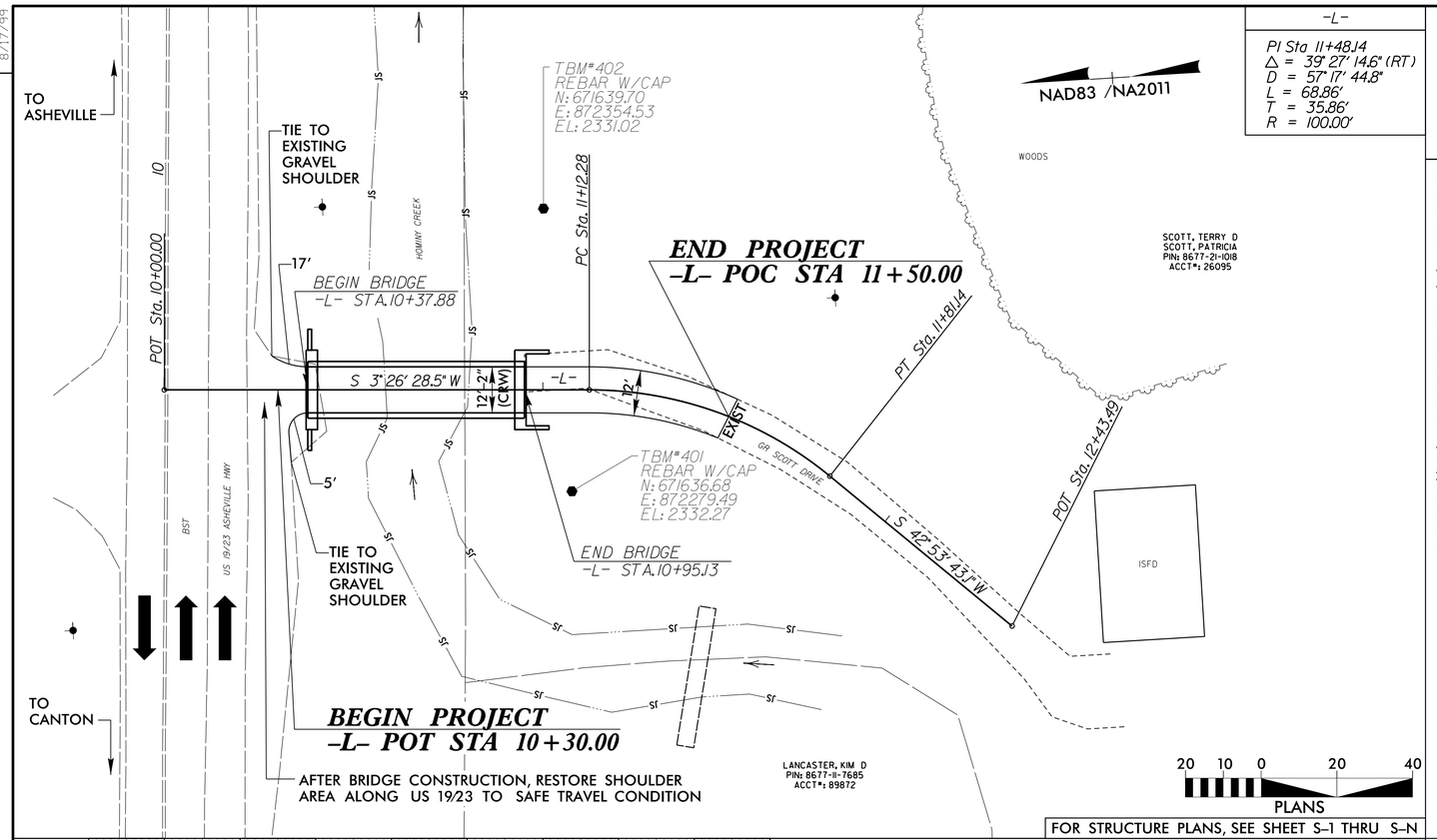
Site # 044-01-ea41a

Scott Drive over Hominy Creek in Haywood County

8/17/99

REVISIONS



FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-N

-L-

PI Sta 11+48.14
Δ = 39° 27' 14.6" (RT)
D = 57° 17' 44.8"
L = 68.86'
T = 35.86'
R = 100.00'

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER HOMINY CREEK ON SCOTT DRIVE

I HEREBY CERTIFY THAT I HAVE REVIEWED THE EXISTING HYDRAULIC CONVEYANCE AT THIS SITE WHICH WAS A 36'-6" SINGLE SPAN STEEL I-BEAM BRIDGE WITH VERTICAL ABUTMENTS WITH THE PROPOSED CONVEYANCE PROVIDED BY THE PROPOSED 55' SINGLE SPAN CORED SLAB BRIDGE WITHSLOPING ABUTMENTS.

THE PROPOSED BRIDGE LOW CHORD SHALL BE SET NO LOWER THAN THE LOW CHORD OF THE EXISTING BRIDGE ELEVATION OF 2,335' WHICH MEETS THE FEMA DISASTER SPECIFIC GUIDANCE FOR THE REPLACEMENT OF PRIVATE ROADS AND BRIDGES ISSUED ON 14 FEBRUARY 2025, "TO PROVIDE BRIDGE/CULVERT DESIGN PLANS CERTIFIED (SEALED, SIGNED, AND DATED) BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA DEMONSTRATING THAT THE NEWLY DESIGNED AND INSTALLED PRIVATE BRIDGE/CULVERT PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING."

THIS CERTIFICATION DEMONSTRATES THAT THE NEWLY DESIGNED AND INSTALLED PRIVATE BRIDGE PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING. THIS IS BASED ON THE BEST AVAILABLE DATA PROVIDED FROM POST STORM EVALUATIONS. PORTIONS OF THE EXISTING STRUCTURES MAY HAVE BEEN DESTROYED, REMOVED, MODIFIED OR SHIFTED FROM THEIR ORIGINAL LOCATION OR ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
044-01-e41a	1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 045564 ENGINEER MATTHEW S. ARMSTRONG
3/19/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 038250 ENGINEER JOHN M. ABEL
3/20/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared For:

DIVISION OF EMERGENCY MANAGEMENT
1636 Gold Star Dr,
Raleigh, NC 27607

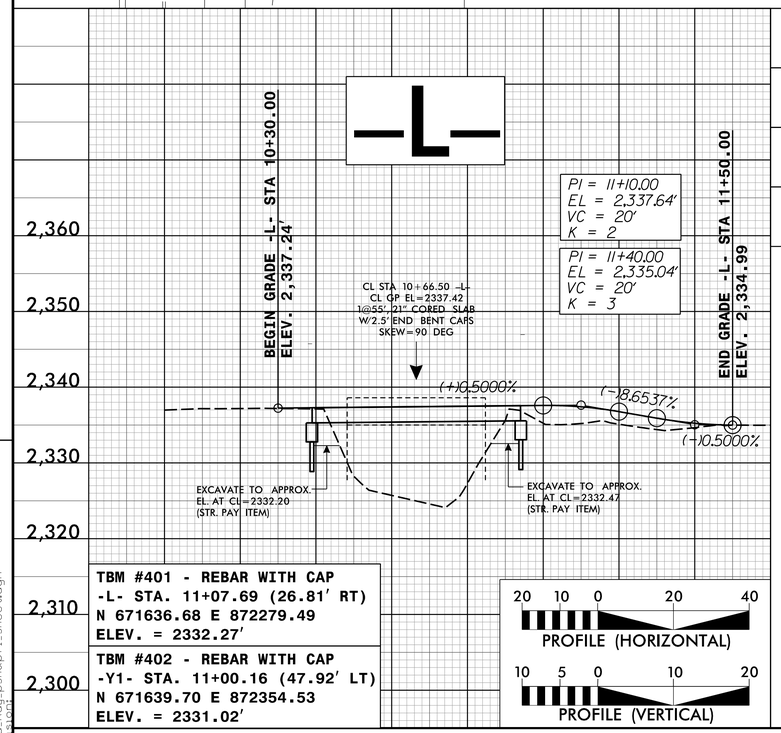
JOHN ABEL
NCEM CONTACT - GFT PROJECT ENGINEER

Plans Prepared In the Office of:

KCI ASSOCIATES OF N.C., P.A.
4800 Falls of Neuse Road, Suite 200
Raleigh, NC 27609-6270
Phone (919) 783-9214
NC Firm License No: C-0764

ROB F. DECOLA, PE
KCI PROJECT MANAGER

MATT ARMSTRONG, PE
KCI PROJECT DESIGN ENGINEER



TBM #401 - REBAR WITH CAP
-L- STA. 11+07.69 (26.81' RT)
N 671636.68 E 872279.49
ELEV. = 2332.27'

TBM #402 - REBAR WITH CAP
-Y1- STA. 11+00.16 (47.92' LT)
N 671639.70 E 872354.53
ELEV. = 2331.02'

20 10 0 20 40
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

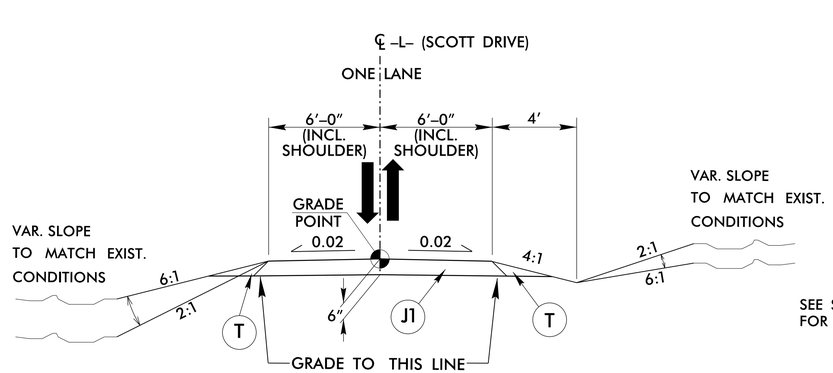
PAVEMENT SCHEDULE

J1	PROP. 6" AGGREGATE BASE COURSE.
J2	PROP. 3" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.

EARTHWORK (CUBIC YARDS)

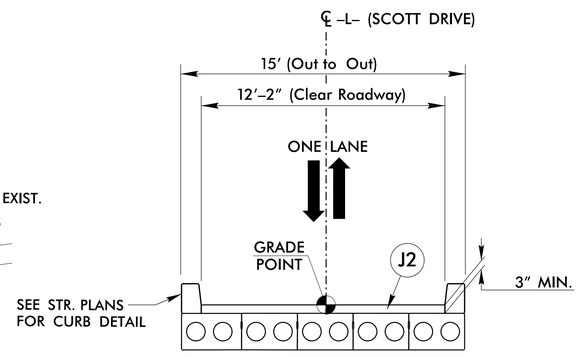
STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+30.00	-L- 10+37.88			3.8	3.8	
-L- 10+95.13	-L- 11+50.00			198.3	198.3	
SUBTOTAL:				202.1	202.1	
WASTE IN LEIU OF BORROW						
PROJECT TOTAL:				202.1	202.1	
SAY:					243	

NOTE:
Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Exisitng Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."



ROADWAY TYPICAL SECTION

-L- STA 10+30.00 TO 10+37.88 (BEG. BR.)
-L- STA 10+95.13 (END BR.) TO 11+50.00



TYPICAL SECTION ON STRUCTURE

21" CORED SLABS
-L- STA 10+37.88 (BEG. BR.) TO 10+95.13 (END BR.)

NOTE: 2:1 SLOPES SHALL NOT BE GREATER THAN 6' IN HEIGHT

3/25/30 PM
s:\dgn\psh&pfl_sheet.dgn
Roadway Design Division

REVISIONS

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR 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
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1165.01	TRUCK MOUNTED ATTENUATOR

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) TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. ALL LANES OF TRAFFIC ARE TO BE OPEN DURING THE HOURS OF 7:00 A.M. TO 9:00 A.M. AND FROM 4:00 P.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY, DURING ANY TIME OF INCLEMENT WEATHER, OR AS DIRECTED BY THE NCDOT DISTRICT ENGINEER. ANY VIOLATION OF THESE HOURS WILL RESULT IN CEASING ANY FURTHER CONSTRUCTION BY THE ENCROACHING PARTY OR THEIR CONTRACTOR. IN ADDITION, THE CONTRACTOR SHALL NOT CLOSE OR NARROW A LANE OF TRAFFIC ON ANY ROAD, DETAIN AND/OR ALTER THE TRAFFIC FLOW ON OR DURING HOLIDAYS, HOLIDAY WEEKENDS, SPECIAL EVENTS, LOCAL FESTIVALS, OR ANY OTHER TIME WHEN TRAFFIC IS UNUSUALLY HEAVY.

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 ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

E) 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.

F) NOTIFY THE DIVISION 14 - DISTRICT 2 OFFICE AT 828-558-6260 OR AT D14-D2_PERMITS@NCDOT.GOV PRIOR TO STARTING CONSTRUCTION TO SCHEDULE A PRECONSTRUCTION MEETING WITH NCDOT TO DISCUSS TRAFFIC CONTROL AND LOGISTICS.

SIGNING

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

8:54:48 AM
ea4la_TCP_sheet.dgn
Division

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER HOMINY CREEK ON SCOTT DRIVE

TRAFFIC CONTROL PLANS

STANDARDS, GENERAL NOTES, AND PHASING

PHASING

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 7 OF 19, GENERAL NOTE (1) WHICH REFERENCES NO. 1101.02 SHEET 3 OF 19.

WHEN INSTALLING LANE CLOSURE PER ROADWAY STANDARD DRAWING NO 1101.02 SHEET 3 OF 19, USE SHIFTING TAPER LENGTH INSTEAD OF MERGE TAPER LENGTH FROM ROADWAY STANDARD DRAWING NO 1101.11 SHEET OF 1 OF 4, BEGIN SHIFTING TAPER WHERE THE SECOND EASTBOUND LANE IS INTRODUCED.

PROJECT REFERENCE NO.	SHEET NO.
044-01-ea4la	1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 045664 ENGINEER MATTHEW G. ARMSTRONG

Signed by: Matthew G. Armstrong
2/19/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared For:

DIVISION OF EMERGENCY MANAGEMENT
1636 Gold Star Dr,
Raleigh, NC 27607

JOHN ABEL
NCEM CONTACT – GFT PROJECT ENGINEER

Plans Prepared In the Office of:

KCI ASSOCIATES OF N.C., P.A.
4800 Falls of Neuse Road, Suite 200
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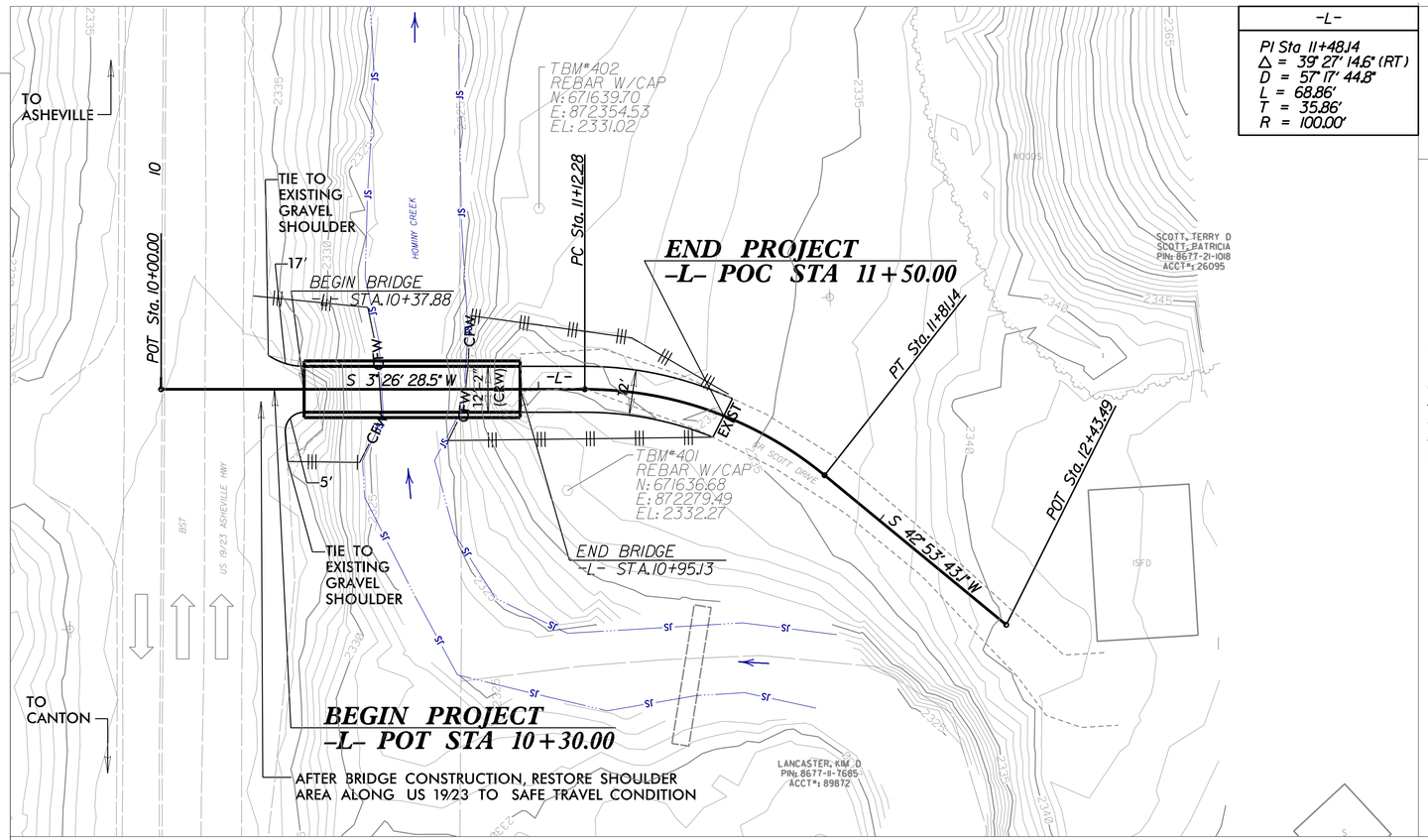
KCI PROJECT MANAGER

MATT ARMSTRONG, PE
KCI PROJECT DESIGN ENGINEER



-L-
PI Sta 11+48.14
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D = 57° 17' 44.8"
L = 68.86'
T = 35.86'
R = 100.00'

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER HOMINY CREEK ON SCOTT DRIVE

PROJECT REFERENCE NO.	SHEET NO.
044-01-ea41a	1
R/W SHEET NO.	

Roadway Standard Drawings

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

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

Plans Prepared For:

DIVISION OF EMERGENCY MANAGEMENT
1636 Gold Star Dr,
Raleigh, NC 27607

JOHN ABEL
NCEM CONTACT – GFT PROJECT ENGINEER

Plans Prepared In the Office of:

KCI ASSOCIATES OF N.C., P.A.
4800 Falls of Neuse Road, Suite 200
Raleigh, NC 27609-6270
Phone (919) 783-9214
NC Firm License No: C-0764

Prepared In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2024 STANDARD SPECIFICATIONS

Designed by

CRYSTAL MOORE — *3124*
NAME — *LEVEL III CERTIFICATION NO.*

303(d) IMPAIRED WATER(S) EXIST ON THIS PROJECT

303(d) Impaired Water Zone(s) Exist
From Sta.
to Sta.
Refer To E. C. Special Provisions for Special Considerations.

EROSION CONTROL PLAN

20' 0' 20' 40' 60'
GRAPHIC SCALE

SOIL STABILIZATION TIMEFRAMES

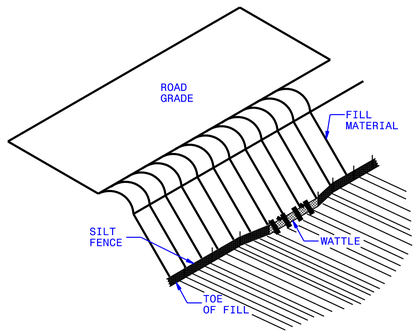
SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD

Std. #	Description	Symbol
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

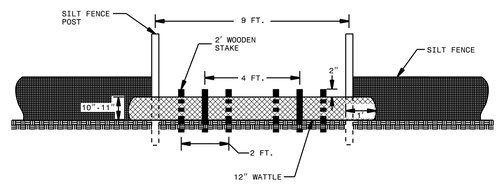
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

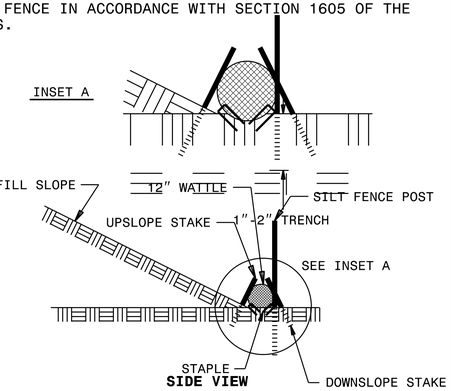
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.



VIEW FROM SLOPE

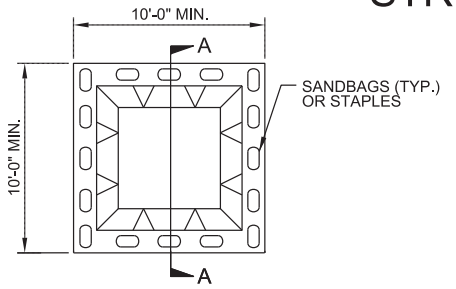


SIDE VIEW

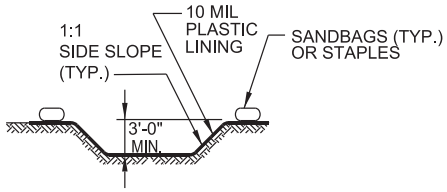
$$$$SYSTIME$$$$
$$$$USERNAME$$$$ON$$$$

PROJECT REFERENCE NO.	SHEET NO.
PRB	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

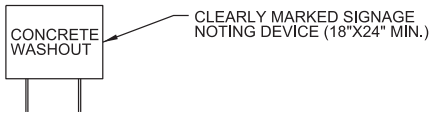
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A



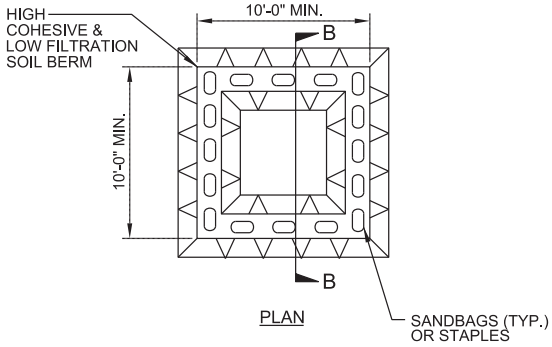
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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.

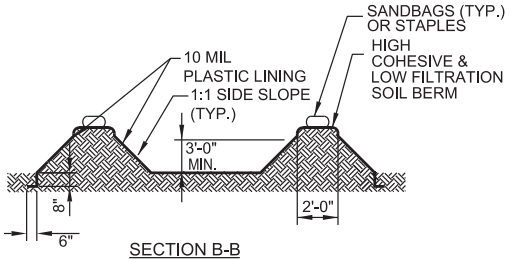
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



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.

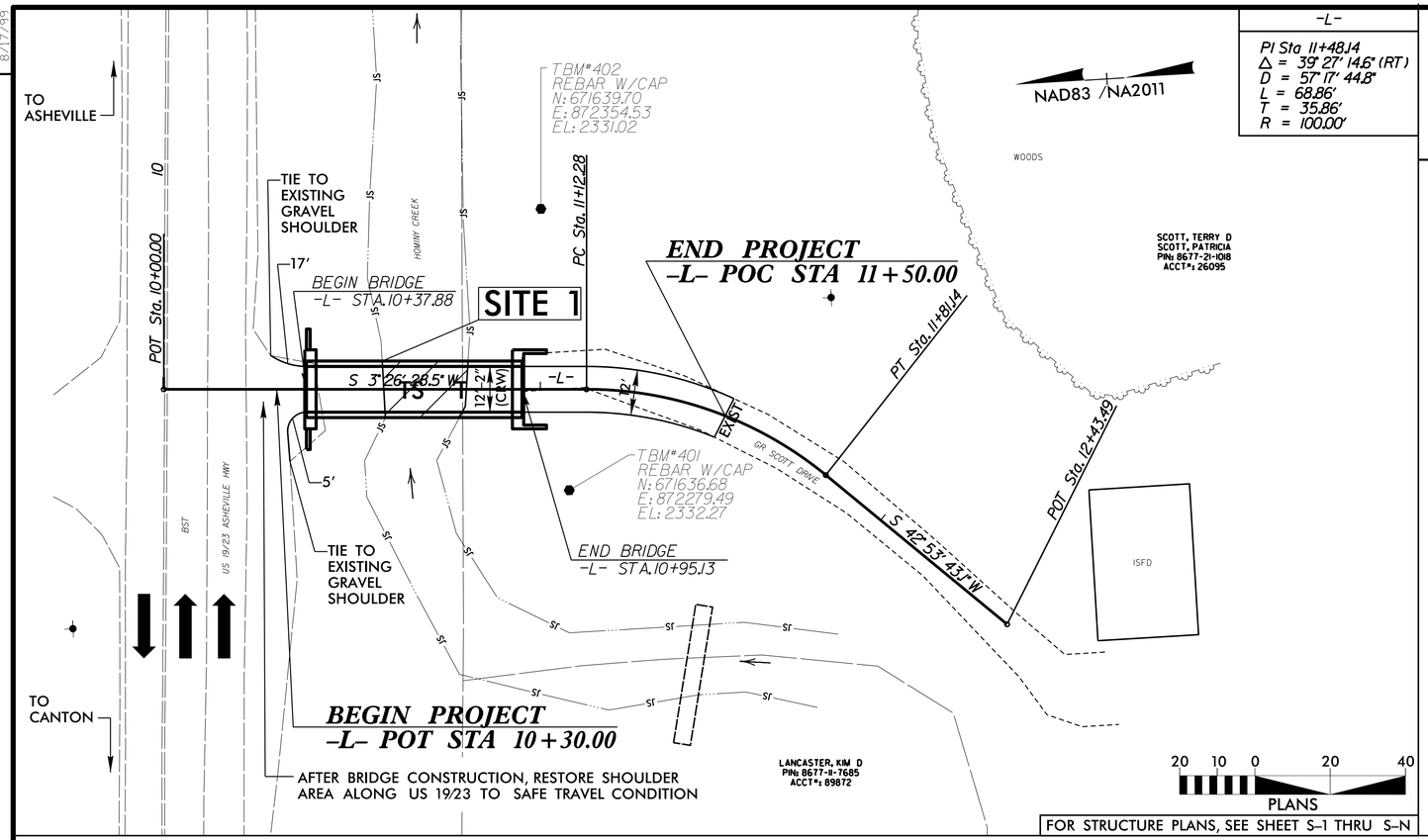
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE

NOT TO SCALE

8/17/99

REVISIONS



FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-N

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER HOMINY CREEK ON SCOTT DRIVE

TS TS

TEMPORARY SURFACE WATER IMPACTS

PROJECT REFERENCE NO.	SHEET NO.
044-01-ea41a	1
R/W SHEET NO.	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared For:

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ROB F. DECOLA, PE
KCI PROJECT MANAGER

MATT ARMSTRONG, PE
KCI PROJECT DESIGN ENGINEER

WETLAND AND SURACE WATER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	L 10+30 TO 10+95	BRIDGE							< 0.01		15	
TOTALS*:									< 0.01	0	15	0

*Rounded totals are sum of actual impacts

NOTES:

Revised 2018 Feb

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
10/31/2025
Haywood
044-01-ea41a
044-01-ea41a
SHEET 1 OF 1

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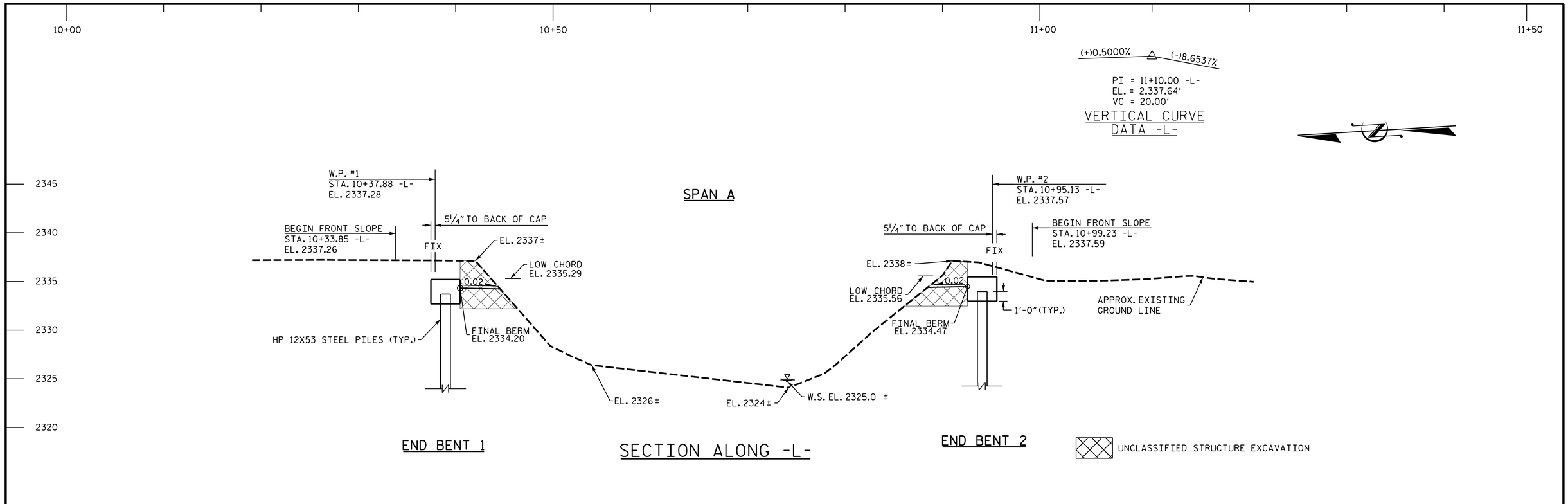
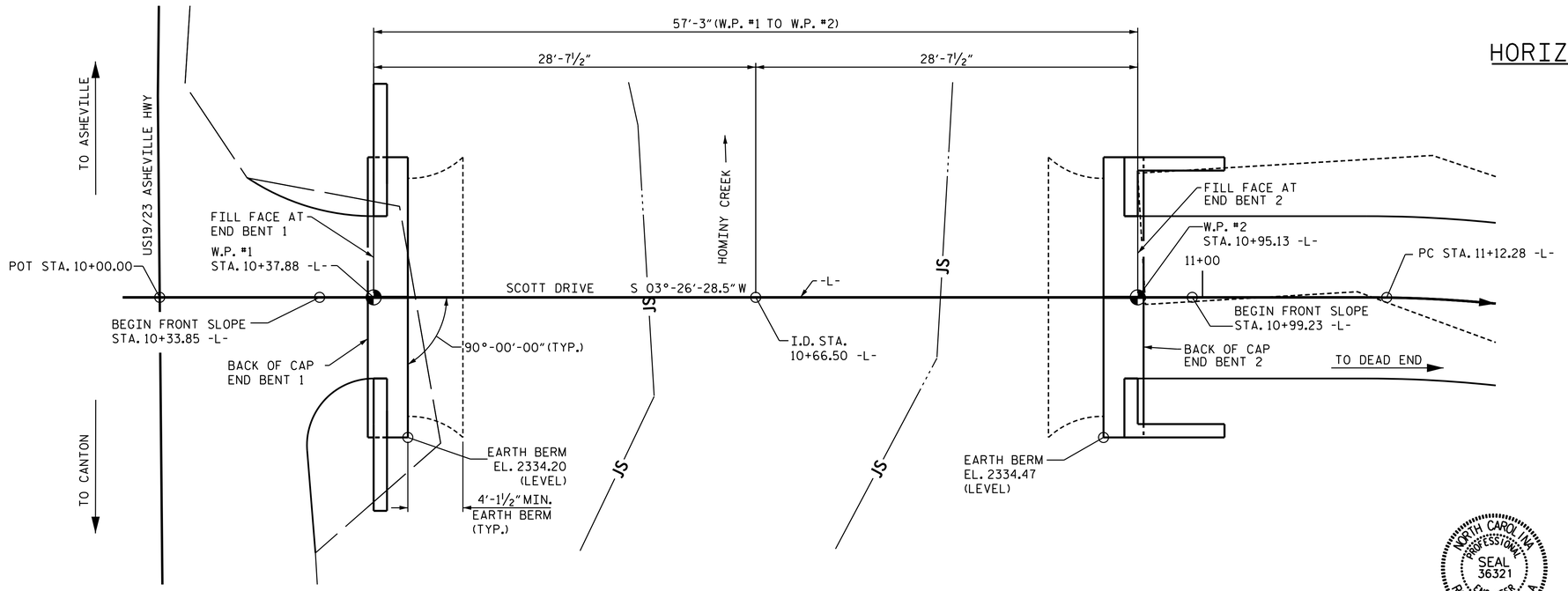
ea41a_impact_pfl_sheet.dgn
Drawing





HORIZONTAL CURVE DATA -L-

PI STA. = 11+48.14 -L-
Δ = 39°-27'-14.6"(RT)
D = 57°-17'-44.8"
L = 68.86'
T = 35.86'
R = 100.00'

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-

SHEET 1 OF 4

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025
DRAWN BY: V.L. MUMMA DATE: 10/20/2025
CHECKED BY: M.G. ARMSTRONG DATE: 10/20/2025

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA
Docusigned by: Robert Decola
12/5/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 785-9214

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

BRIDGE ON SCOTT DR
OVER HOMINY CREEK
BETWEEN US 19/23 (ASHEVILLE HWY)
AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-01
1			3			TOTAL SHEETS
2			4			16

FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES)

FOUNDATION NOTES:

1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. SUBSURFACE DATA IS NOT AVAILABLE AT END BENT NO. 2. PILE LENGTHS ARE BASED ON THE END BENT NO. 1 BORING. PILE LENGTHS AT END BENT NO. 2 MAY VARY FROM THE ESTIMATED AVERAGE PILE LENGTH PROVIDED.

