



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

JOSH STEIN
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

May 14, 2025

Addendum No. 1

RE: Contract # C205032

WBS # 48599.3.2

STATE FUNDED

Chatham County (R-5963A)

SR-2700 (CHATHAM PARK WAY) FROM US-15/US-501 SOUTH OF
PITTSBORO TO US-64 BUSINESS.

May 20, 2025 Letting

To Whom It May Concern:

Reference is made to the plans and proposal furnished to you on this project.

The following revisions have been made to the Cross Section plans.

| Sheet No. | Revision |
|----------------|--|
| X-1A thru X-1D | Updated to match the final earthwork balance card and earthwork summary. |
| X-85 thru X-86 | Updated wall height |

Please void the above listed Sheets in your Plans and staple the revised Sheets thereto.

The following revisions have been made to the Structures Wall plans.

| Sheet No. | Revision |
|--------------|--|
| W-1 thru W-6 | Updated date and name of Pay Item for the Form Liner Finish. |
| W-7 | Retaining Wall #3 – Envelope replaced with wall envelope provided 5/8/25. Revised callouts: Top of Concrete Barrier Rail, Top of Moment Slab/Finished Grade, Finished Grade Bottom of Wall (replaced Ground Elevation/Bottom of Wall). |

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT
1591 MAIL SERVICE CENTER
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900
Fax: (919) 250-4127
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

| Sheet No. | Revision |
|--------------|--|
| W-7 | Revised -W3- Typical Section. Added callouts: Top of Concrete Barrier Rail, Top of Moment Slab, Top of Wall, Finished Grade Bottom of Wall, Updated the Alignment to -W3- (replaced -W5-) |
| W-7 | Revised CIP Concrete Retaining Wall quantity to reflect provided profile and added Simulated Stone Form Liner quantity. |
| W-8 | Revised Non-Standard CIP Gravity Wall detail. Added callouts for the following: Class 2 Concrete Surface Finish, Top of Concrete Barrier Rail, Concrete Barrier Rail Face with Form Liner Finish, Top of Moment Slab, Moment Slab Face with Form Liner Finish, Bond Breaker (and shifted moment slab and barrier up to show gap for the bond breaker callout), CIP Wall Face with Form Liner Finish (Replaced Wall Face callout) |
| W-8 | Added the last 3 notes. |
| W-7 thru W-8 | Removed the NCDOT seal next to the title block due utilization of a non-standard drawing. |
| W-7 thru W-9 | Updated CG2 address to current office address. |

Please void the above listed Sheets in your Plans and staple the revised Sheets thereto.

The following revisions have been made to the proposal.

| Page No. | Revision |
|-----------------|---|
| Proposal Cover | Note added that reads “Includes Addendum No. 1 Dated 05-14-2025”. |
| GT-1 | The Project Geotechnical Unit Special Provision Table of Contents page has been updated. |
| GT-1.3 | The Project Geotechnical Unit Special Provision entitled NON-STANDARD CIP GRAVITY RETAINING WALLS has been updated. The fourth paragraph under Section 5.0 Measurement and Payment has been updated. |
| GT-1.4 | The Project Geotechnical Unit Special Provision entitled NON-STANDARD CIP GRAVITY RETAINING WALLS has been updated. Signature and date updated on seal. |
| GT-2.12 | The Project Geotechnical Unit Special Provision entitled SOIL NAIL RETAINING WALLS has been updated. Signature and date updated on seal. |
| GT-3.1 | The Project Geotechnical Unit Special Provision entitled SIMULATED STONE FORM LINER FINISH has been updated. Second paragraph under General A. Section has been updated. |
| GT-3.5 | The Project Geotechnical Unit Special Provision entitled SIMULATED STONE FORM LINER FINISH has been updated. Measurement and Payment section updated. Signature and date updated on seal. |

Please void the above listed Pages in your proposal and staple the revised Pages thereto.

On the item sheets the following pay item revisions have been made:

| <u>Item</u> | <u>Description</u> | <u>Old Quantity</u> | <u>New Quantity</u> |
|--------------------------|--|----------------------------|----------------------------|
| 0236- 8847000000-E SP | NON-STANDARD CIP GRAVITY RETAINING WALLS | 2,935 SF | 770 SF |
| 0260-8503000000-E 460 | CONCRETE BARRIER RAIL | 909.06 LF | 959.06 LF |
| 0265-8504000000-E 460 | CONCRETE BARRIER RAIL WITH MOMENT SLAB | NEW ITEM | 298 LF |
| 0266-8847000000-E SP | SIMULATED STONE FORM LINER FINISH | NEW ITEM | 5,850 SF |

The Contractor's bid must include these pay item revisions.

The electronic bidding file has been updated to reflect these revisions. Please download the Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the addendum has been applied.

The contract will be prepared accordingly.

Sincerely,

Signed by:

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Ronald E. Davenport, Jr., PE
State Contract Officer

RED/cms
Attachments

cc: Mr. Wiley W. Jones III, PE
Mr. Reuben Blakley, PE
Mr. Ken Kennedy, PE
Mr. Malcolm Bell

Mr. Forrest Dungan, PE
Ms. Jaci Kincaid
Mr. Jon Weathersbee, PE
Project File (2)

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

PROPOSAL

INCLUDES ADDENDUM No. 1 DATED 05-14-2025

DATE AND TIME OF BID OPENING: **May 20, 2025 AT 02:00 PM**

CONTRACT ID C205032
WBS 48599.3.2

FEDERAL-AID NO. STATE FUNDED
COUNTY CHATHAM
T.I.P NO. R-5963A
MILES 3.174
ROUTE NO. SR-2700
LOCATION SR-2700 (CHATHAM PARK WAY) FROM US-15/US-501 SOUTH OF
PITTSBORO TO US-64 BUSINESS.

TYPE OF WORK DRAINAGE, GRADING, PAVING, SIGNALS, AND STRUCTURES.

NOTICE:

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

BIDS WILL BE RECEIVED AS SHOWN BELOW:

THIS IS A ROADWAY & STRUCTURE PROPOSAL

5% BID BOND OR BID DEPOSIT REQUIRED

PROJECT SPECIAL PROVISIONS

GEOTECHNICAL

| | |
|--|------------------|
| NON-STANDARD CIP GRAVITY RETAINING WALLS (SPECIAL) | GT-1.1 – GT-1.4 |
| SOIL NAIL RETAINING WALLS (SPECIAL) | GT-2.1 – GT-2.12 |
| SIMULATED STONE FORM LINER FINISH (SPECIAL) | GT-3.1 – GT-3.5 |
| ROCK EMBANKMENTS (SPECIAL) | GT-4.1 – GT-4.2 |

Signed by:

Carolinus Geotechnical Group, PLLC

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joints at a spacing of 10 ft to 12 ft unless required otherwise in the plans. Make 1/2" thick expansion joints that meet Article 420-10 of the *Standard Specifications* for every third joint and 1/2" deep grooved contraction or sawed joints that meet Subarticle 825-10(B) or 825-10(E) respectively of the *Standard Specifications* for the remaining joints.

Construct 3-inch diameter weep holes on 10-foot centers along CIP gravity walls. Provide subsurface drainage at weep holes in accordance with Article 414-8 of the *Standard Specifications*. Exit weep holes just above finished grade and slope holes at 1 inch/foot through CIP gravity walls so water drains out of front of walls. When single faced precast concrete barrier is required in front of and against CIP gravity walls, extend weep holes through barrier at the same slope.

Do not remove forms or backfill behind CIP gravity walls until concrete attains a compressive strength of at least 2,400 psi. Backfill for CIP gravity walls in accordance with Article 410-8 of the *Standard Specifications*.

If a brick veneer is required, construct brick masonry in accordance with Section 830 of the *Standard Specifications*. Anchor brick veneers to CIP gravity walls with approved brick to concrete type anchors in accordance with the manufacturer's instructions. Space anchors no more than 16 inches apart in the vertical direction and no more than 32 inches apart in the horizontal direction with each row of anchors staggered 16 inches from the row above and below.

5.0 MEASUREMENT AND PAYMENT

Non-Standard CIP Gravity Retaining Walls will be measured and paid in square feet. CIP gravity walls will be measured as the square feet of wall face area with the pay height equal to the difference between top of wall and top of footing elevations. Define "top of wall" as top of CIP concrete.

The contract unit price for *Non-Standard CIP Gravity Retaining Walls* will be full compensation for providing designs, submittals, labor, tools, equipment, and CIP gravity wall materials, excavating, backfilling, hauling, and removing excavated materials and supplying concrete, reinforcing steel, dowels, subsurface drainage, weep holes, and any incidentals necessary to construct CIP gravity walls. The contract unit price for *Non-Standard CIP Gravity Retaining Walls* will also be full compensation for brick veneers, if required.

No separate payment will be made for temporary shoring for wall construction. Temporary shoring for wall construction will be incidental to the contract unit price for *Non-Standard CIP Gravity Retaining Walls*.

The contract unit price for *Non-Standard CIP Gravity Retaining Walls* does not include the cost for ditches, fences, handrails, barrier, moment slab, or guardrail associated with CIP gravity walls as these items will be paid for elsewhere in the contract.

Where it is necessary to provide backfill material from sources other than excavated areas or borrow sources used in connection with other work in the contract, payment for furnishing

and hauling such backfill material will be paid as extra work in accordance with Article 104-7 of the *Standard Specifications*. Placing and compacting such backfill material is not considered extra work but is incidental to the work being performed.

Payment will be made under:

Pay Item

Non-Standard CIP Gravity Retaining Walls

Pay Unit

Square Foot



Signed by:

Robert E. Kral

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R-5963A

GT-2.12

Chatham County

Payment will be made under:

Pay Item

Soil Nail Retaining Walls
Soil Nail Verification Tests
Soil Nail Proof Tests

Pay Unit

Square Foot
Each
Each



Signed by:

Robert C. Kral

12/04/2024

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SIMULATED STONE FORM LINER FINISH**(SPECIAL)****GENERAL**

- A. The work covered by this special provision consists of constructing textured surfaces on formed reinforced concrete surfaces as indicated on the Plans and in this Special Provision. The Contractor shall furnish all materials, labor, equipment, and incidentals necessary for the construction of architectural concrete surface treatment using simulated stone masonry form liners (molds) and a compatible concrete coloring system. The terms “Form Liner Architectural Finish” listed in the wall plans and “architectural concrete surface treatment” discussed in this provision are synonymous with the “Simulated Stone Form Liner System and Surface Finish” discussed in this provision.

The architectural concrete surface treatment should match the appearance (stone size and shape, stone color, and stone texture, pattern, and relief) of natural stone and rock, in the project vicinity, or as directed by the Engineer. Grout pattern joints (mortar joints) and bed thickness should re-create the appearance and color of natural stone on the cast-in-place concrete for Retaining Wall #1, #2, and #3 as indicated in the Plans, this Special Provision, or as directed by the Engineer.

SUBMITTALS

Shop Drawings - The Contractor shall submit for review and acceptance, plan and elevation views and details showing overall simulated stone pattern, joint locations, form tie locations, and end, edge or other special conditions. The drawings should include typical cross sections of applicable surfaces, joints, corners, stone relief, stone size, pitch/working line, mortar joint and bed depths. If necessary, the Contractor shall revise the shop drawings until the proposed form liner patterns and arrangement have been accepted by the Engineer. Shop drawings should be of sufficient scale to show the detail of all stone and joints patterns. The size of the sheets used for the shop drawings shall be 22 in x 34 in.

The form liner shall be patterned such that long continuous horizontal or vertical lines do not occur on the finished exposed surface. The line pattern shall be random in nature and shall conceal construction joint lines. Special attention should be given to details for wrapping form liners around corners.

Shop drawings shall be reviewed and accepted prior to fabrication of form liners.

Sample Panels and Barrier - After the shop drawings have been reviewed and accepted by the Engineer, the Contractor shall construct 24 in x 24 in transportable sample panel(s) at the project site. The materials used in construction of the sample panel(s) shall comply with section 420 of the Standard Specifications. The sample panel(s) shall be constructed using approved form liners. Sample panels will be required for each different form liner pattern that is to be used on the project. Any sample panel that is not accepted by the Engineer is to be removed from the project site and a new sample panel produced at no additional expense to the Department.

Architectural surface treatments and patterns of the finished work shall achieve the same

washing for removal of laitance shall be used.

The contractor shall provide a Color Application Artist who is trained in the special techniques to achieve realistic surface appearances, if requested by the Engineer. To avoid contaminating or damaging the wall surfaces, color stain application shall be scheduled when all concrete work is completed, the concrete has cured a minimum of 28 days, the surface has been determined to be acceptable for coloring, and after adjacent earthwork is complete. The Contractor is to coordinate coloring applications without interference from other work. The Contractor is required to apply coloring to an appropriate test area of 50 square feet and as designated by the Engineer, which will serve as a quality standard for the remaining surface to be colored. Upon approval of the test area by the Engineer, the remaining surfaces may be colored. Stains shall be applied when ambient air temperatures are in accordance with manufacturer's specifications or as directed by the Engineer. The number of coats of stain applied shall be in accordance with manufacturer's specifications or as directed by the Engineer. Treated surfaces located adjacent to exposed soil or pavement shall be temporarily covered to prevent dirt or soil splatter from rain.

Following the completion of all work, repairs of any damage made by other construction operations shall be made to the form lined and colored surfaces as directed by the Engineer.

Experience and Qualifications - The Contractor shall have a minimum of three consecutive years of experience in architectural concrete surface treatment construction on similar types of projects. The Contractor shall furnish to the Engineer 5 references who were responsible for supervision of similar projects and will testify to the successful completion of these projects. Include name, address, telephone number, and specific type of application.

MEASUREMENT AND PAYMENT

Simulated Stone Form Liner Finish will be measured and paid for in square feet of cast-in-place reinforced and unreinforced concrete retaining wall face, cast-in-place reinforced concrete moment slab face, and cast-in-place reinforced concrete barrier rail face for the pertinent wall, as shown on the plans. Payment will include the furnishing and use of all form liners, coloring stains, the construction, finishing, and removal of all sample panels, and all equipment, materials, labor, and incidentals necessary to complete the work in conformance with the Contract Documents.

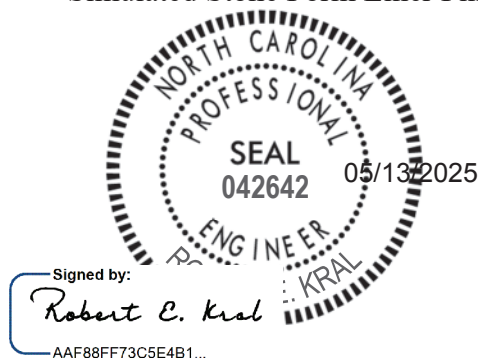
Payment will be made under:

