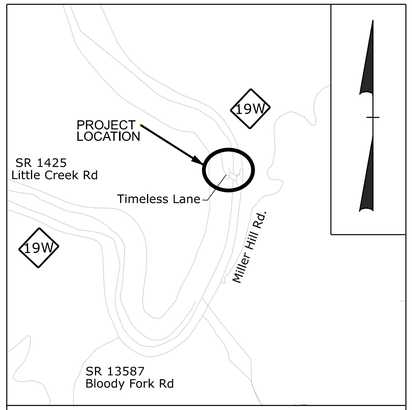
Bridge Contract No. 3

Site # 100-01-00206 Timeless Lane over the Cane River in Yancey County

01/16/24

TIP PROJECT: 100.01.00206

CONTRACT:



VICINITY MAP (NTS)

NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT

YANCEY COUNTY

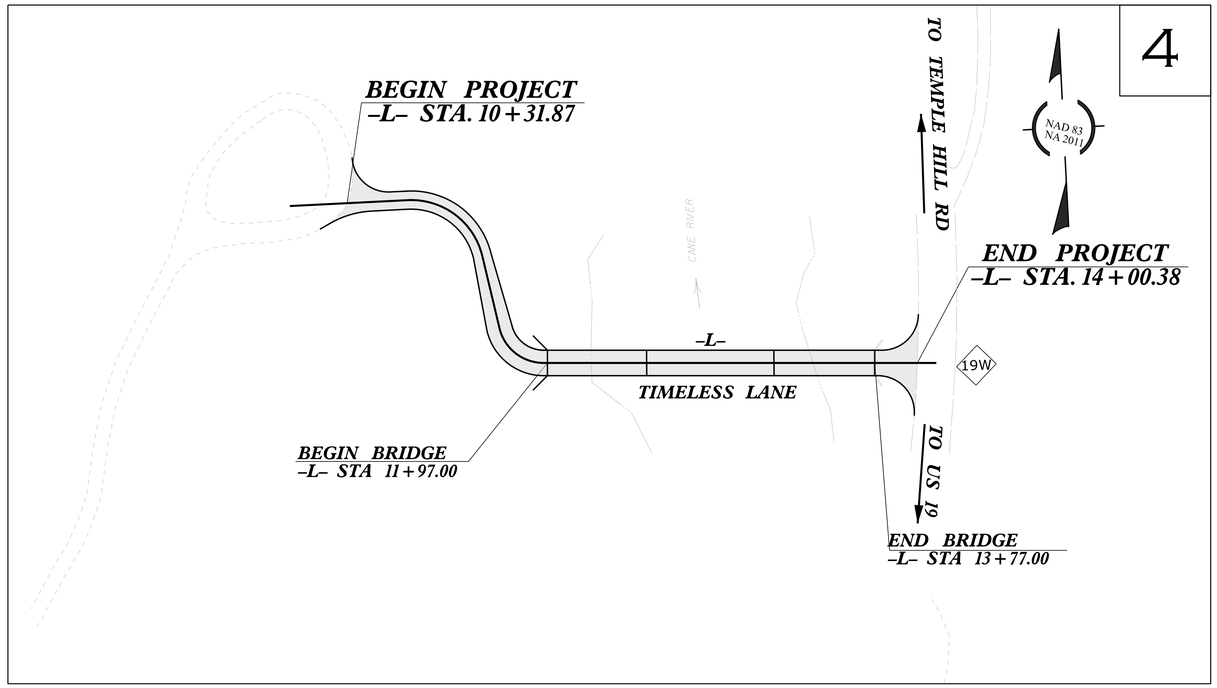
LOCATION: *PRIVATE BRIDGE ON TIMELESS LANE OVER CANE RIVER*

TYPE OF WORK: *GRADING,PAVING & STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	100.01.00206	1	

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

DIVISION 13



INDEX OF SHEETS

SHEET NUMBER	SHEET
1	TITLE SHEET
4	TYPICAL SECTIONS, PLAN, PROFILE AND QUANTITIES
X-1 THRU X- 8	CROSS SECTIONS
S-1 THRU S- 13	STRUCTURE PLANS
EC-1 THRU EC- 5	EROSION CONTROL PLANS
N/A	SUBSURFACE BORING LOGS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

20 10 0 20 40
PLANS

20 10 0 20 40
PROFILE (HORIZONTAL)

5 2.5 0 5 10
PROFILE (VERTICAL)

DESIGN DATA

MATCH EXISTING CONDITIONS

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT = 0.036 MILES

LENGTH OF STRUCTURE PROJECT = 0.034 MILES

TOTAL LENGTH OF PROJECT = 0.070 MILES

GANNETT FLEMING

One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: N/A

LETTING DATE: N/A

ERIC B. NELSON, PE
PROJECT ENGINEER

ANGELA B. PRIDGEN, PE
PROJECT DESIGN ENGINEER

CHRIS WERNER,PE
PRIVATE ROAD AND BRIDGE PROGRAM MANAGER

HYDRAULICS ENGINEER

DocuSigned by: 8/22/2025 *P.E.*
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 040302 ENGINEER WILLIAM K. JERNIGAN, JR.

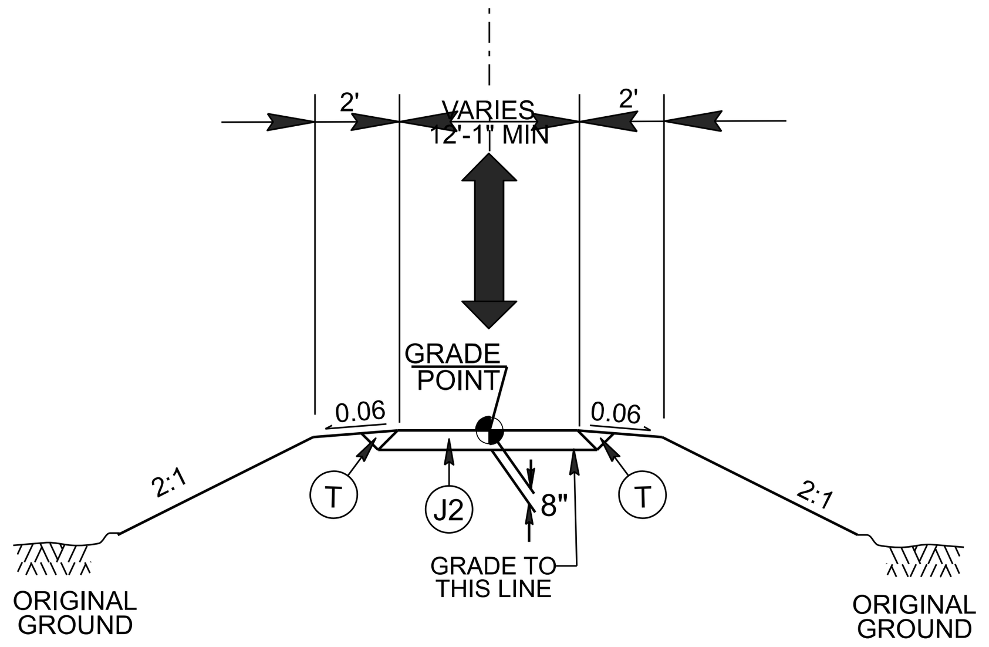
ROADWAY DESIGN ENGINEER

DocuSigned by: 8/22/2025 *P.E.*
SIGNATURE:

NORTH CAROLINA PROFESSIONAL SEAL 032579 ENGINEER ANGELA B. PRIDGEN

EMERGENCY MANAGEMENT NORTH CAROLINA

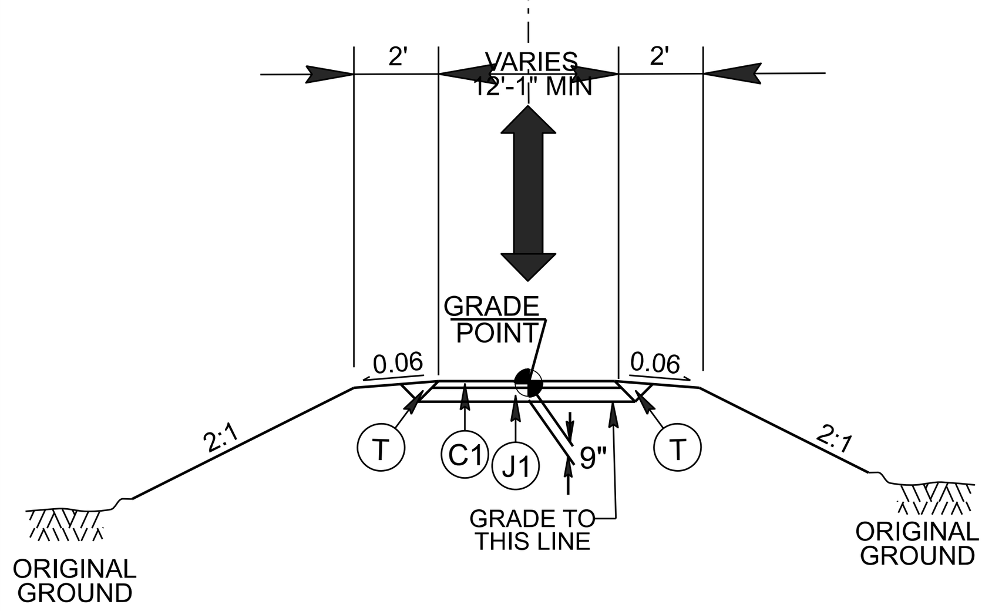
PAVEMENT SCHEDULE	
C1	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J1	PROP.6" AGGREGATE BASE COURSE
J2	PROP.8" AGGREGATE BASE COURSE
T	EARTH MATERIAL



TYPICAL SECTION NO. 1

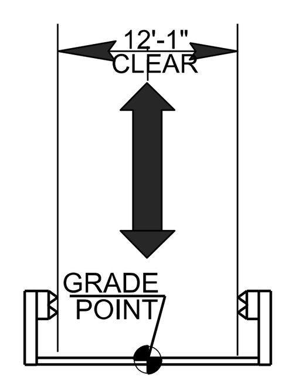
-L- STA. 10+31.87 TO STA. 11+61.21

CUR DATA -L-	CUR DATA -L-
PIc 10+98.52	PIc 11+81.23
Δc = 79°27'08.1" (RT)	Δc = 76°35'48.9" (LT)
D = 143°14'21.7"	D = 229°10'59.2"
Lc = 55.47	Lc = 33.42
Tc = 33.24	Tc = 19.74
R = 40	R = 25



TYPICAL SECTION NO. 2

-L- STA. 11+61.21 TO STA. 11+97.00 (BEGIN BRIDGE)
-L- STA. 13+77.00 (END BRIDGE) TO STA. 14+00.38

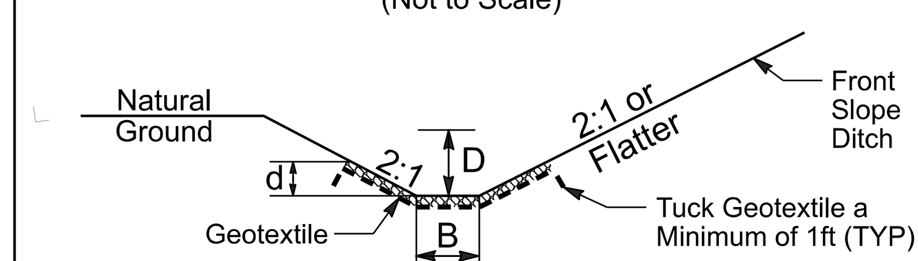


TYPICAL SECTION NO. 3

-L- STA. 11+97.00 (BEGIN BRIDGE) TO STA. 13+77.00 (END BRIDGE)
(SEE STRUCTURE PLANS FOR STRUCTURE CONSTRUCTION DETAIL)

DETAIL A

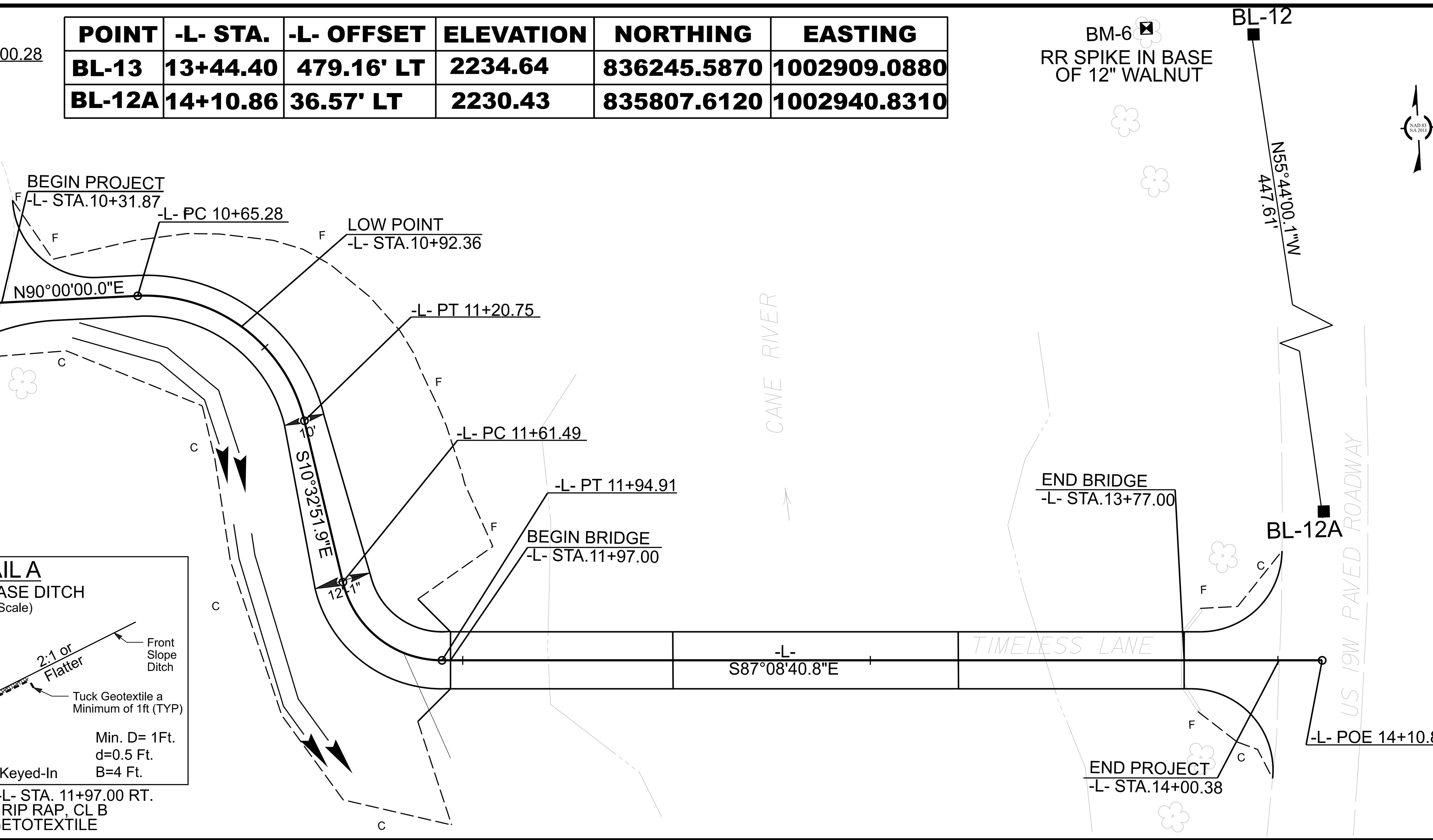
SPECIAL BASE DITCH
(Not to Scale)



Min. D= 1Ft.
d=0.5 Ft.
B=4 Ft.
Type of Liner= CL B Rip-Rap, Keyed-In

-L- STA. 10+51.00 TO -L- STA. 11+97.00 RT.
EST. 146 TONS RIP RAP, CL B
EST. 363 SY GETOTEXTILE

POINT	-L- STA.	-L- OFFSET	ELEVATION	NORTHING	EASTING
BL-13	13+44.40	479.16' LT	2234.64	836245.5870	1002909.0880
BL-12A	14+10.86	36.57' LT	2230.43	835807.6120	1002940.8310



NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT
YANCEY COUNTY

ROADWAY DESIGN ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032579 ANGELA B. PRIDGEN
9/23/2025

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040302 WILLIAM K. JERNIGAN JR.
9/23/2025

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED BY

GANNETT FLEMING

ROADWAY QUANTITIES

DESCRIPTION	QUANTITY	UNIT
UNCLASSIFIED EXCAVATION	10	CY
BORROW EXCAVATION	1,365	CY
ASPHALT TYPE S9.5B	20	Tons
AGGREGATE BASE COURSE	120	Tons
RIP RAP, CLASS B	146	Tons
GETOTEXTILE FOR DRAINAGE	363	SY

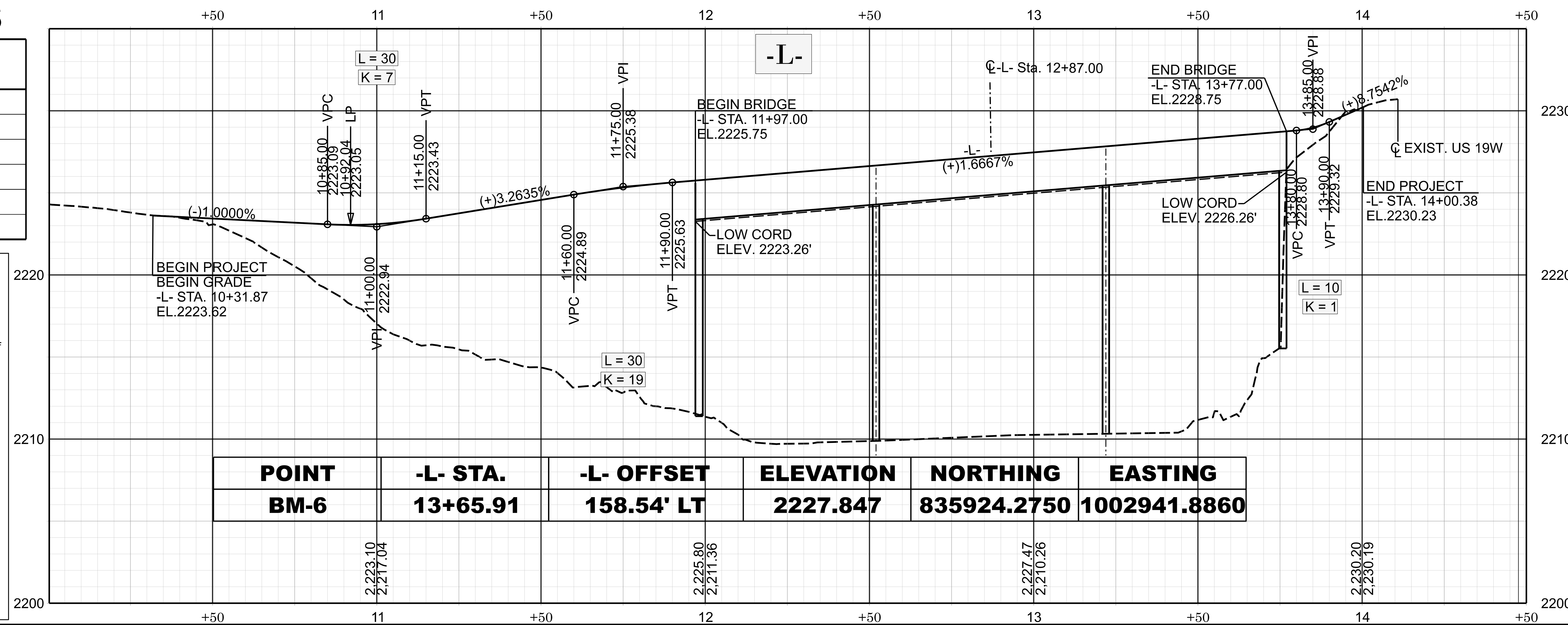
I hereby certify that that I have reviewed the existing hydraulic conveyance at this site which was a four (4) span existing bridge with the proposed conveyance provided by the proposed three (3) span bridge.

The proposed bridge low chord for the bridge shall be set no lower than the top of the existing bridge low chord as documented in the HEC-RAS model obtained from NCFMP 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".

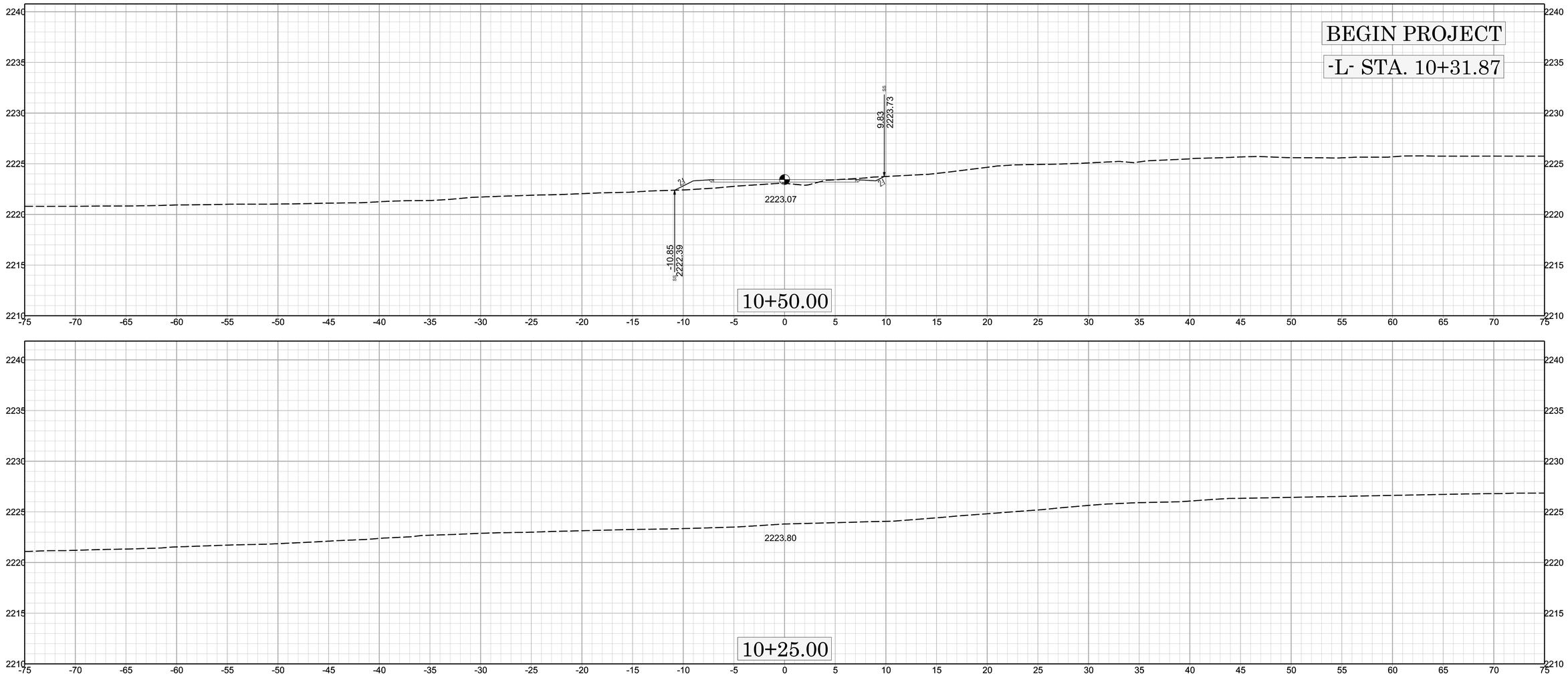
This certification demonstrates that the newly designed and installed private bridge/culvert provides conveyance greater than or equal to the original destroyed crossing. This is based on the best available data provided from post storm evaluations. Portions of the existing structures may have been destroyed, removed, modified or shifted from their original location or elevation.