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 2 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola

12/5/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

BRIDGE ON SCOTT DR
OVER HOMINY CREEK
BETWEEN US 19/23 (ASHEVILLE HWY)
AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: Robert Decola DATE : 12/5/2025

DRAWN BY : V.L. MUMMA DATE : 10/20/25

CHECKED BY : M.G. ARMSTRONG DATE : 10/20/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile KIPS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
						Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile KIPS	Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent No 1, Piles 1-4	4	145	2333.70	15			245							
End Bent No 2, Piles 1-4	4	145	2333.97	15			245							

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

$$\text{**RDR} = \frac{\textit{Factored Resistance + Factored Downdrag Load + Factored Dead Load}}{\textit{Dynamic Resistance Factor}} + \textit{Nominal Downdrag Load Resistance} + \textit{Nominal Resistance From Scourable Material}$$

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load* per Pile KIPS	Dynamic Resistance Factor	Nominal Drag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent No 1, Piles 1-4	142			0.60		
End Bent No 2, Piles 1-4	142			0.60		

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	PIPE PILE PLATES EACH	STEEL PILE POINTS		
		PIPE PILE CUTTING SHOES EACH	PIPE PILE CONICAL POINTS EACH	H-PILE POINTS EACH
End Bent No 1, Piles 1-4				4
End Bent No 2, Piles 1-4				4
TOTAL QTY:				8

SUMMARY OF DPT/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

DYNAMIC PILE TESTING				Pile Order Lengths	
End Bent/ Bent No	Dynamic Pile Testing Required? YES or MAYBE	Dynamic Pile Testing Test Pile Length FT	Total Dynamic Pile Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or Dynamic Pile Testing

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

End Bent/ Bent No, (e.g., "Bent 1, Piles 1-5")	Standard Penetration Test (SPT) Required? YES or MAYBE	Crosshole Sonic Logging (CSL) Required?* YES or MAYBE	Total CSL Tube Length (For All Tubes) per Pier Lin FT	Shaft Inspection Device (SID) Required? YES or MAYBE	Pile Integrity Test (PIT) Required? MAYBE
TOTAL QTY:					

*CSL Tubes are required if CSL Testing is or may be required. The number of CSL Tubes per drilled pier is equal to one tube per foot of design pier diameter with at least 4 tubes per pier. The length of each CSL Tube is equal to the drilled pier length plus 1.5 ft.

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Thomas R. Wells # 037998) on 10-28-2025.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer may adjust the quantity for DPT Testing and Pipe Pile Plates when necessary.

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Robert Decola 12/5/2025

DESIGN ENGINEER OF RECORD: Robert Decola DATE : 12/5/2025

DRAWN BY : V.L. MUMMA DATE : 10/20/25

CHECKED BY : M.G. ARMSTRONG DATE : 10/20/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

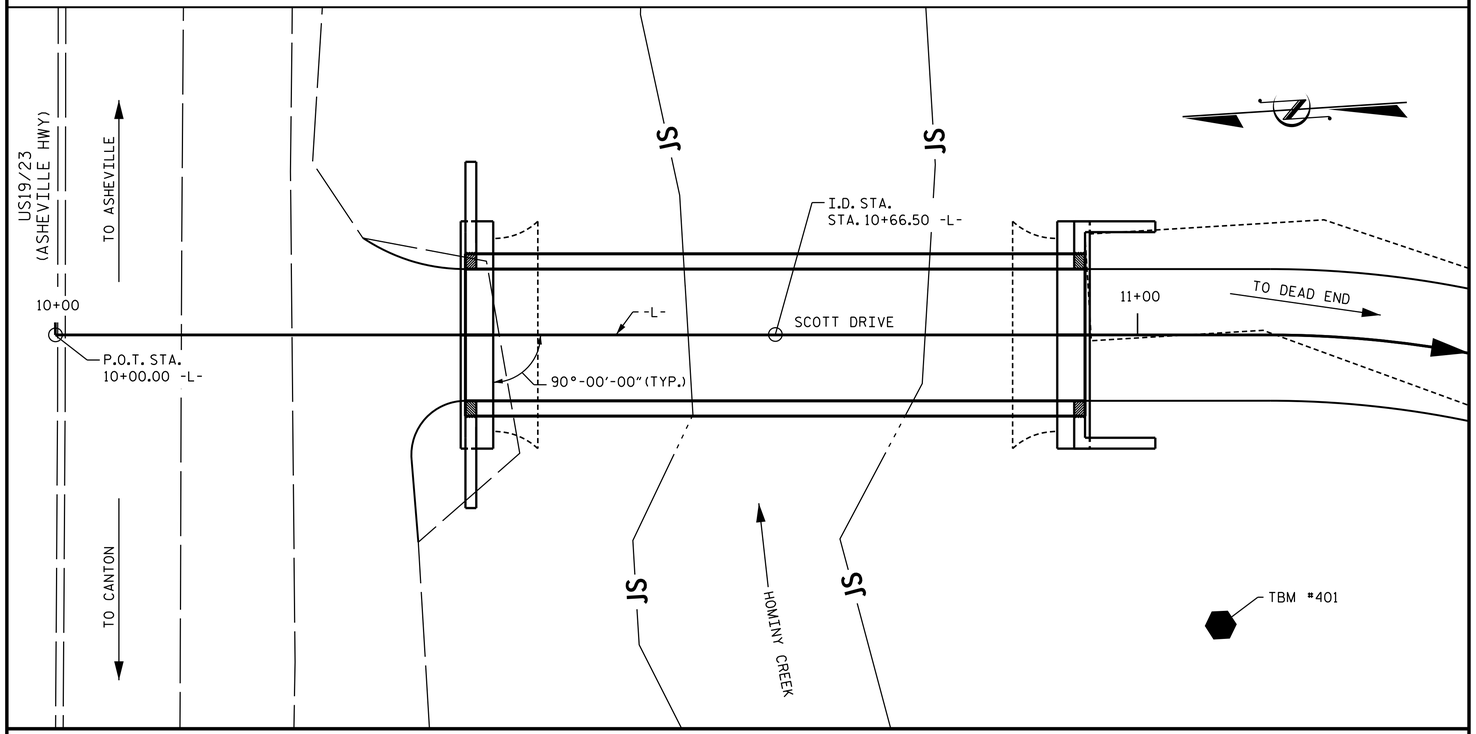
SHEET 3 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

PILE FOUNDATION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			16

TBM #401 - REBAR W/ CAP -L- STA. 11+07.69 -EL-, 26.81' RT N 671636.68 E 872279.49, EL 2332.27 NAVD 88



LOCATION SKETCH

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ROUTINE INSPECTIONS AND MAINTENANCE:

DISCLAIMER: THESE RECOMMENDATIONS ARE INTENTED AS A GENERAL GUIDE FOR PRIVATE BRIDGE OWNERS. IT IS NOT A COMPREHENSIVE CHECKLIST AND DOES NOT REPLACE INSPECTION OR REPAIR GUIDANCE FROM A QUALIFIED ENGINEER. IF YOU OBSREVE UNUSUAL MOVEMENT, DEFLECTION, CRACKING, DETERIORATION, AND/OR ANY STRUCTURAL CONCERN OR SAFETY RELATED ISSUE, CLOSE THIS BRIDGE TO TRAFFIC IMMEDIATELY AND CONSULT A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.

KEEP A MAINTENANCE LOG TO TRACK INSPECTION DATES, OBSERVATIONS, AND ANY WORK PERFORMED. ADDRESS MINOR ISSUES EARLY TO PREVENT FUTURE COSTLY REPAIRS.

BRIDGE INSPECTION PERFORMED BY A CERTIFIED BRIDGE INSPECTOR IS RECOMMENDED ON THE FOLLOWING INTERVALS:

YEAR 0-10:	INSPECT EVERY 5 YEARS
YEAR 10-20:	INSPECT EVERY 4 YEARS
YEAR 20-30:	INSPECT EVERY 3 YEARS
YEAR 30+:	INSPECT EVERY 2 YEARS

IF DETERIORATION IS NOTED IN INSPECTIONS, ACCELERATE INSPECTION FREQUENCY TO EVERY 2 YEARS.

PERFORM ADDITIONAL INSPECTIONS AFTER SEVERE STORMS, FLOODING, SEISMIC EVENTS, AND AFTER VEHICULAR IMPACTS.

REPAIR PRIORITY MAINTENANCE ITEMS NOTED IN INSPECTION REPORTS PROMPTLY

BETWEEN INSPECTIONS OBSERVE FOR CRACKS OR SPALLING IN CONCRETE OR RUST TO STEEL COMPONENT OR REINFORCEMENT, SOURING AT OR AROUND ABUTMENTS, DECK SURFACE WEAR, AND DAMAGE OR DETERIORATION TO CURBS.

REMOVE DEBRIS AND SEDIMENT FROM THE DECK AND CAP SURFACES TO PREVENT PONDING.

MAINTAIN GRAVEL WEARING SURFACE ON THE BRIDGE TO A MINIMUM OF 3"UNIFORM DEPTH. SHOULD THE TOPS OF PRESTRESSED CONCRETE GIRDERS BECOME EXPOSED FOR ANY REASON, CLOSE THE BRIDGE TO TRAFFIC AND REPLACE WEARING SURFACE AS SHOWN ON THE PLANS.

BEARINGS:

REMOVE ANY DEBRIS, VEGETATION, OR SEDIMENT BUILDUP NEAR OR AROUND THE BEARINGS.

INSPECT AND MAINTAIN BEARING PADS TO ENSURE THEY FUNCTION PROPERLY.

CHECK FOR SIGNS OF ROTATION OR TRANSLATION.

REPAIR OR REPLACE DETERIORATED COMPONENTS AS NEEDED UNDER THE GUIDANCE OF A PROFESSIONAL ENGINEER.

CAPS AND FOUNDATIONS:

INSPECT FOR CRACKS, LOOSE CONNECTIONS, BENDING, SETTLEMENT, LEANING, OR EROSION.

MAINTAIN PROPER SITE GRADING AND DRAINAGE TO PREENT EROSION OR WATER DAMAGE.

BACKFILL OR REINFORCE AREAS SHOWING SIGNS OF SCOUR OR SETTLEMENT.

LOOK FOR SIGNS OF SCOUR. WHENEVER SCOUR IS PRESENT, USE STONE TO BACKFILL SCOURED AREAS AT OR AROUND THE SUBSTRUCTURE AND GRADE AS SHOWN ON THE PLANS.

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA. 10+66.50	CLASS A CONCRETE	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES		1'-5" X 1'-3" CONCRETE CURB	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		3'-0" X 2'-6" PRESTRESSED CONCRETE BENT CAPS
	LUMP SUM	CU.YDS.	LBS.	EA.	NO.	LIN.FT.	LIN.FT.	LUMP SUM	NO.	LIN.FT.	LIN.FT.
SUPERSTRUCTURE							110	LUMP SUM	5	275.00	
END BENT 1		2.3	141	4	4	60					21
END BENT 2		3.1	217	4	4	60					21
TOTAL	LUMP SUM	5.4	358	8	8	120	110	LUMP SUM	5	275.00	42

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 4 OF 4

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025

DRAWN BY : V.L. MUMMA DATE : 10/20/25

CHECKED BY : M.G. ARMSTRONG DATE : 10/20/25

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

DocuSigned by: Robert Decola C91B1B6B9B1B4FF...

12/5/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBERS: C-0764

KCI Associates of North Carolina, P.A.

4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

BRIDGE ON SCOTT DR
OVER HOMINY CREEK
BETWEEN US 19/23 (ASHEVILLE HWY)
AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
1			3			TOTAL SHEETS
2			4			16

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	1	1.055	--	1.75	0.275	1.23	55'	EL	27	0.523	1.23	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27	
		HL-93 (OPERATING)	N/A		1.591	--	1.35	0.275	1.59	55'	EL	27	0.523	1.59	55'	EL	5.4	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	2	1.322	47.585	1.75	0.275	1.54	55'	EL	27	0.523	1.47	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		HS-20 (OPERATING)	36.000		1.900	68.396	1.35	0.275	1.99	55'	EL	27	0.523	1.90	55'	EL	5.4	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.776	37.476	1.4	0.275	4.04	55'	EL	27	0.523	4.17	55'	EL	5.4	0.80	0.275	2.78	55'	EL	27	
		SNGARBS2	20.000		2.155	43.095	1.4	0.275	3.14	55'	EL	27	0.523	3.02	55'	EL	5.4	0.80	0.275	2.15	55'	EL	27	
		SNAGRIS2	22.000		2.079	45.734	1.4	0.275	3.03	55'	EL	27	0.523	2.83	55'	EL	5.4	0.80	0.275	2.08	55'	EL	27	
		SNCOTTS3	27.250		1.384	37.708	1.4	0.275	2.01	55'	EL	27	0.523	2.09	55'	EL	5.4	0.80	0.275	1.38	55'	EL	27	
		SNAGGRS4	34.925		1.189	41.527	1.4	0.275	1.73	55'	EL	27	0.523	1.77	55'	EL	5.4	0.80	0.275	1.19	55'	EL	27	
		SNS5A	35.550		1.160	41.255	1.4	0.275	1.69	55'	EL	27	0.523	1.82	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		SNS6A	39.950		1.079	43.102	1.4	0.275	1.57	55'	EL	27	0.523	1.68	55'	EL	5.4	0.80	0.275	1.08	55'	EL	27	
		SNS7B	42.000		1.028	43.175	1.4	0.275	1.50	55'	EL	27	0.523	1.67	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.320	43.556	1.4	0.275	1.92	55'	EL	27	0.523	1.98	55'	EL	5.4	0.80	0.275	1.32	55'	EL	27	
		TNT4A	33.075		1.330	43.979	1.4	0.275	1.94	55'	EL	27	0.523	1.91	55'	EL	5.4	0.80	0.275	1.33	55'	EL	27	
		TNT6A	41.600		1.101	45.811	1.4	0.275	1.60	55'	EL	27	0.523	1.83	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNT7A	42.000		1.114	46.804	1.4	0.275	1.62	55'	EL	27	0.523	1.71	55'	EL	5.4	0.80	0.275	1.11	55'	EL	27	
		TNT7B	42.000		1.163	48.848	1.4	0.275	1.69	55'	EL	27	0.523	1.62	55'	EL	5.4	0.80	0.275	1.16	55'	EL	27	
		TNAGRIT4	43.000		1.101	47.330	1.4	0.275	1.60	55'	EL	27	0.523	1.56	55'	EL	5.4	0.80	0.275	1.10	55'	EL	27	
		TNAGT5A	45.000		1.031	46.405	1.4	0.275	1.50	55'	EL	27	0.523	1.58	55'	EL	5.4	0.80	0.275	1.03	55'	EL	27	
		TNAGT5B	45.000	3	1.013	45.582	1.4	0.275	1.47	55'	EL	27	0.523	1.48	55'	EL	5.4	0.80	0.275	1.01	55'	EL	27	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.617	46.483	1.3	0.275	2.37	55'	EL	27	0.523	2.27	55'	EL	5.4	0.80	0.275	1.62	55'	EL	27	
		EV3	43.000	4	1.049	45.107	1.3	0.275	1.54	55'	EL	27	0.523	1.53	55'	EL	5.4	0.80	0.275	1.05	55'	EL	27	

LOAD FACTORS:

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

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

(#) CONTROLLING LOAD RATING
(1) DESIGN LOAD RATING (HL-93)
(2) DESIGN LOAD RATING (HS-20)
(3) LEGAL LOAD RATING **
(4) EMERGENCY VEHICLE LOAD RATING **
** SEE CHART FOR VEHICLE TYPE
GIRDER LOCATION
I - INTERIOR GIRDER
EL - EXTERIOR LEFT GIRDER
ER - EXTERIOR RIGHT GIRDER

1
2
3
4

LRFR SUMMARY

FOR SPAN "A"

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Developed by: Robert Decola 12/5/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

STANDARD

LRFR SUMMARY FOR 55' CORED SLAB UNIT 90° SKEW

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			16

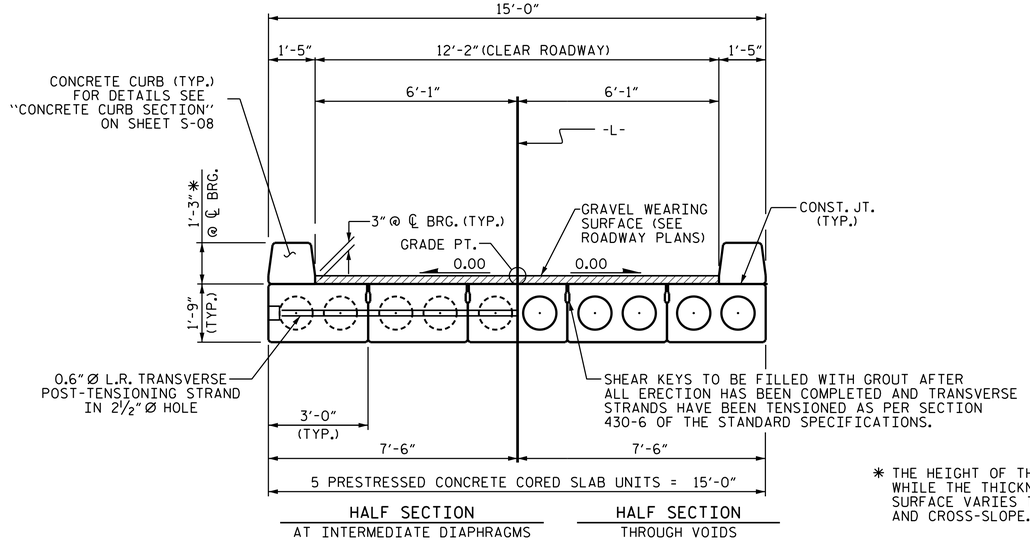
DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025

DRAWN BY: V.L. MUMMA DATE: 10/20/25

CHECKED BY: M.G. ARMSTRONG DATE: 10/20/25

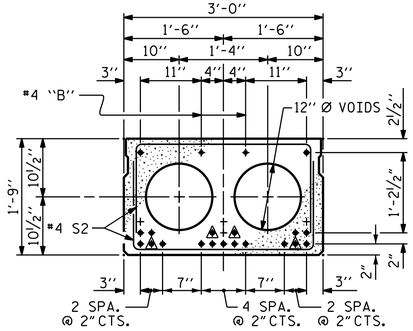
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214



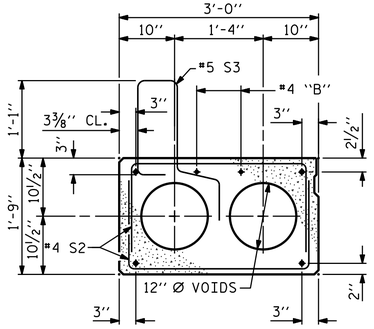
* THE HEIGHT OF THE CURB REMAINS CONSTANT WHILE THE THICKNESS OF THE GRAVEL WEARING SURFACE VARIES TO FOLLOW THE PROFILE AND CROSS-SLOPE.

TYPICAL SECTION



INTERIOR SLAB SECTION

(19 STRANDS REQUIRED)



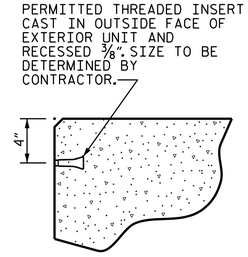
EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

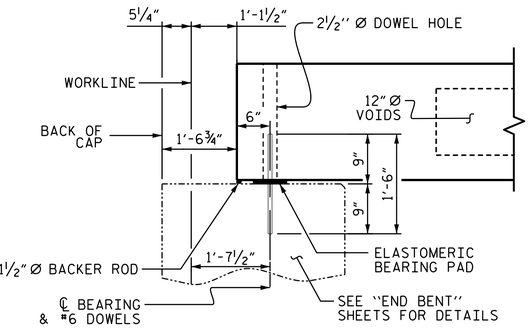
▲ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 6'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

◉ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

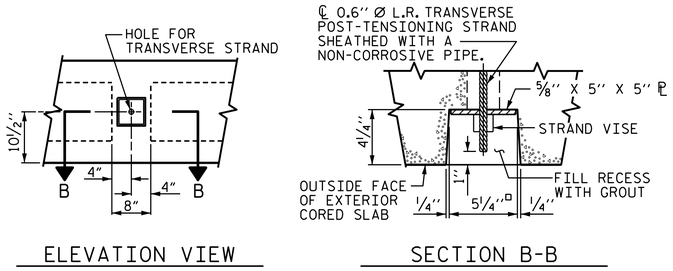
DEBONDING LEGEND



THREADED INSERT DETAIL



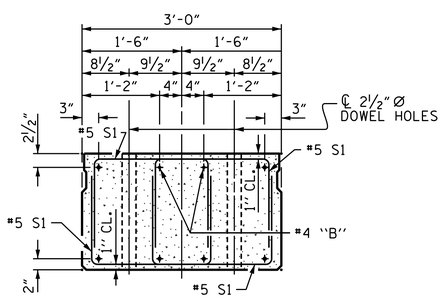
SECTION AT END BENT



ELEVATION VIEW

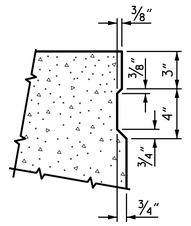
SECTION B-B

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



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

DocuSigned by: Robert Decola

12/5/2025

DESIGN ENGINEER OF RECORD: Robert Decola	DATE: 12/5/2025
DRAWN BY: V.L. MUMMA	DATE: 10/20/25
CHECKED BY: M.G. ARMSTRONG	DATE: 10/20/25

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KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-06
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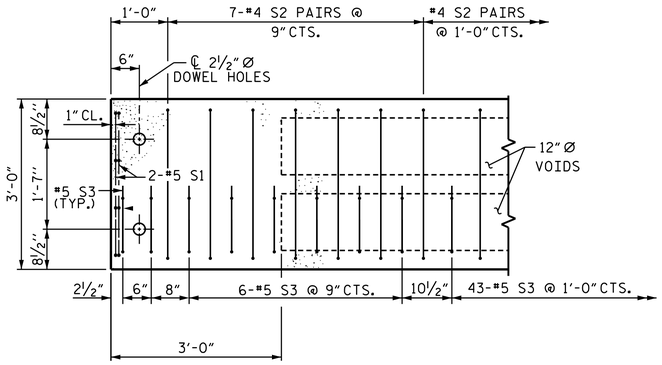
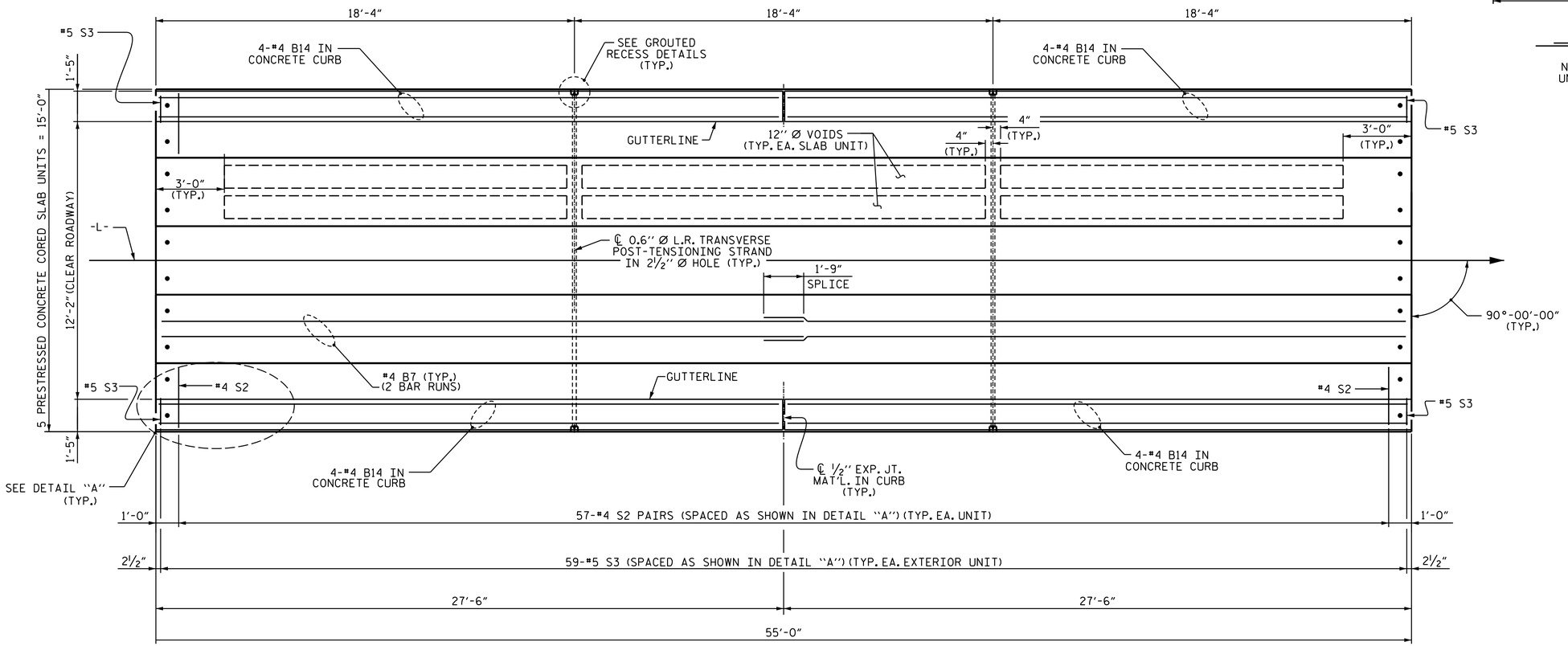


DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.



