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TIP PROJECT: EB–5829

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	EB-5829	1	25

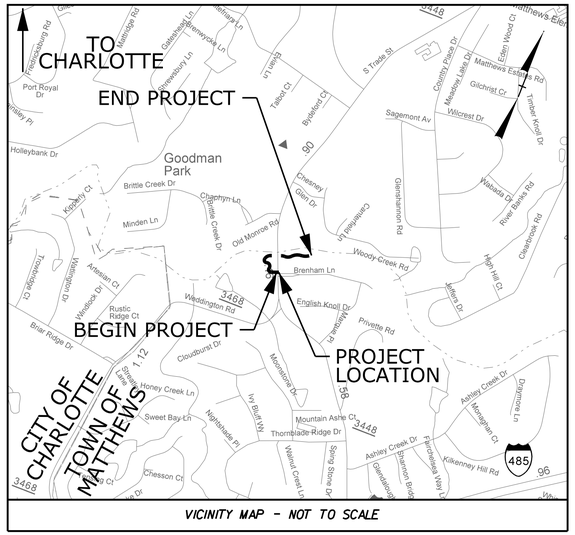
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45969.1.1	N/A	PE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

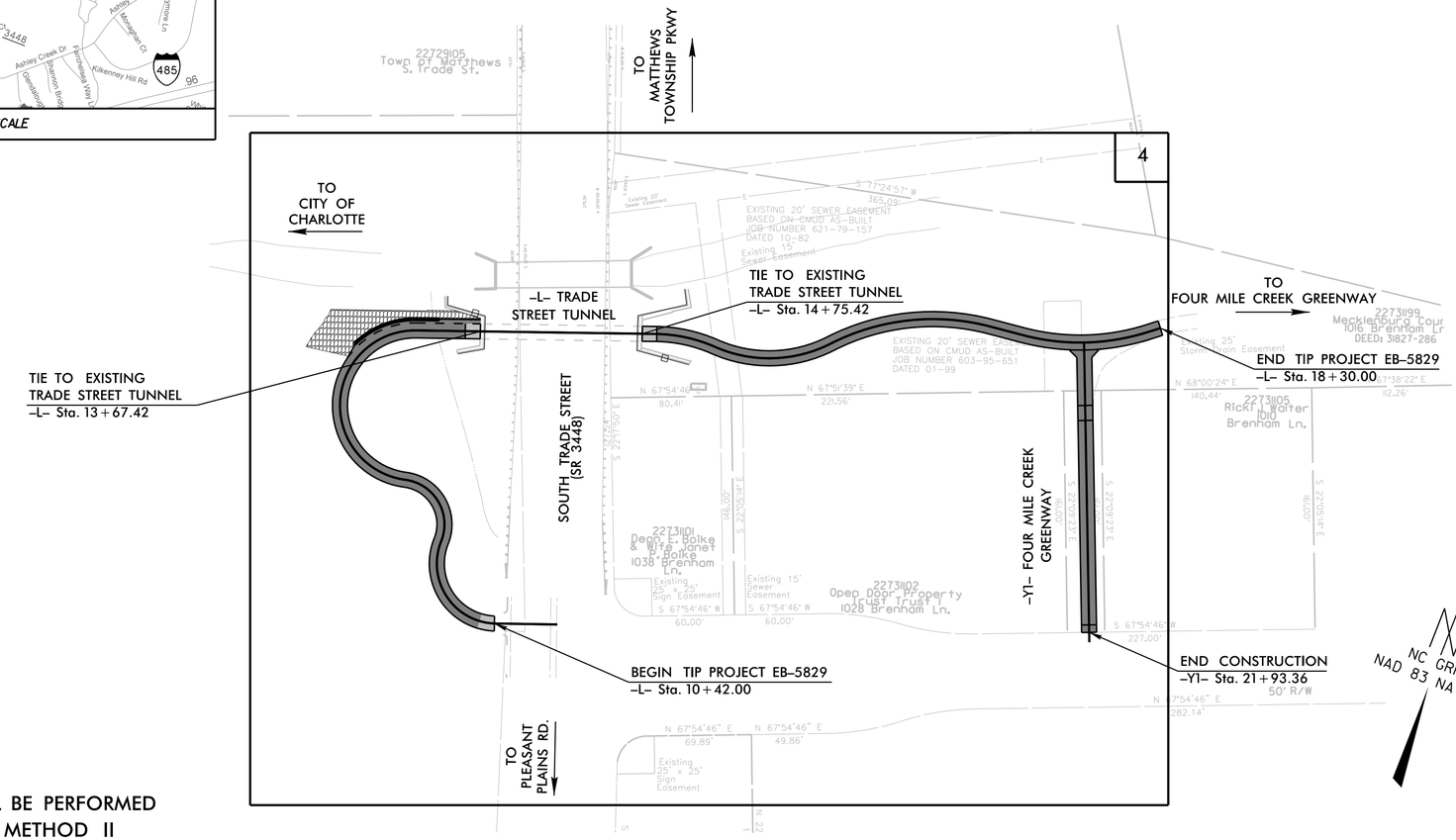
MECKLENBURG COUNTY

LOCATION: ***GREENWAY CONNECTION FROM BRENHAM LN. TO FOUR MILE CREEK GREENWAY BY TRADE STREET TUNNEL***

TYPE OF WORK: ***GRADING, DRAINAGE, PAVING, AND RETAINING WALL***



VICINITY MAP – NOT TO SCALE



NCDOT CONTACT:
DUSTIN SIMPSON
NCDOT – DIVISION 10
716 W. MAIN STREET
ALBEMARLE, NC 28001

CLEARING ON THIS PROJECT SHALL BE PERFORMED BY THE LIMITS ESTABLISHED BY METHOD II

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT:

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

2023 = N/A
2040 = N/A
K = N/A
D = N/A
T = N/A
V = N/A

FUNCTIONAL CLASSIFICATION: N/A

* N/A TTST N/A DUAL
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT EB–5829 = 0.129 MILES
TOTAL LENGTH TIP PROJECT EB–5829 = 0.129 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn © 2022
NC LICENSE #F-0102
200 SOUTH TRYON, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: *N/A*

LETTING DATE: *7/19/2022*

BEN TAYLOR, P.E.
PROJECT ENGINEER

DJ BEAVER, P.E.
PROJECT DESIGN ENGINEER

DUSTIN SIMPSON
NCDOT CONTACT
DM-STIP PROJECT MANAGER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LEWIS

DocuSigned by: Jason Lewis 8/9/2023
SIGNATURE: B53ABA2D65E1407...

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

DocuSigned by: 8/8/2023
SIGNATURE: 870821D09832483... P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

K:\CHL_PRJ\0I036526 – EB-5829 (Trade St Tunnel\Roadway\Pro\EB-5829_rdy_tsht.dgn
8/8/2023

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REVISIONS

8/8/2023

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, LIST OF ROADWAY STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS SHEET
2A-1 THRU 2A-2	PAVEMENT SCHEDULE, TYPICAL SECTIONS, AND MISCELLANEOUS DETAILS
2B-1 THRU 2B-2	DETAIL SHEETS
3B-1	SUMMARY OF EARTHWORK SHEET AND PAVEMENT REMOVAL
3D-1	DRAINAGE SUMMARY SHEET
4	PLAN SHEET
5	PROFILE SHEETS
E-1	ELECTRICAL PLAN
EC-1 THRU EC-5	EROSION CONTROL PLAN SHEETS
X-1A	CROSS-SECTION INDEX
X-1 THRU X-6	CROSS-SECTIONS
W-1	RETAINING WALL PLAN
W-2	RETAINING WALL DETAILS AND NOTES

GENERAL NOTES

2018 SPECIFICATIONS

EFFECTIVE: 01-16-2018
REVISED:

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 II. THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF UNION COUNTY.

UNDERDRAINS:

UNDERDRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.03 AT LOCATIONS DIRECTED BY THE ENGINEER.

SUBSURFACE PLANS:

NO SUBSURFACE PLANS ARE AVAILABLE ON THIS PROJECT. THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATION AS TO THE SUBSURFACE CONDITIONS.

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE:

UNION POWER
MARK MCCLAMROCK
704-221-2355
Mark.mclamrock@union-power.com

PIEDMONT NATURAL GAS
MICHAEL CORRIGAN
980-722-8705
MCorrigan@maserconsulting.com

SPECTRUM
RYAN GODWIN
980-406-1721
Timothy.Godwin@charter.com

SEGRA
ROBERT ROBINSON
803-726-8337
Robert.Robinson@SEGRA.com

WINDSTREAM
BRENT WHITLOCK
803-577-5888
Brent.Whitlock@BYERS.COM

CENTURYLINK
MICHAEL CASEY
980-215-5007
michael.e.casey@centurylink.com

CONTERRA
ERIC WOODS
540-605-0653
ewoods@conterra.com

VERIZON
ANTHONY PACE
980-505-2489
Anthony.pace@verizon.com

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

ROADWAY STANDARD DRAWINGS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFFECTIVE: 01-16-2018
REVISED:

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 II
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
225.04	METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
310.03	CROSS PIPE END SECTION
310.10	DRIVEWAY PIPE CONSTRUCTION
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I
DIVISION 8 - INCIDENTALS	
840.04	CONCRETE OPEN THROAT CATCH BASIN - 12" THRU 48" PIPE
840.18	CONCRETE GRATED DROP INLET TYPE 'B' - 12" THRU 36" PIPE
840.24	FRAMES AND NARROW SLOT SAG GRATES
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
866.01	CHAIN LINK FENCE
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS

Kimley»Horn ©2023

200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

8/8/2023

HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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REVISIONS

8/8/2023

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	1B

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

Note: Not to Scale

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)*
- U/G Telephone Cable (SUE – LOS C)*
- U/G Telephone Cable (SUE – LOS D)*
- U/G Telephone Conduit (SUE – LOS B)*
- U/G Telephone Conduit (SUE – LOS C)*
- U/G Telephone Conduit (SUE – LOS D)*
- U/G Fiber Optics Cable (SUE – LOS B)*
- U/G Fiber Optics Cable (SUE – LOS C)*
- U/G Fiber Optics Cable (SUE – LOS D)*

WATER:

- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)*
- U/G Water Line (SUE – LOS C)*
- U/G Water Line (SUE – LOS D)*
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal
- TV Tower
- U/G TV Cable Hand Hole
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)*
- U/G TV Cable (SUE – LOS C)*
- U/G TV Cable (SUE – LOS D)*
- U/G Fiber Optic Cable (SUE – LOS B)*
- U/G Fiber Optic Cable (SUE – LOS C)*
- U/G Fiber Optic Cable (SUE – LOS D)*

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)*
- U/G Gas Line (SUE – LOS C)*
- U/G Gas Line (SUE – LOS D)*
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)*
- SS Force Main Line (SUE – LOS C)*
- SS Force Main Line (SUE – LOS D)*

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line (SUE – LOS B)*
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

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5/14/99

REVISIONS

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200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	2A-1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

Benjamin Taylor 8/8/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LEWIS

Jason Lewis 8/8/2023

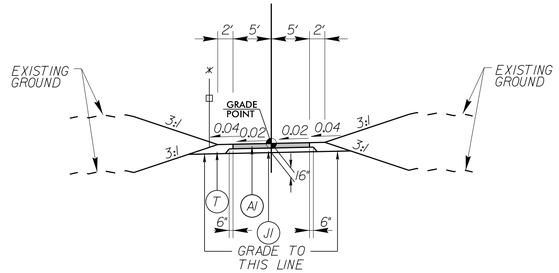
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

AI	10" REINFORCED CONCRETE GREENWAY WITH FIBER
CI	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN ONE LIFT
C2	PROPOSED APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ.YD. IN EACH OF TWO LAYERS.
JI	PROPOSED 6" AGGREGATE BASE COURSE
T	EARTH MATERIAL
VI	PROPOSED BIXIAL GEOGRID
ZI	PROPOSED RETAINING WALL

℄ -L- TRADE STREET TUNNEL

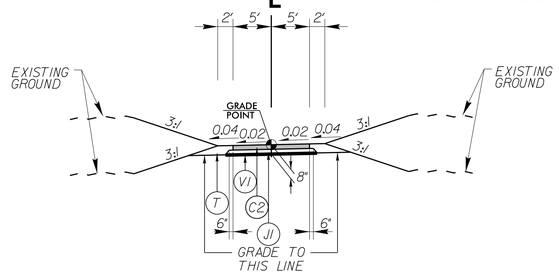
NCDOT STD.866.01 *
6' CHAIN LINK FENCE
FROM -L- STA.13+57.42, 7.5' LT
TO -L- STA.13+65.00, 7.5' LT



TYPICAL SECTION NO. 1

-L- STA 10+42.00 to 10+52.00
-L- STA 13+57.42 to 13+67.42
-L- STA 14+75.42 to 14+85.42

℄ -L- TRADE STREET TUNNEL

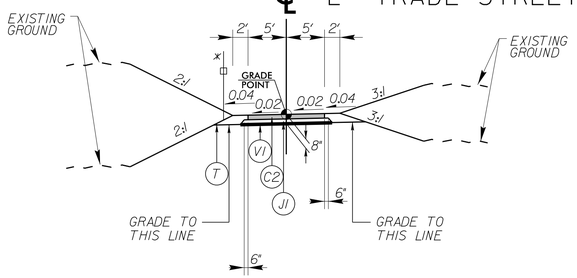


TYPICAL SECTION NO. 2

-L- STA 10+52.00 to 10+64.00
-L- STA 11+25.00 to 12+45.00
-L- STA 14+85.42 to 18+30.00

