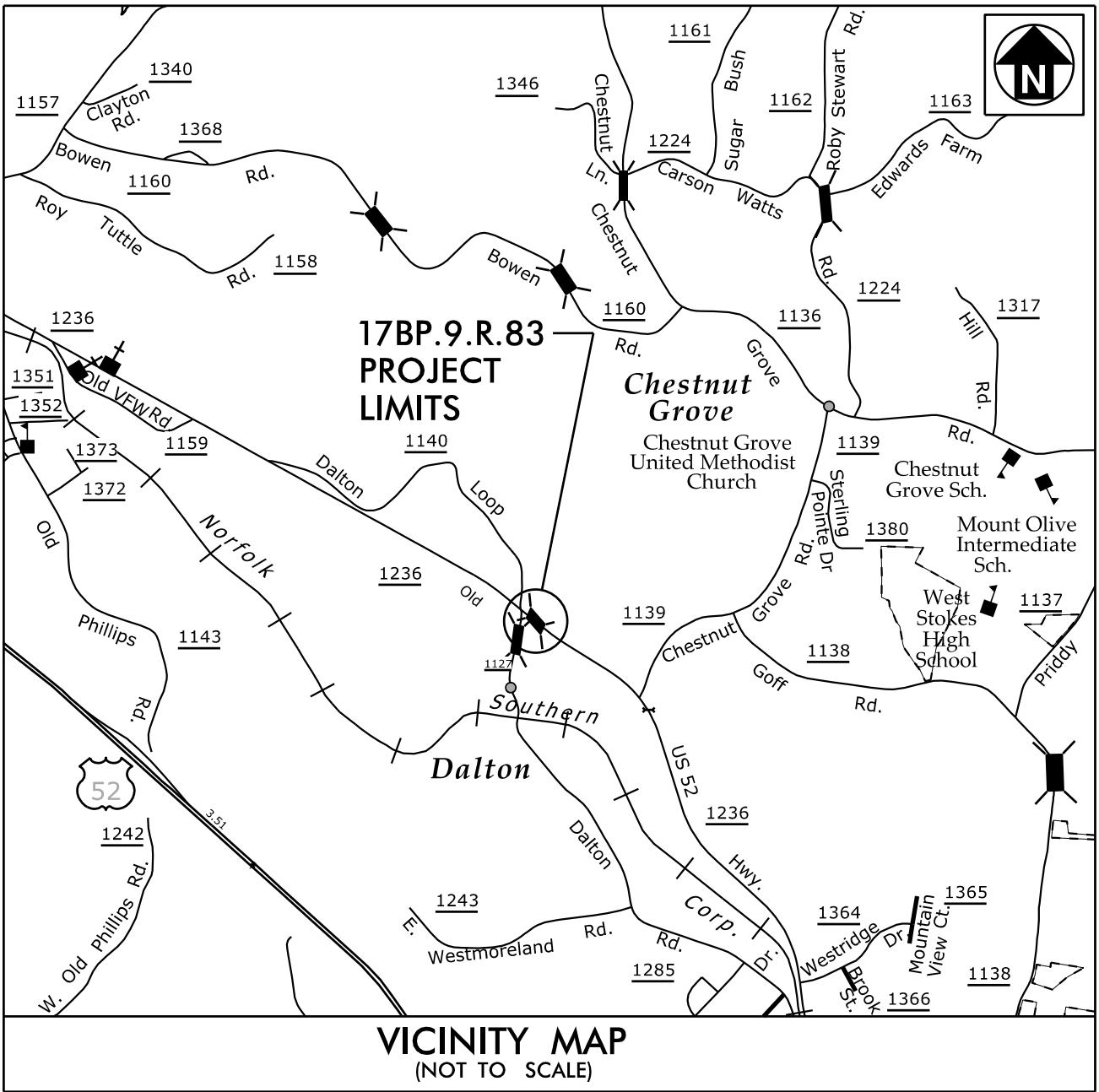


09.08/2019

PROJECT: 17BP.9.R.83

CONTRACT: C205059



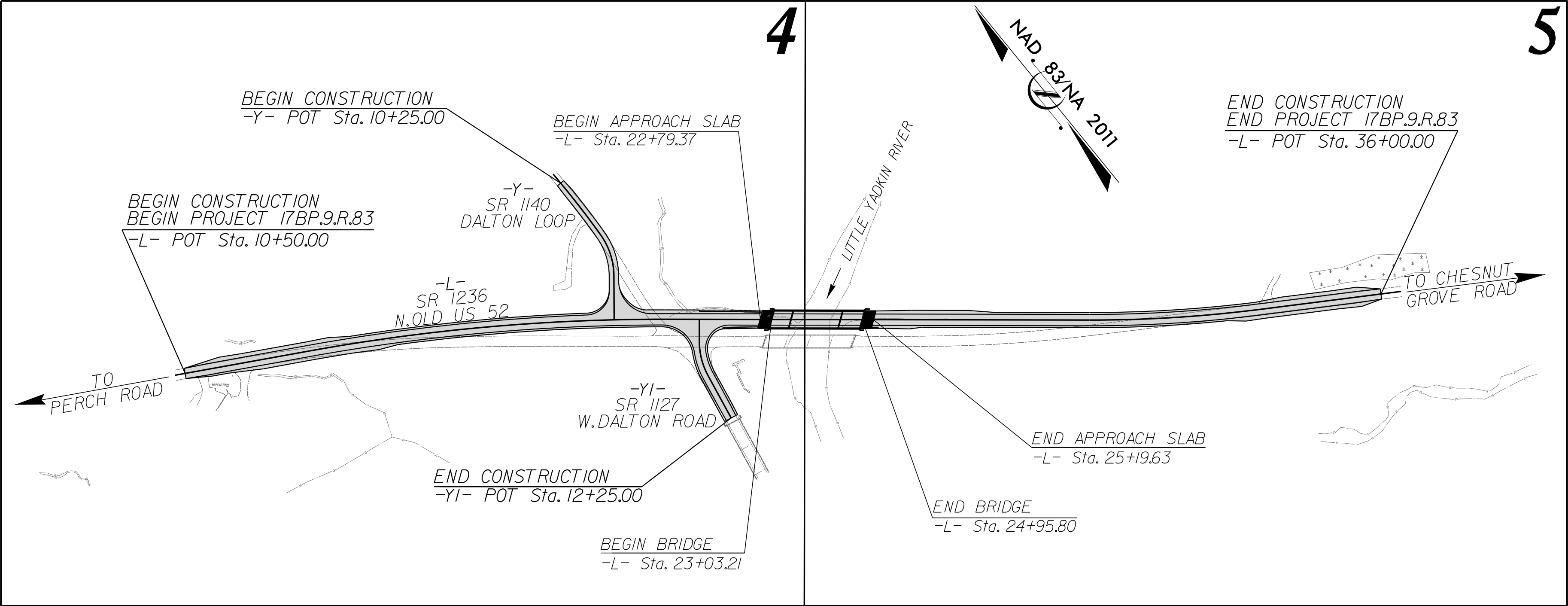
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STOKES COUNTY

LOCATION: BRIDGE NO. 286 OVER LITTLE YADKIN RIVER
ON SR 1236 (NORTH OLD 52)

TYPE OF WORK: GRADING, PAVING, DRAINAGE AND STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.9.R.83	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
17BP.9.PE.83		PE	
17BP.9.ROW.83		RW, UTL	
17BP.9.R.83		CONST	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



PLANS



PROFILE (HORIZONTAL)



PROFILE (VERTICAL)

DESIGN DATA

ADT (2025)= 3,800
ADT (2040)= 8,400

D = 50%
T = 7%*
V = 55 MPH

* TTST = 3% DUAL = 4%

FUNC CLASS =
MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY PROJECT = 0.447 MILES

LENGTH STRUCTURE PROJECT = 0.036 MILES

TOTAL LENGTH PROJECT = 0.483 MILES

Prepared in the Office of WGI for

DIVISION 9

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

APRIL 1, 2022

LETTING DATE:

APRIL 15, 2025

NCDOT CONTACT:

TIM JORDAN, PE
PROJECT ENGINEER

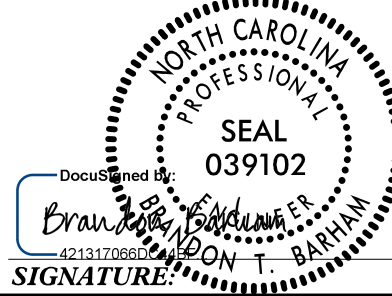
BRANDON BARHAM, PE
HYDRAULIC ENGINEER

JEREMY KEATON, PE, PLS
DIVISION BRIDGE
PROGRAM MANAGER

ROADWAY DESIGN ENGINEER



HYDRAULICS ENGINEER



PLANS PREPARED BY:

M
MOTT
MACDONALD

930 Main Campus Drive, Suite 200
Raleigh, NC 27606
(919) 552-2253
www.mottmac.com

LICENSE NO. F-0669



VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606

GENERAL NOTES		
GENERAL NOTES:	2024 SPECIFICATIONS	EFFECTIVE: 01-16-24
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 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.		
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.		
SUBSURFACE DRAINS:		
SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.		
STREET TURNOUT:		
STREET RETURNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.04 USING THE RADII NOTED ON THE 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 AT THE CONTRACT PRICE FOR "TEMPORARY SHORING".		
END BENTS:		
THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTIONS PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.		
UTILITIES:		
UTILITY OWNERS ON THIS PROJECT ARE DUKE ENERGY, CENTURYLINK, SPECTRUM AND WILKES/RIVERSTREET COMMUNICATIONS.		
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.		
RIGHT-OF-WAY MARKERS:		
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.		

LIST OF ROADWAY STANDARD DRAWINGS		EFF. 01-16-2024
2024 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 16, 2024 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	
225.02	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	
310.10	Driveway Pipe Construction	
DIVISION 4 – MAJOR STRUCTURES		
423.01	Bridge Approach Fills – Type I Approach Fill for Bridge Abutment	
423.02	Bridge Approach Fills – Type IA Alternate Approach Fill for Integral Bridge Abutment	
DIVISION 5 – SUBGRADE, BASES AND SHOULDERS		
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I	
DIVISION 6 – ASPHALT BASES AND PAVEMENTS		
654.01	Pavement Repiars	
DIVISION 8 – INCIDENTALS		
806.01	Concrete Right-of-way Marker	
806.02	Granite Right-of-way Marker	
815.02	Subsurface Drain	
840.00	Concrete Base Pad for Drainage Structures	
840.18	Concrete Grated Drop Inlet Type 'B' – 12" thru 36" Pipe	
840.24	Frames and Narrow Slot Sag Grates	
840.25	Anchorage for Frames – Brick or Concrete or Precast	
840.27	Brick Grated Drop Inlet Type 'B' – 12" thru 36" Pipe	
840.29	Frames and Narrow Slot Flat Grates	
840.35	Traffic Bearing Grated Drop Inlet – for Cast Iron Double Frame and Grates	
840.45	Precast Drainage Structure	
840.46	Traffic Bearing Precast Drainage Structure	
840.66	Drainage Structure Steps	
846.01	Concrete Curb, Gutter and Curb & Gutter	
846.02	Drop Inlet Installation in Expressway Gutter	
846.04	Drop Inlet Installation in Shoulder Berm Gutter	
848.04	Street Turnout	
862.01	Guardrail Placement	
862.02	Guardrail Installation	
862.03	Structure Anchor Units	
876.01	Rip Rap in Channels	
876.02	Guide for Rip Rap at Pipe Outlets	
876.04	Drainage Ditches with Class 'B' Rip Rap	

INDEX OF SHEETS	
SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-2	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1 THRU 2C-2	METHOD OF PIPE INSTALLATION DETAILS
2C-3 THRU 2C-4	GUARDRAIL PLACEMENT DETAILS
2C-5	STRUCTURE ANCHOR UNIT TYPE III MODIFIED DETAIL
2G-1	TEMPORARY SHORING DETAIL
3B-1	GUARDRAIL, TEMPORARY GUARDRAIL, SHOULDER BERM GUTTER & EXPRESSWAY GUTTER, PAVEMENT REMOVAL AND EARTHWORK SUMMARIES
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARY
3P-1	PARCEL INDEX
4 THRU 5	PLAN SHEETS
6 THRU 8	PROFILE SHEETS
RW01 THRU RW05	SURVEY CONTROL SHEETS
TMP-1 THRU TMP-9	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-3	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1	CROSS SECTION INDEX
X-1A	CROSS SECTION SUMMARY
X-2 THRU X-26	CROSS SECTIONS
S-0 THRU S-29	STRUCTURE PLANS
SN	STANDARD STRUCTURE NOTES

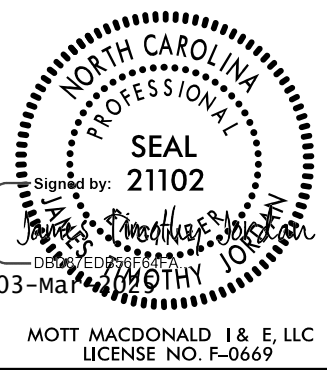
PROJECT REFERENCE

17BP.9.R.83 – STOKES 286

SHEET NO.

