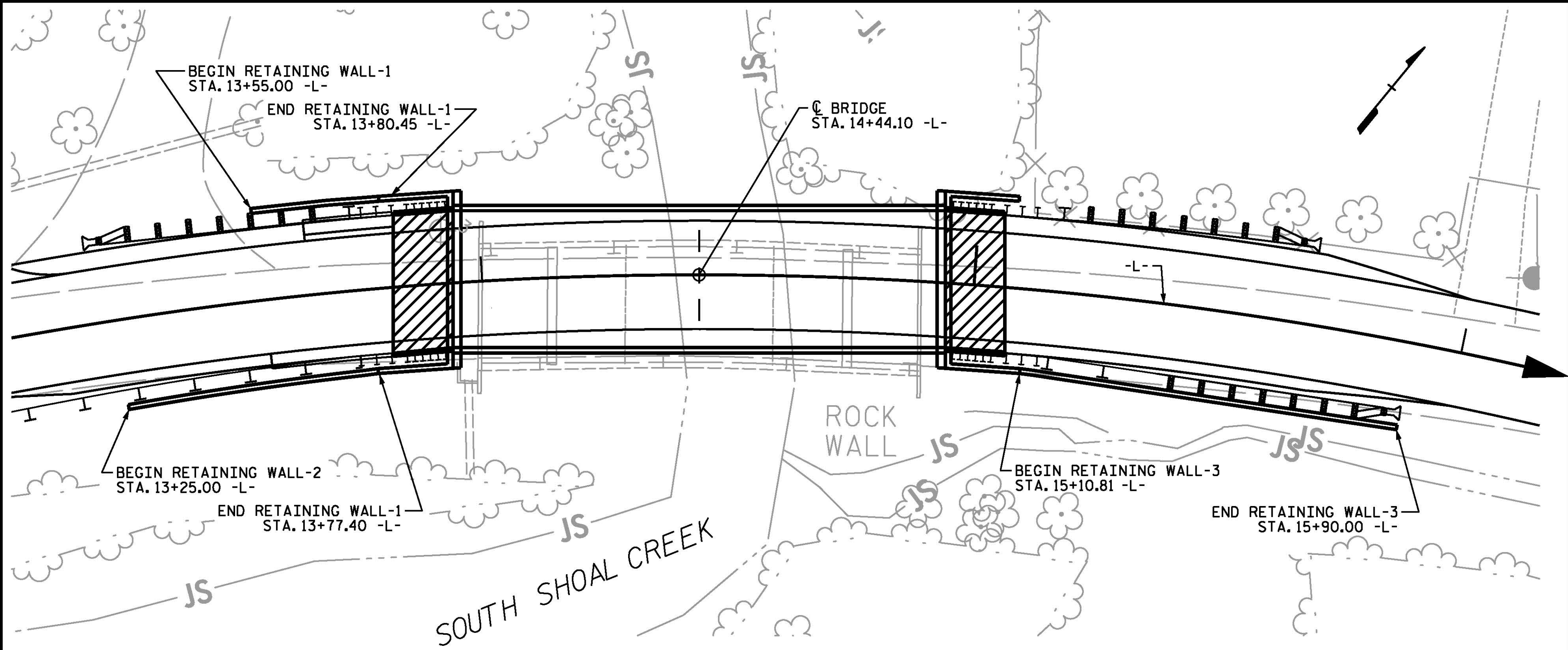
REVISIONS						SHEET NO.
NO.	BYs	DATEs	NO.	BYs	DATEs	W-1
1			3			TOTAL SHEETS
2			4			4

DRAWN BY : M.J. OSTRISHKO DATE : 01/2015  
 CHECKED BY : N.A. PIERCE DATE : 01/2015

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 UNLESS ALL SIGNATURES COMPLETED



