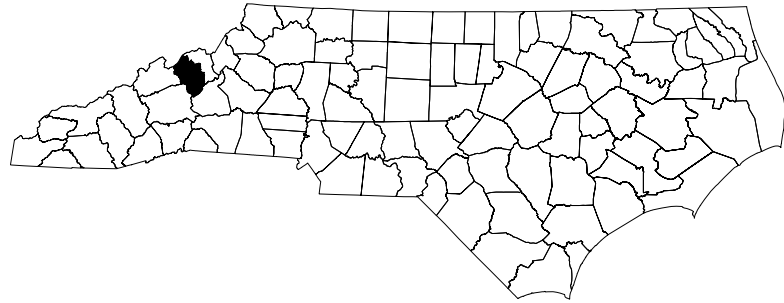


CONTRACT: DM00504 PROJECT: 18313.1100050.PR, ETC.



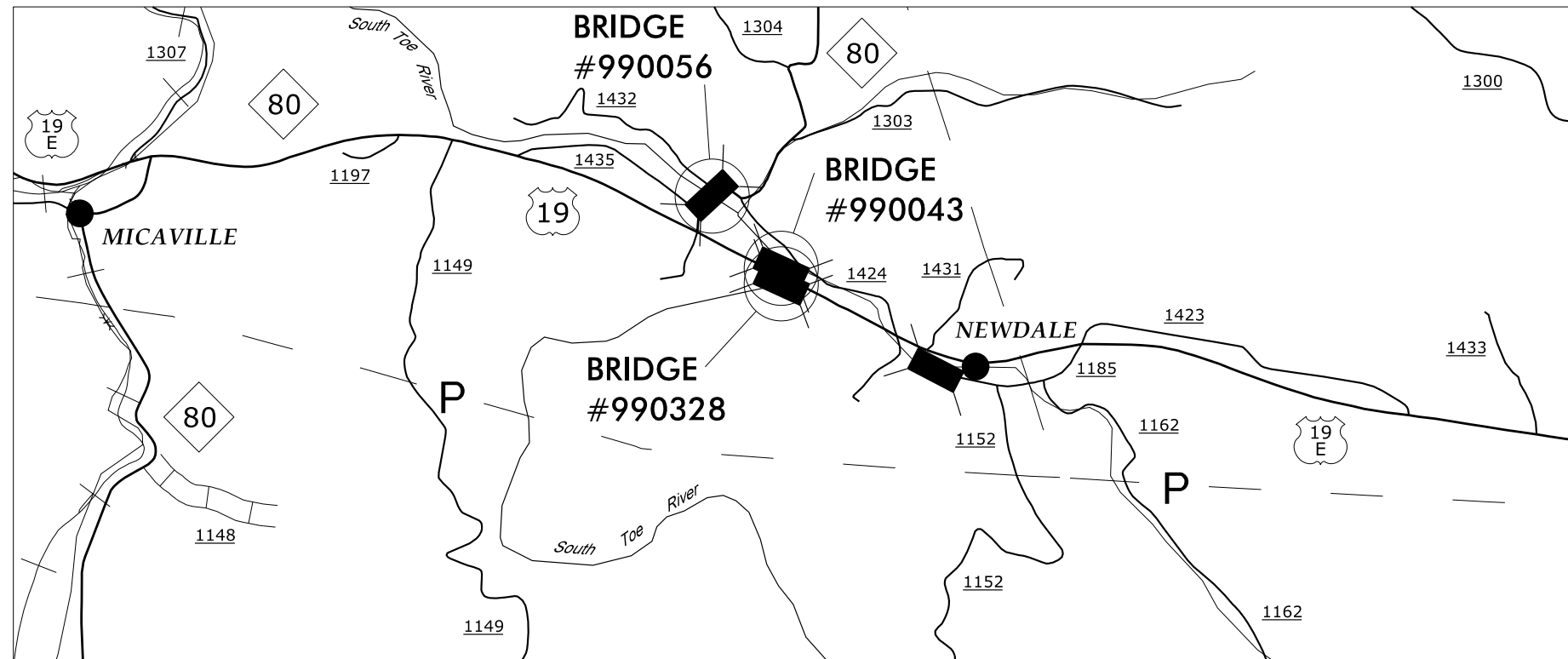
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

YANCEY COUNTY

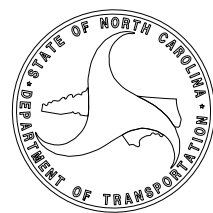
LOCATION:

BRIDGE #990043 ON US 19E WBL OVER SOUTH TOE RIVER
BRIDGE #990328 ON US 19E EBL OVER SOUTH TOE RIVER
BRIDGE #990056 ON NC 80 OVER SOUTH TOE RIVER
TYPE OF WORK: BRIDGE REPAIR, CURB & GUTTER, AND PAVING

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	18313.1100050.PR, ETC.	1	27
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
18313.1100050.PR	NA	BRIDGE 990056	
18313.1100058.PR	NA	ROADWAY REPAIR	
18313.1100090.PR	NA	BRIDGE 990043	
18313.1100096.PR	NA	BRIDGE 990328	



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
RD-1	ROADWAY REPAIR DETAIL
TMP-1 THRU TMP-4	TRAFFIC MANAGEMENT PLANS
EC-2A	ONSITE CONCRETE WASHOUT DETAIL
S1-1 THRU S1-5	STRUCTURE PLANS (#990043)
S2-1 THRU S2-5	STRUCTURE PLANS (#990328)
S3-1 THRU S3-7	STRUCTURE PLANS (#990056)
	STRUCTURE STANDARD NOTES

NCDOT CONTACT: MARK E. HILL, PE

PLANS PREPARED BY:	PLANS PREPARED FOR:
TGS ENGINEERS 201 W. MARION ST. STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275	NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 13 20 Old 74 Asheville, NC 28803
LETTING DATE: APRIL 15, 2026	MARSHALL G. CHEEK, JR., PE PROJECT ENGINEER
2024 STANDARD SPECIFICATIONS	

STRUCTURAL ENGINEER

3/16/2026

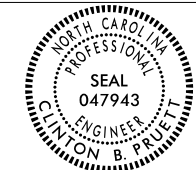
Signed by: **Marshall G. Cheek, Jr.** P.E.
SIGNATURE



ROADWAY DESIGN ENGINEER

3/16/2026

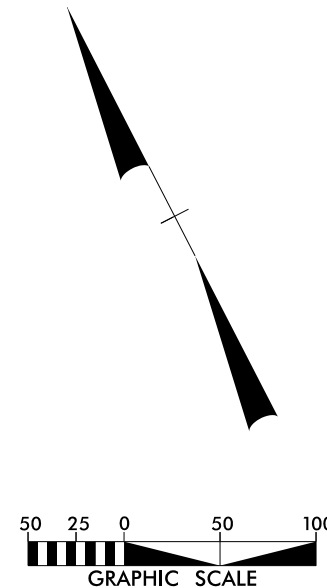
Signed by: **Clinton Pruitt** P.E.
SIGNATURE



8/17/99

ROADWAY REPAIR DETAIL

PROJECT REFERENCE NO. 18313.1100050.PP, ETC.	SHEET NO. RD-1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	
<p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p>	
<p>TGS ENGINEERS 201 W. MARION ST., STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275</p>	



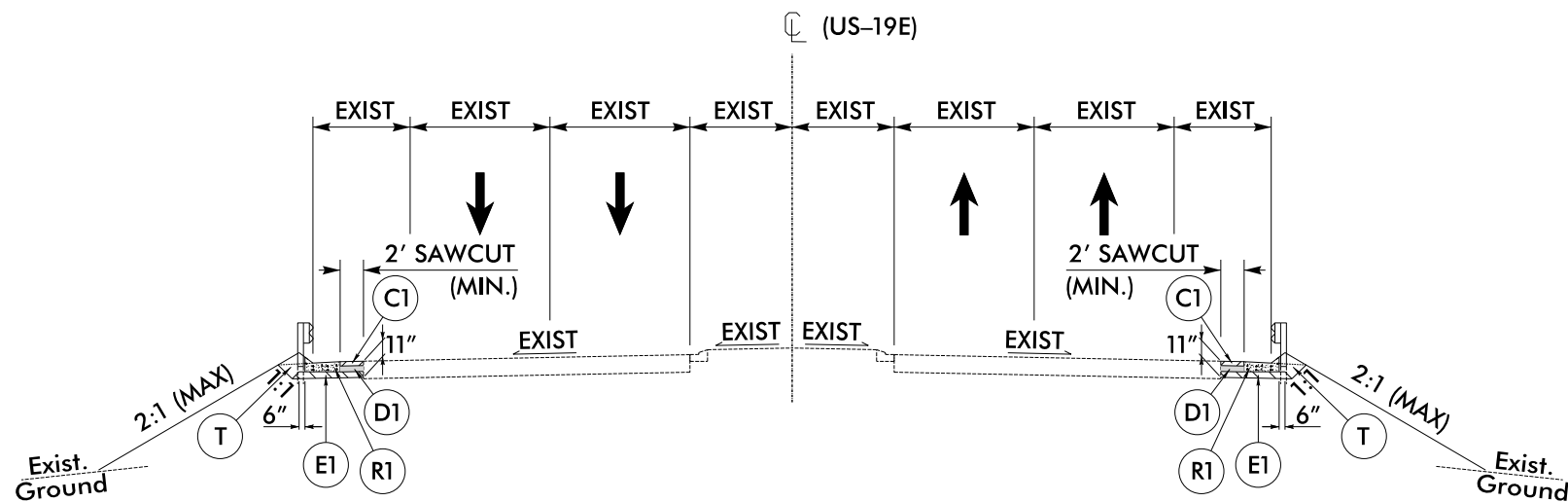
REVISIONS

2/12/2026 X:\NCDDP_Div 13 Bridge Repairs - Helene\Mitchell and Yancey - 2nd Round\Yancey 990328\Plans\DGNs\Roadway Detail and TSH\Yancey 43-328_Rdy_psh.dgn User:cbp

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
R1	SHOULDER BERM GUTTER
T	EARTH MATERIAL

PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

(NOT TO SCALE)

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

YANCEY COUNTY

LOCATION:

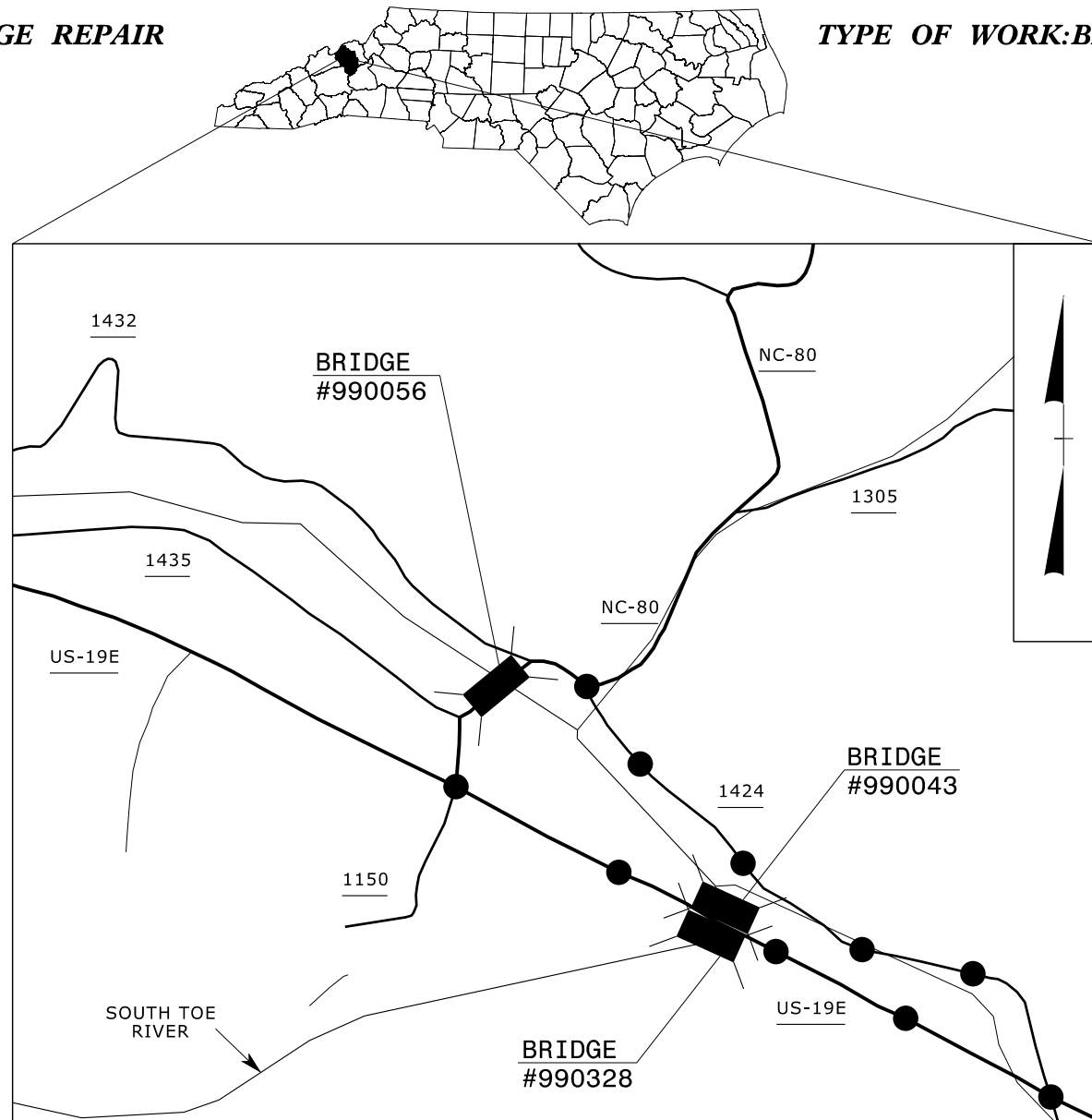
BRIDGE #990043 ON US 19E WBL OVER SOUTH TOE RIVER
BRIDGE #990328 ON US 19E EBL OVER SOUTH TOE RIVER

LOCATION:

BRIDGE #990056 ON NC 80 OVER SOUTH TOE RIVER BETWEEN US 19E AND SR 1305.

TYPE OF WORK: BRIDGE REPAIR

TYPE OF WORK: BRIDGE REPAIR



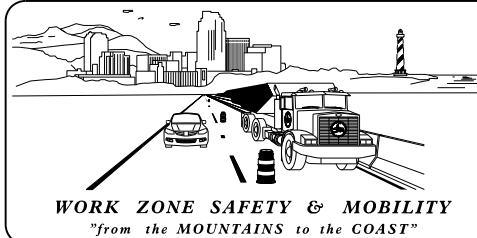
**VICINITY MAP
OFFSITE DETOUR ROUTE FOR BRIDGE #990056**

INDEX OF SHEETS

SHEET NO.	TITLE
TMP-1	TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS
TMP-1A	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, AND LEGEND
TMP-1B	TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES AND GENERAL NOTES)
TMP-2	REVISED ROADWAY STANDARD DRAWING (1205D01)
TMP-3	PHASING
TMP-4	OFF-SITE DETOUR DETAIL (#990056)

SHEET NO.
TMP-1

2/16/2026 X:\NC\DOT\Div 13 Bridge Repairs - Helene\Mitchell and Yancey - 2nd Round\Yancey 43-328-56 Combined TMP\Yancey 43-328-56_TC_TMP_01.dgn User:jjlaplan



PLANS PREPARED FOR N.C.D.O.T. BY:



TGS ENGINEERS
706 HILLSBOROUGH ST. SUITE 200
RALEIGH, NC 27603
PH (919) 773-8887
CORP. LICENSE NO.: C-0275

DON A. PARKER, P.E.
PROJECT ENGINEER

CODA BRANNAN, E.I.
DESIGN ENGINEER



DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

APPROVED: *Don A. Parker*
78088804DEF448L

DATE: 3/16/2026



TIP PROJECT: 18313.1100050.PR, ETC.










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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGERS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED ATTENUATOR
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING
1262.01	GUARDRAIL END DELINEATION

LEGEND

GENERAL

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












SIGNALS

-  EXISTING
-  PROPOSED
-  TEMPORARY




PAVEMENT MARKINGS

-  EXISTING LINES
-  TEMPORARY LINES




TRAFFIC CONTROL DEVICES

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


TEMPORARY SIGNING

-  PORTABLE SIGN
-  STATIONARY SIGN
-  STATIONARY OR PORTABLE SIGN

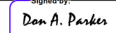


PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

-  PAVEMENT MARKING SYMBOLS

2/12/2026 X:\NC\DOT\Div 13 Bridge Repairs - Helene\Mitchell and Yancey - 2nd Round\Yancey 43-328-56 Combined TMP\Yancy 43-328-56_TC_TMP_01a.dgn User:jjlaplan

APPROVED:  DATE: 3/16/2026			ROADWAY STANDARD DRAWINGS & LEGEND
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

GENERAL NOTES

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

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

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 19E	MONDAY THRU FRIDAY 6:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 7:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME	HOLIDAY
US 19E	1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER. 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31st TO 7:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 P.M. THE FOLLOWING TUESDAY. 3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 7:00 P.M. MONDAY. 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 7:00 P.M. TUESDAY. 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY. 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 6:00 P.M. TUESDAY. 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 7:00 P.M. MONDAY. 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 7:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS WILL NOT BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
US 19E	MONDAY THRU FRIDAY 6:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 7:00 P.M.

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

LANE AND SHOULDER CLOSURE REQUIREMENTS

- E) 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.
- F) 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.
- G) 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.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 10 FT OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) 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.
- I) 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.
- J) NOTIFY THE NCDOT STATEWIDE TRANSPORTATION OPERATIONS CENTER (STOC) AT 877-627-7862 APPROXIMATELY 30 MINUTES PRIOR TO INSTALLING AND WITHIN 15 MINUTES AFTER REMOVING LANE CLOSURES ON INTERSTATES, FREEWAYS, CONTROLLED ACCESS FACILITIES, AND US ROUTES.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- K) 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.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

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

 PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- O) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

 COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.
- P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- Q) 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 RADIUS, 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.
- R) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- S) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

- T) INSTALL FINAL PAVEMENT MARKINGS ON FINAL LAYER OF PAVEMENT AS FOLLOWS:

ROAD NAME	MARKING	MARKER
NC-80	COLD APPLIED PLASTIC (TYPE 3)	NONE

- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

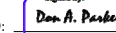
- W) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.


MANAGEMENT STRATEGIES

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

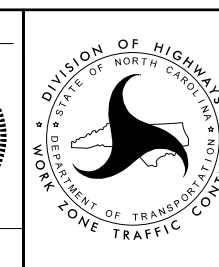
RECOMMENDED STRATEGIES:

- TRAFFIC MANAGEMENT STRATEGIES:
 FULL ROADWAY CLOSURES
 LANE SHIFTS OR CLOSURES
 SHOULDER CLOSURES
 WORK HOUR RESTRICTIONS FOR PEAK TRAVEL
 OFF-SITE DETOURS / USE OF ALTERNATIVE ROUTES
- TRAFFIC / INCIDENT MANAGEMENT & SPEED ENFORCEMENT STRATEGIES:
 DEDICATED (PAID) LAW ENFORCEMENT
- CONTRACTING & INNOVATIVE CONSTRUCTION STRATEGIES:
 INTERMEDIATE CONTRACT TIMES / LIQUIDATED DAMAGES

APPROVED: 
 DATE: 3/16/2026


 DON A. PARKER
 PROFESSIONAL ENGINEER
 043251

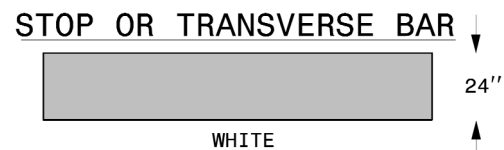
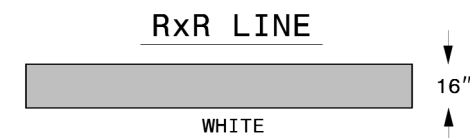
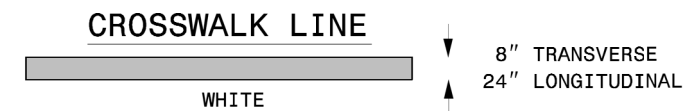
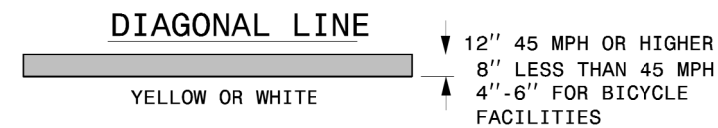
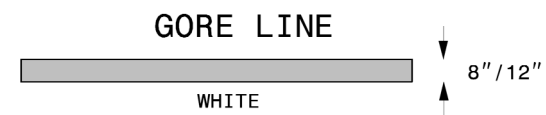
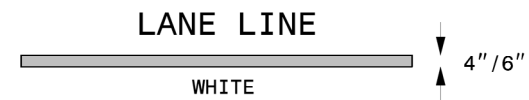
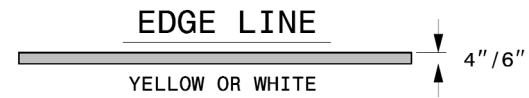
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**



**TRANSPORTATION
OPERATIONS
PLAN & PHASING**

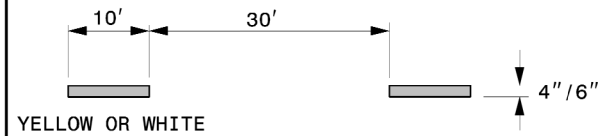
2/12/2026 X:\NCDOT\Div 13 Bridge Repairs - Helene\Mitchell and Yancey - 2nd Round\Yancey 43-328-56 Combined TMP_01B.dgn User:jjfaplanf

CONTINUOUS LINES



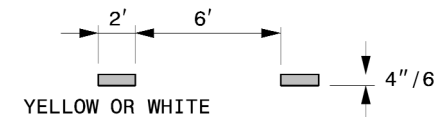
10'-30'/SP SKIP LINE

UNLESS OTHERWISE SHOWN, USE 10'-30'/SP SKIPS FOR SKIP LANE LINES AND SKIP CENTER LINES.



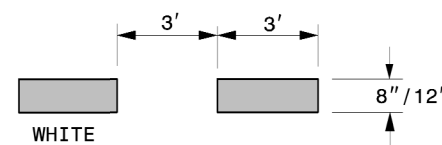
2'-6'/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 2'-6'/SP MINI-SKIPS FOR LANE LINE EXTENSIONS THROUGH INTERSECTIONS, EDGE LINE EXTENSIONS THROUGH INTERSECTIONS AND BICYCLE LANE EXTENSIONS.



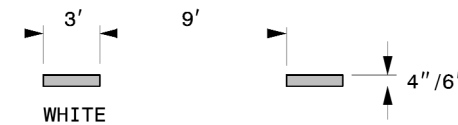
3'-3'/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 3'-3'/SP MINI-SKIPS FOR THE WHITE EDGE LINE EXTENSIONS AT ROUNDABOUTS.



3'-9'/SP MINI-SKIP LINE

UNLESS OTHERWISE SHOWN, USE 3'-9'/SP MINI-SKIPS FOR MINI-SKIP LANE LINES, LINE EXTENSIONS THROUGH TAPERS, AND MINI-SKIPS USED FOR BICYCLE LANE LINES.



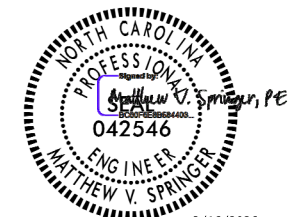
GENERAL NOTES:

- 1- USE 6" LANE, EDGE, AND CENTER LINES ON ALL FULL CONTROL OF ACCESS FACILITIES AND OTHER ROUTES AS DIRECTED BY THE ENGINEER.
- 2- LANE LINES INDICATED AS "WIDE" ON THE ROADWAY STANDARD DRAWINGS SHALL BE AT LEAST TWICE THE WIDTH OF THE NORMAL LINE.
- 3- GORE LINES SHALL BE TWICE THE WIDTH OF THE NORMAL LINE.

