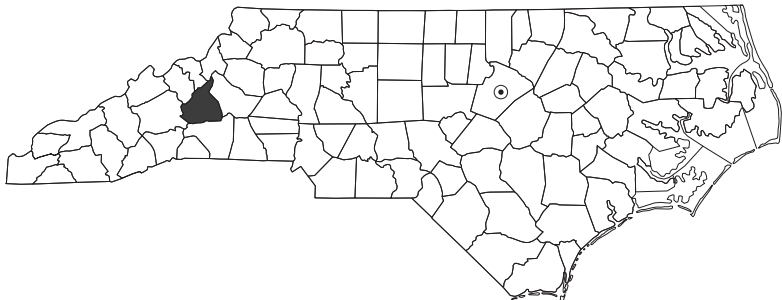


CONTRACT: DM00483



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS


MCDOWELL COUNTY

**LOCATION: BRIDGE NO. 580114 ON SR1569 OVER HONEYCUTT CREEK
BRIDGE NO. 580265 ON SR1103 OVER CROOKED CREEK**

TYPE OF WORK: BRIDGE PRESERVATION – CONSTRUCT CONCRETE COLLARS AROUND BENT PILES, RAIL POST REPLACEMENT, CONSTRUCT NEW APPROACH SLAB, GUARD RAIL WORK, PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18313.2059170.PR & DF18313.2059024.PR	1	22
STATE PROJ.NO.	F.A.PROJ.NO.	DESCRIPTION	
DF18313.2059170.PR	N/A	BRIDGE 580114	
DF18313.2059024.PR	N/A	BRIDGE 580265	

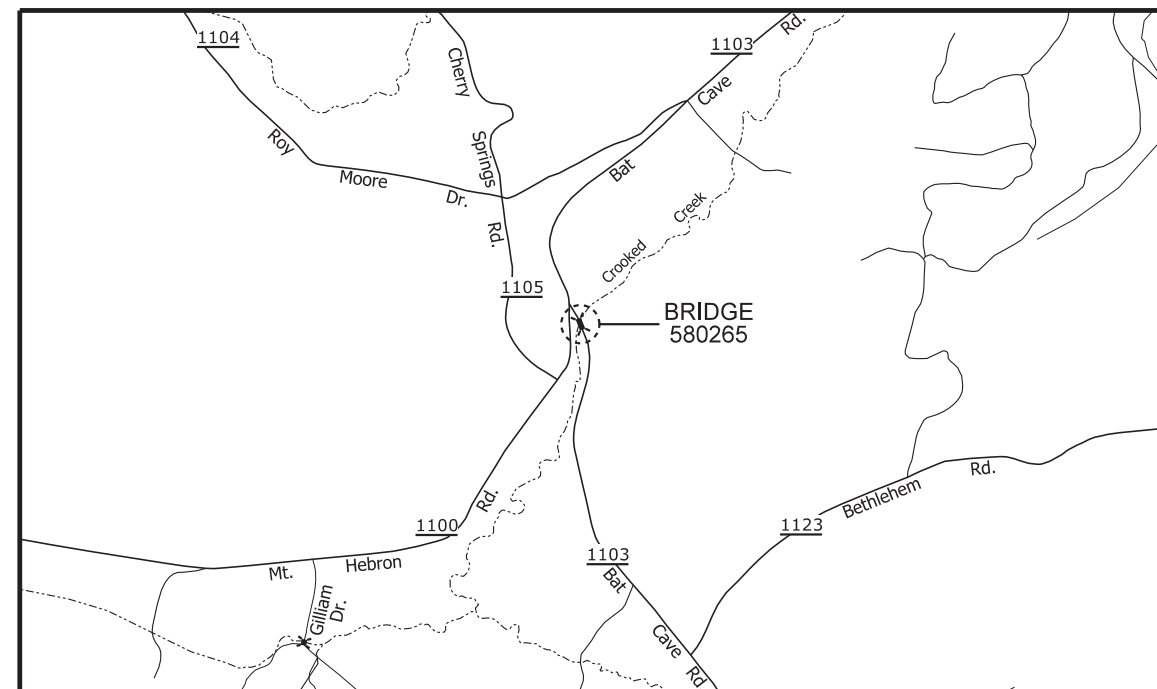
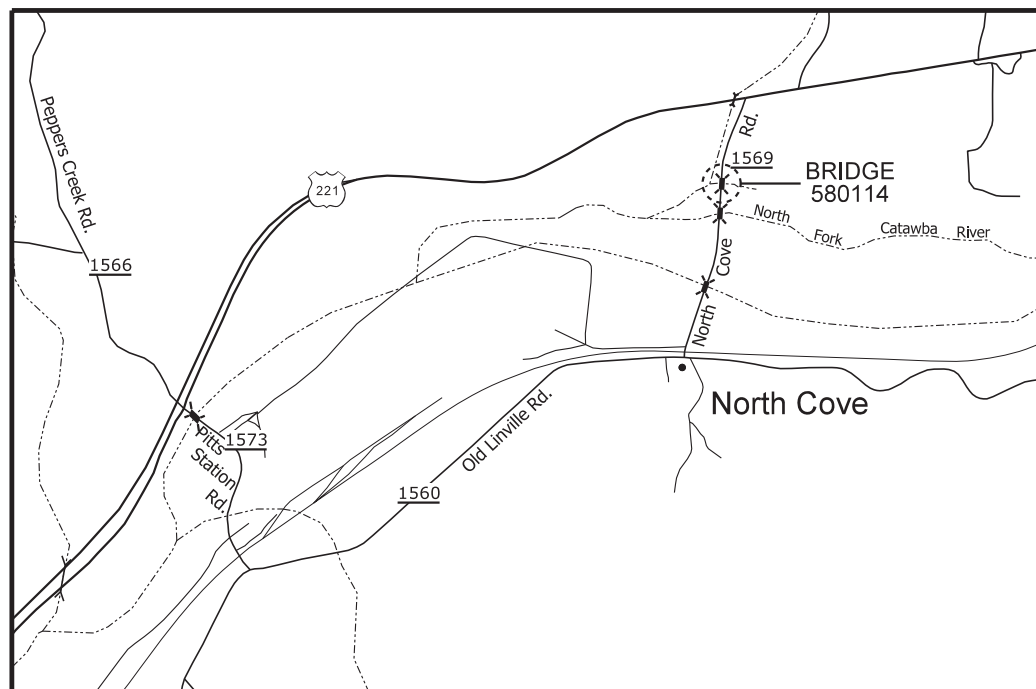
1223 Jones Franklin Rd.
 Raleigh, N.C. 27606
 License No. F-0377
 Bus: 919 851 8077
 Fax: 919 851 8107



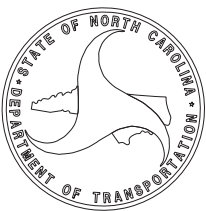
**WETHERILL
ENGINEERING**

TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN

CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION



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

DESIGN DATA
BRIDGE 580114
$$\begin{aligned} \text{ADT } 1996 &= 100 \\ \text{ADT } 2040 &= 200 \end{aligned}$$

V = 35 MPH

FUNC CLASS =
LOCAL ROAD
REGIONAL TIER

DESIGN DATA
BRIDGE 580265

ADT 2023 = 2,200
ADT 2040 = 4,400

V = 55 MPH
(ADVISORY POSTED
25 MPH)

FUNC CLASS =
ARTERIAL
REGIONAL TIER

PROJECT LENGTH

PROJECT LENGTH BRIDGE 580114 =	0.017 MILES
PROJECT LENGTH BRIDGE 580265 =	0.029 MILES

NCDOT CONTACT: JOEL M. DAVIS
ASSISTANT BRIDGE PROGRAM MANAGER

Prepared for:
DEPT. OF TRANSPORTATION
HIGHWAY DIVISION 13
1000 BIRCH RIDGE DRIVE RALEIGH NC, 27610

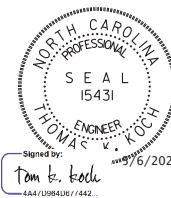
2024 STANDARD SPECIFICATIONS

LETTING DATE:
6/18/2025

GREG S. PURVIS, PE
PROJECT ENGINEER

GREG GILLAND, PE
PROJECT DESIGN ENGINEER

STRUCTURAL ENGINEER



SIGNATURE:

P.E.

+

+

\$FILES\$
\$DATE\$
\$TIME\$


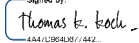
TOTAL BILL OF MATERIAL									
BRIDGE	MOBILIZATION	TRAFFIC CONTROL AT BR # ____	EROSION CONTROL AT BR # ____	CLASS A CONCRETE	RIP RAP CLASS II (2'-0" THICK)	REMOVE AND REPLACE EXISTING GUARDRAIL	ASPHALT PLANT MIX PAVEMENT REPAIR	REPLACE 3"x10"x10' TIMBER BOARD	*BRIDGE APPROACH SLAB
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	TONS	LIN. FT.	TONS	EA.	LUMP SUM
580114		LUMP SUM	LUMP SUM	3.6		12		1	
580265		LUMP SUM	LUMP SUM		19	53.8	4.2		LUMP SUM
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	3.6	19	65.8	4.2	1	LUMP SUM

*BRIDGE APPROACH FILL INCLUDING BUT NOT LIMITED TO COMPACTION AND PLACEMENT OF 4" ABC SHALL BE INCIDENTAL TO THE BRIDGE APPROACH SLAB PAY ITEM.

DF18313.2059170.PR
&
PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
BRIDGE NO. 580114 & 580265

DRAWN BY :	G. GILLAND	DATE :	2-25
CHECKED BY :	T. KOCH	DATE :	2-25
DESIGN ENGINEER OF RECORD:	T. KOCH	DATE :	2-25

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

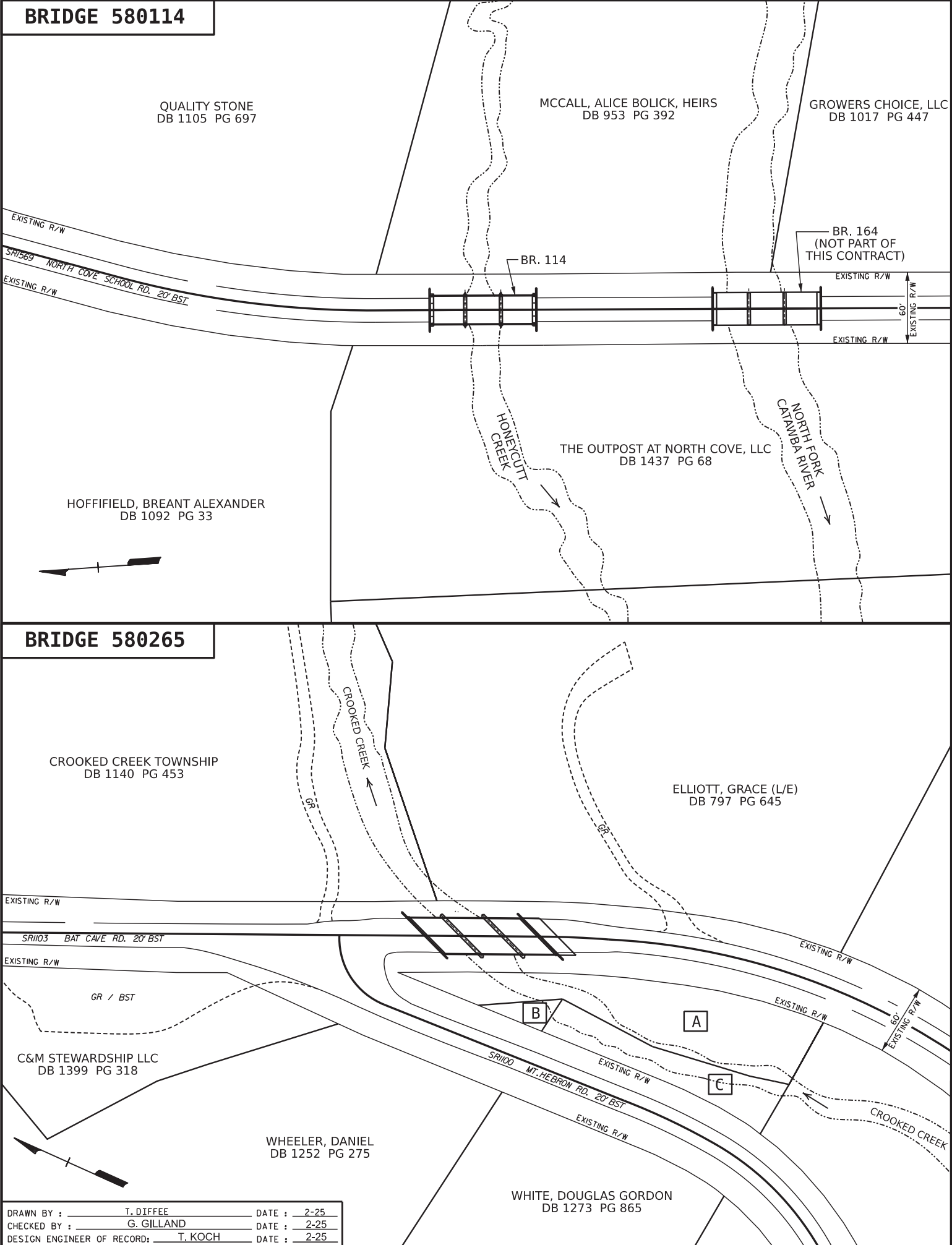
3/25/2025

Signed by:

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOTAL BILL OF MATERIALS

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

P:\2025\25109\02 Div 13 Burke McDowell Rutherford Bridge Repair.sBridge 580114\Repair Plans\Whole Contract\580114 & 580265 Pr1 & Easements.dgn
3/12/2025 6:55:24 AM



NOTES:

INFORMATION SHOWN WAS NOT DERIVED FROM SURVEY DATA.