1A

ROADWAY DESIGN ENGINEER



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UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of:  930 Main Campus Drive, Suite 200 Raleigh, NC 27606 www.mottmac.com

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

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:

Standard Gauge	
RR Signal Milepost	
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	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
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	

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:

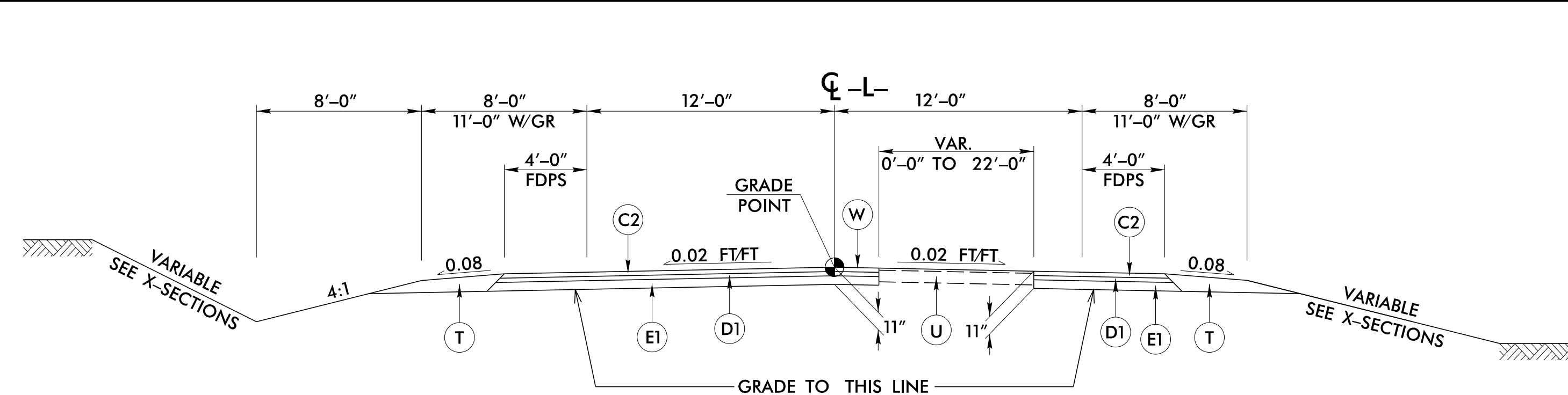
Gas Valve	
Gas Meter	
U/G Gas Line Test Hole (SUE – LOS A)*	
U/G Gas Line (SUE – LOS B)*	
U/G Gas Line (SUE – LOS C)*	
U/G Gas Line (SUE – LOS D)*	
Above Ground Gas Line	

SANITARY SEWER:

Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground 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.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	



TYPICAL SECTION NO. 1

TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 1:

-L- STA 10 + 50.00 TO 11 + 00.00

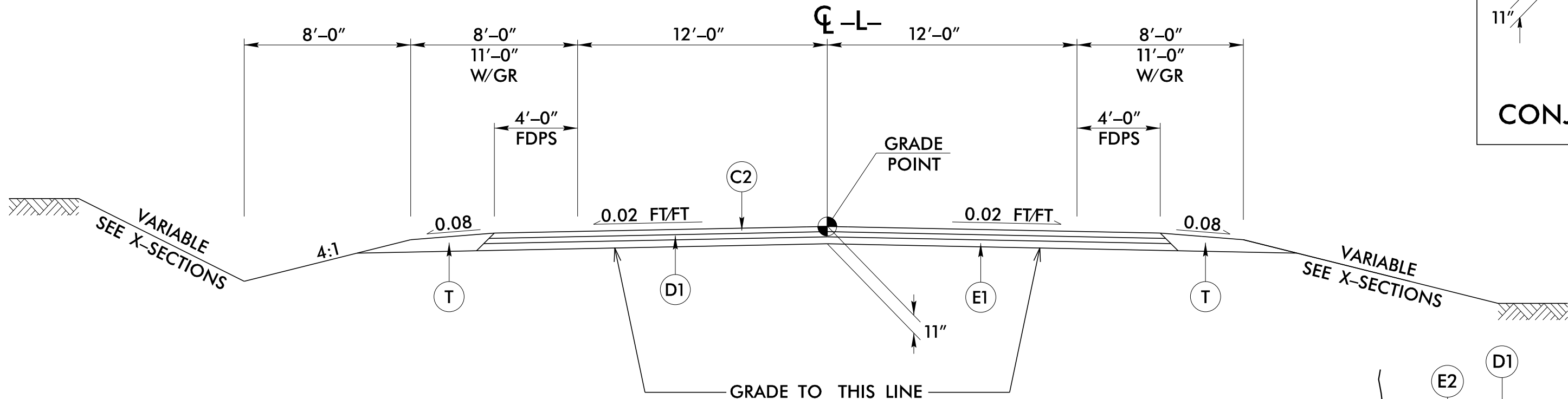
USE TYPICAL SECTION NO. 1:

-L- STA 11 + 00.00 TO 16 + 10.00

-L- STA 29 + 70.00 TO 35 + 50.00

TRANSITION FROM TYPICAL SECTION NO. 1 TO EXISTING:

-L- STA 35 + 50.00 TO 36 + 00.00

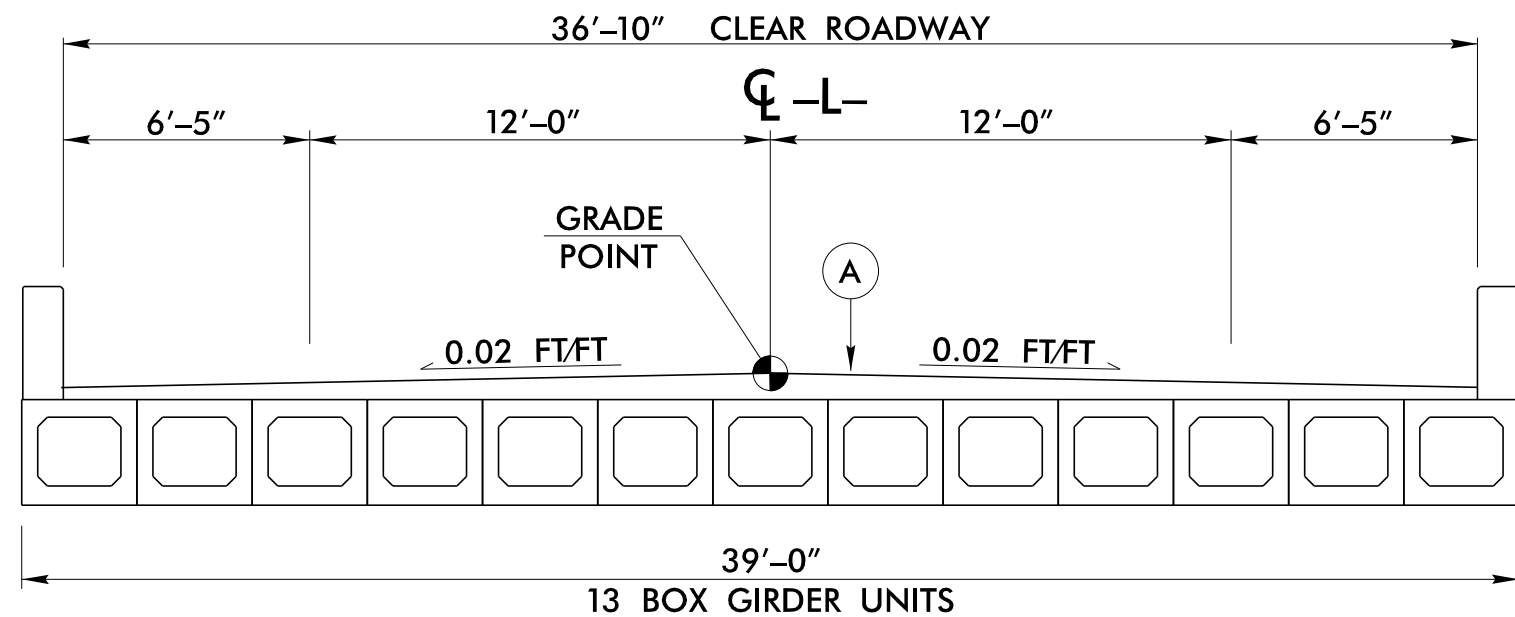


TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2:

-L- STA 16 + 10.00 TO 23 + 03.21 (BEGIN BRIDGE)

-L- STA 24 + 95.80 (END BRIDGE) TO 29 + 70.00

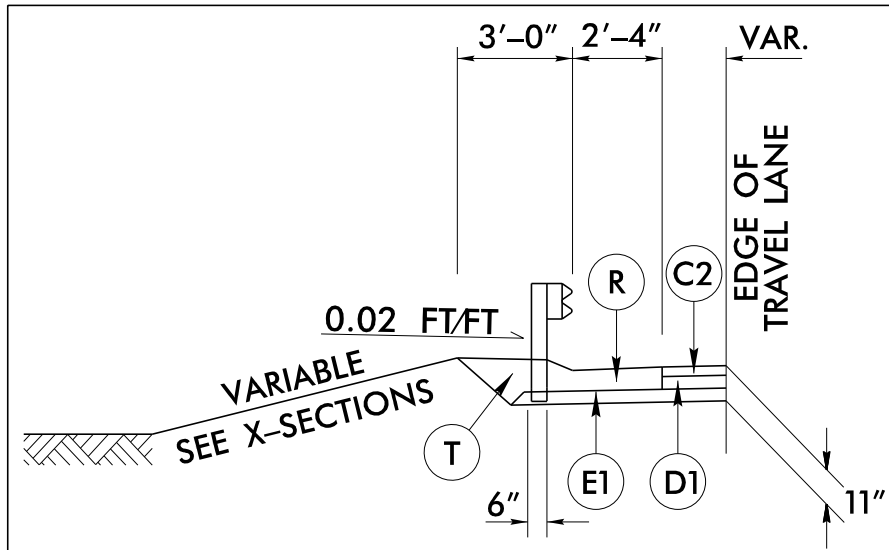


TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3:

-L- STA 23 + 03.21 (BEGIN BRIDGE) TO 24 + 95.80 (END BRIDGE)

