STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

June 14, 2022

Addendum No. 1
RE: Contract # C204110
WBS # 34817.3.14
FEDERAL AID NO. NHF00100(024)
Cumberland County (U-2519BA/BB)
FAYETTEVILLE OUTER LOOP FROM SOUTH OF SR-1003 (CAMDEN ROAD) TO SOUTH OF US-401.

June 21, 2022 Letting

To Whom It May Concern:

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

The following revisions have been made to the Roadway plans.

Sheet No.	Revision
(U-2519BA_BB) 1A	List of Standard Drawings revised. STD.NO. 235.01 Embankment Monitoring added. STD.NO. 852.05 Median Curb for Catch Basin-for Use with 1'6" Curb and Gutter added.
(U-2519BA) 3G-1	**Summary of Geotextile for Soil Stabilization for Embankment Stability** table revised. **Summary of Embankment Waiting Periods** table added. **Summary of Rip-Rap Class B-Limestone** table added. **Summary of Bridge Waiting Periods** table added.

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

The following revisions have been made to the Utility Construction plans.

Sheet No.	Revision
(U-2519BB) UC-10 (New)	New UC-10 sheet for U-2519BB added.

Please add the above listed Sheet to your plans and staple the revised Sheet thereto. Staple New Sheet (U-2519BB) UC-10 after (U-2519BB) UC-9B in your plans.

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

Location:
1020 BIRCH RIDGE DR.
RALEIGH, NC 27610

Website: www.ncdot.gov

The following revisions have been made to the Signing plans.

Sheet No.	Revision
(U-2519BA) SIGN-06B, SIGN-06H thru SIGN-06J, SIGN-06L thru SIGN-06S	Revised to place the correct Professional Engineer's seal within the seal box.

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
(U-2519BA) W-5 thru W-10 (New)	Added Retaining Wall No. 3 to project.

Please add the above listed Sheets in your plans and staple the revised Sheets thereto. Staple New Sheets W-5 thru W-10 after (U-2519BA) SB-4 in your plans.

The following revisions have been made to the proposal:

Page No.	Revisions
Proposal Cover	Note added that reads "Includes Addendum No. 1 Dated 6-14-2022"
Table of Contents	Page numbers updated.
G-2	Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 1, INCENTIVE AND DISINCENTIVE** was removed and Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES** was added.
G-2 thru G-4	Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES** was removed and Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 2, INCENTIVE AND DISINCENTIVE** was added.
G-3 thru G-4	New Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES** was added. Original Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES** was removed.
G-4 thru G-13	New Project Special Provision entitled **INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES** was added.
G-6	Project Special Provision entitled **SPECIALTY ITEMS** was revised to show new items.

Page No.	Revisions
GT-0.1	Unit Project Special Provision entitled **GEOTECHNICAL** revised to update page numbers for "RIP RAP (SPECIAL)" provision.
GT-2.1	Unit Project Special Provision entitled **GEOTECHNICAL** revised. "RIP RAP" provision was revised.
GT 2.2 (New)	Unit Project Special Provision entitled **GEOTECHNICAL** revised. "RIP RAP" provision was revised.

Please void the above listed existing Pages in your proposal and staple the revised Page thereto.
Staple New Page GT-2.2 after GT-2.1 in your proposal.

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

Item	Description	Old Quantity	New Quantity
0011-0029000000-N-SP	TYPE III REINFORCED APPROACH FILL, STATION (24+41.38 -Y16-)	LUMP SUM	DELETED
0143-3649000000-E-876	RIP RAP, CLASS B	15,778 TON	4,778 TON
0361-0028000000-N-SP	TYPE I STANDARD APPROACH FILL, STATION (24+41.38 -Y16-)	NEW ITEM	LUMP SUM
0362-0255000000-E-SP	RIP RAP, CLASS B LIMESTONE	NEW ITEM	11,000 TON
0363-5709300000-E-1520	6" FORCE MAIN SEWER	NEW ITEM	90 LF
0364-5769000000-E-1520	DUCTILE IRON SEWER PIPE FITTINGS	NEW ITEM	224 LB
0365-8801000000-E-SP	MSE RETAINING WALL NO. (3)	NEW ITEM	1,200 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,

DocuSigned by:
Ronald Elton Davenport, Jr.
F81B6038A47A442...

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

RED/cms
Attachments
cc: Mr. Lamar Sylvester, PE
Mr. H. L. "Drew" Cox, PE
Ms. Lori Strickland
Mr. Boyd Tharrington, PE
Mr. Jon Weathersbee, PE
Mr. Ken Kennedy, PE
Project File (2)
Mr. Forrest Dungan, PE
Ms. Jaci Kincaid
Mr. Kyle Kempf
Mr. Mike Gwyn
Ms. Penny Higgins

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

PROPOSAL

INCLUDES ADDENDUM No. 1 DATED 06-14-2022

DATE AND TIME OF BID OPENING: **Jun 21, 2022 AT 02:00 PM**

CONTRACT ID	C204110
WBS	34817.3.14

FEDERAL-AID NO.	NHF00100(024)
COUNTY	CUMBERLAND
T.I.P NO.	U-2519BA, U-2519BB
MILES	5.293
ROUTE NO.	I-495
LOCATION	FAYETTEVILLE OUTER LOOP FROM SOUTH OF SR-1003 (CAMDEN ROAD) TO SOUTH OF US-401.
TYPE OF WORK	GRADING, DRAINAGE, PAVING, SIGNING, 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

TABLE OF CONTENTS

STANDARD SPECIAL PROVISIONS

UNIT PROJECT SPECIAL PROVISIONS

PROPOSAL ITEM SHEET

ITEM SHEET(S) (TAN SHEETS)

The liquidated damages for this contract are **Two Hundred Dollars ($ 200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:
(7-1-95) (Rev. 2-21-12) 108 SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **August 1. 2022**.

The completion date for this intermediate contract time is **August 1, 2026**.

The liquidated damages for this intermediate contract time are **One Thousand Five Hundred Dollars ($ 1,500.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

INTERMEDIATE CONTRACT TIME NUMBER 2, INCENTIVE AND DISINCENTIVE:
(6-18-13) 108 SP1 G14 L

The Contractor shall complete **all** work required **to meet the following conditions** and shall place and maintain traffic on same.

1. **The final layers of pavement shall be placed on all lanes and shoulders along the -L- Line and all associated ramps and/or loops. Milled rumble strips shall be placed on shoulders along the -L- Line, as indicated by the plans.**
2. **All signs shall be completed and accepted along the -L- Line and all associated ramps and/or loops.**
3. **All guardrail, drainage devices, ditches, excavation and embankment shall be completed along the -L- Line and all associated ramps and/or loops.**
4. **Traffic shall be placed in the final traffic pattern along -L- Line and all associated ramps and/or loops.**
5. **Traffic shall be placed in the final traffic pattern along all -Y- Lines.**

The date of availability for this intermediate contract time is **August 1, 2022**.

The completion date for this intermediate contract time is **May 15, 2026**.

It is mutually agreed that time is of the essence in completing Intermediate Contract Time Number 2 and opening same to traffic. It is further mutually agreed a delay in completing this work will result in damage due to increased engineering and inspection costs to the Department of

Transportation, great hardship to the general public, public inconvenience, obstruction of traffic, interference with business, and increased cost of maintaining traffic.

By reason of necessity of expeditious completion of work included in Intermediate Contract Time Number 2, and placing and maintaining traffic on same, it is mutually agreed, the Contractor shall receive an incentive payment of **Fifteen Thousand Dollars ($ 15,000.00)** per calendar day for each day prior to the completion date established for Intermediate Contract Time Number 2 that this work is completed. Incentive payment shall be limited to a maximum of **Three Million Dollars ($ 3,000,000.00)**. No incentive payment shall be allowed for any calendar day after the completion date established for Intermediate Contract Time Number 2 that this work remains incomplete. This date shall be utilized in determining incentive payments and it shall not be revised for any reason whatsoever. Incentive payment determined to be due the Contractor shall be paid by the Department within forty-five (45) calendar days after completion of all work. No incentive payment shall be allowed if the contract is terminated under the provisions of Article 108-13 of the 2018 Standard Specifications.

Disincentive of **Fifteen Thousand Dollars ($ 15,000.00)** per calendar day shall be assessed the Contractor for each day beyond the completion date for Intermediate Contract Time Number 2 that the work is not completed.

The Engineer shall withhold the disincentives as they accrue from the amount of monies due on work performed in the contract.

INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES:
(2-20-07) 108 SP1 G14 A

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **the following roads** during the following time restrictions:

DAY AND TIME RESTRICTIONS

Camden Road, King Road, Stoney Point Road, Barefoot Road and/or Strickland Road
Monday thru Friday, 6:30 AM to 8:30 AM and 4:00 PM to 6:30 PM

Century Circle
6:30 AM to 8:30 AM (WHEN SCHOOL IS IN SESSION)
2:00 PM to 3:30 PM (WHEN SCHOOL IS IN SESSION)

In addition, the Contractor shall not close or narrow a lane of traffic on **Camden Road, King Road, Stoney Point Road, Barefoot Road, Strickland Road and/or Century Circle**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.

2. For **New Year's Day**, between the hours of **6:30 A.M.** December 31st and **6:30 P.M.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **6:30 P.M.** the following Tuesday.

3. For **Easter**, between the hours of **6:30 A.M.** Thursday and **6:30 P.M.** Monday.

4. For **Memorial Day**, between the hours of **6:30 A.M.** Friday and **6:30 P.M.** Tuesday.

5. For **Independence Day**, between the hours of **6:30 A.M.** the day before Independence Day and **6:30 P.M.** the day after Independence Day.

   If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:30 A.M.** the Thursday before Independence Day and **6:30 P.M.** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **6:30 A.M.** Friday and **6:30 P.M.** Tuesday.

7. For **Thanksgiving**, between the hours of **6:30 A.M.** Tuesday and **6:30 P.M.** Monday.

8. For **Christmas**, between the hours of **6:30 A.M.** the Friday before the week of Christmas Day and **6:30 P.M.** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures will not be required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated above and place traffic in the existing traffic pattern.

The liquidated damages are **Two Hundred Fifty Dollars ($ 250.00)** per hour.

INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES:
(6-18-13) 108 SP1 G14 L

The Contractor shall complete **all** work required of **placing traffic on the -L- Line (from Sta. 320+00 +/- to Sta. 344+00 +/-), on -Y13DET-, and on associated ramps -Y13RPB-/ -Y13RPB_XOVER- and -Y13RPC-/-Y13RPC_XOVER-, as described in Phase I, Step #2** on Sheet **TMP-3 of the U-2519BA Transportation Management Plans** and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **August 1, 2022**.

The completion date for this intermediate contract time is **June 1, 2024**.

The liquidated damages are **Five Thousand Dollars ($ 5,000.00)** per calendar day.

PERMANENT VEGETATION ESTABLISHMENT:
(2-16-12) (Rev. 10-15-13) 104 SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the *2018 Standard Specifications*. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control*, *Seeding and Mulching, Repair Seeding*, *Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation,* and *Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the *2018 Standard Specifications*. No additional compensation will be made for maintenance and removal of temporary erosion control items.

DELAY IN RIGHT OF ENTRY:
(7-1-95) 108 SP1 G22 A

The Contractor will not be allowed right of entry to the parcels listed below before September 1, 2022 unless otherwise permitted by the Engineer.

Parcel No.	Property Owner
U-2519BA 040	Earnest Barefoot
U-2519BA 121Z	Donna Wienand
U-2519BA 183	Ronyka Stanley (Floyd Properties and Development, Inc.)
U-2519BA 198	Westhaven Homeowners Assoc.
U-2519BA 199	Westhaven Homeowners Assoc.
U-2519BA 200	Floyd Properties and Dev.

MAJOR CONTRACT ITEMS:

(2-19-02) 104 SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the *2018 Standard Specifications*):

Line #	Description
14	Borrow Excavation
74	Aggregate Base Course
77	Asphalt Concrete Base Course, Type B25.0C

SPECIALTY ITEMS:

(7-1-95)(Rev. 7-20-21) 108-6 SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the *2018 Standard Specifications*).

Line #	Description
124-135	Guardrail
136-139	Fencing
145-170	Signing
186-191, 200-204	Long-Life Pavement Markings
205-206	Permanent Pavement Markers
207-248, 363-364	Utility Construction
249-289	Erosion Control
290-318	Signals/ITS System

FUEL PRICE ADJUSTMENT:

(11-15-05) (Rev. 7-20-21) 109-8 SP1 G43

Revise the *2018 Standard Specifications* as follows:

Page 1-87, Article 109-8, Fuel Price Adjustments, add the following:

The base index price for DIESEL #2 FUEL is **$ 4.3349** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Asphalt Concrete Base Course, Type ____	Gal/Ton	0.90 or 2.90
Asphalt Concrete Intermediate Course, Type ____	Gal/Ton	0.90 or 2.90

Asphalt Concrete Surface Course, Type ____	Gal/Ton	0.90 or 2.90
Open-Graded Asphalt Friction Course	Gal/Ton	0.90 or 2.90
Permeable Asphalt Drainage Course, Type ____	Gal/Ton	0.90 or 2.90
Sand Asphalt Surface Course, Type ____	Gal/Ton	0.90 or 2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
__" Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to __" Pavement	Gal/SY	0.245

For the asphalt items noted in the chart as eligible for fuel adjustments, the bidder may include the *Fuel Usage Factor Adjustment Form* with their bid submission if they elect to use the fuel usage factor. The *Fuel Usage Factor Adjustment Form* is found at the following link:

https://connect.ncdot.gov/letting/LetCentral/Fuel%20Usage%20Factor%20Adjustment%20Form.pdf

Select either 2.90 Gal/Ton fuel factor or 0.90 Gal/Ton fuel factor for each asphalt line item on the *Fuel Usage Factor Adjustment Form*. The selected fuel factor for each asphalt item will remain in effect for the duration of the contract.

Failure to complete the *Fuel Usage Factor Adjustment Form* will result in using 2.90 gallons per ton as the Fuel Usage Factor for Diesel for the asphalt items noted above. The contractor will not be permitted to change the Fuel Usage Factor after the bids are submitted.

STEEL PRICE ADJUSTMENT:

(4-19-22) SP1 G47

Description and Purpose

Steel price adjustments will be made to the payments due the Contractor for items as defined herein that are permanently incorporated into the work, when the price of raw steel mill products utilized on the contract have fluctuated. The Department will adjust monthly progress payments up or down as appropriate for cost changes in steel according to this provision.

Eligible Items

The list of eligible bid items for steel price adjustment can be found on the Departments website at the following address:

https://connect.ncdot.gov/letting/LetCentral/Eligible%20Bid%20Items%20for%20Steel%20Price%20Adjustment.xlsx

Nuts, bolts, anchor bolts, rebar chairs, connecting bands and other miscellaneous hardware associated with these items shall not be included in the price adjustment.

Adjustments will only be made for fluctuations in the cost of the steel used in the above products as specified in the Product Relationship Table below. The producing mill is defined as the source of steel product before any fabrication has occurred (e.g., coil, plate, rebar, hot rolled

shapes, etc.). No adjustment will be made for changes in the cost of fabrication, coating, shipping, storage, etc.

No steel price adjustments will be made for any products manufactured from steel having an adjustment date, as defined by the Product Relationship Table below, prior to the letting date.

Bid Submittal Requirements

The successful bidder, within 14 calendar days after the notice of award is received by him, shall provide the completed Form SPA-1 to the Department. Form SPA-1 can be found on the Departments website at the following address:

https://connect.ncdot.gov/letting/LetCentral/Form%20SPA-1.xlsm

The Contractor shall provide Form SPA-1 listing the Contract Line Number, (with corresponding Item Number, Item Description, and Category) for the steel products they wish to have an adjustment calculated. Only the contract items corresponding to the list of eligible item numbers for steel price adjustment may be entered on Form SPA-1. The Contractor may choose to have steel price adjustment applied to any, all, or none of the eligible items. However, the Contractor's selection of items for steel price adjustment or non-selection (non-participation) may not be changed once Form SPA-1 has been received by the Department. Items the Bidder chooses for steel price adjustment must be designated by writing the word "Yes" in the column titled "Option" by each Pay Item chosen for adjustment. The Bidder's designations on Form SPA-1 must be written in ink or typed and signed by the Bidder to be considered complete. Items not properly designated, designated with "No", or left blank on the Bidder's Form SPA-1 will automatically be removed from consideration for adjustment. No steel items will be eligible for steel price adjustment on this Project if the Bidder fails to return Form SPA-1 in accordance with this provision.

