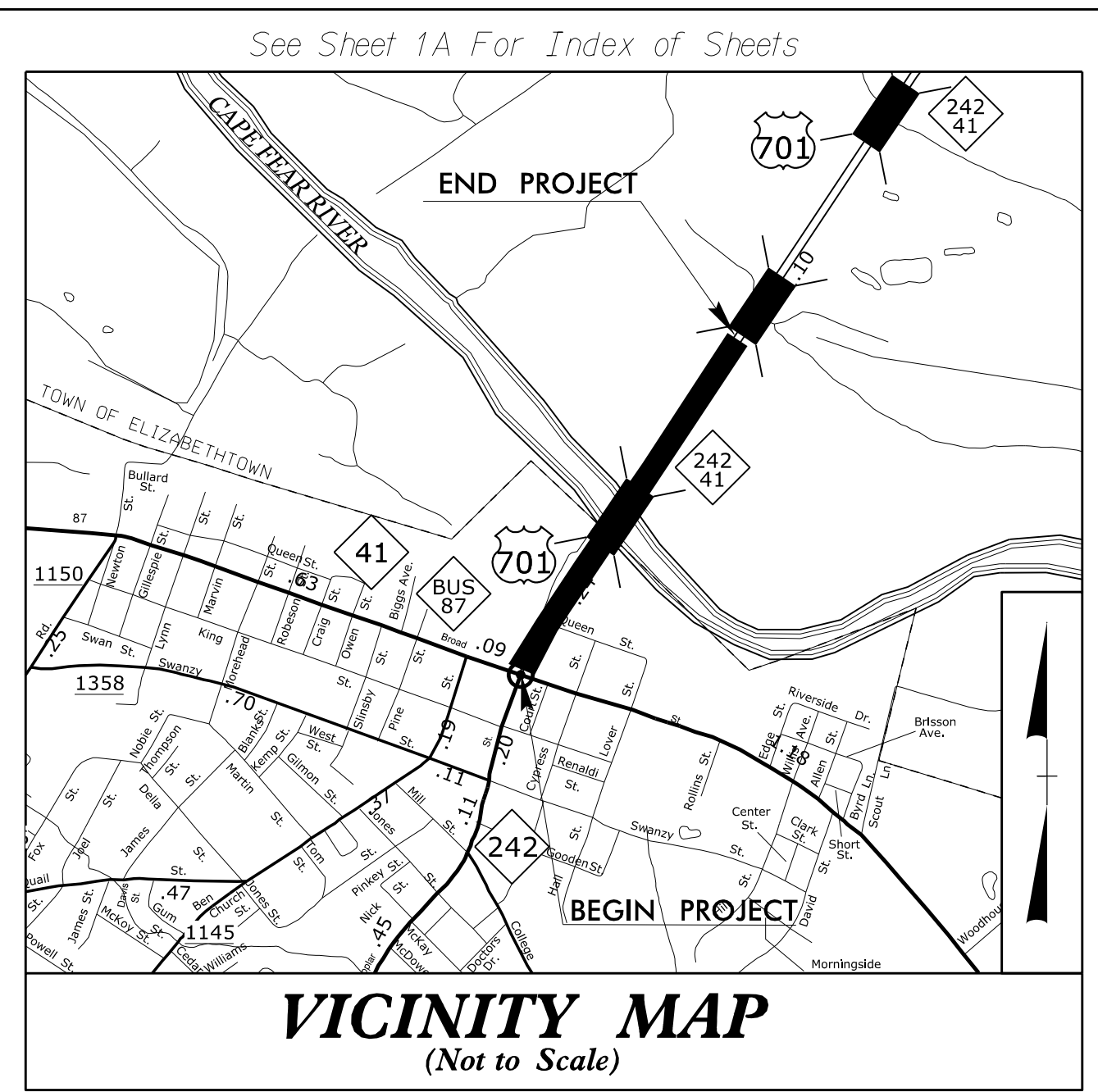


09/08/20

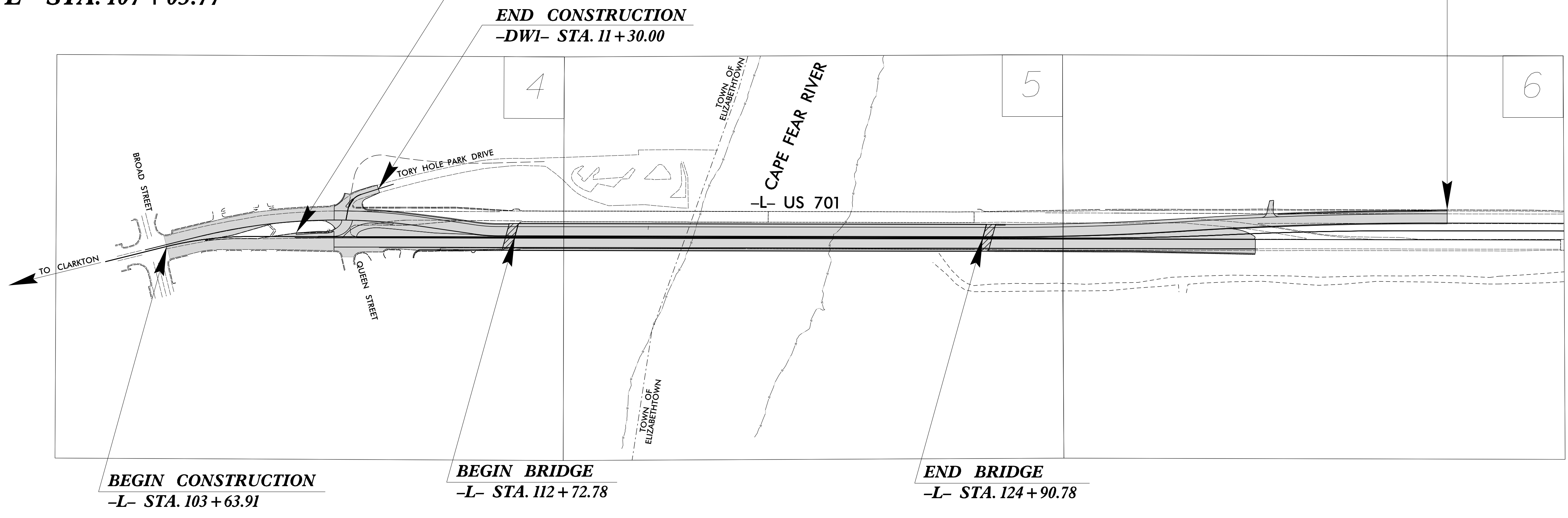
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\Roadway\Proj\Plansheets\US701_rdy_tsh.dgn
corbin,jackson

WBS 48793.3.1

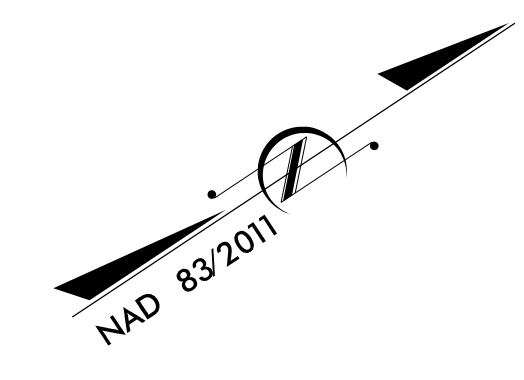
CONTRACT: C204558



BEGIN PROJECT WBS 48793.3.1
-L- STA. 107 + 03.77



END PROJECT WBS 48793.3.1
-L- STA. 137 + 00.00



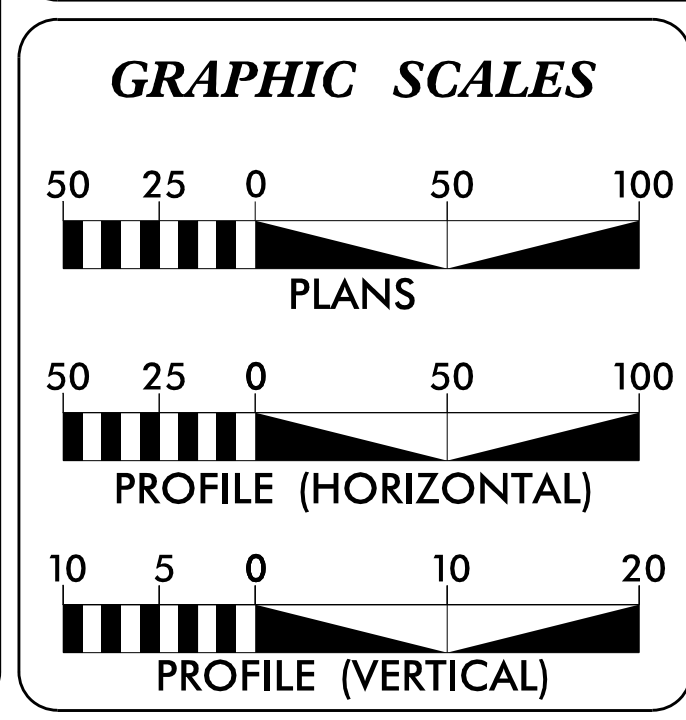
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BLADEN COUNTY

LOCATION: EMERGENCY REPLACEMENT OF BRIDGE NO. 080016 & NO. 080017
OVER CAPE FEAR RIVER ON US 701, NC 41 & NC 242
TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	48793.3.1	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
48793.3.1	ER19005	PE, RW, UTIL., & CONST.	

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA

ADT 2020 =	14,200
ADT 2040 =	17,000
T =	8 % *
V =	25 & 55 MPH
* TTST =	4 DUAL 4
FUNC CLASS =	MINOR ARTERIAL
STATEWIDE TIER	

PROJECT LENGTH

LENGTH ROADWAY PROJECT WBS 48793.3.1 =	0.336 MILES
LENGTH STRUCTURE PROJECT WBS 48793.3.1 =	0.231 MILES
TOTAL LENGTH OF PROJECT WBS 48793.3.1 =	0.567 MILES

Prepared In the Office of:
J.E. ICE of CAROLINAS, PLLC
ICE of Carolinas, PLLC
4502 Falls of Neuse Road, Suite 110
Raleigh, North Carolina 27609
Phone: 919-420-0313
License #: P-0999

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 17, 2020

LETTING DATE:
SEPTEMBER 15, 2020

Prepared for:
DIVISION OF HIGHWAYS
DIVISION 6
558 GILLESPIE ST.
FAYETTEVILLE, NC 28302

BRIAN K. LUSK, PE
PROJECT ENGINEER

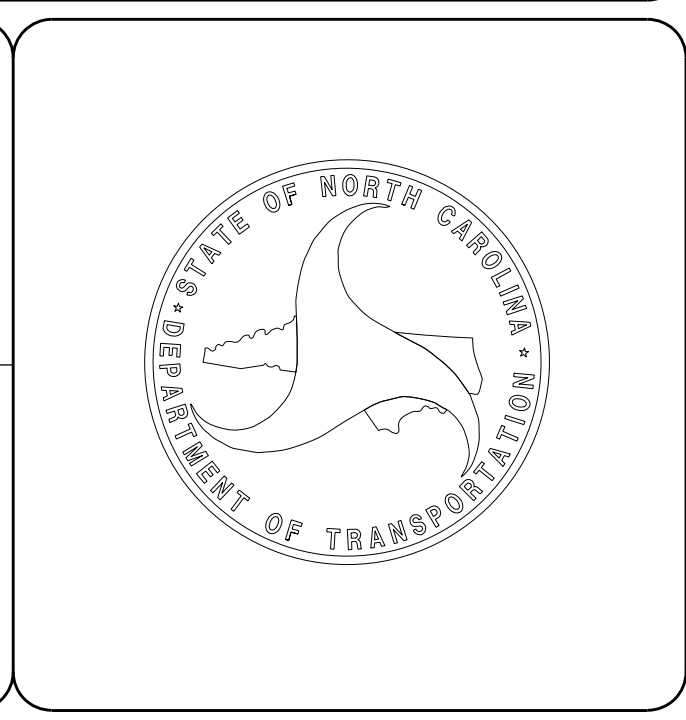
CORBIN JACKSON, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

DocuSigned by:
William J. Stephens, Jr.
P.E. 8/11/2020

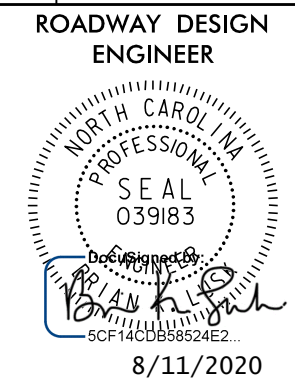
ROADWAY DESIGN ENGINEER

DocuSigned by:
Brian K. Lusk
P.E. 8/11/2020



INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS

PROJECT REFERENCE NO.	SHEET NO.
48793.31	1A



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

ICE of CAROLINAS, PLLC
 4505 Falls of Neuse Road, Suite 110
 Raleigh, North Carolina 27609
 Phone: 919-822-0333
 License #: P-9999

INDEX OF SHEETS

1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1 THRU 2A-4	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2B	ROADWAY DETAIL SHEET
2C-1 THRU 2C-6	SPECIAL DETAILS IN LIEU OF STANDARDS
2G-1 THRU 2G-18	GEOTECHNICAL DETAILS
3B	ROADWAY SUMMARY SHEET
3D-1 THRU 3D-2	DRAINAGE SUMMARY SHEETS
3G	GEOTECHNICAL SUMMARY
3P	PARCEL INDEX SHEET
4-6	PLAN SHEETS
7-9	PROFILE SHEETS
RWO1 THRU RWO6	RIGHT OF WAY SHEETS
TMP-1 THRU TMP-9	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-4	PAVEMENT MARKING PLANS
EC-1 THRU EC-12	EROSION CONTROL PLANS
SIGN-1 THRU SIGN-4	SIGNING PLANS
S-1 THRU S-107	STRUCTURE PLANS
X-1A	CROSS SECTION INDEX
X-1B	CROSS SECTION SUMMARY
X-1 THRU X-45	CROSS SECTIONS

GENERAL NOTES: 2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

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 MODIFIED.

SUPERELEVATION:

ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NOS. 225.04 AND 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:

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

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.

GUARDRAIL:

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

TEMPORARY SHORING:

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

END BENTS:

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

UTILITIES:

UTILITY OWNERS ON THIS PROJECT ARE CENTURY LINK, DUKE ENERGY PROGRESS (DISTRIBUTION AND AERIAL LIGHTING). ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200d02	Method of Clearing - Modified Method II (Detail in Lieu of Standard)
225.01	Guide for Grading Subgrade - Interstate and Freeway
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
225.05	Method of Obtaining Superelevation - Divided Highways
275.01	Rock Plating
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation
DIVISION 4 - MAJOR STRUCTURES	
422.01	Bridge Approach Fills - Type I Standard Approach Fill
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 Repairs
DIVISION 8 - INCIDENTALS	
815.02	Subsurface Drain
816.01	Concrete Pads
840.01	Brick Catch Basin - 12" thru 54" Pipe
840.02	Concrete Catch Basin - 12" thru 54" Pipe
840.03	Frame, Grates and Hood - for Use on Standard Catch Basin
840.18	Concrete Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.22	Frames and Wide Slot Sag Grates
840.24	Frames and Narrow Slot Sag Grates
840.25	Anchorage for Frames - Brick or Concrete or Precast
840.27	Brick Grated Drop Inlet Type 'B' - 12" thru 36" Pipe
840.29	Frames and Narrow Slot Flat Grates
840.31	Concrete Junction Box - 12" thru 66" Pipe
840.32	Brick Junction Box - 12" thru 66" Pipe
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.54	Manhole Frame and Cover
840.71	Concrete and Brick Pipe Plug
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
852.01	Concrete Islands
852.06	Method for Placement of Drop Inlets in Concrete Islands
852D06	Method for Placement of Drop Inlets in Concrete Islands (Detail in Lieu of Standard)
852.10	Median Construction - with Curb and Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862D02	Guardrail Installation (Detail in Lieu of Standard - Sheet 6 of 8)
862.03	Structure Anchor Units
862D03	Structure Anchor Units (Detail in Lieu of Standard - Sheet 1 of 7)
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○ EIP
Computed Property Corner	-----
Property Monument	□ EDM
Parcel/Sequence Number	⑫③
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	----- WLB
Proposed Wetland Boundary	----- WLB
Existing Endangered Animal Boundary	----- EAB
Existing Endangered Plant Boundary	----- EPB
Existing Historic Property Boundary	----- HPB
Known Contamination Area: Soil	---S---S---
Potential Contamination Area: Soil	---S---S---
Known Contamination Area: Water	---W---W---
Potential Contamination Area: Water	---W---W---
Contaminated Site: Known or Potential	☠ ?

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Jurisdictional Stream	----- JS
Buffer Zone 1	----- BZ 1
Buffer Zone 2	----- BZ 2
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

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

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

RIGHT OF WAY & PROJECT CONTROL:

Secondary Horiz and Vert Control Point	◆
Primary Horiz Control Point	○
Primary Horiz and Vert Control Point	●
Exist Permanent Easement Pin and Cap	◇
New Permanent Easement Pin and Cap	◆
Vertical Benchmark	⊠
Existing Right of Way Marker	△
Existing Right of Way Line	-----
New Right of Way Line	----- R/W
New Right of Way Line with Pin and Cap	----- R/W ▲
New Right of Way Line with Concrete or Granite RW Marker	----- R/W ▲
New Control of Access Line with Concrete CA Marker	----- C/A
Existing Control of Access	----- C/A
New Control of Access	----- C/A
Existing Easement Line	----- E
New Temporary Construction Easement	----- E
New Temporary Drainage Easement	----- TDE
New Permanent Drainage Easement	----- PDE
New Permanent Drainage / Utility Easement	----- DUE
New Permanent Utility Easement	----- PUE
New Temporary Utility Easement	----- TUE
New Aerial Utility Easement	----- AUE

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	----- C
Proposed Slope Stakes Fill	----- F
Proposed Curb Ramp	----- CR
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	----- 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	○ S
Storm Sewer	----- S

UTILITIES:

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 LOS B (S.U.E.*)	----- P
U/G Power Line LOS C (S.U.E.*)	----- P
U/G Power Line LOS D (S.U.E.*)	----- P

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	⊕
Telephone Pedestal	⊠
Telephone Cell Tower	⊠
U/G Telephone Cable Hand Hole	○
U/G Telephone Cable LOS B (S.U.E.*)	----- T
U/G Telephone Cable LOS C (S.U.E.*)	----- T
U/G Telephone Cable LOS D (S.U.E.*)	----- T
U/G Telephone Conduit LOS B (S.U.E.*)	----- TC
U/G Telephone Conduit LOS C (S.U.E.*)	----- TC
U/G Telephone Conduit LOS D (S.U.E.*)	----- TC
U/G Fiber Optics Cable LOS B (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS C (S.U.E.*)	----- T FO
U/G Fiber Optics Cable LOS D (S.U.E.*)	----- T FO

WATER:

Water Manhole	⊕
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
U/G Water Line LOS B (S.U.E.*)	----- W
U/G Water Line LOS C (S.U.E.*)	----- W
U/G Water Line LOS D (S.U.E.*)	----- W
Above Ground Water Line	----- A/G Water

TV:

TV Pedestal	⊠
TV Tower	⊗
U/G TV Cable Hand Hole	○
U/G TV Cable LOS B (S.U.E.*)	----- TV
U/G TV Cable LOS C (S.U.E.*)	----- TV
U/G TV Cable LOS D (S.U.E.*)	----- TV
U/G Fiber Optic Cable LOS B (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS C (S.U.E.*)	----- TV FO
U/G Fiber Optic Cable LOS D (S.U.E.*)	----- TV FO

GAS:

Gas Valve	◇
Gas Meter	⊕
U/G Gas Line LOS B (S.U.E.*)	----- G
U/G Gas Line LOS C (S.U.E.*)	----- G
U/G Gas Line LOS D (S.U.E.*)	----- G
Above Ground Gas Line	----- A/G Gas

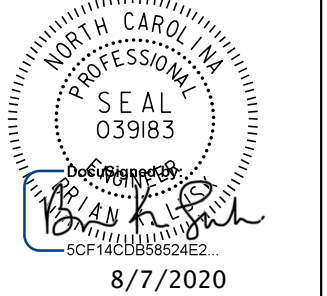
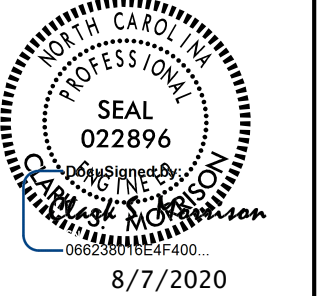

SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
U/G Sanitary Sewer Line	----- SS
Above Ground Sanitary Sewer	----- A/G Sanitary Sewer
SS Forced Main Line LOS B (S.U.E.*)	----- FSS
SS Forced Main Line LOS C (S.U.E.*)	----- FSS
SS Forced Main Line LOS D (S.U.E.*)	----- FSS

MISCELLANEOUS:

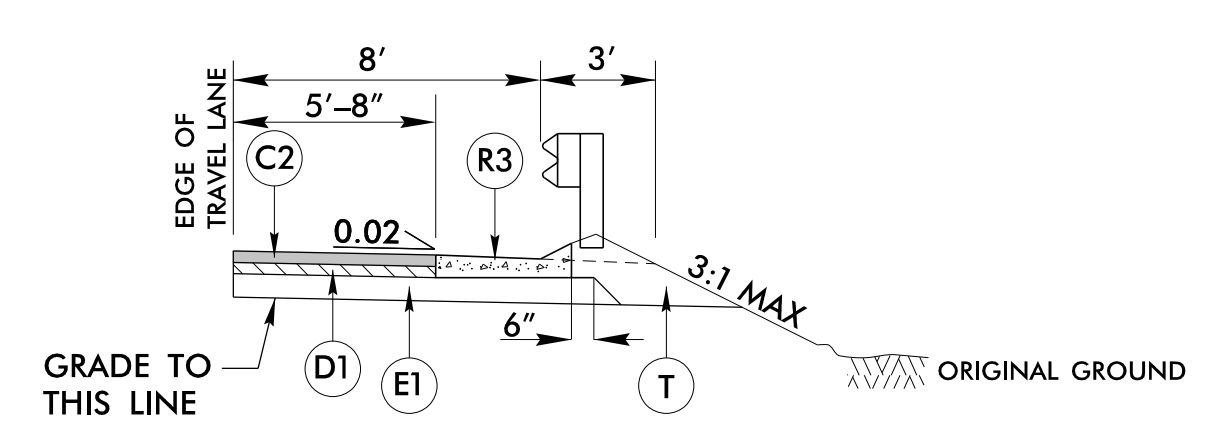
Utility Pole	●
Utility Pole with Base	⊠
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	----- 70TL
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊠ UST
A/G Tank; Water, Gas, Oil	□
Geoenvironmental Boring	⊕
U/G Test Hole LOS A (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

6/2/20

PROJECT REFERENCE NO. 15806.1009011	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER  8/7/2020	PAVEMENT DESIGN ENGINEER  8/7/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0353 License #: P-0999	

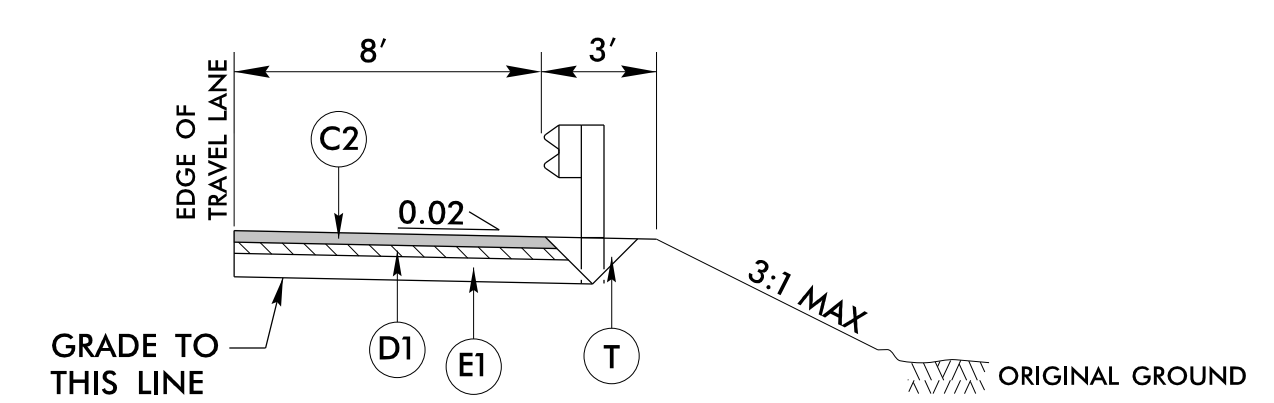
PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD	J1	PROP. 8" AGGREGATE BASE COURSE		
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD IN EACH OF TWO LAYERS	P	PRIME COAT AT THE RATE OF .35 GAL PER SQ. YARD	T	EARTH MATERIAL
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH	R1	2'-6" CONCRETE CURB AND GUTTER	U	EXISTING PAVEMENT
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	R2	1'-6" CONCRETE CURB AND GUTTER	V1	1½" MILLING
D2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	R3	CONCRETE SHOULDER BERM GUTTER	V2	INCIDENTAL MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	R4	5" CONCRETE MONOLITHIC ISLAND	W	WEDGING



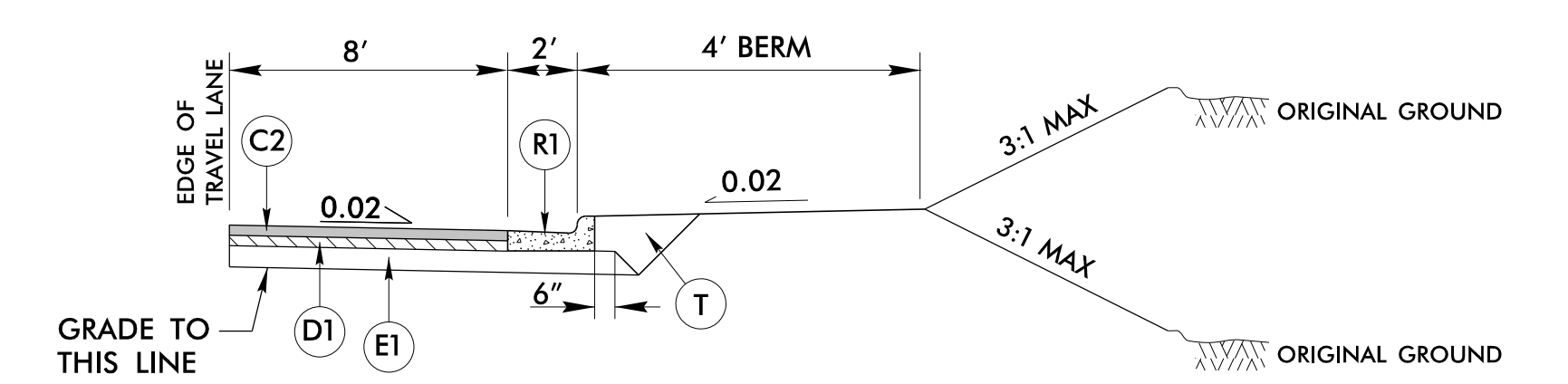
SHOULDER BERM GUTTER DETAIL

- L_SB- STA. 125 + 23.52 TO -L_SB- STA. 125 + 50.00
- L_SB- STA. 132 + 59.81 TO -L_SB- STA. 137 + 00.00
- L_NB- STA. 110 + 75.90 TO -L_NB- STA. 112 + 39.44
- L_NB- STA. 125 + 05.37 TO -L_NB- STA. 132 + 00.00



GUARDRAIL DETAIL

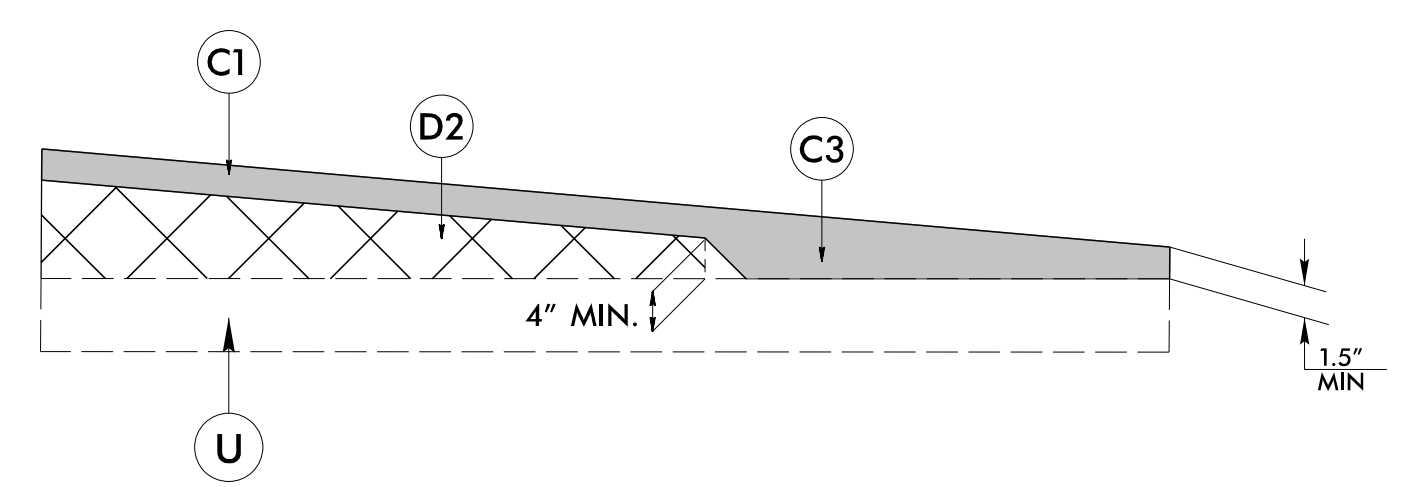
- L_SB- STA. 108 + 99.74 TO -L_SB- STA. 112 + 58.19
- L_SB- STA. 125 + 24.12 TO -L_SB- STA. 127 + 56.42
- L_SB- STA. 128 + 93.51 TO -L_SB- STA. 132 + 11.19
- L_SB- STA. 132 + 57.24 TO -L_SB- STA. 137 + 00.00
- L_NB- STA. 110 + 32.14 TO -L_NB- STA. 112 + 39.44
- L_NB- STA. 125 + 05.37 TO -L_NB- STA. 132 + 00.00



2'-6" CURB & GUTTER DETAIL

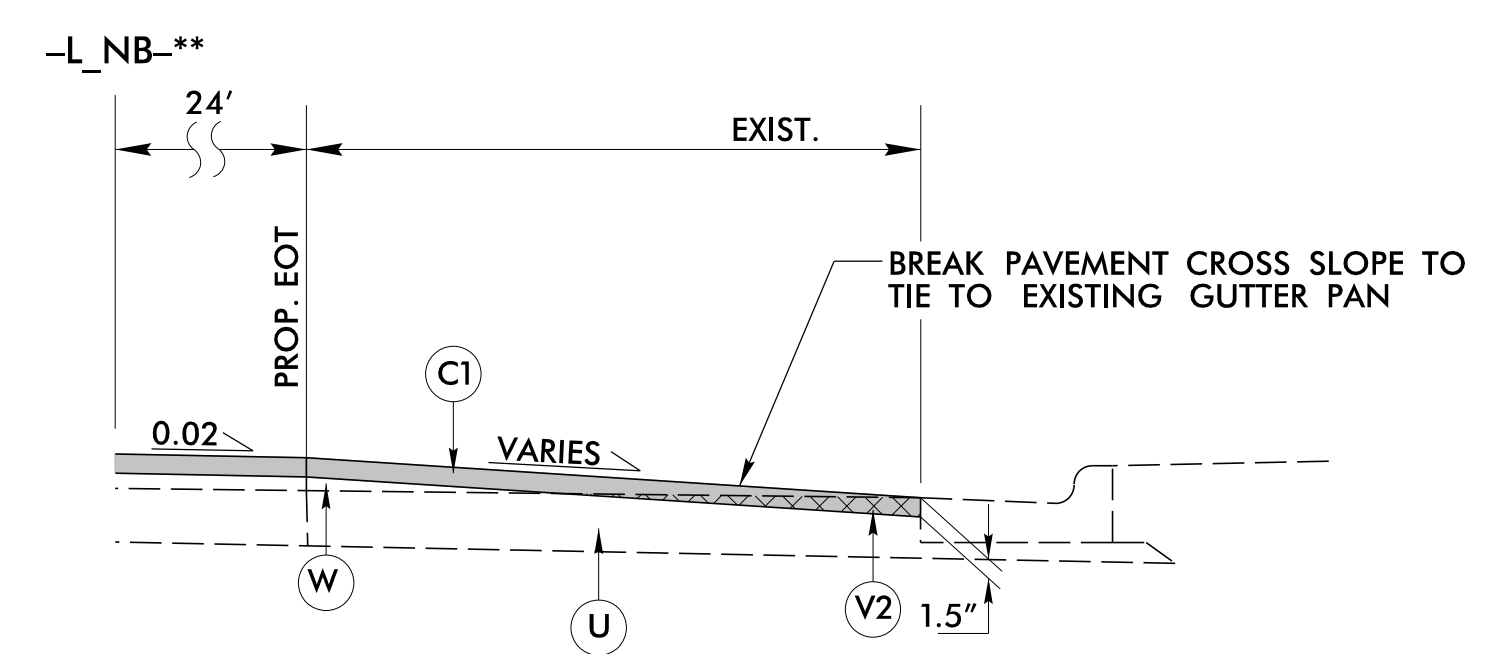
- L_SB- STA. 108 + 85.50 TO -L_SB- STA. 112 + 58.19
- L_NB- STA. 110 + 07.42 TO -L_NB- STA. 110 + 62.09 (TRANS TO SBG)

NOTE:
RETAIN EXISTING CURB AND GUTTER ON
-L_NB- AS SHOWN IN PLANS



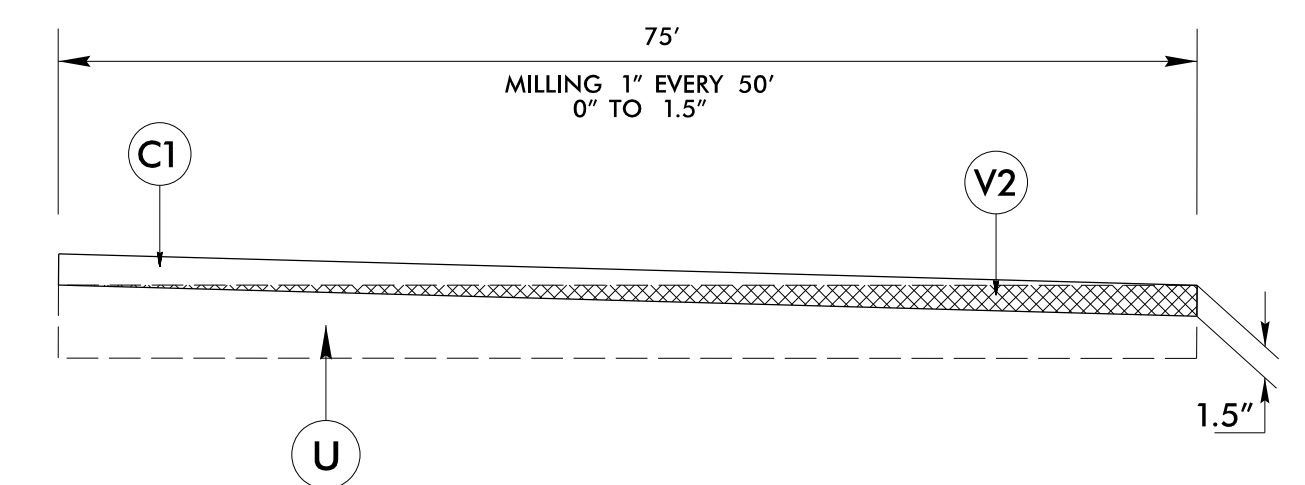
WEDGING DETAIL

USE IN CONJUNCTION W/TYPICAL SECTION NOS. 3, 4, 6, 7, 8, & 9



MILLING AT EXISTING CURB DETAIL

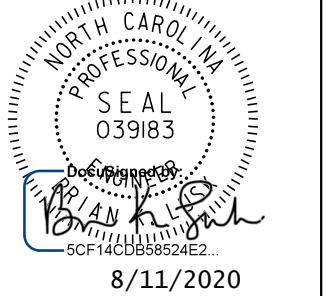
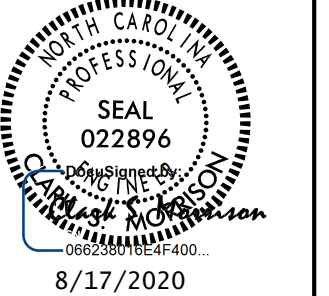

- L_NB- STA. 108 + 02.29 TO -L_NB- STA. 110 + 28.28



MILLING DETAIL

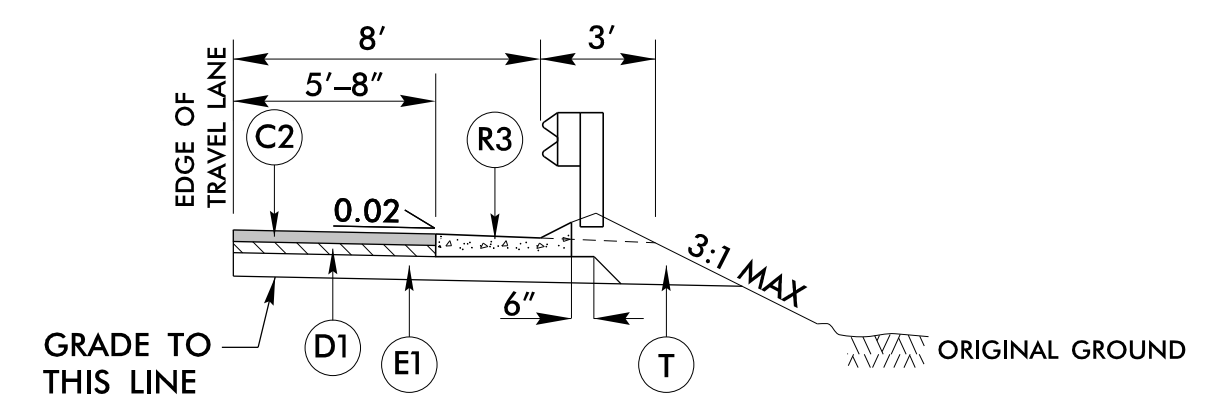
USE MILLING DETAIL AT RESURFACING TIES

2:40:56 PM
 R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-Lrdj-tyr.dgn
 Corbin Jackson

PROJECT REFERENCE NO. 48793.31	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER  8/11/2020	PAVEMENT DESIGN ENGINEER  8/17/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0353 License #: P-0999	

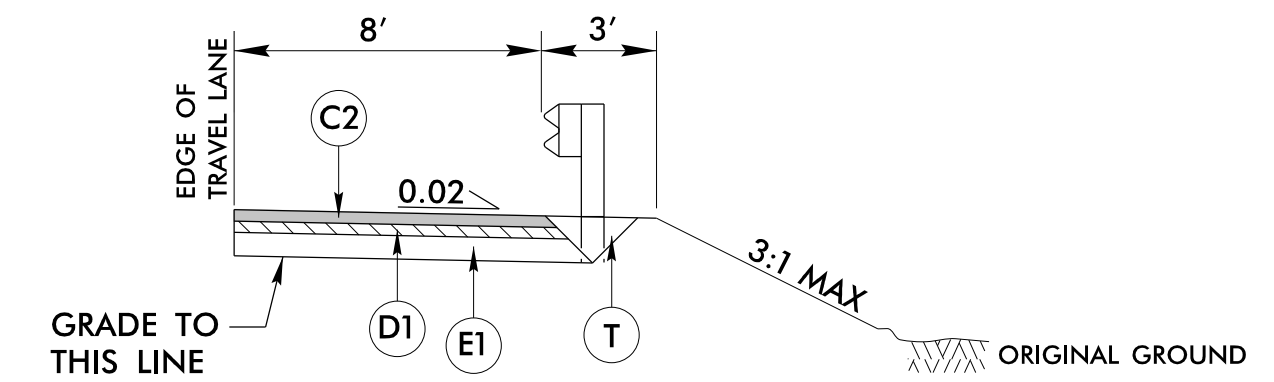
PRELIMINARY PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD	J1	PROP. 8" AGGREGATE BASE COURSE		
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YARD IN EACH OF TWO LAYERS	P	PRIME COAT AT THE RATE OF .35 GAL PER SQ. YARD	T	EARTH MATERIAL
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE, TYPE S9.5C AT AN AVERAGE RATE OF 112 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH	R1	2'-6" CONCRETE CURB AND GUTTER	U	EXISTING PAVEMENT
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	R2	1'-6" CONCRETE CURB AND GUTTER	V1	1½" MILLING
D2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YARD PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" OR GREATER THAN 4" IN DEPTH.	R3	CONCRETE SHOULDER BERM GUTTER	V2	INCIDENTAL MILLING
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YARD	R4	5" CONCRETE MONOLITHIC ISLAND	W	WEDGING



