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SUMMIT
DESIGN AND ENGINEERING SERVICES

Docusign Envelope ID: 3B97EC86-607E-4497-AE09-BAE5D29E1D21

09/08/99

SHEET: RD1

PROJECT: ASHE 005-01-34397

PROJECT LENGTH

LENGTH ROADWAY PROJECT ASHE 005-01-34397 = 0.035 MILES

LENGTH STRUCTURE PROJECT ASHE 005-01-34397 = 0.027 MILES

TOTAL LENGTH PROJECT ASHE 005-01-34397 = 0.062 MILES

PRB CONTACT: WRENN BARRETT, PE
PROJECT MANAGER

100% PLAN SET

NORTH CAROLINA

NCEM Private Roads and Bridges

ASHE COUNTY

HYDRAULICS ENGINEER
1/29/2026
Signed by: He Yang
SIGNATURE: P.E.
NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

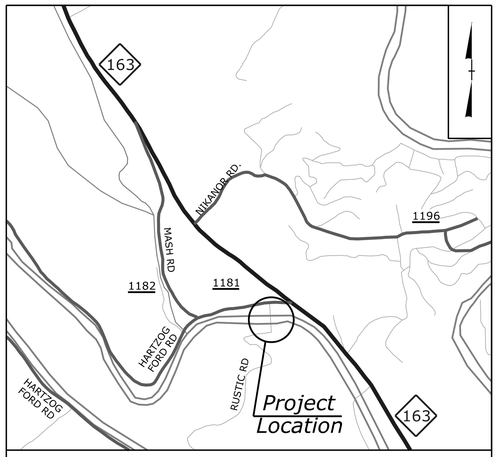
ROADWAY DESIGN ENGINEER
1/29/2026
Signed by: Spencer W. Merritt
SIGNATURE: P.E.
NORTH CAROLINA PROFESSIONAL SEAL 053483 ENGINEER SPENCER W. MERRITT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED IN THE OFFICE OF:
SUMMIT DESIGN AND ENGINEERING SERVICES FIRM NO. C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6776
www.summitde.com

SPENCER MERRITT, PE
PROJECT ENGINEER

JOSHUA JERNIGAN, PE
PROJECT DESIGN ENGINEER



VICINITY MAP (NTS)

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL

INDEX OF SHEETS

RD1 - TYPICALS, VICINITY MAP, GEN. NOTES/STD'S

RD2 THRU RD2B - CONVENTIONAL SYMBOLS, SPECIAL DETAILS

RD3 - PROJECT PLAN AND PROFILE SHEET

EC1 THRU EC5 - EROSION CONTROL PLANS

UO1 - UTILITIES BY OTHERS PLANS

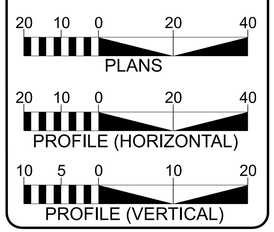
X1 THRU X5 - CROSS SECTIONS

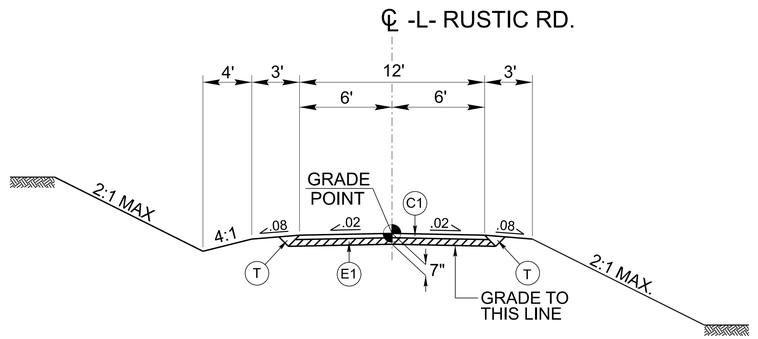
S1 THRU S25 - STRUCTURE PLANS

SN- STANDARD NOTES

MR- BRIDGE MAINTENANCE RECOMMENDATIONS

GRAPHIC SCALES

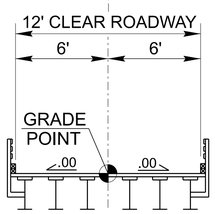




TYPICAL SECTION NO. 1

-L- STA. 10+40.00 TO -L- STA. 11+23.13 (BEGIN BRIDGE)

-L- STA. 12+66.88 (END BRIDGE) TO -L- STA. 13+65.00



BRIDGE TYPICAL

-L- STA. 11+23.13 TO -L- STA. 12+66.88

TYPICAL SECTIONS

THE PROPOSED HYDRAULIC CONVEYANCE PROVIDES EQUAL OR GREATER HYDRAULIC CONVEYANCE THAN THE DESTROYED CROSSING. (SEE APPROX. HYDRAULIC CONVEYANCE TABLE ON SHEET RD-3)

ACTUAL EXISTING HYDRAULIC CONVEYANCE MAY DIFFER FROM WHAT IS SHOWN DUE TO POST HELENE DAMAGE TO THE EXISTING STRUCTURE.

DRAWN BY: J. JERNIGAN 10-2025

CHECKED BY: S. MERRITT 10-2025

NCDOT 2024 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Contracts Standards and Development Unit - N. C. Department of Transportation - Raleigh, N. C., Dated January 16, 2024 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.03	Method of Clearing - Method III
225.02	Guide for Grading Subgrade - Secondary and Local
225.04	Method of Obtaining Superelevation - Two Lane Pavement
275.01	Rock Plating
DIVISION 3 - PIPE CULVERTS	
300.01	Method of Pipe Installation (Use Details in Lieu of Standards for Sheets 1 and 2 of 2)
310.10	Driveway Pipe Construction
DIVISION 8 - INCIDENTALS	
840.35	Traffic Bearing Grated Drop Inlet - for Cast Iron Double Frame and Grates
840.72	Pipe Collar
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	Stationary Work Zone Signs
1145.01	Barricades

GENERAL NOTES: NCDOT 2024 SPECIFICATIONS
EFFECTIVE: 01-16-2024

GRADE LINE:

GRADING AND SURFACING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

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

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATION IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

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

DRIVEWAYS:
DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. 848.03 AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL MAINTAIN LOCAL ACCESS TO ALL RESIDENCES WITHIN THE PROJECT LIMITS DURING CONSTRUCTION.

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 SKYLINE & BLUE RIDGE EMC.

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS.

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

TRAFFIC CONTROL DEVICES:
PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

05/20/24

ASHE 005-01-34397	
RD	002

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

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

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

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

UTILITIES:

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

POWER:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

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

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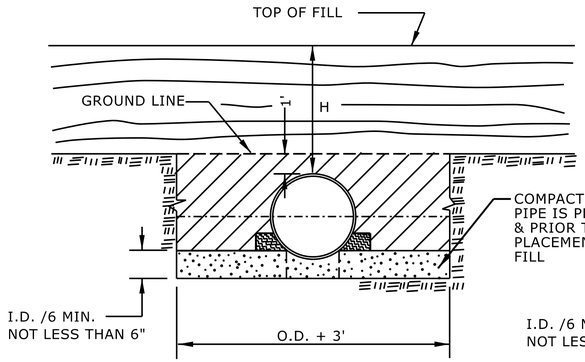
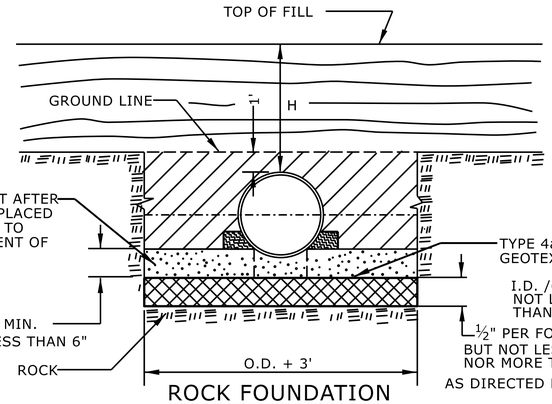
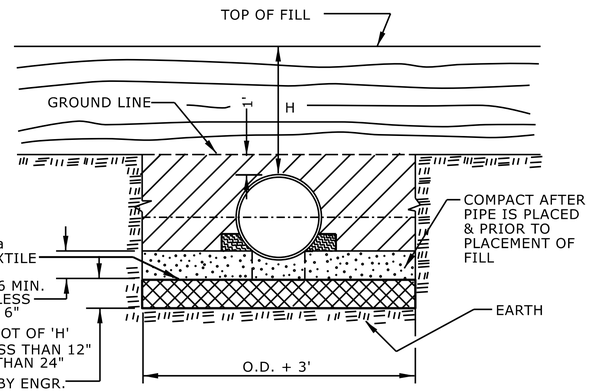
PROJECT REFERENCE NO.	SHEET NO.
005-01-34397	RD-002A



NORMAL EARTH FOUNDATION

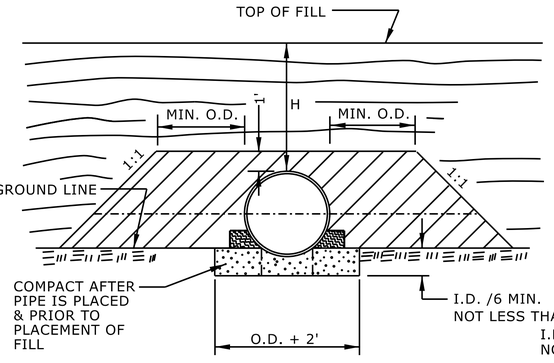


ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE IN TRENCH



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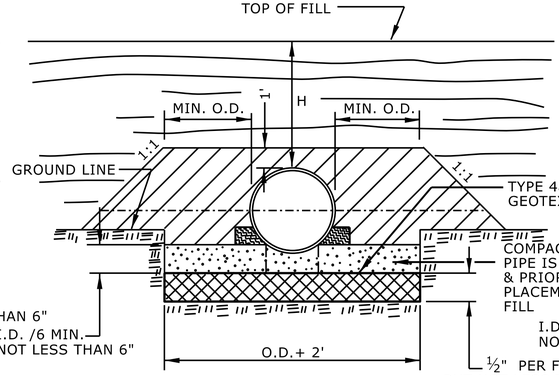
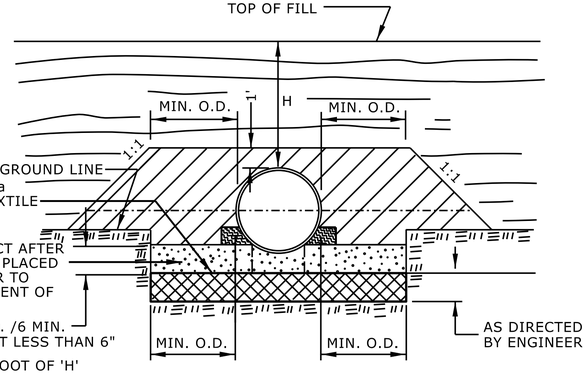


ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE ABOVE GROUND

GENERAL NOTES:

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

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

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

APPROVED SUITABLE LOCAL MATERIAL.

TAKE CARE TO FULLY COMPACT HAUNCH ZONE OF PIPE BACKFILL.

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

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

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

SPRINGLINE OF PIPE

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

UNDISTURBED EARTH MATERIAL

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

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

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

FLEXIBLE PIPE

SHEET 1 OF 2

300.01

10/21/2025

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by: Nicole M Hackler
5884323D34164C5...

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

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ORIGINAL BY: S.CALHOUN DATE: 7-25-2024
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CHECKED BY: _____ DATE: _____
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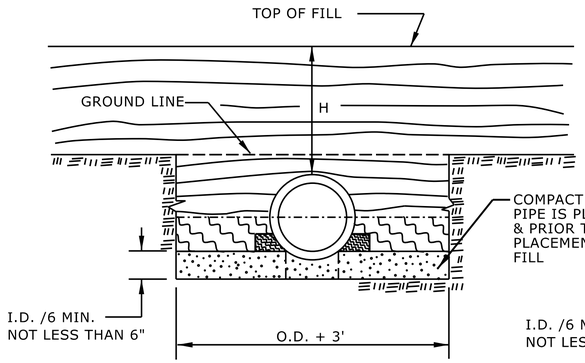

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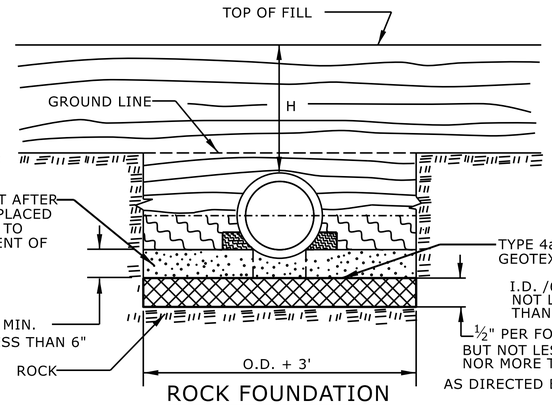
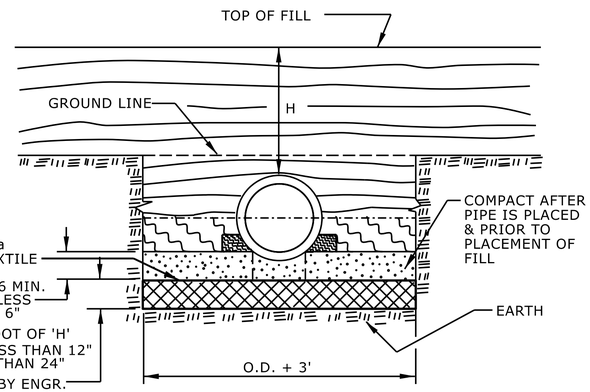
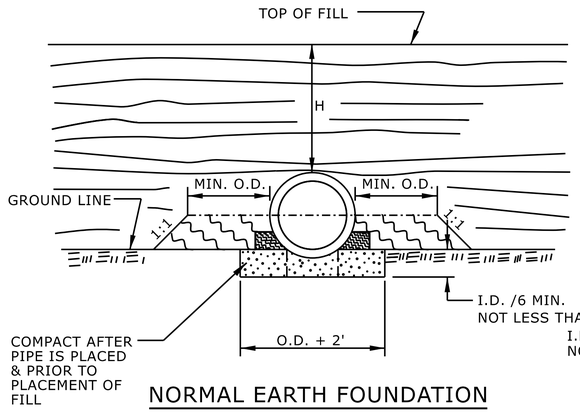


ROCK FOUNDATION



UNSUITABLE MATERIAL FOUNDATION

PIPE IN TRENCH



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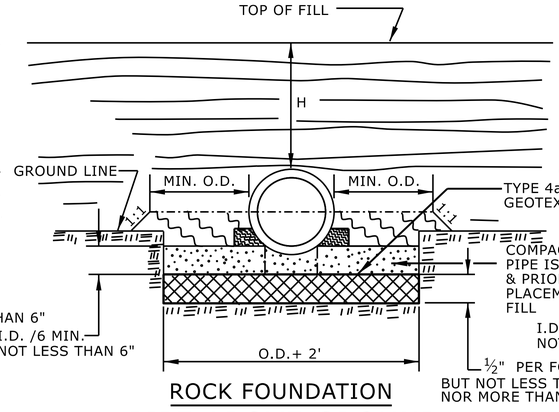

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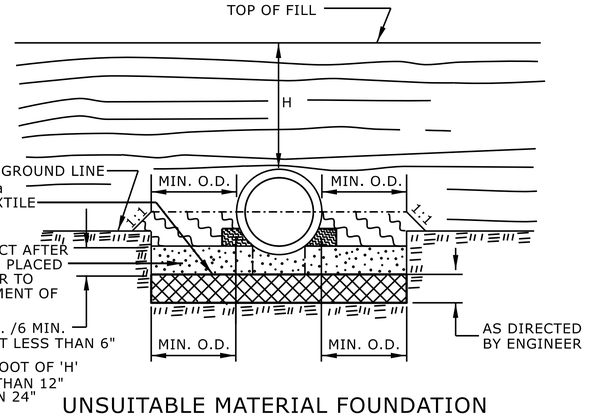

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STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR

METHOD OF PIPE INSTALLATION

RIGID PIPE

SHEET 2 OF 2

300.01

10/21/2025

NORTH CAROLINA PROFESSIONAL SEAL 033144 ENGINEER NICOLE M. HACKLER

Signed by: Nicole M Hackler
5884323D34164C5...

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

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MODIFIED BY: _____ DATE: _____
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FILE SPEC.: _____

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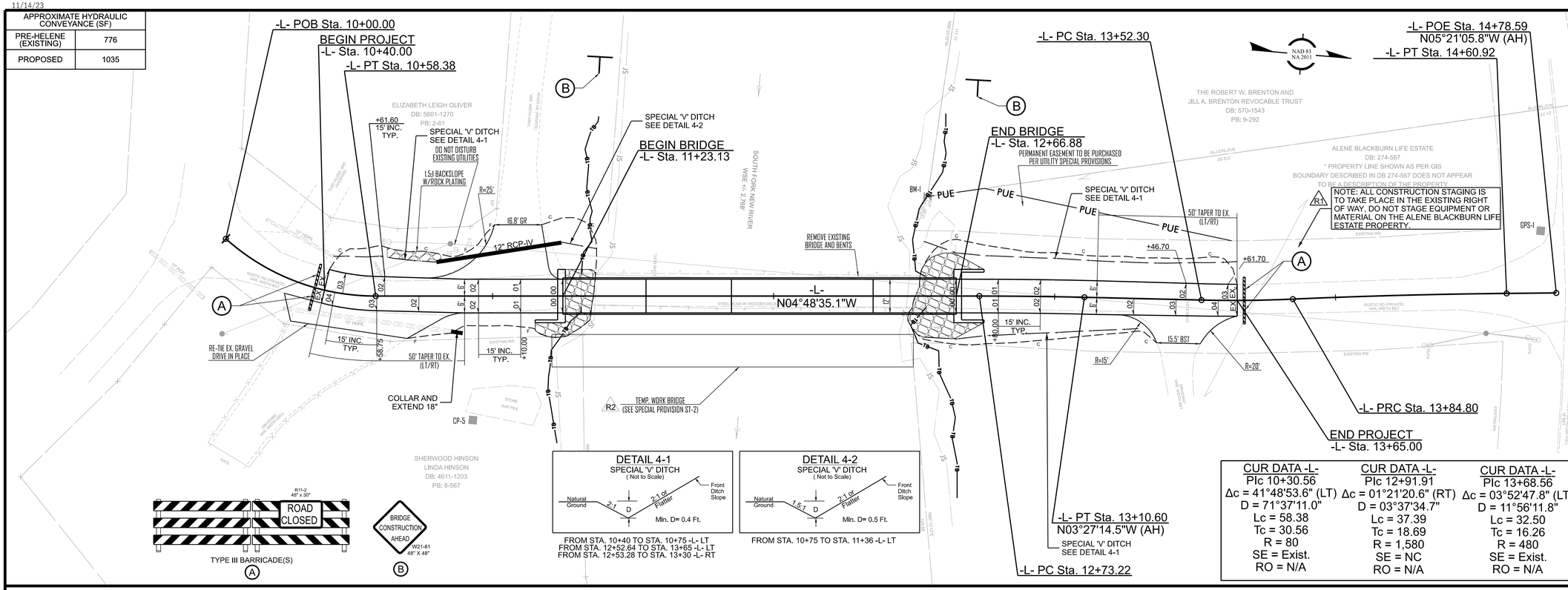
11/14/23

APPROXIMATE HYDRAULIC CONVEYANCE (SF)	
PRE-HELENE (EXISTING)	776
PROPOSED	1035



CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
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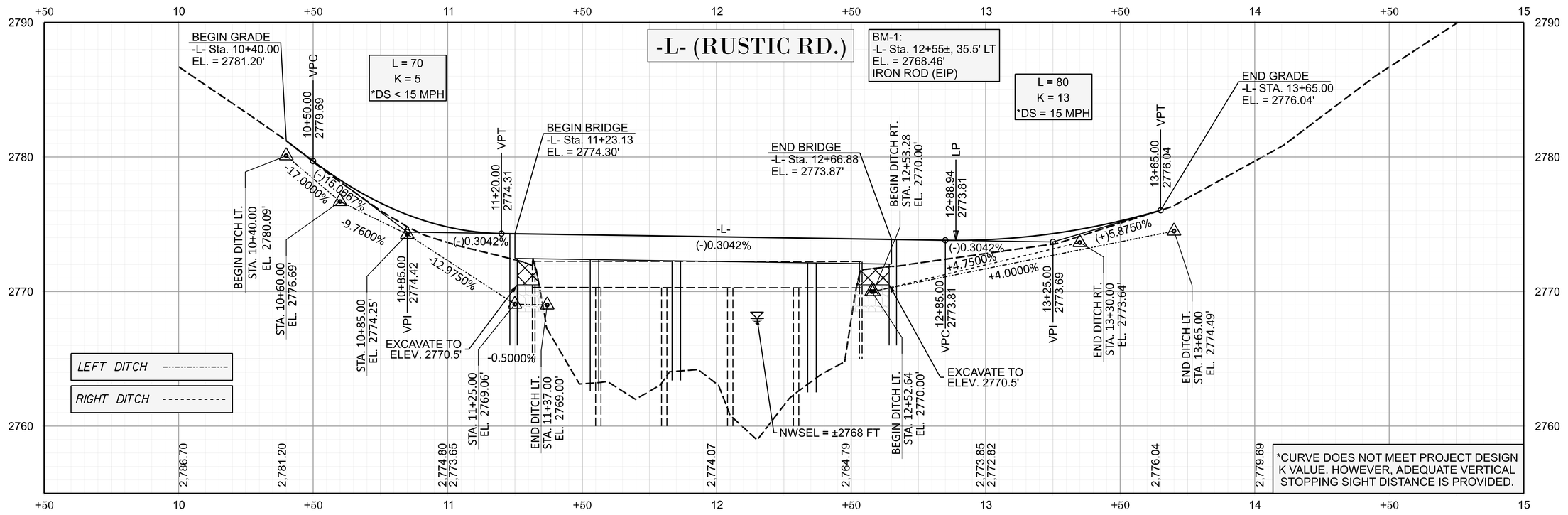
Δc = 41°48'53.6" (LT)	Δc = 01°21'20.6" (RT)	Δc = 03°52'47.8" (LT)	Δc = 01°58'56.4" (RT)
D = 71°37'11.0"	D = 03°37'34.7"	D = 11°56'11.8"	D = 02°36'15.7"
Lc = 58.38	Lc = 37.39	Lc = 32.50	Lc = 76.12
Tc = 30.56	Tc = 18.69	Tc = 16.26	Tc = 38.06
R = 80	R = 1,580	R = 480	R = 2,200
SE = Exist.	SE = NC	SE = Exist.	SE = Exist.
RO = N/A	RO = N/A	RO = N/A	RO = N/A



ASHE 005-01-34397

RD	003

NORTH CAROLINA
ASHE COUNTY

ROADWAY DESIGN ENGINEER
12/19/2025

NORTH CAROLINA PROFESSIONAL SEAL 053483 ENGINEER SPENCER W. MERRITT

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

HYDRAULIC DESIGN ENGINEER
12/19/2025

NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

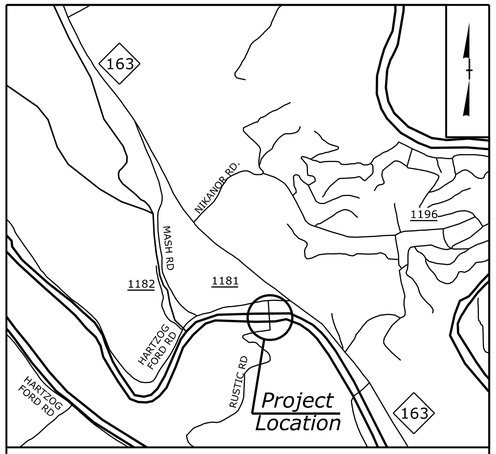
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social Street, Suite 800
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

R1 REV-1 (12/08/25): NOTE ADDED TO STAGE WITHIN EXISTING RIGHT OF WAY.

R2 REV-2 (12/17/25): REVISION CALLOUT TO WORK BRIDGE FOR PERMITTING.

Docusign Envelope ID: A1F005D6-11D9-454D-9DA8-1DFB180BFB78

PROJECT: ASHE 005-01-34397



VICINITY MAP (NTS)

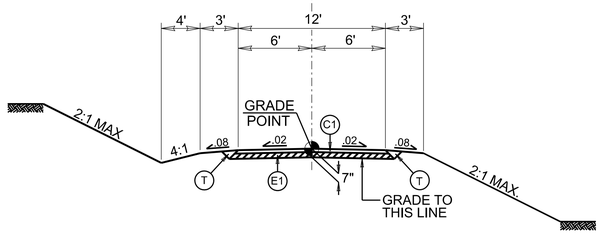
STATE OF NORTH CAROLINA
EMERGENCY MANAGEMENT
PLAN FOR PROPOSED
HIGHWAY EROSION CONTROL
ASHE COUNTY

STATE	NCEM PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	ASHE 005-01-34397	EC-1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

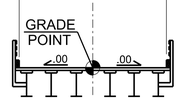
SUMMIT
DESIGN AND ENGINEERING SERVICES

℄ -L- RUSTIC RD.



TYPICAL SECTION NO. 1
-L- STA. 10+40.00 TO -L- STA. 11+23.13 (BEGIN BRIDGE)
-L- STA. 12+66.88 (END BRIDGE) TO -L- STA. 13+65.00

℄ -L- RUSTIC RD.



BRIDGE TYPICAL
-L- STA. 11+23.13 TO -L- STA. 12+66.88

TYPICAL SECTIONS

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
T	EARTH MATERIAL

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

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.

HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. -L- 11+20
to Sta. -L- 12+60
Refer To E. C. Special Provisions for Special Considerations.

THIS IS NOT A CONTROLLED ACCESS PROJECT.
CLEARING AND GRUBBING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

GRAPHIC SCALE

50 25 0 50 100
PLANS

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

EROSION CONTROL ENGINEER

12/19/2025

NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

Signed by: He Yang
SIGNATURE: D6738623A7F4406... P.E.

Prepared in the Office of:
Summit Design And Engineering Sevices
1000 Social St., Suite 800
Raleigh, NC 27609
Voice: (919) 732-3883
Fax: (919) 732-6676
www.summitde.com

Designed by:

HE YANG *4408*
NAME LEVEL III CERTIFICATION NO.

Roadway Standard Drawings

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

$$$$$SYSTIMESTAMP$$$$$
$$$$$USERNAME$$$$$

5/26/20

NCEM PRIVATE ROADS AND BRIDGES
STATE OF NORTH CAROLINA

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Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

ASHE 005-01-34397

EC-2

NORTH CAROLINA
ASHE COUNTY

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(919) 732-6676 (FAX)

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer Basin	
1630.08	Tiered Skimmer Basin	
1630.09	Earthen Dam with Skimmer	
	Infiltration Basin	
	Rock Inlet Sediment Trap:	
1632.01	Type A	A
1632.02	Type B	B
1632.03	Type C	C

Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type A	
1633.02	Temporary Rock Silt Check Type B	
1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1634.01	Temporary Rock Sediment Dam Type A	
1634.02	Temporary Rock Sediment Dam Type B	
1635.01	Rock Pipe Inlet Sediment Trap Type A	A
1635.02	Rock Pipe Inlet Sediment Trap Type B	B
1636.01	Excelsior Wattle Check	
1636.01	Excelsior Wattle Check with Flocculant	
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW
1636.03	Excelsior Wattle Barrier	EW EW EW
1636.03	Coir Fiber Wattle Barrier	CFW CFW CFW

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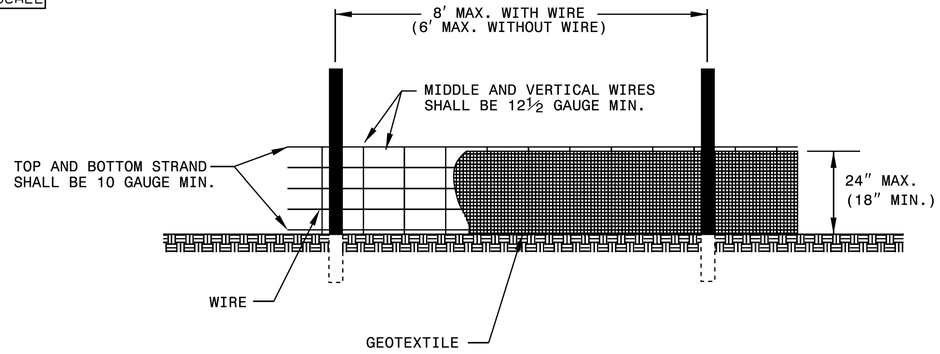


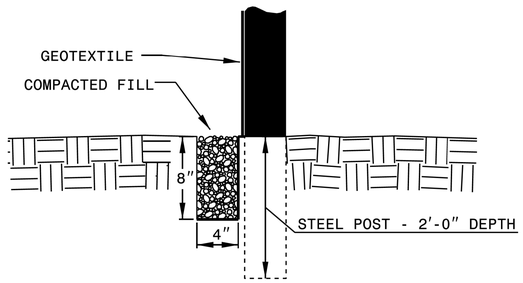
NOTES

USE GEOTEXTILE A MINIMUM OF 36″ IN WIDTH AND FASTEN ADEQUATELY TO THE POSTS AND WIRE AS DIRECTED.

USE WIRE A MINIMUM OF 32″ IN WIDTH AND WITH A MINIMUM OF 5 LINE WIRES WITH 12″ VERTICAL SPACING.

PROVIDE 5′-0″ STEEL POST OF THE SELF-FASTENER ANGLE STEEL TYPE.

FOR MECHANICAL SLICING METHOD INSTALLATION, GEOTEXTILE SHALL BE A MAXIMUM OF 18″ ABOVE GROUND SURFACE.



EXTENSION OF GEOTEXTILE AND WIRE INTO TRENCH

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

1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY SILT FENCE

SHEET 1 OF 1
1605.01

NOT TO SCALE

NOTES

USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

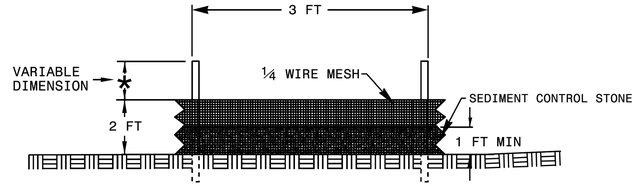
USE HARDWARE CLOTH 24 GAUGE WIRE MESH WITH ¼ INCH MESH OPENINGS.

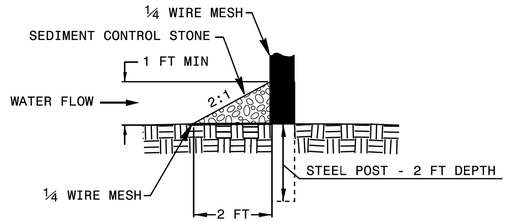
INSTALL 5 FT. SELF FASTENER ANGLE STEEL POST 2 FT. DEEP MINIMUM.