Pay Item

Simulated Stone Form Liner Finish

Pay Unit

Square Foot



County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|---------------|--------------|-------|---|---------------|-----------|--------|
| ROADWAY ITEMS | | | | | | |
| 0001 | 0000100000-N | 800 | MOBILIZATION | Lump Sum | L.S. | |
| 0002 | 0000400000-N | 801 | CONSTRUCTION SURVEYING | Lump Sum | L.S. | |
| 0003 | 0001000000-E | 200 | CLEARING & GRUBBING .. ACRE(S) | Lump Sum | L.S. | |
| 0004 | 0015000000-N | 205 | SEALING ABANDONED WELLS | 2 EA | | |
| 0005 | 0022000000-E | 225 | UNCLASSIFIED EXCAVATION | 457,000 CY | | |
| 0006 | 0036000000-E | 225 | UNDERCUT EXCAVATION | 12,375 CY | | |
| 0007 | 0050000000-E | 226 | SUPPLEMENTARY CLEARING & GRUBBING | 3 ACR | | |
| 0008 | 0127000000-N | 235 | EMBANKMENT SETTLEMENT GAUGES | 5 EA | | |
| 0009 | 0134000000-E | 240 | DRAINAGE DITCH EXCAVATION | 1,530 CY | | |
| 0010 | 0141000000-E | 240 | BERM DITCH CONSTRUCTION | 2,700 LF | | |
| 0011 | 0156000000-E | 250 | REMOVAL OF EXISTING ASPHALT PAVEMENT | 350 SY | | |
| 0012 | 0192000000-N | 260 | PROOF ROLLING | 30 HR | | |
| 0013 | 0194000000-E | 265 | SELECT GRANULAR MATERIAL, CLASS III | 8,275 CY | | |
| 0014 | 0196000000-E | 270 | GEOTEXTILE FOR SOIL STABILIZATION | 12,025 SY | | |
| 0015 | 0222000000-E | SP | GEOTEXTILE FOR ROCK EMBANKMENTS | 3,180 SY | | |
| 0016 | 0248000000-N | SP | GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 134+65 -L- LT | Lump Sum | L.S. | |
| 0017 | 0248000000-N | SP | GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 134+65 -L- RT | Lump Sum | L.S. | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|-----------------|-----------|--------|
| 0018 | 0248000000-N | SP | GENERIC GRADING ITEM TYPE 1 BRIDGE APPROACH FILL, STATION 76+49.00 -L- | Lump Sum | L.S. | |
| 0019 | 0255000000-E | SP | GENERIC GRADING ITEM SELECT MATERIAL, CLASS VI FOR ROCK EMBANKMENTS | 1,730 TON | | |
| 0020 | 0255000000-E | SP | GENERIC GRADING ITEM SELECT MATERIAL, CLASS VII FOR ROCK EMBANKMENTS | 16,640 TON | | |
| 0021 | 0318000000-E | 300 | FOUNDATION CONDITIONING MATERIAL, MINOR STRUCTURES | 3,984.25 TON | | |
| 0022 | 0321000000-E | 300 | FOUNDATION CONDITIONING GEOTEXTILE | 8,942.25 SY | | |
| 0023 | 0335200000-E | 305 | 15" DRAINAGE PIPE | 116 LF | | |
| 0024 | 0335300000-E | 305 | 18" DRAINAGE PIPE | 104 LF | | |
| 0025 | 0335400000-E | 305 | 24" DRAINAGE PIPE | 112 LF | | |
| 0026 | 0335500000-E | 305 | 30" DRAINAGE PIPE | 48 LF | | |
| 0027 | 0335850000-E | 305 | *** DRAINAGE PIPE ELBOWS (15") | 6 EA | | |
| 0028 | 0335850000-E | 305 | *** DRAINAGE PIPE ELBOWS (18") | 4 EA | | |
| 0029 | 0335850000-E | 305 | *** DRAINAGE PIPE ELBOWS (24") | 4 EA | | |
| 0030 | 0335850000-E | 305 | *** DRAINAGE PIPE ELBOWS (30") | 2 EA | | |
| 0031 | 0343000000-E | 310 | 15" SIDE DRAIN PIPE | 140 LF | | |
| 0032 | 0448000000-E | 310 | ***** RC PIPE CULVERTS, CLASS IV (48") | 428 LF | | |
| 0033 | 0448200000-E | 310 | 15" RC PIPE CULVERTS, CLASS IV | 8,184 LF | | |
| 0034 | 0448300000-E | 310 | 18" RC PIPE CULVERTS, CLASS IV | 11,372 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---------------------------------------|---------------|-----------|--------|
| 0035 | 0448400000-E | 310 | 24" RC PIPE CULVERTS, CLASS IV | 3,744 LF | | |
| 0036 | 0448500000-E | 310 | 30" RC PIPE CULVERTS, CLASS IV | 1,436 LF | | |
| 0037 | 0448600000-E | 310 | 36" RC PIPE CULVERTS, CLASS IV | 264 LF | | |
| 0038 | 0449000000-E | 310 | *** RC PIPE CULVERTS, CLASS V (42") | 112 LF | | |
| 0039 | 0995000000-E | 340 | PIPE REMOVAL | 565 LF | | |
| 0040 | 1011000000-N | 500 | FINE GRADING | Lump Sum | L.S. | |
| 0041 | 1044000000-E | 501 | LIME TREATED SOIL (SLURRY METHOD) | 56,500 SY | | |
| 0042 | 1066000000-E | 501 | LIME FOR LIME TREATED SOIL | 700 TON | | |
| 0043 | 1099500000-E | 505 | SHALLOW UNDERCUT | 1,500 CY | | |
| 0044 | 1099700000-E | 505 | CLASS IV SUBGRADE STABILIZATION | 7,810 TON | | |
| 0045 | 1110000000-E | 510 | STABILIZER AGGREGATE | 500 TON | | |
| 0046 | 1112000000-E | 505 | GEOTEXTILE FOR SUBGRADE STABILIZATION | 15,130 SY | | |
| 0047 | 1121000000-E | 520 | AGGREGATE BASE COURSE | 13,600 TON | | |
| 0048 | 1176000000-E | 542 | SOIL CEMENT BASE | 56,500 SY | | |
| 0049 | 1187000000-E | 542 | PORTLAND CEMENT FOR SOIL CEMENT BASE | 1,600 TON | | |
| 0050 | 1220000000-E | 545 | INCIDENTAL STONE BASE | 100 TON | | |
| 0051 | 1231000000-E | 560 | SHOULDER BORROW | 4,900 CY | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|---------------|-----------|--------|
| 0052 | 1275000000-E | 600 | PRIME COAT | 56 GAL | | |
| 0053 | 1297000000-E | 607 | MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2") | 1,150 SY | | |
| 0054 | 1297000000-E | 607 | MILLING ASPHALT PAVEMENT, **** DEPTH (2-1/2") | 6,150 SY | | |
| 0055 | 1330000000-E | 607 | INCIDENTAL MILLING | 950 SY | | |
| 0056 | 1491000000-E | 610 | ASPHALT CONC BASE COURSE, TYPE B25.0C | 22,000 TON | | |
| 0057 | 1503000000-E | 610 | ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C | 27,000 TON | | |
| 0058 | 1519000000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5B | 20 TON | | |
| 0059 | 1523000000-E | 610 | ASPHALT CONC SURFACE COURSE, TYPE S9.5C | 24,000 TON | | |
| 0060 | 1575000000-E | 620 | ASPHALT BINDER FOR PLANT MIX | 3,705 TON | | |
| 0061 | 1693000000-E | 654 | ASPHALT PLANT MIX, PAVEMENT REPAIR | 296 TON | | |
| 0062 | 1891000000-E | SP | GENERIC PAVING ITEM 12" JOINTED CONCRETE TRUCK APRON | 270 SY | | |
| 0063 | 2000000000-N | 806 | RIGHT-OF-WAY MARKERS | 4 EA | | |
| 0064 | 2020000000-N | 806 | CONTROL-OF-ACCESS MARKERS | 199 EA | | |
| 0065 | 2022000000-E | 815 | SUBDRAIN EXCAVATION | 4,170 CY | | |
| 0066 | 2026000000-E | 815 | GEOTEXTILE FOR SUBSURFACE DRAINS | 12,400 SY | | |
| 0067 | 2036000000-E | 815 | SUBDRAIN COARSE AGGREGATE | 2,090 CY | | |
| 0068 | 2044000000-E | 815 | 6" PERFORATED SUBDRAIN PIPE | 12,400 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|------------|-----------|--------|
| 0069 | 2070000000-N | 815 | SUBDRAIN PIPE OUTLET | 25 EA | | |
| 0070 | 2077000000-E | 815 | 6" OUTLET PIPE | 150 LF | | |
| 0071 | 2099000000-E | 816 | SHOULDER DRAIN | 300 LF | | |
| 0072 | 2110000000-E | 816 | 4" SHOULDER DRAIN PIPE | 320 LF | | |
| 0073 | 2121000000-E | 816 | 4" OUTLET PIPE FOR SHOULDER DRAINS | 80 LF | | |
| 0074 | 2132000000-N | 816 | CONCRETE PAD FOR SHOULDER DRAIN PIPE OUTLET | 4 EA | | |
| 0075 | 2143000000-E | 818 | BLOTTING SAND | 20 TON | | |
| 0076 | 2209000000-E | 838 | ENDWALLS | 22.5 CY | | |
| 0077 | 2253000000-E | 840 | PIPE COLLARS | 0.6 CY | | |
| 0078 | 2286000000-N | 840 | MASONRY DRAINAGE STRUCTURES | 275 EA | | |
| 0079 | 2308000000-E | 840 | MASONRY DRAINAGE STRUCTURES | 157 LF | | |
| 0080 | 2364000000-N | 840 | FRAME WITH TWO GRATES, STD 840.16 | 4 EA | | |
| 0081 | 2366000000-N | 840 | FRAME WITH TWO GRATES, STD 840.24 | 76 EA | | |
| 0082 | 2367000000-N | 840 | FRAME WITH TWO GRATES, STD 840.29 | 1 EA | | |
| 0083 | 2374000000-N | 840 | FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E) | 15 EA | | |
| 0084 | 2374000000-N | 840 | FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F) | 91 EA | | |
| 0085 | 2374000000-N | 840 | FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G) | 53 EA | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|--------------|-----------|--------|
| 0086 | 2396000000-N | 840 | FRAME WITH COVER, STD 840.54 | 5 EA | | |
| 0087 | 2407000000-N | 840 | STEEL FRAME WITH TWO GRATES, STD 840.37 | 26 EA | | |
| 0088 | 2440000000-N | 852 | CONCRETE TRANSITIONAL SECTION FOR CATCH BASIN | 59 EA | | |
| 0089 | 2451000000-N | 852 | CONCRETE TRANSITIONAL SECTION FOR DROP INLET | 25 EA | | |
| 0090 | 2535000000-E | 846 | *** X *** CONCRETE CURB (9" X 18") | 270 LF | | |
| 0091 | 2542000000-E | 846 | 1'-6" CONCRETE CURB & GUTTER | 25,600 LF | | |
| 0092 | 2549000000-E | 846 | 2'-6" CONCRETE CURB & GUTTER | 17,800 LF | | |
| 0093 | 2577000000-E | 846 | CONCRETE EXPRESSWAY GUTTER | 340 LF | | |
| 0094 | 2605000000-N | 848 | CONCRETE CURB RAMPS | 120 EA | | |
| 0095 | 2612000000-E | 848 | 6" CONCRETE DRIVEWAY | 370 SY | | |
| 0096 | 2619000000-E | 850 | 4" CONCRETE PAVED DITCH | 40 SY | | |
| 0097 | 2655000000-E | 852 | 5" MONOLITHIC CONCRETE ISLANDS (KEYED IN) | 3,460 SY | | |
| 0098 | 3030000000-E | 862 | STEEL BEAM GUARDRAIL | 2,125 LF | | |
| 0099 | 3150000000-N | 862 | ADDITIONAL GUARDRAIL POSTS | 10 EA | | |
| 0100 | 3210000000-N | 862 | GUARDRAIL END UNITS, TYPE CAT-1 | 7 EA | | |
| 0101 | 3287000000-N | 862 | GUARDRAIL END UNITS, TYPE TL-3 | 11 EA | | |
| 0102 | 3317000000-N | 862 | GUARDRAIL ANCHOR UNITS, TYPE B- 77 | 12 EA | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|--------------|-----------|--------|
| 0103 | 3575000000-E | SP | GENERIC FENCING ITEM BICYCLE/PEDESTRIAN SAFETY RAIL | 1,010 LF | | |
| 0104 | 3628000000-E | 876 | RIP RAP, CLASS I | 520 TON | | |
| 0105 | 3642000000-E | 876 | RIP RAP, CLASS A | 2,380 TON | | |
| 0106 | 3649000000-E | 876 | RIP RAP, CLASS B | 4,440 TON | | |
| 0107 | 3656000000-E | 876 | GEOTEXTILE FOR DRAINAGE | 8,820 SY | | |
| 0108 | 4025000000-E | 901 | CONTRACTOR FURNISHED, TYPE *** SIGN (A) | 2,970 SF | | |
| 0109 | 4025000000-E | 901 | CONTRACTOR FURNISHED, TYPE *** SIGN (B) | 165 SF | | |
| 0110 | 4025000000-E | 901 | CONTRACTOR FURNISHED, TYPE *** SIGN (D) | 203 SF | | |
| 0111 | 4025000000-E | 901 | CONTRACTOR FURNISHED, TYPE *** SIGN (E) | 985 SF | | |
| 0112 | 4025000000-E | 901 | CONTRACTOR FURNISHED, TYPE *** SIGN (F) | 1,114 SF | | |
| 0113 | 4048000000-E | 902 | REINFORCED CONCRETE SIGN FOUNDATIONS | 9 CY | | |
| 0114 | 4060000000-E | 903 | SUPPORTS, BREAKAWAY STEEL BEAM | 8,593 LB | | |
| 0115 | 4072000000-E | 903 | SUPPORTS, 3-LB STEEL U-CHANNEL | 4,915 LF | | |
| 0116 | 4096000000-N | 904 | SIGN ERECTION, TYPE D | 13 EA | | |
| 0117 | 4102000000-N | 904 | SIGN ERECTION, TYPE E | 125 EA | | |
| 0118 | 4108000000-N | 904 | SIGN ERECTION, TYPE F | 63 EA | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|--------------|-----------|--------|
| 0119 | 4110000000-N | 904 | SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A) | 20 EA | | |
| 0120 | 4110000000-N | 904 | SIGN ERECTION, TYPE *** (GROUND MOUNTED) (B) | 6 EA | | |
| 0121 | 4116100000-N | 904 | SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (F) | 33 EA | | |
| 0122 | 4152000000-N | 907 | DISPOSAL OF SIGN SYSTEM, STEEL BEAM | 6 EA | | |
| 0123 | 4155000000-N | 907 | DISPOSAL OF SIGN SYSTEM, U-CHANNEL | 24 EA | | |
| 0124 | 4236000000-N | 907 | DISPOSAL OF SIGN, A & B (GROUND MOUNTED) | 12 EA | | |
| 0125 | 4238000000-N | 907 | DISPOSAL OF SIGN, D, E OR F | 33 EA | | |
| 0126 | 4400000000-E | 1110 | WORK ZONE SIGNS (STATIONARY) | 144 SF | | |
| 0127 | 4405000000-E | 1110 | WORK ZONE SIGNS (PORTABLE) | 768 SF | | |
| 0128 | 4410000000-E | 1110 | WORK ZONE SIGNS (BARRICADE MOUNTED) | 368 SF | | |
| 0129 | 4430000000-N | 1130 | DRUMS | 93 EA | | |
| 0130 | 4435000000-N | 1135 | CONES | 339 EA | | |
| 0131 | 4445000000-E | 1145 | BARRICADES (TYPE III) | 72 LF | | |
| 0132 | 4455000000-N | 1150 | FLAGGER | 80 DAY | | |
| 0133 | 4516000000-N | 1180 | SKINNY DRUM | 131 EA | | |
| 0134 | 4685000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS) | 51,500 LF | | |
| 0135 | 4695000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS) | 8,200 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--|-----------|-----------|--------|
| 0136 | 4709000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING LINES (24", 90 MILS) | 560 LF | | |
| 0137 | 4725000000-E | 1205 | THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS) | 144 EA | | |
| 0138 | 4810000000-E | 1205 | PAINT PAVEMENT MARKING LINES (4") | 89,000 LF | | |
| 0139 | 4820000000-E | 1205 | PAINT PAVEMENT MARKING LINES (8") | 2,500 LF | | |
| 0140 | 4835000000-E | 1205 | PAINT PAVEMENT MARKING LINES (24") | 430 LF | | |
| 0141 | 4845000000-N | 1205 | PAINT PAVEMENT MARKING SYMBOL | 40 EA | | |
| 0142 | 4846000000-E | 1205 | POLYUREA PAVEMENT MARKING LINES (**", *** MILS) (4", 30 MILS) | 810 LF | | |
| 0143 | 4890000000-E | SP | GENERIC PAVEMENT MARKING ITEM YIELD LINE THERMOPLASTIC PAVEMENT MARKING (24", 90 MILS) | 70 LF | | |
| 0144 | 4895000000-N | SP | GENERIC PAVEMENT MARKING ITEM POLYCARBONATE H-SHAPED MARKERS | 650 EA | | |
| 0145 | 4900000000-N | 1251 | PERMANENT RAISED PAVEMENT MARKERS | 5 EA | | |
| 0146 | 5325600000-E | 1510 | 6" WATER LINE | 32 LF | | |
| 0147 | 5325800000-E | 1510 | 8" WATER LINE | 400 LF | | |
| 0148 | 5326200000-E | 1510 | 12" WATER LINE | 9,512 LF | | |
| 0149 | 5326600000-E | 1510 | 16" WATER LINE | 588 LF | | |
| 0150 | 5329000000-E | 1510 | DUCTILE IRON WATER PIPE FITTINGS | 14,800 LB | | |
| 0151 | 5540000000-E | 1515 | 6" VALVE | 15 EA | | |
| 0152 | 5558000000-E | 1515 | 12" VALVE | 13 EA | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|--------------------------------------|-------------|-----------|--------|
| 0153 | 5571600000-E | 1515 | 6" TAPPING SLEEVE & VALVE | 1 EA | | |
| 0154 | 5589200000-E | 1515 | 2" AIR RELEASE VALVE | 4 EA | | |
| 0155 | 5648000000-N | 1515 | RELOCATE WATER METER | 1 EA | | |
| 0156 | 5666000000-N | 1515 | FIRE HYDRANT | 16 EA | | |
| 0157 | 5673000000-E | 1515 | FIRE HYDRANT LEG | 237 LF | | |
| 0158 | 5686500000-E | 1515 | WATER SERVICE LINE | 92 LF | | |
| 0159 | 5709000000-E | 1520 | *** FORCE MAIN SEWER (3") | 590 LF | | |
| 0160 | 5769000000-E | 1520 | DUCTILE IRON SEWER PIPE FITTINGS | 800 LB | | |
| 0161 | 5798000000-E | 1530 | ABANDON *** UTILITY PIPE (3") | 613 LF | | |
| 0162 | 5801000000-E | 1530 | ABANDON 8" UTILITY PIPE | 248 LF | | |
| 0163 | 5804000000-E | 1530 | ABANDON 12" UTILITY PIPE | 118 LF | | |
| 0164 | 5835600000-E | 1540 | 12" ENCASEMENT PIPE | 127 LF | | |
| 0165 | 5835700000-E | 1540 | 16" ENCASEMENT PIPE | 105 LF | | |
| 0166 | 5835900000-E | 1540 | 20" ENCASEMENT PIPE | 1,280 LF | | |
| 0167 | 5836200000-E | 1540 | 30" ENCASEMENT PIPE | 165 LF | | |
| 0168 | 5872500000-E | 1550 | BORE AND JACK OF *** (20") | 108 LF | | |
| 0169 | 5872600000-E | 1550 | DIRECTIONAL DRILLING OF *** (16") | 588 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---------------------------------------|---------------|-----------|--------|
| 0170 | 5888000000-E | SP | GENERIC UTILITY ITEM 2" PVC CASING | 1,744 LF | | |
| 0171 | 5888000000-E | SP | GENERIC UTILITY ITEM 4" PVC CASING | 6,193 LF | | |
| 0172 | 5888000000-E | SP | GENERIC UTILITY ITEM 6" PVC CASING | 3,744 LF | | |
| 0173 | 6000000000-E | 1605 | TEMPORARY SILT FENCE | 50,650 LF | | |
| 0174 | 6006000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS A | 2,725 TON | | |
| 0175 | 6009000000-E | 1610 | STONE FOR EROSION CONTROL, CLASS B | 7,900 TON | | |
| 0176 | 6012000000-E | 1610 | SEDIMENT CONTROL STONE | 6,965 TON | | |
| 0177 | 6015000000-E | 1615 | TEMPORARY MULCHING | 57 ACR | | |
| 0178 | 6018000000-E | 1620 | SEED FOR TEMPORARY SEEDING | 2,500 LB | | |
| 0179 | 6021000000-E | 1620 | FERTILIZER FOR TEMPORARY SEEDING | 13 TON | | |
| 0180 | 6024000000-E | 1622 | TEMPORARY SLOPE DRAINS | 3,300 LF | | |
| 0181 | 6029000000-E | SP | SAFETY FENCE | 2,720 LF | | |
| 0182 | 6030000000-E | 1630 | SILT EXCAVATION | 38,800 CY | | |
| 0183 | 6036000000-E | 1631 | MATting FOR EROSION CONTROL | 115,000 SY | | |
| 0184 | 6037000000-E | 1629 | COIR FIBER MAT | 10,100 SY | | |
| 0185 | 6042000000-E | 1632 | 1/4" HARDWARE CLOTH | 12,400 LF | | |
| 0186 | 6043000000-E | 1644 | LOW PERMEABILITY GEOTEXTILE | 5,200 SY | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|-------------------------------|--------------|-----------|--------|
| 0187 | 6045000000-E | SP | *** TEMPORARY PIPE (15") | 170 LF | | |
| 0188 | 6045000000-E | SP | *** TEMPORARY PIPE (24") | 430 LF | | |
| 0189 | 6070000000-N | 1639 | SPECIAL STILLING BASINS | 16 EA | | |
| 0190 | 6071002000-E | 1642 | FLOCCULANT | 3,585 LB | | |
| 0191 | 6071012000-E | 1642 | COIR FIBER WATTLE | 6,570 LF | | |
| 0192 | 6071014000-E | 1642 | COIR FIBER WATTLE BARRIER | 930 LF | | |
| 0193 | 6071030000-E | 1640 | COIR FIBER BAFFLE | 11,310 LF | | |
| 0194 | 6071050000-E | 1644 | *** SKIMMER (1-1/2") | 16 EA | | |
| 0195 | 6071050000-E | 1644 | *** SKIMMER (2") | 11 EA | | |
| 0196 | 6071050000-E | 1644 | *** SKIMMER (2-1/2") | 1 EA | | |
| 0197 | 6084000000-E | 1660 | SEEDING & MULCHING | 51 ACR | | |
| 0198 | 6087000000-E | 1660 | MOWING | 48 ACR | | |
| 0199 | 6090000000-E | 1661 | SEED FOR REPAIR SEEDING | 600 LB | | |
| 0200 | 6093000000-E | 1661 | FERTILIZER FOR REPAIR SEEDING | 2.25 TON | | |
| 0201 | 6096000000-E | 1662 | SEED FOR SUPPLEMENTAL SEEDING | 1,150 LB | | |
| 0202 | 6108000000-E | 1665 | FERTILIZER TOPDRESSING | 34.25 TON | | |
| 0203 | 6111000000-E | SP | IMPERVIOUS DIKE | 60 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---|-------------|-----------|--------|
| 0204 | 6114500000-N | 1667 | SPECIALIZED HAND MOWING | 10 MHR | | |
| 0205 | 6117000000-N | 1675 | RESPONSE FOR EROSION CONTROL | 125 EA | | |
| 0206 | 6117500000-N | SP | CONCRETE WASHOUT STRUCTURE | 2 EA | | |
| 0207 | 6123000000-E | 1670 | REFORESTATION | 0.5 ACR | | |
| 0208 | 6132000000-N | SP | GENERIC EROSION CONTROL ITEM PREFABRICATED CONCRETE WASHOUT | 12 EA | | |
| 0209 | 7048500000-E | 1705 | PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN) | 16 EA | | |
| 0210 | 7060000000-E | 1705 | SIGNAL CABLE | 6,925 LF | | |
| 0211 | 7120000000-E | 1705 | VEHICLE SIGNAL HEAD (12", 3 SECTION) | 22 EA | | |
| 0212 | 7132000000-E | 1705 | VEHICLE SIGNAL HEAD (12", 4 SECTION) | 4 EA | | |
| 0213 | 7144000000-E | 1705 | VEHICLE SIGNAL HEAD (12", 5 SECTION) | 2 EA | | |
| 0214 | 7288000000-E | 1715 | PAVED TRENCHING (***** (2, 2")) | 295 LF | | |
| 0215 | 7300000000-E | 1715 | UNPAVED TRENCHING (***** (2, 2")) | 990 LF | | |
| 0216 | 7301000000-E | 1715 | DIRECTIONAL DRILL (***** (2, 2")) | 925 LF | | |
| 0217 | 7324000000-N | 1716 | JUNCTION BOX (STANDARD SIZE) | 15 EA | | |
| 0218 | 7348000000-N | 1716 | JUNCTION BOX (OVER-SIZED, HEAVY DUTY) | 8 EA | | |
| 0219 | 7444000000-E | 1725 | INDUCTIVE LOOP SAWCUT | 2,810 LF | | |
| 0220 | 7456100000-E | 1726 | LEAD-IN CABLE (14-2) | 7,370 LF | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|-------------------|--------------|-------|--|-------------|-----------|--------|
| 0221 | 7588000000-N | SP | METAL POLE WITH SINGLE MAST ARM | 8 EA | | |
| 0222 | 7613000000-N | SP | SOIL TEST | 8 EA | | |
| 0223 | 7614100000-E | SP | DRILLED PIER FOUNDATION | 44 CY | | |
| 0224 | 7631000000-N | SP | MAST ARM WITH METAL POLE DESIGN | 8 EA | | |
| 0225 | 7636000000-N | 1745 | SIGN FOR SIGNALS | 21 EA | | |
| 0226 | 7642200000-N | 1743 | TYPE II PEDESTAL WITH FOUNDATION | 11 EA | | |
| 0227 | 7684000000-N | 1750 | SIGNAL CABINET FOUNDATION | 2 EA | | |
| 0228 | 7696000000-N | 1751 | CONTROLLERS WITH CABINET (*****) (2070LX, BASE MTD) | 2 EA | | |
| 0229 | 7744000000-N | 1751 | DETECTOR CARD (TYPE 170) | 21 EA | | |
| 0230 | 7901000000-N | 1753 | CABINET BASE EXTENDER | 2 EA | | |
| 0231 | 7980000000-N | SP | GENERIC SIGNAL ITEM PROTECTIVE COATING FOR SINGLE MAST ARM POLE (AGATE GRAY, RAL 7038) | 8 EA | | |
| 0232 | 7980000000-N | SP | GENERIC SIGNAL ITEM PROTECTIVE COATING FOR TYPE II SIGNAL PEDESTAL (AGATE GRAY, RAL 7038) | 12 EA | | |
| WALL ITEMS | | | | | | |
| 0233 | 8802010000-E | SP | SOIL NAIL RETAINING WALLS | 3,440 SF | | |
| 0234 | 8802015100-N | SP | SOIL NAIL VERIFICATION TESTS | 4 EA | | |
| 0235 | 8802015110-N | SP | SOIL NAIL PROOF TESTS | 8 EA | | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|------------------------|--------------|-------|---|--------------|-----------|--------|
| 0236 | 8847000000-E | SP | GENERIC RETAINING WALL ITEM NON-STANDARD CIP GRAVITY RETAINING WALLS | 770 SF | | |
| 0265 | 8504000000-E | 460 | CONCRETE BARRIER RAIL WITH MOMENT SLAB | 298 LF | | |
| 0266 | 8847000000-E | SP | GENERIC RETAINING WALL ITEM SIMULATED STONE FORM LINER FINISH | 5,850 SF | | |
| STRUCTURE ITEMS | | | | | | |
| 0237 | 8096000000-E | 450 | PILE EXCAVATION IN SOIL | 291.2 LF | | |
| 0238 | 8097000000-E | 450 | PILE EXCAVATION NOT IN SOIL | 146 LF | | |
| 0239 | 8105540000-E | 411 | 3'-6" DIA DRILLED PIERS IN SOIL | 26.4 LF | | |
| 0240 | 8105640000-E | 411 | 3'-6" DIA DRILLED PIERS NOT IN SOIL | 140.8 LF | | |
| 0241 | 8111400000-E | 411 | PERMANENT STEEL CASING FOR 3'-6" DIA DRILLED PIER | 34 LF | | |
| 0242 | 8115000000-N | 411 | CSL TESTING | 2 EA | | |
| 0243 | 8121000000-N | 412 | UNCLASSIFIED STRUCTURE EXCAVATION AT STATION ***** (134+65.00 -L- LT) | Lump Sum | L.S. | |
| 0244 | 8121000000-N | 412 | UNCLASSIFIED STRUCTURE EXCAVATION AT STATION ***** (134+65.00 -L- RT) | Lump Sum | L.S. | |
| 0245 | 8147000000-E | 420 | REINFORCED CONCRETE DECK SLAB | 20,484 SF | | |
| 0246 | 8161000000-E | 420 | GROOVING BRIDGE FLOORS | 22,495 SF | | |
| 0247 | 8182000000-E | 420 | CLASS A CONCRETE (BRIDGE) | 327.5 CY | | |
| 0248 | 8210000000-N | 422 | BRIDGE APPROACH SLABS, STATION ***** (134+65.00 -L- LT) | Lump Sum | L.S. | |