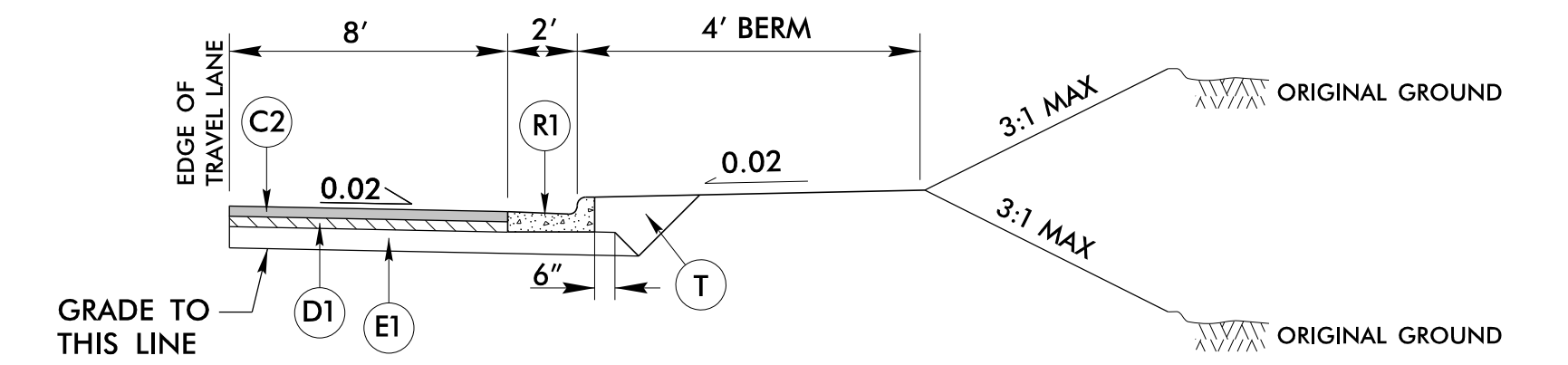
SHOULDER BERM GUTTER DETAIL

- L_SB- STA. 125+23.52 TO -L_SB- STA. 125+50.00
- L_SB- STA. 132+59.81 TO -L_SB- STA. 137+00.00
- L_NB- STA. 110+75.90 TO -L_NB- STA. 112+39.44
- L_NB- STA. 125+05.37 TO -L_NB- STA. 132+00.00



GUARDRAIL DETAIL

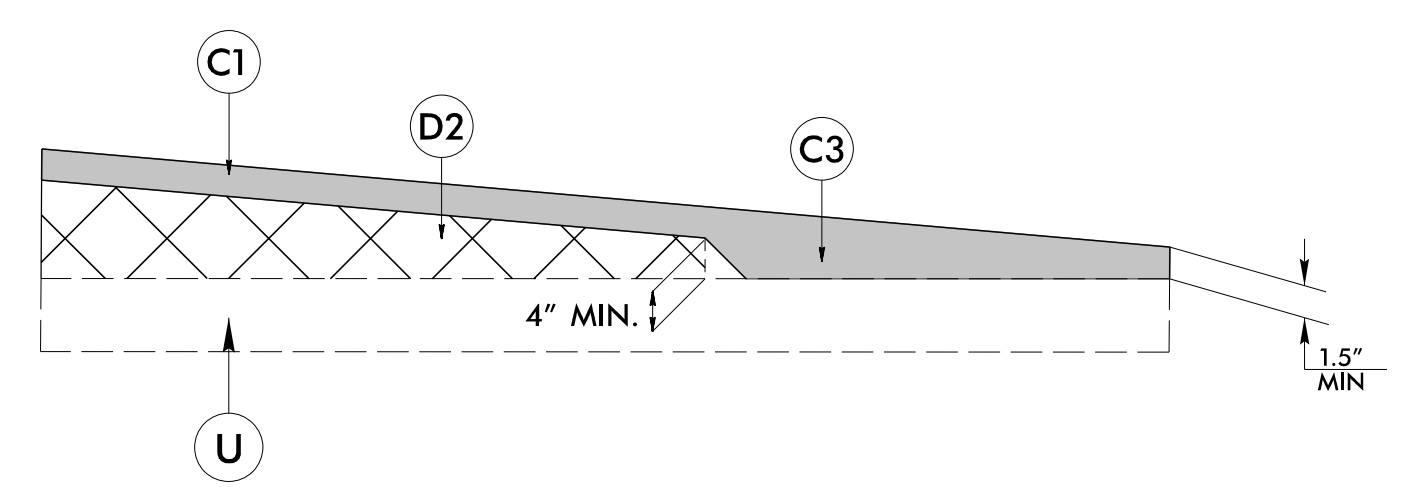
- L_SB- STA. 108+99.74 TO -L_SB- STA. 112+58.19
- L_SB- STA. 125+24.12 TO -L_SB- STA. 127+56.42
- L_SB- STA. 128+93.51 TO -L_SB- STA. 132+11.19
- L_SB- STA. 132+57.24 TO -L_SB- STA. 137+00.00
- L_NB- STA. 110+32.14 TO -L_NB- STA. 112+39.44
- L_NB- STA. 125+05.37 TO -L_NB- STA. 132+00.00



2'-6" CURB & GUTTER DETAIL

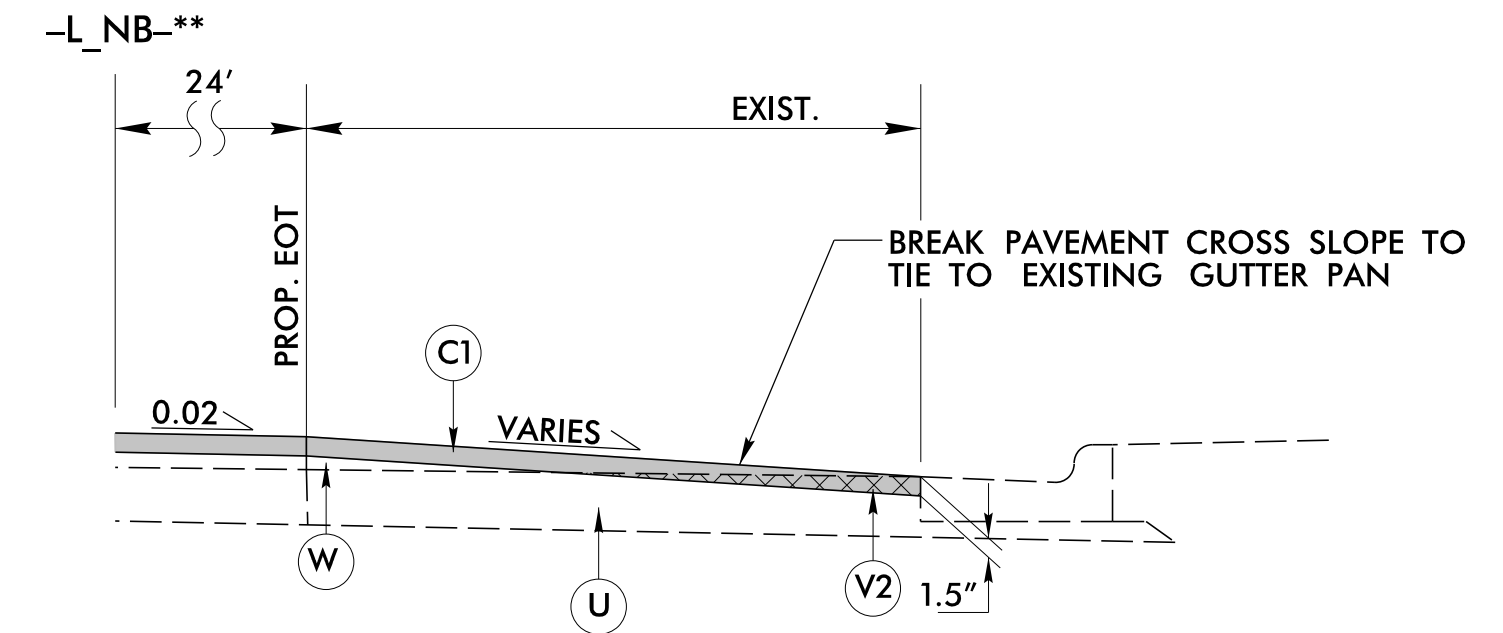
- L_SB- STA. 108+85.50 TO -L_SB- STA. 112+58.19
- L_NB- STA. 110+07.42 TO -L_NB- STA. 110+62.09 (TRANS TO SBG)

NOTE:
RETAIN EXISTING CURB AND GUTTER ON
-L_NB- AS SHOWN IN PLANS



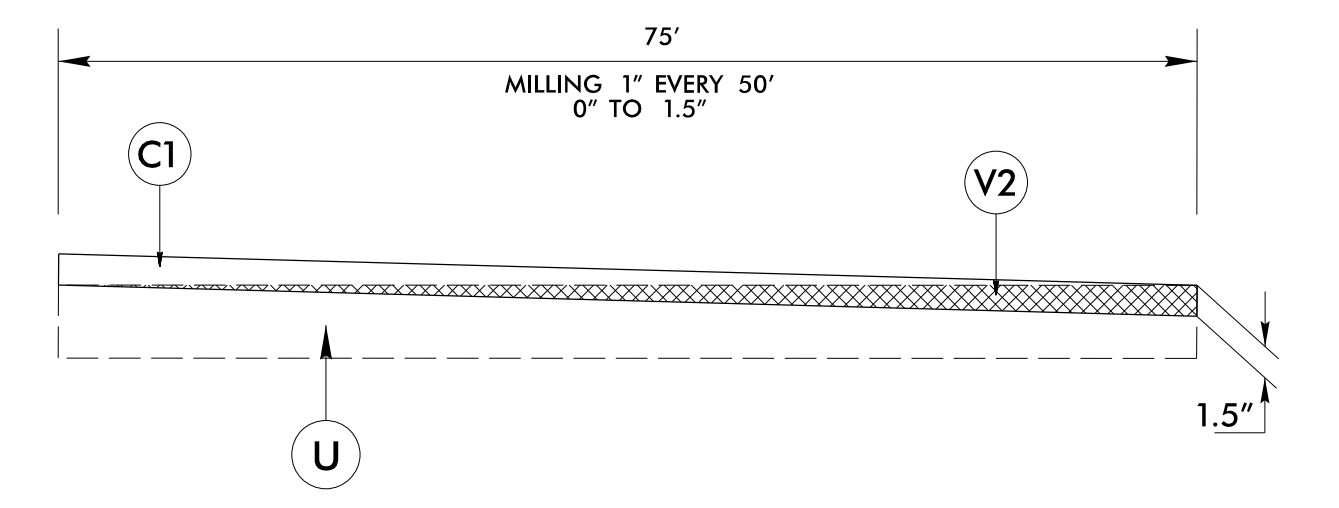
WEDGING DETAIL

USE IN CONJUNCTION W/TYPICAL SECTION NOS. 3, 4, 6, 7, 8, & 9



MILLING AT EXISTING CURB DETAIL

- L_NB- STA. 108+02.29 TO -L_NB- STA. 110+28.28

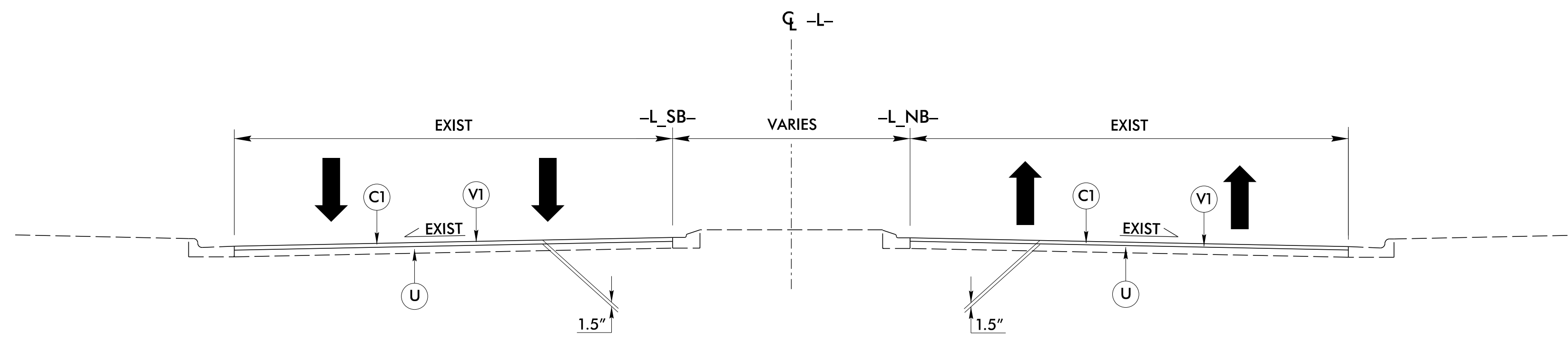


MILLING DETAIL

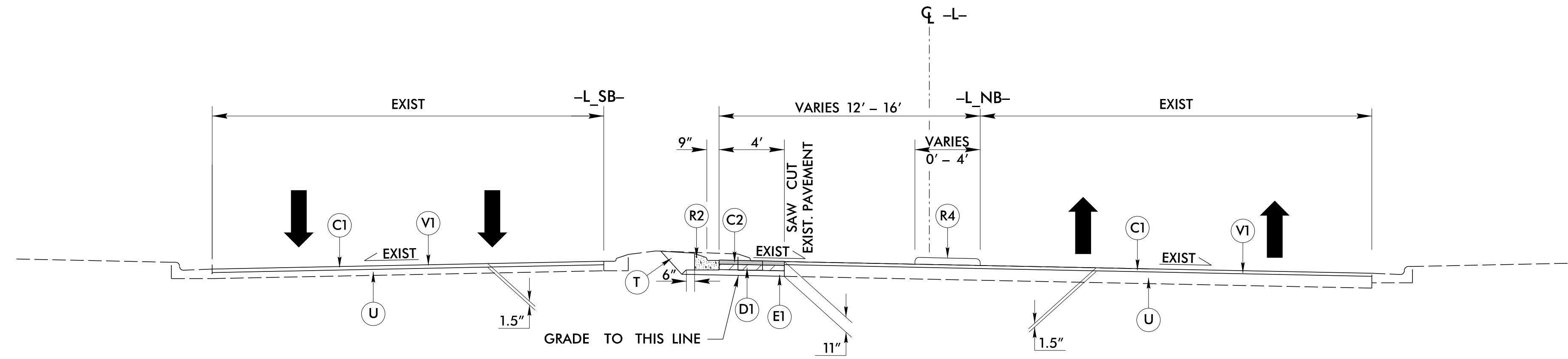
USE MILLING DETAIL AT RESURFACING TIES

6/2/19

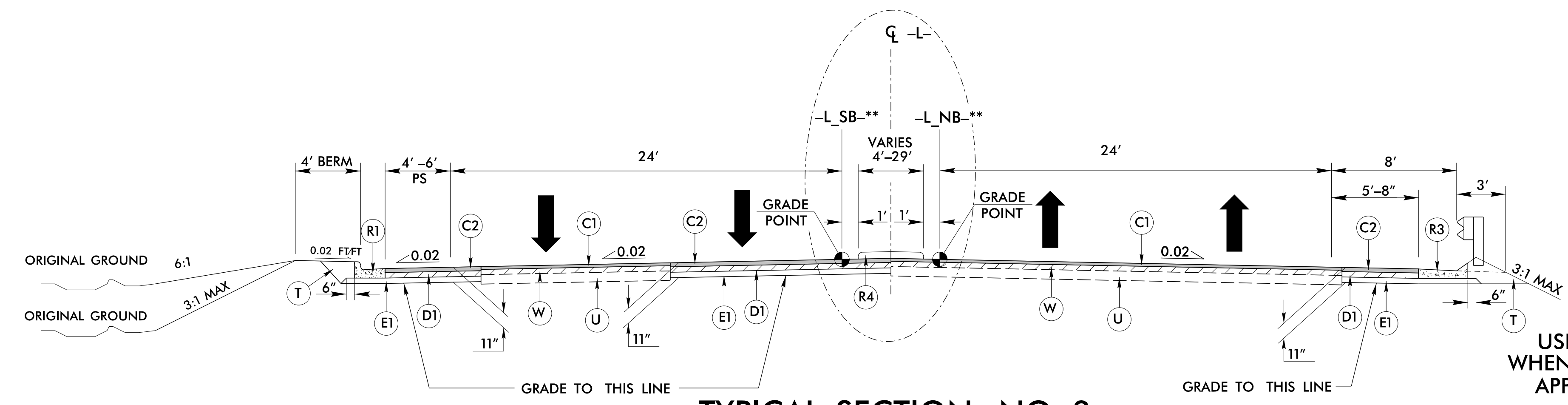
PROJECT REFERENCE NO. 15806.1009011	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



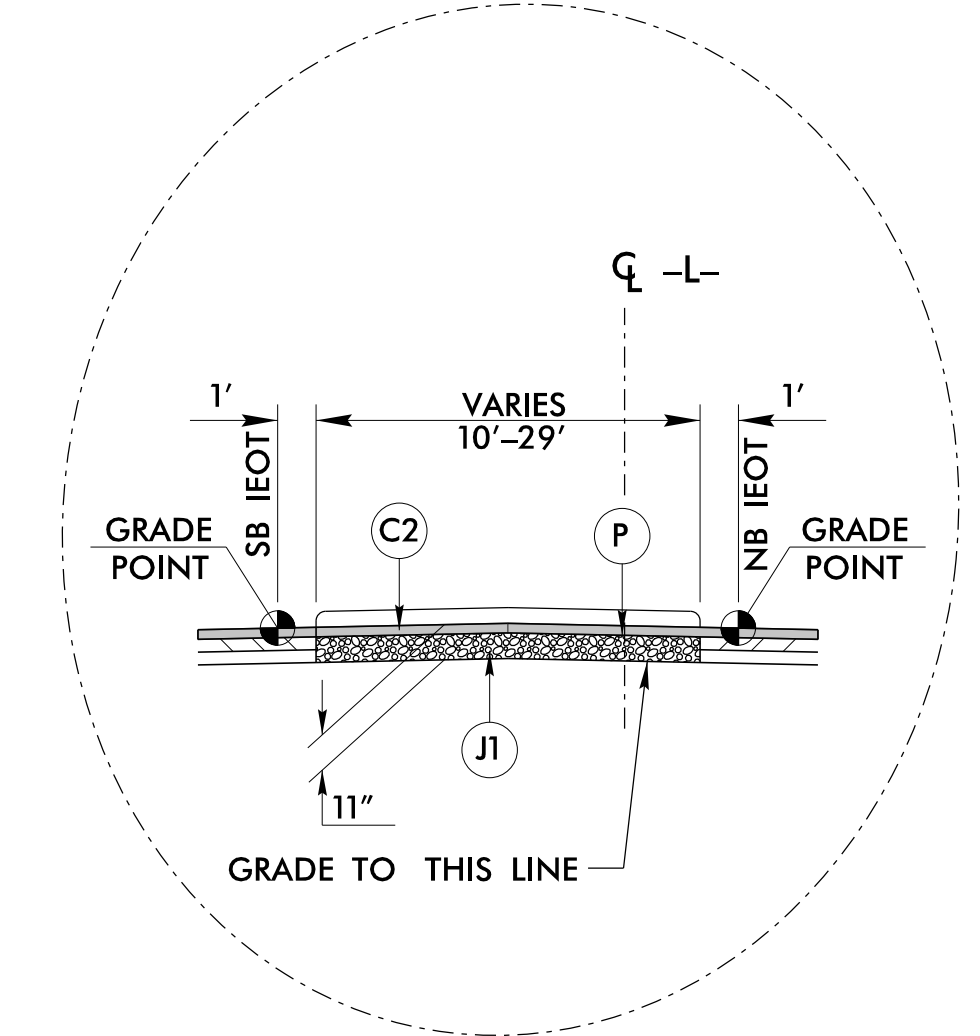
TYPICAL SECTION NO. 1
-L- STA. 103 + 63.91 TO -L- STA. 107 + 03.77



TYPICAL SECTION NO. 2
-L- STA. 107 + 03.77 TO -L- STA. 108 + 02.29



RESURFACE SOUTHBOUND SIDE FROM 108+02.29 TO APPROX. STA. 110+00
FULL DEPTH PAVEMENT FROM APPROX. 110+00 TO 112+40
TYPICAL SECTION NO. 3
-L- STA. 108 + 02.29 TO -L- STA. 112 + 40.00



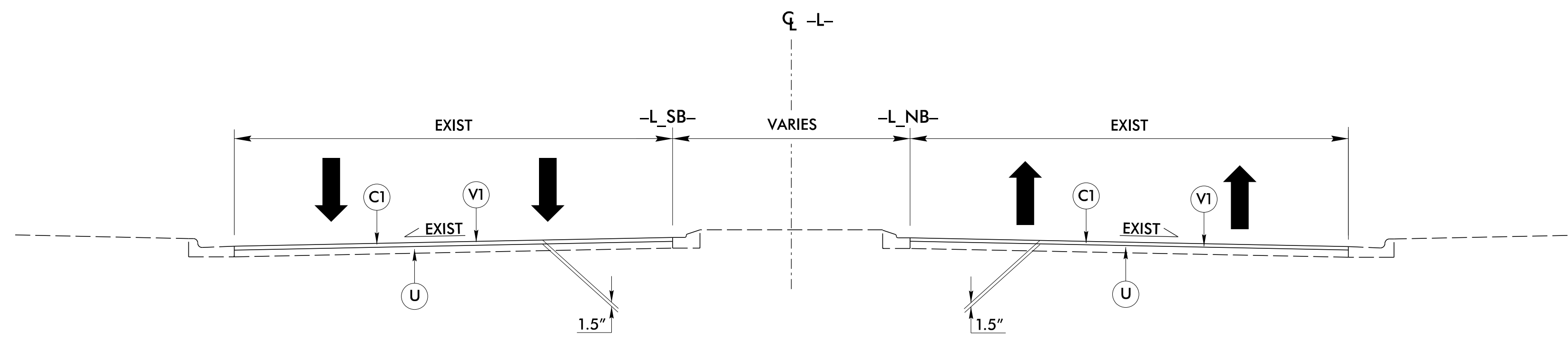
TYPICAL SECTION NO. 3A
USE IN CONJUNCTION W/TYPICAL SECTION NO. 3
WHEN MONOLITHIC ISLAND WIDTH GREATER THAN 10'
APPROX. -L- STA. 108 + 60.71 TO -L- STA. 111 + 20.81

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING

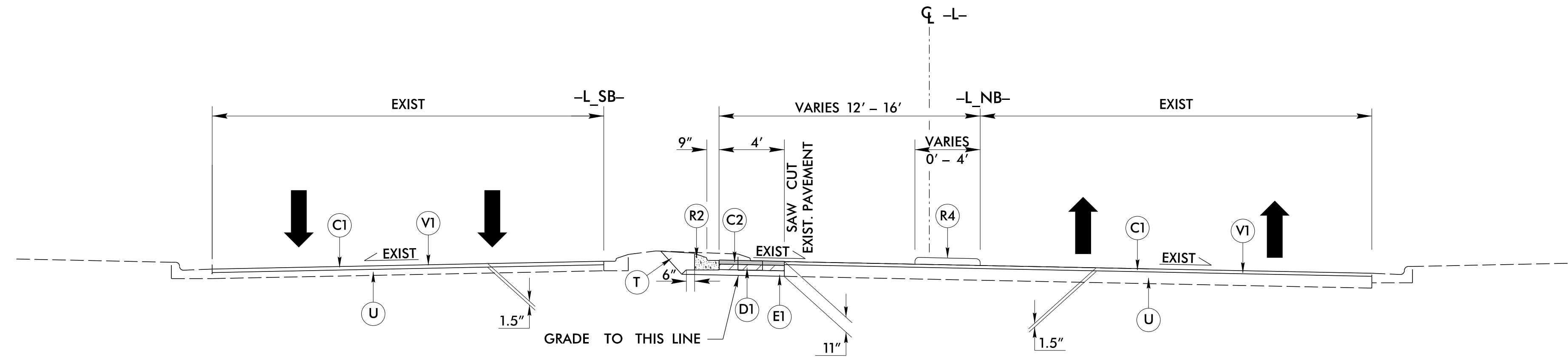
2:40653 IPW
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rdy-tyr.dgn
corbin.jackson

6/2/19

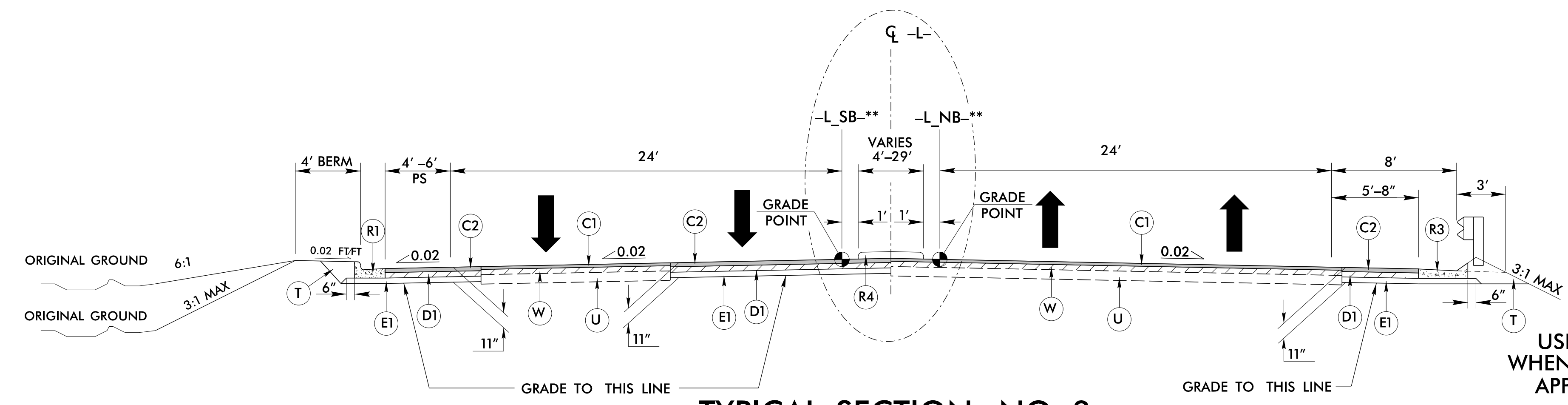
PROJECT REFERENCE NO. 48793.31	SHEET NO. 2A-2
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0393 License # P-9999	



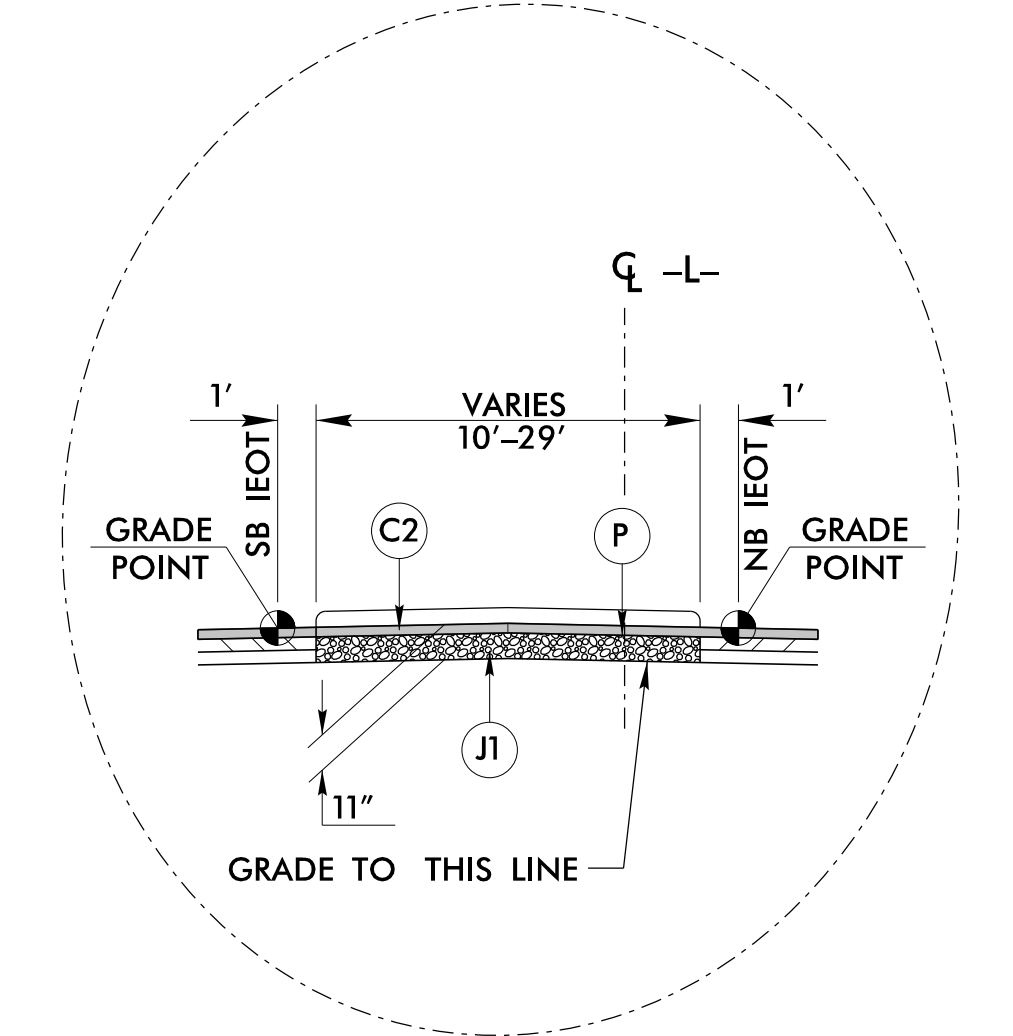
TYPICAL SECTION NO. 1
 -L- STA. 103 + 63.91 TO -L- STA. 107 + 03.77



TYPICAL SECTION NO. 2
 -L- STA. 107 + 03.77 TO -L- STA. 108 + 02.29



TYPICAL SECTION NO. 3
 RESURFACE SOUTHBOUND SIDE FROM 108+02.29 TO APPROX. STA. 110+00
 FULL DEPTH PAVEMENT FROM APPROX. 110+00 TO 112+40
 -L- STA. 108 + 02.29 TO -L- STA. 112 + 40.00



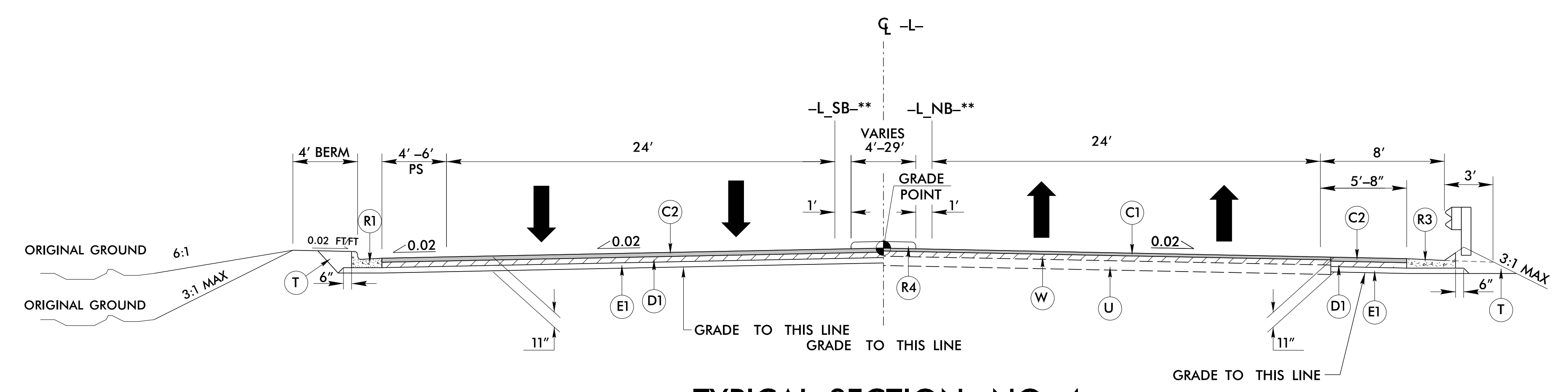
TYPICAL SECTION NO. 3A
 USE IN CONJUNCTION W/TYPICAL SECTION NO. 3
 WHEN MONOLITHIC ISLAND WIDTH GREATER THAN 10'
 APPROX. -L- STA. 108 + 60.71 TO -L- STA. 111 + 20.81

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING

4:07:28 PM R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rdy-tyr.dgn
 brad.musk

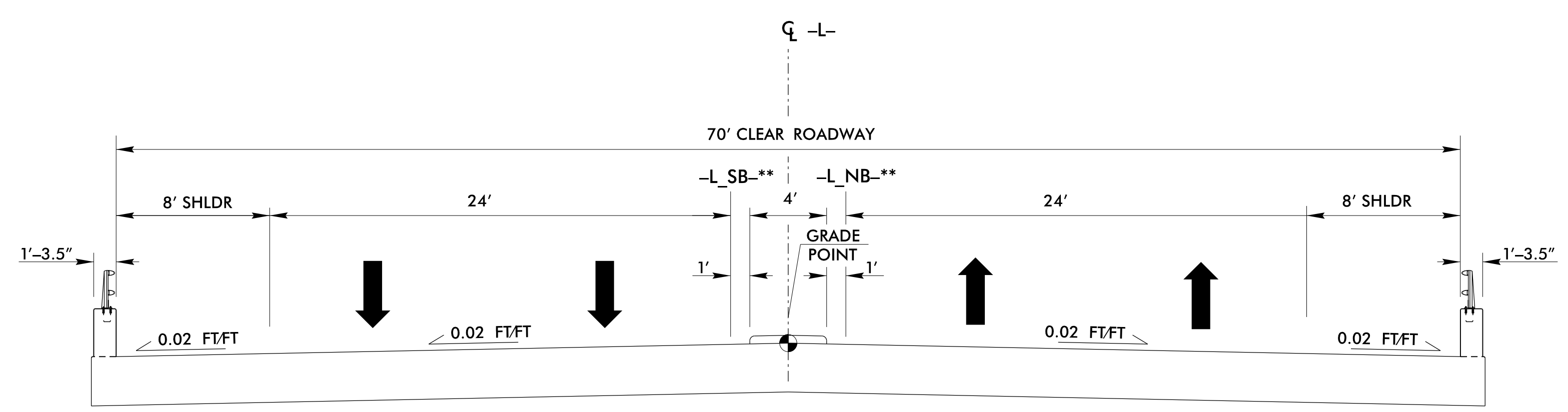
6/2/99

PROJECT REFERENCE NO. 15806.1009011	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

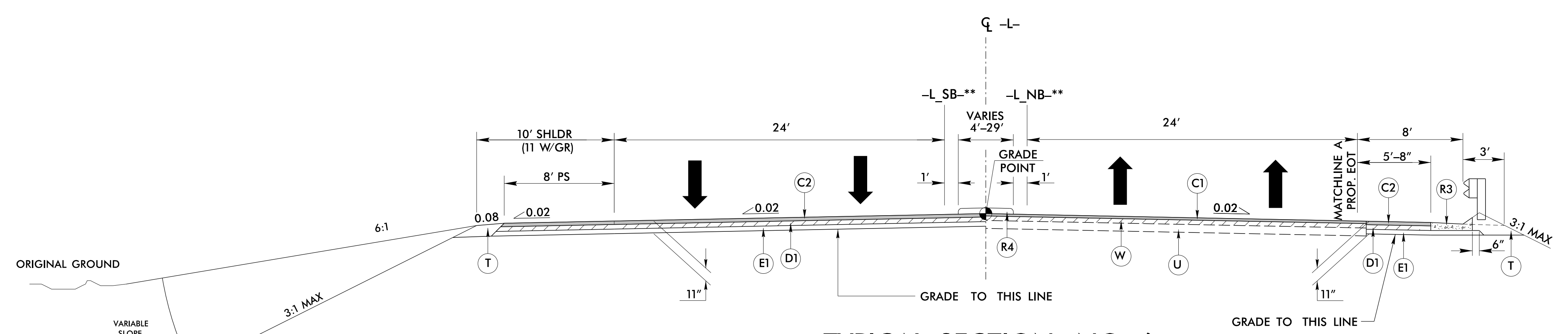


TYPICAL SECTION NO. 4
-L- STA. 112 + 40.00 TO -L- STA. 112 + 72.78 (BEGIN BRIDGE)

**NOTE:
ACROSS BRIDGE PGL SHIFTS TO CL -L-



TYPICAL SECTION NO. 5
-L- STA. 112 + 72.78 TO -L- STA. 124 + 90.78



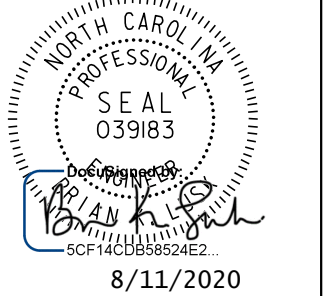
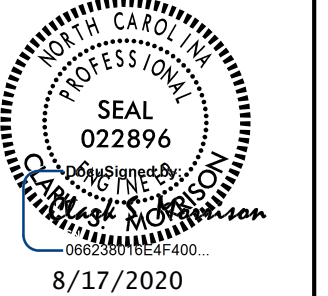

TYPICAL SECTION NO. 6
-L- STA. 124 + 90.78 (END BRIDGE) TO -L- STA. 125 + 40.82

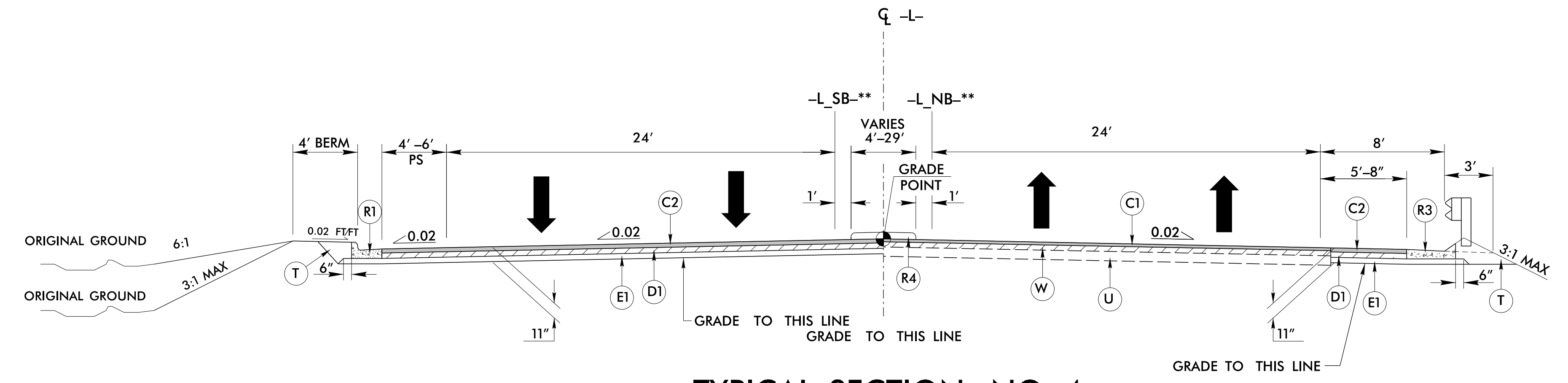
**NOTE:
PGL MOVES TO -L- CL ACROSS THE BRIDGE

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING

2/4/03 PM
 R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rdy-tye.dgn
 Corbin Jackson

6/2/19

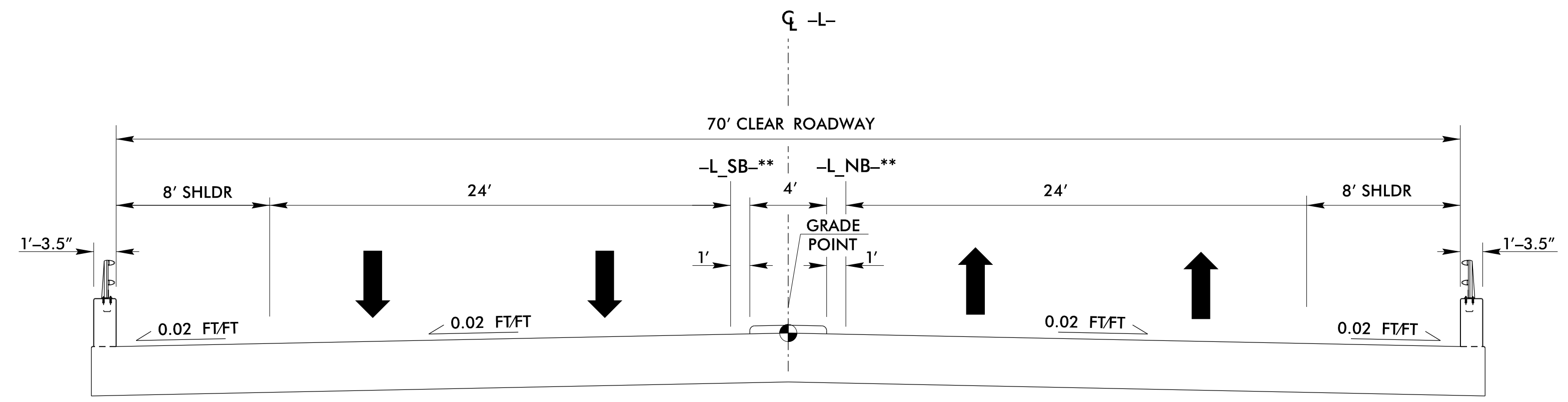
PROJECT REFERENCE NO. 48793.31	SHEET NO. 2A-3
ROADWAY DESIGN ENGINEER  8/11/2020	PAVEMENT DESIGN ENGINEER  8/17/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0353 License #: P-9999	



