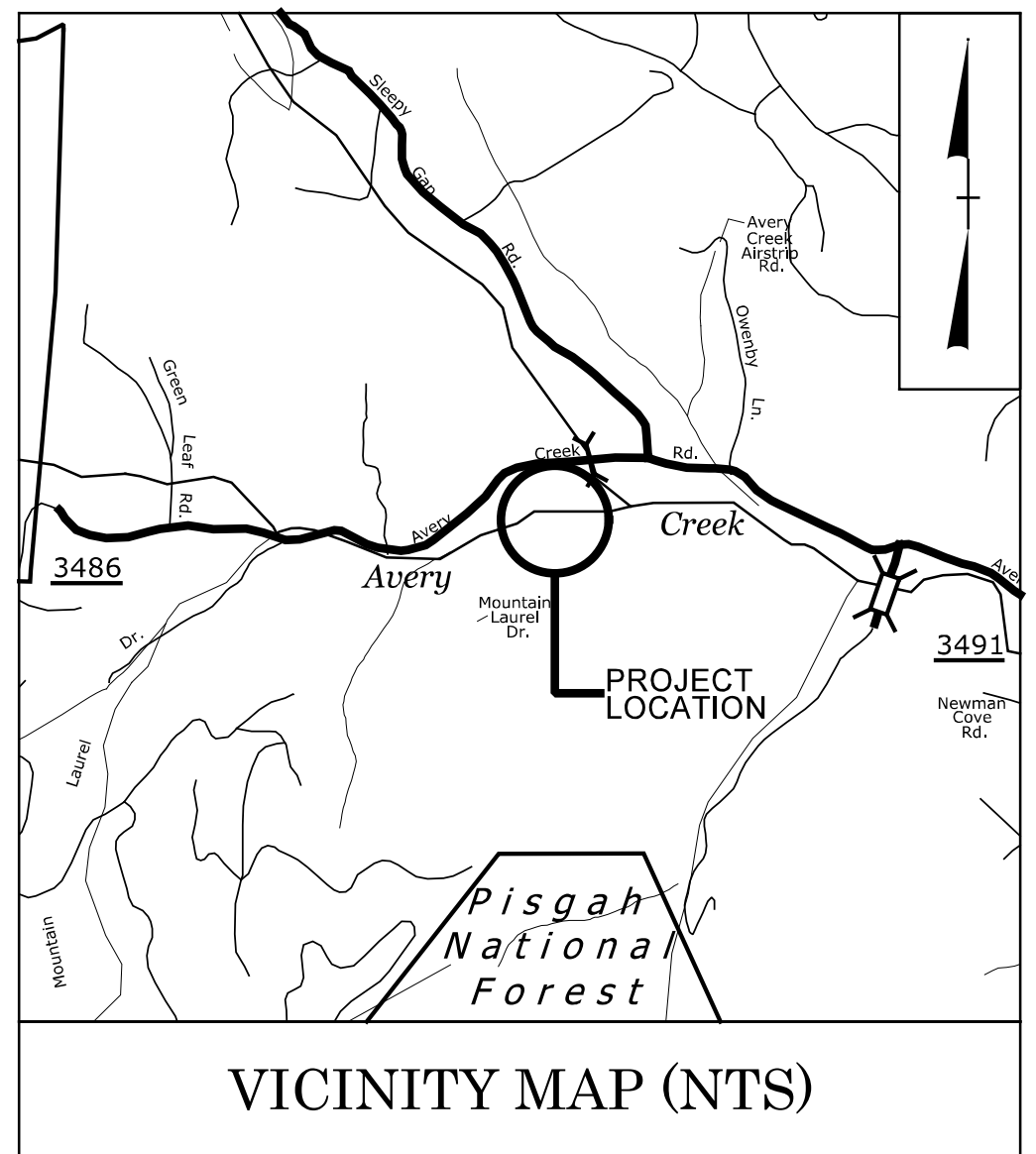


PROJECT: 011-01-70345



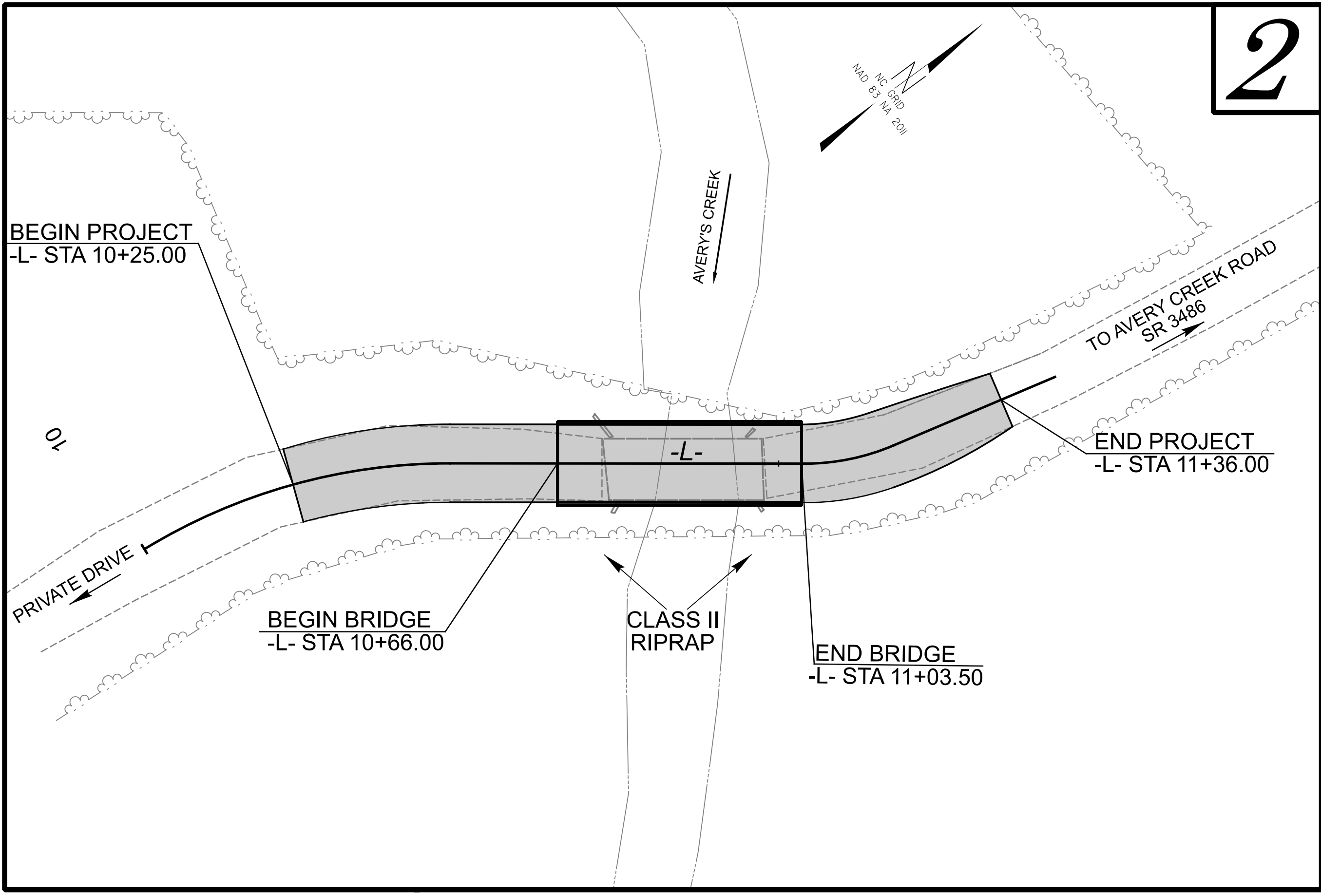
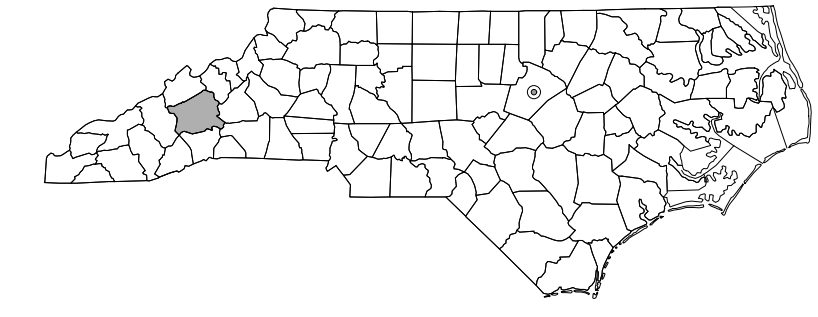
NORTH CAROLINA DEPARTMENT OF EMERGENCY MANAGEMENT

