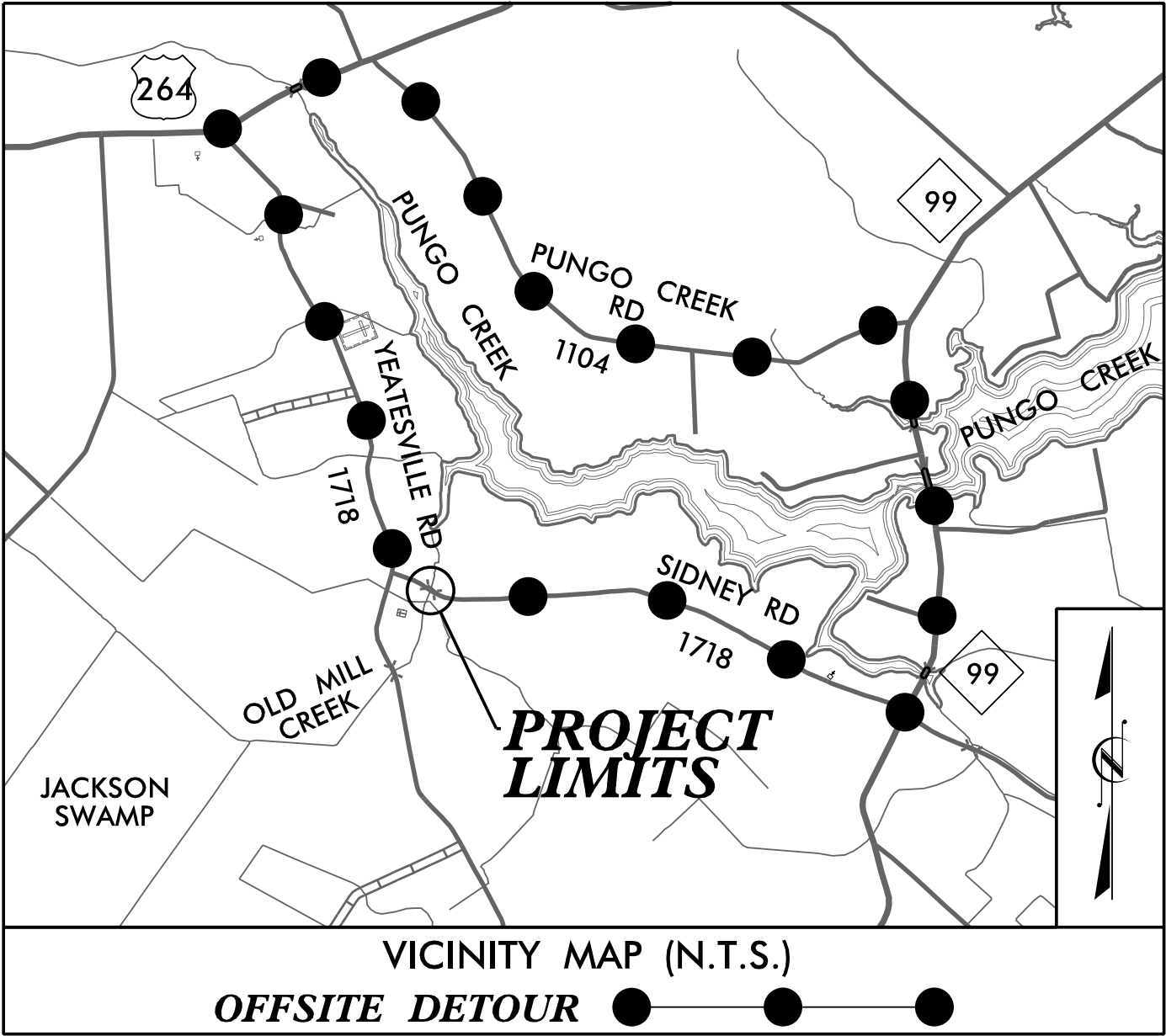


TIP PROJECT: BP2-R015

CONTRACT: DB00646

See Sheet 1A For Index of Sheets
See Sheet 1B For Standard Symbology Sheet



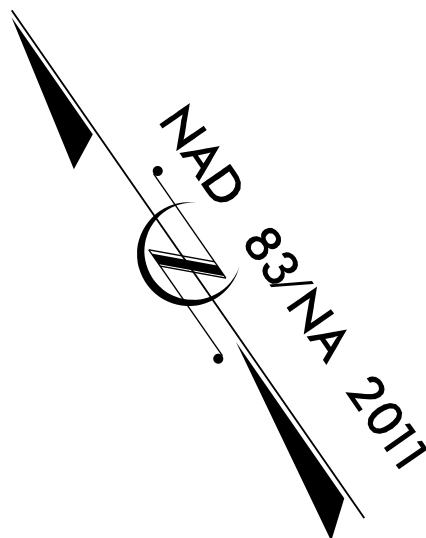
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

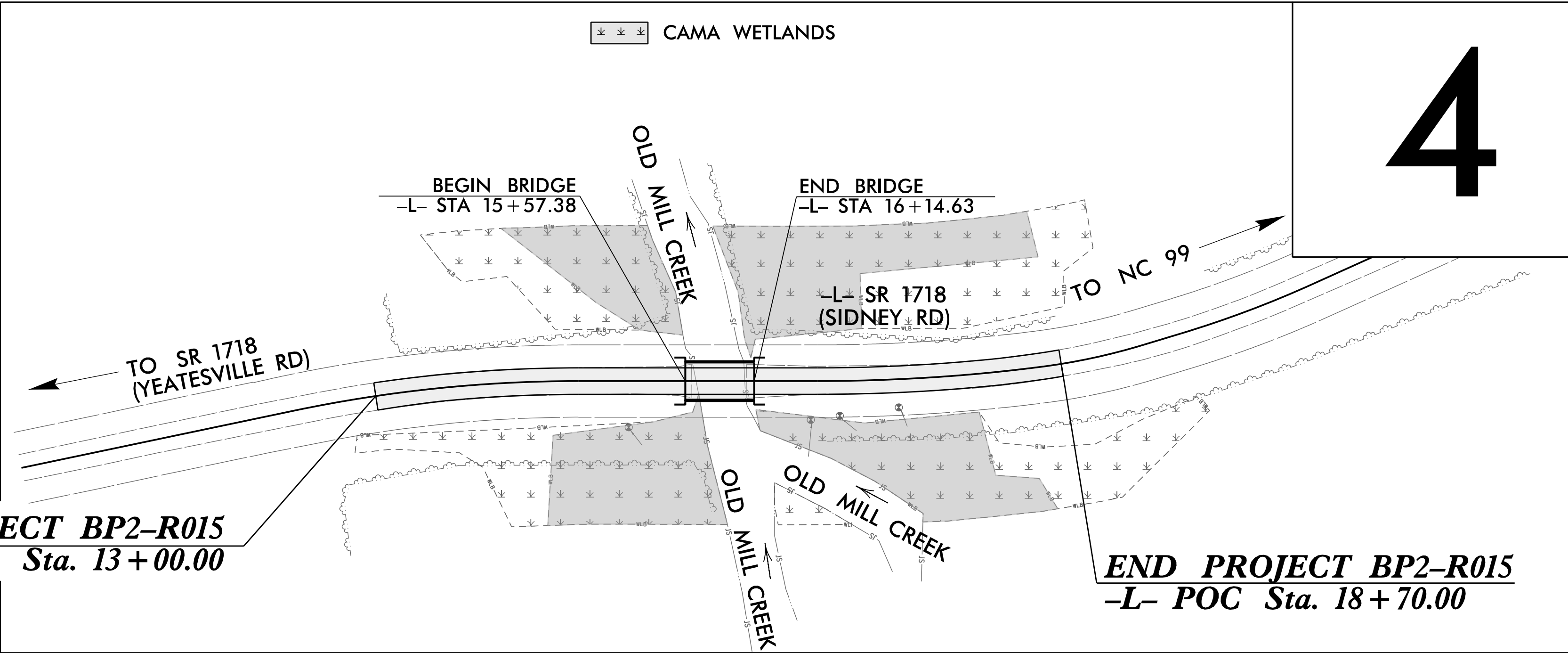
LOCATION: REPLACE BRIDGE NO.131 OVER OLD MILL CREEK ON
SR 1718 (SIDNEY RD)

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R015	1	
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
BP2.R015.1		PE	
BP2.R015.2		UTIL & RW	
BP2.R015.3		CONSTRUCTION	



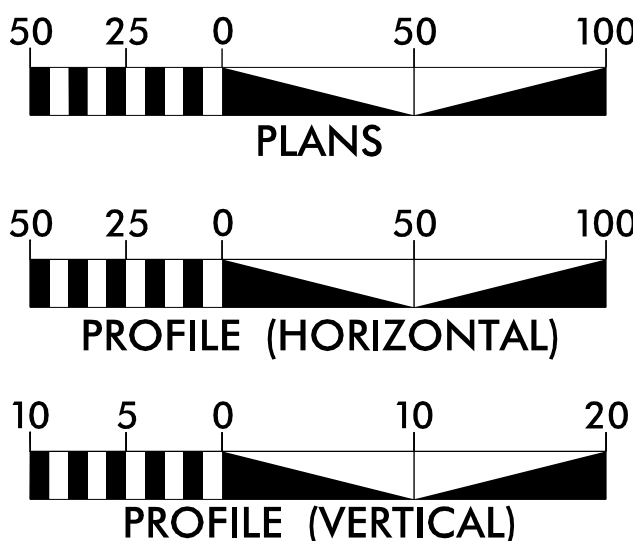
BEGIN PROJECT BP2-R015
-L- POC Sta. 13+00.00



A DESIGN EXCEPTION HAS BEEN APPROVED FOR
MINIMUM HORIZONTAL CURVE RADIUS

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2026 = 770
ADT 2046 = 940
K = 10 %
D = 60 %
T = 6 % *
V = 60 MPH
* TTST=2% DUAL=4%
FUNC CLASS =
LOCAL
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT BP2-R015 = 0.097 MI
LENGTH OF STRUCTURES PROJECT BP2-R015 = 0.011 MI
TOTAL LENGTH OF PROJECT BP2-R015 = 0.108 MI

Prepared in the Office of:
HNTB
HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St.
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 25, 2023

LETTING DATE:
SEPTEMBER 23, 2026

BRIAN P. BLACKWELL, PE
PROJECT ENGINEER

ROY H. TELLIER, PE
PROJECT DESIGN ENGINEER

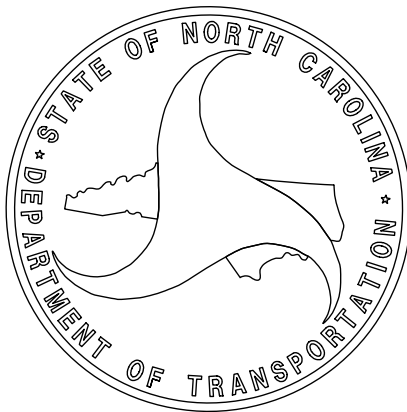
CATHRINE A. HOSSACK, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

Signed by:
Paul Cameron
037E387AD97F426...
P.E.

ROADWAY DESIGN ENGINEER

DocuSigned by:
Roy Tellier
BFFD8DB0A8C430...
P.E.



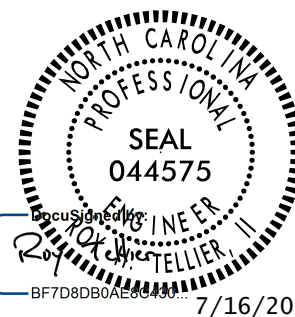
8/17/99

I3-JUL-2026 11:00
\\rogdway\Proj\BP2R015_rdy-gen.dgn
JNH

PROJECT REFERENCE NO.
BP2-R015

SHEET NO.
1A

ROADWAY DESIGN
ENGINEER



**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 & TYPICAL SECTIONS
2C-1 THRU 2C-4	SPECIAL DETAILS
3B-1	ROADWAY & DRAINAGE SUMMARIES
3G-1	GEOTECHNICAL SUMMARIES
4	PLAN AND PROFILE SHEET
RW-1 THRU RW-04	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT AND PROPERTY TIES
TMP-1 THRU TMP-2A	TRAFFIC MANAGEMENT PLANS
EC-1 THRU EC-5	EROSION CONTROL PLANS
RF-1	REFORESTATION PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1	CROSS-SECTION SUMMARY SHEET
X-2 THRU X-6	CROSS-SECTIONS
S-1 THRU S-14	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 11.

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

POWER - TIDELAND EMC

COMMUNICATIONS - RIVERSTREET NETWORKS

WATER - BEAUFORT COUNTY WATER DISTRICT

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

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	
200.02	Method of Clearing - Method II
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
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	
815.02	Subsurface Drain
840.29	Frames and Narrow Slot Flat Grates
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.45	Precast Drainage Structure
840.46	Traffic Bearing Precast Drainage Structure
840.66	Drainage Structure Steps
846.01	Concrete Curb, Gutter and Curb & Gutter
846.04	Drop Inlet Installation in Shoulder Berm Gutter
862.01	Guardrail Placement (Use Details in Lieu of Standards for Sheets 4, 6, 11, 12, and 14 of 15)
862.02	Guardrail Installation (Use Detail in Lieu of Standard for Sheet 5 of 9)
862.03	Structure Anchor Units (Use Detail in Lieu of Standards for Sheet 6 and 8 of 9)
876.02	Guide for Rip Rap at Pipe Outlets

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
Existing Cable Guiderail	
Proposed Cable Guiderail	
Equality Symbol	
Pavement Removal	
VEGETATION:	
Single Tree	
Single Shrub	
Hedge	

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

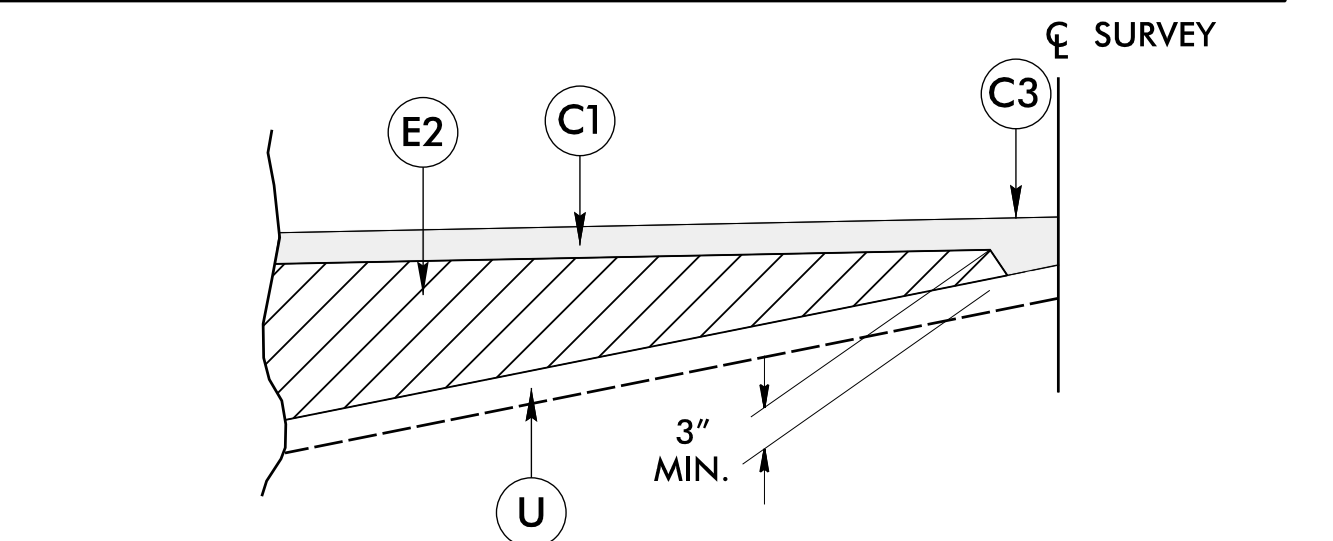
Sanitary Sewer Manhole	
Sanitary Sewer Cleanout	
U/G Sanitary Sewer Line	
Above Ground Sanitary Sewer	
SS Force Main Line Test Hole (SUE – LOS A)*	
SS Force Main Line (SUE – LOS B)*	
SS Force Main Line (SUE – LOS C)*	
SS Force Main Line (SUE – LOS D)*	

MISCELLANEOUS:

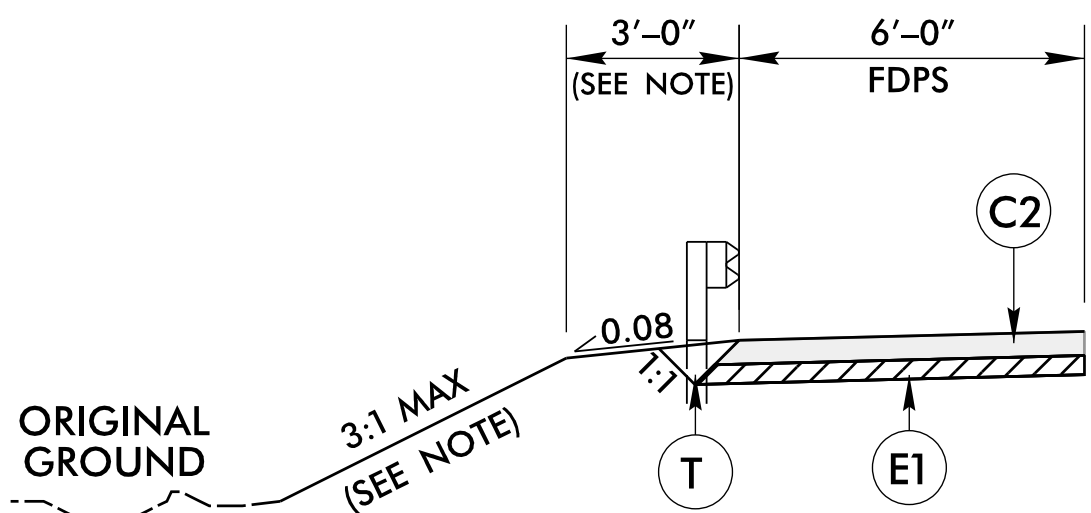
Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line (SUE – LOS B)*	
U/G Tank; Water, Gas, Oil	
Underground Storage Tank, Approx. Loc.	
A/G Tank; Water, Gas, Oil	
Geoenvironmental Boring	
Abandoned According to Utility Records	
End of Information	

6/2/99

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.5" 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. PLACED 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" IN DEPTH OR GREATER THAN 1½" IN DEPTH.
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 570 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" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J1	PROP. 6" AGGREGATE BASE COURSE
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	INCIDENTAL MILLING
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL, THIS SHEET)

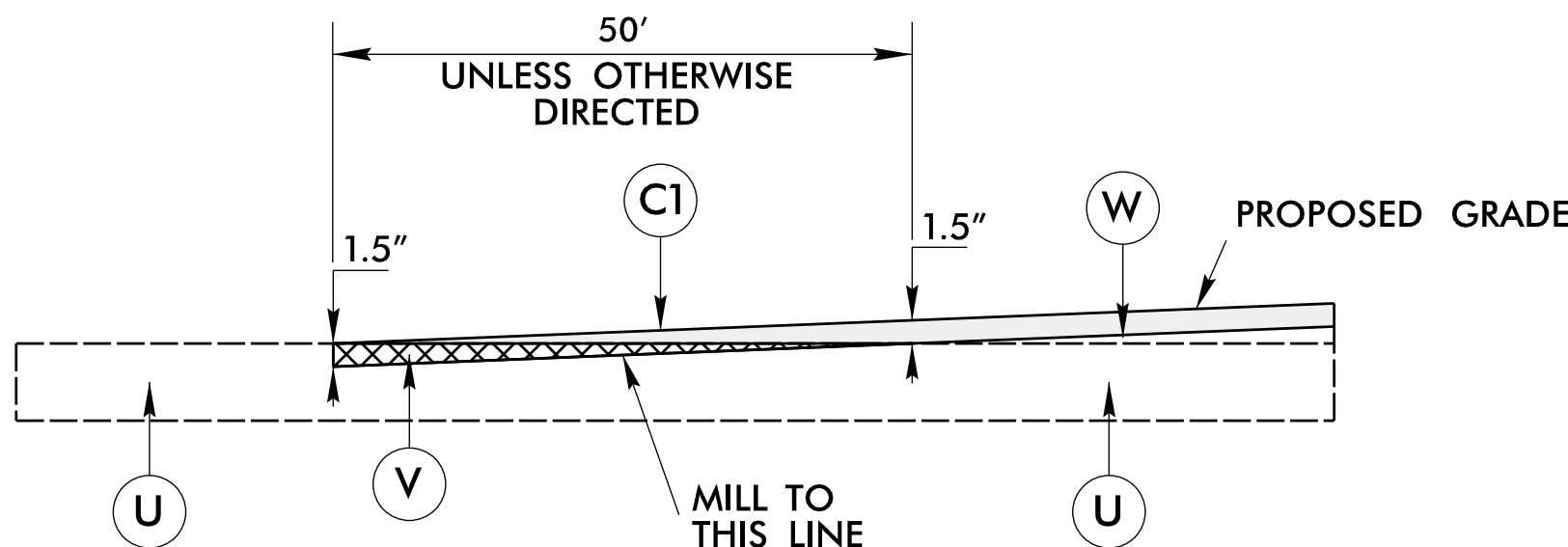


DETAIL SHOWING METHOD OF WEDGING

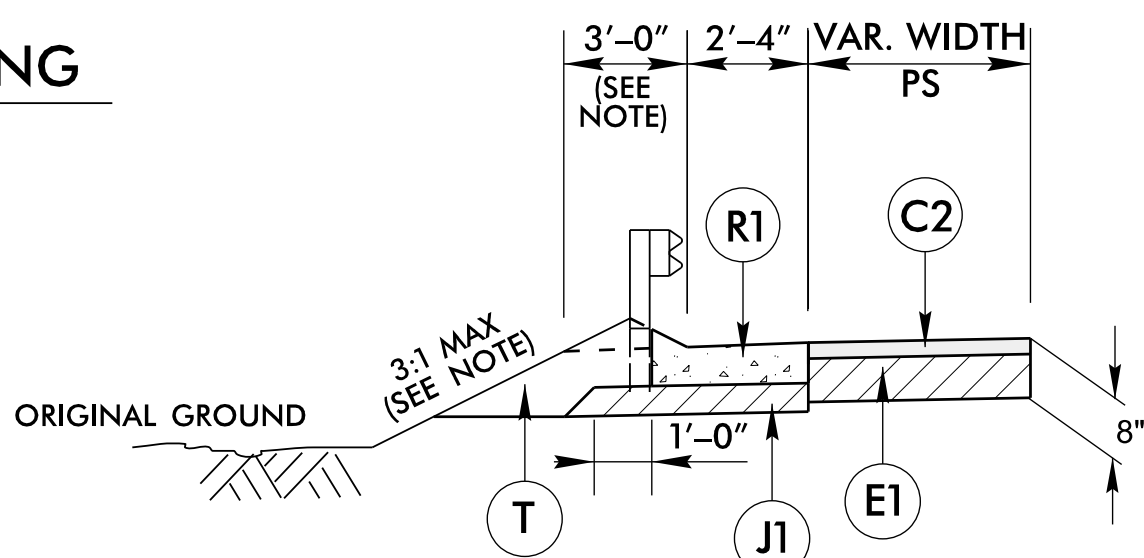


DETAIL A
GUARDRAIL LOCATIONS

NOTE: USE 1.5:1 MAX SLOPES WITH ROCK PLATING.
WIDEN SHOULDER BY 4'-6" IN AREAS OF ROCK PLATING.



DETAIL FOR INCIDENTAL MILLING



DETAIL FOR SHOULDER BERM GUTTER

-L- STA 16+25.50 LT TO STA 16+72.00 LT
-L- STA 16+25.50 RT TO STA 16+61.00 RT

HNTB

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St.
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.

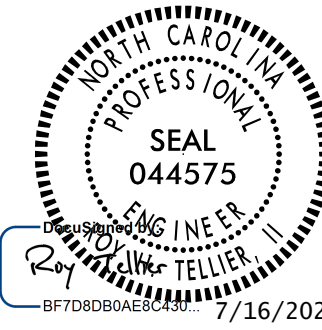
BP2-R015

SHEET NO.

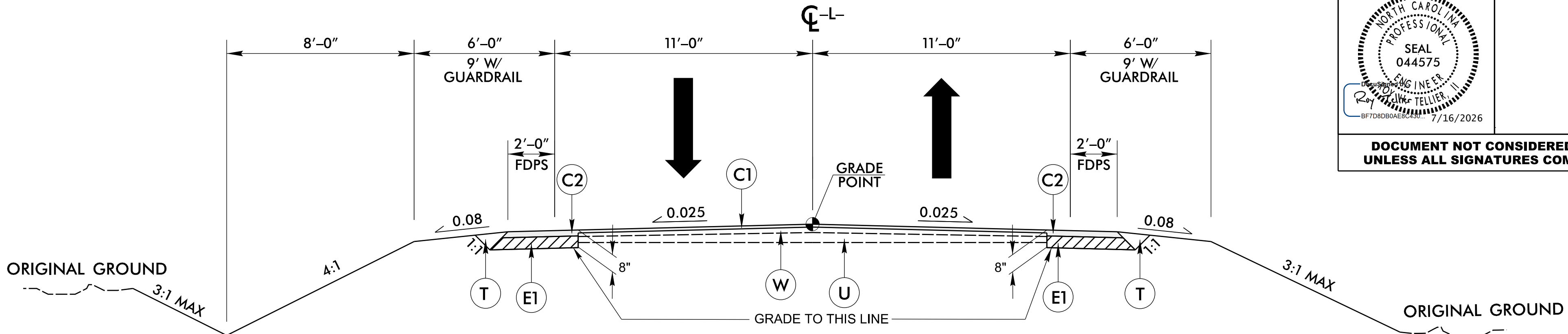
2A-1

ROADWAY DESIGN
ENGINEER

PAVEMENT DESIGN
ENGINEER



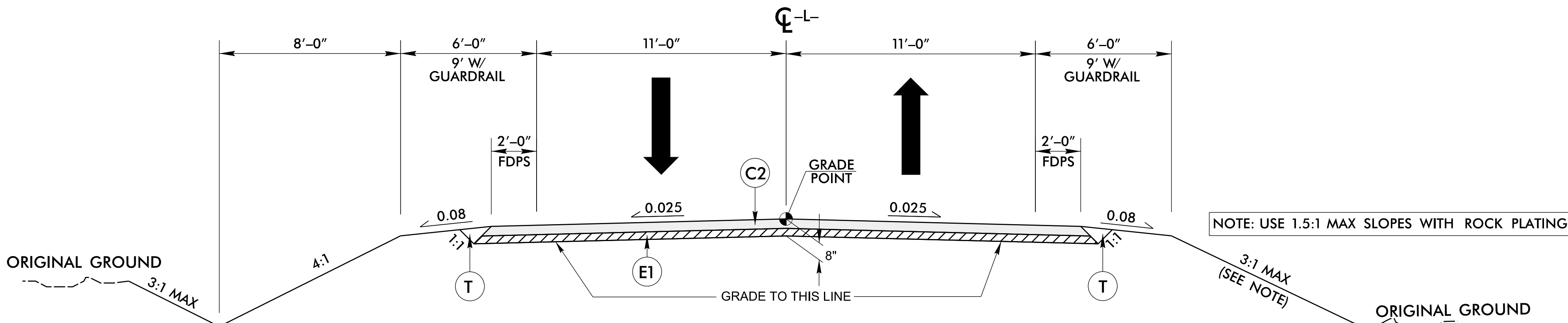
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UNLESS ALL SIGNATURES COMPLETED



TYPICAL SECTION NO. 1

-L- SR 1718 (SIDNEY RD)

USE TYPICAL SECTION NO. 1 FROM:
-L- STA 13+00.00 TO STA 14+50.00

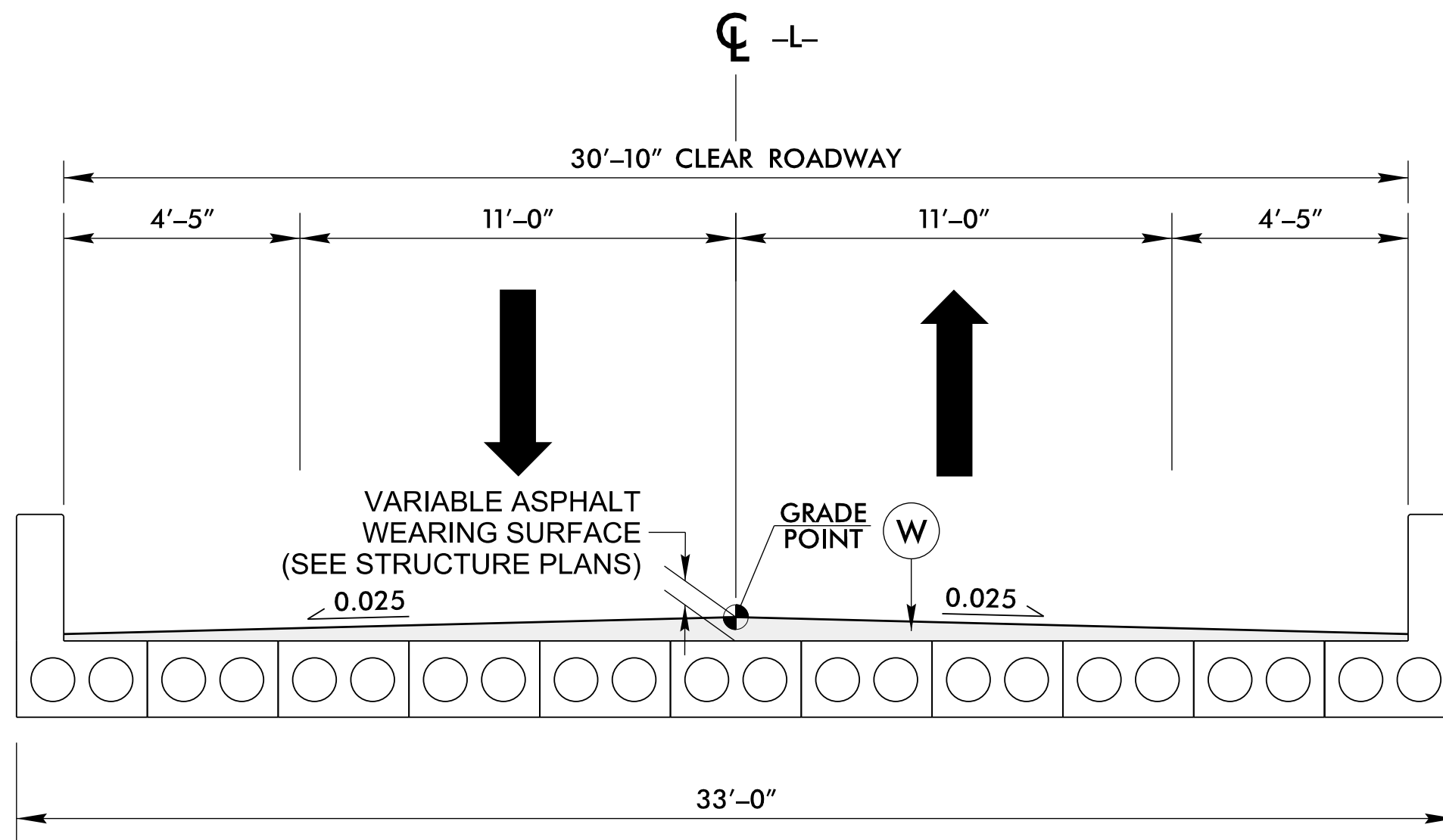


TYPICAL SECTION NO. 2

-L- SR 1718 (SIDNEY RD)

USE TYPICAL SECTION NO. 2 FROM:

-L- STA 14+50.00 TO STA 15+57.38 (BEGIN BRIDGE)
-L- STA 16+14.63 (END BRIDGE) TO STA 18+70.00



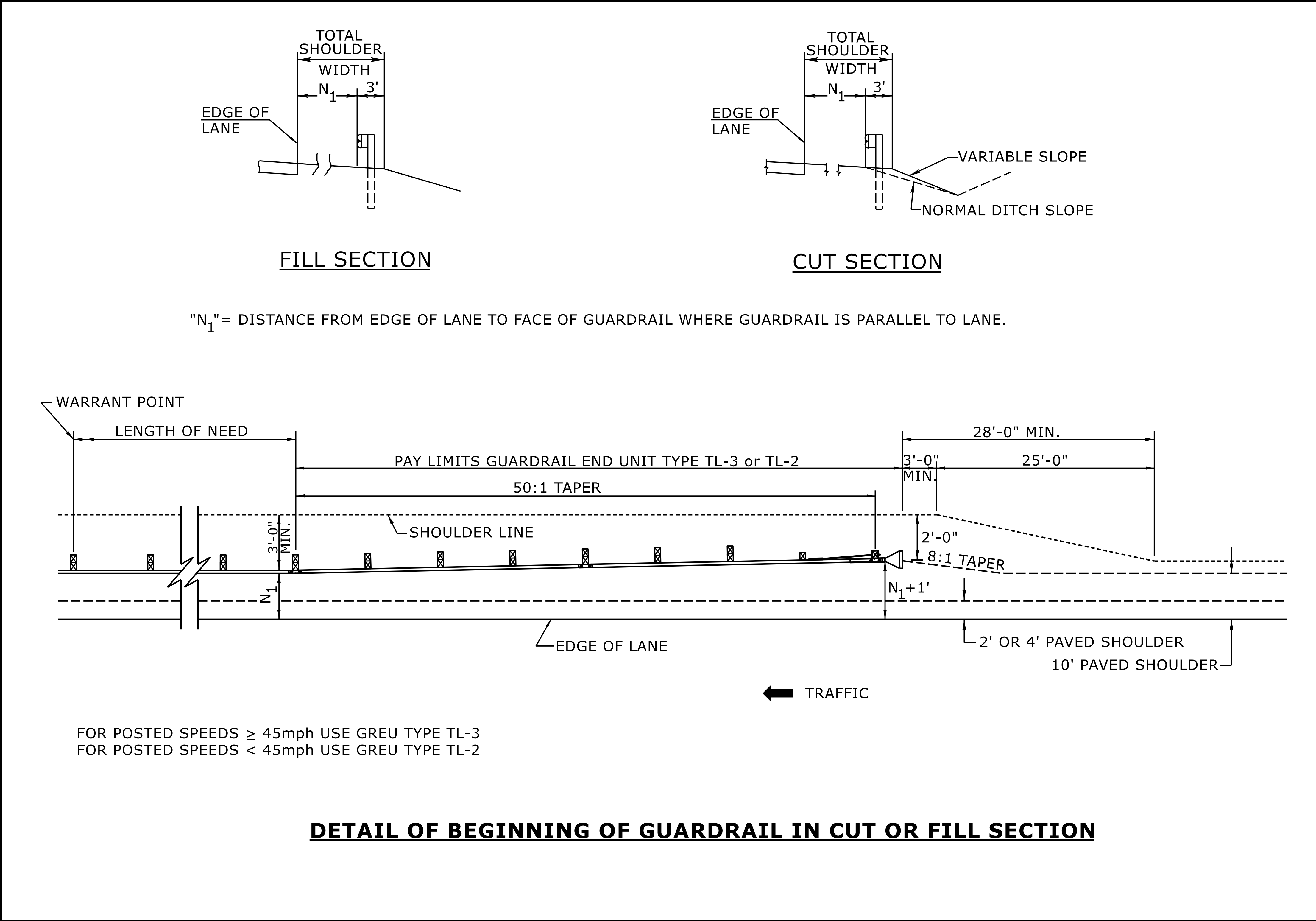
TYPICAL SECTION NO. 3

-L- SR 1718 (SIDNEY RD)
CORED SLAB BRIDGE

USE TYPICAL SECTION NO. 3 FROM:
-L- STA 15+57.38 (BEGIN BRIDGE) TO STA 16+14.63 (END BRIDGE)
NOTE: SEE STRUCTURE PLANS FOR CONSTRUCTION DETAILS

10:04 BP2R015_rdy_typ.dgn
JUN-2026
HNTB

PROJECT REFERENCE NO.	SHEET NO.
BP2-R015	2C-1



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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

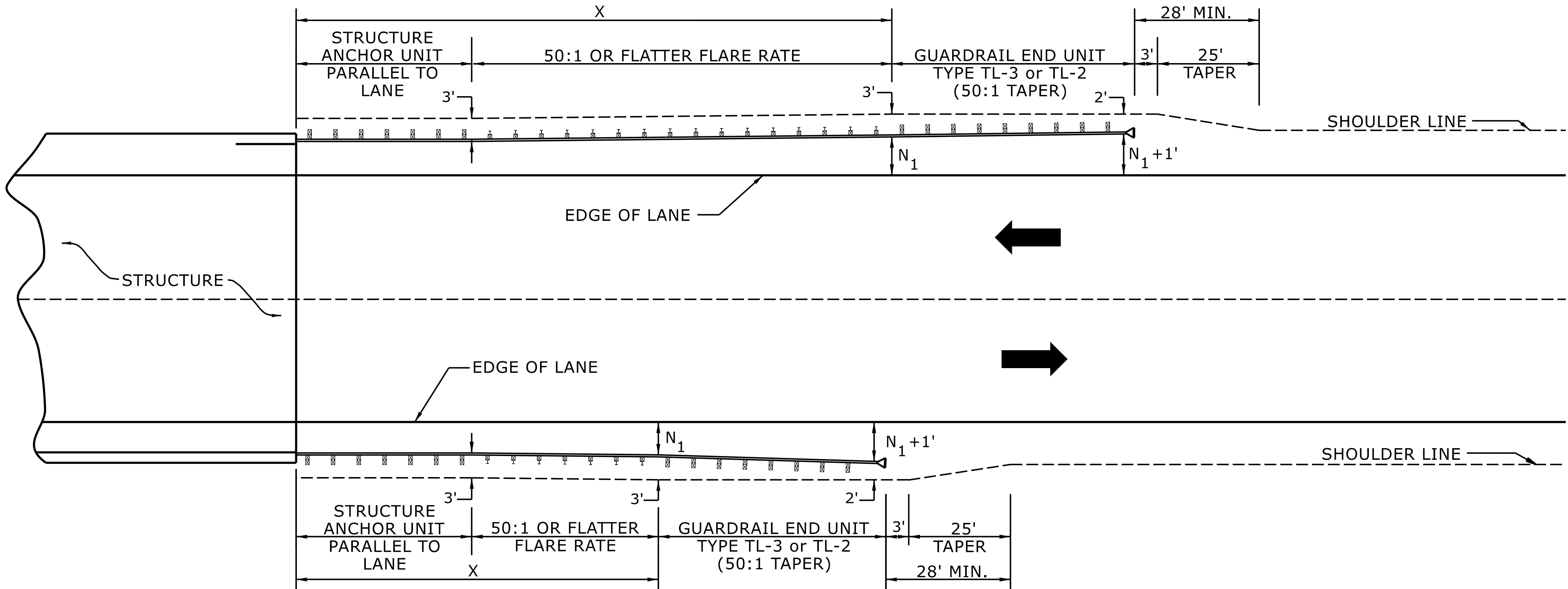
SHEET 6 OF 15
862D01



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CONTRACTS STANDARDS AND DEVELOPMENT UNIT			
Office 919-707-6950		FAX 919-250-4119	
SEE TITLE BLOCK			
ORIGINAL BY:	<u>S.CALHOUN</u>	DATE:	<u>7-25-2024</u>
MODIFIED BY:	<u> </u>	DATE:	<u> </u>
CHECKED BY:	<u> </u>	DATE:	<u> </u>
FILE SPEC.:	<u> </u>		

PROJECT REFERENCE NO.	SHEET NO.
BP2-R015	2C-2



USE FLARE RATE AS THE CONTROL IF THE "N₁" DISTANCE IS NOT OBTAINED.
("N₁" IS BASED ON SHOULDER WIDTHS IN THE ROADWAY DESIGN MANUAL)

SEE STD. 862.03 FOR STRUCTURE ANCHOR UNITS

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

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL PLACEMENT

SHEET 4 OF 15
862D01



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**

Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 3'

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

ROCK

O.D. + 3'

**ROCK FOUNDATION
PIPE IN TRENCH**

TOP OF FILL

GROUND LINE

H

TYPE 4a
GEOTEXTILE

I.D. /6 MIN.
NOT LESS
THAN 6"

1/2" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGR.

O.D. + 3'

EARTH

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

1:1

COMPACT AFTER
PIPE IS PLACED
& PRIOR TO
PLACEMENT OF
FILL

O.D. + 2'

I.D. /6 MIN.
NOT LESS THAN 6"

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

1:1

TYPE 4a
GEOTEXTILE

COMPACT AFTER
PIPE IS PLACED
& PRIOR TO
PLACEMENT OF
FILL

O.D. + 2'

I.D. /6 MIN.
NOT LESS THAN 6"

**ROCK FOUNDATION
PIPE ABOVE GROUND**

TOP OF FILL

GROUND LINE

H

MIN. O.D.

1:1

TYPE 4a
GEOTEXTILE

COMPACT AFTER
PIPE IS PLACED
& PRIOR TO
PLACEMENT OF
FILL

O.D. + 2'

I.D. /6 MIN.
NOT LESS THAN 6"

1/2" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGINEER

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT
ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP
OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1
FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE
UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL
ACCOMPLISH COMPACTION.

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

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

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1
ABOVE AND BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE
WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTRACTS STANDARDS
AND DEVELOPMENT UNIT

Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

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

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

ROADWAY DETAIL DRAWING FOR
METHOD OF PIPE INSTALLATION
RIGID PIPE

SHEET 2 OF 2
300.01

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 3'

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

I.D. /6 MIN.
NOT LESS THAN 6"

ROCK

O.D. + 3'

**ROCK FOUNDATION
PIPE IN TRENCH**

TOP OF FILL

GROUND LINE

H

TYPE 4a
GEOTEXTILE

I.D. /6 MIN.
NOT LESS
THAN 6"

1½" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGR.

O.D. + 3'

UNSUITABLE MATERIAL FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

MIN. O.D.

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 2'

NORMAL EARTH FOUNDATION

TOP OF FILL

GROUND LINE

H

MIN. O.D.

MIN. O.D.

I.D. /6 MIN.
NOT LESS THAN 6"

O.D. + 2'

**ROCK FOUNDATION
PIPE ABOVE GROUND**

TOP OF FILL

GROUND LINE

H

MIN. O.D.

MIN. O.D.