TYPICAL SECTION NO. 4

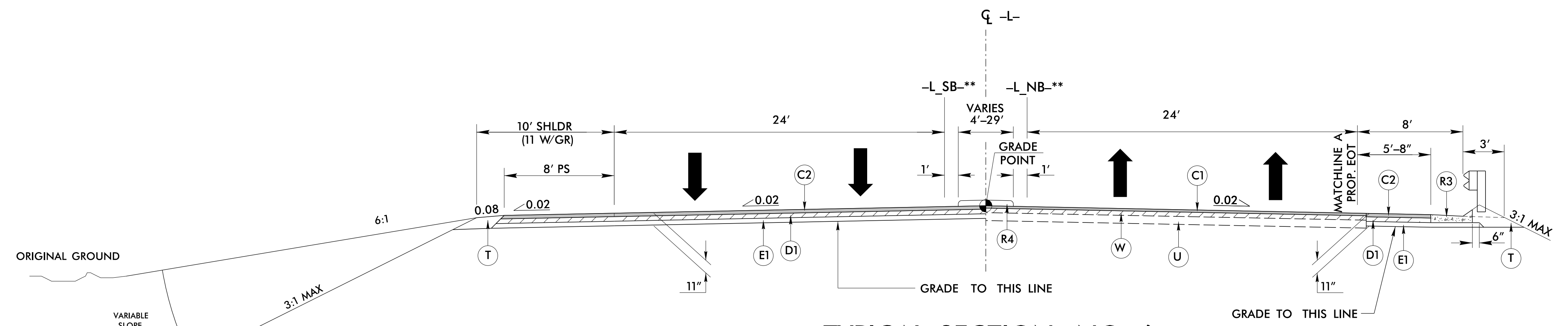
-L- STA. 112 + 40.00 TO -L- STA. 112 + 72.78 (BEGIN BRIDGE)

**NOTE: ACROSS BRIDGE PGL SHIFTS TO CL -L-



TYPICAL SECTION NO. 5

-L- STA. 112 + 72.78 TO -L- STA. 124 + 90.78



TYPICAL SECTION NO. 6

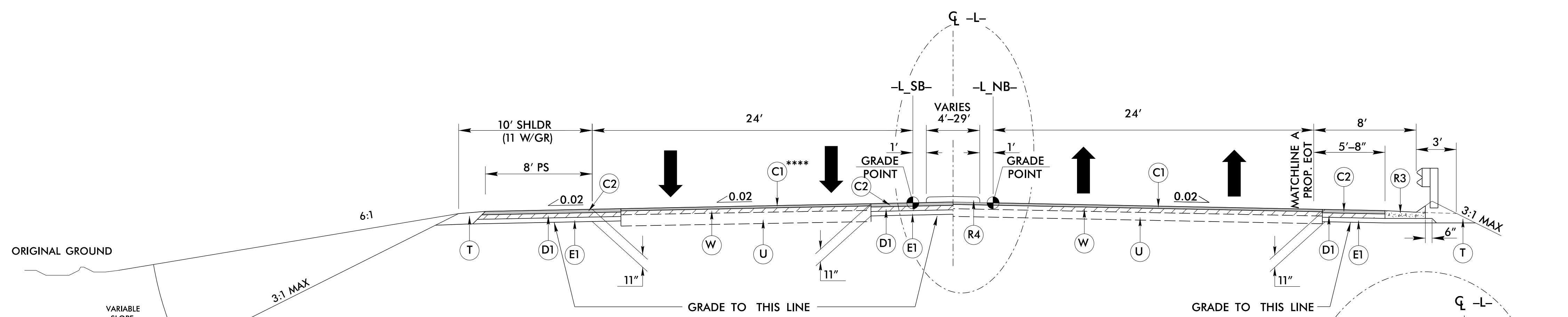
-L- STA. 124 + 90.78 (END BRIDGE) TO -L- STA. 125 + 40.82

**NOTE: PGL MOVES TO -L- CL ACROSS THE BRIDGE

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING

4:07:33 PM
 R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rdy-tyr.dgn
 brian.tusk

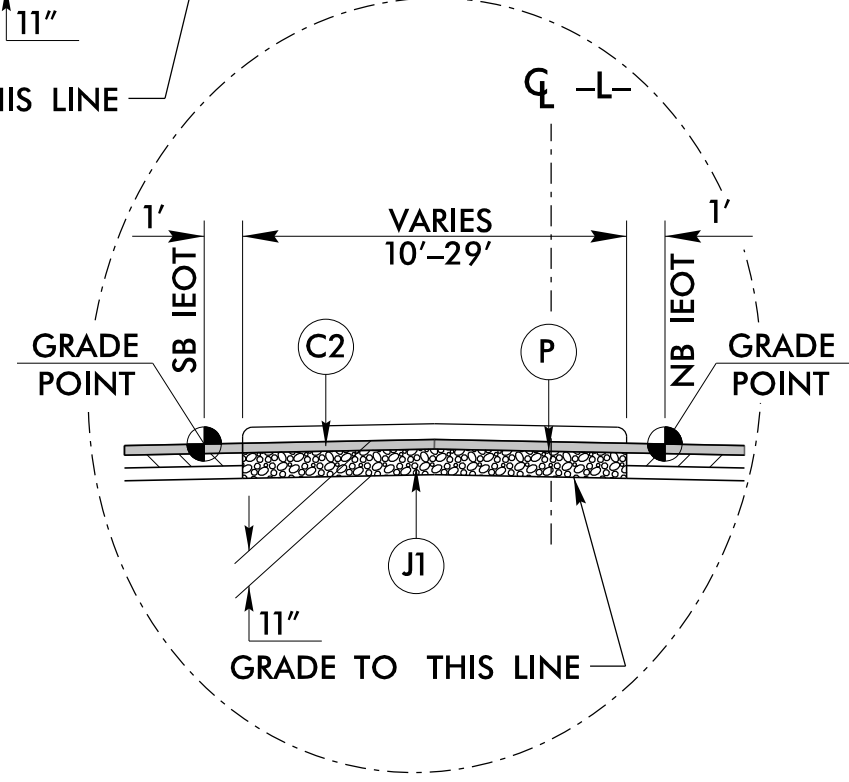
PROJECT REFERENCE NO. 15806.1009011	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER 	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0353 License #: P-9999	



****NOTE:
FULL DEPTH PAVEMENT ON SOUTHBOUND FROM 125+40.82 TO APPROX. STA. 130+50
RESURFACE SB SIDE FROM APPROX. STA. 130+50.00 TO 137+00.00

TYPICAL SECTION NO. 7

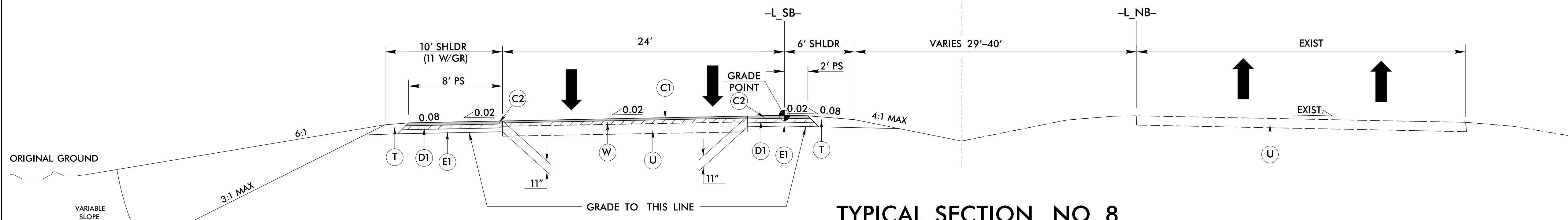
-L- STA. 125+40.82 TO -L- STA. 132+00.00



TYPICAL SECTION NO. 7A

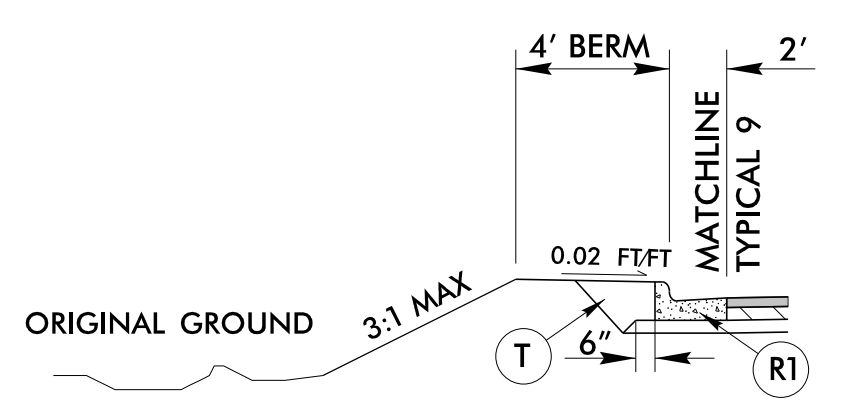
USE IN CONJUNCTION W/TYPICAL SECTION NO. 7
WHEN MONOLITHIC ISLAND WIDTH GREATER THAN 10'
APPROX. -L- STA. 128+33.77 TO -L- STA. 132+00.00

PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING



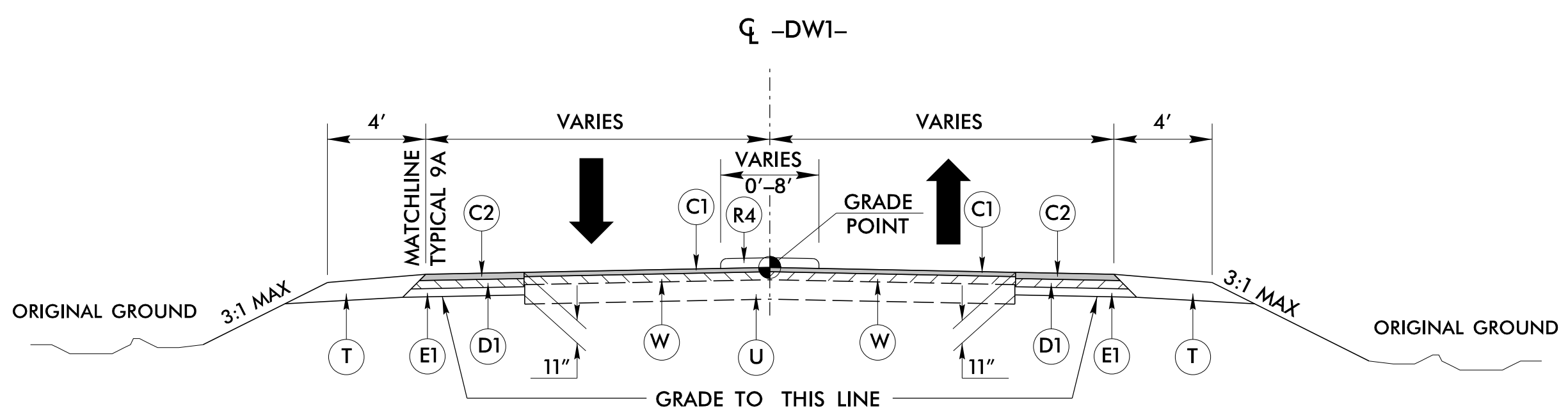
TYPICAL SECTION NO. 8

-L- STA. 132+00.00 TO -L- STA. 137+00.00



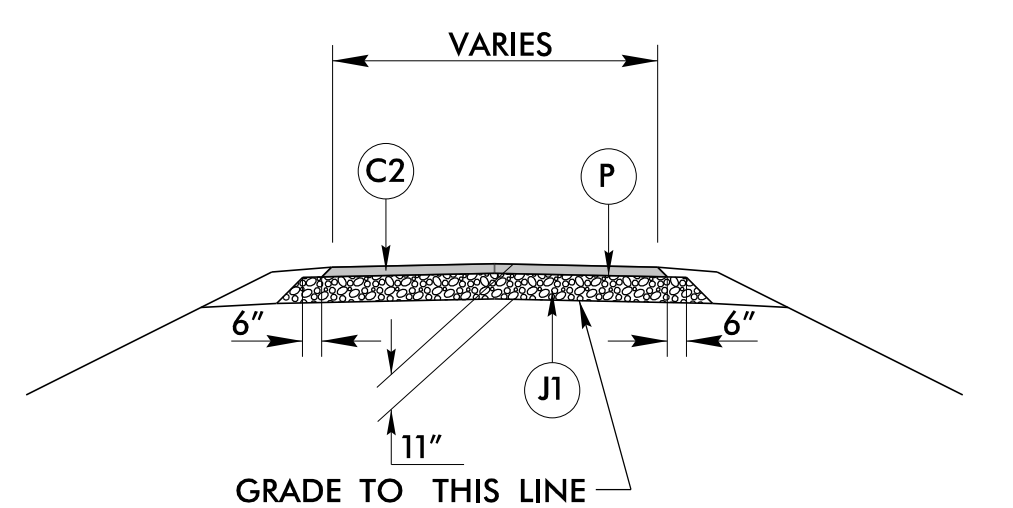
TYPICAL SECTION NO. 9A

USE IN CONJUNCTION WITH TYPICAL SECTION NO. 9
SEE PLANS FOR LOCATION



TYPICAL SECTION NO. 9

-DWI- STA. 10+24.36 TO -DWI- STA. 11+30.00

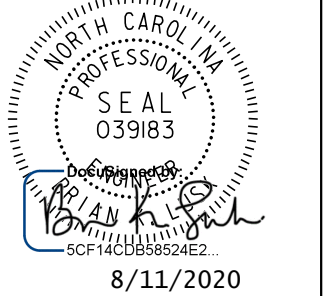
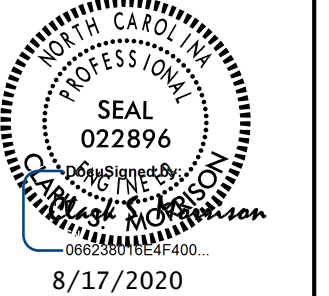



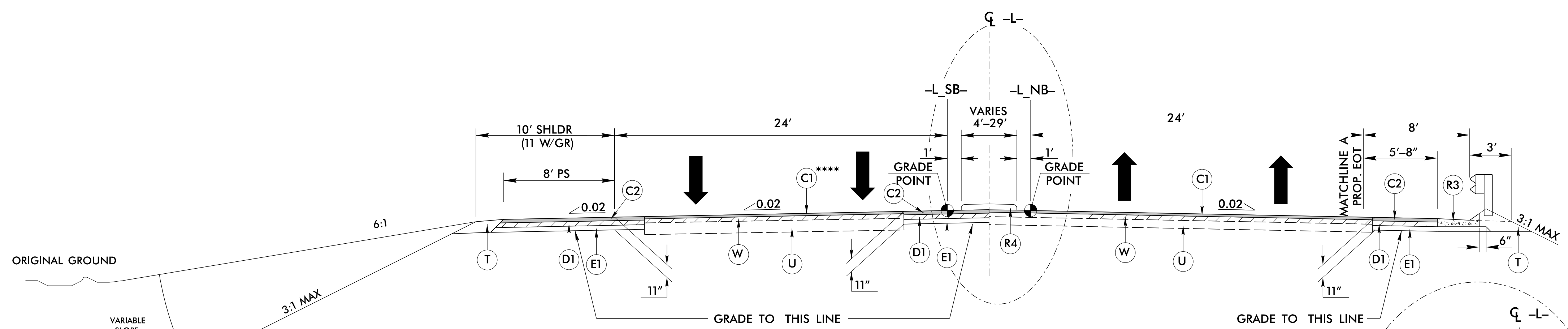
TYPICAL SECTION NO. 10

TEMPORARY PAVEMENT (LESS THAN 1.5 YEARS)
SEE TRAFFIC CONTROL PLANS OR AS DIRECTED
BY THE ENGINEER

R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rd-j-tyr.dgn
 2/4/07 PM
 R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rd-j-tyr.dgn
 Corbin Jackson

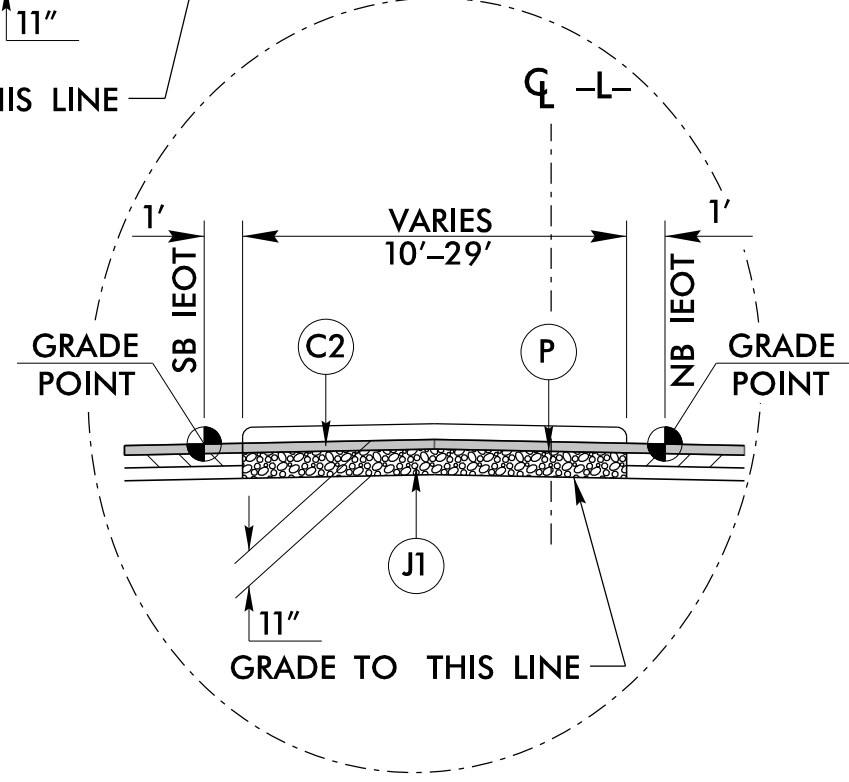
6/2/09

PROJECT REFERENCE NO. 48793.31	SHEET NO. 2A-4
ROADWAY DESIGN ENGINEER  8/11/2020	PAVEMENT DESIGN ENGINEER  8/17/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
 ICE of Carolinas, PLLC 4505 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 919-822-0353 License #: P-0999	



****NOTE:
FULL DEPTH PAVEMENT ON SOUTHBOUND FROM 125+40.82 TO APPROX. STA. 130+50
RESURFACE SB SIDE FROM APPROX. STA. 130+50.00 TO 137+00.00

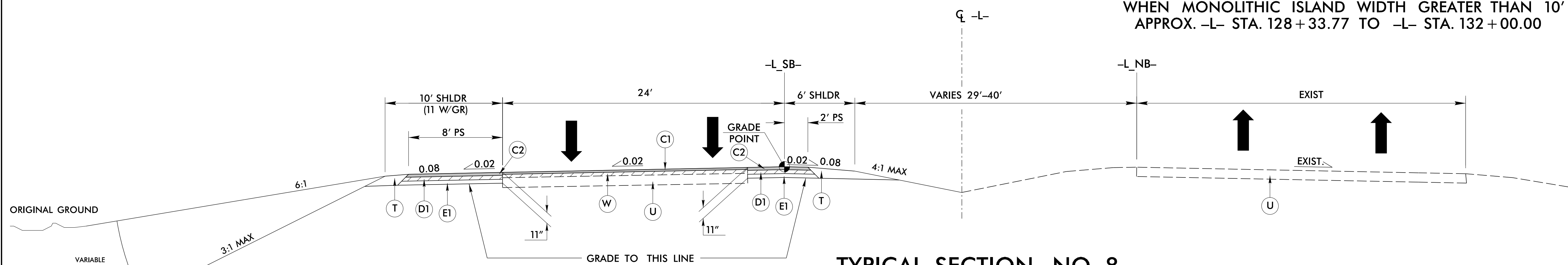
TYPICAL SECTION NO. 7
-L- STA. 125+40.82 TO -L- STA. 132+00.00



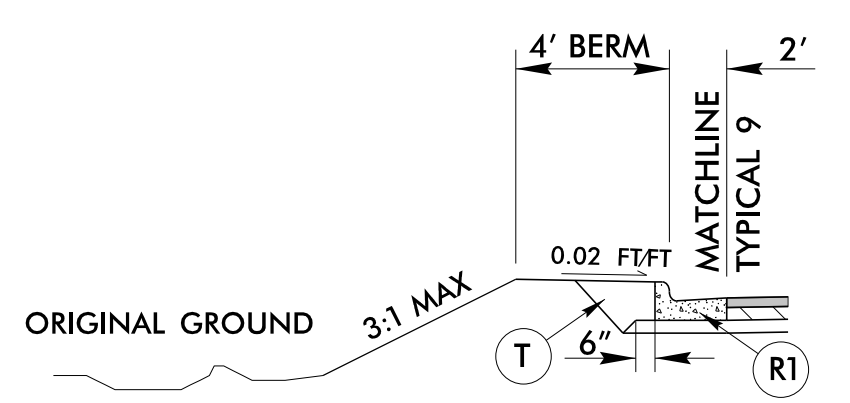
TYPICAL SECTION NO. 7A

USE IN CONJUNCTION W/TYPICAL SECTION NO. 7
WHEN MONOLITHIC ISLAND WIDTH GREATER THAN 10'
APPROX. -L- STA. 128+33.77 TO -L- STA. 132+00.00

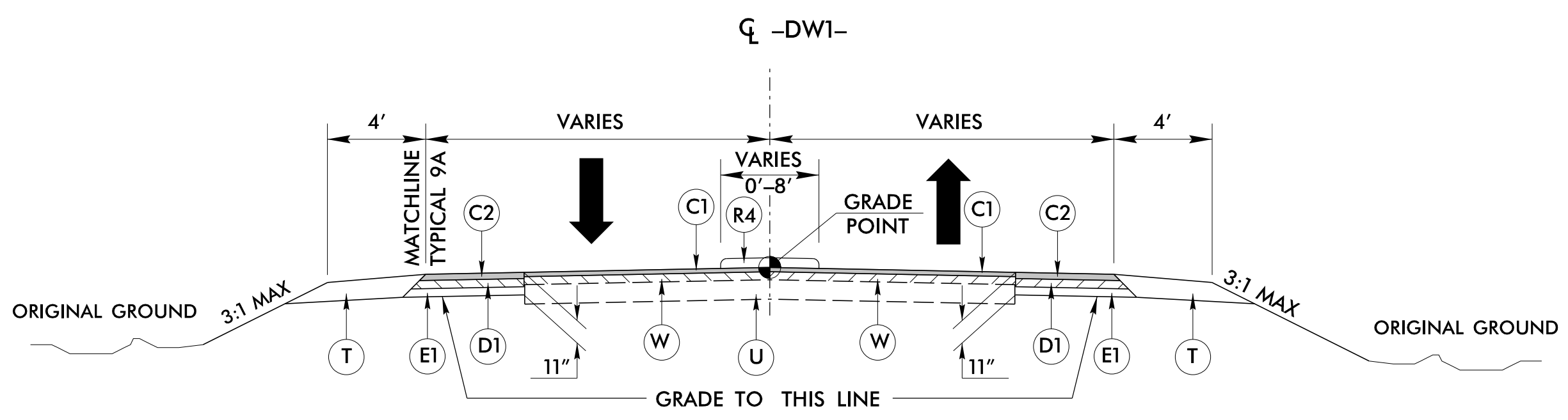
PAVEMENT SCHEDULE	
C1	1.5" S9.5C
C2	3.0" S9.5C
C3	VAR. S9.5C
D1	4" I19.0C
D2	VAR. I19.0C
E1	4" B25.0C
J1	8" ABC
P	PRIME COAT
R1	2'-6" C&G
R2	1'-6" C&G
R3	SBG
R4	5" CONC. ISLAND
T	EARTH MATERIAL
U	EXIST PAVEMENT
V1	1 1/2" MILL
V2	INCIDENTAL MILLING
W	WEDGING



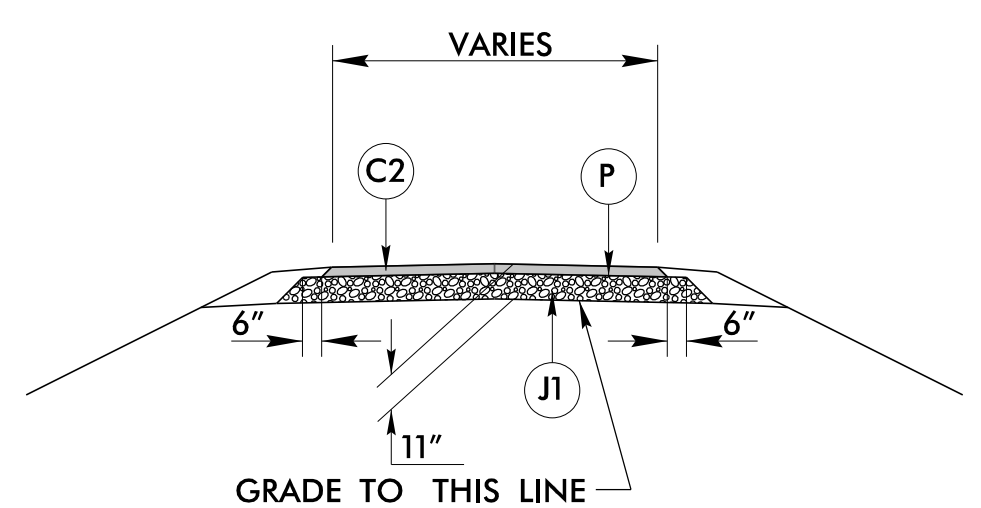
TYPICAL SECTION NO. 8
-L- STA. 132+00.00 TO -L- STA. 137+00.00



TYPICAL SECTION NO. 9A
USE IN CONJUNCTION WITH TYPICAL SECTION NO. 9
SEE PLANS FOR LOCATION



TYPICAL SECTION NO. 9
-DWI- STA. 10+24.36 TO -DWI- STA. 11+30.00



TYPICAL SECTION NO. 10
TEMPORARY PAVEMENT (LESS THAN 1.5 YEARS)
SEE TRAFFIC CONTROL PLANS OR AS DIRECTED
BY THE ENGINEER

4:07:39 PM R:\Projects\19-77-Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\US701-L-rd-j-tyr.dgn

8/17/99

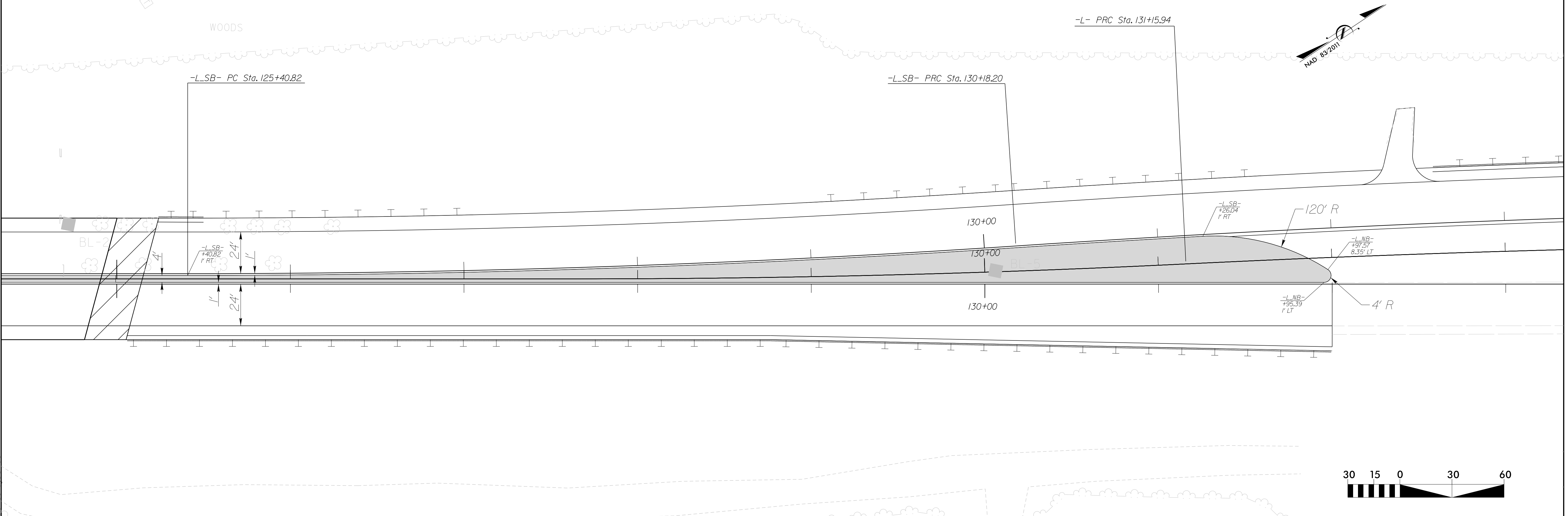
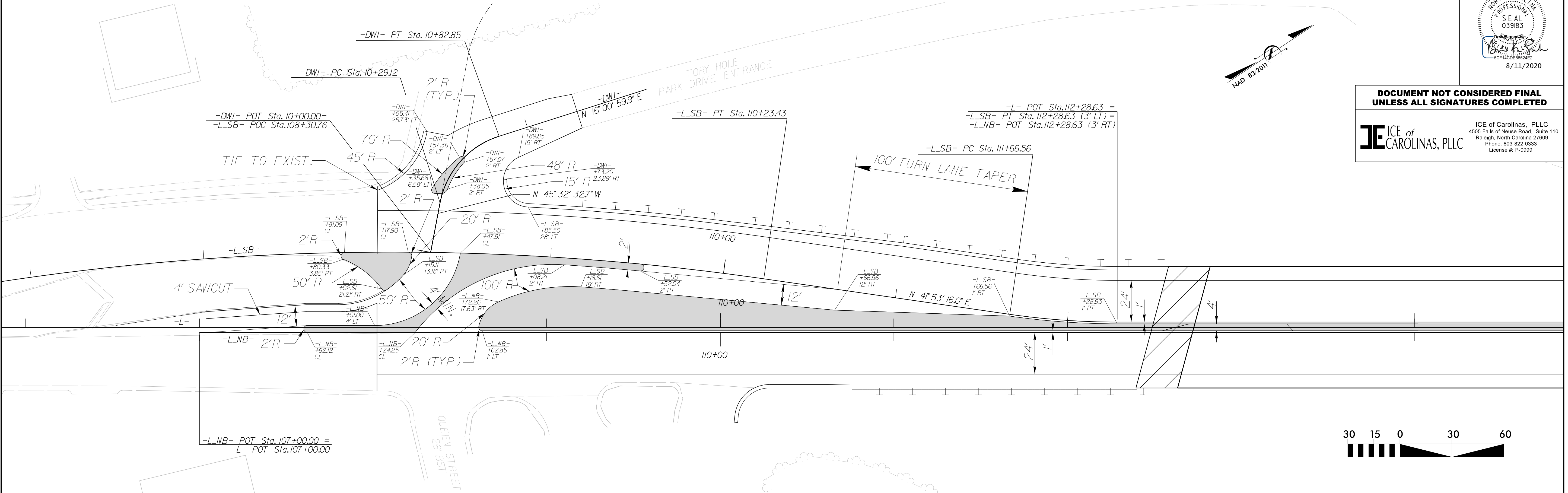
DIMENSIONING DETAIL SHEET

PROJECT REFERENCE NO. 48793.31	SHEET NO. 2B
RW SHEET NO.	

ROADWAY DESIGN ENGINEER

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

ICE of CAROLINAS, PLLC
ICE of Carolinas, PLLC
4505 Falls of Neuse Road, Suite 110
Raleigh, North Carolina 27609
Phone: 803-822-0333
License #: P-0999

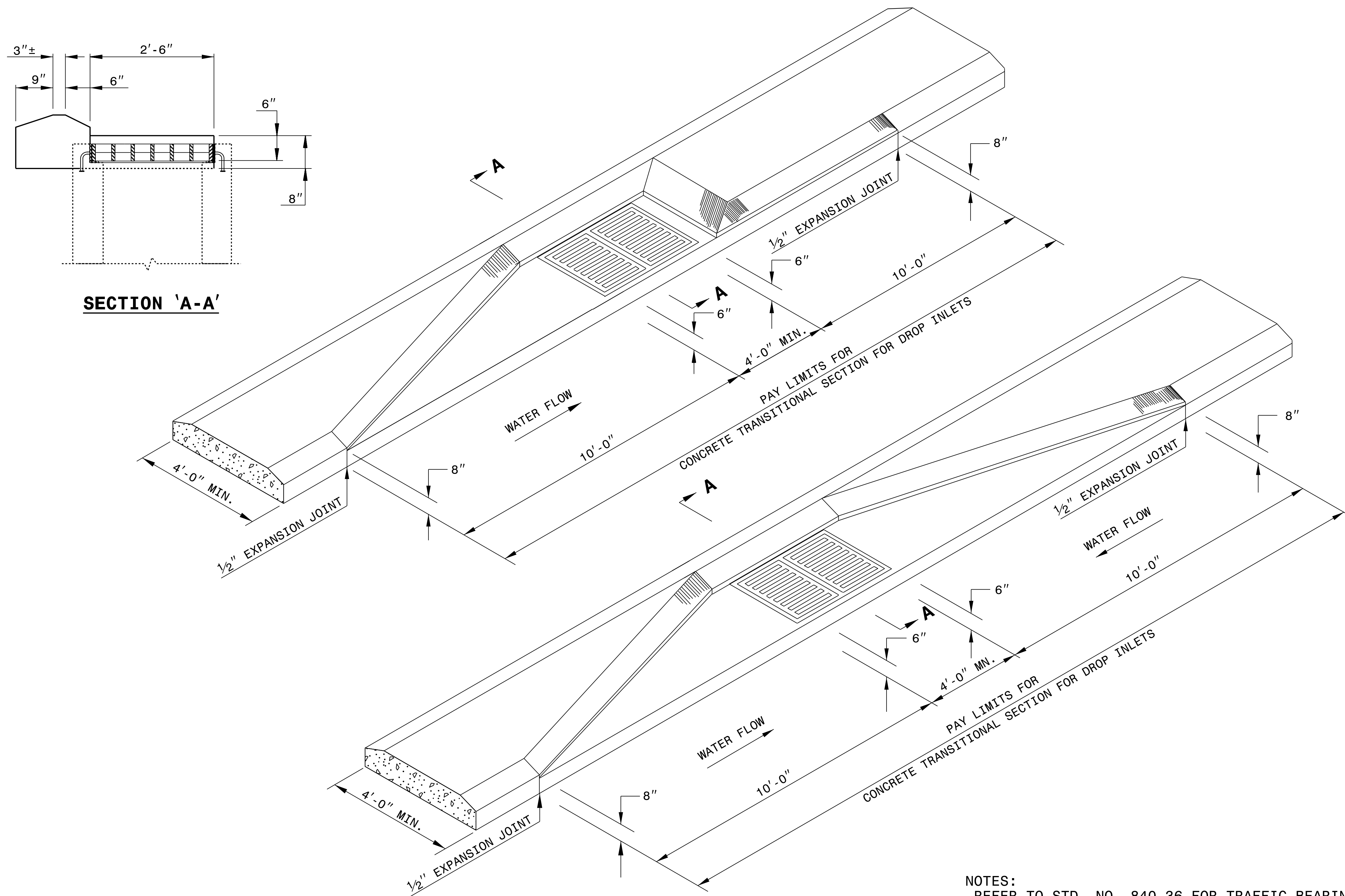


5:30:43 PM
 R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\Plansheets\US701_rdy_psh2B_DETAL.dgn
 Corbin, Jackson

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

ENGLISH DETAIL DRAWING FOR
**METHOD FOR PLACEMENT OF
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1
852D06



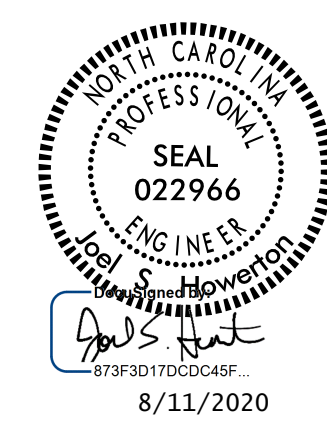
NOTES:
-REFER TO STD. NO. 840.36 FOR TRAFFIC BEARING DRAINAGE STRUCTURE.
-REFER TO STD. NO. 840.37 FOR STEEL GRATE AND FRAME.