ATTACH HARDWARE CLOTH TO POSTS WITH WIRE STAPLE OR OTHER ACCEPTABLE METHODS.

SPACE POSTS A MAXIMUM OF 3 FT.

FOR INSTALLATION BETWEEN SECTIONS OF SILT FENCE, EXTEND SEDIMENT CONTROL STONE A MINIMUM OF 12″ ON EACH SIDE OF SPECIAL SEDIMENT CONTROL FENCE SECTION.





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Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
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Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

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

1-24

ROADWAY STANDARD DRAWING FOR
SPECIAL SEDIMENT CONTROL FENCE

SHEET 1 OF 1
1606.01

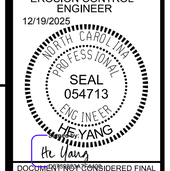
ASHE 005-01-34397

EC-2A

NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER

12/19/2025



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(919) 732-6676 (FAX)

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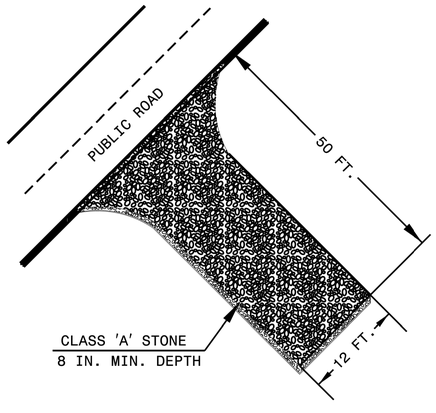

NOTES

1. PROVIDE TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGE TRUCKS.
2. LOCATE ENTRANCES TO PROVIDE FOR UTILIZATION BY ALL CONSTRUCTION VEHICLES.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE WILL BE NECESSARY.
4. ANY MATERIAL TRACKED ONTO THE ROADWAY MUST BE CLEANED UP IMMEDIATELY.
5. LOCATE GRAVEL CONSTRUCTION ENTRANCE AT ALL POINTS OF INGRESS AND EGRESS UNTIL SITE IS STABILIZED. PROVIDE FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE.
6. NUMBER AND LOCATION OF CONSTRUCTION ENTRANCES TO BE DETERMINED BY THE ENGINEER.
7. USE CLASS 'A' STONE OR OTHER COARSE AGGREGATE APPROVED BY THE ENGINEER.
8. INSTALL CONSTRUCTION ENTRANCES IN A WAY TO PREVENT VEHICLES FROM BYPASSING CONSTRUCTION ENTRANCE LEAVING PROJECT SITE.

NOTE: PLACE GEOTEXTILE FOR DRAINAGE BENEATH STONE

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

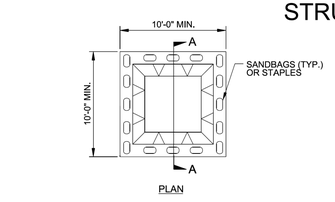
1-24

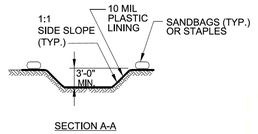
ROADWAY STANDARD DRAWING FOR
GRAVEL CONSTRUCTION ENTRANCE

SHEET 1 OF 1
1607.01

NOT TO SCALE

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



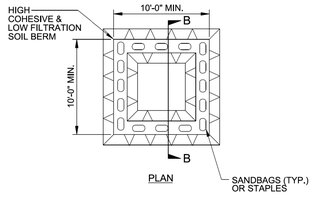


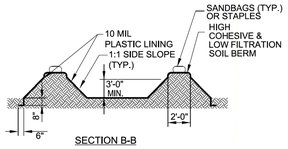
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE





NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

EROSION CONTROL DETAIL	CONCRETE WASHOUT STRUCTURE	STD. NO. N/A
EFFECTIVE: N/A		SHEET 1 OF 1

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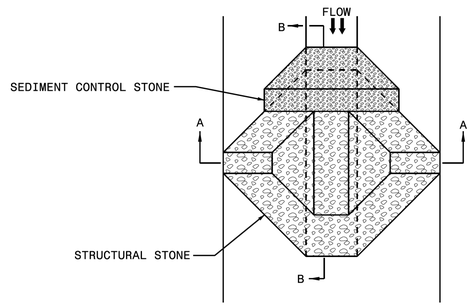
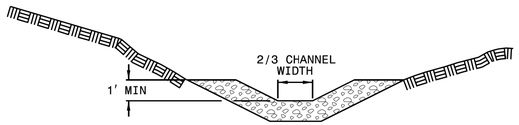


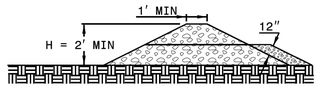
PLAN

NOTES

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.



SECTION A-A



SECTION B-B

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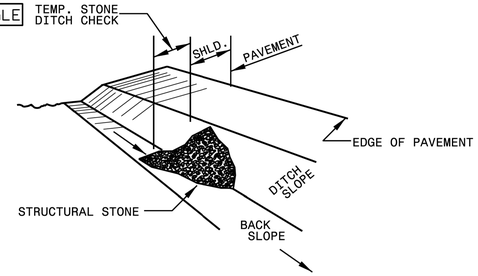
Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE A

SHEET 1 OF 1
1633.01

NOT TO SCALE

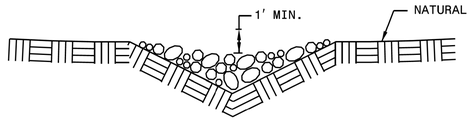


ISOMETRIC VIEW

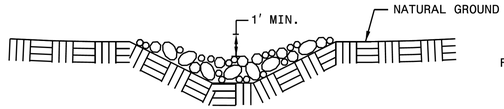
NOTES

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.

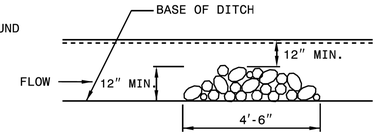
THE ENGINEER MAY DIRECT THE OPTION OF CLASS A STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



CROSS SECTION VEE DITCH



CROSS SECTION TRAPEZOIDAL DITCH



ELEVATION VIEW

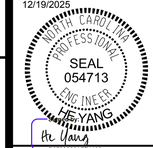
STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE B

SHEET 1 OF 1
1633.02

ASHE 005-01-34397
EC-2B
NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER
12/19/2025



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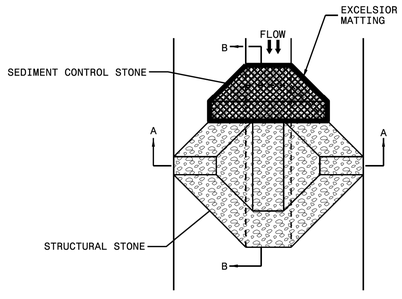
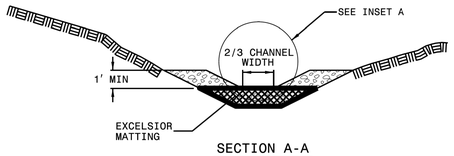


PLAN



SECTION A-A

NOTES:

USE CLASS B EROSION CONTROL STONE FOR STRUCTURAL STONE.

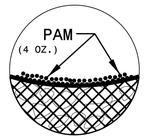
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.

DO NOT APPLY FLOCCULANT TO A TEMPORARY ROCK SILT CHECK THAT SERVES AS A STORMWATER DISCHARGE OUTFALL.

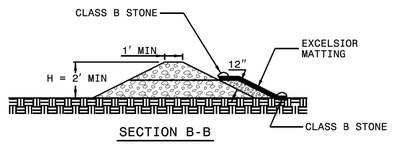
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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

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



INSET A



SECTION B-B

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-24

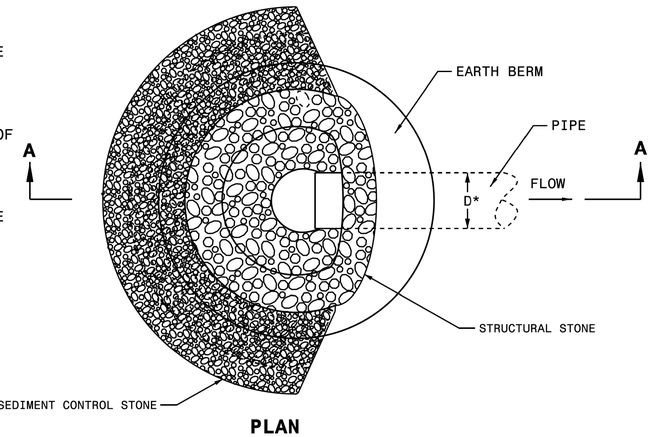
ROADWAY STANDARD DRAWING FOR
TEMPORARY ROCK SILT CHECK TYPE A WITH EXCELSIOR MATTING AND FLOCCULANT

SHEET 1 OF 1
1633.03

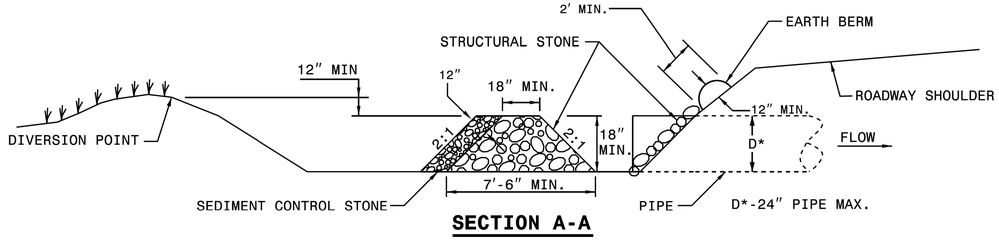
NOT TO SCALE

NOTES

USE CLASS A EROSION CONTROL STONE FOR STRUCTURAL STONE.
USE NO. 5 OR NO. 57 STONE FOR SEDIMENT CONTROL STONE.
CONSTRUCT TOP OF BERM A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR DIVERSION POINT.
PROVIDE A TOTAL SEDIMENT TRAP VOLUME OF 3600± CUBIC FEET PER ACRE OF DISTURBED AREA. SOME OF THE REQUIRED VOLUME MAY BE PROVIDED BY UP OR DOWNSTREAM CONTROLS.



PLAN



SECTION A-A

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
1-24

ROADWAY STANDARD DRAWING FOR
ROCK PIPE INLET SEDIMENT TRAP TYPE B

SHEET 1 OF 1
1635.02

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GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes

Site Area Description	Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

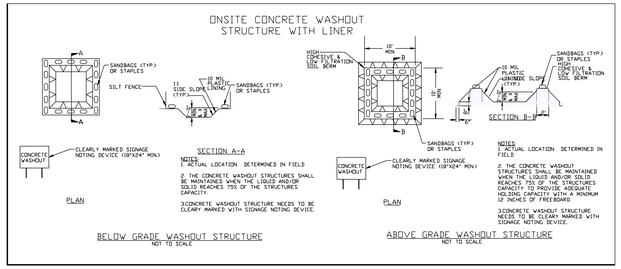
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

NOT TO SCALE

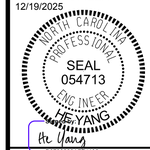
ASHE 005-01-34397

EC-2C

NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER

12/19/2025



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176
1000 Social Street, Suite 800
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

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PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,

(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,

(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,

(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,

(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and

(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

ASHE 005-01-34397

EC-2D

NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER

12/19/2025

NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
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Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

NOT TO SCALE

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5/26/20

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

ASHE 005-01-34397

EC-3

NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
FRANKLIN COUNTY

EROSION CONTROL ENGINEER
12/19/2025

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PLANS PREPARED BY:

SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social Street, Suite 800
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

SOIL STABILIZATION SUMMARY SHEET

DITCH MATTING FOR EROSION CONTROL

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
STRAW MATTING					
4	-L-	12+52.64	13+65	LT	45
4	-L-	12+53.28	13+30	RT	30
				SUBTOTAL	75
EXCELSIOR MATTING					
4	-L-	10+40	10+85	LT	20
				SUBTOTAL	20
	MISCELLANEOUS MATTING TO BE INSTALLED AS DIRECTED BY THE ENGINEER				7555
				TOTAL	7650
				SAY	7700

DITCH MATTING FOR EROSION CONTROL (PSRM)

CONST SHEET NO.	LINE	FROM STATION	TO STATION	SIDE	ESTIMATE (SY)
TYPE 2 PSRM					
4	-L-	10+85	11+25	LT	10
				TOTAL	10

Docusign Envelope ID: A1F005D6-11D9-454D-9DA8-1DFB180BFB78

11/14/23

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Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

CLEARING AND GRUBBING EROSION CONTROL FOR CONSTRUCTION SHEET 4

IMPERVIOUS DIKES TO BE PLACE AT EDGE OF SURVEYED JS

ENVIRONMENTALLY SENSITIVE AREA SEE PROJECT SPECIAL PROVISIONS

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

-L- POB Sta. 10+00.00
BEGIN PROJECT
-L- Sta. 10+40.00
-L- PT Sta. 10+58.38

-L- POE Sta. 14+78.59
N05°21'05.8"W (AH)
-L- PT Sta. 14+60.92

-L- PC Sta. 13+52.30

NAD 83 NA 2011

ELIZABETH LEIGH OLIVER
DB: 5601-1270
PB: 2-61

THE ROBERT W. BRENTON AND JILL A. BRENTON REVOCABLE TRUST
DB: 570-1543
PB: 9-292

ALENE BLACKBURN LIFE ESTATE
DB: 274-567
* PROPERTY LINE SHOWN AS PER GIS BOUNDARY DESCRIBED IN DB 274-567 DOES NOT APPEAR TO BE A DESCRIPTION OF THE PROPERTY.

SHERWOOD HINSON
LINDA HINSON
DB: 4611-1203
PB: 8-567

+61.60
15" INC.
TYP.

SPECIAL 'V' DITCH
SEE DETAIL 4-1

DO NOT DISTURB EXISTING UTILITIES

1.5:1 BACKSLOPE W/ROCK PLATING

R=75'

BEGIN BRIDGE
-L- Sta. 11+23.13

SPECIAL 'V' DITCH
SEE DETAIL 4-2

IMPERVIOUS DIKE
R1

SOUTH FORK NEW RIVER
WSE +/- 2768

REMOVE EXISTING BRIDGE AND BENTS

END BRIDGE
-L- Sta. 12+66.88

PERMANENT EASEMENT TO BE PURCHASED PER UTILITY SPECIAL PROVISIONS

SPECIAL 'V' DITCH
SEE DETAIL 4-1

50' TAPER TO EX. (LT/RT)

NOTE: ALL CONSTRUCTION STAGING IS TO TAKE PLACE IN THE EXISTING RIGHT OF WAY. DO NOT STAGE EQUIPMENT OR MATERIAL ON THE ALENE BLACKBURN LIFE ESTATE PROPERTY.

-L-
N04°48'35.1"W

STEEL BEAM W/ WOODEN DECK

+46.70

+61.70

15" INC.

RE-TIE EX. GRAVEL DRIVE IN PLACE

15" INC. TYP.

50' TAPER TO EX. (LT/RT)

COLLAR AND EXTEND 18"

CP-5

TEMP. WORK BRIDGE
(SEE SPECIAL PROVISION ST-2)

15.5' RST

R=15'

R=20'

-L- PRC Sta. 13+84.80

END PROJECT
-L- Sta. 13+65.00

-L- PT Sta. 13+10.60
N03°27'14.5"W (AH)

SPECIAL 'V' DITCH
SEE DETAIL 4-1

-L- PC Sta. 12+73.22

DETAIL 4-1
SPECIAL 'V' DITCH
(Not to Scale)

Natural Ground | 2:1 | D | 2:1 or Flatter | Front Ditch Slope

Min. D= 0.4 Ft.

FROM STA. 10+40 TO STA. 10+75 -L- LT
FROM STA. 12+52.64 TO STA. 13+65 -L- LT
FROM STA. 12+53.28 TO STA. 13+30 -L- RT

DETAIL 4-2
SPECIAL 'V' DITCH
(Not to Scale)

Natural Ground | 1.5:1 | D | 2:1 or Flatter | Front Ditch Slope

Min. D= 0.5 Ft.

FROM STA. 10+75 TO STA. 11+36 -L- LT

R11-2
48" x 30"
ROAD CLOSED

TYPE III BARRICADE(S)
A

BRIDGE CONSTRUCTION AHEAD
W21-81
48" X 48"
B

CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PIc 10+30.56	PIc 12+91.91	PIc 13+68.56	PIc 14+22.86
Δc = 41°48'53.6" (LT)	Δc = 01°21'20.6" (RT)	Δc = 03°52'47.8" (LT)	Δc = 01°58'56.4" (RT)
D = 71°37'11.0"	D = 03°37'34.7"	D = 11°56'11.8"	D = 02°36'15.7"
Lc = 58.38	Lc = 37.39	Lc = 32.50	Lc = 76.12
Tc = 30.56	Tc = 18.69	Tc = 16.26	Tc = 38.06
R = 80	R = 1,580	R = 480	R = 2,200
SE = Exist.	SE = NC	SE = Exist.	SE = Exist.
RO = N/A	RO = N/A	RO = N/A	RO = N/A

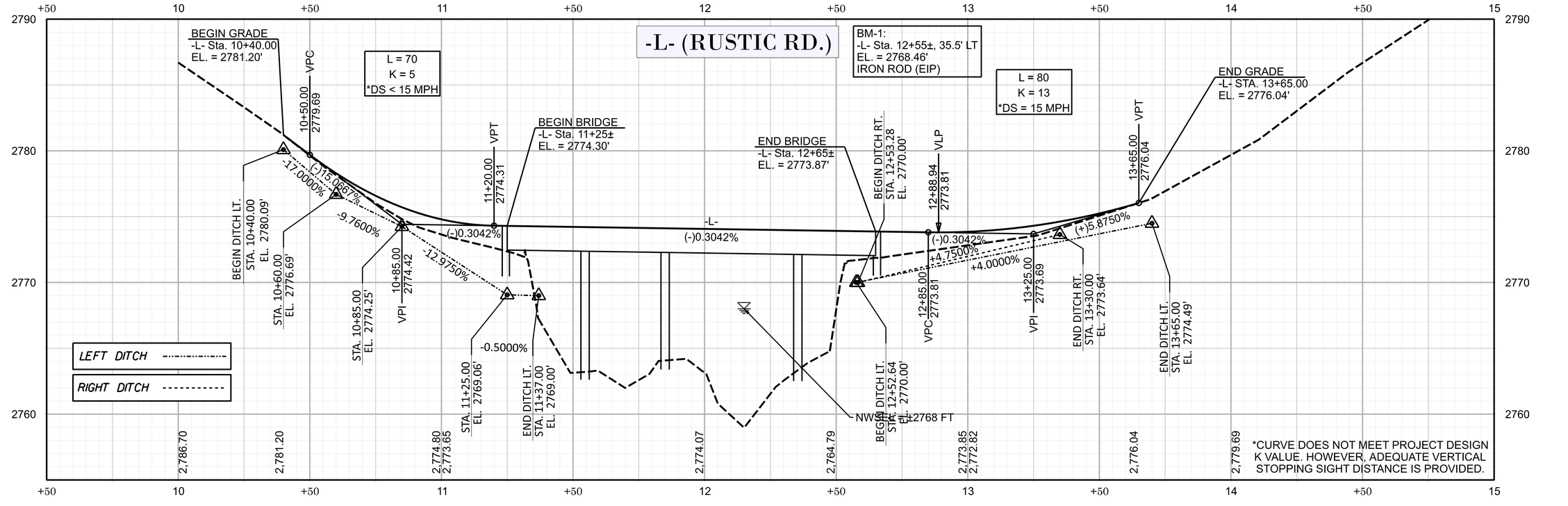
ASHE 005-01-34397
EC-004 | CONST. 003
NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER
12/19/2025
NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social Street, Suite 800
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

R1: REV-1 (12/19/25): REMOVED FLOATING TURBIDITY CURTAIN AND ADDED IMPERVIOUS DIKE.



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11/14/23

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

Public Works - Transportation	Water Resources - Stormwater
Building Inspections	Planning
Water Resources - Utility Engineering	Planning - Transportation
Electric	Fire
Water Resources - Soil & Erosion Control	Parks, Recreation & Cultural Resources

IMPERVIOUS DIKES TO BE PLACE AT EDGE OF SURVEYED JS

-L- POB Sta. 10+00.00
BEGIN PROJECT
-L- Sta. 10+40.00
-L- PT Sta. 10+58.38

ELIZABETH LEIGH OLIVER
DB: 5601-1270
PB: 2-61

+61.60
15' INC. TYP.

SPECIAL 'V' DITCH SEE DETAIL 4-1

DO NOT DISTURB EXISTING UTILITIES

1.5:1 BACKSLOPE W/ROCK PLATING

R=75'

16.8' GR

12" RCP-IV

15" SLOPE

18" RCP

RUSTIC RD (PRIVATE) VAR. WIDTH BST

EX. 02 03 04

15' INC. TYP.

50' TAPER TO EX. (LT/RT)

RE-TIE EX. GRAVEL DRIVE IN PLACE

COLLAR AND EXTEND 18"

CP-5

SHERWOOD HINSON
LINDA HINSON
DB: 4611-1203
PB: 8-567

SPECIAL 'V' DITCH SEE DETAIL 4-2

BEGIN BRIDGE
-L- Sta. 11+23.13

SOUTH FORK NEW RIVER
WSE = 2769'

IMPERVIOUS DIKE
R1

REMOVE EXISTING BRIDGE AND BENTS

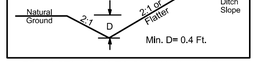
-L-
N04°48'35.1"W

STEEL BEAM W/ WOODEN DECK

TEMP. WORK BRIDGE
(SEE SPECIAL PROVISION ST-2)

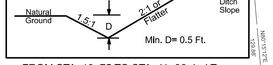
STONE RIP RAP PILE

DETAIL 4-1
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 10+40 TO STA. 10+75 -L- LT
FROM STA. 12+52.64 TO STA. 13+65 -L- LT
FROM STA. 12+53.28 TO STA. 13+30 -L- RT

DETAIL 4-2
SPECIAL 'V' DITCH
(Not to Scale)



FROM STA. 10+75 TO STA. 11+36 -L- LT

-L- PC Sta. 13+52.30

END BRIDGE
-L- Sta. 12+66.88

PERMANENT EASEMENT TO BE PURCHASED PER UTILITY SPECIAL PROVISIONS

THE ROBERT W. BRENTON AND JILL A. BRENTON REVOCABLE TRUST
DB: 570-1543
PB: 9-292

ALENE BLACKBURN LIFE ESTATE
DB: 274-567
* PROPERTY LINE SHOWN AS PER GIS BOUNDARY DESCRIBED IN DB 274-567 DOES NOT APPEAR TO BE A DESCRIPTION OF THE PROPERTY.

NOTE: ALL CONSTRUCTION STAGING IS TO TAKE PLACE IN THE EXISTING RIGHT OF WAY. DO NOT STAGE EQUIPMENT OR MATERIAL ON THE ALENE BLACKBURN LIFE ESTATE PROPERTY.

BM-J

PUE

SPECIAL 'V' DITCH SEE DETAIL 4-1

50' TAPER TO EX. (LT/RT)

+46.70

+61.70

EX. 02 03 04

15' INC. TYP.

+80.00

15.5' RST

R=15'

R=20'

GPS-I

EXISTING R/W

-L- PRC Sta. 13+84.80

END PROJECT
-L- Sta. 13+65.00

-L- PT Sta. 13+10.60
N03°27'14.5"W (AH)

SPECIAL 'V' DITCH SEE DETAIL 4-1

-L- PC Sta. 12+73.22

-L- POE Sta. 14+78.59
N05°21'05.8"W (AH)
-L- PT Sta. 14+60.92

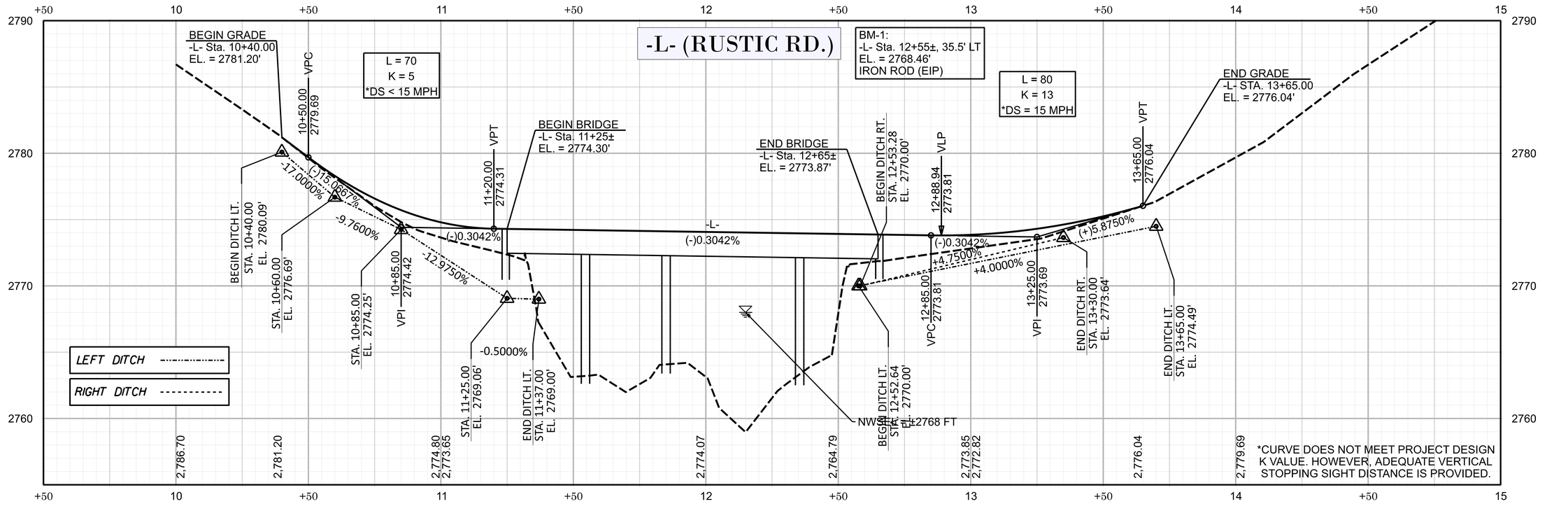
NAD 83 NA 2011

CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PIc 10+30.56	PIc 12+91.91	PIc 13+68.56	PIc 14+22.86
Δc = 41°48'53.6" (LT)	Δc = 01°21'20.6" (RT)	Δc = 03°52'47.8" (LT)	Δc = 01°58'56.4" (RT)
D = 71°37'11.0"	D = 03°37'34.7"	D = 11°56'11.8"	D = 02°36'15.7"
Lc = 58.38	Lc = 37.39	Lc = 32.50	Lc = 76.12
Tc = 30.56	Tc = 18.69	Tc = 16.26	Tc = 38.06
R = 80	R = 1,580	R = 480	R = 2,200
SE = Exist.	SE = NC	SE = Exist.	SE = Exist.
RO = N/A	RO = N/A	RO = N/A	RO = N/A

R11-2
48" x 30"
ROAD CLOSED

TYPE III BARRICADE(S)
A

BRIDGE CONSTRUCTION AHEAD
W21-8I
48" X 48"
B



ASHE 005-01-34397

EC-005 | CONST. 003

NORTH CAROLINA
ASHE COUNTY

EROSION CONTROL ENGINEER
12/19/2025

NORTH CAROLINA PROFESSIONAL SEAL 054713 ENGINEER HE YANG

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

SUMMIT DESIGN AND ENGINEERING SERVICES

NC FIRM LICENSE No: C-5176
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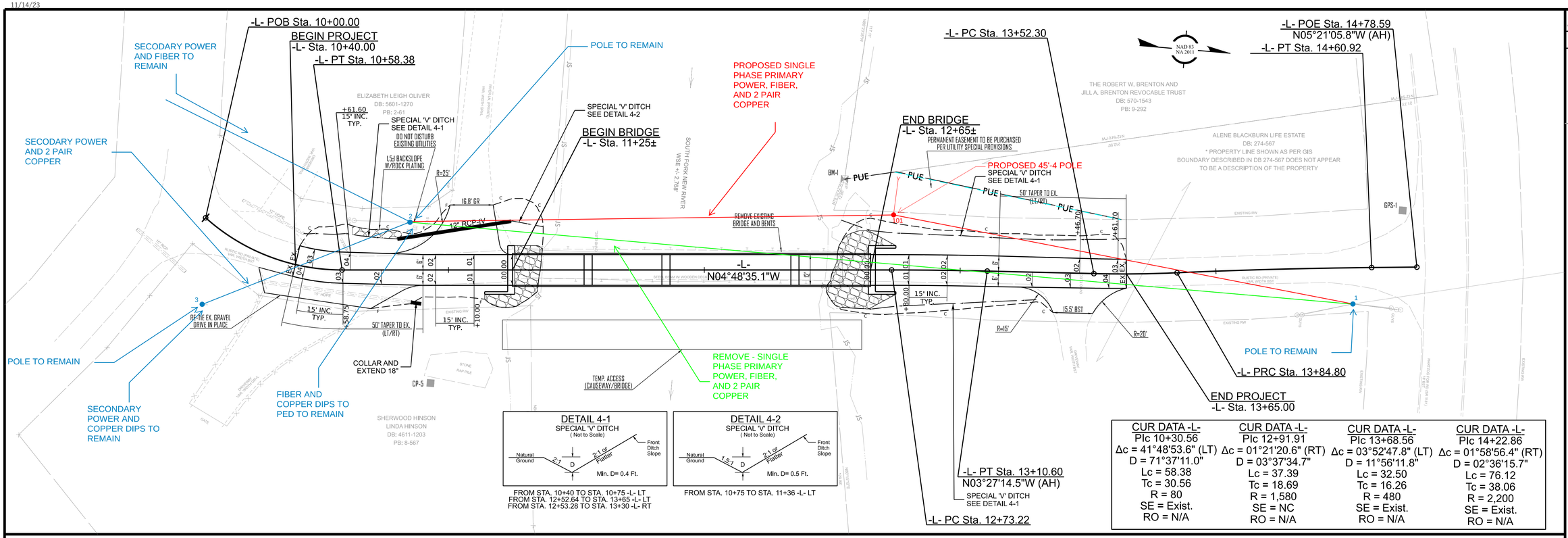
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

R1: REV-1 (12/19/25): REMOVED FLOATING TURBIDITY CURTAIN AND ADDED IMPERVIOUS DIKE.