I.D. /6 MIN.
NOT LESS THAN 6"

1½" PER FOOT OF 'H'
BUT NOT LESS THAN 12"
NOR MORE THAN 24"
AS DIRECTED BY ENGINEER

MIN. O.D.

MIN. O.D.

UNSUITABLE MATERIAL FOUNDATION

GENERAL NOTES:

I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.

O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.

H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT
ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP
OF THE EMBANKMENT AT THAT POINT.

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

LOOSELY PLACED SELECT MATERIAL CLASS III OR CLASS II, TYPE 1
FOR PIPE BEDDING. LEAVE SECTION DIRECTLY BENEATH PIPE
UNCOMPACTED AS PIPE SEATING AND BACKFILL WILL
ACCOMPLISH COMPACTION.

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

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

SPRINGLINE OF PIPE

SELECT BACKFILL MATERIAL CLASS III OR CLASS II,
BELOW SPRINGLINE.

UNDISTURBED EARTH MATERIAL

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE
WITH TYPE IV GEOTEXTILE AS DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

STATION		LOCATION (L, RT, OR CL)	STRUCTURE NO.		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION
SIZE	THICKNESS OR GAUGE		FROM	TO			
-L- 16 + 56		RT	0401		6.3'		
			0401	0402		3.1'	2.7'
-L- 16 + 67		RT	0402		5.9'		
			0402	0403		2.7'	1.3'

300 CY
CY): 300 CY
NTINGENCY): 300 SY

"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 TL-3
NG = NON-GATING IMPACT ATTENUATOR TL-3

SHOULDER BERM GUTTER SUMMARY

SURVEY LINE	STATION	STATION	LENGTH (FT)
-L- (LT)	16 + 25.50	16 + 72.00'	46.50'
-L- (RT)	16 + 25.50	16 + 61.00	35.50'
		TOTAL:	82.00'
		SAY:	90'

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

"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 TL-3
 NG = NON-GATING IMPACT ATTENUATOR TL-3

[illegible]

COMPUTED BY: Tyler Bottom DATE: 12/29/2022
CHECKED BY: Jinyoung Park DATE: 2/7/2023
REVISED BY: Jinyoung Park DATE: 7/15/2026

DATE : 12/29/2022
DATE : 2/7/2023
DATE : 7/15/2026

(9-17-24)

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

PROJECT NO.
BP2-R015

SHEET NO.
3G-1

SUMMARY OF SUBSURFACE DRAINAGE

LINE	Station	Station	Location LT/RT/CL	Drain Type* UD/BD/SD	LF
CONTINGENCY				SD	200
				TOTAL LF:	200

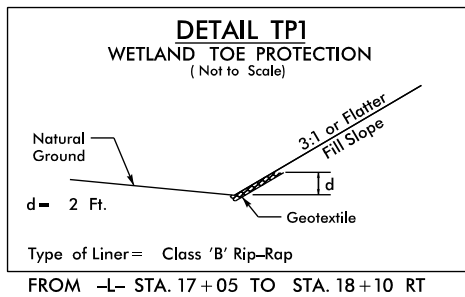
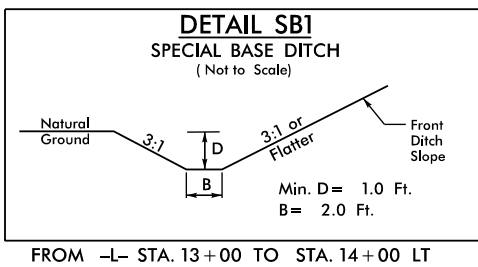
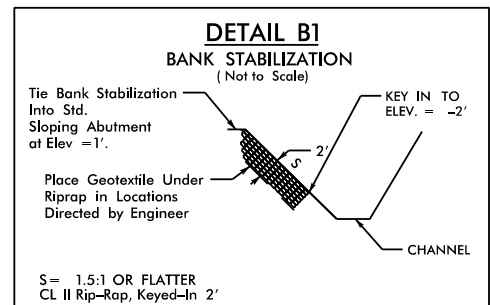
*UD = Underdrain
*BD = Blind Drain
*SD = Subsurface Drain

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2.5:1	15+40 ±	2:1	15+49 ±	LT	1		25
-L-	2.5:1	15+20 ±	1.5:1	15+49 ±	RT	1		60
-L-	2:1	16+22 ±	2.5:1	16+35 ±	LT	1		25
-L-	1.5:1	16+22 ±	2.5:1	17+25 ±	RT	1		200
							TOTAL SY:	310

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

8/17/99



HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St.
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1654

PROJECT REFERENCE NO.

BP2-R015

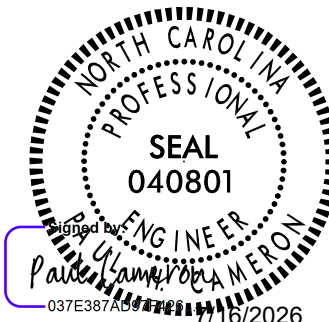
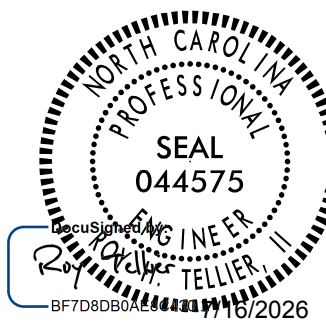
SHEET NO.

4

R/W SHEET NO.

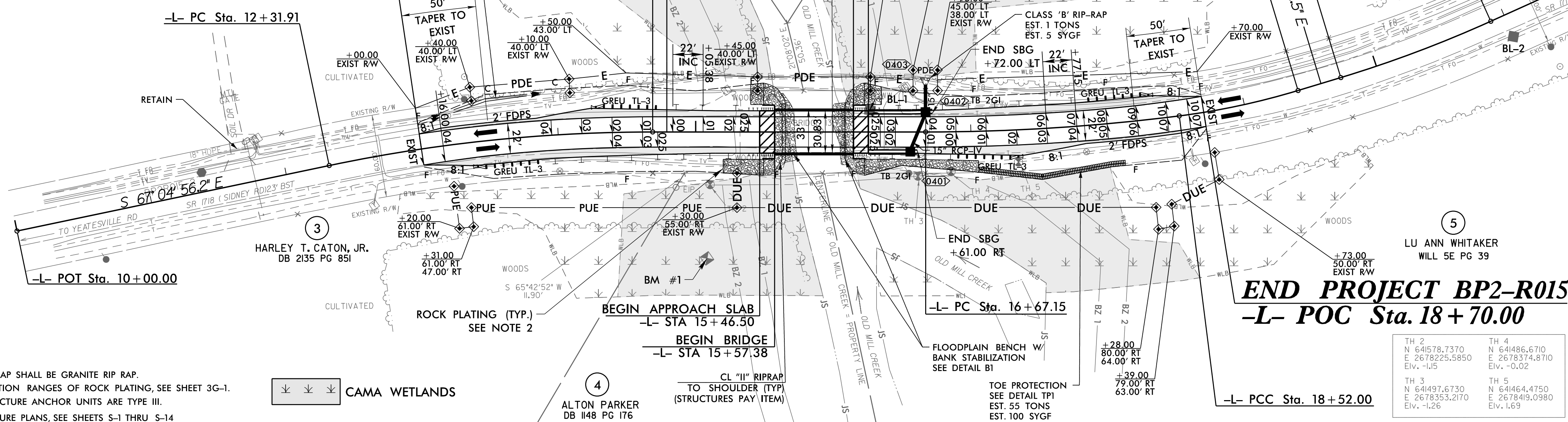
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

BEGIN PROJECT BP2-R015
-L- POC Sta. 13+00.00



NOTES:

- ALL RIP RAP SHALL BE GRANITE RIP RAP.
 - FOR STATION RANGES OF ROCK PLATING, SEE SHEET 3G-1.
 - ALL STRUCTURE ANCHOR UNITS ARE TYPE III.
- FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-14

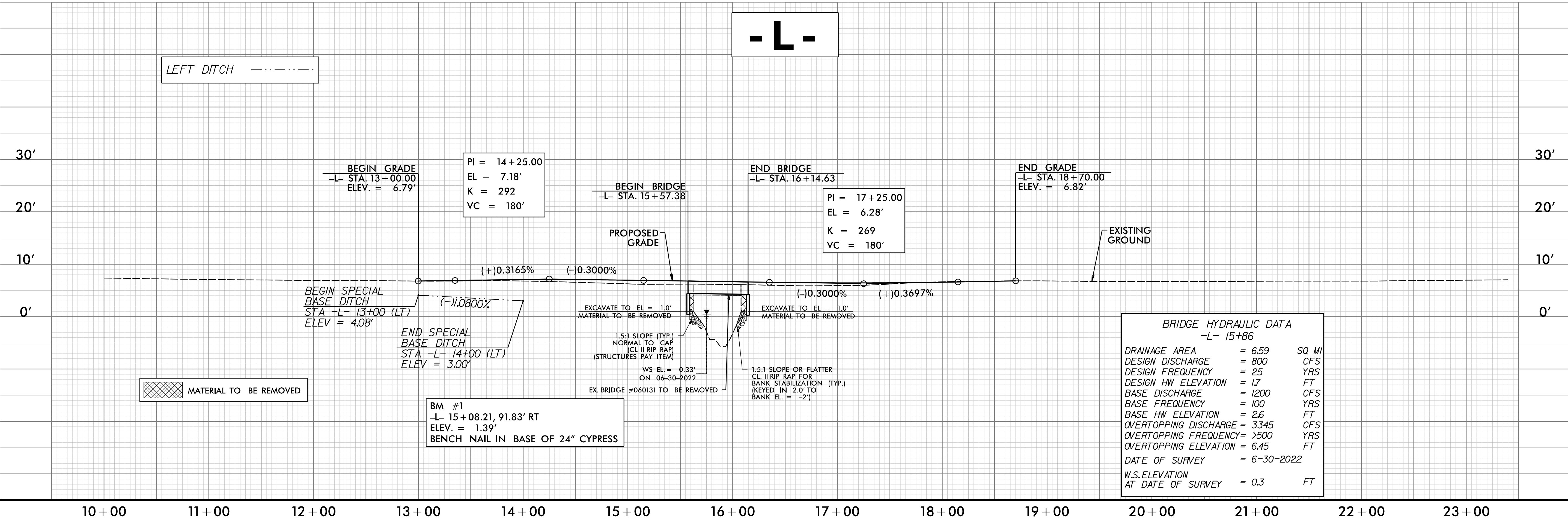
CAMA WETLANDS

PI Sta 13+50.73 Δ = 11° 50' 25" (RT) D = 5' 00' 00" L = 236.81' T = 118.83' R = 1145.92' SE = 04 RO = 88' V = 35MPH	PI Sta 17+59.70 Δ = 7° 14' 23" (LT) D = 5' 55' 00" L = 184.84' T = 192.55' R = 1462.87' SE = 06 RO = 132'
PI Sta 18+96.31 Δ = 9° 38' 58.2" (LT) D = 10' 52' 34.6" L = 88.41' T = 44.33' R = 526.80' SE = EXIST	PI Sta 20+31.21 Δ = 7° 25' 09.2" (LT) D = 6' 21' 58.3" L = 116.54' T = 58.35' R = 900.00' SE = EXIST

A DESIGN EXCEPTION HAS BEEN APPROVED FOR
MINIMUM HORIZONTAL CURVE RADIUS

-L-

LEFT DITCH



MATERIAL TO BE REMOVED

BM #1
-L- 15+08.21, 91.83' RT
ELEV. = 1.39'
BENCH NAIL IN BASE OF 24" CYPRESS

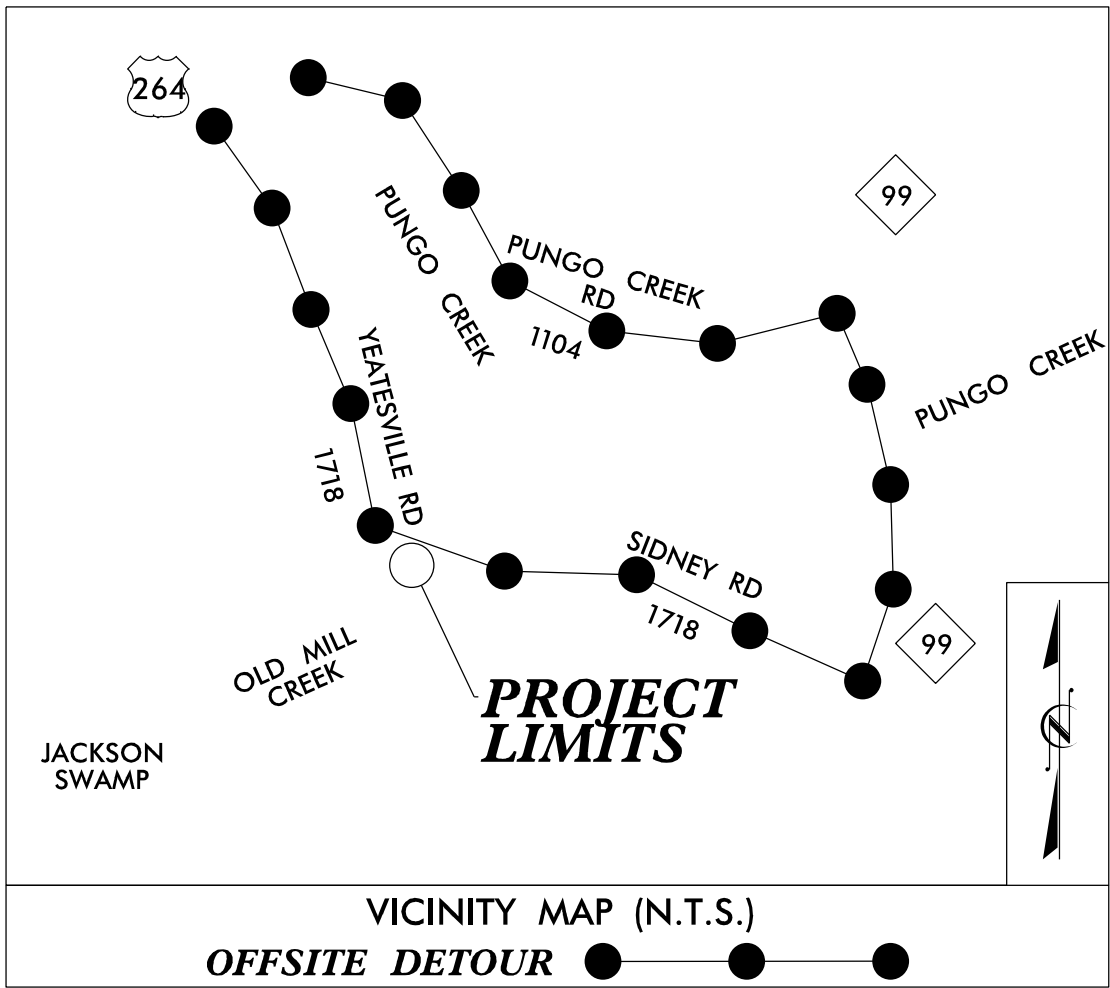
BRIDGE HYDRAULIC DATA
-L- 15+86

DRAINAGE AREA	= 6.59	SQ MI
DESIGN DISCHARGE	= 800	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1.7	FT
BASE DISCHARGE	= 1200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 2.6	FT
OVERTOPPING DISCHARGE	= 3345	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 6.45	FT
DATE OF SURVEY	= 6-30-2022	
W.S. ELEVATION AT DATE OF SURVEY	= 0.3	FT

13-JUL-2026 11:00
Roadway Proj BP2R015_rdy_psh4.dgn

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2.R015	RW01	6

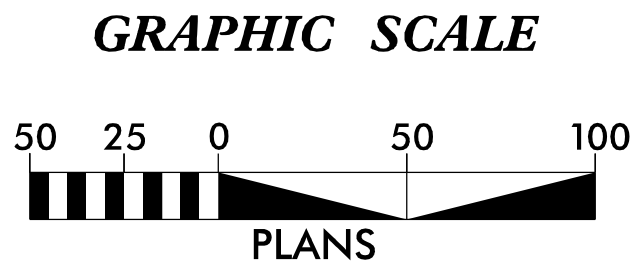
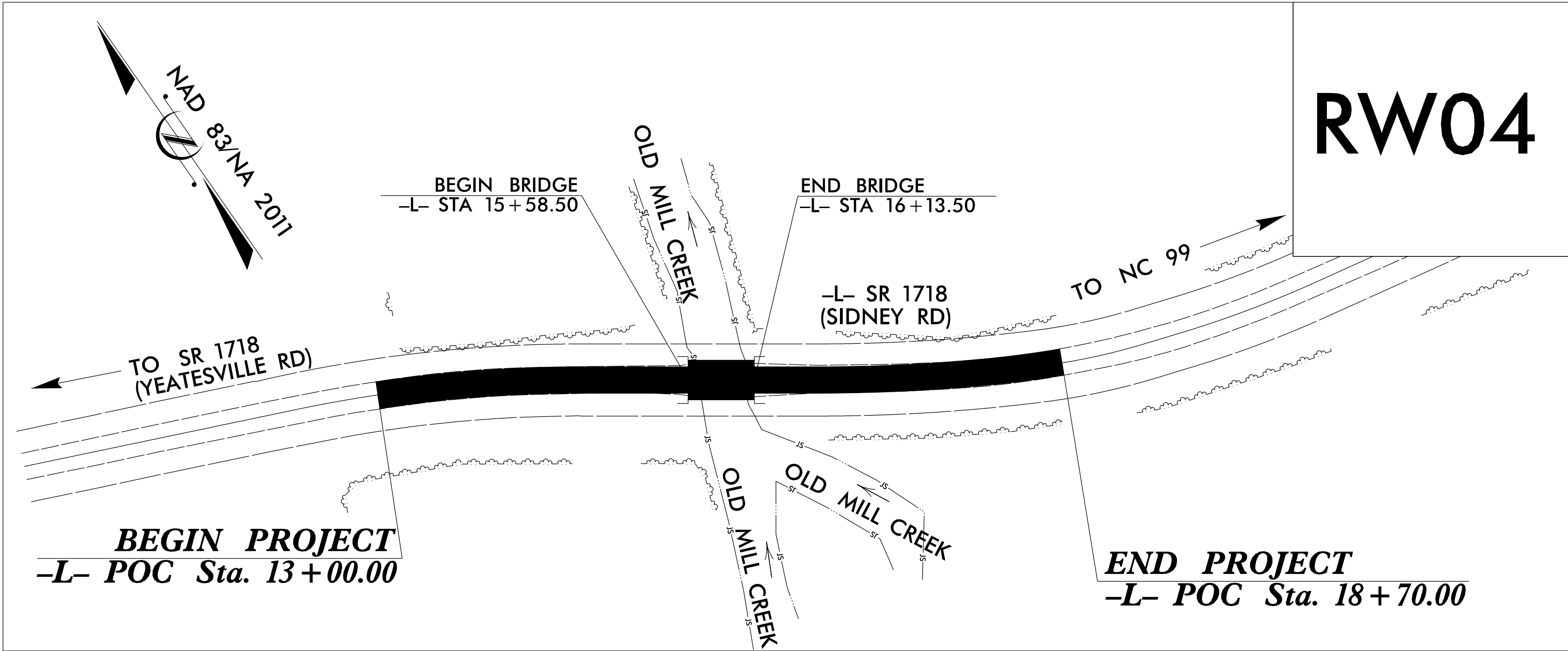
TIP PROJECT: BP2.R015



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

BEAUFORT COUNTY

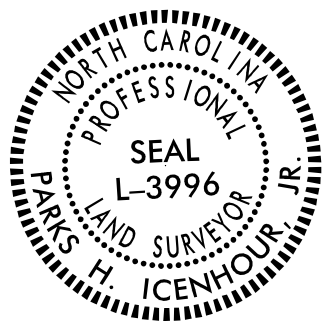
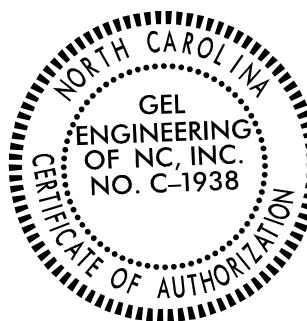


NOT TO SCALE

DATUM DESCRIPTION

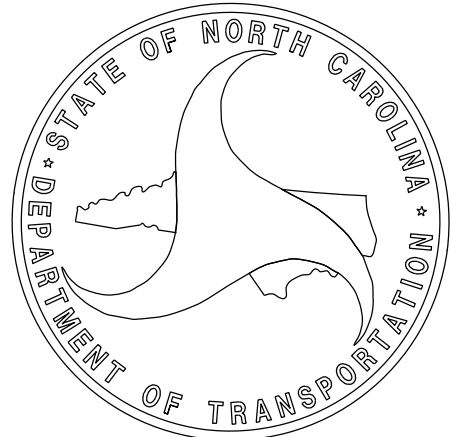
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "BP2R015-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 642,037.3390(ft) EASTING: 2,677,257.7150(ft) ELEVATION: 7.24(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998868855 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:
GEL Engineering of NC, Inc. DBA
GEL SOLUTIONS
an Affiliate of THE GEL GROUP, INC.
657 POOLE DR
GARNER, NC 27529
(919) 544-1100
WWW.GEL-SOLUTIONS.COM



Digitally signed by
Parks H. Icenhour, Jr.

Date: 2026.07.16
15:29:07 -04'00'



REVISIONS

SURVEY CONTROL SHEET
W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.
BP2R.015

SHEET NO.
RW02C-2

Location and Surveys

GEL Engineering of NC, Inc. DBA

GEL SOLUTIONS

an Affiliate of THE GEL GROUP, INC.

657 POOLE DR.
GARNER, NC 27529
(919) 544-1100
WWW.GEL-SOLUTIONS.COM

NORTH CAROLINA
ENGINEERING
OF NC, INC.
NO. C-1938
STATE OF AUTHORITY

PROFESSIONAL
SEAL
L-3996
PARKS H. ICENHOUR, JR.
LAND SURVEYOR

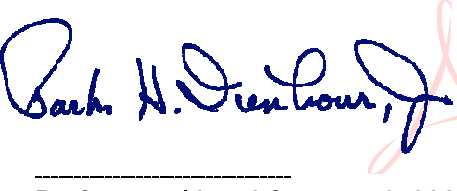
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

I, Parks H. Icenhour Jr., PLS, certify that the Project Control was performed under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: **AA**
Type of GPS field procedure: RTN
Dates of survey: April 1st 2022- April 5th 2022
Datum/Epoch:NAD 83/ 2011A
Published/Fixed-control use: Contol Utilized
Localized around: BP2R015-1
Northing:642037.3390
Easting:2677257.7150
Combined grid factor:0.9998868855
Geoid model:GEOID 18 Conus
Units:US Survey Feet

I also certify that the Baseline Control for this project was completed under my direct and responsible charge from an actual survey made under my supervision; that all horizontal closures had a minimum ratio of precision of 1:20,000 (Class AA) and Vertical accuracy to Class A. Field work was performed from April 1st 2022 to April 5th 2022 , and all coordinates are based on NAD 83/2011 and all elevations are based on NAVD 88; that this survey was performed to meet the requirements of 21NCAC 56.1600 as applicable.

This 16th day of JULY, 2026.



Digitally signed by Parks H. Icenhour, Jr.
Date: 2026.07.16 15:38:09 -04'00'
Professional Land Surveyor L-3996

BL	POINT	DESC.	NORTH	EAST	ELEVATION
1		BP2R015-1	642037.3390	2677257.7150	7.24
2		BP2R015-2	641796.7920	2677926.8860	6.47
BL 1		BP2R015 BL -1	641557.0380	2678351.7840	5.07
BL 2		BP2R015 BL -2	641334.2240	2678766.6080	6.56

BM1 ELEVATION = 1.39
N 641536 E 2678193
BL STATION 15+71.00 96 RIGHT
BENCH NAIL IN BASE OF 24" CYPRESS

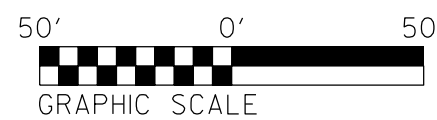
EL	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	641838.352	2677792.434							
LINE			S 67°04'56.2" E	231.91					
PC	641748.046	2678006.035							
CURVE			S 61°09'43.7" E	236.38	11°50'25.1"(RT)	05°00'00.0"	236.81	118.83	1145.92
PT	641634.030	2678213.105							
LINE			S 55°14'31.1" E	198.44					
PC	641520.897	2678376.137							
CURVE			S 58°51'42.7" E	184.72	07°14'23.1"(LT)	03°55'00.0"	184.84	92.55	1462.87
PT	641425.377	2678534.244							
LINE			N 62°28'57.1" W	0.00					
PC	641425.377	2678534.244							
CURVE			S 67°17'23.4" E	88.31	09°36'58.2"(LT)	10°52'34.3"	88.41	44.31	526.80
PT	641391.283	2678615.708							
LINE			S 72°05'52.5" E	32.45					
PC	641381.309	2678646.583							
CURVE			S 75°48'27.1" E	116.46	07°25'09.2"(LT)	06°21'58.3"	116.54	58.35	900.00
PT	641352.756	2678759.487							
LINE			S 79°31'01.7" E	250.61					
POT	641307.160	2679005.910							

NOTES:

1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

This 16th day of JULY, 2026.

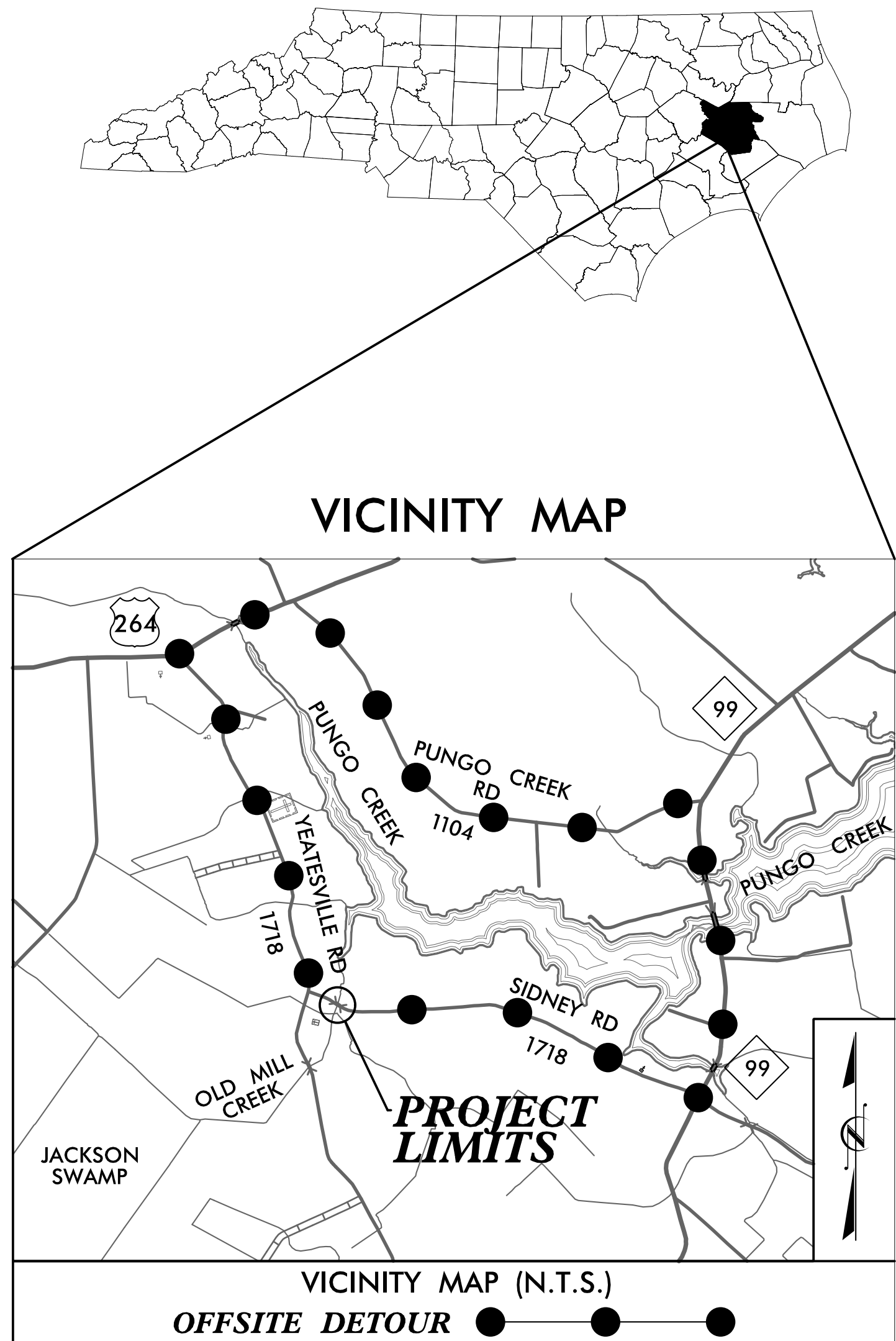
Professional Land Surveyor L-3996



1. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN
BEAUFORT COUNTY



LOCATION: REPLACE BRIDGE NO.131 OVER OLD MILL CREEK ON
SR 1718 (SIDNEY RD)

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

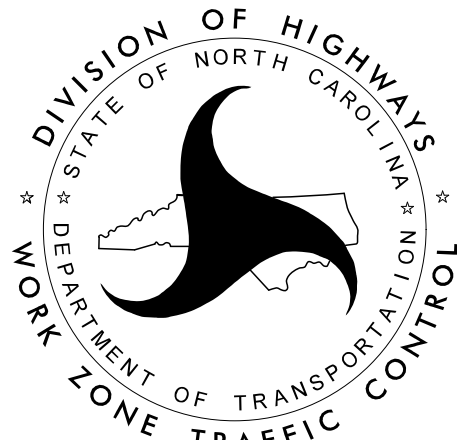
PLANS PREPARED BY: HNTB

H. SHYU, P.E.
PROJECT ENGINEER

G. RODRIGUEZ, E.I.T.
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

C. H. MEYER, P.E.
PROJECT MANAGER



INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY, INDEX OF SHEETS, LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-2	GENERAL NOTES, PHASING, AND DETOUR
TMP-2A	TEMPORARY SIGN DESIGN

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY
STANDARD DRAWINGS" CONTRACT STANDARDS AND DEVELOPMENT UNIT
- N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C. DATED
JAN 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
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY

LEGEND

GENERAL

NORTH ARROW

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

STATIONARY SIGN

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

HNTB

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St.
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

APPROVED:
DATE: 7/17/2026

SEAL

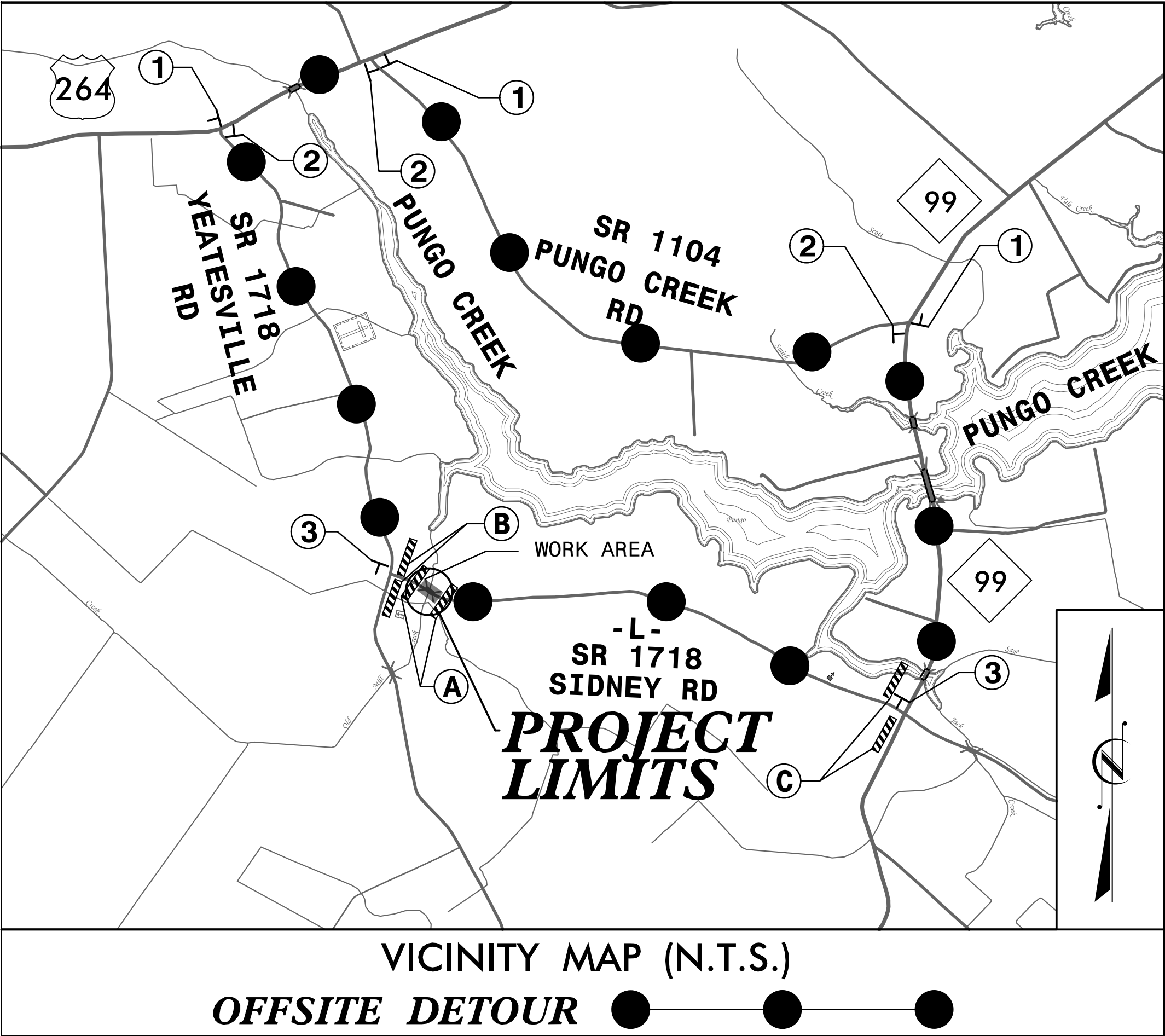


SHEET NO.

TMP-1

BP2-R015

TIP PROJECT:



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 THE DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATIONS MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- 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 ON THIS SHEET.

- 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 DETUR 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.

PAVEMENT MARKING AND MARKERS

- G) STATE FORCES WILL INSTALL MARKINGS AND MARKERS ON THE FINISHED PROJECT.
- H) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- I) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS.
- J) PASSING ZONE WILL BE DETERMINED IN THE FIELD AND MUST BE APPROVED BY THE ENGINEER.

MISCELLANEOUS

- K) COORDINATION WITH BEAUFORT COUNTY EMERGENCY SERVICES AND LOCAL SCHOOLS IS RECOMMENDED BEFORE CONSTRUCTION BEGINS TO ENSURE IMPACTS TO EMERGENCY SERVICES ROUTES AND SCHOOLS BUS ROUTES ARE MINIMIZED TO THE EXTENT PRACTICABLE.

PHASING

PHASE I

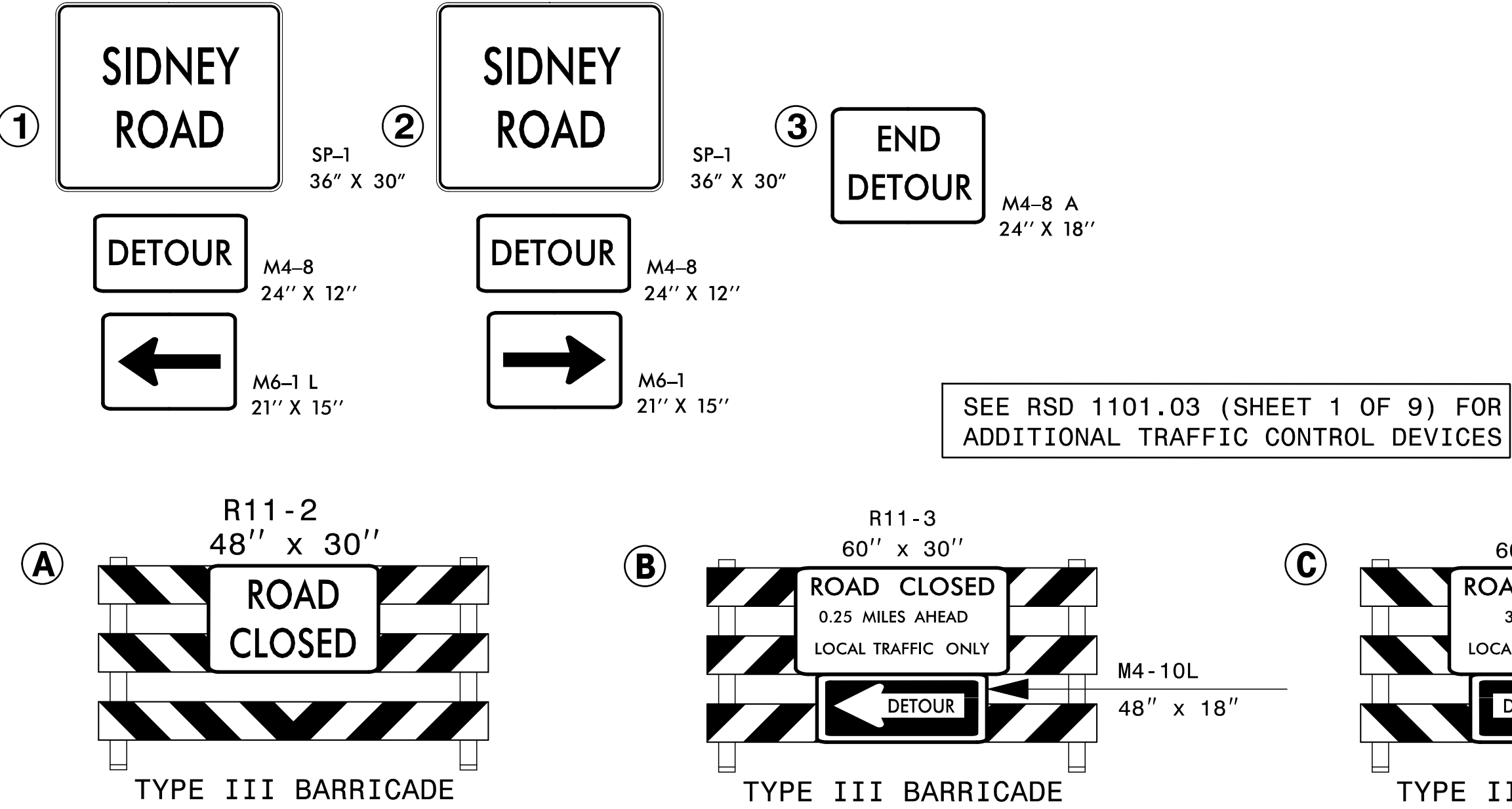
PRIOR TO ANY CONSTRUCTION OPERATIONS, PLACE AND COVER OFF-SITE DETOUR SIGNS AS SHOWN ON THIS SHEET AND IN ACCORDANCE WITH RSD 1101.03 (SHEETS 1 OF 9).

PHASE II

UNCOVER DETOUR SIGNS, CLOSE -L- (SR 1718 / SIDNEY RD) TO TRAFFIC AND CONSTRUCT PROPOSED BRIDGE AND ROADWAY UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE.

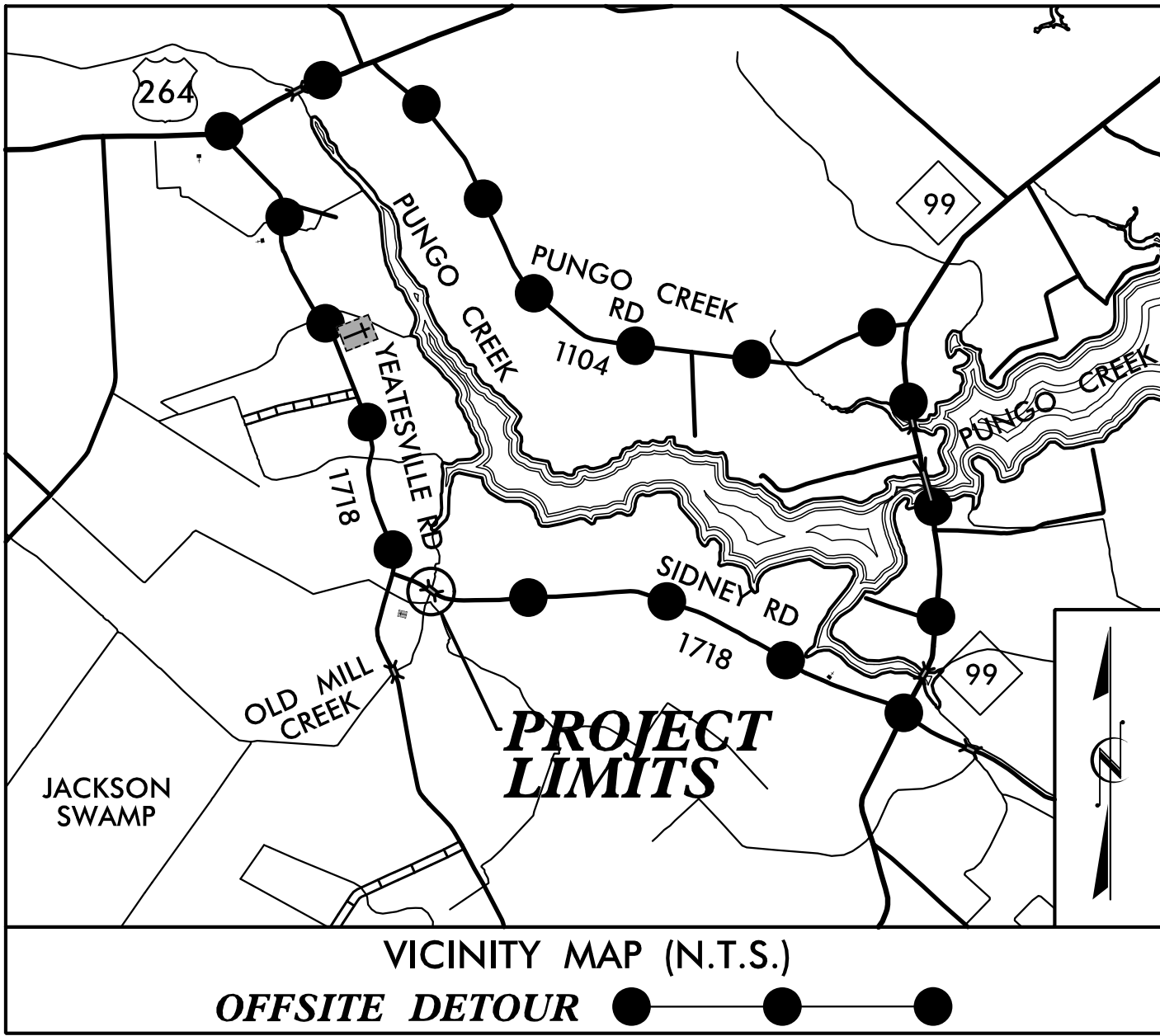
PHASE III

UPON COMPLETION OF BRIDGE AND ROADWAY, PLACE FINAL PAVEMENT MARKINGS AND MARKERS IN ACCORDANCE WITH RSD 1205.01, 1205.02, 1205.12, 1250.01 AND 1251.01. REMOVE BARRICADES AND DETOUR SIGNS AND OPEN -L- (SR 1718 / SIDNEY RD) TO TRAFFIC.