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

ENGLISH DETAIL DRAWING FOR
**METHOD FOR PLACEMENT OF
DROP INLETS IN CONCRETE ISLANDS**

SHEET 1 OF 1
852D06

16-JUL-2018 09:47 S:\Contracts\Projects\Special\Details\kempf\english\852D0601.dgn J:\power\ton AT_CSD-252595



CONTRACT STANDARDS AND DEVELOPMENT UNIT
Office 919-707-6950 FAX 919-250-4119

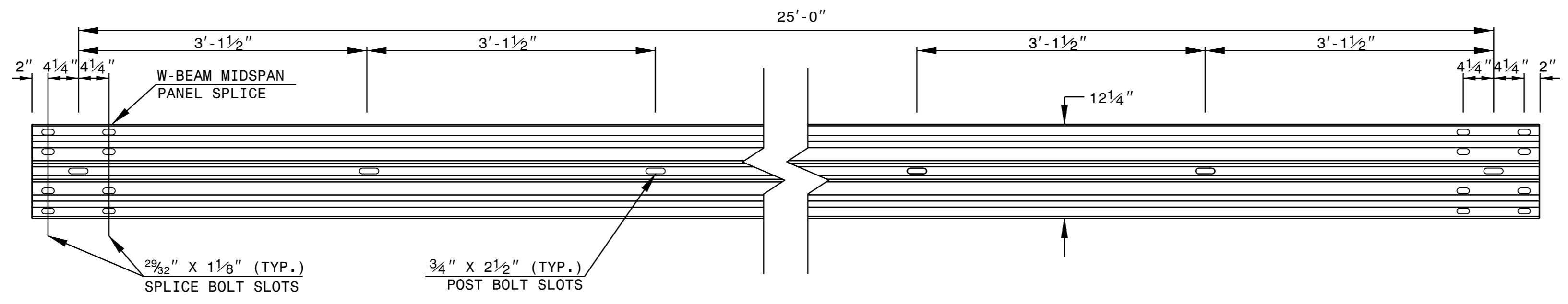
SEE TITLE PLATE

ORIGINAL BY: KKEMPF DATE: 8/2/10
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.: KKEMPF\ENGLISH\852D0601.DGN

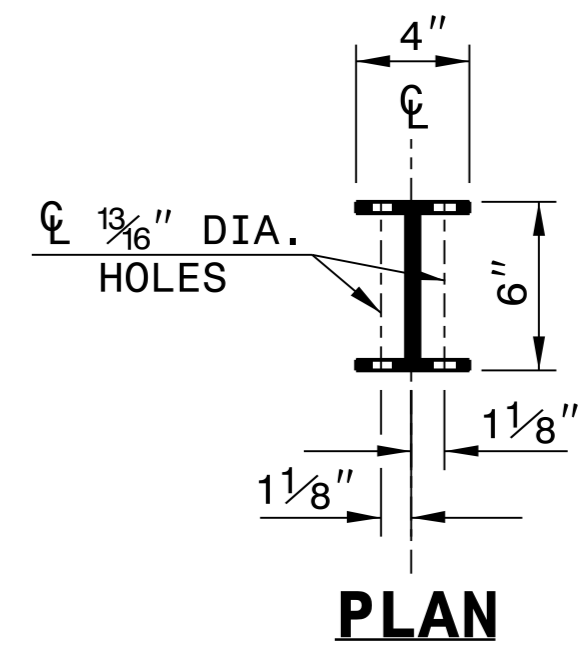
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

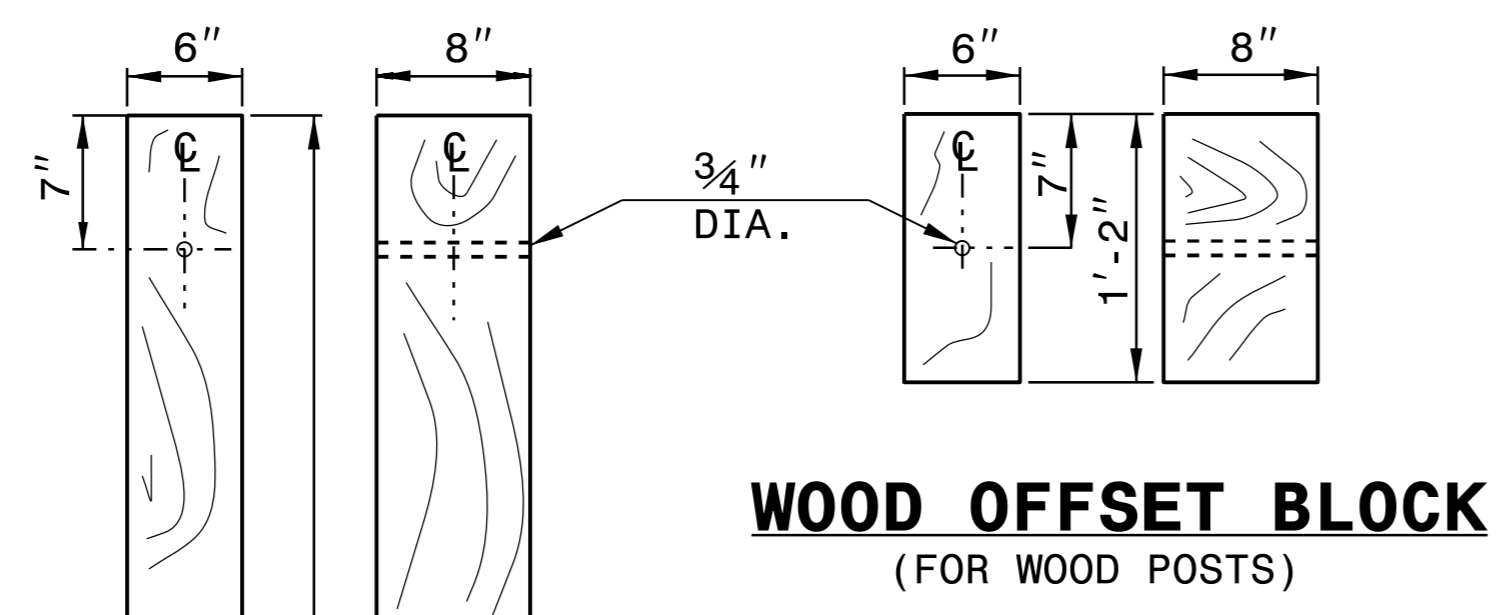
SHEET 6 OF 8
862D02



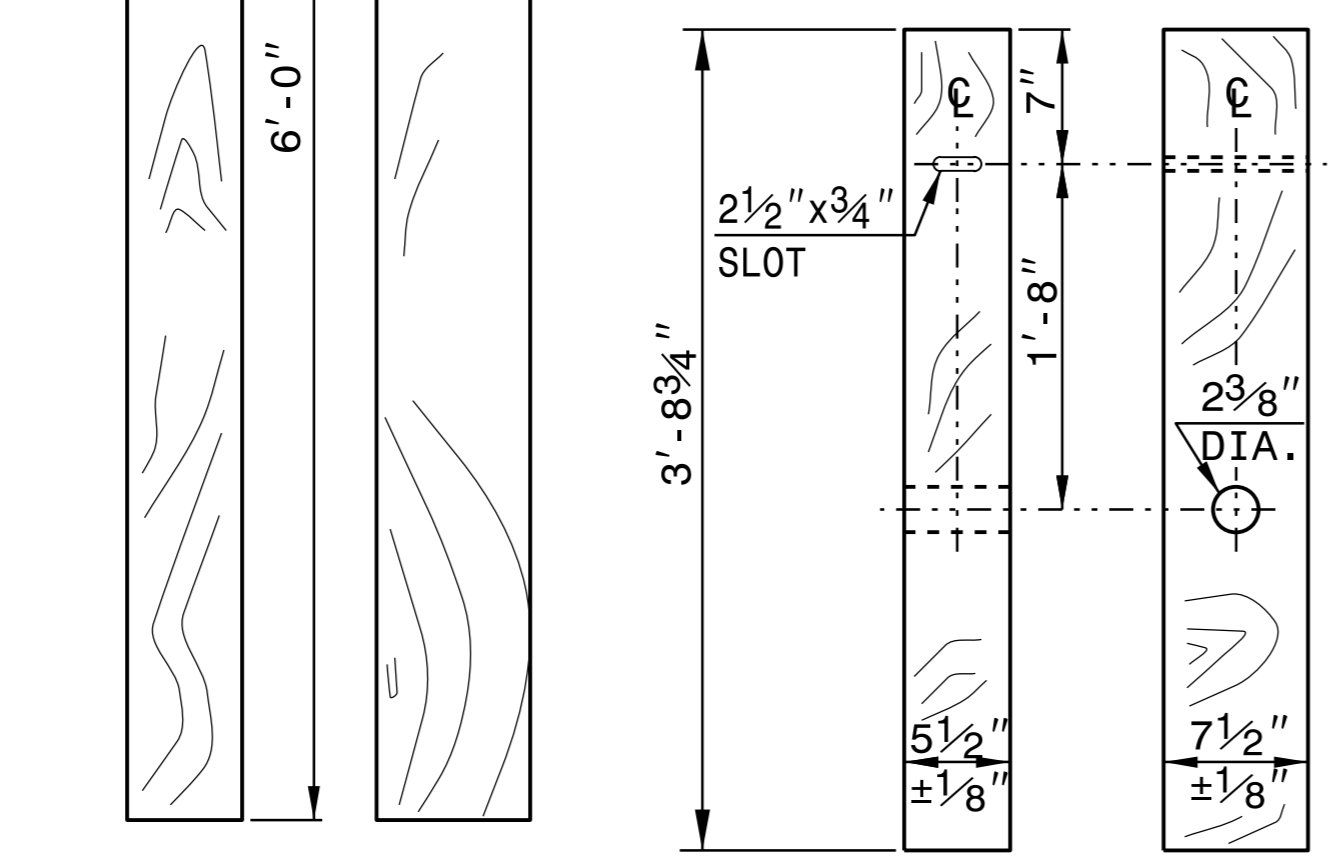
STANDARD W-BEAM GUARDRAIL



PLAN

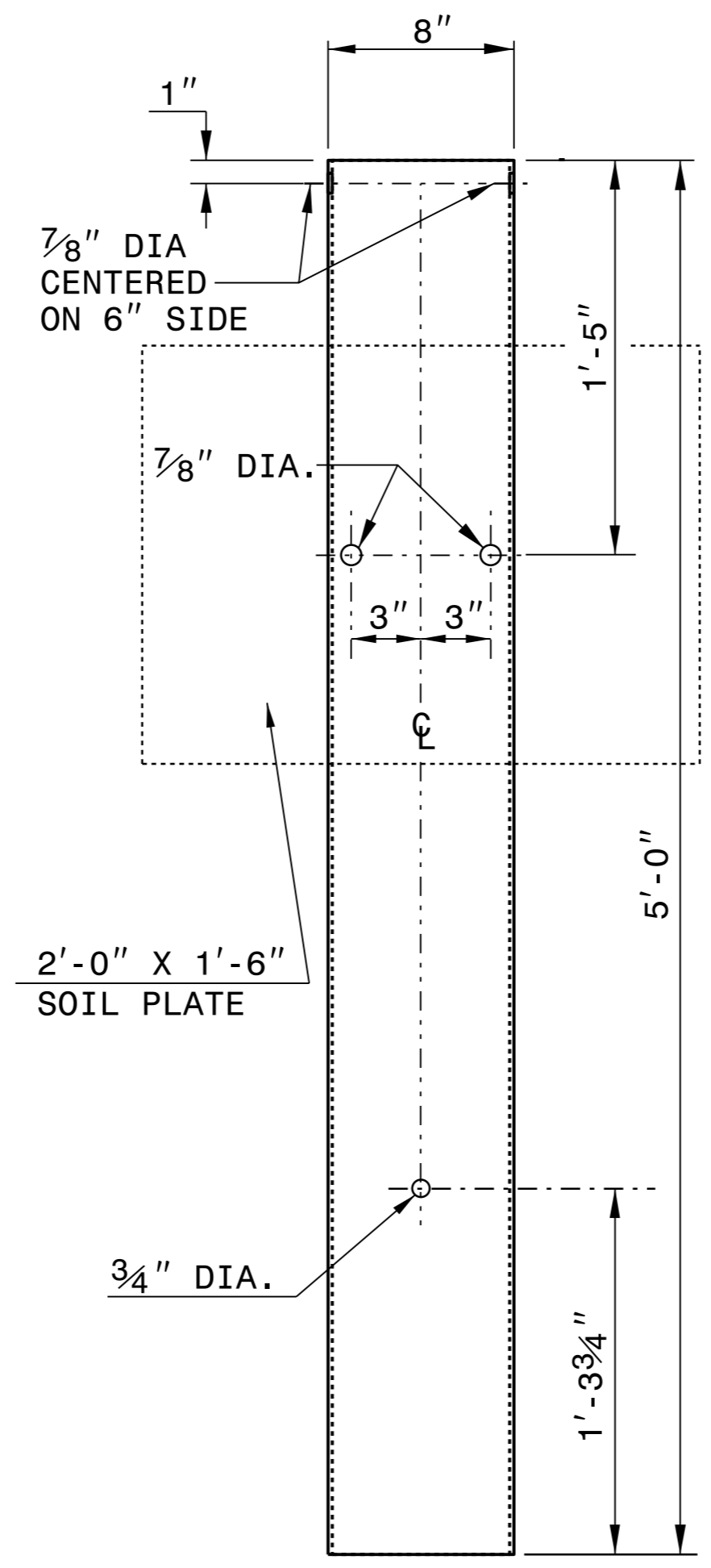


**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

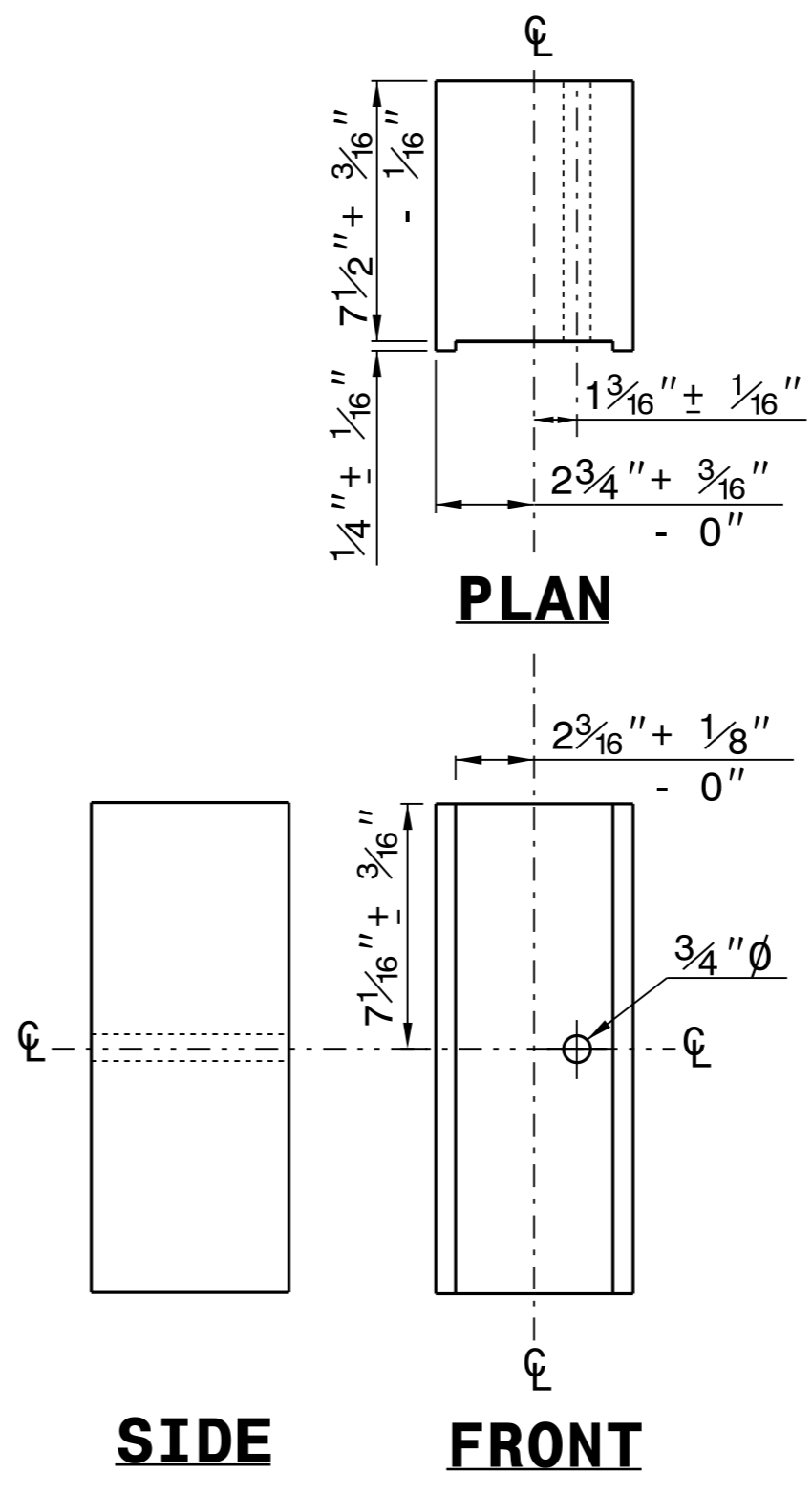


**STANDARD
LINE POST**

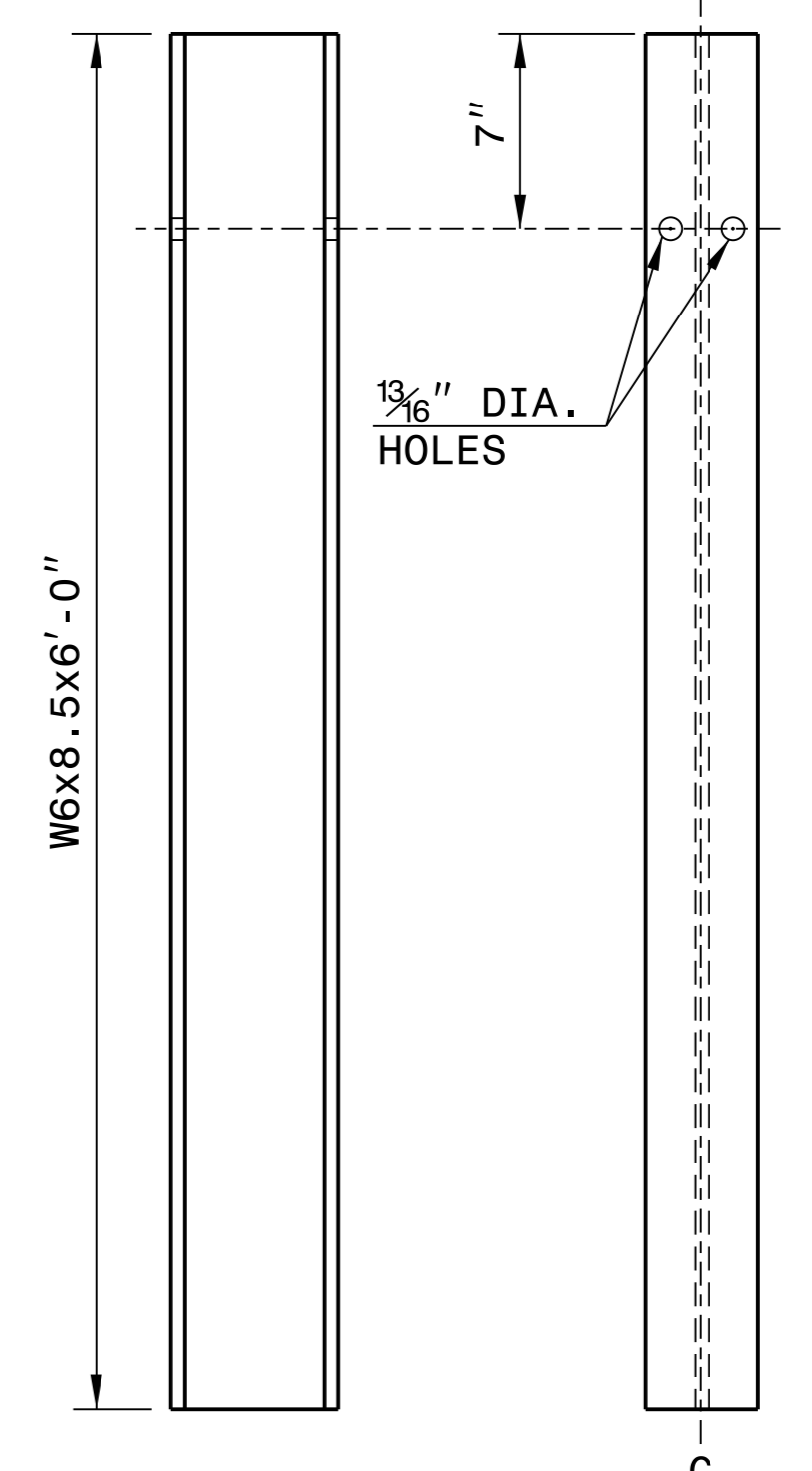
**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**



**ROUTED
OFFSET BLOCK**



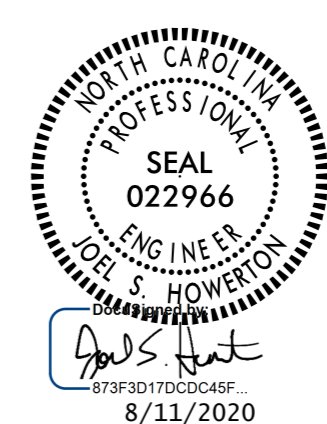
"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

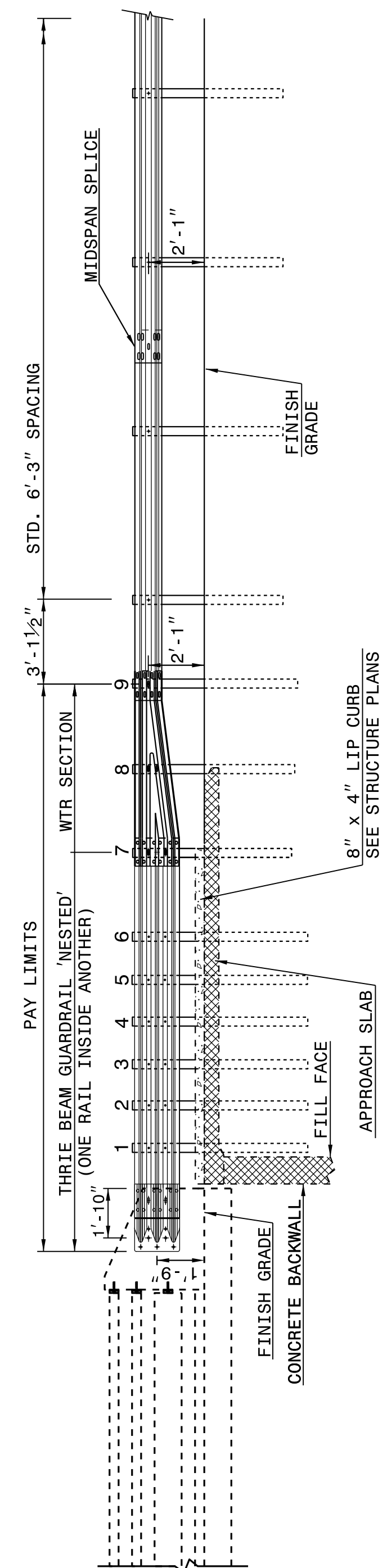
ORIGINAL BY: J. HOWERTON	DATE: 3-7-2018
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.:	

I4-DEC-2017 10:36 S:\Contracts\Special Details\Standard Drawings\Division 8\08662d0301.dgn Jhowerton AT:USD-292595

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

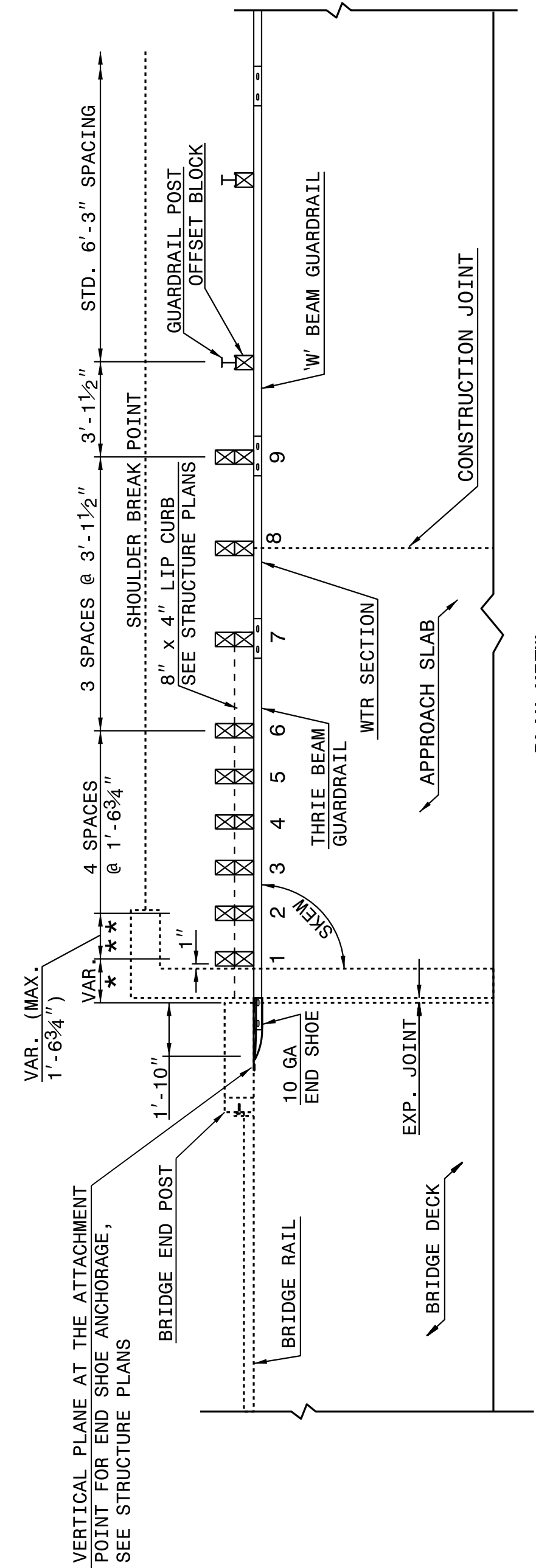
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03



ELEVATION

NOTE: **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

SHEET 1 OF 7 862D03

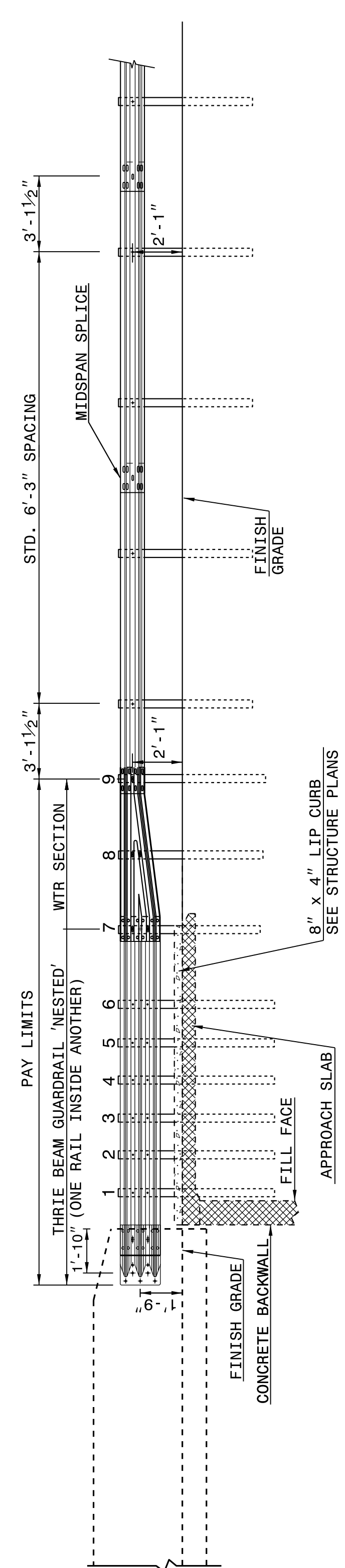
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE

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

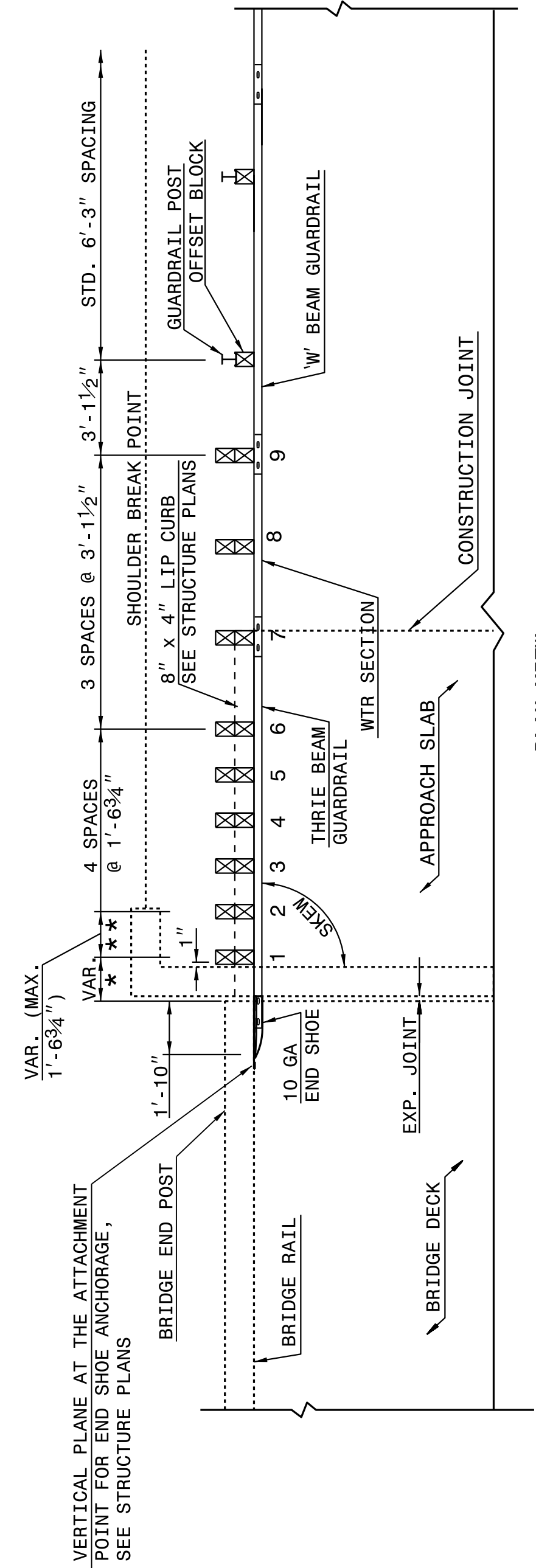
ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03



ELEVATION

NOTE: **POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER. *THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11 1/2" IF CONCRETE BACKWALL IS NOT PRESENT. -SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" X 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB. -MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER). -LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW. -SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.



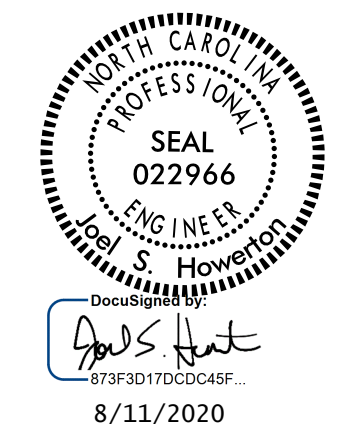
PLAN VIEW

GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER

SHEET 2 OF 7 862D03

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

ROADWAY DETAIL DRAWING FOR STRUCTURE ANCHOR UNITS GUARDRAIL ANCHOR UNIT, TYPE III FOR ATTACHMENT TO RAIL ON BRIDGE - SUB REGIONAL TIER



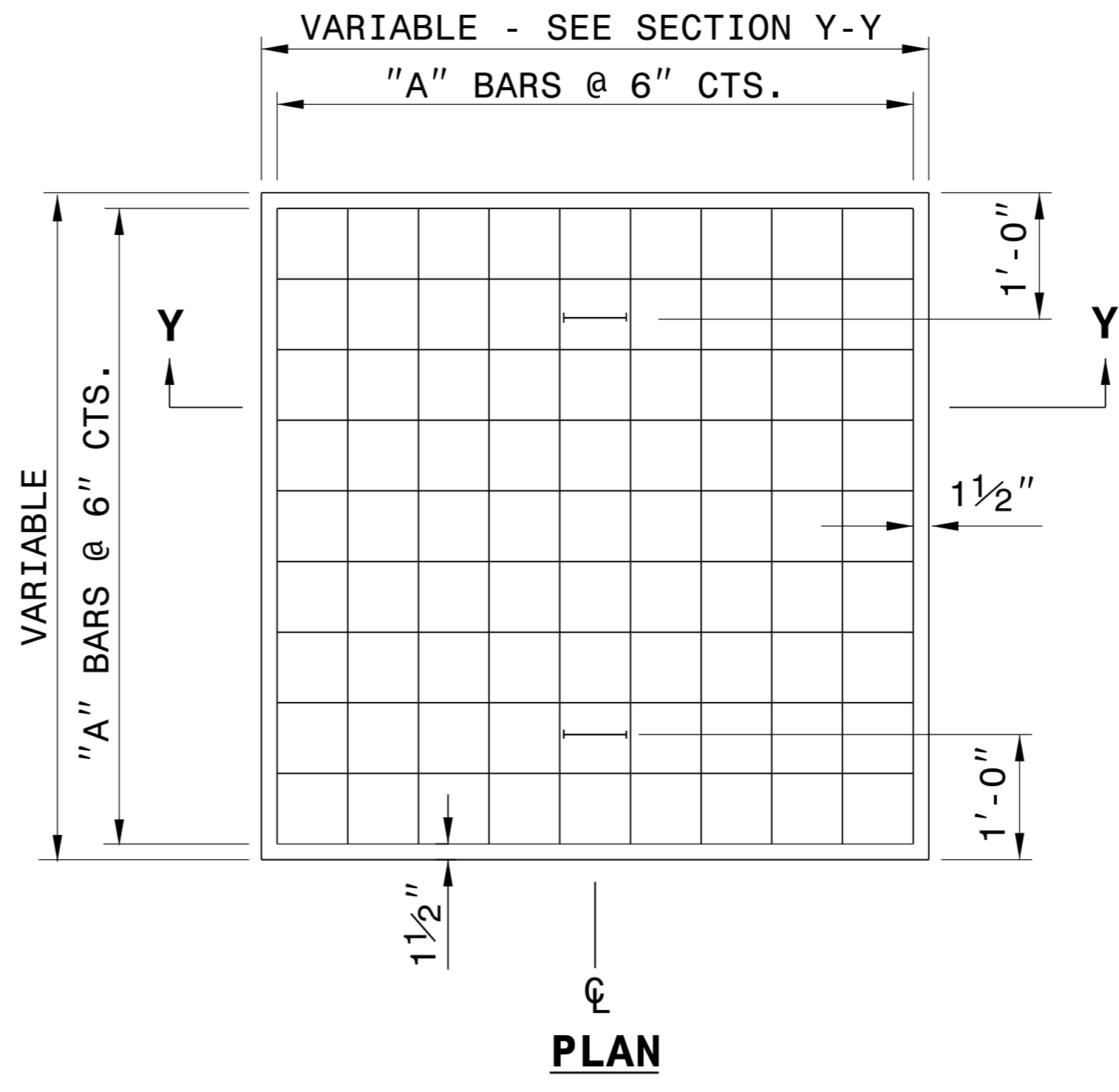
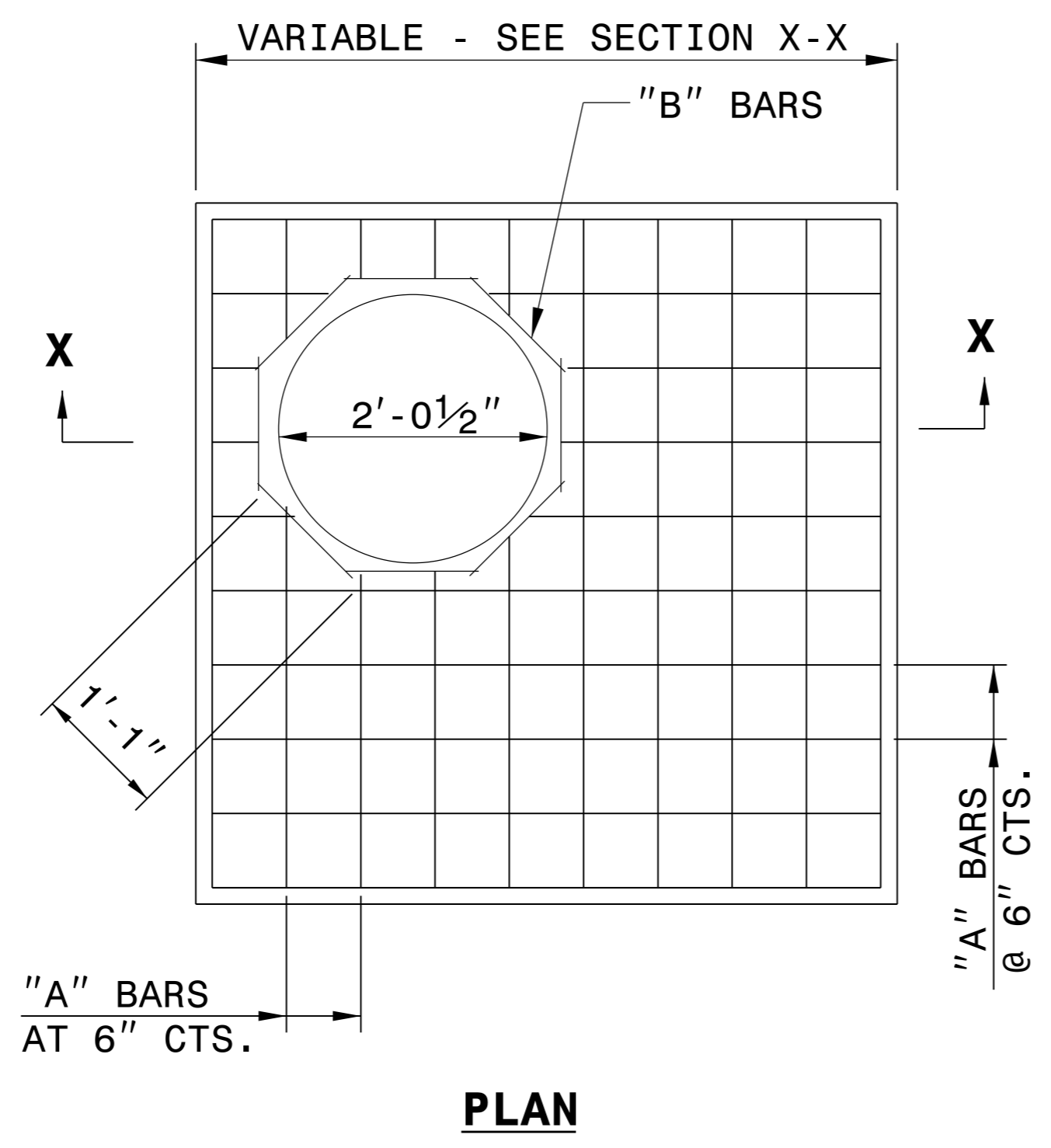
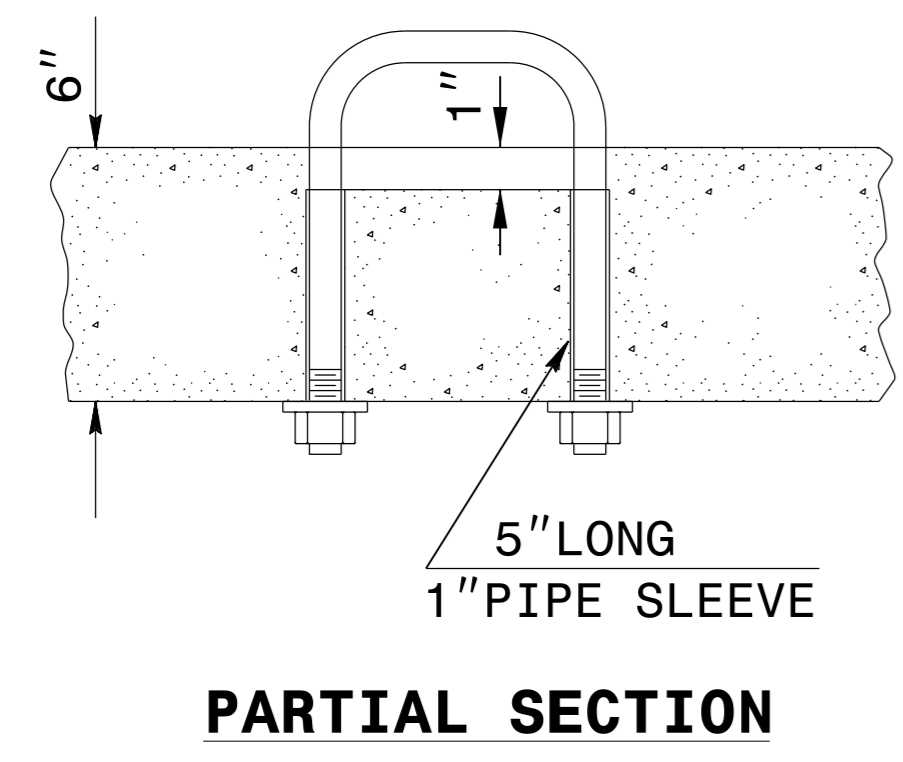
8/11/2020

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J HOWERTON DATE: 06-22-12 MODIFIED BY: DATE: CHECKED BY: DATE: FILE SPEC.: DATE:



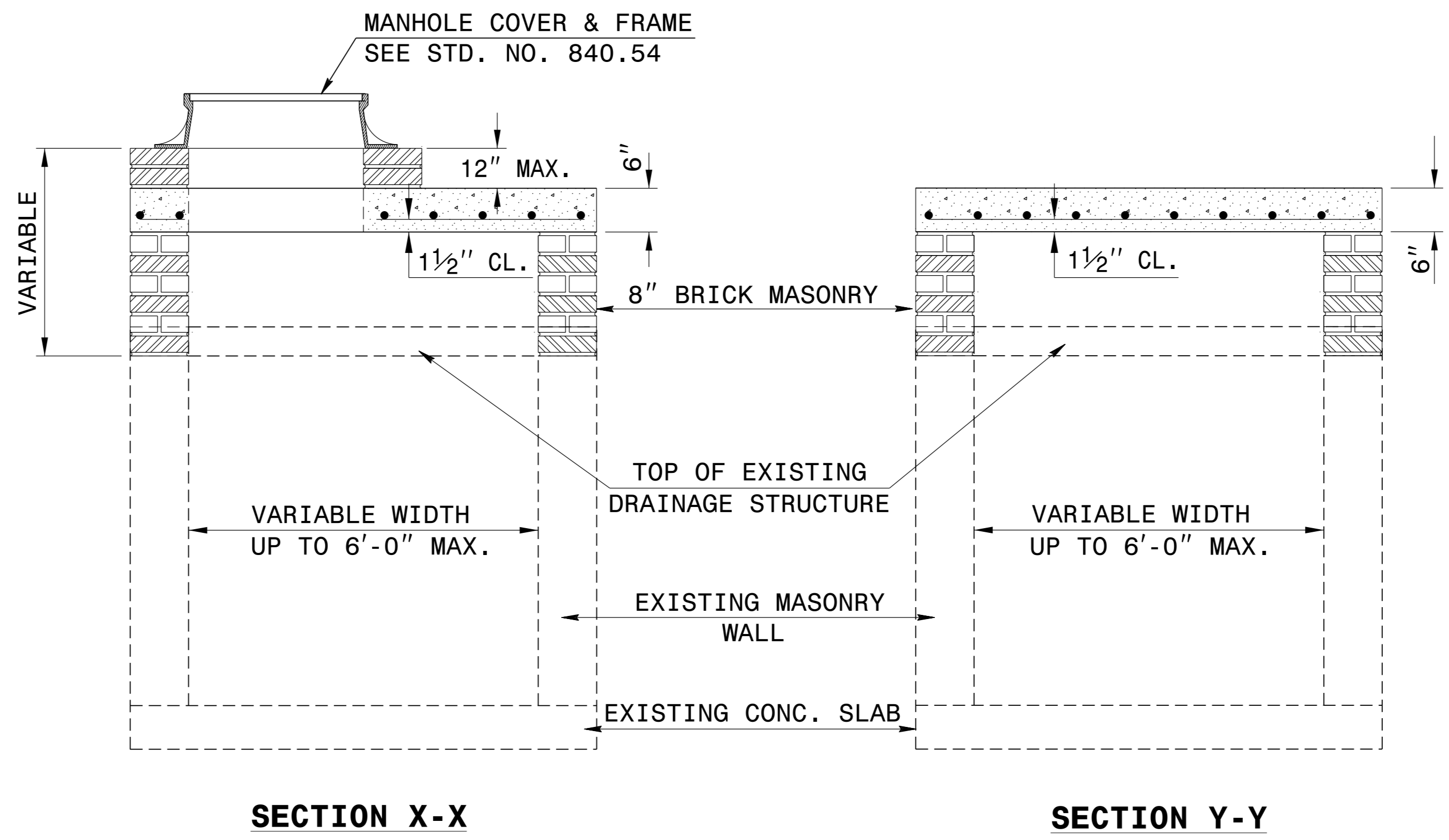
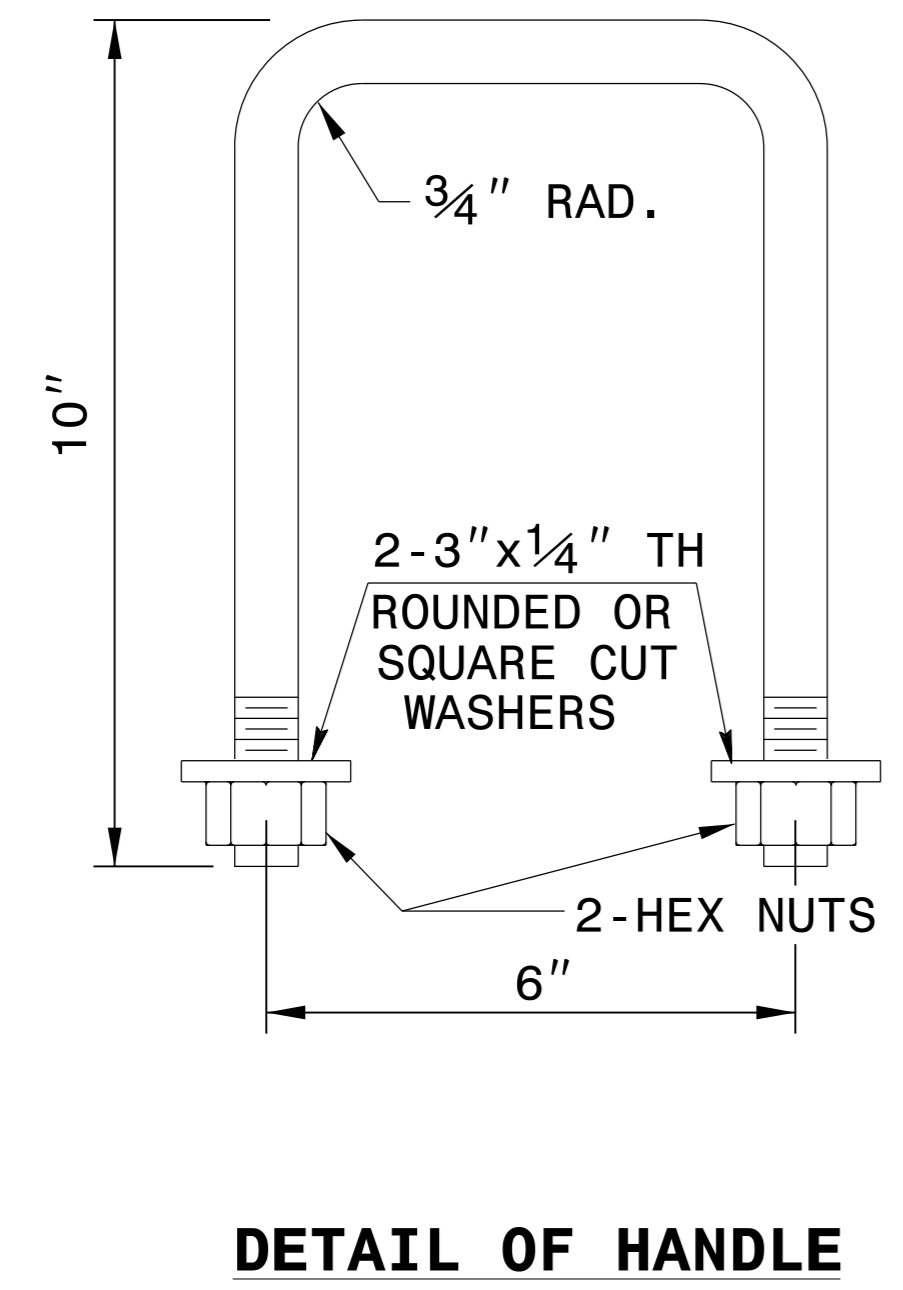
GENERAL NOTES:

CONSTRUCT IN ACCORDANCE WITH SECTION 859 OF THE STANDARD SPECIFICATIONS.