PROPERTY LINES AS SHOWN ARE BASED ON MCDOWEL COUNTY GIS DATA AS WELL AS NCDOT PLANS, WHERE AVAILABLE, AND IS THE BEST INFORMATION AVAILABLE.

TOPOGRAPHIC FEATURES BASED ON 2022 AERIAL PHOTOGRAPHY AS OBTAINED FROM NC ONE MAP, AND MAY NOT REFLECT STORM DAMAGE CAUSED BY HURRICANE HELENE.

DF18313.2059170.PR
PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
BRIDGE NO. 580114 & 580265

- A WHEELER, DANIEL
DB 1256 PG 275
- B WHEELER, DANIEL
DB 1256 PG 275
- C WHITE, DOUGLAS GORDON
DB 1273 PG 865

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

3/12/2025

NORTH CAROLINA
PROFESSIONAL
SEAL
15431
ENGINEER
THOMAS K. KOCH

Signed by:
Thomas K. Koch
4441308410517442
VAVETHERILL
ENGINEERING

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION
EASEMENTS

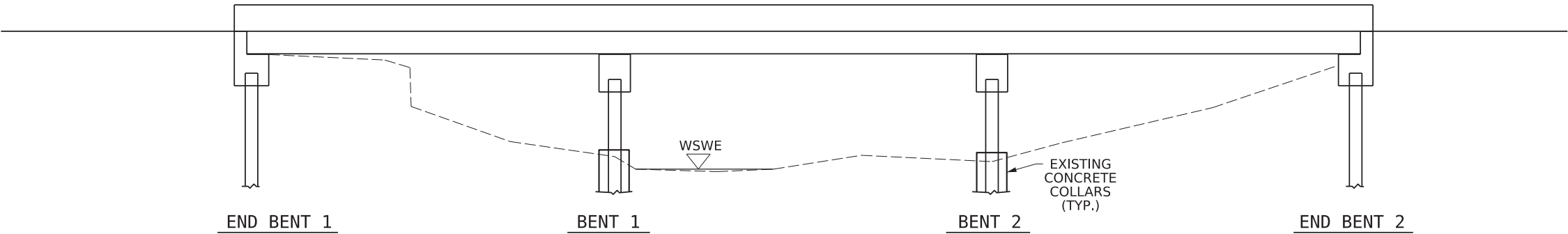
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	3
1			3			TOTAL SHEETS
2			4			22

EROSION CONTROL PLAN

SPAN A

SPAN B

SPAN C



Impervious Dike:

The work covered by this section consists of furnishing, installing, maintaining, and removing an impervious dike for the purpose of diverting normal stream flow around the construction site. The Contractor shall construct an impervious dike in such a manner approved by the Engineer. The impervious dike shall not permit seepage of water into the construction site or contribute to siltation of the stream. The impervious dike shall be constructed of an acceptable material in the locations noted on the plans or as directed by the Engineer.

Acceptable materials shall include but not be limited to sheet piles, sandbags, and/or the placement of an acceptable size stone lined with polypropylene or other impervious fabric.

Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

No direct payment shall be made for the work of installation, maintenance, and removal of impervious dike(s) as described in this provision. Payment for such work shall be included in the contract bid price for "Lump Sum for Erosion Control".

Roadway Standard Drawings

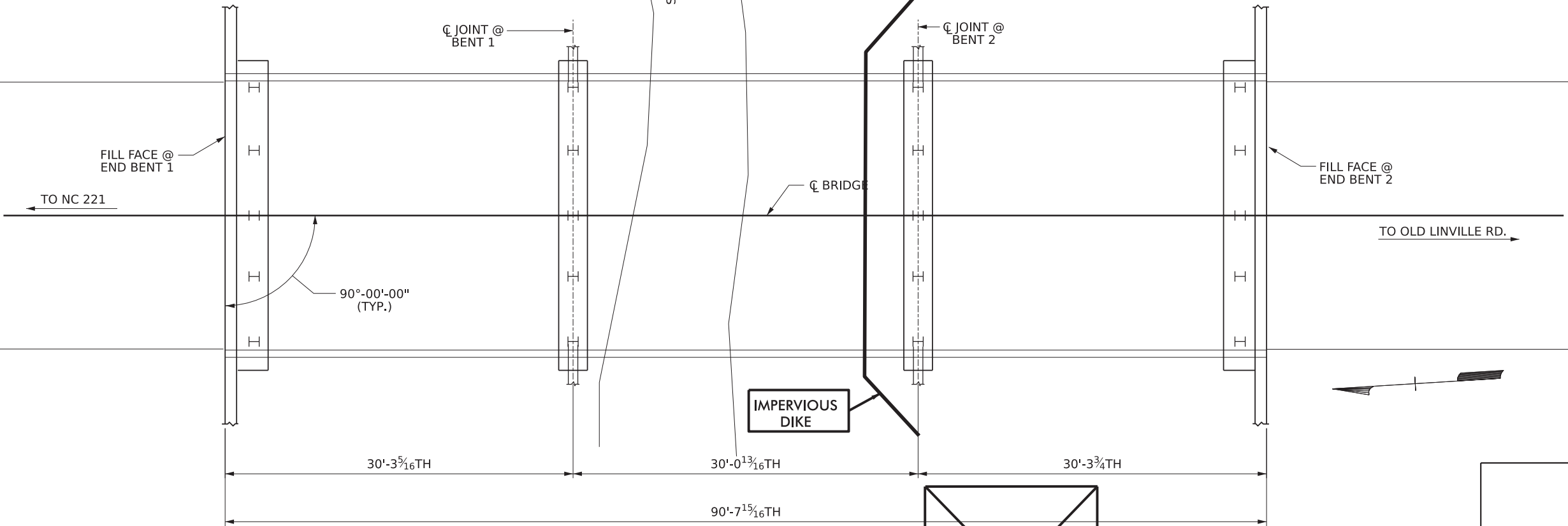
The "Roadway Standard Drawings"- Roadway Design Unit - N. C. Department of Transportation - Raleigh, N. C., dated January 2024 and the latest revision thereto are applicable to this project and by reference hereby are considered a part of these plans.

SECTION ALONG CL ROADWAY

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2024 STANDARD SPECIFICATIONS

SCOPE OF WORK

- CONSTRUCT CONCRETE PILE COLLARS ON BENT 2
- REMOVE AND REPLACE BRIDGE RAILING POST
- TIMBER WING BOARD INSTALLATION
- REMOVE AND REPLACE DAMAGED GUARDRAIL SECTION



PROJECT NO. **DF18313.2059170.PR**
MCDOWELL COUNTY
BRIDGE NO. **580114**

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.

PLAN

SPECIAL STILLING BASIN

KATIE ESTEP
LEVEL IIIA NAME
4485
LEVEL IIIA CERTIFICATION NO.

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
EROSION CONTROL
FOR BRIDGE
ON SR1569
OVER HONEYCUTT CREEK

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

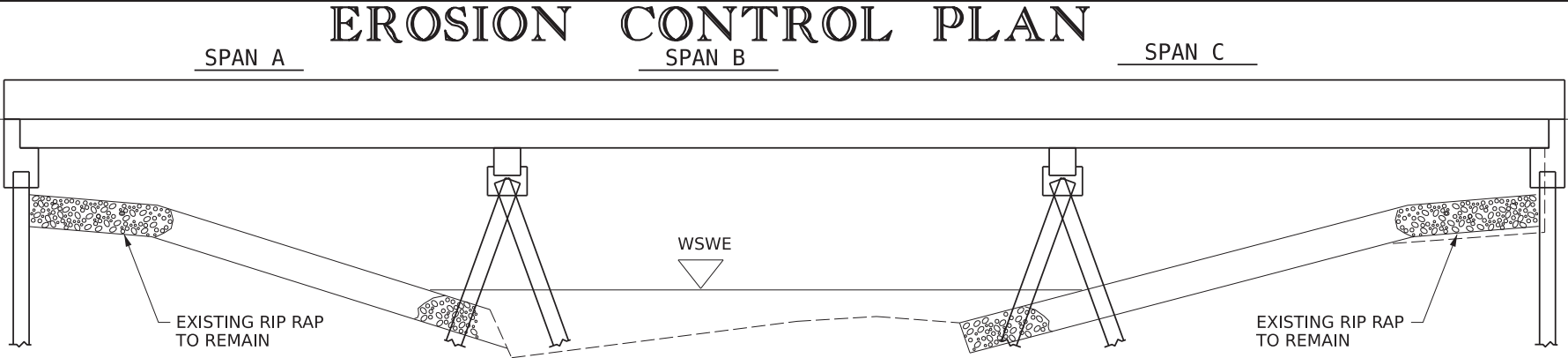
Impervious Dike:

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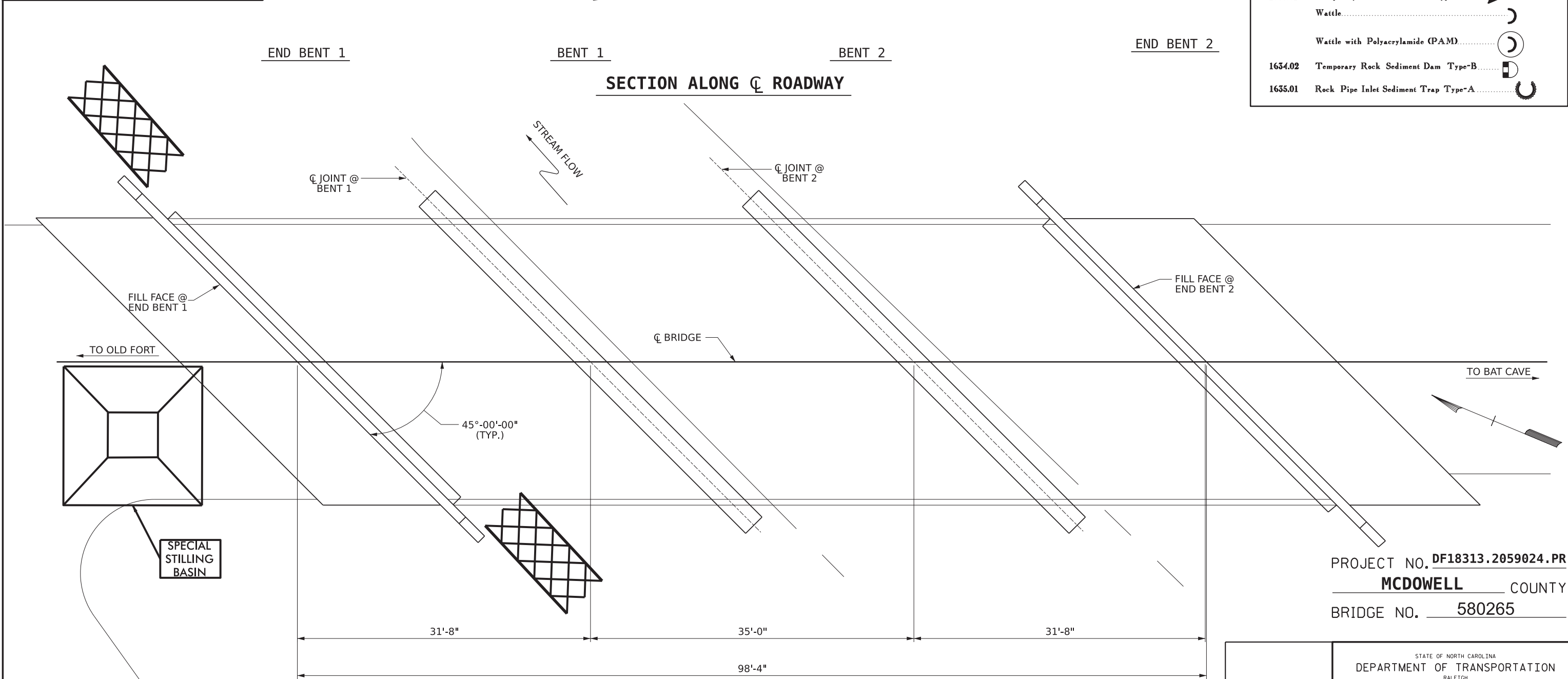
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Earth material shall not be used to construct an impervious dike when it is in direct contact with the stream unless vegetation can be established before contact with the stream takes place.