BUNCOMBE COUNTY

LOCATION: *PRIVATE BRIDGE REPLACEMENT LOCATED AT 548 AVERY CREEK RD, ARDEN, NC 28704.*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, AND STRUCTURE*

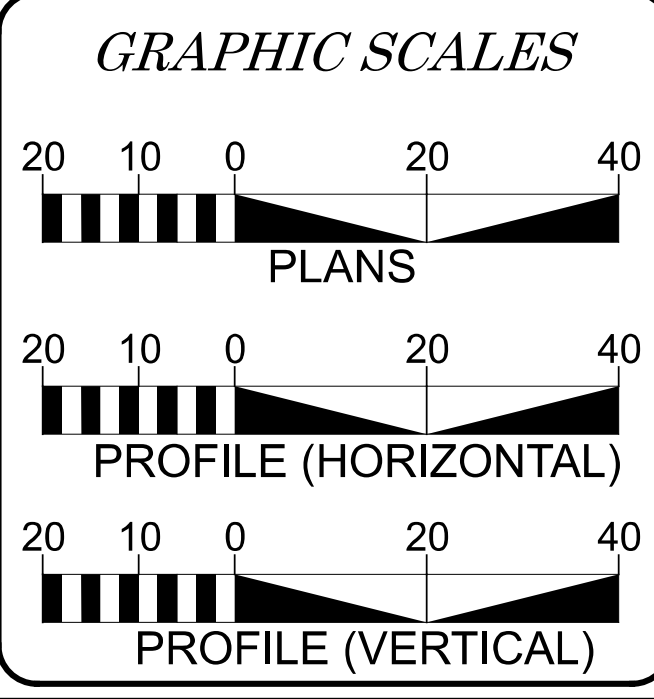
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	011-01-70345	1	18
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	



The proposed bridge 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.

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
2	ROADWAY TYP. SECTION, PLAN AND PROFILE
S-1 THRU S-11	STRUCTURE PGD
EC-1 THRU EC-4	EROSION CONTROL PLANS



DESIGN DATA
FUNC CLASS = PRIVATE ROAD
ADT = >20 AND <2000
MIN R = 40' (<10% GRADE) 80' (>10% GRADE)
e = 0.04 MIN, 0.06 MAX (UNPAVED) 0.02 MIN, 0.06 MAX (PAVED)
MAX GRADE = 12% (UNPAVED) 25% (PAVED)
K = 2 (CREST & SAG)

PROJECT LENGTH
LENGTH OF ROADWAY PROJECT 011-01-70345 = 0.014 MILES
LENGTH OF STRUCTURE PROJECT 011-01-70345 = 0.007 MILES
TOTAL LENGTH OF TIP PROJECT 011-01-70345 = 0.021 MILES

PLANS PREPARED BY:
5430 Wade Park Blvd., Suite 410
Raleigh, NC 27606
Tel. 919-854-0344 Fax. 919-854-0355
NC License No. F-0765

VOLKERT

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:	N/A
LETTING DATE:	N/A

EMILY E MURRAY, PE PROJECT ENGINEER
CHRISTOPHER H. LEE, PE PROJECT DESIGN ENGINEER
CHRIS WERNER, PE PRIVATE ROAD AND BRIDGE PROGRAM MANAGER