℄ -L- TRADE STREET TUNNEL

NCDOT STD.866.01 *
6' CHAIN LINK FENCE
FROM -L- STA.13+40.00, 7.5' LT
TO -L- STA.13+57.42, 7.5' LT



TYPICAL SECTION NO. 3

-L- STA 10+64.00 TO 11+25.00
-L- STA 12+45.00 TO 12+85.00
-L- STA 13+40.00 TO 13+57.42

NOTES:
1. SEE PLAN SHEET 4 FOR RETAINING WALL LOCATION AND SHEET 2B-1 FOR RETAINING WALL DETAILS.
2. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

8/8/2023

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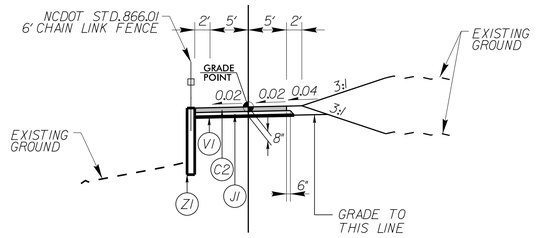
5/14/99

REVISIONS

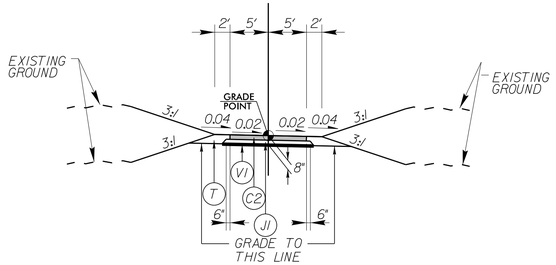
℄ -L- TRADE STREET TUNNEL



TYPICAL SECTION NO. 3A

-L- STA 12+85.00 TO 13+40.00

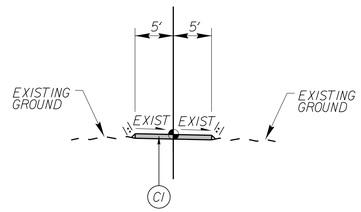
℄ -YI- FOUR MILE CREEK GREENWAY



TYPICAL SECTION NO. 4

-YI- STA 20+05.00 TO 20+52.00

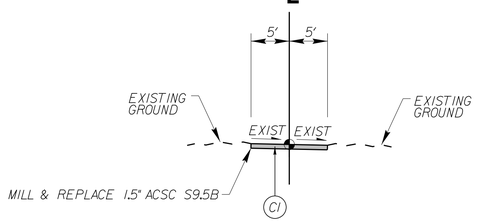
℄ -YI- FOUR MILE CREEK GREENWAY



TYPICAL SECTION NO. 5

-YI- STA 20+52.00 TO 21+88.00

℄ -YI- FOUR MILE CREEK GREENWAY



TYPICAL SECTION NO. 6

-YI- STA 21+88.00 TO 21+93.36

NOTES:
1. SEE PLAN SHEET 4 FOR RETAINING WALL LOCATION AND SHEET 2B-1 FOR RETAINING WALL DETAILS.
2. PAVEMENT EDGE SLOPES 1:1 UNLESS OTHERWISE INDICATED

8/8/2023

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200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	2A-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

DocuSigned by: 8/8/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING

DocuSigned by: Jason Lawing 8/8/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PAVEMENT SCHEDULE
(FINAL PAVEMENT DESIGN)

AI	10" REINFORCED CONCRETE GREENWAY WITH FIBER
CI	PROPOSED APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD. IN ONE LIFT
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JI	PROPOSED 6" AGGREGATE BASE COURSE
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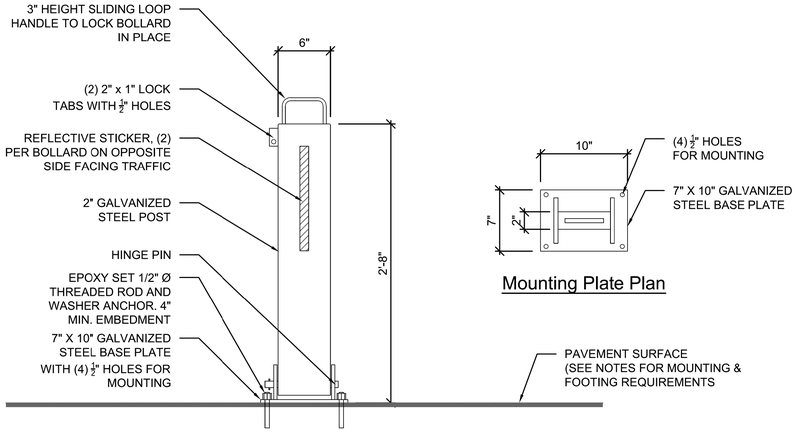
REVISIONS



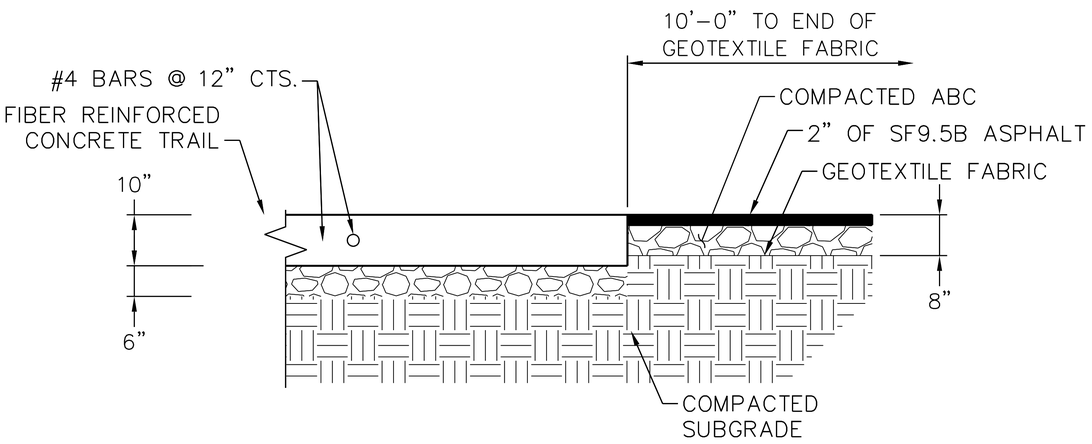
Bollard Elevation

Mounting Plate Plan

Notes:

1. Provide 12"x12"x12" min. concrete footing if placing bollard in asphalt pavement.
2. Provide thickened slab, 6" min. thickness, if placing bollard in light duty 4" concrete pavement.
3. Mount directly into concrete pavement of 6" or greater thickness.

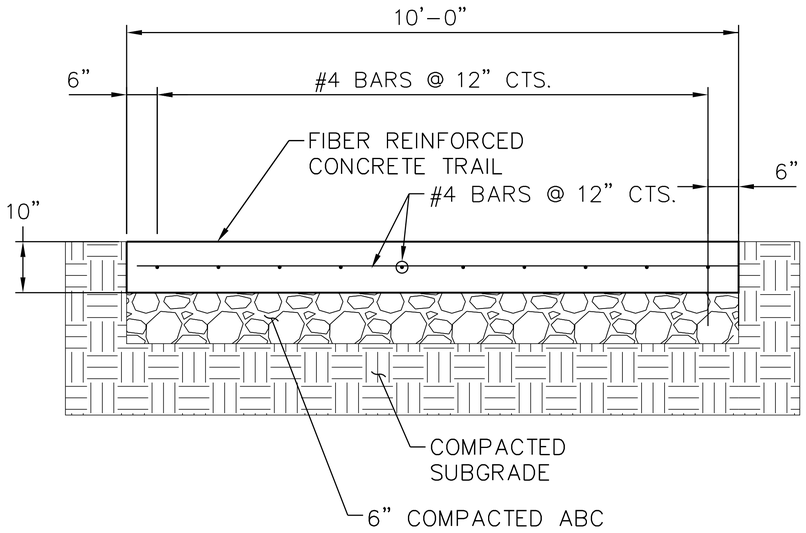
REVISIONS	MECKLENBURG COUNTY ASSET & FACILITY MANAGEMENT and PARK AND RECREATION DEPARTMENTS	JOB NO.
		Design Guideline 10.07P
	COLLAPSIBLE STEEL BOLLARD	SHEET 1 OF 1
	DATE: August, 2018 SCALE: NTS	



ASPHALT / CONCRETE CONNECTION DETAIL

NTS

NOTE: GEOTEXTILE TO EXTEND FULL WIDTH OF TRANSITION



CONCRETE GREENWAY DETAIL

NTS

8/8/2023

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200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
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R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

DocuSigned by: 8/8/2023

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LEWIS

DocuSigned by: Jason Lewis 8/8/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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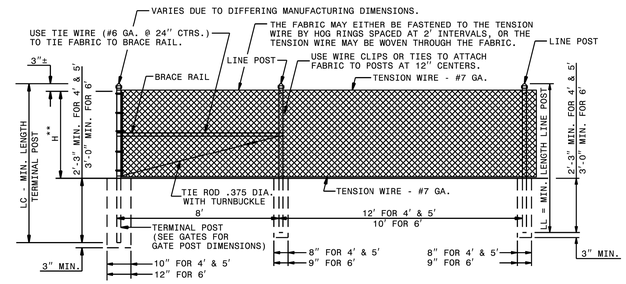
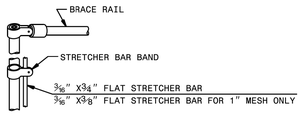
5/14/99

REVISIONS

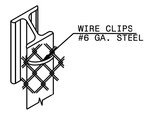


**"H" IS THE HEIGHT OF FENCE. SEE PAY ITEM DESCRIPTION FOR REQ'D HEIGHT FOR PROJECT.

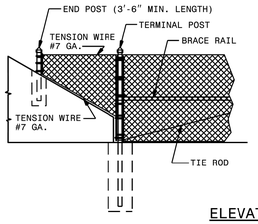
NOTE: ROLL FORMED LINE POST MAY BE DRIVEN TO A MINIMUM OF 3'-0" IN LIEU OF CONCRETE ANCHOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.



GATE OR TERMINAL POST WITH STRETCHER BAR ATTACHMENT

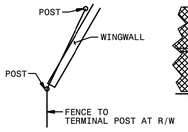


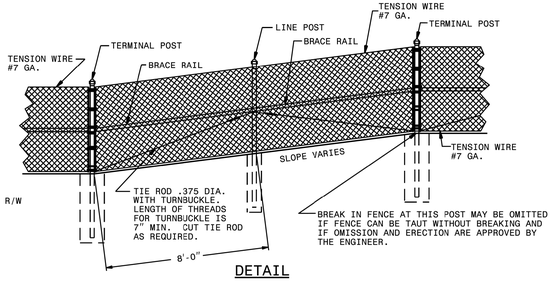
METHOD OF TYING FABRIC TO "H" POST



ELEVATION

METHOD OF TYING FENCE TO ENDWALL





DETAIL

METHOD OF CONSTRUCTING FENCE ON SHARP BREAK IN GRADE

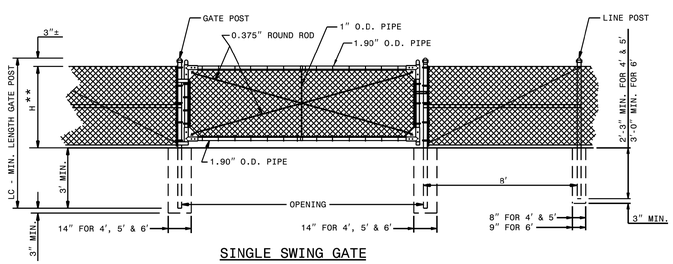
NOTES:
CAPS ARE REQUIRED ON PIPE POST. CAPS ARE NOT REQUIRED ON "H" POST OR ROLL FORMED POST. INSTALL FENCE FABRIC ON THE SIDE FARTHEST FROM THE HIGHWAY EXCEPT THAT ON HORIZONTAL CURVES GREATER THAN THREE DEGREES, INSTALL THE FENCE TO PULL AGAINST LINE POST. CONSIDER ALL CHANGES IN DIRECTION OF FENCE LINE OF 30° OR MORE AS CORNERS.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

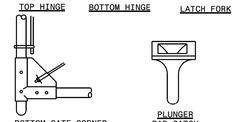
ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4', 5' AND 6' HIGH FENCE

SHEET 1 OF 3
866.01



SINGLE SWING GATE

NOTE:
FENCE HARDWARE VARIES DUE TO DIFFERING MANUFACTURES SUPPLIES.



