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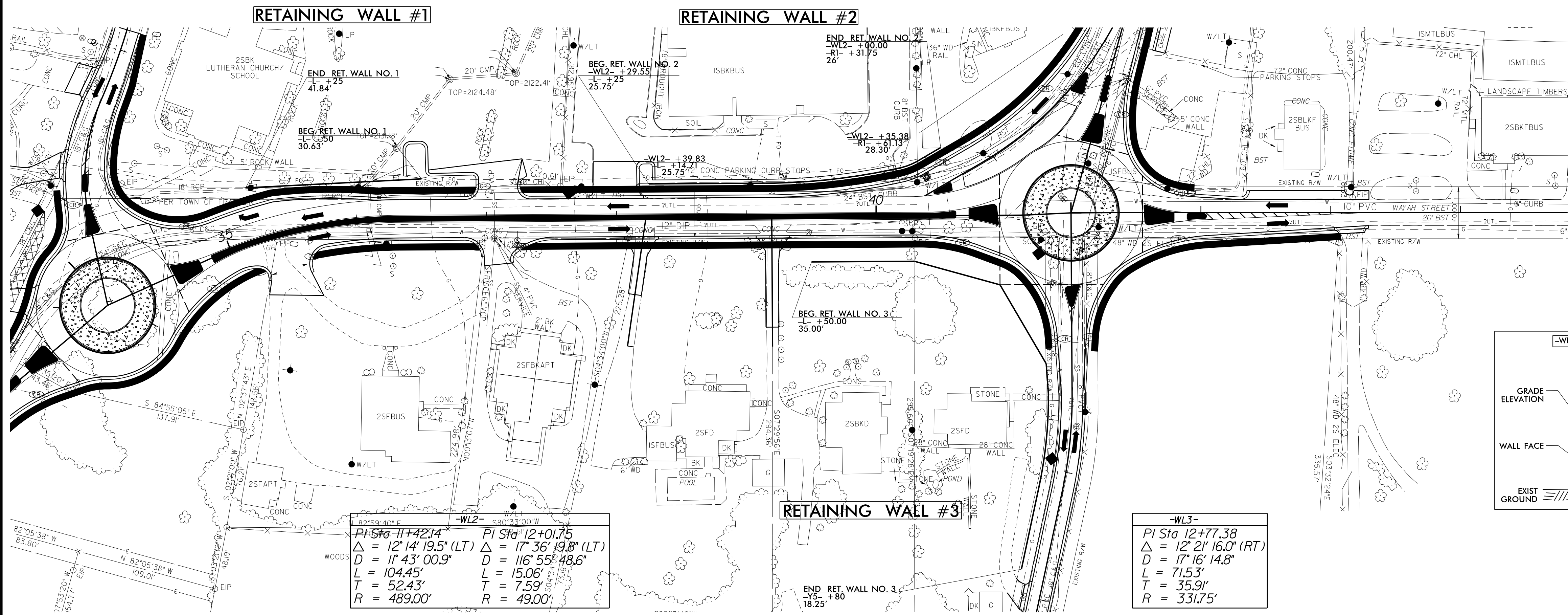
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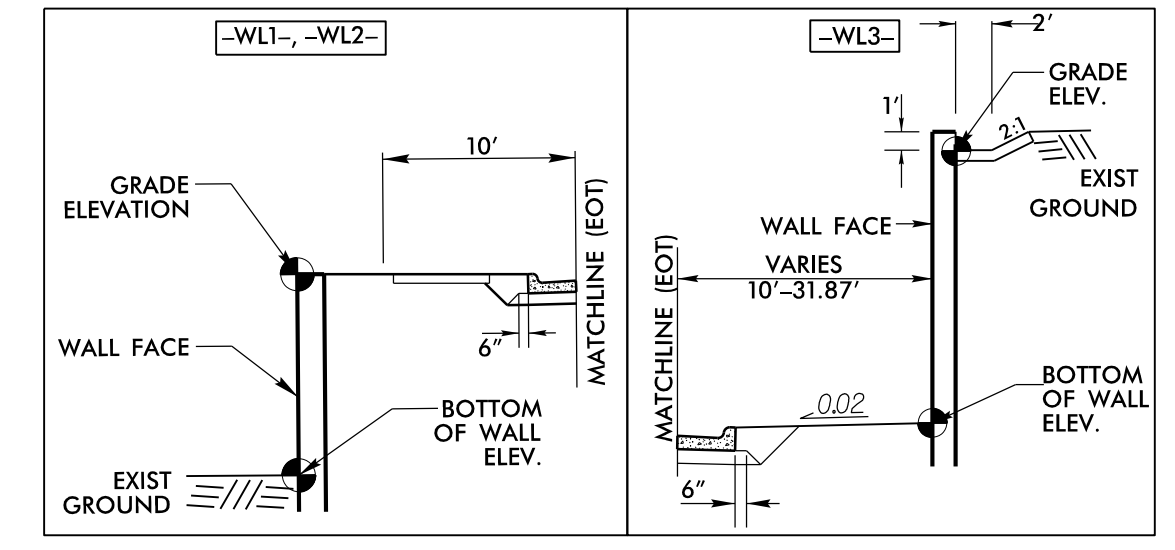
PROJECT REFERENCE NO. U-5604	SHEET NO. W-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	GEOTECHNICAL ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**Stantec**