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

ROADWAY DETAIL DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES AND OFFSETS

SHEET 1 OF 2
1205D01




3/16/2026

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.: DATE:

PROJ. REFERENCE NO.	SHEET NO.
18313.1100050.PR	TMP-3
 TGS ENGINEERS 706 HILLSBOROUGH ST., SUITE 200 RALEIGH, NC 27603 PH (919) 773-8887 CORP. LICENSE NO.: C-0275	

PHASING

BRIDGE NO. 990056

- STEP 1 -- INSTALL DETOUR ADVANCE WARNING SIGNS AND TRAILBLAZING SIGNS (SEE RSD 1101.03, SHEET 1 OF 9, AND TMP-4).
 - BEFORE REMOVAL OF EXISTING MARKINGS, CONTRACTOR SHALL RECORD THE LOCATION OF EXISTING MARKINGS.
- STEP 2 -- CLOSE NC-80 TO THRU TRAFFIC.
- STEP 3 -- PERFORM ALL BRIDGE REPAIR WORK.
- STEP 4 -- INSTALL PERMANENT PAVEMENT MARKINGS (SEE TMP-2, RSD 1205.01, 1205.02, 1205.04, AND 1205.12).
- STEP 5 -- REOPEN NC-80 TO THRU TRAFFIC.
- STEP 6 -- REMOVE ALL TRAFFIC CONTROL DEVICES.

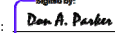
BRIDGE NO. 990043

- STEP 1 -- INSTALL WORK ZONE ADVANCE WARNING SIGNS (SEE RSD 1101.01, SHEET 2)
- STEP 2 -- USING ALTERNATING LANE CLOSURES AS NECESSARY, COMPLETE STRUCTURE REPAIR (SEE RSD 1101.02, SHEET 3).
- STEP 3 -- USING A RIGHT LANE CLOSURE, COMPLETE SBG GUTTER REPAIR AND REPLACE GUARDRAIL AS DESCRIBED ON THE ROADWAY REPAIR DETAIL SHEET. (SEE RSD 1101.02, SHEET 3).
- STEP 4 -- REMOVE ALL TRAFFIC CONTROL DEVICES.


BRIDGE NO. 990328

- STEP 1 -- INSTALL WORK ZONE ADVANCE WARNING SIGNS (SEE RSD 1101.01, SHEET 2)
- STEP 2 -- USING ALTERNATING LANE CLOSURES AS NECESSARY, COMPLETE STRUCTURE REPAIR (SEE RSD 1101.02, SHEET 3)
- STEP 3 -- USING A RIGHT LANE CLOSURE, COMPLETE SBG GUTTER REPAIR AND REPLACE GUARDRAIL AS DESCRIBED ON THE ROADWAY REPAIR DETAIL SHEET. (SEE RSD 1101.02, SHEET 3).
- STEP 4 -- REMOVE ALL TRAFFIC CONTROL DEVICES.

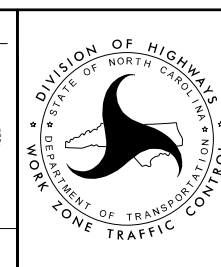
2/12/2026 X:\NC\DOT\Div 13 Bridge Repairs - Helene\Mitchell and Yancey - 2nd Round\Yancey 43-328-56 Combined TMP\Yancey 43-328-56_TC_TMP_03.dgn User:jjlaplanf

APPROVED: 
7628580ADEF448...

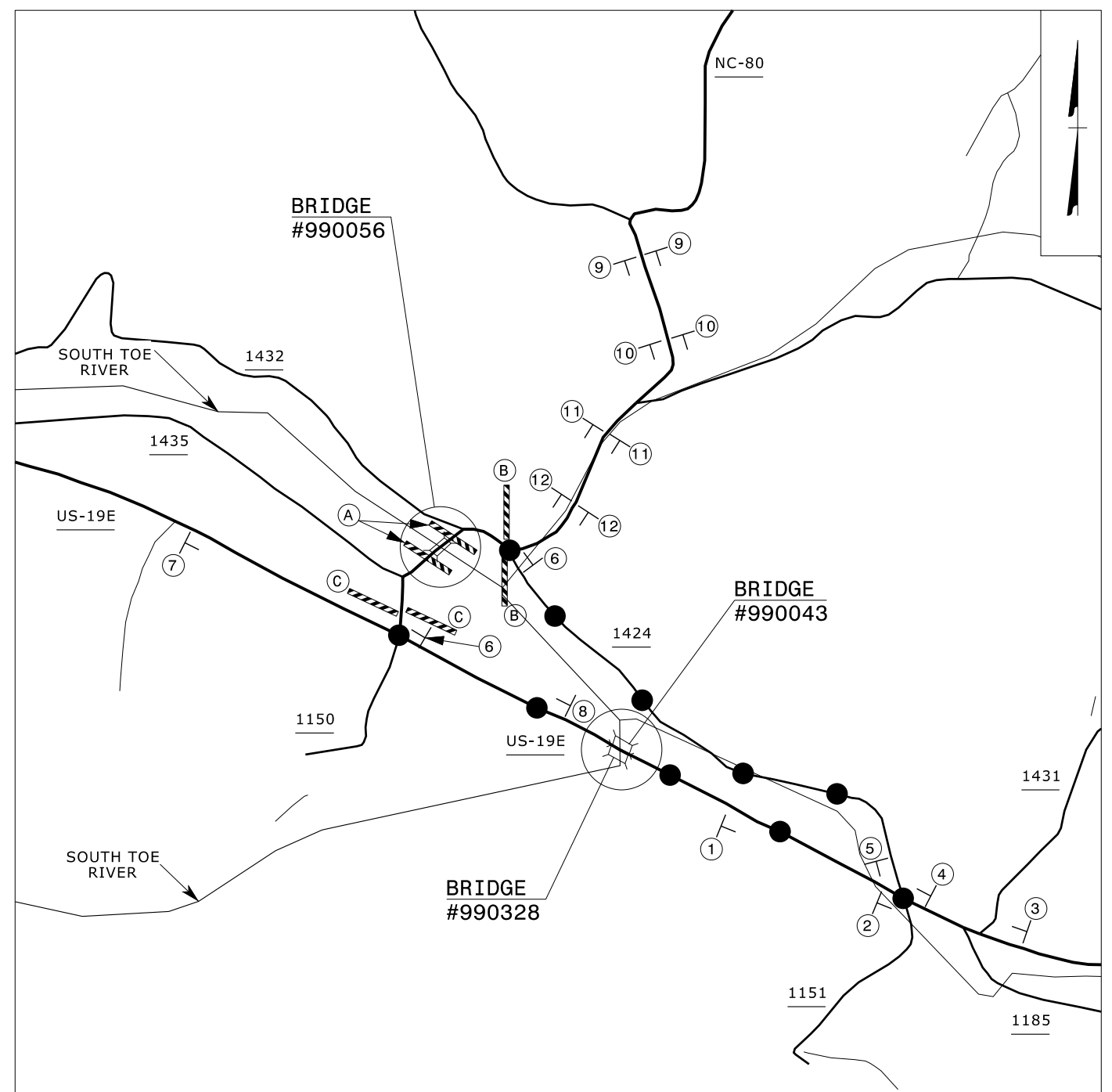
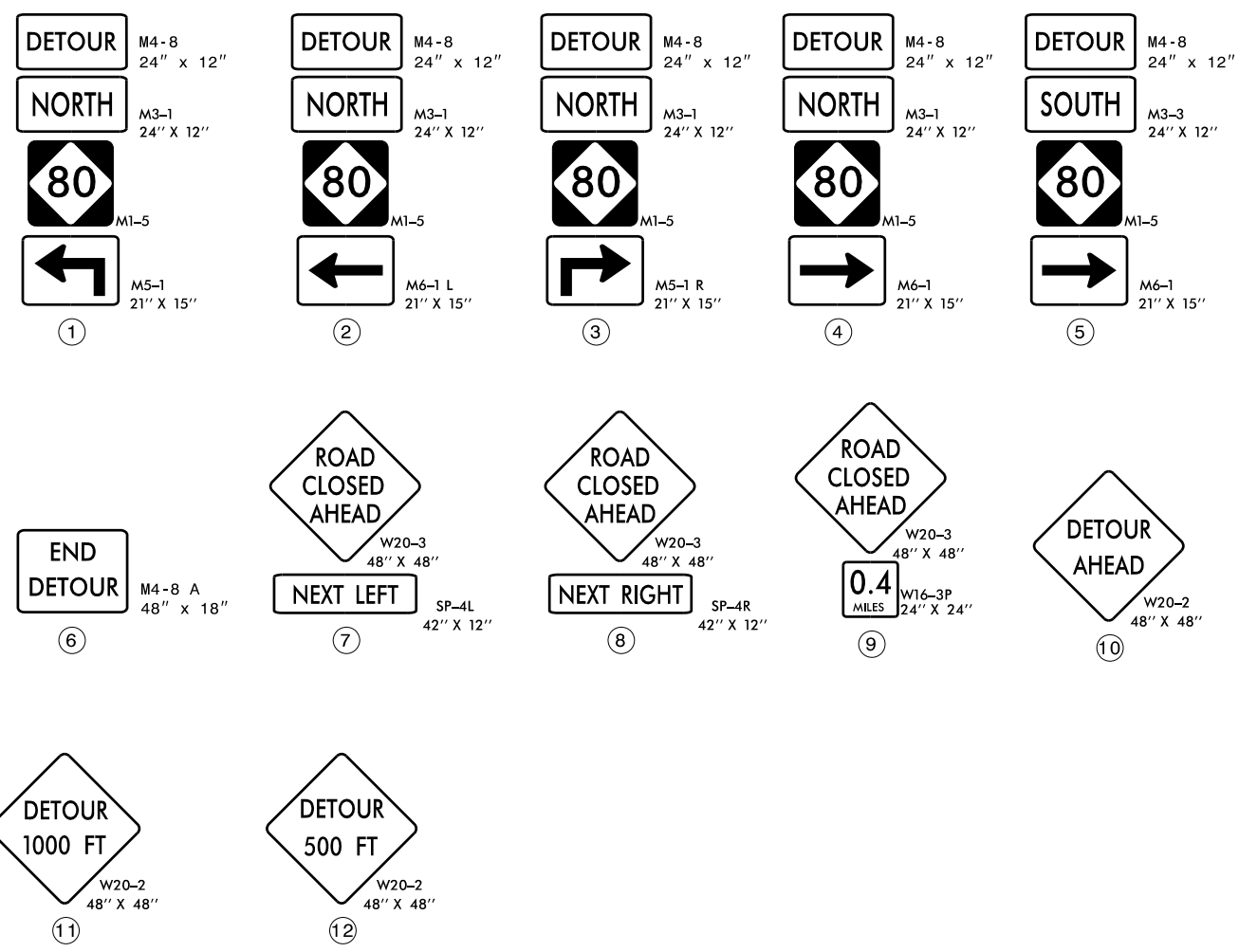
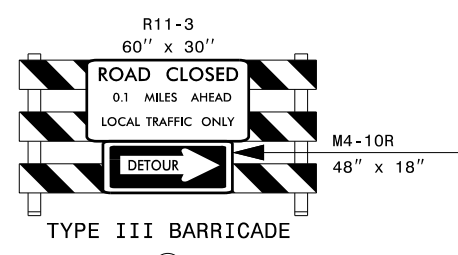
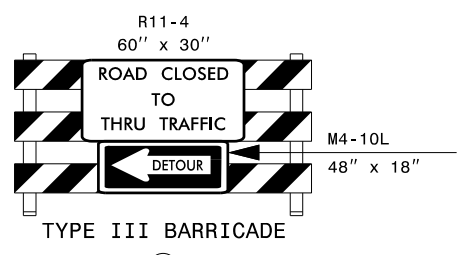
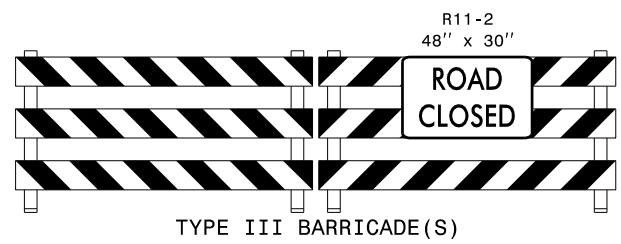
DATE: 3/16/2026



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



PHASING



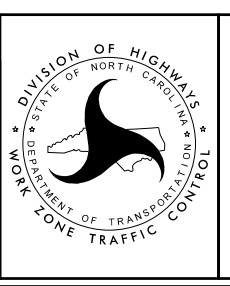
VICINITY MAP

● ● ● OFFSITE DETOUR ROUTE FOR BRIDGE #990056

APPROVED: Don A. Parker
 DATE: 3/16/2026

PROFESSIONAL SEAL
 043251
 DON A. PARKER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

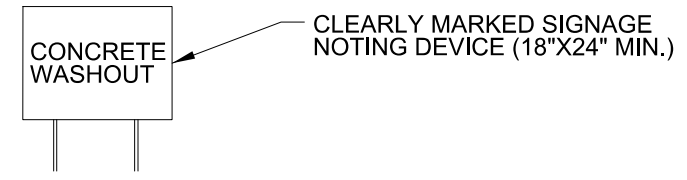
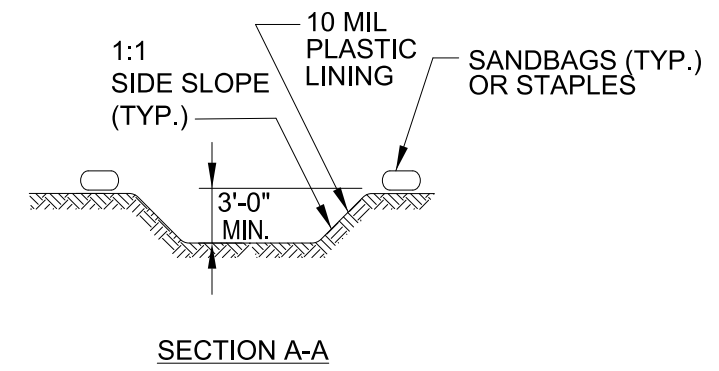
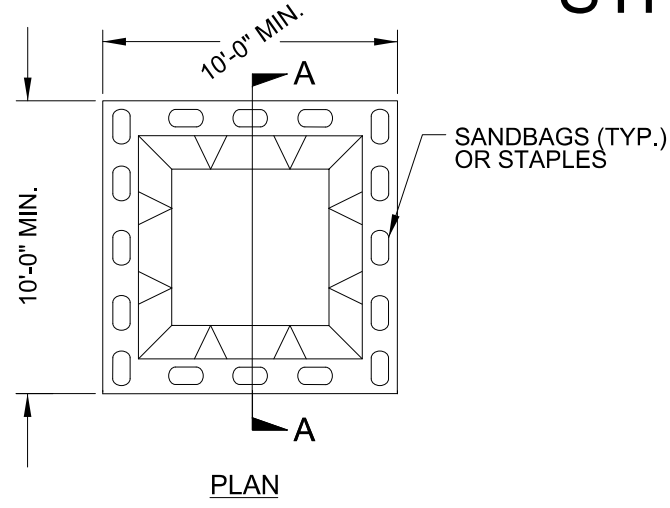


DETOUR SIGNING

2/19/2026 div_13 Bridge Repairs - Helene Mitchell and Yancey - 2nd Round\Yancey 43-328-56 Combined TMP\Yancy 43-328-56_TC_TMP_Detour.dgn User:jjl@cente

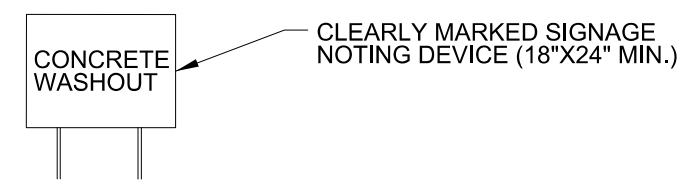
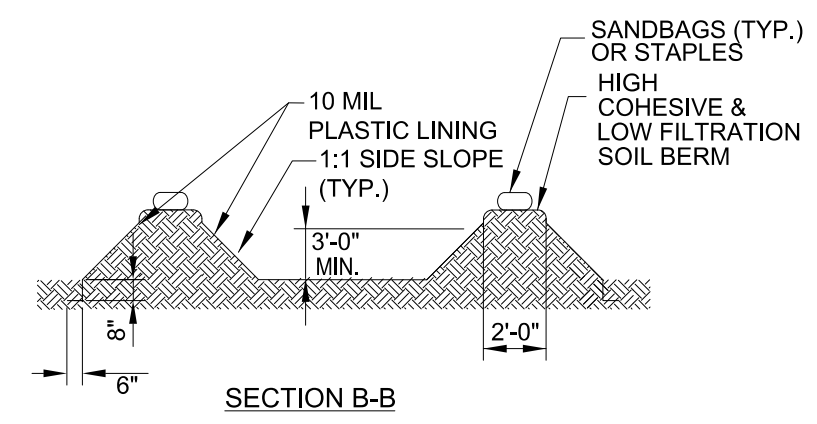
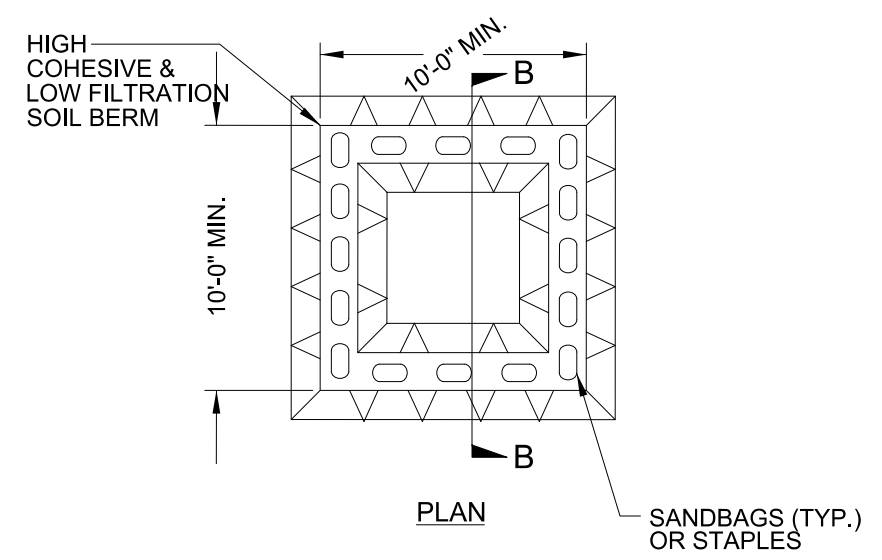
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER

PROJECT REFERENCE NO. 18313.1100050.PR, ETC.	SHEET NO. EC-2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



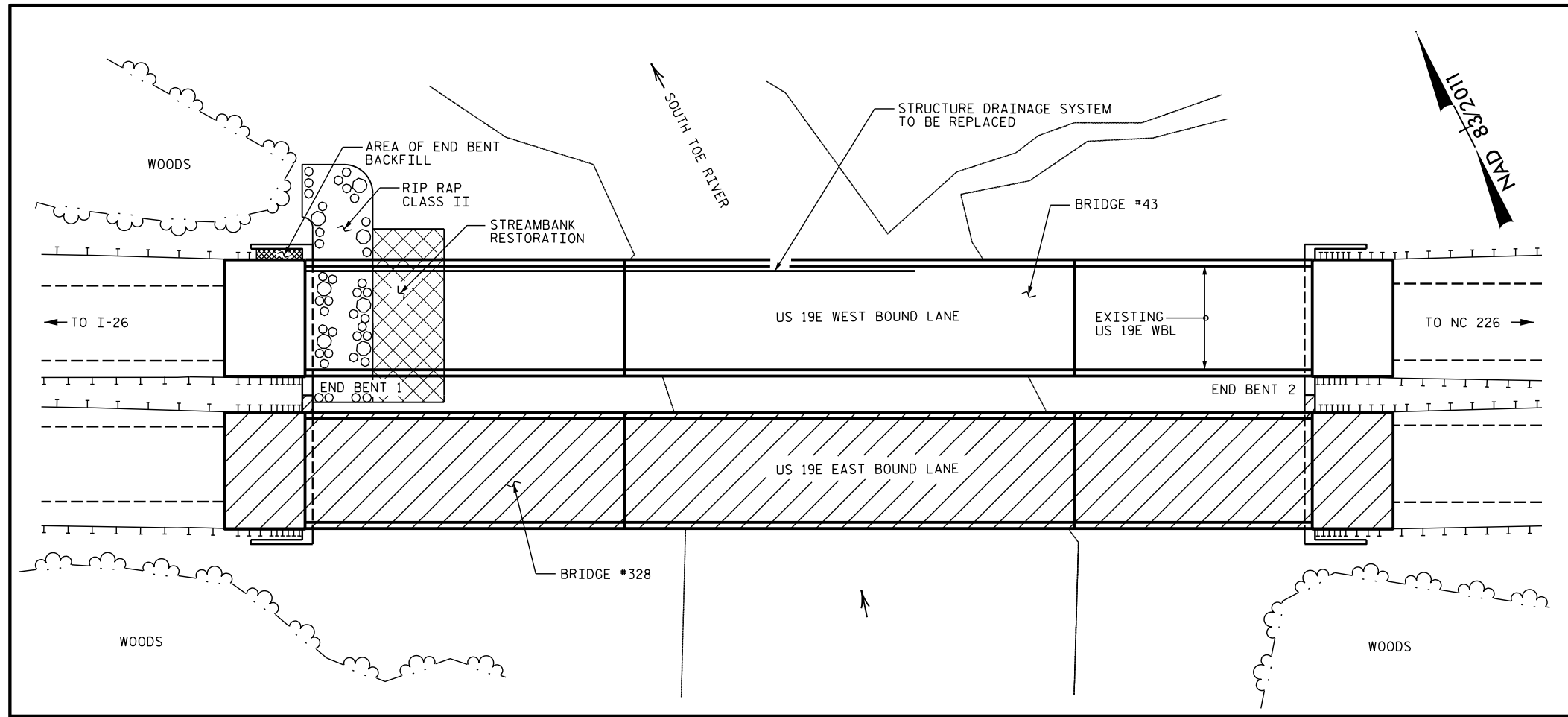
BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

- 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.



LOCATION SKETCH

NOTES

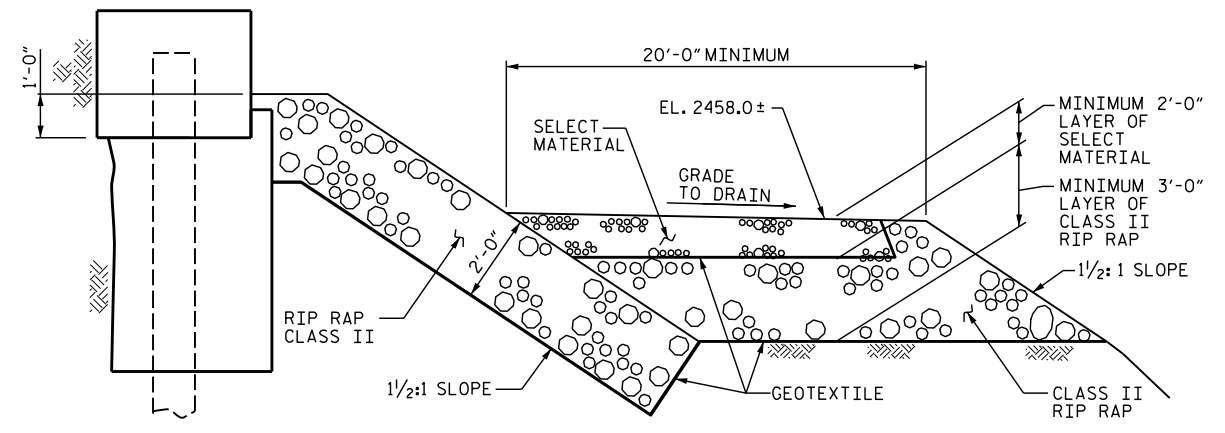
- EXISTING DIMENSIONS AND BRIDGE CONDITIONS ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER. THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THAT SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- FOR FLOWABLE FILL, SEE SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED, ALL WORK SHOWN SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, JANUARY 2024.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.
- FOR OTHER DESIGN DATA, SEE STANDARD NOTES SHEET.
- FOR END BENT BACKFILL, SEE SPECIAL PROVISIONS.
- THE EXISTING STRUCTURE DRAINAGE SYSTEM SHALL BE REPLACED. FOR REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.
- FOR STREAMBANK RESTORATION, SEE SPECIAL PROVISIONS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

SEAL

TOTAL BILL OF MATERIAL								
ITEM	MOBILIZATION	FLOWABLE FILL	FOUNDATION EXCAVATION AT END BENT 1	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM	END BENT BACKFILL	STREAMBANK RESTORATION
	LUMP SUM	C.Y.	LUMP SUM	TONS	SO. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
ESTIMATED TOTALS	LUMP SUM	25	LUMP SUM	100	110	LUMP SUM	LUMP SUM	LUMP SUM

NOTE: QUANTITIES SHOWN ARE ESTIMATED FROM THE BEST INFORMATION AVAILABLE.