County: CHATHAM

| Line # | Item Number | Sec # | Description | Quantity | Unit Cost | Amount |
|--------|--------------|-------|---|----------------|-----------|--------|
| 0249 | 8210000000-N | 422 | BRIDGE APPROACH SLABS, STATION ***** (134+65.00 -L- RT) | Lump Sum | L.S. | |
| 0250 | 8210000000-N | 422 | BRIDGE APPROACH SLABS, STATION ***** (76+49.00 -L-) | Lump Sum | L.S. | |
| 0251 | 8217000000-E | 425 | REINFORCING STEEL (BRIDGE) | 54,732 LB | | |
| 0252 | 8238000000-E | 425 | SPIRAL COLUMN REINFORCING STEEL (BRIDGE) | 4,895 LB | | |
| 0253 | 8262000000-E | 430 | 45" PRESTRESSED CONCRETE GIRDERS | 1,111 LF | | |
| 0254 | 8278000000-E | 430 | FIB *** PRESTRESSED CONCRETE GIRDERS (54") | 1,179.58 LF | | |
| 0255 | 8328200000-E | 450 | PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 14 X 73) | 70 EA | | |
| 0256 | 8384000000-E | 450 | HP 14 X 73 STEEL PILES | 1,385 LF | | |
| 0257 | 8391000000-N | 450 | STEEL PILE POINTS | 70 EA | | |
| 0258 | 8394000000-N | 450 | DYNAMIC PILE TESTING | 1 EA | | |
| 0259 | 8475000000-E | 460 | TWO BAR METAL RAIL | 488.7 LF | | |
| 0260 | 8503000000-E | 460 | CONCRETE BARRIER RAIL | 959.06 LF | | |
| 0261 | 8517000000-E | 460 | 1'-*** X ***** CONCRETE PARAPET (1'-2" X 2'-6") | 519.66 LF | | |
| 0262 | 8608000000-E | 876 | RIP RAP CLASS II (2'-0" THICK) | 1,480 TON | | |
| 0263 | 8622000000-E | 876 | GEOTEXTILE FOR DRAINAGE | 1,647 SY | | |
| 0264 | 8657000000-N | 430 | ELASTOMERIC BEARINGS | Lump Sum | L.S. | |

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT

CROSS-SECTION SUMMARY

PROJ. REFERENCE NO.
R-5963A

SHEET NO.
X-1A

Quantities are approximate only. The Resident Engineer will recross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid.

| Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut |
|----------|------------|-----------|-----------|----------|------------|-----------|-----------|----------|------------|-----------|-----------|-----------|------------|-----------|-----------|
| L | (cu. yd.) | (cu. yd.) | (cu. yd.) | L | (cu. yd.) | (cu. yd.) | (cu. yd.) | L | (cu. yd.) | (cu. yd.) | (cu. yd.) | L | (cu. yd.) | (cu. yd.) | (cu. yd.) |
| 10+19.74 | 0 | 0 | | 37+50.00 | 3254 | 0 | | 65+00.00 | 18 | 1592 | | 91+50.00 | 13 | 2124 | |
| 10+50.00 | 746 | 60 | | 38+00.00 | 2104 | 44 | 60 | 65+50.00 | 19 | 2092 | | 92+00.00 | 9 | 1696 | |
| 10+65.00 | 1028 | 0 | | 38+50.00 | 1001 | 335 | 110 | 66+00.00 | 51 | 2608 | | 92+50.00 | 15 | 1256 | |
| 11+00.00 | 3879 | 0 | | 39+00.00 | 273 | 790 | 90 | 66+50.00 | 74 | 2778 | | 93+00.00 | 9 | 869 | |
| 11+50.00 | 7558 | 0 | | 39+50.00 | 216 | 816 | 125 | 67+00.00 | 47 | 2432 | | 93+50.00 | 8 | 487 | |
| 12+00.00 | 8425 | 0 | | 40+00.00 | 560 | 406 | 145 | 67+50.00 | 20 | 2085 | | 94+00.00 | 12 | 225 | |
| 12+50.00 | 7954 | 0 | | 40+50.00 | 996 | 127 | 60 | 68+00.00 | 58 | 1864 | | 94+50.00 | 84 | 88 | |
| 13+00.00 | 6694 | 0 | | 41+00.00 | 1364 | 57 | 10 | 68+50.00 | 93 | 1642 | | 95+00.00 | 208 | 19 | |
| 13+01.00 | 118 | 0 | | 41+50.00 | 1558 | 21 | | 69+00.00 | 164 | 1031 | | 95+50.00 | 256 | 13 | |
| 13+50.00 | 5613 | 0 | | 42+00.00 | 1766 | 3 | | 69+50.00 | 638 | 276 | | 96+00.00 | 149 | 59 | |
| 14+00.00 | 5193 | 0 | | 42+50.00 | 1961 | 0 | | 70+00.00 | 1479 | 28 | | 96+50.00 | 25 | 401 | |
| 14+50.00 | 4082 | 0 | | 43+00.00 | 1863 | 0 | | 70+50.00 | 2213 | 0 | | 97+00.00 | 4 | 1066 | |
| 15+00.00 | 2264 | 0 | | 43+50.00 | 1808 | 0 | | 71+00.00 | 2621 | 0 | | 97+50.00 | 24 | 1500 | |
| 15+50.00 | 723 | 116 | | | | | | 71+50.00 | 2899 | 0 | | 98+00.00 | 57 | 1193 | |
| 16+00.00 | 226 | 164 | | | | | | 72+00.00 | 3312 | 4 | | 98+50.00 | 42 | 561 | |
| 16+50.00 | 180 | 73 | | 44+00.00 | 1452 | 0 | 75 | 72+50.00 | 4072 | 4 | | 99+00.00 | 8 | 247 | |
| 17+00.00 | 97 | 120 | | 44+50.00 | 957 | 0 | | 73+00.00 | 4585 | 0 | | 99+50.00 | 32 | 235 | |
| 17+50.00 | 10 | 501 | | 45+00.00 | 824 | 0 | | 73+50.00 | 3586 | 0 | | 100+00.00 | 29 | 321 | |
| 18+00.00 | 23 | 1181 | | 45+50.00 | 839 | 0 | | 74+00.00 | 2014 | 0 | | 100+50.00 | 21 | 299 | |
| 18+50.00 | 34 | 1708 | | 46+00.00 | 1048 | 0 | | 74+50.00 | 805 | 6 | | 101+00.00 | 92 | 138 | |
| 19+00.00 | 27 | 1792 | | 46+50.00 | 1256 | 0 | | 75+00.00 | 82 | 692 | | 101+50.00 | 167 | 31 | 440 |
| 19+50.00 | 11 | 1437 | | 47+00.00 | 1367 | 0 | | 75+50.00 | 0 | 2041 | | 102+00.00 | 161 | 47 | 283 |
| 20+00.00 | 3 | 876 | | 47+50.00 | 1311 | 0 | | 75+78.00 | 0 | 1184 | | 102+50.00 | 135 | 103 | 243 |
| 20+50.00 | 10 | 537 | | 48+00.00 | 1079 | 0 | | | | | | 103+00.00 | 129 | 235 | 259 |
| 21+00.00 | 16 | 541 | | 48+50.00 | 799 | 0 | 254 | | | | | 103+50.00 | 113 | 319 | |
| 21+50.00 | 26 | 458 | | 49+00.00 | 516 | 6 | 279 | 77+20.00 | 0 | 0 | | 104+00.00 | 117 | 313 | |
| 22+00.00 | 74 | 189 | | 49+50.00 | 194 | 165 | 167 | 77+50.00 | 0 | 857 | | 104+50.00 | 134 | 376 | |
| 22+50.00 | 204 | 31 | | 50+00.00 | 17 | 715 | | 78+00.00 | 0 | 1647 | | 105+00.00 | 191 | 426 | |
| 23+00.00 | 344 | 0 | | 50+50.00 | 37 | 1434 | | 78+50.00 | 0 | 1152 | | 105+50.00 | 320 | 340 | |
| 23+50.00 | 325 | 5 | | 51+00.00 | 96 | 2075 | | 78+91.82 | 0 | 485 | | 106+00.00 | 672 | 153 | |
| 24+00.00 | 193 | 45 | | 51+50.00 | 91 | 2665 | | | | | | 106+50.00 | 991 | 25 | |
| 24+50.00 | 106 | 91 | | 52+00.00 | 26 | 2934 | | | | | | 107+00.00 | 1328 | 0 | |
| 25+00.00 | 47 | 190 | | 52+50.00 | 15 | 2779 | | 80+41.91 | 0 | 0 | | 107+50.00 | 1755 | 0 | |
| 25+50.00 | 7 | 340 | | 53+00.00 | 19 | 2475 | | 80+50.00 | 563 | 0 | | 108+00.00 | 1795 | 0 | |
| 26+00.00 | 9 | 386 | | 53+50.00 | 13 | 2234 | | 81+00.00 | 4044 | 0 | | 108+50.00 | 1606 | 0 | |
| 26+50.00 | 18 | 268 | | 54+00.00 | 9 | 1855 | | 81+50.00 | 5016 | 0 | | 109+00.00 | 1481 | 0 | |
| 27+00.00 | 202 | 94 | | 54+50.00 | 90 | 1266 | | 82+00.00 | 5885 | 0 | | 109+50.00 | 1235 | 0 | |
| 27+50.00 | 557 | 12 | | 55+00.00 | 291 | 756 | | 82+50.00 | 6864 | 0 | | 110+00.00 | 837 | 0 | |
| 28+00.00 | 778 | 5 | | 55+50.00 | 530 | 382 | | 83+00.00 | 7907 | 0 | | 110+50.00 | 494 | 27 | |
| 28+50.00 | 940 | 3 | | 56+00.00 | 805 | 163 | | 83+50.00 | 8903 | 0 | | 111+00.00 | 203 | 212 | |
| 29+00.00 | 1119 | 0 | | 56+50.00 | 1283 | 52 | | 84+00.00 | 10687 | 0 | | | | | |
| 29+50.00 | 1069 | 0 | | 57+00.00 | 1821 | 0 | | 84+50.00 | 11215 | 0 | | | | | |
| 30+00.00 | 894 | 0 | 204 | 57+50.00 | 2114 | 0 | | 85+00.00 | 9871 | 0 | | | | | |
| 30+50.00 | 1130 | 0 | 134 | 58+00.00 | 2231 | 0 | | 85+50.00 | 8948 | 0 | | | | | |
| 31+00.00 | 1757 | 0 | 137 | 58+50.00 | 2468 | 0 | | 86+00.00 | 8163 | 0 | | | | | |
| 31+50.00 | 2645 | 0 | | 59+00.00 | 2992 | 0 | | 86+50.00 | 7274 | 0 | | | | | |
| 32+00.00 | 3789 | 0 | | 59+50.00 | 3477 | 0 | | 87+00.00 | 6252 | 0 | | | | | |
| 32+50.00 | 4781 | 0 | | 60+00.00 | 3616 | 0 | | 87+50.00 | 4887 | 0 | | | | | |
| 33+00.00 | 5485 | 0 | | 60+50.00 | 3354 | 0 | | 88+00.00 | 3369 | 0 | | | | | |
| 33+50.00 | 6202 | 0 | | 61+00.00 | 2805 | 0 | | 88+50.00 | 2037 | 0 | | | | | |
| 34+00.00 | 6925 | 0 | | 61+50.00 | 2210 | 44 | | 89+00.00 | 720 | 245 | | | | | |
| 34+50.00 | 7430 | 0 | | 62+00.00 | 2153 | 172 | | 89+50.00 | 10 | 1400 | | | | | |
| 35+00.00 | 7774 | 0 | | 62+50.00 | 1675 | 316 | | 90+00.00 | 13 | 2613 | | | | | |
| 35+50.00 | 7991 | 0 | | 63+00.00 | 799 | 624 | | 90+50.00 | 13 | 2774 | | | | | |
| 36+00.00 | 7718 | 0 | | 63+50.00 | 492 | 1060 | | 91+00.00 | 22 | 2465 | | | | | |
| 36+50.00 | 6563 | 0 | | 64+00.00 | 256 | 1350 | | | | | | | | | |
| 37+00.00 | 4807 | 0 | | 64+50.00 | 92 | 1407 | | | | | | | | | |

| STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS | | | | | | | | | | | | PROJ. REFERENCE NO. | | SHEET NO. | |
|--|------------|-----------|-----------|----------|------------|-----------|-----------|----------|------------|-----------|-----------|---|------------|-----------|-----------|
| | | | | | | | | | | | | R-5963A | | X-1C | |
| | | | | | | | | | | | | Quantities are approximate only. The Resident Engineer will recross-section the work accurately when the project is staked out. These cross-section notes will be used in computing the final quantities for which the contractor will be paid. | | | |
| NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT | | | | | | | | | | | | | | | |
| CROSS-SECTION SUMMARY | | | | | | | | | | | | | | | |
| Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut | Station | Uncl. Exc. | Embt | UnderCut |
| Y1 | (cu. yd.) | (cu. yd.) | (cu. yd.) | Y7 | (cu. yd.) | (cu. yd.) | (cu. yd.) | Y10 | (cu. yd.) | (cu. yd.) | (cu. yd.) | Y14 | (cu. yd.) | (cu. yd.) | (cu. yd.) |
| 12+39.00 | 0 | 0 | | 13+25.00 | 0 | 0 | | 9+83.81 | 0 | 0 | | 11+48.00 | 0 | 0 | |
| 12+50.00 | 2 | 1 | | 13+50.00 | 1 | 0 | | 10+00.00 | 0 | 215 | | 11+50.00 | 0 | 0 | |
| 13+00.00 | 9 | 26 | | 13+80.00 | 3 | 1 | | 10+20.00 | 0 | 906 | | 12+00.00 | 15 | 3 | |
| 13+06.00 | 1 | 4 | | 14+00.00 | 3 | 1 | | 10+50.00 | 0 | 1738 | | 12+50.00 | 13 | 8 | |
| 13+50.00 | 11 | 17 | | 14+25.00 | 5 | 1 | | 11+00.00 | 0 | 1959 | | 13+00.00 | 12 | 10 | |
| 14+00.00 | 18 | 33 | | 14+50.00 | 4 | 18 | | 11+50.00 | 52 | 698 | | 13+50.00 | 28 | 6 | |
| 14+50.00 | 26 | 37 | | 14+65.00 | 3 | 21 | | 11+61.00 | 50 | 8 | | 14+00.00 | 26 | 9 | |
| 15+00.00 | 32 | 40 | | 15+00.00 | 8 | 43 | | | | | | 14+50.00 | 6 | 23 | |
| 15+50.00 | 27 | 54 | | 15+50.00 | 97 | 96 | | | | | | 15+00.00 | 5 | 38 | |
| 16+00.00 | 20 | 50 | | 15+71.69 | 156 | 66 | | 12+39.00 | 0 | 0 | | 15+50.00 | 23 | 26 | |
| 16+50.00 | 13 | 41 | | | | | | 12+50.00 | 575 | 0 | | 15+75.00 | 18 | 13 | |
| 17+00.00 | 13 | 43 | | | | | | 13+00.00 | 3009 | 0 | | 16+00.00 | 10 | 25 | |
| 17+50.00 | 10 | 29 | | 17+21.76 | 0 | 0 | | 13+50.00 | 3469 | 0 | | 16+50.00 | 12 | 53 | |
| 18+00.00 | 20 | 22 | | 17+50.00 | 293 | 12 | | 13+90.00 | 2856 | 0 | | 17+00.00 | 17 | 42 | |
| 18+50.00 | 102 | 34 | | 18+00.00 | 183 | 16 | | 14+00.00 | 543 | 0 | | 17+26.00 | 13 | 13 | |
| 19+00.00 | 435 | 40 | | 18+50.00 | 13 | 32 | | 14+17.58 | 350 | 0 | | 17+50.00 | 12 | 14 | |
| 19+50.00 | 352 | 34 | | 19+00.00 | 10 | 24 | | | | | | 18+00.00 | 45 | 60 | |
| 20+00.00 | 469 | 37 | | 19+50.00 | 9 | 0 | | | | | | 18+50.00 | 64 | 75 | |
| 20+50.00 | 469 | 54 | | 20+00.00 | 9 | 0 | | | | | | 19+00.00 | 64 | 103 | |
| 21+00.00 | 3 | 53 | | 20+30.00 | 3 | 0 | | | | | | 19+35.00 | 51 | 70 | |
| 21+50.00 | 3 | 38 | | | | | | | | | | 19+50.00 | 21 | 42 | |
| 22+00.00 | 3 | 28 | | | | | | | | | | 20+00.00 | 54 | 225 | |
| 22+50.00 | 17 | 25 | | | | | | | | | | 20+50.00 | 45 | 185 | |
| 23+00.00 | 37 | 31 | | | | | | | | | | 20+60.00 | 11 | 19 | |
| 23+50.00 | 31 | 31 | | | | | | | | | | 20+90.00 | 43 | 93 | |
| 24+00.00 | 32 | 22 | | | | | | | | | | 21+00.00 | 10 | 52 | |
| 24+50.00 | 73 | 19 | | | | | | | | | | 21+50.00 | 10 | 132 | |
| 25+00.00 | 110 | 19 | | | | | | | | | | 22+00.00 | 3 | 0 | |
| 25+50.00 | 112 | 19 | | | | | | | | | | 22+50.00 | 46 | 22 | |
| 26+00.00 | 175 | 21 | | | | | | | | | | 22+80.00 | 41 | 26 | |
| 26+50.00 | 124 | 17 | | | | | | | | | | 23+00.00 | 18 | 21 | |
| 27+00.00 | 4 | 10 | | | | | | | | | | 23+16.00 | 15 | 16 | |
| 27+50.00 | 6 | 7 | | | | | | | | | | 23+50.00 | 56 | 29 | |
| 28+00.00 | 7 | 4 | | | | | | | | | | 23+83.00 | 45 | 32 | |
| 28+50.00 | 9 | 4 | | | | | | | | | | 24+00.00 | 7 | 19 | |
| 29+00.00 | 10 | 5 | | | | | | | | | | 24+50.00 | 31 | 94 | |
| 29+10.00 | 2 | 1 | | | | | | | | | | 24+92.00 | 45 | 140 | |
| 29+50.00 | 9 | 5 | | | | | | | | | | 25+00.00 | 7 | 33 | |
| 29+63.00 | 3 | 1 | | | | | | | | | | 25+50.00 | 10 | 167 | |
| | | | | | | | | | | | | 26+00.00 | 8 | 108 | |
| | | | | | | | | | | | | 26+27.00 | 11 | 43 | |
| | | | | | | | | | | | | 26+50.00 | 8 | 33 | |
| | | | | | | | | | | | | 26+90.00 | 61 | 43 | |
| | | | | | | | | | | | | 27+00.00 | 27 | 7 | |
| | | | | | | | | | | | | 27+50.00 | 131 | 43 | |
| | | | | | | | | | | | | 27+76.00 | 72 | 22 | |
| | | | | | | | | | | | | 28+00.00 | 58 | 20 | |
| | | | | | | | | | | | | 28+50.00 | 83 | 34 | |
| | | | | | | | | | | | | 28+90.00 | 59 | 23 | |
| | | | | | | | | | | | | 29+00.00 | 10 | 6 | |
| | | | | | | | | | | | | 29+50.00 | 22 | 24 | |
| | | | | | | | | | | | | 30+00.00 | 29 | 23 | |
| | | | | | | | | | | | | 30+50.00 | 20 | 17 | |
| | | | | | | | | | | | | 30+60.00 | 2 | 0 | |
| | | | | | | | | | | | | 31+00.00 | 9 | 0 | |
| | | | | | | | | | | | | 31+05.00 | 0 | 0 | |

8/23/99

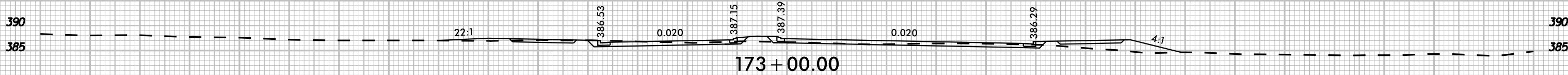
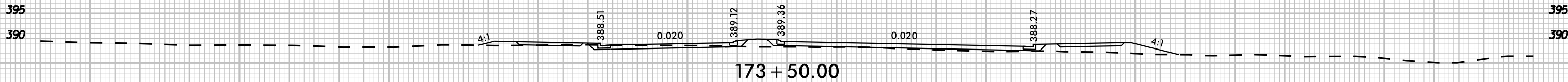
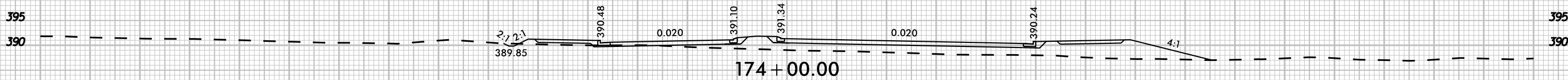
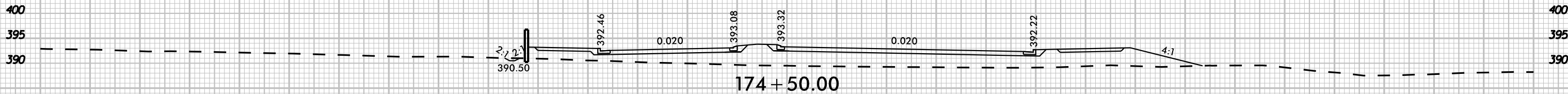
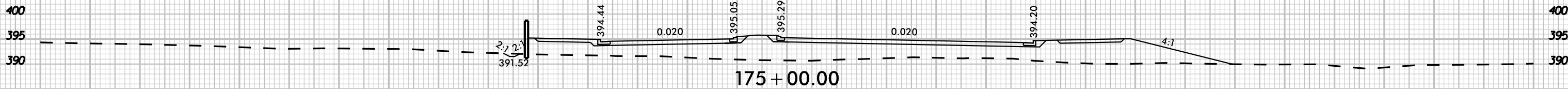


UNDERCUT



PROJ. REFERENCE NO.
R-5963A

SHEET NO.
X-85



-L- CHATHAM PARK WAY

K:\24 - Roadway\01036734 - R-5963A\B\Roadway\SC\B-5963A8B.dwg, xpl, L.dwg

5/8/2025

8/23/99

K:\24 - Roadway\01036734 - R-596348\Roadway\SCOR-596348B.cdw xpl L.dwg

5/8/2025

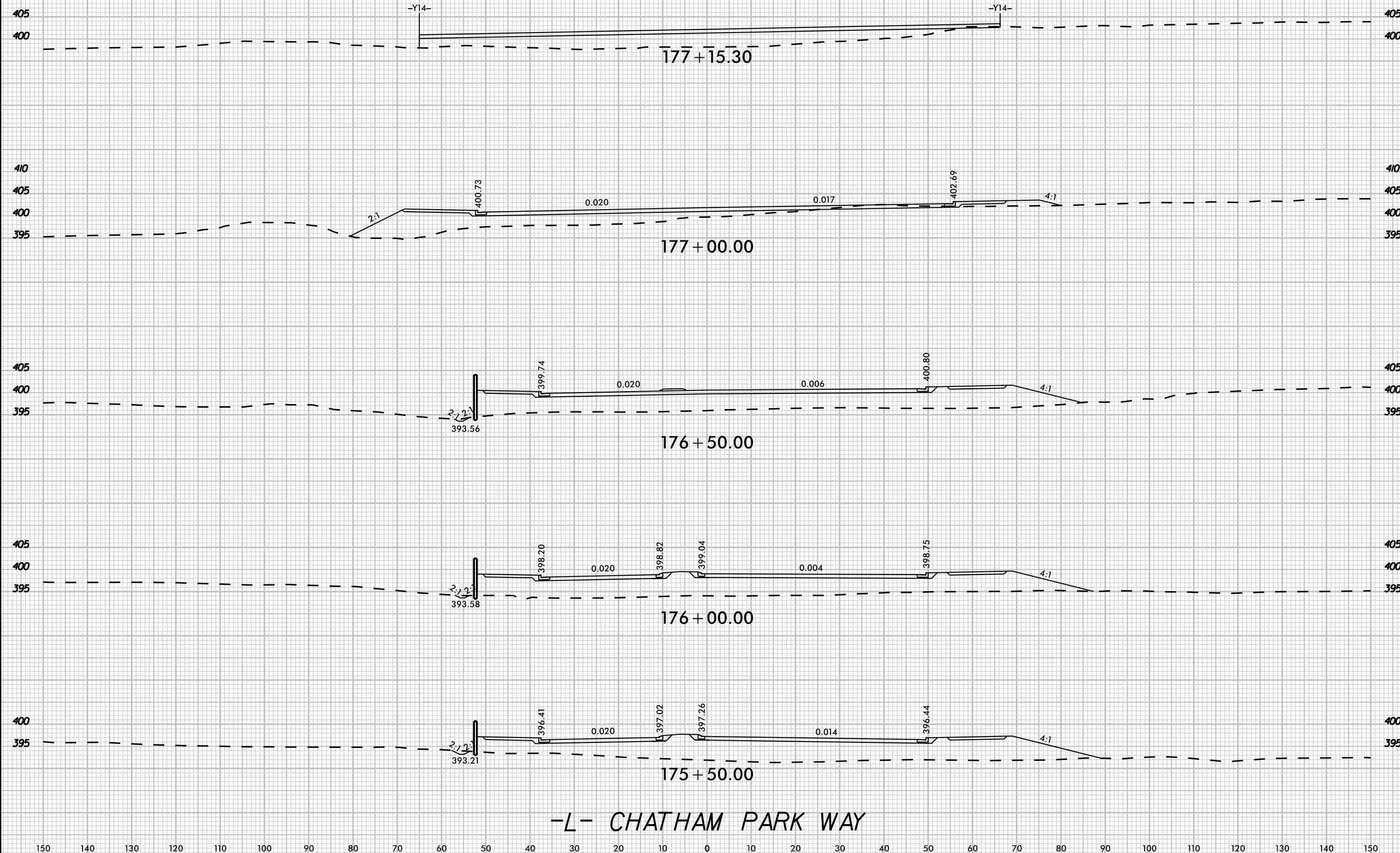


UNDERCUT

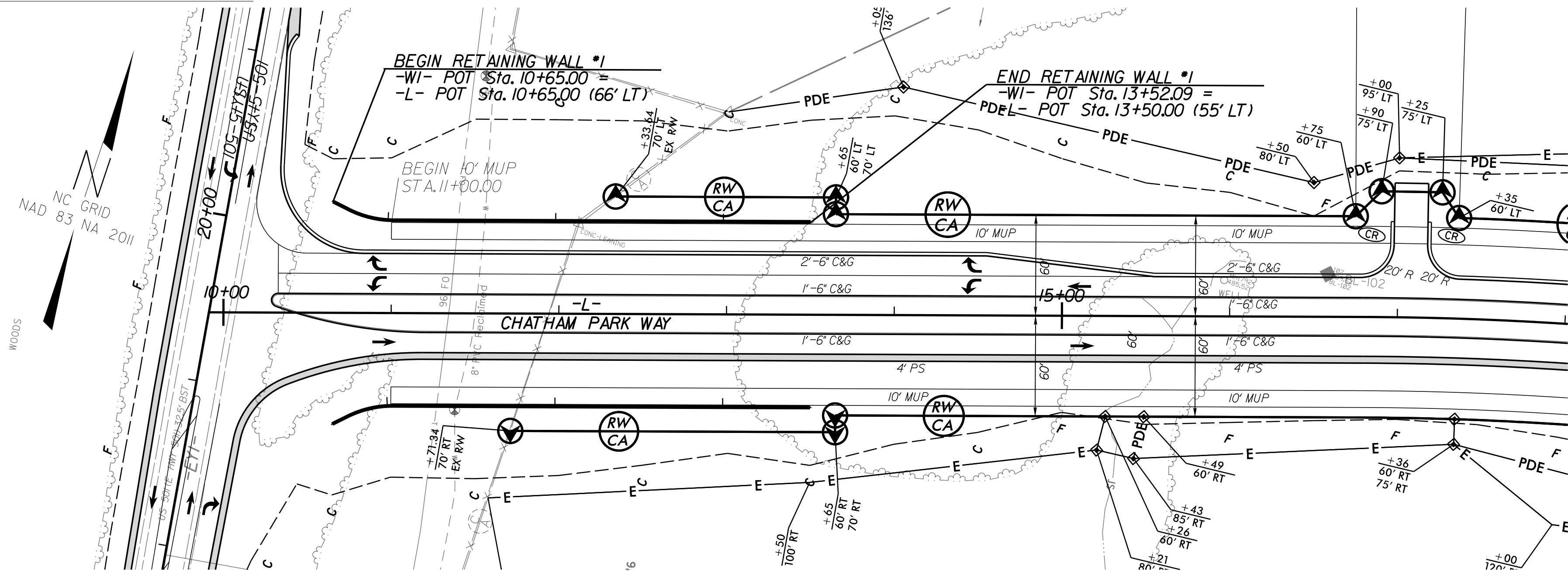


PROJ. REFERENCE NO.
R-5963A

SHEET NO.
X-86

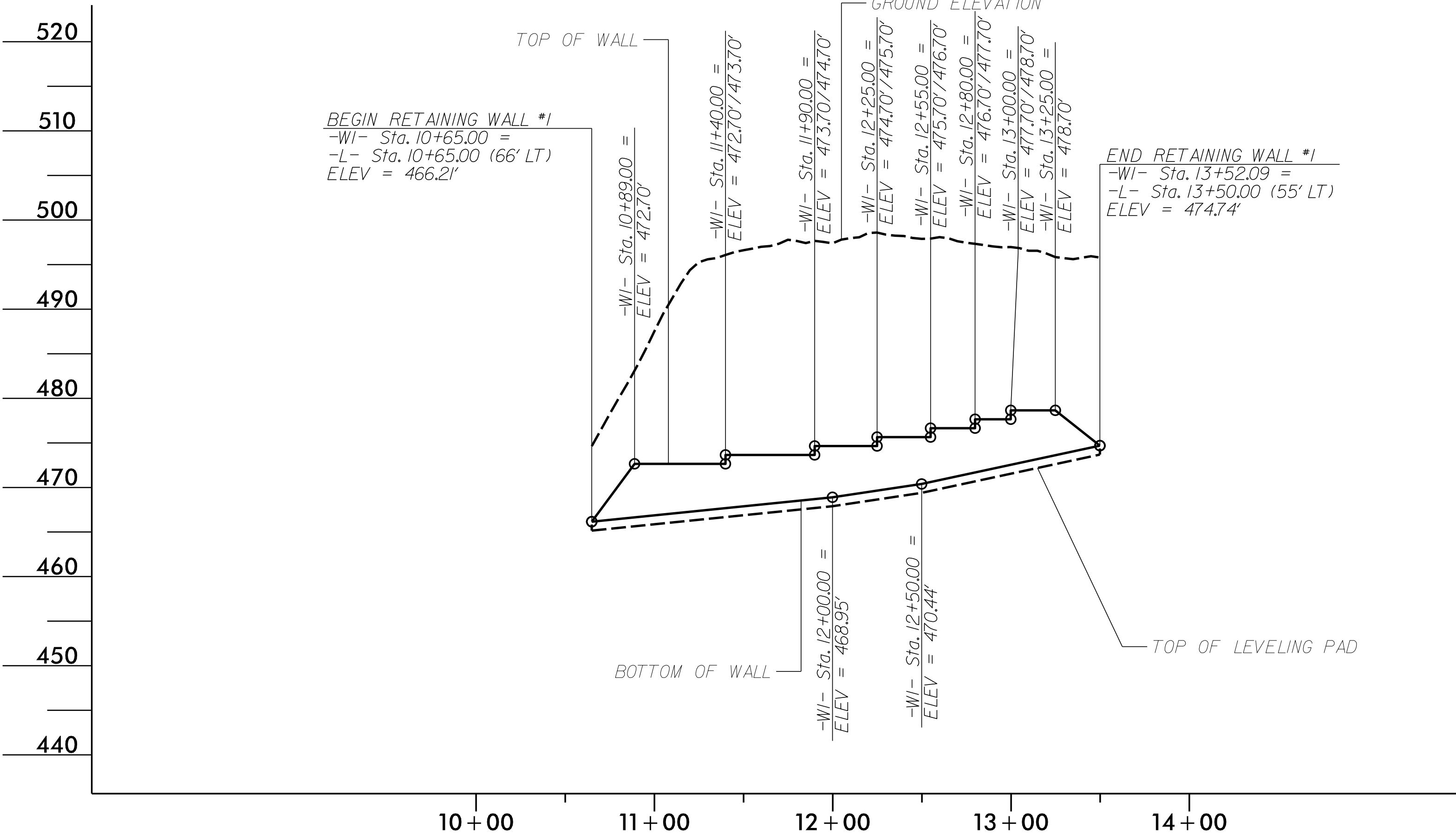


RETAINING WALL #1:



