

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

SR 1605
BRITT FARM RD

42

SR 1608
THIGPEN RD

EDGECOMBE CO
ALAMEDA CO

SR 1606
ELLIS RD

SR 1608
THIGPEN RD

SR 1602
MITCHELL SWAMP RD

PROJECT LOCATION

EDGECOMBE CO
ALAMEDA CO

DETOUR

VICINITY MAP

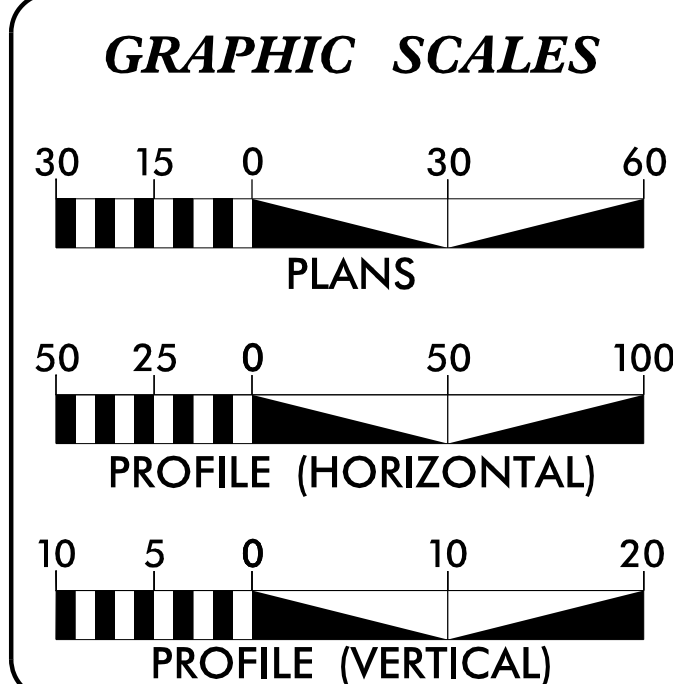
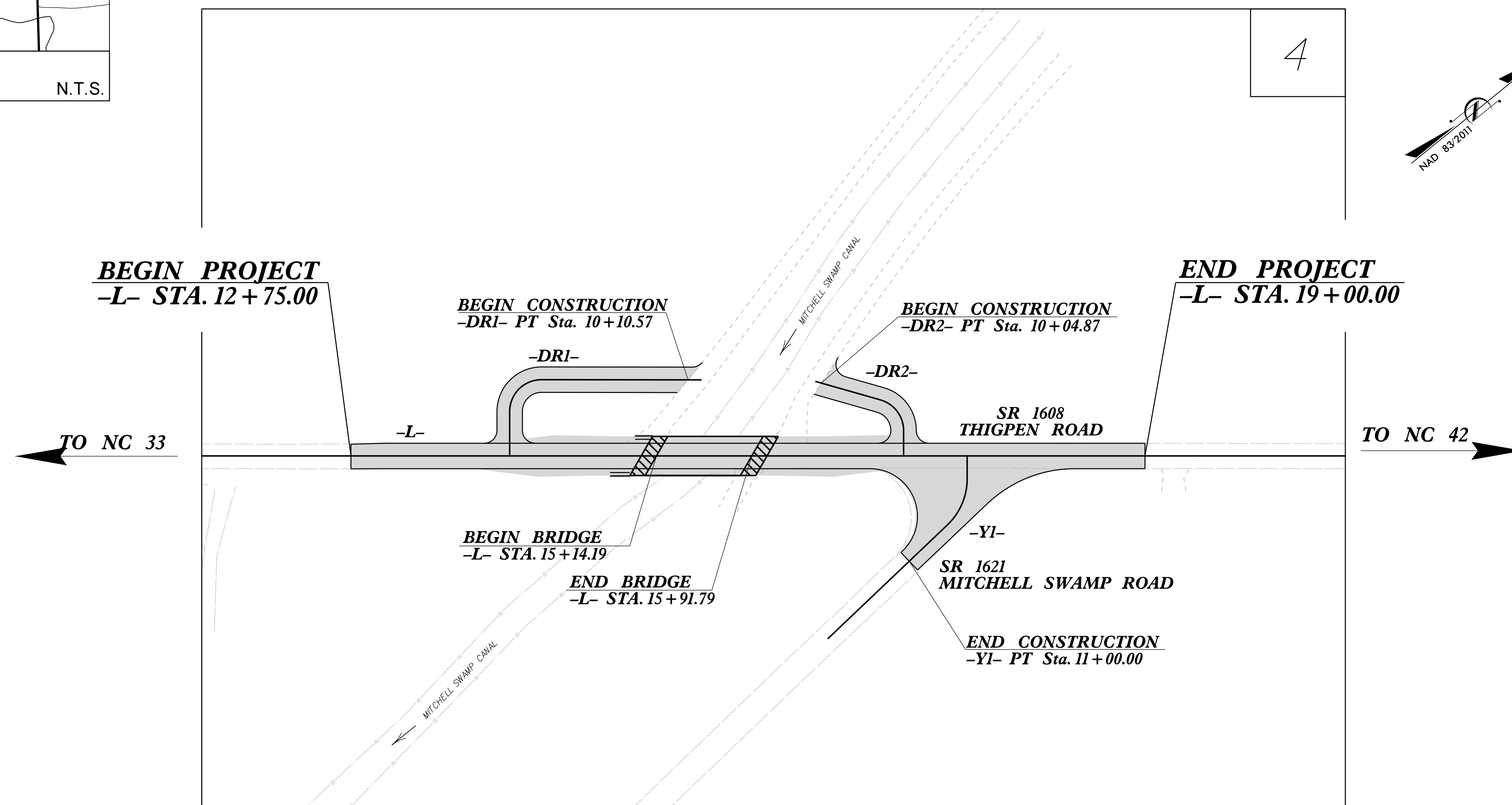
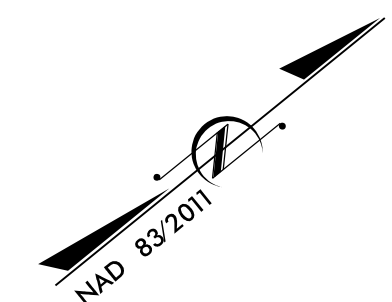
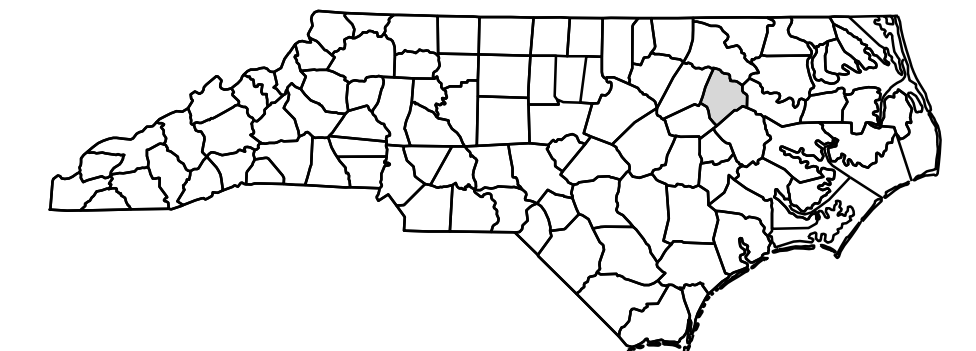
N.T.S.

EDGECOMBE COUNTY

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4-R022	1	
STATE PROJ.NO.	F.A. PROJ.NO.	DESCRIPTION	
BP4.R022.1		PE	
BP4.R022.2		R/W	
BP4.R022.3		CONST	

DIVISION 4


$$\begin{aligned} \text{ADT } 2026 &= 350 \\ \text{ADT } 2046 &= 700 \\ V &= 60 \text{ MPH} \end{aligned}$$

FUNC CLASS = LOCAL
SUBREGIONAL TIER

LENGTH ROADWAY PROJECT BP4-R022	=	0.103 MI
LENGTH STRUCTURES PROJECT BP4-R022	=	0.015 MI
TOTAL LENGTH PROJECT BP4-R022	=	0.118 MI

Prepared in the
Office of:



2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JULY 14, 2023

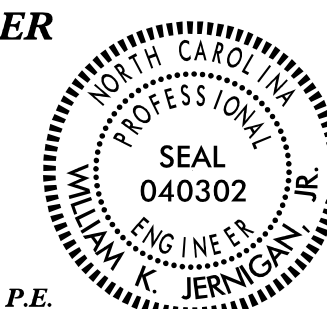
LETTING DATE:
JANUARY 25, 2025

JERRY P. PAGE, PE
PROJECT ENGINEER

ANGELA B. PRIDGEN, PE
PROJECT DESIGN ENGINEER

RACHEL EVANS, PE
NCDOT DIVISION PROJECT MANAGER

HYDRAULICS ENGINEER



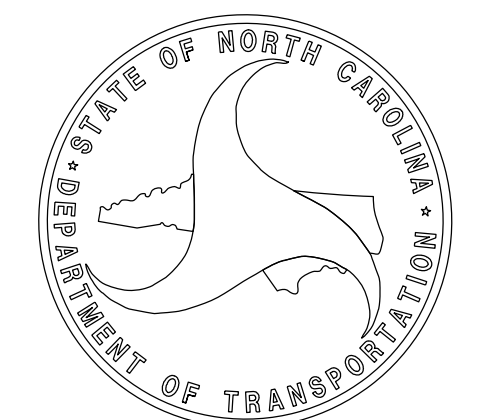
DocuSigned by

 SIGNATURE

1/14/2025 *P.E.*

ROADWAY DESIGN ENGINEER

DocuSigned by
Angela B. Ridge
SIGNATURE

1/14/2025 *P.E.*

8/17/2025

c:\pwworking\gfbw01\aprdgen\dl512473\320088_rdy_tsh_1A.dgn
1/14/2025
aprdgen



PROJECT REFERENCE NO.		SHEET NO.	
BP4.R022		1A	
	ROADWAY DESIGN ENGINEER		
	SEAL 032579 ANGELA B. PRITCHETT ENGINEER 1/14/2025		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES AND STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
2A-1	PAVEMENT SCHEDULE AND TYPICAL SECTIONS
2C-1	SPECIAL DETAILS
3B-1	ROADWAY & DRAINAGE SUMMARIES
4	PLAN SHEET
5	PROFILE SHEET
RW02C-1 THRU RW04	SURVEY CONTROL, EXISTING CENTERLINES, RIGHT OF WAY, EASEMENT, PROPERTY TIES AND CENTERLINE COORDINATE LIST
TMP-1 THRU TMP-3	TRANSPORTATION MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-4	EROSION CONTROL PLANS
RF-1	REFORESTATION
UC-1 THRU UC-5	UTILITY CONSTRUCTION PLANS
X-1	CROSS SECTION INDEX
X-1A	CROSS SECTION SUMMARY
X-2 THRU X-19	CROSS SECTIONS
TITLESHEET S-1 THRU S-14 STANDARD NOTES	STRUCTURE PLANS

GENERAL NOTES

GENERAL NOTES:	2024 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.	
SUPERELEVATION:	ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.05 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.	
SHOULDER CONSTRUCTION:	ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01	
SIDE ROADS:	THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.	
SUBSURFACE DRAINS:	SUBSURFACE DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. NO. 815.02 AT LOCATIONS DIRECTED BY THE ENGINEER.	
GUARDRAIL:	THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.	
TEMPORARY SHORING:	SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.	
END BENTS:	THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.	
UTILITIES:	UTILITY OWNERS ON THIS PROJECT ARE CenturyLink Edgecombe County Water	
RIGHT-OF-WAY MARKERS:	ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY OTHERS.	

STANDARD DRAWINGS

2024 ROADWAY ENGLISH STANDARD DRAWINGS	EFF. 01-16-2024 REV.
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
200.03	Method of Clearing – Method III
225.02	Guide for Grading Subgrade – Secondary and Local
DIVISION 3	– PIPE CULVERTS
300.01	Method of Pipe Installation
DIVISION 4	– MAJOR STRUCTURES
423.01	Bridge Approach Fills
DIVISION 5	– SUBGRADE, BASES AND SHOULDERS
560.01	Method of Shoulder Construction – High Side of Superelevated Curve – Method I
DIVISION 8	– INCIDENTALS
846.01	Concrete Curb, Gutter and Curb & Gutter
862.01	Guardrail Placement
862.02	Guardrail Installation
862.03	Structure Anchor Units
876.01	Rip Rap in Channels
876.02	Guide for Rip Rap at Pipe Outlets
876.04	Drainage Ditches with Class "B" Rip Rap

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
Switch	
RR Abandoned	
RR Dismantled	

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

Woods Line	
Orchard	
Vineyard	

EXISTING STRUCTURES:

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

UTILITIES:

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

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

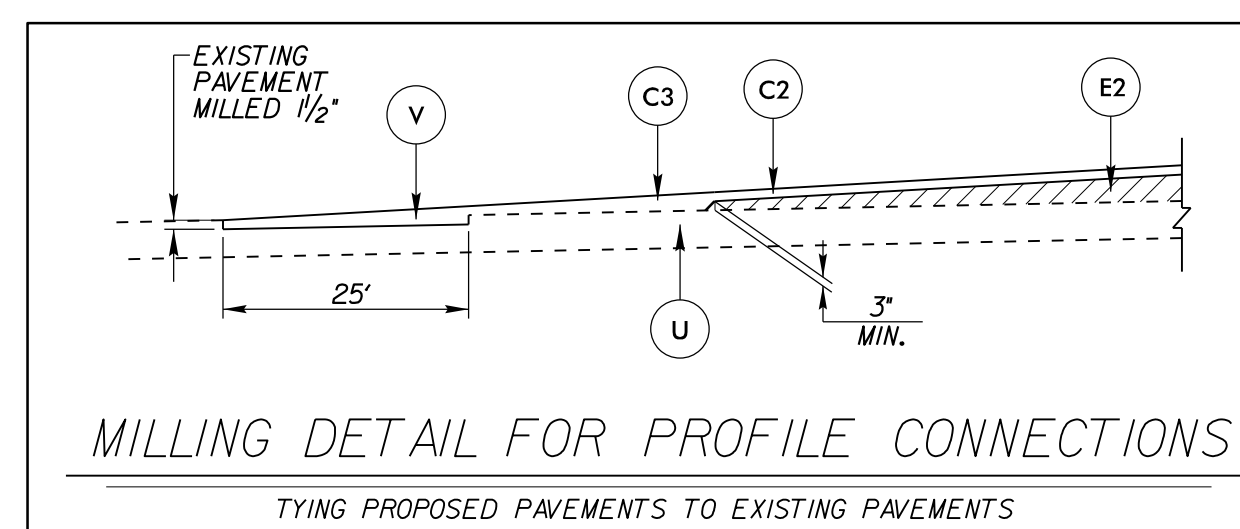
SANITARY SEWER:

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

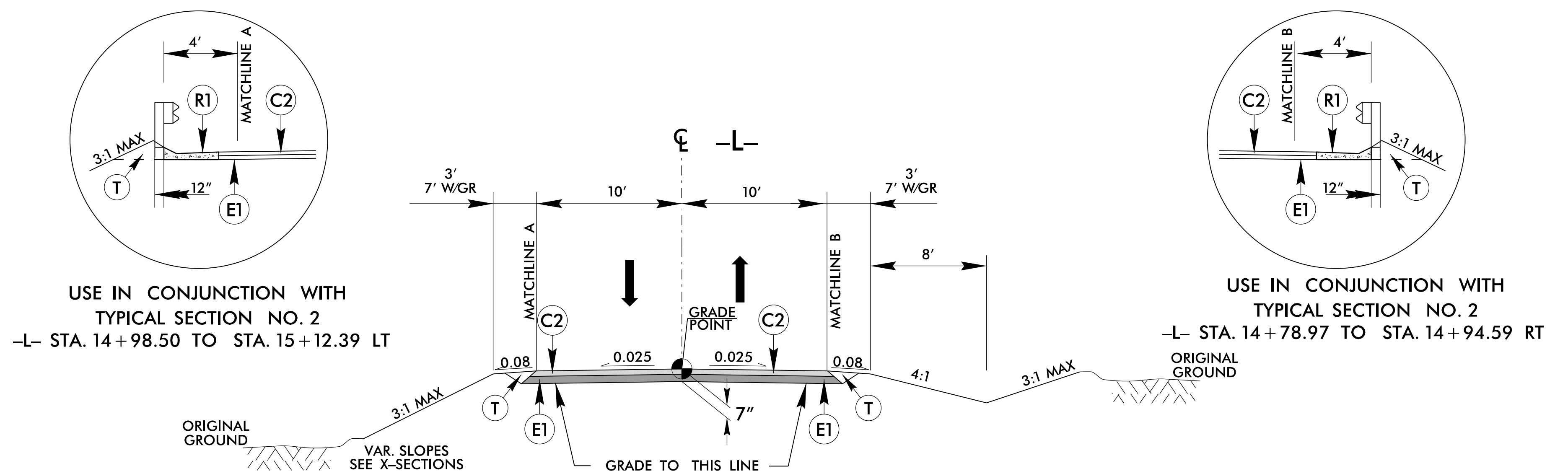
MISCELLANEOUS:

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

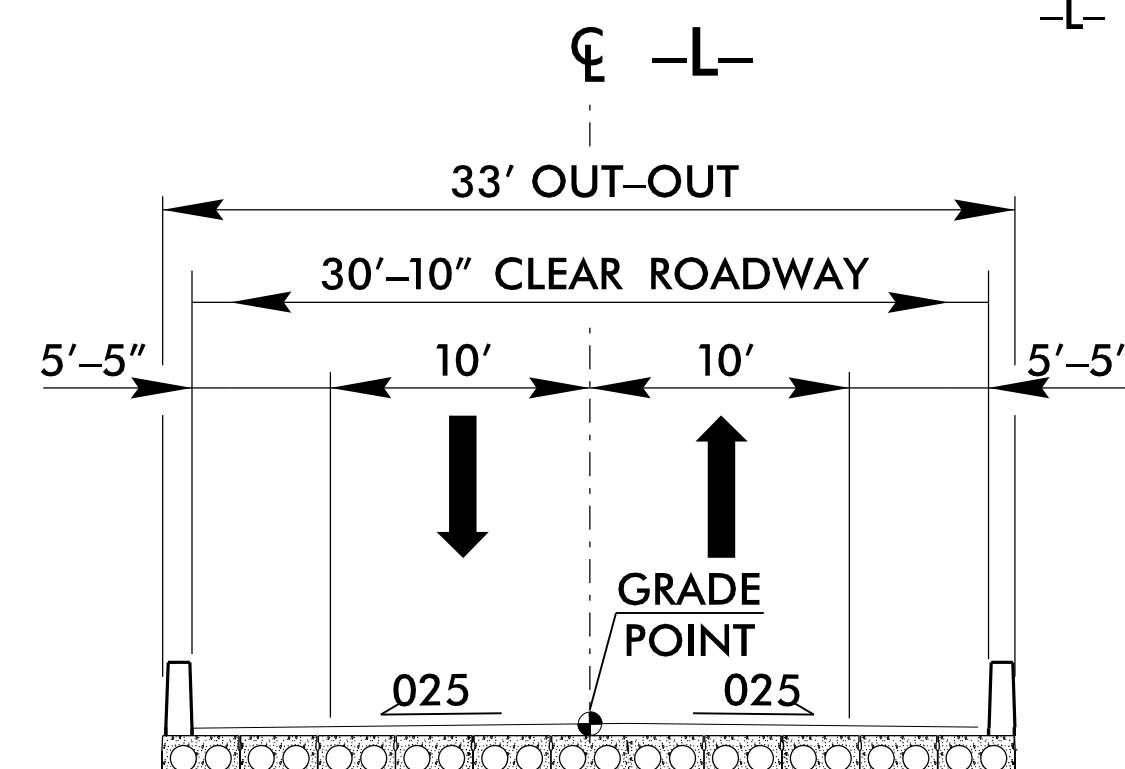
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

[illegible]

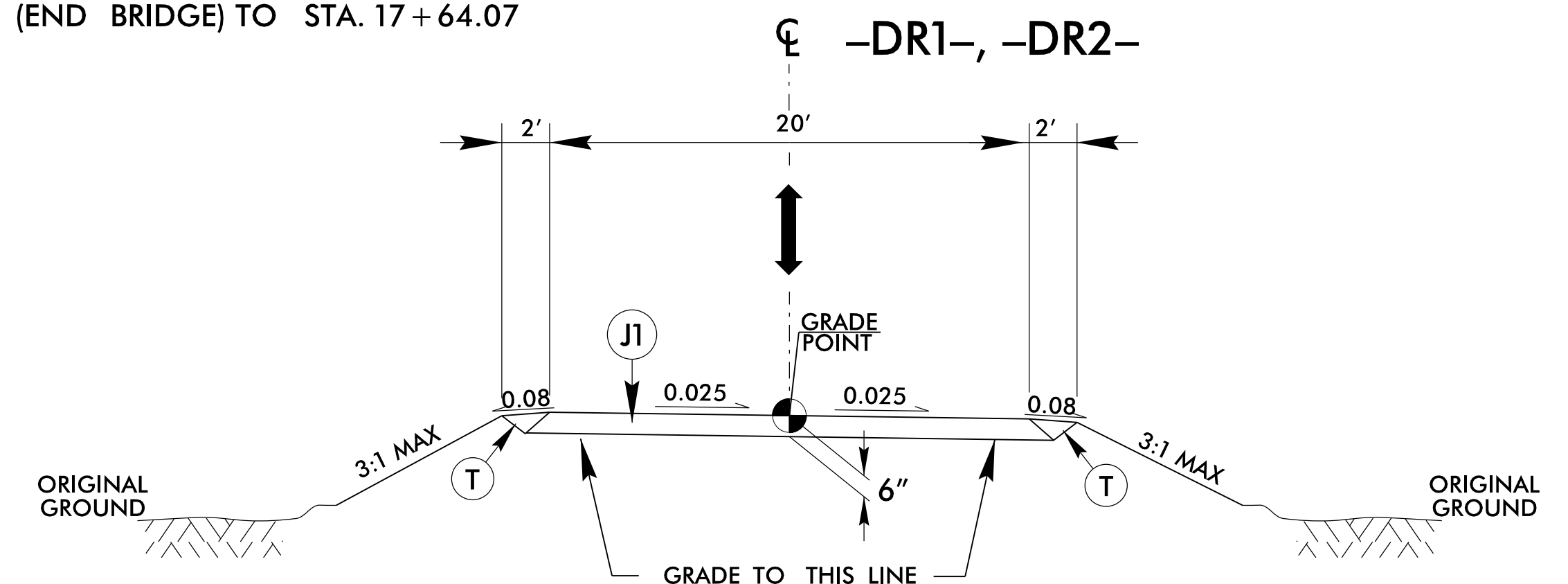
-L- STA. 13+00.00 TO STA. 14+72.03
 -L- STA. 17+64.07 TO STA. 18+75.00
 -Y1- STA. 10+10.00 TO STA. 11+00.00



-L- STA. 14+72.03 TO STA. 15+14.19 (BEGIN BRIDGE)
-L- STA. 15+91.79 (END BRIDGE) TO STA. 17+64.07



—L— STA. 15+14.19 (BEGIN BRIDGE) TO STA. 15+91.79 (END BRIDGE)
(SEE STRUCTURE PLANS)



–DR1– STA. 10+10.57 TO STA. 11+90.26
–DR2– STA. 10+04.87 TO STA. 10+95.69

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

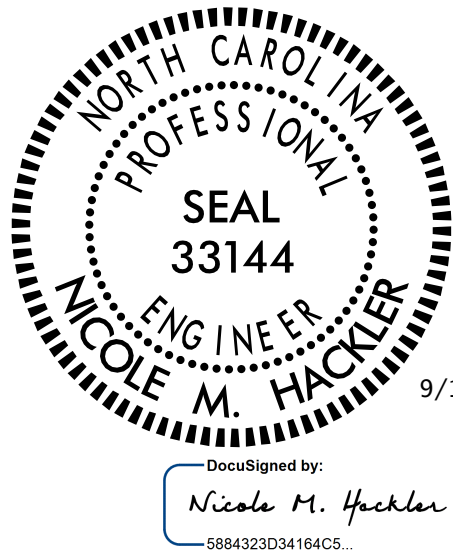
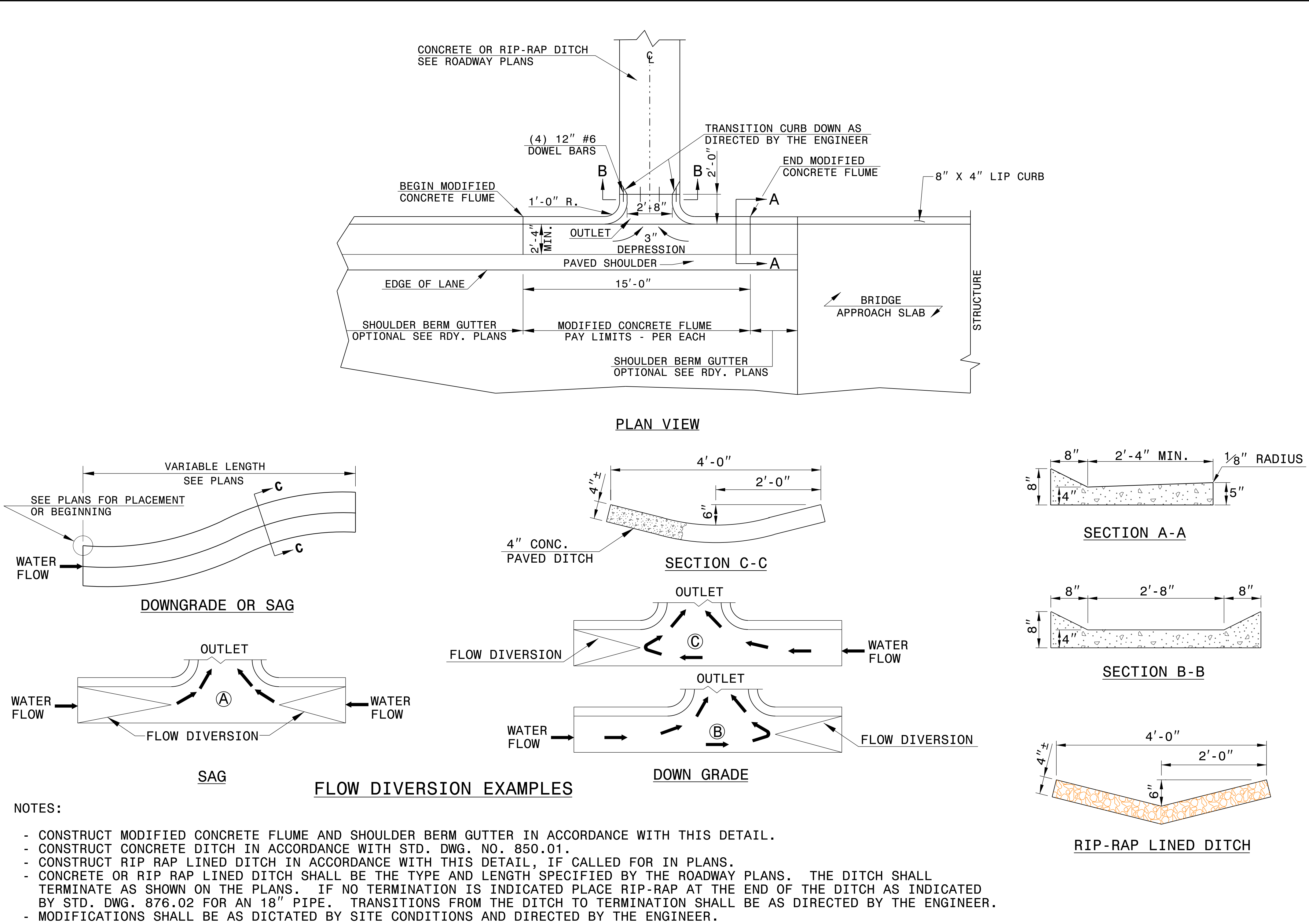
ENGLISH DETAIL DRAWING FOR
MODIFIED CONCRETE FLUME
WITH CONCRETE OR RIP-RAP DITCH

SHEET 1 OF 1
MODFLMDTCH

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



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: E.E. Ward	DATE: July 2004
CHECKED BY:	DATE:
FILE SPEC.: w:\details\stand\modifiedflume.dgn	

SURVEY LINE	LOCATION	STATION	STATION	LENGTH
-L-	RT	14 + 78.97	14 + 94.59	15.62'
-L-	LT	14 + 98.67	15 + 12.39	13.89'
TOTAL:				29.51'
SAY:				30'

[illegible]

5/14/2025

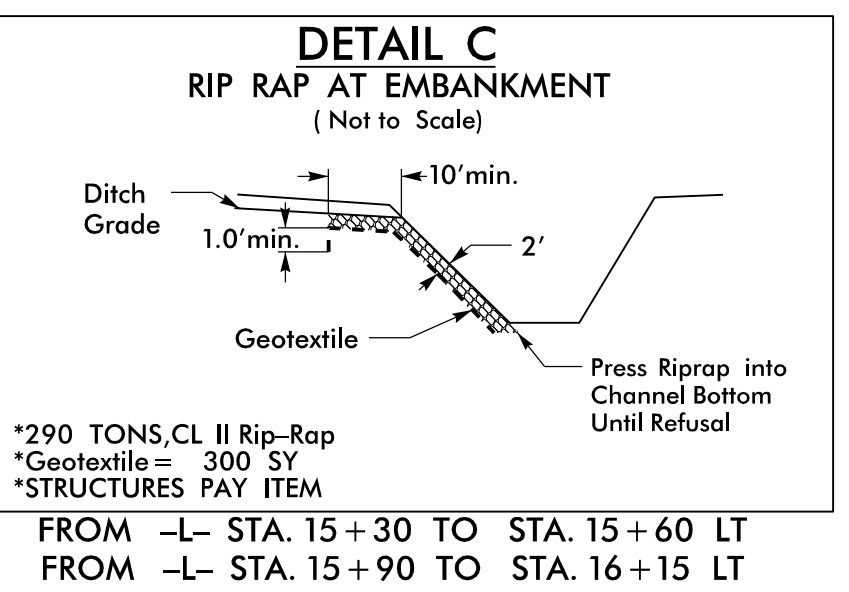
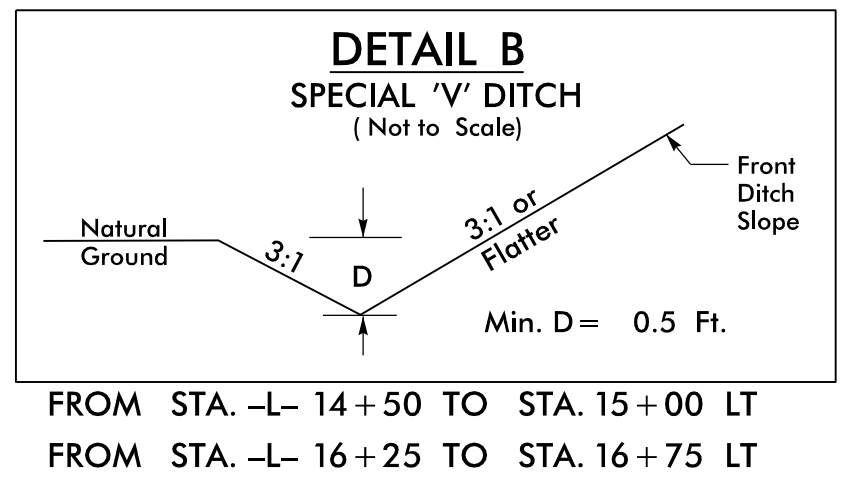
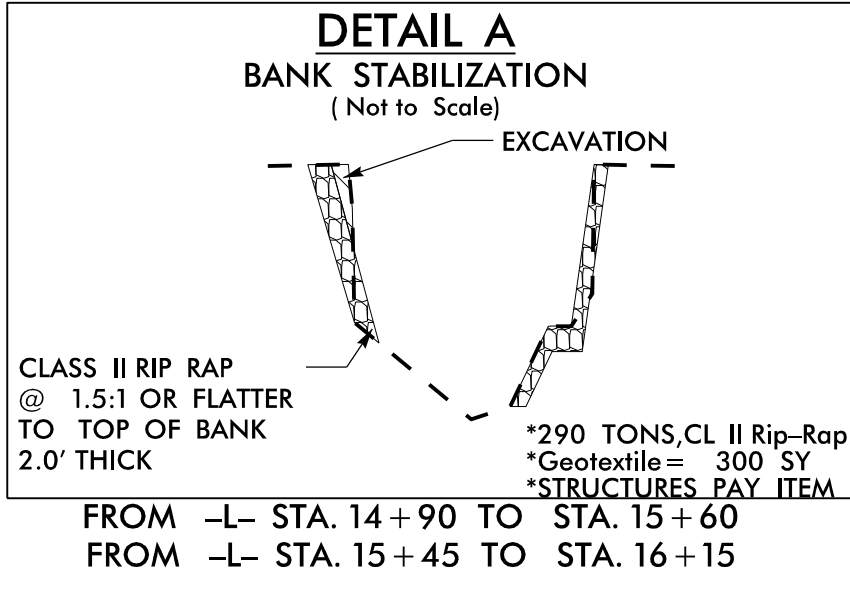
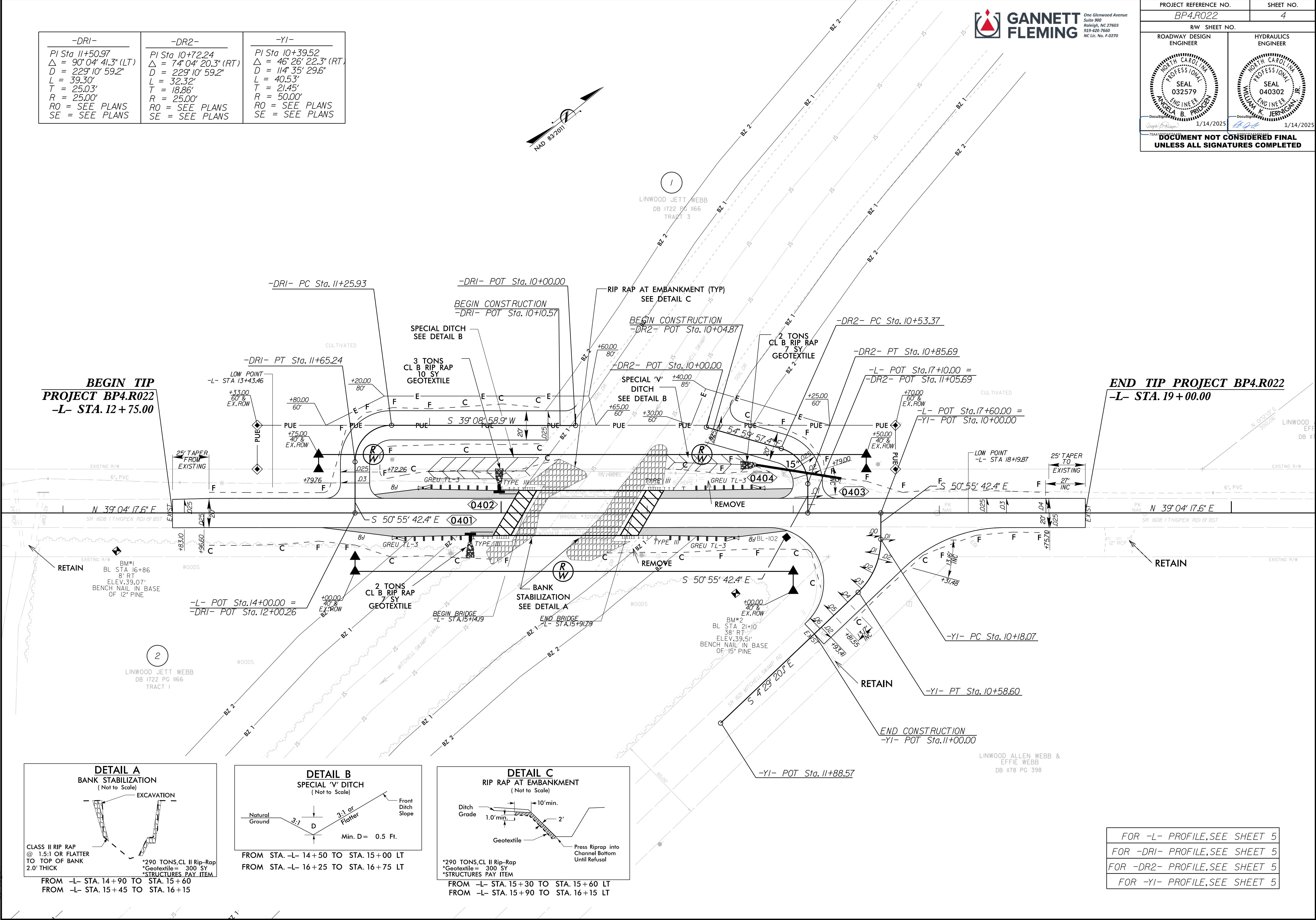
ng\gfpw\100r\idgen\dl512473_3320088.rdj-psd04.dgn

-DRI-	-DR2-	-YI-
PI Sta 11+50.97 $\Delta = 90^{\circ} 04' 41.3''$ (LT) $D = 229' 10'' 59.2''$ $L = 39.30'$ $T = 25.03'$ $R = 25.00'$ RO = SEE PLANS SE = SEE PLANS	PI Sta 10+72.24 $\Delta = 74^{\circ} 04' 20.3''$ (RT) $D = 229' 10'' 59.2''$ $L = 32.32'$ $T = 18.86'$ $R = 25.00'$ RO = SEE PLANS SE = SEE PLANS	PI Sta 10+39.52 $\Delta = 46^{\circ} 26' 22.3''$ (RT) $D = 114' 35'' 29.6''$ $L = 40.53'$ $T = 21.45'$ $R = 50.00'$ RO = SEE PLANS SE = SEE PLANS

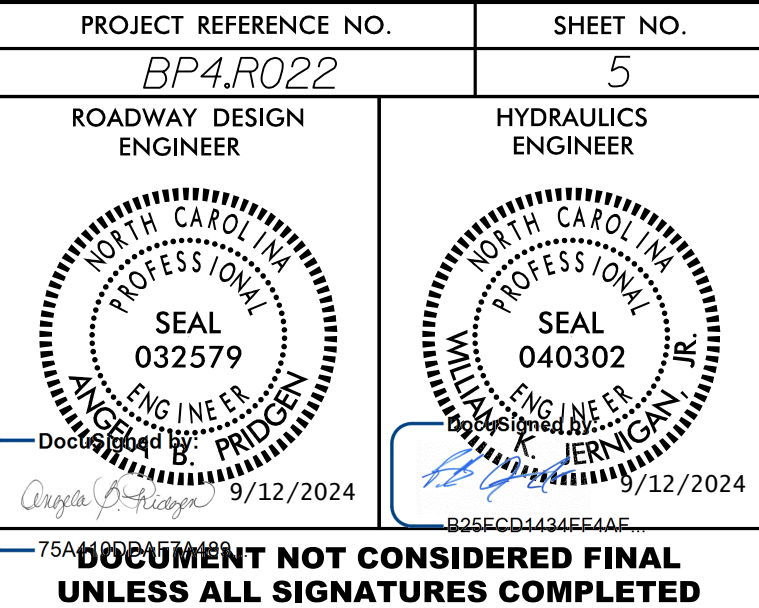


One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

PROJECT REFERENCE NO.		SHEET NO.	
BP4.R022		4	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



FOR -L- PROFILE, SEE SHEET 5
FOR -DRI- PROFILE, SEE SHEET 5
FOR -DR2- PROFILE, SEE SHEET 5
FOR -YI- PROFILE, SEE SHEET 5

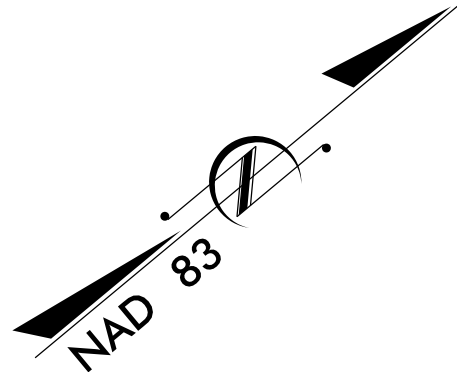


09/08/23

18-AUG-2023 09:30
C:\Users\USL6729784\Desktop\Projects\BP4R022\Client\Final Sheets\BP4.R022.Ls_rw01.dgn
USL6729784 AT 42HYHW3

TIP PROJECT: BP4.R022.1

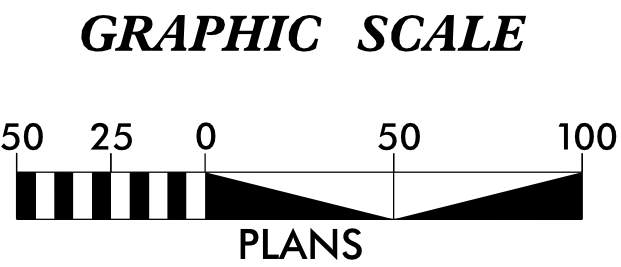
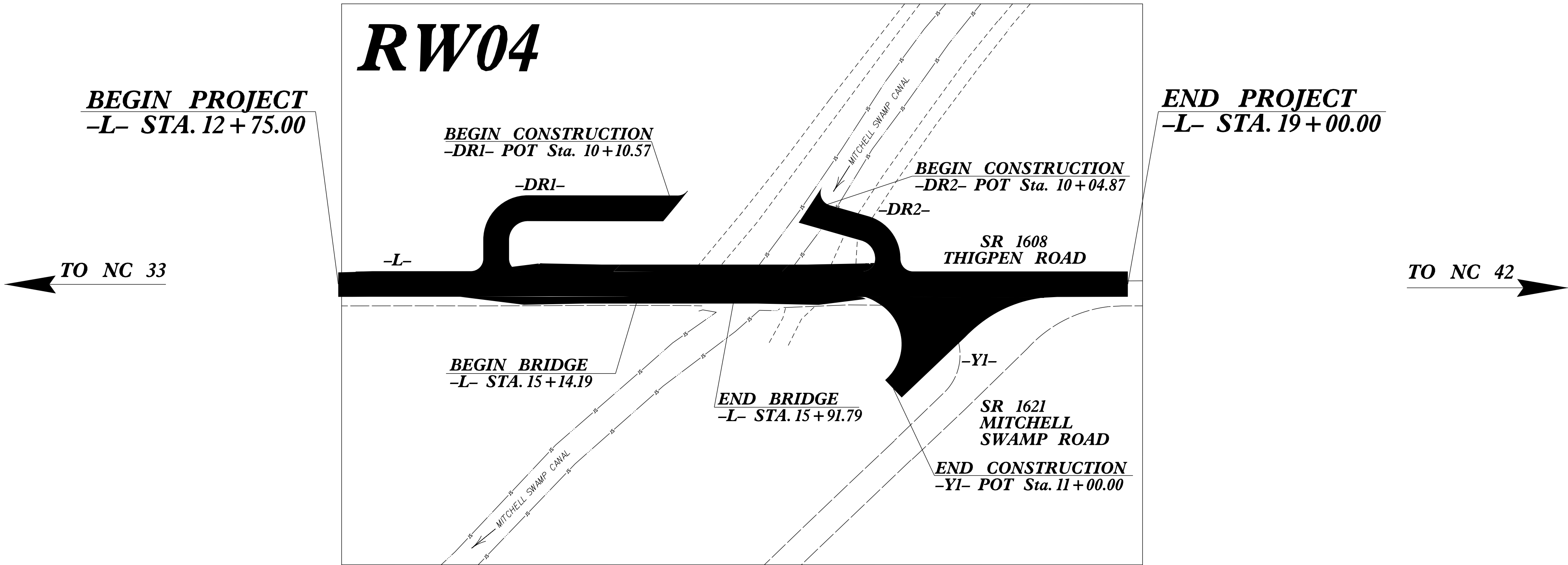
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR4.R022	RW01	7



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

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

EDGECOMBE COUNTY



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT 320088-2 WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 744476.7020(ft) EASTING: 2447614.9600(ft) ELEVATION: 41.53(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991958 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM 320088-2 TO -L- STATION 12+75.00 IS N 45°50'32" E 691.04'(ft) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

Prepared in the Office of:



WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 16, 2023

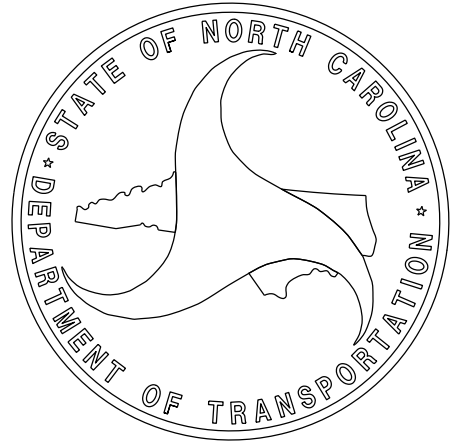
LETTING DATE:
SEPTEMBER 22, 2026

PROFESSIONAL LAND
SURVEYOR



Designed by:
Cal R. Schenert
SIGNATURE:

Date:



6/2/99

REVISIONS

17-AUG-2023 11:48
C:\Users\SL6929784\Desktop\Projects\BP4R022\Client\320088.DSheet.dgn
USL6929784 AT 42HYHW3

PROPOSED ALIGNMENT CONTROL SHEET

PROJECT REFERENCE NO.
BP4.R022

SHEET NO.
RW02D-1

Location and Surveys



WSP USA Inc.
128 TALBERT ROAD
SUITE A
MOORESVILLE, NC 28117
TEL: 704.662.0100
WWW.WSP.COM

L

TYPE	STATION	NORTH	EAST
POT	10+00.00	744779.7918	2447975.1079
POT	22+00.00	745711.4230	2448731.4565

Y1

TYPE	STATION	NORTH	EAST
POT	10+00.00	745369.8249	2448454.1287
PC	10+18.07	745358.4337	2448468.1597
PT	10+58.60	745323.5290	2448486.4918
POT	11+88.57	745193.9518	2448496.6646

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.