No direct payment shall be made for the work of installation, maintenance, and removal of impervious dike(s) as described in this provision. Payment for such work shall be included in the contract bid price for "Lump Sum for Erosion Control".



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	
1630.05	Temporary Diversion	
1630.06	Special Stilling Basin	
1632.03	Rock Inlet Sediment Trap Type C	
1633.01	Temporary Rock Silt Check Type-A	
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	
1633.02	Temporary Rock Silt Check Type-B	
	Wattle	
	Wattle with Polyacrylamide (PAM)	
1634.02	Temporary Rock Sediment Dam Type-B	
1635.01	Rock Pipe Inlet Sediment Trap Type-A	



PLAN

PROJECT NO. **DF18313.2059024.PR**
MCDOWELL COUNTY
BRIDGE NO. **580265**

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.

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.

ROADSIDE ENVIRONMENTAL UNIT
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
2024 STANDARD SPECIFICATIONS

KATIE ESTEP
LEVEL IIIA NAME
4485
LEVEL IIIA CERTIFICATION NO.

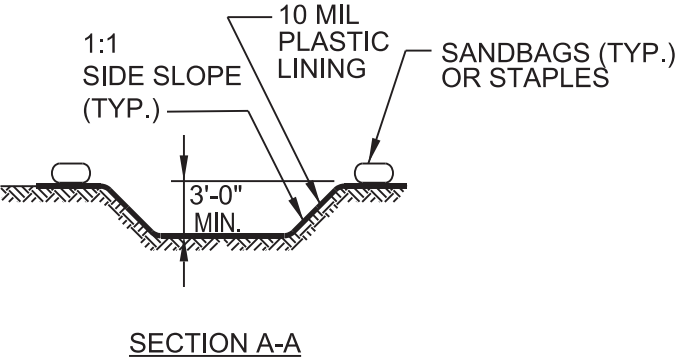
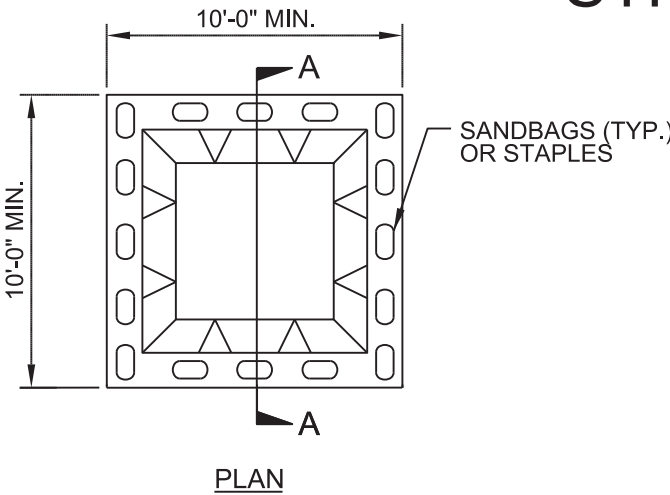
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REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-2
1			3			TOTAL SHEETS
2			4			22

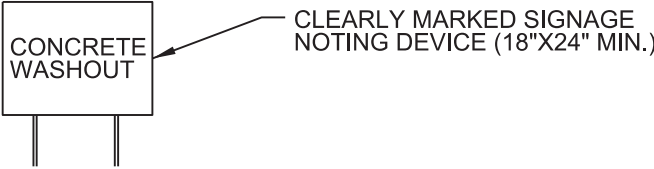
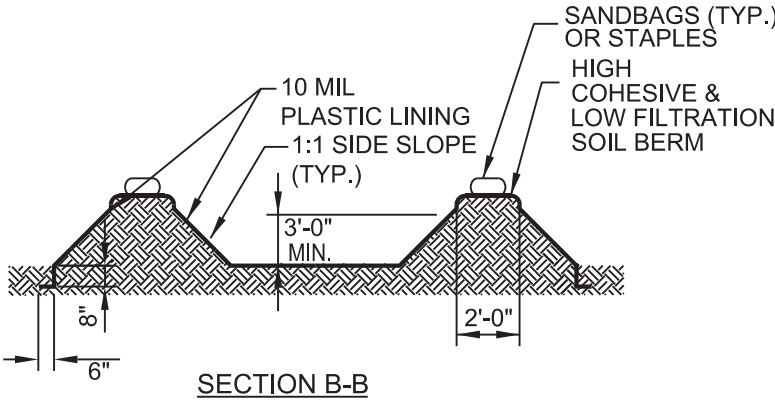
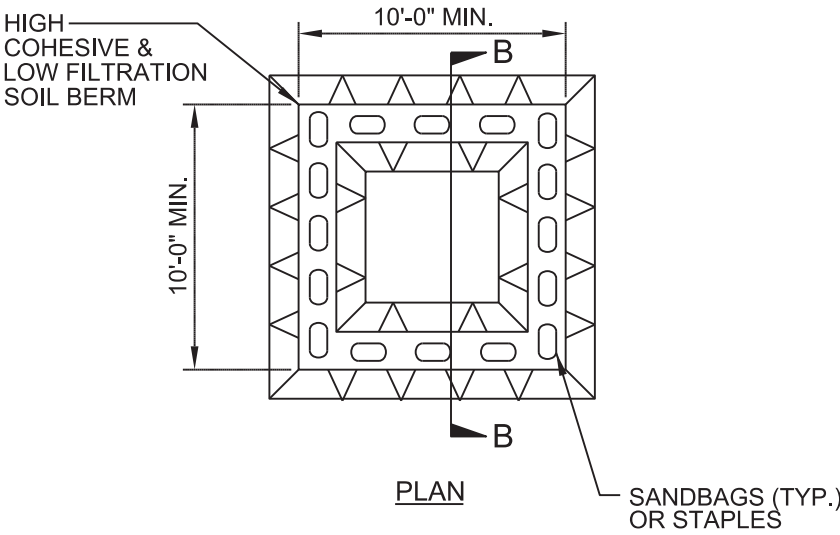
ONSITE CONCRETE WASHOUT
STRUCTURE WITH LINER

PROJECT REFERENCE NO.	SHEET NO.
DF18313.2059170.PR	EC-3
DF18313.2059024.PR	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

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



ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

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

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

McDOWELL COUNTY



INDEX OF SHEETS	
SHEET NO.	TITLE
TMP-01	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-01A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-01B	SIGN AND DEVICE LEGEND
TMP-01C	AREA OVERVIEW
TMP-02	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, & LOCAL NOTES) AND PHASING
TMP-03	SPECIAL SIGN DESIGN
TMP-04 & 05	OFFSITE DETOUR

WORK ZONE SAFETY & MOBILITY

"from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

LARRY GREEN, P.E.

D. ALLEN HAYES, E.I.

NCDOT CONTACTS:

JOEL DAVIS

PROJECT ENGINEER

PROJECT DESIGN ENGINEER



BRIDGE #580114

BRIDGE #580265

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

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

APPROVED:

DATE: 3/12/2025

SEAL

3/11/2025
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User:AHayes

SHEET NO.

TMP-01

DF18313.2059170.PR &
DF18313.2059024.PR

TIP PROJECT:

PROJ. REFERENCE NO.	SHEET NO.
DF18313.2059170.PR & DF18313.2059024.PR	TMP-01A

ROADWAY STANDARD DRAWINGS

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

<u>STD. NO.</u>	<u>TITLE</u>
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1180.01	SKINNY - DRUMS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS - TYPES
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

 NORTH ARROW

TRAFFIC CONTROL DEVICES

 BARRICADE (TYPE III)

TEMPORARY SIGNING

 STATIONARY SIGN

BRIDGE #580114

BRIDGE #580265



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

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

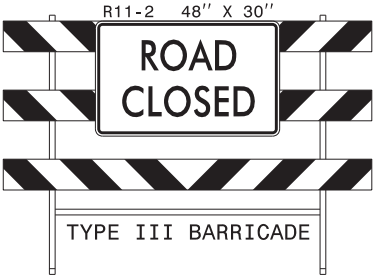
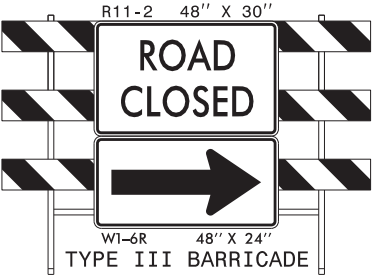
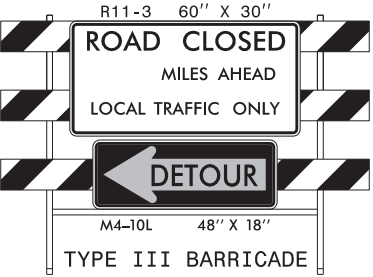

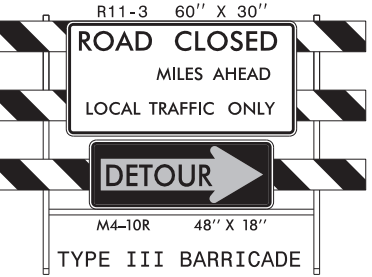
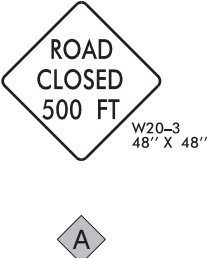
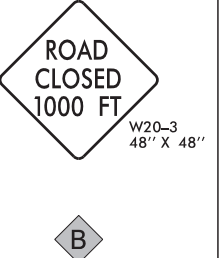
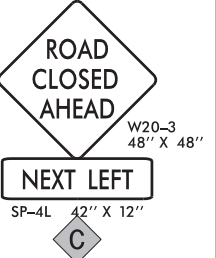
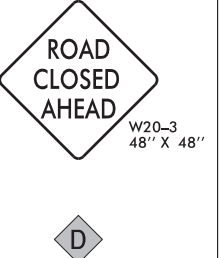
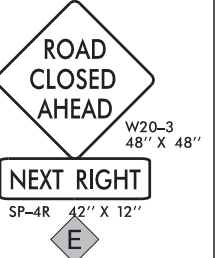
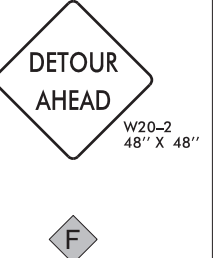
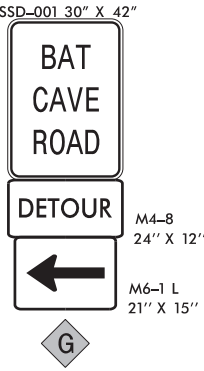
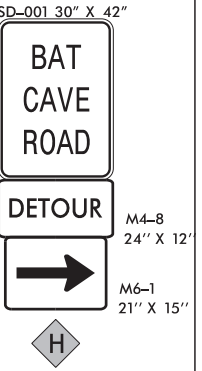
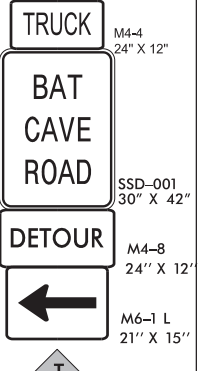
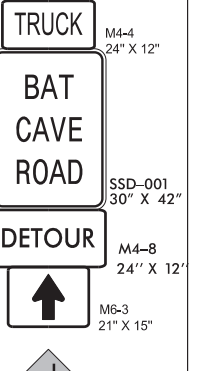
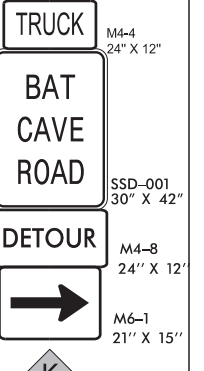
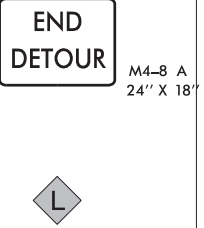
APPROVED: 
DATE: 3/12/2025



