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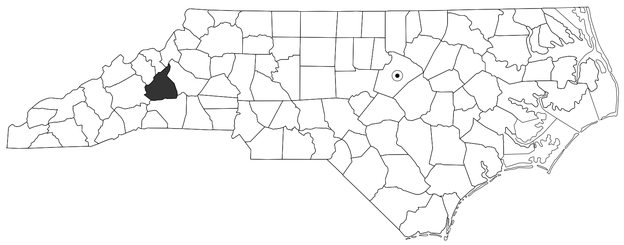
09/08/99

PROJECT: *18313.1059049.PR / 18313.1059054.PR*
18313.1059060.PR

CONTRACT: DM00482

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



MCDOWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	18313.1059060.PR 18313.1059049.PR 18313.1059054.PR	1	32

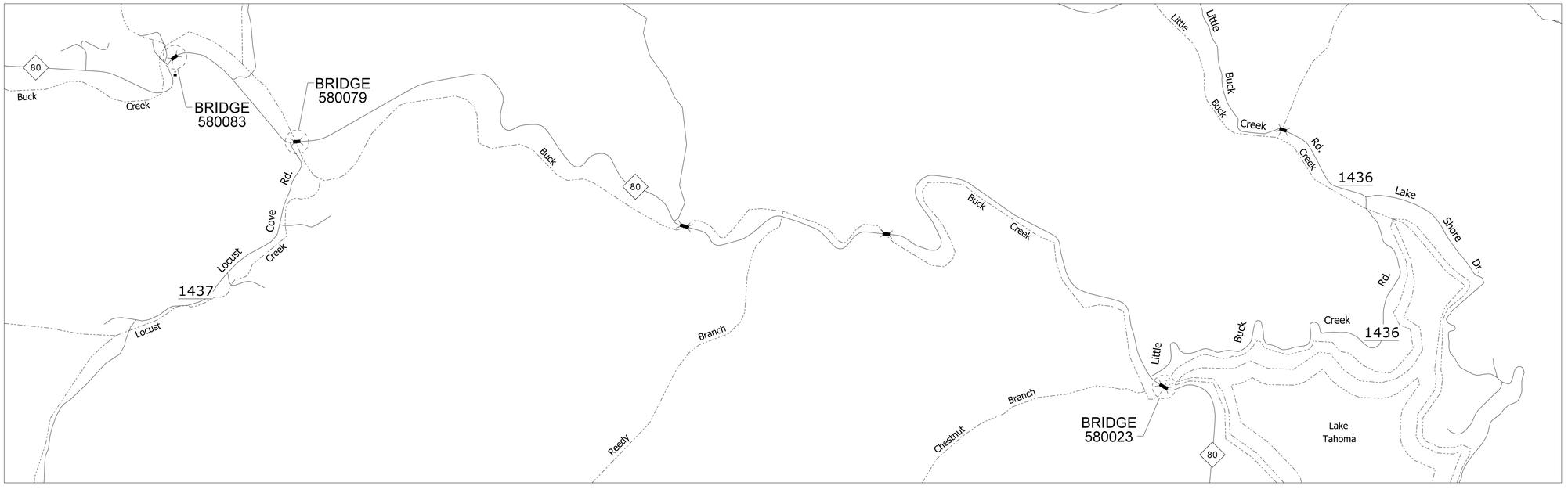
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
18313.1059049.PR	N/A	BRIDGE 580079
18313.1059054.PR	N/A	BRIDGE 580083
18313.1059060.PR	N/A	BRIDGE 580023

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

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

LOCATION: ***BRIDGE NO. 580023 ON NC 80 OVER BUCK CREEK***
BRIDGE NO. 580079 ON NC 80 OVER BUCK CREEK
BRIDGE NO. 580083 ON NC 80 OVER BUCK CREEK

TYPE OF WORK: ***BRIDGE PRESERVATION – CONSTRUCT REINFORCED EARTH SLOPE EMBANKMENT, RESTORE STREAM CHANNEL, INSTALL FLOWABLE FILL, PLACE RIP RAP AND SPALL REPAIR***



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DESIGN DATA BRIDGE 580083	DESIGN DATA BRIDGE 580079	DESIGN DATA BRIDGE 580023
ADT 2022 = 950 ADT 2040 = 1,900	ADT 2022 = 950 ADT 2040 = 1,900	ADT 2022 = 950 ADT 2040 = 1,900
V = 55 MPH	V = 55 MPH	V = 45 MPH (ADVISORY POSTED 15 MPH)
FUNC CLASS = COLLECTOR REGIONAL TIER	FUNC CLASS = COLLECTOR REGIONAL TIER	FUNC CLASS = COLLECTOR REGIONAL TIER

PROJECT LENGTH

PROJECT LENGTH BRIDGE 580023 = 0.028 MILES
PROJECT LENGTH BRIDGE 580079 = 0.020 MILES
PROJECT LENGTH BRIDGE 580083 = 0.022 MILES

NCDOT CONTACT: JOEL M. DAVIS
ASSISTANT BRIDGE PROGRAM MANAGER

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

2024 STANDARD SPECIFICATIONS

LETTING DATE:
DECEMBER 03, 2025

GREG S. PURVIS, PE
PROJECT ENGINEER

ERIN KRAYER, PE
PROJECT DESIGN ENGINEER

STRUCTURAL ENGINEER

11/12/2025

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

DocuSigned by:
John T. Diffee III
F0B317E870EC469...

P.E.

SIGNATURE:

11/12/2025
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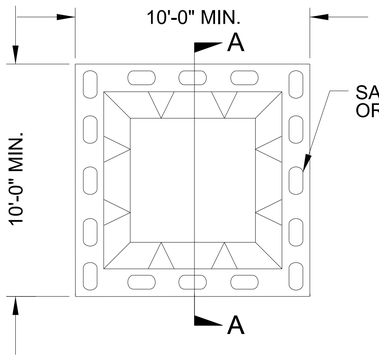
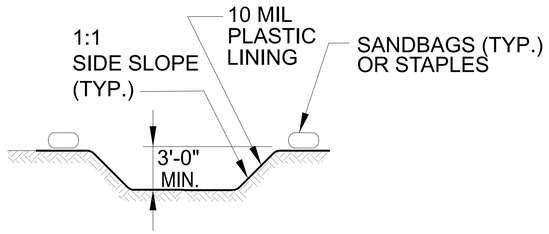
P:\2025\25109.02 Div 13 Burke McDowell Rutherford Bridge Repairs\Bridge 580023\Repair Plans\Whole Contract\580023_580079 & 580083 Cover Sheet.dgn

PROJECT REFERENCE NO.	SHEET NO.
18313.1059049.PR	W-1
18313.1059054.PR	
18313.1059060.PR	
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A

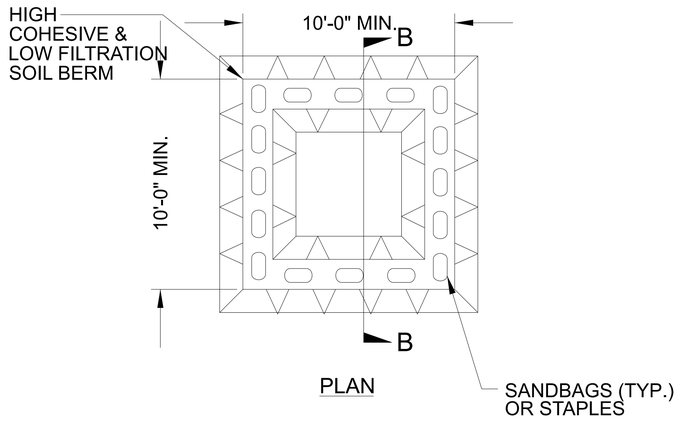
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

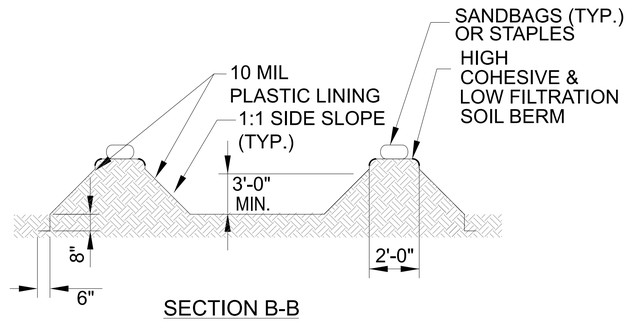
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

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

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE





SECTION B-B

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

CONTRACT REFERENCE NO.	SHEET NO.
DM00482	G-1

GEOTECHNICAL ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 028893 ENGINEER

Signed by: 11/12/2025

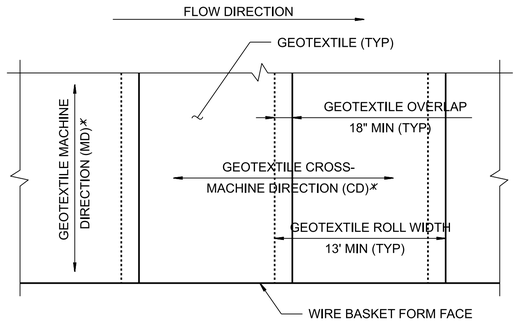
C447682092374CC...

SIGNATURE DATE

ENGINEER

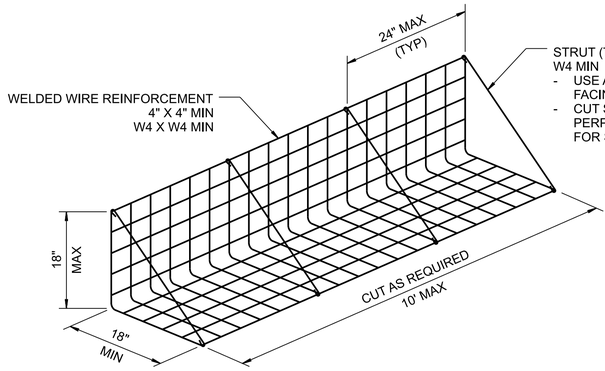
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

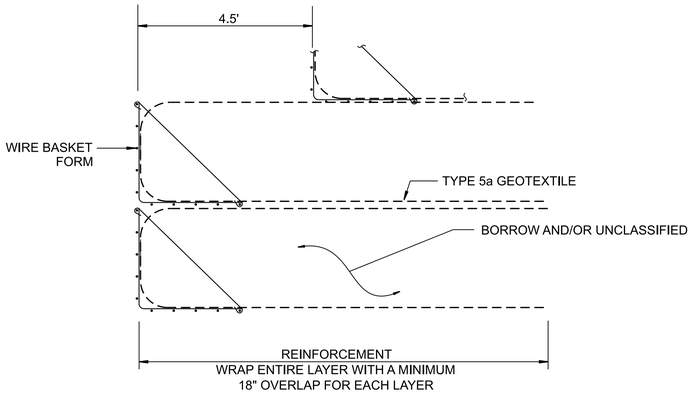


TYPE 5a, GEOTEXTILE PLACEMENT

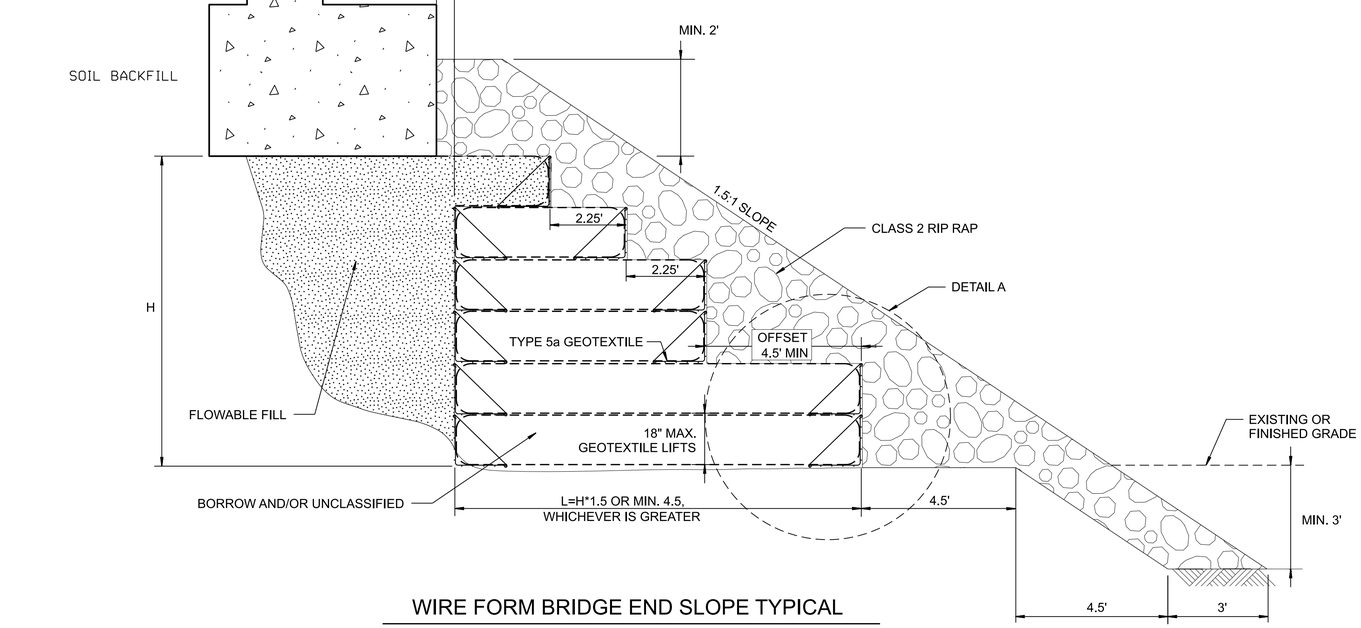
(100% COVERAGE MIN FOR GEOTEXTILE REINFORCEMENT)



WIRE BASKET FORMS



DETAIL A



WIRE FORM BRIDGE END SLOPE TYPICAL

NOTES

1) SEE STRUCTURE DRAWINGS FOR WIRE FORM BRIDGE END SLOPE STABILIZATION LIMITS.
2) CONSTRUCT WIRE FORM BRIDGE END SLOPE IN ACCORDANCE WITH THIS DETAIL AND WIRE FORM BRIDGE END SLOPE SPECIAL PROVISION.
3) AT THE CONTRACTORS OPTION, ELIMINATE THE TOP WIRE FORM AND REPLACE WITH TRADITIONAL CONCRETE FORM WORK.
4) PLACE UNCLASSIFIED MATERIAL AND/OR BORROW IN ACCORDANCE WITH SPECIAL PROVISION.
5) LOCAL MATERIAL MAY BE EXTRACTED FROM THE STREAM AND SUBSTITUTED FOR BORROW USED TO FILL THE WIRE FORM BASKETS WITH APPROVAL BY THE ENGINEER. THIS MATERIAL WILL BE CONSIDERED UNCLASSIFIED MATERIAL (ROCK/STREAM MATERIAL FROM RIVER) AND WILL BE PAID FOR AS BORROW.
6) FULLY ENCAPSULATE LIFT WITH TYPE 5a GEOTEXTILE WITH MINIMUM 18" OVERLAP. MACHINE DIRECTION (MD) OVERLAP NOT TO BE LOCATED WHERE EXPOSED TO CLASS 2 RIP RAP.
7) CONSTRUCT GEOTEXTILE WIRE BASKET SLOPE FIRST AND PLACE FLOWABLE FILL BEFORE PLACEMENT OF CLASS II RIP RAP.
8) SEE STRUCTURE PLANS FOR RIP RAP PLACEMENT AND PAYMENT.

PREPARED BY: MHS	DATE: 11/25
REVIEWED BY: ENW	DATE: 11/25

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

WIRE FORM BRIDGE END SLOPE DETAIL BRIDGE NOS. 79 AND 83 MCDOWELL COUNTY

REVISIONS

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

TOTAL BILL OF MATERIAL

BRIDGE	MOBILIZATION	CONSTRUCTION, MAINTENANCE, AND REMOVAL OF TEMPORARY STRUCTURE AT BR#__	SITE GRADING FOR CHANNEL RESTORATION AT BR#__	REMOVAL OF EXISTING ASPHALT PAVEMENT	ASPHALT CONC. SURFACE COURSE TYPE S9.5B	ASPHALT CONC. BASE COURSE TYPE B25.0C	ASPHALT BINDER FOR PLANT MIX	7' U-CHANNEL POST	POST MOUNTED DELINEATORS (YELLOW)	REMOVE AND RESET EXISTING GUARDRAIL
	LUMP SUM	LUMP SUM	LUMP SUM	SQ. YDS.	TONS	TONS	TONS	EACH	EACH	LIN. FT.
580023					7.3	10.0	1.0	2	2	
580079		LUMP SUM	LUMP SUM	43	7.0	9.6	1.0			70
580083		LUMP SUM	LUMP SUM	50	8.3	11.4	1.1			170
TOTAL	LUMP SUM			93	22.6	31.0	3.1	2	2	240

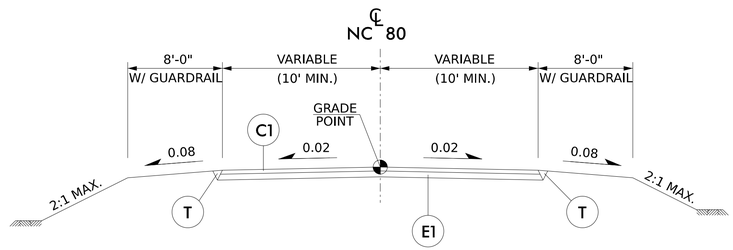
TOTAL BILL OF MATERIAL

BRIDGE	CLASS A CONCRETE	RIP RAP, CLASS II	GEOTEXTILE FOR DRAINAGE	WIRE BASKET FORMS	GEOTEXTILE FOR WIRE FORM BRIDGE END SLOPE, TYPE 5a	BORROW ①	FLOWABLE FILL	CONCRETE REPAIRS	APPROACH FILL, REMOVE AND REPLACE AT BR#___	SPECIAL STILLING BASIN	IMPERVIOUS DIKE	FLOATING TURBIDITY CURTAIN
	CU. YDS.	TONS	SQ. YDS.	LIN. FT.	SQ. YDS.	CU. YDS.	CU. YDS.	CU. FT.	LUMP SUM	EA	LF	SY
580023	13.6	223	85							1	60	43
580079		340		917	860	165	39	4.0	LUMP SUM	1	125	
580083		535	202	948	1,065	231	52		LUMP SUM	1	105	
TOTAL	13.6	1,098	287	1,865	1,925	396	91	4.0		3	290	43

① UNCLASSIFIED MATERIAL (ROCK/STREAM MTL. FROM RIVER) MAY BE SUBSTITUTED FOR BORROW USED TO FILL THE WIRE FORM BASKETS WITH THE APPROVAL OF THE ENGINEER. THERE WILL BE NO SEPARATE PAYMENT FOR UNCLASSIFIED MATERIAL (ROCK/STREAM MATERIAL FROM RIVER) AS IT WILL BE CONSIDERED AS BORROW.

