STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP3.R009	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP3.R009.1		PE
BP3.R009.2		ROW, UTIL.
BP3.R009.3		CONST.

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

FINAL PLANS

BRIDGE NO. 810194

PROJECT: BP3.R009

CONTRACT: DC00436

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

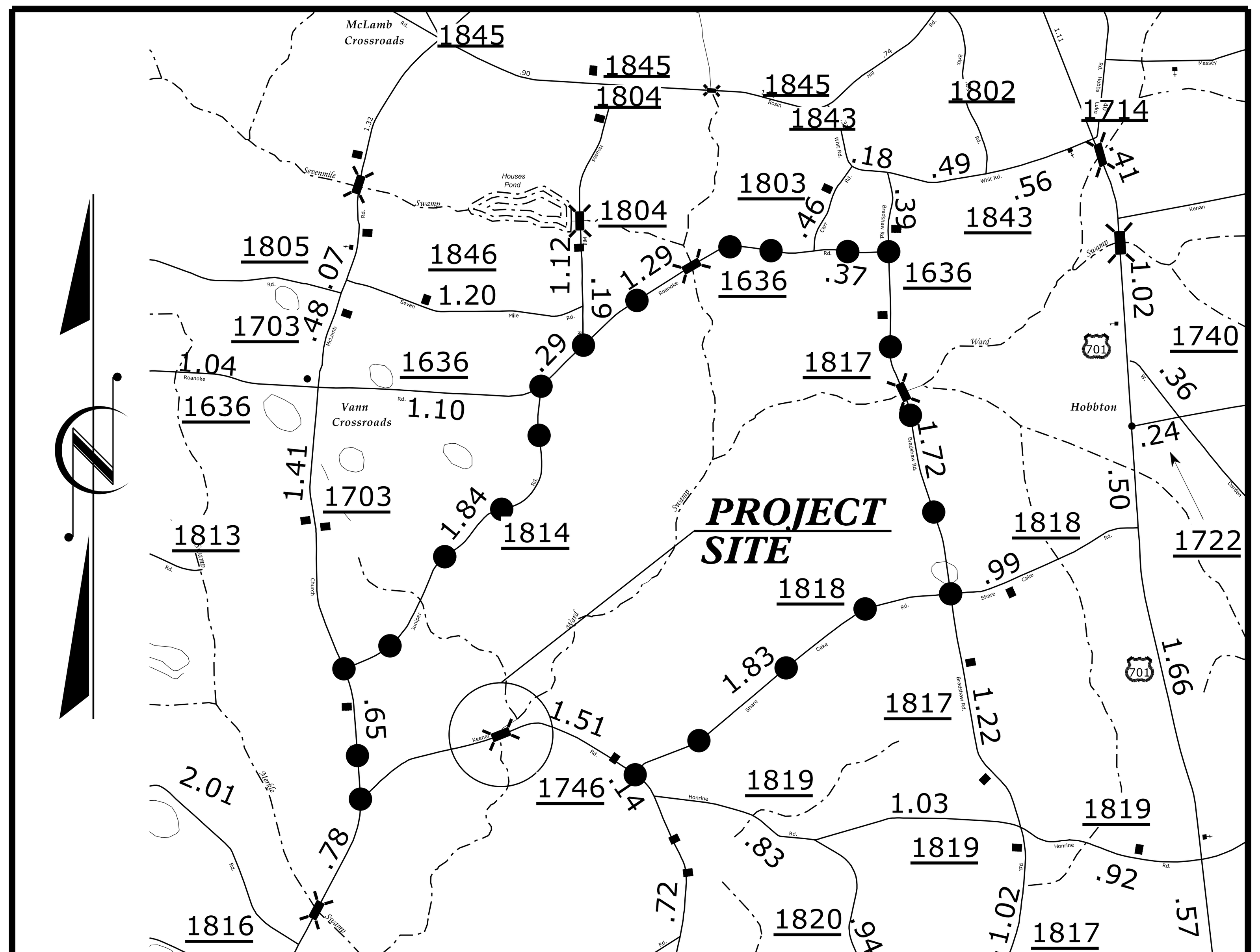
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SAMPSON COUNTY

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

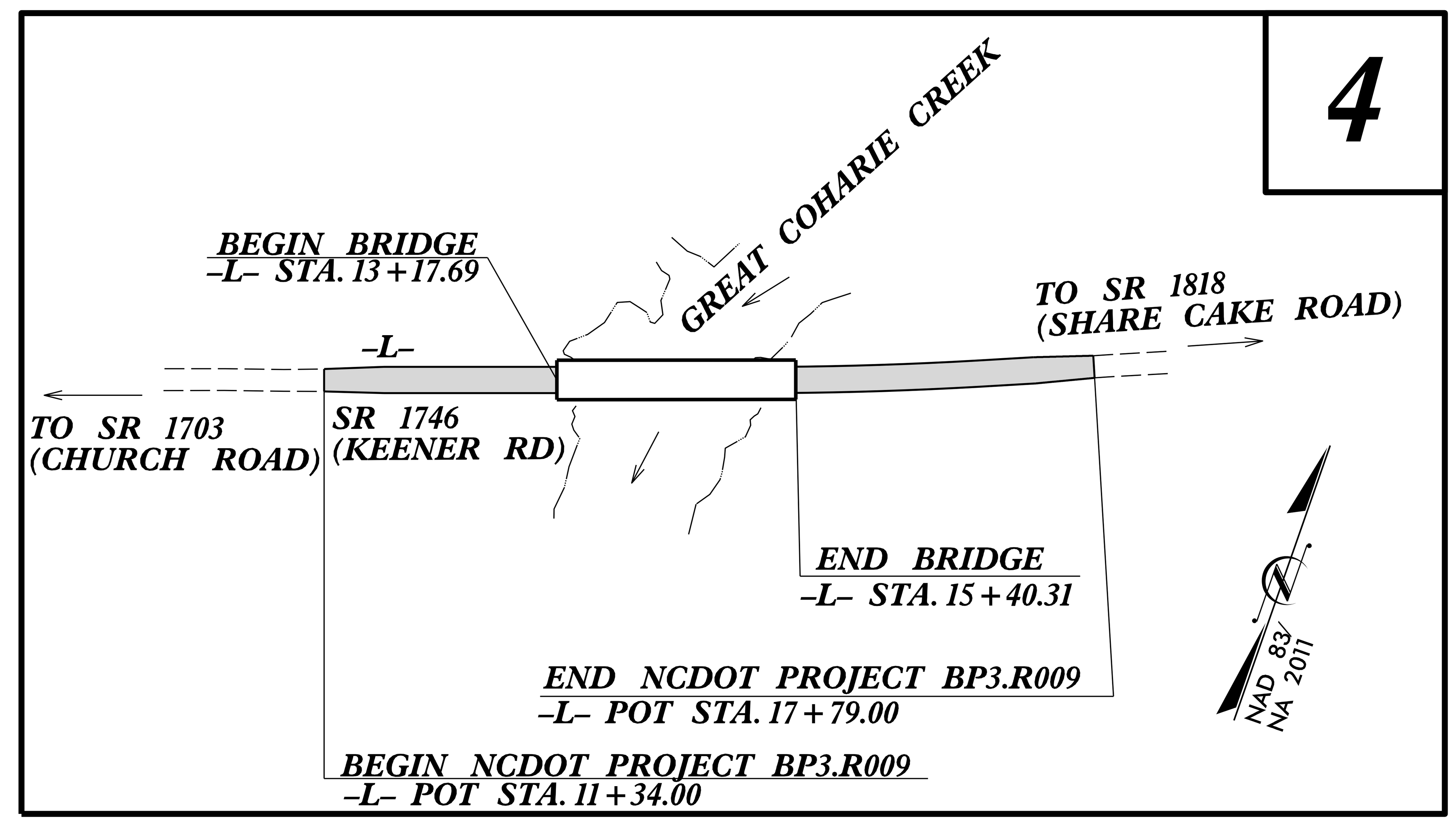
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

NOTE: THIS PROJECT WAS FORMERLY B–5633



VICINITY MAP

OFF–SITE DETOUR



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

30 15 0 30 60 PLANS

30 15 0 30 60 PROFILE (HORIZONTAL)

6 3 0 6 12 PROFILE (VERTICAL)

DESIGN DATA

ADT 2023 = 714
ADT 2043 = 1286
T = 6 % *
V = 55 MPH
* (TTST = 3% + DUAL = 3%)
FUNC CLASS = MINOR COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP3.R009 =	0.080 MILES
LENGTH STRUCTURES PROJECT BP3.R009 =	0.042 MILES
TOTAL LENGTH PROJECT BP3.R009 =	0.122 MILES

NCDOT CONTACT: DEREK PIELECH, PE
DIVISION 3 BRIDGE PROGRAM MANAGER

Prepared for:
DIVISION OF HIGHWAYS
DIVISION THREE
5501 BARBADOS BLVD., CASTLE HAYNE NC, 28429-5647

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 12, 2022

LETTING DATE: JULY 13, 2023

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

GREG S. PURVIS, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SEAL 15833 JERRY L. LINDSEY
SIGNATURE: Jerry L. Lindsey P.E. 6/6/2023

ROADWAY DESIGN ENGINEER
SEAL 022999 GREG S. PURVIS
SIGNATURE: Greg S. Purvis P.E. 6/6/2023

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

6/6/2023
...\Proj\BP3.R009_rdy_TSH.dgn
USER:JRosado

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	1A
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
6/19/2023
NORTH CAROLINA PROFESSIONAL SEAL 022999 ENGINEER GREG S. PURVIS
DocuSigned by: Greg S. Purvis

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

2018 ROADWAY ENGLISH STANDARD DRAWINGS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:

THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III MODIFIED.

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

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.

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:

SAMPSON COUNTY PUBLIC WORKS (WATER) & STAR COMMUNICATIONS (FIBER OPTIC/TELEPHONE)

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

CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION AROUND THE EXISTING WATERLINE WITHOUT HAVING A NCDOT AND SAMPSON COUNTY UTILITIES REPRESENTATIVE PRESENT ON SITE IN CASE OF ACCIDENTAL DAMAGE TO THE EXISTING WATERLINE.

EFF. 01-16-2018
REV.

2018 ROADWAY ENGLISH STANDARD DRAWINGS

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

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200D03	Method of Clearing - Method III Modified
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating (Use Special Detail)
DIVISION 4 - MAJOR STRUCTURES	
422.02	Bridge Approach Fills - Type II Modified Approach Fill
DIVISION 5 - SUBGRADE, BASES AND SHOULDERS	
560.01	Method of Shoulder Construction - High Side of Superelevated Curve - Method I
DIVISION 8 - INCIDENTALS	
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units

INDEX OF SHEETS

5/14/99
6/19/2023 ...\BP3.R009_RDY_PSH_1A.dgn

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line — RW
- Existing Control of Access Line — CA
- Proposed Control of Access Line — CA
- Proposed ROW and CA Line — RW CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Drainage/Utility Easement — DUE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge

- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

** 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 — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)* — P
- U/G Power Line (SUE – LOS C)* — P
- U/G Power Line (SUE – LOS D)* — P

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2A-1

ROADWAY DESIGN 5/3/2023 — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022999 GREG S. PURVIS — Greg S. Purvis

PAVEMENT DESIGN ENGINEER 5/3/2023 — NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 044590 ANDREW D. WARGO — Andrew Wargo

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETHERILL ENGINEERING
1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

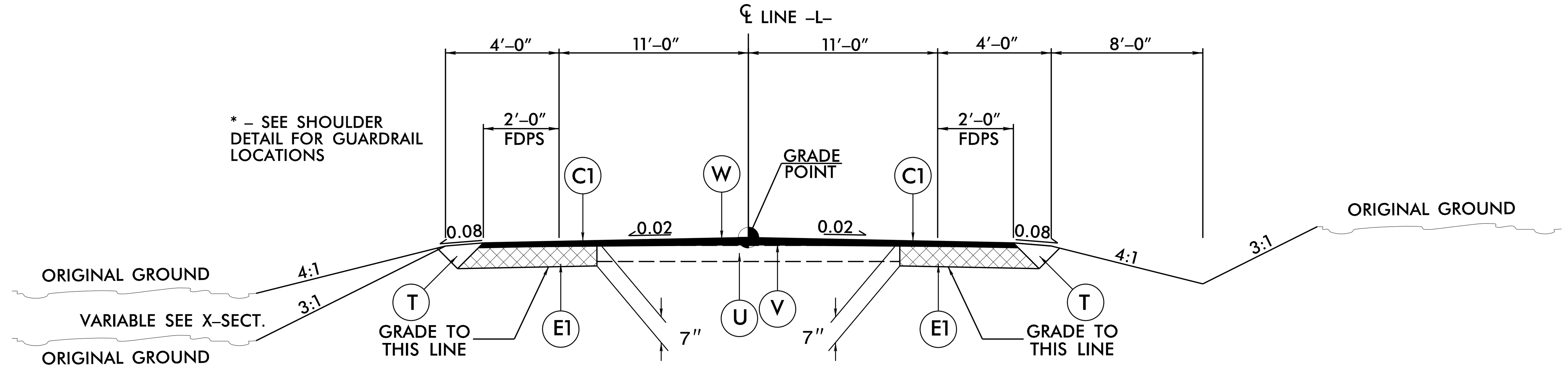
PAVEMENT DESIGN ENGINEER'S SEAL DOES NOT APPLY TO TYPICAL SECTION NO. 3

BRIDGE #810194

FINAL PAVEMENT SCHEDULE TO BE DETERMINED

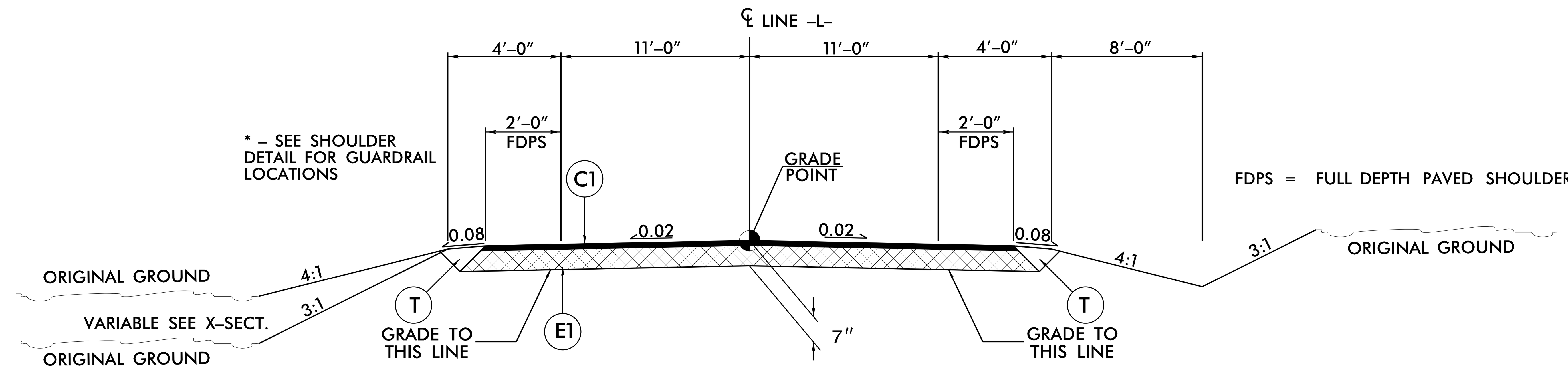
C1	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" IN DEPTH OR GREATER THAN 1½" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
V	MILLING BITUMINOUS PAVEMENT. (SEE MILLING DETAIL)
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

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



TYPICAL SECTION NO. 1

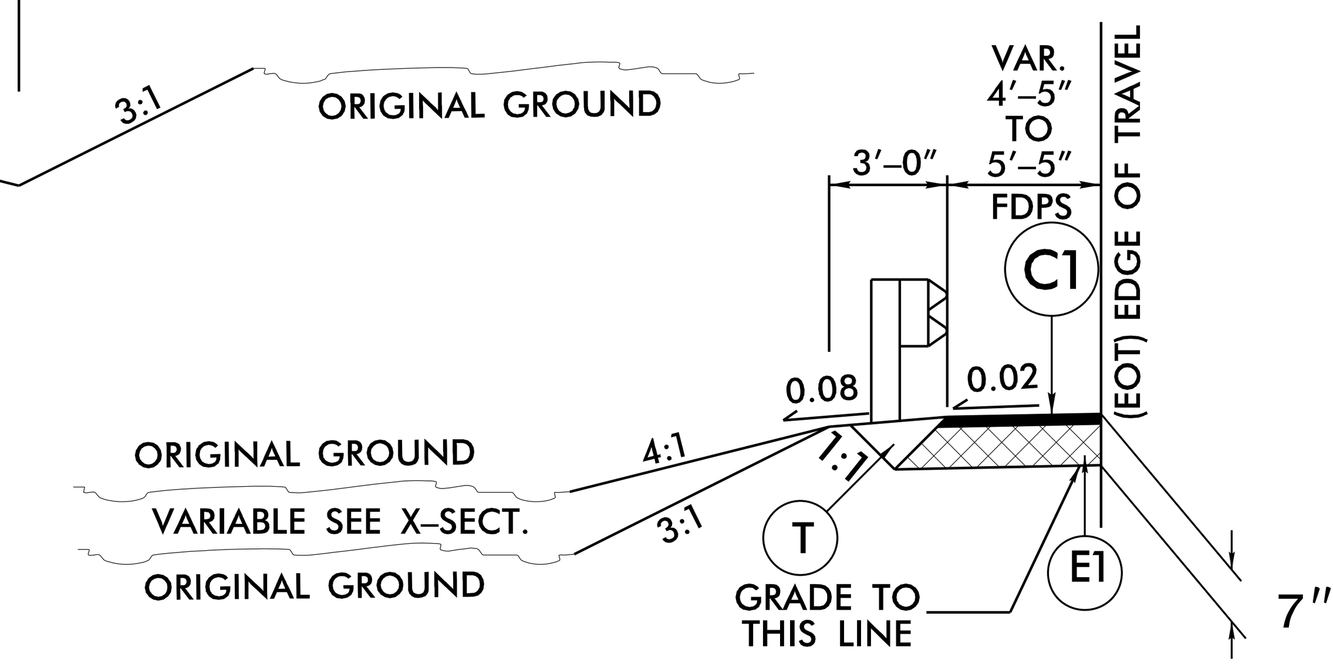
USE TYPICAL SECTION NO. 1 AS FOLLOWS:
-L- STA. 11+34.00 TO -L- STA. 12+69.00
-L- STA. 15+89.00 TO -L- STA. 17+79.00



FDPS = FULL DEPTH PAVED SHOULDER

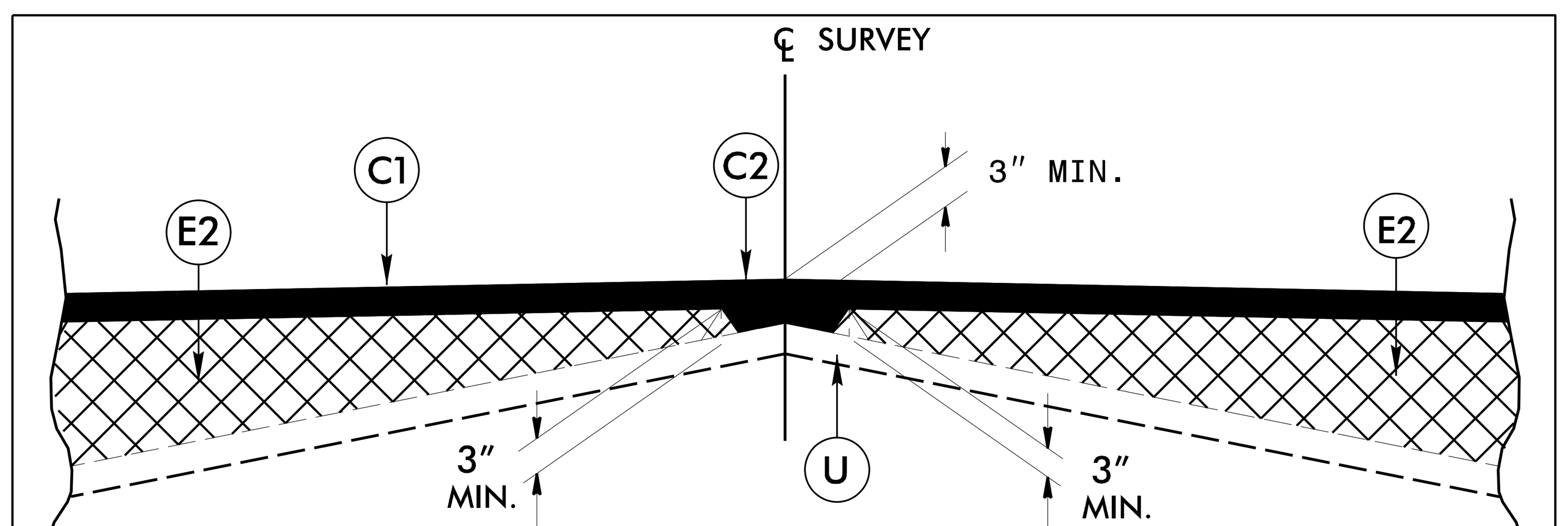
TYPICAL SECTION NO. 2

-L- STA. 12+69.00 TO -L- STA. 13+17.69 (BEGIN BRIDGE)
-L- STA. 15+40.31 (END BRIDGE) TO -L- STA. 15+89.00

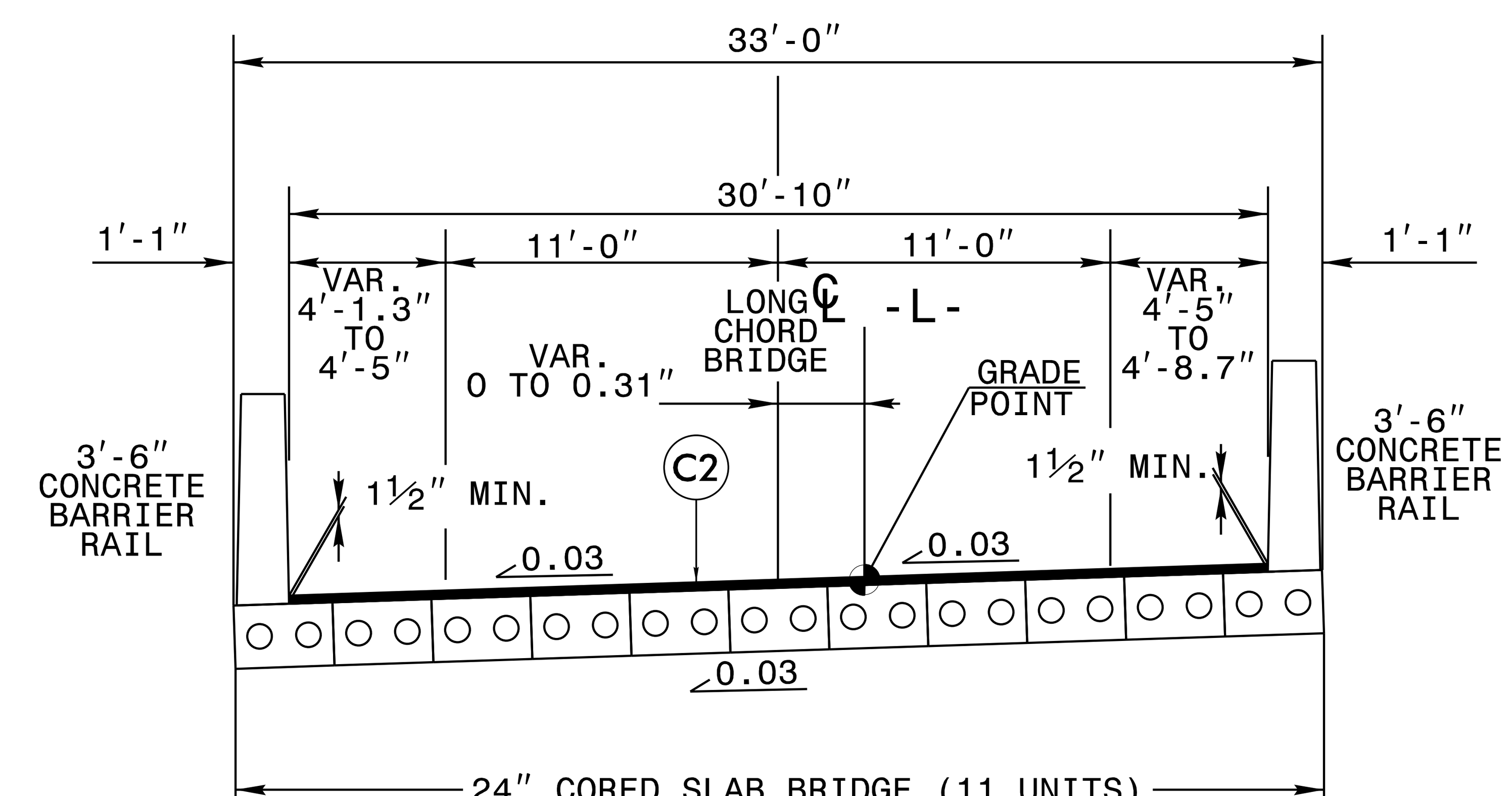


SHOULDER DETAIL

USE SHOULDER DETAIL IN CONJUNCTION WITH TYPICAL SECTIONS NO. 1 & 2:
-L- STA. 12+42.69 TO -L- STA. 13+17.69 RT. & LT.
-L- STA. 15+40.31 TO -L- STA. 16+15.31 RT. & LT.

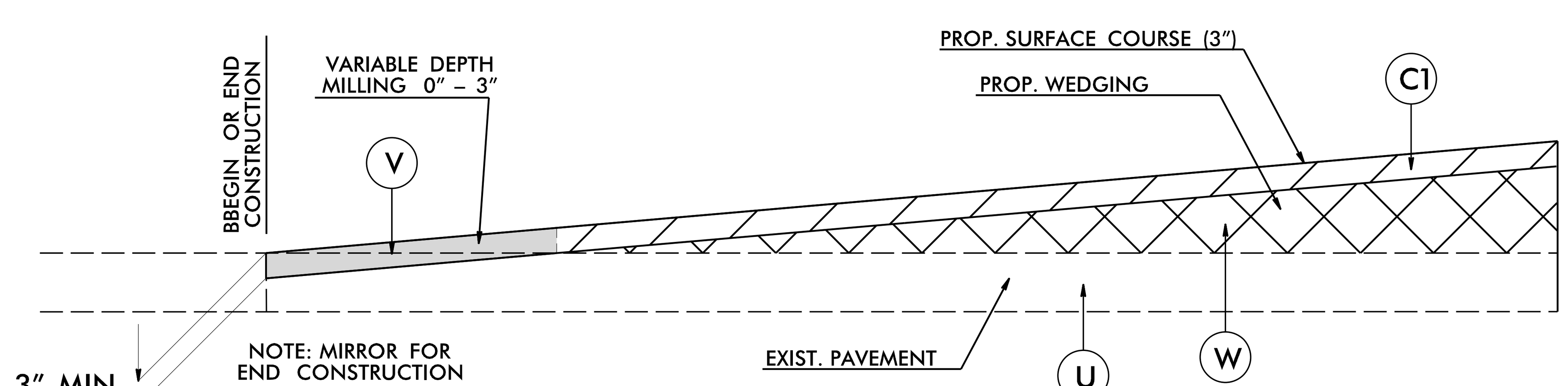


W: Detail Showing Method of Wedging



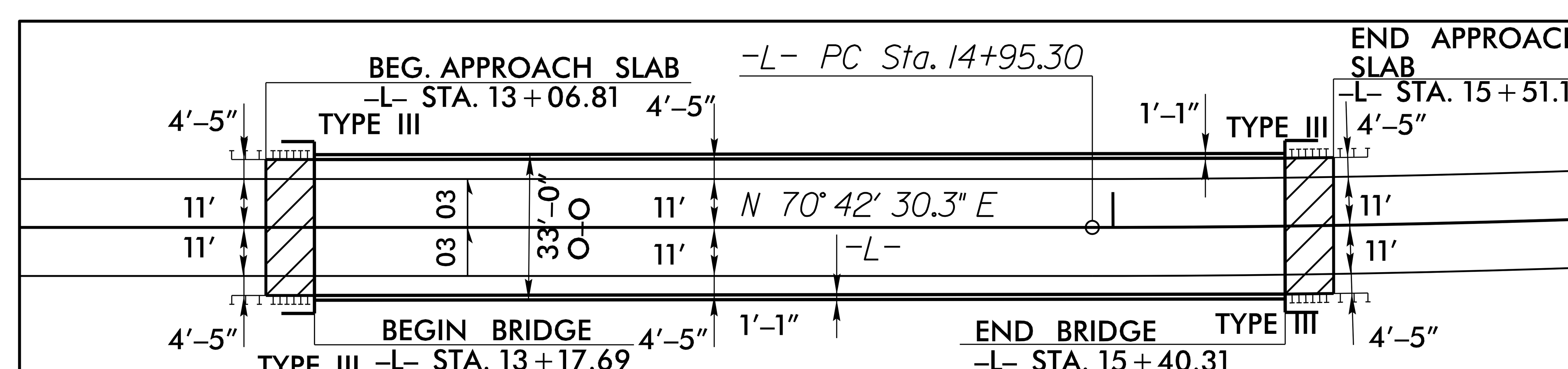
TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3 AS FOLLOWS:
-L- STA. 13+17.69 (BEGIN BRIDGE) TO -L- STA. 15+40.31 (END BRIDGE)



INCIDENTAL MILLING DETAIL

-L- STA. 11+34.00 TO -L- STA. 12+09.00
-L- STA. 17+04.00 TO -L- STA. 17+79.00



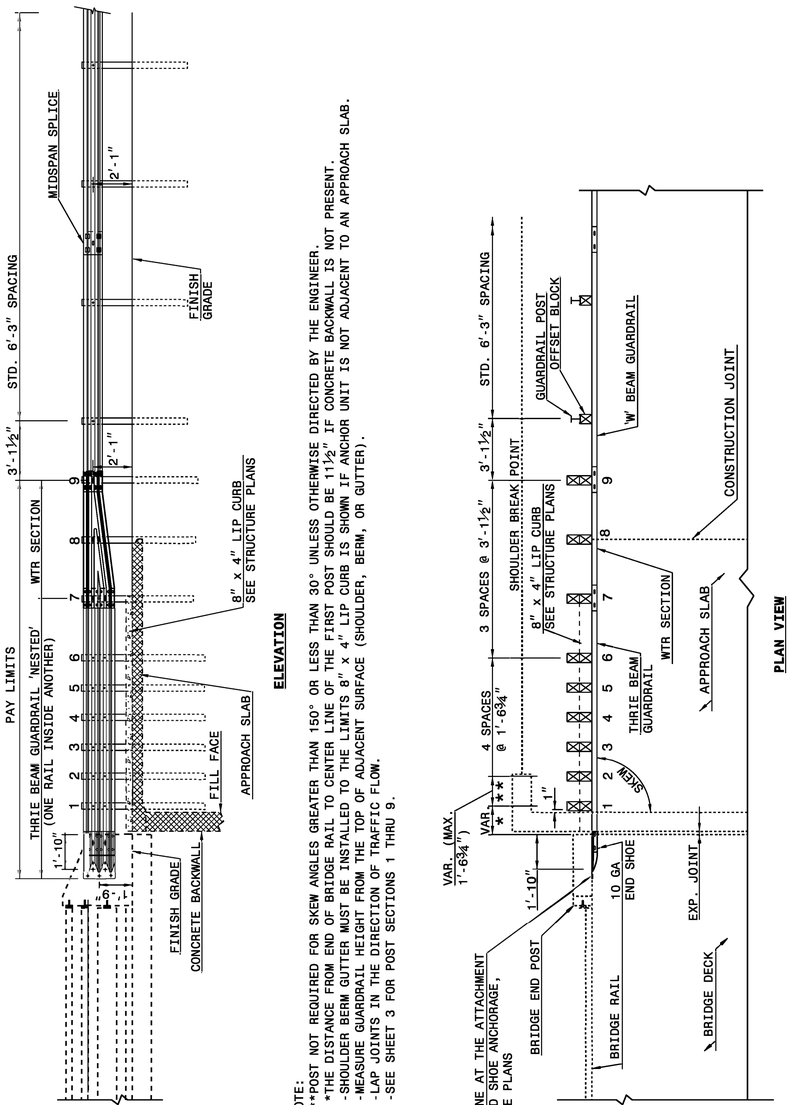
SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP (NTS)

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2C-1

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

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

SHEET 1 OF 7
862D03



ELEVATION

NOTE:
**POST NOT REQUIRED FOR SKEW ANGLES GREATER THAN 150° OR LESS THAN 30° UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
*THE DISTANCE FROM END OF BRIDGE RAIL TO CENTER LINE OF THE FIRST POST SHOULD BE 11½" IF CONCRETE BACKWALL IS NOT PRESENT.
-SHOULDER BERM GUTTER MUST BE INSTALLED TO THE LIMITS 8" x 4" LIP CURB IS SHOWN IF ANCHOR UNIT IS NOT ADJACENT TO AN APPROACH SLAB.
-MEASURE GUARDRAIL HEIGHT FROM THE TOP OF ADJACENT SURFACE (SHOULDER, BERM, OR GUTTER).
-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

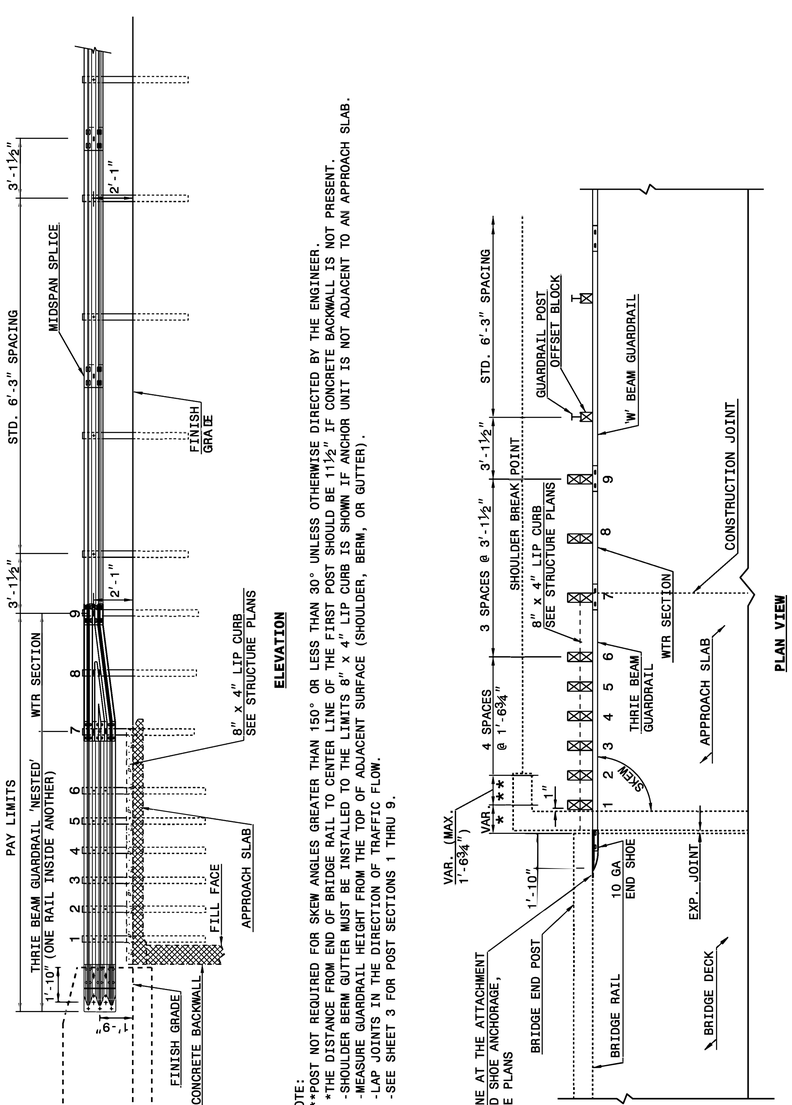
PLAN VIEW

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

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

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

SHEET 2 OF 7
862D03



ELEVATION

NOTE:
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-LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
-SEE SHEET 3 FOR POST SECTIONS 1 THRU 9.

