

GEOTECHNICAL ENGINEER

ENGINEER

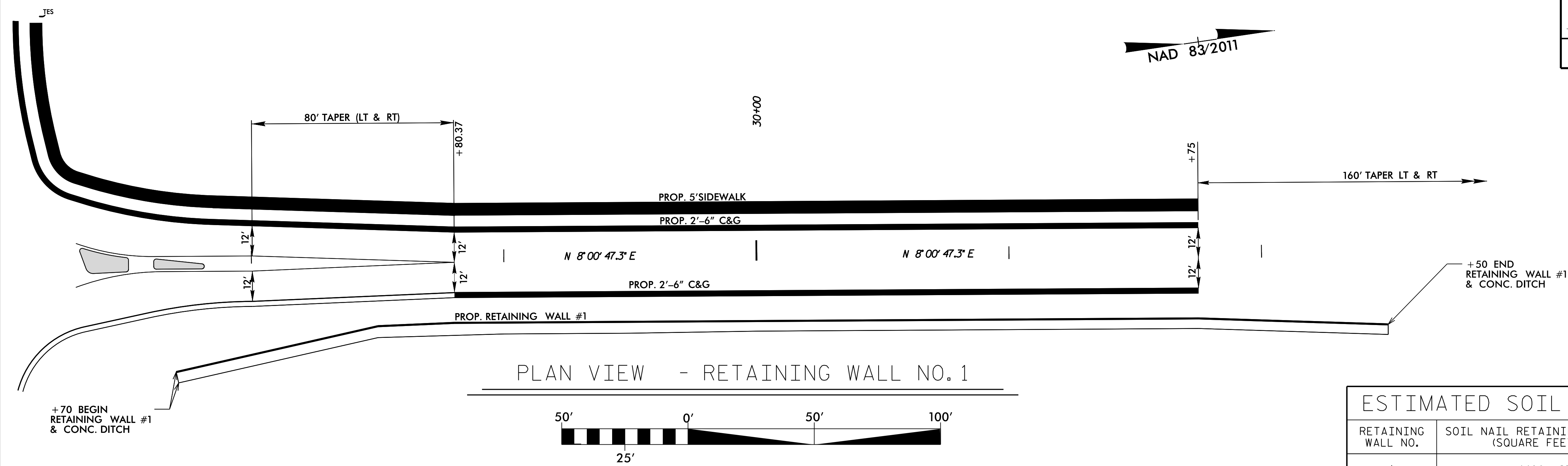
SEAL 031361

SHIPPING YANG

8/18/2016

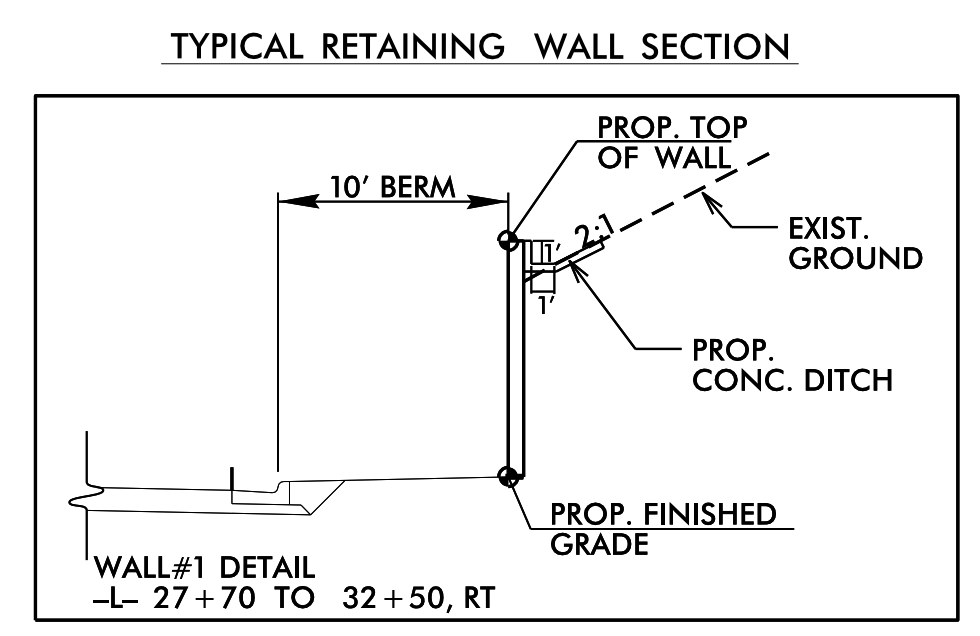
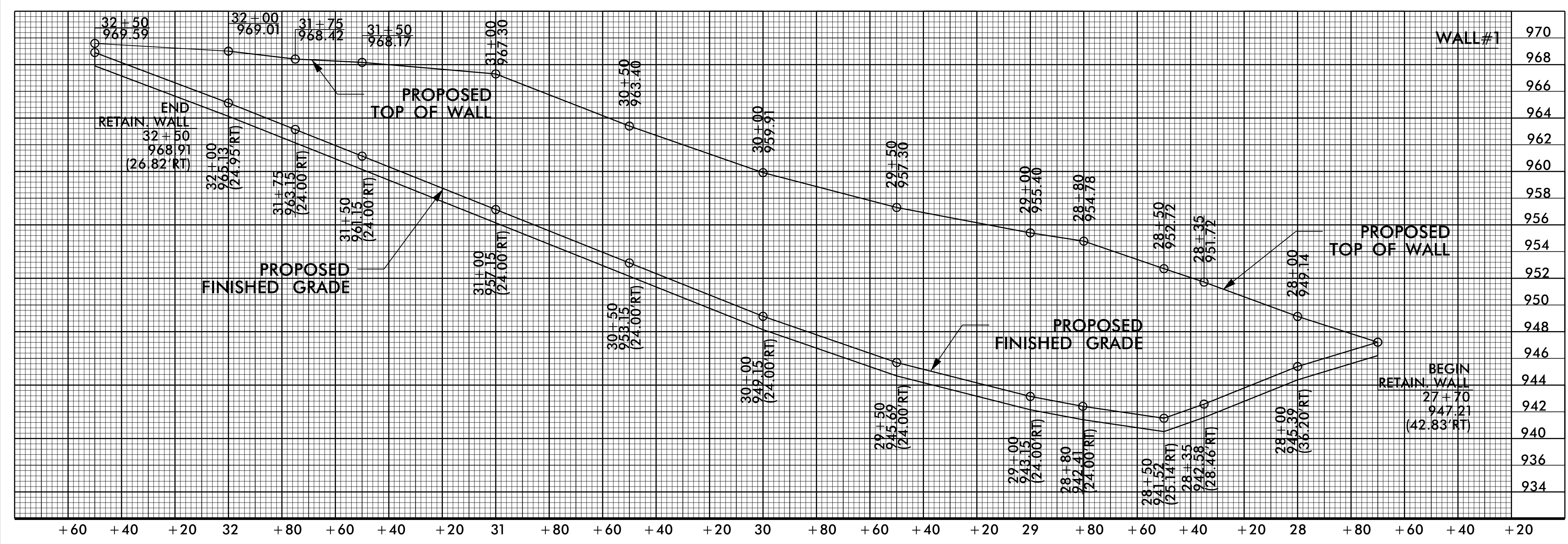
DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL AT THE FOLLOWING LOCATIONS:
 -L- STA 27+70 TO 28+80, RT
 -L- STA 31+75 TO 32+50, RT

ESTIMATED SOIL NAIL WALL QUANTITIES			
RETAINING WALL NO.	SOIL NAIL RETAINING WALLS (SQUARE FEET)	SOIL NAIL VERIFICATION TESTS	SOIL NAIL PROOF TESTS
1	4408 SF	2	10



PROJECT NO.: 45532.1.1 (U-5510)

CATAWBA COUNTY

STATION: STA 27+70 -L- RT 42.83 FT TO 32+50 -L- RT 26.82 FT

SHEET 1 OF 2

PREPARED BY: SY (Signature)

REVIEWED BY: SCC (Signature)