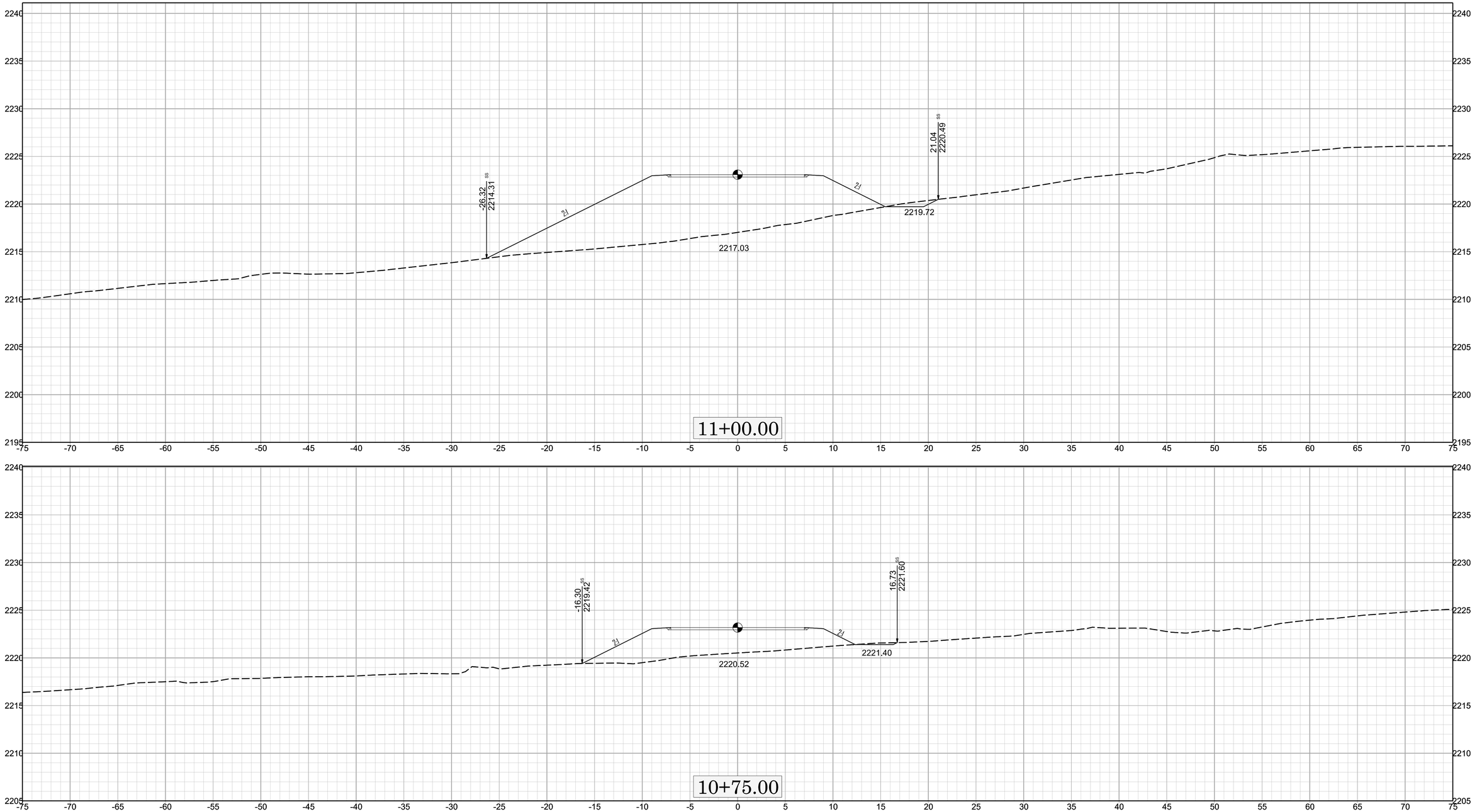
Signed by: William Jernigan

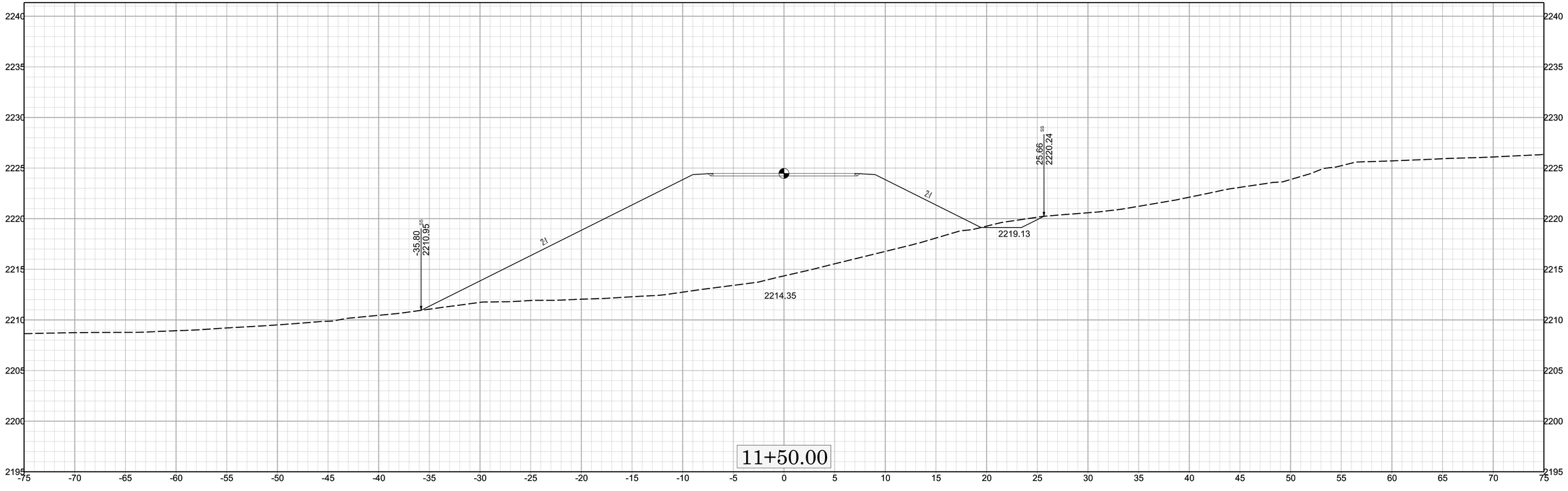
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040302 WILLIAM K. JERNIGAN JR.
9/23/2025



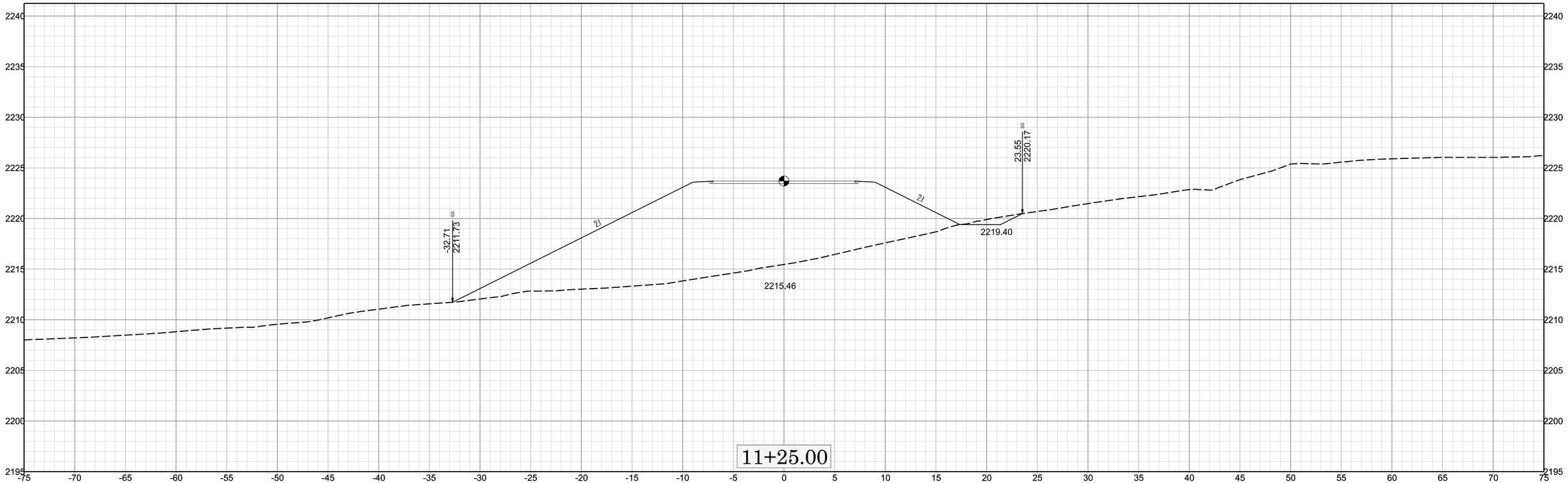
POINT	-L- STA.	-L- OFFSET	ELEVATION	NORTHING	EASTING
BM-6	13+65.91	158.54' LT	2227.847	835924.2750	1002941.8860



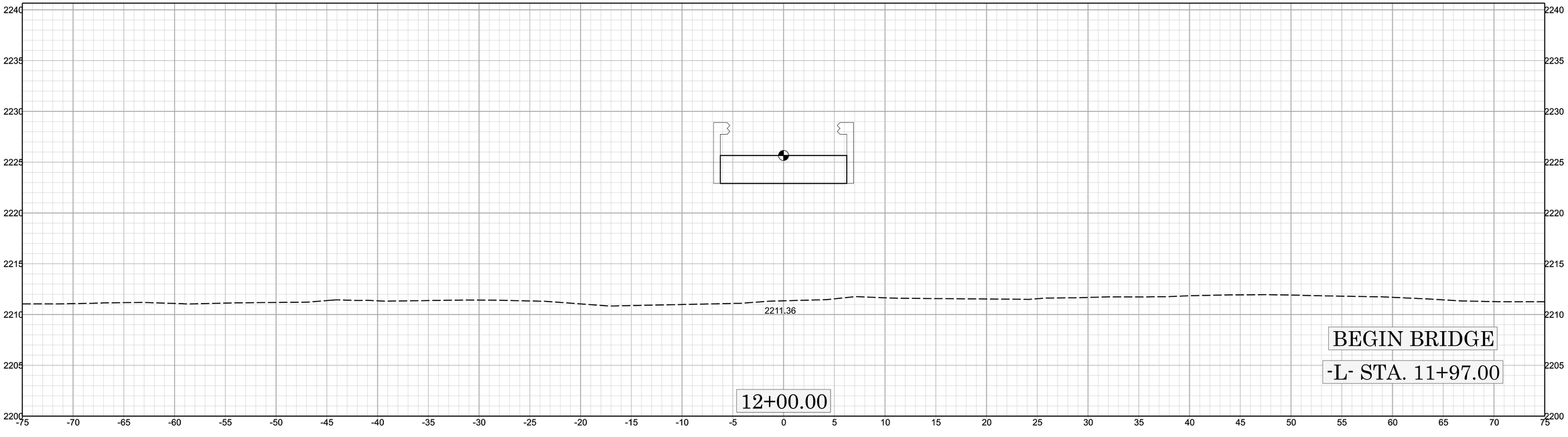


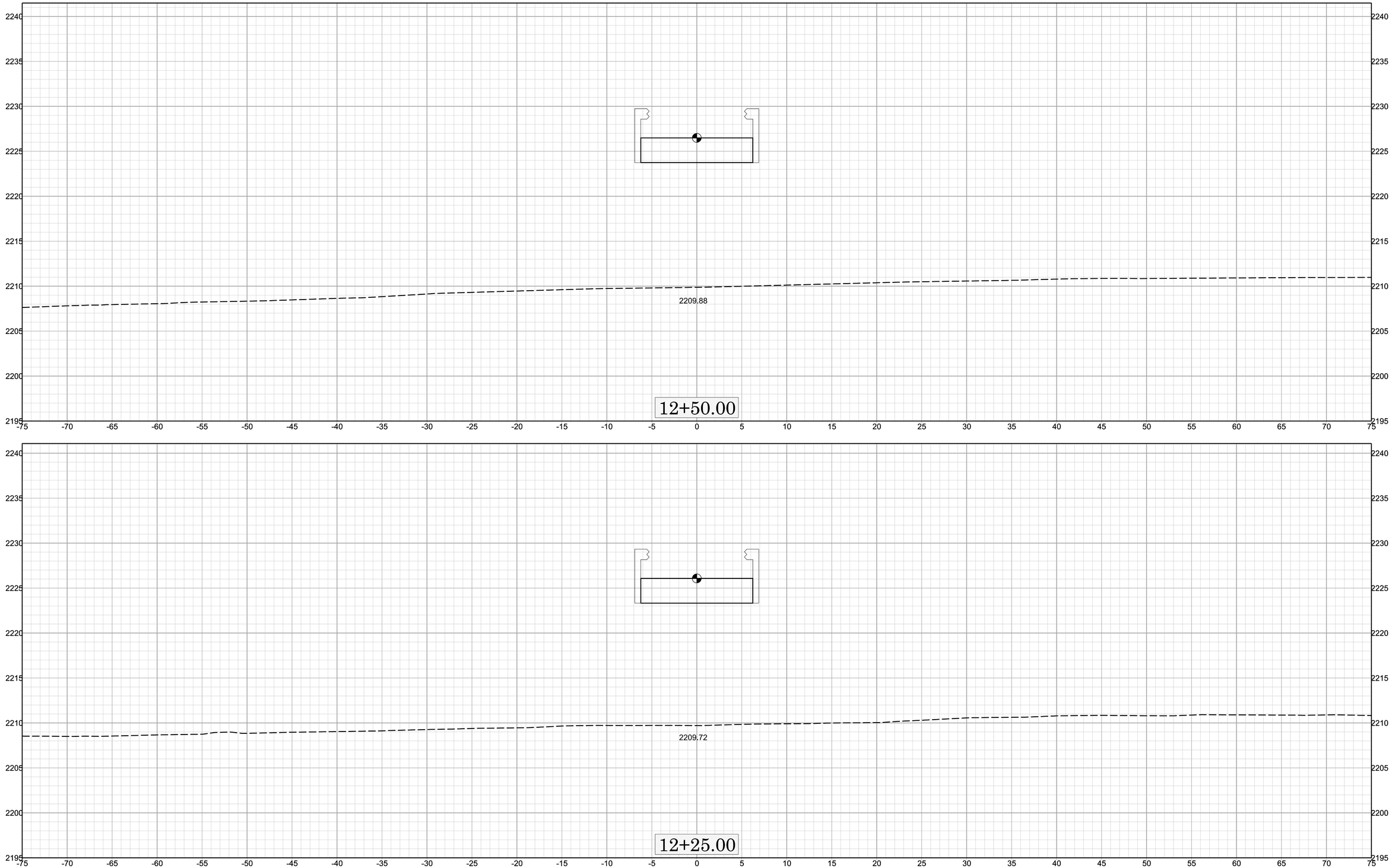


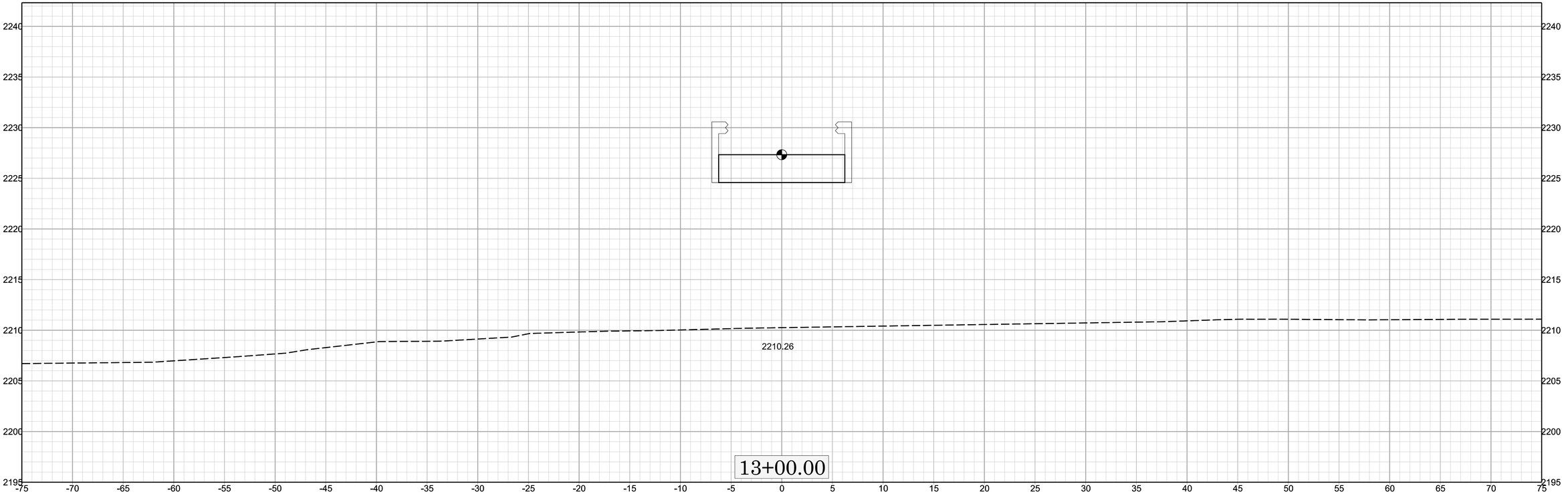
11+50.00

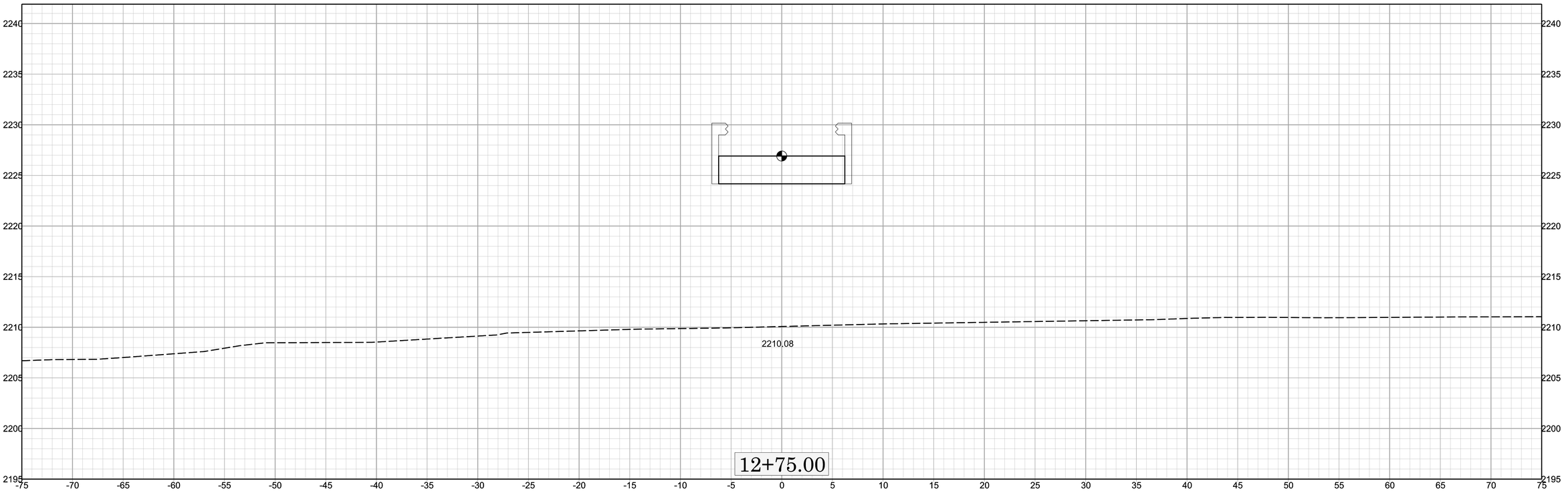


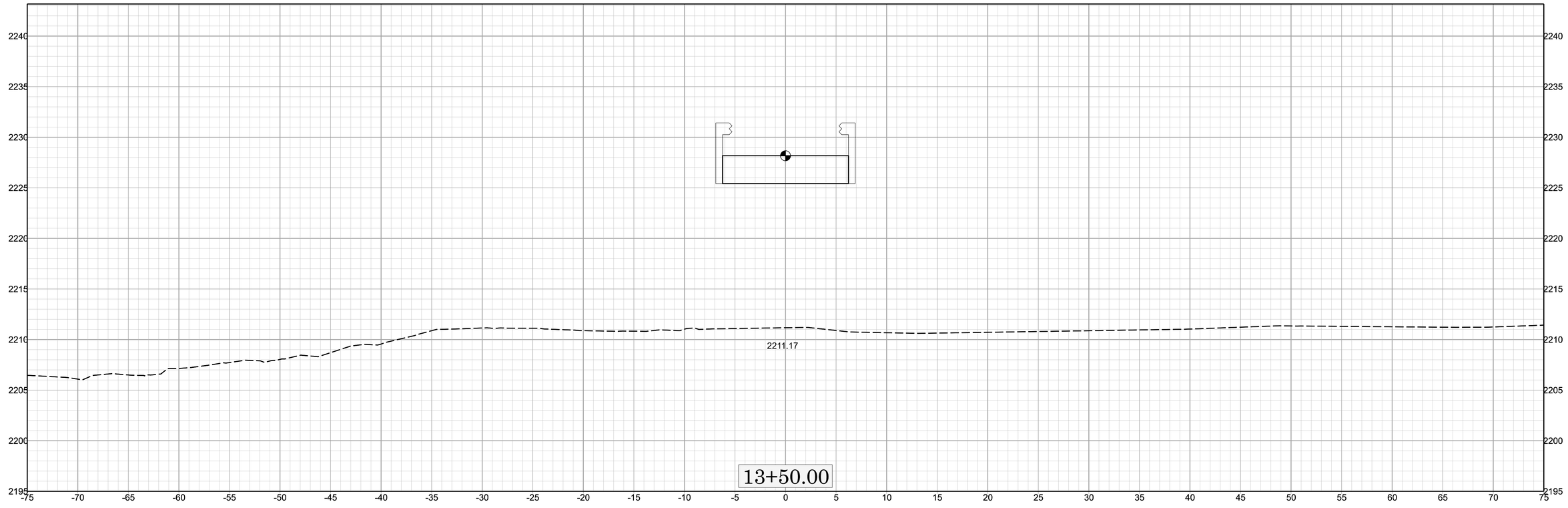
11+25.00

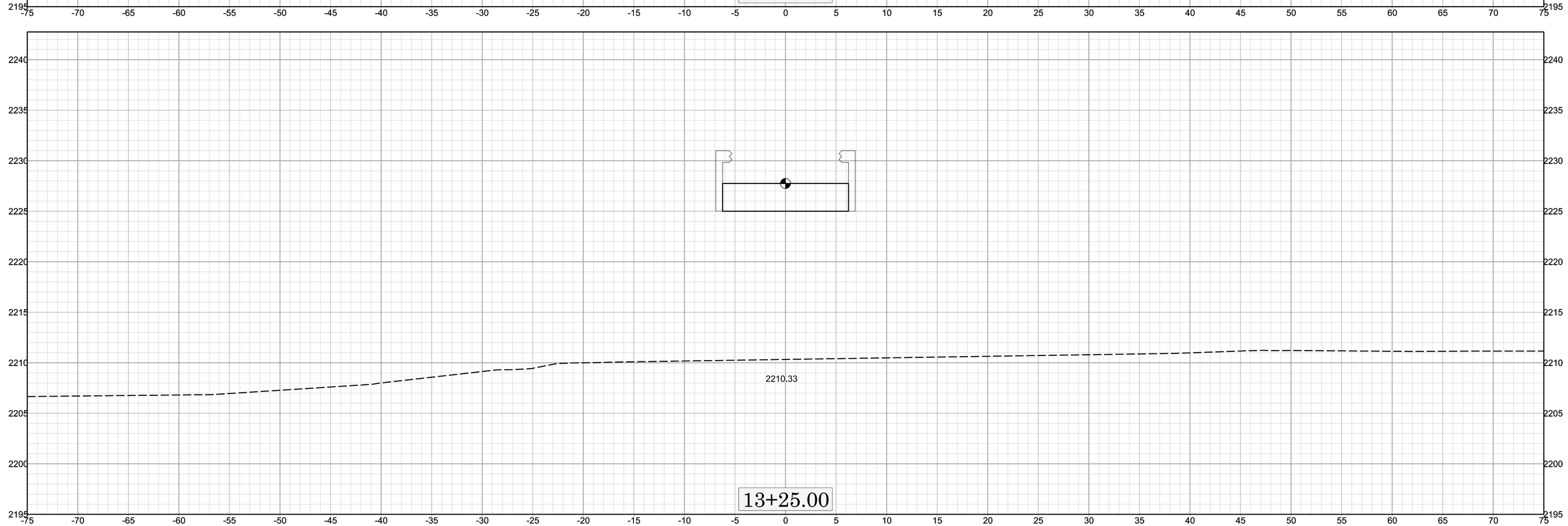


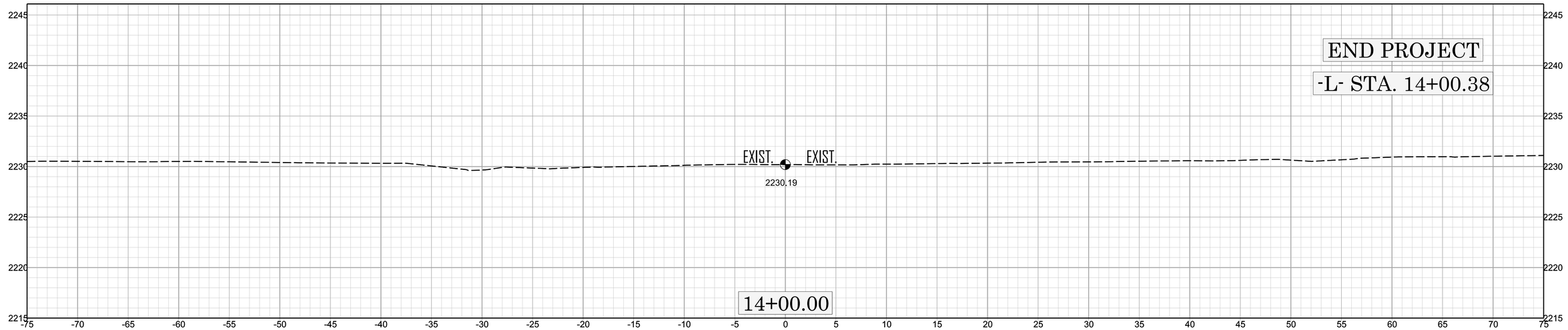


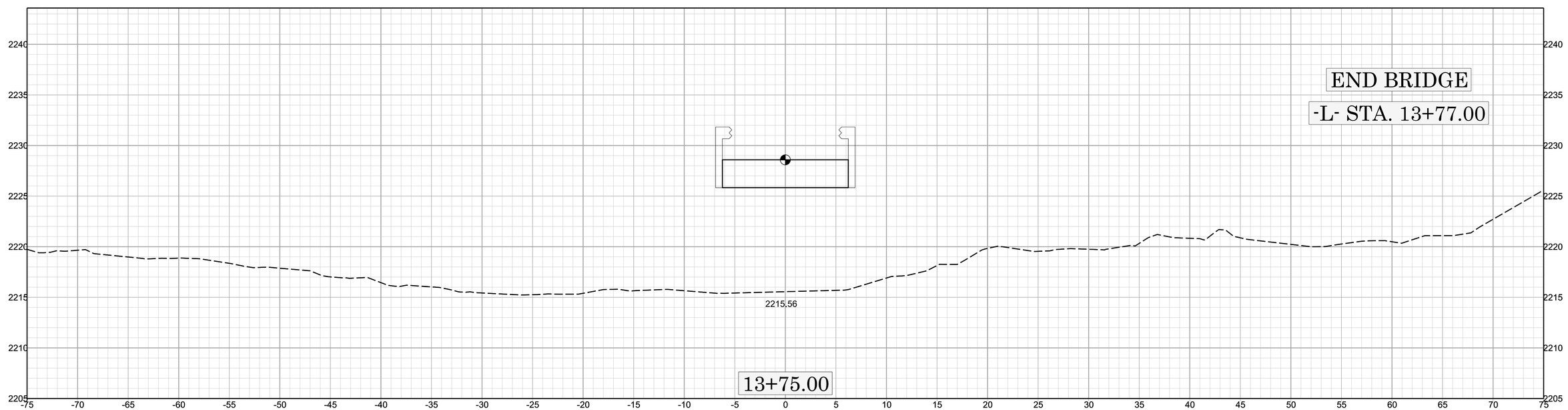




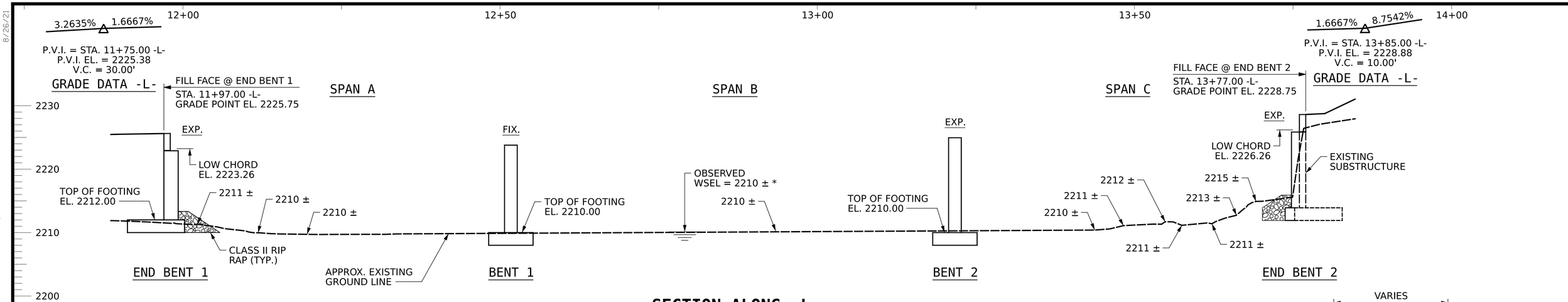






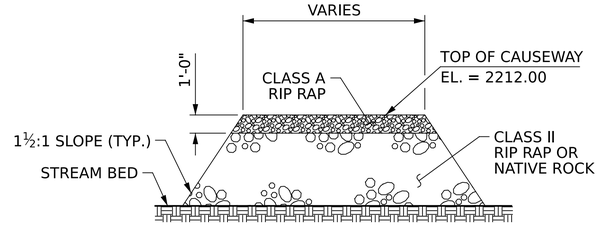


8/26/21



SECTION ALONG -L-

* OBSERVATIONS DURING FIELD SCOPING AT THE BRIDGE SITE NOTED THAT THE WATER SURFACE CONSISTED OF A SERIES OF SHALLOW RIFFLES DUE TO ROCKY SHOALS CREATED BY ROCK DEPOSITED BY THE RIVER. (SEE PHOTOS ON SHEET 2 OF 2)



DETAIL OF CAUSEWAY

PLAN

RECOMMENDED INSPECTION AND MAINTENANCE

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

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

REPAIR ANY PRIORITY MAINTENANCE ITEMS NOTED DURING BRIDGE INSPECTIONS.