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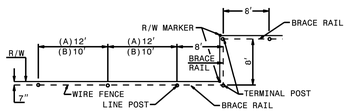
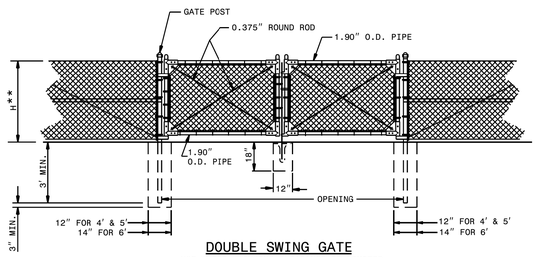
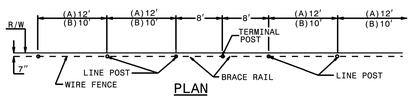


PLAN

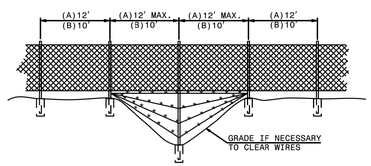
PLACEMENT OF FENCE ALONG RIGHT OF WAY
(BRACE ALL TERMINAL POSTS AS SHOWN ABOVE)



DOUBLE SWING GATE
USE WHERE SWINGING CLEARANCE IS LIMITED



PLAN
(LINE POST/TERMINAL POST SEQUENCE)



DETAIL OF DITCH CROSSING

MAXIMUM WIRE SPACING TO BE 6".
MAXIMUM CLEARANCE BETWEEN LOWEST STRAND AND GROUND TO BE 6".
ERECT BRACE RAILS BETWEEN TERMINAL OR GATE POSTS AT INTERVALS NOT EXCEEDING 700' ON TANGENTS OR 350' ON SHORT RADIUS CURVES.
ERECT ADDTIONAL TERMINAL POSTS IF DIRECTED BY THE ENGINEER.
BRACE TERMINAL POSTS FROM BOTH SIDES OF POST.

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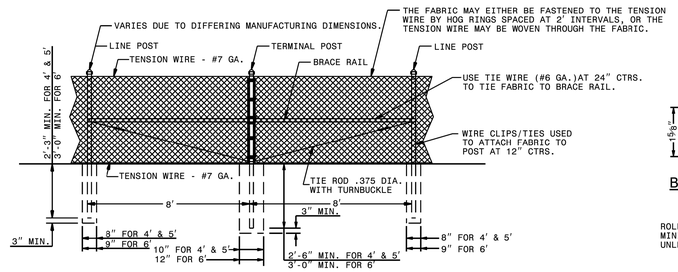
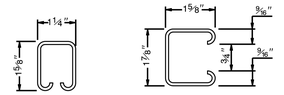
ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4', 5' AND 6' HIGH FENCE

SHEET 2 OF 3
866.01

4/21/2023



LINE BRACE DETAIL



ROLL FORMED LINE POST MAY BE DRIVEN TO A MINIMUM OF 3'-0" IN LIEU OF CONCRETE ANCHOR, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

**"H" IS THE HEIGHT OF FENCE. SEE PAY ITEM DESCRIPTION FOR REQ'D HEIGHT FOR PROJECT.

FABRIC	GALV. STEEL OR ALUMINUM COATED STEEL #11 GAGE			ALUMINUM ALLOY OR ALUMINUM COATED STEEL(#11 GAGE)	
FRAME COMPONENTS	GALVANIZED STEEL #11 GAGE			ALUMINUM ALLOY	
SYSTEM	G1	G2	G3	A1	A2
LINE POST	1.90" O.D. STEEL PIPE	1.625" X 1.875" STEEL H	1.625" X 1.875" STEEL R.F.	2.375" O.D. ALUMINUM PIPE	2.00" X 2.50" ALUMINUM PIPE
TERMINAL POST (END, CORNER, BRACES)	2.375" O.D. STEEL PIPE	2.375" O.D. STEEL PIPE	2.375" O.D. STEEL PIPE	2.875" O.D. ALUMINUM PIPE	2.875" O.D. ALUMINUM PIPE
GATE POST UP THRU 6' LEAF	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE	2.875" O.D. ALUMINUM PIPE	2.875" O.D. ALUMINUM PIPE
GATE POST 7' THRU 12' LEAF	4.000" O.D. STEEL PIPE	4.000" O.D. STEEL PIPE	4.000" O.D. STEEL PIPE	4.000" O.D. ALUMINUM PIPE	4.000" O.D. ALUMINUM PIPE
BRACE RAIL	1.660" O.D. STEEL PIPE	1.660" O.D. STEEL PIPE	1.250" X 1.625" STEEL R.F. OR 1.660" O.D. STEEL PIPE	1.660" O.D. ALUMINUM PIPE	1.660" O.D. ALUMINUM PIPE

FOR 4' AND 5' FENCE SYSTEMS

FABRIC	GALV. STEEL OR ALUMINUM COATED STEEL #11 GAGE		
FRAME COMPONENTS	GALVANIZED STEEL		
SYSTEM	G1	G2	G3
LINE POST	2.375" O.D. STEEL PIPE	1.625" X 1.875" STEEL H	1.625" X 1.875" STEEL R.F.
TERMINAL POST (END, CORNER, BRACES)	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE
GATE POST UP THRU 6' LEAF	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE	2.875" O.D. STEEL PIPE
GATE POST 7' THRU 12' LEAF	4.000" O.D. STEEL PIPE	4.000" O.D. STEEL PIPE	4.000" O.D. STEEL PIPE
BRACE RAIL	1.660" O.D. STEEL PIPE	1.660" O.D. STEEL PIPE	1.250" X 1.625" STEEL R.F. OR 1.660" O.D. STEEL PIPE

FOR 6' FENCE SYSTEMS

ALLOWABLE COMPONENTS FOR FENCE SYSTEMS

STATE OF NORTH CAROLINA
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DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

ROADWAY STANDARD DRAWING FOR
CHAIN LINK FENCE
4', 5' AND 6' HIGH FENCE

SHEET 3 OF 3
866.01

Kimley»Horn ©2023

200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	2B-2
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR

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HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LEWIS

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REVISIONS

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CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	3B-1
R/W SHEET NO.	

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HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING

DocuSigned by: Jason Lawing 8/8/2023

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SUMMARY OF EARTHWORK

IN CUBIC YARDS

LOCATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT+20%	BORROW	WASTE
–L– STA 10+42.00 TO STA 18+30.00	70	0	2942	2872	0
–Y1– STA 20+05.00 TO STA 20+52.00	7	0	41	34	0
PROJECT TOTALS	77	0	2983	2906	0
GRAND TOTALS	77	0		2906	
TOPSOIL 5%				145	
SAY	100	0		3400	

PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD²
–L–	STA 17+90.00	STA 18+30.00	RT	50
–Y1–	STA 20+10.00	STA 20+52.00	LT	50
SUBTOTAL:				100
TEMPORARY WEDGING FROM WZTC:				50
TOTAL:				150
SAY:				200

NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, REMOVAL OF EXISTING PAVEMENT, AND BREAKING OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

8/8/2023

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LL22511

COMPUTED BY:	DJB	DATE:	3/16/22
CHECKED BY:	JDL	DATE:	3/16/22

PROJECT NO.	SHEET NO.
EB-5829	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

**Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.
See "Standard Specifications For Roads and Structures, Section 300-5".**

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

LINE & STATION (SIZE / THICKNESS OR GAUGE)	OFFSET		STRUCTURE NUMBER FROM	STRUCTURE NUMBER TO	TOP ELEVATION FT.	INVERT ELEVATION FT.	INVERT ELEVATION FT.	MINIMUM REQUIRED SLOPE %	Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC) 12	15	18	24	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC
-L- 13+26	26	RT	0403		633.8												
			0403	0404		629.3	627.9			20							
-L- 13+00	14	RT	0404		630.0												
			0404	0405		627.2	626.8										
-L- 17+64	9	LT	0411		626.7												
			0411	0412		618.8	618.4										
-L- 17+40	0	CL	0415	0416		622.0	618.4										
-L- 13+14	8	RT															
-L- 17+63	11	LT															
SHEET TOTALS										20							
PROJECT TOTALS										20							

LINE & STATION	FROM	TO	C. S. PIPE 12 (.064)	15 (.064)	18 (.064)	24 (.064)	30 (.079)	36 (.079)	42 (.109)	48 (.109)	R. C. PIPE CLASS III 12	15	18	24	30	36	42	48
-L- 13+26	0403																	
	0403	0404																
-L- 13+00	0404																	
	0404	0405																
-L- 17+64	0411																	
	0411	0412																
-L- 17+40	0415	0416																
-L- 13+14																		
-L- 17+63																		
SHEET TOTALS																		
PROJECT TOTALS																		

LINE & STATION	FROM	TO	R. C. PIPE CLASS IV 12	15	18	24	30	36	42	48	R. C. PIPE CLASS V 12	15	18	24	30	36	42	48
-L- 13+26	0403																	
	0403	0404																
-L- 13+00	0404																	
	0404	0405		38														
-L- 17+64	0411																	
	0411	0412				24												
-L- 17+40	0415	0416				64												
-L- 13+14																		
-L- 17+63																		
SHEET TOTALS				38		88												
PROJECT TOTALS				38		88												

LINE & STATION	FROM	TO	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	24" SIDE DRAIN PIPE	ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE) CY	DRAINAGE STRUCTURE MASONRY CY	QUANTITIES FOR DRAINAGE STRUCTURES (NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)) 0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03 GRATE TYPE E	F	G	CONCRETE TRANSITIONAL SECTION D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05
-L- 13+26	0403							1								
	0403	0404														
-L- 13+00	0404							1								
	0404	0405														
-L- 17+64	0411							1	3.1							
	0411	0412														
-L- 17+40	0415	0416														
-L- 13+14																
-L- 17+63																
SHEET TOTALS								3	3.1							
PROJECT TOTALS								3	3.1							

LINE & STATION	FROM	TO	OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "A" STD. 840.17 OR STD. 840.26	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29	T.B.J.B. STD. 840.34	T.B.D.I. STD. 840.35	5' X 5' OUTLET CONTROL STRUCTURE STD. 840.14	M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54	ADJUST C.B.	ADJUST D.I.	ADJUST M.H.	FLOWABLE FILL CY	CONCRETE COLLARS CL. "B" STD. 840.72 CY	CONCRETE AND BRICK PIPE PLUG STD. 840.71 CY	PIPE REMOVAL LIN. FT.	REMARKS
-L- 13+26	0403													1	1								REMOVE EX JB W/MH. TIE PROP JB W/MH TO EX 15" RCP
	0403	0404																					
-L- 13+00	0404		1																				
	0404	0405																					
-L- 17+64	0411													1	1								TIE PROP JB W/MH TO EX 24" RCP
	0411	0412																					
-L- 17+40	0415	0416																					
-L- 13+14																						40	REMOVE EX JB AND EX 15" CMP
-L- 17+63																						10	REMOVE EX FLARED END SECTION
SHEET TOTALS			1											2	2							50	
PROJECT TOTALS			1											2	2							50	

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

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REVISIONS

FOR -L- & -Y1- PROFILES, SEE SHEET 5

-L- TRADE STREET TUNNEL
PI Sta 10+99.24
△ = 111° 09' 07.4" (RT)
D = 143° 14' 22.0"
L = 77.60'
T = 58.37'
R = 40.00'
SE = 0.02

-L- TRADE STREET TUNNEL
PI Sta 11+57.25
△ = 104° 32' 55.4" (LT)
D = 190° 59' 09.4"
L = 54.74'
T = 38.78'
R = 30.00'
SE = 0.02

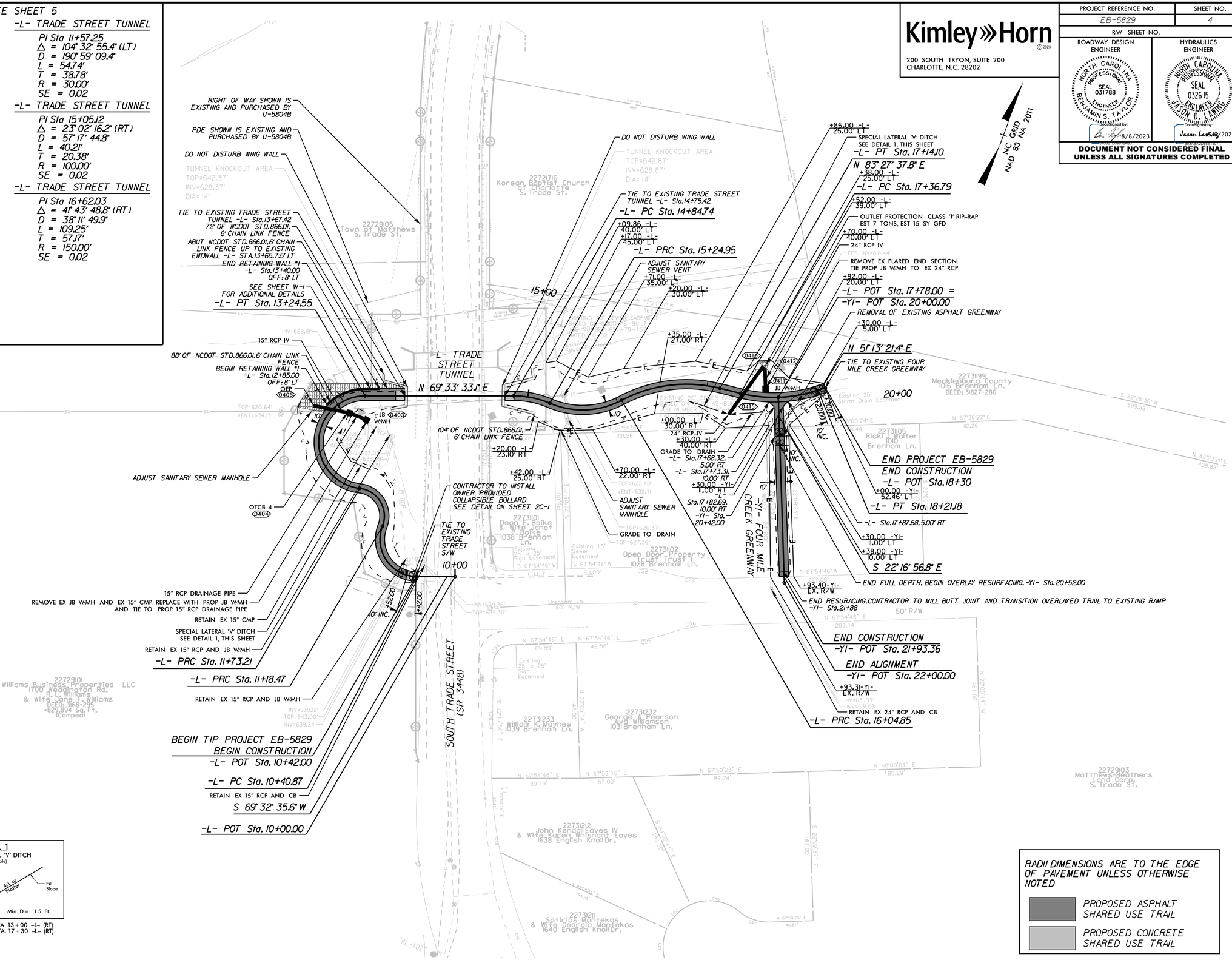
-L- TRADE STREET TUNNEL
PI Sta 12+48.88
△ = 17° 3' 24" 45.5" (RT)
D = 114° 35' 29.6"
L = 151.33'
T = 868.82'
R = 50.00'
SE = 0.02