PLAN OF UNIT

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-
SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

PLAN OF 55' UNIT 12'-2" CLEAR ROADWAY 90° SKEW

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

DocuSigned by: Robert Decola 12/5/2025

DESIGN ENGINEER OF RECORD: Robert Decola	DATE : 12/5/2025
DRAWN BY : N.R. GIAGUNTO	DATE : 10/28/2025
CHECKED BY : M.G. ARMSTRONG	DATE :

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ENGINEERS ◆ PLANNERS ◆ SCIENTISTS ◆ CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
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DEAD LOAD DEFLECTION AND CAMBER

	3′-0″ x 1′-9″
55′ CORED SLAB UNIT	0.6″Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1½″ ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	⅜″ ↓
FINAL CAMBER	1⅛″ ↑

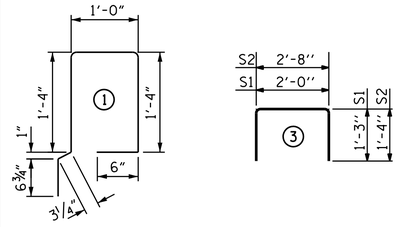
BILL OF MATERIAL FOR CONCRETE CURB

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	55′ UNIT					
✳B14	16	16	#4	STR	27′-1″	289
✳EPOXY COATED REINFORCING STEEL				LBS.		289
CLASS AA CONCRETE				CU.YDS.		7.2
TOTAL CONCRETE CURB LENGTH				LN. FT.		110.00

AGGREGATE BASE COURSE THICKNESS & CURB HEIGHT

	A.B.C. THICKNESS	CURB HEIGHT
55′ UNIT	3″	1′-3″

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
55′ UNIT			
EXTERIOR C.S.	2	55′-0″	110′-0″
INTERIOR C.S.	3	55′-0″	165′-0″
TOTAL	5		275′-0″

CONCRETE RELEASE STRENGTH

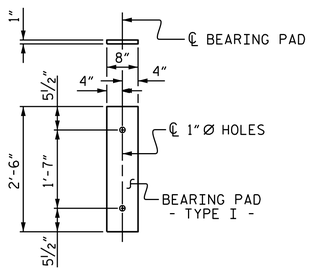
UNIT	PSI
55′ UNITS	4900

GRADE 270 STRANDS

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

BILL OF MATERIAL FOR ONE 55′ CORED SLAB UNIT

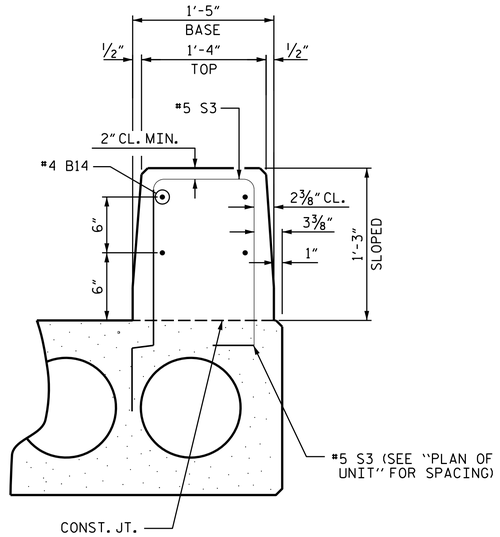
				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B7	4	#4	STR	28′-3″	75	28′-3″	75
S1	8	#5	3	4′-3″	35	4′-3″	35
S2	114	#4	3	5′-4″	406	5′-4″	406
✳S3	59	#5	1	4′-6″	277		
REINFORCING STEEL		LBS.			516		516
✳EPOXY COATED REINFORCING STEEL		LBS.			277		
5000 P.S.I. CONCRETE		CU. YDS.			7.8		7.8
0.6″Ø L.R. STRANDS		No.			19		19



FIXED END
(TYPE I - 10 REQ′D)

ELASTOMERIC BEARING DETAILS

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.



CONCRETE CURB SECTION

NOTES

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

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

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

THE 2½″Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE ″CONCRETE RELEASE STRENGTH″ TABLE.

ALL REINFORCING STEEL IN THE CONCRETE CURB SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ⅛″ IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE CURB AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4′-0″ CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

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

THE #4 S2 STIRRUPS MAY BE SHIFTED AS NECESSARY TO MAINTAIN 1″ CLEAR TO THE GROUTED RECESS.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

THE #5 S3 STIRRUPS MAY BE SHIFTED AS NECESSARY TO AVOID CONFLICTS WITH OTHER REINFORCEMENT IN THE EXTERIOR CORED SLAB UNIT.

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-

SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola
12/5/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

3′-0″ X 1′-9″ PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

DESIGN ENGINEER OF RECORD: Robert Decola	DATE : 12/5/2025
DRAWN BY : V.L. MUMMA	DATE : 10/15/2025
CHECKED BY : M.G. ARMSTRONG	DATE : 10/17/2025

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KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone 1919 783-9214

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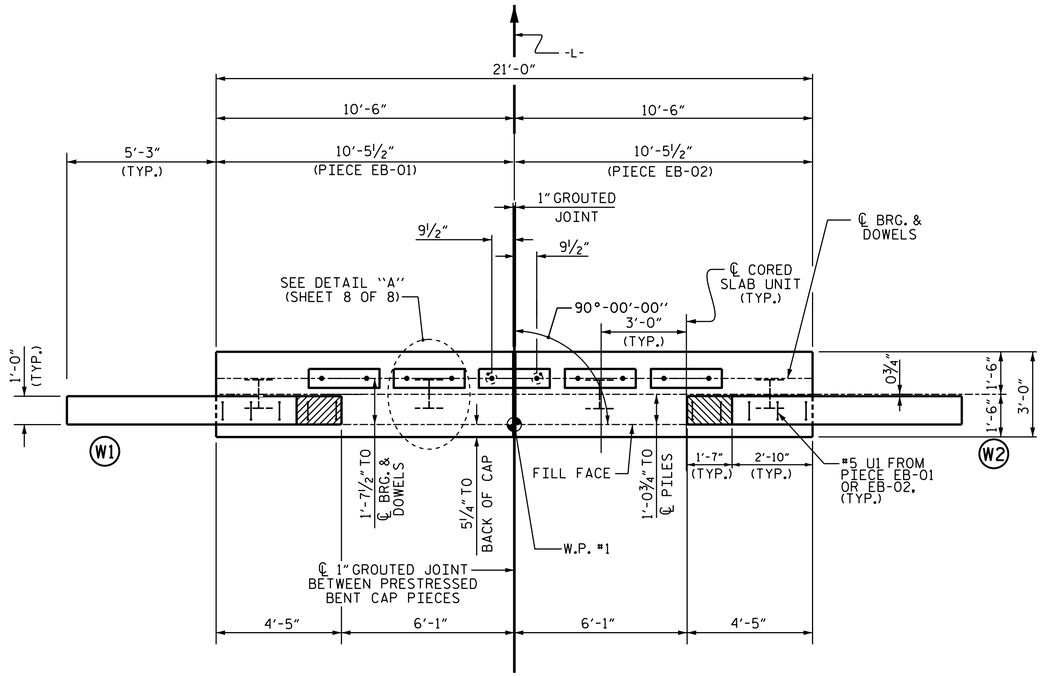
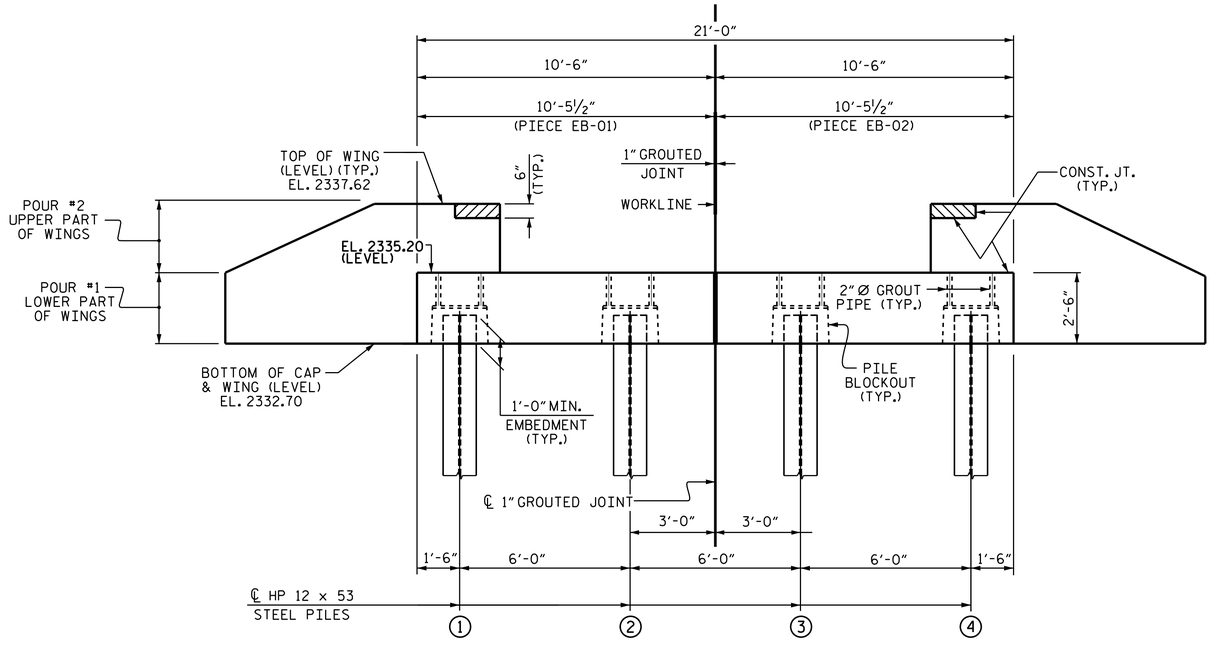


PLAN

(PILE BLOCKOUTS, AND GROUT PIPES NOT SHOWN FOR CLARITY)



ELEVATION

FOR 2" Ø GROUT PIPE AND PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8.

PRESTRESSED CONCRETE BENT CAPS (FOR ONE END BENT)			
PIECE	LENGTH	NUMBER	TOTAL LENGTH
EB-01	10'-5½"	1	10'-5½"
EB-02	10'-5½"	1	10'-5½"
TOTAL		2	20'-11"

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 1

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola

12/5/2025

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025

DRAWN BY: N. GIAGUNTO DATE: 10/29/25

CHECKED BY: R.F. DECOLA DATE: 10/30/25

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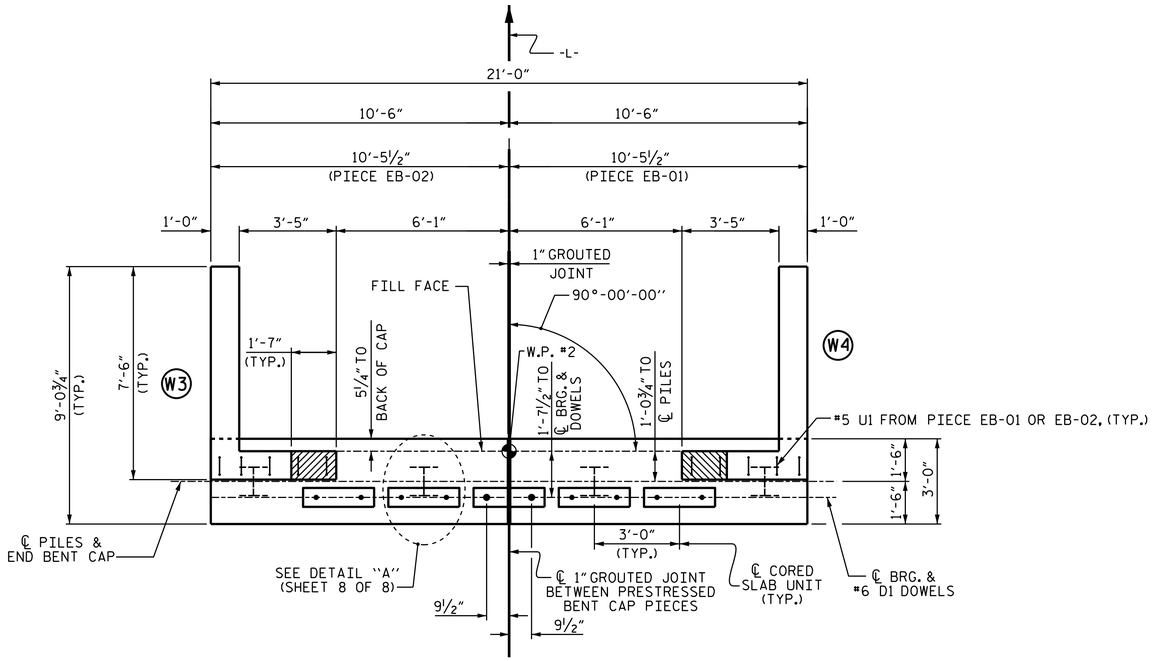
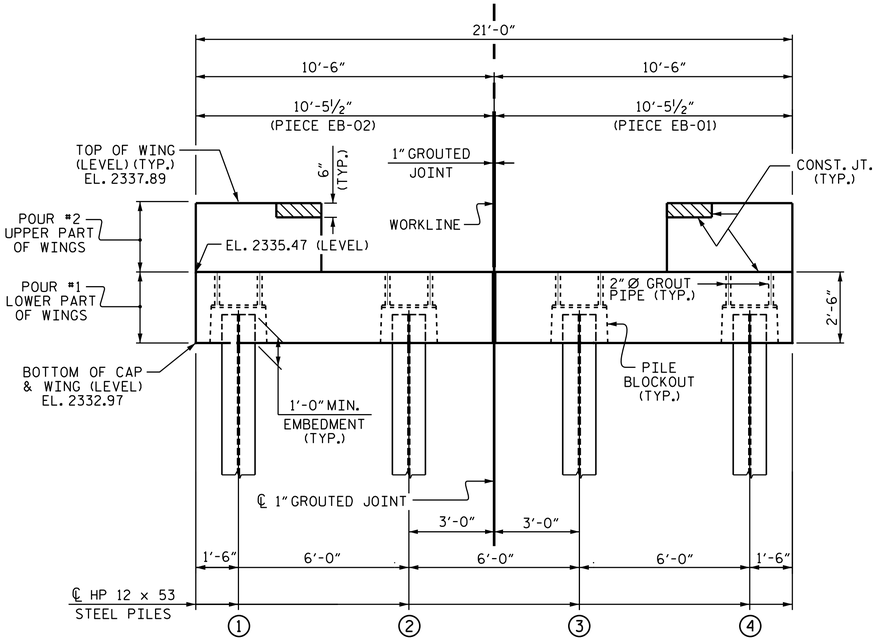


PLAN

(PILE BLOCKOUTS AND GROUT PIPES NOT SHOWN FOR CLARITY)



ELEVATION

FOR 2″ Ø GROUT PIPE AND PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8.

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 2

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola

12/5/2025

DESIGN ENGINEER OF RECORD: Robert Decola	DATE : 12/5/2025
DRAWN BY : V.L. MUMMA	DATE : 10/30/25
CHECKED BY : M.G. ARMSTRONG	DATE : 10/30/25

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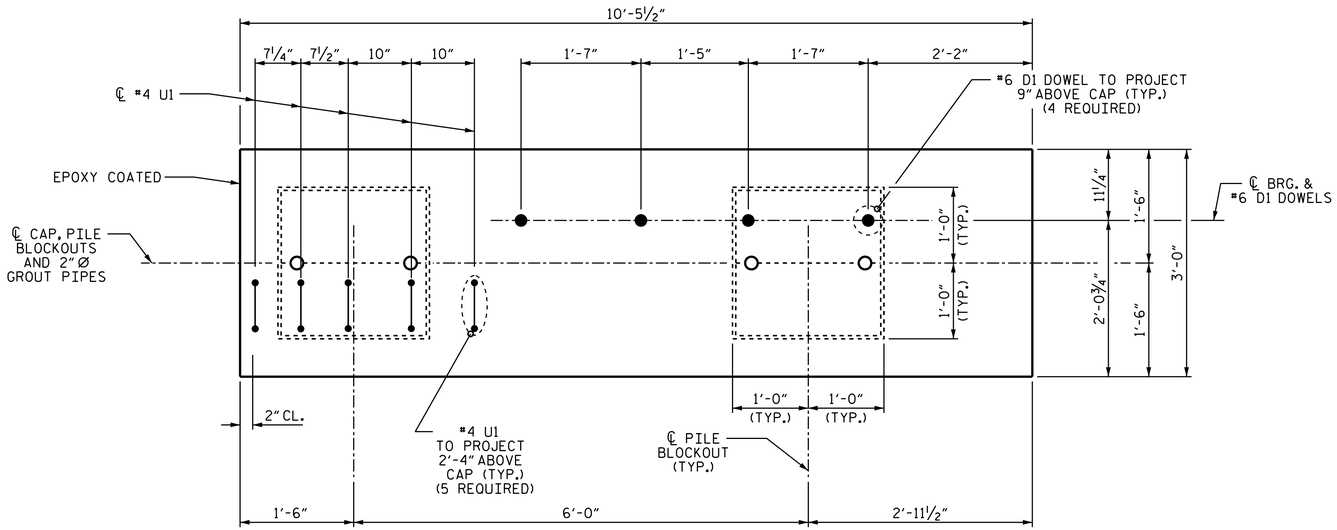
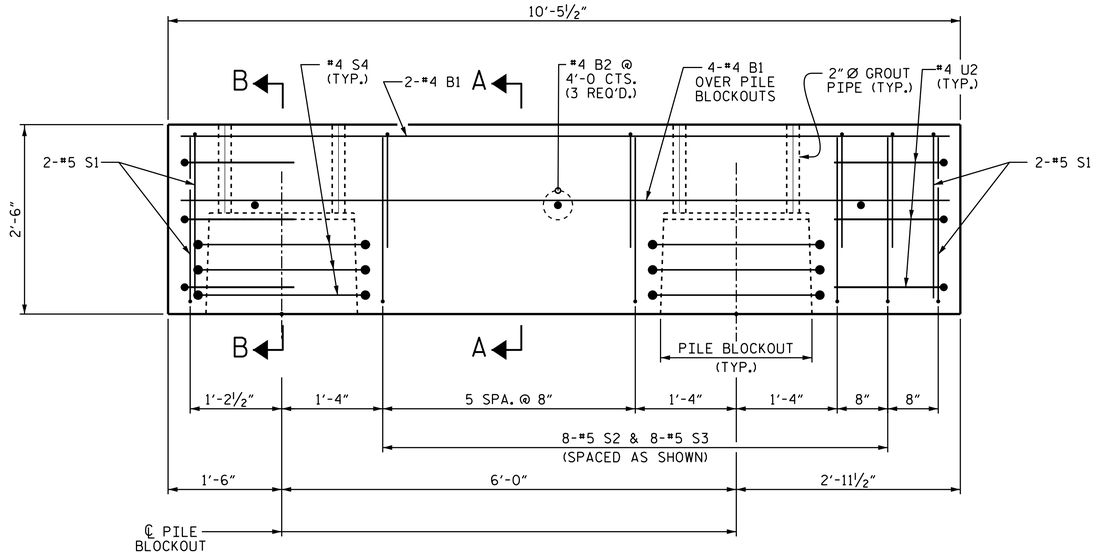


PLAN

(FOR PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8)



ELEVATION

(#6 D1 DOWELS & #4 U1 NOT SHOWN FOR CLARITY)
FOR SECTION A-A & SECTION B-B, SEE SHEET 7 OF 8.

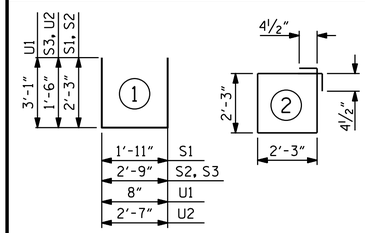
BILL OF MATERIAL

FOR ONE PIECE EB-01

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#4	STR	10′-1″	40
B2	3	#4	STR	2′-8″	5
D1	4	#6	STR	1′-6″	9
S1	8	#5	1	6′-5″	54
S2	8	#5	1	7′-3″	60
S3	8	#5	1	5′-9″	48
S4	6	#4	2	9′-9″	39
U1	5	#4	1	6′-10″	23
U2	6	#4	1	5′-7″	22

REINFORCING STEEL	300 LBS
4000 PSI PRESTRESSED CONCRETE	2.6 C.Y.
GROUT IN PILE BLOCKOUT & JOINT	0.4 C.Y.
0.6″ Ø L.R. STRANDS	No. 12

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-
SHEET 3 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

PRESTRESSED PIECE EB-01

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola 12/5/2025

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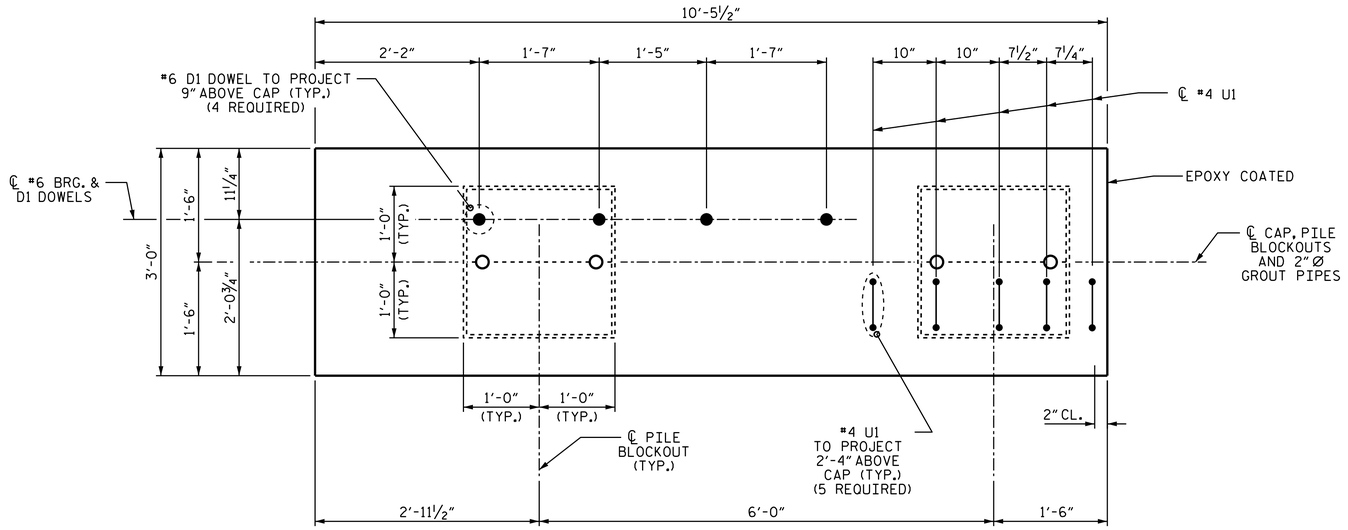
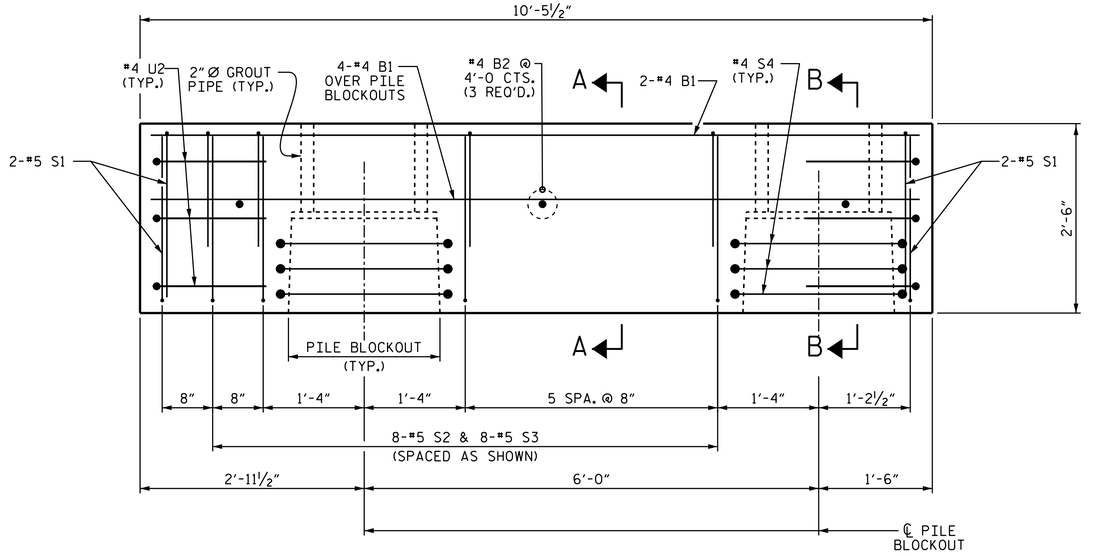


PLAN

(FOR PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8)



ELEVATION

(*6 D1 DOWELS & *4 U1 NOT SHOWN FOR CLARITY)
FOR SECTION A-A & SECTION B-B, SEE SHEET 7 OF 8.

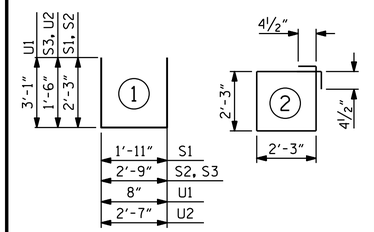
BILL OF MATERIAL

FOR ONE PIECE EB-02

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#4	STR	10′-1″	40
B2	3	#4	STR	2′-8″	5
D1	4	#6	STR	1′-6″	9
S1	8	#5	1	6′-5″	54
S2	8	#5	1	7′-3″	60
S3	8	#5	1	5′-9″	48
S4	6	#4	2	9′-9″	39
U1	5	#4	1	6′-10″	23
U2	6	#4	1	5′-7″	22

REINFORCING STEEL	300 LBS
4000 PSI PRESTRESSED CONCRETE	2.6 C.Y.
GROUT IN PILE BLOCKOUT & JOINT	0.4 C.Y.
0.6″Ø L.R. STRANDS	No. 12

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-

SHEET 4 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

PRESTRESSED PIECE EB-02

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola
12/5/2025

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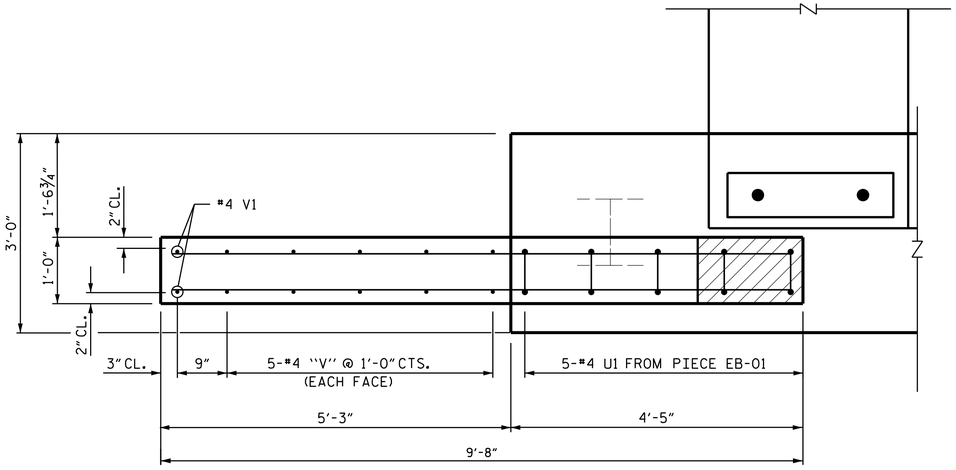
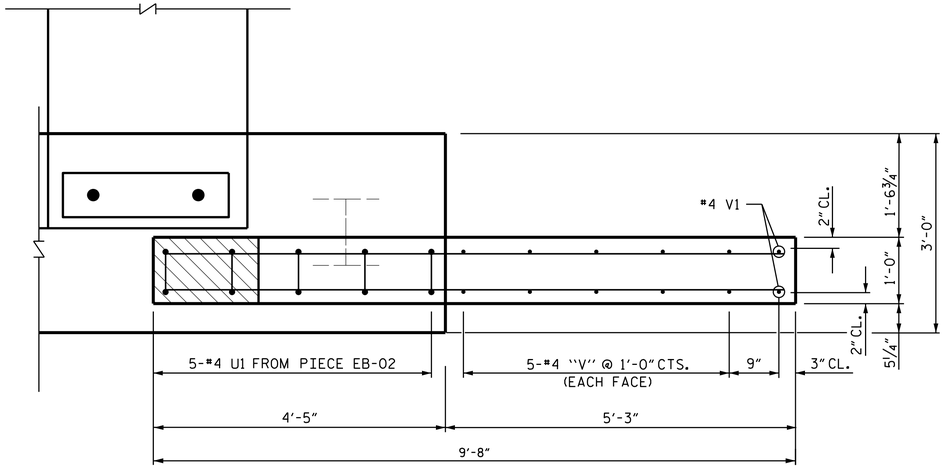
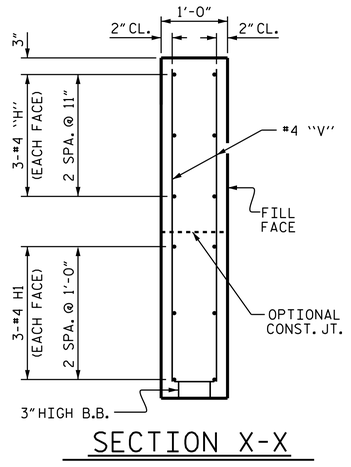
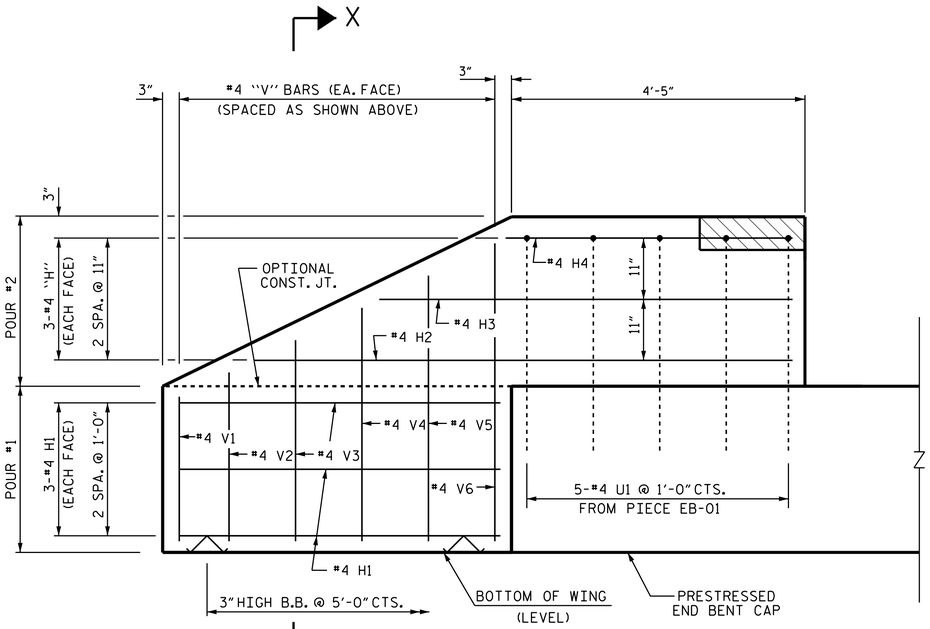