Stantec Consulting Services Inc  
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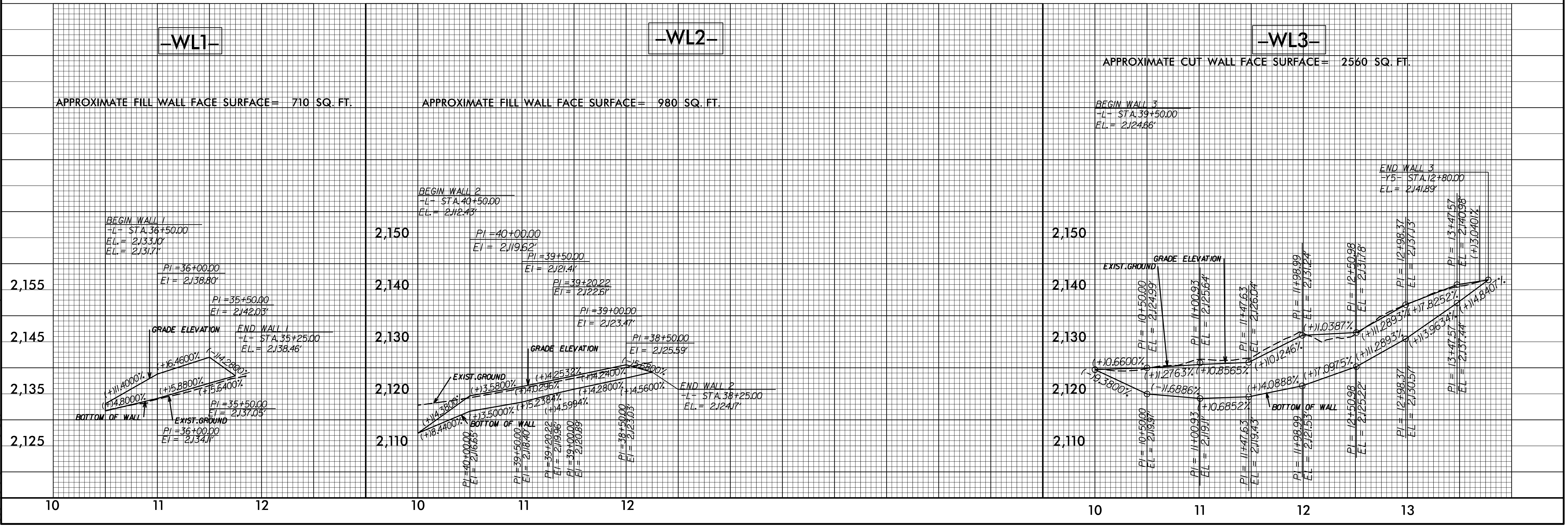
NAD 83 NA 2011



$PI\ Sta\ 11+42.14$      $PI\ Sta\ 12+01.75$   
 $\Delta = 12' 14' 19.5'' (LT)$      $\Delta = 17' 36' 19.8'' (LT)$   
 $D = 11' 43' 00.9''$      $D = 11' 55' 48.6''$   
 $L = 104.45'$      $L = 15.06'$   
 $T = 52.43'$      $T = 7.59'$   
 $R = 489.00'$      $R = 49.00'$