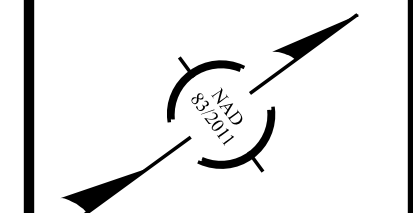
HYDRAULICS ENGINEER

Signed by:
Ana Passman
9E8A70D988684B7...
ANA M. PASSMAN P.E. 1/12/2026

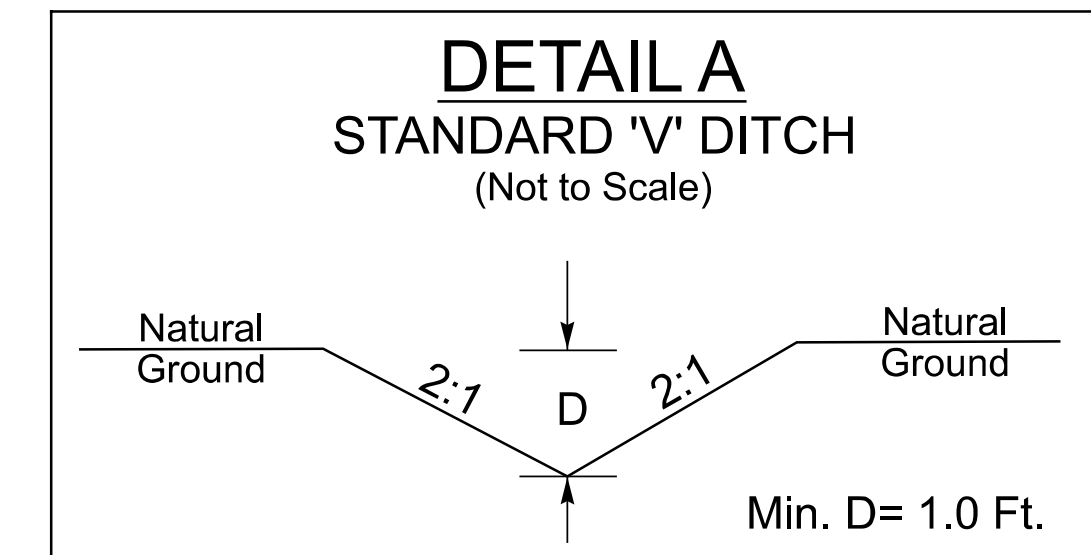
ROADWAY DESIGN ENGINEER

Signed by:
Christopher H. Lee, PE
BF36BF852339499...
CHRISTOPHER H. LEE P.E. 1/12/2026