IF DETERIORATION IS NOTED IN INSPECTIONS, ACCELERATE SCHEDULE AND INSPECT EVERY 2 YEARS THEREAFTER.

OBSERVE BETWEEN INSPECTIONS FOR CRACKS RUST OR SPALLING IN CONCRETE OR STEEL COMPONENTS, SIGNS OF EROSION OR SCOURING AROUND ABUTMENTS AND PIERS, DECK SURFACE WEAR, DAMAGE OR DETERIORATION OF SAFETY RAIL.

REMOVE DEBRIS AND SEDIMENT FROM THE DECK AND UNDERNEATH THE BRIDGE TO PREVENT PONDING AND EROSION.

STRUCTURAL MAINTENANCE SHOULD INCLUDE TIGHTENING LOOSE BOLTS AND FASTENERS, SEALING CRACKS IN CONCRETE, AND REPAIRING SPALLS WHERE REBAR IS EXPOSED.

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric B. Nelson Jr. 11/4/2025
AC8808211907 4CD...

GENERAL DRAWING

FOR BRIDGE ON TIMELESS LANE OVER CANE RIVER

DRAWN BY : J. PARROTT DATE : 07/2025
CHECKED BY : J. YANNACCONE DATE : 08/2025
DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

GANNETT FLEMING

One Glenwood Avenue
Suite 900
Raleigh,NC 27603
919-420-7660
NC Lic.No. F-0270

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

8/26/21

LOOKING WEST FROM END BENT 2

EXISTING END BENT 2

LOOKING EAST FROM END BENT 1

LOOKING SOUTHWEST AT END BENT 2

LOOKING DOWNSTREAM

LOOKING NORTH (DOWNSTREAM) AT END BENT 2

LOOKING UPSTREAM TOWARDS END BENT 2

LOOKING UPSTREAM

LOOKING UPSTREAM TOWARDS END BENT 1

PHOTOS OF EXISTING SITE CONDITIONS

GENERAL NOTES

ASSUMED LIVE LOAD = HS-20.

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

IMPACT ALLOWANCE = 15%

MULTIPLE PRESENCE FACTOR = 1.0

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

UNLESS OTHERWISE REQUIRED ON PLANS, CLASS A CONCRETE SHALL BE USED FOR ALL PORTIONS OF THE STRUCTURE WITH THE EXCEPTION THAT CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURE.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON THE STRUCTURE SHALL BE CHAMFERED ¾".

THE BRIDGE SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS.

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.

THE CONTRACTOR SHALL REMOVE ALLUVIAL MATERIAL AT THE BRIDGE SITE FOR USE IN CONSTRUCTING THE TEMPORARY CAUSEWAYS. THE STREAMBED WHERE MATERIAL HAS BEEN REMOVED SHALL BE CONTOURED IN SUCH A WAY TO APPROXIMATELY MATCH THE STREAM CROSS SECTION IMMEDIATELY UPSTREAM OF THE BRIDGE. AFTER COMPLETION OF BRIDGE CONSTRUCTION, THE ROCK IN THE TEMPORARY CAUSEWAYS SHALL BE PLACED ALONG THE STREAMBANKS ON BOTH SIDES OF THE RIVER.

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

METAL STANDARDS FOR THE BRIDGE RAIL SHALL BE SET NORMAL TO THE GRADE OF THE DECK, UNLESS OTHERWISE SHOWN ON PLANS.

EXISTING DIMENSIONS OF THE EXISTING END BENT NO. 2 ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIFY THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITION DIFFER.

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

WORK ON THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL BELOW, EXCEPT WHERE THE CONTRACTOR’S PLAN USES PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES TO CATCH THE MATERIAL.

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

FOR BRIDGE RAIL SYSTEM, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

LRFR RATING SUMMARY

	VEHICLE	RATING FACTOR
INVENTORY	HS-20	1.22
	EV2	1.82
	EV3	1.34
OPERATING	HS-20	1.59
	EV2	2.37
	EV3	1.56

BRIDGE COORDINATES

LATITUDE	LONGITUDE
35°-59'-59.4"	82°-22'-18.1"

TOTAL BILL OF MATERIAL

CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS	REINFORCED CONCRETE DECK SLAB	CLASS A CONCRETE	REINFORCING STEEL	APPROX. 88,000 LBS STRUCTURAL STEEL	CLASS II RIP RAP (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	BRIDGE RAIL SYSTEM
LUMP SUM	SQ. FT.	CU. YDS.	LBS.	LUMP SUM	TONS	SQ. YDS.	LUMP SUM	LIN. FT.
LUMP SUM	2,265	123.3	17,750	LUMP SUM	80	114	LUMP SUM	360

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric B. Nelson Jr. ACB80821190740D... 11/4/2025

GENERAL DRAWING

FOR BRIDGE ON TIMELESS LANE OVER CANE RIVER

DRAWN BY : J. PARROTT DATE : 07/2025

CHECKED BY : J. YANNACCONE DATE : 08/2025

DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

GANNETT FLEMING
One Glenwood Avenue
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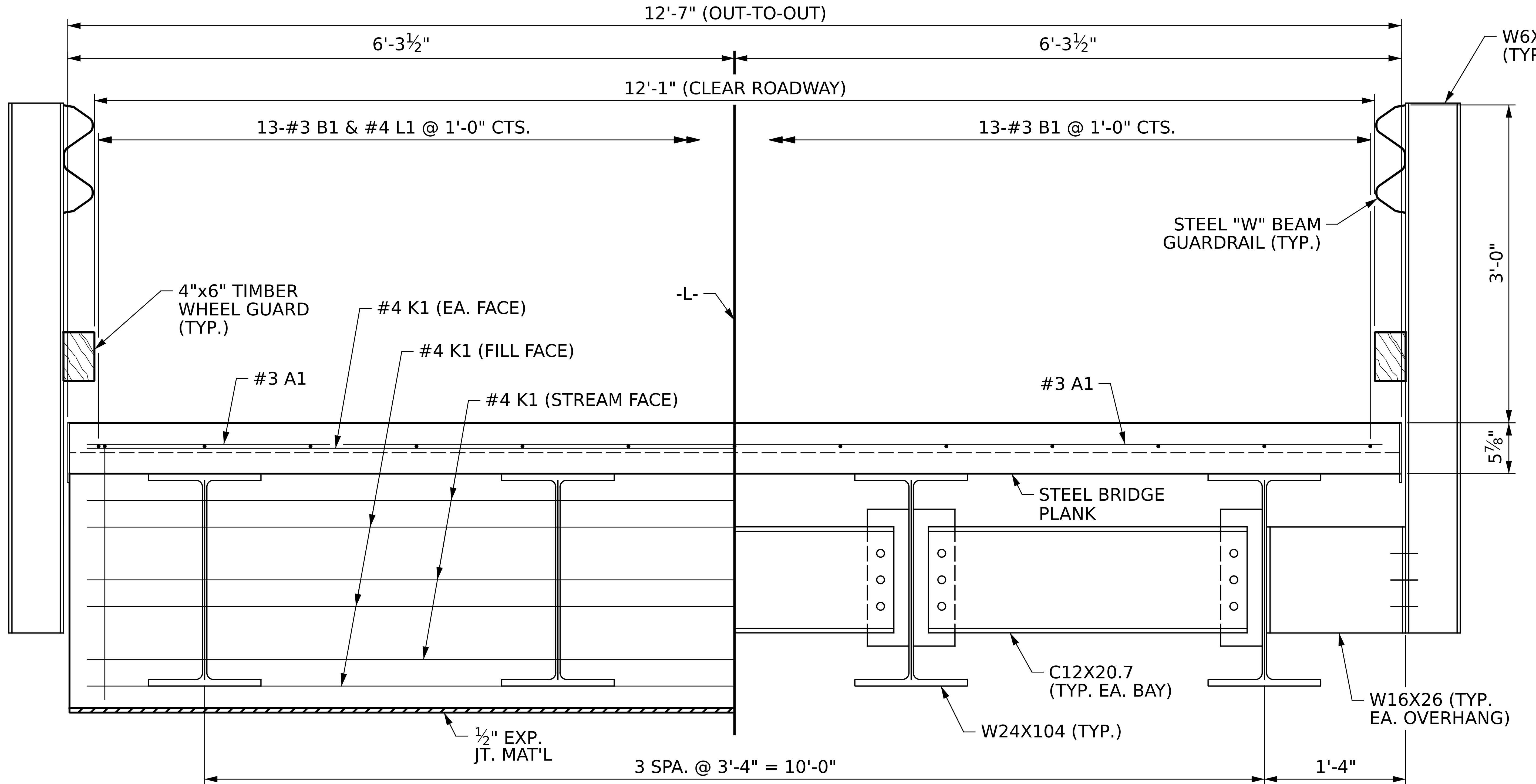
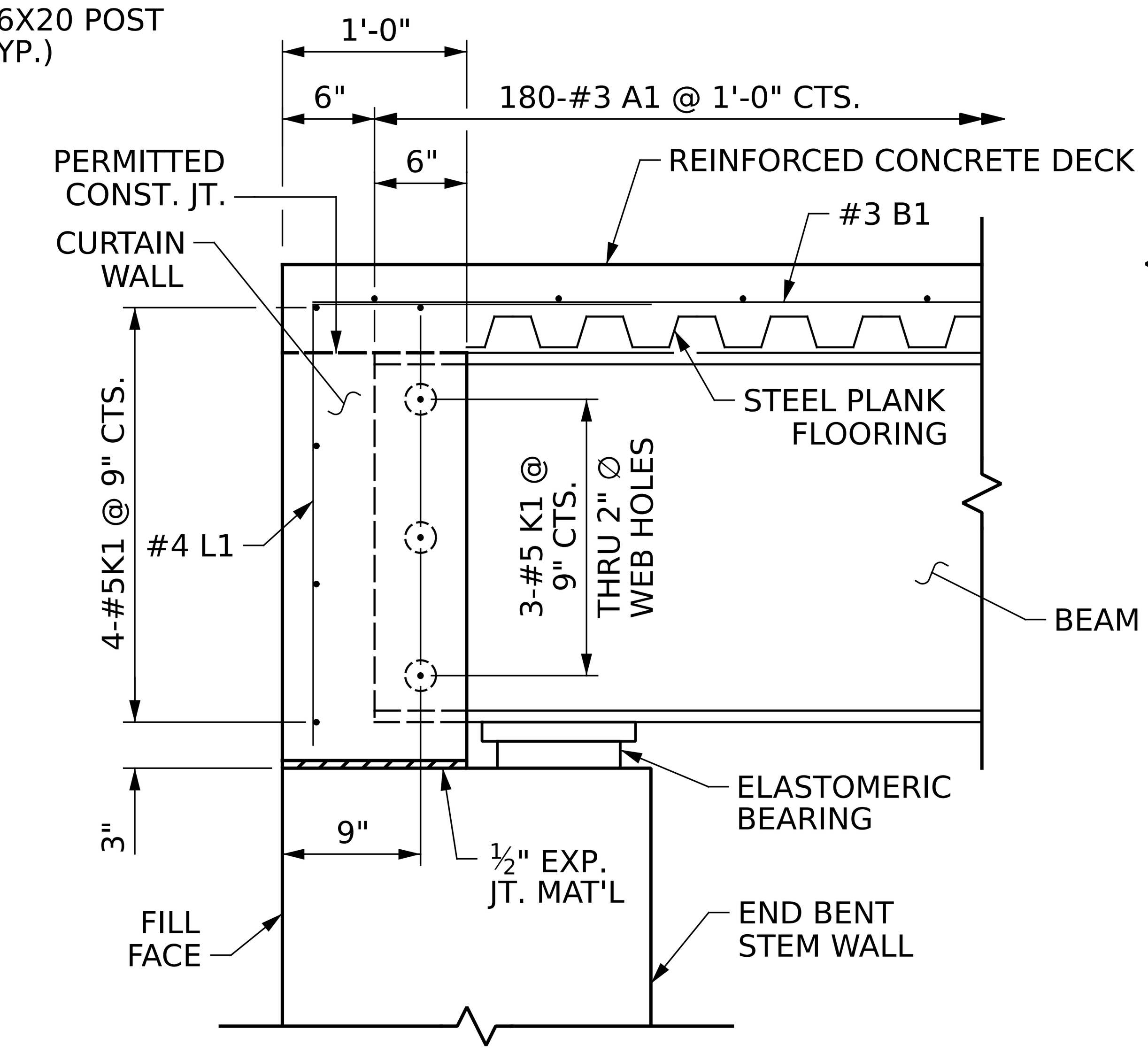
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			13



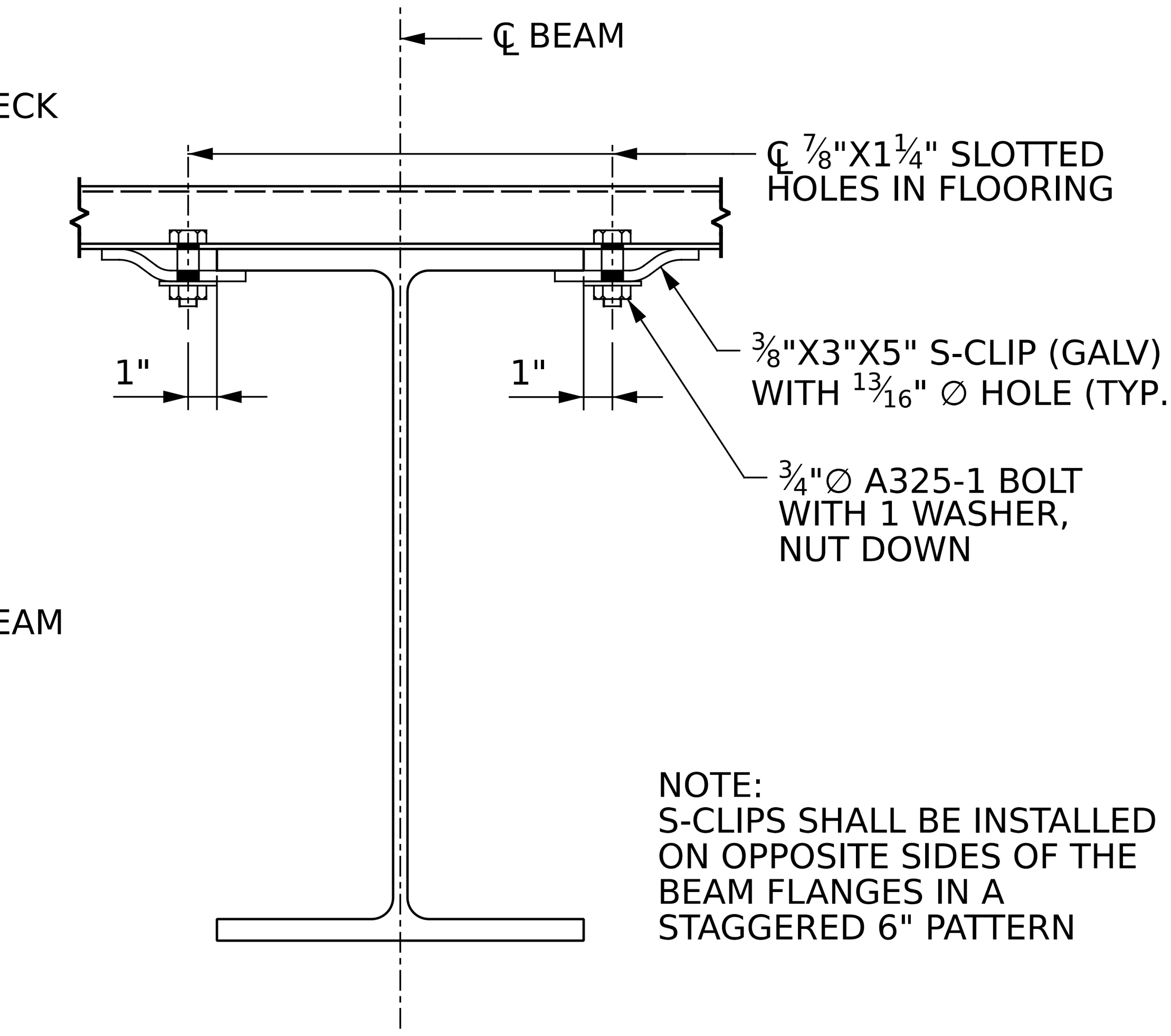
PARTIAL SECTION AT END BENTS
(W16X26 NOT SHOWN FOR CLARITY)