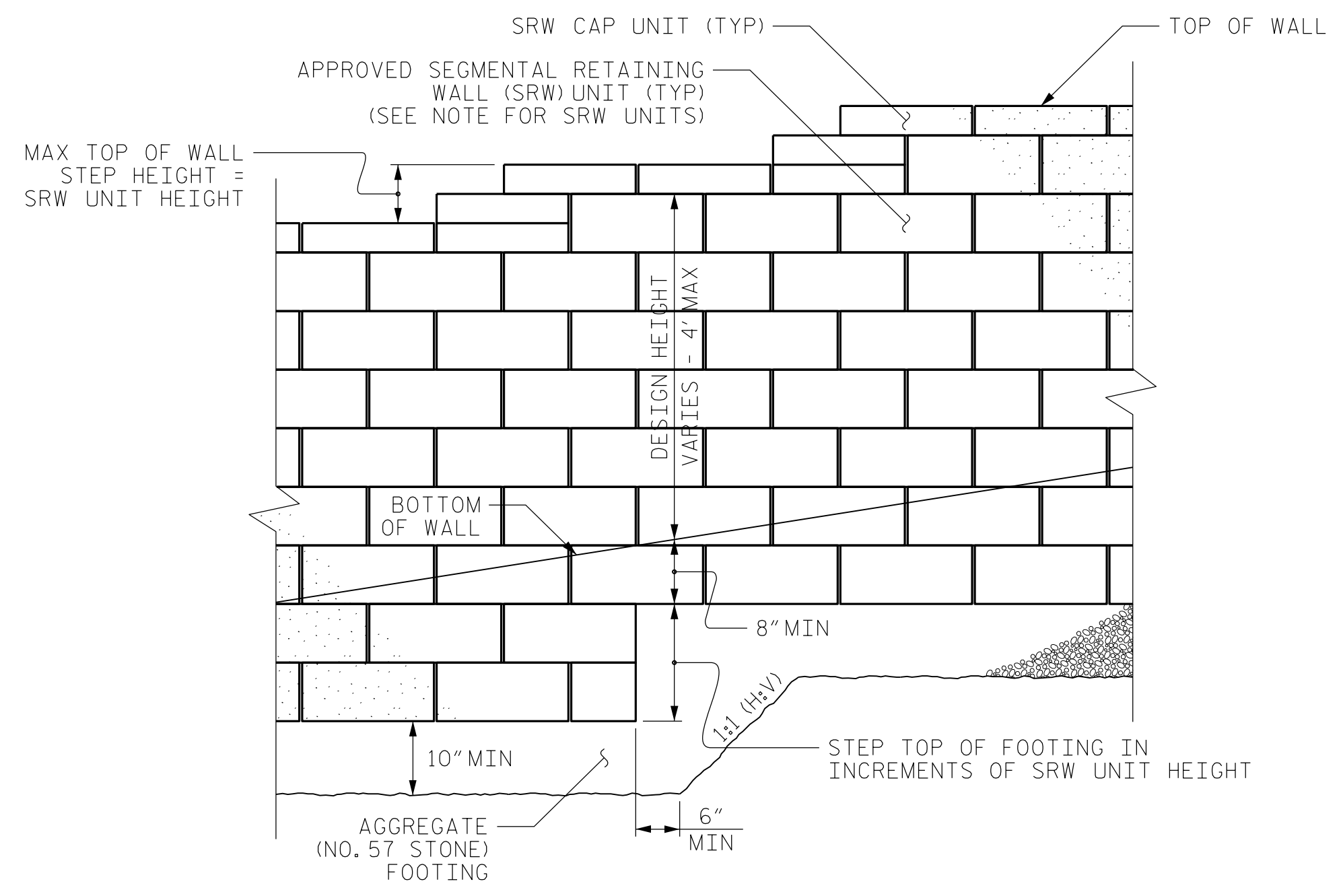
$PI\ Sta\ 12+77.38$   
 $\Delta = 12' 21' 16.0'' (RT)$   
 $D = 17' 16' 14.8''$   
 $L = 71.53'$   
 $T = 35.91'$   
 $R = 331.75'$