NOTE: SEE STRUCTURE PLANS FOR CONSTRUCTION DETAILS

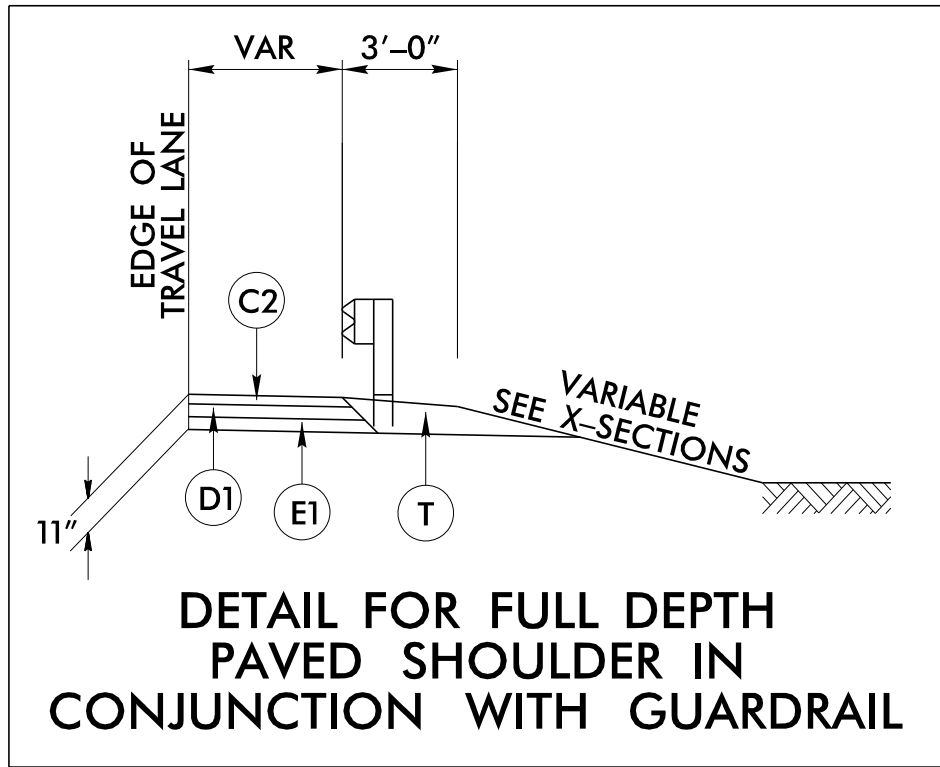


DETAIL FOR SHOULDER BERM GUTTER IN CONJUNCTION WITH GUARDRAIL

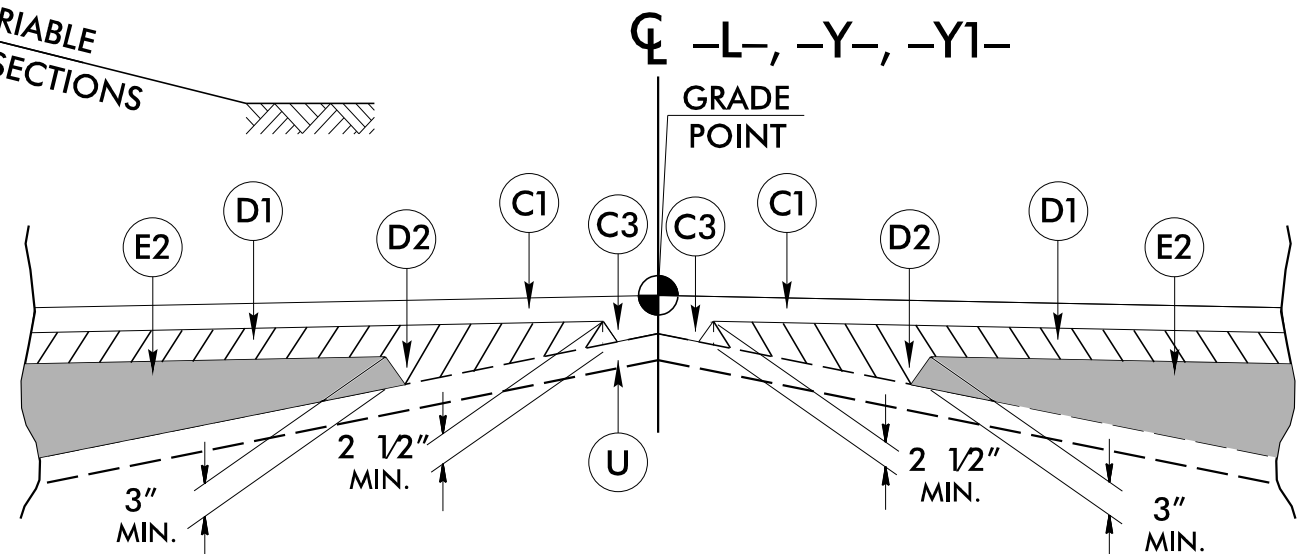
-L- STA 21 + 50.00 TO 22 + 84.30 LT

-L- STA 22 + 00.00 TO 22 + 74.44 RT

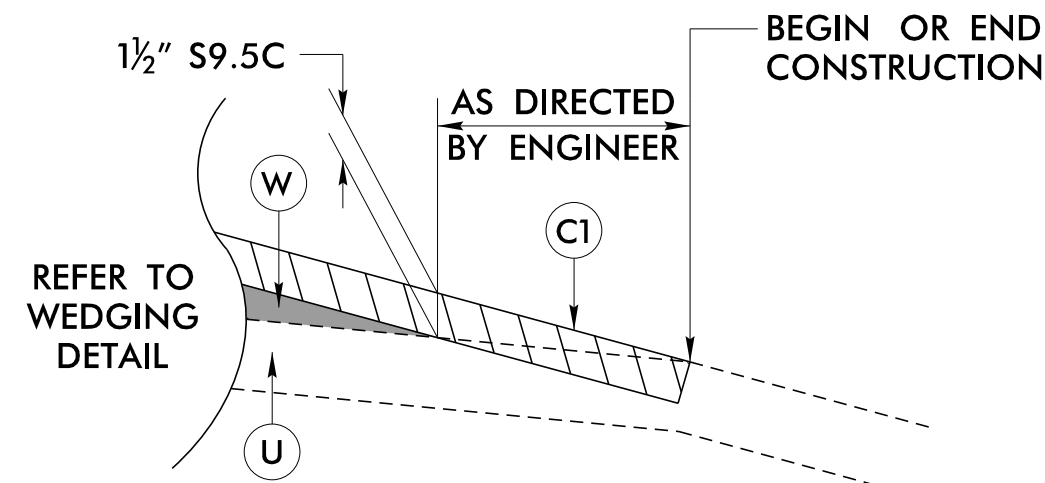
-L- STA 25 + 14.70 TO 25 + 30.00 RT



DETAIL FOR FULL DEPTH PAVED SHOULDER IN CONJUNCTION WITH GUARDRAIL

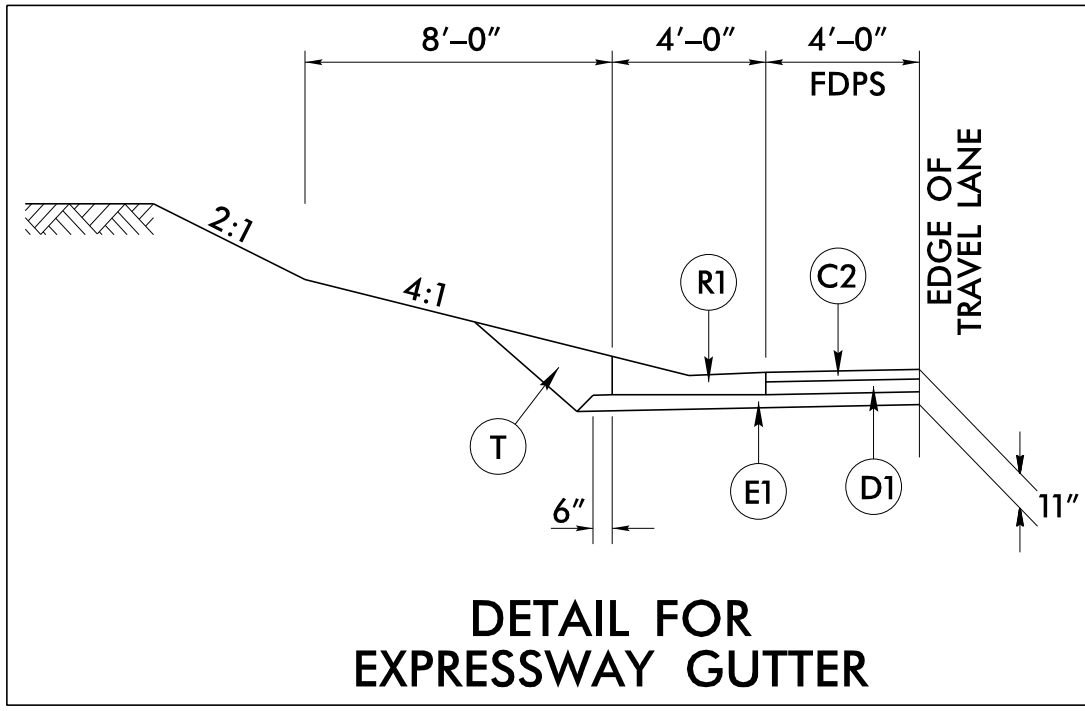


Detail Showing Method of Wedging



MILLING DETAIL

DETAIL SHOWING PROFILE VIEW



DETAIL FOR EXPRESSWAY GUTTER

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 1 & NO. 2

-L- STA 27 + 76.00 TO 33 + 34.00 LT

PROJECT REFERENCE		SHEET NO.	
17BP.9.R.B3 - STOKES 286		2A-1	
ROADWAY DESIGN ENGINEER		NORTH CAROLINA PROFESSIONAL SEAL 21102	
MOTT MACDONALD 1 & E, LLC		NORTH CAROLINA PROFESSIONAL SEAL 035654	
03-Mar-2018		03-Mar-2018	
MOTT MACDONALD 1 & E, LLC		MOTT MACDONALD	
Raleigh, NC 27606		930 Main Campus Drive, Suite 200	
www.mottmac.com		www.mottmac.com	

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Prepared in the Office of:

M

M

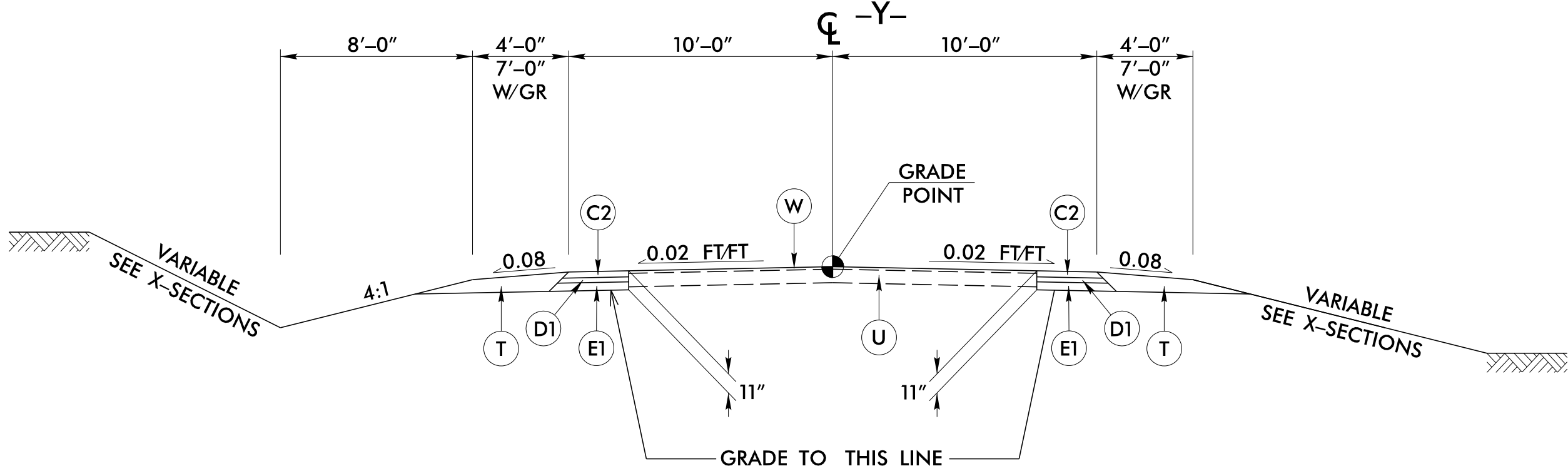
930 Main Campus Drive, Suite 200

Raleigh, NC 27606

www.mottmac.com

FINAL PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN DATED: 3/27/2018)	
A	CONCRETE WEARING SURFACE (STRUCTURE PAY ITEM)
C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1½" IN DEPTH OR GREATER THAN 2" IN DEPTH.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 4" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
R	SHOULDER BERM GUTTER.
R1	EXPRESSWAY GUTTER.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	WEDGING (SEE DETAIL SHOWING METHOD OF WEDGING).

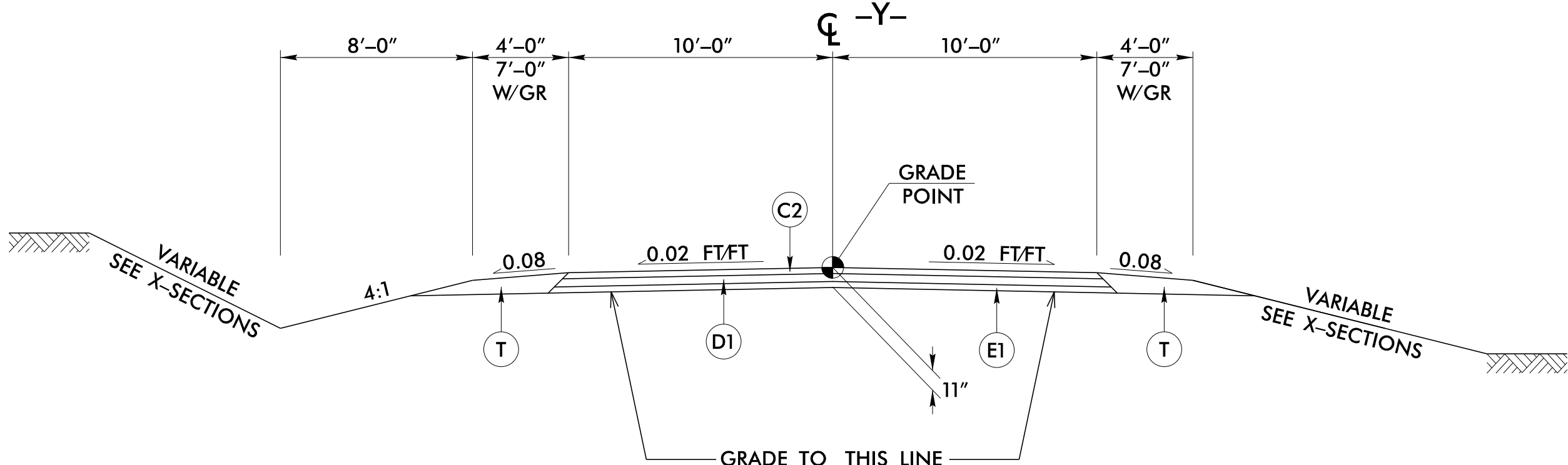
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 4

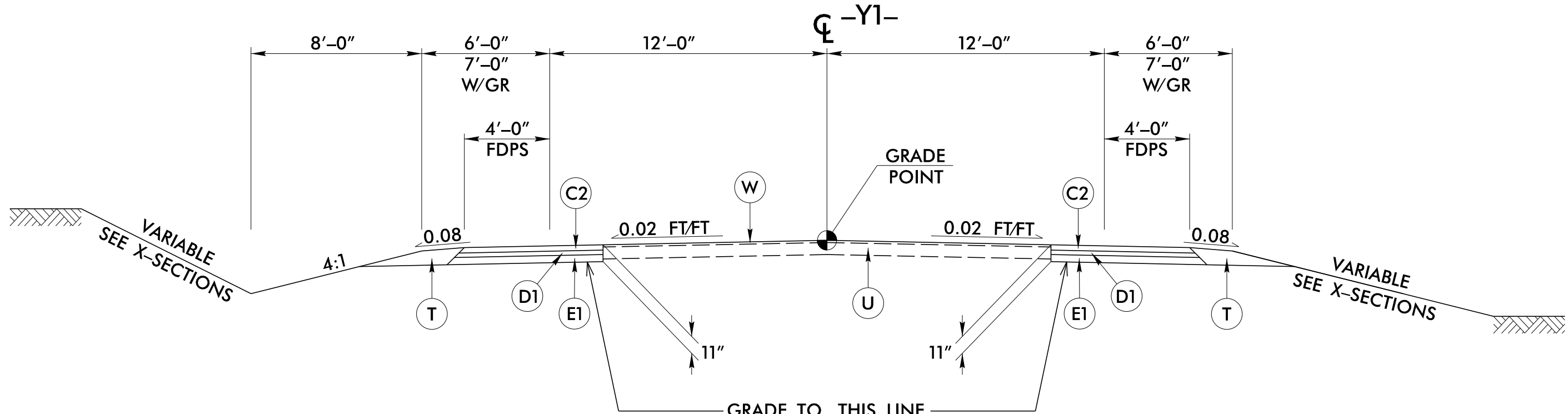
TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 4:
-Y- STA 10+25.00 TO 10+50.00