PARTIAL SECTION AT BENT AND INTERMEDIATE DIAPHRAGMS

TYPICAL SECTION

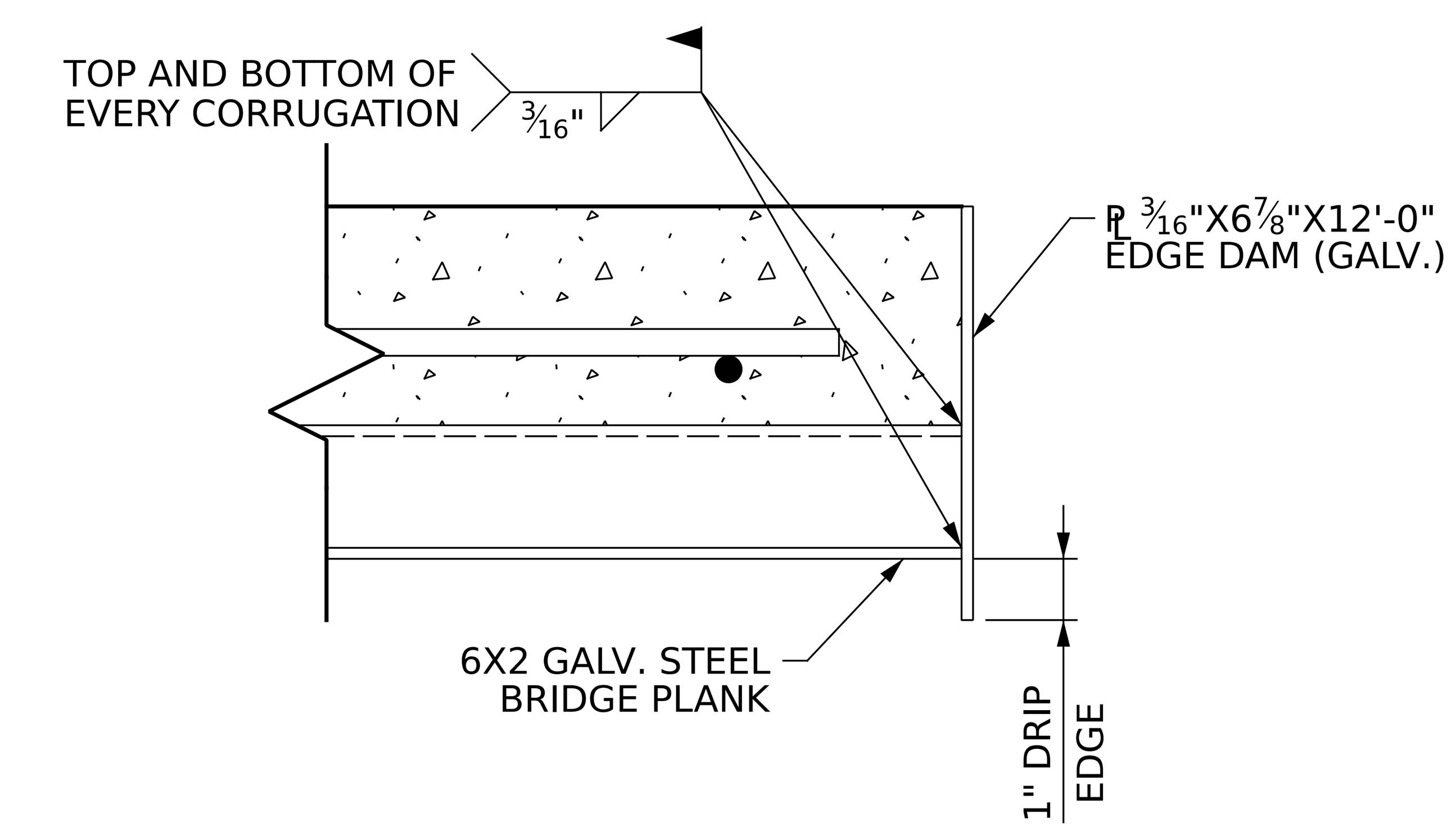


END OF GIRDER DETAIL AT END BENT

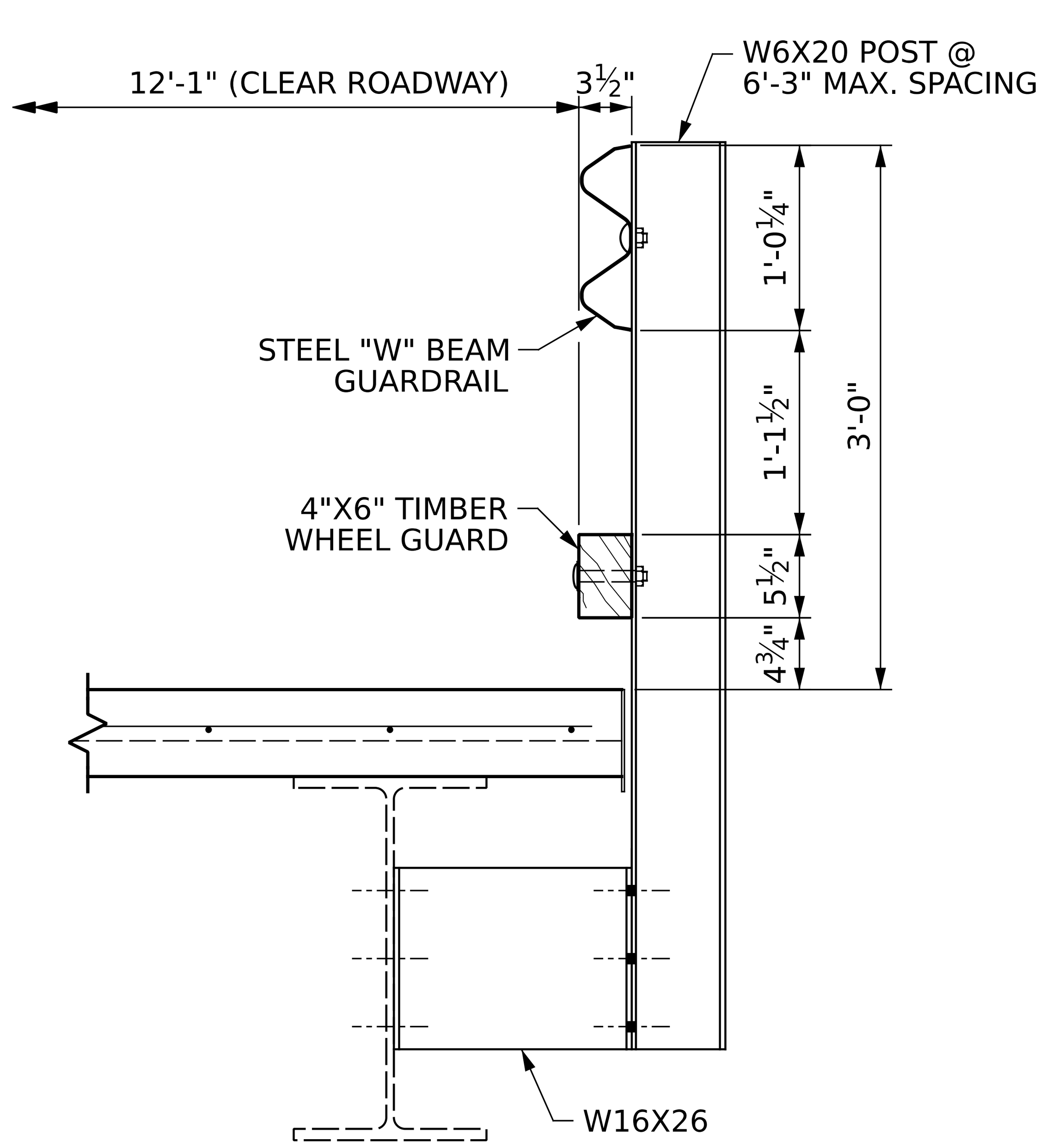


NOTE:
S-CLIPS SHALL BE INSTALLED ON OPPOSITE SIDES OF THE BEAM FLANGES IN A STAGGERED 6" PATTERN

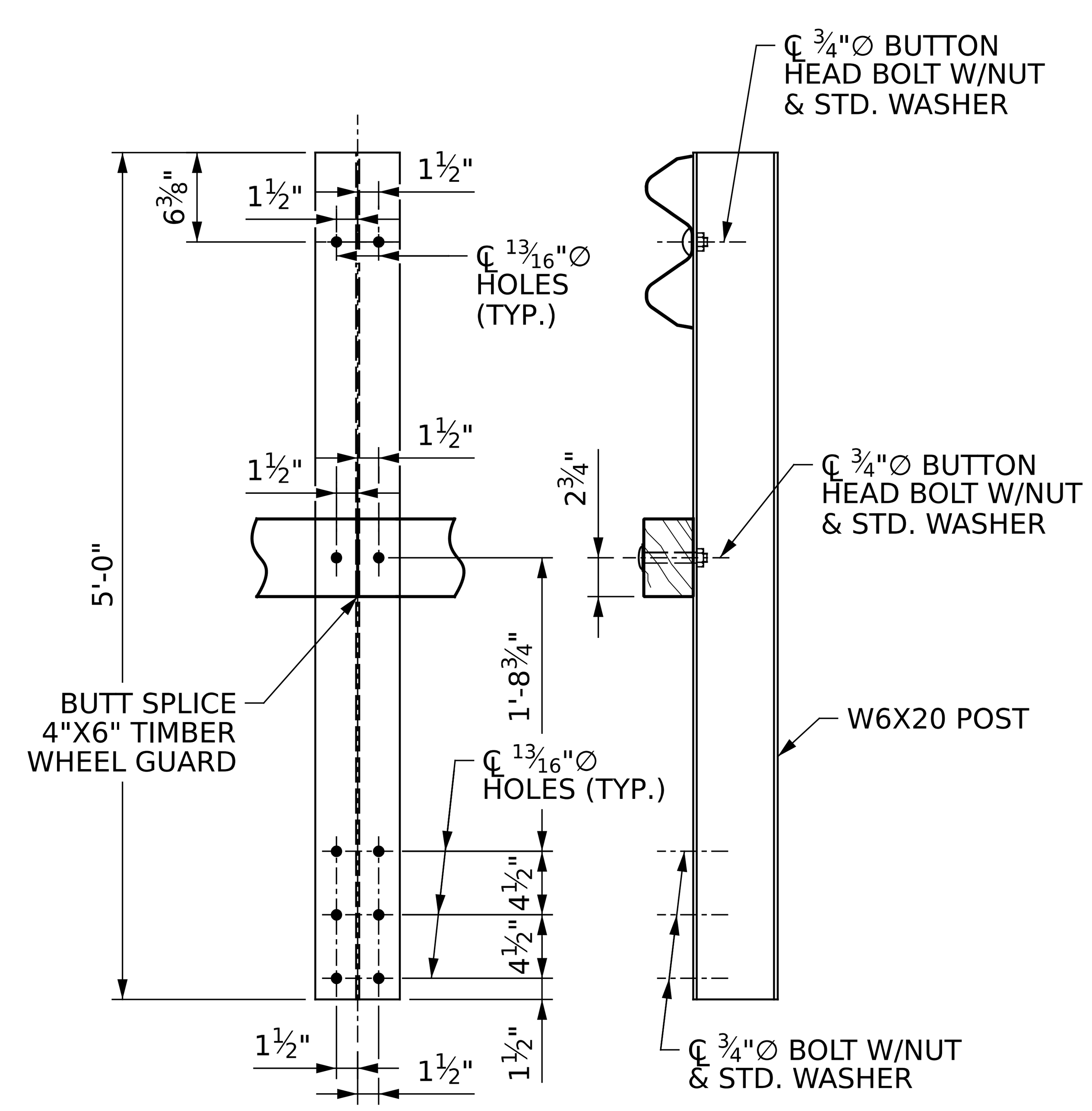
BOLTED ATTACHMENT OF FLOORING



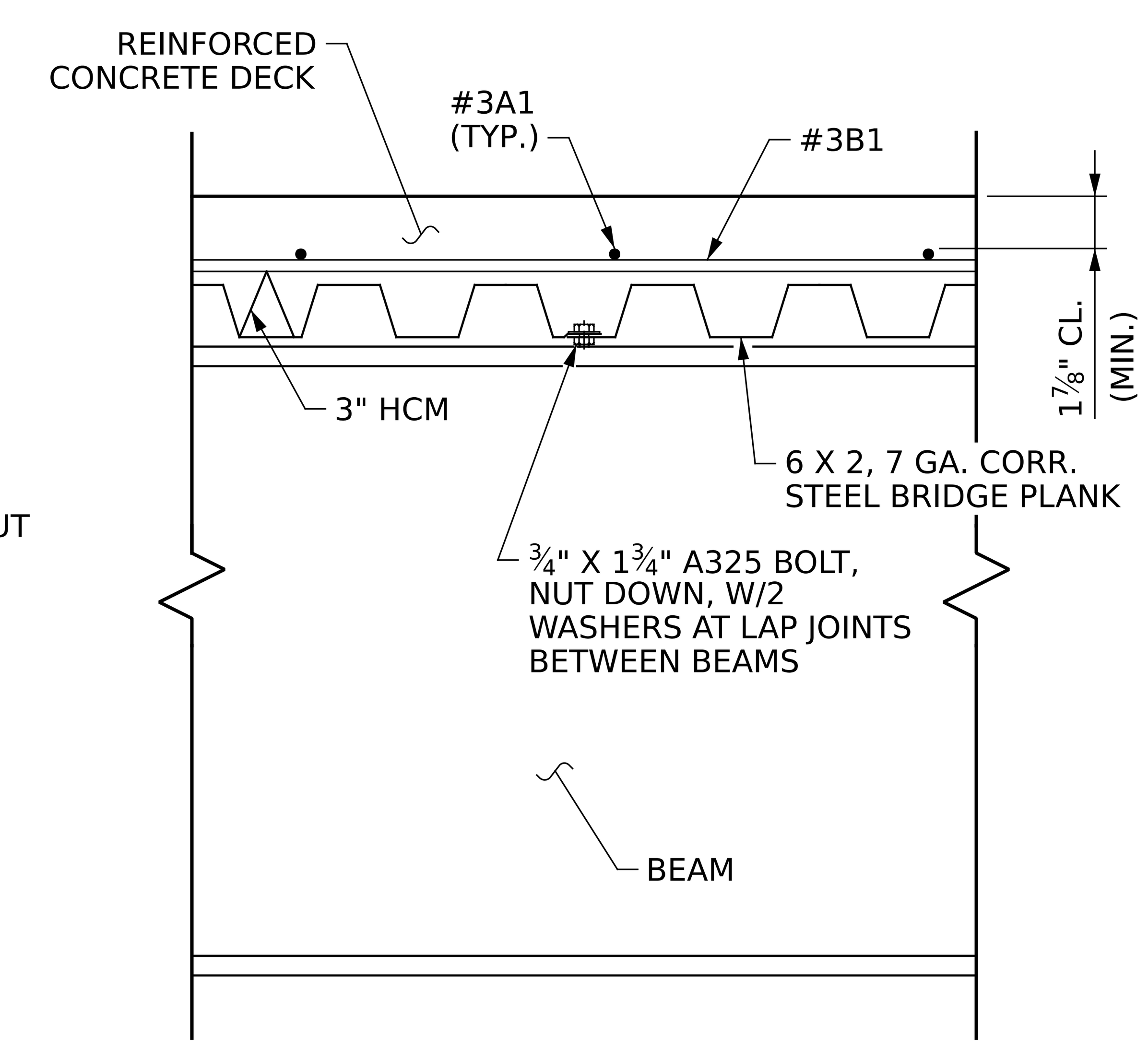
WELDED STEEL PLANK EDGE DAMS



RAIL DETAIL



DETAIL OF RAIL POST



CONCRETE DECK SECTION

PROJECT NO. 100.01.00206
YANCEY COUNTY
STATION: 12+87.00 -L-
SHEET 1 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.
DocuSigned by: [illegible] 11/4/2025
ACB8082119D74CD...

SUPERSTRUCTURE DETAILS

DRAWN BY :	J. PARROTT	DATE :	07/2025
CHECKED BY :	J. YANNACCONE	DATE :	08/2025
DESIGN ENGINEER OF RECORD :	J. YANNACCONE	DATE :	08/2025

GANNETT FLEMING
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

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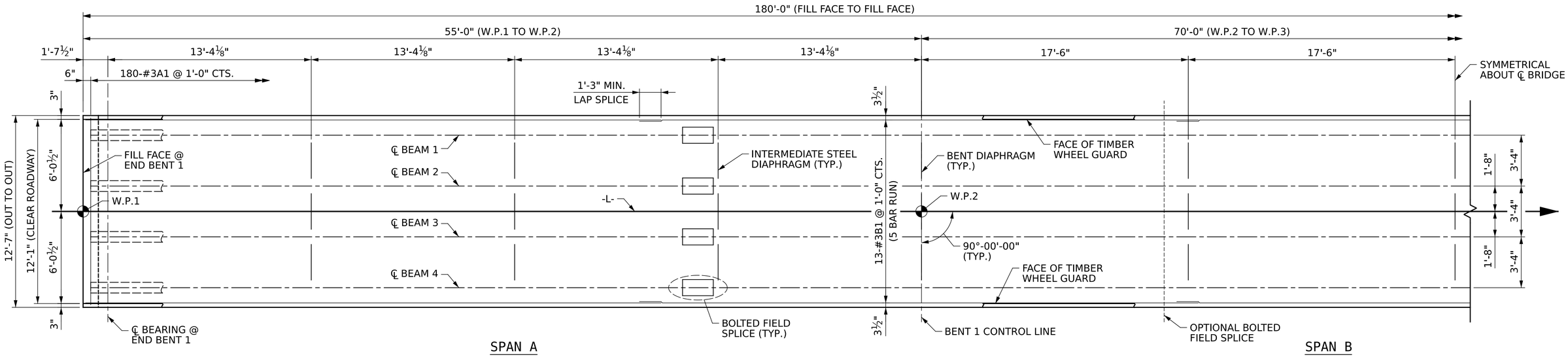
2			4		

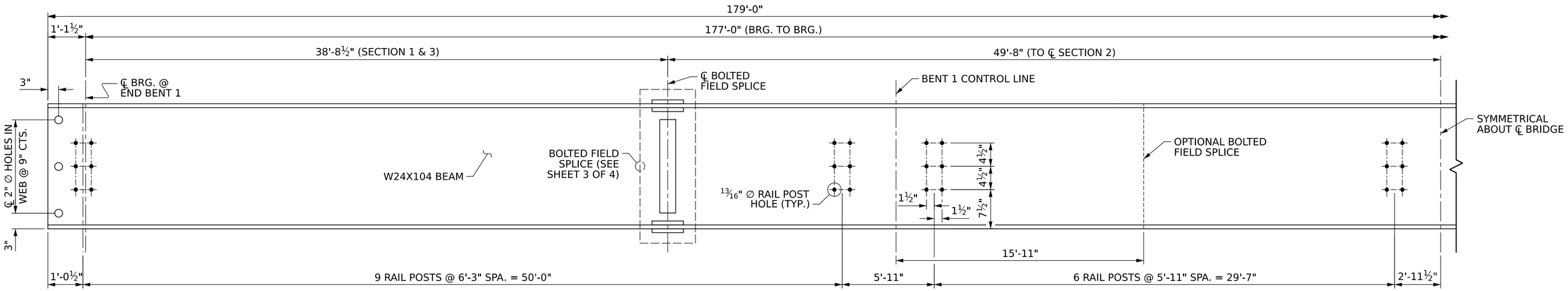
SHEET NO. S-3
TOTAL SHEETS 13

8/26/21



FRAMING PLAN & PLAN OF SPANS

(STEEL PLANK FLOORING NOT SHOWN FOR CLARITY)



BEAM ELEVATION

(SHOWING TYPICAL SPACING AND DIMENSIONS FOR RAIL POST HOLES FOR BEAMS 1 & 4)
(BEAMS 2 & 3 ARE SIMILAR BUT WITHOUT RAIL POST HOLES)

NOTES:

ALL DIMENSIONS ON THIS SHEET ARE HORIZONTAL OR VERTICAL UNLESS OTHER WISE NOTED.

STRUCTURAL STEEL ERECTION IN A CONTINUOUS UNIT SHALL BE COMPLETE BEFORE FALSEWORK OR FORMS ARE PLACED ON THE UNIT.

NO SHOP CAMBER REQUIRED, TURN NATURAL MILL CAMBER UP.

AN OPTIONAL BOLTED FIELD SPLICE IS SHOWN AND MAY BE USED TO FACILITATE BEAM DELIVERY TO THE SITE.

THE CONTRACTOR MAY SPLICE BEAMS ON THE GROUND BEFORE ERECTION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A MEANS TO PREVENT TORSIONAL BUCKLING OR EXCESSIVE DEFLECTION OF THE BEAM WHILE IT IS BEING LIFTED INTO PLACE.

DURING BEAM ERECTION, THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY LATERAL BRACING AND OTHER MEANS OF SUPPORT, AS REQUIRED, TO ENSURE THE STABILITY AND PLUMBNESS OF THE BEAMS IN THE FINAL CONDITION.

FOR STRUCTURAL STEEL NOTES, SEE SHEET 3 OF 4.

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NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.
DocuSigned by: Eric Nelson Jr. 11/4/2025
ACB80821190740D...

PROJECT NO. 100.01.00206
YANCEY COUNTY
STATION: 12+87.00 -L-
SHEET 2 OF 4

SUPERSTRUCTURE DETAILS

REVISIONS					
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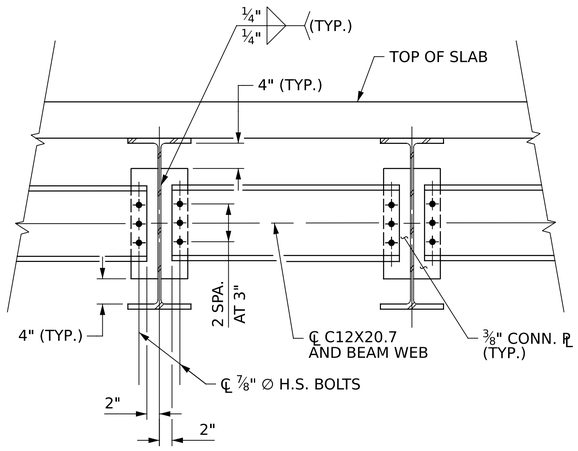
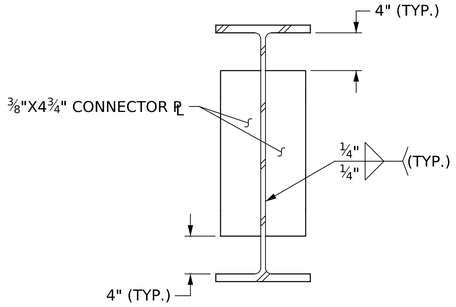
1			3		
2			4		

SHEET NO. S-4
TOTAL SHEETS 13

8/26/21



TYPICAL BENT AND INTERMEDIATE DIAPHRAGM



BENT AND INTERMEDIATE DIAPHRAGM CONNECTOR PLATE DETAIL

NOTES:

STRUCTURAL STEEL FOR ROLLED I-BEAMS, DIAPHRAGMS, SPLICE PLATES AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 AND PAINTED WITH SYSTEM 1 OR GALVANIZED IN ACCORDANCE WITH THE NCDOT STRUCTURAL STEEL SHOP COATINGS PROGRAM AND SECTION 442-8 OF THE NCDOT STANDARD SPECIFICATIONS.

COATING APPLICATION FOR ALL STRUCTURAL STEEL SHALL NOT BE PERFORMED UNTIL ALL SHOP FABRICATION INCLUDING CUTTING, DRILLING AND WELDING HAS BEEN COMPLETED.

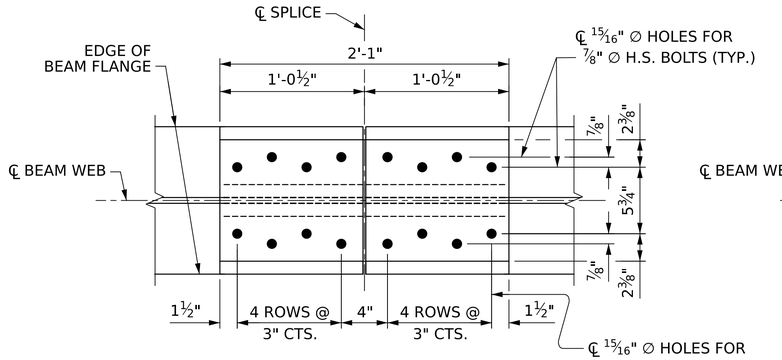
ALL STEEL BRIDGE PLANKS, BOLTS, NUTS, SCREWS AND ASSOCIATED STEEL PARTS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATIONS FOR THERMALLY SPRAYED COATINGS, SECTION 1076.

TREATED TIMBER SHALL BE IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATION, SECTION 1082.

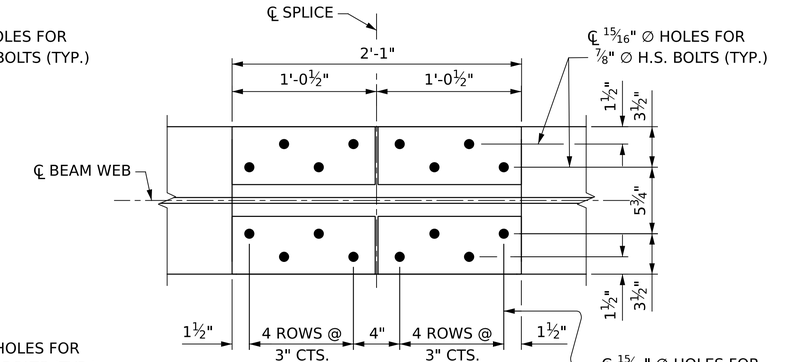
TENSION ON THE ASTM A325 BOLTS THROUGH THE CHANNEL MEMBER ENDS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

THE CONTRACTOR SHALL CUT AN OPENING IN THE STEEL BRIDGE PLANK TO ACCOMMODATE THE OUTER SPLICE PLATE ON THE TOP FLANGE FOR THE BOLTED FIELD SPLICE. APPROPRIATE MEASURES SHALL BE TAKEN TO ENSURE THAT THE OPENING IS SEALED TO PREVENT LEAKAGE DURING THE PLACEMENT OF THE DECK CONCRETE.

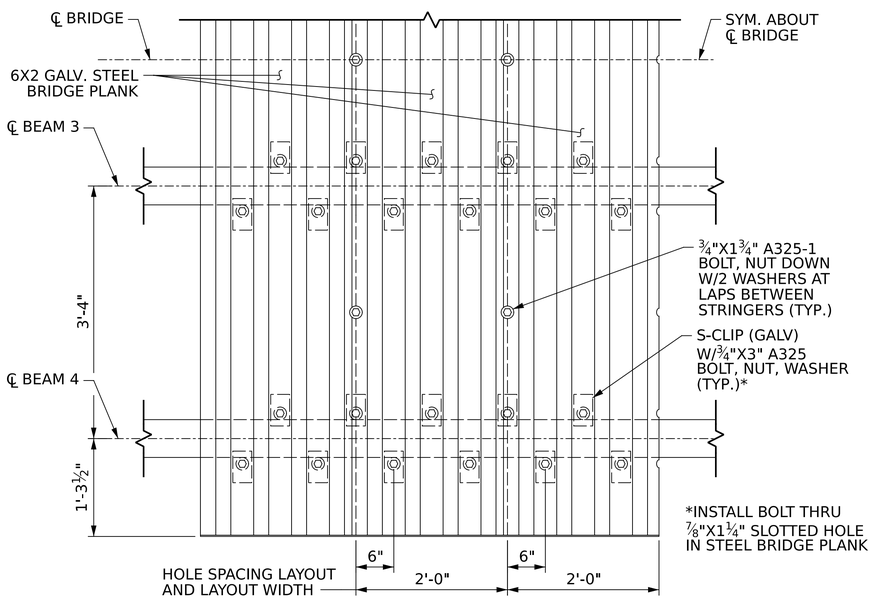
NOTE: IF ADDITIONAL HOLES ARE NEEDED FOR FABRICATION PURPOSES, THE UNUSED HOLES SHALL BE FILLED WITH ¾" BOLTS TO PREVENT CONCRETE LEAKAGE DURING PLACEMENT OF THE DECK.



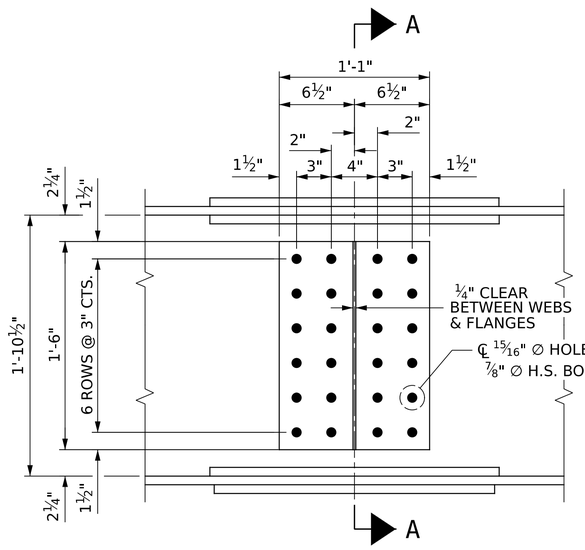
PLAN (TOP OF TOP FLANGE)



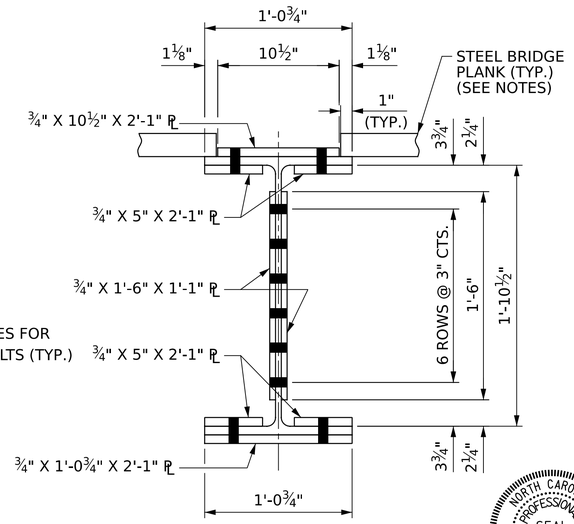
PLAN (TOP OF BOTTOM FLANGE)



TYPICAL BOLTED STEEL FLOORING LAYOUT



ELEVATION



SECTION A-A

BOLTED FIELD SPLICE DETAILS

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 3 OF 4

SUPERSTRUCTURE DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric Nelson Jr. ACB80821190740D... 11/4/2025

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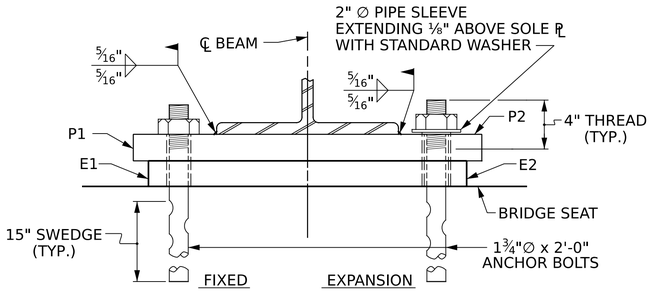
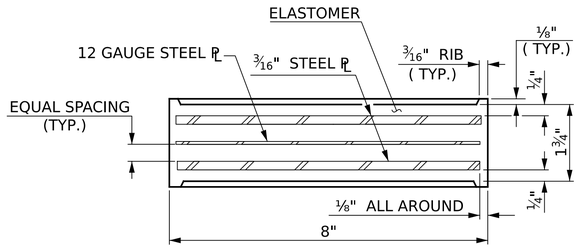
SHEET NO. S-5

TOTAL SHEETS 13

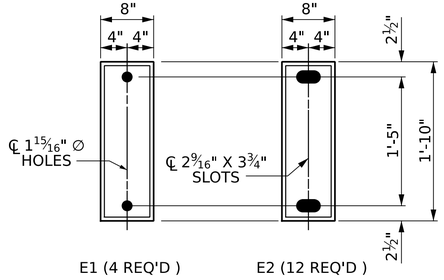
8/26/21



END VIEW

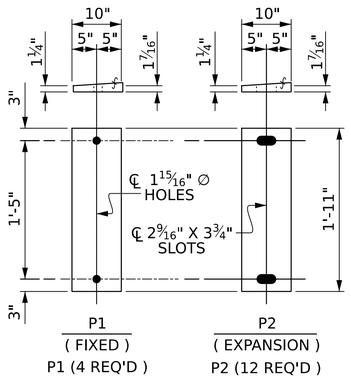


TYPICAL SECTION OF ELASTOMERIC BEARINGS



PLAN VIEW OF ELASTOMERIC BEARING

TYPE I



SOLE PLATE DETAILS ("P")

NOTES

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

THE 2'' ∅ PIPE SLEEVE SHALL BE CUT FROM SCHEDULE 40 PVC PLASTIC PIPE. THE PVC PLASTIC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785.

THE PAYMENT FOR THE PIPE SLEEVES SHALL BE INCLUDED IN THE SEVERAL PAY ITEMS.

FOR PAINTED STRUCTURAL STEEL, SOLE PLATES, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE NCDOT STANDARD SPECIFICATIONS.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

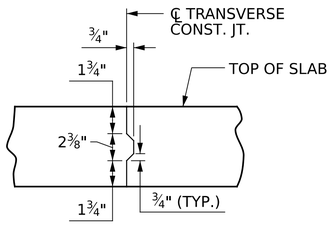
THE ELASTOMER IN THE STEEL REINFORCED BEARINGS SHALL HAVE A SHEAR MODULUS OF 0.160 KSI, IN ACCORDANCE WITH AASHTO M251.

FOR STEEL REINFORCED ELASTOMERIC BEARINGS, SEE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY PROPOSE ALTERNATE METHODS, PROVIDED DETAILS ARE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL.