-L- TRADE STREET TUNNEL
PI Sta 15+05.12
△ = 2° 3' 02" 16.2" (RT)
D = 57° 17' 44.8"
L = 40.21'
T = 20.38'
R = 100.00'
SE = 0.02

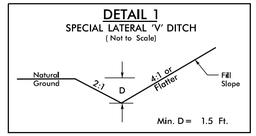
-L- TRADE STREET TUNNEL
PI Sta 15+67.75
△ = 50° 52' 00.3" (LT)
D = 63° 39' 43.1"
L = 79.90'
T = 42.80'
R = 90.00'
SE = 0.02

-L- TRADE STREET TUNNEL
PI Sta 16+62.03
△ = 41° 43' 48.8" (RT)
D = 38° 11' 49.9"
L = 109.25'
T = 57.17'
R = 150.00'
SE = 0.02

-L- TRADE STREET TUNNEL
PI Sta 17+80.13
△ = 32° 14' 16.4" (LT)
D = 38° 11' 49.9"
L = 84.40'
T = 43.35'
R = 150.00'
SE = 0.02



DETAIL 1
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 11+50 TO STA. 13+00 -L- (RT)
FROM STA. 16+80 TO STA. 17+30 -L- (RT)

RADII DIMENSIONS ARE TO THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED

PROPOSED ASPHALT SHARED USE TRAIL

PROPOSED CONCRETE SHARED USE TRAIL

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200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	4
R/W SHEET NO.	

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8/8/2023

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5/14/99

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200 SOUTH TRYON, SUITE 200
CHARLOTTE, N.C. 28202

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	5

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR
DocuSigned by: 8/8/2023

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER JASON D. LAWING
DocuSigned by: Jason Lawing 8/8/2023

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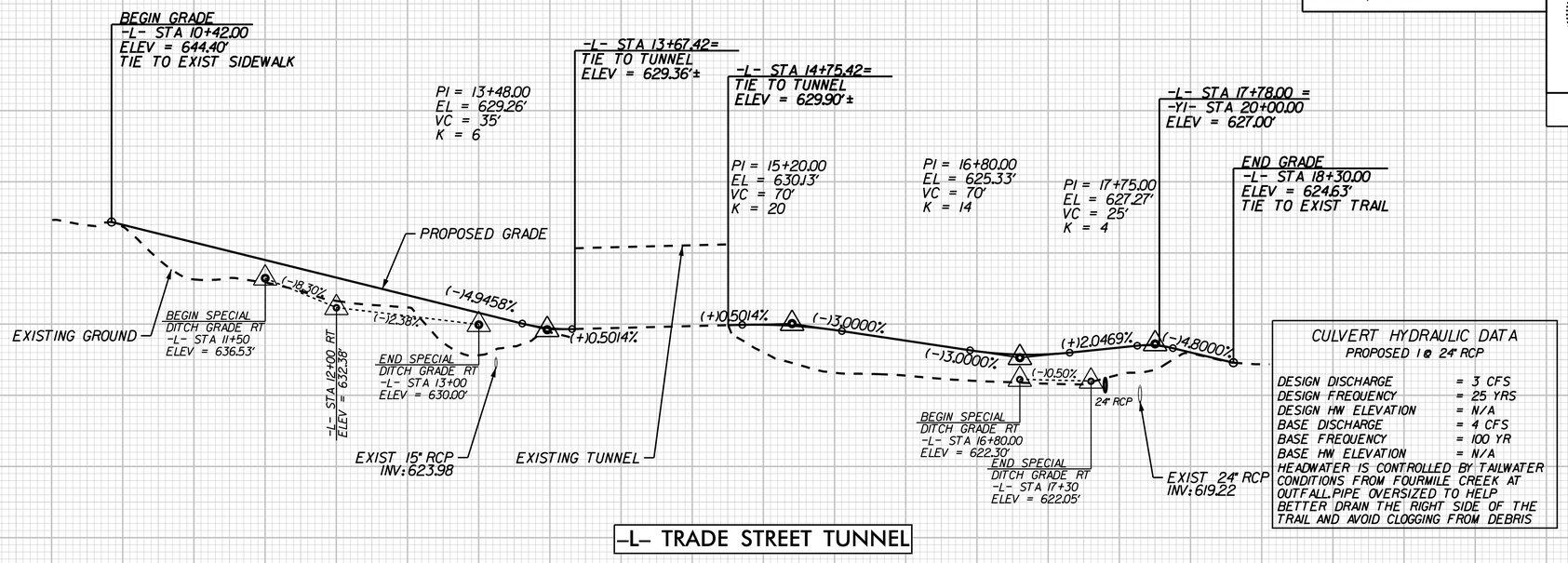


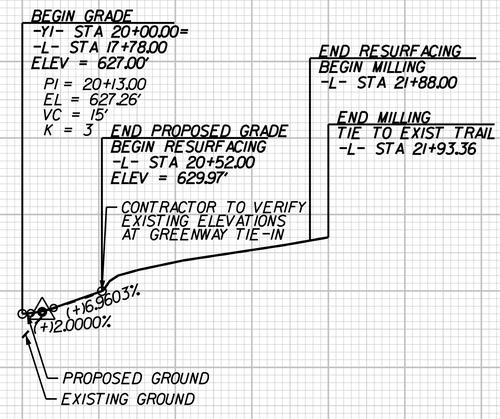
-L- TRADE STREET TUNNEL

FOR -L- PLAN, SEE SHEET 4

CULVERT HYDRAULIC DATA
PROPOSED 1 @ 24" RCP

DESIGN DISCHARGE	= 3 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= N/A
BASE DISCHARGE	= 4 CFS
BASE FREQUENCY	= 100 YR
BASE HW ELEVATION	= N/A

HEADWATER IS CONTROLLED BY TAILWATER CONDITIONS FROM FOURMILE CREEK AT OUTFALL PIPE. OVERSIZED TO HELP BETTER DRAIN THE RIGHT SIDE OF THE TRAIL AND AVOID CLOGGING FROM DEBRIS



-Y1- FOUR MILE CREEK GREENWAY

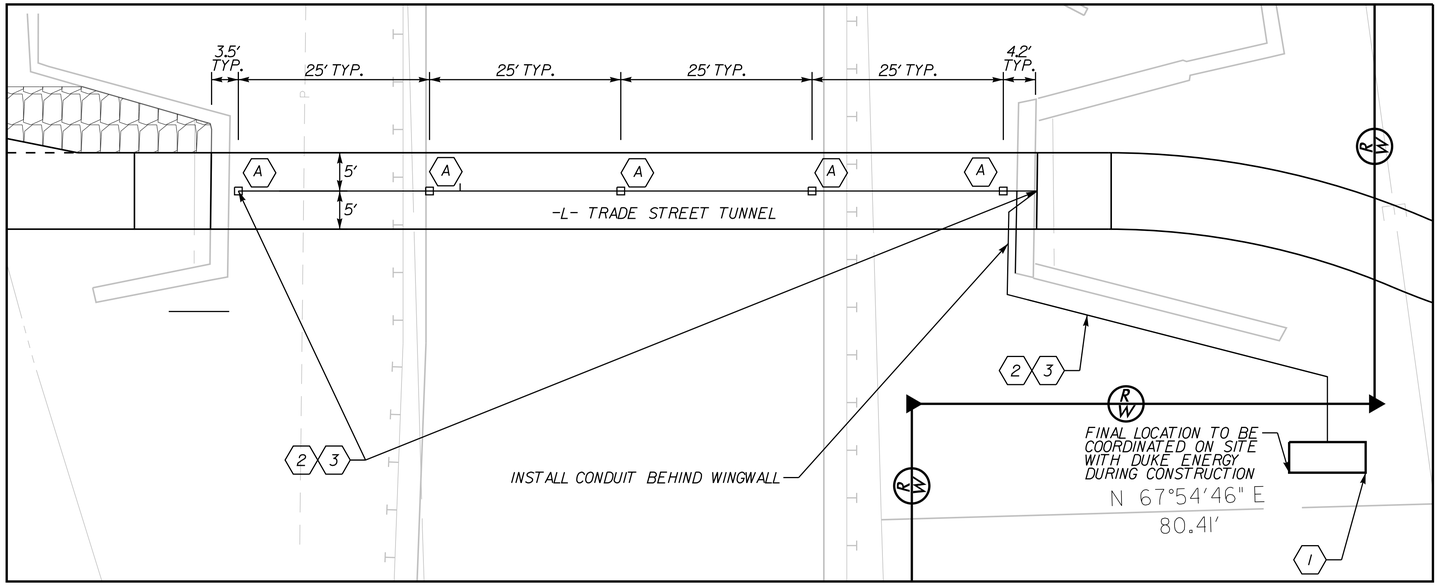
FOR -Y1- PLAN, SEE SHEET 4

8/8/2023

DocuSign Envelope ID: 13A5BAD3-6632-49AE-AD59-4BCE3787B292

REVISIONS

5/14/99



TUNNEL LIGHTING PLAN

SCALE: 1" = 10'

KEY NOTES:

1. COUNTY TO PROVIDE COMBINATION PANEL,DISCONNECT,INCLUDING INSTALL OF CONCRETE BASE & CONDUIT (AT PANEL BASE).NCDOT CONTRACTOR RESPONSIBLE FOR PROVIDING & INSTALLING GROUNDING RODS AND GROUNDING WIRE PER NEC.
2. CONDUIT SIZE:¾" RIGID
3. CONDUCTOR SIZE: 2-12 AWG. 1-12 AWG GROUND
A. LED LIGHT FIXTURE

4/14/2022

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PROJECT REFERENCE NO.	SHEET NO.
EB-5829	E-1
RW SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 031788 ENGINEER BENJAMIN S. TAYLOR DocuSigned by: 87082ID098324B3... 4/14/22	NORTH CAROLINA PROFESSIONAL SEAL 032615 ENGINEER MICHAEL DAVID LEWING DocuSigned by: B53ABA2D65E1407... 4/14/22

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GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE,STATE BUILDING CODES AND THE LOCAL BUILDING CODES. ALL COMPONENTS SHALL BE UL LISTED.

2. THE CONTRACTOR SHALL INTERCONNECT THE LIGHTING BRANCH CIRCUIT INTO THE COMBINATION SERVICE AND DISCONNECT PANEL PROVIDED BY OTHERS.THIS WORK WILL BE INCIDENTAL TO 2 #12 W/G FEEDER CIRCUIT IN 3/4" CONDUIT.

3. PROVIDE ADDITIONAL SUPPORT FOR DEVICES,FIXTURES, EQUIPMENT,AND FEEDERS WHERE THE CONSTRUCTION IS NOT SUITABLE FOR DIRECT MOUNTING.

4. VERIFY CEILING SYSTEMS AND PROVIDE MOUNTING ACCESSORIES,TRIMS AND ALL REQUIRED MOUNTING HARDWARE TO SUIT THE PARTICULAR INSTALLATION.

5. BRANCH CIRCUIT CONDUCTORS SHALL BE 12 AWG MINIMUM.

6. BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER.

7. ALL WIRE TERMINATIONS SHALL BE RATED FOR AT LEAST 75 DEGREES C.

8. ALL FEEDERS AND CIRCUITRY SHALL BE TORQUED PER THE PANEL.

9. BREAKERS AND PARTICULAR EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

10. MANUFACTURER'S NAME AND MODEL NUMBER ARE GIVEN FOR DESCRIPTIVE PURPOSES,TO INDICATE A QUALITY STANDARD,AND ARE NOT INTENDED TO LIMIT PRODUCTS TO A PARTICULAR MANUFACTURER.PRODUCTS DEEMED EQUAL AND APPROVED BY THE DEPARTMENT WILL BE ACCEPTED.

11. FOR ANY METAL CONDUIT ENTERING AN ENCLOSURE WHERE A PRE-PUNCHED CONCENTRIC OR ECCENTRIC KNOCKOUT IS USED, THE CONTRACTOR SHALL ENSURE ADEQUATE BONDING BETWEEN THE METAL CONDUIT AND ENCLOSURE BY INSTALLING A BONDING JUMPER AROUND THE CONCENTRIC OR ECCENTRIC KNOCKOUT.