USE TYPICAL SECTION NO. 4:
-Y- STA 10+50.00 TO 11+75.00



TYPICAL SECTION NO. 5

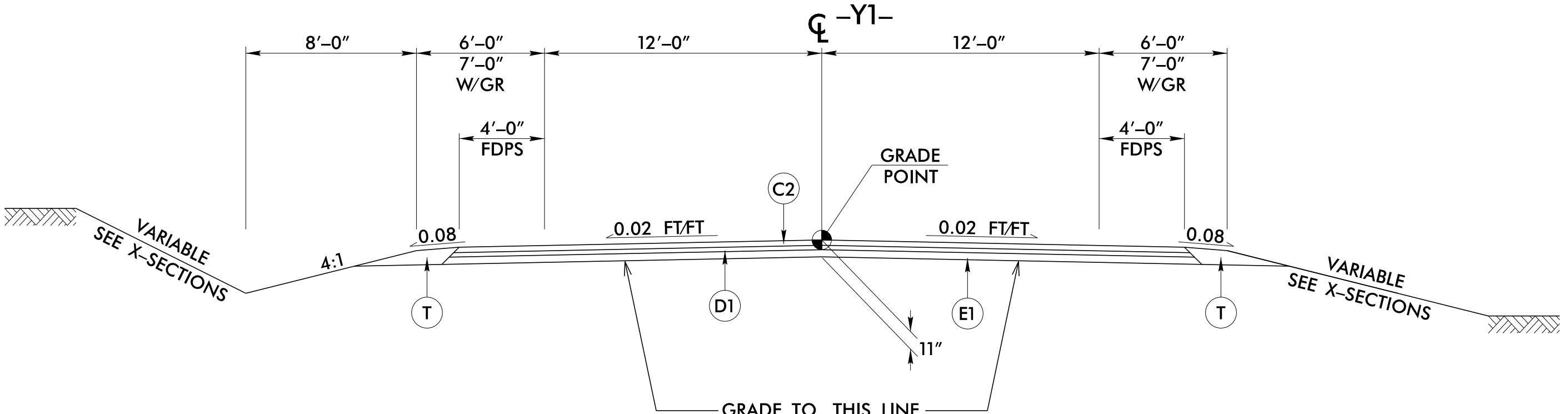
USE TYPICAL SECTION NO. 5:
-Y- STA 11+75.00 TO 13+38.00



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6:
-Y1- STA 11+10.00 TO 12+00.00

TRANSITION FROM TYPICAL SECTION NO. 6 TO EXISTING:
-Y1- STA 12+00.00 TO 12+25.00



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO. 7:
-Y1- STA 10+12.00 TO 11+10.00

PAVEMENT SCHEDULE	
C2	3" S9.5C
D1	4" I19.0C
E1	4" B25.0C
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

PROJECT REFERENCE
17BP.9.R.83 - STOKES 286

SHEET NO.
2A-2

ROADWAY DESIGN
ENGINEER

SEAL
21102

JOHN MOTT
03-Mar-2025

SEAL
035654

JOHN MOTT
03-Mar-2025

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Prepared in the
Office of:

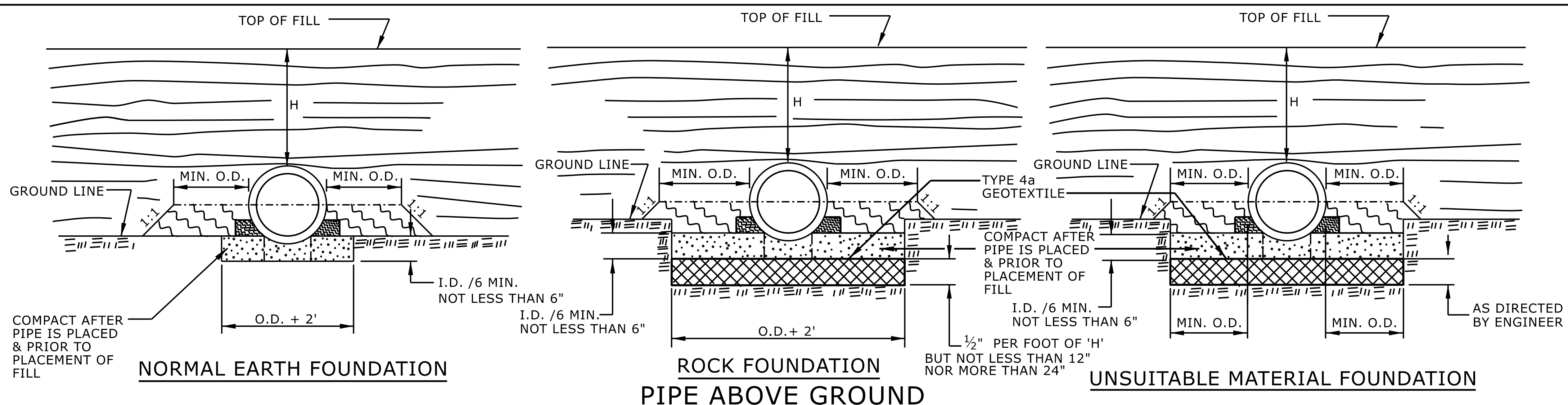
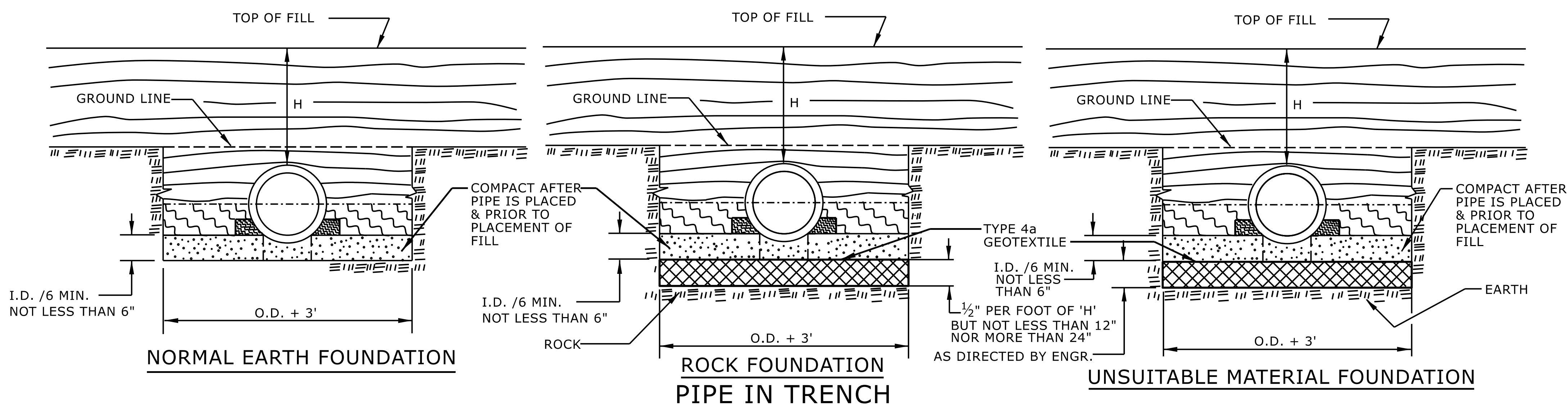
M

MOTT
MACDONALD

930 Main Campus Drive, Suite 200
Raleigh, NC 27606
www.mottmac.com

Seal of the Professional Engineer, North Carolina, Seal Number 033144, for Nicole M. Hackler.

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
 MODIFIED BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____
 FILE SPEC.: _____



GENERAL NOTES:
I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT
ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP
OF THE EMBANKMENT AT THAT POINT.

	APPROVED SUITABLE LOCAL MATERIAL.
	TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.
	LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1 FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL ACCOMPLISH COMPACTION.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

REFER TO NCDOT PIPE MATERIAL SELECTION GUIDE AND STANDARD SPECIFICATIONS
FOR ALLOWABLE PIPE FILL HEIGHTS AND PIPE SPECIFICATIONS.

	SPRINGLINE OF PIPE
	SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
	UNDISTURBED EARTH MATERIAL
	SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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ROADWAY DETAIL DRAWING FOR METHOD OF PIPE INSTALLATION RIGID PIPE

SHEET 2 OF 2
300.01



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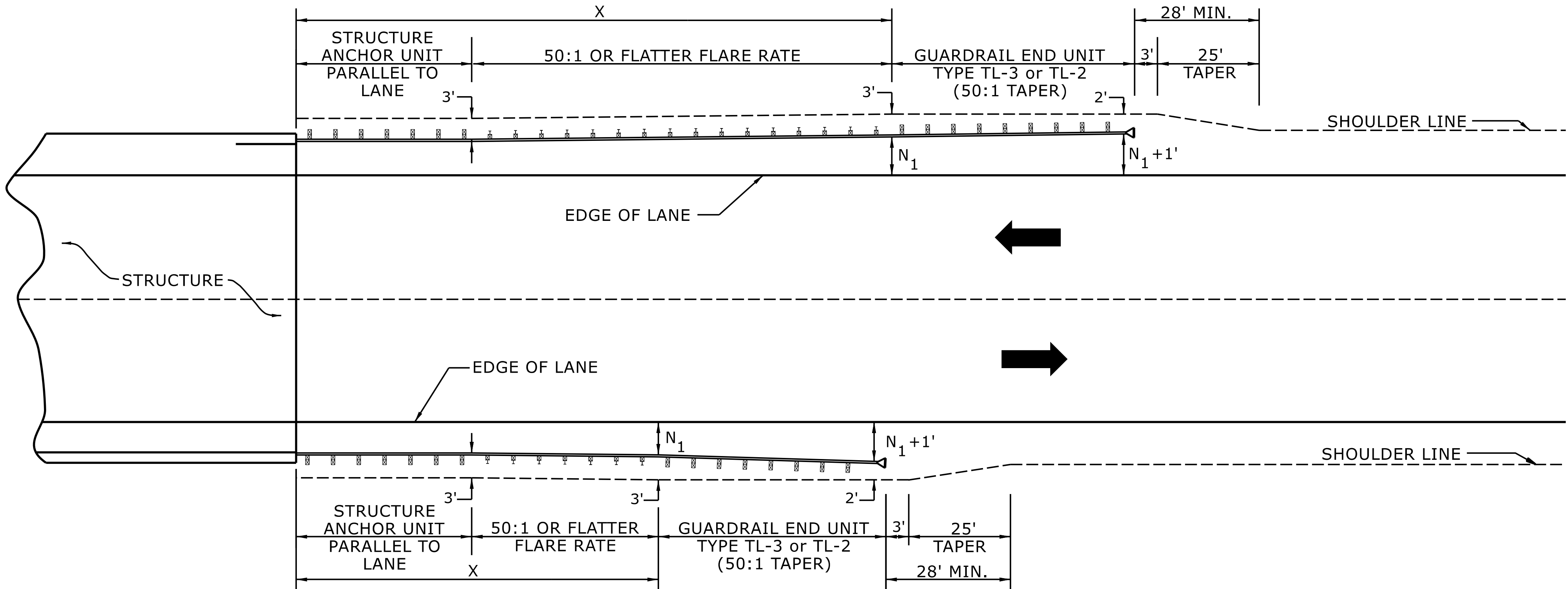
**CONTRACTS STANDARDS
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SEE TITLE BLOCK

ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
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USE FLARE RATE AS THE CONTROL IF THE "N₁" DISTANCE IS NOT OBTAINED.
("N₁" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

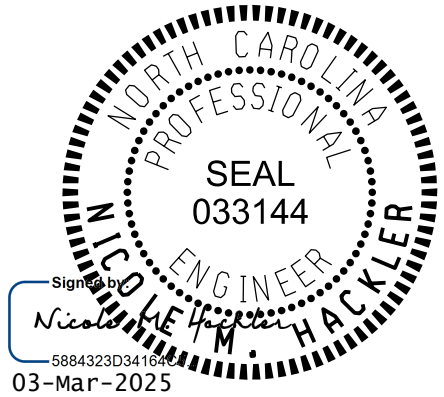
SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

FOR POSTED SPEEDS ≥ 45MPH USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45MPH USE GREU TYPE TL-2

GUARDRAIL LENGTH OF NEED (X) IS CALCULATED BASED ON THE AASHTO ROADSIDE DESIGN GUIDE.