11/14/23



CUR DATA -L-	CUR DATA -L-	CUR DATA -L-	CUR DATA -L-
PIc 10+30.56	PIc 12+91.91	PIc 13+68.56	PIc 14+22.86
Δc = 41°48'53.6" (LT)	Δc = 01°21'20.6" (RT)	Δc = 03°52'47.8" (LT)	Δc = 01°58'56.4" (RT)
D = 71°37'11.0"	D = 03°37'34.7"	D = 11°56'11.8"	D = 02°36'15.7"
Lc = 58.38	Lc = 37.39	Lc = 32.50	Lc = 76.12
Tc = 30.56	Tc = 18.69	Tc = 16.26	Tc = 38.06
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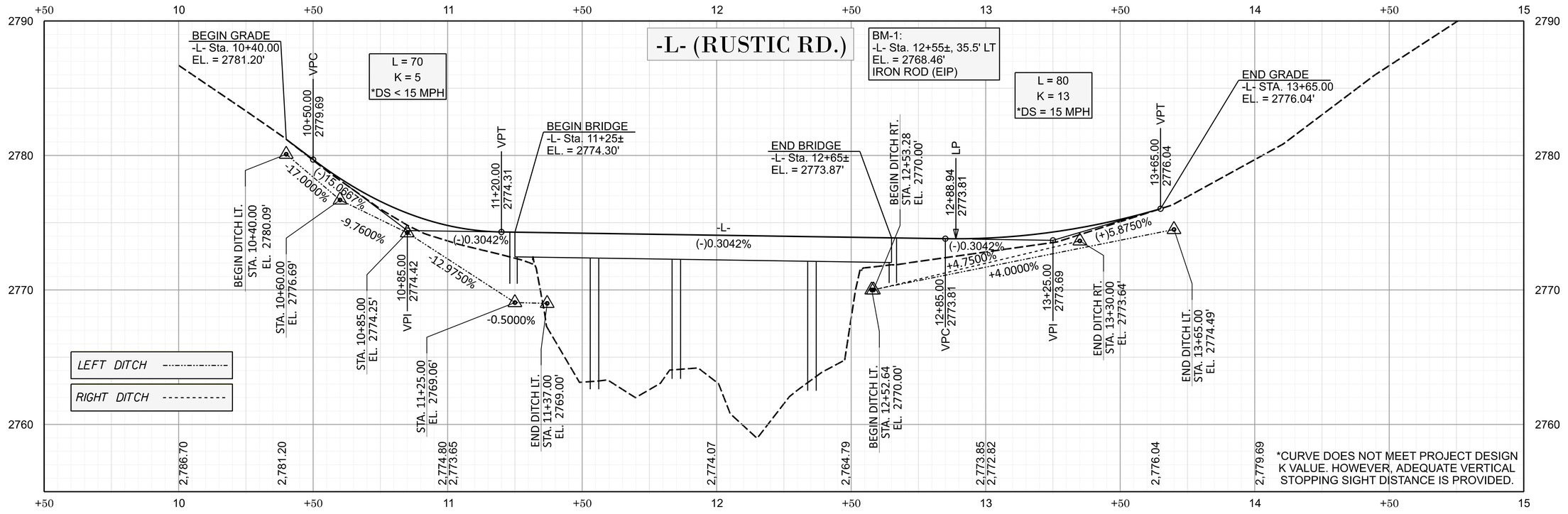
SE = Exist.	SE = NC	SE = Exist.	SE = Exist.
RO = N/A	RO = N/A	RO = N/A	RO = N/A



ASHE 005-01-34397

U	001

NORTH CAROLINA
ASHE COUNTY

PLANS PREPARED BY:

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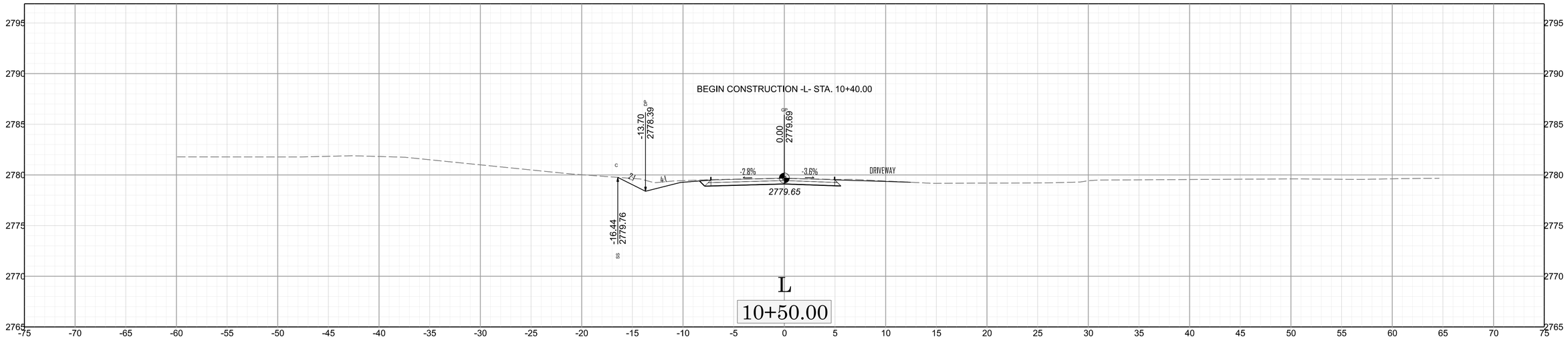
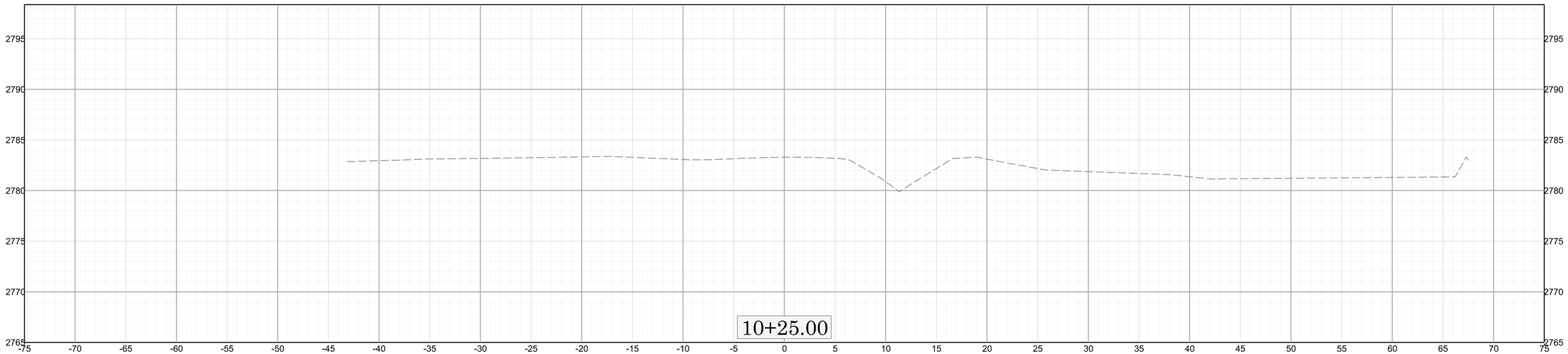
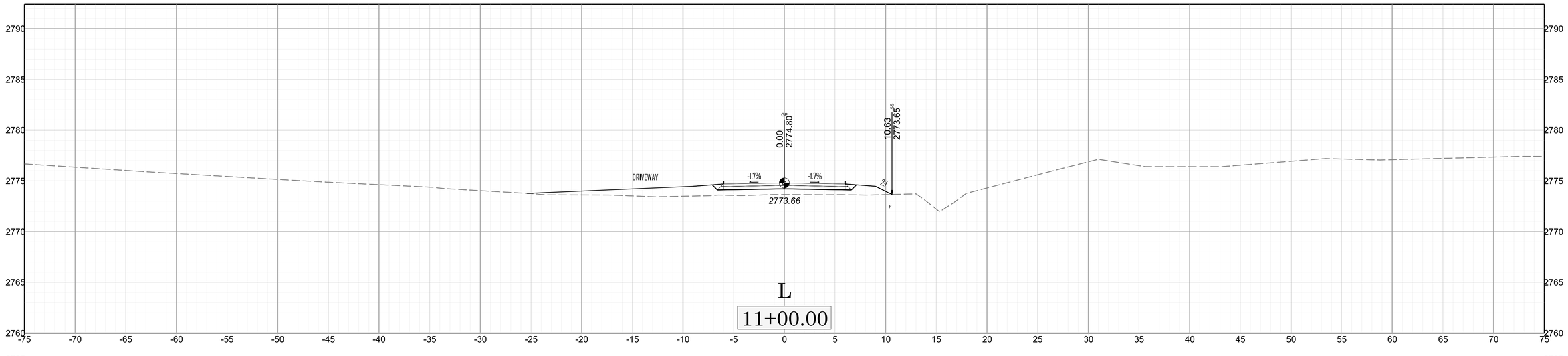
NC FIRM LICENSE No: C-5176
1000 Social Street, Suite 800
Raleigh, NC 27609
(919) 732-3883
(919) 732-6676 (FAX)

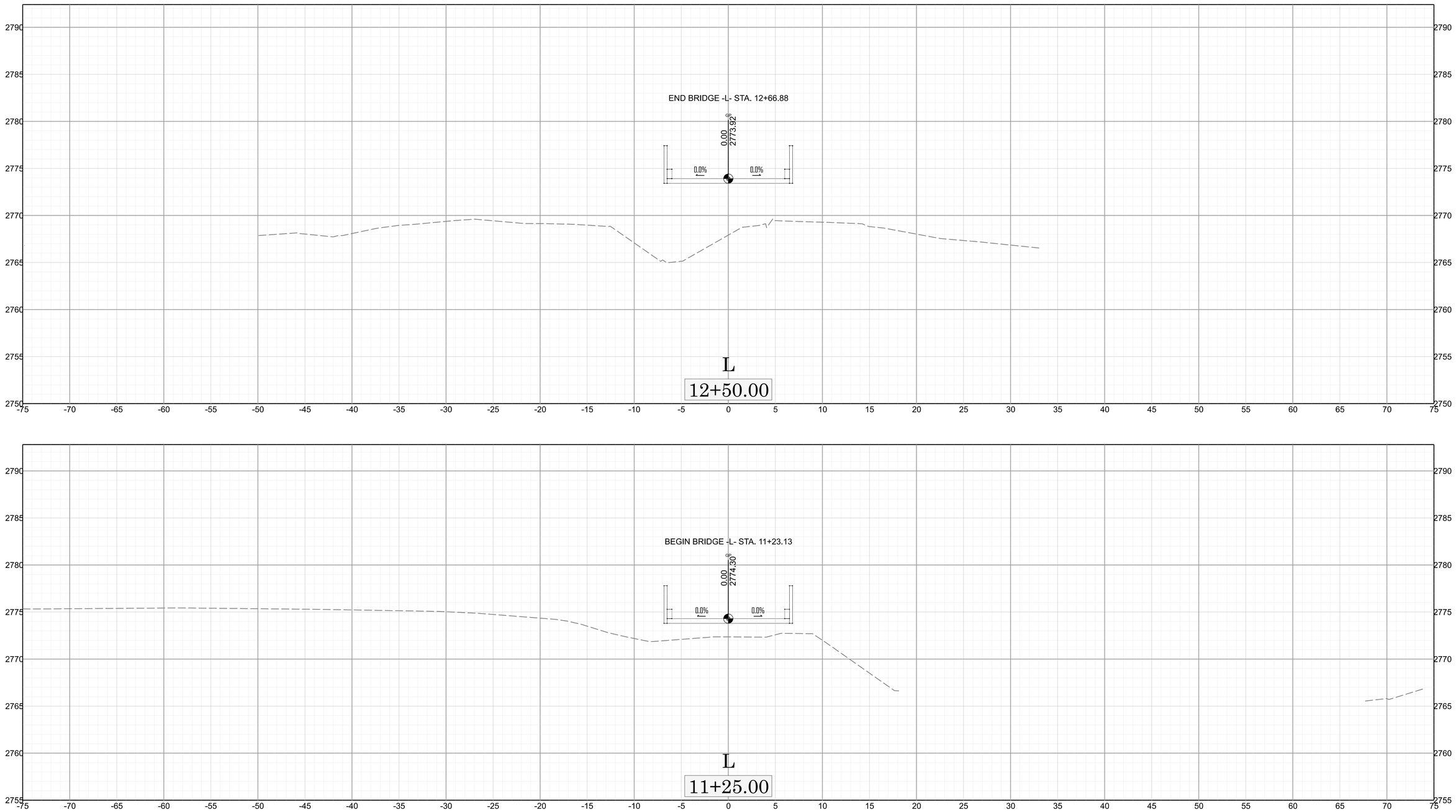
SCE/josh.jernigan - 9/5/2025


BEGIN CONSTRUCTION -L- STA. 10+40.00
-13.70
2778.39
0.00
2779.69
-2.8%
-3.6%
DRIVEWAY
2779.65
-16.44
2779.76
L
10+50.00


10+25.00


DRIVEWAY
-1.7%
-1.7%
2:1
0.00
2774.80
GS
10.63
2773.65
SS
2773.66
F
L
11+00.00

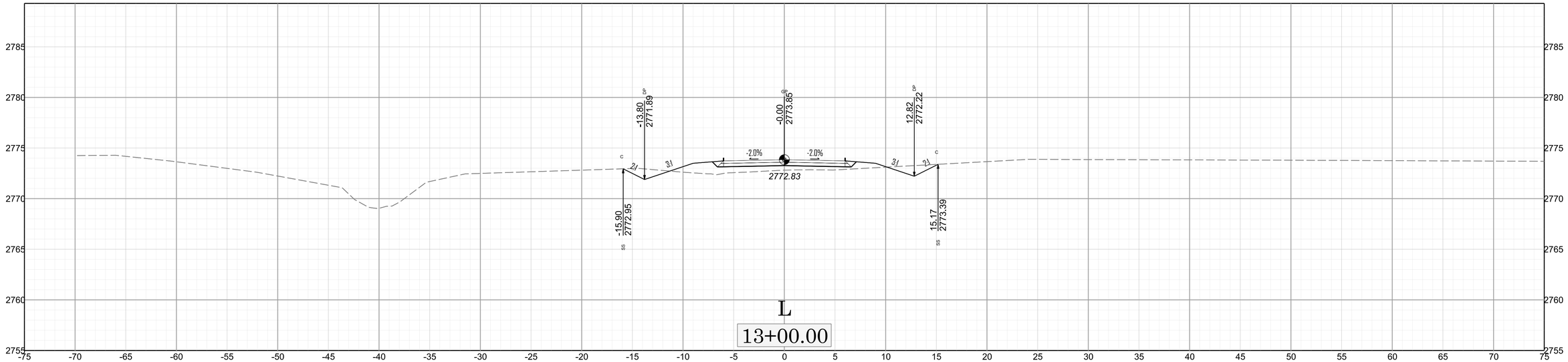
-12.44
2775.23
DP
1.5:1
3:1
C
-15.98
2777.58
SS
0.00
2776.59
GS
-2.0%
-2.0%
9.33
2775.88
SS
2:1
2776.02
F
L
10+75.00



0 5 10

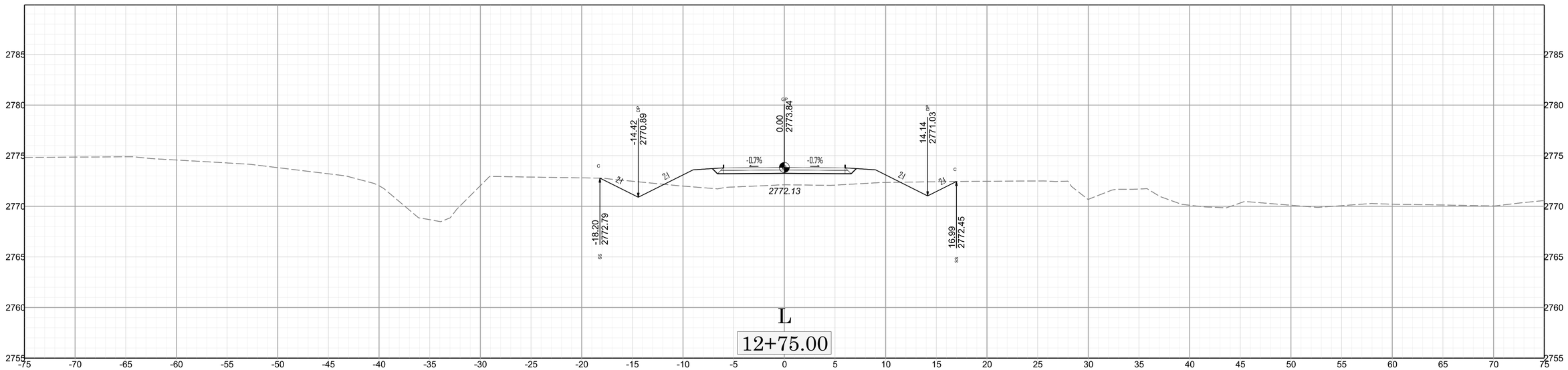
X 003

ASHE 005-01-34397



L

13+00.00



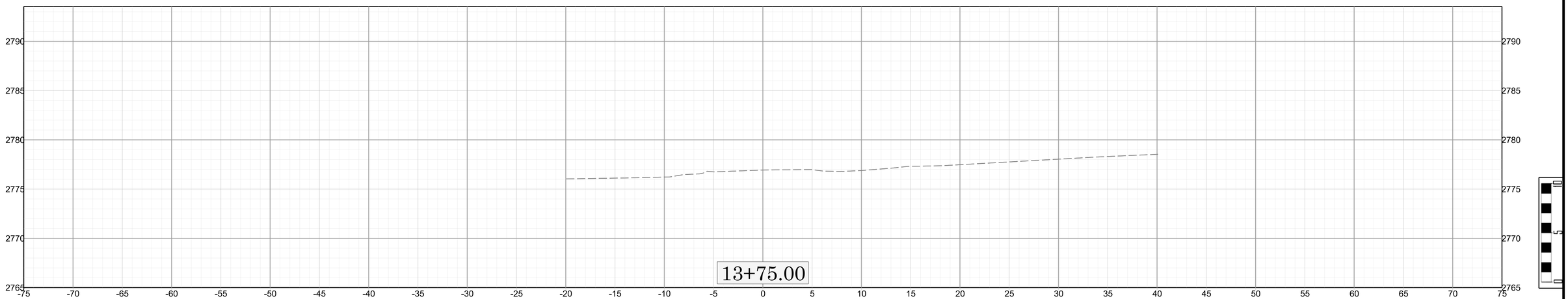
L

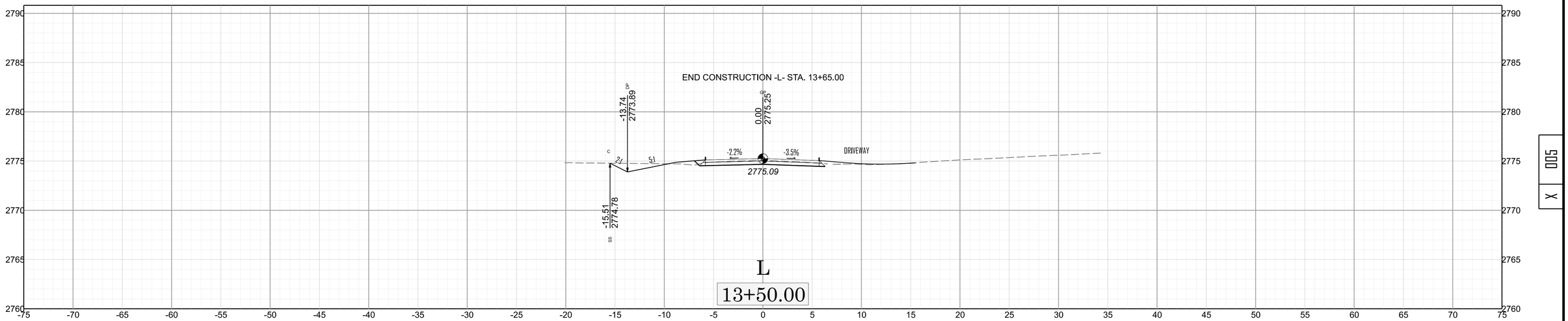
12+75.00

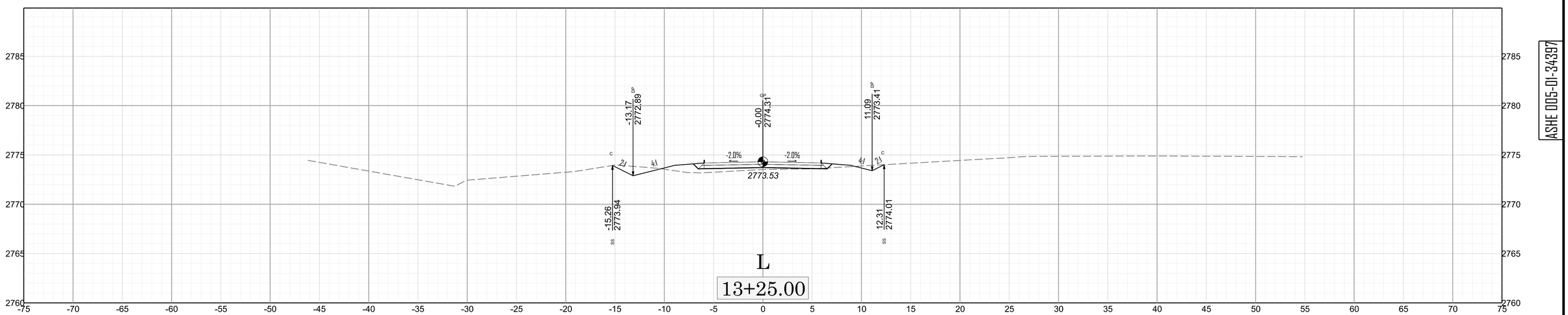
0 5 10

X 004

ASHE 005-01-34397







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ASHE 005-01-34987

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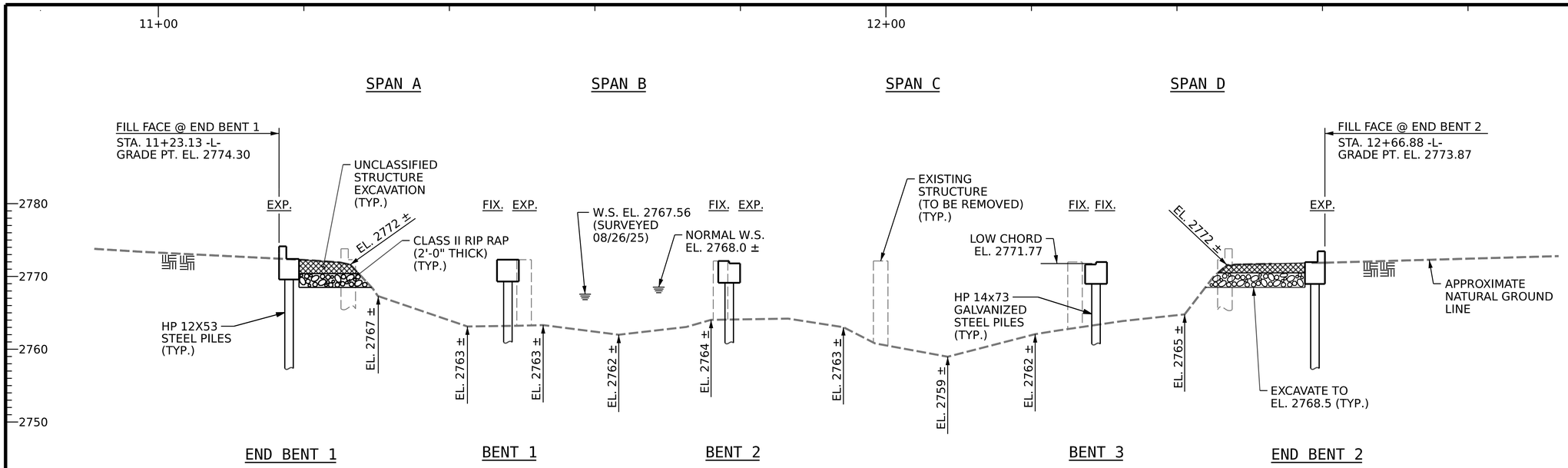
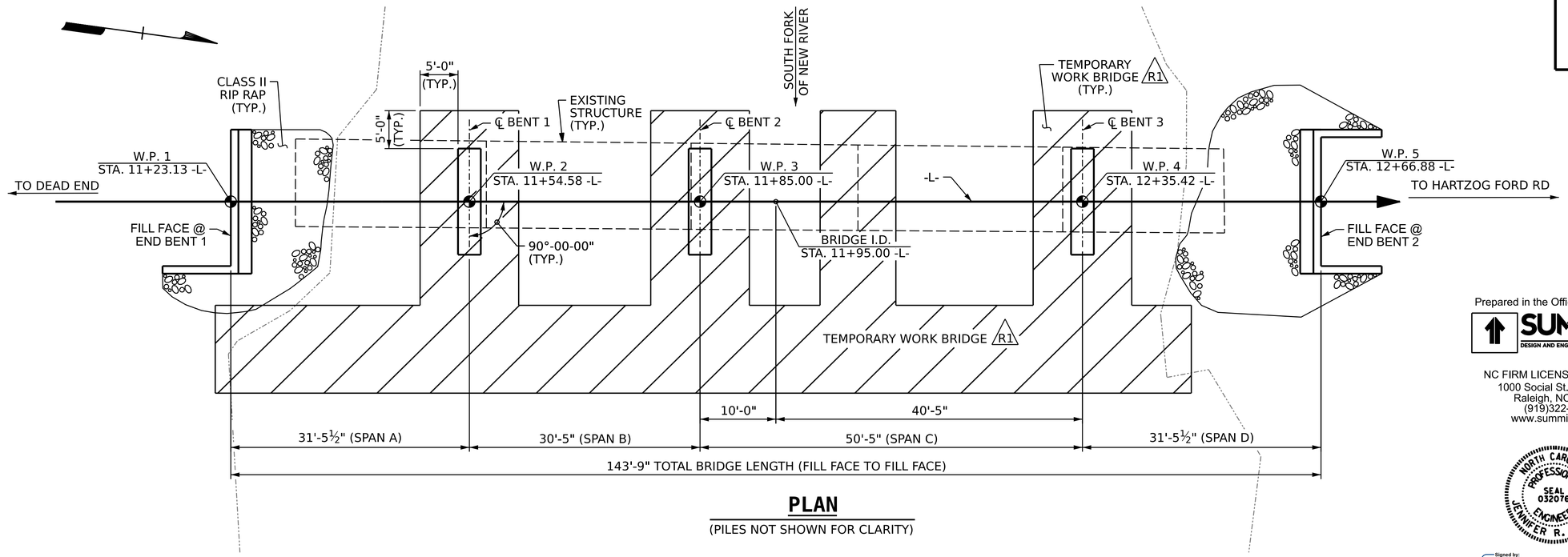


SECTION ALONG -L-



PLAN

(PILES NOT SHOWN FOR CLARITY)

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS

DRAWN BY : B.M.WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

R1 REV-1 (12/17/25): REVISIONS FOR CHANGE TO TEMPORARY WORK BRIDGE FOR PERMITTING.

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SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY
12/19/2025
Signed by: Jennifer R. McRoy F21A12F88CD840B...