CLASS II RIP RAP & STREAMBANK RESTORATION DETAIL

CLASS II RIP RAP AT THE PROJECT SITE SHALL BE STOCKPILED FOR USE FOLLOWING THE SCOUR REPAIR. THE EXISTING RIP RAP SHALL BE SUPPLEMENTED WITH ADDITIONAL CLASS II RIP RAP AS NECESSARY. THE ENTIRE WORK TO STOCKPILE AND REPLACE THE EXISTING RIP RAP SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR FOUNDATION EXCAVATION. RIP RAP SHALL BE PLACED TO A LEVEL OF 1 FOOT ABOVE THE BOTTOM OF THE END BENT CAP OR AS DIRECTED BY THE ENGINEER.

DRAWN BY : NMW DATE : 5/25
 CHECKED BY : MGC DATE : 5/25

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 43

SHEET 1 OF 5

3/16/2026

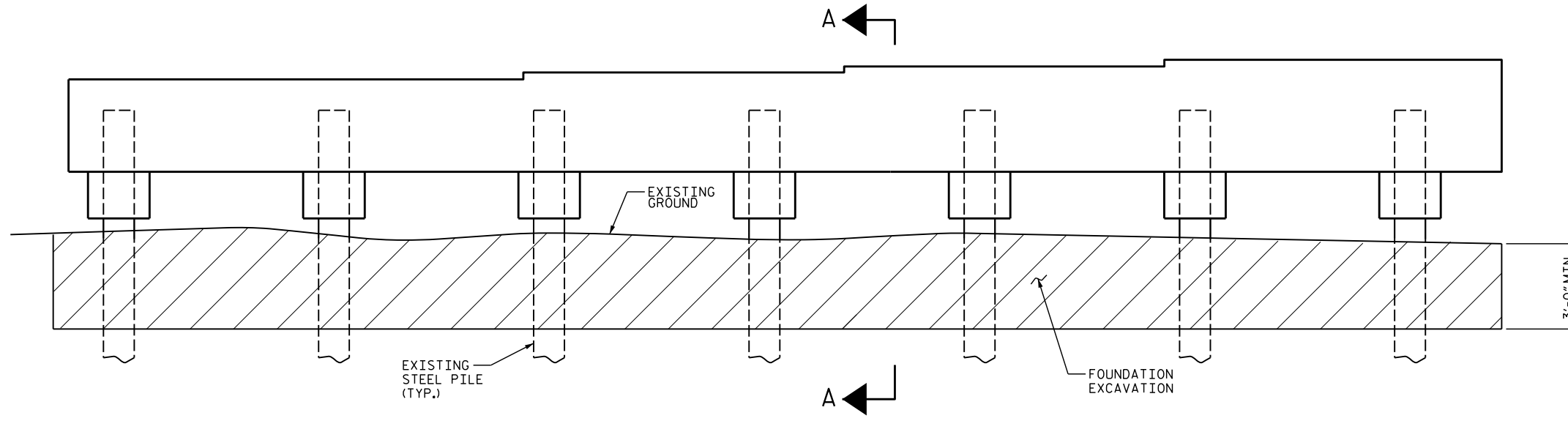
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE #43 ON US 19E
 OVER SOUTH TOE RIVER
 BETWEEN I-26 AND NC 226

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						REVISIONS			SHEET NO.			
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275						NO.	BY:	DATE:	NO.	BY:	DATE:	S1-1
						1			3			TOTAL SHEETS
						2			4			5

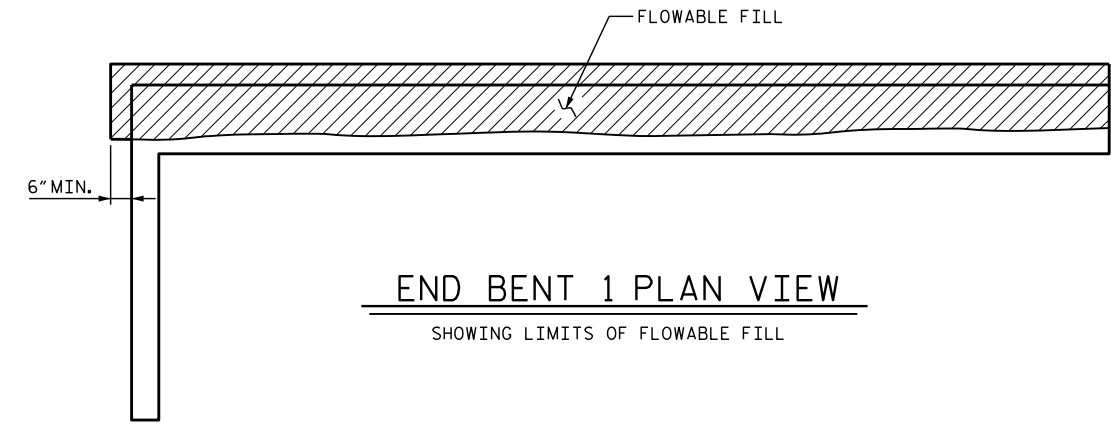
NOTES

TEMPORARILY DEWATER AS NECESSARY TO PROVIDE ACCESS TO END BENT SCOUR AREAS.
 THE MINIMUM EXCAVATION FOR PLACEMENT OF THE FLOWABLE FILL IS INDICATED. SHOULD ADDITIONAL EXCAVATION BE REQUIRED, DETERMINATION OF PAYMENT WILL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR FOUNDATION EXCAVATION.



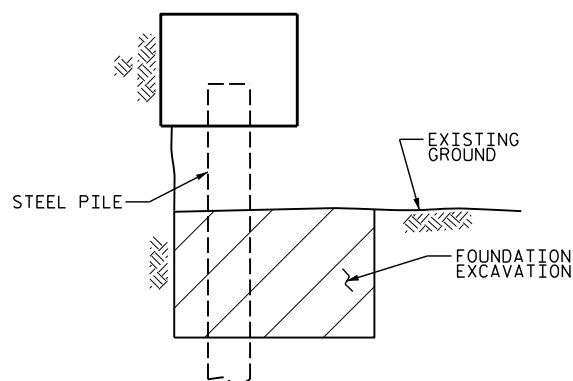
END BENT 1 ELEVATION

WINGS NOT SHOWN IN ELEVATION FOR CLARITY.



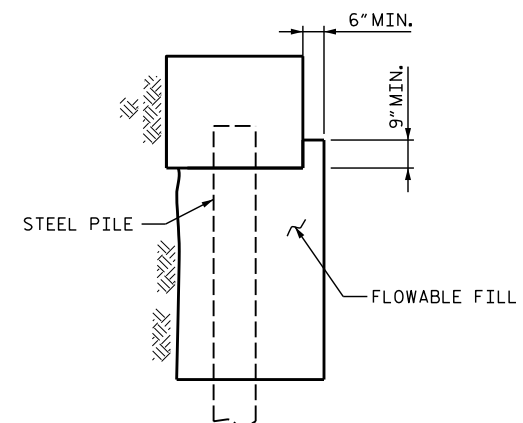
END BENT 1 PLAN VIEW

SHOWING LIMITS OF FLOWABLE FILL



SECTION A-A

SHOWING LIMITS OF FOUNDATION EXCAVATION



SECTION A-A

SHOWING LIMITS OF FLOWABLE FILL

PROJECT NO. 18313.1100050.PR, ETC.

YANCEY COUNTY

BRIDGE NO. 43

SHEET 2 OF 5



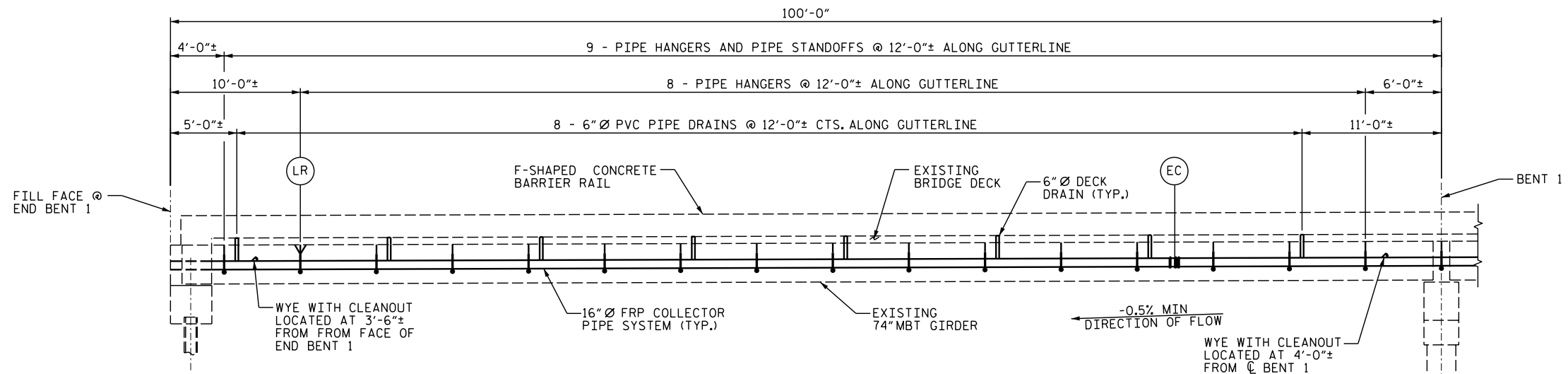
3/16/2026

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

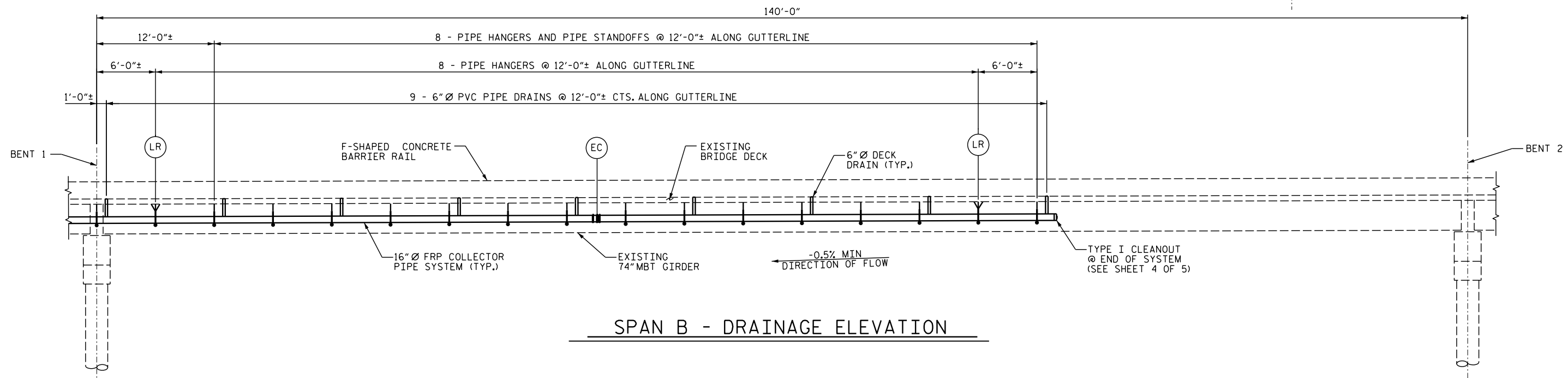
BRIDGE #43 ON US 19E
 OVER SOUTH TOE RIVER
 BETWEEN I-26 AND NC 226

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						REVISIONS		SHEET NO.				
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275						NO.	BY:	DATE:	NO.	BY:	DATE:	S1-2
						1			3			TOTAL SHEETS
						2			4			5

DRAWN BY : NMW DATE : 5/25
 CHECKED BY : MGC DATE : 5/25



SPAN A - DRAINAGE ELEVATION



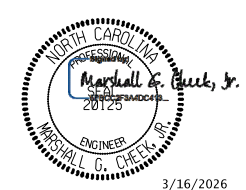
SPAN B - DRAINAGE ELEVATION

NOTES

EC = EXPANSION COUPLER (SEE SHEET 5 OF 5)
 LR = LONGITUDINAL RESTRAINT (SEE SHEET 4 OF 5)
 DISTANCE BETWEEN THE LONGITUDINAL RESTRAINT AND EXPANSION COUPLER SHALL NOT EXCEED 120'-0".

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 43

SHEET 3 OF 5



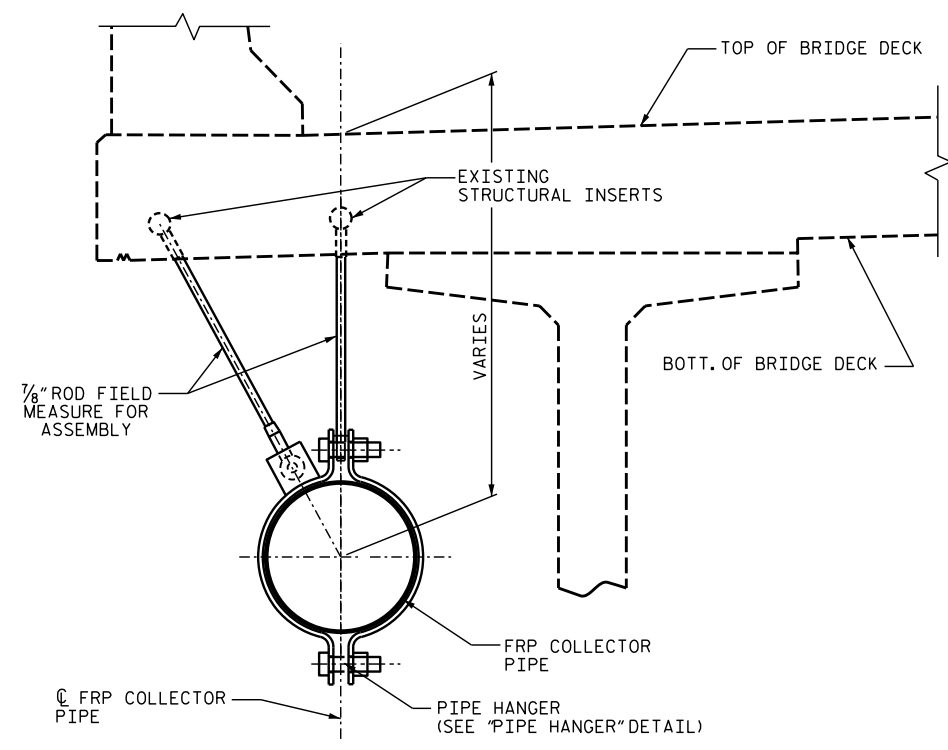
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE #43 ON US 19E
 OVER SOUTH TOE RIVER
 BETWEEN I-26 AND NC 226

DRAWN BY : NMW DATE : 6/25
 CHECKED BY : MGC DATE : 6/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						SHEET NO. S1-3	
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275						TOTAL SHEETS 5	
REVISIONS							
NO.	BY:	DATE:	NO.	BY:	DATE:		
1			3				
2			4				

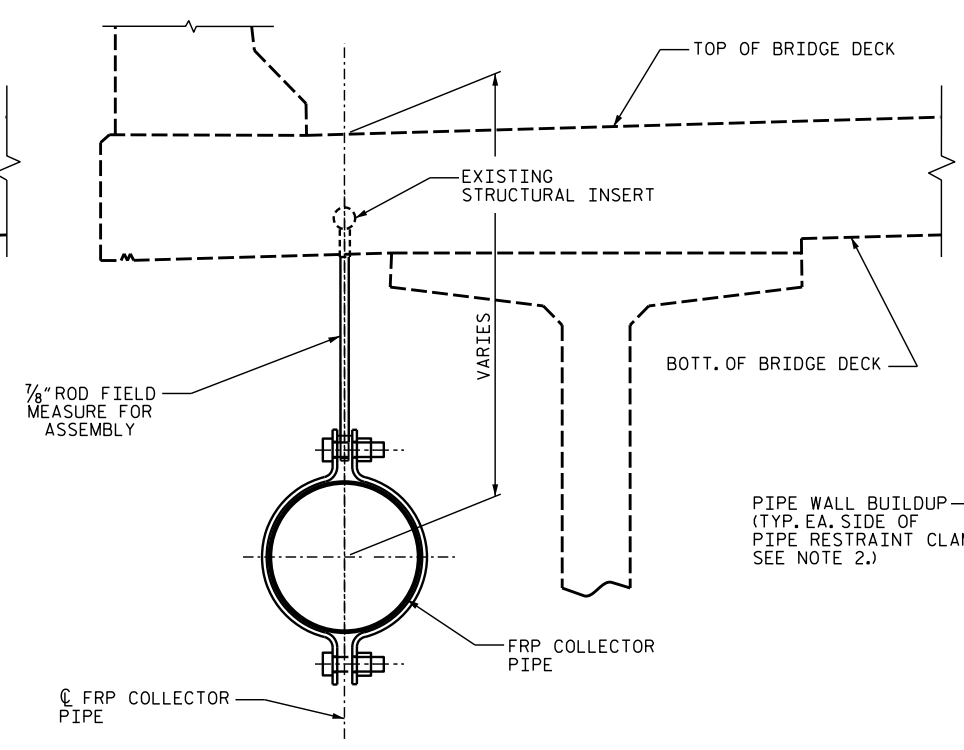
NOTES

- FOR ADDITIONAL NOTES , SEE SHEET 5 OF 5.
- CONTRACTOR SHALL ENSURE PIPE WALL BUILDUP IS SUFFICIENT TO ENGAGE PIPE RESTRAINT CLAMP AT LONGITUDINAL RESTRAINT LOCATIONS.



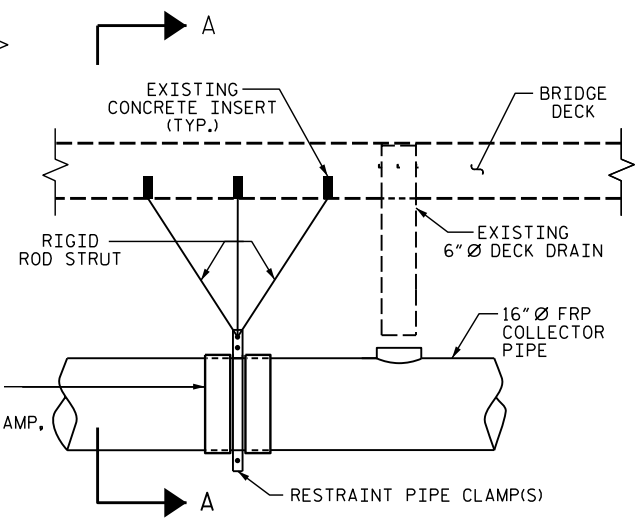
PIPE HANGER AND PIPE STANDOFF

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.

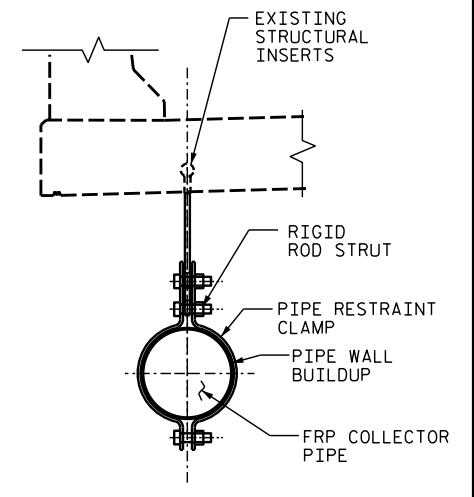


PIPE HANGER

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.



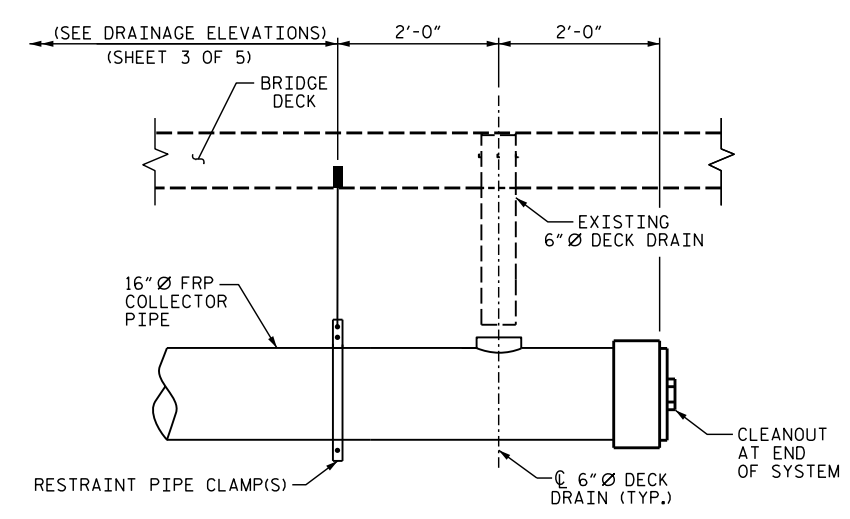
ELEVATION VIEW



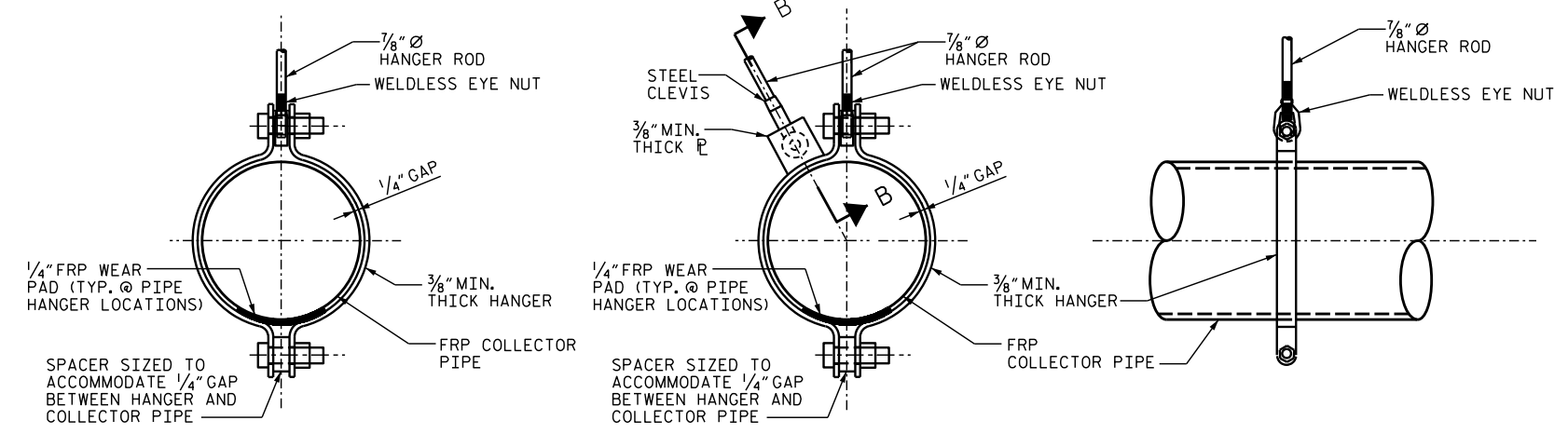
SECTION A-A

LONGITUDINAL RESTRAINT DETAIL

* STANDOFF NOT REQUIRED AT LONGITUDINAL RESTRAINT

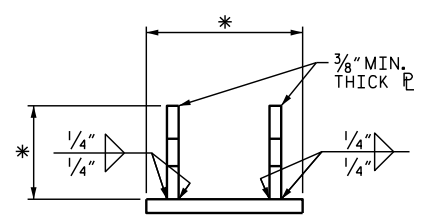


TYPE I SYSTEM END DETAIL



PIPE HANGER DETAILS

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.



SECTION B-B

(STEEL CLEVIS & 7/8" Ø HANGER ROD NOT SHOWN FOR CLARITY)

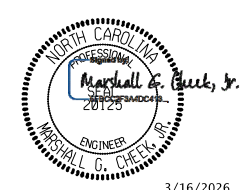
* DIMENSIONS TO BE DETERMINED BY MANUFACTURER

PROJECT NO. 18313.1100050.PR, ETC.