Establishing the Base Price

The Department will use a blend of monthly average prices as reported from the Fastmarkets platform to calculate the monthly adjustment indices (BI and MI). This data is typically available on the first day of the month for the preceding month. The indices will be calculated by the Department for the different categories found on the Product Relationship Table below. For item numbers that include multiple types of steel products, the category listed for that item number will be used for adjusting each steel component.

The bidding index for Category 1 Steel items is $50.50 per hundredweight.
The bidding index for Category 2 Steel items is $86.16 per hundredweight.
The bidding index for Category 3 Steel items is $68.60 per hundredweight.
The bidding index for Category 4 Steel items is $55.78 per hundredweight.
The bidding index for Category 5 Steel items is $62.81 per hundredweight.
The bidding index for Category 6 Steel items is $90.16 per hundredweight.
The bidding index for Category 7 Steel items is $56.30 per hundredweight.
The bidding index represents a selling price of steel based on Fastmarkets data for the month of February 2022.

MI = Monthly Index. – in Dollars ($) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

BI = Bidding Index. - in Dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

Steel Product (Title)	BI, MI*	Adjustment Date for MI	Category
Reinforcing Steel, Bridge Deck, and SIP Forms	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	1
Structural Steel and Encasement Pipe	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	2
Steel H-Piles, Soldier Pile Walls	Based on one or more Fastmarkets indices	Delivery Date from Producing Mill	3
Guardrail and Pipe Piles Items	Based on one or more Fastmarkets indices	Material Received Date**	4
Fence Items	Based on one or more Fastmarkets indices	Material Received Date**	5
Overhead Sign Assembly, Signal Poles, High Mount Standards	Based on one or more Fastmarkets indices	Material Received Date**	6
Prestressed Concrete Members	Based on one or more Fastmarkets indices	Cast Date of Member	7

Submit documentation to the Engineer for all items listed in the Contract for which the Contractor is requesting a steel price adjustment.

Submittal Requirements

The items in categories 1,2, and 3, shall be specifically stored, labeled, or tagged, recognizable by color marking, and identifiable by Project for inspection and audit verification immediately upon arrival at the fabricator.

Furnish the following documentation for all steel products to be incorporated into the work and documented on Form SPA-2, found on the Departments website at the following address:

https://connect.ncdot.gov/projects/construction/Construction%20Forms/Form%20SPA-2.xlsx

Submit all documentation to the Engineer prior to incorporation of the steel into the completed work. The Department will withhold progress payments for the affected contract line item if the documentation is not provided and at the discretion of the Engineer the work is allowed to proceed. Progress payments will be made upon receipt of the delinquent documentation.

Step 1 (Form SPA -2)

Utilizing Form SPA-2, submit separate documentation packages for each line item from Form SPA-1 for which the Contractor opted for a steel price adjustment. For line items with multiple

components of steel, each component should be listed separately. Label each SPA-2 documentation package with a unique number as described below.

a. Documentation package number: (Insert the contract line-item) - (Insert sequential package number beginning with "1").
   Example: 412 - 1,
   412 - 2,
   424 – 1,
   424 – 2,
   424 – 3, etc.
b. The steel product quantity in pounds
   i. The following sources should be used, in declining order of precedence, to determine the weight of steel/iron, based on the Engineers decision:
      1. Department established weights of steel/iron by contract pay item per pay unit;
      2. Approved Shop Drawings;
      3. Verified Shipping Documents;
      4. Contract Plans;
      5. Standard Drawing Sheets;
      6. Industry Standards (i.e., AISC Manual of Steel Construction, AWWA Standards, etc.); and
      7. Manufacture's data.
   ii. Any item requiring approved shop drawings shall have the weights of steel calculated and shown on the shop drawings or submitted and certified separately by the fabricator.
c. The date the steel product, subject to adjustment, was shipped from the producing mill (Categories 1-3), received on the project (Categories 4-6), or casting date (Category 7).

Step 2 (Monthly Calculator Spreadsheet)

For each month, upon the incorporation of the steel product into the work, provide the Engineer the following:

1) Completed NCDOT Steel Price Adjustment Calculator Spreadsheet, summarizing all the steel submittal packages (Form SPA-2) actually incorporated into the completed work in the given month.
   a. Contract Number
   b. Bidding Index Reference Month
   c. Contract Completion Date or Revised Completion Date
   d. County, Route, and Project TIP information
   e. Item Number
   f. Line-Item Description
   g. Submittal Number from Form SPA-2
   h. Adjustment date
   i. Pounds of Steel
2) An affidavit signed by the Contractor stating the documentation provided in the NCDOT Steel Price Adjustment Calculator Spreadsheet is true and accurate.

Price Adjustment Conditions

Download the Monthly Steel Adjustment Spreadsheet with the most current reference data from the Department's website each month at the following address:

https://connect.ncdot.gov/projects/construction/Construction%20Forms/Form%20SPA-3%20NCDOT%20Steel%20Price%20Adjustment%20Calculator.xlsx

If the monthly Fastmarkets data is not available, the data for the most recent immediately preceding month will be used as the basis for adjustment.

Price Adjustment Calculations

The price adjustment will be determined by comparing the percentage of change in index value listed in the proposal (BI) to the monthly index value (MI). (See included sample examples). Weights and date of shipment must be documented as required herein. The final price adjustment dollar value will be determined by multiplying this percentage increase or decrease in the index by the represented quantity of steel incorporated into the work, and the established bidding index (BI) subject to the limitations herein.

Price increase/decrease will be computed as follows:

SPA = ((MI/ BI) -1) * BI *(Q/100)

Where;

SPA = Steel price adjustment in dollars

MI = Monthly Shipping Index. – in Dollars ($) per hundredweight (CWT). Use the adjustment indices from the month the steel was shipped from the producing mill, received on the project, or member cast as defined in the Product Relationship Table.

BI = Bidding Index. - in Dollars ($) per hundredweight (CWT). Use the adjustment indices as listed in the proposal.

Q = Quantity of steel, product, pounds actually incorporated into the work as documented by the Contractor, or Design Build Team and verified by the Engineer.

Calculations for price adjustment shall be shown separate from the monthly progress estimate and will not be included in the total cost of work for determination of progress or for extension of Contract time in accordance with Subarticle 108-10(B)(1).

Any apparent attempt to unbalance bids in favor of items subject to price adjustment may result in rejection of the bid proposal.

Adjustments will be paid or charged to the Contractor only. Any Contractor receiving an adjustment under this provision shall distribute the proper proportional part of such adjustments to the subcontractor who performed the applicable work.

Delays to the work caused by steel shortages may be justification for a Contract time extension but will not constitute grounds for claims for standby equipment, extended office overhead, or other costs associated with such delays.

If an increase in the steel material price is anticipated to exceed 50% of the original quoted price, the contractor must notify the Department within 7 days prior to purchasing the material. Upon receipt of such notification, the Department will direct the Contractor to either (1) proceed with the work or (2) suspend the work and explore the use of alternate options.

If the decrease in the steel material exceeds 50% of the original quoted price, the contractor may submit to the Department additional market index information specific to the item in question to dispute the decrease. The Department will review this information and determine if the decrease is warranted.

When the steel product adjustment date, as defined in the Product Relationship Table, is after the approved contract completion date, the steel price adjustments will be based on the lesser value of either the MI for the month of the approved contract completion date or the MI for the actual adjustment date.

If the price adjustment is based on estimated material quantities for that time, and a revision to the total material quantity is made in a subsequent or final estimate, an appropriate adjustment will be made to the price adjustment previously calculated. The adjustment will be based on the same indices used to calculate the price adjustment which is being revised. If the adjustment date of the revised material quantity cannot be determined, the adjustment for the quantity in question, will be based on the indices utilized to calculate the steel price adjustment for the last initial documentation package submission, for the steel product subject to adjustment, that was incorporated into the particular item of work, for which quantities are being finalized.
Example: Structural steel for a particular bridge was provided for in three different shipments with each having a different mill shipping date. The quantity of structural steel actually used for the bridge was calculated and a steel price adjustment was made in a progress payment. At the conclusion of the work an error was found in the plans of the final quantity of structural steel used for the bridge. The quantity to be adjusted cannot be directly related to any one of the three mill shipping dates. The steel price adjustment for the quantity in question would be calculated using the indices that were utilized to calculate the steel price adjustment for the quantity of structural steel represented by the last initial structural steel documentation package submission. The package used will be the one with the greatest sequential number.

Extra Work/Force Account:

When steel products, as specified herein, are added to the contract as extra work, in accordance with the provisions of Article 104-7 or 104-3, the Engineer will determine and specify in the supplemental agreement, the need for application of steel price adjustments on a case-by-case basis. No steel price adjustments will be made for any products manufactured from steel having an adjustment date prior to the supplemental agreement execution date. Price adjustments will be made as provided herein, except the Bidding Index will be based on the month in which the supplemental agreement pricing was executed.

For work performed on force account basis, reimbursement of actual material costs, along with the specified overhead and profit markup, will be considered to include full compensation for the current cost of steel and no steel price adjustments will be made.

Examples **Form SPA-2**

Steel Price Adjustment Submission Form

Contract Number __C203394_____ Bid Reference Month __January 2019__

Submittal Date ___8/31/2019_____

Contract Line Item _____237_____

Line Item Description __APPROX….LBS Structural Steel_____

Sequential Submittal Number _____2_____

Supplier	Description of material	Location information	Quantity in lbs.	Adjustment Date
XYZ mill	Structural Steel	Structure 3, Spans A-C	1,200,000	May 4, 2020
ABC distributing	Various channel & angle shapes	Structure 3 Spans A-C	35,000	July 14, 2020
		Total Pounds of Steel	1,235,000	

Note: Attach the following supporting documentation to this form.

- Bill of Lading to support the shipping dates
- Supporting information for weight documentation (e.g., Pay item reference, Shop drawings, shipping documents, Standards Sheets, industry standards, or manufacturer's data)

By providing this data under my signature, I attest to the accuracy of and validity of the data on this form and certify that no deliberate misrepresentation in any manner has occurred.

Printed Name Signature

_____ _____

GT-0.1

PROJECT SPECIAL PROVISIONS

GEOTECHNICAL

U-2519BA

U-2519BB

DocuSigned by:
Geotechnical Engineering Unit
E06538624A11498...
06/13/2022

RIP RAP **(SPECIAL)**

1.0 RIP RAP CLASS B LIMESTONE

All ditches collecting runoff from cut slopes in formational soils where it is found acidic groundwater is present in areas shown on Roadway Plan Sheet 3G-1 shall use Rip Rap, Class B Limestone consisting exclusively of limestone materials meeting the criteria in Section 2.0 for lining ditches. Plating of roadway cut slopes with leaching acid groundwater may also require Rip Rap, Class B Limestone. Rip Rap, Class B Limestone shall follow Section 876 of the Standard Specifications except for the following additions:

2.0 MATERIALS

Revise Section 876 of the 2018 Standard Specification as follows:

Article 876-2 MATERIALS, first paragraph, include the following after the first sentence:

The Engineer will handle testing any groundwater leaching out of the cut slopes to determine if the pH value of the water is less than 5.5. Rip Rap, Class B Limestone will not be needed if pH is 5.5 or above. If the pH of the water is less than 5.5, then provide Type 2 geotextile for filtration geotextiles and line ditch with Rip Rap, Class B Limestone meeting the following criteria: Limestone shall have not less than 90% calcium carbonate equivalent and dolomitic limestone shall have not less than 10% of magnesium. If pH of water is less than 4.5, then additionally plate the cut slope from the ditch line up to the level where groundwater is leaching out of the face of the cut with 1' thick Rip Rap, Class B Limestone. Line ditches downstream of the presence of leaching acid groundwater cut slopes with Rip Rap, Class B Limestone as directed by the Engineer.

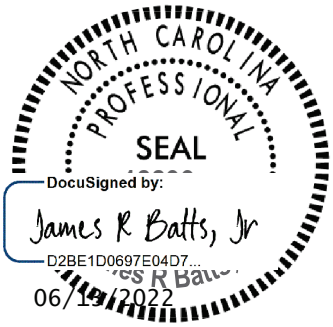
ARTICLE 876-4 MEASUREMENT AND PAYMENT

Rip Rap, Class B, Limestone will be measured and paid in tons. Plain rip rap will be measured by weighing rip rap in trucks in accordance with 106-7.

The contract unit prices for Rip Rap, Class B, Limestone will be full compensation for providing, transporting, and placing rip rap, filtration geotextiles, wire staples and anchor pins.

Payment will be made under:

Pay Item	Pay Unit
Rip Rap, Class B Limestone	Tons


NORTH CAROLINA
PROFESSIONAL
SEAL
DocuSigned by:
James R Batts, Jr
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06/15/2022

8/17/99

INDEX of SHEETS, GENERAL NOTES, and LIST of STANDARDS

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA / U-2519BB	1A

ROADWAY DESIGN ENGINEER
6/10/2022
NORTH CAROLINA PROFESSIONAL SEAL 16725 ENGINEER SCOTT D. BLEVINS
DocuSigned by: Scott D. Blevins