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UNLESS ALL SIGNATURES COMPLETED**



LIST OF APPLICABLE
ROADWAY STANDARD
DRAWINGS, AND LEGEND

 A	 B	 C	 D	 E	
 A	 B	 C	 D	 E	 F
 G	 H	 I	 J	 K	 L

X

BARRICADES

-WITH MOUNTED SIGNING

X

SIGNING

-STATIONARY MOUNTED

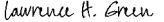
BRIDGE #580114


BRIDGE #580265



1223 Jones Franklin Rd.
Raleigh, N.C. 27606
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TRANSPORTATION PLANNING/DESIGN • BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN • GIS/GPS • CONSTRUCTION OBSERVATION

DocuSigned by:
APPROVED: 
DATE: 3/12/2025



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UNLESS ALL SIGNATURES COMPLETED



SIGN AND DEVICE LEGEND



3/11/2025
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User:AHayes

BRIDGE #580114

BRIDGE #580265



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

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

APPROVED: *Lawrence H. Green*
48087089898D486...

DATE: 3/12/2025



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



AREA OVERVIEW

—

3/11/2025
P:\2025\25109.02 Div 13 Burke McDowellRutherford Bridge Repairs\Traffic Design\2 Project\4 Design Files\4 WZTC\DF181313_TMP_02 GN&P.dgn
User:AHayes

GENERAL NOTES

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

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

- A) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- B) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- E) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY, RAMP, OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.
- F) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON N. COVE SCHOOL RD.
- G) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

AND

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

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

AND

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

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

TRAFFIC CONTROL DEVICES

- M) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.
- N) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

MISCELLANEOUS

- O) THE CONTRACTOR SHALL MAINTAIN ACCESS TO RESIDENTS AND BUSINESSES DURING CONSTRUCTION.

MANAGEMENT STRATEGIES

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

RECOMMENDED STRATEGIES:

TRAFFIC MANAGEMENT STRATEGIES:
ONE-LANE, TWO WAY OPERATION (FLAGGING)
OFF-SITE DETOURS

LOCAL NOTES

THE ENGINEER SHALL COMPLETE THE FOLLOWING:

- 1) IN ORDER TO HAVE TIME TO ADEQUATELY REROUTE SCHOOL BUSESSES, MCDOWELL COUNTY SCHOOLS WILL BE CONTACTED AT (828) 652-4535 AT LEAST ONE MONTH PRIOR TO ROAD CLOSURE.
- 2) MCDOWELL COUNTY EMERGENCY MANAGEMENT WILL BE CONTACTED AT (828) 652-3541 LEAST ONE MONTH PRIOR TO ROAD CLOSURE TO MAKE THE NECESSARY TEMPORARY REASSIGNMENTS TO PRIMARY RESPONSE UNITS.

PROJ. REFERENCE NO.	SHEET NO.
DF18313.2059170.PR & DF18313.2059024.PR	TMP - 02

PHASING

NOTE: CONSTRUCTION OPERATIONS FOR AREA 1 AND AREA 2 MAY BE PERFORMED SIMULTANEOUSLY PER THE DISCRETION OF THE ENGINEER.

AREA 1

- STEP 1) INSTALL ALL OFFSITE DETOUR SIGNING AND ROAD CLOSURE SIGNING. COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER.
[SEE SHEETS TMP-01B & 04]
- STEP 2) WHEN READY TO CLOSE THE ROADWAY, UNCOVER THE DETOUR AND ROAD CLOSURE SIGNING, CLOSE SR 1103 (BAT CAVE RD), AND DETOUR TRAFFIC.
[SEE SHEETS TMP-01B & 04]
- STEP 3) AWAY FROM TRAFFIC, REMOVE EXISTING BRIDGE, AND CONSTRUCT PROPOSED -L- STRUCTURE AND APPROACHES FROM THE BEGIN PROJECT LIMITS TO THE END PROJECT LIMITS UP TO AND INCLUDING THE FINAL LIFT OF SURFACE COURSE, AND FINAL PAVEMENT MARKINGS.
[SEE ROADWAY PLANS AND FINAL PAVEMENT MARKING PLAN]
- STEP 4) OPEN -L- TO THE FINAL TRAFFIC PATTERN, AND REMOVE ALL ROAD CLOSURE SIGNING, OFFSITE DETOUR SIGNING, TEMPORARY TRANSPORATION MANAGEMENT DEVICES.
[SEE SHEET TMP-04 FOR SIGN LOCATIONS]

AREA 2

- STEP 1) USING ROADWAY STANDARD DRAWING (RSD) 1101.01, INSTALL ALL ADVANCE WARNING SIGNS. IF CONSTRUCTION DOES NOT START WITHIN THREE (3) DAYS OF SIGN INSTALLATION, COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER.
- STEP 2) UNCOVER ADVANCE WARNING SIGNING IF NEEDED, AND USING RSD 1101.02 AS NEEDED, COMPLETE REPAIRS ON SR 1569 (N. COVE SCHOOL RD). RETURN TRAFFIC TO THE EXISTING PATTERN BY THE END OF THE WORK PERIOD.
- STEP 3) OPEN SR 1569 AND REMOVE ALL ADVANCE WARNING SIGNING, LANE CLOSURE SIGNING, AND TEMPORARY TRANSPORATION MANAGEMENT DEVICES.



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

BRIDGE #580114
BRIDGE #580265

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

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

DocuSigned by:
Lawrence H. Green
48067089880486...

APPROVED: _____
DATE: 3/12/2025

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[illegible]




<div data-bbox="1678 1701 1979 1727"> BRIDGE #580114 </div> <div data-bbox="1678 1741 1979 1768"> BRIDGE #580265 </div>	<div data-bbox="2054 1701 2386 1727"> <small>DocuSigned by:</small> <small>APPROVED:</small> <i>Lawrence H. Green</i> <small>89087089898D486..</small> </div> <div data-bbox="2054 1741 2386 1755"> <small>DATE:</small> <u>3/12/2025</u> </div>	<div data-bbox="2414 1701 2604 1751">  </div>	<div data-bbox="2414 1701 2604 1751">  </div> <div data-bbox="2648 1727 2965 1741"> SPECIAL SIGN DESIGN </div>
<div data-bbox="1619 1808 1864 1888">  </div> <div data-bbox="1880 1808 2038 1888"> 1223 Jones Franklin Rd. Raleigh, N.C. 27606 License No. F-0377 Bus: 919 851 8077 Fax: 919 851 8107 </div>	<div data-bbox="2066 1915 2386 1943"> DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED </div>		

Diagram illustrating the plan view of Bridge No. 580265, showing construction limits and stationing. The bridge is oriented vertically, with stationing increasing from top to bottom.

Key Features and Stationing:

- SR 1103:** Located at the top of the diagram.
- SR 1106:** Located below SR 1103.
- SR 1104:** Located below SR 1106.
- SR 1100:** Located below SR 1104.
- SR 1103:** Located below SR 1100.
- SR 1123:** Located at the bottom of the diagram.
- SR 1131:** Located below SR 1123.

Bridge and Construction Limits:

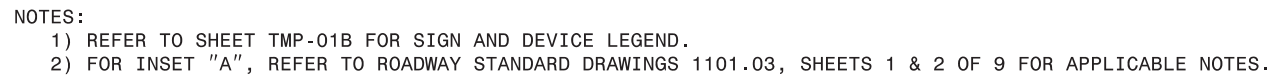
- BRIDGE NO. 580265:** Indicated by a thick black rectangle.
- BEGIN CONSTRUCTION LIMITS:** Indicated by a vertical line to the right of the bridge structure.
- END CONSTRUCTION LIMITS:** Indicated by a vertical line to the left of the bridge structure.

Stationing and Distances:

- 500'±:** Distance from SR 1103 to SR 1106.
- 1500'±:** Distance from SR 1106 to SR 1104.
- 500'±:** Distance from SR 1104 to SR 1100.
- 500'±:** Distance from SR 1100 to SR 1103.
- 100'±:** Distance from the bridge structure to the D/W (Right of Way) line.
- 500'±:** Distance from the D/W line to the SR 1123/1131 intersection.
- 500'±:** Distance from the SR 1123/1131 intersection to the SR 1131 line.
- 500'±:** Distance from the SR 1131 line to the SR 1103 line.

Other Labels:

- D/W:** Right of Way line.
- INSET "A":** Located at the top right of the diagram.



BRIDGE #580265

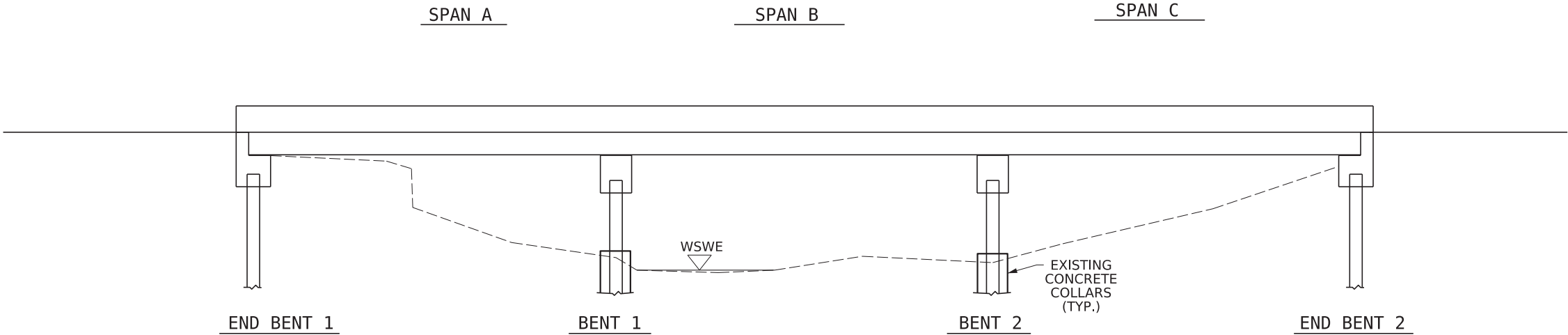


DocuSigned by:
APPROVED: Lawrence H. Green
48087088988D48B...
DATE: 3/12/2025



OFFSITE DETOUR

P:\2025\25109.02 Div 13 Burke McDowell Rutherford Bridge Repairs\Bridge 580114\Repair Plans\580114 GENERAL DRAWING.dgn
5/6/2025 12:07:52 PM



NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITIONS ARE FROM BEST INFORMATION AVAILABLE; THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER; THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THAT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

BRIDGE ORIENTATION CONFORMS TO THE ORIGINAL BRIDGE PLANS.