C:\Users\USLG\Z9784\Desktop\Projects\BP4R022\Client\320088-ESheet.dgn
USLG729784 AT 42HYHW3

6/2/99

RIGHT OF WAY CONTROL SHEET

PROJECT REFERENCE NO.	SHEET NO.
BP4.R022	RW02E-I
Location and Surveys	
 WSP USA Inc. 128 TALBERT ROAD SUITE A MOORESVILLE, NC 28117 TEL: 704.662.0100 WWW.WSP.COM	

ROW MARKER REBAR AND CAP

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+75.00	-30.00	745089.8352	2448188.1760
L	13+75.00	-40.00	745096.1381	2448180.4124
L	17+50.00	-40.00	745387.2729	2448416.7714
L	17+50.00	-30.00	745380.9700	2448424.5350
L	14+00.00	30.00	745071.4268	2448250.5149
L	14+00.00	40.00	745065.1239	2448258.2785
L	17+00.00	40.00	745298.0317	2448447.3656
L	17+00.00	53.32	745289.6376	2448457.7050

ROW MARKER PERMANENT EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+33.00	-60.00	745076.1369	2448138.4131
L	13+33.00	-30.00	745057.2281	2448161.7038
L	17+70.00	-60.00	745415.4059	2448413.8500
L	17+70.00	-30.00	745396.4972	2448437.1408

I, CalR. Scheinert, PLS, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) (R/W Staking) performed under my responsible charge meet NCDOT Survey Standards as directed in the NCDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans. I also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing survey control provided by others; that the depicted property data shown herein were surveyed by others; and these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

Witness my original signature, registration number and seal this 21st day of August, 2023.

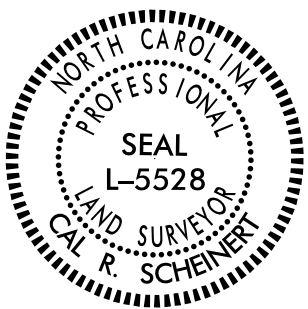
DocuSigned by:
Cnd F. Schmeier
D5785B746607485

Professional Land Surveyor

L-5528
PLS *

PLS #

Seal



NOTES:

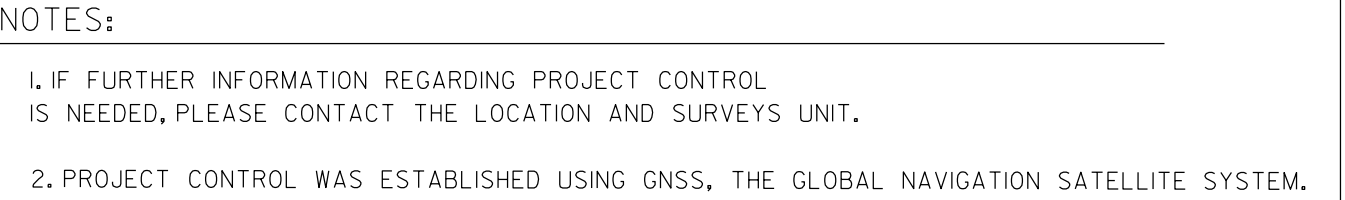
1. PROJECT CONTROL WAS ESTABLISHED USING GNSS, THE GLOBAL NAVIGATION SATELLITE SYSTEM.
2. THE PROPOSED ALIGNMENT CONTROL DATA FOR THIS PROJECT HAS BEEN COMPILED FROM VARIOUS SOURCES. IF FURTHER INFORMATION REGARDING PROJECT CONTROL IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

I, Carl R. Schneplert, a Professional Land Surveyor in the state of North Carolina hereby certify to the best of my knowledge and belief that the following work item(s) [R/W Stalking Horse] performed under permit number NCSDOT Survey Standards as directed in the NCSDOT Location & Surveys guidelines and procedures.

I further certify that the right of way and permanent easement points shown herein and outlined in the tables shown hereon (localized coordinates, station/offset) have been checked and are accurate representations of the right of way and permanent easement points depicted on the corresponding highway plans, also certify that the right of way and permanent easement points shown herein have been field monumented under my supervision from existing monuments controlled by others that the depicted property data shown herein were surveyed by others; these monuments denote the right of way and easement boundaries at the time of staking which may be subject to change due to right of way revisions (See deeds for final determination).

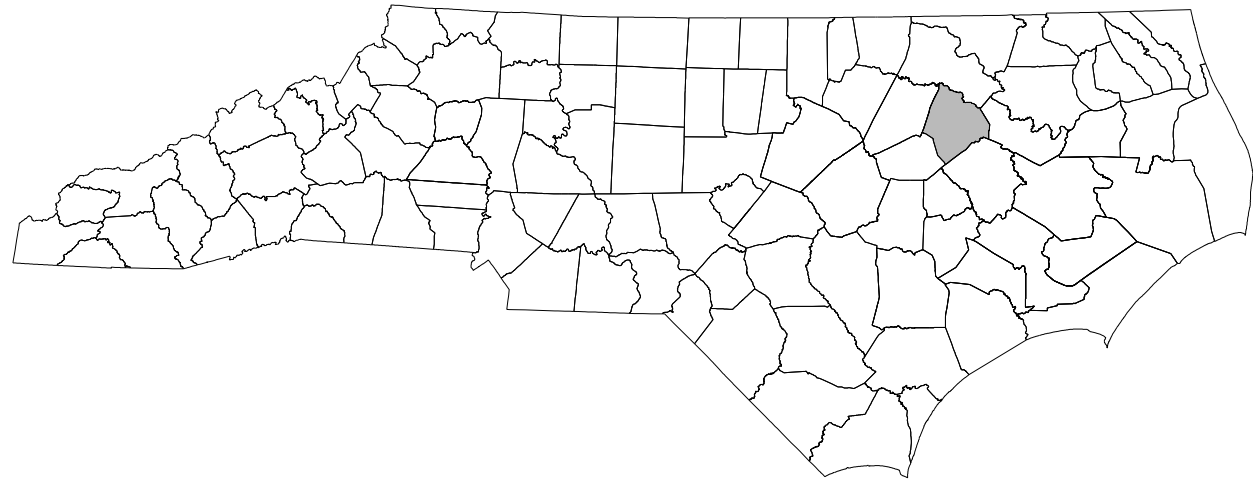
Witness my original signature, registration number and seal this 26st day of August, 2023.

L-5528
PLS *

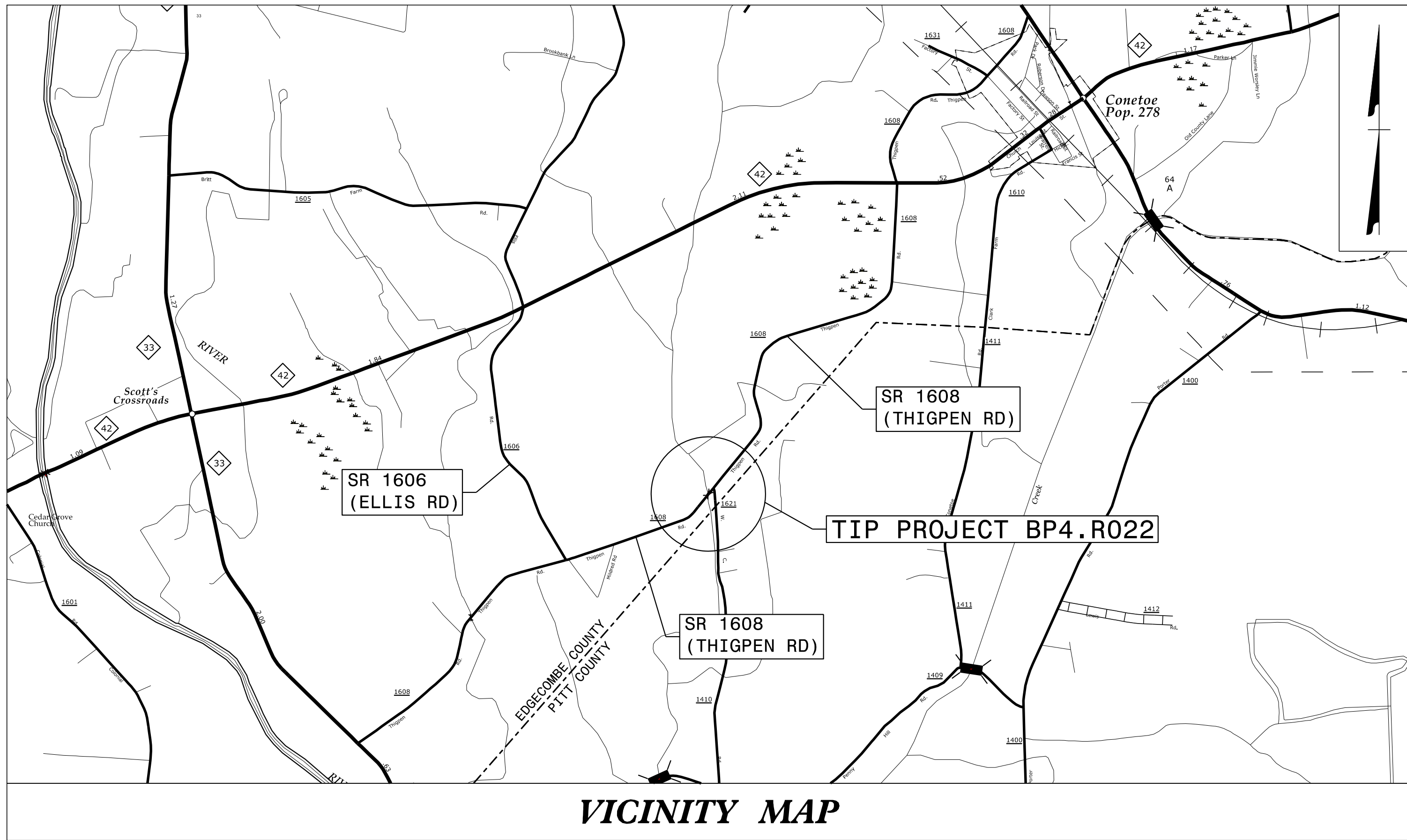


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

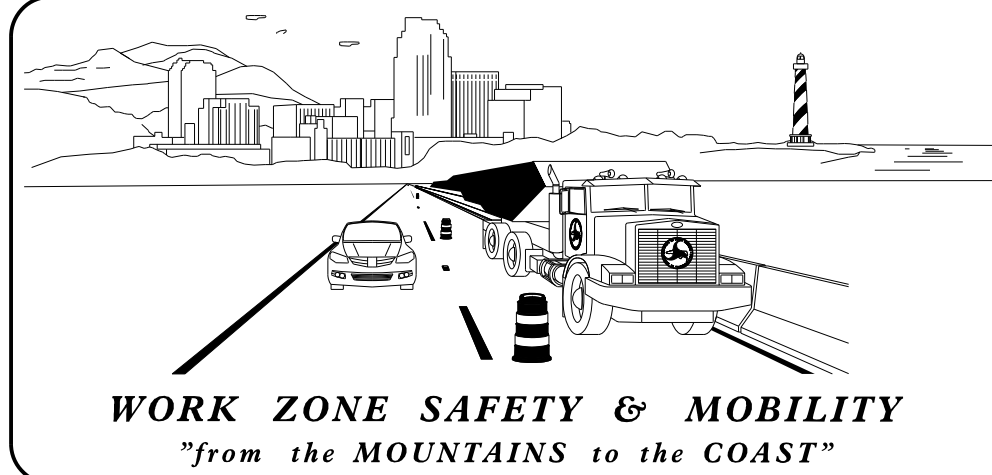
TRANSPORTATION MANAGEMENT PLAN
EDGECOMBE COUNTY



LOCATION: REPLACEMENT OF BRIDGE NO. 88 OVER MITCHELL
SWAMP CANAL ON SR 1608 (THIGPEN ROAD)



VICINITY MAP



PLANS PREPARED BY:

JERRY P. PAGE, PE
PROJECT ENGINEER

BENJAMIN A. WHITE, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACTS:

ADDISON GAINEY, PE
PROJECT ENGINEER

RACHEL EVANS, PE
PROJECT DESIGN ENGINEER

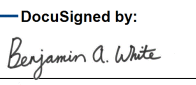


INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, INDEX OF SHEETS AND MANAGEMENT STRATEGIES
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN
TMP-2	SPECIAL SIGN DESIGN - THIGPEN ROAD
TMP-3	OFFSITE DETOUR ROUTE - THIGPEN ROAD

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



APPROVED: 
DATE: 9/12/2024

SEAL



TIP PROJECT: BP4.R022

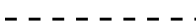
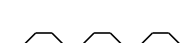
ROADWAY STANDARD DRAWINGS

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

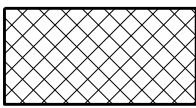
STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1145.01	BARRICADES - TYPE-III

LEGEND

GENERAL

-  DIRECTION OF TRAFFIC FLOW
-  DIRECTION OF PEDESTRIAN TRAFFIC FLOW
-  EXIST. PVMT.
-  NORTH ARROW
-  PROPOSED PVMT.
-  TEMP. SHORING (LOCATION PURPOSES ONLY)

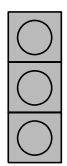
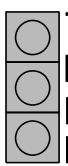
 WORK AREA

 REMOVAL

 USER DEFINED (IF NEEDED)

 USER DEFINED (IF NEEDED)

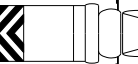
SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY
-  PORTABLE

PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES

TRAFFIC CONTROL DEVICES

-  BARRICADE (TYPE III)
-  CONE
-  DRUM
-  SKINNY DRUM
-  TUBULAR MARKER
-  TEMPORARY CRASH CUSHION
-  FLASHING ARROW BOARD
-  FLAGGER
-  LAW ENFORCEMENT
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

PAVEMENT MARKERS

-  CRYSTAL/CRYSTAL
-  CRYSTAL/RED
-  YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

9/27/2024
pw:\\gfnfnet-pw.bentley.com\\gfnfnet-pw-01\\Documents\\Projects\\70503\\5-Working\\Traffic\\TrafficControl\\TCP\\BP4.R022_TMP_PSHIA.dgn
User:bwhtfe

MANAGEMENT STRATEGIES

- 1) CLOSE SR 1608 (THIGPEN RD) TO TRAFFIC AND DETOUR TRAFFIC OFF-SITE.
- 2) LOCAL ACCESS TO ALL OTHER ROADS AND RESIDENCES WILL BE MAINTAINED BETWEEN CLOSURE POINTS AT ALL TIMES DURING CONSTRUCTION.

GENERAL NOTES

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

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- B) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

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

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

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

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

TRAFFIC CONTROL DEVICES

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

PHASING

PHASE I

- STEP 1: USING SHEET TMP-3 AND ROADWAY STANDARD DRAWING 1101.03 SHEET 1 OF 9, INSTALL DETOUR ROUTE SIGNING TO CLOSE SR 1608 (THIGPEN RD).
- STEP 2: AWAY FROM TRAFFIC, COMPLETE PROPOSED BRIDGE AND ROADWAY CONSTRUCTION ALONG -L- (THIGPEN RD) FROM -L- STA. 12+75.00 TO STA. 19+00.00, INCLUDING DRAINAGE, GUARDRAIL AND FINAL PAVEMENT MARKINGS.
- STEP 3: REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND OPEN -L- (THIGPEN RD) TO PROPOSED TRAFFIC PATTERN.

LOCAL NOTES

- 1) NOTIFY EDGEcombe AND PITT COUNTY EMERGENCY SERVICES AND PUBLIC SCHOOLS AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE

8/6/2024
pw:\\gfnfnet-pw.bentley.com\\gfnfnet-pw-01\\Documents\\Projects\\70503\\5-Working\\Traffic\\TrafficControl\\TCP\\BP4.R022_TMP_PSHB.dgn
User: bwhite

SIGN NUMBER: SP23305

TYPE: STATIONARY

QUANTITY: SEE PLANS

SIGN WIDTH: 3'-0"

HEIGHT: 2'-0"

TOTAL AREA: 6.0 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

DESIGN BY: D. BEARD

PROJECT ID: BP4.R022

CHECKED BY: D. EATON

LOCATION:

Nov 07, 2023

DIV: 4

THIGPEN
ROAD

3'-0"

2'-0"

5"

5"D

4"

5"D

5"

BORDER
R=1.5"

TH=0.63"

IN=0.38"

4.85"

26.3"

4.85"

Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter																									Series/Size Text Length	
		T	H	I	G	P	E	N																	D 2000	
	4.8	3.9	4.6	1.9	4.5	4.1	3.9	3.4	4.8																26.3	
		R	O	A	D																				D 2000	
	9.6	4.1	4.2	5	3.4	9.6																			16.8	

FILENAME: GuidsignSpecial-signs_2023

NORTH CAROLINA D.O.T. SIGN DETAIL

8/6/2024
pw:\gfn\pw.bentley.com\gfn\pw-0\Documents\Projects\70503\5-Working\Traffic\TrafficControl\TCP\BP4.R022_TMP_PSH02.dgn
User:bnwhite

APPROVED:

DocuSigned by:
Benjamin A. White
68F770221017443

DATE: 9/12/2024

SEAL

SEAL

044594

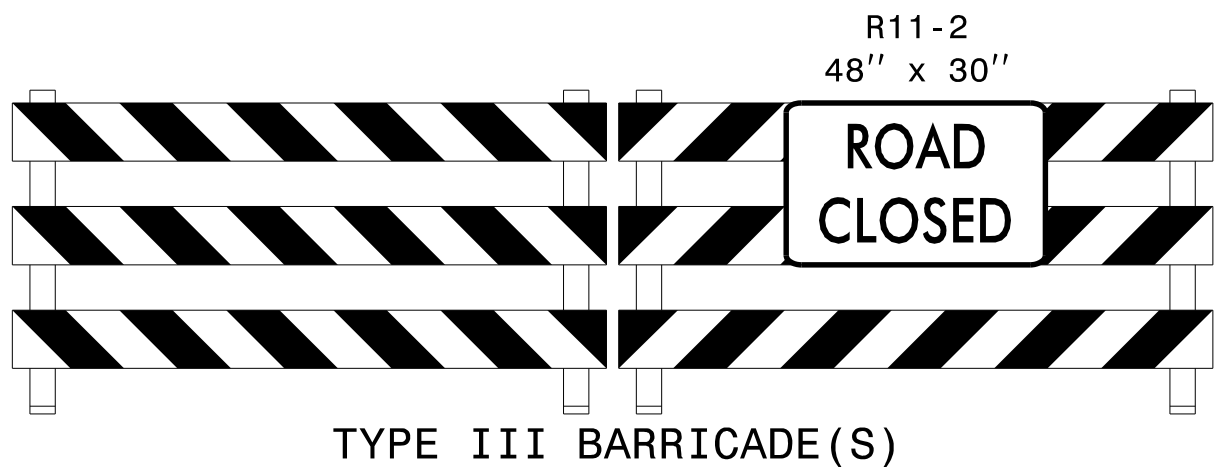
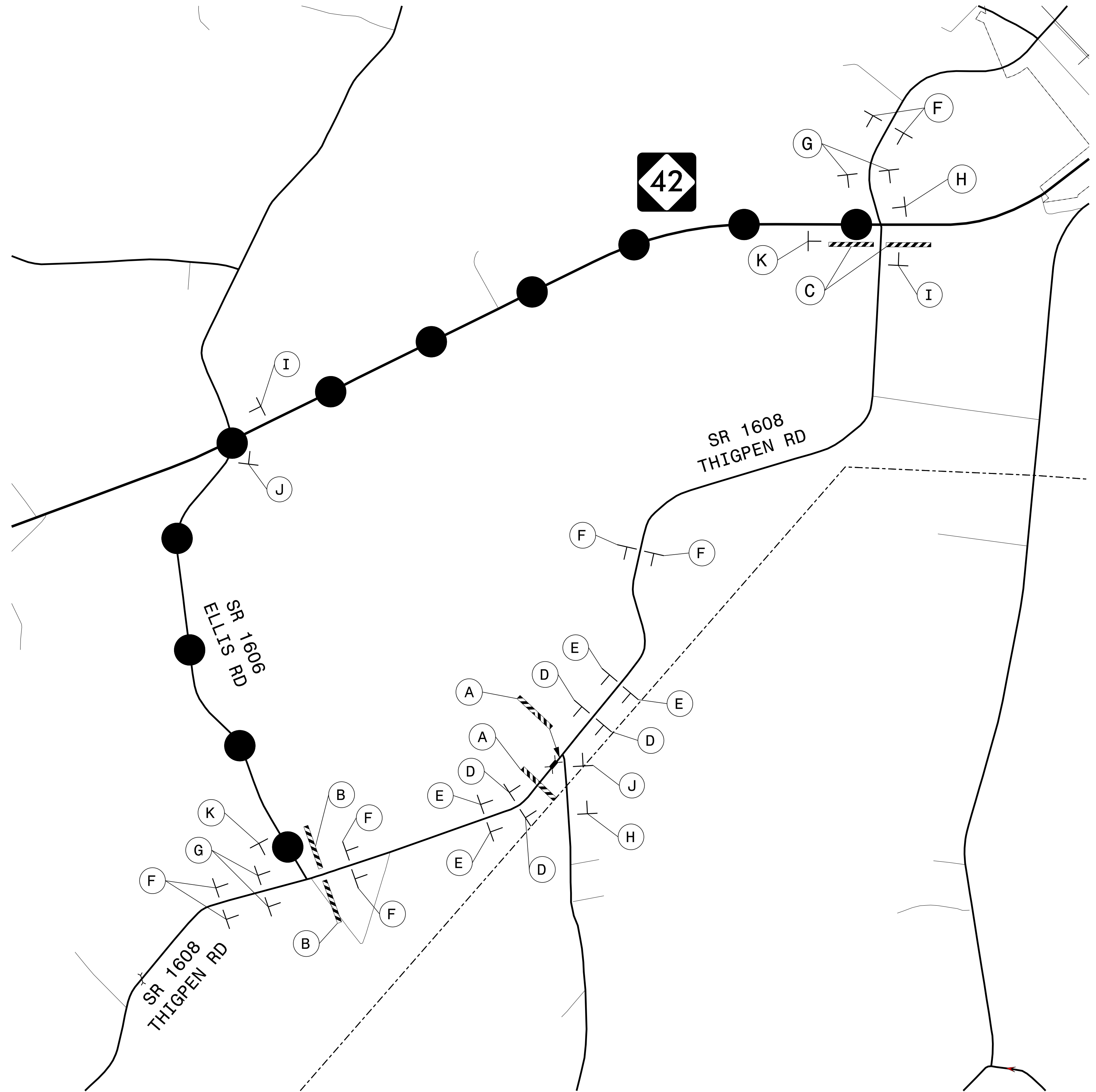
BENJAMIN A. WHITE

PROFESSIONAL ENGINEER

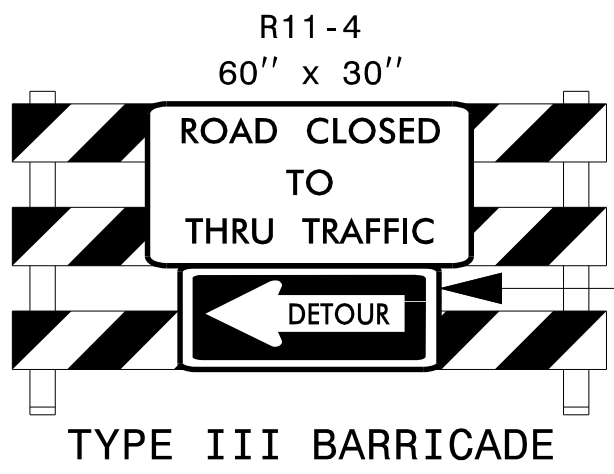
NORTH CAROLINA

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

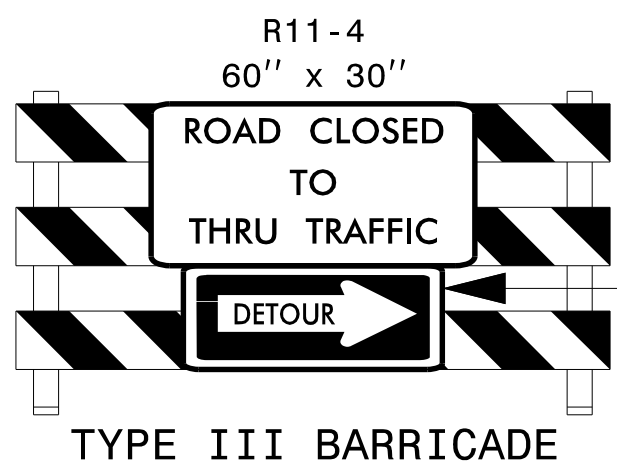
SPECIAL
SIGN
DESIGN



A



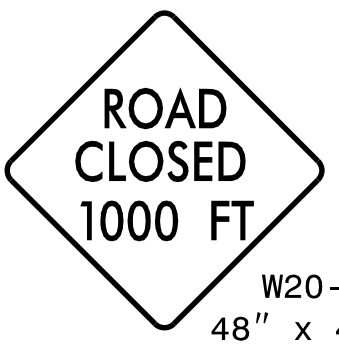
B



C



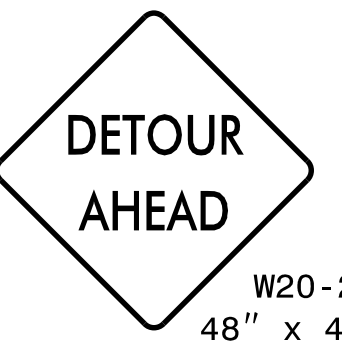
D



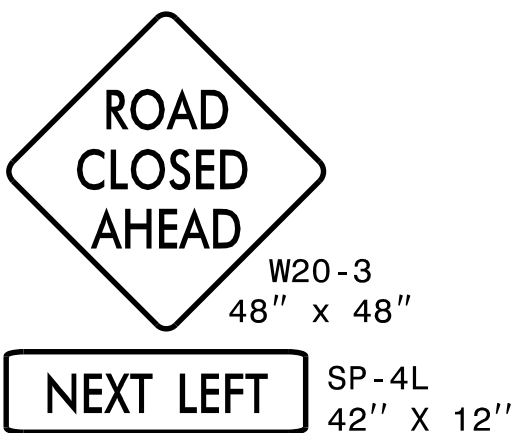
E



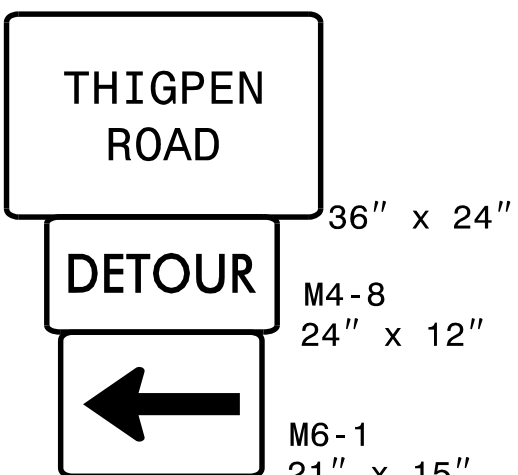
F



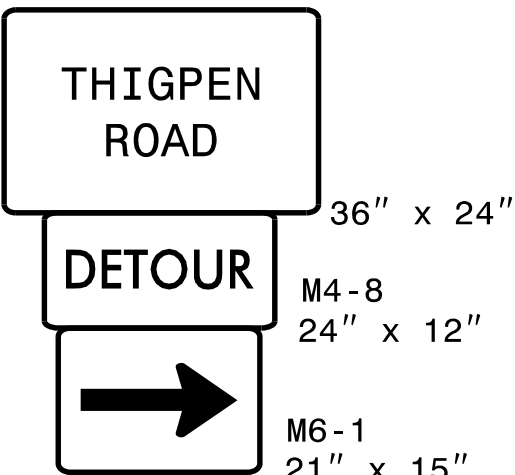
G



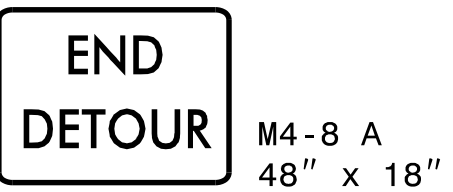
H



I



J



K

8/6/2024
pw:\gfn\et-pw.bentley.com\gfn\et-pw-0\Documents\Projects\70503\5-Working\Traffic\TrafficControl\TCP\BP4.R022.TMP_PSH03.dgn
User:bnwhite

9/27/2024
pwt\gfnnet-pw\benjamin.white\Documents\Projects\70503\5-Working\Traffic\TrafficControl\PMF\BP4.R022.pmp_tsh.dgn
User:benwhite

T.I.P.: BP4.R022

CONTRACT: DD00473

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLAN
EDGECOMBE COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 88 OVER
MITCHELL SWAMP CANAL ON SR 1608 (THIGPEN ROAD)

TIP NO.	SHEET NO.
BP4.R022	PMP - 1
APPROVED: DocuSigned by: Benjamin A. White 68F776221B17443...	
DATE: 9/27/2024	
SEAL	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

INDEX

SHEET NO.	DESCRIPTION
PMP-1	PAVEMENT MARKING PLAN INDEX, GENERAL NOTES, ROADWAY STANDARD DRAWINGS, AND PAVEMENT MARKING SCHEDULE
PMP-2	PAVEMENT MARKING DETAILS

ROADWAY STANDARD DRAWING

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

STD. NO.	TITLE
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES

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 ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING
(-L-) SR 1608 (THIGPEN ROAD)	THERMOPLASTIC
(-Y1-) SR 1621 (MITCHELL SWAMP ROAD)	THERMOPLASTIC

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.

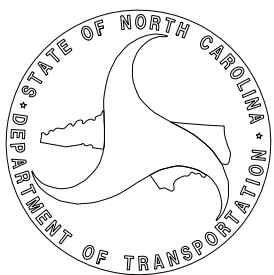
PAVEMENT MARKING AND
MARKER SCHEDULE

SYMBOL	DESCRIPTION
T1	THERMOPLASTIC WHITE EDGELINE (4", 90 MIL)
T5	THERMOPLASTIC 2 FT. - 6 FT./SP WHITE MINISKIP (4", 90 MIL)
T13	THERMOPLASTIC YELLOW DOUBLE CENTER (4", 90 MIL)

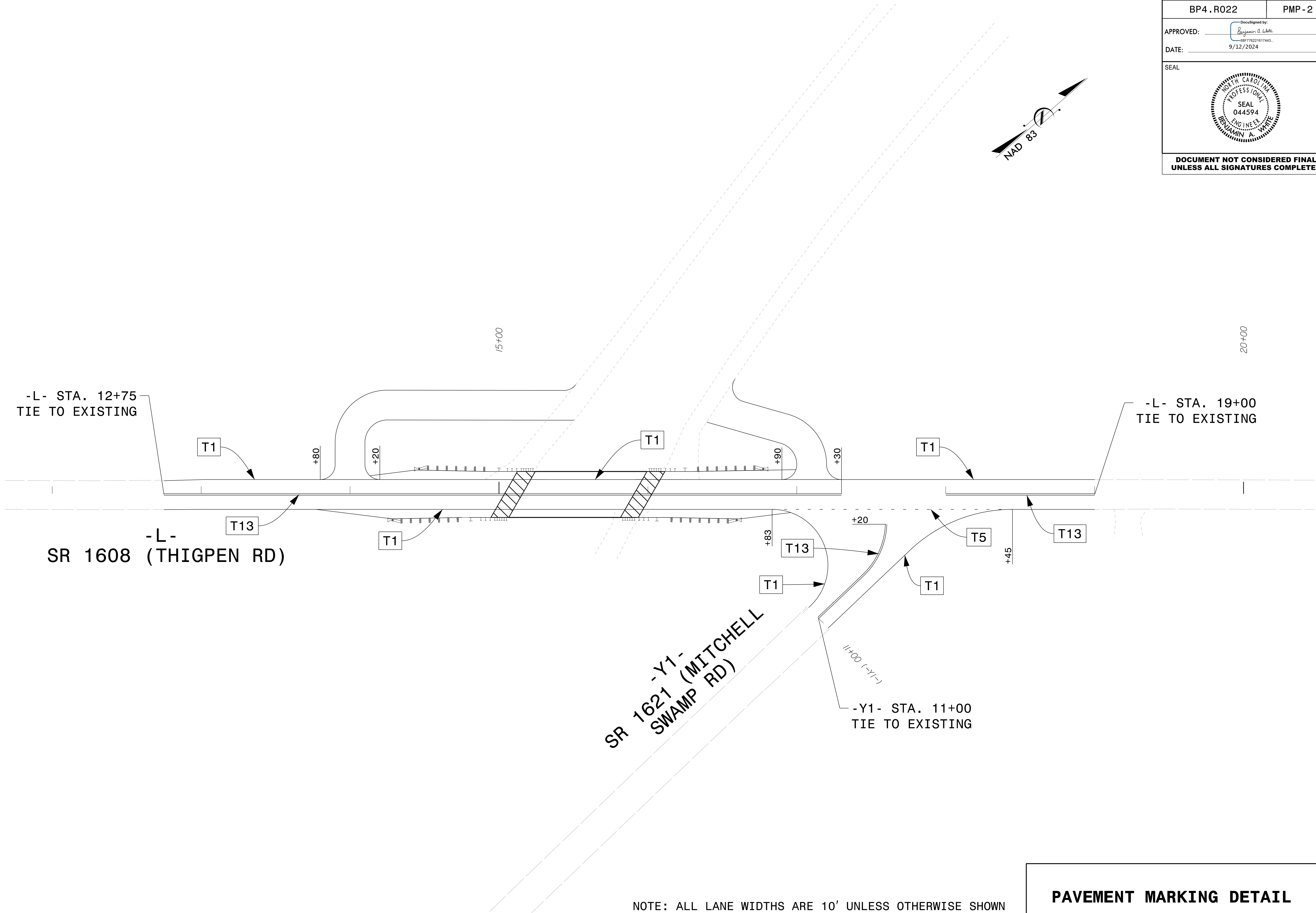
PLAN PREPARED BY:



JERRY P. PAGE, PE PROJECT ENGINEER
BENJAMIN A. WHITE, PE PROJECT DESIGN ENGINEER



TIP NO.	SHEET NO.
BP4.R022	PMP-2
APPROVED: DocuSigned by: Benjamin A. White 6BF776221617443...	
DATE: 9/12/2024	
SEAL	
SEAL 044594 ENGINEER BENJAMIN A. WHITE	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



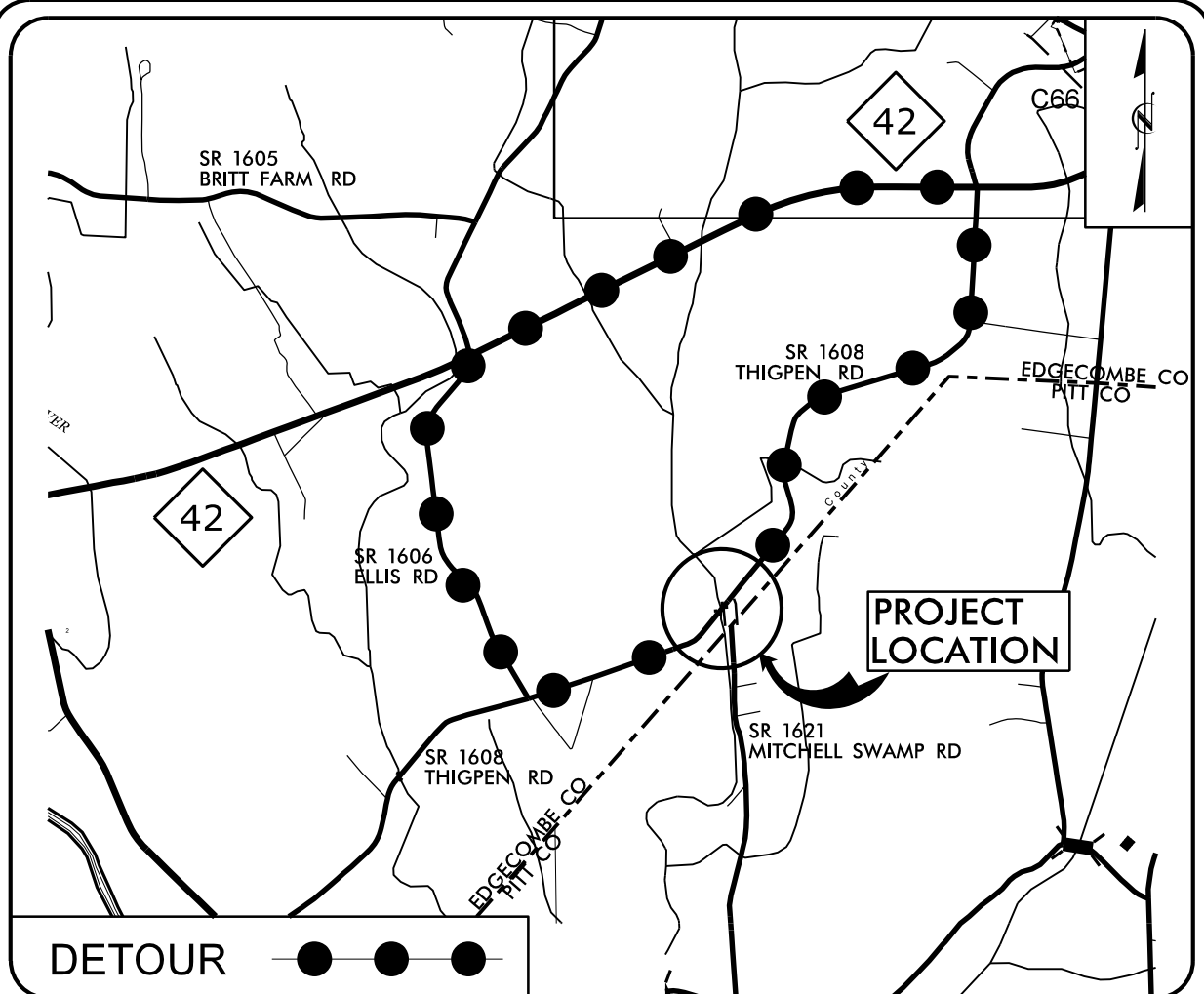
8/6/2024
D:\bentley\pw\Documents\Projects\70503\5-Working\Traffic\TrafficControl\PM\BP4.R022.pmp_psh02.dgn
User: bwhite

NOTE: ALL LANE WIDTHS ARE 10' UNLESS OTHERWISE SHOWN

PAVEMENT MARKING DETAIL

s:\01\13-JAN-2025\12134_48681\5-Working\5-Erosion Control\1\CAD\320086.EC.tsh.dgn

TIP PROJECT: BP4.R022



VICINITY MAP
NOT TO SCALE

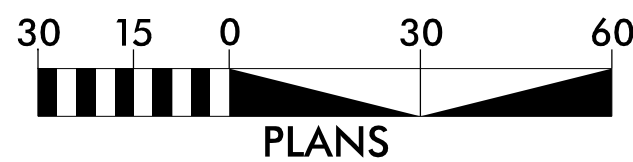
ENVIRONMENTALLY
SENSITIVE AREA(S) EXIST
ON THIS PROJECT

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

THIS PROJECT HAS
BEEN DESIGNED TO
SENSITIVE WATERSHED
STANDARDS.

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

GRAPHIC SCALE



THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY
WITH THE REGULATIONS SET FORTH BY THE
NCG-010000 GENERAL CONSTRUCTION PERMIT
ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES DIVISION OF WATER QUALITY.



One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

Designed by:

HANNAH AREY

NAME

4651

LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL

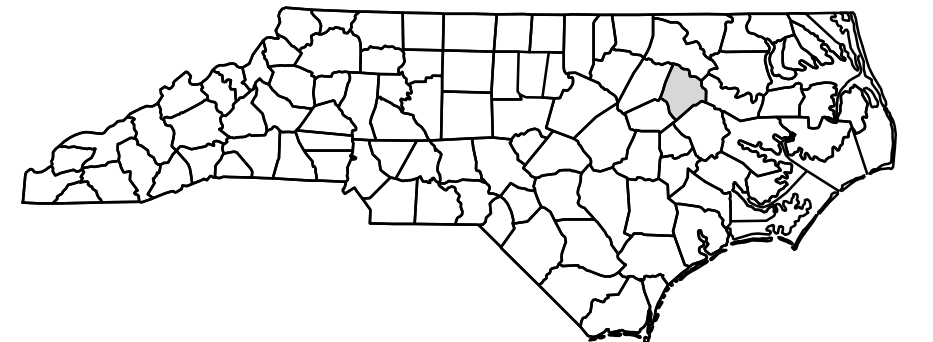
EDGECOMBE COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO. 88 OVER
MITCHELL SWAMP CANAL ON SR 1608 (THIGPEN ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R022	EC-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

DIVISION 4



EC-4

BEGIN PROJECT
-L- STA. 12 + 75.00

BEGIN CONSTRUCTION
-DRI- PT Sta. 10 + 10.57

BEGIN CONSTRUCTION
-DR2- PT Sta. 10 + 04.87

END PROJECT
-L- STA. 19 + 00.0

TO NC 33

TO NC 42

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

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

PROJECT REFERENCE NO.		SHEET NO.	
BP4.R022		EC-3	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

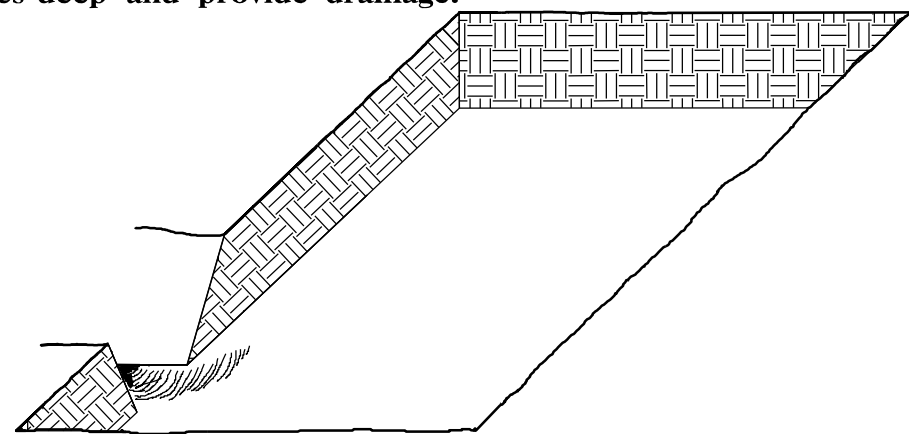
SOIL STABILIZATION TIMEFRAMES

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.

