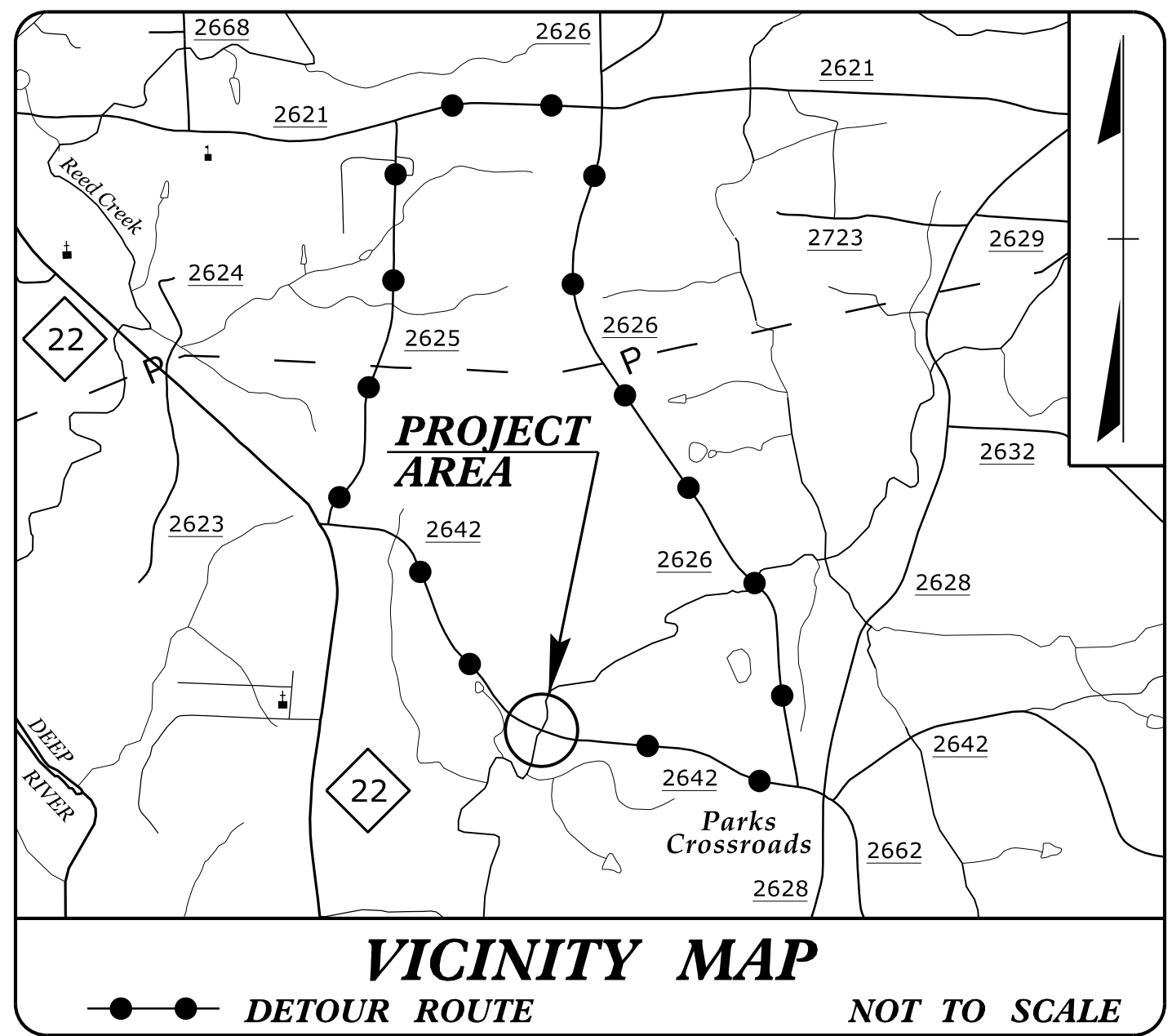


TIP PROJECT: BP8-R023

CONTRACT: DH00556

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols

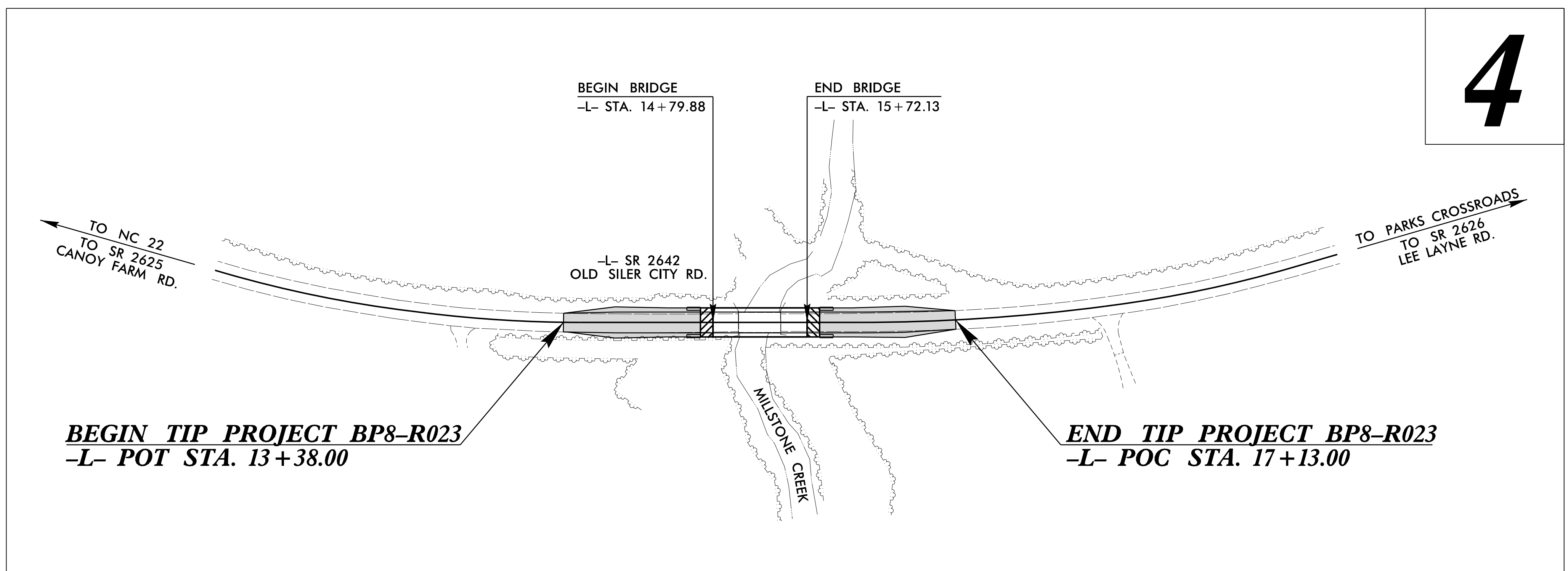
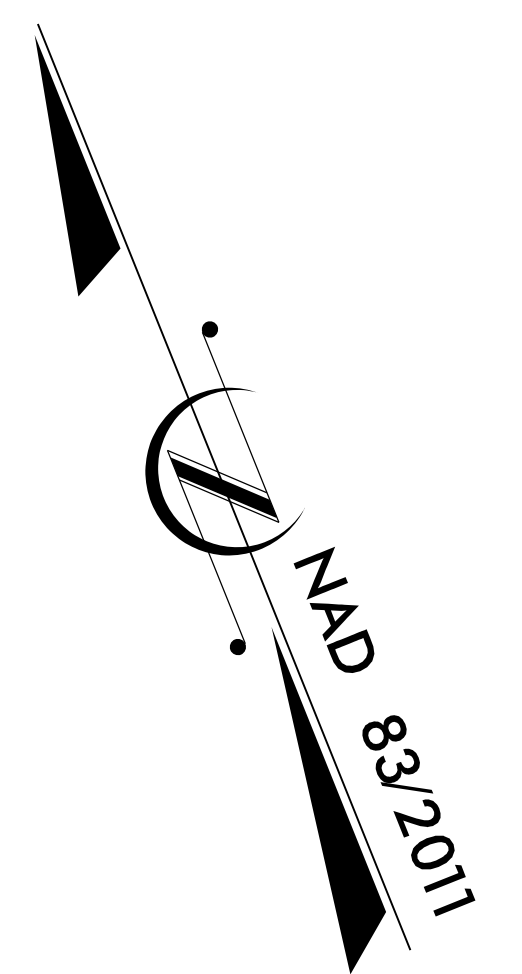


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
RANDOLPH COUNTY

LOCATION: REPLACE BRIDGE NO.164 ON SR 2642 (OLD SILER CITY RD.) OVER MILLSTONE CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

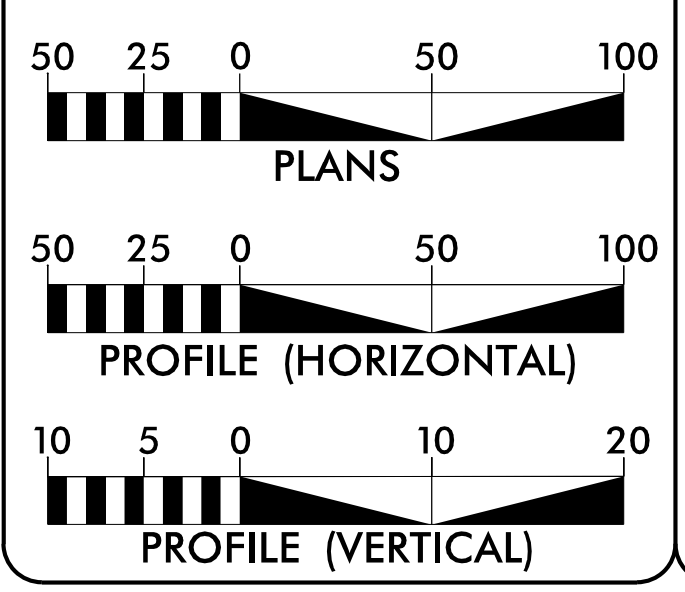
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP8-R023	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP8.R023.1		PE	
BP8.R023.2		RW & UTILITIES	
BP8.R023.3		CONSTRUCTION	

FINAL PLANS



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2024 = 450
(ESTIMATED)

V = 60 MPH

FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP8-R023 = 0.054 MILES
LENGTH STRUCTURE PROJECT BP8-R023 = 0.017 MILES
TOTAL LENGTH PROJECT BP8-R023 = 0.071 MILES

Plans Prepared By:



2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 19, 2023

LETTING DATE:
AUGUST 27, 2024

Plans Prepared For:

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 8
121 DOT DRIVE
CARTHAGE, NC 28327

TIM WELCH, PE
NCDOT PROJECT ENGINEER

M. TRAVIS POTTS, PE
PROJECT ENGINEER

NYA K. BOAYUE, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

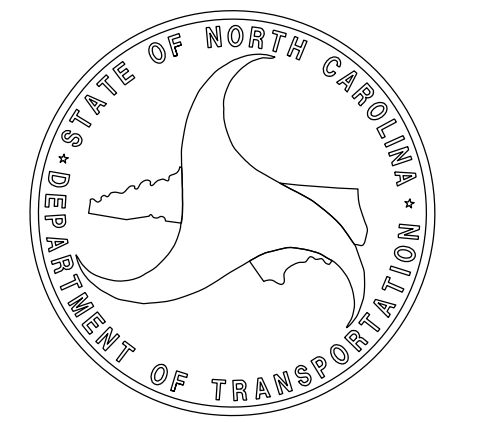
DocuSigned by:
Andrew Nottingham 6/6/2024
02F940DF9D07A475

ANDREW NOTTINGHAM
P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
M. Travis Potts 6/6/2024
45181FEE89ADF

M. TRAVIS POTTS
P.E.





ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

PROJECT REFERENCE NO. SHEET NO.
BP8-R023 1A
ROADWAY DESIGN ENGINEER SEAL 041453
NORTH CAROLINA PROFESSIONAL ENGINEERS
TRAVIS POTTS
DocuSigned by: M. Travis Potts 6/20/2024
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

INDEX OF SHEETS
SHEET NUMBER SHEET
1 TITLE SHEET
1A INDEX OF SHEETS, GENERAL NOTES, AND STANDARD DRAWINGS
1B CONVENTIONAL SYMBOLS
2A-1 PAVEMENT SCHEDULE AND TYPICAL SECTIONS
3B-1 SUMMARIES OF EARTHWORK, PAVEMENT REMOVAL, SHOULDER BERM GUTTER, AND GUARDRAIL
3D-1 DRAINAGE SUMMARY
3G-1 GEOTECHNICAL SUMMARIES
4 PLAN AND PROFILE SHEET
RW01 THRU RW04 RIGHT-OF-WAY PLANS
TMP-1 THRU TMP-3 TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2 PAVEMENT MARKING PLANS
EC-1 THRU EC-5 EROSION CONTROL PLANS
RF-1 REFORESTATION PLANS
UD-1 THRU UD-2 UTILITIES BY OTHERS PLANS
X-1 CROSS-SECTION SUMMARY SHEET
X-2 THRU X-6 CROSS-SECTIONS
S-1 THRU S-17 STRUCTURE PLANS

GENERAL NOTES: 2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024
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 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
SUBSURFACE DRAINS:
SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.
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 WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.
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 DUKE ENERGY AND BRIGHTSPEED (COMMUNICATIONS).
ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.
RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

2024 ROADWAY ENGLISH STANDARD DRAWINGS EFF. 01-16-2024 REV.
The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - 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
DIVISION 4 - MAJOR STRUCTURES
423.01 Bridge Approach Fills - Type 1 Approach Fill for Bridge Abutment
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS
560.01 Method of Shoulder Construction - High Side of Superelevated Curve - Method I
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
840.25 Anchorage for Frames - Brick or Concrete or Precast
840.29 Frames and Narrow Slot Flat Grates
840.35 Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.46 Traffic Bearing Precast Drainage Structure
840.66 Drainage Structure Steps
846.01 Concrete Curb, Gutter and Curb & Gutter
846.04 Drop Inlet Installation in Shoulder Berm Gutter
862.01 Guardrail Placement
862.02 Guardrail Installation (Special Detail for Sheet 6 of 8)
862.03 Structure Anchor Units
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

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	(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	☒
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	JS
Buffer Zone 1	BZ 1
Buffer Zone 2	BZ 2
Flow Arrow	←
Disappearing Stream	→
Spring	○
Wetland	WLB
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)*	▬

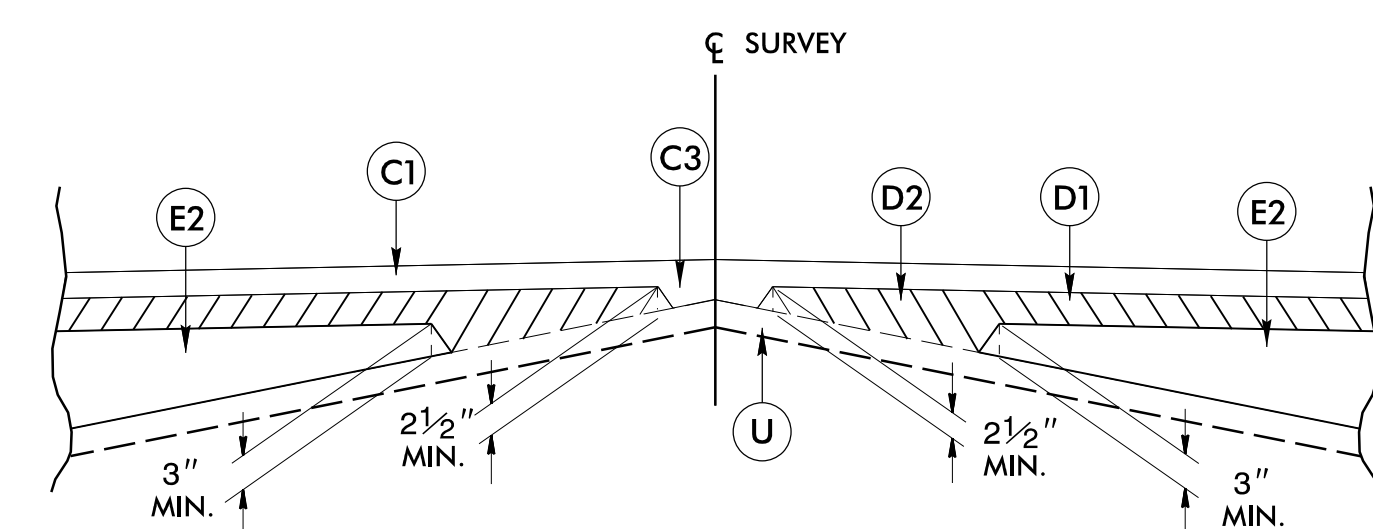
MISCELLANEOUS:

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	AATUR
End of Information	E.O.I.

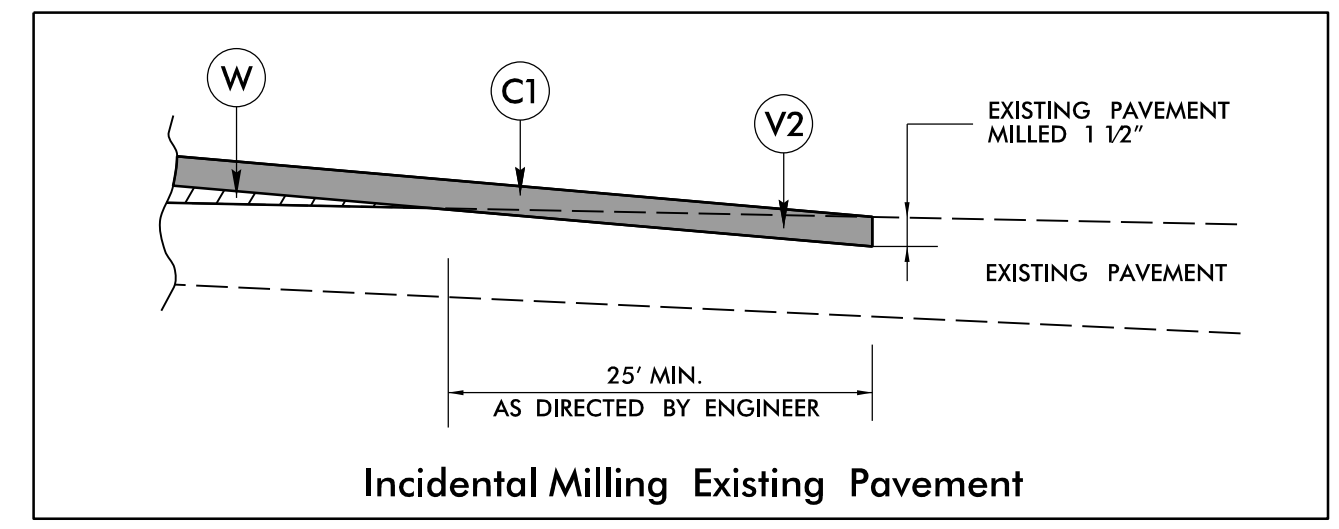
6/2/2024

PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1 1/2" 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 2 1/2" 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 3" OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
R1	SHOULDER BERM GUTTER.
U	EXISTING PAVEMENT.
V1	MILLING, 1 1/2"
V2	INCIDENTAL MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE DETAIL SHOWING METHOD OF WEDGING).

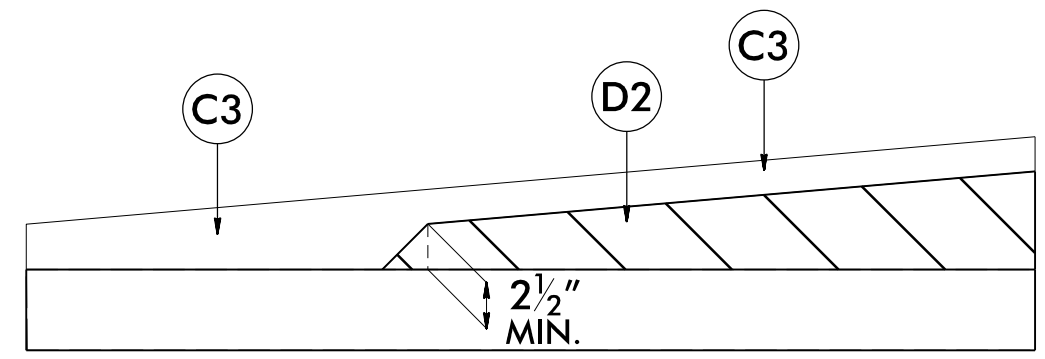
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



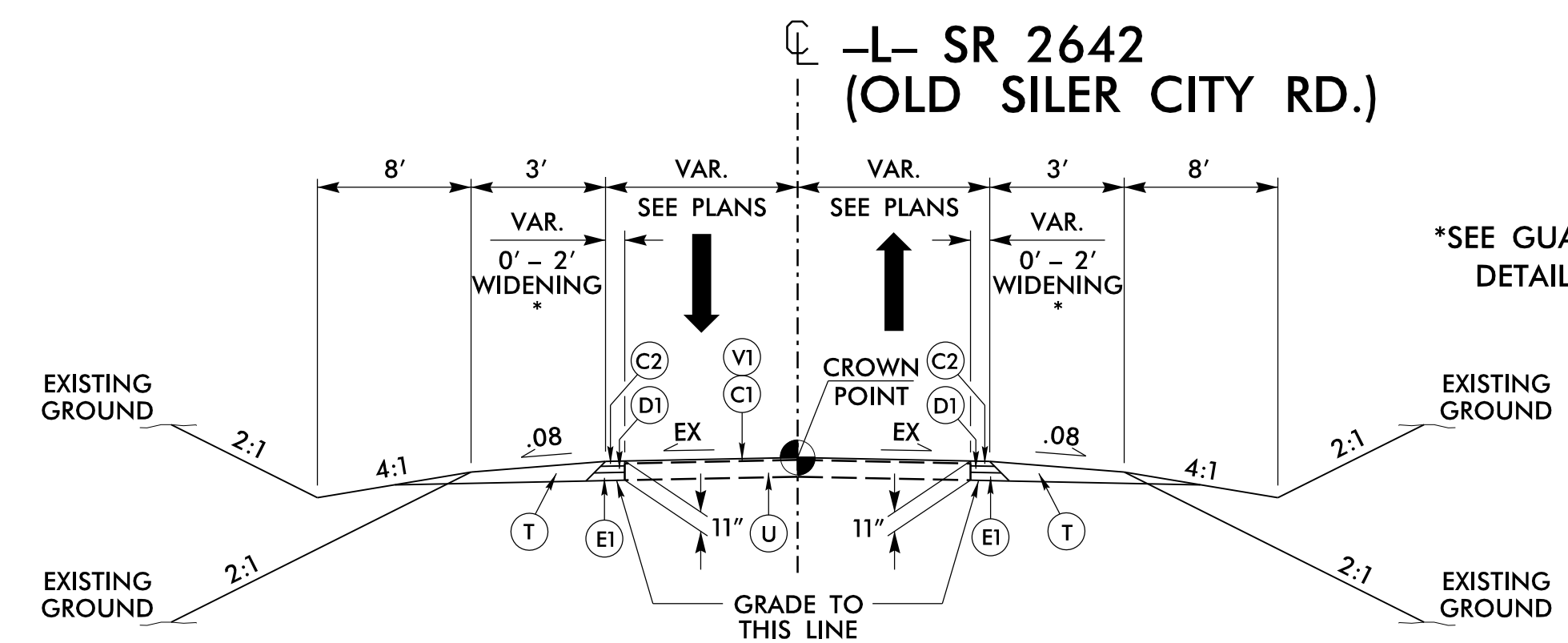
Detail Showing Method of Wedging



Incidental Milling Existing Pavement



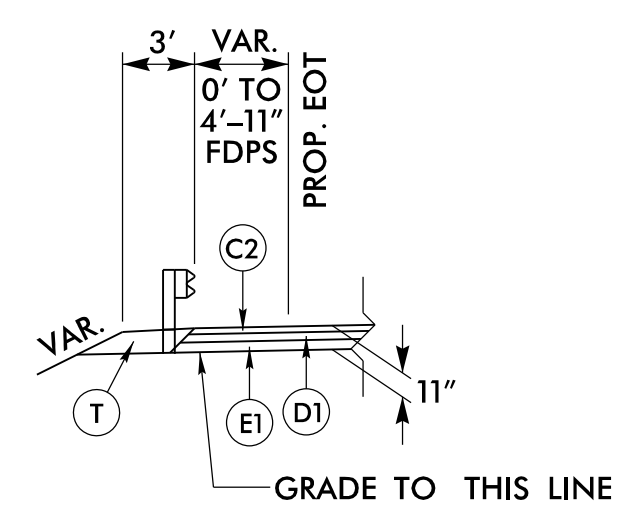
Detail For Paving on Bridge Deck



TYPICAL SECTION NO. 1

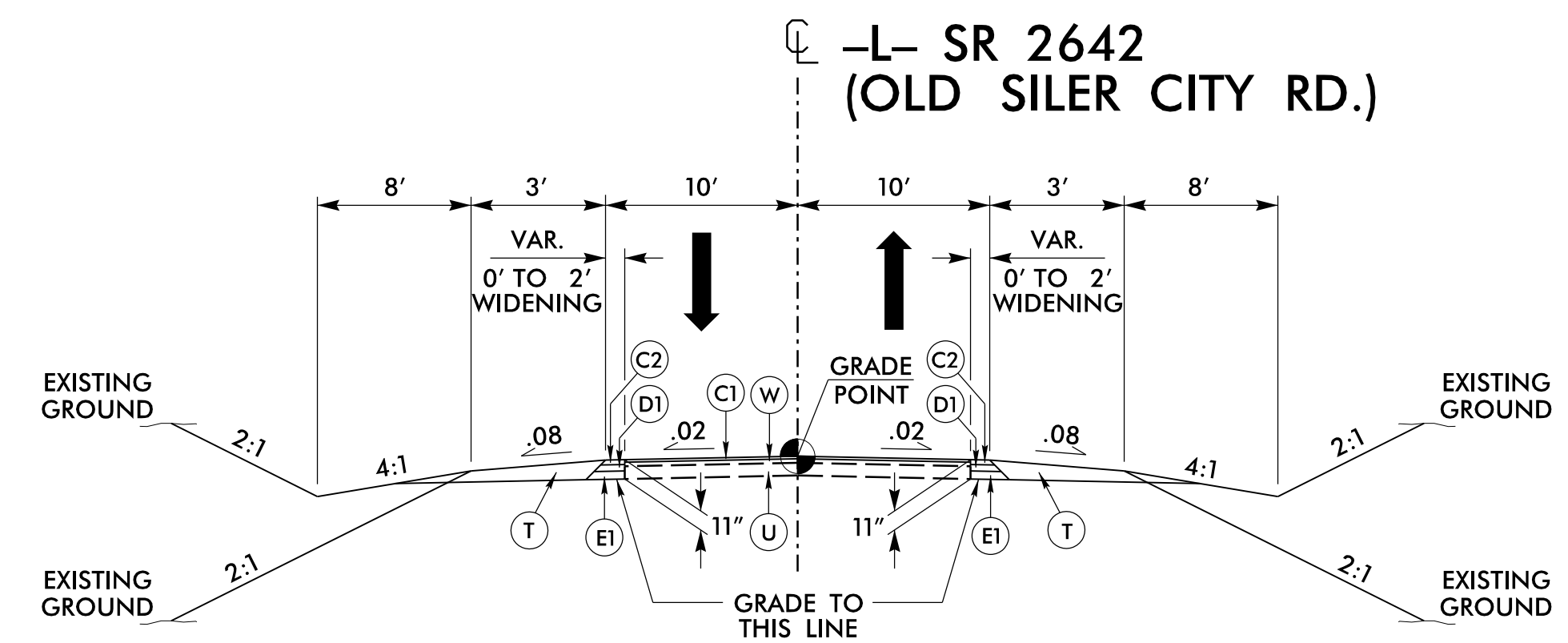
-L- STA. 13+38.00 TO -L- STA. 14+00.00
 -L- STA. 16+70.00 TO -L- STA. 17+13.00

*SEE GUARDRAIL AND PAVED SHOULDER DETAIL FOR ADDITIONAL WIDENING



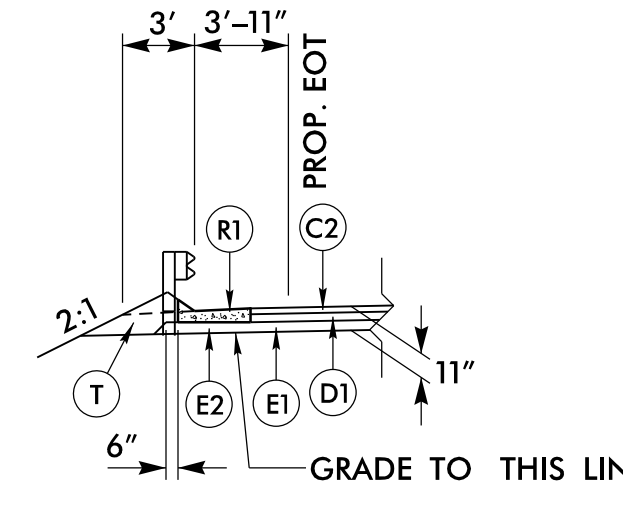
GUARDRAIL AND PAVED SHOULDER DETAIL

SEE PLAN FOR GUARDRAIL LOCATIONS



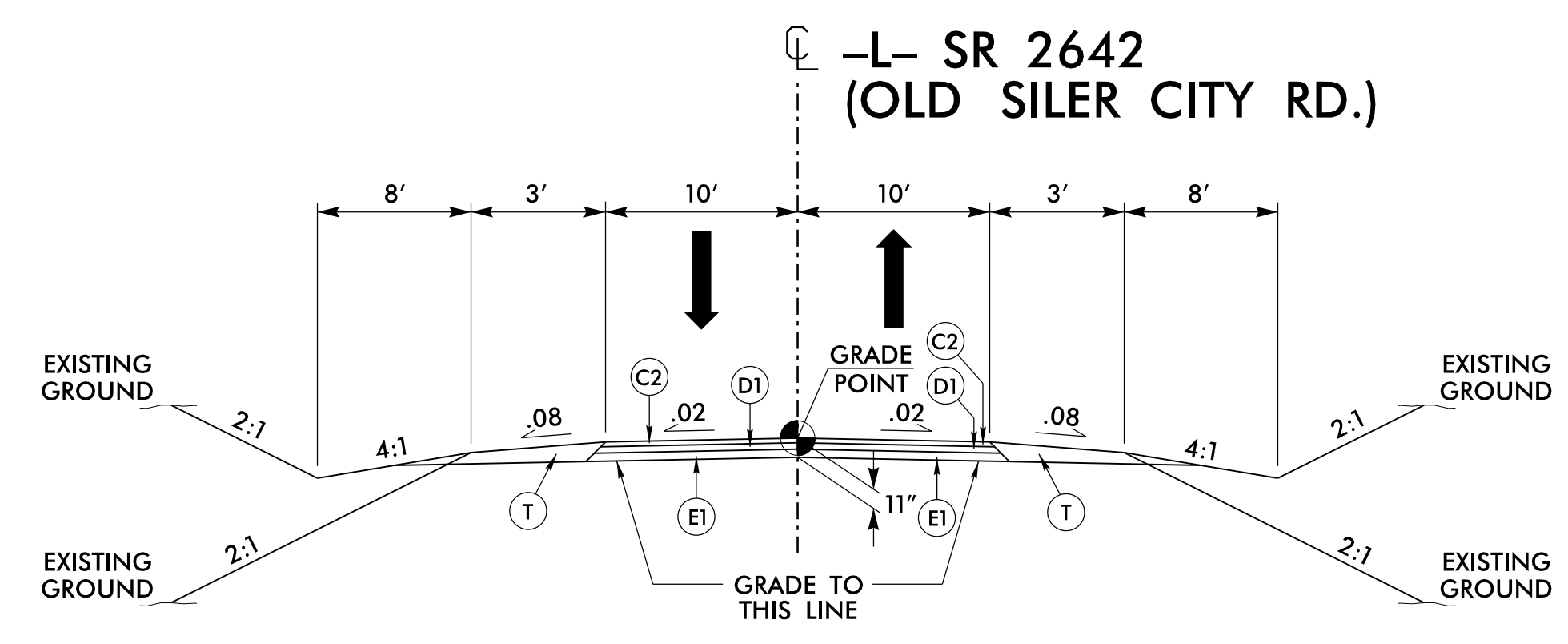
TYPICAL SECTION NO. 2

-L- STA. 14+00.00 TO -L- STA. 14+50.00
 -L- STA. 16+00.00 TO -L- STA. 16+70.00



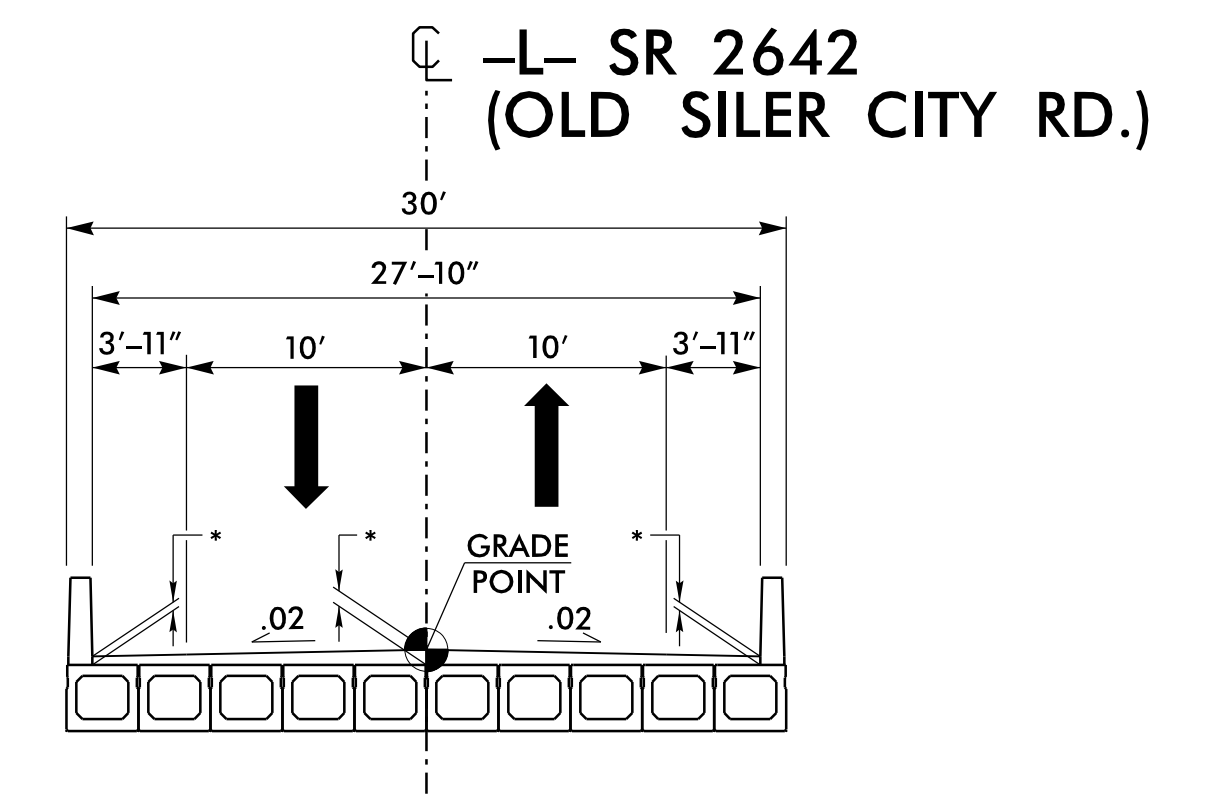
SHOULDER BERM GUTTER DETAIL

SEE PLAN FOR SHOULDER BERM GUTTER LOCATIONS



TYPICAL SECTION NO. 3

-L- STA. 14+50.00 TO -L- STA. 14+79.88 (BEGIN BRIDGE)
 -L- STA. 15+72.13 (END BRIDGE) TO -L- STA. 16+00.00



TYPICAL SECTION NO. 4

-L- STA. 14+79.88 (BEGIN BRIDGE) TO -L- STA. 15+72.13 (END BRIDGE)

*SEE DETAIL FOR PAVING ON BRIDGE DECK, AND
 SEE STRUCTURE PLANS FOR ASPHALT WEARING SURFACE DEPTH

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

PROJECT REFERENCE NO. BP8-R023	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

C:\MAY 2024 06:54 Roadway\Proj\BP8R023_rdy_tup.dgn
 10:00 AM 6/2/2024 3:30 PM
 11:58 AM 6/2/2024 3:30 PM

12/06/07

COMPUTED BY: SMS DATE: JUNE 9, 2023
 CHECKED BY: MTP DATE: APRIL 4, 2024

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. SHEET NO.
 BP8-R023 3B-1

**SUMMARY OF EARTHWORK
 VOLUME IN CUBIC YARDS**

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 13+38.00	-L- 14+79.88	28	71	43	
	(BEGIN BRIDGE)				
SUBTOTAL:		28	71	43	
-L- 15+72.13	-L- 17+13.00	46	70	24	
	(END BRIDGE)				
SUBTOTAL:		46	70	24	
TOTAL:		74	141	67	
MATERIAL FOR SHOULDER CONSTRUCTION			58	58	
PROJECT TOTAL:		74	199	125	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				6	
GRAND TOTAL:		74	199	131	
SAY:		80		140	

EST. DDE = 30 CY
 EST. UNDERCUT = 200 CY
 EST. GEOTEXTILE = 200 SY
 EST. SELECT GRANULAR MATERIAL = 200 CY

Earthwork quantities are calculated by ms consultants. These earthwork quantities are based in part on subsurface data provided by the Geotechnical Engineering Unit.

Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

**SUMMARY OF EXISTING
 ASPHALT PAVEMENT REMOVAL**

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD ²
-L-	14+50.00	15+05.23	CL	106
-L-	15+45.88	16+00.00	CL	102
TOTAL:				208
SAY:				210

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH
-L- LT	14+56.00	14+69.00	13
-L- RT	14+56.00	14+69.00	13
-L- LT	15+83.00	15+96.00	13
-L- RT	15+83.00	15+96.00	13
TOTAL:			52
SAY:			55

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

GUARDRAIL SUMMARY

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			REMOVE EXISTING GUARDRAIL	REMOVE AND RESET EXISTING GUARDRAIL	REMARKS					
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	GREU TL-3	TYPE III	EA	G	NG												
-L-	13+87	14+81	LT	93.75				14+81	4	7	50	50	1	1	1	1															
-L-	13+87	14+81	RT	93.75				14+81	4	7	50	50	1	1	1	1															
-L-	15+71	16+65	LT	93.75				15+71	4	7	50	50	1	1	1	1															
-L-	15+71	16+65	RT	93.75				15+71	4	7	50	50	1	1	1	1															
SUBTOTAL				375.00																											
ANCHOR DEDUCTIONS																															
GREU TL-3 4 @ 50				-200.00																											
TYPE III 4 @ 18.75				-75.00																											
PROJECT TOTAL				100.00																											
SAY				125.00																											
EXTRA GUARDRAIL POSTS = 5 EA																															

C:\MAY 2024 06:54
 K:\0016\06330707\Roadway\Proj\BP8R023_rdy_sum.dgn
 12/06/07 15:58:58

COMPUTED BY: Linda M. Johns, PE

DATE: 4-2-24

CHECKED BY: Andrew Nottingham, PE

DATE: 4-2-24

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

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

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

Main table with columns: LINE & STATION, OFFSET, STRUCTURE NUMBER, THICKNESS OR GAUGE, TOP ELEVATION, INVERT ELEVATION, MINIMUM REQUIRED SLOPE, Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, ENDWALLS, REINFORCED ENDWALLS, DRAINAGE STRUCTURE, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, CONCRETE TRANSITIONAL SECTION, GRAPE TYPE, FLOWABLE FILL, CONCRETE COLLARS, CONCRETE AND BRICK PIPE, and PIPE REMOVAL.

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.

SHEET TOTALS: 32

PROJECT TOTALS: 32

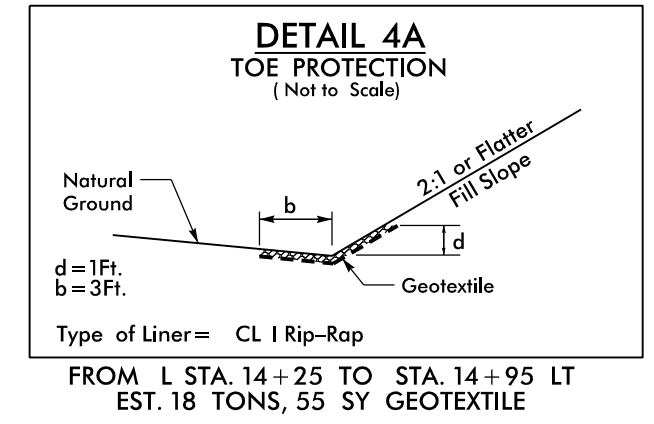
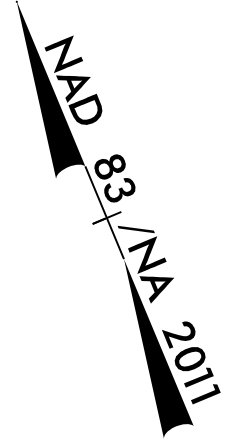
**STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**

SUMMARY OF SUBSURFACE DRAINAGE

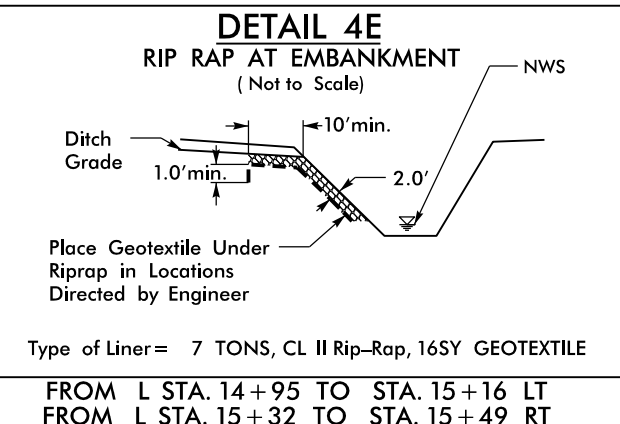
LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
				SD	100
				TOTAL LF:	100

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

8.17.2022



Type of Liner = CL I Rip-Rap
FROM L STA. 14+25 TO STA. 14+95 LT
EST. 18 TONS, 55 SY GEOTEXTILE



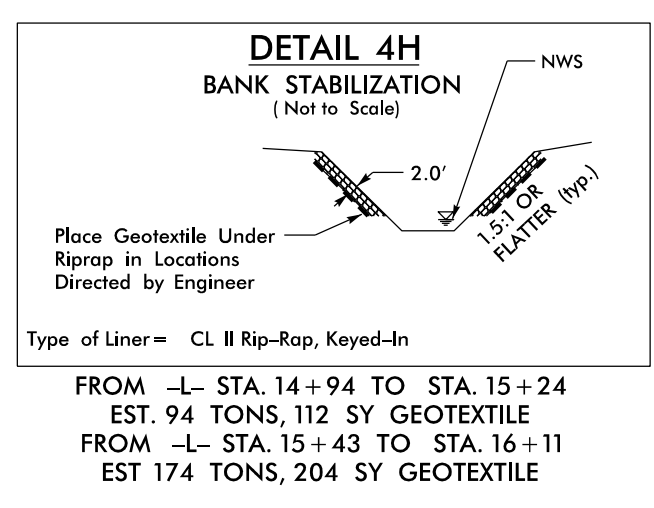
Type of Liner = 7 TONS, CL II Rip-Rap, 165Y GEOTEXTILE
FROM L STA. 14+95 TO STA. 15+16 LT
FROM L STA. 15+32 TO STA. 15+49 RT

-L-			
PI Sta 11+01.12 Δ = 9° 01' 16.2" (LT) D = 5' 00' 00.0" L = 180.42' T = 90.40' R = 1,145.92'	PI Sta 12+80.38 Δ = 7° 01' 16.3" (LT) D = 4' 46' 28.7" L = 147.05' T = 73.62' R = 1,200.00'	PI Sta 17+38.39 Δ = 7° 30' 37.6" (LT) D = 3' 10' 59.2" L = 235.95' T = 118.14' R = 1,800.00' SE = SEE PLANS	PI Sta 19+51.73 Δ = 8° 40' 25.8" (LT) D = 5' 00' 00.0" L = 173.48' T = 86.90' R = 1,145.92'

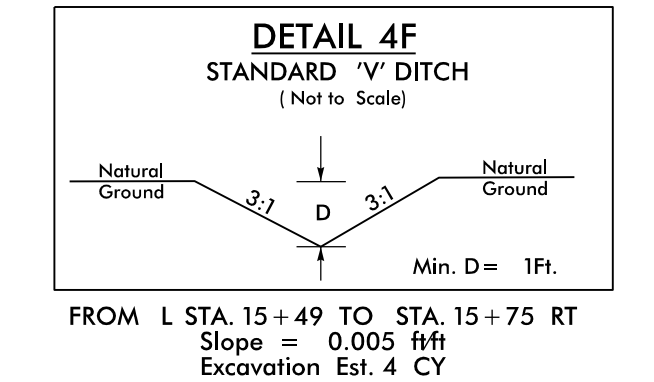
ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

PROJECT REFERENCE NO. BP8-R023	SHEET NO. 4
ROADWAY DESIGN ENGINEER M. Travis Potts	HYDRAULICS ENGINEER Andrew Nottingham
SEAL 041453 M. TRAVIS POTTS	SEAL 018533 ANDREW NOTTINGHAM
DocuSigned by: M. Travis Potts 6/20/2024	DocuSigned by: Andrew Nottingham 6/20/2024

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



Type of Liner = CL II Rip-Rap, Keyed-In
FROM -L- STA. 14+94 TO STA. 15+24
EST. 94 TONS, 112 SY GEOTEXTILE
FROM -L- STA. 15+43 TO STA. 16+11
EST. 174 TONS, 204 SY GEOTEXTILE



FROM L STA. 15+49 TO STA. 15+75 RT
Slope = 0.005 f/ft
Excavation Est. 4 CY

BEGIN TIP PROJECT BP8-R023
-L- POT STA. 13+38.00

BEGIN GRADE
-L- STA. 14+00.00

SHOULDER BERM GUTTER:
-L- STA. 14+56.00 TO -L- STA. 14+69.00 LT/RT
-L- STA. 15+83.00 TO -L- STA. 15+96.00 LT/RT

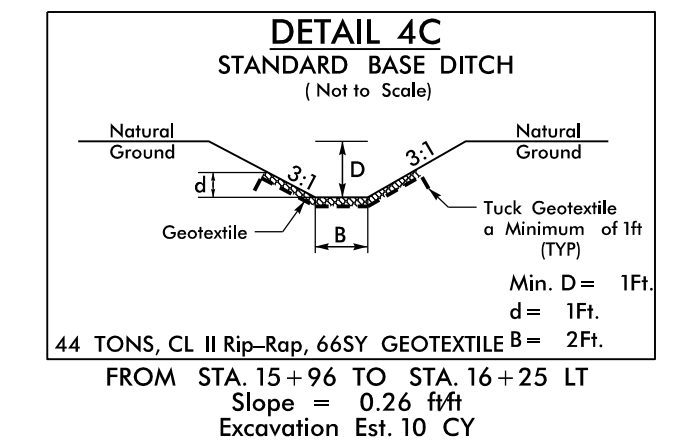
BRIDGE AND APPROACH SLAB:
-L- STA. 14+69.00 BEGIN APPROACH SLAB
-L- STA. 14+79.88 BEGIN BRIDGE
-L- STA. 15+72.13 END BRIDGE
-L- STA. 15+83.00 END APPROACH SLAB

UNCLASSIFIED STRUCTURE EXCAVATION

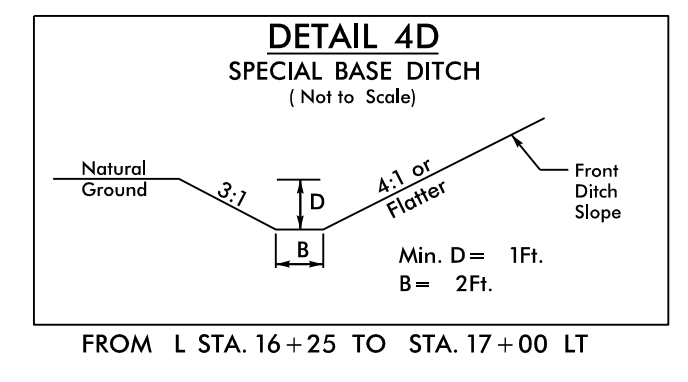
END TIP PROJECT BP8-R023
-L- POT STA. 17+13.00