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS

LIST OF STANDARD DRAWINGS

EFF. 01–16–2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch – N. C. Department of Transportation – Raleigh, N. C., Dated January, 2018 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 – EARTHWORK	
200.03	Method of Clearing – Method III
225.01	Guide for Grading Subgrade – Interstate and Freeway
225.02	Guide for Grading Subgrade – Secondary and Local
225.03	Deceleration and Acceleration Lanes
225.04	Method of Obtaining Superelevation – Two Lane Pavement
225.05	Method of Obtaining Superelevation – Divided Highways
225.06	Method of Grading Sight Distance at Intersections
225.08	Earth Berm Median Pier Protection
225.09	Guide for Shoulder and Ditch Transition at Grade Separations
235.01	Embankment Monitoring
240.01	Guide for Berm Ditch Construction
DIVISION 3 – PIPE CULVERTS	
300.01	Method of Pipe Installation
310.10	Driveway Pipe Construction
DIVISION 4 – MAJOR STRUCTURES	
422.01	Bridge Approach Fills – Type I Standard Approach Fill
422.03	Reinforced Bridge Approach Fills – Type A Alternate Approach Fill for Integral Abutment
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
560.02	Method of Shoulder Construction – High Side of Superelevated Curve – Method II
DIVISION 6 – ASPHALT BASES AND PAVEMENTS	
610.03	Guide for Paving Shoulders Under Bridges – Method III
610.04	Guide for Paving Shoulders Under Bridges – Method IV
654.01	Pavement Repairs
665.01	Asphalt Shoulders – Milled Rumble Strips
DIVISION 8 – INCIDENTALS	
806.01	Concrete Right–of–Way Markers
806.02	Granite Right–of–Way Markers
815.02	Subsurface Drain
838.01	Concrete Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.11	Brick Endwall for Single and Double Pipe Culverts – 15" thru 48" Pipe 90 Skew
838.21	Reinforced Concrete Endwall – for Single 54" Pipe 90 Skew
838.27	Reinforced Concrete Endwall – for Single 60" Pipe 90 Skew
838.33	Reinforced Concrete Endwall – for Single 66" Pipe 90 Skew
838.39	Reinforced Concrete Endwall – for Single 72" Pipe 90 Skew
838.45	Notes for Reinforced Concrete Endwall – Std. Dwg 838.21 thru 838.40
838.51	Reinforced Brick Endwall – for Single 54" Pipe 90 Skew
838.57	Reinforced Brick Endwall – for Single 60" Pipe 90 Skew
838.63	Reinforced Brick Endwall – for Single 66" Pipe 90 Skew
838.69	Reinforced Brick Endwall – for Single 72" Pipe 90 Skew
838.75	Notes for Reinforced Brick Endwall – Std. Dwg 838.51 thru 838.70
840.00	Concrete Base Pad for Drainage Structures
840.01	Brick Catch Basin – 12" thru 54" Pipe
840.02	Concrete Catch Basin – 12" thru 54" Pipe
840.03	Frame, Grates and Hood – for Use on Standard Catch Basin
840.04	Concrete Open Throat Catch Basin – 12" thru 48" Pipe
840.05	Brick Open Throat Catch Basin – 12" thru 48" Pipe
840.14	Concrete Drop Inlet – 12" thru 30" Pipe
840.15	Brick Drop Inlet – 12" thru 30" Pipe
840.16	Drop Inlet Frame and Grates – for use with Std. Dwg 840.14 and 840.15
840.17	Concrete Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.19	Concrete Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.20	Frames and Wide Slot Flat Grates
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames – Brick or Concrete or Precast
840.26	Brick Grated Drop Inlet Type 'A' – 12" thru 72" Pipe
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe
840.28	Brick Grated Drop Inlet Type 'D' – 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box – 12" thru 66" Pipe
840.32	Brick Junction Box – 12" thru 66" Pipe
840.34	Traffic Bearing Junction Box – for Use with Pipes 42" and Under
840.41	Spring Box – Concrete or Brick
840.45	Precast Drainage Structure
840.54	Manhole Frame and Cover
840.66	Drainage Structure Steps
840.72	Pipe Collar
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
848.01	Concrete Sidewalk
848.02	Driveway Turnout – Radius Type
848.04	Street Turnout
848.05	Curb Ramp – Proposed Curb & Gutter
850.01	Concrete Paved Ditch850.11 Guide for Berm Drainage Outlet – 24" and 30" Pipe
852.01	Concrete Islands
852.05	Median Curb for Catch Basin – for Use with 1'–6" Curb and Gutter
852.06	Method for Placement of Drop Inlets in Concrete Islands
852.10	Median Construction – with Curb and Gutter
857.01	Precast Reinforced Concrete Barrier – 41" Single Faced
862.01	Guardrail Placement
862.02	Guardrail Installation (Special Detail for Sheet 6 of 8)
862.03	Structure Anchor Units (Special Detail for Type III Anchor Units Sheets 1 of 7 and 2 of 7)
862.04	Anchoring End of Guardrail – B–77 and B–83 Anchor Units
865.01	Cable Guiderail
866.02	Woven Wire Fence – with Wood Post
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.03	Drainage Ditches with Class 'A' Rip Rap
876.04	Drainage Ditches with Class 'B' Rip Rap

LIST OF GENERAL NOTES

EFF. 01–16–2018
REV.

GRADE LINE:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE–IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 & 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01 & 560.02.

SIDE ROADS:

THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

BERM DITCHES:

BERM DITCHES SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAILS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

SUBSURFACE DRAINS:

SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.

DRIVEWAYS:

DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.02 USING 3' RADII OR RADII AS SHOWN ON THE PLANS. LOCATIONS OF DRIVES WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

STREET TURNOUT:

STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 848.04 USING THE RADII NOTED ON PLANS.

GUARDRAIL:

THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:

SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC NOT SHOWN ON THE PLANS WILL BE PAID FOR AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".

END BENTS:

THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS–SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE LUMBEE RIVER EMC, CENTURYLINK, SPECTRUM, PIEDMONT NATURAL GAS, AQUA NC, AND FAUETTEVILLE PUBLIC WORKS COMMISSION.

RIGHT–OF–WAY MARKERS:

ALL RIGHT–OF–WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

CURB RAMPS

CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. CONSTRUCT ALL CURB RAMPS ACCORDANCE WITH STD 848.05.

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8/17/99

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO.	SHEET NO.
U-2519BA	3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location	Drain Type*	LF
-L-	352+00	372+00	LT/RT/CL	SD	6000
-L-	379+00	391+50	LT/RT/CL	SD	3750
-L-	440+00	455+50	LT/RT/CL	SD	4650
CONTINGENCY					6100
			U-2519BA TOTAL LF:		20,500
			U-2519BB TOTAL LF:		6,250
			GRAND TOTAL:		26,750

***UD = Underdrain**
***BD = Blind Drain**
***SD = Subsurface Drain**
***For Subsurface Drainage, see Subsurface Drainage (SP).**

SUMMARY OF AGGREGATE SUBGRADE /STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	500	1,000	1,500		
		U-2519BA TOTAL CY/TONS/SY:			500	1000**	1500**	0	0
		U-2519BB TOTAL CY/TONS/SY:			500	1,000	1500**	0	0
			GRAND TOTAL:		1,000	2,000	3,000	0	0

***ASU(1/2) = Aggregate Subgrade (Type 1 or 2)**
***AST = Aggregate Stabilization**
****Total tons of "Class IV Subgrade Stabilization" and total square yards of "Geotextile for Soil Stabilization" are only the estimated quantities for ASU(1/2)/AST and may only represent a portion of the subgrade stabilization and geotextile quantities shown in the Item Sheets of the Proposal.**

SUMMARY OF GEOTEXTILE FOR SOIL STABILIZATION FOR EMBANKMENT STABILITY

LINE	Station *	Station *	Location LT/RT	SY
L	328+25.00	344+25.00	RT/LT	6,775
L	344+75.00	349+75.00		6,775
L	373+50.00	379+75.00		6,775
L	440+75.00	443+25.00	LT/RT	6,775
Y13RPA	12+25.00	22+00.00		6,000
Y13RPB	20+20.00	22+60.00		6,000
Y13RPC	17+75.00	18+50.00		6,000
U-2519BA CONTINGENCY				10,000
U-2519BA TOTAL SY:				55,100
U-2519BB CONTINGENCY TOTAL SY:				20,000
GRAND TOTAL SY:				75,100 **

***Geotextile for Soil Stabilization maybe needed in the locations listed above.**
****Geotextile for Soil Stabilization quantities for Undercut Excavation for embankment and subgrade are not included.**

SUMMARY OF REINFORCED SOIL SLOPES

LINE	Beginning Slope	Approx. Station	Ending Slope	Approx. Station	Location LT/RT	SY
L	2.5:1	394+25.00	2:1	396+50.00	RT	960
				U-2519BA TOTAL SY:		960
				U-2519BB TOTAL SY:		0
				GRAND TOTAL SY:		960

SUMMARY OF EMBANKMENT WAITING PERIODS

LINE	Station	Station	MONTHS
-Y16-	23+39.38	25+43.38	1
		U-2519BA:	1
		U-2519BB:	N/A

SUMMARY OF RIP–RAP CLASS B – LIMESTONE

LINE	Approx. Station	Approx. Station	CONTINGENCY TON
L	352+00.00	372+00.00	3,700
L	379+00.00	391+50.00	3,650
L	440+00.00	455+50.00	3,650
U-2519BA CONTINGENCY TOTAL SY:			11,000
U-2519BB TOTAL SY:			0
CONTINGENCY GRAND TOTAL SY:			11,000*

***Special provision Rip Rap, Class B Limestone to be used when acidic groundwater is found in foundational cut locations.**

SUMMARY OF BRIDGE WAITING PERIODS

Bridge Description	End Bent/ Bent No.	MONTHS
Structure #4 - Bridge No. 451 on Stoney Point Rd. (-Y16-) over -L-	1 & 2	1
	U-2519BA:	1
	U-2519BB:	N/A

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TIP NO.	SHEET NO.
U-2519BA	SIGN-6B

APPROVED: DocuSigned by: David M. Eaton 0DA1C5F247484F7...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

-Y13- STA. 34+65+/-
MATCHLINE SEE SHEET SIGN-6I

-Y13- SR 1003 (CAMDEN RD)

-L- (I-295)

MATCHLINE SEE SHEET SIGN-6A
-L- STA. 346+62+/-

STA. 348+00 -L-

MATCHLINE SEE SHEET SIGN-6J
-Y13- STA. 62+10+/-

STA. 367+60 -L-

MATCHLINE SEE SHEET SIGN-6C
-L- STA. 374+50+/-

402 DO NOT ENTER (2 SIGNS) 403 416 RIGHT LANE ENDS 413 ONE WAY 405 ONE WAY 407 RIGHT LANE ENDS 413 500 FEET 424 WRONG WAY (2 SIGNS) 404 406 SOUTH I-295 295 509 36"X18" 1003 302 36"X18" 1003 301 72"X24" 308 506 NORTH I-295 295 WRONG WAY (2 SIGNS) 404 406 416 DO NOT ENTER (2 SIGNS) 403 RIGHT LANE ENDS 413 ONE WAY 405 ONE WAY 407 416 402

SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6H

APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748F7...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BREAKLINE SEE THIS SHEET

BREAKLINE SEE THIS SHEET

MATCHLINE SEE SHEET SIGN-6G
-L- STA. 503+00+/-

-L- (I-295)

-L- STA. 519+00
END PROJECT U-2519BA

STA. 512+50 -L-

SINGLE FACED CONC. BARRIER

5 SIGNS

SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6J

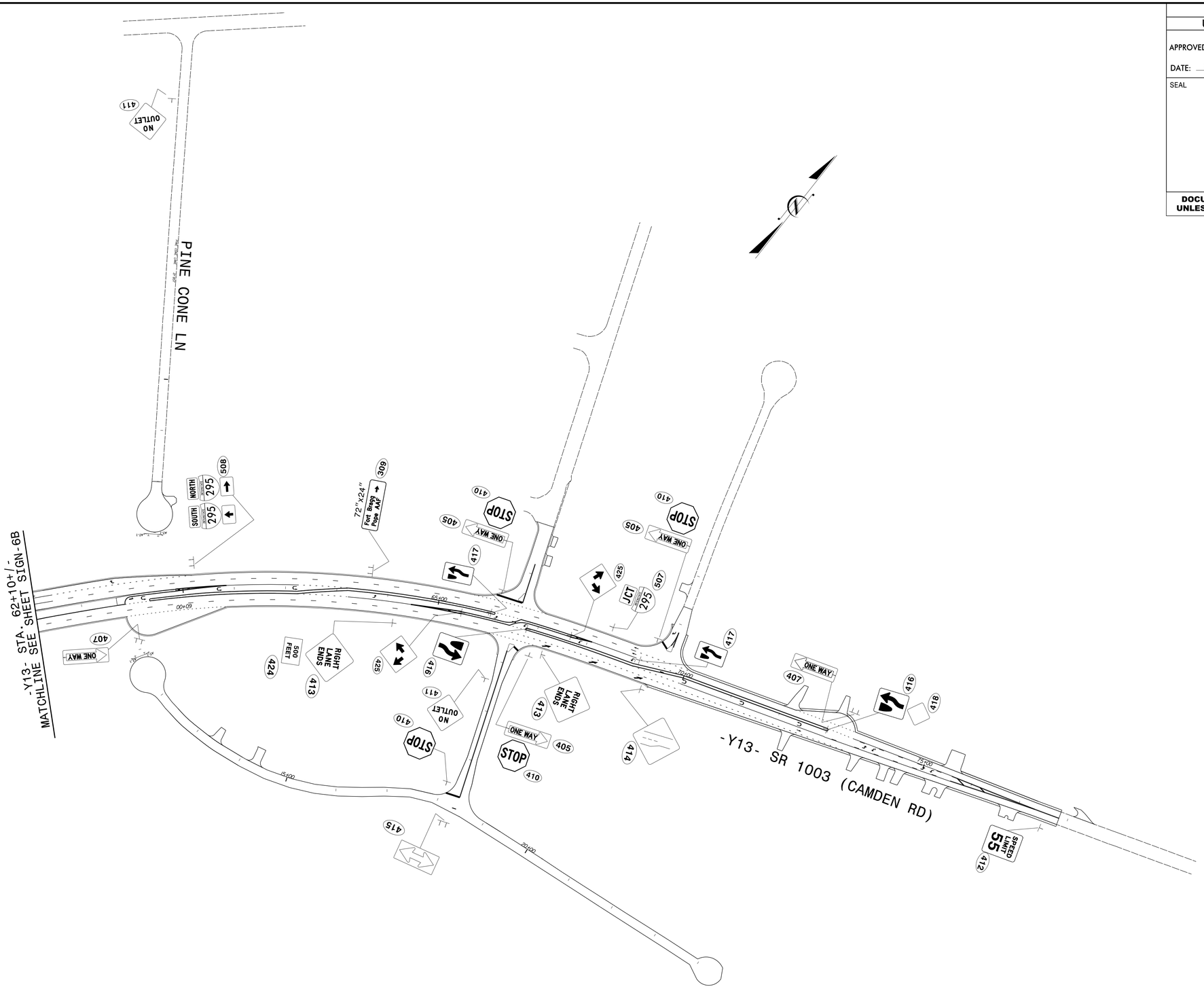
APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748F7...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6L

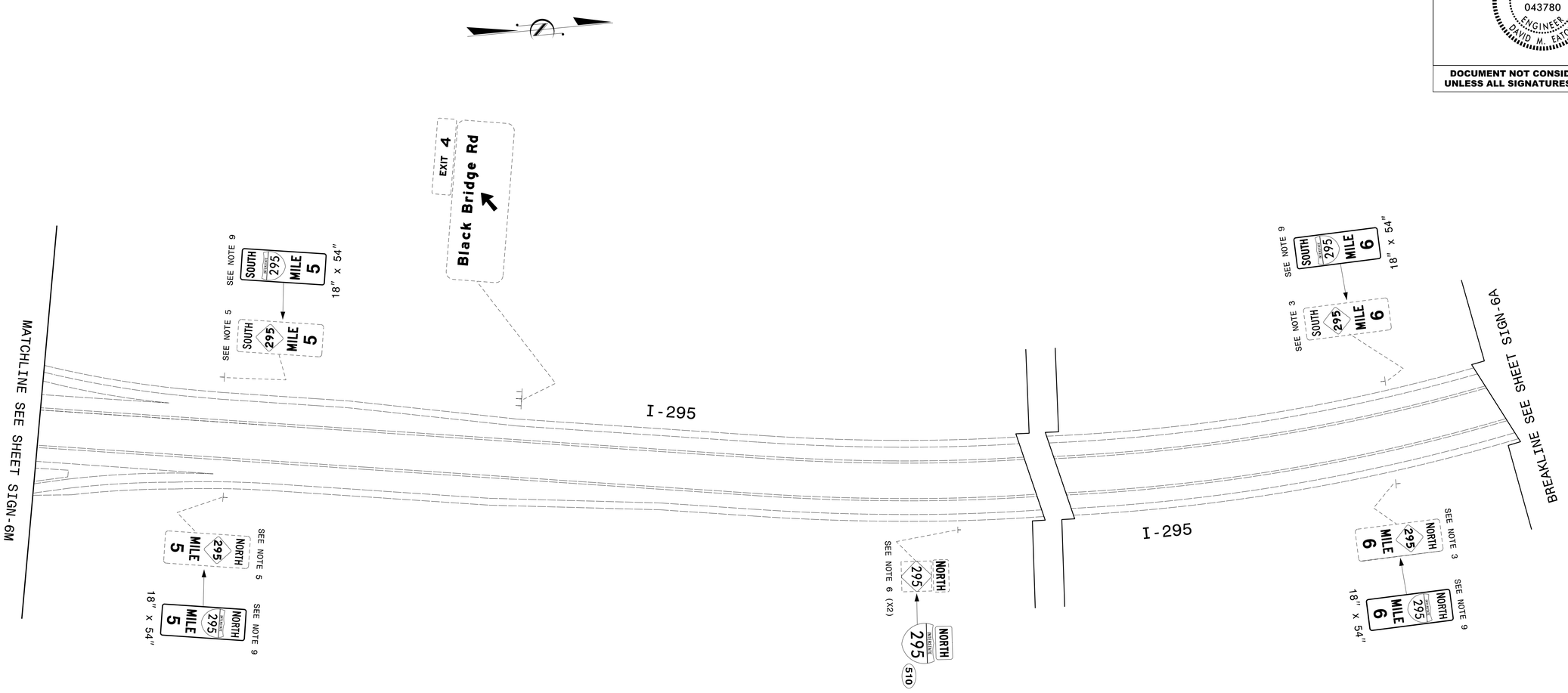
APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6M

APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748FF...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

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MATCHLINE SEE SHEET SIGN-6N

EXIT 4

I-295

BLACK BRIDGE RD

OLD PLANK RD

SEE NOTE 6 (X2)

SEE NOTE 5

SEE NOTE 6 (X3)

MATCHLINE SEE SHEET SIGN-6M

SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6N

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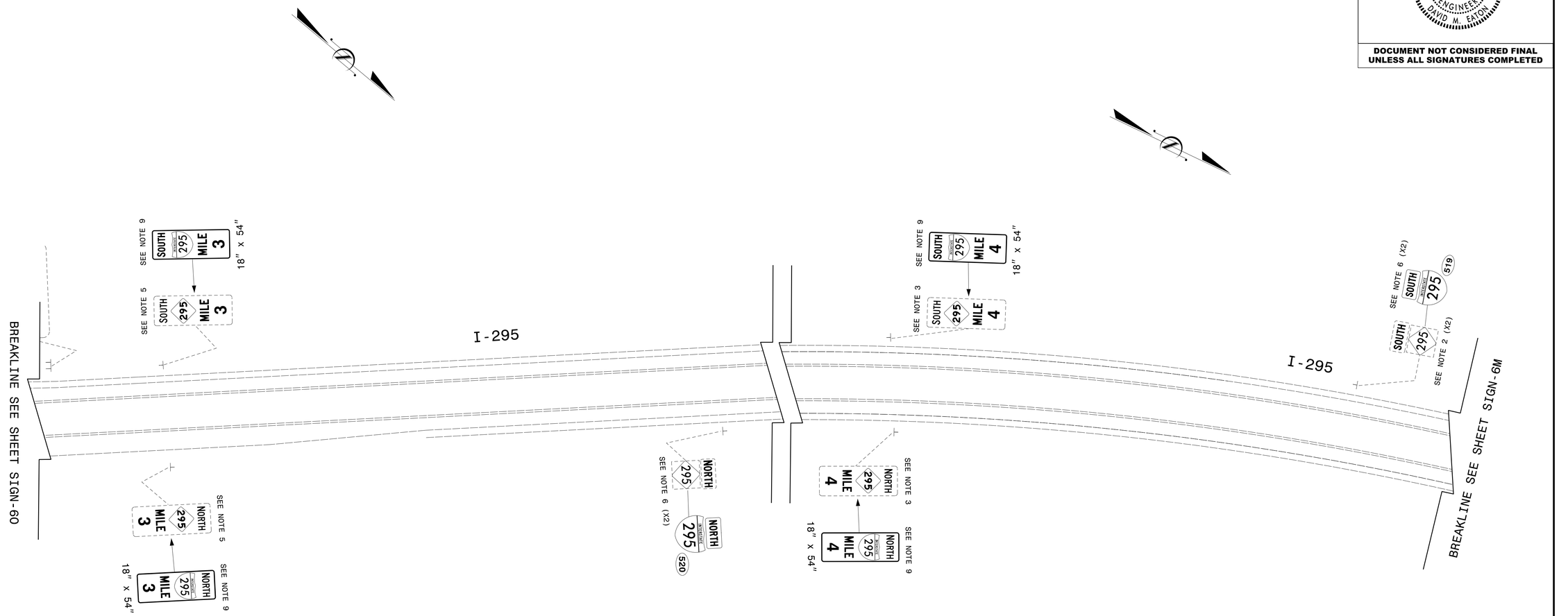
DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-60

APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748F7...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BREAKLINE SEE SHEET SIGN-6O

SR 1118 PARKTON RD

PARKTON RD

I-295

SEE NOTE 6 (X2)

SEE NOTE 6 (X3)

SEE NOTE 6 (X3)

SEE NOTE 6 (X3)

SEE NOTE 6 (X3)

SEE NOTE 5

SEE NOTE 5

SEE NOTE 6 (X3)

SEE NOTE 6 (X3)

LEFT EXIT 1 I-95 NORTH Benson 1½ MILES

BREAKLINE SEE SHEET SIGN-6N

MATCHLINE SEE SHEET SIGN-6P

SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6P

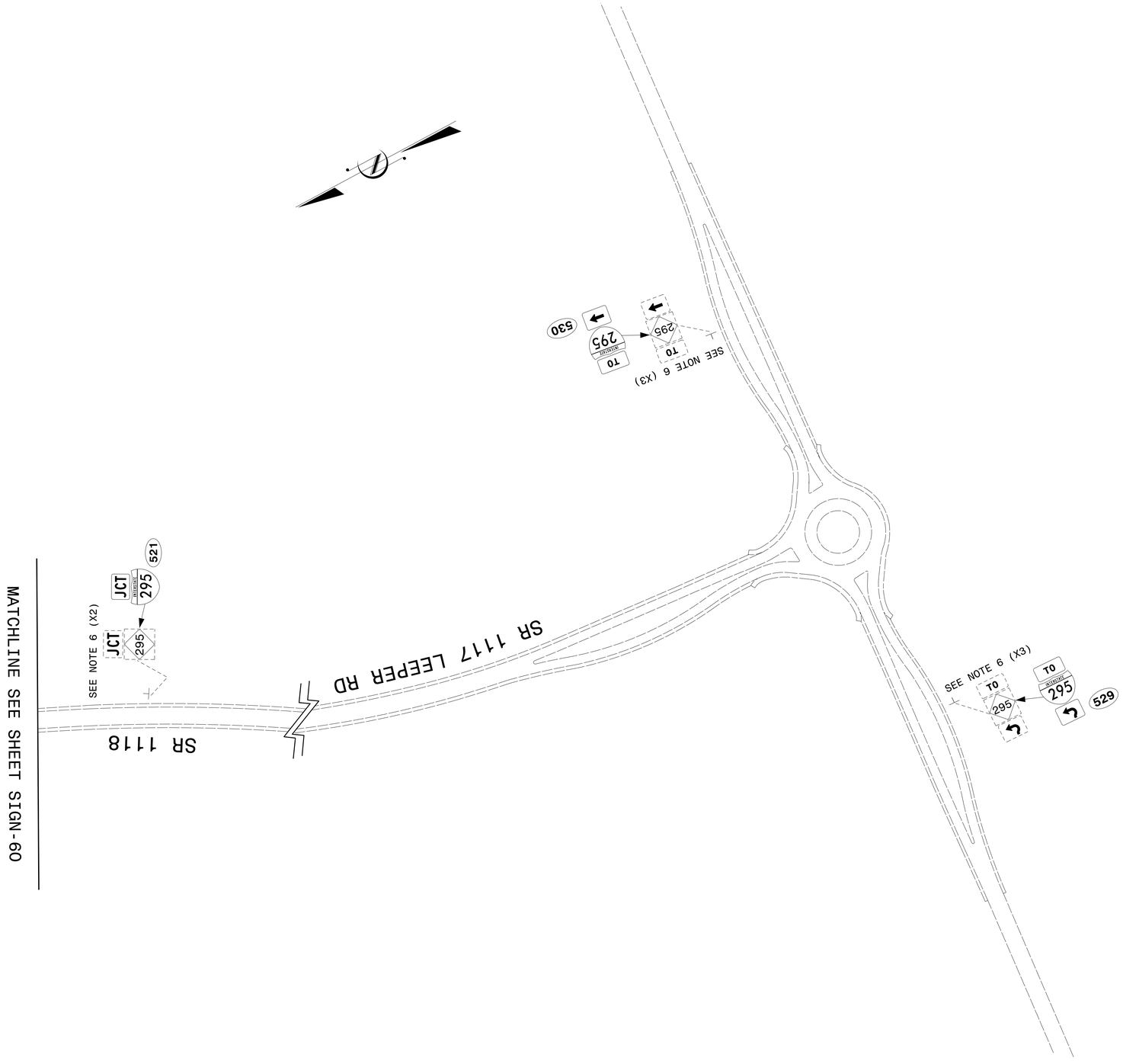
APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748FF...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6Q

APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SR 1902 EVERETT RD

SOUTH 95 Lumberton

NORTH 95 Benson EXIT 30 MPH

LEFT EXIT 1

TO I-95 SOUTH

EXIT 1

SEE NOTE 9

SOUTH 295 MILE 1 18" x 54"

SEE NOTE 5

SOUTH 295 MILE 1

SEE NOTE 2 (X2)

END 295

END 295 533

SEE NOTE 6 (X2)

BREAKLINE SEE SHEETS SIGN-6R AND SIGN-6S

I-295

I-295

SEE NOTE 6 (X2)

SOUTH 295 531

SOUTH 295

SEE NOTE 2 (X2)

SEE NOTE 9

SOUTH 295 MILE 2 18" x 54"

SEE NOTE 3

SOUTH 295 MILE 2

SEE NOTE 5

MILE 1 295 NORTH

SEE NOTE 9

MILE 1 295 NORTH 18" x 54"

TO I-95 NORTH

SEE NOTE 2 (X2)

295 NORTH

295 532

SEE NOTE 6 (X2)

I-295

MILE 2 295 NORTH

SEE NOTE 3

MILE 2 295 NORTH 18" x 54"

SEE NOTE 9

BREAKLINE SEE SHEET SIGN-6O

US-301

SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6R

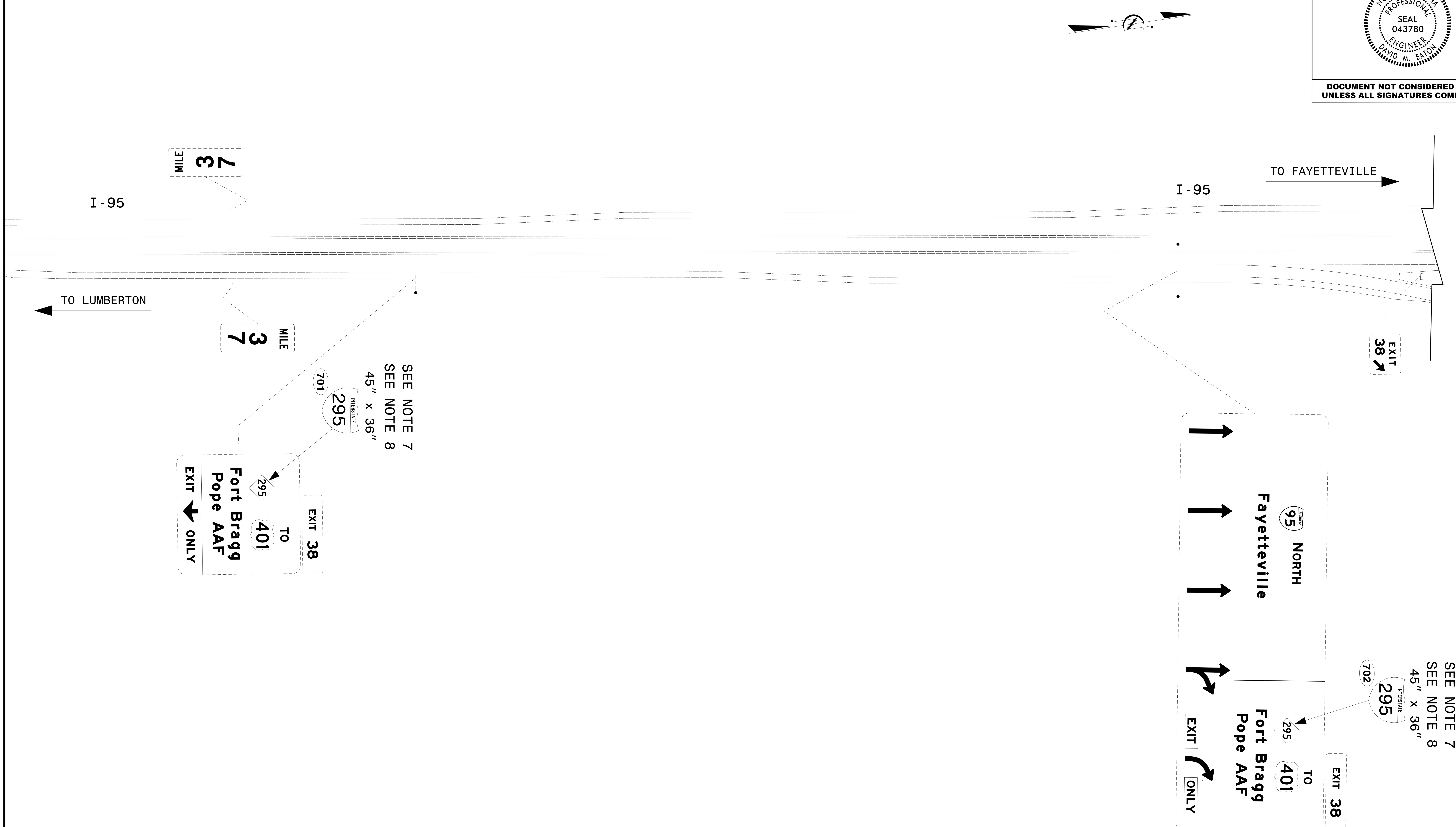
APPROVED: David M. Eaton

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



SIGNING PLANS

TIP NO.	SHEET NO.
U-2519BA	SIGN-6S

APPROVED: DocuSigned by: David M. Eaton DDA1C5F24748F7...

DATE: 04/25/2022

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 043780 ENGINEER DAVID M. EATON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GREEN SPRINGS RD

BREAKLINE SEE SHEET SIGN-6Q

EXIT 38 TO 401

295

INTERSTATE 295 (703)

45" x 36"

SEE NOTE 7

SEE NOTE 8

I-95

TO LUMBERTON

SEE NOTE 7

SEE NOTE 8

45" x 36"

INTERSTATE 295 (704)

EXIT 38 TO 401 1 MILE

295

TO FAYETTEVILLE

BUS I-95

US 301 SERVICE RD

EXIT 38 TO 401 2 MILES

295

45" x 36"

INTERSTATE 295 (705)