YANCEY COUNTY

BRIDGE NO. 43

SHEET 4 OF 5



3/16/2026

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

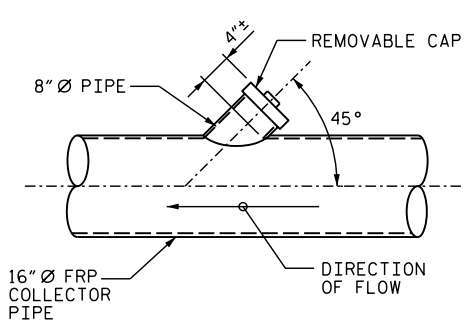
BRIDGE #43 ON US 19E
OVER SOUTH TOE RIVER
BETWEEN I-26 AND NC 226

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						REVISIONS			SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:				
1			3			S1-4			
2			4			TOTAL SHEETS 5			

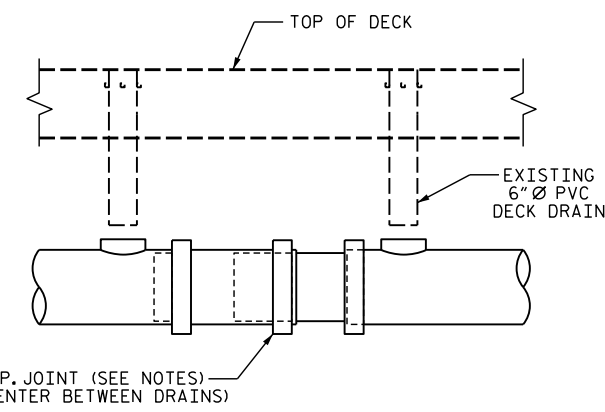
DRAWN BY : NMW DATE : 6/25
CHECKED BY : MGC DATE : 6/25

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

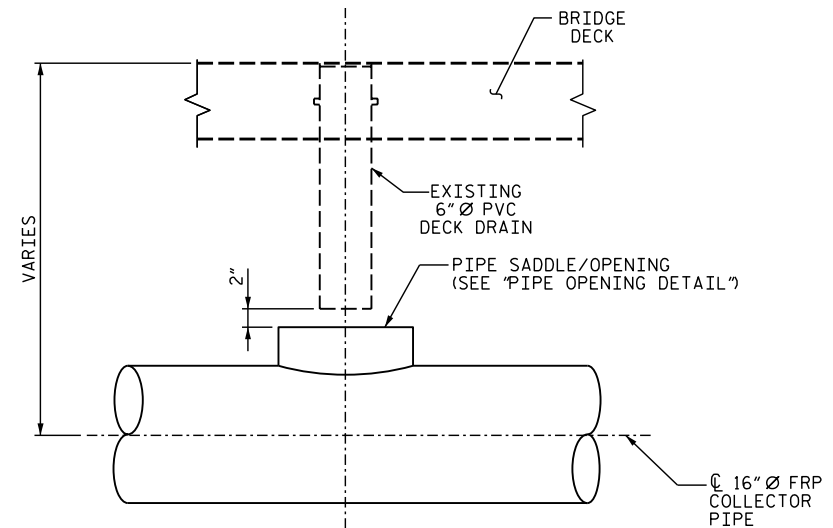
DRAINAGE SYSTEM NOTES



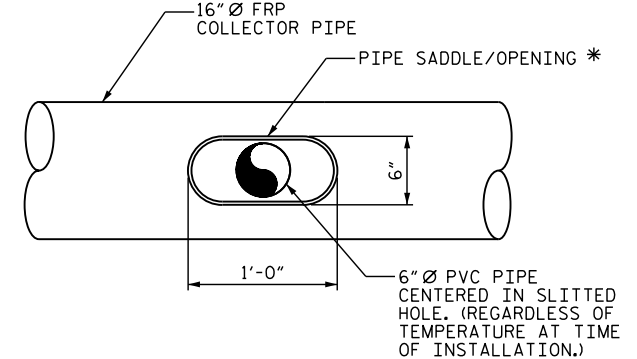
CLEANOUT DETAIL



EXPANSION COUPLER



DRAIN PIPE AND PIPE CONNECTOR



PIPE OPENING DETAIL

* FABRICATOR SHALL DETERMINE PIPE SADDLE/REINFORCEMENT FOR OPENING SIZE INDICATED. FABRICATOR SHALL SUBMIT SHOP DRAWINGS OF PIPE SADDLE/OPENING FOR REVIEW PRIOR TO BEGINNING FABRICATION.

THE CONTRACTOR SHALL REPLACE THE STRUCTURE DRAINAGE SYSTEM IN KIND, INCLUDING ALL FRP COLLECTOR PIPE, PIPE SUPPORT AND PIPE HANGERS AS DETAILED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE ENTIRE COST FOR LABOR AND MATERIALS NECESSARY TO FABRICATE AND INSTALL THE REPLACEMENT COMPONENTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM". FOR REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL REPLACE ALL BROKEN DOWNSPOUTS AS DIRECTED BY THE ENGINEER. THE METHOD OF REPAIR SHALL BE APPROVED BY THE ENGINEER.

CARE SHALL BE TAKEN DURING REMOVAL AND REPLACEMENT OF THE EXISTING STRUCTURE DRAINAGE SYSTEM TO AVOID DAMAGING THE EXISTING STRUCTURE. DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

ALL COLLECTOR PIPES, ELBOWS, COUPLERS, AND TEES SHALL BE FIBERGLASS REINFORCED PLASTIC PIPE MEETING THE SPECIFICATIONS OF ASTM D2996 AND THE ACCELERATED UV WEATHERING PERFORMANCE REQUIREMENTS OF ASTM D4329-05 PER PROCEDURE ASTM G154.

EACH PIPE SECTION SHALL HAVE A MINIMUM OF TWO HANGERS.

COLLECTOR PIPE SECTIONS SHALL BE SUPPORTED FROM THE EXISTING 7/8" INSERTS EMBEDDED IN THE CONCRETE DECK SLAB, NO ATTACHMENT TO THE GIRDERS WILL BE PERMITTED.

CONTRACTOR SHALL PROVIDE FRP COUPLINGS CAPABLE OF HANDLING THE ANTICIPATED MOVEMENTS. ADDITIONALLY FRP COUPLINGS SHALL PROVIDE HORIZONTAL ALIGNMENT TOLERANCES SUCH THAT THE 16" Ø FRP COLLECTOR PIPE AND COUPLINGS CAN CLOSELY FOLLOW THE VERTICAL CURVE OF THE STRUCTURE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE DRAINAGE SYSTEM USING NECESSARY FITTINGS, TEES, AND WYES TO PROVIDE A CONTINUOUS DRAINAGE SYSTEM.

DECK DRAIN PIPE SHALL BE ASTM D1785, SCHEDULE 40. ALL PVC FITTINGS SHALL BE MINIMUM ASTM D2655, SCHEDULE 40.

EXPANSION JOINT COUPLERS IN THE COLLECTOR PIPE SHALL HAVE A MINIMUM CAPACITY TO ACCOMMODATE 6 INCHES OF TOTAL MOVEMENT (3 INCHES EXPANSION/3 INCHES CONTRACTION.)

COLLECTOR PIPE SUPPORTS SHALL BE LOCATED WITHIN 12 INCHES, ± 4 INCHES, OF A COLLECTOR PIPE JOINT.

DECK DOWN-DRAIN PIPES SHALL BE CENTERED IN SLOTTED OPENING IN COLLECTOR PIPE REGARDLESS OF TEMPERATURE AT TIME OF INSTALLATION.

HANGER RODS SHALL BE ASTM A193, GRADE B7 OR CARBON STEEL ALL-THREAD HANGER RODS.

NUTS SHALL BE ASTM A194, GRADE 2H, HEAVY HEX NUTS.

THE DETAILS OF ALL PIPING, HARDWARE, OR OTHER MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

WORKING DRAWINGS FOR THE DRAINAGE SYSTEM AND LAYOUT PLANS INCLUDING, BUT NOT LIMITED TO, PIPE SUPPORT BRACKETS, PIPE ALIGNMENT, PIPE LENGTHS, AND ALL NECESSARY FITTINGS, ELBOWS, WYES, ADAPTERS, GUIDES, RESTRAINTS, WEAR PADS, COUPLERS AND JOINTS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA AND SUBMITTED FOR APPROVAL PRIOR TO ORDERING MATERIALS.

PIPE MANUFACTURER SHALL ENSURE THE PIPE AND THE PIPE SUPPORT BEARING AREA IS DESIGNED IN ACCORDANCE WITH THE HANGER SPACING PROVIDED IN THESE PLANS.

PIPE DESIGN MUST ALLOW VERTICAL FLEXURE FROM THE SUPERSTRUCTURE.

THE COLLECTOR PIPE SHALL CLOSELY FOLLOW THE LONGITUDINAL GRADE OF THE STRUCTURE WHILE MAINTAINING A MINIMUM OF 5% SLOPE AT ALL TIMES.

COUPLERS SHALL BE DESIGNED TO ACCOMMODATE A TURN AT EACH BENT IN ORDER TO FOLLOW THE HORIZONTAL AND VERTICAL CURVATURE OF THE BRIDGE OVERHANG.

THE PIPE MANUFACTURER SHALL ENSURE THE FRICTIONAL FORCE REQUIRED TO ACTIVATE THE EXPANSION COUPLERS DOES NOT OVERSTRESS THE COUPLER WALL BUILD-UP, DRAINAGE SYSTEM BRACKETS SUPPORTS OR LATERAL RESTRAINTS.

WASHERS SHALL BE ASTM F436 OR APPROVED EQUAL.

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

BOLT THREADS SHALL BE BURRED TO PREVENT LOOSENING.

PVC PIPE SHALL BE PAINTED TO MATCH THE SURFACE FINISH OF THE STRUCTURE WITH TWO COATS OF AN ACRYLIC OR LATEX PAINT THAT IS CHEMICALLY COMPATIBLE WITH PVC PRODUCTS AND MEETS THE REQUIREMENTS OF ARTICLE 1080-12 OF THE STANDARD SPECIFICATIONS. EACH COAT SHALL BE 2 DRY MILS THICK. DECK DRAINS SHALL BE ROUGHENED PRIOR TO PAINTING.

ALL METALLIC COMPONENTS IN THE DRAINAGE SYSTEM, EXCEPT STAINLESS STEEL AND MALLEABLE IRON PARTS, ARE REQUIRED TO BE HOT-DIPPED GALVANIZED PER NCDOT STANDARD SPECIFICATIONS. ELECTRO-PLATE COATING ON STEEL RODS, STEEL YOKE TYPE PIPE ROLLS, BRACKETS, OTHER STEEL HARDWARE IS CONSIDERED BY NCDOT AS TOO THIN FOR OUTDOOR APPLICATIONS.

ALL FRP AND PVC PIPE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ALL STRUCTURAL STEEL SHALL BE ASTM A36 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.

THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP-1) PRIOR TO COATING.

ALL FABRICATION SHALL CONFORM TO THE APPLICABLE SECTION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

ALL FRP SHALL BE PIGMENTED TO MATCH THE SURFACE FINISH OF THE STRUCTURE.

ALL FRP PIPE SIZES ARE SHOWN AS INSIDE DIAMETER SIZES.

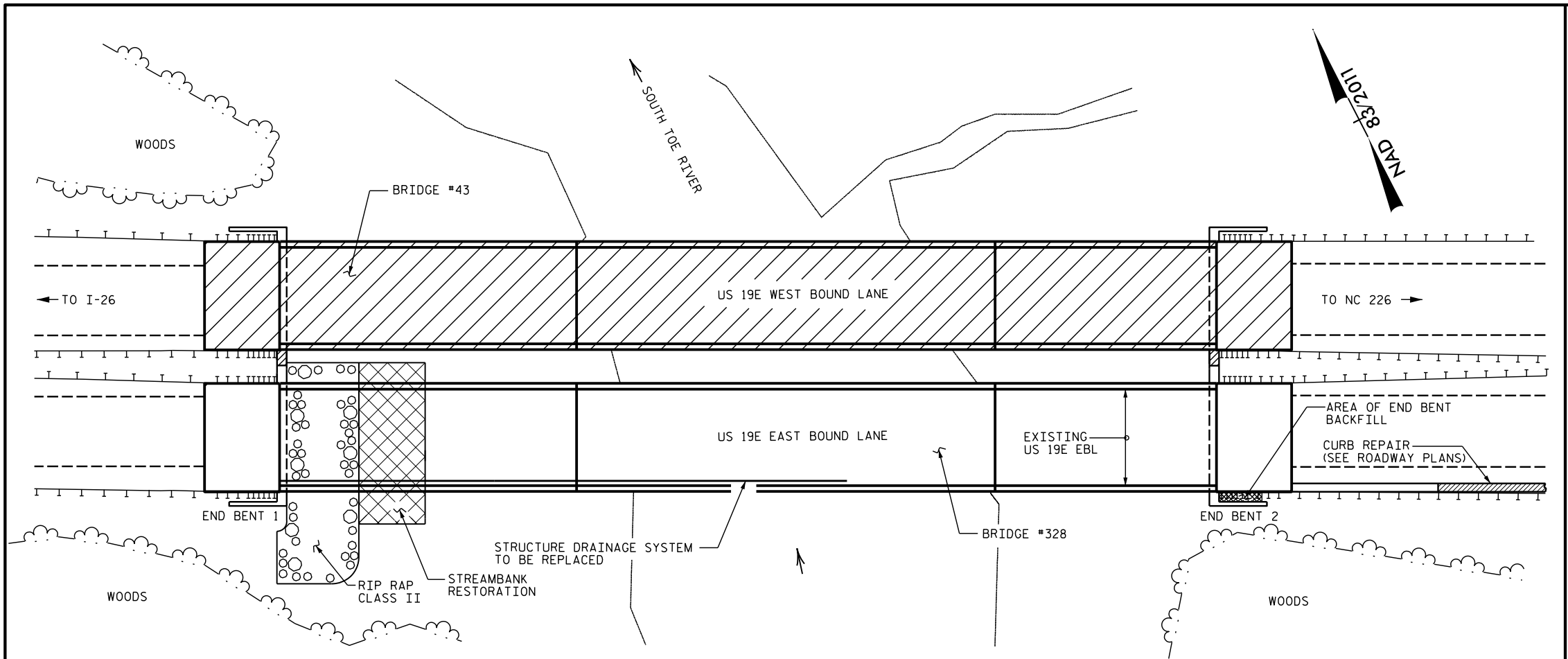
FRP = FIBERGLASS REINFORCED PLASTIC.

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 43

SHEET 5 OF 5

		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						
		BRIDGE #43 ON US 19E OVER SOUTH TOE RIVER BETWEEN I-26 AND NC 226						
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		REVISIONS		SHEET NO.				
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275		NO.	BY:	DATE:	NO.	BY:	DATE:	S1-5
		1			3			TOTAL SHEETS
		2			4			5

DRAWN BY : NMW DATE : 6/25
 CHECKED BY : MGC DATE : 6/25



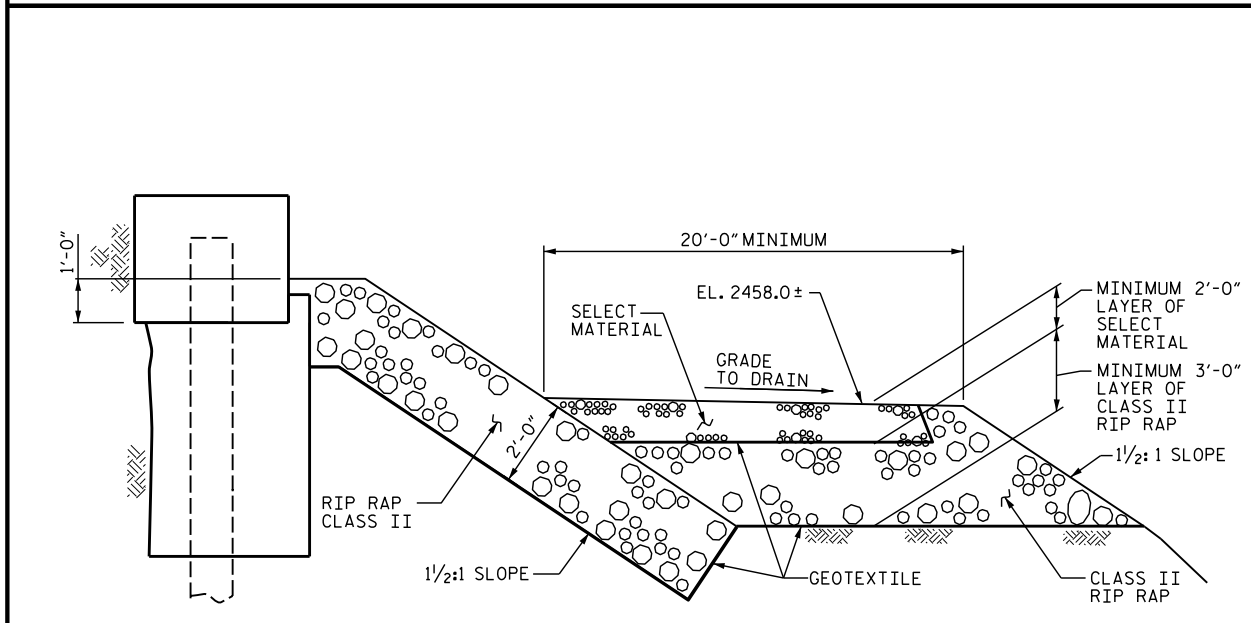
LOCATION SKETCH

NOTES

- EXISTING DIMENSIONS AND BRIDGE CONDITIONS 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.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- FOR FLOWABLE FILL, SEE SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED, ALL WORK SHOWN SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, JANUARY 2024.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.
- FOR OTHER DESIGN DATA, SEE STANDARD NOTES SHEET.
- FOR END BENT BACKFILL, SEE SPECIAL PROVISIONS.
- THE EXISTING STRUCTURE DRAINAGE SYSTEM SHALL BE REPLACED. FOR REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.
- FOR STREAMBANK RESTORATION, SEE SPECIAL PROVISIONS.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

SEAL



CLASS II RIP RAP & STREAMBANK RESTORATION DETAIL

CLASS II RIP RAP AT THE PROJECT SITE SHALL BE STOCKPILED FOR USE FOLLOWING THE SCOUR REPAIR. THE EXISTING RIP RAP SHALL BE SUPPLEMENTED WITH ADDITIONAL CLASS II RIP RAP AS NECESSARY. THE ENTIRE WORK TO STOCKPILE AND REPLACE THE EXISTING RIP RAP SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR FOUNDATION EXCAVATION. RIP RAP SHALL BE PLACED TO A LEVEL OF 1 FOOT ABOVE THE BOTTOM OF THE END BENT CAP OR AS DIRECTED BY THE ENGINEER.

TOTAL BILL OF MATERIAL								
ITEM	MOBILIZATION	FLOWABLE FILL	FOUNDATION EXCAVATION AT END BENT 2	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM	END BENT BACKFILL	STREAMBANK RESTORATION
	LUMP SUM	C.Y.	LUMP SUM	TONS	SO. YDS.	LUMP SUM	LUMP SUM	LUMP SUM
ESTIMATED TOTALS	LUMP SUM	15	LUMP SUM	100	110	LUMP SUM	LUMP SUM	LUMP SUM

NOTE: QUANTITIES SHOWN ARE ESTIMATED FROM THE BEST INFORMATION AVAILABLE.

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 328

SHEET 1 OF 5

DRAWN BY : NMW DATE : 4/25
 CHECKED BY : MGC DATE : 5/25

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE #328 ON US 19E OVER SOUTH TOE RIVER BETWEEN I-26 AND NC 226

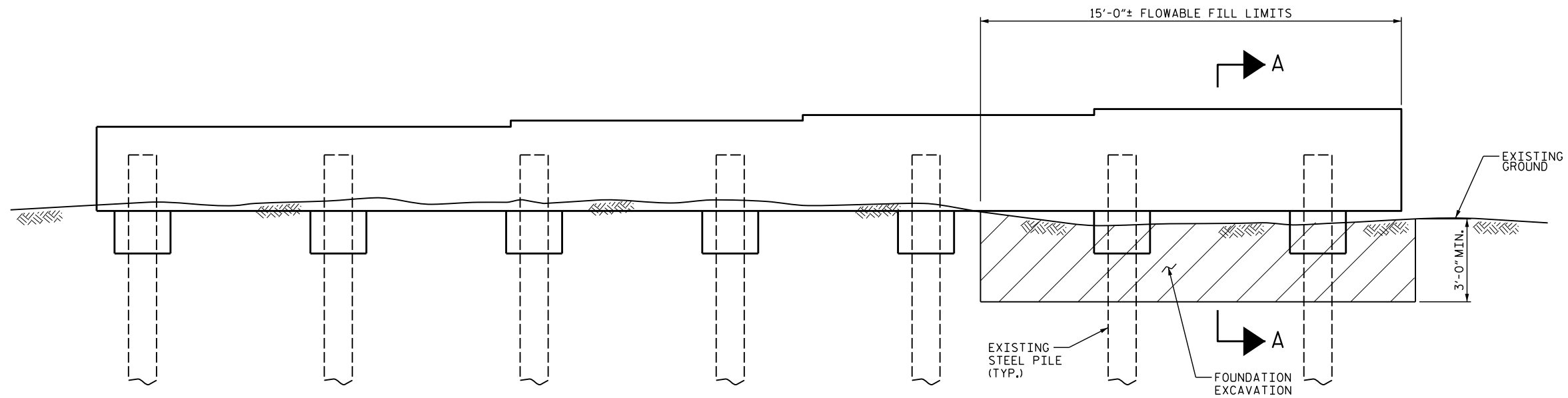
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
 201 W. MARION ST STE 200
 SHELBY, NC 28150
 PH (704) 476-0003
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S2-1
2			4			TOTAL SHEETS 5

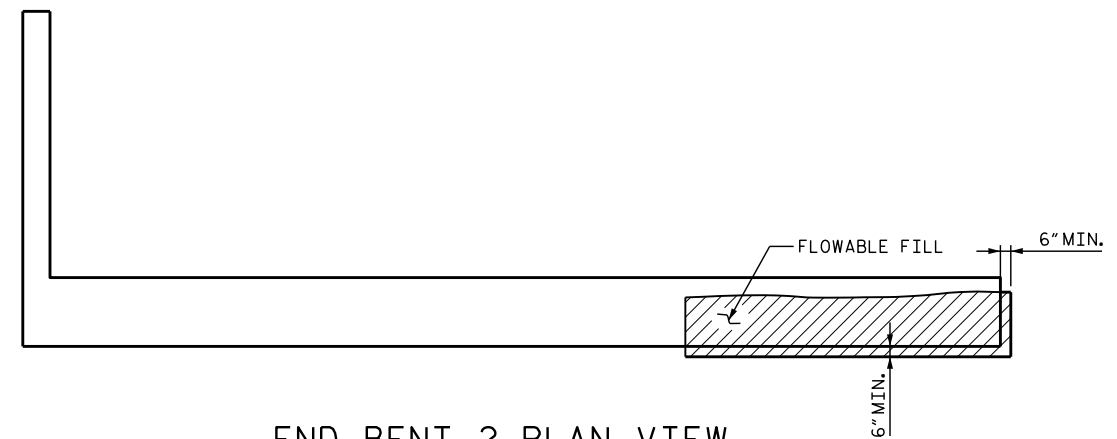
NOTES

TEMPORARILY DEWATER AS NECESSARY TO PROVIDE ACCESS TO END BENT SCOUR AREAS.
 THE MINIMUM EXCAVATION FOR PLACEMENT OF THE FLOWABLE FILL IS INDICATED. SHOULD ADDITIONAL EXCAVATION BE REQUIRED, DETERMINATION OF PAYMENT WILL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR FOUNDATION EXCAVATION.



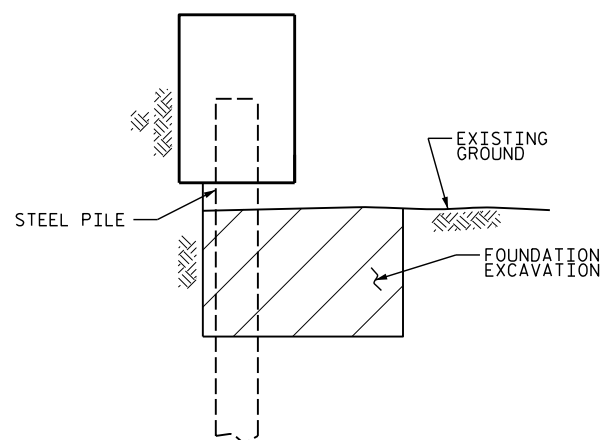
END BENT 2 ELEVATION

WINGS NOT SHOWN IN ELEVATION FOR CLARITY.



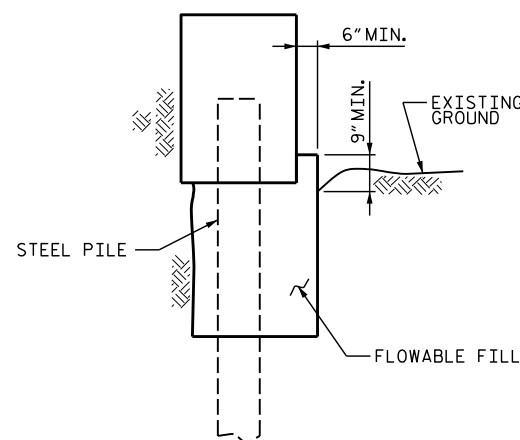
END BENT 2 PLAN VIEW

SHOWING LIMITS OF FLOWABLE FILL



SECTION A-A

SHOWING LIMITS OF FOUNDATION EXCAVATION



SECTION A-A

SHOWING LIMITS OF FLOWABLE FILL

PROJECT NO. 18313.1100050.PR, ETC.