PLAN VIEW

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

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HACKLER

DocuSigned by:
Nicole M. Hackler
5/23/2023
58843233034164C5...

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

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

14-DEC-2017 10:36
S:\Contracts\Contracts\Special Details\jhowerton\Standard Drawings\2018 Standard Drawings\Details in Lieu of Standards\Division 8\0862d0301.dgn
jhowerton AT CSD-2925595

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2C-2
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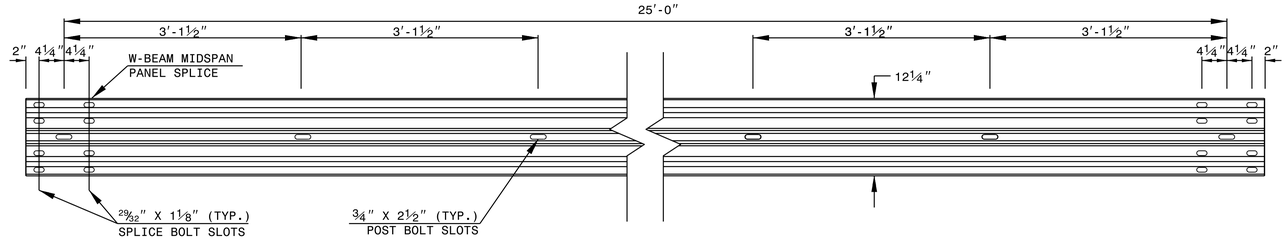
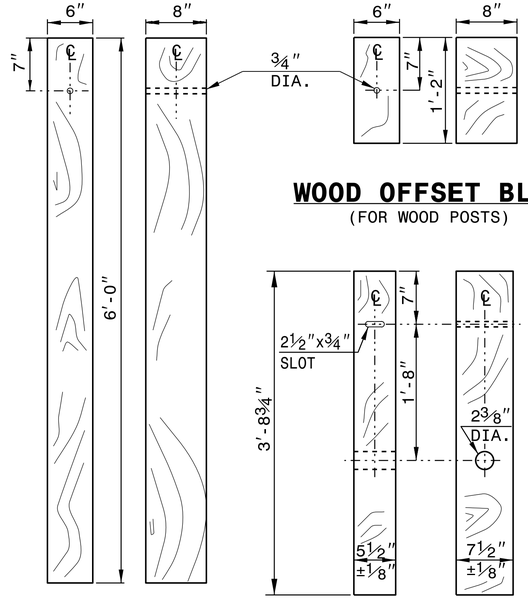
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02



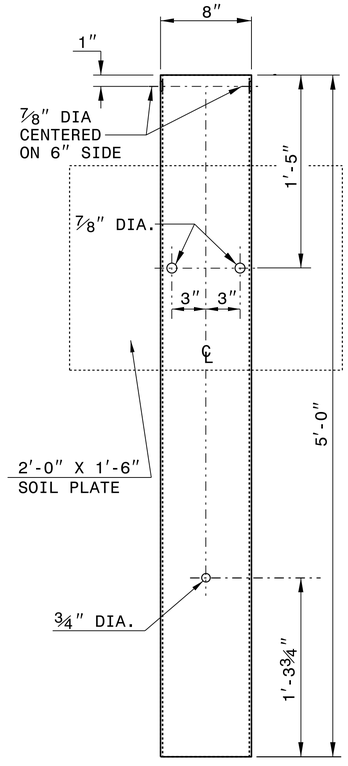
STANDARD W-BEAM GUARDRAIL



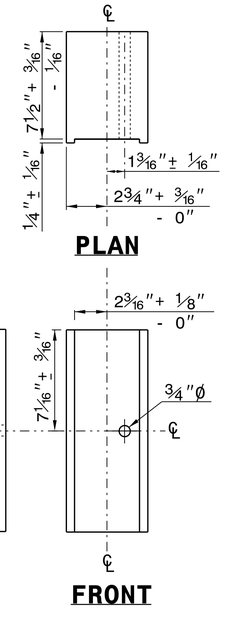
WOOD OFFSET BLOCK
(FOR WOOD POSTS)

STANDARD LINE POST

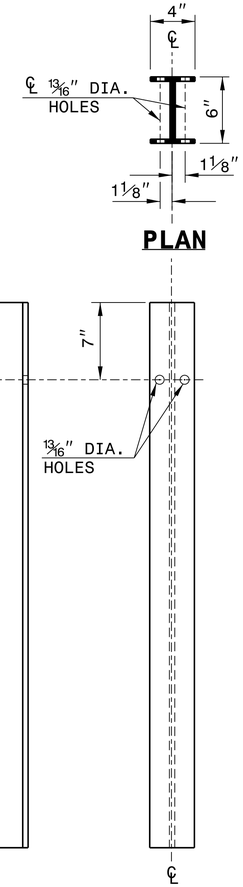
SHORT WOOD BREAKAWAY POST



STEEL TUBE
TS 6"x8"x0.1875"



ROUTED OFFSET BLOCK



"W6" STEEL POST

SYSTEM PARTS

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

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M. HYATT

DocuSigned by:
Nicole M. Hyatt 7/25/2023
5884323D34164C5...

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

SEE TITLE BLOCK

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

5/14/99

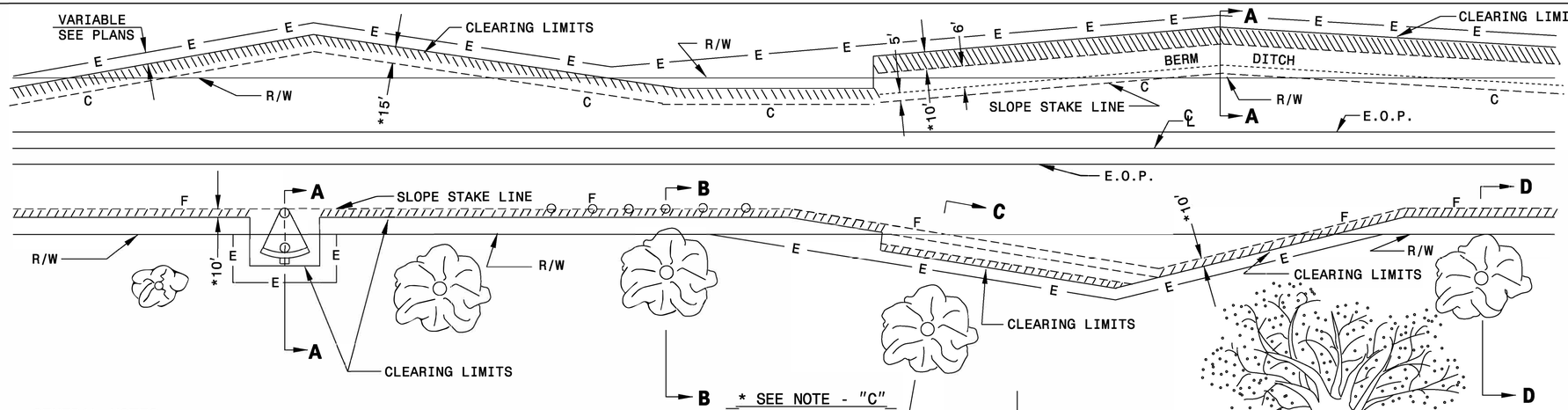
PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2C-3

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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1

200D03



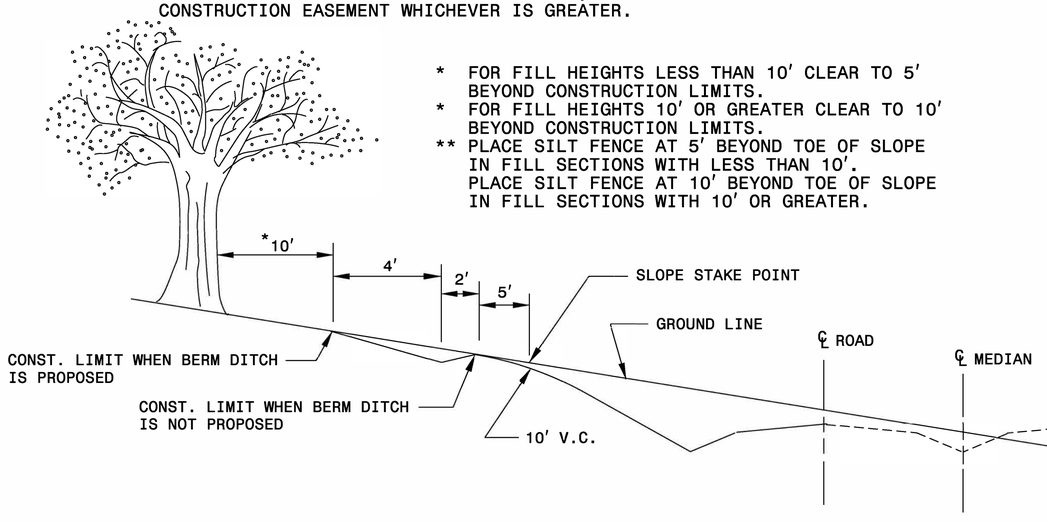
GENERAL NOTES:

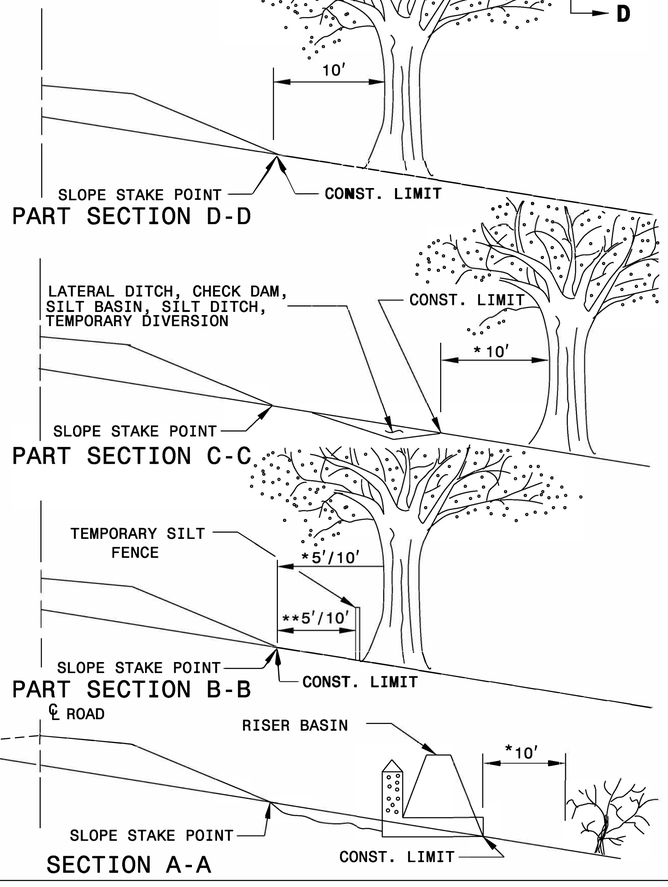
1. REMOVE TREES OUTSIDE THE CLEARING LIMIT WHEN, IN THE OPINION OF THE ENGINEER, THE UTILITY OF A TREE WILL BE DESTROYED BY THE CONSTRUCTION OR THE CLEARING OPERATION.
2. CLEAR IN ACCORDANCE WITH THIS STANDARD EXCEPT WHERE ADDITIONAL CLEARING IS REQUIRED FOR SAFETY AS SHOWN ON THE PLANS.

METHOD III CLEARING LIMITS

(A) CUTS -- CLEAR TO CONSTRUCTION LIMITS.
(B) FILLS - CLEAR TO 5′/10′ * BEYOND CONSTRUCTION LIMITS, UNLESS SPECIFIED OTHERWISE BY WETLAND PERMIT.
(C) CUTS AND FILLS - WHEN THE CLEARING LIMITS (A AND B) EXCEED THE PROPOSED R/W OR PROPOSED CONSTRUCTION EASEMENTS, THEN CLEAR ONLY TO THE R/W OR CONSTRUCTION EASEMENT WHICHEVER IS GREATER.

* FOR FILL HEIGHTS LESS THAN 10′ CLEAR TO 5′ BEYOND CONSTRUCTION LIMITS.
* FOR FILL HEIGHTS 10′ OR GREATER CLEAR TO 10′ BEYOND CONSTRUCTION LIMITS.
** PLACE SILT FENCE AT 5′ BEYOND TOE OF SLOPE IN FILL SECTIONS WITH LESS THAN 10′.
PLACE SILT FENCE AT 10′ BEYOND TOE OF SLOPE IN FILL SECTIONS WITH 10′ OR GREATER.





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

ENGLISH DETAIL DRAWING FOR
METHOD OF CLEARING
MODIFIED METHOD - III

SHEET 1 OF 1

200D03

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 33144 NICOLE M HACKLER

DocuSigned by: Nicole M. Hackler 5/23/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

SEE TITLE BLOCK

ORIGINAL BY:	T.S.S.	DATE:	FEB.2000
MODIFIED BY:	K.A.K.	DATE:	AUG.2016
CHECKED BY:		DATE:	
FILE SPEC.:	kkempf/english/0200d301.dgn		

05-DEC-2017 10:31
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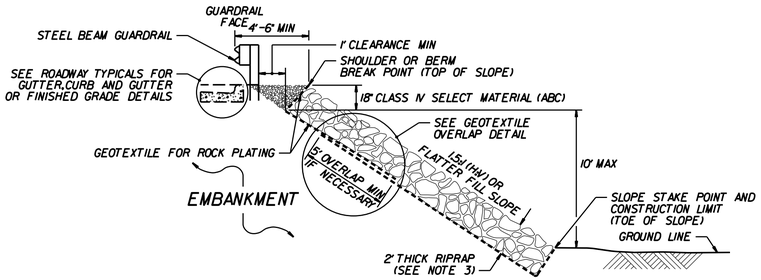
jhowerton
AT CSD-292595

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2C-4

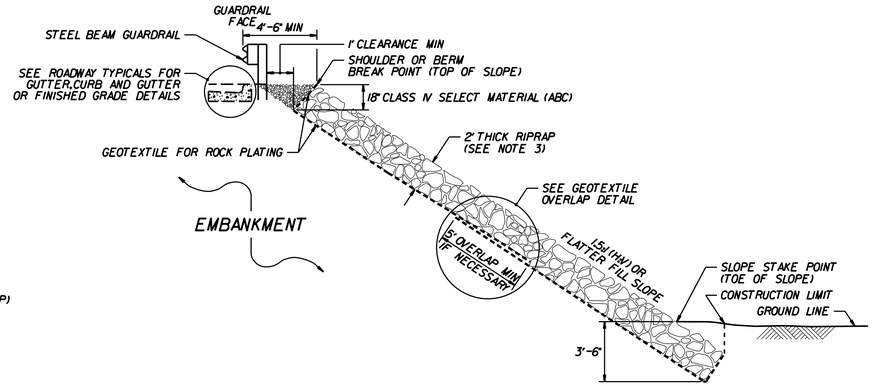
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

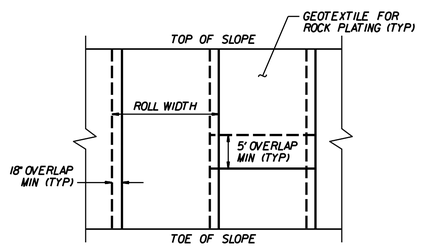
ROCK PLATING



ROCK PLATING DETAIL NO. 1 – TYPICAL SECTION

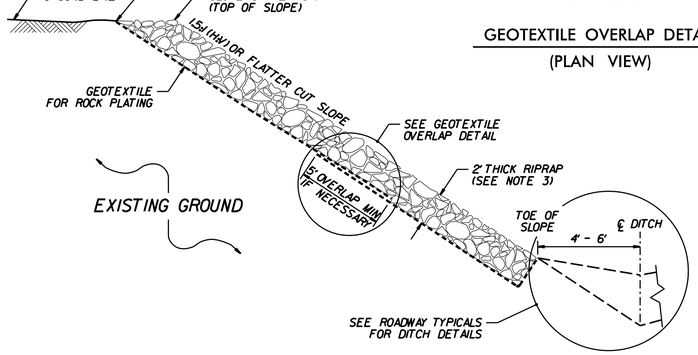


ROCK PLATING DETAIL NO. 2 – TYPICAL SECTION

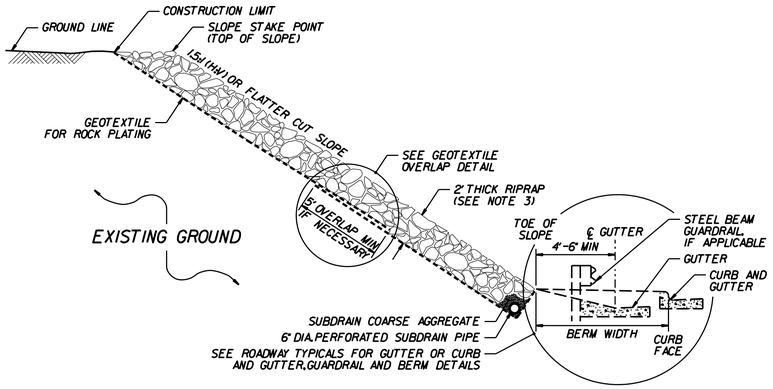


GEOTEXTILE OVERLAP DETAIL

(PLAN VIEW)



ROCK PLATING DETAIL NO. 3 – TYPICAL SECTION



ROCK PLATING DETAIL NO. 4 – TYPICAL SECTION

NOTES:

1. SEE ROADWAY PLANS AND SUMMARY SHEETS FOR ROCK PLATING LOCATIONS.
2. FOR ROCK PLATING,SEE SECTION 275 OF THE STANDARD SPECIFICATIONS.
3. USE CLASS 1,2 OR B RIPRAP UNLESS REQUIRED OTHERWISE IN THE ROADWAY SUMMARY SHEETS.

SHEET 1 OF 1

275D01

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

ROADWAY DETAIL DRAWING FOR

ROCK PLATING

SHEET 1 OF 1

275D01

SEAL
33144
NICOLE M. HACKLER

DocuSigned by:
Nicole M. Hackler
5/23/2023
5884323D34164C5...

CONTRACT STANDARDS
AND DEVELOPMENT UNIT
Office 919-707-6900 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: S. HIDDEN DATE: 03-11-22
MODIFIED BY: DATE:
CHECKED BY: DATE:
FILE SPEC.:

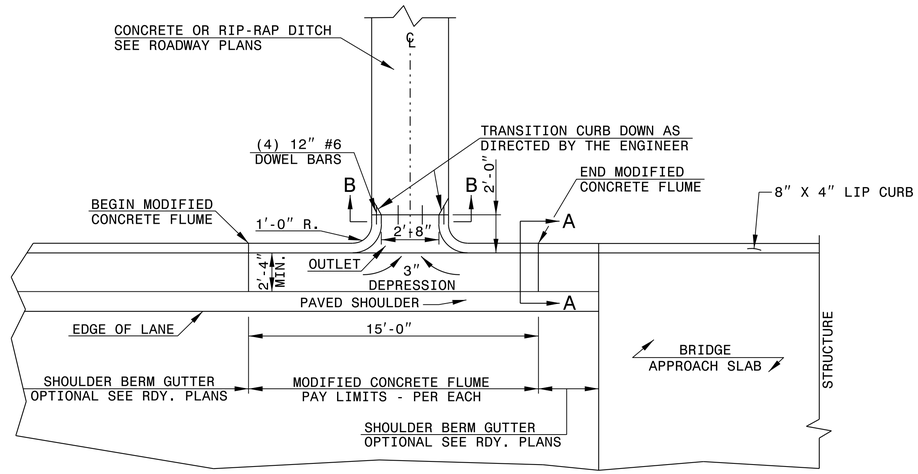
PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	2C-5

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

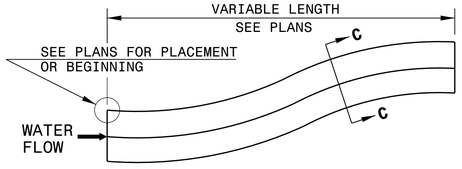
ENGLISH DETAIL DRAWING FOR

MODIFIED CONCRETE FLUME

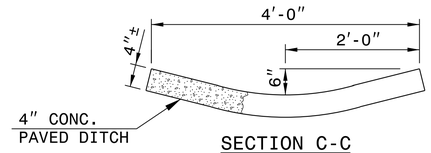
WITH CONCRETE OR RIP-RAP DITCH



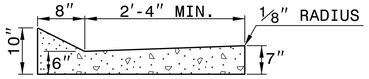
PLAN VIEW



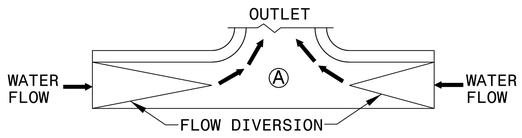
DOWNGRADE OR SAG



SECTION C-C



SECTION A-A



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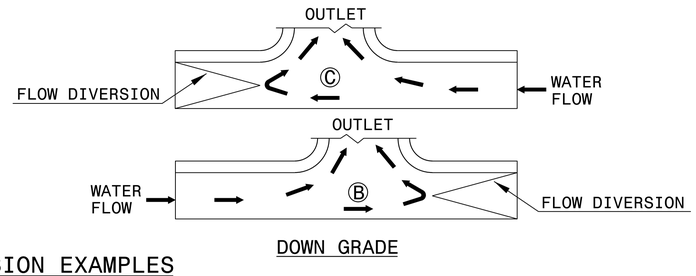
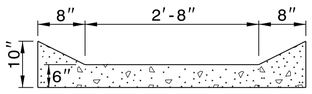
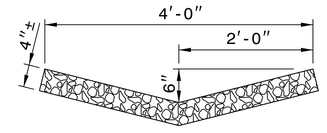


DOWN GRADE



SECTION B-B



RIP-RAP LINED DITCH

FLOW DIVERSION EXAMPLES

NOTES:

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

SHEET 1 OF 1
MODFLMDTCH

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

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

SHEET 1 OF 1
MODFLMDTCH

NORTH CAROLINA PROFESSIONAL SEAL 33144 ENGINEER NICOLE M HICKLER

DocuSigned by:
Nicole M. Hickler
5884323D34164C5...
5/23/2023

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

SEE PLATE FOR TITLE

ORIGINAL BY: E.E. Ward DATE: Apr. 2002
MODIFIED BY: J.S. Howerton DATE: October 2017
CHECKED BY: _____ DATE: _____
FILE SPEC.: w:details\stand\modifiedflume.dgn

18-OCT-2017 14:17
S:\Contracts\Contracts\Special Details\ericward\usr\details\stand\modifiedflume.dgn
jhowerton AT CSD-212595

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COMPUTED BY: SLK & JAR DATE: 05/02/2023
CHECKED BY: GSP DATE: 05/02/2023

SUMMARY OF EARTHWORK

STATION	STATION	UNCL. EXCAV.	EMBANK. +%	BORROW	WASTE
-L- STA. 11+34.00	-L- STA. 13+17.69 (BEGIN BRIDGE)	11	120	109	
SUBTOTALS:		11	120	109	
-L- STA. 15+40.31 (END BRIDGE)	-L- STA. 17+79.00	33	158	125	
SUBTOTALS:		33	158	125	
PROJECT SUBTOTALS:		44	277	233	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT				12	
GRAND TOTALS:		44	277	244	
SAY:		50		250	

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

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

ASPHALT PAVEMENT REMOVAL SUMMARY

SURVEY LINE	STATION	STATION	LOCATION LT/RT/CL	YD^2
-L-	12+69	13+49	CL	180
-L-	14+94	15+89	CL	217
			TOTAL:	397
			SAY:	400

SUB-REGIONAL & REGIONAL LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48" & UNDER)

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

STATION / SIZE / THICKNESS OR GAUGE	LOCATION (LT, RT, OR CL)	STRUCTURE NO. FROM	STRUCTURE NO. TO	TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	SLOPE CRITICAL	DRAINAGE PIPE (RCP, CSP, CAAP, HDPE, or PVC) 12"	15"	18"	24"	30"	36"	42"	48"	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE
-L- 12+98	LT.																		
-L- 15+61	LT.																		
TOTAL																			

STATION	C.S. PIPE 12" .064	15" .064	18" .064	24" .064	36" .079	42" .109	48" .109	R.C. PIPE (CLASS III) 15"	18"	24"	30"	36"	42"	48"	R.C. PIPE (CLASS V) 12"	15"	18"	24"	30"	36"	42"	48"
-L- 12+98																						
-L- 15+61																						
TOTAL																						

STATION	**" R. C. PIPE (CLASS V)	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	**" R. C. PIPE CULVERTS, CONTRACTOR DESIGN PIPE	15" SIDE DRAIN PIPE	18" SIDE DRAIN PIPE	ENDWALLS STD. 838.01, STD. 838.11 OR STD. 838.80 (UNLESS NOTED OTHERWISE) CU. YDS. R.C.P.	C.S.P.	QUANTITIES FOR DRAINAGE STRUCTURES PER EACH (0' THRU 5.0')	* TOTAL L.F. FOR PAY QUANTITY SHALL BE COL. 'A' + (1.3 X COL.'B') LIN. *FT. A 5.0' THRU 10.0'	B 10.0' AND ABOVE	C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES AND HOOD STANDARD 840.03 TYPE OF GRATE E	F	G	CONCRETE TRANSITIONAL SECTION CATCH BASIN	DROP INLET	G.D.I. TYPE "B" STD. 840.18 OR 840.27	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.24	T.B.D.I. STD. 840.35	G.D.I. (N.S.) FRAME WITH TWO GRATES STD. 840.29	M.H. FRAME & COVER STD. 840.54	M.C.F. MODIFIED CONCRETE FLUME (STD. MODFLMDTCH)	CSP ELBOWS NO. & SIZE	CONC. COLLARS CL. "B" C.Y. STD 840.72	CONC. & BRICK PIPE PLUG, C.Y. STD. 840.71	PIPE REMOVAL LIN.FT.	REMARKS
-L- 12+98																						1					
-L- 15+61																						1					
TOTAL																						2					

ABBREVIATIONS

C.B. CATCH BASIN
N.D.I. NARROW DROP INLET
D.I. DROP INLET
G.D.I. GRATED DROP INLET
G.D.I. (N.S.) GRATED DROP INLET (NARROW SLOT)
J.B. JUNCTION BOX
M.H. MANHOLE
T.B.D.I. TRAFFIC BEARING DROP INLET
M.C.F. MODIFIED CONCRETE FLUME

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH STRAIGHT	LENGTH SHOP CURVED	LENGTH DOUBLE FACED	WARRANT POINT APPROACH END	WARRANT POINT TRAILING END	"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH APPROACH END	FLARE LENGTH TRAILING END	W APPROACH END	W TRAILING END	ANCHORS XI MOD	TYPE III	GREU TL-3	AT-1		CAT-1	VI MOD	BIC	AT-1	IMPACT ATTENUATOR TYPE 350 EA	G	NG	SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS
-L-	12+42.69	13+17.69	LT.	75.00'				13+17.69	4'-5"	7'-5"		50'-0"		1'-0"		1	1													
-L-	12+42.69	13+17.69	RT.	75.00'			13+17.69		4'-5"	7'-5"	50'-0"		1'-0"			1	1													
-L-	15+40.31	16+15.31	LT.	75.00'			15+40.31		4'-5"	7'-5"	50'-0"		1'-0"			1	1													
-L-	15+40.31	16+15.31	RT.	75.00'				15+40.31	4'-5"	7'-5"		50'-0"		1'-0"		1	1													
			PROJECT SUBTOTAL	300.00'												4	4													
		LESS ANCHOR DEDUCTIONS		(-)275.00'																										
		GR PROJECT TOTAL		25.00'																										
		PERMANENT GR SAY		25.00'	ADDITIONAL GUARDRAIL POSTS = 5 EACH														GUARDRAIL ANCHOR DEDUCTIONS											
																			TYPE III = 4 @ 18.75' = 75'											
																			GREU TL-3 = 4 @ 50' = 200'											
																			TOTAL DEDUCTIONS = 275.00'											

BRIDGE NO. 810194

FINAL PLANS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

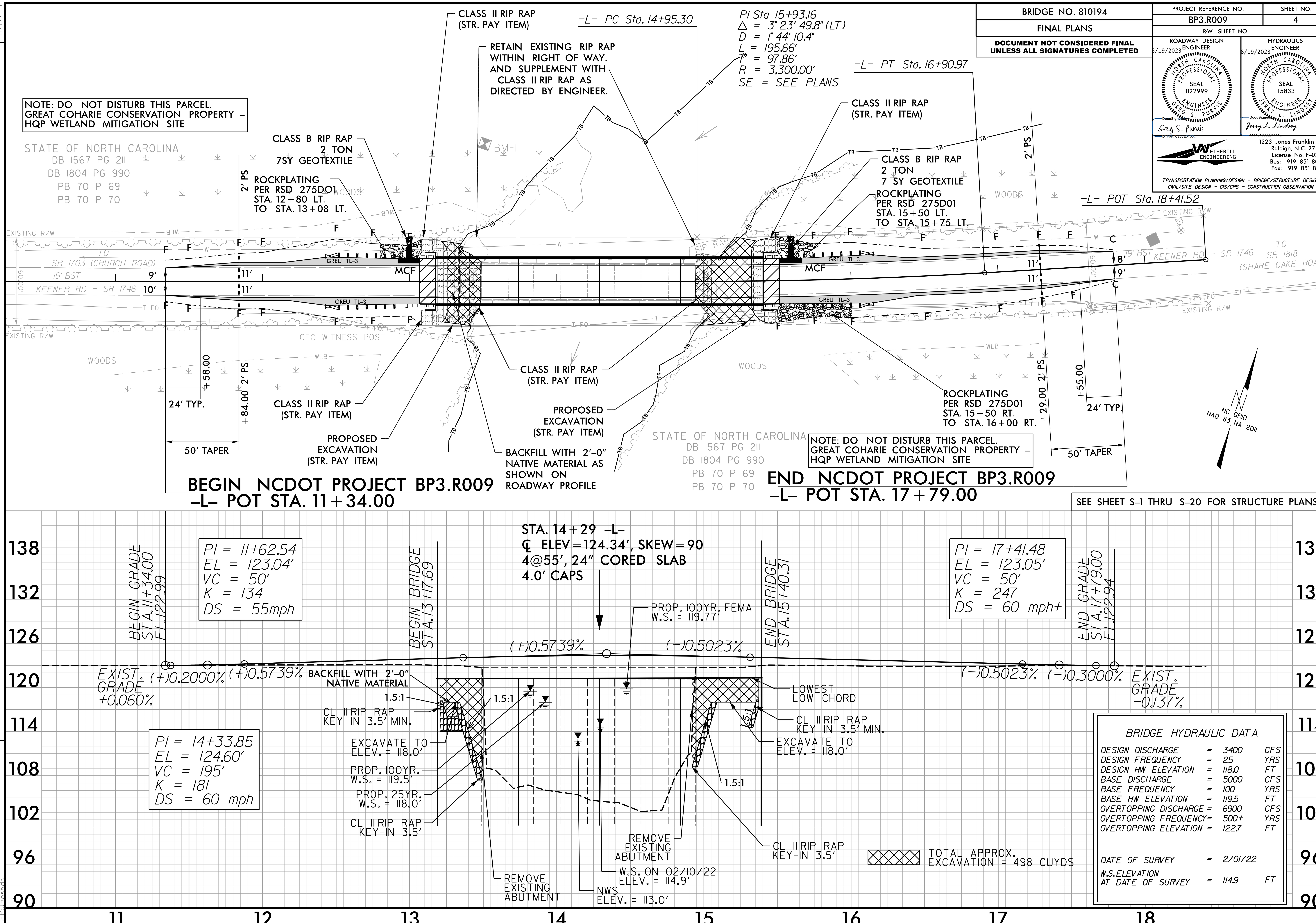
PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