SEE NOTE 7

SEE NOTE 8

I-95

TO DUNN

SIGNING PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-2519BB	UC-10

DESIGNED BY: DJ
DRAWN BY: DJ
CHECKED BY: TR
APPROVED BY: TR
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

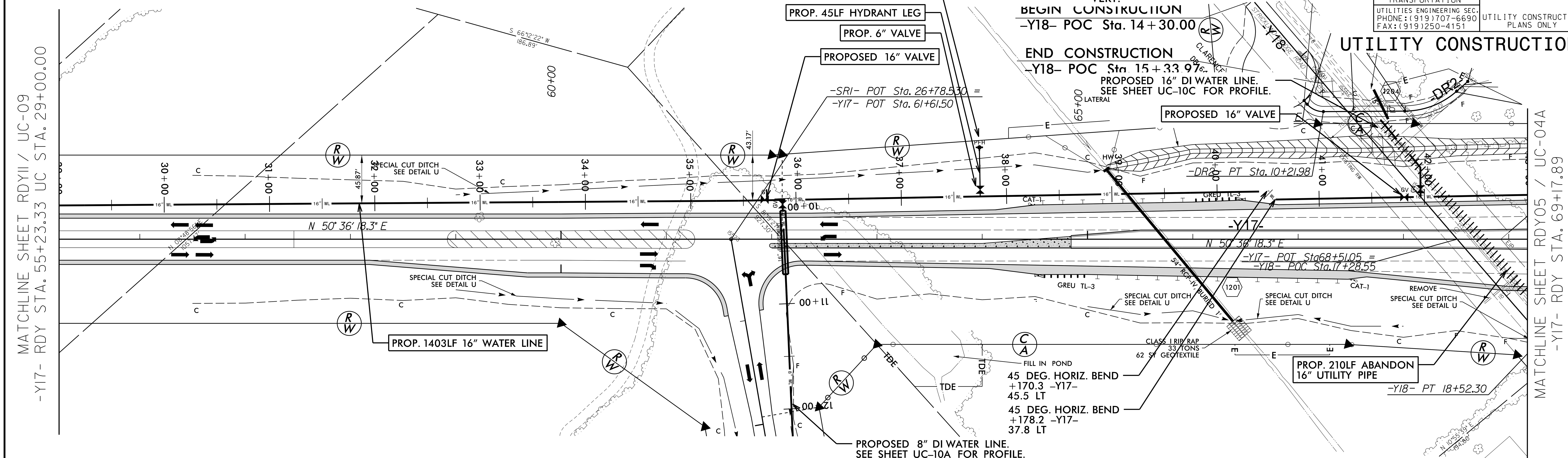
UTILITY CONSTRUCTION PLANS ONLY

Dewberry

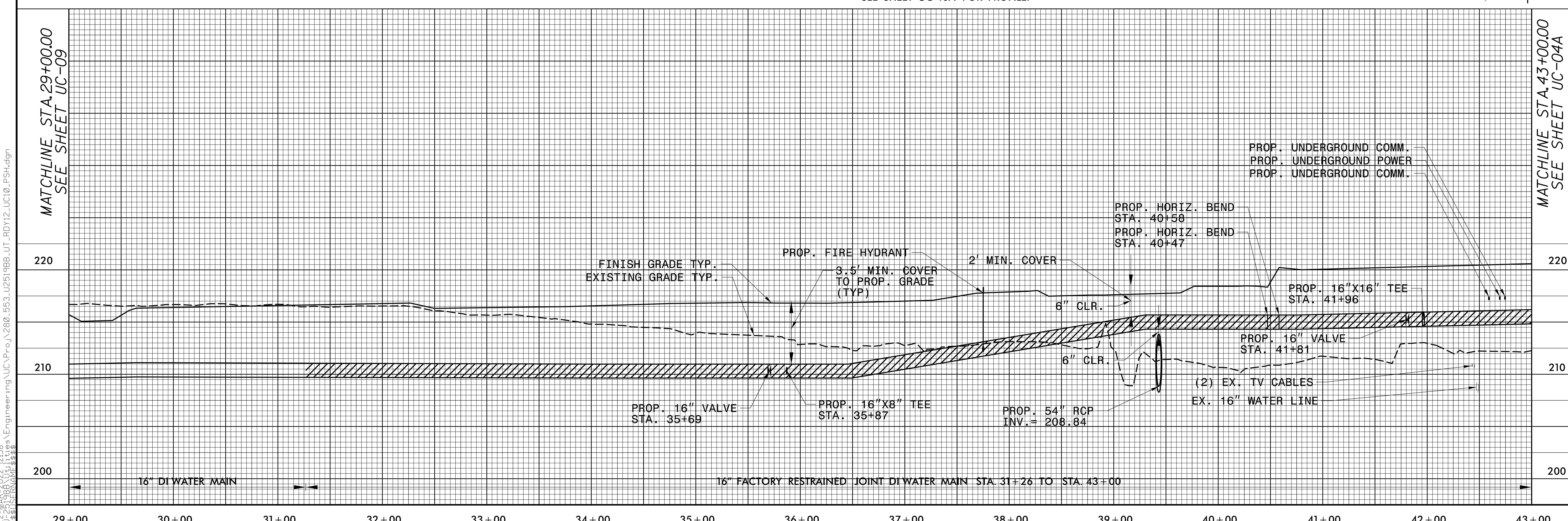
3/24/2022

UTILITY CONSTRUCTION

NOTE:
THE ESTIMATED QUANTITY OF DUCTILE IRON WATER PIPE FITTINGS ON THIS PLAN SHEET IS 1900 POUNDS. THE ACTUAL QUANTITY AND TYPE OF FITTINGS WILL VARY BASED ON FIELD CONDITIONS.



GRAPHIC SCALE
50 25 0 50 100
HORIZ.
5 0 5 10
VERT.
NAD 83/95
PROP. FIRE HYDRANT
PROP. 45LF HYDRANT LEG
PROP. 6" VALVE
PROPOSED 16" VALVE
BEGIN CONSTRUCTION
-Y18- POC Sta. 14+30.00
END CONSTRUCTION
-Y18- POC Sta. 15+33.97
PROPOSED 16" DI WATER LINE. SEE SHEET UC-10C FOR PROFILE.
-SR1- POT Sta. 26+78.530 =
-Y17- POT Sta. 61+61.50
PROPOSED 16" VALVE
-DR2- PT Sta. 10+21.98
N 50° 36' 18.3" E
-Y17-
-Y17- POT Sta68+51.05 =
-Y18- POC Sta.17+28.55
SPECIAL CUT DITCH SEE DETAIL U
PROP. 1403LF 16" WATER LINE
CLASS I RIP RAP 33 TONS 62 SY GEOTEXTILE
FILL IN POND
45 DEG. HORIZ. BEND +170.3 -Y17- 45.5 LT
45 DEG. HORIZ. BEND +178.2 -Y17- 37.8 LT
PROP. 210LF ABANDON 16" UTILITY PIPE
-Y18- PT 18+52.30
PROPOSED 8" DI WATER LINE. SEE SHEET UC-10A FOR PROFILE.
MATCHLINE SHEET RDY11 / UC-09
-Y17- RDY STA. 55+23.33 UC STA. 29+00.00
MATCHLINE SHEET RDY05 / UC-04A
-Y17- RDY STA. 69+17.89
UC STA. 43+00.00



MATCHLINE STA.29+00.00 SEE SHEET UC-09
MATCHLINE STA.43+00.00 SEE SHEET UC-04A
PROP. UNDERGROUND COMM.
PROP. UNDERGROUND POWER
PROP. UNDERGROUND COMM.
PROP. HORIZ. BEND STA. 40+58
PROP. HORIZ. BEND STA. 40+47
FINISH GRADE TYP.
EXISTING GRADE TYP.
PROP. FIRE HYDRANT
3.5' MIN. COVER TO PROP. GRADE (TYP)
2' MIN. COVER
6" CLR.
PROP. 16"X16" TEE STA. 41+96
PROP. 16" VALVE STA. 41+81
6" CLR.
(2) EX. TV CABLES
EX. 16" WATER LINE
PROP. 16" VALVE STA. 35+69
PROP. 16"X8" TEE STA. 35+87
PROP. 54" RCP INV.= 208.84
220
210
200
16" DI WATER MAIN
16" FACTORY RESTRAINED JOINT DI WATER MAIN STA. 31+26 TO STA. 43+00
29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00

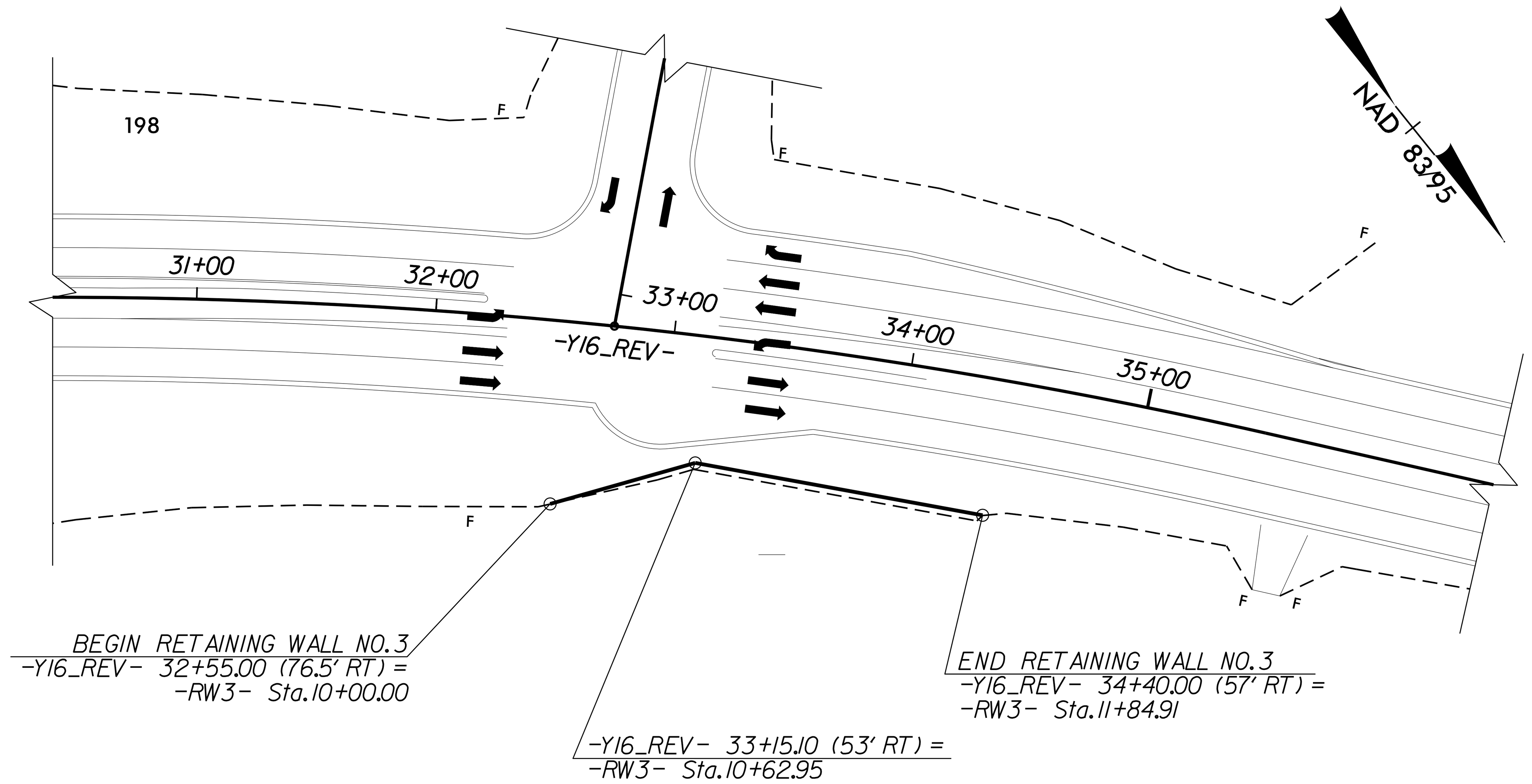
GEOTECHNICAL ENGINEER | ENGINEER

SEAL 032171 NORTH CAROLINA PROFESSIONAL ENGINEER JINYOUNG PARK

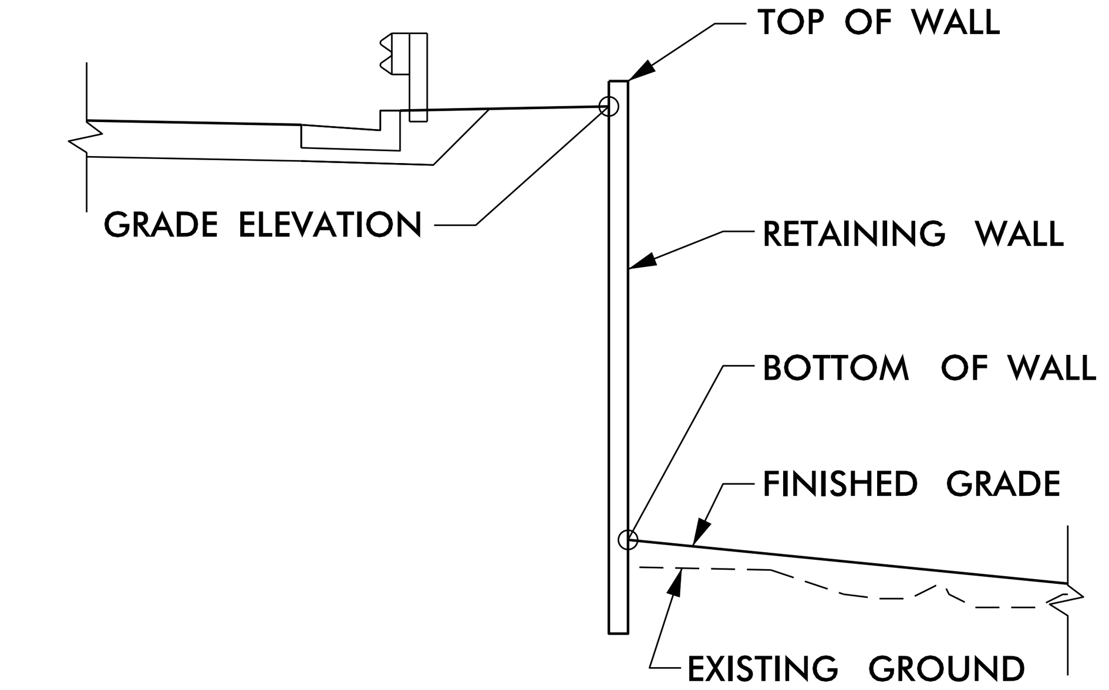
DocuSigned by: 06/10/2022

SIGNATURE DATE | SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



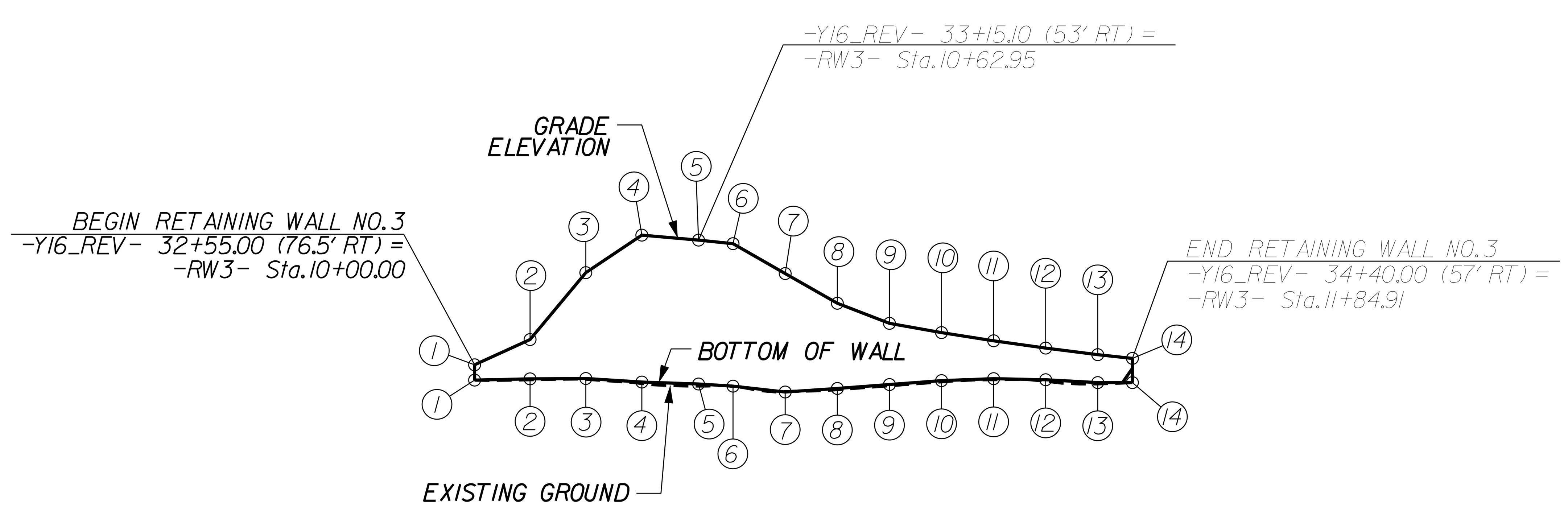
PLAN VIEW FOR RETAINING WALL NO. 3



FROM -Y16REV- STA. 32+95± TO -Y16REV- ATA. 33+00±

TYPICAL SECTION WITHOUT BACKSLOPE

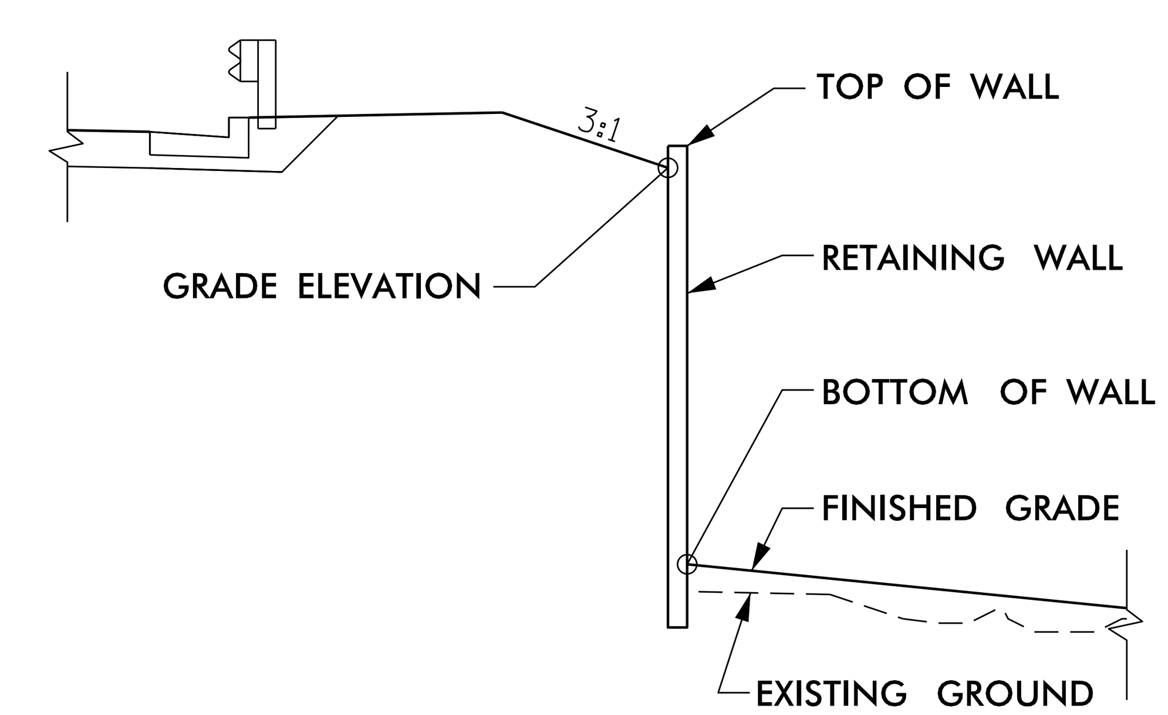
N.T.S.