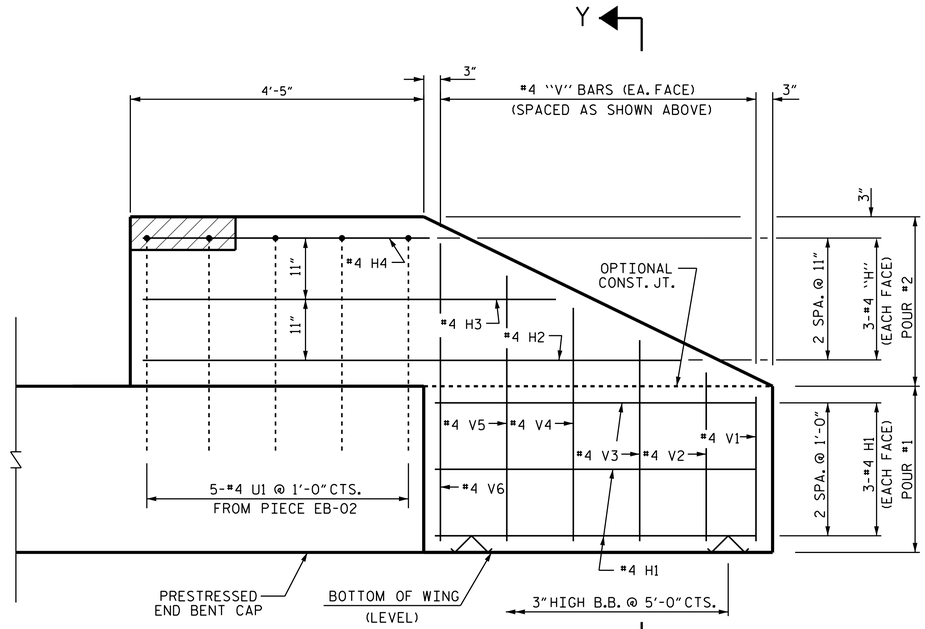




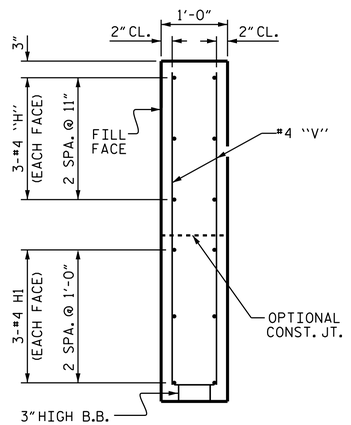
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 1
WING DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

12/5/2025

Robert Decola

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025

DRAWN BY: V.L. MUMMA DATE: 10/20/2025

CHECKED BY: M.G. ARMSTRONG DATE: 10/21/2025

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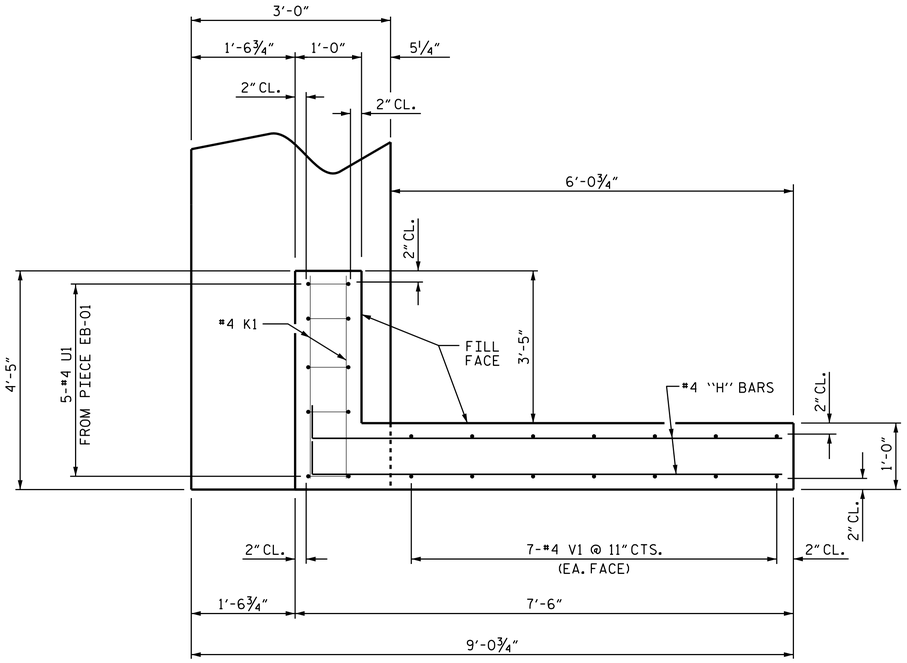
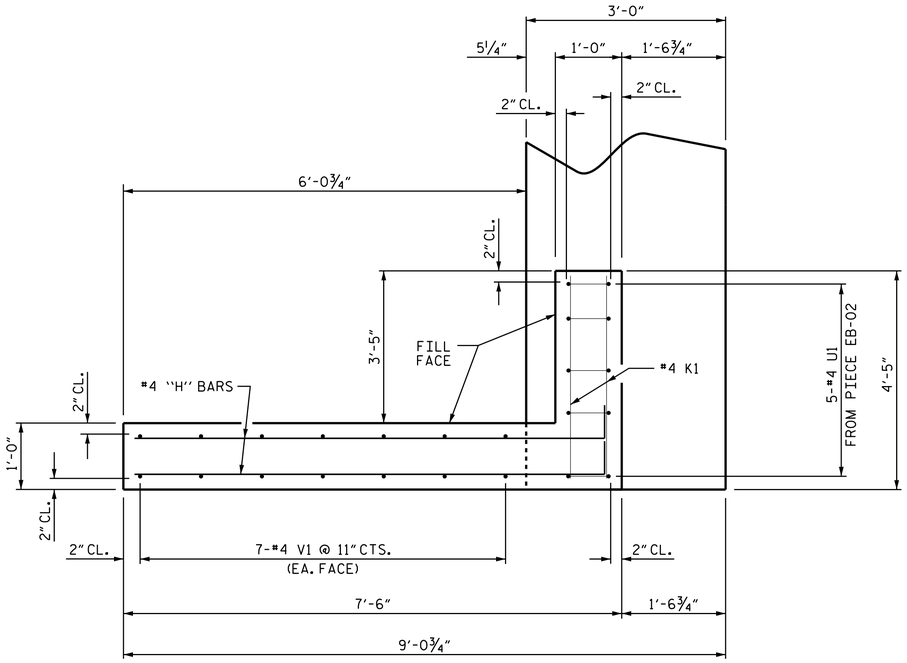
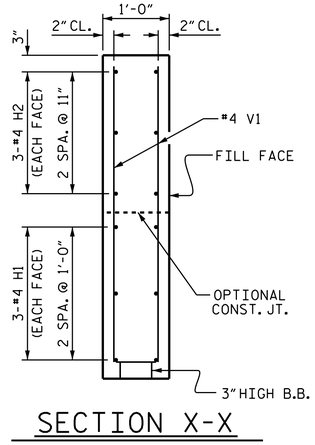
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214



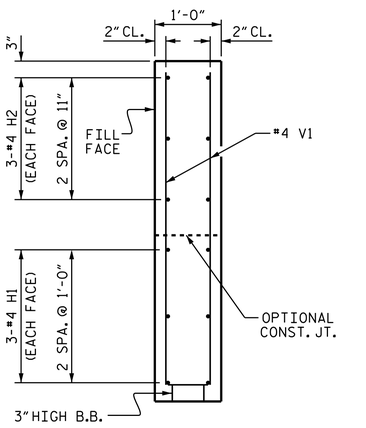
PLAN OF WING (W3)



PLAN OF WING (W4)



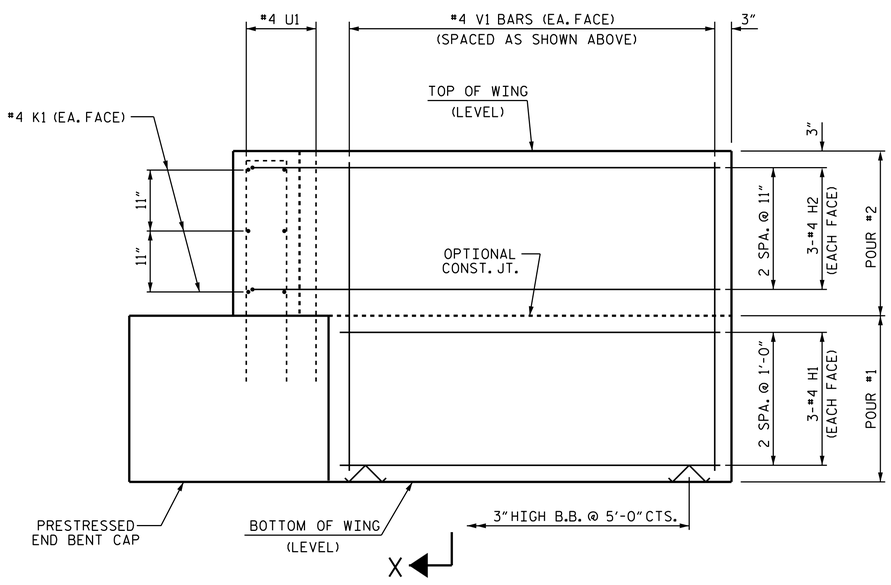
SECTION X-X



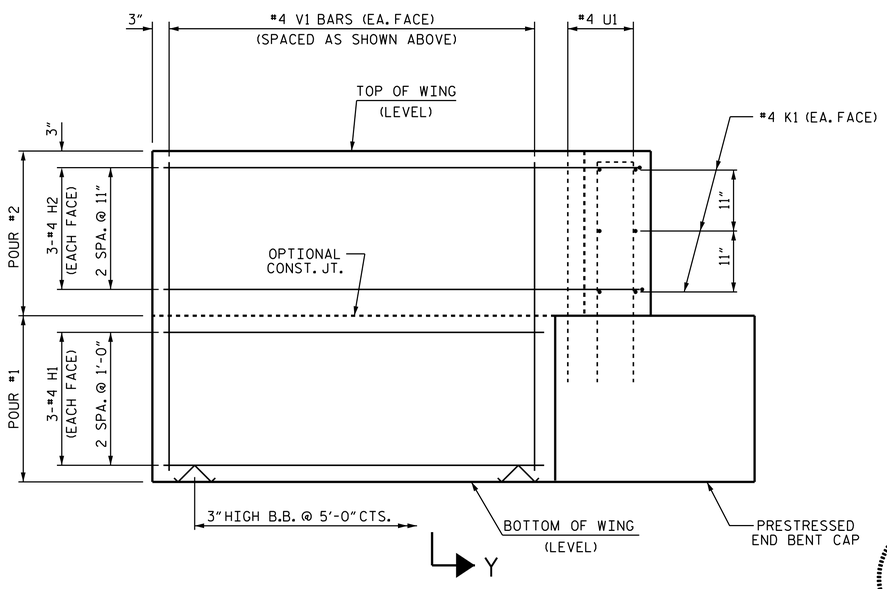
SECTION Y-Y

X

Y



ELEVATION OF WING (W3)



ELEVATION OF WING (W4)

WING DETAILS

DESIGN ENGINEER OF RECORD: Robert Decola	DATE : 12/5/2025
DRAWN BY : V.L. MUMMA	DATE : 10/20/25
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NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Docusigned by: Robert Decola

12/5/2025

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KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

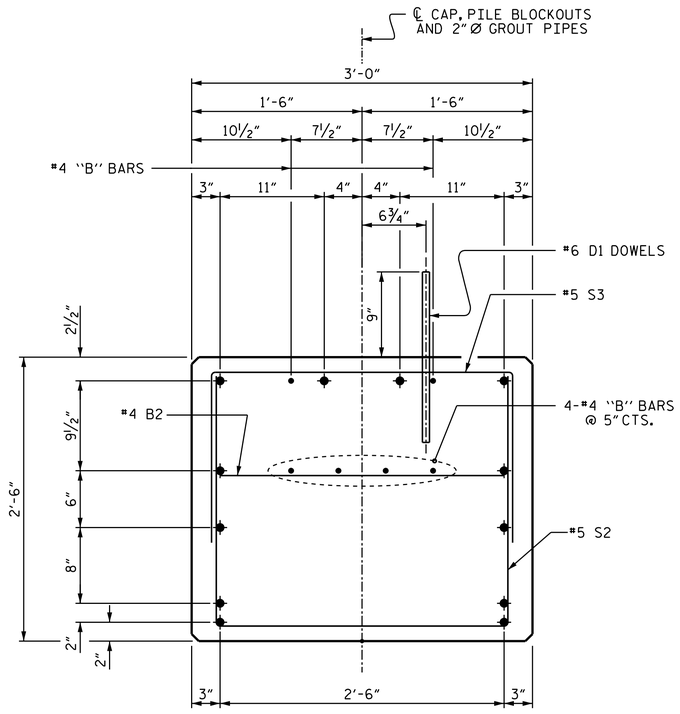
SHEET 6 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE
END BENT 2
WING DETAILS

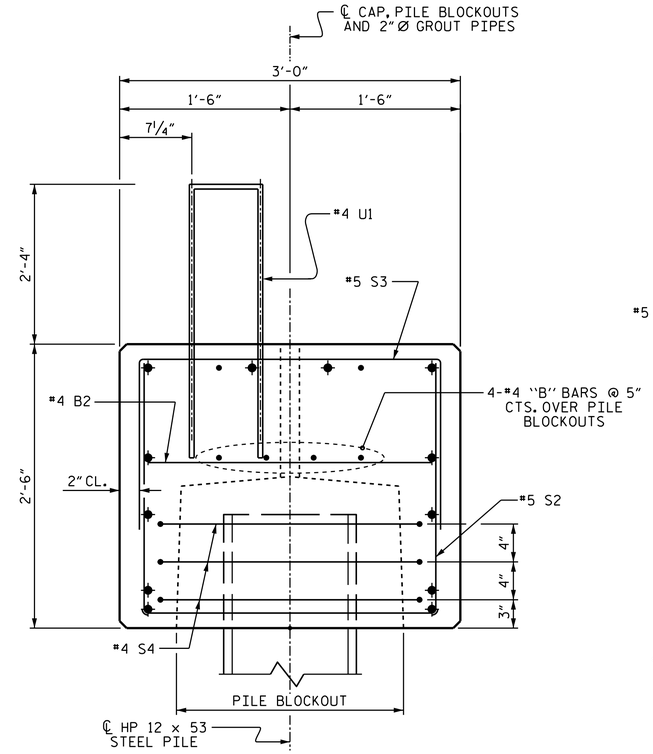
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			16

STD. NO. EB_30_60S4



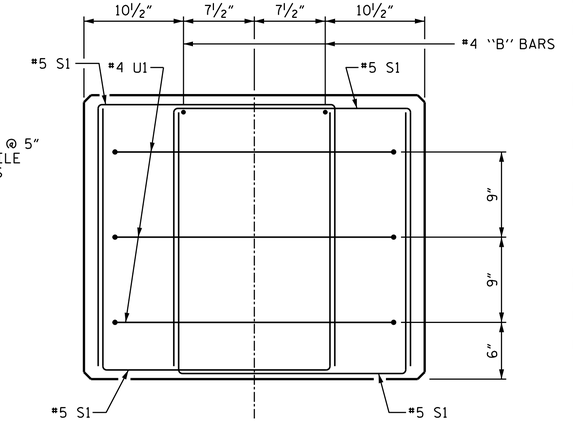
SECTION A-A

(SHOWING 0.6"Ø LOW RELAXATION STRAND LAYOUT)
(12 STRANDS)
"U" BARS NOT SHOWN FOR CLARITY



SECTION B-B

D1 BARS NOT SHOWN FOR CLARITY



END OF CAP VIEW

(TYPICAL BOTH ENDS)

NOTES

STIRRUPS IN PRESTRESSED PIECES MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS AND GROUT PIPES.

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

ALL REINFORCING STEEL CAST WITH THE END BENT CAP SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "3'-0" x 2'-6" PRESTRESSED CONCRETE BENT CAPS".

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

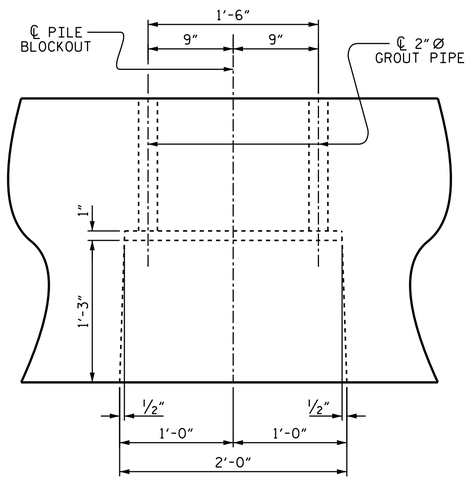
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE ENDS OF THE END BENT CAP SEGMENTS.

APPLY EPOXY PROTECTIVE COATING TO THE EXTERIOR END FACE OF PRESTRESSED PIECE EB-01 AND EB-02.

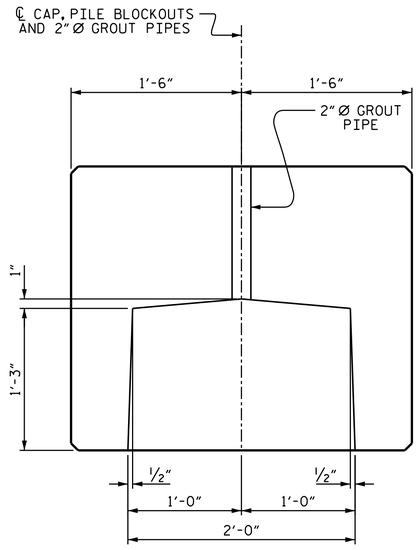
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE END BENT CAPS SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A METHOD TO LIFT AND SUPPORT THE PRESTRESSED CAP PIECES IN THE PROPER LOCATION AND ELEVATION AS SHOWN ON THE PLANS PRIOR TO PLACEMENT AND CURING OF THE GROUT IN THE PILE BLOCKOUTS. THE METHOD CHOSEN SHALL PROVIDE FOR A WATERTIGHT SEAL AT THE BOTTOM OF THE CAP UNTIL THE GROUT HAS HARDENED SO NO GROUT COMES IN CONTACT WITH THE STREAM.

◆ DENOTES PRESTRESSED STRAND



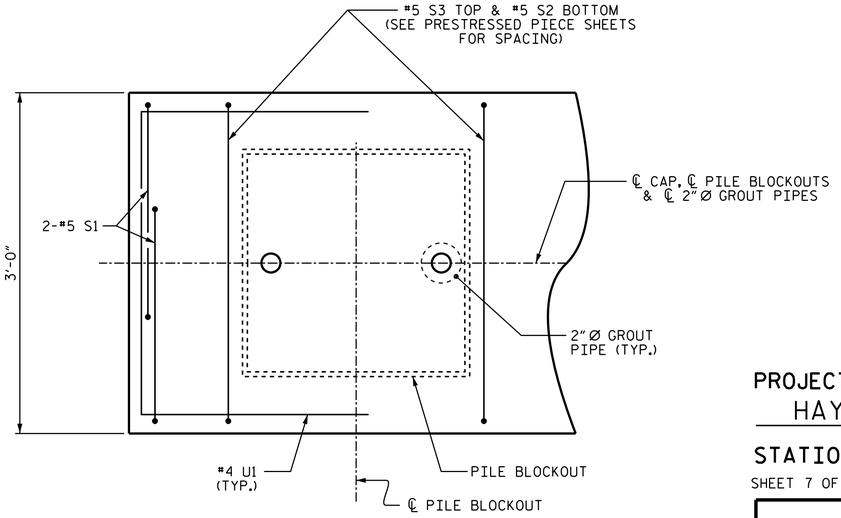
ELEVATION



SECTION

PILE BLOCKOUT DETAILS

(DIMENSIONS ARE TYPICAL EACH BLOCKOUT)



PART PLAN-END OF CAP

(TYPICAL BOTH ENDS)

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

Robert Decola
12/5/2025

PROJECT NO. 044-01-EA41A
HAYWOOD COUNTY
STATION: 10+66.50 -L-
SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT DETAILS

DESIGN ENGINEER OF RECORD: Robert Decola	DATE : 12/5/2025
DRAWN BY : V.L. MUMMA	DATE : 10/20/25
CHECKED BY : M.G. ARMSTRONG	DATE : 10/20/25

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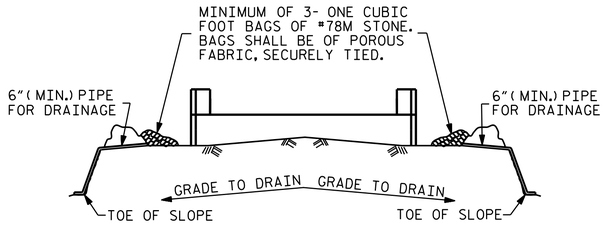
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
2			4			16

STD. NO. PSEBT

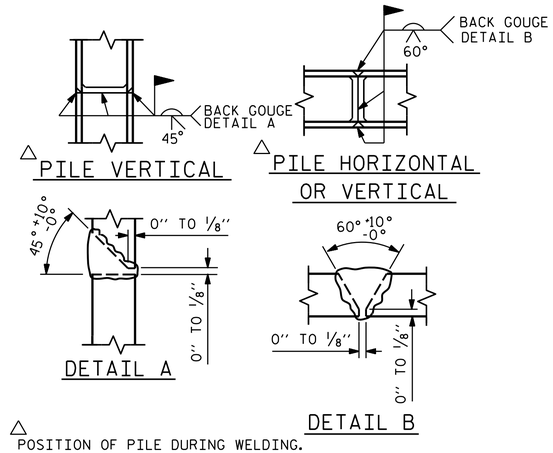


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BILL OF MATERIAL

WINGS FOR END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	4'-9"	38
H2	4	#4	STR	8'-1"	22
H3	4	#4	STR	6'-3"	17
H4	4	#4	STR	4'-6"	12
V1	4	#4	STR	2'-2"	6
V2	4	#4	STR	2'-6"	7
V3	4	#4	STR	2'-11"	8
V4	4	#4	STR	3'-5"	9
V5	4	#4	STR	3'-11"	10
V6	4	#4	STR	4'-4"	12

REINFORCING STEEL 141 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 LOWER PART OF WINGS 1.0 C.Y.

POUR #2 UPPER PART OF WINGS 1.3 C.Y.

TOTAL CLASS A CONCRETE 2.3 C.Y.

WINGS FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	5'-8"	45
H2	12	#4	1	7'-9"	62
K1	12	#4	STR	2'-11"	23
V1	28	#4	STR	4'-8"	87

REINFORCING STEEL 217 LBS.

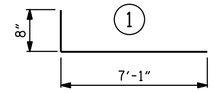
CLASS A CONCRETE BREAKDOWN

POUR #1 LOWER PART OF WINGS 1.1 C.Y.

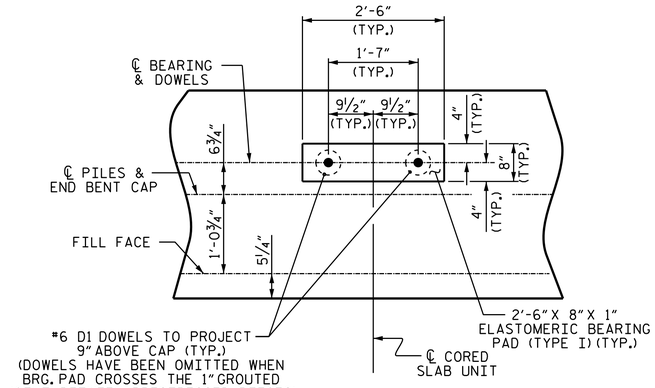
POUR #2 UPPER PART OF WINGS 2.0 C.Y.

TOTAL CLASS A CONCRETE 3.1 C.Y.

BAR TYPES

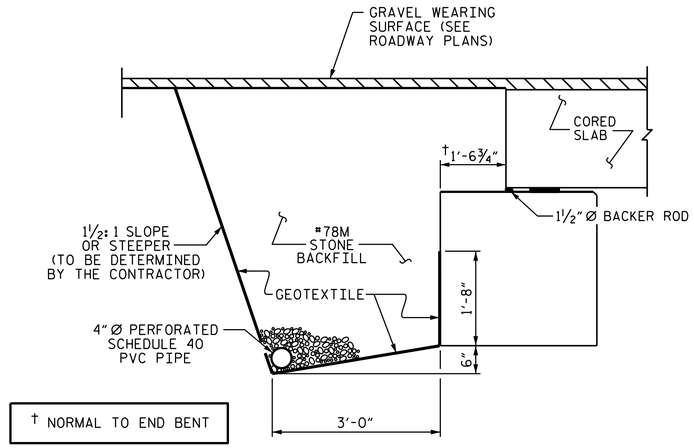


ALL BAR DIMENSIONS ARE OUT TO OUT.



DETAIL "A"

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



SECTION THRU BACKFILL

NOTES

FOR PRESTRESSED CAP DETAILS, SEE "PRESTRESSED PIECE EB-01" & "PRESTRESSED PIECE EB-02" SHEETS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR 3'-0" x 2'-6" PRESTRESSED CONCRETE BENT CAPS, SEE SPECIAL PROVISIONS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE CONCRETE CURB IS CAST IF SLIP FORMING IS USED.

PROJECT NO. 044-01-EA41A

HAYWOOD COUNTY

STATION: 10+66.50 -L-

SHEET 8 OF 8

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

DocuSigned by: Robert Decola 12/5/2025

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT DETAILS

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

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 12/5/2025

DRAWN BY : V.L. MUMMA DATE : 10/20/25

CHECKED BY : M.G. ARMSTRONG DATE : 10/20/25

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "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" Ø SHEAR STUDS FOR THE ¾" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞" Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾" Ø STUDS BASED ON THE RATIO OF 3 - ⅞" Ø STUDS FOR 4 - ¾" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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.

REV. 6-16-95 EEM (c) RGW REV. 5-7-03 RWW (c) JTE REV. 10-1-11 MAA (c) GM
REV. 8-16-99 RWW (c) LES REV. 5-1-06 TLA (c) GM REV. 12-17 MAA (c) THC

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ENGLISH

JANUARY, 1990

STD. NO. SN

Site # 044-01-cdc5b

Jade Drive over Turkey Creek in Haywood County

8/17/99

REVISIONS

TO MAX PATCH RD. SR 1334

PROPERTY OWNERS ARE USING TEMPORARY DRIVEWAY WHICH CONSISTS OF 48" DIA. PIPE AND FILL. CONTRACTOR TO REMOVE TEMPORARY PIPE AND DRIVEWAY AND RESTORE BANKS TO PRE-STORM CONDITIONS AFTER COMPLETION OF BRIDGE.

TBM#700
REBAR W/CAP
N:729582.84
E:838113.25
EL:2919.86

15 SR 1340 TURKEY CREEK ROAD

-Y1- PCC Sta. 15+15.07

BEGIN BRIDGE
-L- STA.10+13.38

BEGIN PROJECT
-L- POT STA 10+00.00

-Y1- POC STA.15+71.30
-L- POT STA.10+00.00
-L- BEARING AHEAD
=N 1° 37' 51.8" E

-Y1- PT Sta. 15+95.96

CHRISTINE BOYER
8732-89-2104

STREAM BANK STABILIZATION SEE DETAIL A

S 85° 28' 00.0" E

-Y1- PC Sta. 16+53.42

TBM#702
REBAR W/CAP
N:729533.33
E:838252.74
EL:2932.43

TO DEAD END

END BRIDGE
-L- STA.10+40.63

GEORGE G TUCKER III
LEEON B TUCKER
8733-70-0377

END PROJECT
-L- POT STA 10+60.00

-TEMP-
EXIST
JADE DRIVE
15'-2" (CRW)
-L-

-L- PC Sta. 10+50.77

TURKEY CREEK

-L- PT Sta. 11+63.09

N 53° 06' 50.7" E

-L- PC Sta. 11+98.13

-L- PT Sta. 12+75.61

APRIL ENNIS
JEFFREY ENNIS
8733-80-4101

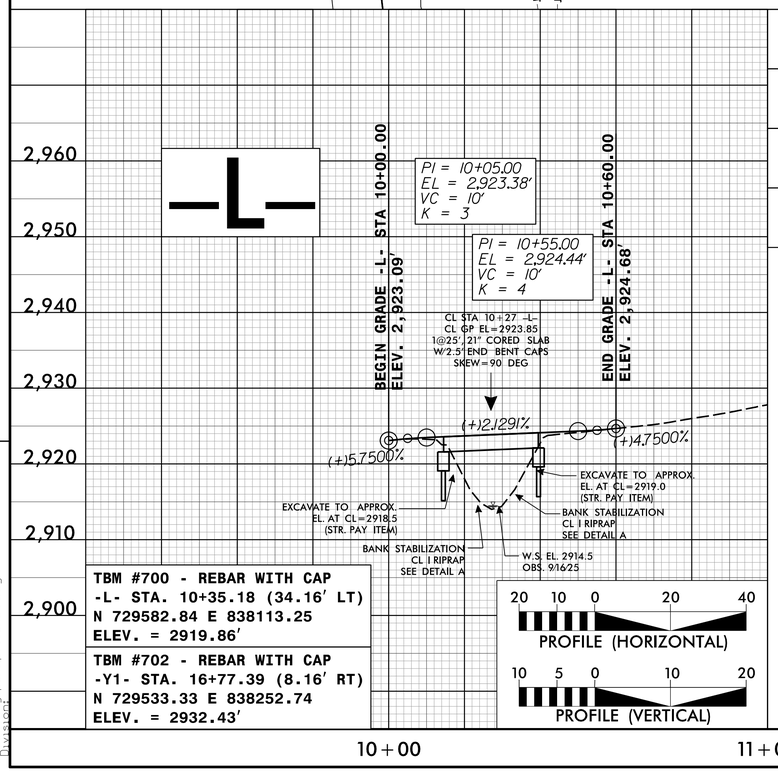
NAD83 /NA2011

20 10 0 20 40
PLANS

FOR STRUCTURE PLANS, SEE SHEET S-1 THRU S-N

-Y1-		
PI Sta 14+65.68	PI Sta 15+56.08	PI Sta 16+87.18
Δ = 9° 27' 20.2" (RT)	Δ = 23° 10' 20.7" (RT)	Δ = 21° 50' 11.2" (LT)
D = 9° 32' 57.5"	D = 28° 38' 52.4"	D = 32° 44' 25.6"
L = 99.02'	L = 80.89'	L = 66.70'
T = 49.62'	T = 41.00'	T = 33.76'
R = 600.00'	R = 200.00'	R = 175.00'

-L-	
PI Sta 11+11.04	PI Sta 13+66.15
Δ = 51° 28' 58.8" (RT)	Δ = 161° 24' 33.8" (LT)
D = 45° 50' 11.8"	D = 208° 20' 53.8"
L = 112.32'	L = 77.47'
T = 60.27'	T = 168.02'
R = 125.00'	R = 27.50'

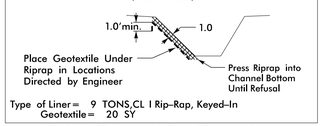


STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER TURKEY CREEK ON JADE DRIVE

DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner= 9 TONS,CL I Rip-Rap, Keyed-In
Geotextile= 20 SY

FROM STA. 10+21 TO STA. 10+31

CONTRACTOR TO ENSURE THAT RESIDENTS ON TURKEY CREEK ROAD AND JADE DRIVE CAN ACCESS THEIR PROPERTIES THROUGHOUT DURATION OF PROJECT. NOTIFY RESIDENTS OF ANY TEMPORARY LANE CLOSURES NEEDED FOR BRIDGE CONSTRUCTION.