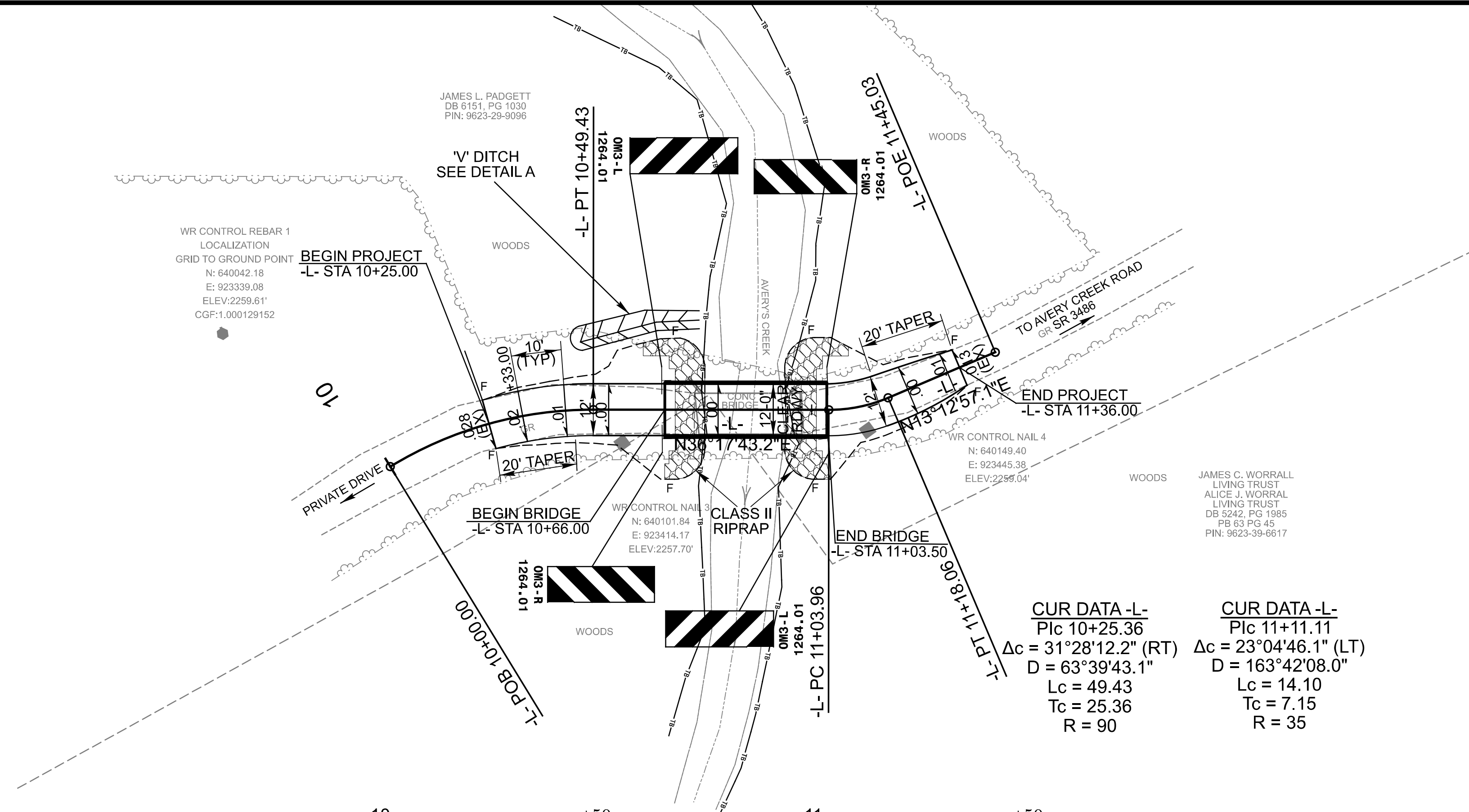




BRIDGE AT 548 AVERY CREEK RD, ARDEN, NC 28704
BUNCOMBE COUNTY
12'-0" CLEAR ROADWAY AND 90° SKEW