END GRADE
-L- STA. 16+70.00

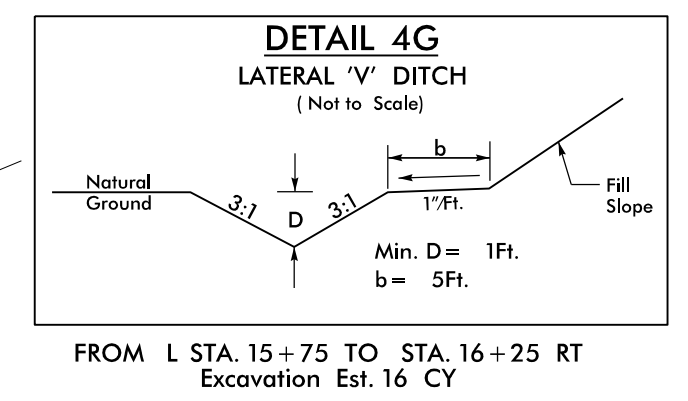
FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-17



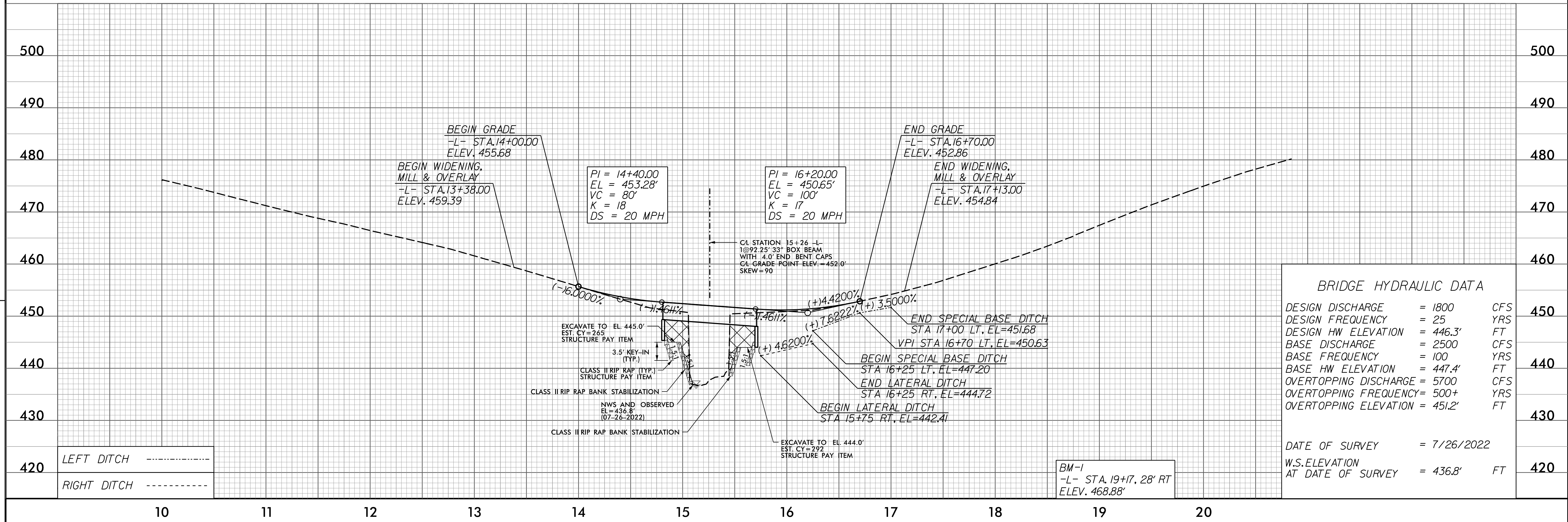
44 TONS, CL II Rip-Rap, 66SY GEOTEXTILE B = 2Ft.
FROM STA. 15+96 TO STA. 16+25 LT
Slope = 0.26 f/ft
Excavation Est. 10 CY



FROM L STA. 16+25 TO STA. 17+00 LT



FROM L STA. 15+75 TO STA. 16+25 RT
Excavation Est. 16 CY



BRIDGE HYDRAULIC DATA			
DESIGN DISCHARGE	= 1800	CFS	450
DESIGN FREQUENCY	= 25	YRS	
DESIGN HW ELEVATION	= 446.3'	FT	
BASE DISCHARGE	= 2500	CFS	
BASE FREQUENCY	= 100	YRS	440
BASE HW ELEVATION	= 447.4'	FT	
OVERTOPPING DISCHARGE	= 5700	CFS	
OVERTOPPING FREQUENCY	= 500+	YRS	430
OVERTOPPING ELEVATION	= 451.2'	FT	
DATE OF SURVEY	= 7/26/2022		
W.S. ELEVATION	= 436.8'	FT	420
AT DATE OF SURVEY			

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP8.R023	RW01	07

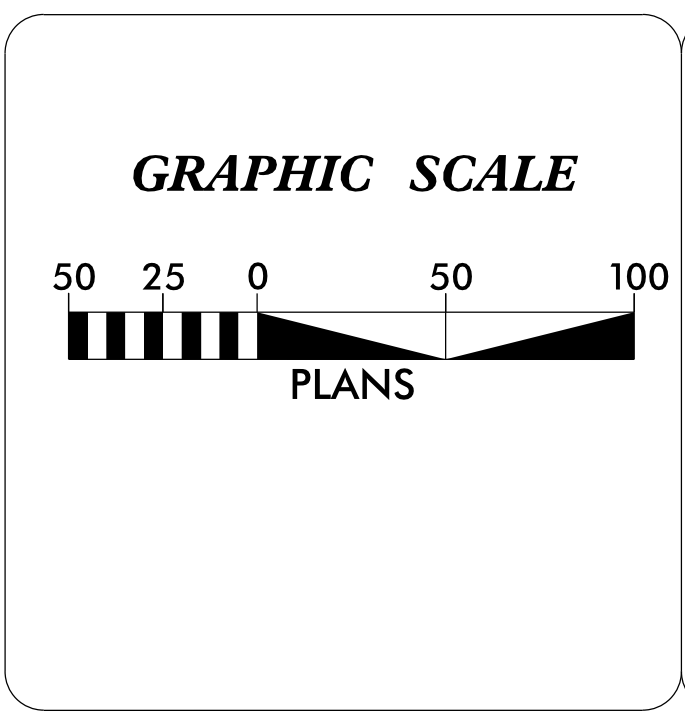
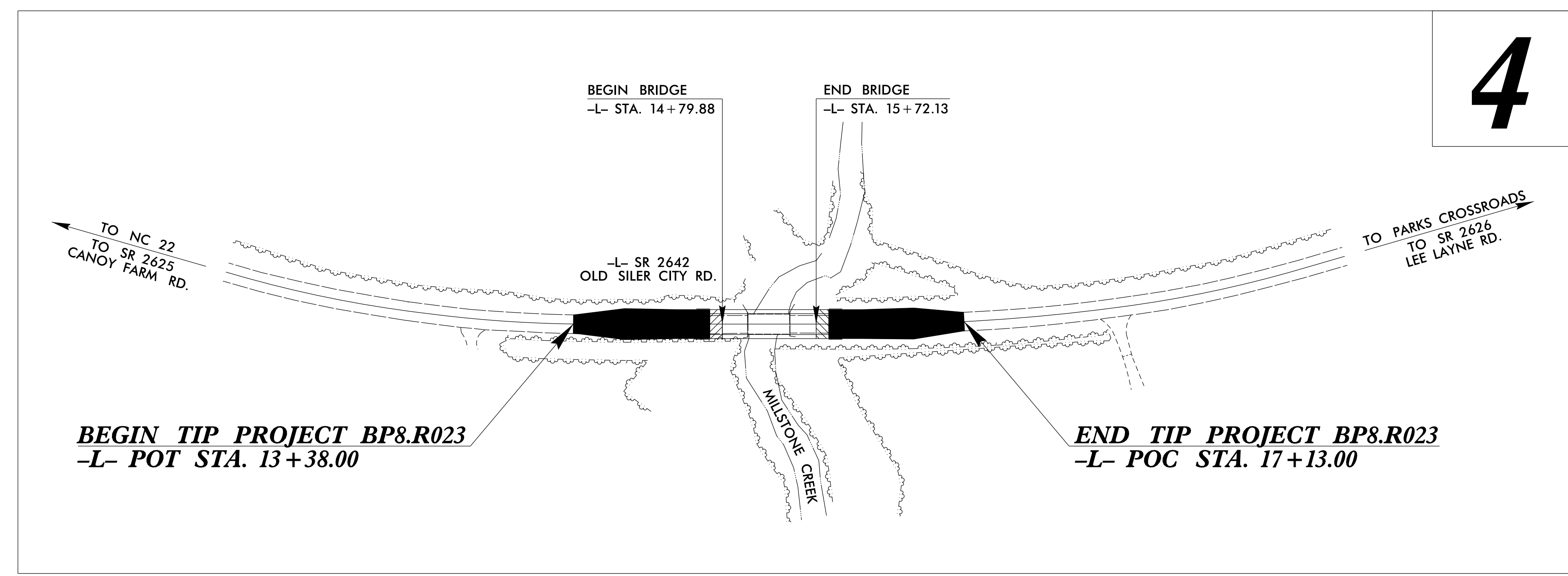
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SURVEY CONTROL, EXISTING CENTERLINES,
RIGHT OF WAY, EASEMENTS AND PROPERTY TIES

RANDOLPH COUNTY

TIP PROJECT: BP8.R023

13-FEB-2024 10:50 SA\Units\Div08\ASHEBORO_PROJECTS\B.projects\5762_diso_750164_diso_750164_diso_BP8.R023\NRW_Staking\rw_sheets_240212\BP8R023_LS_rw01.dgn
09/08/99
AT LS-32981L



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B5762-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 712,692.2200(ft) EASTING: 1,816,035.5589(ft) ELEVATION: 462.15(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99988668

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B5762-2" TO -L- STATION 13+38.00 IS S 79° 29' 33.87" E 56.33(ft)

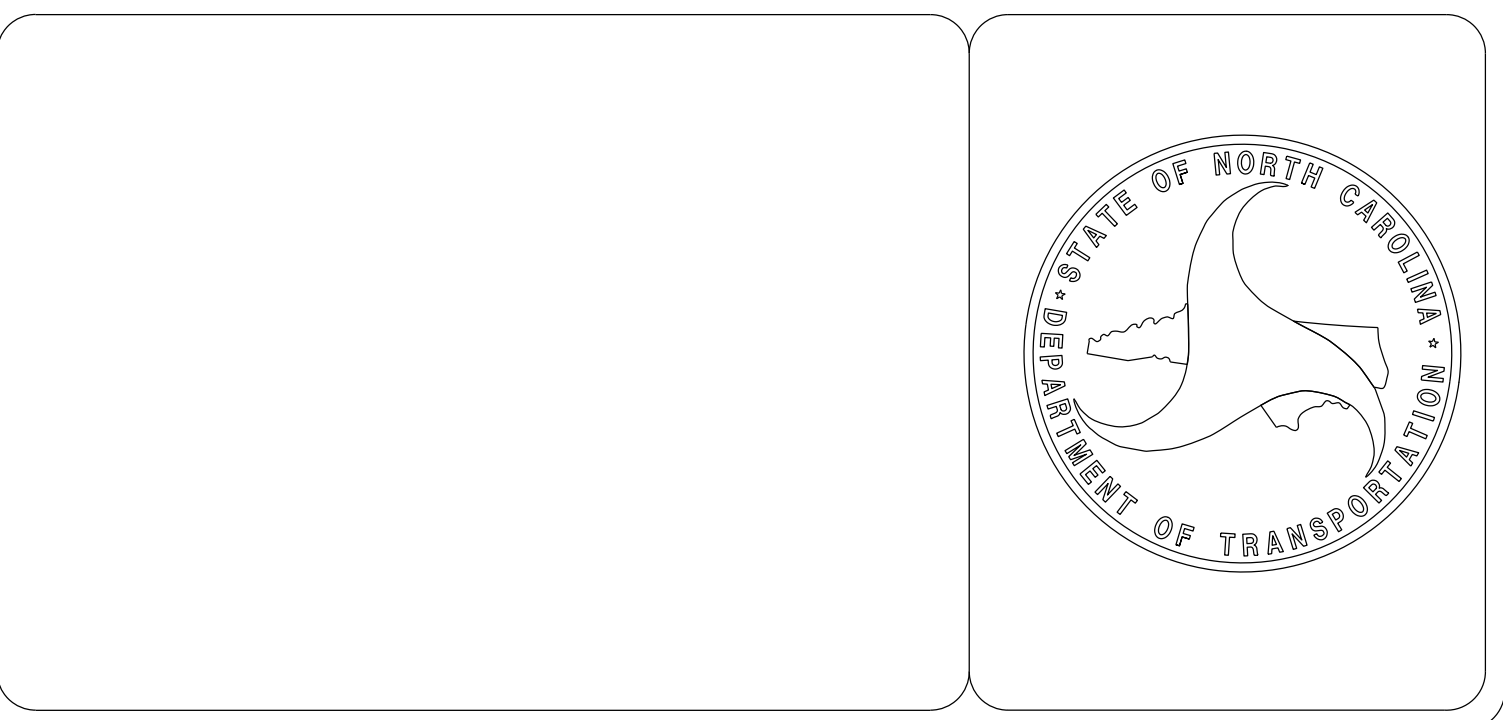
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

**DIVISION 8
LOCATION AND SURVEYS UNIT**

2018 STANDARD SPECIFICATIONS

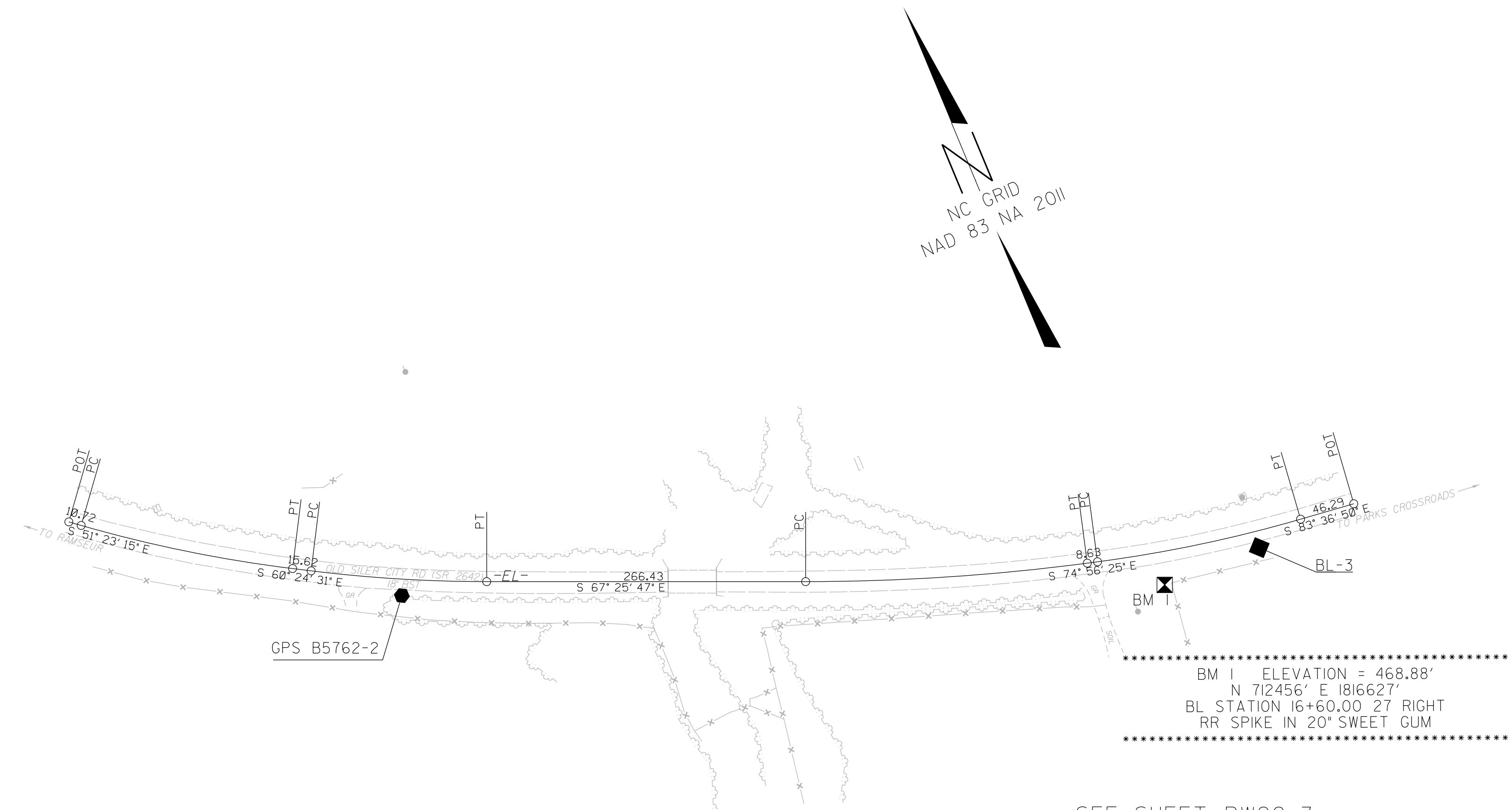
RIGHT OF WAY DATE: <u>JUNE 16, 2023</u>	LETTING DATE: <u>JANUARY 23, 2024</u>
---	---



SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

NC DOT GPS STATION B5762-1
 LOCALIZED PROJECT COORDINATES
 N = 713017.7603'
 E = 1815625.4025'
 ELEVATION = 481.55'



SEE SHEET RW2C-3
 FOR FURTHER
 ALIGNMENT DETAILS

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1		GPS B5762-1	713017.7603	1815625.4025	481.55
2		GPS B5762-2	712692.2200	1816035.5589	462.15
3		BL-3	712454.2800	1816712.2859	474.60

* * * * *
 BM1 ELEVATION = 468.88
 N 712456 E 1816627
 RR SPIKE 20" SWEET GUM
 * * * * *

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

6/2/09

REVISIONS

I2-FEB-2024 JH45
 S:\Jh45\ASHEBORO-PROJECTS\B.projects\B5762.also.750164.also.BP8.R023.1\RW.Staking\rw.sheets.240212\BP8R023.LS-rw02c-2.dgn
 dbwright AT LS-32468LL

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

REVISIONS

I3-FEB-2024 11:02 S:\Projects\ASHEBORO-PROJECTS\B.projects\5762.dwg also 750164.dwg also BP8.R023.dwg also 240212\BP8.R023.dwg also 3.dwg
dbwright

EL POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	712855.847	1815802.308							
LINE			S 51°23'14.5" E	10.72					
PC	712849.159	1815810.683							
CURVE			S 55°53'52.7" E	180.24	09°01'16.2"(LT)	05°00'00.0"	180.42	90.40	1145.92
PT	712748.105	1815959.927							
LINE			S 60°24'30.8" E	15.62					
PC	712740.390	1815973.513							
CURVE			S 63°55'08.9" E	146.96	07°01'16.3"(LT)	04°46'28.7"	147.05	73.62	1200.00
PT	712675.781	1816105.508							
LINE			S 67°25'47.1" E	266.43					
PC	712573.522	1816351.530							
CURVE			S 71°11'05.9" E	235.78	07°30'37.6"(LT)	03°10'59.2"	235.95	118.14	1800.00
PT	712497.480	1816574.710							
LINE			S 74°56'24.7" E	8.63					
PC	712495.237	1816583.046							
CURVE			S 79°16'37.6" E	173.31	08°40'25.8"(LT)	05°00'00.0"	173.48	86.90	1145.92
PT	712462.991	1816753.331							
LINE			S 83°36'50.5" E	46.29					
POT	712457.843	1816799.329							

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE SURVEY CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

PROPOSED ALIGNMENT CONTROL SHEET

L			
TYPE	STATION	NORTH	EAST
POT	10+00.00	712855.8473	1815802.3082
PC	10+10.72	712849.1588	1815810.6830
PT	11+91.14	712748.1054	1815959.9268
PC	12+06.77	712740.3903	1815973.5126
PT	13+53.82	712675.7811	1816105.5080
PC	16+20.24	712573.5218	1816351.5303
PT	18+56.19	712497.4799	1816574.7100
PC	18+64.82	712495.2369	1816583.0460
PT	20+38.30	712462.9908	1816753.3306
POT	20+84.59	712457.8427	1816799.3286

REVISIONS

12-FEB-2024 10:56 AM SHEBDFD PROJECTS\B-projects\5762.also.750164.also.BP8.R023\RM_Staking\rm_sheets_240212\BP8R023.LS_rw02d-1.dgn
 12-FEB-2024 10:56 AM SHEBDFD PROJECTS\B-projects\5762.also.750164.also.BP8.R023\RM_Staking\rm_sheets_240212\BP8R023.LS_rw02d-1.dgn
 DWG LIGHT AT 1:5=39681

6/2/99

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP8.R023	RW03E-1
Location and Surveys	

ROW MARKER IRON PIN AND CAP-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+53.82	-45.00	712717.3345	1816122.7797
L	13+53.82	-30.00	712703.4834	1816117.0225
L	13+53.82	30.00	712648.0788	1816093.9935
L	13+53.82	45.00	712634.2276	1816088.2363
L	16+20.24	45.00	712531.9683	1816334.2586
L	16+20.24	-45.00	712615.0752	1816368.8020
L	17+00.00	45.00	712502.2741	1816410.4167
L	17+00.00	30.00	712516.3667	1816415.5548
L	17+00.00	-45.00	712586.8295	1816441.2451
L	17+00.00	-30.00	712572.7369	1816436.1070

ROW MARKER PERMANENT EASEMENT-E

ALIGN	STATION	OFFSET	NORTH	EAST
L	14+90.00	45.00	712581.9584	1816213.9892
L	14+90.00	60.00	712568.1072	1816208.2320
L	15+15.00	-45.00	712655.4698	1816271.6179
L	15+50.00	-65.00	712660.5045	1816311.6135
L	15+60.00	60.00	712541.2401	1816272.8706
L	16+20.24	-65.00	712633.5434	1816376.4783
L	16+50.00	-45.00	712604.1621	1816395.6821
L	16+55.00	45.00	712518.6137	1816367.2841

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED 04/06/2024.

6/2/19

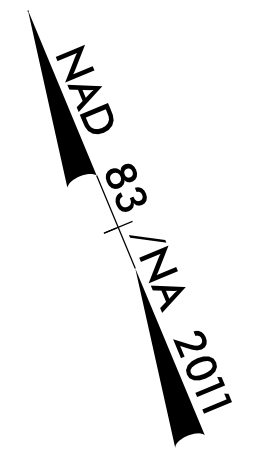
REVISIONS

I:\FEB-2024_0817\ASHEBORO_PROJECTS\B-projects\65762.also.750164.also.BP8.R023\RM_Staking\rm_sheets_240212\BP8R023.LS_rw03e-1.dgn
 0817\ASHEBORO_PROJECTS\B-projects\65762.also.750164.also.BP8.R023\RM_Staking\rm_sheets_240212\BP8R023.LS_rw03e-1.dgn
 0817\ASHEBORO_PROJECTS\B-projects\65762.also.750164.also.BP8.R023\RM_Staking\rm_sheets_240212\BP8R023.LS_rw03e-1.dgn

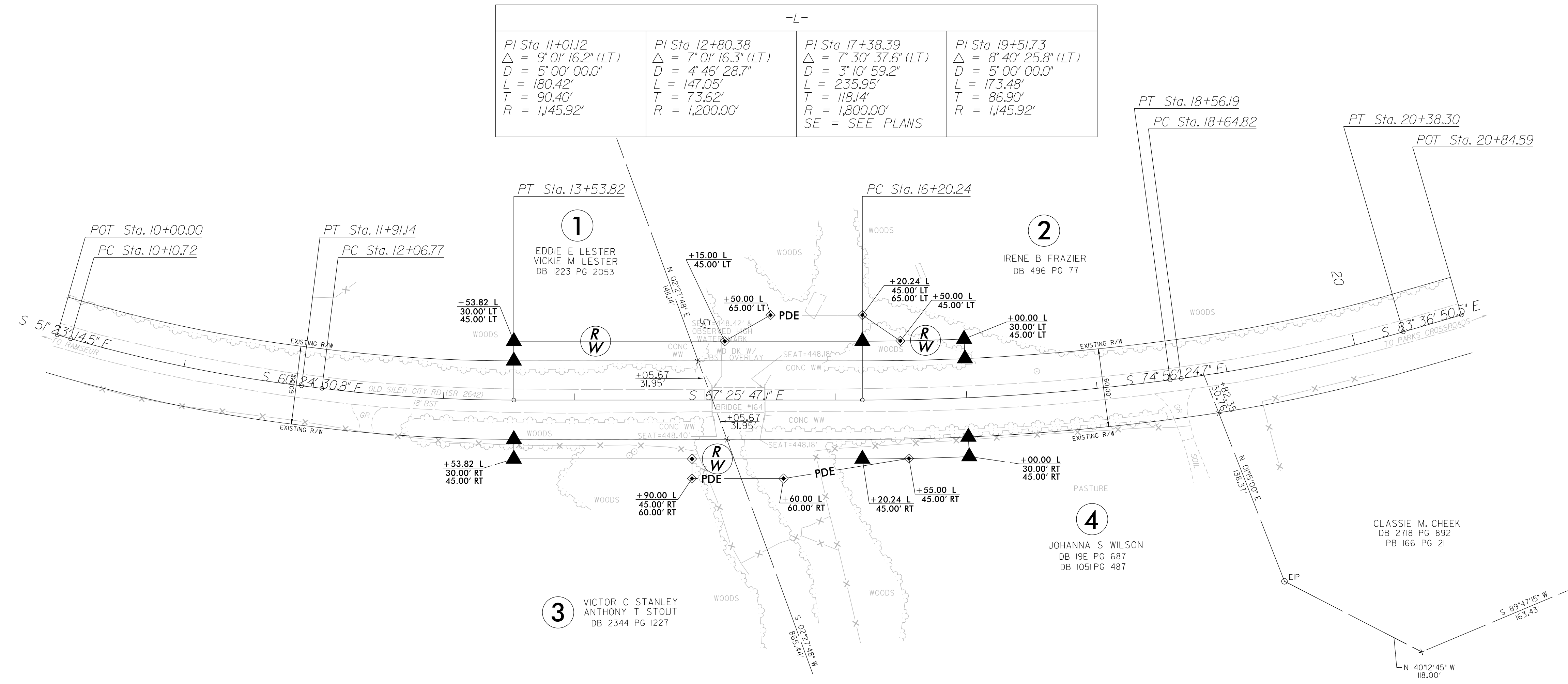
6/2/19

15-FEB-2024 08:26 C:\Users\jg10065\OneDrive\Projects\B-projects\5762_also_750164_also_BP8.R023\1\RM_Staking\rm_sheets_240212\BP8R023_1_S_rw04.dgn
 5:11:51 PM
 downlight AT 1:5:39:681L

REVISIONS



-L-			
PI Sta 11+01.12 $\Delta = 9^{\circ} 01' 16.2" (LT)$ $D = 5^{\circ} 00' 00.0"$ $L = 180.42'$ $T = 90.40'$ $R = 1,145.92'$	PI Sta 12+80.38 $\Delta = 7^{\circ} 01' 16.3" (LT)$ $D = 4^{\circ} 46' 28.7"$ $L = 147.05'$ $T = 73.62'$ $R = 1,200.00'$	PI Sta 17+38.39 $\Delta = 7^{\circ} 30' 37.6" (LT)$ $D = 3^{\circ} 10' 59.2"$ $L = 235.95'$ $T = 118.14'$ $R = 1,800.00'$ SE = SEE PLANS	PI Sta 19+51.73 $\Delta = 8^{\circ} 40' 25.8" (LT)$ $D = 5^{\circ} 00' 00.0"$ $L = 173.48'$ $T = 86.90'$ $R = 1,145.92'$



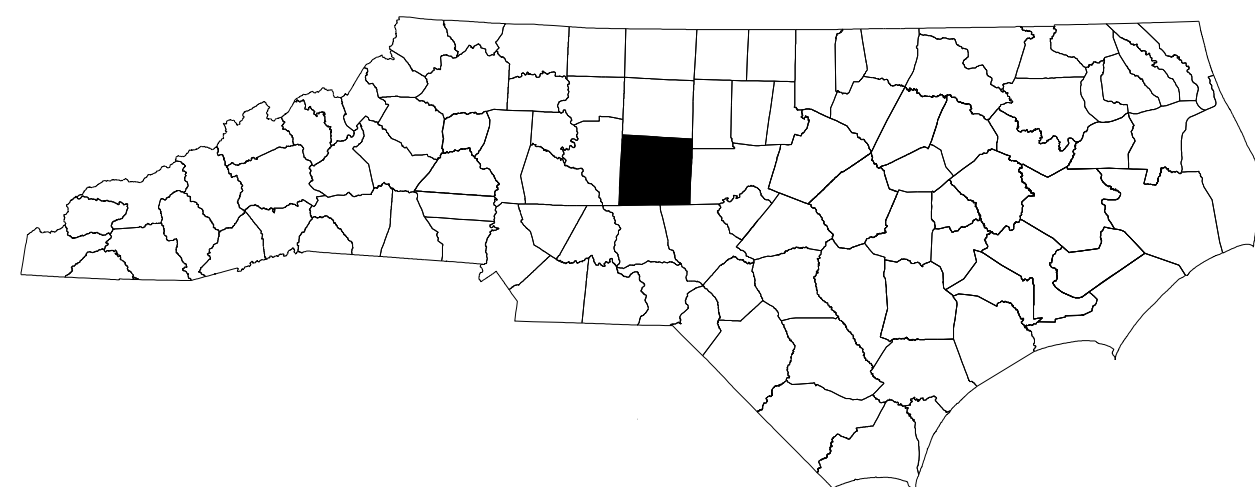
NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
3. RIGHT OF WAY MONUMENTATION ESTABLISHED FEBRUARY 2024 .

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

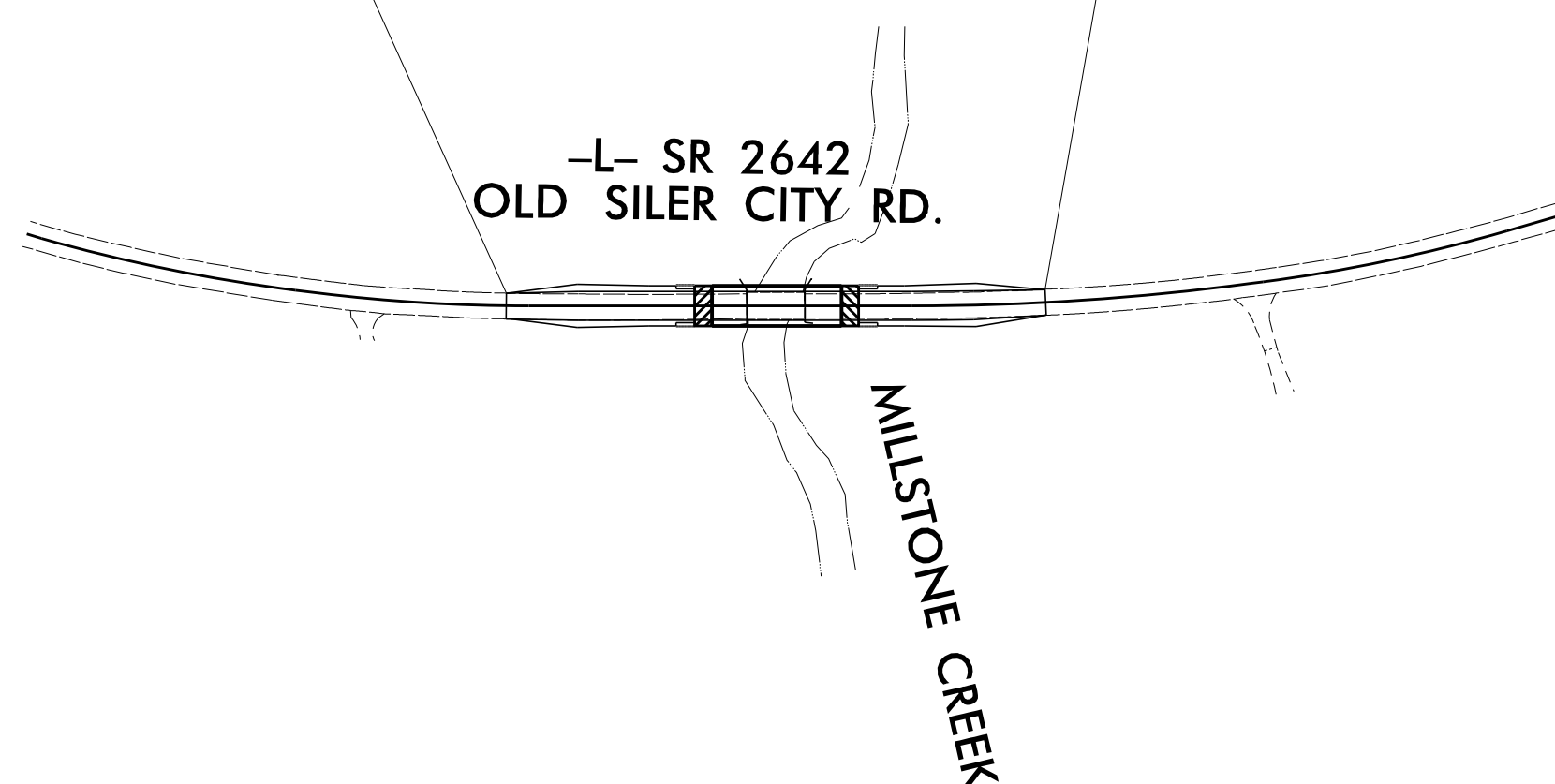
TRANSPORTATION MANAGEMENT PLAN

RANDOLPH COUNTY

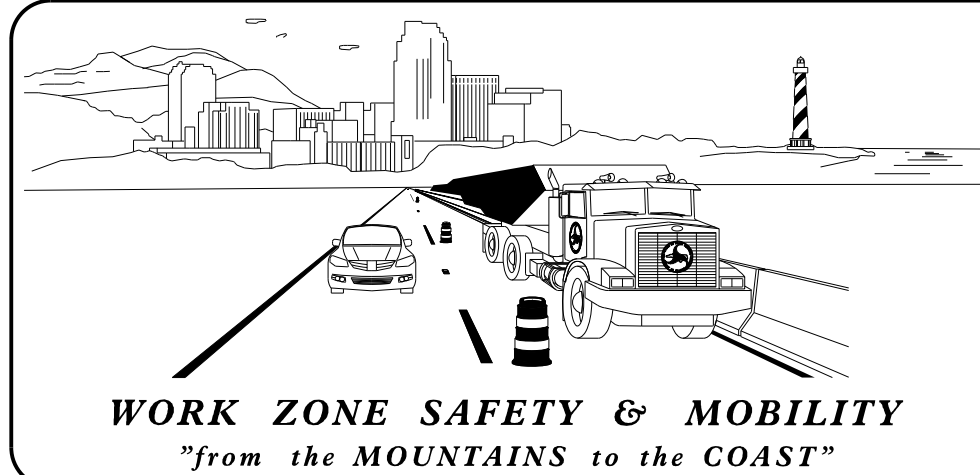


BEGIN PROJECT
-L- STA. 13+38.00

END PROJECT
-L- STA. 17+13.00



5/8/2024
N:\D0160\08391-02_BP8.R023_RANDOLPH\TrafficControl\CP\BP8R023.TMP_title.dgn
User:tygraves



PLANS PREPARED BY:

TYSON A. GRAVES, PE

PAYTON L. NELSON

NCDOT CONTACTS:

KENNETH C. THORNEWELL, PE
PROJECT ENGINEER

JUSTIN D. BEAVER, PE



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, GENERAL NOTES, PHASING, AND LEGEND
TMP-2	DETOUR ROUTE AND SIGNING
TMP-3	WORK ZONE SIGN DESIGN

SHEET NO.
TMP-1

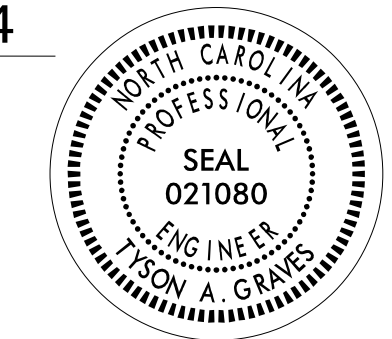
BP8.R023

TIP PROJECT:

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED:
DATE: 5-8-2024

ms consultants, inc.
5444 Wake Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239



SEAL

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN STANDARDS
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

- B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 10 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.

- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

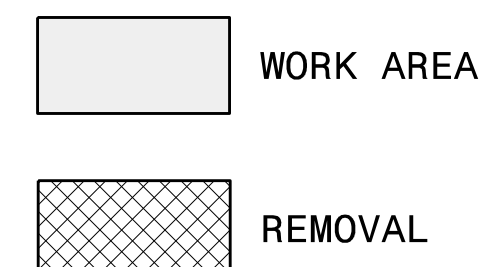
- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

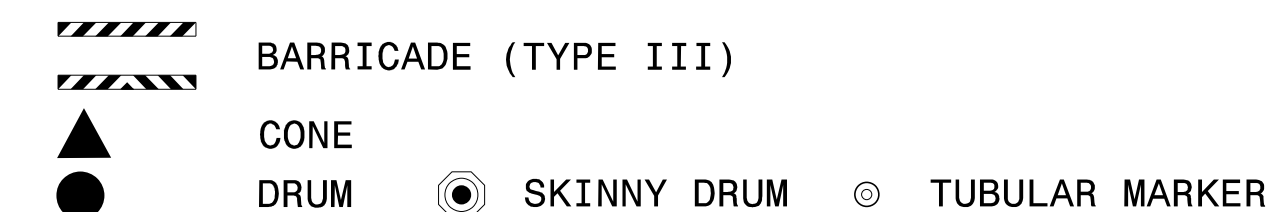
- F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

LEGEND

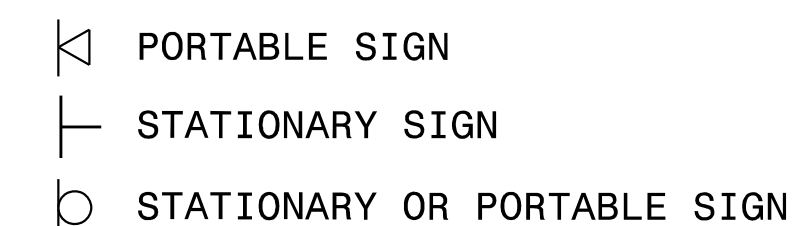
GENERAL



TRAFFIC CONTROL DEVICES



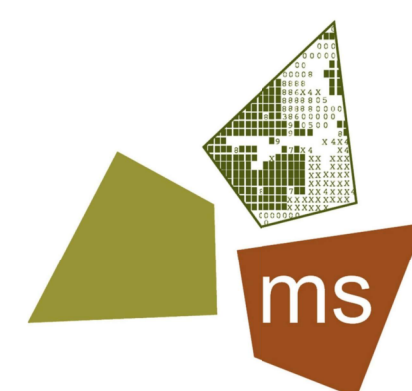
TEMPORARY SIGNING




PHASING

- STEP 1 - INSTALL ADVANCE WARNING SIGNS ACCORDING TO ROADWAY STANDARD DRAWING 1101.01 (SHEET 3 OF 3).
- STEP 2 - INSTALL DETOUR SIGNS AS SHOWN ON TMP-2, AND COVER.
- STEP 3 - USING ROADWAY STANDARD DRAWING 1101.03 (SHEET 1 OF 9) , INSTALL TYPE III BARRICADES AS SHOWN ON TMP-2, UNCOVER DETOUR SIGNS, AND CLOSE ROAD.
- STEP 4 - REMOVE EXISTING BRIDGE AND CONSTRUCT BRIDGE AND APPROACHES.
- STEP 5 - INSTALL PERMANENT PAVEMENT MARKINGS AND MARKERS.
- STEP 6 - REMOVE DETOUR SIGNS AND OPEN ROAD TO TRAFFIC.

5/8/2024 N:\D060\08391-02_BP8.R023_RANDOLPH I64\TrafficControl\CP\BP8R023_TMP_title_1a.dgn User:tyson.graves

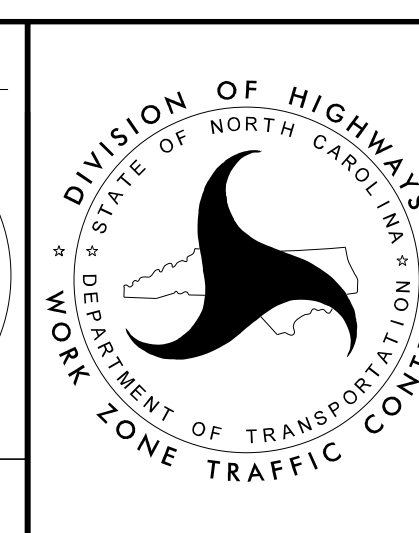
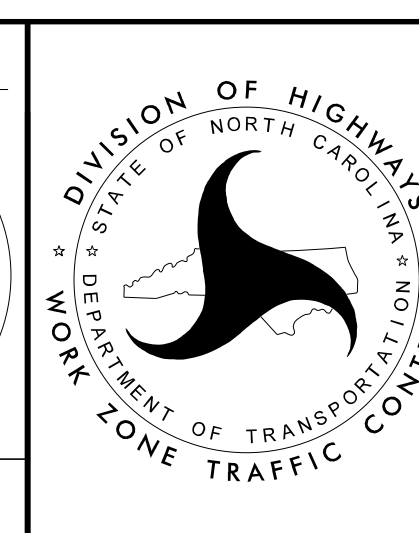


ms consultants, inc.
 5444 Wake Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

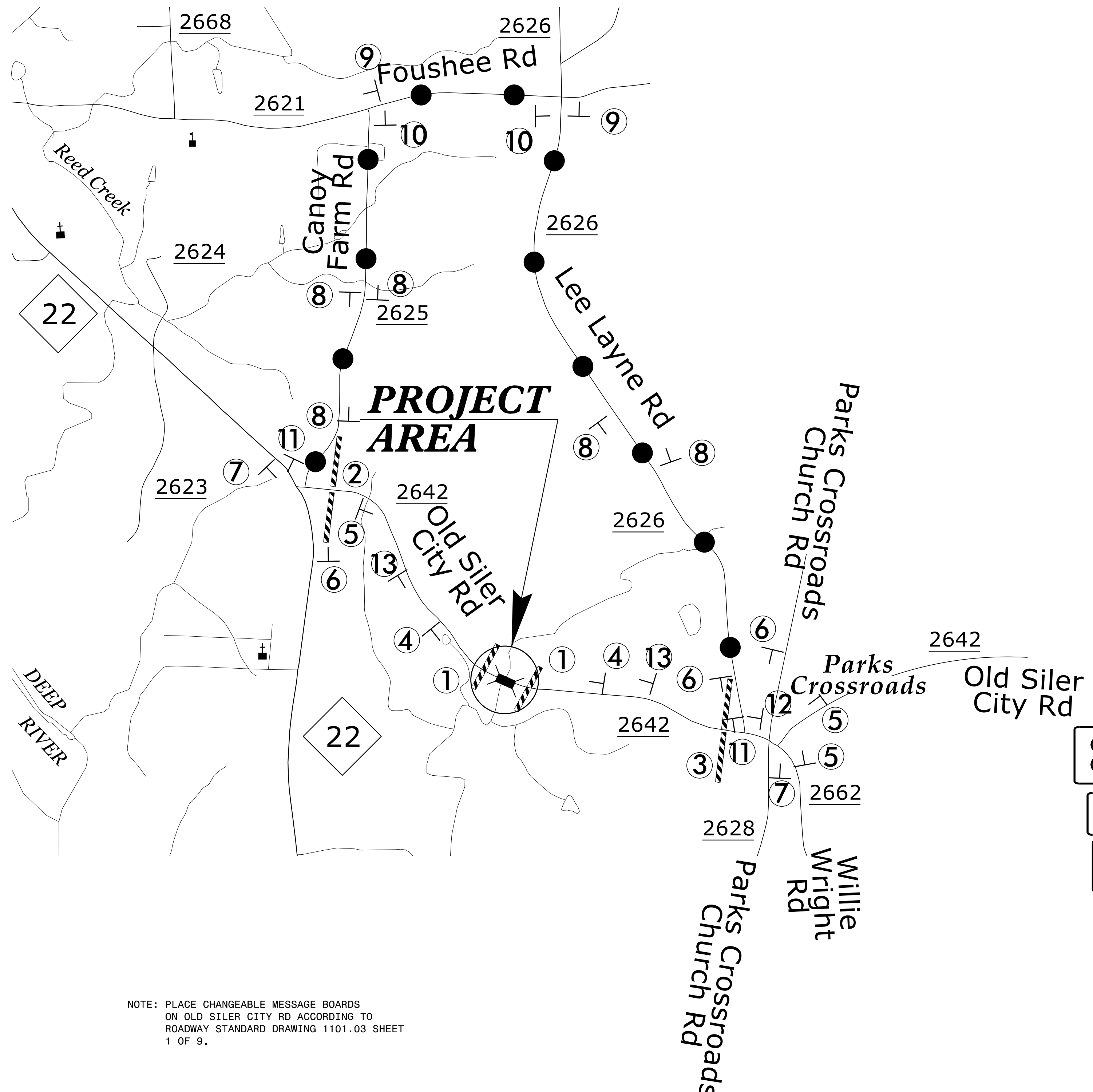
APPROVED: 
 DATE: 5-8-2024

SEAL

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

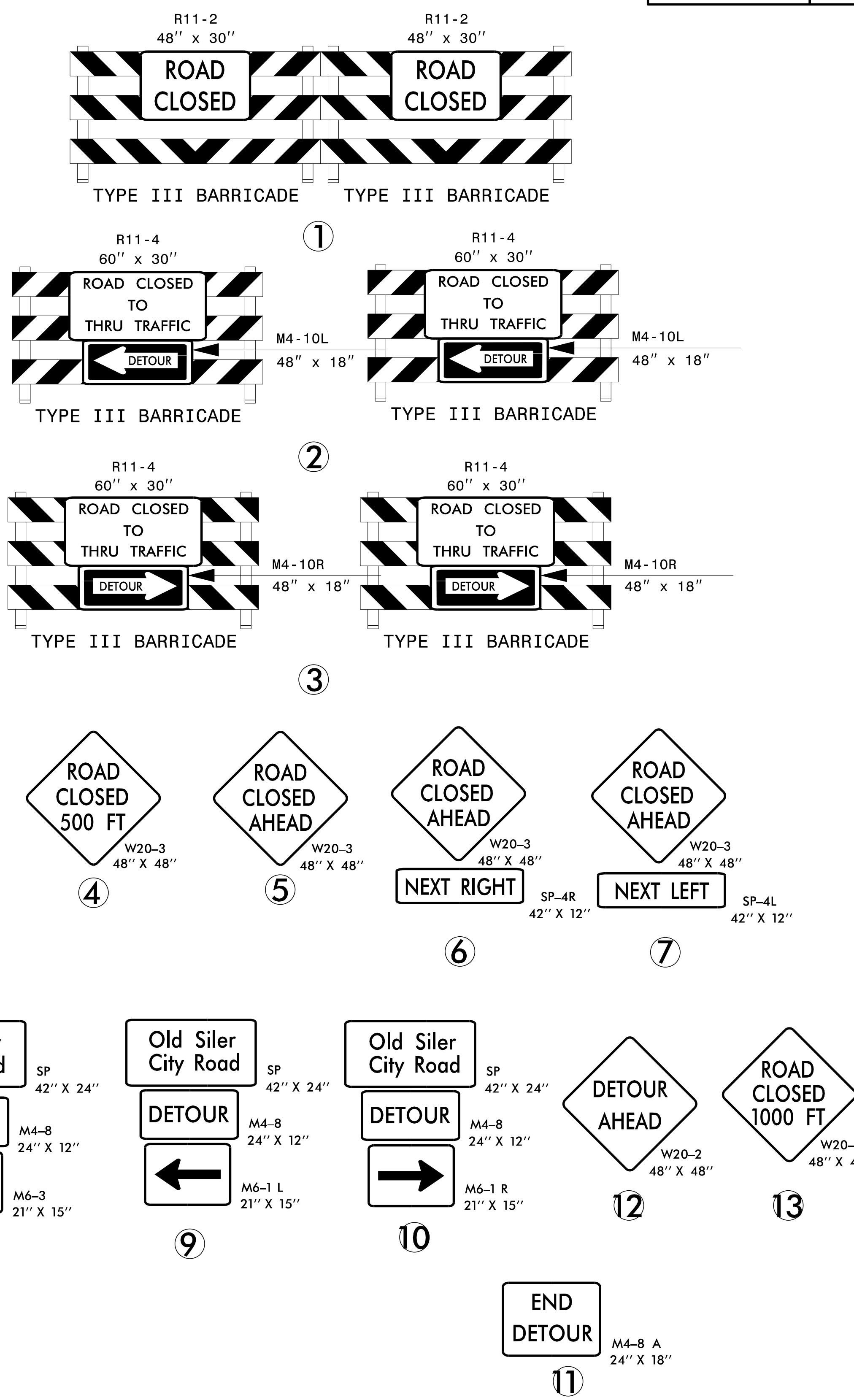


ROADWAY STANDARD
 DRAWINGS, LEGEND,
 GENERAL NOTES,
 & PHASING



NOTE: PLACE CHANGEABLE MESSAGE BOARDS ON OLD SILER CITY RD ACCORDING TO ROADWAY STANDARD DRAWING 1101.03 SHEET 1 OF 9.