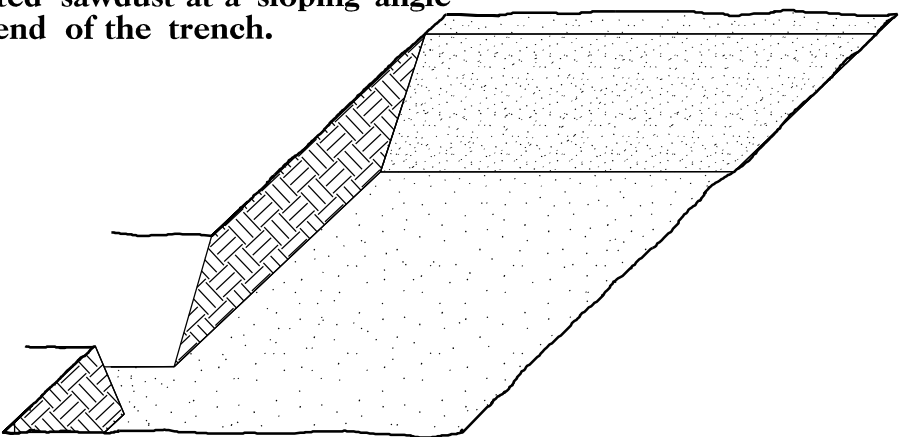
PLANTING DETAILS
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

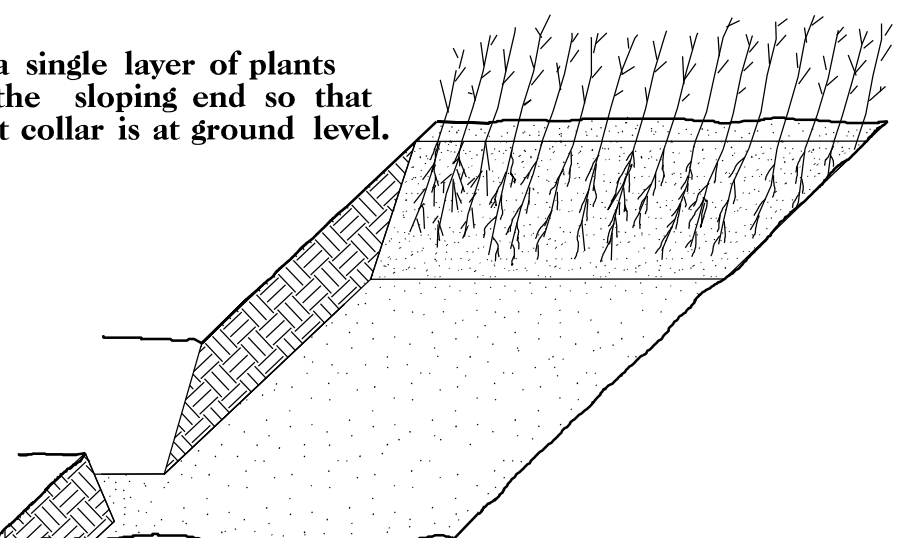
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



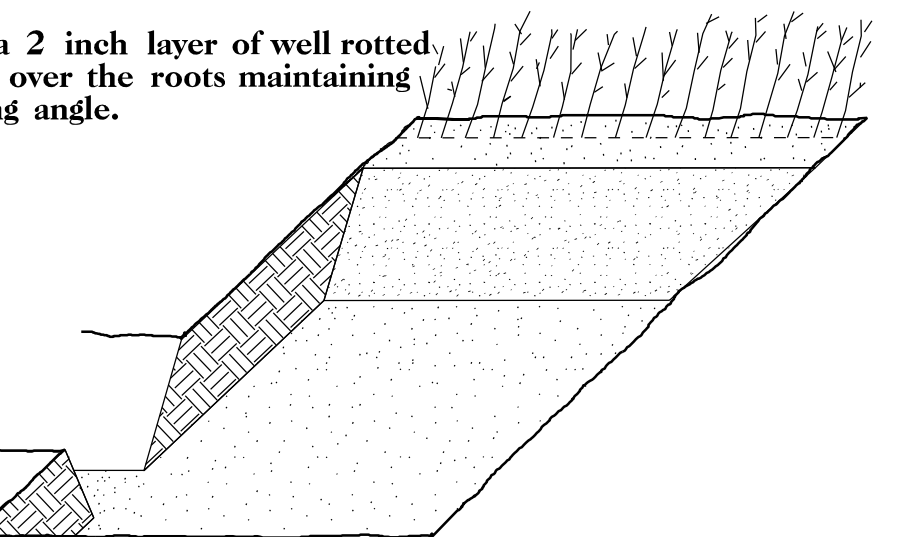
3. Jackfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



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

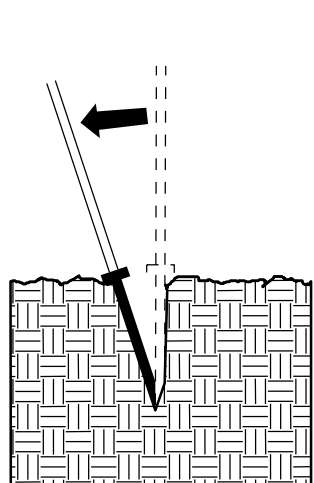


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

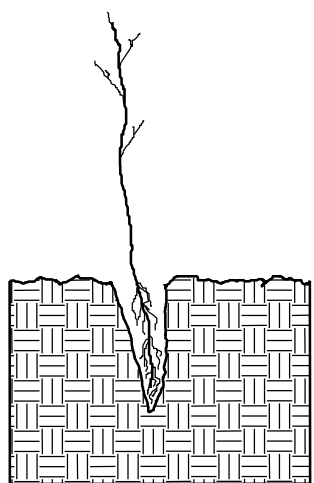


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

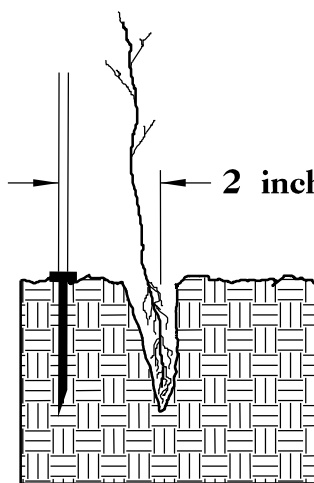
DOUBLE PLANTING METHOD
USING THE K3C PLANTING BAR



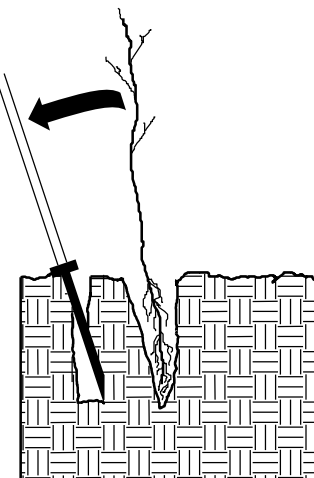
1. Insert planting bar as shown and pull handle toward planter.



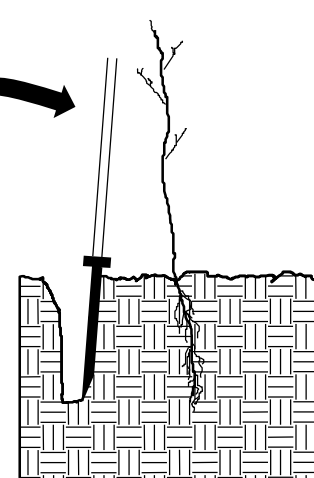
2. Remove planting bar and place seedling at correct depth.



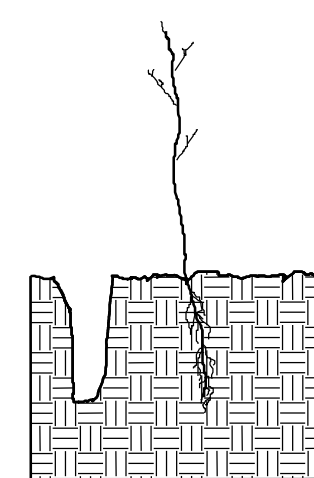
3. Insert planting bar 2 inches toward planter from seedling.



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



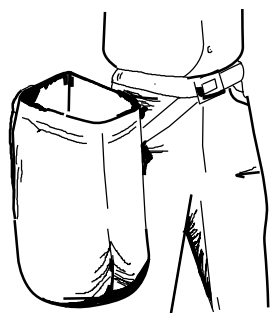
5. Push handle forward firming soil at top.



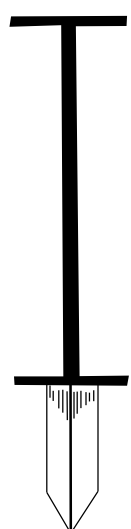
6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

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



K3C PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.



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

REFORESTATION

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

REFORESTATION

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

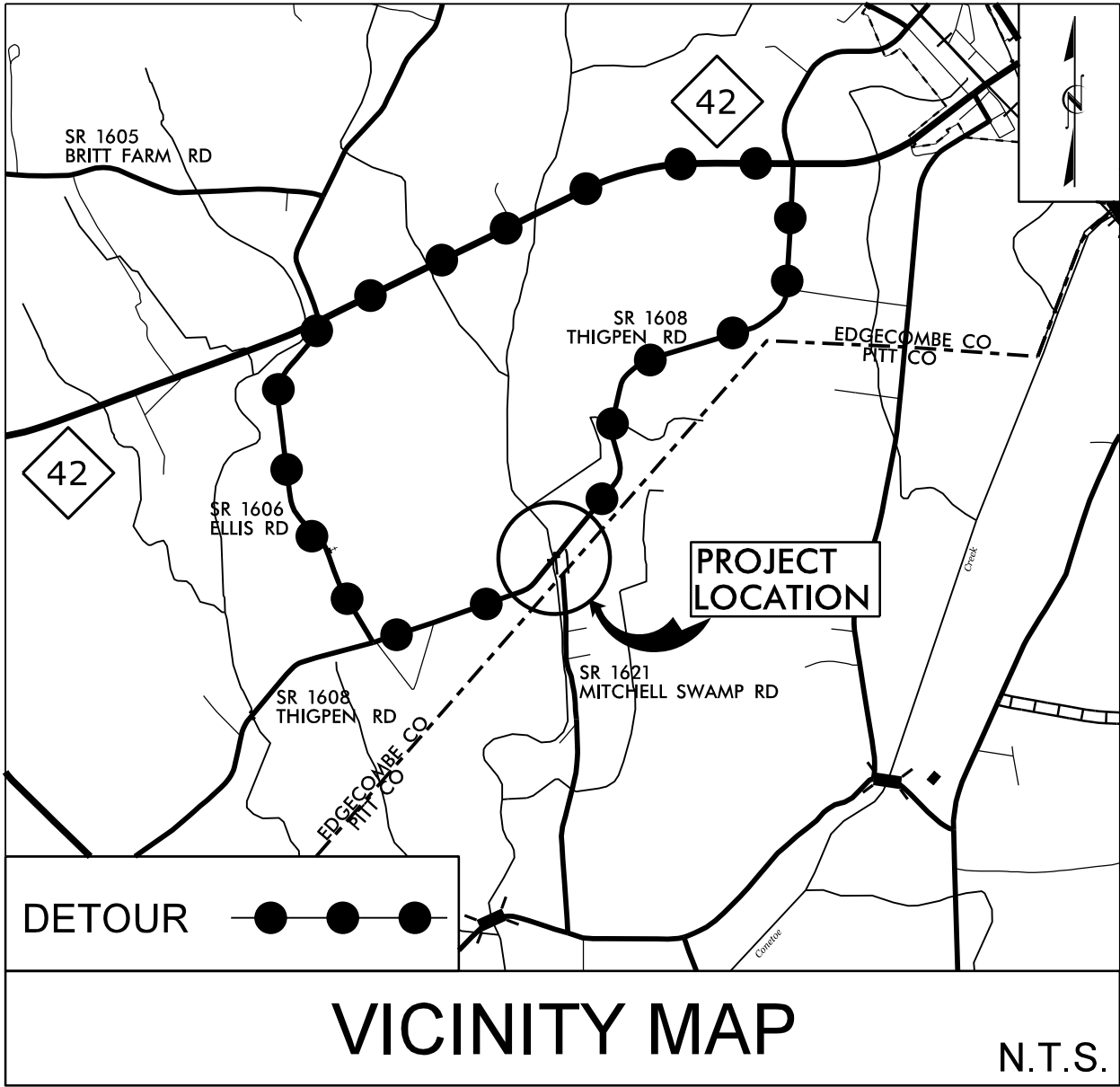
25% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in 3R
25% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in 3R
25% FRAXINUS PENNSYLVANICA	GREEN ASH	12 in - 18 in 3R
25% BETULA NIGRA	RIVER BIRCH	12 in - 18 in 3R

REFORESTATION DETAIL SHEET

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	3P4.R022	RF-1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

TIP PROJECT: BP4.R022

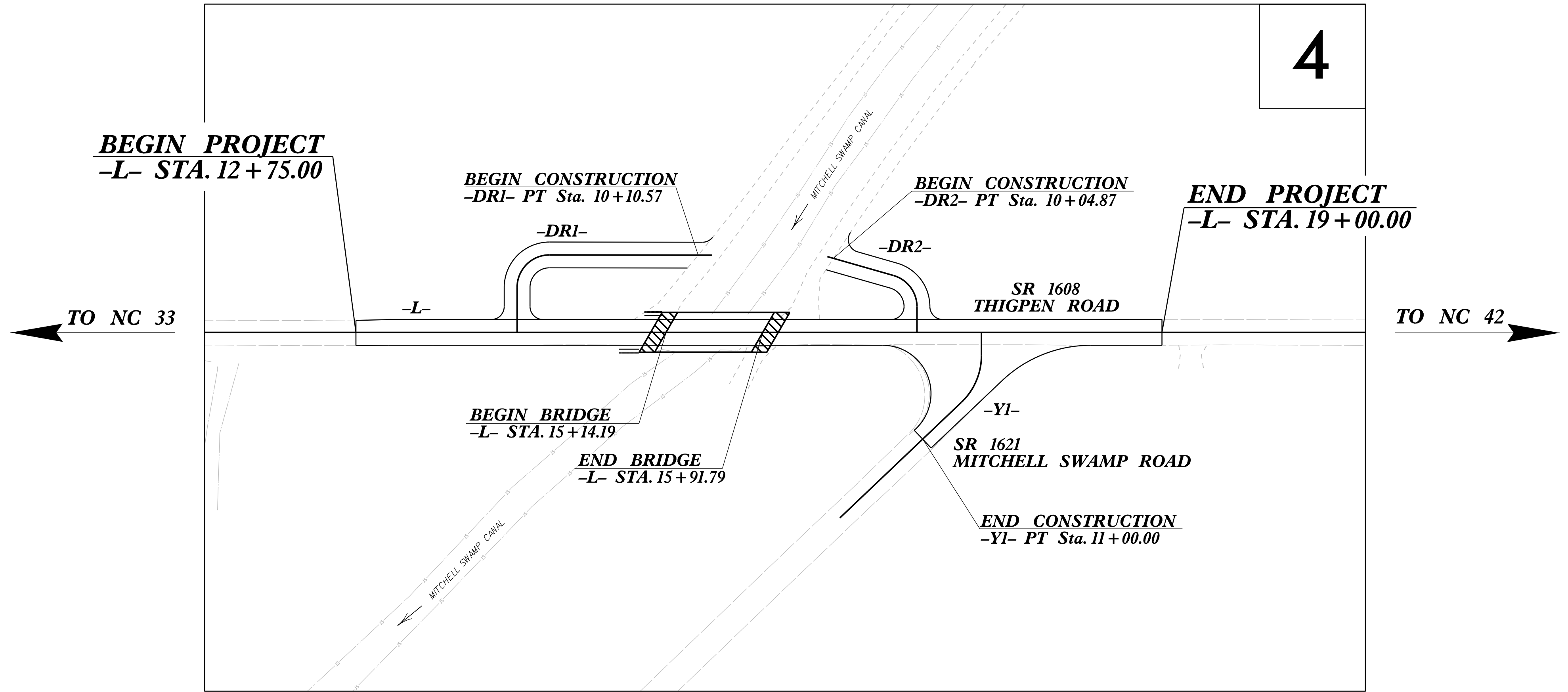
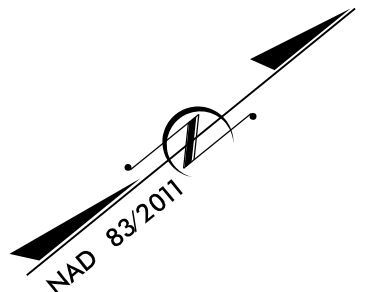


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

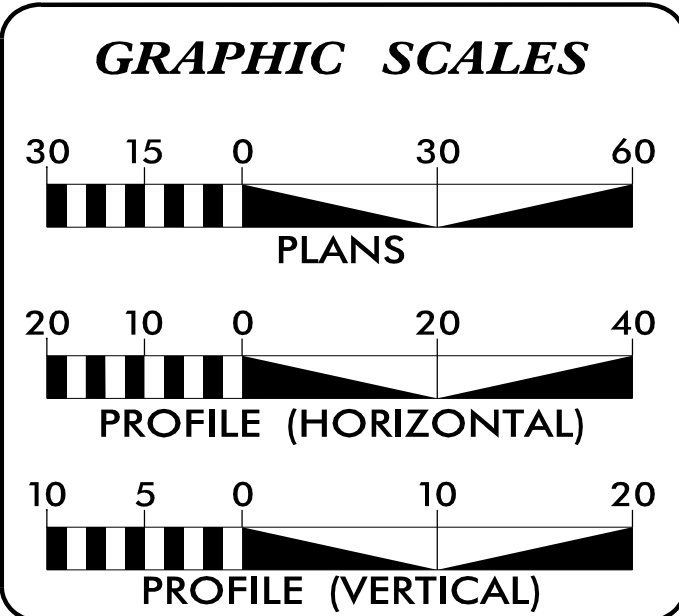
UTILITY CONSTRUCTION PLANS EDGECOMBE COUNTY

**LOCATION: REPLACEMENT OF BRIDGE NO. 88 OVER
MITCHELL SWAMP CANAL ON SR 1608 (THIGPEN ROAD)**

TYPE OF WORK: WATER LINE RELOCATION



DOCUMENT NOT CONSIDERED FINAL
UNTIL ALL SIGNATURES ARE COMPLETED



INDEX OF SHEETS	
SHEET NO.:	DESCRIPTION:
UC-1	TITLE SHEET
UC-2	UTILITY SYMBOLOGY
UC-3	NOTES
UC-3A	DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5	PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

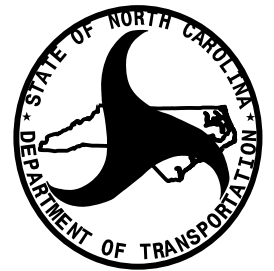
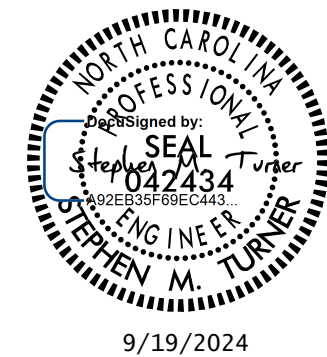
(A) EDGECOMBE COUNTY WATER

PREPARED IN THE OFFICE OF



STEPHEN M. TURNER, PE UTILITIES PROJECT MANAGER
BENJAMIN A. WHITE, PE UTILITIES PROJECT ENGINEER

SEAL



DIVISION OF HIGHWAYS
DIVISION 4
509 WARD BLVD.
WILSON NC 27893
PHONE (252) 640-6400
FAX (252) 234-6174

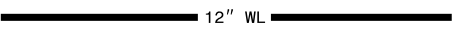
KEITH EASON, PE DIVISION ENGINEER
COREY MCLAMB, PE DIVISION CONSTRUCTION ENGINEER
KYLE A PLEASANT DIVISION UTILITY ENGINEER

STATE OF NORTH CAROLINA

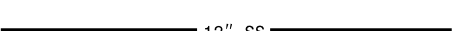
DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

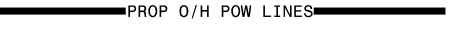
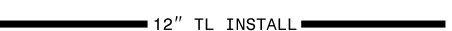
PROPOSED WATER SYMBOLS

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

PROPOSED SEWER SYMBOLS

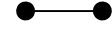
Gravity Sewer Line (Sized as Shown)	
Force Main Sewer Line (Sized as Shown)	
Manhole (Sized per Note)	
Sewer Pump Station	

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

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

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

EXISTING UTILITIES SYMBOLS

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

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

*For Existing Utilities

Utility Line Drawn from Record (Type as Shown) 

Designated Utility Line (Type as Shown) 

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2024.

2. THE EXISTING UTILITIES BELONG TO EDGECOMBE COUNTY. THE CONTACT PERSON IS:

PAUL MOSELEY
UTILITIES DIRECTOR
252-567-9252

IN THE EVENT OF A CONFLICT BETWEEN THE UTILITY OWNER'S TECHNICAL SPECIFICATIONS AND NCDOT STANDARD SPECIFICATIONS/PROJECT SPECIAL PROVISIONS, THE MOST STRINGENT SHALL GOVERN.

3. ALL WATER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER RESOURCES, PUBLIC WATER SUPPLY SECTION. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT QUALITY, DIVISION OF WATER RESOURCES, WATER QUALITY SECTION. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.

4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.

5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPORTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.

7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.

8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.

9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

10. ALL WATER LINE INSTALLED ON THIS PROJECT SHALL MEET THE REQUIREMENTS OF THE RULES GOVERNING PUBLIC WATER SYSTEMS. VERTICAL SEPARATION BETWEEN PROPOSED WATER MAINS AND STORM DRAINAGE SHALL BE A MINIMUM OF 18-INCHES PER RECOMMENDED STANDARDS OF WATER WORKS. ALL PROPOSED WATER LINE SHALL HAVE A MINIMUM COVER OF 36-INCHES. PROPOSED WATER MAINS SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF 10-FEET FROM SEWER MAINS (REF. RULE .0904, RULE.0906). UTILITIES BEING RELOCATED OR INSTALLED AS SHOWN ON THE UTILITY CONSTRUCTION PLANS MUST BE ADJUSTED ACCORDINGLY TO MEET THESE CRITERIA.

PROJECT SPECIFIC NOTES:

1. CONTRACTOR'S ATTENTION IS DIRECTED TO SECTIONS 102, 107, AND 1550 OF THE STANDARD SPECIFICATIONS CONCERNING TRENCHLESS INSTALLATION. IT IS CONTRACTOR'S RESPONSIBILITY TO HAVE BORE DESIGNED AND SEALED BY A LICENSED NORTH CAROLINA PROFESSIONAL ENGINEER. NO DAMAGE IS ALLOWED TO RIVER, WETLANDS, OR BUFFER ZONES.

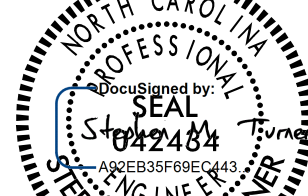
2. IF HDPE PIPE IS INSTALLED BY DIRECTIONAL DRILL. IT SHALL BE FILLED WITH WATER AND NOT BE CONNECTED TO ANY OTHER PIPE OR FITTINGS FOR ONE WEEK FROM THE TIME OF INSTALLATION.

LIST OF STANDARD DRAWINGS

1515.02 FIRE HYDRANT



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.
BP4.R022		UC-3
DESIGNED BY:	SMT	
DRAWN BY:	BAW	
CHECKED BY:	SMT	
APPROVED BY:	SMT	
REVISED:		
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION		UTILITY CONSTRUCTION PLANS ONLY
UTILITIES ENGINEERING SEC. PHONE : (919) 707-6690 FAX : (919) 250-4151		

UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS



**GANNETT
FLEMING**

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.
BP4.R022

SHEET NO.
UC-3A

DESIGNED BY: **SMT**

DRAWN BY: **BAW**

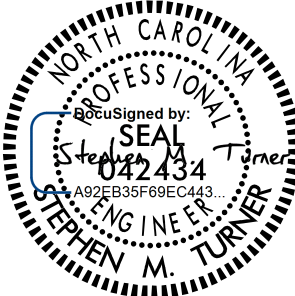
CHECKED BY: **SMT**

APPROVED BY: **SMT**

REVISED:

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION

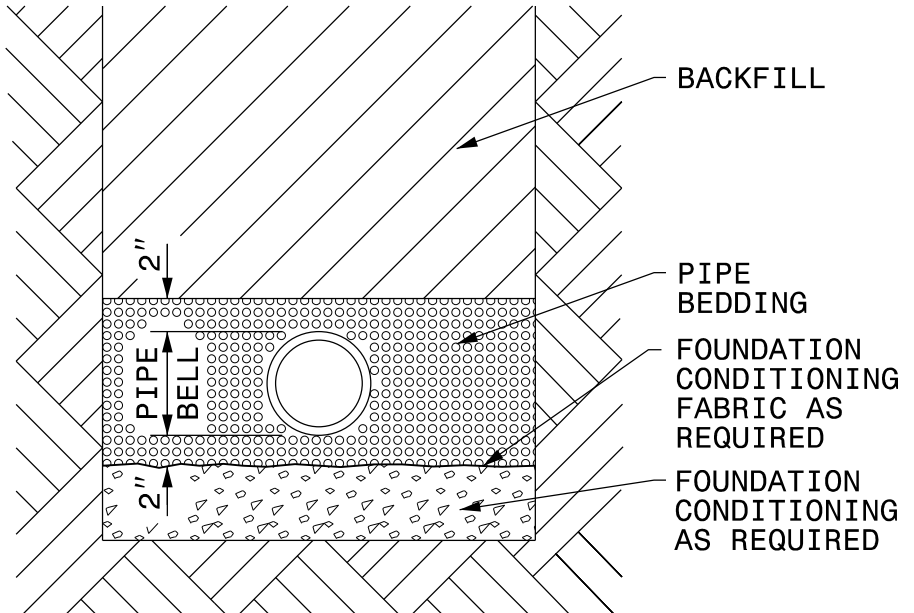
UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151



UTILITY CONSTRUCTION
PLANS ONLY

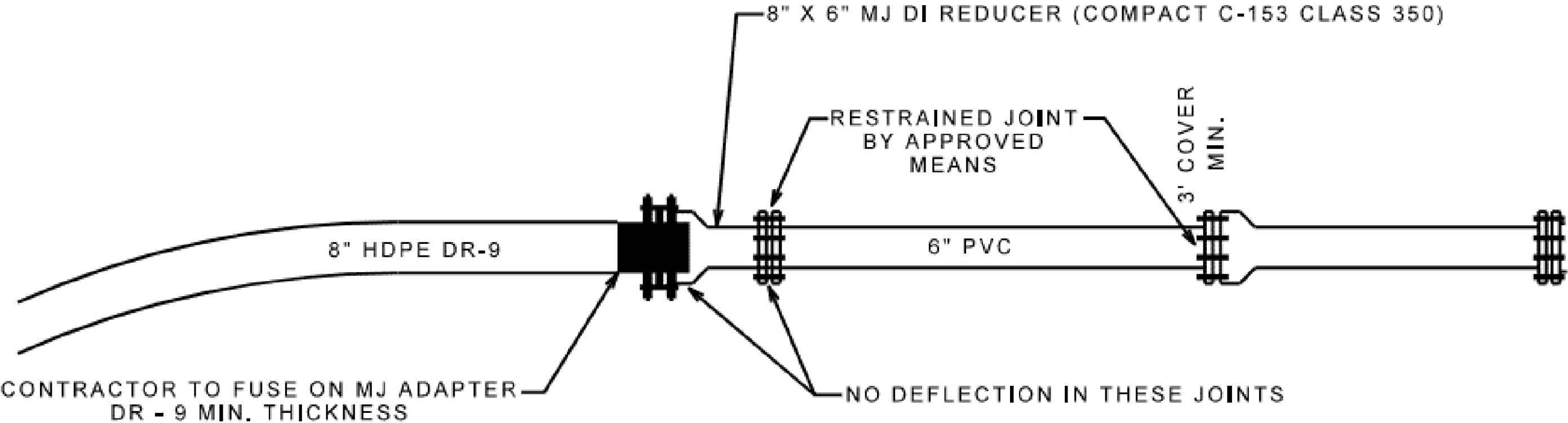
UTILITY CONSTRUCTION

TRENCH DETAIL



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

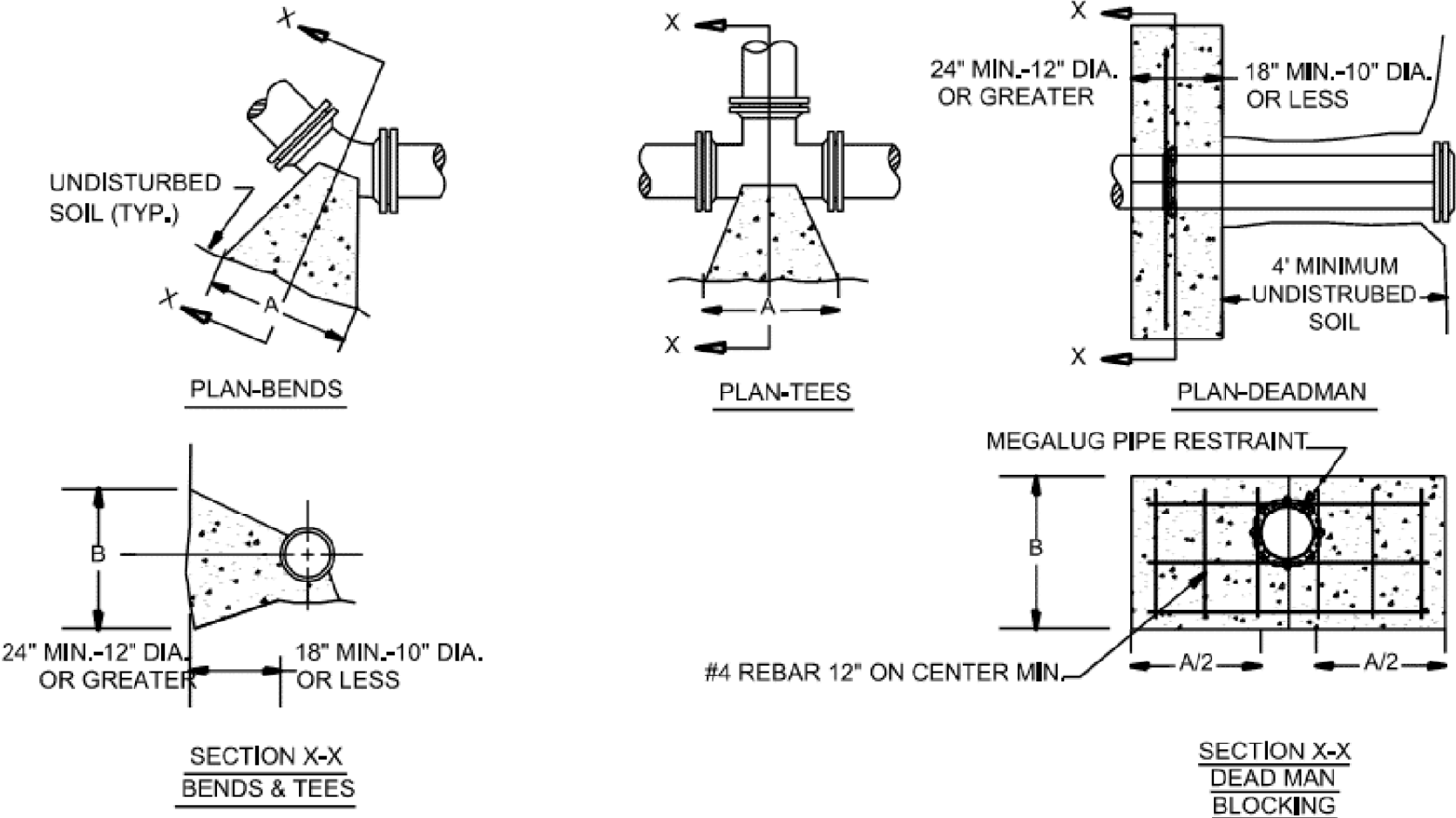
MAXIMUM TRENCH WIDTH AT TOP OF PIPE			
NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)	NOMINAL PIPE SIZE (INCHES)	TRENCH WIDTH (INCHES)
4	28	20	44
6	30	24	48
8	32	30	54
10	34	36	60
12	36	42	66
14	38	48	72
16	40	54	78
18	42		



RESTRAINT DETAIL 8" HDPE X 6" PVC

NOT TO SCALE

THRUST BLOCK SPECIFICATIONS AND DIMENSIONS																
FITTING	AREA (IN^2)	TEES		AREA OF THRUST BLOCK (FT^2)	90° BENDS AND DEAD MAN (FT)		AREA OF THRUST BLOCK (FT^2)	45° BENDS AND "Y"'S (FT)		AREA OF THRUST BLOCK (FT^2)	22.5° BENDS (FT)		AREA OF THRUST BLOCK (FT^2)	11.25° BENDS (FT)		AREA OF THRUST BLOCK (FT^2)
		A (FT)	B (FT)		A (FT)	B (FT)		A (FT)	B (FT)		A (FT)	B (FT)				
SIZES (IN)					A (FT)	B (FT)		A (FT)	B (FT)		A (FT)	B (FT)		A (FT)	B (FT)	
6	28.3	2.1	1.0	2.1	2.4	1.2	3.0	1.8	0.9	1.6	1.3	0.6	0.8	1.3	0.6	0.8
8	50.3	2.7	1.4	3.8	3.3	1.6	5.3	2.4	1.2	2.9	1.7	0.9	1.5	1.7	0.9	1.5
10	78.5	3.4	1.7	5.9	4.1	2.0	8.3	3.0	1.5	4.5	2.1	1.1	2.3	2.1	1.1	2.3
12	113.1	4.1	2.1	8.5	4.9	2.4	12.0	3.6	1.8	6.5	2.6	1.3	3.3	2.6	1.3	3.3
14	153.9	4.8	2.4	11.5	5.7	2.9	16.3	4.2	2.1	8.8	3.0	1.5	4.5	3.0	1.5	4.5
16	201.1	5.5	2.7	15.1	7.1	3.0	21.3	4.8	2.4	11.5	3.4	1.7	5.9	3.4	1.7	5.9
18	254.5	6.4	3.0	19.1	18.0	CY	27.0	5.4	2.7	14.6	3.9	1.9	7.4	3.9	1.9	7.4
20	314.2	7.9	3.0	23.6	22.2	CY	33.3	6.0	3.0	18.0	4.3	2.1	9.2	4.3	2.1	9.2
24	452.4	22	CY	33.9	32.0	CY	48.0	17.3	CY	26.0	5.1	2.6	13.2	5.1	2.6	13.2



THRUST BLOCKING DETAIL

- NOTES:
1. BASED ON 200 PSI STATIC PRESSURE PLUS AWWA WATER HAMMER ALLOWANCE ASSUMING 4000 PSF BEARING CAPACITY OF SOIL
 2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
 3. THRUST BLOCKS TO BE USED AT ALL LINES OPERATING UNDER PRESSURE.
 4. THESE DETAILS IN NO WAY LIMIT THE SIZE OR LOCATION OF ADDITIONAL BLOCKING WHEN REQUESTED BY THE COUNTY ENGINEER.
 5. DEPTH FROM GROUND SURFACE TO TOP OF BLOCKING SHALL BE GREATER THAN HEIGHT OF BLOCKING
 6. ALL FITTINGS, VALVES, ETC. SHALL BE WRAPPED WITH VISQUEEN OR POLYWRAP BEFORE CONCRETE IS PLACED, TO PREVENT CORROSION OR BONDING OF THE CONCRETE TO THE BOLTS, FITTINGS, OR PIPE.
 7. WIDTH OF THE THRUST BLOCK SHOULD BE AT LEAST TWO TIMES THE HEIGHT OF THE THRUST BLOCK.
 8. CUBIC YARDS OF CONCRETE IS SPECIFIED TO OPPOSE THE THRUST FORCE WHEN DIMENSION "A" EXCEEDS 8 FEET
 9. ALTHOUGH THE BEARING STRENGTHS USED IN THIS TABLE HAVE BEEN USED SUCCESSFULLY IN THE DESIGN OF THRUST BLOCKS AND ARE CONSIDERED TO BE CONSERVATIVE, THEIR ACCURACY IS TOTALLY DEPENDANT ON ACCURATE SOIL IDENTIFICATION AND EVALUATION. THE ULTIMATE RESPONSIBILITY FOR SELECTING THE PROPER BEARING STRENGTH OF A PARTICULAR SOIL TYPE RESTS WITH THE DESIGN ENGINEER.

5/14/99

9/19/2024
3:\p\01\white\dl512588\BP4.R022.ut.rd\04_UC04_psh.dgn
041116

-DRI-	-DR2-	-YI-
PI Sta 11+50.97 $\Delta = 90^{\circ} 04' 41.3"$ (LT) $D = 229' 10" 59.2"$ $L = 39.30'$ $T = 25.03'$ $R = 25.00'$ RO = SEE PLANS SE = SEE PLANS	PI Sta 10+72.24 $\Delta = 74^{\circ} 04' 20.3"$ (RT) $D = 229' 10" 59.2"$ $L = 32.32'$ $T = 18.86'$ $R = 25.00'$ RO = SEE PLANS SE = SEE PLANS	PI Sta 10+39.52 $\Delta = 46^{\circ} 26' 22.3"$ (RT) $D = 114' 35' 29.6"$ $L = 40.53'$ $T = 21.45'$ $R = 50.00'$ RO = SEE PLANS SE = SEE PLANS

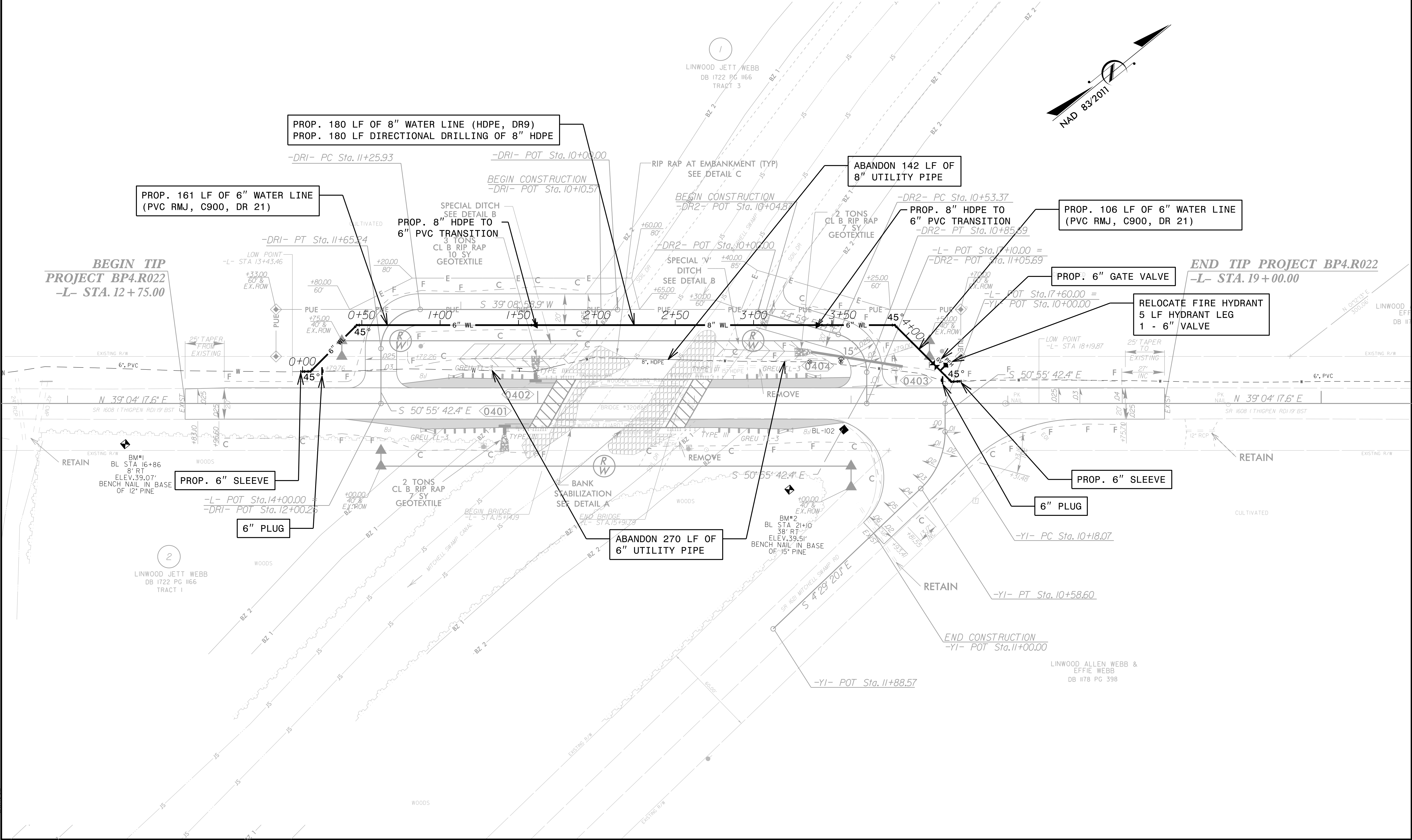


One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
BP4.R022	UC - 4
DESIGNED BY: SMT	
DRAWN BY: BAW	
CHECKED BY: SMT	
APPROVED BY: SMT	
REVISED:	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITY ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION