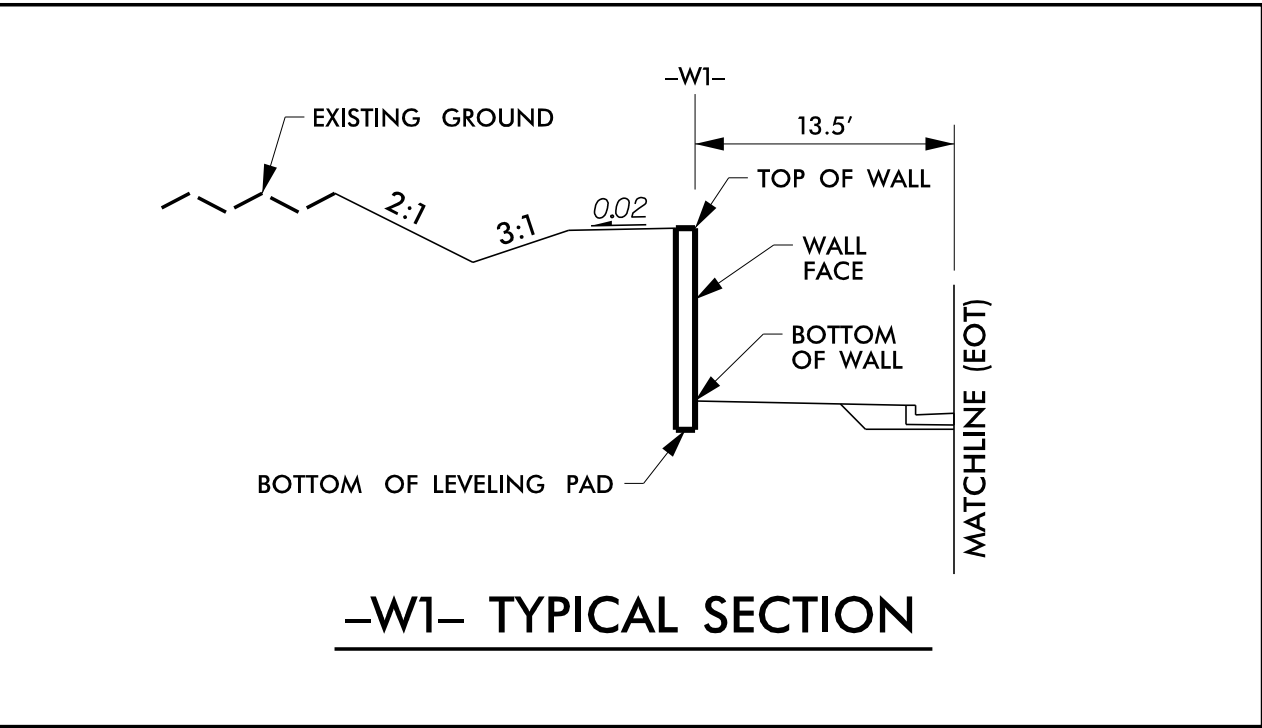
RETAINING WALL #1 – PLAN

NOT TO SCALE



RETAINING WALL #1 – ENVELOPE

NOT TO SCALE
(LOOKING AT FACE OF WALL)



-W1- TYPICAL SECTION

| ESTIMATED SOIL NAIL WALL QUANTITIES | | | |
|-------------------------------------|---|------------------------------|-----------------------|
| RETAINING WALL NO. | SOIL NAIL RETAINING WALLS (SQUARE FEET) | SOIL NAIL VERIFICATION TESTS | SOIL NAIL PROOF TESTS |
| 1 | 1,720 | 2 | 4 |
| SIMLUATED STONE FORM LINER FINISH | | | 1,720 SF |

PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #1: -W1- STA. 10+65.00 TO 13+52.09

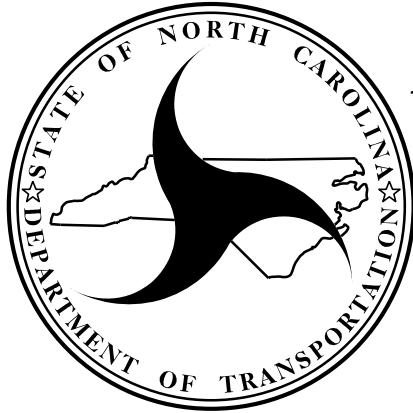
SHEET 1 OF 3

PREPARED BY: K. DE MONTBRUN
REVIEWED BY: R. KRAL

DATE: 05/12/25
DATE: 05/12/25

RETAINING WALL NO. 1 ENVELOPE AND WALL LAYOUT PROVIDED BY
NCDOT 1/31/25.

Prepared in the Office of:
CAROLINAS GEOTECHNICAL GROUP
1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

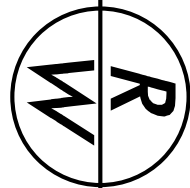


NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

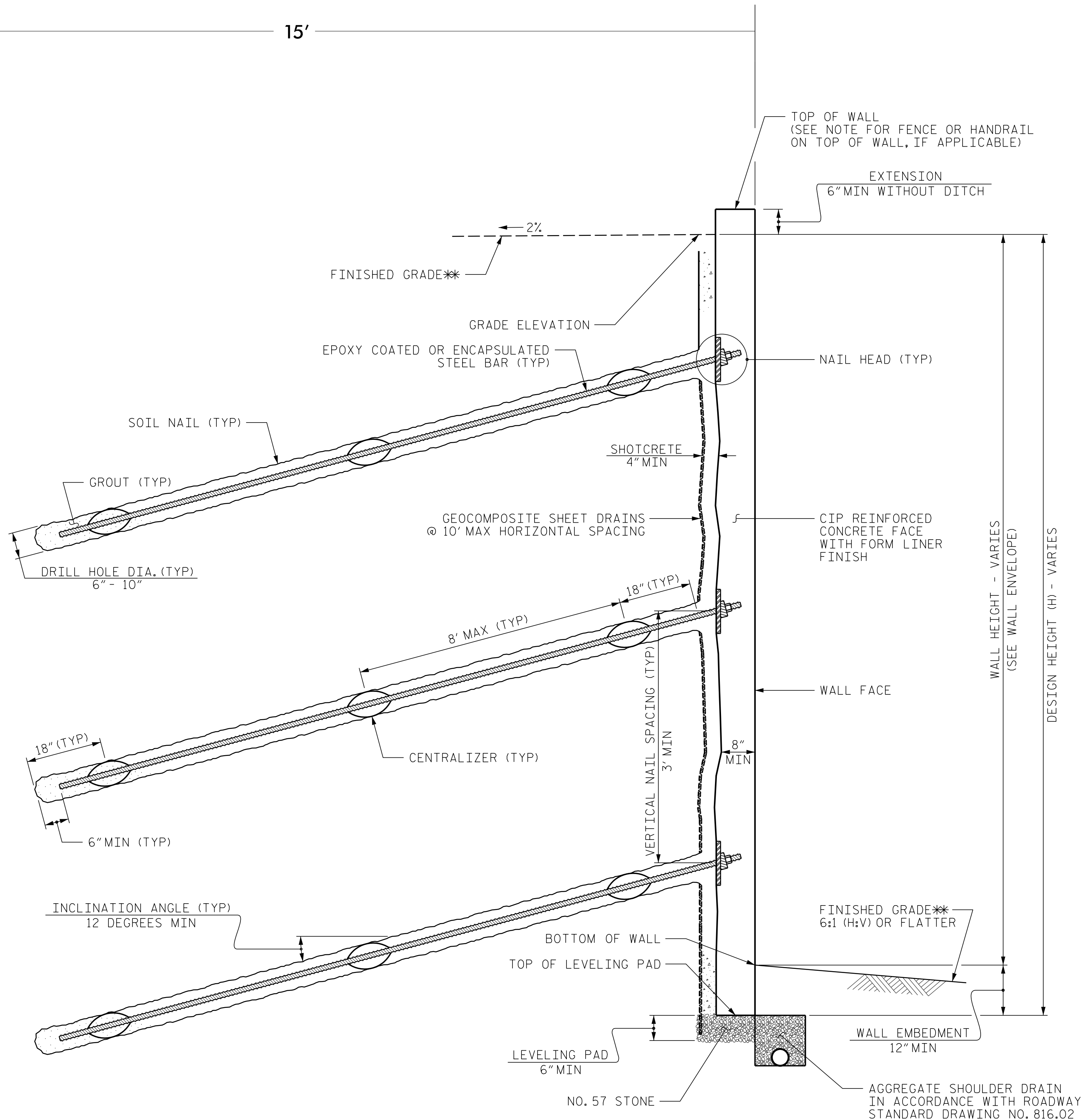
**GEOTECHNICAL
ENGINEERING UNIT**

RETAINING WALL #1
SOIL NAIL RETAINING WALL

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



RIGHT OF WAY



SOIL NAIL WALL - TYPICAL SECTION

*SEE CONCRETE DITCH BEHIND WALL DETAILS.
**SEE PLANS FOR FINISHED GRADE.

GEOTECHNICAL
ENGINEER

Signed by:
Robert E. Kral
05/12/2025
SIGNATURE DATE

ENGINEER

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT NO.: R-5963A
CHATHAM COUNTY
RETAINING WALL #1: -W1- STA. 10+65.00 TO 13+52.09
SHEET 2 OF 3

| | |
|-----------------------------|----------------|
| PREPARED BY: K. DE MONTBRUN | DATE: 05/12/25 |
| REVIEWED BY: R. KRAL | DATE: 05/12/25 |

Prepared in the Office of:


CAROLINAS
GEOTECHNICAL
GROUP

1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL
ENGINEERING UNIT

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

| | |
|---|--|
| <div>GEOTECHNICAL ENGINEER</div> <div></div> <div><div>Signed by: <i>Robert E. Kral</i> AAFB8FF73C5E4B1</div><div>05/12/2025</div></div> <div>SIGNATUREDATE</div> | <div>ENGINEER</div> <div></div> <div></div> <div>SIGNATUREDATE</div> |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED | |

NOTES:

FOR SOIL NAIL RETAINING WALLS,SEE SOIL NAIL RETAINING WALLS PROVISION.

A FORM LINER ARCHITECTURAL FINISH IS REQUIRED FOR THE CIP REINFORCED CONCRETE FACE FOR RETAINING WALL #1.THE CONTRACTOR SHALL PROVIDE THE REQUESTED FINISH BEFORE BEGINNING CIP REINFORCED CONCRETE FACE CONSTRUCTION.THE APPEARANCE (STONE SIZE AND SHAPE,STONE COLOR, AND STONE TEXTURE, PATTERN,AND RELIEF) SHOULD MATCH NATURAL STONE AND ROCK.FOR FORM LINER ARCHITECHTURAL FINISH,SEE THE SIMULATED STONE FORM LINER FINISH SPECIAL PROVISION.

BEFORE BEGINNING SOIL NAIL WALL DESIGN FOR RETAINING WALL #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 #1 FOR THE FOLLOWING:

- 1) DESIGN HEIGHT (H)= WALL HEIGHT + WALL EMBEDMENT
2) DESIGN LIFE = 75 YEARS
3) MINIMUM WALL EMBEDMENT ELEVATION = VARIES (MIN.1 FT BELOW PROPOSED FINISHED GRADE ELEVATION)
4) IN-SITU ASSUMED PARAMETERS:

-W1- STATION 10+10+65 TO 10+87
ABOVE EL.471 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
EL. 468 - 471 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 34 DEGREES
COHESION, c = 0 PSF
BELOW EL.468 FT.
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF
-W1- STATION 10+87 TO 11+21
ABOVE EL.468 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
BELOW EL.468 FT.
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF
-W1- STATION 11+21 TO 11+50
ABOVE EL.492
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
EL. 483 - 492 FT.
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF
EL. 467 - 483 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
BELOW EL.467
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF

-W1- STATION 11+50 TO 12+00
ABOVE EL.469 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
BELOW EL.469 FT.
UNIT WEIGHT, γ = 170 PCF
FRICTION ANGLE, ϕ = 34 DEGREES
COHESION, c = 1,000 PSF
-W1- STATION 12+00 TO 12+50
ABOVE EL.464 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
BELOW EL.464 FT.
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF
-W1- STATION 12+50 TO 13+52
ABOVE EL.473 FT.
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 26 DEGREES
COHESION, c = 0 PSF
BELOW EL.473 FT.
UNIT WEIGHT, γ = 135 PCF
FRICTION ANGLE, ϕ = 32 DEGREES
COHESION, c = 500 PSF

WHERE ROCK IS ENCOUNTERED IN THE WALL ENVELOPE,DESIGNERS SHOULD REFER TO THE FHWA PRESUMPTIVE STRENGTH PARAMETERS OR OTHER REPRESENTATIVE AND REPEATABLE VALUES AND PROVIDE SOURCE REFERENCES IN THEIR DESIGN SUBMITTAL.

WHEN ANALYZING FOR INFINITE SLOPE CONDITIONS,DESIGNERS SHOULD ANALYZE UP TO TWO (2) TIMES THE WALL HEIGHT BEHIND THE WALL FACE FOR FAILURE PLANE SEARCHES.THIS INFORMATION SHOULD BE INCLUDED WITH THE DESIGN SUBMITTAL.

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 #1.

THE PROPOSED RIGHT OF WAY (ROW) BOUNDARY IS 16.1 FT FROM THE FACE OF RETAINING WALL #1 AT ITS NEAREST POINT.SOIL NAILS MAY NOT BE INSTALLED BEYOND THE ROW BOUNDARY.SEE "SOIL NAIL WALL - TYPICAL SECTION"DETAIL.

WHERE ROCK IS PRESENT IN THE WALL ENVELOPE,CONTROLLED BLASTING IS RECOMMENDED,BUT NOT REQUIRED,TO MAINTAIN THE NEAT EXCAVATION LINE.VOIDS,RESULTING FROM BLASTING OR EXCAVATING,THAT EXTEND BEYOND THE NEAT LINES ARE TO BE FILLED WITH A COMBINATION OF SHORT SOIL NAILS,WELDED WIRE,AND SHOTCRETE,AT THE DISCRETION OF THE ENGINEER.THE COSTS ASSOCIATED WITH THIS WORK WILL BE CONSIDERED INCIDENTAL TO WALL CONSTRUCTION AND NO ADDITIONAL COMPENSATION WILL BE MADE.FOR BLASTING,SEE THE BLASTING PROVISION.

WHERE CONSTRUCTION VOIDS EXIST ALONG THE TOP OF RETAINING WALL #1,THE CONTRACTOR SHOULD BE PREPARED TO FORM THE CANTILEVERED SECTION OF THE CIP REINFORCED CONCRETE FACE TO THE TOP OF WALL ELEVATION.THE CONSTRUCTION VOID SHOULD BE FILLED WITH CONCRETE OR SHOTCRETE PRIOR TO CONSTRUCTION OF THE CONCRETE DITCH.ADDITIONAL WALL FACE REINFORCEMENT OR SOIL NAILS MAY BE REQUIRED FOR TALLER THAN TYPICAL CANTILEVER FACE HEIGHTS.

PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #1: -W1- STA. 10+65.00 TO 13+52.09

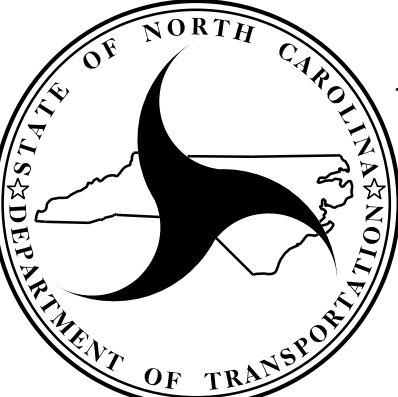
SHEET 3 OF 3

| | |
|-----------------------------|----------------|
| PREPARED BY: K. DE MONTBRUN | DATE: 05/12/25 |
| REVIEWED BY: R. KRAL | DATE: 05/12/25 |



