



PROPOSED EDGE OF TRAVEL

VARIES

43.72' TO 69.58'

VARIES

FDPs

0.04

2:1

2:1

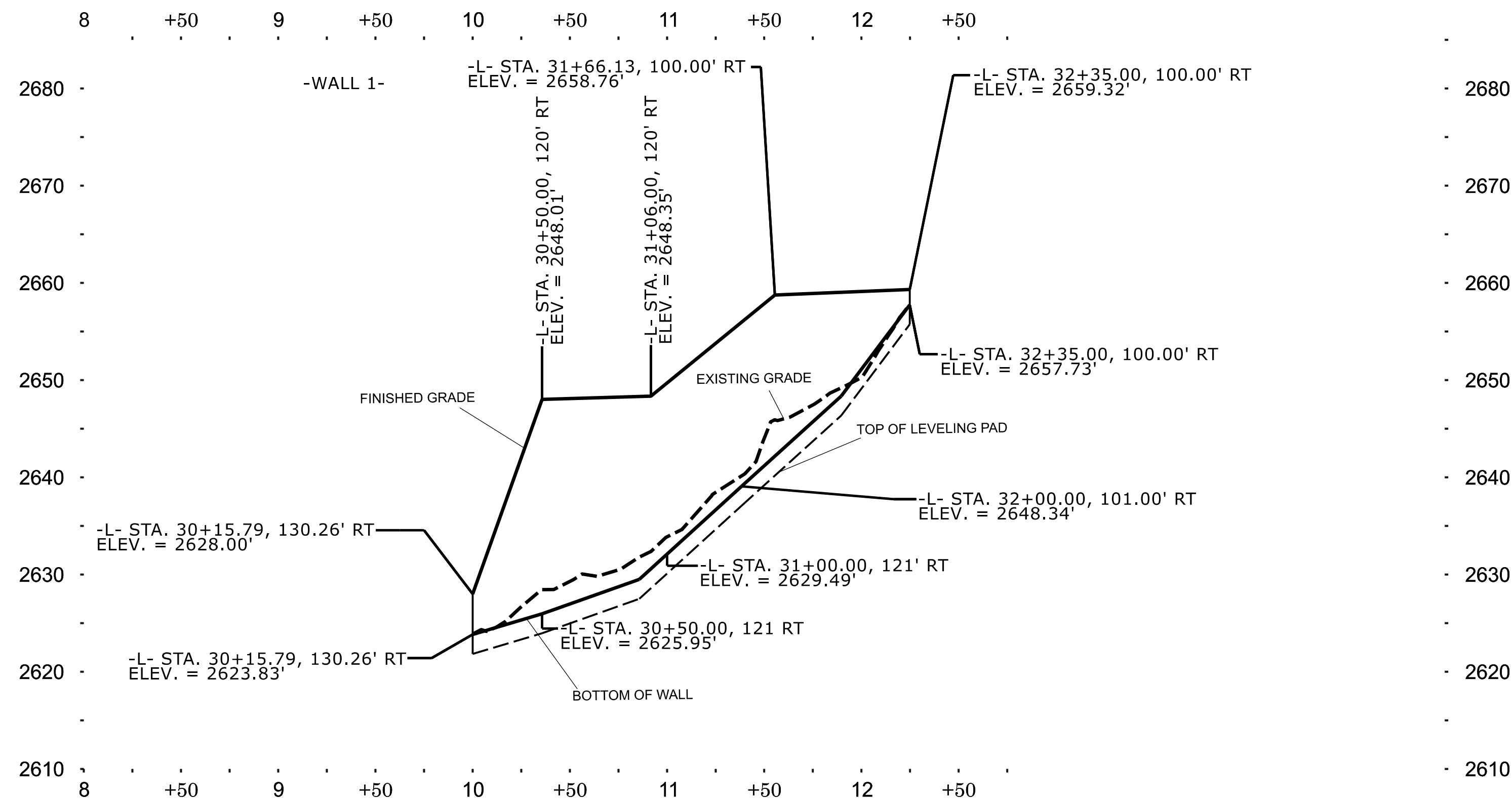
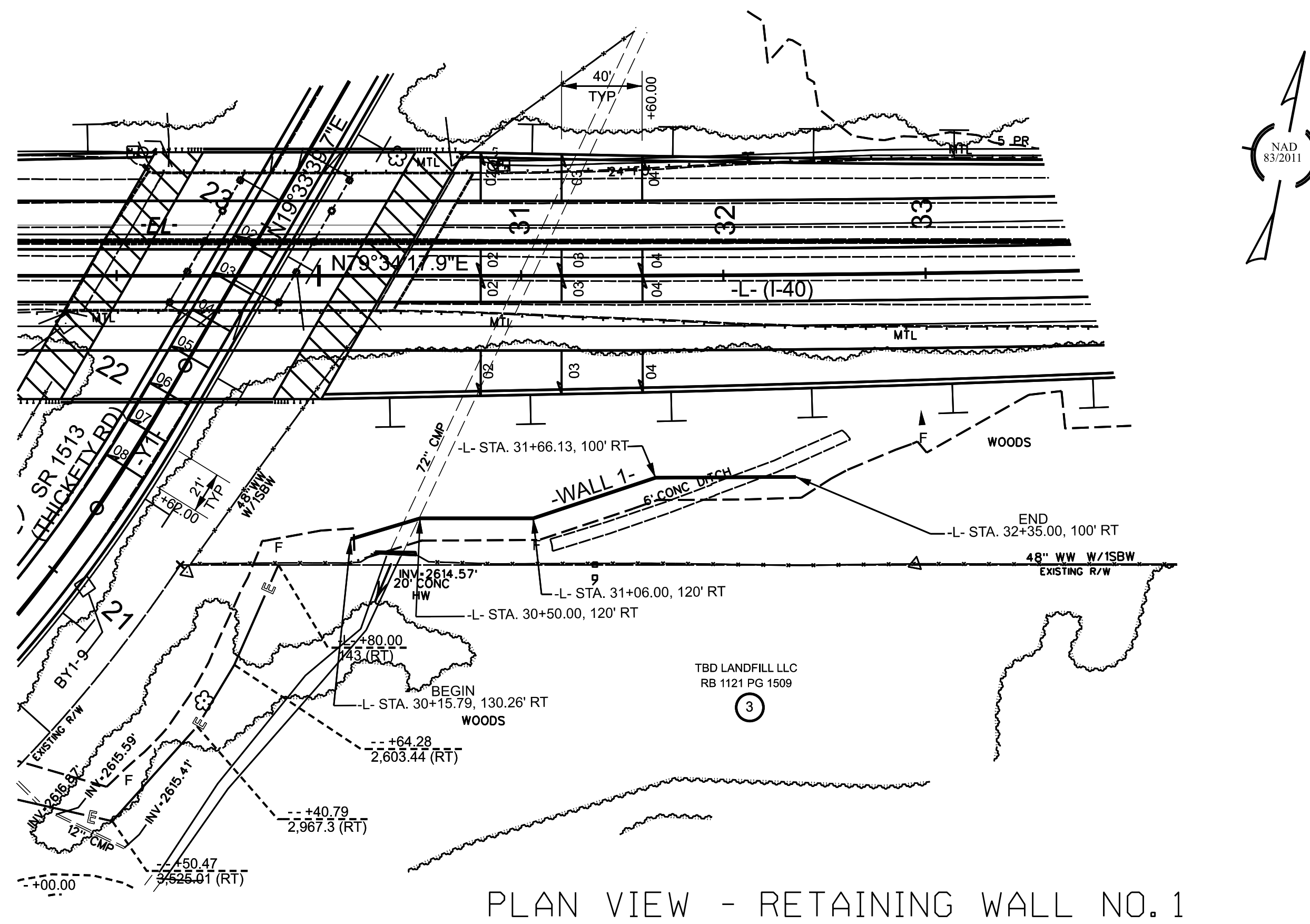
GRADE TO THIS LINE