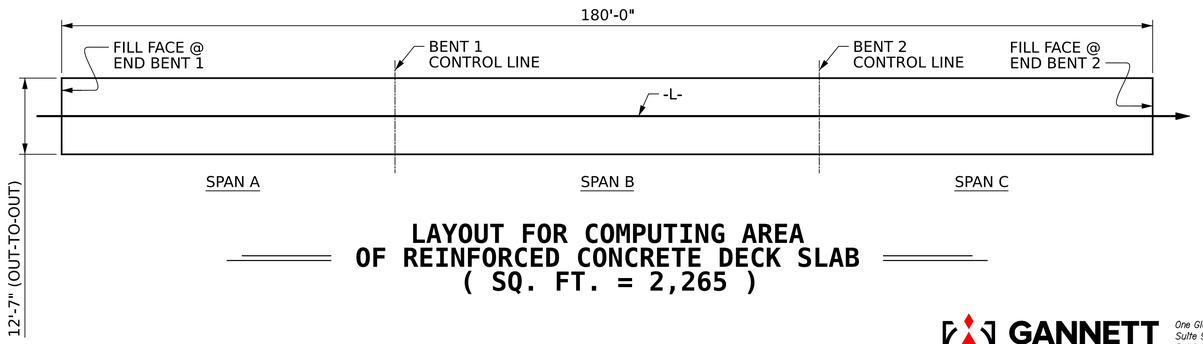
← (#) = INDICATES POUR NUMBER AND DIRECTION OF POUR

MAXIMUM ALLOWABLE SERVICE LOADS	
D.L.+L.L. (NO IMPACT)	
TYPE I	140 k

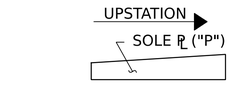


TRANSVERSE CONSTRUCTION JOINT DETAIL

NOTE: REINFORCING STEEL IN SLAB NOT SHOWN. LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU JOINT



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (SQ. FT. = 2,265)

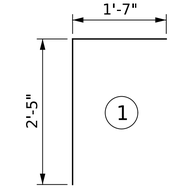


SOLE PL PLACEMENT DETAIL

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
A1	180	#3	STR.	12'-3"	829
B1	65	#3	STR.	37'-0"	904
K1	16	#5	STR.	12'-3"	204
L1	26	#4	1	4'-0"	70
REINFORCING STEEL				LBS.	2007

BAR TYPES

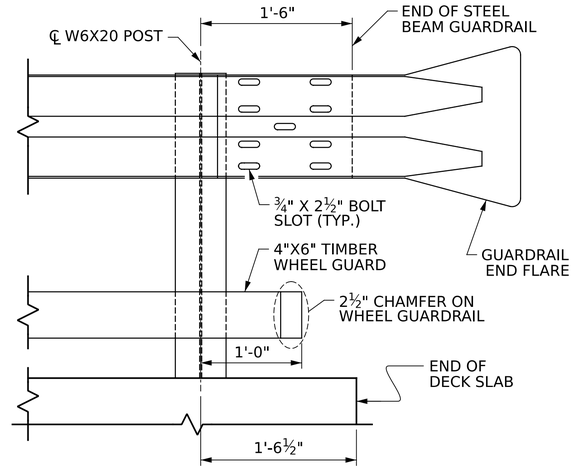


ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL

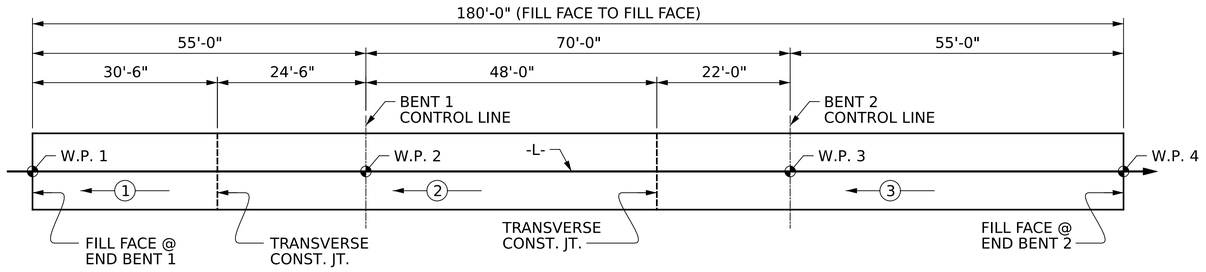
	CLASS AA CONCRETE*
	(CU.YDS.)
POUR 1	8.0
POUR 2	16.6
POUR 3	18.6
TOTAL	43.2

* USE NO. 78M STONE FOR CLASS AA CONCRETE.



GUARDRAIL END TREATMENT

INSTALL GUARDRAIL END FLARES AT ALL FOUR CORNERS OF THE BRIDGE. NO SEPARATE PAYMENT WILL BE MADE FOR THE GUARDRAIL END FLARES AS THE COST OF SUCH SHALL BE INCLUDED IN THE PRICE PER LINEAR FOOT FOR "BRIDGE RAIL SYSTEM".



POURING SEQUENCE

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 4 OF 4

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric B. Nelson Jr. ACB8082110D74CD... 11/4/2025

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1			3			TOTAL SHEETS
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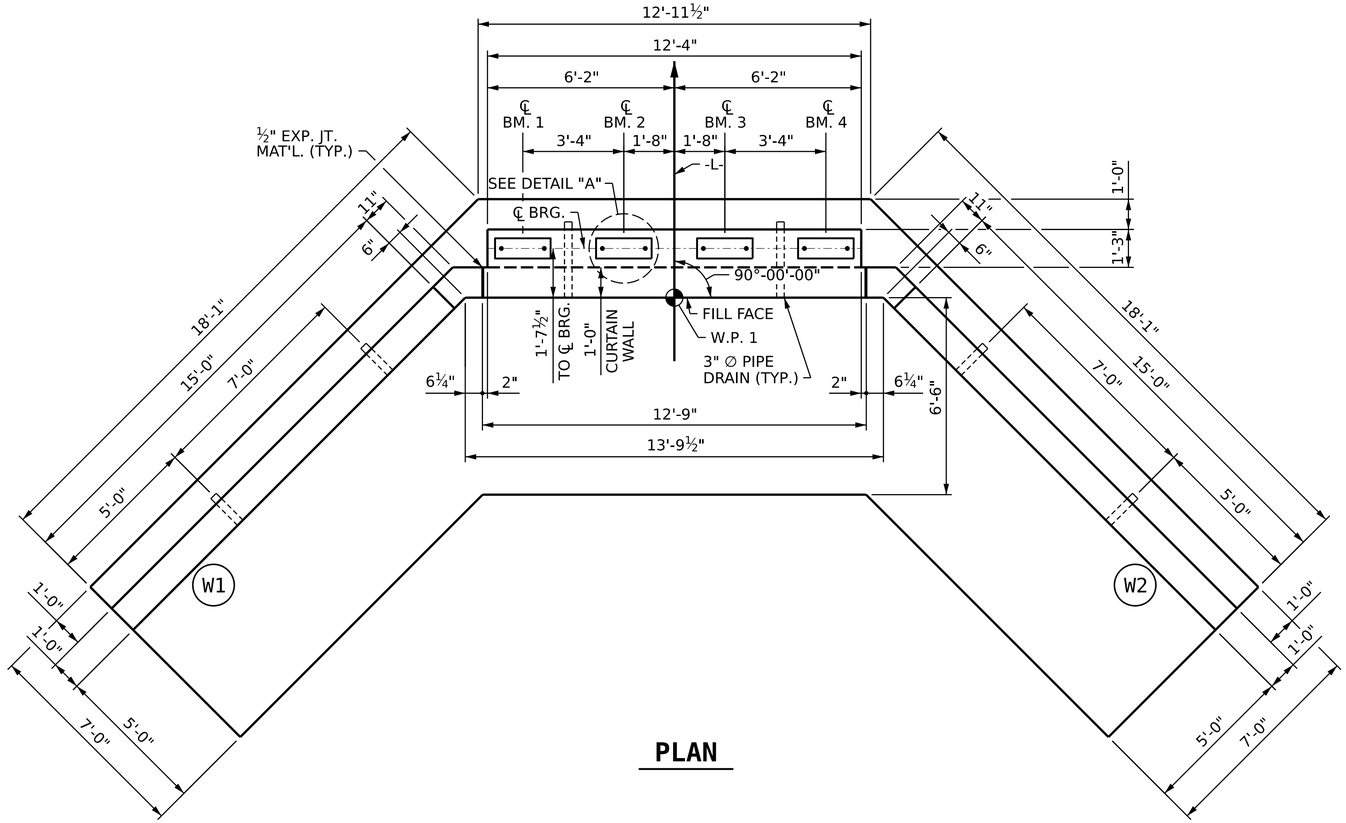
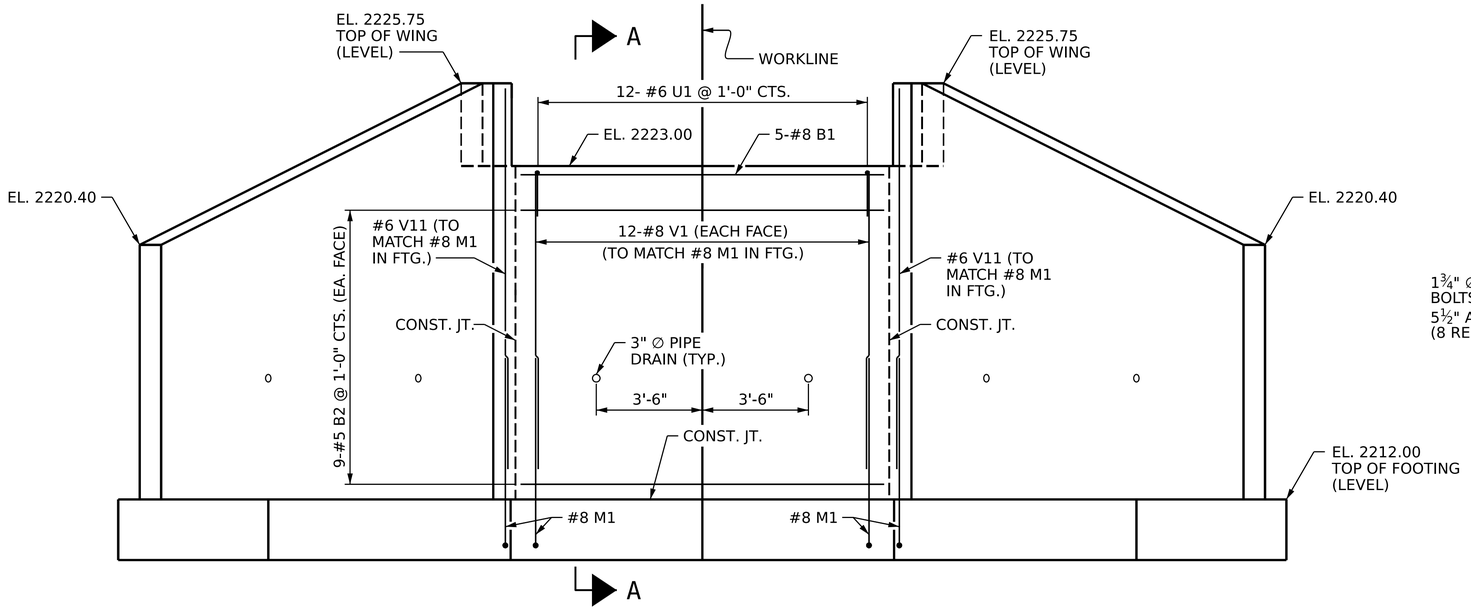
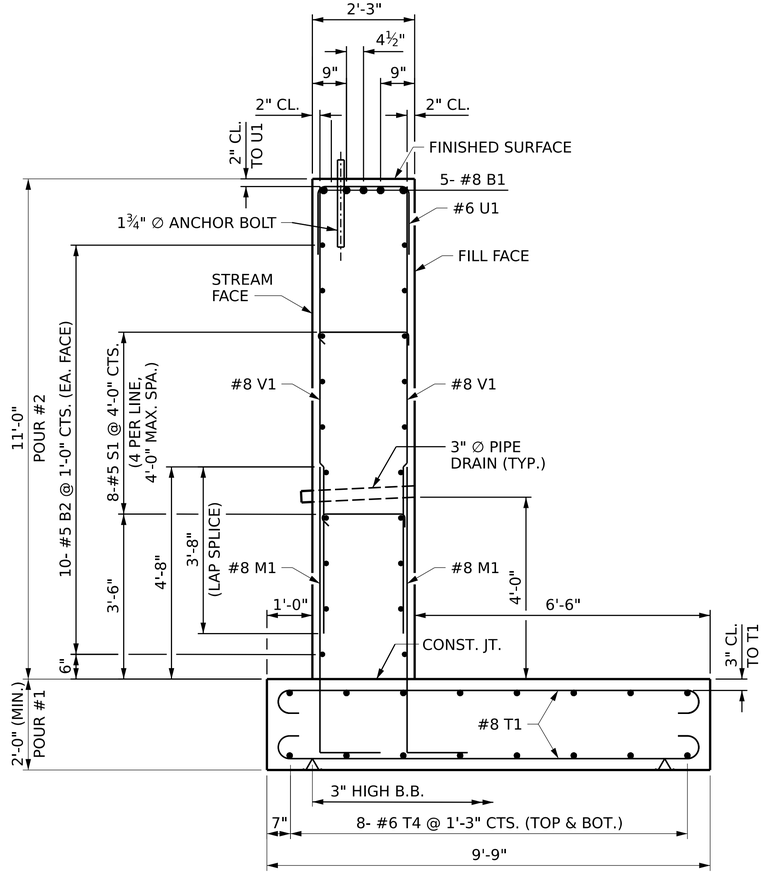


PLAN

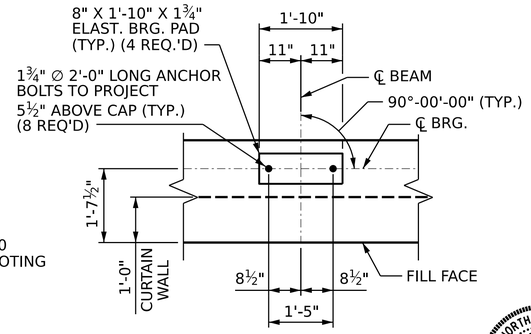


ELEVATION

(FOR FOOTING REINFORCING, SEE SHEET 3 OF 3)
(FOR WING REINFORCING, SEE SHEET 2 OF 3)



SECTION A-A



DETAIL "A"

PROJECT NO. 100.01.00206
YANCEY COUNTY
STATION: 12+87.00 -L-
SHEET 1 OF 3

SUBSTRUCTURE
END BENT 1

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.
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ACB8082119D74CD...

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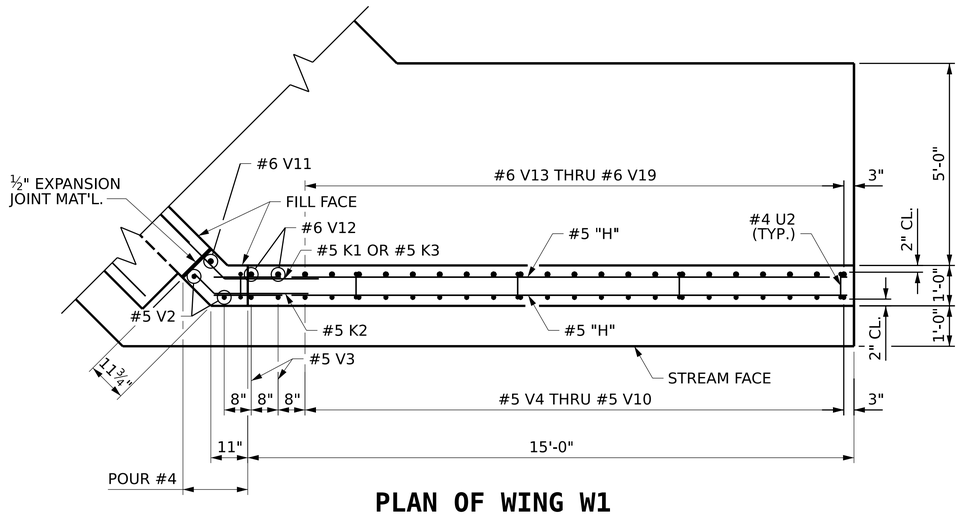
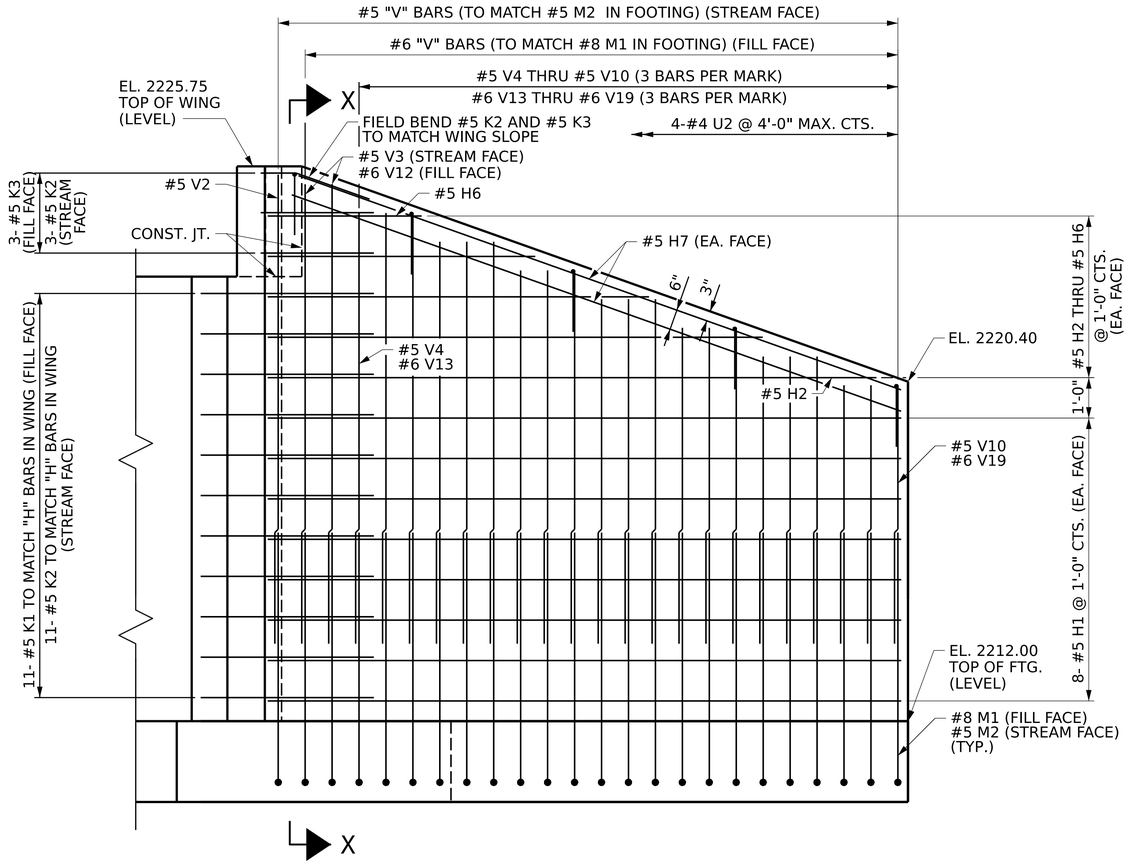
8/26/21



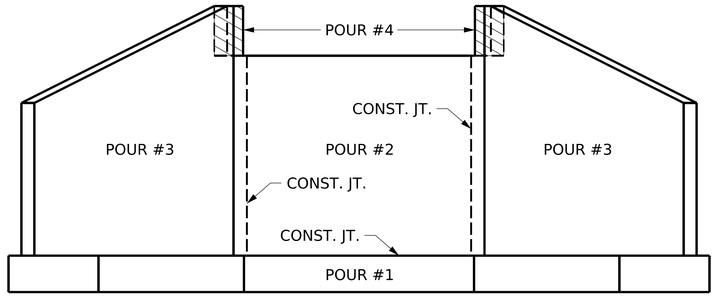
PLAN OF WING W1

(WING W1 SHOWN, WING W2 SIMILAR)



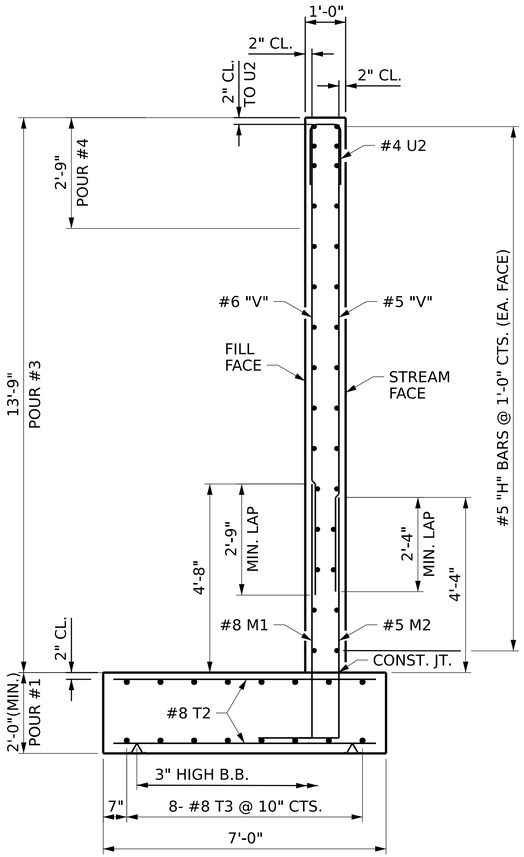
ELEVATION OF WING W1

(WING W1 SHOWN. WING W2 SIMILAR.
FOR REINFORCING STEEL IN FOOTING,
SEE "FOOTING PLAN" SHEET 3 OF 3.)



POUR SEQUENCE

(LOOKING UPSTATION)



SECTION X-X

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 2 OF 3

SUBSTRUCTURE

END BENT 1

WING DETAILS

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

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NOTES:

#4 U1 STIRRUPS IN THE END BENT WALL MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

FOOTINGS:

EXCAVATE TO SOUND CRYSTALLINE ROCK THROUGHLY CLEAN THE SURFACE OF ANY LOOSE OR UNSOUND MATERIALS.

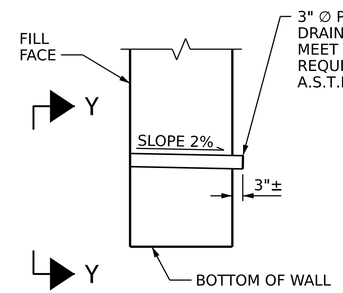
REMOVE STANDING WATER AND ENSURE A SATURATED CONDITION FOR THE ROCK SURFACE PRIOR TO PLACEMENT OF FOOTING CONCRETE.

PROVIDE VARIABLE HEIGHT REBAR SUPPORTS AS REQUIRED TO MAINTAIN THE LOCATION OF THE REINFORCEMENT AS SHOWN ON THE PLANS.

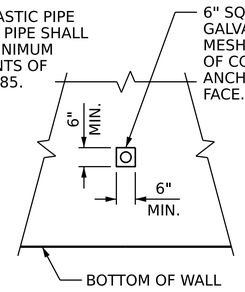
PROVIDE THE MINIMUM FOOTING THICKNESS AS SHOWN ON THE PLANS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE VERTICAL LEG OF THE M1 AND M2 BARS IN THE FOOTING ARE DETAILED WITH 1 FOOT EXTRA LENGTH.

THE SPREAD FOOTING AT END BENT 1 IS DESIGNED FOR A FACTORED RESISTANCE OF 8.7 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 8 TSF IMMEDIATELY PRIOR TO PLACING CONCRETE.