THE WALL ENVELOPE DOES NOT ACCURATELY DEPICT THE ACTUAL FACE OF THE WALL

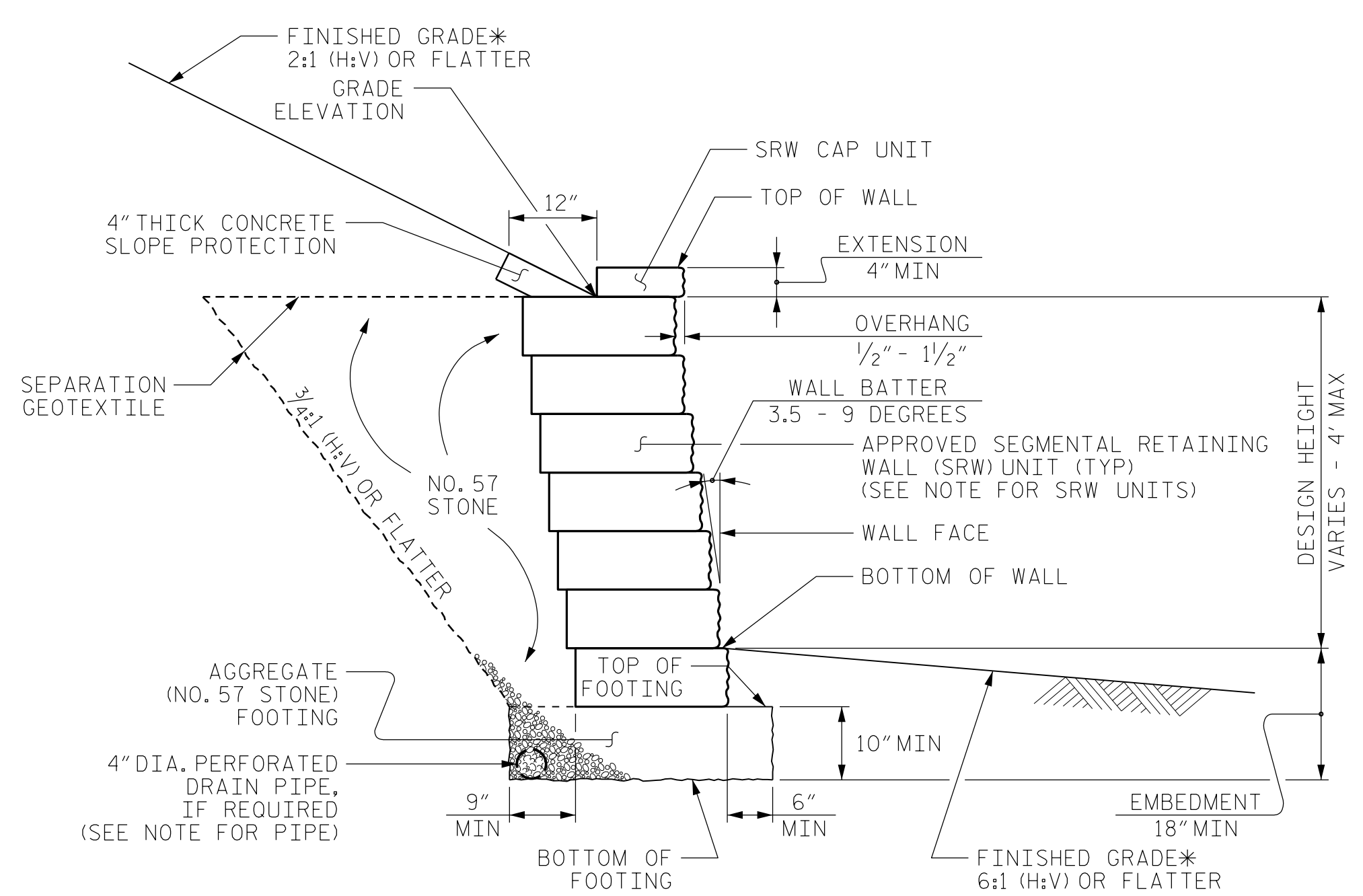


REVISIONS  
 03-MAY-2018 15:24  
 I:\Projects\2015\U5604\2.00 U-5604 US-441 Intersection Improvements\U5604\_GEO\_PDM\W\CADD\_GEO\TECH\Plan\Prof\15-3-2018 Wall Plans\U5604\_rdy\_wl\_Envelopes.dgn  
 8/17/99





**STANDARD SEGMENTAL GRAVITY WALL - PARTIAL ELEVATION**



**STANDARD SEGMENTAL GRAVITY WALL WITH SLOPE**

\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

**NOTES:**

FOR STANDARD SEGMENTAL GRAVITY RETAINING WALLS, SEE SECTION 454 OF THE STANDARD SPECIFICATIONS.

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

DO NOT ATTACH FENCES OR HANDRAILS TO STANDARD GRAVITY WALLS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS FOR INTERSTATE HIGHWAY OR RAILROAD PROJECTS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS WHEN SURCHARGE LOADS WILL BE WITHIN 5'-6" OF THE BACK OF SRW CAP UNITS.

DO NOT USE STANDARD SEGMENTAL GRAVITY WALLS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW WALLS.

DESIGN RETAINING WALL NO.1 FROM STA. 35+89 TO STA. 36+55 AS A SEGMENTAL GRAVITY WALL. DO NOT USE A STANDARD SEGMENTAL GRAVITY WALL BETWEEN THESE STATIONS.