● ● **DETOUR ROUTE**



5/8/2024 N:\D060\08391-02_BP8.R023 RANDOLPH I64\TrafficControl\CP\BP8R023_TMP_2.dgn User:trgraves

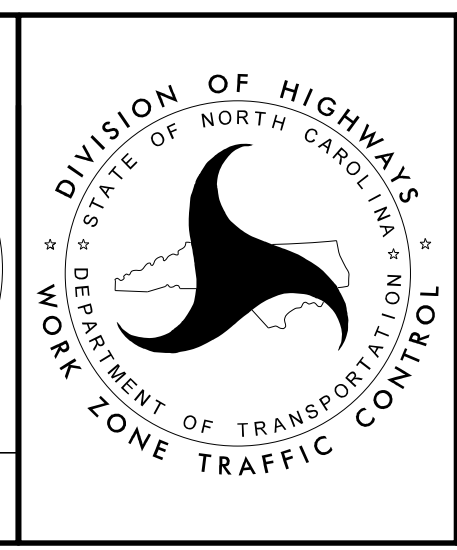


ms consultants, inc.
5444 Wake Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

APPROVED: *Tyson Graves*
DATE: 5-8-2024

SEAL

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



DETOUR ROUTE AND SIGNS

SIGN NUMBER: name	BACKG COLOR: Fluorescent Orange	DESIGN BY: TAG	CHECKED BY: DVJ	May 7, 2024
TYPE: STATIONARY	COPY COLOR: Black	PROJECT ID: ID	LOCATION:	DIV: 8
QUANTITY: SEE PLANS				
SIGN WIDTH: 3'-6"				
HEIGHT: 2'-0"				
TOTAL AREA: 7.0 Sq.Ft.				
BORDER TYPE: INSET				
RECESS: 0.47"				
WIDTH: 0.63"				
RADII: 1.5"				
NO. Z BARS:	MAT'L: 0.080" (2.0 mm) ALUMINUM			
LENGTH:				

USE NOTES: 1,2

- Legend and border shall be direct applied black non-reflective sheeting.
- Background shall be NC GRADE 8 fluorescent orange retroreflective sheeting.

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

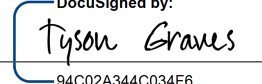
Letter locations are panel edge to lower left corner										Series/Size
O	I	d	S	i	e	r				Text Length
8.8	12.7	14.1	16.7	21.7	25.2	26.8	28.3	31.5		C 2000 24.3
C	i	t	y	R	o	a	d			C 2000 27.1
7.5	11.2	12.4	14.3	17.4	22.4	25.8	28.9	32		

FILENAME: SIGN DESIGNS - Work Zone_2 NORTH CAROLINA D.O.T. SIGN DETAIL

5/8/2024
 N:\D0\60\08391-02_BP8.R023_RANDOLPH\64\TrafficControl\TCP\BP8R023_TMP_3.dgn
 User: tgraves

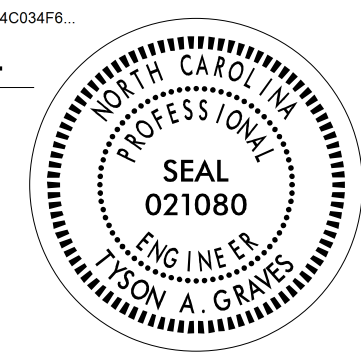


ms consultants, inc.
 5444 Wake Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

APPROVED: 

DATE: 5-8-2024

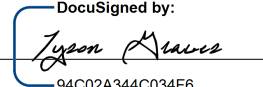

SEAL



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



WORK ZONE
 SIGN DESIGN

TIP NO. BP8.R023	SHEET NO. PMP - 1
APPROVED: 	
DATE: 5-8-2024	
SEAL 	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN
RANDOLPH COUNTY**

T.I.P.: BP8.R023

CONTRACT:

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN TITLE AND SCHEDULE SHEET
PMP-2	PAVEMENT MARKING DETAIL

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2024 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY
1253.01	RAISED PAVEMENT MARKERS - SNOWPLOWABLE
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

PAVEMENT MARKING SCHEDULE

THERMOPLASTIC (4", 90 MILS)	
T1	WHITE EDGELINE
T13	YELLOW DOUBLE CENTER
MARKERS	
NON-CAST IRON SNOWPLOWABLE PAVEMENT MARKERS	
ME	YELLOW & YELLOW

GENERAL NOTES

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

A) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

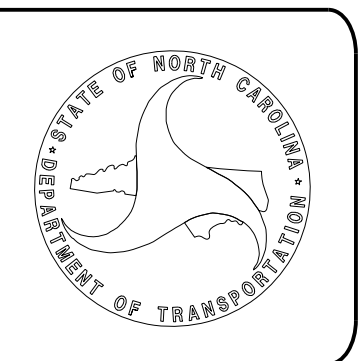
ROAD NAME	MARKING	MARKER
SR 2642	THERMOPLASTIC	SNOWPLOWABLE

B) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.


C) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS.

D) PASSING ZONES WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

PLAN SUBMITTED TO:	
<u>Mitch Eaton, PE</u>	Signing and Delineation Regional Engineer
<u>Stacey Johns</u>	Project Design Engineer

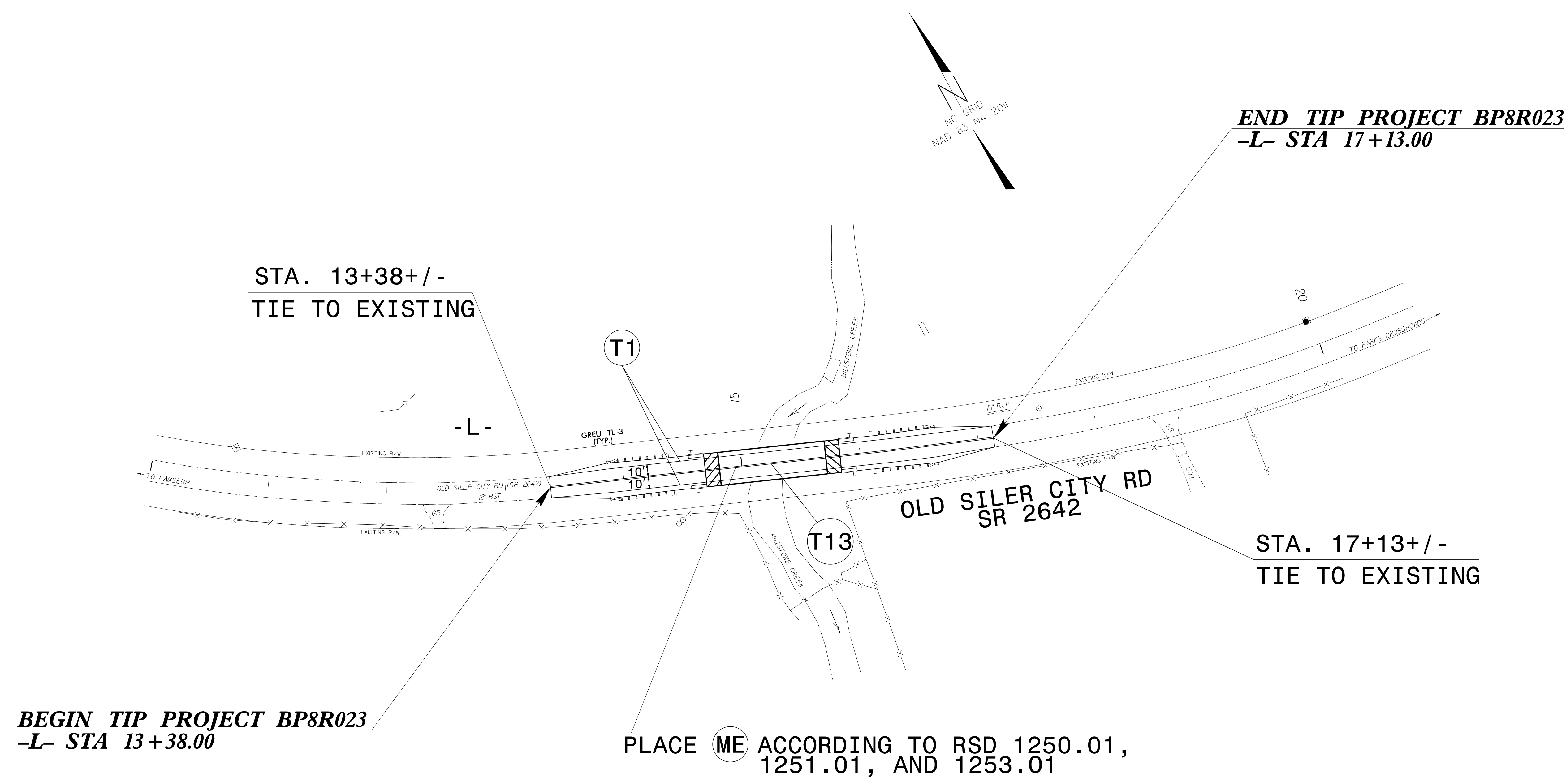


PLAN PREPARED BY: ms consultants, inc.	
<u>Tyson A. Graves, PE</u>	Project Engineer
<u>Payton L. Nelson</u>	Project Design Engineer



ms consultants, inc.
5444 Wake Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

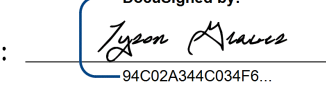
5/8/2024 09:39:02 BP8.R023 RANDOLPH 164\Traffic\Signing\CADD\Signing Layout Plans\BP8R023.plt.tle.dgn User:tygraves




PLACE (ME) ACCORDING TO RSD 1250.01, 1251.01, AND 1253.01

5/8/2024 N:\D060\08391-02 BP8-R023 RANDOLPH I64\Traffic\Signing\CADD\Signing Layout\Plans\BP8R023.pm_02.dgn User:trgraves

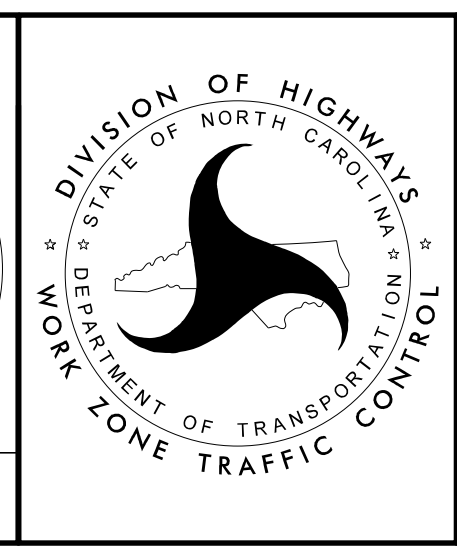
ms consultants, inc.
 5444 Wake Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

APPROVED: 
 DATE: 5-8-2024

SEAL

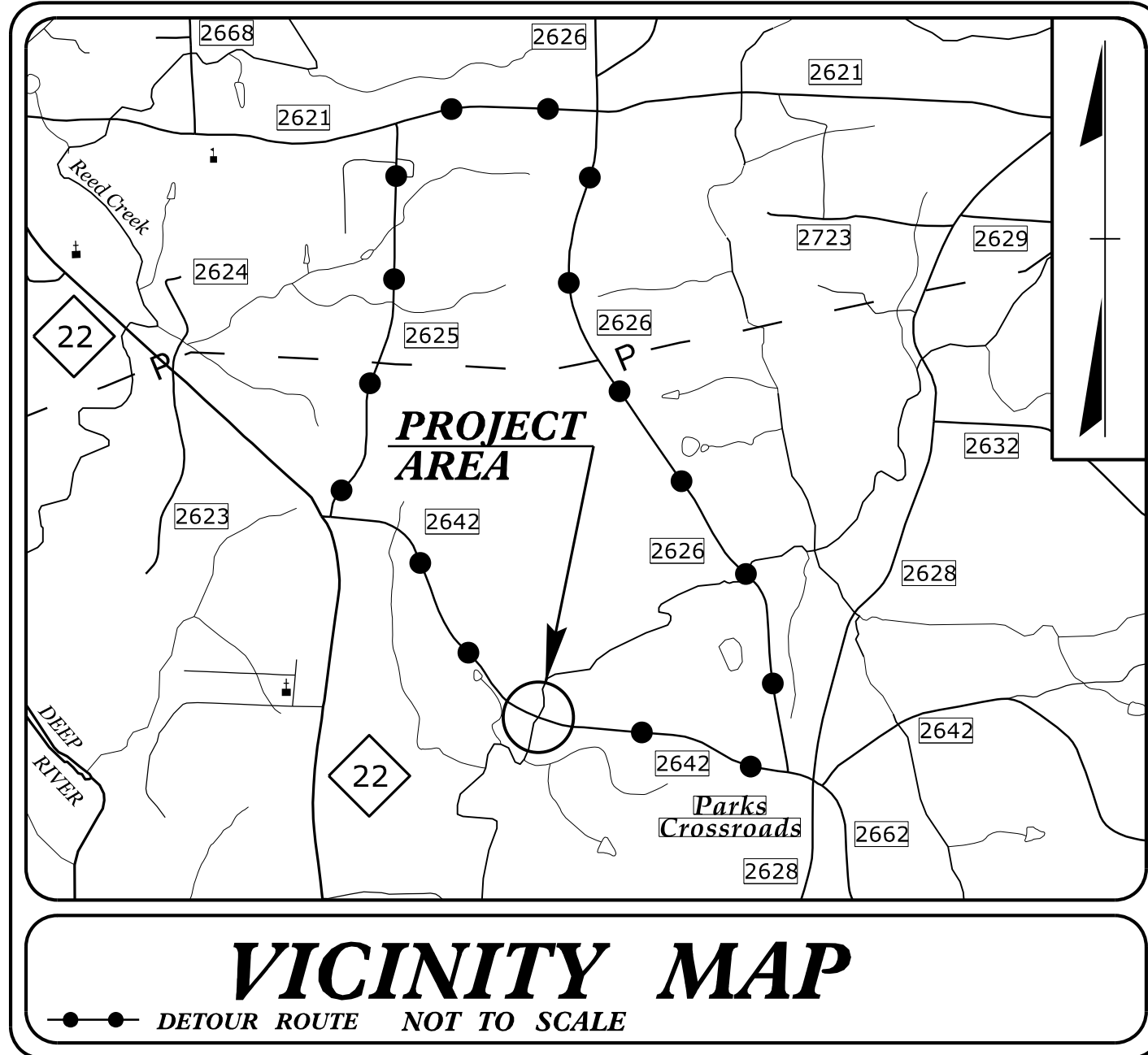


**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**



FINAL PAVEMENT MARKINGS

TIP PROJECT: BP8.R023



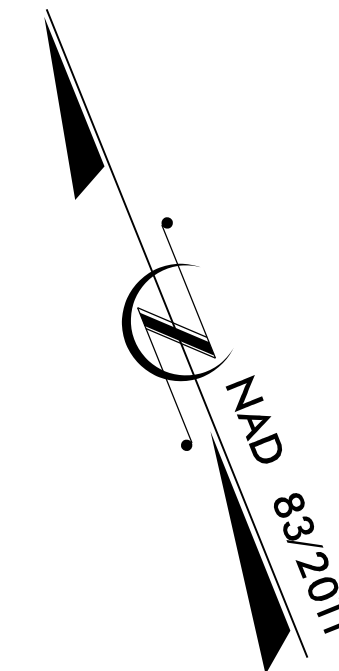
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
**PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

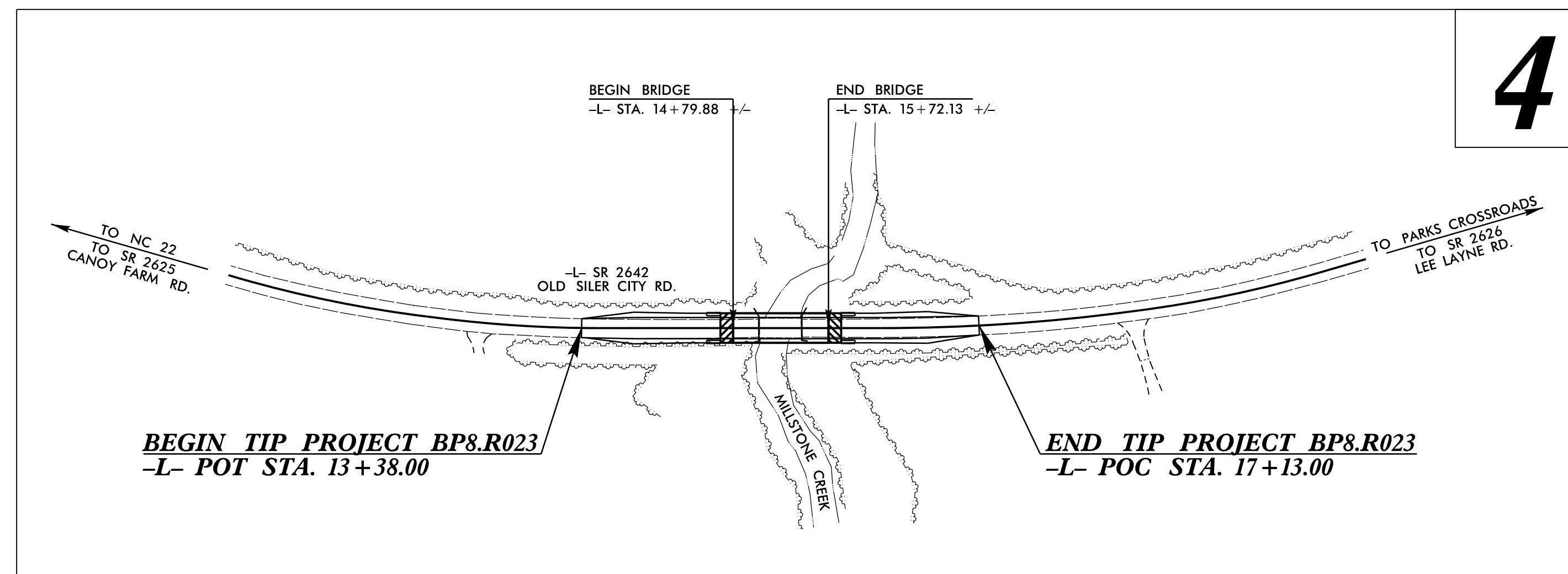
RANDOLPH COUNTY

**LOCATION: REPLACE BRIDGE NO. 164 ON SR 2642 (OLD
SILER CITY RD.) OVER MILLSTONE CREEK**

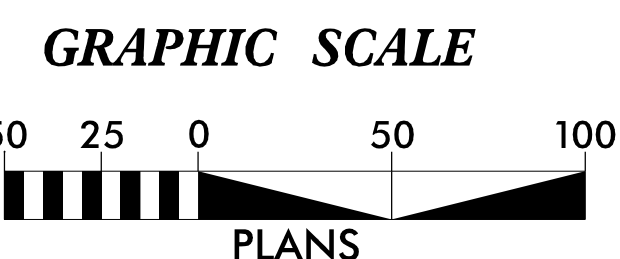
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP8.R023	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



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



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

Prepared in the Office of:

ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

Designed by:

ANDREW HOLLEN **3490**
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

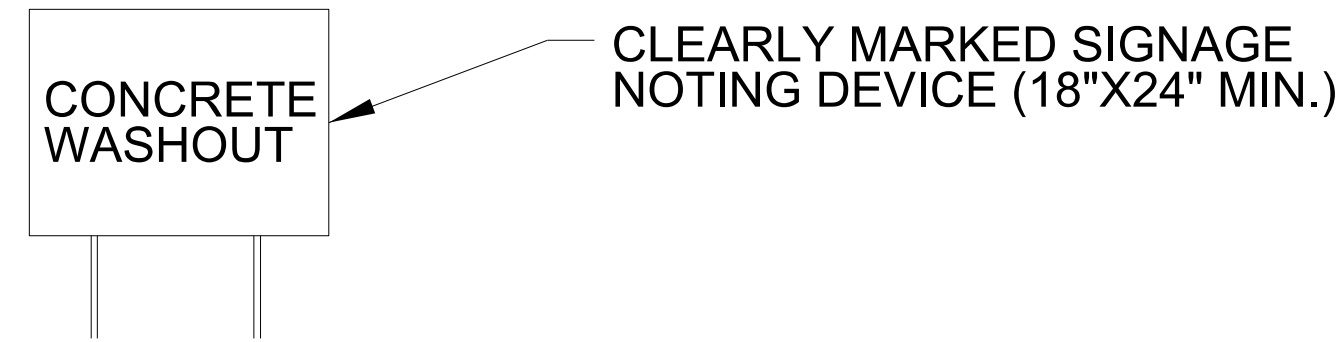
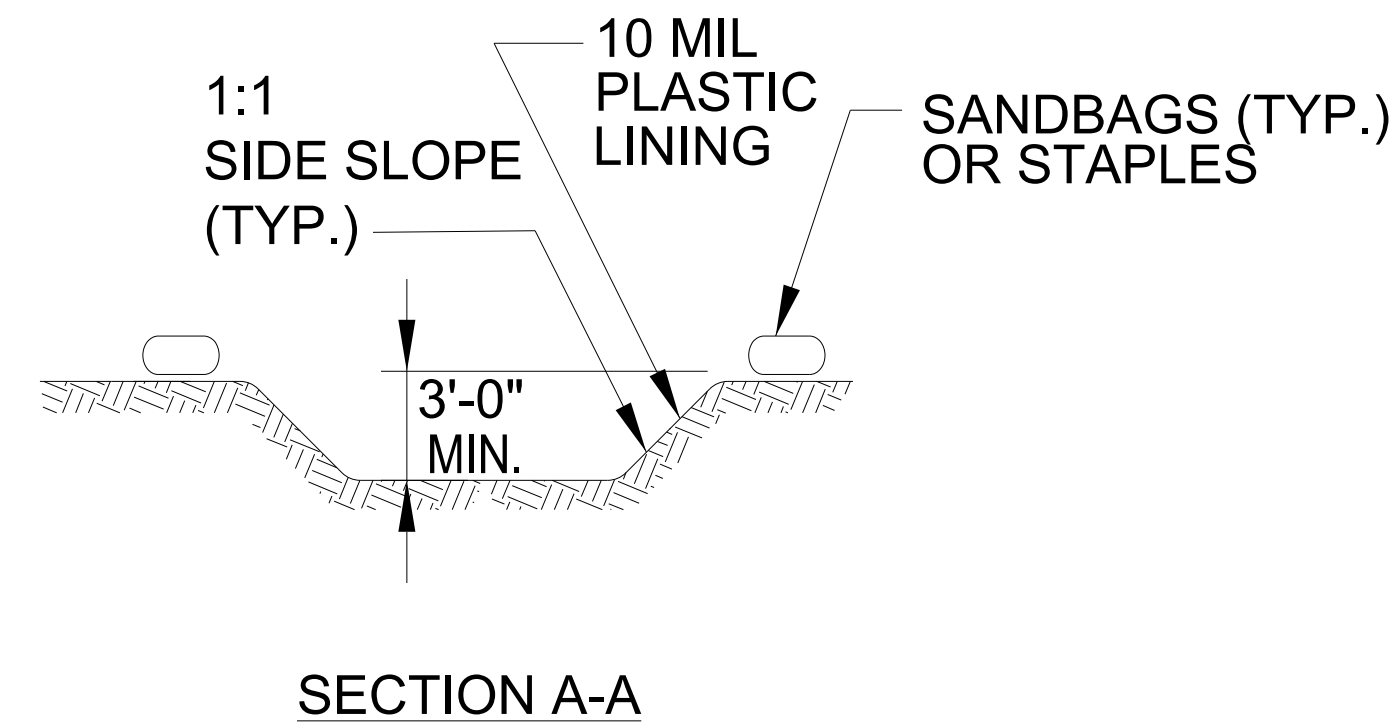
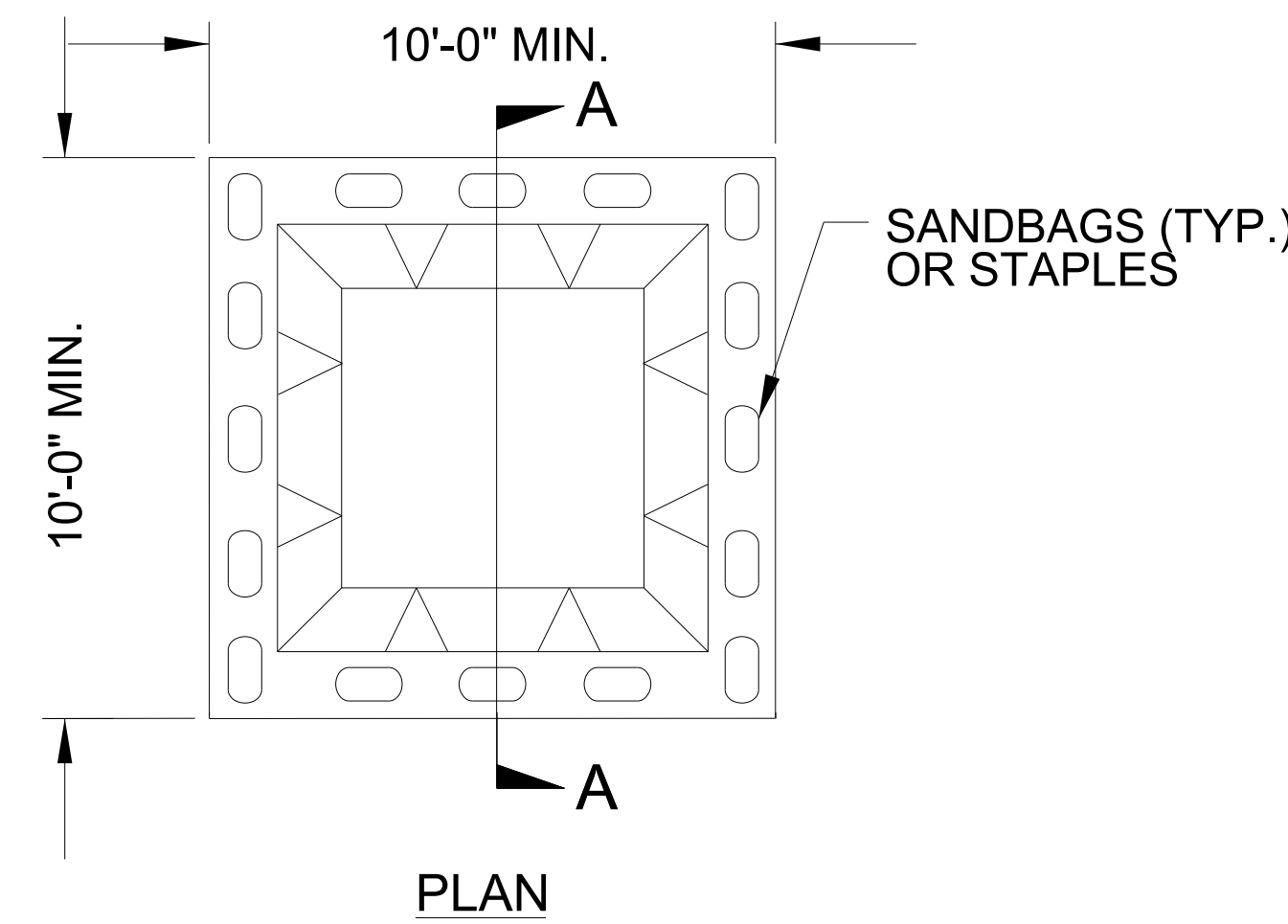
PROJECT REFERENCE NO. BP8.R023	SHEET NO. EC-02
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A		1636.03	Excelsior Wattle Barrier	
1632.02	Type B		1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C				

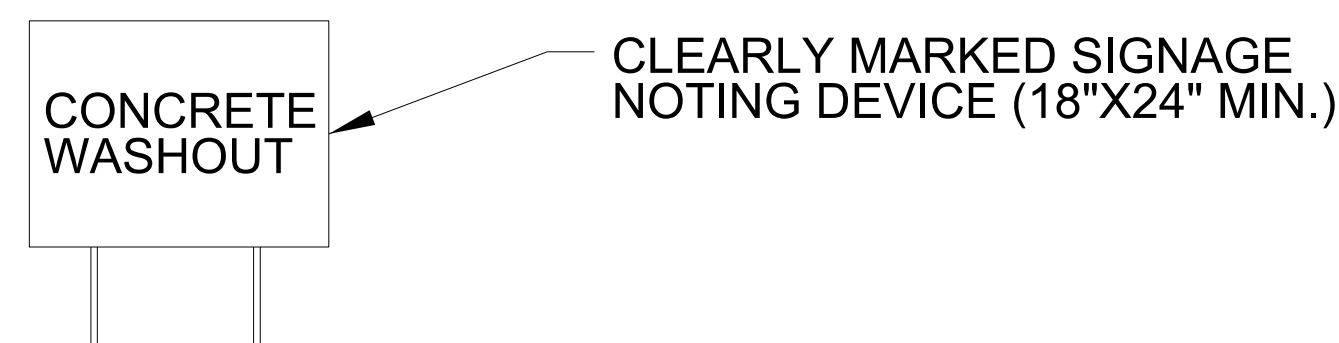
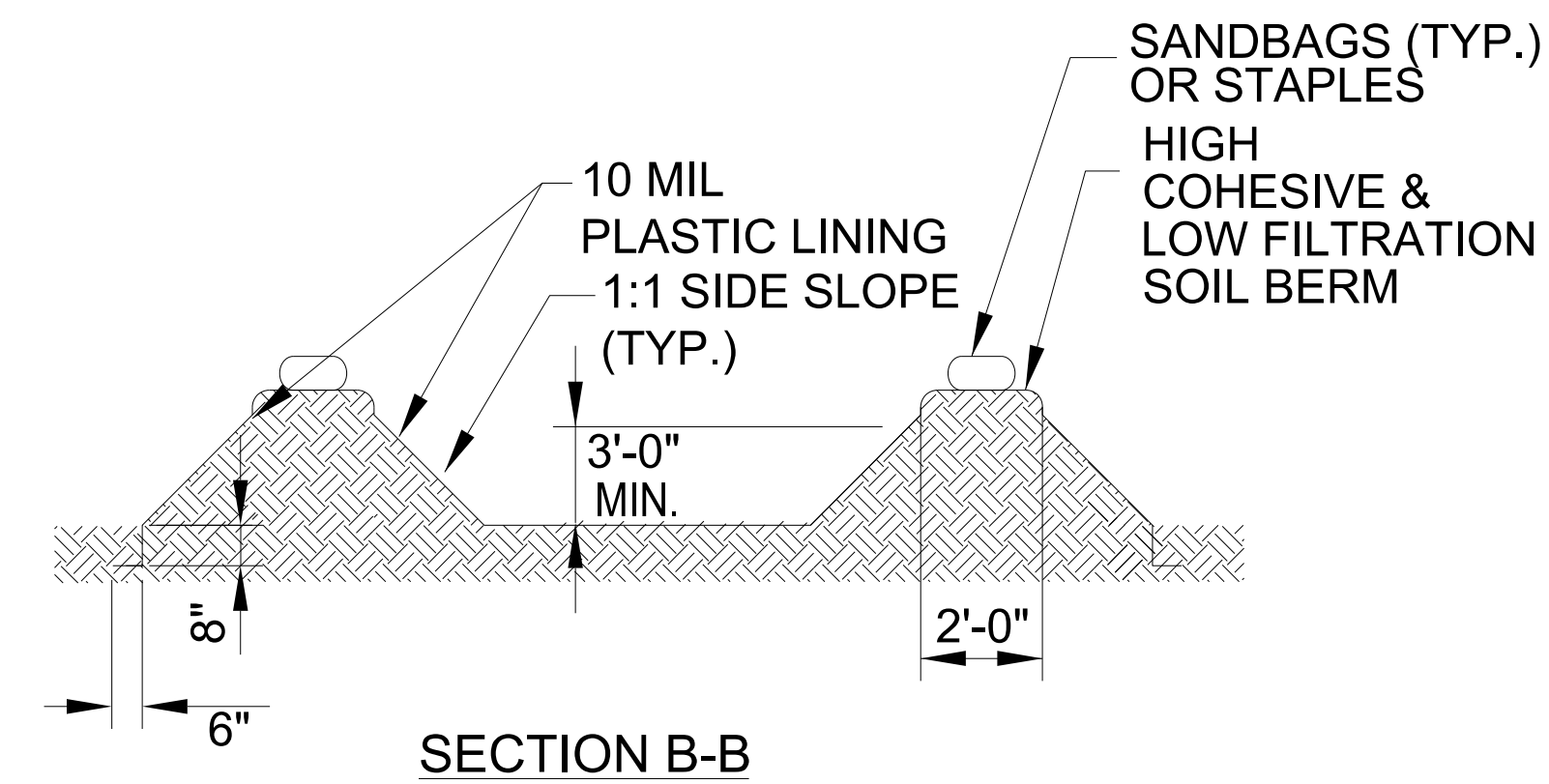
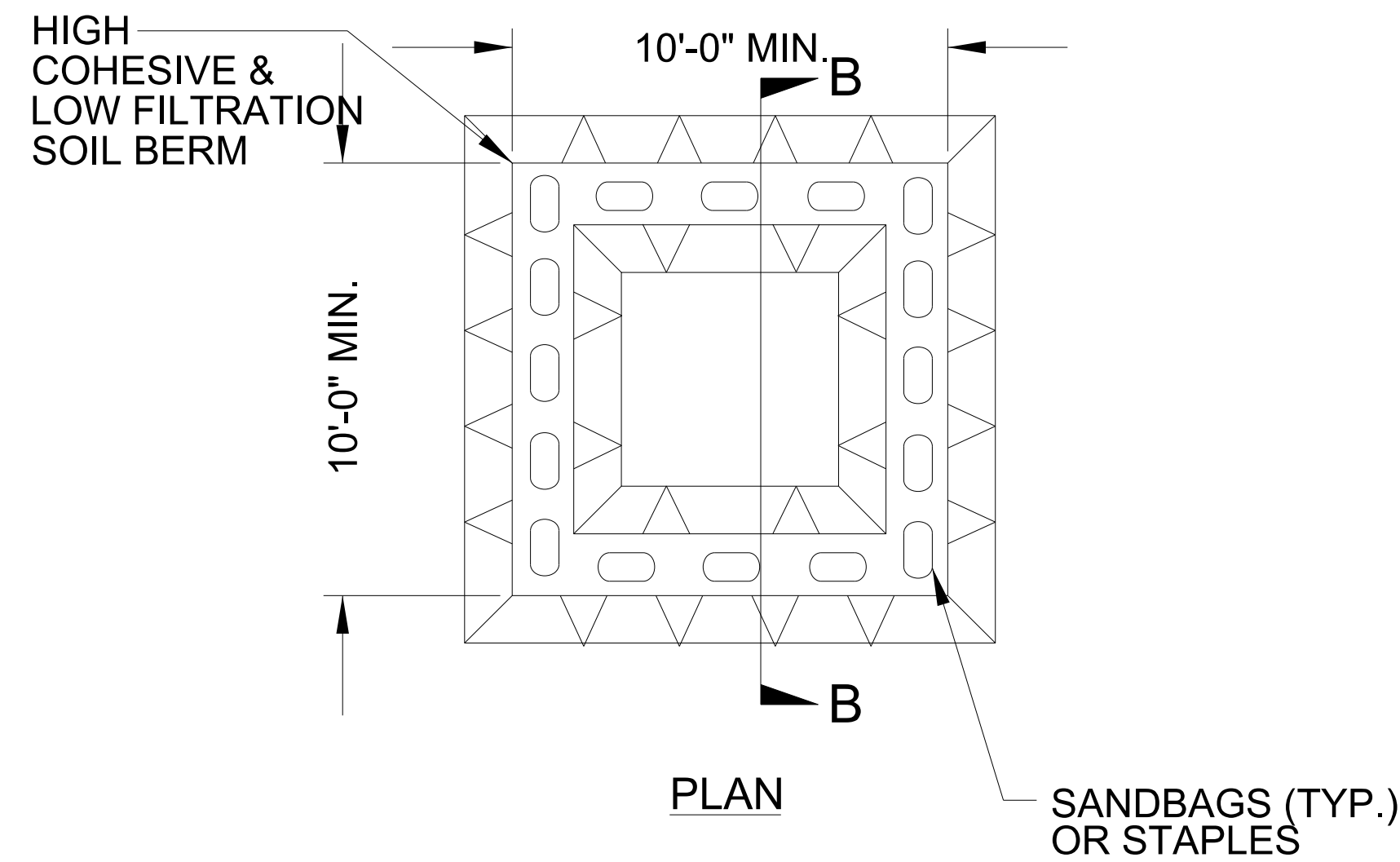
PROJECT REFERENCE NO. <i>BP8.R023</i>	SHEET NO. <i>EC-2A</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

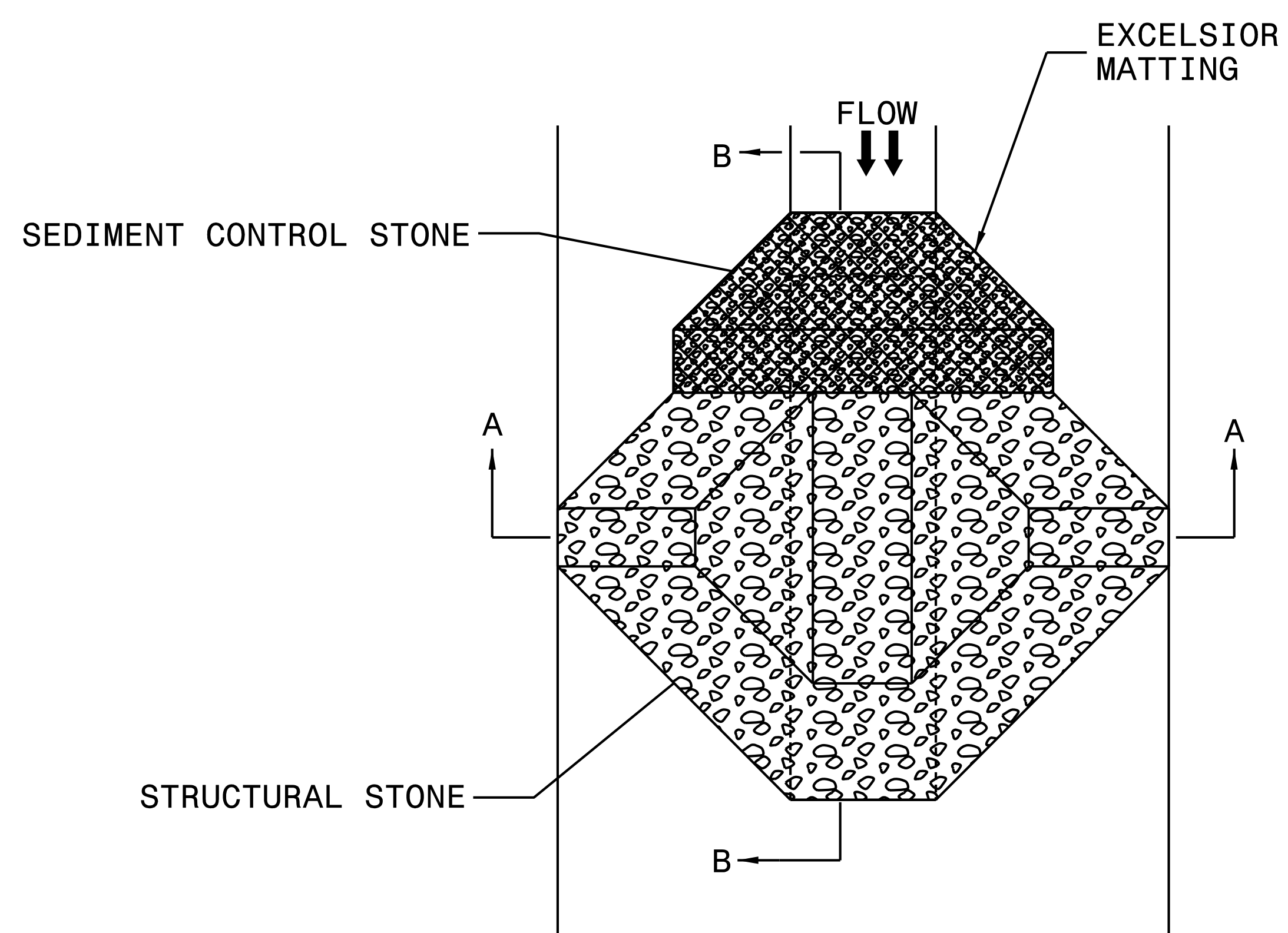


ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

- NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

PROJECT REFERENCE NO. <i>BP8.R023</i>	SHEET NO. <i>EC-2B</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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



PLAN

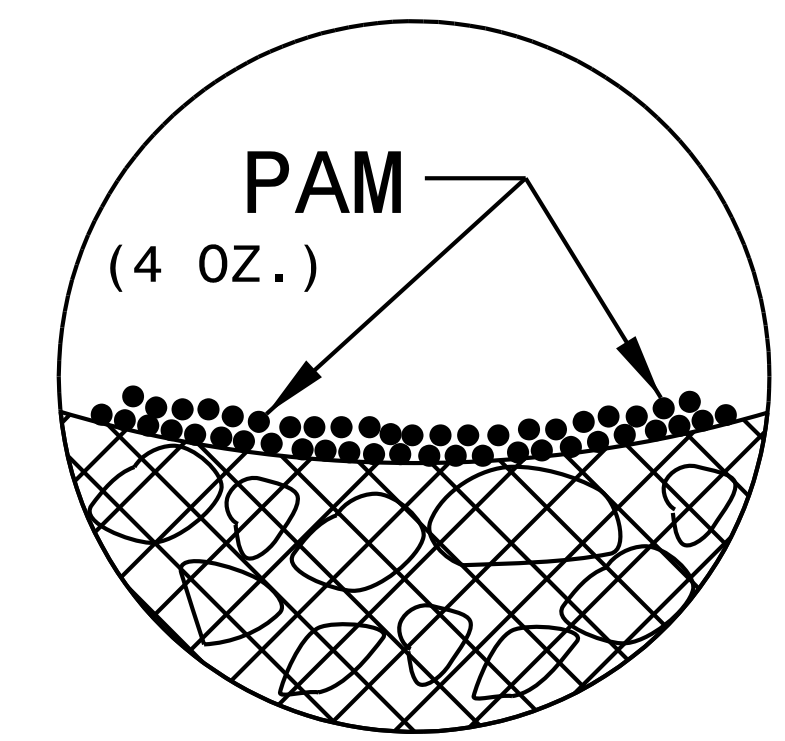
NOTES:

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

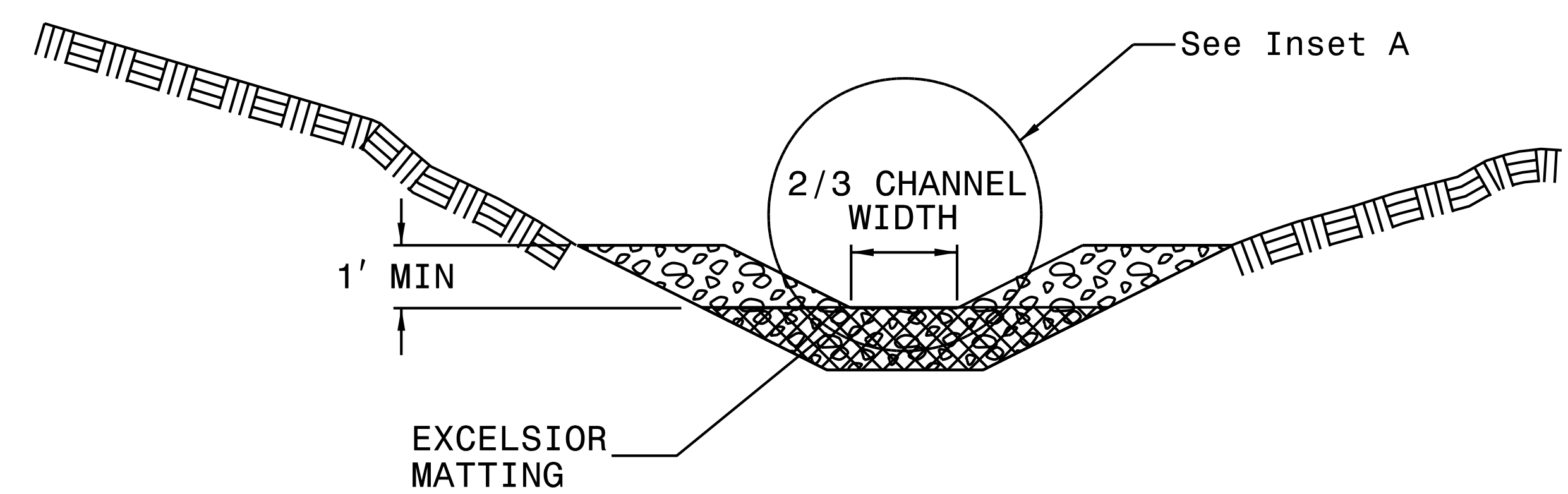
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

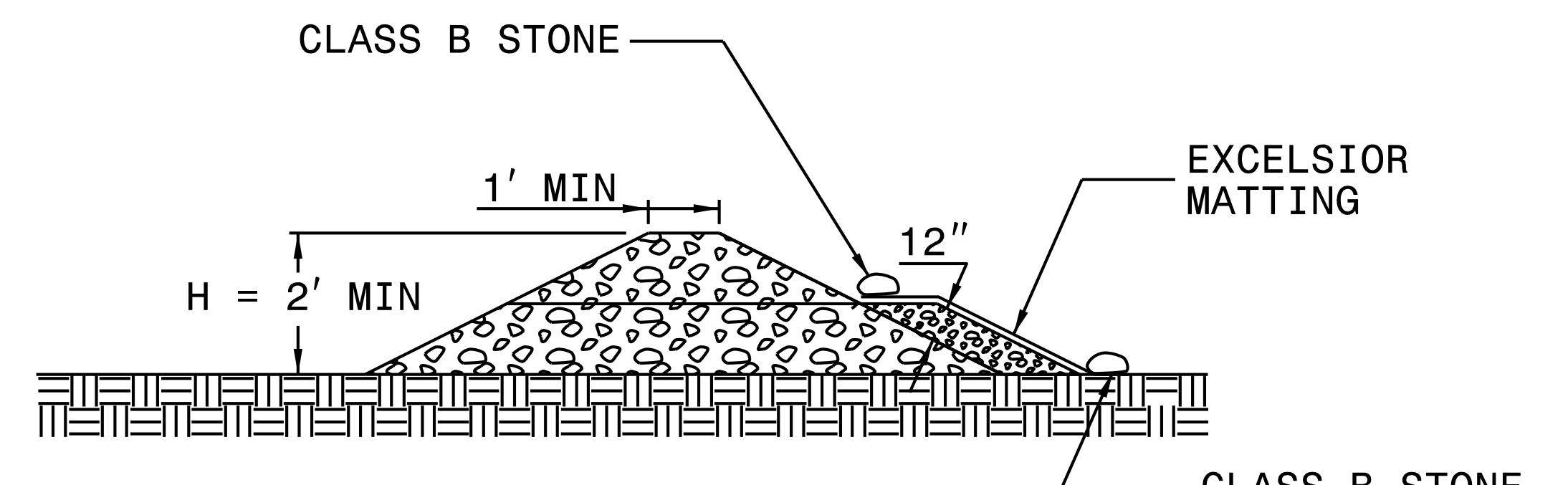
INITIALLY APPLY 4 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

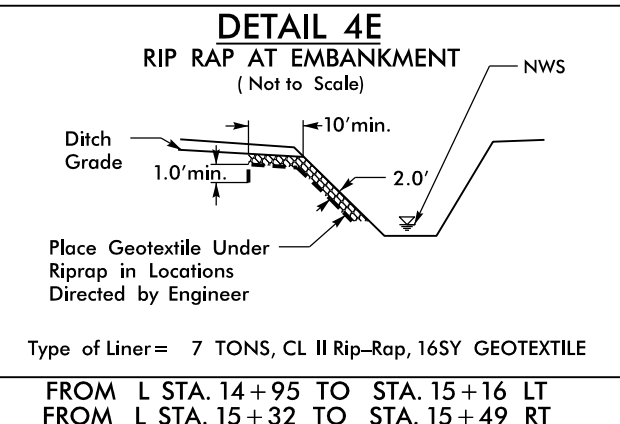
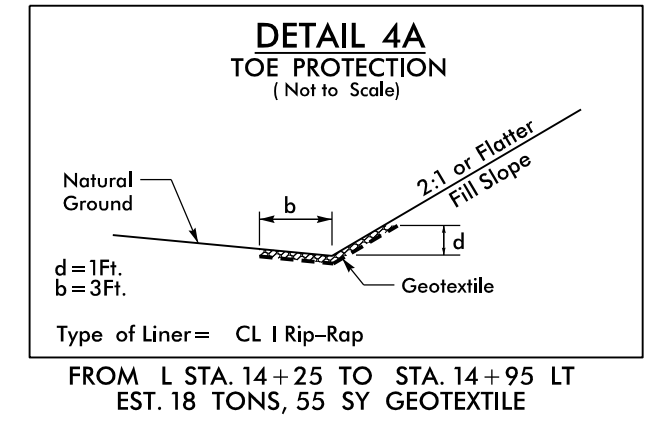
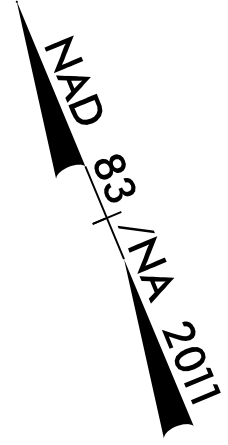
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO. <i>BP8.R023</i>	SHEET NO. <i>EC-3</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION TIMEFRAMES

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

8.17.2022



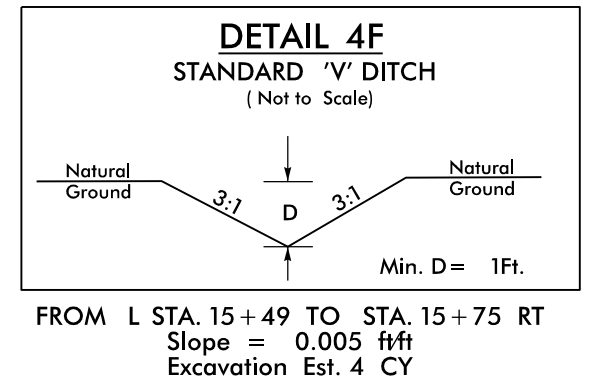
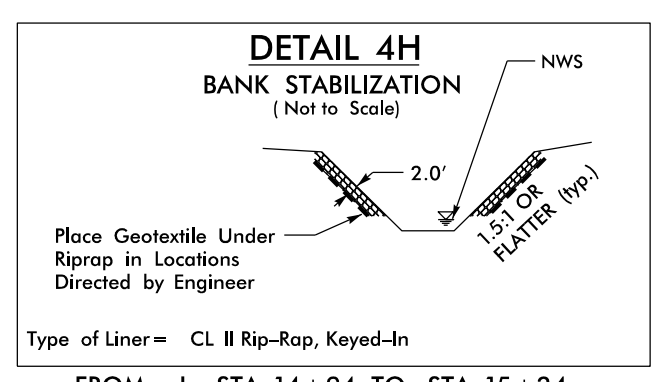
NOTE: PLACE TEMPORARY ROCK SEDIMENT DAMS TYPE - B AND TEMPORARY ROCK SILT CHECKS TYPE - A AT DRAINAGE OUTLETS.