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP2-R015	EC-1	
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	

TIP PROJECT: BP2-R015



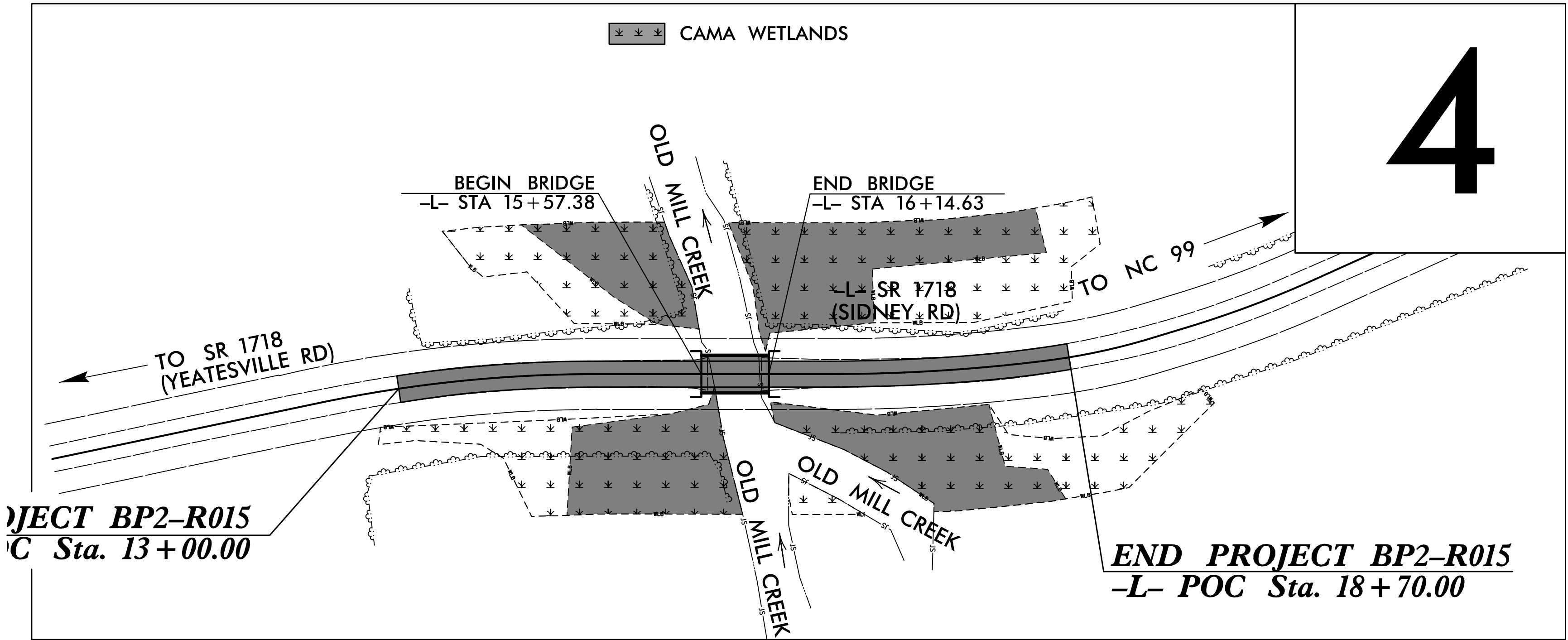
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

BEAUFORT COUNTY

LOCATION: REPLACE BRIDGE NO.131 OVER OLD MILL CREEK ON
SR 1718 (SIDNEY RD)

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

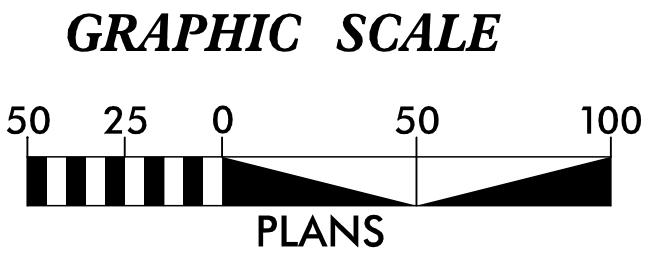


THIS PROJECT CONTAINS
EROSION CONTROL PLANS
FOR CLEARING AND
GRUBBING PHASE OF
CONSTRUCTION.

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

Refer To E. C. Special Provisions
for Special Considerations.



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL STORMWATER CONSTRUCTION PERMIT
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF
ENVIRONMENTAL QUALITY DIVISION OF ENERGY,
MINERAL AND LAND RESOURCES.

HNTB

HNTB

HNTB NORTH CAROLINA, P.C.
4000 Center at North Hills St.
Suite 500
Raleigh, North Carolina 27609
NC License No: C-1554

Designed by:

NATALIE CHAN, P.E.
NAME

3444
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

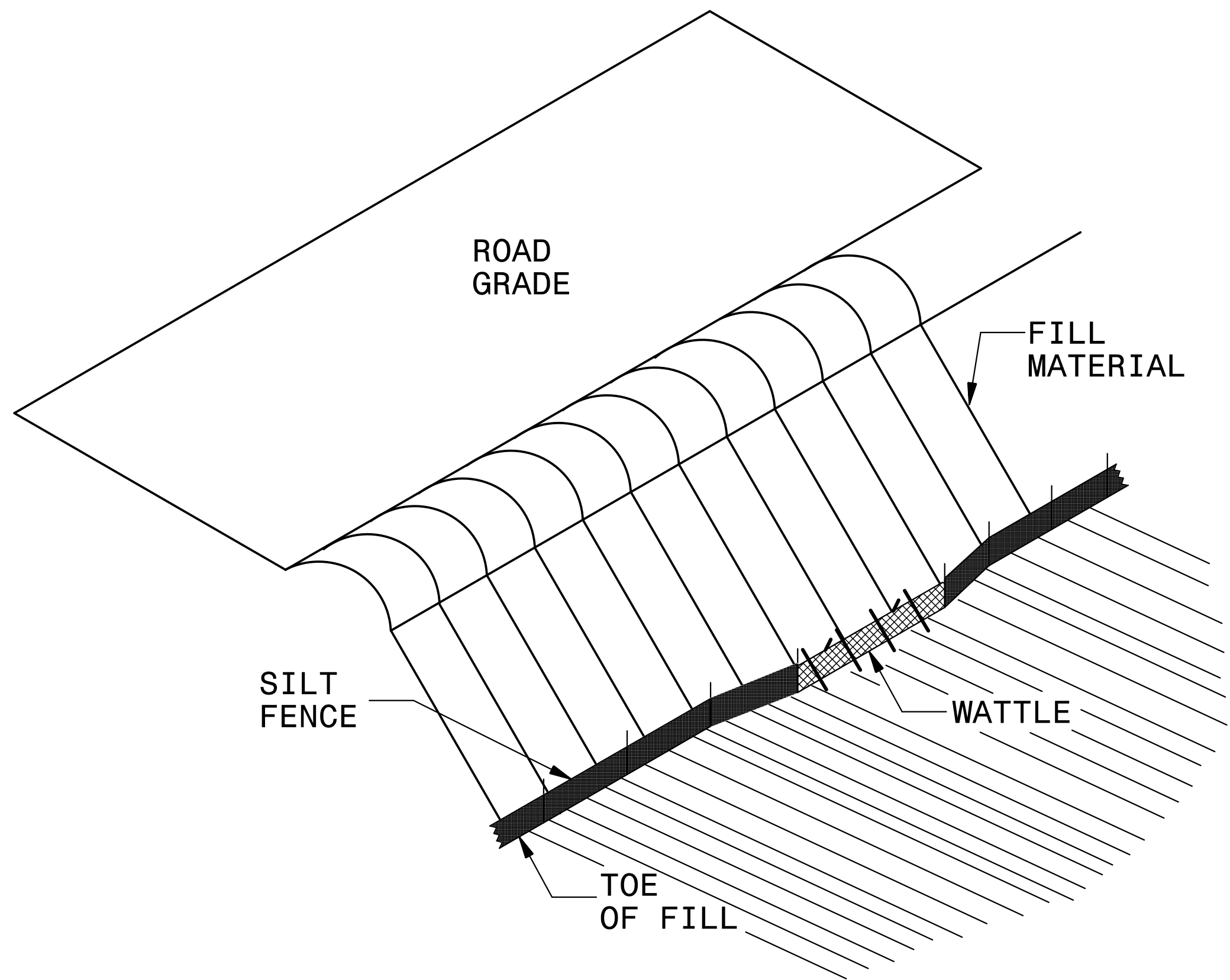
PROJECT REFERENCE NO.	SHEET NO.
BP2-R015	EC-2
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

EROSION & SEDIMENT CONTROL LEGEND

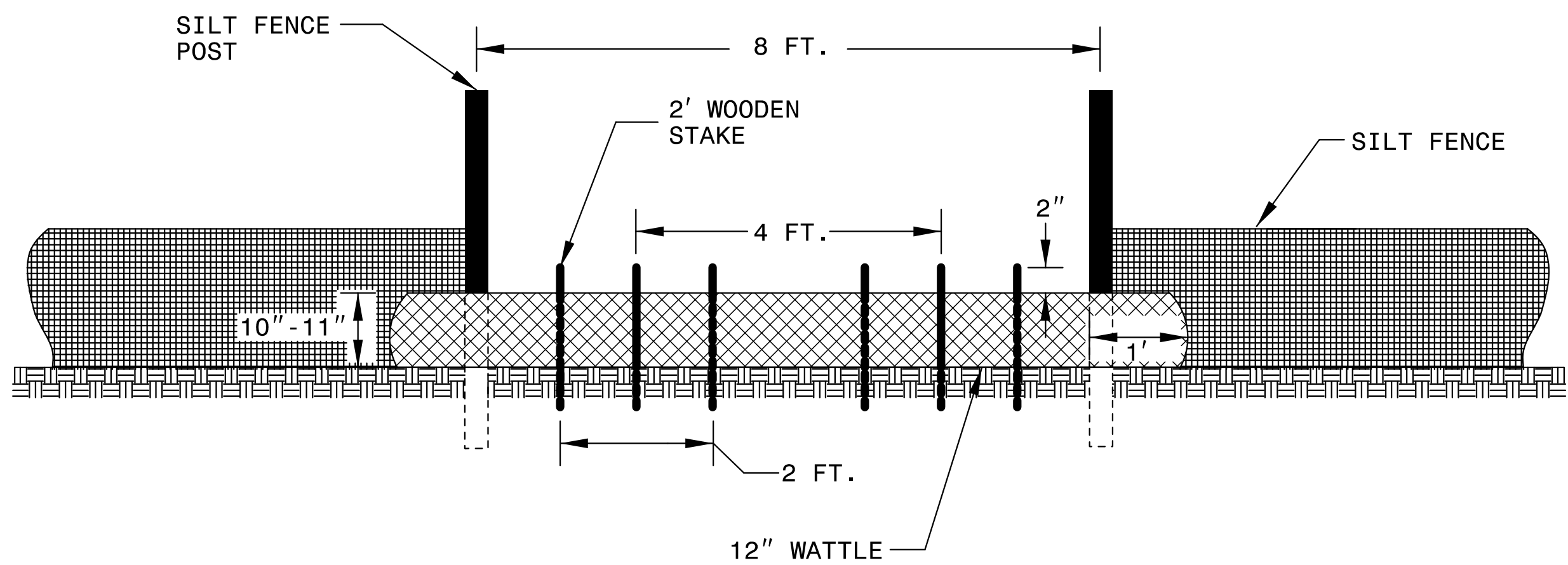
Std. #	Description	Symbol	Std. #	Description	Symbol
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior 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				

SILT FENCE COIR FIBER WATTLE BREAK DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BP2-R015	EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



ISOMETRIC VIEW



VIEW FROM SLOPE

NOTES:

USE MINIMUM 12 IN. DIAMETER COIR FIBER (COCONUT FIBER) WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

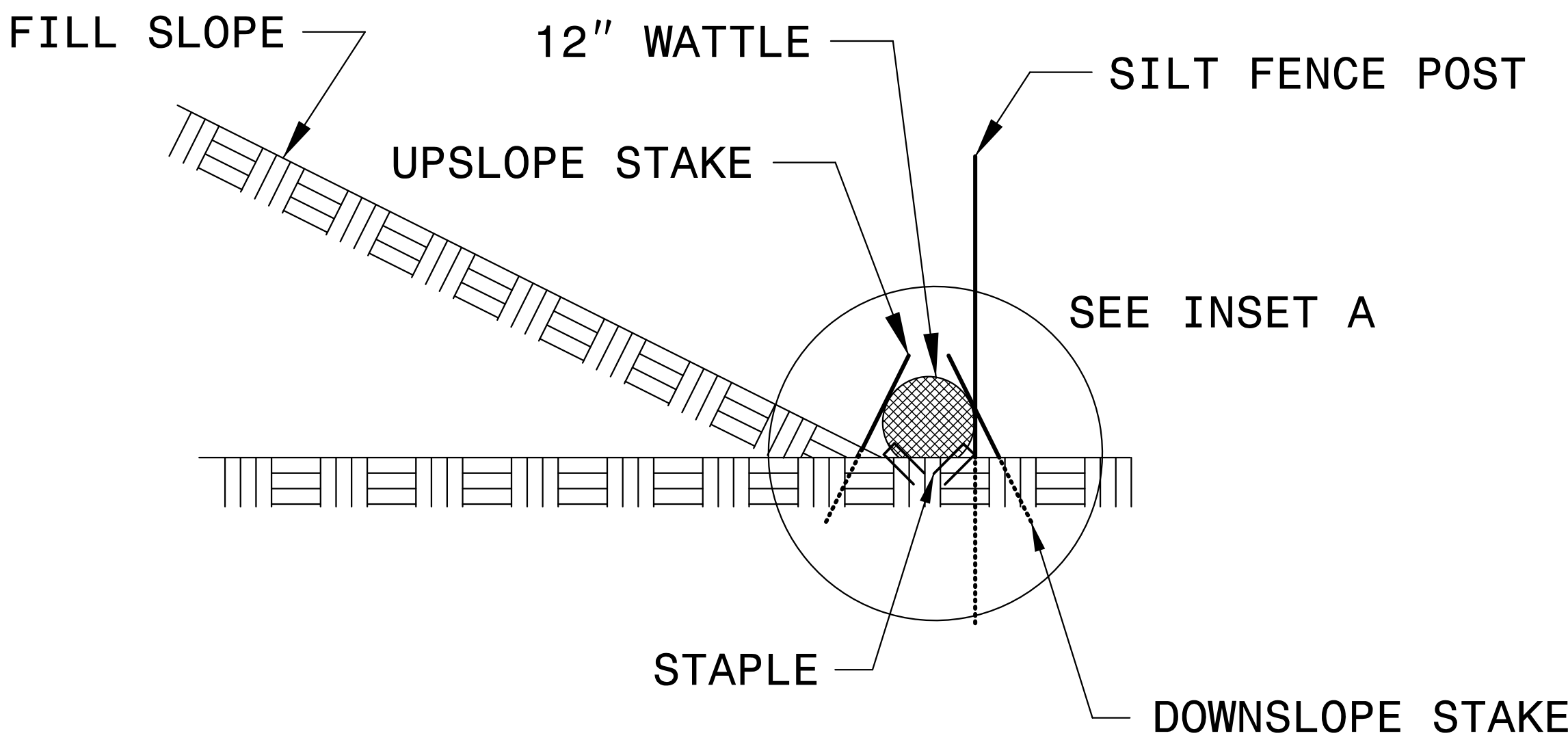
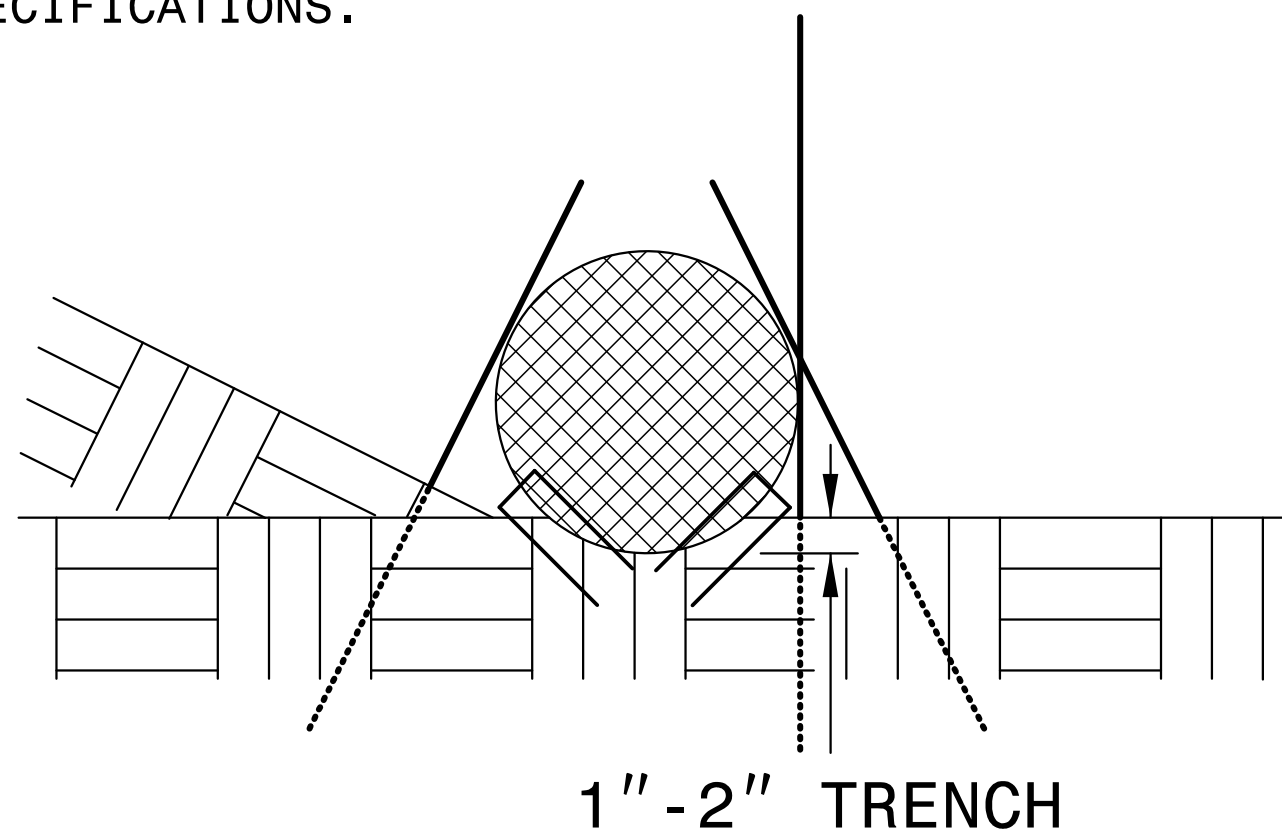
PROVIDE STAPLES MADE OF 11 GAUGE STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 6" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.

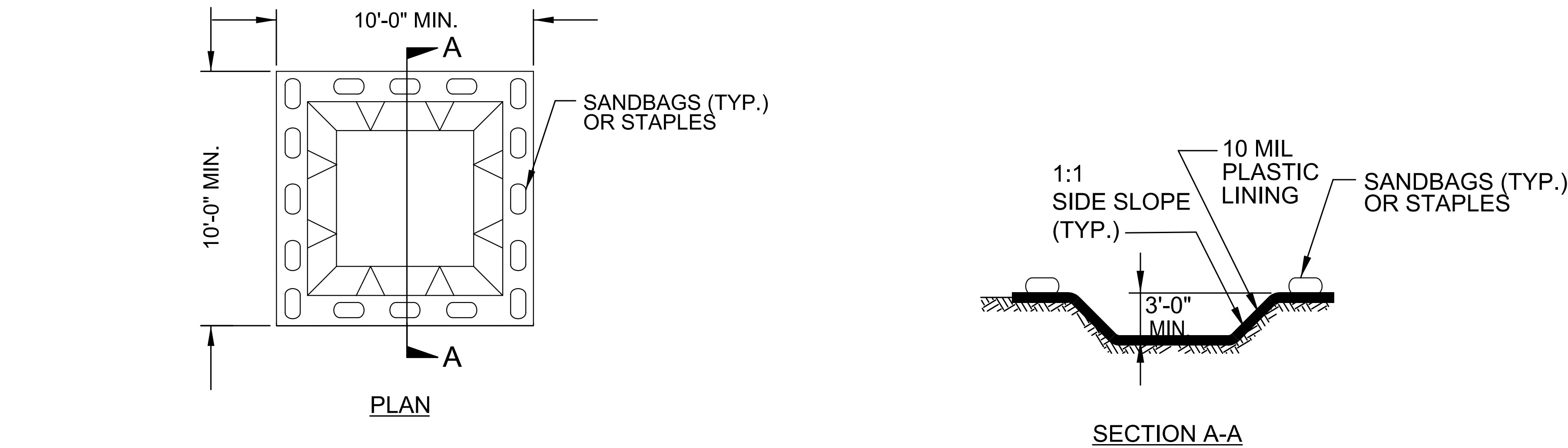
INSET A



SIDE VIEW

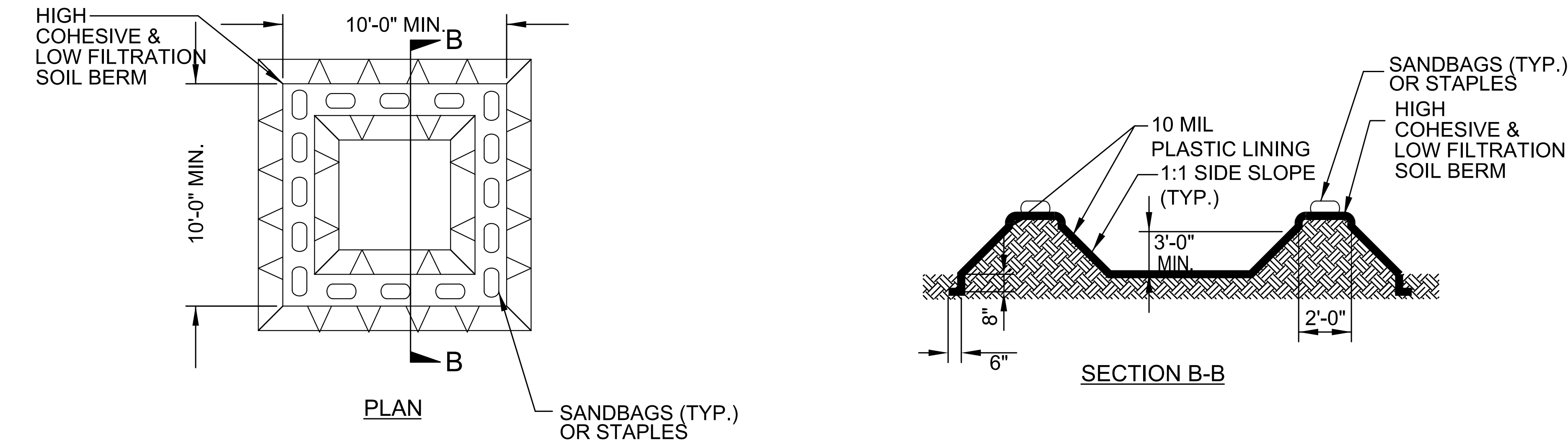
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
BP2-R015	EC-2B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



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.

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 TO 4:1	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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.	SHEET NO.
<i>BP2-R015</i>	<i>EC-3A</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

SOIL STABILIZATION SUMMARY SHEET

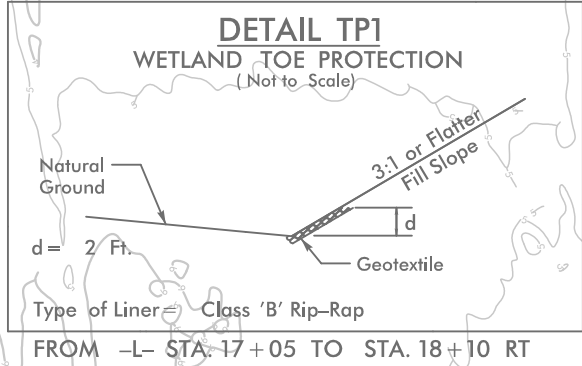
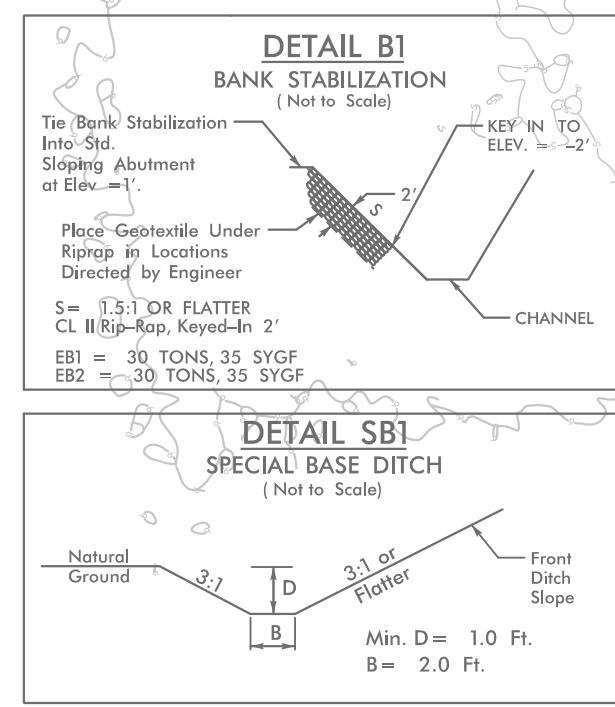
MATTING FOR EROSION CONTROL

[illegible]

MATTING FOR EROSION CONTROL

[illegible]

8/17/99



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

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

BEGIN PROJECT BP2-R015
-L- POC Sta. 13+00.00

-L- PC Sta. 12+31.91

-L- POT Sta. 10+00.00

NOTES:

1. ALL RIP RAP SHALL BE GRANITE RIP RAP.
 2. FOR STATION RANGES OF ROCK PLATING, SEE SHEET 3G-1.
 3. ALL STRUCTURE ANCHOR UNITS ARE TYPE III.
- FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-14

CAMA WETLANDS

ALTON PARKER

CL II RIPRAP
TO SHOULDER (TYP.)
(STRUCTURES PAY ITEM)

BEGIN BRIDGE
-L- STA 15+57.38

BEGIN APPROACH SLAB
-L- STA 15+46.50

IMPERVIOUS DIKE

FLOATING
TURBIDITY
CURTAIN

EX. BRIDGE #060131
TO BE REMOVED

END BRIDGE
-L- STA 16+14.63

END APPROACH SLAB
-L- STA 16+25.50

-L- PC Sta. 19+72.86

-L- PT Sta. 19+40.41

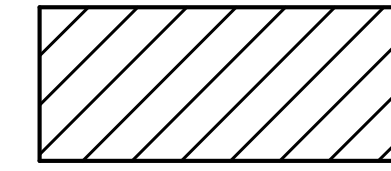
-L- PT Sta. 20+89.40

END PROJECT BP2-R015
-L- POC Sta. 18+70.00

-L- PCC Sta. 18+52.00

- NOTES: 1. THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.
2. THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

NOTE: NYLON MESH MATTING SHOULD NOT BE USED
WITHIN 25 FT OF TOP OF STREAM BANK.



ENVIRONMENTALLY SENSITIVE AREA
SEE PROJECT SPECIAL PROVISIONS

LEFT DITCH

-L-

BEGIN GRADE
-L- STA. 13+00.00
ELEV. = 6.79'

PI = 14+25.00
EL = 7.18'
K = 292
VC = 180'

BEGIN BRIDGE
-L- STA. 15+57.38

END BRIDGE
-L- STA. 16+14.63

PI = 17+25.00
EL = 6.28'
K = 269
VC = 180'

END GRADE
-L- STA. 18+70.00
ELEV. = 6.82'

BEGIN SPECIAL
BASE DITCH
STA -L- 13+00 (LT)
ELEV = 4.08'

END SPECIAL
BASE DITCH
STA -L- 14+00 (LT)
ELEV = 3.00'

EXCAVATE TO EL = 1.0'
MATERIAL TO BE REMOVED

EXCAVATE TO EL = 1.0'
MATERIAL TO BE REMOVED

1.5:1 SLOPE (TYP.)
NORMAL TO CAP
(CL II RIP RAP)
(STRUCTURES PAY ITEM)

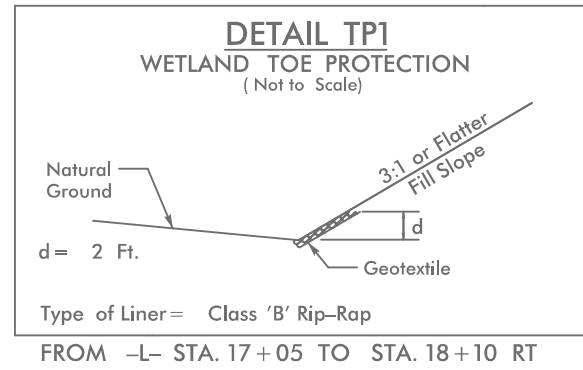
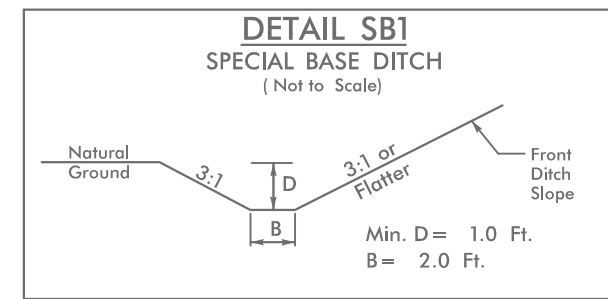
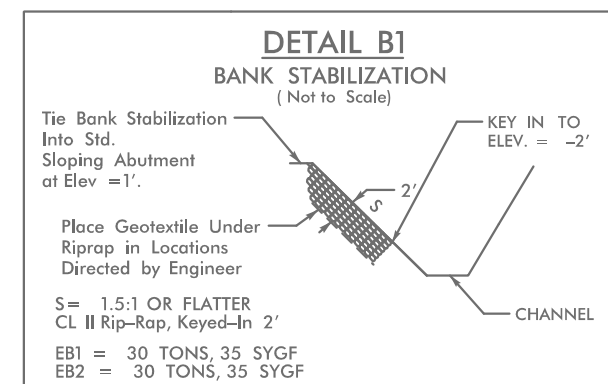
1.5:1 SLOPE OR FLATTER
CL II RIP RAP FOR
BANK STABILIZATION (TYP.)
(KEYED IN 2.0' TO
BANK EL. = -2')

WS EL = 0.33'
ON 06-30-2022
EX. BRIDGE #060131 TO BE REMOVED

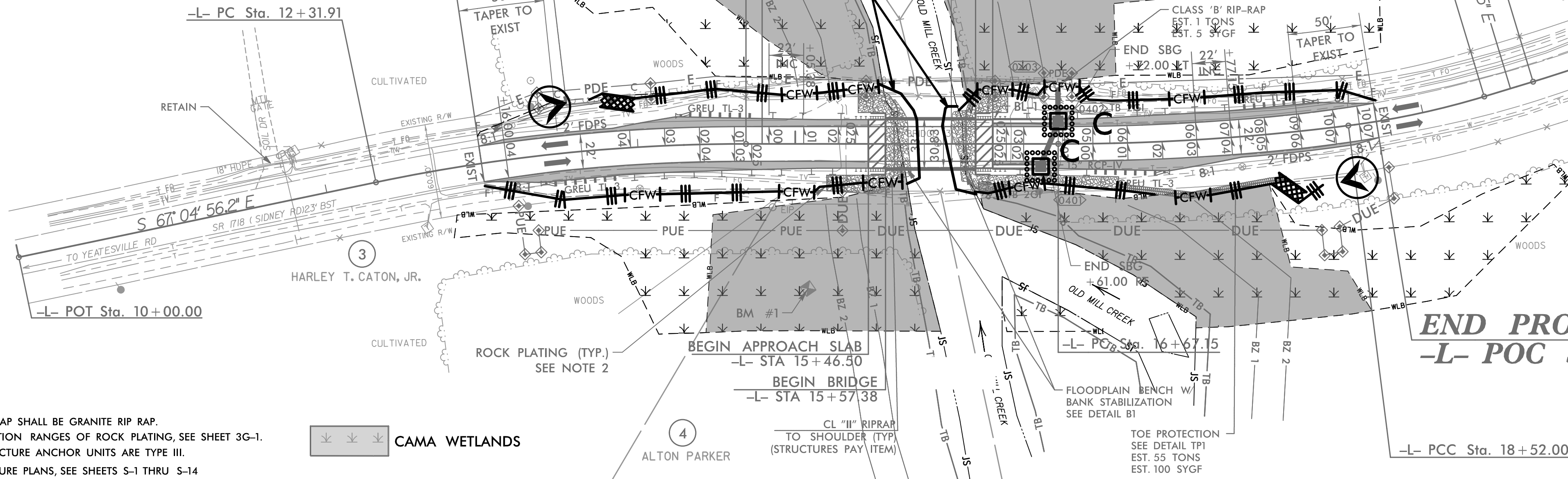
BM #1
-L- 15+08.21, 91.83' RT
ELEV. = 1.39'
BENCH NAIL IN BASE OF 24" CYPRESS

BRIDGE HYDRAULIC DATA		
-L- 15+86		
DRAINAGE AREA	= 659	SQ MI
DESIGN DISCHARGE	= 800	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 17	FT
BASE DISCHARGE	= 1200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 26	FT
OVERTOPPING DISCHARGE	= 3345	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 6.45	FT
DATE OF SURVEY	= 6-30-2022	
W.S. ELEVATION		
AT DATE OF SURVEY	= 0.3	FT

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00



BEGIN PROJECT BP2-R015
-L- POC Sta. 13+00.00



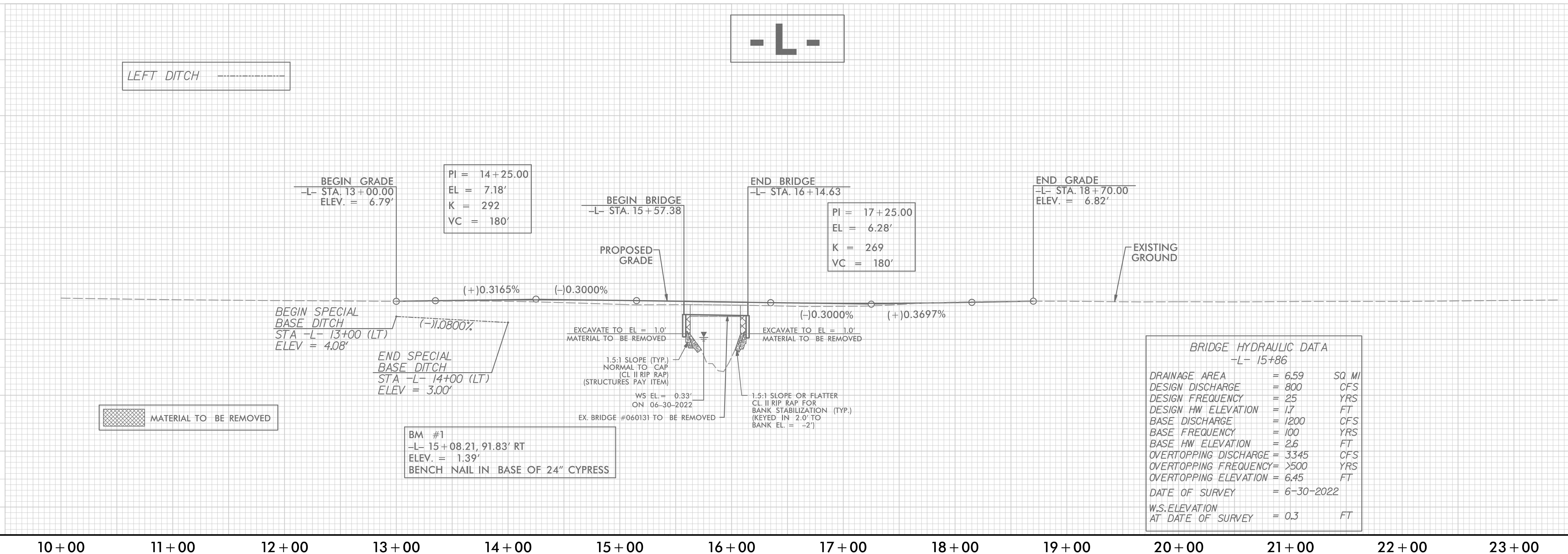
- NOTES:**
1. ALL RIP RAP SHALL BE GRANITE RIP RAP.
 2. FOR STATION RANGES OF ROCK PLATING, SEE SHEET 3G-1.
 3. ALL STRUCTURE ANCHOR UNITS ARE TYPE III.
- FOR STRUCTURE PLANS, SEE SHEETS S-1 THRU S-14

CAMA WETLANDS

END PROJECT BP2-R015
-L- POC Sta. 18+70.00

- NOTES:**
1. THE CONTRACTOR SHALL INSTALL SPECIAL SEDIMENT CONTROL FENCE OR WATTLES IN LOW AREAS OF SILT FENCE AND UNDER THE BRIDGE, AS NEEDED OR DIRECTED BY THE ENGINEER.
 2. THE OUTSIDE BUFFER, WETLAND OR WATER BOUNDARY SHALL BE CLEARLY MARKED BY HIGHLY VISIBLE FENCING (ORANGE SAFETY FENCE).

NOTE: NYLON MESH MATTING SHOULD NOT BE USED WITHIN 25 FT OF TOP OF STREAM BANK.