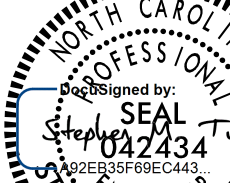
8/17/99

bwhite
9/19/2024
c:\pwworking\gfpw01\white\dl512588\BP4.R022_ut_UC05_pfl_psh.dgn

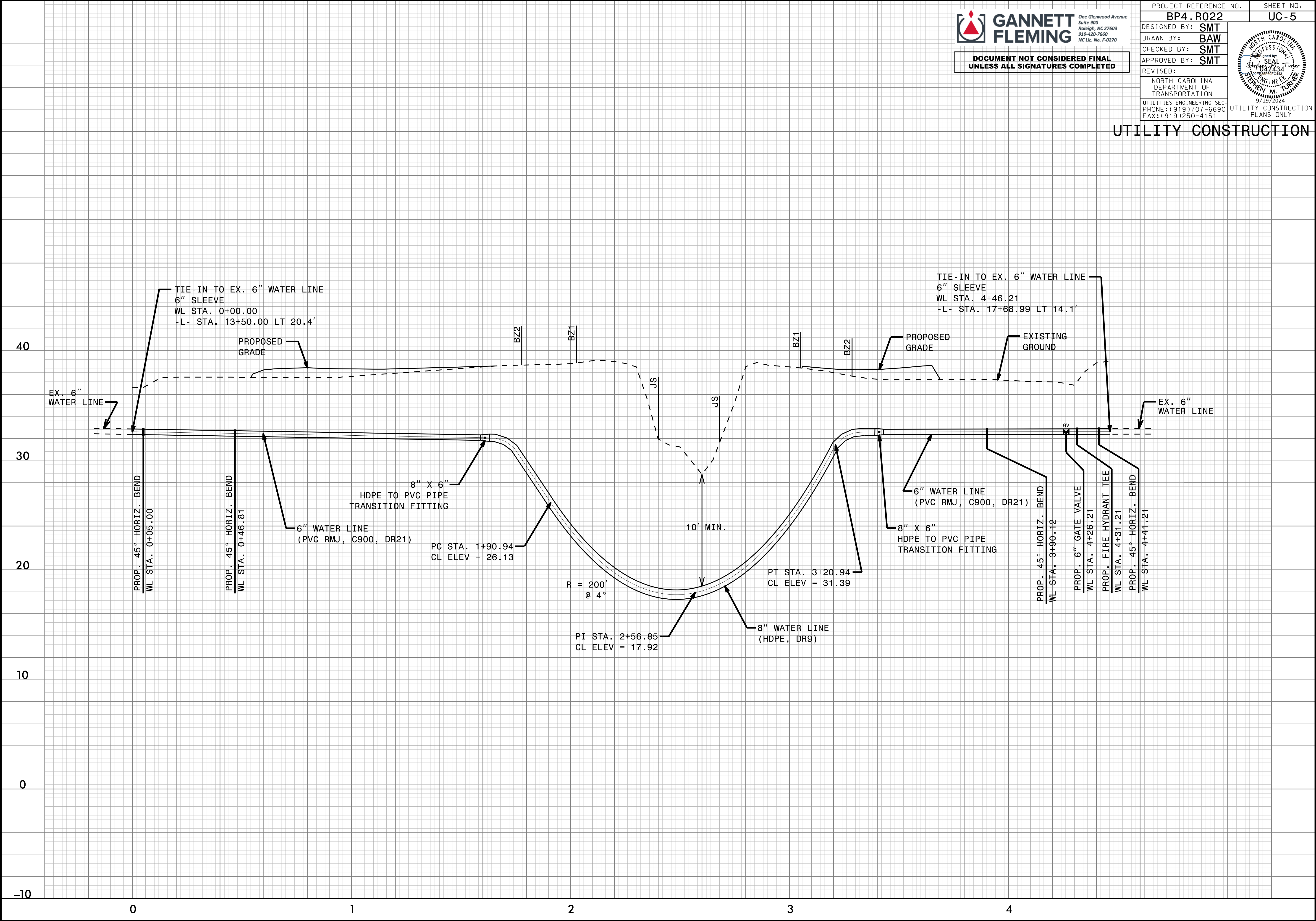


One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.		SHEET NO.	
BP4.R022		UC-5	
DESIGNED BY: SMT			
DRAWN BY: BAW			
CHECKED BY: SMT			
APPROVED BY: SMT			
REVISED:		NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		9/19/2024 UTILITY CONSTRUCTION PLANS ONLY	

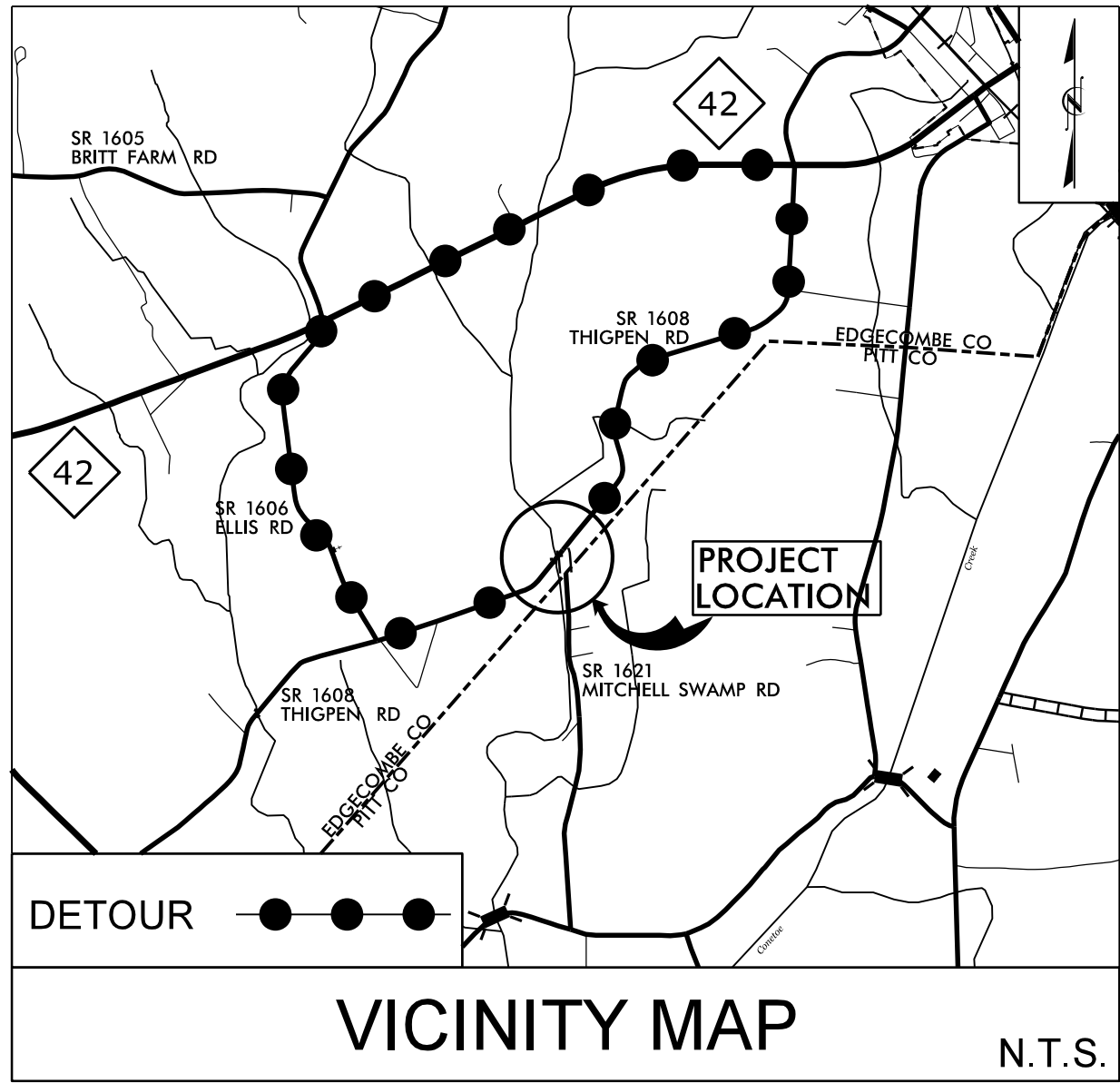
UTILITY CONSTRUCTION



19-SEP-2024 16:36 C:\Users\swaddock\Desktop\UB0_Upload to S drive\BP4.R022\320088_Microstation Files_ROW Plans\SUBMIT\TSH\320088_DDC4_Ub0+sh.dgn swaddock AT DIV04-350182L

TIP PROJECT: BP4.R022

CONTRACT:

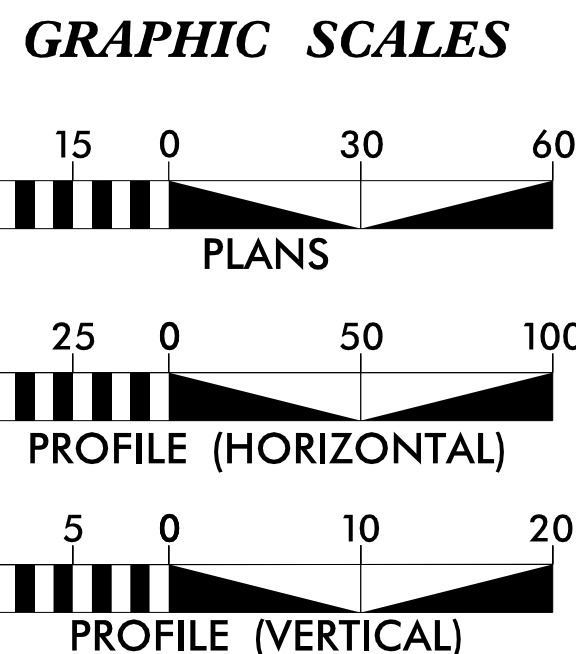
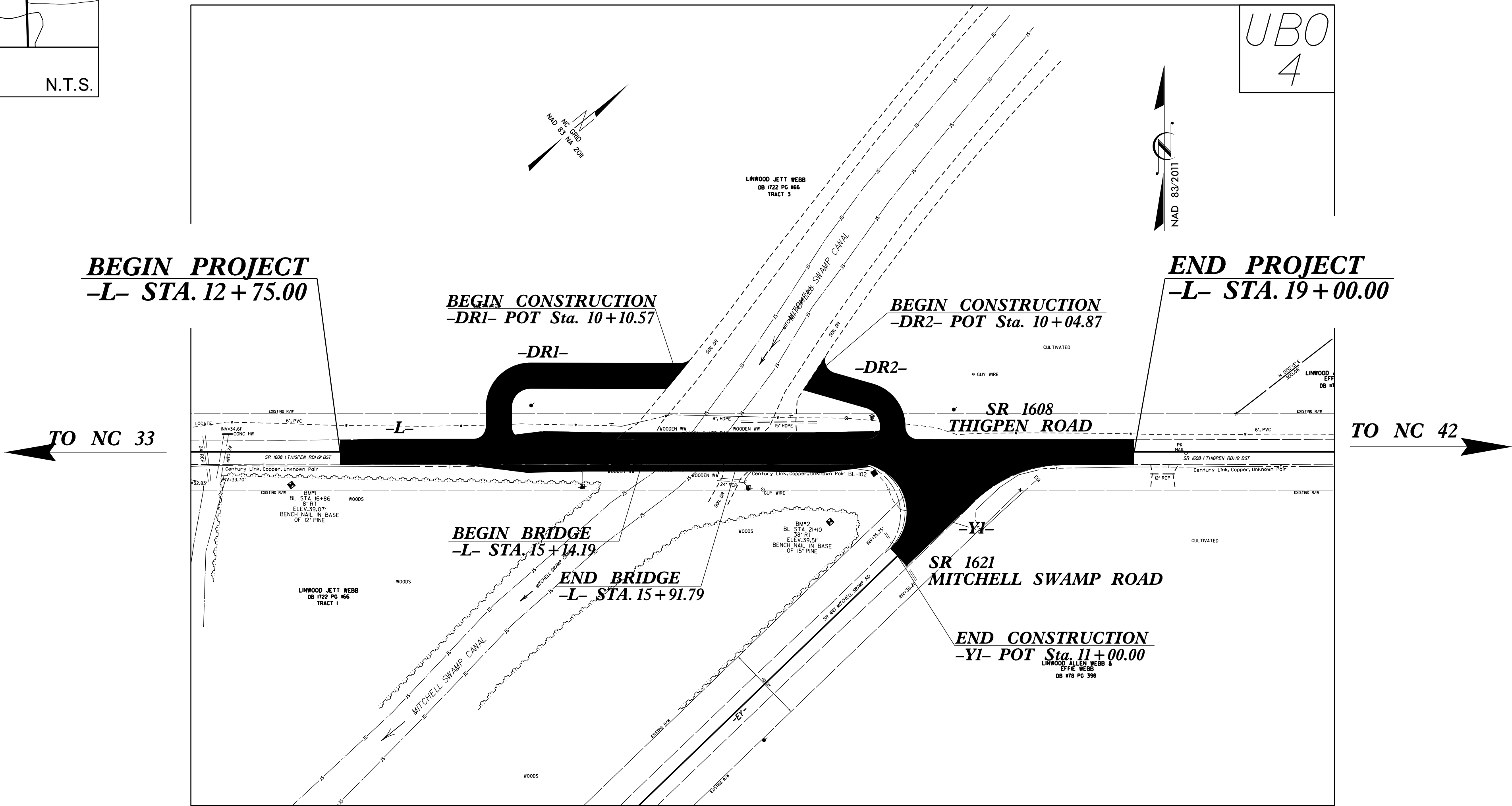


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

UTILITIES BY OTHERS PLANS EDGECOMBE COUNTY

LOCATION: REPLACEMENT OF BRIDGE NO.88 OVER
MITCHELL SWAMP CANAL ON SR 1608 (THIGPEN ROAD)

TYPE OF WORK: UTILITY BY OTHERS

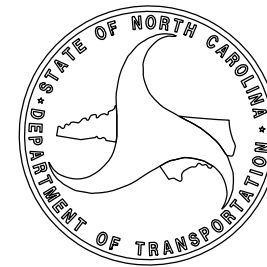


INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
UBO-01	TITLE SHEET
UBO-04	PLAN SHEETS

UTILITY OWNERS WITH CONFLICTS	
A.	EDGECOMBE MARTIN COUNTY (EMC) – POWER
B.	BRIGHTSPEED – TELECOMMUNICATIONS

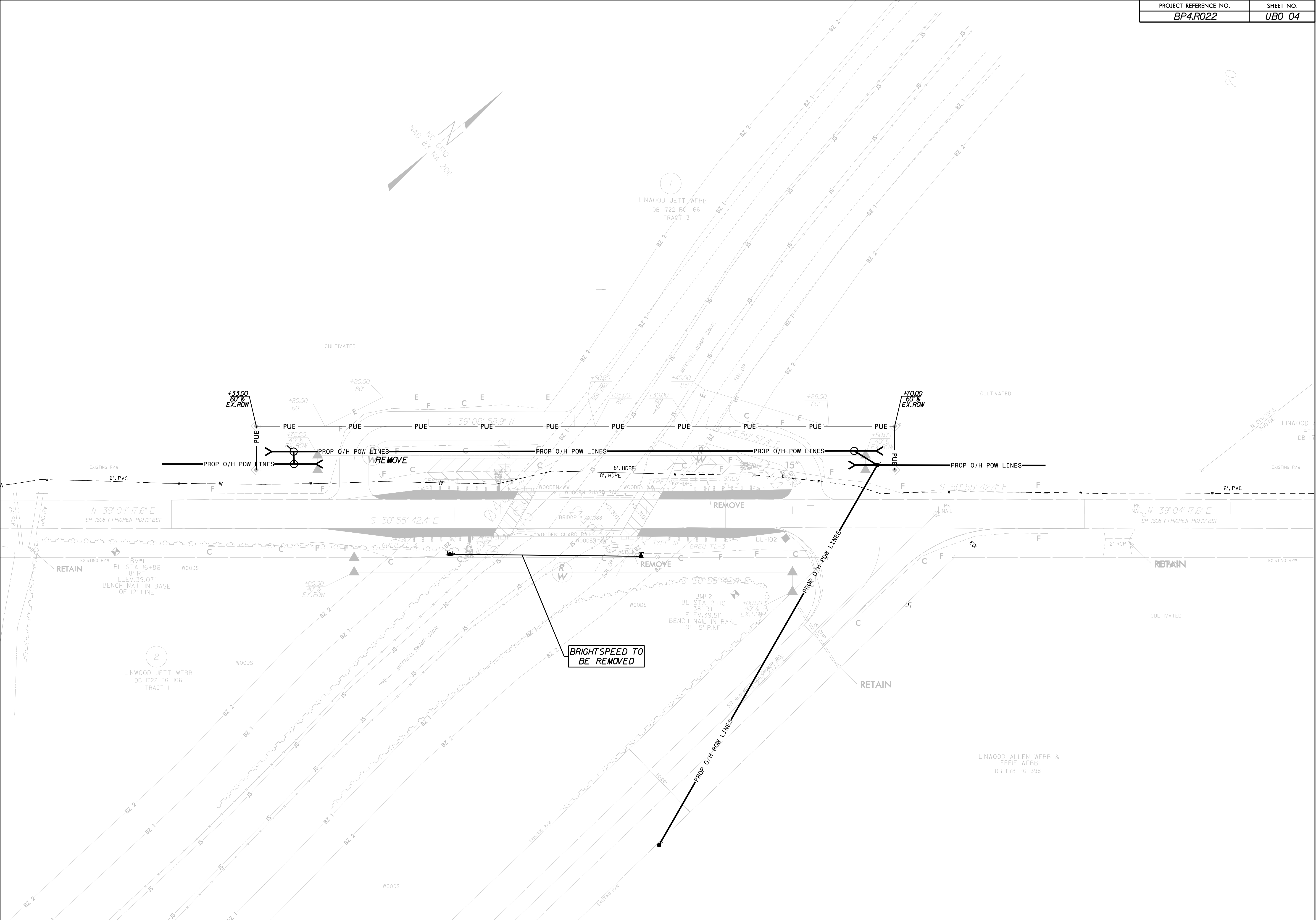
Prepared in the Office of:
DIVISION OF HIGHWAYS
Division 4
509 Ward Blvd.
Wilson, NC 27895

KYLE PLEASANT
PROJECT UTILITIES ENGINEER



DIVISION OF HIGHWAYS
DIVISION 4
509 Ward Blvd. Wilson NC 27895

ADDISON GAINES, PE
DIVISION CONTACT #1



CROSS SECTION INDEX

CROSS SECTION INDEX
CROSS SECTION SUMMARY

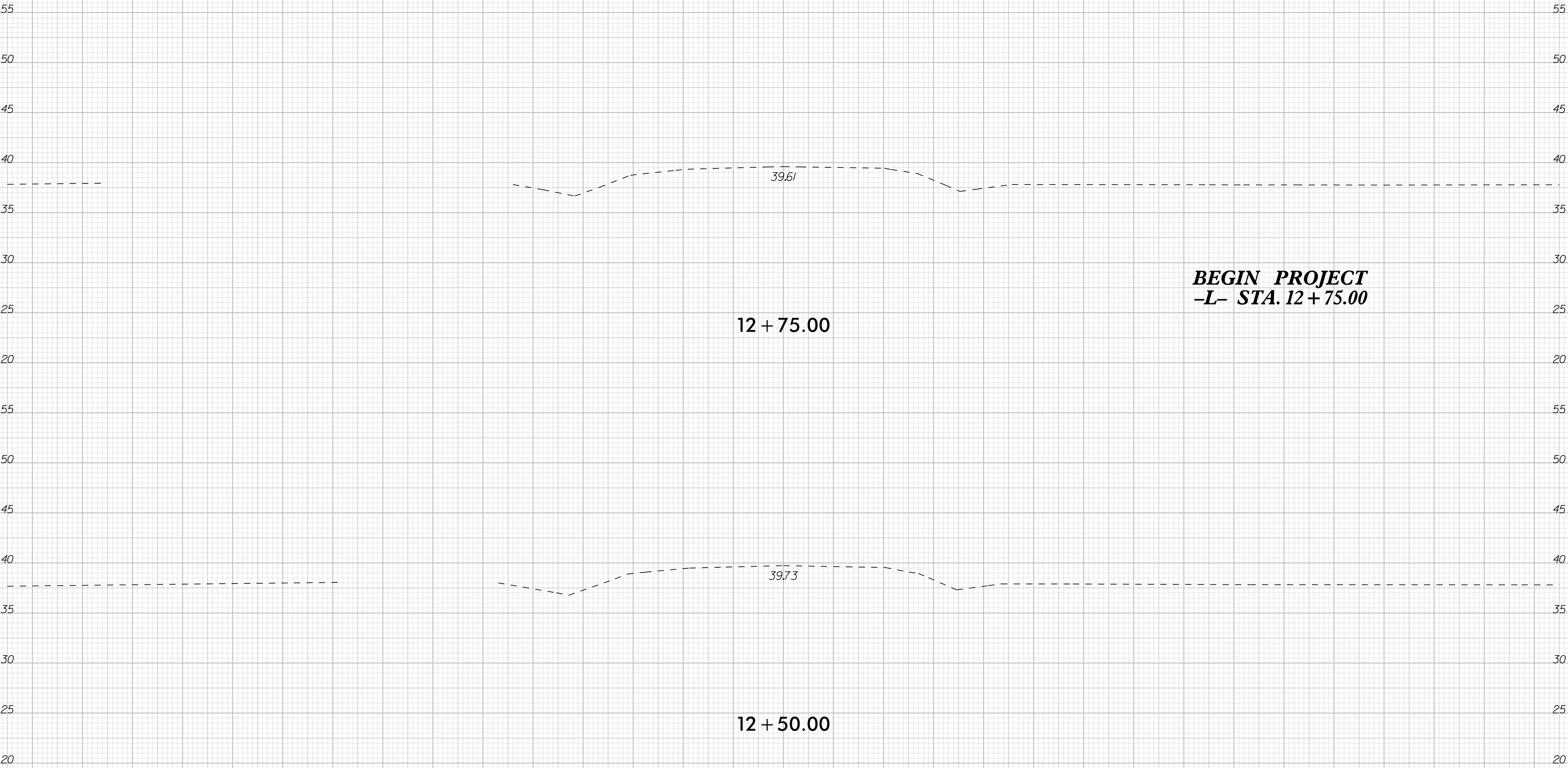
X-1
X-1A

<u>ROADWAY</u>	<u>STATION</u>	<u>TO</u>	<u>STATION</u>	<u>SHEET NO.</u>
-L-	12 + 75.00		19 + 00.00	X-2 TO X-15
-DR1-	10 + 00.00		11 + 50.00	X-15 TO X-16
-DR2-	10 + 00.00		11 + 00.00	X-17
-Y1-	10 + 00.00		11 + 00.00	X-18 TO X-19

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-2

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



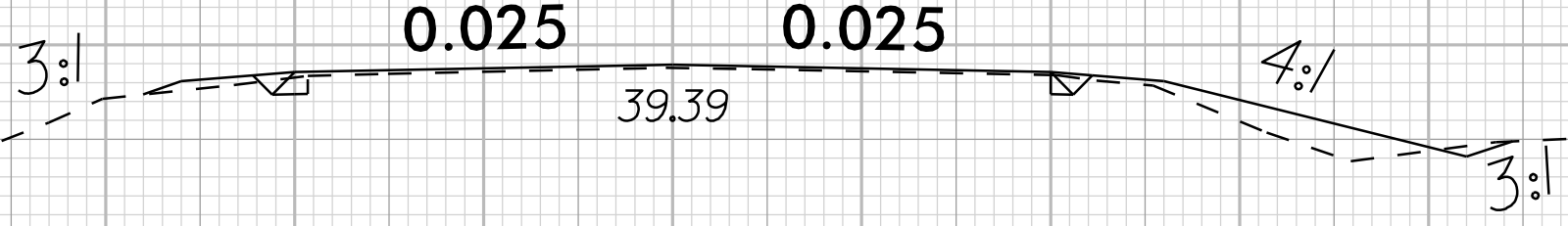
8/14/2024
c:\pwworking\gfpw0\emorrisonagfnet.com\d512474\320088_rdy_xpl.L.dgn
emorrison

6/23/16

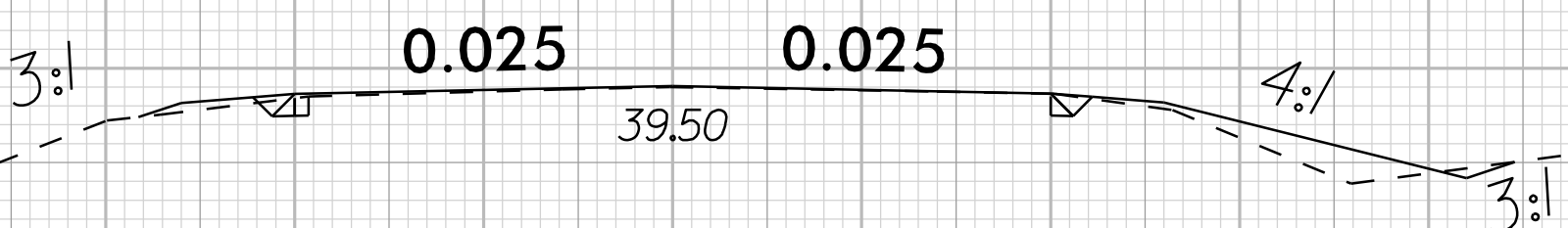
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-3

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

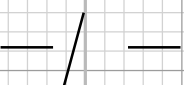
55
50
45
40
35
30
25
20
55
50
45
40
35
30
25
20



13 + 25.00



13 + 00.00



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

6/23/16

02.55 02.55 02.55 02.55 02.55	PROJ. REFERENCE NO.		SHEET NO.	
	BP4.R022		X-4	

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
50
45
40
35
30
25
20
55
50
45
40
35
30
25
20

3:1 0.025 0.025 3:1

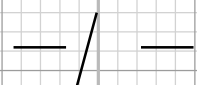
39.33

13 + 75.00

3:1 0.025 0.025 4:1 3:1

39.34

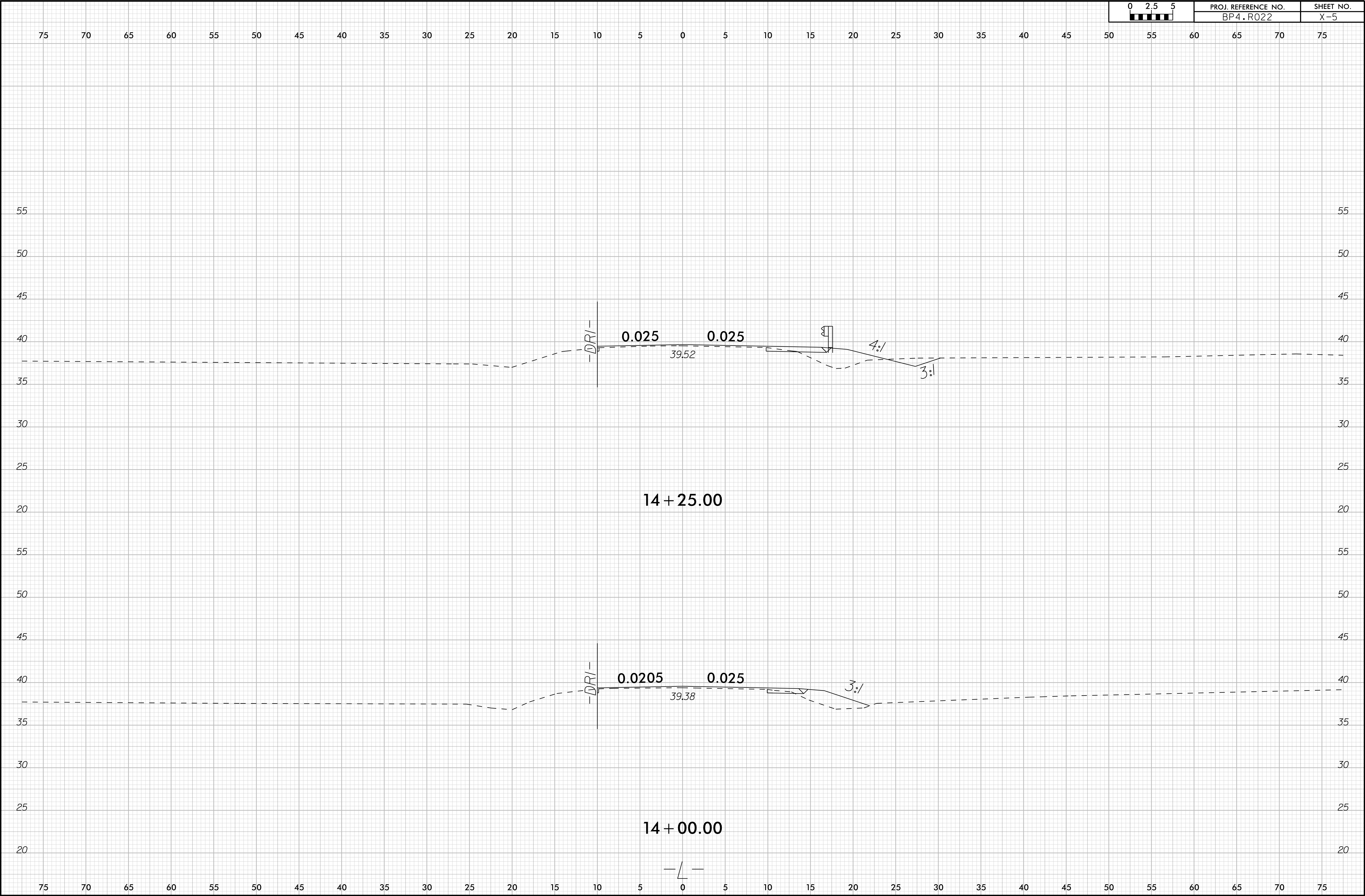
13 + 50.00



8/14/2024
c:\pwworking\gfbw01\emorrison\gfbw01\320088_rdy_xpl.Ldgn
emorrison

6/23/16

02.55 02.55	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-5



6/23/16

02.55 02.55 02.55 02.55 02.55	PROJ. REFERENCE NO.		SHEET NO.	
	BP4.R022		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

55

50

45

40

35

30

25

20

55

50

45

40

35

30

25

20

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

0.025 0.0205

39.82

3:1 37.16 4:1

3:1 3:1

14 + 75.00

0.025 0.025

39.67

3:1 37.23 4:1

4:1 3:1

14 + 50.00

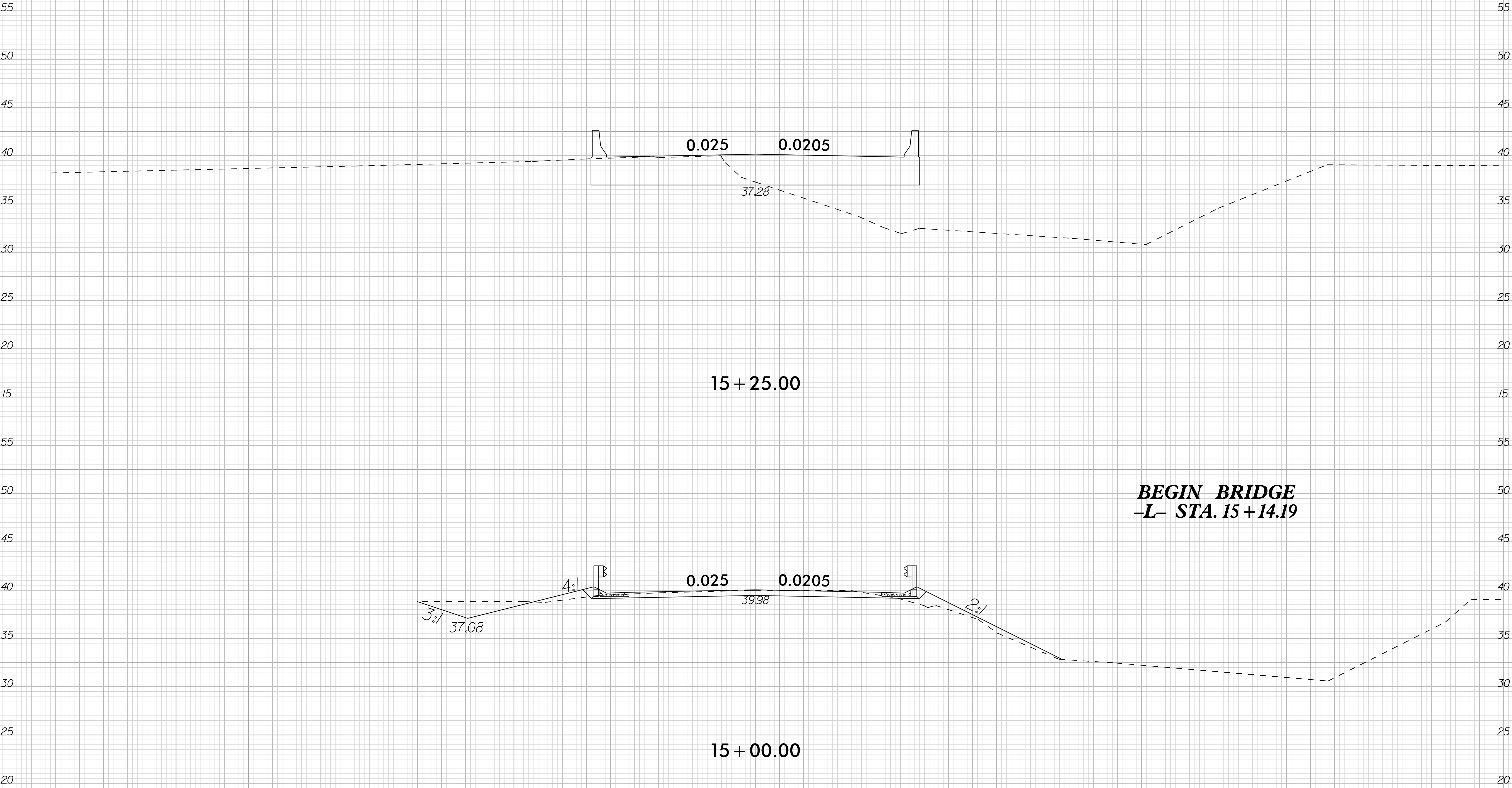
— / —

8/14/2024
c:\pwworking\gfbw01\emorrison\gfbw01\emorrison\gfbw01\320088_rdy_xpl.Ldgn
emorrison

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-7

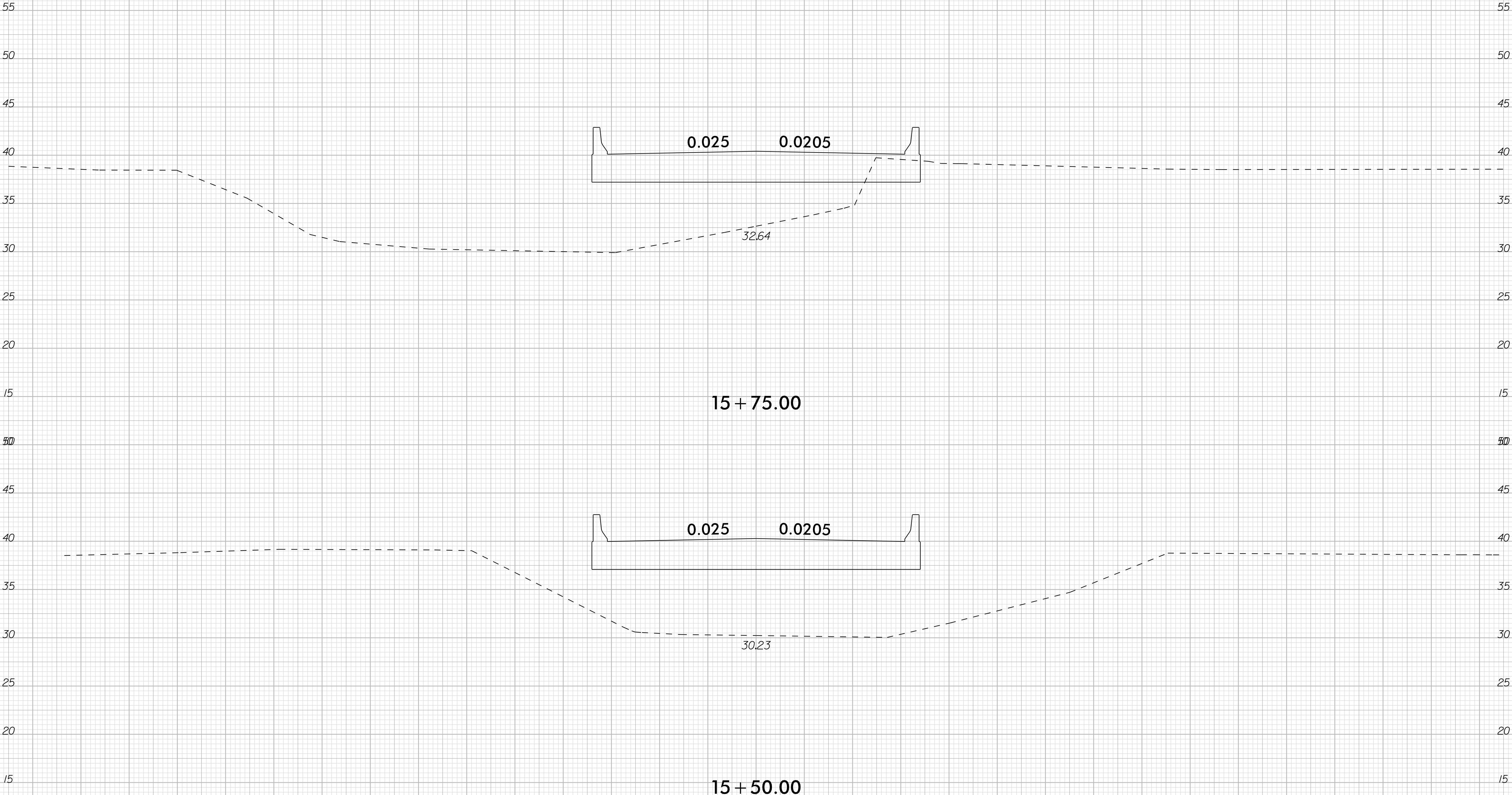
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



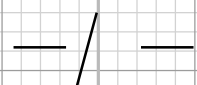
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-8

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

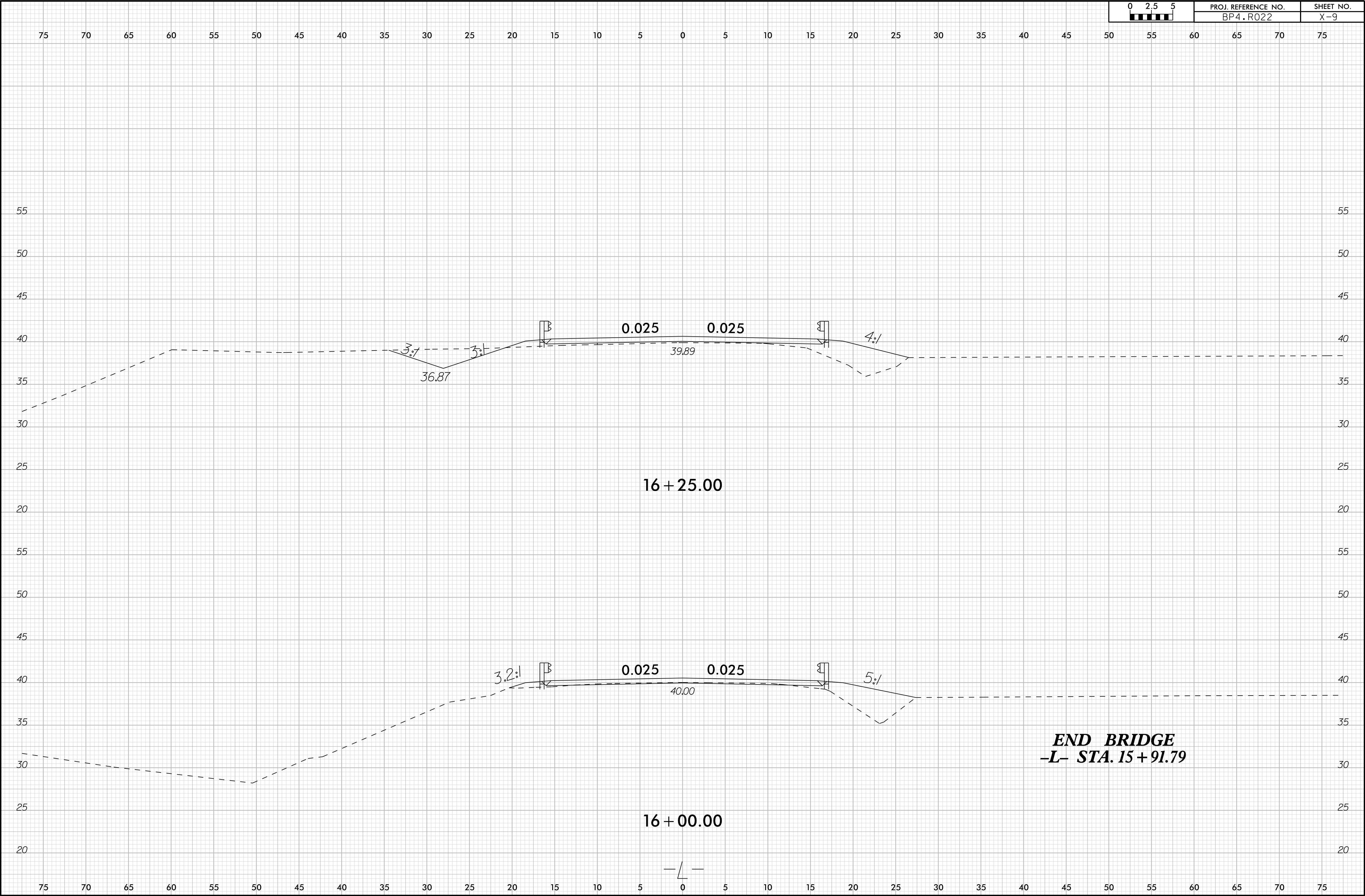


8/14/2024
c:\pwworking\gfbw01\emorrison\gfbw01\320088_rdu_xpl.dgn
emorrison



6/23/16

02.55 02.55	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-9



6/23/16

02.55 02.55 02.55 02.55 02.55	PROJ. REFERENCE NO.		SHEET NO.	
	BP4.R022		X-10	

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

50

45

40

35

30

25

20

55

50

45

40

35

30

25

20

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

0.025 0.025

3:1

4.5:1

39.65

16 + 75.00

0.025 0.025

3:1

3.3:1

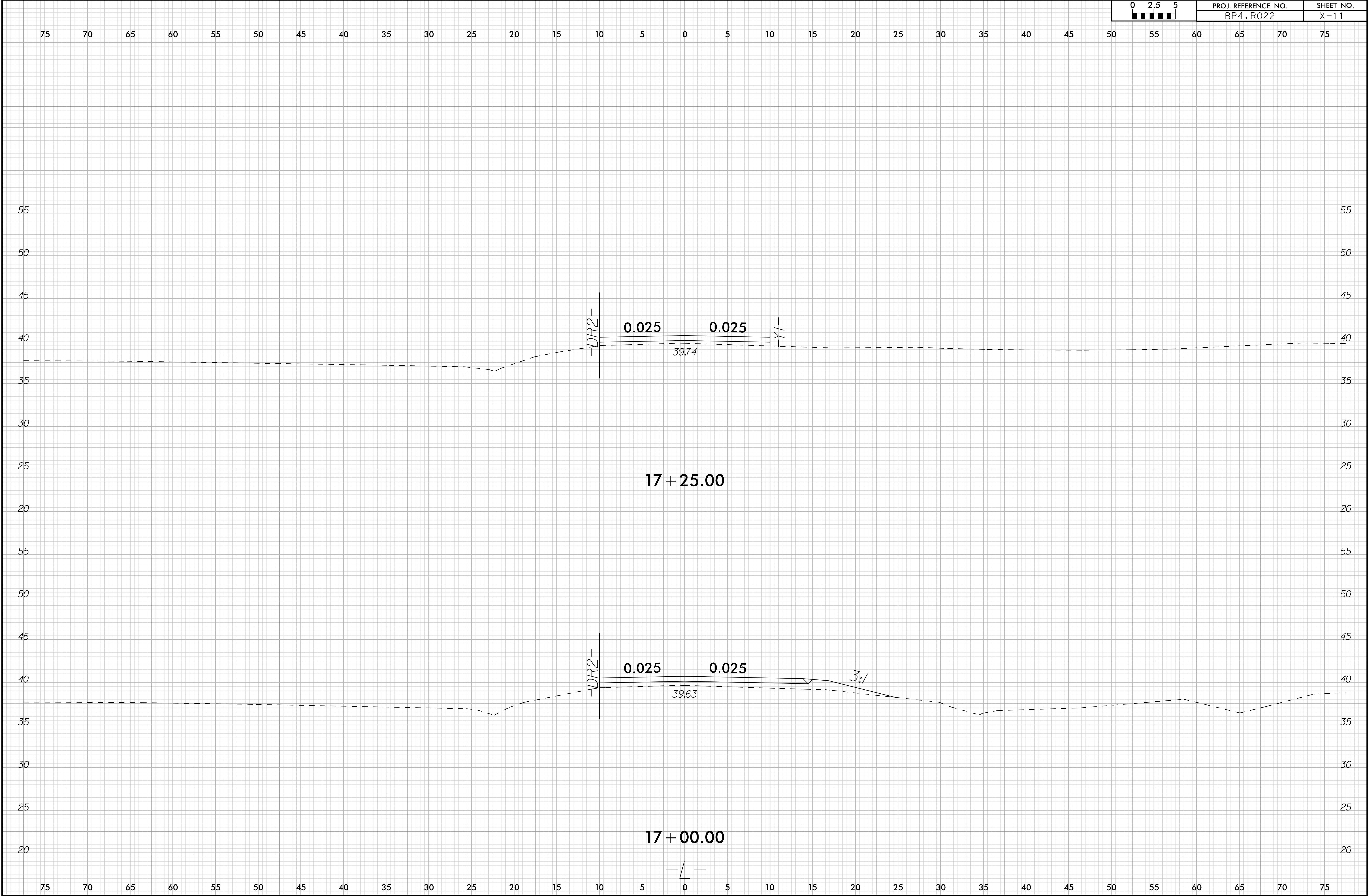
36.95

39.77

16 + 50.00

—/—

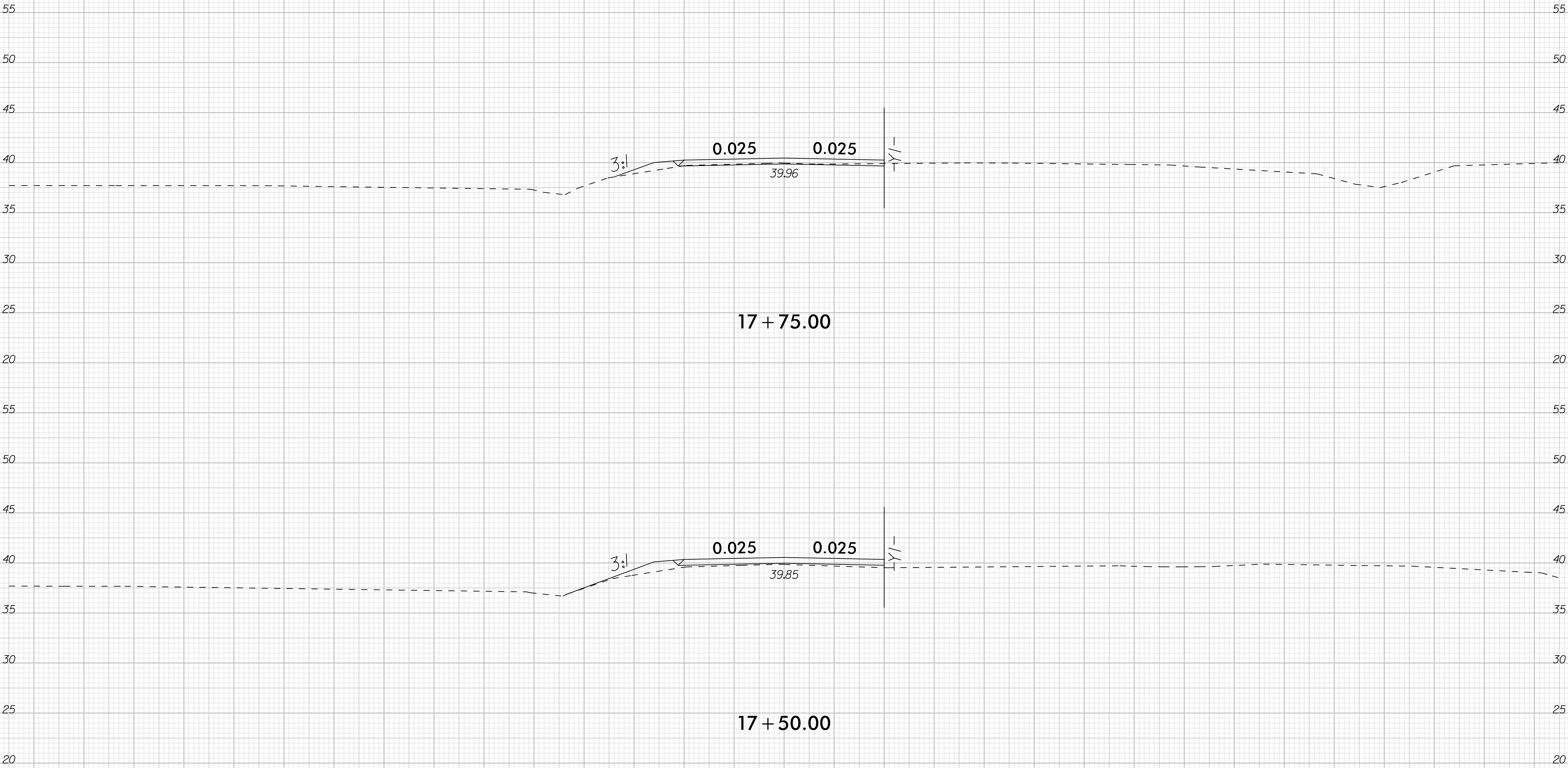
8/14/2024
c:\pwworking\gfbw01\emorrison\gfbw01\emorrison\gfbw01\1512474\320088_rdy_xpl.dgn
emorrison