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ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



LENGTHS AND OFFSETS FOR PROPOSED GUARDRAIL AT TWO LANE - TWO WAY LOCATIONS

SHEET 4 OF 15
862D01

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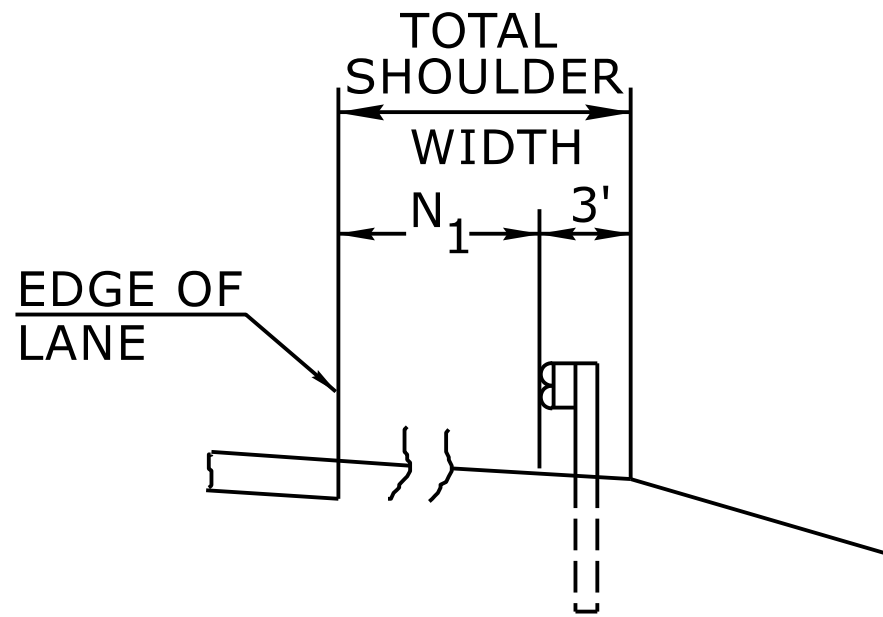
**CONTRACTS STANDARDS
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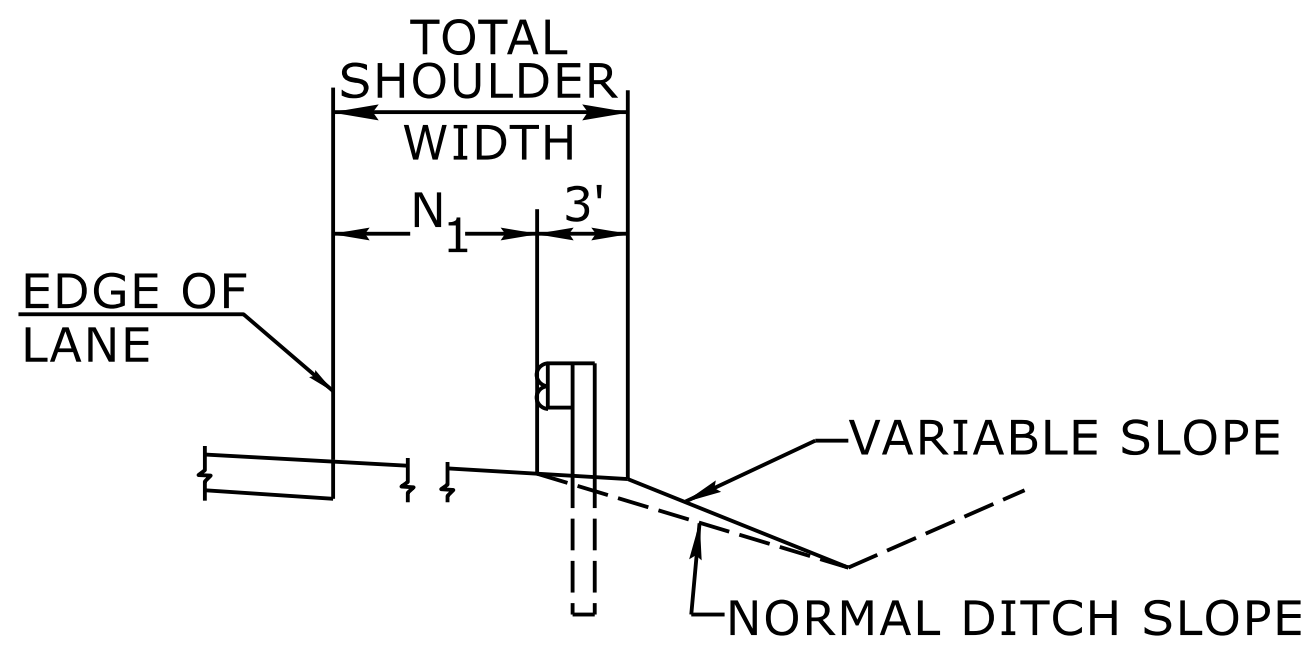
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FILE SPEC.:

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17BP.9.R.83 - STOKES 286	2C-4

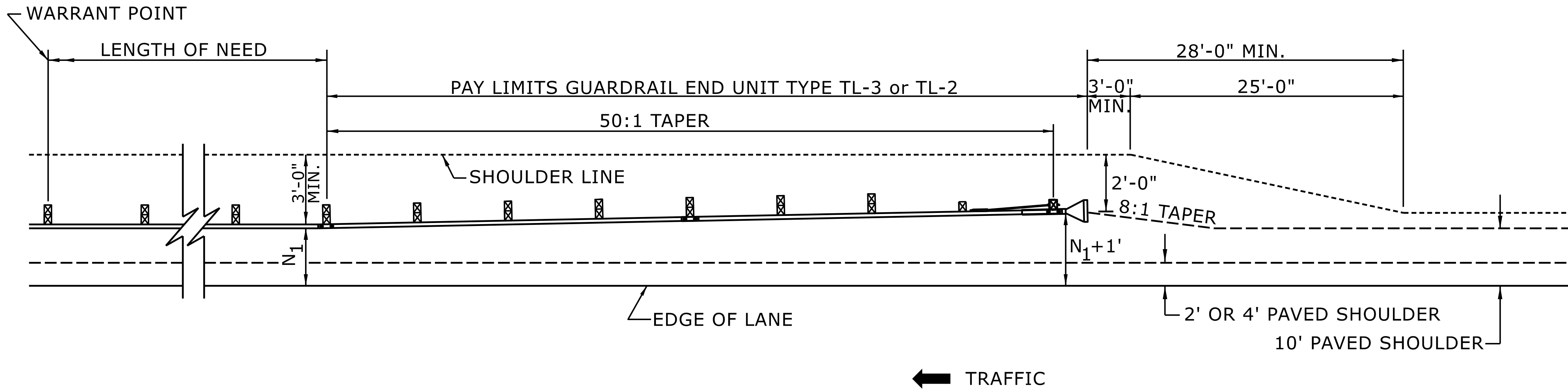


FILL SECTION



CUT SECTION

"N₁"= DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL WHERE GUARDRAIL IS PARALLEL TO LANE.

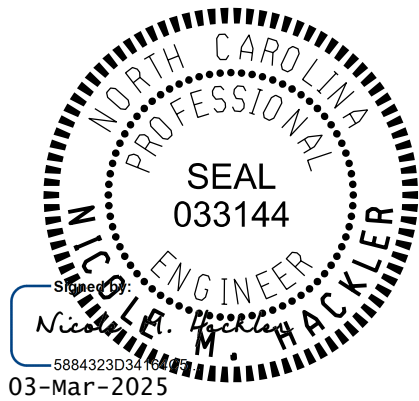


FOR POSTED SPEEDS ≥ 45mph USE GREU TYPE TL-3
FOR POSTED SPEEDS < 45mph USE GREU TYPE TL-2

DETAIL OF BEGINNING OF GUARDRAIL IN CUT OR FILL SECTION

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RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT



SHEET 6 OF 15
862D01

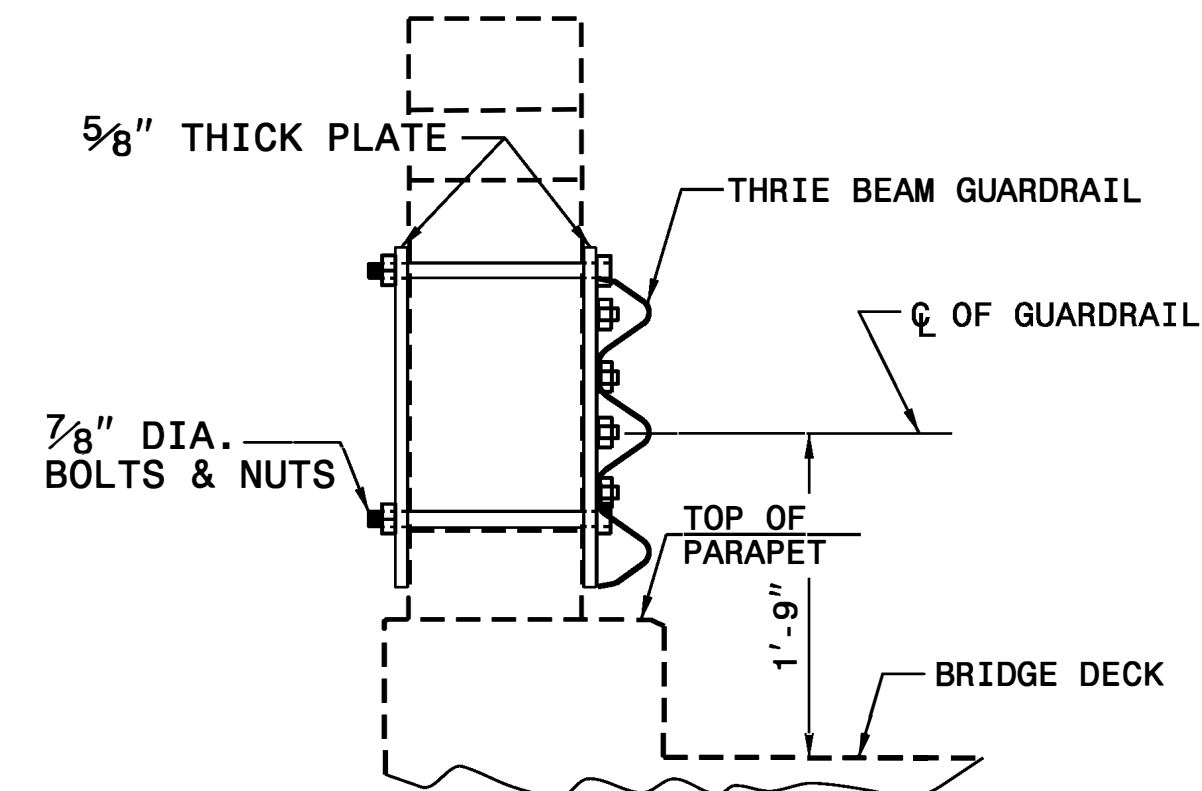
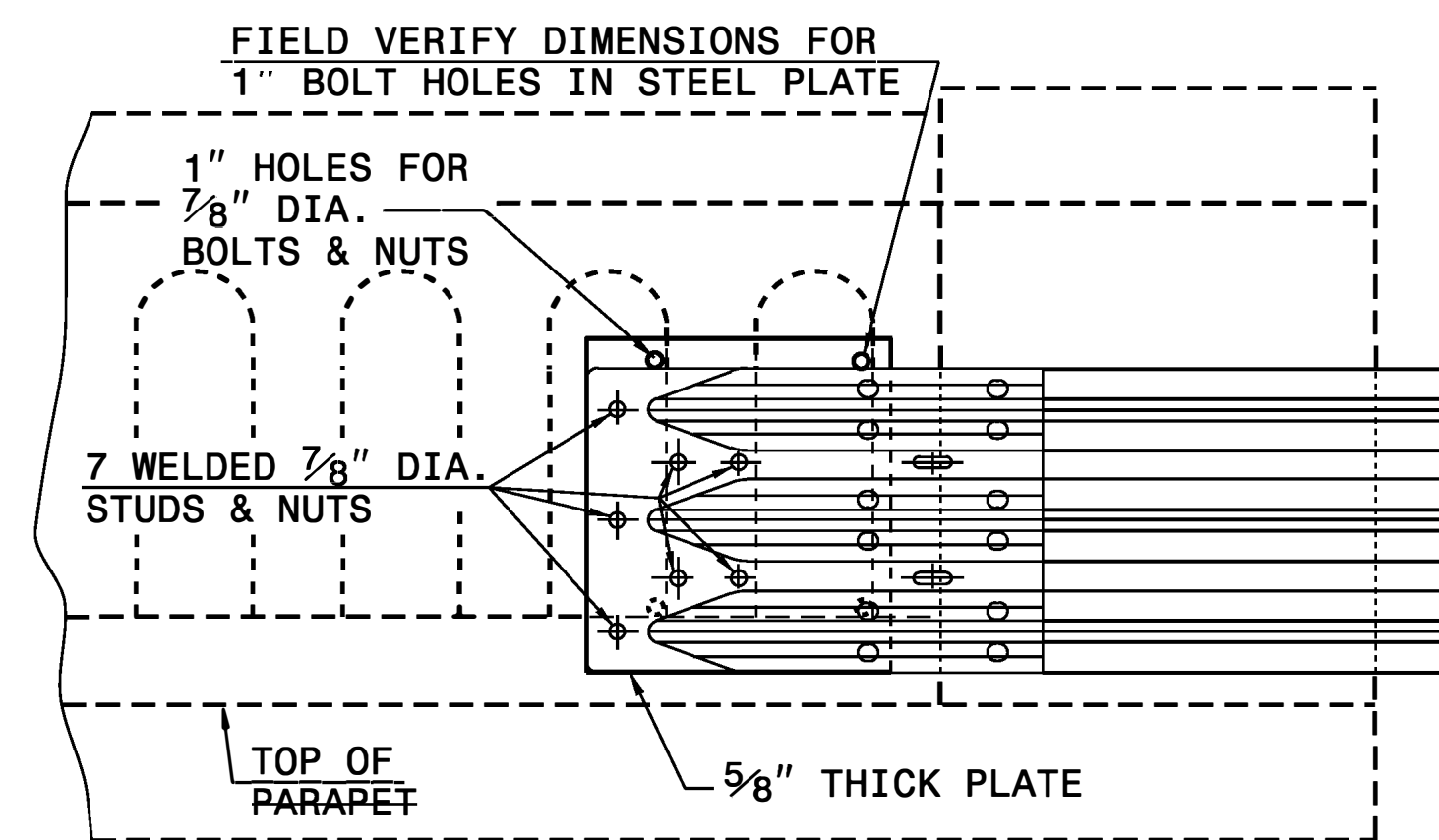
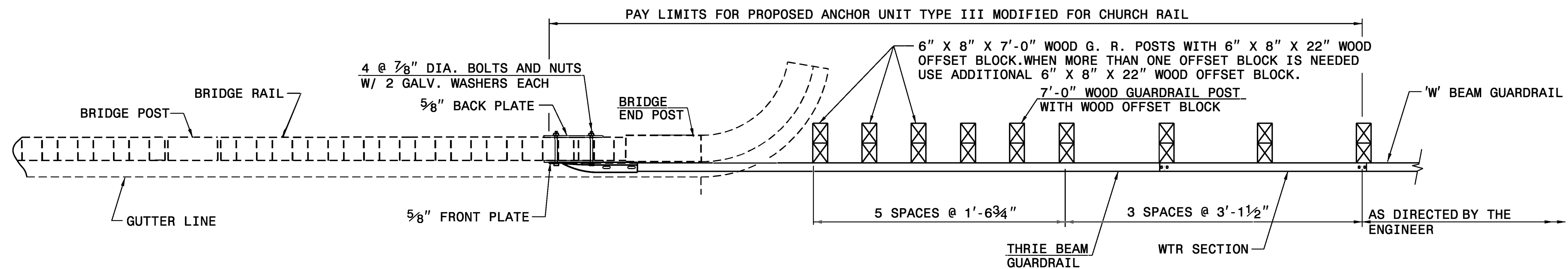
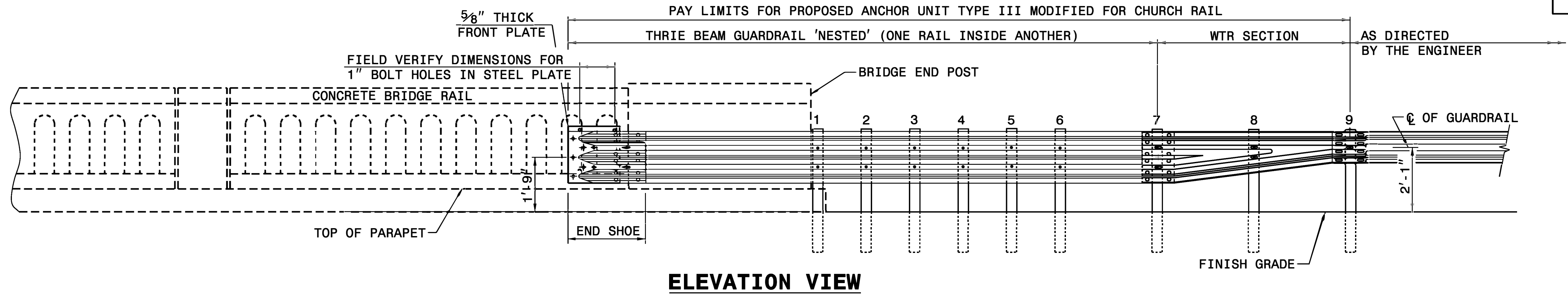
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**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