YANCEY COUNTY

BRIDGE NO. 328

SHEET 2 OF 5

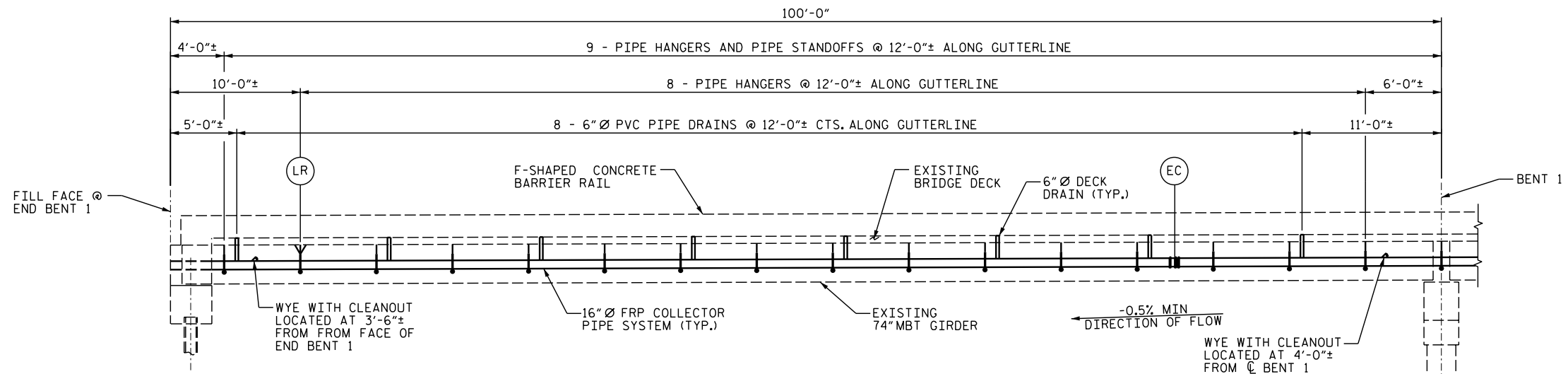


STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

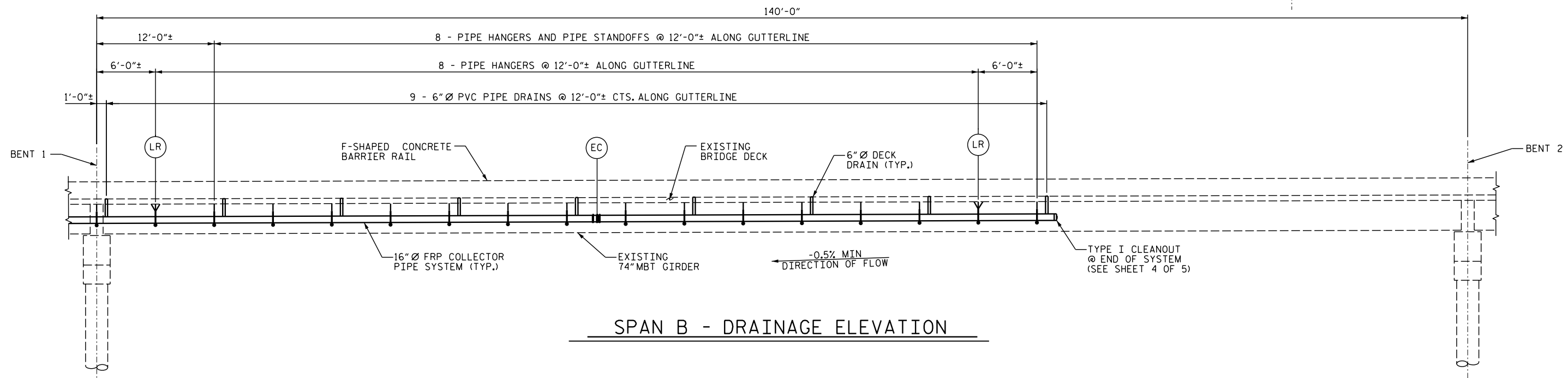
BRIDGE #328 ON US 19E
 OVER SOUTH TOE RIVER
 BETWEEN I-26 AND NC 226

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						REVISIONS			SHEET NO.			
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275						NO.	BY:	DATE:	NO.	BY:	DATE:	S2-2
						1			3			TOTAL SHEETS
						2			4			5

DRAWN BY : NMW DATE : 5/25
 CHECKED BY : MGC DATE : 5/25



SPAN A - DRAINAGE ELEVATION



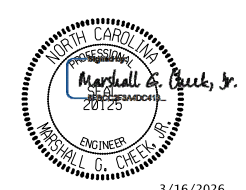
SPAN B - DRAINAGE ELEVATION

NOTES

EC = EXPANSION COUPLER (SEE SHEET 5 OF 5)
 LR = LONGITUDINAL RESTRAINT (SEE SHEET 4 OF 5)
 DISTANCE BETWEEN THE LONGITUDINAL RESTRAINT AND EXPANSION COUPLER SHALL NOT EXCEED 120'-0".

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 328

SHEET 3 OF 5



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

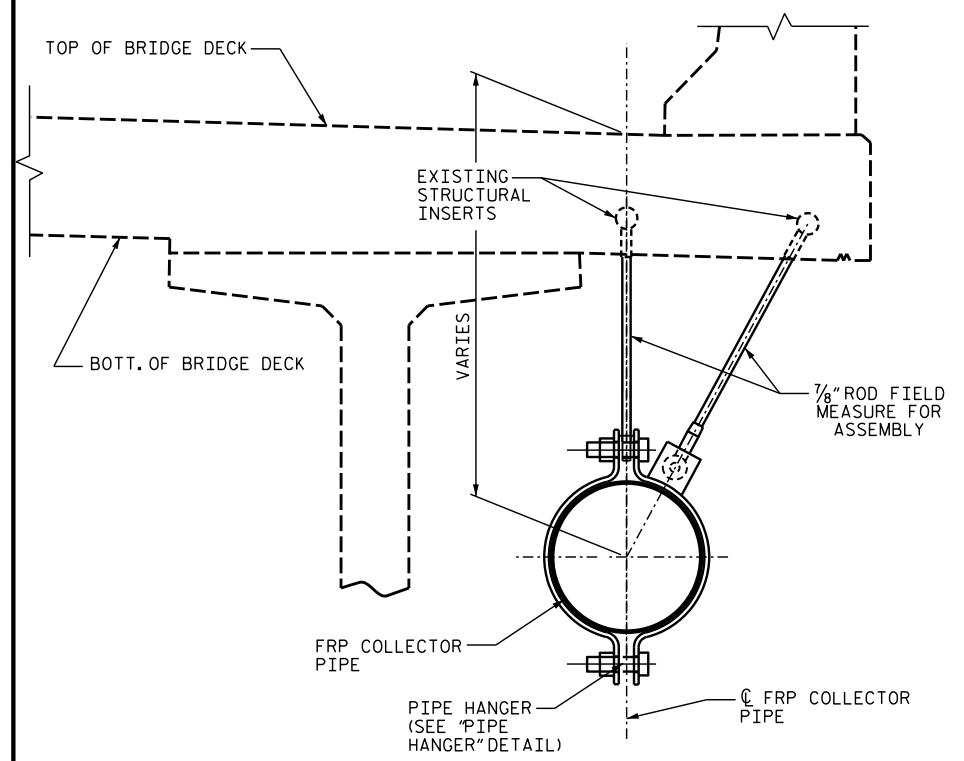
BRIDGE #328 ON US 19E
 OVER SOUTH TOE RIVER
 BETWEEN I-26 AND NC 226

DRAWN BY : NMW DATE : 6/25
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						SHEET NO. S2-3	
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275						TOTAL SHEETS 5	
REVISIONS							
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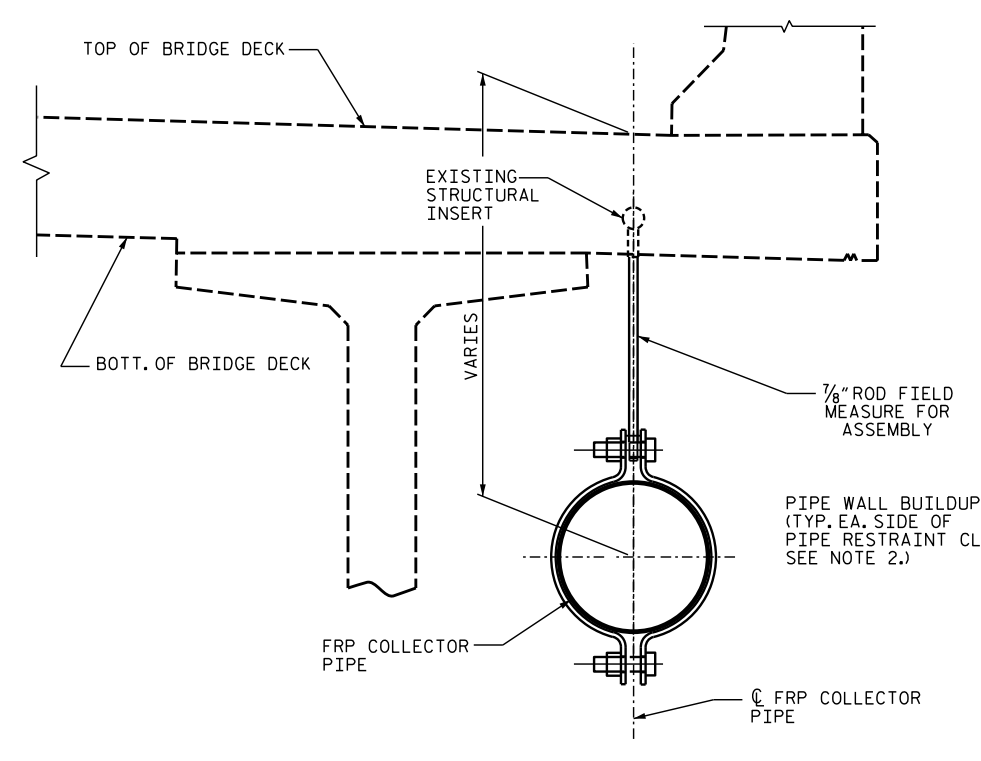
NOTES

- FOR ADDITIONAL NOTES , SEE SHEET 5 OF 5.
- CONTRACTOR SHALL ENSURE PIPE WALL BUILDUP IS SUFFICIENT TO ENGAGE PIPE RESTRAINT CLAMP AT LONGITUDINAL RESTRAINT LOCATIONS.



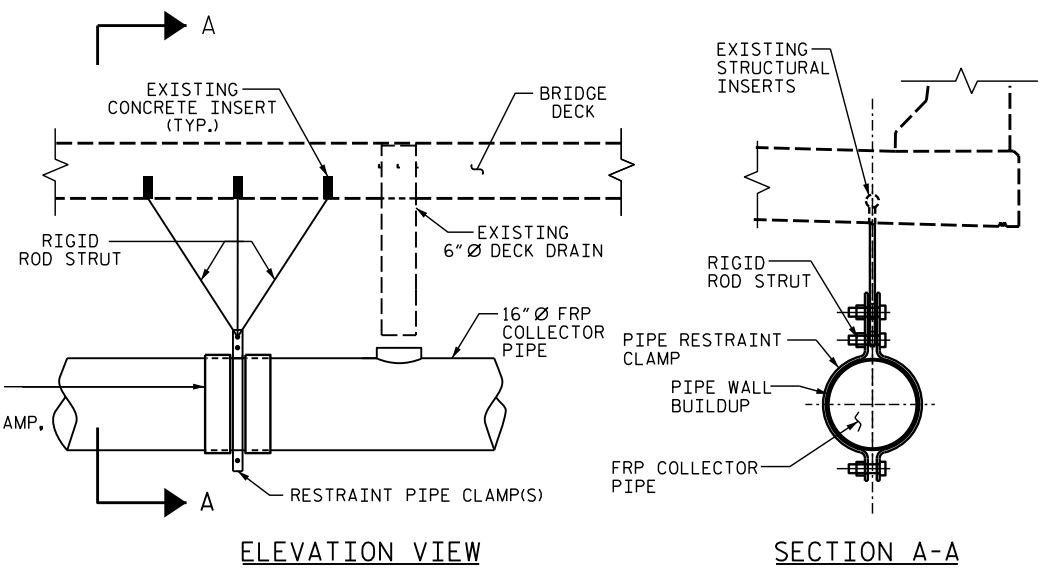
PIPE HANGER AND PIPE STANDOFF

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.



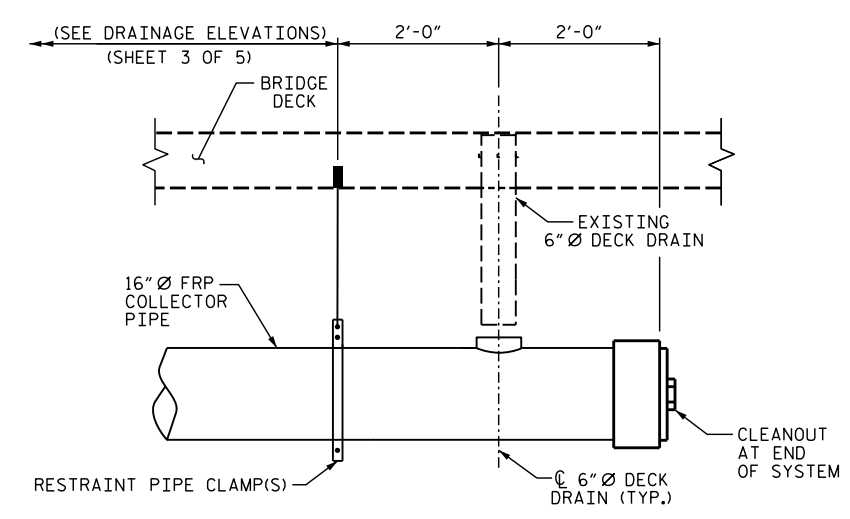
PIPE HANGER

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.

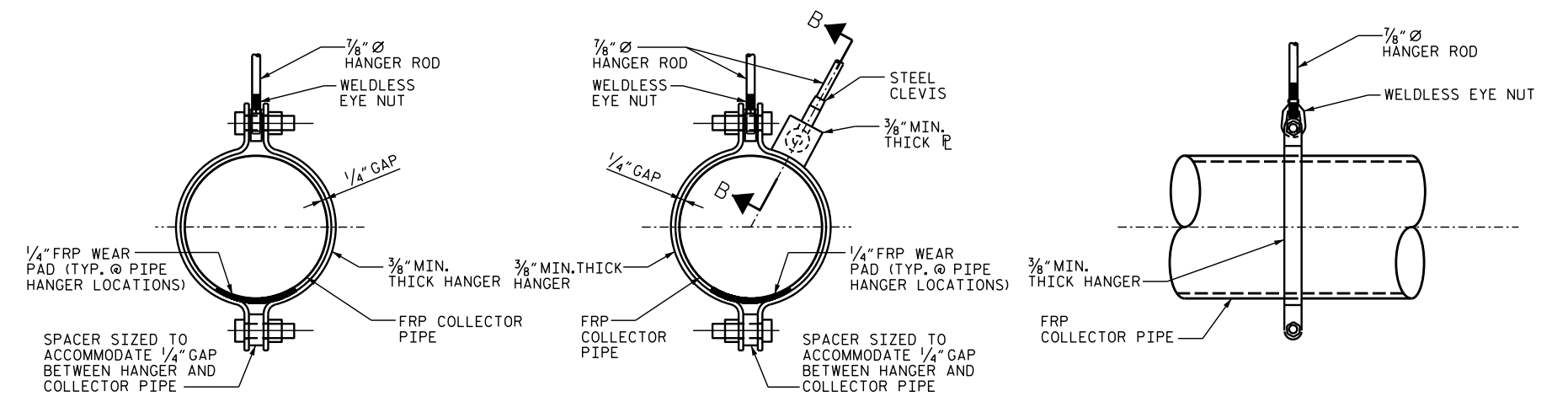


LONGITUDINAL RESTRAINT DETAIL

* STANDOFF NOT REQUIRED AT LONGITUDINAL RESTRAINT

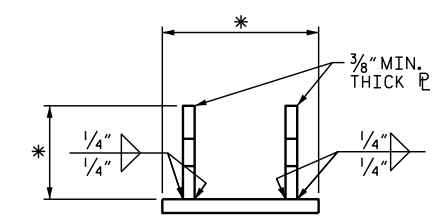


TYPE I SYSTEM END DETAIL



PIPE HANGER DETAILS

ALL COMPONENTS SHALL BE GALVANIZED AFTER FABRICATION.



SECTION B-B

(STEEL CLEVIS & 7/8" HANGER ROD NOT SHOWN FOR CLARITY)

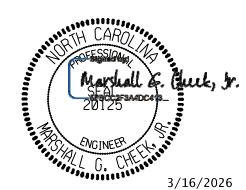
* DIMENSIONS TO BE DETERMINED BY MANUFACTURER

PROJECT NO. 18313.1100050.PR, ETC.

YANCEY COUNTY

BRIDGE NO. 328

SHEET 4 OF 5



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

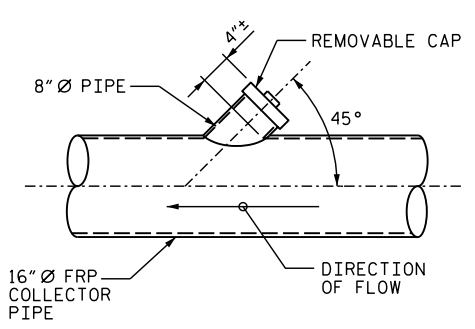
BRIDGE #328 ON US 19E
OVER SOUTH TOE RIVER
BETWEEN I-26 AND NC 226

DRAWN BY : NMW DATE : 6/25
CHECKED BY : MGC DATE : 6/25

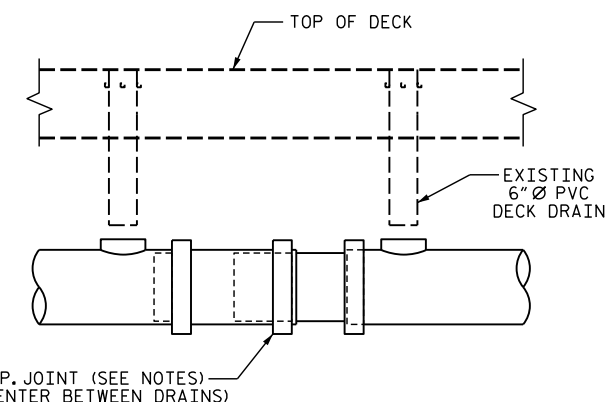
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						REVISIONS			SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:				
1			3			S2-4			
2			4			TOTAL SHEETS 5			

TGS ENGINEERS
201 W. MARION ST STE 200
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

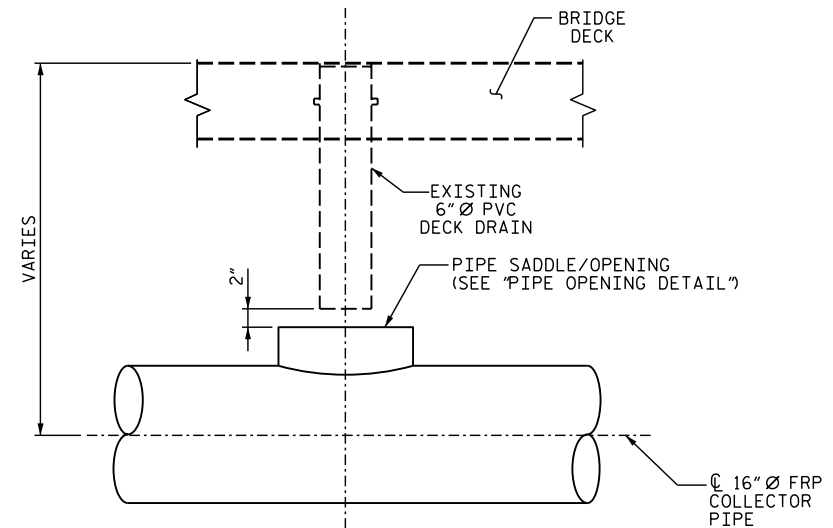
DRAINAGE SYSTEM NOTES



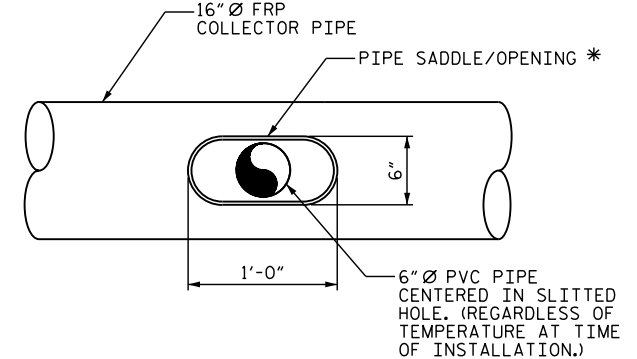
CLEANOUT DETAIL



EXPANSION COUPLER



DRAIN PIPE AND PIPE CONNECTOR



PIPE OPENING DETAIL

* FABRICATOR SHALL DETERMINE PIPE SADDLE/REINFORCEMENT FOR OPENING SIZE INDICATED. FABRICATOR SHALL SUBMIT SHOP DRAWINGS OF PIPE SADDLE/OPENING FOR REVIEW PRIOR TO BEGINNING FABRICATION.

THE CONTRACTOR SHALL REPLACE THE STRUCTURE DRAINAGE SYSTEM IN KIND, INCLUDING ALL FRP COLLECTOR PIPE, PIPE SUPPORT AND PIPE HANGERS AS DETAILED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE ENTIRE COST FOR LABOR AND MATERIALS NECESSARY TO FABRICATE AND INSTALL THE REPLACEMENT COMPONENTS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM". FOR REPLACEMENT OF STRUCTURE DRAINAGE SYSTEM, SEE SPECIAL PROVISIONS.

THE CONTRACTOR SHALL REPLACE ALL BROKEN DOWNSPOUTS AS DIRECTED BY THE ENGINEER. THE METHOD OF REPAIR SHALL BE APPROVED BY THE ENGINEER.

CARE SHALL BE TAKEN DURING REMOVAL AND REPLACEMENT OF THE EXISTING STRUCTURE DRAINAGE SYSTEM TO AVOID DAMAGING THE EXISTING STRUCTURE. DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

ALL COLLECTOR PIPES, ELBOWS, COUPLERS, AND TEES SHALL BE FIBERGLASS REINFORCED PLASTIC PIPE MEETING THE SPECIFICATIONS OF ASTM D2996 AND THE ACCELERATED UV WEATHERING PERFORMANCE REQUIREMENTS OF ASTM D4329-05 PER PROCEDURE ASTM G154.

EACH PIPE SECTION SHALL HAVE A MINIMUM OF TWO HANGERS.

COLLECTOR PIPE SECTIONS SHALL BE SUPPORTED FROM THE EXISTING 7/8" INSERTS EMBEDDED IN THE CONCRETE DECK SLAB, NO ATTACHMENT TO THE GIRDERS WILL BE PERMITTED.

CONTRACTOR SHALL PROVIDE FRP COUPLINGS CAPABLE OF HANDLING THE ANTICIPATED MOVEMENTS. ADDITIONALLY FRP COUPLINGS SHALL PROVIDE HORIZONTAL ALIGNMENT TOLERANCES SUCH THAT THE 16" Ø FRP COLLECTOR PIPE AND COUPLINGS CAN CLOSELY FOLLOW THE VERTICAL CURVE OF THE STRUCTURE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE HORIZONTAL AND VERTICAL ALIGNMENT OF THE DRAINAGE SYSTEM USING NECESSARY FITTINGS, TEES, AND WYES TO PROVIDE A CONTINUOUS DRAINAGE SYSTEM.

DECK DRAIN PIPE SHALL BE ASTM D1785, SCHEDULE 40. ALL PVC FITTINGS SHALL BE MINIMUM ASTM D2655, SCHEDULE 40.

EXPANSION JOINT COUPLERS IN THE COLLECTOR PIPE SHALL HAVE A MINIMUM CAPACITY TO ACCOMMODATE 6 INCHES OF TOTAL MOVEMENT (3 INCHES EXPANSION/3 INCHES CONTRACTION.)

COLLECTOR PIPE SUPPORTS SHALL BE LOCATED WITHIN 12 INCHES, ± 4 INCHES, OF A COLLECTOR PIPE JOINT.

DECK DOWN-DRAIN PIPES SHALL BE CENTERED IN SLOTTED OPENING IN COLLECTOR PIPE REGARDLESS OF TEMPERATURE AT TIME OF INSTALLATION.

HANGER RODS SHALL BE ASTM A193, GRADE B7 OR CARBON STEEL ALL-THREAD HANGER RODS.