6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-12

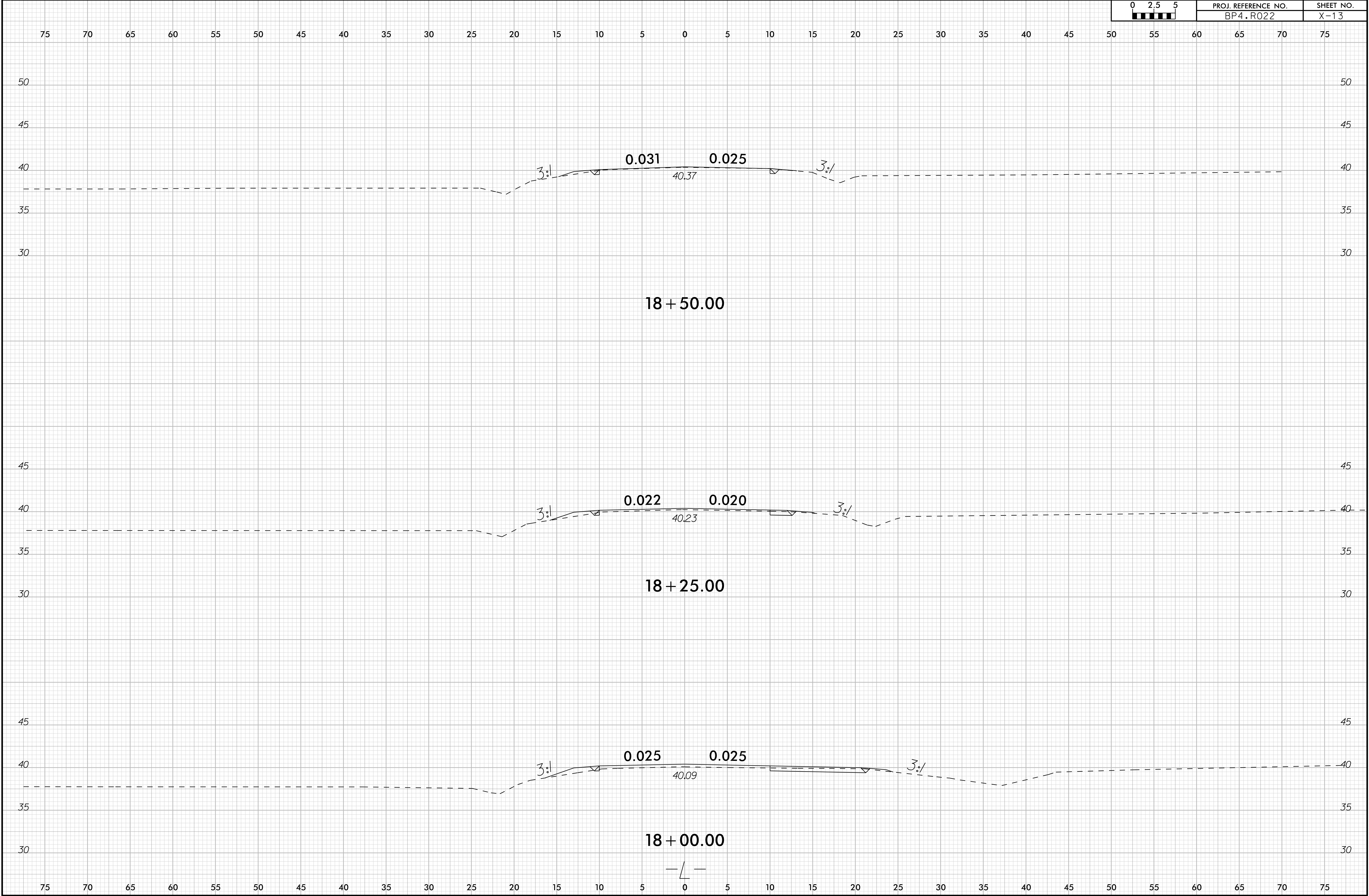
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

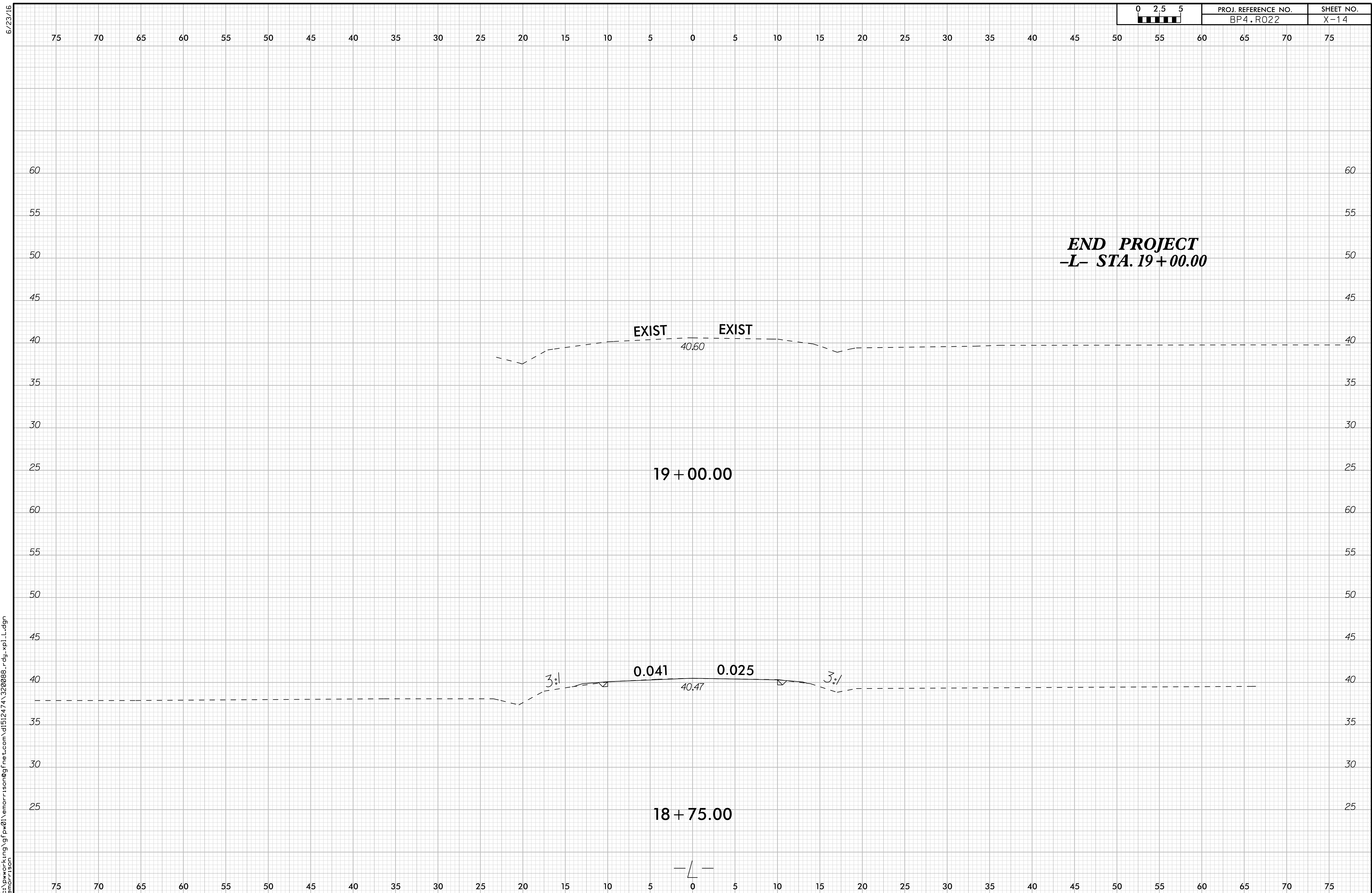


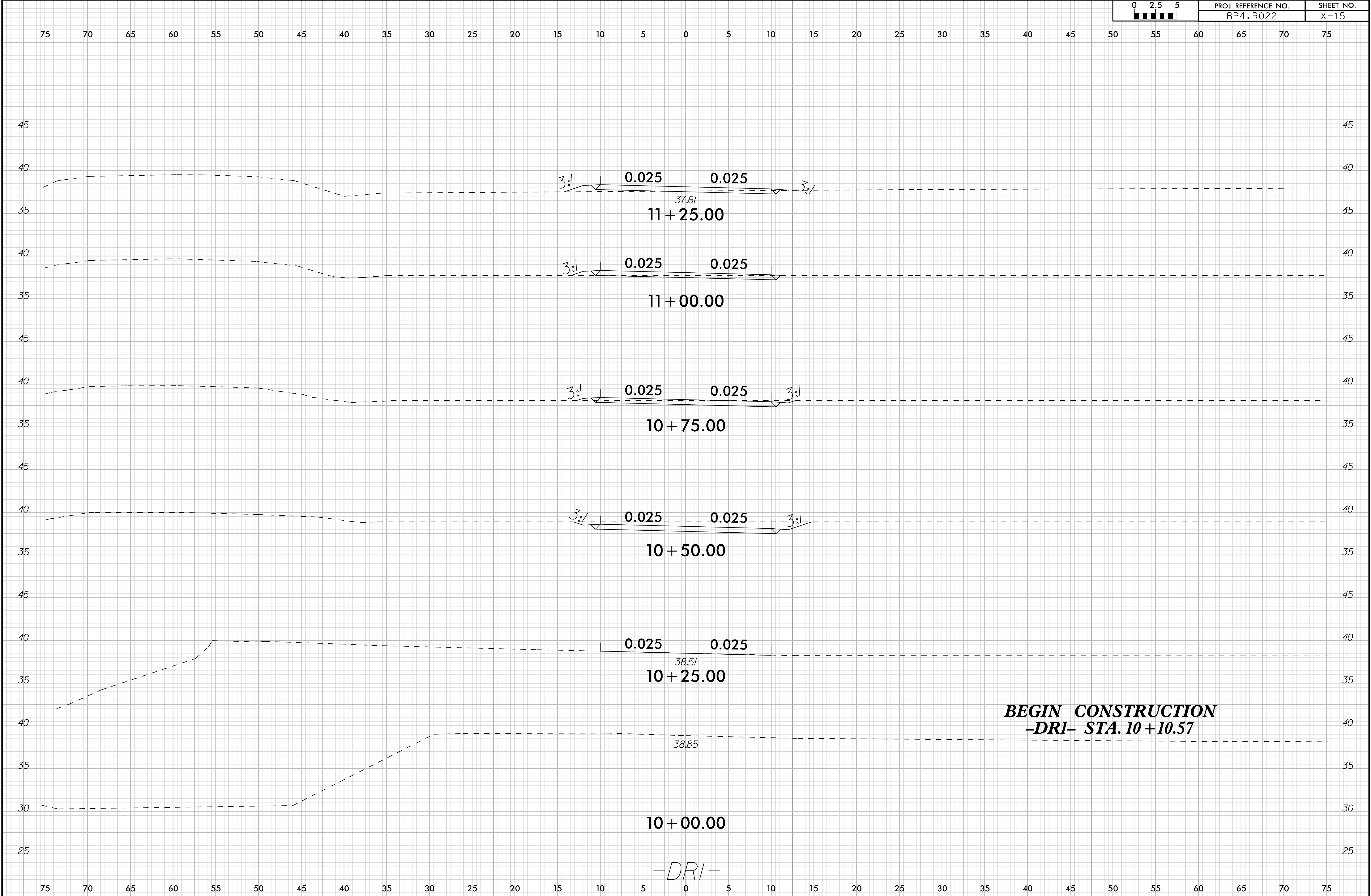
8/14/2024
c:\pwworking\gfbw01\emorrison\gfbw01\320088_rdy_xpl.dgn
emorrison

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-13







6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	BP4.R022	X-16

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

45
40
35

45
40
35

3% 0.025 0.025 3%

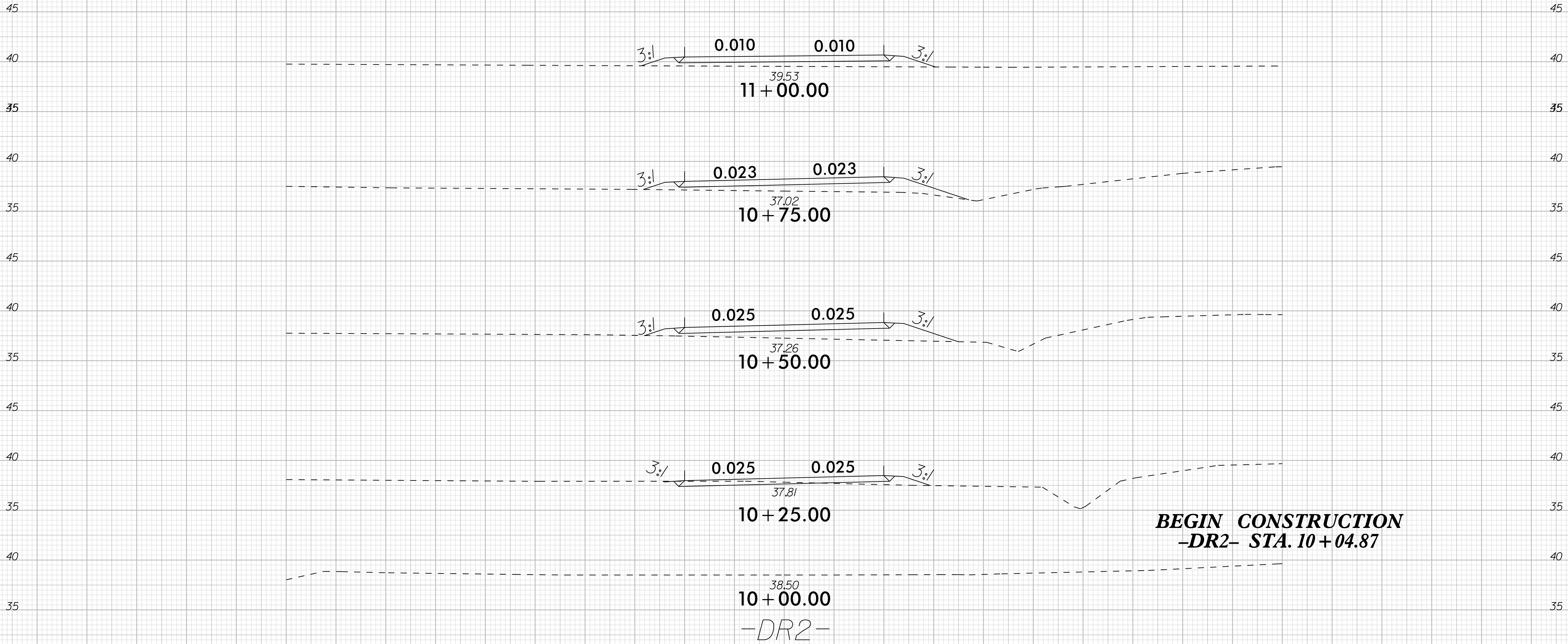
37.53

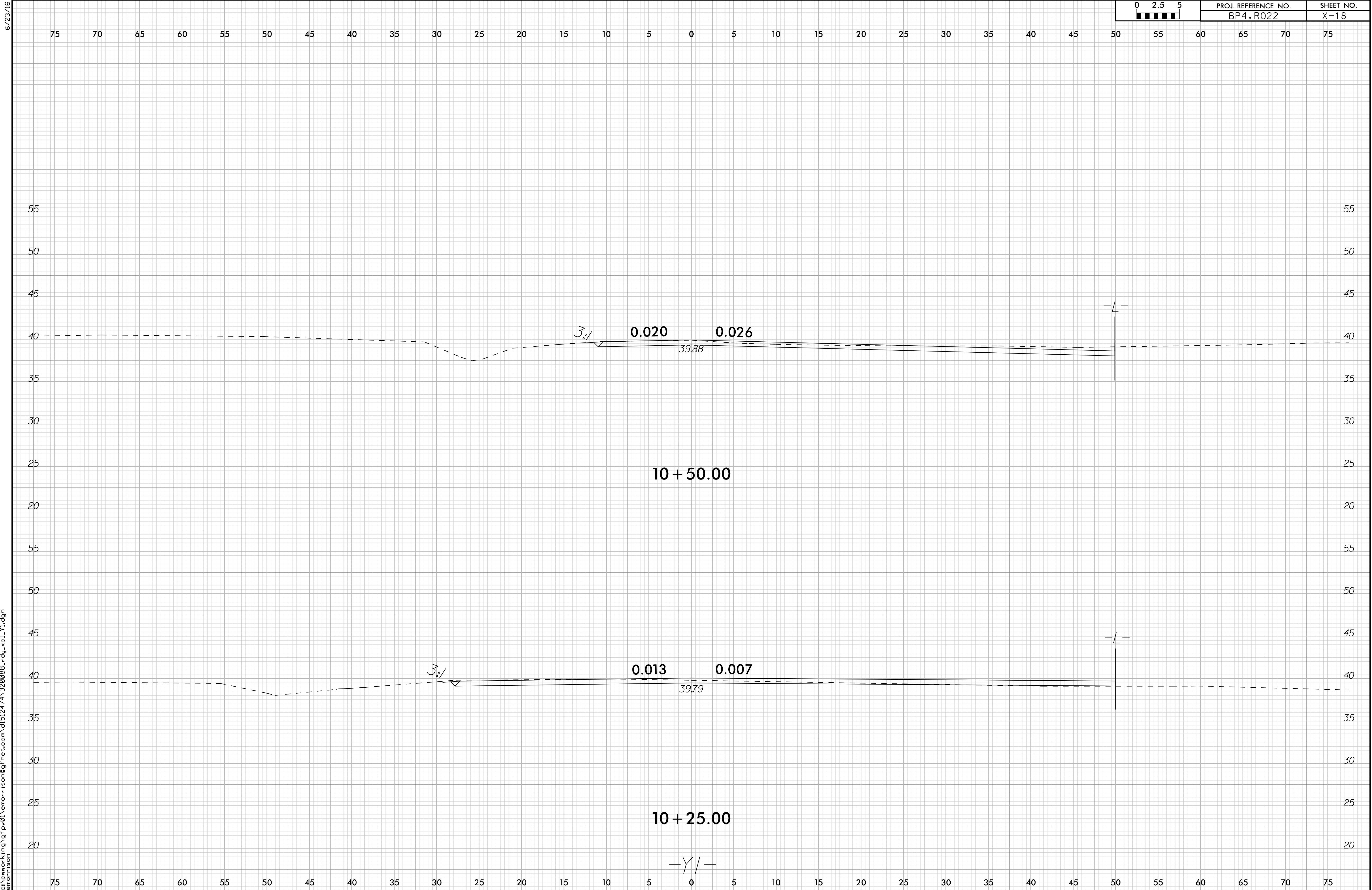
11 + 50.00

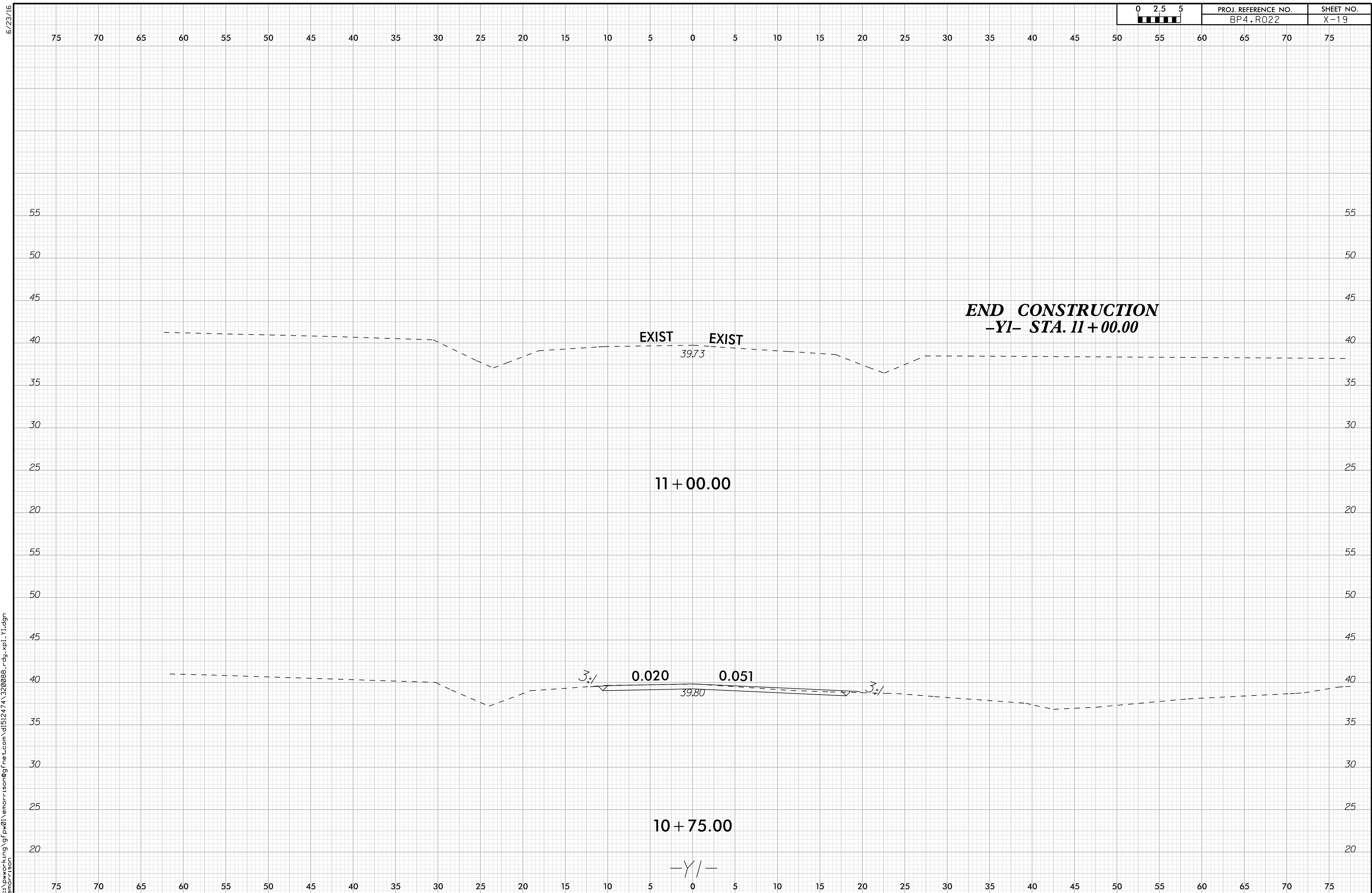
-DRI-

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

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

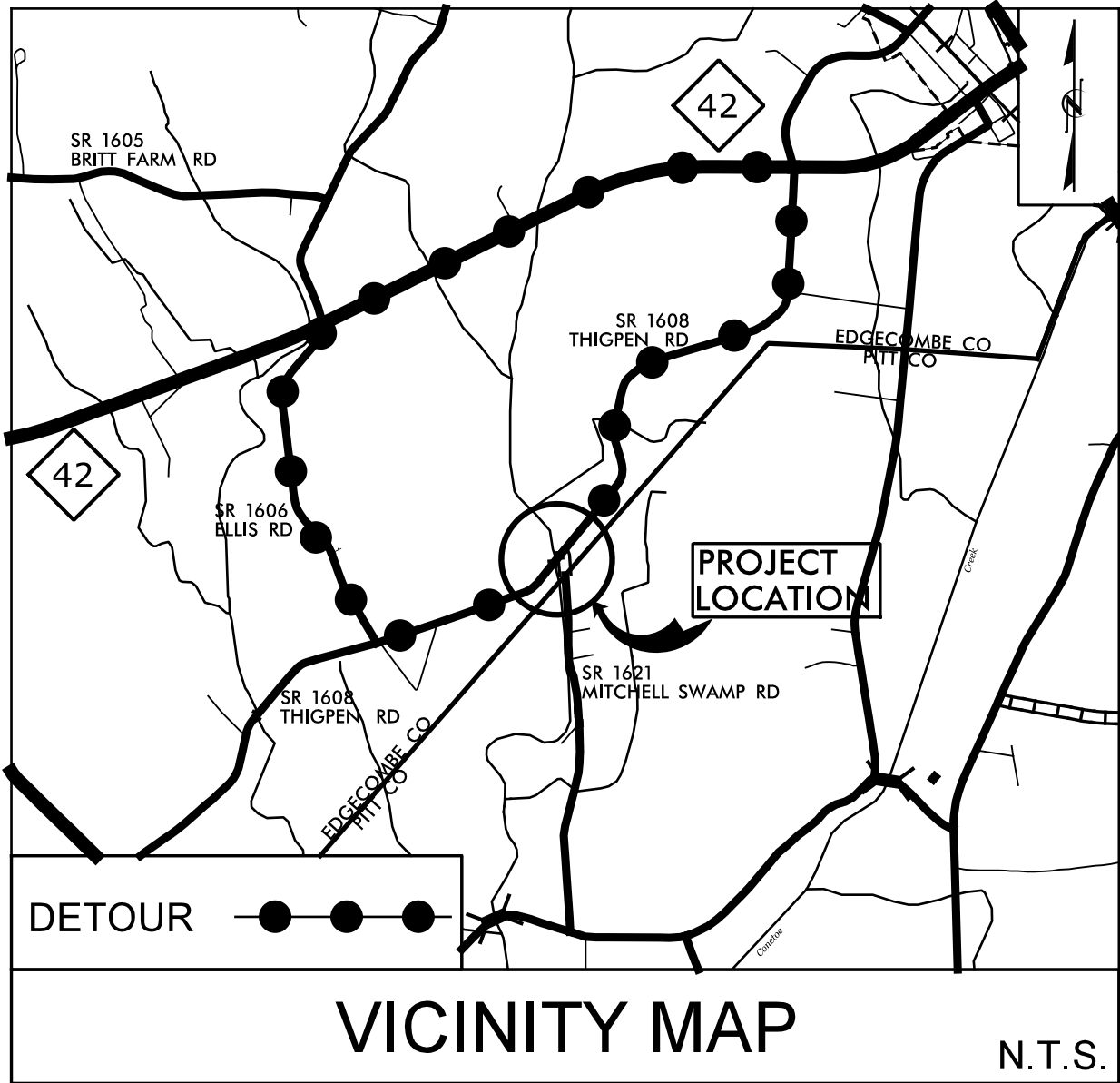






PROJECT: BP4.R022

CONTRACT NO: DD00473



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

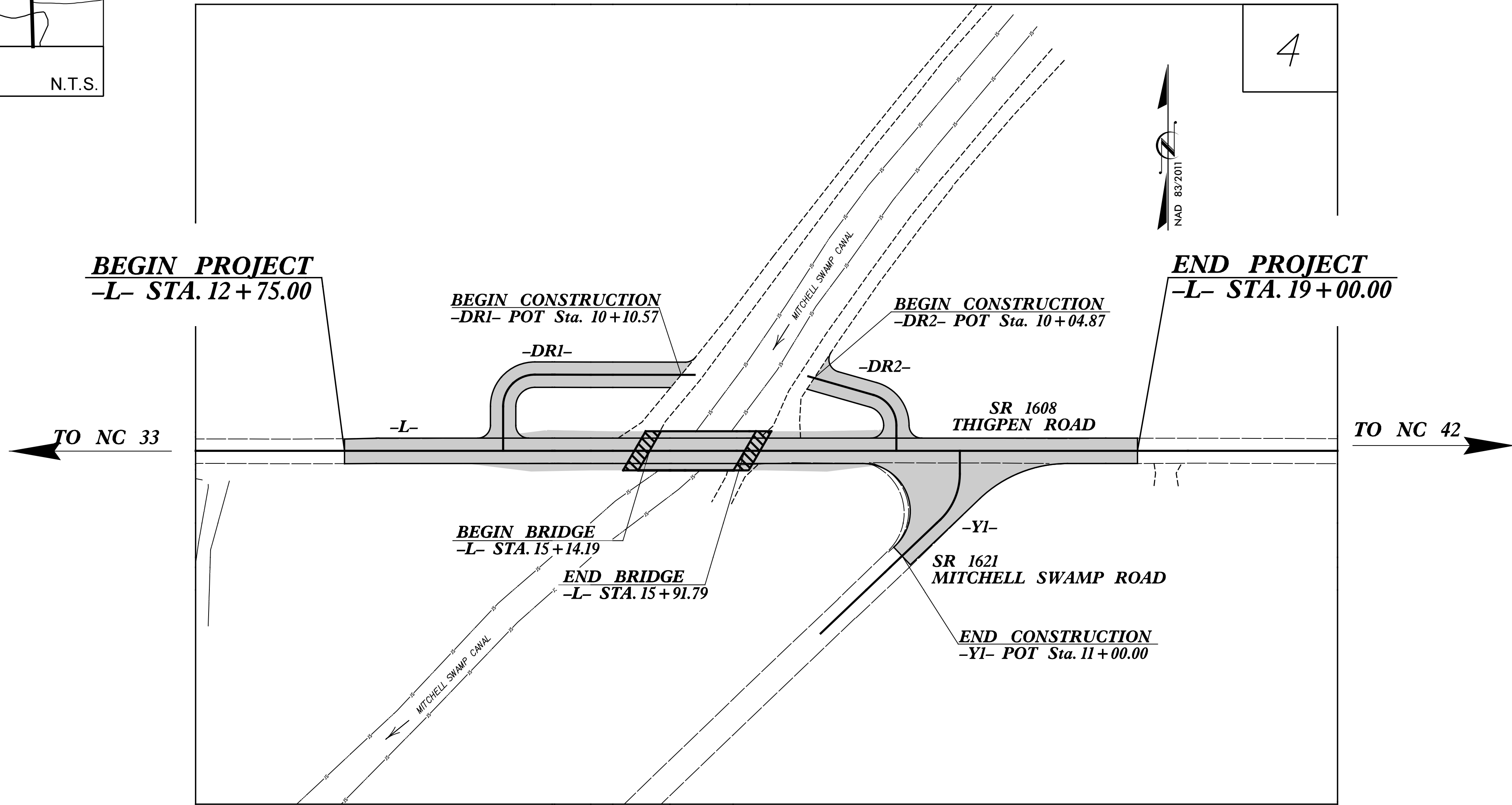
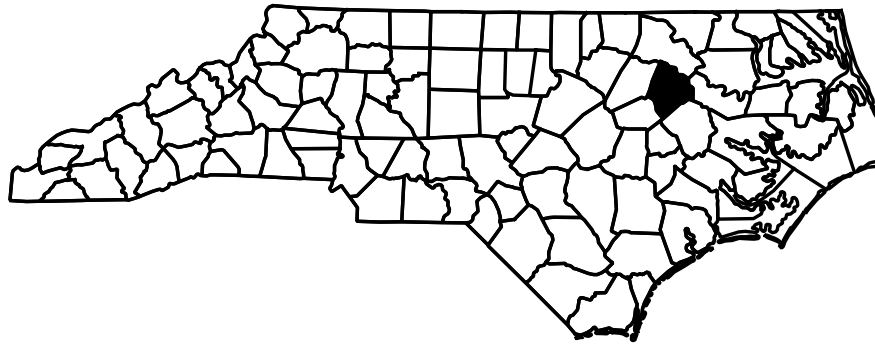
EDGECOMBE COUNTY
STRUCTURES

LOCATION: REPLACEMENT OF BRIDGE NO. 320088 OVER
MITCHELL SWAMP CANAL ON SR 1608 (THIGPEN ROAD)

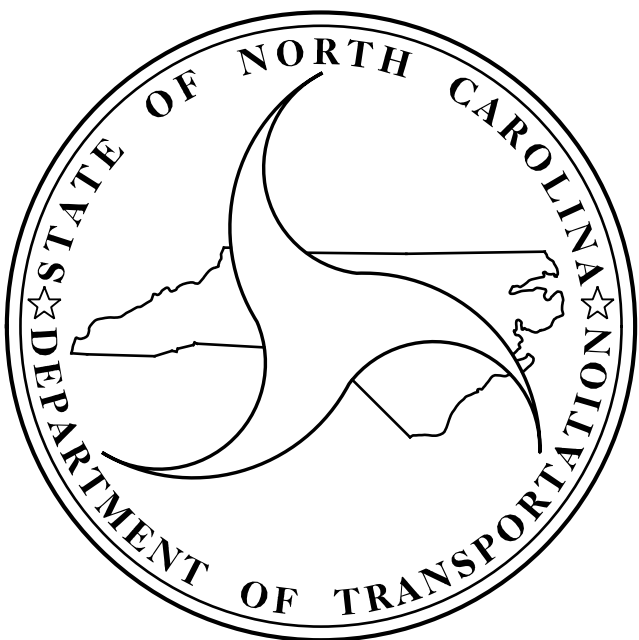
TYPE OF WORK: GRADING, DRAINAGE, PAVING & STRUCTURE

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP4.R022		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
530176	NA	P.E.	
530177	NA	RW	

DIVISION 4



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DESIGN DATA

ADT 2026 = 350
ADT 2046 = 700

V = 60 MPH

FUNC CLASS = LOCAL SUBREGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY PROJECT BP4.R022 = 0.103 MILES
LENGTH STRUCTURES PROJECT BP4.R022 = 0.015 MILES
TOTAL LENGTH PROJECT BP4.R022 = 0.118 MILES

NCDOT CONTACT: RACHEL EVANS, PE
NCDOT DIVISION PROJECT MANAGER



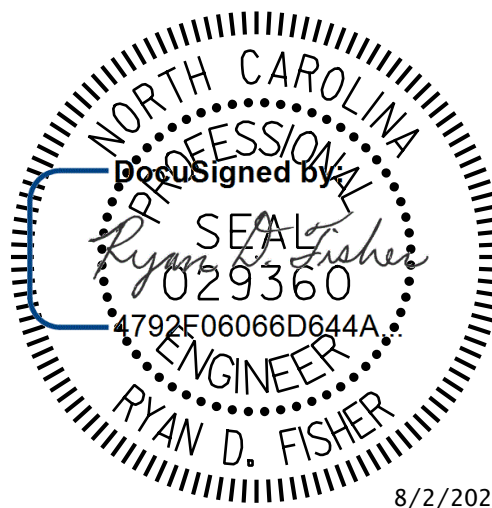
GANNETT
FLEMING

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

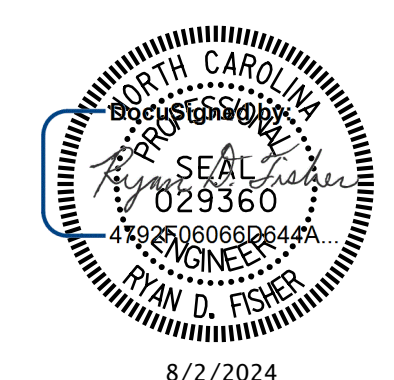
RYAN FISHER, P.E.
STRUCTURES DESIGN ENGINEER

2024 STANDARD SPECIFICATIONS

LETTING DATE: OCTOBER 8, 2024



RYAN FISHER, P.E.
STRUCTURES DESIGN ENGINEER



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 Lenth 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	85	See Substructure Plans	65	N/A	N/A	145	7						
End Bent 2, Piles 1-7	85		65	N/A	N/A	145							

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

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

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) ## (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile TONS	Factored Downdrag Load per Pile TONS	Factored Dead Load* per Pile TONS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile TONS	Nominal Scour Resistance per Pile TONS	Scour Resistance Factor (Default = 1.00)
End Bent 1, Piles 1-7	84			0.60			
End Bent 2, Piles 1-7	84			0.60			

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

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)				Pile Order Lengths	
End Bent/ Bent No	DPT Testing Required? YES or MAYBE	DPT Test Pile Length FT	Total DPT Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or DPT
EB1	MAYBE	70	1		
EB2	MAYBE	70			

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

NOTES:

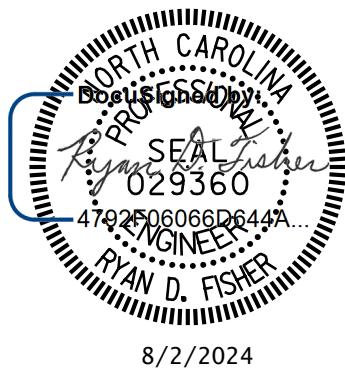
- The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Jinyoung Park PE#032171) on 2-15-23.
- Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
- The Engineer will determine the need for Dynamic Pile Testing when DPTs may be required.

PROJECT NO. BP4.R022

EDGEcombe COUNTY

STATION: 15+53.00 -L-

SHEET 2 OF 3



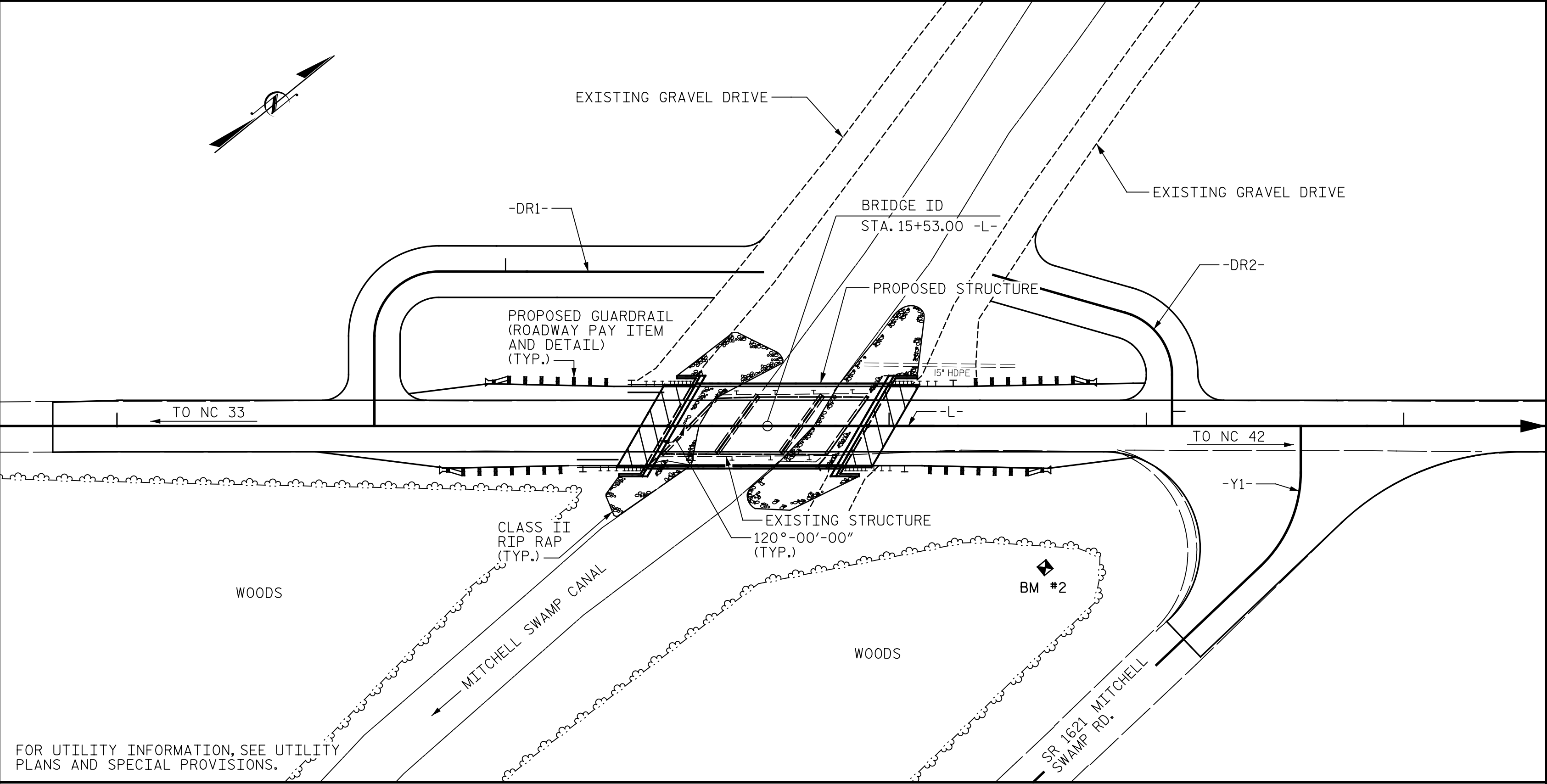
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
GENERAL DRAWING FOR BRIDGE ON SR 1608 (THIGPEN RD.) OVER MITCHELL SWAMP CANAL BETWEEN NC 33 AND NC 42					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					14

DRAWN BY :	M. SPENCER	DATE :	06/2023
CHECKED BY :	R. FISHER	DATE :	06/2024
DESIGN ENGINEER OF RECORD:	R. FISHER	DATE :	06/2024



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

BENCHMARK: BM#2 NAIL SET IN BASE OF 15" PINE TREE, 55.04' RT. OF -L- STA. 16+60.67, EL. 39.51



LOCATION SKETCH

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, SHEET SN.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE AT STATION 15+53.00 -L-."
- THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.
- FOR EXISTING STRUCTURE CONSISTING OF 3 SPANS (1 @ 23'-0", 1 @ 25'-0", 1 @ 17'-6") STEEL I-BEAMS ON TIMBER END BENTS AND INTERIOR BENTS WITH A CLEAR ROADWAY WIDTH OF 23'-2" LOCATED AT THE PROPOSED STRUCTURE SITE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED SV: 25 TONS, T1ST: 40 TONS. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A REDUCED LOAD LIMIT MAY BE POSTED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.
- THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. THE INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES".
- FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.
- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY ON ROADWAY PLANS.
- FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.
- AT THE CONTRACTOR'S OPTION, PRESTRESSED CONCRETE END BENT CAPS MAY BE SUBSTITUTED IN PLACE OF THE CAST-IN-PLACE CAPS. THE CONTRACTOR SHALL COORDINATE WITH THE RESIDENT ENGINEER TO RECEIVE PLANS AND DETAILS FROM THE STRUCTURES MANAGEMENT UNIT. THE REDESIGN AND ANY ADDITIONAL MATERIALS NEEDED WILL BE AT NO ADDITIONAL COST TO THE CONTRACTOR.