WALL ENVELOPE FOR RETAINING WALL NO. 3

EXPOSED WALL FACE VIEW, N.T.S.

POINT NO.	WALL STATION	GRADE ELEVATION (FT)	BOTTOM OF WALL (FT)
1	10+00	215.60	214.74
2	10+15.59	217.02	214.81
3	10+31.26	220.78	214.83
4	10+47.01	222.89	214.69
5	10+62.95	222.61	214.40
6	10+72.64	222.41	214.47
7	10+87.31	220.73	214.07
8	11+01.97	219.06	214.27
9	11+16.62	217.93	214.49
10	11+31.26	217.41	214.71
11	11+45.90	216.95	214.82
12	11+60.53	216.54	214.76
13	11+75.16	216.17	214.60
14	11+84.91	215.96	214.60



FROM -Y16REV- STA. 32+55± TO -Y16REV- ATA. 32+95±
FROM -Y16REV- STA. 33+30± TO -Y16REV- ATA. 34+40±

TYPICAL SECTION WITH BACKSLOPE

N.T.S.

ESTIMATED MSE WALL QUANTITY	
MSE RETAINING WALL NO. 3	1,200 SF

PROJECT NO.: U-2519BA

CUMBERLAND COUNTY

STATION: -Y16_REV- 32+55.00

SHEET 1 OF 6 WALL ID RW3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

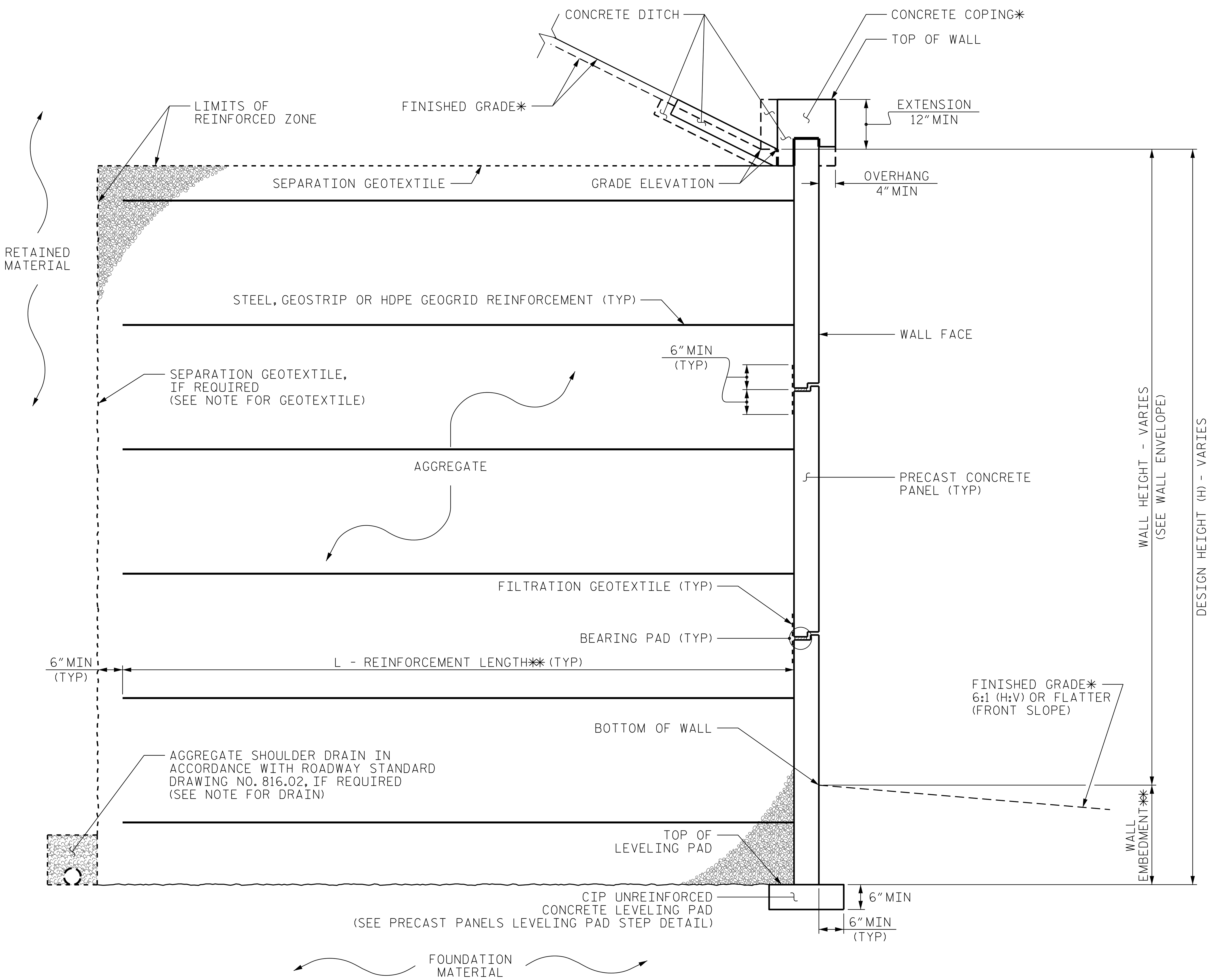
RETAINING WALL NO. 3
PLAN VIEW AND
WALL ENVELOPE

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	J. PARK	6/10/22	3		
2			4		

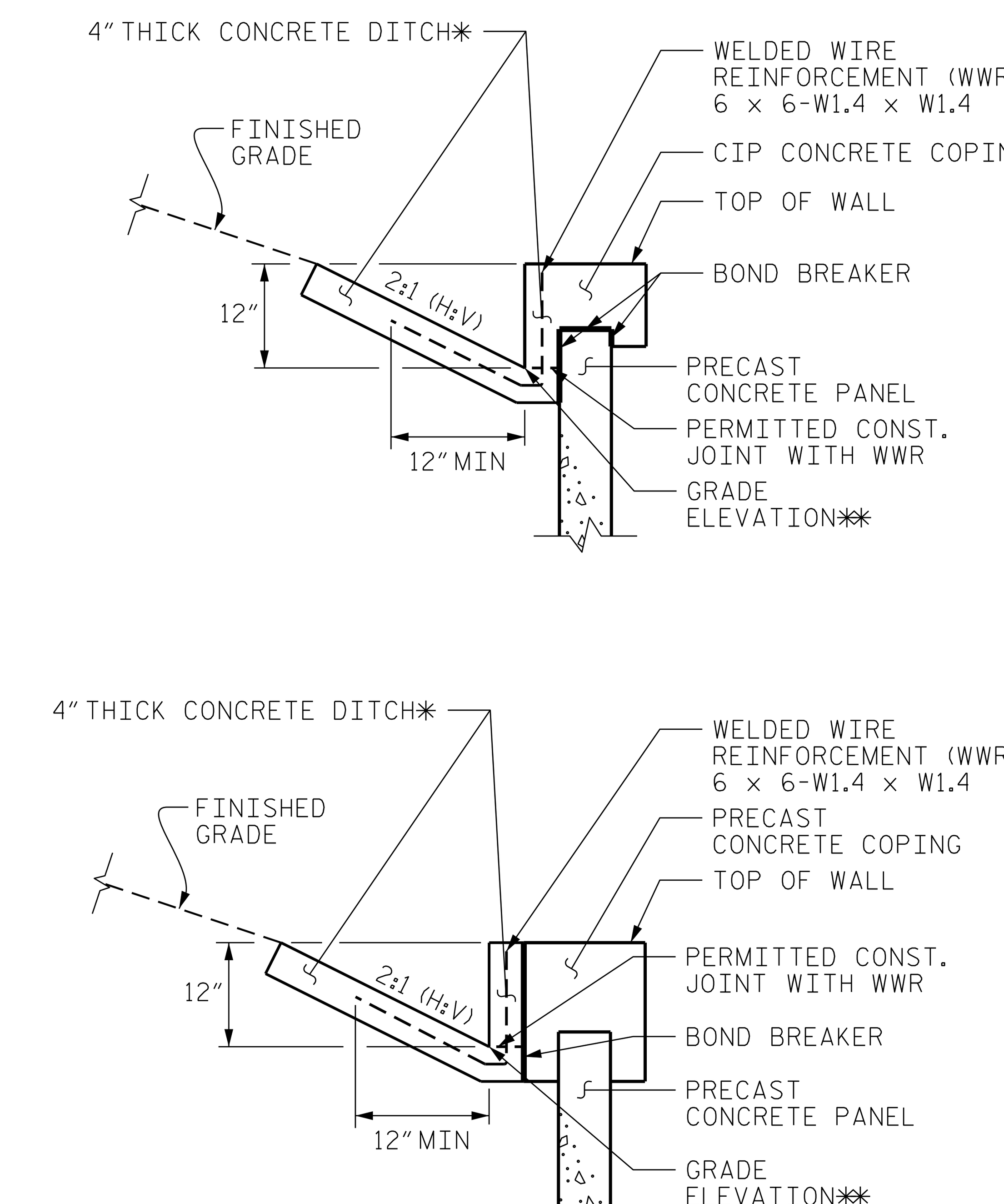
SHEET NO. W-5

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022



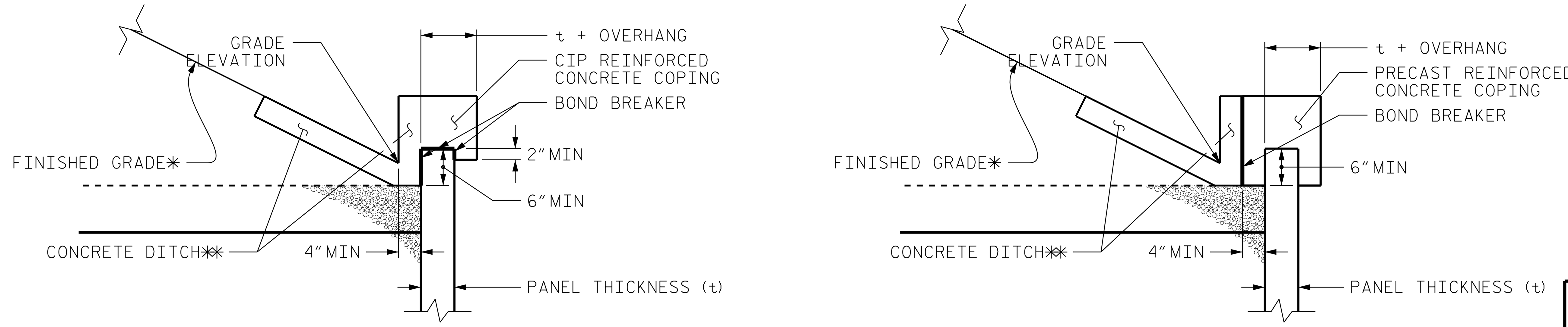
MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

FROM -Y16REV- STA. 32+55± TO -Y16REV- ATA. 32+95± AND -Y16REV- STA. 33+30± TO -Y16REV- ATA. 34+40±
*SEE COPING DETAILS AND PLANS FOR FINISHED GRADE.
**SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



CONCRETE DITCH BEHIND WALL DETAILS

*SEE PLANS FOR CONCRETE DITCH DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.



COPING DETAILS

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

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032171 JINYOUNG PARK

DocuSigned by: A713D8C0F83A4F9 06/10/2022

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO.: U-2519BA

CUMBERLAND COUNTY

STATION: -Y16_REV- 32+55.00

SHEET 2 OF 6 WALL ID RW3

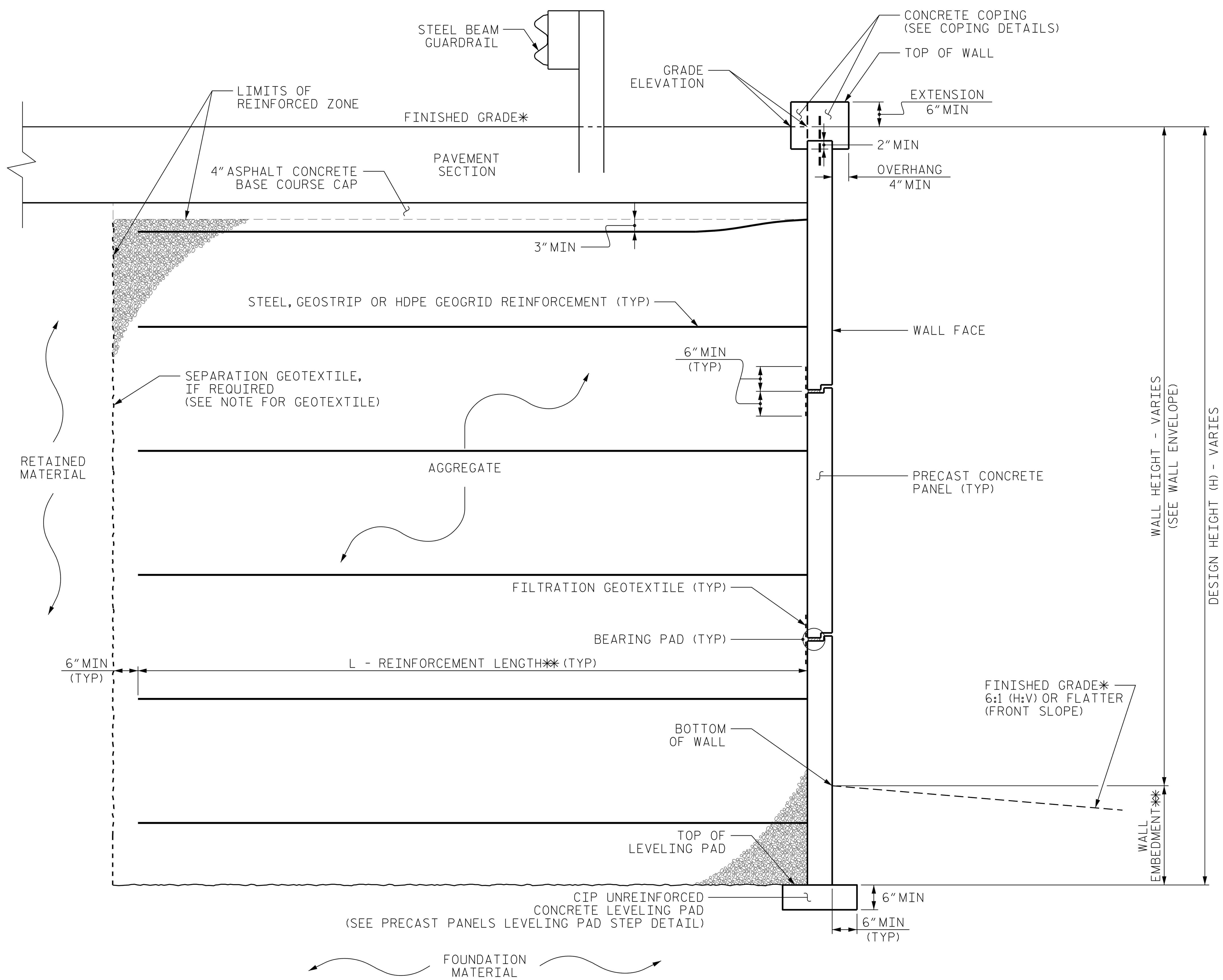
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 3
TYPICAL SECTION WITH PANELS AND BACKSLOPE