ORIGINAL GROUND

5'

RETAINING WALL NO. 1 TYPICAL

(NOT TO SCALE)



WALL ENVELOPE - RETAINING WALL NO.1

NOTE: 1) OFFSET DIMENSIONS ARE FROM FACE OF WALL
2) THE WALL ENVELOPE DOES NOT ACCURATELY
DEPICT THE ACTUAL FACE OF THE WALL

| | |
|------------------|--------------|
| PREPARED BY: SY | DATE: 3/2025 |
| REVIEWED BY: SCC | DATE: 3/2025 |

| | | |
|---|---------|--------------------|
| STANDARD SEGMENTAL GRAVITY WALL QUANTITIES | | |
| RETAINING WALL NO. 1 | -WALL1- | • 3825 SQUARE FEET |

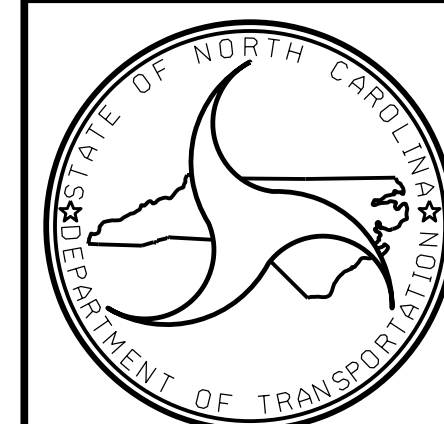
- WALL AREA IS MEASURED USING THE DESIGN HEIGHT "H"

PROJECT NO.: B-5541

HAYWOOD COUNTY

STATION: -L- STA. 30+15.79-32+35.00

SHEET 1 OF 3

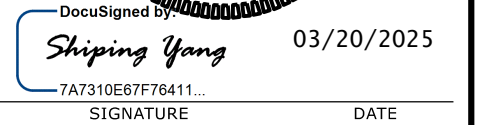


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

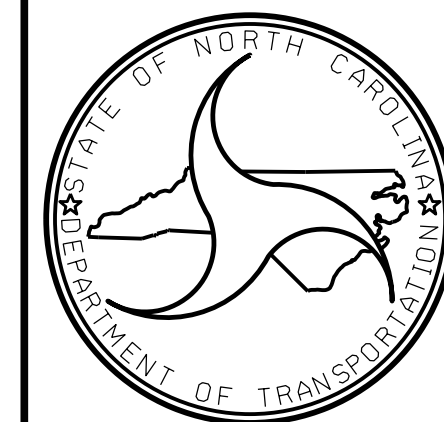
RETAINING WALL NO. 1
MSE RETAINING WALL
PLAN VIEW AND WALL ENVELOPE

| REVISIONS | | | | | | SHEET NO. W-1 |
|-----------|----|------|-----|----|------|-------------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | - | - | 3 | - | - | |
| 2 | | | 4 | | | |



PROJECT NO.: B-5541
HAYWOOD COUNTY
STATION: -L- STA. 30+15.79-32+35.00
SHEET 2 OF 3

| REVISIONS | | | | | | SHEET NO. W-2 |
|-----------|----|------|-----|----|------|-------------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | - | - | 3 | - | - | |
| 2 | | | 4 | | | |



GEOTECHNICAL
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| | |
|------------------|--------------|
| PREPARED BY: SY | DATE: 3/2025 |
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NOTES:

FOR MECHANICALLY STABILIZED EARTH (MSE) RETAINING WALLS, SEE MECHANICALLY STABILIZED EARTH RETAINING WALLS PROVISION.

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

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 1.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 1.

A DRAIN IS REQUIRED FOR RETAINING WALL NO. 1.

BEFORE BEGINNING MSE 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) DESIGN HEIGHT (H) = WALL HEIGHT + WALL EMBEDMENT
- 2) DESIGN LIFE = 100 YEARS
- 3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 10,000 PSF
- 4) MINIMUM REINFORCEMENT LENGTH (L) = 1.2H OR 6 FT, WHICHEVER IS LONGER
- 5) REINFORCED ZONE AGGREGATE PARAMETERS:

| AGGREGATE TYPE* | UNIT WEIGHT (γ) PCF | FRICTION ANGLE (φ) DEGREES | COHESION (c) PSF |
|-----------------|---------------------------|----------------------------------|------------------------|
| COARSE | 110 | 38 | 0 |
| FINE | 115 | 34 | 0 |