6/19/2023 NORTH CAROLINA PROFESSIONAL SEAL 022999 ENGINEER GREG S. PURVIS — Greg S. Purvis

6/19/2023 NORTH CAROLINA PROFESSIONAL SEAL 15833 ENGINEER JERRY L. LINDSEY — Jerry L. Lindsey

WETHERILL ENGINEERING — 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



REVISIONS
CLASS II RIP RAP (STR. PAY ITEM)
-L- PC Sta. 14+95.30
PI Sta 15+93.16
Δ = 3° 23' 49.8" (LT)
D = 1° 44' 10.4"
L = 195.66'
T = 97.86'
R = 3,300.00'
SE = SEE PLANS
RETAIN EXISTING RIP RAP WITHIN RIGHT OF WAY. AND SUPPLEMENT WITH CLASS II RIP RAP AS DIRECTED BY ENGINEER.
-L- PT Sta. 16+90.97
CLASS II RIP RAP (STR. PAY ITEM)
NOTE: DO NOT DISTURB THIS PARCEL. GREAT COHARIE CONSERVATION PROPERTY - HQP WETLAND MITIGATION SITE
STATE OF NORTH CAROLINA
DB 1567 PG 211
DB 1804 PG 990
PB 70 P 69
PB 70 P 70
CLASS B RIP RAP 2 TON 7SY GEOTEXTILE
ROCKPLATING PER RSD 275D01 STA. 12+80 LT. TO STA. 13+08 LT.
BM-1
CLASS B RIP RAP 2 TON 7 SY GEOTEXTILE
ROCKPLATING PER RSD 275D01 STA. 15+50 LT. TO STA. 15+75 LT.
-L- POT Sta. 18+41.52
EXISTING R/W
WOODS
TO SR 1703 (CHURCH ROAD)
19' BST
KEENER RD - SR 1746
TO SR 1818 (SHARE CAKE ROAD)
KEENER RD - SR 1746
GREU TL-3
MCF
2' PS
9' 10' 11' 11' 8' 9' 11' 11'
CFO WITNESS POST
+58.00
+84.00
24' TYP.
50' TAPER
CLASS II RIP RAP (STR. PAY ITEM)
PROPOSED EXCAVATION (STR. PAY ITEM)
BACKFILL WITH 2'-0" NATIVE MATERIAL AS SHOWN ON ROADWAY PROFILE
CLASS II RIP RAP (STR. PAY ITEM)
PROPOSED EXCAVATION (STR. PAY ITEM)
ROCKPLATING PER RSD 275D01 STA. 15+50 RT. TO STA. 16+00 RT.
+29.00
+55.00
24' TYP.
50' TAPER
NC GRID NAD 83 NA 2011
NOTE: DO NOT DISTURB THIS PARCEL. GREAT COHARIE CONSERVATION PROPERTY - HQP WETLAND MITIGATION SITE
BEGIN NCDOT PROJECT BP3.R009 -L- POT STA. 11+34.00
END NCDOT PROJECT BP3.R009 -L- POT STA. 17+79.00
SEE SHEET S-1 THRU S-20 FOR STRUCTURE PLANS
STA. 14+29 -L-
℄ ELEV=124.34', SKEW=90
4@55', 24" CORED SLAB
4.0' CAPS
PI = 11+62.54
EL = 123.04'
VC = 50'
K = 134
DS = 55mph
BEGIN GRADE STA.11+34.00 FL 122.99
BEGIN BRIDGE STA.13+17.69
PROP. 100YR. FEMA W.S. = 119.77'
END BRIDGE STA.15+40.31
PI = 17+41.48
EL = 123.05'
VC = 50'
K = 247
DS = 60 mph+
END GRADE STA.17+79.00 FL 122.94
(+)0.5739%
(-)0.5023%
EXIST. GRADE +0.060%
(+)0.2000%
(+)0.5739%
BACKFILL WITH 2'-0" NATIVE MATERIAL
1.5:1
CL II RIP RAP KEY IN 3.5' MIN.
EXCAVATE TO ELEV. = 118.0'
PROP. 100YR. W.S. = 119.5'
PROP. 25YR. W.S. = 118.0'
CL II RIP RAP KEY-IN 3.5'
REMOVE EXISTING ABUTMENT
REMOVE EXISTING ABUTMENT
W.S. ON 02/10/22 ELEV. = 114.9'
NWS ELEV. = 113.0'
LOWEST LOW CHORD
CL II RIP RAP KEY IN 3.5' MIN.
EXCAVATE TO ELEV. = 118.0'
CL II RIP RAP KEY-IN 3.5'
(-)0.5023%
(-)0.3000%
EXIST. GRADE -0.137%
PI = 14+33.85
EL = 124.60'
VC = 195'
K = 181
DS = 60 mph
TOTAL APPROX. EXCAVATION = 498 CUYDS
138 132 126 120 114 108 102 96 90
11 12 13 14 15 16 17 18

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	=	3400	CFS
DESIGN FREQUENCY	=	25	YRS
DESIGN HW ELEVATION	=	118.0	FT
BASE DISCHARGE	=	5000	CFS
BASE FREQUENCY	=	100	YRS
BASE HW ELEVATION	=	119.5	FT
OVERTOPPING DISCHARGE	=	6900	CFS
OVERTOPPING FREQUENCY	=	500+	YRS
OVERTOPPING ELEVATION	=	122.7	FT
DATE OF SURVEY	=	2/01/22	
W.S. ELEVATION AT DATE OF SURVEY	=	114.9	FT

8/17/99

6/19/2023 ...BP3R009_RDY_psh.dgn

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP3.R009	RW01	04

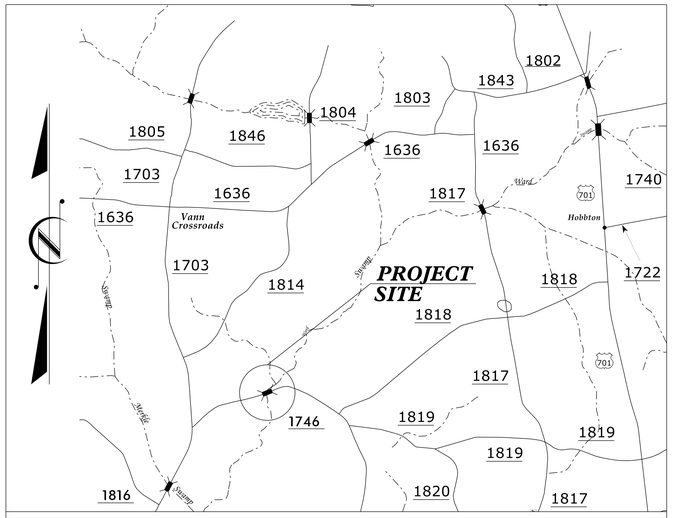
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

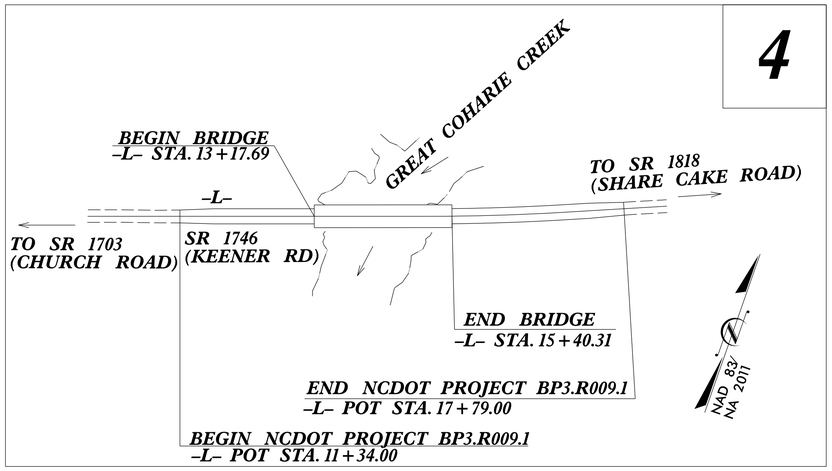
SAMPSON COUNTY

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

TIP PROJECT: BP3.R009



VICINITY MAP



GRAPHIC SCALE
FOR RW04 ONLY

50 25 0 50 100
PLANS

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT "B5633-2" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 509572.8660(ft) EASTING: 2182091.4760(ft) ELEVATION: 171.37(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999871400
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B5633-2" TO -L- STATION 10+00.00 IS N 75-35'06.5" E 2149.90(ft)
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	*LETTING DATE:*
JULY 12, 2022	*JULY 13, 2023*

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DocuSigned by: 05/26/2023
SIGNATURE: *Date:*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/2/99

SURVEY CONTROL SHEET

W/ EXISTING CENTERLINE ALIGNMENTS PRIOR TO CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	RW02C-1

Location and Surveys

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J SAWYER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NC GRID
NAD 83 NA 2011

REVBL

POINT	DESC.	NORTH	EAST	ELEVATION
B5633-1	CAP & REBAR	508851.6500	2181230.5360	172.94
B5633-2	CAP & REBAR	509572.8660	2182091.4760	171.37
BL-3	CAP & REBAR	509797.3640	2183006.5630	137.10
BL-4	CAP & REBAR	509996.2350	2183819.8560	122.93
REVBL-5	CAP & REBAR	510204.6205	2184500.1830	121.78
BL-6	CAP & REBAR	510400.8270	2184924.3820	122.40

****
BM-1 ELEVATION = 117.17
N 510312 E 2184474
BM-1 R/R SPIKE IN 14" SWEET GUM
****

EL

POINT	N	E	BEARING	DIST	DELTA	D	L	T	R
POT	510108.065	2184173.696							
LINE			N 70°42'30.3" E	495.30					
PC	510271.702	2184641.188							
CURVE			N 69°00'35.4" E	195.63	03°23'49.8"(LT)	01°44'10.4"	195.66	97.86	3300.00
PT	510341.780	2184823.841							
LINE			N 67°18'40.5" E	150.55					
POT	510399.851	2184962.742							

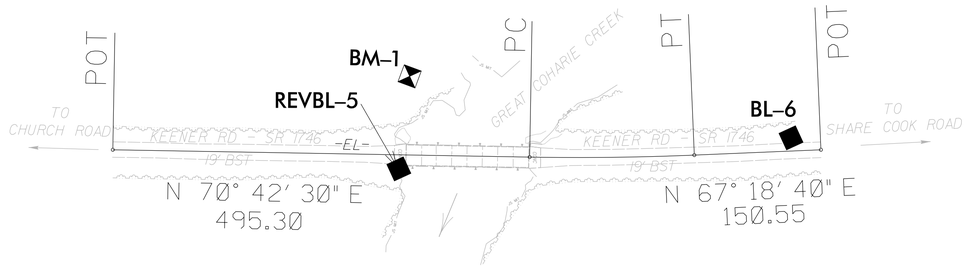
I, Christopher J. Sawyer, PLS, certify that the Project Control was verified under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

Class of survey: ***AA***
Type of GPS field procedure: RTN
Dates of survey: March 2016
Datum/Epoch: NAD 1983/ NA 2011
Published/Fixed-control use: N/A FOR RTN
Localized around: B5633-2
Northing: 509572.8660
Easting: 2182091.4760
Combined grid factor: 0.999871400
Geoid model: G12NC
Units: NAVD 88

I also certify that the Baseline Control for this project was verified 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 March 2016 and December 2021, and all coordinates are based on NAD 83/NA 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 15th day of May, 2023.

DocuSigned by:
Christopher Sawyer
97000B02E1021467
Professional Land Surveyor L-4526



NOTES:

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

26-MAY-2023 14:40
H:\Sampson\B-5633_EDB_0194\Working\150 series plans\bp3r009_ls_rw02c - Copy.dgn
cjsawyer AT LS-32869L

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	RW02D-1

Location and Surveys

LOCATION AND SURVEYS UNIT
DIVISION 3
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

PROJECT SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I, Christopher J. Sawyer, PLS, certify that the data compiled came from available surveys/mapping performed by others and provided to me by NCDOT and do not certify to the accuracy or quality of the individual data sources.

This 15th day of May, 2023.

DocuSigned by:

Professional Land Surveyor L-4526

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	510108.0655	2184173.6964
PC	14+95.30	510271.7018	2184641.1884
PT	16+90.97	510341.7795	2184823.8408
POT	18+41.52	510399.8509	2184962.7415

NOTES:

1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

REVISIONS

6/2/99

10-MAY-2023 12:41
S:\Units\Div03\Projects\BRIDGE\Sampson\B-5633_EDB_0194\Working\150 series plans\bp3-009_LS_rw02d-1.dgn
mjduval AT LS-328725L

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	RW04

Location and Surveys

LOCATION AND SURVEYS UNITS
DIVISION 3
5310 BARBADOS BLVD., SUITE 102
CASTLE HAYNE, NORTH CAROLINA 28429

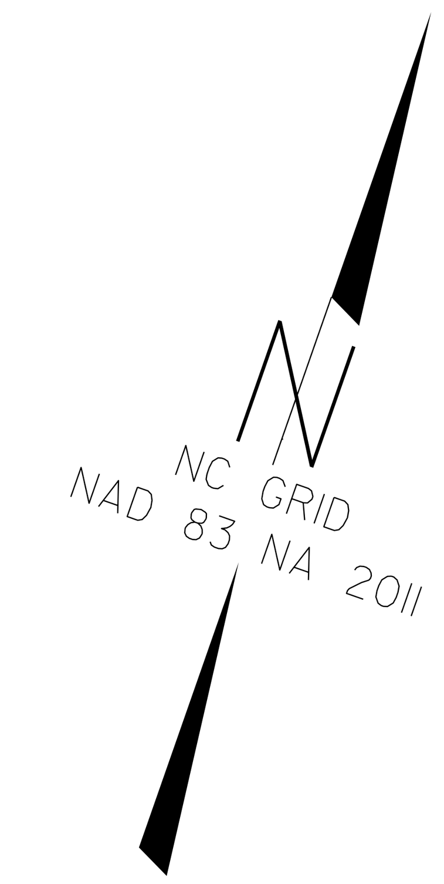
PROJECT SURVEYOR

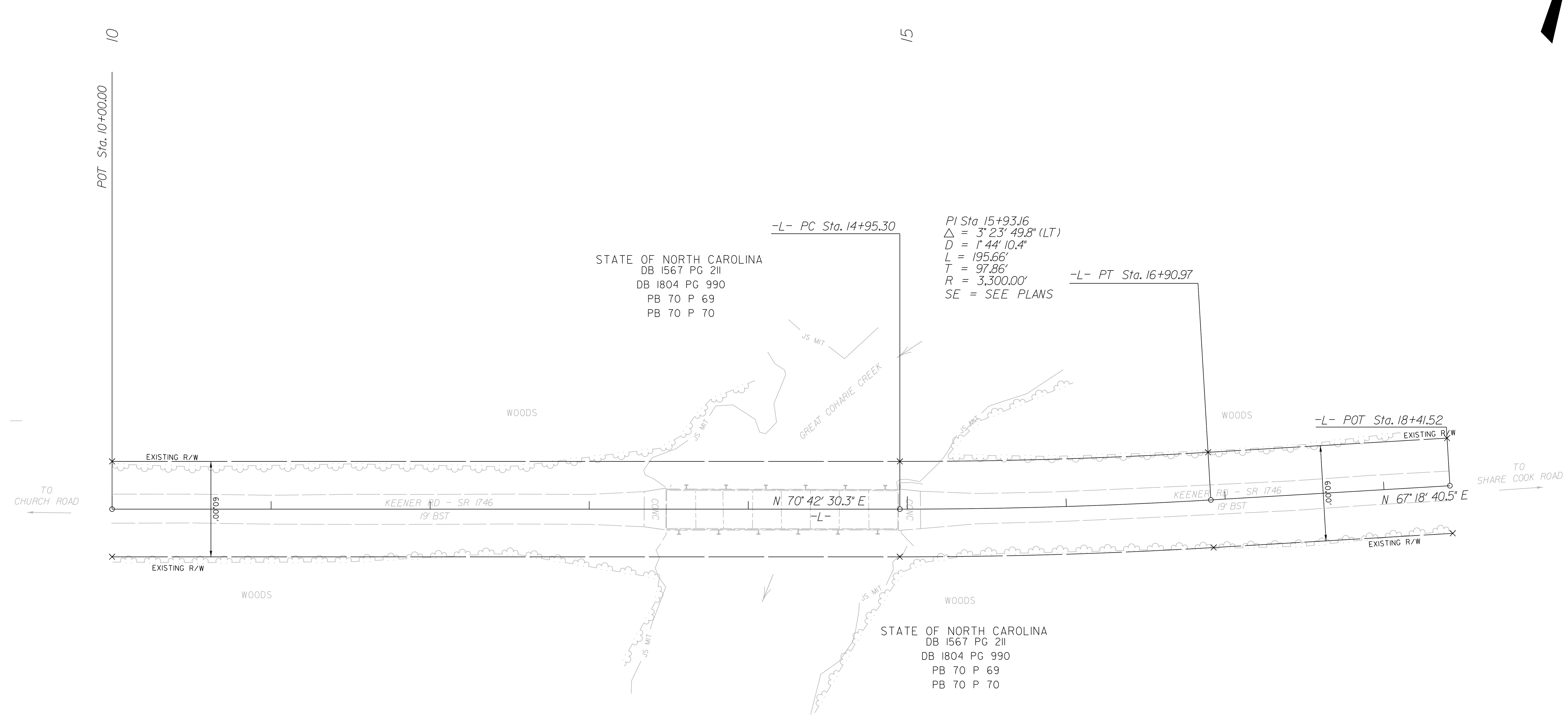
NORTH CAROLINA PROFESSIONAL SEAL L-4526 LAND SURVEYOR CHRISTOPHER J. SAWYER

05/26/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NO ADDITIONAL R/W OR EASEMENTS ACQUIRED WITH THIS PROJECT





NOTES:

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

2. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.

REVISIONS

6/2/99

10-MAY-2023 13:52
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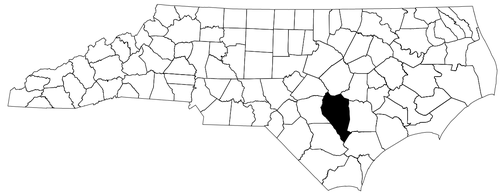
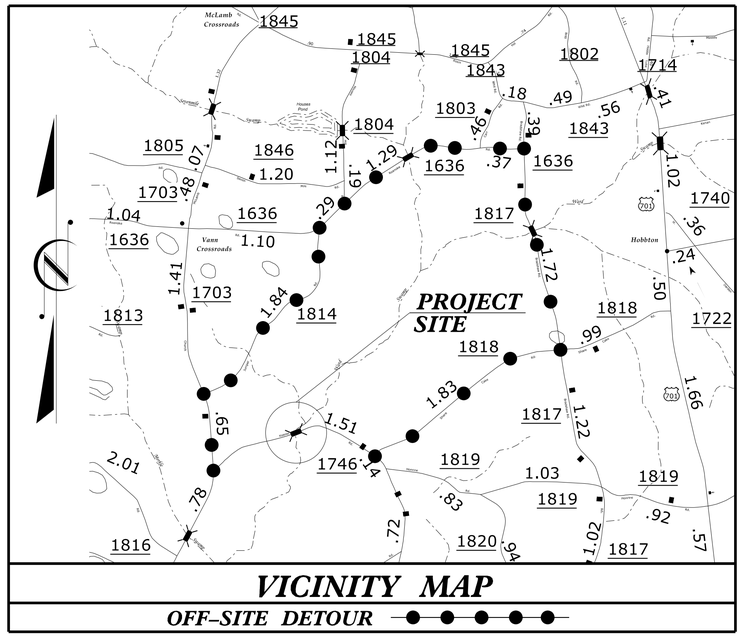
mjduval AT LS-328/25L

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

SAMPSON COUNTY





VICINITY MAP

OFF–SITE DETOUR

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

GREG PURVIS, P.E.

D. ALLEN HAYES, E.I.

NCDOT CONTACTS:

D. A. PARKER, P.E.
PROJECT ENGINEER

SPENCER JENNINGS
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

INDEX OF SHEETS

SHEET NO.
TMP-01

BP3.R009

TIP PROJECT:

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: DocuSigned by: Greg S. Purvis D1F07C256E3403...

DATE: 5/2/2023

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
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Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	TMP-01A

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES

LEGEND

GENERAL

NORTH ARROW

TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

TEMPORARY SIGNING

STATIONARY SIGN

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C266E3403
DATE: 5/2/2023

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

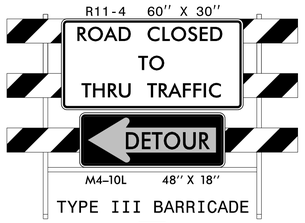
4/3/2023
\\Wei-fs01\projects\2022\22112.01 Sampson I94 bridge\Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP3.R009_TMP_01A Legend.dgn
User:AHayes

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	TMP-01B

R11-2 48" X 30"

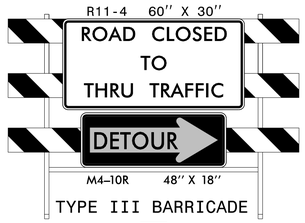
A

R11-4 60" X 30"



B

R11-4 60" X 30"



C

A

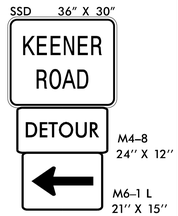
B

C

D

E

F



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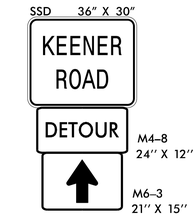

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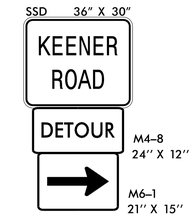

I

J

X **BARRICADES**
-WITH MOUNTED SIGNING

X **SIGNING**
-STATIONARY MOUNTED

WETHERILL ENGINEERING
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Raleigh, N.C. 27606
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: Greg S. Purvis
DocuSigned by: D1F0F7C256E3403...
DATE: 5/2/2023

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SIGN AND DEVICE LEGEND

4/3/2023
\\Wei-fs01\projects\2022\22112.01 Sampson I94 bridge\Traffic\Traffic Design\Pre-Let\Plan\WZTC\BP3.R009_TMP_01B_SDL.dgn
User:AHayes

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	TMP-02

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

B) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

AND

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

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

AND

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

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

TRAFFIC CONTROL DEVICES

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

MANAGEMENT STRATEGIES

THE FOLLOWING LISTED WORK ZONE STRATEGIES ARE RECOMMENDED FOR INCLUSION WITHIN THIS TRANSPORTATION MANAGEMENT PLAN (TMP).

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
OFF-SITE DETOURS

LOCAL NOTES

1) IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSSES, SAMPSON COUNTY SCHOOLS WILL BE CONTACTED AT (910) 592-1401 AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.

2) SAMPSON COUNTY EMERGENCY MANAGEMENT WILL BE CONTACTED AT (910) 592-8996 LEAST ONE MONTH PRIOR TO ROAD CLOSURE TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

PHASING

STEP 1) INSTALL ALL OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING. COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER. INSTALL SIGN ASSEMBLY "H" EVERY 0.90 MILES ON SR 1814 (JUNIPER RD) AND SR 1818 (SHARE CAKE RD), AND EVERY 0.75 MILES ON SR 1636 (ROANOKE RD) AND SR 1817 (BRADSHAW RD), STARTING FROM THE BEGINNING OF EACH DIRECTION OF EACH LEG OF THE OFF-SITE DETOUR. [SEE SHEETS TMP-01B & 04]

STEP 2) WHEN READY TO CLOSE THE ROADWAY, UNCOVER THE DETOUR AND ROAD CLOSURE SIGNING, CLOSE -L- (SR 1746), AND DETOUR TRAFFIC. [SEE SHEETS TMP-01B & 04]

STEP 3) AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE, AND CONSTRUCT PROPOSED -L- STRUCTURE AND APPROACHES FROM THE BEGIN PROJECT LIMITS TO THE END PROJECT LIMITS UP TO AND INCLUDING THE FINAL LIFT OF SURFACE COURSE, AND FINAL PAVEMENT MARKINGS. [SEE ROADWAY PLANS AND FINAL PAVEMENT MARKING PLAN]

STEP 4) OPEN -L- TO THE FINAL TRAFFIC PATTERN, AND REMOVE ALL ROAD CLOSURE SIGNING, OFFSITE DETOUR SIGNING, TEMPORARY TRANSPORATION MANAGEMENT DEVICES. [SEE SHEET TMP-04 FOR SIGN LOCATIONS]

ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403...
DATE: 5/2/2023

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES) AND PHASING

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	TMP-03

SIGN NUMBER: name
TYPE: STATIONARY
QUANTITY: SEE PLANS

SIGN WIDTH: 3′-0″
HEIGHT: 2′-6″
TOTAL AREA: 7.5 Sq.Ft.

BORDER TYPE: INSET
RECESS: 0.38″
WIDTH: 0.63″
RADII: 1.5″

NO. Z BARS:
LENGTH:

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

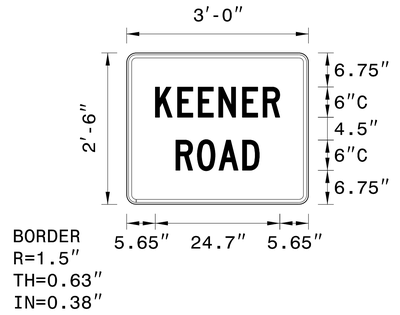
SYMBOL	X	Y	WID	HT

MAT′L: 0.080″ (2.0 mm) ALUMINUM

USE NOTES: 1,2

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

DESIGN BY: DAH
PROJECT ID: BP3.R009
CHECKED BY: WEI
LOCATION: OFFSITE DETOUR
Oct 11, 2022
DIV: 3



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter locations are panel edge to lower left corner

																										Series/Size Text Length
	K	E	E	N	E	R																				C 2000
	5.7	10.1	14.1	18.2	22.9	27																				24.7
	R	O	A	D																						C 2000
	9.7	14	18.2	22.9																						16.6

FILENAME: BP3.R009_REF_BSSD

NORTH CAROLINA D.O.T. SIGN DETAIL

ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: Docusigned by: Greg S. Purvis D1F0F7C256E3403...
DATE: 5/2/2023

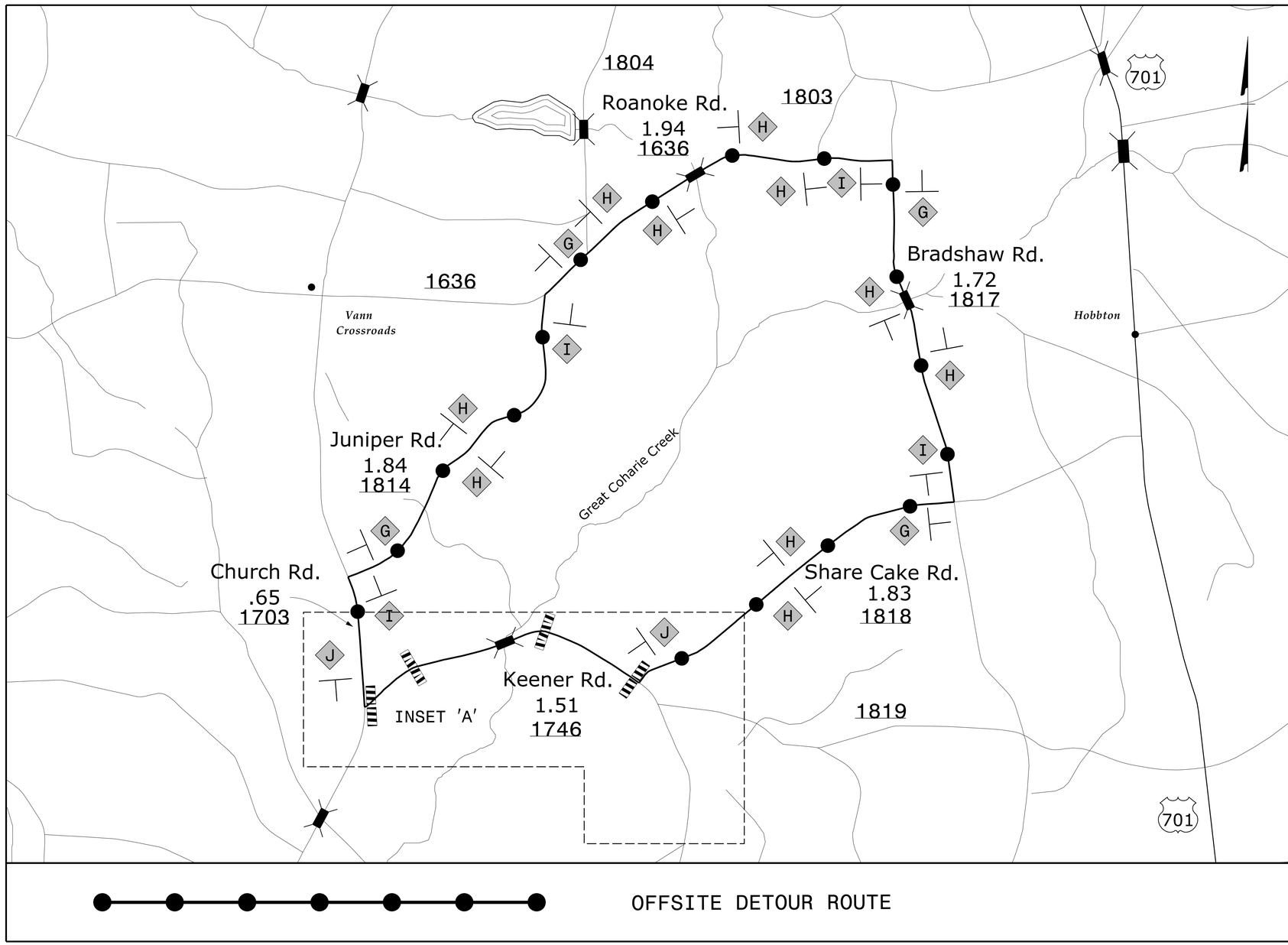
NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

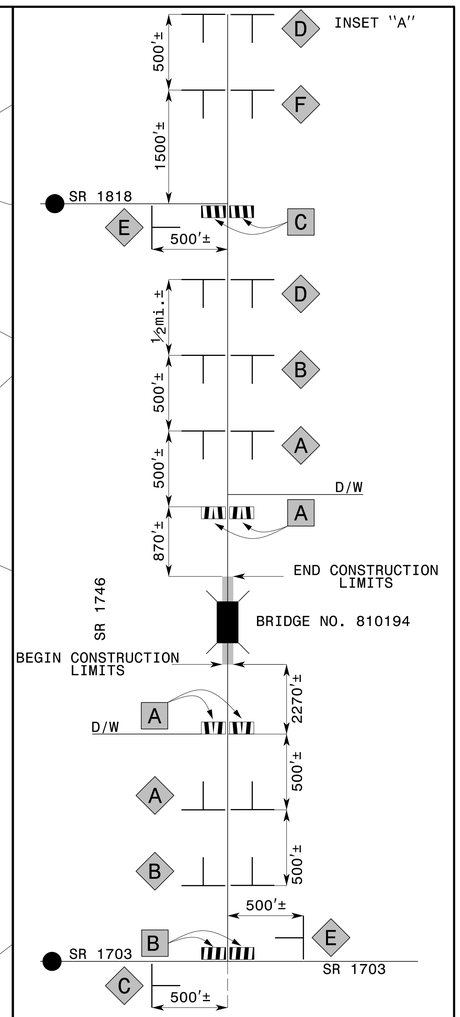
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

SPECIAL SIGN DESIGN

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	TMP-04





NOTES:
1) REFER TO SHEET TMP-01B FOR SIGN AND DEVICE LEGEND.
2) FOR INSET "A", REFER TO ROADWAY STANDARD DRAWINGS 1101.03, SHEETS 1 & 2 OF 9 FOR APPLICABLE NOTES.

ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F-0377
Bus: 919 851 8077
Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: Greg S. Purvis (DocuSigned by: D1F0F7C256E3403...)
DATE: 5/2/2023

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

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DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

OFFSITE DETOUR

TIP NO.	SHEET NO.
BP3.R009	PMP-01

APPROVED: DocuSigned by: Greg S. Purvis D1F0F7C256E3403... DATE: 6/6/2023

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
SAMPSON COUNTY

T.I.P.: BP3.R009

CONTRACT: DC00436

INDEX

ROADWAY STANDARD DRAWING

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

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

FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM
T1	WHITE SOLID EDGE LINE	THERMOPLASTIC (4", 90 MIL)
T13	YELLOW DOUBLE CENTER	THERMOPLASTIC (4", 90 MIL)
MA	YELLOW & YELLOW	PERMANENT RAISED MARKER

GENERAL NOTES

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

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

ROAD NAME	MARKING	MARKER
SR 1746	THERMOPLASTIC	RAISED

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

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

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

E) ALL STATIONS ARE CONSIDERED +/- UNLESS OTHERWISE SHOWN ON THE PLANS.

PLAN SUBMITTED TO:

Ayman I. Alqudwah, P.E., Signing and Delineation Regional Engineer

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

PLAN PREPARED BY: Wetherill Engineering, Inc.

GREG PURVIS, P.E. PROJECT MANAGER

D. ALLEN HAYES, E.I. TRAFFIC DESIGN ENGINEER

WETHERILL ENGINEERING

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

TIP NO.	SHEET NO.
BP3.R009	PMP-02

APPROVED: Greg S. Purvis (DocuSigned by: D1F07C256E3403...) 5/2/2023

DATE:

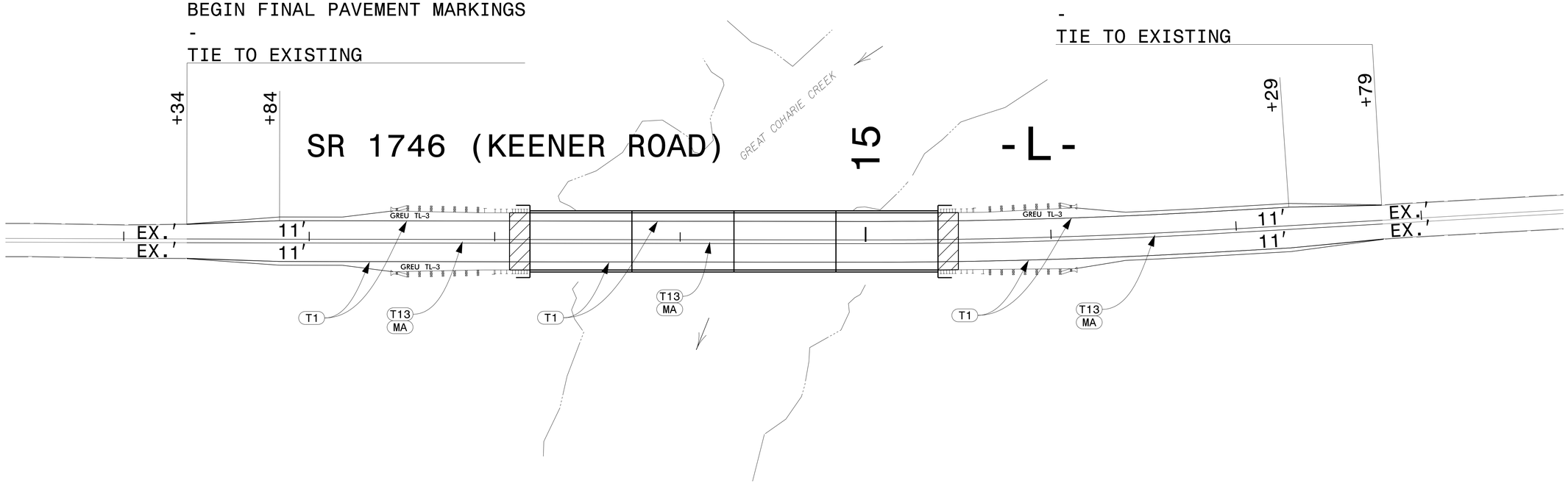
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 22999 ENGINEER GREG S. PURVIS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BEGIN FINAL PAVEMENT MARKINGS
-
TIE TO EXISTING

END FINAL PAVEMENT MARKINGS
-
TIE TO EXISTING



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PAVEMENT MARKING DETAIL

PROJECT: BP3.R009

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP3.R009	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP3.R009.1		PE
BP3.R009.2		ROW, UTIL.
BP3.R009.3		CONST.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

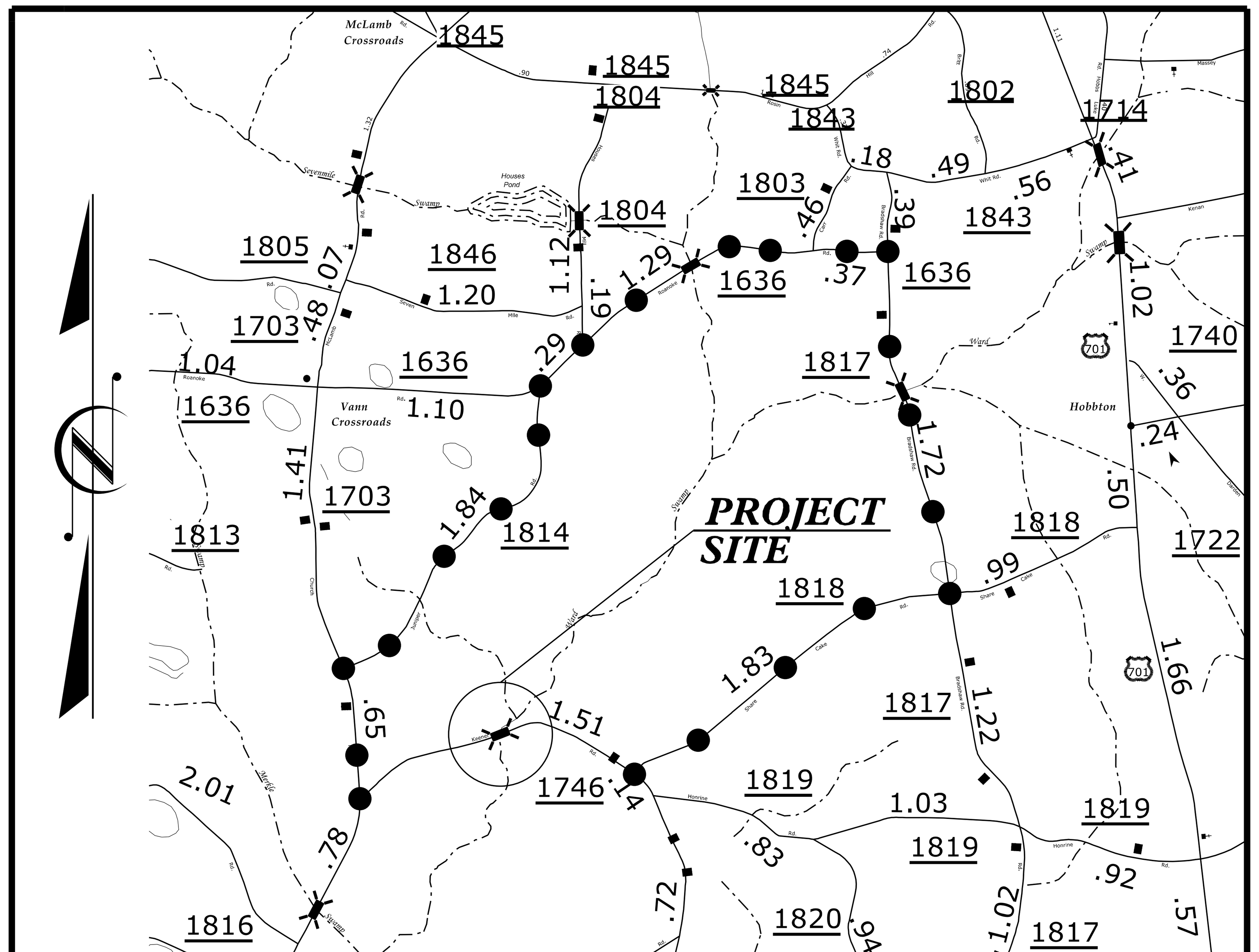
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

SAMPSON COUNTY

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

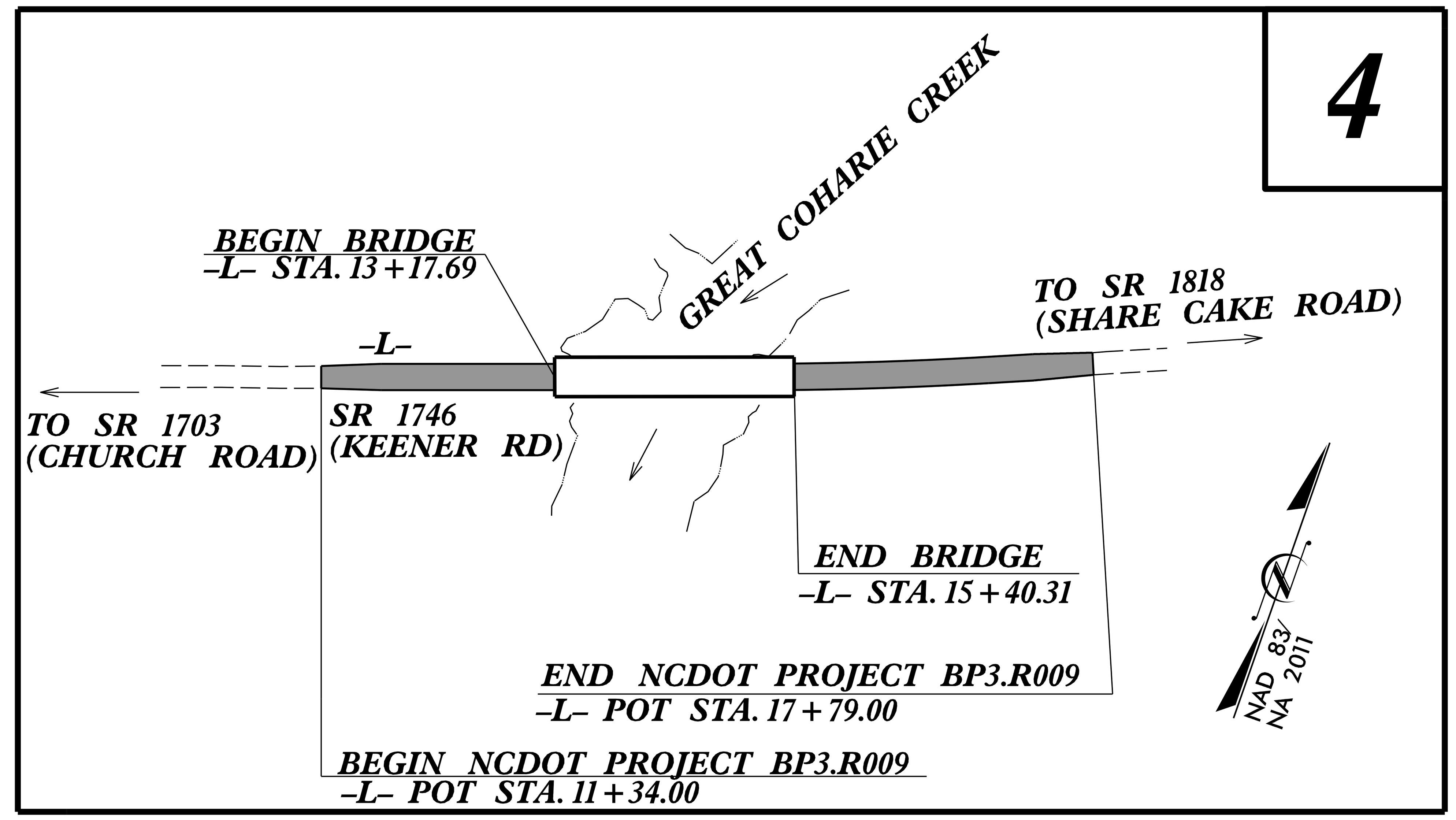
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

NOTE: THIS PROJECT WAS FORMERLY B-5633



VICINITY MAP

OFF-SITE DETOUR



EROSION AND SEDIMENT CONTROL MEASURES

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

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

GRAPHIC SCALE

50 25 0 50 100

PLANS

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

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

Prepared In the Office of:

WETHERILL ENGINEERING, INC.
1223 JONES FRANKLIN ROAD
RALEIGH, NC 27606

Designed by:

KATIE ESTEP 4485
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

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

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

WATTLE BARRIER DETAIL

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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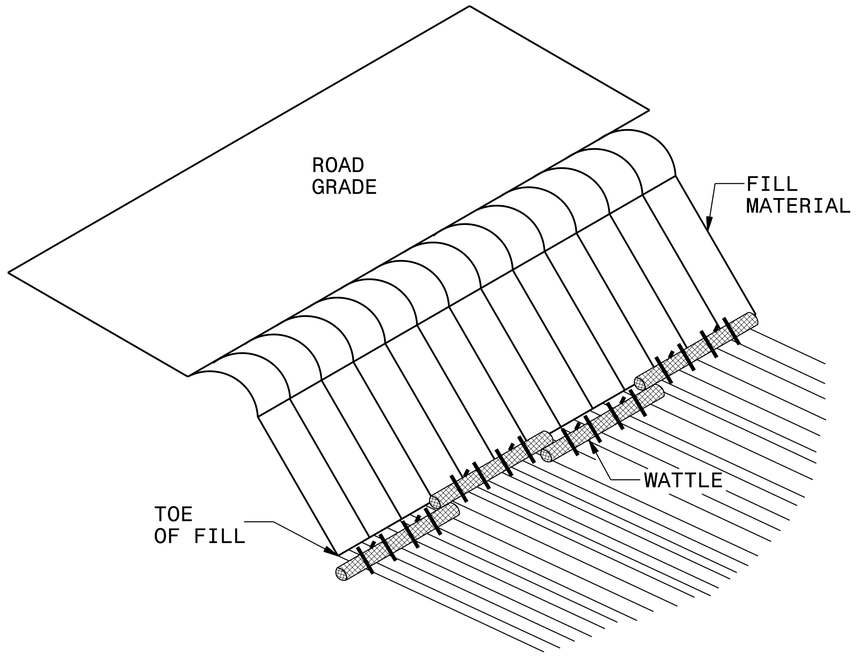


ISOMETRIC VIEW

NOTES:

USE MINIMUM 18 IN. NOMINAL DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 2 TO 3 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLES ON TOE OF SLOPE.

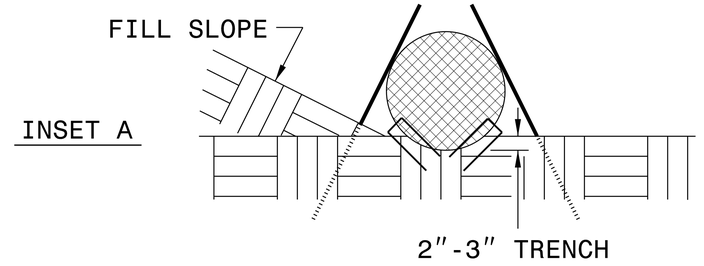
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

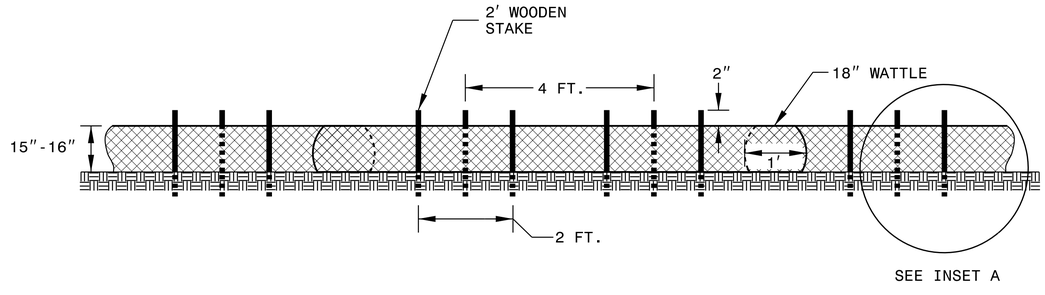
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12″ IN LENGTH.

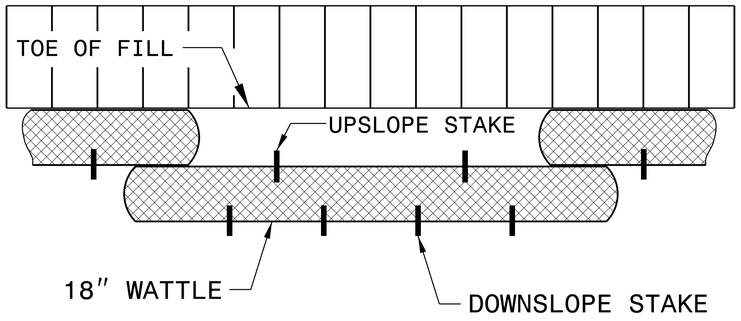
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

FOR BREAKS ALONG LARGE SLOPES, USE MAXIMUM SPACING OF 25 FT.





FRONT VIEW



TOP VIEW

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	EC-3

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SOIL STABILIZATION TIMEFRAMES

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

8/17/99

REVISIONS

BRIDGE NO. 810194	PROJECT REFERENCE NO.	SHEET NO.
EROSION CONTROL PLANS	BP3.R009	EC-4/CONST.4
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	R/W SHEET NO.	
	ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

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

6/6/2023
...\Sampson194_EC_CG.dgn
USER:KAlford

BRIDGE NO. 810194

EROSION CONTROL PLANS

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

PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	EC-5/CONST.4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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*TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION*

REVISIONS

8/17/99

6/6/2023
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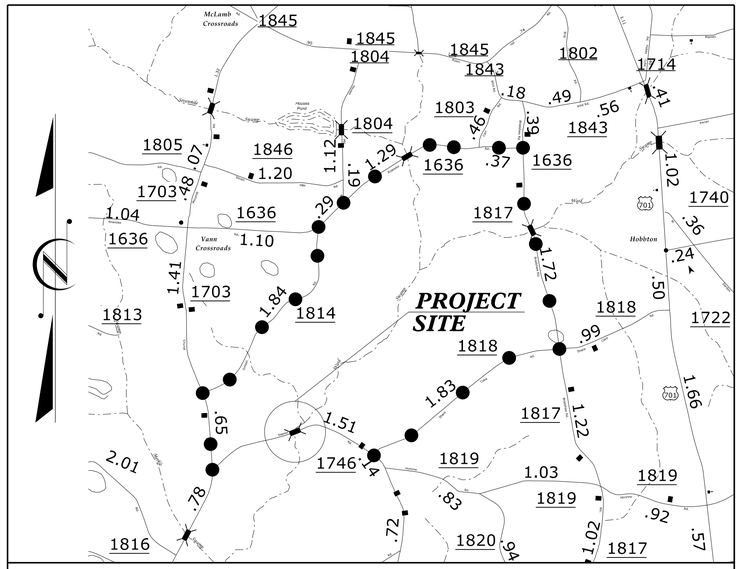

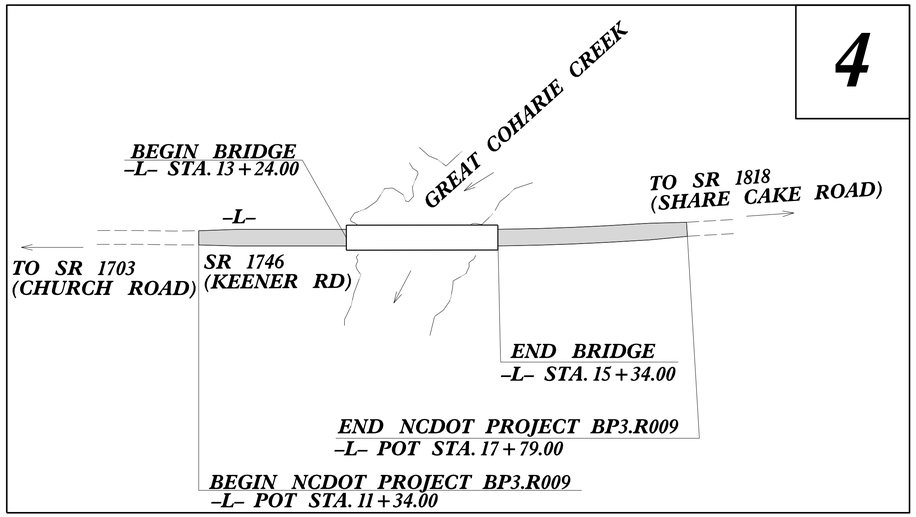

09/08/99

TIP PROJECT: BP3.R009

T.I.P. NO.	SHEET NO.
BP3.R009	UO-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS
SAMPSON COUNTY

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.

BRIDGE NO. 810194

VICINITY MAP

OFF-SITE DETOUR ●—●—●—●—●

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

TYPE OF WORK: UTILITY RELOCATION BY OTHERS

NOTE: THIS PROJECT WAS FORMERLY B-5633

FINAL PLANS

GRAPHIC SCALES

INDEX OF SHEETS

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

UTILITY OWNERS WITH CONFLICTS

NO UTILITY CONFLICTS

PREPARED IN THE OFFICE OF:

WETHERILL ENGINEERING

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TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN - GIS/GPS
CIVIL/SITE DESIGN - CONSTRUCTION OBSERVATION - SURVEY/SUE - UTILITIES

PANKIL K. PATEL	UTILITY PROJECT MANAGER
TREVER REEVES	PROJECT UTILITY COORDINATOR

DIVISION OF HIGHWAYS
DIVISION 3

5501 BARBADOS BLVD.
CASTLE HAYNE NC 28429-5647

JON W. GILES	DIVISION 3 UTILITY COORDINATOR
DEREK PIELECH, PE	DIVISION 3 BRIDGE PROGRAM MANAGER

$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$
$$$USERNAME$$$$

5/14/99

NO UTILITY CONFLICTS WITH PROJECT BP3.R009

BRIDGE NO. 810194

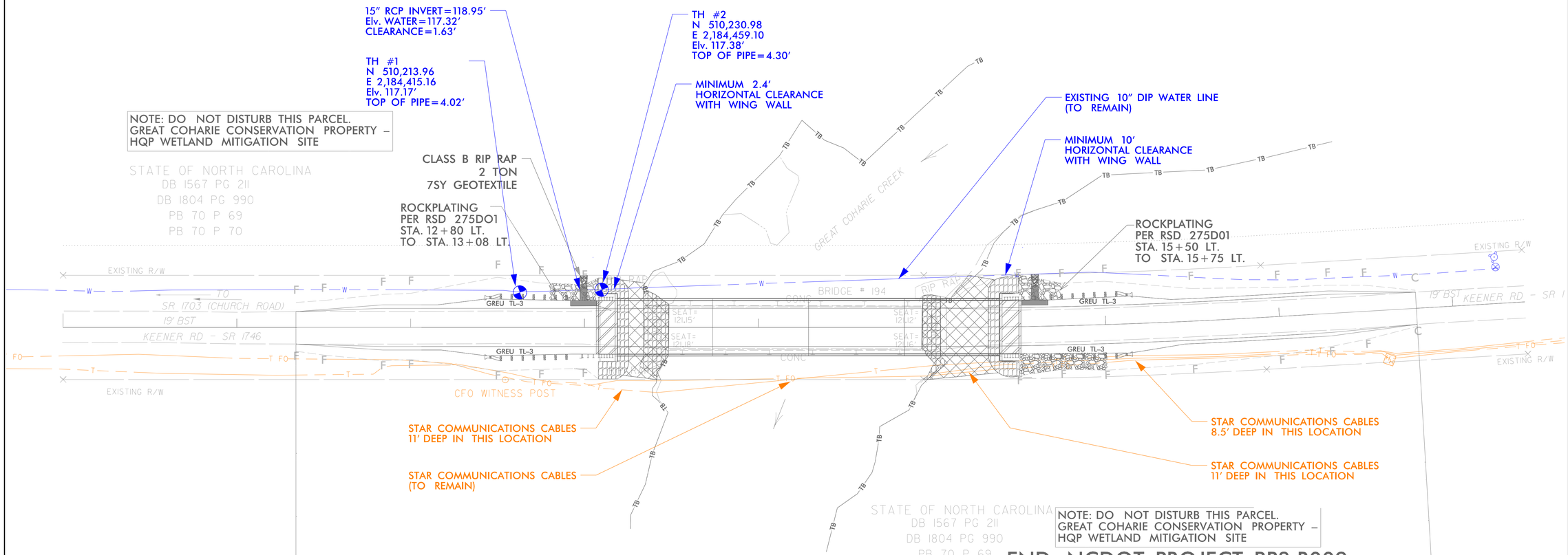
PROJECT REFERENCE NO.	SHEET NO.
BP3.R009	U0-2
THIS SHEET CORRESPONDS TO RDY- 4	

UTILITIES BY OTHERS

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

FINAL PLANS

NC GRID NAD 83 NA 2011



BEGIN NCDOT PROJECT BP3.R009
–L– POT STA. 11+34.00

END NCDOT PROJECT BP3.R009
–L– POT STA. 17+79.00

NOTES:

1) NCDOT TO COORDINATE WITH SAMPSON COUNTY ON CONSTRUCTION DATES.

2) CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION AROUND THE EXSTING WATER LINE WITHOUT HAVING A NCDOT AND A SAMPSON COUNTY UTILITIES REPRESENTATIVE PRESENT ON SITE IN CASE OF ACCIDENTAL DAMAGE TO THE EXISTING WATER LINE.

8:57:19 AM
E:\2022\22112.01 Sampson 194 bridge\Utilities\Engineering\UBO\Proj\BP3R009_ut_rdy_U02.dgn
6/19/2023

PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	X-1A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CROSS-SECTION SUMMARY

NOTE: EMBANKMENT COLUMN INCLUDES BACKFILL FOR UNDERCUT

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
11+34.00	0	0
11+50.00	1	1
11+84.00	2	4
12+00.00	1	3
12+50.00	1	29
12+75.00	0	23
13+00.00	2	21
13+17.67	4	15

Station L	Uncl. Exc. (cu. yd.)	Embt (cu. yd.)
15+40.31	0	0
15+50.00	4	13
15+75.00	9	29
16+00.00	6	23
16+50.00	5	35
17+00.00	2	20
17+29.00	3	4
17+50.00	2	1
17+79.00	2	1

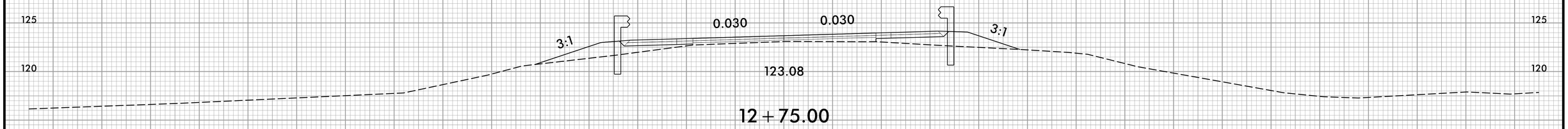
Approximate quantities only. Unclassified excavation, borrow excavation, shoulder borrow, fine grading, clearing and grubbing, breaking of existing pavement and removal of existing pavement will be paid for at the lump sum price for "Grading".

CROSS SECTION INDEX

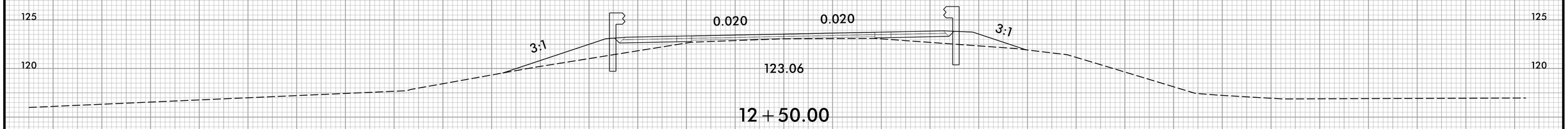
SHEET	LINE	BEGIN STATION	END STATION
X-1	-L-	11+34.00	12+75.00
X-2	-L-	13+00.00	13+50.00
X-3	-L-	14+00.00	15+00.00
X-4	-L-	15+40.31	15+50.00
X-5	-L-	15+75.00	17+00.00
X-6	-L-	17+29.00	17+79.00

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BP3.R009	X–1

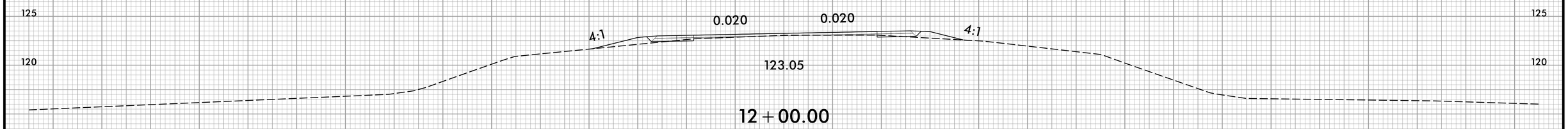
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



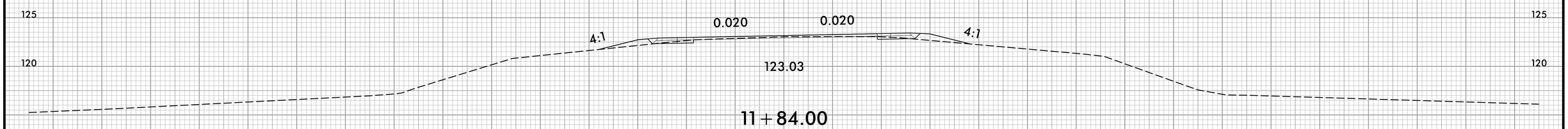
12+75.00



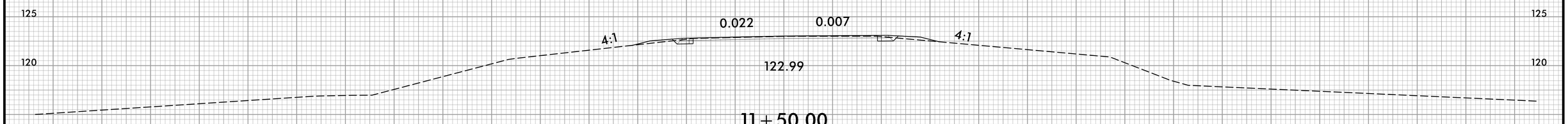
12+50.00



12+00.00

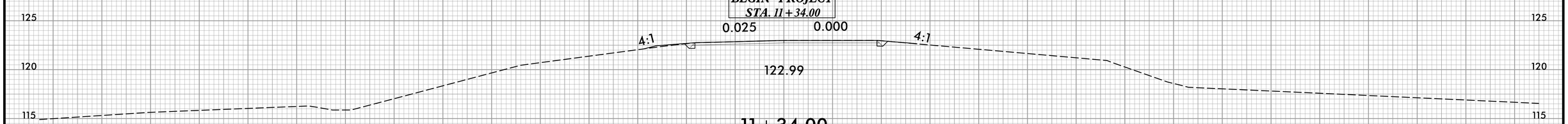


11+84.00



11+50.00

BEGIN PROJECT
STA. 11+34.00



11+34.00

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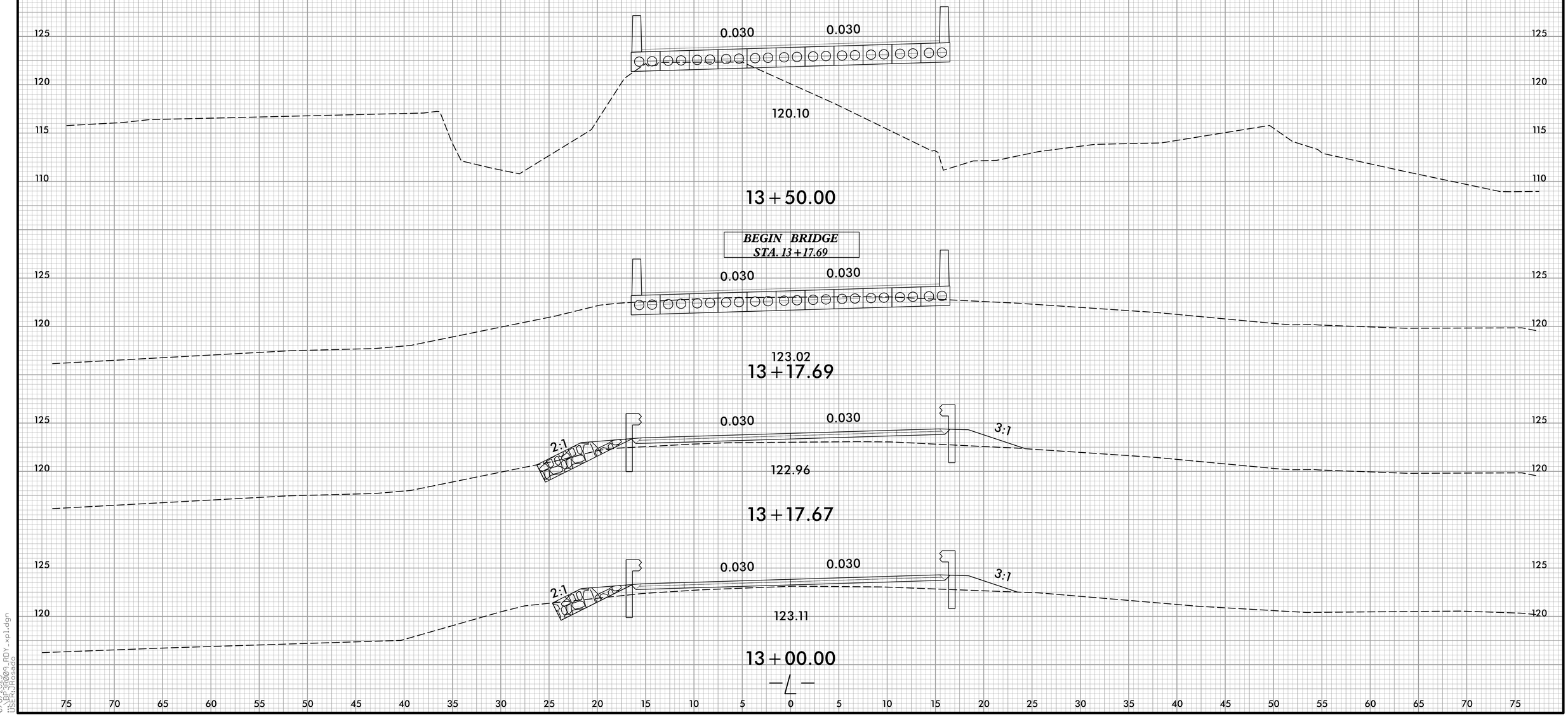
	BP3.R009	X–2