SEGMENTAL RETAINING WALL (SRW) UNITS ARE APPROVED FOR EITHER 2' OR 4' MAXIMUM DESIGN HEIGHTS. FOR DETAILS AND DIMENSIONS OF APPROVED SRW UNITS AND MAXIMUM DESIGN HEIGHTS, SEE [connect.ncdot.gov/resources/Geological/Pages/Products.aspx](http://connect.ncdot.gov/resources/Geological/Pages/Products.aspx)

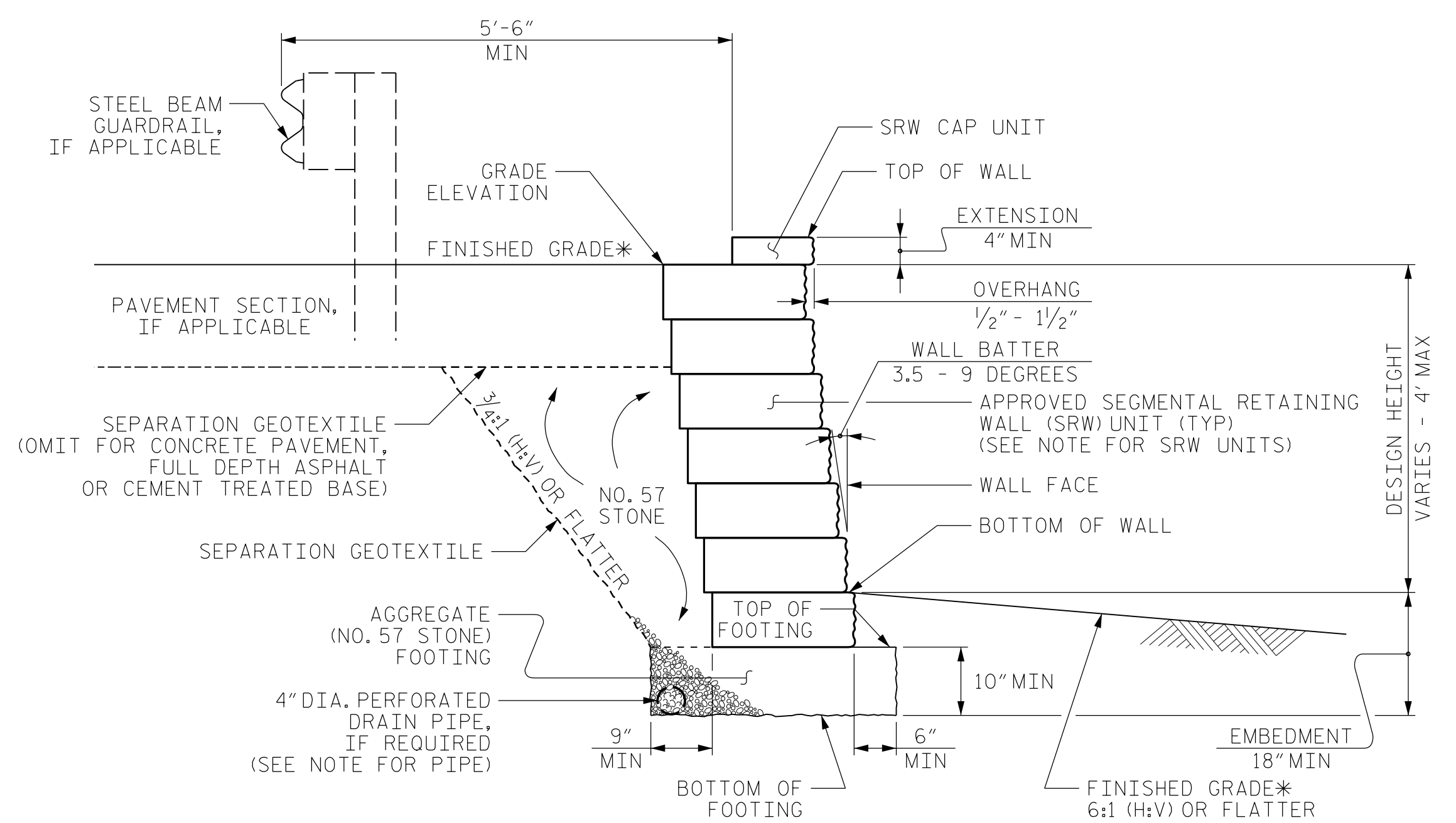
DO NOT MIX APPROVED SRW UNITS FROM DIFFERENT VENDORS ON THE SAME STANDARD SEGMENTAL GRAVITY WALL. USE THE SAME SIZE APPROVED SRW UNITS FOR EACH WALL SECTION.

FREEZE-THAW DURABLE SRW UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS ARE REQUIRED.

BEFORE BEGINNING STANDARD SEGMENTAL GRAVITY WALL CONSTRUCTION, SURVEY WALL LOCATIONS AND SUBMIT WALL PROFILE VIEWS (WALL ENVELOPES) FOR REVIEW. FOR WALL ENVELOPES, INCLUDE BOTTOM OF WALL, EXISTING GROUND AND GRADE ELEVATIONS AND OTHER ELEVATIONS AS NEEDED AT INTERVALS OF 25' OR LESS ALONG WALLS. DO NOT START WALL CONSTRUCTION UNTIL WALL ENVELOPES ARE ACCEPTED.