SECTION THRU END BENT WALL

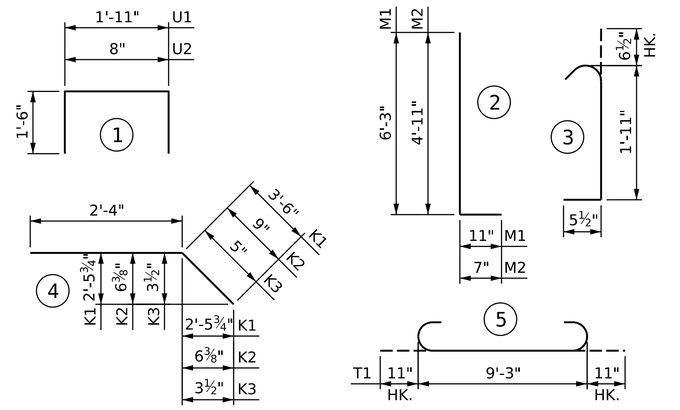


VIEW Y-Y

NOTE:
NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

PIPE DRAIN DETAILS

BAR TYPES



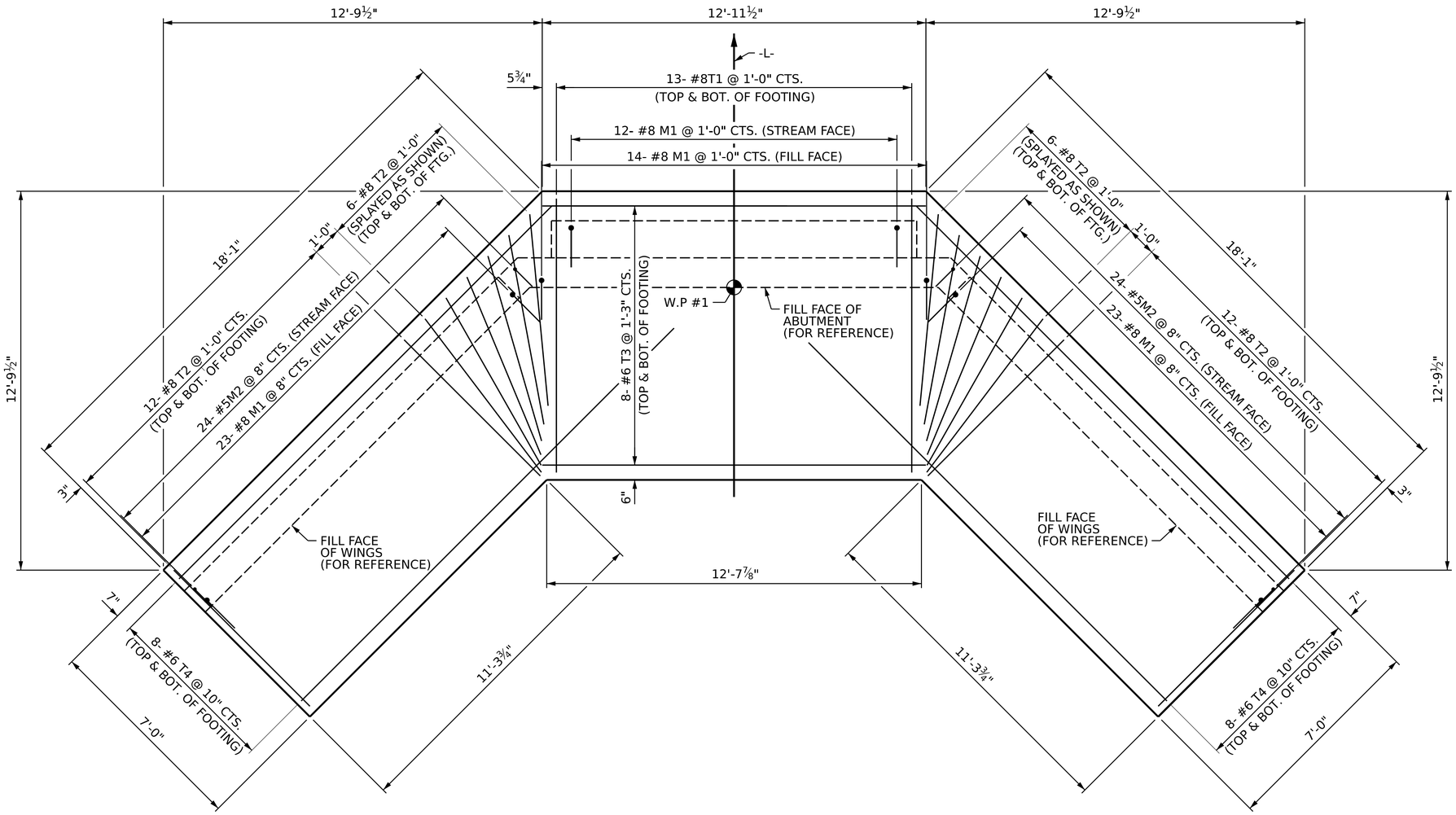
ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	5	#8	STR.	12'-0"	160
B2	20	#5	STR.	12'-0"	250
H1	32	#5	STR.	15'-8"	523
H2	4	#5	STR.	15'-1"	63
H3	4	#5	STR.	12'-3"	51
H4	4	#5	STR.	9'-5"	39
H5	4	#5	STR.	6'-8"	28
H6	4	#5	STR.	3'-10"	16
H7	8	#5	STR.	15'-8"	131
K1	22	#5	4	5'-10"	134
K2	26	#5	4	3'-1"	84
K3	4	#5	4	2'-9"	11
M1	72	#8	2	7'-2"	1378
M2	48	#5	2	5'-6"	275
S1	8	#5	3	2'-11"	24
T1	26	#8	5	11'-1"	769
T2	72	#8	STR.	6'-8"	1282
T3	16	#6	STR.	13'-0"	312
T4	32	#6	STR.	17'-10"	857
U1	12	#6	1	4'-11"	89
U2	10	#4	1	3'-8"	24
V1	26	#8	STR.	9'-10"	683
V2	2	#5	STR.	12'-8"	26
V3	4	#5	STR.	12'-5"	52
V4	6	#5	STR.	11'-9"	74
V5	6	#5	STR.	11'-0"	69
V6	6	#5	STR.	10'-3"	64
V7	6	#5	STR.	9'-7"	60
V8	6	#5	STR.	8'-10"	55
V9	6	#5	STR.	8'-2"	51
V10	6	#5	STR.	7'-5"	46
V11	2	#6	STR.	12'-8"	38
V12	4	#6	STR.	12'-5"	75
V13	6	#6	STR.	11'-9"	106
V14	6	#6	STR.	11'-0"	99
V15	6	#6	STR.	10'-3"	92
V16	6	#6	STR.	9'-7"	86
V17	6	#6	STR.	8'-10"	80
V18	6	#6	STR.	8'-2"	74
V19	6	#6	STR.	7'-5"	67

REINFORCING STEEL	LBS.	8397
CLASS A CONCRETE BREAKDOWN ✳		
POUR 1	C.Y.	24.5
POUR 2	C.Y.	11.3
POUR 3	C.Y.	13.8
POUR 4	C.Y.	0.30
TOTAL	C.Y.	49.9

✳ FOR POUR SEQUENCE, SEE SHEET 2 OF 3.



FOOTING PLAN

PROJECT NO. 100.01.00206
YANCEY COUNTY
STATION: 12+87.00 -L-
SHEET 3 OF 3

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.
DocuSigned by: Eric Nelson Jr. 11/4/2025 ACB80821190744CD...

SUBSTRUCTURE
END BENT 1
FOOTING DETAILS

DRAWN BY : J. HARRIS DATE : 08/2025
CHECKED BY : R. NELSON DATE : 08/2025
DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

GANNETT FLEMING
One Glenwood Avenue
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Raleigh, NC 27603
919-420-7660
NC Lic.No. F-0270

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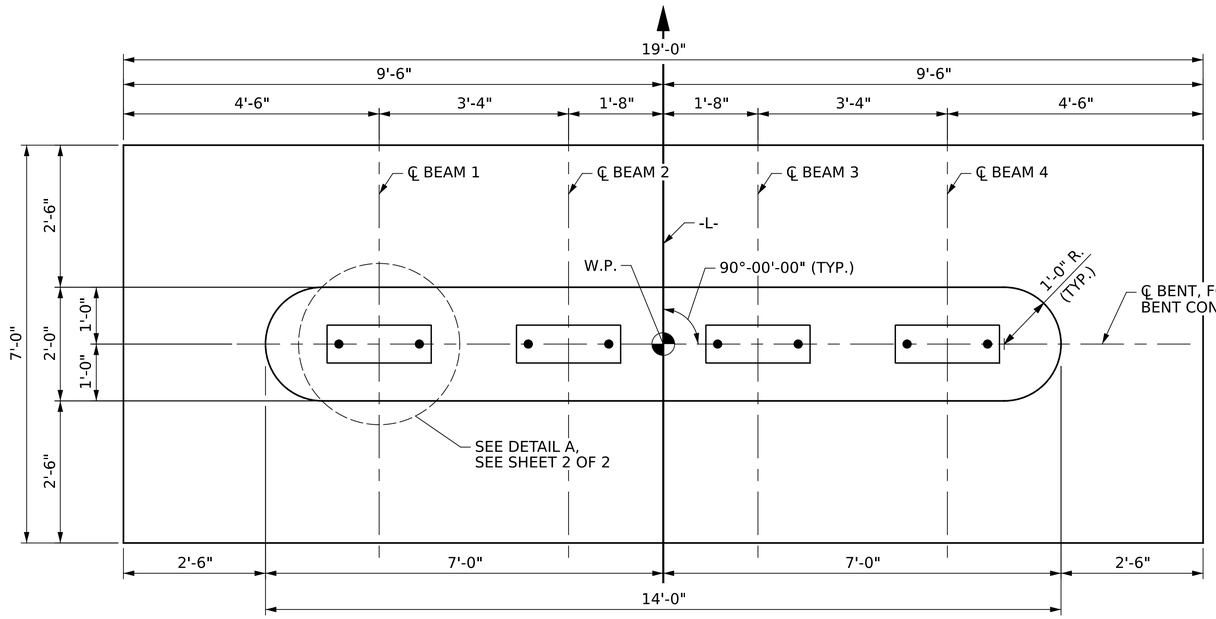
2			4		

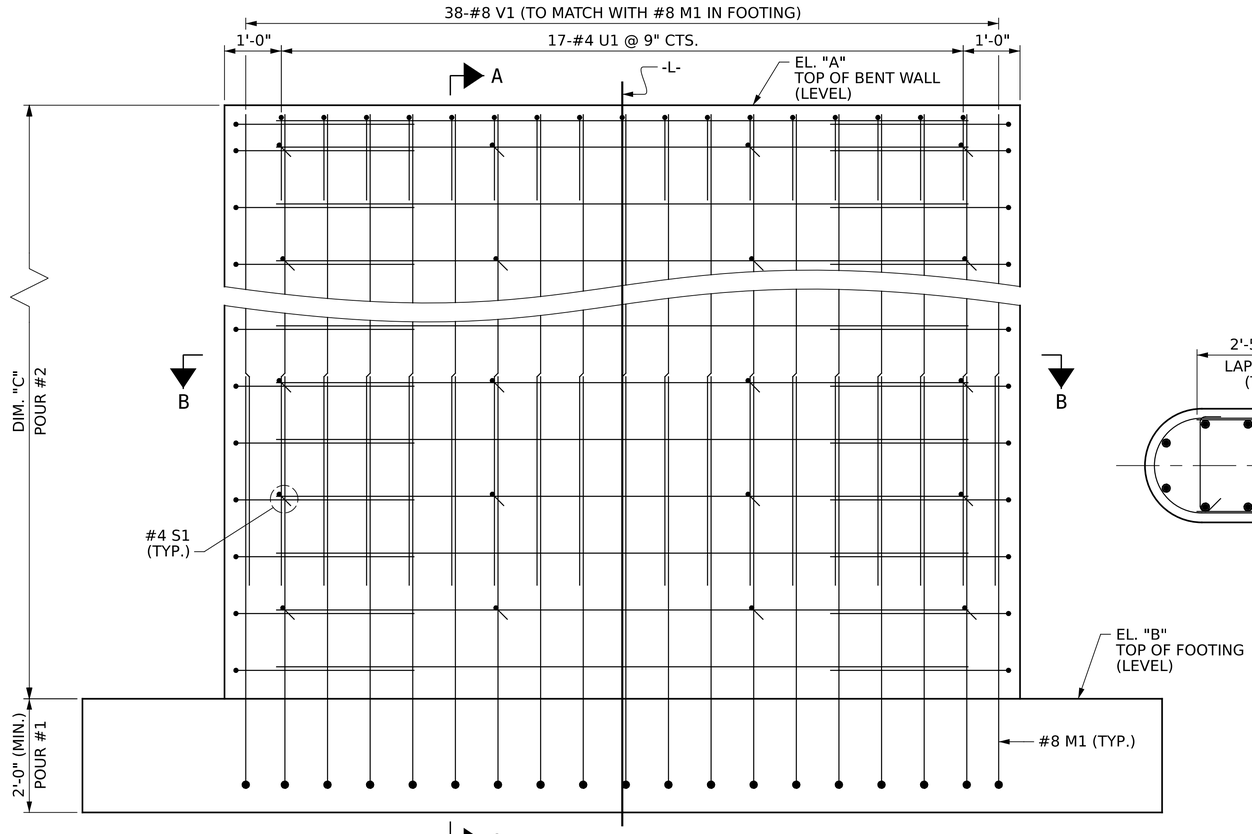
SHEET NO. S-9
TOTAL SHEETS 13

8/26/21



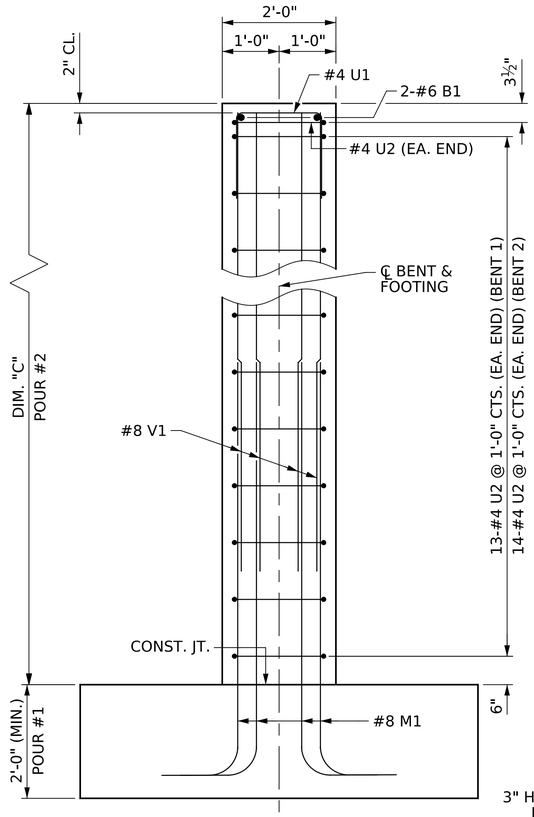
PLAN

(SEE BENT INFORMATION TABLE FOR W.P.)



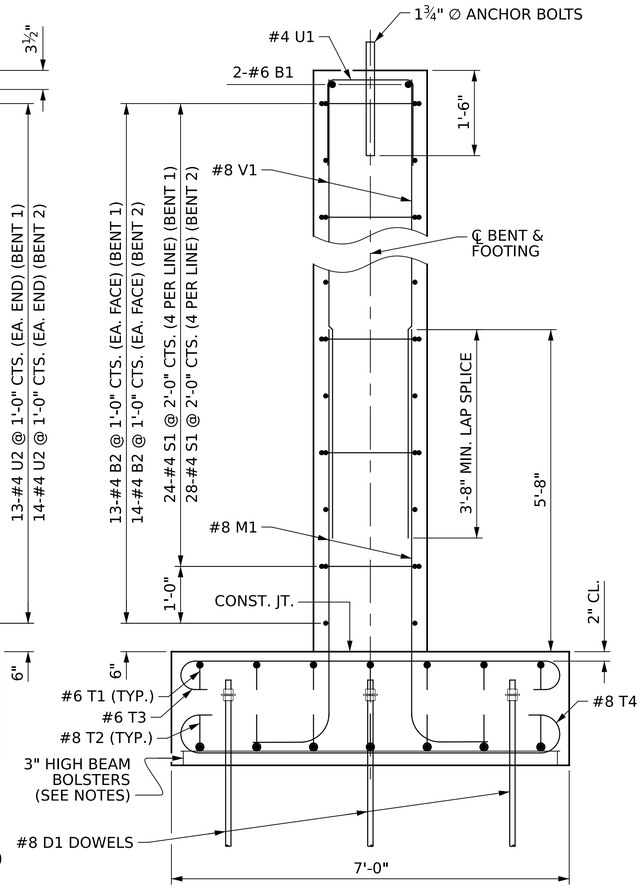
ELEVATION

(FOR FOOTING REINFORCEMENT, SEE SHEET 2 OF 2)
(SEE BENT INFORMATION TABLE FOR "A", "B" & "C")

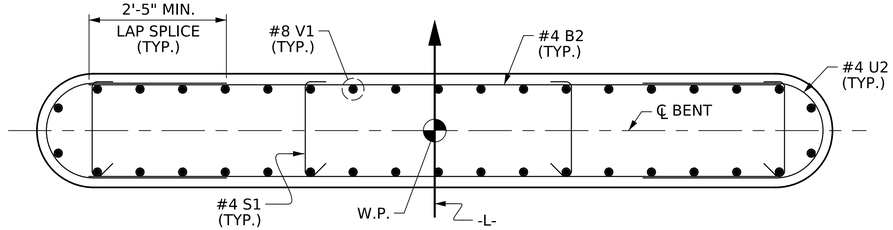


END ELEVATION

(FOR FOOTING REINFORCEMENT, SEE FOOTING PLAN)
(S1 BARS NOT SHOWN FOR CLARITY)



SECTION A-A



SECTION B-B

BENT INFORMATION TABLE

BENT	W.P.	"A"	"B"	"C"
1	2	2223.92	2210.00	13'-11"
2	3	2225.08	2210.00	15'-1"

PROJECT NO. 100.01.00206
YANCEY COUNTY
STATION: 12+87.00 -L-
SHEET 1 OF 2

SUBSTRUCTURE

BENTS 1 & 2 PLAN & ELEVATION

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.
DocuSigned by: Eric B Nelson Jr. ACB8082119D74CD... 11/4/2025

DRAWN BY : J. PARROTT DATE : 08/2025
CHECKED BY : J. YANNACCONE DATE : 08/2025
DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

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1			3			TOTAL SHEETS
2			4			13

8/26/21

NOTES:

#4 U1 STIRRUPS IN THE BENT WALL MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

ROCK ANCHORS:

PROVIDE DOWELS WITH A MINIMUM YIELD STRENGTH OF 60 KSI. FOR #8 REBAR DOWELS, THE TOP 6" SHALL BE THREADED FOR THE ATTACHMENT OF NUTS AND PLATE WASHERS. THE MINIMUM PLATE WASHER SIZE IS 6" X 6" X ½".

ALL ELEVATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR'S ATTENTION IS CALLED TO THE POTENTIAL FOR SLOPING ROCK CONDITIONS. PROVIDE DOWELS OF SUFFICIENT LENGTH TO ACHIEVE A 6' MINIMUM EMBEDMENT DEPTH BELOW THE EXISTING ROCK SURFACE AND THE PROJECTION INTO THE FOOTING AS SHOWN ON THE PLANS.

PRIOR TO DOWEL GROUTING, PROVIDE MEASURES TO RESTRICT SURFACE WATER FROM ENTERING THE DOWEL HOLE. CHECK THE DOWEL HOLE FOR SUBTERRANEAN INFLOWS OF WATER. IF PRESENT, MEASURE THE CHANGE IN WATER ELEVATION. IF THE WATER ELEVATION INCREASES BY MORE THAN 2" IN 15 MINUTES PROVIDE A TEMPORARY SLEEVE INSIDE THE HOLE PRIOR TO PLACEMENT OF GROUT. PROVIDE A MINIMUM OF 2' OF GROUT HEAD ABOVE THE SLEEVE BOTTOM DURING REMOVAL OF THE TEMPORARY SLEEVE.

IF NO SUBTERRANEAN INFLOWS OF WATER ARE PRESENT, REMOVE ANY DELETERIOUS MATERIAL AND STANDING WATER FROM DOWEL HOLES PRIOR TO PLACEMENT OF DOWEL AND GROUT MATERIAL.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOOTINGS:

EXCAVATE TO SOUND CRYSTALLINE ROCK AND THOROUGHLY CLEAN THE SURFACE OF ANY LOOSE OR UNSOUND MATERIALS.

REMOVE STANDING WATER AND ENSURE A SATURATED CONDITION FOR THE ROCK SURFACE PRIOR TO PLACEMENT OF FOOTING CONCRETE.

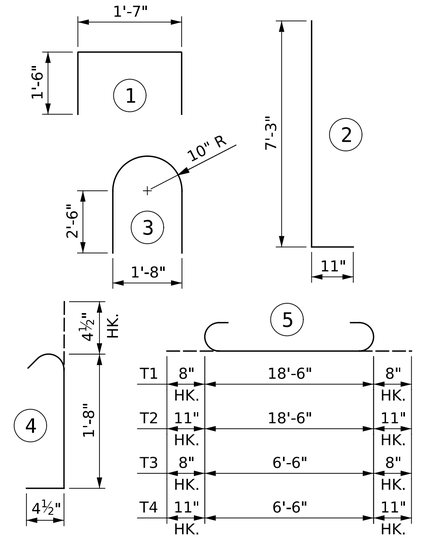
PROVIDE VARIABLE HEIGHT REBAR SUPPORTS AS REQUIRED TO MAINTAIN THE LOCATION OF THE REINFORCEMENT AS SHOWN ON THE PLANS.

PROVIDE THE MINIMUM FOOTING THICKNESS AS SHOWN ON THE PLANS.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE VERTICAL LEG OF THE #8 M1 BARS AND THE #8 D1 DOWEL BARS IN THE FOOTING ARE DETAILED WITH 2 FEET OF EXTRA LENGTH.

THE SPREAD FOOTINGS AT BENT 1 AND BENT 2 ARE DESIGNED FOR A FACTORED RESISTANCE OF 3 TSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 8 TSF IMMEDIATELY PRIOR TO PLACING CONCRETE.

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BENT 1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#6	STR.	12'-0"	36
B2	26	#4	STR.	12'-0"	208
D1	10	#8	STR.	9'-0"	240
M1	38	#8	2	8'-2"	829
S1	24	#4	4	2'-5"	39
T1	7	#6	5	19'-10"	208
T2	7	#8	5	20'-4"	380
T3	19	#6	5	7'-10"	224
T4	19	#8	5	8'-4"	423
U1	17	#4	1	4'-7"	54
U2	28	#4	3	7'-1"	143
V1	38	#8	STR.	13'-8"	1387

REINFORCING STEEL LBS. 4171

CLASS A CONCRETE BREAKDOWN

POUR 1 (BENT FOOTING)	C.Y.	9.9
POUR 2 (BENT WALL)	C.Y.	18.8
TOTAL	C.Y.	28.7

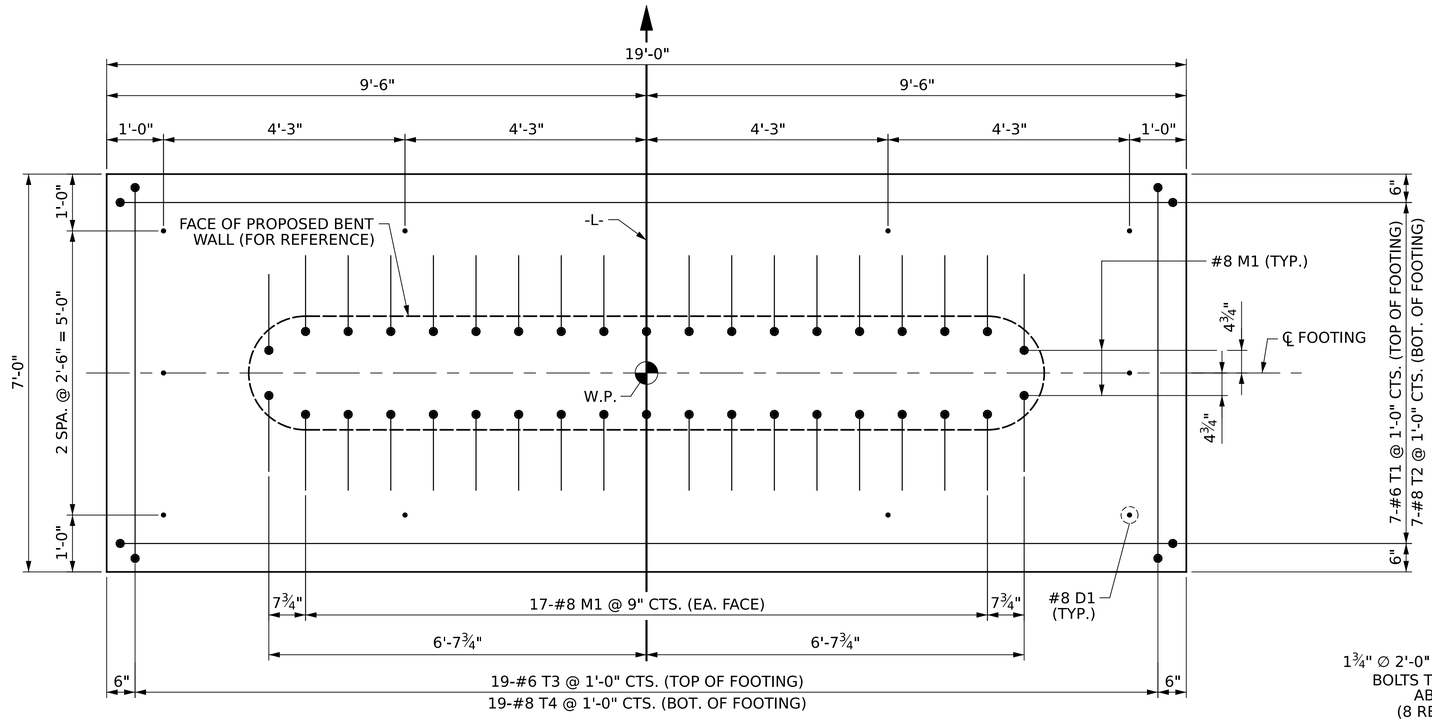
BENT 2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	2	#6	STR.	12'-0"	36
B2	28	#4	STR.	12'-0"	224
D1	10	#8	STR.	9'-0"	240
M1	38	#8	2	8'-2"	829
S1	28	#4	4	2'-5"	45
T1	7	#6	5	19'-10"	208
T2	7	#8	5	20'-4"	380
T3	19	#6	5	7'-10"	224
T4	19	#8	5	8'-4"	423
U1	17	#4	1	4'-7"	54
U2	30	#4	3	7'-1"	154
V1	38	#8	STR.	14'-10"	1505

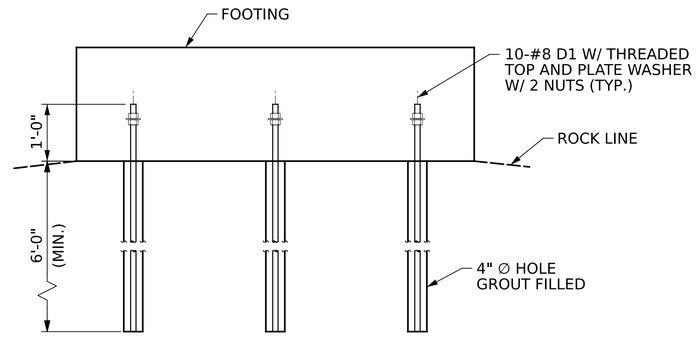
REINFORCING STEEL LBS. 4322

CLASS A CONCRETE BREAKDOWN

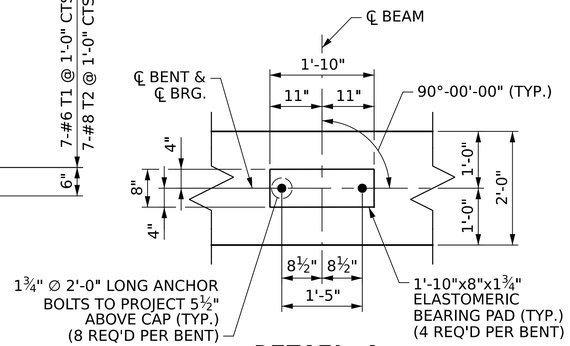
POUR 1 (BENT FOOTING)	C.Y.	9.9
POUR 2 (BENT WALL)	C.Y.	20.4
TOTAL	C.Y.	30.3



FOOTING PLAN



DOWEL GROUTING DETAIL



DETAIL A

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 2 OF 2

SUBSTRUCTURE

BENTS 1 & 2 DETAILS & BILL OF MATERIAL

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric Nelson 11/4/2025

DRAWN BY : J. PARROTT DATE : 08/2025
CHECKED BY : J. YANNACCONE DATE : 08/2025
DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

GANNETT FLEMING

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Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