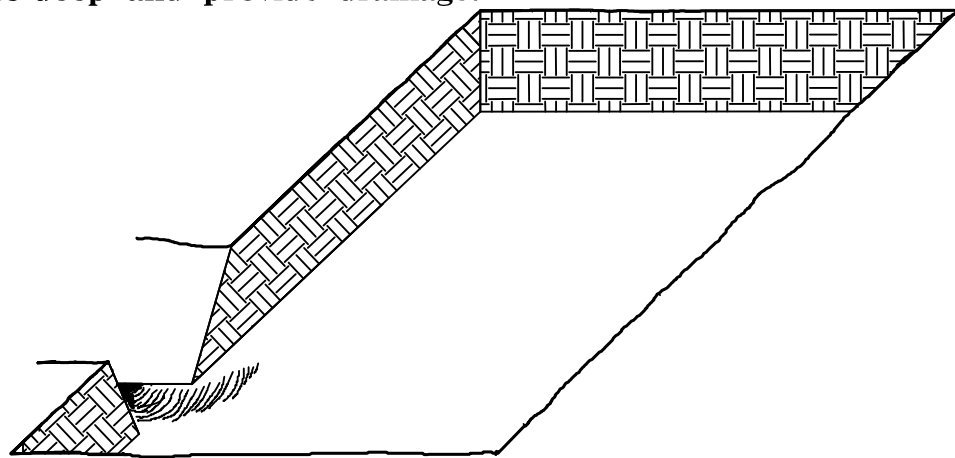


BRIDGE HYDRAULIC DATA		
-L- 15+86		
DRAINAGE AREA	= 659	SQ. MI
DESIGN DISCHARGE	= 800	CFS
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DESIGN HW ELEVATION	= 17	FT
BASE DISCHARGE	= 1200	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 26	FT
OVERTOPPING DISCHARGE	= 3345	CFS
OVERTOPPING FREQUENCY	= >500	YRS
OVERTOPPING ELEVATION	= 6.45	FT
DATE OF SURVEY	= 6-30-2022	
W.S. ELEVATION		
AT DATE OF SURVEY	= 0.3	FT

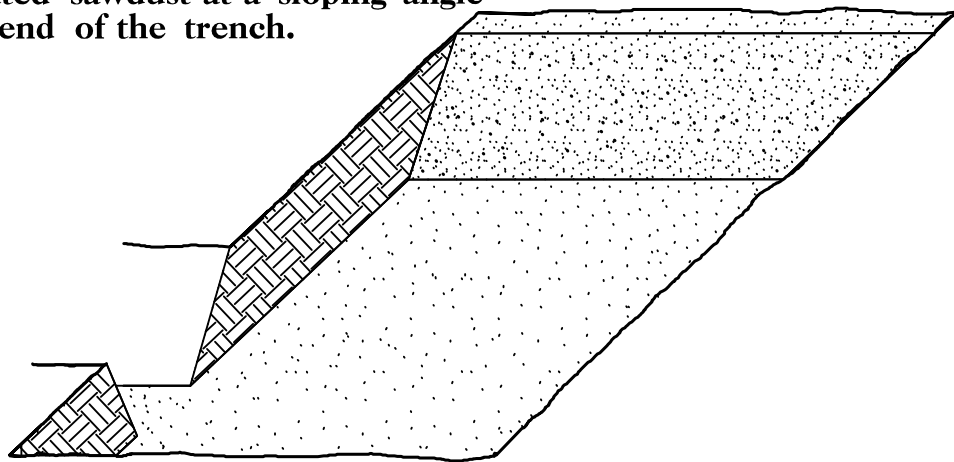
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

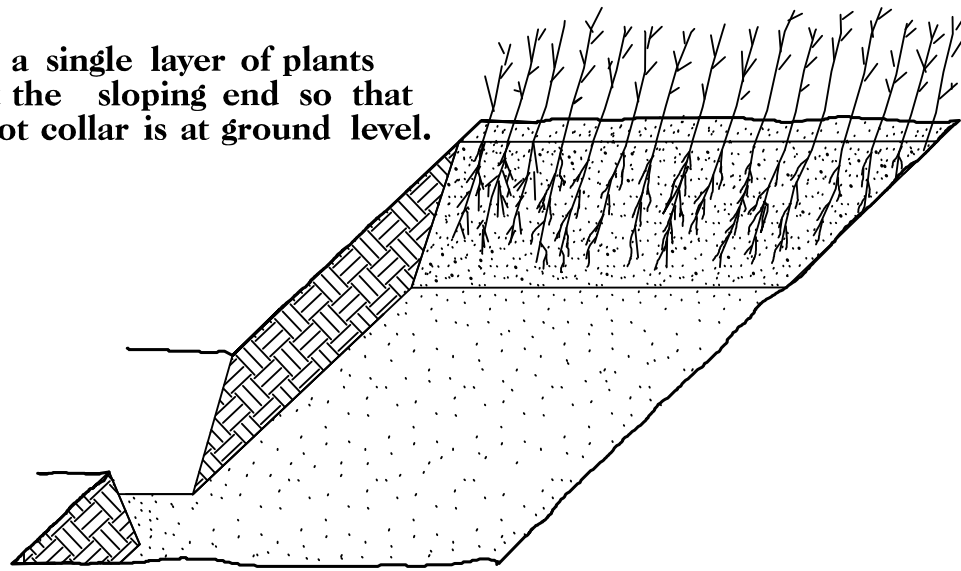
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



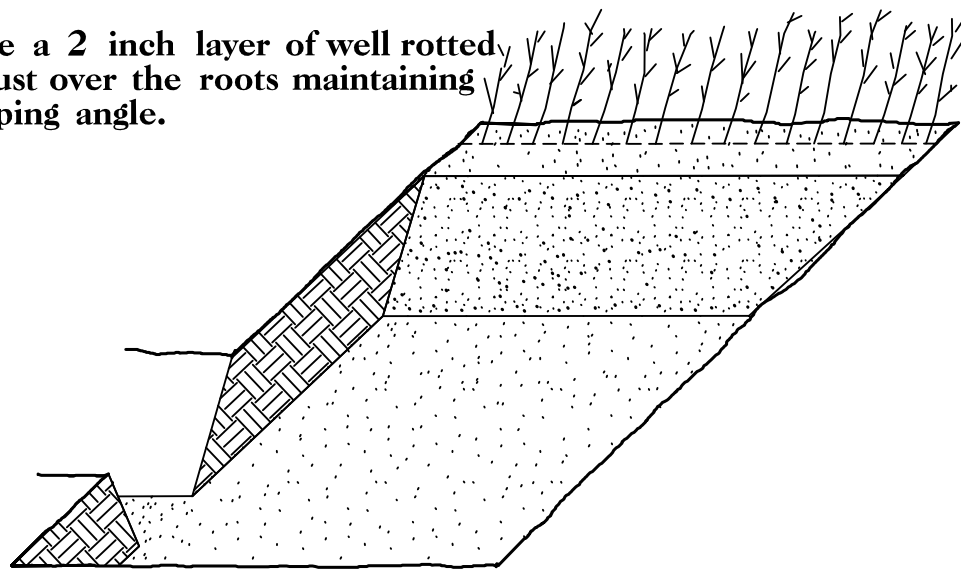
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

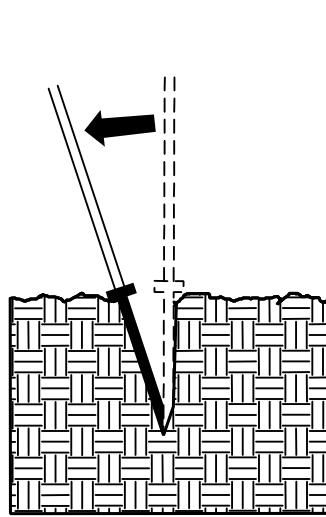


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

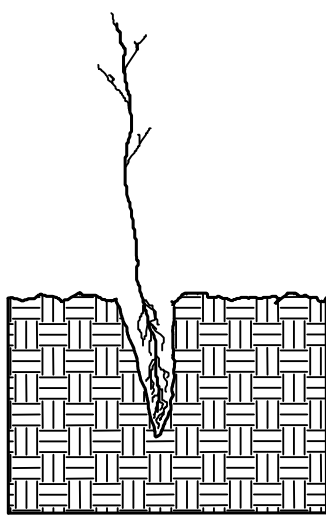


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

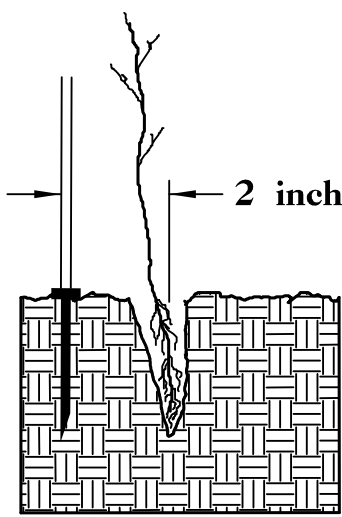
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



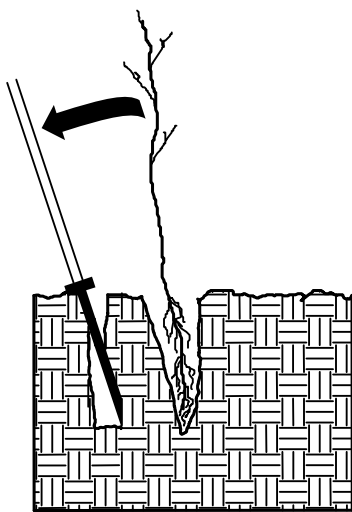
1. Insert planting bar as shown and pull handle toward planter.



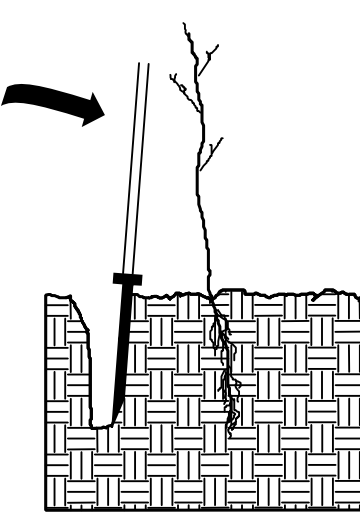
2. Remove planting bar and place seedling at correct depth.



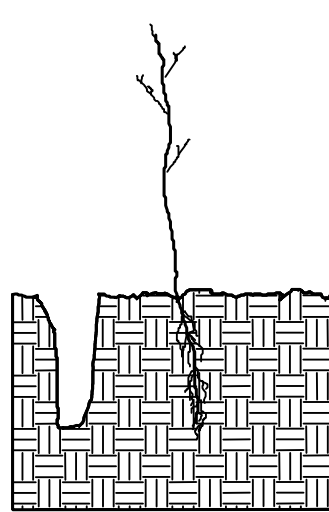
3. Insert planting bar 2 inches toward planter from seedling.



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



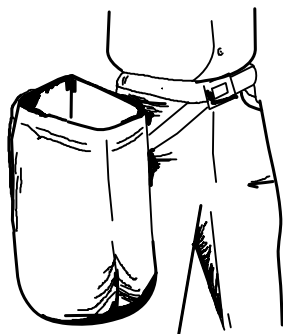
5. Push handle forward firming soil at top.



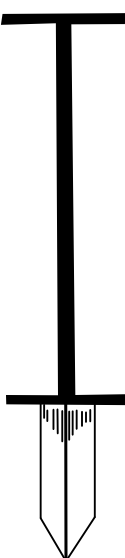
6. Leave compaction hole open. Water thoroughly.

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

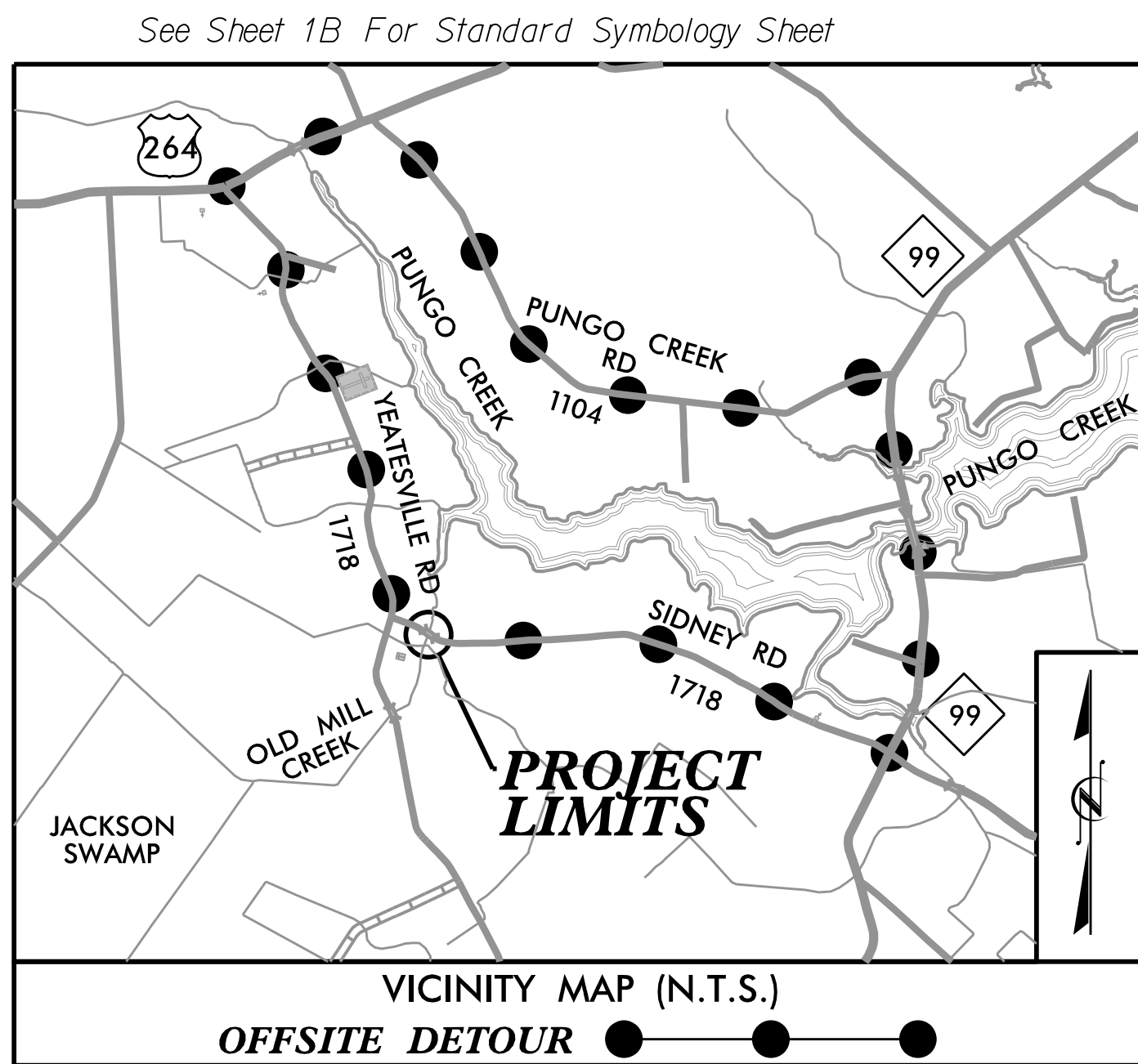
REFORESTATION DETAIL SHEET

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

6/18/2026
\\wse03\local\wse\Projects\NC\HNTB\Division 2\ENG22-044\BP2.R015.LBR-131_Beaufort\Utilities\Coordination\Uo0\BP2R015_ut_tsh_uo0L.psh.dgn
9:38:51 AM

09/08/99

TIP PROJECT: BP2-R015



DESIGN RECOMMENDATION
PLAN SET

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

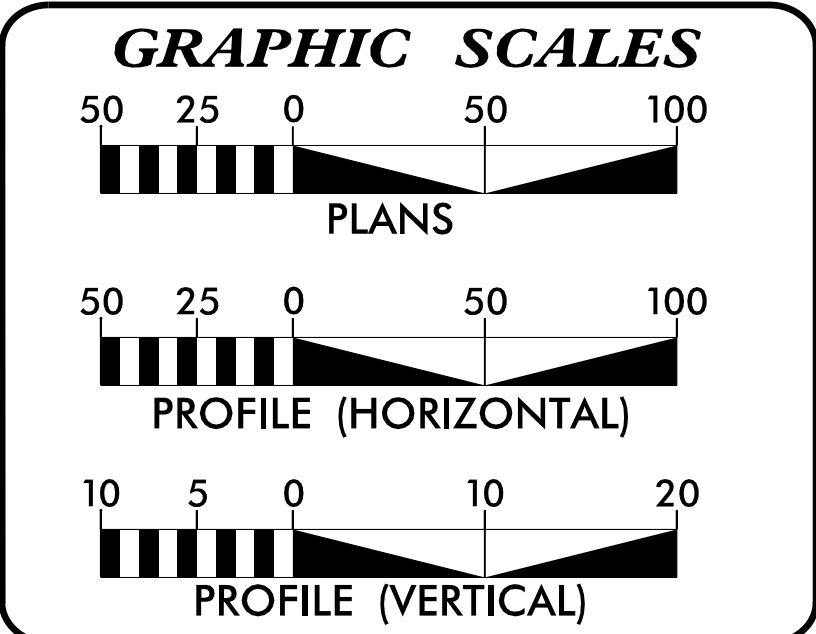
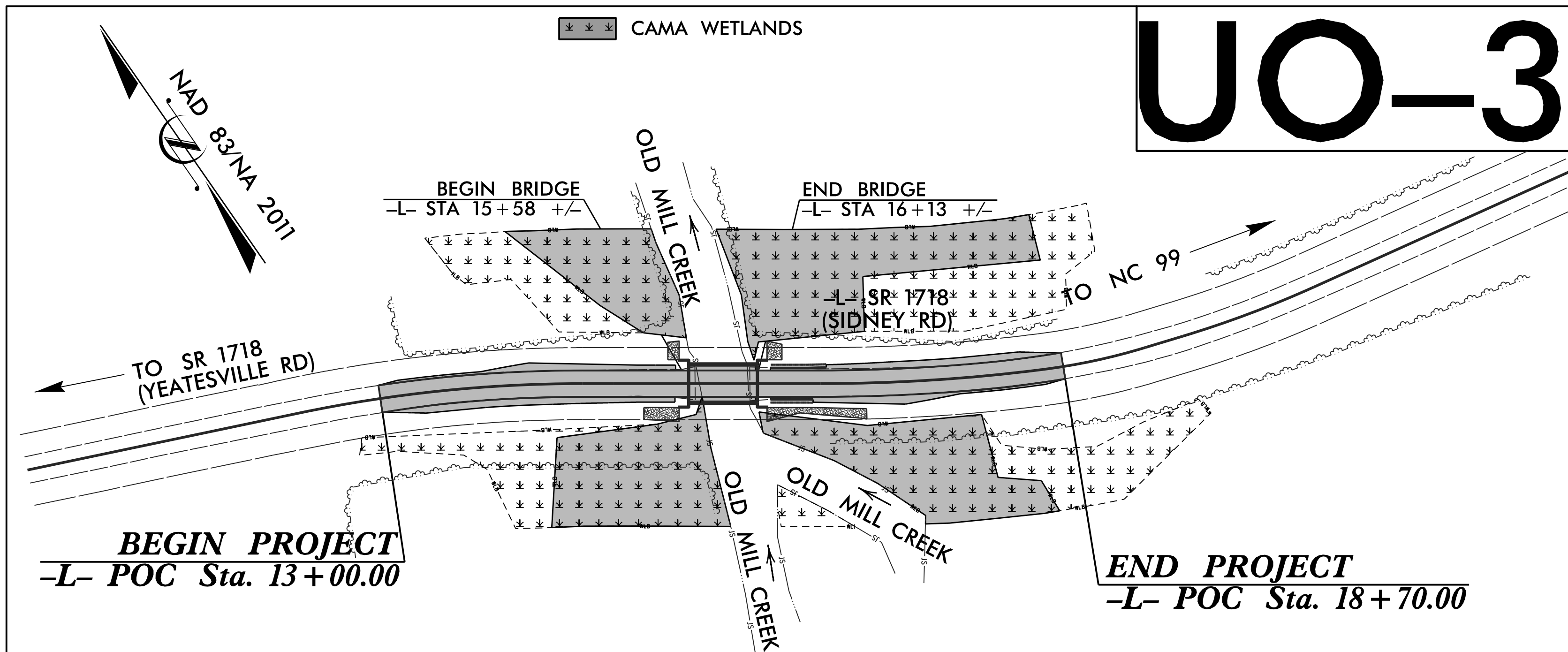
UTILITIES BY OTHERS PLANS
BEAUFORT COUNTY

LOCATION: REPLACE BRIDGE NO.131 OVER OLD
MILL CREEK ON SR 1718 (SIDNEY RD)

TYPE OF WORK: UTILITY RELOCATION

T.I.P. NO.	SHEET NO.
BP2-R015	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.



SHEET NO.:	DESCRIPTION:
UO-1	TITLE SHEET
UO-2	SYMBOLGY
UO-3	UBO PLAN SHEETS

UTILITY OWNERS WITH CONFLICTS
(A) POWER - TIDELAND EMC (B) COMMUNICATIONS - RIVERSTREET NETWORKS

PREPARED IN THE OFFICE OF:
Weston & Sampson SM WSE of North Carolina, PC 2052 Energy Drive Phone: 919.297.0220
NC License: C-4847 Apex, NC 27502 westonandsampson.com
JIM FORBES D. VONDENHUEVEL
PROJECT UTILITY COORD. MANAGER PROJECT UTILITY COORDINATOR PROJECT UTILITY ENGINEER

	DIVISION OF HIGHWAYS UTILITIES UNIT HIGHWAY DIVISION 2 2815 ROUSE ROAD EXTENSION KINGSTON, NC 28304 PHONE (252) 775-6100 FAX (252) 208-7862
CATHRINE A. MEYER, PE MICHAEL AMAN, PE DAVID KRAMER CHAD MILLS	DIVISION PROJECT ENGINEER DIVISION PROJECT MANAGER DIVISION UTILITY ENGINEER DIVISION UTILITY COORDINATOR

5/14/99

6/18/2026
2\ENC22-0441\B2\015.1.BR-131_Beaufort\Utilities\Coordination\Uo0\BP2R015.ut_tsh_uo01_psh.dgn
06/18/2026

REV: 2/1/2012

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROJECT REFERENCE NO.
BP2-R015

SHEET NO.
UO-2

Weston&Sampson

WSE of North Carolina, PC
2052 Energy Drive
Phone: 919.297.0220

NC
License:
C-4847
Apex, NC 27502
westonandsampson.com

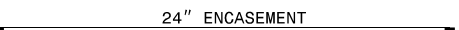
PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	
11¼ Degree Bend	
22½ Degree Bend	
45 Degree Bend	
90 Degree Bend	
Plug	
Tee	
Cross	
Reducer	
Gate Valve	
Butterfly Valve	
Tapping Valve	
Line Stop	
Line Stop with Bypass	
Blow Off	
Fire Hydrant	
Relocate Fire Hydrant	
Remove Fire Hydrant	
Water Meter	
Relocate Water Meter	
Remove Water Meter	
Water Pump Station	
RPZ Backflow Preventer	
DCV Backflow Preventer	
Relocate RPZ Backflow Preventer	
Relocate DCV Backflow Preventer	

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Telephone Pedestal	
Utility Line by Others (Type as Shown)	
Trenchless Installation	
Encasement by Open Cut	
Encasement	

Thrust Block	
Air Release Valve	
Utility Vault	
Concrete Pier	
Steel Pier	
Plan Note	
Pay Item Note	

NOTE

PAY ITEM

EXISTING UTILITIES SYMBOLS

Power Pole	
Telephone Pole	
Joint Use Pole	
Utility Pole	
Utility Pole with Base	
H-Frame Pole	
Power Transmission Line Tower	
Water Manhole	
Power Manhole	
Telephone Manhole	
Sanitary Sewer Manhole	
Hand Hole for Cable	
Power Transformer	
Telephone Pedestal	
CATV Pedestal	
Gas Valve	
Gas Meter	
Located Miscellaneous Utility Object	
Abandoned According to Utility Records	
End of Information	

*Underground Power Line	
*Underground Telephone Cable	
*Underground Telephone Conduit	
*Underground Fiber Optics Telephone Cable	
*Underground TV Cable	
*Underground Fiber Optics TV Cable	
*Underground Gas Pipeline	
Aboveground Gas Pipeline	
*Underground Water Line	
Aboveground Water Line	
*Underground Gravity Sanitary Sewer Line	
Aboveground Gravity Sanitary Sewer Line	
*Underground SS Forced Main Line	
Underground Unknown Utility Line	
SUE Test Hole	
Water Meter	
Water Valve	
Fire Hydrant	
Sanitary Sewer Cleanout	

*For Existing Utilities

Utility Line Drawn from Record (Type as Shown)

Designated Utility Line (Type as Shown)

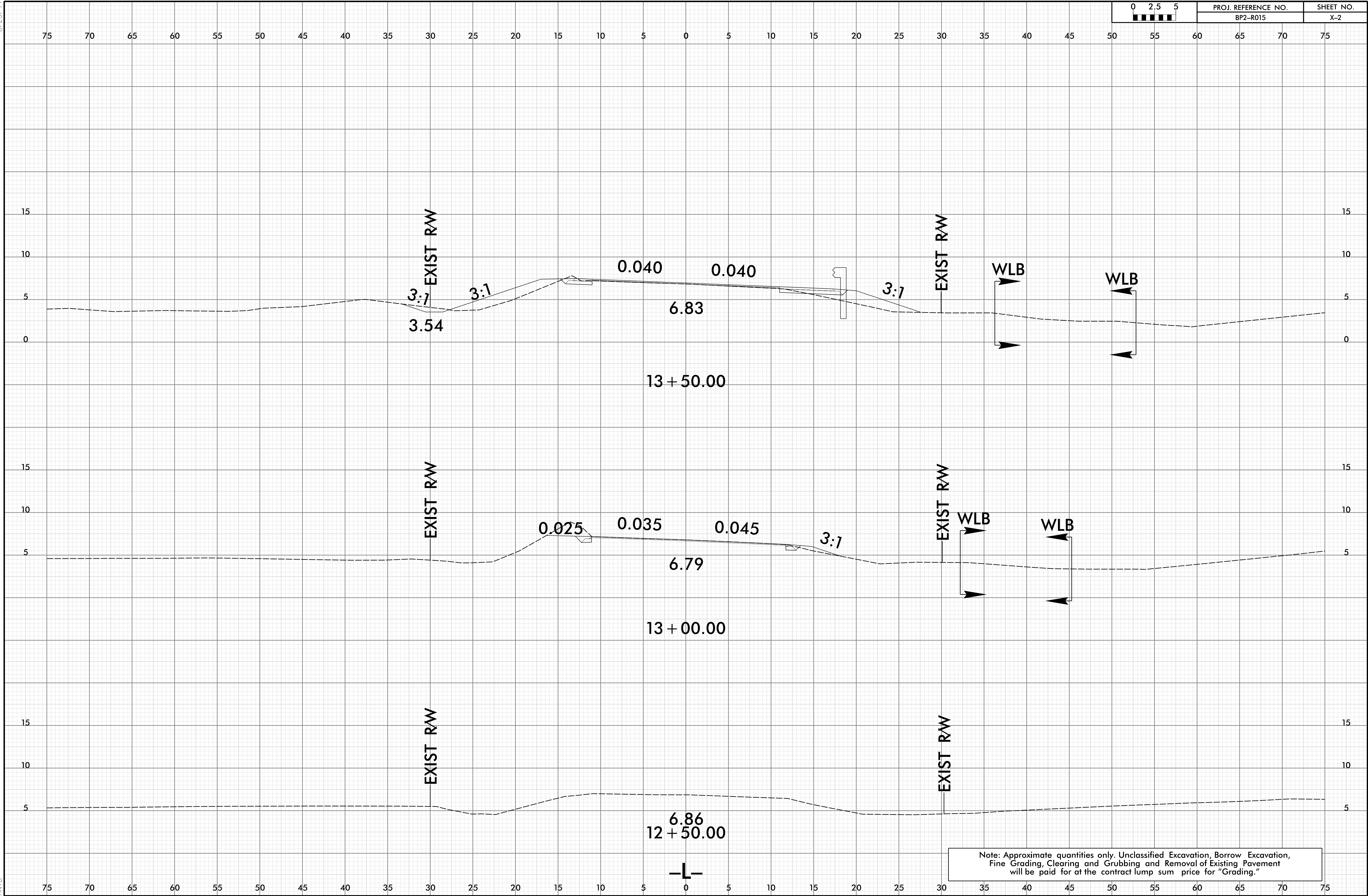
CROSS-SECTION SUMMARY

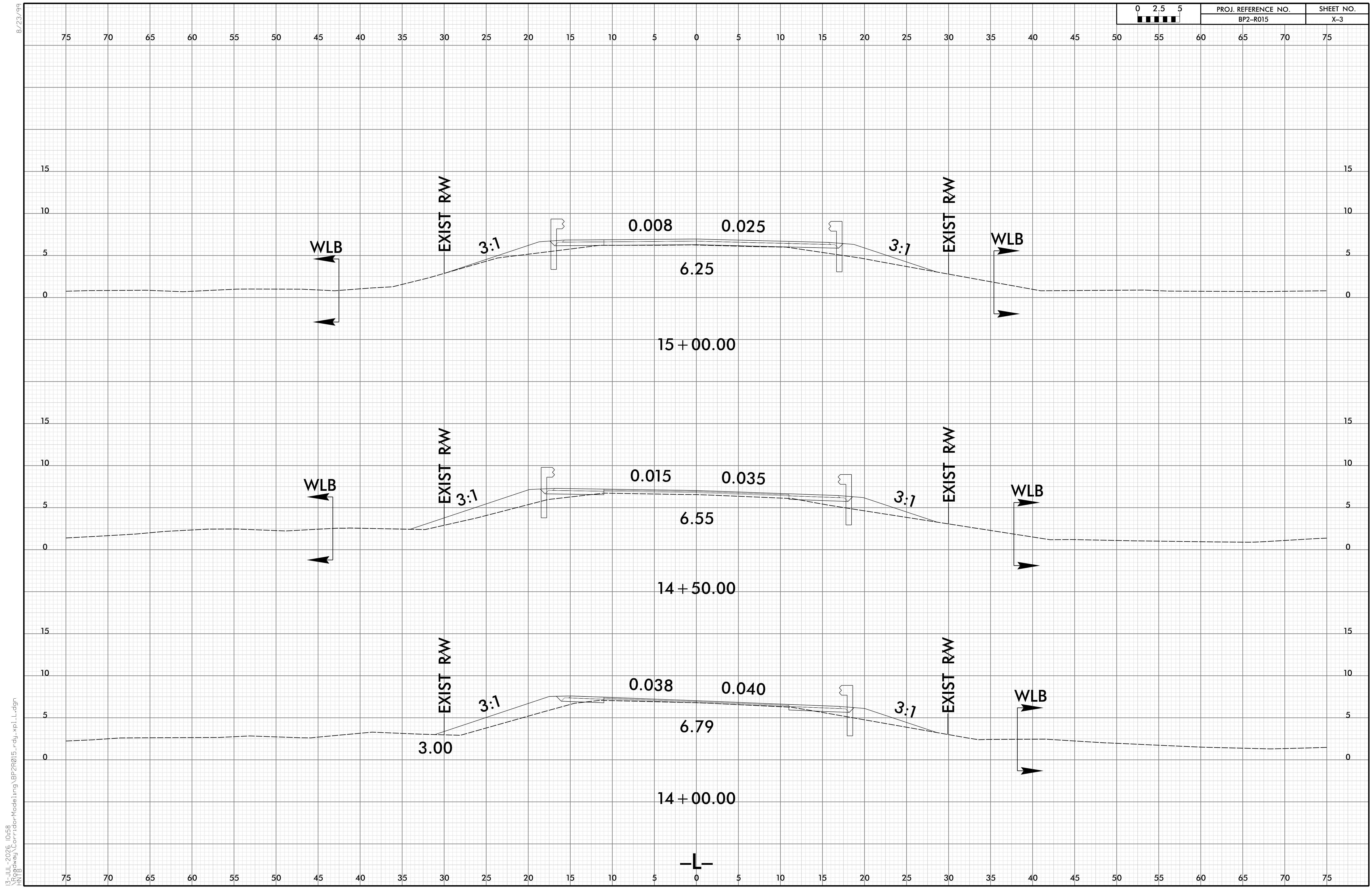
Approximate quantities only. Unclassified excavation, borrow excavation, fine grading, clearing and grubbing, and removal of existing pavement will be paid for at the lump sum price for "Grading".

NOTE: EMBANKMENT COLUMN DOES NOT INCLUDE BACKFILL FOR UNDERCUT.

PROJ. REFERENCE NO.	SHEET NO.
BP2-R015	X-1

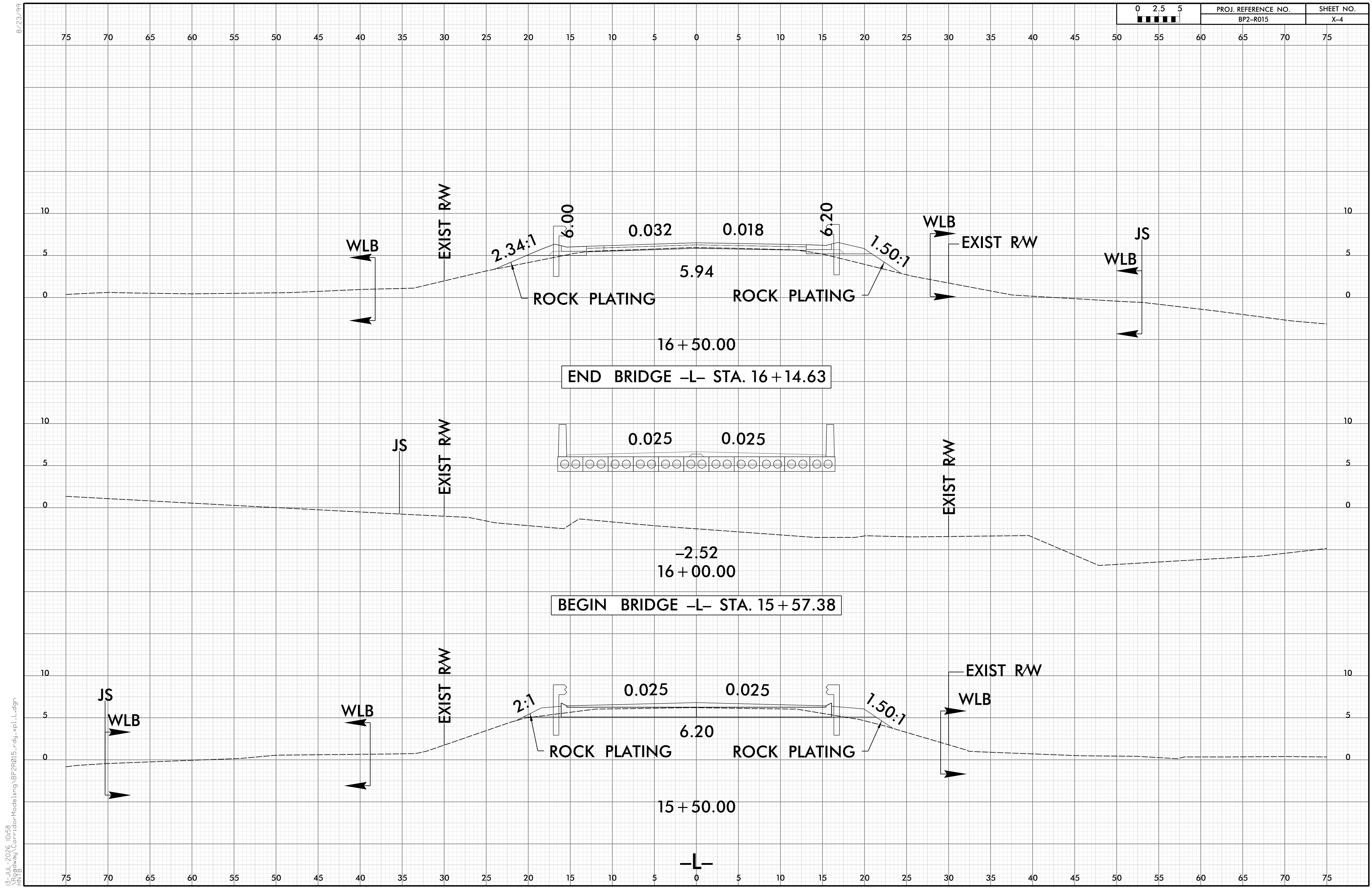
8/23/99
3-JUL-2026 10:58
\\Roadway\Corridor-Modeling\BP2R015-rdy_xpl_L.dgn
HNTB





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3-JUL-2026 10:58
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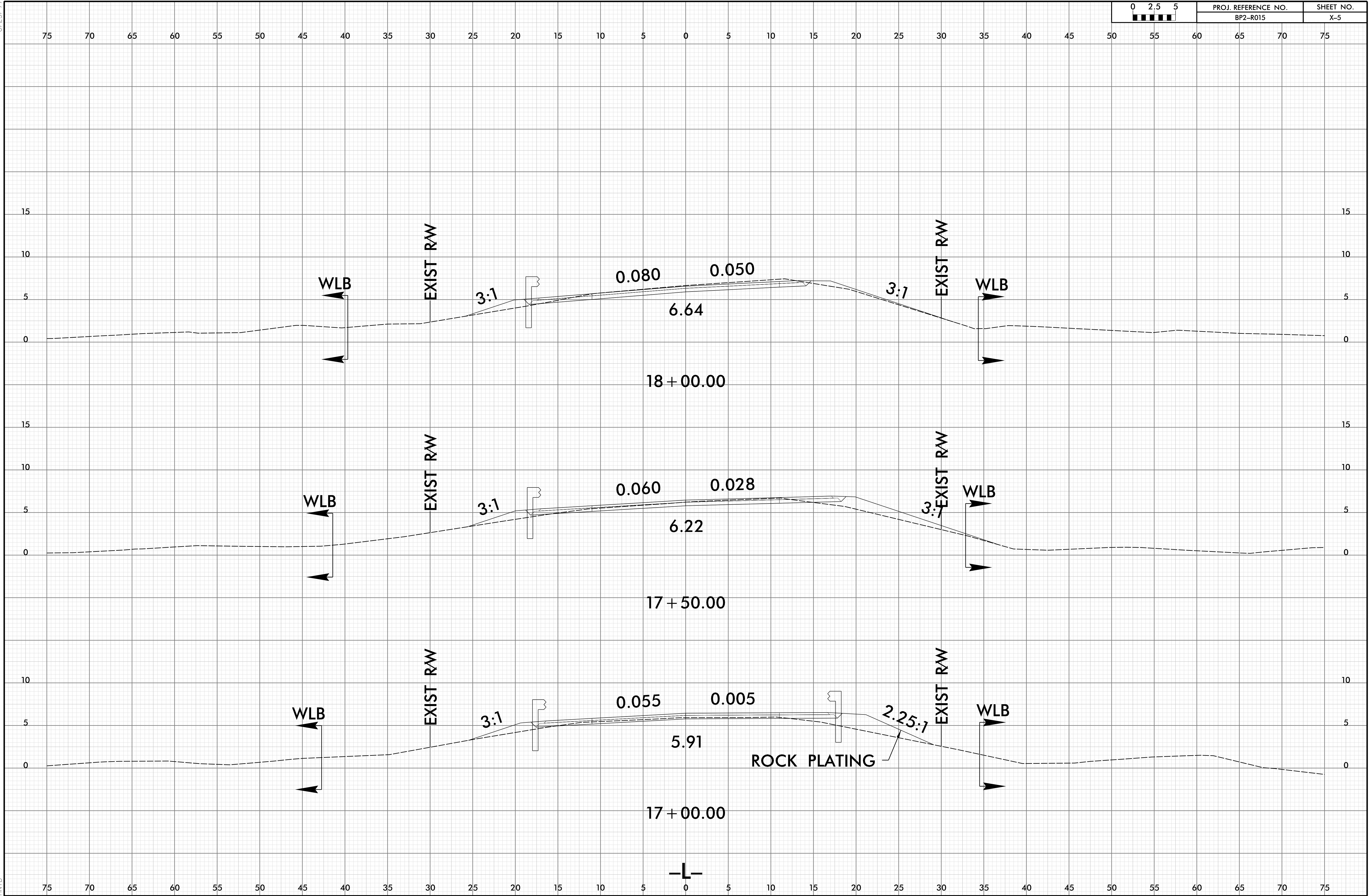
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP2-R015	X-3



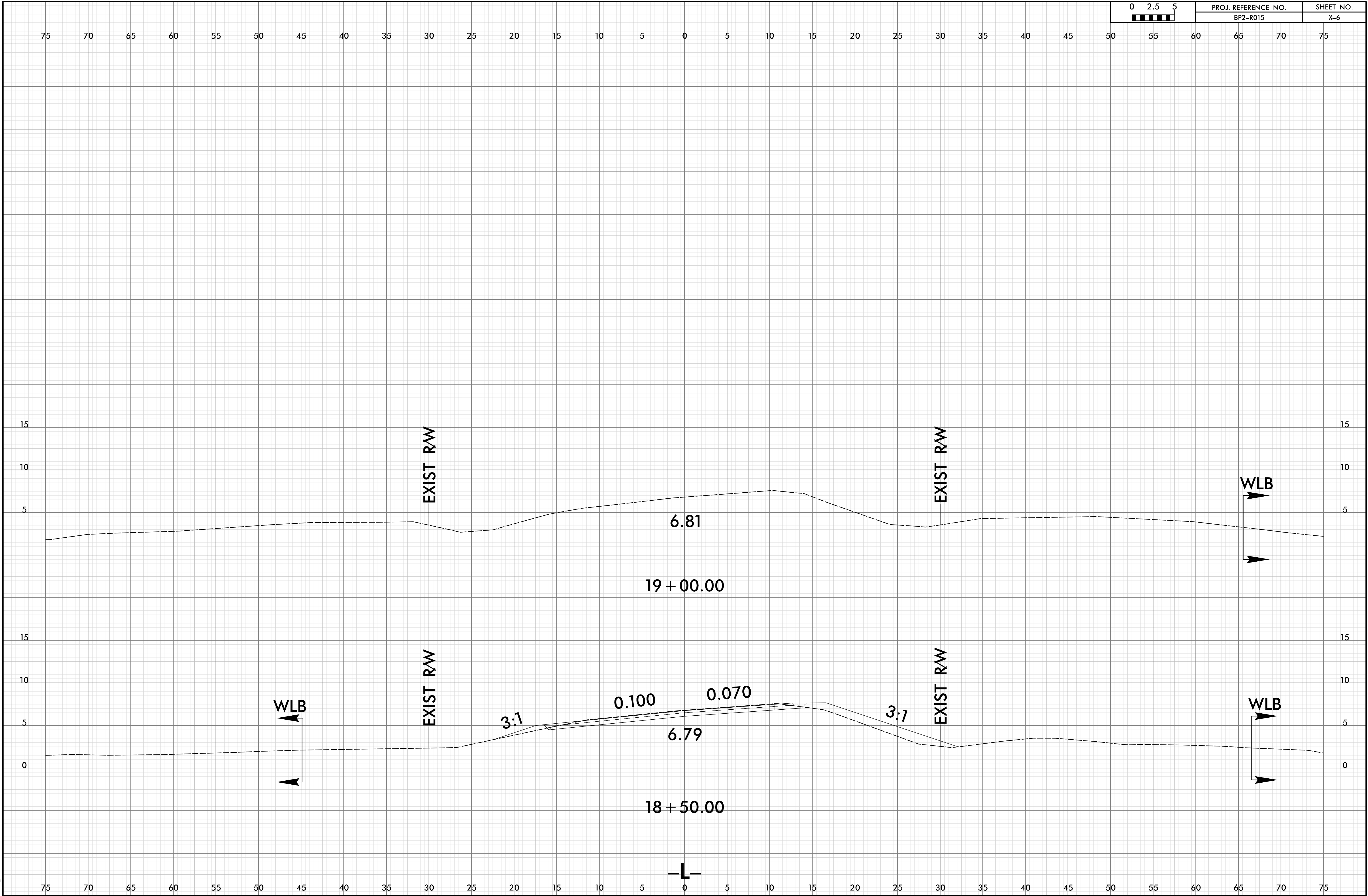
8/23/99
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HNTB

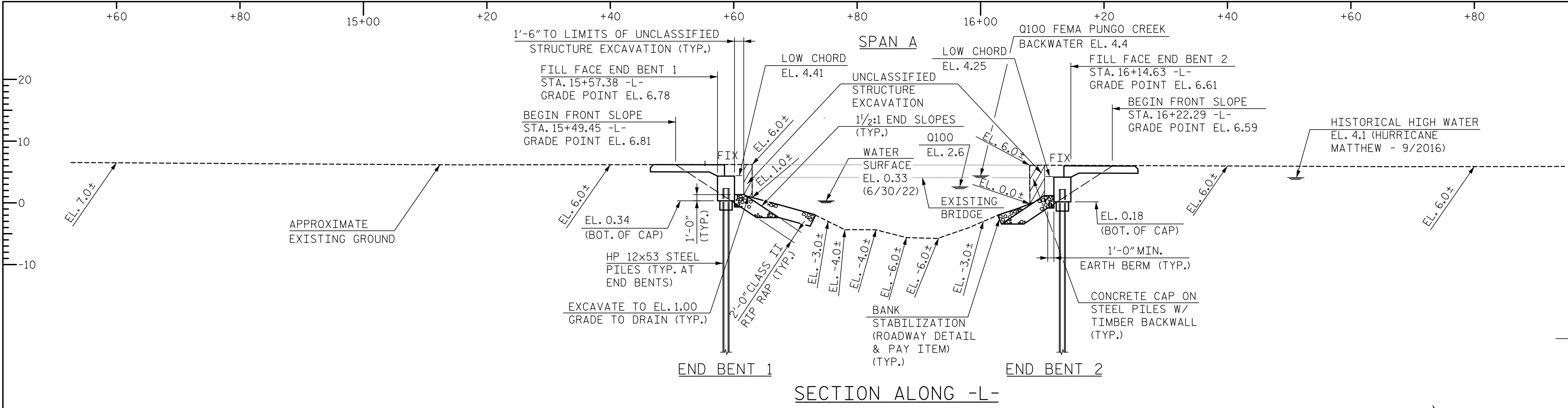
0 2.5 5	PROJ. REFERENCE NO. BP2-R015	SHEET NO. X-4
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HNTB



8/23/99
3-JUL-2026 10:58
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HNTB





BRIDGE HYDRAULIC DATA

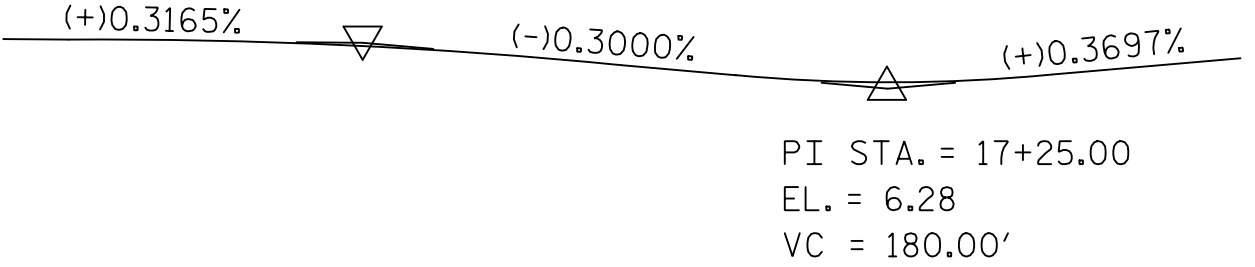
DESIGN DISCHARGE	=	800 CFS
FREQUENCY OF DESIGN FLOOD	=	25 YRS
DESIGN HIGH WATER ELEVATION	=	1.7 FT.
DRAINAGE AREA	=	6.59 SQ. MI.
BASIC DISCHARGE (Q100)	=	1,200 CFS
BASIC HIGH WATER ELEVATION	=	2.6 FT.