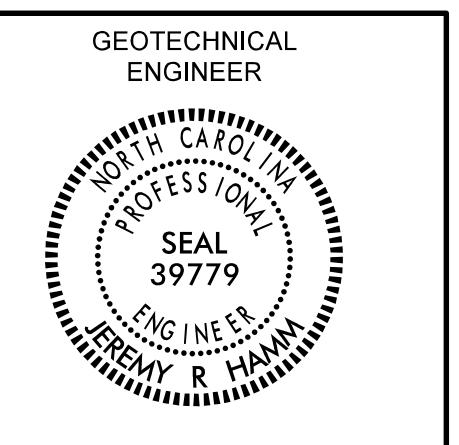
A DRAIN PIPE IS REQUIRED IF GROUNDWATER IS ABOVE BOTTOM OF FOOTINGS.

DO NOT PLACE NO. 57 STONE FOR FOOTINGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



**STANDARD SEGMENTAL GRAVITY WALL WITHOUT SLOPE**

\*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.



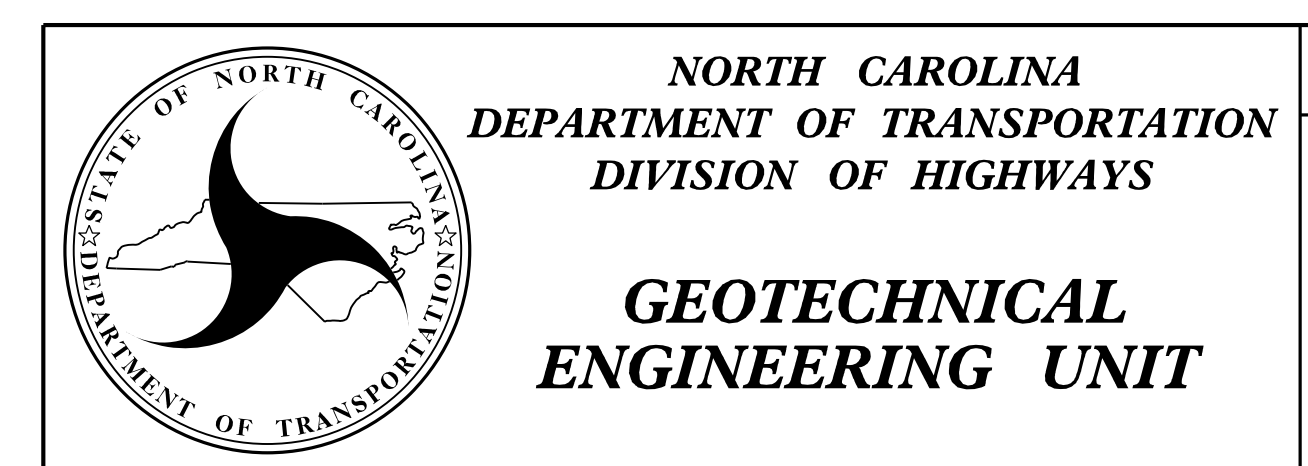
Signature: *Jeremy R. Hamm* Date: 5/3/2018