TOTAL BILL OF MATERIAL

BRIDGE	WORK ZONE SIGNS (STATIONARY)	WORK ZONE SIGNS (PORTABLE)	TEMPORARY PORTABLE TRAFFIC SIGNAL SYSTEM	DRUMS	FLAGGER	COLD APPLIED PLASTIC PAVEMENT PARKING LINES, TYPE IV (24")	PAINT PAVEMENT PARKING LINES (4")	INLAID RAISED PAVEMENT MARKERS
	SQ. FT.	SQ. FT.	EA	EA	DAY	LIN. FT.	LIN. FT.	EA
580023								
580079	234	96	1	40	10	100	400	6
580083	234	96	1	40	10	100	400	6
TOTAL	468	192	2	80	20	200	800	12



ROADWAY TYPICAL SECTION

PAVEMENT SCHEDULE	
C1	3" S9.5B
E1	4" B25.0C
T_	EARTH MATERIAL

18313.1059049.PR
18313.1059054.PR
PROJECT NO. **18313.1059060.PR**

MCDOWELL COUNTY

BRIDGE NO. **580023, 580079 & 580083**

DocuSigned by: Lawrence H. Green 480870899B0D4E8...
NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H. GREEN
TRAFFIC CONTROL
11/12/2025

DocuSigned by: John T. Diffee III F9B317F870FC468...
NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III
STRUCTURAL
11/12/2025

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TOTAL BILL OF MATERIAL & ROADWAY TYPICAL SECTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	4
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

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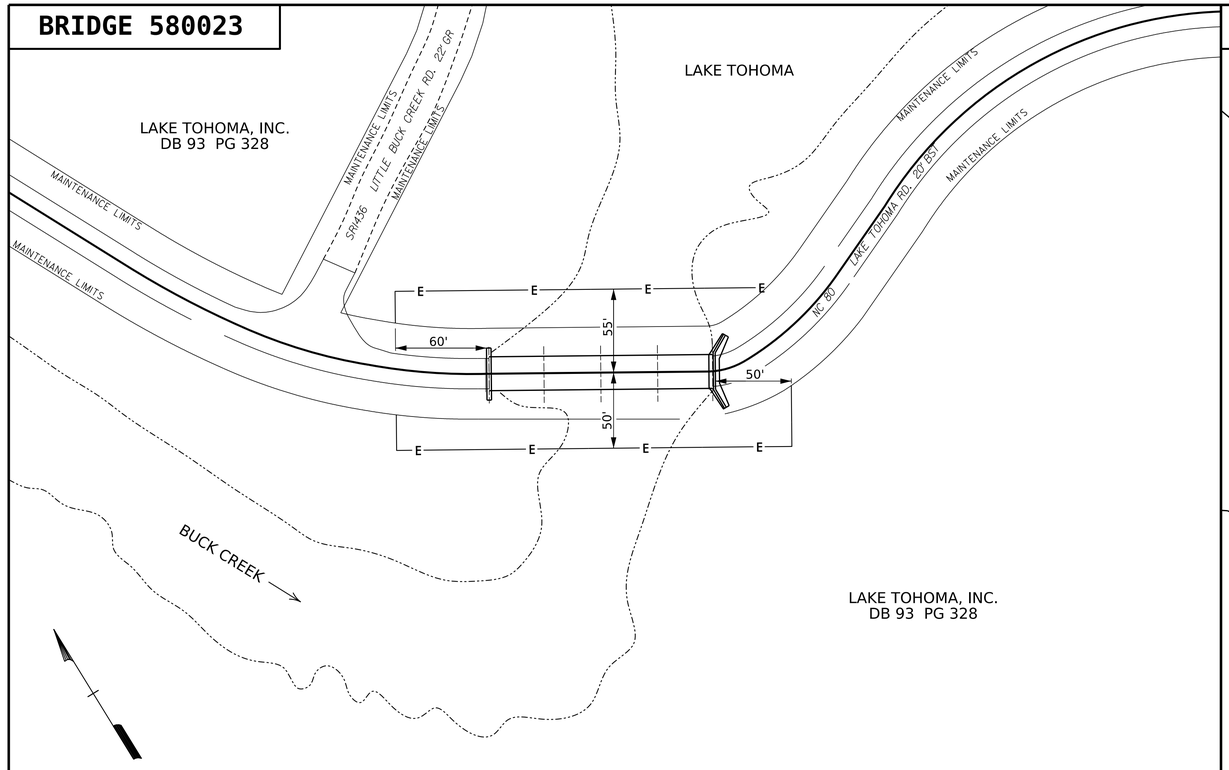
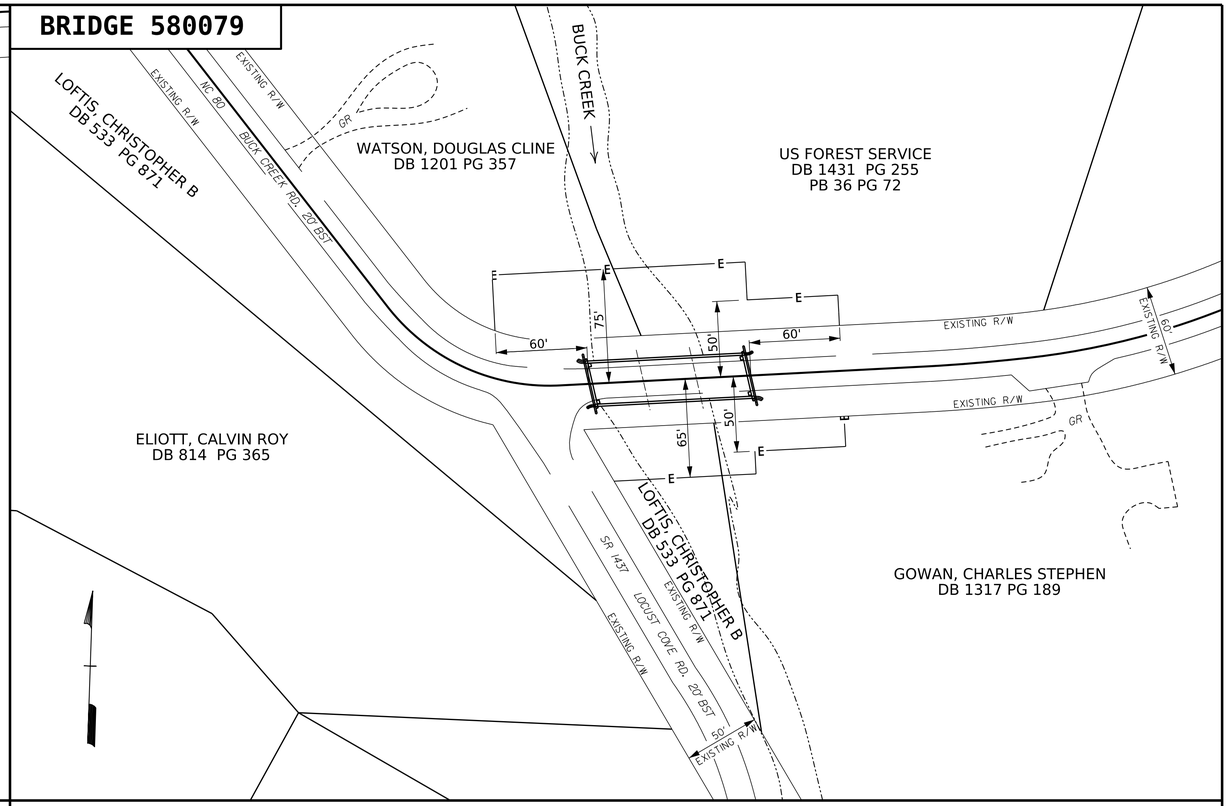
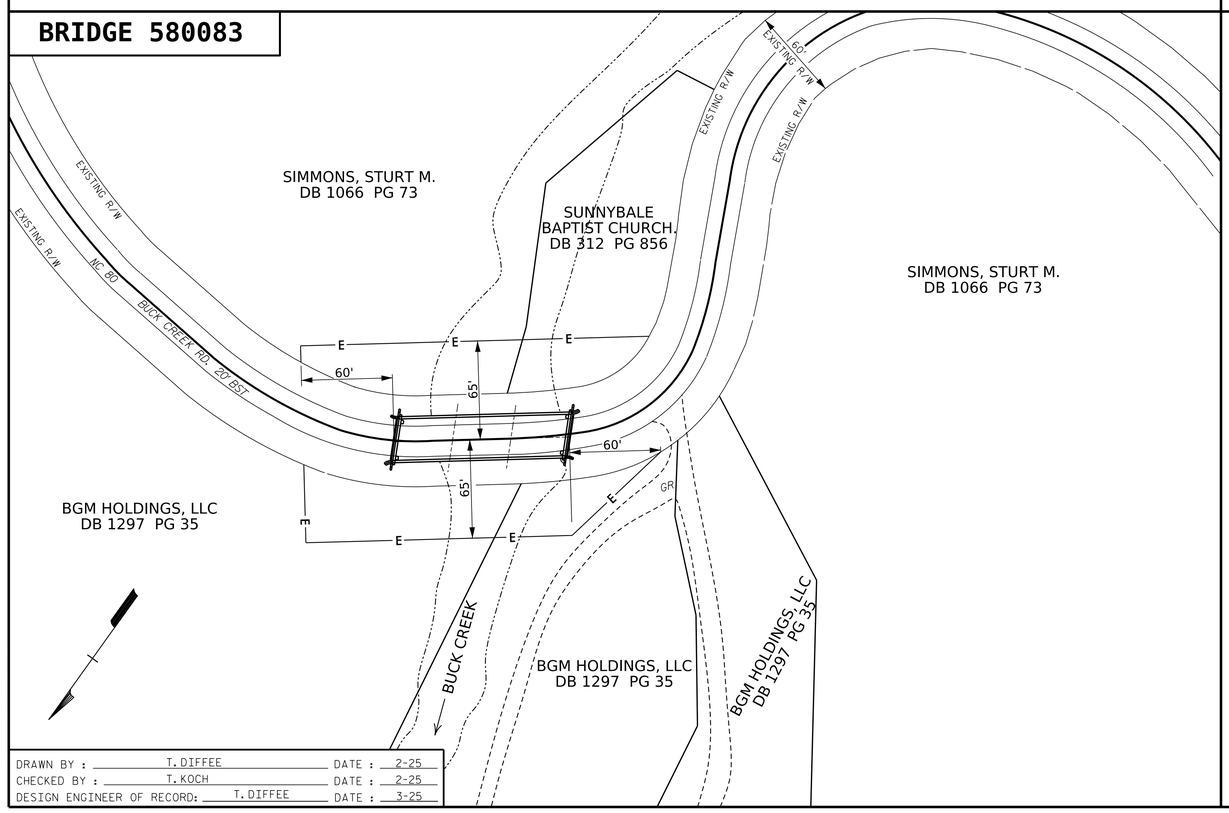
BRIDGE 580023



BRIDGE 580079



BRIDGE 580083



DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

NOTES:

INFORMATION SHOWN WAS NOT DERIVED FROM SURVEY DATA.

PROPERTY LINES AS SHOWN ARE BASED ON MCDOWELL 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.

PROPOSED CONSTRUCTION EASEMENTS ARE REFERENCED FROM FILL FACE OF END BENTS/ABUTMENTS AND FROM CENTERLINE OF BRIDGE.

PROJECT NO. 18313.1059049.PR
18313.1059054.PR
18313.1059060.PR

MCDOWELL COUNTY

BRIDGE NO. 580023, 580079 & 580083

DocuSigned by: John T. Diffee III
F0B317F87D1D4B0...

STATE OF NORTH CAROLINA
PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

CONSTRUCTION EASEMENTS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	5
1			3			TOTAL SHEETS
2			4			32

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

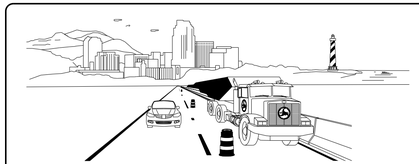
TRANSPORTATION MANAGEMENT PLAN

McDOWELL COUNTY

INDEX OF SHEETS

SHEET NO.
TMP-01

TIP PROJECT: 18I3.1059049.PR, 18I3.1059054.PR, 18I3.1059060.PR



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

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

BRIDGE #580023
BRIDGE #580079
BRIDGE #580083

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

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPROVED: DocuSigned by: Lawrence H. Green 4B0870889B8D480...

DATE: 11/5/2025

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H. GREEN

11/4/2025
11:24:25 AM
User:AHayes

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PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.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:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1130.01	DRUMS
1135.01	CONES
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

DIRECTION OF TRAFFIC FLOW

EXIST. PVMT.

NORTH ARROW

WORK AREA

TRAFFIC CONTROL DEVICES

DRUM

SIGNALS

PORTABLE

PAVEMENT MARKINGS

EXISTING LINES

TEMPORARY LINES

TEMPORARY PAVEMENT MARKING

TAG	DESCRIPTION	PAY ITEM
C61	WHITE STOPBAR	COLD APPLIED (TYPE IV)

BRIDGE #580023

BRIDGE #580079

BRIDGE #580083

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

APPROVED: DocuSigned by: Lawrence H. Green 480870B89B6D488...

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H GREEN

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

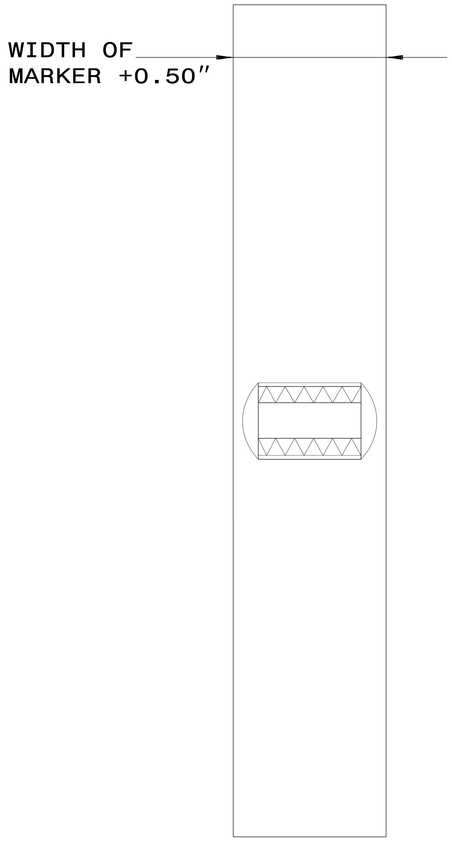
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND

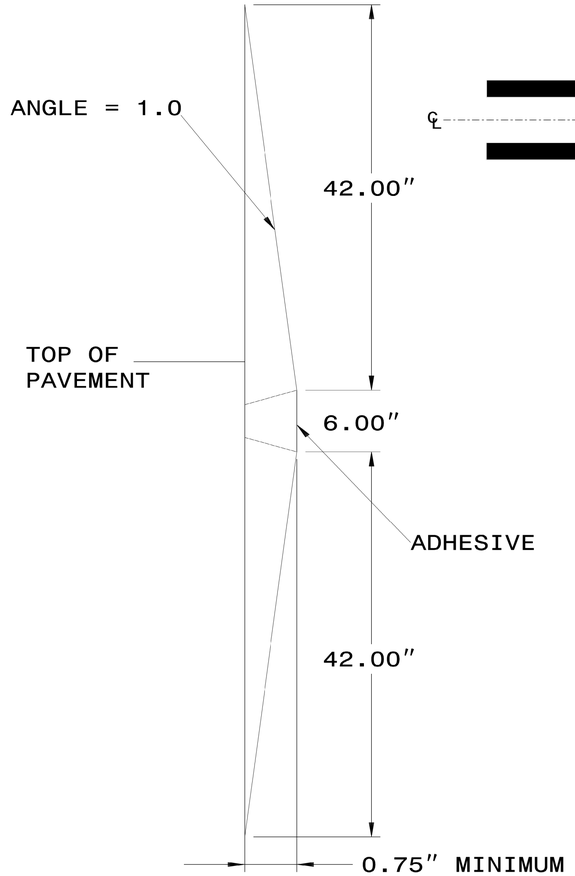
PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-01B

PROJECT REFERENCE NO.	SHEET NO.

PLAN VIEW



SECTION VIEW



MARKER SPACING

NORTH CAROLINA PROFESSIONAL SEAL 042546 ENGINEER MATTHEW V. SPRINGER

NOTES:

1. THE PAVEMENT SHALL BE SAW CUT TO THE DIMENSIONS SHOWN.
2. THE SAW CUT AREA MUST BE DRY AND FREE OF DUST. DIRT OR ANY MATERIAL WHICH WILL ADVERSELY AFFECT THE BOND OF THE ADHESIVE.
3. INSTALL MARKERS WITH APPROVED ADHESIVE. ADHESIVE SHOULD NOT BE ALLOWED TO BUILD UP IN FRONT OF MARKER LENS.
4. THE MARKER AND THE ADHESIVE PAD SHALL NOT EXCEED THE TOP OF THE PAVEMENT SURFACE. DEPTH = 0.75″ MINIMUM.
5. RECESSED MARKERS INSTALLED ON CONCRETE PAVEMENT SHOULD BE INSTALLED A MINIMUM OF 2″ FROM THE PAVEMENT JOINT OR EDGE

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

DETAIL OF INLAID RAISED PAVEMENT MARKER

ORIGINAL BY: rgwatson DATE: 02-06-2024
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

BRIDGE #580023

BRIDGE #580079

BRIDGE #580083

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

APPROVED: DocuSigned by: Lawrence H. Green 4008706B9B0B480...