OVERTOPPING FLOOD DATA

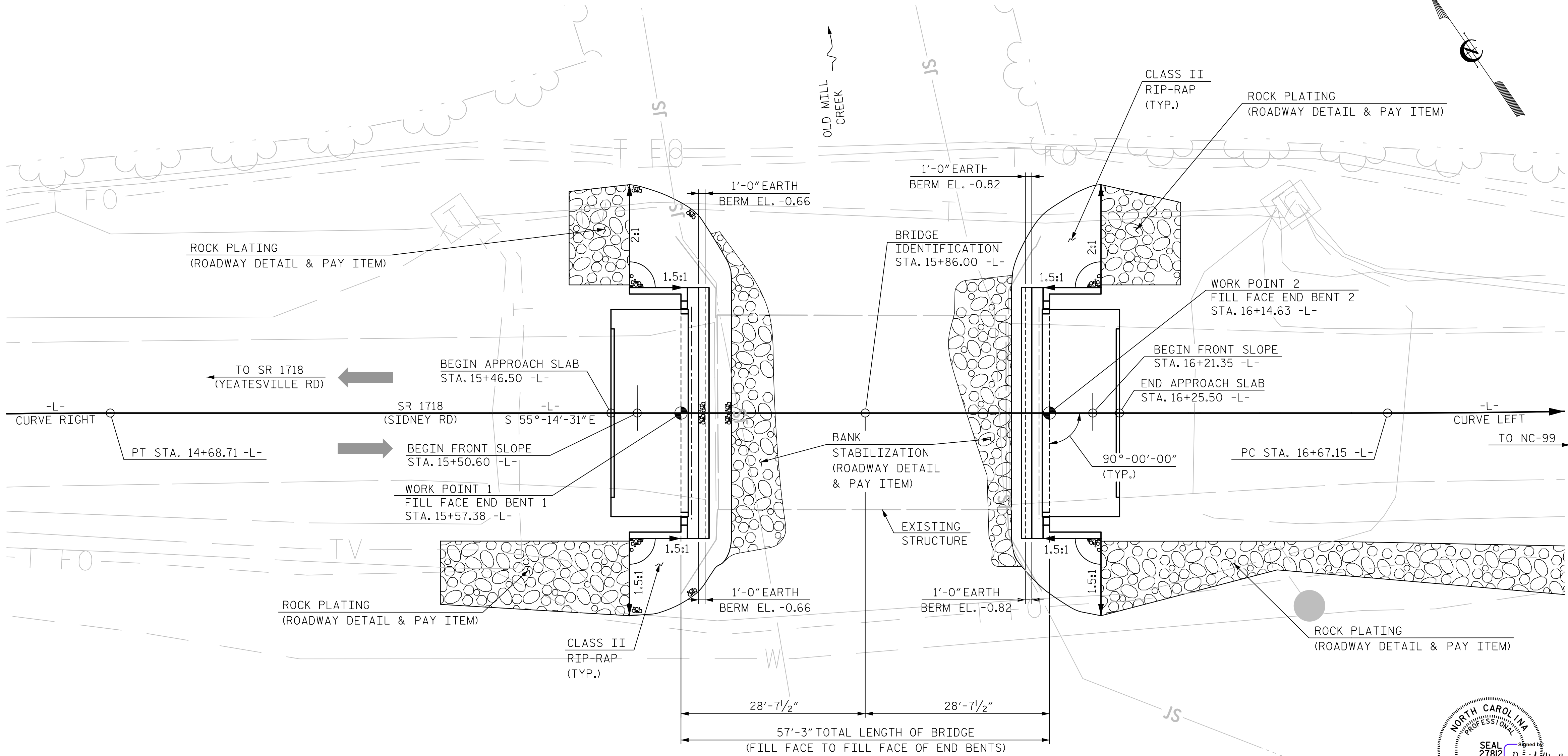
OVERTOPPING DISCHARGE	=	>3,345 CFS
FREQUENCY OF OVERTOPPING FLOOD	=	>500 YRS.
OVERTOPPING FLOOD ELEVATION	=	6.45 FT.

NOTE: OVERTOPS AT STA. 16+89.00 -L- LT., NORMAL CROWN
WS EL. TAKEN @ RIVER STA. 12+33.0

PI STA. = 14+25.00
EL. = 7.18
VC = 180.00'



GRADE DATA -L-



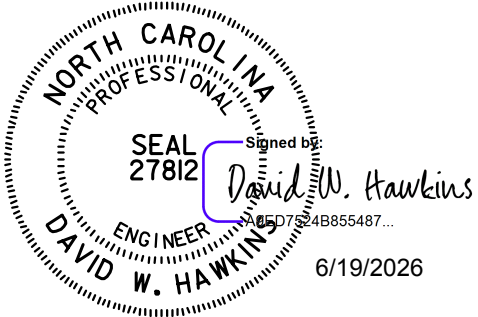
PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 1 OF 2 REPLACES BRIDGE NO. 060131

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR
BRIDGE ON SR 1718 OVER
OLD MILL CREEK
BETWEEN
SR 1718 AND NC-99

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	
1			3		S-1
2			4		TOTAL SHEETS 14

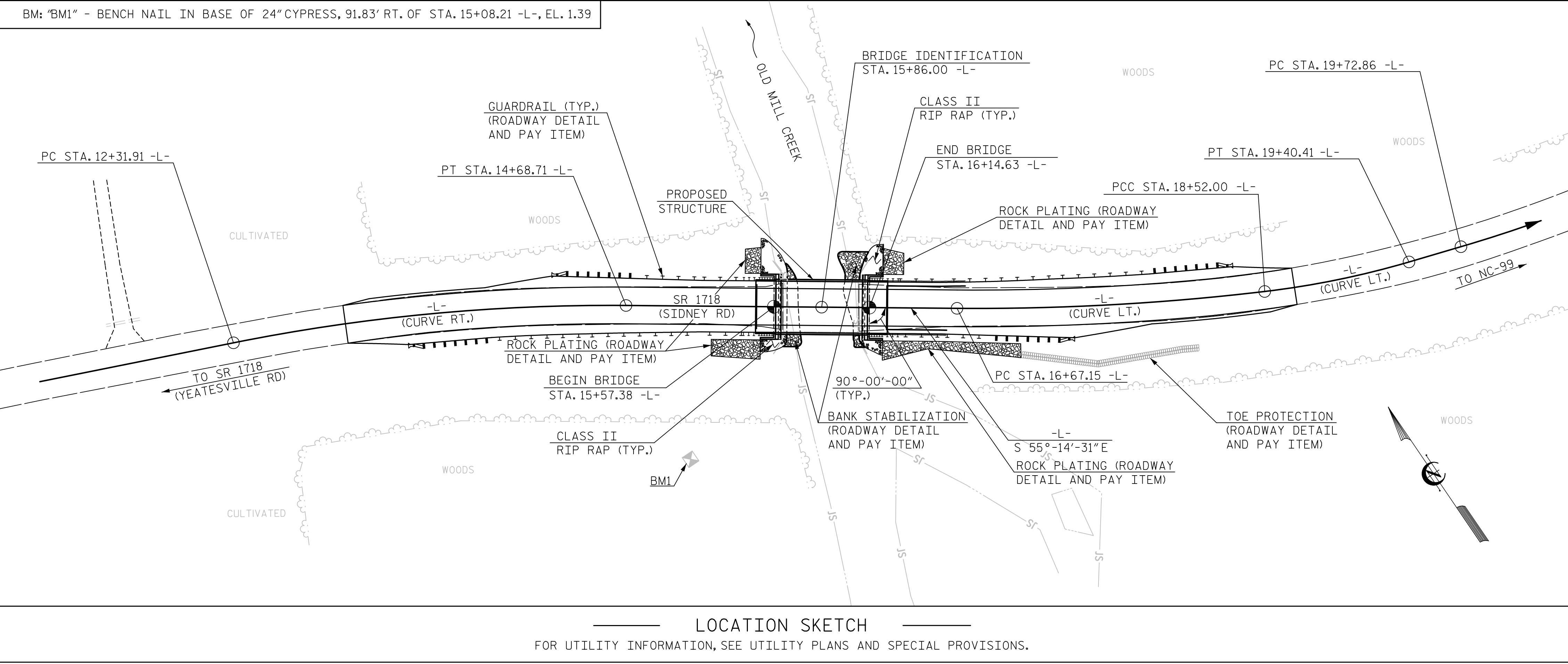


HNTB HNTB NORTH CAROLINA, P.C.
NC License No. C-1554
4000 Center at North Hills Street, Suite 500, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	3/23
CHECKED BY	P. PARBER	DATE	3/23
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26

DWG. NO. 1

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



FOUNDATION NOTES:

FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY OF 30,000 - 60,000 FT-LBS PER BLOW WILL BE REQUIRED TO DRIVE PILES. THIS ESTIMATED ENERGY DOES NOT RELEASE THE CONTRACTOR FROM PROVIDING DRIVING EQUIPMENT IN ACCORDANCE WITH 450-3(D)(2) OF THE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL																	
	REMOVAL OF EXISTING STRUCTURE AT STATION 15+86.00 -L-	ASBESTOS ASSESSMENT	DYNAMIC PILE TESTING	UNCLASSIFIED STRUCTURE EXCAVATION AT STATION 15+86.00 -L-	CLASS AA CONCRETE	BRIDGE APPROACH SLABS, STATION 15+86.00 -L-	EPOXY COATED REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	HP 12x53 STEEL PILES	PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0"x1'-9" PRESTRESSED CONCRETE CORED SLABS		
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EACH	NO.	LIN. FT.	EACH	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.
SUPERSTRUCTURE	LUMP SUM	_____	_____	_____	_____	LUMP SUM	_____	_____	_____	_____	_____	110.25	_____	_____	LUMP SUM	11	605
END BENT 1	_____	_____	_____	LUMP SUM	21.6	_____	2,594	7	7	490	_____	_____	65	70	_____	_____	_____
END BENT 2	_____	_____	_____	LUMP SUM	21.6	_____	2,594	7	7	490	_____	_____	65	70	_____	_____	_____
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	43.2	LUMP SUM	5,188	14	14	980	7	110.25	130	140	LUMP SUM	11	605

GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

THIS STRUCTURE CONTAINS THE NECESSARY CORROSION PROTECTION REQUIRED FOR A CORROSIVE SITE.

FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+86.00 -L-."

CLASS AA CONCRETE SHALL BE USED IN ALL CAST-IN-PLACE END BENT CAPS AND SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL BAR SUPPORTS USED IN THE PARAPET, END BENT CAPS AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONCRETE IN THE END BENT CAPS OF END BENT NO. 1, AND END BENT NO 2 SHALL CONTAIN SILICA FUME. SILICA FUME SHALL BE SUBSTITUTED FOR 5% OF THE PORTLAND CEMENT BY WEIGHT. IF THE OPTION OF ARTICLE 1024-1 OF THE STANDARD SPECIFICATIONS TO PARTIALLY SUBSTITUTE CLASS F FLY ASH FOR PORTLAND CEMENT IS EXERCISED, THEN THE RATE OF FLY ASH SUBSTITUTION SHALL BE REDUCED TO 1.0 LB OF FLY ASH PER 1.0 LB OF CEMENT. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 19.5 FT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF ONE 45'-10" SPAN; 28.7' CLEAR ROADWAY WIDTH AND 11 PRESTRESSED CONCRETE CORED SLABS ON REINFORCED CONCRETE PIER CAPS/STEEL PILES AND TIMBER BACKWALLS SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18-EVALUATING SCOUR AT BRIDGES."

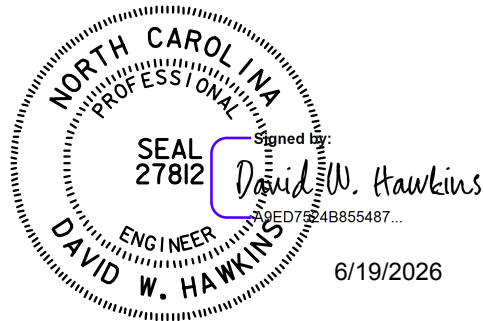
FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.

FOR ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES, SEE SPECIAL PROVISIONS.

PAVEMENT ALONG THE TRANSVERSE CENTERLINE OF ALL CAPS SHALL BE SAW CUT TO A DEPTH OF 3/4"±, CLEANED, AND FILLED WITH AN APPROVED ASPHALT SEALANT IN ACCORDANCE WITH SECTION 1028 OF THE STANDARD SPECIFICATIONS. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT UNIT PRICE FOR VARIOUS PAY ITEMS.

APPLY AN APPROVED EPOXY PROTECTIVE COATING TO THE TOPS OF ALL CAPS. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO OTHER PAY ITEMS IN THE CONTRACT AND NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.



PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 2 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH GENERAL DRAWING FOR BRIDGE ON SR 1718 OVER OLD MILL CREEK BETWEEN SR 1718 AND NC-99							SHEET NO. S-2 TOTAL SHEETS 14	
REVISIONS								
NO.	BY	DATE	NO.	BY	DATE			
1			3					
2			4					

HNTB		HNTB NORTH CAROLINA, P.C. NC License No. C-1554 4000 Center of North Hills Street, Suite 500, Raleigh, N.C. 27609	
DRAWN BY	M. WRIGHT	DATE	3/23
CHECKED BY	P. BARBER	DATE	3/23
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		DWG. NO. 2	

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #/(#) (e.g., "Bent 1, Piles 1-5")	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
					Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Total Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent No. 1 Piles 1-7	74	2.34	70	N/A	N/A	100	7						
End Bent No 2 Piles 1-7	74	2.18	70	N/A	N/A	100							

*Predrilling for Piles is required for end bents/bents with a predrilling length and at the Contractor's option for end bents/bents with predrilling information but no predrilling length.

$$^{**}RDR = \frac{\text{Factored Resistance} + \text{Factored Downdrag Load} + \text{Factored Dead Load}}{\text{Dynamic Resistance Factor}} + \text{Nominal Downdrag Resistance} + \frac{\text{Nominal Scour Resistance}}{\text{Scour Resistance Factor}}$$

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No. Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent No. 1 Piles 1-7	74			0.75			1.00
End Bent No 2 Piles 1-7	74			0.75			1.00

***Factored Dead Load is factored weight of pile above the ground line.**

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)				Pile Order Lengths	
End Bent/ Bent No	DPT Testing Required? YES or MAYBE	DPT Test Pile Length FT	Total DPT Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or DPT
End Bent No. 1	Yes	75	2		
End Bent No.2	Yes	75			

*EST = Pile order lengths from estimated pile lengths; DPT = Pile order lengths based on DPT testing. For groups of end bents/bents with pile order lengths based on DPT testing, the first end bent/bent no. listed for each group is the representative end bent/bent with the DPT.

PROJECT NO. BP2-R015

BEAUFORT COUNTY

STATION: 15+86 -L-

NOTES:

1. The Pile and Drilled Pier Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jinyoung Park PE#032171) on 03-27-2024.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer will determine the need for DPT when DPTs may be required.

<

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γDC	γDW
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

MINIMUM RATING FACTORS ARE BASED ON THE STRENGTH I AND SERVICE III LIMIT STATES.

ALLOWABLE STRESSES FOR SERVICE III LIMIT STATE ARE AS REQUIRED FOR DESIGN.

COMMENTS:

1.
2.
3.
4.

CONTROLLING LOAD RATING

1

DESIGN LOAD RATING (HL-93)

2

DESIGN LOAD RATING (HS-20)

3

LEGAL LOAD RATING * *

4

EMERGENCY VEHICLE LOAD RATING

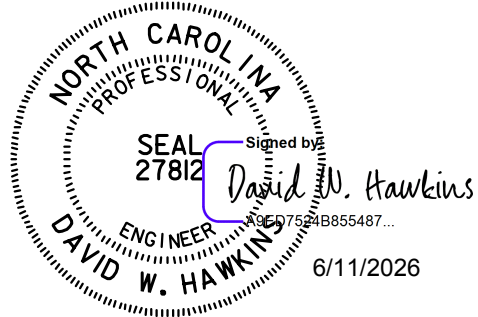
**

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER- EXTERIOR RIGHT GIRDER

PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

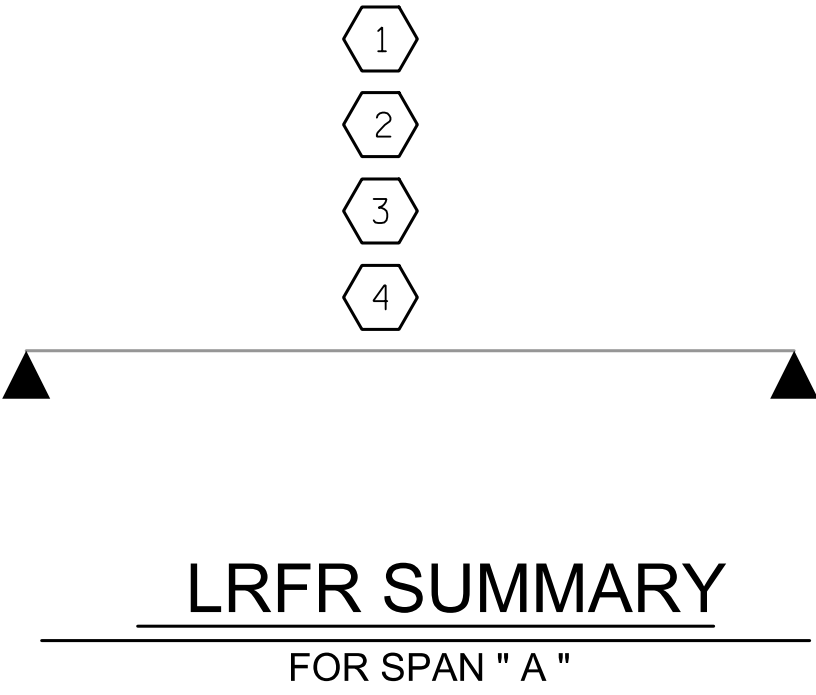


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
55' CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-4
1			3			TOTAL SHEETS
2			4			14

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE	VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING ⬡#	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER		
						LIVE-LOAD FACTORS (γ LL)	MOMENT				SHEAR				LIVE-LOAD FACTORS (γ LL)	MOMENT								
							DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN		GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD	HL-93 (INVENTORY)	N/A	⬡1	1.055	-	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27		
	HL-93 (OPERATING)	N/A	--	1.591	-	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--		
	HS-20 (INVENTORY)	36.000	⬡2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27		
	HS-20 (OPERATING)	36.000	--	1.900	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.90	55'	EL	5.4	N/A	--	--	--	--	--		
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	2.776	37.476	1.4	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000	--	2.155	43.095	1.4	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000	--	2.079	45.734	1.4	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250	--	1.384	37.708	1.4	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925	--	1.189	41.527	1.4	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550	--	1.160	41.255	1.4	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950	--	1.079	43.102	1.4	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
		SNS7B	42.000	--	1.028	43.175	1.4	0.275	1.50	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	1.320	43.556	1.4	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075	--	1.330	43.979	1.4	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600	--	1.101	45.811	1.4	0.275	1.60	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000	--	1.114	46.804	1.4	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000	--	1.163	48.848	1.4	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000	--	1.101	47.330	1.4	0.275	1.60	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNAGT5A	45.000	--	1.031	46.405	1.4	0.275	1.50	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
		TNAGT5B	45.000	⬡3	1.013	45.582	1.4	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27	
EMERGENCY VEHICLE (EV)	EV2	28.750	--	1.617	46.483	1.3	0.275	2.37	55'	EL	27	0.523	2.27	55'	EL	5.4	0.80	0.275	1.62	55'	EL	27		
	EV3	43.000	⬡4	1.049	45.107	1.3	0.275	1.54	55'	EL	27	0.523	1.53	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27		



STD. NO. 21LRFR1-90S-55L		
ASSEMBLED BY: M. WRIGHT	DATE : 3/23	
CHECKED BY : P. BARBER	DATE : 3/23	
DRAWN BY : MAA 1/08	REV. 11/12/08RR	MAA/GM
CHECKED BY : GM/DI 2/08	REV. 10/1/11	MAA/GM
	REV. 04/23	BNB/AAI

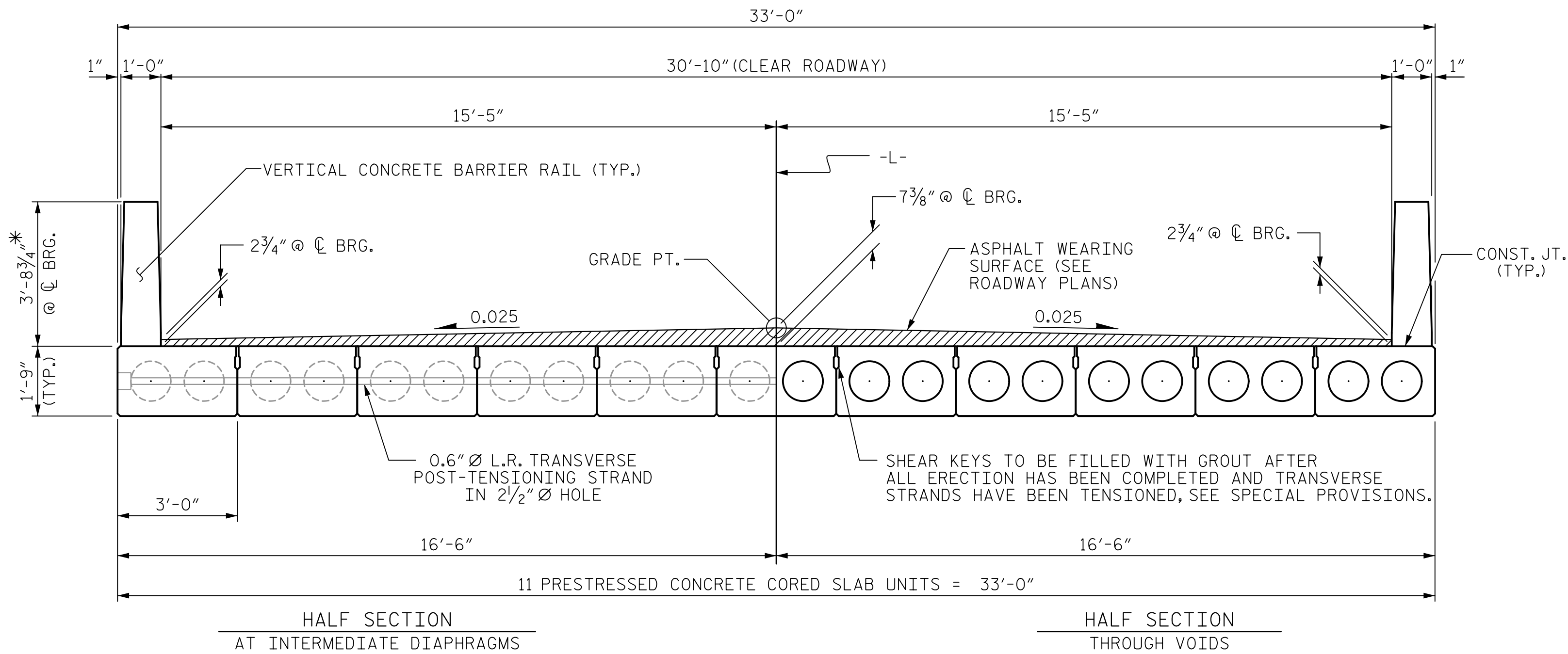
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

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NC License No. C-1554
4000 Center at North Hills Street, Suite 500, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	3/23
CHECKED BY	P. BARBER	DATE	3/23
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26

DWG. NO. 4

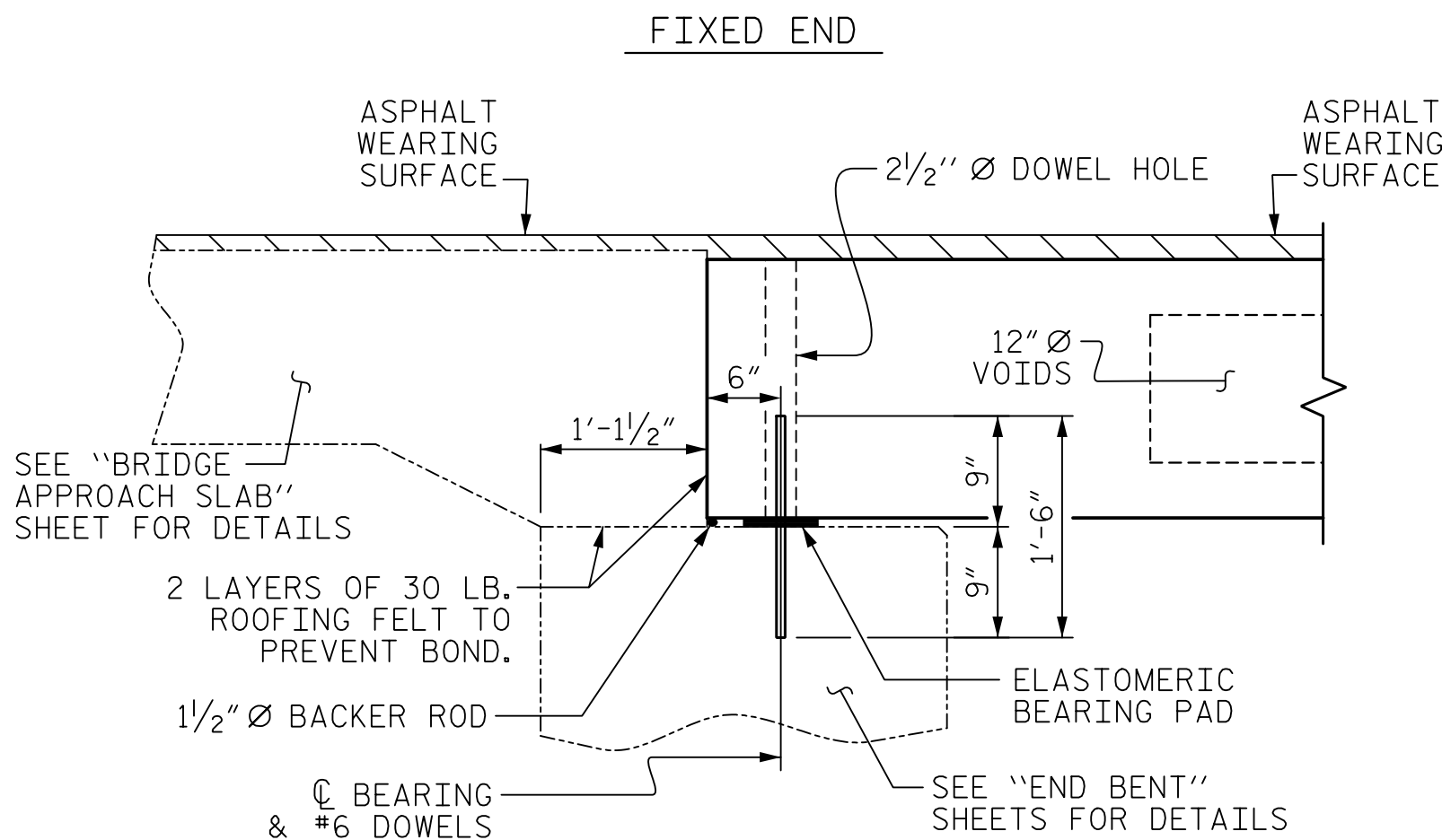
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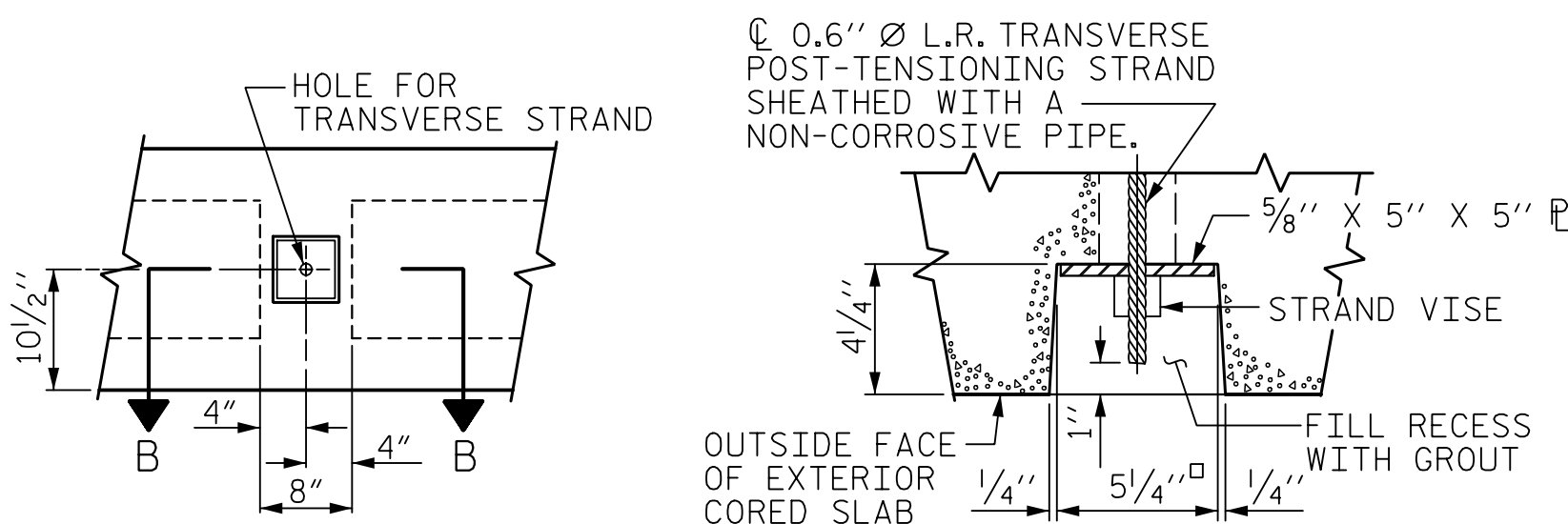
TYPICAL SECTION

* - 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.

NOTE: NO DECK DRAINS.



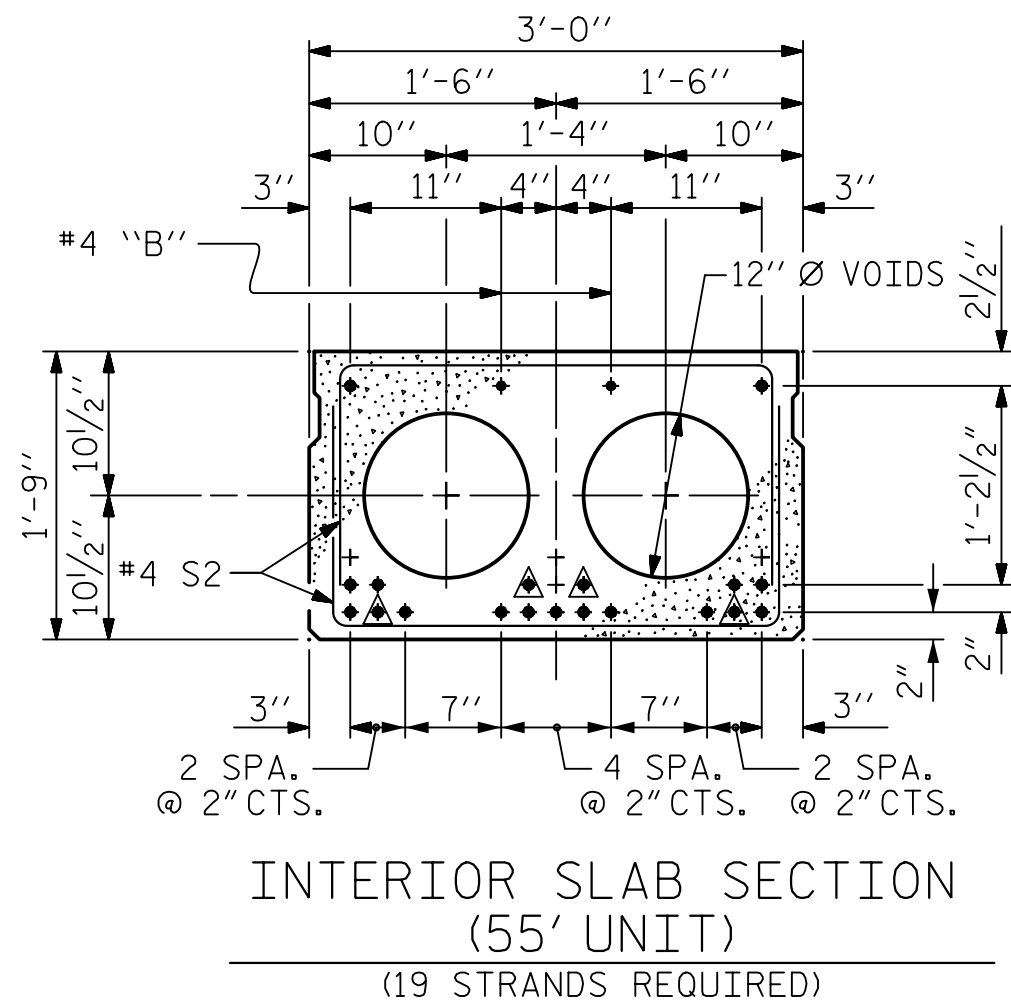
SECTION AT END BENT



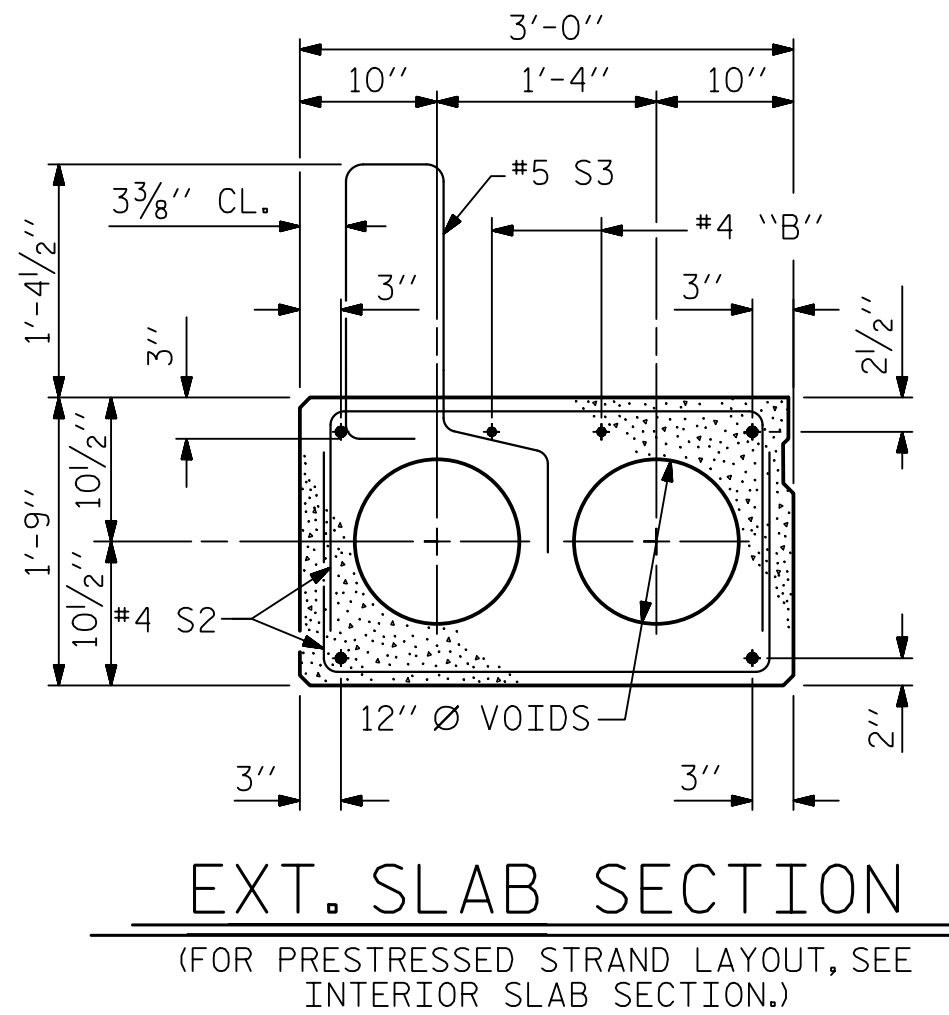
ELEVATION VIEW

SECTION B-B

GROUTED RECESS AT END OF POST-TENSIONED STRAND OF CORED SLABS



0.6" Ø LOW RELAXATION STRAND LAYOUT



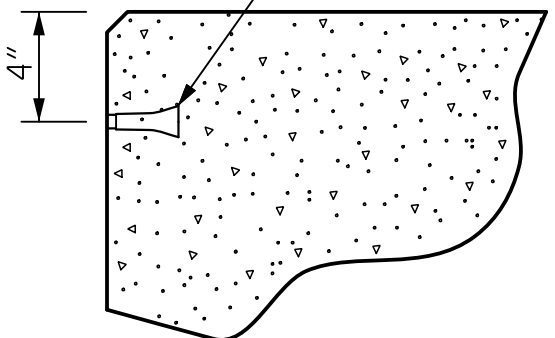
EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

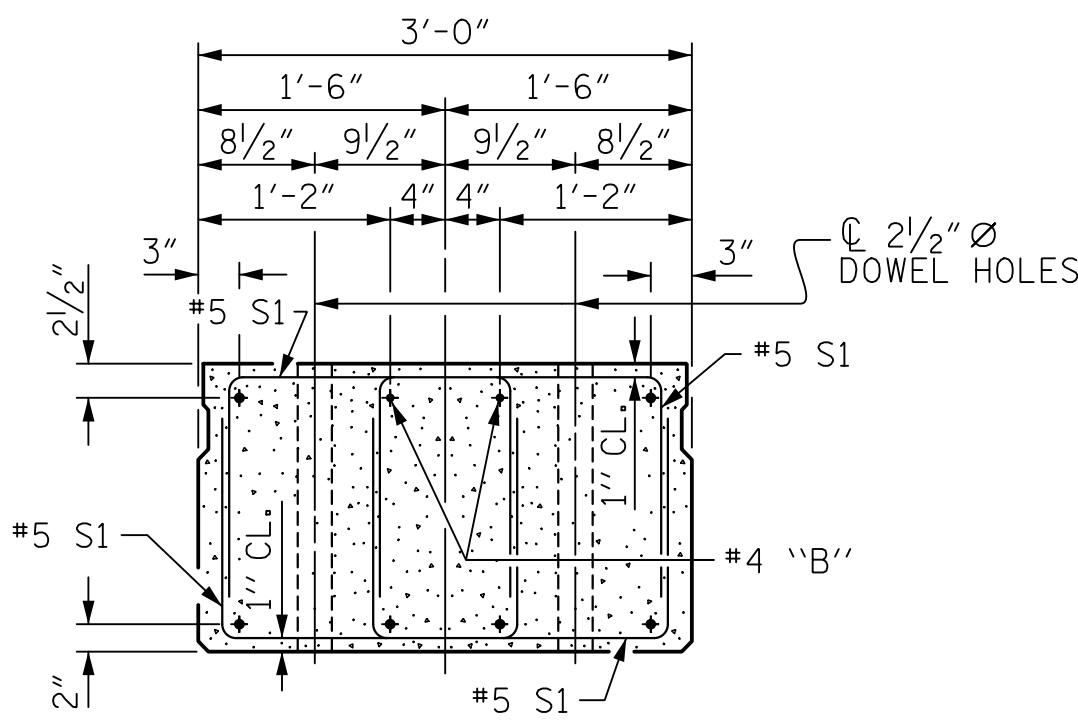
⚠ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

PERMITTED THREADED INSERT CAST IN OUTSIDE FACE OF EXTERIOR UNIT AND RECESSED 3/8" SIZE TO BE DETERMINED BY CONTRACTOR.