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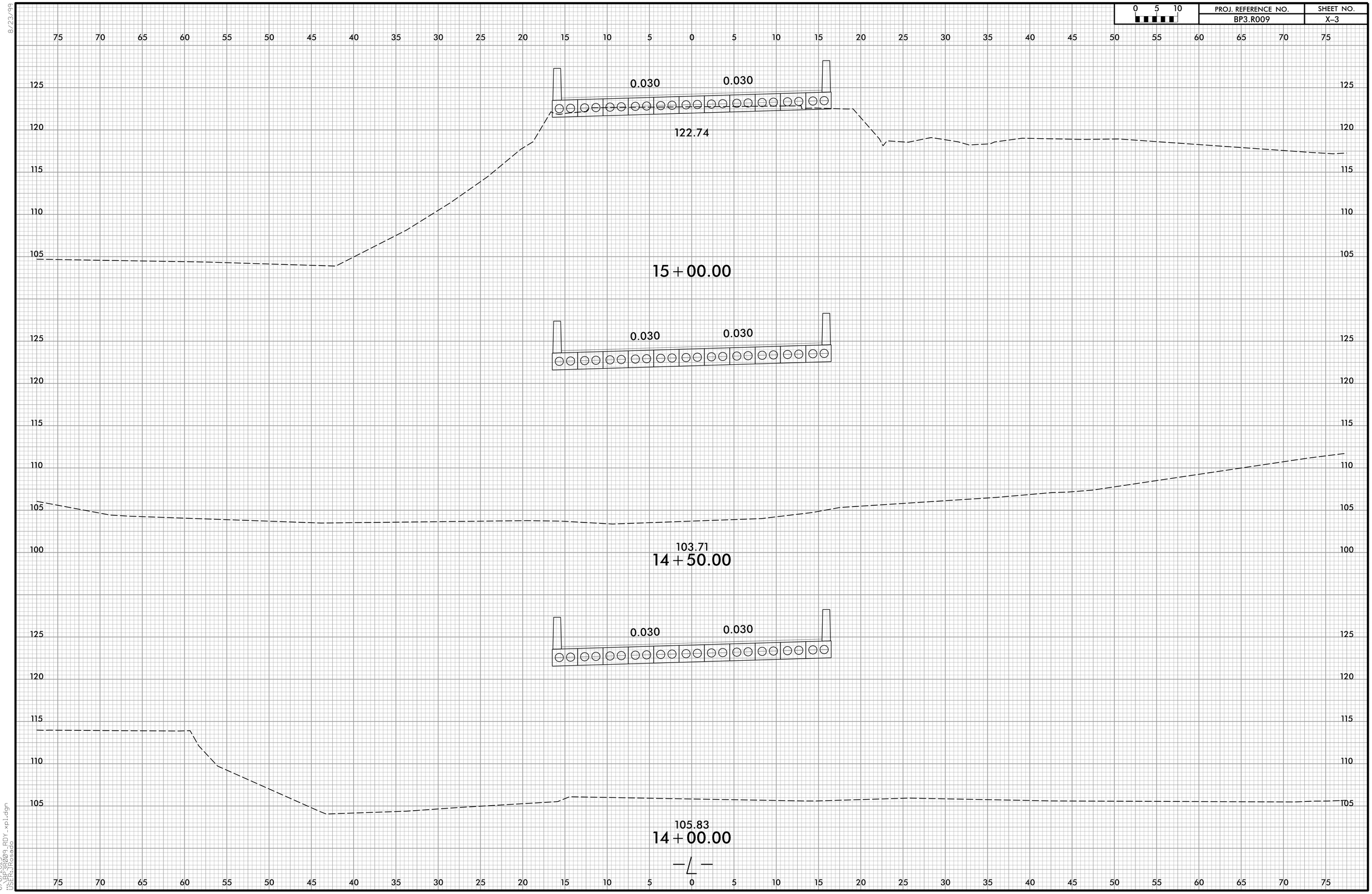
	BP3.R009	X-3



PROJ. REFERENCE NO.	SHEET NO.
BP3.R009	X-4

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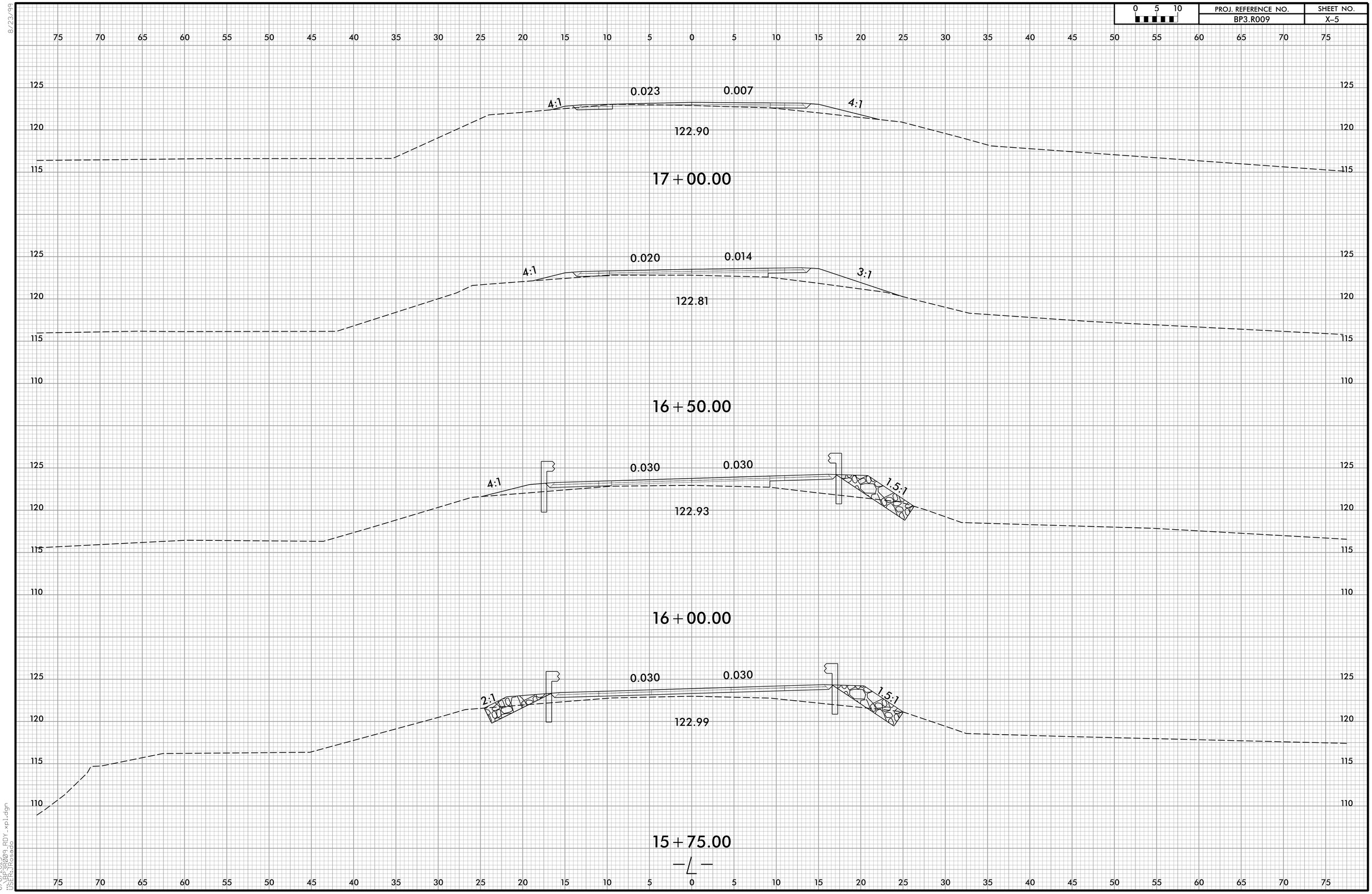


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	BP3.R009	X–6

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

END PROJECT
STA. 17+79.00

125 120

0.008 0.041

122.94

17+79.00

125 120

0.002 0.028

4:1 4:1

122.98

17+50.00

125 120

0.011 0.019

4:1 4:1

122.96

17+29.00

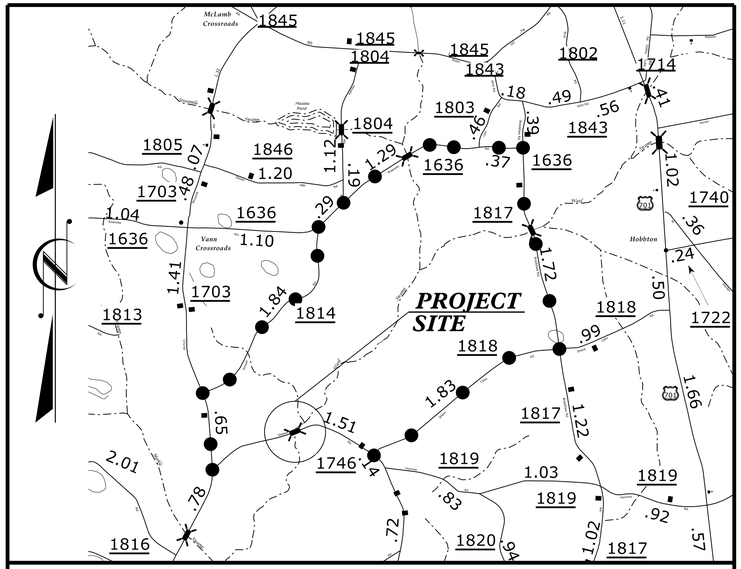
—℄—

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

09/08/99

PROJECT: BP3.R009

CONTRACT: DC00436



VICINITY MAP

OFF–SITE DETOUR

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

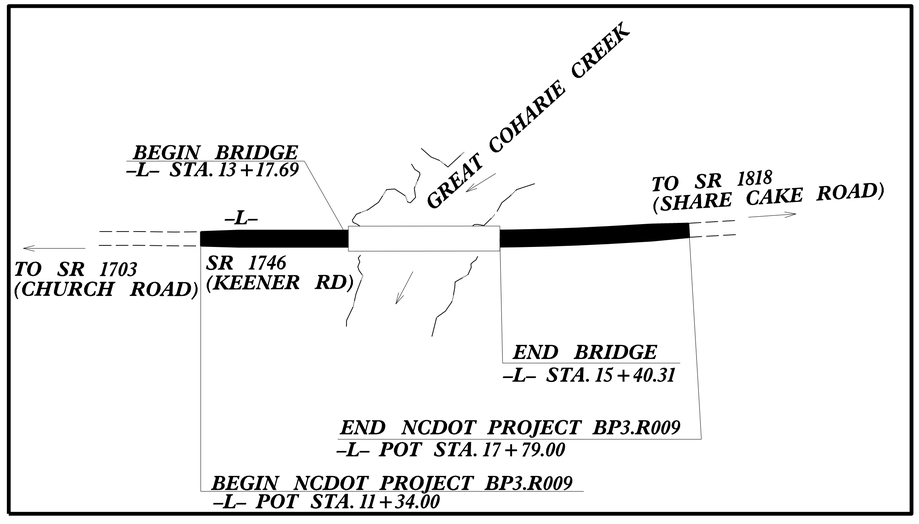
SAMPSON COUNTY

LOCATION: BRIDGE NO. 810194 OVER GREAT COHARIE CREEK ON SR 1746 (KEENER ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

NOTE: THIS PROJECT WAS FORMERLY B–5633

STRUCTURE PLANS



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP3.R009		

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
BP3.R009.1		PE
BP3.R009.2		ROW, UTIL.
BP3.R009.3		CONST.

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
License No. F–0377
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Fax: 919 851 8107

TRANSPORTATION PLANNING/DESIGN – BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN – GIS/GPS – CONSTRUCTION OBSERVATION

BRIDGE NO. 810194

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN A. DILWORTH

DocuSigned by: 6213822692208438... 6/9/2023

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DESIGN DATA

ADT 2023 = 714
ADT 2043 = 1286

T = 6 % *
V = 55 MPH

* (TTST = 3% + DUAL = 3%)

FUNC CLASS =
MINOR COLLECTOR
SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP3.R009 =	0.080 MILES
LENGTH STRUCTURES PROJECT BP3.R009 =	0.042 MILES
TOTAL LENGTH PROJECT BP3.R009 =	0.122 MILES

NCDOT CONTACT: DEREK PIELECH, PE
DIVISION 3 BRIDGE PROGRAM MANAGER

Prepared for:
DIVISION OF HIGHWAYS
DIVISION THREE
5501 BARBADOS BLVD., CASTLE HAYNE NC, 28429–5647

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 12, 2022

LETTING DATE:
JULY 13, 2023

EDWARD G. WETHERILL, PE
PROJECT ENGINEER

JOHN A. DILWORTH, PE
PROJECT DESIGN ENGINEER

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

6/9/2023
::\DGN\BP3.R009.1_SD_TSH.dgn
::USER:JRosado

13+00 +20 +40 +60 +80 14+00 +20 +40 +60 +80 15+00 +20 +40 +60 +80 16+00

SPAN "A" SPAN "B" SPAN "C" SPAN "D"

PI = 14+33.85
EL = 124.60
VC = 195'
(+)0.5739% (-)0.5023%
GRADE DATA -L-

FILL FACE @ END BENT 1
STA. 13+17.69 -L-
GRADE POINT EL. = 123.93

BEGIN FRONT SLOPE
STA. 13+10.45 -L-
GRADE POINT EL. = 123.89

1'-7" MIN. BERM (TYP.)
1'-0" MIN. EARTH BERM (TYP.)
FIXED
BACKFILL WITH 2'-0" NATIVE MATERIAL
UNCLASSIFIED STRUCTURE EXCAVATION (TYP.)
EXISTING SUBSTRUCTURE (TYP.)
FIXED FIXED
100 YR. EL. 119.5
25 YR. EL. 118.0
NWS EL. 113.0
WS ON 2-10-22 EL. 114.9
100 YR. FEMA EL. 119.77
FIXED FIXED
FIXED FIXED
1'-6" TO LIMITS OF UNCLASSIFIED STRUCTURE EXCAVATION (TYP.)
FIXED
FILL FACE @ END BENT 2
STA. 15+40.31 -L-
GRADE POINT EL. = 124.07
BEGIN FRONT SLOPE
STA. 15+47.54 -L-
GRADE POINT EL. = 124.03
APPROX. NATURAL GROUND

130 120 110 100

EL. 123.0 ± (×4)
1'-0" (TYP.)
EXCAVATE TO EL. 118.0 GRADE TO DRAIN
HP 12x53 VERTICAL STEEL PILES
1½:1 SLOPE (TYP.)
EL. 109.0 ±
EL. 106.0 ±
EL. 107.0 ±
HP 14x73 VERTICAL STEEL PILES
HP 14x73 VERTICAL STEEL PILES
EL. 103.0 ±
HP 14x73 VERTICAL STEEL PILES
EL. 111.0 ±
CLASS II RIP RAP (2'-0" THICK) W/ GEOTEXTILE (TYP.)
HP 12x53 VERTICAL STEEL PILES

PI = 11+62.54
EL = 123.04
VC = 50'
(+)0.2000% (+)0.5739%
GRADE DATA -L-

END BENT 1 BENT 1 BENT 2 BENT 3 END BENT 2

SECTION ALONG -L-

LOW CHORD ELEVATIONS	
	ELEVATION @ ℄ BRG. @ LEFT END
END BENT 1	121.15
END BENT 2	121.29

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

HYDRAULIC DATA

DESIGN DISCHARGE _____ = 3,400 C.F.S.
FREQUENCY OF DESIGN FLOOD ____ = 25 YRS.
DESIGN HIGH WATER ELEVATION __ = 118.0
DRAINAGE AREA _____ = 76.9 SQ. MI.
BASE DISCHARGE (Q100) _____ = 5,000 C.F.S.
BASE HIGH WATER ELEVATION __ = 119.5

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE _____ = 6,900+ C.F.S.
FREQUENCY OF OVERTOPPING FLOOD __ = 500+ YRS.
OVERTOPPING FLOOD ELEVATION __ = 122.7 *

* OVERTOPPING OCCURS @ -L- STA. 10+00.00 EL. = 122.7

GREAT COHARIE CREEK

CLASS II RIP RAP (2'-0" THICK) W/GEOTEXTILE
FOR ROCK PLATING STARTING @ 12+80.00 -L- SEE ROADWAY PLANS
1'-0" EARTH BERM EL. 115.98
BACKFILL WITH 2'-0" NATIVE MATERIAL
EXISTING SUBSTRUCTURE (TYP.)
BENT NO. 1 CONTROL LINE
BENT NO. 2 CONTROL LINE
W.P. #3 BRIDGE I.D. STA. 14+29.00 -L-
BENT NO. 3 CONTROL LINE
-L- PC Sta. 14+95.30
CLASS II RIP RAP (2'-0" THICK) W/GEOTEXTILE
1'-0" EARTH BERM EL. 116.12
FOR ROCK PLATING STARTING @ 15+50.00 -L- (BOTH SIDES) SEE ROADWAY PLANS

W.P. #1 STA. 13+17.69 -L-
W.P. #2 STA. 13+73.88 -L-
W.P. #4 STA. 14+84.13 -L-
W.P. #5 STA. 15+40.31 -L- OFFSET 0.307' RT.

NOTE:
W.P. # 5 IS LOCATED ON AN EXTENDED TANGENT. END APPROACH SLAB IS LOCATED ON -L-.

BEGIN APPROACH SLAB
STA. 13+06.81 -L-
TO SR 1703
BEGIN FRONT SLOPE
STA. 13+10.45 -L-
FILL FACE @ END BENT 1
SR 1746
90°-00'-00" (TYP.)
END APPROACH SLAB
STA. 15+51.19 -L-
-L-
TO SR 1818
EXTENDED TANGENT
BEGIN FRONT SLOPE
STA. 15+47.54 -L-
FILL FACE @ END BENT 2

NAD 83

1'-0" EARTH BERM EL. 117.15
1'-0" EARTH BERM EL. 117.29

56'-2¼" 55'-1½" 55'-1½" 56'-2¼"
FILL FACE @ END BENT 1 TO FILL FACE @ END BENT 2 = 222'-7½"

PLAN
(PILES NOT SHOWN IN PLAN VIEW)

HORIZONTAL CURVE DATA -L-

PI Sta 15+93.16
Δ = 3° 23' 49.8" (LT)
D = 1° 44' 10.4"
L = 195.66'
T = 97.86'
R = 3,300.00'

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 1 OF 3 REPLACES BRIDGE #194

ENGINEER OF RECORD
6/13/2023
NORTH CAROLINA PROFESSIONAL SEAL 15431 ENGINEER THOMAS K. KOCH
DocuSigned by: Thomas K. Koch
WETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON SR 1746 OVER GREAT COHARIE CREEK BETWEEN SR 1703 AND SR 1818

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			20

DRAWN BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : T. KOCH DATE : 6-23

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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 1, PILES (1-7)	75	SEE SUBSTRUCTURE PLANS	45			125	19						
BENT 1, PILES (1-8)	120		65	98	80.0	215							
BENT 2, PILES (1-8)	120		65	98	80.0	205							
BENT 3, PILES (1-8)	120		65	100	80.0	205							
END BENT 2, PILES (1-7)	75		45			125							

*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.

$$**\text{RDR} = \frac{\text{FACTORED RESISTANCE + FACTORED DOWNDRAG LOAD + FACTORED DEAD LOAD}}{\text{DYNAMIC RESISTANCE FACTOR}} + \text{NOMINAL DOWNDRAG RESISTANCE} + \frac{\text{NOMINAL SCOUR RESISTANCE}}{\text{SCOUR RESISTANCE FACTOR}}$$

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 1, PILES (1-7)	71			0.60			1.00
BENT 1, PILES (1-8)	118			0.60		12	1.00
BENT 2, PILES (1-8)	118			0.60		5	1.00
BENT 3, PILES (1-8)	118			0.60		5	1.00
END BENT 2, PILES (1-7)	71			0.60			1.00

*FACTORED DEAD LOAD IS FACTORED WEIGHT OF PILE ABOVE GROUND LINE.

SUMMARY OF PDA/PILE ORDER LENGTHS

(BLANK ENTRIES INDICATE ITEM IS NOT APPLICABLE TO STRUCTURE)

PILE DRIVING ANALYZER (PDA)				PILE ORDER LENGTHS	
END BENT/ BENT No.	PDA TESTING REQUIRED? (YES OR MAYBE)	PDA TEST PILE LENGTH (FT)	TOTAL PDA TESTING QUANTITY (EACH)	END BENT/ BENT No. (s)	PILE ORDER LENGTH BASIS* (EST OR PDA)
END BENT 1, PILES (1-7)	MAYBE	50	2		
BENT 1, PILES (1-8)	MAYBE	70			
BENT 2, PILES (1-8)	MAYBE	70			
BENT 3, PILES (1-8)	MAYBE	70			
END BENT 2, PILES (1-7)	MAYBE	50			

*EST = PILE ORDER LENGTHS FROM ESTIMATED PILE LENGTHS; PDA = PILE ORDER LENGTHS BASED ON PDA TESTING. FOR GROUPS OF END BENTS/BENTS WITH PILE ORDER LENGTHS BASED ON PDA TESTING, THE FIRST END BENT/BENT No. LISTED FOR EACH GROUP IS THE REPRESENTATIVE END BENT/BENT WITH THE PDA.

NOTES:

1. THE PILE FOUNDATION TABLES ARE BASED ON THE BRIDGE SUBSTRUCTURE DESIGN AND FOUNDATION RECOMMENDATIONS SEALED BY A NORTH CAROLINA PROFESSIONAL ENGINEER THEIN TUN ZAN (PE SEAL # 030943) ON 07-29-2022.
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 PDA TESTING WHEN PDAS MAY BE REQUIRED.

DRAWN BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
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LICENSE NO. F-0377

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

PILE FOUNDATION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			20

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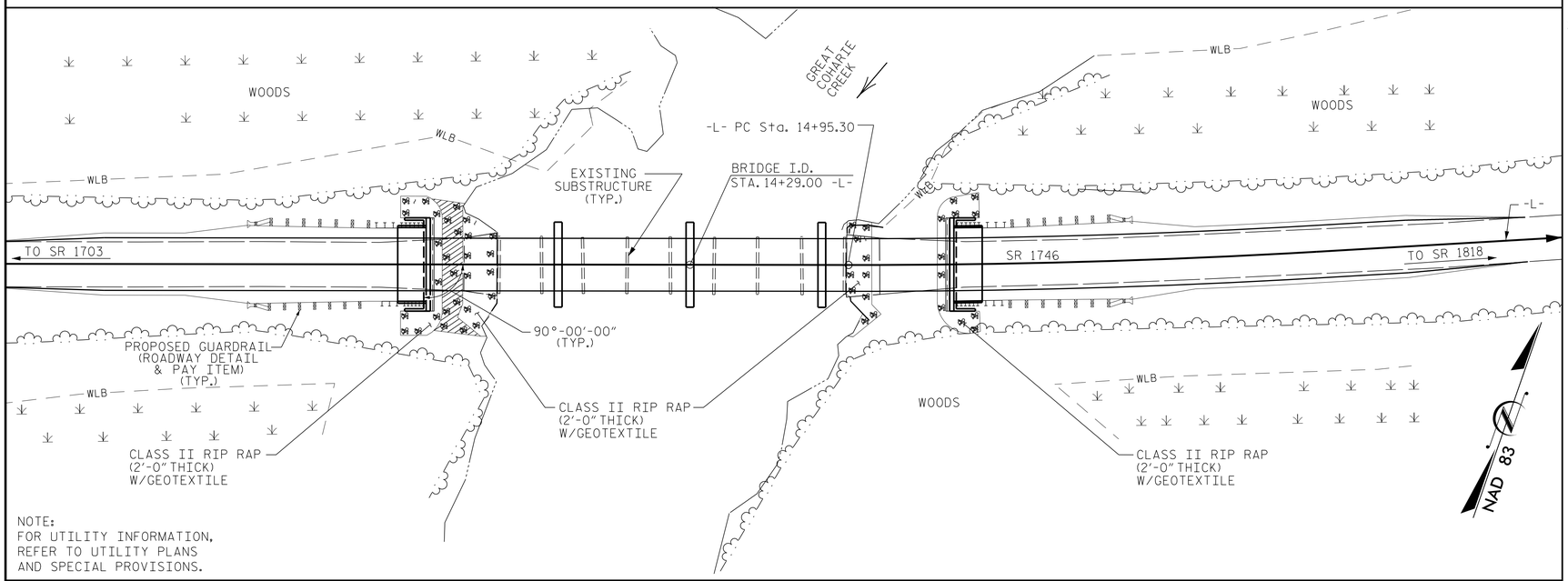

LOCATION SKETCH

FOUNDATION NOTES:

1. FOR PILES, SEE PILE PROVISIONS AND SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. OBSERVE A ONE MONTH WAITING PERIOD AFTER CONSTRUCTING THE EMBANKMENT, END BENT AND REINFORCED BRIDGE APPROACH FILL, IF APPLICABLE, BEFORE BEGINNING APPROACH SLAB CONSTRUCTION AT END BENT NO. 2. FOR BRIDGE WAITING PERIODS, SEE ROADWAY PLANS AND SECTION 235 OF THE STANDARD SPECIFICATIONS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	PDA TESTING	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12x53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14x73 GALVANIZED STEEL PILES	HP 12 X 53 STEEL PILES		HP 14x73 GALVANIZED STEEL PILES		PILE REDRIVES	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" x 2'-0" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	EA.	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EA.	EA.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	No.	LIN. FT.
SUPERSTRUCTURE															441.00			LUMP SUM	44	2420.00
END BENT 1					21.8		2636	7		7	315			3		175	194			
BENT 1					10.7		2136		8			8	520	5						
BENT 2					10.7		2136		8			8	520	4						
BENT 3					10.7		2136		8			8	520	4						
END BENT 2					21.8		2636	7		7	315			3		120	133			
TOTAL	LUMP SUM	LUMP SUM	2	LUMP SUM	75.7	LUMP SUM	11,680	14	24	14	630	24	1560	19	441.00	295	327	LUMP SUM	44	2420.00

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.

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.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA ON SHEET S-1 SHALL BE EXCAVATED FOR A DISTANCE OF 30 FT. 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 1 SPAN @ 18'-8", 1 SPAN @ 17'-5", 5 SPANS @ 18'-3" AND 1 SPAN @ 18'-8", WITH A CLEAR ROADWAY WITDTH OF 25'-6" AND HAVING A SUPERSTRUCTURE CONSISTING OF REINFORCED CONCRETE DECK ON I-BEAMS AND A SUBSTRUCTURE OF REINFORCED CONCRETE END BENT AND BENT CAPS ON TIMBER PILES WITH STEEL CRUTCH BENTS SHALL BE REMOVED. THE EXISTING STRUCTURE IS PRESENTLY POSTED FOR LOAD LIMIT.

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 DIFFERENCE 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 SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION 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.

AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT AND BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE REVISED PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

FOR INTERIOR BENTS No. 1, No. 2 AND No. 3 ONLY PARTIAL GALVANIZING OF THE PILES IS REQUIRED. SEE INTERIOR BENT SHEET FOR REQUIRED GALVANIZED LENGTHS. PAYMENT FOR PARTIALLY GALVANIZED PILES WILL BE MADE UNDER THE CONTRACT UNIT PRICE FOR GALVANIZED STEEL PILES.

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 14+29.00 -L-."

THIS BRIDGE SHALL BE CONSTRUCTED USING TOP-DOWN CONSTRUCTION METHODS. THE USE OF A TEMPORARY CAUSEWAY OR WORK BRIDGE IS NOT PERMITTED.