THE DIMENSIONS FOR THE EXISTING BOXES ARE APPROXIMATE AND MAY VARY SLIGHTLY.

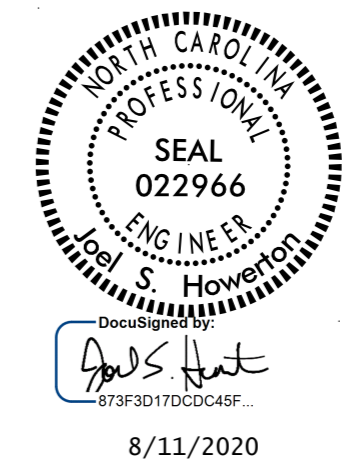
DETAIL INTENDED FOR NON-TRAFFIC BEARING DRAINAGE STRUCTURES.

BILL OF MATERIALS				
REINFORCING STEEL				
CODE	SIZE	QTY.	LENGTH	REINF. STEEL LBS.
A	#4	20	4'-6"	60.12
B	#4	8	1'-1"	5.79
TOTAL				65.91 *
MASONRY				CU YDS
TOP SLAB CONCRETE CLASS "B"				.4326 *
BRICK MASONRY PER FT HT (MIN)				.4111



*** NOTE:**
QUANTITIES BASED ON 3'-6" X 3'-6" DRAINAGE STRUCTURE. ADJUST QUANTITIES FOR LARGER STRUCTURES AND MANHOLE CONSTRUCTION.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



CONTRACT STANDARDS AND DEVELOPMENT UNIT	
Office 919-707-6950	FAX 919-250-4119
DETAIL TO CONVERT EXISTING DI, CB, OTCB or GI TO JUNCTION BOX (MANHOLE OPTIONAL)	
ORIGINAL BY: T.S.S.	DATE: NOV. 1997
MODIFIED BY: T.S.S.	DATE: FEB. 2000
CHECKED BY:	DATE:
FILE SPEC.: ds174:/usr/details/stand/boxtojbe.dgn	

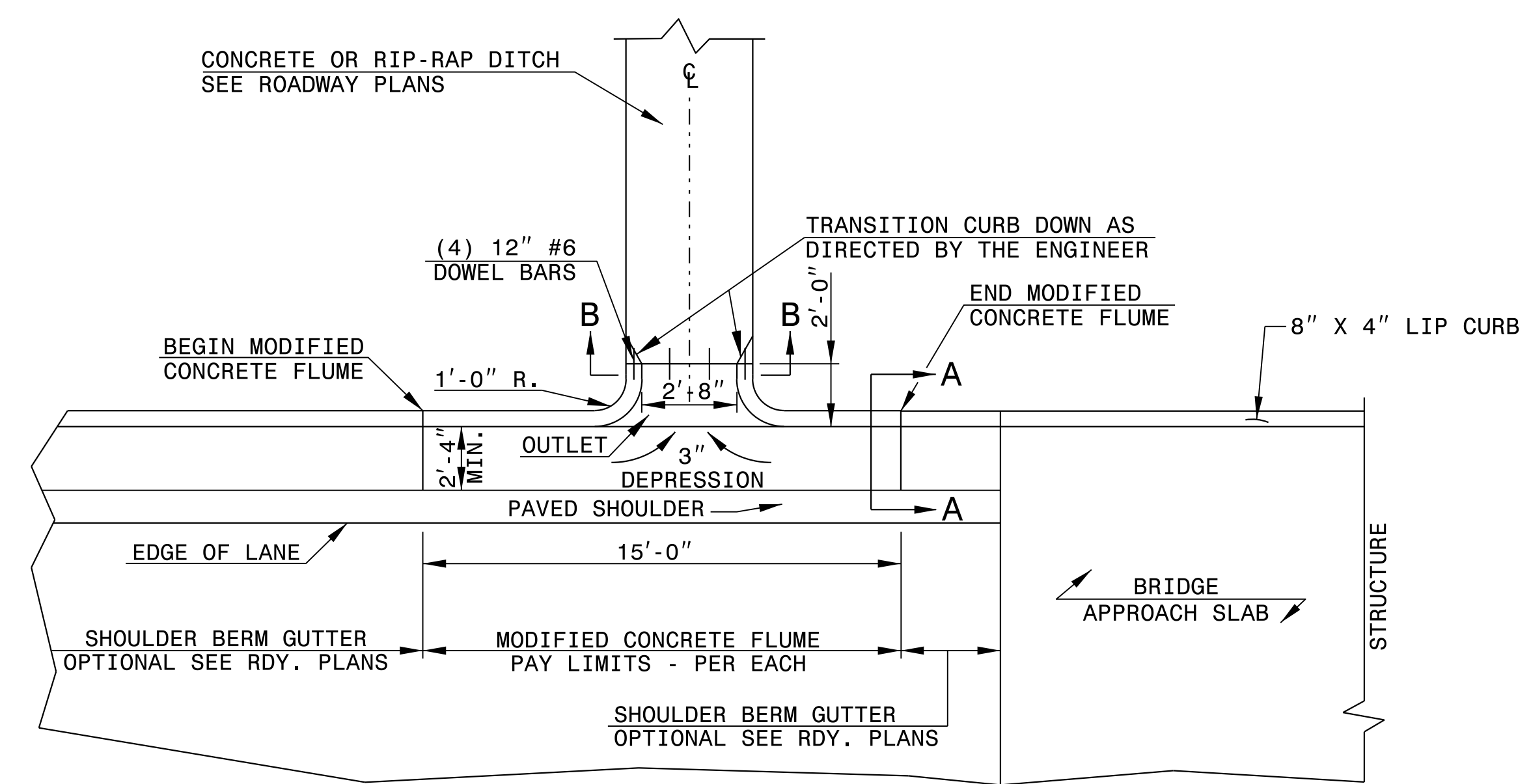
11/11/2020 10:58:11 AM
 8739301700045F...
 7/11/2020 10:58:11 AM
 8739301700045F...

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

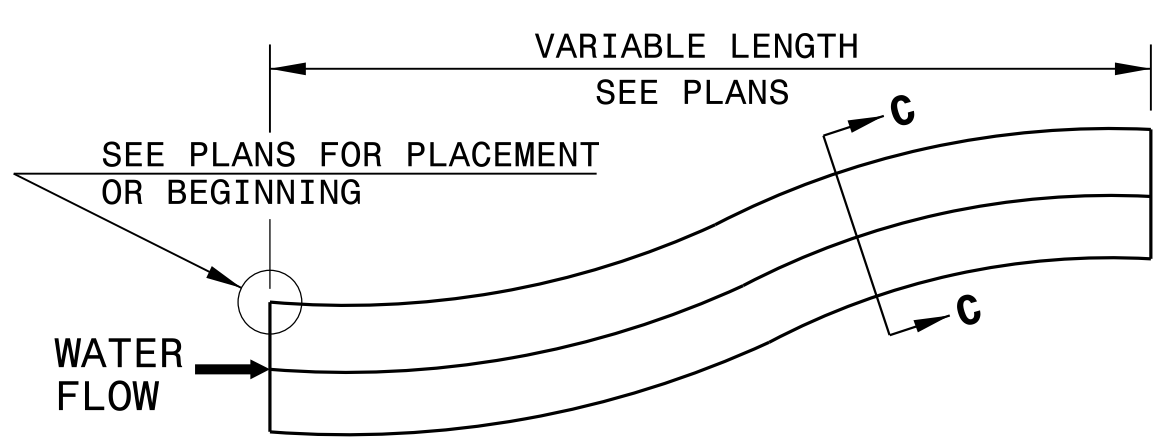
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH

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

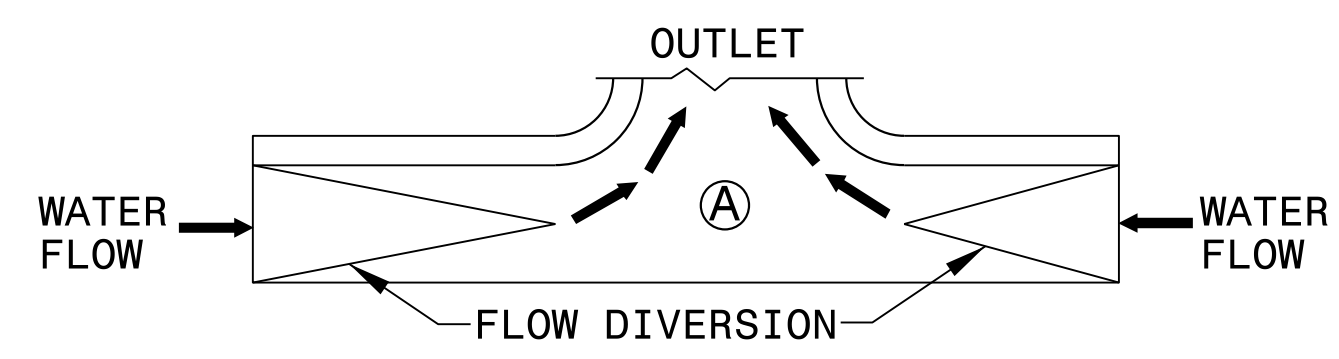
ENGLISH DETAIL DRAWING FOR MODIFIED CONCRETE FLUME WITH CONCRETE OR RIP-RAP DITCH



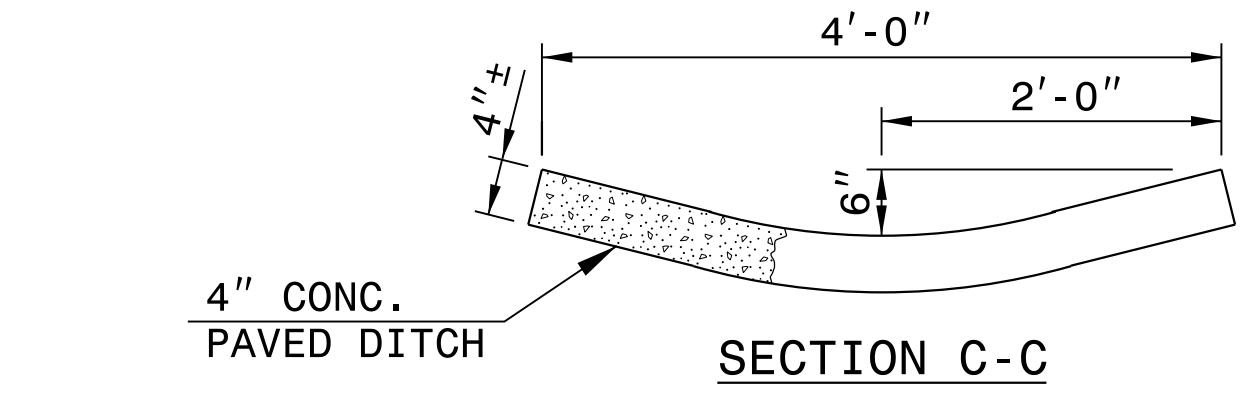
PLAN VIEW



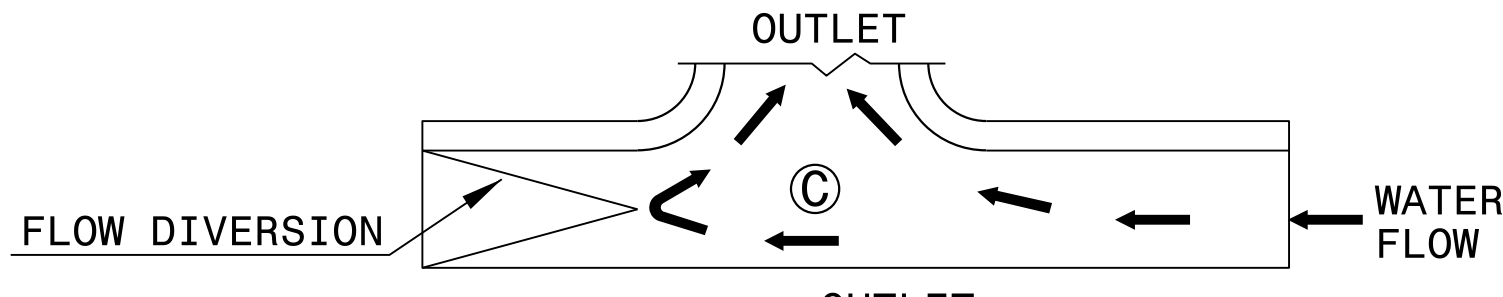
DOWNGRADE OR SAG



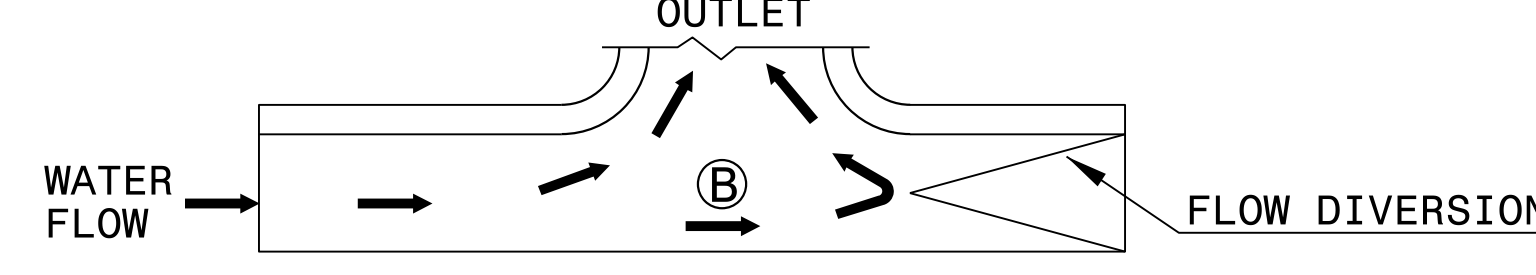
SAG



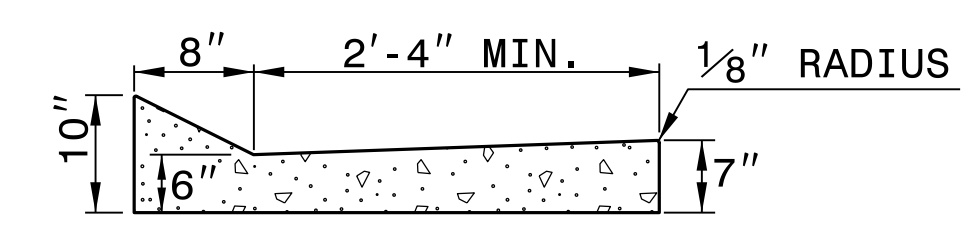
SECTION C-C



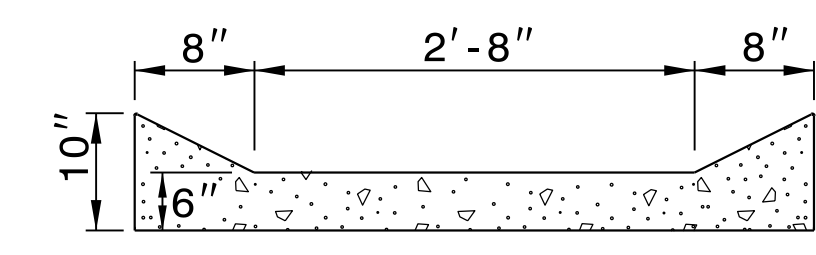
FLOW DIVERSION EXAMPLES



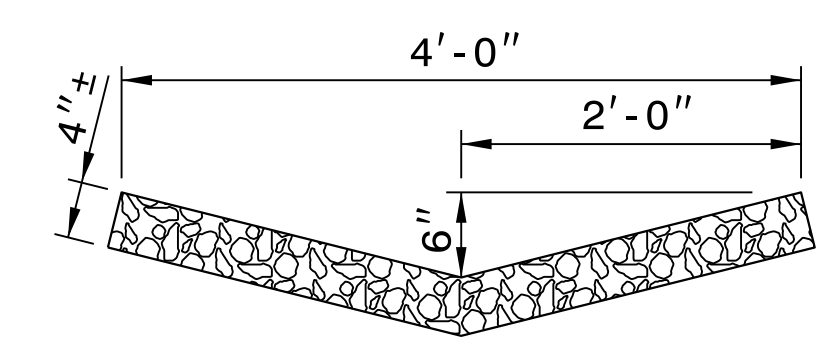
DOWN GRADE



SECTION A-A



SECTION B-B



RIP-RAP LINED DITCH

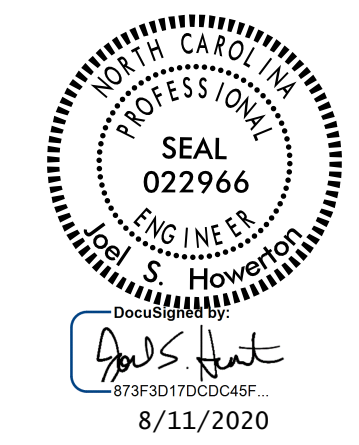
- NOTES: - CONSTRUCT MODIFIED CONCRETE FLUME AND SHOULDER BERM GUTTER IN ACCORDANCE WITH THIS DETAIL. - CONSTRUCT CONCRETE DITCH IN ACCORDANCE WITH STD. DWG. NO. 850.01. - CONSTRUCT RIP RAP LINED DITCH IN ACCORDANCE WITH THIS DETAIL, IF CALLED FOR IN PLANS. - CONCRETE OR RIP RAP LINED DITCH SHALL BE THE TYPE AND LENGTH SPECIFIED BY THE ROADWAY PLANS. THE DITCH SHALL TERMINATE AS SHOWN ON THE PLANS. IF NO TERMINATION IS INDICATED PLACE RIP-RAP AT THE END OF THE DITCH AS INDICATED BY STD. DWG. 876.02 FOR AN 18" PIPE. TRANSITIONS FROM THE DITCH TO TERMINATION SHALL BE AS DIRECTED BY THE ENGINEER. - MODIFICATIONS SHALL BE AS DICTATED BY SITE CONDITIONS AND DIRECTED BY THE ENGINEER.

SHEET 1 OF 1 MODFLMDTCH

SHEET 1 OF 1 MODFLMDTCH

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS AND DEVELOPMENT UNIT Office 919-707-6950 FAX 919-250-4119 SEE PLATE FOR TITLE ORIGINAL BY: E.E. Ward DATE: Apr. 2002 MODIFIED BY: J.S. Howerton DATE: October 2017 CHECKED BY: DATE: FILE SPEC.: w:\details\stand\modifiedflume.dgn

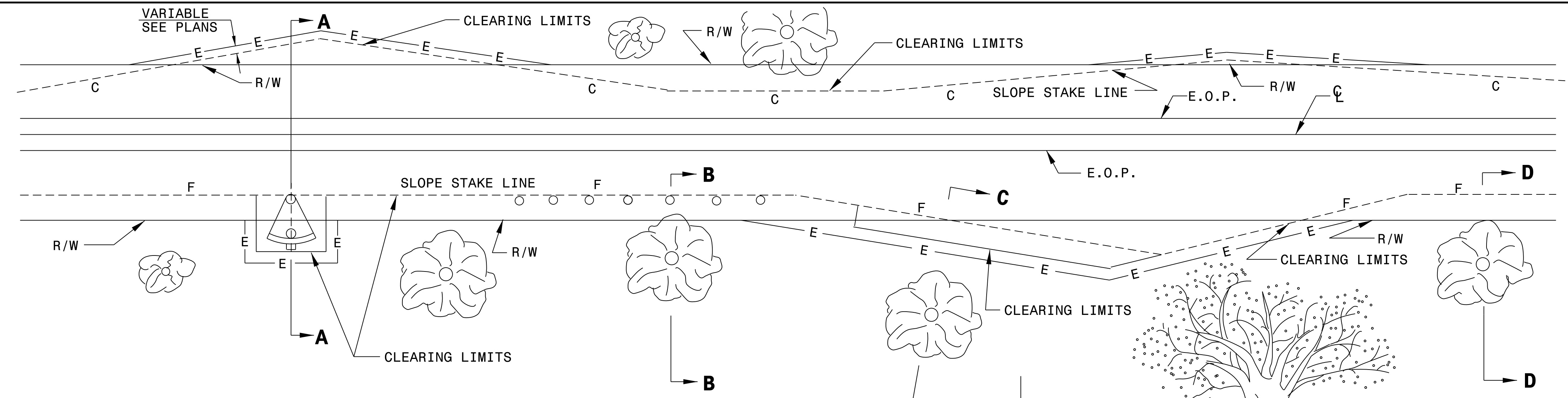


18-QCT-2017 1417 S:\Contracts\Contract\Stand\Stand\stand\modiflume.dgn J:\work\ton AH CS0-212095

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

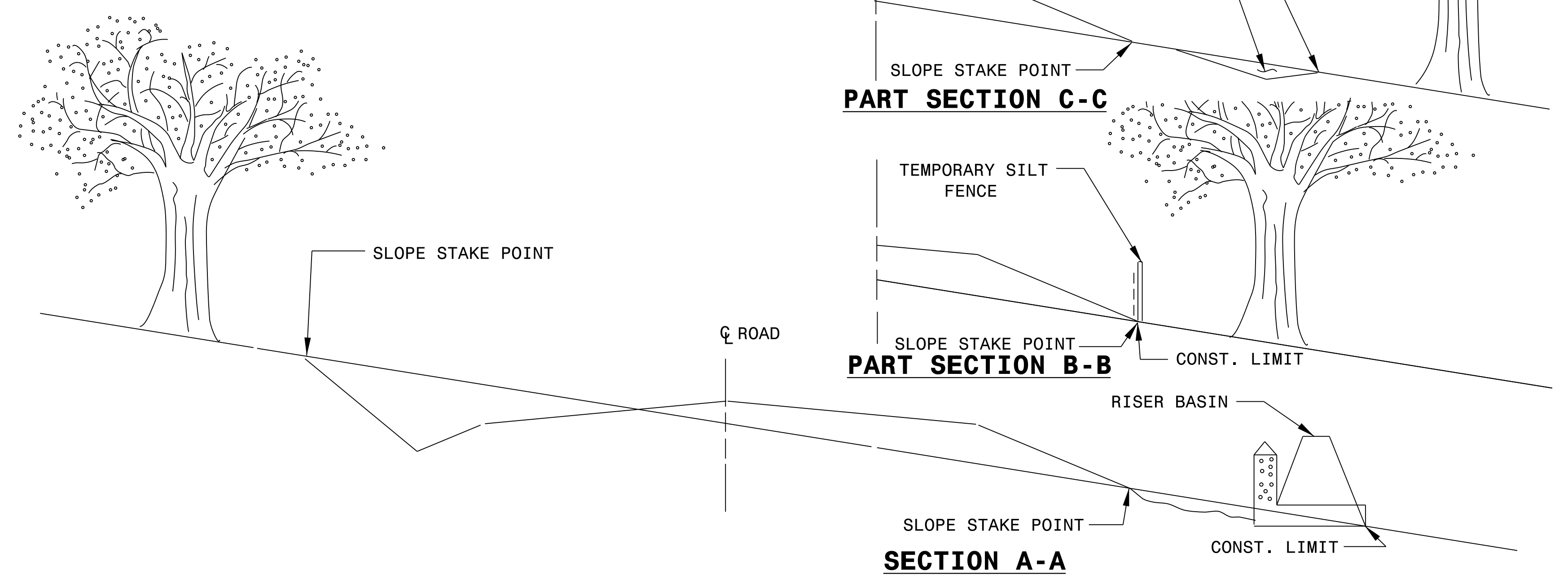
ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
 MODIFIED METHOD - II

SHEET 1 OF 1
200d02



- GENERAL NOTES:**
1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
 2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.
 3. FOR SECTIONS WITH WIDE MEDIANS WHERE TREES ARE TO REMAIN, CLEAR THE MEDIAN SIDE IN THE SAME MANNER AS ON THE OUTSIDE.
 4. HAND CLEAR AS NEEDED OUTSIDE THE SLOPE STAKE LINES FOR INSTALLATION OF EROSION CONTROL DEVICES.

CLEAR TO SLOPE STAKE LINE OR CONSTRUCTION LIMITS



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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
 MODIFIED METHOD - II

SHEET 1 OF 1
200d02



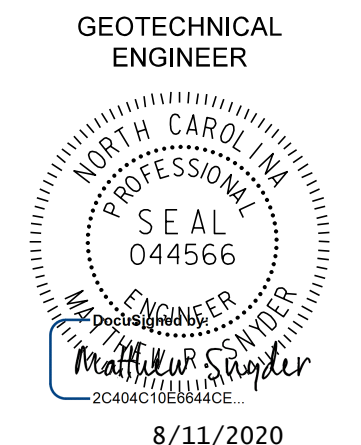
8/11/2020

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACT STANDARDS & DEVELOPMENT UNIT
STANDARDS AND SPECIAL DESIGN
 Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: rnbritt	DATE: 05-02-11
MODIFIED BY:	DATE:
CHECKED BY:	DATE:
FILE SPEC.: details/rnbritt/english/urban/u3615aconcretefume.dgn	

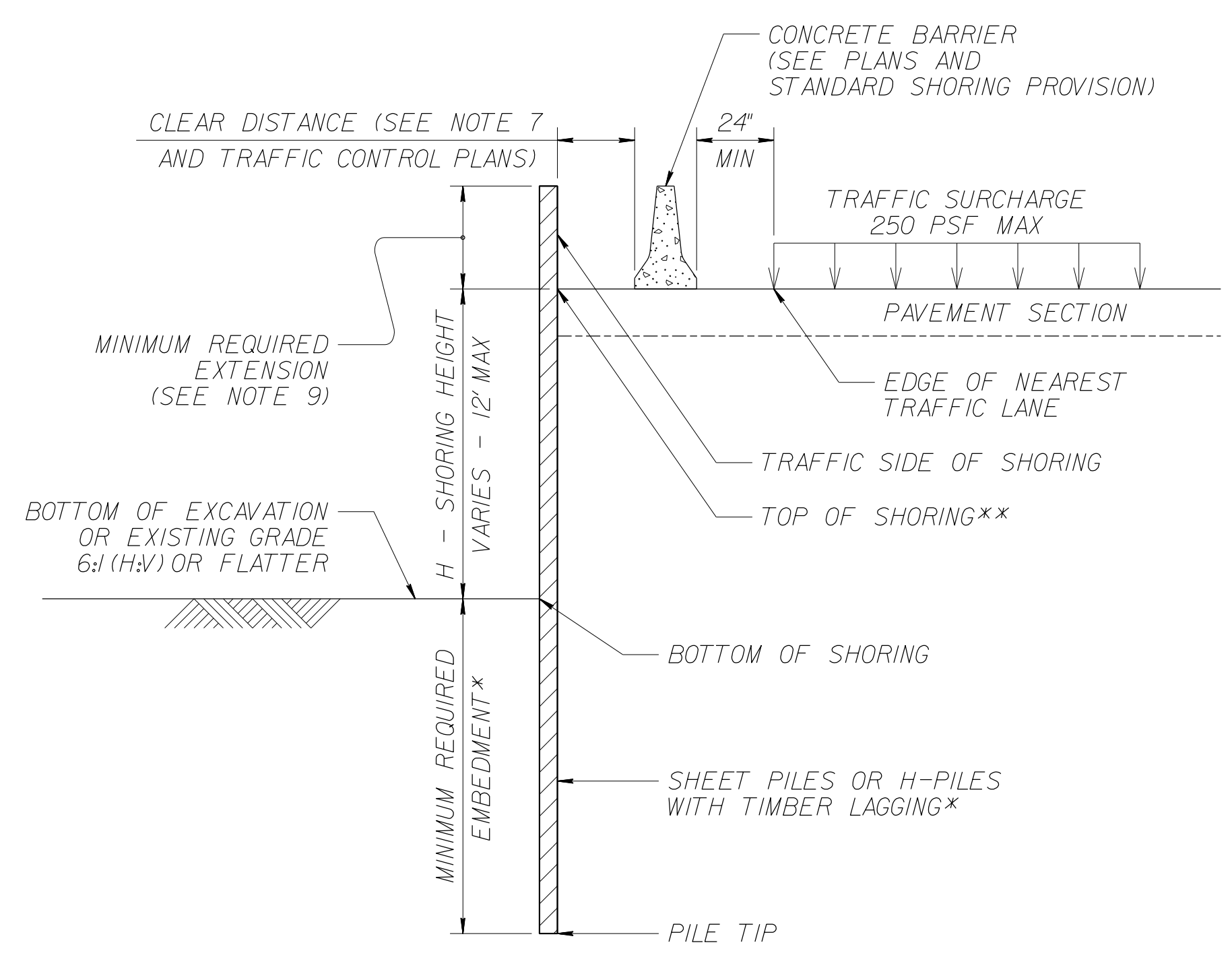
PROJECT REFERENCE NO. 48793.3.1	SHEET NO. 2G-1
GEOTECHNICAL ENGINEER  8/11/2020	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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 ³ /FT)	MINIMUM REQUIRED EMBEDMENT* (FT) (SEE NOTE 10)			MINIMUM REQUIRED EMBEDMENT (FT)	MINIMUM REQUIRED SECTION MODULUS (IN ³ /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		

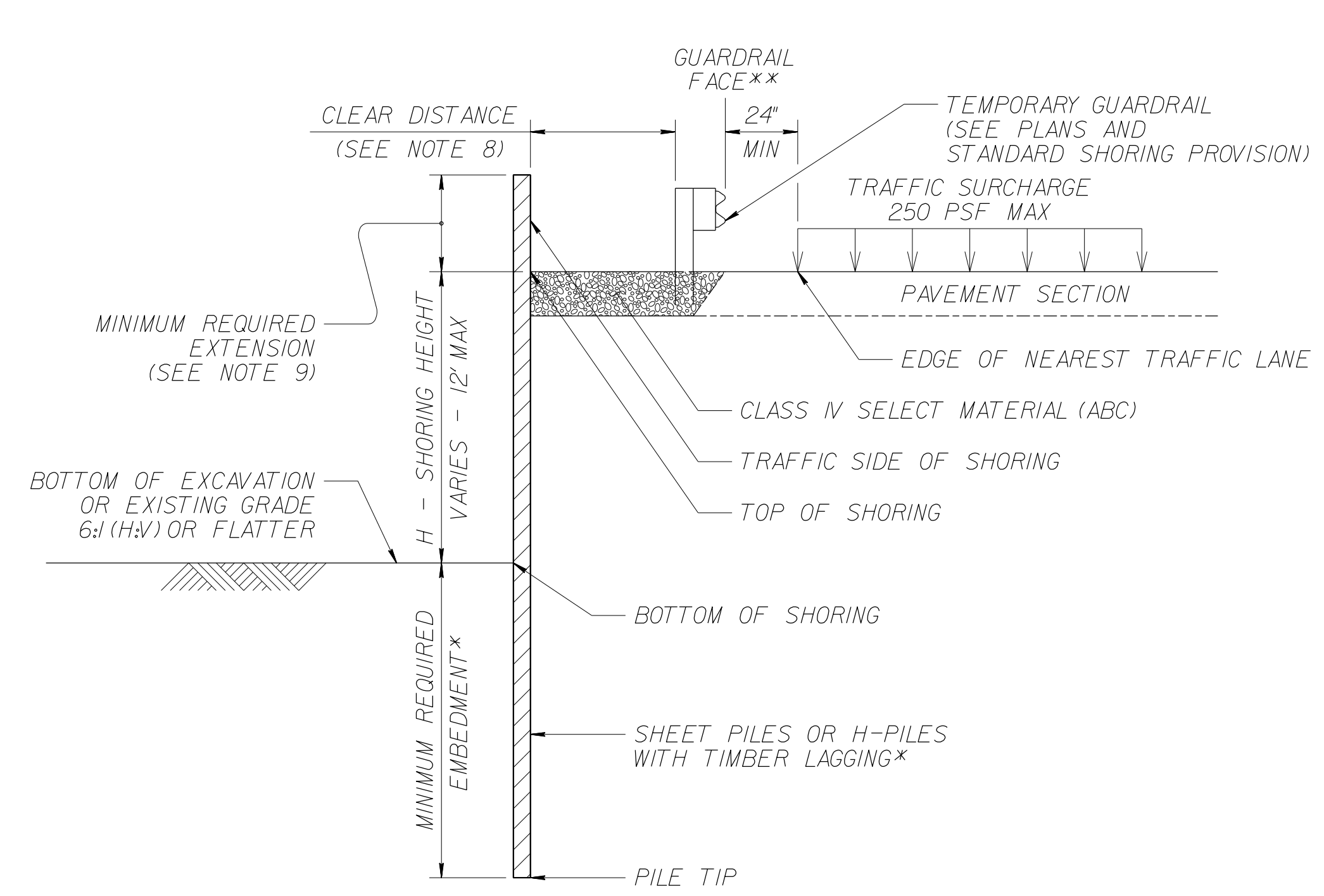
- NOTES:**
- AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING AS NOTED IN THE PLANS.
 - FOR STANDARD TEMPORARY SHORING, SEE STANDARD SHORING PROVISION.
 - STANDARD TEMPORARY SHORING IS BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
UNIT WEIGHT, $\gamma = 120$ PCF
FRICTION ANGLE, $\phi = 30$ DEGREES
COHESION, $c = 0$ PSF
 - DO NOT USE STANDARD TEMPORARY SHORING IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE.
 - DO NOT USE STANDARD TEMPORARY SHORING WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS WITHIN THE EMBEDMENT DEPTH.
 - 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.
 - 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".
 - 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".
 - MINIMUM REQUIRED EXTENSION IS 6' FOR "SLOPE OR SURCHARGE CASE WITH NO TRAFFIC IMPACT" AND 32' FOR "SURCHARGE CASE WITH TRAFFIC IMPACT".
 - 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.
 - 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
 - CONTACT THE ENGINEER IF PILES DO NOT ATTAIN THE MINIMUM REQUIRED EMBEDMENT.