BM2: 8" SPIKE SET IN BASE OF MAPLE TREES, 32' LEFT OF STA. 7+76.00 -BL-, EL. =1788.41



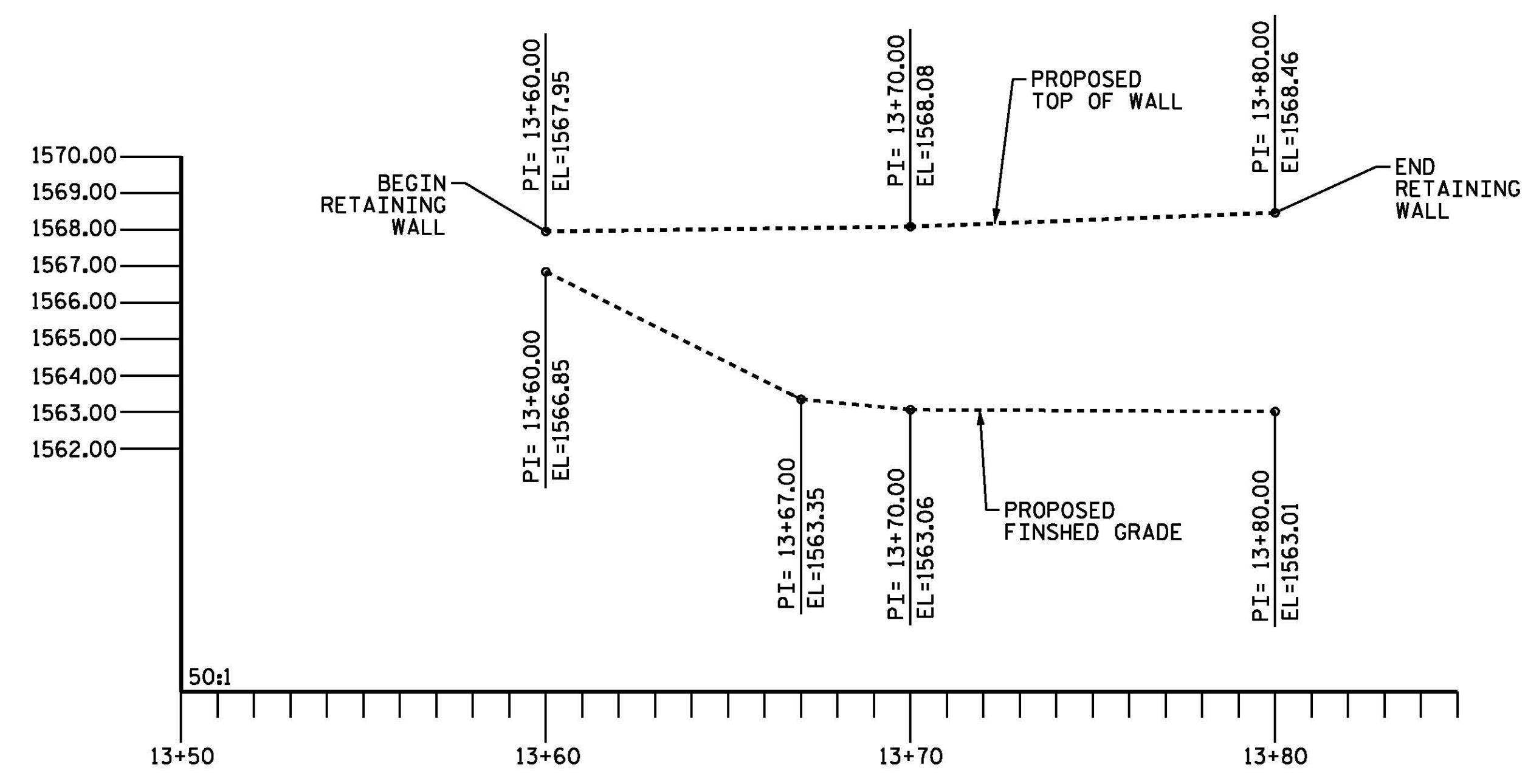
LOCATION SKETCH

**NOTES**  
 FOR GABION RETAINING WALL DETAILS, SEE SHEET 1 OF 4.  
 \* ELEVATION AT PROPOSED FINISHED GRADE AND EXPOSED WALL HEIGHT DOES NOT INCLUDE EMBEDMENT DEPTH.  
 \*\* FOR DESIGN WALL HEIGHT "H", SEE DESIGN DETAILS.