NOTE: PERIMETER EROSION CONTROL MEASURES SHALL BE INSTALLED DURING CLEARING AND GRUBBING PHASE.

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

PROJECT REFERENCE NO. <i>BP8.R023</i>	SHEET NO. <i>EC-4/CONST.4</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



BEGIN TIP PROJECT BP8-R023
-L- POT STA. 13+38.00

BEGIN GRADE
-L- STA. 14+00.00

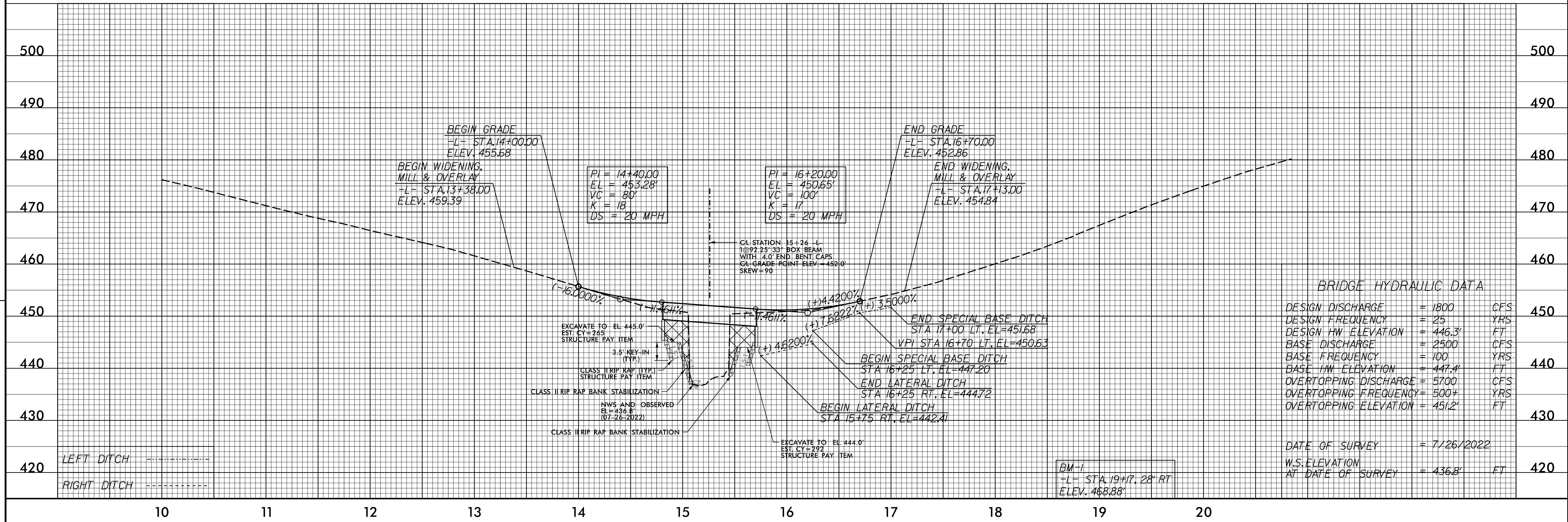
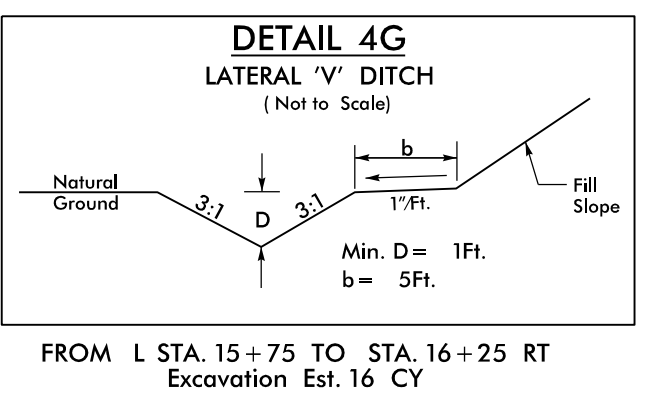
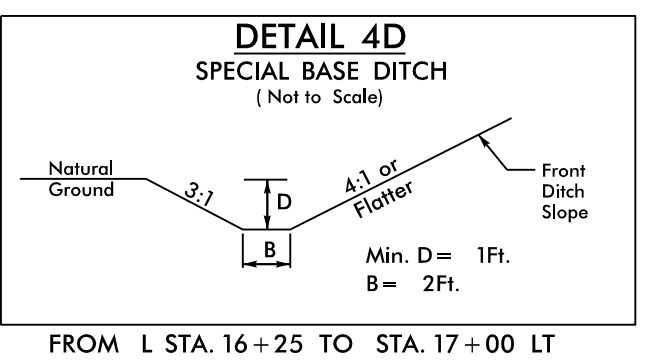
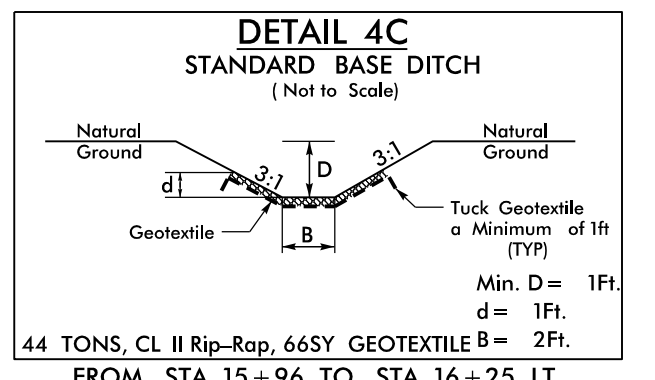
SHOULDER BERM GUTTER:
-L- STA. 14+56.00 TO -L- STA. 14+69.00 LT/RT
-L- STA. 15+83.00 TO -L- STA. 15+96.00 LT/RT

BRIDGE AND APPROACH SLAB:
-L- STA. 14+69.00 BEGIN APPROACH SLAB
-L- STA. 14+79.88 BEGIN BRIDGE
-L- STA. 15+72.13 END BRIDGE
-L- STA. 15+83.00 END APPROACH SLAB

UNCLASSIFIED STRUCTURE EXCAVATION

END TIP PROJECT BP8-R023
-L- POT STA. 17+13.00

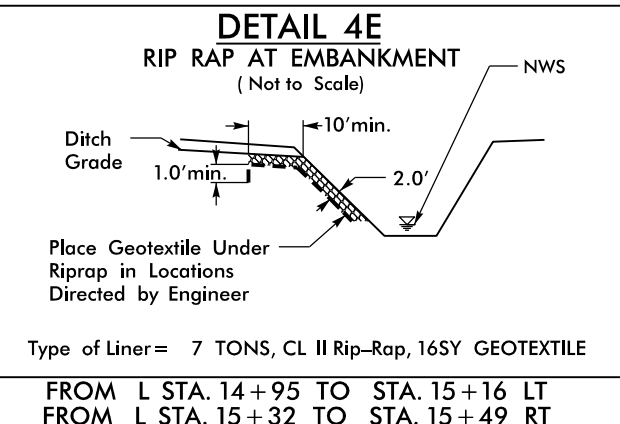
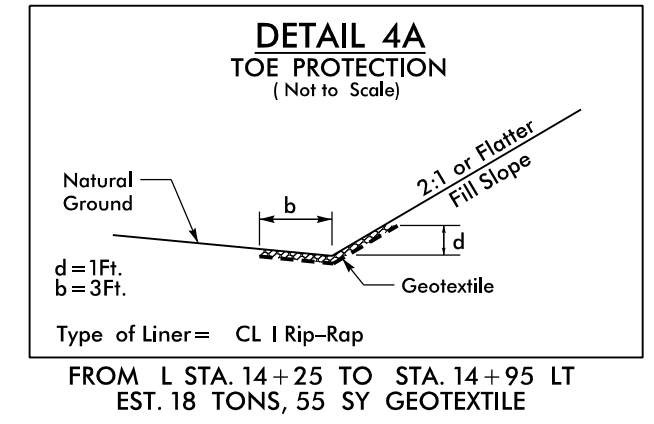
END GRADE
-L- STA. 16+70.00



REVISIONS

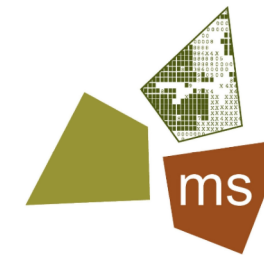
8/17/99

NAD 83 - NA 2011



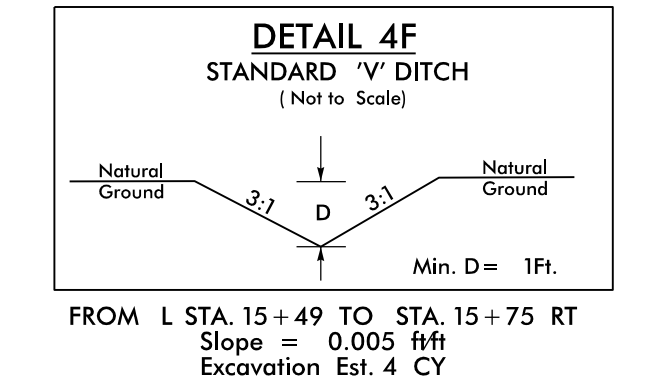
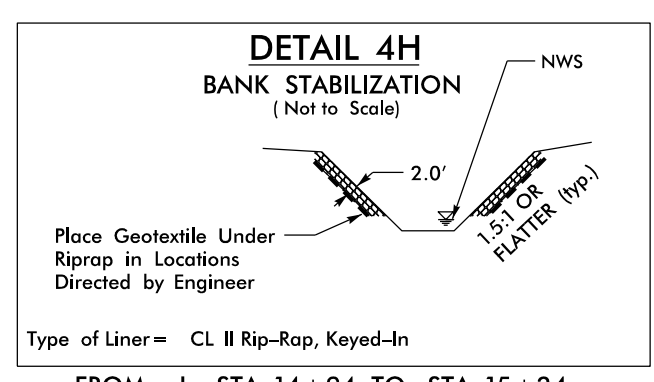
Install Class II rip rap in ditchline Sta. 15+75 to 16+75 LT

Place Matting for Erosion Control on Slope as Work Allows. Begin to End



ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

PROJECT REFERENCE NO. <i>BP8.R023</i>	SHEET NO. <i>EC-5/CONST.4</i>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



BEGIN TIP PROJECT BP8-R023
-L- POT STA. 13+38.00

BEGIN GRADE
-L- STA. 14+00.00

3

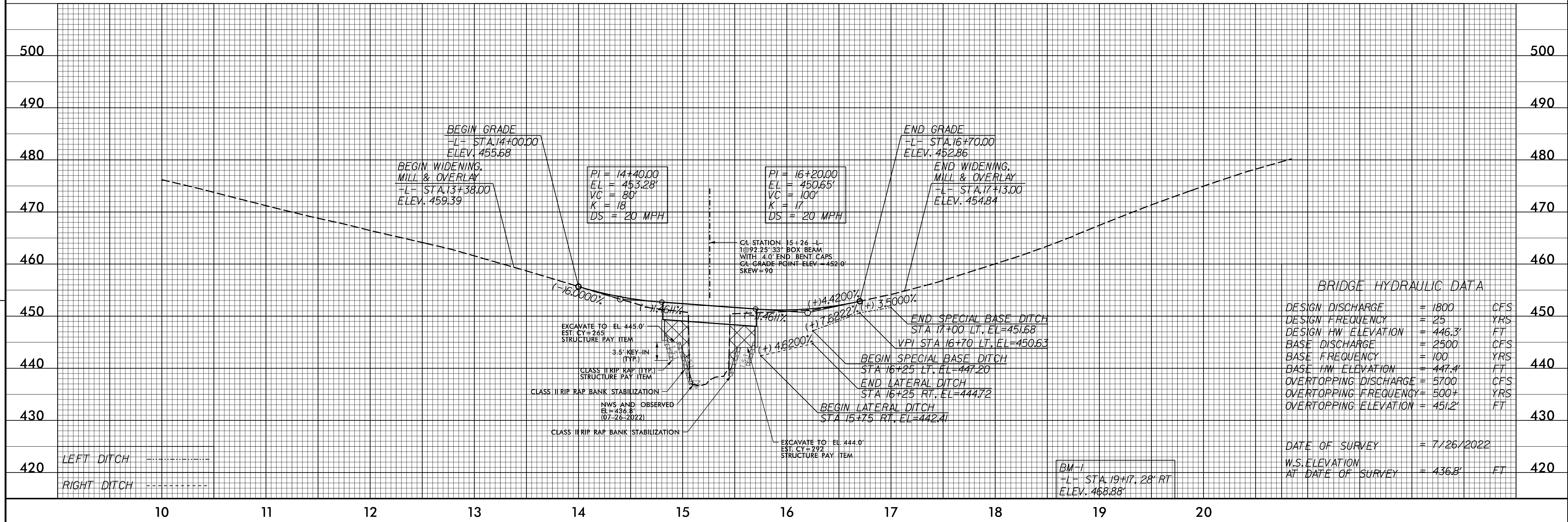
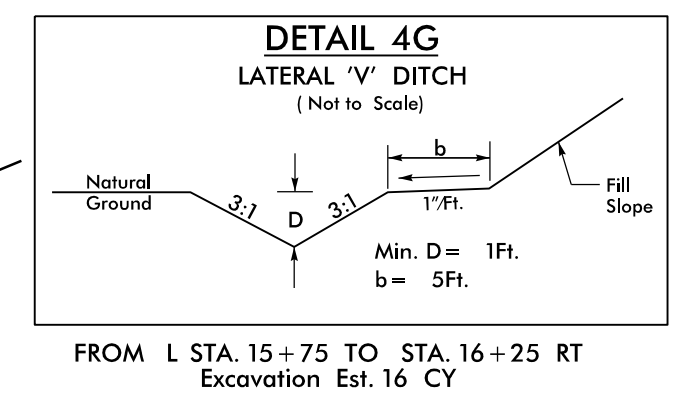
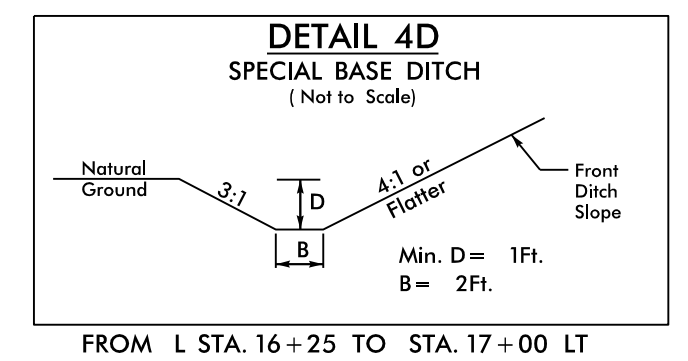
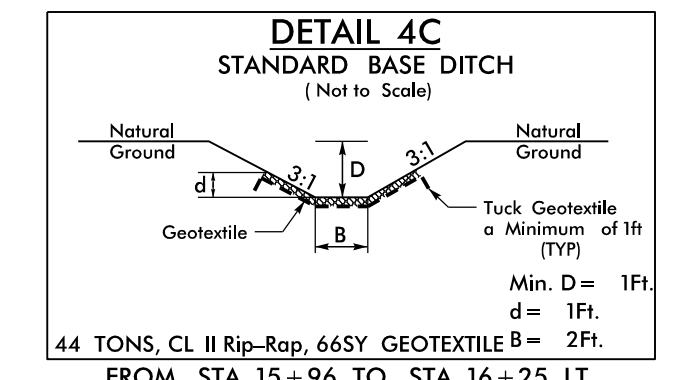
SHOULDER BERM GUTTER:
-L- STA. 14+56.00 TO -L- STA. 14+69.00 LT/RT
-L- STA. 15+83.00 TO -L- STA. 15+96.00 LT/RT

BRIDGE AND APPROACH SLAB:
-L- STA. 14+69.00 BEGIN APPROACH SLAB
-L- STA. 14+79.88 BEGIN BRIDGE
-L- STA. 15+72.13 END BRIDGE
-L- STA. 15+83.00 END APPROACH SLAB

UNCLASSIFIED STRUCTURE EXCAVATION

END TIP PROJECT BP8-R023
-L- POT STA. 17+13.00

END GRADE
-L- STA. 16+70.00



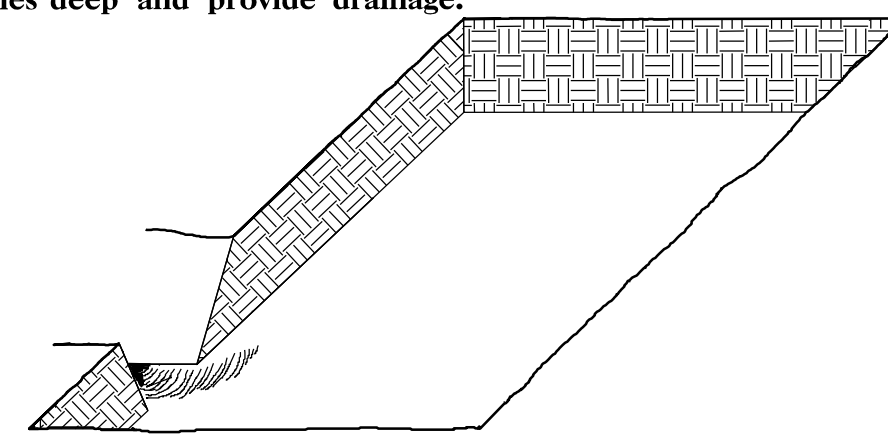
REVISIONS

PLANTING DETAILS

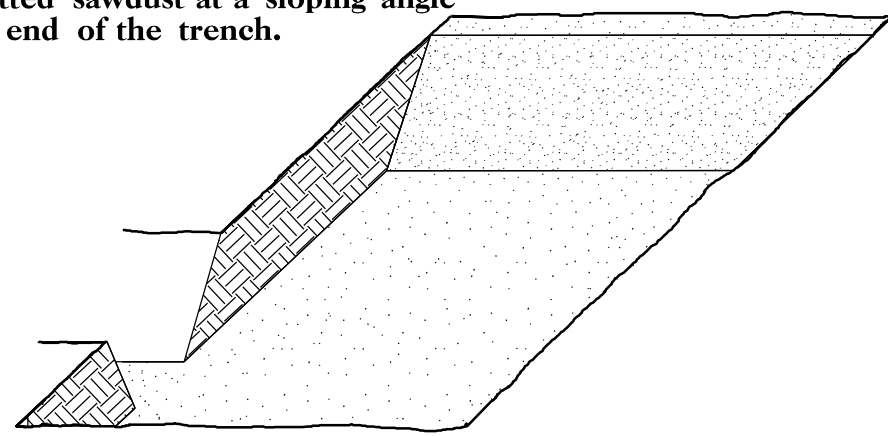
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

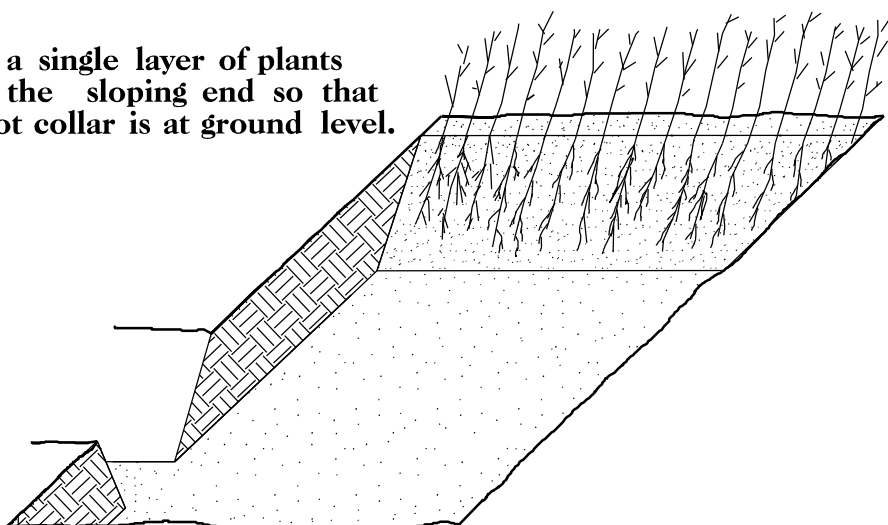
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



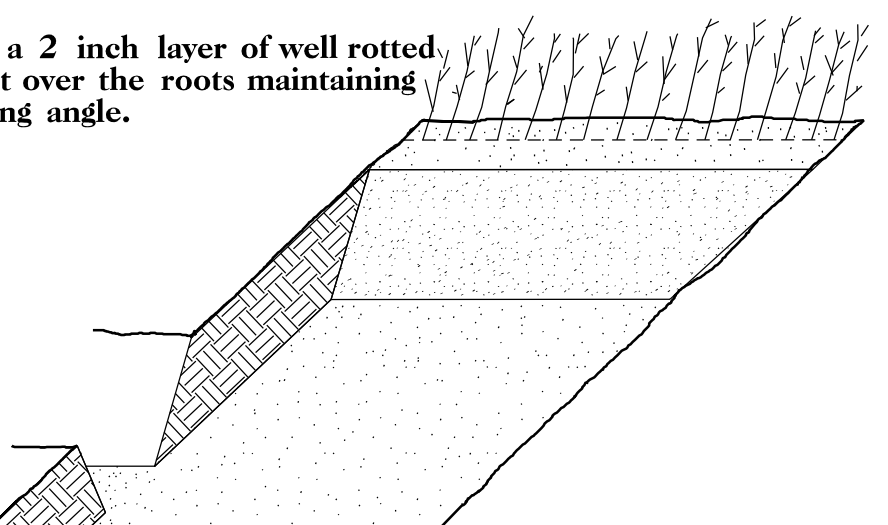
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

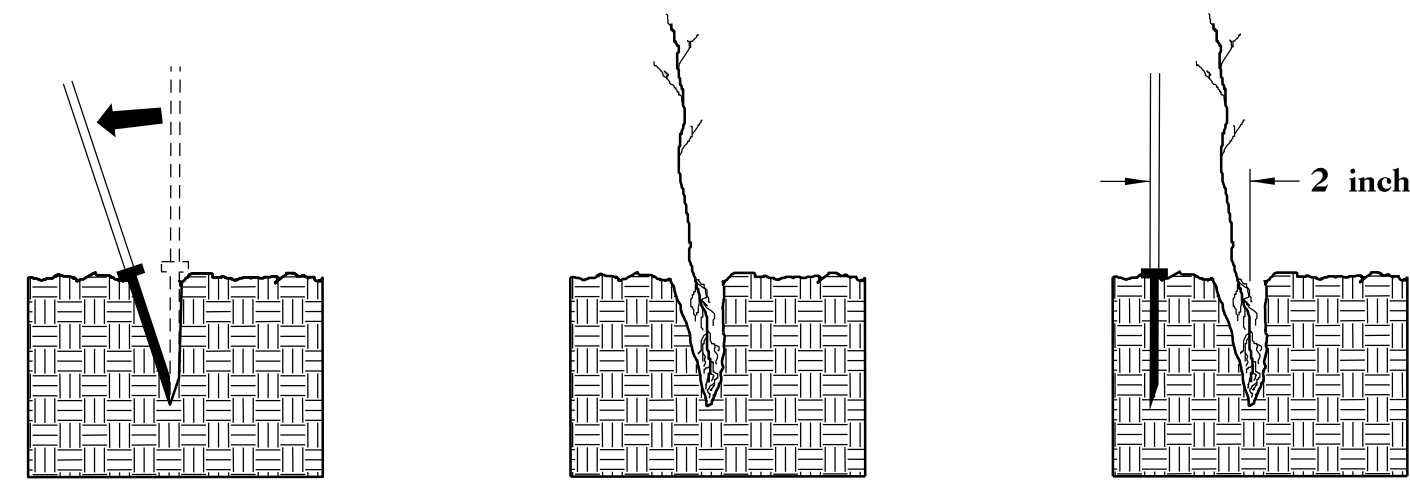


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.



6. Repeat layers of plants and sawdust as necessary and water thoroughly.

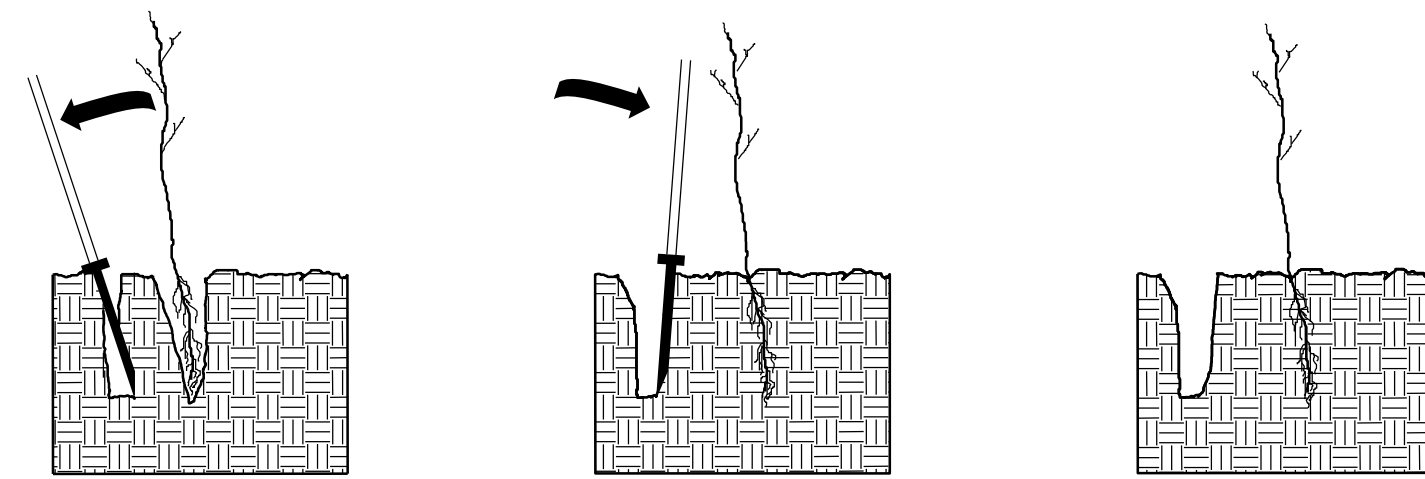
DIBBLE PLANTING METHOD USING THE KBC PLANTING BAR



1. Insert planting bar as shown and pull handle toward planter.

2. Remove planting bar and place seedling at correct depth.

3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.

5. Push handle forward firming soil at top.

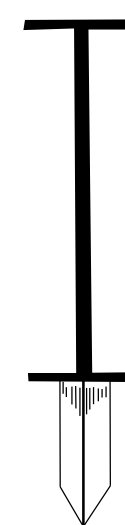
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.



KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

REFORESTATION

- TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

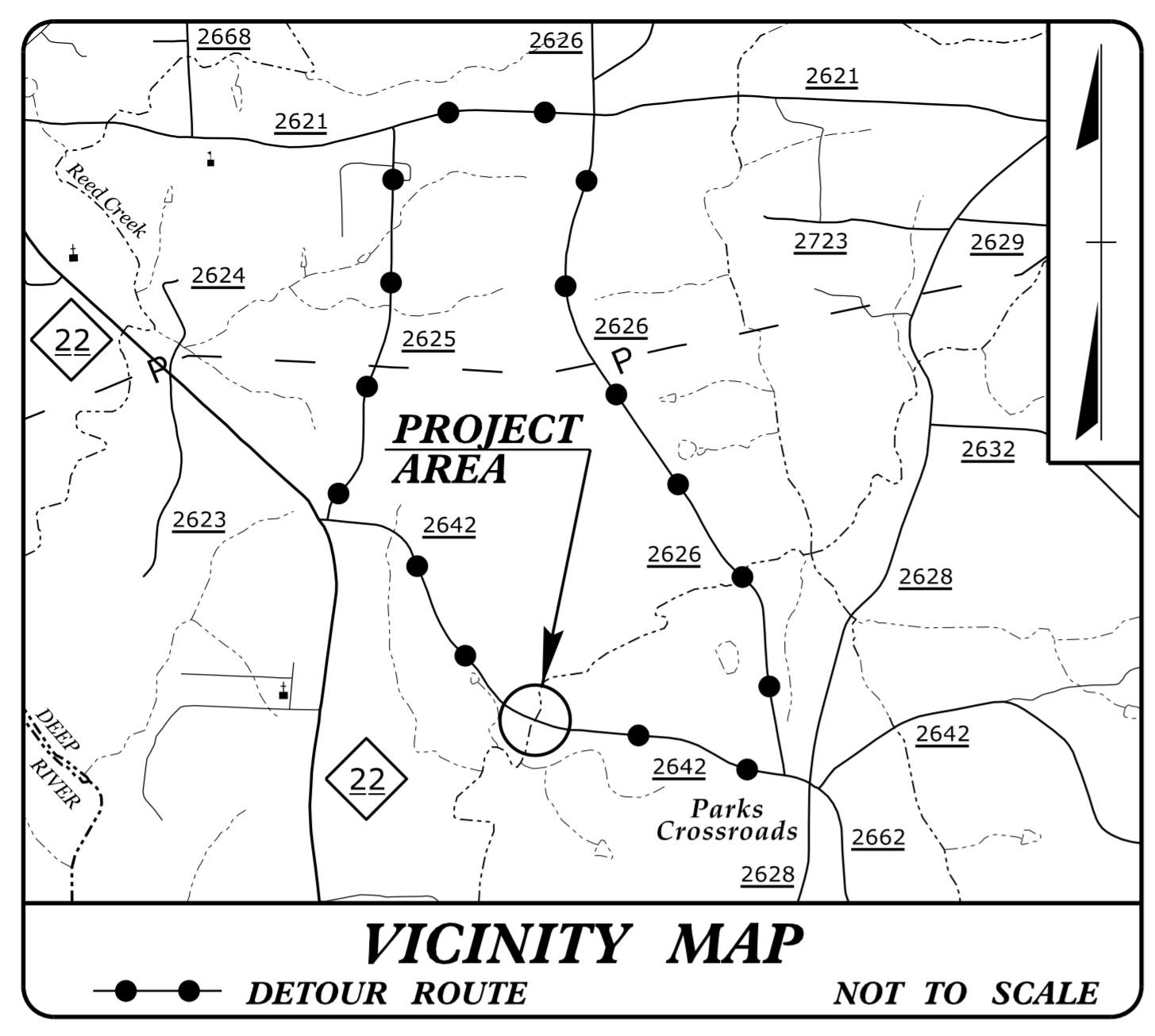
30%	LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
30%	PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
40%	BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT

09/08/99

TIP PROJECT: BP8-R023



STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

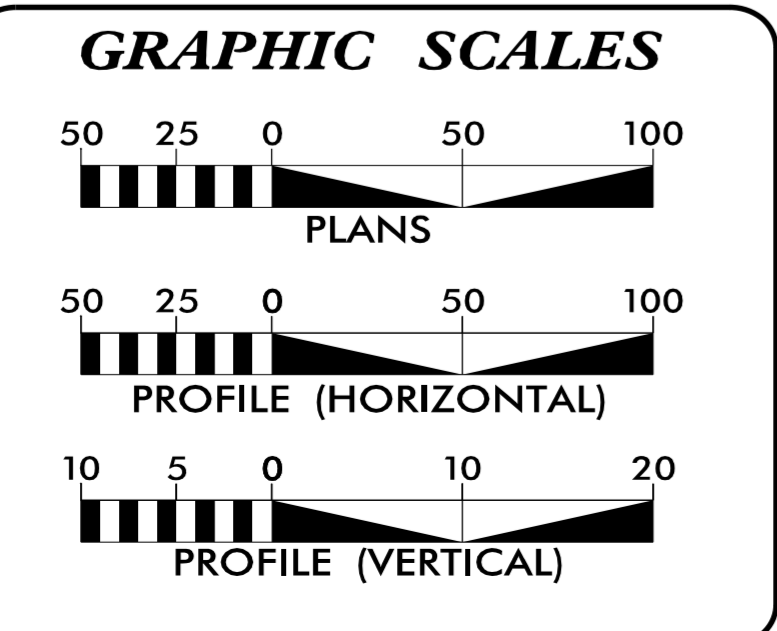
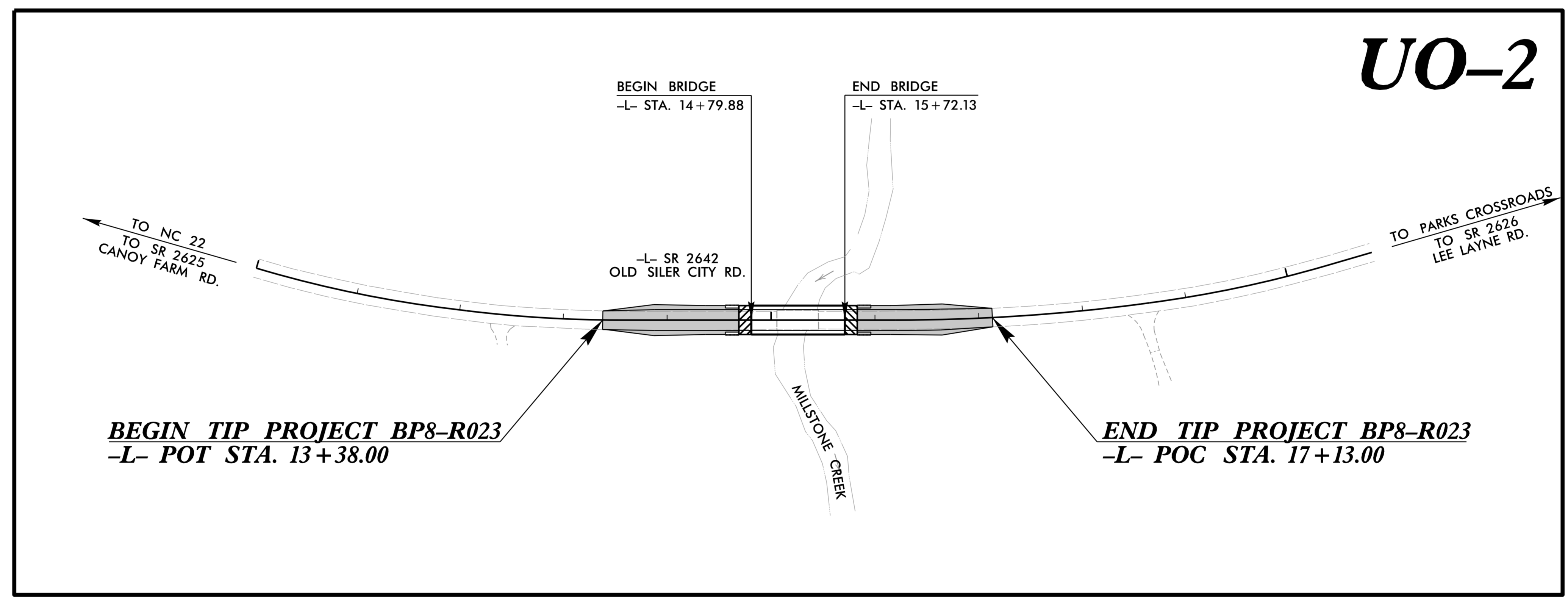
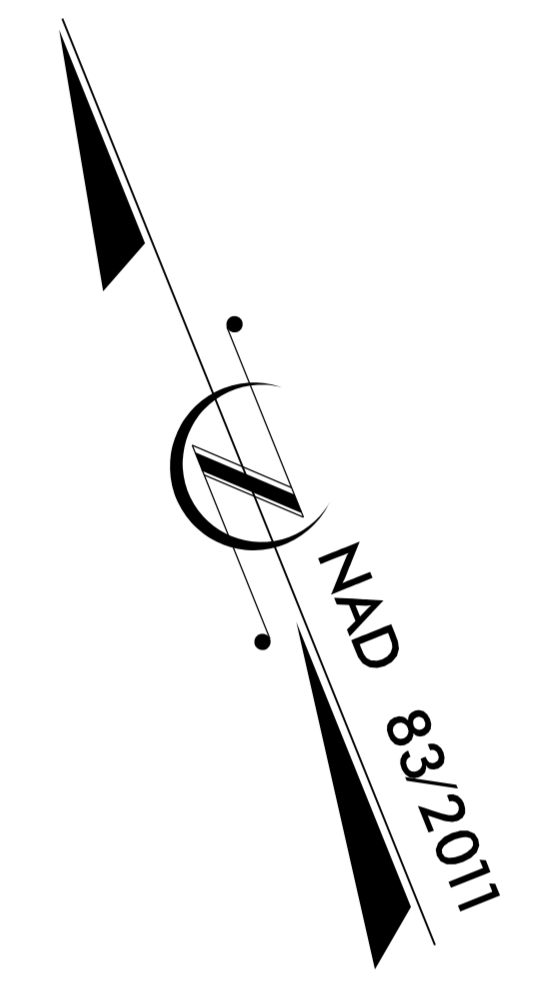
**UTILITIES BY OTHERS PLANS
 RANDOLPH COUNTY**

LOCATION: REPLACE BRIDGE NO. 164 ON SR 2642 (OLD SILER CITY RD.) OVER MILLSTONE CREEK

TYPE OF WORK: UTILITY RELOCATION

T.I.P. NO.	SHEET NO.
BP8-R023	UO-1

NOTE:
 ALL UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR UTILITY WORK SHOWN ON THIS SHEET.



INDEX OF SHEETS

SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	UBO PLAN SHEET

UTILITY OWNERS WITH CONFLICTS

(A) COMMUNICATIONS - BRIGHTSPEED

PREPARED IN THE OFFICE OF:

CH ENGINEERING
 DIVISION OF PENNONI

5430 WADE PARK BLVD., SUITE 106,
 RALEIGH, NC 27607 PHONE: 919.929.1173
 FAX: 919.493.6548 NC LICENSE #P-0189

UTILITIES PROJECT COORDINATOR
 WAYNE WILEY

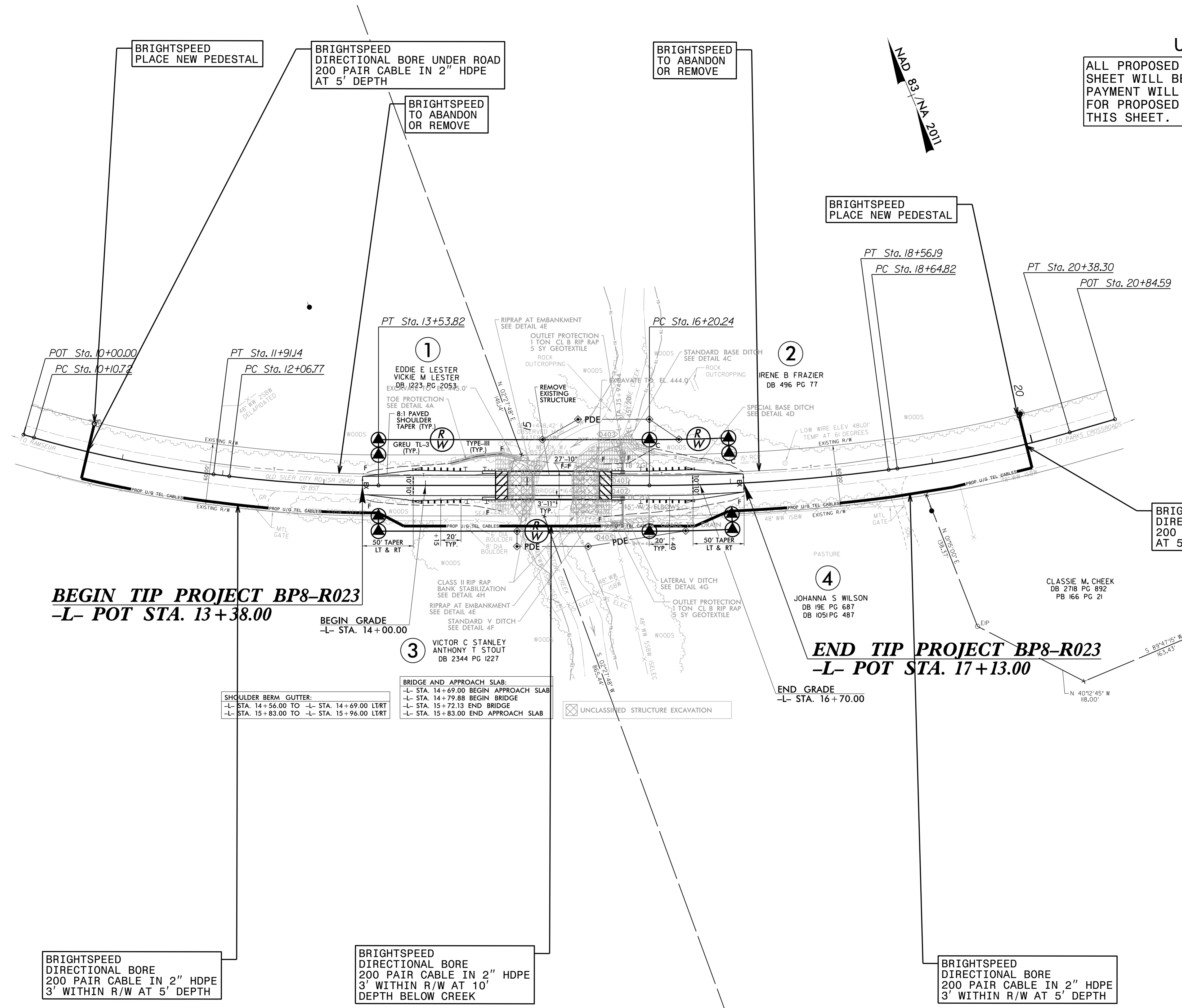
**DIVISION OF HIGHWAYS
 UTILITIES UNIT**
 1555 MAIL SERVICES CENTER
 RALEIGH, NC 27699-1555
 PHONE (919) 707-6690
 FAX (919) 250-4151

TIM WELCH, PE DIV. BRIDGE PROG. MANAGER
 TRAVIS MORGAN, PE DIV. UTILITIES ENGINEER
 JAMIE YOW DIV. UTILITIES COORDINATOR

6/21/2024
 R:\Utilities\Engineering\UBO\Proj\BP8R023_ut-fsh_uol.dgn
 -USERNAME-

UTILITIES BY OTHERS

ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS. NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR PROPOSED UTILITY WORK SHOWN ON THIS SHEET.