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SEE TITLE BLOCK

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CHECKED BY: DATE:
FILE SPEC.: DATE:

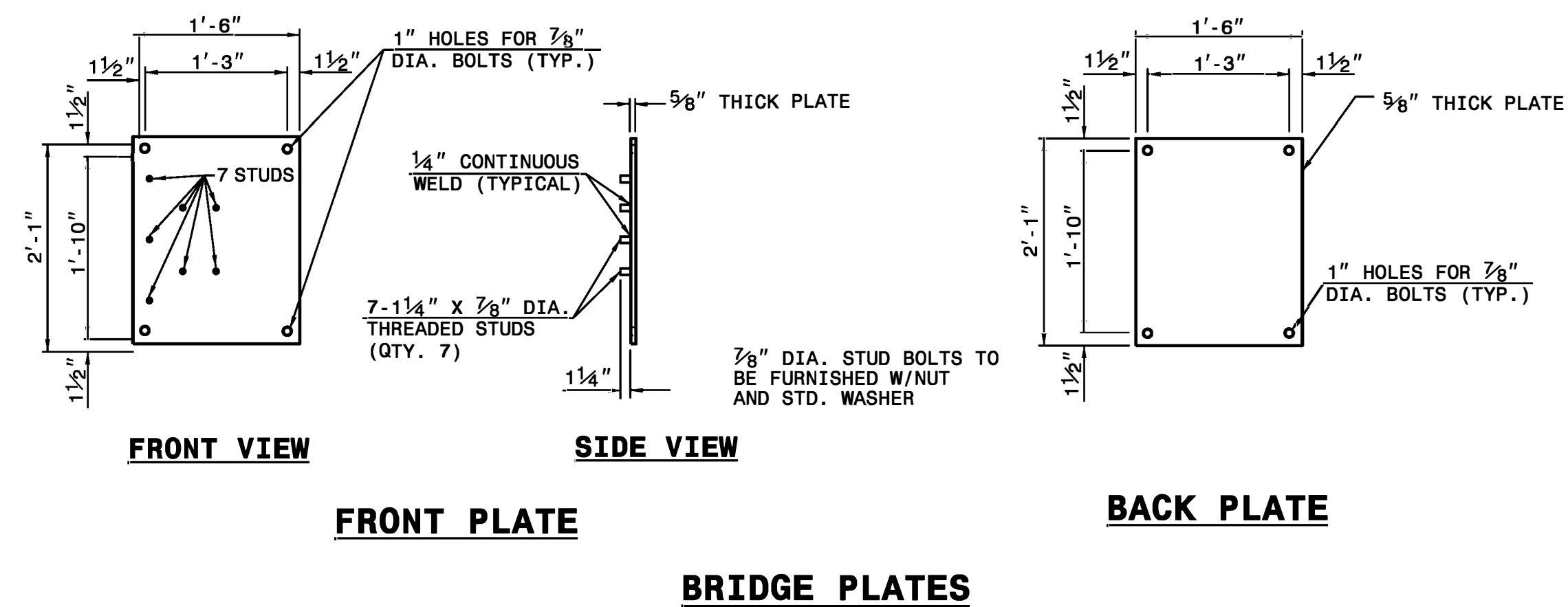


GUARDRAIL ATTACHMENT TO BRIDGE POST

SECTION VIEW

GENERAL NOTES:

1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
2. TAP NUTS FOR THE $\frac{7}{8}$ " DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
7. ATTACH THREADED STUDS TO PLATE WITH $\frac{1}{4}$ " WELDS ALL AROUND.
8. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
9. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
10. SEE ROADWAY STANDARD DRAWING 862.03 SHEET 4 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT.



1/23/2023

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**CONTRACT STANDARDS
AND DEVELOPMENT UNIT**
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**STRUCTURE ANCHOR UNIT
TYPE III MODIFIED**

ORIGINAL BY: C.O. CUEVAS	DATE: 12-00
MODIFIED BY: KA KEMPF	DATE: 07-18
CHECKED BY: _____	DATE: _____
FILE SPEC.: \\usr\details\stand\bpiii.dgn	

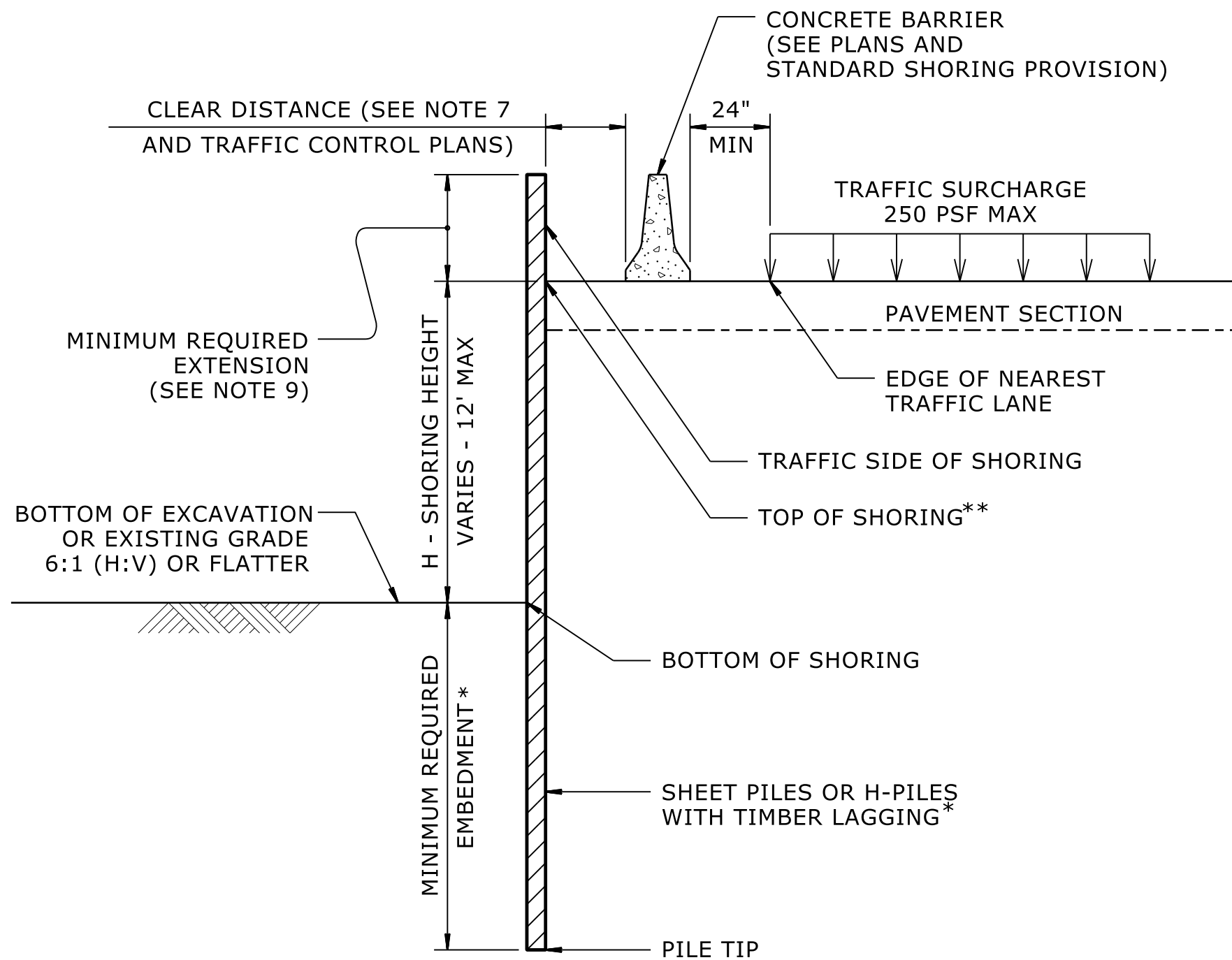
GROUNDWATER CONDITION (SEE NOTE 6)	H SHORING HEIGHT (FT)	SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT					SURCHARGE CASE WITH TRAFFIC IMPACT				
		SHEET PILES		H-PILES WITH TIMBER LAGGING			SHEET PILES		H-PILES WITH TIMBER LAGGING		
		MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ⁴ /FT)	MINIMUM REQUIRED EMBEDMENT * (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ⁴ /FT)	MINIMUM REQUIRED EMBEDMENT * (FT) (SEE NOTE 10)		
				HP 10x42	HP 12x53	HP 14x73			HP 10x42	HP 12x53	HP 14x73
GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP	< 6	11.5	4.5	11.5	11.5	11.5	16.0	12.0	13.0	13.0	13.0
	7	13.0	7.0	13.0	13.0	13.0	17.0	14.5	14.5	14.5	14.5
	8	15.0	10.0	--	15.0	15.0	18.0	17.0	--	15.5	15.5
	9	17.0	14.0	--	17.0	17.0	19.0	20.0	--	17.0	17.0
	10	18.5	19.5	--	--	18.5	20.0	23.5	--	--	18.5
	11	20.5	26.0	--	--	--	21.0	28.0	--	--	20.0
	12	22.5	33.0	--	--	--	22.0	33.0	--	--	21.5
GROUNDWATER ELEVATION BELOW PILE TIP	< 6	7.5	3.0	8.0	8.0	8.0	11.0	10.0	9.5	9.5	9.5
	7	8.5	4.5	9.5	9.5	9.5	12.0	12.0	10.5	10.5	10.5
	8	10.0	6.5	10.5	10.5	10.5	12.5	14.0	11.5	11.5	11.5
	9	11.0	9.5	--	12.0	12.0	13.5	16.5	--	12.5	12.5
	10	12.5	13.0	--	--	13.5	14.0	19.5	--	13.5	13.5
	11	13.5	17.0	--	--	14.5	15.0	22.5	--	--	14.5
	12	15.0	21.5	--	--	16.0	16.0	25.5	--	--	15.5

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

*DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "---".