FROM -L- STA. 10+45 TO STA. 10+74 LT

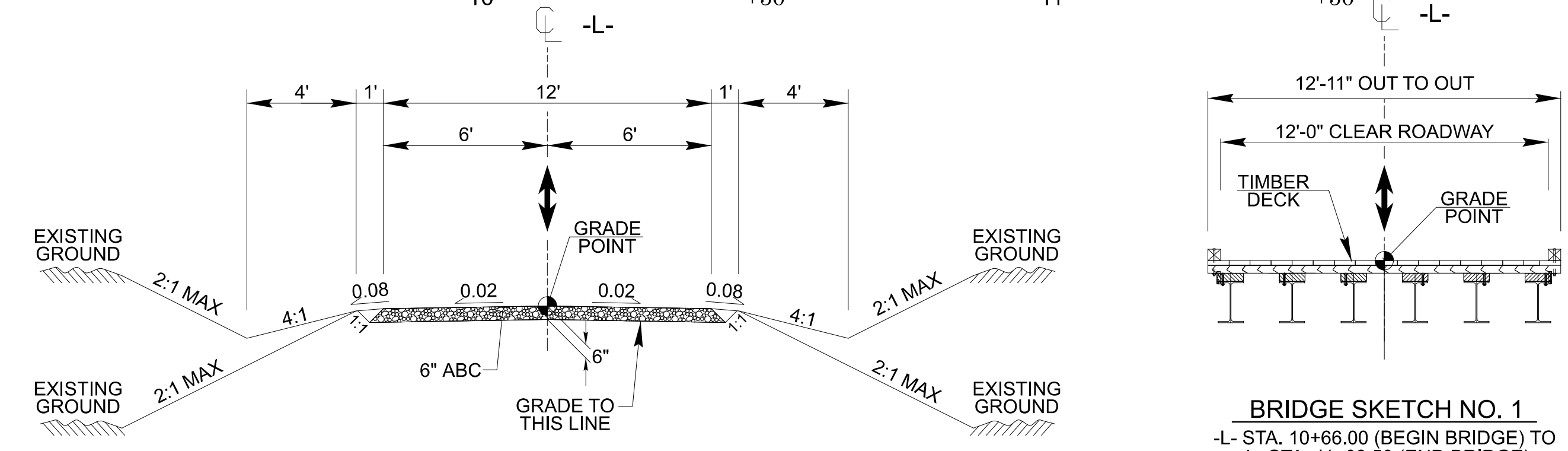
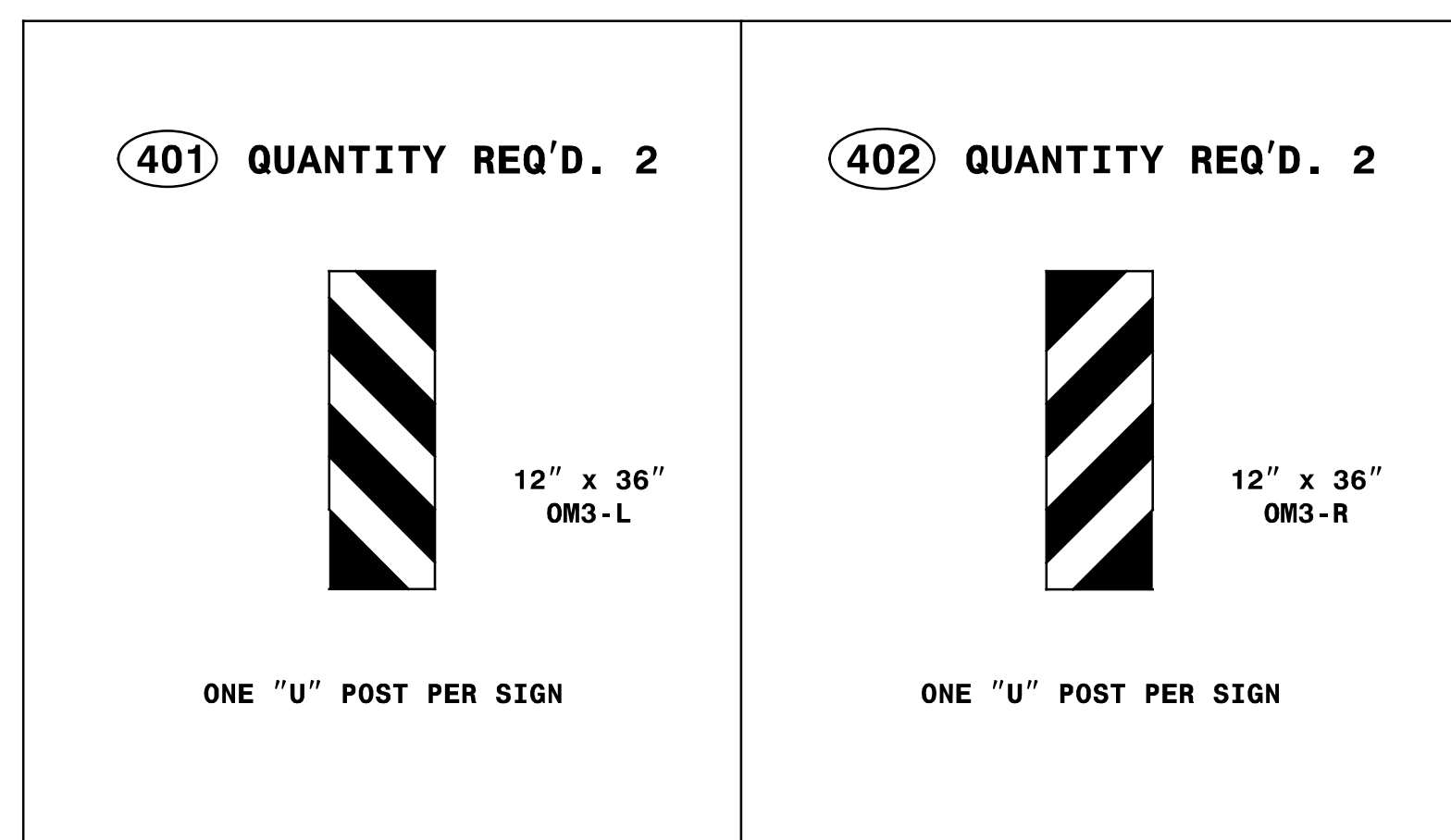
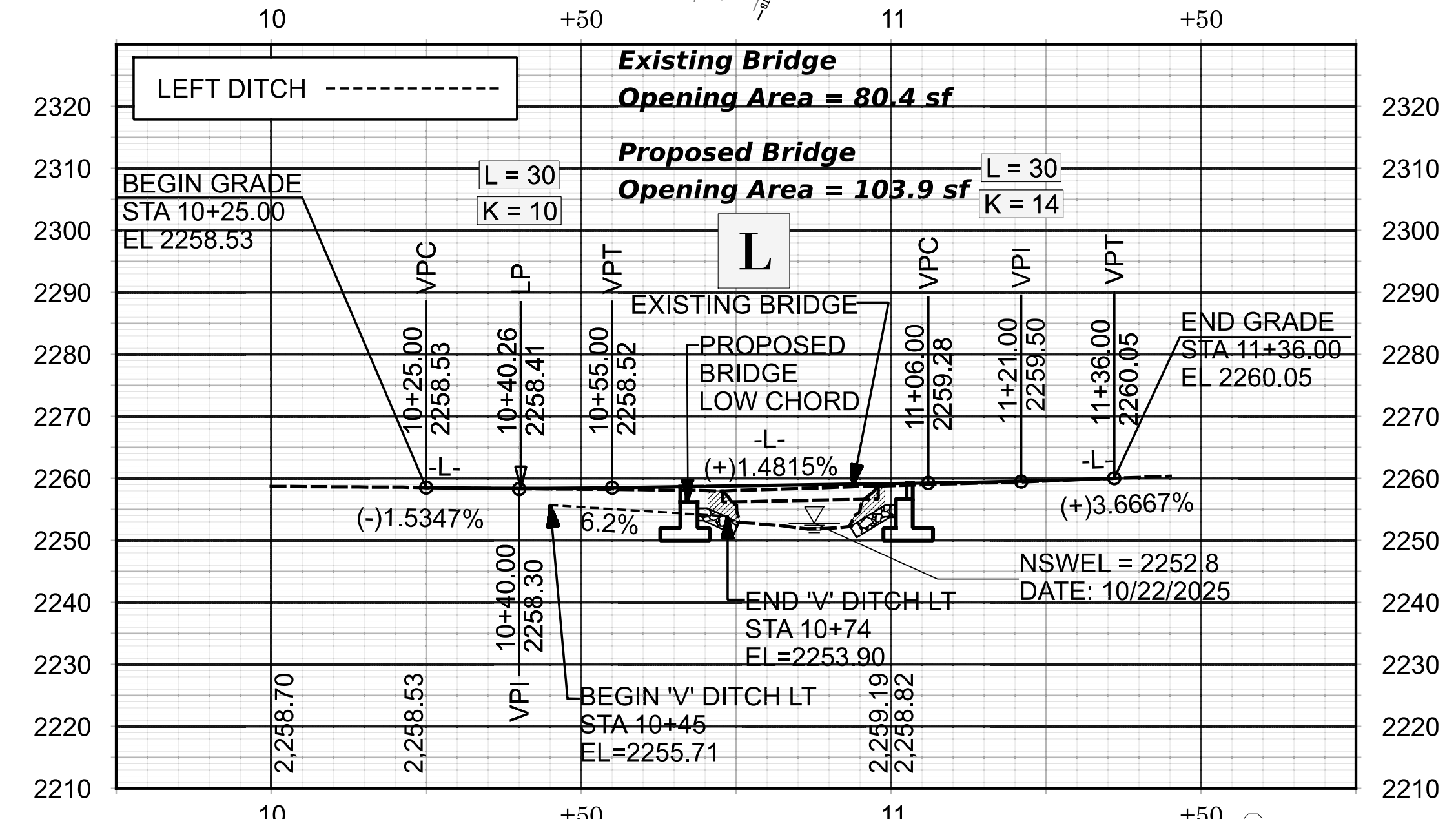