I HEREBY CERTIFY THAT I HAVE REVIEWED THE EXISTING HYDRAULIC CONVEYANCE AT THIS SITE WHICH WAS AN UNKNOWN EXISTING BRIDGE WITH THE PROPOSED CONVEYANCE PROVIDED BY THE PROPOSED 25 FEET SPAN BRIDGE. SPAN LENGTH WAS DETERMINED BASED ON DOWNSTREAM NCDOT STRUCTURES WITH BRIDGE LENGTHS BETWEEN 16.5 FEET AND 18.5 FEET.

THE PROPOSED BRIDGE LOW CHORD SHALL BE SET NO LOWER THAN THE TOP OF THE EXISTING TEMPORARY PIPE WHICH MEETS THE FEMA DISASTER SPECIFIC GUIDANCE FOR THE REPLACEMENT OF PRIVATE ROADS AND BRIDGES ISSUED ON 14 FEBRUARY 2025, "TO PROVIDE BRIDGE/CULVERT DESIGN PLANS CERTIFIED (SEALED, SIGNED, AND DATED) BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NORTH CAROLINA DEMONSTRATING THAT THE NEWLY DESIGNED AND INSTALLED PRIVATE BRIDGE/CULVERT PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING."

THIS CERTIFICATION DEMONSTRATES THAT THE NEWLY DESIGNED AND INSTALLED PRIVATE BRIDGE PROVIDES CONVEYANCE GREATER THAN OR EQUAL TO THE ORIGINAL DESTROYED CROSSING. THIS IS BASED ON THE BEST AVAILABLE DATA PROVIDED FROM POST STORM EVALUATIONS. PORTIONS OF THE EXISTING STRUCTURES MAY HAVE BEEN DESTROYED, REMOVED, MODIFIED OR SHIFTED FROM THEIR ORIGINAL LOCATION OR ELEVATION.

PROJECT REFERENCE NO.	SHEET NO.
044-01-cdc5b	1
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 045664 ENGINEER MATTHEW C. ARMSTRONG
Signature: Matthew C. Armstrong
5/29/2026

HYDRAULICS ENGINEER
NORTH CAROLINA PROFESSIONAL SEAL 033860 ENGINEER LEWIS A. ROBINSON
3720/2026

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared For:
DIVISION OF EMERGENCY MANAGEMENT
1636 Gold Star Dr,
Raleigh, NC 27607

JOHN ABEL
NCEM CONTACT - GFT PROJECT ENGINEER

Plans Prepared In the Office of:
KCI ASSOCIATES OF N.C., P.A.
4800 Falls of Neuse Road, Suite 200
Raleigh, NC 27609-6270
Phone (919) 783-9214
NC Firm License No: C-0764

ROB F. DECOLA, PE
KCI PROJECT MANAGER

MATT ARMSTRONG, PE
KCI PROJECT DESIGN ENGINEER

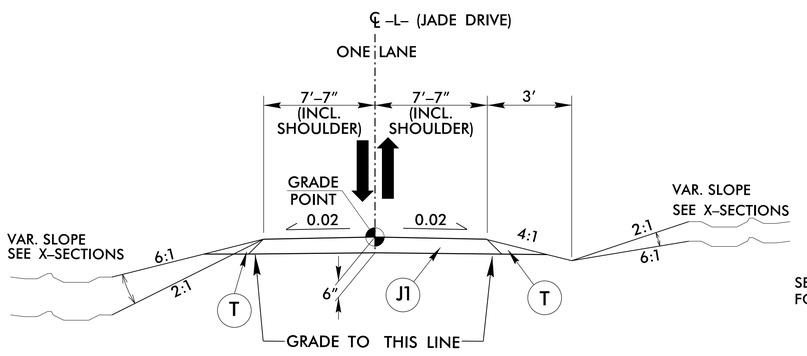
PRELIMINARY PAVEMENT SCHEDULE

J1	PROP. 6" AGGREGATE BASE COURSE.
J2	PROP. 3" AGGREGATE BASE COURSE.
T	EARTH MATERIAL.

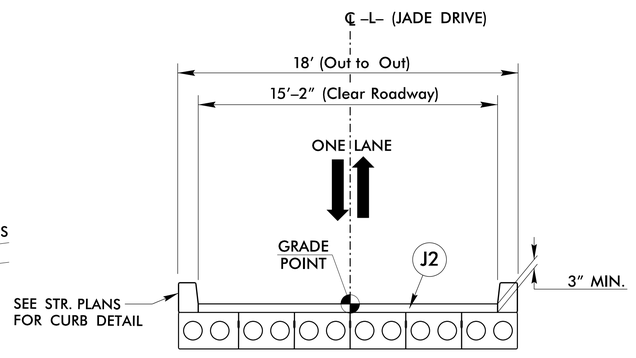
EARTHWORK (CUBIC YARDS)

STATION	STATION	UNCL. EXCAV.	UNDERCUT EXCAV.	EMBANK. +%	BORROW	WASTE
-L- 10+00.00	-L- 10+13.38			7.8	7.8	
-L- 10+40.63	-L- 10+60.00			10.3	10.3	
SUBTOTAL:				18.1	18.1	
WASTE IN LEIU OF BORROW						
PROJECT TOTAL:				18.1	18.1	
SAY:					22	

NOTE:
Approximate quantities only. Unclassified Excavation, Borrow Excavation, Fine Grading, Clearing and Grubbing, Breaking of Exisitng Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

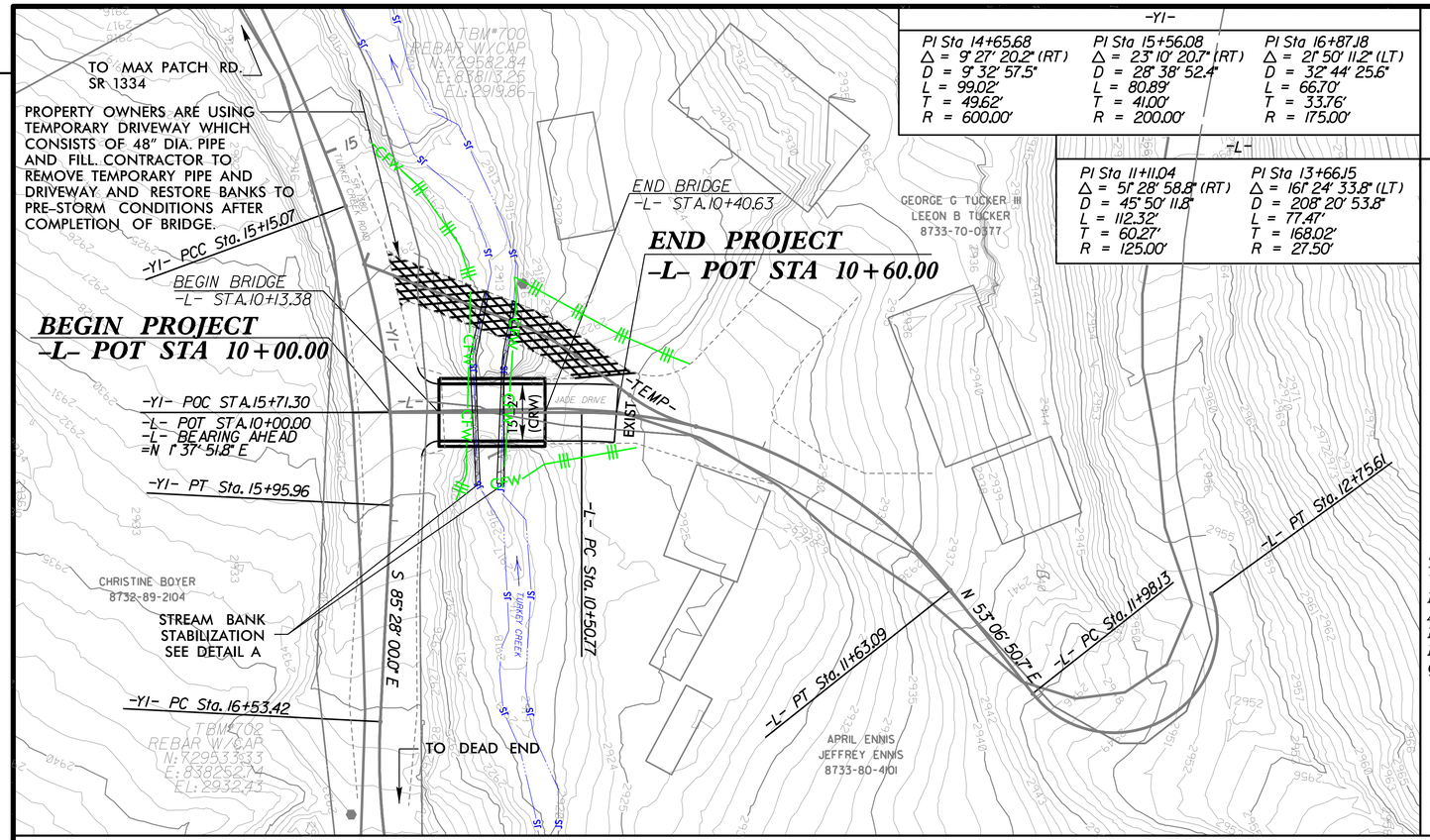


ROADWAY TYPICAL SECTION
-L- STA 10+00.00 TO 10+13.38 (BEG. BR.)
-L- STA 10+40.63 (END BR.) TO 10+60.00



TYPICAL SECTION ON STRUCTURE
21" CORED SLABS
-L- STA 10+13.38 (BEG. BR.) TO 10+40.63 (END BR.)

3:38:55 PM
C:\Projects\Haywood_psh&pf1_sheet.dgn
Division



-Y1-		
PI Sta 14+65.68	PI Sta 15+56.08	PI Sta 16+87.18
Δ = 9° 27' 20.2" (RT)	Δ = 23° 10' 20.7" (RT)	Δ = 21° 50' 11.2" (LT)
D = 9° 32' 57.5"	D = 28° 38' 52.4"	D = 32° 44' 25.6"
L = 99.02'	L = 80.89'	L = 66.70'
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-L-	
PI Sta 11+11.04	PI Sta 13+66.15
Δ = 51° 28' 58.8" (RT)	Δ = 161° 24' 33.8" (LT)
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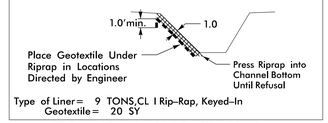
STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER TURKEY CREEK ON JADE DRIVE

DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner= 9 TONS,CL I Rip-Rap, Keyed-In
Geotextile = 20 SY

FROM STA. 10+21 TO STA. 10+31

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.

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE APRIL 1, 2019 ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER QUALITY.

EROSION CONTROL PLAN

20' 0' 20' 40' 60'
GRAPHIC SCALE

PROJECT REFERENCE NO.	SHEET NO.
044-01-cdc5b	2
R/W SHEET NO.	
	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Plans Prepared For:

DIVISION OF EMERGENCY MANAGEMENT
1636 Gold Star Dr,
Raleigh, NC 27607

JOHN ABEL, PE
NCEM CONTACT - GFT PROJECT ENGINEER

Plans Prepared In the Office of:

KCI ASSOCIATES OF N.C., P.A.
4800 Falls of Neuse Road, Suite 200
Raleigh, NC 27609-6270
Phone (919) 783-9214
NC Firm License No: C-0764

Prepared In the Office of:
ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27601
2024 STANDARD SPECIFICATIONS

Designed by:
CRYSTAL MOORE *3124*
NAME LEVEL III CERTIFICATION NO.

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

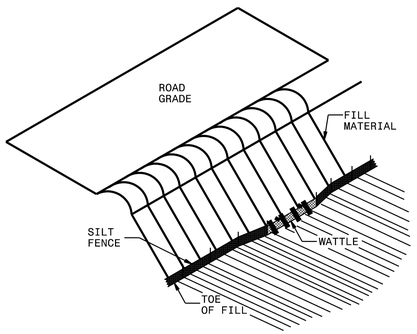
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

EROSION & SEDIMENT CONTROL LEGEND

Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD

Std. #	Description	Symbol
1636.01	Coir Fiber Wattle Check	
1636.01	Coir Fiber Wattle Check with Flocculant	
1636.02	Silt Fence Excelsior Wattle Break	EW
	Silt Fence Coir Fiber Wattle Break	CFW

SILT FENCE WATTLE BREAK DETAIL



ISOMETRIC VIEW

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE AND LENGTH OF 10 FT.

EXCAVATE A 1 TO 2 INCH TRENCH FOR WATTLE TO BE PLACED.

DO NOT PLACE WATTLE ON TOE OF SLOPE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. NOMINAL CROSS SECTION.

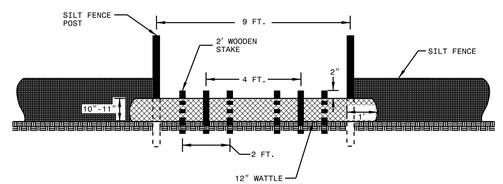
INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO GROUND.

PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

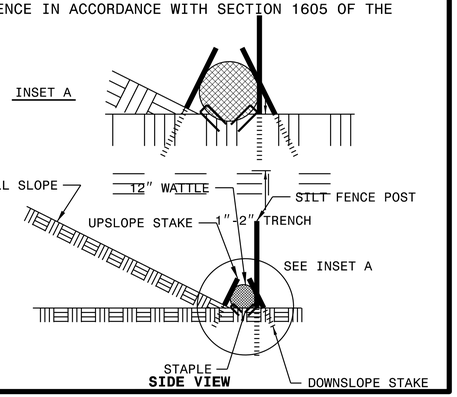
INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

WATTLE INSTALLATION CAN BE ON OUTSIDE OF THE SILT FENCE AS DIRECTED.

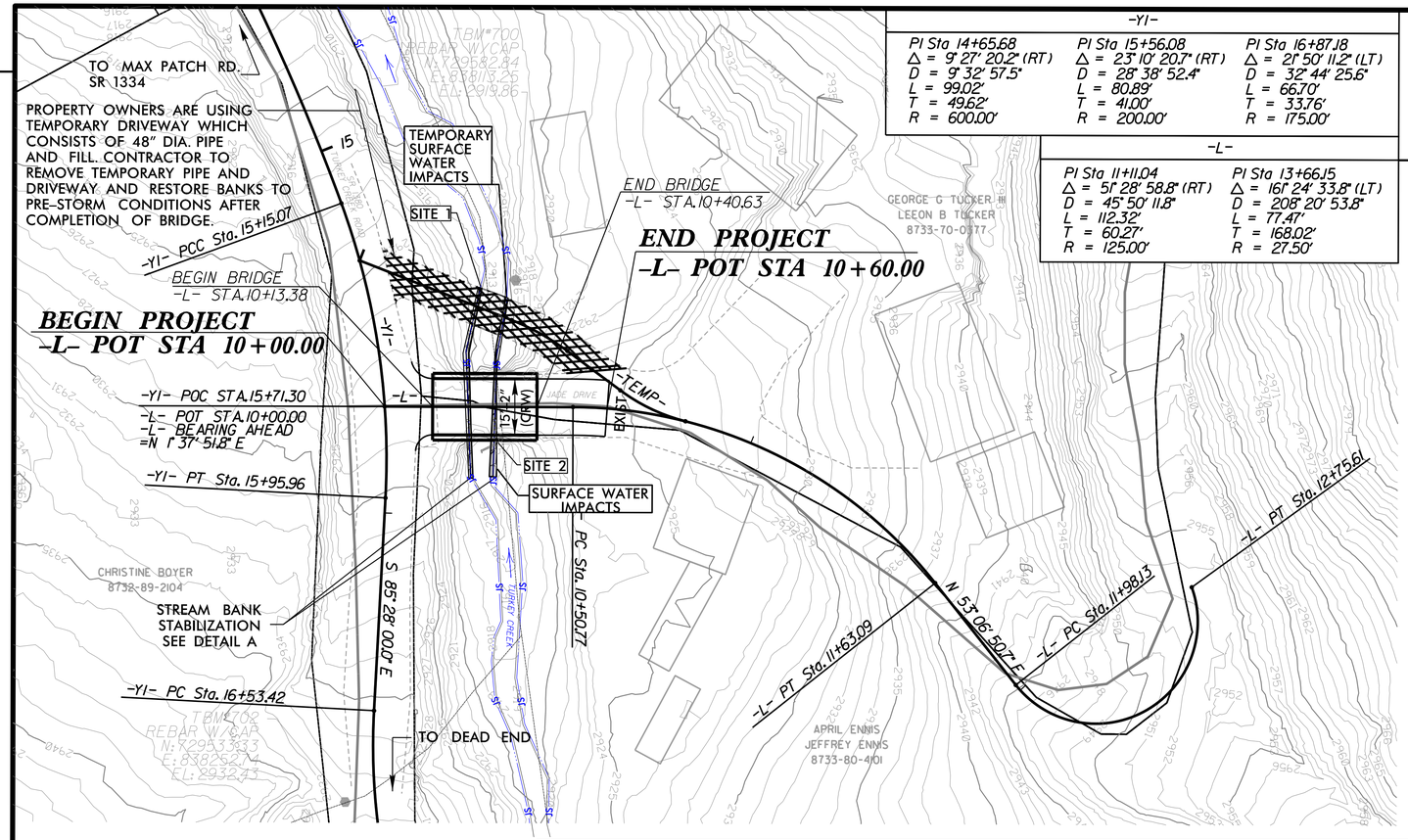
INSTALL TEMPORARY SILT FENCE IN ACCORDANCE WITH SECTION 1605 OF THE STANDARD SPECIFICATIONS.



VIEW FROM SLOPE



SIDE VIEW



-Y1-

PI Sta 14+65.68	PI Sta 15+56.08	PI Sta 16+87.18
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-L-

PI Sta 11+11.04	PI Sta 13+66.15
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T = 60.27'	T = 168.02'
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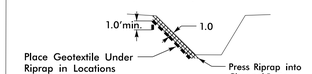
DETAIL A
BANK STABILIZATION
(Not to Scale)



Type of Liner= 9 TONS,CL I Rip-Rap, Keyed-In
Geotextile= 20 SY

FROM STA. 10+21 TO STA. 10+31

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY

HAYWOOD COUNTY

LOCATION: BRIDGE OVER TURKEY CREEK ON JADE DRIVE

PROJECT REFERENCE NO.	SHEET NO.
044-01-cdc5b	3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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1636 Gold Star Dr,
Raleigh, NC 27607

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ROB F. DECOLA, PE
KCI PROJECT MANAGER

MATT ARMSTRONG, PE
KCI PROJECT DESIGN ENGINEER

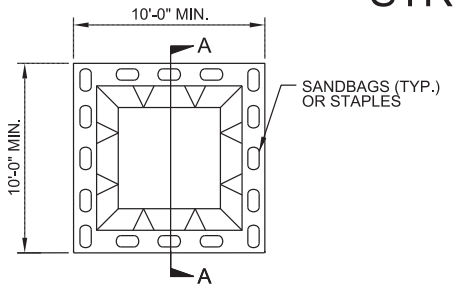
20' 0' 20' 40' 60'
GRAPHIC SCALE

WETLAND AND SURACE WATER IMPACTS SUMMARY

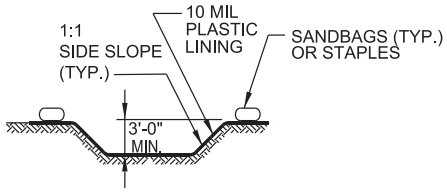
			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	TEMP STA. 14+58.1 TO 14+66.4	TEMPORARY BRIDGE							< 0.01		10	
2	L STA. 10+22 & 10+28 LT/RT	STREAM STABILIZATION						< 0.01		52		
TOTALS*:								< 0.01	< 0.01	52	10	0

PROJECT REFERENCE NO.	SHEET NO.
PRB	EC-2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

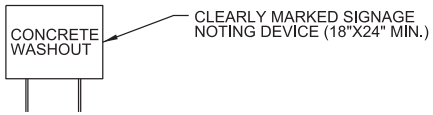
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A



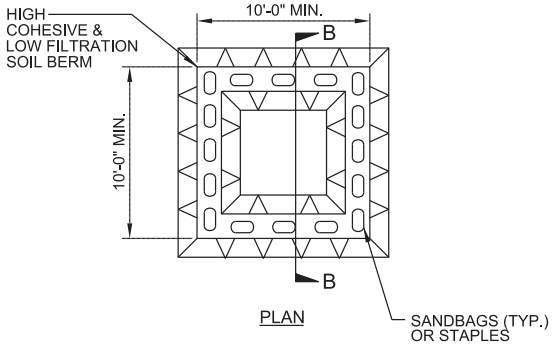
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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.

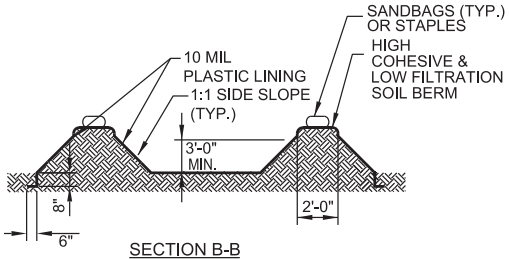
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE

NOT TO SCALE



PLAN



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

10+00

(+)5.7500% △ (+)2.1291%

PI = 10+05.00 -L-
EL. = 2,923.38'
VC = 10.00'

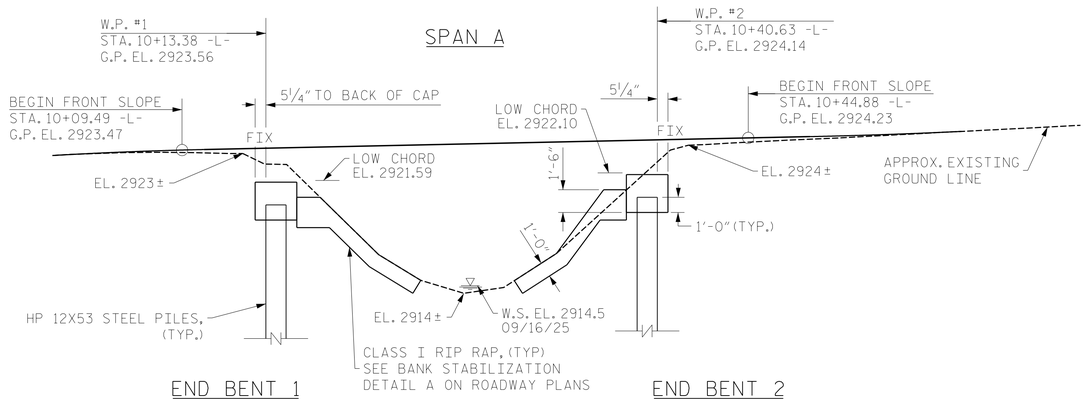
VERTICAL CURVE DATA -L-

10+50

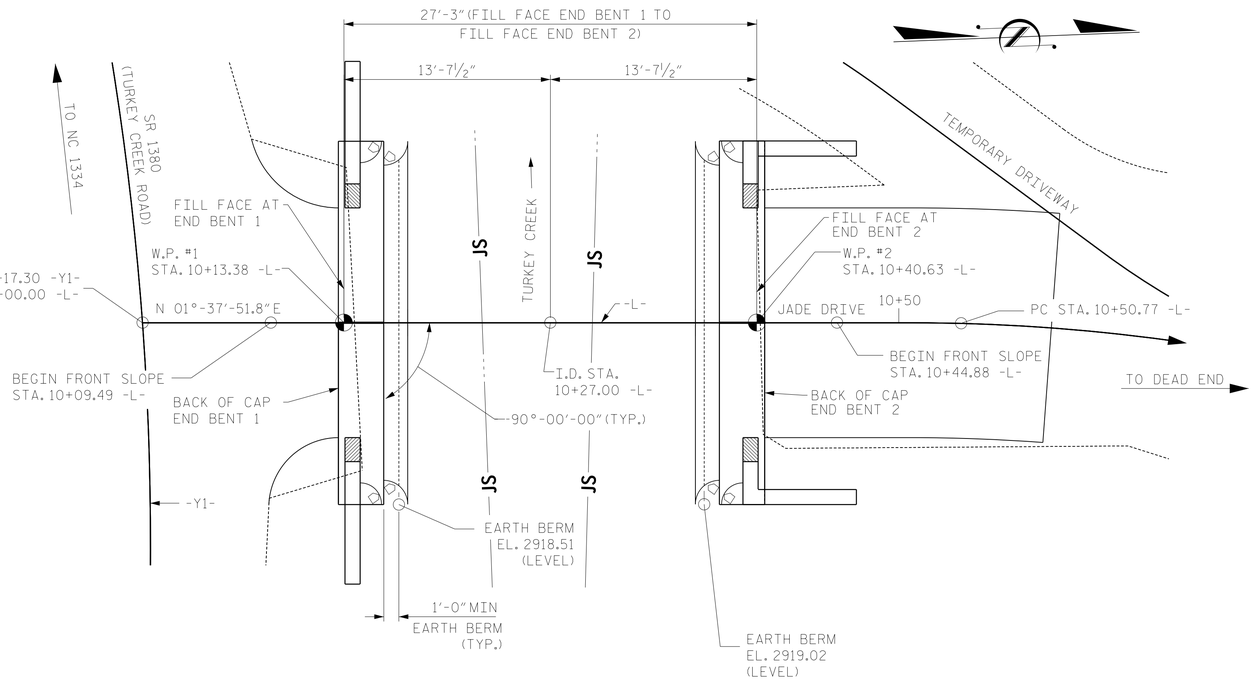
(+)2.1291% △ (+)4.7500%

PI = 10+55.00 -L-
EL. = 2,924.44'
VC = 10.00'

VERTICAL CURVE DATA -L-



SECTION ALONG -L-



PLAN

PILES NOT SHOWN FOR CLARITY

HORIZONTAL CURVE DATA -L-

PI STA. = 11+11.04 -L-
Δ = 51°-28'-58.8"(RT)
D = 45°-50'-11.8"
L = 112.32'
T = 60.27'
R = 125.00'

PROJECT NO. 044-01-CDC5B
HAYWOOD COUNTY
STATION: 10+27.00 -L-

SHEET 1 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

FOR BRIDGE BETWEEN SR 1380 (TURKEY CREEK RD) AND DEAD END

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-01
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : M.G. ARMSTRONG DATE : 10/16/2025
CHECKED BY : R.F. DECOLA DATE : 10/16/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

M:\2025\00052205.01 GROW NC 044-01-cdc5b\2 Working\Structures\Drawings\2_Final\402_001_cdc5b_GD_001.dgn
10/24/2025 4:39:33 PM Matt.Armstrong Structures.pltcfg
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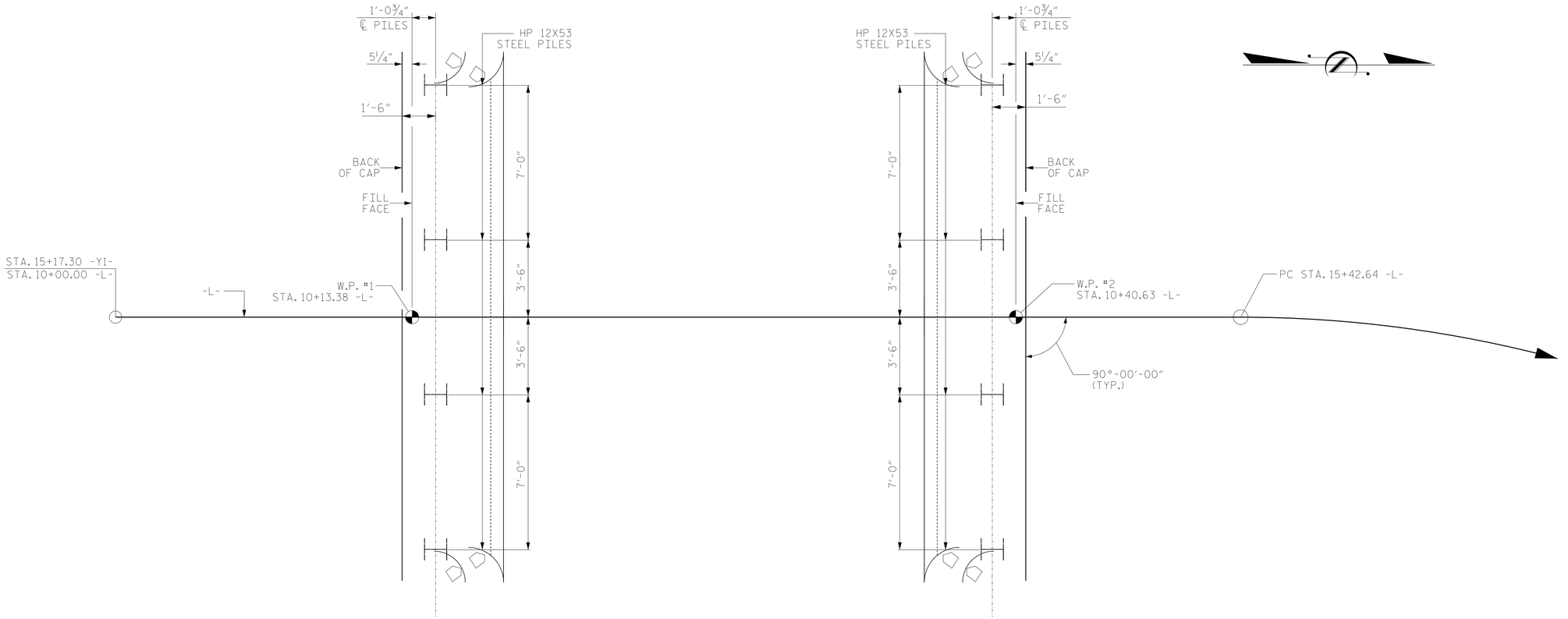