BEGIN TIP PROJECT BP8-R023
 -L- POT STA. 13+38.00

END TIP PROJECT BP8-R023
 -L- POT STA. 17+13.00

SHOULDER BERM GUTTER:
 -L- STA. 14+56.00 TO -L- STA. 14+69.00 LTRT
 -L- STA. 15+83.00 TO -L- STA. 15+96.00 LTRT

BRIDGE AND APPROACH SLAB:
 -L- STA. 14+69.00 BEGIN APPROACH SLAB
 -L- STA. 14+79.88 BEGIN BRIDGE
 -L- STA. 15+72.13 END BRIDGE
 -L- STA. 15+83.00 END APPROACH SLAB

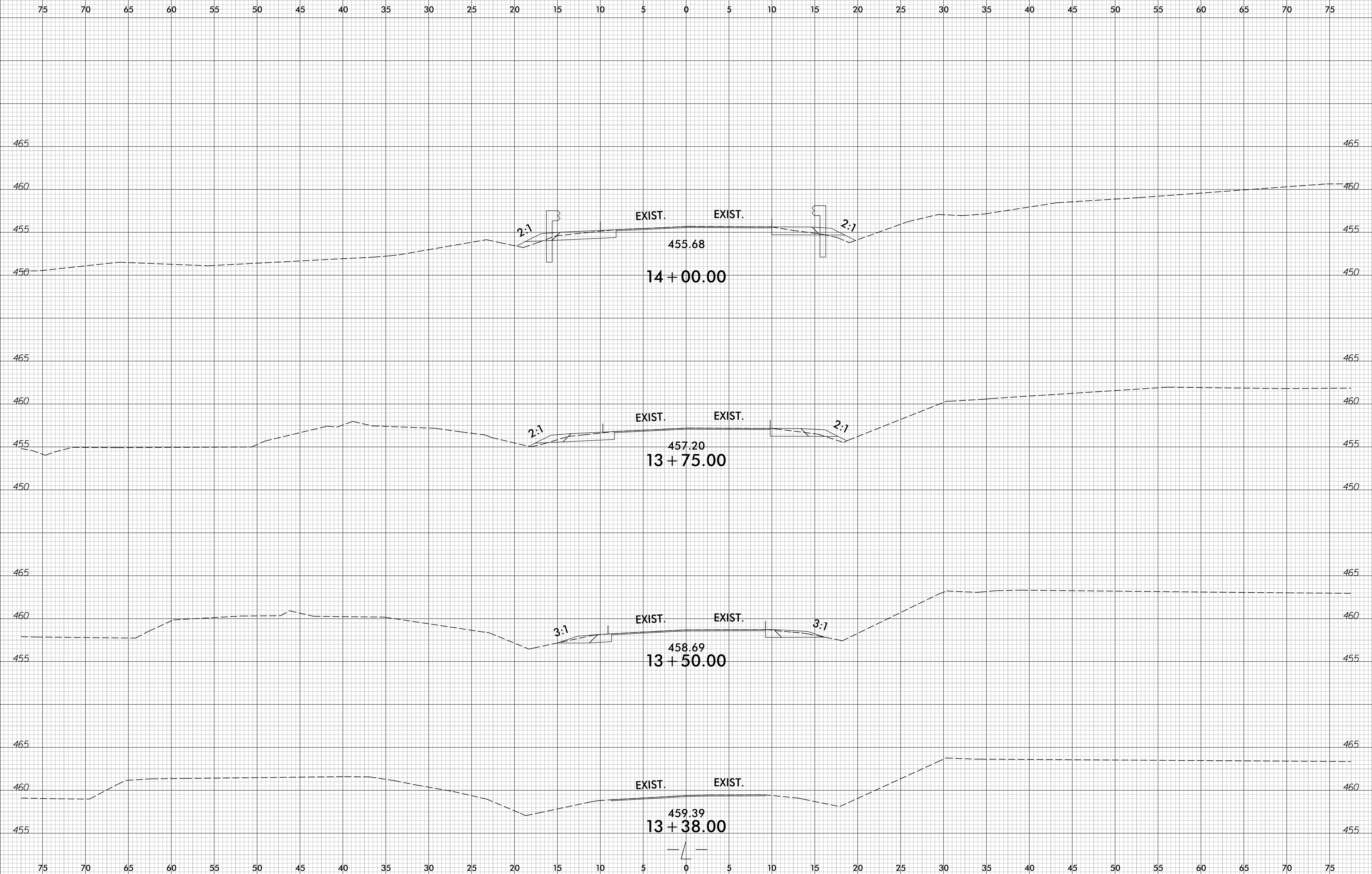
UNCLASSIFIED STRUCTURE EXCAVATION

BRIGHTSPEED DIRECTIONAL BORE 200 PAIR CABLE IN 2" HDPE 3' WITHIN R/W AT 5' DEPTH

BRIGHTSPEED DIRECTIONAL BORE 200 PAIR CABLE IN 2" HDPE 3' WITHIN R/W AT 10' DEPTH BELOW CREEK

BRIGHTSPEED DIRECTIONAL BORE 200 PAIR CABLE IN 2" HDPE 3' WITHIN R/W AT 5' DEPTH

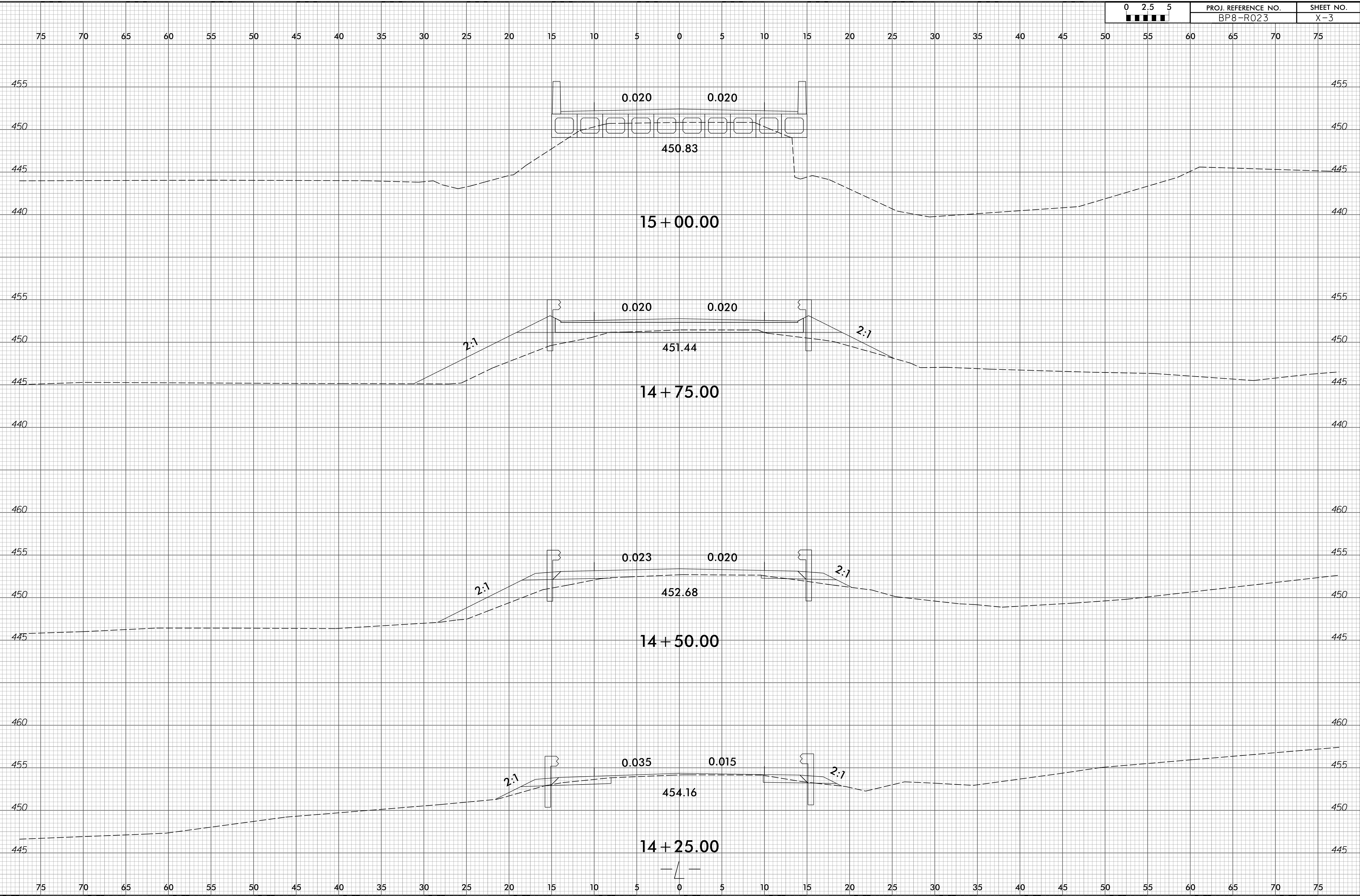
5/14/99
 6/21/2024
 C:\Users\psh\OneDrive\Documents\Projects\BP8R023\rdy-4_uo2_psh.dgn



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
BP8-R023	X-3

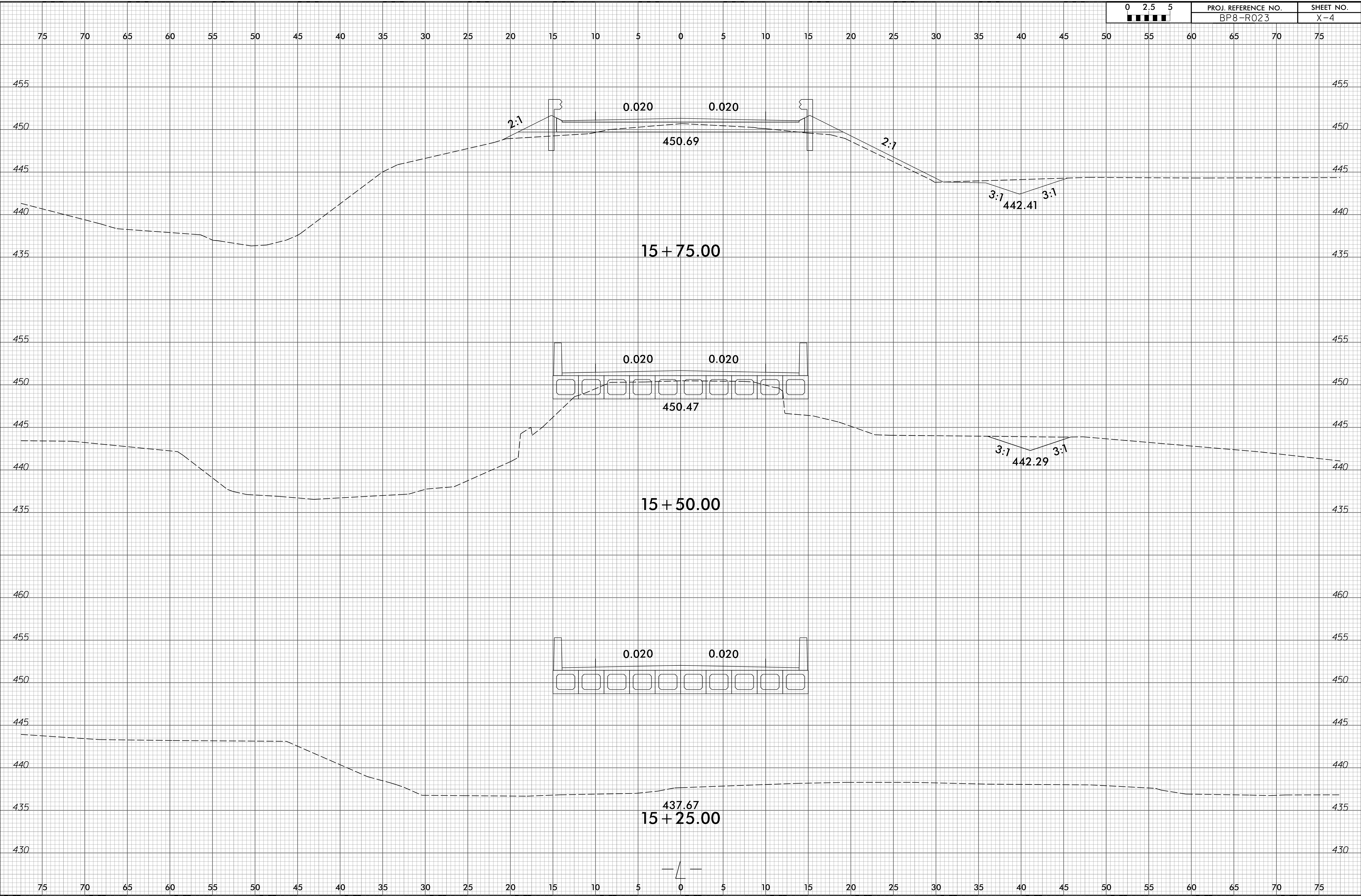


20-MAY-2024 07:11
C:\Users\jamesr\OneDrive\Documents\CorridorModeling\BP8R023_dj_xpl.dgn

6/23/16
20-MAY-2024 07:11
D:\00\60\03\02_BP8.R023 RAND01.PH 164\Roadway\Corridor\Modeling\BP8R023.dwg_xpl.dgn
33028741615333



PROJ. REFERENCE NO.	SHEET NO.
BP8-R023	X-4



15 + 75.00

15 + 50.00

15 + 25.00

0.020 0.020

0.020 0.020

0.020 0.020

2:1

2:1

3:1

3:1

3:1

3:1

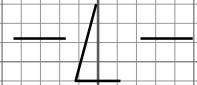
450.69

450.47

437.67

442.41

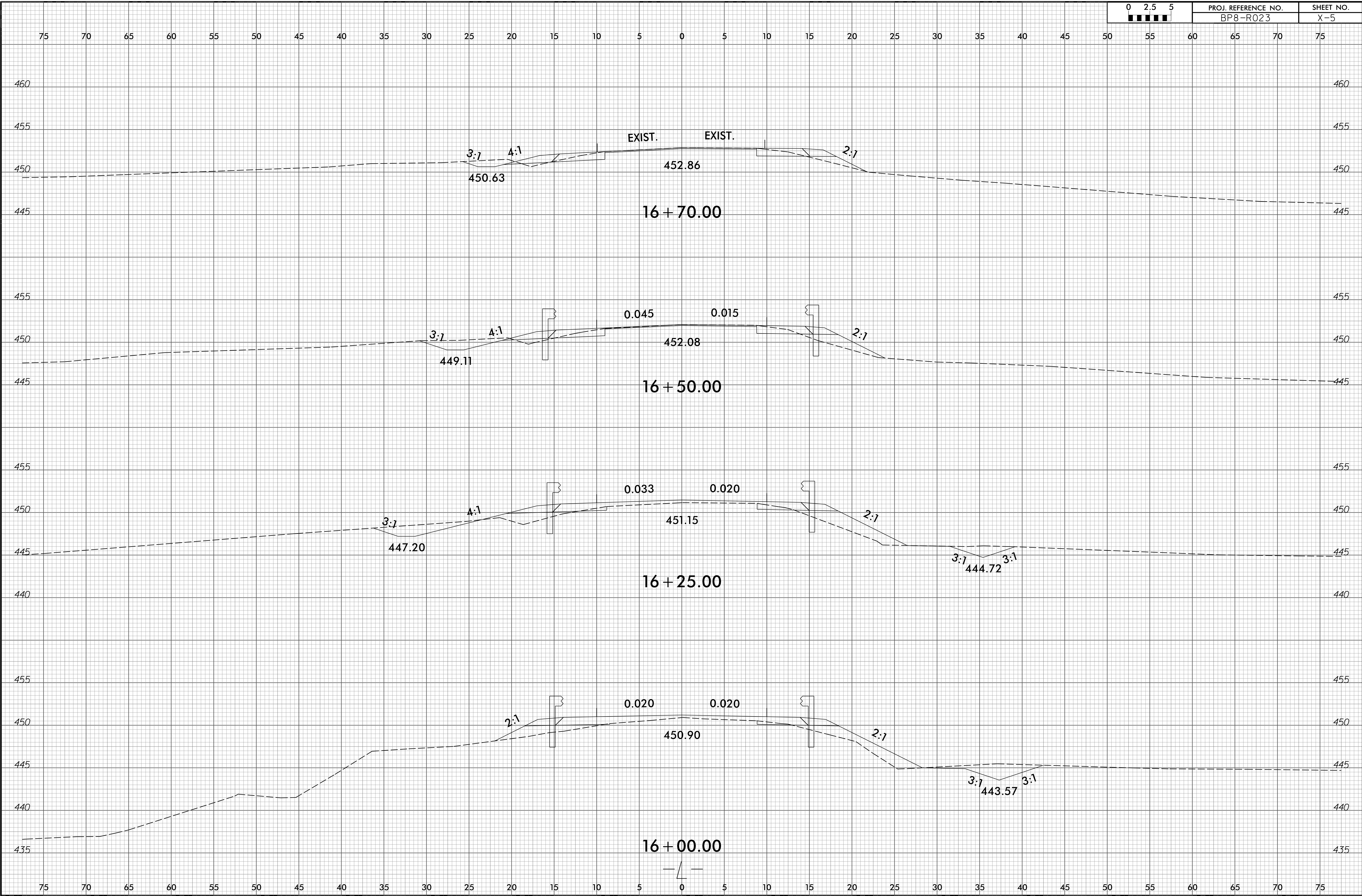
442.29



6/23/16



PROJ. REFERENCE NO.	SHEET NO.
BP8-R023	X-5



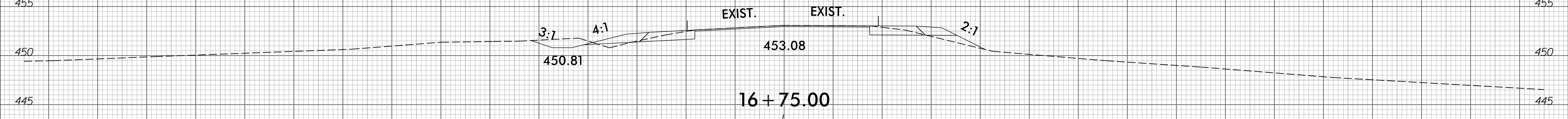
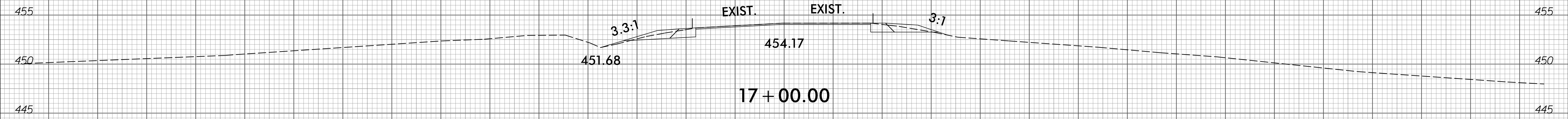
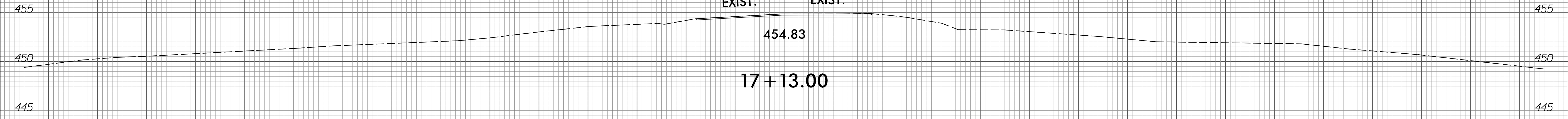
20-MAY-2024 07:11
 I:\00\164\Roadway\CorridorModeling\BP8R023.dwg_xpl.dgn
 \$\$\$\$\$\$

6/23/16



PROJ. REFERENCE NO.	SHEET NO.
BP8-R023	X-6

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

20-MAY-2024 07:11
 I:\00_164\03\164\BP8-R023-R023.dwg
 3:3:164\Roadway\CorridorModeling\BP8R023.dwg_xpl.dgn

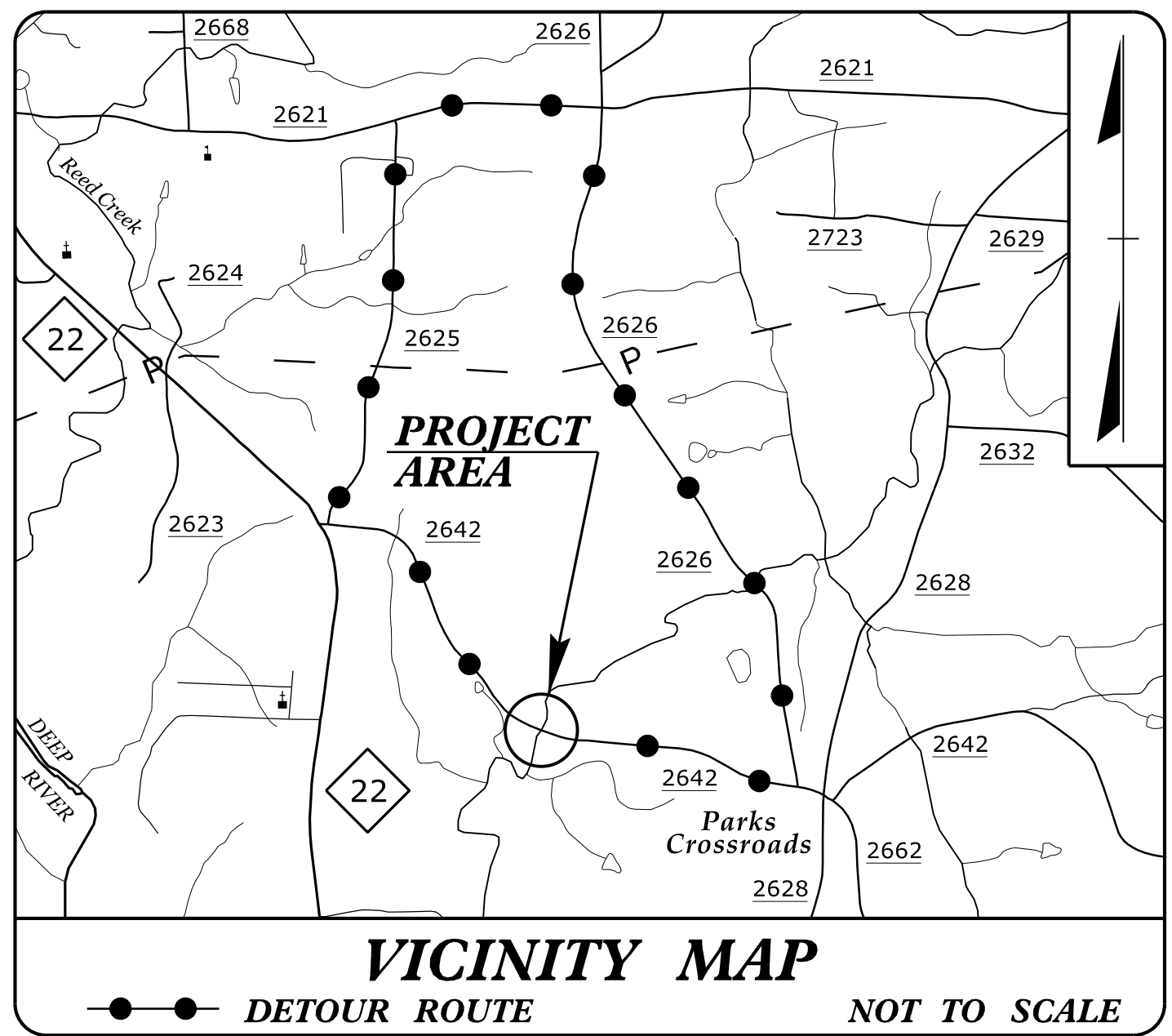
15/08/2019

TIP PROJECT: BP8.R023

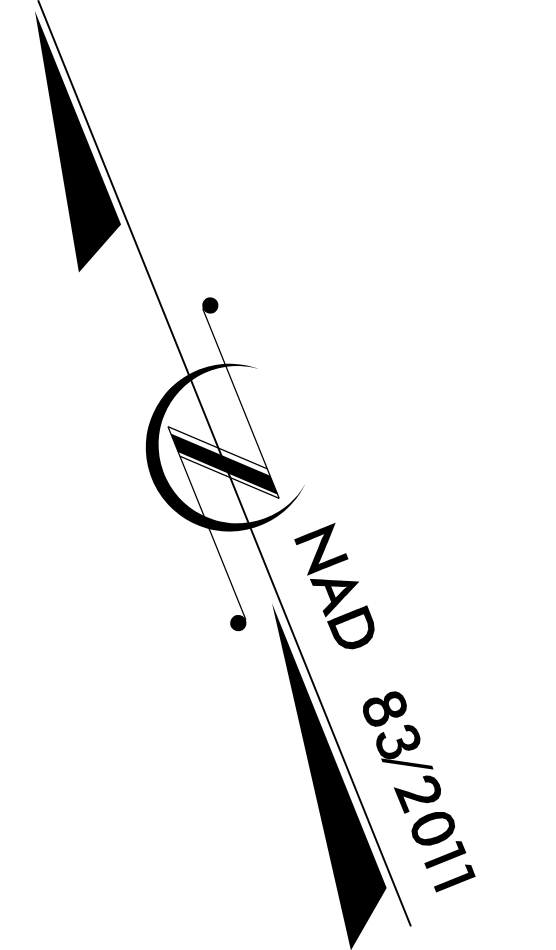
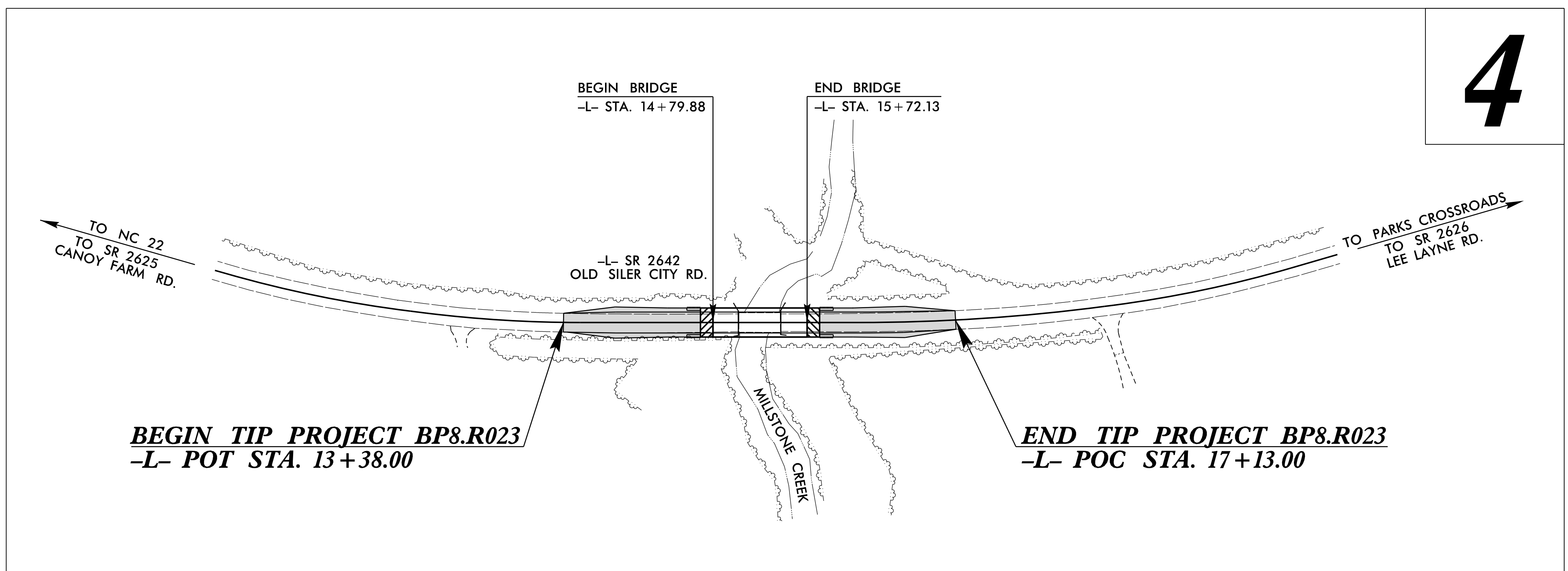
CONTRACT: DH00556

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
RANDOLPH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP8.R023		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
BP8.R023.1		PE	
BP8.R023.2		RW & UTILITIES	
BP8.R023.3		CONSTRUCTION	

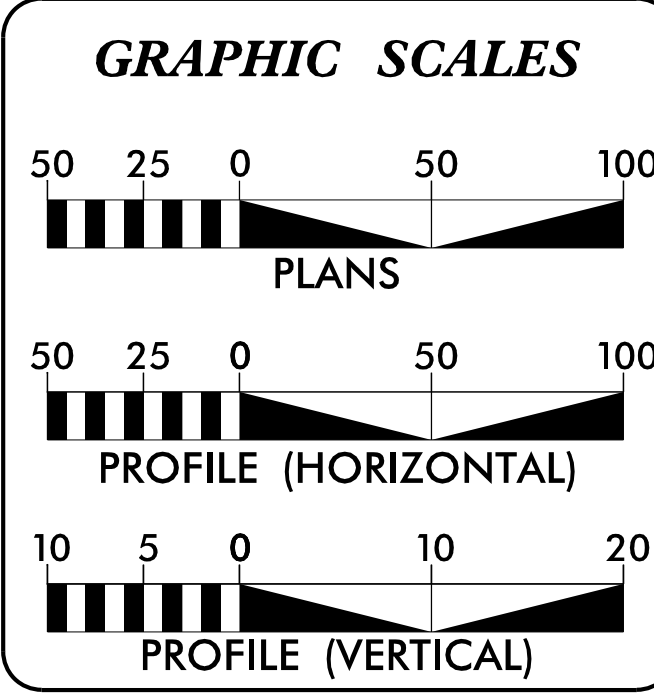


LOCATION: REPLACE BRIDGE NO.164 ON SR 2642 (OLD SILER CITY RD.) OVER MILLSTONE CREEK
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE



STRUCTURES

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



DESIGN DATA
ADT 2021 = 400

V = 60 MPH

FUNC CLASS = LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP8.R023	=	0.054 MILES
LENGTH STRUCTURE PROJECT BP8.R023	=	0.017 MILES
TOTAL LENGTH PROJECT BP8.R023	=	0.071 MILES

Plans Prepared By:
 ms consultants, inc.
5444 Wade Park Blvd.
Suite 150
Raleigh, NC 27607
NC License Number - C-3239

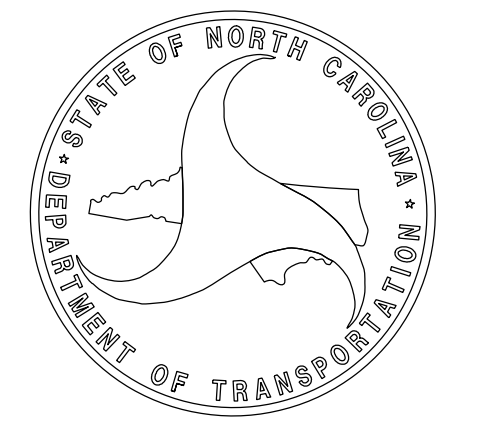
2024 STANDARD SPECIFICATIONS

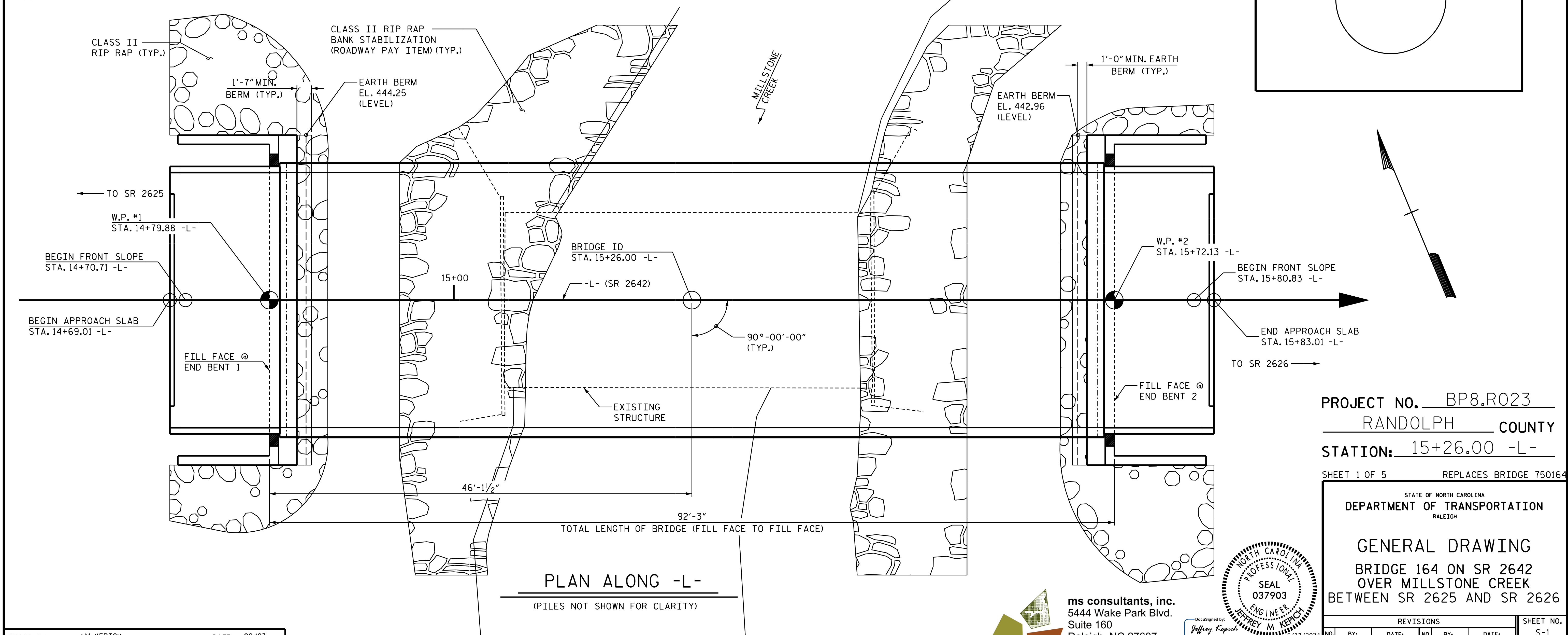
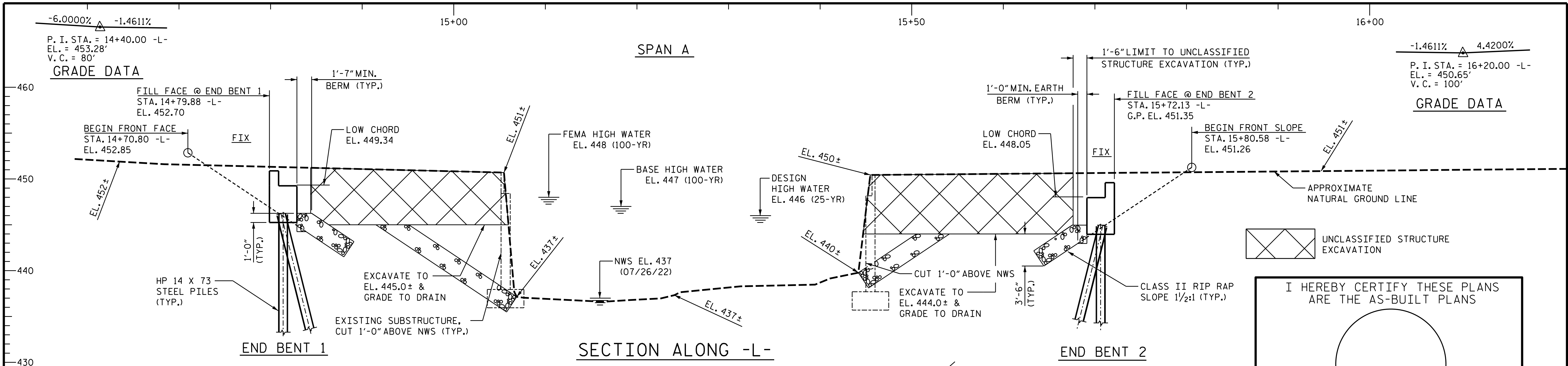
RIGHT OF WAY DATE:
JUNE 19, 2023

LETTING DATE:
AUGUST 27, 2024

Plans Prepared For:
NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS - DIVISION 8
121 DOT DRIVE
CARTHAGE, NC 28327

TIM WELCH, PE
NCDOT PROJECT ENGINEER





I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

PROJECT NO. BP8.R023
 RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 1 OF 5 REPLACES BRIDGE 750164



ms consultants, inc.
 5444 Wake Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

DRAWN BY :	J.M. KEPICH	DATE :	02/23
CHECKED BY :	M. AMORANDO	DATE :	02/23
DESIGN ENGINEER OF RECORD :	J.M. KEPICH	DATE :	03/24

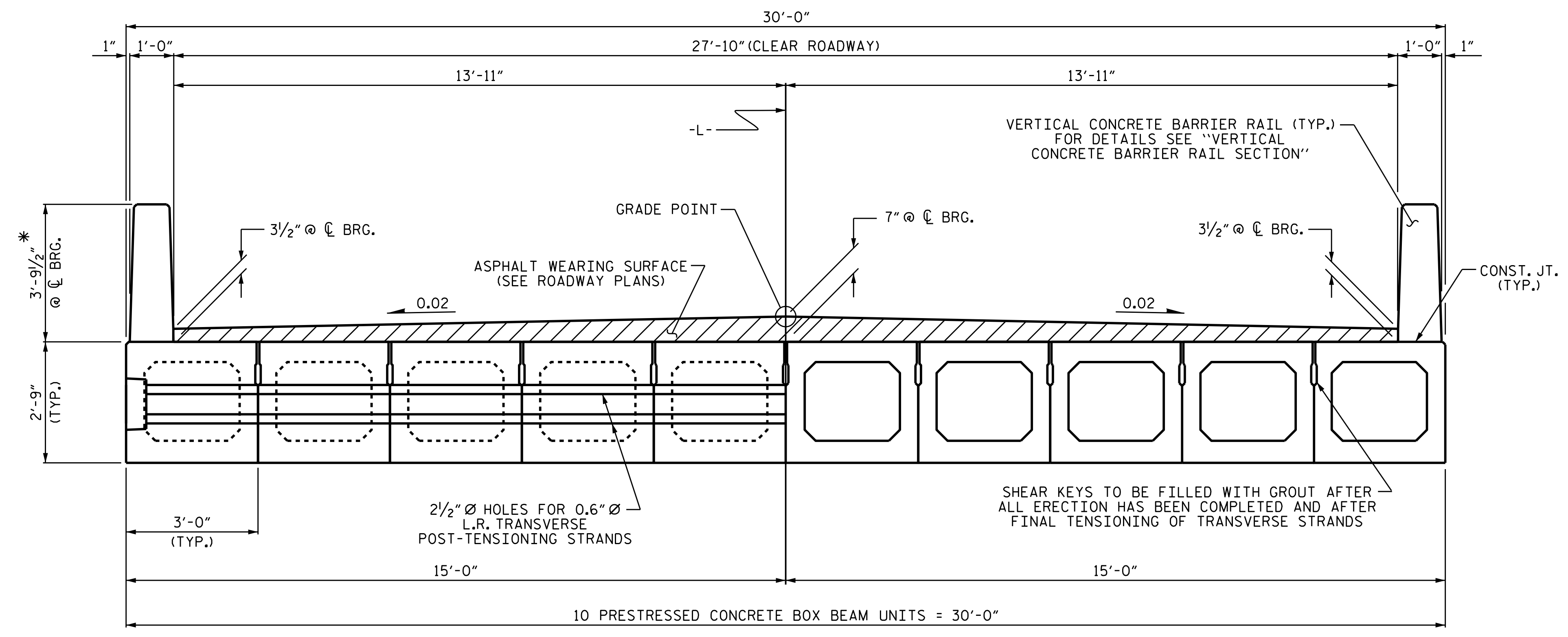
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TOTAL SHEETS 17

NOTES

- ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ALL REINFORCING STEEL CAST WITH THE BOX BEAM SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE BOX BEAMS.
- FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.
- RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.
- THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF BOX BEAM SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.
- THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.
- THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE BOX BEAM UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 6000 PSI.
- ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS SHALL BE EPOXY COATED.
- PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE BOX BEAM UNIT ENDS.
- APPLY EPOXY PROTECTIVE COATING TO BOX BEAM UNIT ENDS.
- VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH, SHALL BE TOoled IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.
- THE LOCATION OF THE VOID DRAINS MAY BE SHIFTED SLIGHTLY WHERE NECESSARY TO CLEAR PRESTRESSING STRANDS OR TRANSVERSE REINFORCING STEEL.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.
- THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4'-0" CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.
- THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.
- THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

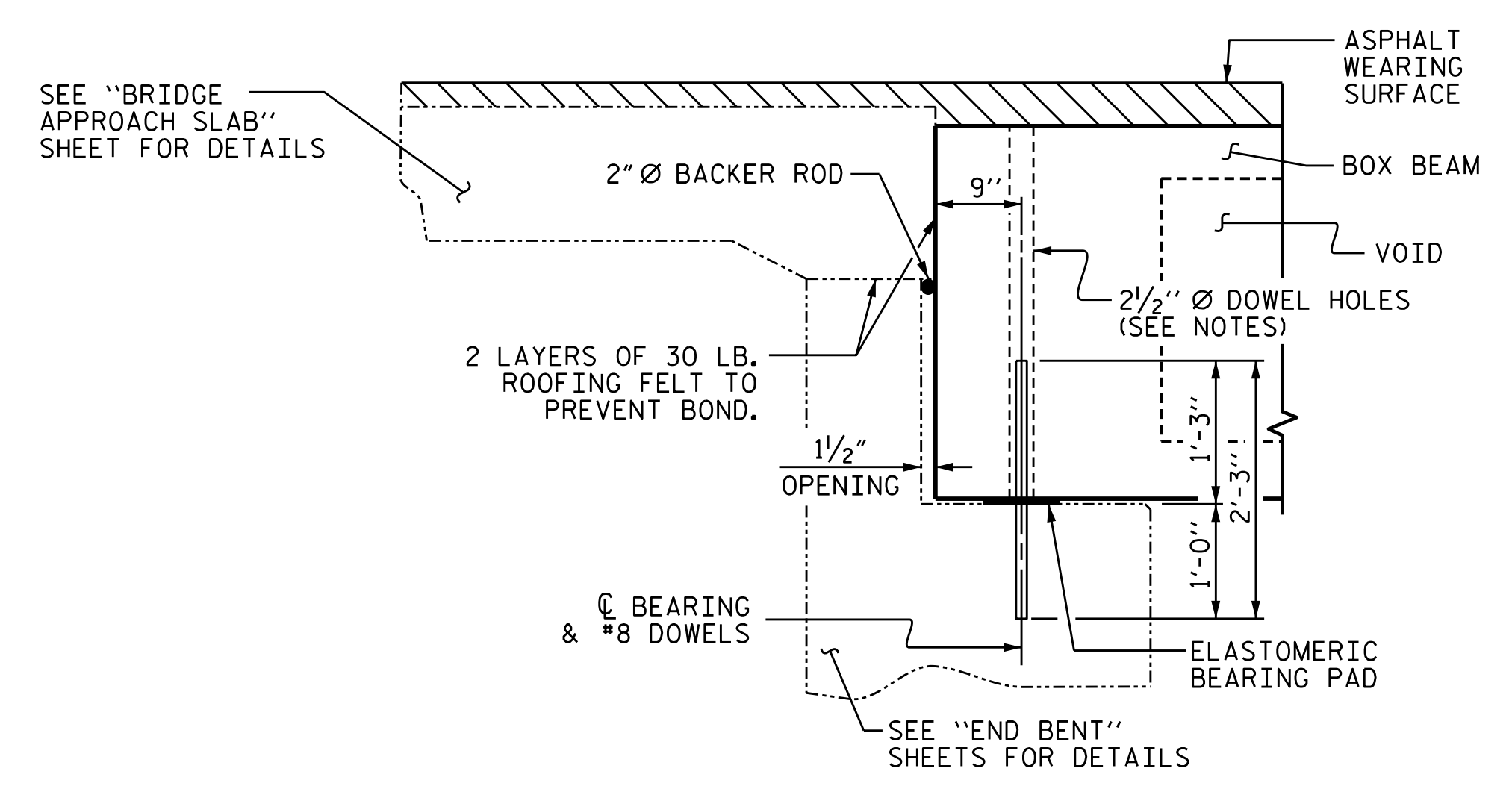


HALF SECTION AT INTERMEDIATE DIAPHRAGMS HALF SECTION THROUGH VOIDS

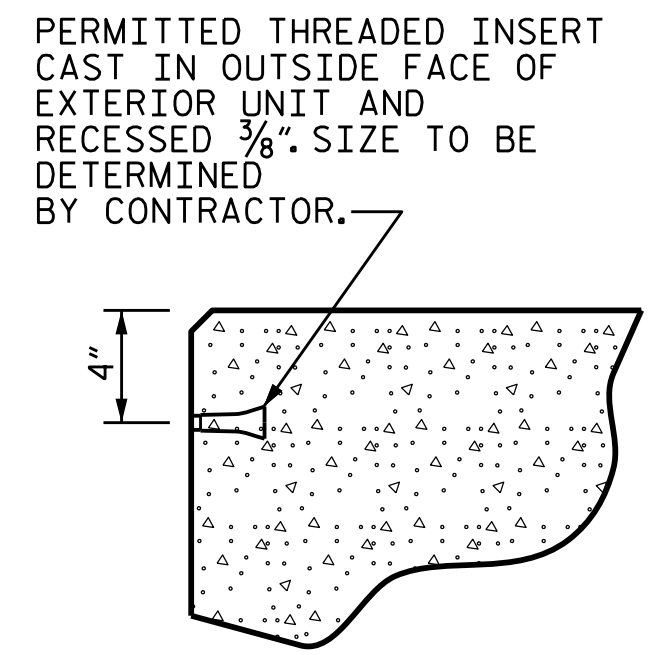
TYPICAL SECTION

*THE MAXIMUM BARRIER RAIL HEIGHT AND ASPHALT THICKNESS IS SHOWN. THE HEIGHT OF THE BARRIER RAIL AND ASPHALT THICKNESS VARIES WHILE THE TOP OF THE BARRIER RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE. FOR RAIL HEIGHT DETAILS AND ASPHALT THICKNESS, SEE THE "VERTICAL CONCRETE BARRIER RAIL SECTION" DETAIL.