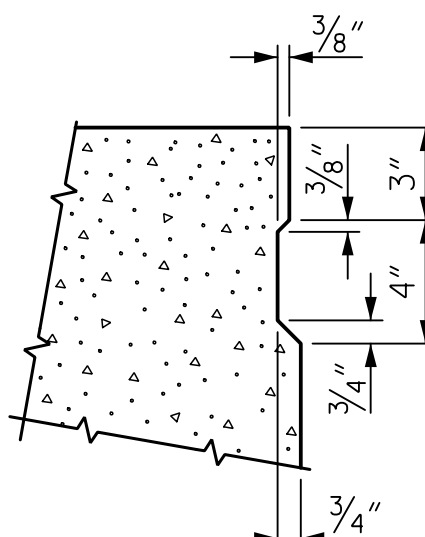


THREADED INSERT DETAIL



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	
1			3		TOTAL SHEETS
2			4		14

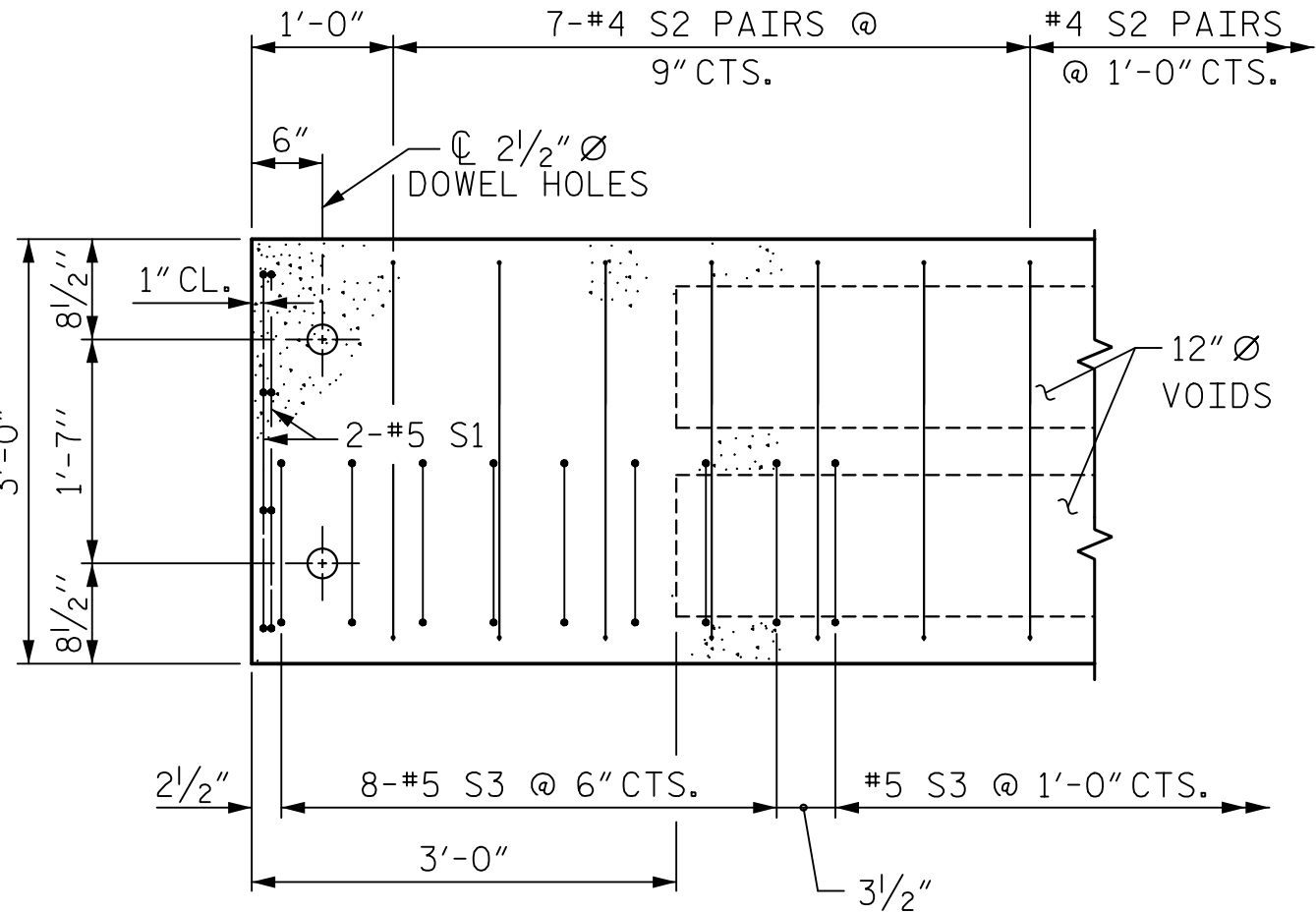
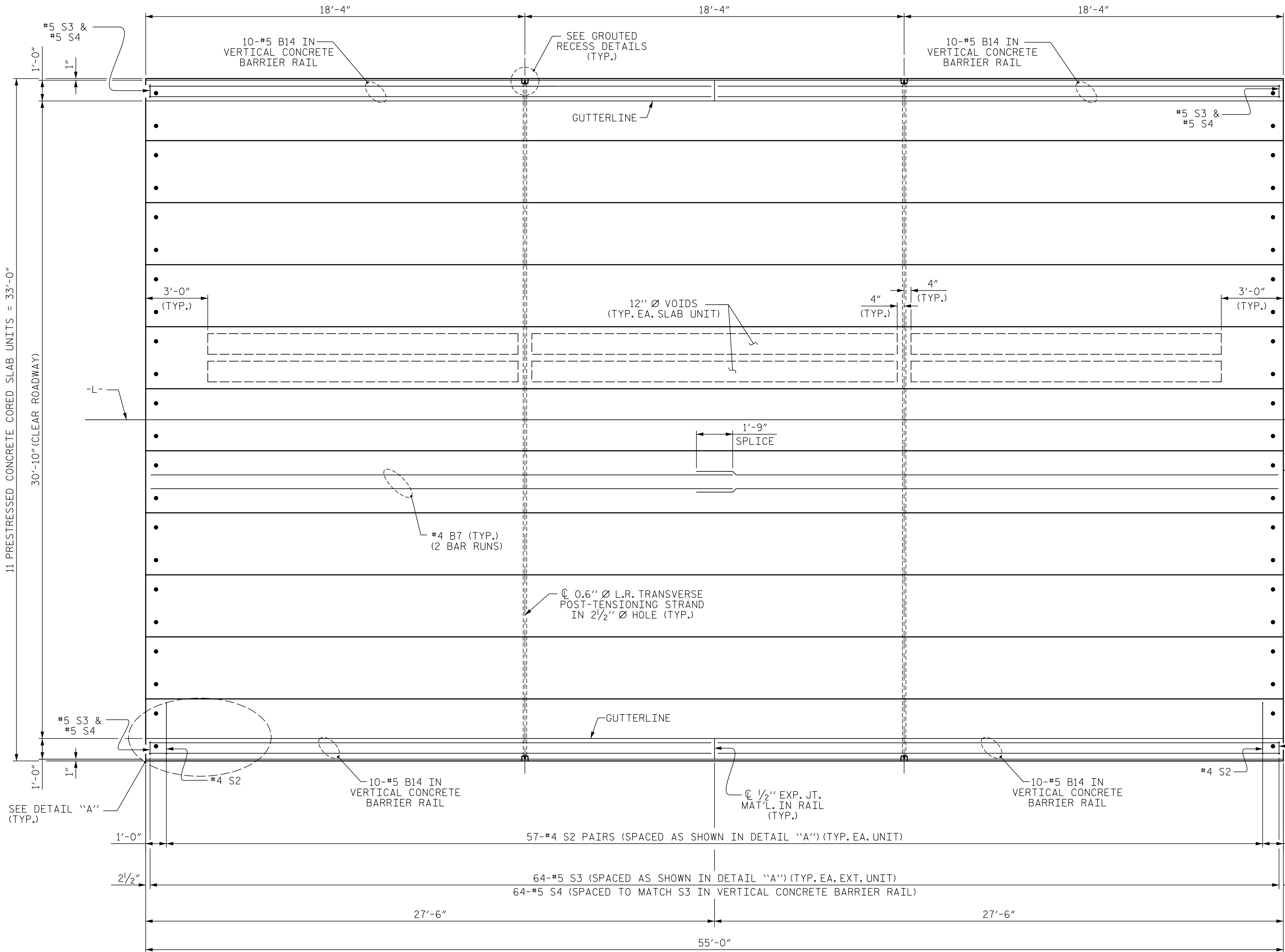
DRAWN BY		M. WRIGHT	DATE	3/23
CHECKED BY		P. BARBER	DATE	3/23
DESIGN ENGINEER OF RECORD		D. HAWKINS	DATE	6/26

DOCUMENT NOT CONSIDERED FINAL
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DAVID W. HAWKINS
ENGINEER
27812
6/11/2026

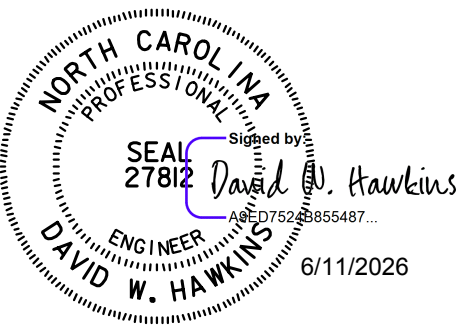
STD. NO. 21" PCS2_33-90S			
ASSEMBLED BY : M. WRIGHT		DATE : 3/23	
CHECKED BY : P. BARBER		DATE : 3/23	
DRAWN BY : DGE		5/09	REV. 8/14
CHECKED BY : BCH		6/09	REV. 5/23
		MAA/TMG	BNB/AAI

6/8/2026
TIME
\\M01_011_BP2R015_SMLCS02_006_06013.dgn



DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR
UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.



PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55' UNIT
30'-10" CLEAR ROADWAY
90° SKEW

STD. NO. 21"PCS_33_90S_55L

ASSEMBLED BY : M. WRIGHT	DATE : 3/23
CHECKED BY : P. BARBER	DATE : 3/23
DRAWN BY : DGE 3/09	REV. 12/5/11 MAA/AAC
CHECKED BY : BCH 3/09	REV. 8/14 MAA/TMG

PLAN OF UNIT

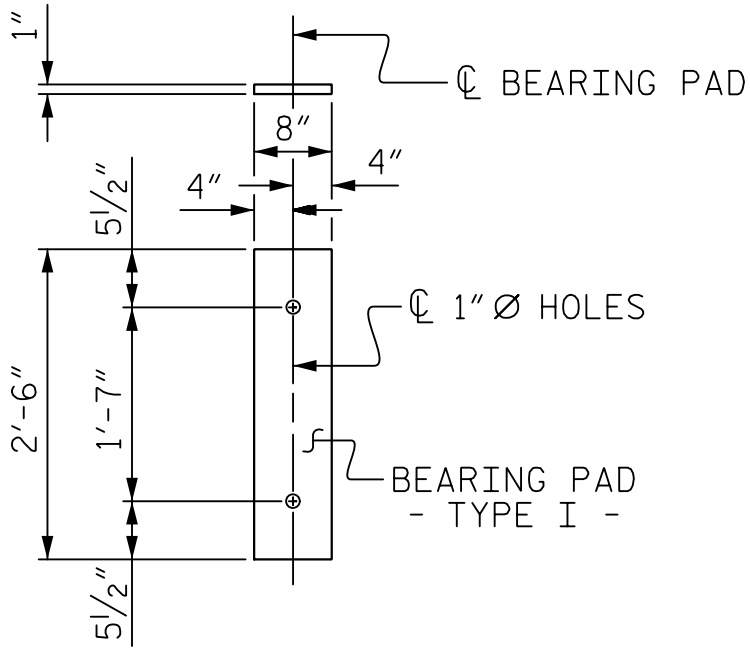
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DRAWN BY	M. WRIGHT	DATE	3/23
CHECKED BY	P. BARBER	DATE	3/23
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26

DWG. NO. 6

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

SHEET NO.	S-6
TOTAL SHEETS	14

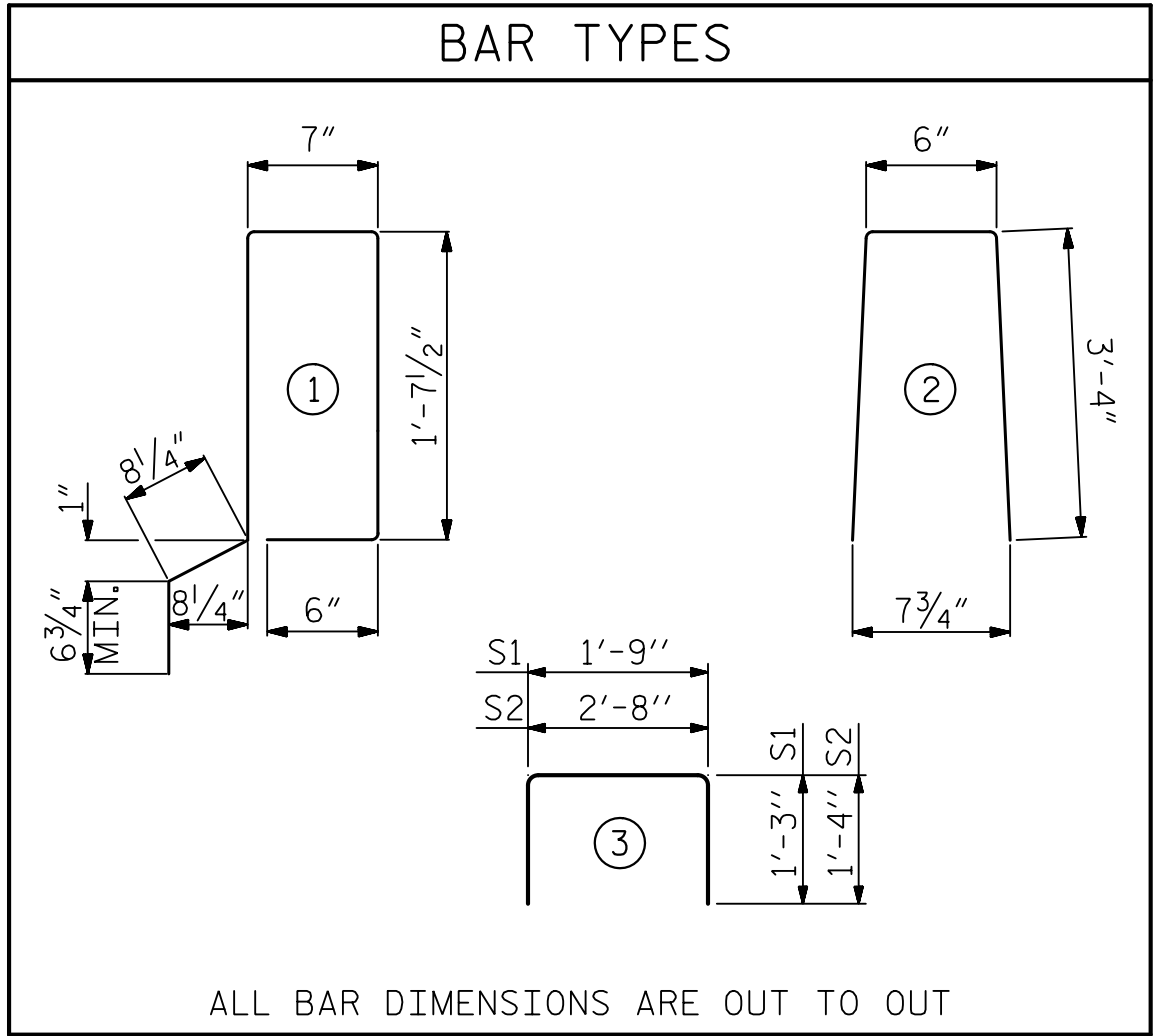


FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT		INTERIOR UNIT	
				LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28'-3"	75	28'-3"	75
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	114	#4	3	5'-4"	406	5'-4"	406
* S3	64	#5	1	5'-7"	373		
REINFORCING STEEL				LBS.	516		516
* EPOXY COATED REINFORCING STEEL				LBS.	373		
6500 P.S.I. CONCRETE				CU. YDS.	7.8		7.8
0.6" Ø L.R. STRANDS				No.	19		19



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 CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

RECESSES FOR TRANSVERSE STRANDS SHALL BE GROUTED AFTER THE TENSIONING OF THE STRANDS.

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB 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.

WHEN CORED SLABS ARE CAST, AN INTERNAL HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDeways. AT LEAST SIX WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM, IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

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 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.

FLAME CUTTING OF THE TRANSVERSE POST-TENSIONING STRAND IS NOT ALLOWED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

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.

PRESTRESSED CONCRETE CORED SLAB UNITS ARE DESIGNED FOR 0 PSI TENSION IN THE PRECOMPRESSED TENSILE ZONE UNDER ALL LOADING CONDITIONS.

PRESTRESSED CONCRETE CORED SLAB UNITS SHALL CONTAIN CALCIUM NITRITE CORROSION INHIBITOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

CONCRETE RELEASE STRENGTH	
UNIT	PSI
55' UNITS	4900

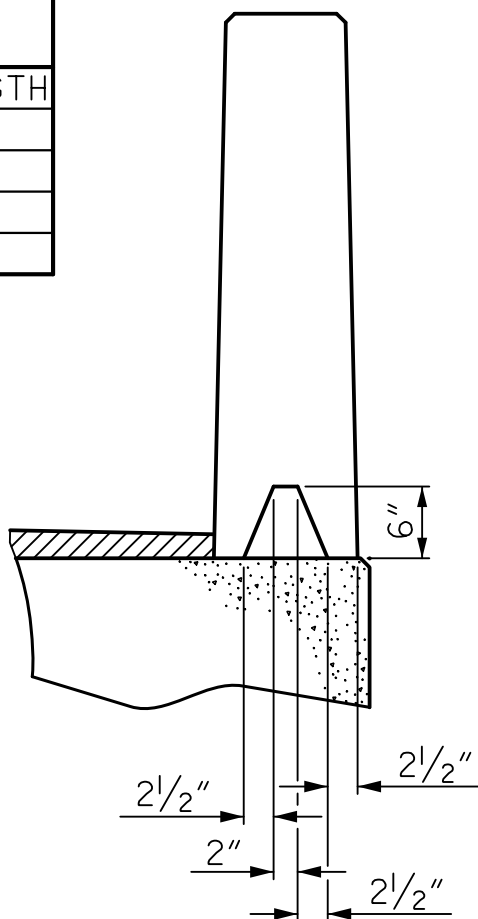
GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
55' UNITS	1 5/8"	3'-7 5/8"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL							
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT	
	55' UNIT						
* B14	40	40	#5	STR	27'-1"	1130	
* S4	128	128	#5	2	7'-2"	957	
* EPOXY COATED REINFORCING STEEL				LBS.		2087	
CLASS AA CONCRETE				CU. YDS.		14.1	
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN. FT.		110.25	

DEAD LOAD DEFLECTION AND CAMBER	
	3'-0" x 1'-9"
55' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1 1/2" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	3/8" ↓
FINAL CAMBER	1 1/8" ↑

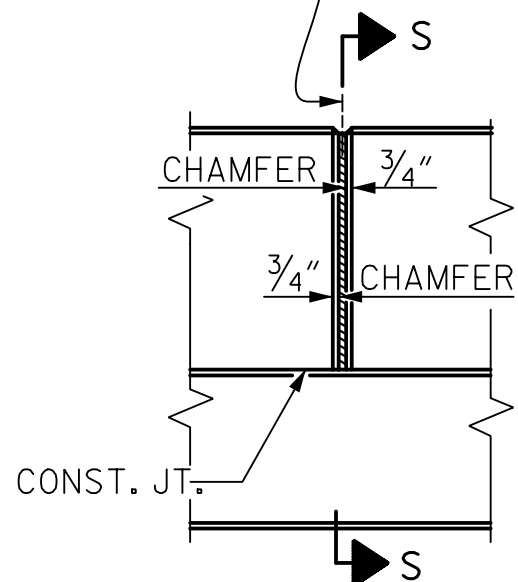
** INCLUDES FUTURE WEARING SURFACE

CORED SLABS REQUIRED			
55' UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	55'-0"	110'-0"
INTERIOR C.S.	9	55'-0"	495'-0"
TOTAL	11		605'-0"

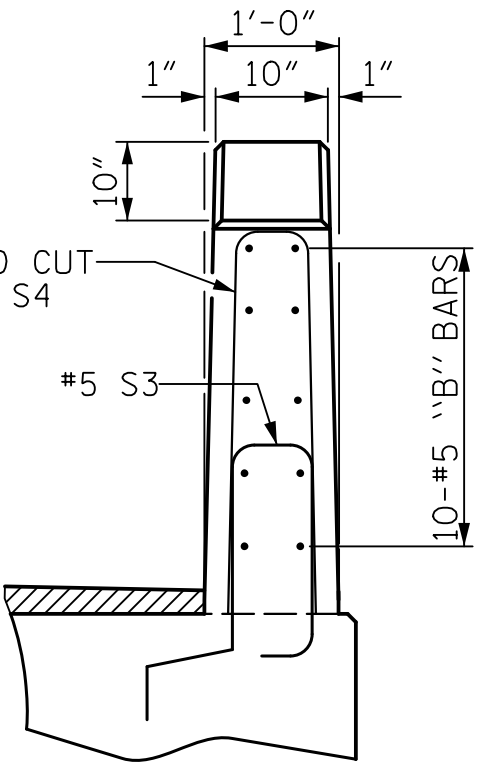


SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)

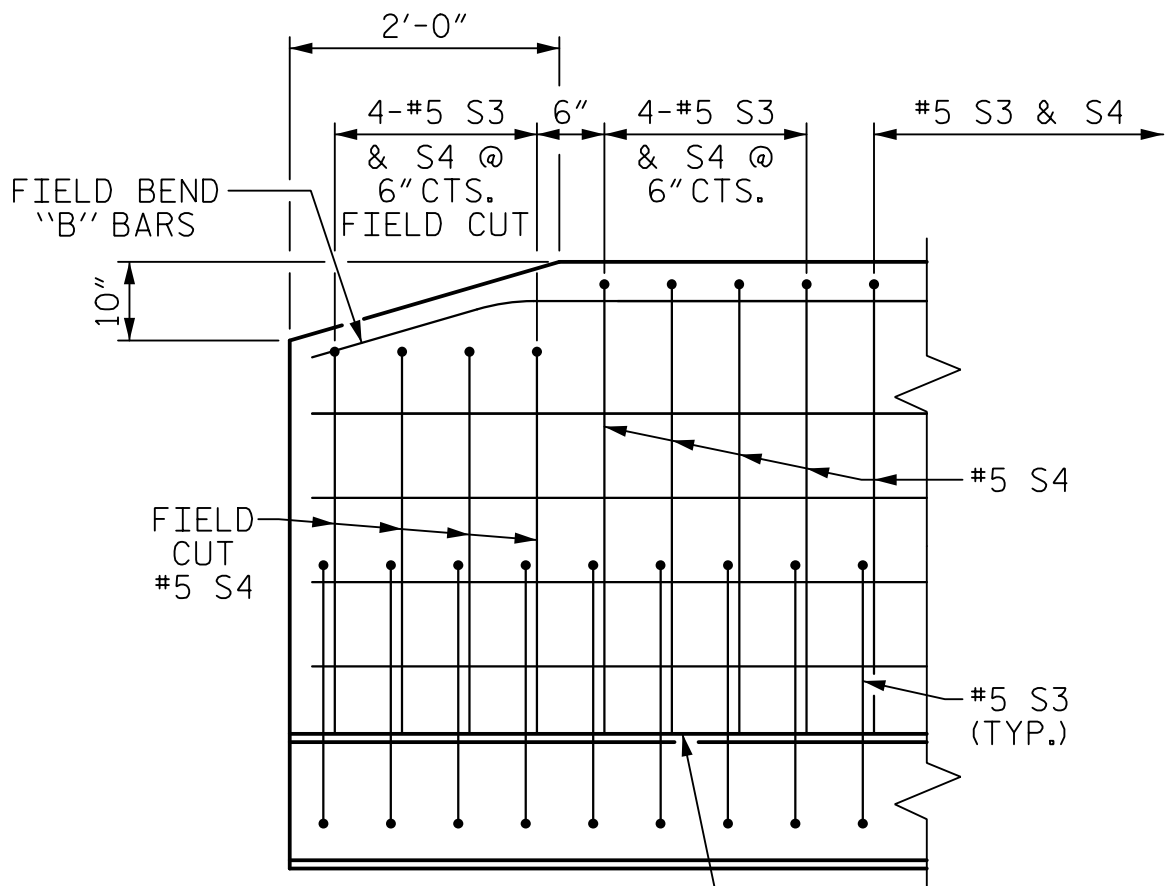
1/2" EXP. JT. MAT'L HELD IN
PLACE WITH GALVANIZED NAILS.
(NOTE: OMIT EXP. JT. MAT'L.
WHEN SLIP FORM IS USED)



END VIEW



SIDE VIEW



GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
					TOTAL SHEETS
					14

HNTB		HNTB NORTH CAROLINA, P.C.	
		NC License No. C-1554	
		4000 Center of North Hills Street, Suite 500, Raleigh, N.C. 27609	
		DRAWN BY: M. WRIGHT DATE: 3/23	
		CHECKED BY: P. BARBER DATE: 3/23	
		DESIGN ENGINEER OF RECORD: D. HAWKINS DATE: 6/26	
		DWG. NO. 7	

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STD. NO. 21" PCS3_33.90S	
ASSEMBLED BY: M. WRIGHT	DATE: 3/23
CHECKED BY: P. BARBER	DATE: 3/23
DRAWN BY: DGE 5/09	REV. 5/18
CHECKED BY: BCH 6/09	MAA/THC

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.)

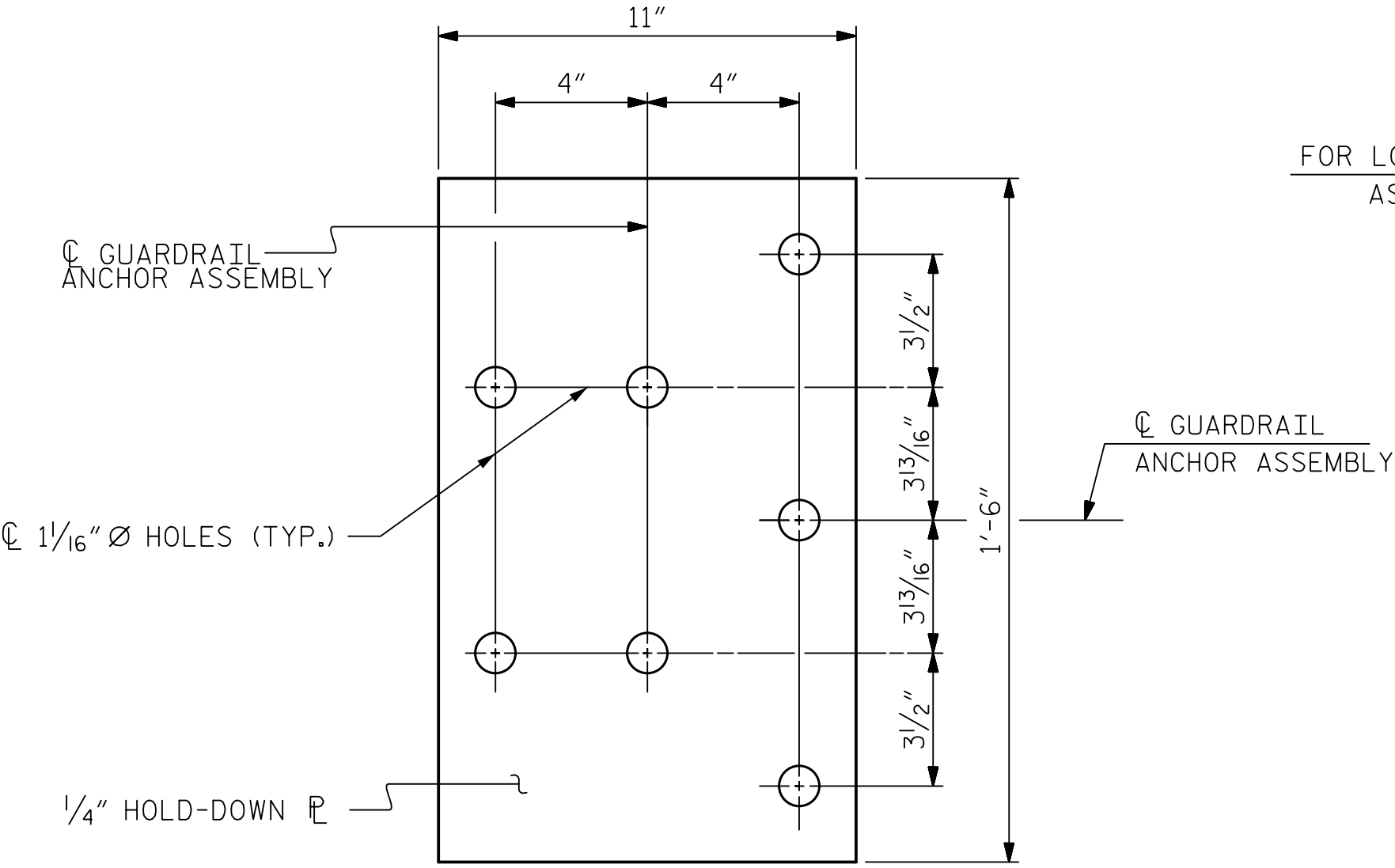
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

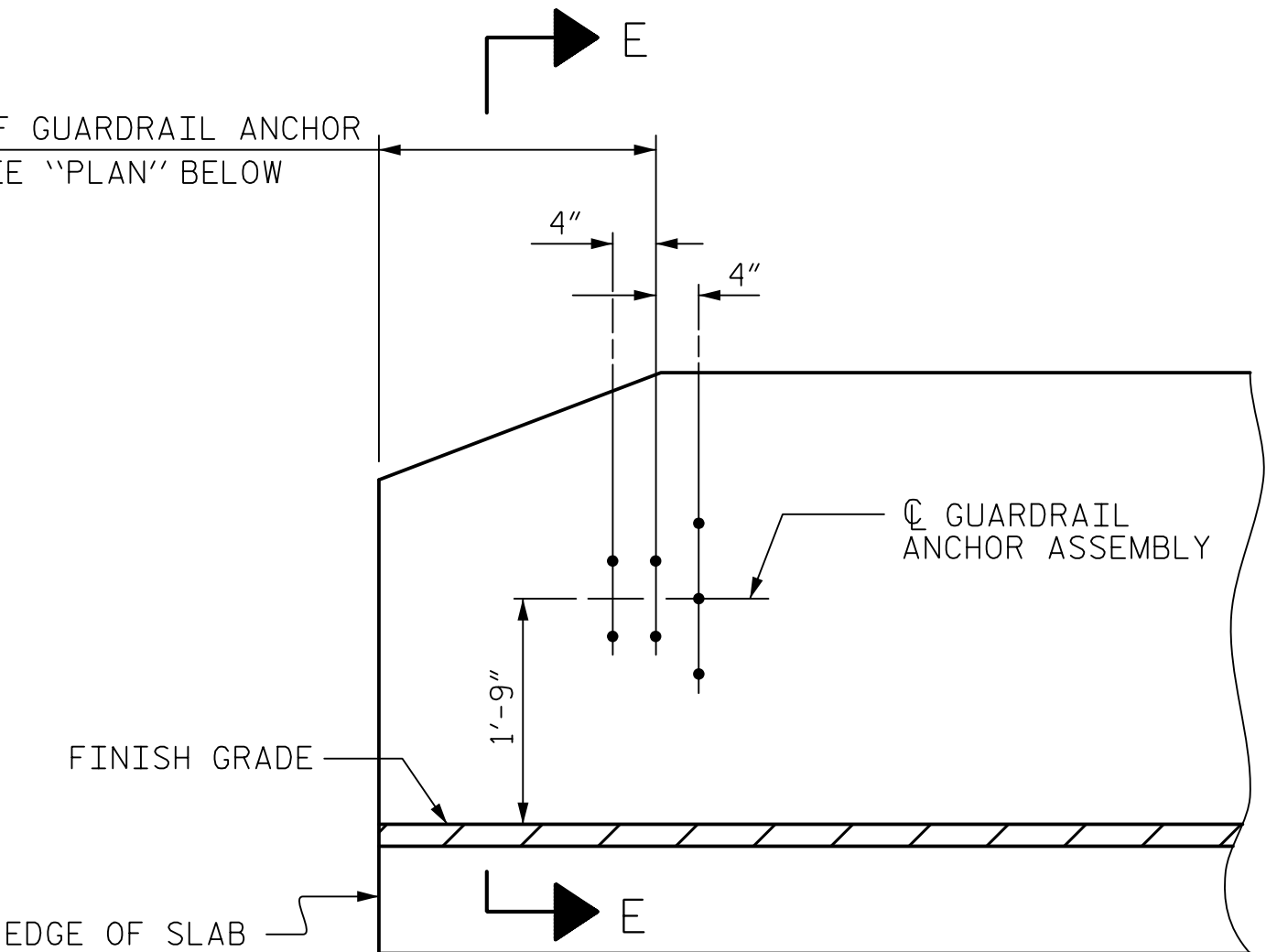
THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

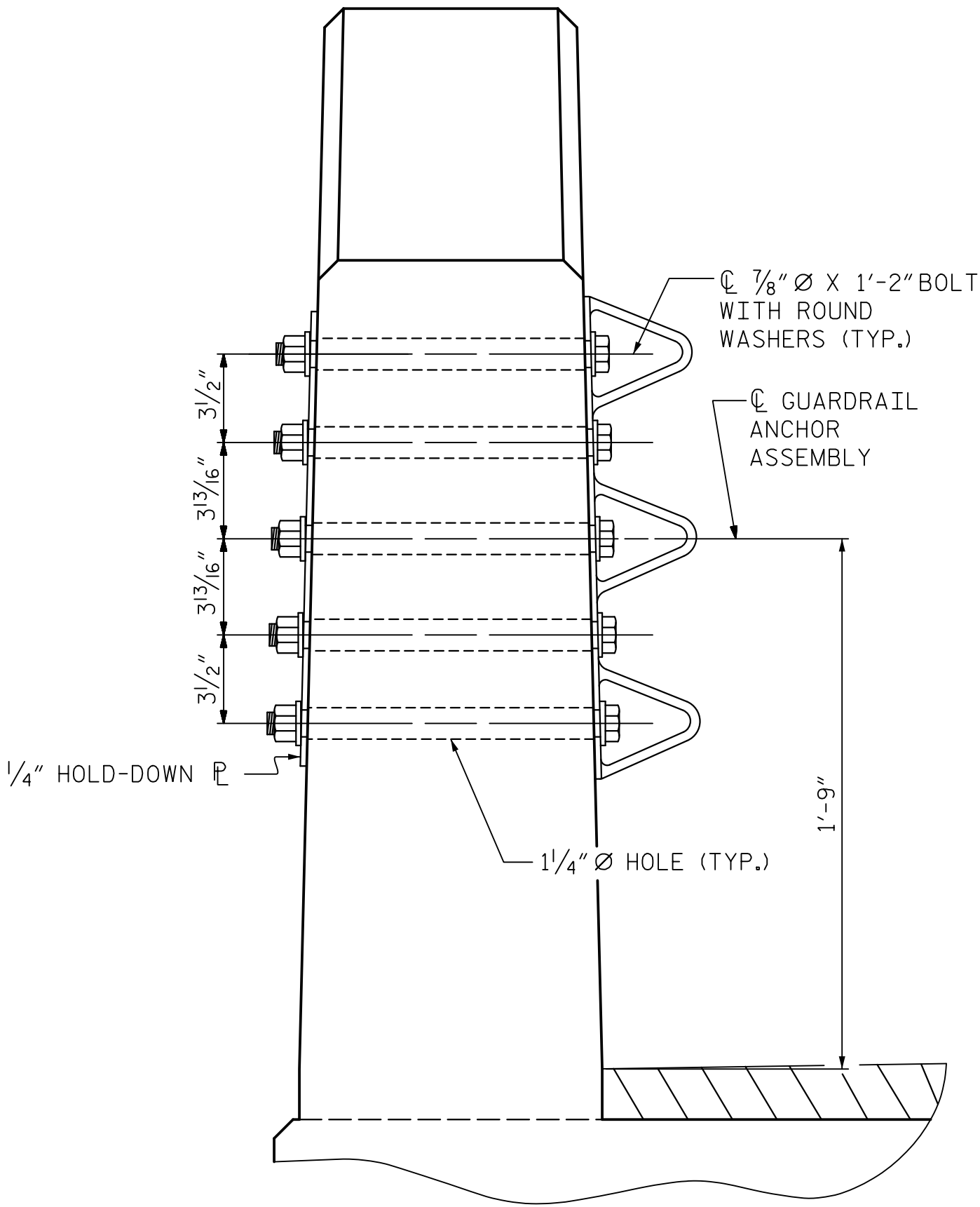
THE 1 1/4" Ø HOLES SHALL BE FORMED OR DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.



PLAN

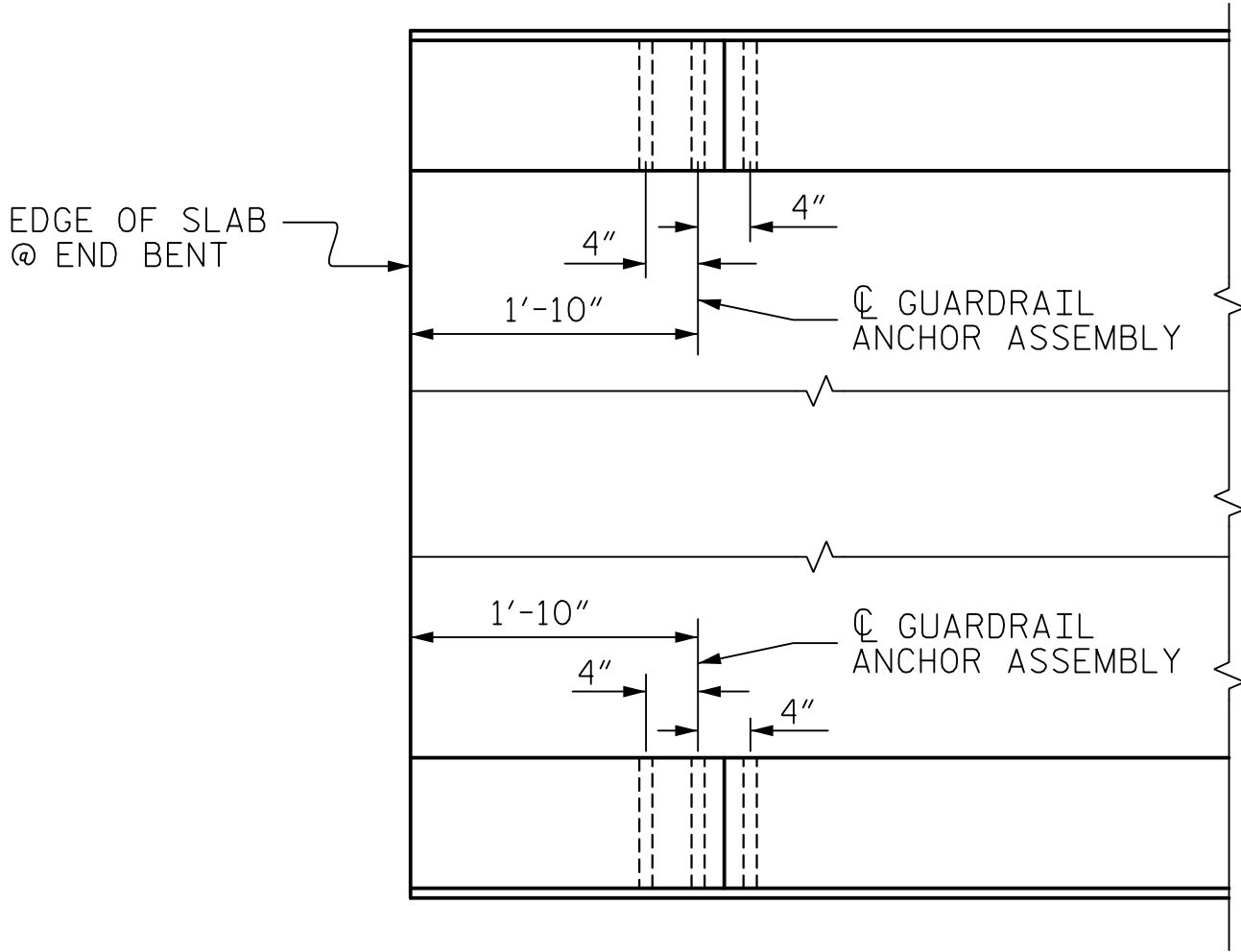


ELEVATION



SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

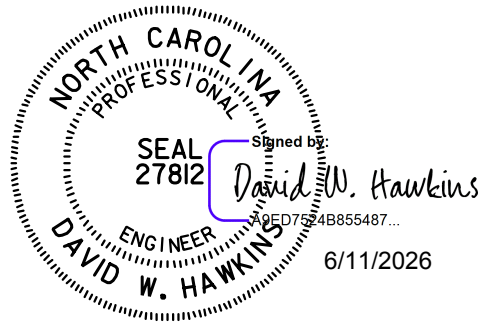
END BENT #1 SHOWN, END BENT #2 SIMILAR.