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H GREEN

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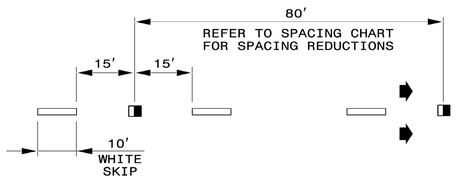
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

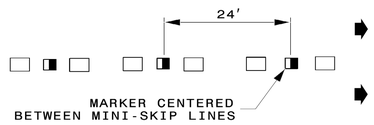
PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-01C

PROJECT REFERENCE NO.	SHEET NO.

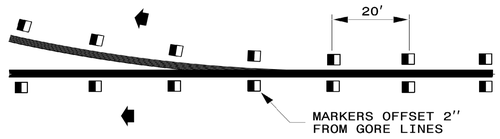
10′-30′/SP SKIP LINE



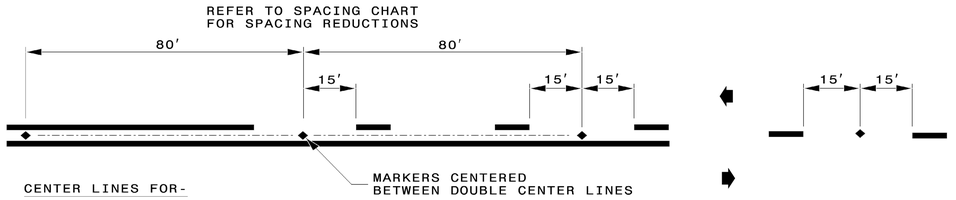
3′-9′/SP MINI-SKIP LINE



GORE LINES



YELLOW CENTER LINES

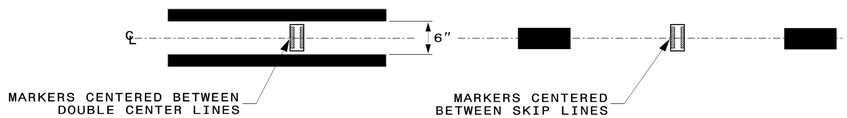


CENTER LINES FOR-

TWO-LANE, TWO-WAY ROADWAYS
UNDIVIDED ROADWAYS
TWO-WAY LEFT TURN LANES

DETAIL OF PAVEMENT MARKER PLACEMENT

RAISED REFLECTIVE PAVEMENT MARKERS



LEGEND

- CRYSTAL/RED PAVEMENT MARKER
- YELLOW/YELLOW PAVEMENT MARKER
- DIRECTION OF TRAFFIC FLOW

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

ROADWAY DETAIL DRAWING FOR

RAISED PAVEMENT MARKERS

INSTALLATION SPACING

SHEET 2 OF 3

1250D01

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042546 MATTHEW V SPRINGER

CONTRACTS STANDARDS AND DEVELOPMENT UNIT
Office 919-707-8950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: M.V. SPRINGER DATE: 2-15-24
MODIFIED BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____
FILE SPEC.: _____

BRIDGE #580023

BRIDGE #580079

BRIDGE #580083

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

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

APPROVED: DocuSigned by: Lawrence H. Green 480870869B6248B

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL ENGINEER LAWRENCE H GREEN SEAL 028137

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-02

GENERAL NOTES

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

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

TIME RESTRICTIONS

A) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
1. ALL ROADS	6:00 A.M. - 9:00 A.M. 3:00 P.M. - 6:00 P.M. SUNDAY - SATURDAY	TEMPORARY BRIDGE INSTALLATION, 20 MINUTES PAVEMENT INSTALLATION UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE, 30 MINUTES

LANE AND SHOULDER CLOSURE REQUIREMENTS

B) 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.

C) 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.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 5 FT OF AN OPEN TRAVEL LANE ON AN UNDIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) 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.

F) 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.

G) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON NC 80.

PAVEMENT EDGE DROP OFF REQUIREMENTS

H) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

I) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) X FT/MI IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) 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.

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.

PAVEMENT MARKINGS AND MARKERS

N) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. ALL ROADS	COLD APPLIED (TYPE IV)	NONE

O) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

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

PHASING

NOTE: THE CONTRACTOR SHALL COMPLETE CONSTRUCTION OPERATIONS ON THE FOLLOWING BRIDGES IN THE CONSECUTIVE SEQUENCE:
580023
580079
580083

STEP 1) USING ROADWAY STANDARD DRAWING (RSD) 1101.01, INSTALL ALL ADVANCE WARNING SIGNING. IF WORK IS NOT BEGUN WITHIN 3 DAYS OF INSTALLATION, REMOVE OR COVER SIGNS USING AN APPROVED METHOD PER THE DISCRETION OF THE ENGINEER. USING RSD 1101.02, INSTALL ALL LANE CLOSURE SIGNING AND COVER, AND FOR BRIDGES 580079 AND 580083,INSTALL PORTABLE SIGNALS.

STEP 2) UNCOVER THE ADVANCE WARNING SIGNS IF NEEDED. USING RSD 1101.02, CLOSE THE NORTHBOUND LANE OF BRIDGE 580023 AND COMPLETE ALL COSTRUCTION OPERATIONS. THEN REOPEN THE NORTHBOUND LANE TO TRAFFIC, CLOSE THE SOUTHBOUND LANE, COMPLETE THE CONSTRUCTION OPERATIONS, AND REOPEN THE SOUTHBOUND LANE.

STEP 3) FOR BRIDGES 580079 AND 580083, UNCOVER THE ADVANCE WARNING SIGNS IF NEEDED. STOPPING TRAFFIC INSTALL TEMPORARY BRIDGE STRUCTURE ON THE SOUTHBOUND LANE OF NC 80, UNCOVER LANE CLOSURE SIGNING, ACTIVATE PORTABLE SIGNALS, AND PLACE TRAFFIC INTO A ONE LANE TWO WAY PATTERN ON THE SOUTHBOUND LANE. THEN AWAY FROM TRAFFIC, PERFORM CONSTRUCTION OPERATIONS IN THE NORTHBOUND LANE. [SEE SHEET TMP-04]

STEP 4) UPON COMPLETION OF CONSTRUCTION OPERATIONS IN THE NORTHBOUND LANE, STOP TRAFFIC AND RESET TEMPORARY BRIDGE STRUCTURE ONTO THE NORTHBOUND LANE, RESET CHANNELIZING DEVICES, AND PLACE TRAFFIC INTO A ONE LANE, TWO WAY PATTERN IN THE NORTHBOUND LANE. THEN AWAY FROM TRAFFIC, PERFORM CONSTRUCTION OPERATIONS IN THE SOUTHBOUND LANE.

STEP 5) UPON COMPLETION OF CONSTRUCTION OPERATIONS IN THE SOUTHBOUND LANE, STOP TRAFFIC, REMOVE TEMPORARY BRIDGE STRUCTURE, AND INSTALL PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LIFT OF SURFACE COURSE. UPON COMPLETION OF PAVEMENT INSTALLATION, RETURN TRAFFIC TO THE ONE LANE, TWO WAY PATTERN.

STEP 6) USING SHEETS TMP-04 & 05, INSTALL THE FINAL LIFT OF SURFACE COURSE AND FINAL PAVEMENT MARKINGS.

STEP 7) OPEN ALL ROADS TO THE EXISTING TRAFFIC PATTERN, REMOVE ALL ADVANCE CLOSURE SIGNING, LANE CLOSURE SIGNING, AND TEMPORARY TRANSPORATION MANAGEMENT DEVICES. REPEAT STEPS 1, AND 3 THRU 6 FOR THE NEXT BRIDGE STRUCTURE UNTIL ALL STRUCTURES HAVE BEEN REPAIRED.

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)
ONE-LANE, TWO WAY OPERATION (SIGNALIZED)

BRIDGE #580023
BRIDGE #580079
BRIDGE #580083

WETHERILL ENGINEERING
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Fax: 919 851 8107
TRANSPORTATION PLANNING/DESIGN - BRIDGE/STRUCTURE DESIGN
CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Lawrence H. Green 480670889880488
DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H GREEN

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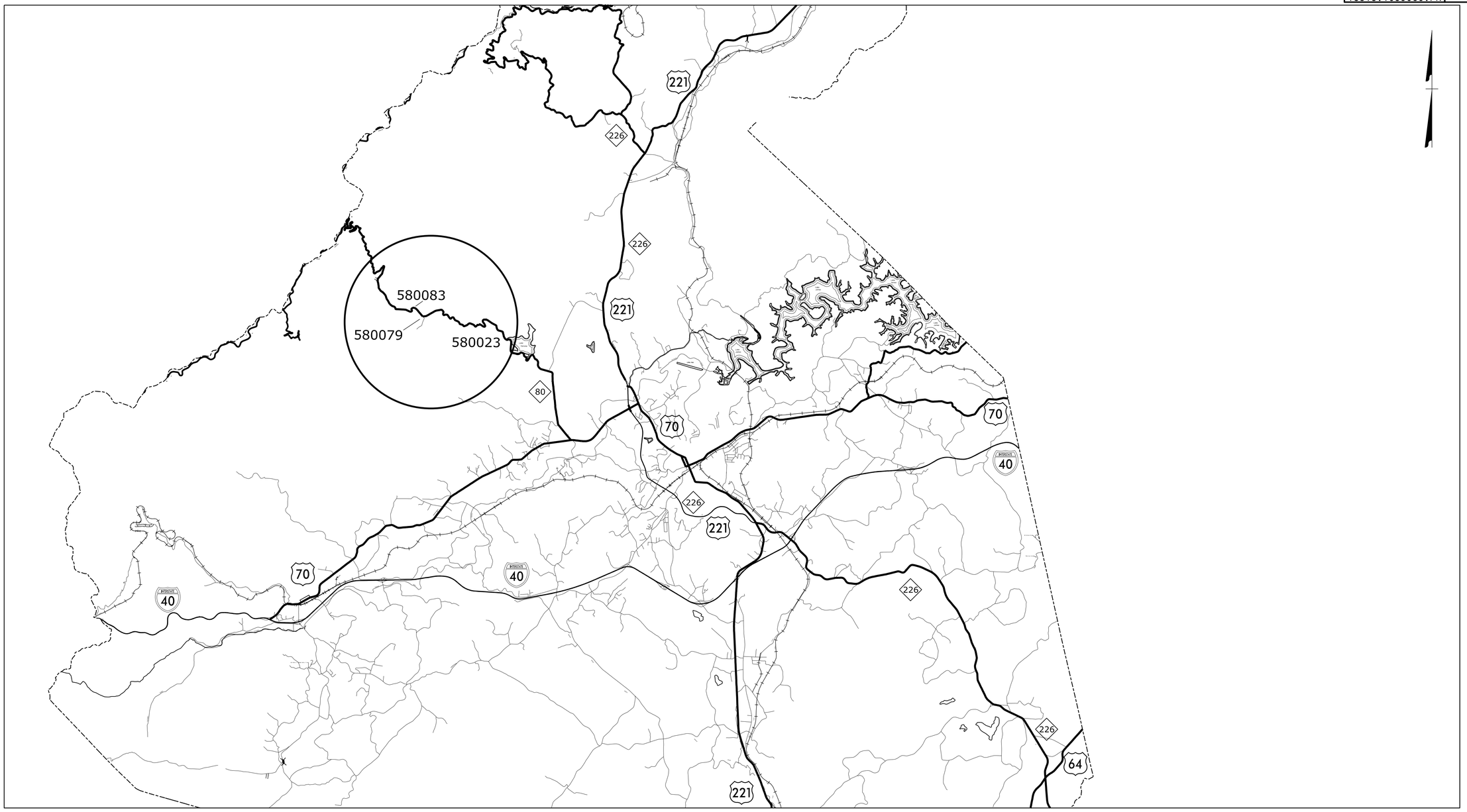
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

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

PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-03



BRIDGE #580023

BRIDGE #580079

BRIDGE #580083

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APPROVED: DocuSigned by: Lawrence H. Green 4B0870B8B8D44B...

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL SEAL 028137 ENGINEER LAWRENCE H. GREEN

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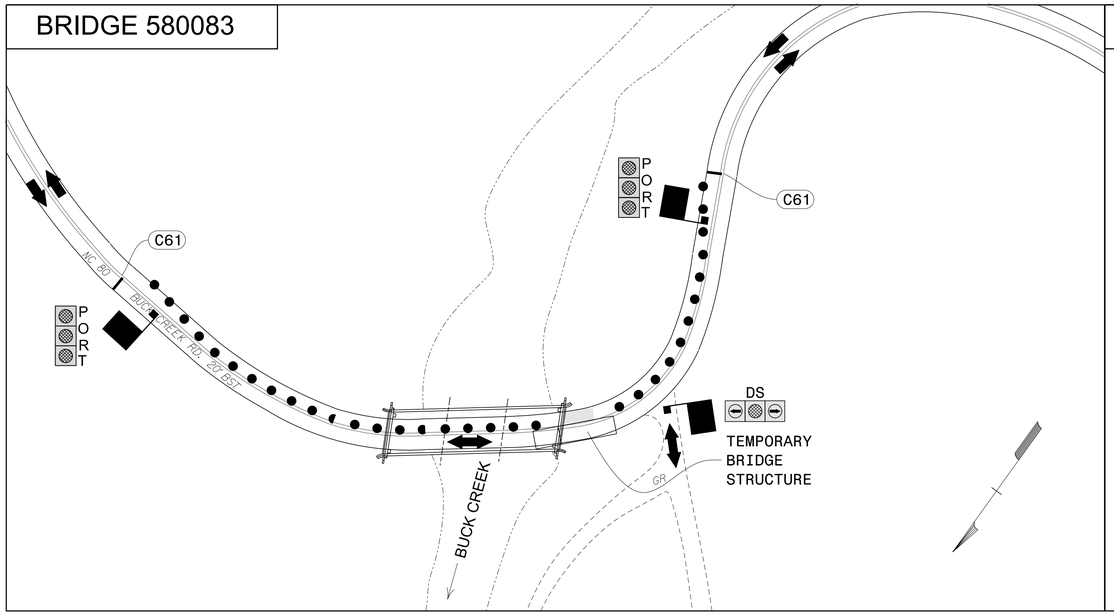
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

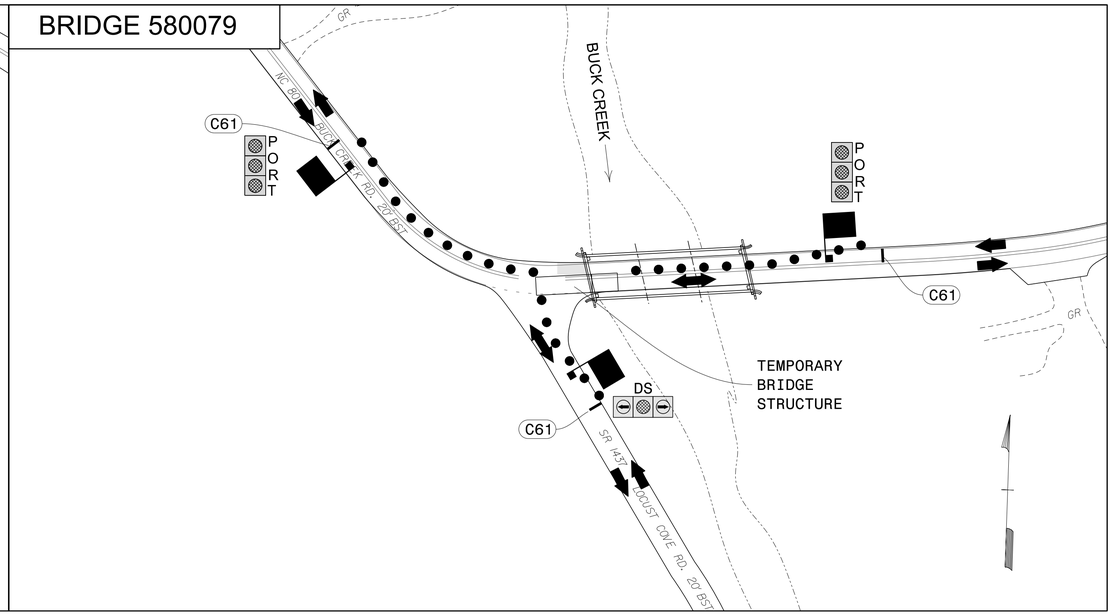
AREA OVERVIEW

PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-04

BRIDGE 580083



BRIDGE 580079



NOTES:
1) REFER TO RSD 1101.02, SHEET 17 OF 19 FOR SIGN AND DEVICE PLACEMENT, AND GENERAL NOTES.

BRIDGE #580079

BRIDGE #580083

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Lawrence H. Green 480870898B0D48B...