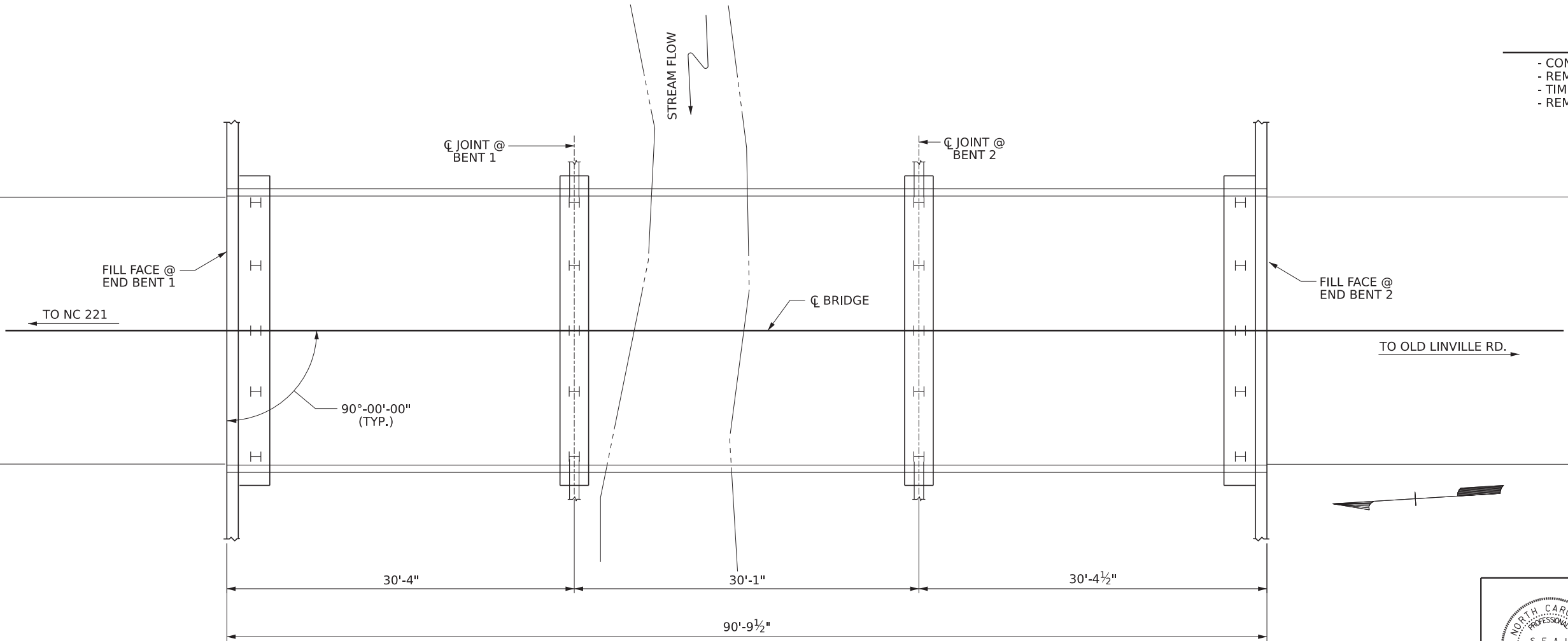
I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER

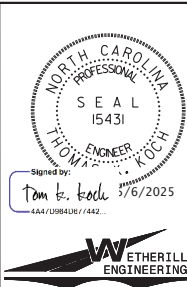
DATE

SCOPE OF WORK

- CONSTRUCT CONCRETE PILE COLLARS ON BENT 2
- REMOVE AND REPLACE BRIDGE RAILING POST
- TIMBER WING BOARD INSTALLATION
- REMOVE AND REPLACE DAMAGED GUARDRAIL SECTION



PROJECT NO. **DF18313.2059170.PR**
MCDOWELL COUNTY
BRIDGE NO. **580114**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE
ON SR1569
OVER HONEYCUTT CREEK

REVISIONS

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

SHEET NO.

S-1

TOTAL

SHEETS

22

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. KOCH DATE : 2-25

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



LOCATION SKETCH

INFORMATION INDICATED ON THE LOCATION SKETCH SHALL BE CONSIDERED GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL CONFIRM, THROUGH OTHER SOURCES, SPECIFIC INFORMATION REGARDING BRIDGES, ROADWAYS, UTILITIES, THE SURROUNDING AREA, AND ANY OTHER ASPECTS THAT MAY BE NECESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LAT: 35.8398380052499
LONG: -81.9885321939424

BILL OF MATERIAL

PAY ITEM	QTY.	UNITS
TRAFFIC CONTROL	1	LUMP SUM
CLASS A CONCRETE	3.6	CY
REMOVE AND REPLACE EXISTING GUARDRAIL	12.0	LF
REPLACE 3"x10"x10' TIMBER BOARD	1	EA.

NOTES

EXISTING DIMENSIONS AND BRIDGE CONDITION ARE FROM THE BEST INFORMATION AVAILABLE.

THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THAT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.

WORK ON THE BRIDGES SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW. THE CONTRACTOR SHALL SUBMIT PLANS FOR CONSTRUCTION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS AND THE PROJECT SPECIAL PROVISIONS.

ANY DAMAGE TO EXISTING REINFORCEMENT STEEL, DURING CONTRACTOR'S OPERATIONS, SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AND PERFORMED AT NO ADDITIONAL COST TO THE DEPARTMENT.

FOR GUARDRAIL REPLACEMENT, SEE SPECIAL PROVISIONS.

PROJECT NO. DF18313.2059170.PR
MCDOWELL COUNTY
BRIDGE NO. 580114

3/12/2025

NORTH CAROLINA

PROFESSIONAL

SEAL

15431

ENGINEER

THOMAS K. KOCH

Signed by:

Thomas K. Koch

ETHERILL ENGINEERING

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

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

FOR BRIDGE

ON SR 1569

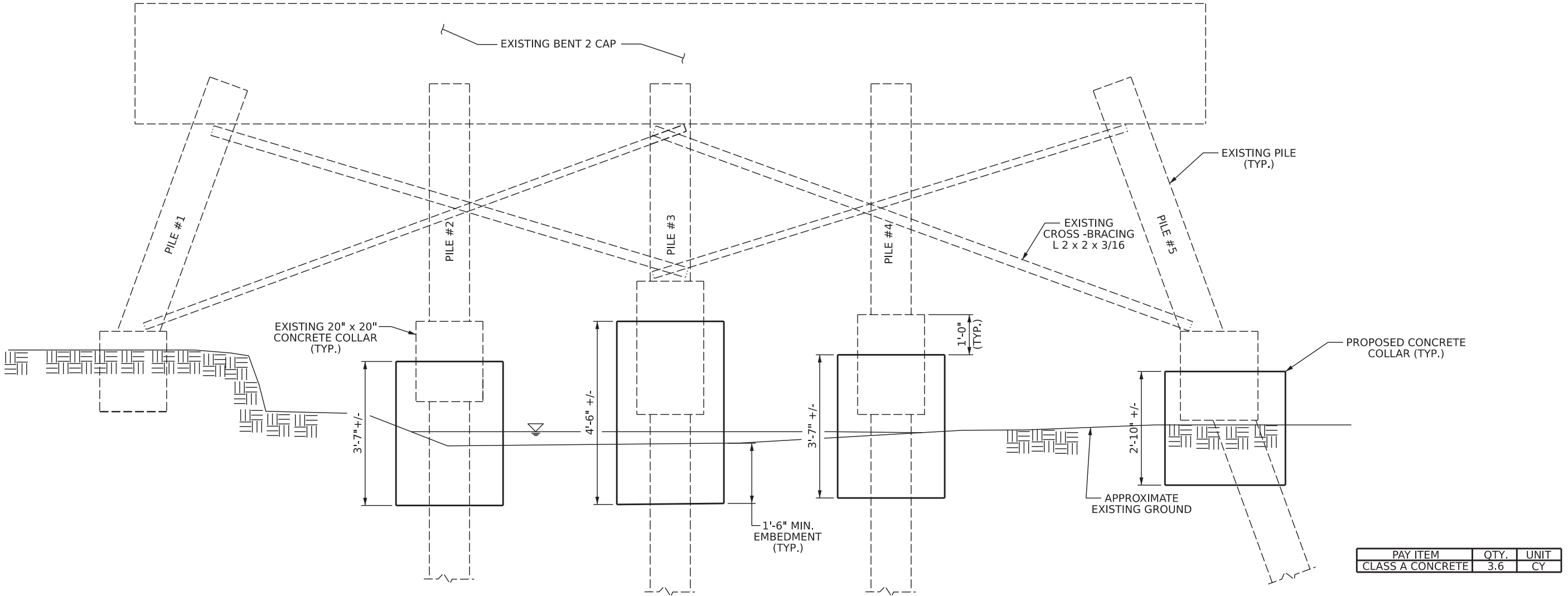
OVER HONEYCUTT CREEK

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

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DRAWN BY :	J. PENDERGRAFT	DATE :	1-25
CHECKED BY :	T. KOCH	DATE :	1-25
DESIGN ENGINEER OF RECORD:	T. KOCH	DATE :	2-25

P:\2025\25109.02 Div 13 Burke McDowell Rutherford Bridge Repairs\Bridge 580114\Repair Plans\580114 BENT S.dgn
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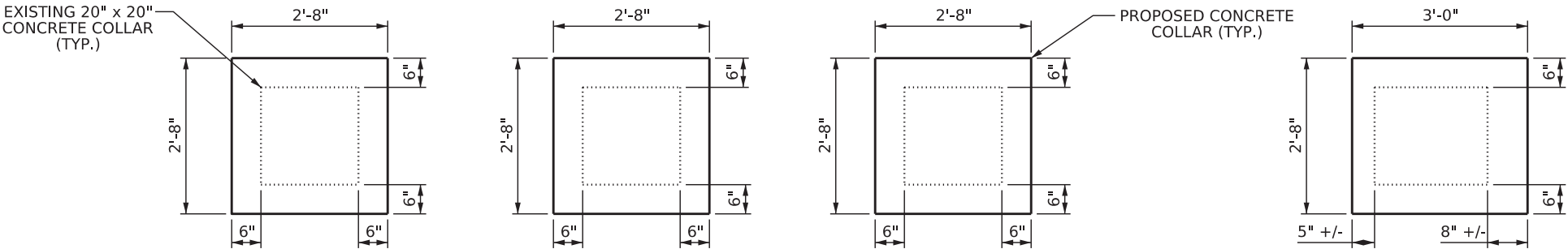


PAY ITEM	QTY.	UNIT
CLASS A CONCRETE	3.6	CY

BENT 2 ELEVATION

EXISTING STEEL PILES ARE HP 12x53

NOTE: THE TIP ELEVATIONS OF THE EXISTING PILES ARE NOT KNOWN.



PLAN - PROPOSED COLLAR REPAIR

PROJECT NO. DF18313.2059170.PR
MCDOWELL COUNTY
BRIDGE NO. 580114

DRAWN BY :	J. PENDERGRAFT	DATE :	1-25
CHECKED BY :	T. KOCH	DATE :	1-25
DESIGN ENGINEER OF RECORD:	T. KOCH	DATE :	2-25

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3/12/2025

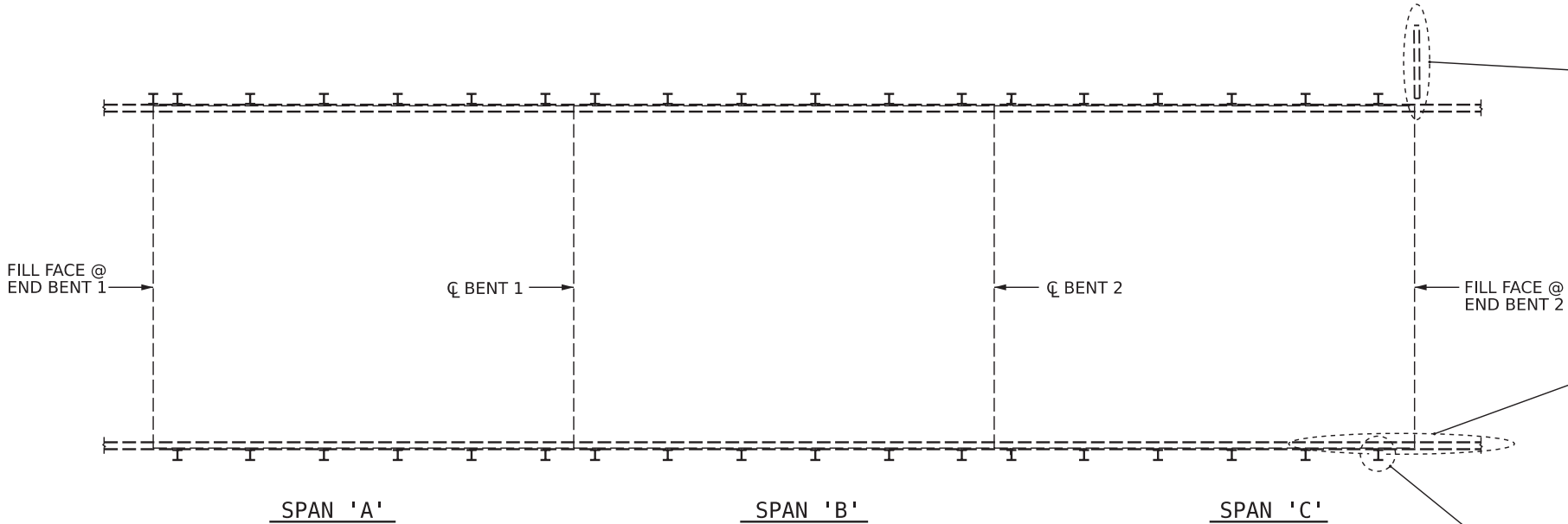
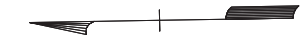
NORTH CAROLINA
PROFESSIONAL
SEAL
15431
ENGINEER
THOMAS K. KOCH