END BENT 1

END BENT 2

FOUNDATION LAYOUT

(DIMENSIONS LOCATING PILES ARE SHOWN TO CENTERLINE OF PILES)

FOUNDATION NOTES:

1. FOR PILES, SEE SECTION 450 OF THE STANDARD SPECIFICATIONS.
2. SUBSURFACE DATA IS NOT AVAILABLE AT END BENT NO. 2. PILE LENGTHS ARE BASED ON THE END BENT NO. 1 BORING. PILE LENGTHS AT END BENT NO. 2 MAY VARY FROM THE ESTIMATED AVERAGE PILE LENGTH PROVIDED.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

FOR BRIDGE ON SR 1380
(TURKEY CREEK RD) AND DEAD END

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : M.G. ARMSTRONG DATE : 10/16/25
CHECKED BY : R.F. DECOLA DATE : 10/16/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-02
1			3			TOTAL SHEETS
2			4			16

SUMMARY OF PILE INFORMATION/INSTALLATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Number of Piles per Line	Factored Resistance per Pile TONS	Pile Cut-Off (Top of Pile) Elevation FT	Estimated Pile Length per Pile FT	Scour Critical Elevation FT	Driven Piles			Predrilling for Piles*			Drilled-In Piles		
						Min Pile Tip (Tip No Higher Than) Elev FT	Required Driving Resistance (RDR)** per Pile TONS	Pile Redrives Quantity EACH	Predrilling Length per Pile Lin FT	Predrilling Elevation (Elev Not To Predrill Below) FT	Maximum Predrilling Dia INCHES	Pile Excavation (Bottom of Hole) Elev FT	Pile Exc Not In Soil per Pile Lin FT	Pile Exc In Soil per Pile Lin FT
End Bent No 1, Piles 1-4	4	100	2920.01	20			170							
End Bent No 2, Piles 1-4	4	100	2920.52	20			170							

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

****RDR =** $\frac{\textit{Factored Resistance + Factored Downdrag Load + Factored Dead Load}}{\textit{Dynamic Resistance Factor}}$ ***+ Nominal Downdrag Load Resistance + Nominal Resistance From Scourable Material***

PILE DESIGN INFORMATION

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	Factored Axial Load per Pile KIPS	Factored Drag Load per Pile KIPS	Factored Dead Load* per Pile KIPS	Dynamic Resistance Factor	Nominal Downdrag Resistance per Pile KIPS	Nominal Scour Resistance per Pile KIPS
End Bent No 1, Piles 1-4	100			0.60		
End Bent No 2, Piles 1-4	100			0.60		

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

SUMMARY OF DYNAMIC PILE TESTING/PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

DYNAMIC PILE TESTING				Pile Order Lengths	
End Bent/ Bent No	Dynamic Pile Testing Required? YES or MAYBE	Dynamic Pile Testing Test Pile Length FT	Total Dynamic Pile Testing Quantity EACH	End Bent/ Bent No(s)	Pile Order Length Basis* EST or Dynamic Pile Testing

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

SUMMARY OF PILE ACCESSORIES

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, Pile(s) #-# (e.g., "Bent 1, Piles 1-5")	PIPE PILE PLATES EACH	STEEL PILE POINTS		
		PIPE PILE CUTTING SHOES EACH	PIPE PILE CONICAL POINTS EACH	H-PILE POINTS EACH
TOTAL QTY:				

SUMMARY OF DPT / PILE ORDER LENGTHS

(Blank entries indicate item is not applicable to structure)

End Bent/ Bent No, (e.g., "Bent 1, Piles 1-5")	Standard Penetration Test (SPT) Required? YES or MAYBE	Crosshole Sonic Logging (CSL) Required?* YES or MAYBE	Total CSL Tube Length (For All Tubes) per Pier Lin FT	Shaft Inspection Device (SID) Required? YES or MAYBE	Pile Integrity Test (PIT) Required? MAYBE
TOTAL QTY:					

*CSL Tubes are required if CSL Testing is or may be required. The number of CSL Tubes per drilled pier is equal to one tube per foot of design pier diameter with at least 4 tubes per pier. The length of each CSL Tube is equal to the drilled pier length plus 1.5 ft.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 3 OF 4

NOTES:

1. The Pile Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Thomas R. Wells # 037998) on 10-15-2025.
2. Total Pile Driving Equipment Setup quantity (not shown in Pile Foundation Tables) equals the number of driven piles, i.e., the number of piles with a Required Driving Resistance.
3. The Engineer will determine the need for DPT Testing and Pipe Pile Plates when necessary.

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : N. GIAGUNTO DATE : 10/17/25

CHECKED BY : R.F. DECOLA DATE : 10/17/25

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4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

STATE OF NORTH CAROLINA
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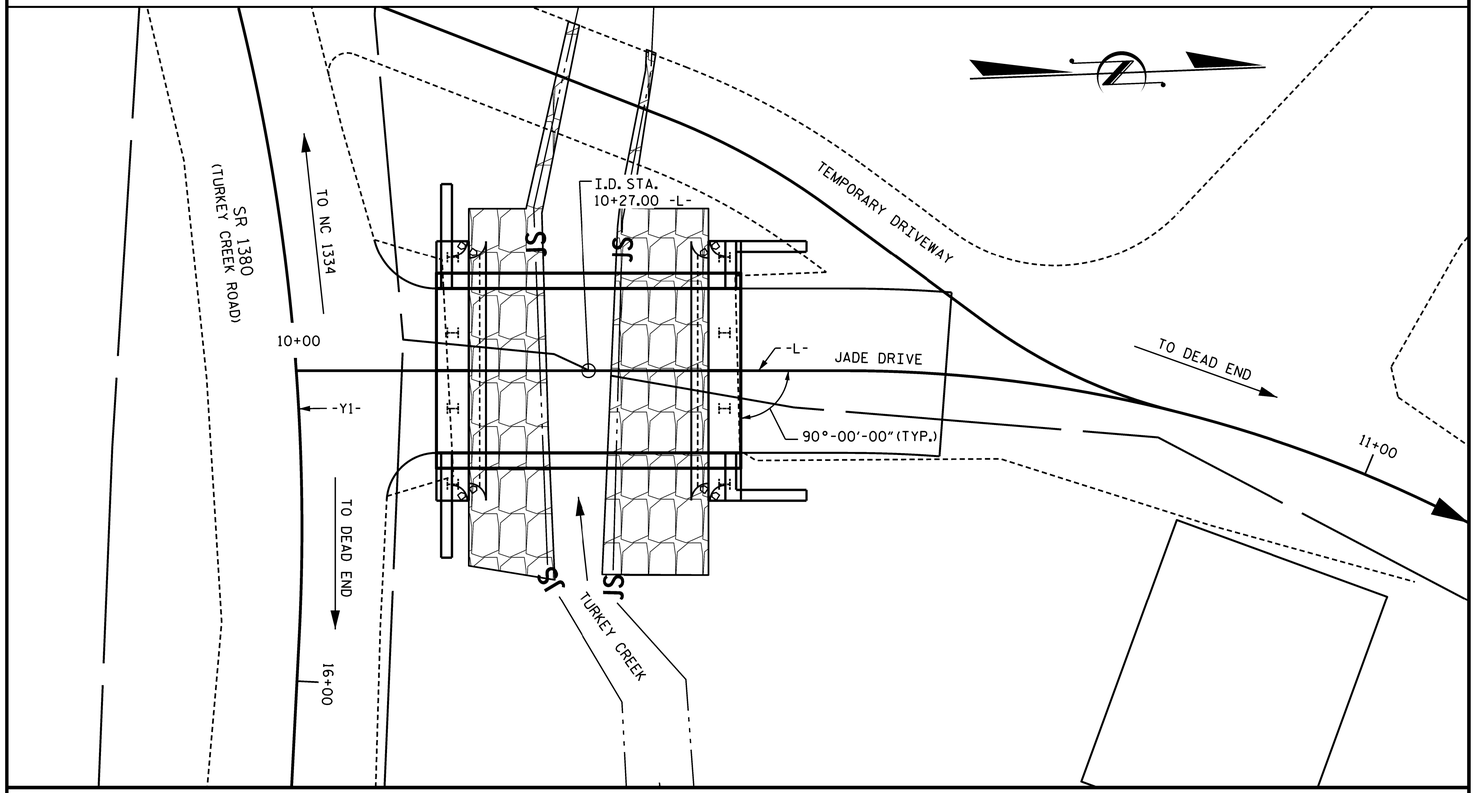
PILE FOUNDATION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-03
1			3			TOTAL SHEETS
2			4			16

TBM #700 - REBAR W/ CAP -L- STA. 10+35.18 -EL-, 34.16' LT N 729582.84 E 838113.25, EL 2919.86 NAVD 88



LOCATION SKETCH

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE AT STA. 10+27, 25' LT	CLASS A CONCRETE	REINFORCING STEEL	PILE DRIVING EQUIPMENT SETUP FOR HP 12X53 STEEL PILES	HP 12X53 STEEL PILES		1'-5" X 1'-3" CONCRETE CURB	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS		3'-0" X 2'-6" PRESTRESSED CONCRETE BENT CAPS
	LUMP SUM	CU.YDS.	LBS.	EA.	NO.	LIN.FT.	LIN.FT.	LUMP SUM	NO.	LIN.FT.	LIN.FT.
SUPERSTRUCTURE							50	LUMP SUM	6	150.00	
END BENT 1		2.3	141	4	4	80					24
END BENT 2		3.1	217	4	4	80					24
TOTAL	LUMP SUM	5.4	358	8	8	160	50	LUMP SUM	6	150.00	48

NOTES:

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING.

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

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH "HEC 18 - EVALUATING SCOUR AT BRIDGES."

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ROUTINE INSPECTIONS AND MAINTENANCE:

DISCLAIMER: THESE RECOMMENDATIONS ARE INTENDED AS A GENERAL GUIDE FOR PRIVATE BRIDGE OWNERS. IT IS NOT A COMPREHENSIVE CHECKLIST AND DOES NOT REPLACE INSPECTION OR REPAIR GUIDANCE FROM A QUALIFIED ENGINEER. IF YOU OBSERVE UNUSUAL MOVEMENT, DEFLECTION, CRACKING, DETERIORATION, AND/OR ANY STRUCTURAL CONCERN OR SAFETY RELATED ISSUE, CLOSE THIS BRIDGE TO TRAFFIC IMMEDIATELY AND CONSULT A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA.

KEEP A MAINTENANCE LOG TO TRACK INSPECTION DATES, OBSERVATIONS, AND ANY WORK PERFORMED. ADDRESS MINOR ISSUES EARLY TO PREVENT FUTURE COSTLY REPAIRS.

BRIDGE INSPECTION PERFORMED BY A CERTIFIED BRIDGE INSPECTOR IS RECOMMENDED ON THE FOLLOWING INTERVALS:
- YEAR 0-10: INSPECT EVERY 5 YEARS
- YEAR 10-20: INSPECT EVERY 4 YEARS
- YEAR 20-30: INSPECT EVERY 3 YEARS
- YEAR 30+: INSPECT EVERY 2 YEARS

IF DETERIORATION IS NOTED IN INSPECTIONS, ACCELERATE INSPECTION FREQUENCY TO EVERY 2 YEARS.

PERFORM ADDITIONAL INSPECTIONS AFTER SEVERE STORMS, FLOODING, SEISMIC EVENTS, AND AFTER VEHICULAR IMPACTS.

REPAIR PRIORITY MAINTENANCE ITEMS NOTED IN INSPECTION REPORTS PROMPTLY.

BETWEEN INSPECTIONS OBSERVE FOR CRACKS OR SPALLING IN CONCRETE OR RUST TO STEEL COMPONENT OR REINFORCEMENT, SOURING AT OR AROUND ABUTMENTS AND PIERS, DECK SURFACE WEAR, AND DAMAGE OR DETERIORATION TO CURBS.

REMOVE DEBRIS AND SEDIMENT FROM THE DECK AND CAP SURFACES TO PREVENT PONDING.

MAINTAIN GRAVEL WEARING SURFACE ON THE BRIDGE TO A MINIMUM OF 3" UNIFORM DEPTH. SHOULD THE TOPS OF PRESTRESSED CONCRETE CORED SLABS BECOME EXPOSED FOR ANY REASON, CLOSE THE BRIDGE TO TRAFFIC AND REPLACE WEARING SURFACE AS SHOWN ON THE PLANS.

BEARINGS

REMOVE ANY DEBRIS, VEGETATION, OR SEDIMENT BUILDUP NEAR OR AROUND THE BEARINGS.

INSPECT AND MAINTAIN BEARING PADS TO ENSURE THEY FUNCTION PROPERLY.

CHECK FOR SIGNS OF ROTATION OR TRANSLATION.

REPAIR OR REPLACE DETERIORATED COMPONENTS AS NEEDED UNDER THE GUIDANCE OF A PROFESSIONAL ENGINEER.

CAPS AND FOUNDATIONS

INSPECT FOR CRACKS, LOOSE CONNECTIONS, BENDING, SETTLEMENT, LEANING, OR EROSION.

MAINTAIN PROPER SITE GRADING AND DRAINAGE TO PREVENT EROSION OR WATER DAMAGE.

BACKFILL OR REINFORCE AREAS SHOWING SIGNS OF SCOUR OR SETTLEMENT.

LOOK FOR SIGNS OF SCOUR. WHENEVER SCOUR IS PRESENT, USE STONE TO BACKFILL SCOURED AREAS AT OR AROUND THE SUBSTRUCTURE AND GRADE AS SHOWN ON THE PLANS.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 4 OF 4

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

GENERAL DRAWING

FOR BRIDGE BETWEEN SR 1380 (TURKEY CREEK RD) AND DEAD END

NORTH CAROLINA PROFESSIONAL SEAL 36321 ENGINEER ROBERT F. DECOLA

DocuSigned by: Robert Decola C91B1BEB951B4FF... 11/3/2025

DESIGN ENGINEER OF RECORD: Robert Decola DATE: 11/3/2025

DRAWN BY: M.G. ARMSTRONG DATE: 10/06/25

CHECKED BY: R.F. DECOLA DATE: 10/07/25

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-04
1			3			TOTAL SHEETS
2			4			16

LOAD AND RESISTANCE FACTOR RATING (LRFR) SUMMARY FOR PRESTRESSED CONCRETE GIRDERS

LOAD TYPE		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING (#)	MINIMUM RATING FACTORS (RF)	TONS = W x RF	STRENGTH I LIMIT STATE											SERVICE III LIMIT STATE						COMMENT NUMBER
								MOMENT					SHEAR						MOMENT						
							LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	LIVE-LOAD FACTORS (γ LL)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	
DESIGN LOAD		HL-93 (INVENTORY)	N/A	(1)	1.018	--	1.75	0.284	2.53	25'	EL	12	0.591	1.02	25'	EL	1.2	0.80	0.284	2.34	25'	EL	12	
		HL-93 (OPERATING)	N/A		1.319	--	1.35	0.284	3.29	25'	EL	12	0.591	1.32	25'	EL	1.2	N/A	--	--	--	--	--	
		HS-20 (INVENTORY)	36.000	(2)	1.178	42.394	1.75	0.284	3.76	25'	EL	12	0.591	1.18	25'	EL	1.2	0.80	0.284	3.46	25'	EL	12	
		HS-20 (OPERATING)	36.000		1.527	54.959	1.35	0.284	4.87	25'	EL	12	0.591	1.53	25'	EL	1.2	N/A	--	--	--	--	--	
LEGAL LOAD	SINGLE VEHICLE (SV)	SNSH	13.500		2.728	36.833	1.4	0.284	6.83	25'	EL	12	0.591	2.73	25'	EL	1.2	0.80	0.284	5.04	25'	EL	12	
		SNGARBS2	20.000		2.186	43.718	1.4	0.284	6.39	25'	EL	12	0.591	2.19	25'	EL	1.2	0.80	0.284	4.72	25'	EL	12	
		SNAGRIS2	22.000		2.141	47.107	1.4	0.284	6.83	25'	EL	12	0.591	2.14	25'	EL	1.2	0.80	0.284	5.04	25'	EL	12	
		SNCOTTS3	27.250		1.385	37.731	1.4	0.284	3.57	25'	EL	12	0.591	1.38	25'	EL	1.2	0.80	0.284	2.64	25'	EL	12	
		SNAGGRS4	34.925		1.332	46.511	1.4	0.284	3.56	25'	EL	12	0.591	1.33	25'	EL	1.2	0.80	0.284	2.62	25'	EL	12	
		SNS5A	35.550		1.392	49.477	1.4	0.284	3.45	25'	EL	12	0.591	1.39	25'	EL	1.2	0.80	0.284	2.54	25'	EL	12	
		SNS6A	39.950		1.334	53.310	1.4	0.284	3.23	25'	EL	12	0.591	1.33	25'	EL	1.2	0.80	0.284	2.39	25'	EL	12	
		SNS7B	42.000		1.344	56.455	1.4	0.284	3.23	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.37	25'	EL	12	
	TRUCK TRACTOR SEMI-TRAILER (TTST)	TNAGRIT3	33.000		1.634	53.934	1.4	0.284	4.55	25'	EL	12	0.591	1.63	25'	EL	1.2	0.80	0.284	3.36	25'	EL	12	
		TNT4A	33.075		1.483	49.049	1.4	0.284	3.95	25'	EL	12	0.591	1.48	25'	EL	1.2	0.80	0.284	2.92	25'	EL	12	
		TNT6A	41.600		1.398	58.138	1.4	0.284	3.71	25'	EL	12	0.591	1.40	25'	EL	1.2	0.80	0.284	2.74	25'	EL	12	
		TNT7A	42.000		1.391	58.419	1.4	0.284	3.84	25'	EL	12	0.591	1.39	25'	EL	1.2	0.80	0.284	2.83	25'	EL	12	
		TNT7B	42.000		1.343	56.385	1.4	0.284	3.46	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.55	25'	EL	12	
		TNAGRIT4	43.000		1.340	57.604	1.4	0.284	3.71	25'	EL	12	0.591	1.34	25'	EL	1.2	0.80	0.284	2.73	25'	EL	12	
		TNAGT5A	45.000		1.367	61.501	1.4	0.284	3.71	25'	EL	12	0.591	1.37	25'	EL	1.2	0.80	0.284	2.73	25'	EL	12	
		TNAGT5B	45.000	(3)	1.239	55.766	1.4	0.284	3.65	25'	EL	9.6	0.591	1.24	25'	EL	1.2	0.80	0.284	2.71	25'	EL	9.6	
EMERGENCY VEHICLE (EV)		EV2	28.750		1.667	47.927	1.3	0.284	4.84	25'	EL	12	0.591	1.67	25'	EL	1.2	0.80	0.284	3.23	25'	EL	12	
		EV3	43.000	(4)	1.148	49.369	1.3	0.284	3.14	25'	EL	12	0.591	1.15	25'	EL	1.2	0.80	0.284	2.09	25'	EL	12	

LOAD FACTORS:

DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

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

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

COMMENTS:

1.

2.

3.

4.

(#) CONTROLLING LOAD RATING

(1) DESIGN LOAD RATING (HL-93)

(2) DESIGN LOAD RATING (HS-20)

(3) LEGAL LOAD RATING **

(4) EMERGENCY VEHICLE LOAD RATING **

** SEE CHART FOR VEHICLE TYPE

GIRDER LOCATION

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

LRFR SUMMARY

FOR SPAN "A"

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

STANDARD

LRFR SUMMARY FOR 25' CORED SLAB UNIT 90° SKEW

(NON-INTERSTATE TRAFFIC)

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-05
1			3			TOTAL SHEETS
2			4			16

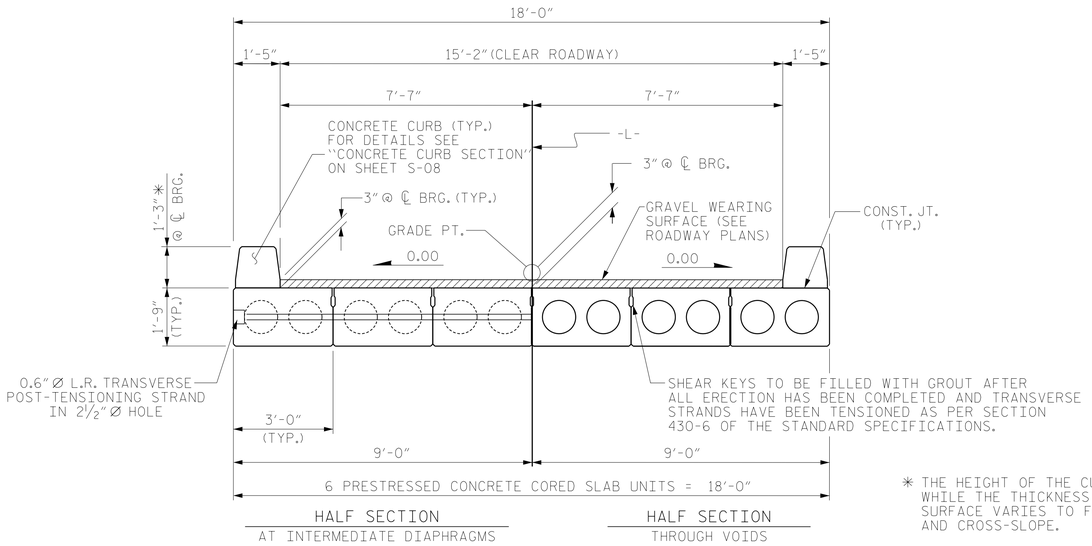
DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : N. GIAGUNTO DATE : 10/16/25

CHECKED BY : R.F. DECOLA DATE : 10/16/25

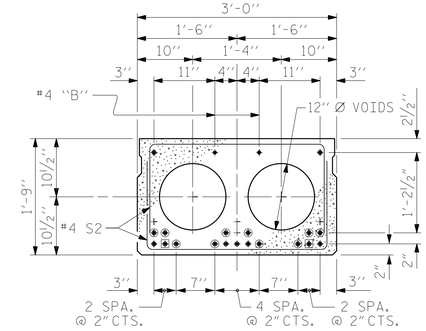
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ENGINEERS • PLANNERS • SCIENTISTS • CONSTRUCTION MANAGERS LICENSE NUMBER: C-0764
KCI Associates of North Carolina, P.A.
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214



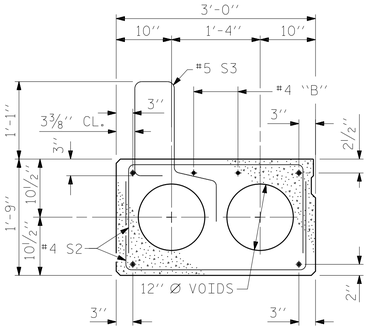
* THE HEIGHT OF THE CURB REMAINS CONSTANT WHILE THE THICKNESS OF THE GRAVEL WEARING SURFACE VARIES TO FOLLOW THE PROFILE AND CROSS-SLOPE.

TYPICAL SECTION



INTERIOR SLAB SECTION (25' UNIT)

(9 STRANDS REQUIRED)



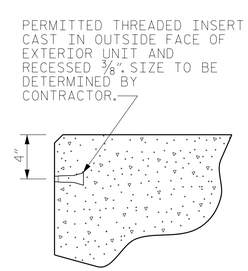
EXT. SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTION.)

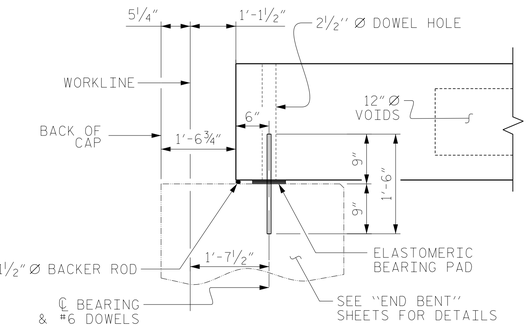
⊙ BOND SHALL BE BROKEN ON THESE STRANDS FOR A DISTANCE OF 2'-0" FROM END OF CORED SLAB UNIT. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

⊛ OPTIONAL FULL LENGTH DEBONDED STRANDS. THESE STRANDS ARE NOT REQUIRED. IF THE FABRICATOR CHOOSES TO INCLUDE THESE STRANDS IN THE CORED SLAB UNIT, THE STRANDS SHALL BE DEBONDED FOR THE FULL LENGTH OF THE UNIT AT NO ADDITIONAL COST. SEE STANDARD SPECIFICATIONS, ARTICLE 1078-7.

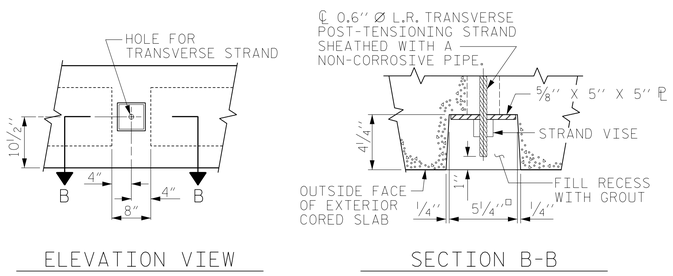
DEBONDING LEGEND



THREADED INSERT DETAIL



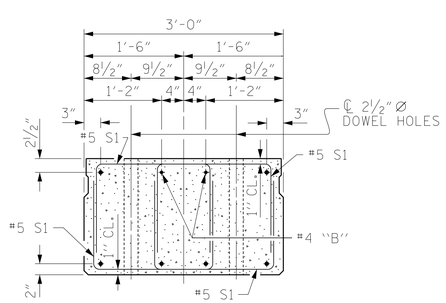
SECTION AT END BENT



ELEVATION VIEW

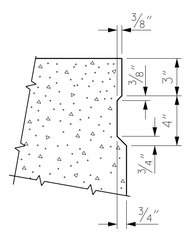
SECTION B-B

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



END ELEVATION

SHOWING PLACEMENT OF DOUBLE STIRRUPS AND LOCATION OF DOWEL HOLES. (STRAND LAYOUT NOT SHOWN.) INTERIOR SLAB UNIT SHOWN-EXTERIOR SLAB UNIT SIMILAR EXCEPT SHEAR KEY LOCATION.