CUR DATA -L- Plc 10+25.36
 $\Delta c = 31^\circ 28' 12.2''$ (RT)
 $D = 63^\circ 39' 43.1''$
 $Lc = 49.43$
 $Tc = 25.36$
 $R = 90$

CUR DATA -L- Plc 11+11.11
 $\Delta c = 23^\circ 04' 46.1''$ (LT)
 $D = 163^\circ 42' 08.0''$
 $Lc = 14.10$
 $Tc = 7.15$
 $R = 35$

ROADWAY QUANTITIES

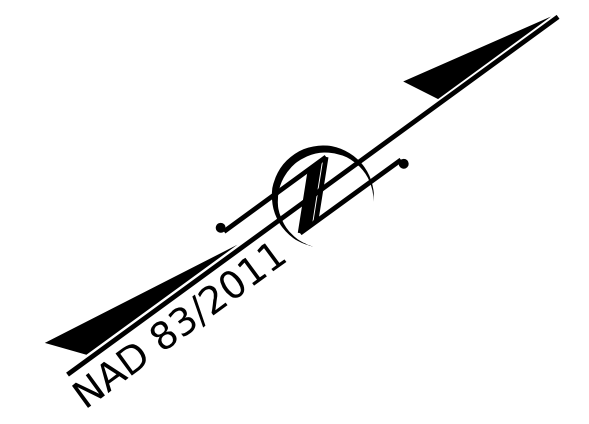
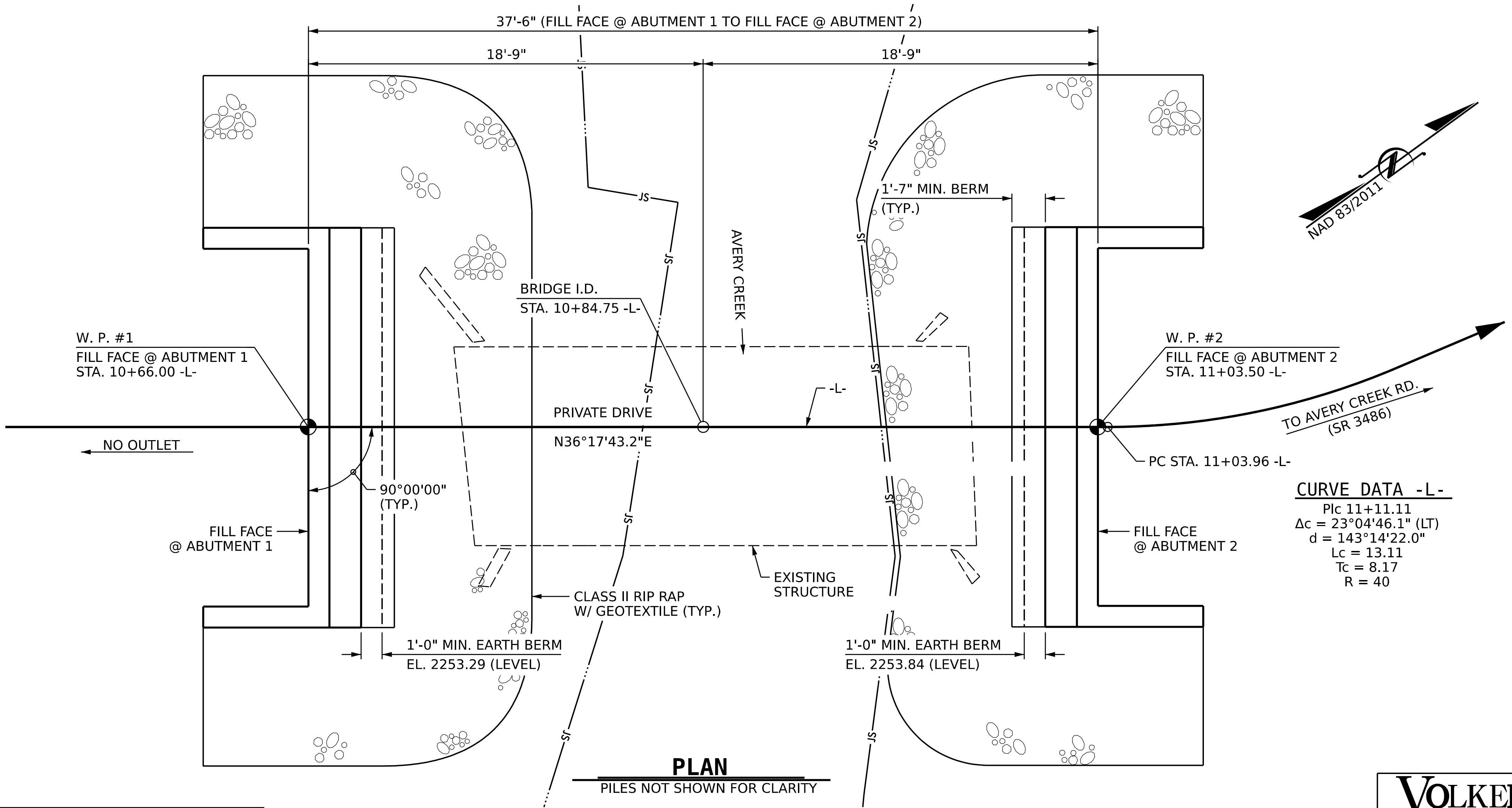
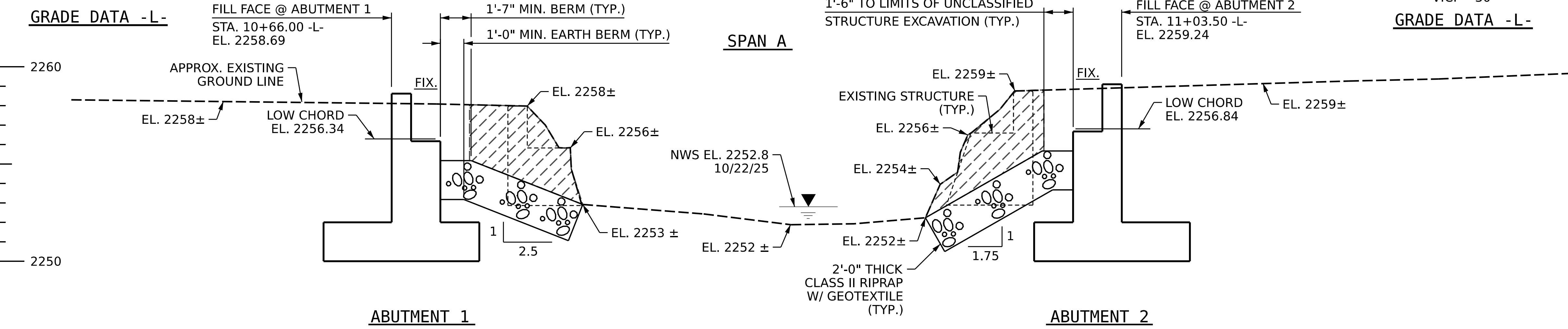
DESCRIPTION	QUANTITY	UNIT
UNCLASSIFIED EXCAVATION	33	CY
SUPPLEMENTARY CLEARING AND GRUBBING	1	ACRES
FINE GRADING	110	SY
AGGREGATE BASE COURSE	40	TON
OBJECT MARKERS	4	EA



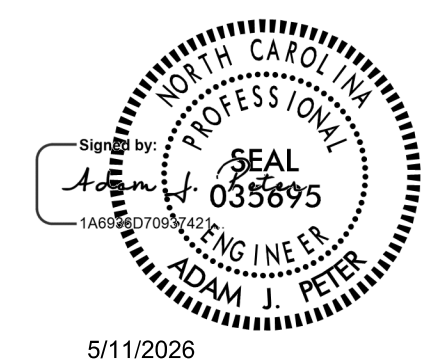
9/26/20

10+50
 (-) 1.5347% Δ (+) 1.4815%
 P.I. STA. = 10+40.00 -L-
 EL. = 2258.30
 V.C. = 30'

(+) 1.4815% Δ (+) 3.6667%
 P.I. STA. = 11+21.00 -L-
 EL. = 2259.50
 V.C. = 30'



CURVE DATA -L-
 Plc 11+11.11
 Δc = 23°04'46.1" (LT)
 d = 143°14'22.0"
 Lc = 13.11
 Tc = 8.17
 R = 40



PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
 STATION: **10+84.75 -L-**
 SHEET 1 OF 3

NORTH CAROLINA
 OFFICE OF EMERGENCY MANAGEMENT

GENERAL DRAWING
 PRIVATE BRIDGE REPLACEMENT
 LOCATED AT 548 AVERY CREEK RD,
 ARDEN, NC 28704

DRAWN BY : M. HOGAN DATE : 11/25
 CHECKED BY : A. PETER DATE : 12/25
 DESIGN ENGINEER OF RECORD : A. PETER DATE : 01/26

VOLKERT
 5430 Wade Park Blvd., Suite 410
 Raleigh, NC 27607
 Tel: 919-854-0244 Fax: 919-854-0355
 NC License No. F-0765

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

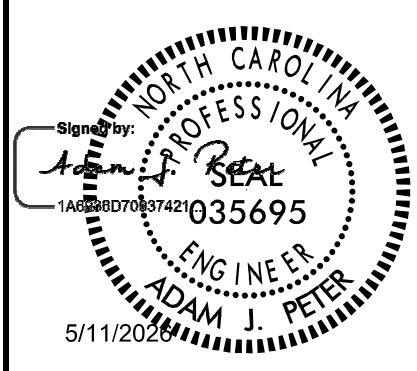
SUMMARY OF SPREAD FOOTING INFORMATION
 (Blank entries indicate item is not applicable to structure)