-L- STATION	OFFSET FROM C (LEFT)	ELEV. AT TOP OF WALL	* PROPOSED BERM ELEVATION	** DESIGN WALL HEIGHT "H"
13+60.00	17.76	1567.95	1564.01	3.94
13+70.00	17.57	1568.08	1563.06	5.02
13+80.00	17.58	1568.46	1563.01	5.45

GABION RETAINING WALL **	88.0	SQ.FT.
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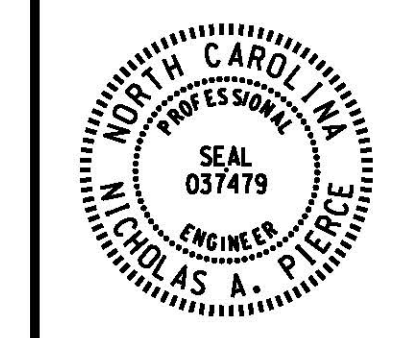
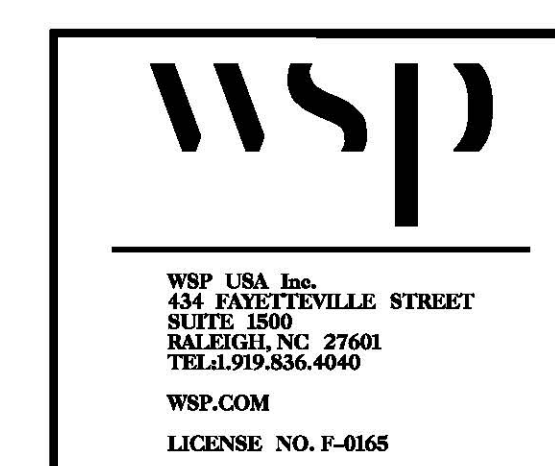
\*\* EMBEDDED WALL NOT INCLUDED IN QUANTITY



WALL ENVELOPE - 1

PROJECT NO. 17BP.14.R.87  
CHEROKEE COUNTY  
 STATION: 13+25.00 to 15+90.00  
 SHEET 2 OF 4

DESIGN ENGINEER OF RECORD:  
*Nicholas A. Pierce*  
 DATE: 11/2/2017



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GABION RETAINING WALL  
 WALL ENVELOPE

DRAWN BY : M.J. OSTRISHKO DATE : 01/2015  
 CHECKED BY : N.A. PIERCE DATE : 01/2015

REVISIONS						SHEET NO.
NO.	BYs	DATEs	NO.	BYs	DATEs	W-2
1			3			TOTAL SHEETS
2			4			4

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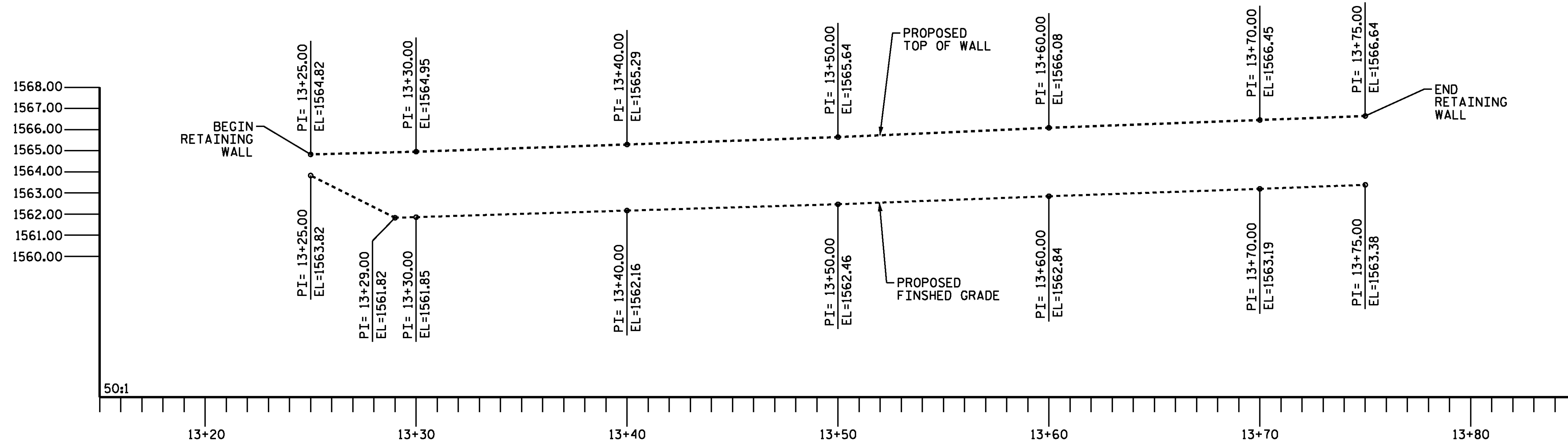
**NOTES**