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PROJECT NO.: U-5604

MACON COUNTY

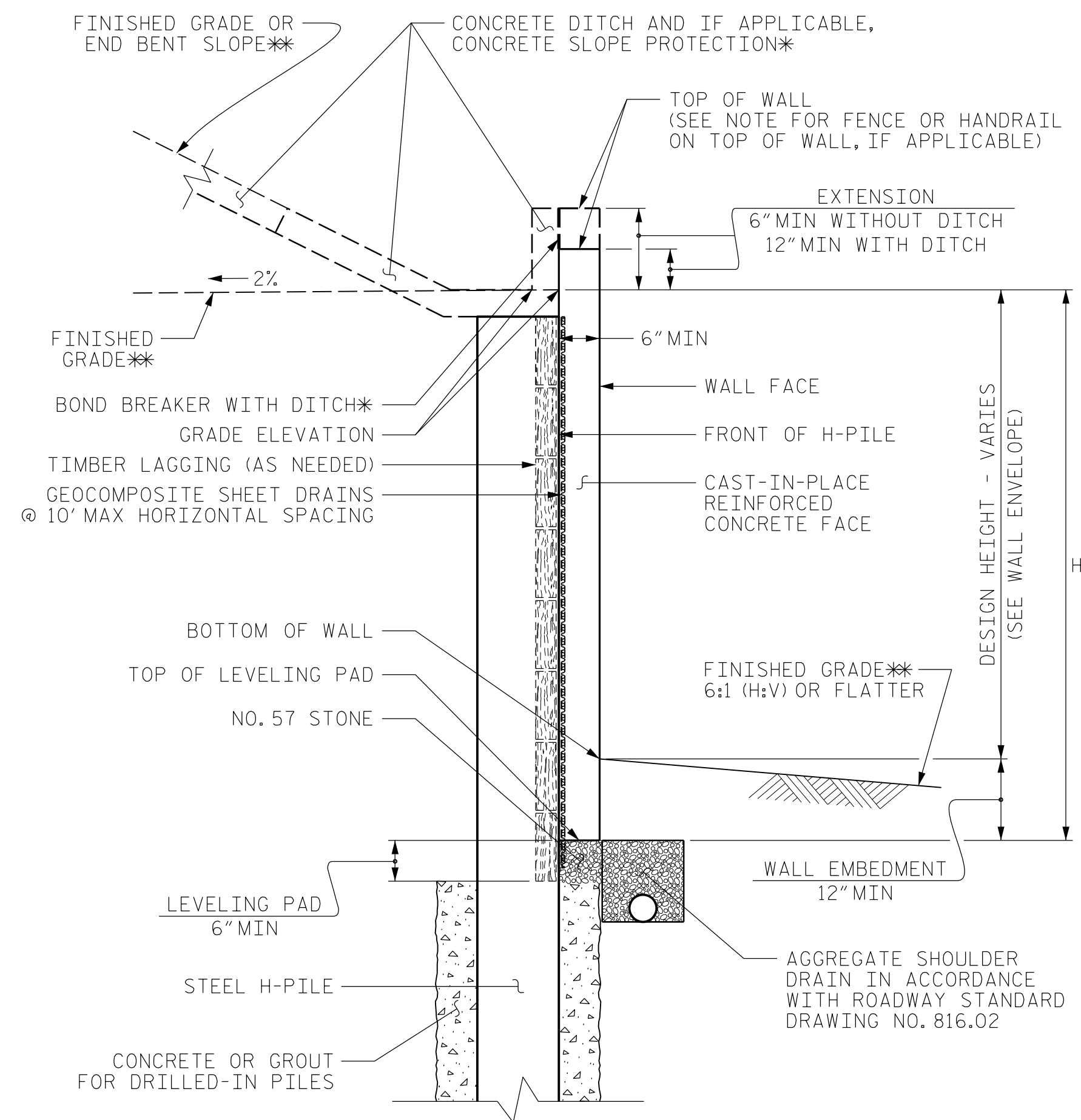
STATION: \_\_\_\_\_



**STANDARD DETAIL NO. 454.02**  
**RETAINING WALLS NO. 1 & 2**  
**SEGMENTAL GRAVITY RETAINING WALL WITH FREEZE-THAW DURABLE SRW UNITS**  
 SHEET NO. W-2  
 DATE: 1-16-18