MINIMUM REQUIRED EMBEDMENT AND SECTION MODULUS

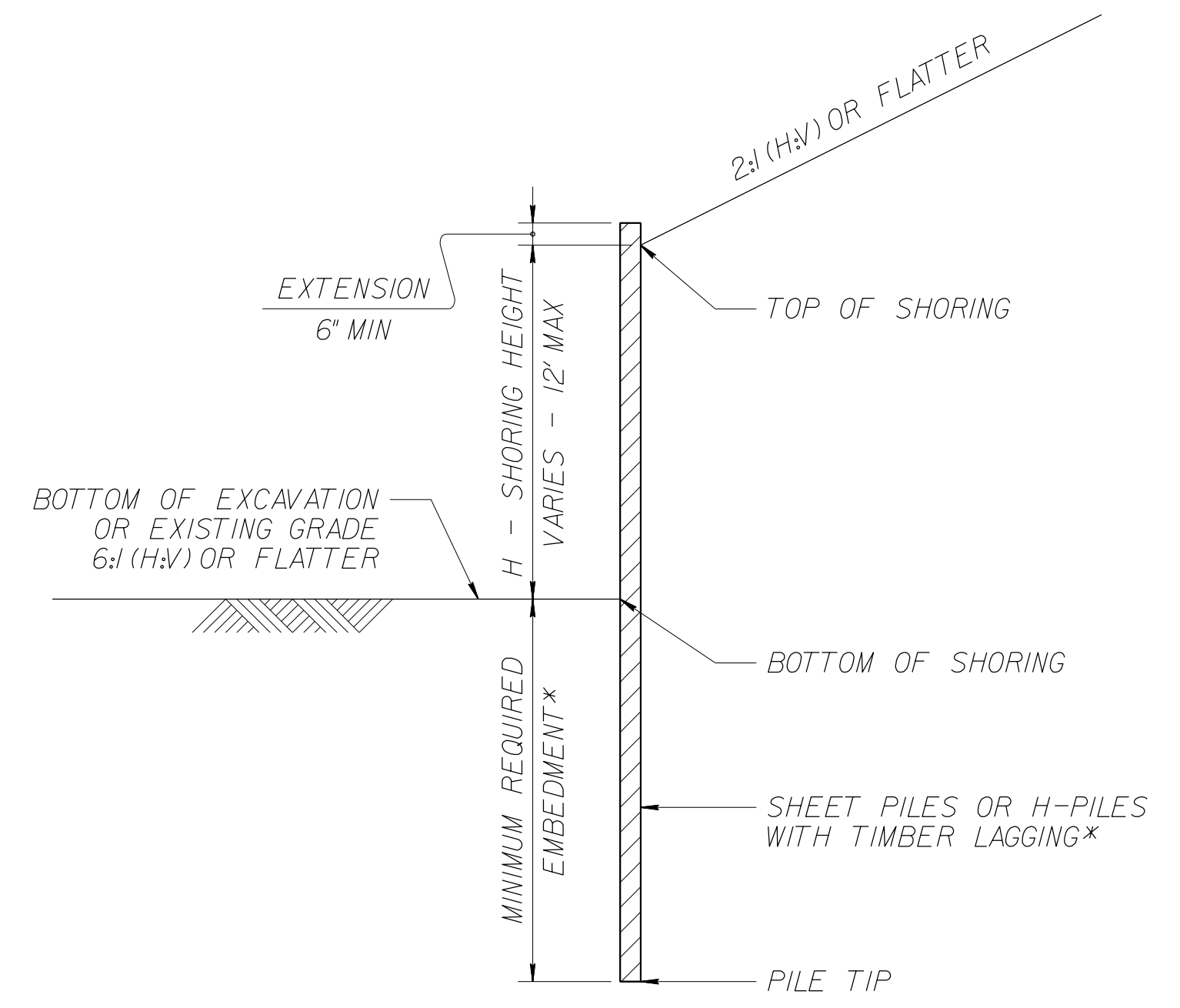
***DO NOT USE H-PILES WITH TIMBER LAGGING FOR GROUNDWATER CONDITION, SHORING HEIGHT AND H-PILE SIZE SHOWN IF MINIMUM REQUIRED EMBEDMENT IS "--".**



CONCRETE BARRIER
****TOP OF SHORING = EDGE OF PAVEMENT**



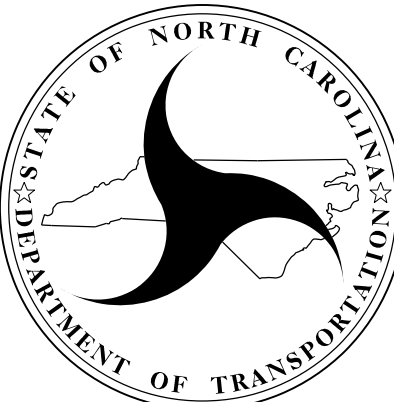
TEMPORARY GUARDRAIL
****GUARDRAIL FACE = EDGE OF PAVEMENT**



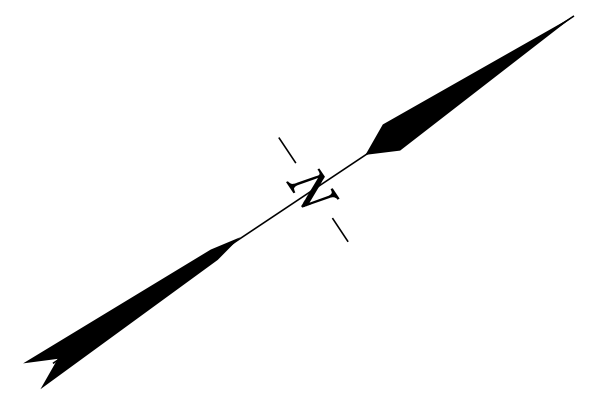
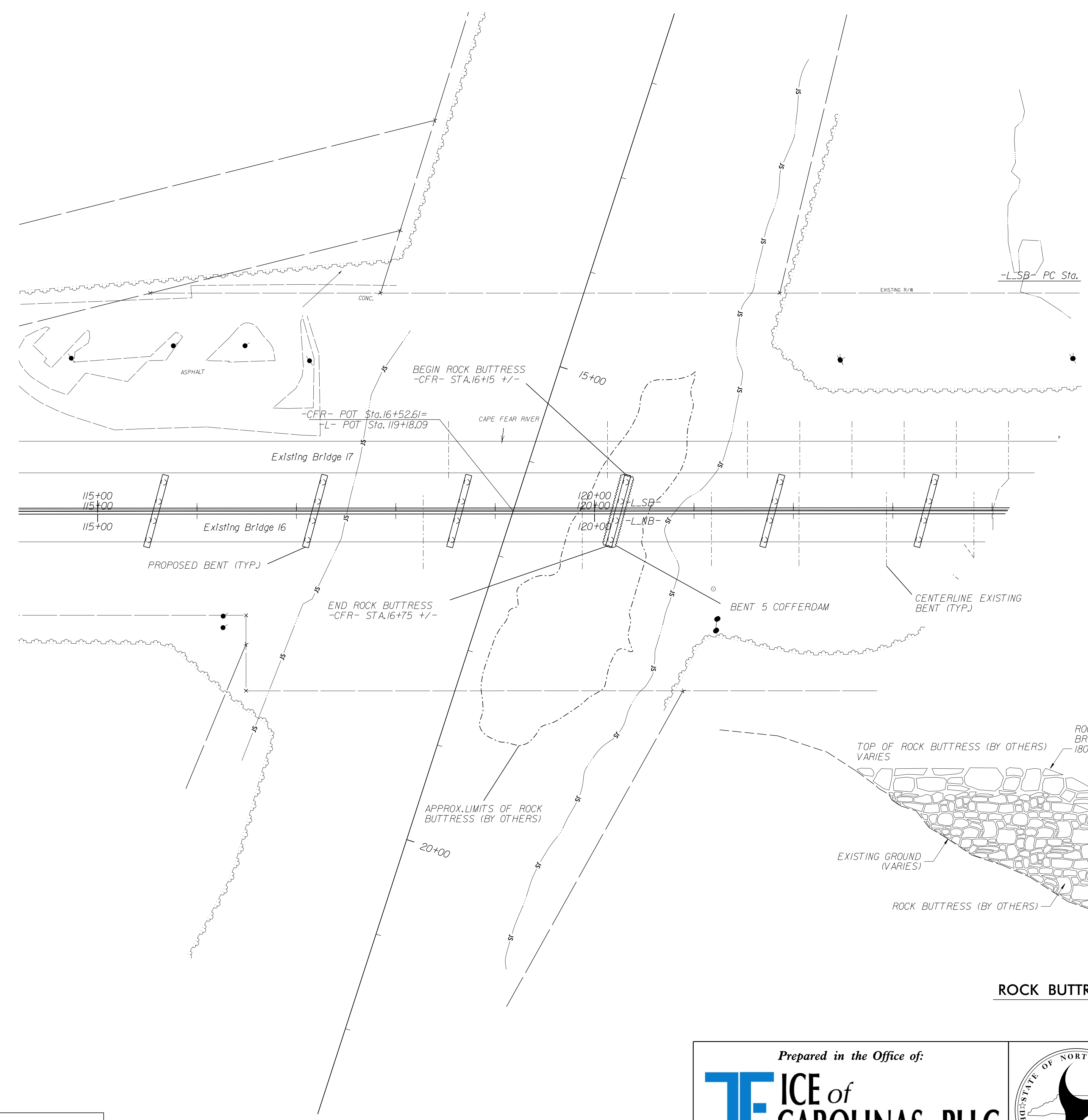
STANDARD TEMPORARY SHORING (SLOPE CASE)
***SEE TABLE ABOVE.**

STANDARD TEMPORARY SHORING (SURCHARGE CASE)
***SEE TABLE ABOVE.**

NOT TO SCALE


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

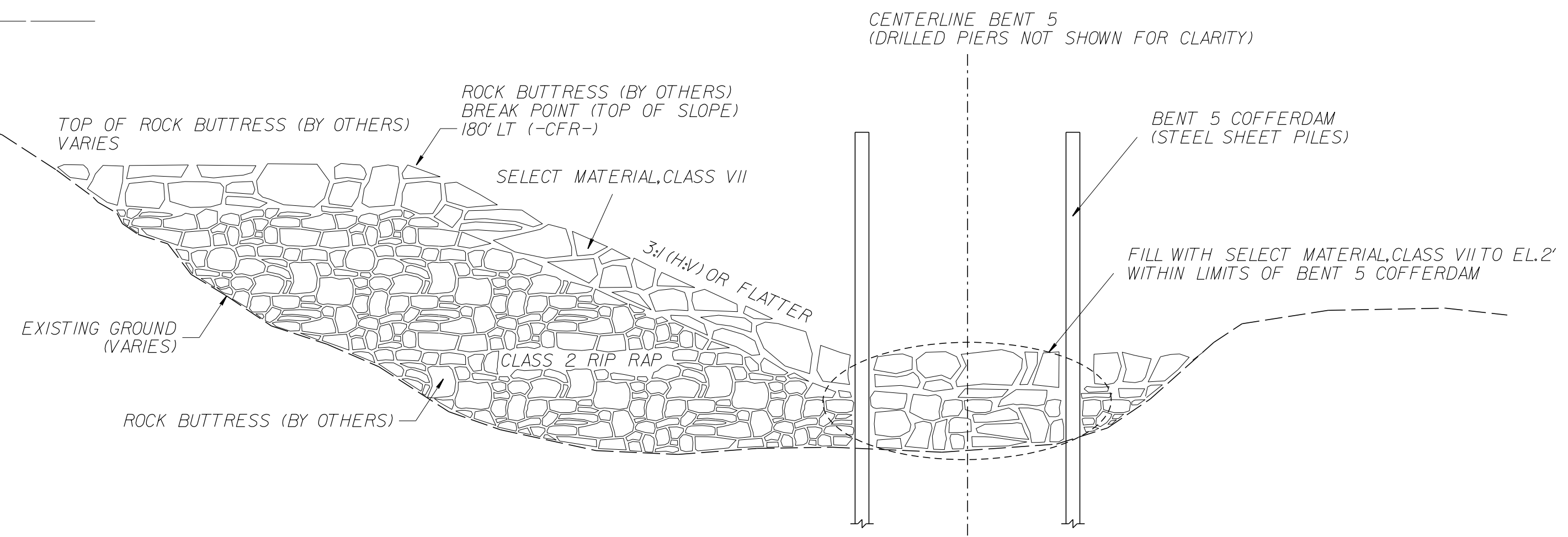
STANDARD DETAIL NO. 1801.01
STANDARD TEMPORARY SHORING
 DATE: 11-19-13



ROCK BUTTRESS LOCATIONS	
BEGIN STATION	END STATION
16+15 +/- -CFR-	16+75 +/- -CFR-

ESTIMATED QUANTITIES	
SELECT MATERIAL, CLASS VII	400 TONS


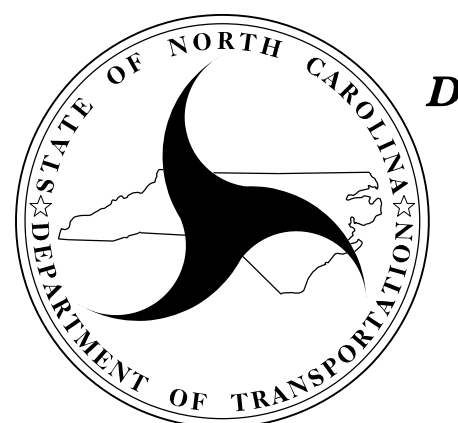
- NOTES:**
- REMOVE BENT 5 COFFERDAM STEEL SHEET PILES PRIOR TO PLACING SELECT MATERIAL, CLASS VII
 - PLACE SELECT MATERIAL, CLASS VII WITHIN LIMITS OF BENT 5 COFFERDAM
 - FINAL CONFIGURATION OF ROCK BUTTRESS WITHIN LIMITS OF COFFERDAM SHALL BE FIELD VERIFIED FOLLOWING PLACEMENT OF SELECT MATERIAL, CLASS VII



ROCK BUTTRESS TYPICAL SECTION

NOT TO SCALE	
PREPARED BY: M. SNYDER	DATE: 7/20
REVIEWED BY: M. VALIQUETTE	DATE: 7/20

Prepared in the Office of:

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

**GEOTECHNICAL
ENGINEERING UNIT**

ROCK BUTTRESS DETAIL					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	MRS	8/20	3		
2			4		

GEOTECHNICAL ENGINEER



8/11/2020

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PI Sta. 111+97.65
 $\Delta = 8'12''47.2''$ (LT)
 $D = 13'13''56.2''$
 $L = 62.07'$
 $T = 31.03'$
 $R = 433.00'$
 $SE = .03$
 $DS = 25$ MPH

-L- POT Sta. 112+28.63 =
 -L-SB- PT Sta. 112+28.63 (3' LT) =
 -L-NB- POT Sta. 112+28.63 (3' RT)

-L-SB- PC Sta. 111+66.56

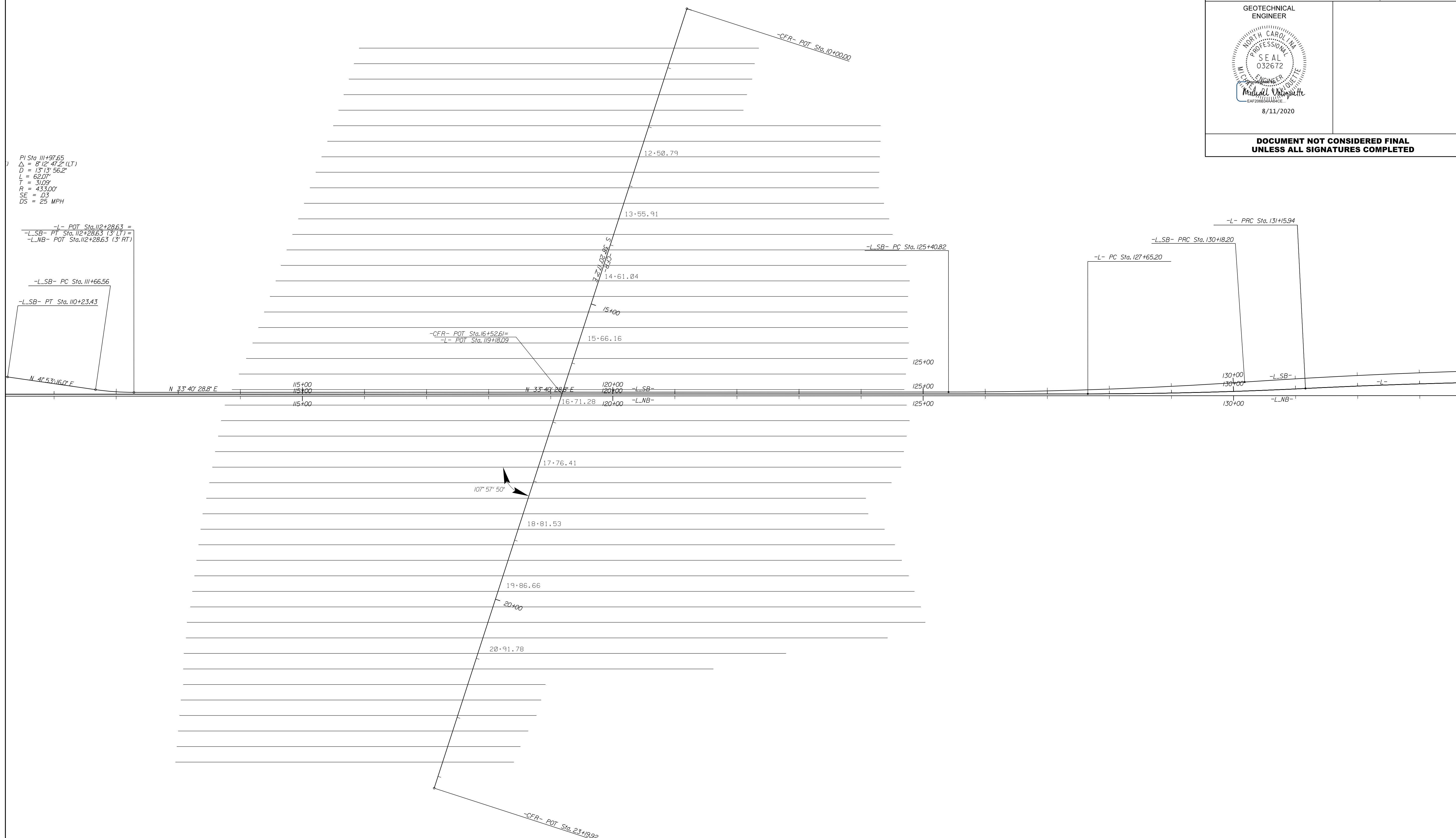
-L-SB- PT Sta. 110+23.43

N 41° 53' 16.72" E

N 33° 40' 28.8" E

N 33° 40' 28.8" E

-CFR- POT Sta. 23+19.92



NOT TO SCALE

PREPARED BY: M. SNYDER	DATE: 7/20
REVIEWED BY: M. VALIQUETTE	DATE: 7/20

Prepared in the Office of:

NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

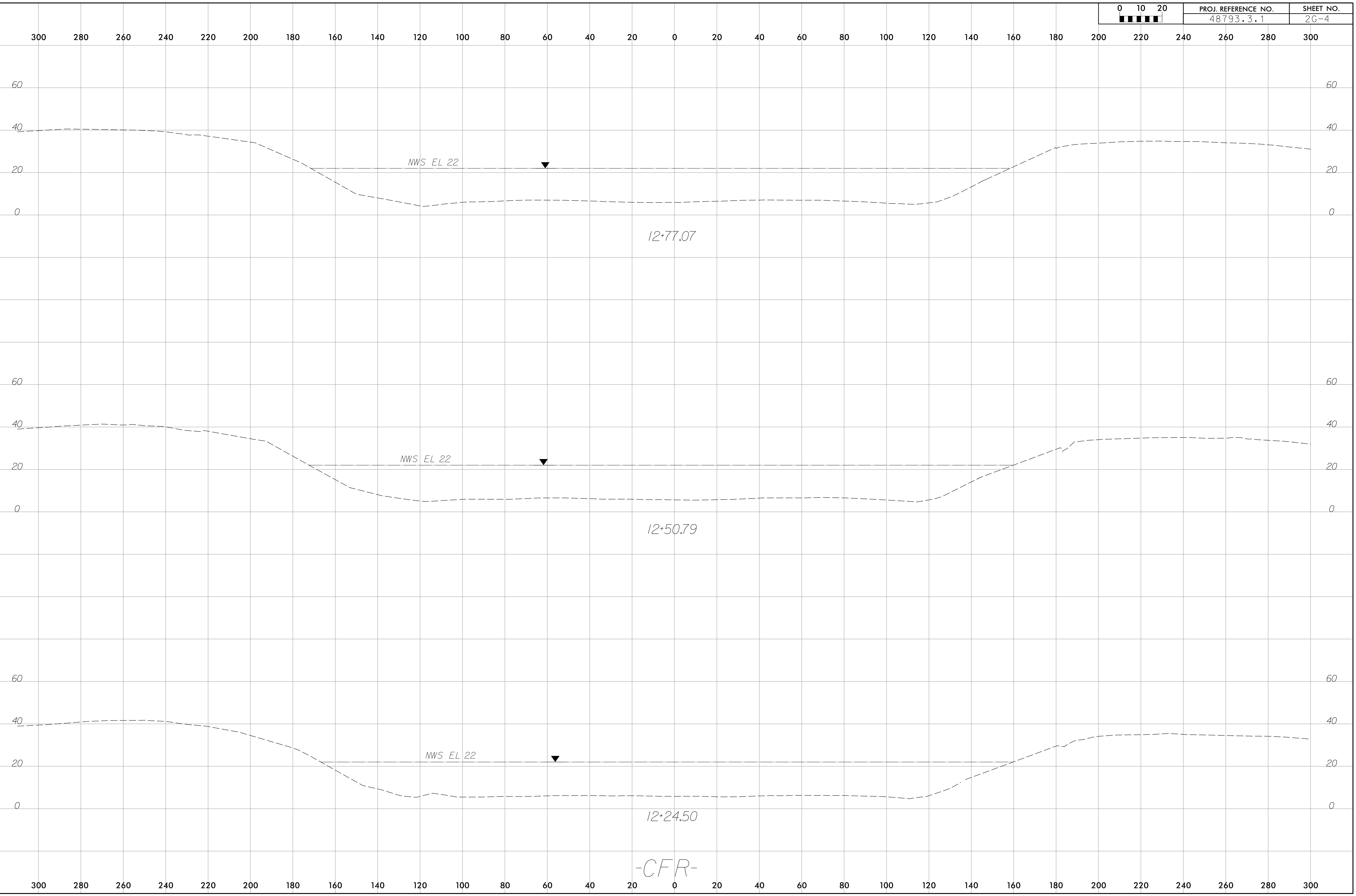
GEOTECHNICAL
 ENGINEERING UNIT

-CFR- ALIGNMENT DETAIL

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

6/23/16
9:32:53 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian, Turk

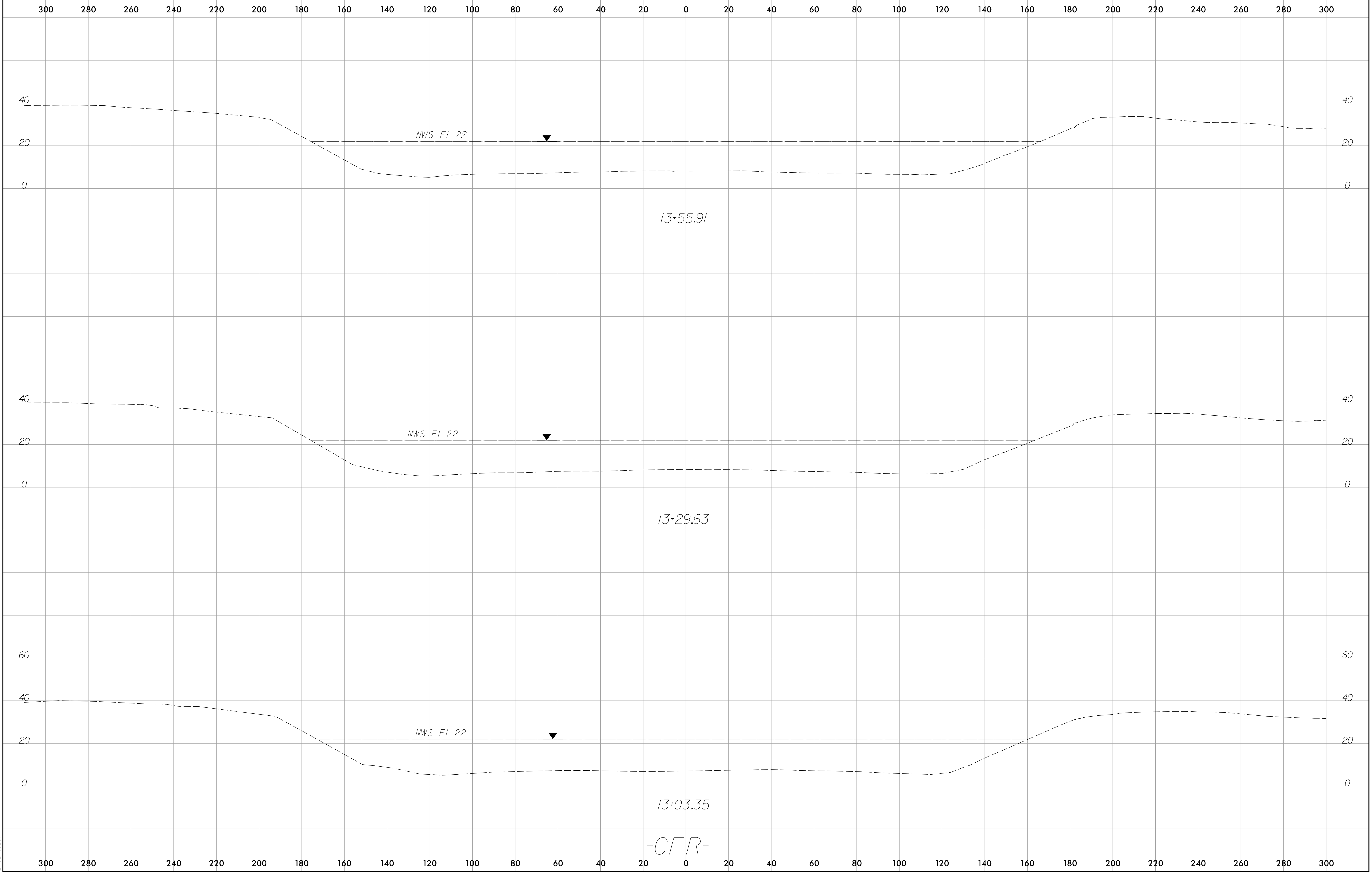
0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-4
------------------------	----------------------------------	-------------------



-CFR-

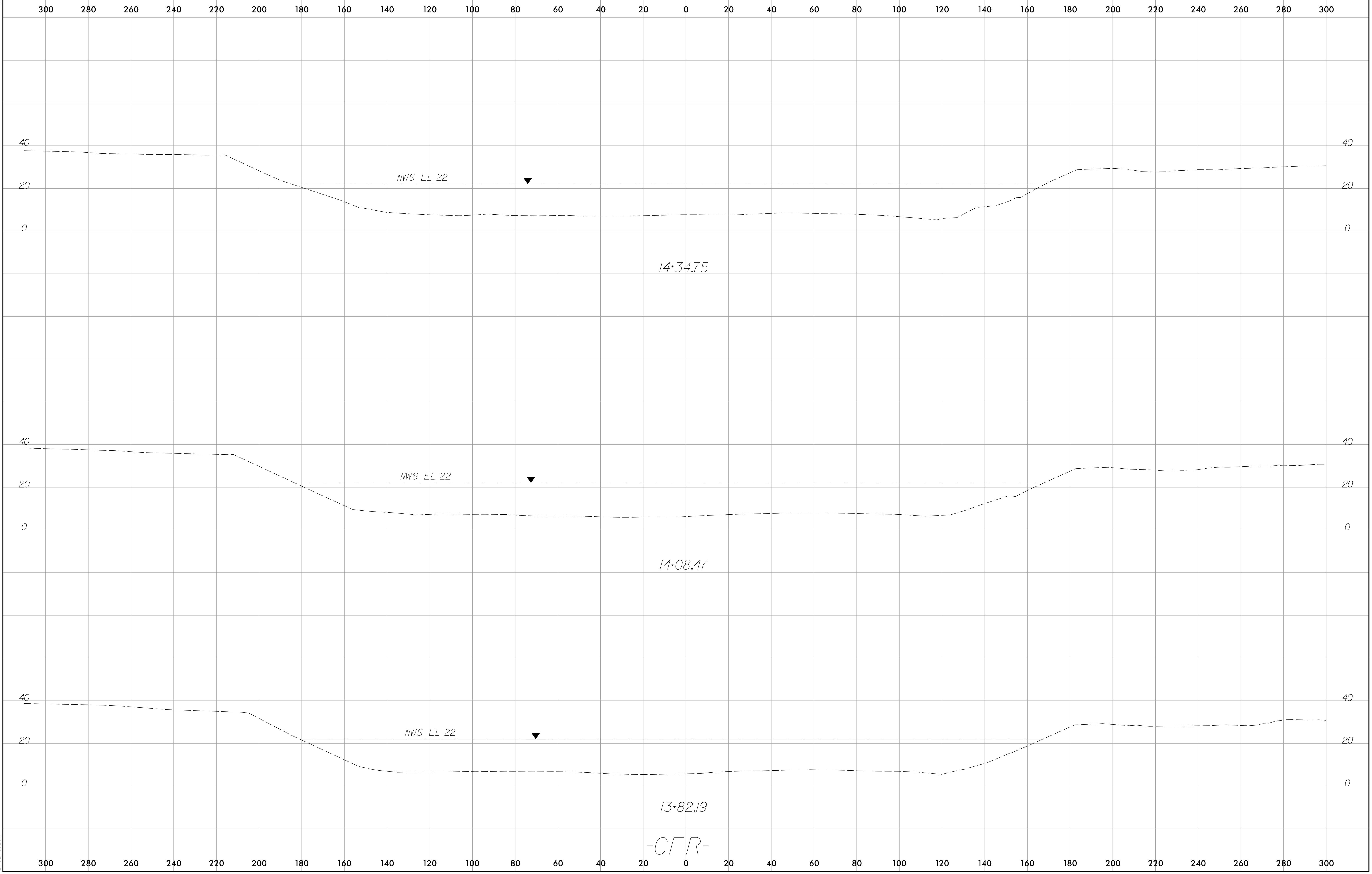
6/23/16
9:32:57 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttriss XPL_20-4 to 20-18.dgn
Brian, Turk

0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-5
------------------------	----------------------------------	-------------------



6/23/16
9:33:00 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian, Turk

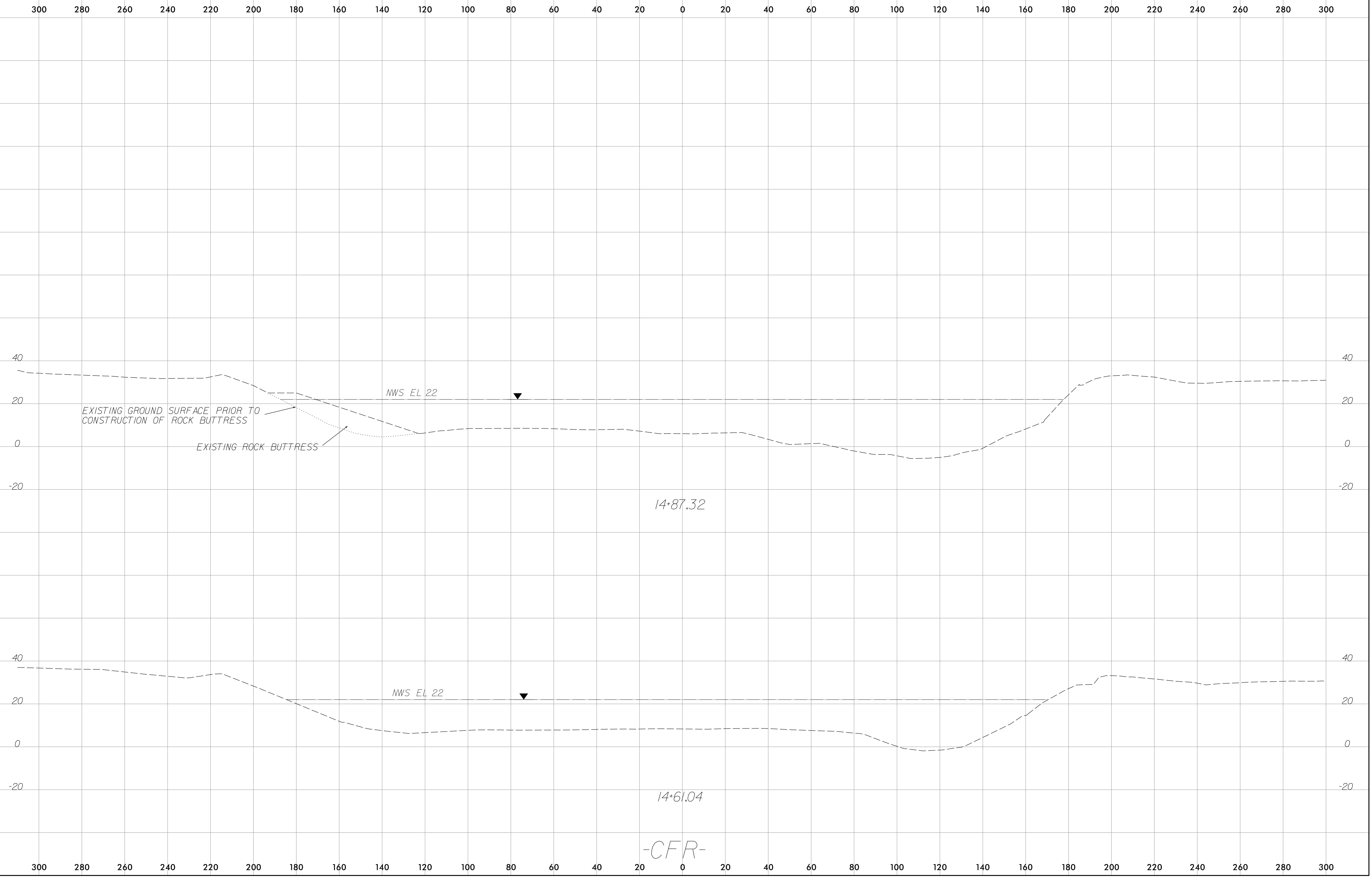
0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-6
------------------------	----------------------------------	-------------------



-CFR-

6/23/16

	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	2G-7

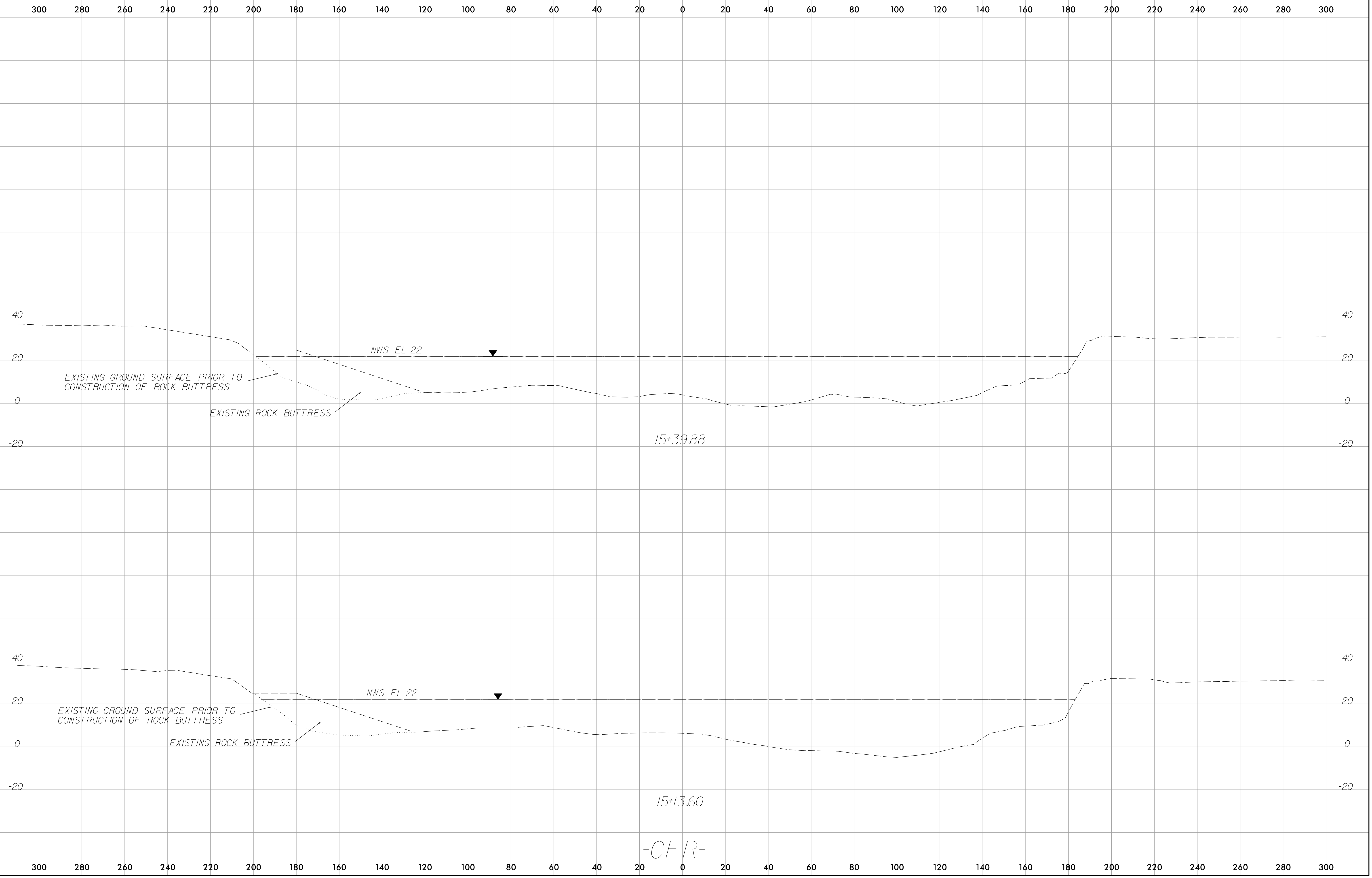


9:33:04 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_Geotechnical\08_BRDG0016_0017_Rock Buttress XPL_20-4 to 20-18.dgn
Brian Turk

-CFR-

6/23/16

	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	2G-8

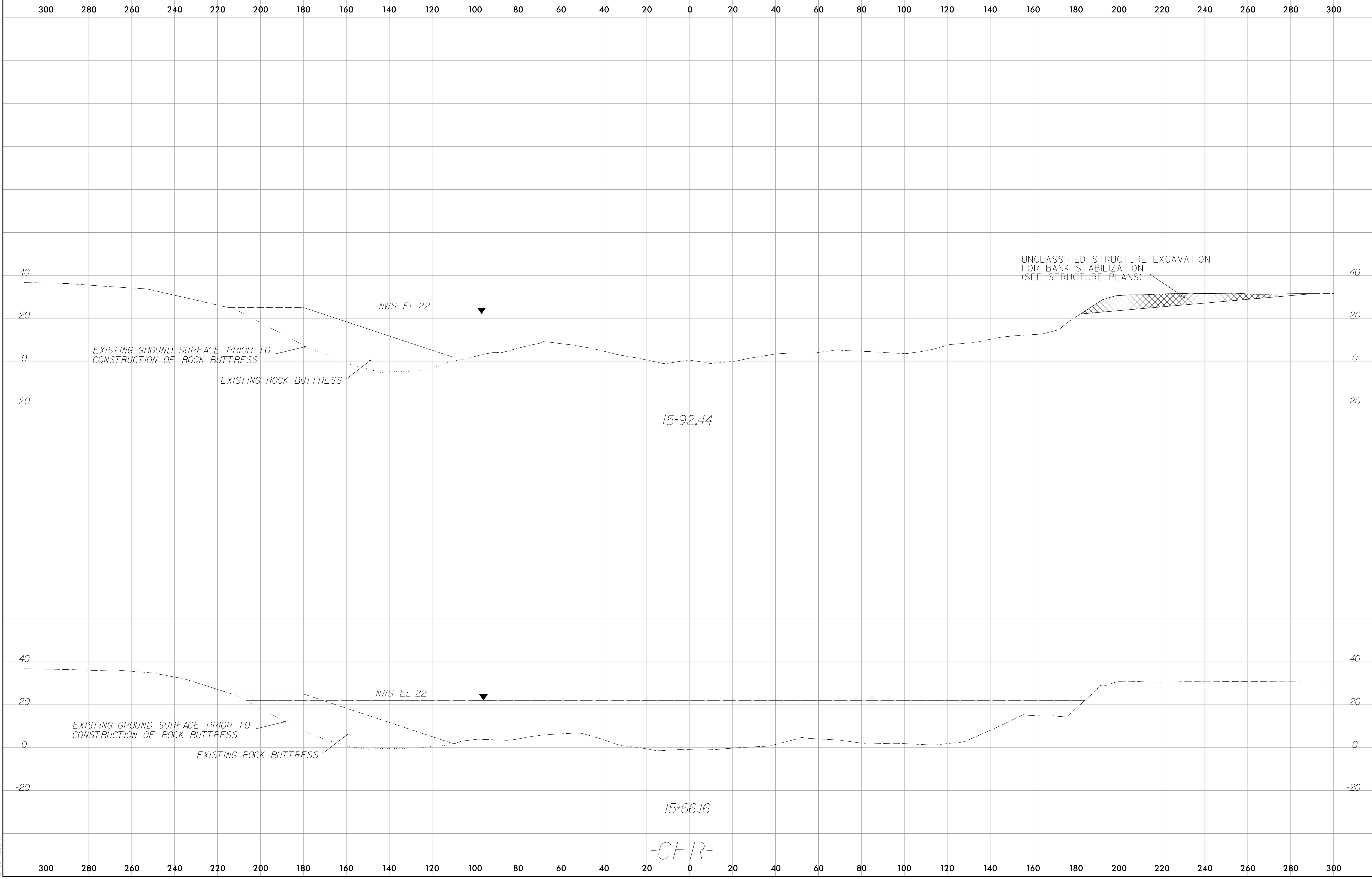


9:33:07 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_BRDG\0016_0017_Rock Buttress XPL_20-4 to 20-18.dgn
Brian Turk

-CFR-

6/23/16

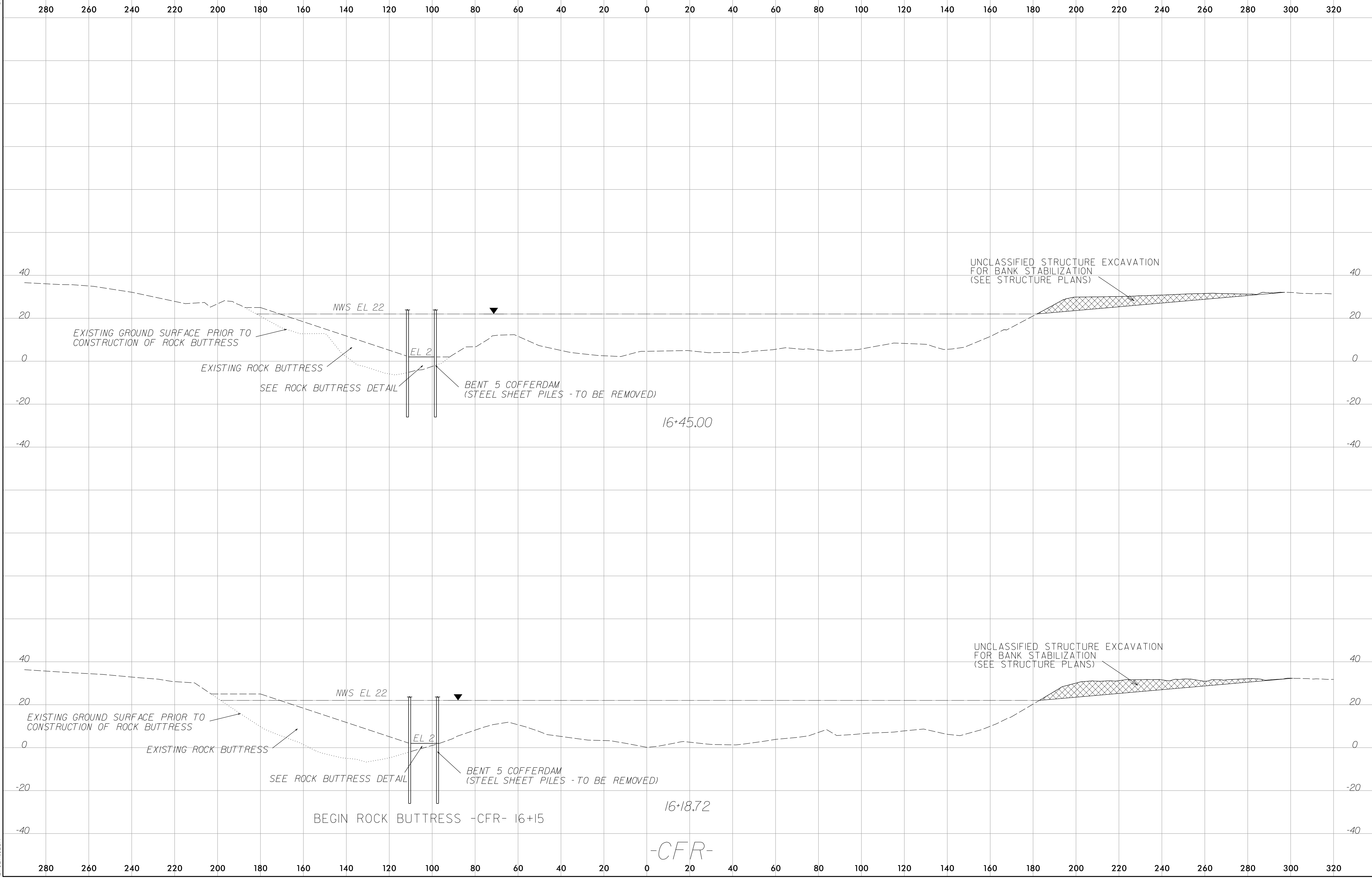
0 10 20 ■■■■■■	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-9
-------------------	----------------------------------	-------------------