FIXED END



SECTION AT END BENT



THREADED INSERT DETAIL

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-

SHEET 1 OF 5

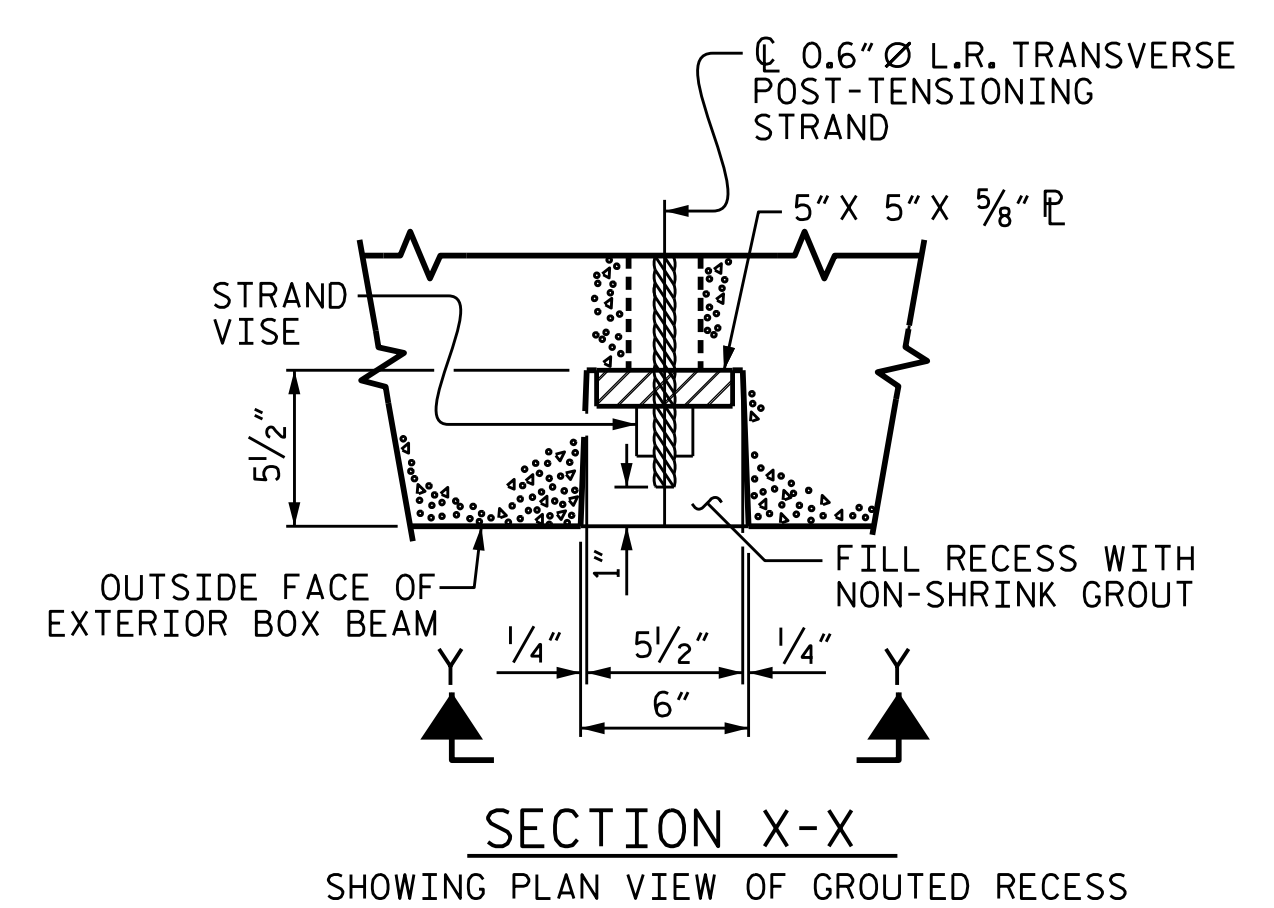
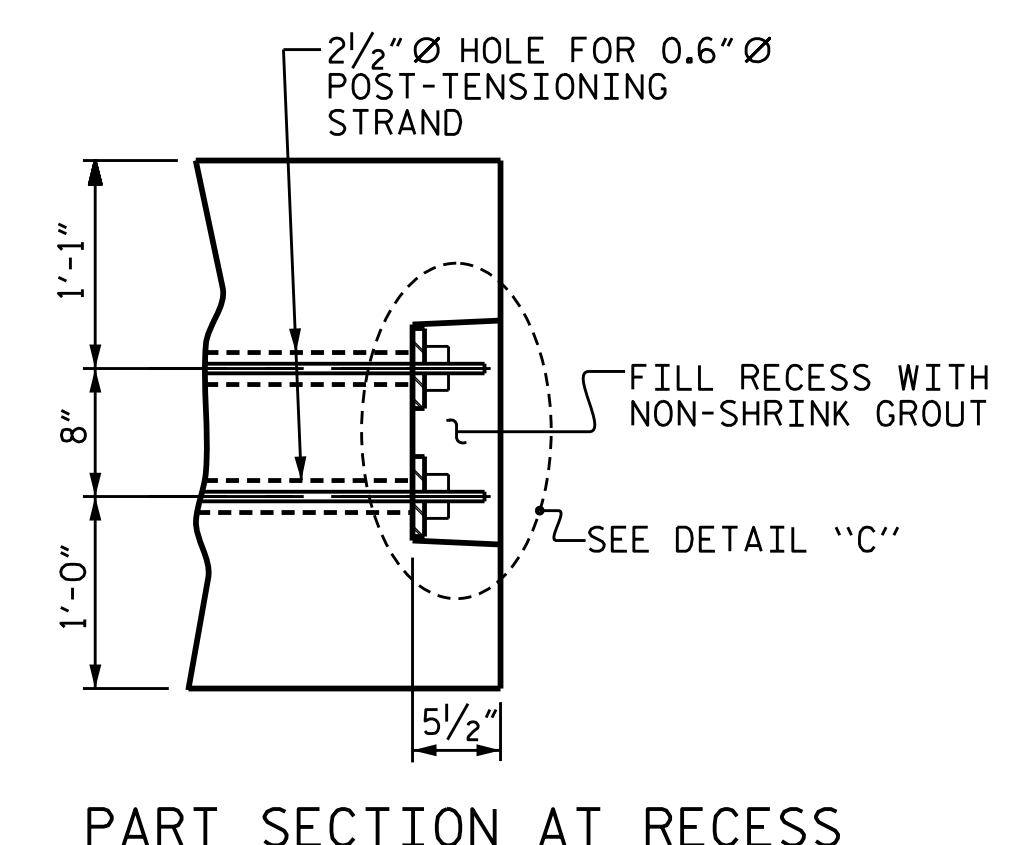
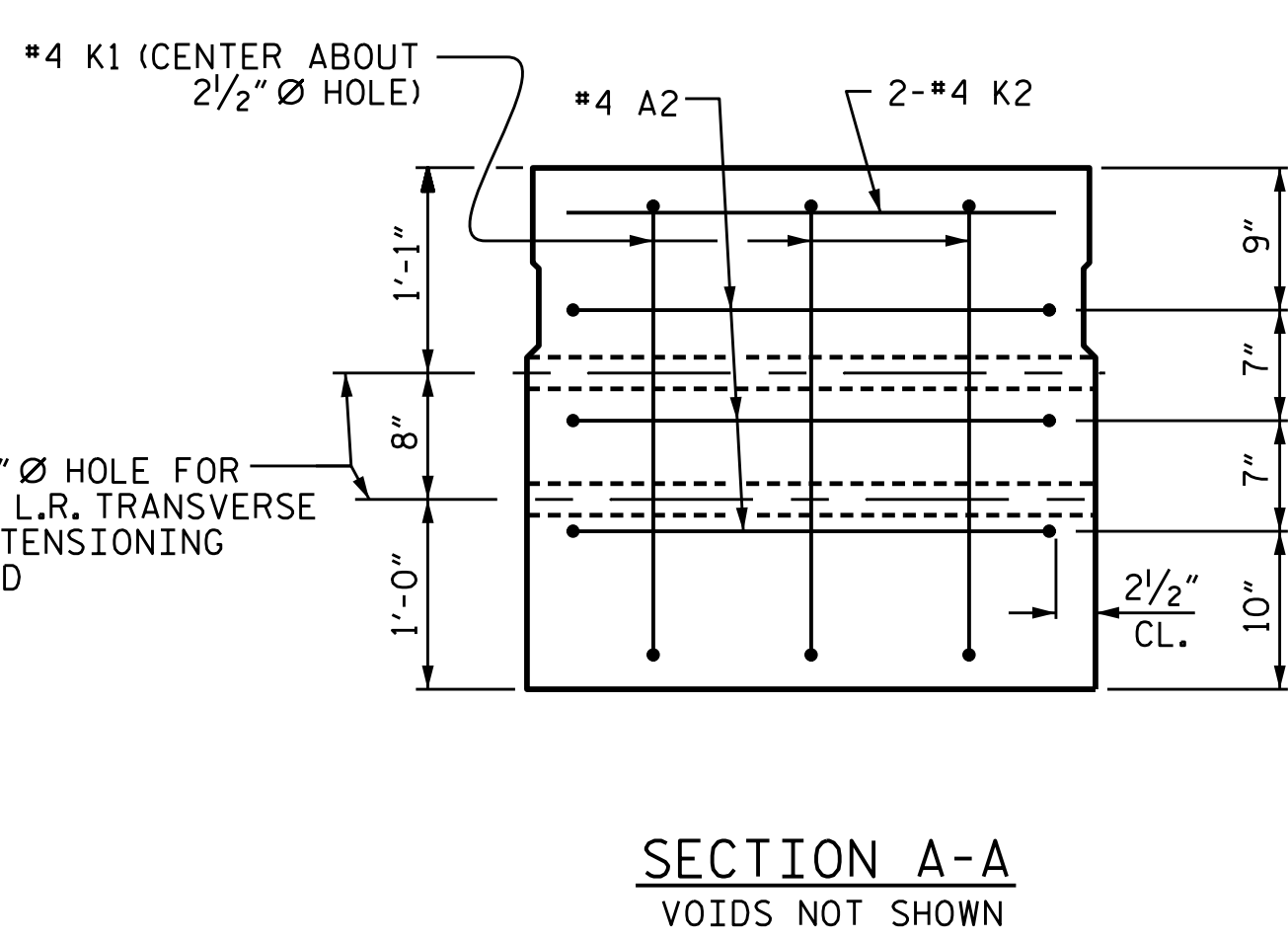
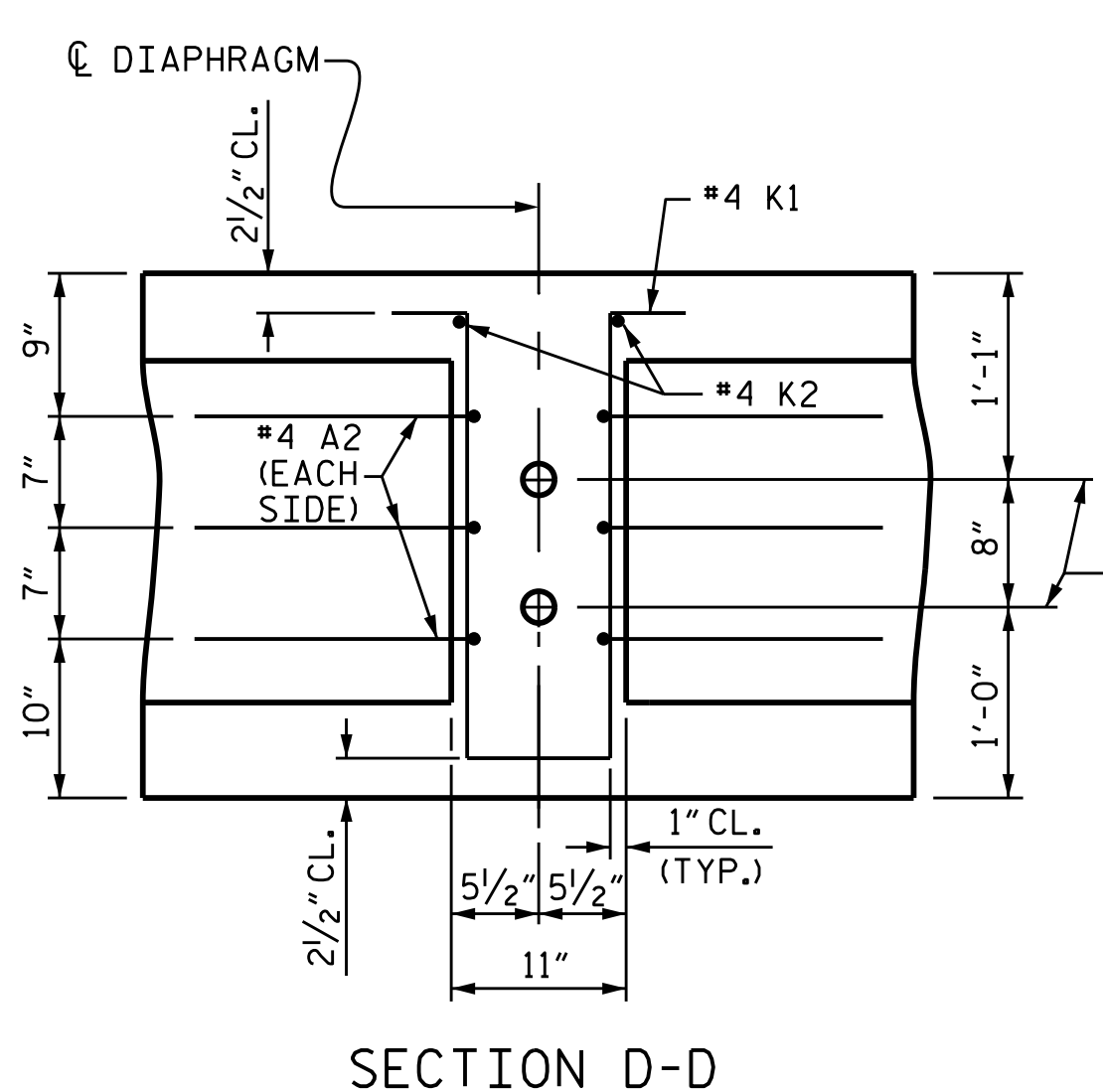
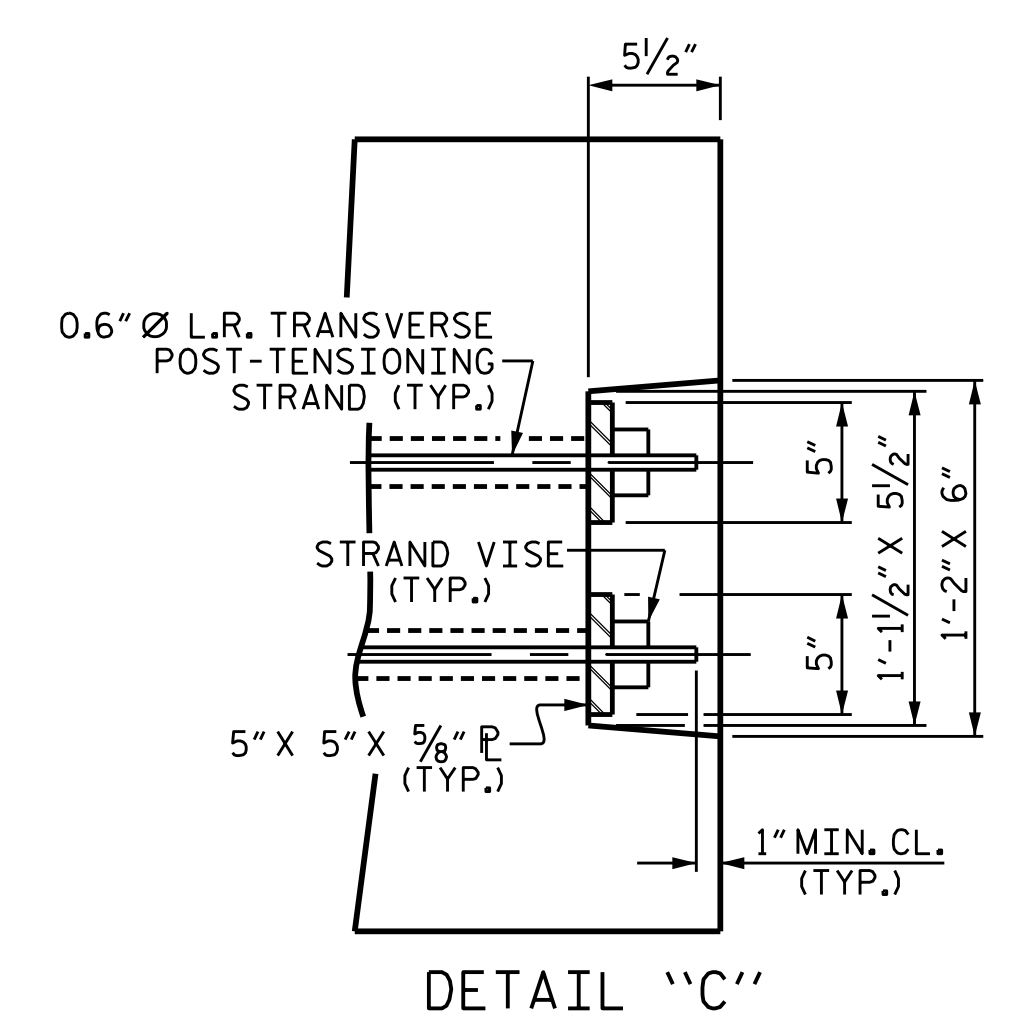
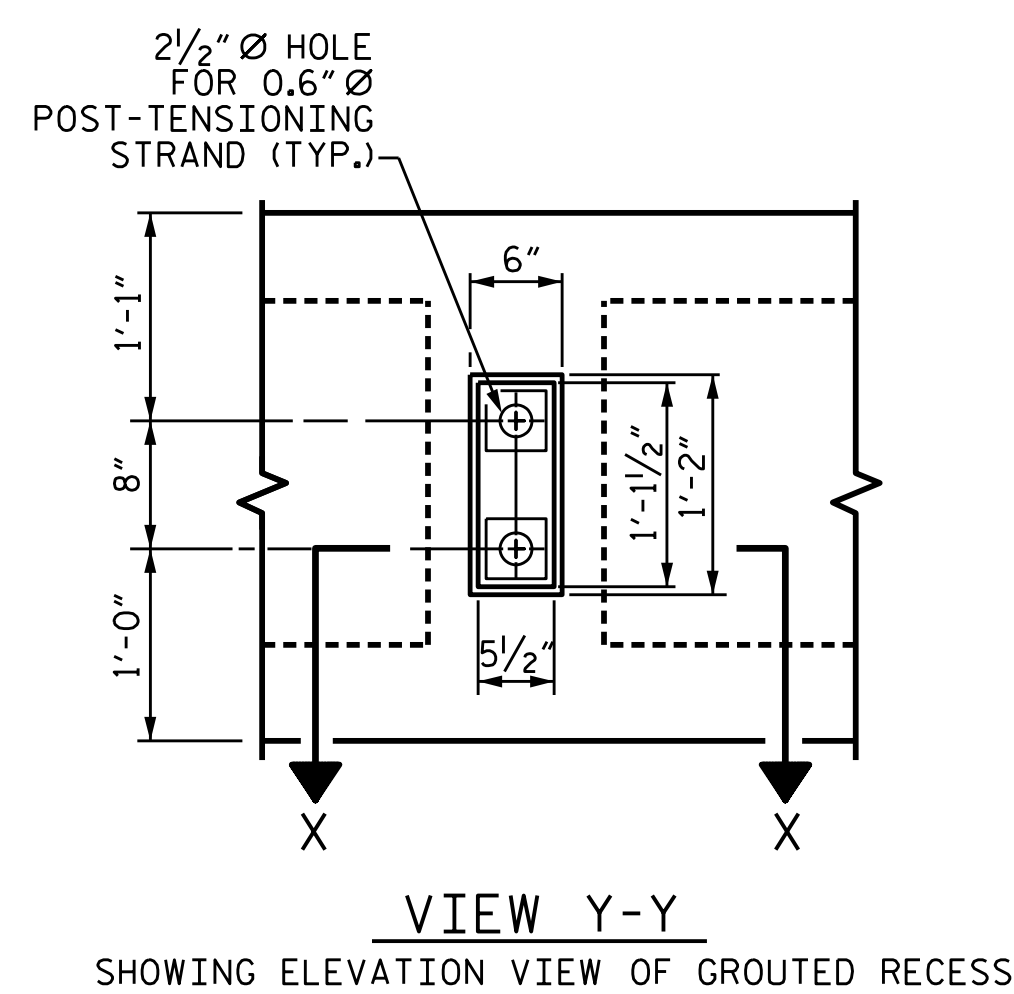
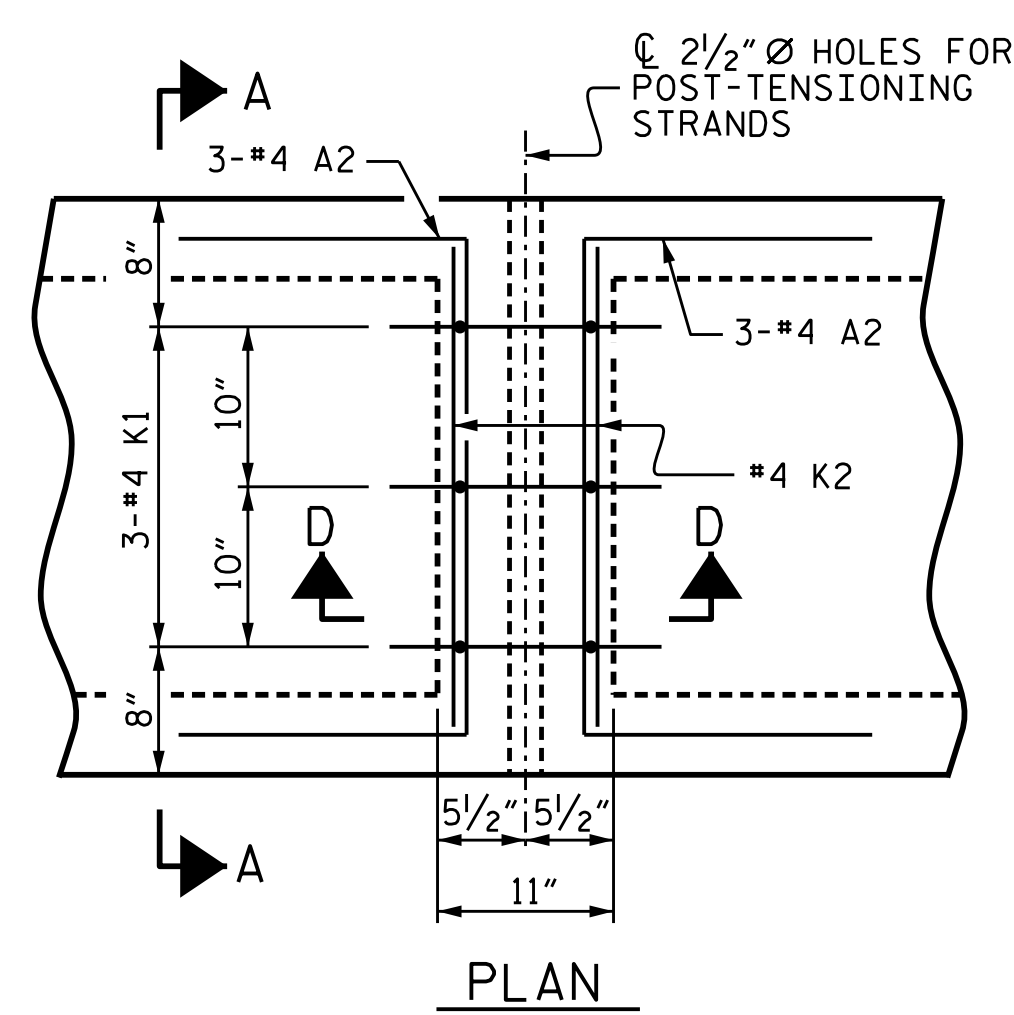
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 2'-9"
 PRESTRESSED CONCRETE
 BOX BEAM UNIT



ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDO	DATE : 02/23
DRAWN BY : DGE 8/II	REV. 8/14 MAA/TMG
CHECKED BY : TMG II/II	

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

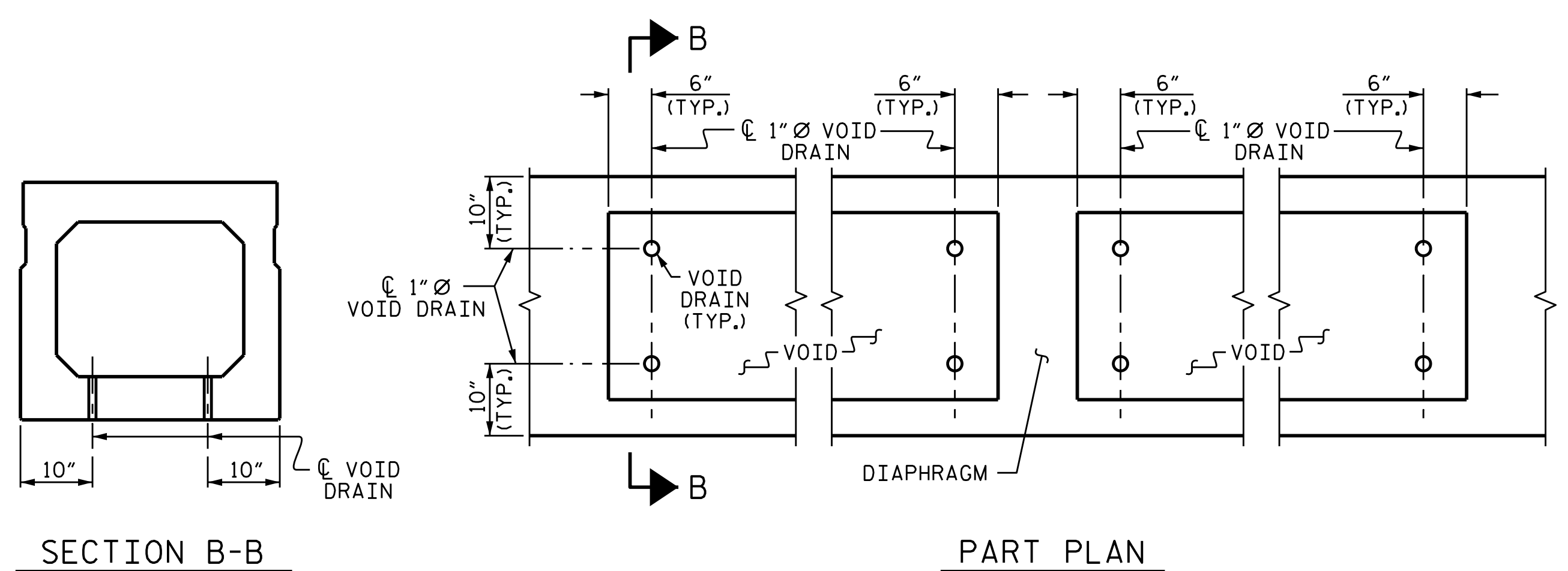
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			17



DOUBLE DIAPHRAGM DETAILS

*4 "S" BARS NOT SHOWN. *4 "S" BARS MAY BE SHIFTED SLIGHTLY TO CLEAR 2 1/2" Ø HOLE.

GROUTED RECESS DETAIL AT END OF POST-TENSIONED STRANDS OF EXTERIOR BOX BEAM



VOID DRAIN DETAILS

(DIMENSIONS SHOWN ARE TYPICAL FOR EACH VOID)

DEAD LOAD DEFLECTION AND CAMBER	
90' BOX BEAM UNIT	3'-0" x 2'-9"
CAMBER (SLAB ALONE IN PLACE)	2 3/4" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/4" ↓
FINAL CAMBER	2" ↑

** INCLUDES FUTURE WEARING SURFACE

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 4 OF 5

ASSEMBLED BY : J.M. KEPICH DATE :02/23
 CHECKED BY : M. AMORANDO DATE :02/23
 DRAWN BY : DGE 10/11 REV. 8/14 MAA/TMG
 CHECKED BY : TMG 11/11

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

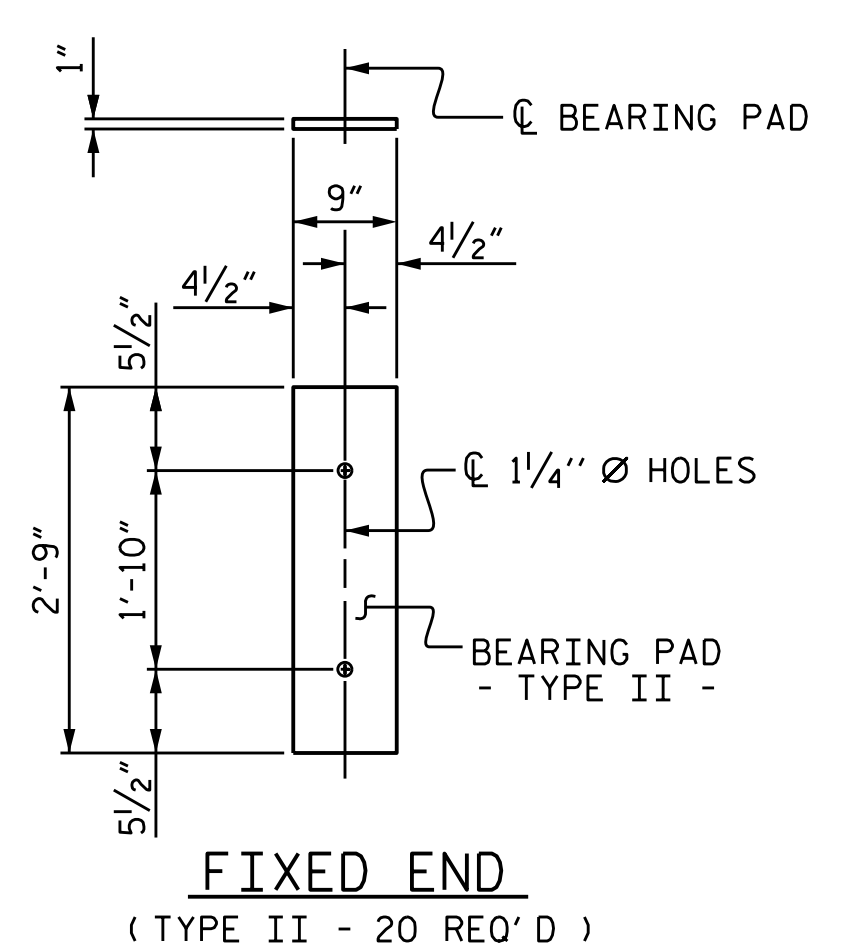


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 3'-0" X 2'-9"
 PRESTRESSED CONCRETE
 BOX BEAM UNIT

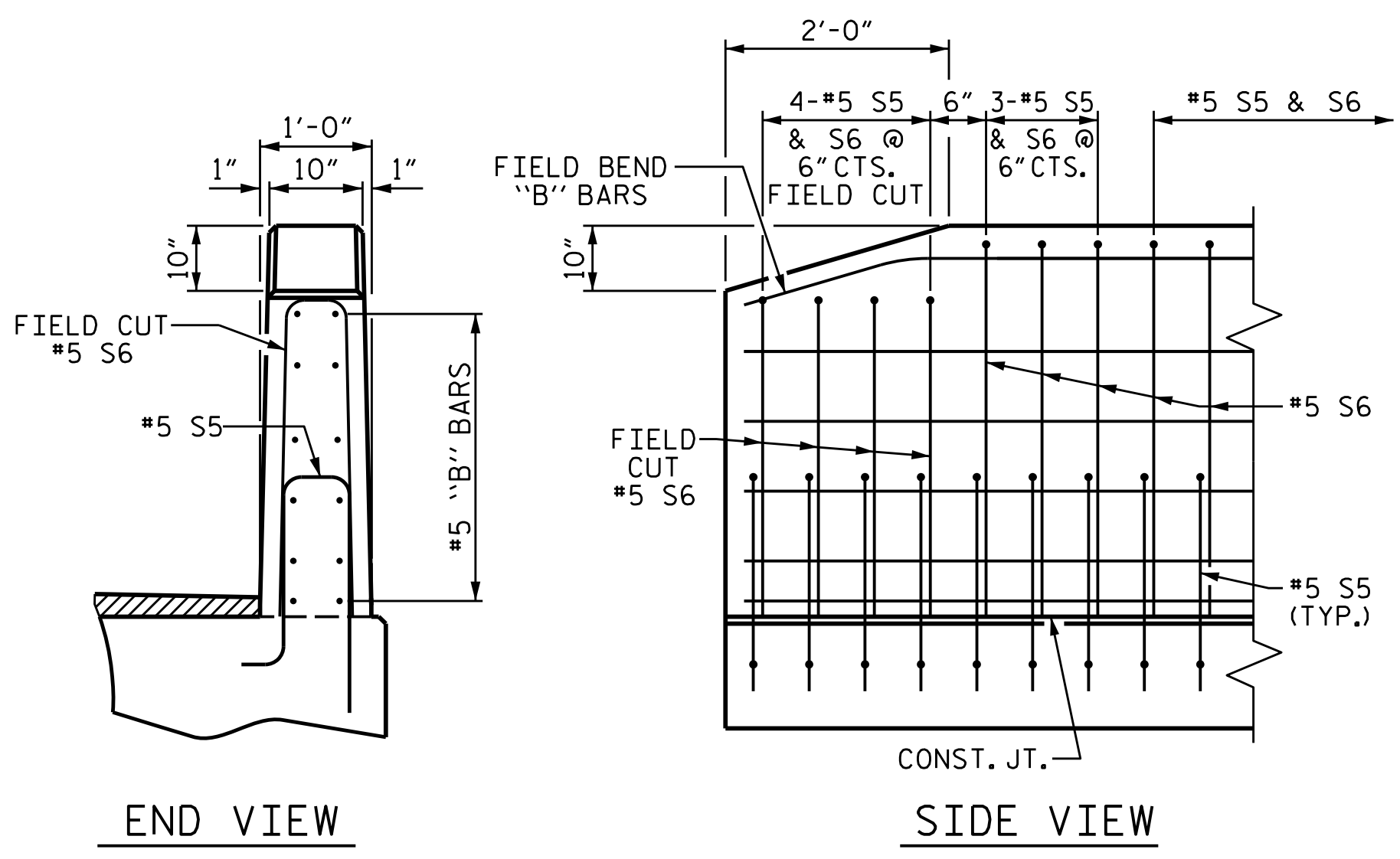
REVISIONS				SHEET NO.
NO.	BY:	DATE:	NO.	DATE:
1			3	
2			4	

TOTAL SHEETS 17



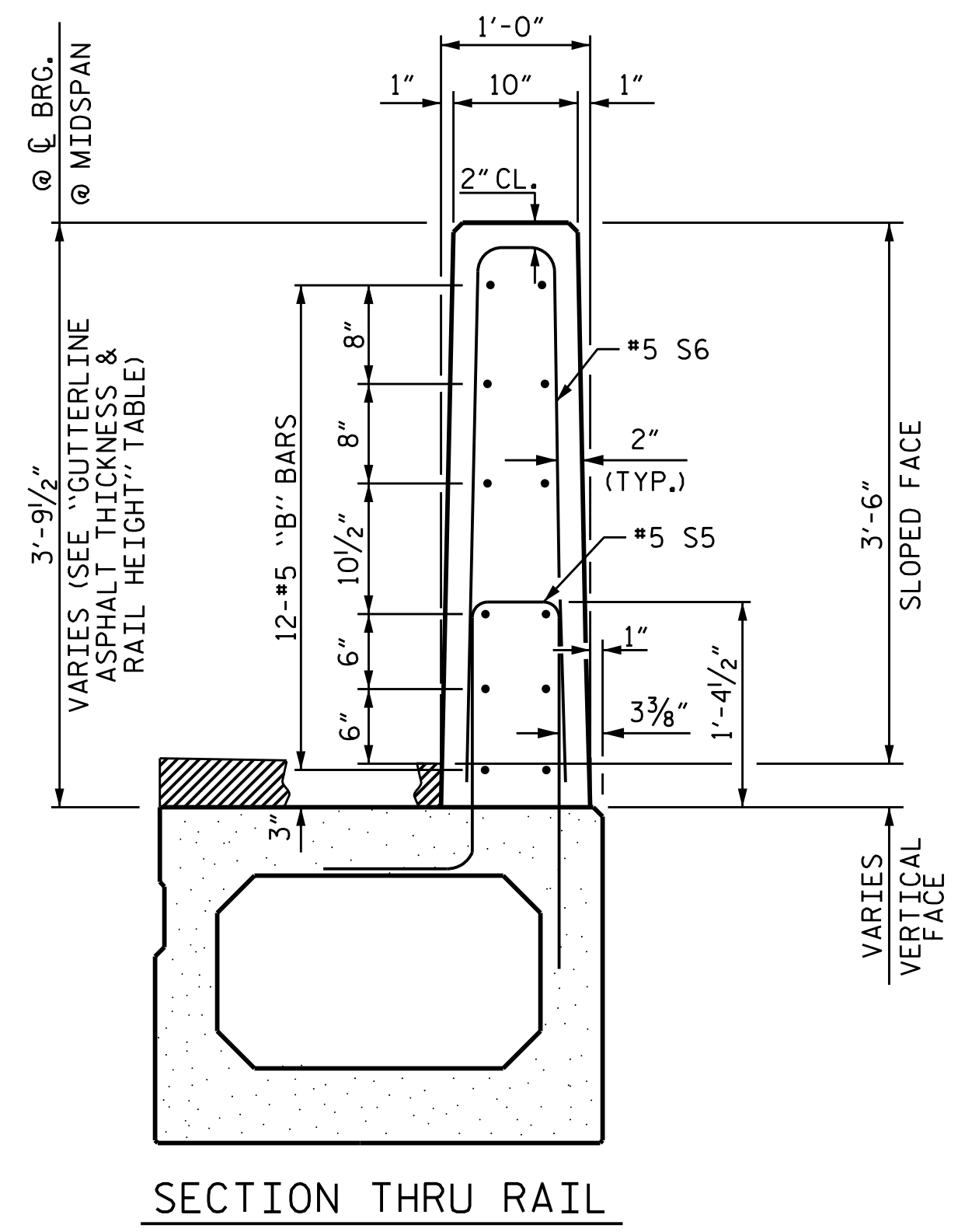
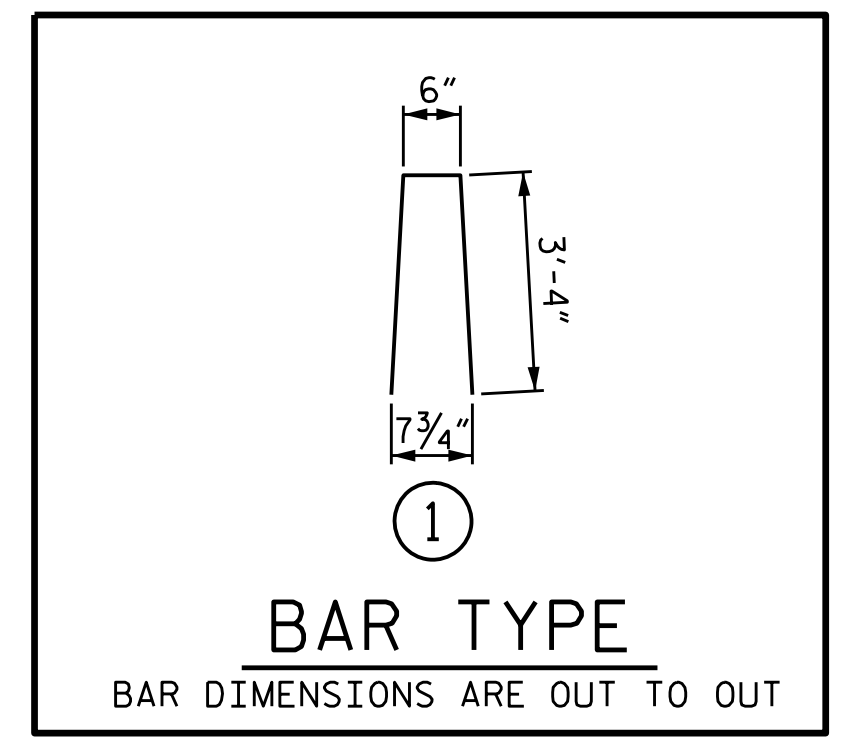
ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

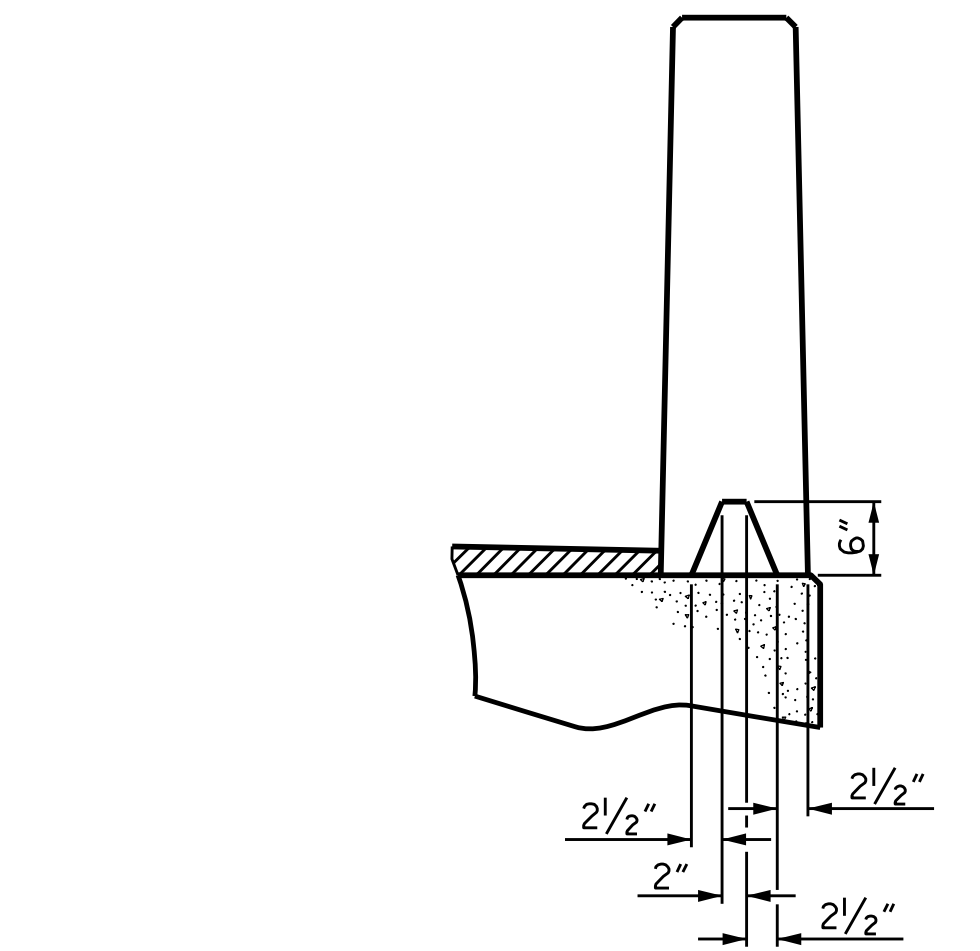


END OF RAIL DETAILS

BOX BEAM UNITS REQUIRED			
	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR B.B.	2	90'-0"	180'-0"
INTERIOR B.B.	8	90'-0"	720'-0"
TOTAL	10		900'-0"



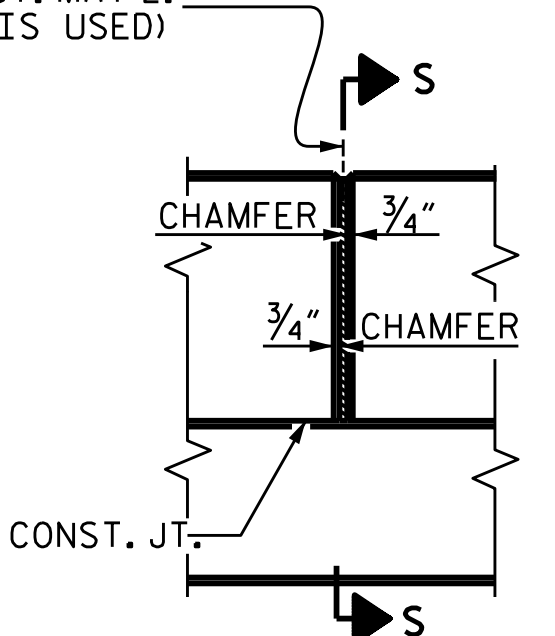
VERTICAL CONCRETE BARRIER RAIL DETAILS



SECTION S-S

AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L. WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL					
BAR	BARS PER PAIR OF EXTERIOR UNITS	SIZE	TYPE	LENGTH	WEIGHT
	90' UNIT				
*B10	96	#5	STR	22'-1"	2211
*S6	252	#5	1	7'-2"	1884
*EPOXY COATED REINFORCING STEEL				LBS.	4095
CLASS AA CONCRETE				CU.YDS.	23.3
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.	180.0

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
90' UNITS	1 1/2"	3'-7 1/2"

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

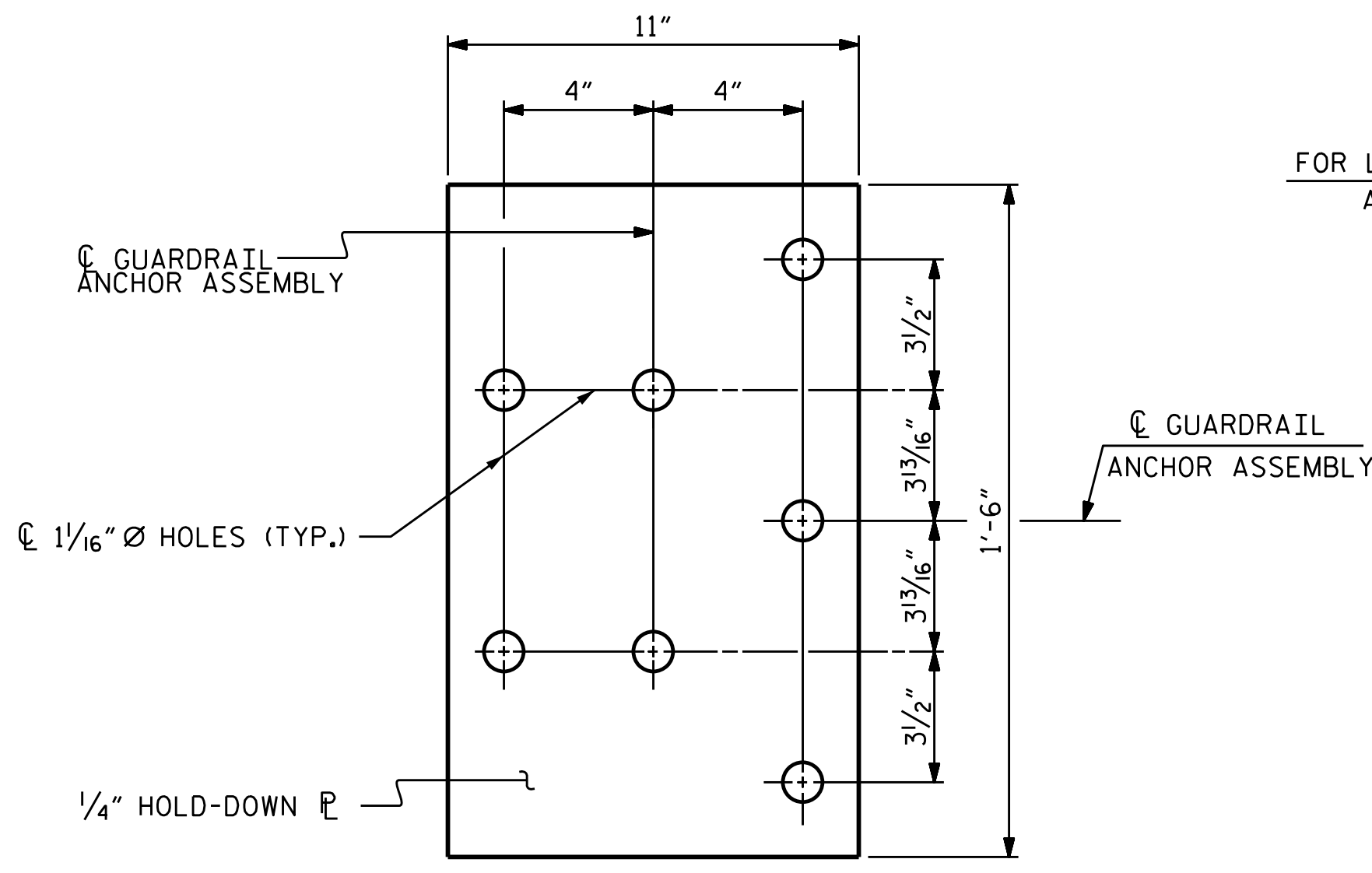
3'-0" X 2'-9"
 PRESTRESSED CONCRETE
 BOX BEAM UNIT

ASSEMBLED BY : J.M. KEPICH	DATE :02/23
CHECKED BY : M. AMORANDO	DATE :02/23
DRAWN BY : DGE 10/11	REV. 5/18
CHECKED BY : TMG 11/11	MAA/THC

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

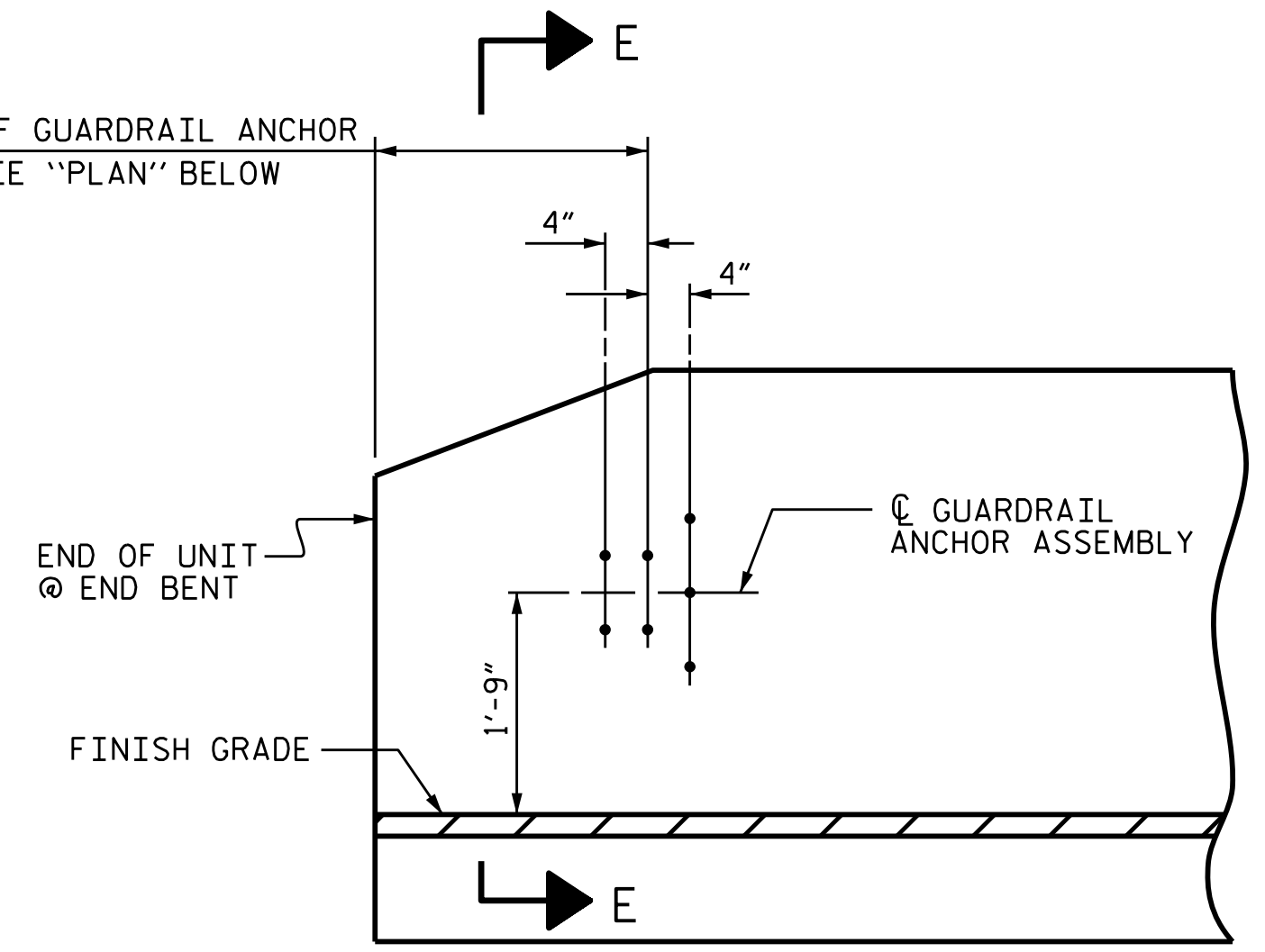
NORTH CAROLINA
 PROFESSIONAL
 SEAL
 037903
 ENGINEER
 JEFFREY M. KEPICH