Prepared in the Office of:
**CAROLINAS
GEOTECHNICAL
GROUP**

1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

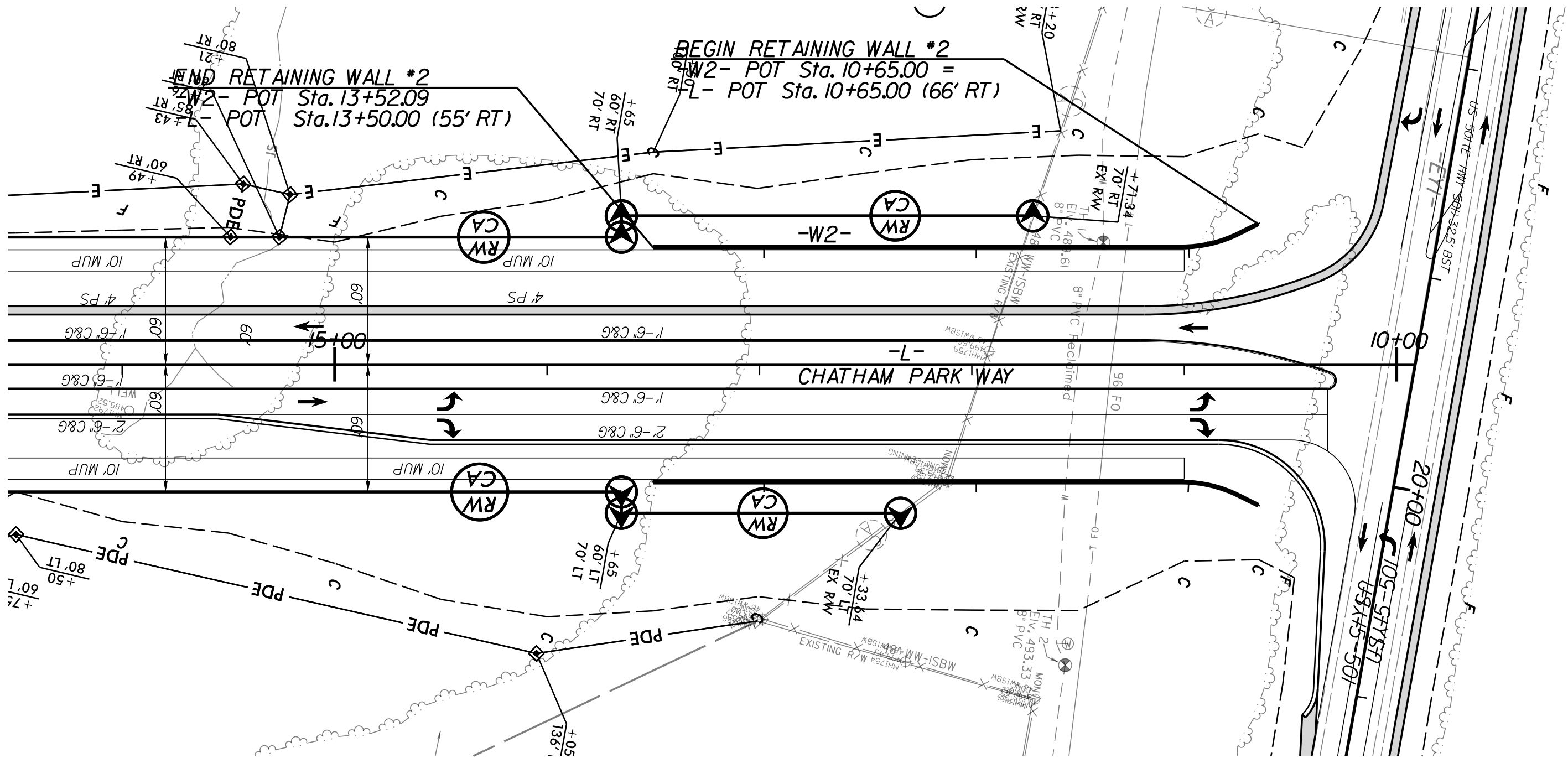


**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

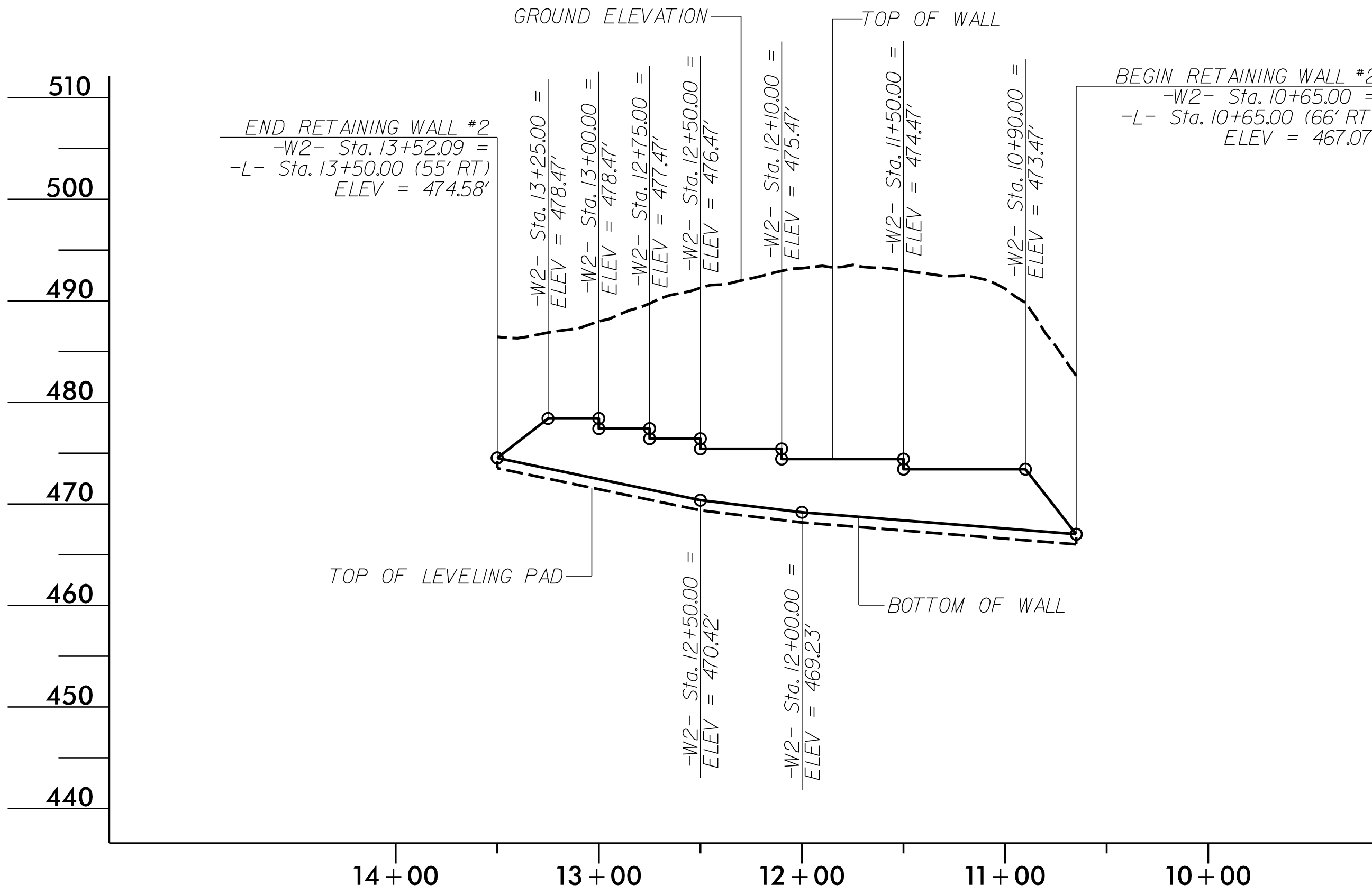
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|-----------|----|------|-----|----|------|-------------------------|
| NO. | BY | DATE | NO. | BY | DATE | |
| 1 | | | 3 | | | |
| 2 | | | 4 | | | |

RETAINING WALL #2:



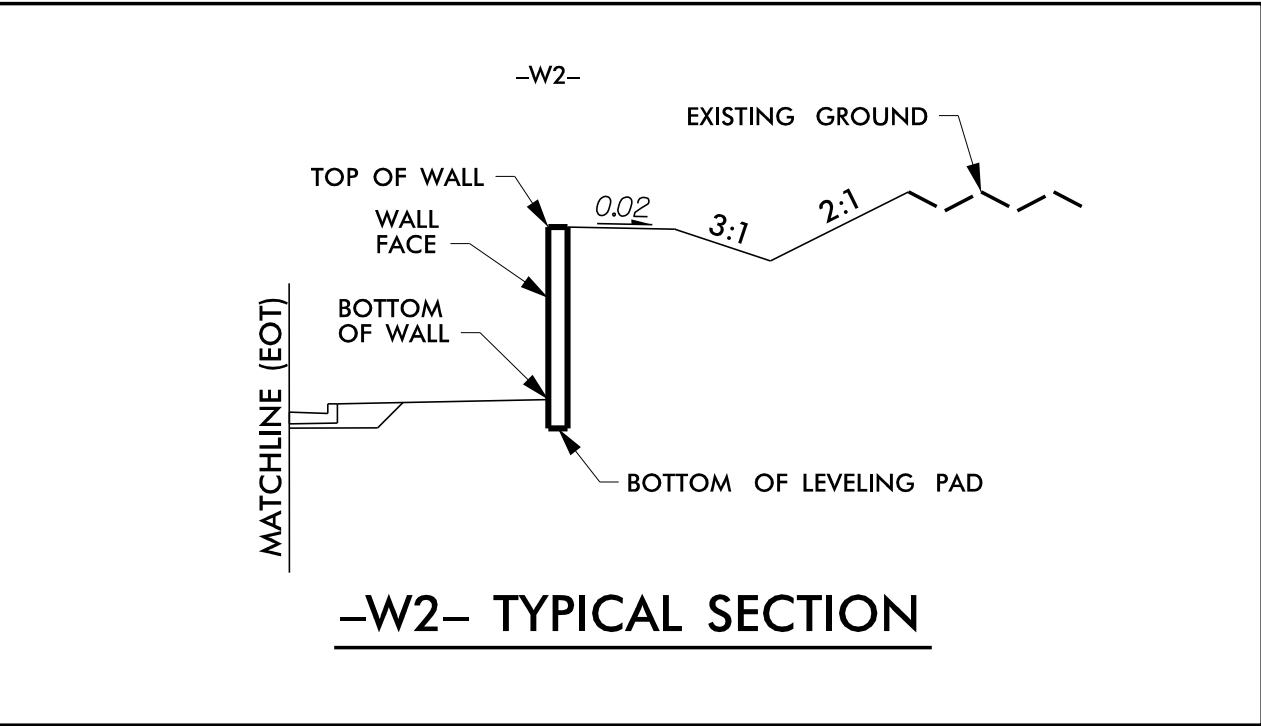
RETAINING WALL #2 – PLAN

NOT TO SCALE



RETAINING WALL #2 – ENVELOPE

NOT TO SCALE
(LOOKING AT FACE OF WALL)



-W2- TYPICAL SECTION

| ESTIMATED SOIL NAIL WALL QUANTITIES | | | |
|-------------------------------------|---|------------------------------|-----------------------|
| RETAINING WALL NO. | SOIL NAIL RETAINING WALLS (SQUARE FEET) | SOIL NAIL VERIFICATION TESTS | SOIL NAIL PROOF TESTS |
| 2 | 1,720 | 2 | 4 |
| SIMULATED STONE FORM LINER FINISH | | | 1,720 SF |

PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #2: -W2- STA. 10+65.00 TO 13+52.09

SHEET 1 OF 3

| | |
|-----------------------------|----------------|
| PREPARED BY: K. DE MONTBRUN | DATE: 05/12/25 |
| REVIEWED BY: R. KRAL | DATE: 05/12/25 |

RETAINING WALL NO. 2 ENVELOPE AND WALL LAYOUT PROVIDED BY NCDOT JANUARY 31, 2025.



Prepared in the Office of:
CAROLINA'S GEOTECHNICAL GROUP
1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684



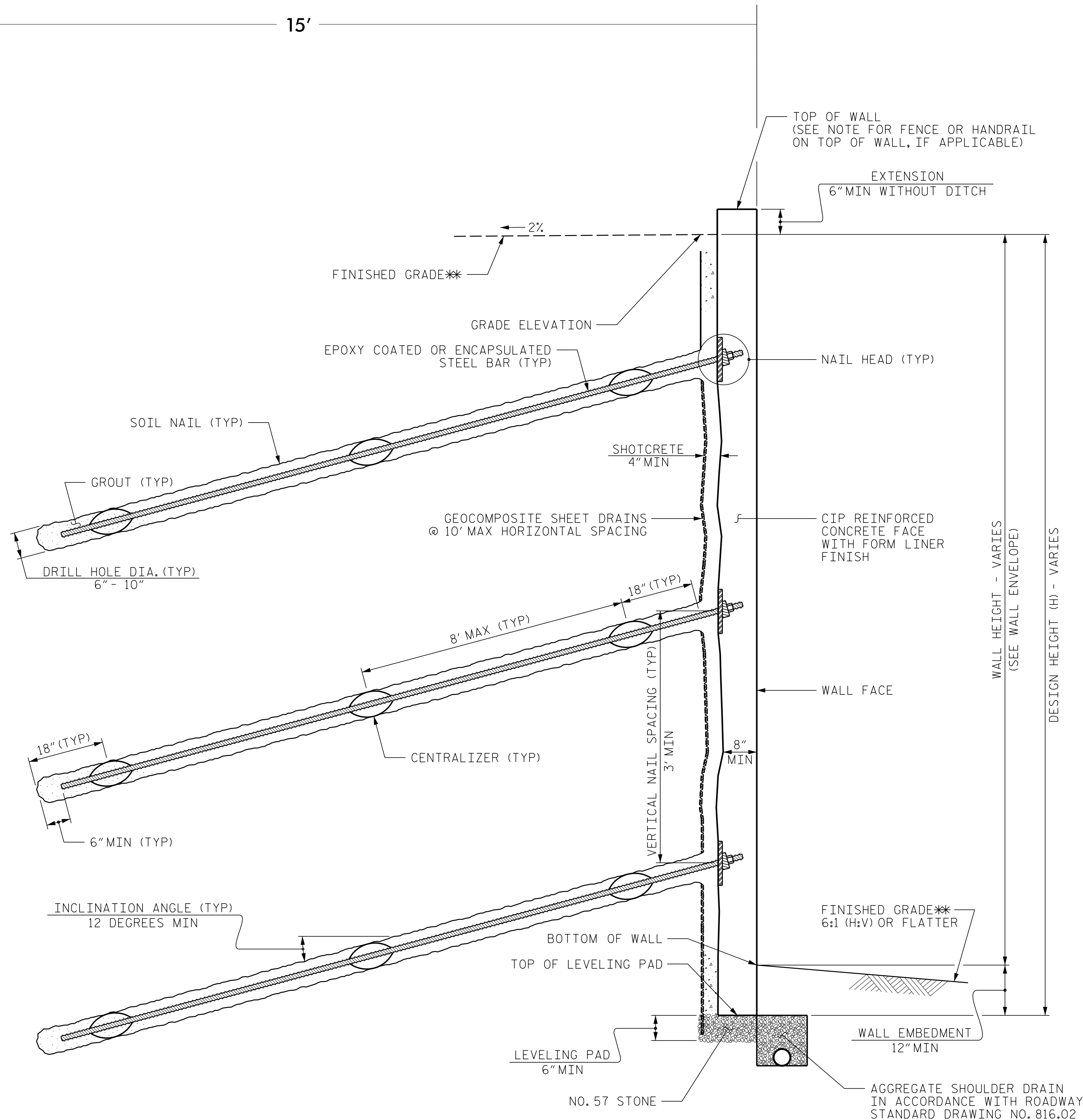
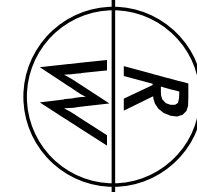
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL #2
SOIL NAIL RETAINING WALL

| REVISIONS | | | | | | SHEET NO. W-4 |
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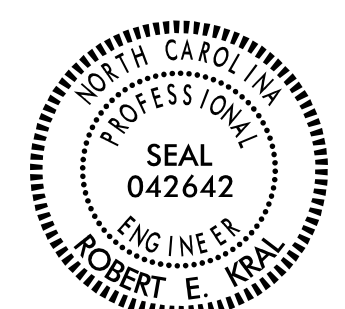
RIGHT OF WAY



SOIL NAIL WALL - TYPICAL SECTION

*SEE CONCRETE DITCH BEHIND WALL DETAILS.
**SEE PLANS FOR FINISHED GRADE.

GEOTECHNICAL
ENGINEER



Signed by:

Robert E. Kral

05/12/2025

DATE

ENGINEER

SIGNATURE

DATE

**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #2: -W2- STA. 10+65.00 TO 13+52.09

SHEET 2 OF 3

RETAINING WALL #2 SOIL NAIL RETAINING WALL

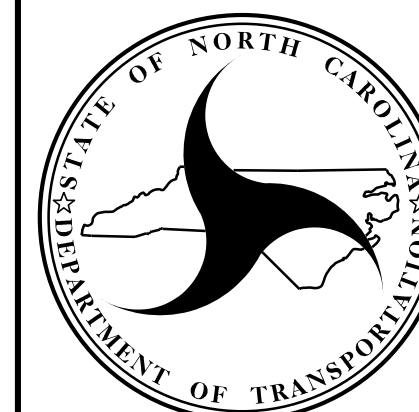
REVISIONS

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SHEET
NO.
W-5

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| PREPARED BY: K. DE MONTBRUN | DATE: 05/12/25 |
| REVIEWED BY: R. KRAL | DATE: 05/12/25 |

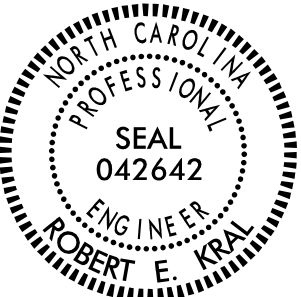
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CG2 CAROLINAS
GEOTECHNICAL
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1805 SARDIS ROAD NORTH
SUITE 100
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(980) 339-8684



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**GEOTECHNICAL
ENGINEERING UNIT**

GEOTECHNICAL
ENGINEER



Signed by:
Robert E. Kral
AAFB8FF73C9E4B1
SIGNATURE

05/12/2025
DATE

ENGINEER

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NOTES:

FOR SOIL NAIL RETAINING WALLS, SEE SOIL NAIL RETAINING WALLS PROVISION.

A FORM LINER ARCHITECTURAL FINISH IS REQUIRED FOR THE CIP REINFORCED CONCRETE FACE FOR RETAINING WALL #2. THE CONTRACTOR SHALL PROVIDE THE REQUESTED FINISH BEFORE BEGINNING CIP REINFORCED CONCRETE FACE CONSTRUCTION. THE APPEARANCE (STONE SIZE AND SHAPE, STONE COLOR, AND STONE TEXTURE, PATTERN, AND RELIEF) SHOULD MATCH NATURAL STONE AND ROCK. FOR FORM LINER ARCHITECTURAL FINISH, SEE THE SIMULATED STONE FORM LINER FINISH SPECIAL PROVISION.

BEFORE BEGINNING SOIL NAIL 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 ELEVATION = VARIES (MIN. 1 FT BELOW PROPOSED FINISHED GRADE ELEVATION)

4) IN-SITU ASSUMED SOIL PARAMETERS:
- W2- STATION 10+65 TO 10+75

ABOVE EL. 471 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

BELOW EL. 471 FT.

UNIT WEIGHT, γ = 135 PCF

FRICTION ANGLE, ϕ = 32 DEGREES

COHESION, c = 500 PSF
- W2- STATION 10+75 TO 11+65

ABOVE EL. 475 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

EL. 472 - 475 FT.

UNIT WEIGHT, γ = 135 PCF

FRICTION ANGLE, ϕ = 32 DEGREES

COHESION, c = 500 PSF

BELOW EL. 472 FT.

UNIT WEIGHT, γ = 170 PCF

FRICTION ANGLE, ϕ = 34 DEGREES

COHESION, c = 1,000 PSF
- W4- STATION 11+65 TO 12+15

ABOVE EL. 493 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

EL. 481 - 483 FT.

UNIT WEIGHT, γ = 135 PCF

FRICTION ANGLE, ϕ = 32 DEGREES

COHESION, c = 500 PSF

BELOW EL. 481 FT.

UNIT WEIGHT, γ = 170 PCF

FRICTION ANGLE, ϕ = 34 DEGREES

COHESION, c = 1,000 PSF
- W2- STATION 12+15 TO 13+25

ABOVE EL. 468 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

EL. 458 - 468 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 34 DEGREES

COHESION, c = 0 PSF

BELOW EL. 458 FT.

UNIT WEIGHT, γ = 135 PCF

FRICTION ANGLE, ϕ = 32 DEGREES

COHESION, c = 500 PSF
- W2- STATION 13+25 TO 13+52

ABOVE EL. 480 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

EL. 465 - 480 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 34 DEGREES

COHESION, c = 0 PSF

BELOW EL. 465 FT.

UNIT WEIGHT, γ = 120 PCF

FRICTION ANGLE, ϕ = 26 DEGREES

COHESION, c = 0 PSF

WHERE ROCK IS ENCOUNTERED IN THE WALL ENVELOPE, DESIGNERS SHOULD REFER TO THE FHWA PRESUMPTIVE STRENGTH PARAMETERS OR OTHER REPRESENTATIVE AND REPEATABLE VALUES AND PROVIDE SOURCE REFERENCES IN THEIR DESIGN SUBMITTAL.

WHEN ANALYZING FOR INFINITE SLOPE CONDITIONS, DESIGNERS SHOULD ANALYZE UP TO TWO (2) TIMES THE WALL HEIGHT BEHIND THE WALL FACE FOR FAILURE PLANE SEARCHES. THIS INFORMATION SHOULD BE INCLUDED WITH THE DESIGN SUBMITTAL.

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 #2.

THE PROPOSED RIGHT OF WAY (ROW) BOUNDARY IS 15 FT FROM THE FACE OF RETAINING WALL #2 AT ITS NEAREST POINT. SOIL NAILS MAY NOT BE INSTALLED BEYOND THE ROW BOUNDARY. SEE "SOIL NAIL WALL - TYPICAL SECTION" DETAIL.

WHERE ROCK IS PRESENT IN THE WALL ENVELOPE, CONTROLLED BLASTING IS RECOMMENDED, BUT NOT REQUIRED, TO MAINTAIN THE NEAT EXCAVATION LINE. VOIDS, RESULTING FROM BLASTING OR EXCAVATING, THAT EXTEND BEYOND THE NEAT LINES ARE TO BE FILLED WITH A COMBINATION OF SHORT SOIL NAILS, WELDED WIRE, AND SHOTCRETE, AT THE DISCRETION OF THE ENGINEER. THE COSTS ASSOCIATED WITH THIS WORK WILL BE CONSIDERED INCIDENTAL TO WALL CONSTRUCTION AND NO ADDITIONAL COMPENSATION WILL BE MADE. FOR BLASTING, SEE THE BLASTING PROVISION.

WHERE CONSTRUCTION VOIDS EXIST ALONG THE TOP OF RETAINING WALL #2, THE CONTRACTOR SHOULD BE PREPARED TO FORM THE CANTILEVERED SECTION OF THE CIP REINFORCED CONCRETE FACE TO THE TOP OF WALL ELEVATION. THE CONSTRUCTION VOID SHOULD BE FILLED WITH CONCRETE OR SHOTCRETE PRIOR TO CONSTRUCTION OF THE CONCRETE DITCH. ADDITIONAL WALL FACE REINFORCEMENT OR SOIL NAILS MAY BE REQUIRED FOR TALLER THAN TYPICAL CANTILEVER FACE HEIGHTS.

PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #2: -W2- STA. 10+65.00 TO 13+52.09


SHEET 3 OF 3

| | |
|-----------------------------|----------------|
| PREPARED BY: K. DE MONTBRUN | DATE: 05/12/25 |
| REVIEWED BY: R. KRAL | DATE: 05/12/25 |



Prepared in the Office of:
**CAROLINAS
GEOTECHNICAL
GROUP**

1805 SARDIS ROAD NORTH
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(980) 339-8684



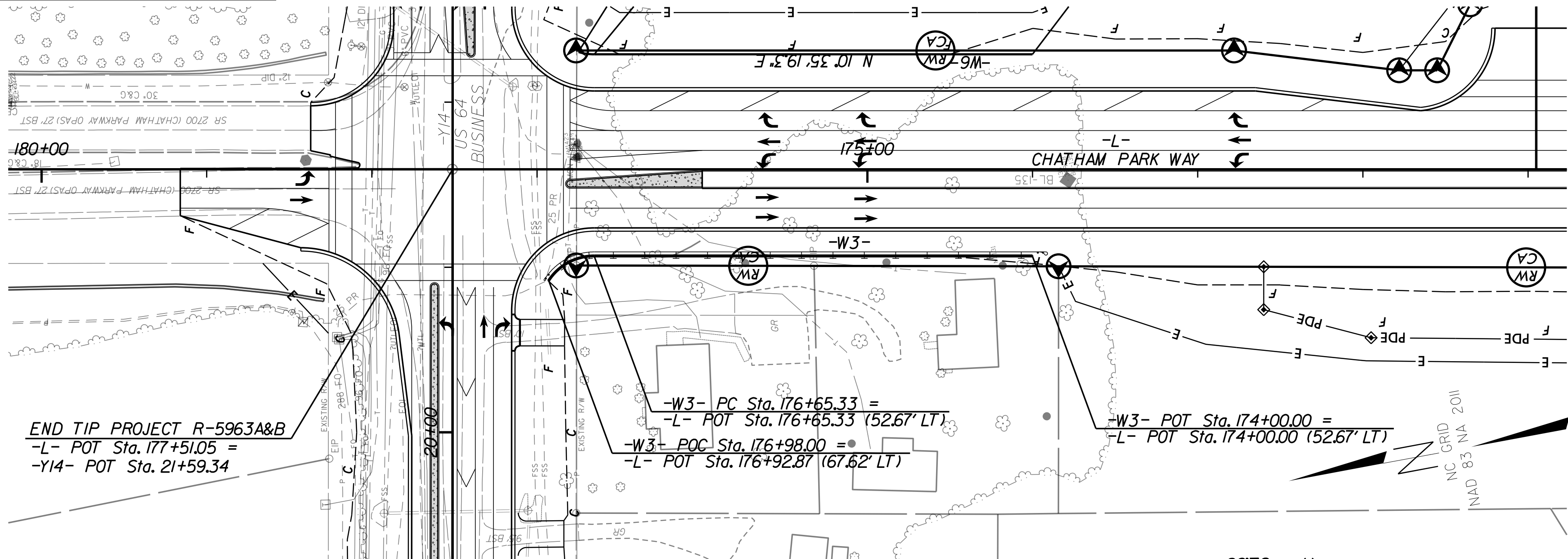
**NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS**

**GEOTECHNICAL
ENGINEERING UNIT**

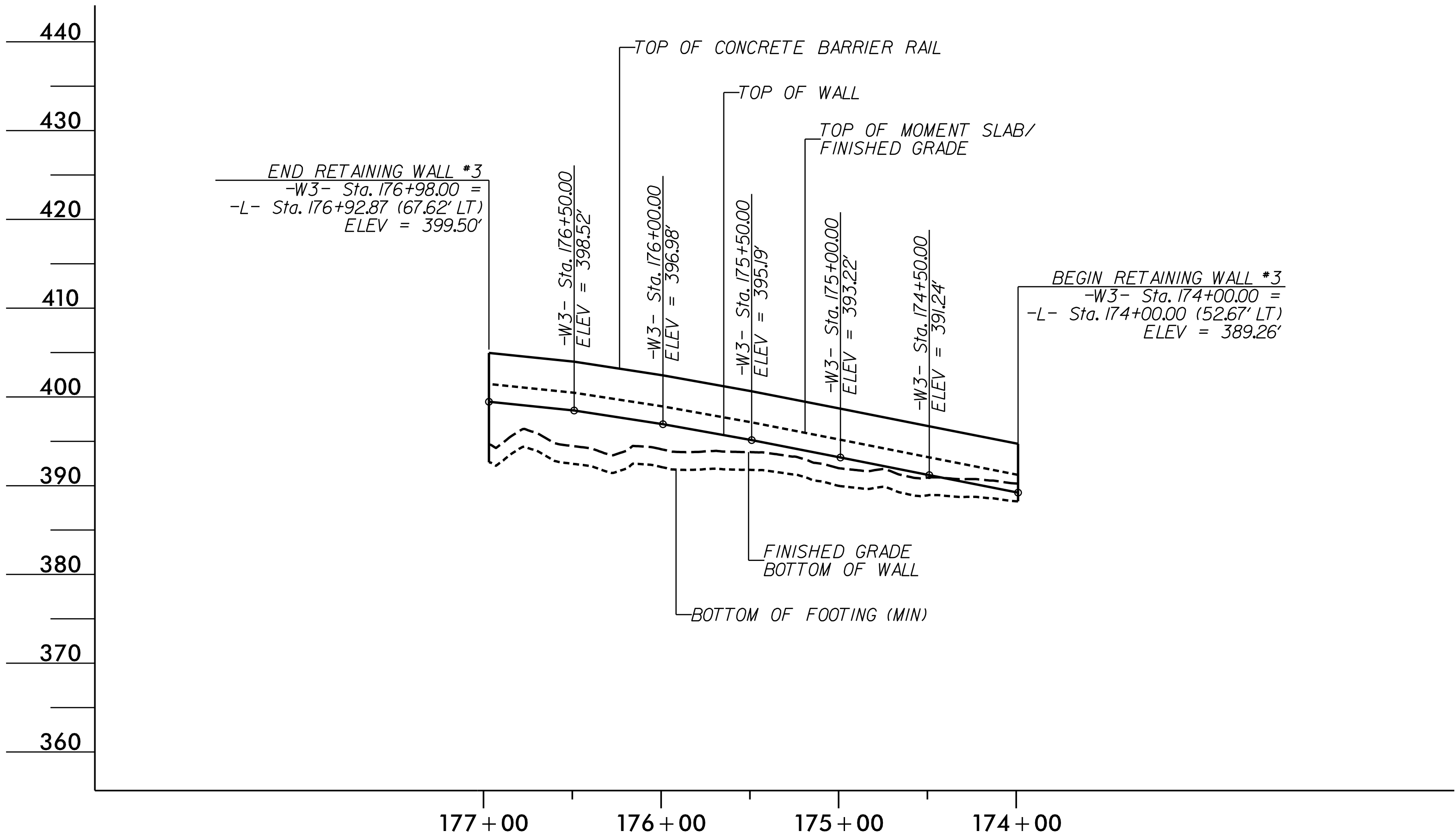
RETAINING WALL #2
SOIL NAIL RETAINING WALL

| REVISIONS | | | | | | SHEET NO. W-6 |
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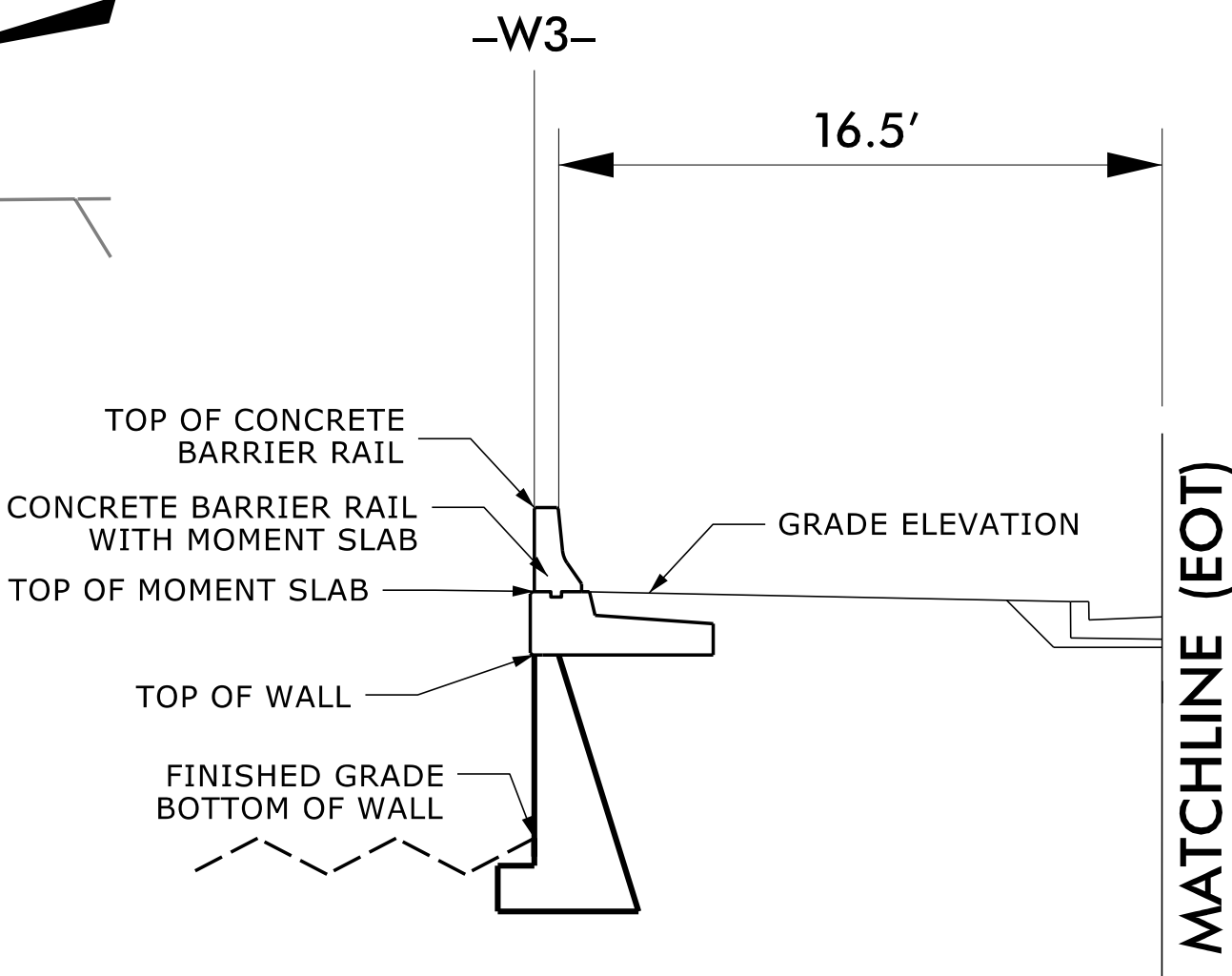
RETAINING WALL #3:



RETAINING WALL #3 – PLAN
NOT TO SCALE



RETAINING WALL #3 – ENVELOPE
NOT TO SCALE
(LOOKING AT FACE OF WALL)



-W3- TYPICAL SECTION
RETAINING WALL #3
-L- STA. 174+00 TO 176+92.87, LT
-W3- STA. 174+00.00 TO 176+98.00

| ESTIMATED QUANTITIES RETAINING WALL # 3 | |
|--|----------|
| NON-STANDARD CIP GRAVITY RETAINING WALL | 770 SF |
| SIMULATED STONE FORM LINER FINISH | 2,410 SF |

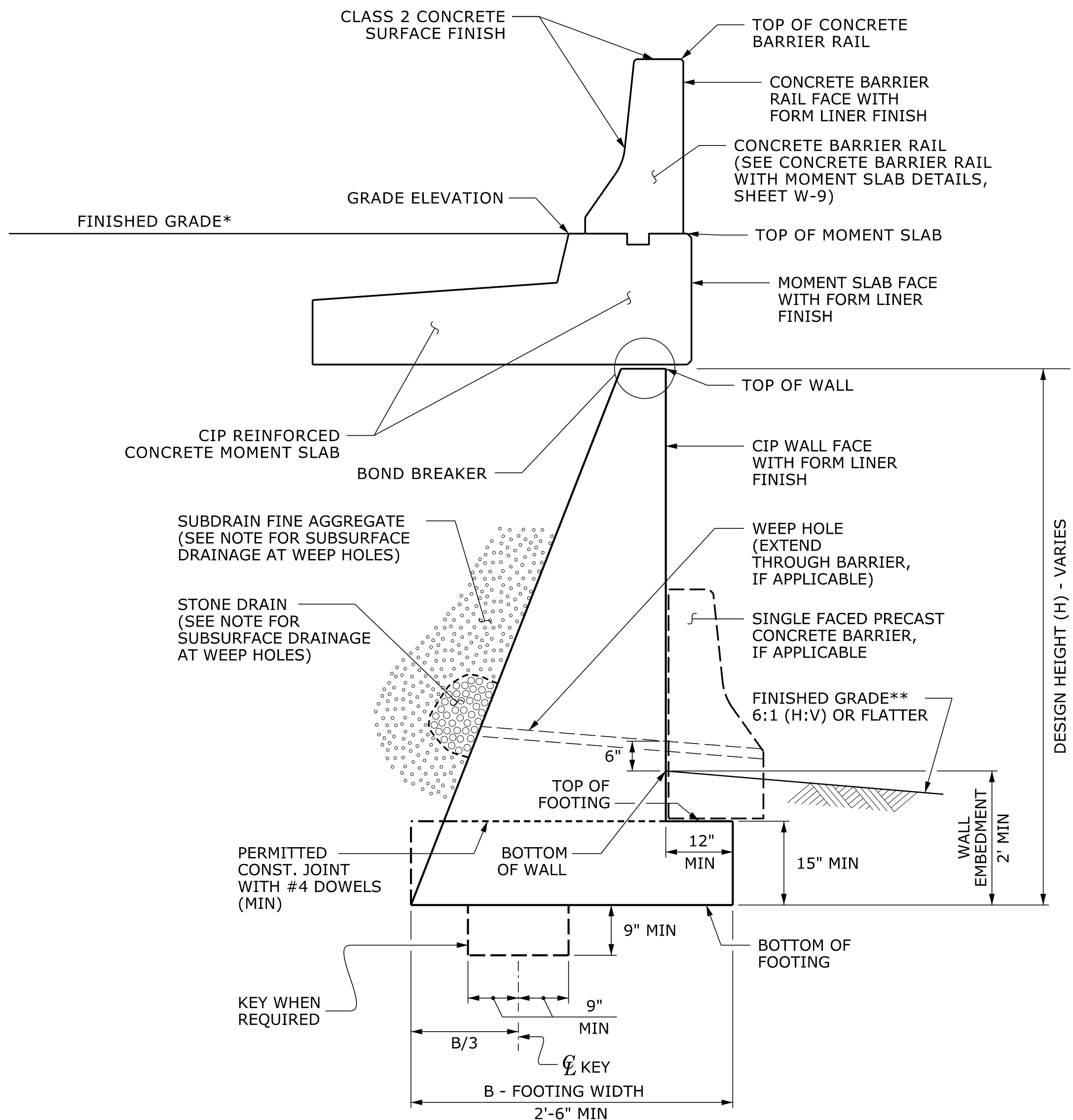
PROJECT NO.: R-5963A
CHATHAM COUNTY
RETAINING WALL #3: -W3- STA. 174+00.00 TO 176+98.00
SHEET 1 OF 3

PREPARED BY: K. DE MONTBRUN
REVIEWED BY: R. KRAL
DATE: 05/09/25
DATE: 05/09/25

RETAINING WALL #3 ENVELOPE AND WALL LAYOUT PROVIDED BY
KIMLEY-HORN MAY 8, 2025.

Prepared in the Office of:
CGE | **CAROLINAS
GEOTECHNICAL
GROUP**
1805 SARDIS ROAD NORTH
SUITE 100
CHARLOTTE, NC 28270
(980) 339-8684

| REVISIONS | | | | | | SHEET NO. W-7 |
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NON-STANDARD CIP GRAVITY WALL

**SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

NOTES:

FOR NON-STANDARD CIP GRAVITY RETAINING WALLS, REFER TO THE NON-STANDARD CIP GRAVITY RETAINING WALLS SPECIAL PROVISION.

FOR SINGLE FACED PRECAST CONCRETE BARRIER, SEE ROADWAY PLANS AND SECTION 857 OF THE STANDARD SPECIFICATIONS.

FOR SUBSURFACE DRAINAGE AT WEEP HOLES, SEE ARTICLE 414-8 OF THE STANDARD SPECIFICATIONS.

NON-STANDARD CIP GRAVITY WALLS ARE BASED ON THE FOLLOWING:

IN-SITU ASSUMED RETAINED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF


IN-SITU ASSUMED FOUNDATION SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 26$ DEGREES
COHESION, $c = 0$ PSF

UNDERCUTTING OF SOFT AND/OR WET SOILS IN THE VICINITY OF THE WALL FOUNDATION MAY BE REQUIRED TO IMPROVE BEARING RESISTANCE AFTER THE WALL FOOTING IS EXCAVATED TO BEARING GRADE. IF REQUIRED BY THE ENGINEER, USE UNDERCUT EXCAVATION TO REMOVE SOFT AND/OR WET SOILS, UNDERCUT TO SUITABLE FOUNDATION SOILS OR TO DEPTH NO GREATER THAN 3 FEET BELOW THE BOTTOM OF FOOTING ELEVATION, WHICHEVER OCCURS FIRST. PLACE GEOTEXTILE FOR SOIL STABILIZATION IN THE BOTTOM OF THE EXCAVATION AND BACKFILL WITH SELECT GRANULAR MATERIAL. FOR UNDERCUT AND EXCAVATION AND SELECT GRANULAR MATERIAL, SEE STANDARD SPECIFICATION. UNDERCUT EXCAVATION, SELECT GRANULAR MATERIAL, AND GEOTEXTILE FOR SOIL STABILIZATION WILL BE PAID AS SEPARATE ADDITIONAL QUANTITIES.

BEFORE BEGINNING NON-STANDARD CIP 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. DO NOT START WALL CONSTRUCTION UNTIL WALL ENVELOPES ARE ACCEPTED.