- FOR GABION RETAINING WALL DETAILS, SEE SHEET 1 OF 4.
- \* ELEVATION AT PROPOSED FINISHED GRADE AND EXPOSED WALL HEIGHT DOES NOT INCLUDE EMBEDMENT DEPTH.
- \*\* FOR DESIGN WALL HEIGHT "H", SEE DESIGN DETAILS.

RETAINING WALL ELEVATIONS - 2				
-L- STATION	OFFSET FROM CL (RIGHT)	ELEV. AT TOP OF WALL	* PROPOSED BERM ELEVATION	** DESIGN WALL HEIGHT "H"
13+25.00	17.31'	1564.82	1561.71	3.11
13+30.00	17.22'	1564.95	1561.85	3.10
13+40.00	17.02'	1565.29	1562.16	3.13
13+50.00	16.82'	1565.64	1562.46	3.18
13+60.00	16.37'	1566.08	1562.84	3.24
13+70.00	16.37'	1566.45	1563.19	3.26
13+75.00	16.34'	1566.64	1563.38	3.26

TOTAL STRUCTURE QUANTITIES	
GABION RETAINING WALL ***	155.0 SQ.FT.

\*\*\* EMBEDDED WALL NOT INCLUDED IN QUANTITY

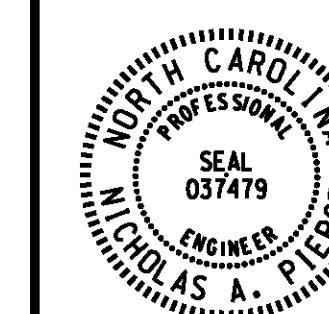


**WALL ENVELOPE - 2**

PROJECT NO. 17BP.14.R.87  
CHEROKEE COUNTY  
 STATION: 13+25.00 to 15+90.00  
 SHEET 3 OF 4

DESIGN-ENGINEER OF RECORD:  
*Stephen Pierce*  
 DATE: 11/2/2017

**wsp**  
 WSP USA Inc.  
 434 FAYETTEVILLE STREET  
 SUITE 1500  
 RALEIGH, NC 27601  
 TEL: 919.856.4040  
 WSP.COM  
 LICENSE NO. F-0165



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GABION RETAINING WALL WALL ENVELOPE**