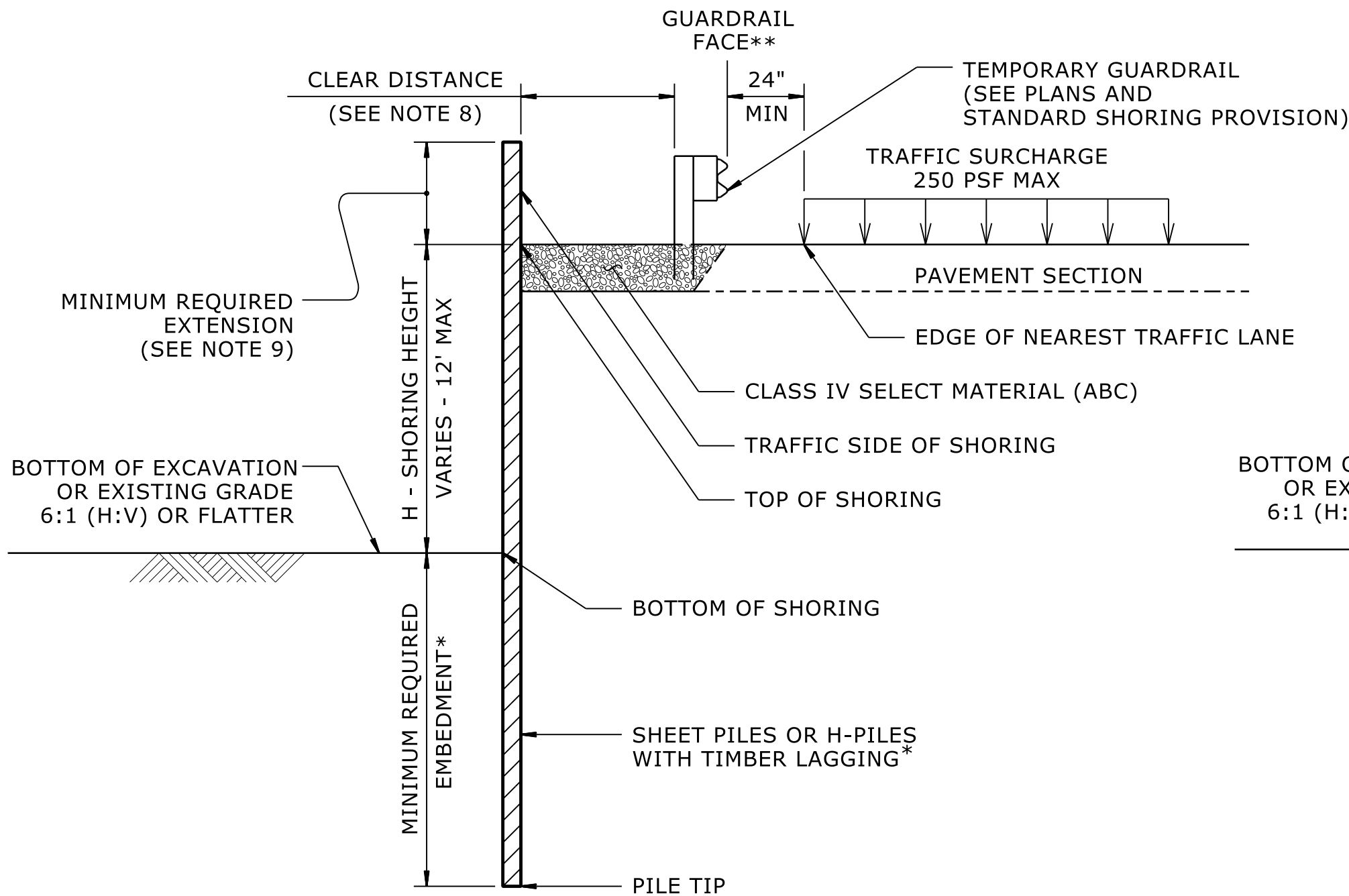
NOTES:

1. AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
2. FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
3. STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, γ = 120 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF
4. DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
5. DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
6. USE GROUNDWATER ELEVATION NOTED IN THE PLANS. IF NO GROUNDWATER ELEVATION IS SHOWN IN THE PLANS, USE "GROUNDWATER ELEVATION BETWEEN BOTTOM OF SHORING AND PILE TIP" FOR GROUNDWATER CONDITION. DO NOT USE STANDARD TEMPORARY SHORING IF GROUNDWATER IS ABOVE BOTTOM OF SHORING.
7. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN THE MINIMUM REQUIRED FOR CONCRETE BARRIER, SET BARRIER NEXT TO AND UP AGAINST TRAFFIC SIDE OF PILES AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
8. AT THE CONTRACTOR'S OPTION OR IF AVAILABLE CLEAR DISTANCE IS LESS THAN 4' FOR TEMPORARY GUARDRAIL, ATTACH GUARDRAIL TO TRAFFIC SIDE OF PILES AS SHOWN IN THE PLANS AND USE "SURCHARGE CASE WITH TRAFFIC IMPACT".
9. MINIMUM REQUIRED EXTENSION IS 6" FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32" FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
10. MINIMUM REQUIRED EMBEDMENT FOR H-PILES WITH TIMBER LAGGING IS BASED ON DRIVEN H-PILES AT MAXIMUM 6' SPACING. AT THE CONTRACTOR'S OPTION, EMBEDMENT DEPTHS MAY BE REDUCED BY 25% FOR DRILLED-IN H-PILES.
11. SUBMIT A "STANDARD TEMPORARY SHORING SELECTION FORM" AT LEAST 7 DAYS BEFORE STARTING TEMPORARY SHORING CONSTRUCTION. UP TO 3 SHORING LOCATIONS MAY BE INCLUDED ON EACH FORM. STANDARD SHORING SELECTION FORMS ARE AVAILABLE FROM:
connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx
12. CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.



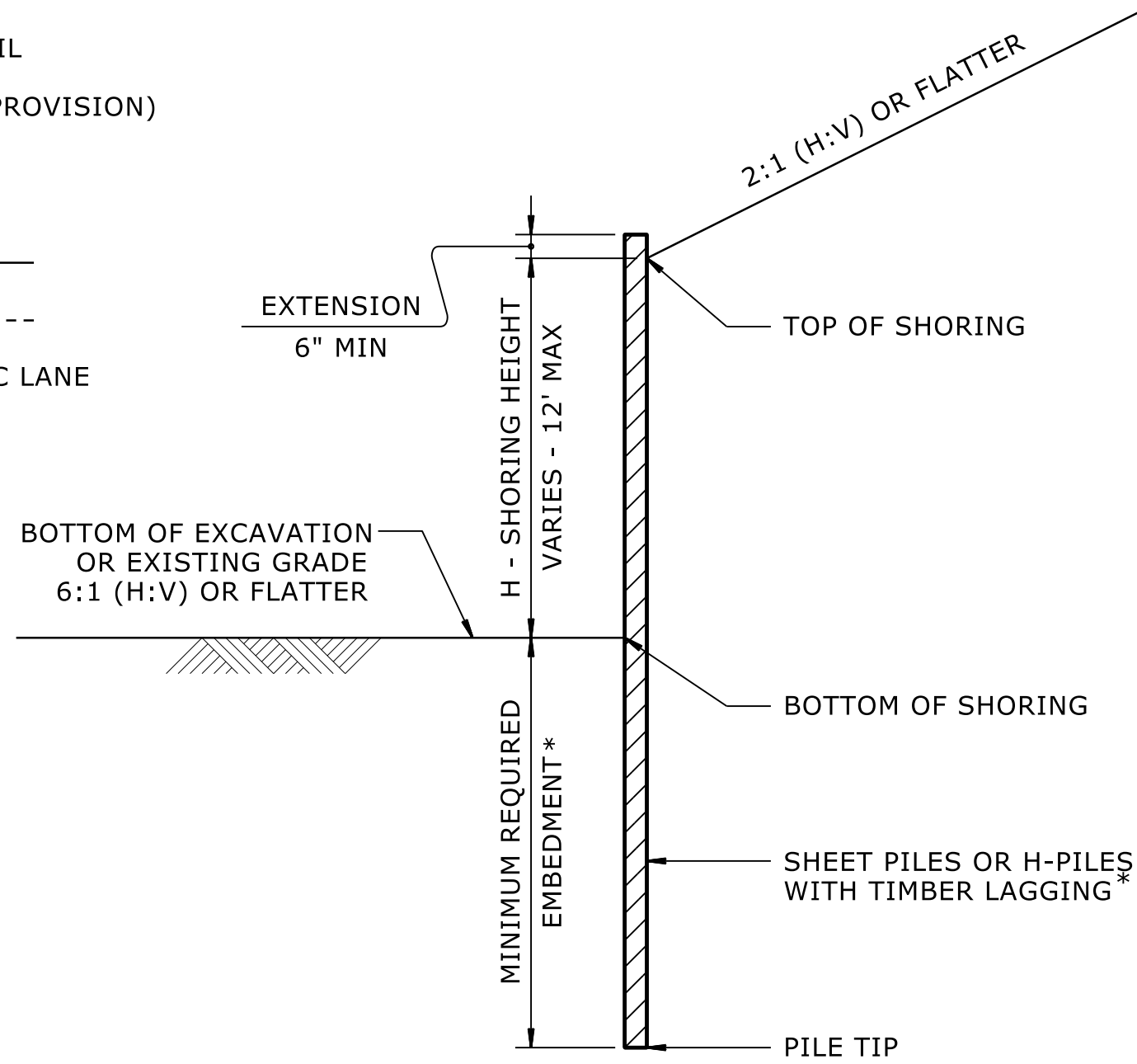
CONCRETE BARRIER

**TOP OF SHORING =
EDGE OF PAVEMENT



TEMPORARY GUARDRAIL

**GUARDRAIL FACE =
EDGE OF PAVEMENT

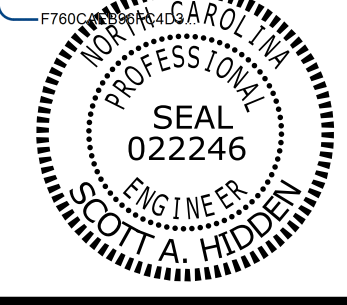
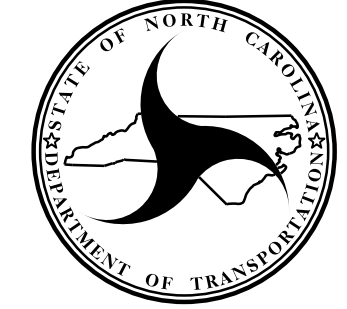


STANDARD TEMPORARY SHORING

(SLOPE CASE)
*SEE TABLE ABOVE.

STANDARD TEMPORARY SHORING

(SURCHARGE CASE)
*SEE TABLE ABOVE.



SUMMARY OF EARTHWORK IN CUBIC YARDS

STATION	STATION	UNCL. EXCAV.	EMBANK. + %	BORROW	WASTE
-L- 10 + 50.00	23 + 03.21	12,233	14,327	2,094	
-L- 24 + 95.80	36 + 00.00	31,458	8,240		23,218
-Y- 10 + 25.00	13 + 30.00	2,867	370		2,497
-YI- 10 + 50.00	12 + 25.00	32	67	35	
PROJECT TOTALS:		46,590	23,004	2,129	25,715
WASTE IN LIEU OF BORROW				-2,129	-2,129
GRAND TOTALS:		46,590		0	23,586
SAY:		48,930		0	

EST. DDE = 2,475 CY
EST. SHOULDER BORROW = 1540 CY
EST. SHALLOW UNDERCUT = 100 CY
EST. CLASS IV SUBGRADE STABILIZATION = 200 TONS
PER GEOTECH. RECOMMENDATIONS, ESTIMATE 1,600 CY OF UNDERCUT TO BE USED AT THE DISCRETION OF THE RESIDENT ENGINEER.

NOTE: Approximate quantities only. Fine Grading, Clearing and Grubbing, Shoulder Borrow, and Removal of Existing Asphalt Pavement willbe paid for at the contract Lump Sum price for "Grading".