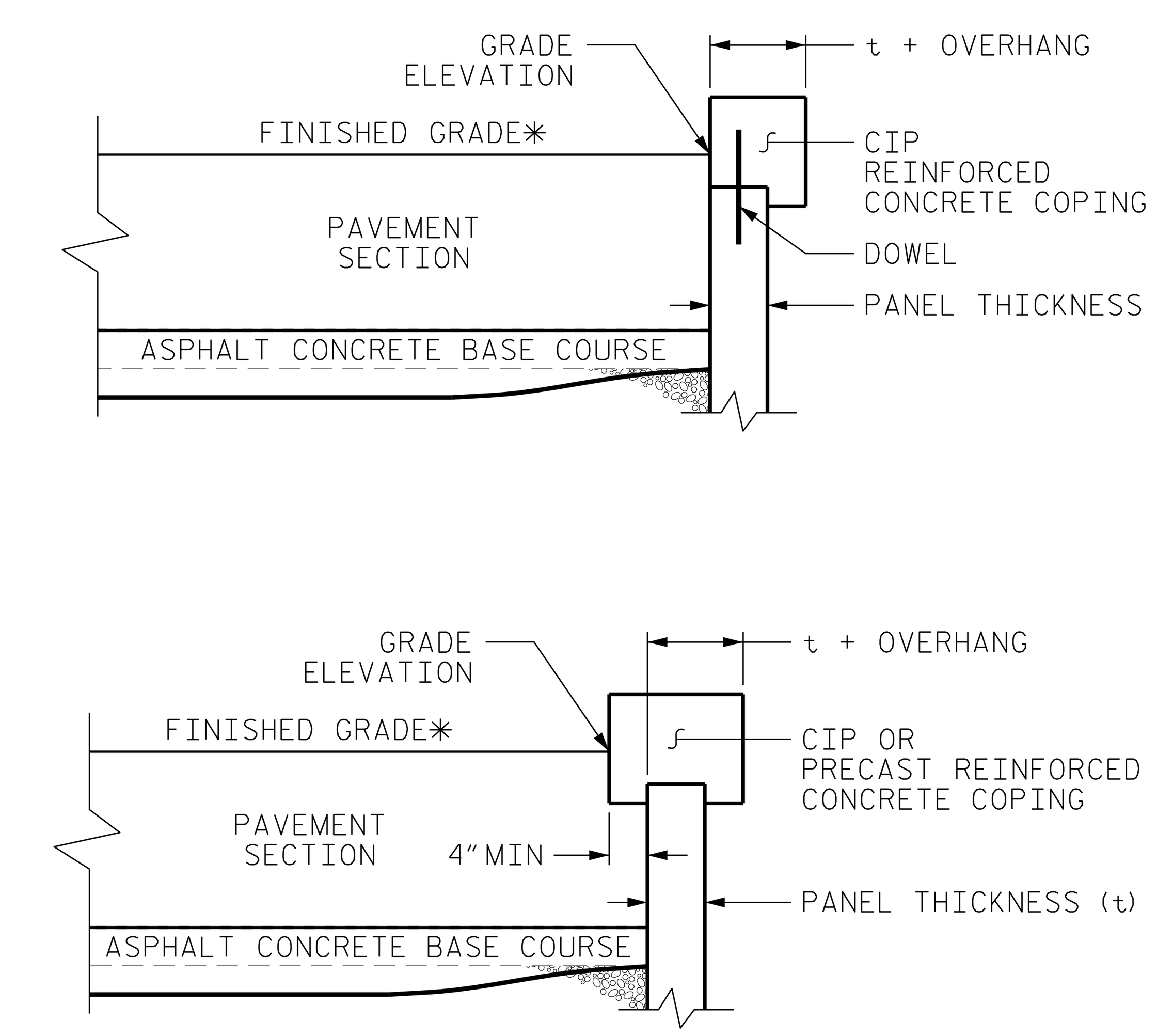
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	J. PARK	6/10/22	3			W-6
2			4			

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022



MSE WALL WITH PRECAST PANELS - TYPICAL SECTION

FROM -Y16REV- STA. 32+95± TO -Y16REV- ATA. 33+30±
✱SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
✱✱SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



COPING DETAILS

AT THE CONTRACTOR'S OPTION, CONNECT COPING TO PANELS WITH DOWELS OR EXTEND COPING DOWN BACK OF PANELS.
✱SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

PROJECT NO.: U-2519BA
CUMBERLAND COUNTY
STATION: -Y16_REV- 32+55.00
SHEET 3 OF 6 WALL ID RW3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 3
TYPICAL SECTION WITH PANELS AND NO BACKSLOPE

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	J. PARK	6/10/22	3		
2			4		

SHEET NO. W-7

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

DocuSigned by: 06/10/2022

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

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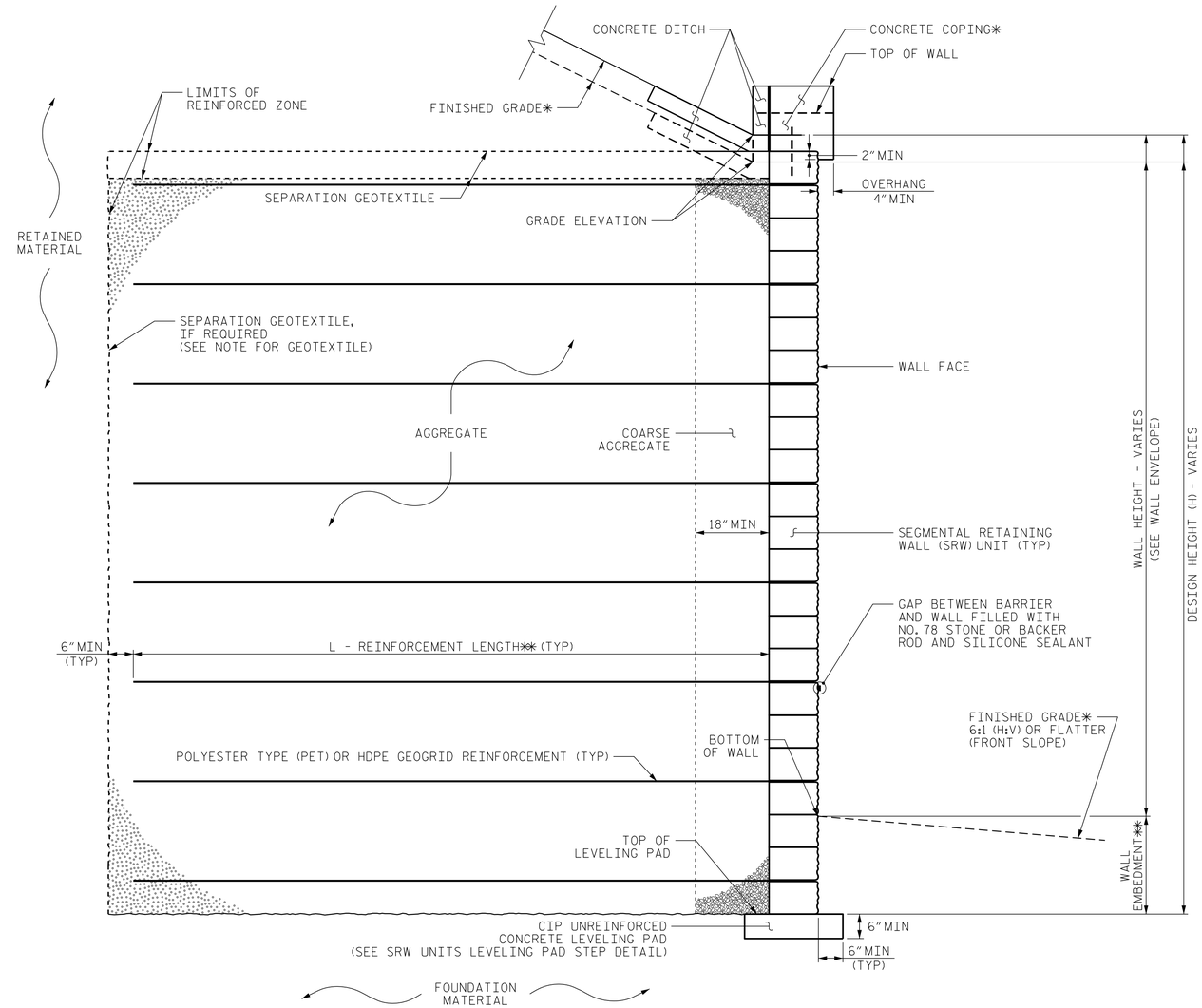
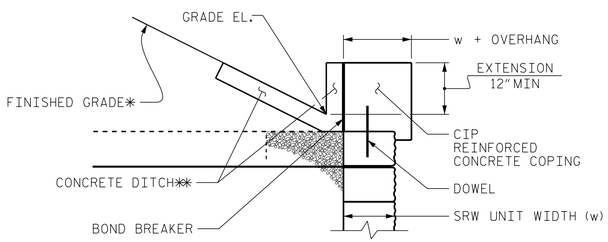
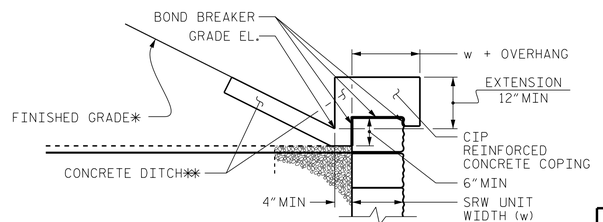


MSE WALL WITH SRW UNITS - TYPICAL SECTION

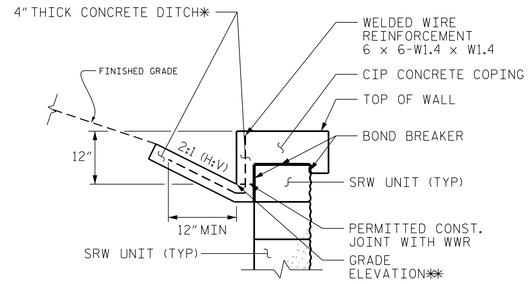
FROM -Y16REV- STA. 32+55± TO -Y16REV- ATA. 32+95± AND -Y16REV- STA. 33+30± TO -Y16REV- ATA. 34+40±
*SEE COPING DETAILS AND PLANS FOR FINISHED GRADE.
**SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR WALL EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.

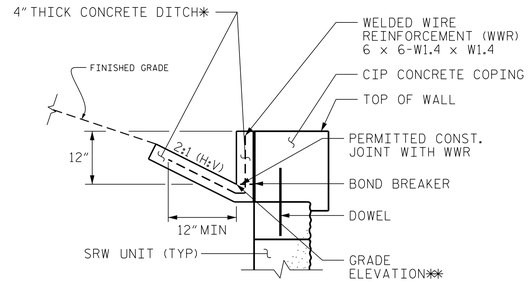




COPING DETAILS

AT THE CONTRACTOR'S OPTION, CONNECT COPING TO SRW UNITS WITH DOWELS OR EXTEND COPING DOWN BACK OF SRW UNITS.
*SEE PLANS FOR FINISHED GRADE.
**SEE CONCRETE DITCH BEHIND WALL DETAILS.





CONCRETE DITCH BEHIND WALL DETAILS

*SEE PLANS FOR CONCRETE DITCH DETAILS.
**SEE WALL ENVELOPE FOR GRADE ELEVATIONS.

PROJECT NO.: U-2519BA

CUMBERLAND COUNTY

STATION: -Y16_REV- 32+55.00

SHEET 4 OF 6 WALL ID RW3

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 3 TYPICAL SECTION WITH SRW UNITS AND BACKSLOPE

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1	J. PARK	6/10/22	3			W-8
2			4			