SHEAR KEY DETAIL

NOTE: OMIT SHEAR KEY ON OUTSIDE FACE OF EXTERIOR CORED SLABS.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-06
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : N. GIAGUNTO DATE : 10/16/25

CHECKED BY : R.F. DECOLA DATE : 10/16/25

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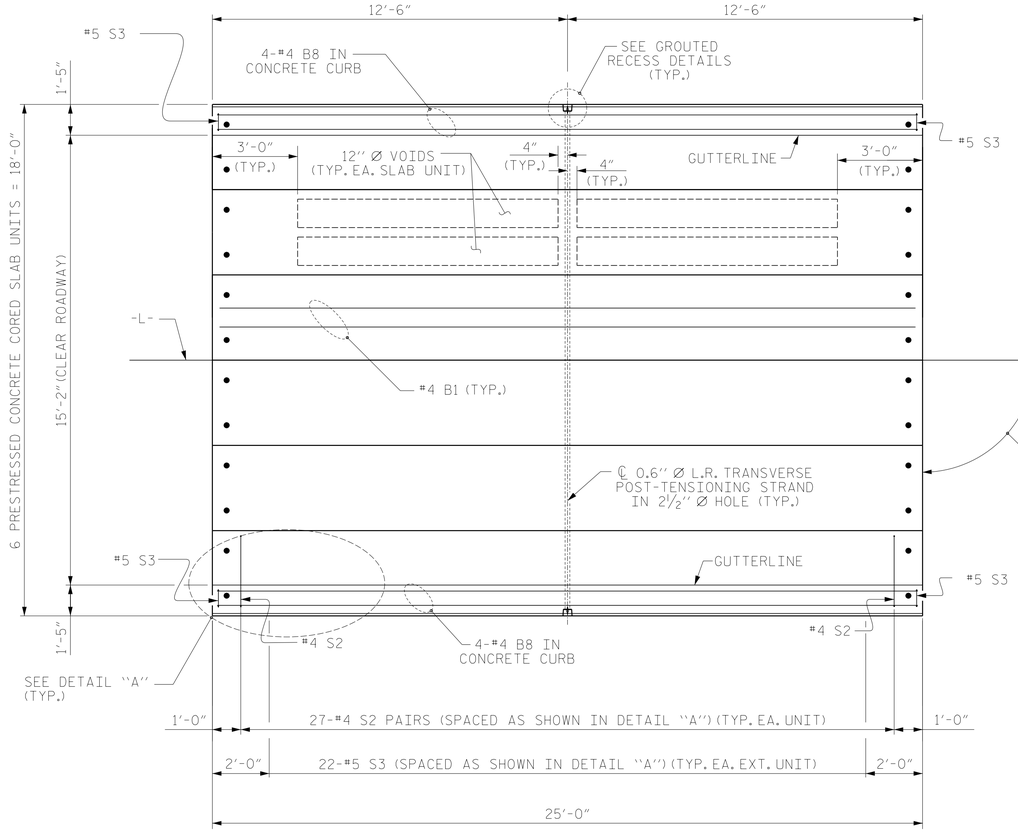
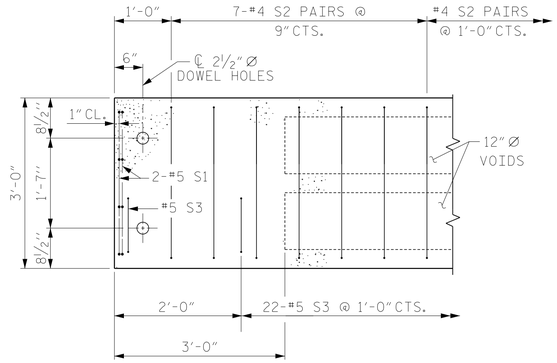


PLAN OF UNIT



DETAIL "A"

(TYPICAL EACH END OF UNIT)
NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

PLAN OF 25' UNIT 15'-2" CLEAR ROADWAY 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-07
1			3			TOTAL SHEETS
2			4			16

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M:\2025\00052205.01 GROW NC 044-01-cdc5b\2 Working\Structures\Drawings\2 Final\402_013_cdc5b_PLAN_007.dgn
10/24/2025 4:41:56 PM Matt.Armstrong Structures.tbl Structures.pltcfg
KCI PROJ. #221601946.09G

DEAD LOAD DEFLECTION AND CAMBER	
	3′-0″ x 1′-9″
25′ CORED SLAB UNIT	0.6″Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	1/4″ ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD	1/8″ ↓
FINAL CAMBER	1/8″ ↑

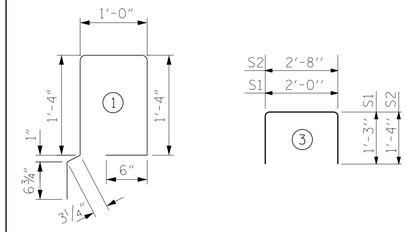
BILL OF MATERIAL FOR CONCRETE CURB

BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	25′ UNIT					
✳ B8	4	8	#4	STR	24′-7″	131
✳ EPOXY COATED REINFORCING STEEL				LBS.		131
CLASS AA CONCRETE				CU.YDS.		3.2
TOTAL CONCRETE CURB LENGTH				LN. FT.		50.00

AGREGATE BASE COURSE THICKNESS & CURB HEIGHT

	A.B.C. THICKNESS	CURB HEIGHT
25′ UNIT	3″	1′-3″

BAR TYPES



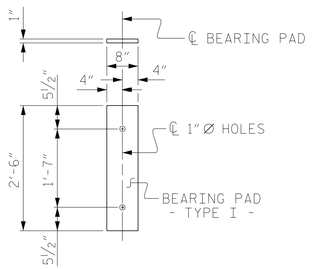
ALL BAR DIMENSIONS ARE OUT TO OUT

CORED SLABS REQUIRED

	NUMBER	LENGTH	TOTAL LENGTH
25′ UNIT			
EXTERIOR C.S.	2	25′-0″	50′-0″
INTERIOR C.S.	4	25′-0″	100′-0″
TOTAL	6		150′-0″

BILL OF MATERIAL FOR ONE 25′ CORED SLAB UNIT

				EXTERIOR UNIT		INTERIOR UNIT	
BAR	NUMBER	SIZE	TYPE	LENGTH	WEIGHT	LENGTH	WEIGHT
B1	2	#4	STR	24′-8″	33	24′-8″	33
S1	8	#5	3	4′-3″	35	4′-3″	35
S2	54	#4	3	5′-4″	192	5′-4″	192
✳ S3	48	#5	1	4′-6″	207		
REINFORCING STEEL		LBS.			260		260
✳ EPOXY COATED REINFORCING STEEL		LBS.			207		
5000 P.S.I. CONCRETE		CU. YDS.			3.7		3.7
0.6″Ø L.R. STRANDS		No.			9		9



FIXED END
(TYPE I - 12 REQ'D)

ELASTOMERIC BEARING DETAILS

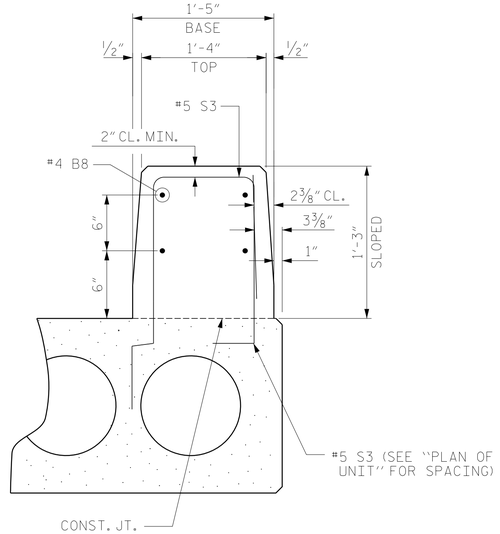
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

CONCRETE RELEASE STRENGTH

UNIT	PSI
25′ UNITS	4000

GRADE 270 STRANDS

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



CONCRETE CURB SECTION

NOTES

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

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

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

THE 2½″Ø DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

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

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN THE REQUIRED STRENGTH SHOWN IN THE "CONCRETE RELEASE STRENGTH" TABLE.

ALL REINFORCING STEEL IN THE CONCRETE CURB SHALL BE EPOXY COATED.

PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE CORED SLAB UNIT ENDS.

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, ½″ IN DEPTH, SHALL BE TOOLED IN ALL EXPOSED FACES OF THE CONCRETE CURB AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS. A CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT ALONG BRIDGE.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

THE PERMITTED THREADED INSERTS ARE DETAILED AS AN OPTION FOR THE CONTRACTOR TO ATTACH FALSEWORK AND FORMWORK DURING CONSTRUCTION.

THE PERMITTED THREADED INSERTS IN THE EXTERIOR UNITS SHALL BE SIZED BY THE CONTRACTOR, SPACED AT 4′-0″ CENTERS AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS. STAINLESS STEEL THREADED INSERTS MAY BE USED AS AN ALTERNATE.

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

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

THE #4 S2 STIRRUPS MAYBE SHIFTED AS NECESSARY TO MAINTAIN 1″ CLEAR TO THE GROUTED RECESS.

MAINTAIN A SYMMETRIC TENSION FORCE BETWEEN EACH PAIR OF TRANSVERSE POST TENSIONING STRANDS IN THE DIAPHRAGM.

PROJECT NO. 044-01-CDC5B
HAYWOOD COUNTY
STATION: 10+27.00 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

3′-0″ X 1′-9″ PRESTRESSED CONCRETE CORED SLAB UNIT 90° SKEW

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-08
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : N. GIAGUNTO DATE : 10/15/2025
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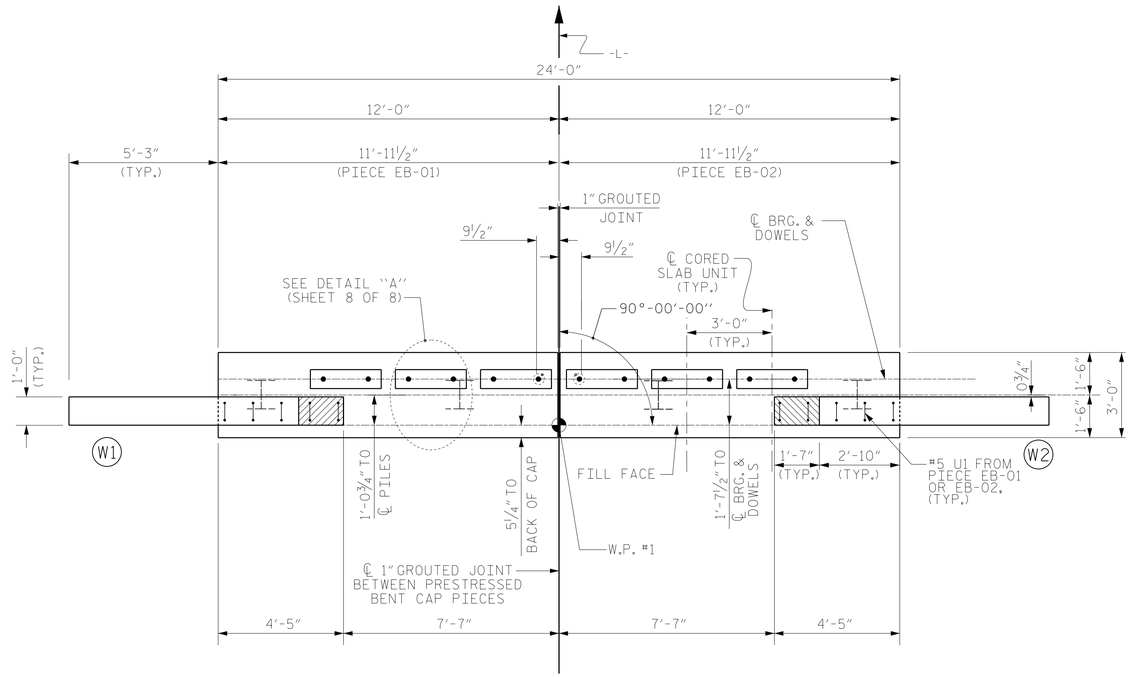
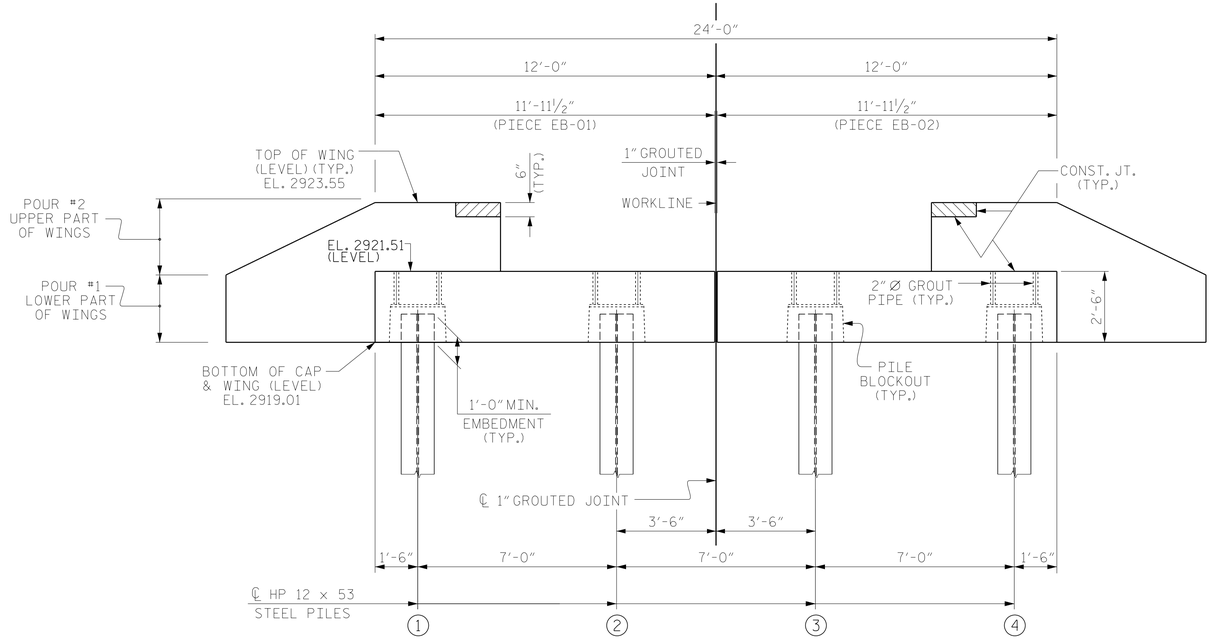


PLAN

(PILE BLOCKOUTS, AND GROUT PIPES NOT SHOWN FOR CLARITY)



ELEVATION

FOR 2" Ø GROUT PIPE AND PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8.
WINGS NOT SHOWN FOR CLARITY.

PRESTRESSED CONCRETE BENT CAPS (FOR ONE END BENT)			
PIECE	LENGTH	NUMBER	TOTAL LENGTH
EB-01	11'-11½"	1	11'-11½"
EB-02	11'-11½"	1	11'-11½"
TOTAL		2	23'-11"

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 1 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 1

DESIGN ENGINEER OF RECORD:	DATE :
DRAWN BY : N. GIAGUNTO	DATE : 10/16/25
CHECKED BY : R.F. DECOLA	DATE : 10/17/25

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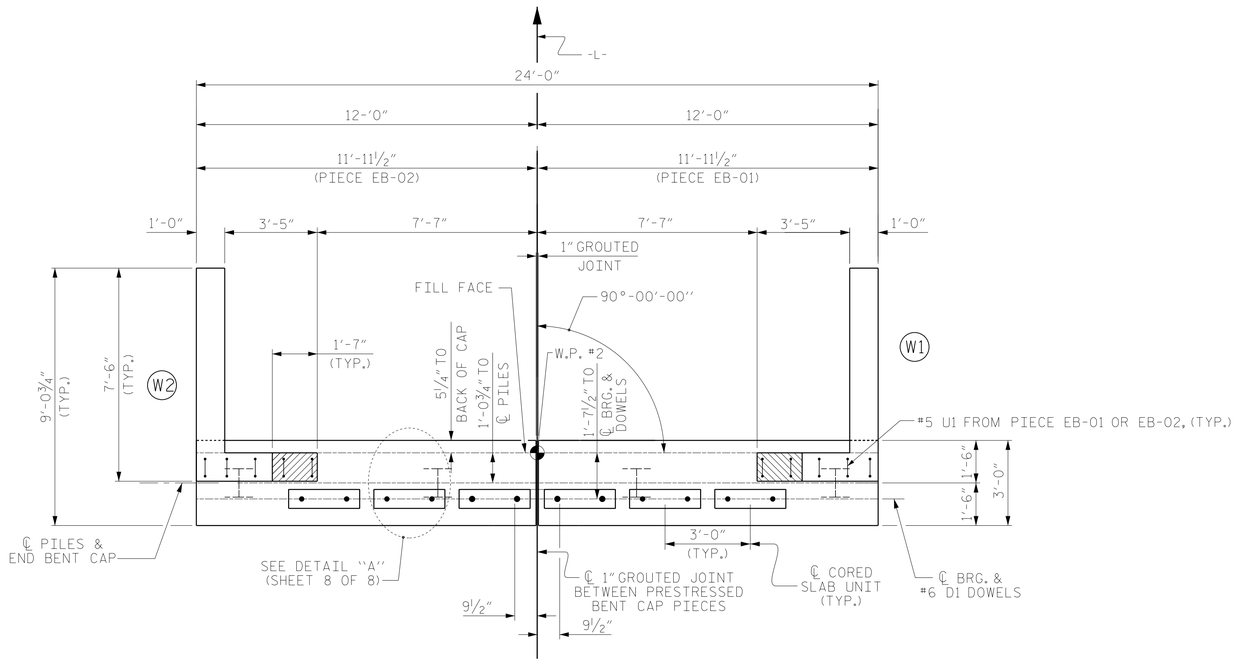
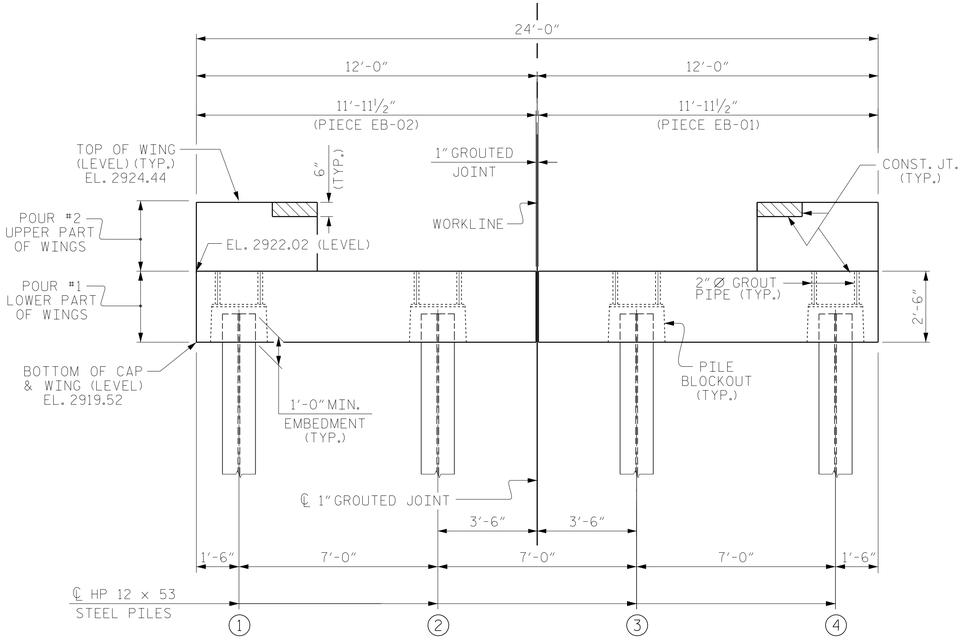
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-09
1			3			TOTAL SHEETS
2			4			16

STIP NO. DCERT-27-006



PLAN

(PILE BLOCKOUTS AND GROUT PIPES NOT SHOWN FOR CLARITY)



ELEVATION

FOR 2" Ø GROUT PIPE AND PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8.
WINGS NOT SHOWN FOR CLARITY.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 2 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 2

DESIGN ENGINEER OF RECORD:	DATE :
DRAWN BY : N. GIAGUNTO	DATE : 10/16/25
CHECKED BY : R.F. DECOLA	DATE : 10/17/25

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

SHEET NO. S-10

TOTAL SHEETS 16

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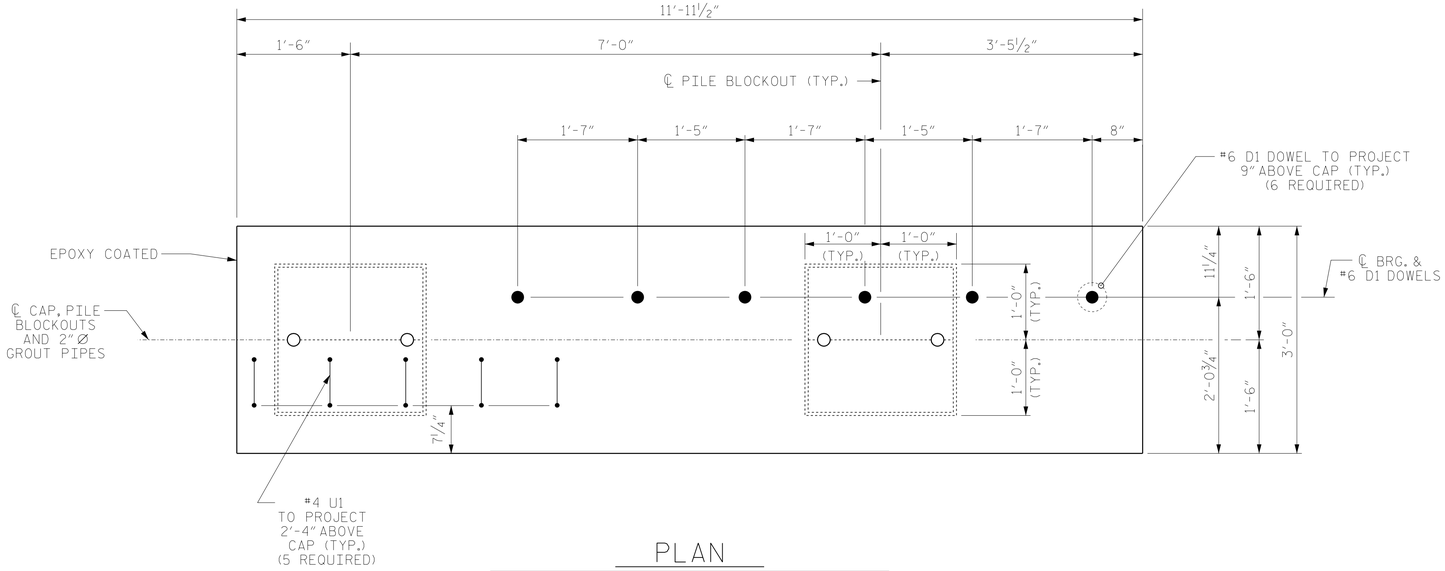
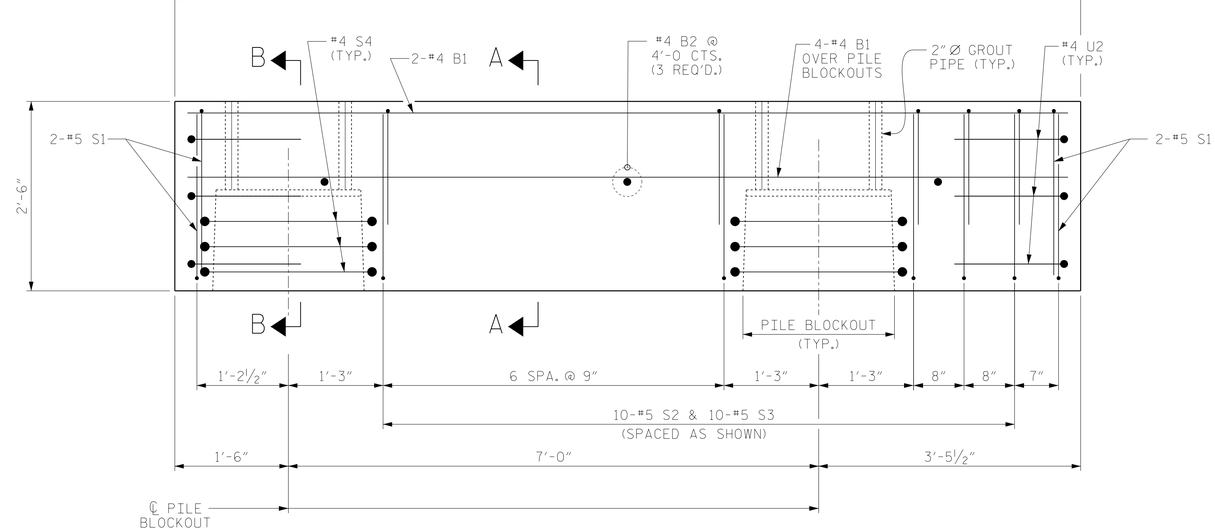


PLAN

(FOR PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8)



ELEVATION

(#6 D1 DOWELS & #4 "U" NOT SHOWN FOR CLARITY)
FOR SECTION A-A & SECTION B-B, SEE SHEET 7 OF 8.

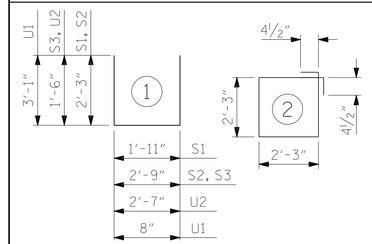
BILL OF MATERIAL

FOR ONE PIECE EB-01

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#4	STR	11′-7″	46
B2	3	#4	STR	2′-8″	5
D1	6	#6	STR	1′-6″	14
S1	8	#5	1	6′-5″	54
S2	10	#5	1	7′-3″	76
S3	10	#5	1	5′-9″	60
S4	6	#4	2	9′-9″	39
U1	5	#4	1	6′-10″	23
U2	4	#4	1	5′-7″	22

REINFORCING STEEL	339 LBS
4000 PSI PRESTRESSED CONCRETE	2.9 C.Y.
GROUT IN PILE BLOCKOUT & JOINT	0.4 C.Y.
0.6″ Ø L.R. STRANDS	No. 12

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 3 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

PRESTRESSED PIECE EB-01

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : S. MATHUR DATE : 10/17/25

CHECKED BY : R.F. DECOLA DATE : 10/17/25

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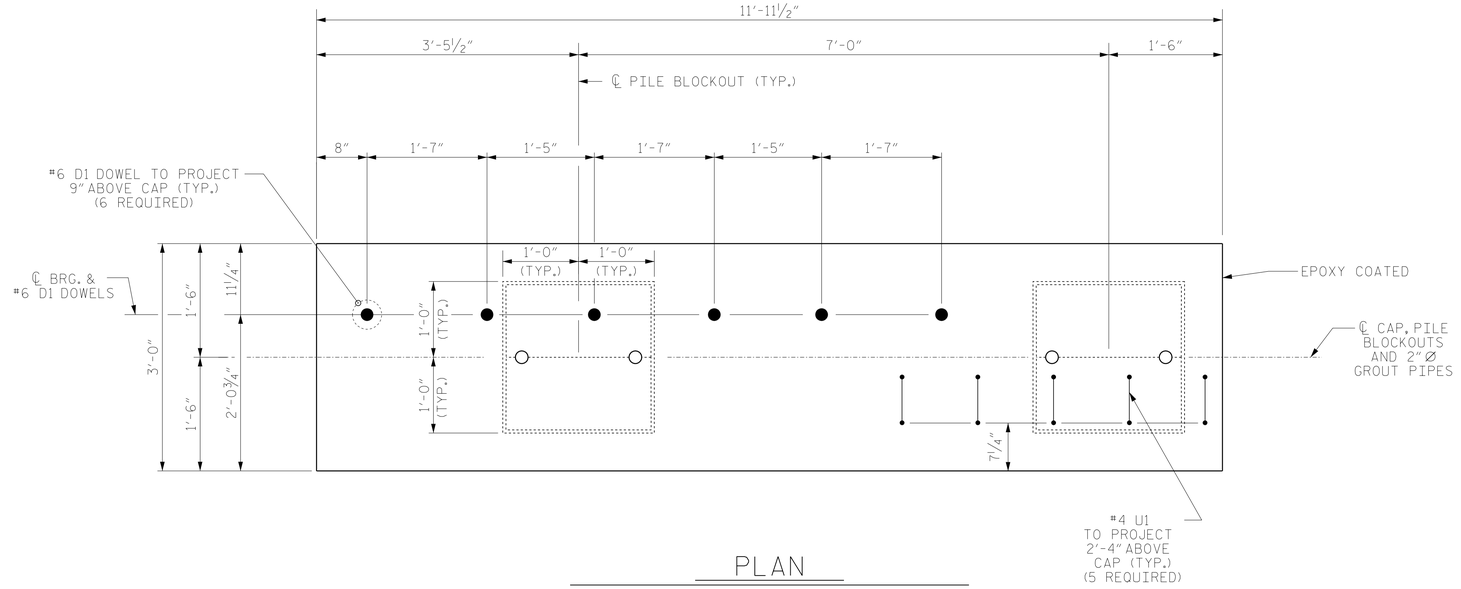
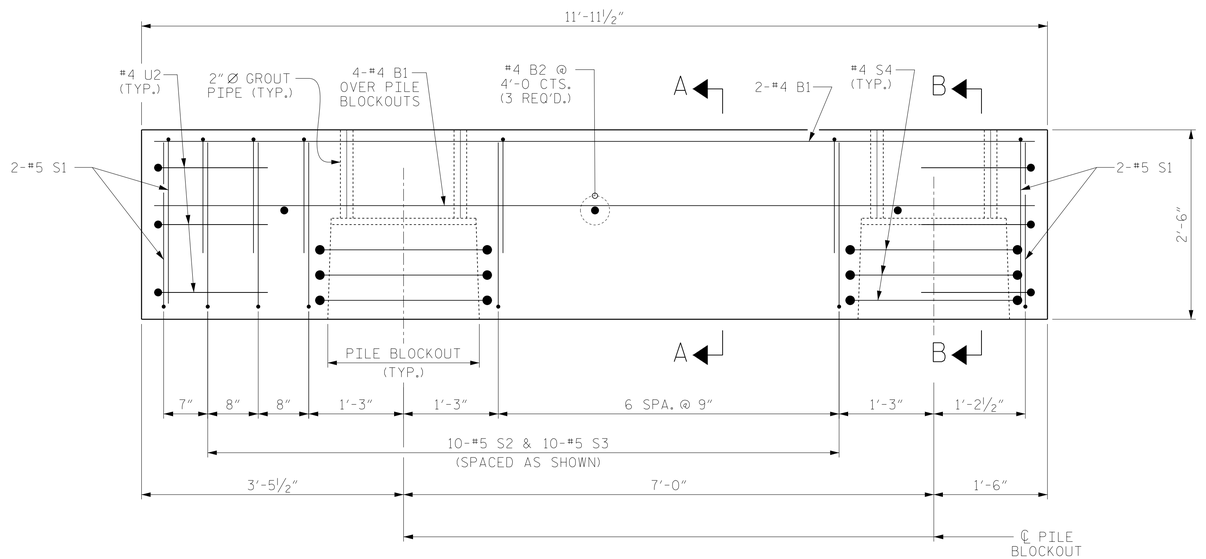


PLAN

(FOR PILE BLOCKOUT DETAILS, SEE SHEET 7 OF 8)



ELEVATION

(#6 D1 DOWELS & #4 "U" NOT SHOWN FOR CLARITY)
FOR SECTION A-A & SECTION B-B, SEE SHEET 7 OF 8.