End Bent / Bent No. Footing(s) #(-#) (e.g., "Bent 1, Footing 1-2")	Factored Bearing Resistance KSF	Footing Dimensions (Length x Width) FT x FT	Required Bearing Resistance KSF	Scour Critical Elevation FT	Minimum Bottom of Footing (Footing No Higher Than) Elevation FT
End Bent No. 1, Footing 1	4.3	12 x 8	4.2		2250.00
End Bent No. 1, Footing 2	4.3	12 x 8	4.2		2250.00

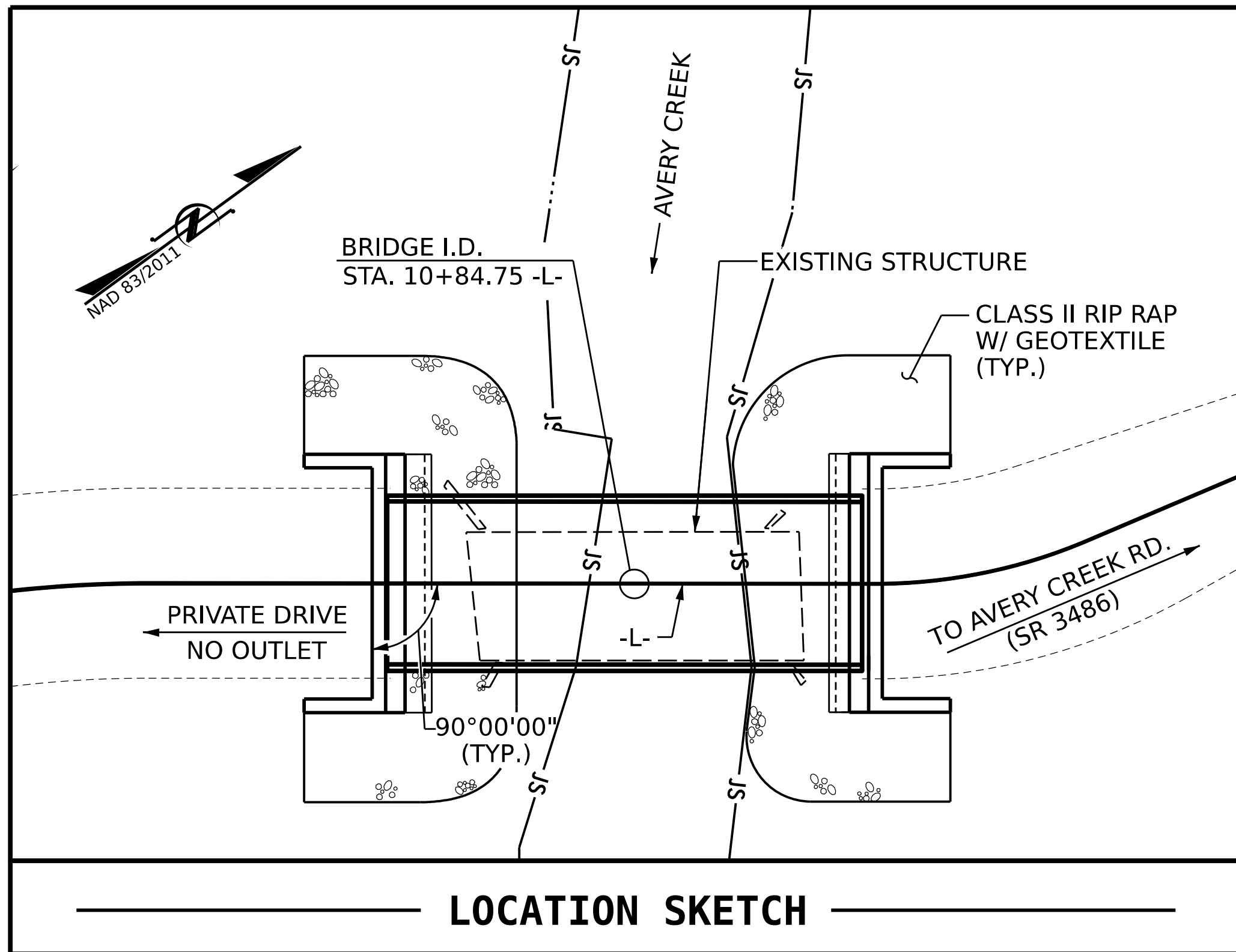
PROJECT NO. PRB 011.01.70345
Buncombe COUNTY
 STATION -L- 10+84.75

NOTES:

- The Micropile and Spread Footing Foundation Tables are based on the bridge substructure design and foundation recommendations sealed by a North Carolina Professional Engineer (Hratch Antoine Agopian, #057984) on 12-08-2025.

		STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH MICROPILE AND SPREAD FOOTING FOUNDATION TABLES					
SIGNATURE _____ DATE _____		REVISIONS		SHEET NO. S-2			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	NO. 1	BY	DATE	NO. 3	BY	DATE	TOTAL SHEETS 11
	2			4			

5/26/20



ASSUMED LIVE LOAD = HS-20.

THE BRIDGE IS LOAD RATED OVER 1.0 FOR EV3 THEORETICAL EMERGENCY VEHICLE (WEIGHT = 86 KIPS)

THIS BRIDGE IS LOCATED IN SEISMIC ZONE 1.

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

THE MATERIAL SHOWN IN THE HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 14 FT EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED IN A MANNER THAT PREVENTS DEBRIS FROM FALLING INTO THE WATER. THE CONTRACTOR SHALL SUBMIT DEMOLITION PLANS FOR REVIEW AND REMOVE THE BRIDGE IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OR GALVANIZED OF THE STRUCTURAL STEEL SHOP COATING PROGRAM AND ARTICLE 442-8 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

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

THE SUBSTRUCTURE OF THE EXISTING BRIDGE INDICATED ON THE PLANS IS FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

ALL TIMBER AND LUMBER MEMBERS SHALL BE TREATED SOUTHERN PINE AND CONFORM TO SECTION 1082 OF THE STANDARD SPECIFICATIONS.

ALL TIMBER DIMENSIONS SHOWN ON THE PLANS ARE NOMINAL DIMENSIONS.

WHEN FIELD CUTTING TIMBER MEMBERS, TREAT NEWLY EXPOSED SURFACES WITH EITHER A BITUMINOUS ASPHALT-BASED ROOFING CEMENT, COPPER NAPHTHENATE PASTE, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING.