NUTS SHALL BE ASTM A194, GRADE 2H, HEAVY HEX NUTS.

THE DETAILS OF ALL PIPING, HARDWARE, OR OTHER MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR AND IS SUBJECT TO THE APPROVAL OF THE ENGINEER.

WORKING DRAWINGS FOR THE DRAINAGE SYSTEM AND LAYOUT PLANS INCLUDING, BUT NOT LIMITED TO, PIPE SUPPORT BRACKETS, PIPE ALIGNMENT, PIPE LENGTHS, AND ALL NECESSARY FITTINGS, ELBOWS, WYES, ADAPTERS, GUIDES, RESTRAINTS, WEAR PADS, COUPLERS AND JOINTS SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN NORTH CAROLINA AND SUBMITTED FOR APPROVAL PRIOR TO ORDERING MATERIALS.

PIPE MANUFACTURER SHALL ENSURE THE PIPE AND THE PIPE SUPPORT BEARING AREA IS DESIGNED IN ACCORDANCE WITH THE HANGER SPACING PROVIDED IN THESE PLANS.

PIPE DESIGN MUST ALLOW VERTICAL FLEXURE FROM THE SUPERSTRUCTURE.

THE COLLECTOR PIPE SHALL CLOSELY FOLLOW THE LONGITUDINAL GRADE OF THE STRUCTURE WHILE MAINTAINING A MINIMUM OF 5% SLOPE AT ALL TIMES.

COUPLERS SHALL BE DESIGNED TO ACCOMMODATE A TURN AT EACH BENT IN ORDER TO FOLLOW THE HORIZONTAL AND VERTICAL CURVATURE OF THE BRIDGE OVERHANG.

THE PIPE MANUFACTURER SHALL ENSURE THE FRICTIONAL FORCE REQUIRED TO ACTIVATE THE EXPANSION COUPLERS DOES NOT OVERSTRESS THE COUPLER WALL BUILD-UP, DRAINAGE SYSTEM BRACKETS SUPPORTS OR LATERAL RESTRAINTS.

WASHERS SHALL BE ASTM F436 OR APPROVED EQUAL.

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

BOLT THREADS SHALL BE BURRED TO PREVENT LOOSENING.

PVC PIPE SHALL BE PAINTED TO MATCH THE SURFACE FINISH OF THE STRUCTURE WITH TWO COATS OF AN ACRYLIC OR LATEX PAINT THAT IS CHEMICALLY COMPATIBLE WITH PVC PRODUCTS AND MEETS THE REQUIREMENTS OF ARTICLE 1080-12 OF THE STANDARD SPECIFICATIONS. EACH COAT SHALL BE 2 DRY MILS THICK. DECK DRAINS SHALL BE ROUGHENED PRIOR TO PAINTING.

ALL METALLIC COMPONENTS IN THE DRAINAGE SYSTEM, EXCEPT STAINLESS STEEL AND MALLEABLE IRON PARTS, ARE REQUIRED TO BE HOT-DIPPED GALVANIZED PER NCDOT STANDARD SPECIFICATIONS. ELECTRO-PLATE COATING ON STEEL RODS, STEEL YOKE TYPE PIPE ROLLS, BRACKETS, OTHER STEEL HARDWARE IS CONSIDERED BY NCDOT AS TOO THIN FOR OUTDOOR APPLICATIONS.

ALL FRP AND PVC PIPE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

ALL STRUCTURAL STEEL SHALL BE ASTM A36 OR APPROVED EQUAL UNLESS NOTED OTHERWISE.

THE GALVANIZED SURFACE SHALL BE CLEANED TO (SSPC SP-1) PRIOR TO COATING.

ALL FABRICATION SHALL CONFORM TO THE APPLICABLE SECTION OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.

ALL FRP SHALL BE PIGMENTED TO MATCH THE SURFACE FINISH OF THE STRUCTURE.

ALL FRP PIPE SIZES ARE SHOWN AS INSIDE DIAMETER SIZES.

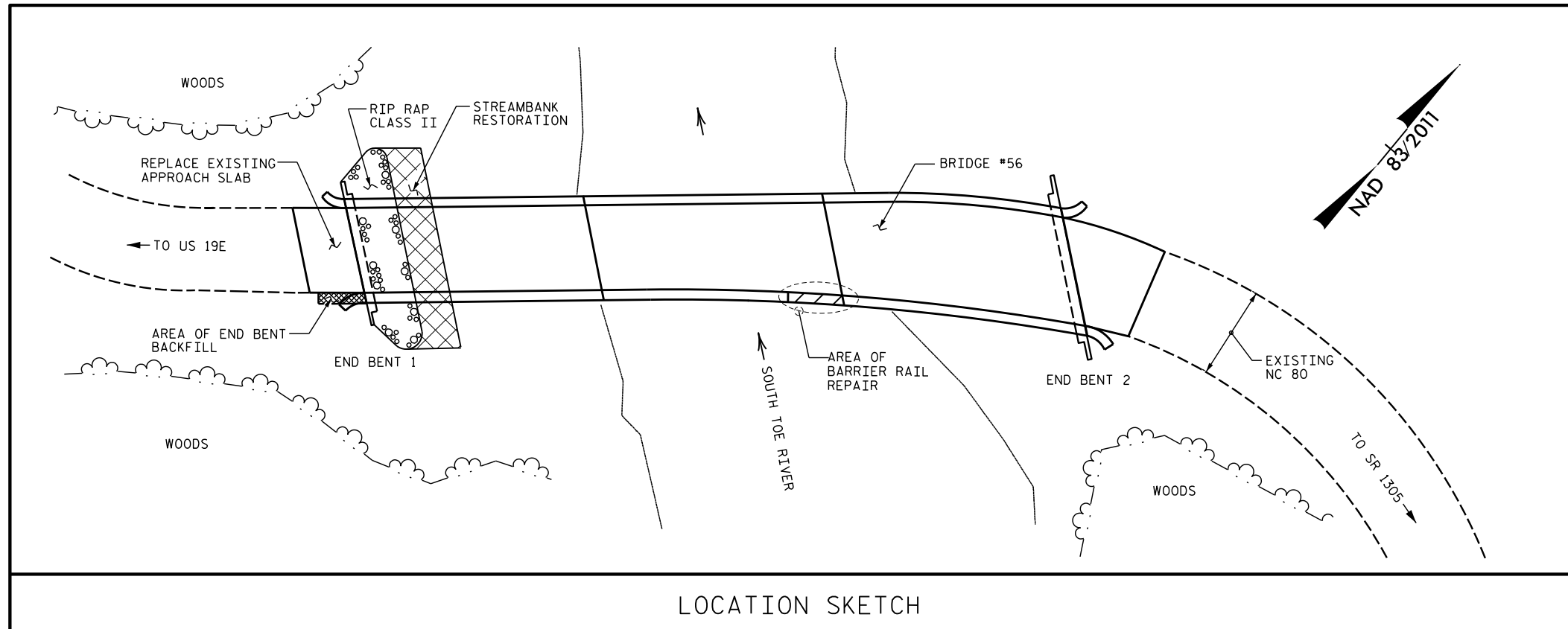
FRP = FIBERGLASS REINFORCED PLASTIC.

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 328

SHEET 5 OF 5

		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH		BRIDGE #328 ON US 19E OVER SOUTH TOE RIVER BETWEEN I-26 AND NC 226
		DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		
TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275		REVISIONS NO. BY: DATE: NO. BY: DATE:		SHEET NO. S2-5
		1 3 2 4		TOTAL SHEETS 5

DRAWN BY : NMW DATE : 6/25
 CHECKED BY : MGC DATE : 6/25



LOCATION SKETCH

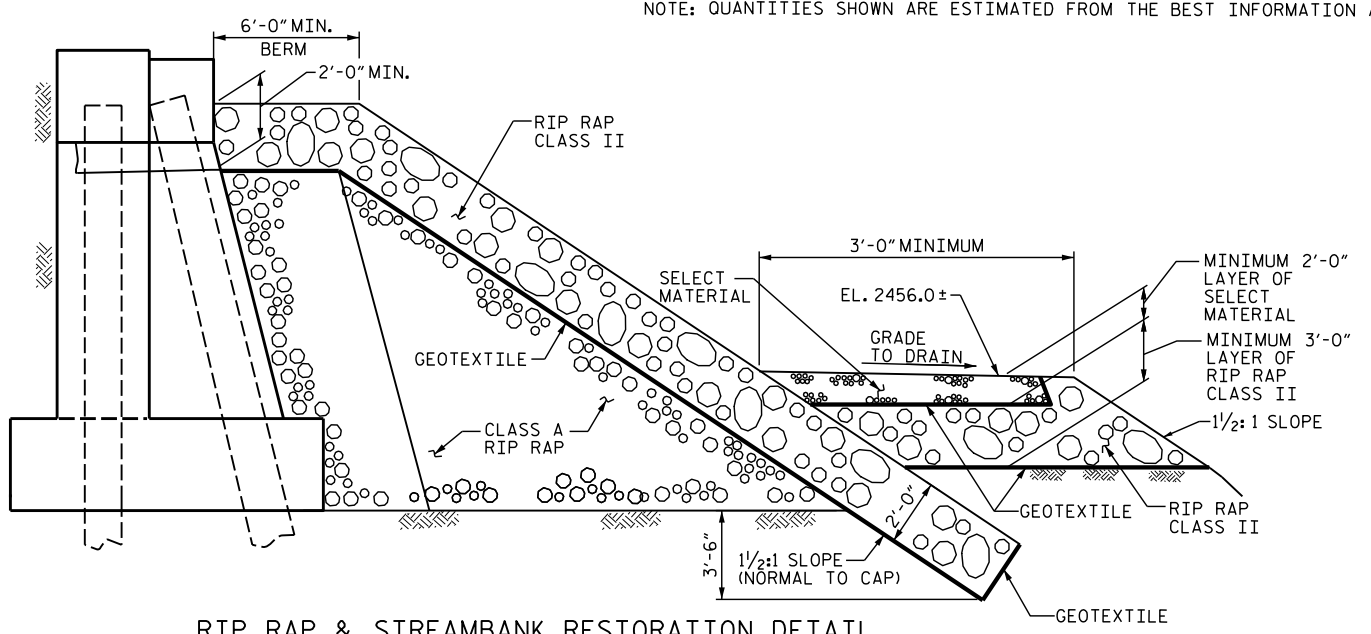
NOTES

- EXISTING DIMENSIONS AND BRIDGE CONDITIONS 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.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FOLLOW ALL STATE AND FEDERAL SAFETY REQUIREMENTS.
- FOR FLOWABLE FILL, SEE SPECIAL PROVISIONS.
- UNLESS OTHERWISE NOTED, ALL WORK SHOWN SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, JANUARY 2024.
- BRIDGE ORIENTATION CONFORMS TO EXISTING BRIDGE PLANS.
- FOR OTHER DESIGN DATA, SEE STANDARD NOTES SHEET.
- FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.
- FOR BARRIER RAIL REPAIR, SEE SPECIAL PROVISIONS.
- REMOVAL OF THE EXISTING BARRIER RAIL AS SHOWN SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL SUBMIT PLANS FOR REMOVAL OF THE EXISTING BARRIER RAIL IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.
- FOR STREAMBANK RESTORATION, SEE SPECIAL PROVISIONS.
- FOR END BENT BACKFILL, SEE SPECIAL PROVISIONS.
- FOR BRIDGE APPROACH SLABS, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL

ITEM	MOBILIZATION	FLOWABLE FILL	FOUNDATION EXCAVATION AT END BENT 1	GROOVING BRIDGE FLOORS	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL	FOAM JOINT SEALS	RIP RAP CLASS A	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	PARTIAL REMOVAL OF EXISTING STRUCTURE	BARRIER RAIL REPAIR	STREAMBANK RESTORATION	END BENT BACKFILL
	LUMP SUM	C.Y.	LUMP SUM	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LUMP SUM	TONS	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM
ESTIMATED TOTALS	LUMP SUM	7	LUMP SUM	410	25.6	LUMP SUM	2084	LUMP SUM	150	350	400	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM

NOTE: QUANTITIES SHOWN ARE ESTIMATED FROM THE BEST INFORMATION AVAILABLE.



RIP RAP & STREAMBANK RESTORATION DETAIL

AFTER PLACEMENT OF RIP RAP CLASS A, CLASS II RIP RAP SHALL BE PLACED TO A LEVEL OF APPROXIMATELY 1 FOOT ABOVE THE BOTTOM OF END BENT CAP AS DIRECTED BY THE ENGINEER AND SHALL BE PAID FOR UNDER THE PRICE BID FOR RIP RAP CLASS II (2'-0" THICK). CLASS II RIP RAP, SELECT MATERIAL AND GEOTEXTILE USED AS STREAMBANK RESTORATION SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR STREAMBANK RESTORATION.

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS.

SEAL

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 56

SHEET 1 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE #56 ON NC 80
 OVER SOUTH TOE RIVER
 BETWEEN US 19E AND SR 1305

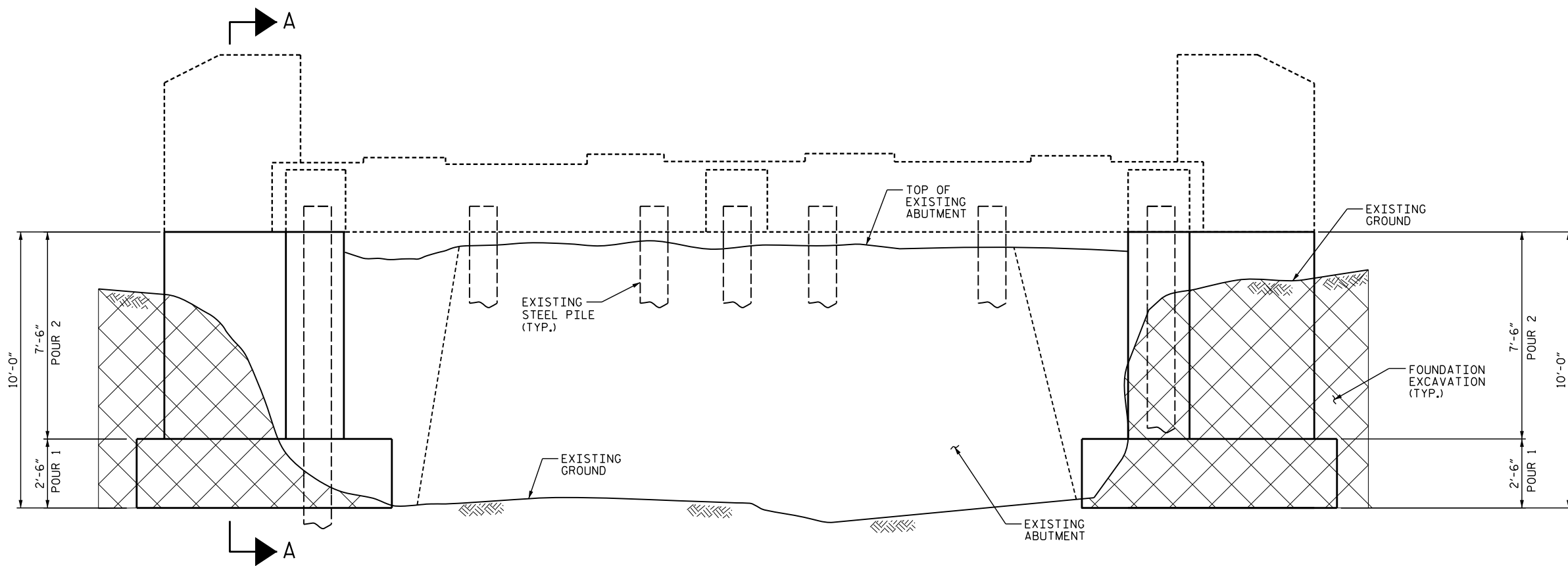
3/16/2026

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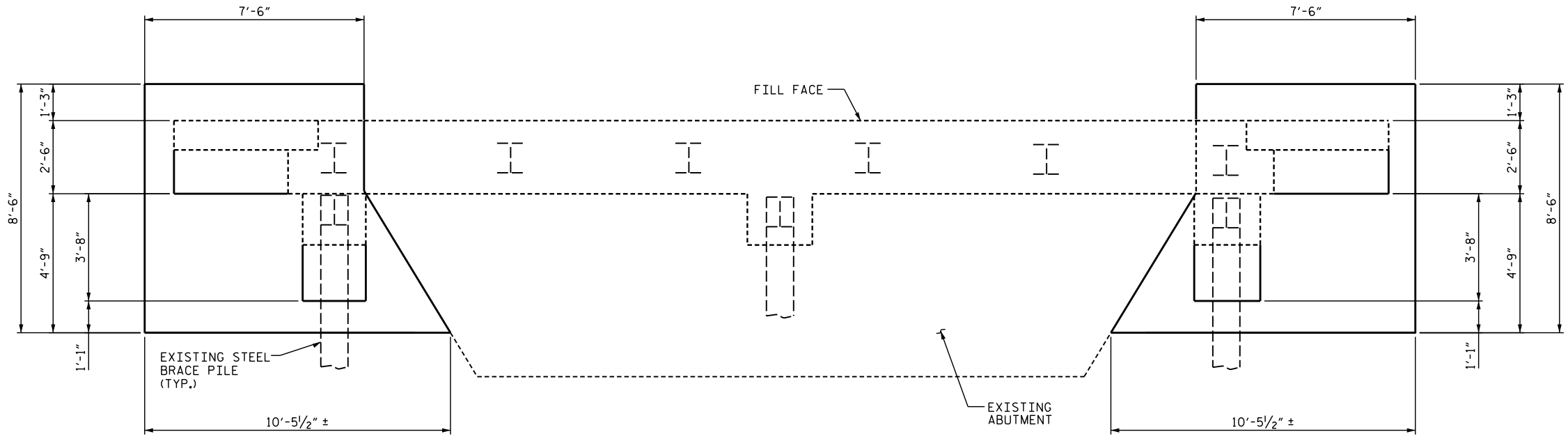
TGS ENGINEERS
 201 W. MARION ST STE 200
 SHELBY, NC 28150
 PH (704) 476-0003
 CORP. LICENSE NO.: C-0275

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S3-1
1			3			TOTAL SHEETS 7
2			4			

DRAWN BY : NMW DATE : 5/25
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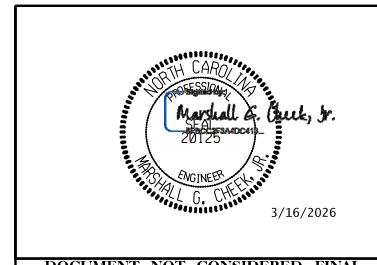


END BENT 1 ELEVATION
FOR SECTION A-A, SEE SHEET 3 OF 7



END BENT 1 PLAN VIEW

PROJECT NO. 18313.1100050.PR, ETC.
YANCEY COUNTY
BRIDGE NO. 56
SHEET 2 OF 7

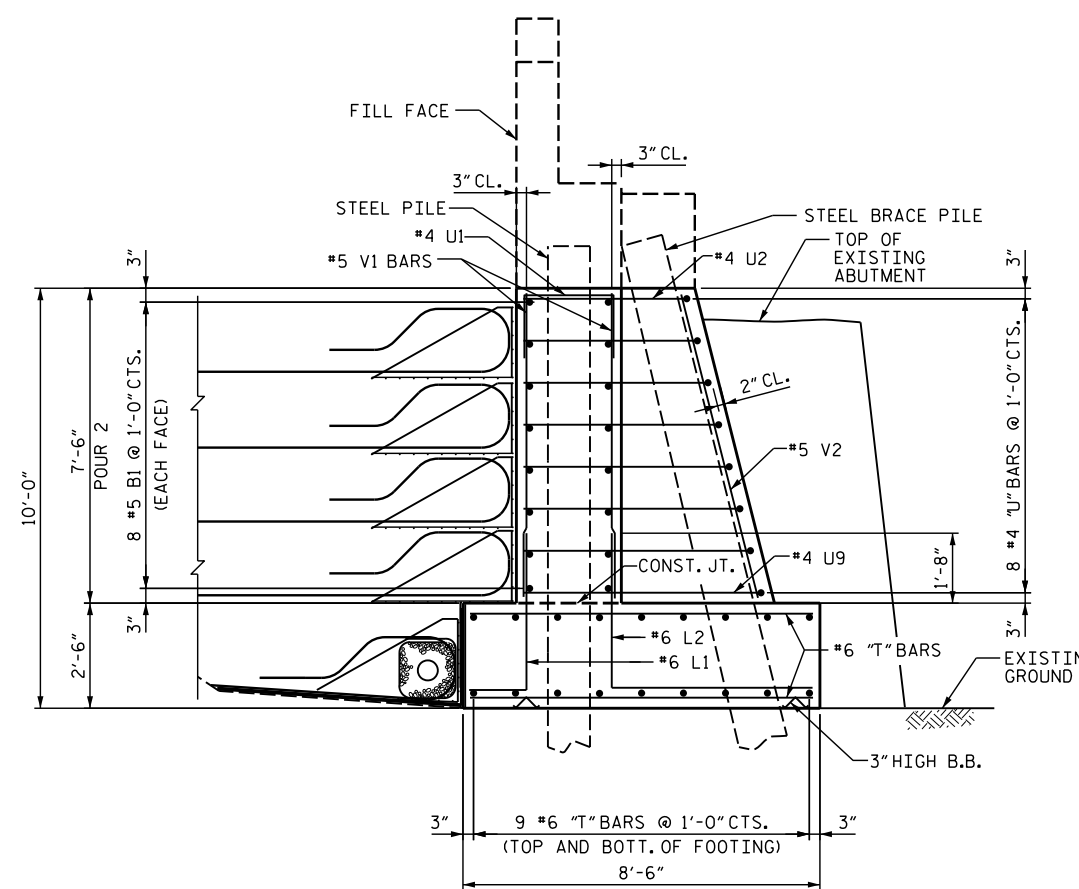


STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE #56 ON NC 80
OVER SOUTH TOE RIVER
BETWEEN US 19E AND SR 1305

DRAWN BY : NMW DATE : 7/25
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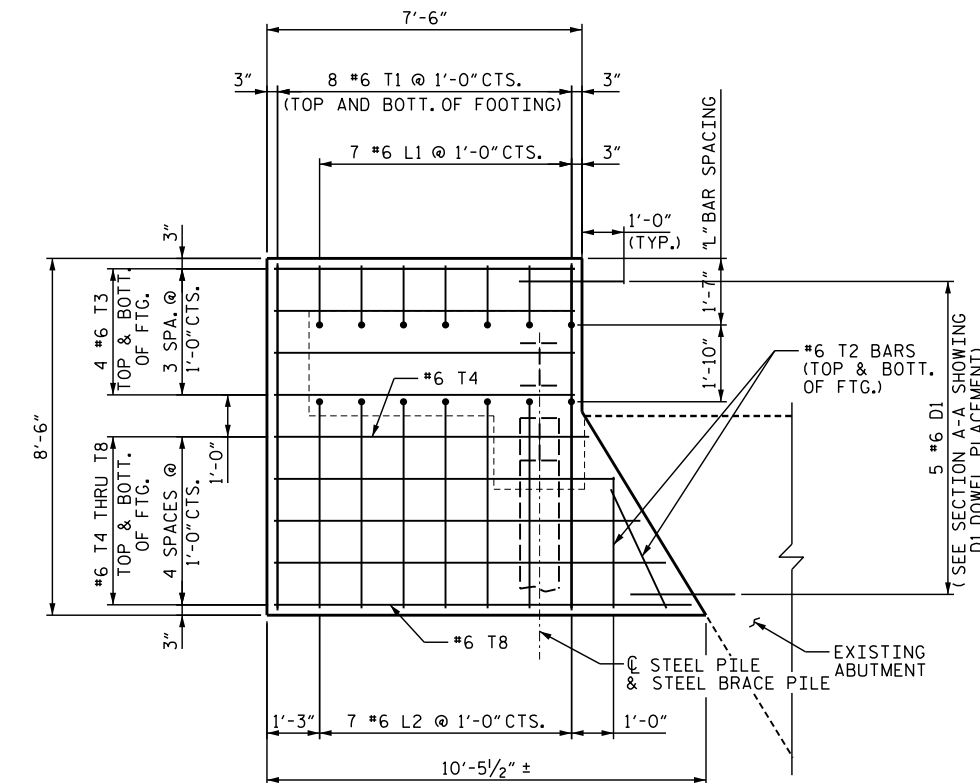
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REVISIONS						SHEET NO.
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1			3			TOTAL SHEETS
2			4			7



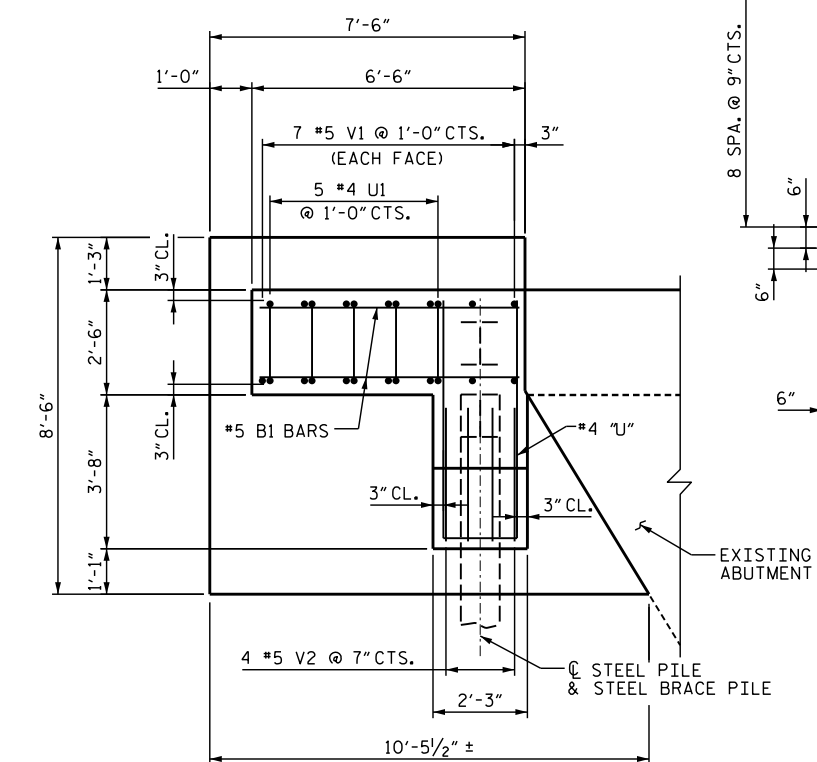
SECTION A-A

FOR APPROACH FILL DETAILS, SEE SHEET 5 OF 7.