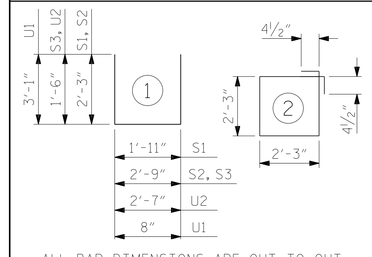
BILL OF MATERIAL

FOR ONE PIECE EB-02

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	6	#4	STR	11′-7″	46
B2	3	#4	STR	2′-8″	5
D1	6	#6	STR	1′-6″	14
S1	8	#5	1	6′-5″	54
S2	10	#5	1	7′-3″	76
S3	10	#5	1	5′-9″	60
S4	6	#4	2	9′-9″	39
U1	5	#4	1	6′-10″	23
U2	4	#4	1	5′-7″	22

REINFORCING STEEL	339 LBS
4000 PSI PRESTRESSED CONCRETE	2.9 C.Y.
GROUT IN PILE BLOCKOUT & JOINT	0.4 C.Y.
0.6″ Ø L.R. STRANDS	No. 12

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

GRADE 270 STRANDS

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

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 4 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

PRESTRESSED PIECE EB-02

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : S. MATHUR DATE : 10/17/25

CHECKED BY : R.F. DECOLA DATE : 10/17/25

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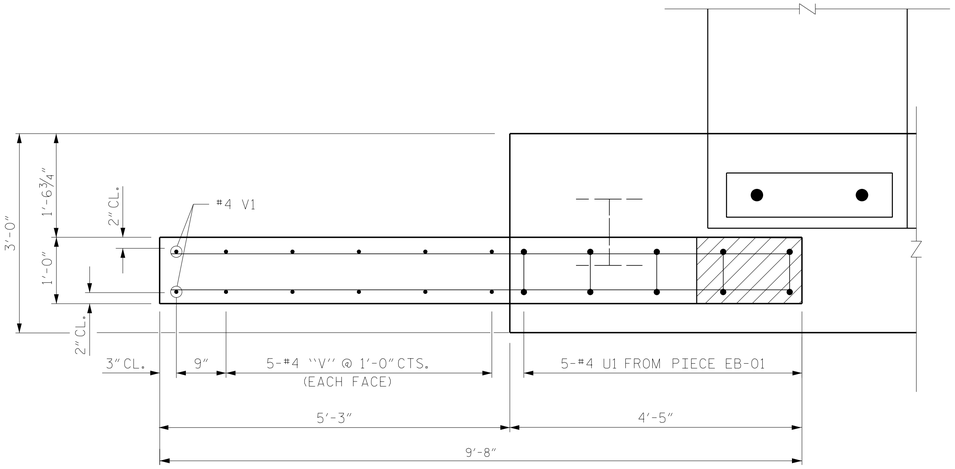
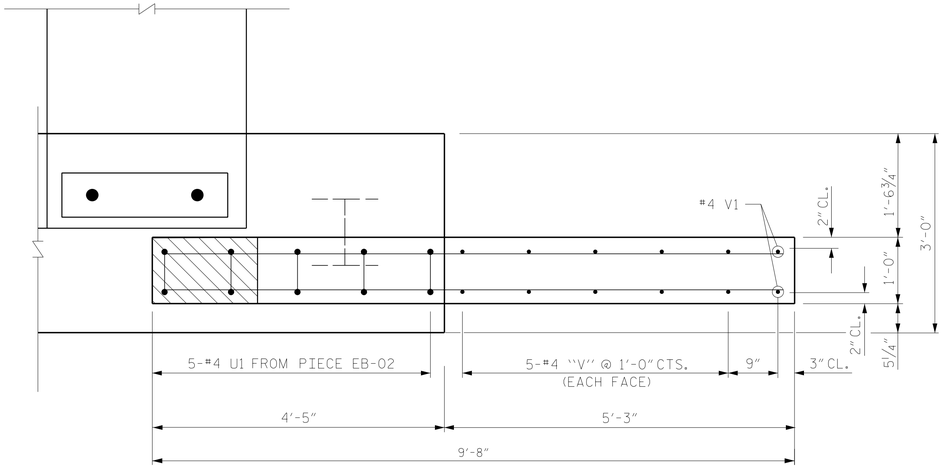
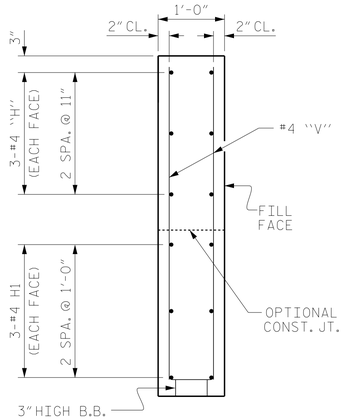
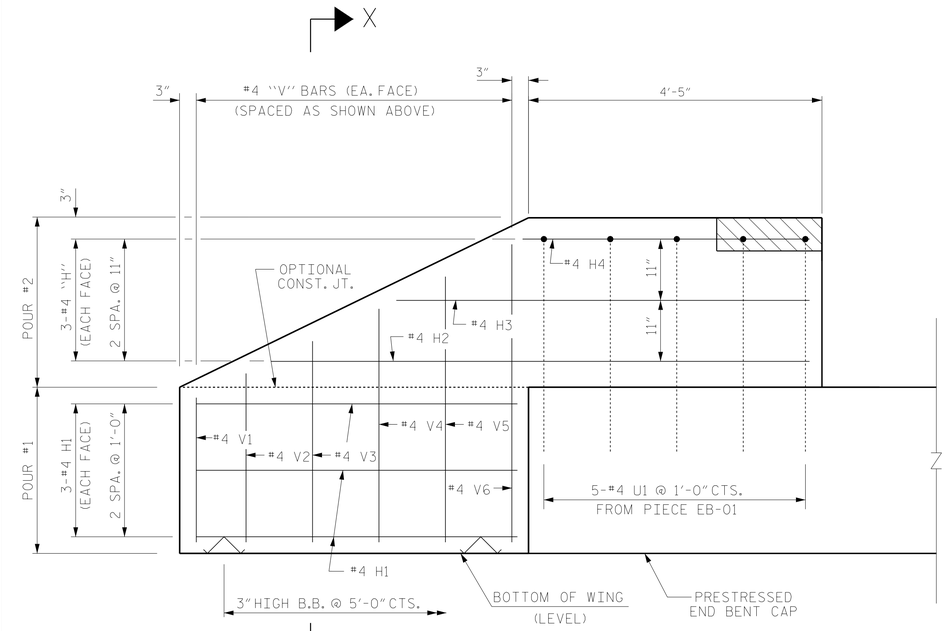
4800 Falls of Neuse Road, Suite 200 Raleigh, NC 27609-6270 Phone (919) 783-9214



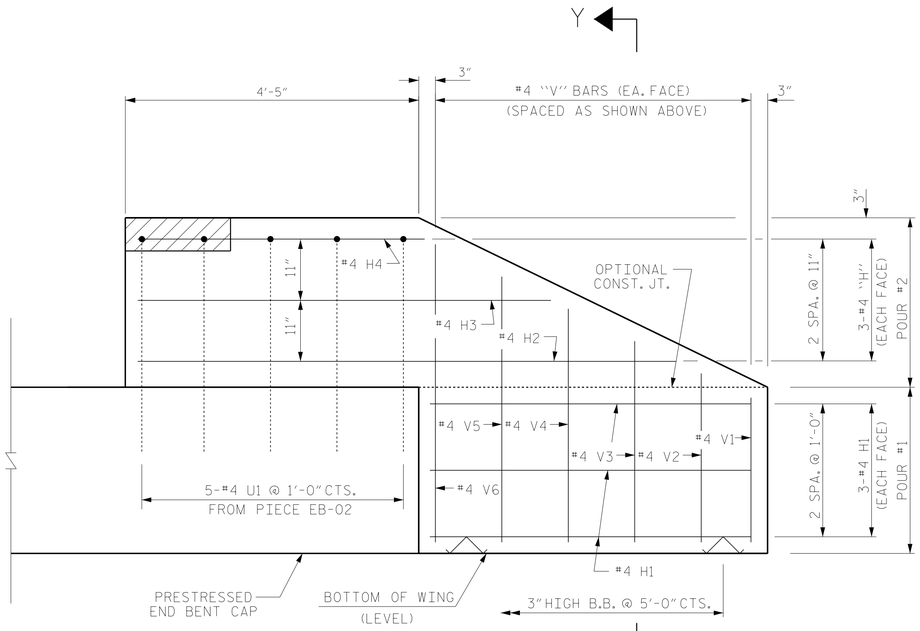




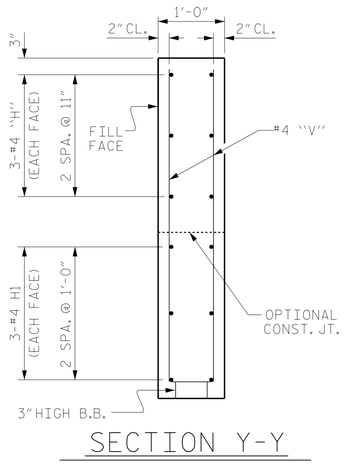
SECTION X-X



ELEVATION OF WING (W1)



ELEVATION OF WING (W2)



SECTION Y-Y

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 5 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT 1 WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			16

DESIGN ENGINEER OF RECORD: DATE :

DRAWN BY : N. GIAGUNTO DATE : 10/16/2025

CHECKED BY : R.F. DECOLA DATE : 10/17/2025

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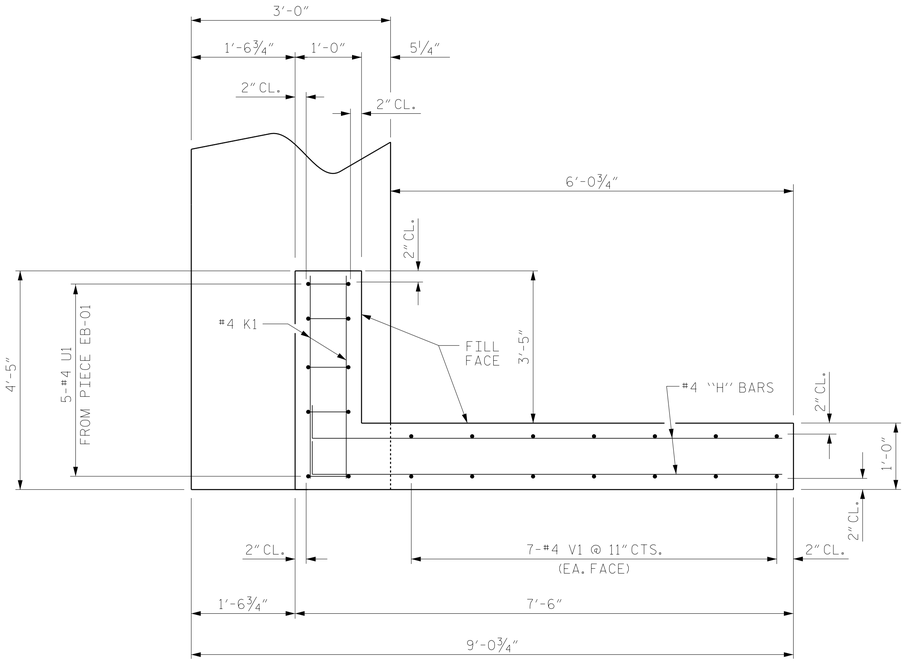
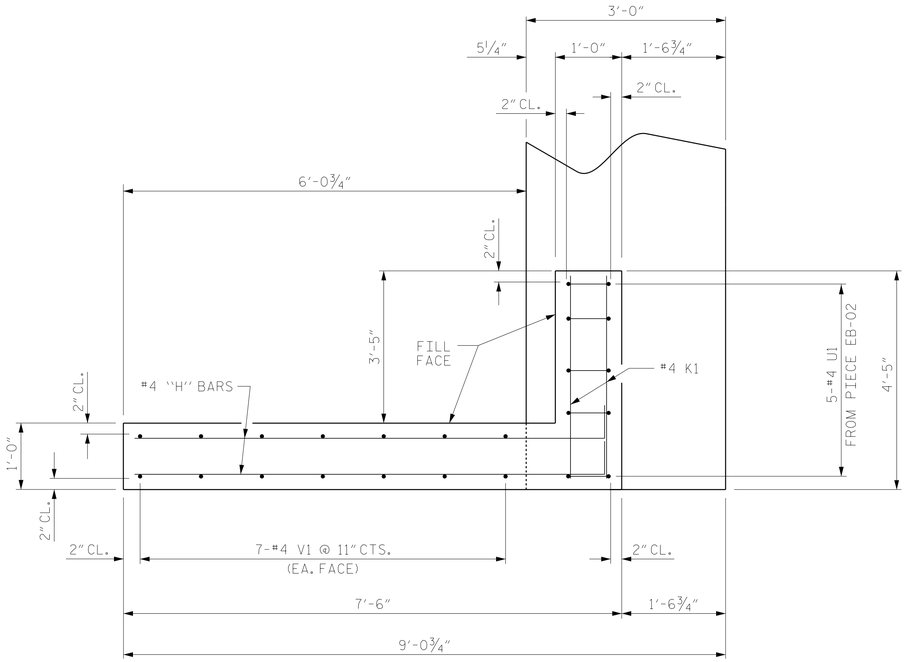
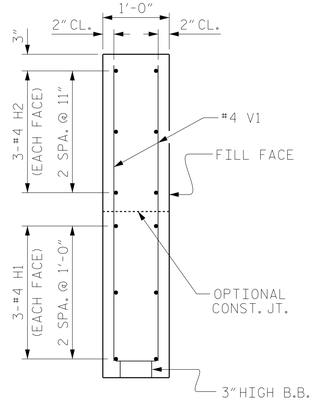


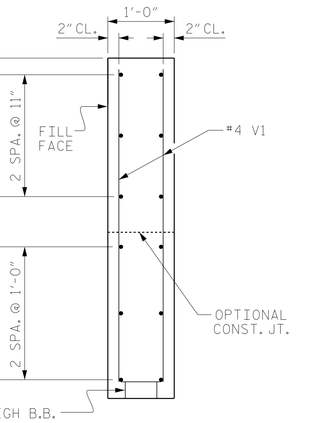
PLAN OF WING (W1)



PLAN OF WING (W2)



SECTION X-X



SECTION Y-Y

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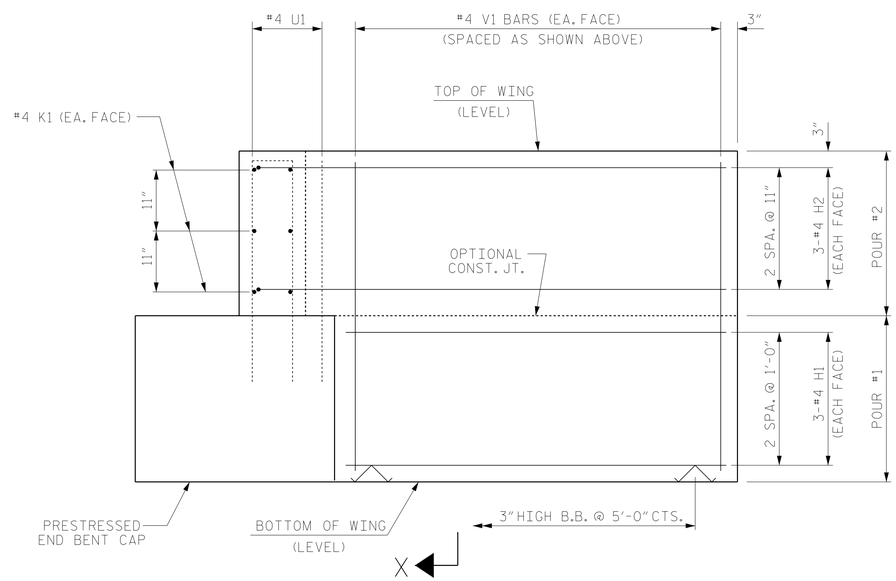

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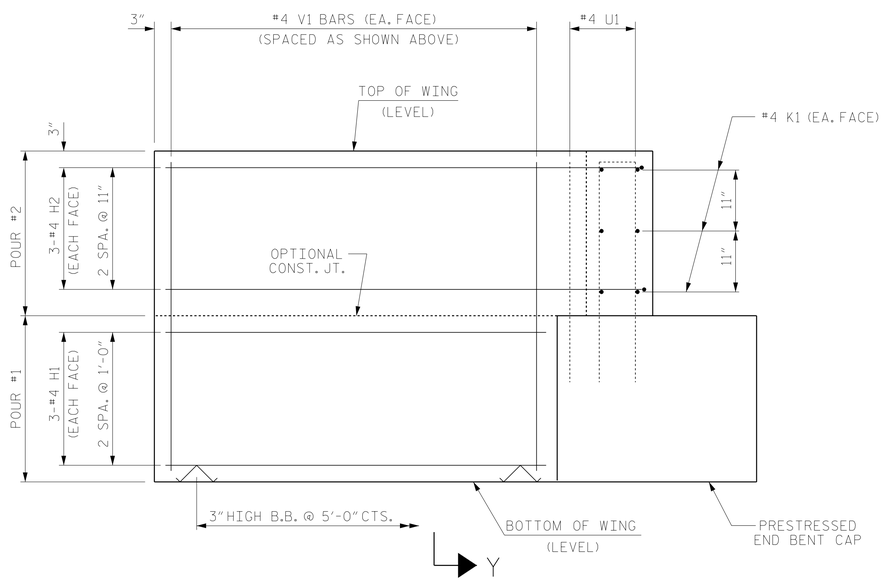
ELEVATION OF WING (W1)

Y



Y

ELEVATION OF WING (W2)

WING DETAILS

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

SHEET 6 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE
END BENT 2
WING DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			16

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STD. NO. EB_30_60S4

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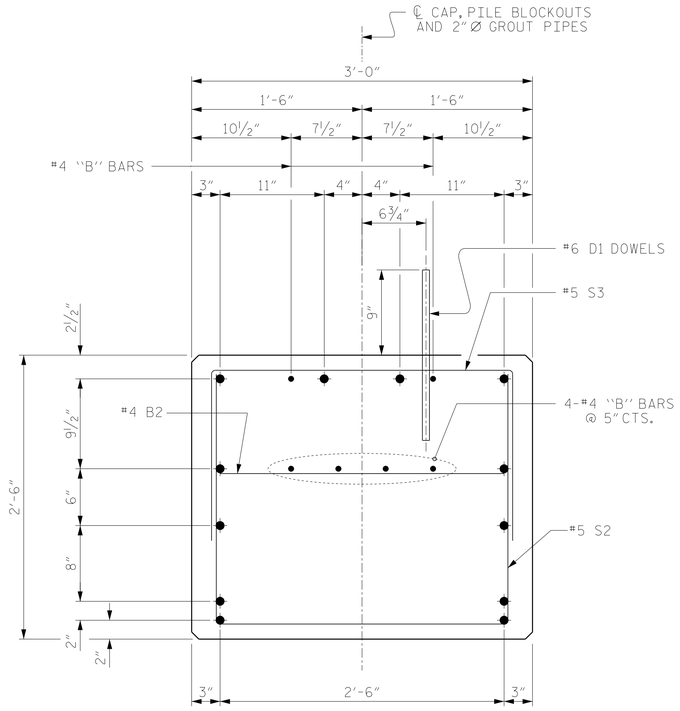
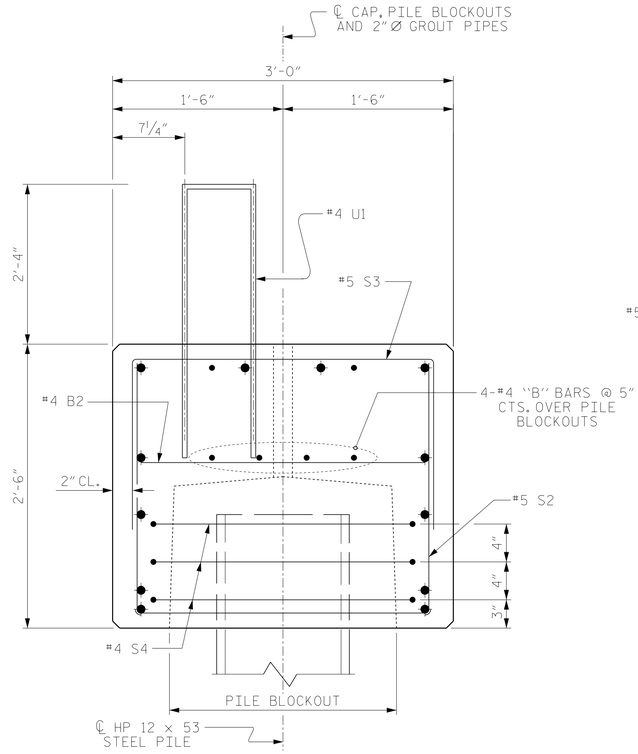
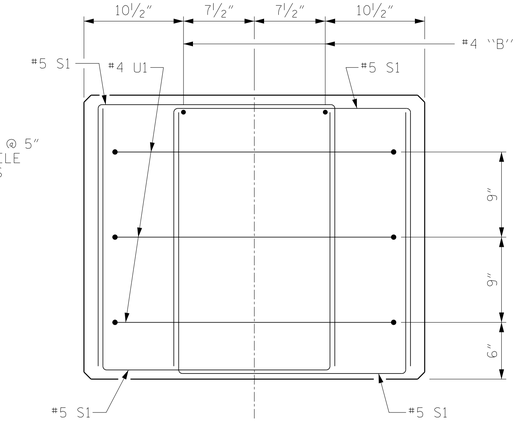


SECTION A-A

(SHOWING 0.6"Ø LOW RELAXATION STRAND LAYOUT)
(12 STRANDS)



SECTION B-B



END OF CAP VIEW

(TYPICAL BOTH ENDS)

NOTES

STIRRUPS IN PRESTRESSED PIECES MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS AND GROUT PIPES.

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

ALL REINFORCING STEEL CAST WITH THE END BENT CAP SHALL BE GRADE 60 AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "3'-0" × 2'-6" PRESTRESSED CONCRETE BENT CAPS".

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

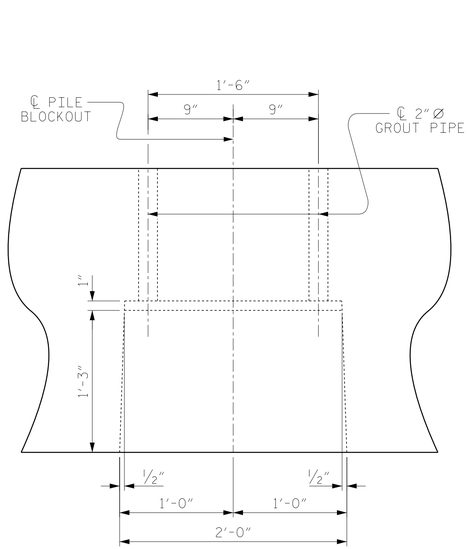
PRESTRESSING STRANDS SHALL BE CUT FLUSH WITH THE ENDS OF THE END BENT CAP SEGMENTS.

APPLY EPOXY PROTECTIVE COATING TO THE EXTERIOR END FACE OF PRESTRESSED PIECE EB-01 AND EB-02.

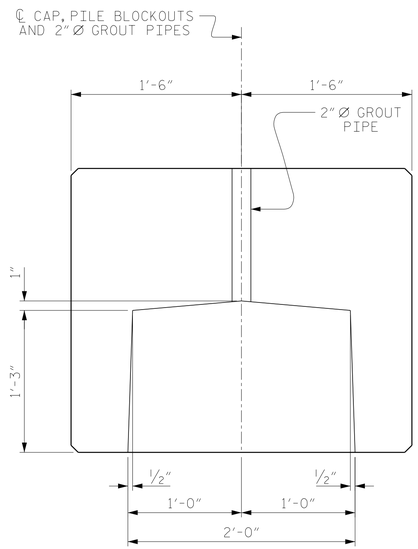
THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE END BENT CAPS SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI.

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A METHOD TO LIFT AND SUPPORT THE PRESTRESSED CAP PIECES IN THE PROPER LOCATION AND ELEVATION AS SHOWN ON THE PLANS PRIOR TO PLACEMENT AND CURING OF THE GROUT IN THE PILE BLOCKOUTS. THE METHOD CHOSEN SHALL PROVIDE FOR A WATERTIGHT SEAL AT THE BOTTOM OF THE CAP UNTIL THE GROUT HAS HARDENED SO NO GROUT COMES IN CONTACT WITH THE STREAM.

● DENOTES PRESTRESSED STRAND



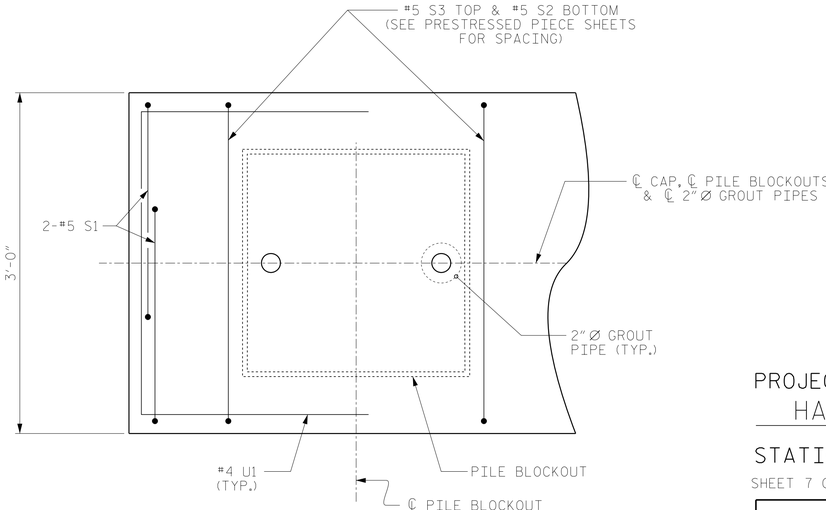
ELEVATION



SECTION

PILE BLOCKOUT DETAILS

(DIMENSIONS ARE TYPICAL EACH BLOCKOUT)



PART PLAN-END OF CAP

(TYPICAL BOTH ENDS)

PROJECT NO. 044-01-CDC5B
HAYWOOD COUNTY
STATION: 10+27.00 -L-
SHEET 7 OF 8

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-15
1			3			TOTAL SHEETS
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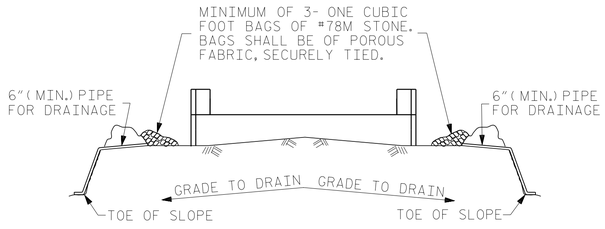
STD. NO. PSEBT

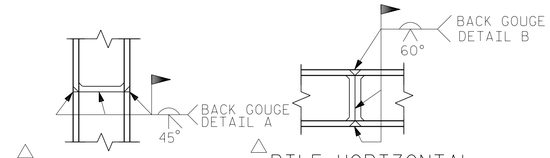


BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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

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

TEMPORARY DRAINAGE AT END BENT



△ POSITION OF PILE DURING WELDING.

PILE SPLICE DETAILS

BILL OF MATERIAL

WINGS FOR END BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	4'-9"	38
H2	4	#4	STR	8'-1"	22
H3	4	#4	STR	6'-3"	17
H4	4	#4	STR	4'-6"	12
V1	4	#4	STR	2'-2"	6
V2	4	#4	STR	2'-6"	7
V3	4	#4	STR	2'-11"	8
V4	4	#4	STR	3'-5"	9
V5	4	#4	STR	3'-11"	10
V6	4	#4	STR	4'-4"	12

REINFORCING STEEL 141 LBS.

CLASS A CONCRETE BREAKDOWN

POUR #1 LOWER PART OF WINGS 1.0 C.Y.

POUR #2 UPPER PART OF WINGS 1.3 C.Y.

TOTAL CLASS A CONCRETE 2.3 C.Y.

WINGS FOR END BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
H1	12	#4	STR	5'-8"	45
H2	12	#4	1	7'-9"	62
K1	12	#4	STR	2'-11"	23
V1	28	#4	STR	4'-8"	87

REINFORCING STEEL 217 LBS.

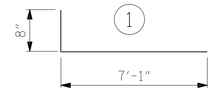
CLASS A CONCRETE BREAKDOWN

POUR #1 LOWER PART OF WINGS 1.1 C.Y.

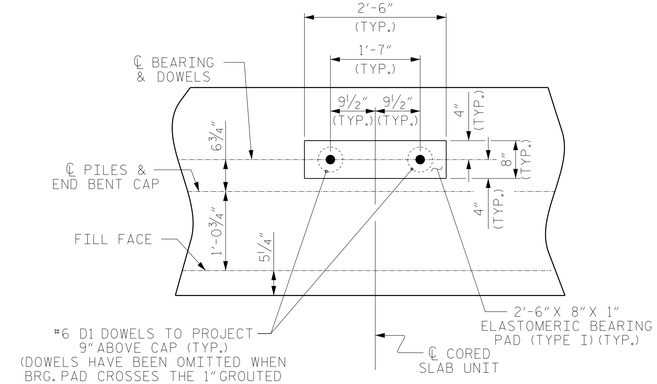
POUR #2 UPPER PART OF WINGS 2.0 C.Y.

TOTAL CLASS A CONCRETE 3.1 C.Y.

BAR TYPES

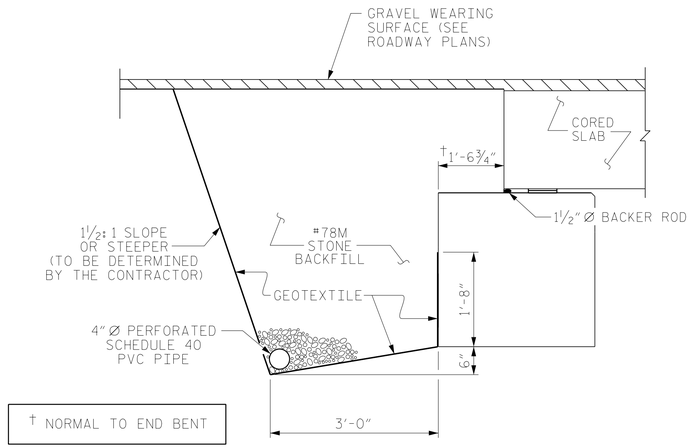


ALL BAR DIMENSIONS ARE OUT TO OUT.



DETAIL ''A''

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



† NORMAL TO END BENT

SECTION THRU BACKFILL

NOTES

FOR PRESTRESSED CAP DETAILS, SEE ''PRESTRESSED PIECE EB-01'' & ''PRESTRESSED PIECE EB-02'' SHEETS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR 3'-0" x 2'-6" PRESTRESSED CONCRETE BENT CAPS, SEE SPECIAL PROVISIONS.

THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE CONCRETE CURB IS CAST IF SLIP FORMING IS USED.

PROJECT NO. 044-01-CDC5B

HAYWOOD COUNTY

STATION: 10+27.00 -L-

STATE OF NORTH CAROLINA
DEPARTMENT OF PUBLIC SAFETY
RALEIGH

SUBSTRUCTURE

END BENT DETAILS

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1			3			TOTAL SHEETS
2			4			16

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STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2018 "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"Ø SHEAR STUDS FOR THE ¾"Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - ⅞"Ø STUDS FOR 4 - ¾"Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF ⅞"Ø STUDS ALONG THE BEAM AS SHOWN FOR ¾"Ø STUDS BASED ON THE RATIO OF 3 - ⅞"Ø STUDS FOR 4 - ¾"Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

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

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

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

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. 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.

ENGLISH

JANUARY, 1990

STD. NO. SN

REV. 6-16-95 EEM (/) RGW REV. 5-7-03 RWW (/) JTE REV. 10-1-11 MAA (/) GM
REV. 8-16-99 RWW (/) LES REV. 5-1-06 TLA (/) GM REV. 12-17 MAA (/) THC

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