9:33:11 AM
F:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_Geotechnical\08_BRDG0016_0017_Rock_Buttress_XPL_20-4 to 20-18.dgn
Brian_Tusk

6/23/16

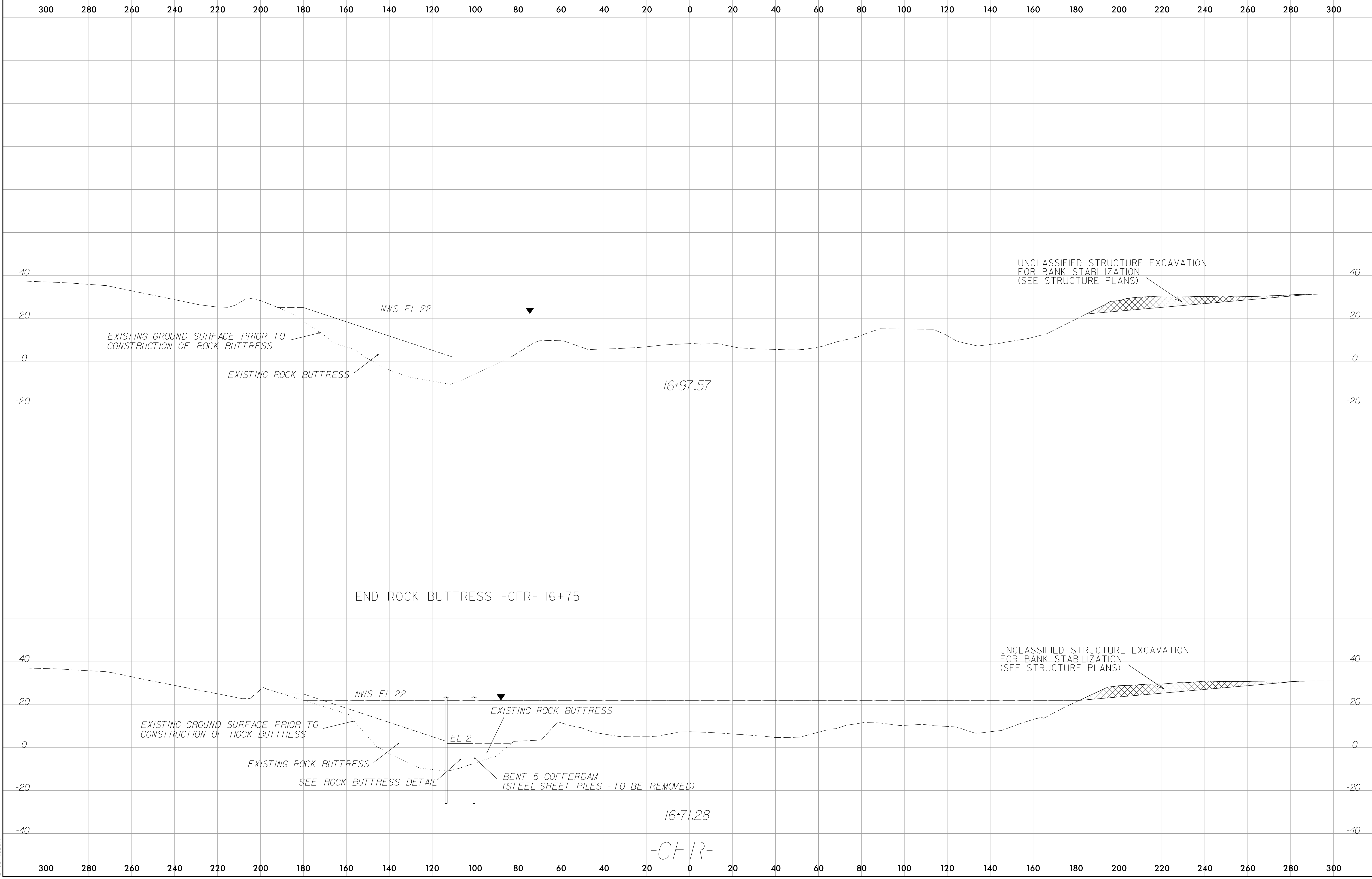
0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	26-10



9:33:05 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD\CADD_Geotechnical\EngineeringDgn\08_GEO_BRDG0016_0017_Rock Buttress XPL_26-4 to 26-10.dgn

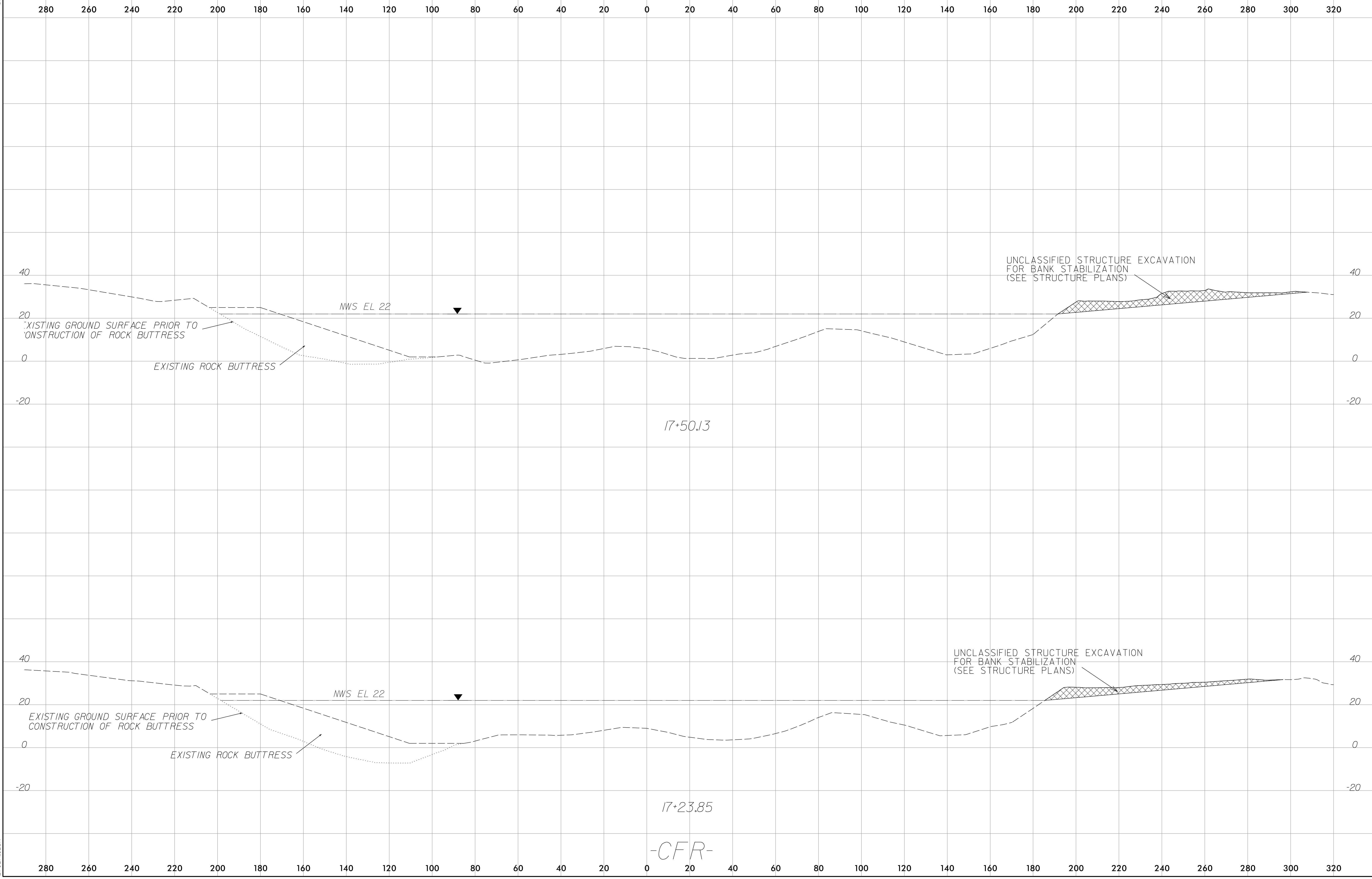
6/23/16
9:33:18 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRD\0016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian Turk

0 10 20	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	2G-11



6/23/16
9:33:22 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian Turk

	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	2G-12



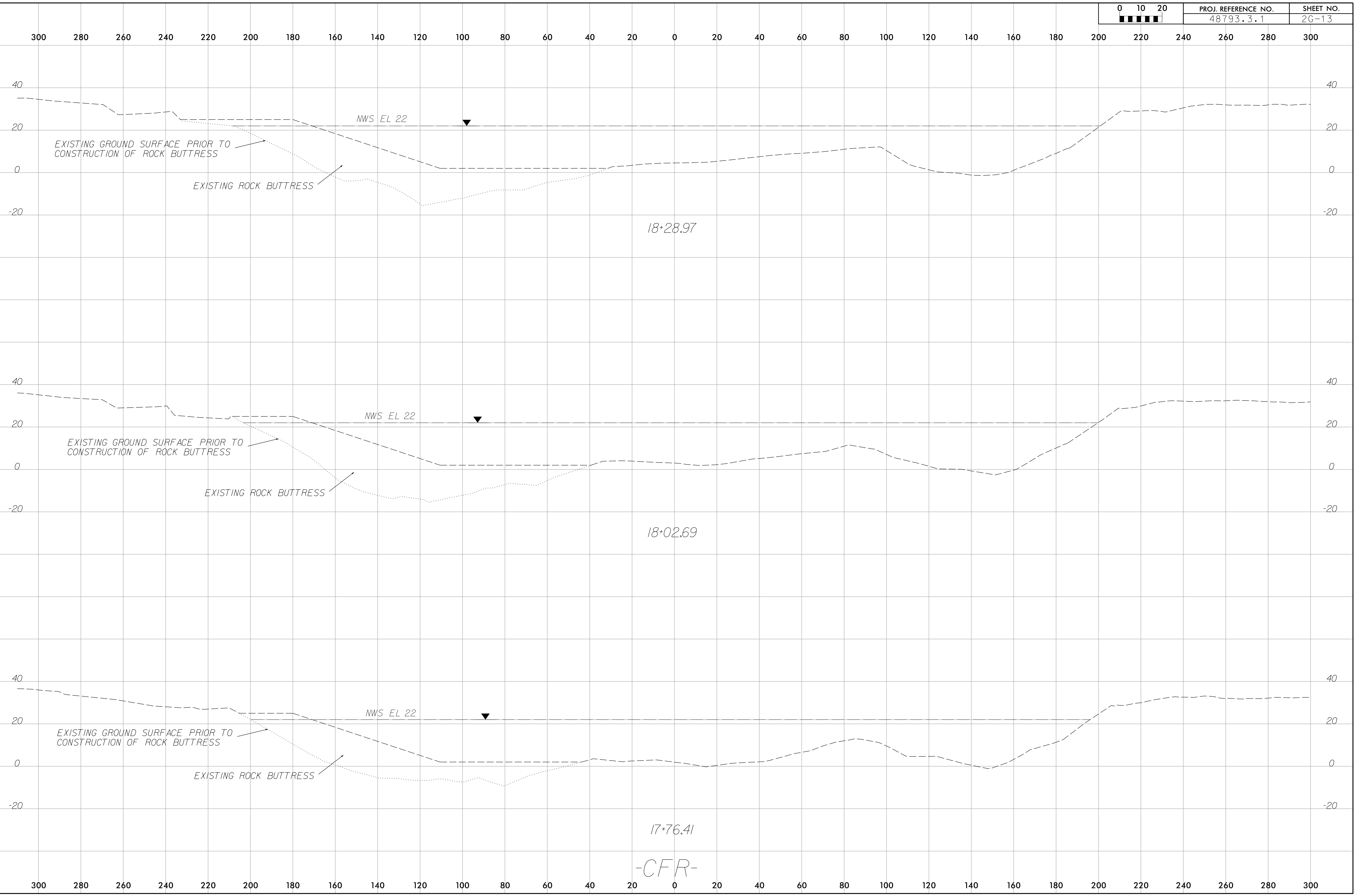
17+50.13

17+23.85

-CFR-

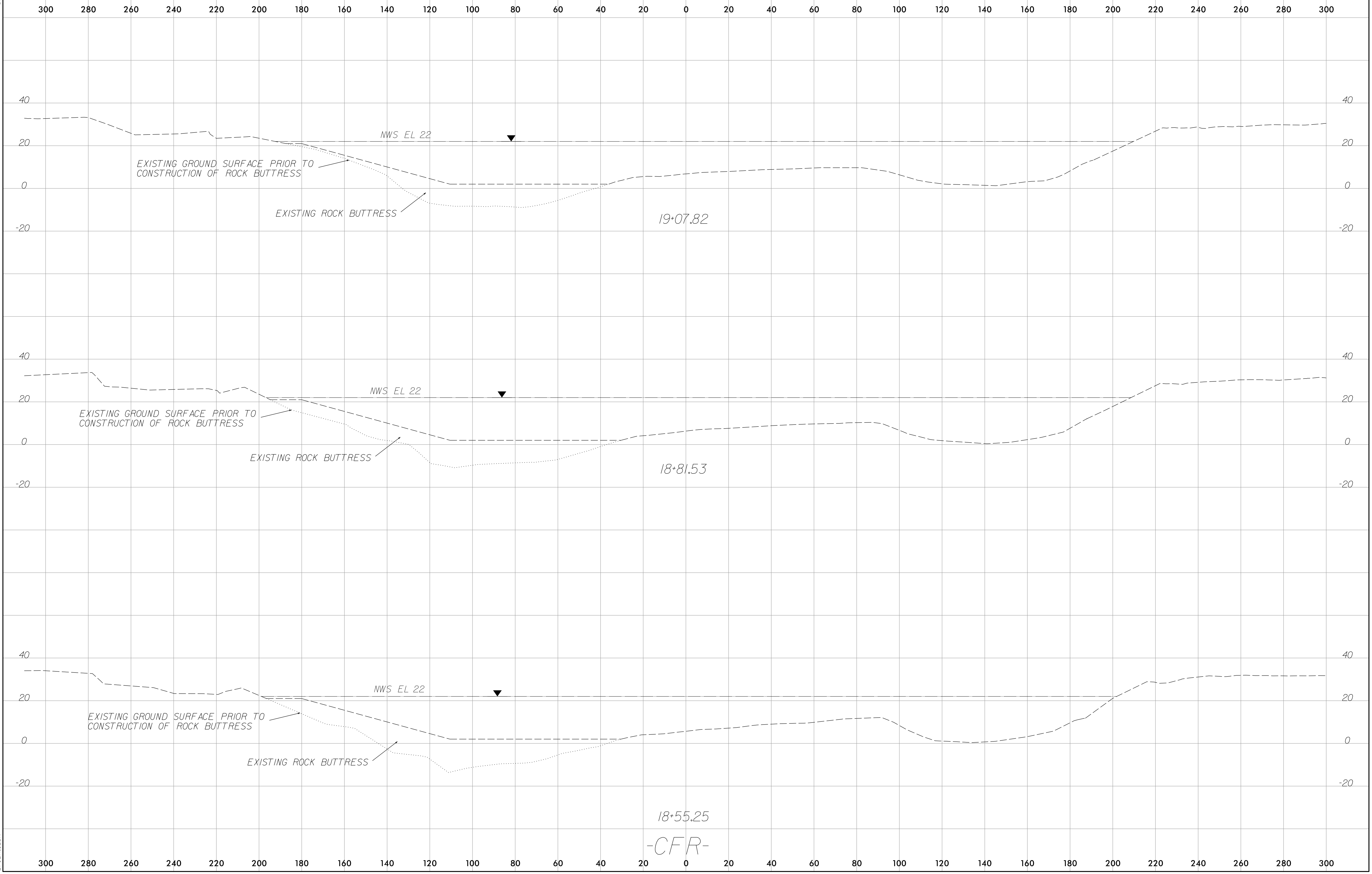
6/23/16
9:33:25 AM
C:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG0016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian, Turk

	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	26-13



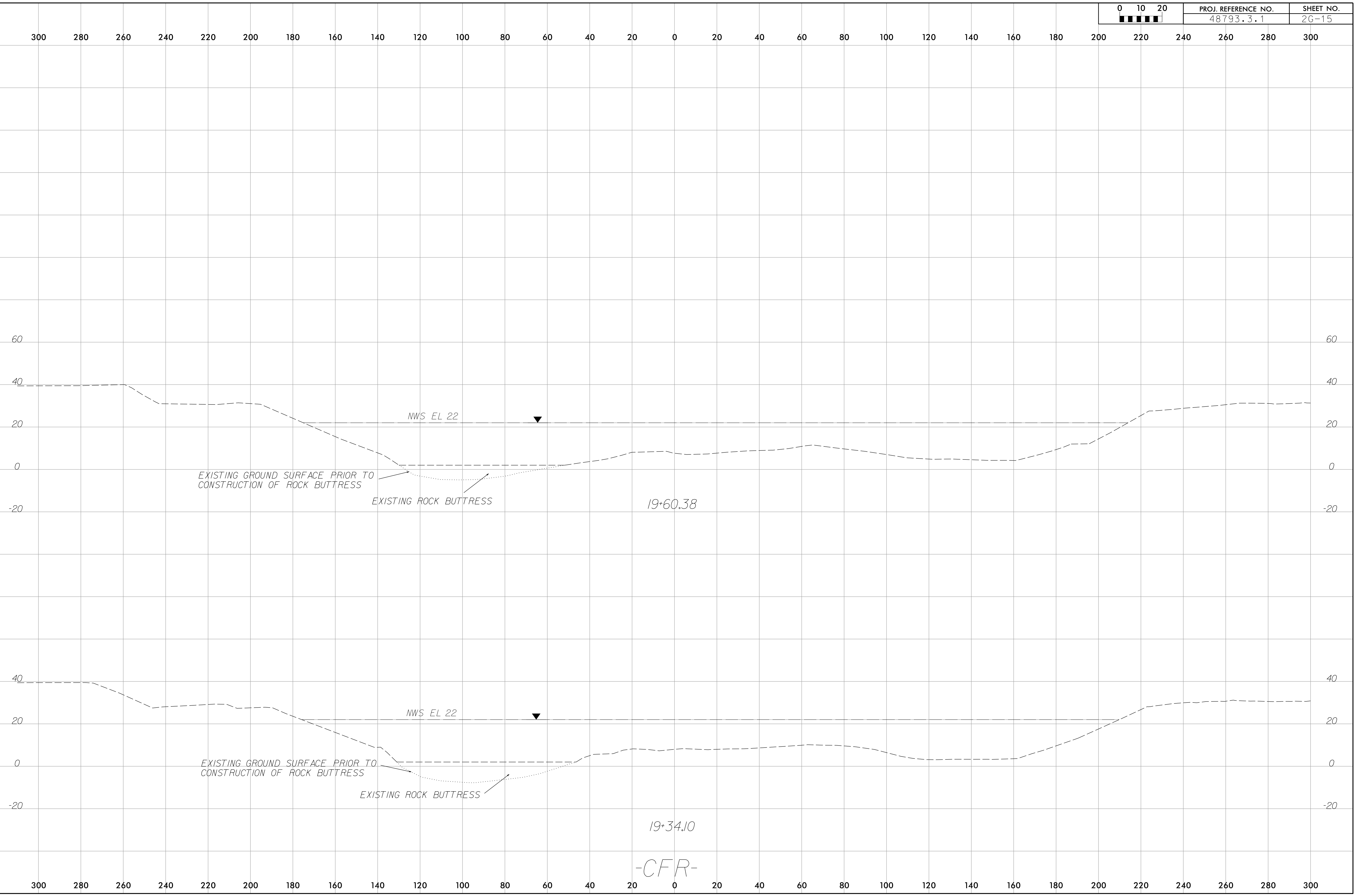
6/23/16
9:33:29 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttrss XPL_20-4 to 20-18.dgn
Brian, Turk

	PROJ. REFERENCE NO.	SHEET NO.
	48793.3.1	2G-14



6/23/16
9:33:32 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock_Buttress_XPL_20-4 to 20-18.dgn
Brian_Tusk

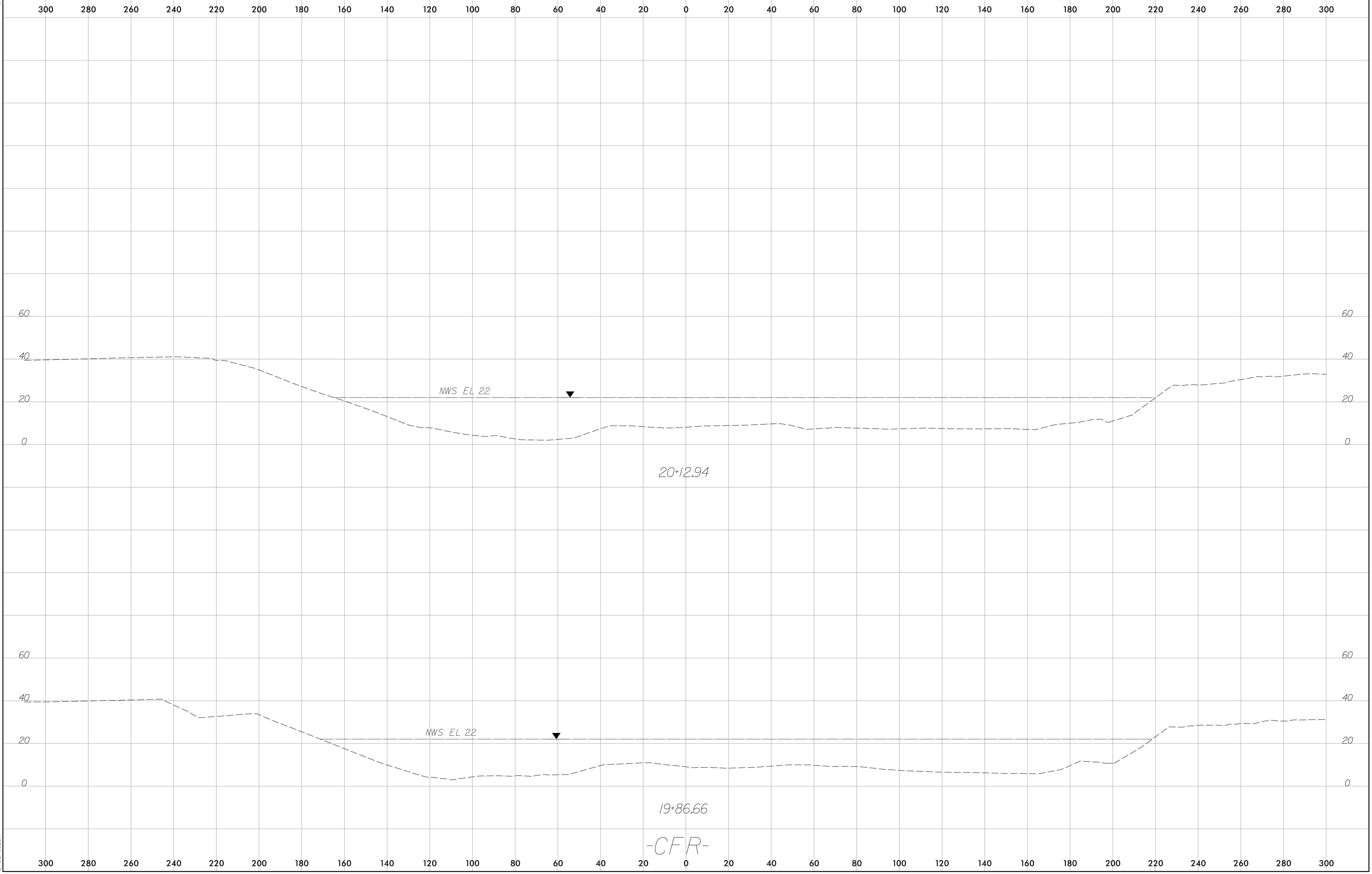
0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-15
------------------------	----------------------------------	--------------------



-CFR-

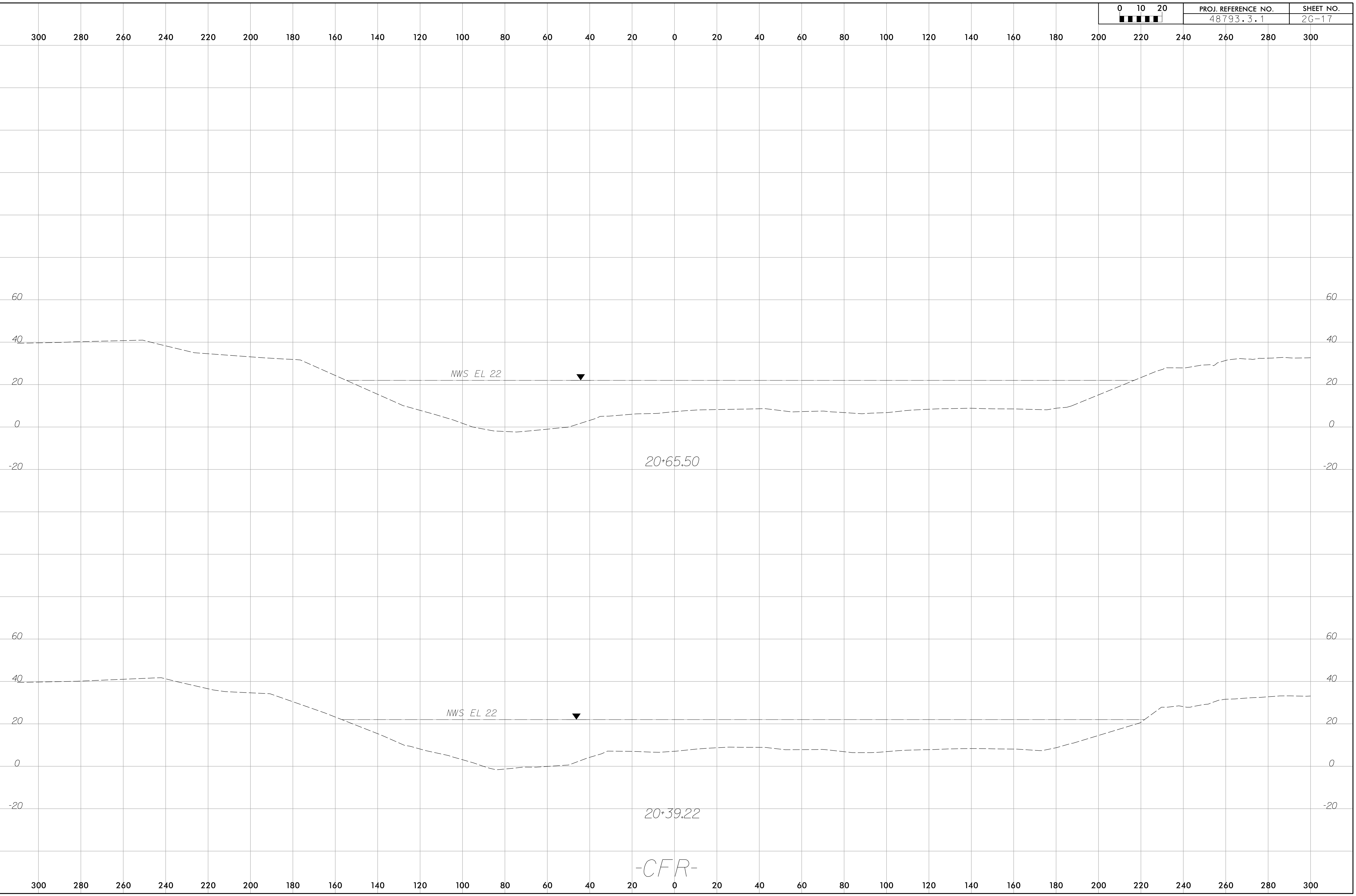
6/23/16
9:33:36 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttress XPL_20-4 to 20-18.dgn
Brian, Turk

0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 26-16
------------------------	----------------------------------	--------------------



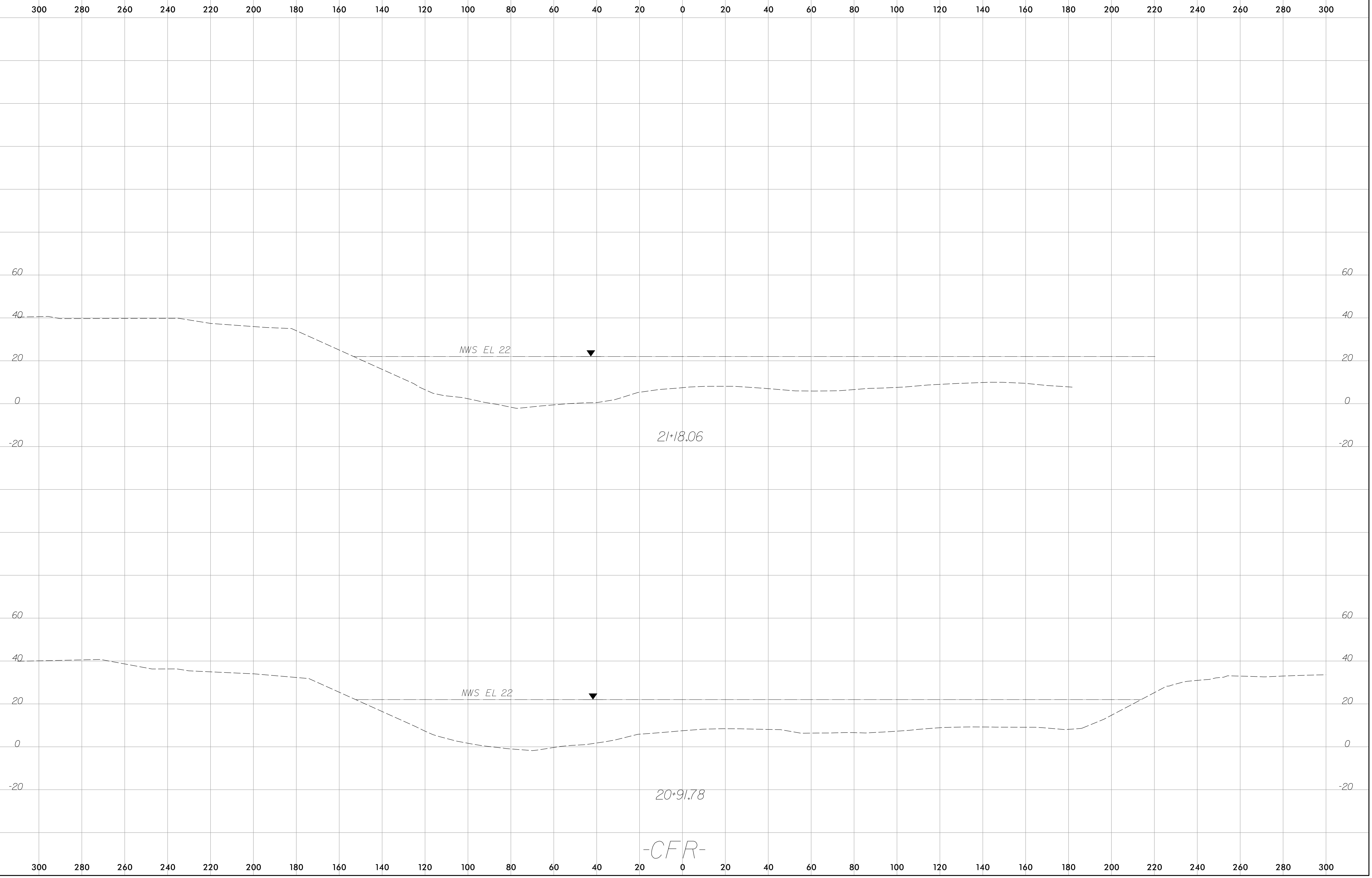
6/23/16
9:33:39 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG0016_0017_Rock Buttress XPL_20-4 to 20-18.dgn
Brian, Turk

0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 2G-17
------------------------	----------------------------------	--------------------



6/23/16
9:33:43 AM
P:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\ICE\ICE Geotechnical\CADD_GEO\TECH\EngineeringDgn\08_GEO_BRDG\0016_0017_Rock Buttress XPL_20-4 to 20-18.dgn
Brian, Turk

0 10 20 █ █ █ █ █ █	PROJ. REFERENCE NO. 48793.3.1	SHEET NO. 26-18
------------------------	----------------------------------	--------------------



6/21/00

5:30:22 PM R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\...Roadway\Proj\Plansheets\US701\Summary.dgn

COMPUTED BY: C. JACKSON DATE: 7/30/2020
 CHECKED BY: B. LUSK DATE: 7/30/2020

PROJECT REFERENCE NO. 48793.31 SHEET NO. 3B

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
 SUMMARY OF ROADWAY QUANTITIES**

GUARDRAIL SUMMARY

N* = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL
 TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT
 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

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOULDER WIDTH	FLARE LENGTH		W		ANCHORS							IMPACT ATTENUATOR TYPE 350		SINGLE FACED CONCRETE BARRIER	REMOVE EXISTING GUARDRAIL	REMOVE & STOCKPILE EXISTING GUARDRAIL	REMARKS								
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	XI XI	GREU TL 3	M-350	B-77	TYPE III	CAT-1	AT-1	G					NG							
L SB	108+94.66	112+82.16	LT	387.50					8	4' BERM																									
L SB	125+00.16	127+56.16	LT	256.00					8	11			50						1																
L SB	128+92.55	132+11.30	LT	318.75					8	11			50						1																
L SB	132+56.25	137+00.00	LT	443.75					8	11			93					1.86																	
L NB	110+32.15	112+63.40	RT	231.25					8	11																									
L NB	124+81.40	132+00.00	RT	718.60					8	11								323.5																	
REMOVAL OF EXISTING GUARDRAIL																																			
L SB	108+56.71	112+90.93	LT																																434.22
L SB	111+51.63	112+92.18	RT																															140.55	
L NB	111+28.14	112+86.40	LT																															158.26	
L NB	110+32.11	112+86.40	RT																															254.29	
L SB	124+48.23	132+20.39	LT																															772.16	
L SB	124+50.65	125+29.87	RT																															79.22	
L SB	132+63.87	137+00.00	LT																															436.13	
L NB	124+70.02	125+82.18	LT																															112.16	
L NB	124+67.15	132+00.00	LT																															732.85	
SUBTOTAL				2355.85	0.00	0.00																													3119.84
ANCHOR DEDUCTIONS																																			
	CAT-1	3.00 @ 6.25'		18.75																															
	TYPE III	4.00 @ 18.75'		75																															
	GREU TL-3	3.00 @ 50'		150																															
	SUBTOTAL			243.75																															
TOTAL				2112.10																															
SAY				2112.50	0.00	0.00																													3119.84

**SUMMARY OF EARTHWORK
 IN CUBIC YARDS**

Station	Station	Uncl. Excav.	Embank. +%	Borrow	Waste
-L- 107+00.00	-L- 112+72.78	701	330		371
-DW1- 10+24.36	-DW1- 11+50.00	18	101	83	
SUBTOTALS:		719	431	83	371
-L-124+90.78	-L-137+00.00	1,256	1,150		106
SUBTOTALS:		1,256	1,150	0	106
PROJECT TOTALS:		1,975	1,581	83	477
WASTE IN LIEU OF BORROW MATERIAL FOR SHOULDER CONSTRUCTION			588		477
PROJECT TOTALS:					
GRAND TOTALS:		1,975	2,169		0
SAY:		2,100			

EST. DDE = 135 CY

Note: Approximate quantities only. Unclassified Excavation, Shoulder Borrow, Fine Grading, Clearing and Grubbing, and Removal of Existing Pavement will be paid for at the contract lump sum price for grading.

SHOULDER BERM GUTTER SUMMARY

LINE	Station	Station	LENGTH
L NB (RT)	110+75.90	112+40.06	165 LF
L NB (RT)	125+05.37	132+00.00	695 LF
L SB (LT)	125+24.12	125+50.01	26 LF
L SB (LT)	132+59.83	137+00.00	443 LF
TOTAL:			1329 LF
SAY:			1400 LF

**PAVEMENT REMOVAL SUMMARY
 IN SQUARE YARDS**

SURVEY LINE	Station	Station	LOCATION LT/RT/CL	ASPHALT REMOVAL	ASPHALT BREAKUP	CONCRETE REMOVAL	CONCRETE BREAKUP
DW1	10+25.32	11+30.00	LT	34			
DW1	10+95.39	11+30.00	RT	7			
-L NB-	107+03.77	107+93.27	LT	19			
-L NB-	108+60.88	111+20.81	LT	40			
-L NB-	110+04.00	112+91.60	RT	217			
-L NB-	124+69.42	124+90.55	LT/RT	56			
-L NB-	125+06.62	130+27.77	RT	149			
-L SB-	108+70.31	112+91.03	LT	1285			
-L SB-	108+42.64	110+02.23	RT	208			
-L SB-	124+68.21	130+47.12	LT	1959			
-L SB-	130+47.12	137+00.00	LT	714			
-L SB-	134+15.08	137+00.00	LT/RT	73			
-L- (ex xover)	13+50.14	136+26.74	LT/RT	675			
TOTAL:				5436			
SAY:				5440			

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
-L-**	124+80	130+00	RT	SD	500
**SEE NOTES BELOW					
CONTINGENCY					
TOTAL LF:					500

*UD = Underdrain
 *BD = Blind Drain
 *SD = Subsurface Drain

**NOTES:
 Subdrain to be placed along side road adjacent to the rock plating on existing NB fill slope and/or as directed by Engineer.
 Quantities provided by Division 6 Construction. Individual quantities are based on excavation in sandy soils and are as follows:

ITEM	QTY
Subdrain Excavation	222 CY
Geotextiles for Subsurface Drains	890 SY
Subdrain Pipe Outlets	4 EA
6" Perforated Subdrain Pipe	500 LF
6" Outlet Pipe	100 LF
Subdrain Course Aggregate (No. 57 Stone)	350 TON

GBLBSZ

COMPUTED BY: BDB DATE: 7/15/2020
CHECKED BY: WTS DATE: 7/16/2020

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
WBS 48793.3.1 3D-1

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)

Table with columns for Line & Station, Offset, Structure Number, Top Elevation, Invert Elevation, Minimum Required Slope, Side Drain Pipe (RCP, CSP, CAAP, HDPE, or PVC), R.C. Pipe Class IV, Drainage Structure, Quantities for Drainage Structures, Frame, Grates, and Hood, Concrete Transitional Section, and Remarks. Includes a summary row at the bottom labeled 'SHEET TOTALS'.

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

CBRL6S2

COMPUTED BY: BDB DATE: 7/15/2020
CHECKED BY: WTS DATE: 7/16/2020

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PROJECT NO. SHEET NO.
WBS 48793.3.1 3D-2

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)

Main data table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Side Drain Pipe, R. C. PIPE CLASS IV, R. C. PIPE CLASS V, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, etc.

ABBREVIATIONS table listing symbols and their corresponding material names like C.A.A. CORRUGATED ALUMINIUM ALLOY, C.B. CATCH BASIN, etc.

SHEET TOTALS and PROJECT TOTALS summary rows at the bottom of the table.