DO NOT PLACE CONCRETE FOR FOOTINGS UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

A FORM LINER ARCHITECTURAL FINISH IS REQUIRED FOR THE CIP CONCRETE FACE FOR RETAINING WALL #3, MOMENT SLAB FACE, AND CONCRETE BARRIER RAIL FACE. THE CONTRACTOR SHALL PROVIDE THE REQUESTED FINISH BEFORE BEGINNING CIP CONCRETE FACE CONSTRUCTION. THE APPEARANCE (STONE SIZE AND SHAPE, STONE COLOR, TEXTURE, PATTERN, AND RELIEF) SHOULD MATCH NATURAL STONE AND ROCK IN THE PROJECT VICINITY. FOR FORM LINER ARCHITECTURAL FINISH, SEE THE SIMULATED STONE FORM LINER FINISH SPECIAL PROVISION.

| | |
|--|--------------------------------------|
| GEOTECHNICAL ENGINEER | ENGINEER |
|  | |
| Signed by: <i>Robert E. Kral</i> -AAFB8FF73C3E4B1- SIGNATURE | 05/10/2025 DATE SIGNATURE DATE |
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PROJECT NO.: R-5963A

CHATHAM COUNTY

RETAINING WALL #3: -W3- STA. 174+00.00 TO 176+98.00

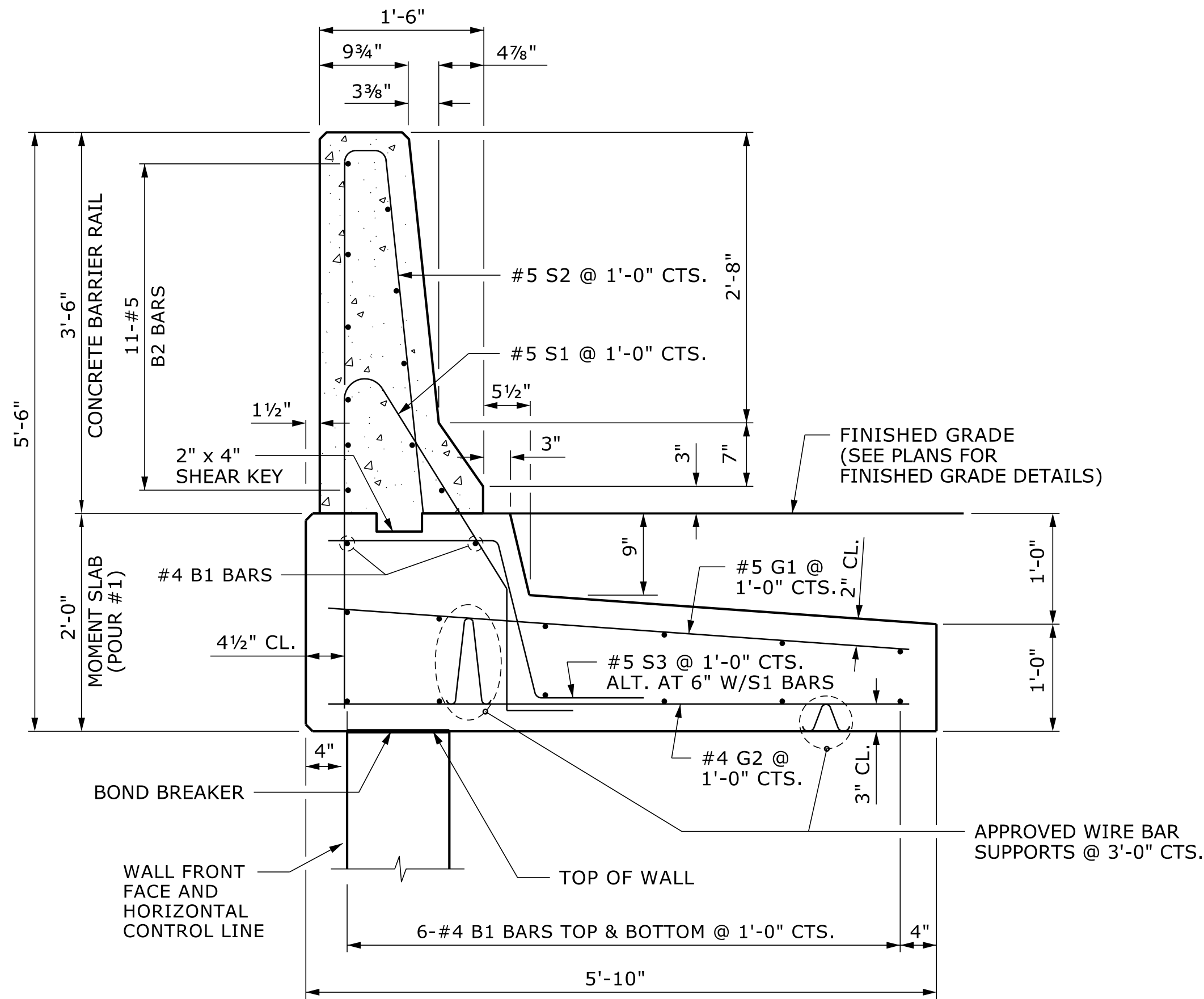
SHEET 2 OF 3

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| PREPARED BY: K. DE MONTBRUN | DATE: 05/09/25 |
| REVIEWED BY: R. KRAL | DATE: 05/09/25 |

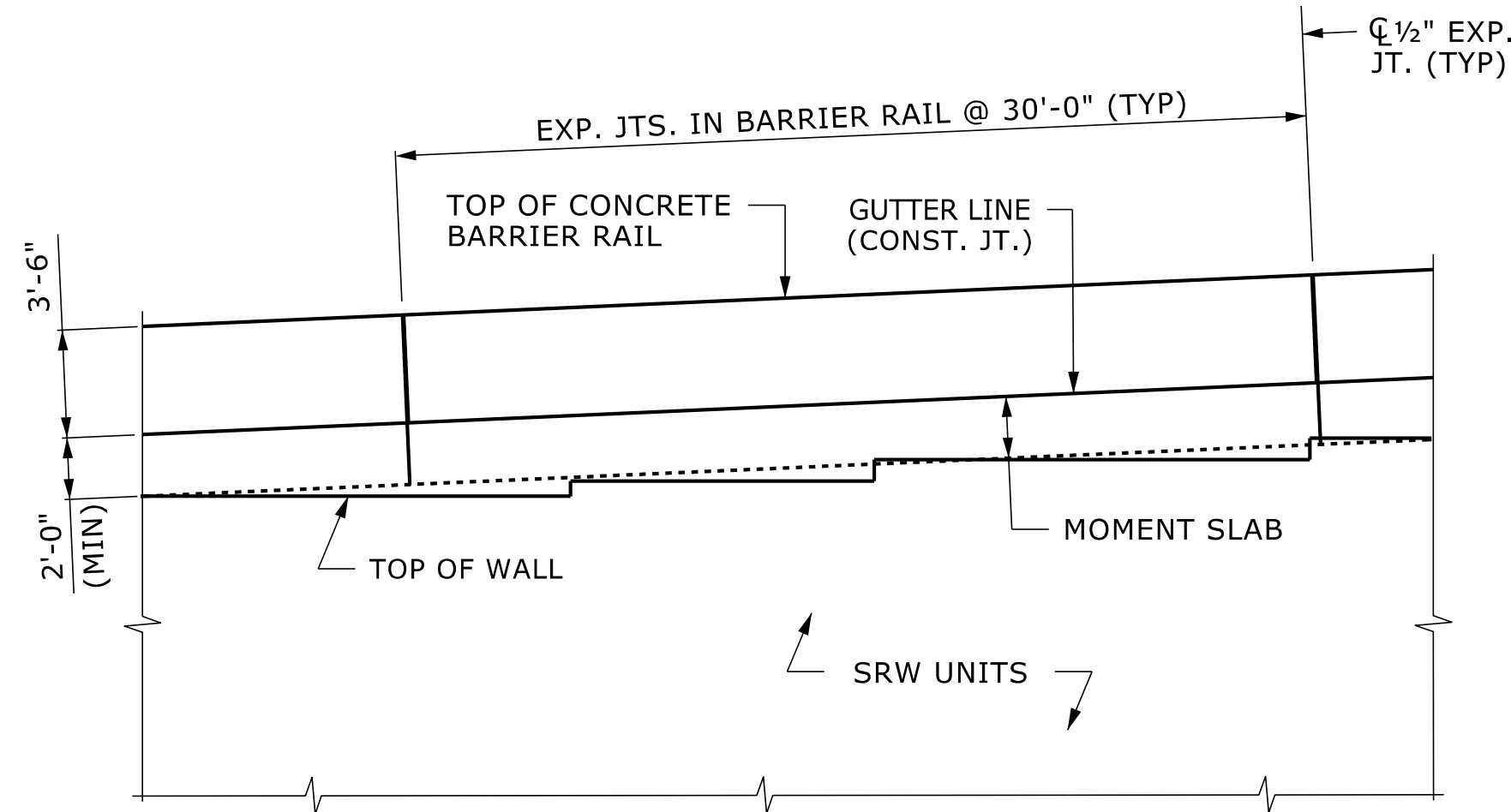
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1805 SARDIS ROAD NORTH
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CHARLOTTE, NC 28270
(980) 339-8684

RETAINING WALL #3
NON-STANDARD
CIP GRAVITY RETAINING WALL
WITH MOMENT SLAB

| REVISIONS | | | | | | SHEET NO. W-8 |
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CONCRETE BARRIER RAIL WITH MOMENT SLAB



CONCRETE BARRIER RAIL WITH MOMENT SLAB - PARTIAL ELEVATION

NOTES:

FOR CONCRETE BARRIER RAIL WITH MOMENT SLAB, SEE SECTION 460 OF THE STANDARD SPECIFICATIONS.

CONCRETE BARRIER RAIL WITH MOMENT SLAB SHALL BE A MINIMUM OF 15' IN LENGTH.

EXPANSION JOINTS SHALL BE PLACED IN THE BARRIER RAIL AND MOMENT SLAB AT A MAXIMUM SPACING OF 30'.

GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED SURFACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MID-POINT OF BARRIER RAIL SEGMENTS LESS THAN 20' IN LENGTH.

EXPANSION OR CONTRACTION JOINTS IN THE BARRIER RAIL AND MOMENT SLAB SHALL BE ALIGNED WITH JOINTS IN WALL FACING BELOW.

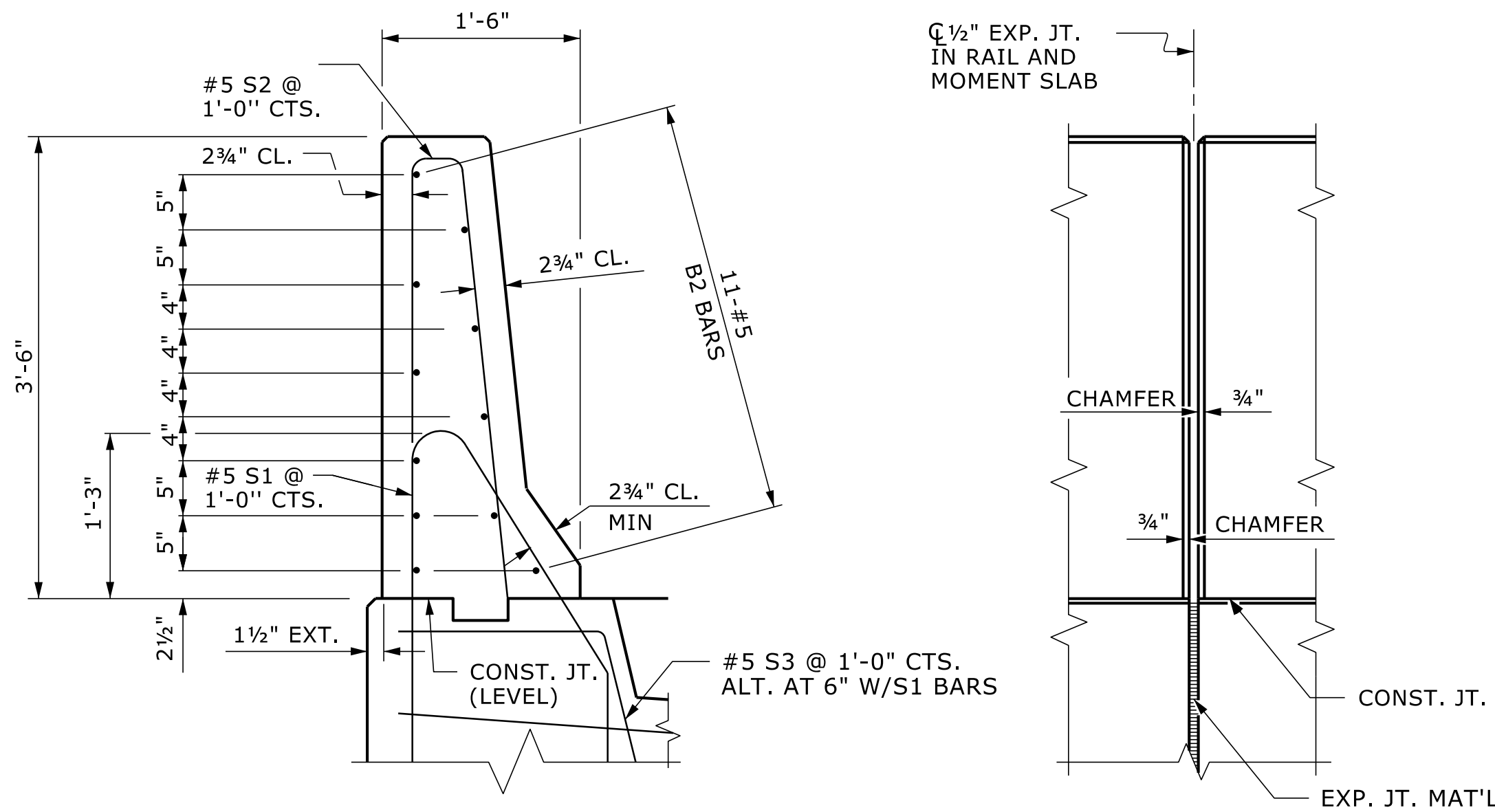
THE BARRIER RAIL SHALL NOT BE CAST UNTIL THE MOMENT SLAB HAS ATTAINED AN AGE OF THREE CURING DAYS OR A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI. IN ADDITION, NO FILL MATERIAL, ASPHALT, OR CONSTRUCTION EQUIPMENT IS ALLOWED ON THE MOMENT SLAB PRIOR TO SATISFYING THE MINIMUM CONCRETE CURING AND STRENGTH REQUIREMENTS.

ALL REINFORCING STEEL IN THE BARRIER RAIL SHALL BE EPOXY COATED.

IF STEPS ARE REQUIRED AT TOP OF WALL, DETAILS SHOWING INTERFACE BETWEEN BOTTOM OF MOMENT SLAB AND STEPS SHALL BE SUBMITTED FOR APPROVAL.

IF EXISTING OR FUTURE OBSTRUCTIONS SUCH AS FOUNDATIONS, BARRIERS, PIPES, INLETS OR UTILITIES WILL INTERFERE WITH CONCRETE BARRIER RAIL WITH MOMENT SLAB, CONCRETE BARRIER RAIL WITH MOMENT SLAB DETAILS SHALL BE REVISED AND SUBMITTED FOR APPROVAL.

| |
|--|
| CONCRETE BARRIER RAIL WITH MOMENT SLAB |
| PAY LENGTH = 298 LIN FT |



SECTION THRU RAIL

ELEV. @ EXP. JOINTS

BARRIER RAIL DETAILS

GEOTECHNICAL ENGINEER

Signed by:
Robert E. Kral
Signature

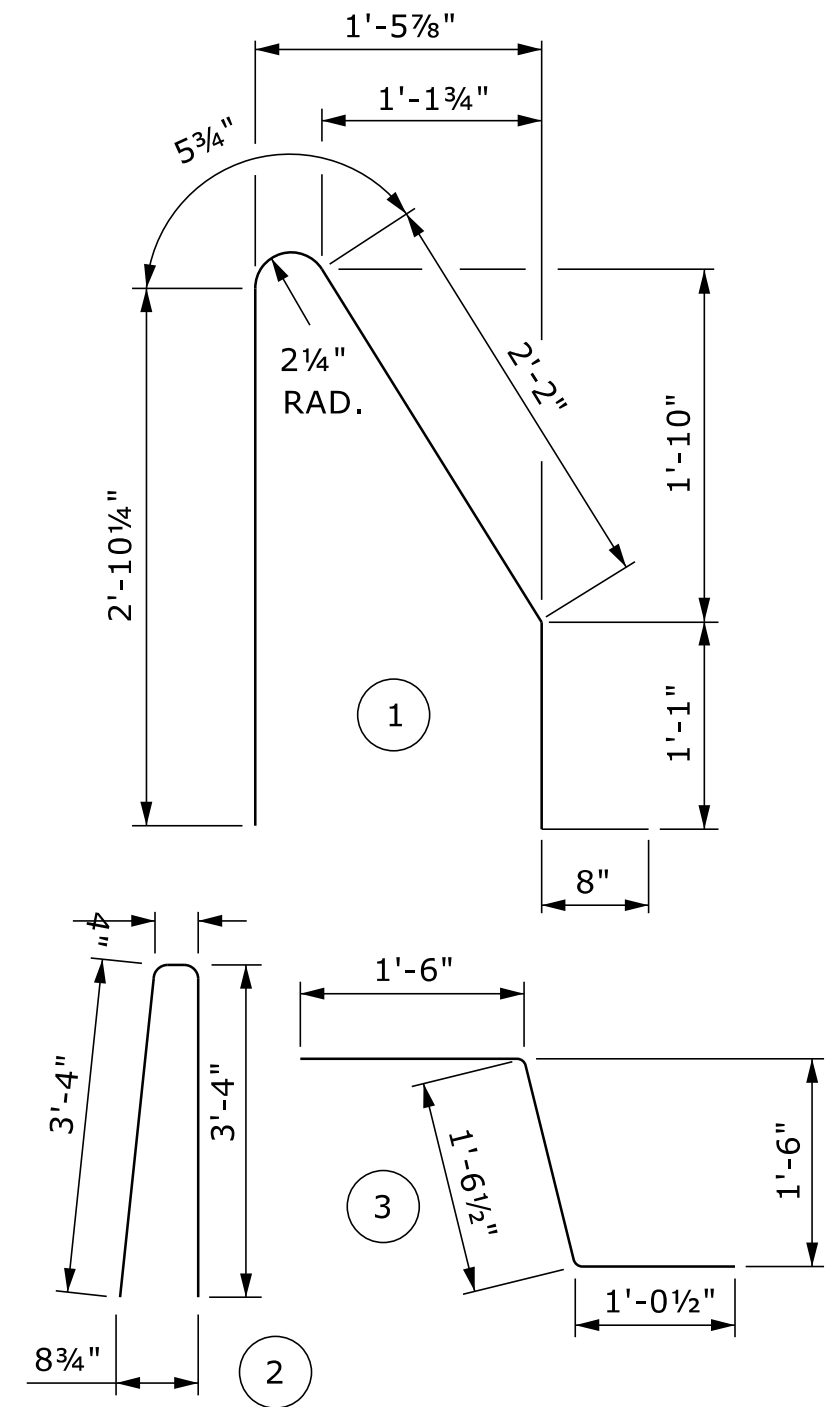
ENGINEER

05/10/2025
Date

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SIGNATUREDATE

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

| FOR ONE 30'-0" SECTION OF CONCRETE BARRIER RAIL WITH MOMENT SLAB | | | | | |
|--|-----|------|------|--------|-----------|
| | NO. | SIZE | TYPE | LENGTH | WEIGHT |
| | 14 | #4 | STR | 29'-7" | 277 |
| | 11 | #5 | STR | 29'-7" | 339 |
| | 31 | #5 | STR | 5'-6" | 178 |
| | 31 | #4 | STR | 5'-6" | 114 |
| | 31 | #5 | 1 | 7'-3" | 234 |
| | 31 | #5 | 2 | 7'-0" | 226 |
| | 30 | #5 | 3 | 4'-1" | 128 |
| REINFORCING STEEL | | | | | 697 LB |
| EPOXY COATED REINFORCING STEEL | | | | | 799 LB |
| CLASS AA CONCRETE BARRIER RAIL | | | | | 4.1 CY |
| CLASS A CONCRETE MOMENT SLAB | | | | | 9.1 CY |
| CONCRETE BARRIER RAIL WITH MOMENT SLAB | | | | | 30 LIN FT |

PROJECT NO.: R-5963A
CHATHAM COUNTY
RETAINING WALL #3: -W3- STA. 174+00.00 TO 176+98.00
SHEET 3 OF 3

| | |
|-----------------------------|----------------|
| PREPARED BY: K. DE MONTBRUN | DATE: 05/09/25 |
| REVIEWED BY: R. KRAL | DATE: 05/09/25 |

Prepared in the Office of:

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CHARLOTTE, NC 28270
(980) 339-8684

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| REVISIONS | | | | | | SHEET NO. W-9 |
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