12. CIRCUITRY TO SWITCHES,RECEPTACLES AND ALL OTHER DEVICES SHALL BE TERMINATED ON THE DEVICES SCREW TERMINALS.

13. COORDINATE ANY AND ALL WORK WITH OTHER TRADES PRIOR TO INSTALLATION SO AS TO AVOID CONFLICT DURING CONSTRUCTION.

14. PROTECT EXISTING UNDERGROUND UTILITIES DURING CONSTRUCTION.

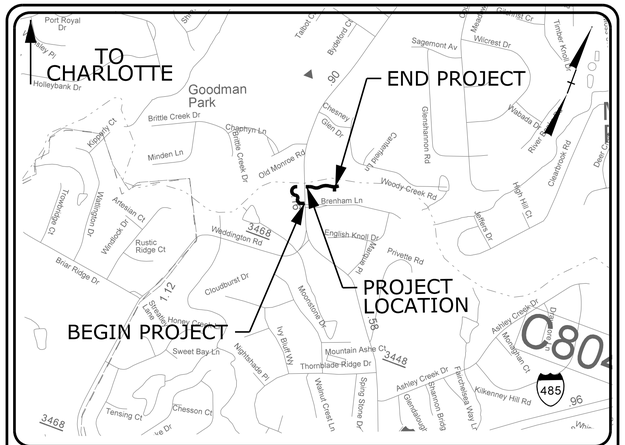
15. ALL ELECTRICAL MATERIALS,DEVICES,APPLIANCES,AND EQUIPMENT SHALL BE LABEL LISTED BY AN APPROVED THIRD PARTY TESTING AGENCY.

16. ALL CONDUIT SHALL BE A MINIMUM OF 36 INCHES BELOW GRADE WHERE ROUTED UNDERGROUND.

17. INSTALL RIGID GALVANIZED STEEL (RGS) CONDUIT ABOVE GROUND AND POLYVINYL CHLORIDE (PVC) SCHEDULE 40 CONDUIT UNDERGROUND.

18. LED LIGHT FIXTURE SPACING IS SHOWN AS TYPICAL.LED LIGHT FIXTURES MAY BE SHIFTED IN LINE TO AVOID OBSTRUCTIONS AS APPROVED BY THE ENGINEER.

TIP PROJECT: EB–5829



VICINITY MAP
NOT TO SCALE

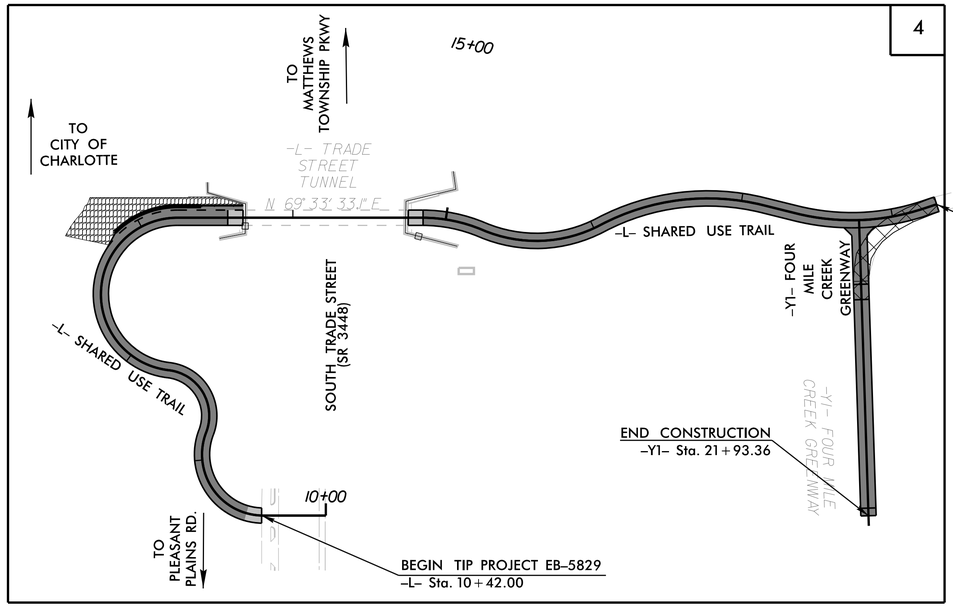
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

MECKLENBURG COUNTY

LOCATION: GREENWAY CONNECTION FROM BRENHAM LN. TO FOUR MILE CREEK GREENWAT BY TRADE STREET TUNNEL

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & GREENWAY INSTALLATION



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	EB-5829	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
45969.1.1	N/A	PE

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1630.03	Temporary Silt Ditch	TSD
1630.05	Temporary Diversion	TD
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle / Coir Fiber Wattle	EW CFW
	Wattle / Coir Fiber Wattle with Polyacrylamide (PAM)	
1634.01	Temporary Rock Sediment Dam Type-A	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	
1635.02	Rock Pipe Inlet Sediment Trap Type-B	
1630.04	Stilling Basin	
1630.06	Special Stilling Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C
	Skimmer Basin	
	Tiered Skimmer Basin	
	Infiltration Basin	

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

GRAPHIC SCALE

50 25 0 50 100
PLANS

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE APPLICABLE REGULATIONS SET FORTH BY THE NCG–010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF WATER RESOURCES.

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200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202
PHONE: (704) 333-5131

Prepared In the Office of:

KIMLEY HORN
200 SOUTH TRYON STREET, SUITE 200
CHARLOTTE, NORTH CAROLINA 28202

Designed by:

SPENCER GREEN, P.E. ***#4244***
NAME *LEVEL III CERTIFICATION NO.*

Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2018 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	EC-2A

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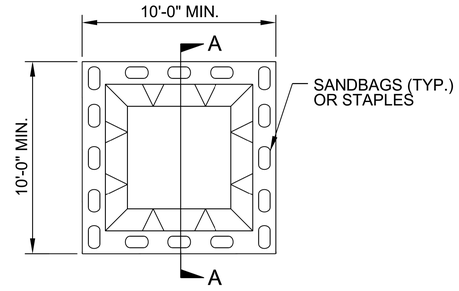
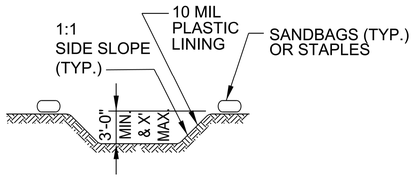
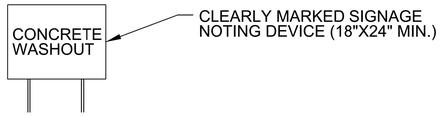
REVISIONS

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER







SECTION A-A

PLAN

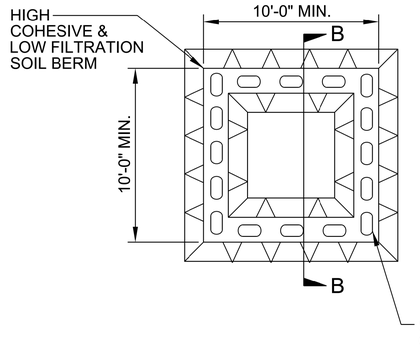
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

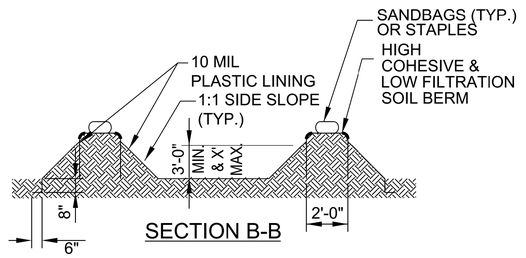
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

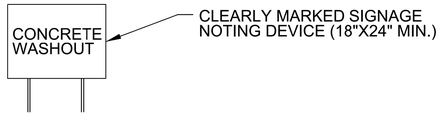
BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE





SECTION B-B



PLAN

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

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PROJECT REFERENCE NO.	SHEET NO.
EB-5829	EC-2B

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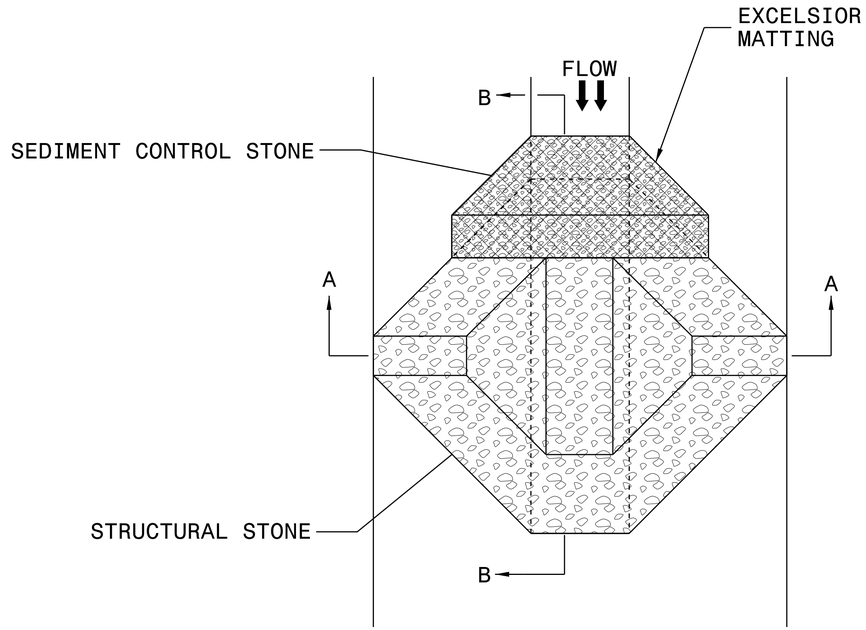
TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)



PLAN

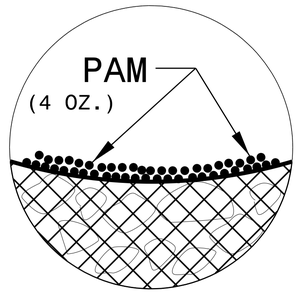
NOTES:

INSTALL TEMPORARY ROCK SILT CHECK TYPE A IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1633.01.

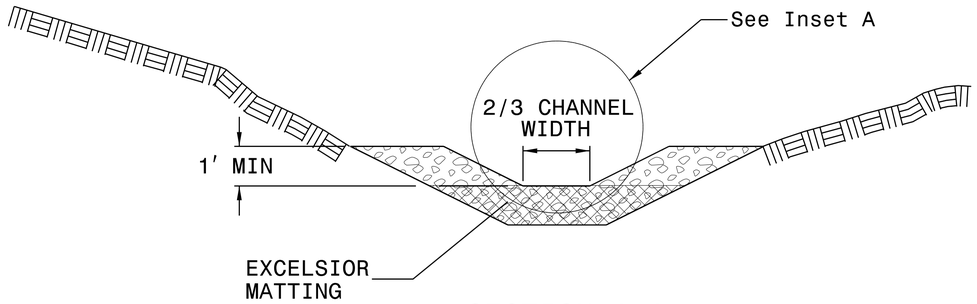
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

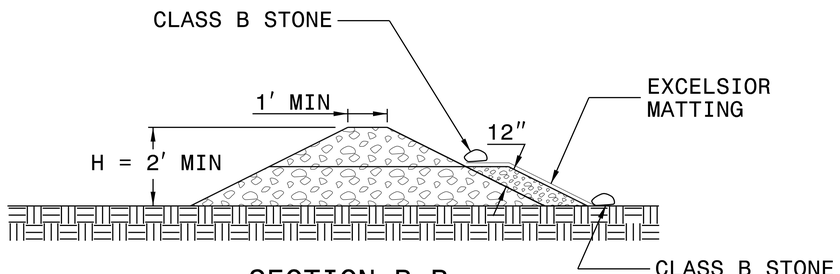
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

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8/11/2023

E&SC PLANS

PROJECT REFERENCE NO.	SHEET NO.
EB-5829	EC-3

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CHARLOTTE, N.C. 28202

REVISIONS

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION SUMMARY SHEET

MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
SLOPES:				RIGHT	
4:2	-L-	12+00	13+00	RT	105
4:2	-L-	16+80	17+30	RT	55

PERMANENT SOIL REINFORCEMENT MAT

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
SLOPES:					
4:2	-L-	11+50	12+00	RT	55

8/8/2023

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DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

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PROJECT REFERENCE NO.	SHEET NO.
EB-5829	EC-4/CONST.4