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL ENGINEER LAWRENCE H. GREEN SEAL 028137

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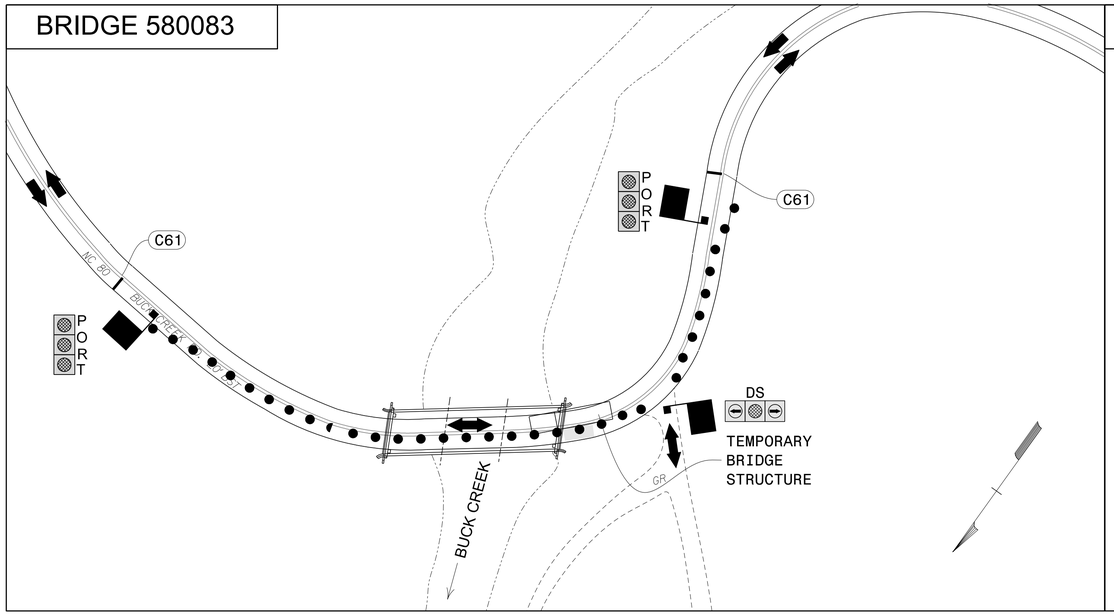
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

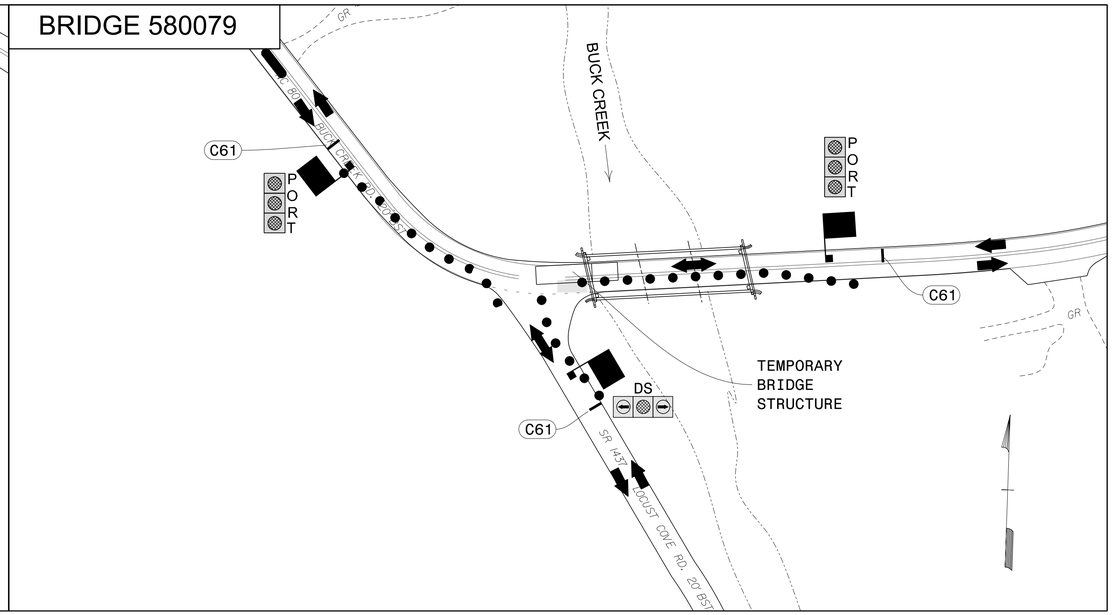
PHASE DETAIL FOR
NORTHBOUND CONSTRUCTION

PROJ. REFERENCE NO.	SHEET NO.
18313.1059049.PR 18313.1059054.PR 18313.1059060.PR	TMP-05

BRIDGE 580083



BRIDGE 580079



NOTES:
1) REFER TO RSD 1101.02, SHEET 17 OF 19 FOR SIGN AND DEVICE PLACEMENT, AND GENERAL NOTES.

BRIDGE #580079

BRIDGE #580083

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CIVIL/SITE DESIGN - GIS/GPS - CONSTRUCTION OBSERVATION

APPROVED: DocuSigned by: Lawrence H. Green 450870B59B8D4B8...

DATE: 11/5/2025

NORTH CAROLINA PROFESSIONAL ENGINEER LAWRENCE H. GREEN SEAL 028137

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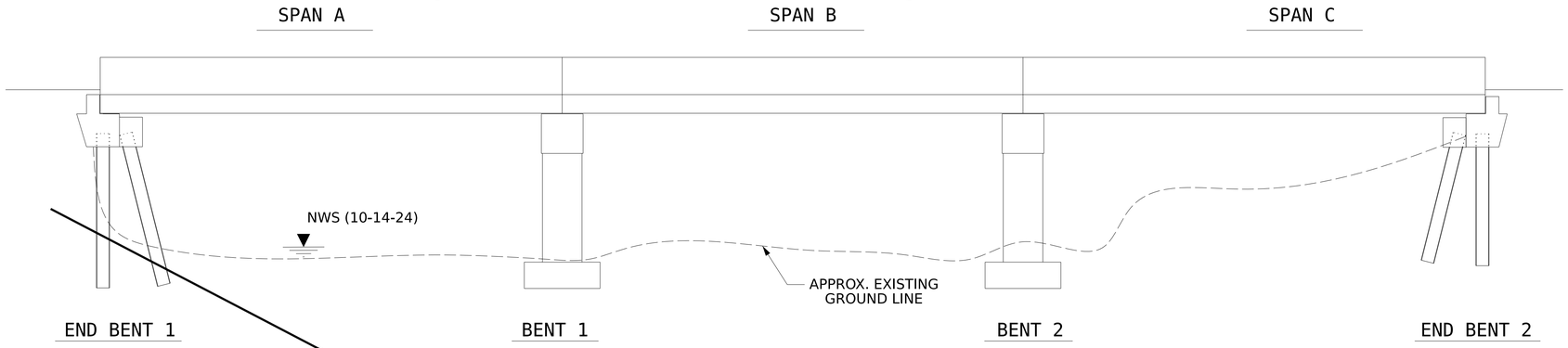
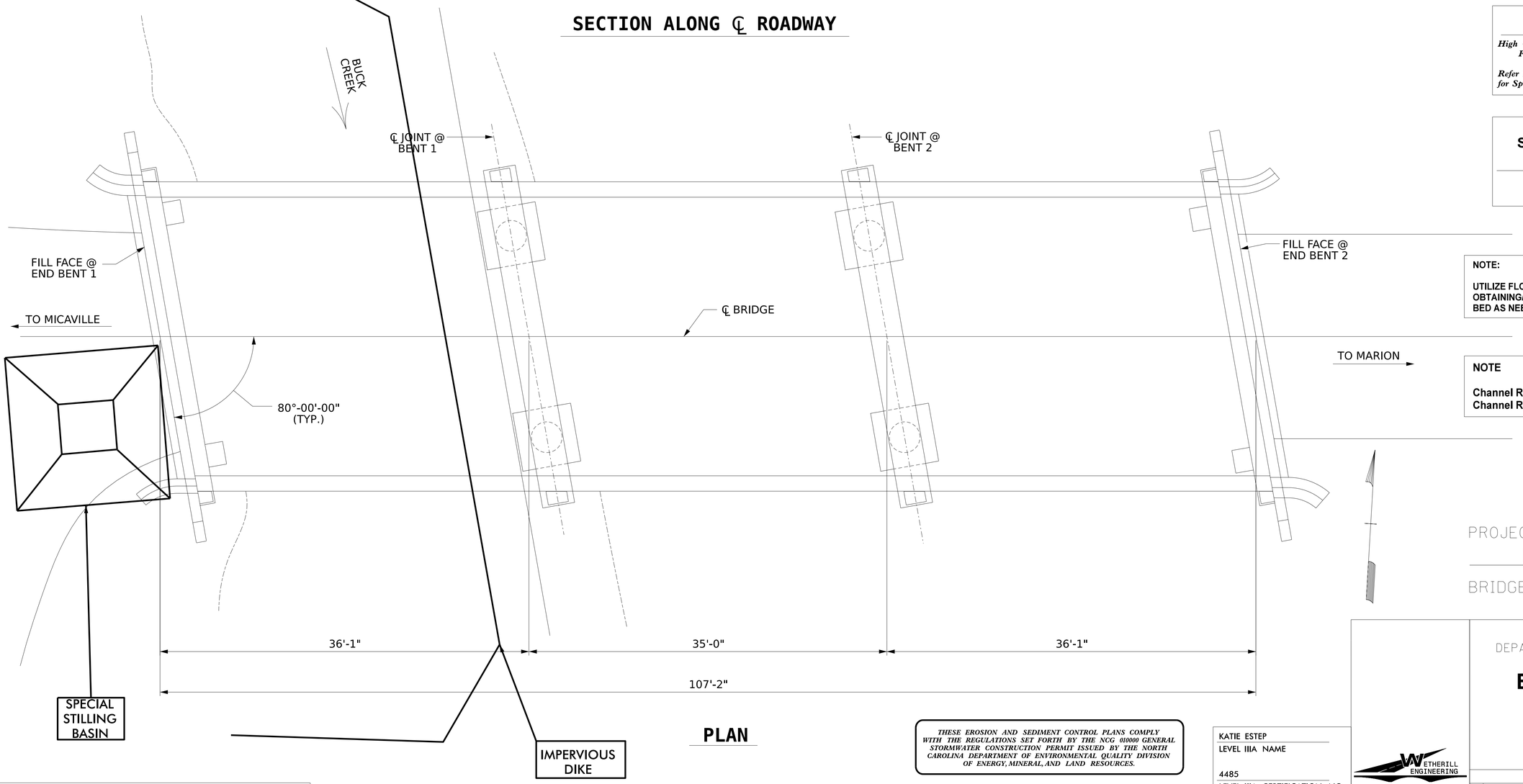
DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PHASE DETAIL FOR
SOUTHBOUND CONSTRUCTION

EROSION CONTROL PLAN



SECTION ALONG ℄ ROADWAY



PLAN

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

2024 STANDARD SPECIFICATIONS

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 is applicable to this project and by reference hereby are considered a part of these plans.

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. BEGIN
to Sta. END
Refer To E. C. Special Provisions for Special Considerations.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

NOTE:

UTILIZE FLOATING TURBIDITY CURTAIN FOR OBTAINING/EXCAVATING BED MATERIAL FROM STREAM BED AS NEEDED

NOTE

Channel Restoration required. For Site Grading for Channel Restoration, see Specal Provisions.

PROJECT NO. **18313.1059049.PR**

MCDOWELL COUNTY

BRIDGE NO. 580079

$TIME$
$FILE$
$DATE$

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: _____ DATE : _____

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.

KATIE ESTEP
LEVEL IIIA NAME

4485
LEVEL IIIA CERTIFICATION NO.

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EROSION CONTROL

FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-1
1			3			TOTAL SHEETS
2			4			30

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.

FLOATING TURBIDITY CURTAIN:

Description

This work consists of the installation of a Floating Turbidity Curtain to deter silt suspension and movement of silt particles during construction. The floating turbidity curtain shall be constructed at locations as directed.

Materials

The curtain material shall be made of a tightly woven nylon, plastic or other non–deteriorating material meeting the following specifications:

Property	Value
Grab tensile strength	*md–370 lbs *cd–250 lbs
Mullen burst stength	480 psi
Trapezoid tear strength	*md–100 lbs *cd–60 lbs
Apparent opening size	70 US standard sieve
Percent open area	4% permittivity 0.28 sec–1

*md – machine direction
*cd – cross machine direction

In the event that more than one width of fabric is required, a 6" overlap of the material shall also be required.

The curtain material shall be supported by a flotation material having over 29 lbs/ft buoyancy. The floating curtain shall have a 5/16" galvanized chain as ballast and dual 5/16" galvanized wire ropes with a heavy vinyl coating as load lines.

Construction Methods

The Contractor shall maintain the Floating Turbidity Curtain in a satisfactory condition until its removal is requested by the Engineer.

Environmentally Sensitive Areas:

This project is located in an "Environmentally Sensitive Area." This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the area identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200–1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Areas", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108–7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107–13(b) of the Standard Specifications.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "Environmentally Sensitive Areas" as indicated on the erosion control plans.

Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

High Quality Waters:

BUCK CREEK has been identified as high quality water. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the "Environmentally Sensitive Areas" identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200–1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Areas", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108–7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107–13(b) of the Standard Specifications.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "Environmentally Sensitive Areas" as indicated on the erosion control plans.

Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet in height or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

PROJECT NO. 18313.1059049.PR

MCDOWELL COUNTY

BRIDGE NO. 580079

$TIME$
$FILE$
$DATE$

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: _____ DATE : _____

KATIE ESTEP
LEVEL IIIA NAME

4485
LEVEL IIIA CERTIFICATION NO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

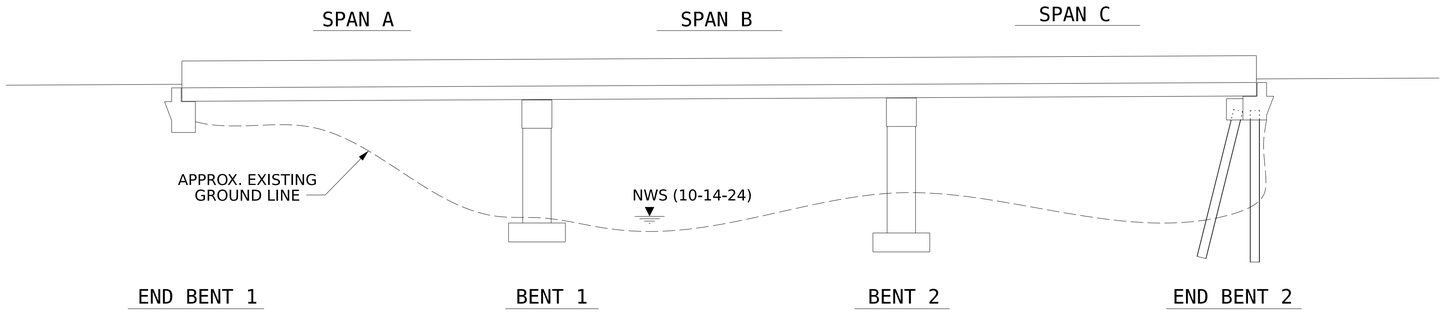
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EROSION CONTROL

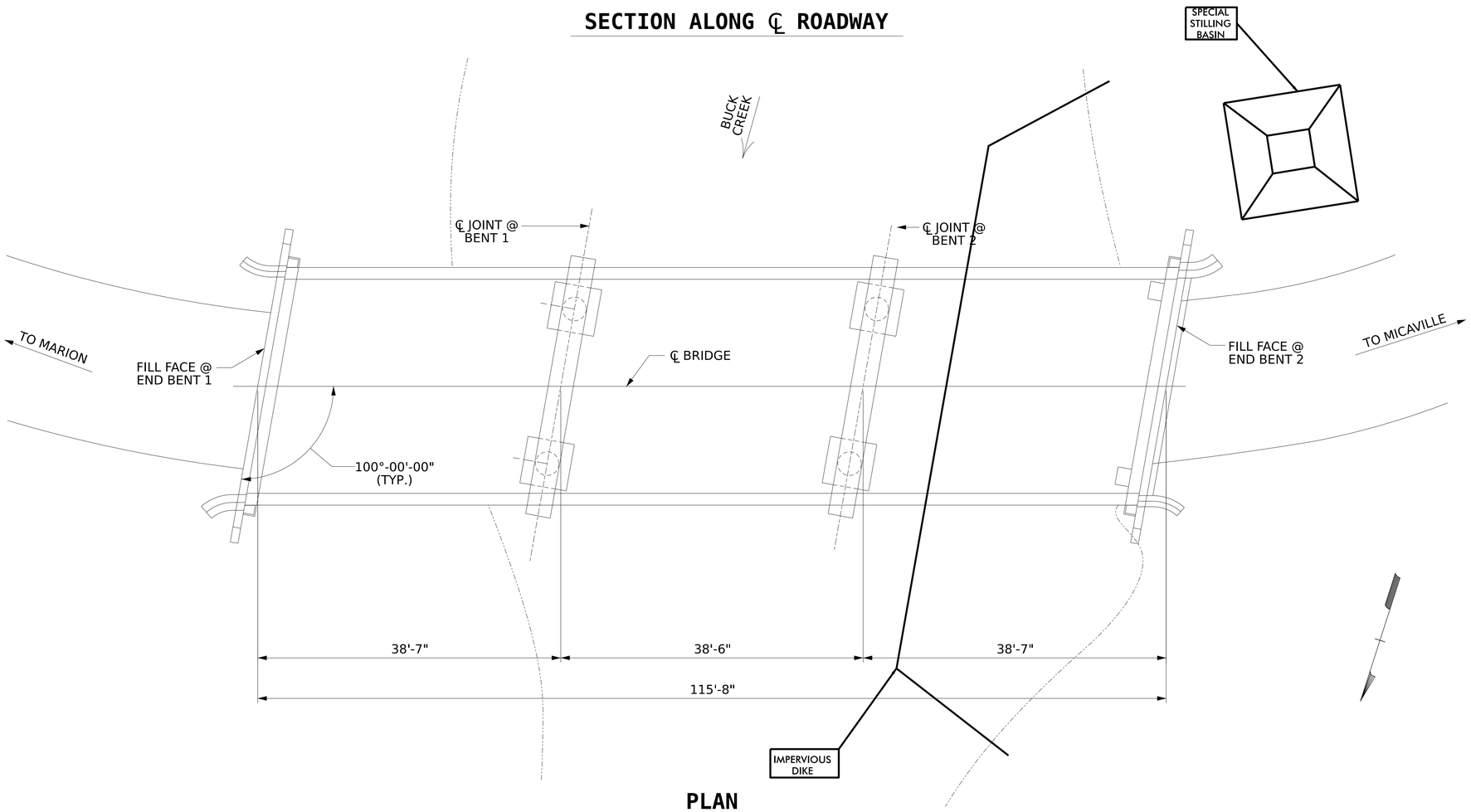
FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-2
1			3			TOTAL SHEETS
2			4			30

EROSION CONTROL PLAN



SECTION ALONG ℄ ROADWAY



PLAN

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

2024 STANDARD SPECIFICATIONS

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.