HYDRAULIC DATA:

DESIGN DISCHARGE	= 1,320 C.F.S.
FREQUENCY OF DESIGN FLOOD	= 25 YEARS
DESIGN HIGH WATER ELEVATION	= 37.8
DRAINAGE AREA	= 16.1 SQ. MI.
BASE DISCHARGE (FEMA-Q100)	= 2,000 C.F.S.
BASE HIGH WATER ELEVATION	= 41.0

OVERTOPPING FLOOD DATA:

OVERTOPPING DISCHARGE	= 1,600 C.F.S.
FREQUENCY OF OVERTOPPING FLOOD	= 50 YEAR
OVERTOPPING FLOOD ELEVATION	= 39.47 *

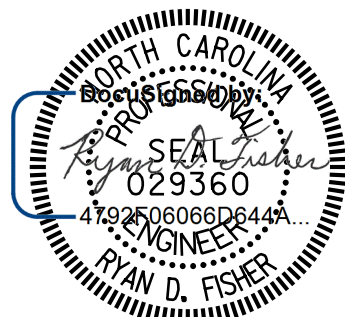
* OVERTOPPING OCCURS AT ROADWAY LOW-POINT AT STA. 13+43 -L-

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENT	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	PILE DRIVING EQUIPMENT SET UP FOR HP 12 X 53 STEEL PILES	HP 12 X 53 STEEL PILES		PILE REDRIVES	DYNAMIC PILE TESTING	VERTICAL CONCRETE BARRIER RAIL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARING	3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB		EPOXY PROTECTIVE COATING
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	LUMP SUM	LBS.	EA.	NO.	LIN. FT.	EA.	EA.	LIN. FT.	TONS	SQ. YDS.	LUMP SUM	NO.	LIN. FT.	LUMP SUM
SUPERSTRUCTURE					LUMP SUM							150.00			LUMP SUM	11	825.00	
END BENT NO. 1			LUMP SUM	24.3		2,923	7	7	455	7	1		114	118				LUMP SUM
END BENT NO. 2			LUMP SUM	24.3		2,923	7	7	455				176	182				LUMP SUM
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	48.6	LUMP SUM	5,846	14	14	910	7	1	150.00	290	300	LUMP SUM	11	825.00	LUMP SUM

PROJECT NO. BP4.R022
EDGEcombe COUNTY
STATION: 15+53.00 -L-

SHEET 3 OF 3



1/15/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE ON
SR 1608 (THIGPEN RD.)
OVER MITCHELL SWAMP CANAL
BETWEEN NC 33 AND NC 42

DRAWN BY : M. SPENCER/J. MYA DATE : 06/2023
CHECKED BY : R. FISHER DATE : 06/2024
DESIGN ENGINEER OF RECORD: R. FISHER DATE : 06/2024

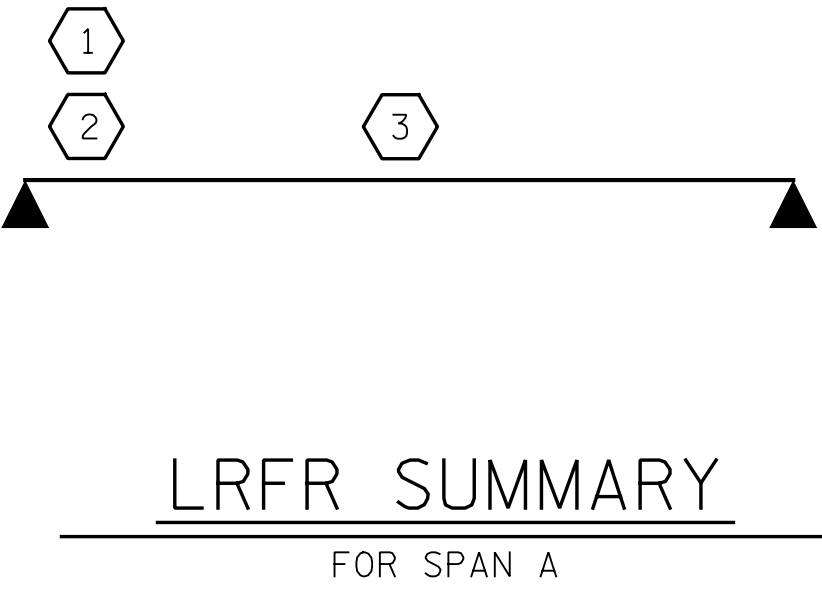


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

p:\xgfn\pw.bentley.com\gfn\pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_007_BP4.R022_SMU_GD_004.dgn
8/2/2024 9:21:59 AM pdf_color_gfalt_FS.plt
EDGECOMBE, Pen.tbi

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS																								
LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVE-LOAD FACTORS	MOMENT					SHEAR					LIVE-LOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93(INVENTORY)	N/A	①	1.47	--	1.75	0.209	1.47	75'	EL	36.923	0.316	3.01	75'	EL	7.385	0.80	0.209	1.58	75'	EL	36.923	
		HL-93(OPERATING)	N/A	--	1.91	--	1.35	0.209	1.91	75'	EL	36.923	0.316	3.36	75'	EL	7.385	0.80	--	--	--	--	--	
		HS-20(INVENTORY)	36.000	②	1.93	69.48	1.75	0.209	1.93	75'	EL	36.923	0.316	3.26	75'	EL	7.385	0.80	0.209	2.01	75'	EL	36.923	
		HS-20(OPERATING)	36.000	--	2.50	90.00	1.35	0.209	2.50	75'	EL	36.923	0.316	4.29	75'	EL	7.385	0.80	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500	--	4.71	63.59	1.40	0.209	5.46	75'	EL	36.923	0.316	10.18	75'	EL	7.385	0.80	0.209	4.71	75'	EL	36.923	
		SNGARBS2	20.000	--	3.50	70.00	1.40	0.209	4.06	75'	EL	36.923	0.316	7.16	75'	EL	7.385	0.80	0.209	3.50	75'	EL	36.923	
		SNAGRIS2	22.000	--	3.31	72.82	1.40	0.209	3.85	75'	EL	36.923	0.316	6.63	75'	EL	7.385	0.80	0.209	3.31	75'	EL	36.923	
		SNCOTTS3	27.250	--	2.34	63.77	1.40	0.209	2.72	75'	EL	36.923	0.316	4.94	75'	EL	7.385	0.80	0.209	2.34	75'	EL	36.923	
		SNAGGRS4	34.925	--	1.96	68.45	1.40	0.209	2.27	75'	EL	36.923	0.316	4.07	75'	EL	7.385	0.80	0.209	1.96	75'	EL	36.923	
		SNS5A	35.550	--	1.91	67.90	1.40	0.209	2.22	75'	EL	36.923	0.316	4.12	75'	EL	7.385	0.80	0.209	1.91	75'	EL	36.923	
		SNS6A	39.950	--	1.75	69.91	1.40	0.209	2.03	75'	EL	36.923	0.316	3.74	75'	EL	7.385	0.80	0.209	1.75	75'	EL	36.923	
		SNS7B	42.000	--	1.67	70.14	1.40	0.209	1.94	75'	EL	36.923	0.316	3.67	75'	EL	7.385	0.80	0.209	1.67	75'	EL	36.923	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000	--	2.14	70.62	1.40	0.209	2.48	75'	EL	36.923	0.316	4.50	75'	EL	7.385	0.80	0.209	2.14	75'	EL	36.923	
		TNT4A	33.075	--	2.15	71.11	1.40	0.209	2.49	75'	EL	36.923	0.316	4.38	75'	EL	7.385	0.80	0.209	2.15	75'	EL	36.923	
		TNT6A	41.600	--	1.75	72.80	1.40	0.209	2.04	75'	EL	36.923	0.316	3.88	75'	EL	7.385	0.80	0.209	1.75	75'	EL	36.923	
		TNT7A	42.000	--	1.76	73.92	1.40	0.209	2.05	75'	EL	36.923	0.316	3.84	75'	EL	7.385	0.80	0.209	1.76	75'	EL	36.923	
		TNT7B	42.000	--	1.82	76.44	1.40	0.209	2.11	75'	EL	36.923	0.316	3.58	75'	EL	7.385	0.80	0.209	1.82	75'	EL	36.923	
		TNAGRIT4	43.000	--	1.73	74.39	1.40	0.209	2.01	75'	EL	36.923	0.316	3.46	75'	EL	7.385	0.80	0.209	1.73	75'	EL	36.923	
TNAGT5A		45.000	--	1.64	73.80	1.40	0.209	1.90	75'	EL	36.923	0.316	3.43	75'	EL	7.385	0.80	0.209	1.64	75'	EL	36.923		
TNAGT5B	45.000	③	1.62	72.90	1.40	0.209	1.88	75'	EL	36.923	0.316	3.28	75'	EL	7.385	0.80	0.209	1.62	75'	EL	36.923			
EMERGENCY VEHICLE (EV)	EV2	28.750	--	2.47	71.01	1.30	0.209	3.09	75'	EL	36.923	0.316	5.33	75'	EL	7.385	0.80	0.209	2.47	75'	EL	36.923		
	EV3	43.000	④	1.62	69.66	1.30	0.209	2.03	75'	EL	36.923	0.316	3.53	75'	EL	7.385	0.80	0.209	1.62	75'	EL	36.923		



LRFR SUMMARY
FOR SPAN A

LOAD FACTORS:

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

- ALL DISTANCES ARE MEASURED FROM THE CENTERLINE OF BEARING.
-
-
-

CONTROLLING LOAD RATING

① DESIGN LOAD RATING (HL-93)

② DESIGN LOAD RATING (HS-20)

③ LEGAL LOAD RATING **

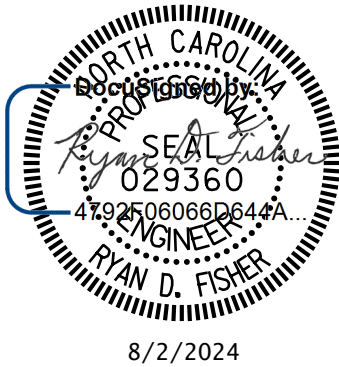
④ EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

PROJECT NO. BP4.R022
EDGEcombe COUNTY
STATION: 15+53.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
LRFR SUMMARY FOR
75' CORED SLAB UNIT
120° SKEW
(NON-INTERSTATE TRAFFIC)

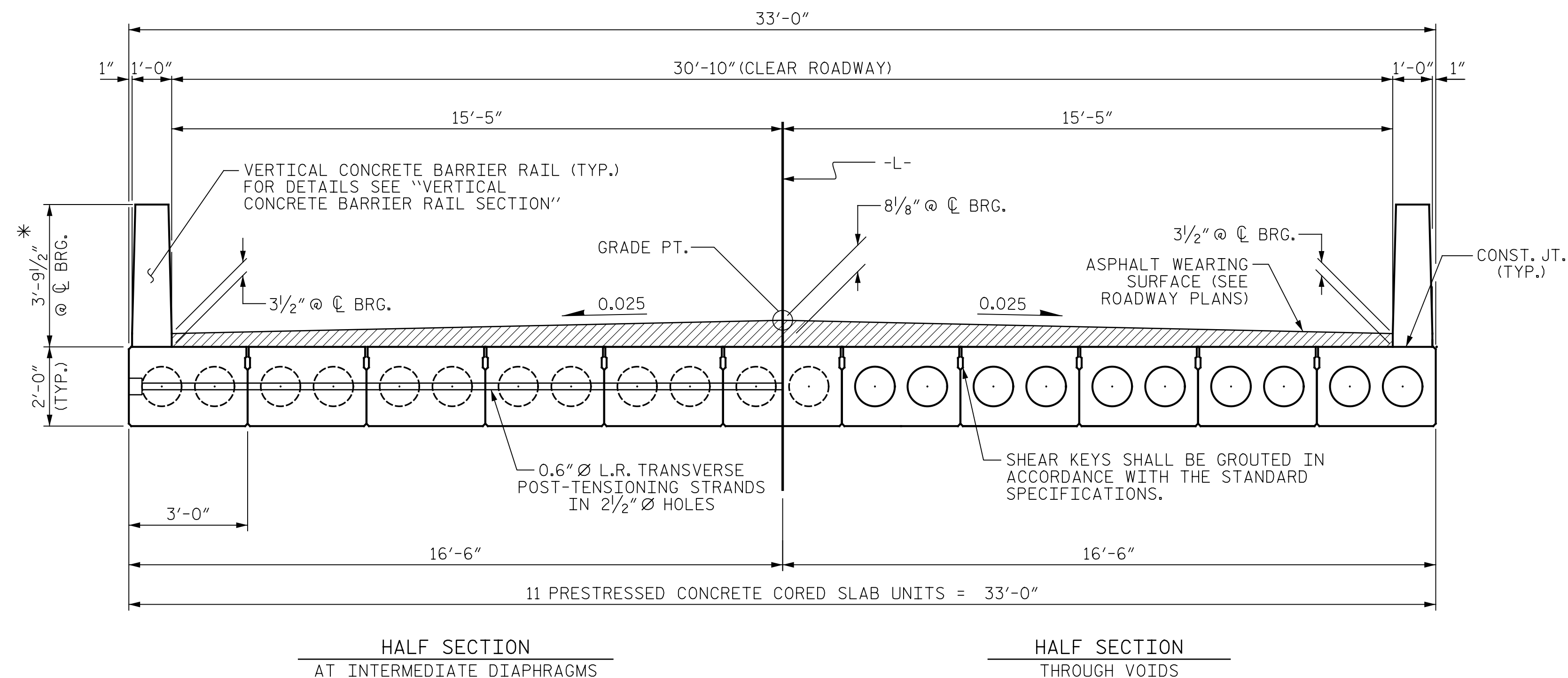
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
①			③			TOTAL SHEETS
②			④			14

GANNETT
FLEMING

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

DRAWN BY :	M. SPENCER	DATE :	06/2023
CHECKED BY :	R. FISHER	DATE :	06/2024
DESIGN ENGINEER OF RECORD:	R. FISHER	DATE :	06/2024

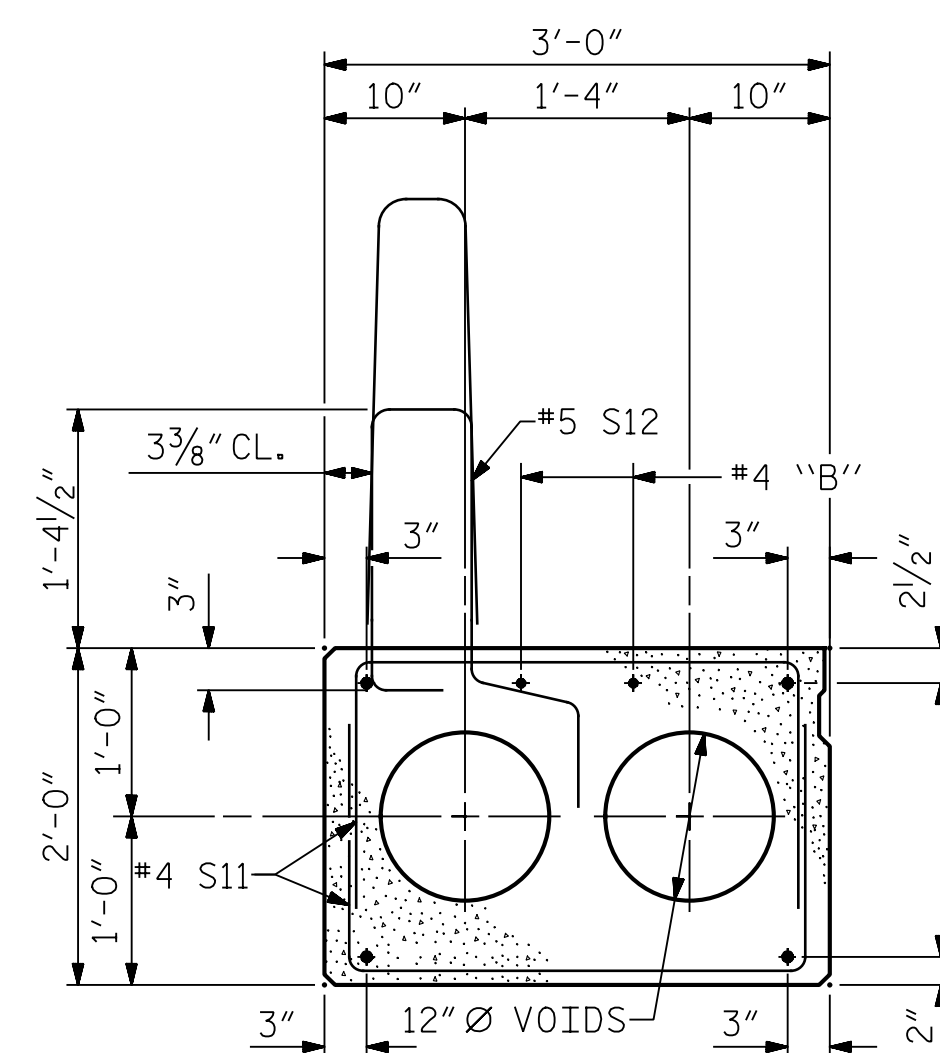


HALF SECTION
AT INTERMEDIATE DIAPHRAGMS

HALF SECTION
THROUGH VOIDS

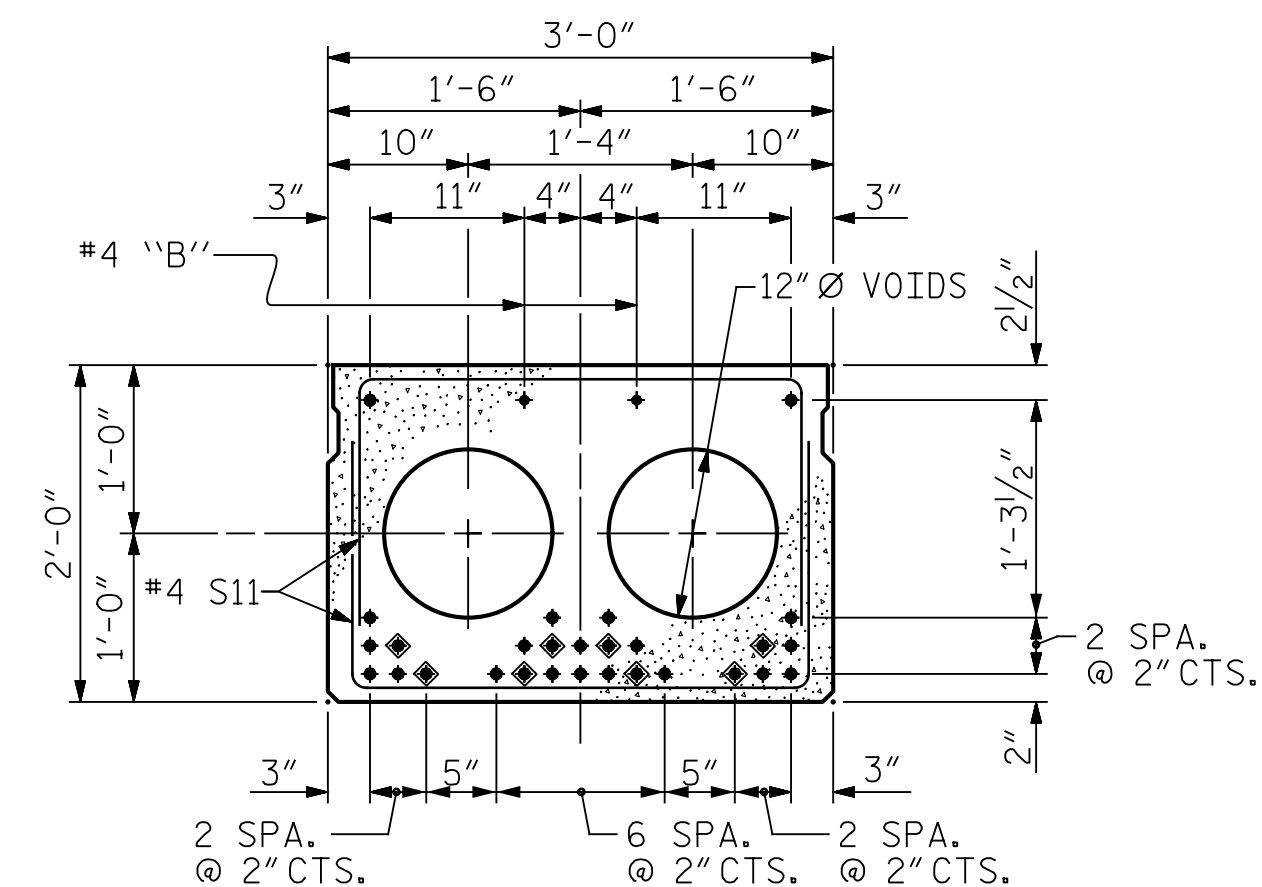
TYPICAL SECTION

* - 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.)



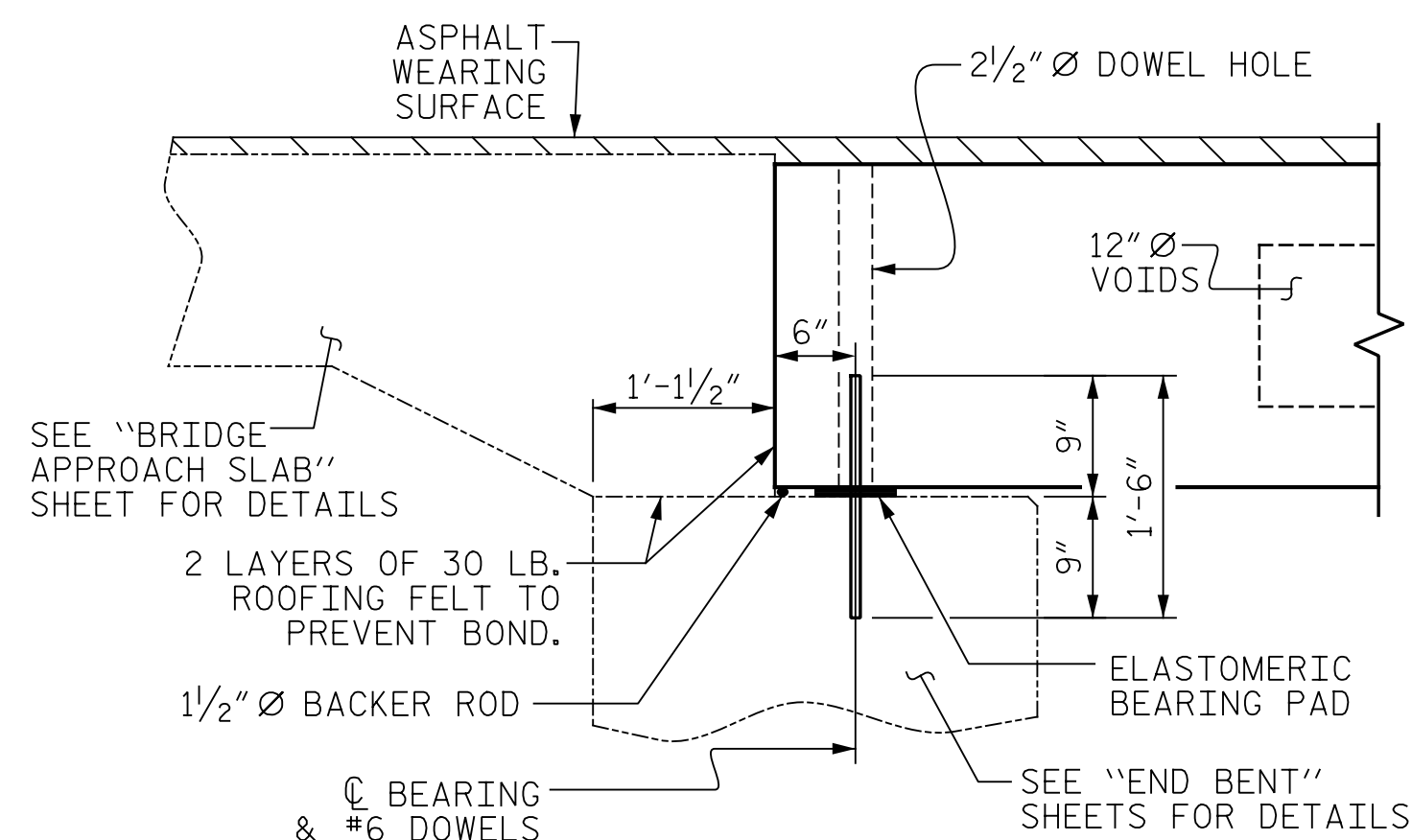
INTERIOR SLAB SECTION (75' UNIT)

(28 STRANDS REQUIRED)

0.6'' Ø LOW
RELAXATION STRAND LAYOUT

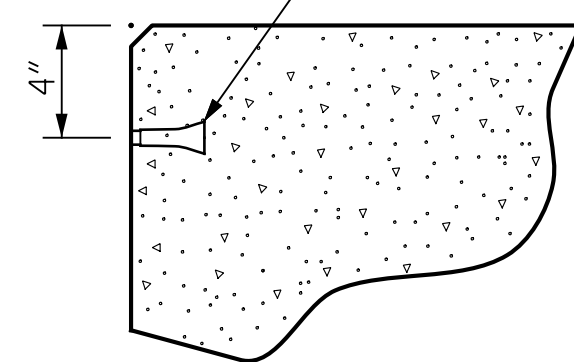
◆ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 12'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

DEBONDING LEGEND

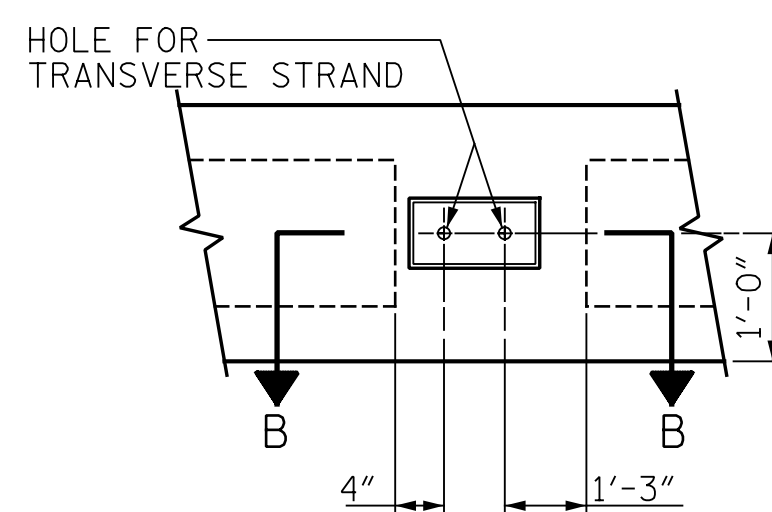


SECTION AT END BENT

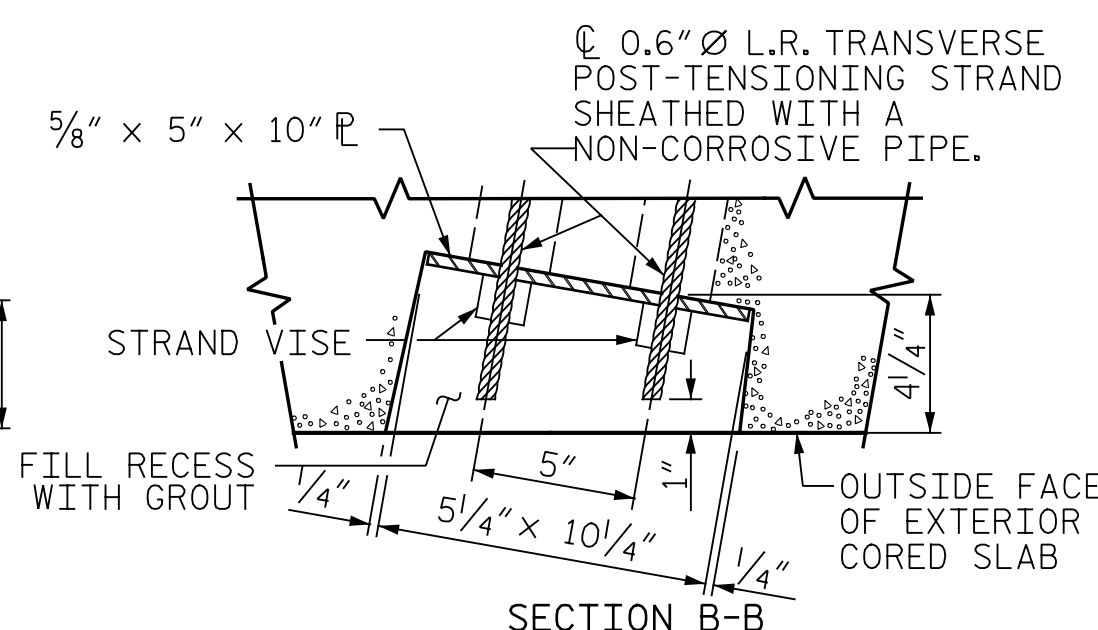
PERMITTED THREADED INSERT
CAST IN OUTSIDE FACE OF
EXTERIOR UNIT AND
RECESSED $\frac{3}{8}$ " SIZE TO BE
DETERMINED
BY CONTRACTOR. —



THREADED INSERT DETAIL

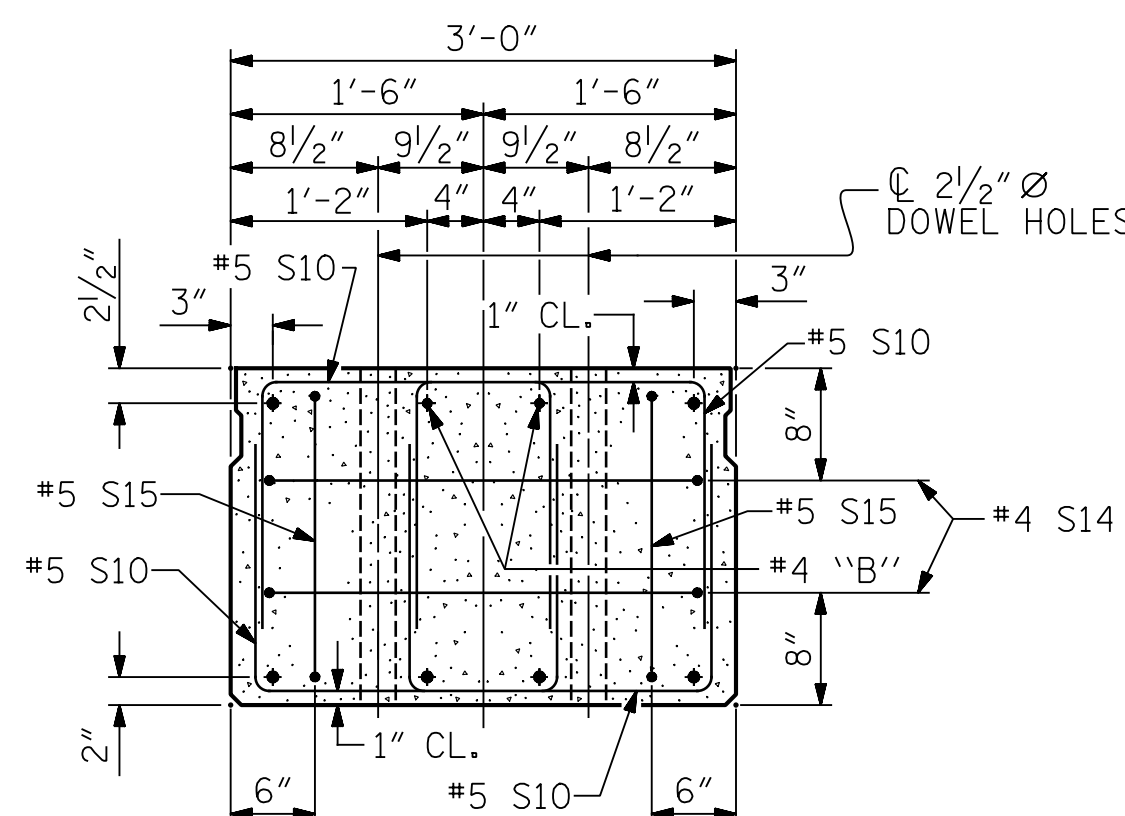


ELEVATION VIEW



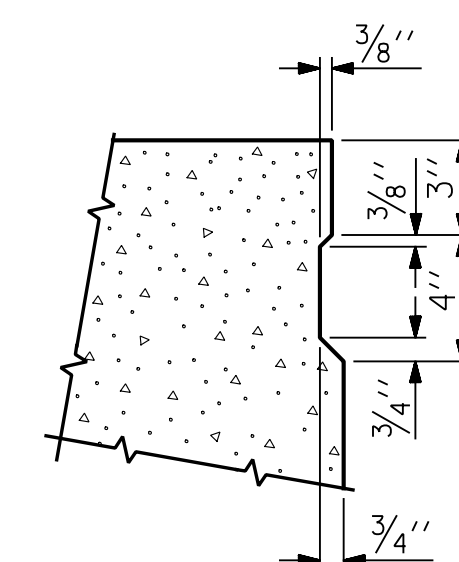
SECTION B-B

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



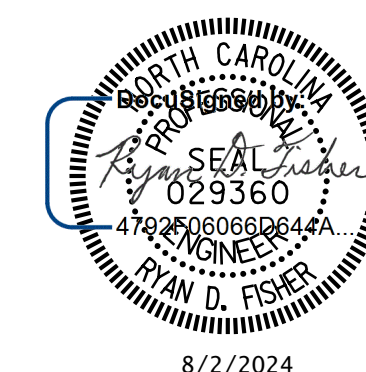
END ELEVATION

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.



8/2/2024

PROJECT NO. BP4.R022
EDGEcombe COUNTY
 STATION: 15+53.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

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

REVISIONS						SHEET NO. S-5
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

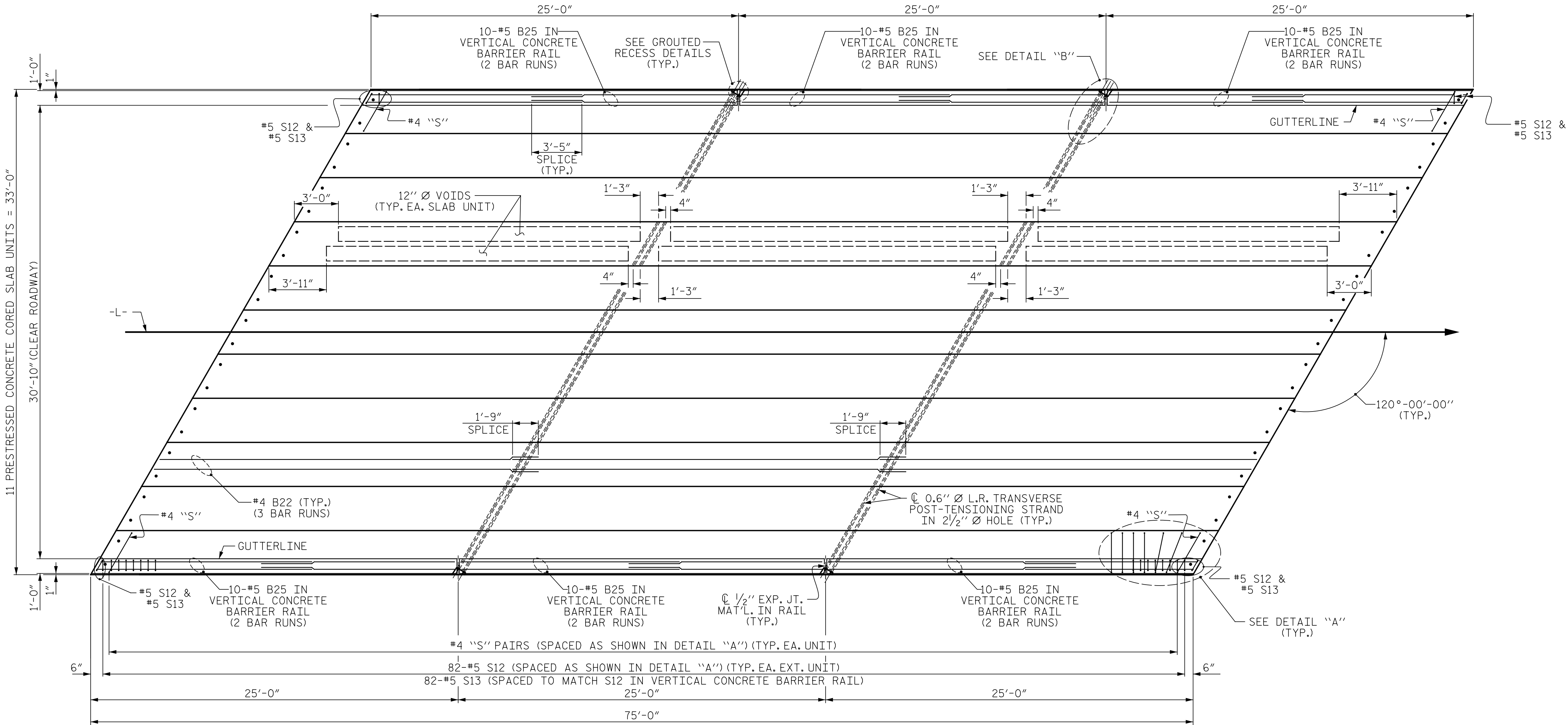


**GANNETT
FLEMING**

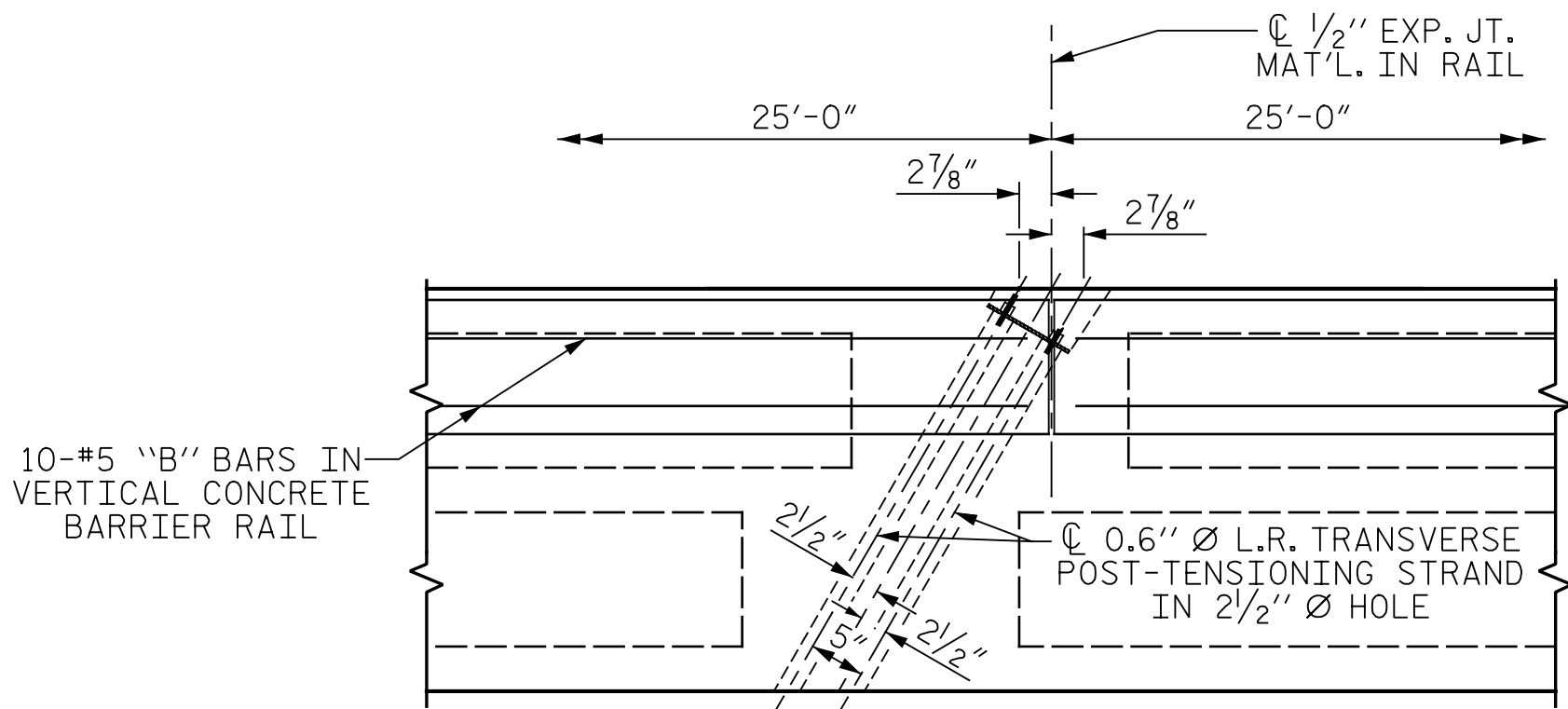
**One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270**

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

p:\xgfn\pw.bentley.com\gnet-pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_011_BP4.R022_SMU_BB_006.dgn
8/2/2024 9:22:10 AM pdf_color_gfalt_FS.plt
EDGEcombe_Pen.tbl