GEOTECHNICAL ENGINEER

SEAL 032171 NORTH CAROLINA PROFESSIONAL ENGINEER JINYOUNG PARK

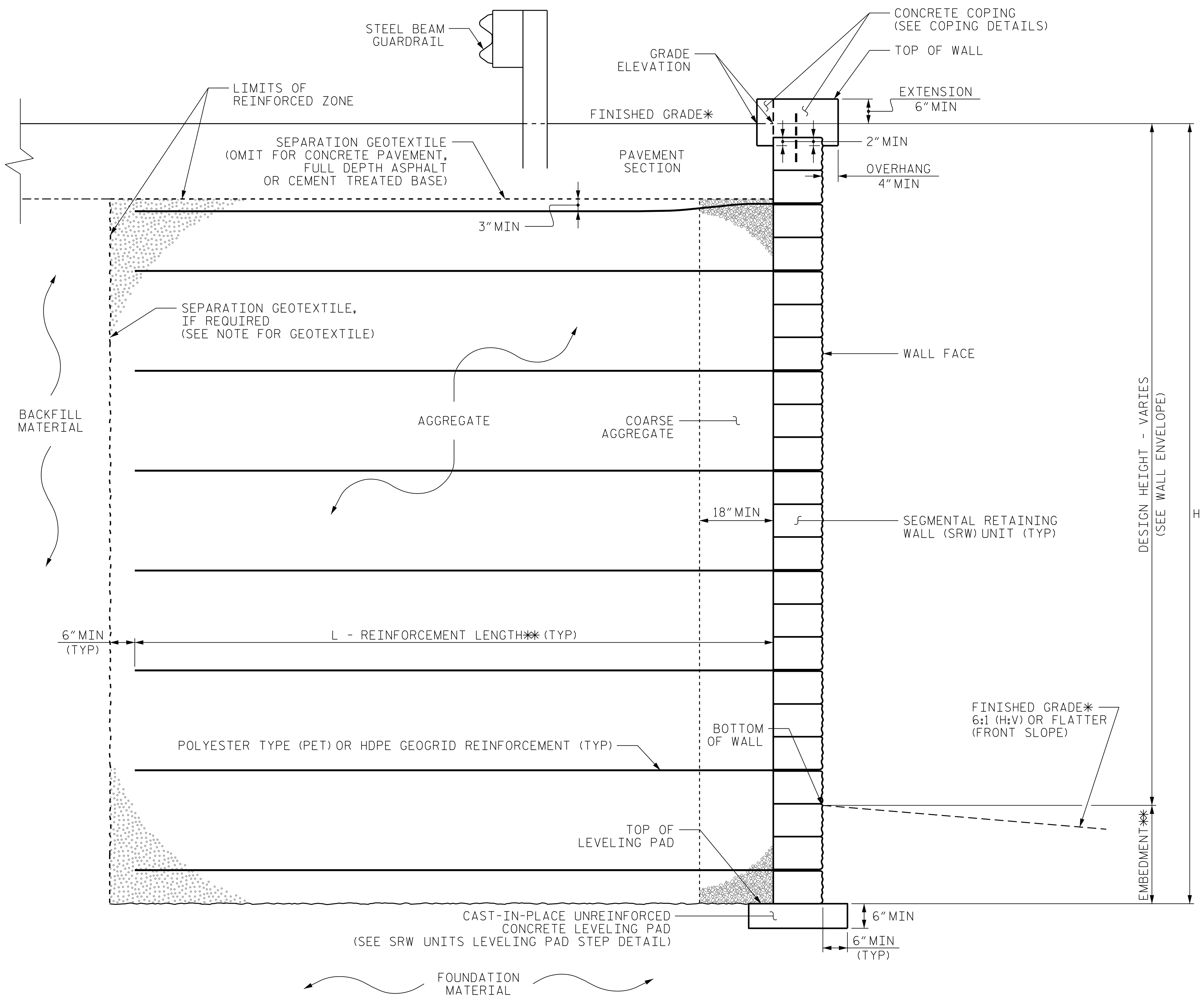
DocuSigned by: 06/10/2022

SIGNATURE DATE

ENGINEER

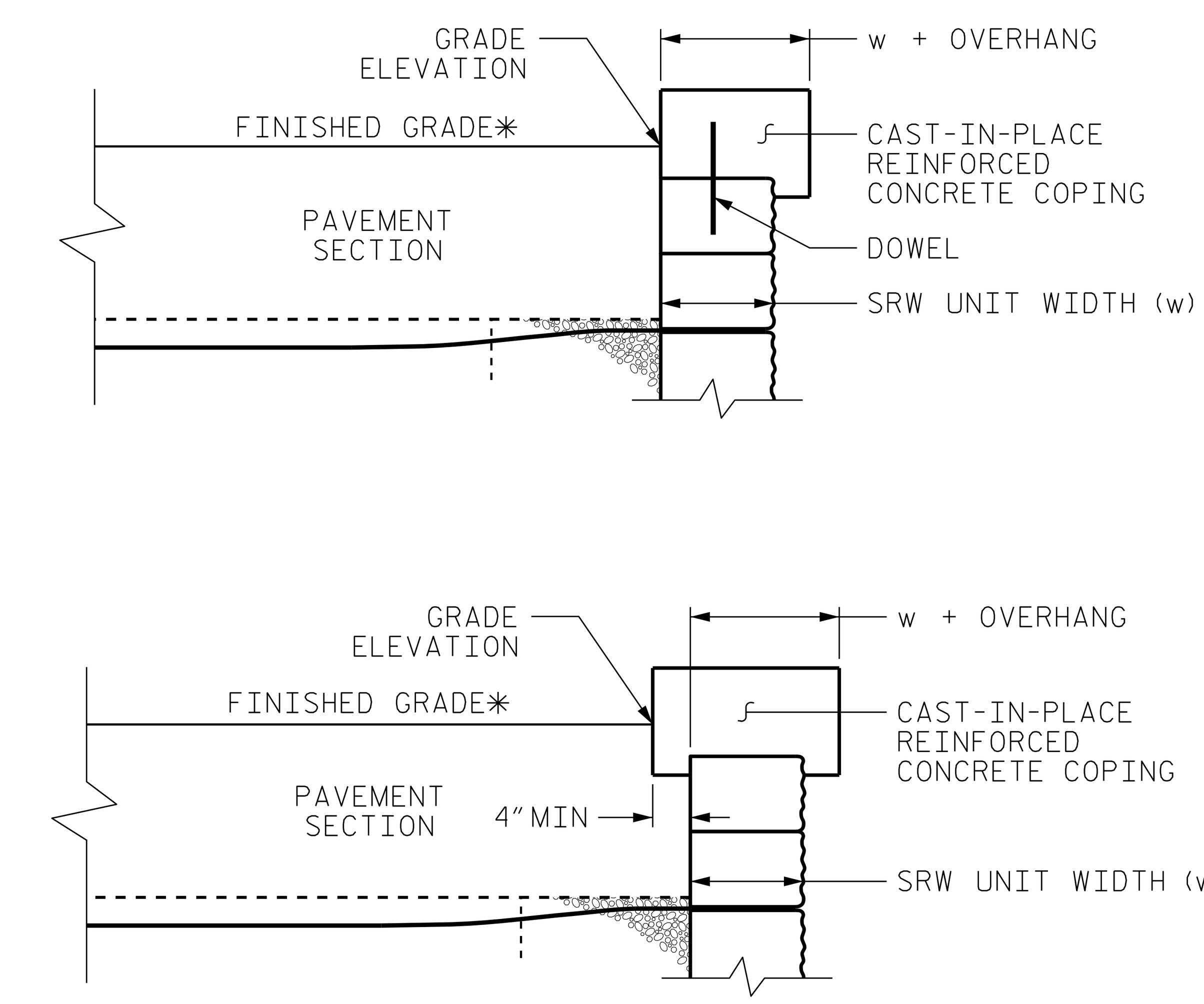
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



MSE WALL WITH SRW UNITS - TYPICAL SECTION

FROM -Y16REV- STA. 32+95± TO -Y16REV- ATA. 33+30±
*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.
**SEE MSE RETAINING WALLS PROVISION AND IF APPLICABLE, MSE WALL NOTES FOR EMBEDMENT AND REINFORCEMENT LENGTH REQUIREMENTS.



COPING DETAILS

AT THE CONTRACTOR'S OPTION, CONNECT COPING TO SRW UNITS WITH DOWELS OR EXTEND COPING DOWN BACK OF SRW UNITS.
*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.

PROJECT NO.: U-2519BA

CUMBERLAND COUNTY

STATION: -Y16_REV- 32+55.00

SHEET 5 OF 6 WALL ID RW3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 3
TYPICAL SECTION WITH
SRW UNITS AND NO BACKSLOPE

REVISIONS

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1	J. PARK	6/10/22	3			W-9
2			4			

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032171 JINYOUNG PARK

DocuSigned by: 06/10/2022

SIGNATURE DATE

ENGINEER

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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 AN MSE WALL SYSTEM WITH SEGMENTAL RETAINING WALL (SRW) UNITS THAT MEET ARTICLE 1040-4 OF THE STANDARD SPECIFICATIONS FOR RETAINING WALL NO. 3.

AT THE CONTRACTOR'S OPTION, USE FINE AGGREGATE IN THE REINFORCED ZONE OF RETAINING WALL NO. 3.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE BACK OF THE REINFORCED ZONE FOR RETAINING WALL NO. 3.

A SEPARATION GEOTEXTILE IS REQUIRED AT THE END OF RETAINING WALL NO. 3.

BEFORE BEGINNING MSE WALL DESIGN FOR RETAINING WALL NO. 3, SURVEY WALL LOCATION AND SUBMIT 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. 3 FOR THE FOLLOWING:
1) H = DESIGN HEIGHT + EMBEDMENT
2) DESIGN LIFE = 100 YEARS
3) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2,450 LB/SF
4) MINIMUM REINFORCEMENT LENGTH (L) = 0.85H OR 6 FT, WHICHEVER IS LONGER
5) MINIMUM EMBEDMENT = 1.0 FT
6) REINFORCED ZONE AGGREGATE PARAMETERS:

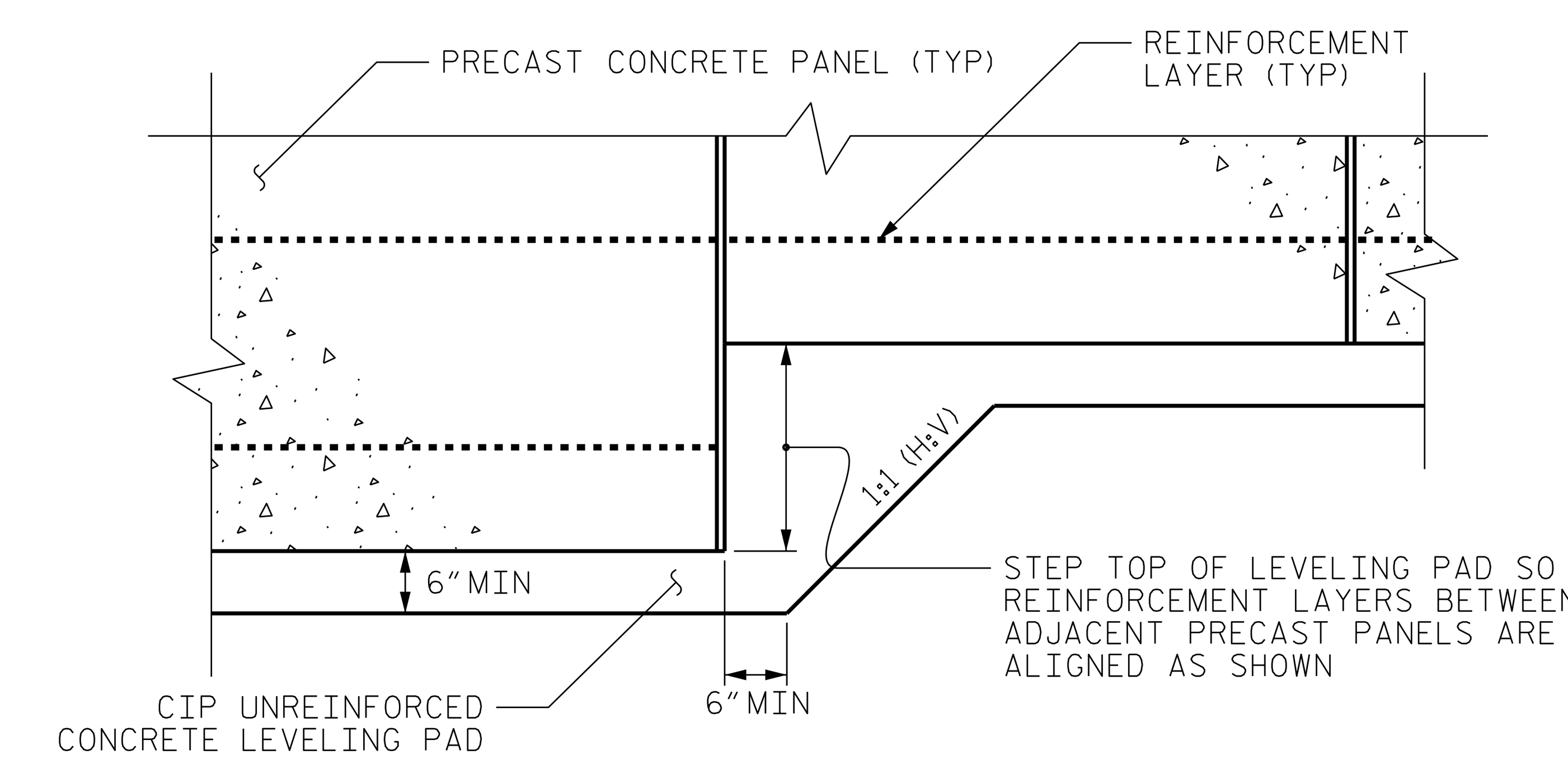
AGGREGATE TYPE*	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
COARSE	110	38	0
FINE	115	34	0
* SEE MSE RETAINING WALLS PROVISION FOR COARSE AND FINE AGGREGATE MATERIAL REQUIREMENTS.			

7) IN-SITU ASSUMED MATERIAL PARAMETERS:

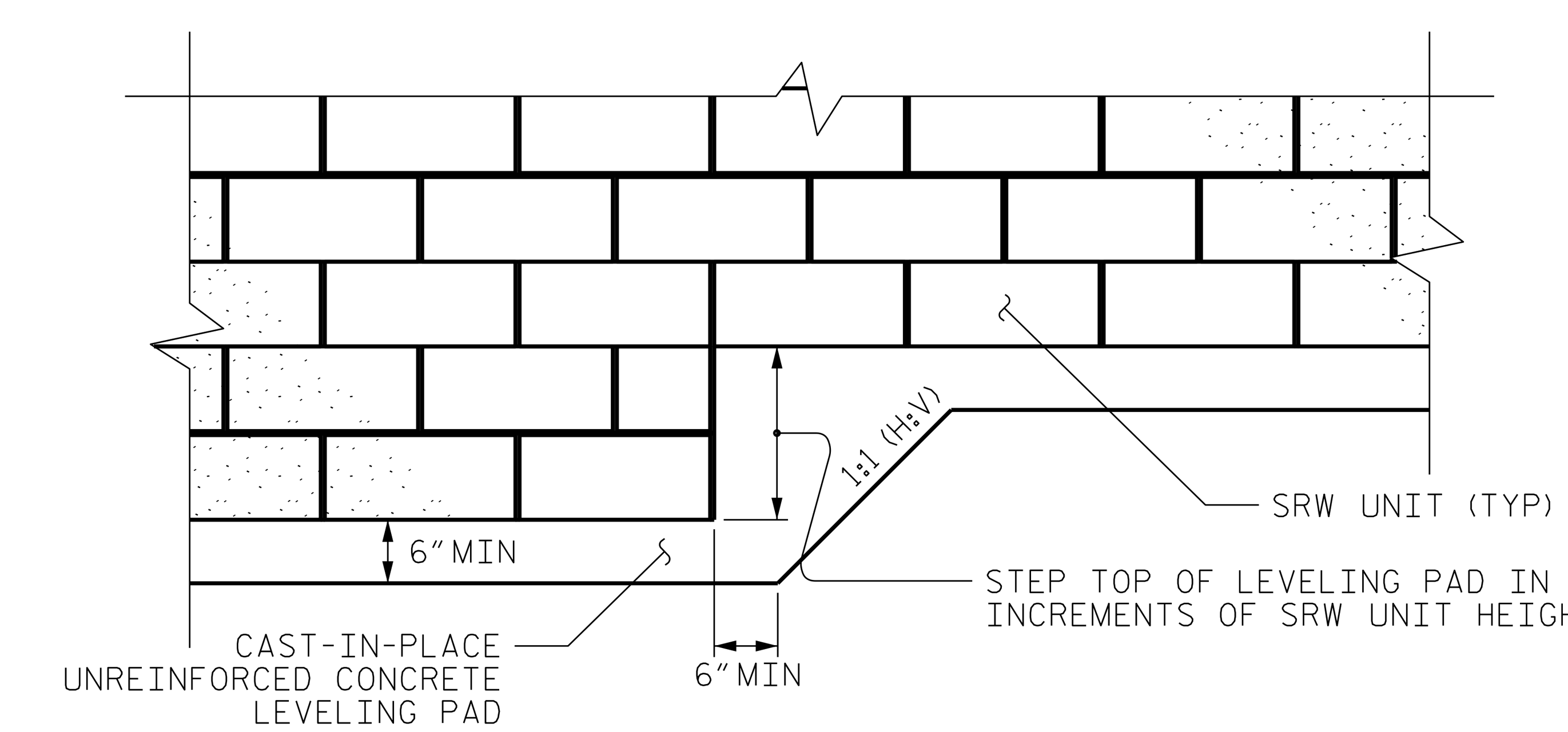
MATERIAL TYPE	UNIT WEIGHT (γ) LB/CF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) LB/SF
BACKFILL	120	30	0
FOUNDATION	120	30	0

DESIGN RETAINING WALL NO. 3 FOR A LIVE LOAD (TRAFFIC) SURCHARGE.

DO NOT PLACE LEVELING PAD CONCRETE, AGGREGATE OR REINFORCEMENT FOR RETAINING WALL NO. 3 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.



PRECAST PANELS
LEVELING PAD STEP DETAIL



SRW UNITS LEVELING PAD STEP DETAIL

PROJECT NO.: U-2519BA

CUMBERLAND COUNTY

STATION: -Y16_REV- 32+55.00

SHEET 6 OF 6 WALL ID RW3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 3
NOTES AND LEVELING PAD DETAILS

REVISIONS							SHEET NO.
NO.	BY	DATE	NO.	BY	DATE		
1	J. PARK	6/10/22	3				W-10
2			4				

PREPARED BY: J. PARK	DATE: 03 / 2022
REVIEWED BY: J. BATTS	DATE: 03 / 2022