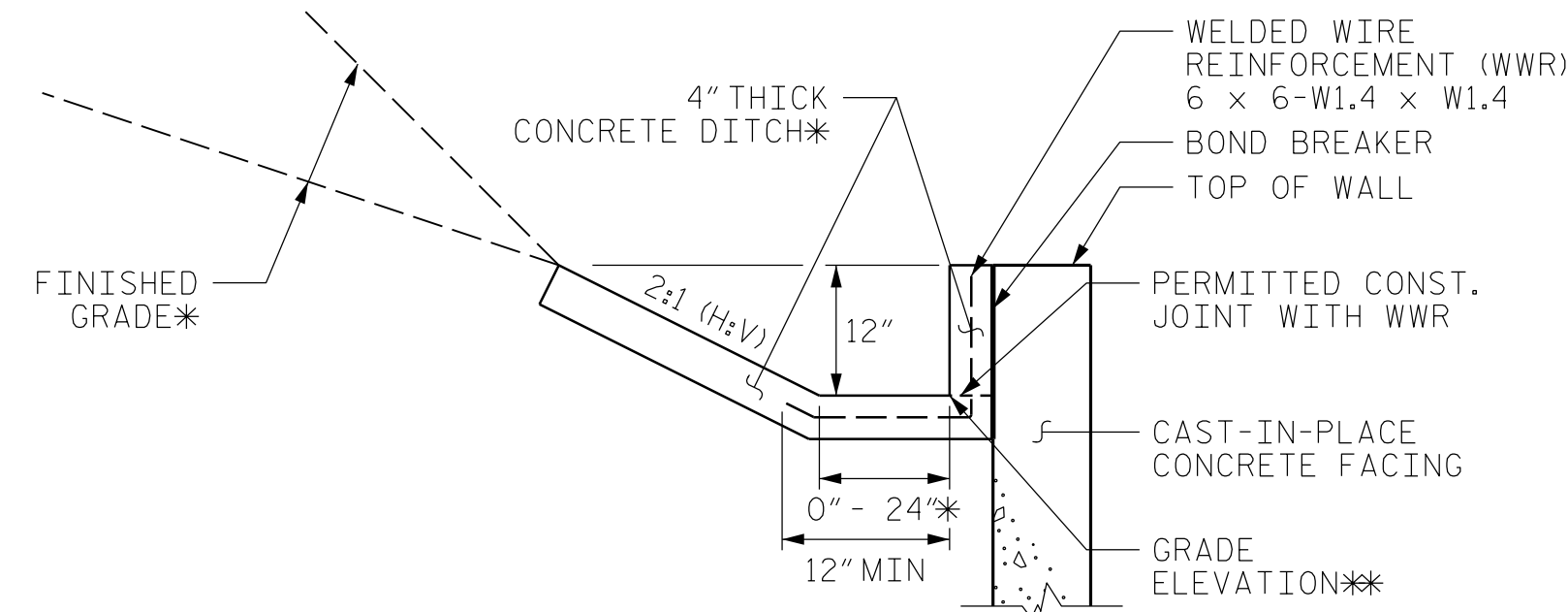


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**SOLDIER PILE WALL WITH CAST-IN-PLACE FACE - TYPICAL SECTION**

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



**CONCRETE DITCH BEHIND WALL WITH CONCRETE FACING**

\*SEE ROADWAY PLANS FOR CONCRETE DITCH AND FINISHED GRADE DETAILS.  
\*SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

**NOTES:**

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

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

A FENCE OR HANDRAIL IS REQUIRED ON TOP OF RETAINING WALL NO. 3. SEE ROADWAY PLANS FOR FENCE OR HANDRAIL ATTACHMENT DETAILS.

DRILLED-IN H-PILES ARE REQUIRED FOR RETAINING WALL NO. 3.

USE A SOLDIER PILE RETAINING WALL WITH A CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 3.

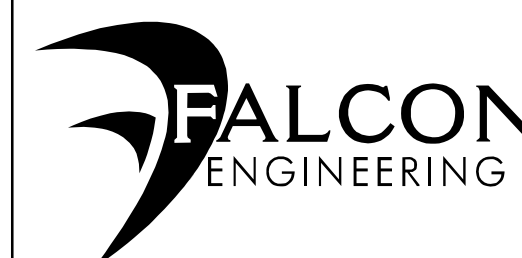
BEFORE BEGINNING SOLDIER PILE WALL DESIGN FOR RETAINING WALL NO. 3, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

A FORM-LINED OR STAMPED AND STAINED ARCHITECTURAL FINISH IS REQUIRED FOR THE CAST-IN-PLACE REINFORCED CONCRETE FACE FOR RETAINING WALL NO. 3.

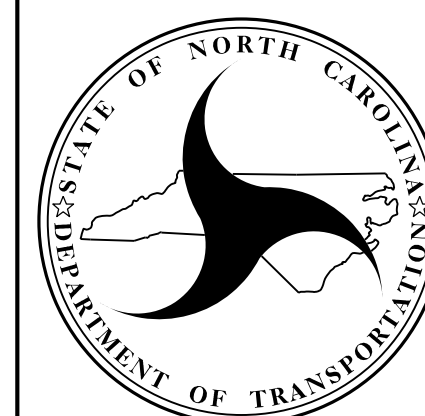
DESIGN RETAINING WALL NO. 3 FOR THE FOLLOWING:  
1) H = DESIGN HEIGHT + WALL EMBEDMENT  
2) DESIGN LIFE = 100 YEARS  
3) MINIMUM WALL EMBEDMENT ELEVATION = 1 FT  
4) MINIMUM PILE PENETRATION INTO ROCK = N/A  
5) IN-SITU ASSUMED MATERIAL PARAMETERS:  
UNIT WEIGHT,  $\gamma$  = 120 PCF  
FRICTION ANGLE,  $\phi$  = 30 DEGREES  
COHESION,  $c$  = 0 PSF

AT THE CONTRACTOR'S OPTION, USE A TEMPORARY SLOPE INSTEAD OF TEMPORARY SUPPORT OF EXCAVATIONS FOR RETAINING WALL NO. 3.

PREPARED BY: HUNSBERGER, W. S.	DATE: 11/03/17
REVIEWED BY: HAMM, J. R.	DATE: 11/03/17



FALCON ENGINEERING, INC.  
1210 TRINITY ROAD, SUITE 110  
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NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

**GEOTECHNICAL ENGINEERING UNIT**

**RETAINING WALL NO. 3 SOLDIER PILE WALL WITH CAST-IN-PLACE FACE**

**REVISIONS**

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