Signed by:
Thomas K. Koch
666120641001/4427
VAV ETHERILL
ENGINEERING

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

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

P:\2025\25109\02 Div 13 Burke McDowell Rutherford Bridge Repairs\Bridge 580114\Repair Plans\580114 DAMAGED RAIL POST.dgn
3/12/2025 7:14:28 AM



REPAIR LOCATION PLAN



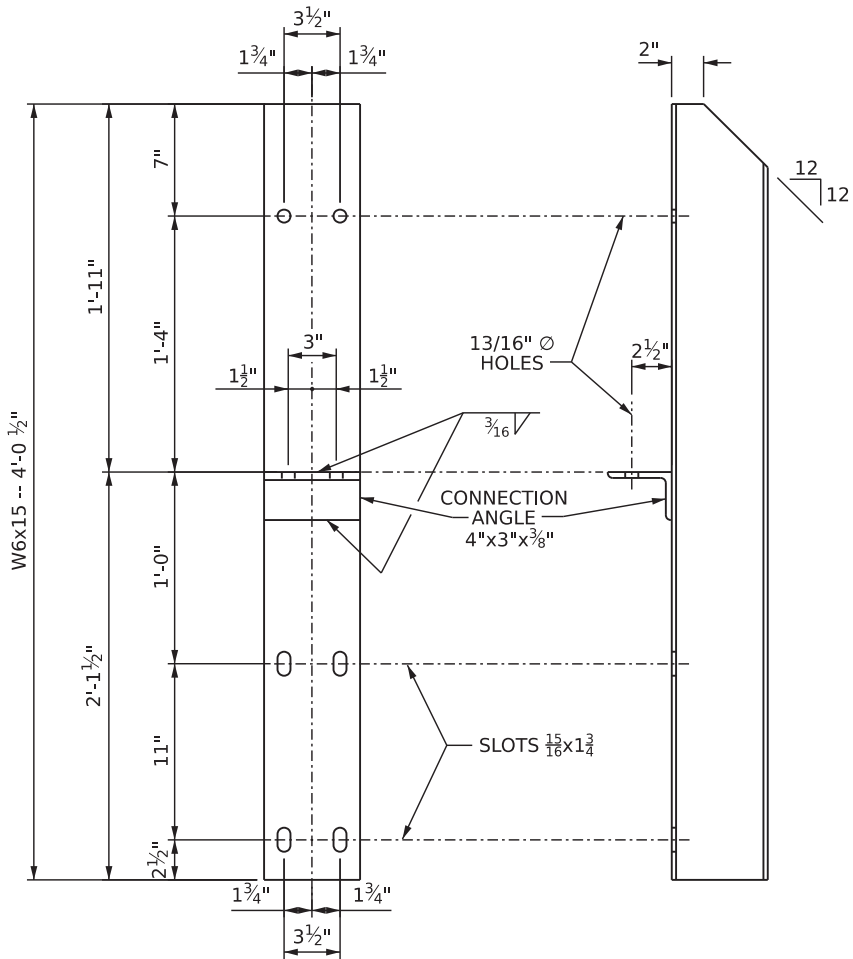
12-FOOT LONG SECTION OF BRIDGE/
GUARD RAIL DAMAGED
TO BE REPLACED



3"x10"-10' LONG TOP TIMBER WING
BOARD DETACHED
REINSTALL OR REPLACE



DAMAGED BRIDGE RAIL POST
REPLACE WITH NEW POST
(SEE RAIL POST DETAILS BELOW)



RAIL POST

PAY ITEM	QTY.	UNITS
REMOVE AND REPLACE EXISTING GUARDRAIL	12	LF
REPLACE 3" x 10" x 10' TIMBER BOARD	1	EA.

NOTES:

STEEL W-SHAPES SHALL MEET THE REQUIREMENTS OF ASTM A992.

STEEL ANGLES SHALL MEET THE REQUIREMENTS OF ASTM A36.

PAINT RAIL POST IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PROJECT NO. DF18313.2059170.PR
MCDOWELL COUNTY
BRIDGE NO. 580114

DRAWN BY :	J. PENDERGRAFT	DATE :	1-25
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NORTH CAROLINA
PROFESSIONAL
SEAL
15431

ENGINEER
THOMAS K. KOCH

Signed by:

Thomas K. Koch

40471306/001/4027

WVETHERILL
ENGINEERING

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Raleigh, N.C. 27606
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

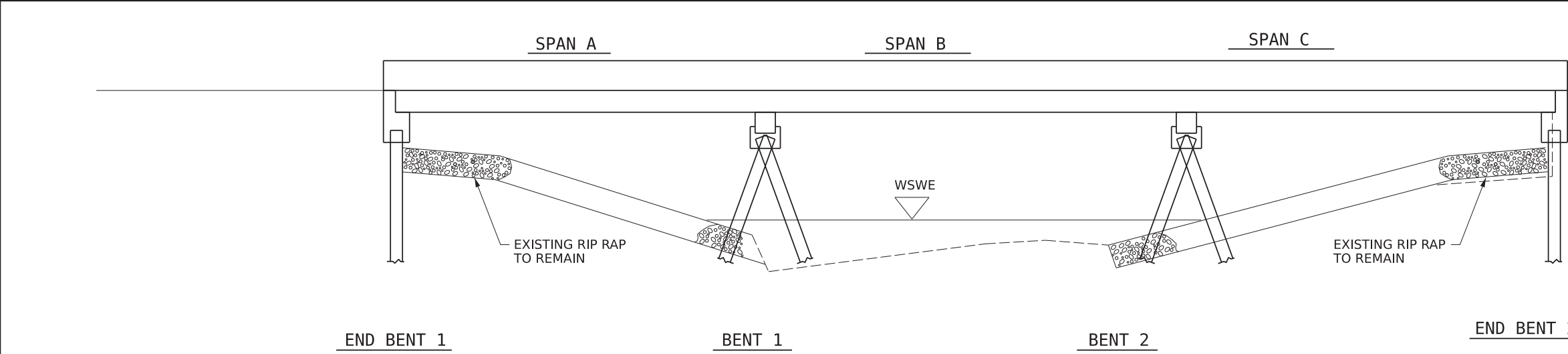
**RAIL POST,
RAILING/GUARDRAIL,
AND WING REPAIRS**

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

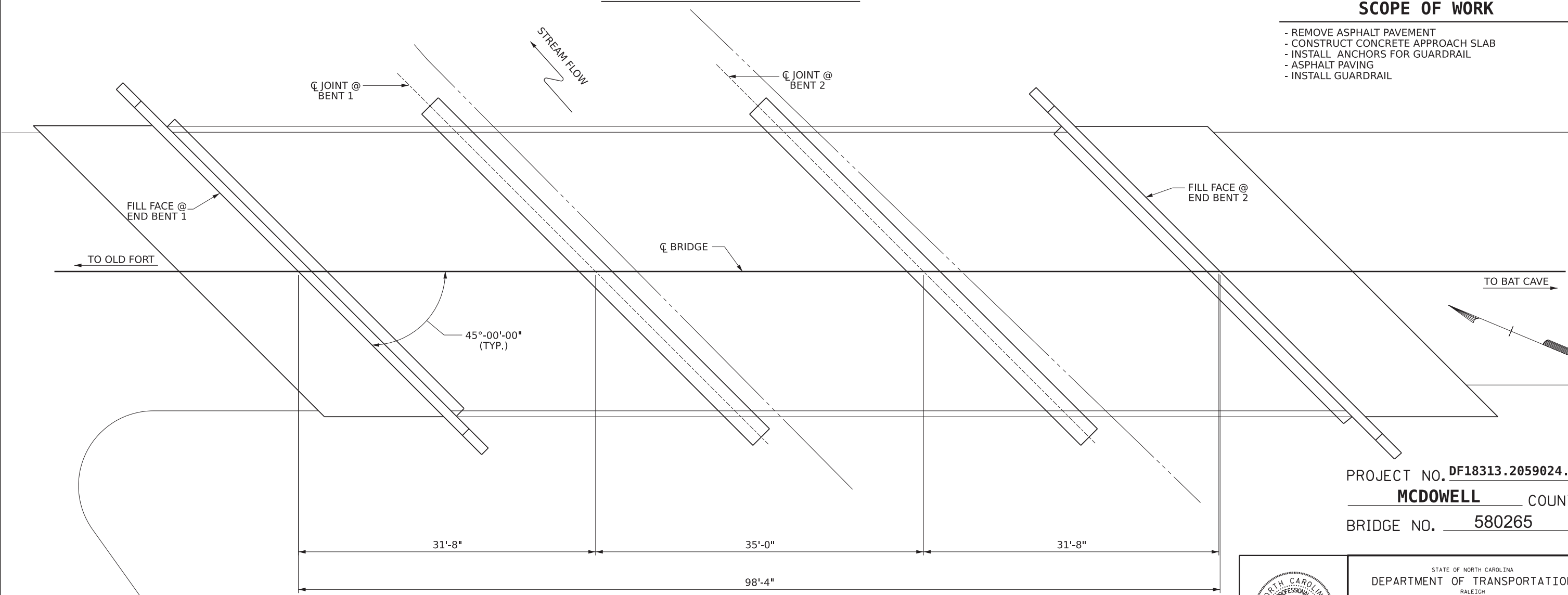
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\$TIME\$



SECTION ALONG ϕ ROADWAY



PLAN

NOTES

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I HEREBY CERTIFY THAT THIS STRUCTURE WAS REHABILITATED ACCORDING TO THESE PLANS OR AS NOTED HEREIN.