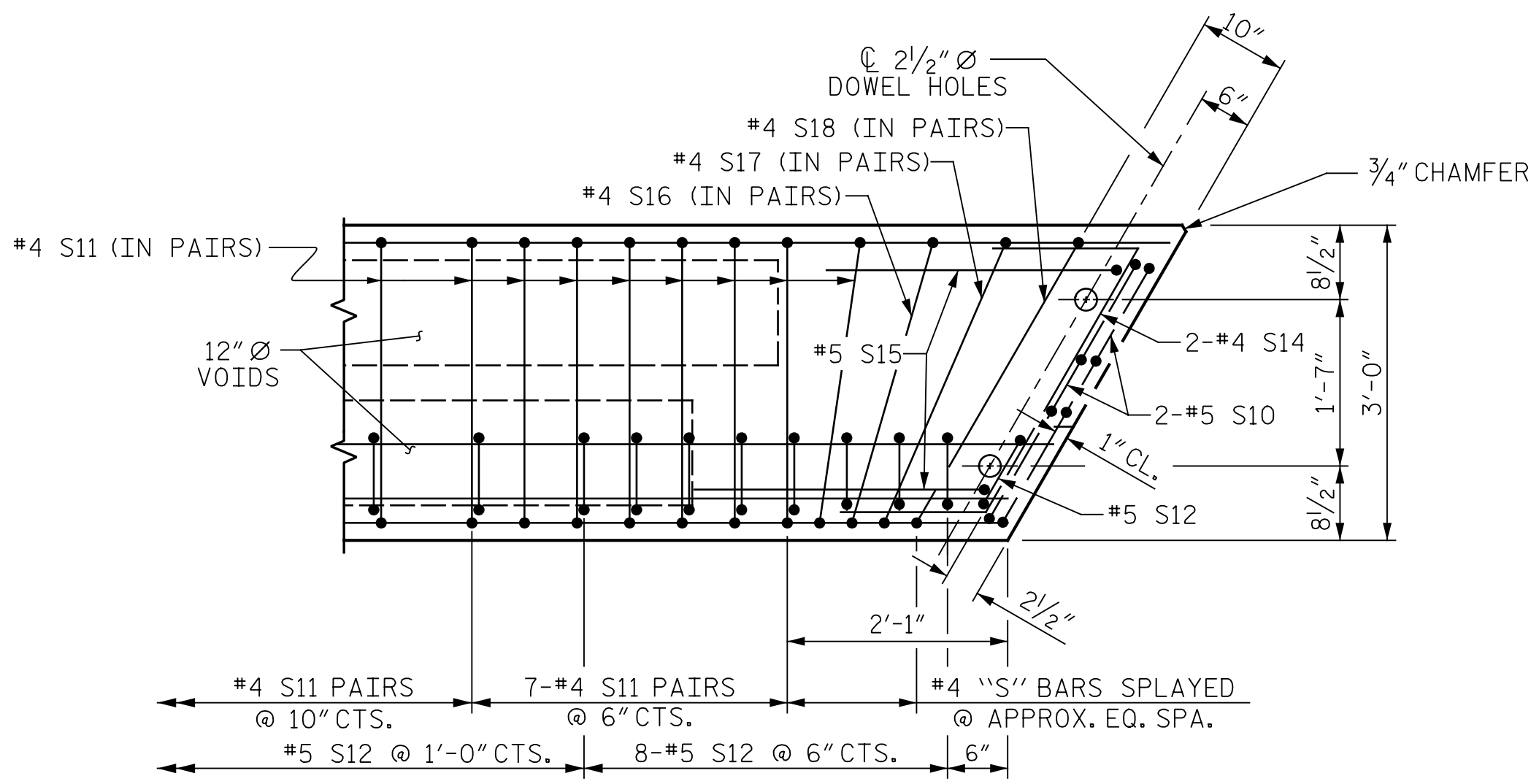


PLAN OF UNIT



DETAIL "B"

#4 S11 BARS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1" CLEAR TO GROUTED RECESS AND 2 1/2" Ø TRANSVERSE POST-TENSIONING STRAND HOLES



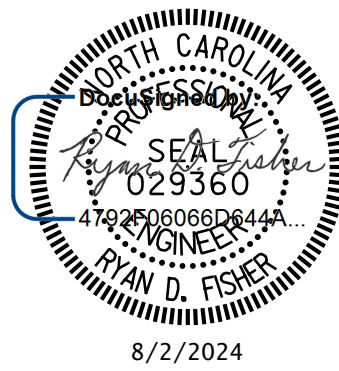
DETAIL "A"

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



One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



PROJECT NO. BP4.R022
EDGEcombe COUNTY
STATION: 15+53.00 -L-

SHEET 2 OF 3

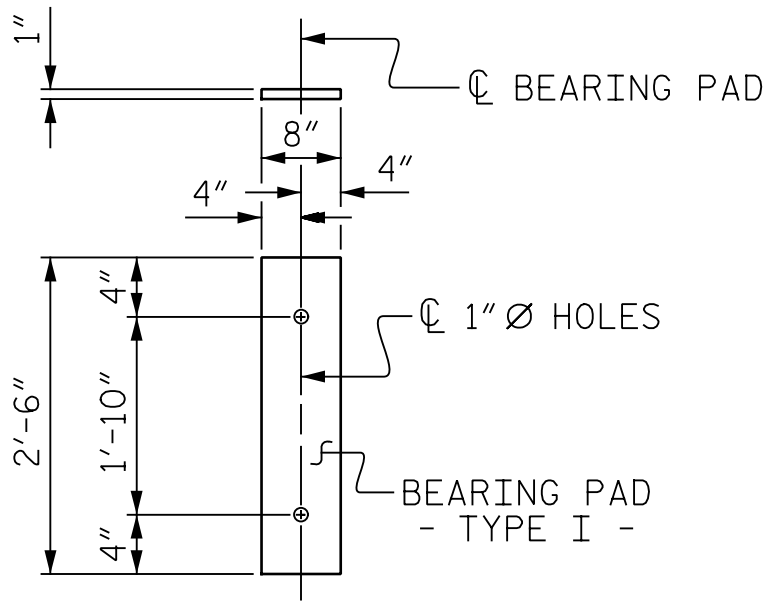
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 75' UNIT
30'-10" CLEAR ROADWAY
120° SKEW

DRAWN BY : M. SPENCER DATE : 06/2023
CHECKED BY : R. FISHER DATE : 01/2024
DESIGN ENGINEER OF RECORD: R. FISHER DATE : 06/2024

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-6
2			4			TOTAL SHEETS 14

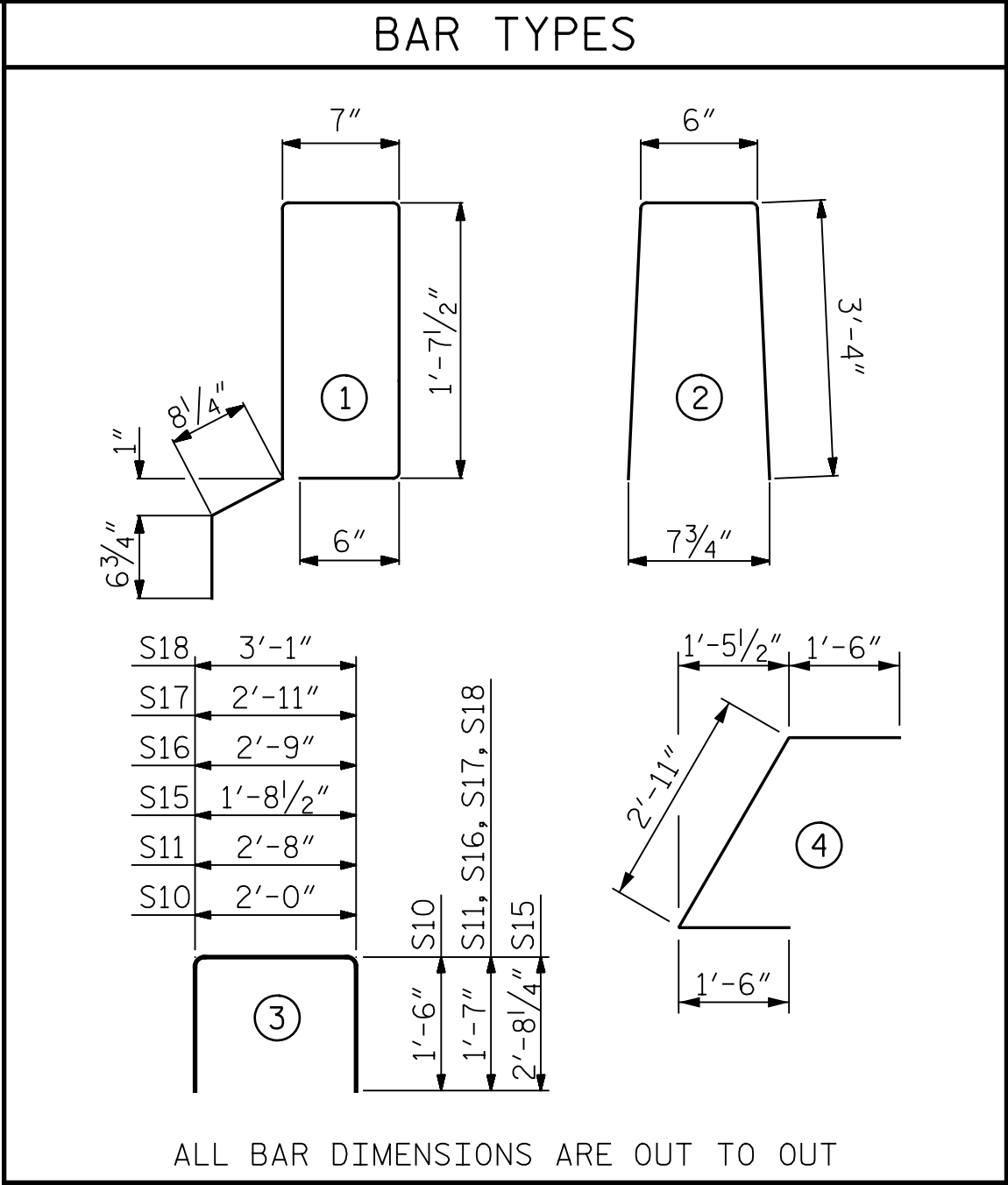
p:\gfn\et-pw\p\et-pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_013_BP4.R022_SMU_BB_007.dgn
8/2/2024 9:22:15 AM pdf_color_gfalt_FS.plt
EDGECOMBE.Pan.tbl



FIXED END
(TYPE I - 22 REQ'D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 60 DUROMETER HARDNESS.



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR ONE 75' CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B22	6	#4	STR	26'-3"	105	26'-3"	105
S10	8	#5	3	5'-0"	42	5'-0"	42
S11	182	#4	3	5'-10"	709	5'-10"	709
*S12	83	#5	1	5'-7"	483		
S14	4	#4	4	5'-11"	16	5'-11"	16
S15	4	#5	3	7'-1"	30	7'-1"	30
S16	4	#4	3	5'-11"	16	5'-11"	16
S17	4	#4	3	6'-1"	16	6'-1"	16
S18	4	#4	3	6'-3"	17	6'-3"	17
REINFORCING STEEL				LBS.		951	
*EPOXY COATED REINFORCING STEEL				LBS.		483	
8,000 P.S.I. CONCRETE				CU. YDS.		12.8	
0.6" Ø L.R. STRANDS				No.		28	

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
75' UNIT						
*B25	120	120	#5	STR.	14'-6"	1,815
*S13	164	164	#5	2	7'-2"	1,226
*EPOXY COATED REINFORCING STEEL					LBS.	3,041
CLASS AA CONCRETE					CU.YDS.	19.4
TOTAL VERTICAL CONCRETE BARRIER RAIL					LN.FT.	150.00

GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT

	ASPHALT OVERLAY THICKNESS @ MID-SPAN	RAIL HEIGHT @ MID-SPAN
75' UNITS	2 5/16"	3'-8 5/16"

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
75' UNIT			
EXTERIOR C.S.	2	75'-0"	150'-0"
INTERIOR C.S.	9	75'-0"	675'-0"
TOTAL	11		825'-0"

DEAD LOAD DEFLECTION AND CAMBER

	3'-0" x 2'-0"
75' CORED SLAB UNIT	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	2 3/8" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD**	1 3/16" ↓
FINAL CAMBER	1 3/16" ↑

** INCLUDES FUTURE WEARING SURFACE

NOTES

ALL PRESTRESSING STRANDS SHALL BE 7-WIRE LOW RELAXATION GRADE 270 STRANDS AND SHALL CONFORM TO AASHTO M203 EXCEPT FOR SAMPLING REQUIREMENTS WHICH SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL REINFORCING STEEL CAST WITH THE CORED SLAB SECTIONS SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PRESTRESSED CONCRETE CORED SLABS.

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

THE 2 1/2" Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

THE BACKER RODS SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

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

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, 1/2" IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

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

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.

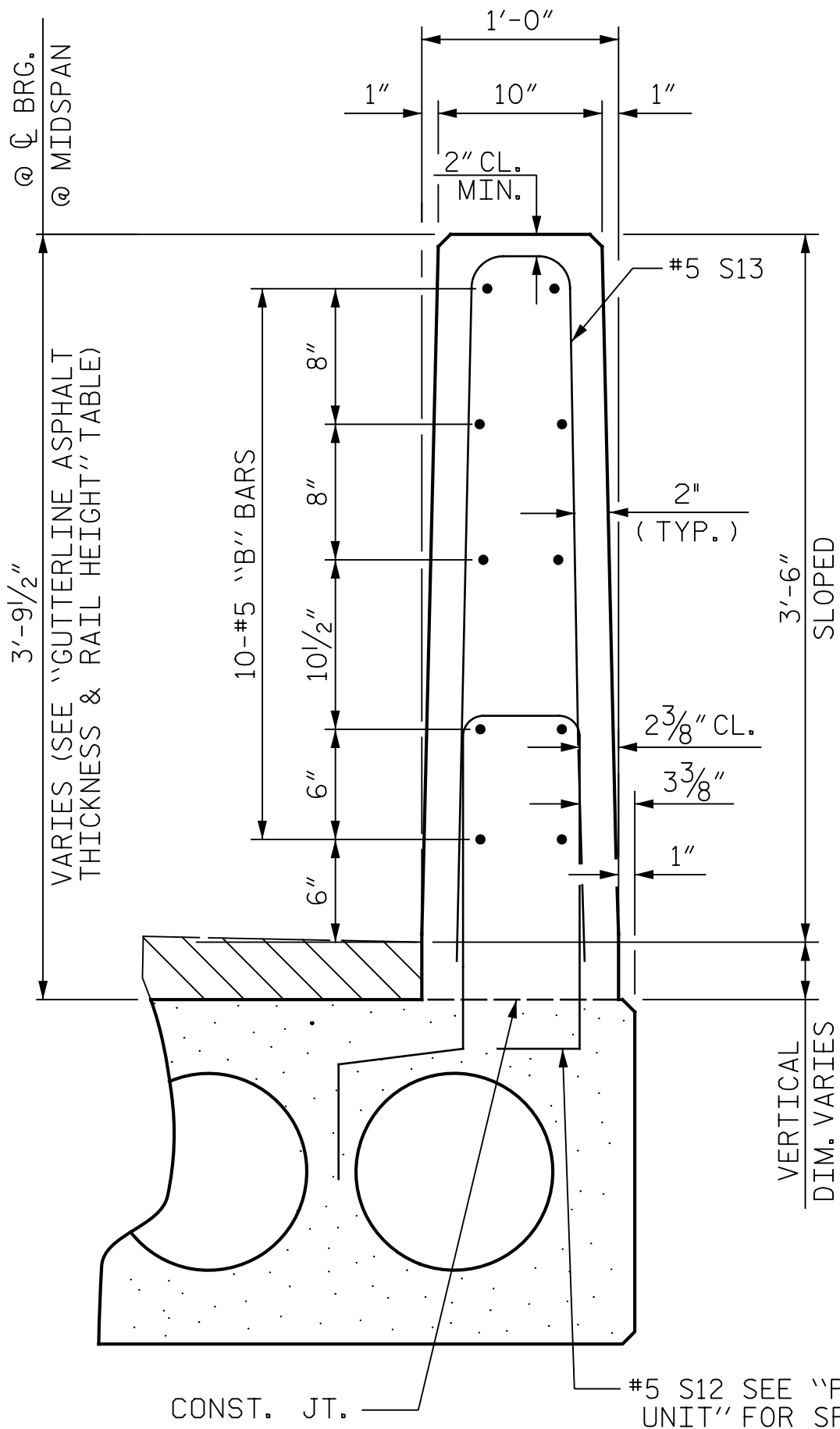
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

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.

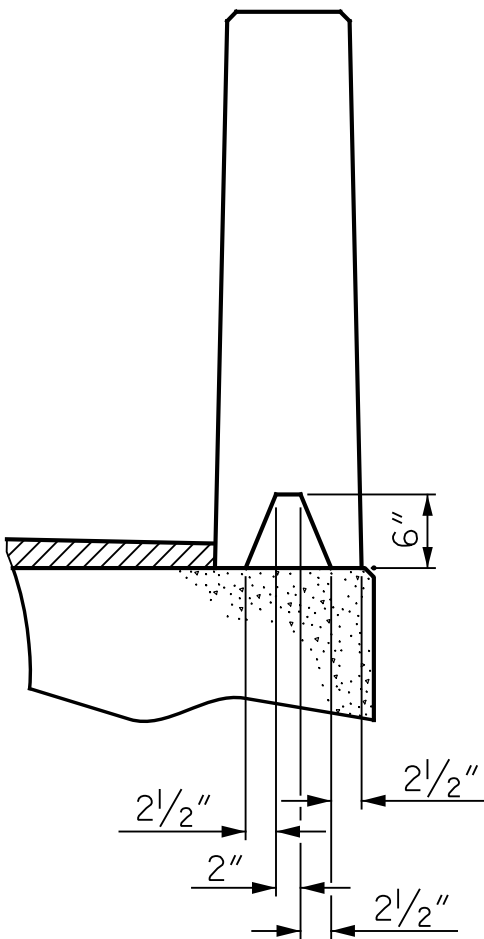
THE PERMITTED THREADED INSERTS SHALL BE GROUTED BY THE CONTRACTOR IMMEDIATELY FOLLOWING REMOVAL OF THE FALSEWORK.

THE COST OF THE PERMITTED THREADED INSERTS SHALL BE INCLUDED IN THE PRICE BID FOR THE PRECAST UNITS.

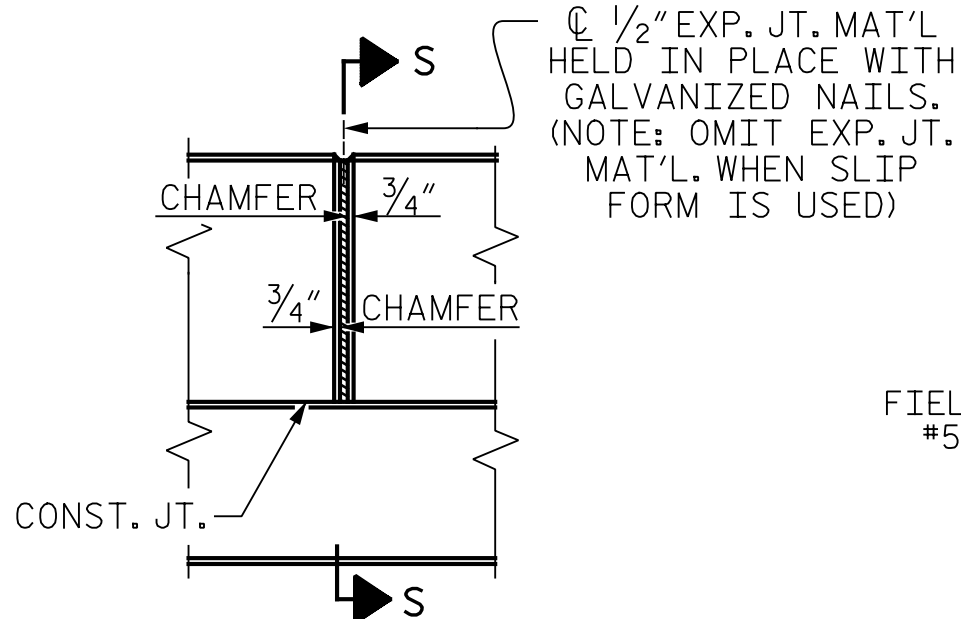


SECTION THRU RAIL

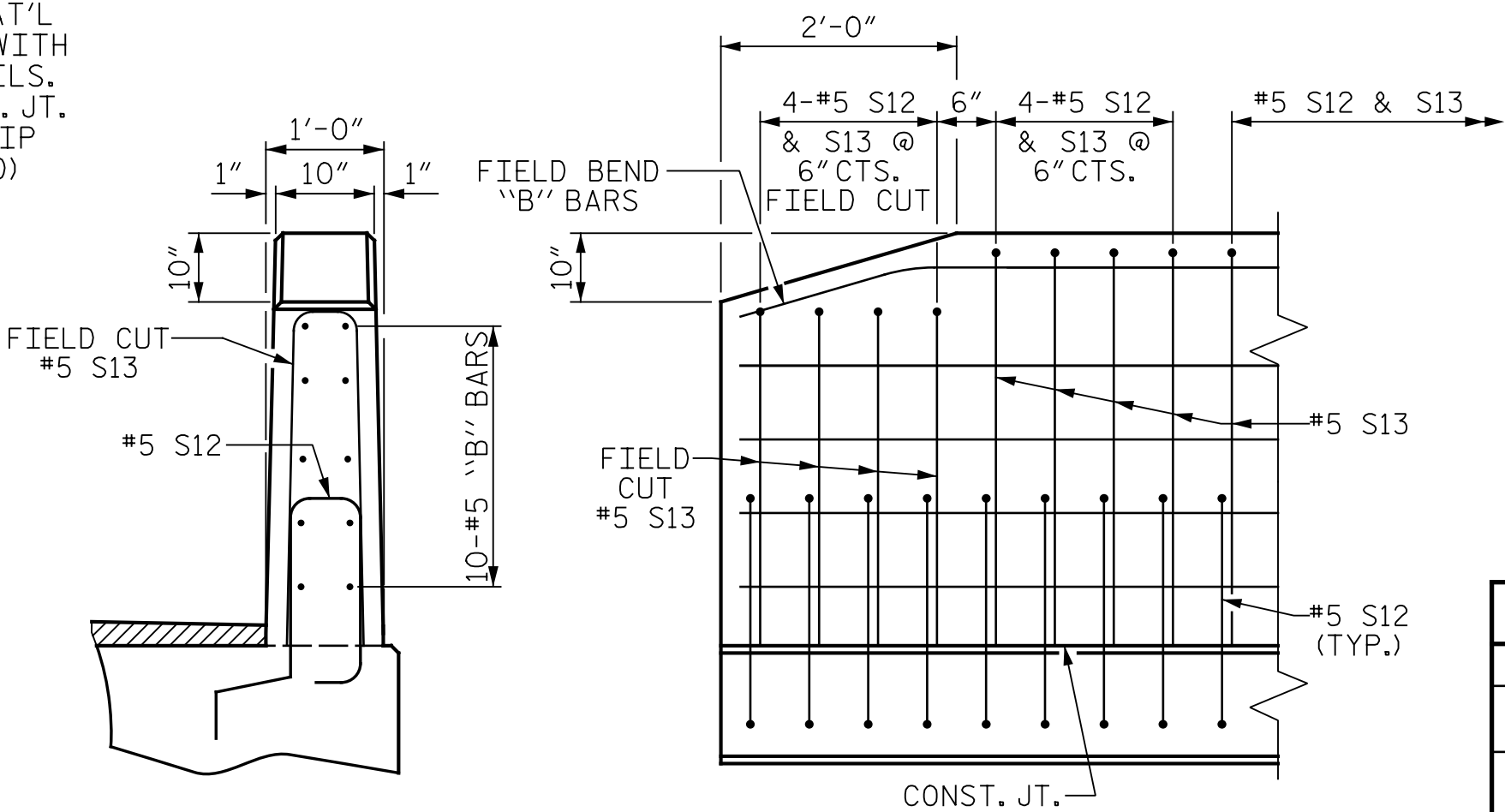
VERTICAL CONCRETE BARRIER RAIL DETAILS



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

END OF RAIL DETAILS

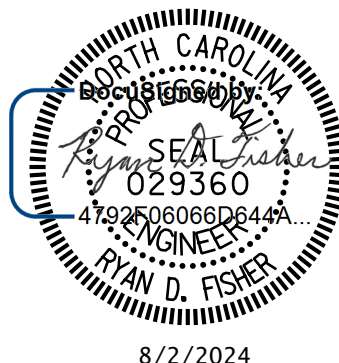
SIDE VIEW

CONCRETE RELEASE STRENGTH	
UNIT	PSI
75' UNITS	6,000

GRADE 270 STRANDS	
AREA (SQUARE INCHES)	0.6" Ø L.R.
ULTIMATE STRENGTH (LBS. PER STRAND)	0.217
APPLIED PRESTRESS (LBS. PER STRAND)	58,600
	43,950



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



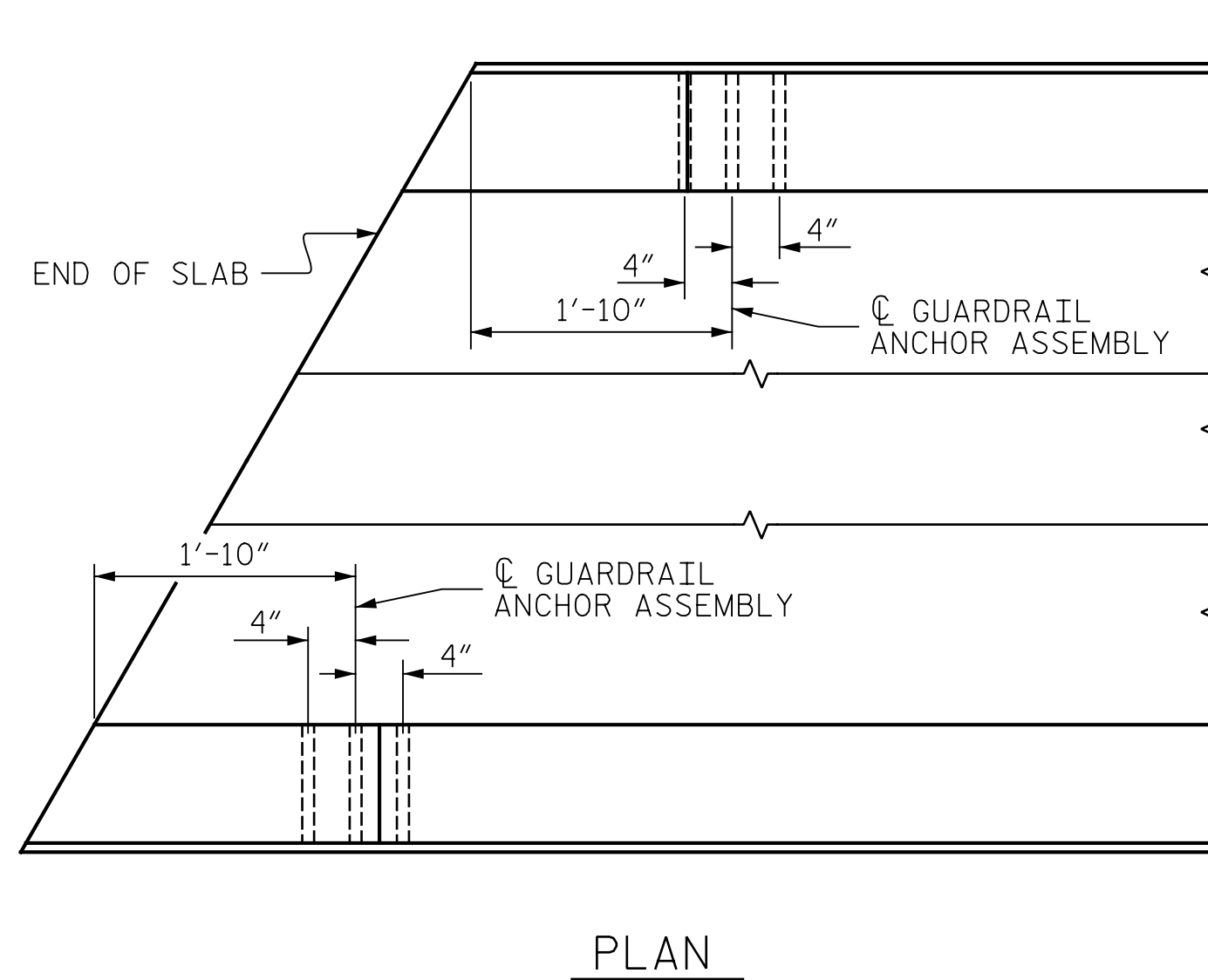
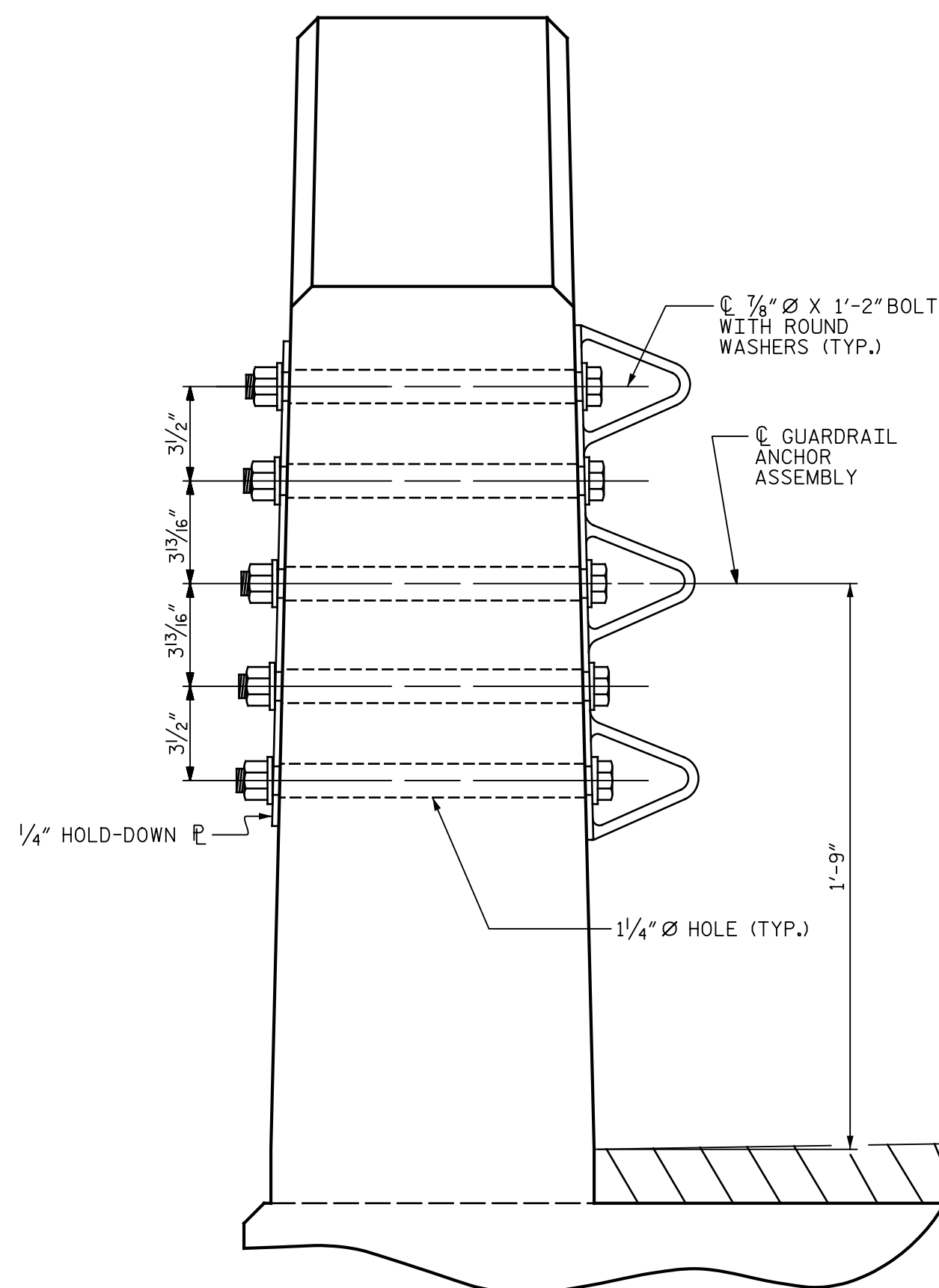
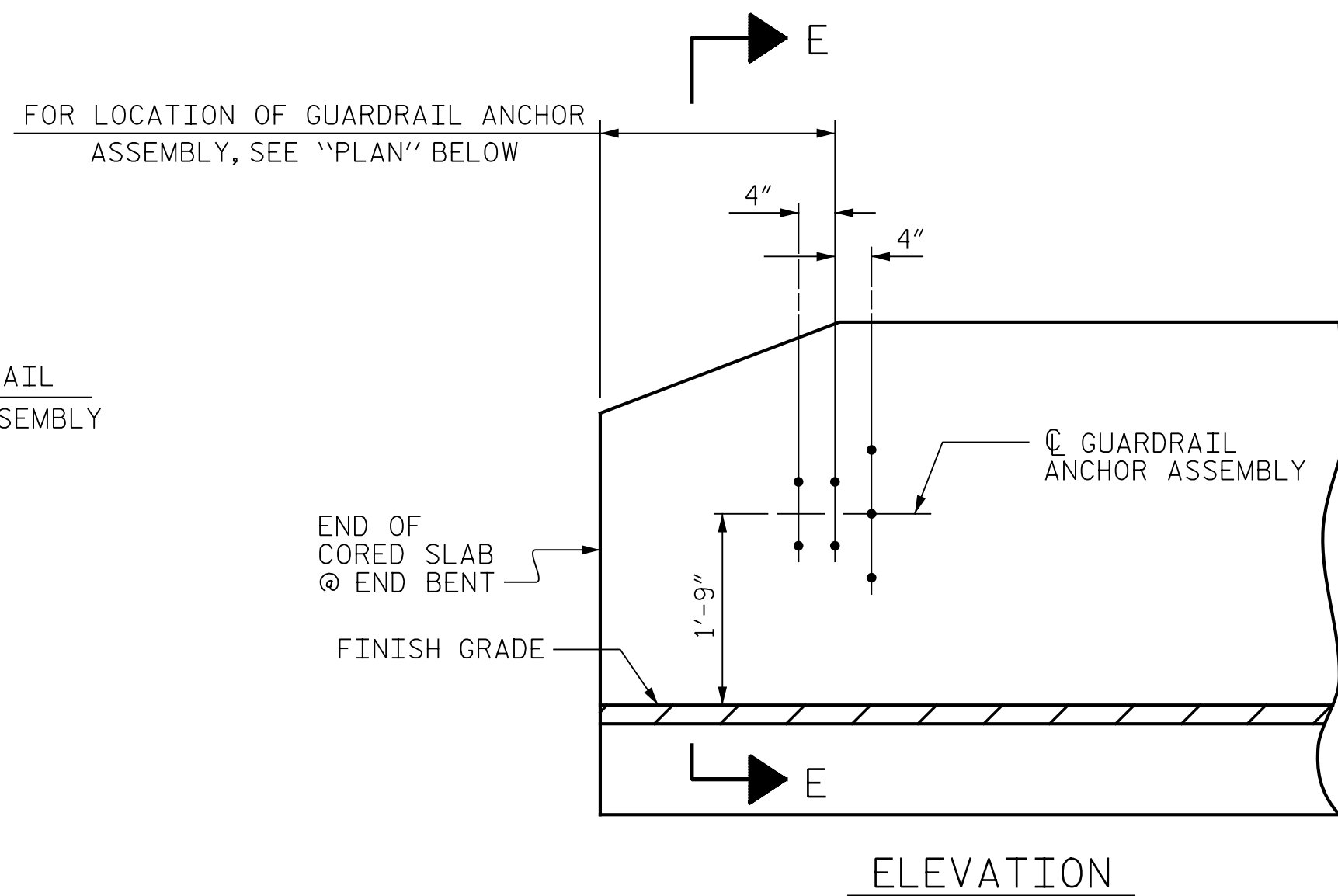
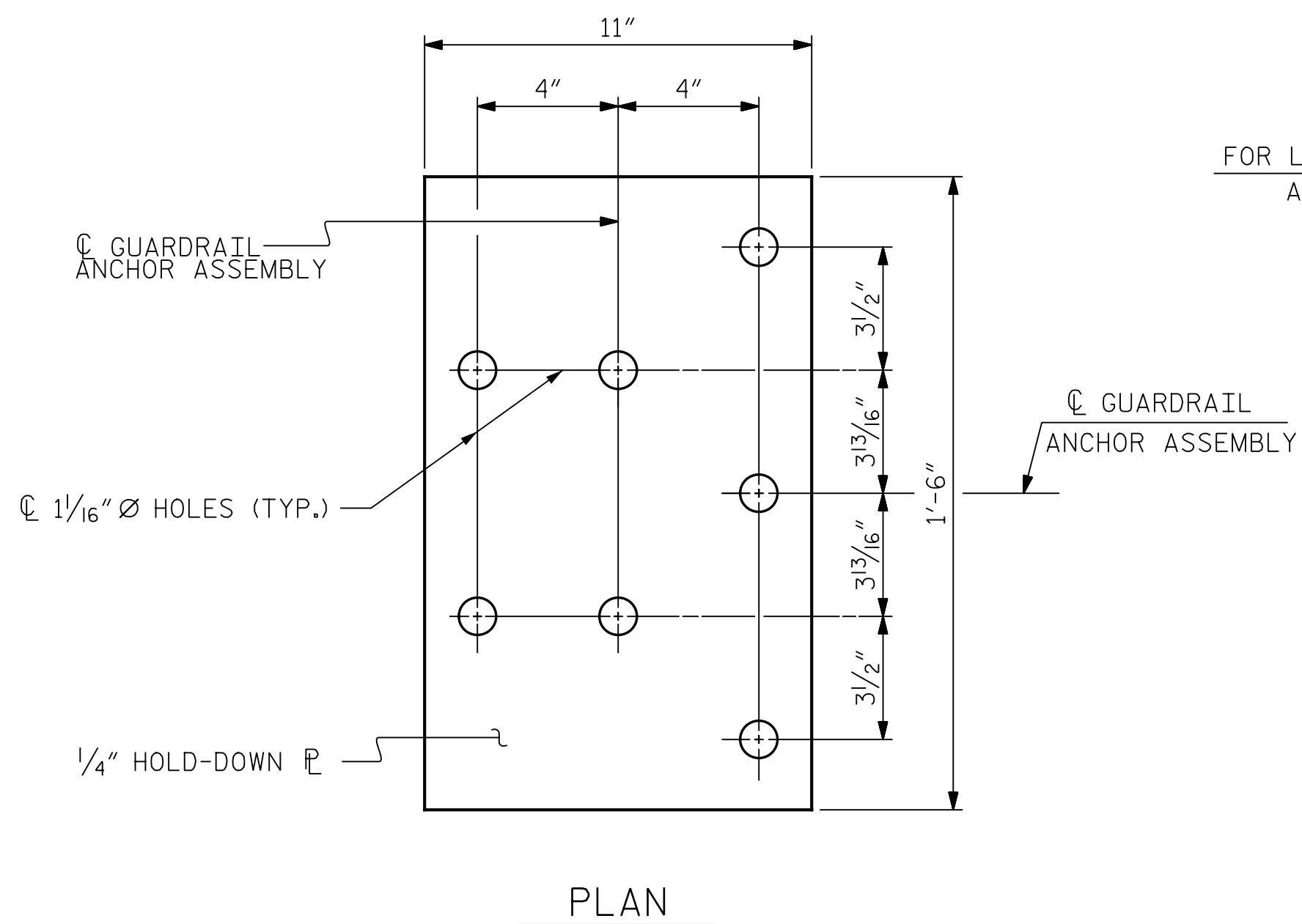
PROJECT NO. BP4.R022
EDGECOMBE COUNTY
STATION: 15+53.00 -L-

SHEET 3 OF 3

DEPARTMENT OF TRANSPORTATION RALEIGH					
3'-0" X 2'-0" PRESTRESSED CONCRETE CORED SLAB UNIT					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					14

DRAWN BY : M. SPENCER DATE : 06/2023
CHECKED BY : R. FISHER DATE : 01/2024
DESIGN ENGINEER OF RECORD: R. FISHER DATE : 06/2024

pw:\gfnet-pw-bentley.com:gfnet-pw-01\Documents\Projects\70503\5-Working Structures\CAD\3.0 100% Plans\401_015_BP4,R022_SMU_GR_008.dgn
8/2/2024 9:22:19 AM pdf_color_gfclt_FS.plt EDGECOMBE.Pen.tbl



SKETCH SHOWING
POINTS OF ATTACHMENT

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE $\frac{1}{8}$ " Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

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

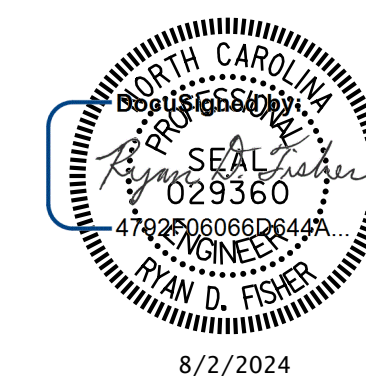
AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

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

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

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

PROJECT NO. BP4.R022
EDGEcombe COUNTY
 STATION: 15+53.00 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD GUARDRAIL ANCHORAGE DETAILS FOR VERTICAL CONCRETE BARRIER RAIL

ASSEMBLED BY : <u>M. SPENCER</u>		DATE : <u>06/2023</u>
CHECKED BY : <u>R. FISHER</u>		DATE : <u>01/2024</u>
DESIGN ENGINEER OF RECORD: <u>R. FISHER</u>		DATE : <u>07/2024</u>
DRAWN BY : <u>MAA</u>	DATE : <u>05/2010</u>	REV. MAA/TMG 01/2015
CHECKED BY : <u>GM</u>	DATE : <u>05/2010</u>	REV. MAA/THC 12/2017
		REV. MAA/THC 05/2018

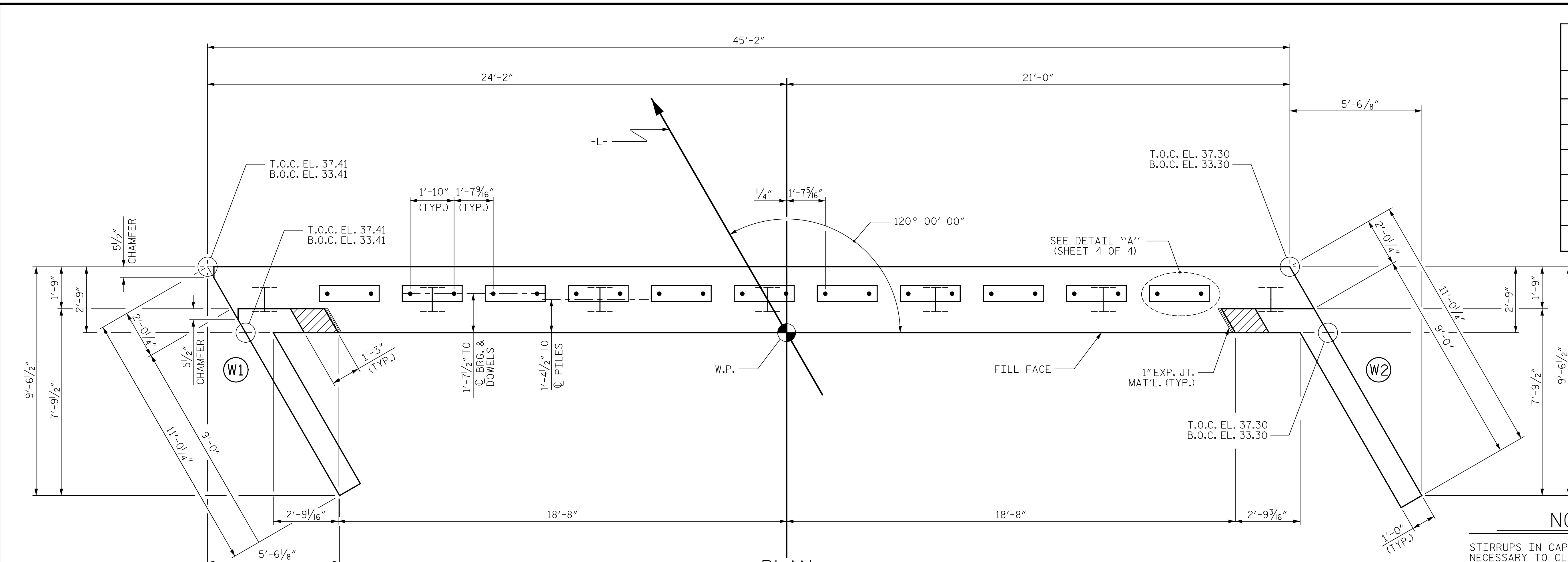


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

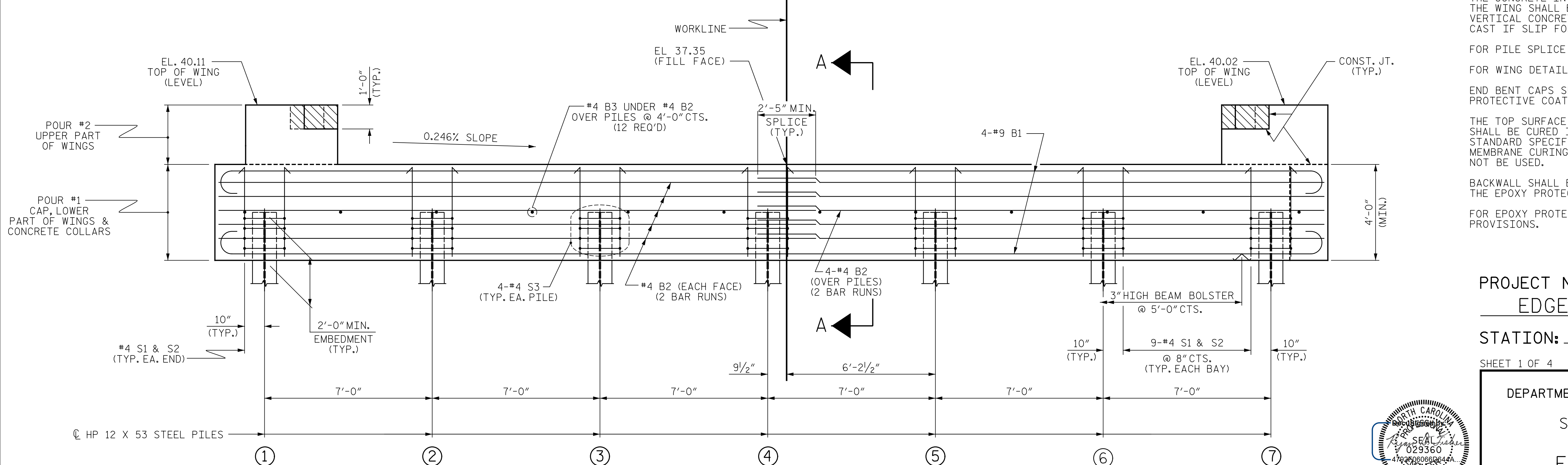
REVISIONS						SHEET NO. S-8
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

(SHT 1a) STD. NO. GRA3

pww\gfnct-pw.bentley.com\gfnct-pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_017_BP4.R022_SMU_EB1_009.dgn
1/15/2025 5:28:58 PM pdf_color_gfalt_FS.plt
EDGEcombe.Pan.tbl



TOP OF PILE ELEVATIONS	
①	35.41
②	35.39
③	35.37
④	35.36
⑤	35.34
⑥	35.32
⑦	35.31



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.