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 1 OF 4

GENERAL DRAWING

FOR BRIDGE OVER SOUTH FORK OF THE NEW RIVER ON RUSTIC RD. BETWEEN SR 1181 (HARTZOG FORD RD.) AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1	MKB	12/17/25	3			TOTAL SHEETS
2			4			25

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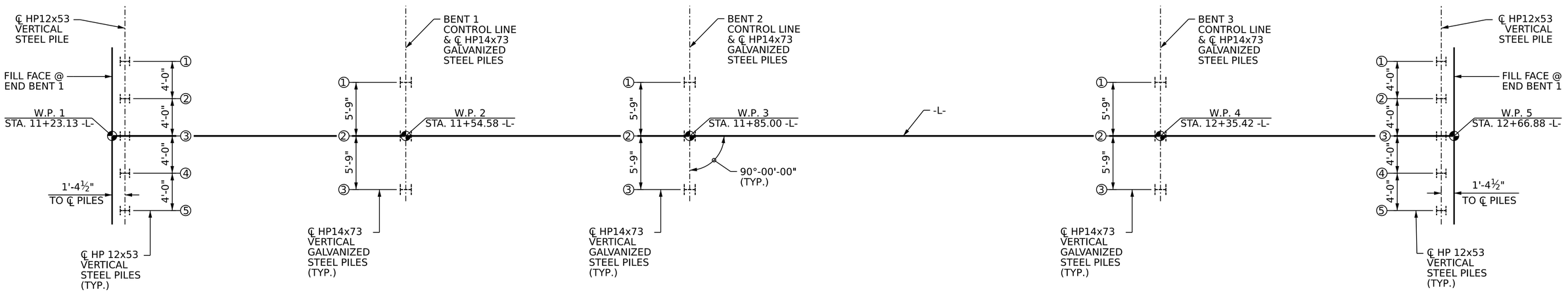

END BENT 1 | BENT 1 | BENT 2 | BENT 3 | END BENT 2

FOUNDATION LAYOUT

DIMENSIONS LOCATING PILES ARE SHOWN TO THE CENTERLINE OF PILES

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
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1000 Social Dr., Suite 800
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(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12F88CDB408...
10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 2 OF 4

SUBSTRUCTURE

FOUNDATION LAYOUT

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			25

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5

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")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles **			Drilled-In Piles		
						Minimum Pile Tip (Tip No Higher Than) Elevation FT	Required Driving Resistance (RDR)* per pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile LIN FT	Predrilling Elevation (Elevation Not To Predrill Below) FT	Maximum Predrilling Diameter INCHES	Pile Excavation (Bottom of Hole) Elevation FT	Pile Excavation Not In Soil per Pile LIN FT	Pile Excavation In Soil per Pile LIN FT
End Bent 1	5	54	2770.39	12								2758.39	10.1	1.9
Bent 1	3	118	2770.13	12								2758.13	8.9	3.1
Bent 2	3	118	2770.13	19								2751.13	11.2	7.8
Bent 3	3	118	2770.13	18								2752.13	13.6	4.4
End Bent 2	5	54	2769.96	27		2742.96	90							
TOTAL QUANTITY:													151.6	55.4

$$* RDR = \frac{Factored\ Resistance + Factored\ Drag\ Load + Factored\ Dead\ Load}{Dynamic\ Resistance\ Factor} + Nominal\ Drag\ Load\ Resistance + Nominal\ Resistance\ from\ Scourable\ Material$$

** 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.

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 KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load * per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent 1	54					
Bent 1	118					
Bent 2	118					
Bent 3	118					
End Bent 2	54			0.60		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent / Bent No, Pile(s) #(-#) (e.g., "Bent 1, Piles 1-5")	Pipe Pile Plates EACH	Steel Pile Points		
		Pipe Pile Cutting Shoes EACH	Pipe Pile Conical Points EACH	H-Pile Points EACH
End Bent 1				
Bent 1				
Bent 2				
Bent 3				
End Bent 2				5
TOTAL QUANTITY:				5

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

Dynamic Pile Testing (DPT)		
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	DPT Test Pile Length FT	DPT Testing Quantity EACH
TOTAL QUANTITY:		

Pile Order Lengths for Concrete Piles	
End Bent / Bent No (e.g., "Bent 1 - Bent 3")	Pile Order Length Basis* EST or DPT

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

PROJECT NO. 005-01-34697

ASHE COUNTY

STATION: 11+95.00 -L-

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Robert D. Botzenmayer, #044443) on 10-01-2025.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

FOUNDATION NOTES ON PLANS:

1. For piles, see Section 450 of the Standard Specifications.
2. Fill holes for drilled-in piles with concrete or grout.

DRAWN BY: B. M. WILSON DATE: 10/2025
CHECKED BY: J. R. MCROY DATE: 10/2025
DESIGN ENGINEER OF RECORD: J. R. MCROY DATE: 10/2025

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy 10/15/2025
F21A12FB8CDB40B...
SIGNATURE DATE

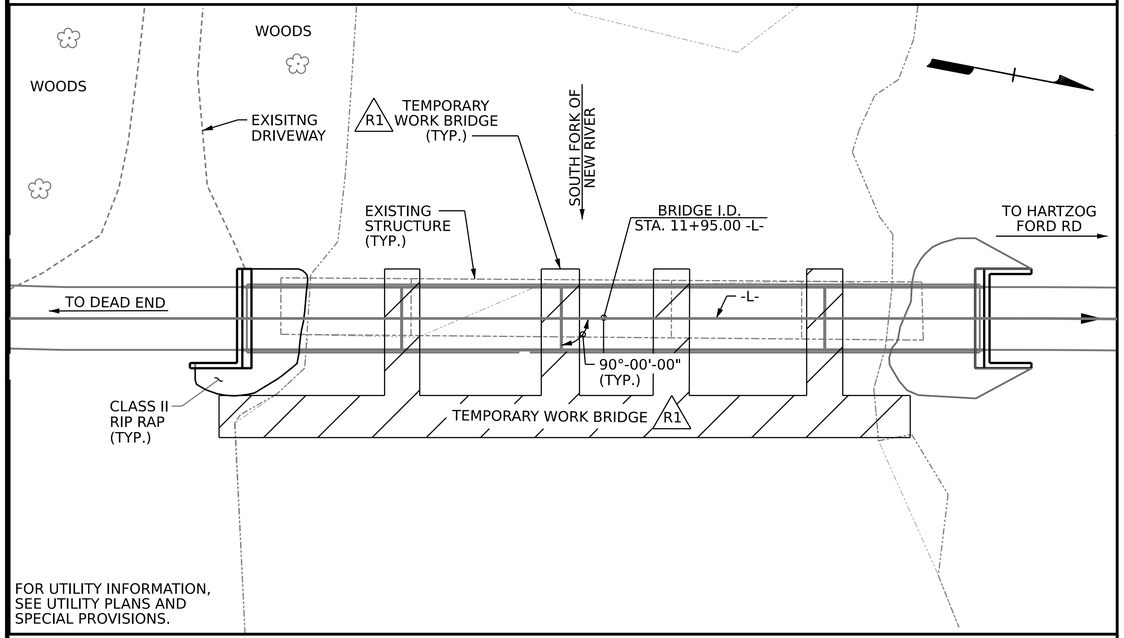
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PILE FOUNDATION TABLES

REVISIONS							SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:		S-3
1			3				TOTAL SHEETS
2			4				25

Docusign Envelope ID: 1F5A3BCA-54CA-41F3-A67E-C2A2531C7B15

BM#1: IRON ROD (EIP) 35.5' LEFT @ STA. 12+55.00 ± -L- EL. 2768.46



LOCATION SKETCH

NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OR GALVANIZED OF THE STRUCTURAL STEEL SHOP COATING PROGRAM AND ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

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 11+95.00 -L-

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 9'-6" LEFT OF -L- AND 14'-9" RIGHT OF -L- AT END BENT 1 AND 15'-5" EACH SIDE OF -L- AT END BENT 2 AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL BE REQUIRED TO CONSTRUCT, MAINTAIN, AND AFTERWARDS REMOVE A TEMPORARY ACCESS AT STATION 11+95.00 -L- FOR USE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE. FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

THE EXISTING STRUCTURE CONSISTING OF 5 SPANS (1@ 25', 1@ 27', 1@ 22', 1@ 27', 1@ 25') WITH A CLEAR ROADWAY WIDTH OF 12' CARRIED ON A TIMBER DECK SUPPORTED BY STEEL ROLLED BEAMS ON A CONCRETE SUBSTRUCTURE, SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR A LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIOIRATE DURING CONSTRUCTION OF THE PROPOSED BRIDGE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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

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

FOR TIMBER MEMBERS, ALL TIMBER AND LUMBER SHALL BE TREATED NO. 1 SOUTHERN PINE AND CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS.

ALL TIMBER DIMENSIONS SHOWN ON THE PLANS ARE NOMINAL DIMENSIONS.

WHEN FIELD CUTTING TIMBER MEMBERS, TREAT NEWLY EXPOSED SURFACES WITH EITHER A BITUMINOUS ASPHALT-BASED ROOFING CEMENT, COPPER NAPHTHENATE PASTE, OR APPORVED PRESERVATIVE SYSTEM BEFORE INSTALLING.

TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH A BITUMINOUS ASPHALT-BASED ROOFING CEMENT, COPPER NAPHTHENATE PASTE, OR APPORVED PRESERVATIVE SYSTEM BEFORE INSTALLING.

PRE-DRILL HOLES IN ALL TIMBER AND LUMBER MEMBERS ACCEPTING BOLTS TO REDUCE SPLITING.

PRIOR TO INSTALLING TIMBER NAILERS, PLACE A SELF ADHERING HIGH DENSITY POLYETHYLENE RUBBERISED ASPHALT ADHESIVE FLASHING MEMBRANE ON THE TOP FLANGE OF THE STEEL BEAMS.

PRIOR TO INSTALLING TIMBER DECKING MEMBERS, PLACE A SELF ADHERING HIGH DENSITY POLYETHYLENE RUBBERISED ASPHALT ADHESIVE FLASHING MEMBRANE ON THE TOP FLANGE OF THE STEEL BEAMS.

SCREW OR TORQUE LAG/STRUCTURAL SCREWS; DO NOT DRIVE THEM WITH A HAMMER.

SCREWS SHALL HAVE SUFFICIENT LENGTH SO THAT SCREW THREADS AND SHANK WILL PENETRATE RECEIVING MEMBERS

SALVAGE BEAMS SHALL NOT BE USED, UNLESS OTHERWISE NOTED ON THE PLANS.

ALL STRUCTURAL STEEL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS, UNLESS OTHERWISE NOTES ON THE PLANS.

FOR TIMBER BRIDGE RAIL SYSTEM INCLUDING LUMBER, DELINEATORS, HARDWARE FOR BOLT CONNECTIONS, HARDWARE FOR SCREW CONNECTIONS AND ALUMINUM DRIP EDGE, SEE TIMBER BRIDGE SUPERSTRUCTURE ON STEEL BEAMS SPECIAL PROVISIONS.

FOR ASBESTOS ASSESSMENTS, SEE SPECIAL PROVISIONS.

FOR TIMBER BRIDGE DECK SYSTEM INCLUDING HARDWARE FOR BOLT CONNECTIONS AND HARDWARE FOR SCREW CONNECTIONS, SEE TIMBER BRDIGE SUPERSTRUCTURE ON STEEL BEAMS SPECIAL PROVISIONS.

A HYDRAULIC MODEL WAS NOT DEVELOPED FOR THIS BRIDGE SITE. HYDRAULIC DATA NOT PROVIDED OTHER THAN WHAT IS SHOWN IN THE ELEVATION VIEW ON THE GENERAL DRAWING SHEET 1 OF 4. A FUTURE HYDRAULIC MODEL WILL BE DEVELOPED BY FEMA TO INCORPORATE THE PROPOSED STRUCTURE AND ANY CHANGES TO THE FLOODPLAIN AND FLOODWAY.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

TEMPORARY WORK BRIDGE TO BE CONSTRUCTED WITH A MINIMUM TOTAL SPAN LENGTH OF 80.0 FEET BETWEEN BANKS.

IF TEMPORARY CAUSEWAY OPTION IS UTILIZED IN THE AREAS AROUND THE BENTS, THEN ONLY TWO CAUSEWAY LOCATIONS TO BE IN PLACE AT ONE TIME.

R1 REV-1 (12/17/25): REVISIONS FOR CHANGE TO TEMPORARY WORK BRIDGE FOR PERMITTING.

TOTAL BILL OF MATERIAL

	CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMP ACCESS AT STA. 11+95.00 -L-	REMOVAL OF EXISTING STRUCTURE @ STA. 11+95.00 -L-	ASBESTOS ASSESSMENT	PILE EXCAVATION IN SOIL	PILE EXCAVATION NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	REINFORCING STEEL	APPROX. 71,940 LBS. STRUCTURAL STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LUMP SUM	CU. YDS.	LBS.	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	LUMP SUM	LUMP SUM			LUMP SUM			
END BENT 1				9.5	50.5		9.5	1278	
BENT 1				18.3	26.7		3.9	868	
BENT 2				17.4	33.6		4.2	924	
BENT 3				16.2	40.8		4.2	924	
END BENT 2							11.0	1423	
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	61.4	151.6	LUMP SUM	32.8	5417	LUMP SUM

	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	PILE DRIVING EQUIPMENT SETUP FOR HP 14X73 GALVANIZED STEEL PILES	HP 12X53 STEEL PILES		HP 14X73 GALVANIZED STEEL PILES		STEEL PILE POINTS	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	TIMBER DECK SYSTEM	TIMBER BRIDGE RAIL SYSTEM
	EA.	EA.	NO.	LIN. FT.	NO.	LIN. FT.	EA.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LIN. FT.
SUPERSTRUCTURE										LUMP SUM	LUMP SUM	284
END BENT 1	5		5	60				26	29			
BENT 1		3			3	45						
BENT 2		3			3	51						
BENT 3		3			3	57						
END BENT 2	5		5	135			5	45	50			
TOTAL	10	9	10	195	9	153	5	71	79	LUMP SUM	LUMP SUM	284

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

Prepared in the Office of:
SUMMIT DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY
12/19/2025
Signed by: Jennifer R. McRoy F21A12FB6CDB40B...

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 4 OF 4

GENERAL DRAWING

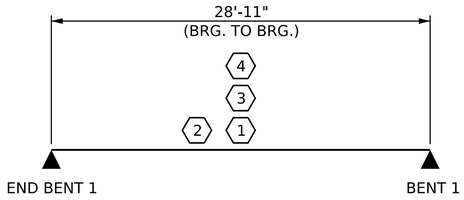
FOR BRIDGE OVER SOUTH FORK OF NEW RIVER ON RUSTIC RD. BETWEEN SR 1181 (HARTZOG FORD RD.) AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1	MKB	12/17/25	3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5

LOAD AND RESISTANCE FACTOR RATING (LRFR) STEEL GIRDERS (W 14 X 61)

LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE II LIMIT STATE						COMMENT NUMBER
							LIVE-LOAD FACTORS (γ LL)	MOMENT					SHEAR					LIVE-LOAD FACTORS (γ LL)	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	1	1.17	--	1.75	0.336	1.17	A	I	15.00	0.336	2.95	A	I	0.00	1.30	0.336	1.26	A	I	15.00	
		HL-93 (OPERATING)	N/A		1.52	--	1.35	0.336	1.52	A	I	15.00	0.336	3.83	A	I	0.00	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.58	56.88	1.75	0.336	1.58	A	I	12.00	0.336	3.38	A	I	0.00	1.30	0.336	1.70	A	I	12.00	
		HS-20 (OPERATING)	36.000		2.05	73.80	1.35	0.336	2.05	A	I	12.00	0.336	4.39	A	I	0.00	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.85	38.48	1.40	0.336	3.31	A	I	15.00	0.336	8.50	A	I	0.00	1.30	0.336	2.85	A	I	15.00	
		SNGARBS2	20.000		2.45	49.00	1.40	0.336	2.84	A	I	12.00	0.336	6.49	A	I	0.00	1.30	0.336	2.45	A	I	12.00	
		SNAGRIS2	22.000		2.48	54.56	1.40	0.336	2.87	A	I	12.00	0.336	6.22	A	I	0.00	1.30	0.336	2.48	A	I	18.00	
		SNCOTTS3	27.250		1.43	38.97	1.40	0.336	1.66	A	I	15.00	0.336	4.29	A	I	0.00	1.30	0.336	1.43	A	I	15.00	
		SNAGGRS4	34.925		1.36	47.50	1.40	0.336	1.58	A	I	15.00	0.336	3.88	A	I	0.00	1.30	0.336	1.36	A	I	15.00	
		SNS5A	35.550		1.32	46.93	1.40	0.336	1.53	A	I	15.00	0.336	4.13	A	I	0.00	1.30	0.336	1.32	A	I	15.00	
		SNS6A	39.950		1.25	49.94	1.40	0.336	1.46	A	I	15.00	0.336	3.86	A	I	0.00	1.30	0.336	1.25	A	I	15.00	
		SNS7B	42.000	3	1.21	50.82	1.40	0.336	1.41	A	I	15.00	0.336	3.96	A	I	0.00	1.30	0.336	1.21	A	I	15.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.61	53.13	1.40	0.336	1.87	A	I	15.00	0.336	4.54	A	I	0.00	1.30	0.336	1.61	A	I	15.00	
		TNT4A	33.075		1.54	50.94	1.40	0.336	1.79	A	I	15.00	0.336	4.26	A	I	0.00	1.30	0.336	1.54	A	I	15.00	
		TNT6A	41.600		1.39	57.82	1.40	0.336	1.61	A	I	15.00	0.336	4.16	A	I	0.00	1.30	0.336	1.39	A	I	15.00	
		TNT7A	42.000		1.44	60.48	1.40	0.336	1.67	A	I	15.00	0.336	3.89	A	I	0.00	1.30	0.336	1.44	A	I	15.00	
		TNT7B	42.000		1.37	57.54	1.40	0.336	1.59	A	I	15.00	0.336	3.79	A	I	0.00	1.30	0.336	1.37	A	I	15.00	
		TNAGRIT4	43.000		1.41	57.62	1.40	0.336	1.63	A	I	15.00	0.336	3.65	A	I	0.00	1.30	0.336	1.41	A	I	15.00	
		TNAGT5A	45.000		1.36	60.63	1.40	0.336	1.57	A	I	15.00	0.336	3.90	A	I	0.00	1.30	0.336	1.36	A	I	15.00	
		TNAGT5B	45.000		1.30	58.50	1.40	0.336	1.51	A	I	12.00	0.336	3.44	A	I	0.00	1.30	0.336	1.30	A	I	18.00	
EMERGENCY VEHICLE (EV)		EV2	28.750		2.22	63.83	1.30	0.336	2.22	A	I	18.00	0.336	4.96	A	I	0.00	N/A	--	--	--	--	--	
		EV3	43.000	4	1.48	63.64	1.30	0.336	1.48	A	I	15.00	0.336	3.39	A	I	0.00	N/A	--	--	--	--	--	



LRFR SUMMARY

(SPAN A SHOWN, SPANS B & D SIMILAR)

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

(#) CONTROLLING LOAD RATING

1. DESIGN LOAD RATING (HL-93)
2. DESIGN LOAD RATING (HS-20)
3. LEGAL LOAD RATING * *
4. EMERGENCY VEHICLE LOAD RATING

* * SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

ASSEMBLED BY: B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DRAWN BY : GA 7/2024
CHECKED BY : AKP 7/2024

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(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12F88CDB408...
10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

STANDARD

LRFR SUMMARY FOR 30FT STEEL GIRDERS

(NON-INTERSTATE TRAFFIC)

(SPANS A, B & D)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			25

STD. TB_LRFR_30L

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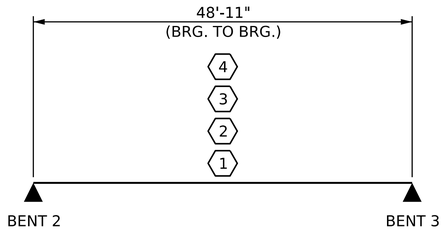
LOAD AND RESISTANCE FACTOR RATING (LRFR) STEEL GIRDERS (W 18 X 130)

LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	# CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE										SERVICE II LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR					MOMENT						
							LIVE-LOAD FACTORS (γ LL)	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)	LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	1	1.08	--	1.75	0.373	1.08	A	I	25.00	0.373	5.13	A	I	0.00	1.30	0.373	1.48	A	I	25.00	
		HL-93 (OPERATING)	N/A		1.39	--	1.35	0.373	1.39	A	I	25.00	0.373	6.66	A	I	0.00	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.34	48.24	1.75	0.373	1.34	A	I	25.00	0.373	6.19	A	I	0.00	1.30	0.373	1.84	A	I	25.00	
		HS-20 (OPERATING)	36.000		1.73	62.28	1.35	0.373	1.73	A	I	25.00	0.373	8.03	A	I	0.00	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		3.42	46.17	1.40	0.373	3.42	A	I	25.00	0.373	9.99	A	I	0.00	1.30	0.373	3.78	A	I	25.00	
		SNGARBS2	20.000		2.69	53.80	1.40	0.373	2.69	A	I	20.00	0.373	9.99	A	I	0.00	1.30	0.373	2.97	A	I	20.00	
		SNAGRIS2	22.000		2.58	56.76	1.40	0.373	2.58	A	I	30.00	0.373	9.99	A	I	0.00	1.30	0.373	2.84	A	I	20.00	
		SNCOTTS3	27.250		1.71	46.60	1.40	0.373	1.71	A	I	25.00	0.373	8.86	A	I	0.00	1.30	0.373	1.88	A	I	25.00	
		SNAGGRS4	34.925		1.48	51.69	1.40	0.373	1.48	A	I	25.00	0.373	7.51	A	I	0.00	1.30	0.373	1.63	A	I	25.00	
		SNS5A	35.550		1.44	51.19	1.40	0.373	1.44	A	I	25.00	0.373	7.69	A	I	0.00	1.30	0.373	1.59	A	I	25.00	
		SNS6A	39.950		1.35	53.93	1.40	0.373	1.35	A	I	25.00	0.373	7.08	A	I	0.00	1.30	0.373	1.49	A	I	25.00	
		SNS7B	42.000		1.29	54.18	1.40	0.373	1.29	A	I	25.00	0.373	7.04	A	I	0.00	1.30	0.373	1.42	A	I	25.00	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.65	54.45	1.40	0.373	1.65	A	I	25.00	0.373	8.37	A	I	0.00	1.30	0.373	1.82	A	I	25.00	
		TNT4A	33.075		1.67	55.24	1.40	0.373	1.67	A	I	25.00	0.373	8.09	A	I	0.00	1.30	0.373	1.84	A	I	25.00	
		TNT6A	41.600		1.39	57.82	1.40	0.373	1.39	A	I	25.00	0.373	7.67	A	I	0.00	1.30	0.373	1.53	A	I	25.00	
		TNT7A	42.000		1.41	59.22	1.40	0.373	1.41	A	I	25.00	0.373	7.23	A	I	0.00	1.30	0.373	1.55	A	I	25.00	
		TNT7B	42.000		1.47	61.74	1.40	0.373	1.47	A	I	25.00	0.373	6.81	A	I	0.00	1.30	0.373	1.62	A	I	25.00	
		TNAGRIT4	43.000		1.39	58.05	1.40	0.373	1.39	A	I	25.00	0.373	6.57	A	I	0.00	1.30	0.373	1.53	A	I	25.00	
		TNAGT5A	45.000		1.30	59.77	1.40	0.373	1.30	A	I	25.00	0.373	6.64	A	I	0.00	1.30	0.373	1.43	A	I	25.00	
		TNAGT5B	45.000	3	1.27	57.15	1.40	0.373	1.27	A	I	25.00	0.373	6.24	A	I	0.00	1.30	0.373	1.41	A	I	25.00	
EMERGENCY VEHICLE (EV)		EV2	28.750		2.06	59.23	1.30	0.373	2.06	A	I	30.00	0.373	9.70	A	I	0.00	N/A	--	--	--	--	--	
		EV3	43.000	4	1.34	57.62	1.30	0.373	1.34	A	I	25.00	0.373	6.56	A	I	0.00	N/A	--	--	--	--	--	



LRFR SUMMARY
(SPAN C)

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ DC	γ DW
	STRENGTH I	1.25	1.50
	SERVICE II	1.00	1.00

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

CONTROLLING LOAD RATING
1 DESIGN LOAD RATING (HL-93)
2 DESIGN LOAD RATING (HS-20)
3 LEGAL LOAD RATING * *
4 EMERGENCY VEHICLE LOAD RATING
* * SEE CHART FOR VEHICLE TYPE

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

ASSEMBLED BY: B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DRAWN BY : GA 8/2024
CHECKED BY : AKP 8/2024

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. Mcroy F21A12F88CD8408...
10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

STANDARD

LRFR SUMMARY FOR 50FT STEEL GIRDERS

(NON-INTERSTATE TRAFFIC)
(SPAN C)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			25

STD. TB_LRFR_50L

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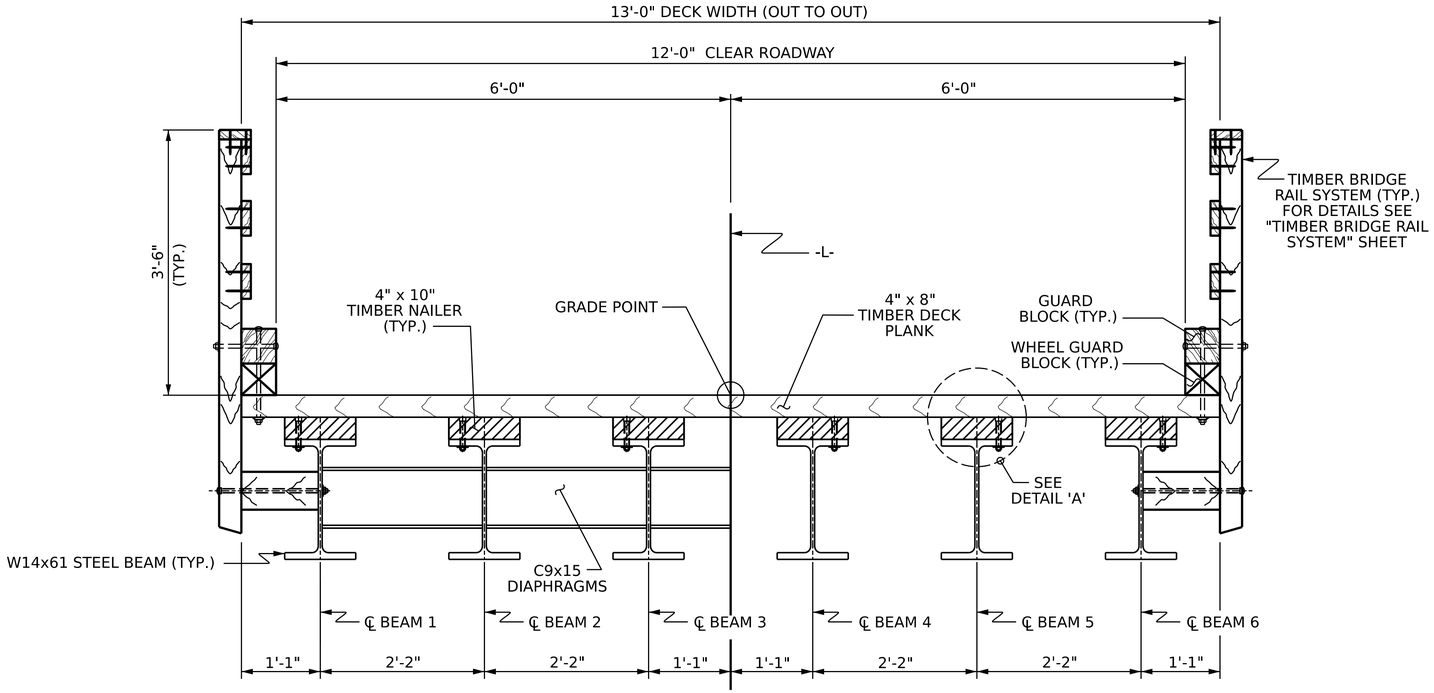


HALF-SECTION AT INTERMEDIATE DIAPHRAGM
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)

HALF-SECTION
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR

TYPICAL SECTION
(30' BEAM LENGTH)

NOTES

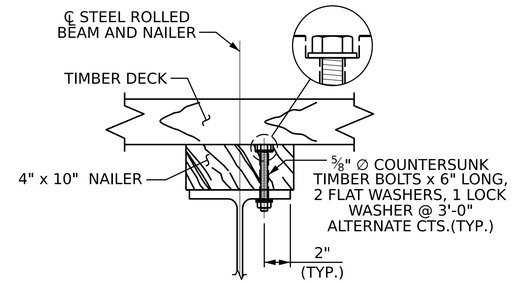
FOR TIMBER BRIDGE DECK SYSTEM DETAILS, SEE PLAN OF SPAN SHEETS.

FOR TIMBER BRIDGE RAIL SYSTEM DETAILS, SEE TIMBER BRIDGE RAIL SYSTEM PLAN SHEET.

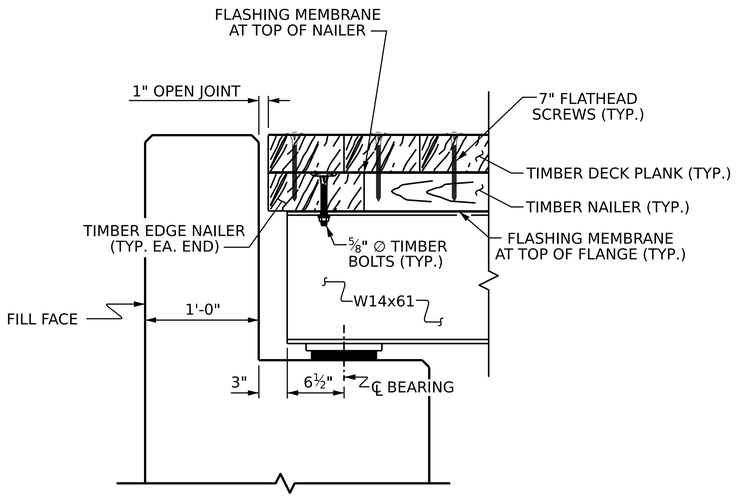
PRIOR TO PLACING TIMBER BEAM NAILER AND EDGE NAILER MEMBERS, PLACE A FLASHING MEMBRANE ON THE TOP SIDE OF THE STEEL BEAMS.

PRIOR TO PLACING TIMBER PLANK MEMBERS, PLACE A SELF-ADHERING FLASHING MEMBRANE ON THE TOP SIDE OF THE TIMBER NAILERS.

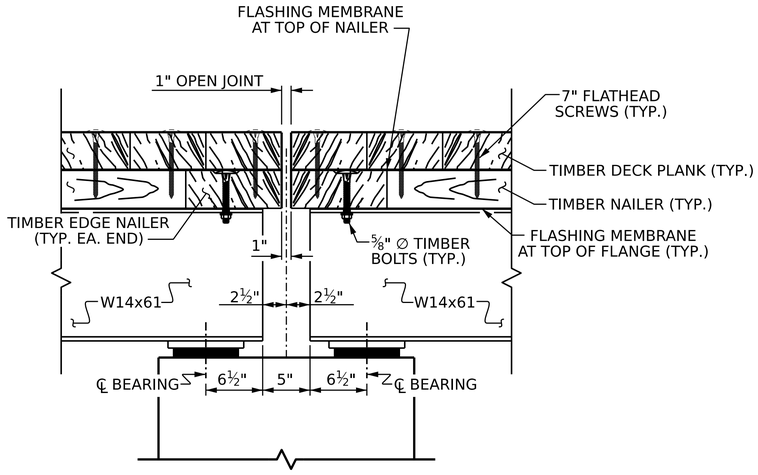
FOR BEAM AND DIAPHRAGM DETAILS, SEE GIRDER DETAILS SHEET.



DETAIL 'A'



SECTION AT END BENT



SECTION AT BENT 1

FOR SECTION AT BENT 2 & 3 SEE SHEET S-8

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12F88CDB408...
10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 1 OF 2

SUPERSTRUCTURE

TYPICAL SECTION

(SPANS A,B & D)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-7
1			3			TOTAL SHEETS
2			4			25

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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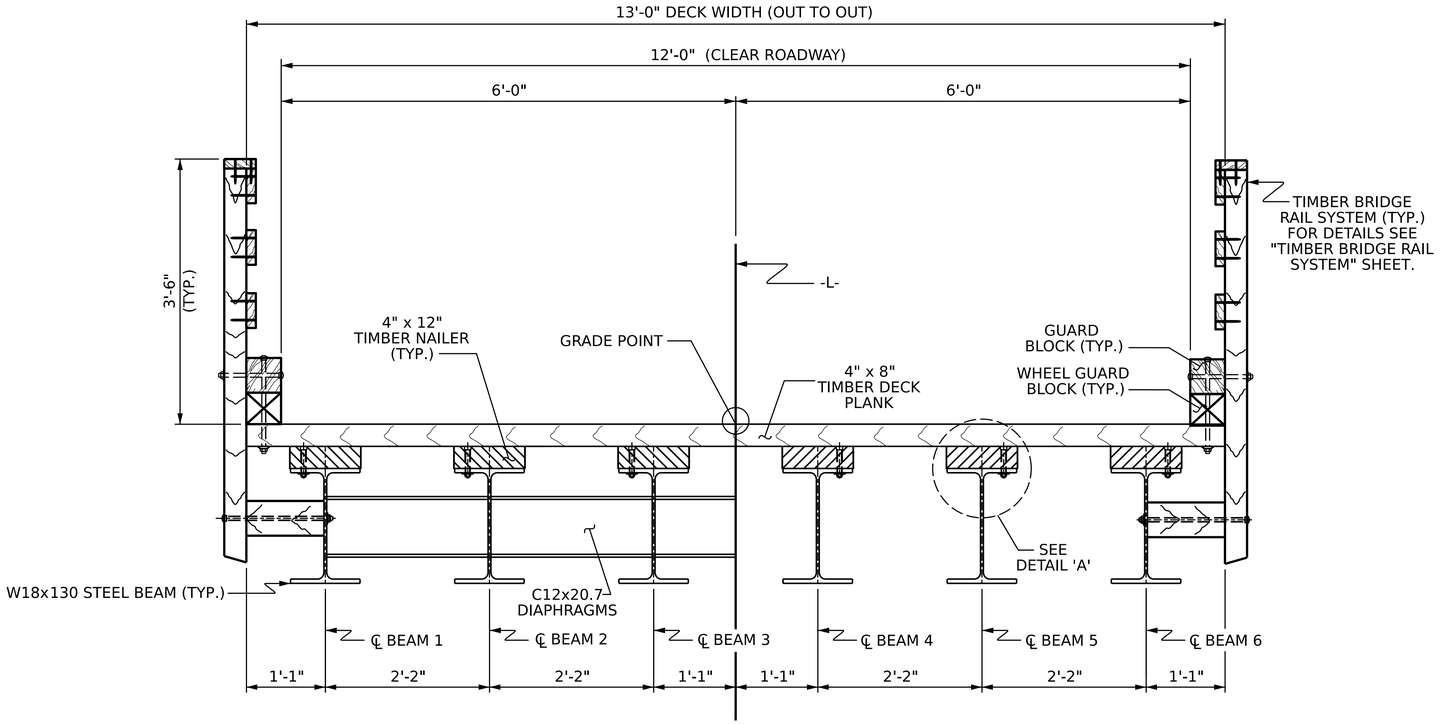


HALF-SECTION AT INTERMEDIATE DIAPHRAGM
(LEFT SIDE SHOWN, RIGHT SIDE SIMILAR)

HALF-SECTION
(RIGHT SIDE SHOWN, LEFT SIDE SIMILAR

NOTES

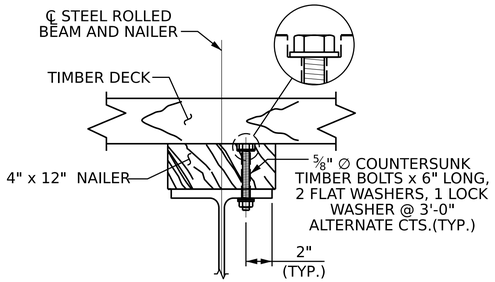
FOR TIMBER BRIDGE DECK SYSTEM DETAILS, SEE PLAN OF SPAN SHEETS.