DRAWN BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : T. KOCH DATE : 6-23

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 3 OF 3

ENGINEER OF RECORD
6/13/2023
NORTH CAROLINA PROFESSIONAL SEAL 15431 ENGINEER THOMAS K. KOCH
DocuSigned by: Thomas K. Koch
WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
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LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON SR 1746 OVER GREAT COHARIE CREEK BETWEEN SR 1703 AND SR 1818

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			20

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LOAD AND RESISTANCE FACTOR RATING (LRFD) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LEVEL		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
								MOMENT					SHEAR						MOMENT						
							LIVELOAD FACTORS	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)	LIVELOAD FACTORS	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.974	--	1.75	0.278	2.49	55′	EL	27	0.526	**1.97**	55′	EL	**5.4**	0.80	0.278	2.27	55′	EL	27	
		HL-93(Opr)	N/A	--	2.559	--	1.35	0.278	3.23	55′	EL	27	0.526	2.56	55′	EL	5.4	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	2.358	84.885	1.75	0.278	3.12	55′	EL	27	0.526	**2.36**	55′	EL	**5.4**	0.80	0.278	2.84	55′	EL	27	
		HS-20(Opr)	36.000	--	3.057	110.036	1.35	0.278	4.04	55′	EL	27	0.526	3.06	55′	EL	5.4	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	5.965	80.53	1.4	0.278	8.19	55′	EL	27	0.526	6.71	55′	EL	5.4	0.80	0.278	5.97	55′	EL	27	
		SNGARBS2	20.000	--	4.621	92.422	1.4	0.278	6.36	55′	EL	27	0.526	4.86	55′	EL	5.4	0.80	0.278	4.62	55′	EL	27	
		SNAGRIS2	22.000	--	4.434	97.548	1.4	0.278	6.12	55′	EL	21.6	0.526	4.55	55′	EL	5.4	0.80	0.278	4.43	55′	EL	27	
		SNCOTTS3	27.250	--	2.974	81.029	1.4	0.278	4.08	55′	EL	27	0.526	3.36	55′	EL	5.4	0.80	0.278	2.97	55′	EL	27	
		SNAGGRS4	34.925	--	2.555	89.234	1.4	0.278	3.51	55′	EL	27	0.526	2.85	55′	EL	5.4	0.80	0.278	2.56	55′	EL	27	
		SNS5A	35.550	--	2.494	88.65	1.4	0.278	3.42	55′	EL	27	0.526	2.93	55′	EL	5.4	0.80	0.278	2.49	55′	EL	27	
		SNS6A	39.950	--	2.318	92.619	1.4	0.278	3.18	55′	EL	27	0.526	2.7	55′	EL	5.4	0.80	0.278	2.32	55′	EL	27	
		SNS7B	42.000	--	2.209	92.776	1.4	0.278	3.03	55′	EL	27	0.526	2.69	55′	EL	5.4	0.80	0.278	2.21	55′	EL	27	
	TTST	TNAGRIT3	33.000	--	2.836	93.596	1.4	0.278	3.89	55′	EL	27	0.526	3.19	55′	EL	5.4	0.80	0.278	2.84	55′	EL	27	
		TNT4A	33.075	--	2.857	94.504	1.4	0.278	3.92	55′	EL	27	0.526	3.08	55′	EL	5.4	0.80	0.278	2.86	55′	EL	27	
		TNT6A	41.600	--	2.366	98.442	1.4	0.278	3.25	55′	EL	27	0.526	2.94	55′	EL	5.4	0.80	0.278	2.37	55′	EL	27	
		TNT7A	42.000	--	2.395	100.575	1.4	0.278	3.29	55′	EL	27	0.526	2.76	55′	EL	5.4	0.80	0.278	2.39	55′	EL	27	
		TNT7B	42.000	--	2.499	104.94	1.4	0.278	3.43	55′	EL	27	0.526	2.6	55′	EL	5.4	0.80	0.278	2.50	55′	EL	27	
		TNAGRIT4	43.000	--	2.365	101.706	1.4	0.278	3.25	55′	EL	27	0.526	2.51	55′	EL	5.4	0.80	0.278	2.37	55′	EL	27	
		TNAGT5A	45.000	--	2.216	99.716	1.4	0.278	3.04	55′	EL	27	0.526	2.53	55′	EL	5.4	0.80	0.278	2.22	55′	EL	27	
		TNAGT5B	45.000	3	2.177	97.95	1.4	0.278	2.99	55′	EL	27	0.526	2.38	55′	EL	5.4	0.80	0.278	**2.18**	55′	EL	**27**	

LOAD FACTORS:

	LIMIT STATE	γ_{DC}	γ_{DW}
DESIGN LOAD RATING FACTORS	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)

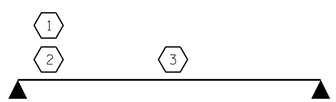
(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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



LRFR SUMMARY

FOR SPANS 'A', 'B', 'C' & 'D'

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

WETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

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			20

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DRAWN BY : CVC 6/10
CHECKED BY : DNS 6/10

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STD. NO. 24LRFR1_90S_55L (TOP DOWN)

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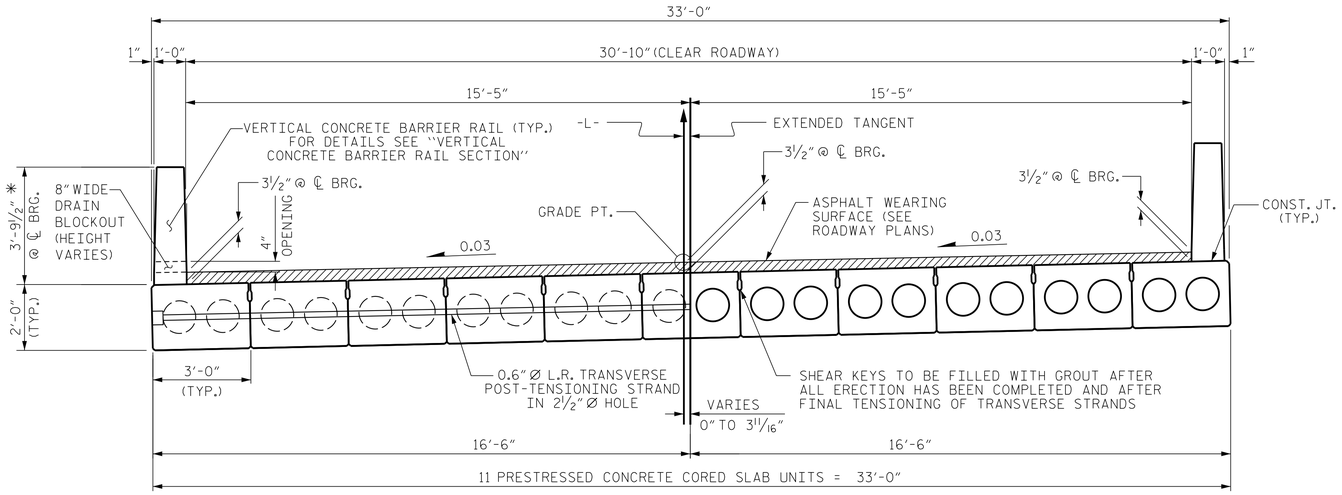
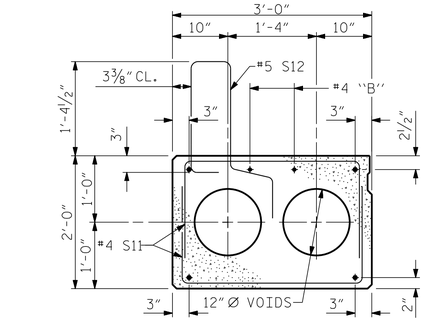


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

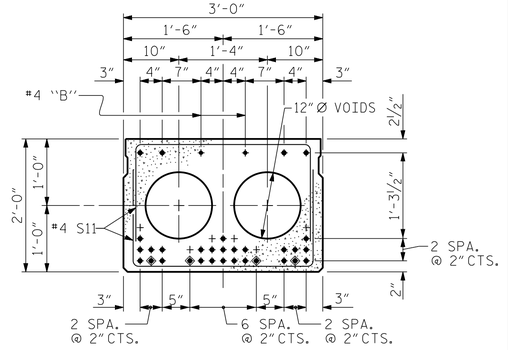
TYPICAL SECTION

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



EXTERIOR SLAB SECTION

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



INTERIOR SLAB SECTION (55' UNIT)

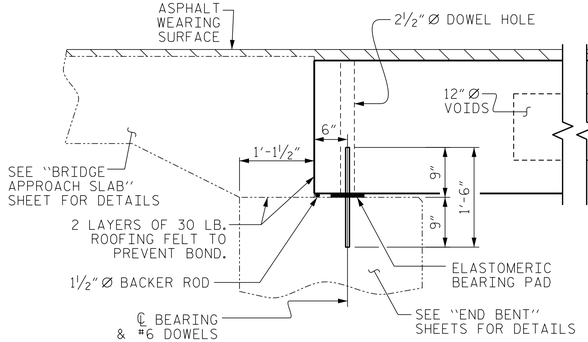
(31 STRANDS REQUIRED)

0.6'' Ø LOW RELAXATION STRAND LAYOUT

◈ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

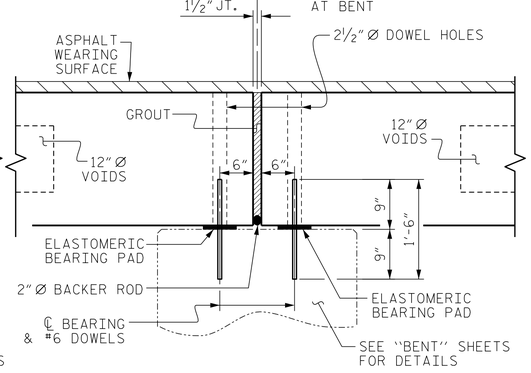
DEBONDING LEGEND

FIXED END



SECTION AT END BENT

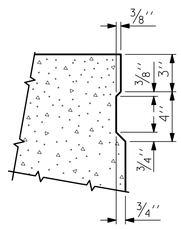
FIXED END FIXED END



SECTION AT BENT

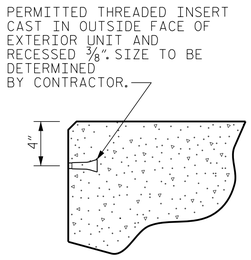
END ELEVATION

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.

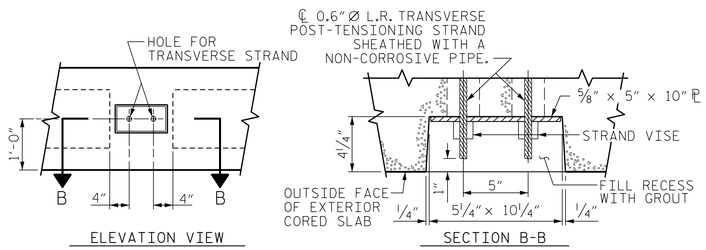


SHEAR KEY DETAIL

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



THREADED INSERT DETAIL



GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 1 OF 3

ENGINEER OF RECORD
6/6/2023
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD

3'-0'' X 2'-0'' PRESTRESSED CONCRETE CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : J. DILWORTH	DATE : 8-22		
DRAWN BY : MAA 7/10	REV. 9/14	MAA/TMG	
CHECKED BY : MKT 8/10			

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STD. NO. 24PCS4_33_90S (TOP DOWN)

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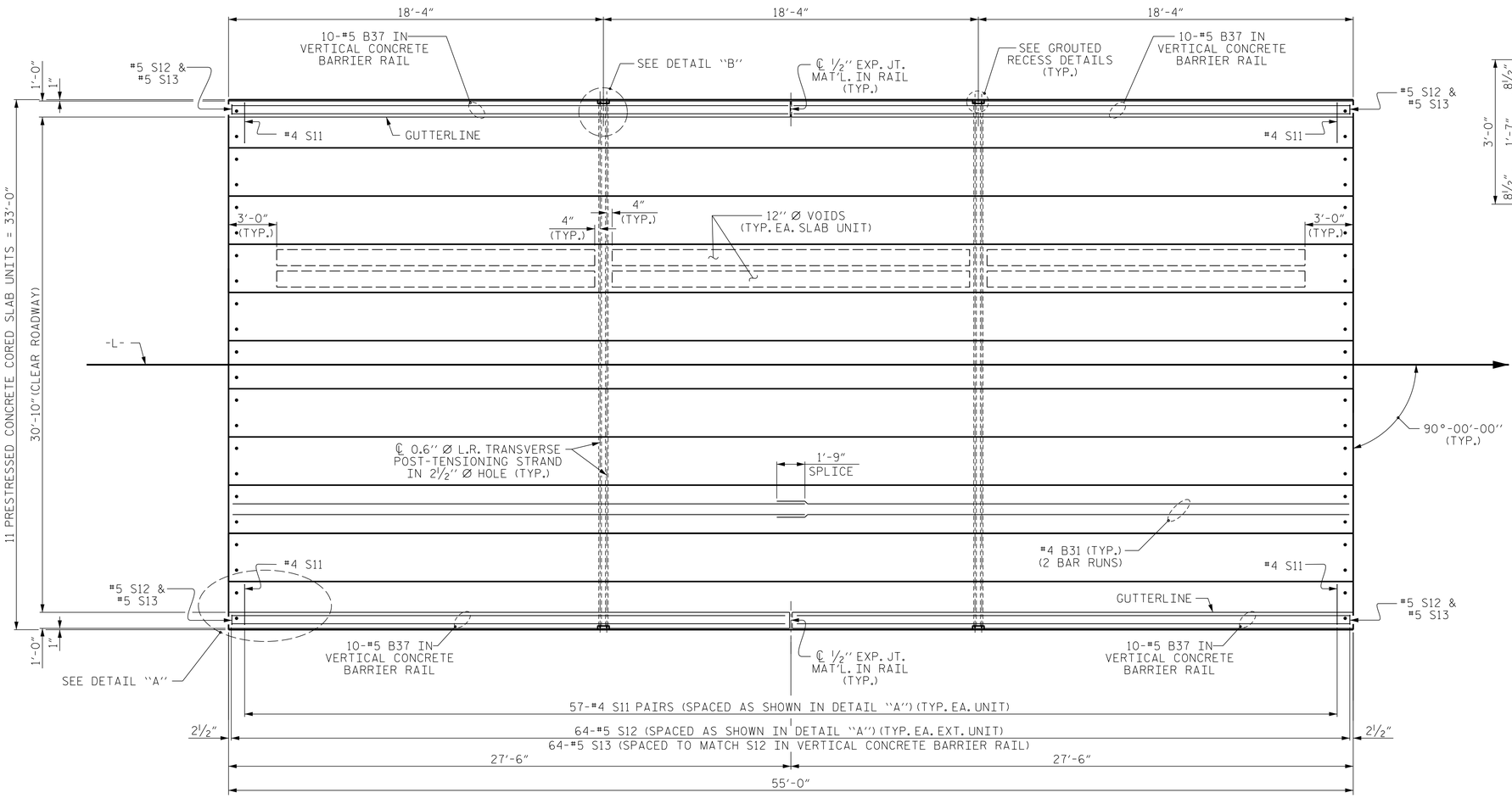
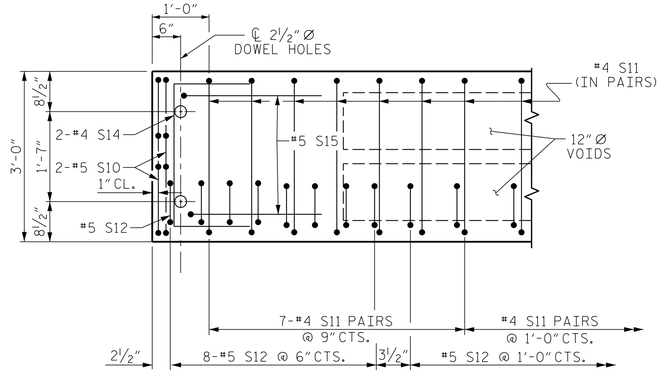
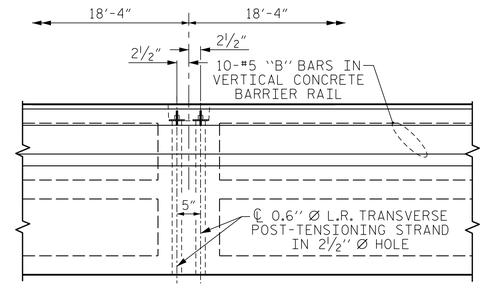


PLAN OF UNIT SPANS A, B, C, & D



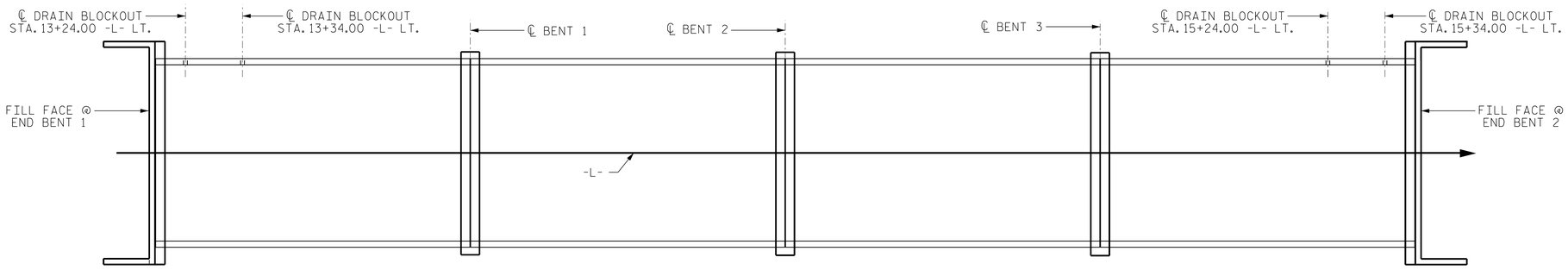
DETAIL ″A″

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S12 BARS.



DETAIL ″B″

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1″CLEAR TO GROUTED RECESS AND 2½″ Ø TRANSVERSE POST-TENSIONING STRAND HOLES



PLAN OF DECK DRAIN BLOCKOUT LOCATIONS

(LEFT SIDE ONLY)(4 TOTAL)

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 2 OF 3

ENGINEER OF RECORD
6/6/2023
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 55′ UNIT 30′-10″ CLEAR ROADWAY 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : J. DILWORTH	DATE : 8-22		
DRAWN BY : MAA 7/10		REV. 12/5/11	MAA/AAC
CHECKED BY : MKT 8/10		REV. 8/14	MAA/TMG

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STD. NO. 24PCS_33_90S_55L (TOP DOWN)

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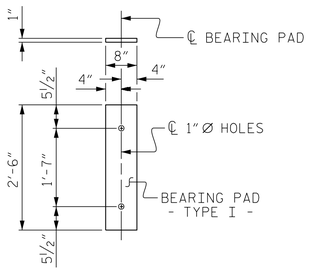


FIXED END
(TYPE I - 88 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
55' UNITS	2"	3'-8"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	55' UNIT					
✳B37	40	160	#5	STR	27'-1"	4520
✳S13	128	512	#5	2	7'-2"	3827
✳EPOXY COATED REINFORCING STEEL				LBS.		8347
CLASS AA CONCRETE				CU.YDS.		57.2
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN.FT.		441.00

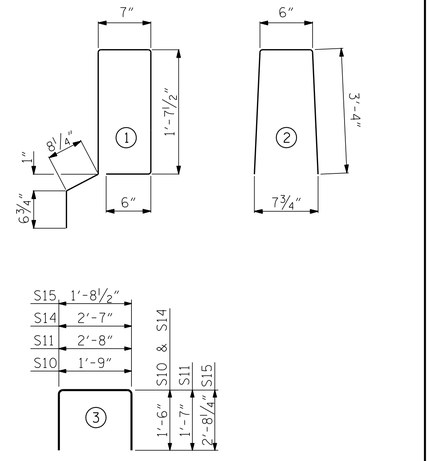
BILL OF MATERIAL FOR ONE 55' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B31	4	#4	STR	28'-3"	75	28'-3"	75
S10	8	#5	3	4'-9"	40	4'-9"	40
S11	114	#4	3	5'-10"	444	5'-10"	444
✳S12	64	#5	1	5'-7"	373		
S14	4	#4	3	5'-7"	15	5'-7"	15
S15	4	#5	3	7'-1"	30	7'-1"	30
REINFORCING STEEL			LBS.		604		604
✳EPOXY COATED REINFORCING STEEL			LBS.		373		
8500 P.S.I. CONCRETE			CU. YDS.		9.4		9.4
0.6"Ø L.R. STRANDS			No.		31		31

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
55' UNIT			
EXTERIOR C.S.	8	55'-0"	440'-0"
INTERIOR C.S.	36	55'-0"	1,980'-0"
TOTAL			2,420'-0"

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"
55' CORED SLAB UNIT	0.6"Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1¾" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	¼" ↓
FINAL CAMBER	1½" ↑

** INCLUDES FUTURE WEARING SURFACE

CONCRETE RELEASE STRENGTH

UNIT	PSI
55' UNITS	6200

GRADE 270 STRANDS

	0.6"Ø L.R.
AREA (SQUARE INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950

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 2½"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.

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.

ALL REINFORCING STEEL IN VERTICAL CONCRETE BARRIER RAILS 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, ½" 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.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #4 S11 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO THE GROUTED RECESS.

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.

THE DRAIN OPENING AT THE GUTTERLINE SHALL BE 4" X 8". THE HEIGHT OF THE BLOCKOUT IN THE VERTICAL CONCRETE BARRIER RAIL SHALL EXTEND FROM THE TOP OF THE CORED SLAB UNIT TO THE TOP OF THE DRAIN OPENING.

APPLY EPOXY PROTECTIVE COATING TO EXTERIOR FACE OF THE EXTERIOR CORED SLAB UNITS THAT REQUIRE DRAINS IN THE BARRIER RAIL.

SECTION THRU RAIL

SECTION T-T
AT OPEN JOINT AT BENT
(THIS IS TO BE USED WHERE FOAM JOINT IS NOT USED)

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

ELEVATION AT EXPANSION JOINTS

END VIEW

SIDE VIEW

VERTICAL CONCRETE BARRIER RAIL DETAILS

END OF RAIL DETAILS

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 3 OF 3

ENGINEER OF RECORD
6/6/2023
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Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
3'-0" X 2'-0"
PRESTRESSED CONCRETE CORED SLAB UNIT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22
DRAWN BY : MAA 6/10
CHECKED BY : MKT 8/10
REV. 5/18 MAA/THC

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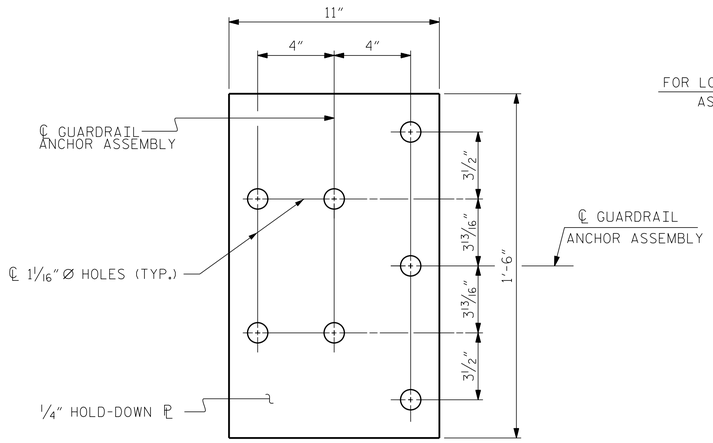
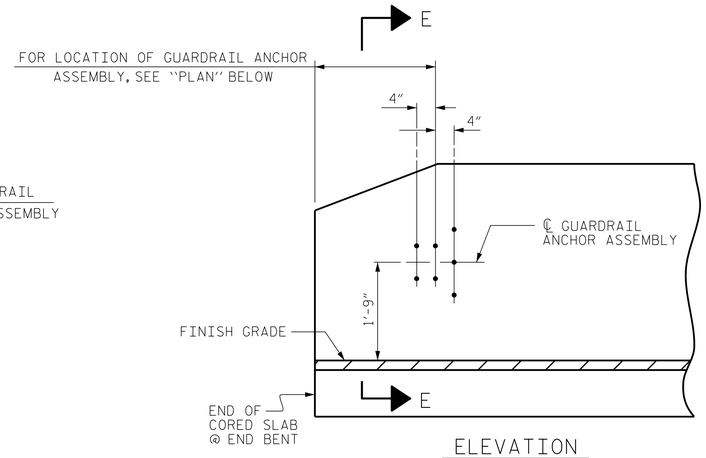
6/6/2023 10:32:35 AM

STD. NO. 24PCS3_33_90S (TOP DOWN)



PLAN



ELEVATION

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.)

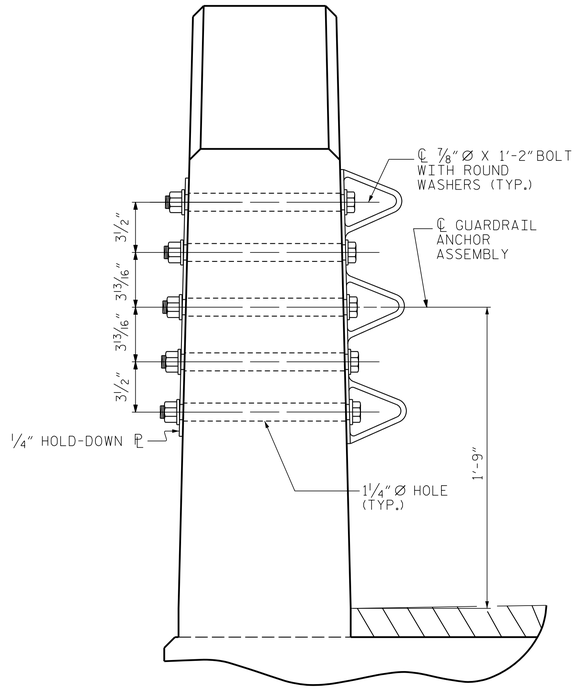
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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.

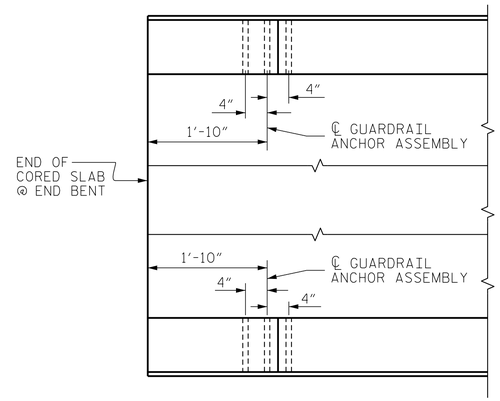
THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

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.



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. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

WETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

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

SHEET NO. S-8

TOTAL SHEETS 20

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT		DATE : 8-22	
CHECKED BY : J. DILWORTH		DATE : 8-22	
DRAWN BY : MAA 5/10	REV. 1/15		MAA/TMC
CHECKED BY : GM 5/10	REV. 12/17		MAA/THC
	REV. 5/18		MAA/THC

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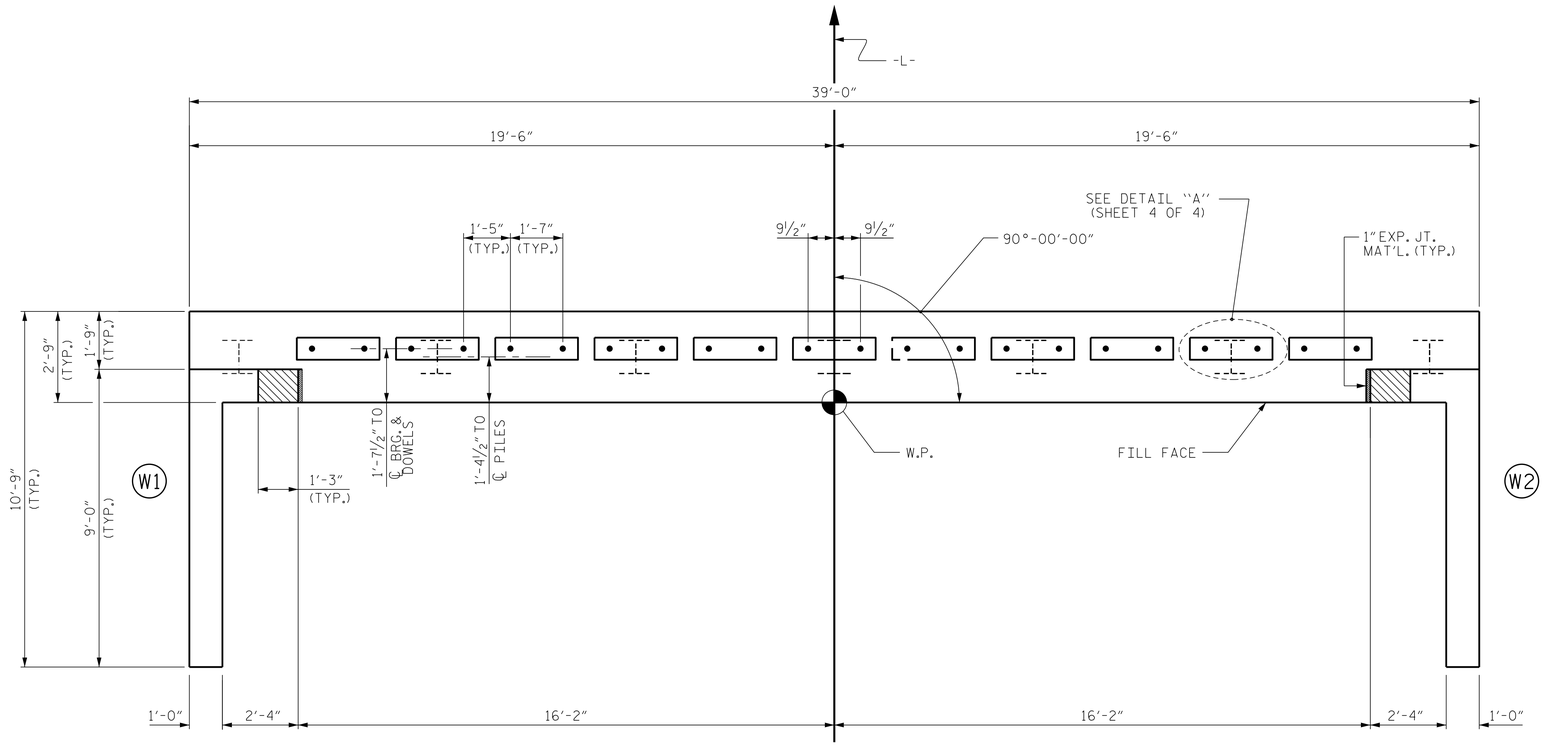
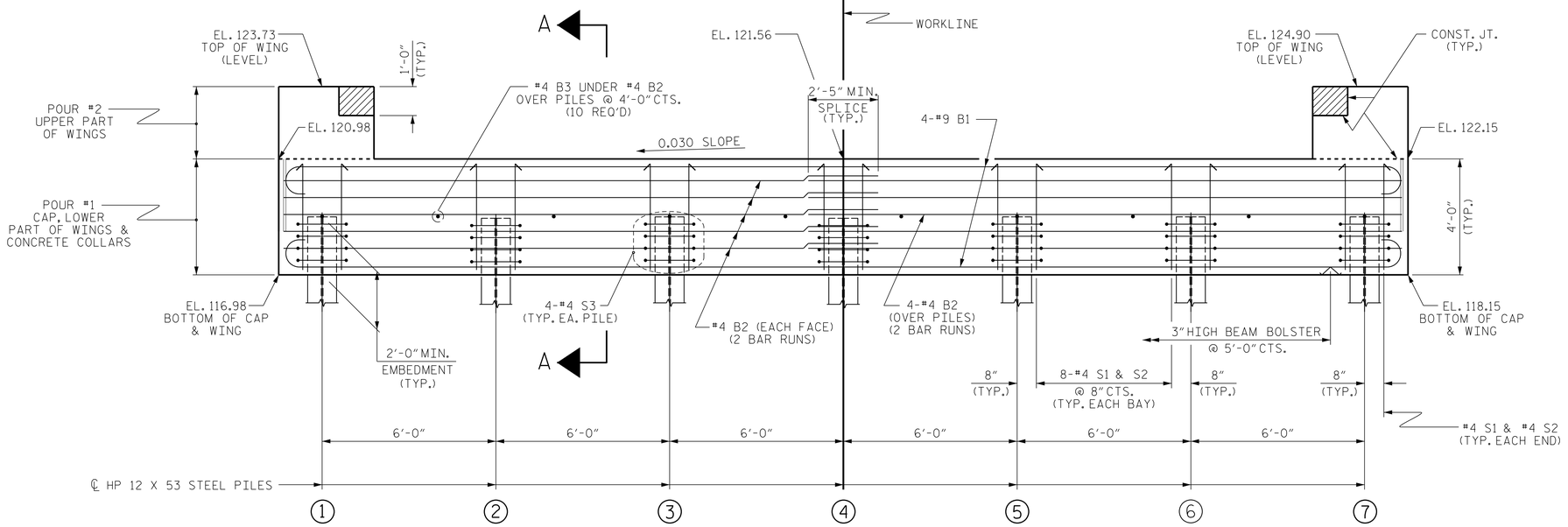
(SHT 1) STD. NO. GRA3



PLAN



ELEVATION

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

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS	
1	119.03
2	119.21
3	119.39
4	119.57
5	119.75
6	119.93
7	120.11

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 1 OF 4

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22
CHECKED BY : J. DILWORTH	DATE : 8-22
DRAWN BY : WJH 12/11	REV. 4/15 MAA/TMG
CHECKED BY : AAC 12/11	

ENGINEER OF RECORD
6/6/2023
NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH
DocuSigned by: John Arthur Dilworth
ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			20

STD. NO. EB_33_90S4

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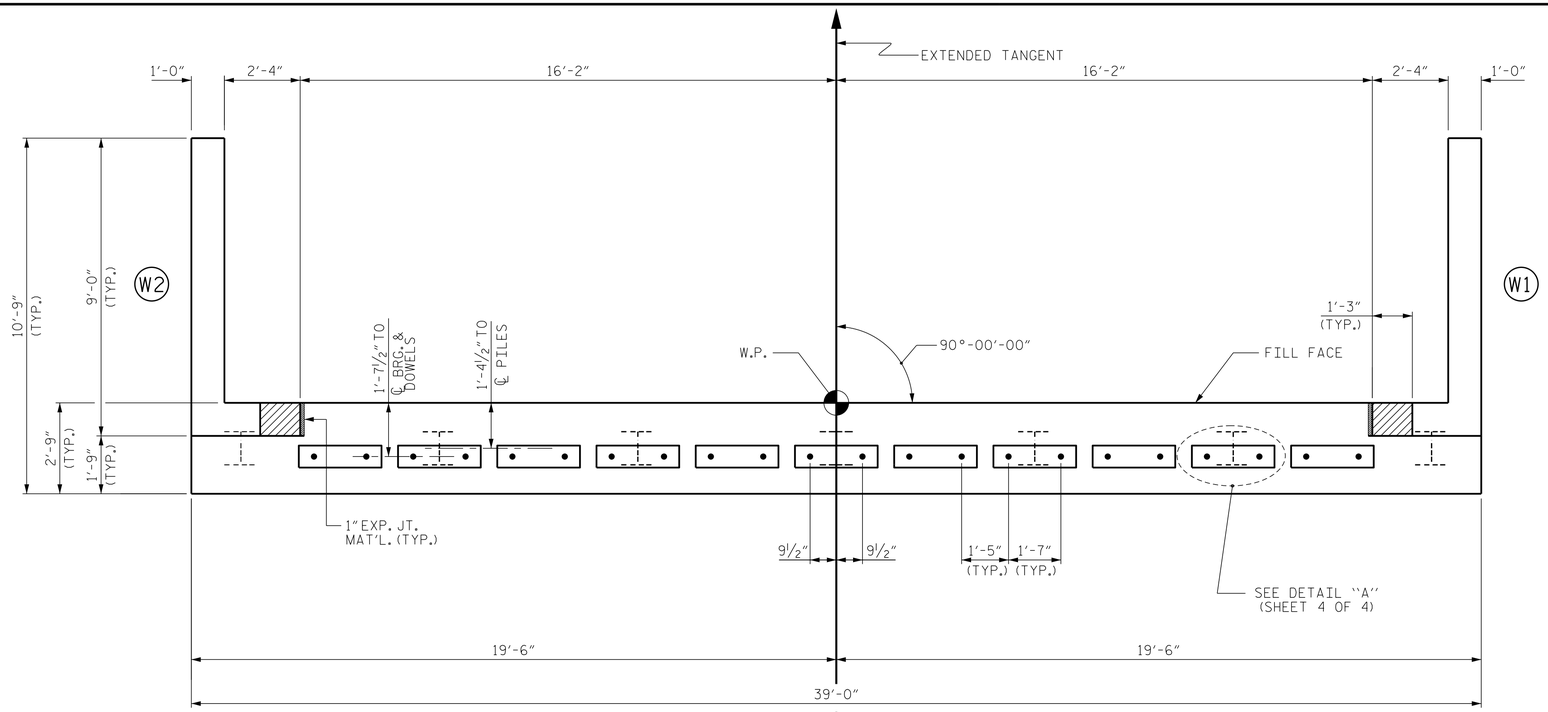
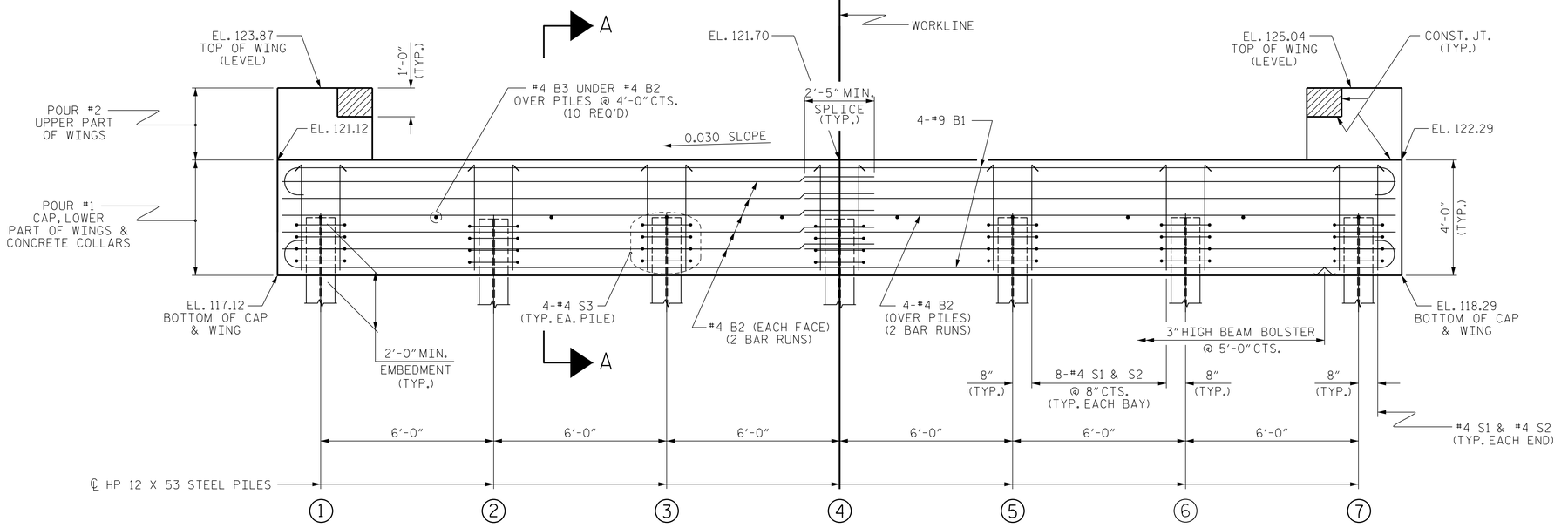