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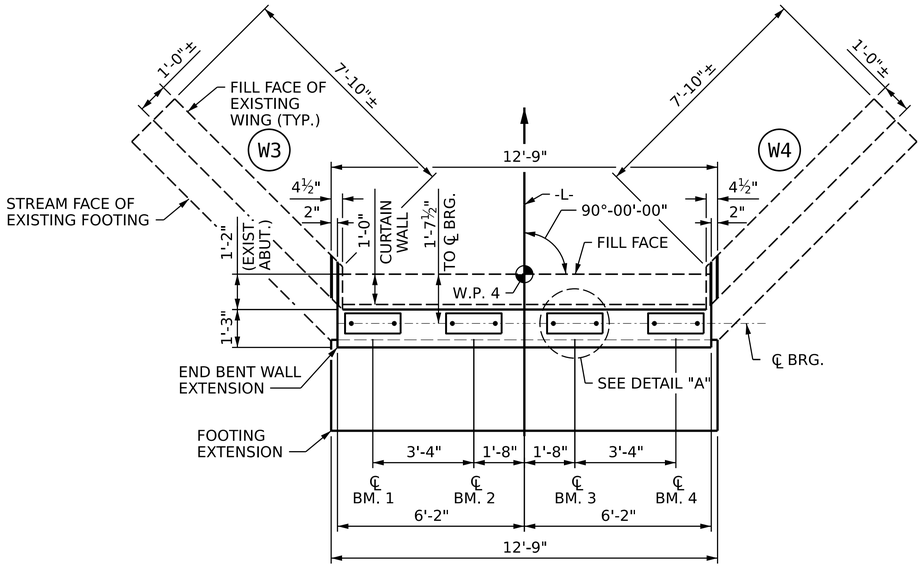
2			4		

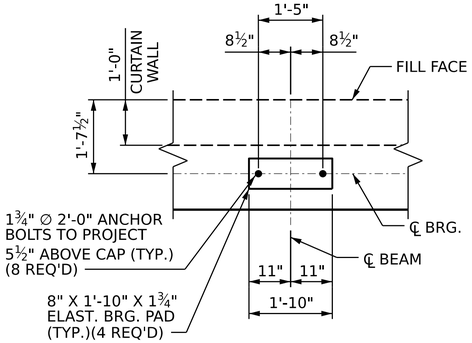
SHEET NO. S-11

TOTAL SHEETS 13

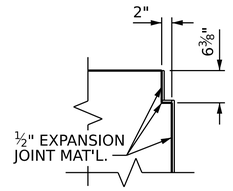
8/26/21



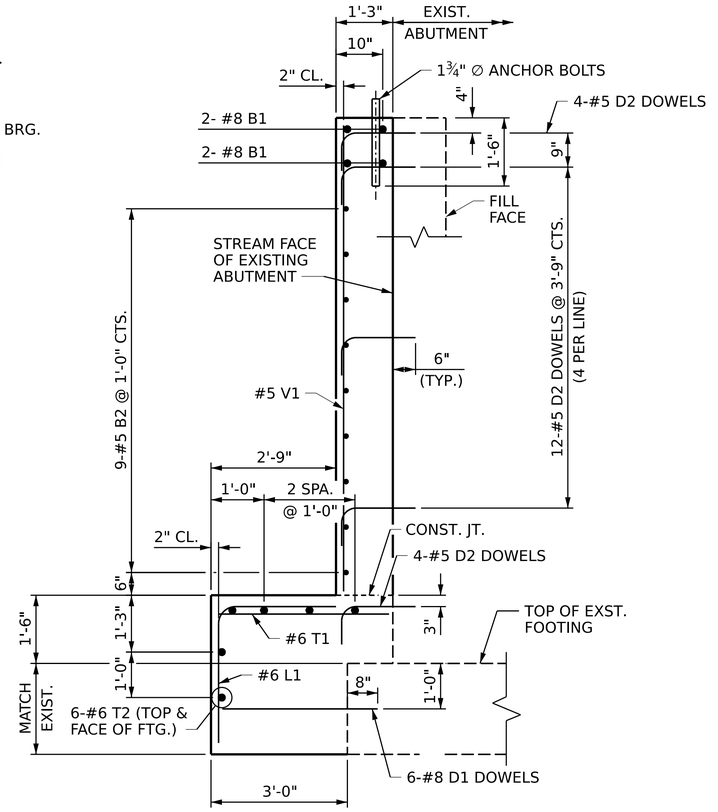
PLAN



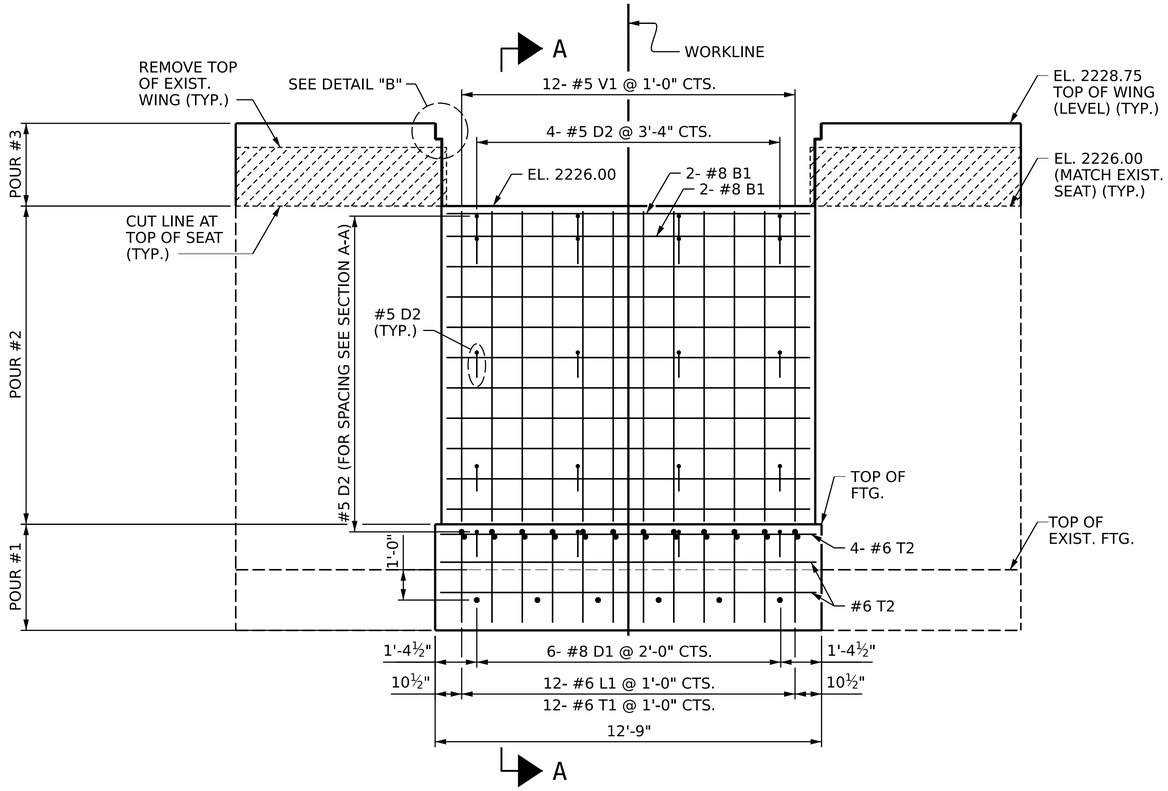
DETAIL "A"



DETAIL "B"



SECTION A-A



ELEVATION

(FOR WING REINFORCING, SEE SHEET 2 OF 2)

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 1 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric B Nelson Jr 11/4/2025 ACB8082119D74CD...

SUBSTRUCTURE

END BENT 2

DRAWN BY : J. HARRIS DATE : 08/2025

CHECKED BY : R. NELSON DATE : 08/2025

DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

GANNETT FLEMING

One Glenwood Avenue Suite 900 Raleigh, NC 27603 919-420-7660 NC Lic.No. F-0270

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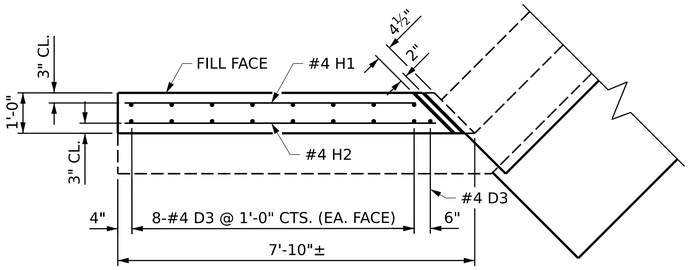
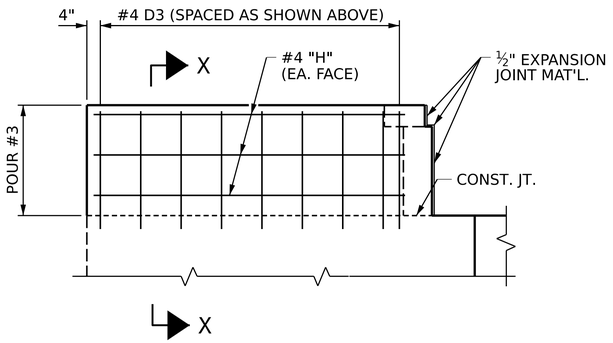
2			4			13

8/26/21



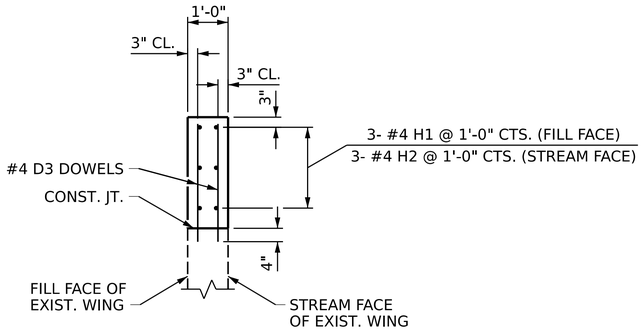
PLAN OF WING W3

(WING W3 SHOWN. WING W4 SIMILAR.)



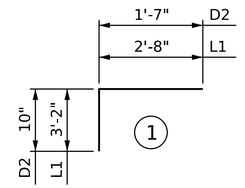
ELEVATION OF WING W3

(WING W3 SHOWN. WING W4 SIMILAR.)



SECTION X-X

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT

BILL OF MATERIAL

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#8	STR.	12'-0"	128
B2	9	#5	STR.	12'-0"	113
D1	6	#8	STR.	3'-6"	56
D2	20	#5	1	2'-5"	50
D3	17	#4	STR.	2'-11"	33
H1	6	#4	STR.	7'-2"	29
H2	6	#4	STR.	7'-8"	31
L1	12	#6	1	5'-10"	105
T1	12	#6	STR.	4'-0"	72
T2	6	#6	STR.	12'-5"	112
V1	12	#5	STR.	10'-6"	131

REINFORCING STEEL	LBS.	860
CLASS A CONCRETE BREAKDOWN		
POUR 1	C.Y.	5.8
POUR 2	C.Y.	6.9
POUR 3	C.Y.	1.7
TOTAL	C.Y.	14.4

NOTES:

EXISTING DIMENSIONS OF THE EXISTING END BENT NO. 2 ARE FROM THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL FIELD VERIFY THE INFORMATION SHOWN ON THE PLANS AND NOTIF THE ENGINEER IF ACTUAL DIMENSIONS AND CONDITIONS DIFFER.

FIELD CUT REBAR WHEN NECESSARY TO MAINTAIN 2" MINIMUM CONCRETE COVER.

FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE ARTICLE 420-13 OF THE NCDOT STANDARD SPECIFICATIONS. NO FIELD TESTING IS REQUIRED.

PROJECT NO. 100.01.00206

YANCEY COUNTY

STATION: 12+87.00 -L-

SHEET 2 OF 2

NORTH CAROLINA PROFESSIONAL SEAL 020208 ENGINEER ERIC B. NELSON JR.

DocuSigned by: Eric B Nelson Jr 11/4/2025

SUBSTRUCTURE

END BENT 2

WING DETAILS

DRAWN BY : J. HARRIS DATE : 08/2025

CHECKED BY : R. NELSON DATE : 08/2025

DESIGN ENGINEER OF RECORD : J. YANNACCONE DATE : 08/2025

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

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

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

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

CONCRETE:

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

CONCRETE CHAMFERS:

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

DOWELS:

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

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

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

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

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

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

REINFORCING STEEL:

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

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

STRUCTURAL STEEL:

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

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

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

HANDRAILS AND POSTS:

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

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

SPECIAL NOTES:

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

GEOTECHNICAL BORING REPORT
BORE LOG

SHEET

WBS 100.01.00206	**TIP** Timeless Ln	**COUNTY** YANCEY	**GEOLOGIST** B. Worley, PG
SITE DESCRIPTION GROW NC/NCEM Support for Private Roads and Private Bridges - Timeless Lane over Cane River			**GROUND WTR (ft)**
BORING NO. B1	**STATION** 13+90	**OFFSET** 2 ft LT	**ALIGNMENT** -L-	**0 HR.** Dry
COLLAR ELEV. 2,228.9 ft	**TOTAL DEPTH** 15.6 ft	**NORTHING** 1,002,932	**EASTING** 835,765	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 89% 12/20/2024		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic
DRILLER W. Shenberger	**START DATE** 07/22/25	**COMP. DATE** 07/22/25	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
2230										2,228.9 GROUND SURFACE 0.0
										ROADWAY EMBANKMENT Brown, med. dense to dense, Silty SAND (A-2-4) w/ cobbles *interpreted as recent (post-Helene) rdwy embankment fill
2225	2,225.9	3.0	3	13	19	32		D		2,223.9 5.0 Dark red-brown, med. stiff Sandy SILT (A-4)
2220	2,220.9	8.0	3	2	3	5		M		*some grinding on older embankment fill cobbles and/or boulders
										2,216.9 12.0 Gray and brown, dense, Silty SAND (A-2-4) w/ gravel and cobbles
2215	2,215.9	13.0	20	24	25	49		D		
	2,213.3	15.6	60/0.0			60/0.0				2,213.3 15.6 **CRYSTALLINE ROCK** (biotite gneiss) Boring Terminated with Standard Penetration Test Refusal at Elevation 2,213.3 ft on Crystalline Rock (biotite gneiss) *Drilled 15 ft. towards US19W from existing end bend / wing wall

NCDOT BORE SINGLE YANCEY 100.01.00206_GEO_GINT.GPJ NC_DOT.GDT 7/28/25

GEOTECHNICAL BORING REPORT
BORE LOG

SHEET

WBS 100.01.00206	**TIP** Timeless Ln	**COUNTY** YANCEY	**GEOLOGIST** B. Worley, PG
SITE DESCRIPTION GROW NC/NCEM Support for Private Roads and Private Bridges - Timeless Lane over Cane River			**GROUND WTR (ft)**
BORING NO. B2-A	**STATION** 12+50	**OFFSET** 5 ft LT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. 2,209.8 ft	**TOTAL DEPTH** 1.7 ft	**NORTHING** 1,002,791	**EASTING** 835,772	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 89% 12/20/2024		**DRILL METHOD** Solid Augers	**HAMMER TYPE** Automatic
DRILLER W. Shenberger	**START DATE** 07/21/25	**COMP. DATE** 07/21/25	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
2210										2,209.8 GROUND SURFACE 0.0
										2,208.1 **ALLUVIAL** Cobbles, boulders, and Silty SAND (A-2-4) *Post-Helene re-worked alluvial 1.7
										CRYSTALLINE ROCK (biotite gneiss) Boring Terminated by Auger Refusal at Elevation 2,208.1 ft on Crystalline Rock (biotite gneiss)

NCDOT BORE SINGLE YANCEY 100.01.00206_GEO_GINT.GPJ NC_DOT.GDT 7/28/25

SHEET

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 100.01.00206	**TIP** Timeless Ln	**COUNTY** YANCEY	**GEOLOGIST** B. Worley, PG
SITE DESCRIPTION GROW NC/NCEM Support for Private Roads and Private Bridges - Timeless Lane over Cane River			**GROUND WTR (ft)**
BORING NO. B2-B	**STATION** 12+50	**OFFSET** 4 ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 2,209.9 ft	**TOTAL DEPTH** 2.6 ft	**NORTHING** 1,002,792	**EASTING** 835,772 — **24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 89% 12/20/2024	**DRILL METHOD** Solid Augers	**HAMMER TYPE** Automatic	
DRILLER W. Shenberger	**START DATE** 07/21/25	**COMP. DATE** 07/21/25	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
2210										ELEV. (ft) DEPTH (ft)
										2,209.9 GROUND SURFACE 0.0
										ALLUVIAL Cobbles, boulders, and Silty SAND (A-2-4) *Post-Helene re-worked alluvial
										2,207.3 2.6
										CRYSTALLINE ROCK (biotite gneiss) Boring Terminated by Auger Refusal at Elevation 2,207.3 ft on Crystalline Rock (biotite gneiss)

NCDOT BORE SINGLE YANCEY 100.01.00206_GEO_GINT.GPJ NC_DOT.GDT 7/28/25

SHEET

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 100.01.00206	**TIP** Timeless Ln	**COUNTY** YANCEY	**GEOLOGIST** B. Worley, PG
SITE DESCRIPTION GROW NC/NCEM Support for Private Roads and Private Bridges - Timeless Lane over Cane River			**GROUND WTR (ft)**
BORING NO. B3-A	**STATION** 11+81	**OFFSET** 7 ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 2,212.7 ft	**TOTAL DEPTH** 3.1 ft	**NORTHING** 1,002,724	**EASTING** 8,357,779 — **24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 89% 12/20/2024	**DRILL METHOD** Solid Augers	**HAMMER TYPE** Automatic	
DRILLER W. Shenberger	**START DATE** 07/22/25	**COMP. DATE** 07/22/25	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
2215										ELEV. (ft) DEPTH (ft)
										2,212.7 GROUND SURFACE 0.0
2210										**ALLUVIAL** Cobbles, boulders, and Silty SAND (A-2-4)
										2,209.6 *Post-Helene re-worked alluvial 3.1
										CRYSTALLINE ROCK (biotite gneiss) Boring Terminated by Auger Refusal at Elevation 2,209.6 ft on Crystalline Rock (biotite gneiss)

NCDOT BORE SINGLE YANCEY 100.01.00206_GEO_GINT.GPJ NC_DOT.GDT 7/28/25

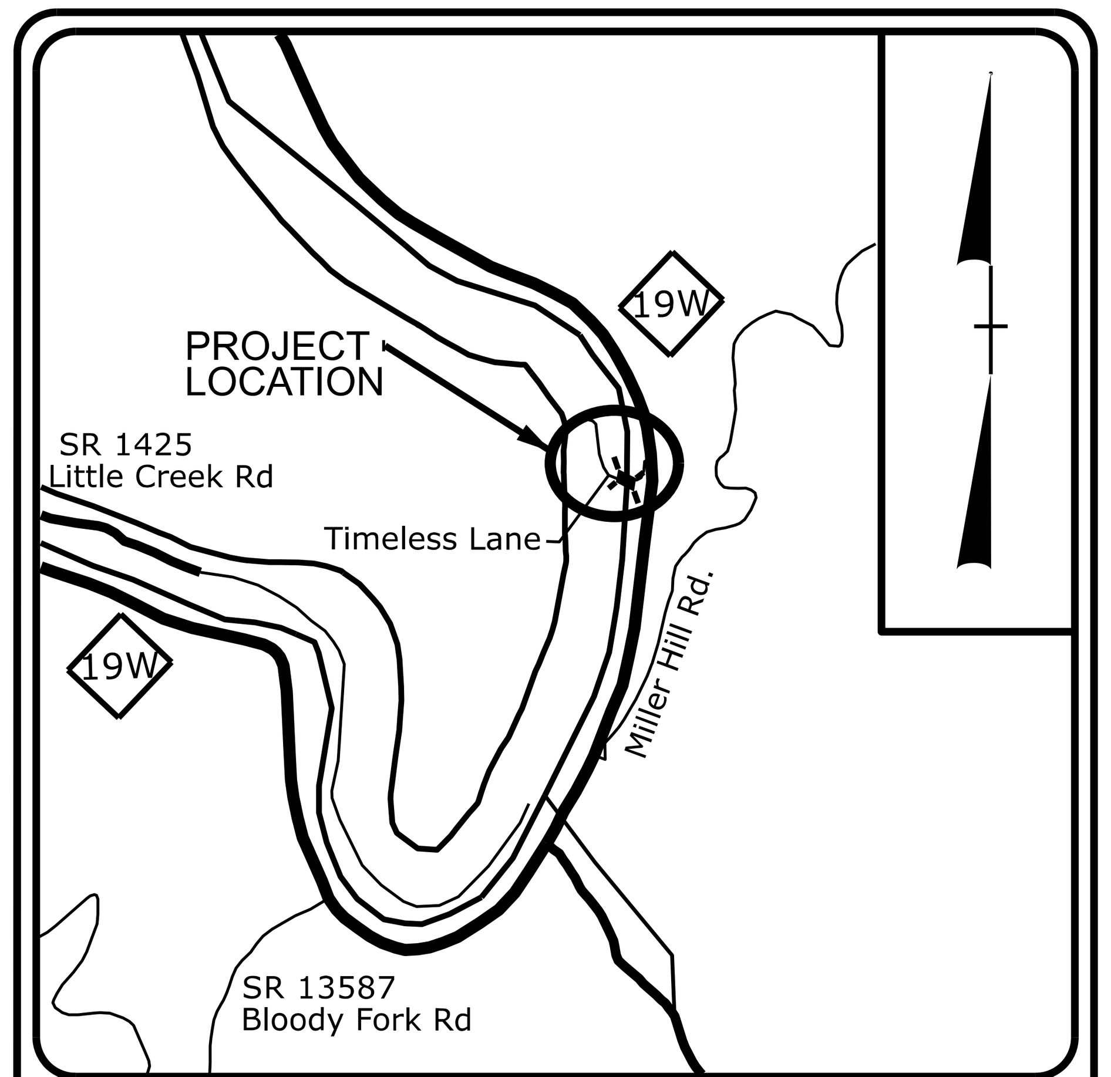
SHEET

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 100.01.00206	**TIP** Timeless Ln	**COUNTY** YANCEY	**GEOLOGIST** B. Worley, PG
SITE DESCRIPTION GROW NC/NCEM Support for Private Roads and Private Bridges - Timeless Lane over Cane River			**GROUND WTR (ft)**
BORING NO. B3-B	**STATION** 11+78	**OFFSET** 1 ft RT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. 2,213.0 ft	**TOTAL DEPTH** 3.7 ft	**NORTHING** 1,002,721	**EASTING** 835,781	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE F&R3763 CME-550X 89% 12/20/2024		**DRILL METHOD** Solid Augers	**HAMMER TYPE** Automatic
DRILLER W. Shenberger	**START DATE** 07/22/25	**COMP. DATE** 07/22/25	**SURFACE WATER DEPTH** N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
										ELEV. (ft) DEPTH (ft)
2215										2,213.0 GROUND SURFACE 0.0
										ALLUVIAL Cobbles, boulders, and Silty SAND (A-2-4) *Post-Helene re-worked alluvial
2210										2,209.3 3.7
										CRYSTALLINE ROCK (biotite gneiss) Boring Terminated by Auger Refusal at Elevation 2,209.3 ft on Crystalline Rock (biotite gneiss)

PROJECT: 100.01.00206



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
EMERGENCY MANAGEMENT

PLAN FOR PROPOSED
EROSION CONTROL

YANCEY COUNTY

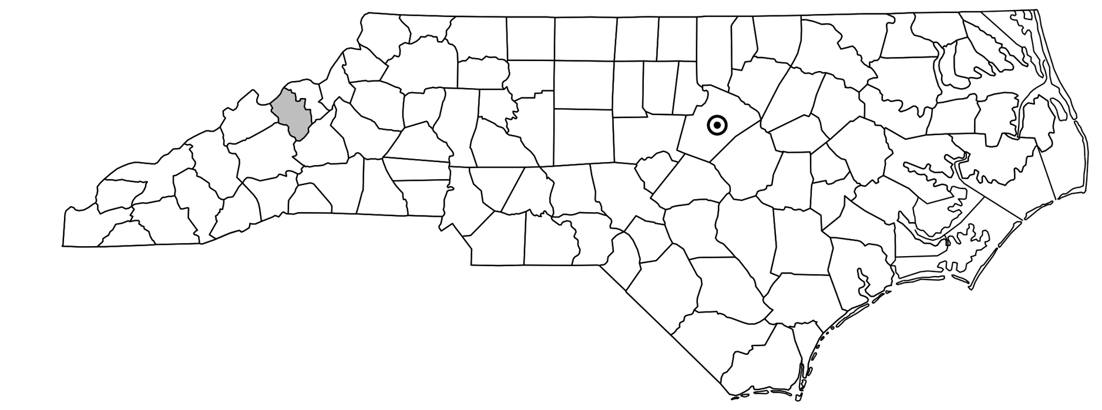
LOCATION: *PRIVATE BRIDGE ON TIMELESS LANE OVER CANE RIVER*

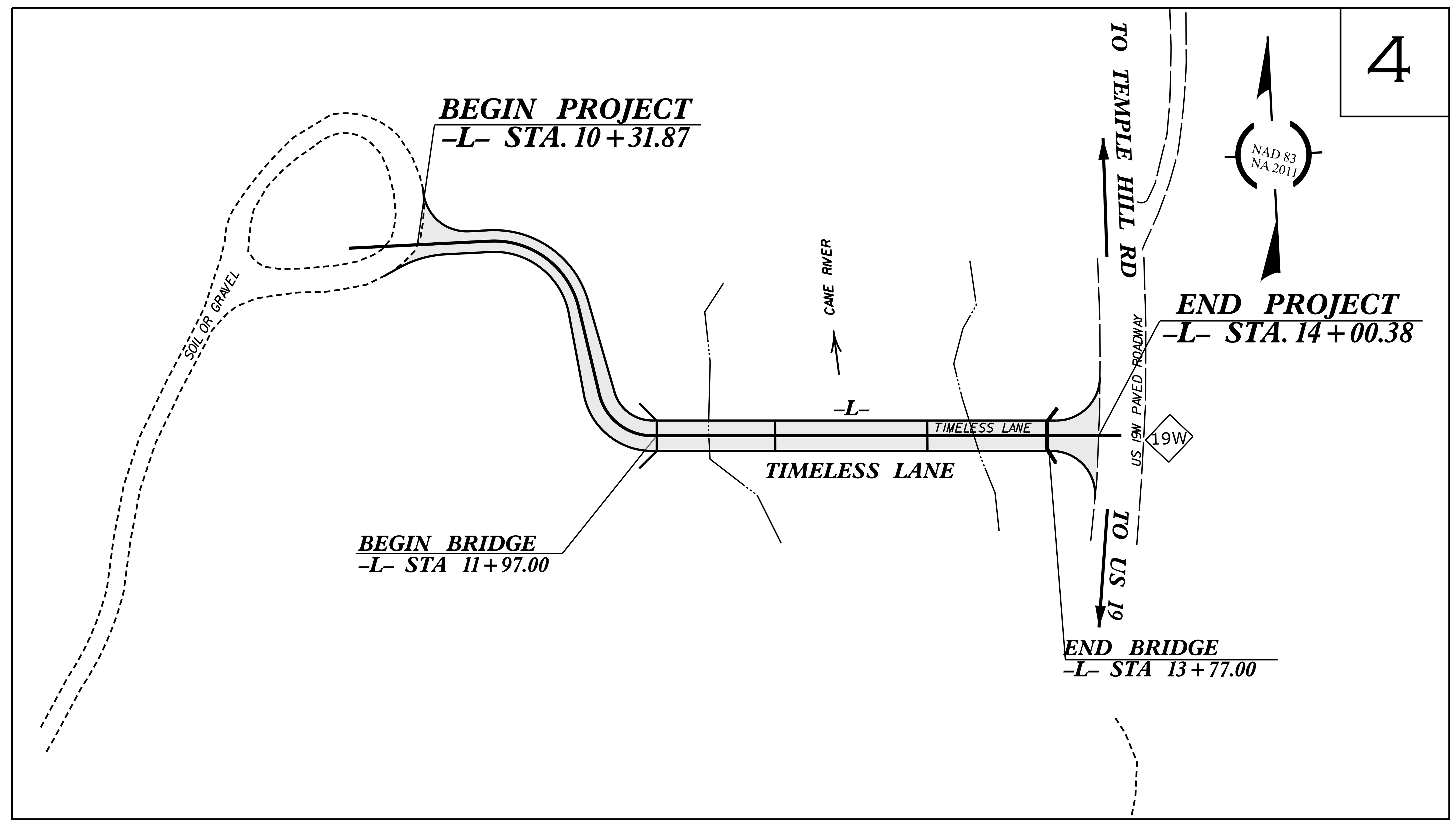
TYPE OF WORK: *GRADING, PAVING & STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	100.01.00206	EC-1	4

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

DIVISION 13





HIGH QUALITY WATER(S) EXIST ON THIS PROJECT

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

ENVIRONMENTALLY SENSITIVE AREA(S) EXIST ON THIS PROJECT

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

THIS PROJECT HAS BEEN DESIGNED TO SENSITIVE WATERSHED STANDARDS.