FOR TIMBER BRIDGE RAIL SYSTEM DETAILS, SEE TIMBER BRIDGE RAIL SYSTEM PLAN SHEET.

PRIOR TO PLACING TIMBER BEAM NAILER AND EDGE NAILER MEMBERS, PLACE A FLASHING MEMBRANE ON THE TOP SIDE OF THE STEEL BEAMS.

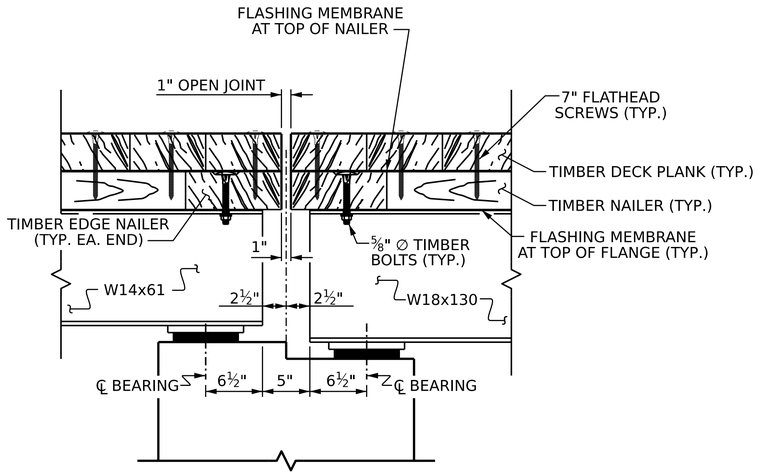
PRIOR TO PLACING TIMBER PLANK MEMBERS, PLACE A SELF-ADHERING FLASHING MEMBRANE ON THE TOP SIDE OF THE TIMBER NAILERS.

FOR BEAM AND DIAPHRAGM DETAILS, SEE GIRDER DETAILS SHEET.

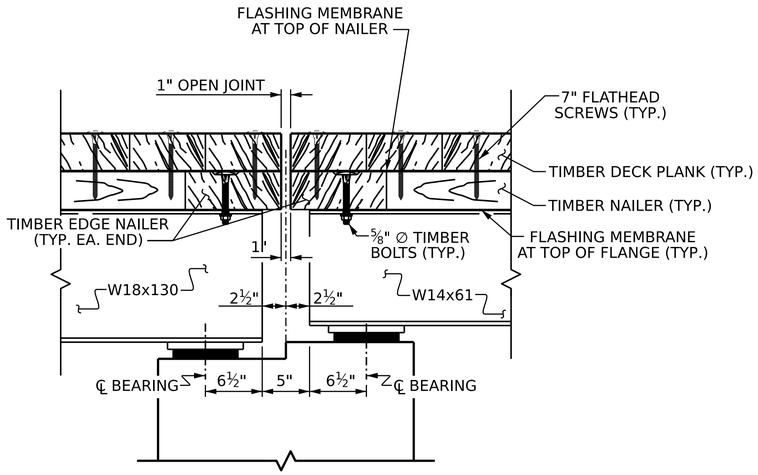


DETAIL 'A'

TYPICAL SECTION
(50' BEAM LENGTH)



SECTION AT BENT 2



SECTION AT BENT 3

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12F88CDB408...
10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 2 OF 2

SUPERSTRUCTURE

TYPICAL SECTION

(SPAN C)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			25

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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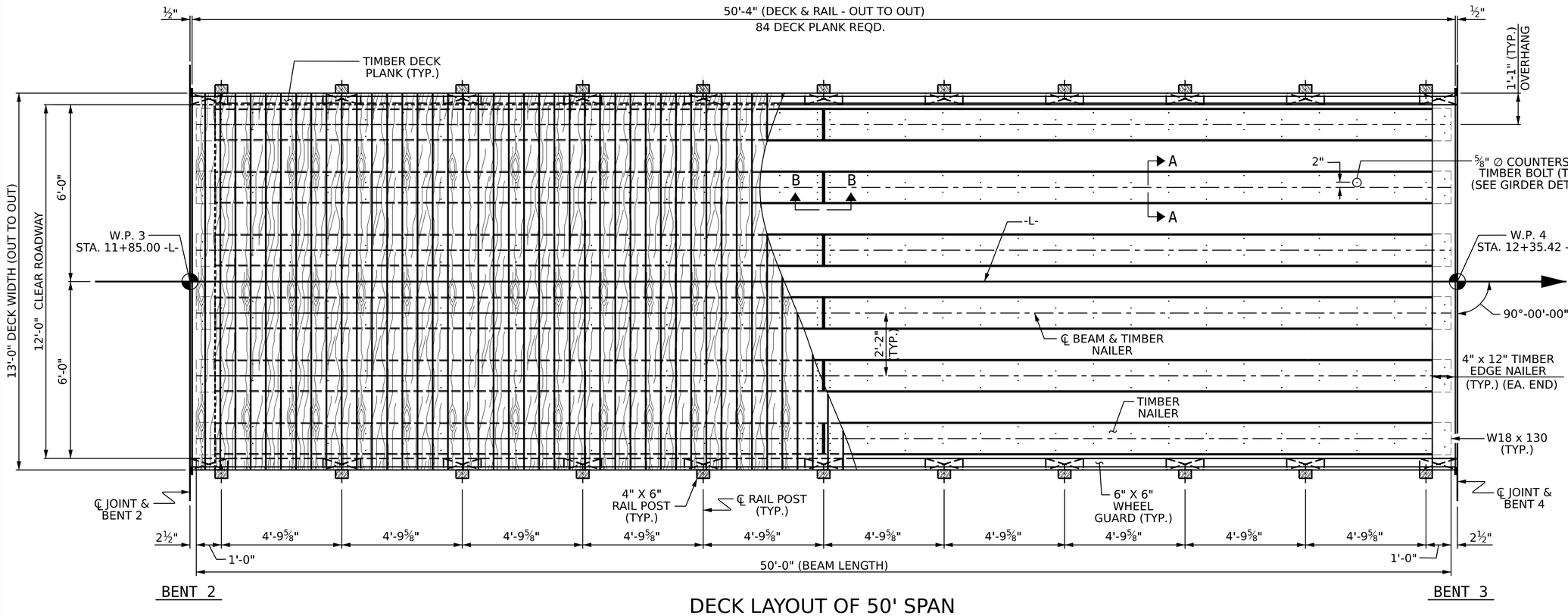
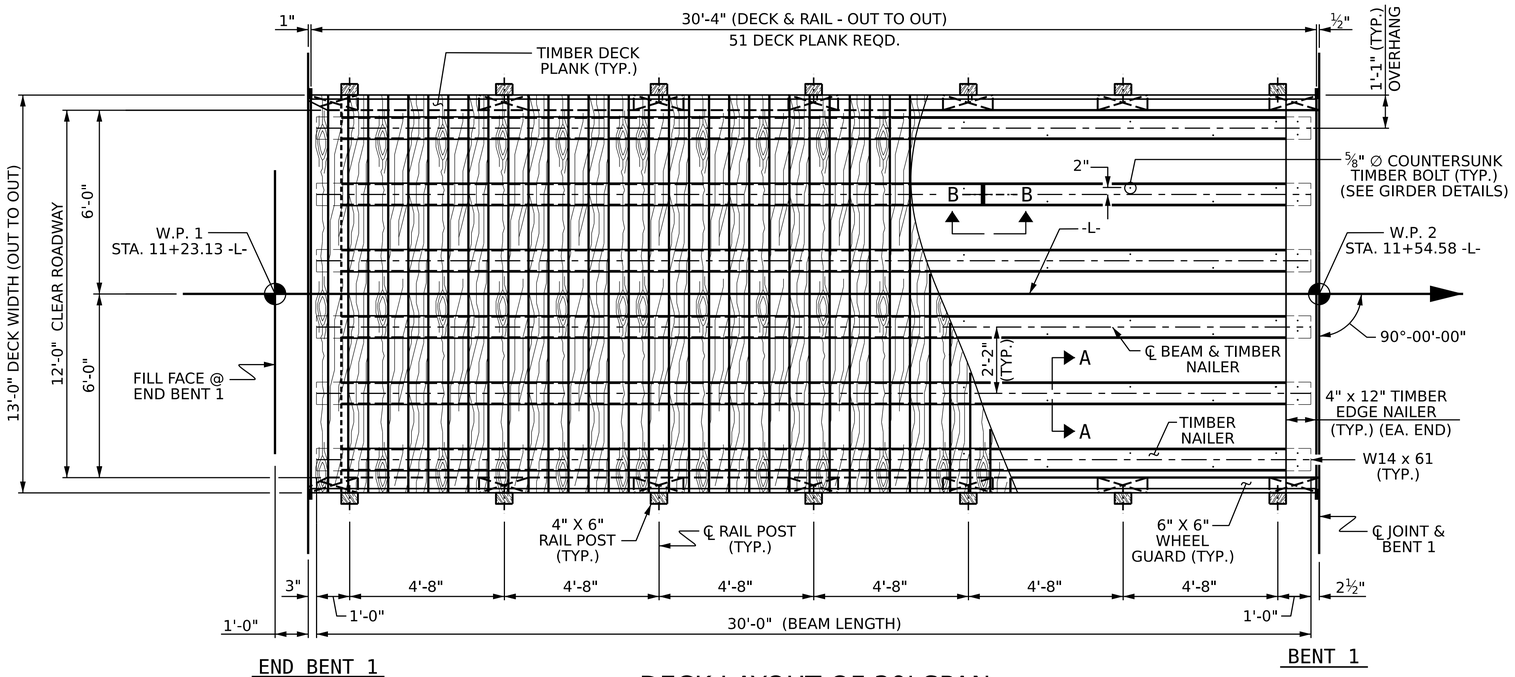


DECK LAYOUT OF 50' SPAN

(SPAN C)



DECK LAYOUT OF 30' SPAN

SPAN A (SPANS B & D SIMILAR)

NOTES

FOR ADDITIONAL NOTES, SEE TYPICAL SECTION AND GENERAL DRAWING SHEETS.

STAGGER TIMBER DECK PLANK JOINTS AT 4'-0" MINIMUM FROM ADJACENT RUN.

ATTACH TIMBER DECK PLANKS TO NAILERS WITH TWO STRUCTURAL SCREWS PER TIMBER DECK PLANK.

AVOID HITTING NAILER BOLT WHEN DRIVING TIMBER DECK SCREWS.

SEE BEAM DETAILS FOR SPACING OF TIMBER BOLTS IN TOP FLANGE OF ROLLED BEAM.

COUNTERSINK TIMBER BOLT AND STRUCTURAL SCREW HEADS TO BE FLUSH WITH TIMBER SURFACE.

TRIM THE EDGE NAILER FLUSH WITH THE EDGE OF DECK.

DECK PLANK WIDTH MAY BE CUT TO 6" (MIN.) TO FIT WITHIN LIMITS OF TIMBER DECK. ALL DECK PLANKS ATTACHED TO THE EDGE NAILER SHALL BE FULL WIDTH. CUT BOARDS WILL NOT BE PERMITTED TO BE PLACED ADJACENT TO ONE ANOTHER.

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 1 OF 2

SUPERSTRUCTURE

PLAN OF SPANS

(30' & 50' SPANS)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			25

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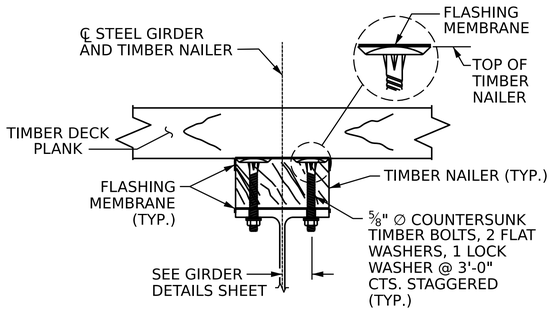
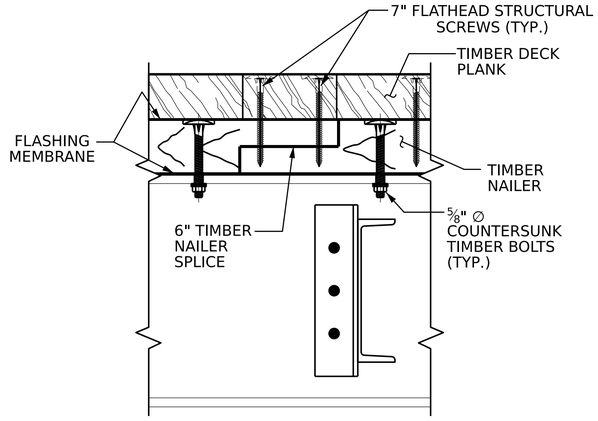


SECTION A-A

TIMBER NAILER ATTACHMENT DETAILS



SECTION B-B

NAILER SPLICE & TIMBER PLANK ATTACHMENT DETAILS

BILL OF MATERIAL FOR 30 FT. SPAN

TREATED LUMBER

ITEM	SIZE	LIN. FT.
TIMBER DECK PLANKS	4"x8"	663.0
TIMBER NAILERS	4"x10"	170.5
TIMBER EDGE NAILERS	4"x12"	26.0
TOTAL TREATED LUMBER		859.5 LIN. FT.

FLASHING MEMBRANE

ITEM	SIZE	LIN. FT.
TOP OF BEAM	25 MILS	180.0
TOP OF TIMBER NAILERS	25 MILS	170.5
TOP OF TIMBER EDGE NAILERS	25 MILS	26.0
FLASHING MEMBRANE		376.5 LIN. FT.

HARDWARE

ITEM	No.	SIZE	LBS.
⅝" ∅ TIMBER BOLTS	144	⅝"	201.9
HEAVY HEX NUTS	144	⅝"	17.3
STANDARD WASHER	144	⅝"	11.0
LOCK WASHER	144	⅝"	11.0
FLAT HEAD STR. SCREWS	612	7"	6.1
HARDWARE FOR CONNECTIONS			247.3 LBS.

BILL OF MATERIAL FOR 50 FT. SPAN

TREATED LUMBER

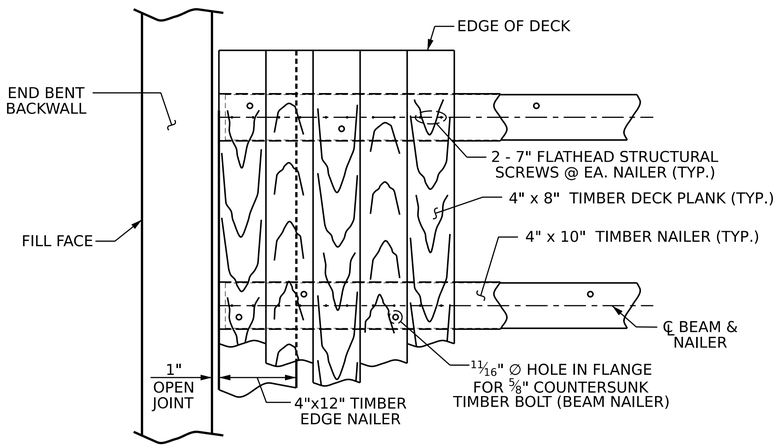
ITEM	SIZE	LIN. FT.
TIMBER DECK PLANKS	4"x8"	1092.0
TIMBER NAILERS	4"x12"	290.5
TIMBER EDGE NAILERS	4"x12"	26.0
TOTAL TREATED LUMBER		1408.5 LIN. FT.

FLASHING MEMBRANE

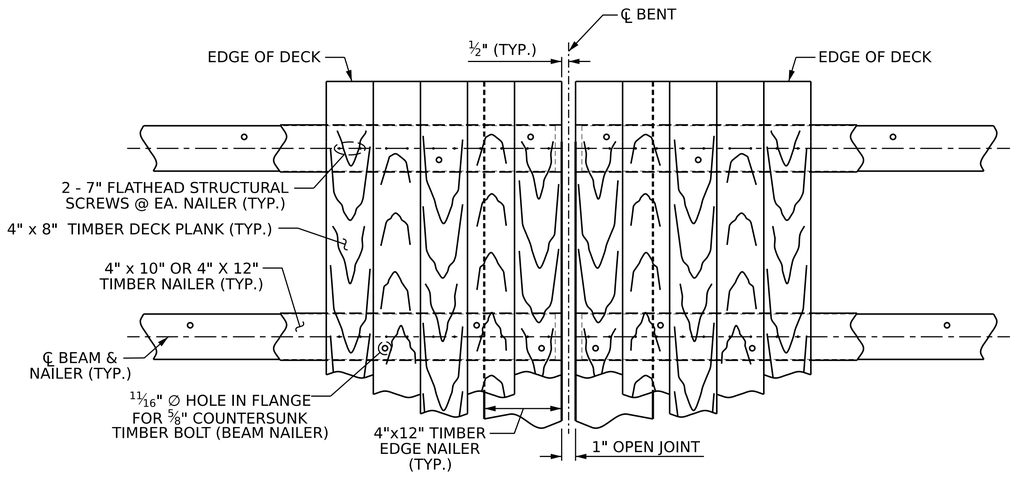
ITEM	SIZE	LIN. FT.
TOP OF BEAM	25 MILS	300.0
TOP OF TIMBER NAILERS	25 MILS	290.5
TOP OF TIMBER EDGE NAILERS	25 MILS	26.0
FLASHING MEMBRANE		616.5 LIN. FT.

HARDWARE

ITEM	Nos.	SIZE	LBS.
⅝" ∅ TIMBER BOLTS	222	⅝"	310.3
HEAVY HEX NUTS	222	⅝"	26.6
STANDARD WASHER	222	⅝"	17.0
LOCK WASHER	222	⅝"	17.0
FLAT HEAD STR. SCREWS	1008	7"	10.1
HARDWARE FOR CONNECTIONS			381.0 LBS.



TYPICAL DECK DETAIL AT END BENTS



TYPICAL DECK DETAIL AT BENTS

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CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 2 OF 2

SUPERSTRUCTURE

PLAN OF SPAN DETAILS

(ALL SPANS)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			25

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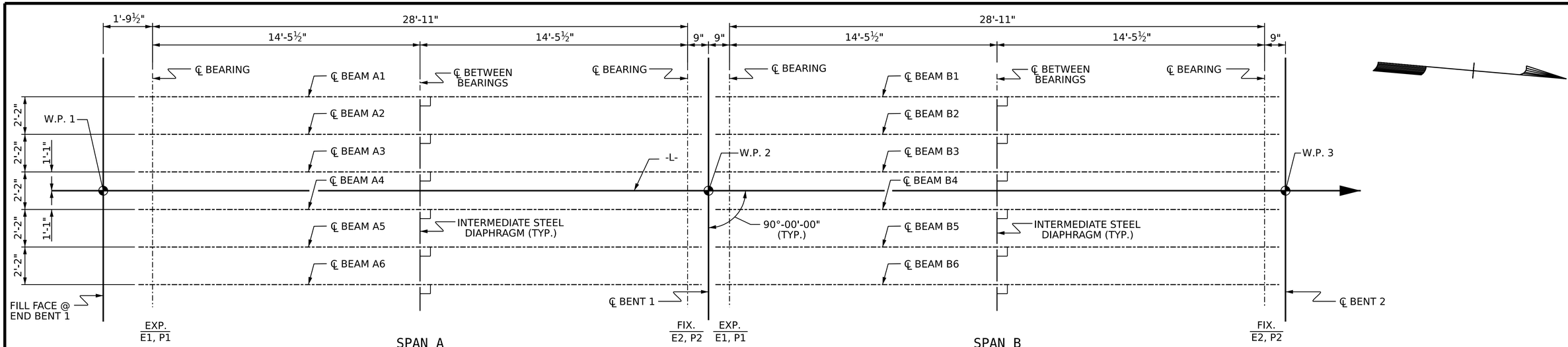
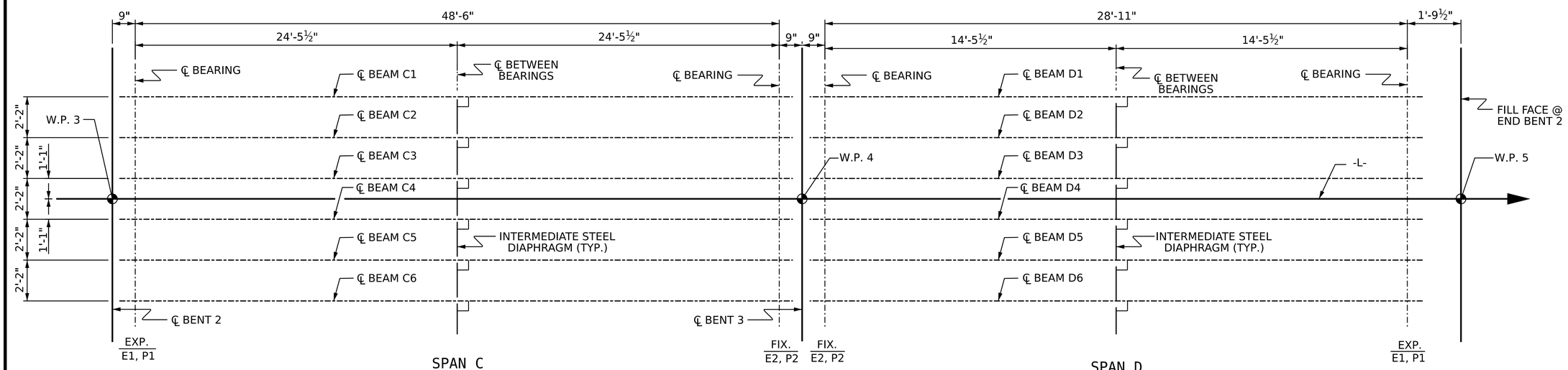


FRAMING PLAN SPANS A & B



FRAMING PLAN SPANS C & D

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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Signed by: Jennifer R. McRoy F21A12F88CD8408...
10/15/2025

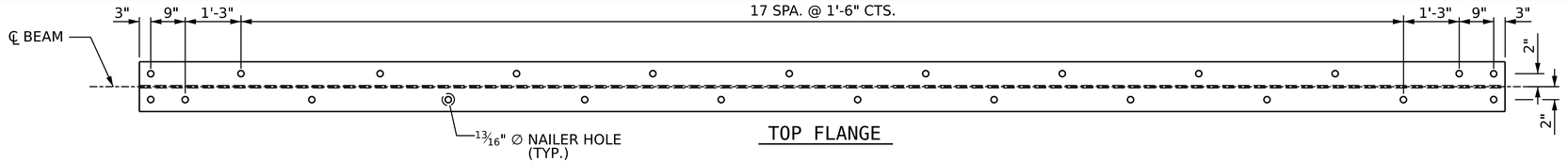
PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

SUPERSTRUCTURE

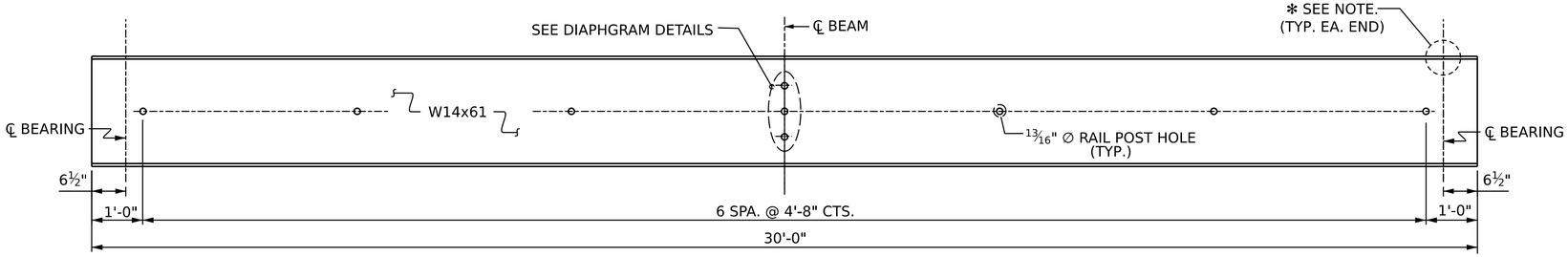
FRAMING PLAN

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



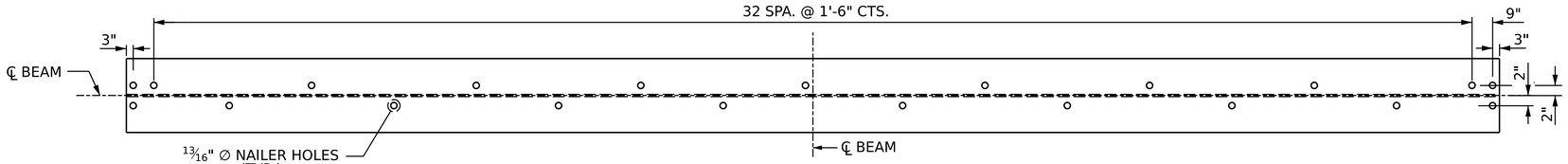
TOP FLANGE



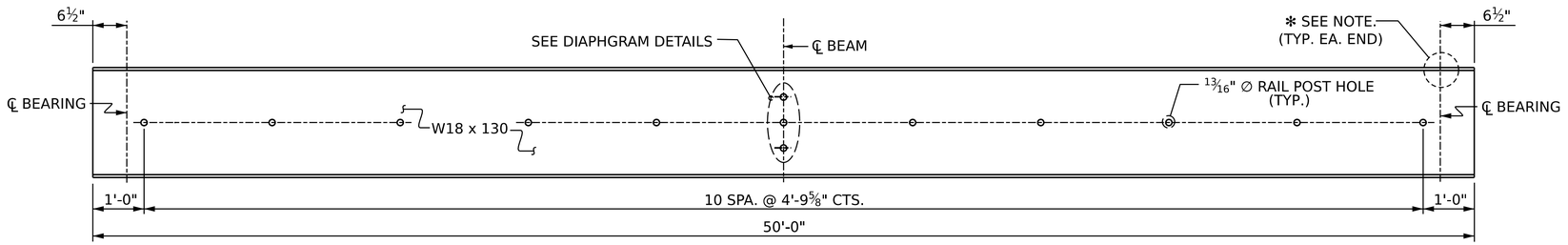
ELEVATION

BEAM DETAILS

(SPANS A, B, & D)



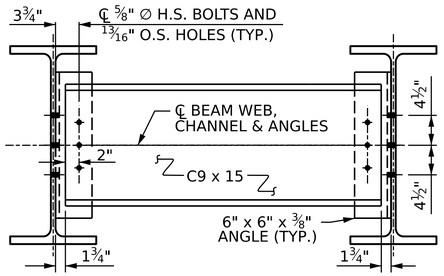
TOP FLANGE



ELEVATION

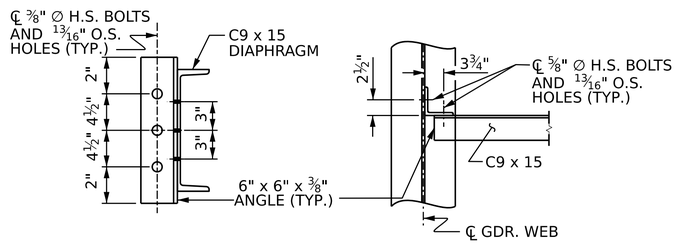
BEAM DETAILS

(SPAN C)



INTERIOR DIAPHRAGM DETAIL

(SPANS A, B, & D)



ANGLE DETAIL

(SPANS A, B, & D)

NOTES

NO SALVAGED BEAMS SHALL BE USED, UNLESS OTHERWISE NOTED ON THE PLANS.

NO SHOP CAMBER REQUIRED, TURN NATURAL MILL CAMBER UP.

ALL STRUCTURAL STEEL FIELD CONNECTIONS SHALL BE ⅝" DIA. GALVANIZED HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

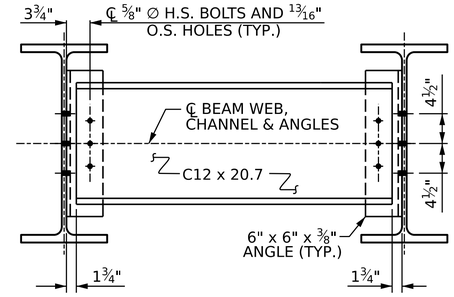
BEAMS SHALL BE PLACED PARALLEL TO THE CHORD.

CONTRACTORS OPTION TO WELD CONNECTOR TO BEAM PRIOR TO SHOP COATING.

SEE GENERAL DRAWING NOTES FOR COATING.

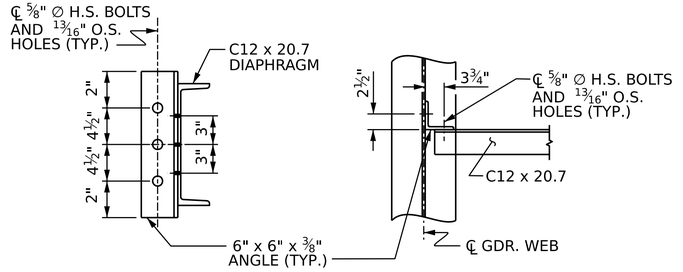
✻ FOR SIZE AND LOCATION OF OPTIONAL BOLTED SOLE PLATE, SEE BEARING DETAILS SHEET.

BEAM ELEVATION VIEWS ARE SHOWING RAIL POST HOLES FOR EXTERIOR BEAMS. INTERIOR BEAMS ARE SIMILAR BUT WITHOUT RAIL POST HOLES.