PLAN



ELEVATION

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

NOTES

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

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

TOP OF PILE ELEVATIONS	
1	119.17
2	119.35
3	119.53
4	119.71
5	119.89
6	120.07
7	120.25

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 2 OF 4

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : J. DILWORTH	DATE : 8-22		
DRAWN BY : WJH 12/11	REV. 4/15	MAA/TMG	
CHECKED BY : AAC 12/11			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEER OF RECORD
6/6/2023
NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH
DocuSigned by: John Arthur Dilworth

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			20

STD. NO. EB_33_90S4

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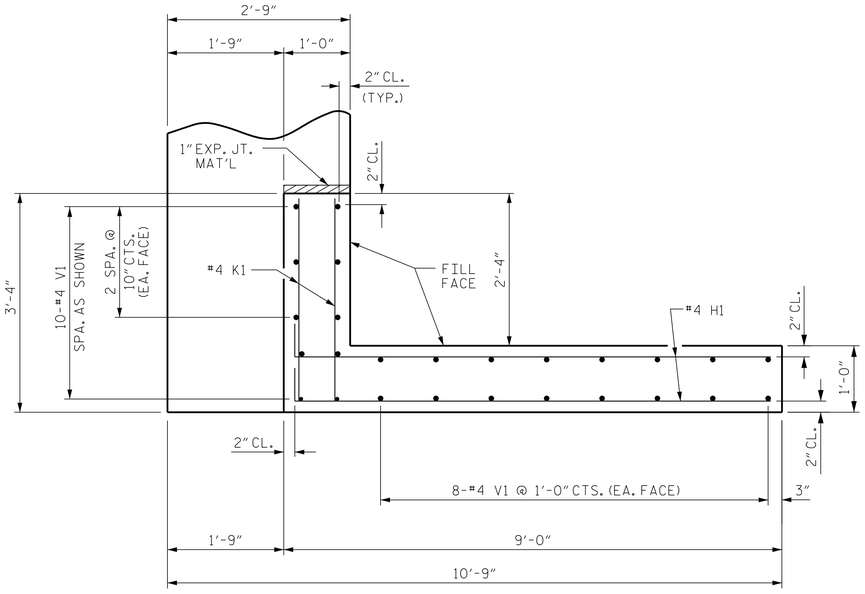
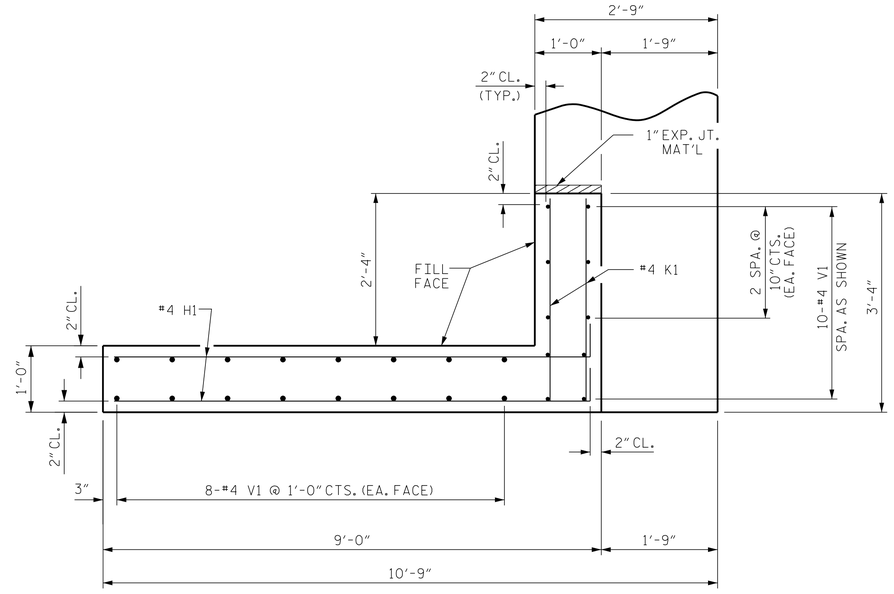
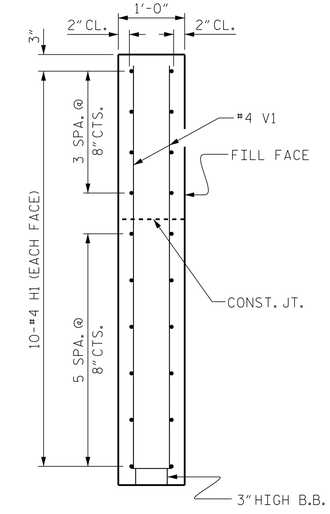


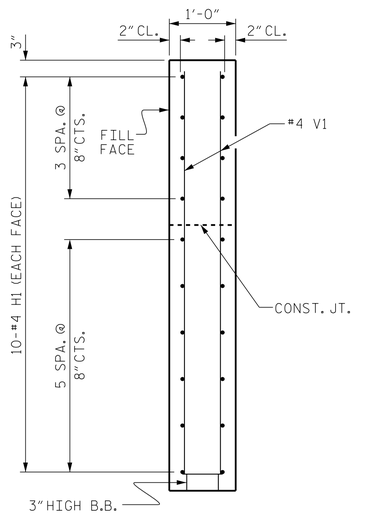
PLAN OF WING (W1)



PLAN OF WING (W2)

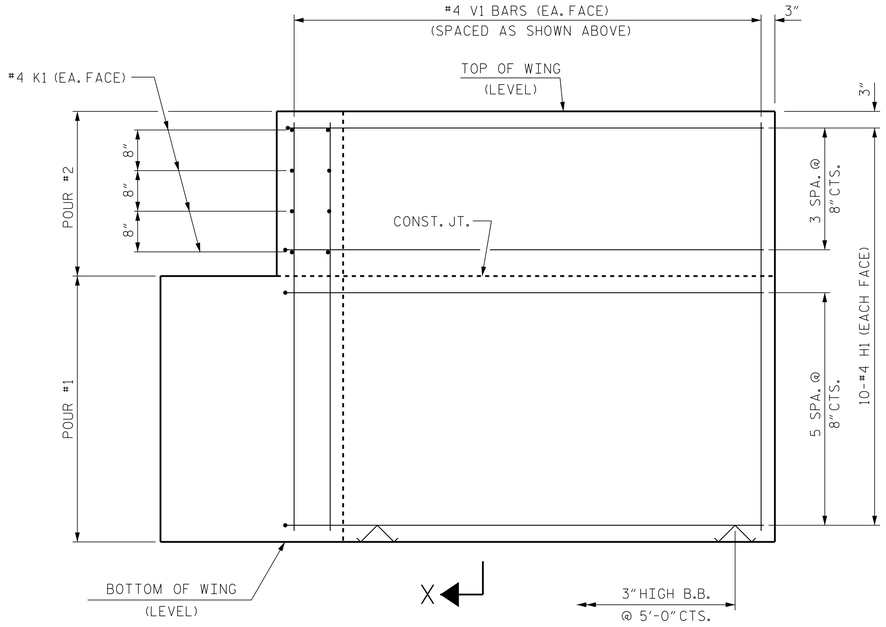


SECTION X-X

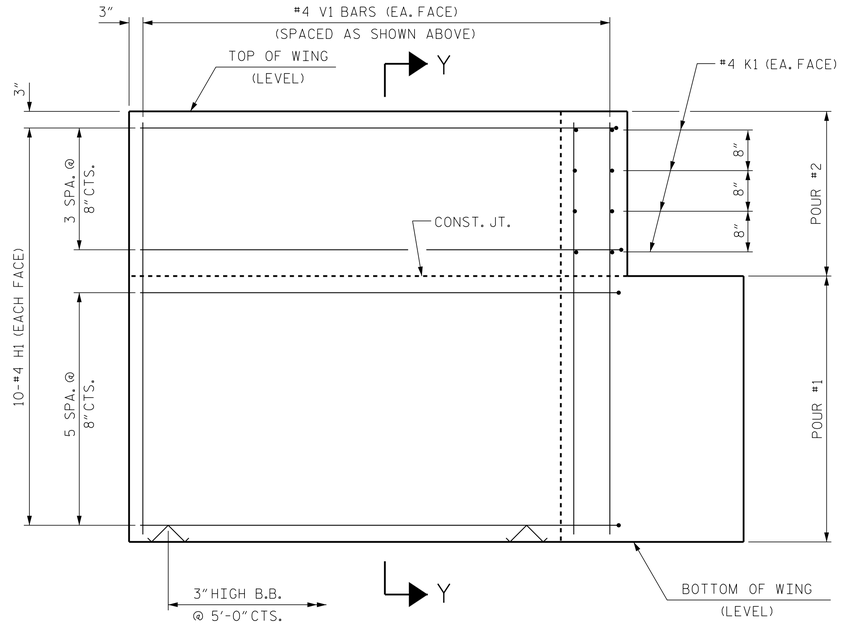


SECTION Y-Y

X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : J. DILWORTH	DATE : 8-22		
DRAWN BY : WJH 12/11	REV. 4/15	MAA/TMG	
CHECKED BY : AAC 12/11			

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ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
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LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

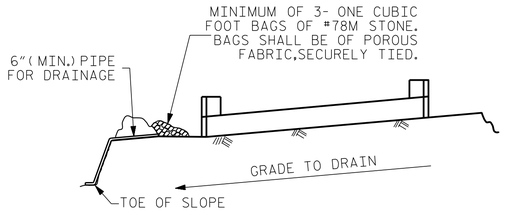
END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			20

PROJECT NO. BP3.R009
SAMPSON COUNTY
STATION: 14+29.00 -L-

SHEET 3 OF 4

STD. NO. EB_33_90S4

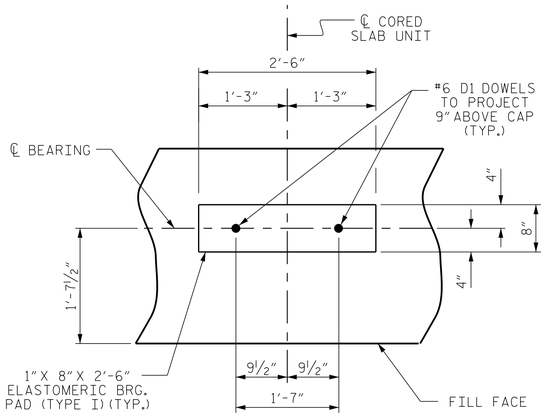


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.

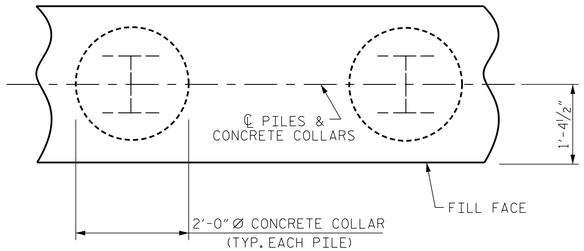
NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK AND THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR THE SEVERAL PAY ITEMS.

TEMPORARY DRAINAGE AT END BENT

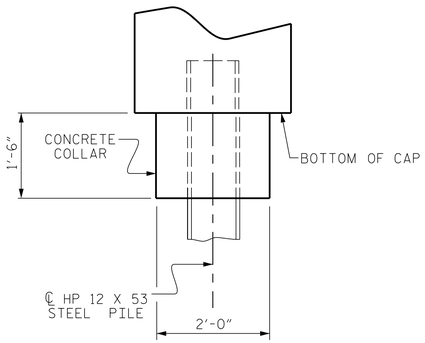


DETAIL "A"

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



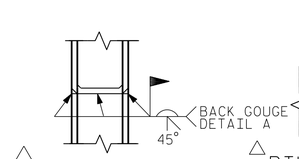
PLAN



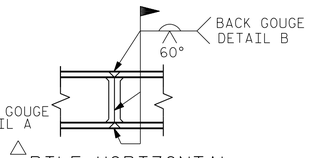
ELEVATION

CORROSION PROTECTION FOR STEEL PILES DETAIL

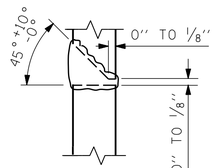
(END BENT No. 1 SHOWN, END BENT No. 2 SIMILAR BY ROTATION)



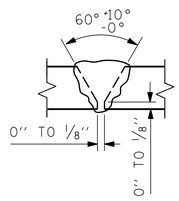
△ PILE VERTICAL



△ PILE HORIZONTAL OR VERTICAL



DETAIL A

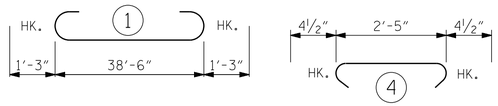


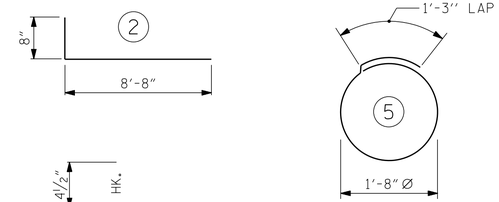
DETAIL B

△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BAR TYPES





ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR ONE END BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-0"	1115
B2	28	#4	STR	20'-7"	385
B3	10	#4	STR	2'-5"	16
D1	22	#6	STR	1'-6"	50
H1	40	#4	2	9'-4"	249
K1	16	#4	STR	2'-11"	31
S1	50	#4	3	10'-5"	348
S2	50	#4	4	3'-2"	106
S3	28	#4	5	6'-6"	122
V1	52	#4	STR	6'-2"	214

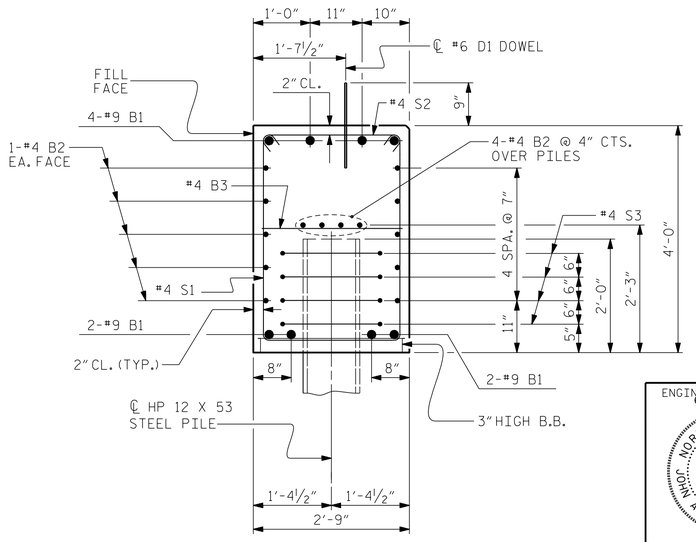
REINFORCING STEEL (FOR ONE END BENT) 2636 LBS.

CLASS A CONCRETE BREAKDOWN (FOR ONE END BENT)

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

POUR #2 UPPER PART OF WINGS 2.3 C.Y.

TOTAL CLASS A CONCRETE 21.8 C.Y.



SECTION A-A

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

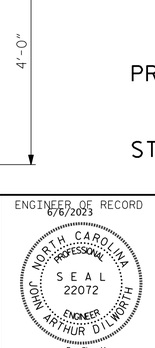
PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 4 OF 4

ENGINEER OF RECORD
8/6/2023



ETHERILL ENGINEERING
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Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

END BENT No. 1 & 2 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : J. DILWORTH	DATE : 8-22		
DRAWN BY : WJH 12/11	REV. 4/17	MAA/THC	
CHECKED BY : AAC 12/11			

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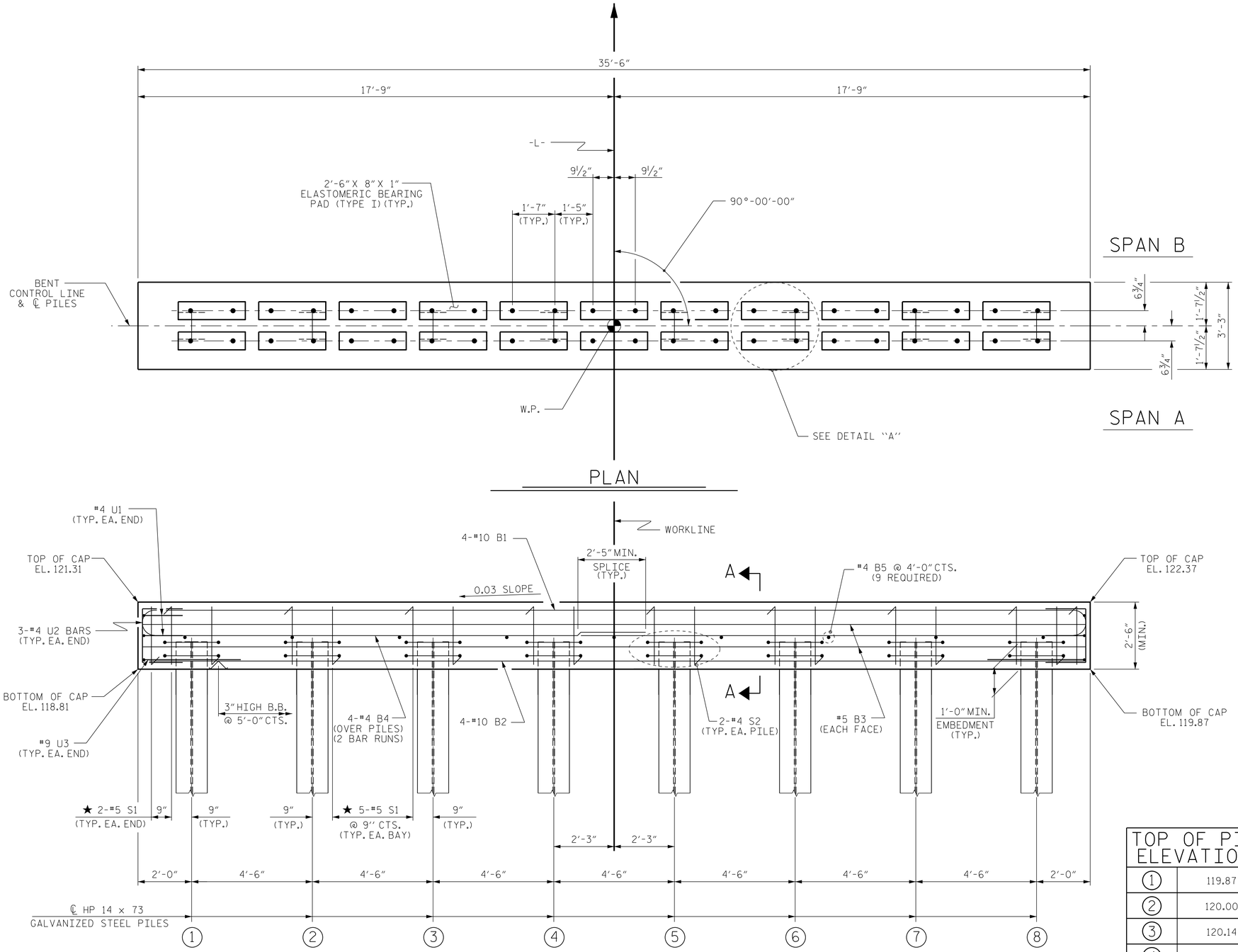
STD. NO. EB_33_90S4



ELEVATION

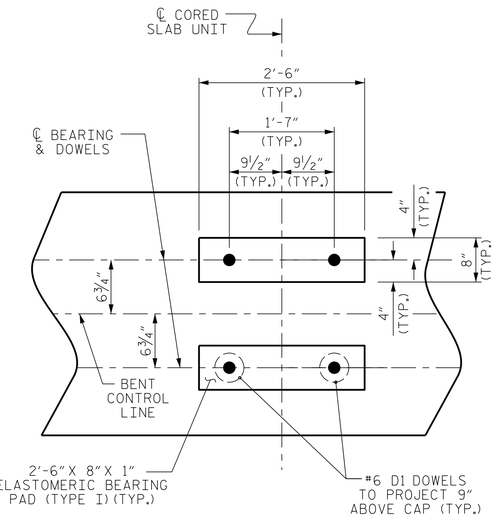
FOR SECTION A-A, SEE SHEET 2 OF 2

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 35 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

TOP OF PILE ELEVATIONS	
①	119.87
②	120.00
③	120.14
④	120.27
⑤	120.41
⑥	120.54
⑦	120.68
⑧	120.81

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 1 OF 2

ENGINEER OF RECORD

6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

ETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22
CHECKED BY : J. DILWORTH	DATE : 8-22
DRAWN BY : DGE 05/10	REV. 6/17 MAA/THC
CHECKED BY : MKT 05/10	

STD. NO. 14"HP_BT_33_90S_<60'

P:\2022\22112.01 Sampson 194 bridge\Structures\DGN\BP3.R009_1_SD_BT.dgn
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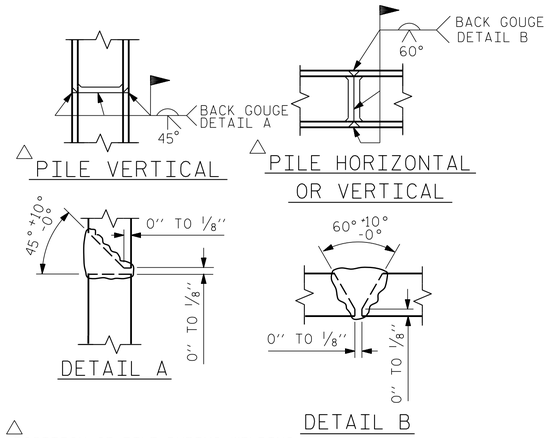
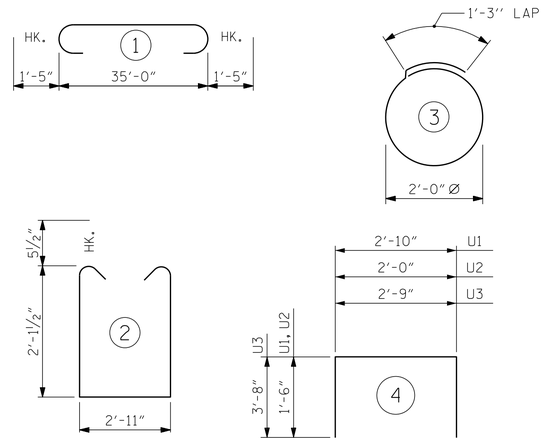


PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

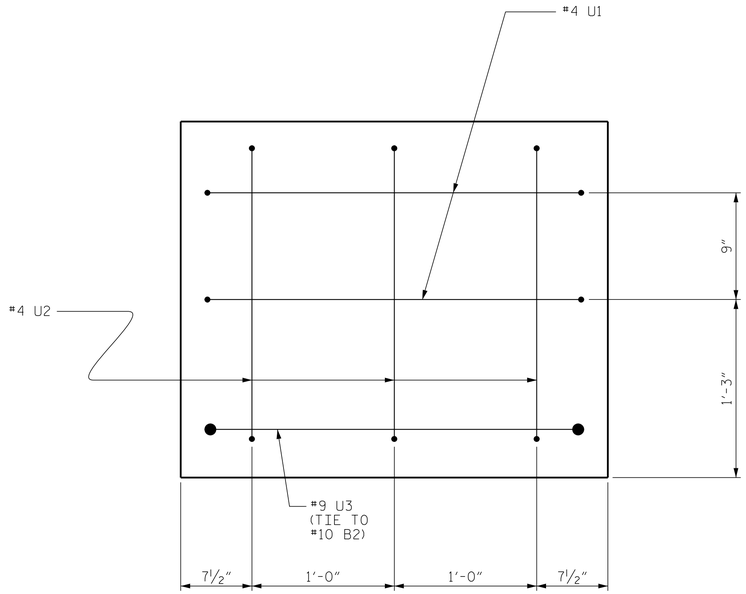
FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69

REINFORCING STEEL (FOR ONE BENT) 2136 LBS

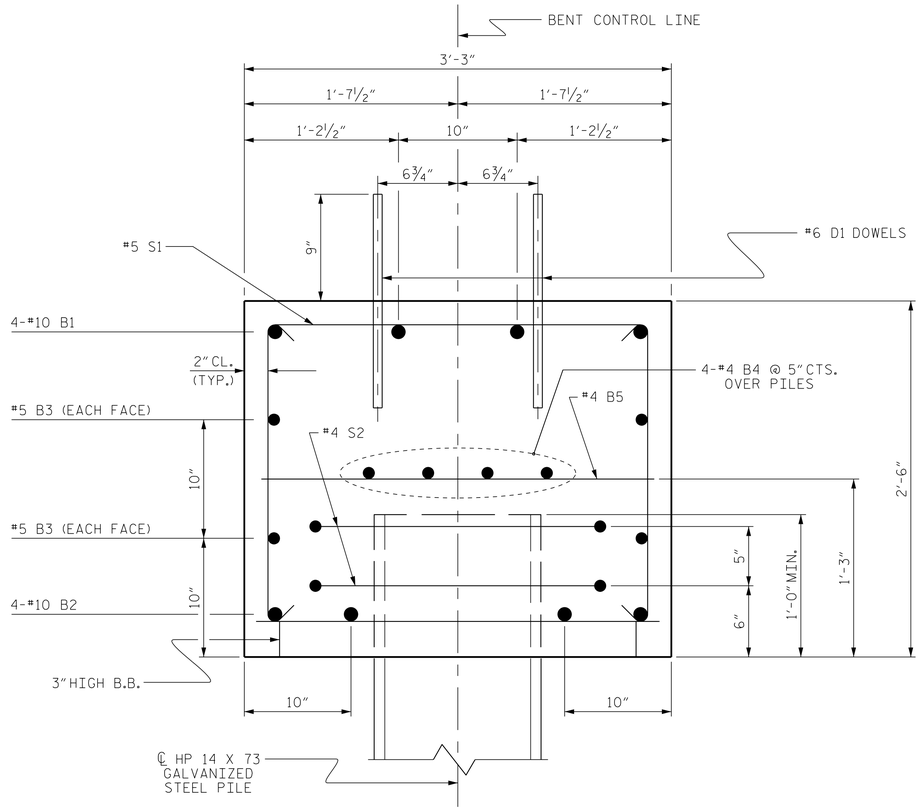
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

TOTAL CLASS A CONCRETE 10.7 C.Y.