SKETCH SHOWING POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-



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

STD. NO. GRA3 (SHT 1)			
ASSEMBLED BY : M. WRIGHT		DATE : 3/23	
CHECKED BY : P. BARBER		DATE : 3/23	
DRAWN BY : MAA	5/10	REV. 1/15	MAA/TMG
CHECKED BY : CM	5/10	REV. 12/17	MAA/THC
		REV. 5/18	MAA/THC

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HNTB HNTB NORTH CAROLINA, P.C. NC License No. C-1554 4000 Center at North Hills Street, Suite 500, Raleigh, N.C. 27609			
DRAWN BY : M. WRIGHT	DATE : 3/23	DWG. NO. 8	
CHECKED BY : P. BARBER	DATE : 3/23		
DESIGN ENGINEER OF RECORD : D. HAWKINS	DATE : 6/26		

REVISIONS					SHEET NO. S-8
NO.	BY	DATE	NO.	BY	
1			3		TOTAL SHEETS
2			4		14



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REV. 4/15 MAA/TMO

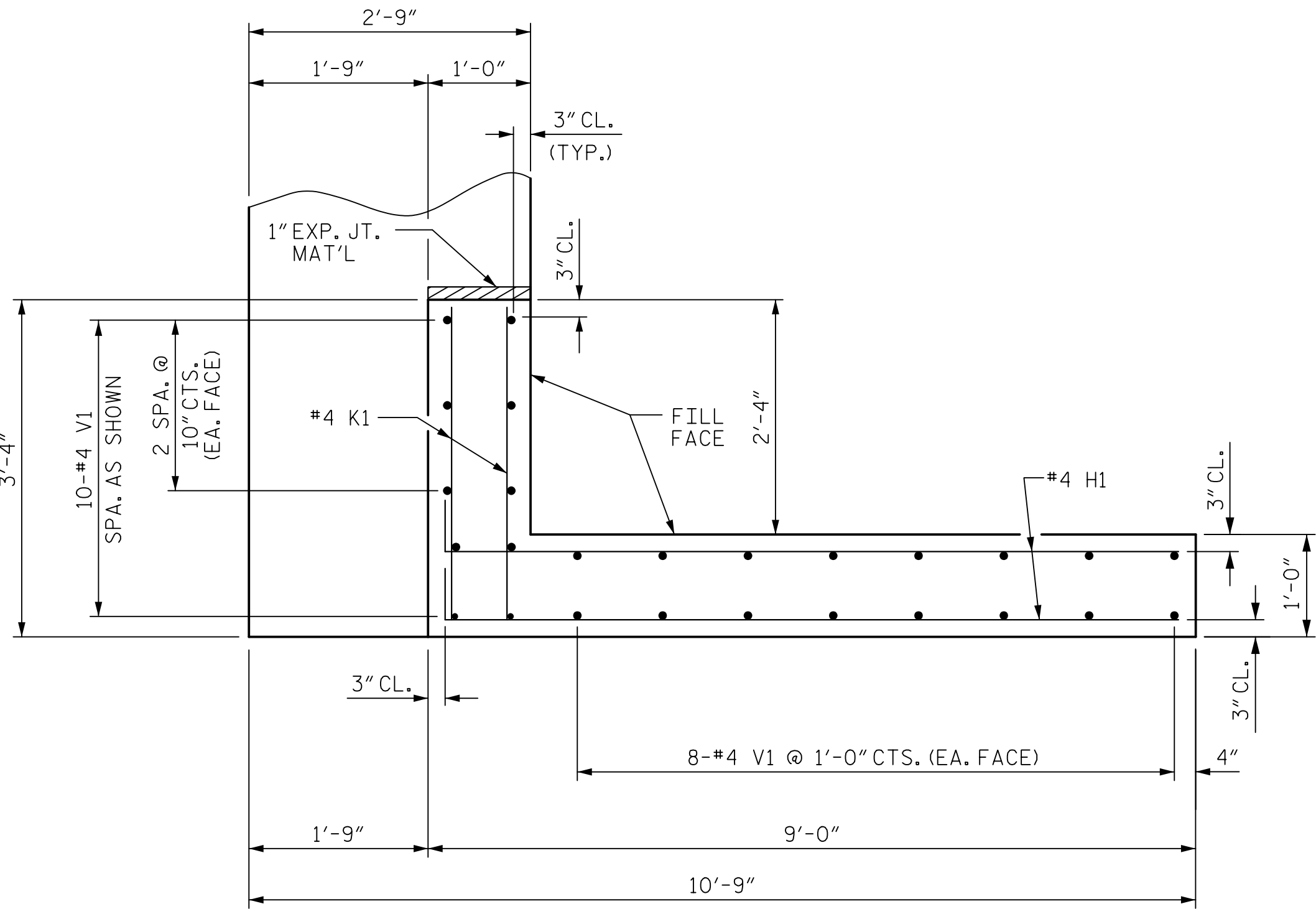
DRAWN BY	M. WRIGHT	DATE	3/23	DWG. NO. 10
CHECKED BY	P. BARBER	DATE	3/23	
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26	

DRAWN BY	M. WRIGHT	DATE	3/23	DWG. NO. 10
CHECKED BY	P. BARBER	DATE	3/23	
DESIGN ENGINEER OF RECORD	D. HAWKINS	DATE	6/26	

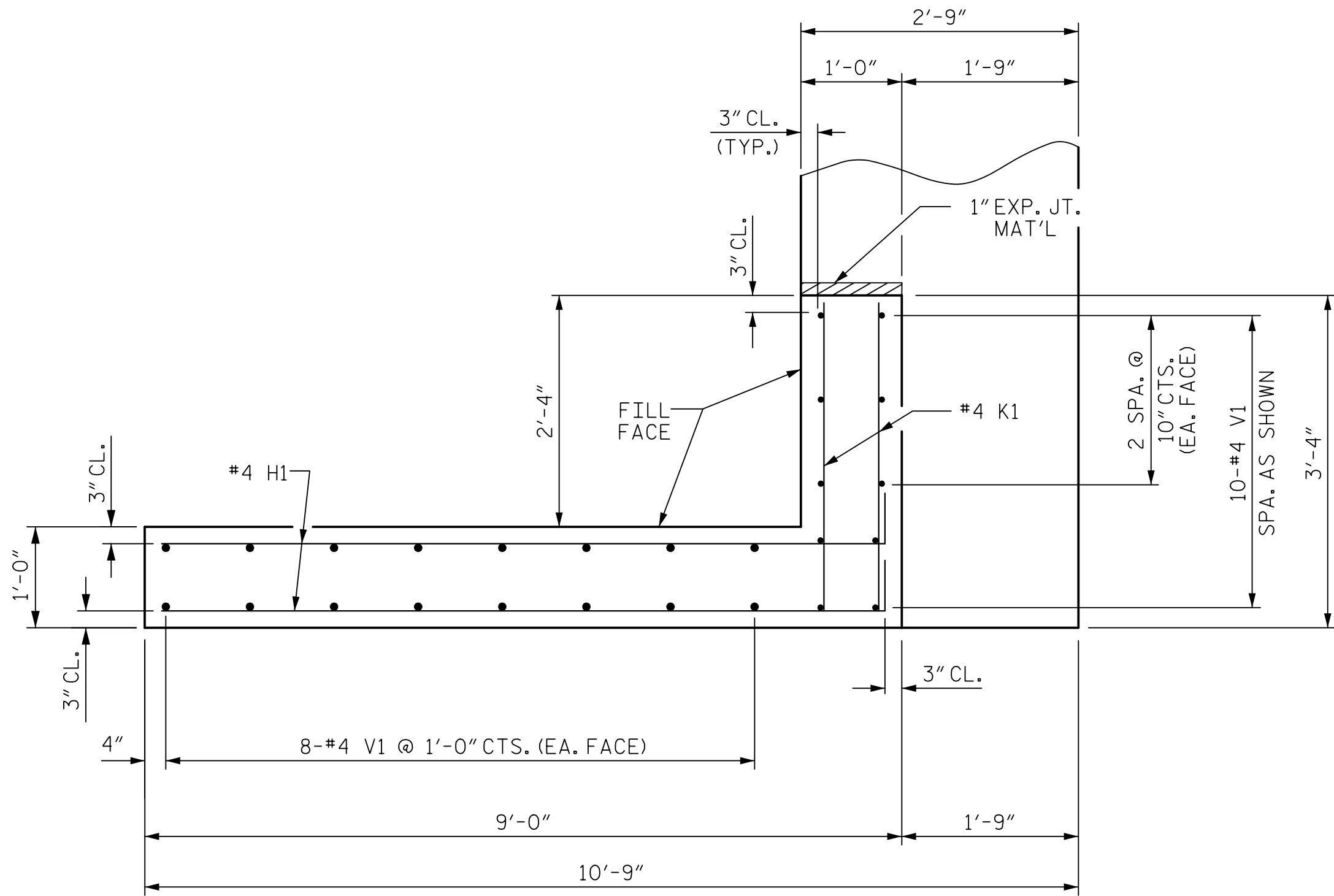
FOR WING DETAILS, SEE SHEET 3 OF 4.

REVISIONS						SHEET NO. S-10
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 14
2			4			

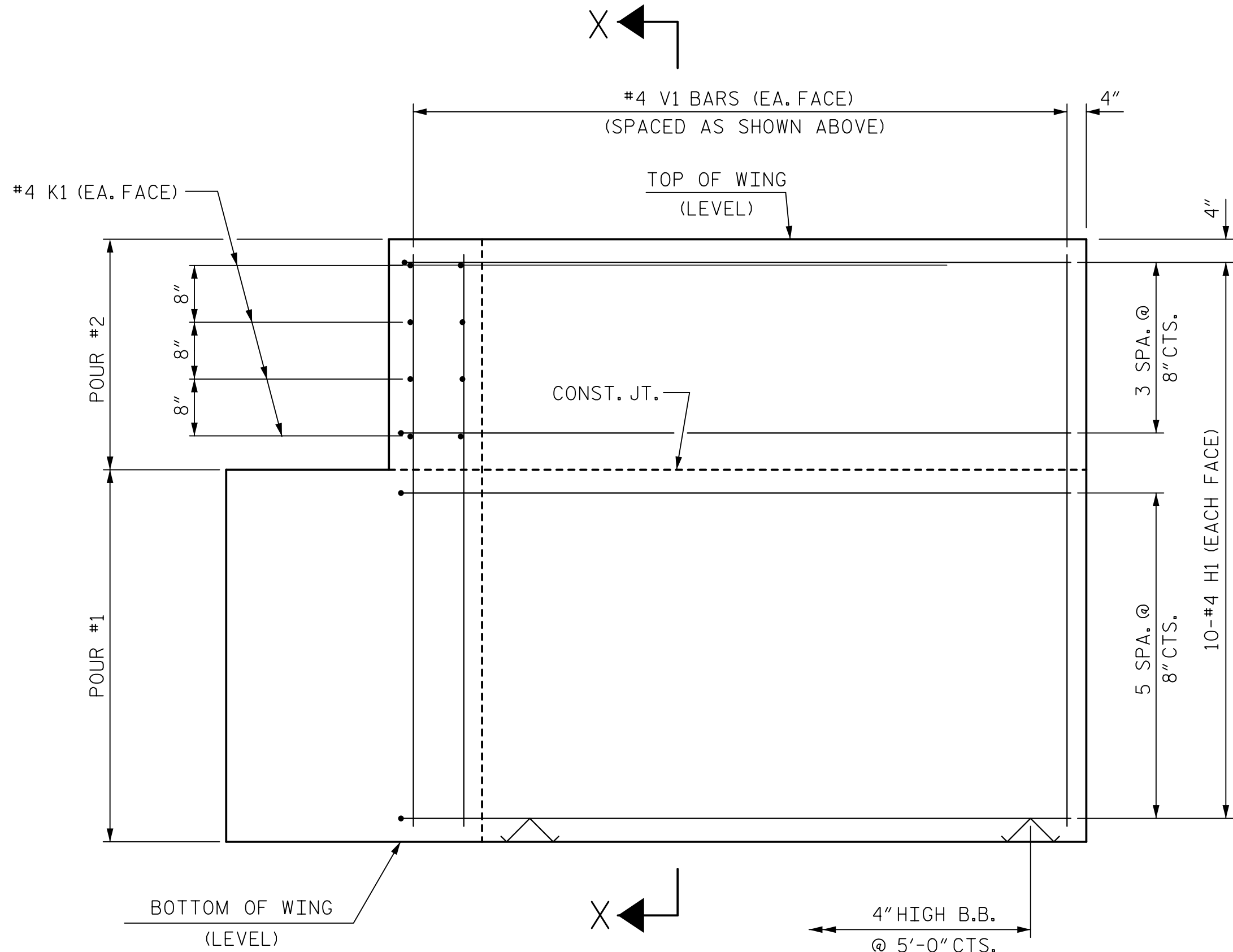
SHEET NO.	S-10
TOTAL SHEETS	14



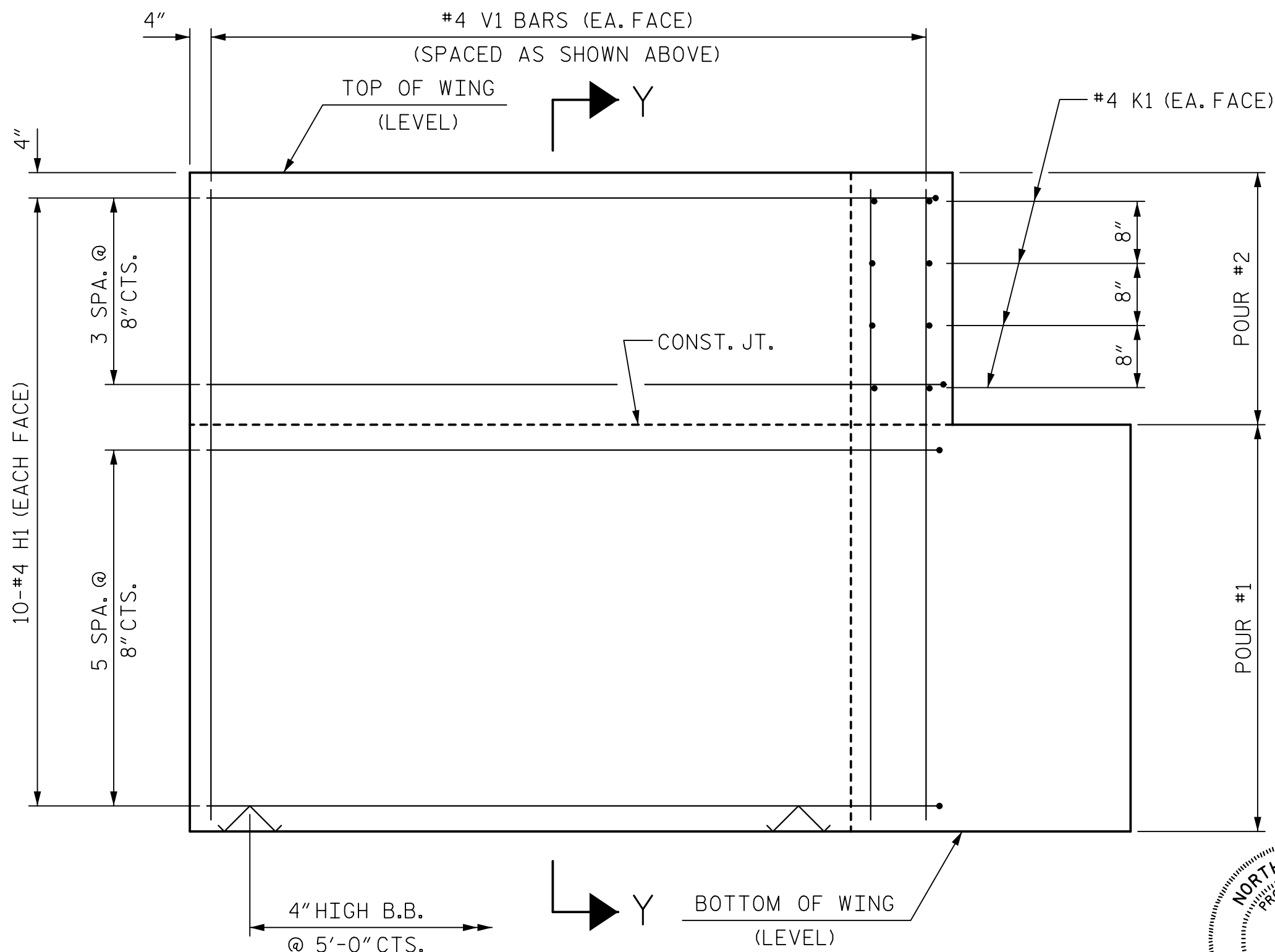
PLAN OF WING (W1)



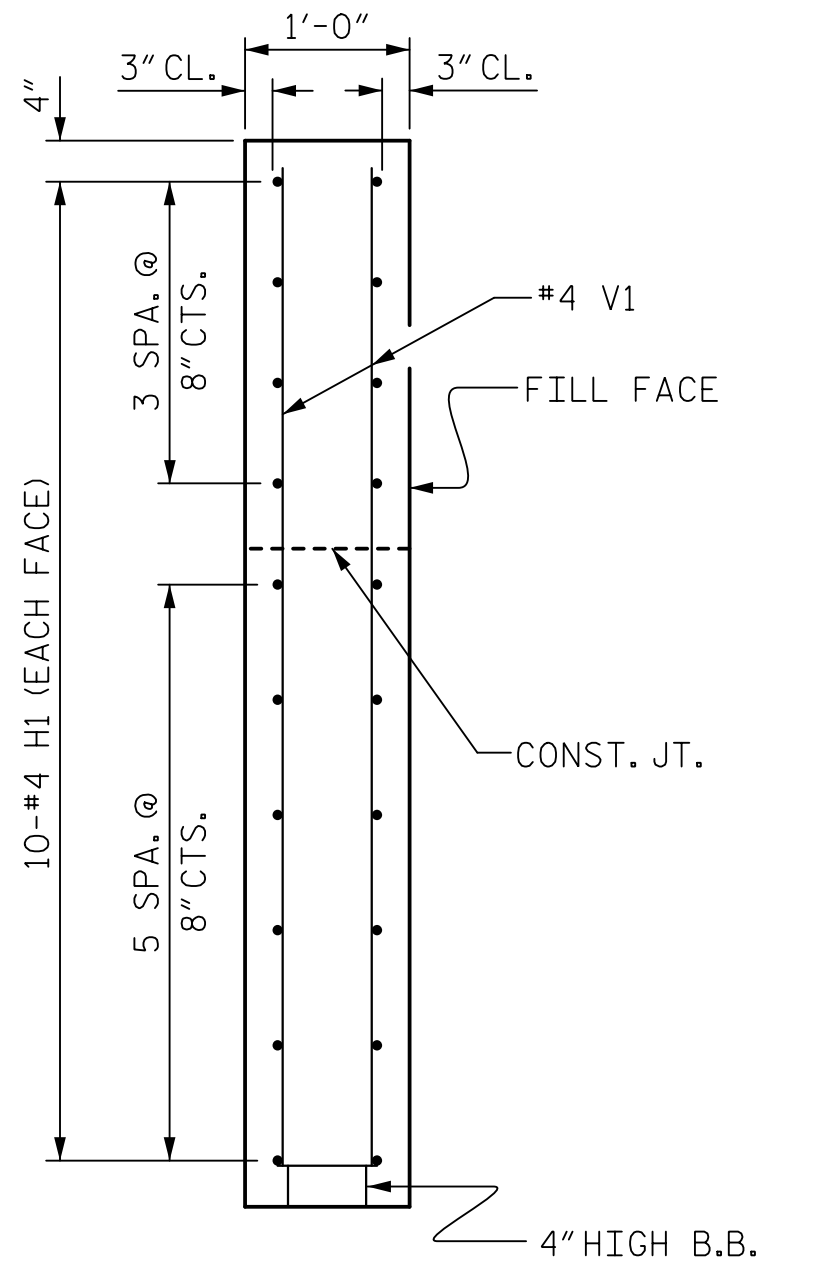
PLAN OF WING (W2)



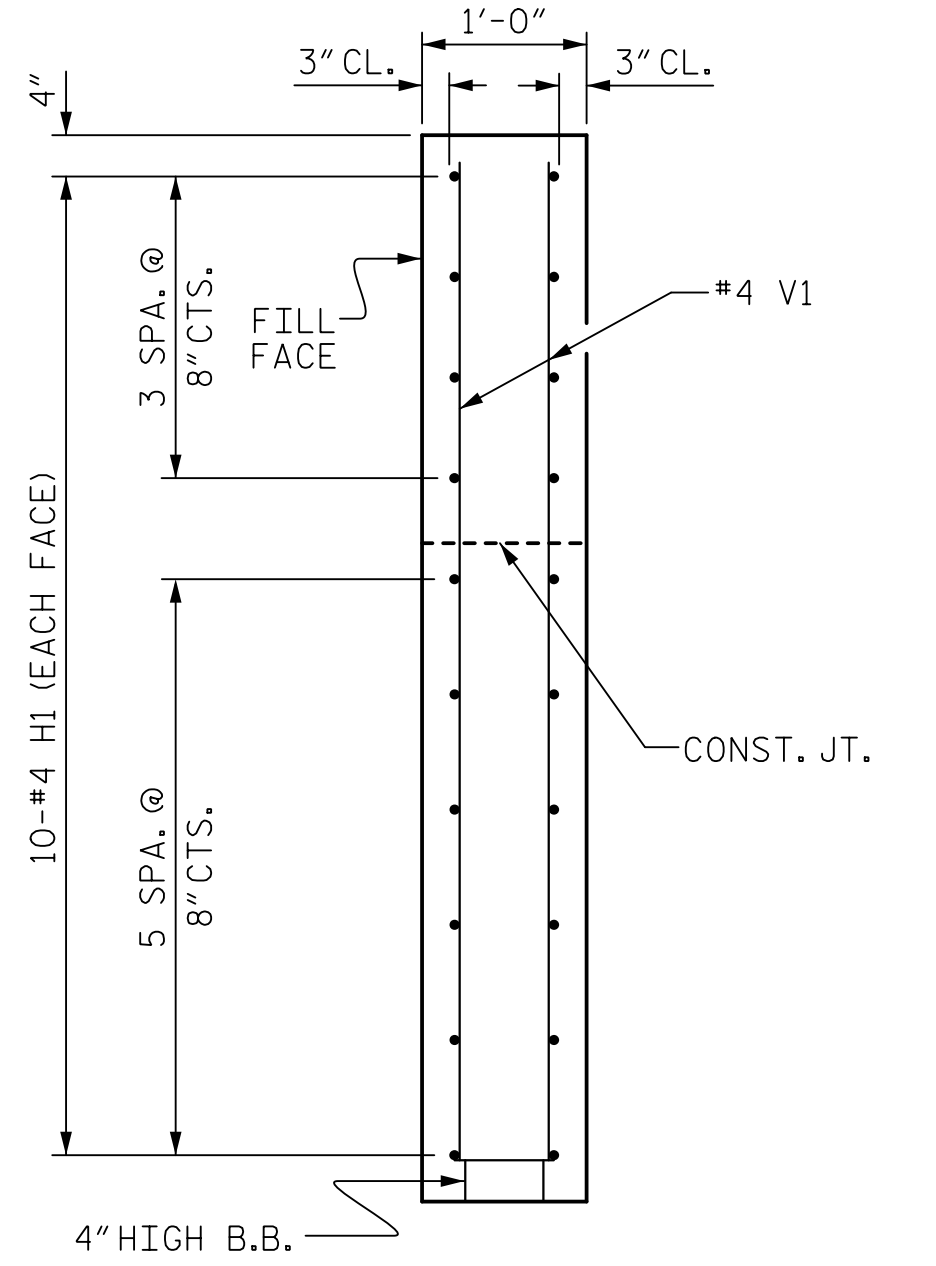
ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION X-X



SECTION Y-Y

PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE
END BENT
WING DETAILS

STD. NO. EB_33_90S4

ASSEMBLED BY : M. WRIGHT DATE : 3/23
CHECKED BY : P. BARBER DATE : 3/23

DRAWN BY : WJH 12/11
CHECKED BY : AAC 12/11

REV. 4/15 MAA/TMG

WING DETAILS

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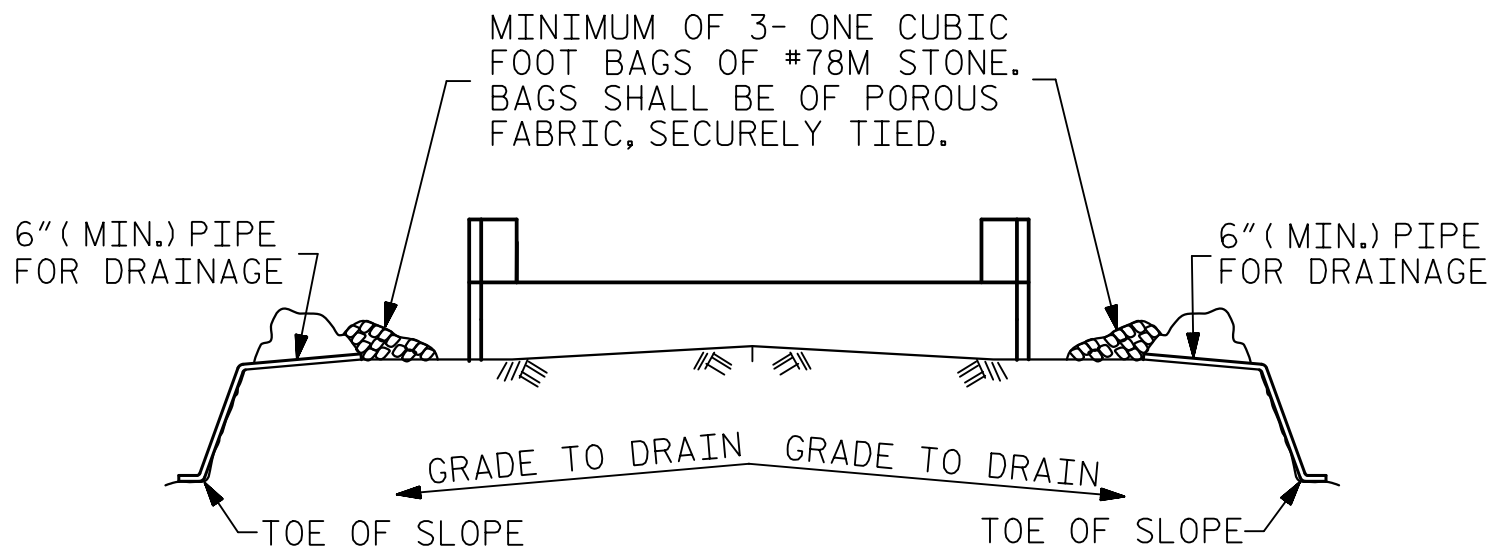
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4000 Center of North Hills Street, Suite 500, Raleigh, N.C. 27609

DRAWN BY : M. WRIGHT DATE : 3/23
CHECKED BY : P. BARBER DATE : 3/23
DESIGN ENGINEER OF RECORD : D. HAWKINS DATE : 6/26

DWG. NO. 11

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	
1			3		S-11
2			4		

TOTAL SHEETS
14

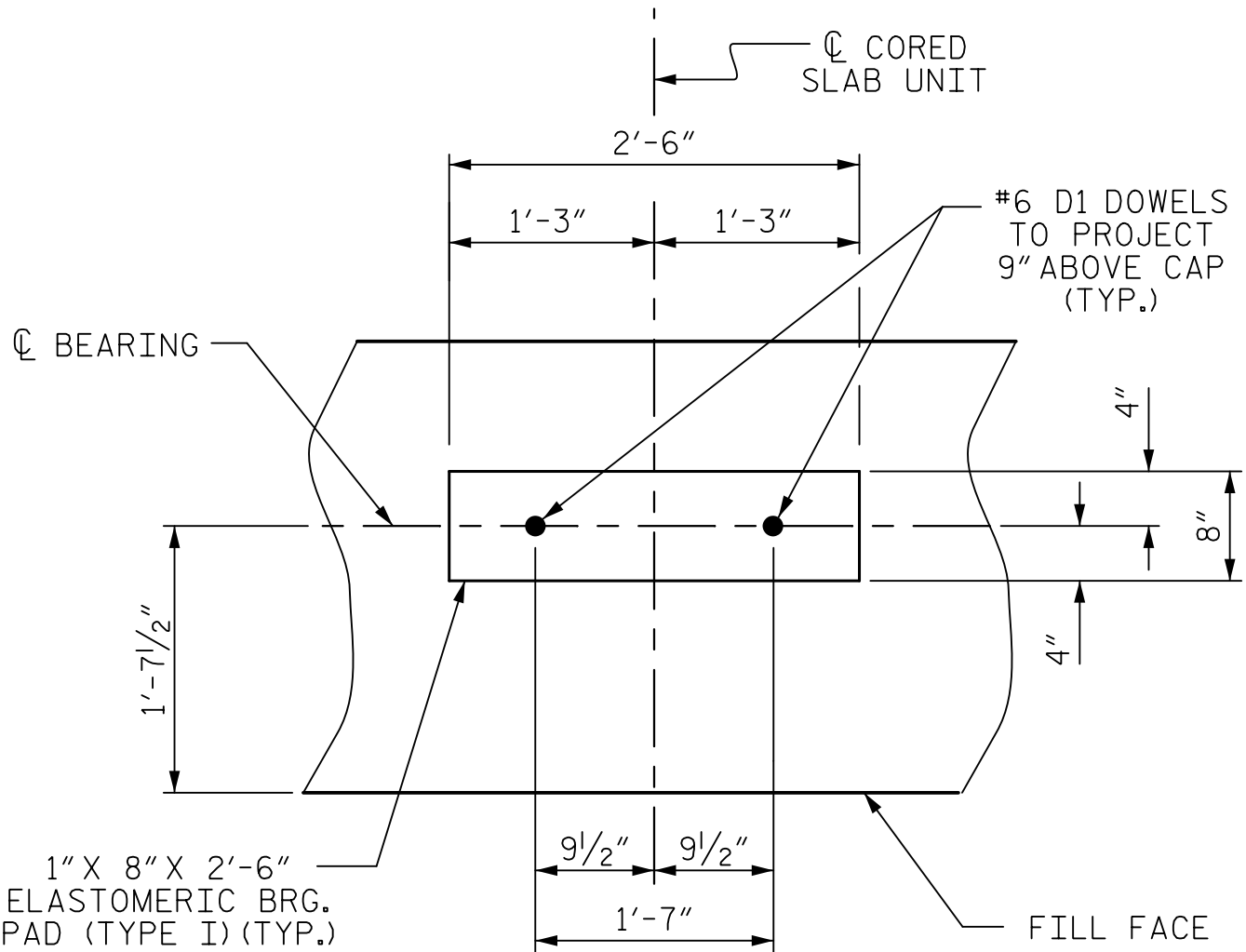


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

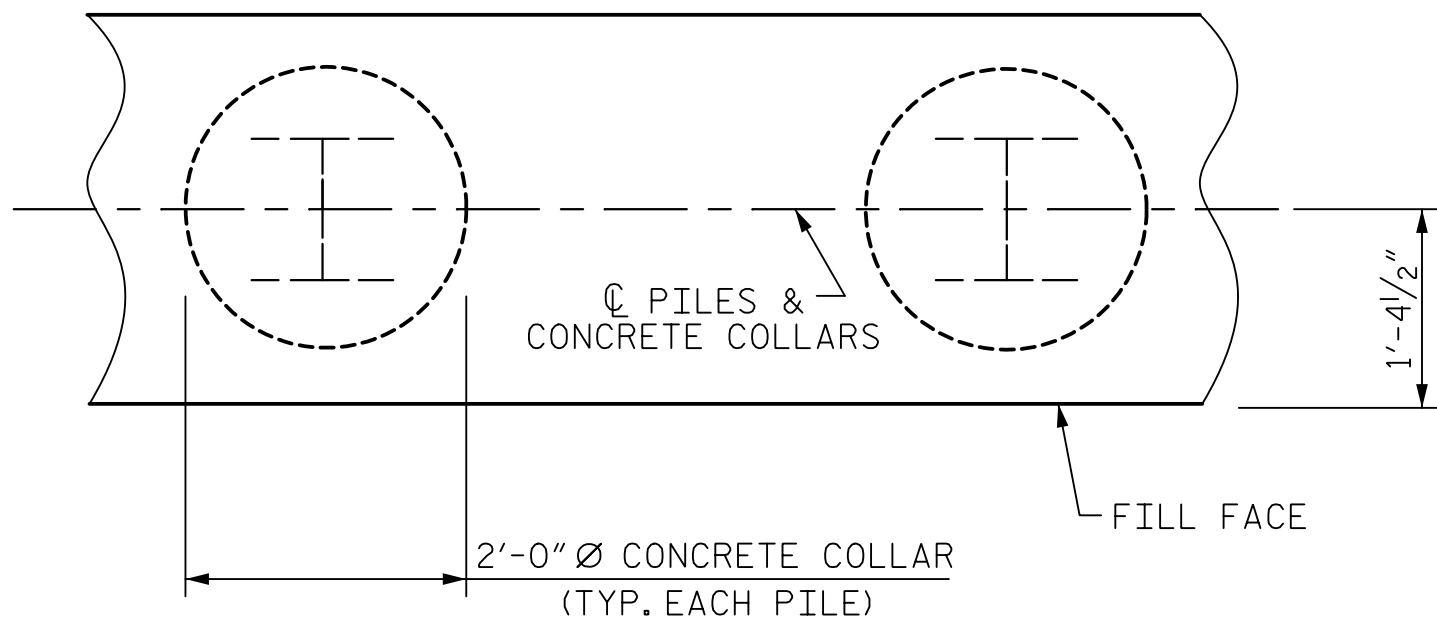
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

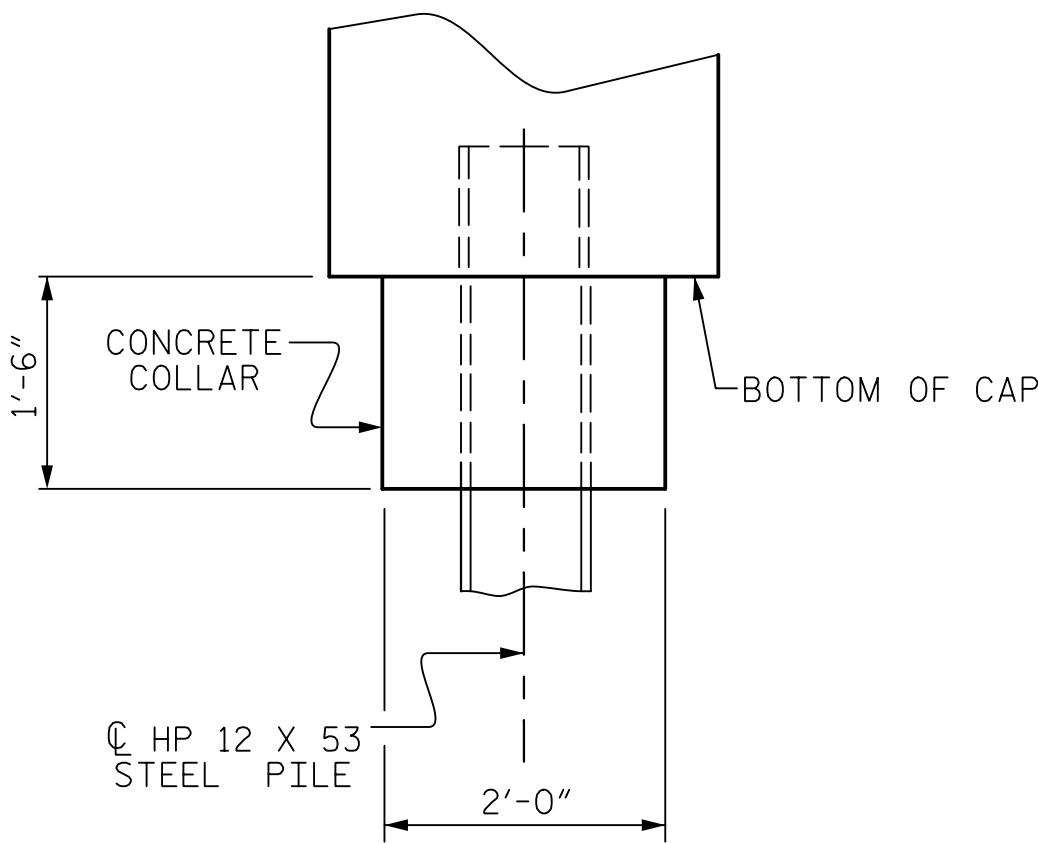


DETAIL "A"

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



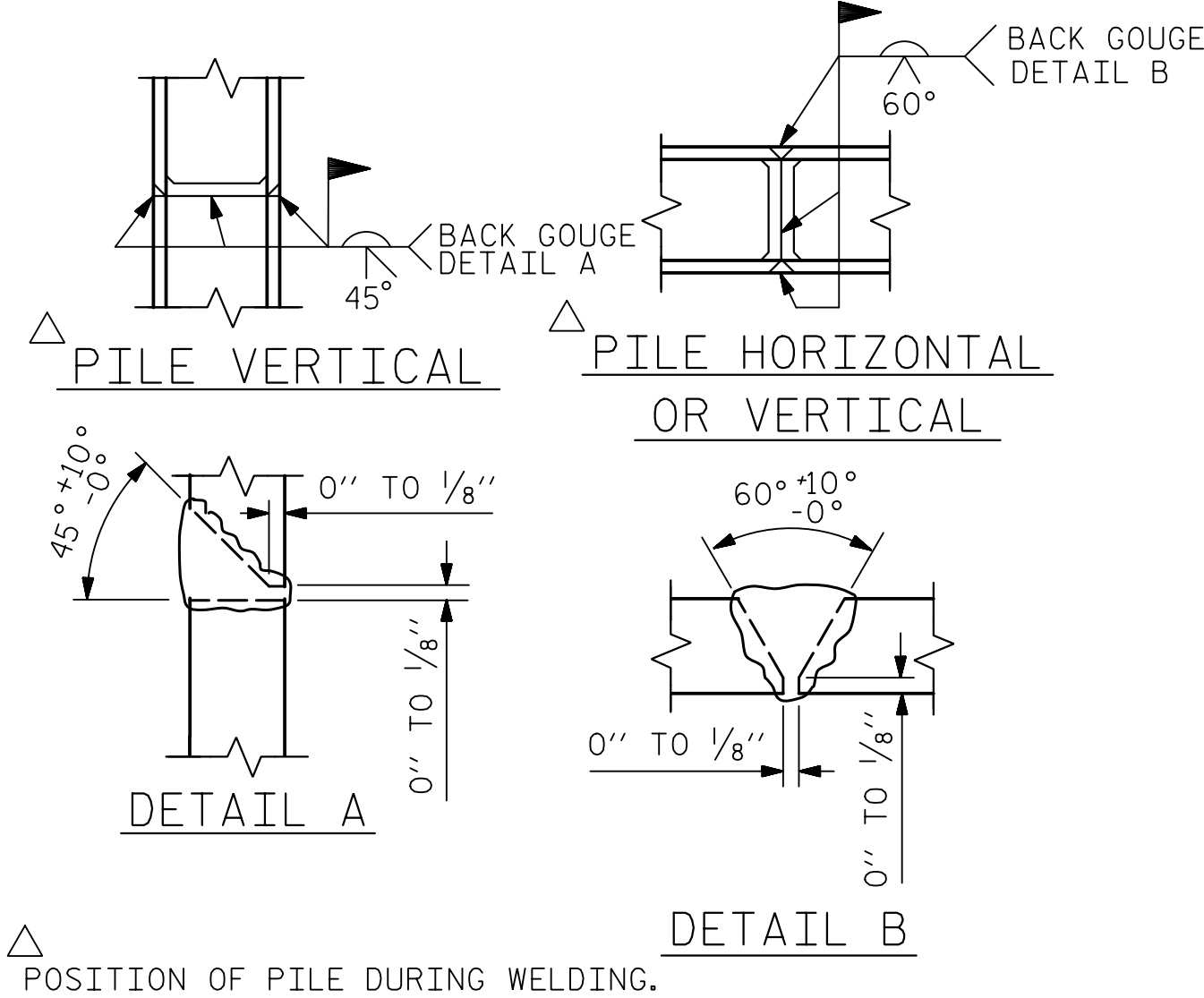
PLAN



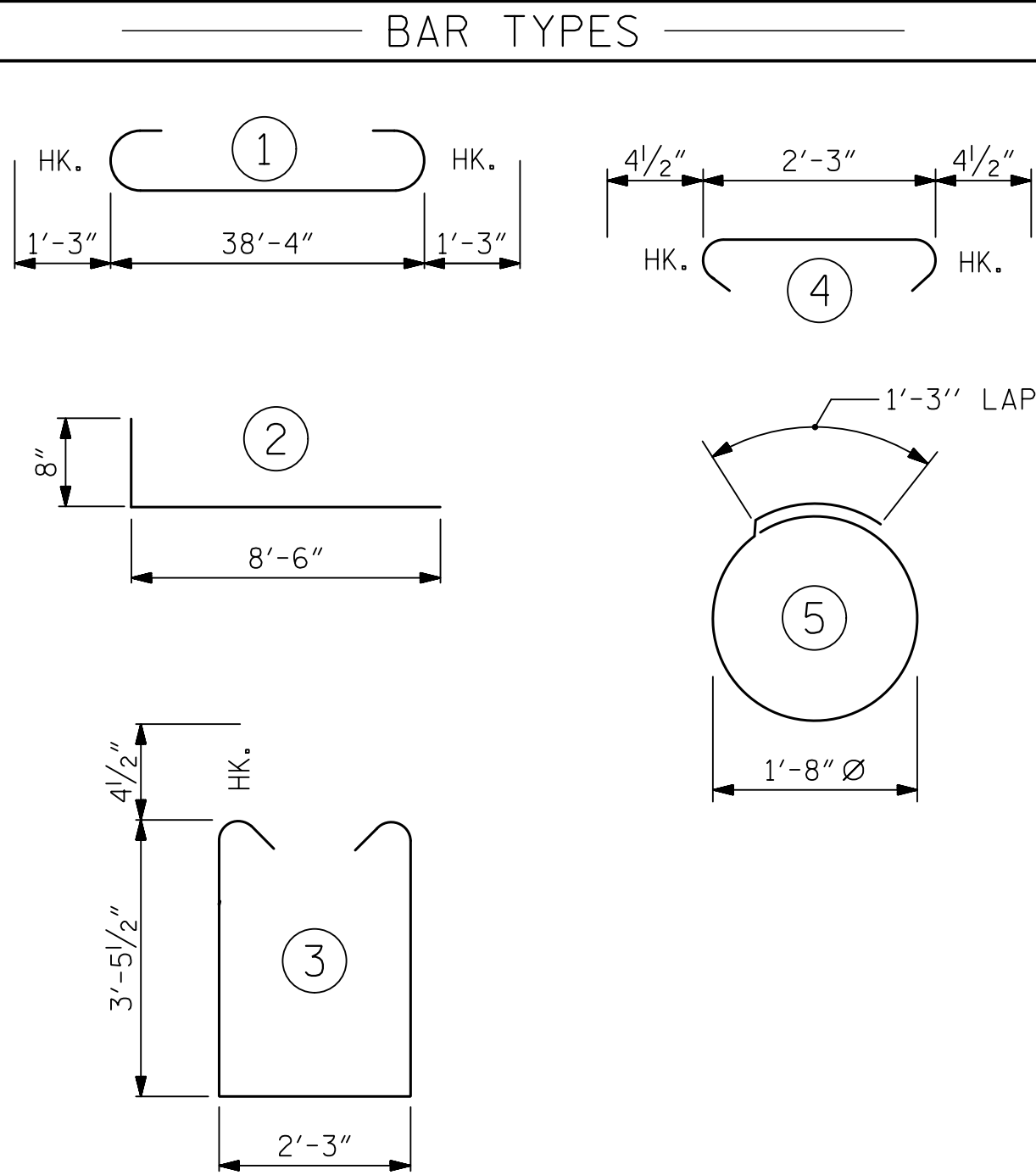
ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

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



PILE SPLICE DETAILS



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	40'-10"	1,111
B2	28	#4	STR	20'-6"	383
B3	10	#4	STR	2'-3"	15
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-2"	245
K1	16	#4	STR	2'-9"	29
S1	50	#4	3	9'-11"	331
S2	50	#4	4	3'-0"	100
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-0"	208

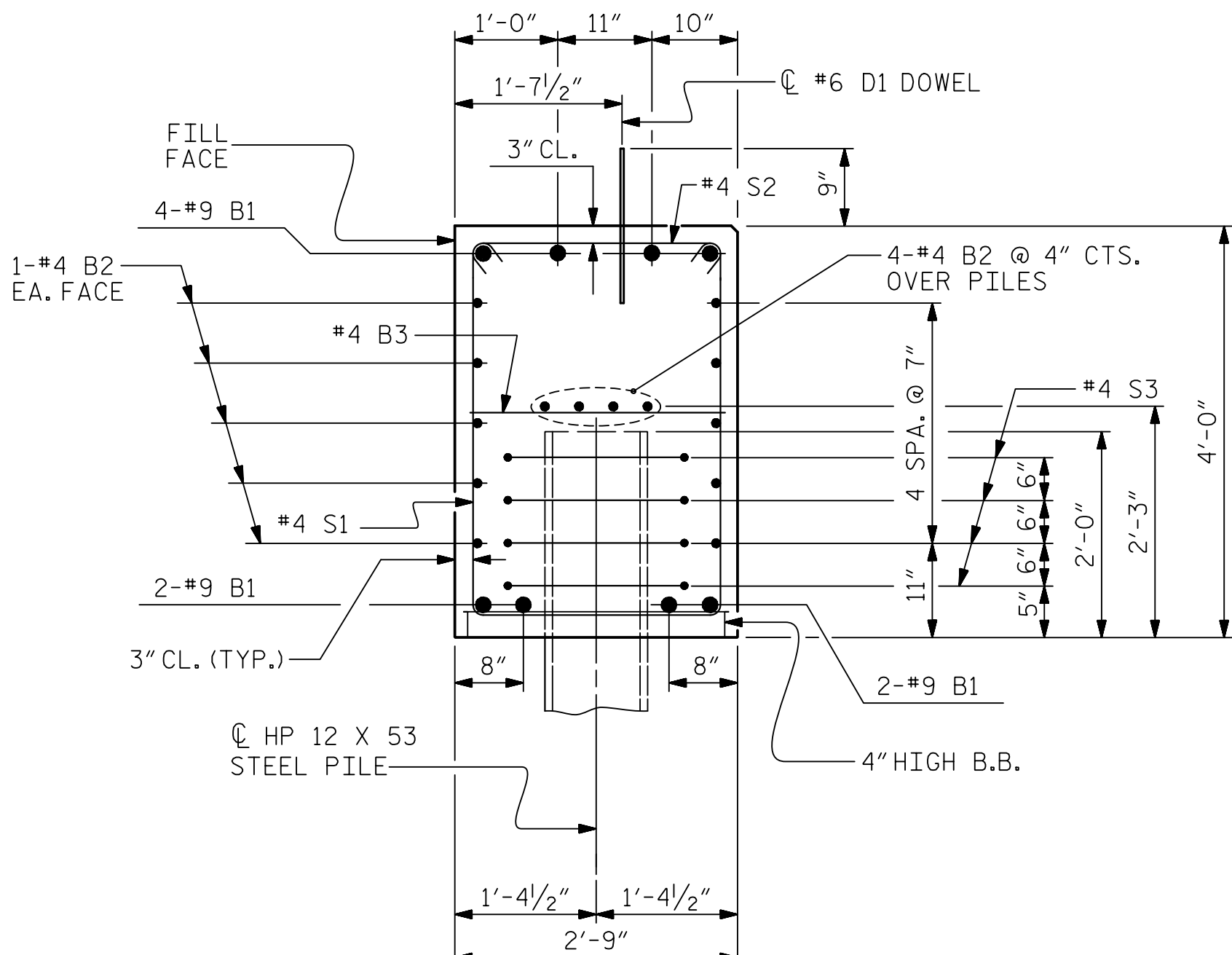
EPOXY COATED REINFORCING STEEL (FOR ONE END BENT) 2,594 LBS.