INTERIOR DIAPHRAGM DETAIL

(SPAN C)



ANGLE DETAIL

(SPAN C)

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

PROJECT NO. 005-01-34397

ASHE COUNTY

STATION: 11+95.00 -L-

SUPERSTRUCTURE

BEAM AND DIAPHRAGM DETAILS

DRAWN BY :	B.M. WILSON	DATE :	09/2025
CHECKED BY :	J.R. MCROY	DATE :	09/2025
DESIGN ENGINEER OF RECORD:	J.R. MCROY	DATE :	09/2025

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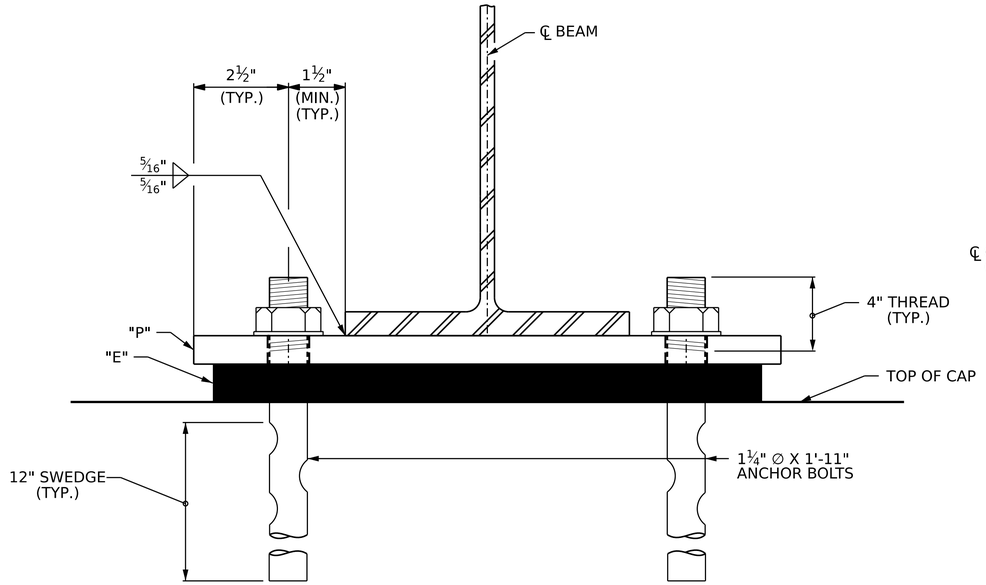
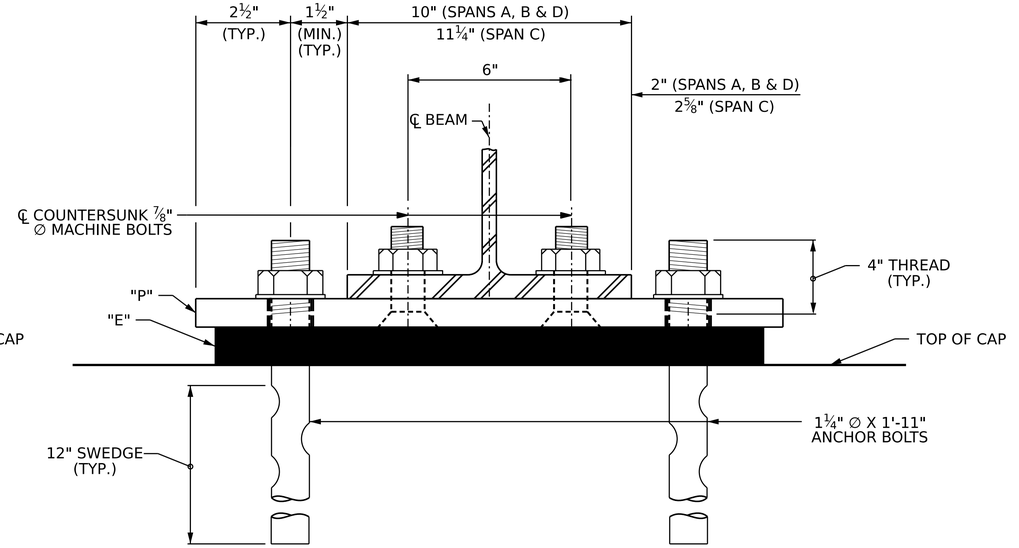
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



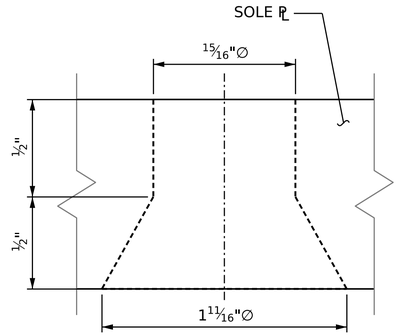
END VIEW

WELDED



END VIEW

OPTIONAL BOLTED



DETAIL B

NOTES

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT ALL SUPPORTS, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF ½ TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 36.

ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A449. NUTS SHALL MEET THE REQUIREMENTS OF AASHTO M291-DH OR AASHTO M292-2H. WASHERS SHALL MEET THE REQUIREMENTS OF AASHTO M293. SHOP DRAWINGS ARE NOT REQUIRED FOR ANCHOR BOLTS, NUTS, AND WASHERS. SHOP INSPECTION IS REQUIRED.

AT THE APPROVAL OF THE ENGINEER, SOLE PLATES AT THE EXPANSION END MAY BE FIELD WELDED.

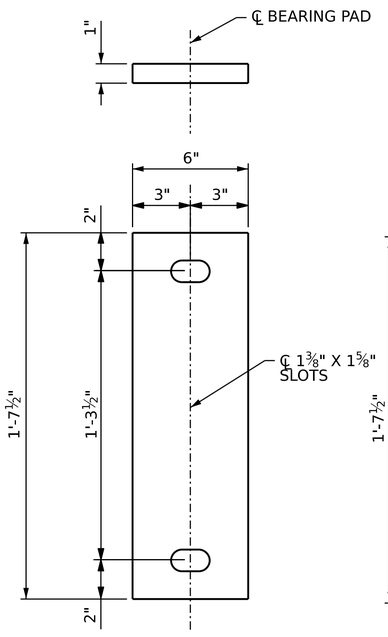
WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300° F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

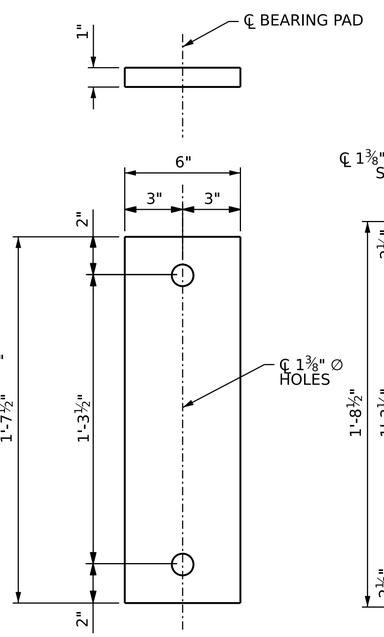
AT NO ADDITIONAL COST TO THE DEPARTMENT, THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CAST-IN-PLACE ANCHORS. LEVEL 1 FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ANCHOR BOLT IS 30 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

ADHESIVELY ANCHORED ANCHOR BOLTS SHALL BE THREADED FULL LENGTH.

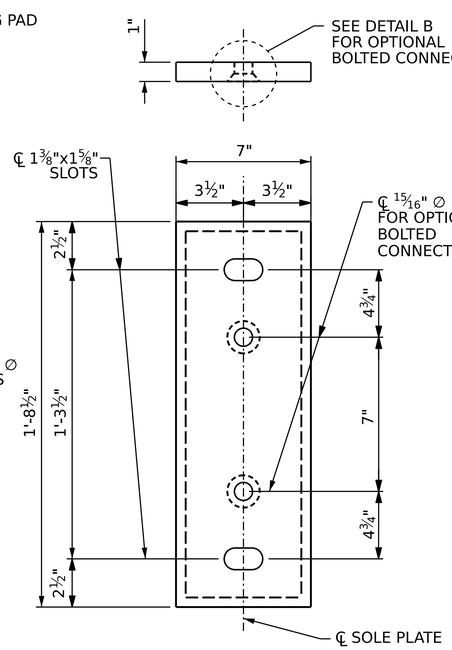
AT THE APPROVAL OF THE ENGINEER, THE OPTIONAL BOLTED SOLE PLATE MAY BE USED AT NO ADDITIONAL COST TO THE DEPARTMENT.



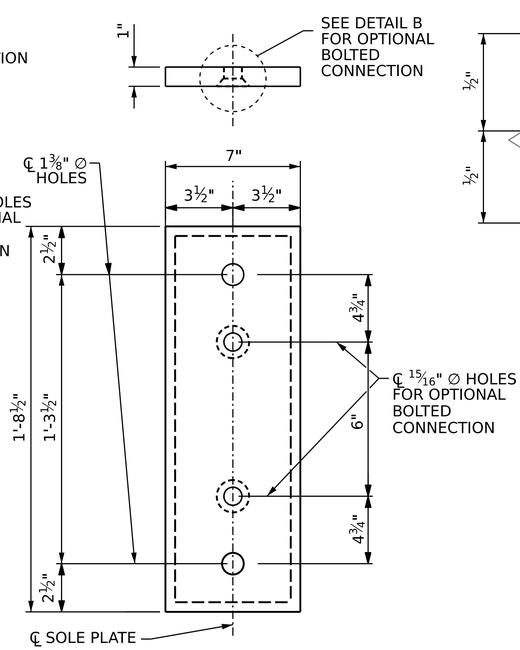
E1 ELASTOMERIC BEARING DETAILS
(24 REQ'D)
EXPANSION



E2 ELASTOMERIC BEARING DETAILS
(24 REQ'D)
FIXED



P1 SOLE PLATE DETAILS
(24 REQ'D)
EXPANSION



P2 SOLE PLATE DETAILS
(24 REQ'D)
FIXED

ASSEMBLED BY: B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

Prepared in the Office of:
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NC FIRM LICENSE No: C-5176
1000 Social Dr., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
BRIDGE NO. 11+95.00 -L-

BEARING DETAILS TYPE III

(ALL SPANS)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			25

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BILL OF MATERIAL FOR ONE RAIL 30 FT (6 REQ.D)

TREATED LUMBER

ITEM	SIZE	LIN. FT.
RAILS	2"x 6"	90.00
RAIL POSTS	4"x6"	42.00
TOP RAIL	2"x8"	30.50
WHEEL GUARD	6"x6"	30.50
WHEEL GUARD BLOCK	6"x6"	10.50
END POSTS	2"x8"	12.00
SPACER BLOCK	6"x6"	7.58

HARDWARE

ITEM	No.	SIZE	LBS.
TIMBER BOLTS (WHEEL GUARD)	7	⅜" ∅	9.80
TIMBER BOLTS (SPACE BLOCK)	7	⅜" ∅	9.80
TIMBER BOLTS (RAIL)	7	⅝" ∅	16.10
HEAVY HEX NUTS	21	⅜" ∅	2.52
FLATHEAD STR. SCREWS	72	3½"	0.91
STANDARD WASHER	7	⅝" ∅	1.00
LOCK WASHER	7	⅜" ∅	1.00
OGEE WASHERS	14	⅝" ∅	8.68

HARDWARE FOR CONNECTIONS_____ APPROX. 49.80 LBS.

ACCESSORIES (SPAN A & D ONLY)

ITEM	No.
4 X 34 LINEAR DELINEATOR	4
W23-10 12x36 DELINEATOR	2
U-CHANNEL SUPPORT POST	2

PAY LENGTH = 30.5 LIN. FT.

BILL OF MATERIAL FOR ONE RAIL 50 FT (2 REQ.D)

TREATED LUMBER

ITEM	SIZE	LIN. FT.
RAILS	2"x 6"	150.00
RAIL POSTS	4"x6"	66.00
TOP RAIL	2"x8"	50.50
WHEEL GUARD	6"x6"	50.50
WHEEL GUARD BLOCK	6"x6"	16.50
END POSTS	2"x8"	12.00
SPACER BLOCK	6"x6"	11.00

HARDWARE

ITEM	Nos.	SIZE	LBS.
TIMBER BOLTS (WHEEL GUARD)	11	⅜" ∅	15.40
TIMBER BOLTS (SPACE BLOCK)	11	⅜" ∅	15.40
TIMBER BOLTS (RAIL)	11	⅝" ∅	25.30
HEAVY HEX NUTS	33	⅜" ∅	3.96
FLATHEAD STR. SCREWS	104	3½"	1.20
STANDARD WASHER	11	⅝" ∅	1.00
LOCK WASHER	11	⅜" ∅	1.00
OGEE WASHERS	22	⅝" ∅	13.64

HARDWARE FOR CONNECTIONS_____ APPROX. 78.90 LBS.

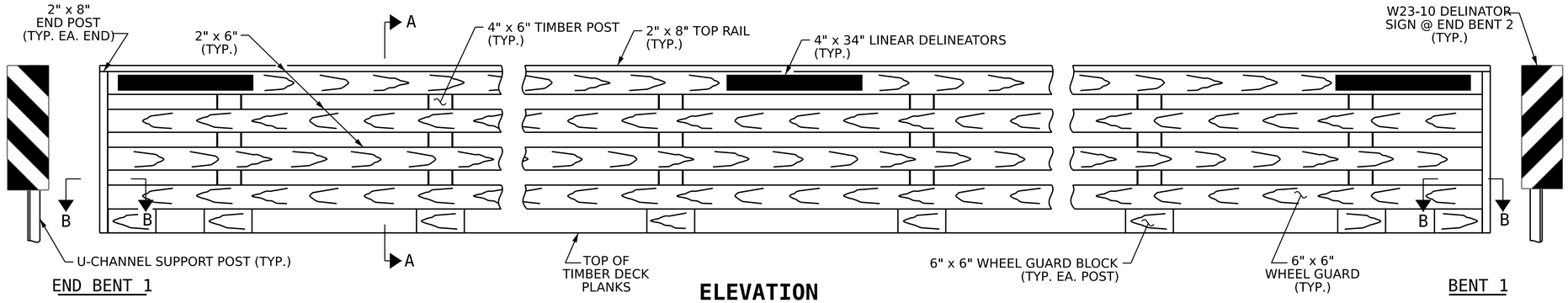
PAY LENGTH = 50.5 LIN. FT.

NOTES

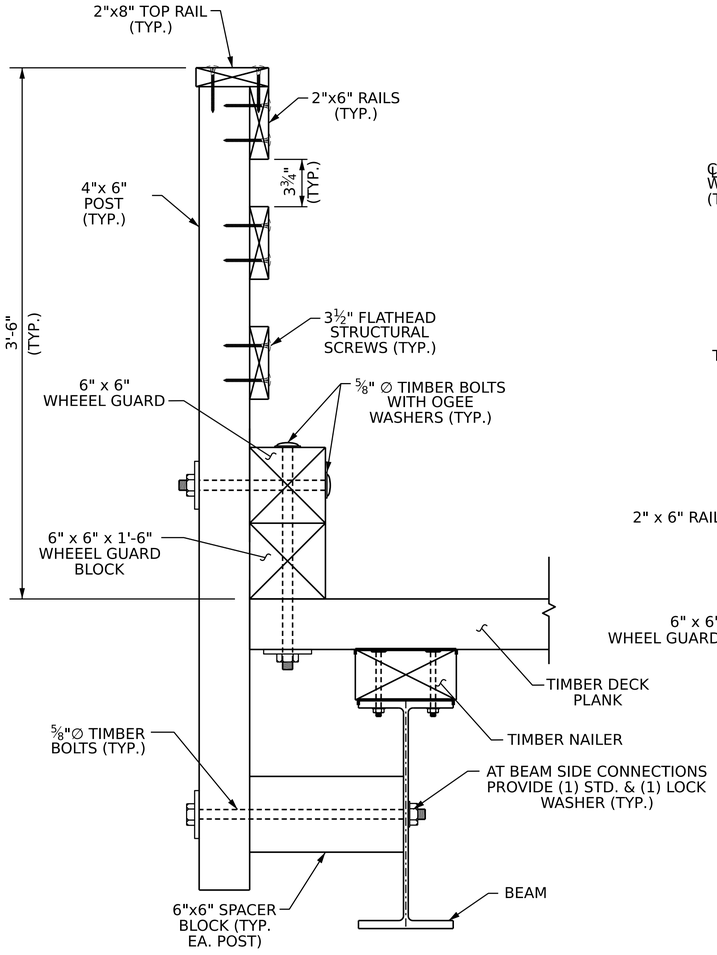
BRIDGE RAILS SHALL BE CONTINUOUS FROM END POST TO END POST WITH NO GAPS. RAIL LUMBER LENGTHS SHALL BE ATTACHED TO A MINIMUM OF THREE POSTS.

TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.

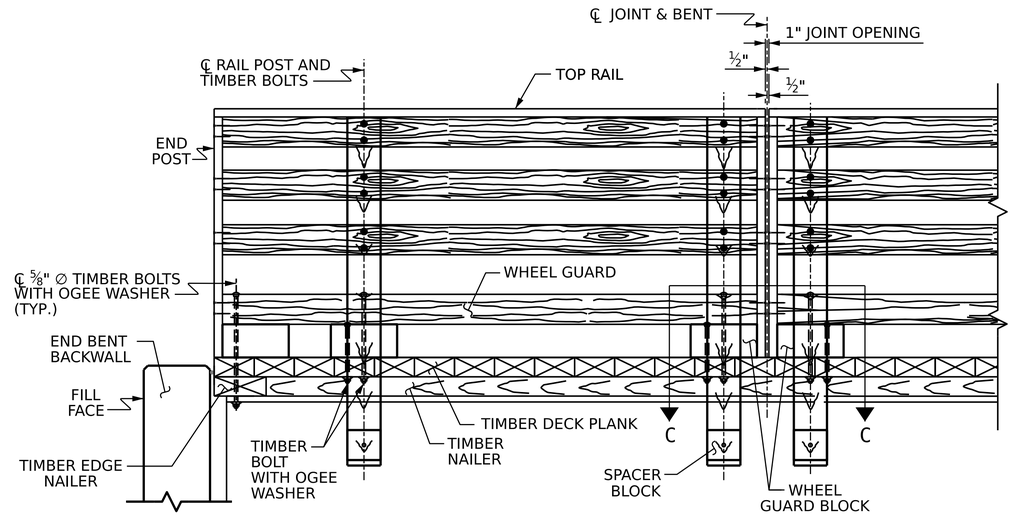
SEE PLAN OF SPAN SHEET FOR NUMBER OF POSTS AND POST SPACING.



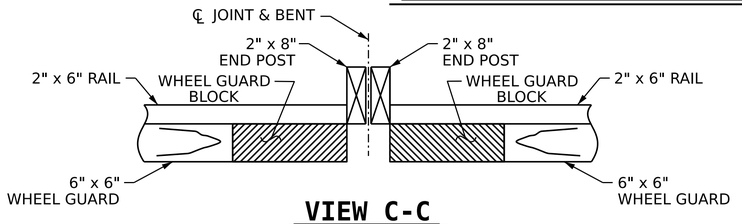
ELEVATION



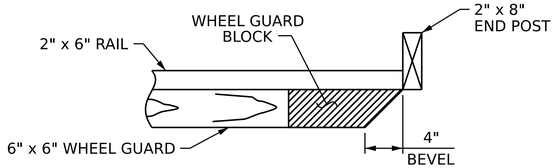
SECTION A-A



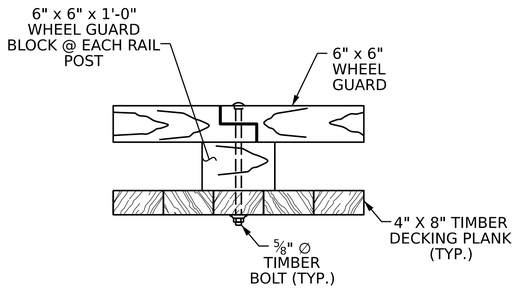
RAIL DETAIL AT END BENTS AND BENTS



VIEW C-C



VIEW B-B



WHEEL GUARD SPLICE DETAIL

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1000 Social Dr., Suite 800
Raleigh, NC 27609
(919)322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. MCROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B...
10/15/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

SUPERSTRUCTURE

TIMBER BRIDGE RAIL SYSTEM

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			25

DRAWN BY : B.M. WILSON DATE : 09/2025
CHECKED BY : J.R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

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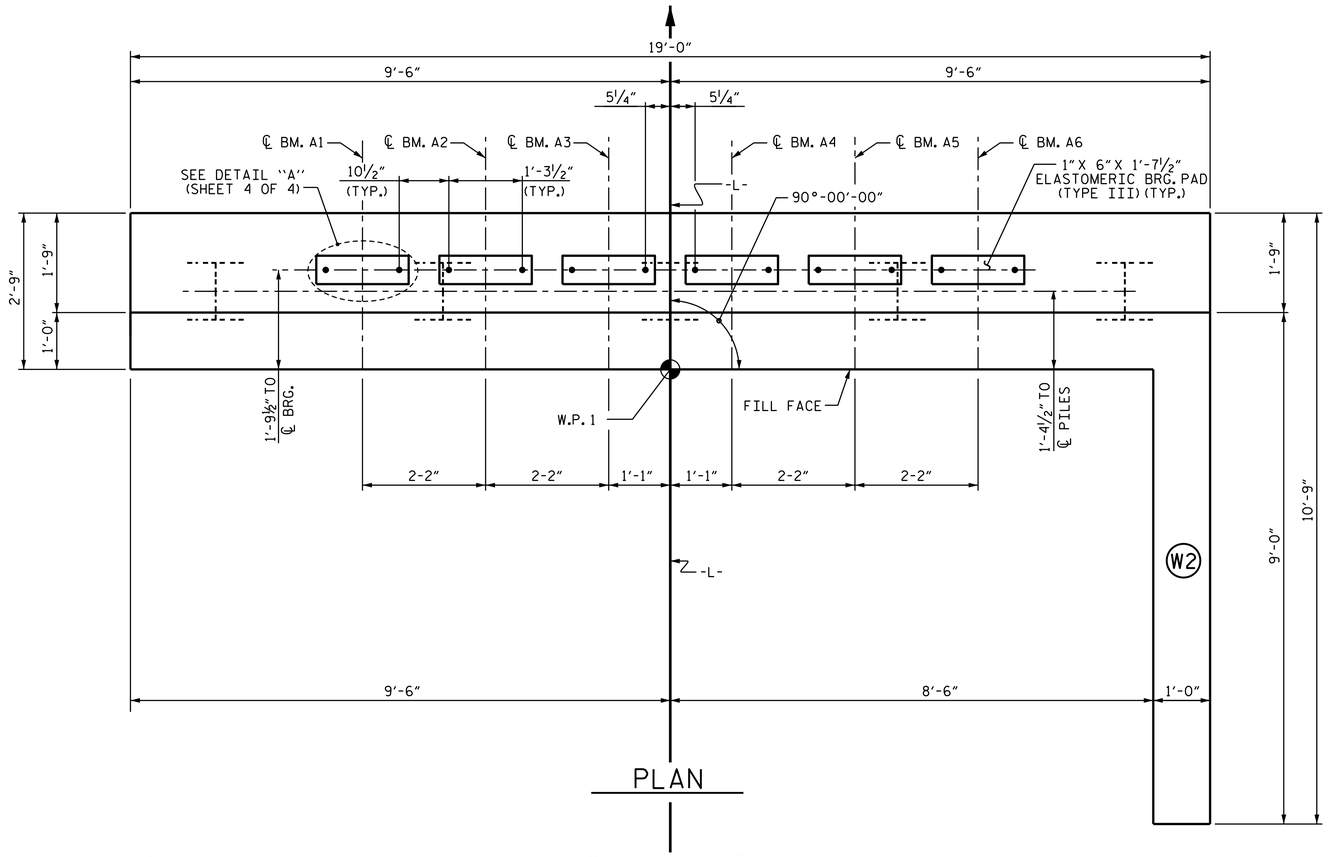
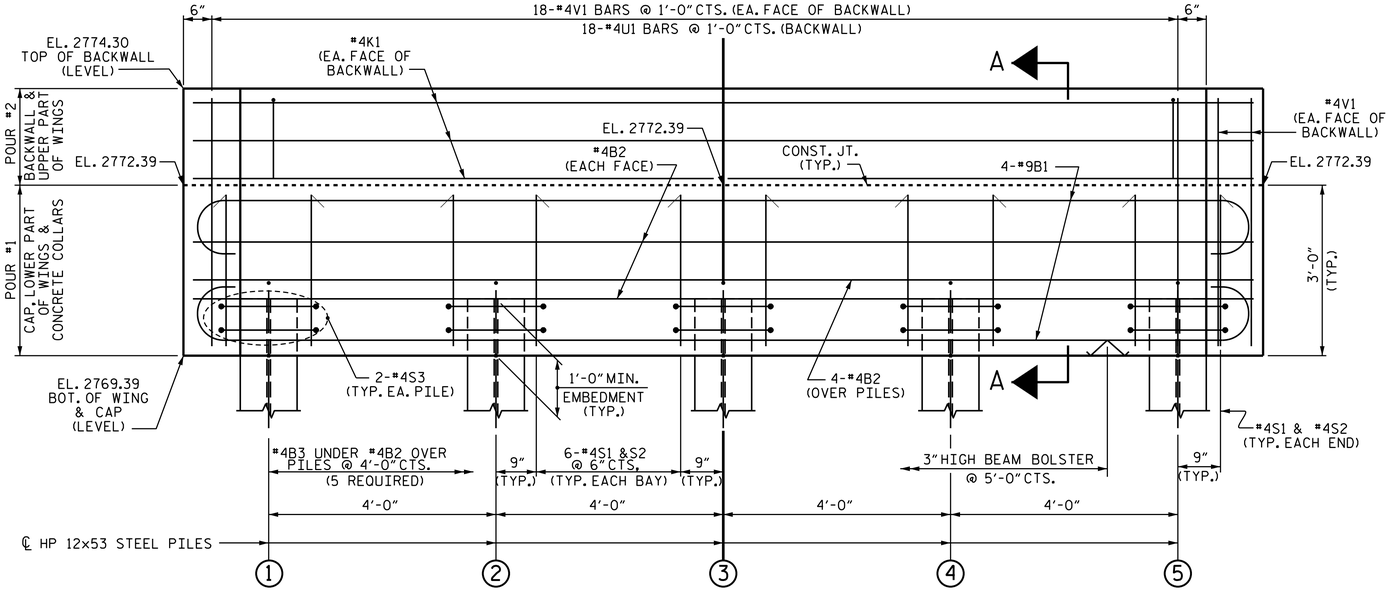


PLAN



ELEVATION

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

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B...
10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 1 OF 4

SUBSTRUCTURE

END BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			25

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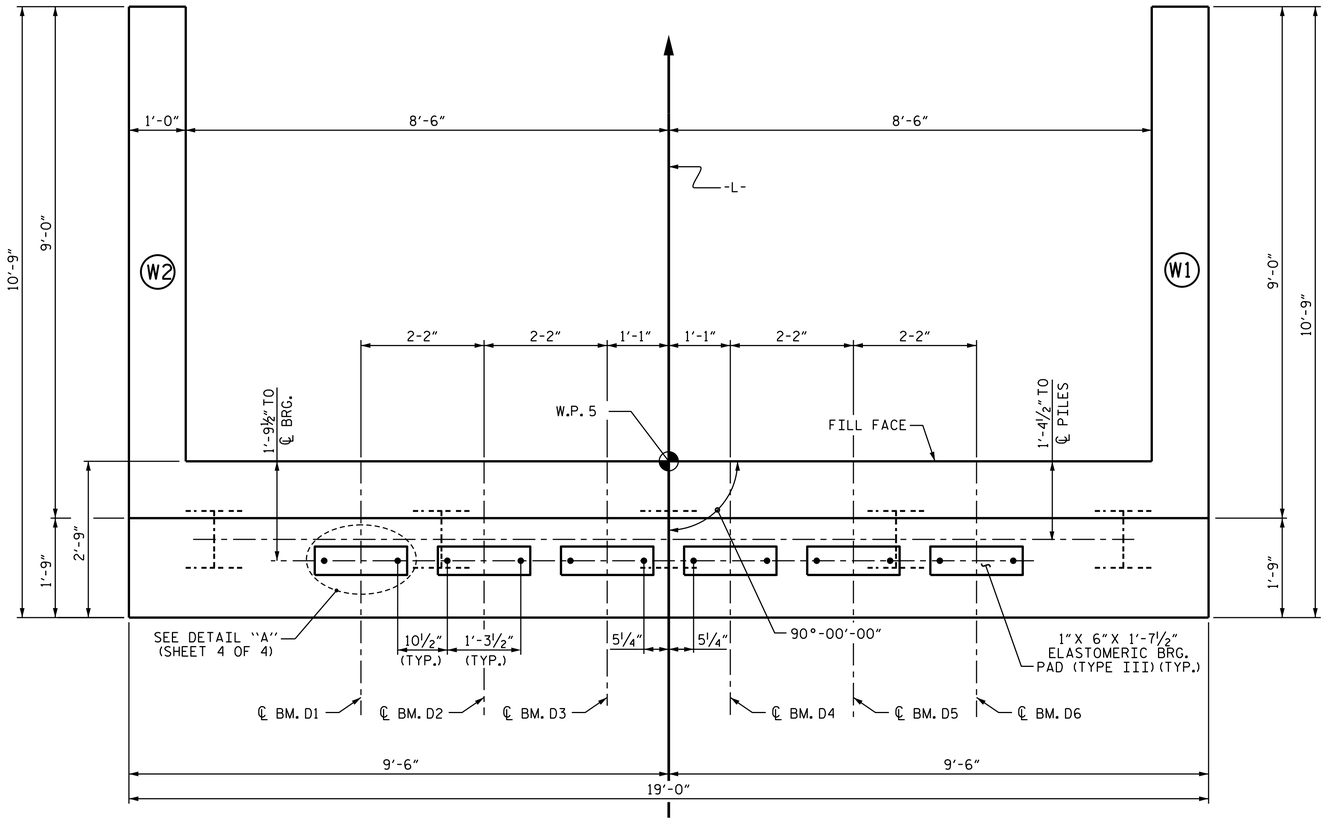
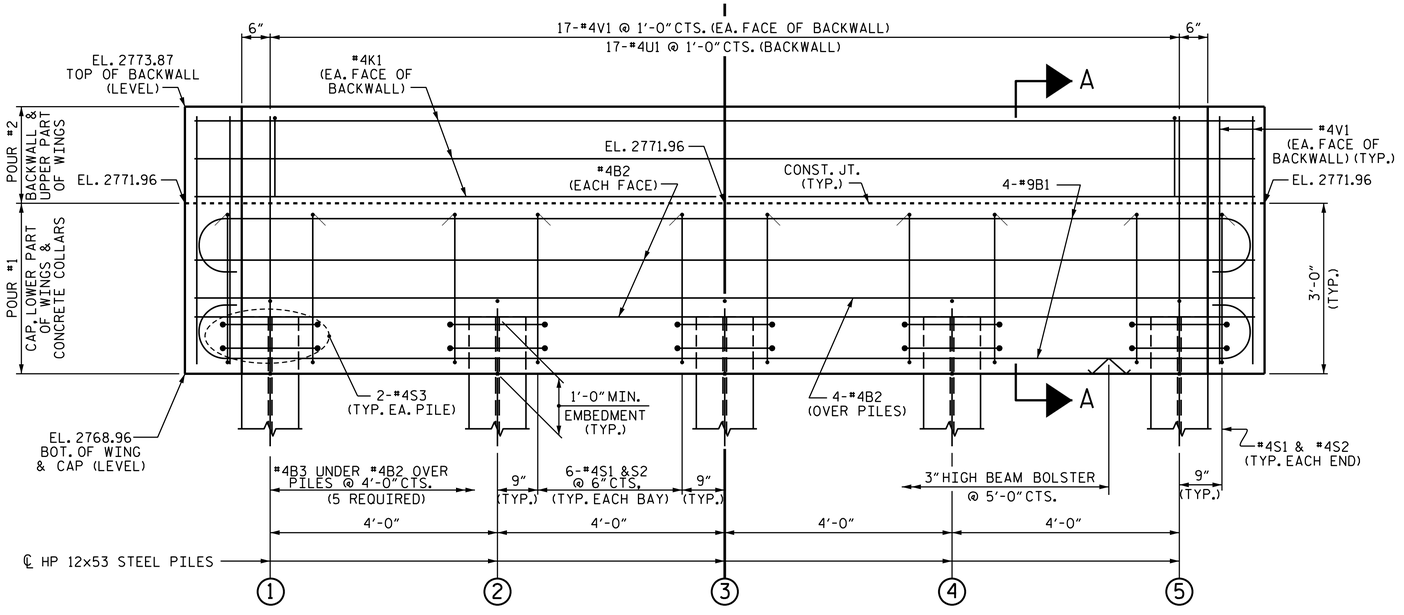


PLAN



ELEVATION

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

NOTES

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

FOR PILE SPLICE DETAILS, SEE SHEET 4 OF 4.