END BENT CAPS SHALL RECEIVE AN EPOXY PROTECTIVE COATING.

THE TOP SURFACE AREAS OF THE END BENT CAPS SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

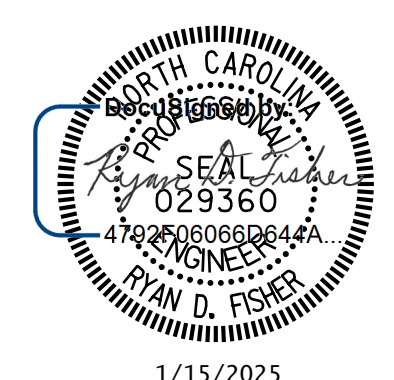
FOR EPOXY PROTECTIVE COATING, SEE SPECIAL PROVISIONS.

PROJECT NO. BP4.R022
EDGEcombe COUNTY
STATION: 15+53.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUBSTRUCTURE
END BENT 1

REVISIONS						SHEET NO. S-9
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

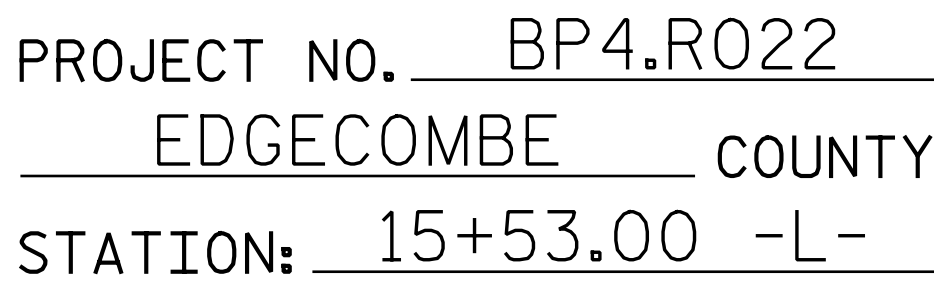
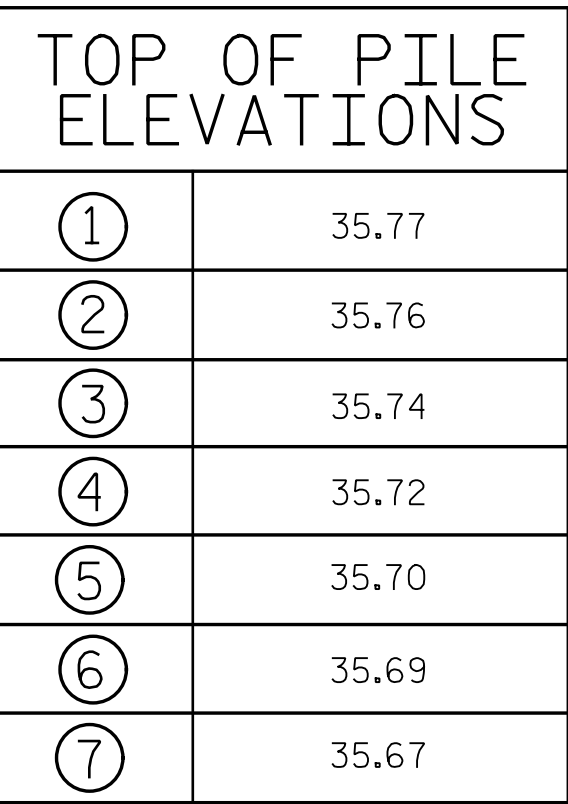


ASSEMBLED BY : <u>M. SPENCER</u>	DATE : <u>06/2023</u>
CHECKED BY : <u>R. FISHER</u>	DATE : <u>01/2024</u>
DESIGN ENGINEER OF RECORD: <u>R. FISHER</u>	DATE : <u>07/2024</u>
DRAWN BY : <u>WJH</u>	DATE : <u>12/2011</u>
CHECKED BY : <u>AAC</u>	DATE : <u>12/2011</u>
REV. MAA/TMG	04/2015

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.

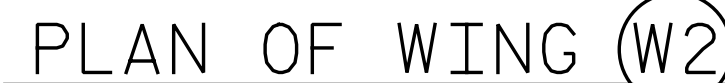
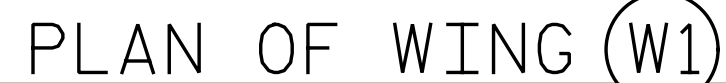


DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

 **GANNETT
FLEMING** *One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270*



SHEET 3 OF 4

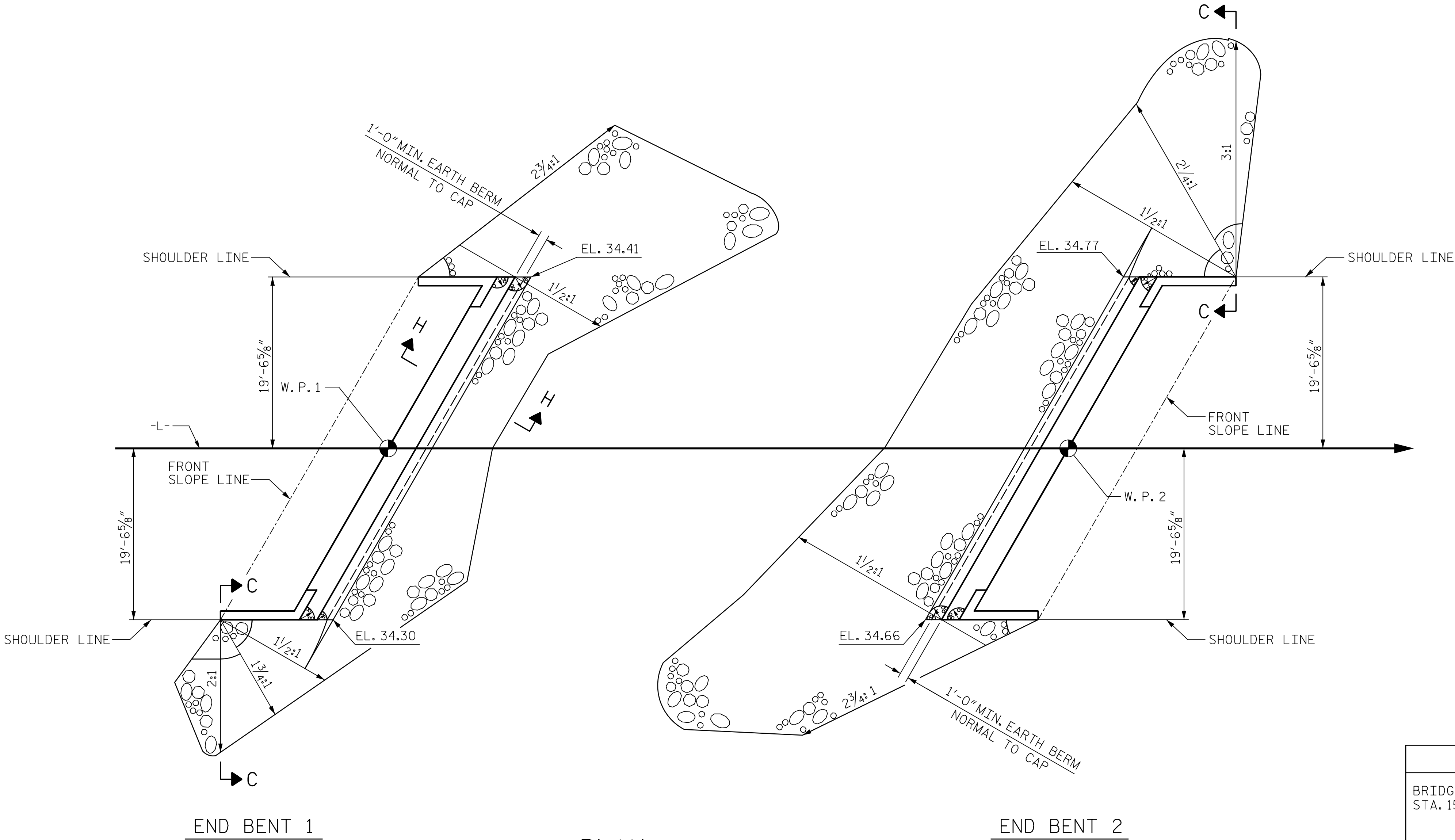
END BENT
WING DETAILS

WING DETAILS



REVISIONS						SHEET NO S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 14
2			4			

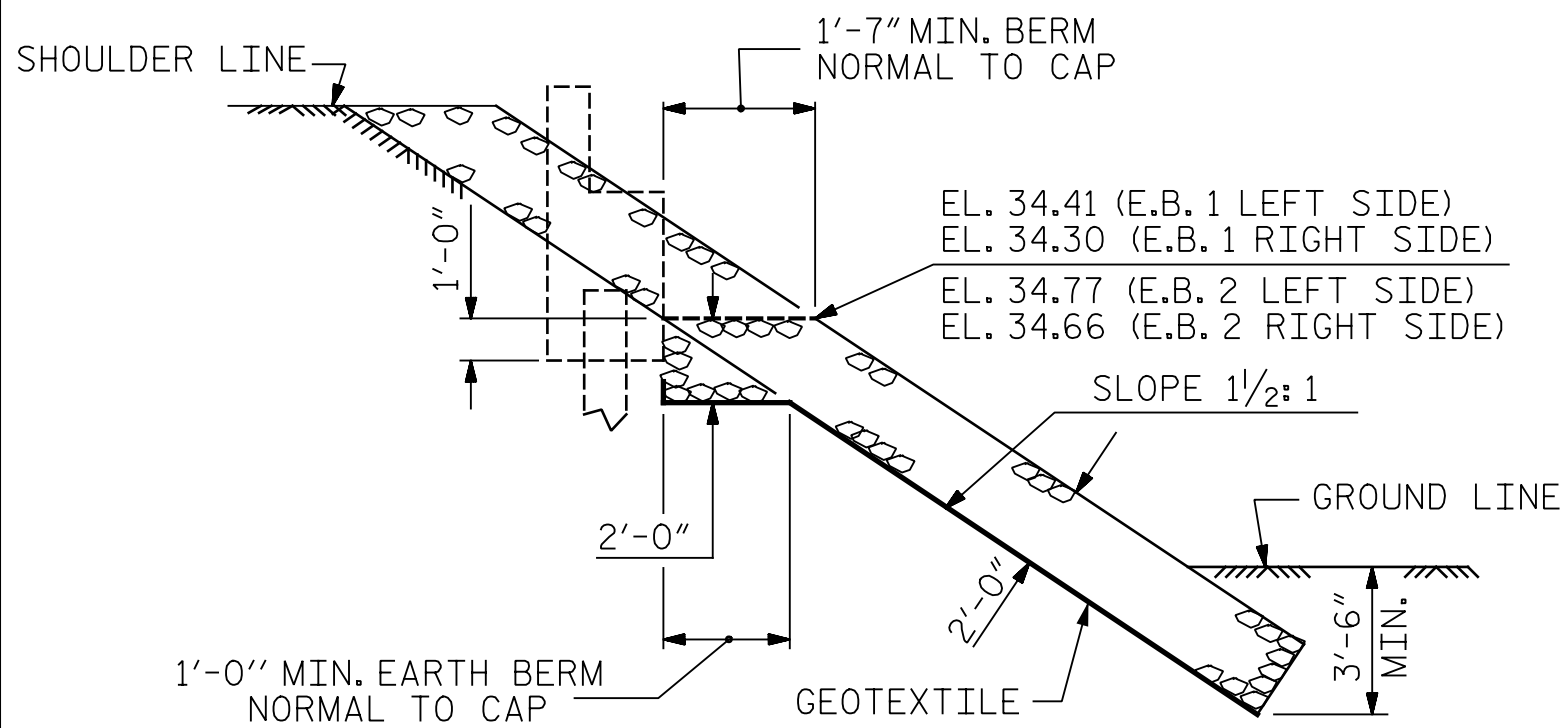
p:\xgfn\pw.bentley.com\gfn\pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_025_BP4.R022_SMU_RR_013.dgn
8/2/2024 9:22:44 AM pdf_color_gfalt_FS.plt
EDGECOMBE.Pan.tbl



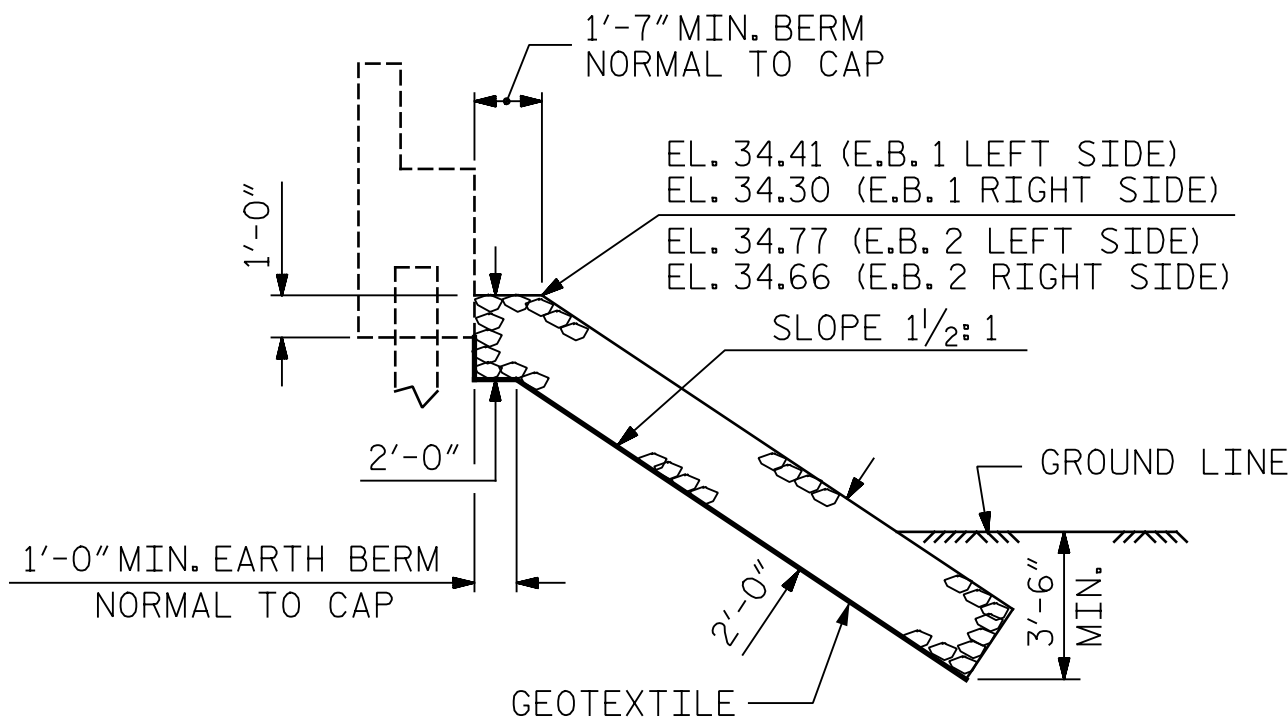
PLAN

ESTIMATED QUANTITIES

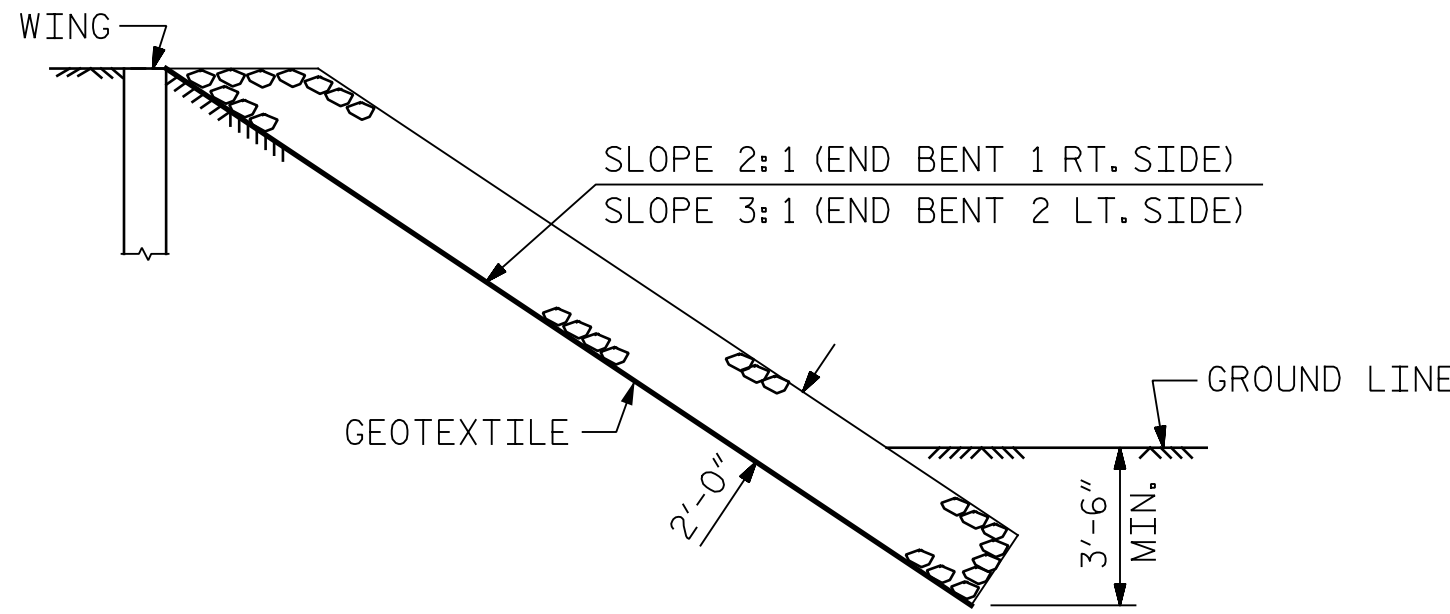
BRIDGE @ STA. 15+53.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	114	118
END BENT 2	176	182



SECTION H-H



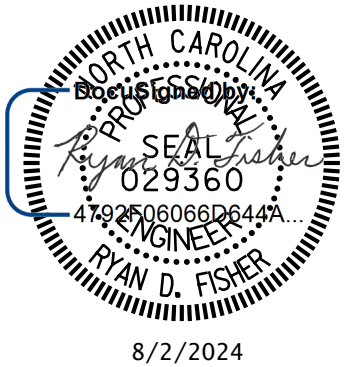
SECTION C-C
BERM RIP RAPPED



SECTION C-C

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

PROJECT NO. BP4.R022
EDGEcombe COUNTY
STATION: 15+53.00 -L-



RIP RAP DETAILS

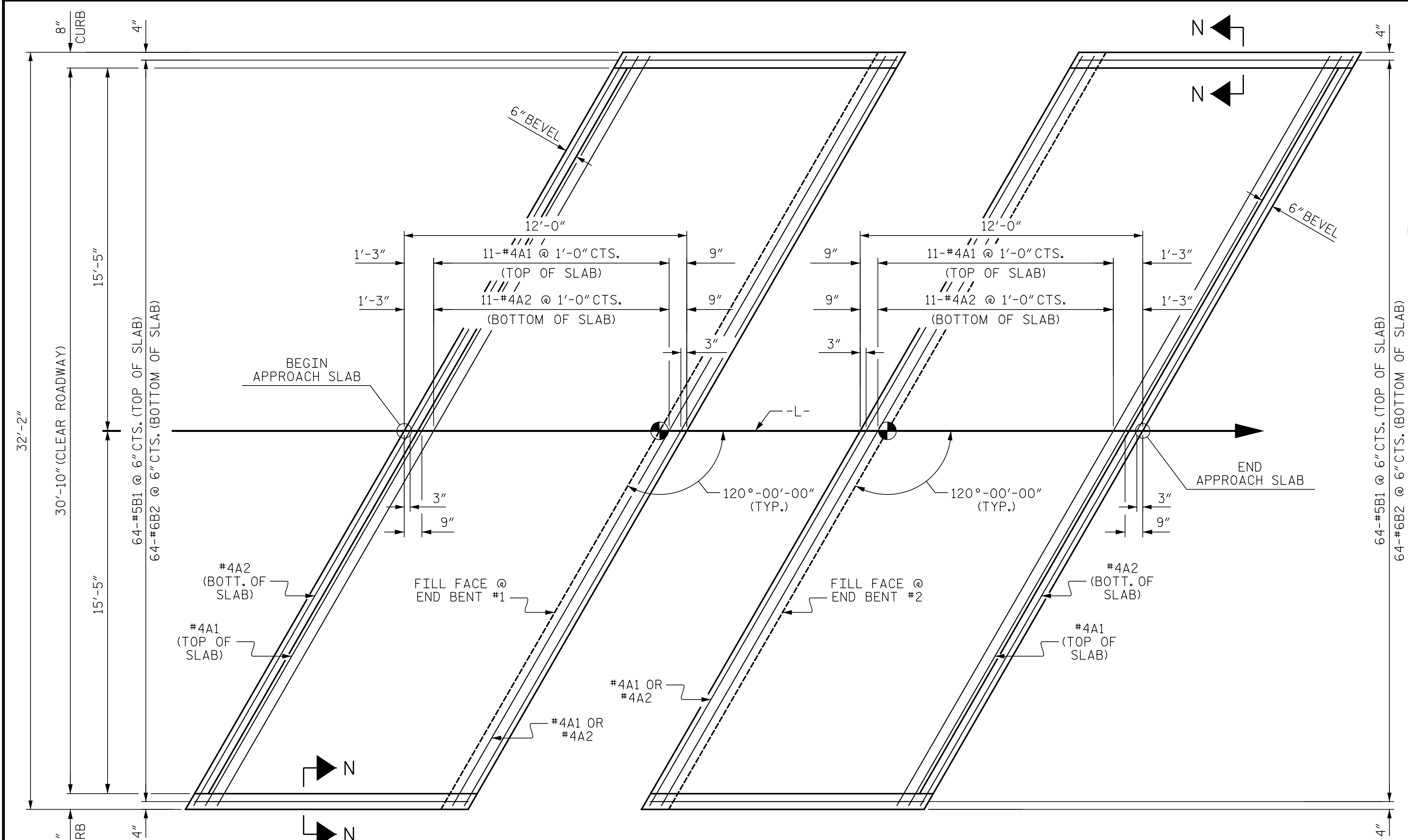
DRAWN BY : M. SPENCER DATE : 06/2023
CHECKED BY : R. FISHER DATE : 01/2024
DESIGN ENGINEER OF RECORD: R. FISHER DATE : 07/2024

GANNETT FLEMING
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

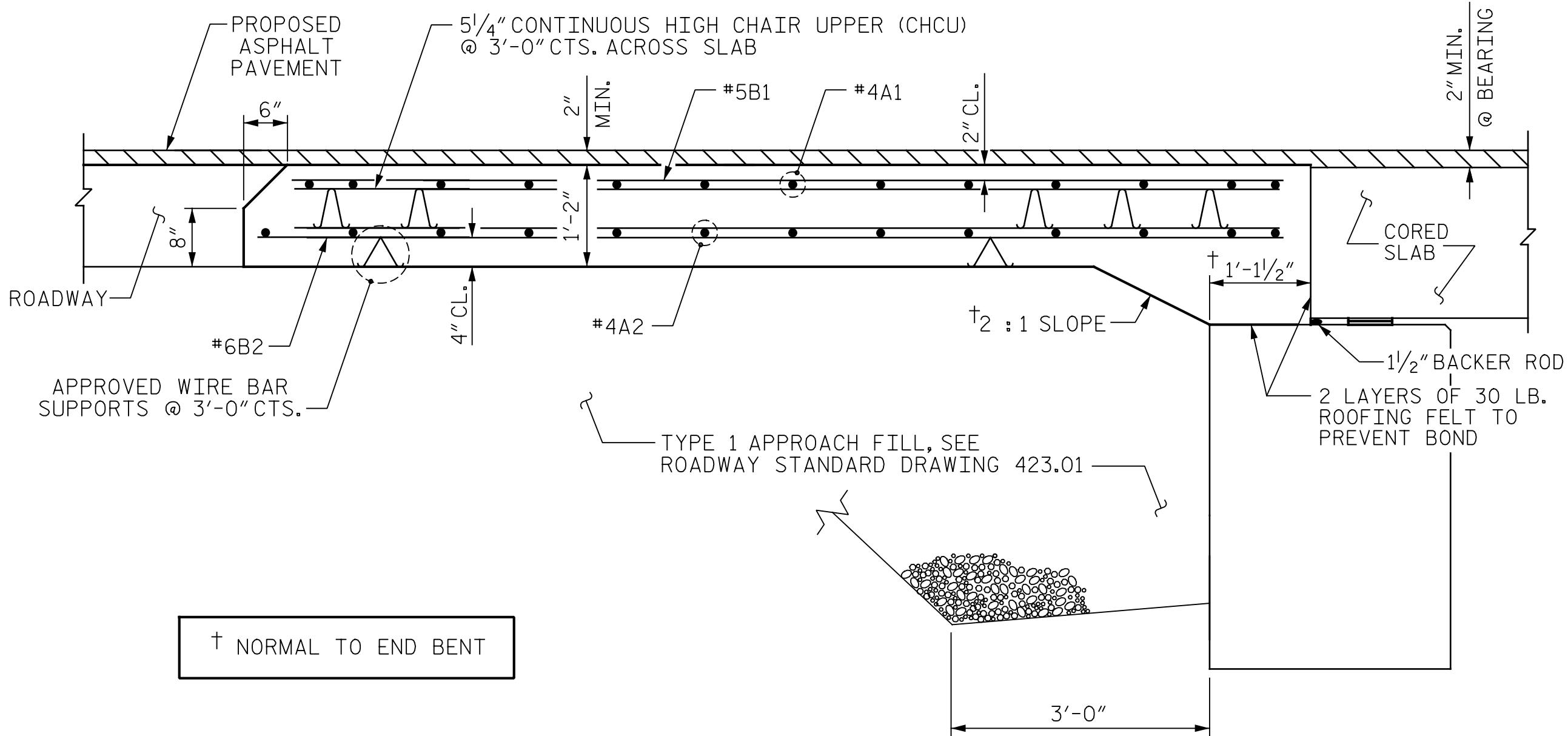
pww\gfnfnet-pw.bentley.com\gfnfnet-pw-01\Documents\Projects\70503\5-Working\Structures\CAD\3.0 100% Plans\401_027_BP4.R022_SMU_AS_014.dgn
8/2/2024 9:22:51 AM pdf_color_gfalt_FS.plt
EDGECOMBE.Pan.tbl



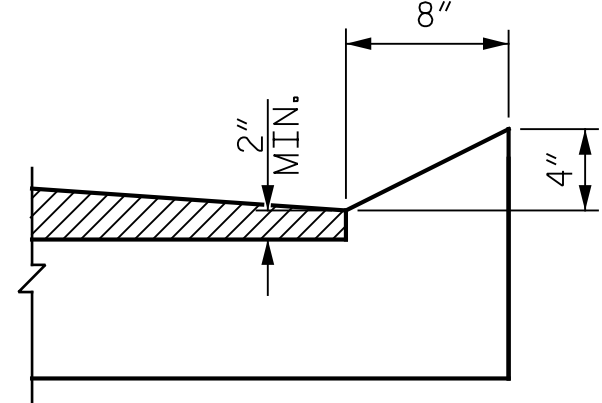
PLAN @ END BENT #1

PLAN @ END BENT #2

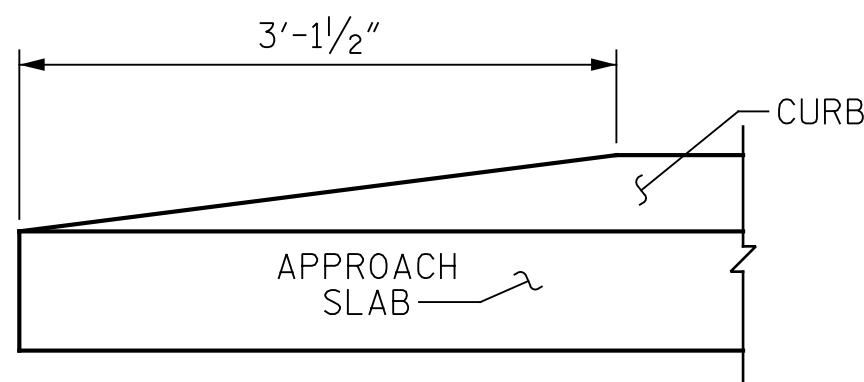
DIMENSIONS SHOWN ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT
SHOULDER BERM GUTTER

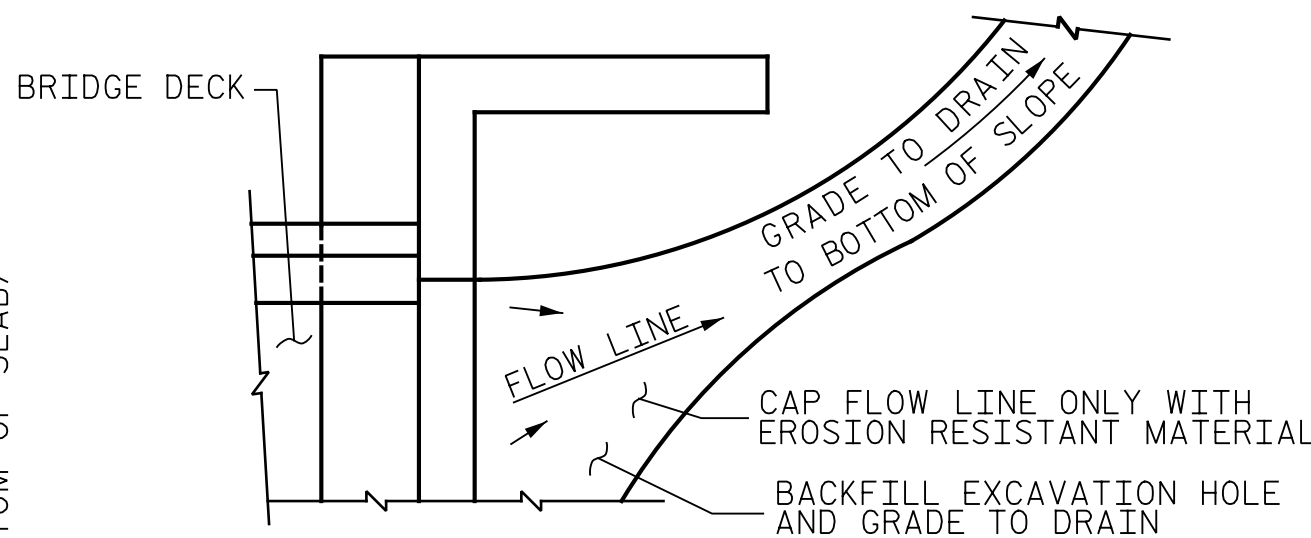
CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL, SEE ROADWAY PLANS.

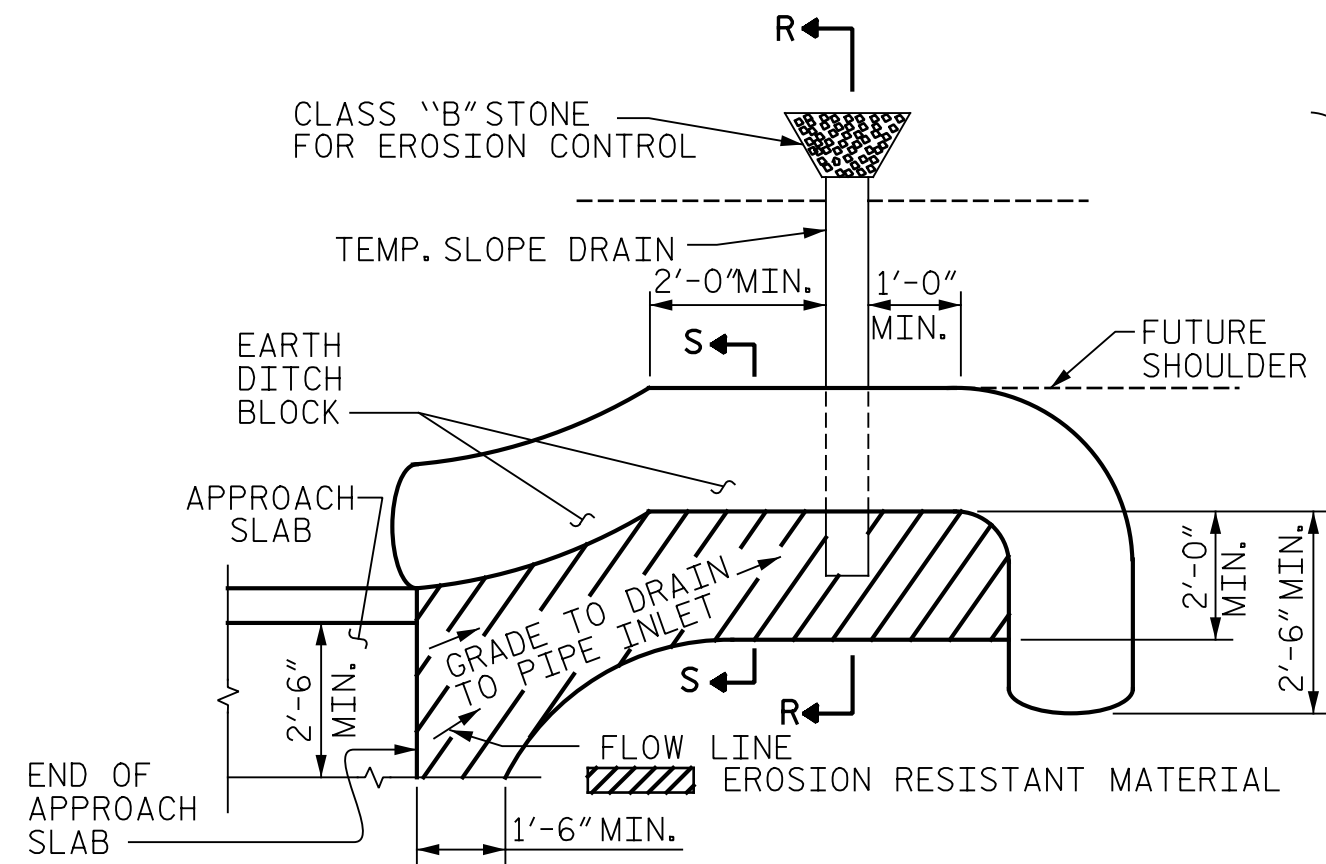
AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED. SEE ROADWAY PLANS.

APPROACH SLAB GROOVING IS NOT REQUIRED.



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



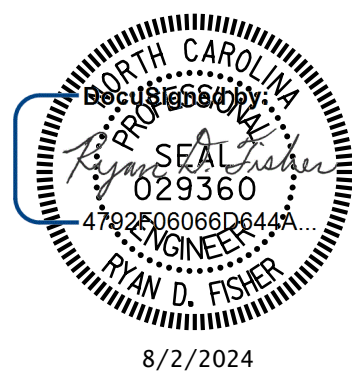
NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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

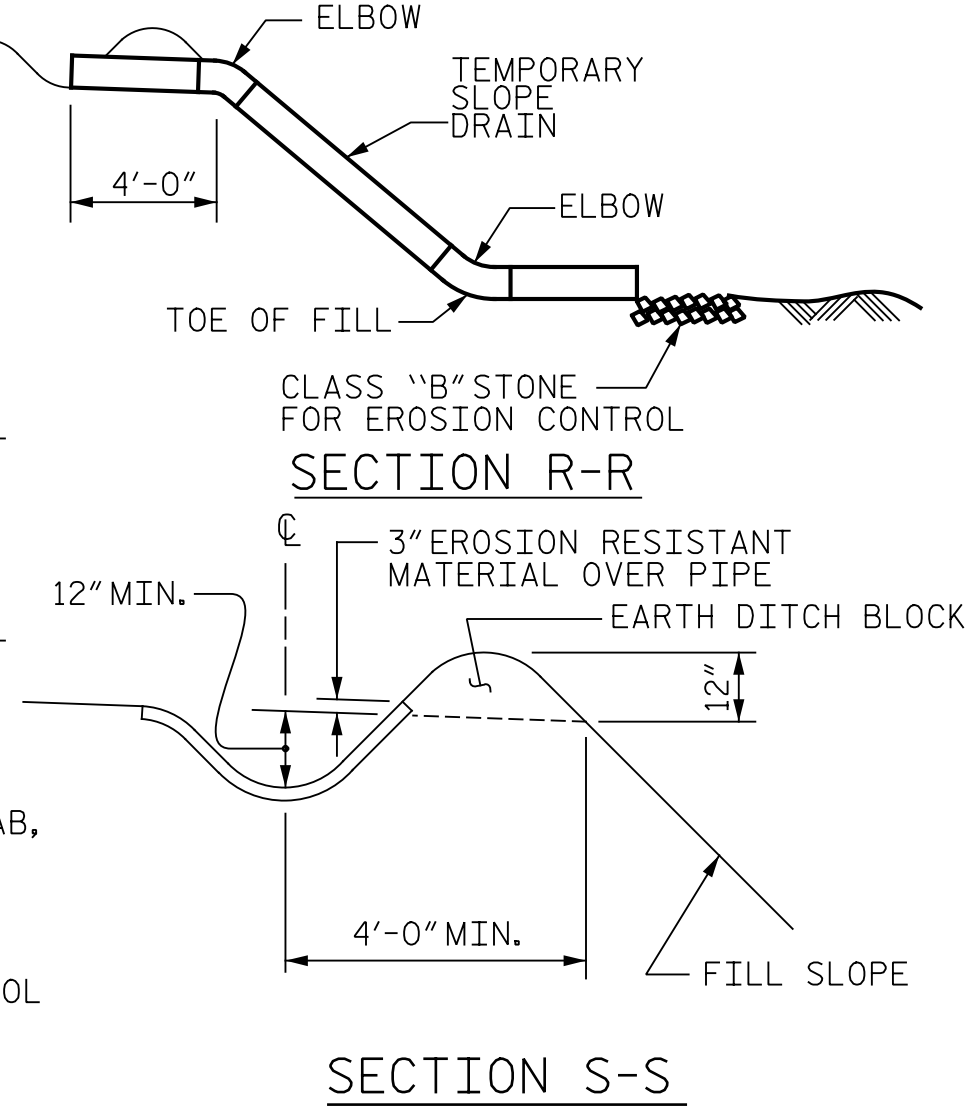
TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

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



BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	36'-8"	318
A2	13	#4	STR	36'-8"	318
* B1	64	#5	STR	11'-1"	740
B2	64	#6	STR	11'-7"	1113
REINFORCING STEEL				LBS.	1431
* EPOXY COATED REINFORCING STEEL				LBS.	1058
CLASS AA CONCRETE				C. Y.	19.8
APPROACH SLAB AT EB #2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	13	#4	STR	36'-8"	318
A2	13	#4	STR	36'-8"	318
* B1	64	#5	STR	11'-1"	740
B2	64	#6	STR	11'-7"	1113
REINFORCING STEEL				LBS.	1431
* EPOXY COATED REINFORCING STEEL				LBS.	1058
CLASS AA CONCRETE				C. Y.	19.8



SECTION S-S

PROJECT NO. BP4.R022
EDGECOMBE COUNTY
STATION: 15+53.00 -L-

DEPARTMENT OF TRANSPORTATION RALEIGH					
STANDARD BRIDGE APPROACH SLAB CORED SLAB UNIT (SUB-REGIONAL TIER) 120° SKEW					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					14

STD. NO. BAS_33_120S



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

ASSEMBLED BY :	M. SPENCER	DATE :	06/2023
CHECKED BY :	R. FISHER	DATE :	01/2024
DESIGN ENGINEER OF RECORD:	R. FISHER	DATE :	07/2024
DRAWN BY :	KMM	3-08	REV. 06/19
CHECKED BY :	GM	3-08	REV. 08/19
			REV. 07/23
			MAA/THC
			BNB/THC
			BNB/SNM

+

pwa\\vgfnet-pw.bentley.com\gfnets\5-Working\Structures\CAD\3.0 100% Plans\500_001_BP4.R022-SMU_SN.dgn
8/2/2024 9:22:56 AM pdf_color_gfolt_FS.plt
EDGE/COMBE_Pan.tbl

+

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 2024 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1 1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" 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 1/4" 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.

STANDARD NOTES

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 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" 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. FINIS 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.