COMPUTED BY: MRS DATE: 7/20
 COMPUTED BY: NDM DATE: 7/20

(12-17-19)

PROJECT NO. SHEET NO.
 48793.3.1 3G

**STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS**

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2.7 : 1	125+00	2.7 : 1	129+00	RT	2	1	2950
							TOTAL SY:	2950

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

SUMMARY OF AGGREGATE SUBGRADE/STABILIZATION

LINE	Station	Station	Aggregate Type* ASU(1/2)/AST	Aggregate Thickness INCHES [8" for ASU(2)]	Shallow Undercut CY	Class IV Subgrade Stabilization TONS	Geotextile for Soil Stabilization SY	Stabilizer Aggregate TONS	Class IV Aggregate Stabilization TONS
			CONTINGENCY	ASU (1)	12	200	400	800	
					TOTAL CY/TONS/SY:	200	400**	800**	0

*ASU(1/2) = Aggregate Subgrade (Type 1 or 2)

*AST = Aggregate Stabilization

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

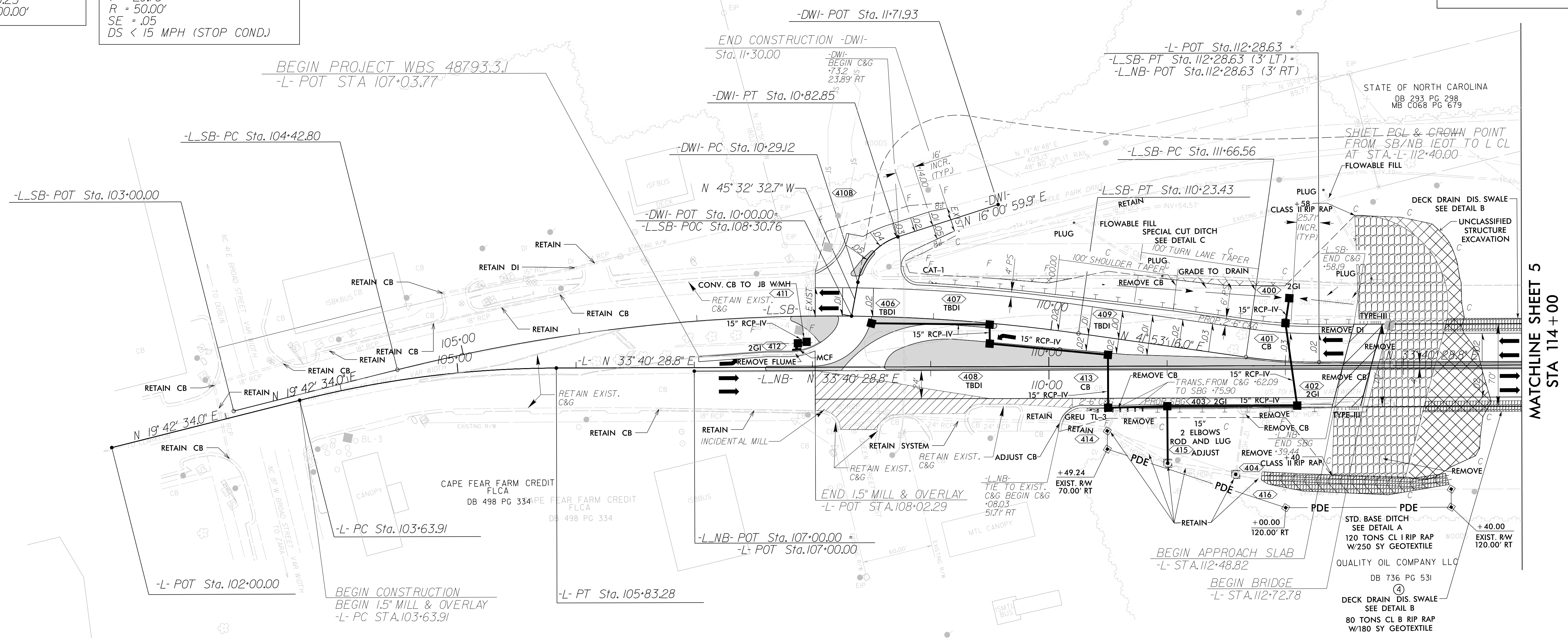
8/17/99
9/4/25 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear-River\..._NCDOT\Roadway\Proj\Plansheets\US701-L_rdy_psh04.dgn

-L-SB-US 701 SOUTHBOUND	
PI Sta 107+36.80	PI Sta 111+97.65
$\Delta = 22^\circ 10' 41.9''$ (RT)	$\Delta = 8^\circ 12' 47.2''$ (LT)
D = 3' 49' 11.0"	D = 13' 13' 56.2"
L = 580.63'	L = 62.07'
T = 293.99'	T = 31.09'
R = 1,500.00'	R = 433.00'
SE = EXIST	SE = .03
DS = 25 MPH	DS = 25 MPH

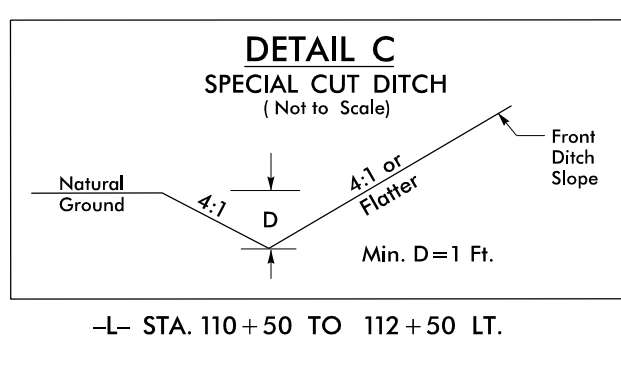
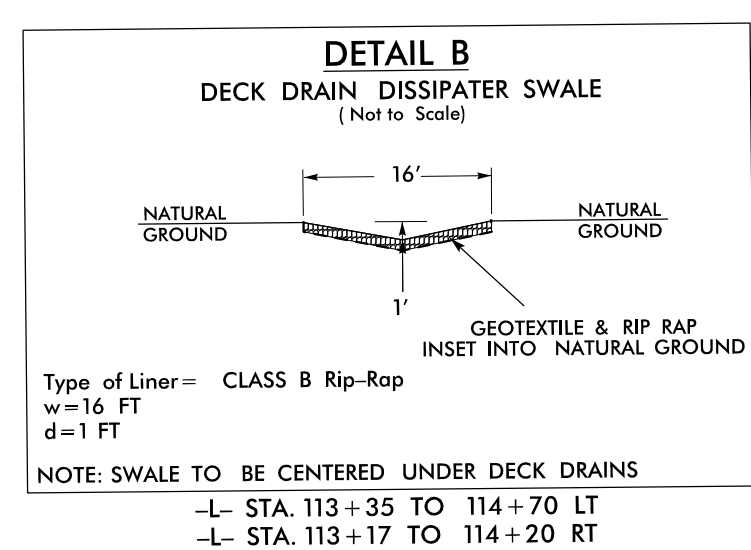
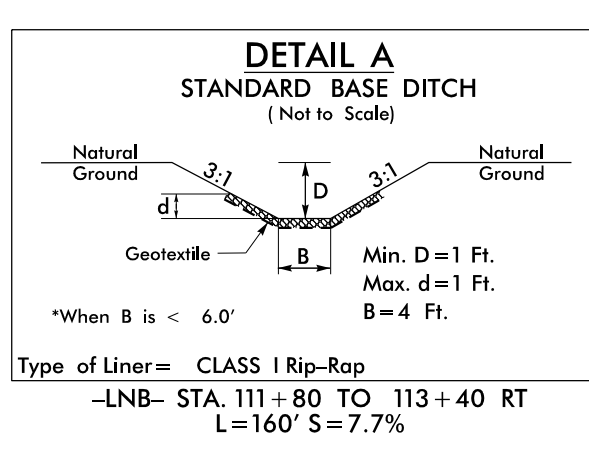
-L- US 701
PI Sta 104+74.14
$\Delta = 13^\circ 57' 54.8''$ (RT)
D = 6' 2' 58.3"
L = 219.37'
T = 110.23'
R = 900.00'

-DWI-TORY HOLE PARK DRIVE
PI Sta 10+58.91
$\Delta = 6^\circ 33' 32.6''$ (RT)
D = 114' 35' 29.6"
L = 53.72'
T = 29.78'
R = 50.00'
SE = .05
DS < 15 MPH (STOP COND.)

PROJECT REFERENCE NO. 48793.31	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 039183 9/2/2020	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 20754 9/2/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
ICE of CAROLINAS, PLLC 4503 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 803-822-0333 License #: P-6999	



NOTE: ALL EASEMENT CALLOUTS FROM -L- UNLESS OTHERWISE NOTED

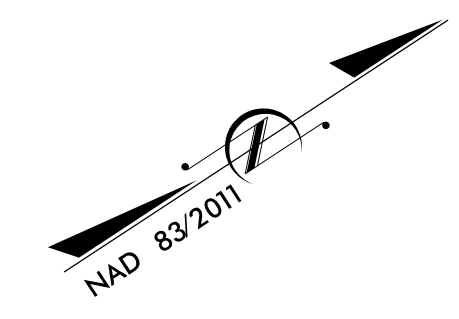


INCIDENTAL MILL AT EXIST. C&G
 PAVEMENT REMOVAL

FOR -DWI- PROFILE, SEE SHEET 9
FOR -L- PROFILE, SEE SHEET 8
FOR -L-NB- AND -L-SB- PROFILE, SEE SHEET 7

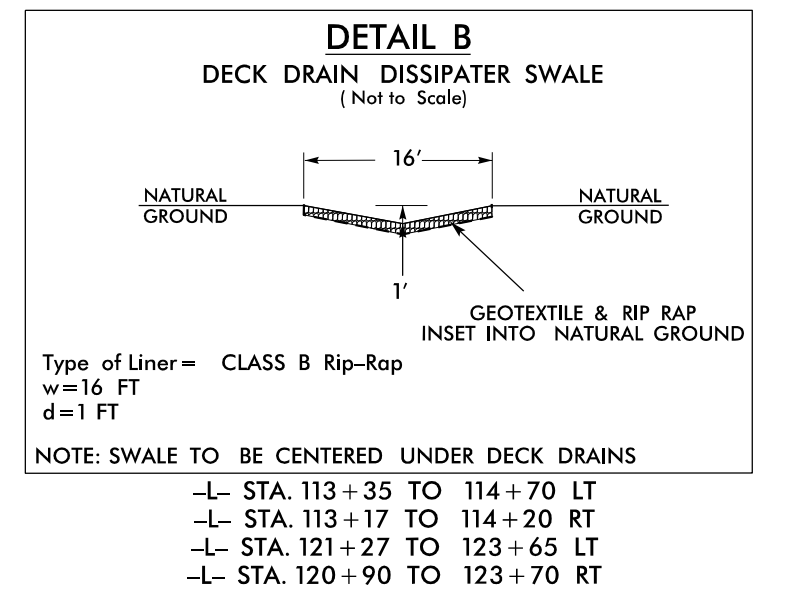
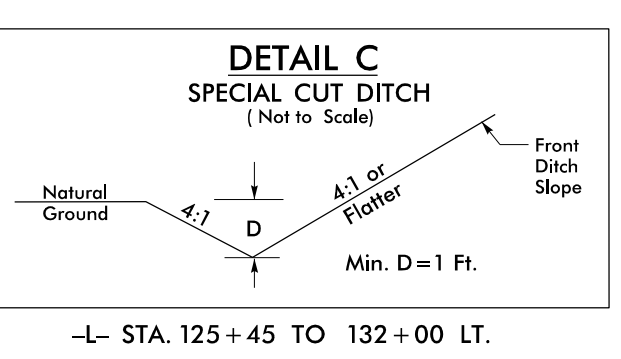
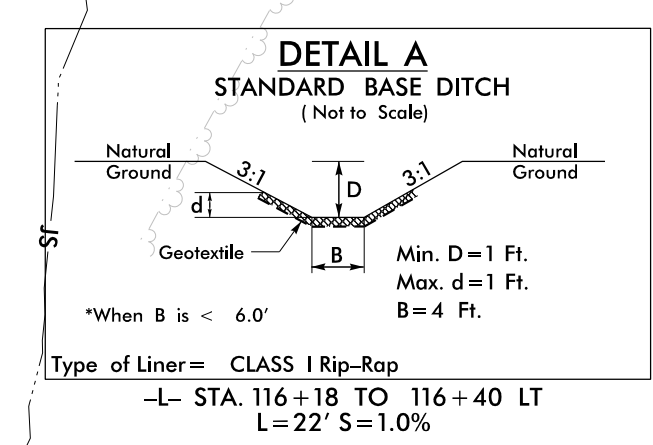
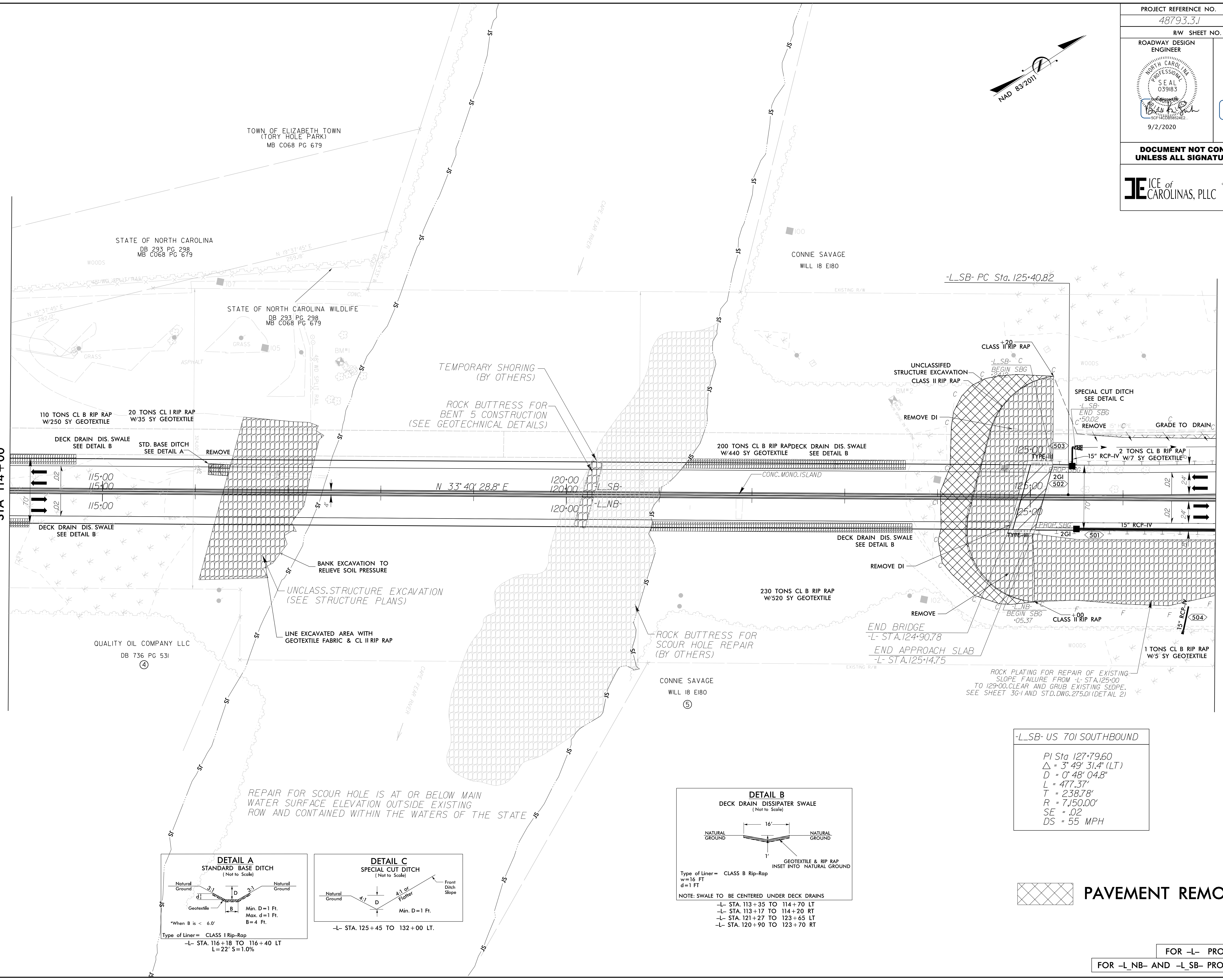
8/17/99
9:51:02 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\Plansheets\US701\rdy_psh05.dgn
B:\work\19-77

PROJECT REFERENCE NO. 48793.31	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 039183 9/2/2020	HYDRAULICS ENGINEER NORTH CAROLINA PROFESSIONAL SEAL 20754 9/2/2020
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
ICE of CAROLINAS, PLLC 4503 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 803-822-0333 License #: P-6999	



MATCHLINE SHEET 4
STA 114+00

MATCHLINE SHEET 6
STA 127+00



-L_SB- US 701 SOUTHBOUND

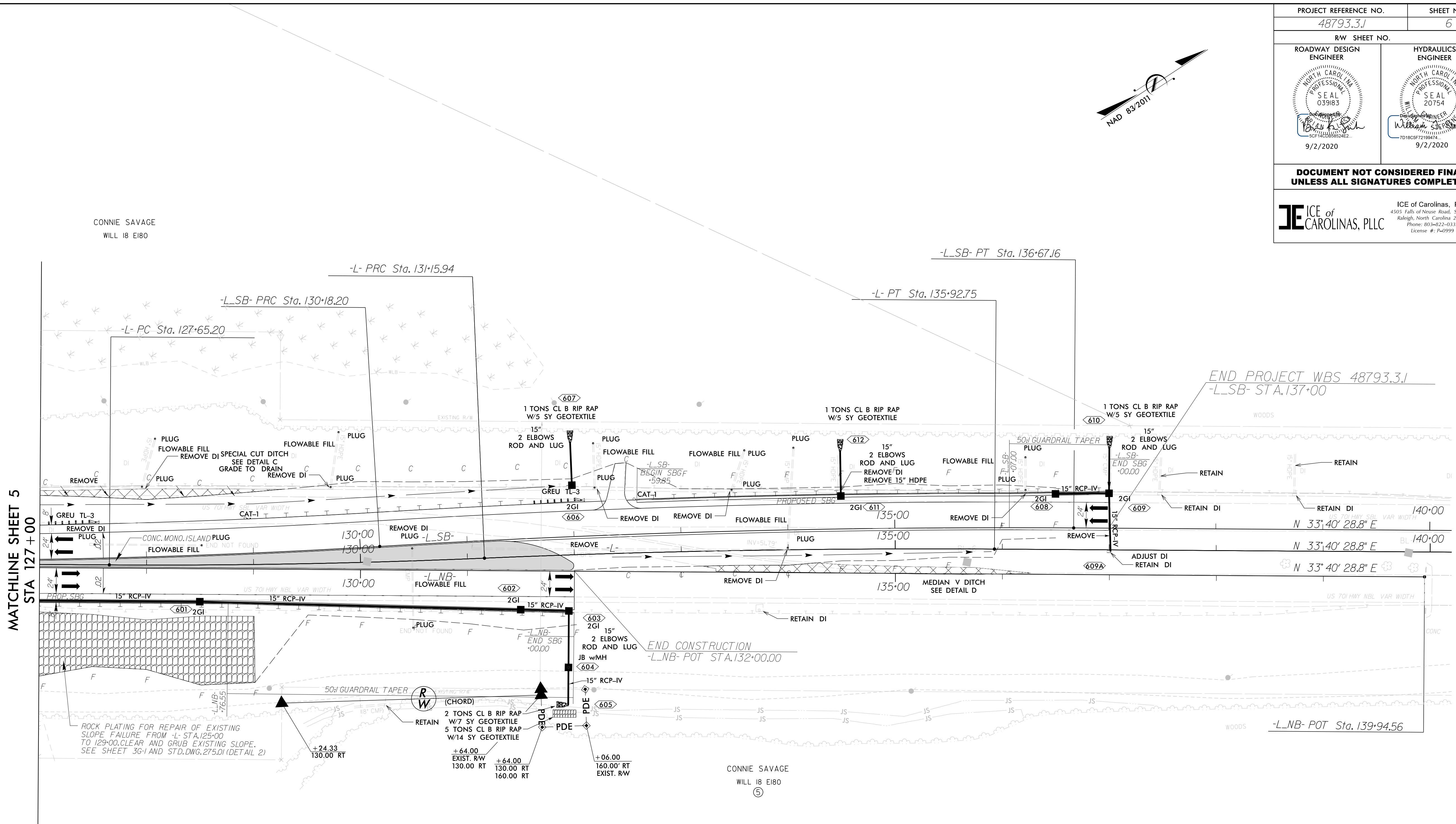
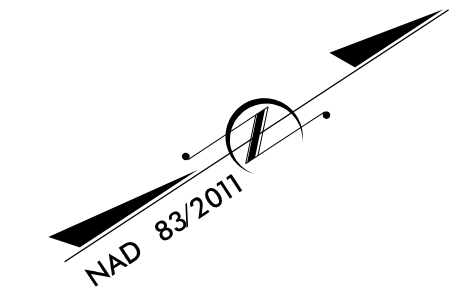
PI Sta 127+79.60
 $\Delta = 3^\circ 49' 31.4''$ (LT)
 $D = 0' 48' 04.8''$
 $L = 477.37'$
 $T = 238.78'$
 $R = 7,150.00'$
 $SE = .02$
 $DS = 55$ MPH

PAVEMENT REMOVAL

FOR -L- PROFILE, SEE SHEET 8
FOR -L_NB- AND -L_SB- PROFILE, SEE SHEET 9

8/17/99

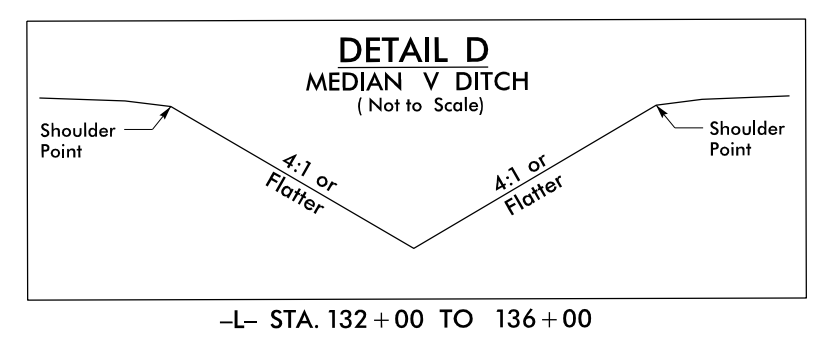
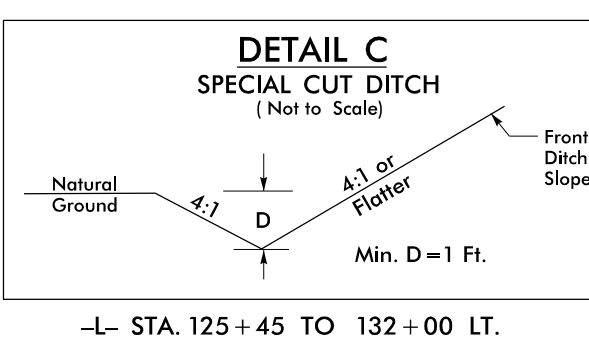
PROJECT REFERENCE NO. 48793.3.1	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER 	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
ICE of CAROLINAS, PLLC 4503 Falls of Neuse Road, Suite 110 Raleigh, North Carolina 27609 Phone: 803-822-0333 License #: P-6999	



MATCHLINE SHEET 5
STA 127+00

-L_SB- US 701 SOUTHBOUND	
PI Sta 127+79.60	PI Sta 133+42.80
$\Delta = 3^{\circ} 49' 31.4''$ (LT)	$\Delta = 3^{\circ} 49' 31.4''$ (RT)
D = 0' 48' 04.8"	D = 0' 35' 22.1"
L = 477.37'	L = 648.96'
T = 238.78'	T = 324.60'
R = 7,150.00'	R = 9,720.00'
SE = .02	SE = NC
DS = 55 MPH	DS = 55 MPH

-L- US 701	
PI Sta 129+40.61	PI Sta 133+54.39
$\Delta = 2^{\circ} 48' 38.1''$ (LT)	$\Delta = 2^{\circ} 48' 38.1''$ (RT)
D = 0' 48' 04.8"	D = 0' 35' 22.1"
L = 350.74'	L = 476.81'
T = 175.40'	T = 238.45'
R = 7,150.00'	R = 9,720.00'



PAVEMENT REMOVAL

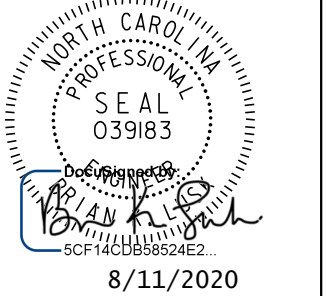

NOTE: ALL EASEMENT CALLOUTS FROM -L- UNLESS OTHERWISE NOTED

FOR -L_NB- AND -L_SB- PROFILE, SEE SHEET 9

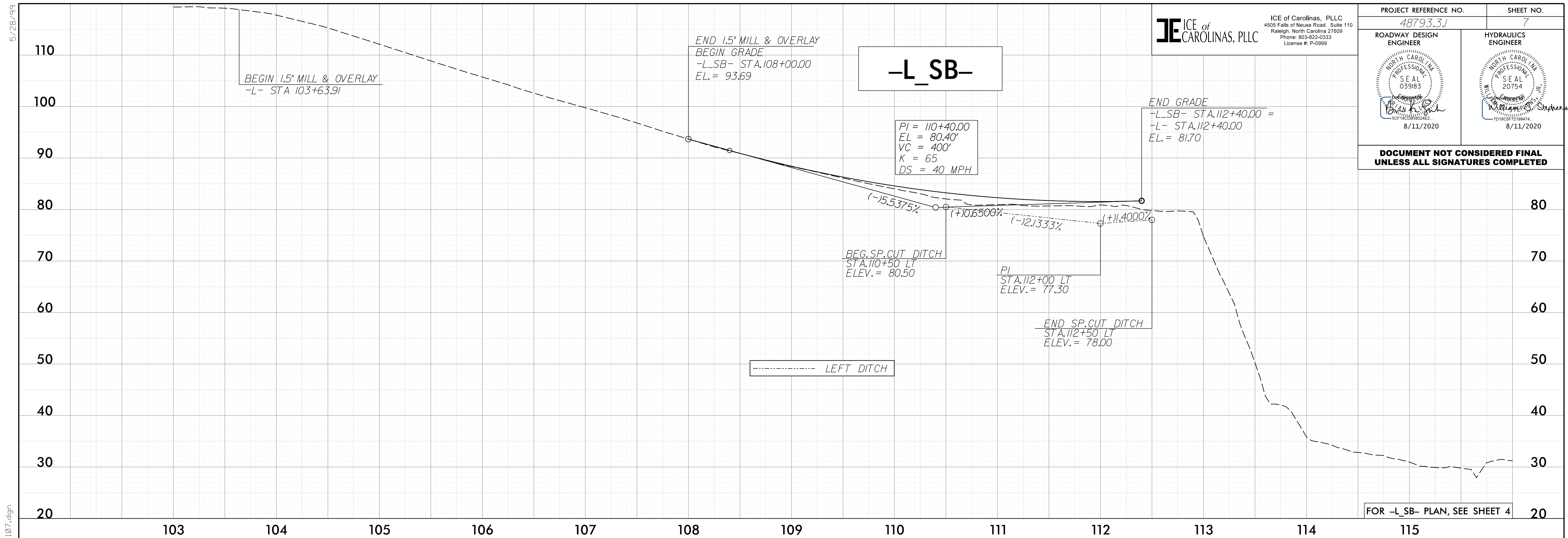
9:43:10 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\Plansheets\US701\rdy_psh06.dgn
8/17/99

5/28/19

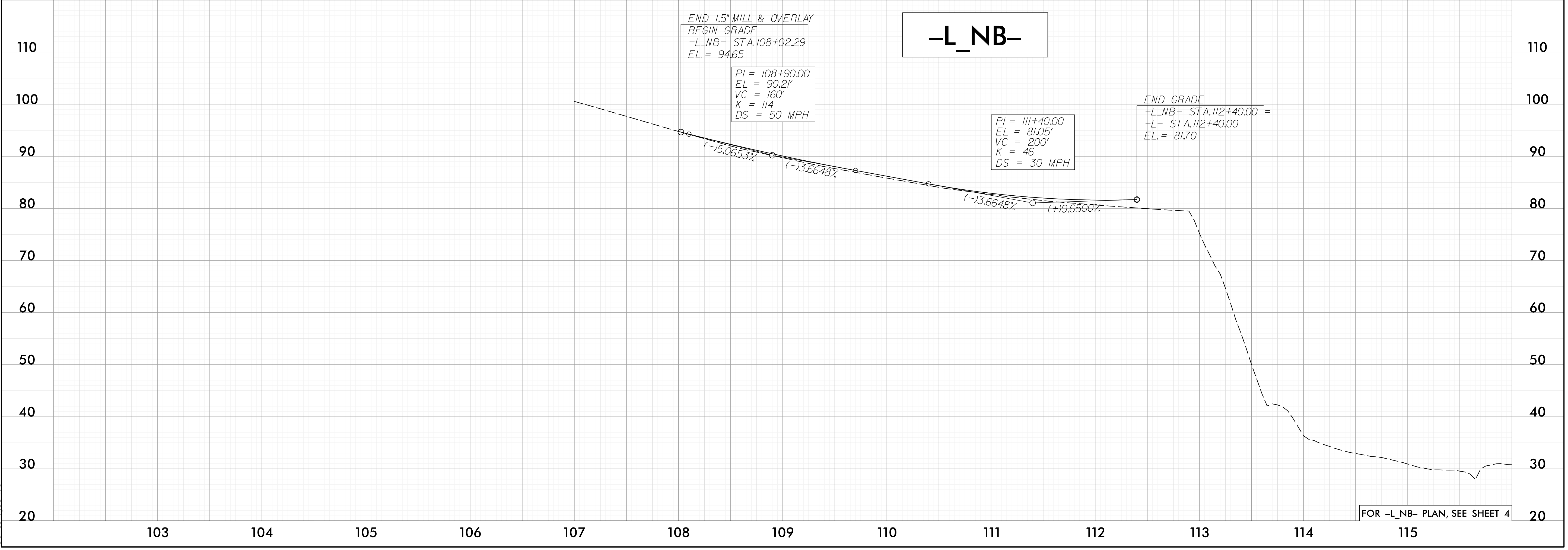
ICE of CAROLINAS, PLLC
ICE of Carolinas, PLLC
4505 Falls of Neuse Road, Suite 110
Raleigh, North Carolina 27609
Phone: 803-822-0333
License #: P-0999

PROJECT REFERENCE NO. 48793.31	SHEET NO. 7
ROADWAY DESIGN ENGINEER  8/11/2020	HYDRAULICS ENGINEER  8/11/2020

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

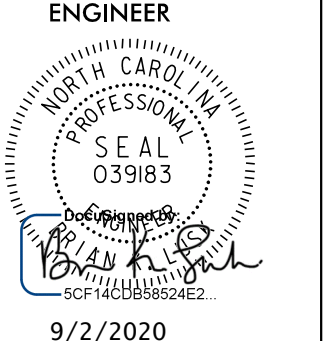
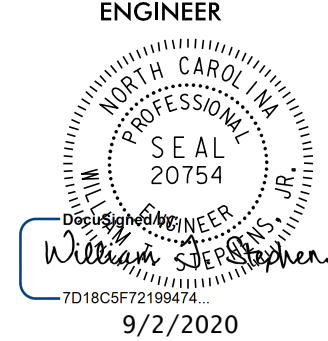


5/31/14 PM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NCDOT\Roadway\Proj\Plansheets\US701-L-rdy-pl\07.dgn
Corbin Jackson

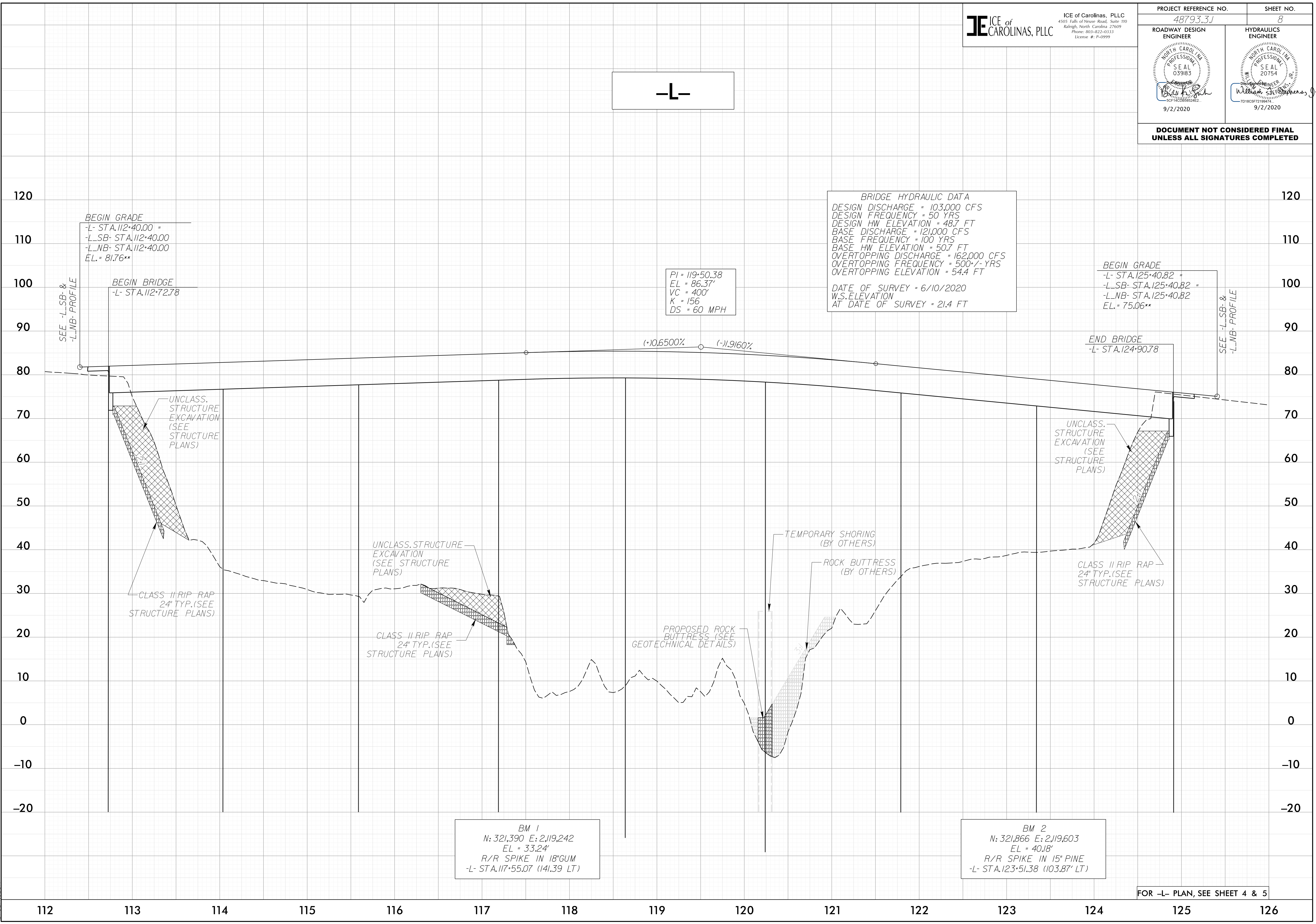


5/14/19
9:43:15 AM
R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NC00\Roadway\Proj\Plansheets\US701-L-rdy-pl\08.dgn
B:\work\19-77

ICE of CAROLINAS, PLLC
4505 Falls of Neuse Road, Suite 110
Raleigh, North Carolina 27609
Phone: 803-822-0333
License #: P-0999

PROJECT REFERENCE NO. 48793.31	SHEET NO. 8
ROADWAY DESIGN ENGINEER  9/2/2020	HYDRAULICS ENGINEER  9/2/2020

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



BEGIN GRADE
 -L- STA.112+40.00 =
 -L-SB- STA.112+40.00
 -L-NB- STA.112+40.00
 EL. = 81.76**

BEGIN BRIDGE
 -L- STA.112+72.78

PI = 119+50.38
 EL = 86.37'
 VC = 400'
 K = 156
 DS = 60 MPH

BRIDGE HYDRAULIC DATA
 DESIGN DISCHARGE = 103,000 CFS
 DESIGN FREQUENCY = 50 YRS
 DESIGN HW ELEVATION = 48.7 FT
 BASE DISCHARGE = 121,000 CFS
 BASE FREQUENCY = 100 YRS
 BASE HW ELEVATION = 50.7 FT
 OVERTOPPING DISCHARGE = 162,000 CFS
 OVERTOPPING FREQUENCY = 500 +/- YRS
 OVERTOPPING ELEVATION = 54.4 FT
 DATE OF SURVEY = 6/10/2020
 W.S. ELEVATION
 AT DATE OF SURVEY = 21.4 FT

BEGIN GRADE
 -L- STA.125+40.82 =
 -L-SB- STA.125+40.82 =
 -L-NB- STA.125+40.82
 EL. = 75.06**

END BRIDGE
 -L- STA.124+90.78

UNCLASS. STRUCTURE EXCAVATION (SEE STRUCTURE PLANS)

CLASS II RIP RAP 24" TYP. (SEE STRUCTURE PLANS)

UNCLASS. STRUCTURE EXCAVATION (SEE STRUCTURE PLANS)

CLASS II RIP RAP 24" TYP. (SEE STRUCTURE PLANS)

PROPOSED ROCK BUTTRESS (SEE GEOTECHNICAL DETAILS)

TEMPORARY SHORING (BY OTHERS)
 ROCK BUTTRESS (BY OTHERS)

UNCLASS. STRUCTURE EXCAVATION (SEE STRUCTURE PLANS)

CLASS II RIP RAP 24" TYP. (SEE STRUCTURE PLANS)

BM 1
 N: 321,390 E: 2,119,242
 EL = 33.24'
 R/R SPIKE IN 18" GUM
 -L- STA.117+55.07 (141.39 LT)

BM 2
 N: 321,866 E: 2,119,603
 EL = 40.18'
 R/R SPIKE IN 15" PINE
 -L- STA.123+51.38 (103.87' LT)

FOR -L- PLAN, SEE SHEET 4 & 5

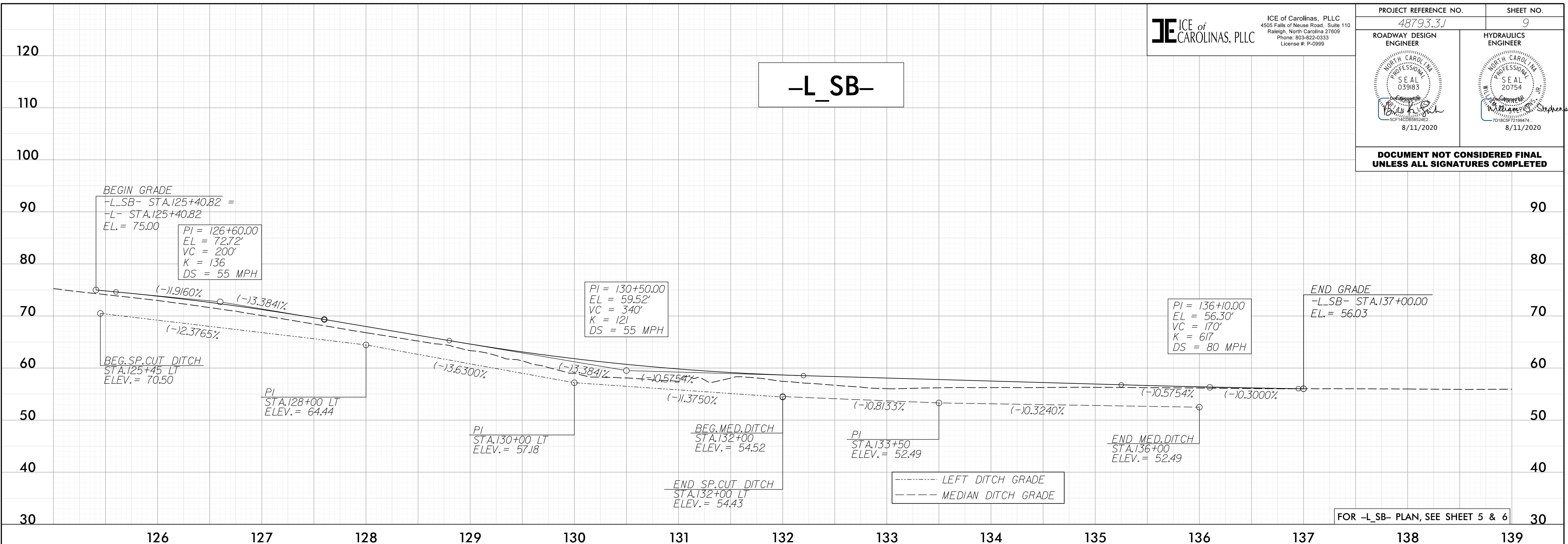
5/28/19



ICE of Carolinas, PLLC
4505 Falls of Neuse Road, Suite 110
Raleigh, North Carolina 27609
Phone: 803-822-0333
License #: P-0999

PROJECT REFERENCE NO. 48793.31	SHEET NO. 9
ROADWAY DESIGN ENGINEER [Signature] 8/11/2020	HYDRAULICS ENGINEER [Signature] 8/11/2020

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



5:32:21PM R:\Projects\19-77 Division 6 On Call\02 US 701 over Cape Fear River\NC001\Roadway\Proj\Plansheets\US701-L-rd-pl-109.dgn