END BENT 1 POUR 1

(LEFT SIDE SHOWN RIGHT SIDE SIMILAR)



END BENT 1 POUR 2

(LEFT SIDE SHOWN RIGHT SIDE SIMILAR)

NOTES

THE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR MAY NEED TO MAKE FIELD ADJUSTMENTS TO THE FORMS AND REINFORCEMENT AS NECESSARY TO MATCH ACTUAL FIELD CONDITIONS. THE CONTRACTOR SHALL GET APPROVAL FROM THE ENGINEER PRIOR TO ANY ADJUSTMENTS BEING MADE.

TEMPORARILY DEWATER AS NECESSARY TO PROVIDE ACCESS TO END BENT SCOUR AREAS.

THE CONTRACTOR SHALL EXCAVATE EXISTING FILL TO EXISTING ROCK AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE #6 DOWELS SHALL BE ADHESIVELY ANCHORED INTO THE EXISTING ABUTMENT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. FIELD TESTING OF THE ADHESIVELY ANCHORED DOWELS IS NOT REQUIRED.

FOR BONDING OF THE NEW CONCRETE TO OLD, THE OLD CONCRETE SHALL BE THOROUGHLY ROUGHENED, CLEANED OF LOOSE MATERIAL AND WETTED FOR A MINIMUM OF 2 HOURS PRIOR TO PLACING NEW CONCRETE.

MECHANICALLY CLEAN SOIL, RUST, SCALE AND EXISTING PAINT ON EXISTING PILES.

AFTER PILE HAS BEEN CLEANED, THE PILE SHALL BE INSPECTED FOR EXCESSIVE SECTION LOSS, AREAS THAT EXHIBIT AN EXCESS OF 35% SECTION LOSS SHALL BE REVIEWED BY THE ENGINEER TO DETERMINE IF AREA OF SECTION LOSS SHOULD BE REPAIRED.

AS DETERMINED BY THE ENGINEER, AREAS WITH EXCESSIVE SECTION LOSS SHALL BE REPAIRED BY WELDED PLATING AS DIRECTED BY THE ENGINEER. PLATE THICKNESS SHALL BE APPROXIMATELY HALF THE ORIGINAL THICKNESS OF THE COMPONENT BEING REPAIRED, BUT A MINIMUM OF 1/4\"/>

ALL REPAIR STEEL SHALL BE AASHTO M270 GRADE 36 STEEL OR BETTER.

ALL WELDING SHALL BE IN ACCORDANCE WITH CURRENT APPLICABLE AWS AND NCDOT STANDARD SPECIFICATIONS.

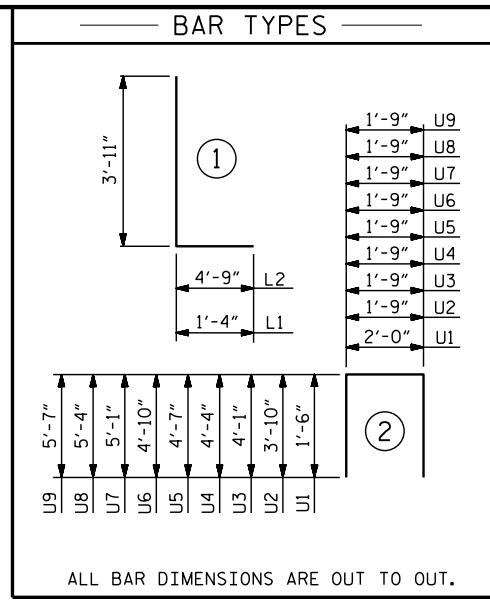
ALL WELDS WILL BE INSPECTED AND TESTED BY THE NCDOT MATERIALS AND TEST UNIT IN ACCORDANCE WITH THE CURRENT ASW BRIDGE WELDING CODE AND STANDARD SPECIFICATIONS.

COMPLETE THE REPAIRS ON A PILE BEFORE PROCEEDING TO THE NEXT PILE TO BE REPAIRED.

IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, AFTER REPAIR, GRIND ALL WELDS SMOOTH, THOROUGHLY CLEAN AREA TO REMOVE DEBRIS AND OILS FROM REPAIR PROCESS.

PAINT PILES WITH BLACK MAX OR EQUIVALENT COATING APPROVED BY THE ENGINEER.

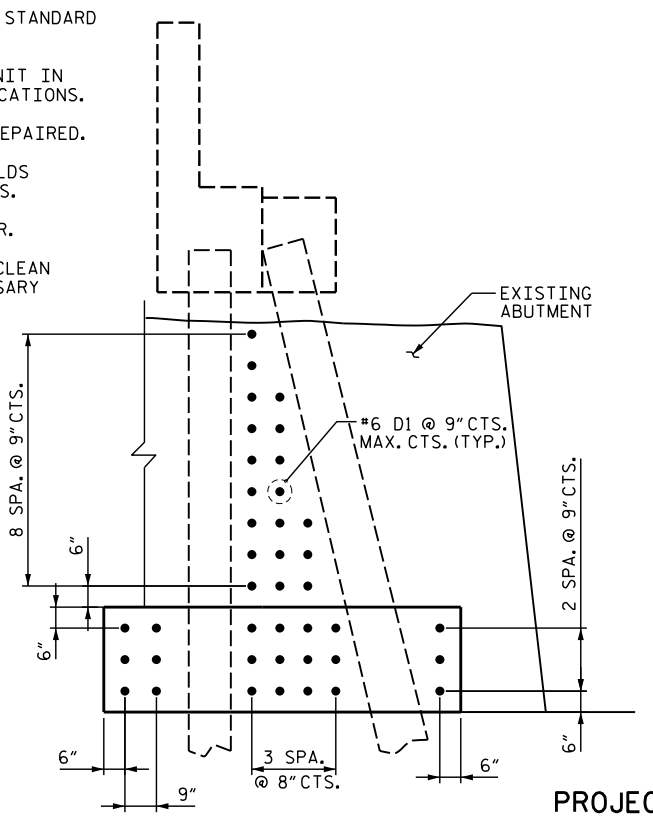
AFTER ALL PILES HAVE BEEN REPAIRED AS NECESSARY AND CLEANED AND PAINTED, CLEAN EXISTING SURFACES, AND PLACE REINFORCEMENT, CONCRETE, AND OTHER ITEMS NECESSARY FOR ENCASEMENT AS DETAILED.



BILL OF MATERIAL					
END BENT 1 ENCASEMENT (1 SIDE) (2 REQ'D.)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	16	#5	STR	6'-2"	103
D1	40	#6	STR	2'-6"	150
L1	7	#6	1	5'-3"	55
L2	7	#6	1	8'-8"	91
T1	16	#6	STR	8'-2"	196
T2	4	#6	STR	2'-10"	17
T3	8	#6	STR	7'-2"	86
T4	2	#6	STR	7'-6"	23
T5	2	#6	STR	8'-1"	24
T6	2	#6	STR	8'-8"	26
T7	2	#6	STR	9'-4"	28
T8	2	#6	STR	9'-11"	30
U1	5	#4	2	5'-0"	17
U2	1	#4	2	9'-5"	6
U3	1	#4	2	9'-11"	7
U4	1	#4	2	10'-5"	7
U5	1	#4	2	10'-11"	7
U6	1	#4	2	11'-5"	8
U7	1	#4	2	11'-11"	8
U8	1	#4	2	12'-5"	8
U9	1	#4	2	12'-11"	9
V1	14	#5	STR	7'-2"	105
V2	4	#5	STR	7'-4"	31

REINFORCING STEEL	1042 LBS.
CLASS A CONCRETE BREAKDOWN	
POUR #1 EXTENSION FOOTING	6.6 C.Y.
POUR #2 END BENT EXTENSION	6.2 C.Y.
TOTAL CLASS A CONCRETE	12.8 C.Y.

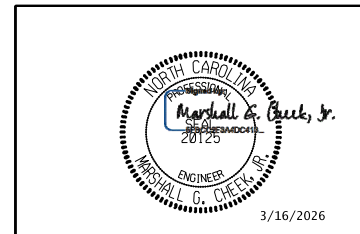
TOTAL QUANTITIES		
END BENT 1 ENCASEMENT	REINFORCING STEEL	CLASS A CONCRETE
	LBS.	CU. YDS.
LEFT SIDE	1042	12.8
RIGHT SIDE	1042	12.8
TOTALS	2084	25.6



SECTION A-A

(SHOWING D1 DOWEL PLACEMENT)

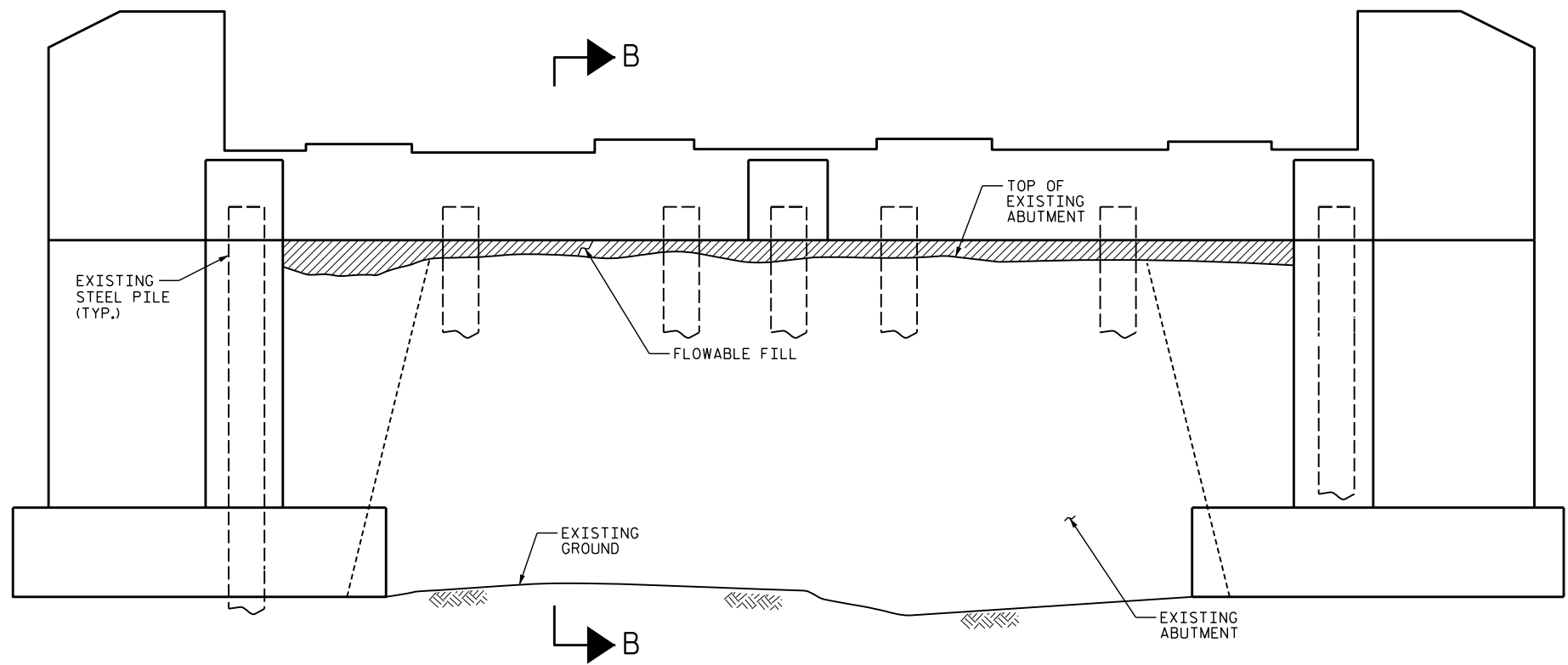
PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 56
 SHEET 3 OF 7



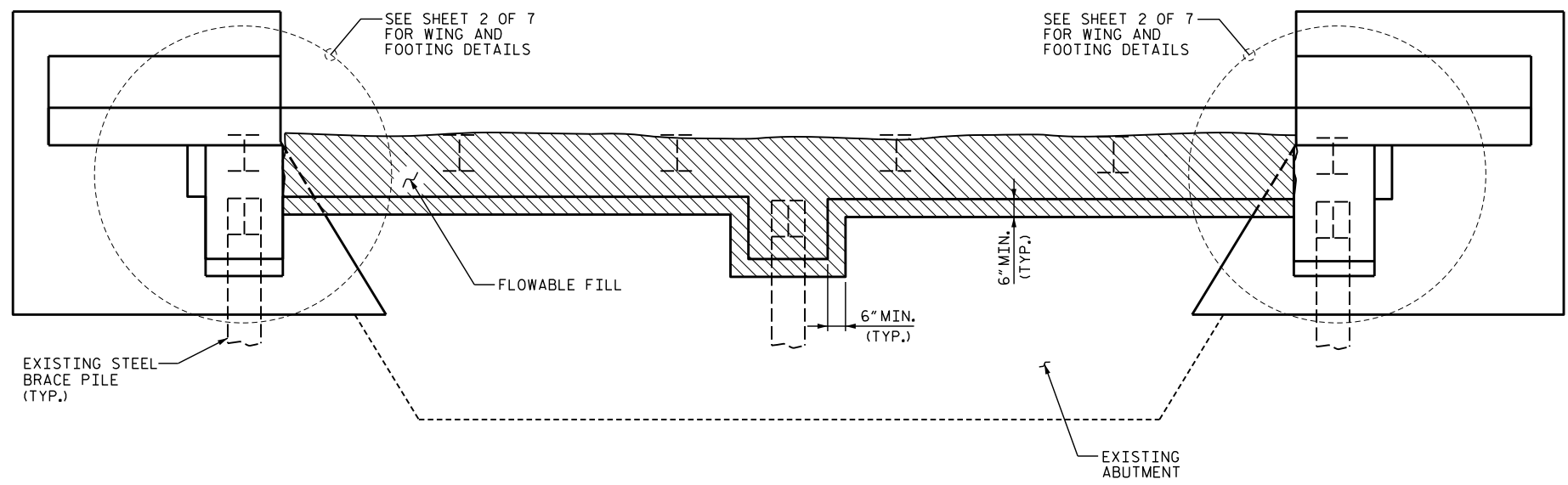
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE #56 ON NC 80
 OVER SOUTH TOE RIVER
 BETWEEN US 19E AND SR 1305

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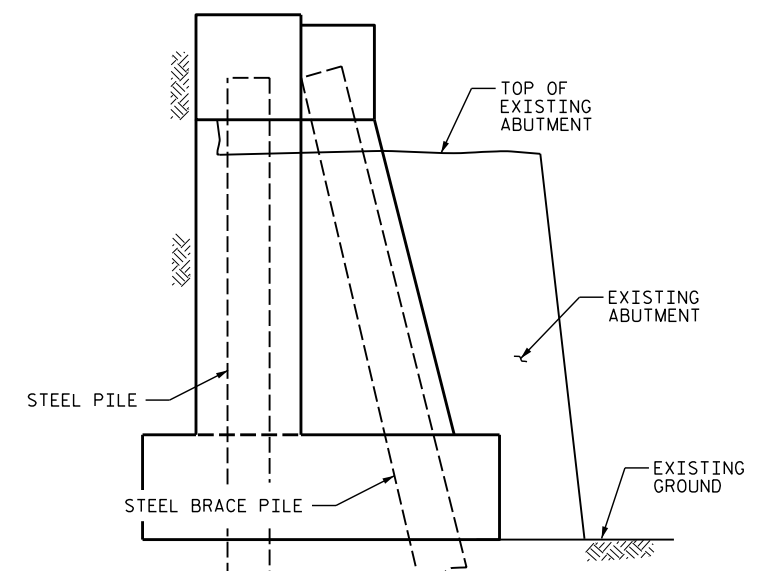
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED					
TGS ENGINEERS					
201 W. MARION ST STE 200					
SHELBY, NC 28150					
PH (704) 476-0003					
CORP. LICENSE NO.: C-0275					
REVISIONS					
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SHEET NO.					S3-3
TOTAL SHEETS					7



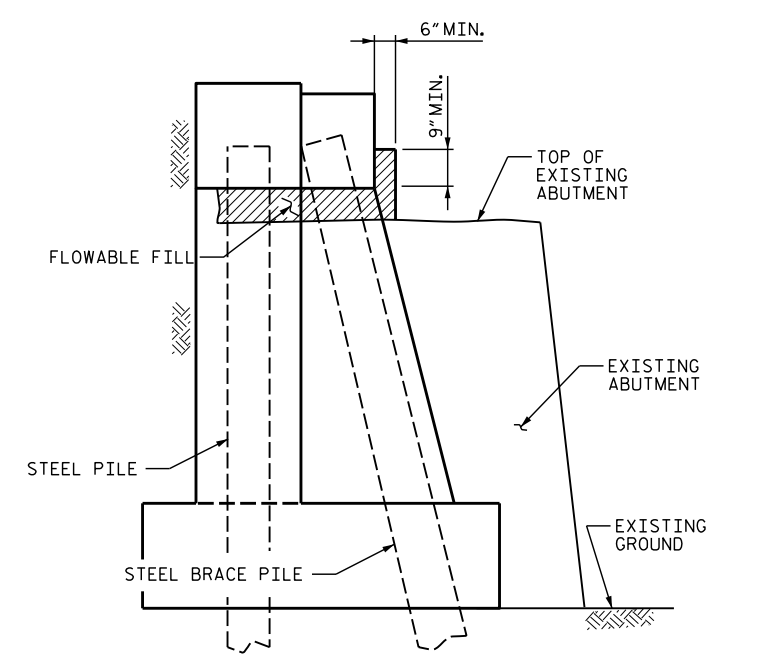
END BENT 1 ELEVATION



END BENT 1 PLAN VIEW
SHOWING LIMITS OF FLOWABLE FILL



SECTION B-B

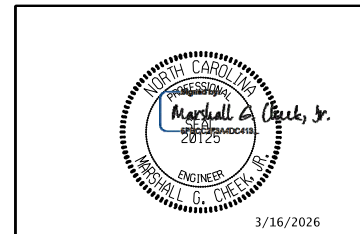


SECTION B-B

SHOWING LIMITS OF FLOWABLE FILL

PROJECT NO. 18313.1100050.PR, ETC.
YANCEY COUNTY
BRIDGE NO. 56

SHEET 4 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #56 ON NC 80
OVER SOUTH TOE RIVER
BETWEEN US 19E AND SR 1305

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NOTES

THE CONTRACTOR SHALL REMOVE THE APPROACH SLAB REPAIRS AS REQUIRED FOR CONSTRUCTION OF THE APPROACH SLAB AS DETAILED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

ALL WORK, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE REMOVAL AND DISPOSAL OF THE APPROACH SLAB REPAIRS AND BACKFILL MATERIALS AS DESIGNATED ON THE PLANS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "PARTIAL REMOVAL OF EXISTING STRUCTURE".

CARE SHALL BE TAKEN DURING THE REMOVAL OF THE APPROACH SLAB REPAIRS AND BACKFILL MATERIALS. ANY DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

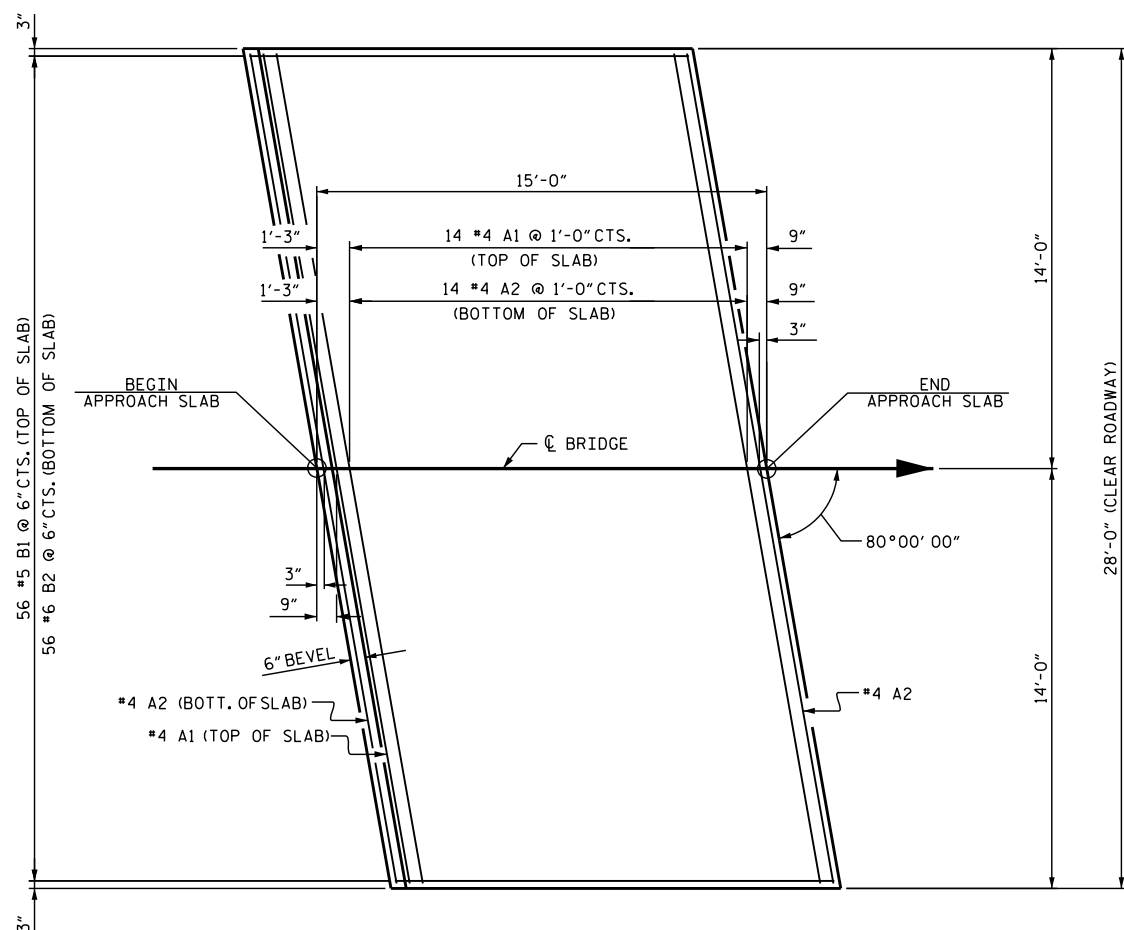
FOR REINFORCED BRIDGE APPROACH FILL INCLUDING GEOTEXTILE, WELDED WIRE FACING, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE BRIDGE APPROACH SLABS SPECIAL PROVISIONS.

THE ENTIRE COST OF THE REINFORCED APPROACH FILL INCLUDING GEOTEXTILE, WELDED WIRE FACING, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL SHALL BE PAID FOR UNDER THE LUMP SUM PRICE FOR BRIDGE APPROACH SLABS.