CLASS AA CONCRETE BREAKDOWN (FOR ONE END BENT)

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 19.5 C.Y.

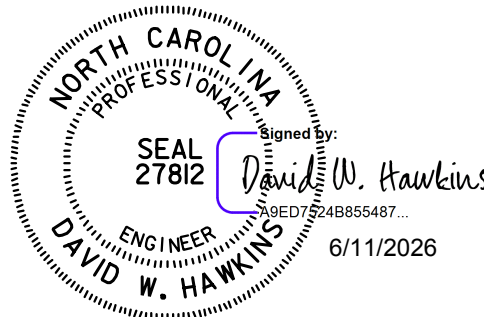
POUR #2 UPPER PART OF WINGS 2.1 C.Y.

TOTAL CLASS AA CONCRETE 21.6 C.Y.



SECTION A-A

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



PROJECT NO. BP2-R015

BEAUFORT COUNTY

STATION: 15+86.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2
DETAILS

REVISIONS					SHEET NO.
NO.	BY	DATE	NO.	BY	
1			3		TOTAL SHEETS
2			4		14

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DRAWN BY: M. WRIGHT DATE: 3/23
CHECKED BY: P. BARBER DATE: 3/23
DESIGN ENGINEER OF RECORD: D. HAWKINS DATE: 6/26

DWG. NO. 12

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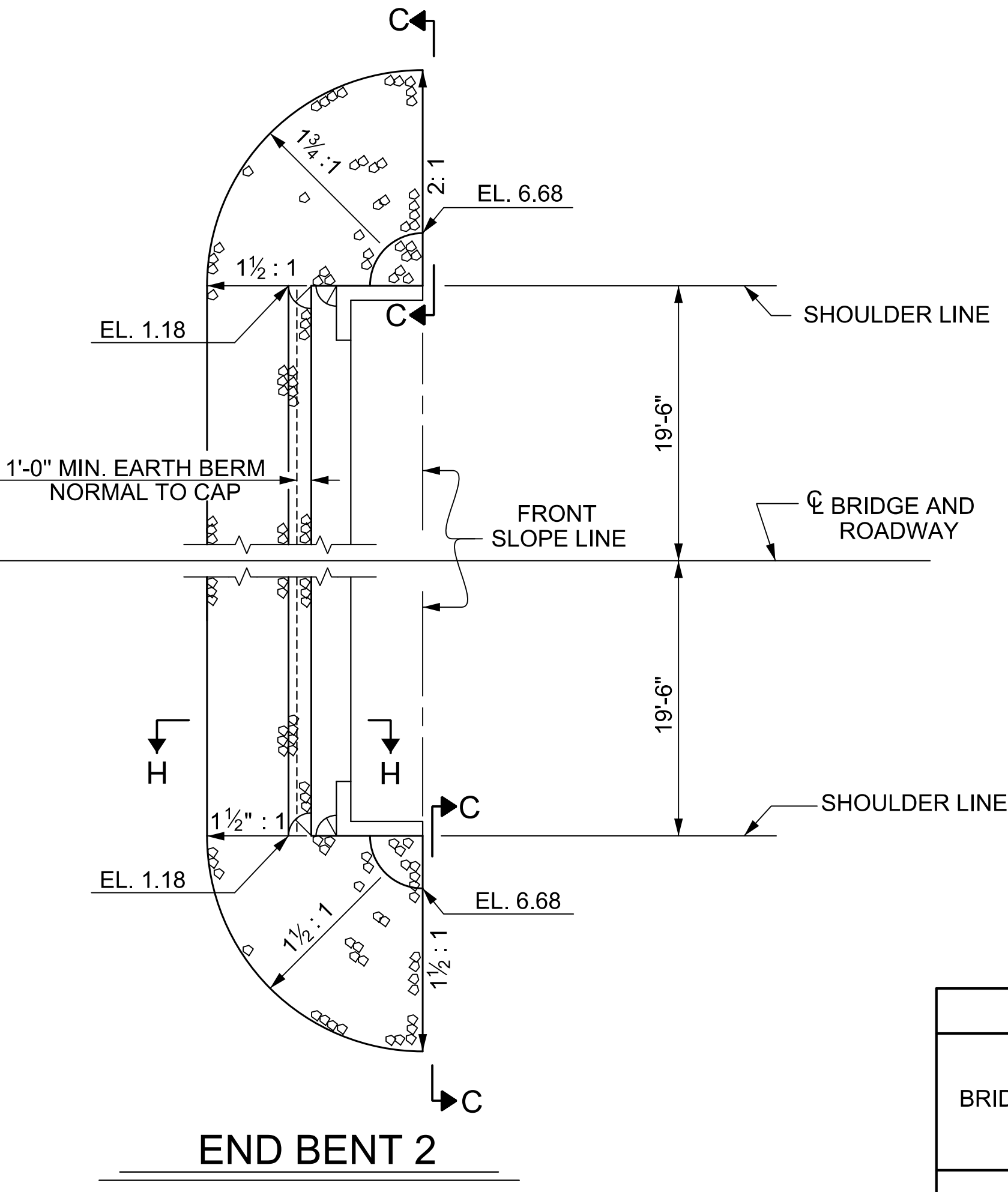
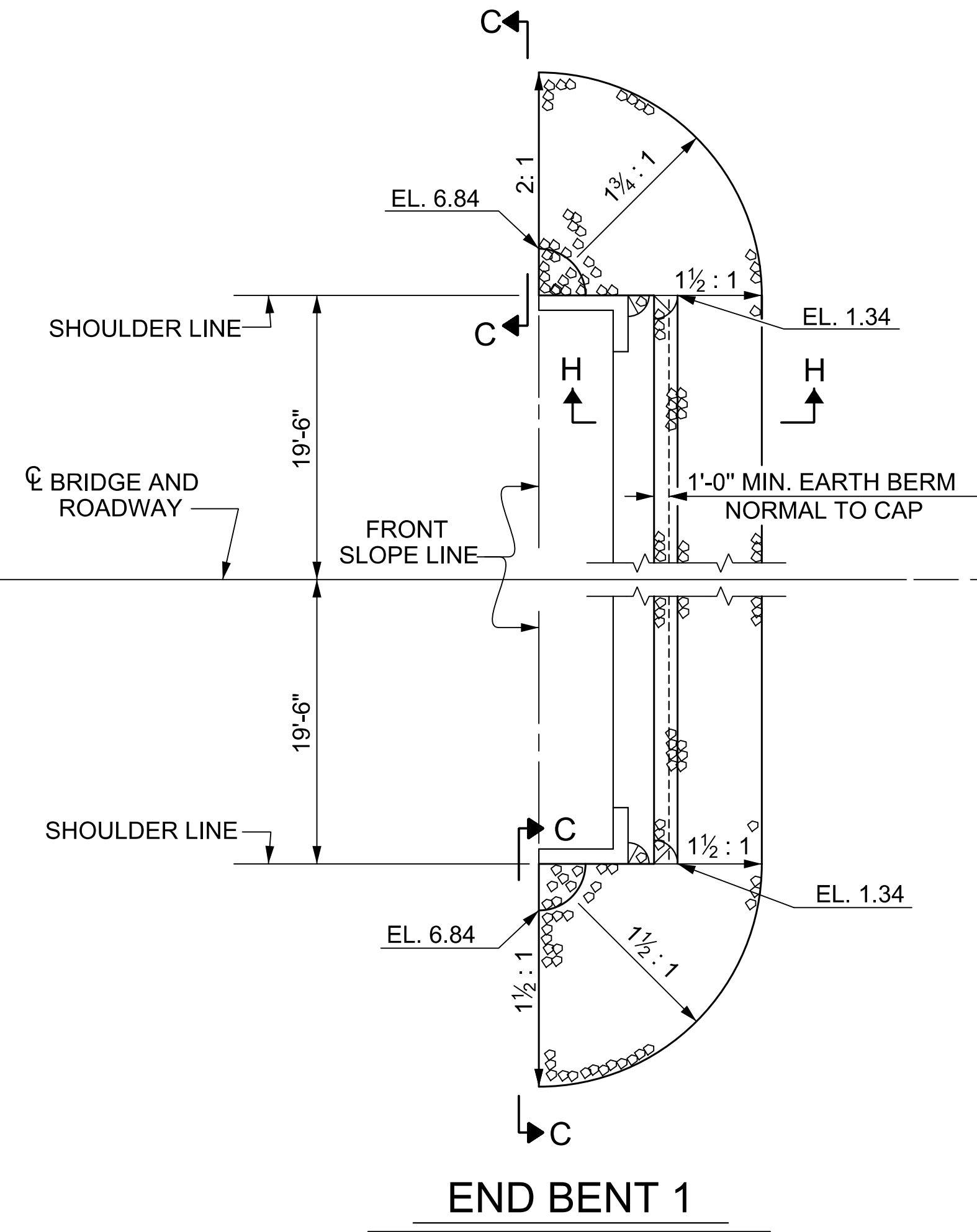
STD. NO. EB_33_90S4

ASSEMBLED BY: M. WRIGHT DATE: 3/23
CHECKED BY: P. BARBER DATE: 3/23

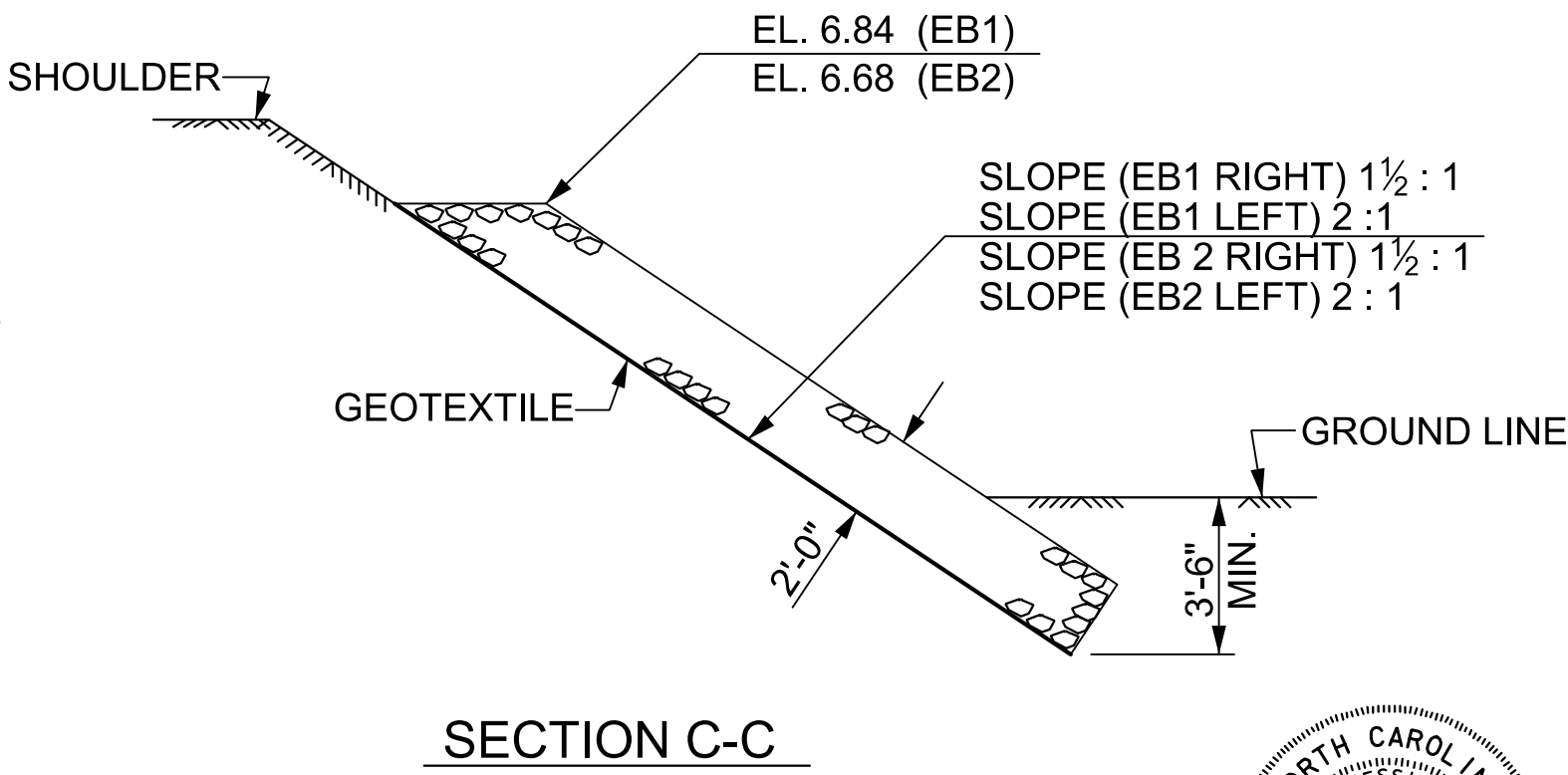
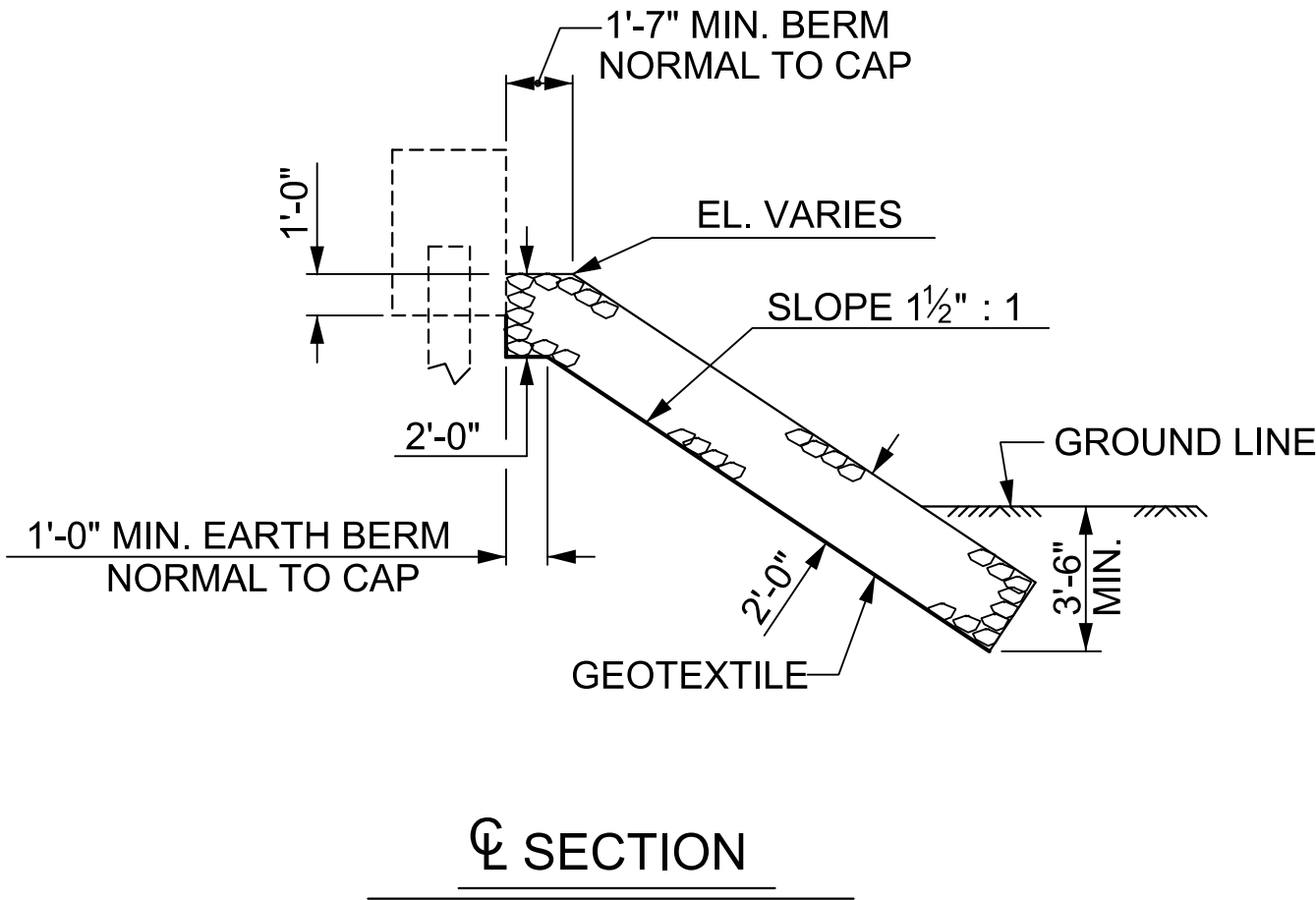
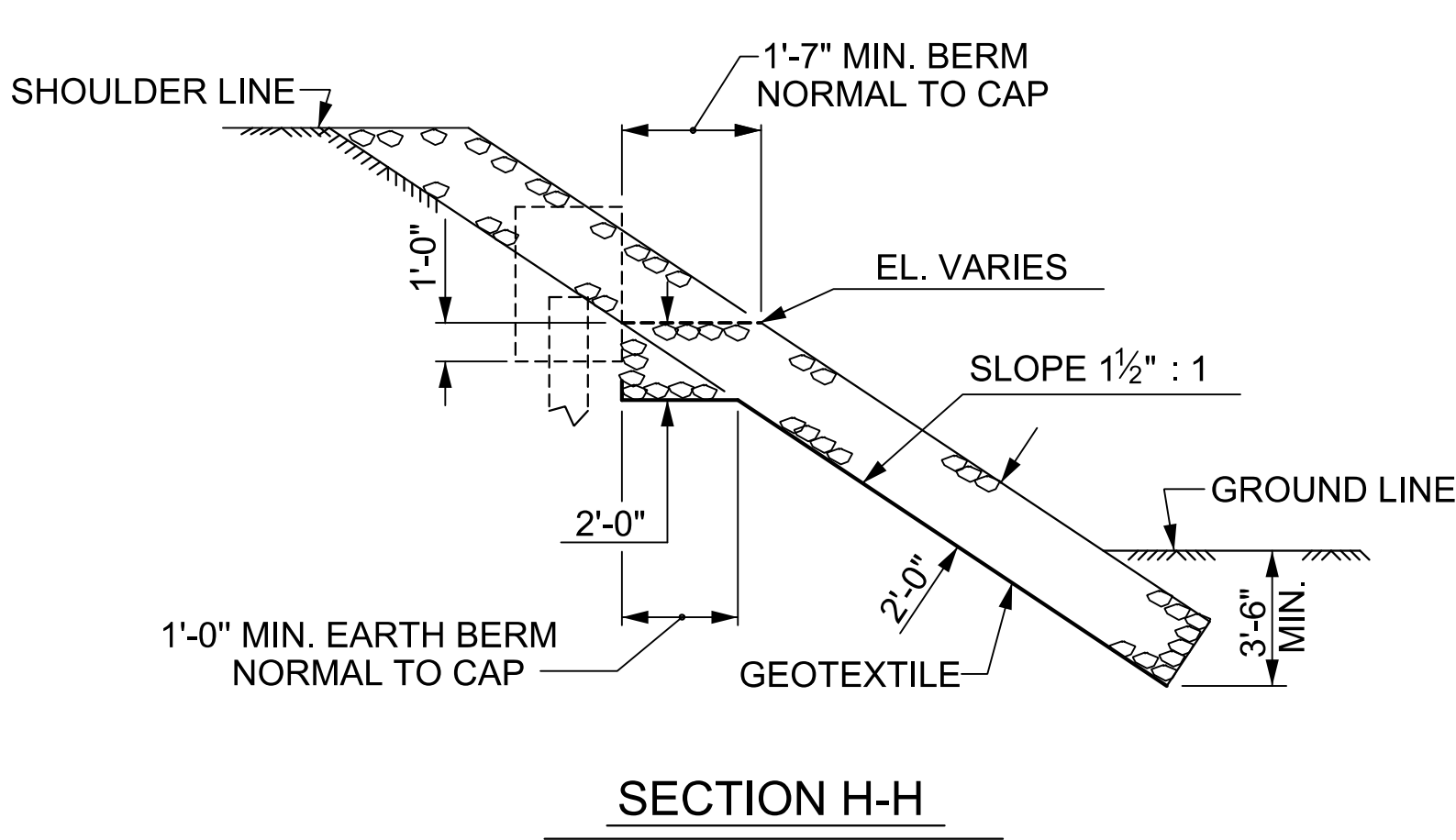
DRAWN BY: WJH 12/11
CHECKED BY: AAC 12/11

REV. 4/15 MAA/TMG

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

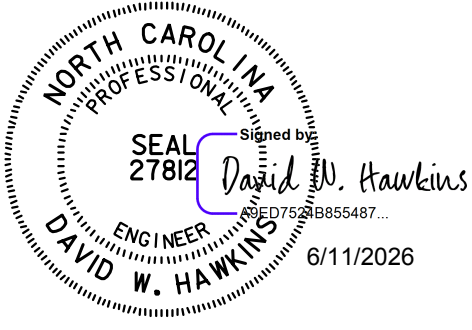


ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+86.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	65	70
END BENT 2	65	70



PROJECT NO. BP2-R015
BEAUFORT COUNTY
STATION: 15+86.00 -L-

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



ASSEMBLED BY : M. WRIGHT	DATE : 8/24
CHECKED BY : Z. REINEKE	DATE : 11/24
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

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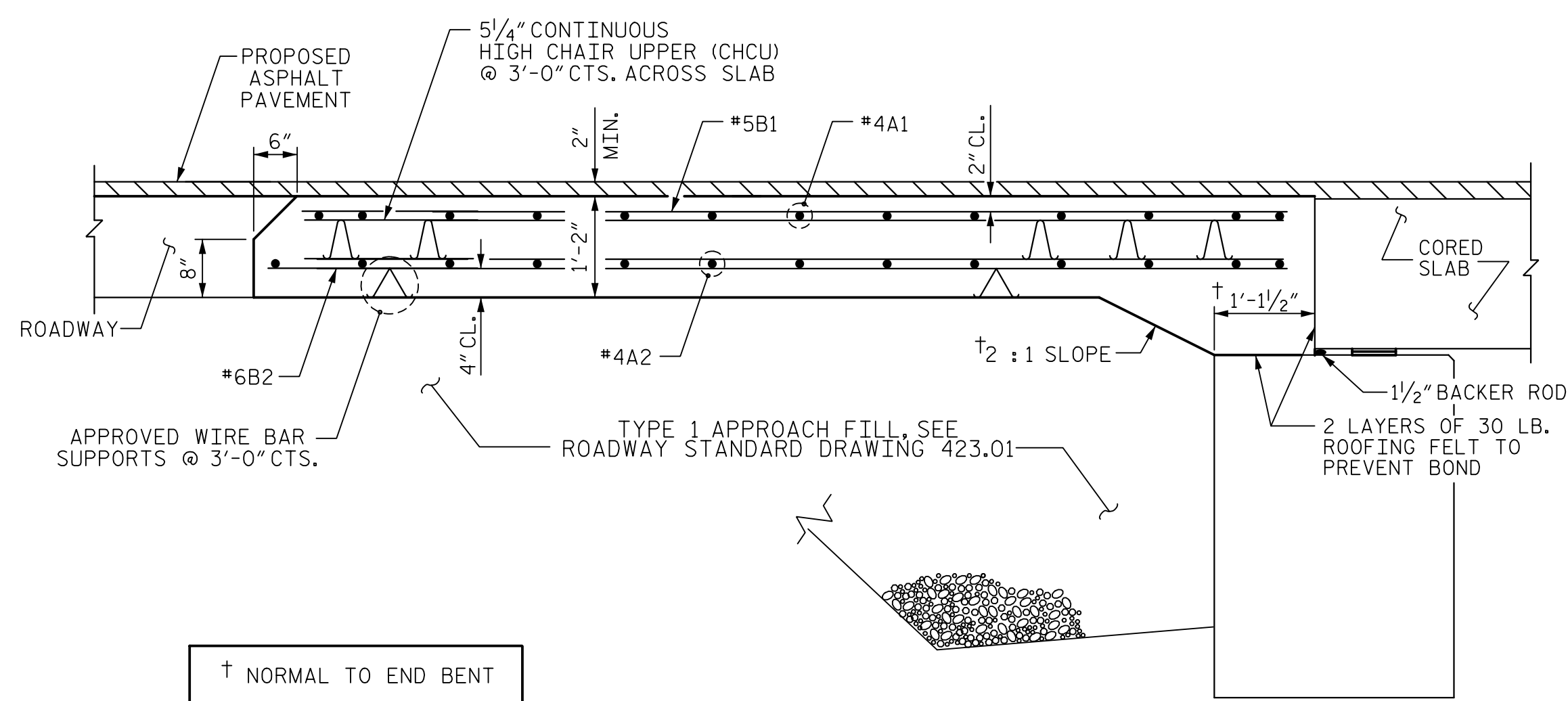
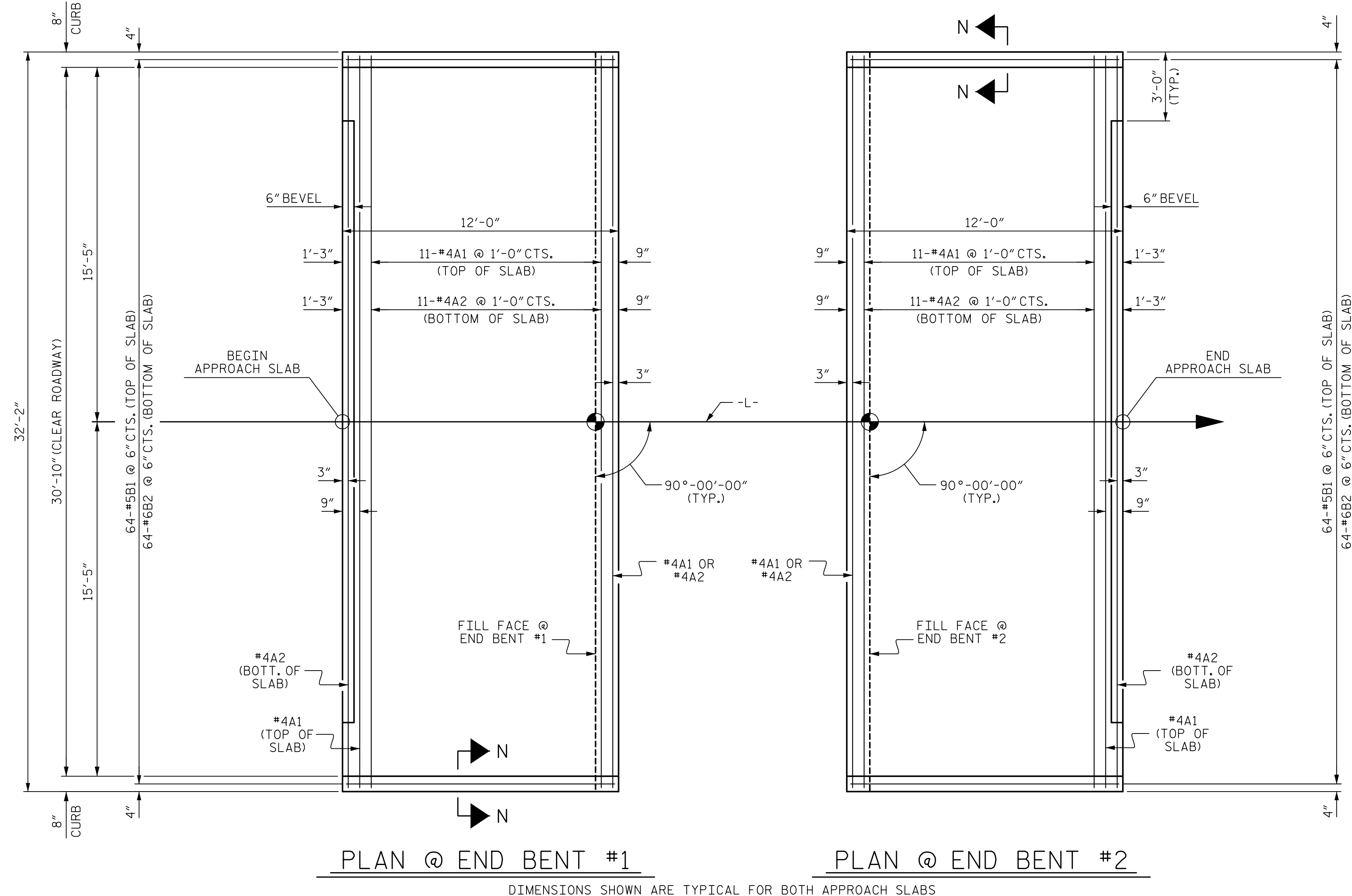
DRAWN BY : M. WRIGHT	DATE : 8/24
CHECKED BY : Z. REINEKE	DATE : 11/24
DESIGN ENGINEER OF RECORD : D. HAWKINS	DATE : 6/26

DWG. NO. 13

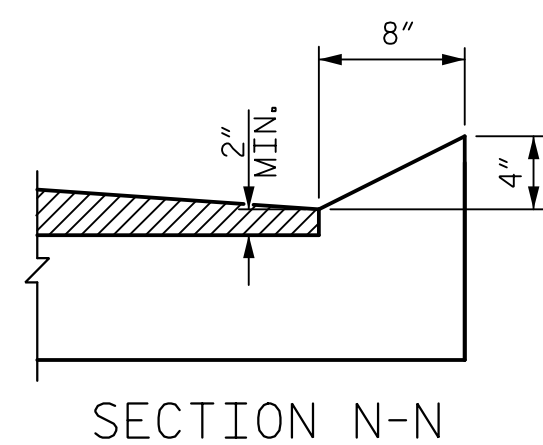
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REVISIONS					SHEET NO. S-13
NO.	BY	DATE	NO.	BY	
1			3		TOTAL SHEETS
2			4		14

STD. NO. RR1 Sht. 2



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

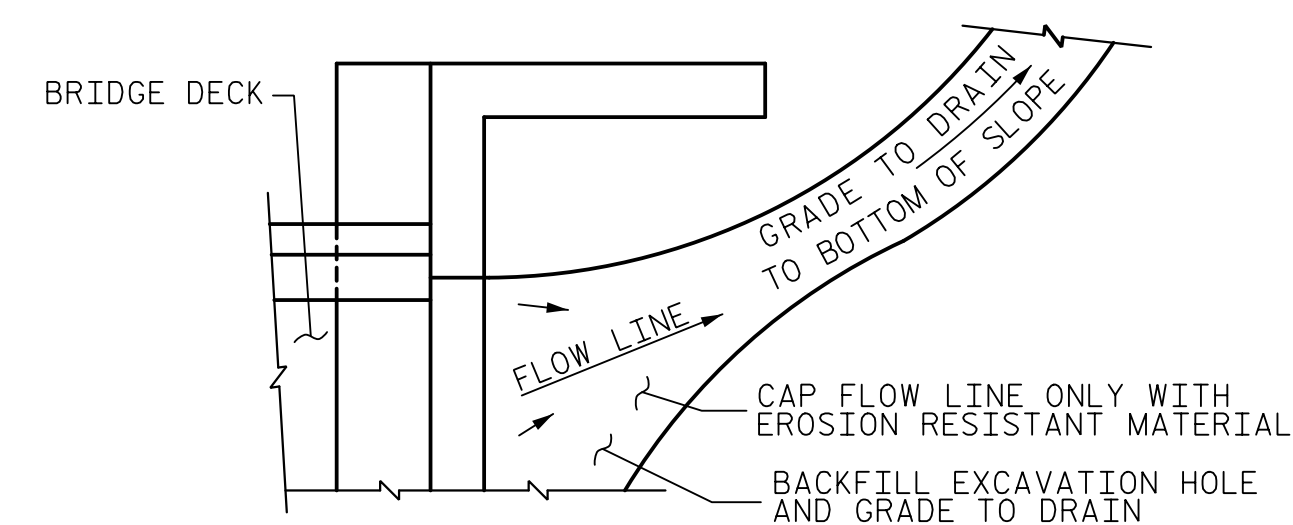


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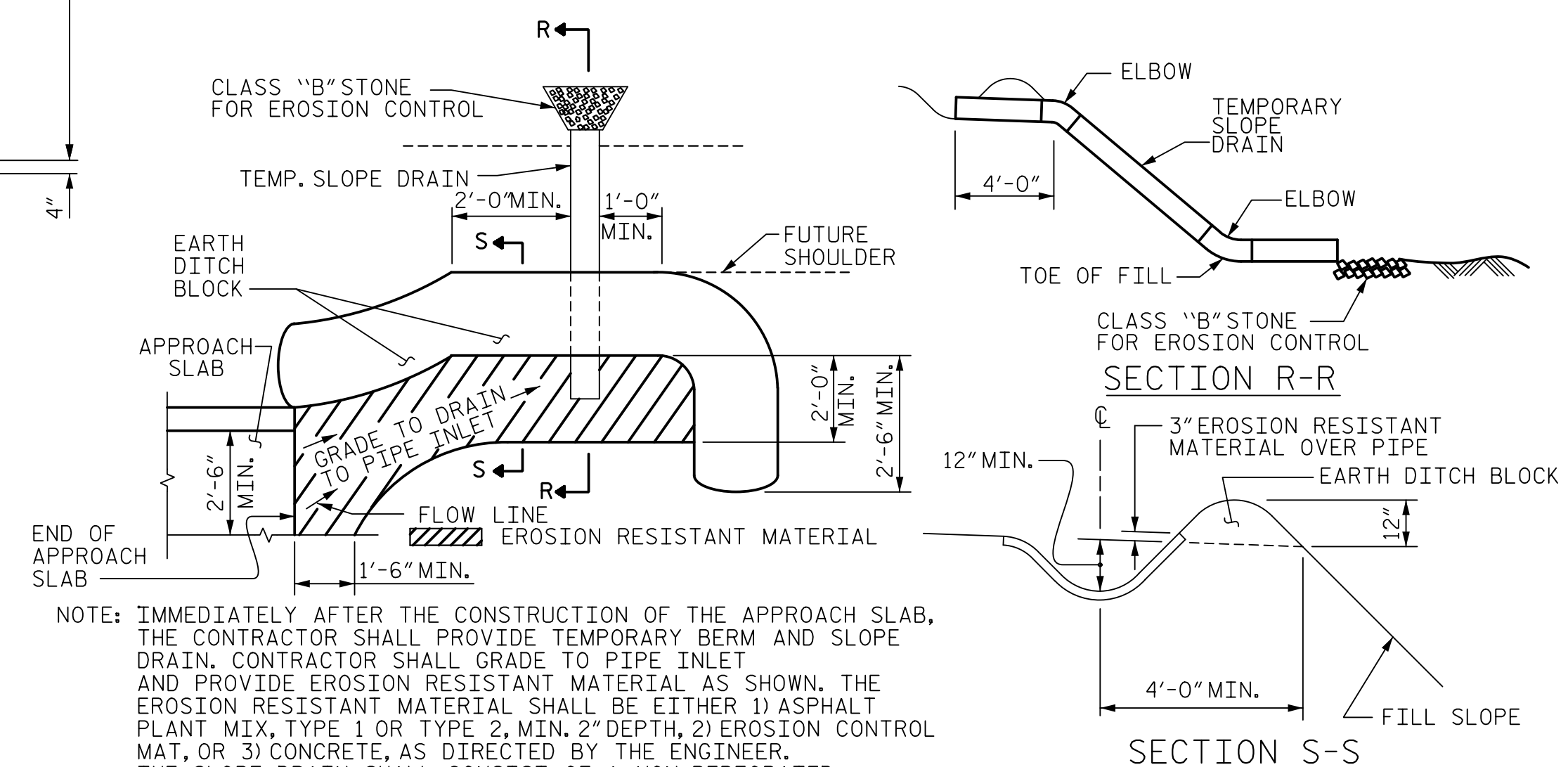
FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

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.



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 SLAB 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.



PLAN VIEW

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

PROJECT NO. BP2-R015
BEAUFORT COUNTY
 STATION: 15+86.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
BRIDGE APPROACH SLAB
FOR PRESTRESSED CONCRETE
CORED SLAB UNIT
(SUB-REGIONAL TIER)
90° SKEW

09	<i>REVISIONS</i>						SHEET NO. S-14
	NO.	BY	DATE	NO.	BY	DATE	
	1			3			TOTAL SHEETS 14
	2			4			

STD. NO. BAS_33_90S

ASSEMBLED BY : M. WRIGHT	DATE : 3/23
CHECKED BY : P. BARBER	DATE : 3/23

DRAWN BY : SHS/MAA 5-09	REV. 12-17	MAA/TH
CHECKED BY : BCH 5-09	REV. 08-19	BNB/TH

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NC License No. C-1554
4000 Center at North Hills Street, Suite 500, Raleigh, N.C. 27609

DRAWN BY	M. WRIGHT	DATE	3/23	DWG. NO. 14
CHECKED BY	P. BARBER	DATE	3/23	
DESIGNED BY	D. HAWKINS	DATE	6/26	

DWG NO. 14

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5/8/2026
TIME
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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS.....	AASHTO (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE.....	SEE AASHTO
STRESS IN EXTREME FIBER OF STRUCTURAL STEEL - AASHTO M270 GRADE 36	---- 20,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50W	--- 27,000 LBS. PER SQ. IN.
- AASHTO M270 GRADE 50	---- 27,000 LBS. PER SQ. IN.
REINFORCING STEEL IN TENSION - GRADE 60	----- 24,000 LBS. PER SQ. IN.
CONCRETE IN COMPRESSION	----- 1,200 LBS. PER SQ. IN.
CONCRETE IN SHEAR	----- SEE AASHTO
STRUCTURAL TIMBER - TREATED OR UNTREATED EXTREME FIBER STRESS	---- 1,800 LBS. PER SQ. IN.
COMPRESSION PERPENDICULAR TO GRAIN OF TIMBER	----- 375 LBS. PER SQ. IN.
EQUIVALENT FLUID PRESSURE OF EARTH	----- 30 LBS. PER CU. FT. (MINIMUM)

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

STEEL SHEET PILING FOR PERMANENT OR TEMPORARY APPLICATIONS SHALL BE HOT ROLLED.

CONCRETE:

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF ALL STRUCTURES WITH THE EXCEPTION THAT: CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES, ABUTMENT BACKWALLS, AND APPROACH SLABS; AND CLASS B CONCRETE SHALL BE USED FOR SLOPE PROTECTION AND RIP RAP.

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED ¾" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1½" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A ¼" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A ¼" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

DOWELS WHEN INDICATED ON PLANS AS FOR CULVERT EXTENSIONS, SHALL BE EMBEDDED AT LEAST 12" INTO THE OLD CONCRETE AND GROUTED INTO PLACE WITH 1:2 CEMENT MORTAR.

ALLOWANCE FOR DEAD LOAD DEFLECTION, SETTLEMENT,
ETC. IN CASTING SUPERSTRUCTURES:

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE.

ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE ⅞" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST ⅝" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY ⅛" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

SPECIAL NOTES:

GENERALLY, IN CASE OF DISCREPANCY, THIS STANDARD SHEET OF NOTES SHALL GOVERN OVER THE SPECIFICATIONS, BUT THE REMAINDER OF THE PLANS SHALL GOVERN OVER NOTES HEREON, AND SPECIAL PROVISIONS SHALL GOVERN OVER ALL. SEE SPECIFICATIONS ARTICLE 105-4.