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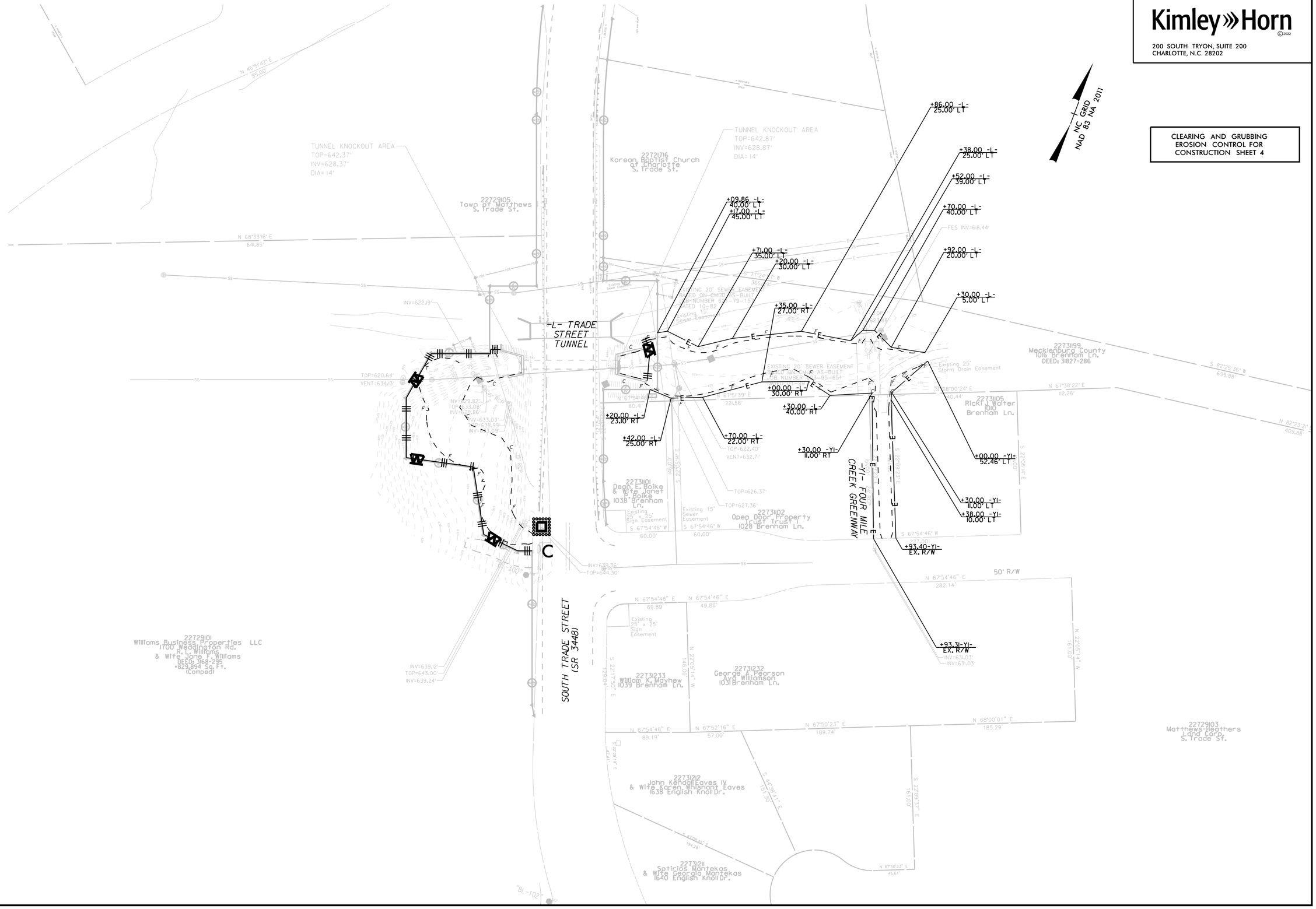
CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

NC GRID
NAD 83 NA 2011

REVISIONS
5/14/99
8/8/2023



PROJECT REFERENCE NO.	SHEET NO.
EB-5829	EC-5/CONST.4

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NAD 83 NC GRID NA 2011

TUNNEL KNOCKOUT AREA
TOP=642.37'
INV=628.37'
DIA=14'

TUNNEL KNOCKOUT AREA
TOP=642.87'
INV=628.87'
DIA=14'

22721716
Korean Baptist Church
of Charlotte
S. Trade St.

22729105
Town of Matthews
S. Trade St.

N 46°51'42" E
35.00'

N 68°33'16" E
641.85'

15+00

20+00

10+00

-L- TRADE STREET TUNNEL

SOUTH TRADE STREET (SR 3448)

15" RCP-IV
INV=622.19'

OEP
0405

JB W/MH
0403

0402

OTCB-4
0404

0401

0400

TOP=620.64'
VENT=634.43'

INV=639.36'
TOP=644.30'

INV=639.12'
TOP=643.00'
INV=639.24'

+20.00 -L-
23.10 RT

+42.00 -L-
25.00 RT

+09.86 -L-
40.00 LT

+17.00 -L-
45.00 LT

+71.00 -L-
35.00 LT

+20.00 -L-
30.00 LT

+35.00 -L-
27.00 RT

+00.00 -L-
30.00 RT

24" RCP-IV

+30.00 -L-
40.00 RT

GRADE TO DRAIN

+70.00 -L-
22.00 RT

TOP=622.40'
VENT=632.71'

TOP=626.37'

TOP=627.36'

+30.00 -YI-
11.00' RT

-YI- FOUR MILE CREEK GREENWAY

+86.00 -L-
25.00 LT

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1, THIS SHEET

+38.00 -L-
25.00 LT

+52.00 -L-
39.00 LT

OUTLET PROTECTION CLASS 'I' RIP-RAP
EST 7 TONS, EST 15 SY GFD

+70.00 -L-
40.00 LT

24" RCP-IV

FES. INV=618.44'

REMOVE EX FLARED END SECTION.
TIE PROP JB W/MH TO EX 24" RCP

+92.00 -L-
20.00 LT

+30.00 -L-
5.00 LT

0416

0412

0411

JB W/MH

0415

+00.00 -YI-
52.46' LT

+30.00 -YI-
11.00' LT

+38.00 -YI-
10.00' LT

+93.40-YI-
EX. R/W

0410

+93.31-YI-
EX. R/W
INV=631.03'

RETAIN EX 24" RCP AND CB

50' R/W

15" RCP DRAINAGE PIPE

REMOVE EX JB W/MH AND EX 15" CMP. REPLACE WITH PROP JB W/MH
AND TIE TO PROP 15" RCP DRAINAGE PIPE

RETAIN EX 15" CMP

SPECIAL LATERAL 'V' DITCH
SEE DETAIL 1, THIS SHEET

RETAIN EX 15" RCP AND JB W/MH

RETAIN EX 15" RCP AND JB W/MH

RETAIN EX 15" RCP AND CB

22729101
Williams Business Properties LLC
1700 Weddington Rd.
R. L. Williams
& Wife Jane F. Williams
DEED 368-295
+829,894 SQ. FT.
(Comped)

22731101
Dean E. Bolke
& Wife Janet
E. Bolke
1038 Brenham
Ln.

22731102
Opep Door Property
Trust Trust 1
1028 Brenham Ln.

22731199
Mecklenburg County
1016 Brenham Ln.
DEED 31827-286

22731105
Ricki L. Walter
1010
Brenham Ln.

22731232
George A. Pearson
a/k/a Williamson
1031 Brenham Ln.

22731233
William K. Mayhew
1039 Brenham Ln.

22731212
John Kendall Eaves IV
& Wife Karen Whisnant Eaves
1638 English Knoll Dr.

22731211
Sotirios Mantekas
& Wife Georgia Mantekas
1640 English Knoll Dr.

22729103
Matthews-Heathers
Land Corp.
S. Trade St.

Existing 20' SEWER EASEMENT
RECORDED ON-EMUSTS-BUILT
AS-BUILT NUMBER 6179-11-1
DATED 10-87
Existing 15'
Sewer Easement

Existing 25' x 25'
Sign Easement

Existing 25'
Storm Drain Easement

N 67°54'46" E
282.14'

N 67°54'46" E
69.89'

N 67°54'46" E
49.86'

N 67°54'46" E
89.19'

N 67°52'16" E
57.00'

N 67°50'23" E
189.74'

N 68°00'01" E
185.29'

N 22°05'14" W
161.00'

S 22°09'37" E
161.00'

S 67°54'46" W
60.00'

S 67°54'46" W
60.00'

S 67°54'46" W

S 22°05'14" E
146.00'

S 22°05'14" E
129.04'

S 22°03'23" E

S 22°05'14" E

S 82°25'36" W
639.88'

N 82°23'21" E
409.88'

N 67°38'22" E
112.26'

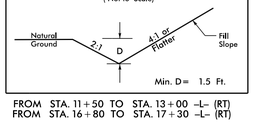
S 22°09'00" E
70.44'

S 44°38'41" E
151.30'

S 67°50'23" E
46.61'

S 67°50'23" E
194.28'

DETAIL 1
SPECIAL LATERAL "V" DITCH
(Not to Scale)



FROM STA. 11+50 TO STA. 13+00 -L- (RT)
FROM STA. 16+80 TO STA. 17+30 -L- (RT)

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-1A

EB–5829
CROSS–SECTION INDEX

–L– TRADE STREET TUNNEL	X–1 THRU X–5
–Y1– FOUR MILE CREEK GREENWAY	X–6

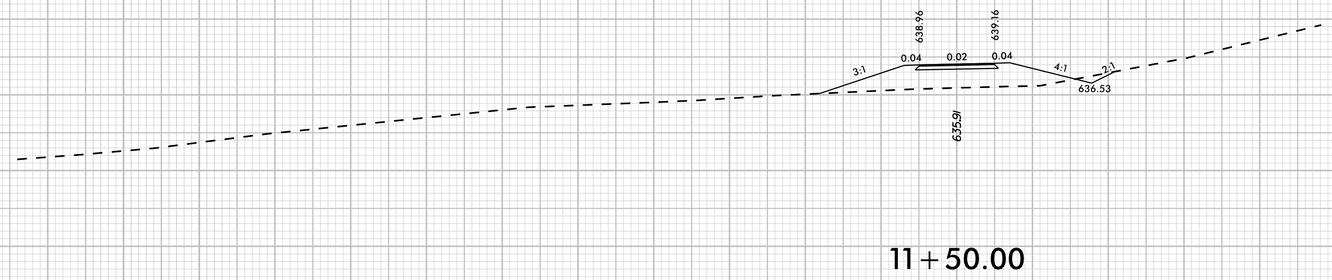
NOTE: APPROXIMATE QUANTITIES ONLY. UNCLASSIFIED EXCAVATION, FINE GRADING, CLEARING AND GRUBBING, REMOVAL OF EXISTING PAVEMENT, AND BREAKING OF EXISTING PAVEMENT WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR "GRADING."

8/8/2023 K:\CHL_PRJ\01036526 - EB-5829 (Trade St Tunnel\Roadway\XSC\EB-5829_rdy_xpl_cover.dgn

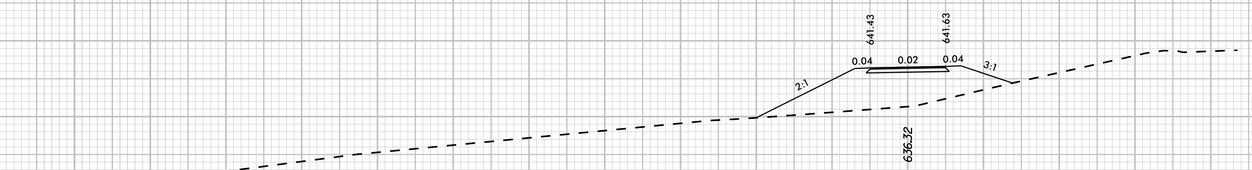
0 5 10

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-1

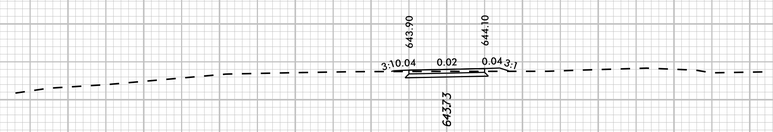
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



11+50.00



11+00.00



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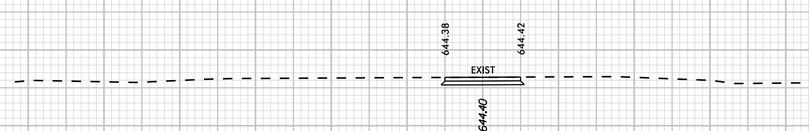