DATE: 7/28/16

DATE: 8/22/2016

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 1 SOIL NAIL RETAINING WALL

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

SHEET NO. W-1

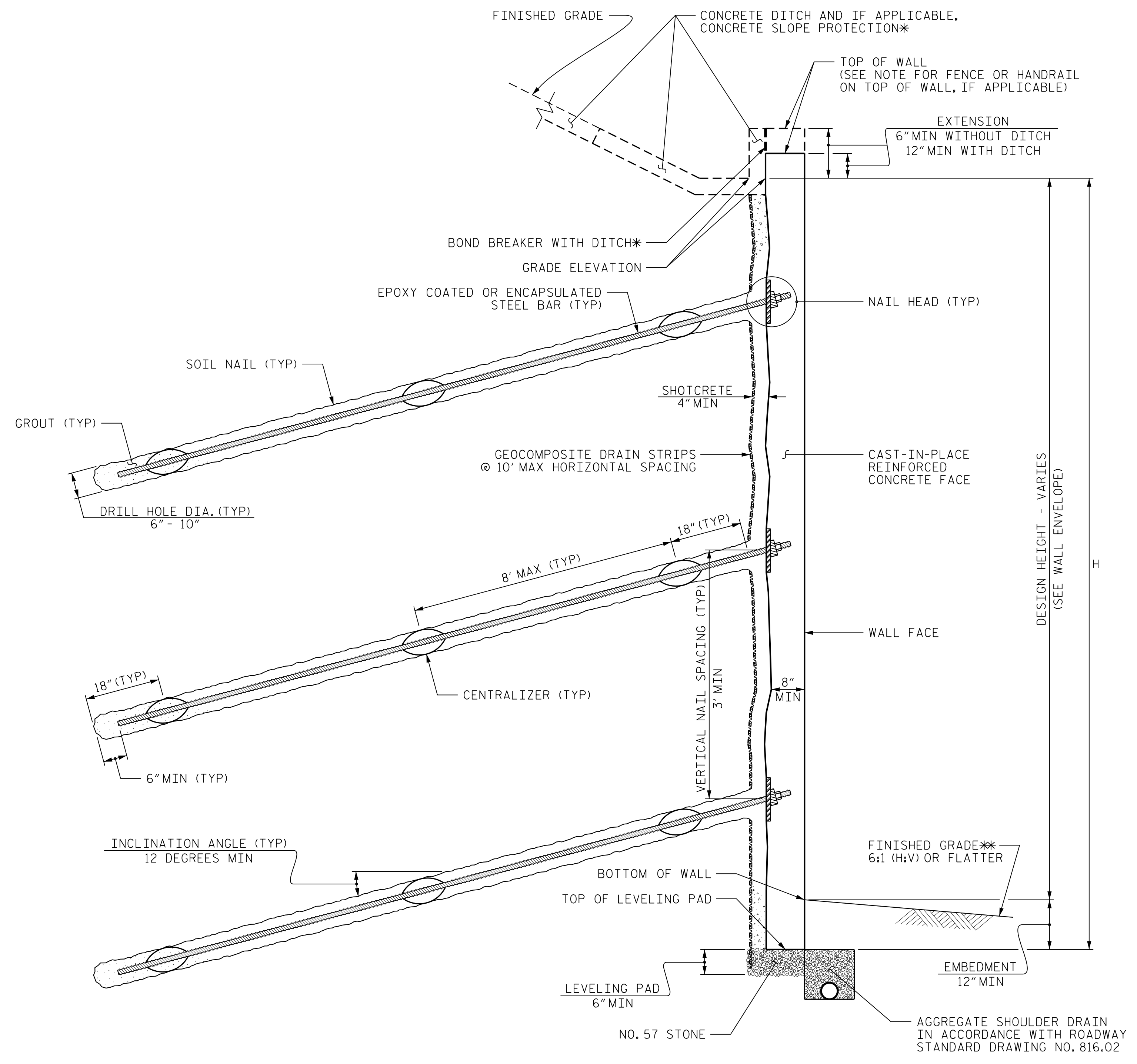
GEOTECHNICAL ENGINEER

DocuSigned by:
Shipping Yang
8/18/2016

ENGINEER

SIGNATURE DATE

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SOIL NAIL WALL - TYPICAL SECTION

*SEE CONCRETE DITCH BEHIND WALL DETAILS.
*SEE PLANS FOR FINISHED GRADE OR END BENT SLOPE DETAILS.

NOTES:

- FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.
- STEEL BEAM GUARDRAIL IS REQUIRED AT THE EDGE OF THE PARKING LOT
- FOR STEEL BEAM GUARDRAIL, SEE ROADWAY PLANS AND SECTION 862 OF THE STANDARD SPECIFICATIONS.
- A FENCE IS REQUIRED ON TOP OF THE SLOPE. SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.
- BEFORE BEGINNING SOIL NAIL WALL DESIGN FOR RETAINING WALL NO.1, 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 NO.1 FOR THE FOLLOWING:
 - 1) H = DESIGN HEIGHT + EMBEDMENT
 - 2) DESIGN LIFE = 100 YEARS
 - 3) MINIMUM EMBEDMENT ELEVATION = 1 FT
 - 4) IN-SITU ASSUMED MATERIAL PARAMETERS ABOVE ELEVATION 947 FT:
 - UNIT WEIGHT, γ = 115 LB/CF
 - FRICTION ANGLE, ϕ = 28 DEGREES
 - COHESION, c = 0 LB/SF
 - 5) IN-SITU ASSUMED MATERIAL PARAMETERS BELOW ELEVATION 947 FT:
 - UNIT WEIGHT, γ = 120 LB/CF
 - FRICTION ANGLE, ϕ = 30 DEGREES
 - COHESION, c = 0 LB/SF
- EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH SOIL NAILS FOR RETAINING WALL NO.1.

PROJECT NO.: 45532.1.1 (U-5510)
 CATAWBA COUNTY
 STATION: STA 27+70 -L- RT 42.83 FT TO
 32+50 -L- RT 26.82 FT
 SHEET 2 OF 2

PREPARED BY: SY	DATE: 7/28/16
REVIEWED BY: SCC	DATE: 8/22/2016

**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

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

SHEET NO. W-2