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. BEGIN
to Sta. END
Refer To E. C. Special Provisions for Special Considerations.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

NOTE:

UTILIZE FLOATING TURBIDITY CURTAIN FOR OBTAINING/EXCAVATING BED MATERIAL FROM STREAM BED AS NEEDED

NOTE

Channel Restoration required. For Site Grading for Channel Restoration, see Specal Provisions.

PROJECT NO. **18313.1059054.PR**

MCDOWELL COUNTY

BRIDGE NO. 580083

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.

KATIE ESTEP
LEVEL IIIA NAME

4485
LEVEL IIIA CERTIFICATION NO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EROSION CONTROL

FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-3
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

$TIME$
$FILE$
$DATE$

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.

FLOATING TURBIDITY CURTAIN:

Description

This work consists of the installation of a Floating Turbidity Curtain to deter silt suspension and movement of silt particles during construction. The floating turbidity curtain shall be constructed at locations as directed.

Materials

The curtain material shall be made of a tightly woven nylon, plastic or other non–deteriorating material meeting the following specifications:

Property	Value
Grab tensile strength	*md–370 lbs *cd–250 lbs
Mullen burst stength	480 psi
Trapezoid tear strength	*md–100 lbs *cd–60 lbs
Apparent opening size	70 US standard sieve
Percent open area	4% permittivity 0.28 sec–1

*md – machine direction
*cd – cross machine direction

In the event that more than one width of fabric is required, a 6" overlap of the material shall also be required.

The curtain material shall be supported by a flotation material having over 29 lbs/ft buoyancy. The floating curtain shall have a 5/16" galvanized chain as ballast and dual 5/16" galvanized wire ropes with a heavy vinyl coating as load lines.

Construction Methods

The Contractor shall maintain the Floating Turbidity Curtain in a satisfactory condition until its removal is requested by the Engineer.

Environmentally Sensitive Areas:

This project is located in an "Environmentally Sensitive Area." This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the area identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

Clearing and Grubbing:

In areas identified on the erosion control plans as "Environmentally Sensitive Areas", the Contractor may perform clearing operations, but not grubbing operations until immediately prior to beginning grading operations as described in Section 200, Article 200–1, in the Standard Specifications. The "Environmentally Sensitive Area" shall be defined as a 50 foot buffer zone on both sides of the stream (or depression), measured from top of streambank, (or center of depression). Only clearing operations (not grubbing) shall be allowed in this buffer zone until immediately prior to beginning grading operations. Erosion control devices shall be installed immediately following the clearing operation.

Grading:

Once grading operations begin in identified "Environmentally Sensitive Areas", work will progress in a continuous manner until complete. All construction within these areas must progress in a continuous manner such that each phase is complete and areas permanently stabilized prior to beginning of next phase. Failure on the part of the Contractor to complete any phase of construction in a continuous manner in "Environmentally Sensitive Areas" as specified will be just cause for the Engineer to direct the suspension of work in accordance with Section 108–7 of the Standard Specifications.

Temporary Stream Crossings:

Any crossing of streams within the limits of this project must be accomplished in accordance with Section 107–13(b) of the Standard Specifications.

Seeding and Mulching:

Seeding and mulching shall be performed in accordance with Section 1660 of the Standard Specifications and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Seeding and mulching shall be performed on the areas disturbed by construction immediately following final grade establishment. No appreciable time shall lapse into the contract time without stabilization of slopes, ditches and other areas within the "Environmentally Sensitive Areas" as indicated on the erosion control plans.

Stage Seeding:

The work covered by this section shall consist of the establishment of a vegetative cover on cut and fill slopes as grading progresses. Seeding and mulching shall be done in stages on cut and fill slopes which are greater than 20 feet in height measured along the slope, or greater than 2 acres in area. Each stage shall not exceed the limits stated above.

High Quality Waters:

BUCK CREEK has been identified as high quality water. This designation requires special procedures to be used for clearing and grubbing, temporary stream crossings, and grading operations within the "Environmentally Sensitive Areas" identified on the plans. This also requires special procedures to be used for seeding and mulching and staged seeding within the project.

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PROJECT NO. 18313.1059054.PR

MCDOWELL COUNTY

BRIDGE NO. 580083

$TIME$
$FILE$
$DATE$

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EROSION CONTROL

FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-4
1			3			TOTAL SHEETS
2			4			30

EROSION CONTROL PLAN

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

2024 STANDARD SPECIFICATIONS

NOTE

Channel Restoration required. For Site Grading for Channel Restoration, see Specal Provisions.

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.

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

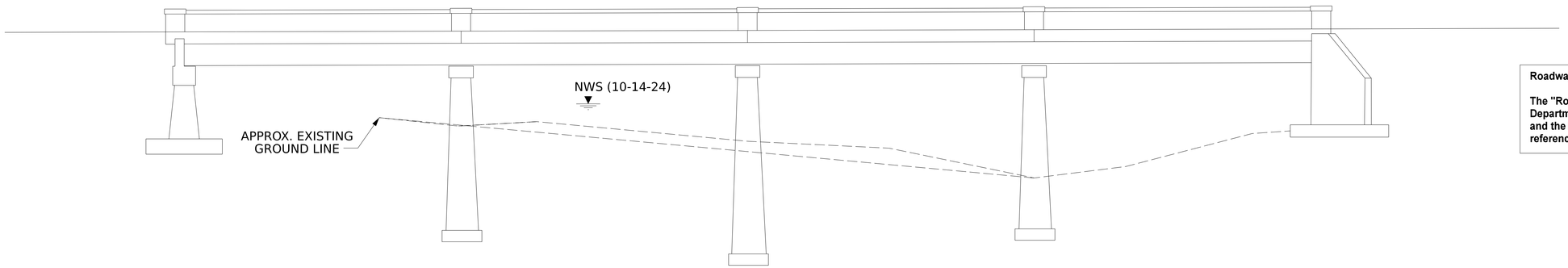
HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

High Quality Water Zone(s) Exist
From Sta. BEGIN
to Sta. END
Refer To E. C. Special Provisions for Special Considerations.

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

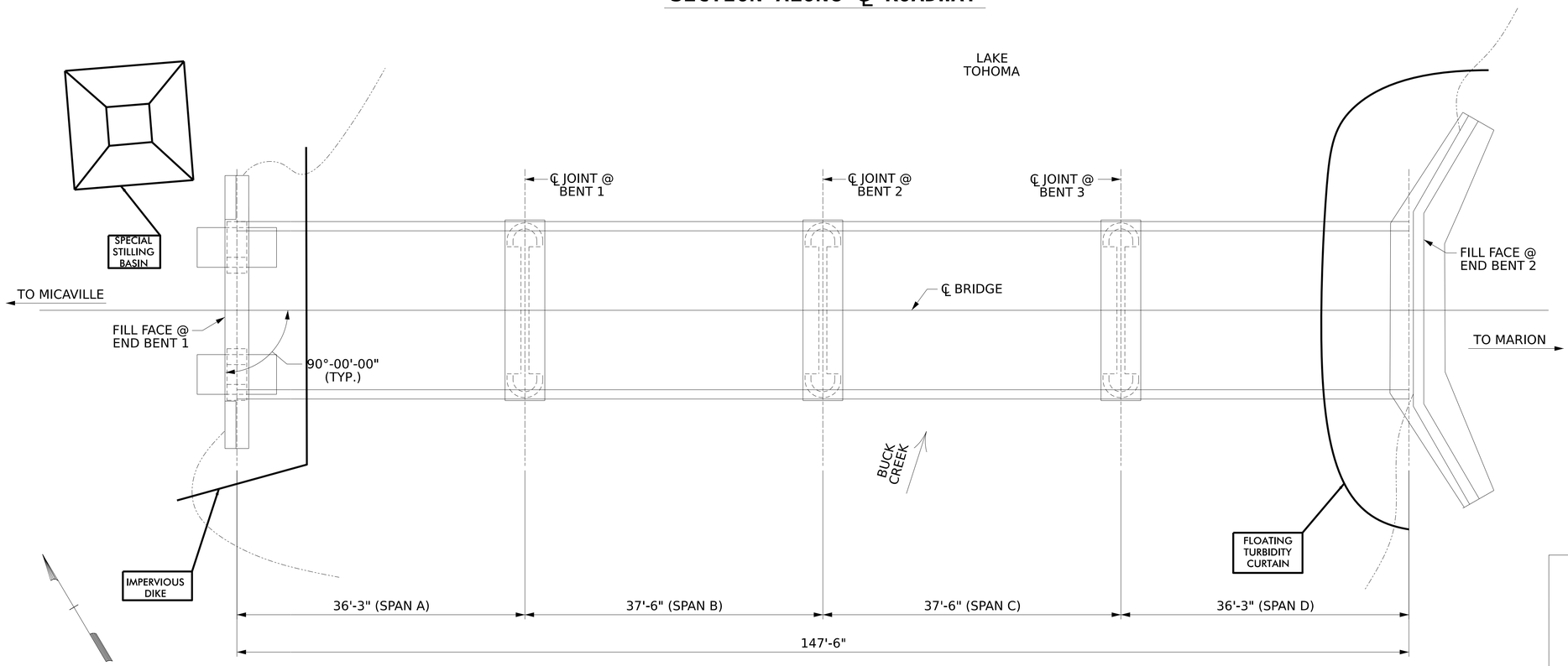
Refer To E. C. Special Provisions for Special Considerations.

SPAN A SPAN B SPAN C SPAN D



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

SECTION ALONG ℄ ROADWAY



PLAN

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.

KATIE ESTEP
LEVEL IIIA NAME

4485
LEVEL IIIA CERTIFICATION NO.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

PROJECT NO. 18313.1059060.PR
MCDOWELL COUNTY
BRIDGE NO. 580023

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EROSION CONTROL
FOR BRIDGE
ON NC 80
OVER BUCK CREEK
(AT LAKE TOHOMA)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-5
1			3			TOTAL SHEETS
2			4			30

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

$TIME$
$FILE$
$DATE$

Environmentally Sensitive Areas:

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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.

FLOATING TURBIDITY CURTAIN:

Description

This work consists of the installation of a Floating Turbidity Curtain to deter silt suspension and movement of silt particles during construction. The floating turbidity curtain shall be constructed at locations as directed.

Materials

The curtain material shall be made of a tightly woven nylon, plastic or other non–deteriorating material meeting the following specifications:

Property	Value
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Trapezoid tear strength	*md–100 lbs *cd–60 lbs
Apparent opening size	70 US standard sieve
Percent open area	4% permittivity 0.28 sec–1

*md – machine direction
*cd – cross machine direction

In the event that more than one width of fabric is required, a 6" overlap of the material shall also be required.

The curtain material shall be supported by a flotation material having over 29 lbs/ft buoyancy. The floating curtain shall have a 5/16" galvanized chain as ballast and dual 5/16" galvanized wire ropes with a heavy vinyl coating as load lines.

Construction Methods

The Contractor shall maintain the Floating Turbidity Curtain in a satisfactory condition until its removal is requested by the Engineer.

PROJECT NO. 18313.1059060.PR

MCDOWELL COUNTY

BRIDGE NO. 580023

$TIME$
$FILE$
$DATE$

DRAWN BY : K. ESTEP DATE : 3-25
CHECKED BY : K. ALFORD DATE : 3-25
DESIGN ENGINEER OF RECORD: _____ DATE : _____

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

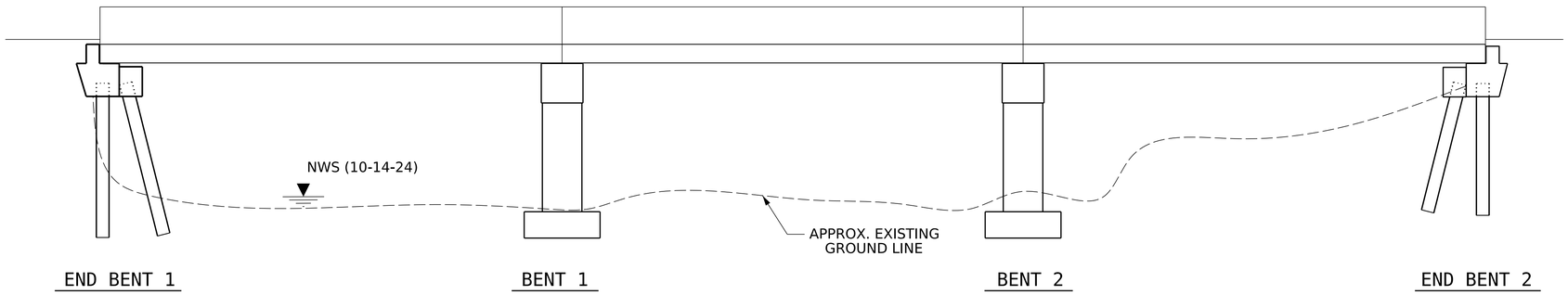
WETHERILL ENGINEERING
1223 Jones Franklin Rd.
Raleigh, N.C. 27606
Bus: 919 851 8077
Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

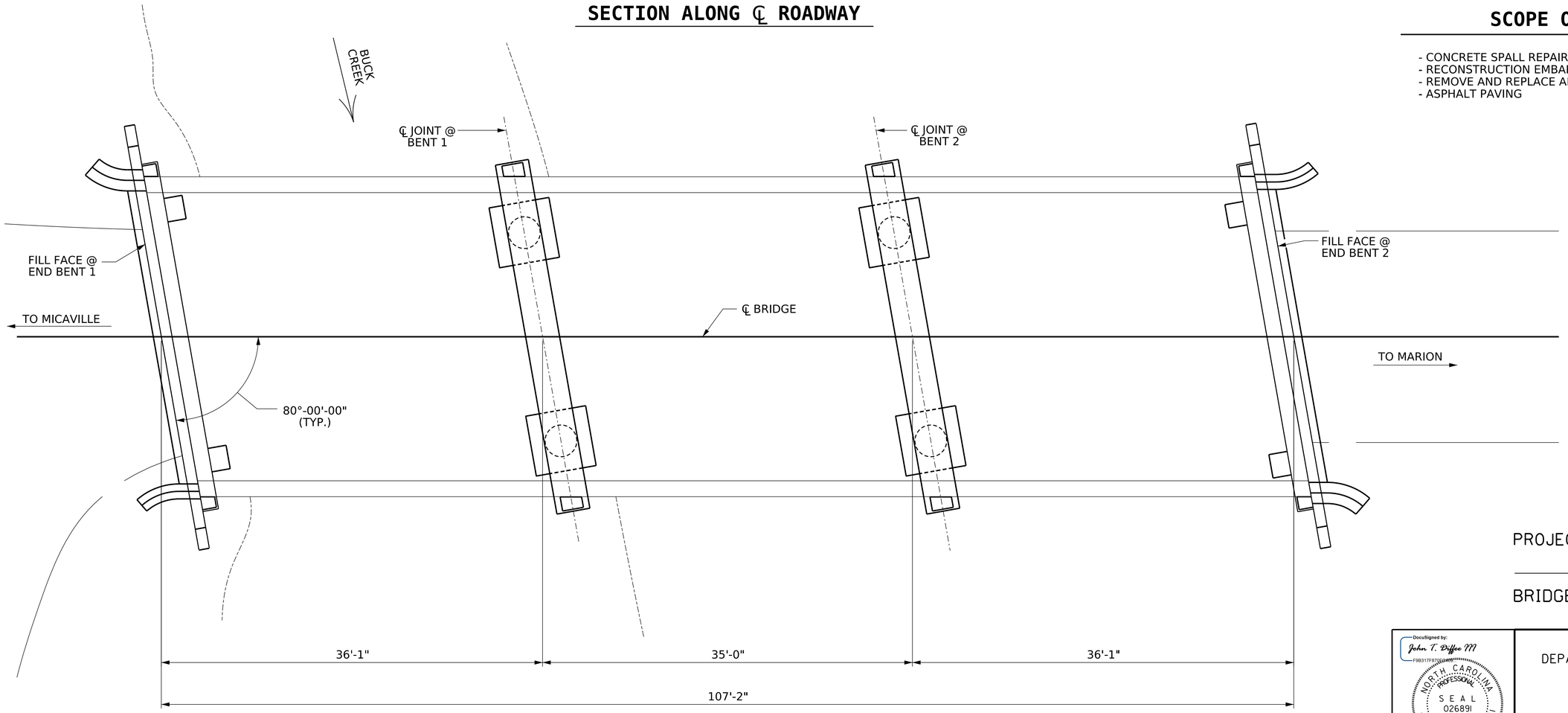
EROSION CONTROL

FOR BRIDGE
ON NC 80
OVER LAKE TOHOMA

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	EC-6
1			3			TOTAL SHEETS
2			4			30



SECTION ALONG ℄ ROADWAY



PLAN

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

- CONCRETE SPALL REPAIR AT BENT #2
- RECONSTRUCTION EMBANKMENT AT END BENT #1
- REMOVE AND REPLACE APPROACH FILLS AT END BENT #1
- ASPHALT PAVING

PROJECT NO. **18313.1059049.PR**

MCDOWELL COUNTY

BRIDGE NO. 580079

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DocuSigned by: John T. Diffee III
F9B317F87D5E4...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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 NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1
1			3			TOTAL SHEETS
2			4			32

P:\2025\25109.02 Div 13 Burke McDowell Rutherford Bridge Repairs\Bridge 580079\Repair Plans\580079 GENERAL DRAWINGdgn
11/12/2025 2:53:42 PM

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 NECCESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LAT: 35.73560199754
LONG: -82.1294475343362

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 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 ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR SITE GRADING FOR CHANNEL RESTORATION AT BR__, SEE SPECIAL PROVISIONS.