END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION A-A

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 2 OF 2

ENGINEER OF RECORD
6/6/2023

DocuSigned by:
John Arthur Dilworth

WETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			20

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

REV. 6/17 MAA/THC

P:\2022\22112.01 Sampson 194 bridge\Structures\DGN\BP3.R009.1_SD_BT.dgn
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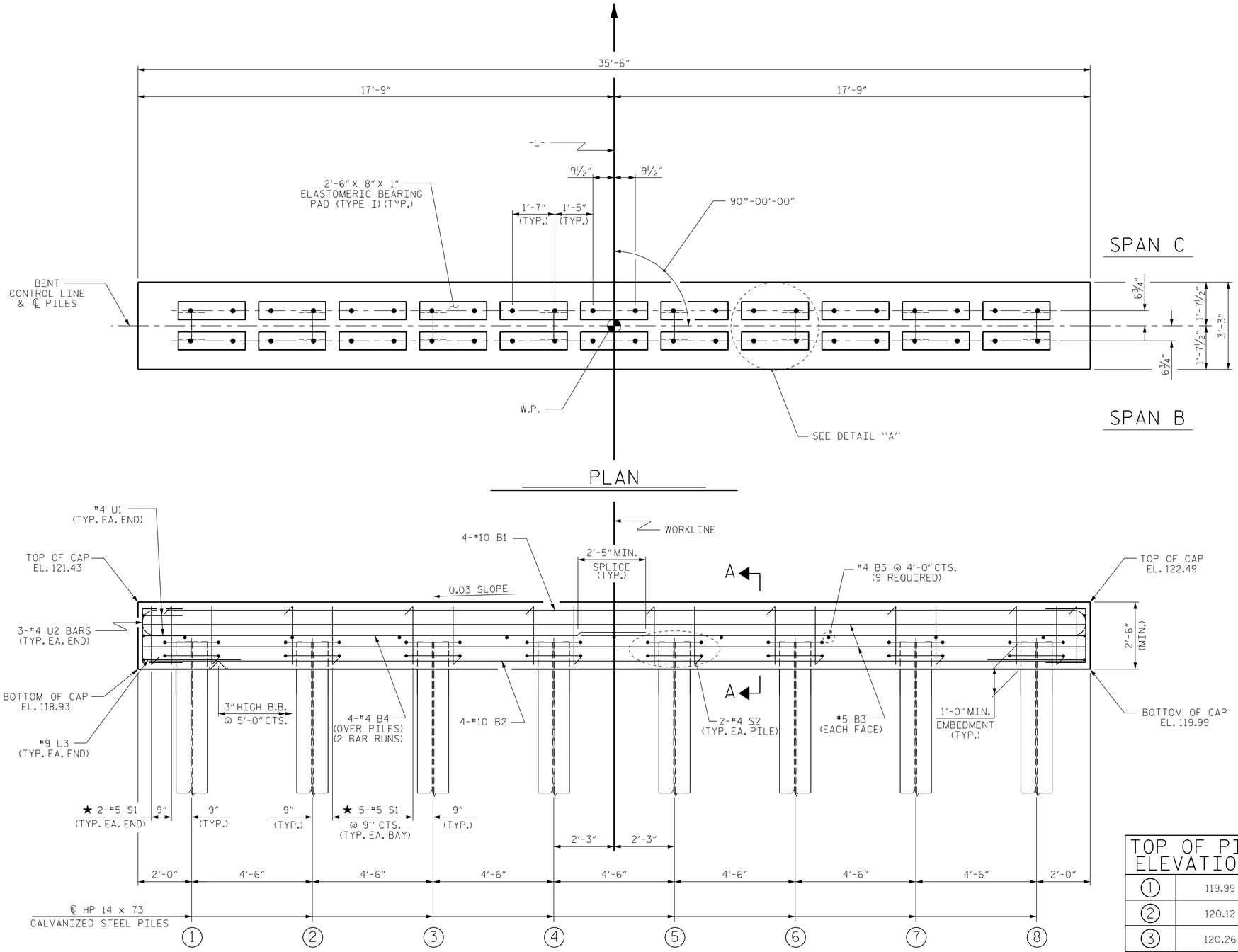
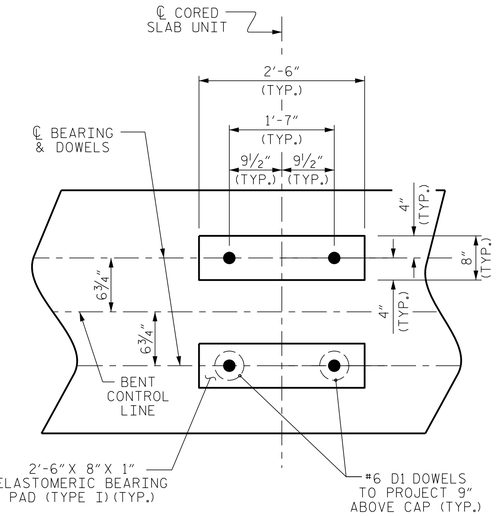
STD. NO. 14"HP_BT_33_90S_<60'



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 38 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

TOP OF PILE ELEVATIONS	
1	119.99
2	120.12
3	120.26
4	120.39
5	120.53
6	120.66
7	120.80
8	120.93

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 1 OF 2

ENGINEER OF RECORD 6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

ETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22
CHECKED BY : J. DILWORTH	DATE : 8-22
DRAWN BY : DGE 05/10	REV. 6/17 MAA/THC
CHECKED BY : MKT 05/10	

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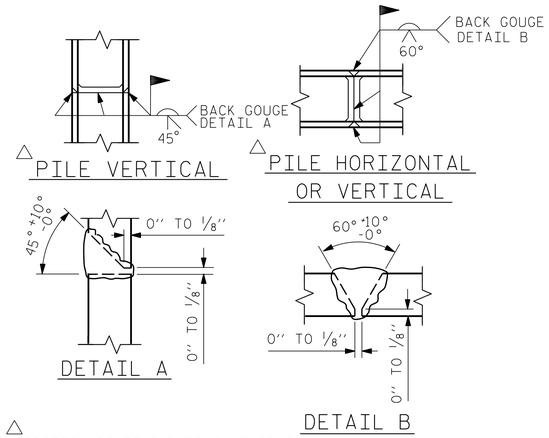
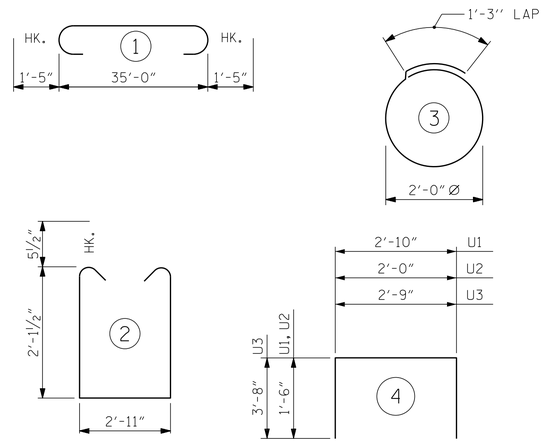


PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

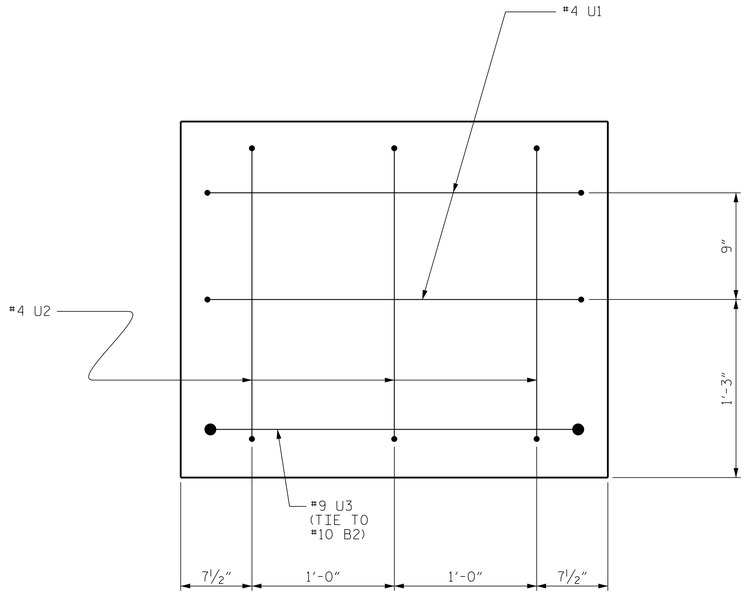
FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69

REINFORCING STEEL (FOR ONE BENT) 2136 LBS

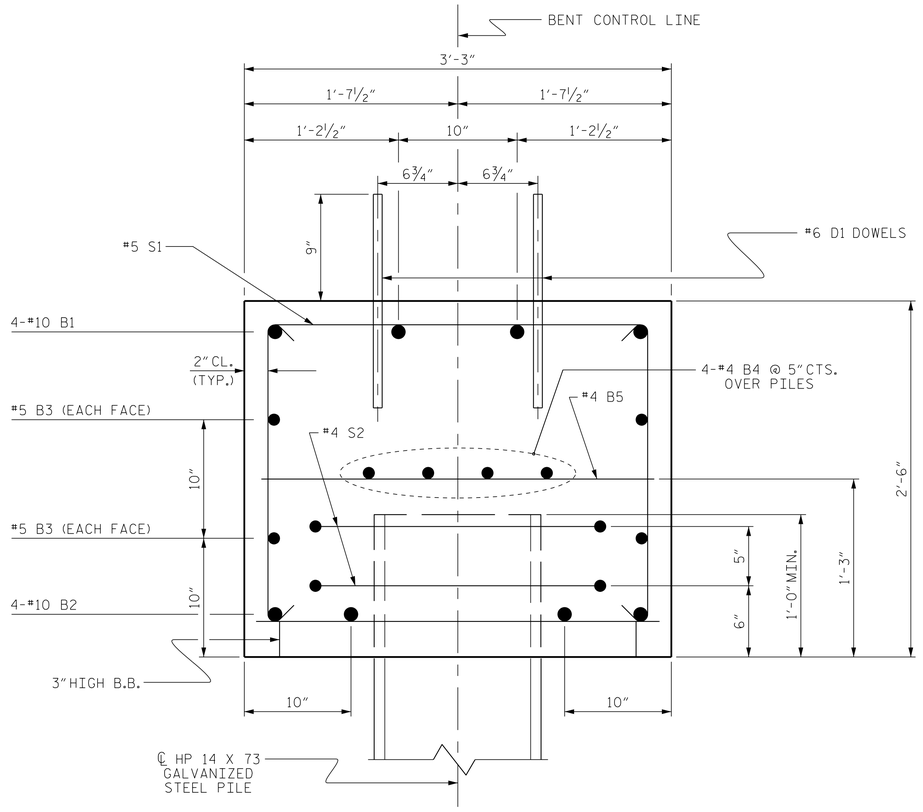
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

TOTAL CLASS A CONCRETE 10.7 C.Y.



END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION A-A

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 2 OF 2

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

ETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			20

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

REV. 6/17 MAA/THC

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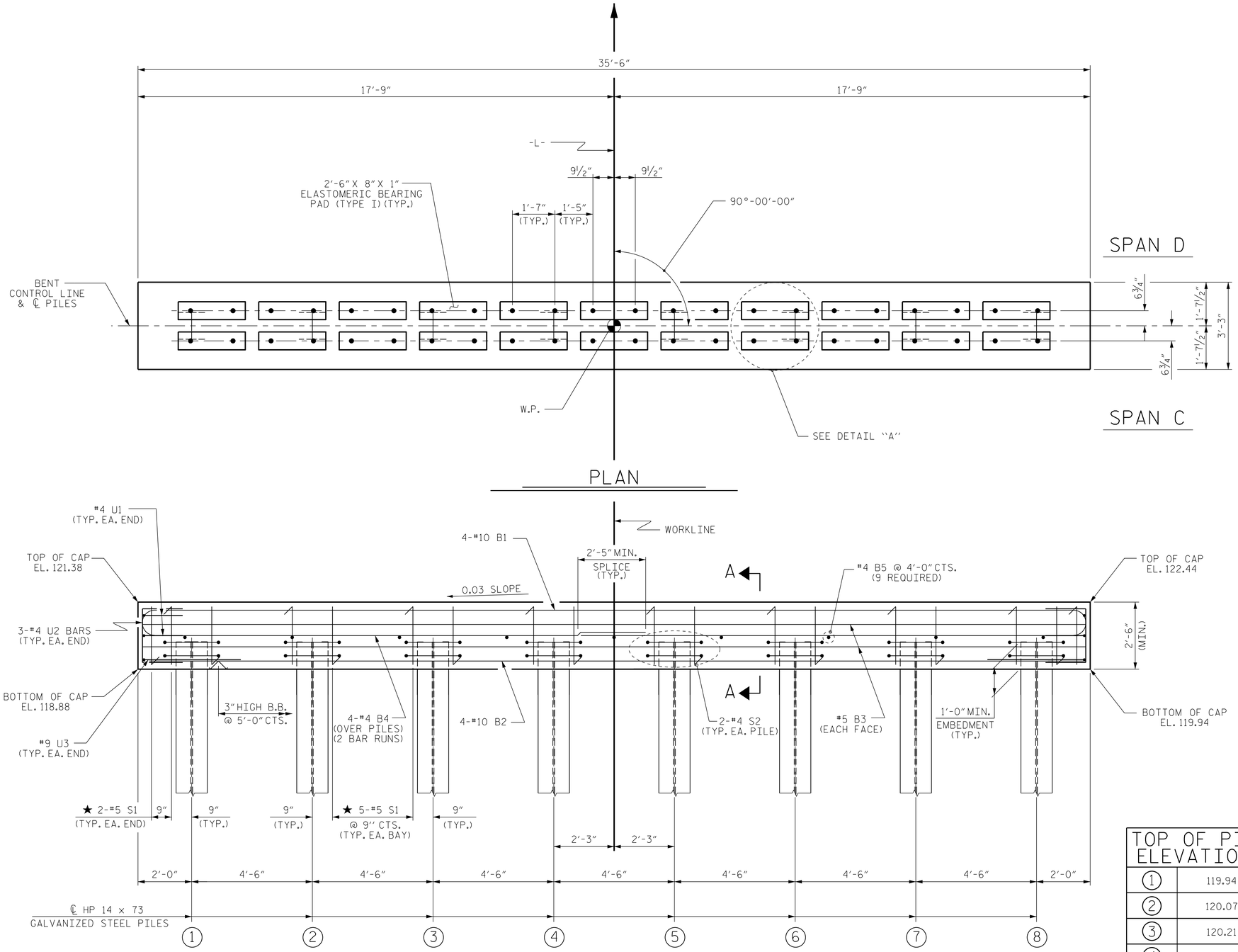
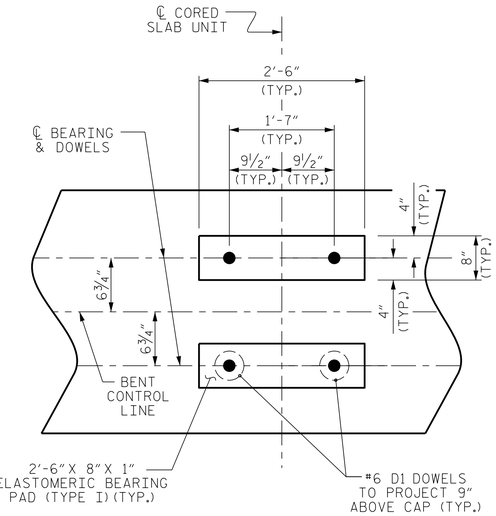


ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

NOTES

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

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE TOP OF EACH INTERIOR BENT PILE A MINIMUM OF 33 FEET. GALVANIZE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

TOP OF PILE ELEVATIONS

①	119.94
②	120.07
③	120.21
④	120.34
⑤	120.48
⑥	120.61
⑦	120.75
⑧	120.88

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 1 OF 2

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER JOHN ARTHUR DILWORTH

DocuSigned by: John Arthur Dilworth

ETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			20

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

REV. 6/17 MAA/THC

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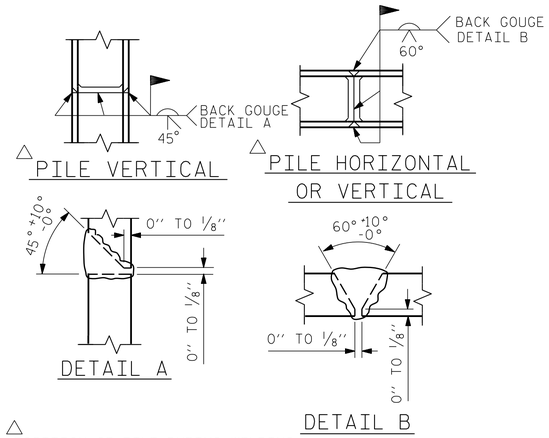
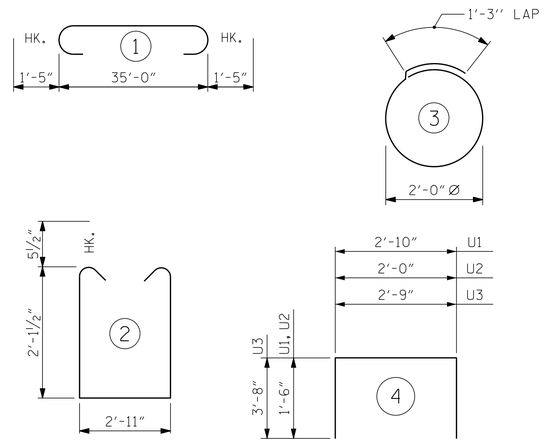


PILE SPLICE DETAILS

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

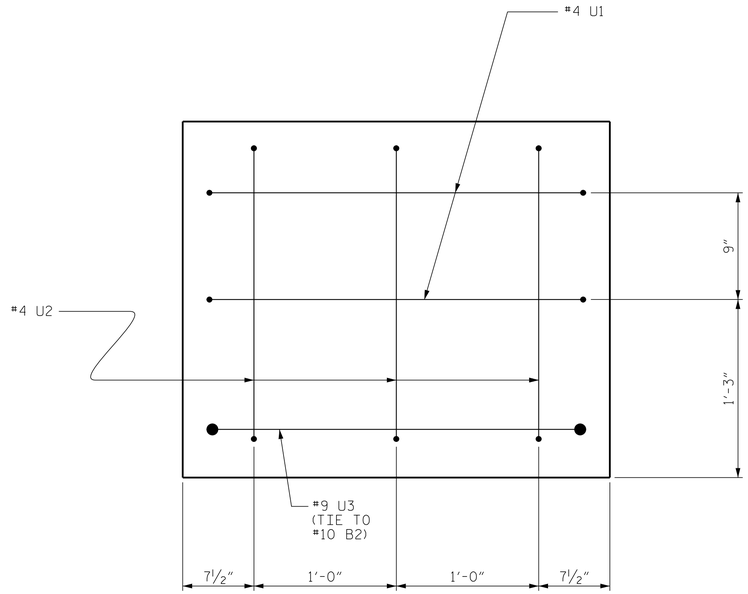
FOR ONE BENT

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	37'-10"	651
B2	4	#10	STR	35'-2"	605
B3	4	#5	STR	35'-2"	147
B4	8	#4	STR	18'-10"	101
B5	9	#4	STR	2'-11"	18
D1	44	#6	STR	1'-6"	99
S1	39	#5	2	8'-1"	329
S2	16	#4	3	7'-7"	81
U1	4	#4	4	5'-10"	16
U2	6	#4	4	5'-0"	20
U3	2	#9	4	10'-1"	69

REINFORCING STEEL (FOR ONE BENT) 2136 LBS

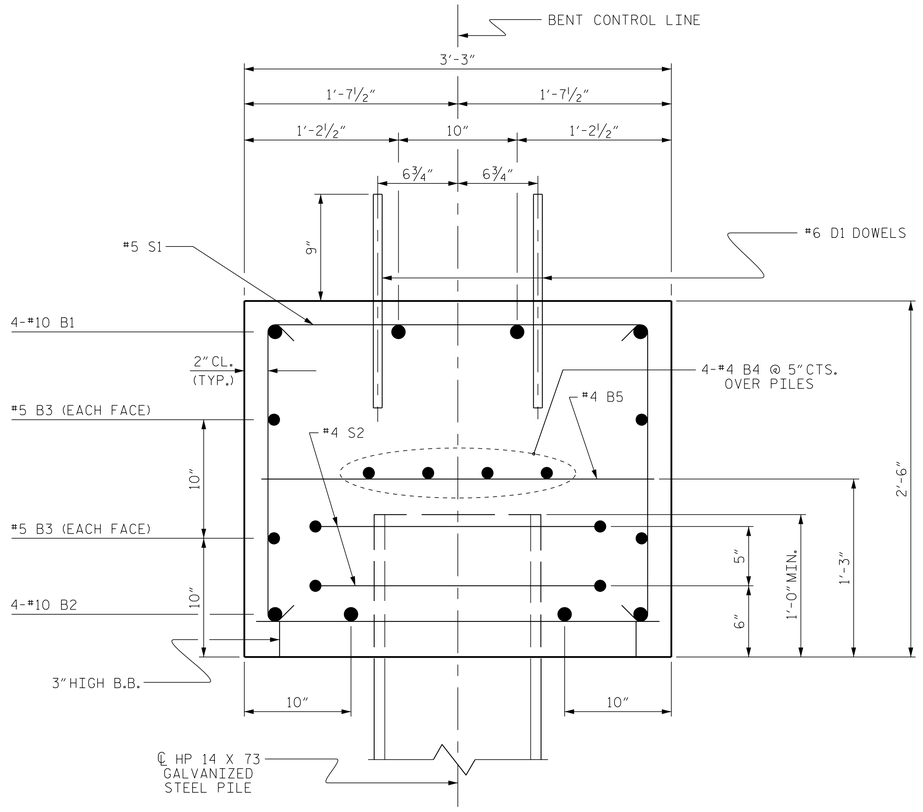
CLASS A CONCRETE BREAKDOWN (FOR ONE BENT)

TOTAL CLASS A CONCRETE 10.7 C.Y.



END OF CAP VIEW

(TYPICAL BOTH ENDS)



SECTION A-A

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

SHEET 2 OF 2

ENGINEER OF RECORD
6/6/2023

NORTH CAROLINA PROFESSIONAL SEAL 22072 ENGINEER ARTHUR DILWORTH

DocuSigned by:
John Arthur Dilworth

WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE

BENT No. 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			20

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT DATE : 8-22
CHECKED BY : J. DILWORTH DATE : 8-22

DRAWN BY : DGE 05/10
CHECKED BY : MKT 05/10

REV. 6/17 MAA/THC

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6/6/2023 10:50:27 AM

STD. NO. 14"HP_BT_33_90S_<60'

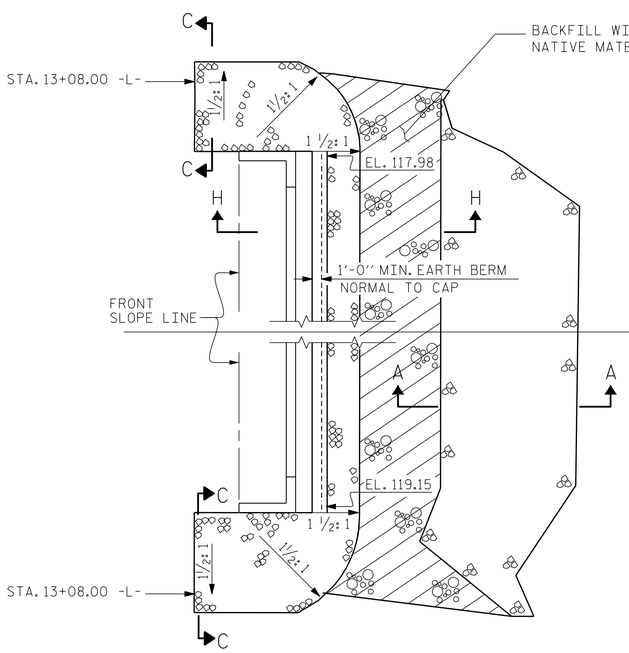
NOTES:

THE COST OF PROVIDING AND PLACING 2'-0" NATIVE MATERIAL SHALL BE INCLUDED IN THE PRICE PAID FOR TONS OF RIP RAP CLASS II (2'-0" THICK).

NO SEPARATE PAYMENT SHALL BE MADE FOR NATIVE MATERIAL.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 14+29.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1 ✳	175	194
END BENT 2 ✳	120	133

✳ INCLUDES RIP RAP QUANTITY AT STREAM BANK



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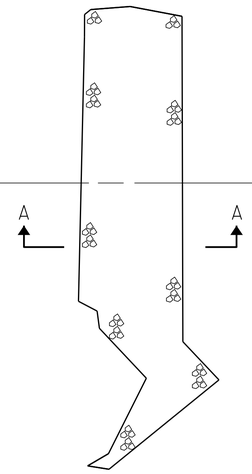

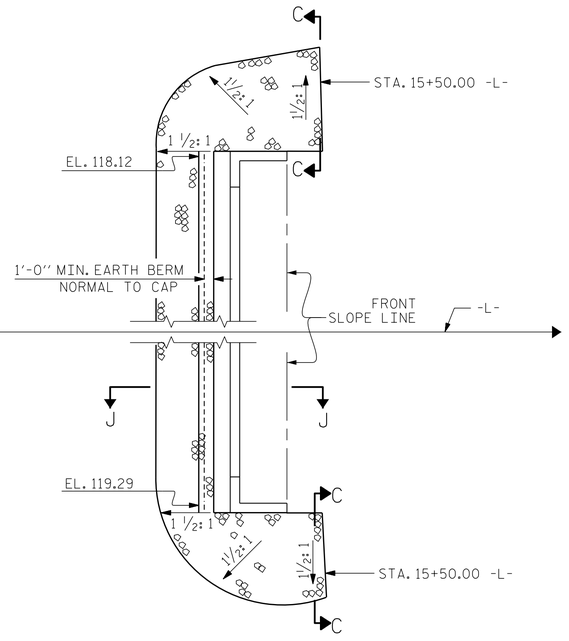

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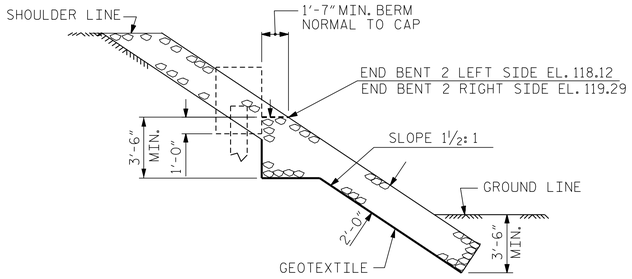
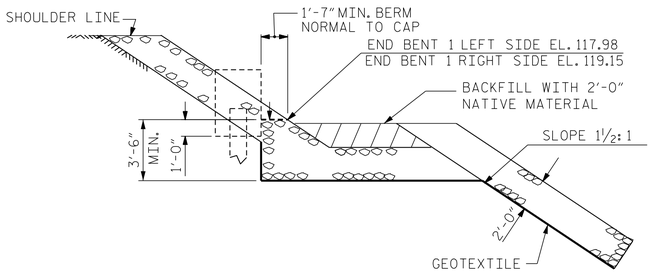
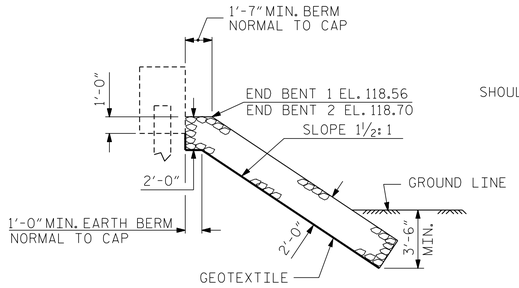


SECTION J-J

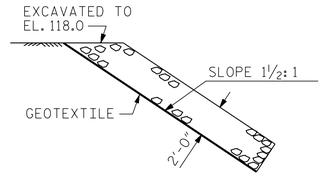
PLAN OF RIP RAP

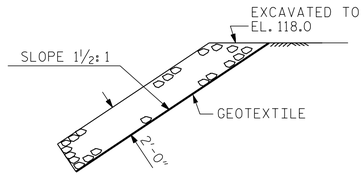


SECTION H-H

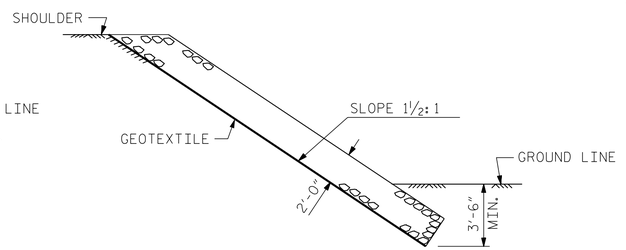


℄ SECTION BERM RIP RAPPED





SECTION A-A



SECTION C-C

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

ENGINEER OF RECORD
6/13/2023

NORTH CAROLINA PROFESSIONAL SEAL 15431 ENGINEER THOMAS K. KOCH

DocuSigned by: Thomas K. Koch

WETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD

RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			20

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22	
CHECKED BY : T. KOCH	DATE : 6-23	
DRAWN BY : REK 1/84	REV. 10/1/11	MAA/GM
CHECKED BY : RDU 1/84	REV. 12/21/11	MAA/GM
	REV. 12/17	MAA/THC

STD. NO. RR1

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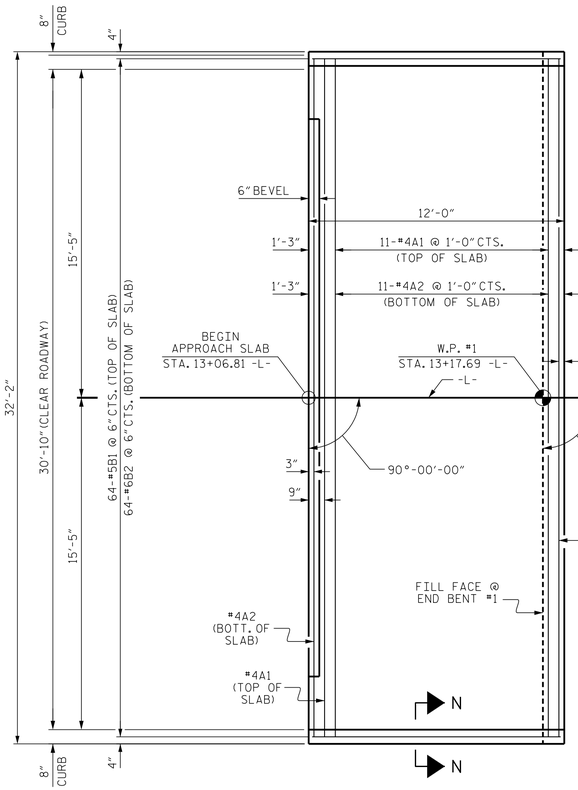
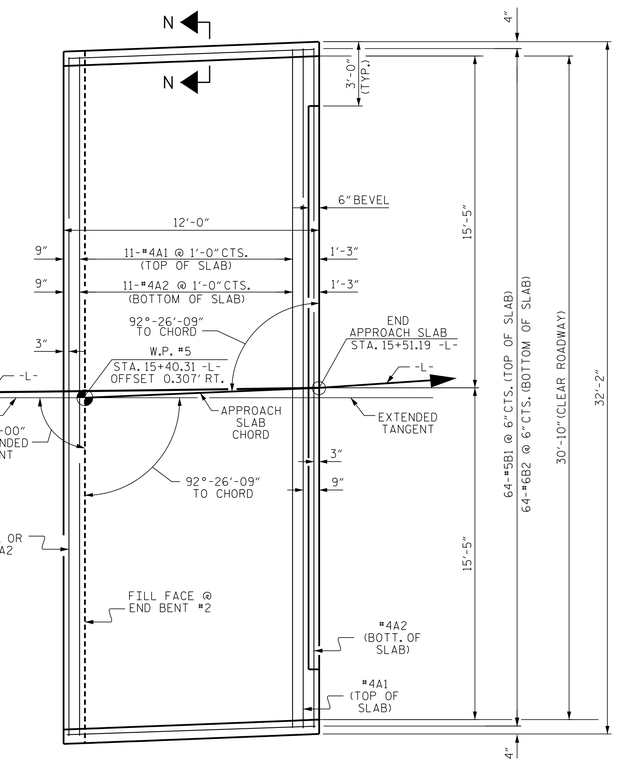
6/13/2023 9:41:28 AM



PLAN @ END BENT #1



PLAN @ END BENT #2

NOTE:
W.P. #5 IS LOCATED ON AN EXTENDED TANGENT.
END APPROACH SLAB IS LOCATED ON -L-.

NOTES

FOR BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, 4" Ø DRAINAGE PIPE, AND SELECT MATERIAL BACKFILL, SEE ROADWAY PLANS.

GEOTEXTILE SHALL BE TYPE 1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

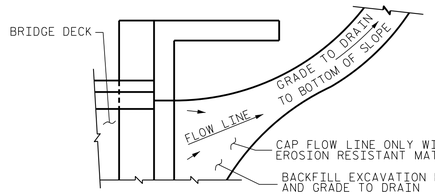
SELECT MATERIAL BACKFILL (CLASS V OR CLASS VI) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

SELECT MATERIAL BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF BACKWALL FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.

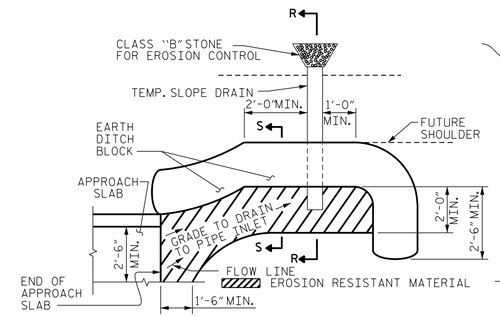
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



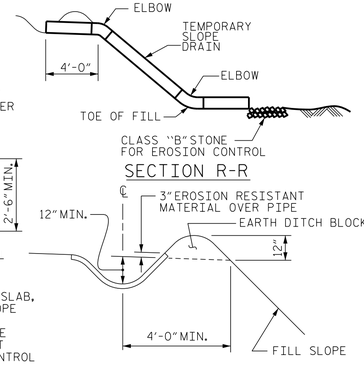
NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT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

TEMPORARY DRAINAGE DETAIL



NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

PLAN VIEW



SECTION S-S

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

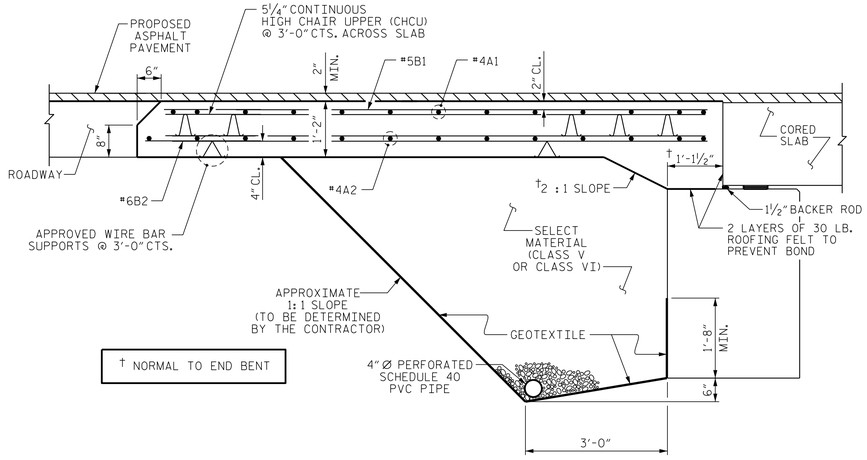
BILL OF MATERIAL

APPROACH SLAB AT EB #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
* B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
* EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C. Y.	19.5

APPROACH SLAB AT EB #2

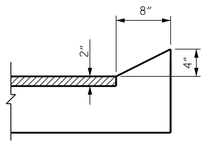
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	31'-10"	276
A2	13	#4	STR	31'-10"	276
* B1	64	#5	STR	11'-2"	745
B2	64	#6	STR	11'-8"	1121
REINFORCING STEEL				LBS.	1397
* EPOXY COATED REINFORCING STEEL				LBS.	1021
CLASS AA CONCRETE				C. Y.	19.5



† NORMAL TO END BENT

SECTION THRU SLAB

(TYPE II - MODIFIED APPROACH FILL)



SECTION N-N

CURB DETAILS

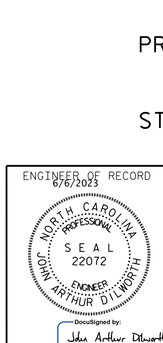
SPLICE LENGTHS		
BAR SIZE	EPOXY COATED	UNCOATED
#4	1'-11"	1'-7"
#5	2'-5"	2'-0"
#6	3'-7"	2'-5"

PROJECT NO. BP3.R009

SAMPSON COUNTY

STATION: 14+29.00 -L-

ENGINEER OF RECORD
6/6/2023



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD BRIDGE APPROACH SLAB FOR PRESTRESSED CONCRETE CORED SLAB UNIT (SUB-REGIONAL TIER) 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			20

STD. NO. BAS_33_90S

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ASSEMBLED BY : J. PENDERGRAFT	DATE : 8-22		
CHECKED BY : -	DATE : -		
DRAWN BY : SHS/MAA 5-09	REV. 12-17	MAA/THC	
CHECKED BY : BCH 5-09	REV. 08-19	BNB/THC	

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STANDARD NOTES

DESIGN DATA:

SPECIFICATIONS	A.A.S.H.T.O. (CURRENT)
LIVE LOAD	SEE PLANS
IMPACT ALLOWANCE	SEE A.A.S.H.T.O.
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 A.A.S.H.T.O.
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 2018 "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 5/16" 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 1/16 INCH 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.

ENGLISH

JANUARY, 1990

STD. NO. SN

REV. 6-16-95 EEM (/) RGW REV. 5-7-03 RWW (/) JTE REV. 10-1-11 MAA (/) GM
REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM REV. 12-17 MAA (/) THC

6/6/2023
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