FOR WING DETAILS, SEE SHEET 3 OF 4.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NORTH CAROLINA PROFESSIONAL SEAL 052076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12F88CDB408... 10/15/2025

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PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 2 OF 4

SUBSTRUCTURE

END BENT 2

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-16
1			3			TOTAL SHEETS
2			4			25

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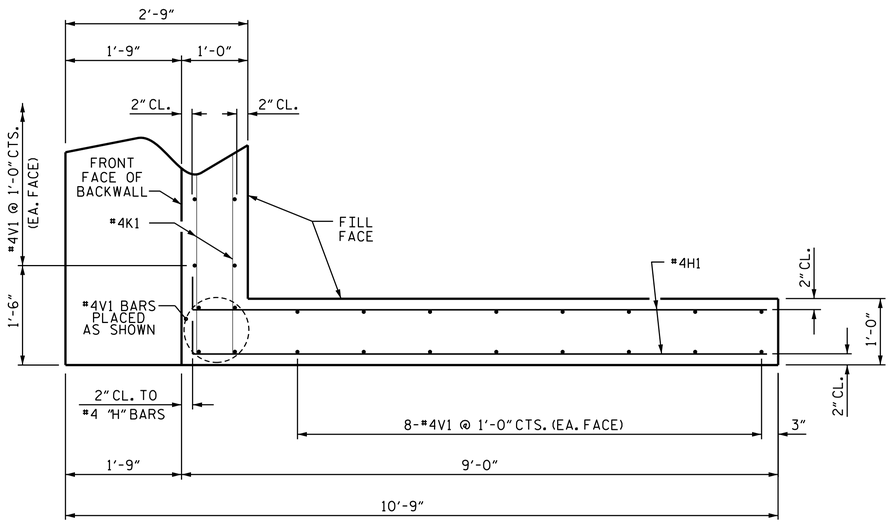
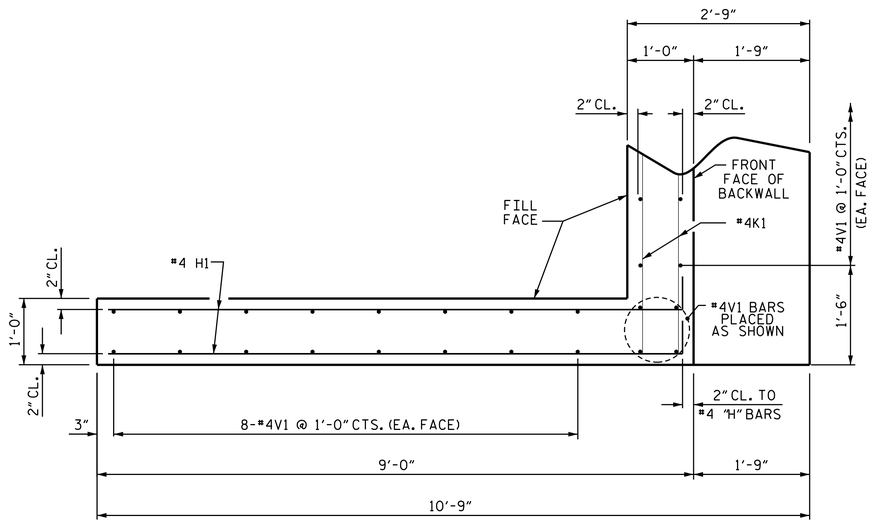


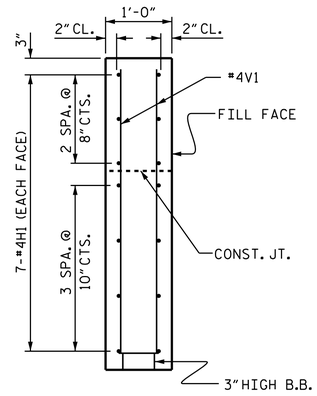
PLAN OF WING (W1)

(END BENT 2 ONLY)

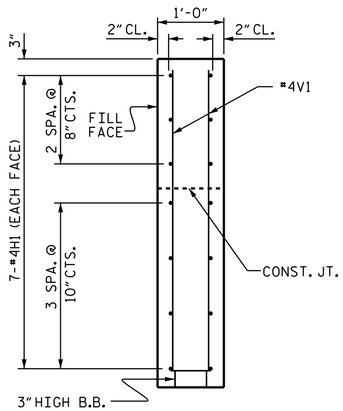


PLAN OF WING (W2)

(END BENT 1 & 2)



SECTION X-X



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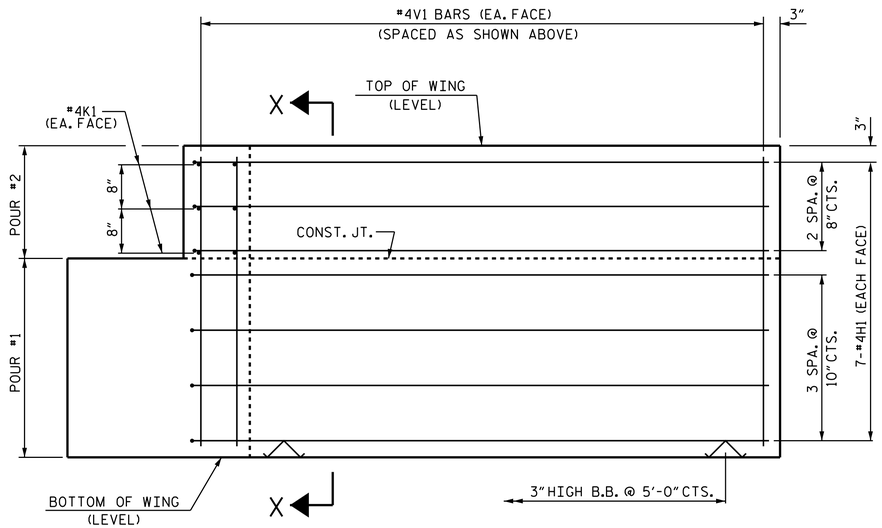
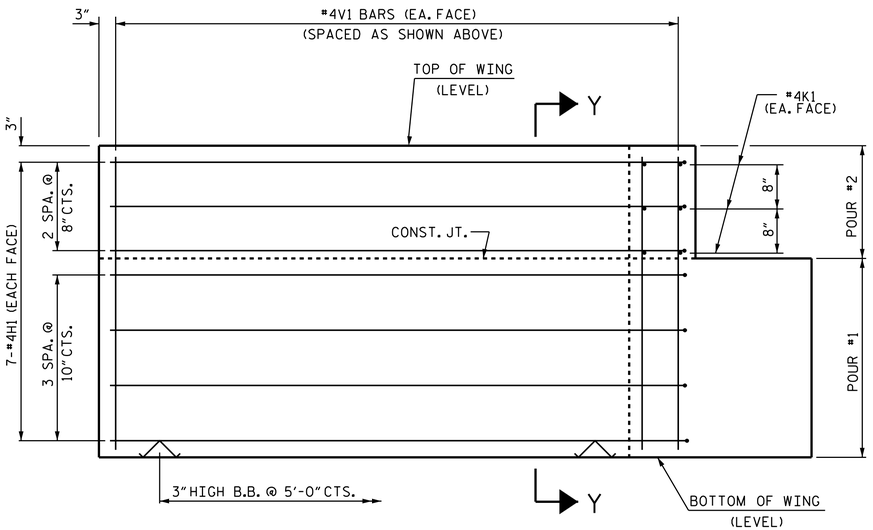


ELEVATION OF WING (W1)



ELEVATION OF WING (W2)

WING DETAILS

DRAWN BY :	K. D. LAYNE	DATE :	09/2025
CHECKED BY :	J. R. McROY	DATE :	09/2025
DESIGN ENGINEER OF RECORD:	J. R. McROY	DATE :	10/2025

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10/15/2025

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PROJECT NO. 005-01-34397

ASHE COUNTY

STATION: 11+95.00 -L-

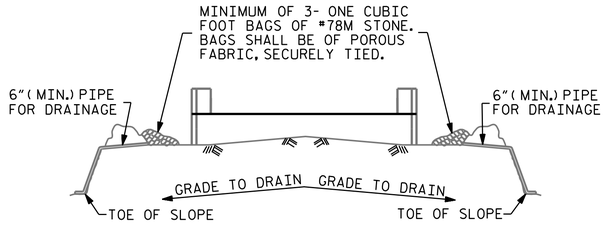
SHEET 3 OF 4

SUBSTRUCTURE

END BENT
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-17
1			3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5

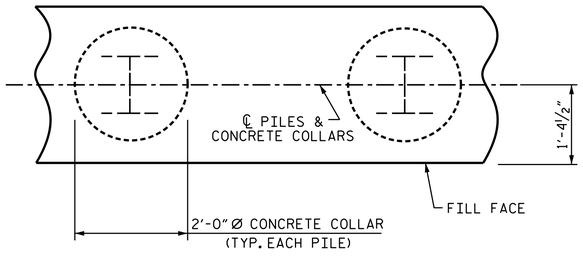


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

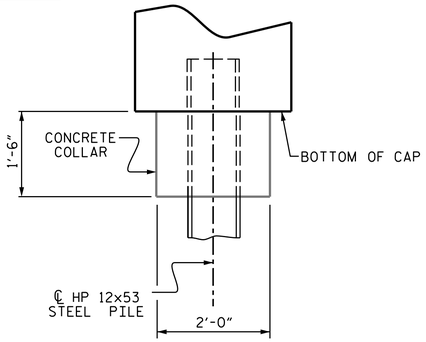
BAGGED STONE SHALL REMAIN IN PLACE UNTIL THE ENGINEER DIRECTS THAT IT BE REMOVED. THE CONTRACTOR SHALL REMOVE AND DISPOSE OF SILT ACCUMULATIONS AT BAGGED STONE WHEN SO DIRECTED BY THE ENGINEER. BAGS SHALL BE REMOVED AND REPLACED WHENEVER THE ENGINEER DETERMINES THAT THEY HAVE DETERIORATED AND LOST THEIR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

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

TEMPORARY DRAINAGE AT END BENT



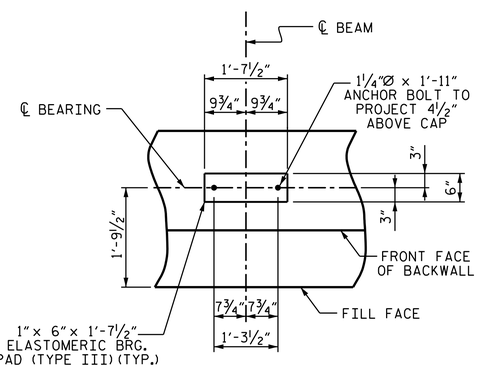
PLAN



ELEVATION

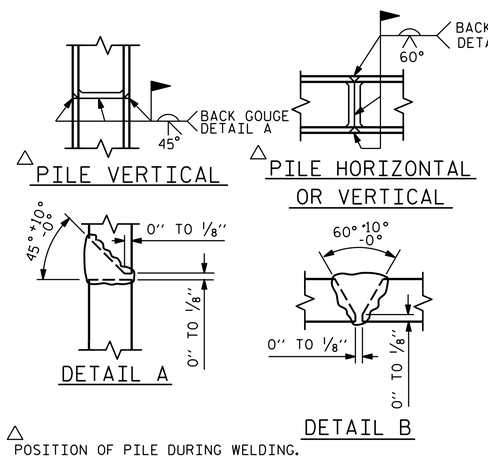
CORROSION PROTECTION FOR STEEL PILES DETAIL

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



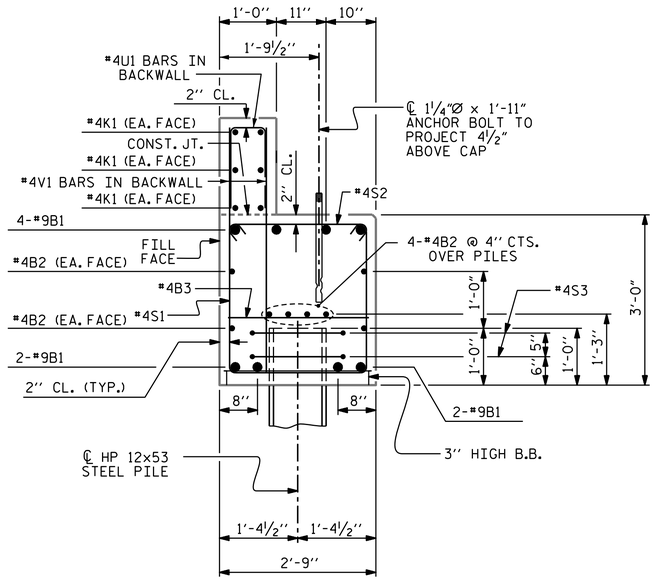
DETAIL "A"

(END BENT 1 SHOWN, END BENT 2 SIMILAR BY ROTATION)



△ POSITION OF PILE DURING WELDING.

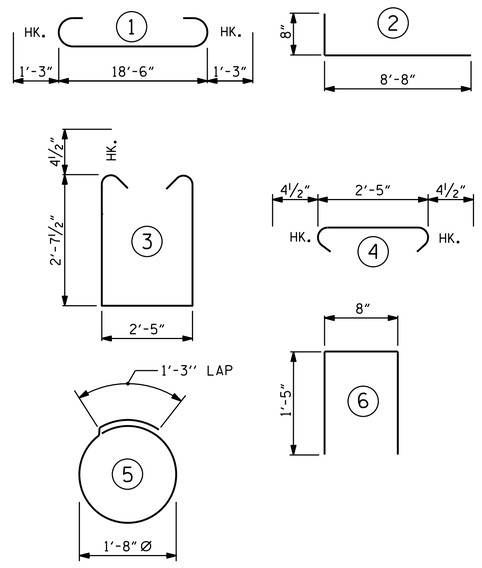
PILE SPLICE DETAILS



SECTION A-A

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

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL FOR END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	21'-0"	571
B2	8	#4	STR	18'-8"	100
B3	5	#4	STR	2'-5"	8
H1	14	#4	2	9'-4"	87
K1	6	#4	STR	18'-8"	75
S1	26	#4	3	8'-5"	146
S2	26	#4	4	3'-2"	55
S3	10	#4	5	6'-6"	43
V1	54	#4	STR	4'-3"	153
U1	17	#4	6	3'-6"	40

REINFORCING STEEL 1278 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 7.6 C.Y.

POUR #2 BACKWALL & UPPER PART OF WINGS 1.9 C.Y.

TOTAL CLASS A CONCRETE 9.5 C.Y.

BILL OF MATERIAL FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	21'-0"	571
B2	8	#4	STR	18'-8"	100
B3	5	#4	STR	2'-5"	8
H1	28	#4	2	9'-4"	175
K1	6	#4	STR	18'-8"	75
S1	26	#4	3	8'-5"	146
S2	26	#4	4	3'-2"	55
S3	10	#4	5	6'-6"	43
V1	74	#4	STR	4'-3"	210
U1	17	#4	6	3'-6"	40

REINFORCING STEEL 1423 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 CAP, LOWER PART OF WINGS & COLLARS 8.5 C.Y.

POUR #2 BACKWALL & UPPER PART OF WINGS 2.5 C.Y.

TOTAL CLASS A CONCRETE 11.0 C.Y.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. McROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NC FIRM LICENSE No: C-5176
1000 Social St., Suite 800
Raleigh, NC 27609
Ph: (919) 322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12F88CD840B... 10/15/2025

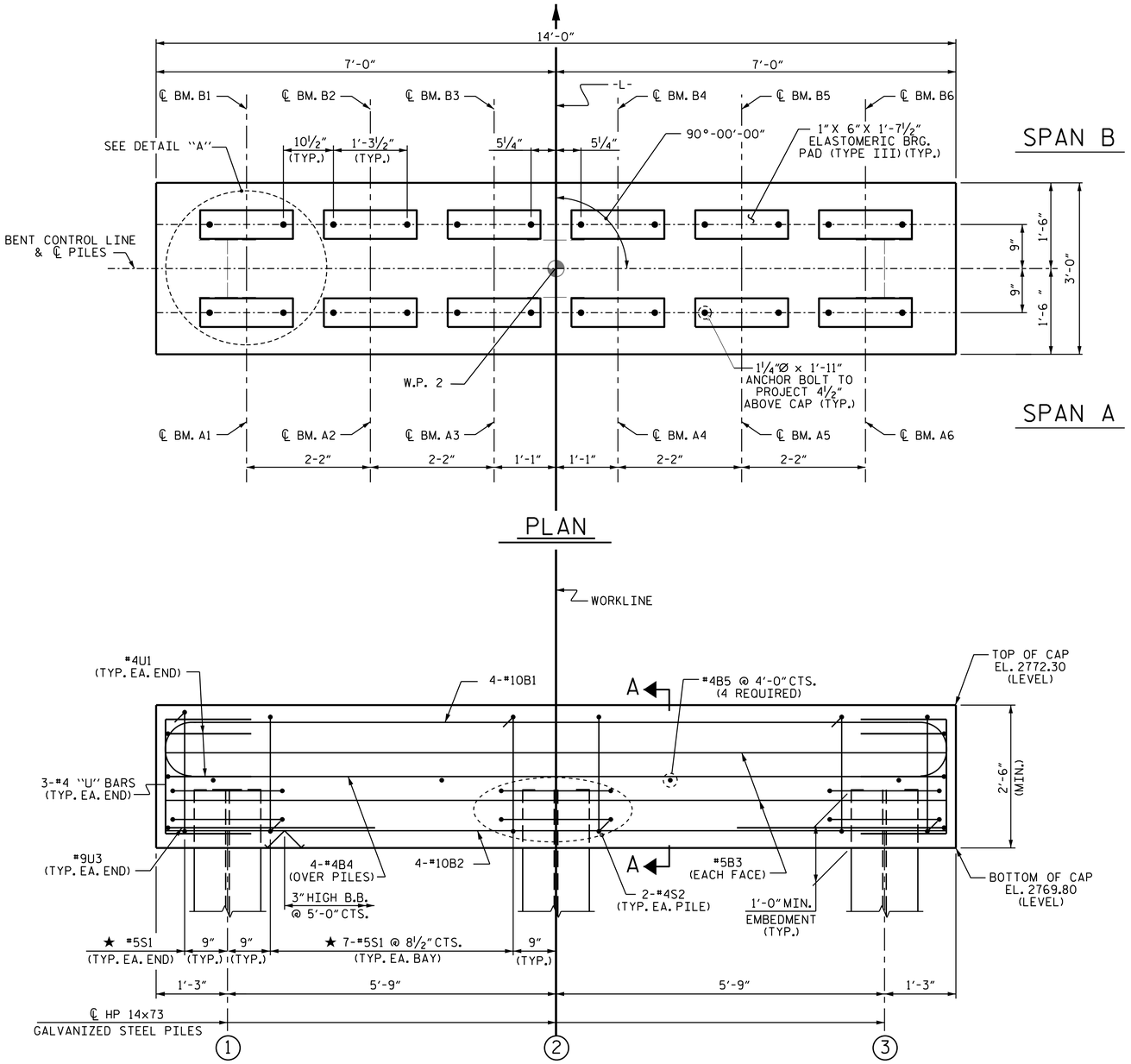
PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 4 OF 4

SUBSTRUCTURE

END BENT 1 & 2 DETAILS

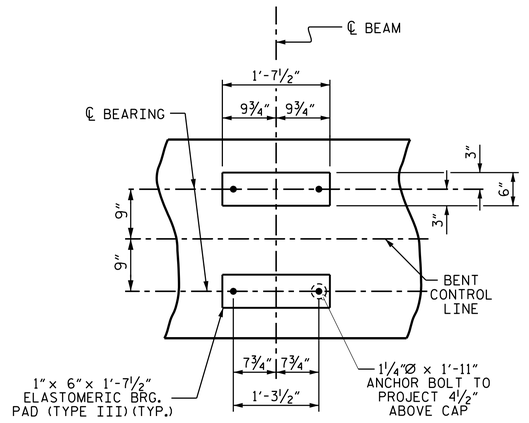
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-18
1			3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CD840B...
10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 1 OF 2

SUBSTRUCTURE

BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-19
1			3			TOTAL SHEETS
2			4			25

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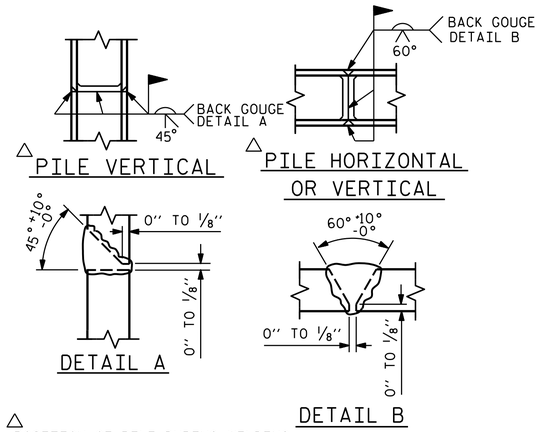
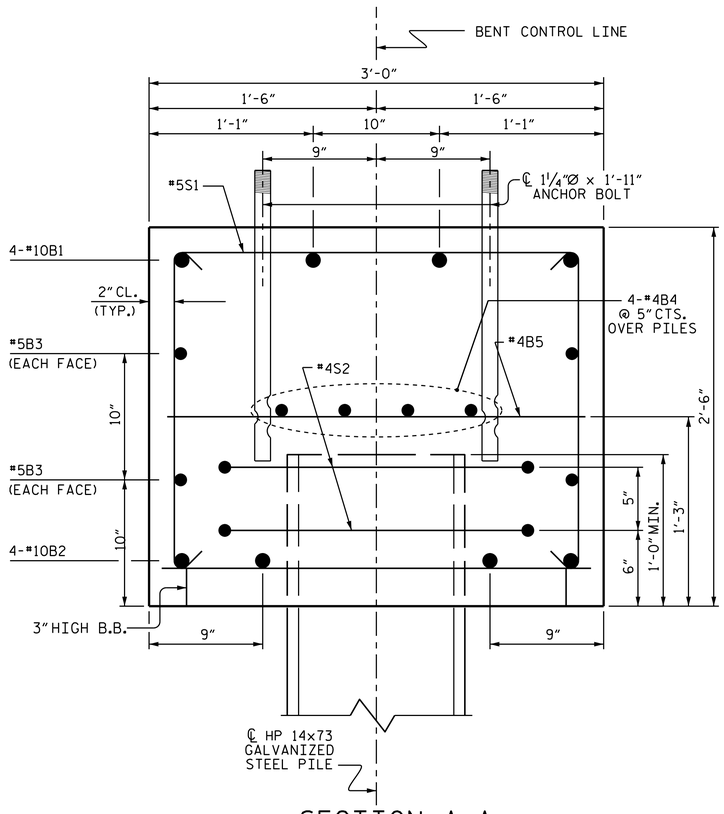
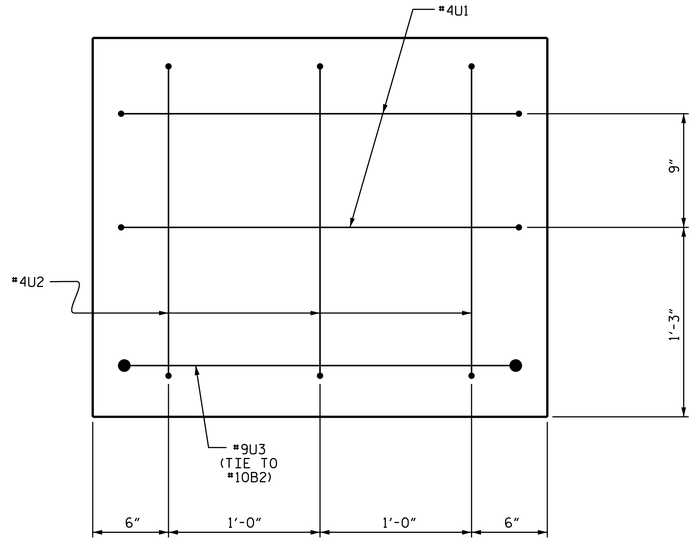


PILE SPLICE DETAILS



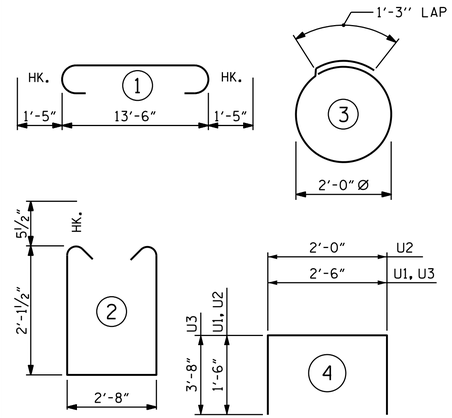
SECTION A-A



END OF CAP VIEW

(TYPICAL BOTH ENDS)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	16'-4"	281
B2	4	#10	STR	13'-8"	235
B3	4	#5	STR	13'-8"	57
B4	4	#4	STR	13'-8"	37
B5	4	#4	STR	2'-8"	7
S1	16	#5	2	7'-10"	131
S2	6	#4	3	7'-7"	18
U1	4	#4	4	5'-6"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	9'-10"	67

REINFORCING STEEL 868 LBS

CLASS A CONCRETE BREAKDOWN
TOTAL CLASS A CONCRETE 3.9 C.Y.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. McROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB408... 10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

SHEET 2 OF 2

SUBSTRUCTURE

BENT 1

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-20
1			3			TOTAL SHEETS
2			4			25

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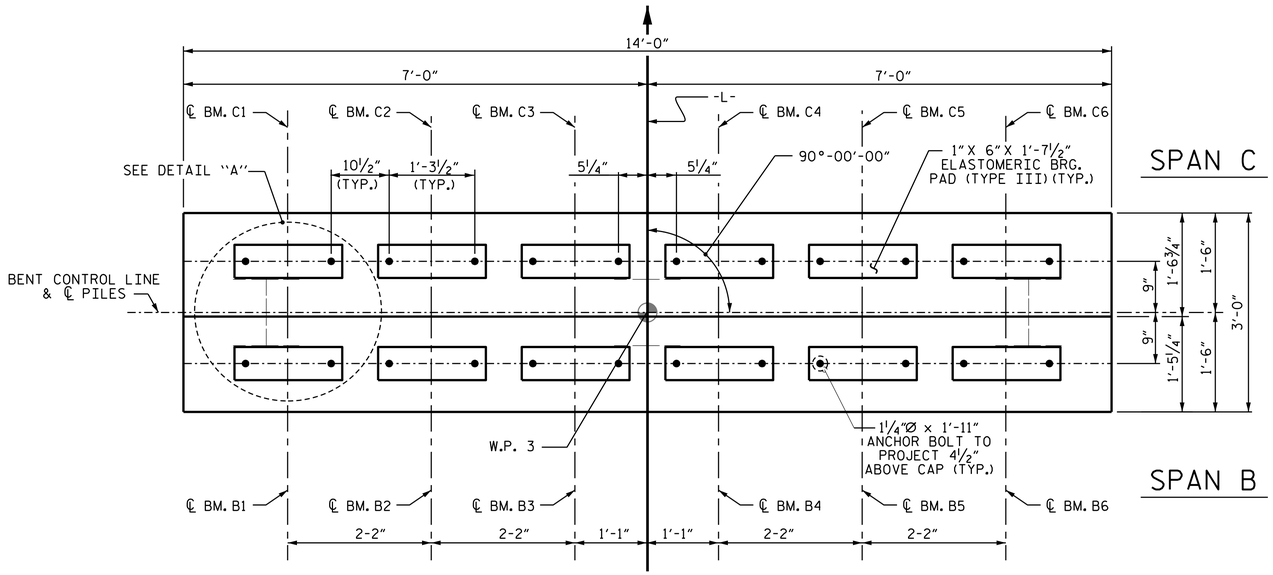
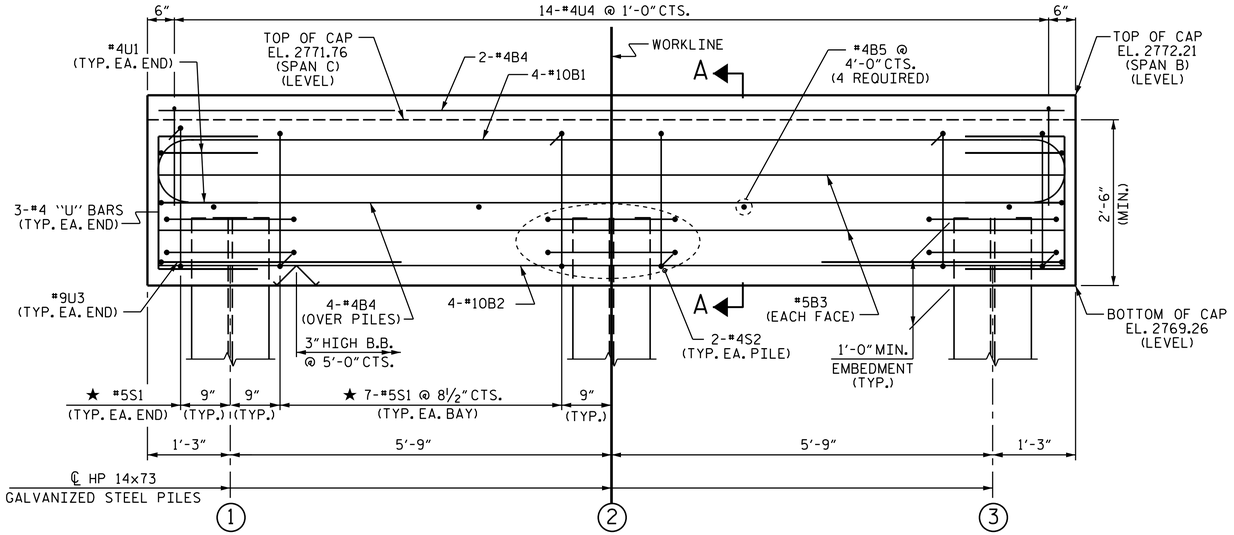
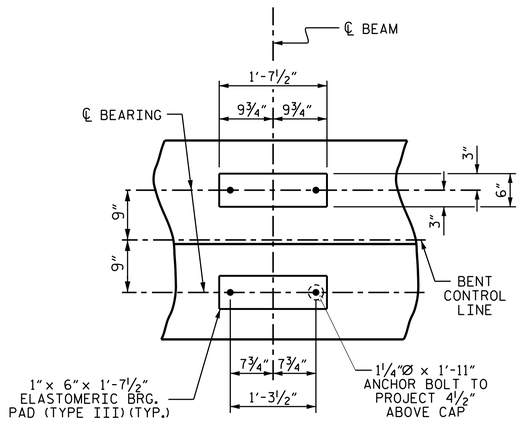