RESIDENT ENGINEER

DATE

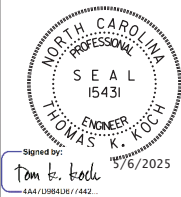
SCOPE OF WORK

- REMOVE ASPHALT PAVEMENT
- CONSTRUCT CONCRETE APPROACH SLAB
- INSTALL ANCHORS FOR GUARDRAIL
- ASPHALT PAVING
- INSTALL GUARDRAIL

PROJECT NO. **DF18313.2059024.PR**

MCDOWELL COUNTY

BRIDGE NO. **580265**



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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
BRIDGE PRESERVATION
FOR BRIDGE
ON SR1103
OVER CROOKED CREEK

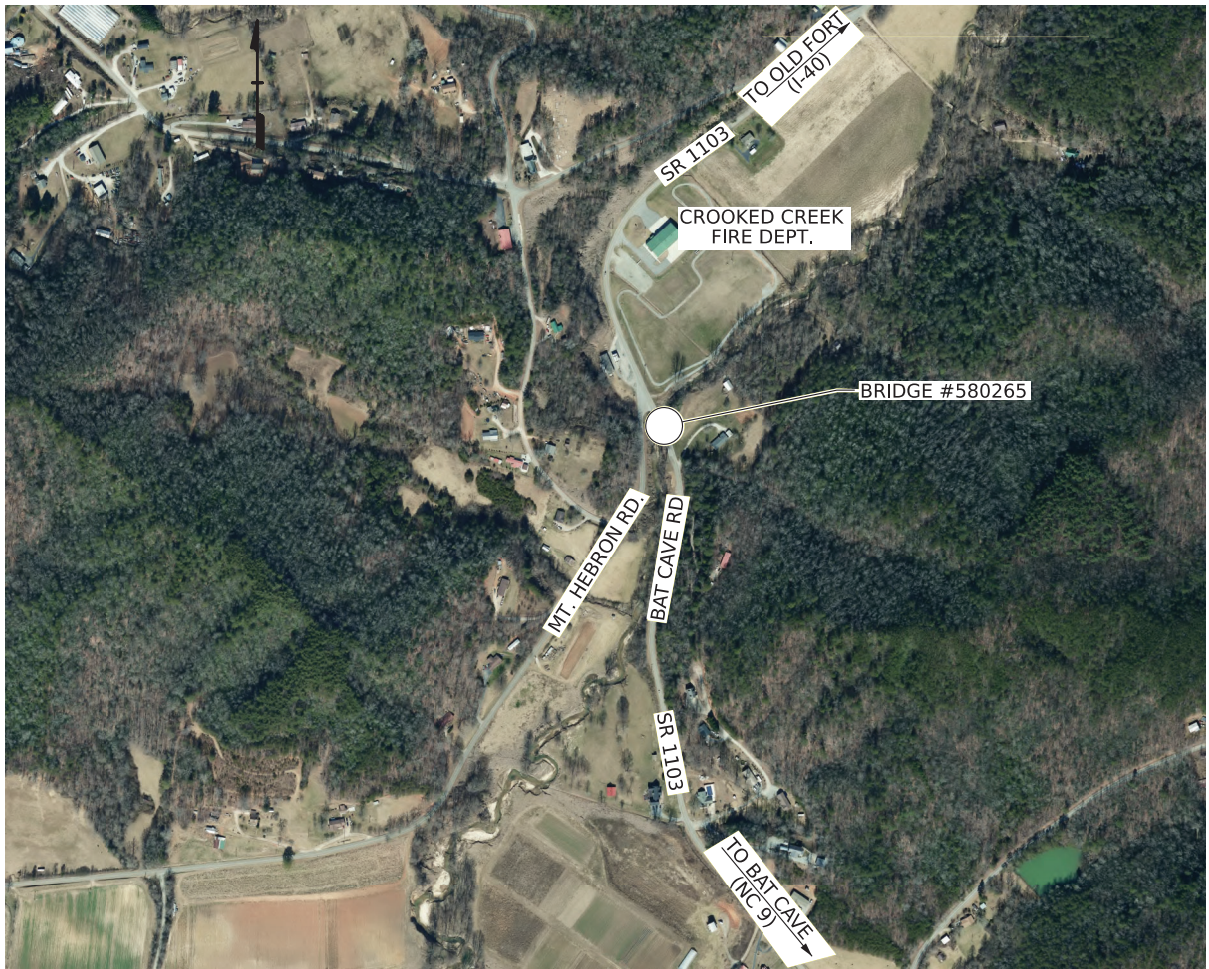
REVISIONS

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

SHEET NO.
S-5
TOTAL
SHEETS
22

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DRAWN BY : J. PENDERGRAFT DATE : 1-25
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LOCATION SKETCH

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BRIDGE COORDINATES

LAT: 35.5721701284549
LONG: -82.1860540373789


TOTAL BILL OF MATERIAL		
PAY ITEM	QTY.	UNITS
TRAFFIC CONTROL AT BR #__	1	LUMP SUM
BRIDGE APPROACH SLAB	1	LUMP SUM
CLASS II RIP RAP	19	TONS
ASPHALT PLANT MIX PAVEMENT REPAIR	4	TONS
REMOVE AND REPLACE EXISTING GUARDRAIL	54	LF

PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
 BRIDGE NO. 580265

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3/25/2025



STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

GENERAL DRAWING

BRIDGE PRESERVATION

FOR BRIDGE


ON SR 1103

OVER CROOKED CREEK

Designed by:

Thomas K. Koch

REGISTERED PROFESSIONAL ENGINEER



VW ETHERNILL
ENGINEERING

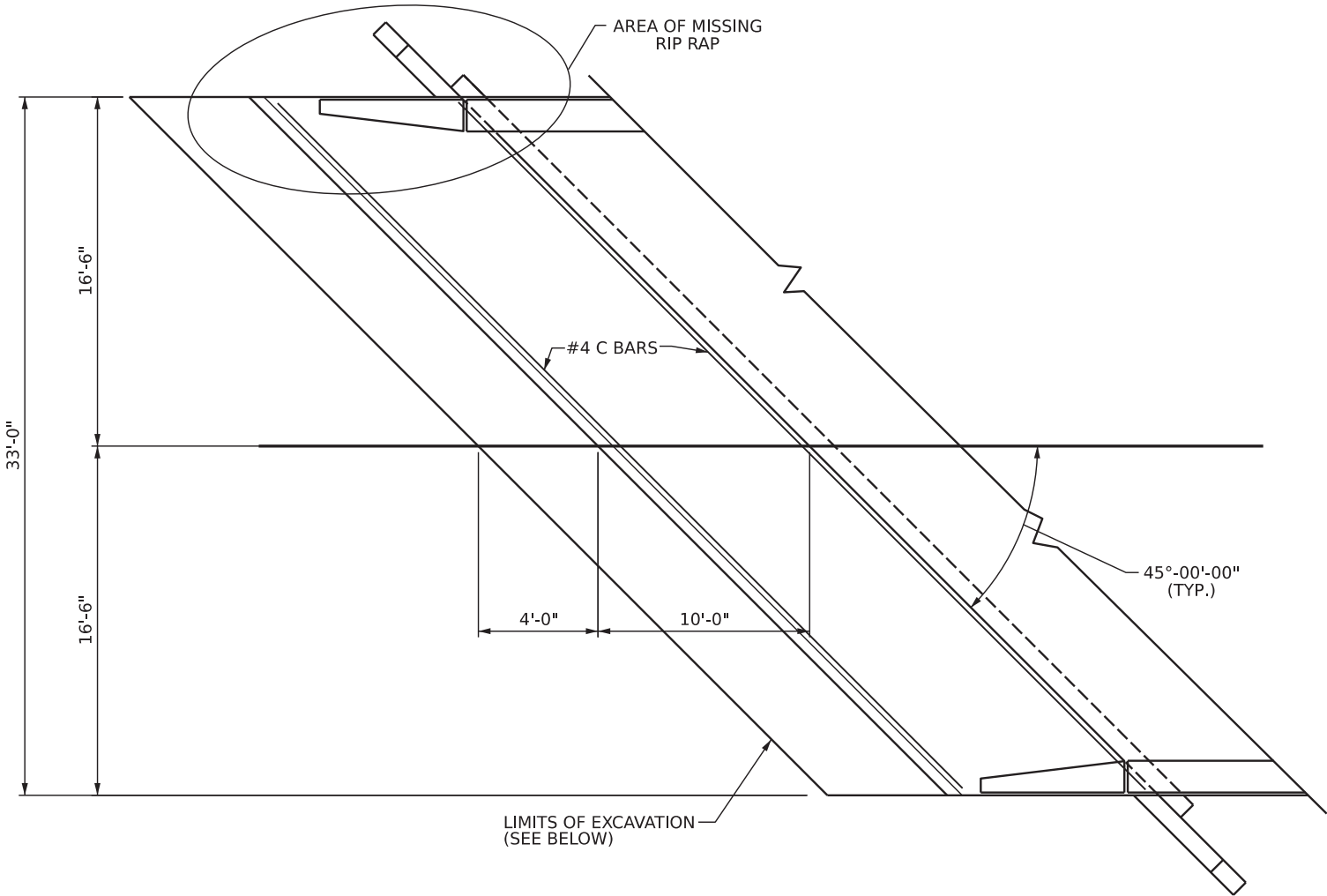
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
 Bus: 919 851 8077
 Fax: 919 851 8107
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REVISIONS		
NO.	BY:	DATE:
1		
2		

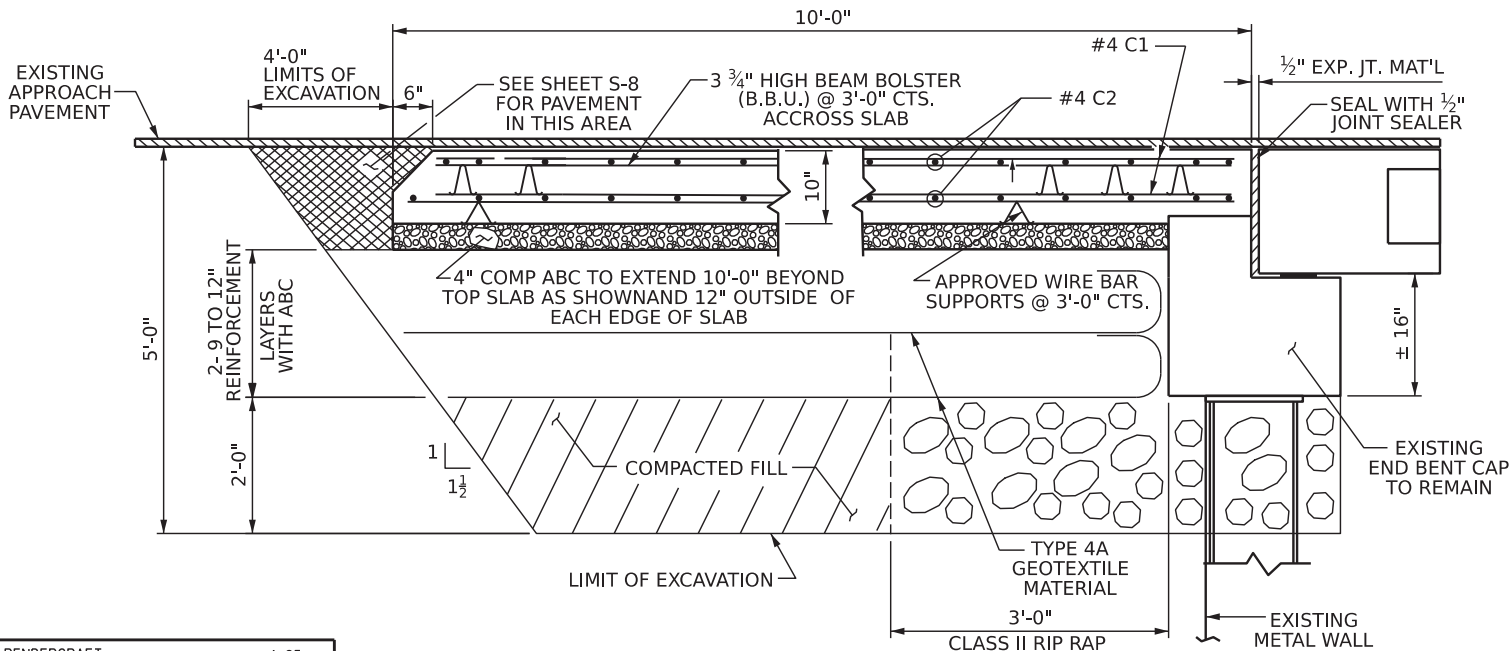
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SHEET NO.	
S-6	
TOTAL SHEETS	22

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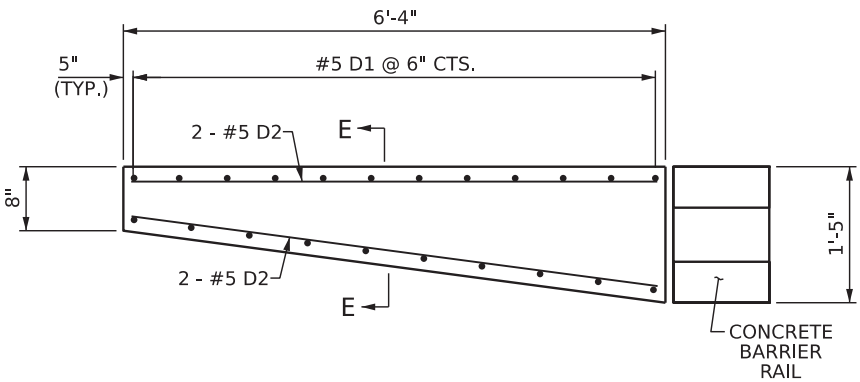
PLAN OF APPROACH SLAB @ END BENT 1