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

GRAPHIC SCALE

40 20 0 20 40

PLANS

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

GANNETT FLEMING
One Glenwood Avenue
Suite 900
Raleigh, NC 27603
919-420-7660
NC Lic. No. F-0270

NORTH CAROLINA PROFESSIONAL SEAL 040302 ENGINEER WILLIAM K. JERNIGAN, JR.

Prepared In the Office of:
Gannett Fleming
One Glenwood Ave.
Suite 900
Raleigh, NC 27603

Designed by:

William Jernigan	3395
NAME	LEVEL III CERTIFICATION NO.

EMERGENCY MANAGEMENT NORTH CAROLINA

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
100.01.00206	EC-02

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040302 ENGINEER WILLIAM K. JERNIGAN

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

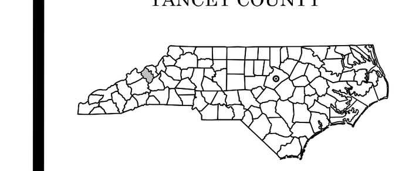
EROSION & SEDIMENT CONTROL LEGEND

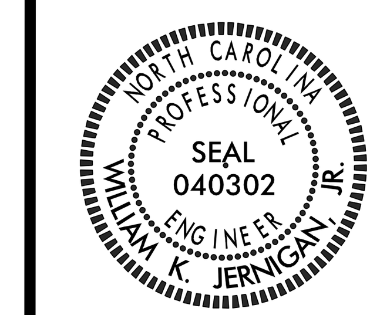
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	
1622.01	Temporary Berms and Slope Drains	
1630.02	Silt Basin Type B	
1630.03	Temporary Silt Ditch	TSD
1630.04	Stilling Basin	
1630.05	Temporary Diversion	TD
1630.06	Special Stilling Basin	
1630.07	Skimmer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

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

NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT

YANCEY COUNTY



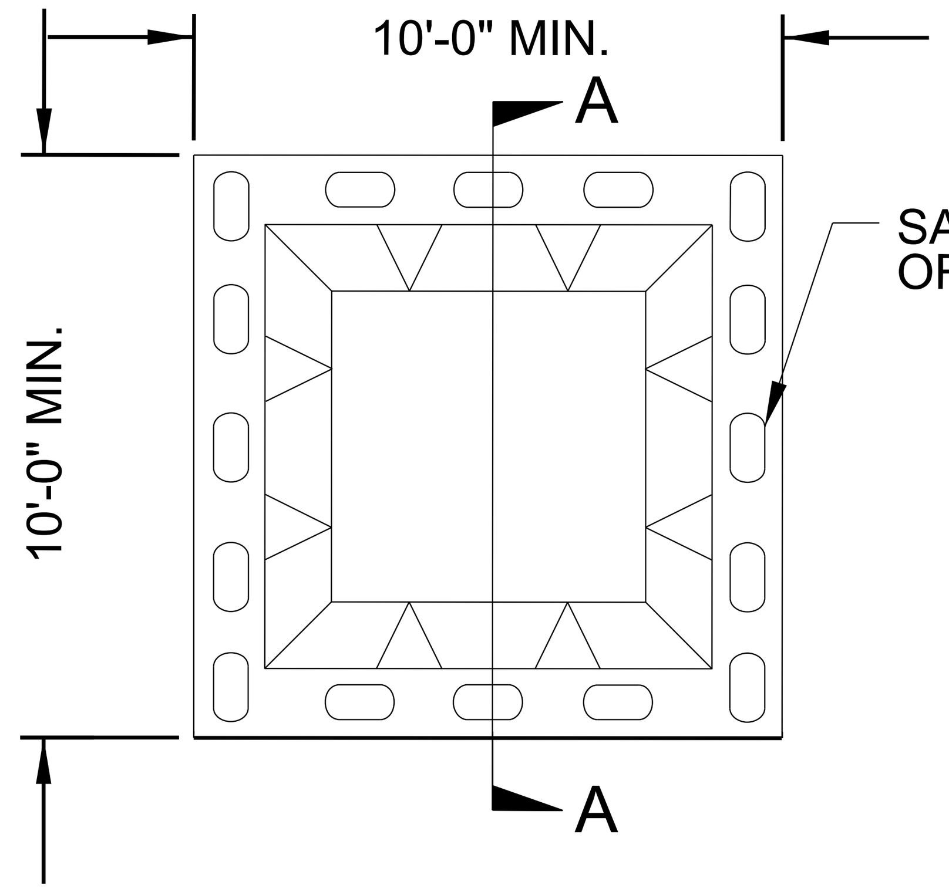


DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

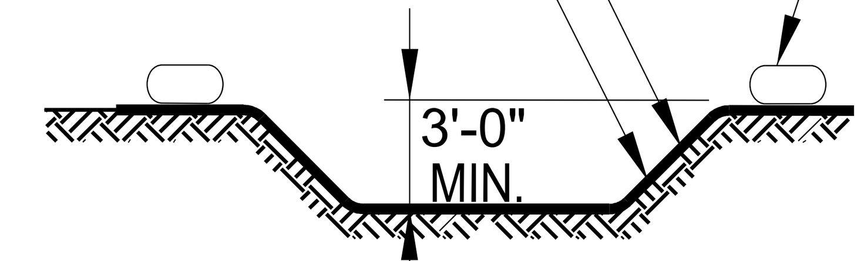
PREPARED BY

GANNETT FLEMING

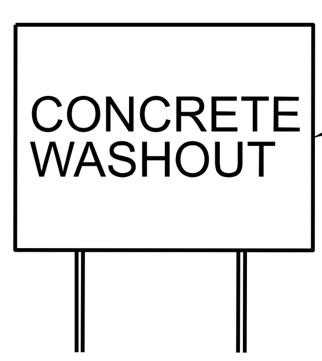
ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



SECTION A-A



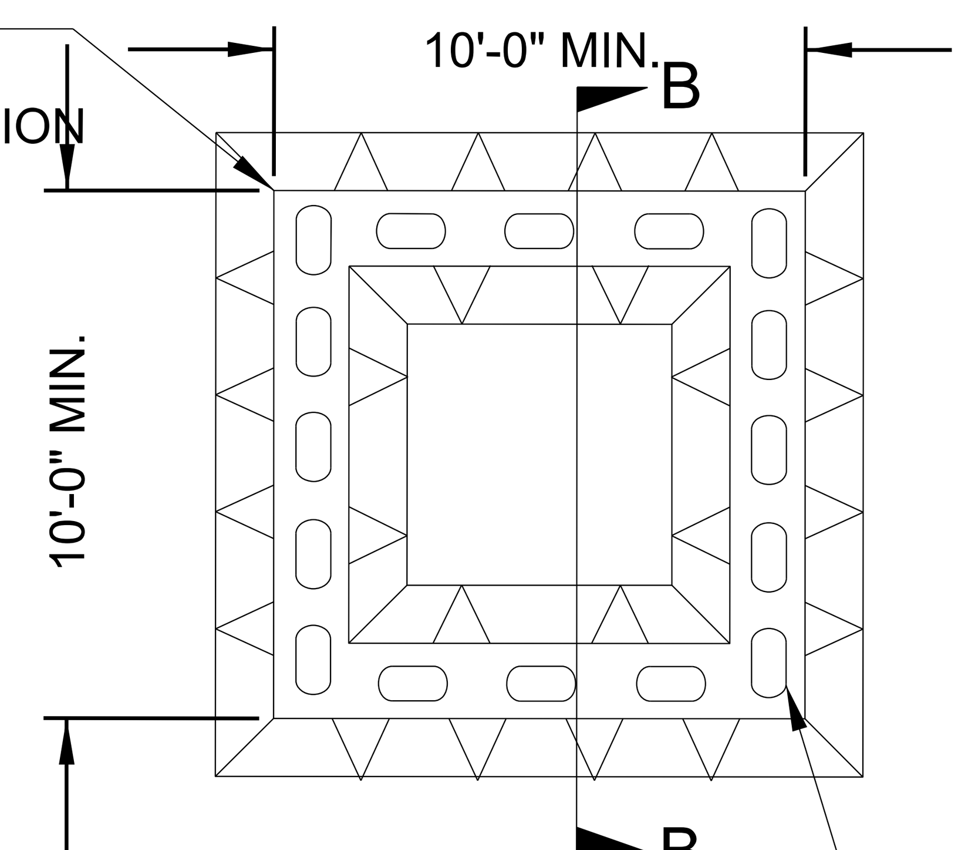
NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

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.

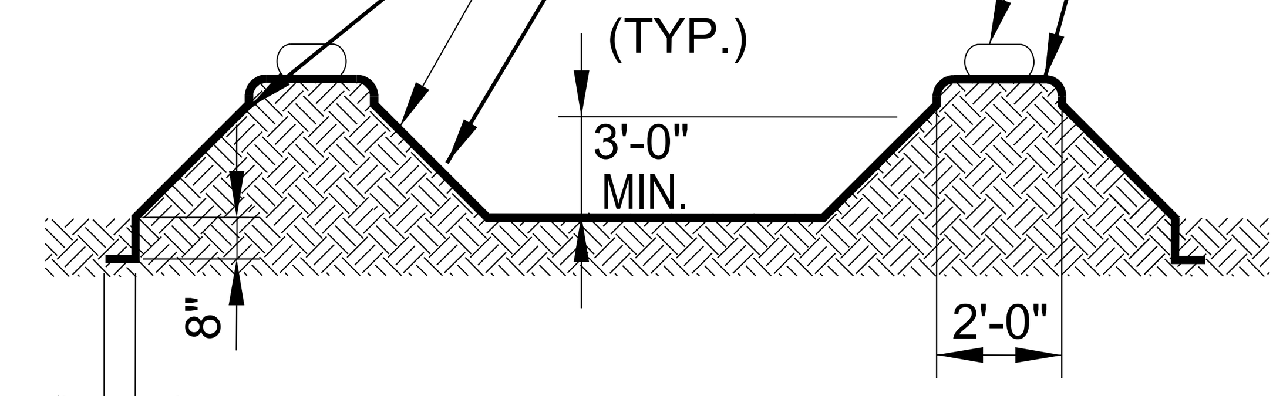
3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.

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

PROJECT REFERENCE NO.	SHEET NO.
100.01.00206	EC-3A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 040302 ENGINEER WILLIAM K. JERNIGAN

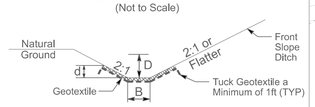
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

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 TO 4:1	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH WITH SLOPES STEEPER THAN 4:1. 7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	7 DAYS FOR PERIMETER DIKES, SWALES, DITCHES PERIMETER SLOPES, AND HQW ZONES

11/14/23

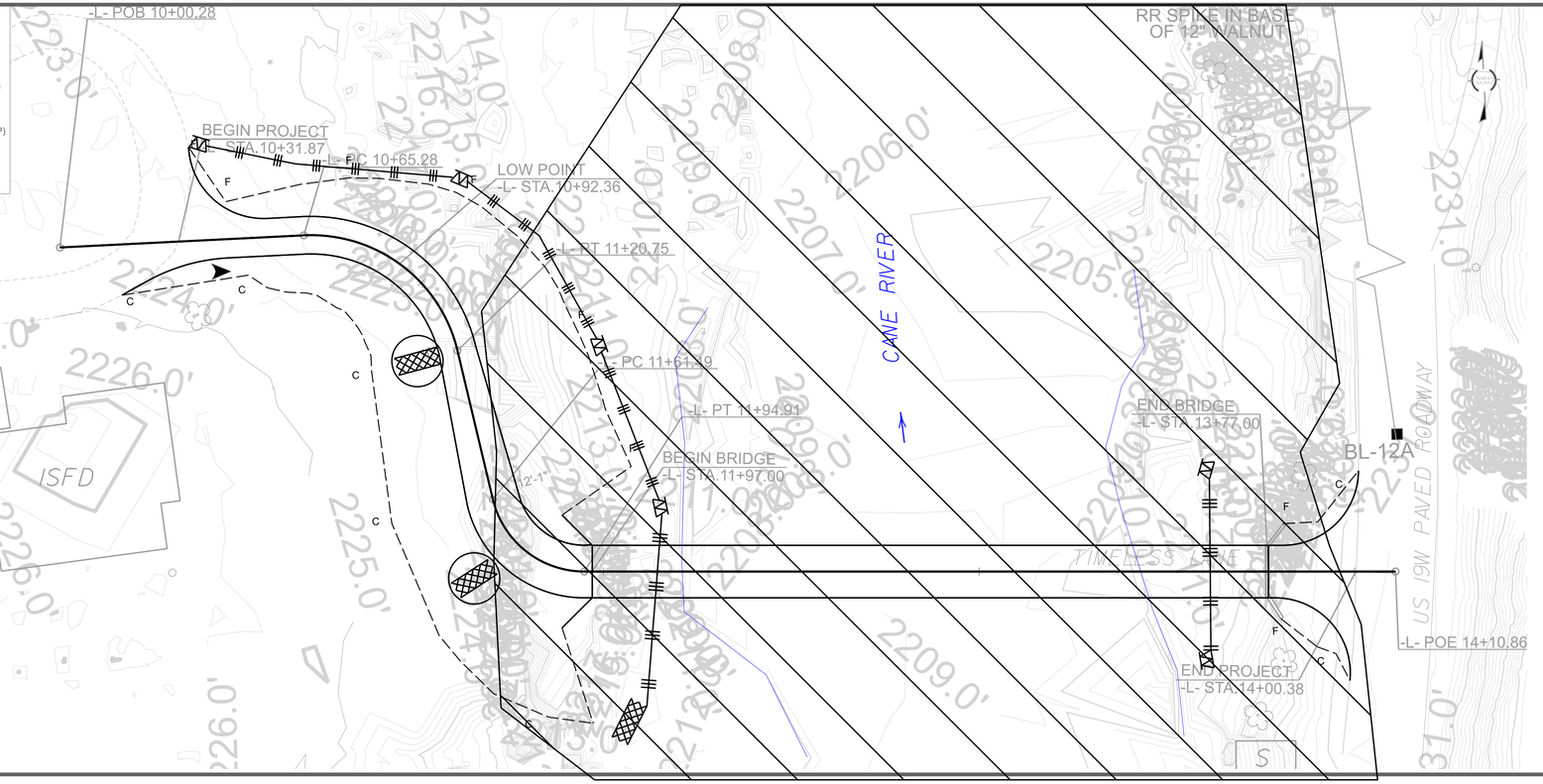
DETAIL A
SPECIAL BASE DITCH
(Not to Scale)



Min. D= 1Ft.
d=0.5 Ft.
B=4 Ft.

Type of Liner= CL B Rip-Rap, Keyed-In

FROM -L- STA. 10+51 TO -L- STA. 11+97 RT.



GRAPHIC SCALE

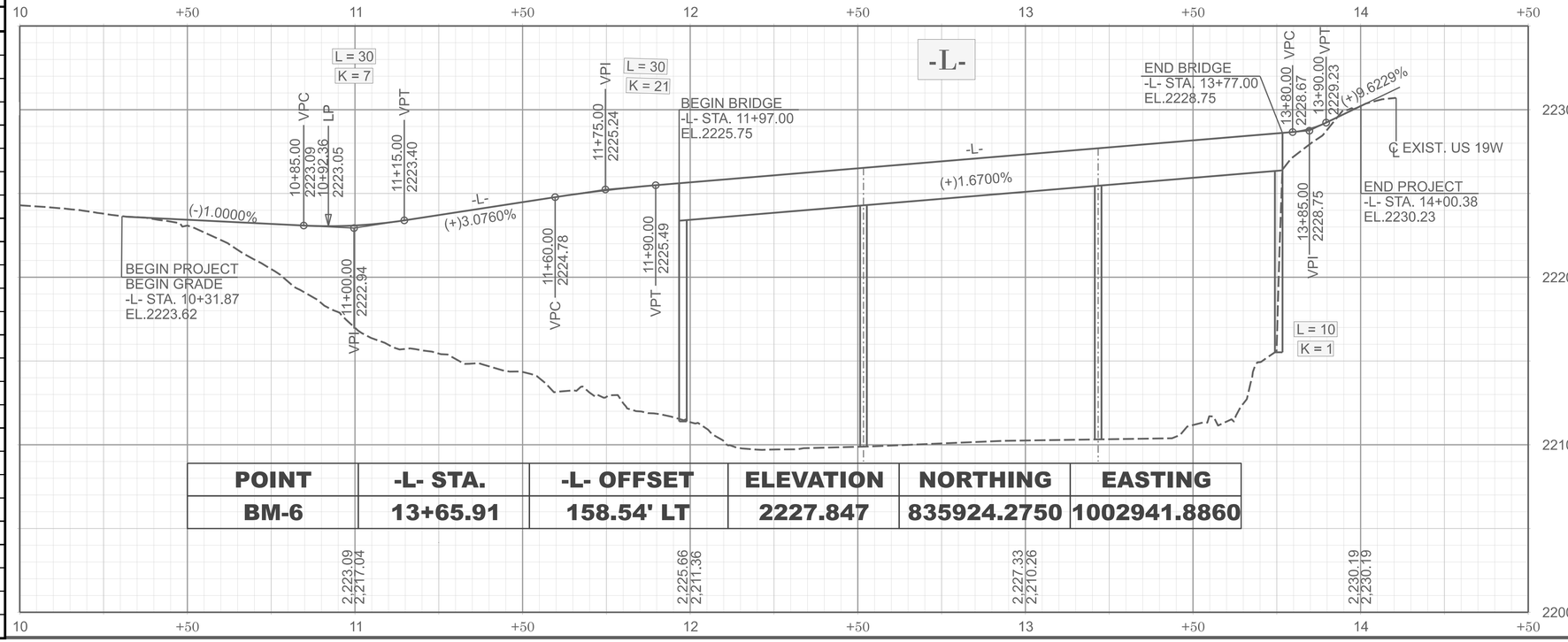
40 20 0 20 40

PLANS

TROUT STREAM BUFFER ZONE

NOTE:
UTILIZE TEMPORARY SEDIMENT BASIN OR SPECIAL STILLING BASIN(S) AS STILLING BASIN WHERE APPLICABLE.

Erosion Control Quantities		
DESCRIPTION	**QUANTITY**	**UNIT**
GEOTEXTILE FOR DRAINAGE	250	SY
TEMPORARY SILT FENCE	445	LF
EROSION CONTROL STONE, CLASS A	40	TON
EROSION CONTROL STONE, CLASS B	50	TON
SEDIMENT CONTROL STONE	85	TON
TEMPORARY MULCHING	0.5	ACR
SEED FOR TEMPORARY SEEDING	100	LB
FERTILIZER FOR TEMPORARY SEEDING	0.5	TON
TEMPORARY SLOPE DRAINS	200	LF
SAFETY FENCE	260	LF
SILT EXCAVATION	70	CY
MATTING FOR EROSION CONTROL	7515	SY
COIR FIBER MAT	100	SY
1/4" HARDWARE CLOTH	140	LF
SPECIAL STILLING BASINS	2	EA
FLOCCULANT	10	LB
SEEDING AND MULCHING	0.5	ACR
MOWING	0.5	ACR
SEED FOR REPAIR SEEDING	50	LB
FERTILIZER FOR REPAIR SEEDING	0.25	TON
SEED FOR SUPPLEMENTAL SEEDING	50	LB
FERTILIZER TOPDRESSING	0.25	TON
SPECIALIZED HAND MOWING	10	MHR
RESPONSE FOR EROSION CONTROL	25	EA
REFORESTATION	0.1	ACR
CONCRETE WASHOUT STRUCTURE	1	EA



POINT	-L- STA.	-L- OFFSET	ELEVATION	NORTHING	EASTING
BM-6	13+65.91	158.54' LT	2227.847	835924.2750	1002941.8860

100.01.00206
EC-4

NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT
YANCEY COUNTY

NORTH CAROLINA PROFESSIONAL SEAL 040302 ENGINEER WILLIAM K. JERNIGAN JR.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PREPARED BY

GANNETT FLEMING

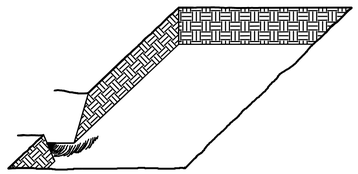
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	100.01.00206	RF-1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	

PLANTING DETAILS

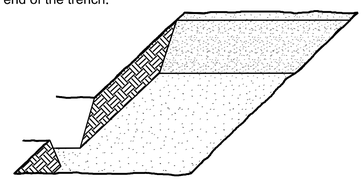
SEEDLING / LINER BAREROOT PLANTING DETAIL

HEALING IN

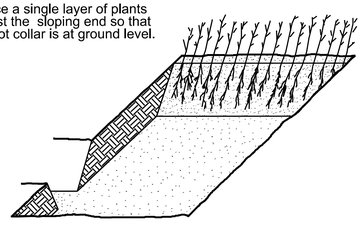
1. Locate a healing-in site in a shady, well protected area.
2. Excavate a flat bottom trench 12 inches deep and provide drainage.



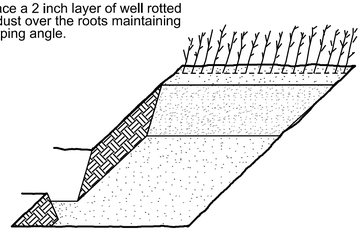
3. Backfill the trench with 2 inches well rotted sawdust. Place a 2 inch layer of well rotted sawdust at a sloping angle at one end of the trench.



4. Place a single layer of plants against the sloping end so that the root collar is at ground level.

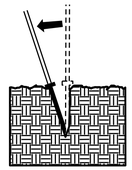


5. Place a 2 inch layer of well rotted sawdust over the roots maintaining a sloping angle.

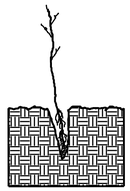


6. Repeat layers of plants and sawdust as necessary and water thoroughly.

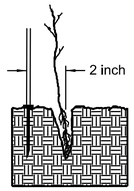
DIBBLE PLANTING METHOD
USING THE KBC PLANTING BAR



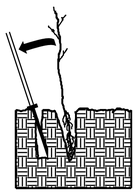
1. Insert planting bar as shown and pull handle toward planter.



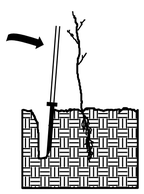
2. Remove planting bar and place seedling at correct depth.



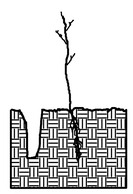
3. Insert planting bar 2 inches toward planter from seedling.



4. Pull handle of bar toward planter, firming soil at bottom.



5. Push handle forward firming soil at top.



6. Leave compaction hole open. Water thoroughly.

PLANTING NOTES:

PLANTING BAG
During planting, seedlings shall be kept in a moist canvas bag or similar container to prevent the root systems from drying.

KBC PLANTING BAR
Planting bar shall have a blade with a triangular cross section, and shall be 12 inches long, 4 inches wide and 1 inch thick at center.

ROOT PRUNING
All seedlings shall be root pruned, if necessary, so that no roots extend more than 10 inches below the root collar.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040302 WILLIAM K. JERNIGAN, JR.

REFORESTATION

☐ TREE REFORESTATION SHALL BE PLANTED 6 FT. TO 10 FT. ON CENTER, RANDOM SPACING, AVERAGING 8 FT. ON CENTER, APPROXIMATELY 680 PLANTS PER ACRE.

REFORESTATION

MIXTURE, TYPE, SIZE, AND FURNISH SHALL CONFORM TO THE FOLLOWING:

34% LIRIODENDRON TULIPIFERA	TULIP POPLAR	12 in - 18 in BR
33% PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	12 in - 18 in BR
33% BETULA NIGRA	RIVER BIRCH	12 in - 18 in BR

REFORESTATION DETAIL SHEET

N.C.D.O.T. - ROADSIDE ENVIRONMENTAL UNIT