PROJECT NO. **18313.1059049.PR**

MCDOWELL COUNTY

BRIDGE NO. 580079

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : J. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: J. DIFFEE DATE : 3-25

DocuSigned by: John T. Diffee III
F9B317F8F0D0466...
NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III
11/12/2025

WETHERILL ENGINEERING
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			32

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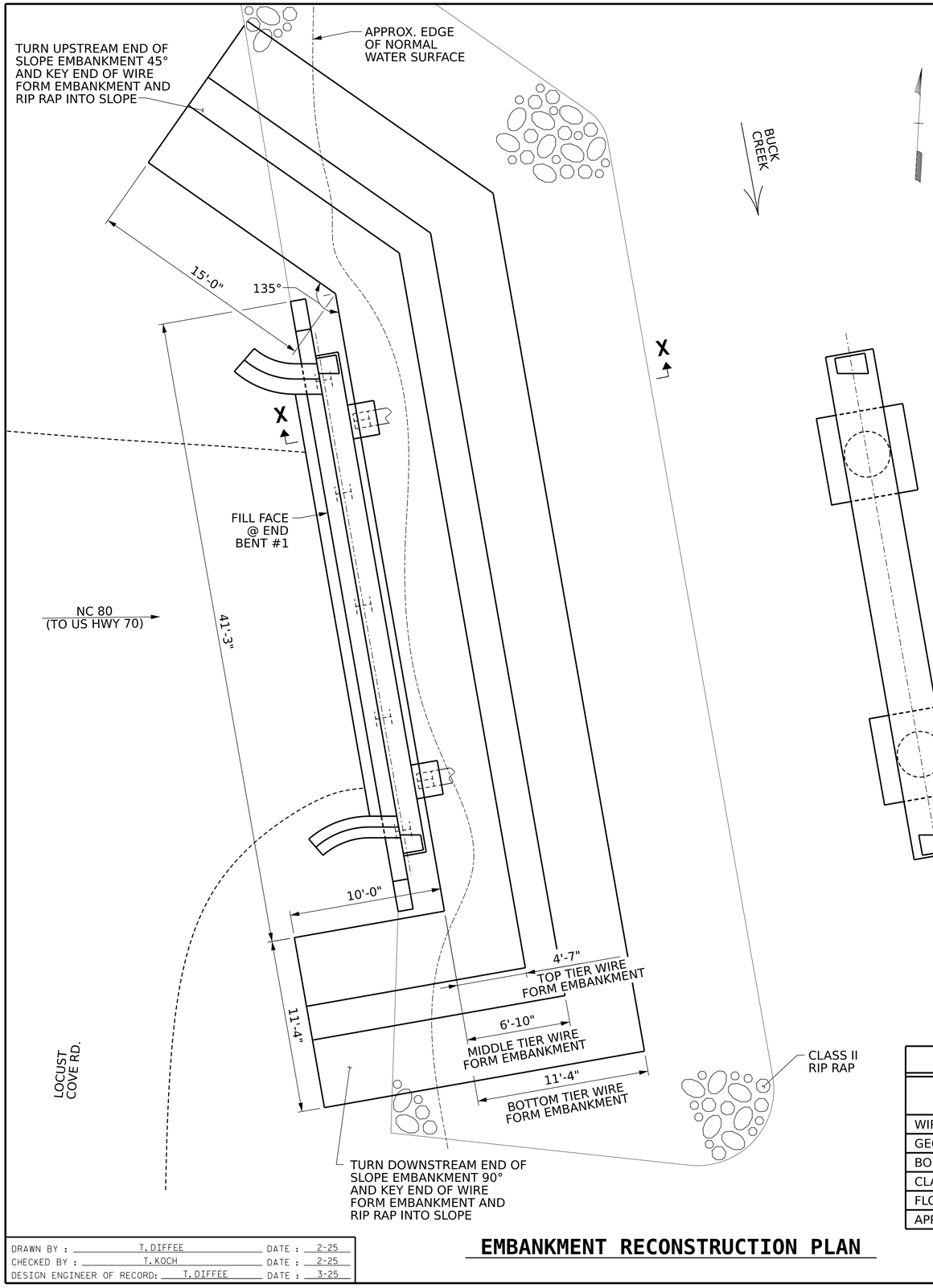


EMBANKMENT RECONSTRUCTION PLAN

NOTES:

INSTALL TRAFFIC CONTROL MEASURES PER PLANS. SEE MAINTENANCE OF TRAFFIC PLANS.

STAKE CONSTRUCTION LIMITS OF EMBANKMENT STABILIZATION.

REALIGN STREAM FLOW CHANNEL TO PRE-HURRICANE HELENE LOCATION. FOR SITE GRADING FOR CHANNEL RESTORATION, SEE SPECIAL PROVISIONS.

INSTALL A SAND BAG DIKE OUTSIDE OF FINISHED EMBANKMENT FOOTPRINT. SEE EROSION CONTROL PLANS.

PUMP OUT DIKED AREA TO REMOVE SURFACE WATER AND ALLOW CONSTRUCTION IN THE DRY.

CLEAR DEBRIS THAT WILL INTERFERE WITH CONSTRUCTION OF EMBANKMENT INCLUDING ANY MATERIAL EMBEDDED IN EXPOSED PILE FLANGES.

TAKE CARE NOT TO EXCAVATE DOWN IN FRONT OF END BENT PILES. WHILE EXACT PILE LENGTHS ARE UNKNOWN, EXISTING PLANS INDICATE THAT THE PILES AT END BENT #1 ARE ONLY 10 FEET IN LENGTH.

EXCAVATE APPROACH FILLS TO REMOVE DEBRIS AND OTHER UNSUITABLE MATERIALS BURIED IN FILLS. SUITABLE MATERIALS MAY BE REUSED AS APPROACH FILL.

FOR APPROACH FILL, REMOVE AND REPLACE, SEE SPECIAL PROVISIONS.

LEVEL OUT FOOTPRINT AREA OF WIRE FORM EMBANKMENTS, AND CONSTRUCT WIRE FORM EMBANKMENTS IN ACCORDANCE WITH PROJECT DETAILS (SEE WIRE FORM BRIDGE END SLOPE DETAIL, SHEET G-1) AND SPECIAL PROVISIONS.

CUT WIRE BASKET FORMS AND GEOTEXTILES, TO FIT AROUND BATTERED PILES.

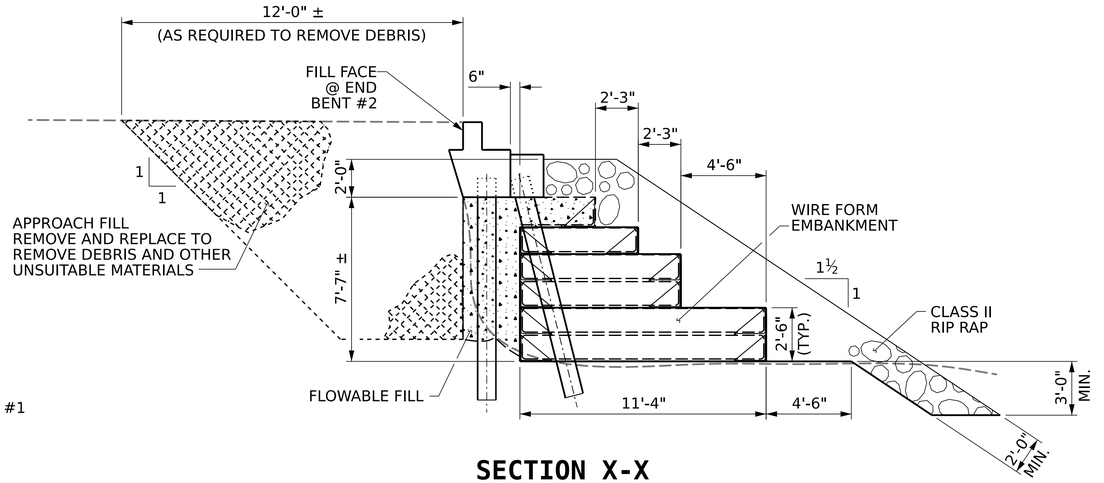
USE REMOVABLE FORMS ALONG FILL FACE OF BRIDGE TO FORM APPROACH SIDE OF FLOWABLE FILL.

ONCE WIRE FORM EMBANKMENTS ARE COMPLETE, USE FLOWABLE FILL TO FILL AREA UNDER CAP USING BACK SIDE OF WIRE FORM EMBANKMENT LIFTS AS A FORM. FOR TOPS OF WIRE FORM EMBANKMENTS LESS THAN HEIGHT OF BOTTOM OF CAP, INSTALL REMOVABLE FORMS OR ADDITIONAL WIRE BASKET WITH GEOTEXTILE TO MAKE UP DIFFERENCE. VIBRATE FLOWABLE FILL DURING POURING, IF REQUIRED, TO GET CONSOLIDATION AROUND PILES, AND INTO VOIDS.

FOR FLOWABLE FILL, SEE SPECIAL PROVISIONS.

CONTRACTOR MAY PLACE FLOWABLE FILL IN LIFTS TO MATCH WITH WIRE FORM EMBANKMENT STEPS. INSTALLING APPROACH FILLS AFTER FLOWABLE FILL IS IN PLACE.

INSTALL AND COMPACT ROADWAY APPROACH FILL PER NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. AT CONTRACTORS OPTION, #57 STONE MAY BE USED FOR APPROACH FILL TO REDUCE COMPACTION WORK. USE FILTER FABRIC TO SEPERATE #57 STONE FROM EXISTING EMBANKMENT FILL.



SECTION X-X

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES	
	ESTIMATE	ACTUAL
WIRE BASKET FORMS	917 LF	LF
GEOTEXTILE FOR WIRE FORM BRIDGE END SLOPE, TYPE 5a	860 SY	SY
BORROW	165 CY	CY
CLASS II RIP RAP	340 TONS	TONS
FLOWABLE FILL	39 CY	CY
APPROACH FILL, REMOVE AND REPLACE	LUMP SUM	

PROJECT NO. 18313.1059049.PR

MCDOWELL COUNTY

BRIDGE NO. 580079

DocuSigned by: John T. Diffee III F9B317F870C4466...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT #1 EMBANKMENT RECONSTRUCTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

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BENT 2 - ELEVATION

LOOKING WEST

AS-BUILT REPAIR QUANTITY TABLE

BENT 2 SPAN C FACE	QUANTITIES			
	ESTIMATE		ACTUAL	
CONCRETE REPAIRS	AREA SQ. FT.	VOLUME CU. FT.	AREA SQ. FT.	VOLUME CU. FT.
CAP	3.0	4.0		

VALUES IN CHART REPRESENT ESTIMATED REPAIR TOTALS AFTER REMOVAL OF UNSOUND CONCRETE, MINIMUM OF 1" BEHIND REPAIR AND MINIMUM 2" CLEARANCE TO SAWCUT.

NOTES:

REPAIR LOCATIONS AND ESTIMATE OF QUANTITIES ARE GIVEN WITH THE BEST INFORMATION AVAILABLE. IF ADDITIONAL REPAIRS NOT SHOWN ON THE DRAWINGS ARE DEEMED NECESSARY BY THE ENGINEER, THE ENGINEER WILL NOTE ON THE DRAWINGS THE APPROXIMATE LOCATION AND DESCRIPTION OF THE REPAIRS AND ADJUST THE ACTUAL QUANTITIES ENTERED INTO THE REPAIR QUANTITY TABLE.

REMOVE UNSOUND CONCRETE TO THE EXTENT NECESSARY, MINIMUM OF 1" BEHIND REBAR AND MINIMUM OF 2" CLEARANCE TO SAWCUT.

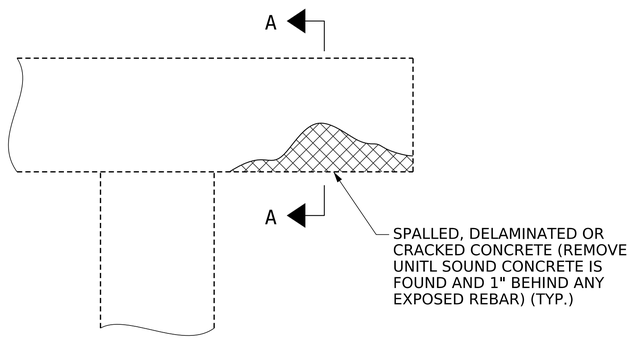
THE METHOD USED TO DELINEATE THE AREAS OF UNSOUND CONCRETE TO BE REPAIRED SHALL NOT PERMANENTLY MARK THE CONCRETE, LEAVE ANY RESIDUE AFTER REMOVAL OR REQUIRE HARSH CHEMICALS TO REMOVE.

THE CONTRACTOR SHALL REMOVE THE DETERIORATED CONCRETE IN ACCORDANCE WITH THE GUIDELINES SET IN THESE NOTES, IN THE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

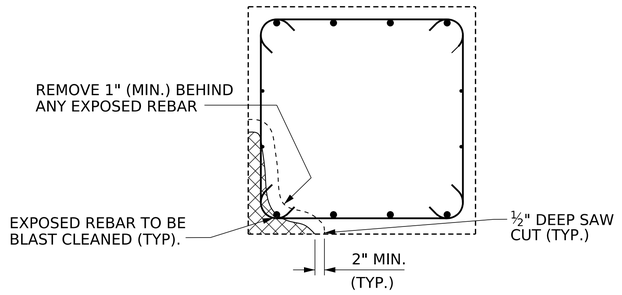
NO MORE THAN ONE-THIRD OF THE CAP OR COLUMN CROSS SECTIONAL AREA SHALL BE REMOVED AT ONE TIME. SHOULD IT BECOME NECESSARY TO REMOVE MORE THAN 30% OF THE CAP OR COLUMN CROSS SECTIONAL AREA, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

SIMULTANEOUS REMOVAL OF UNSOUND CONCRETE MAY BE PERMITTED ON MORE THAN ONE FACE OF A THE CAP OR COLUMN. IF THE AREAS OF REMOVAL ARE NOT ADJACENT TO OR DIRECTLY OPPOSITE ONE ANOTHER. IF REMOVAL EXTENDS MORE THAN 1½" BEHIND MAIN REINFORCING BARS, NOTIFY THE ENGINEER PRIOR TO PROCEEDING.

FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.



BENT CAP REPAIRS



SECTION A-A

TYPICAL CAP REPAIR DETAILS

PROJECT NO. 18313.1059049.PR

MCDOWELL COUNTY

BRIDGE NO. 580079

DocuSigned by: John T. Diffee III F9B317F87C1D4B3...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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

SPALL REPAIR

BENT 2
SPAN C FACE

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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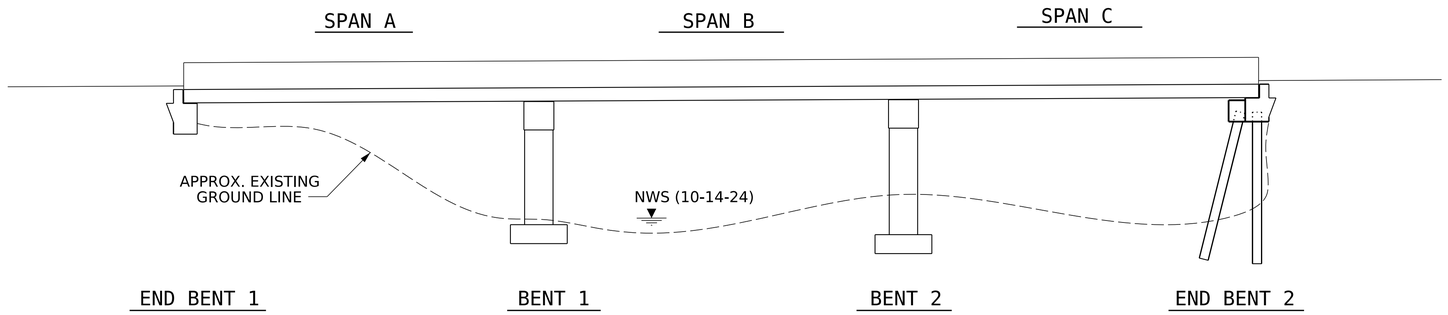
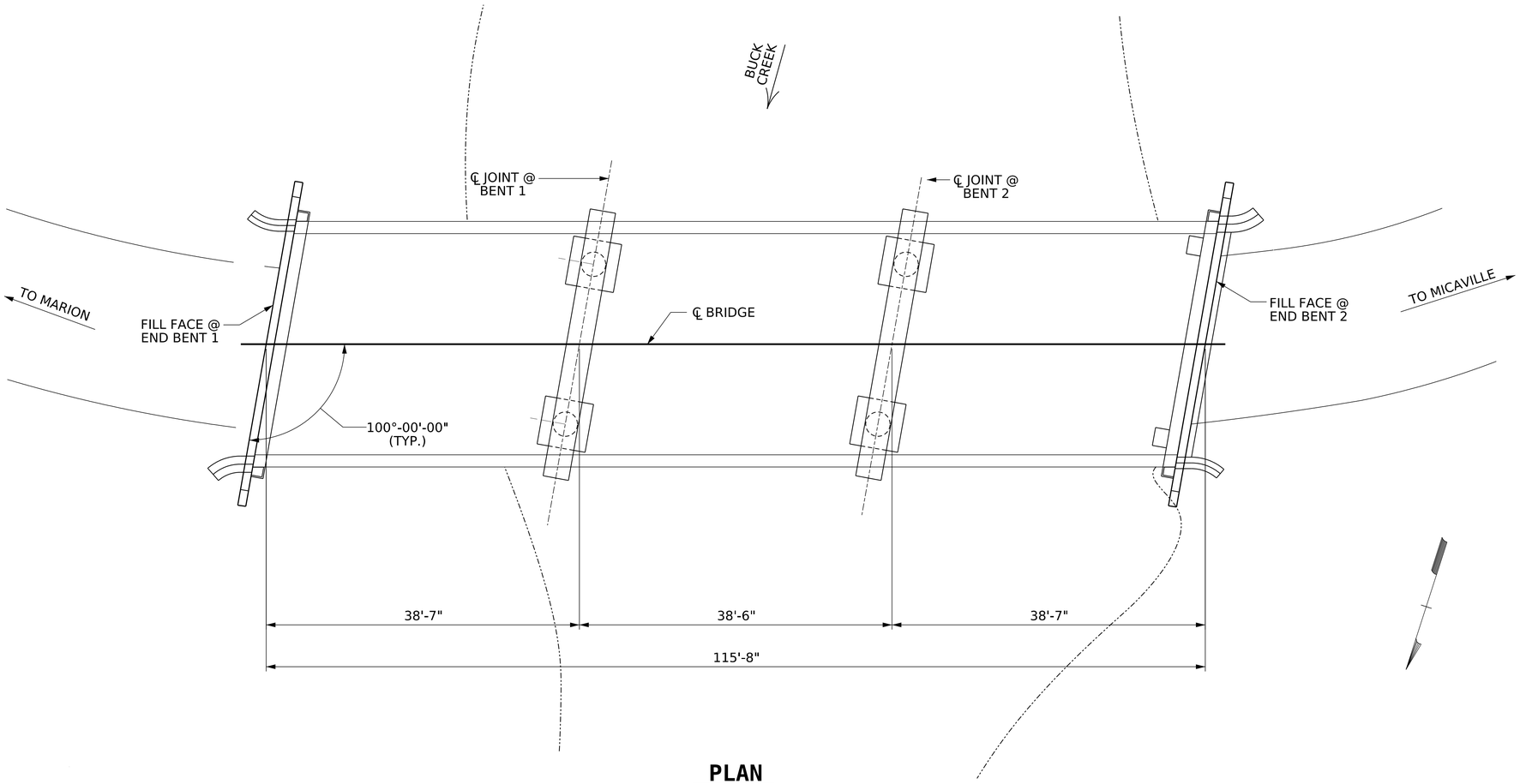


SECTION ALONG ℄ ROADWAY



PLAN

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

- INSTALL RIP RAP SLOPE PROTECTION AT END BENT #1
- RECONSTRUCTION EMBANKMENT AT END BENT #2
- REMOVE AND REPLACE APPROACH FILLS AT END BENT #2
- ASPHALT PAVING

PROJECT NO. 18313.1059054.PR

MCDOWELL COUNTY

BRIDGE NO. 580083

DocuSigned by: John T. Diffee III F9B317F8D0E2466...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

WETHERILL ENGINEERING

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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 NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

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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 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 ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR SITE GRADING FOR CHANNEL RESTORATION AT BR__, SEE SPECIAL PROVISIONS.