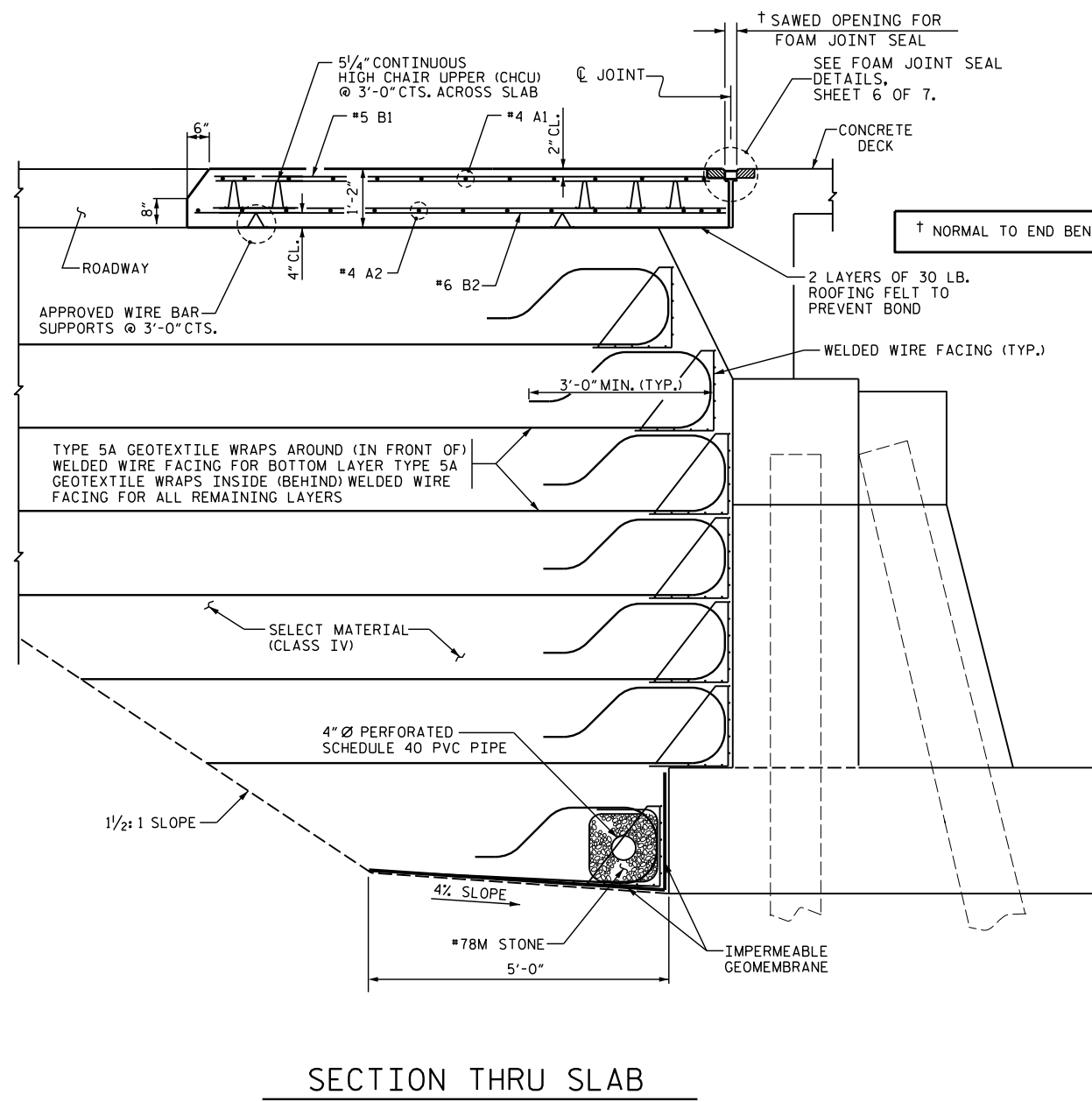
THE APPROACH SLAB SHALL BE GROOVED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE COST OF THE REINFORCING STEEL, EPOXY COATED REINFORCING STEEL, AND CLASS AA CONCRETE IN THE APPROACH SLAB SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR BRIDGE APPROACH SLABS.

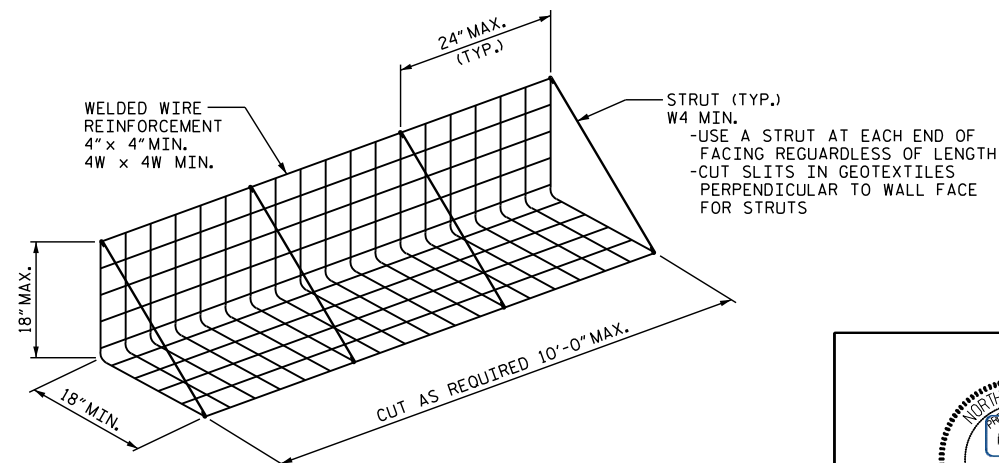
THE CONTRACTOR SHALL REPAIR ANY DAMAGED APPROACH ROADWAY TO MATCH THE EXISTING PAVEMENT OR AS DIRECTED BY THE ENGINEER TO RESTORE A PROPER TIE-IN TO THE APPROACH SLAB. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION OF THE APPROACH SLAB. SEE BRIDGE APPROACH SLABS SPECIAL PROVISION.



PLAN @ END BENT 1



SECTION THRU SLAB



WELDED WIRE FACING

BILL OF MATERIAL					
APPROACH SLAB AT EB 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* A1	15	#4	STR	28'-1"	281
A2	16	#4	STR	28'-1"	300
* B1	56	#5	STR	13'-11"	813
B2	56	#6	STR	14'-8"	1234
REINFORCING STEEL				LBS.	1534
* EPOXY COATED REINFORCING STEEL				LBS.	1094
CLASS AA CONCRETE				C. Y.	18.2

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

PROJECT NO. 18313.1100050.PR, ETC.

YANCEY COUNTY

BRIDGE NO. 56

SHEET 5 OF 7



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE #56 ON NC 80
OVER SOUTH TOE RIVER
BETWEEN US 19E AND SR 1305

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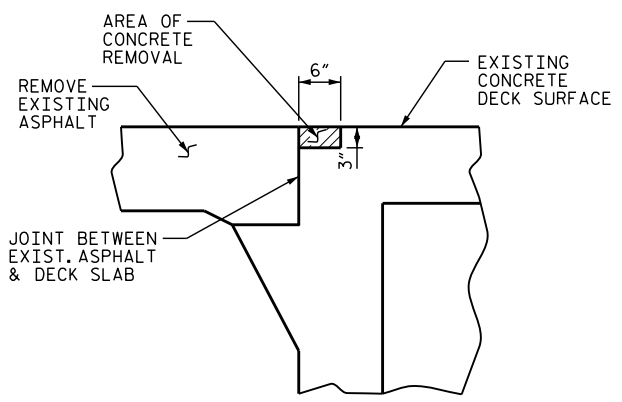
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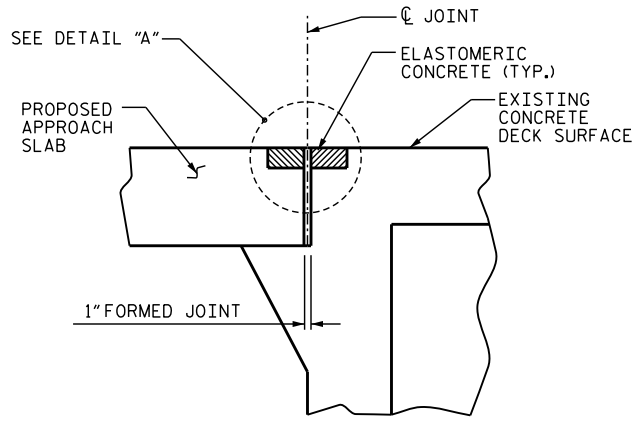
NOTES

FOR FOAM JOINT SEALS, SEE FOAM JOINT SEAL REPLACEMENT SPECIAL PROVISION.
 FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
 THE INSTALLED FOAM JOINT SEALS SHALL BE WATERTIGHT.
 NOMINAL UNCOMPRESSED SEAL WIDTH OF FOAM JOINT SHALL BE 2".
 THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINT FOR THE FOAM JOINT SEAL IN LIEU OF SAWING THE JOINT.
 THE REMOVAL OF THE EXISTING EXPANSION JOINT AND EXISTING CONCRETE IN BRIDGE DECK, PLACEMENT OF ELASTOMERIC CONCRETE AND INSTALLATION OF THE FOAM JOINT SEALS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR FOAM JOINT SEALS.
 FOR SAWING THE ELASTOMERIC CONCRETE BLOCKOUT IN THE EXISTING DECK AND APPROACH SLAB, SEE FOAM JOINT SEAL REPLACEMENT SPECIAL PROVISION.
 FOR REMOVAL OF CONCRETE IN THE EXISTING DECK, SEE BRIDGE JOINT DEMOLITION SPECIAL PROVISION.

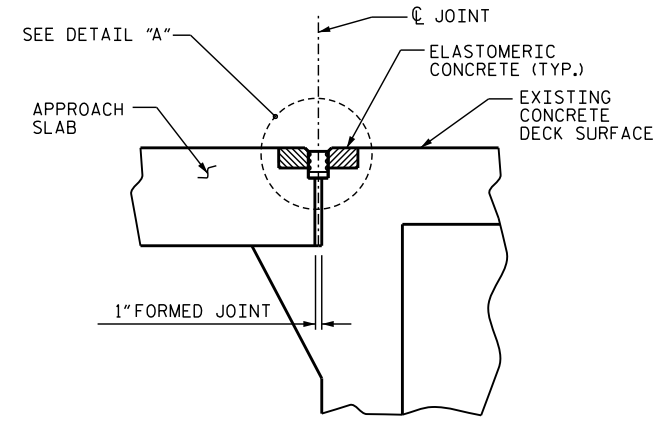
BILL OF MATERIAL		
LOCATION	ELASTOMERIC CONCRETE (CY.YD.)	TOTAL LENGTH OF FOAM JOINT (FT.)
END BENT 1	0.3	29'-6"



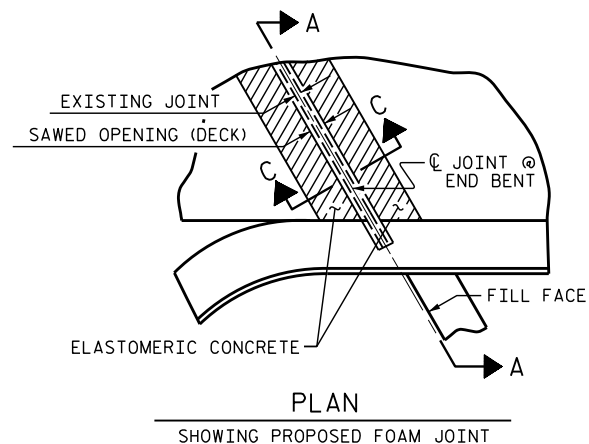
MINIMUM EXISTING JOINT DEMOLITION AT END BENT 1



PROPOSED JOINT PRE-SAWED AT END BENT 1

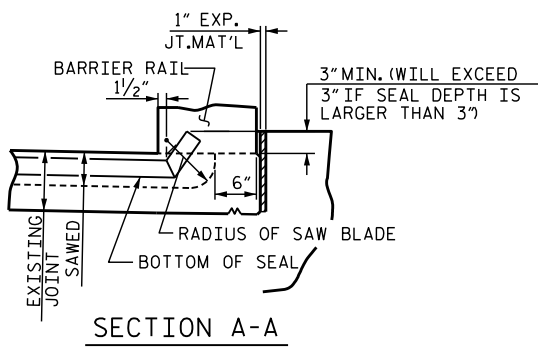


PROPOSED FOAM JOINT AT END BENT 1

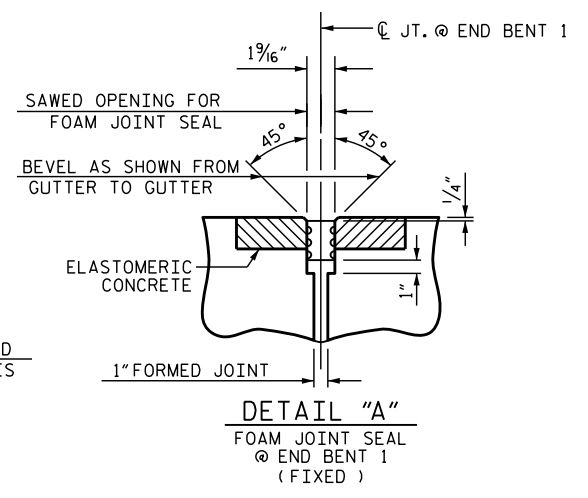


FOAM JOINT SEAL DETAILS @ END BENT 1

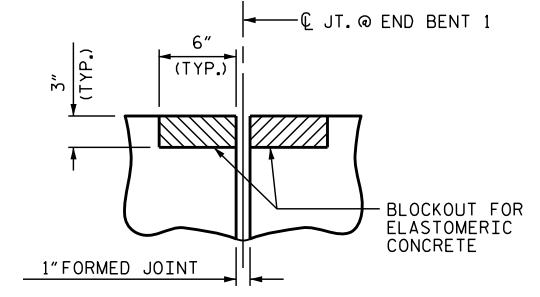
FOAM JOINT SEAL TO BE CUT, HEAT WELDED AND TURNED UP PARALLEL TO SLOPED FACE OF THE CURB.



SECTION A-A



DETAIL "A"
FOAM JOINT SEAL @ END BENT 1 (FIXED)



SECTION C-C
FOAM JOINT SEAL (PRE-SAWED ELASTOMERIC CONCRETE DIMENSIONS)

PROJECT NO. 18313.1100050.PR, ETC.
YANCEY COUNTY

BRIDGE NO. 56

SHEET 6 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE #56 ON NC 80 OVER SOUTH TOE RIVER BETWEEN US 19E AND SR 1305

3/16/2026

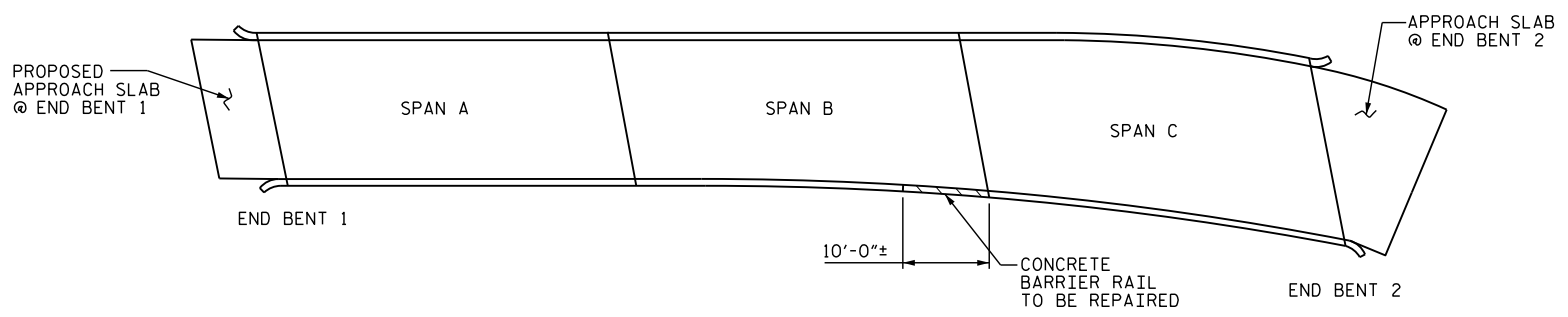
Marshall G. Cheek, Jr.
 PROFESSIONAL ENGINEER
 20125

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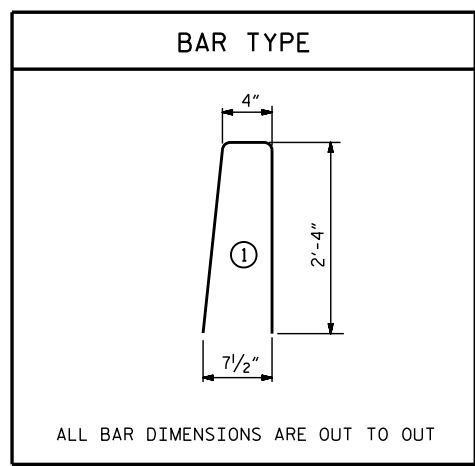
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 SHELBY, NC 28150
 PH (704) 476-0003
 CORP. LICENSE NO.: C-0275

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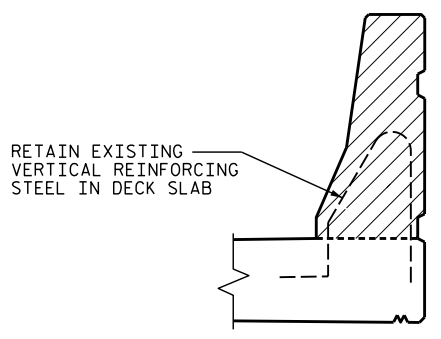


PLAN VIEW OF BARRIER RAIL REPAIR



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL FOR BARRIER RAIL REPAIR					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B1	8	#5	STR.	9'-8"	81
* S1	10	#5	1	5'-0"	52
* EPOXY COATED REINFORCING STEEL					133 LBS.
CLASS "AA" CONCRETE					1.0 C.Y.



EXISTING SECTION THRU RAIL

THE CONCRETE IN THE SHADED AREA SHALL BE REMOVED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

NOTES

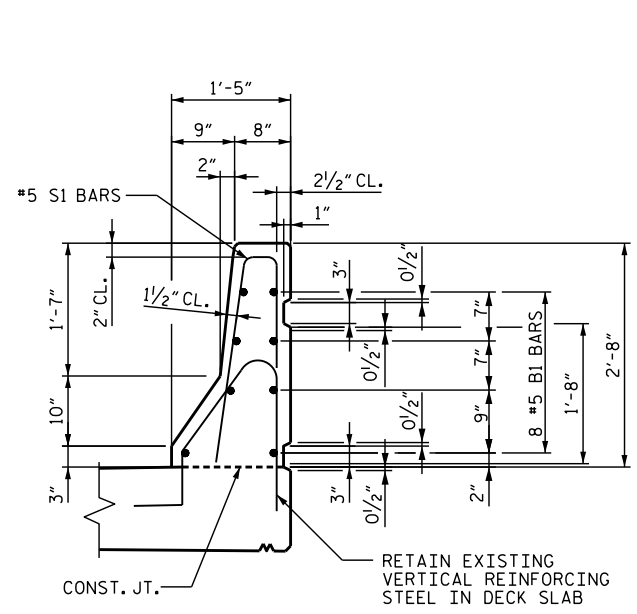
REMOVE THE EXISTING BARRIER RAIL TO THE LIMITS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER AND IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE EXISTING VERTICAL REINFORCING STEEL IN THE CONCRETE DECK SLAB SHALL BE RETAINED, CLEANED AND SPLICED WITH THE PROPOSED REINFORCING STEEL. IN ADDITION, RETAIN THE MINIMUM SPLICE LENGTH AS SHOWN OF THE EXISTING HORIZONTAL REINFORCING STEEL IN THE BARRIER RAIL TO SPLICE WITH THE PROPOSED REINFORCING STEEL.

ALL OF THE WORK, MATERIALS, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE REMOVAL OF THE EXISTING BARRIER RAIL AND FOR THE CONSTRUCTION OF THE NEW BARRIER RAIL AND SHALL BE PAID FOR UNDER THE LUMP SUM BID PRICE FOR "BARRIER RAIL REPAIR".

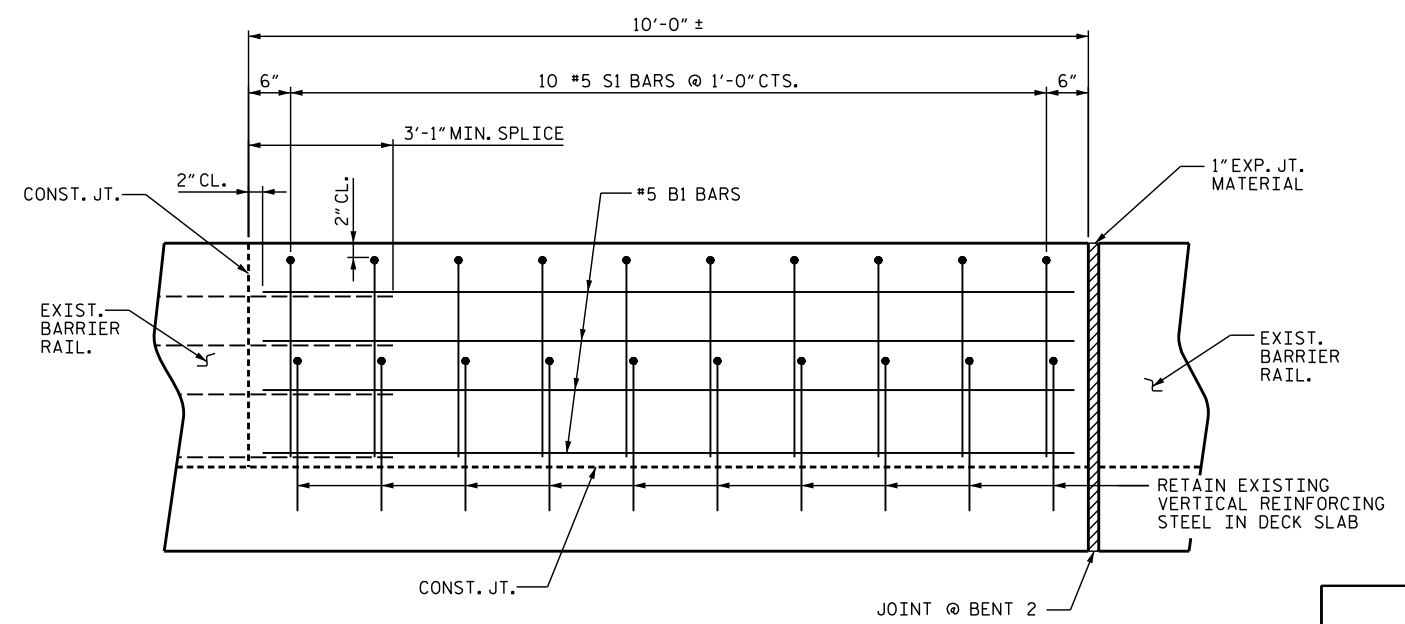
FOR BONDING OF NEW CONCRETE TO OLD, THE OLD CONCRETE SHALL BE THOROUGHLY ROUGHENED, CLEANED OF LOOSE MATERIAL AND WETTED FOR A MINIMUM OF TWO HOURS PRIOR TO PLACING NEW CONCRETE.

CARE SHALL BE TAKEN DURING REMOVAL TO THE EXISTING BARRIER RAIL TO AVOID DAMAGING THE EXISTING CONCRETE DECK. DAMAGE TO THE EXISTING STRUCTURE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE DEPARTMENT. THE METHOD OF REPAIR SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

ALL REINFORCING IN THE BARRIER RAIL REPAIR SHALL BE EPOXY COATED.



SECTION THRU BARRIER RAIL

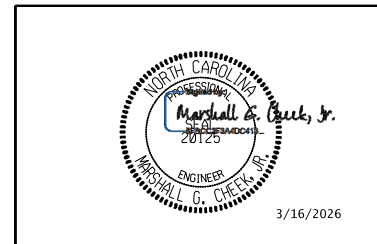


ELEVATION

PARAPET DETAILS

PROJECT NO. 18313.1100050.PR, ETC.
 YANCEY COUNTY
 BRIDGE NO. 56

SHEET 7 OF 7



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 BRIDGE #56 ON NC 80
 OVER SOUTH TOE RIVER
 BETWEEN US 19E AND SR 1305

DRAWN BY : NMW DATE : 5/25
 CHECKED BY : MCC DATE : 6/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED						TGS ENGINEERS 201 W. MARION ST STE 200 SHELBY, NC 28150 PH (704) 476-0003 CORP. LICENSE NO.: C-0275		REVISIONS			SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:				S3-7		
1			3						TOTAL SHEETS		
2			4						7		