PLAN



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

PROJECT NO. 005-01-34397

ASHE COUNTY

STATION: 11+95.00 -L-

SHEET 1 OF 2

SUBSTRUCTURE

BENT 2

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

SHEET NO. S-21

TOTAL SHEETS 25

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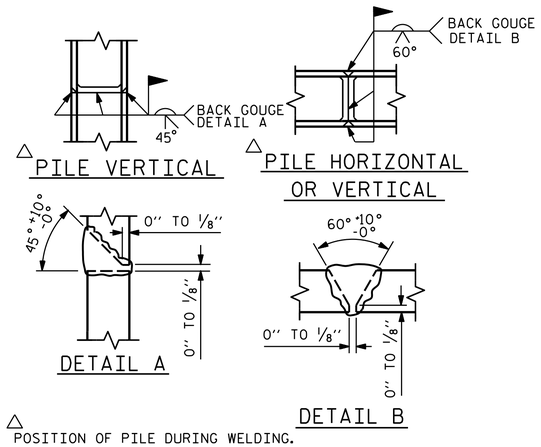
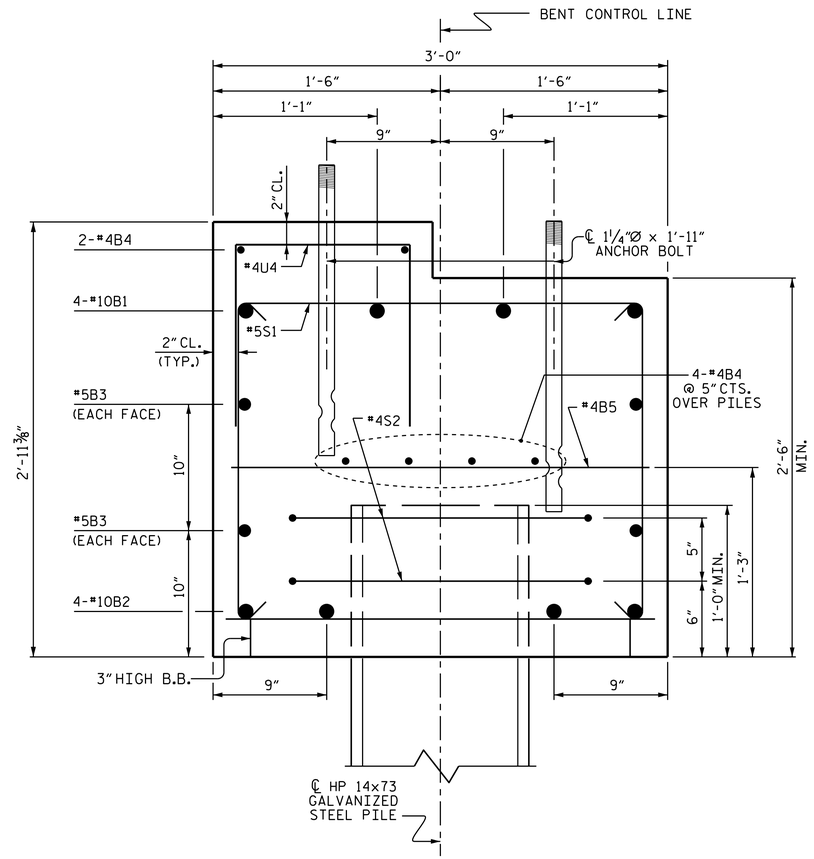
DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. McROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

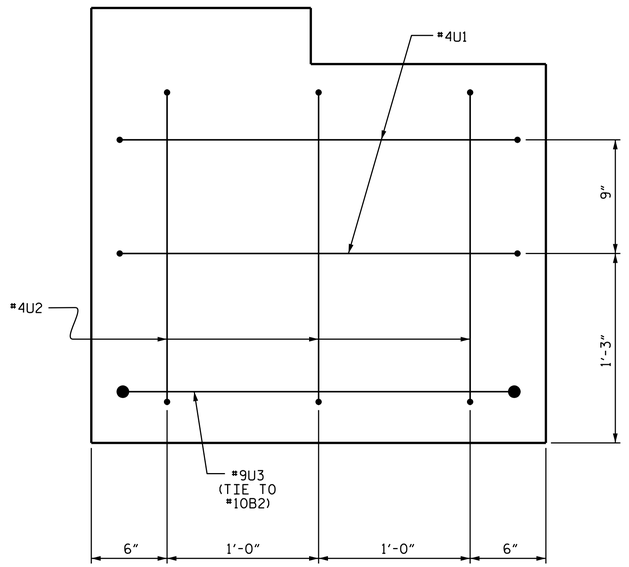
Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



PILE SPLICE DETAILS



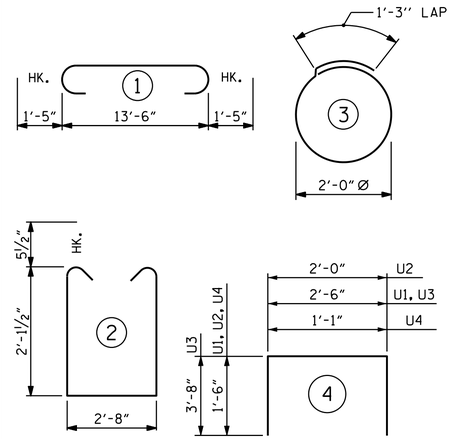
SECTION A-A



END OF CAP VIEW

(TYPICAL BOTH ENDS)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

FOR BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	16'-4"	281
B2	4	#10	STR	13'-8"	235
B3	4	#5	STR	13'-8"	57
B4	6	#4	STR	13'-8"	55
B5	4	#4	STR	2'-8"	7
S1	16	#5	2	7'-10"	131
S2	6	#4	3	7'-7"	18
U1	4	#4	4	5'-6"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	9'-10"	67
U4	14	#4	4	4'-1"	38
REINFORCING STEEL					924 LBS

CLASS A CONCRETE BREAKDOWN
TOTAL CLASS A CONCRETE 4.2 C.Y.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

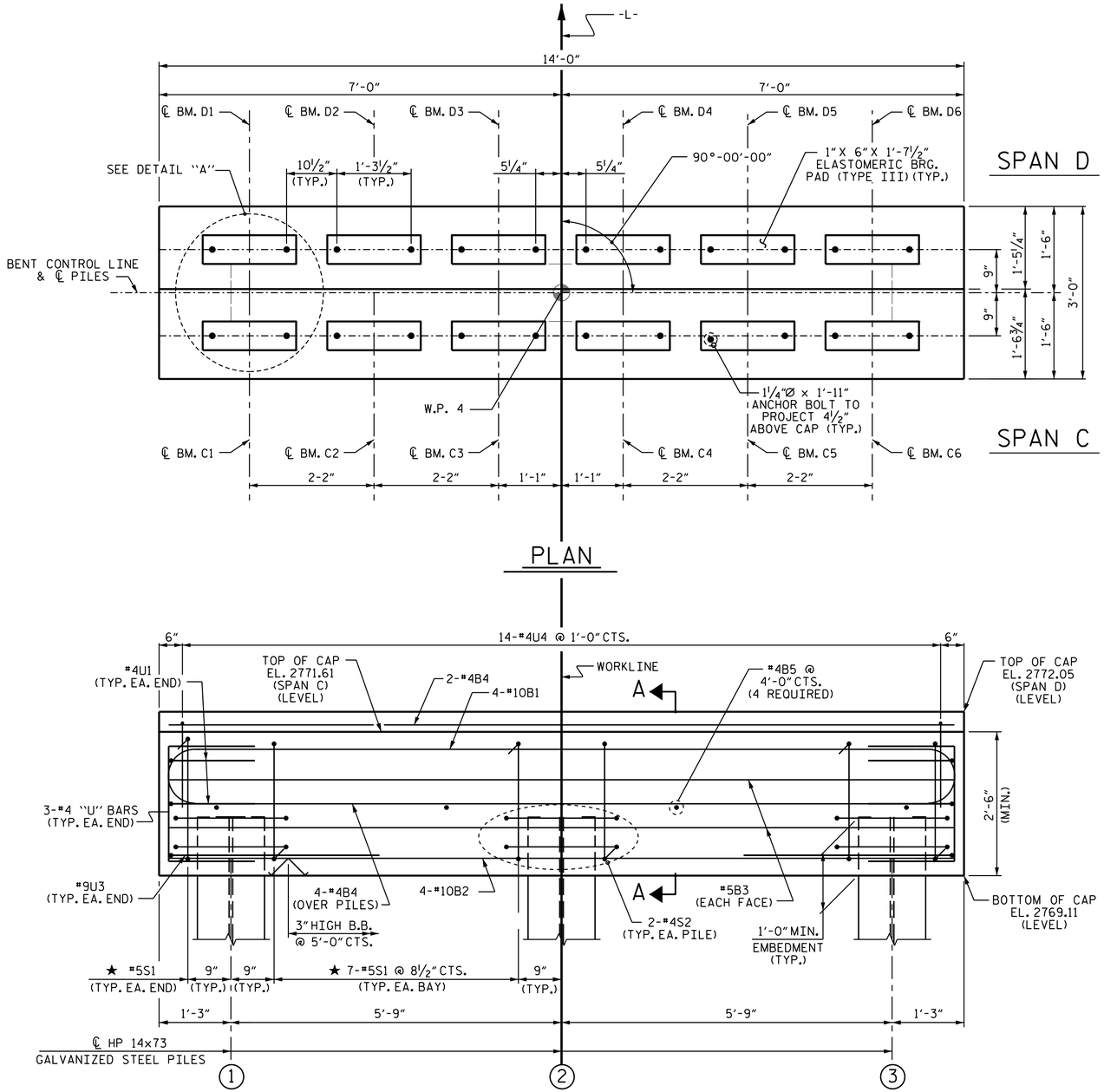
PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-
SHEET 2 OF 2

SUBSTRUCTURE

BENT 2

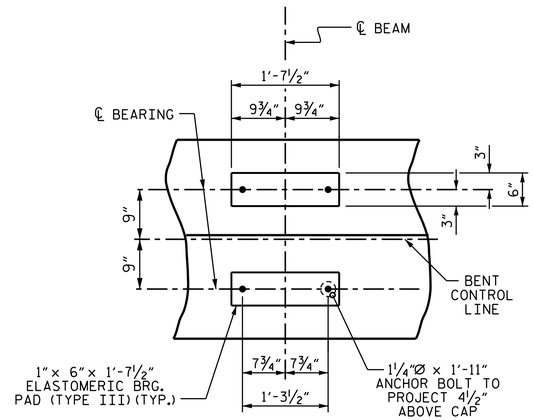
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			25

Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



ELEVATION

FOR SECTION A-A, SEE SHEET 2 OF 2



DETAIL "A"

(DIMENSIONS ARE TYPICAL EACH BEARING)

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

★ INVERT ALTERNATE STIRRUPS.

GALVANIZE THE FULL LENGTH OF EACH INTERIOR BENT PILE IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

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Signed by: Jennifer R. McRoy F21A12FB8CD8408... 10/15/2025

PROJECT NO. 005-01-34397

ASHE COUNTY

STATION: 11+95.00 -L-

SHEET 1 OF 2

SUBSTRUCTURE

BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			25

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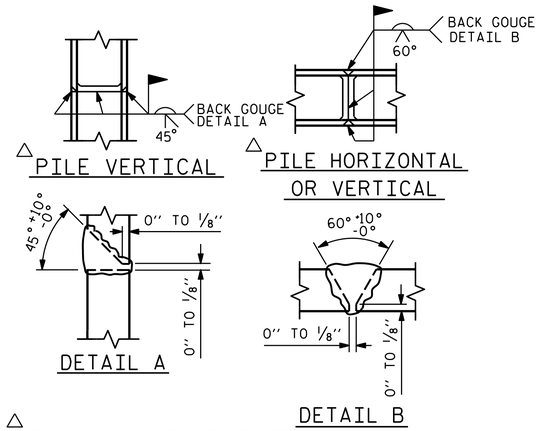
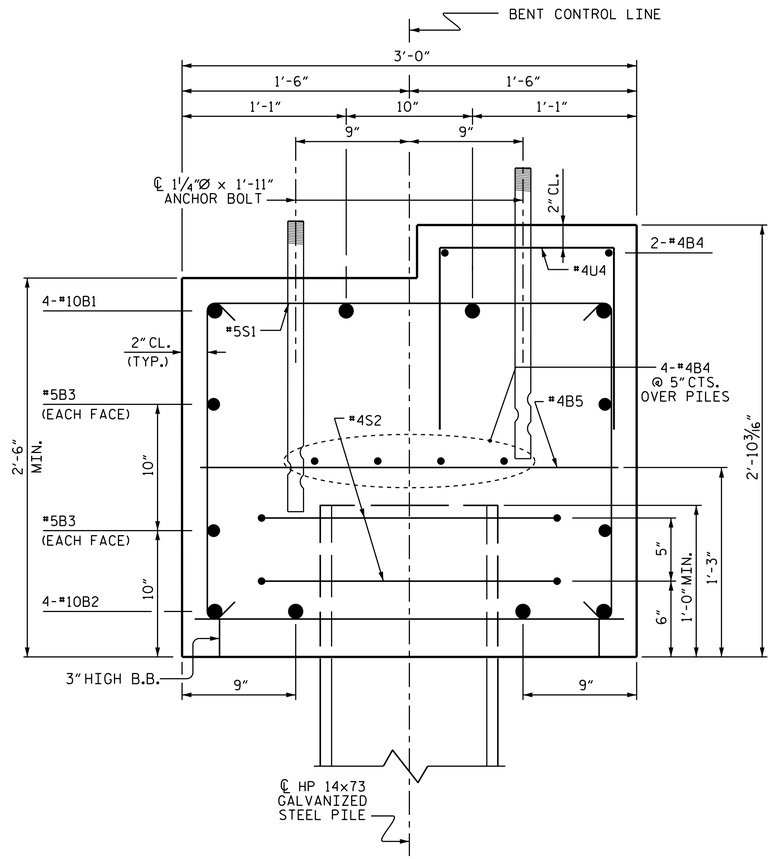
DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. McROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

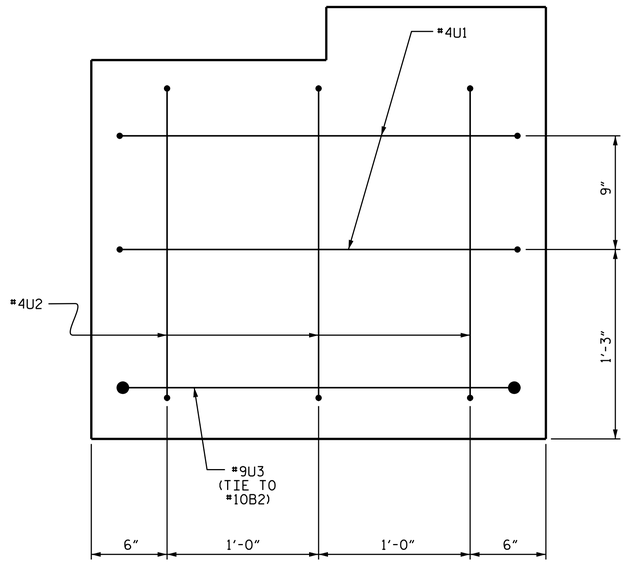
Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



PILE SPLICE DETAILS

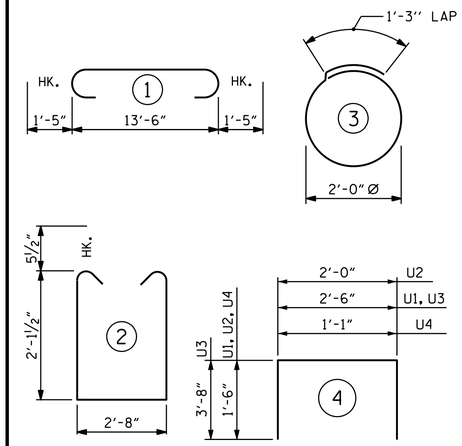


SECTION A-A



END OF CAP VIEW
(TYPICAL BOTH ENDS)

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL
FOR BENT 3

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#10	1	16'-4"	281
B2	4	#10	STR	13'-8"	235
B3	4	#5	STR	13'-8"	57
B4	6	#4	STR	13'-8"	55
B5	4	#4	STR	2'-8"	7
S1	16	#5	2	7'-10"	131
S2	6	#4	3	7'-7"	18
U1	4	#4	4	5'-6"	15
U2	6	#4	4	5'-0"	20
U3	2	#9	4	9'-10"	67
U4	14	#4	4	4'-1"	38
REINFORCING STEEL					924 LBS

CLASS A CONCRETE BREAKDOWN
TOTAL CLASS A CONCRETE 4.2 C.Y.

DRAWN BY : K. D. LAYNE DATE : 09/2025
CHECKED BY : J. R. MCROY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J. R. McROY DATE : 10/2025

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Ph: (919) 322-0115
www.summitde.com

NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB40B... 10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

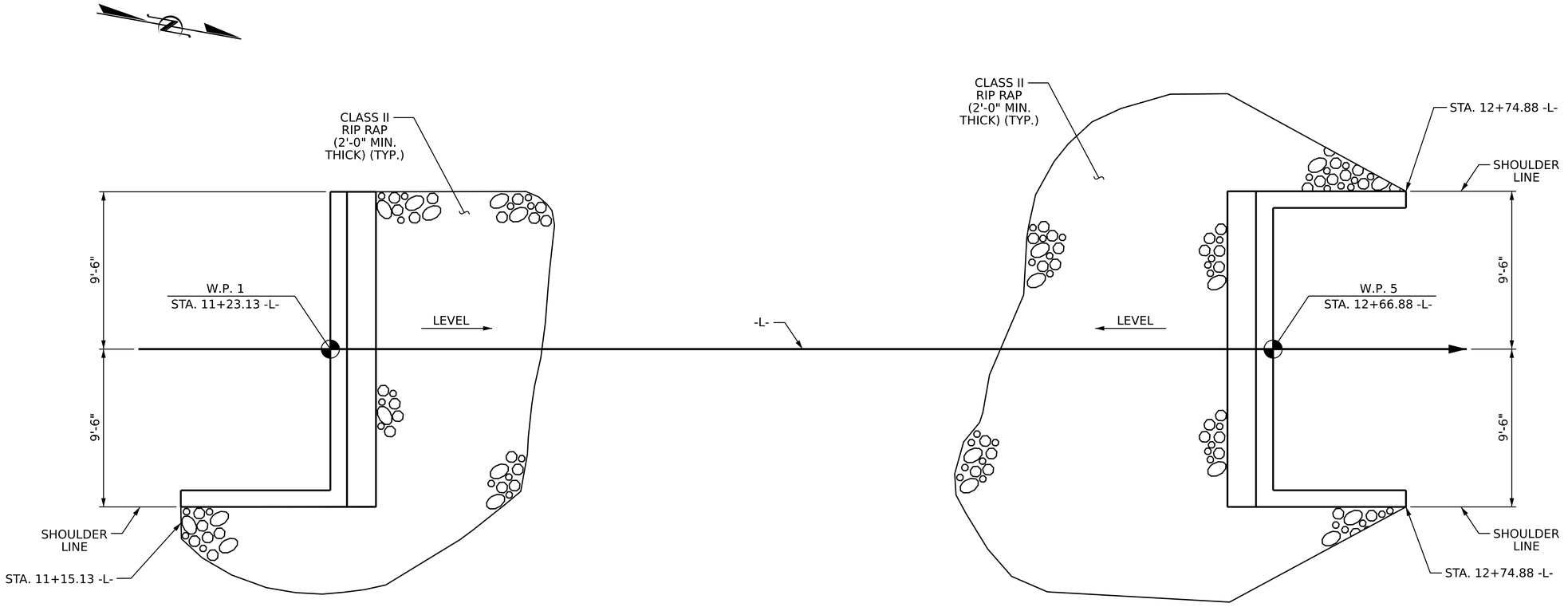
SHEET 2 OF 2

SUBSTRUCTURE

BENT 3

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-24
1			3			TOTAL SHEETS
2			4			25

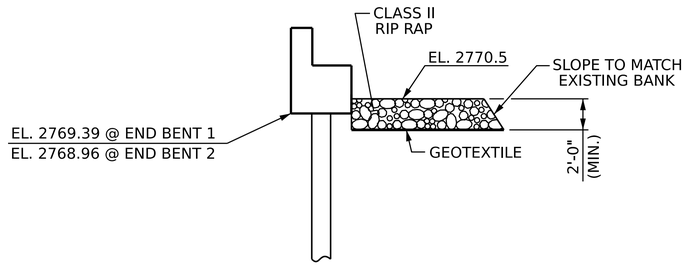
Docusign Envelope ID: 14110150-B463-4513-A176-8D421C9826C5



ABUTMENT 1

ABUTMENT 2

PLAN



℄ SECTION

ESTIMATED QUANTITIES		
BRIDGE @ 11+95.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
ABUTMENT 1	26	29
ABUTMENT 2	45	50

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NORTH CAROLINA PROFESSIONAL SEAL 032076 ENGINEER JENNIFER R. McROY

Signed by: Jennifer R. McRoy F21A12FB8CDB408...
10/15/2025

PROJECT NO. 005-01-34397
ASHE COUNTY
STATION: 11+95.00 -L-

RIP RAP DETAILS

DRAWN BY : M.K. BEARD DATE : 09/2025
CHECKED BY : G.W. DICKEY DATE : 09/2025
DESIGN ENGINEER OF RECORD: J.R. MCROY DATE : 09/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-25
1			3			TOTAL SHEETS
2			4			25

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

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 $\frac{7}{8}$" ∅ SHEAR STUDS FOR THE $\frac{3}{4}$" ∅ STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - $\frac{7}{8}$" ∅ STUDS FOR 4 - $\frac{3}{4}$" ∅ STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF $\frac{7}{8}$" ∅ STUDS ALONG THE BEAM AS SHOWN FOR $\frac{3}{4}$" ∅ STUDS BASED ON THE RATIO OF 3 - $\frac{7}{8}$"∅ STUDS FOR 4 - $\frac{3}{4}$" ∅ 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 $\frac{5}{16}$" 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 $\frac{1}{16}$" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

BRIDGE MAINTENANCE RECOMMENDATIONS

005-01-34397 ASHE COUNTY (RUSTIC ROAD) BRIDGE

A. BRIDGE APPROACH

1. CHECK SIGNS ON BOTH ENDS OF BRIDGE
   - i. WARNING AND INFORMATION SIGNS.
   - ii. BRIDGE END MARKERS.
2. CLEAR WEEDS, BRUSH AND OVERHANGING LIMBS
   - i. ENSURE CLEAR VISIBILITY OF BRIDGE AND SIGNS.
   - ii. CLEAN AREA AROUND BRIDGE.
   - iii. REMOVE ALL DEBRIS FROM SITE.
3. EROSION OF BRIDGE APPROACH
   - i. FILL ANY ERODED AREAS AT GUTTER LINE ON SHOULDER.
   - ii. AT GUTTER LINE, BUILD (IF NEEDED) A PAVED CHANNEL TO CARRY WATER TO SIDE DITCH AT NON-EROSIVE VELOCITY.
   - iii. CHECK SHOULDERS FOR SIGNS OF EROSION AND FILL AND TAMP EROSION CHANNELS.

B. APPROACH ROAD TRAFFIC LANES

1. FILL ALL RUTS AND HOLES.
2. CHECK TRANSITION FROM ROAD TO BRIDGE AND ENSURE A SMOOTH TRANSITION.
3. BUILD A SHORT BITUMINOUS RAMP TO PROVIDE A SMOOTH TRANSITION, IF NEEDED.

C. SIDE DITCHES AND STREAM CHANNEL

1. CLEAR SIDE DITCHES OF ALL BRUSH, WEEDS AND DEBRIS.
2. CLEAR DEBRIS AND OBSTRUCTIONS FROM STREAM CHANNEL THROUGH FULL WIDTH OF R.O.W.
3. ELIMINATE ALL BRUSH GROWING UNDER THE BRIDGE.

D. BRIDGE SUPERSTRUCTURE (DECK, RAILS, BEAMS AND BEARINGS)

1. DECK MAINTENACE
   - i. DECK MAINTENANCE SHOULD BE PERFORMED ON AN ANNUAL BASIS.
   - ii. CLEAN ALL DIRT, GRAVEL, TRASH AND DEBRIS FROM DECK.
   - iii. CLEAR ALL GUTTERS AND DRAINAGE OUTLETS.
   - iv. REMOVE ANY OBSTRUCTIONS CAUSING PONDING OF WATER.
   - v. DIRECT DECK DRAINS (IF PRESENT) AWAY FROM ALL STRUCTURAL COMPONENTS.
   - vi. CHECK TRANSVERSE PLANKING FOR BREAKS, ROTTING OR ANY WEAKNESS. REPLACE INDIVIDUAL PLANKS, IF NEEDED. REPLACE DAMAGED PLANKS AND RE-NAIL OLD PLANKS, IF REQUIRED. PULL ANY PROTRUDING NAILS AND REPLACE.
   - vii. THIS BRIDGE IS A LOW WATER BRIDGE WITH HISTORICAL DATA SHOWING THE ASPHALT WEARING SURFACE WASHED OFF DURING PAST OVERTOPPING EVENTS. THEREFORE, NO ASPHALT WEARING SURFACE HAS BEEN APPLIED TO THE DECK. AS A REFERENCE, NCDOT DOES NOT REQUIRE AN ASPHALT WEARING SURFACE FOR LOW WATER BRIDGES FROM THE STRUCTURES MANAGEMENT UNIT'S TIMBER BRIDGE MANUAL.
2. EXPANSION JOINTS
   - i. DECK EXPANSION JOINTS SHOULD BE CLEANED AND ANY DIRT, GRAVEL, DEBRIS OR OTHER OBSTRUCTIONS REMOVED FROM THE EXPANSION JOINT OPENING.
3. STRUCTURAL STEEL BEAMS
   - i. CLEAR ANY DEBRIS FOUND ON FLANGES OR ON ANY BRACING OCCURRING ON THE STRUCTURE.
   - ii. CHECK LONGITUDINAL PLANKS BETWEEN GIRDER AND DECK FOR DAMAGE, EXCESSIVE WEAR, BREAKS, SHATTERING, LOOSENESS OR ROT. REPLACE DAMAGED PLANKS AND RE-NAIL OLD PLANKS, IF REQUIRED. PULL ANY PROTRUDING NAILS AND REPLACE.
4. HANDRAILS AND CURBS
   - i. REPAIR ANY BENT, BROKEN OR MISSING PARTS OF THE BRIDGE HANDRAIL OR CURBS.
   - ii. CHECK LONGITUDINAL PLANKS ALONG CURB FOR DAMAGE, EXCESSIVE WEAR, BREAKS, SHATTERING, LOOSENESS OR ROT. REPLACE DAMAGED PLANKS AND RE-NAIL OLD PLANKS, IF REQUIRED. PULL ANY PROTRUDING NAILS AND REPLACE.
5. BEARINGS
   - i. BEARINGS ARE POINTS WHERE THE BRIDGE SUPERSTRUCTURE IS ATTACHED TO THE SUBSTRUCTURE (PIERS, ABUTMENTS AND OTHER SUPPORTS).
   - ii. IDENTIFY THE FIXED AND EXPANSION BEARINGS. CLEAR ALL DIRT, BROKEN CONCRETE OR DEBRIS OF ANY KIND FROM AROUND THE BEARINGS.
   - iii. CLEAR ANY OBSTRUCTION THAT WOULD PREVENT THE EXPANSION BEARING FROM BEING ABLE TO FUNCTION PROPERLY.
   - iv. ONCE CLEANED, SPRAY WITH OIL TO PREVENT RUSTING AND TO ASSIST WITH MOVEMENT.
   - v. BEARING SHOULD BE INSPECTED AND CLEANED ON AN ANNUAL BASIS.

E. BRIDGE SUBSTRUCTURE (ABUTMENTS AND PIERS)

1. ABUTMENTS
   - i. INSPECT FOR CRACKING OF ABUTMENT CAP OR WING WALLS.
   - ii. ASSESS SIGNIFICANT MOVEMENT OF ANY PART OF THE ABUTMENT.
   - iii. NOTE OUT-OF-PLUMB COMPONENTS AND REPORT ANY SERIOUS DETERIORATION OF THE ABUTMENT.
   - iv. NOTE ANY EROSION OF THE STREAM THAT MAY UNDERMINE THE ABUTMENT AND ELIMINATE THE CAUSE OF THE EROSION, IF POSSIBLE.
   - v. FILL AND TAMP ANY RODENT HOLES ALONG THE BASE OF THE ABUTMENT AND WING WALLS.
2. PIERS
   - i. CORRECT ANY WATER DRAINAGE ON PIER CAP.
   - ii. REPAIR, WHERE POSSIBLE, ANY CRACKS OR DETERIORATION OF THE PIER CAP.
   - iii. CHECK FOR UNDERMINING OF PIER FOUNDATION, IF POSSIBLE, AND REPAIR.
   - iv. CHECK PIER FOR ANY SIGNS OF MOVEMENT OR ALTERED ALIGNMENT OF PIER CAPS IN RELATION TO SUPERSTRUCTURE.
   - v. CHECK THAT 4'-0" MIN. CLEARANCE IS MAINTAINED UNDER THE BRIDGE IN SPANS A, B AND D.