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 NECCESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LAT: 35.7384038432107
LONG: -82.1347907841008

PROJECT NO. **18313.1059054.PR**

MCDOWELL COUNTY

BRIDGE NO. 580083

DocuSigned by:
John T. Diffee III
F9B317F87D9A4F0...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

ETHERILL ENGINEERING

1223 Jones Franklin Rd.
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Fax: 919 851 8107
LICENSE NO. F-0377

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE
ON NC 80
OVER BUCK CREEK

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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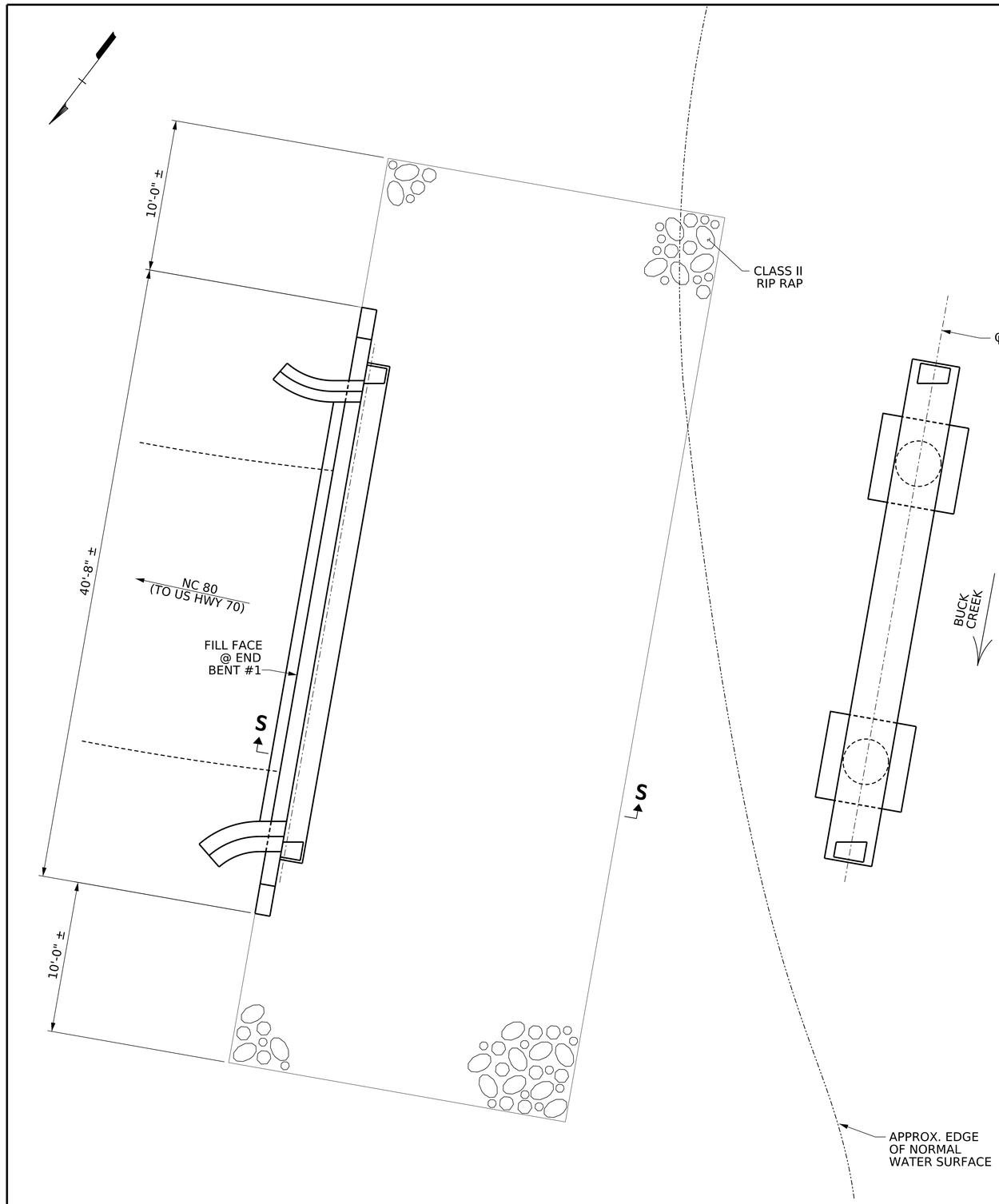


SLOPE PROTECTION PLAN

NOTES:

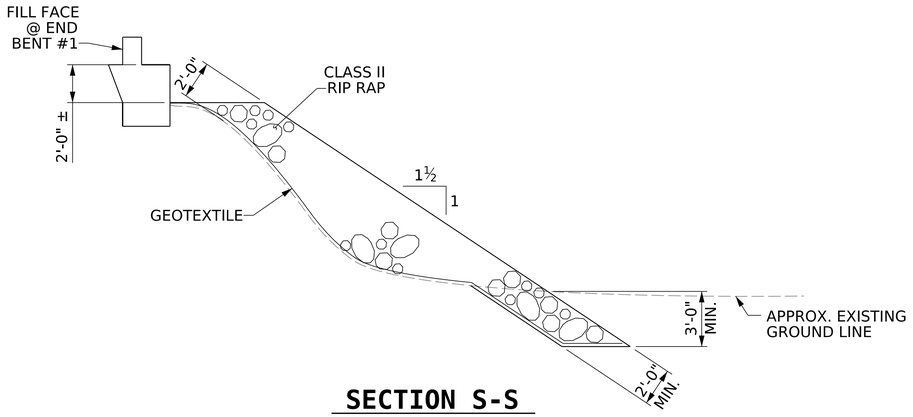
STAKE CONSTRUCTION LIMITS OF SLOPE PROTECTION.

INSTALL EROSION CONTROL MEASURES PER EROSION CONTROL PLANS.

REMOVE ANY DEBRIS IN AREA TO RECEIVE SLOPE PROTECTION PRIOR TO INSTALL GEOTEXTILE.

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES	
	ESTIMATE	ACTUAL
CLASS II RIP RAP	215 TONS	TONS
GEOTEXTILE FOR DRAINAGE	202 SY	SY



SECTION S-S

PROJECT NO. 18313.1059054.PR

MCDOWELL COUNTY

BRIDGE NO. 580083

DocuSigned by: John T. Diffee III F9B317F8...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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

END BENT #1
SLOPE PROTECTION

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

SHEET NO. S-7

TOTAL SHEETS 32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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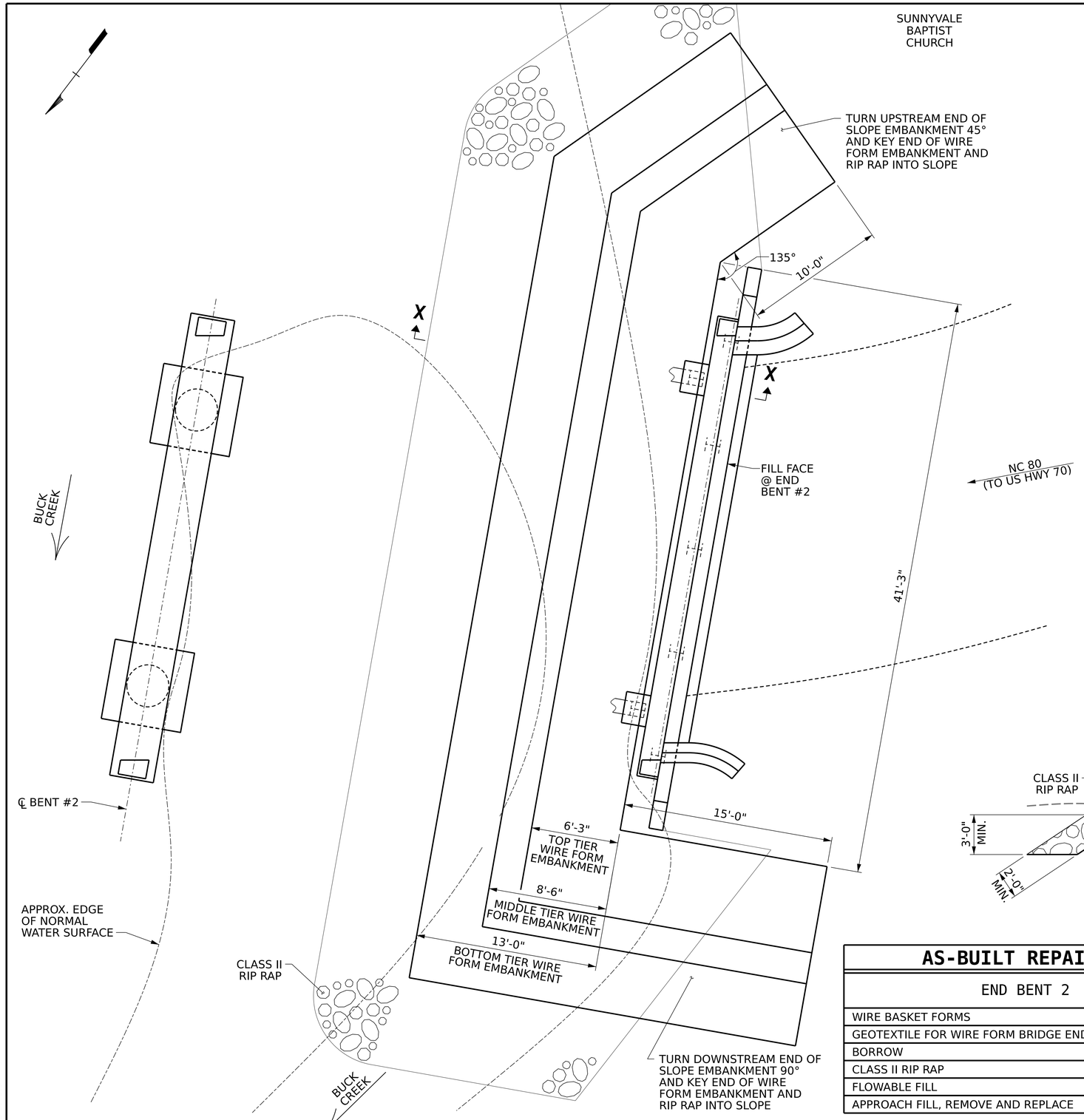


EMBANKMENT RECONSTRUCTION PLAN

NOTES:

INSTALL TRAFFIC CONTROL MEASURES PER PLANS. SEE MAINTENANCE OF TRAFFIC PLANS.

STAKE CONSTRUCTION LIMITS OF EMBANKMENT STABILIZATION.

REALIGN STREAM FLOW CHANNEL TO PRE-HURRICANE HELENE LOCATION. FOR SITE GRADING FOR CHANNEL RESTORATION, SEE SPECIAL PROVISIONS.

INSTALL A SAND BAG DIKE OUTSIDE OF FINISHED EMBANKMENT FOOTPRINT. SEE EROSION CONTROL PLANS.

PUMP OUT DIKED AREA TO REMOVE SURFACE WATER AND ALLOW CONSTRUCTION IN THE DRY.

CLEAR DEBRIS THAT WILL INTERFERE WITH CONSTRUCTION OF EMBANKMENT INCLUDING ANY MATERIAL EMBEDDED IN EXPOSED PILE FLANGES.

TAKE CARE NOT TO EXCAVATE DOWN IN FRONT OF END BENT PILES. WHILE EXACT PILE LENGTHS ARE UNKNOWN, EXISTING PLANS INDICATE THAT THE PILES AT END BENT #2 ARE ONLY 16.25 FEET IN LENGTH.

EXCAVATE APPROACH FILLS TO REMOVE DEBRIS AND OTHER UNSUITABLE MATERIALS BURIED IN FILLS. SUITABLE MATERIALS MAY BE REUSED AS APPROACH FILL.

FOR APPROACH FILL, REMOVE AND REPLACE, SEE SPECIAL PROVISIONS.

LEVEL OUT FOOTPRINT AREA OF WIRE FORM EMBANKMENTS, AND CONSTRUCT WIRE FORM EMBANKMENTS IN ACCORDANCE WITH PROJECT DETAILS (SEE WIRE FORM BRIDGE END SLOPE DETAIL, SHEET G-1) AND SPECIAL PROVISIONS.

CUT WIRE BASKET FORMS AND GEOTEXTILES, TO FIT AROUND BATTERED PILES.

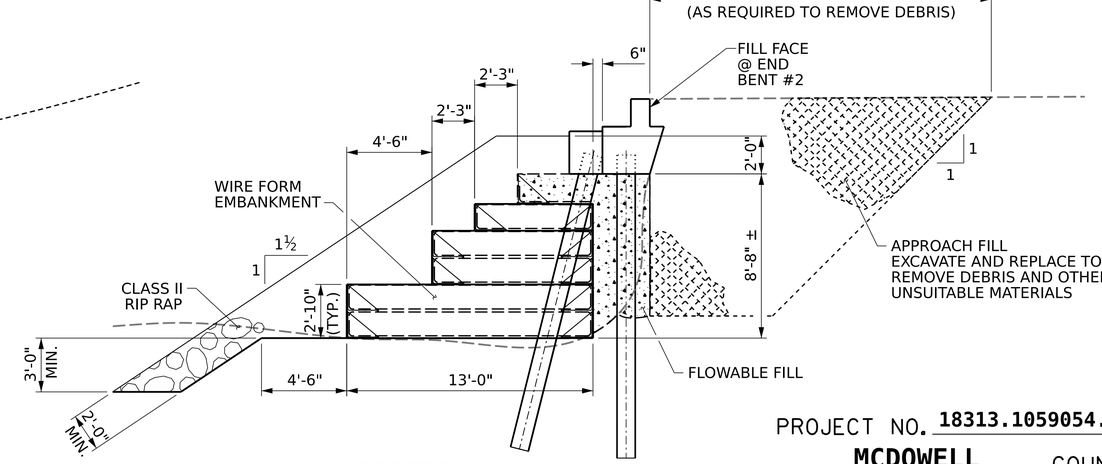
USE REMOVABLE FORMS ALONG FILL FACE OF BRIDGE TO FORM APPROACH SIDE OF FLOWABLE FILL.

ONCE WIRE FORM EMBANKMENTS ARE COMPLETE, USE FLOWABLE FILL TO FILL AREA UNDER CAP USING BACK SIDE OF WIRE FORM EMBANKMENT LIFTS AS A FORM. FOR TOPS OF WIRE FORM EMBANKMENTS LESS THAN HEIGHT OF BOTTOM OF CAP, INSTALL REMOVABLE FORMS OR ADDITIONAL WIRE BASKET WITH GEOTEXTILE TO MAKE UP DIFFERENCE. VIBRATE FLOWABLE FILL DURING POURING, IF REQUIRED, TO GET CONSOLIDATION AROUND PILES, AND INTO VOIDS.

FOR FLOWABLE FILL, SEE SPECIAL PROVISIONS.

CONTRACTOR MAY PLACE FLOWABLE FILL IN LIFTS TO MATCH WITH WIRE FORM EMBANKMENT STEPS. INSTALLING APPROACH FILLS AFTER FLOWABLE FILL IS IN PLACE.

INSTALL AND COMPACT ROADWAY APPROACH FILL PER NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES. AT CONTRACTORS OPTION, #57 STONE MAY BE USED FOR APPROACH FILL TO REDUCE COMPACTION WORK. USE FILTER FABRIC TO SEPERATE #57 STONE FROM EXISTING EMBANKMENT FILL.