10+42.00

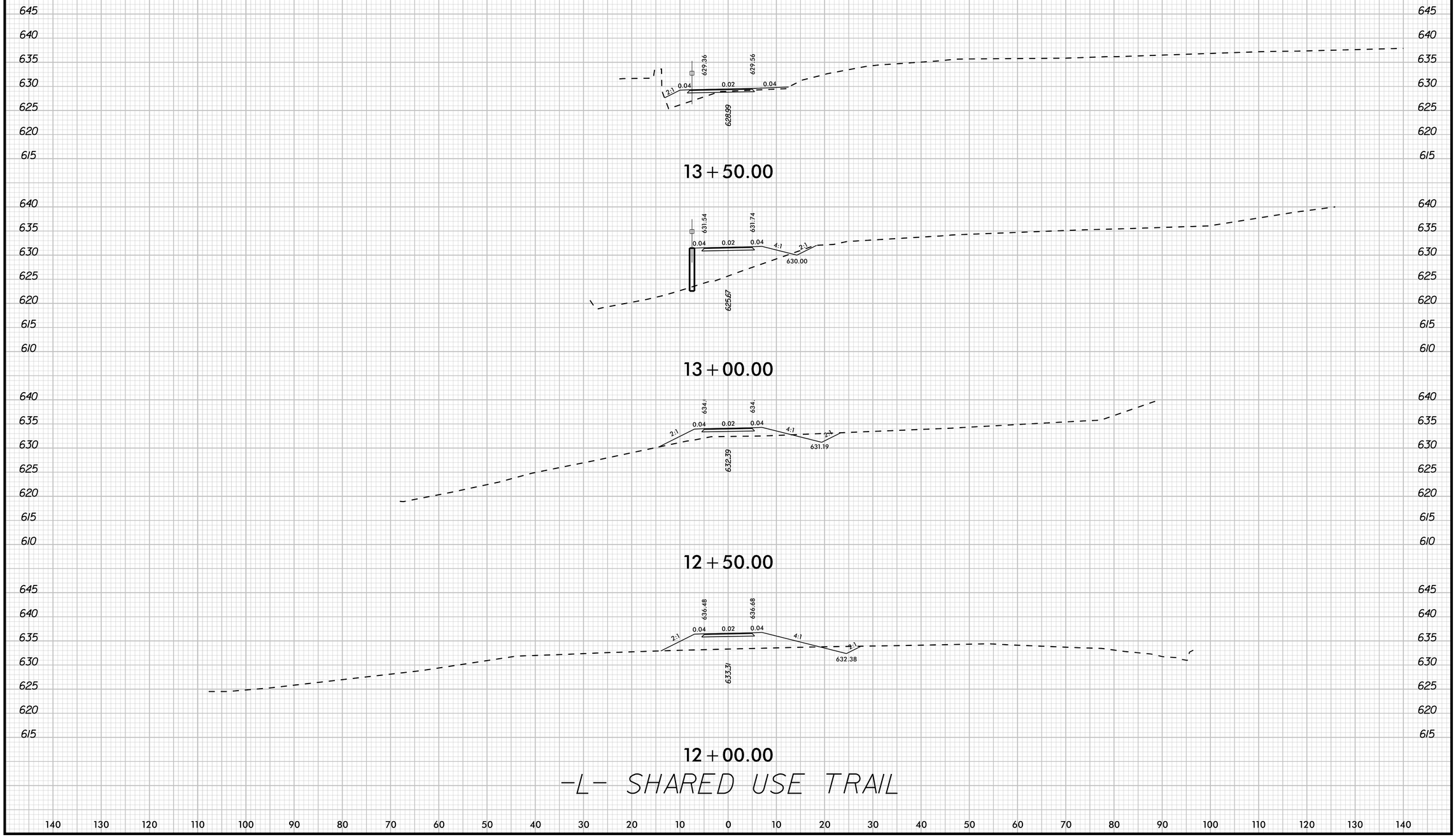
-L- SHARED USE TRAIL

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-3

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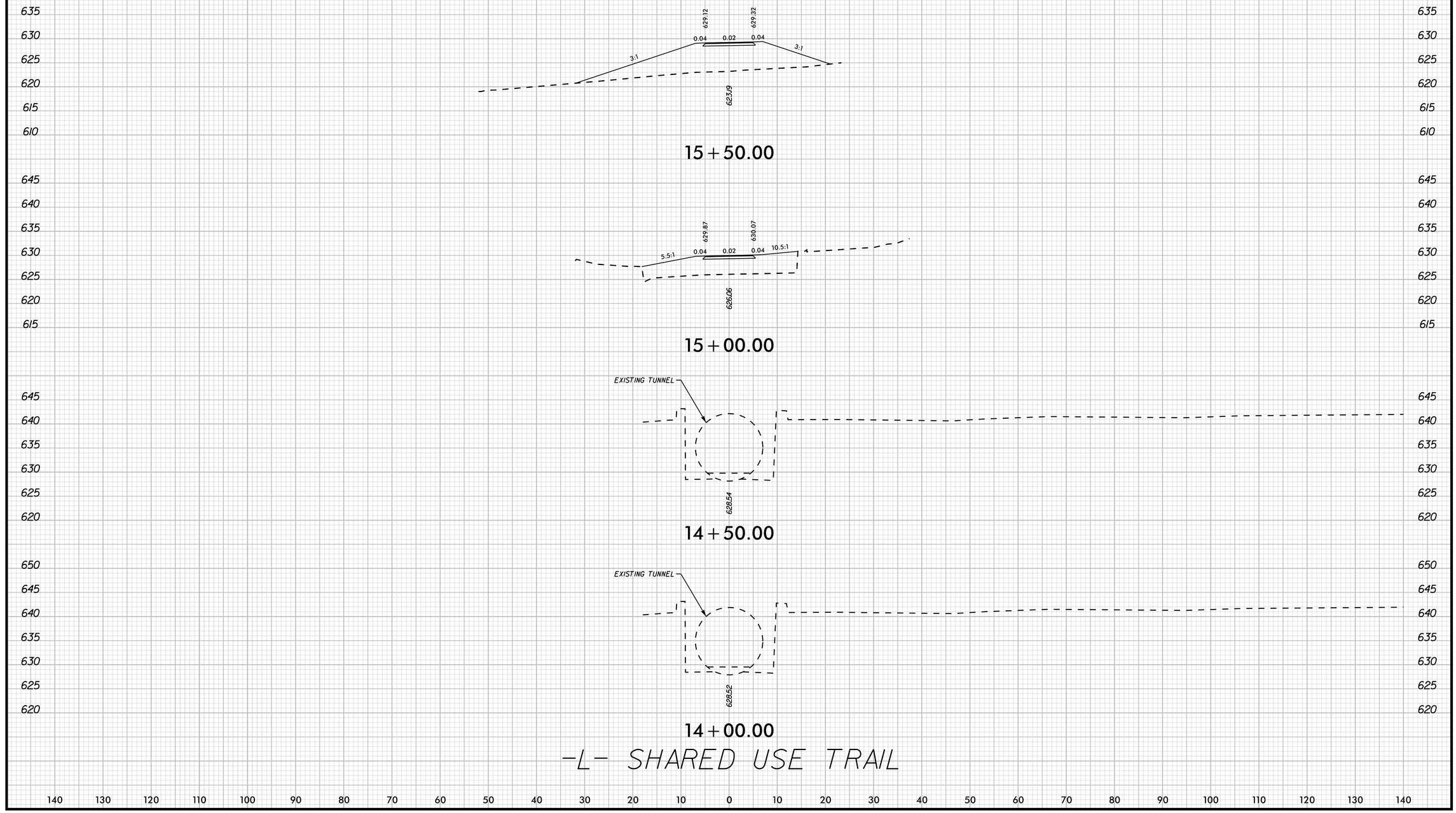
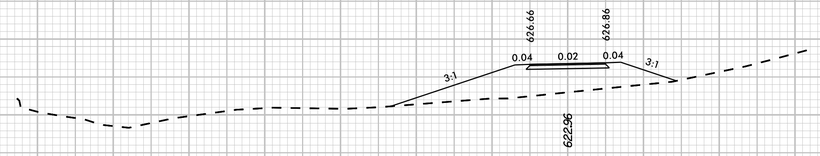


0 5 10

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-4

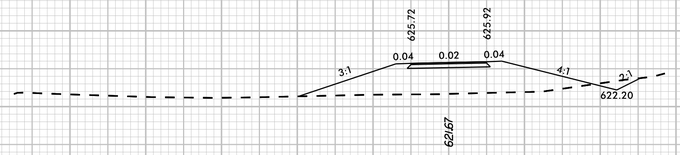
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

635 630 625 620 615 610



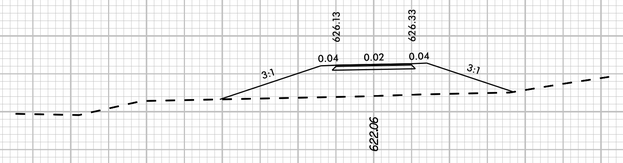
17+50.00

640 635 630 625 620 615 610



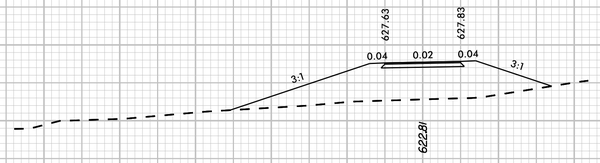
17+00.00

640 635 630 625 620 615 610



16+50.00

640 635 630 625 620 615 610



16+00.00

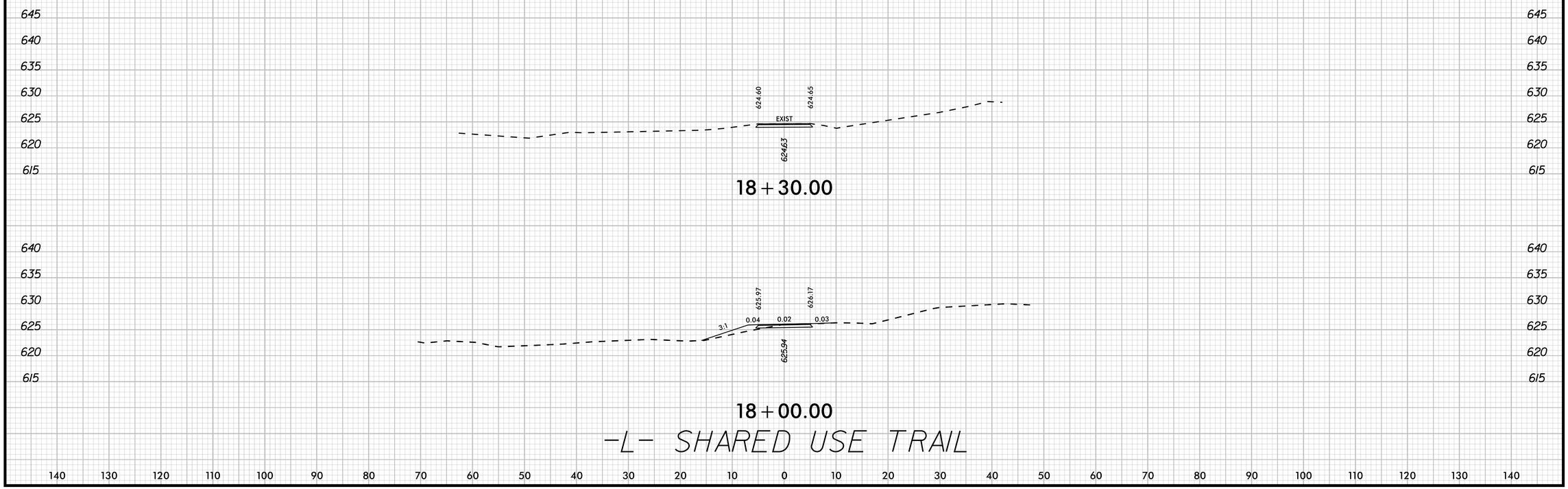
-L- SHARED USE TRAIL

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-5

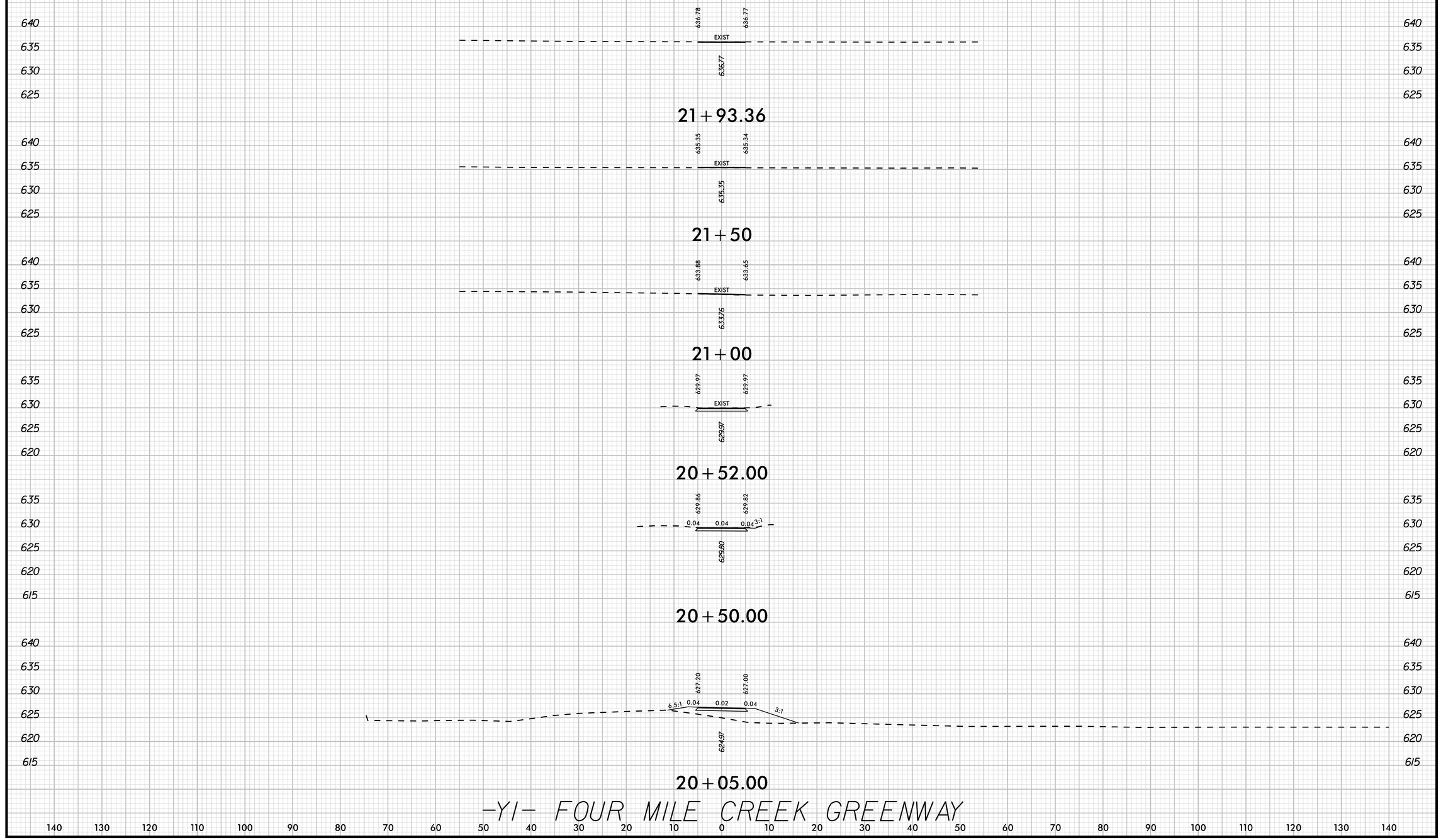
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