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	21 + 50.00	22 + 84.30	137.30'
-L- RT	22 + 00.00	22 + 74.44	74.44'
-L- RT	25 + 14.70	25 + 30.00	15.30'
TOTAL:			224.04'
SAY:			230'

EXPRESSWAY GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	27 + 76.00	33 + 34.00	558.00'
TOTAL:			558.00'
SAY:			570'

EXISTING ASPHALT PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ³
-L-	11 + 98.00	22 + 91.00	CL	2,088.04
-L-	24 + 72.00	32 + 51.00	CL	1,490.96
-Y-	11 + 75.00	13 + 50.00	CL	552.68
-YI-	10 + 12.00	11 + 10.00	CL	317.47
TOTAL:				4,449.15
SAY:				4,675

FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-2	GREU TL-3	TYPE III	CAT-1	VI MOD	BIC	AT-1	EA	G	NG					
-L-	11+25.00	13+62.50	LT	237.50'			12+50	11+50	8'	11'	50'	50'	1'	1'				2													
-L-	11+87 +/-	14+66.00	RT	256.25'	25.00'		12+50	13+50	8'	11'		50'		1'				1				1						BREAK FOR DRIVE			
-L-	20+01 +/-	23+08.14	LT	275.00'	37.50'		23+08.14	20+50	8'	11'									1			1						BREAK FOR -Y-			
-L-	21+71 +/-	22+98.28	RT	100.00'	37.50'		23+00	22+98.28	8'	11'									1			1						BREAK FOR -YI-			
-L-	25+00.73	27+45 +/-	LT	225.00'	25.00'		27+00	25+00.72	8'	11'								1				1						BREAK FOR DRIVE			
-L-	24+90.87	25+97.12	RT	106.25'			24+90.86	25+00	8'	11'		50'		1'				1	1												
-L-	33+07.00	35+57.00	RT	250.00'			33+62.50	35+50	8'	11'	50'	50'	1'	1'				2													
-L-	33+73 +/-	35+50.00	LT	168.75'	12.50'		35+50	34+50	8'	11'	50'		1'					1				1						BREAK FOR DRIVE			
-YI-	11+25.00	12+00.00	LT	75.00'				12+00	4'	7'								1										TIE TO EXISTING GUARDRAIL			
-YI-	11+25.00	12+00.00	RT	75.00'			12+00		4'	7'								1										TIE TO EXISTING GUARDRAIL			
	SUBTOTAL			1,768.75'	137.50'																										
	LESS ANCHOR DEDUCTIONS																														
			GREU TL-2	2 @ 25.00' =	-50.00'																										
			GREU TL-3	7 @ 50.00' =	-350.00'																										
			AT-1	5 @ 6.25' =	-31.25'																										
			TYPE III	4 @ 18.75' =	-75.00'																										
			TOTAL	1,262.50'	137.50'													2	7	4			5					ADDITIONAL GUARDRAIL POST = 10 EACH			

TEMPORARY GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI	GREU TL-2	GREU TL-3	TYPE III MODIFIED	CAT-1	VI MOD	BIC	AT-1	EA	G	NG					
-L-	21+35 +/-	22+92 +/-	LT	156.25'			22+92 +/-		2'	5'								1	1									TIE TO EXISTING BRIDGE RAIL (SEE TMP-4)			
-L-	24+82 +/-	27+63 +/-	LT	281.25'				24+82 +/-	2'	5'								1	1									TIE TO EXISTING BRIDGE RAIL (SEE TMP-5)			
	SUBTOTAL			437.50'																											
	LESS ANCHOR DEDUCTIONS																														
		GREU TL-3	2 @ 50.00' =	-100.00'																											
		TYPE III MODIFIED	2 @ 18.75' =	-37.50'																											

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COMPUTED BY: Eddie Beverly DATE: 7/16/24
CHECKED BY: Michael Stephens 7/16/24

(2-3-23)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT NO.
17BP.9.R.83 - STOKES 286

SHEET NO.
3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	500
				TOTAL LF:	500

*UD = Underdrain

*BD = Blind Drain

*SD = Subsurface Drain

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

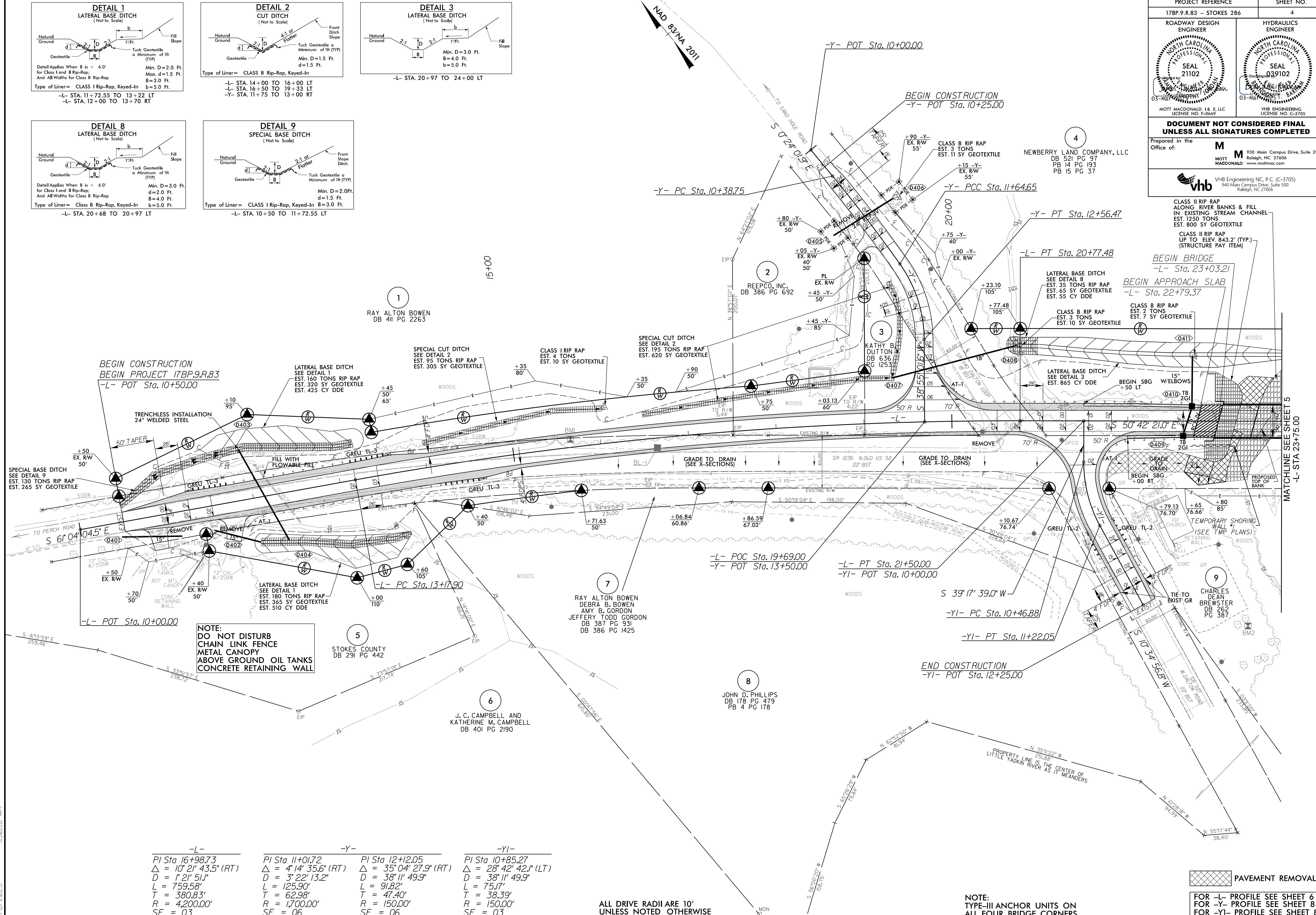
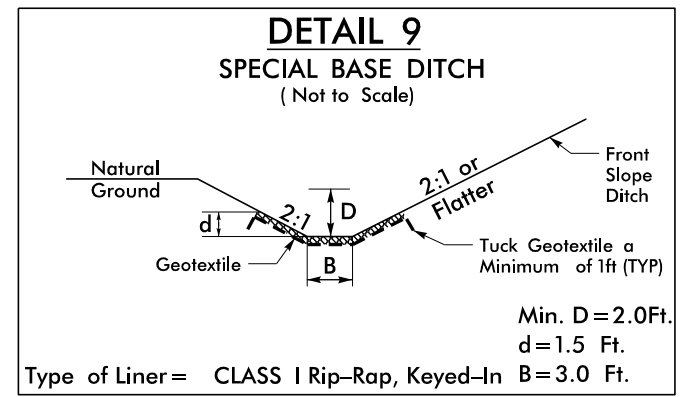
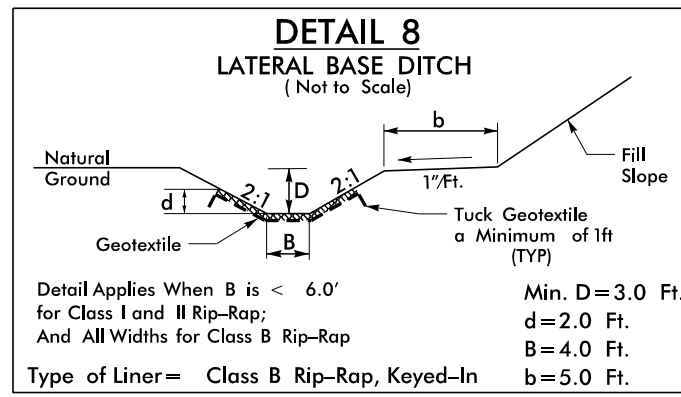
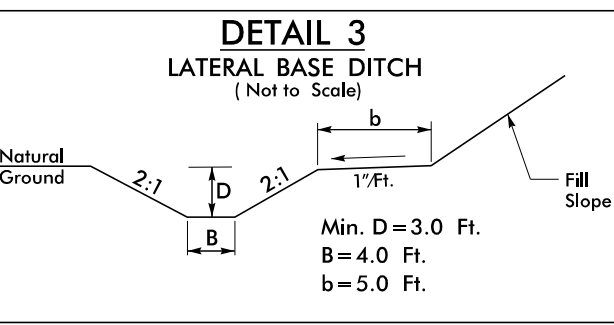
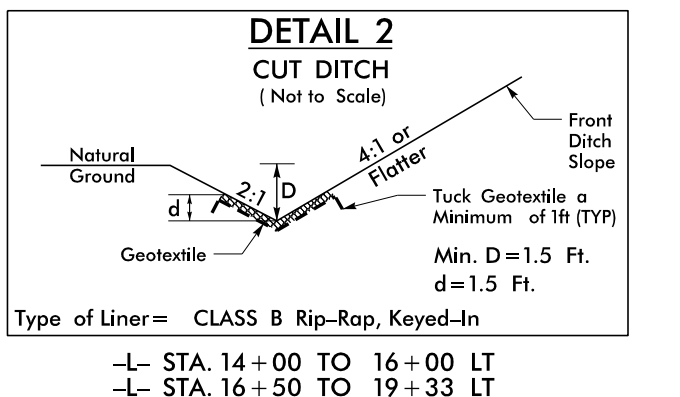
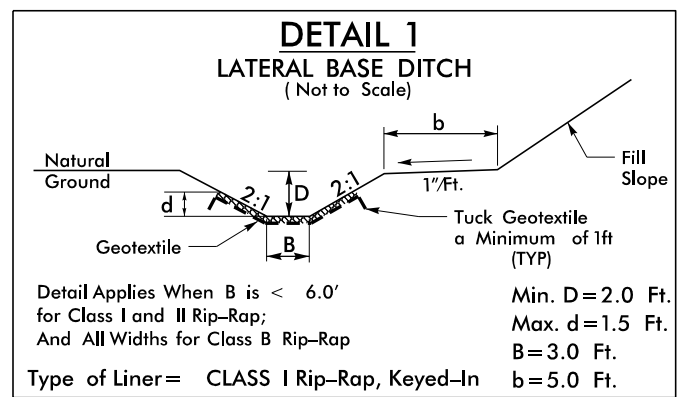
LINE	Station	Station	Aggregate Type* ASU(1/2)/ AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Subgrade Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
CONTINGENCY			ASU(1)	12	100	200	300		
			TOTAL CY/TONS/SY:		100	200**	300**	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 Subgrade 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.

Mott MacDonald Restricted



PROJECT REFERENCE		SHEET NO.	
17BP.9.R.83 - STOKES 286		4	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		MOTT MACDONALD 18 E. LLC 930 Main Campus Drive, Suite 200 Raleigh, NC 27606 www.mottmac.com	
		VHB Engineering LLC, P.C. (C-3705) 940 Main Campus Drive, Suite 500 Raleigh, NC 27606	

CLASS II RIP RAP ALONG RIVER BANKS & FILL IN EXISTING STREAM CHANNEL EST. 1250 TONS EST. 800 SY GEOTEXTILE

CLASS II RIP RAP UP TO ELEV. 843.2' (TYP.) (STRUCTURE PAY ITEM)

BEGIN BRIDGE
-L- Sta. 23+03.21

BEGIN APPROACH SLAB
-L- Sta. 22+79.37

LATERAL BASE DITCH SEE DETAIL 8
EST. 35 TONS RIP RAP
EST. 65 SY GEOTEXTILE
EST. 55 CY DDE

CLASS B RIP RAP EST. 3 TONS EST. 10 SY GEOTEXTILE

CLASS B RIP RAP EST. 2 TONS EST. 7 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 3
EST. 865 CY DDE

BEGIN SBG WELBOWS
-L- STA. 22+79.37

BEGIN SBG WELBOWS
-L- STA. 22+79.37

LATERAL BASE DITCH SEE DETAIL 1
EST. 180 TONS RIP RAP
EST. 345 SY GEOTEXTILE
EST. 510 CY DDE

LATERAL BASE DITCH SEE DETAIL 1
EST. 160 TONS RIP RAP
EST. 320 SY GEOTEXTILE
EST. 425 CY DDE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

LATERAL BASE DITCH SEE DETAIL 1
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

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SPECIAL BASE DITCH SEE DETAIL 9
EST. 130 TONS RIP RAP
EST. 265 SY GEOTEXTILE

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-L-	-Y-	-YI-
PI Sta 16+98.73 Δ = 10° 21' 43.5" (RT) D = 1° 21' 51.1" L = 759.58' T = 380.83' R = 4,200.00' SE = 0.3	PI Sta 11+01.72 Δ = 4° 14' 35.6" (RT) D = 3° 22' 13.2" L = 125.90' T = 62.98' R = 1,700.00' SE = 0.6	PI Sta 12+02.05 Δ = 35° 04' 27.9" (RT) D = 38° 11' 49.9" L = 91.82' T = 47.40' R = 150.00' SE = 0.6
PI Sta 10+85.27 Δ = 28° 42' 42.1" (LT) D = 38° 11' 49.9" L = 75.17' T = 38.39' R = 150.00' SE = 0.3		

ALL DRIVE RADII ARE 10'
UNLESS NOTED OTHERWISE

NOTE:
TYPE-III ANCHOR UNITS ON
ALL FOUR BRIDGE CORNERS

PAVEMENT REMOVAL

FOR -L- PROFILE SEE SHEET 6
FOR -Y- PROFILE SEE SHEET 8
FOR -YI- PROFILE SEE SHEET 8