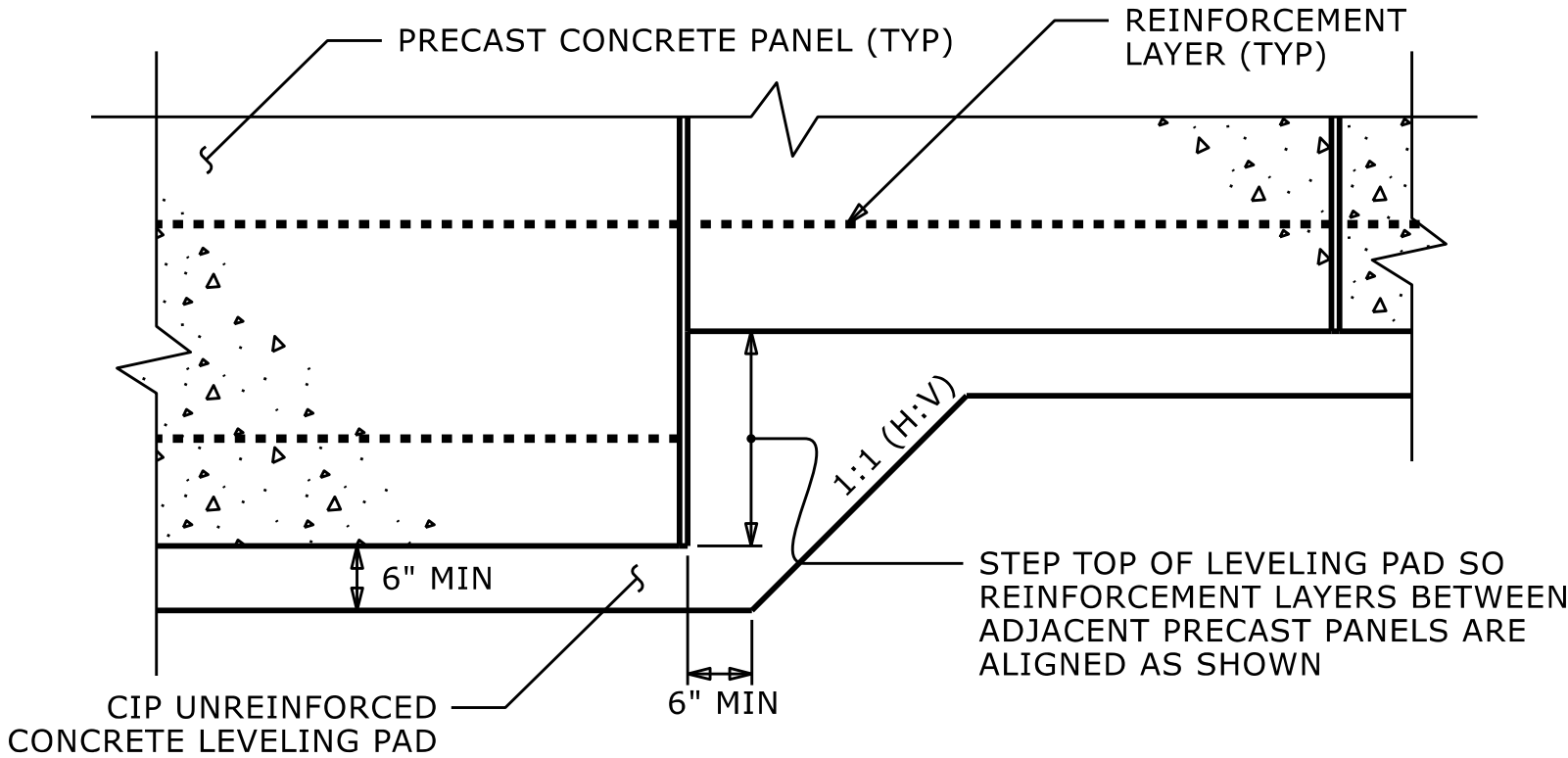
*SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.

6) IN-SITU ASSUMED MATERIAL PARAMETERS:

| MATERIAL TYPE | UNIT WEIGHT (γ) PCF | FRICTION ANGLE (φ) DEGREES | COHESION (c) PSF |
|---------------|---------------------------|----------------------------------|------------------------|
| RETAINED | 120 | 30 | 0 |
| FOUNDATION | 120 | 30 | 0 |

EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, GUARDRAIL, FENCE OR HANDRAIL POSTS, PAVEMENTS, PIPES, INLETS OR UTILITIES MAY INTERFERE WITH REINFORCEMENT FOR RETAINING WALL NO. 1.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



PRECAST PANELS
LEVELING PAD STEP DETAIL

GEOTECHNICAL
ENGINEER

DocuSigned by
Shiping Yang
03/20/2025

ENGINEER

SIGNATUREDATE

SIGNATUREDATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT NO.: B-5541
HAYWOOD COUNTY
STATION: -L- STA. 30+15.79-32+35.00
SHEET 3 OF 3

| | |
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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

RETAINING WALL NO. 1
MSE RETAINING WALL
NOTES & LEVELING PAD STEP DETAIL

REVISIONS

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

SHEET NO. W-3