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS 17
2			4			

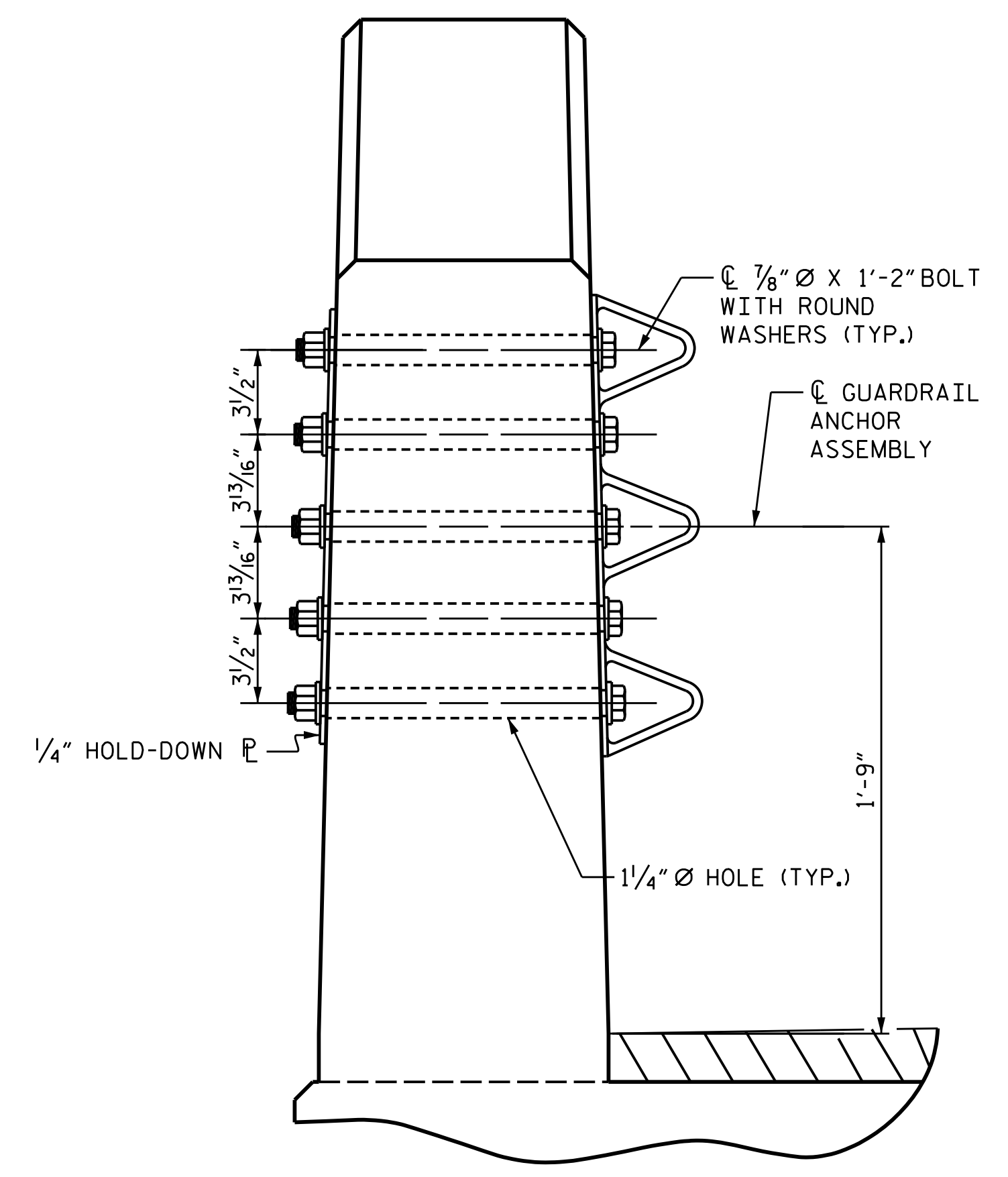


PLAN

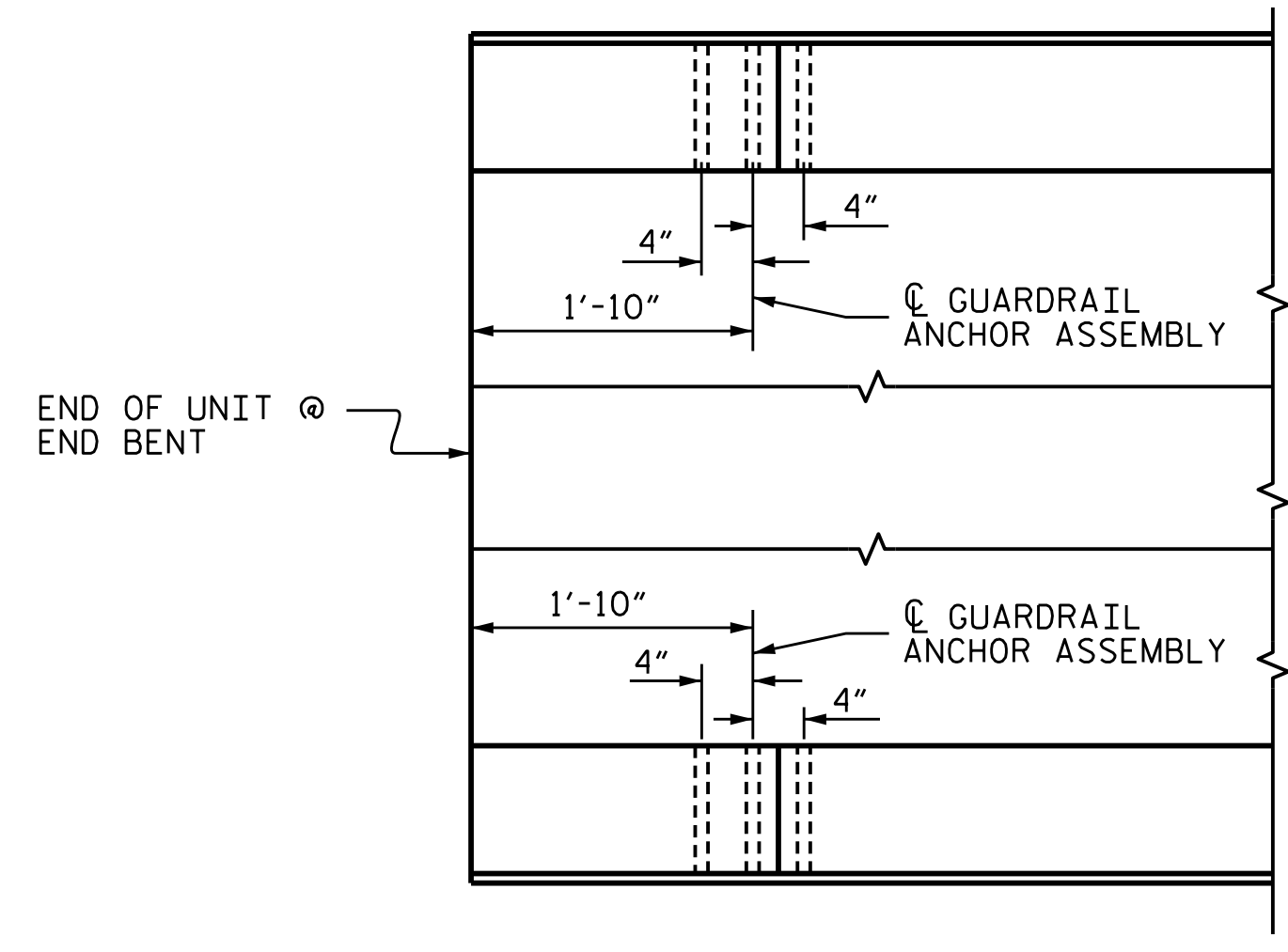
FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE "PLAN" BELOW



ELEVATION



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN
LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

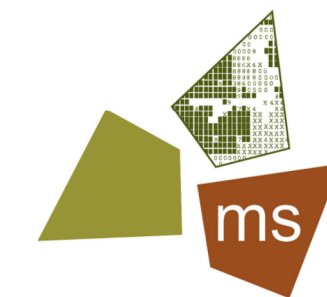
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

- THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.
- THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.
- BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)
- THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.
- AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.
- THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.
- THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.
- THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-

ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDO	DATE : 02/23
DRAWN BY : MAA 5/10	REV. 1/15 MAA/TMG
CHECKED BY : GM 5/10	REV. 12/17 MAA/THC
	REV. 5/18 MAA/THC



ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 GUARDRAIL ANCHORAGE
 DETAILS
 FOR VERTICAL CONCRETE
 BARRIER RAIL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS 17
2			4			

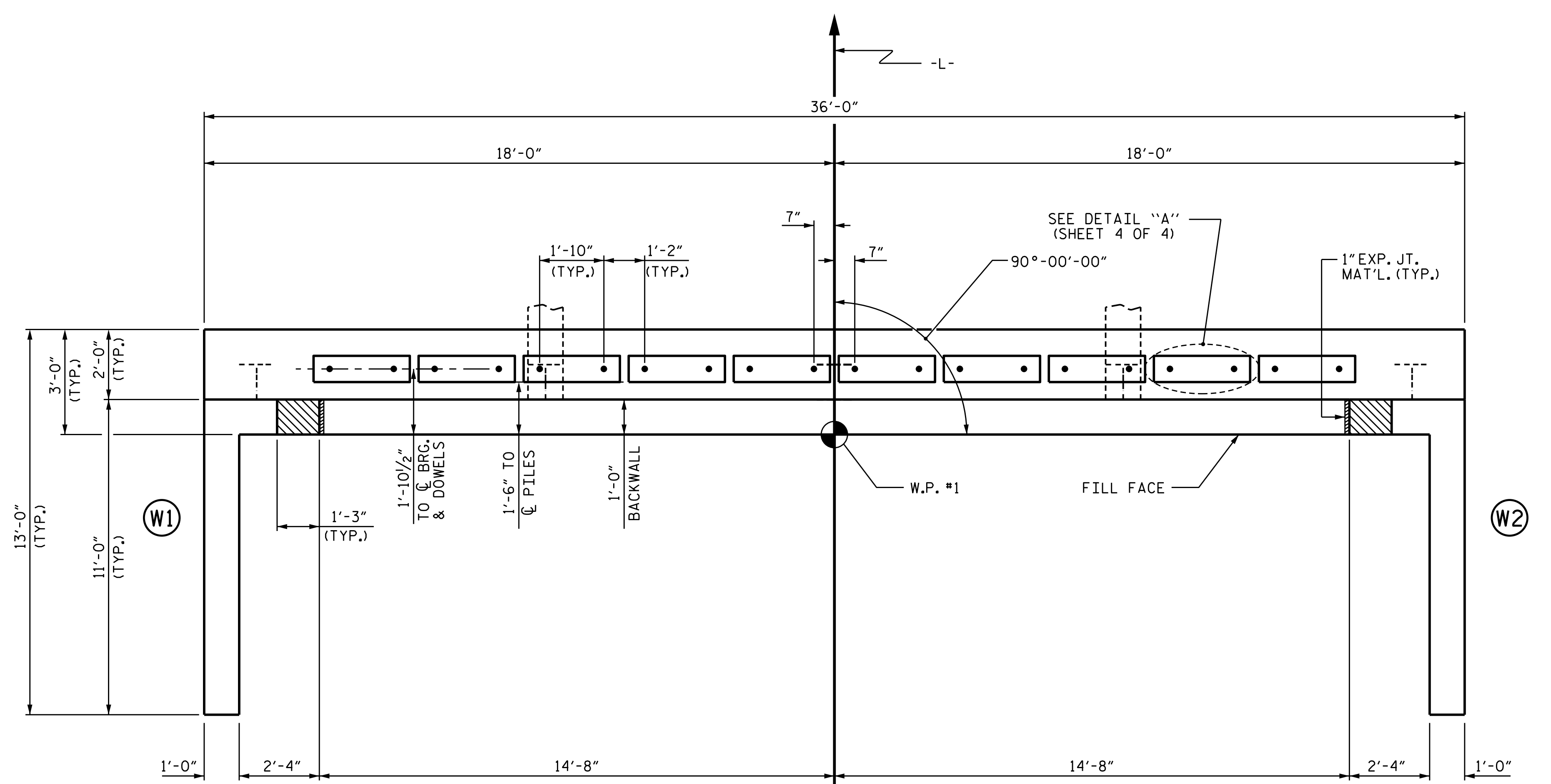
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

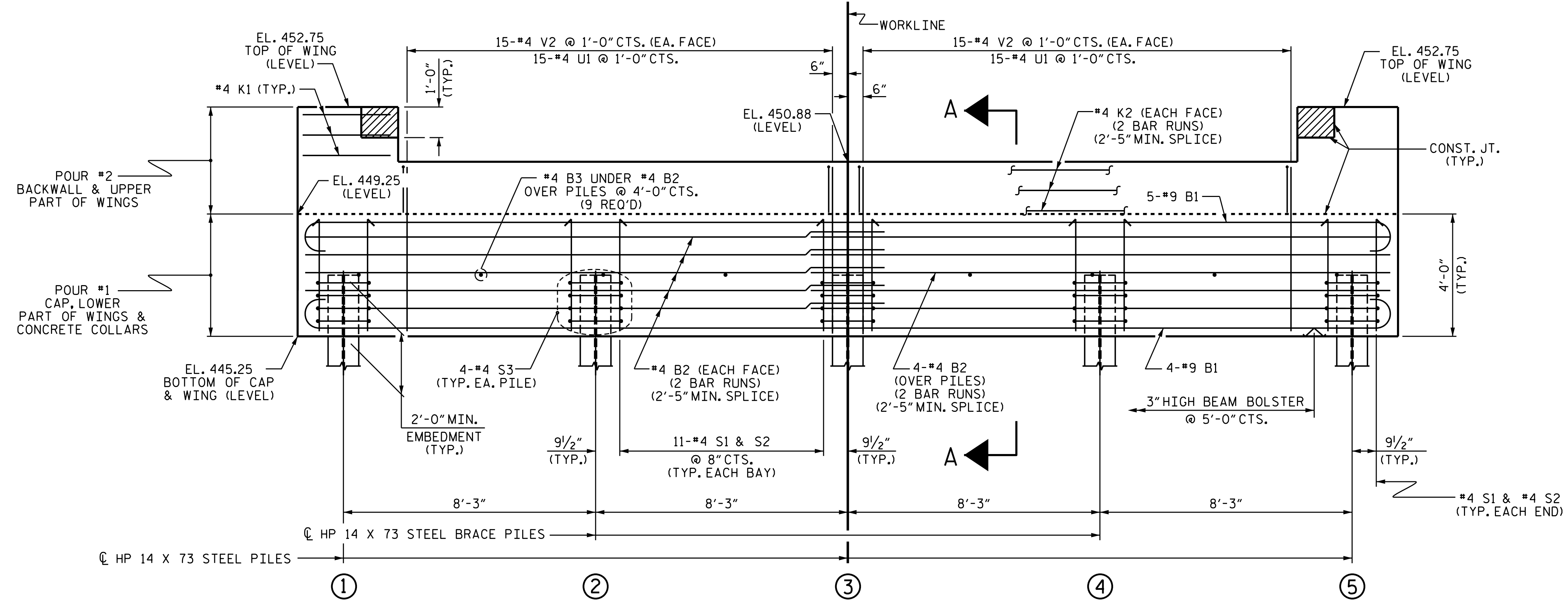
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
FOR SECTION A-A, SEE SHEET 4 OF 4.
CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. BP8.R023

RANDOLPH COUNTY

STATION: 15+26.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT No. 1



ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDO	DATE : 02/23
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

TOTAL SHEETS 17

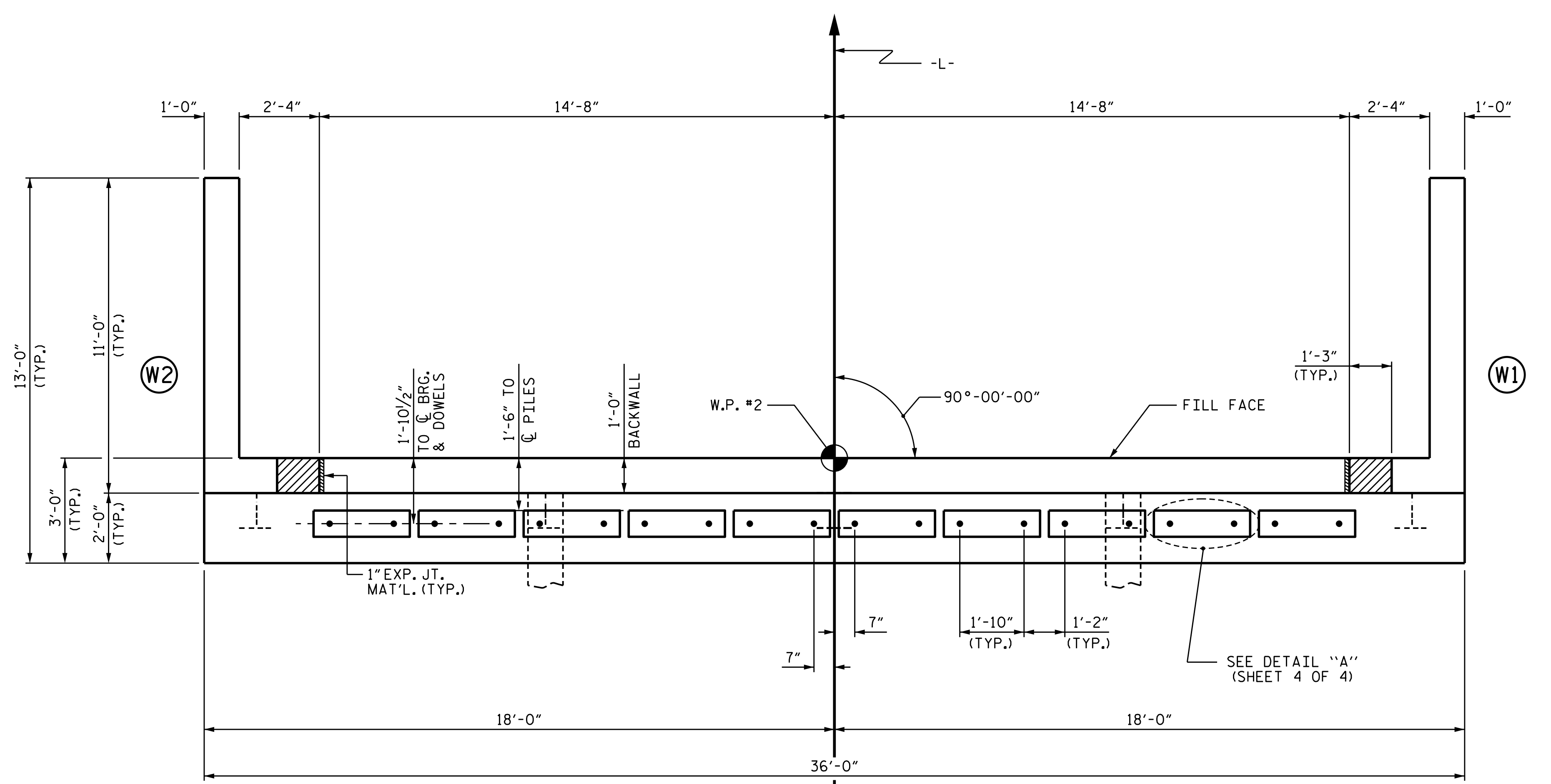
NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.

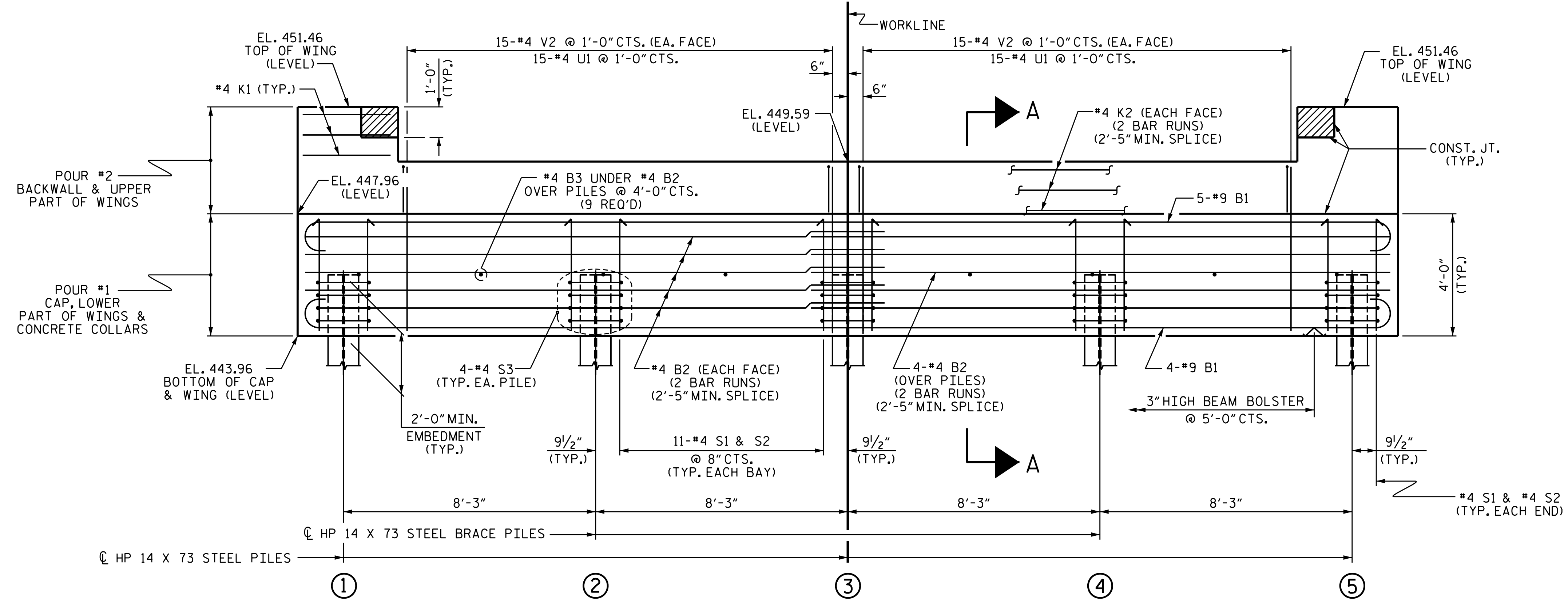
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE VERTICAL CONCRETE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.



PLAN



ELEVATION

WINGS NOT SHOWN FOR CLARITY.
 FOR SECTION A-A, SEE SHEET 4 OF 4.
 CONCRETE COLLARS FOR STEEL PILES NOT SHOWN IN PLAN AND ELEVATION VIEWS FOR CLARITY.
 SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL", SHEET 4 OF 4.

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

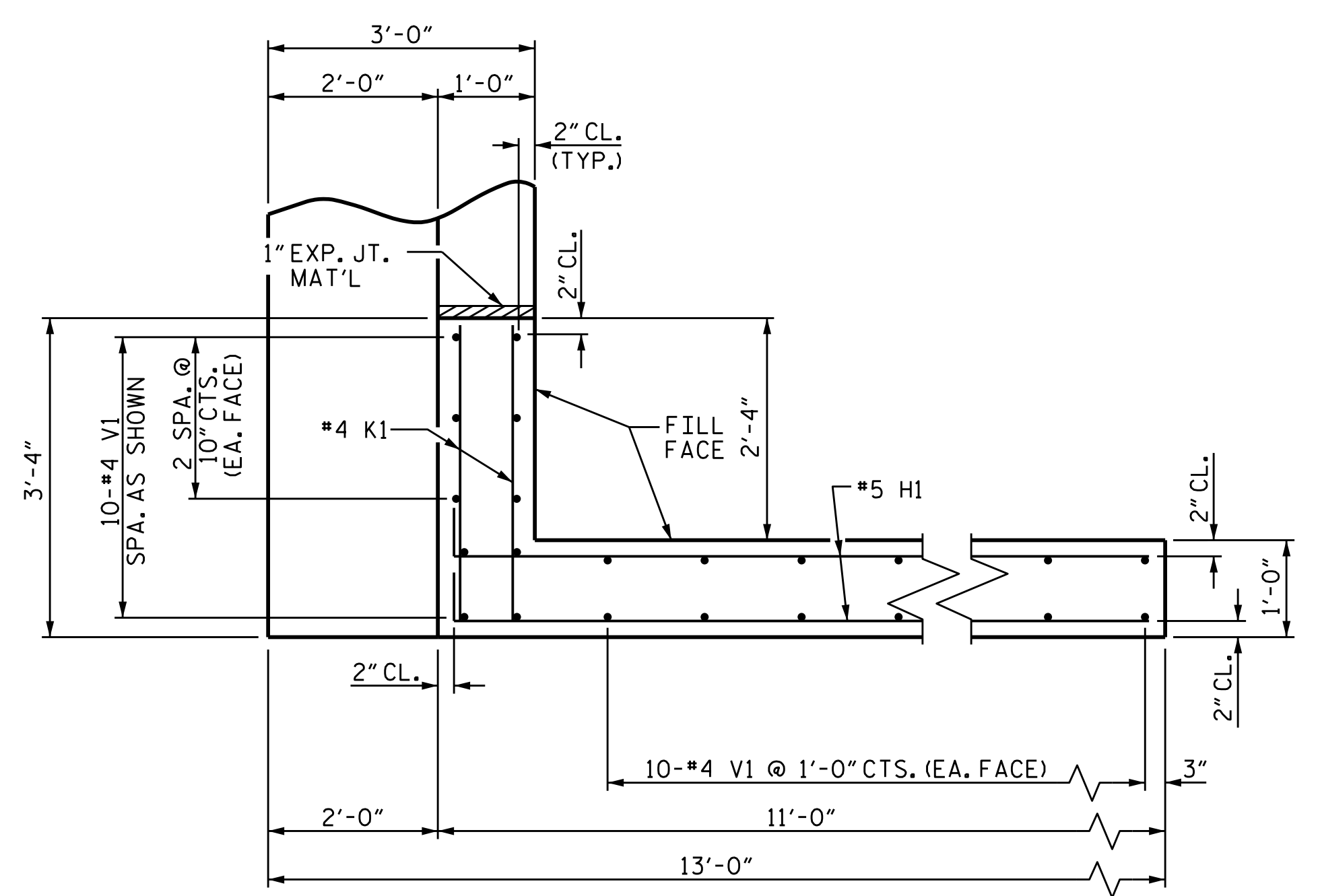
SUBSTRUCTURE
END BENT No. 2



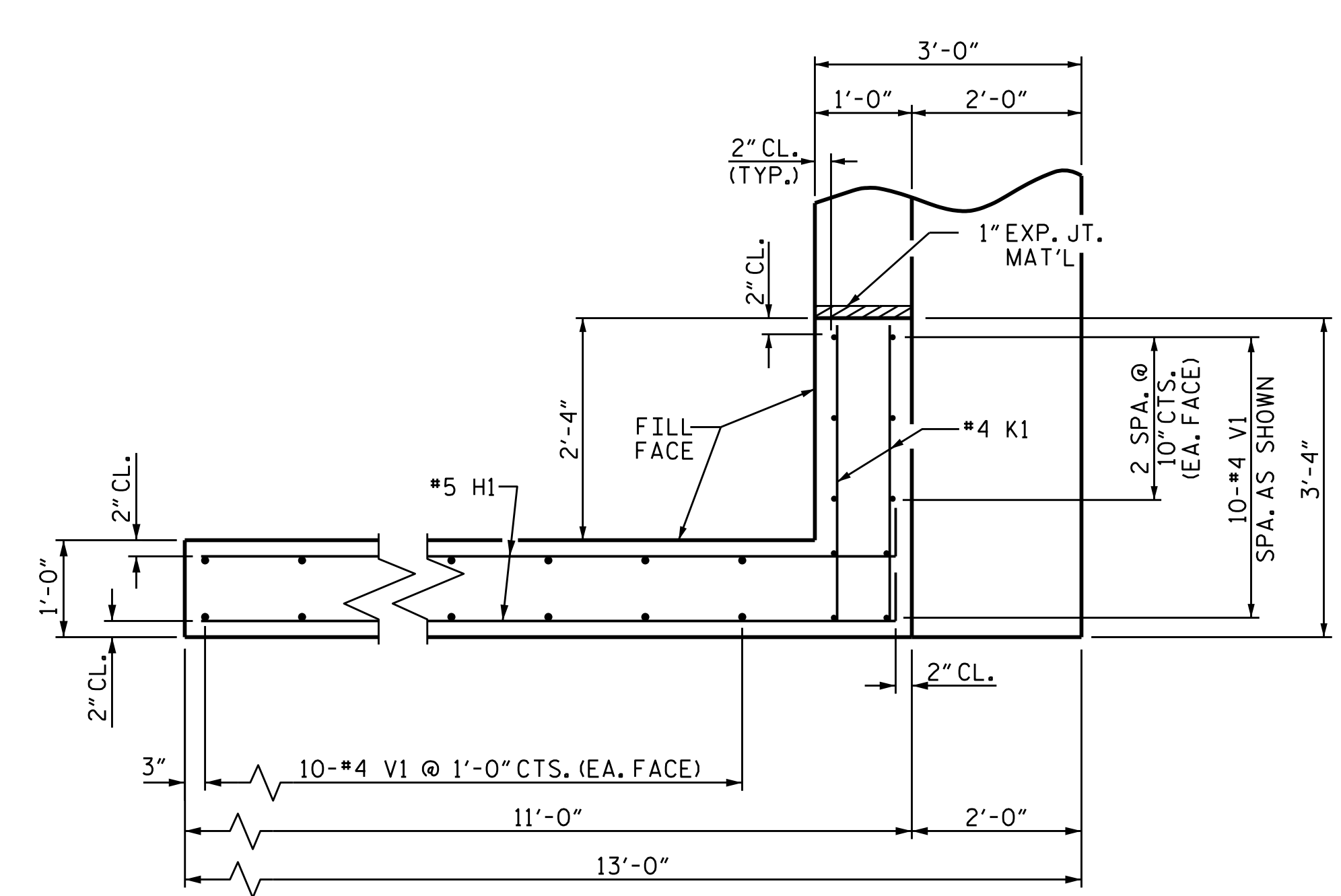
ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDI	DATE : 02/23
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

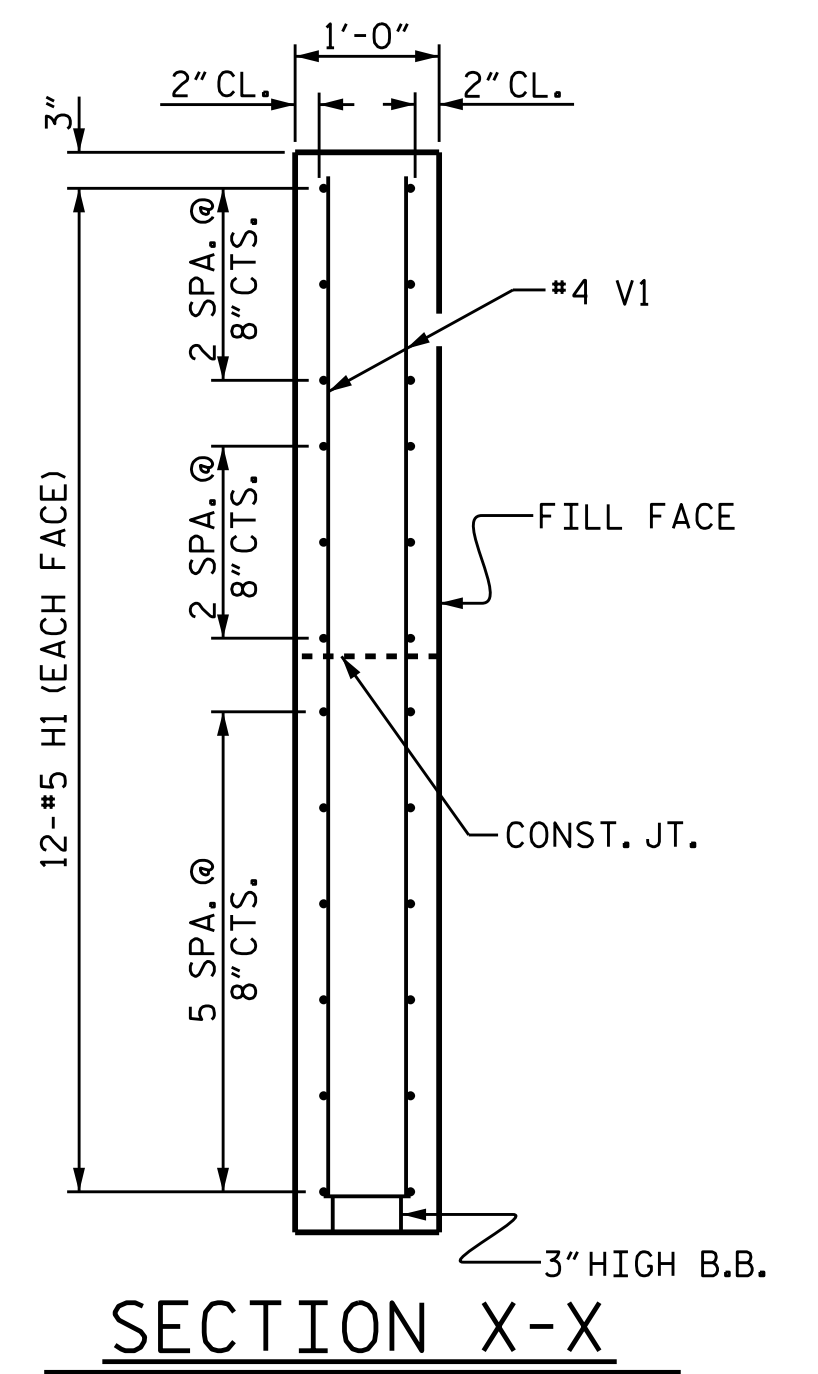
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS 17
2			4			



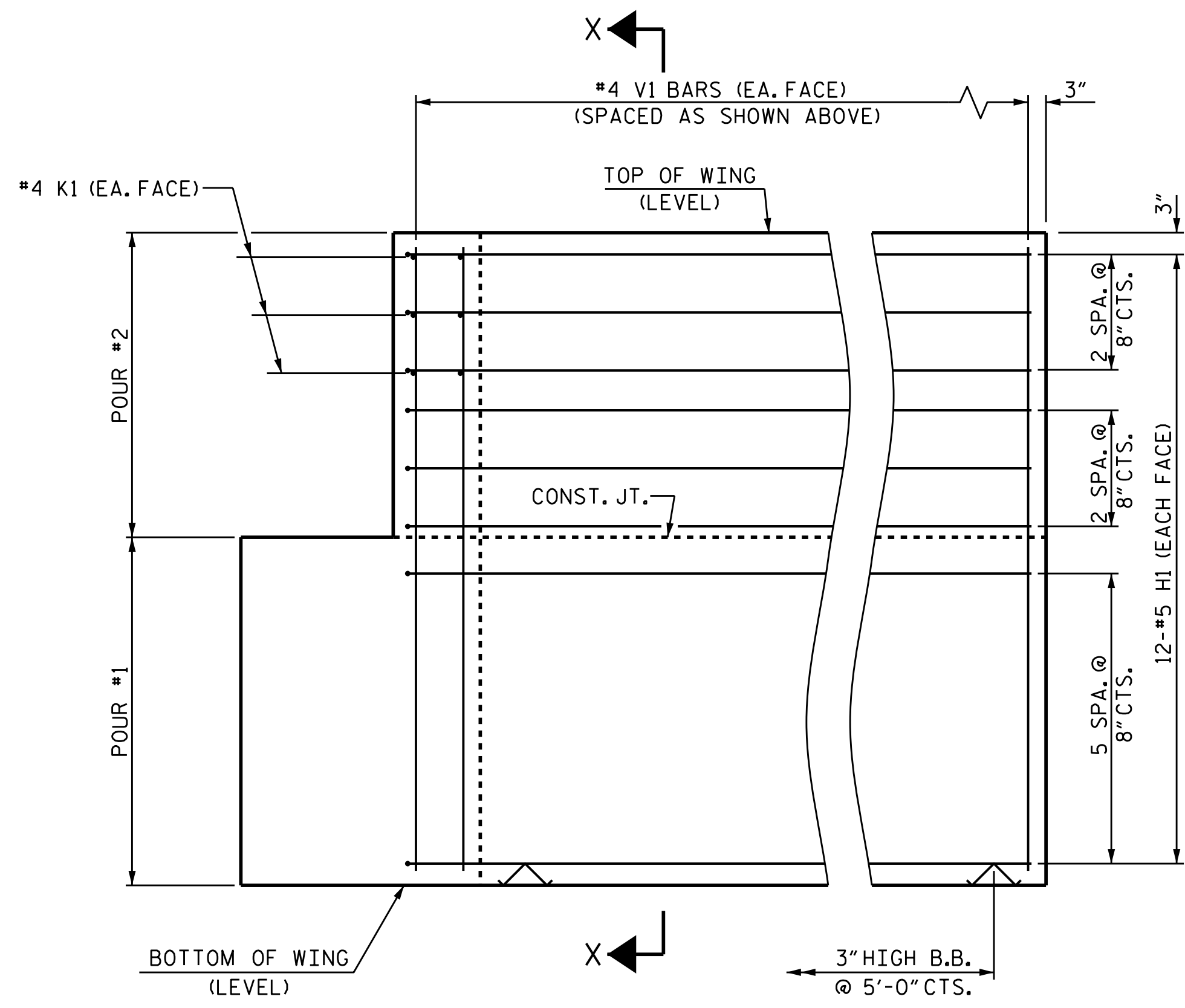
PLAN OF WING (W1)



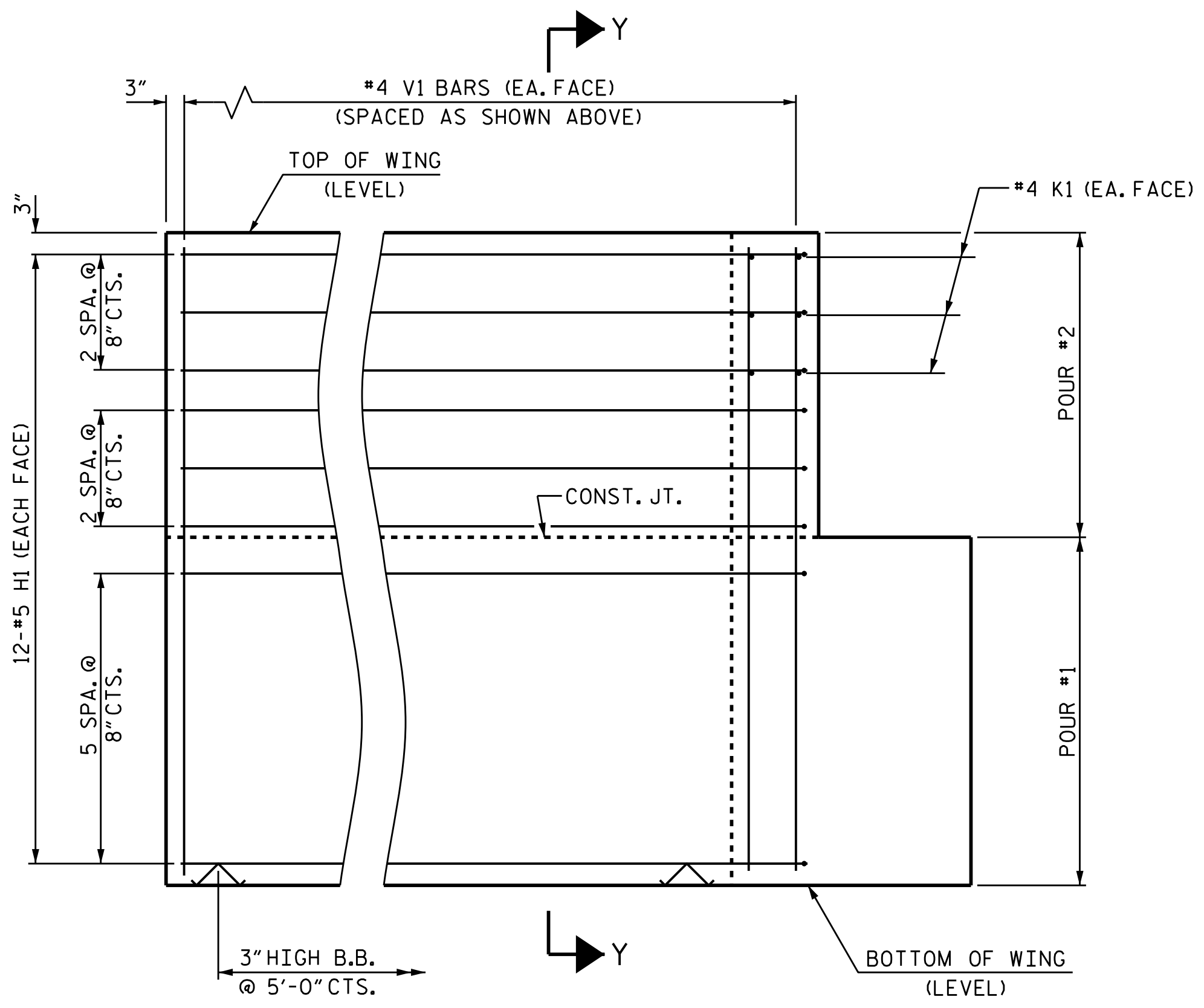
PLAN OF WING (W2)



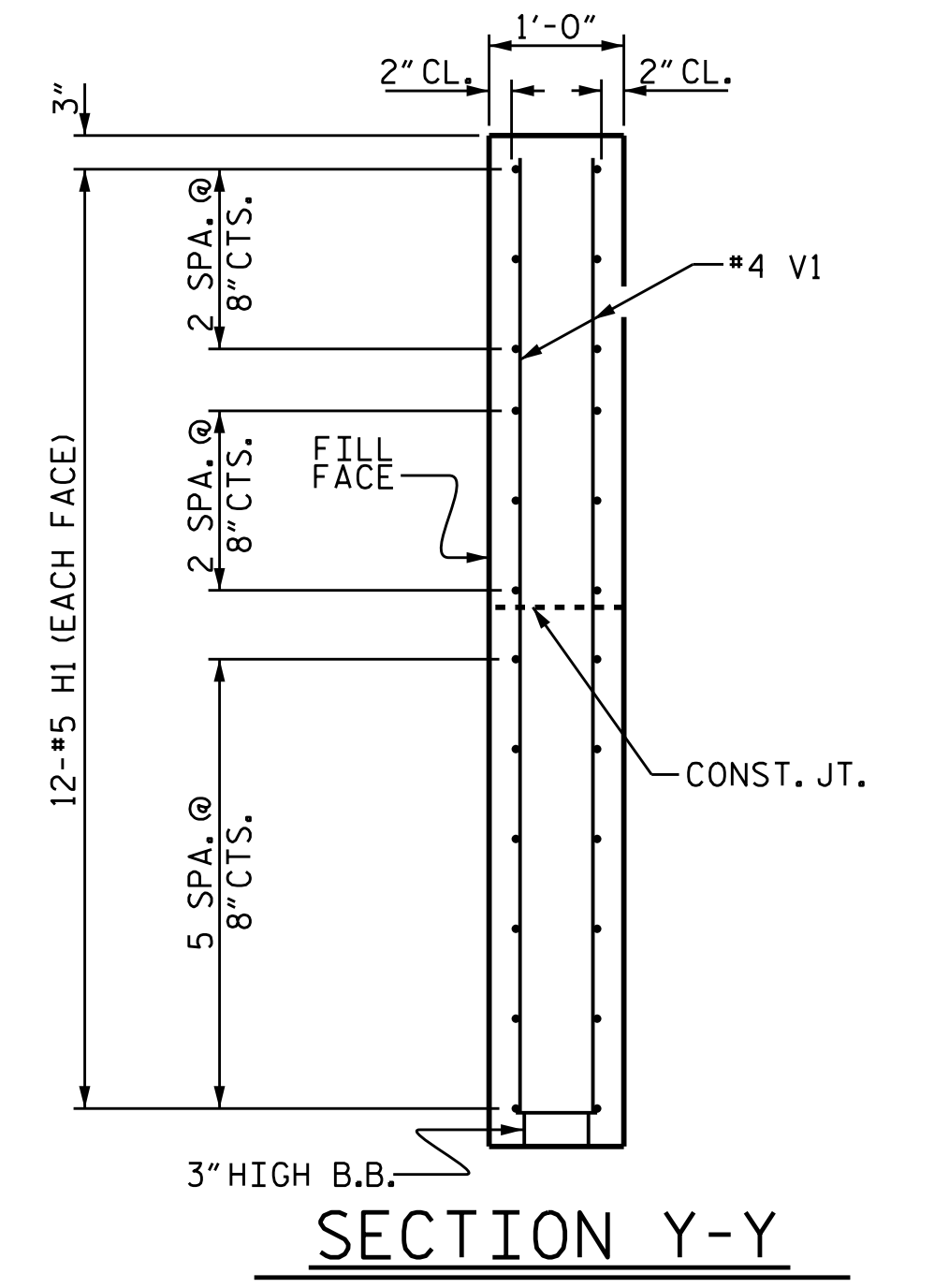
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

WING DETAILS

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT
 WING DETAILS

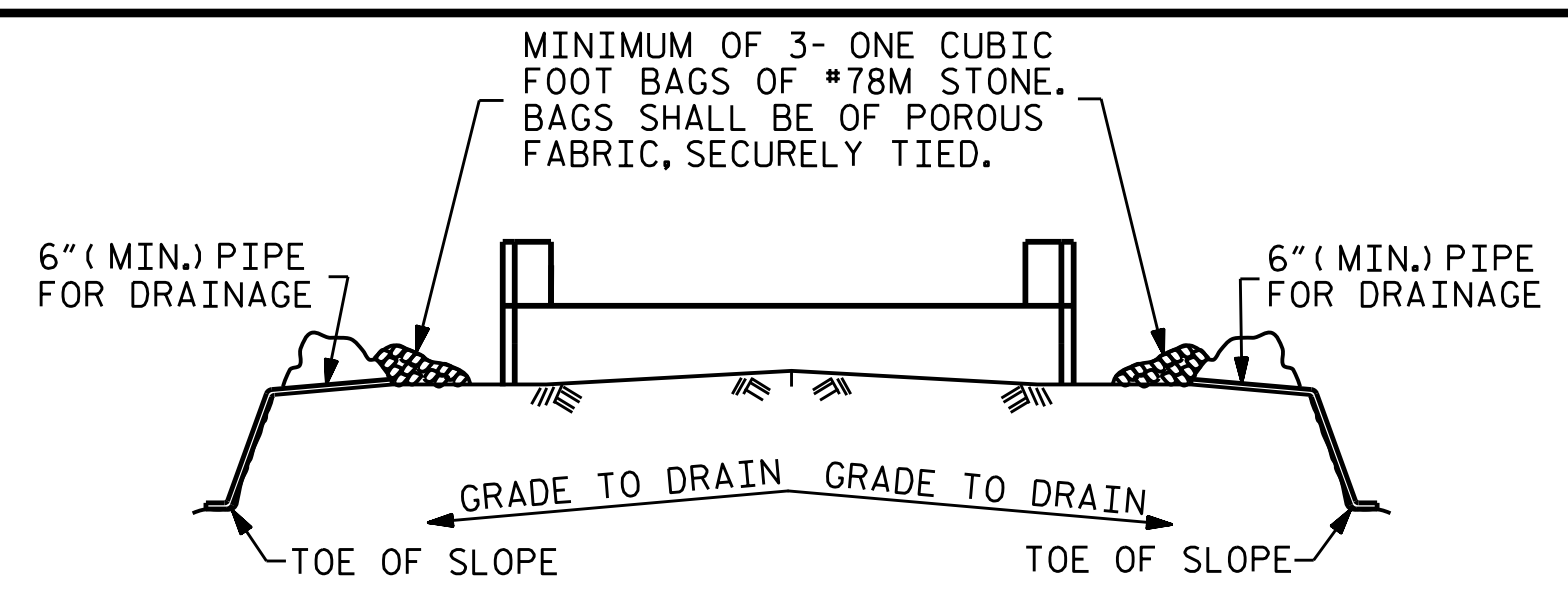
ASSEMBLED BY : J.M. KEPICH	DATE :02/23
CHECKED BY : M. AMORANDO	DATE :02/23
DRAWN BY : WJH 12/11	REV. 4/15
CHECKED BY : AAC 12/11	MAA/TMG

ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

Professional Engineer Seal
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL
 037903
 JEFFREY M. KEPICH
 2/17/2024

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

TOTAL SHEETS 17

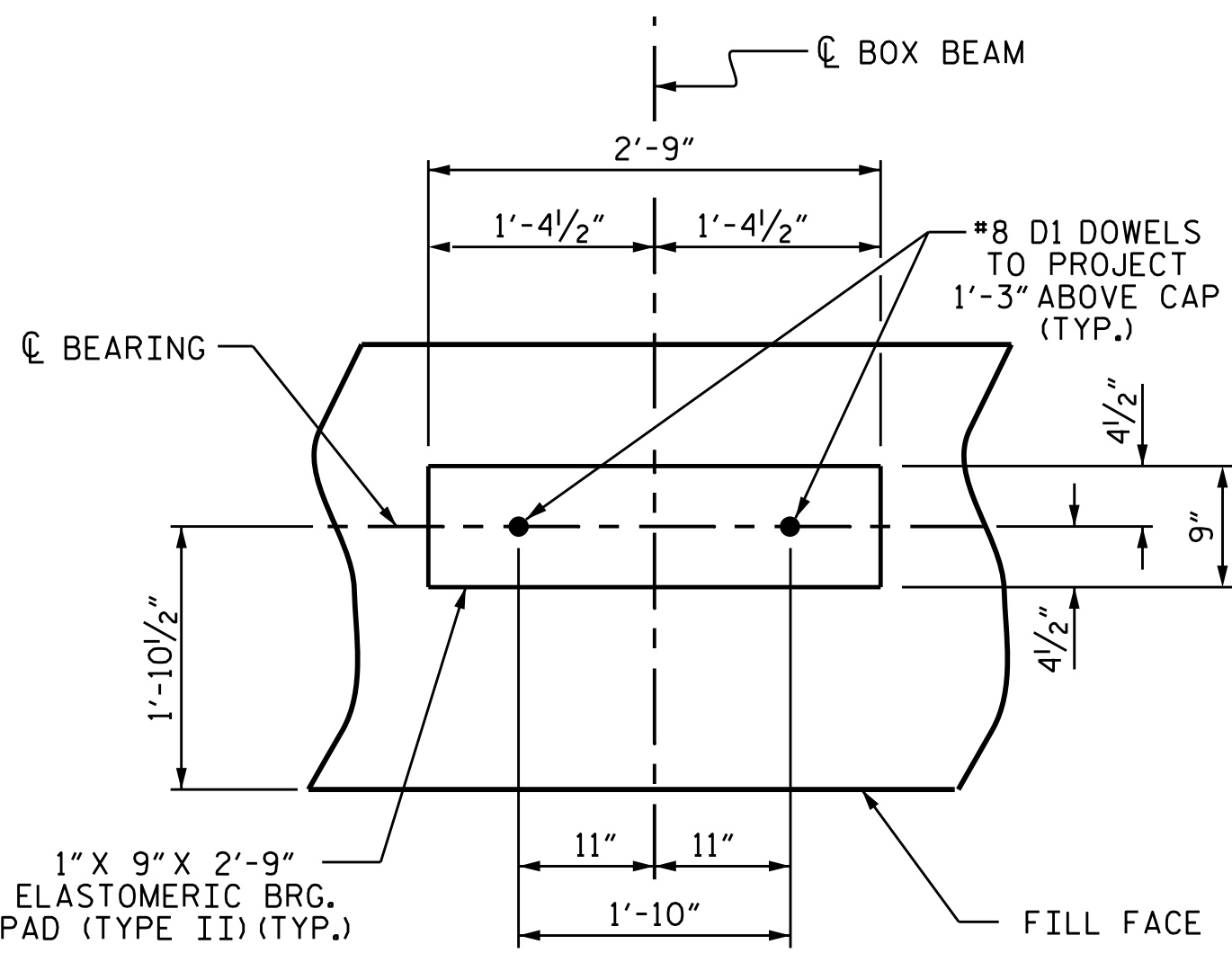


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR EFFECTIVENESS.