SECTION X-X

AS-BUILT REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES	
	ESTIMATE	ACTUAL
WIRE BASKET FORMS	948 LF	LF
GEOTEXTILE FOR WIRE FORM BRIDGE END SLOPE, TYPE 5a	1,065 SY	SY
BORROW	231 CY	CY
CLASS II RIP RAP	320 TONS	TONS
FLOWABLE FILL	52 CY	CY
APPROACH FILL, REMOVE AND REPLACE	LUMP SUM	

PROJECT NO. 18313.1059054.PR

MCDOWELL COUNTY

BRIDGE NO. 580083

DocuSigned by: John T. Diffee III F9B317F87C1D4B8...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

ETHERILL ENGINEERING

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT #2 EMBANKMENT RECONSTRUCTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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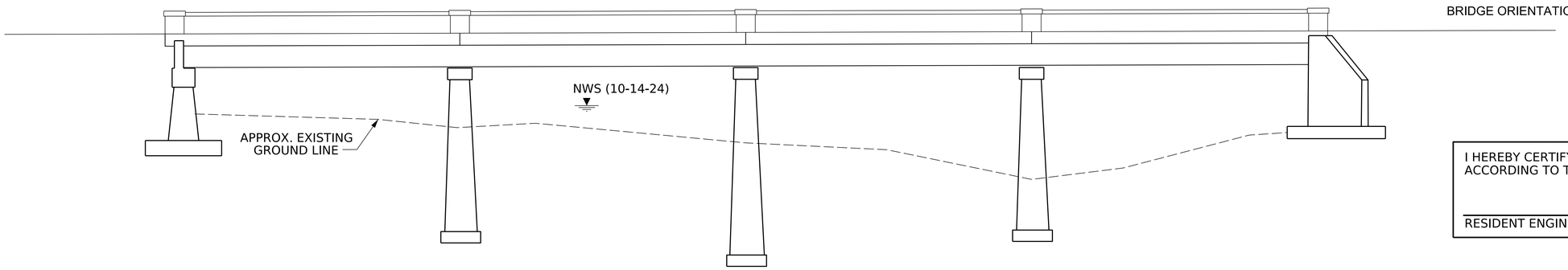
SPAN A | SPAN B | SPAN C | SPAN D



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

SECTION ALONG ℄ ROADWAY

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.

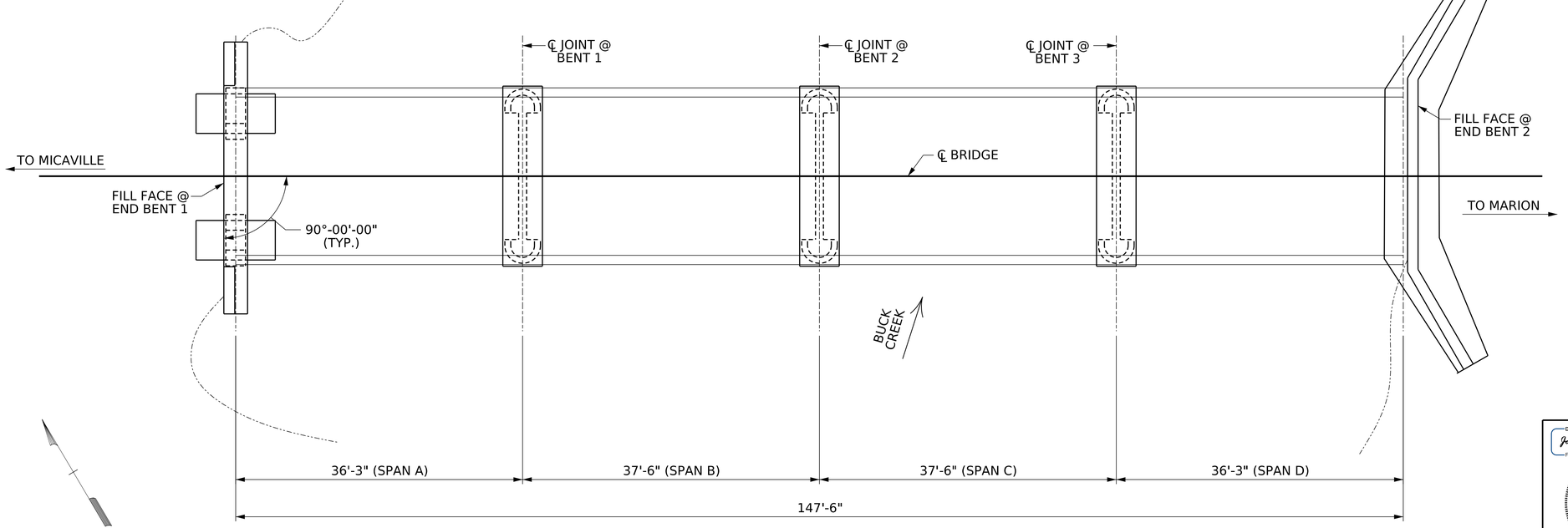
BRIDGE ORIENTATION CONFORMS TO THE ORIGINAL BRIDGE PLANS.

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

RESIDENT ENGINEER DATE

SCOPE OF WORK

- CONSTRUCT CONCRETE FILL IN BLOCKS AT END BENT #1
- INSTALL RIP RAP SLOPE PROTECTION AT END BENTS #2 AND #1
- REPLACE MISSING DELINEATOR SIGNS AT END BENT #2
- ASPHALT PAVING



PLAN

PROJECT NO. 18313.1059060.PR

MCDOWELL COUNTY

BRIDGE NO. 580023

DocuSigned by: John T. Diffee III F9B317F87D6D4BF...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE II

11/12/2025

WETHERILL ENGINEERING

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE
ON NC 80
OVER BUCK CREEK
(AT LAKE TOHOMA)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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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 NECCESSARY TO PERFORM AND COMPLETE THE PROJECT.

BRIDGE COORDINATES

LAT: 35.728050
LONG: -82.0923611

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 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 ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

PROJECT NO. 18313.1059060.PR
MCDOWELL COUNTY
BRIDGE NO. 580023

DocuSigned by:
John T. Diffee III
F98317F8705C4E0...
NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III
11/12/2025

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

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING
FOR BRIDGE
ON NC 80
OVER BUCK CREEK
(AT LAKE TOHOMA)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : J. PENDERGRAFT DATE : 1-25
CHECKED BY : T. KOCH DATE : 1-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

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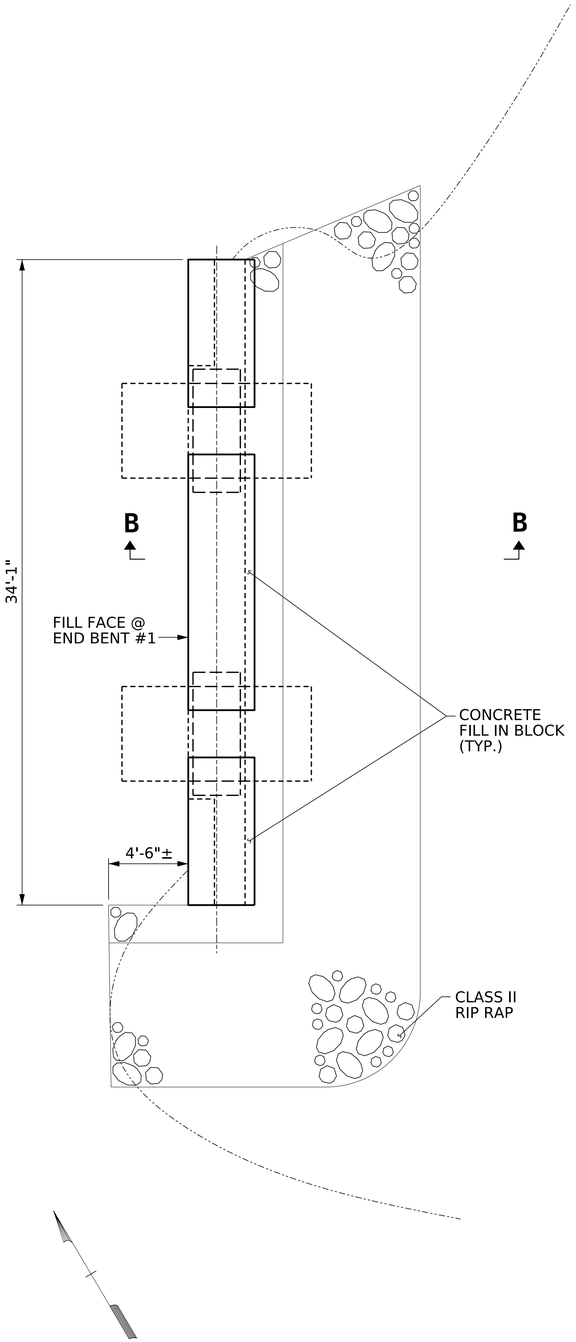


PLAN - END BENT #1

NOTES:

INSTALL EROSION CONTROL MEASURES.

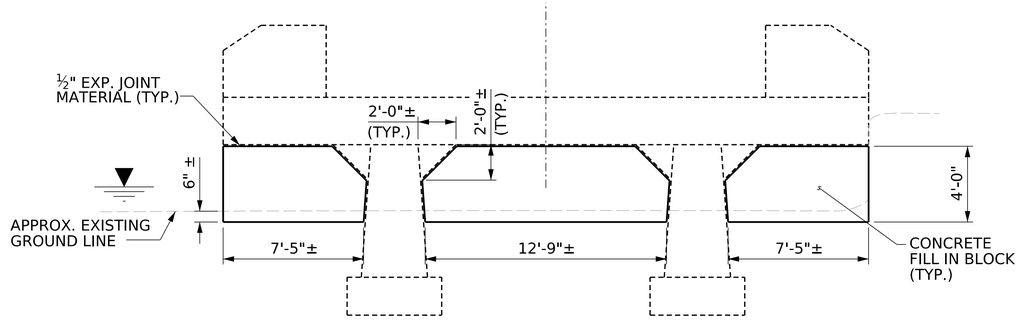
REMOVE DEBRIS FROM AREA TO RECEIVE CONCRETE FILL IN BLOCKS AND RIP RAP.

EXCAVATE AND LEVEL FOOTING AREA TO RECEIVE CONCRETE FILL IN BLOCKS.

FORM AND POUR CONCRETE FILL IN BLOCKS.

INSTALL GEOTEXTILE FILTER FABRIC AND PLACE CLASS II RIP RAP ONCE CONCRETE HAS CURED.

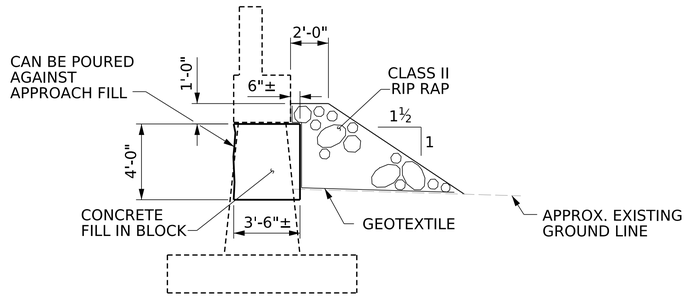
REPLACING MISSING DELINEATORS AT END BENT #1.



ELEVATION

(LOOKING WEST)

RIP RAP NOT SHOWN FOR CLARITY



SECTION B-B

PROJECT NO. 18313.1059060.PR

MCDOWELL COUNTY

BRIDGE NO. 580023

AS-BUILT REPAIR QUANTITY TABLE

END BENT 1	QUANTITIES	
	ESTIMATE	ACTUAL
CLASS A CONCRETE	13.6 CY	CY
CLASS II RIP RAP	73 TONS	TONS
GEOTEXTILE FOR DRAINAGE	85 SY	SY
POST MOUNTED DELINEATORS (YELLOW)	2 EA	EA
7' U-CHANNEL POSTS	2 EA	EA

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

DocuSigned by: John T. Diffee III
F9B317F870E6488...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT #1 FILL IN BLOCKS & SLOPE PROTECTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			32

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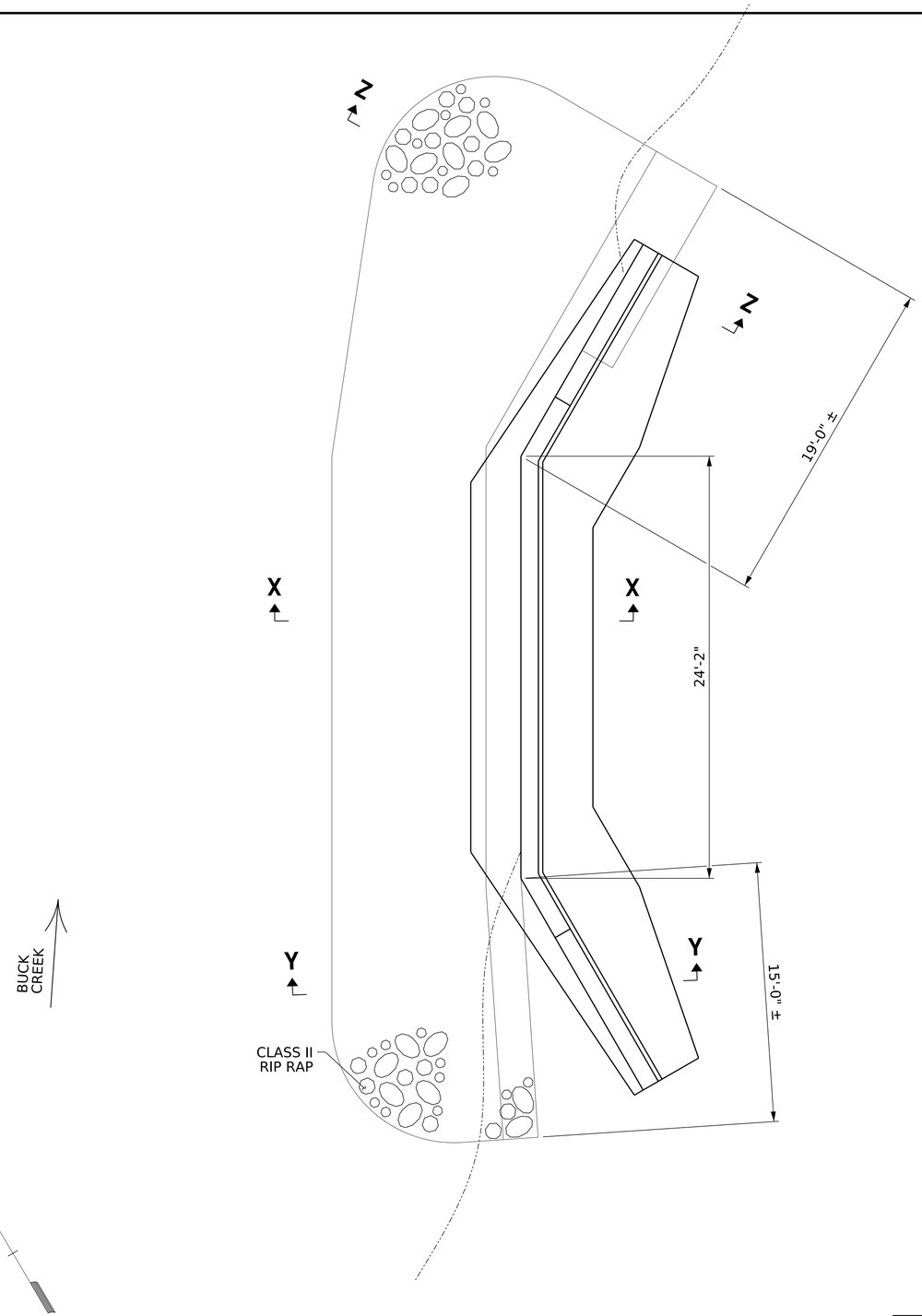


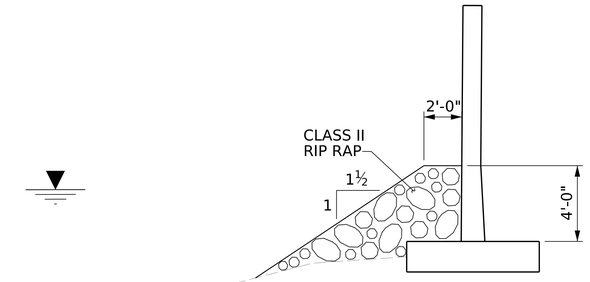
SLOPE PROTECTION PLAN - END BENT #2

NOTES:

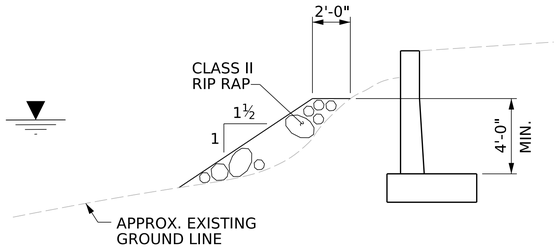
INSTALL EROSION CONTROL MEASURES.

REMOVE DEBRIS FROM AREA TO RECEIVE RIP RAP.

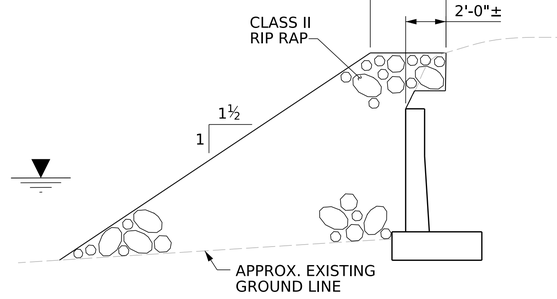
PLACE CLASS II RIP RAP. DO NOT DROP RIP RAP DIRECTLY ON ABUTMENT FOOTING OR AGAINST ABUTMENT WALL TO AVOID DAMAGING CONCRETE.



SECTION X-X



SECTION Y-Y



SECTION Z-Z

AS-BUILT REPAIR QUANTITY TABLE

END BENT 2	QUANTITIES	
	ESTIMATE	ACTUAL
CLASS II RIP RAP	150 TONS	TONS

PROJECT NO. 18313.1059060.PR

MCDOWELL COUNTY

BRIDGE NO. 580023

DocuSigned by: John T. Diffee III F9B317E6B0F0466...

NORTH CAROLINA PROFESSIONAL SEAL 026891 ENGINEER JOHN T. DIFFEE III

11/12/2025

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

END BENT #2 SLOPE PROTECTION

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			32

DRAWN BY : T. DIFFEE DATE : 2-25
CHECKED BY : T. KOCH DATE : 2-25
DESIGN ENGINEER OF RECORD: T. DIFFEE DATE : 3-25

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8/26/21

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" 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.