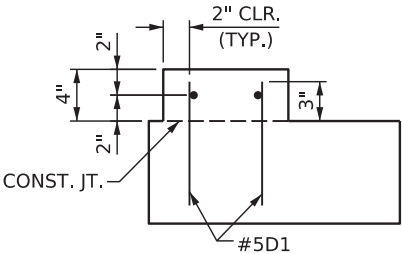
SECTION THRU APPROACH SLAB

PAY ITEM	QTY.	UNITS
BRIDGE APPROACH SLAB	1	LUMP SUM
CLASS II RIP RAP	19	TONS
ASPHALT PLANT MIX PAVEMENT REPAIR	4.2	TONS

BILL OF MATERIAL					
APPROACH SLAB AT EB #1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
C1	44	#4	STR	9'-3"	272
C2	28	#4	STR	23'-10"	446
D1	48	#5	STR	0'-10"	42
D2	4	#5	STR	5'-9"	24
REINFORCING STEEL				LBS.	784
CLASS A CONCRETE				C.Y.	
SLAB					10.0
CURB					0.2
TOTAL					10.2



PLAN OF CURB



SECTION E-E

PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
BRIDGE NO. 580265

DRAWN BY :	J. PENDERGRAFT	DATE :	1-25
CHECKED BY :	T. KOCH	DATE :	1-25
DESIGN ENGINEER OF RECORD:	T. KOCH	DATE :	2-25

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UNLESS ALL SIGNATURES COMPLETED

3/12/2025

NORTH CAROLINA

PROFESSIONAL

SEAL

15431

ENGINEER

THOMAS K. KOCH

Signed By:

THOMAS K. KOCH
VAVETHERILL ENGINEERING

1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-6377

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

RALEIGH

APPROACH SLAB

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

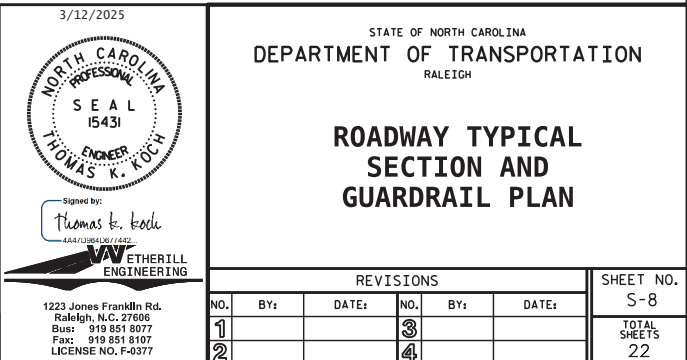
SHEET NO.
S-7
TOTAL SHEETS
22



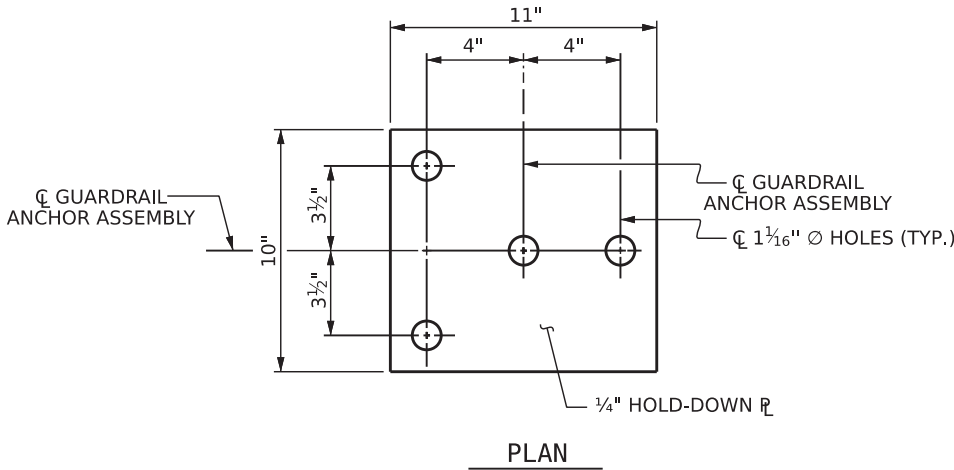
PAY ITEM	QTY.	UNITS
REMOVE AND REPLACE EXISTING GUARDRAIL	53.8	LF

PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
 BRIDGE NO. 580265

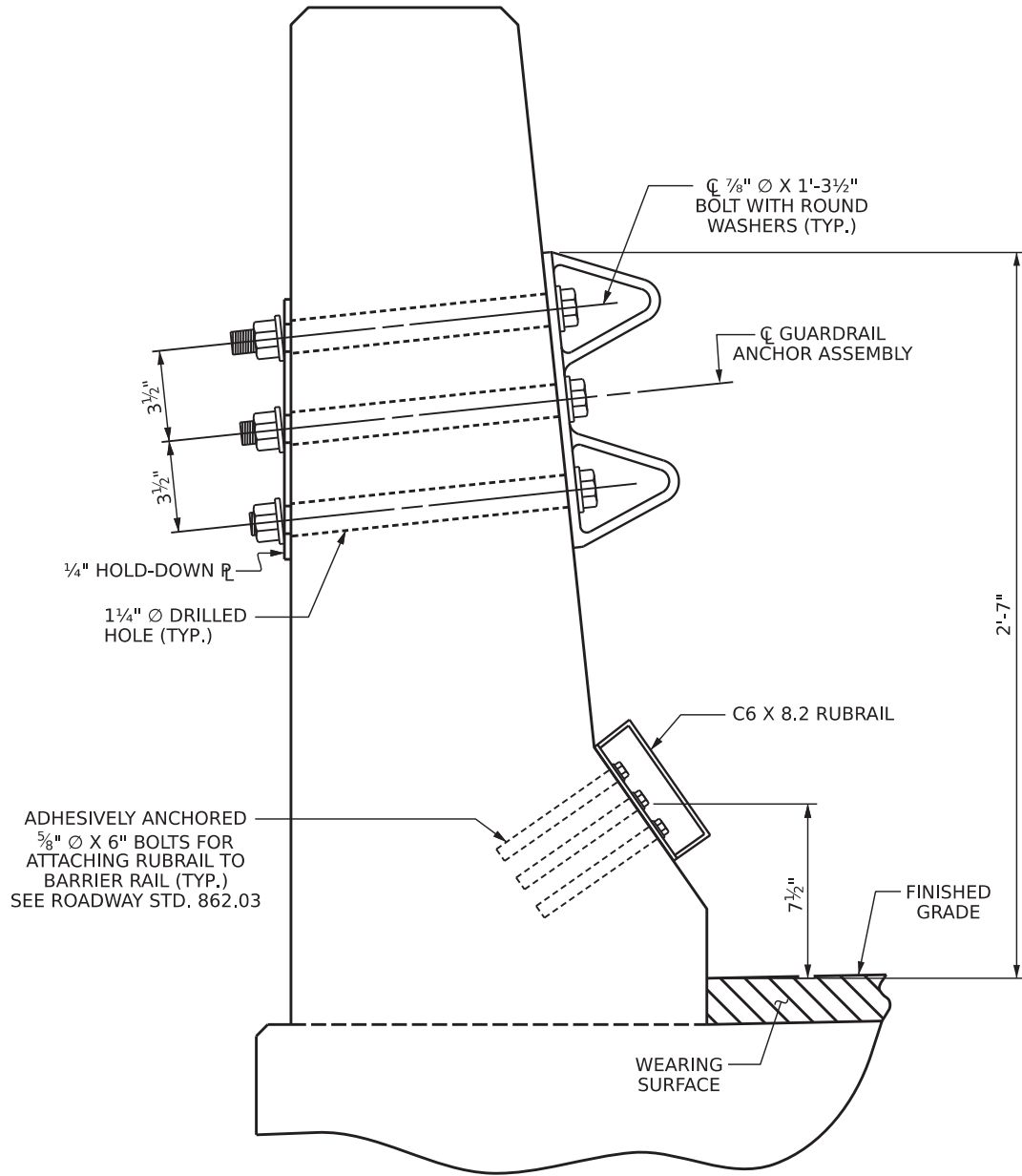
DOCUMENT NOT CONSIDERED FINAL
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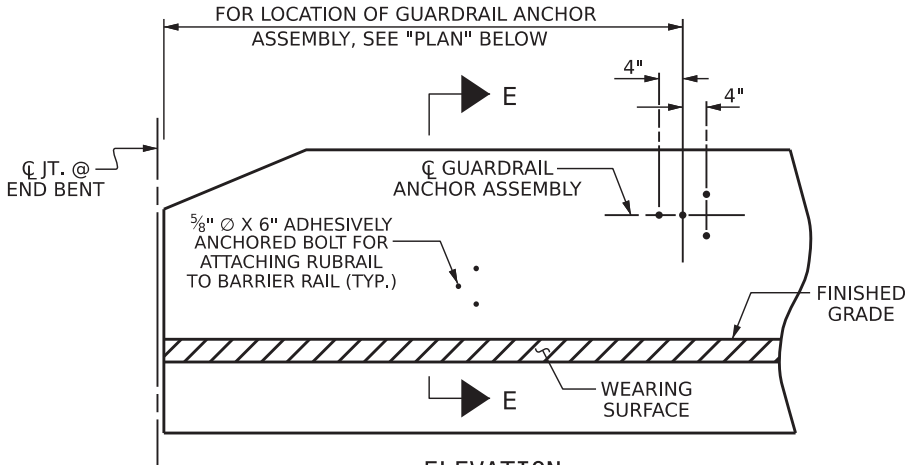


PLAN



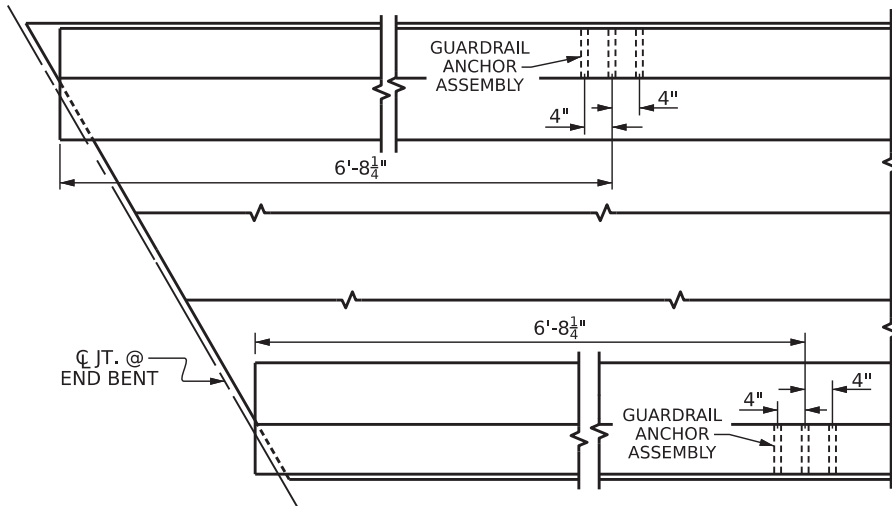
SECTION E-E

GUARDRAIL ANCHOR ASSEMBLY DETAILS



ELEVATION

FOR LOCATION OF RUBRAIL, SEE ROADWAY STD. 862.03



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

END BENT #1 SHOWN

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 3/4" HOLD-DOWN PLATE AND 4 - 7/8" O BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

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

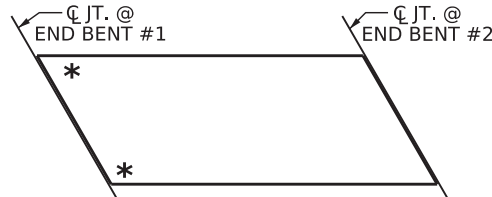
BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 7/8" O GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

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

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

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

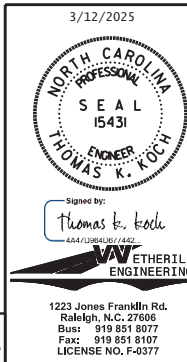
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 5/8" O X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" O BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.



SKETCH SHOWING POINTS OF ATTACHMENTS

* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. DF18313.2059024.PR
MCDOWELL COUNTY
BRIDGE NO. 580265



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
**BRIDGE PRESERVATION
GUARDRAIL ANCHORAGE
FOR BARRIER RAIL**

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. KOCH DATE : 2-25

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			22

STANDARD NOTES

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7⁄8" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7⁄8" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7⁄8" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - 7⁄8"Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5⁄16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY ½16" OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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