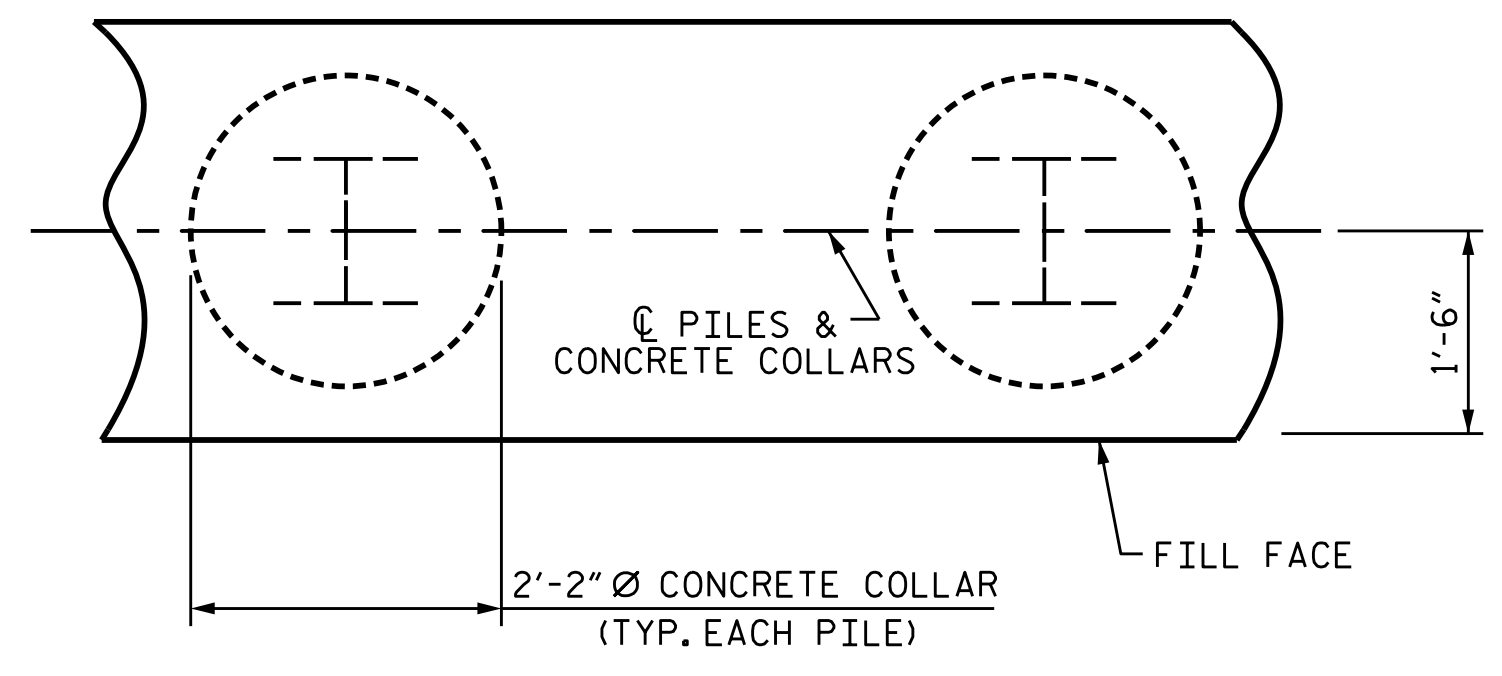
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT



DETAIL "A"

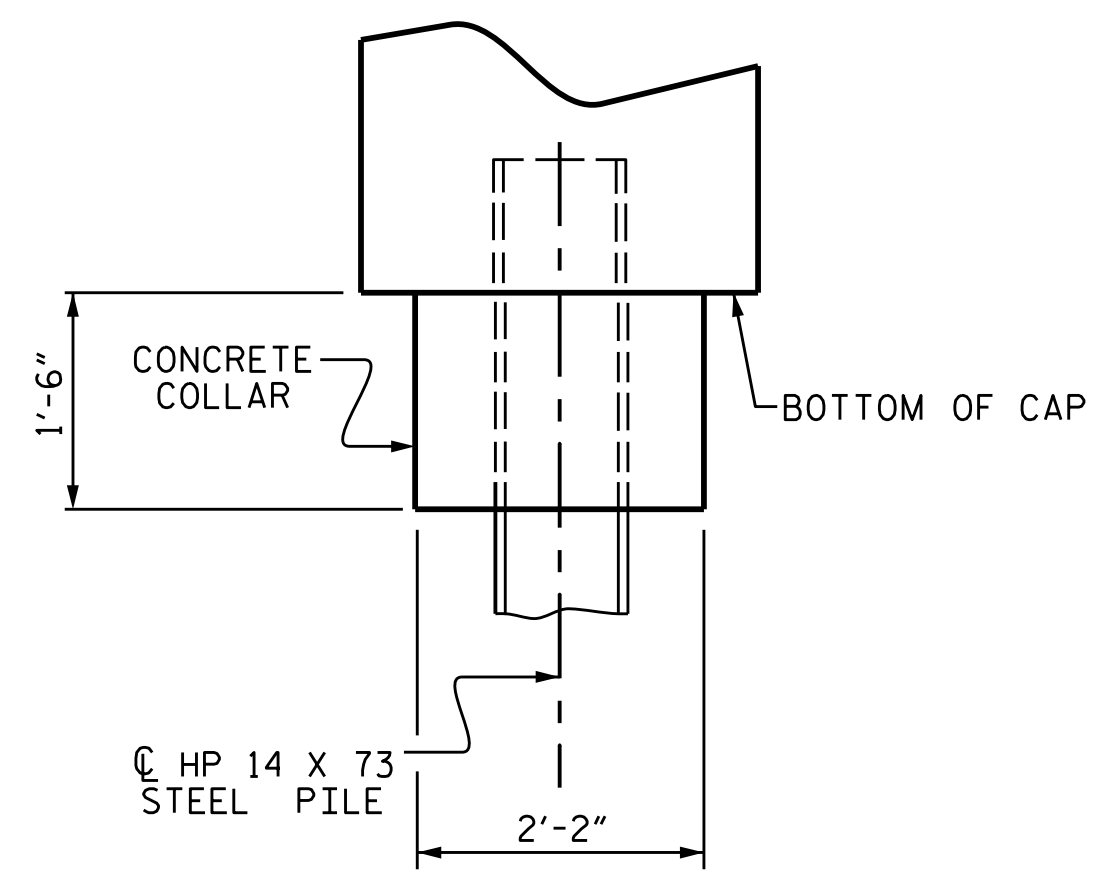
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



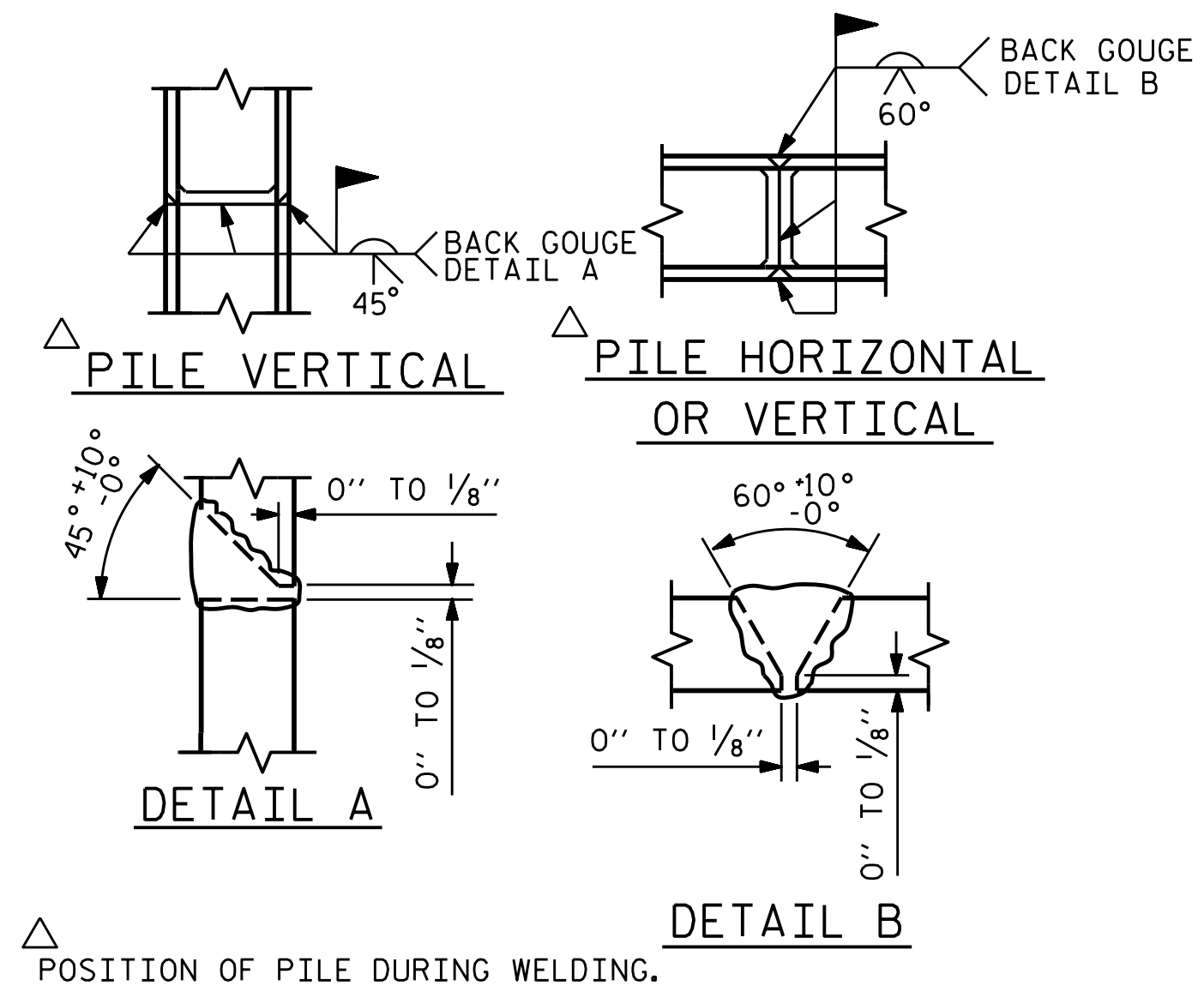
PLAN

CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)

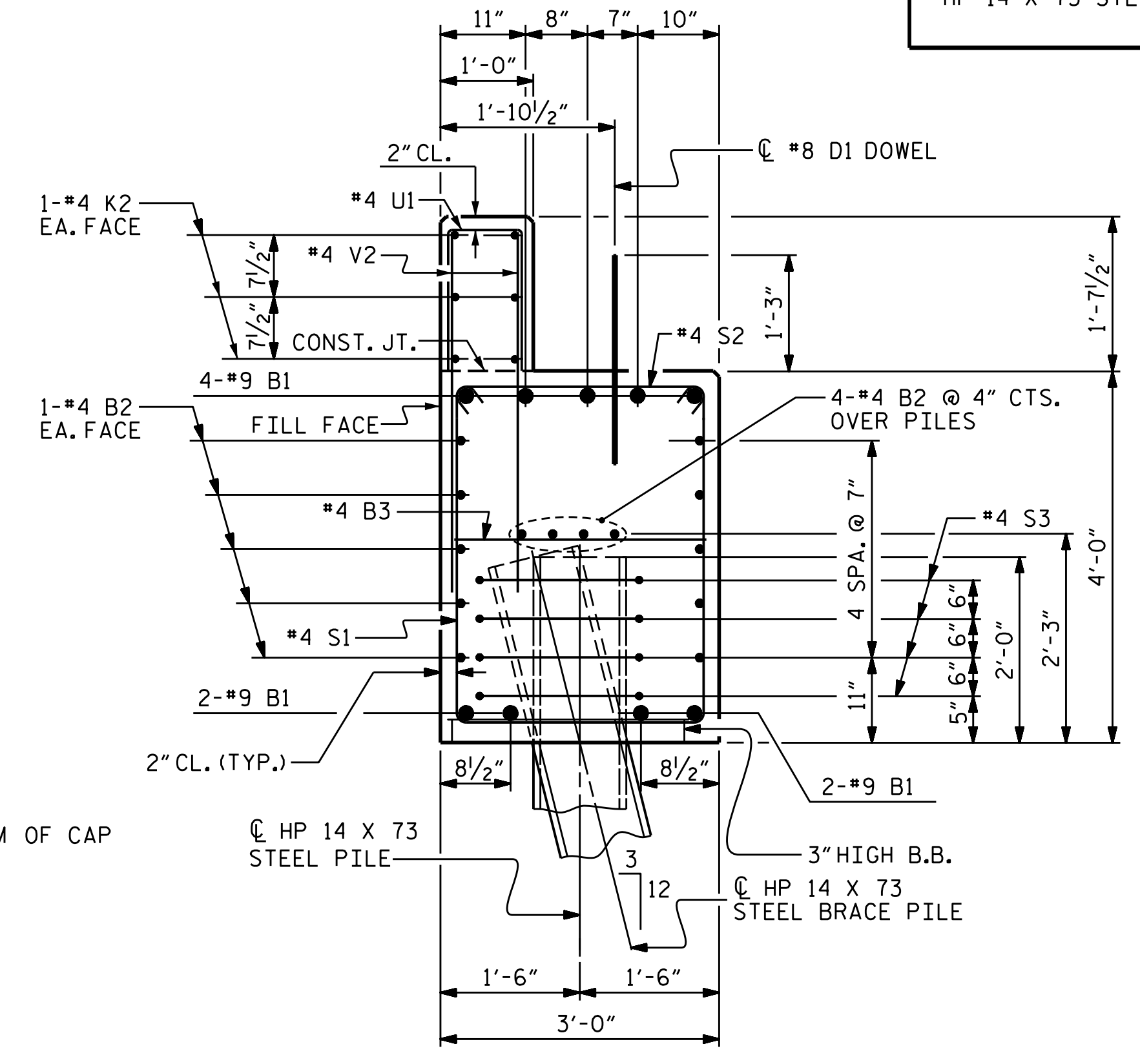


ELEVATION



PILE SPLICE DETAILS

BAR TYPES		BILL OF MATERIAL FOR ONE END BENT				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		
B1	#9	1	38'-0"	1163		
B2	#4	STR	19'-1"	357		
B3	#4	STR	2'-8"	16		
D1	#8	STR	2'-3"	120		
H1	#5	2	11'-4"	567		
K1	#4	STR	2'-11"	23		
K2	#4	STR	19'-1"	153		
S1	#4	3	10'-8"	328		
S2	#4	4	3'-5"	105		
S3	#4	5	7'-7"	101		
U1	#4	6	3'-7"	72		
V1	#4	STR	7'-2"	287		
V2	#4	STR	5'-3"	210		
REINFORCING STEEL (FOR ONE END BENT)				3502 LBS.		
CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)						
POUR #1 CAP, LOWER PART OF WINGS & COLLARS				20.0 C.Y.		
POUR #2 BACKWALL & UPPER PART OF WINGS				5.2 C.Y.		
TOTAL CLASS A CONCRETE				25.2 C.Y.		
END BENT No. 1 HP 14 X 73 STEEL PILES NO: 5 LIN. FT.= 90		END BENT No. 2 HP 14 X 73 STEEL PILES NO: 5 LIN. FT.= 115				
PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES NO: 5		PILE DRIVING EQUIPMENT SETUP FOR HP 14 X 73 STEEL PILES NO: 5				



SECTION A-A

(CONCRETE COLLAR NOT SHOWN FOR CLARITY. SEE "CORROSION PROTECTION FOR STEEL PILES DETAIL.")

PROJECT NO. BP8.R023
RANDOLPH COUNTY
 STATION: 15+26.00 -L-
 SHEET 4 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT No. 1 & 2
 DETAILS



ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDO	DATE : 02/23
DRAWN BY : WJH 12/11	REV. 4/17
CHECKED BY : AAC 12/11	MAA/THC

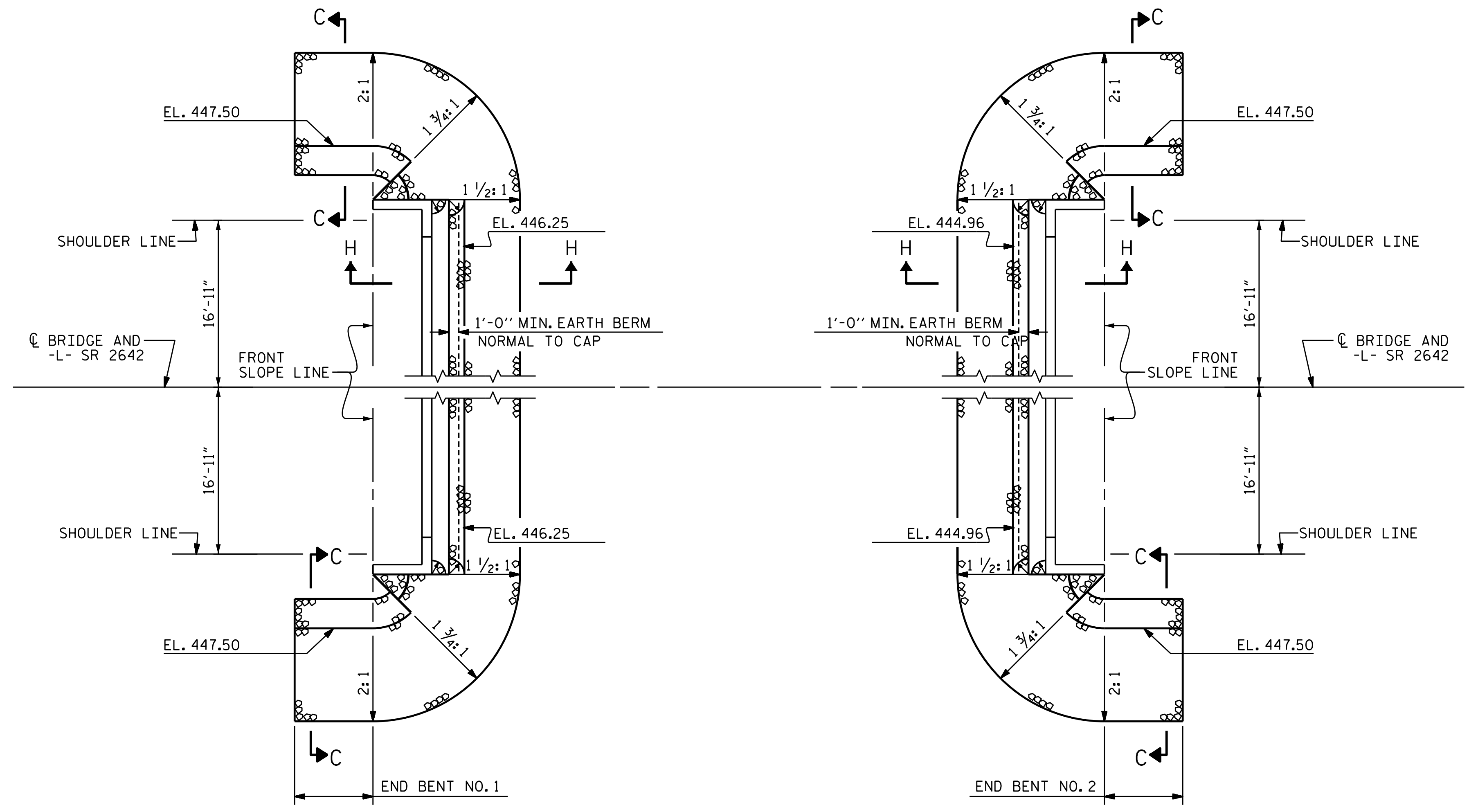
ms consultants, inc.
 5444 Wade Park Blvd.
 Suite 160
 Raleigh, NC 27607
 NC License Number : C-3239

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TOTAL SHEETS	17
--------------	----

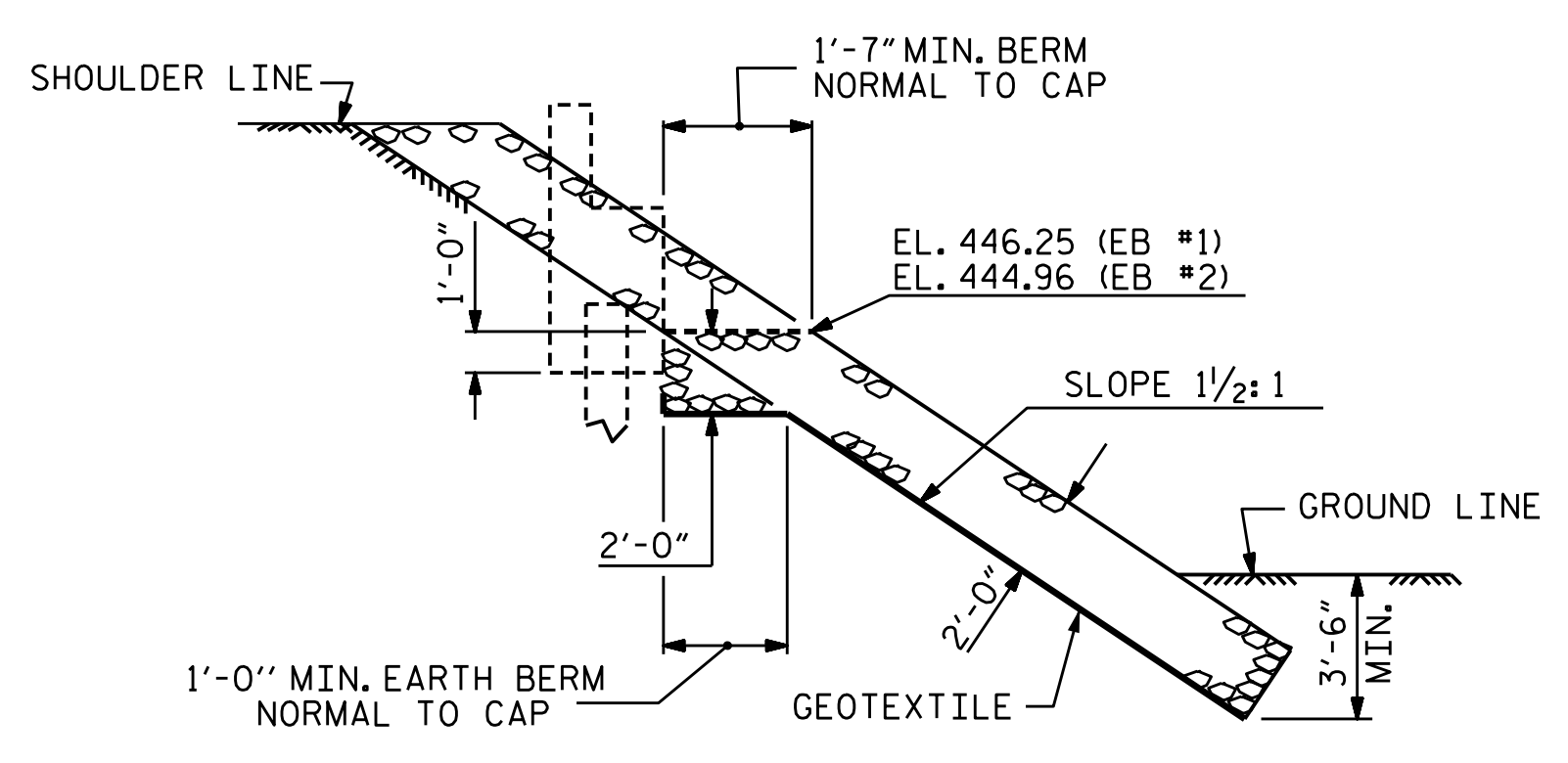
NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



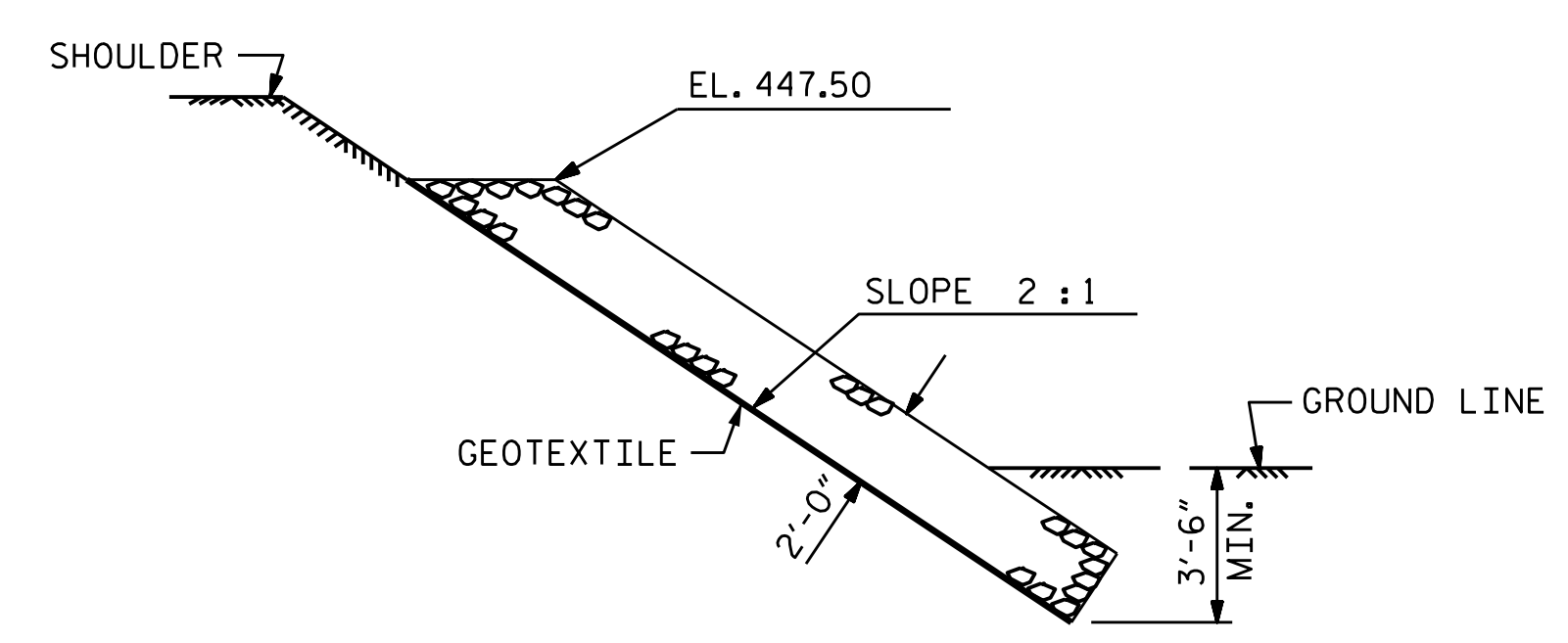
END BENT 1

END BENT 2

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+26.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	50	56
END BENT 2	40	44



SECTION H-H



SECTION C-C

PROJECT NO. BP8.R023
RANDOLPH COUNTY
STATION: 15+26.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
RIP RAP DETAILS

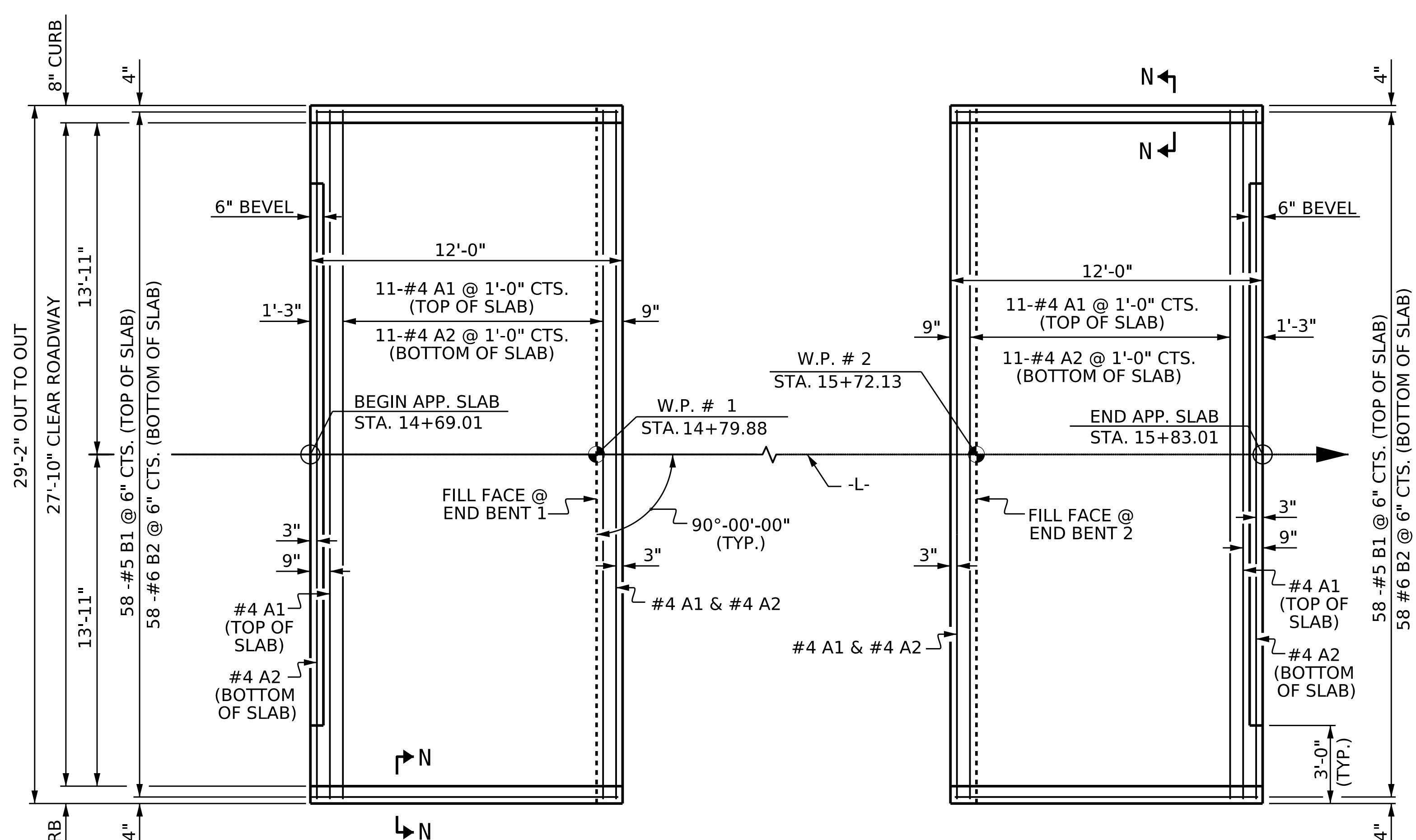


ASSEMBLED BY : J.M. KEPICH	DATE : 02/23
CHECKED BY : M. AMORANDO	DATE : 02/23
DRAWN BY : REK 1/84	REV. 10/1/11 MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11 MAA/GM
	REV. 12/17 MAA/THC

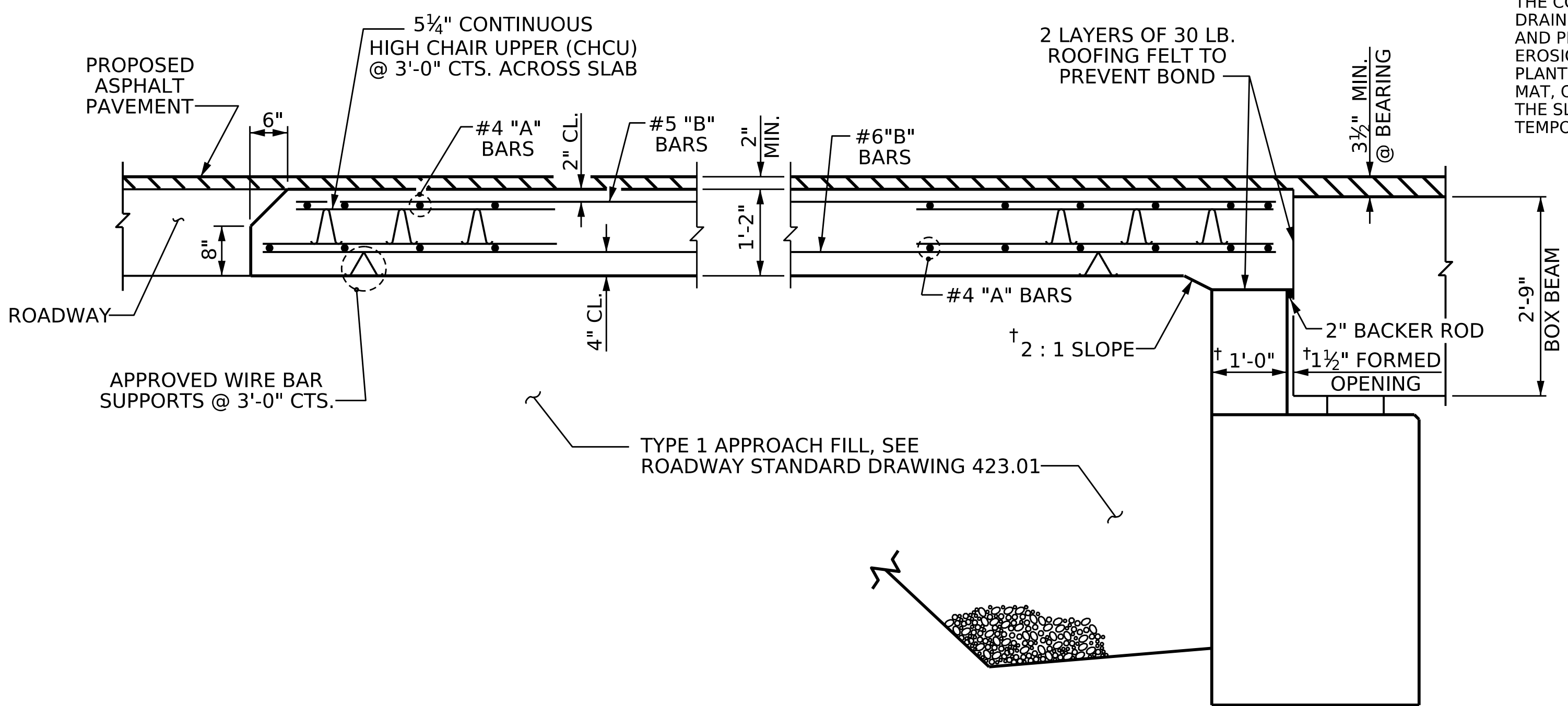
ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			17



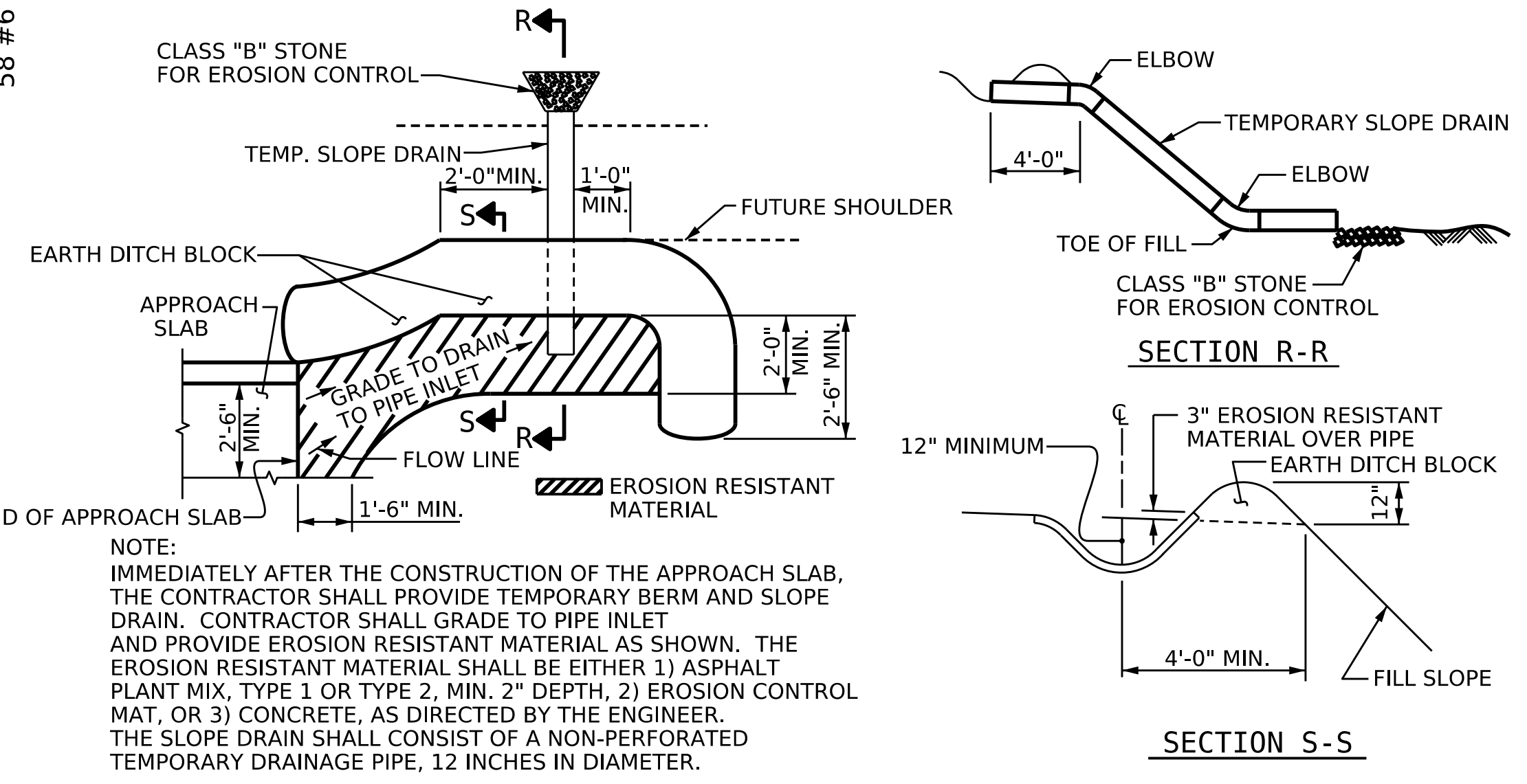
PLAN @ END BENT 1
PLAN @ END BENT 2
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



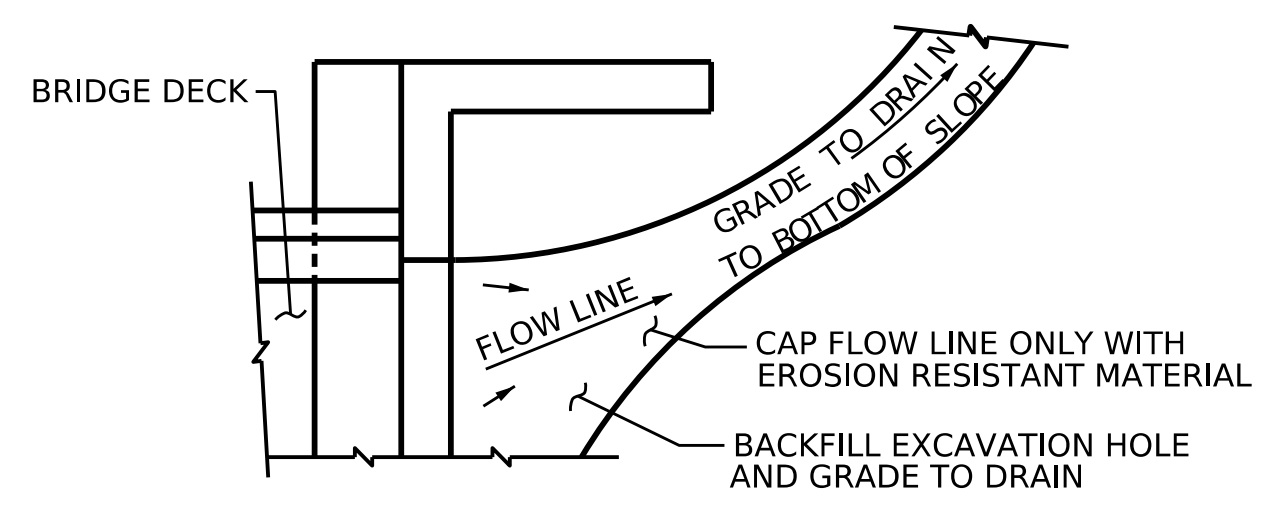
SECTION THRU SLAB

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.
APPROACH SLAB GROOVING IS NOT REQUIRED.



TEMPORARY BERM AND SLOPE DRAIN DETAILS
(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



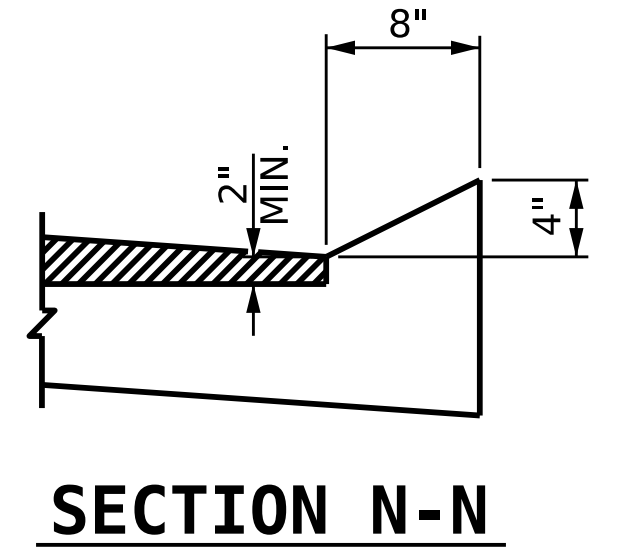
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

TEMPORARY DRAINAGE DETAIL

BILL OF MATERIAL

APPROACH SLAB AT EB 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016
REINFORCING STEEL					LBS. 1266
* EPOXY COATED REINFORCING STEEL					LBS. 926
CLASS AA CONCRETE					C. Y. 15.4

APPROACH SLAB AT EB 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	13	#4	STR	28'-10"	250
A2	13	#4	STR	28'-10"	250
*B1	58	#5	STR	11'-2"	676
B2	58	#6	STR	11'-8"	1016
REINFORCING STEEL					LBS. 1266
* EPOXY COATED REINFORCING STEEL					LBS. 926
CLASS AA CONCRETE					C. Y. 15.4



SECTION N-N

SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

PROJECT NO. BP8.R023
RANDOLPH COUNTY
STATION: 15+26.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE BOX BEAM UNIT
(SUB-REGIONAL TIER)



REVISIONS
NO. BY: DATE: NO. BY: DATE:
1 3 4
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY: J.M. KEPICH DATE: 3/14/24
CHECKED BY: L.M. SAMPLES DATE: 3/14/24
DRAWN BY: KMM 3-08 REV. 06/19 MAA/THC
CHECKED BY: GM 3-08 REV. 08/19 ENB/THC
REV. 07/23 RNB/SNM

ms consultants, inc.
5444 Wade Park Blvd.
Suite 160
Raleigh, NC 27607
NC License Number : C-3239