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

DRAWN BY : M.J. OSTRISHKO DATE : 01/2015  
 CHECKED BY : N.A. PIERCE DATE : 01/2015

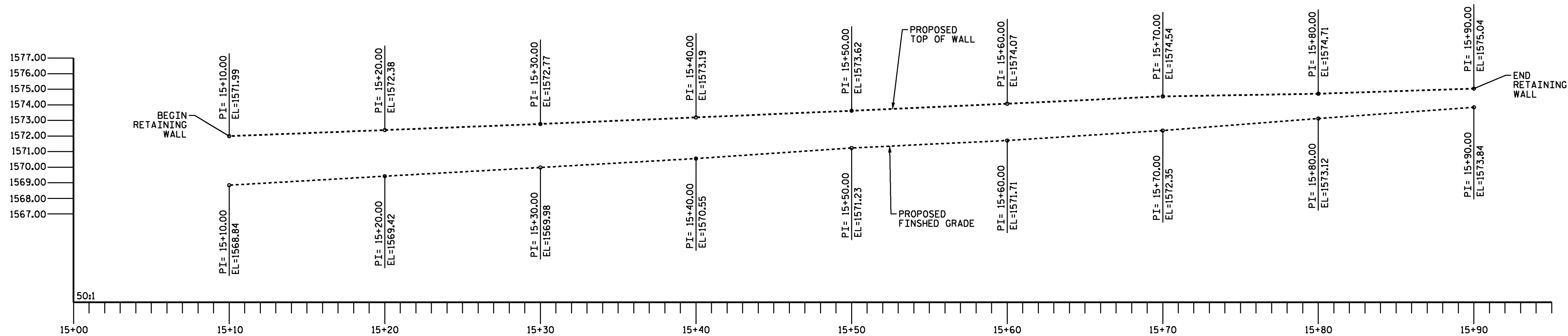
**NOTES**

- FOR GABION RETAINING WALL DETAILS, SEE SHEET 1 OF 4.
- \* ELEVATION AT PROPOSED FINISHED GRADE AND EXPOSED WALL HEIGHT DOES NOT INCLUDE EMBEDMENT DEPTH.
- \*\* FOR DESIGN WALL HEIGHT "H", SEE DESIGN DETAILS.

<b>TOTAL STRUCTURE QUANTITIES</b>	
GABION RETAINING WALL ***	191.0 SQ.FT.

\*\*\* EMBEDDED WALL NOT INCLUDED IN QUANTITY

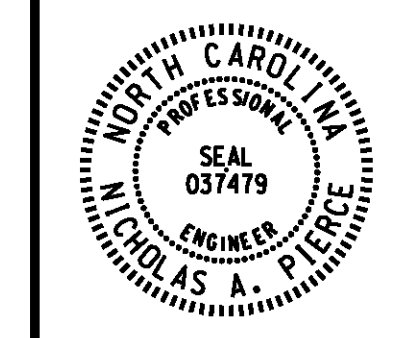
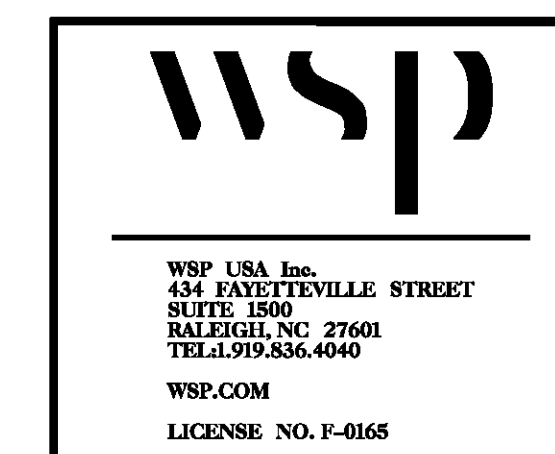
<b>RETAINING WALL ELEVATIONS - 3</b>				
-L- STATION	OFFSET FROM C (RIGHT)	ELEV. AT TOP OF WALL	* PROPOSED BERM ELEVATION	** DESIGN WALL HEIGHT "H"
15+10.00	16.37'	1571.99	1568.84	3.15
15+20.00	16.64'	1572.38	1569.42	2.96
15+30.00	17.06'	1572.77	1569.98	2.79
15+40.00	17.35'	1573.19	1570.55	2.64
15+50.00	17.52'	1573.62	1571.23	2.39
15+60.00	17.55'	1574.07	1571.71	2.36
15+70.00	17.46'	1574.54	1572.35	2.19
15+80.00	17.24'	1574.71	1573.12	1.59
15+90.00	16.89'	1575.04	1573.84	1.20



**WALL ENVELOPE - 3**

PROJECT NO. 17BP.14.R.87  
CHEROKEE COUNTY  
 STATION: 13+25.00 to 15+90.00  
 SHEET 4 OF 4

DESIGN ENGINEER OF RECORD:  
*Nicholas A. Pierce*  
 DATE: 11/2/2017



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**GABION  
 RETAINING WALL  
 WALL ENVELOPE**

DRAWN BY : M.J. OSTRISHKO DATE : 01/2015  
 CHECKED BY : N.A. PIERCE DATE : 01/2015

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

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