0 5 10

PROJ. REFERENCE NO.	SHEET NO.
EB-5829	X-6

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



-YI- FOUR MILE CREEK GREENWAY

PROJECT REFERENCE NO.	SHEET NO.
45969.1.1 (EB-5829)	W-1

GEOTECHNICAL ENGINEER

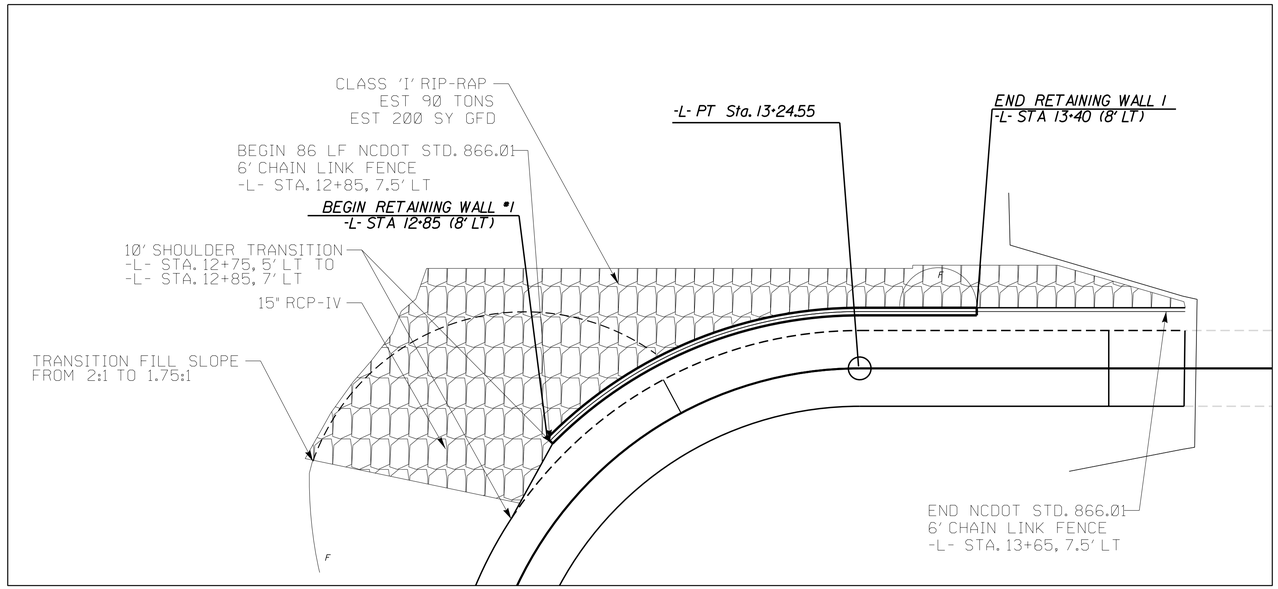
NORTH CAROLINA PROFESSIONAL SEAL 028893 ENGINEER

DocuSigned by: 08/11/2023
STEVEN SCHOMER
SIGNATURE DATE

ENGINEER

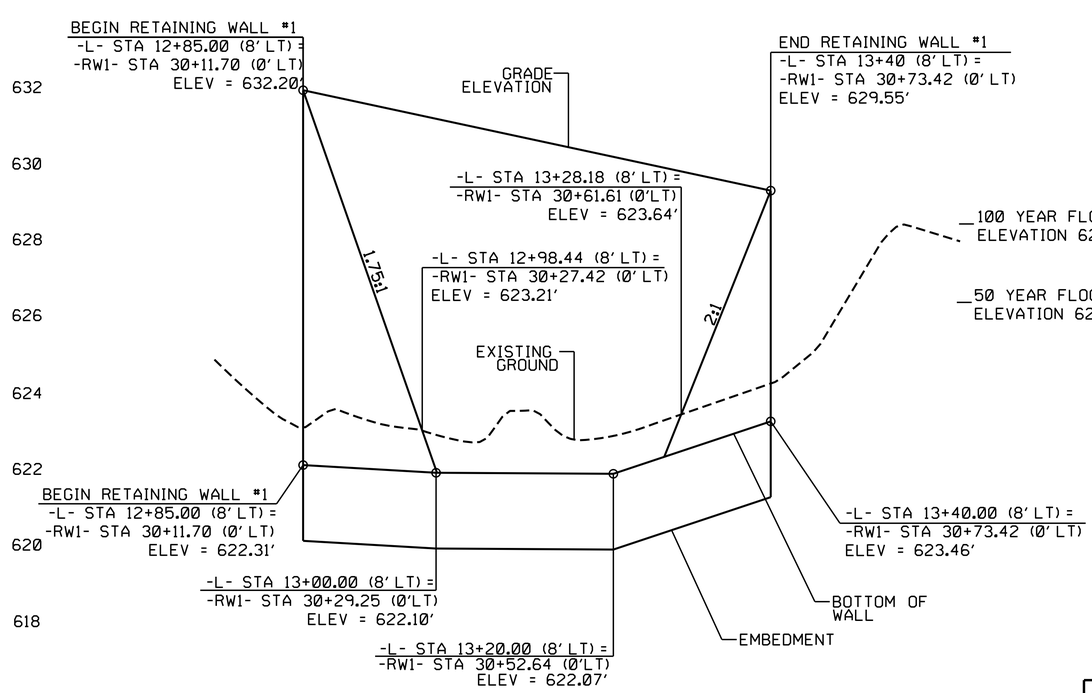
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

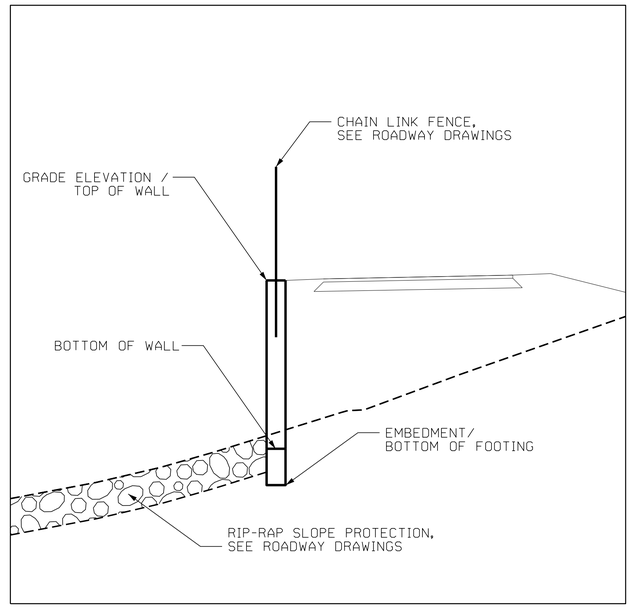


RETAINING WALL NO. 1 PLAN

PRECAST GRAVITY RETAINING WALLS = 590 SF



RETAINING WALL NO. 1 ELEVATION



CROSS SECTION - STA 13+00 -L-

PREPARED BY: MHS	DATE: 3/24/22
REVIEWED BY: ENW	DATE: 3/24/22

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 1 PRECAST GRAVITY WALL

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	MHS	8/23	3		
2			4		

PROJECT REFERENCE NO.	SHEET NO.
45969.1.1 (EB-5829)	W-2

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 028893 ENGINEER MICHAEL H. SIEBERS

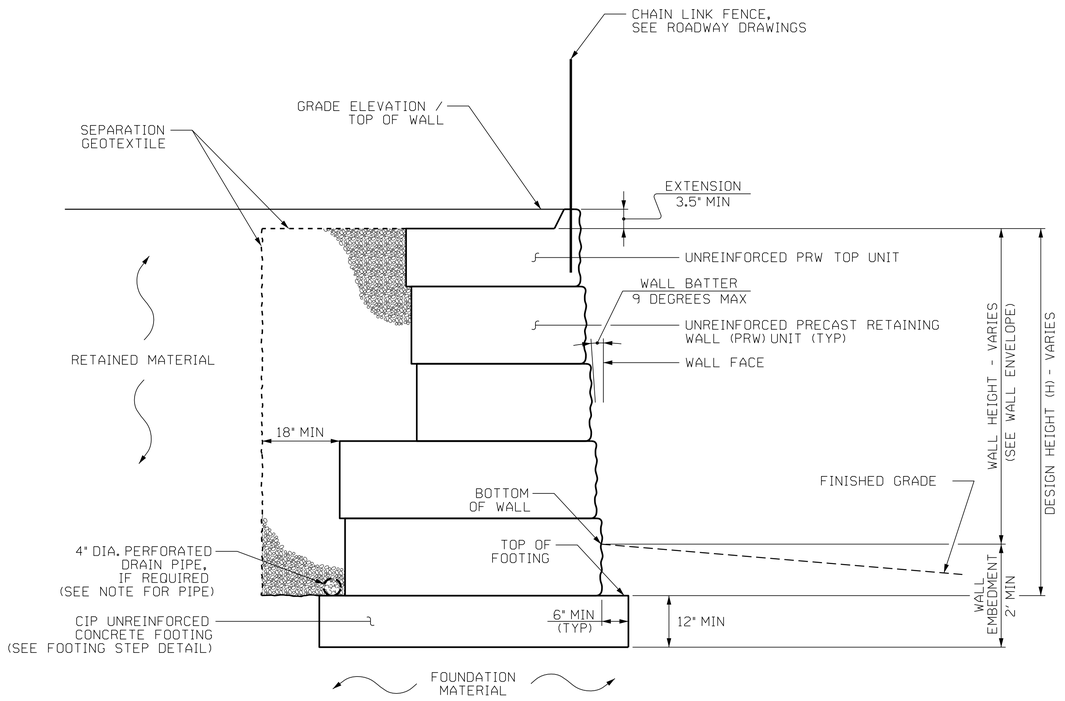
DocuSigned by: 08/11/2023

SIGNATURE DATE

ENGINEER

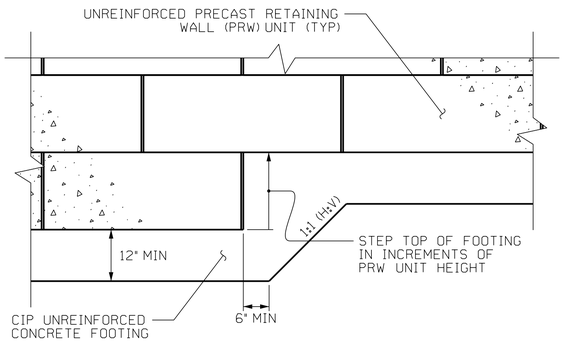
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PRECAST GRAVITY WALL - TYPICAL SECTION

*SEE ROADWAY PLANS FOR FINISHED GRADE DETAILS.



FOOTING STEP DETAIL

NOTES:

FOR PRECAST GRAVITY RETAINING WALLS, SEE SECTION 455 OF THE STANDARD SPECIFICATIONS.

FOR CHAIN LINK FENCE, SEE ROADWAY PLANS.

A DRAIN PIPE IS REQUIRED FOR RETAINING WALL NO. 1.

BEFORE BEGINNING PRECAST GRAVITY WALL DESIGN FOR RETAINING WALL NO. 1, SURVEY WALL LOCATION AND SUBMIT A REVISED WALL PROFILE VIEW (WALL ENVELOPE) FOR REVIEW. DO NOT START WALL DESIGN OR CONSTRUCTION UNTIL THE REVISED WALL ENVELOPE IS ACCEPTED.

DESIGN RETAINING WALL NO. 1 FOR DESIGN HEIGHTS EQUAL TO THE WALL HEIGHT PLUS DEPTH TO TOP OF FOOTING (DIFFERENCE BETWEEN GRADE ELEVATION AND TOP OF FOOTING ELEVATION).

DESIGN RETAINING WALL NO. 1 FOR THE FOLLOWING:
1) MAXIMUM FACTORED VERTICAL PRESSURE ON FOUNDATION MATERIAL = 2,000 PSF
2) MINIMUM WALL EMBEDMENT ELEVATION = 2 FT
3) IN-SITU ASSUMED MATERIAL PARAMETERS:

MATERIAL TYPE	UNIT WEIGHT (γ) PCF	FRICTION ANGLE (ϕ) DEGREES	COHESION (c) PSF
RETAINED	120	30	0
FOUNDATION	115	28	0

DESIGN RETAINING WALL NO. 1 FOR A LIVE LOAD SURCHARGE OF 250 PSF.

DO NOT PLACE CONCRETE FOR FOOTINGS FOR RETAINING WALL NO. 1 UNTIL EXCAVATION DIMENSIONS AND FOUNDATION MATERIAL ARE APPROVED.

PREPARED BY: MHS	DATE: 3/24/22
REVIEWED BY: ENW	DATE: 3/24/22

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

RETAINING WALL NO. 1
PRECAST GRAVITY WALL

REVISIONS

NO.	BY	DATE	NO.	BY	DATE
1	MHS	8/29	3		
2			4		