NOTES

TREAT ALL DRILLED OR NEWLY EXPOSED HOLES IN TIMBER MEMBERS BY PUMPING WITH BITUMINOUS ASPHALT-BASED ROOFING CEMENT, OR APPROVED PRESERVATIVE SYSTEM BEFORE INSTALLING HARDWARE.

PRE-DRILL HOLES IN TIMBER AND LUMBER MEMBERS ACCEPTING BOLTS TO ELIMINATE SPLITTING.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATION, UNLESS OTHERWISE NOTED ON THE PLANS.

DO NOT DRIVE LAG/STRUCTURAL SCREWS WITH A HAMMER, SCREW OR TORQUE LAG/STRUCTURAL SCREWS.

SCREWS SHALL PROVIDE SUFFICIENT LENGTH SO THAT SCREW SHANK WILL PENETRATE RECEIVING MEMBERS.

FOR ASBESTOS ASSESSMENT, SEE SPECIAL PROVISIONS.

FOR TIMBER BRIDGE DECK SYSTEM INCLUDING HARDWARE FOR BOLT CONNECTIONS AND HARDWARE FOR SCREW CONNECTIONS, SEE TIMBER BRIDGE SUPERSTRUCTURE ON STEEL BEAMS SPECIAL PROVISION.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL MAY CONTAIN LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "REMOVAL OF EXISTING STRUCTURE."

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 ALL STRUCTURES WITH THE EXCEPTION THAT CLASS AA CONCRETE SHALL BE USED IN BRIDGE SUPERSTRUCTURES.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4".

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.

FOUNDATION NOTES:

END BENT SCOUR PROTECTION IS REQUIRED FOR SPREAD FOOTINGS AT ABUTMENT 1 AND ABUTMENT 2.

CONSTRUCT THE REINFORCED CONCRETE FOOTING AT STATION -L- 10+66.00 AND STATION -L- 11+03.50 WITH 1/4" OF CAMBER AT THE FRONT FACE OF THE ABUTMENT TO ACCOUNT FOR ANTICIPATED SETTLEMENT.

EXCAVATE 3FT OF SANDY SILT BELOW ELEVATION 2250 FT. COMPACT THE NATIVE SOIL TO FORM A STABLE WORKING PLATFORM FREE OF SURGING WATER FROM NEARBY CREEK.

INSTALL NCDOT APPROVED TYPE 2 GEOTEXTILE OVER THE PREPARED SUBGRADE. BACKFILL WITH SELECT MATERIAL, CLASS IV MEETING THE REQUIREMENTS OF SECTION 1016 OF THE STANDARD SPECIFICATIONS, AND COMPACT PROPERLY.

FOR SELECT MATERIAL, CLASS VI, SEE SPECIAL PROVISIONS.

HYDRAULIC DATA:

EXISTING BRIDGE OPENING = 80.4 SF
PROPOSED BRIDGE OPENING = 103.9 SF

TOTAL BILL OF MATERIAL

	CONSTRUCTION MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	ASBESTOS ASSESSMENTS	UNCLASSIFIED STRUCTURE EXCAVATION	FOUNDATION EXCAVATION FOR ABUTMENT 1	FOUNDATION EXCAVATION FOR ABUTMENT 2	CLASS A CONCRETE	REINFORCING STEEL	APPROX. 16,352 LBS. OF STRUCTURAL STEEL	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARING	SELECT MATERIAL CLASS IV	SELECT MATERIAL CLASS VI	TIMBER DECK SYSTEM
	LUMP SUM	LUMP SUM	EACH	LUMP SUM	LUMP SUM	LUMP SUM	CU. YDS.	LBS.	LUMP SUM	TONS	SO.YDS.	LUMP SUM	TONS	TONS	LUMP SUM
SUPERSTRUCTURE		LUMP SUM	1	LUMP SUM	LUMP SUM	LUMP SUM			LUMP SUM			LUMP SUM			LUMP SUM
ABUTMENT 1							22.9	3,122		68	167		83	27	
ABUTMENT 2							24.1	3,165		73	172		83	29	
TOTAL	LUMP SUM	LUMP SUM	1	LUMP SUM	LUMP SUM	LUMP SUM	47.0	6,287	LUMP SUM	141	339	LUMP SUM	166	56	LUMP SUM

RECOMMENDED INSPECTION AND MAINTENANCE

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

INITIAL:	INSPECT WITHIN 6 MONTHS OF CONSTRUCTION COMPLETION
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.

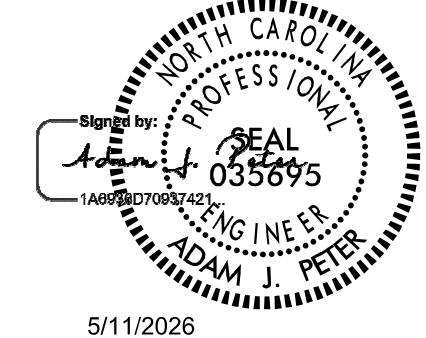
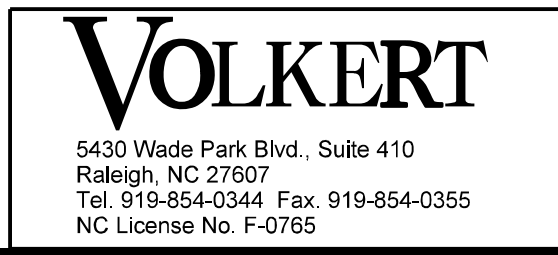
OBSERVE BETWEEN INSPECTIONS FOR CRACKS RUST OR SPALLING IN CONCRETE OR STEEL COMPONENTS, SIGNS OF EROSION OR SCOURING AROUND ABUTMENTS AND PIERS, DECK SURFACE WEAR, DAMAGE OR DETERIORATION OF WHEEL GUARD.

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, AND SEALING CRACKS IN CONCRETE.

NOTE THAT THE TIMBER DECK DISTRIBUTES LOAD TO THE STEEL BEAMS AND SHOULD BE MAINTAINED IN GOOD CONDITION. APPLY WOOD SEALER OR PRESERVATIVE AFTER 10 YEARS IN SERVICE AND THEREAFTER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REPLACE WORN TIMBER MEMBERS IN KIND.

DRAWN BY : M. HOGAN DATE : 12/25
CHECKED BY : A. PETER DATE : 12/25
DESIGN ENGINEER OF RECORD : A. PETER DATE : 01/26



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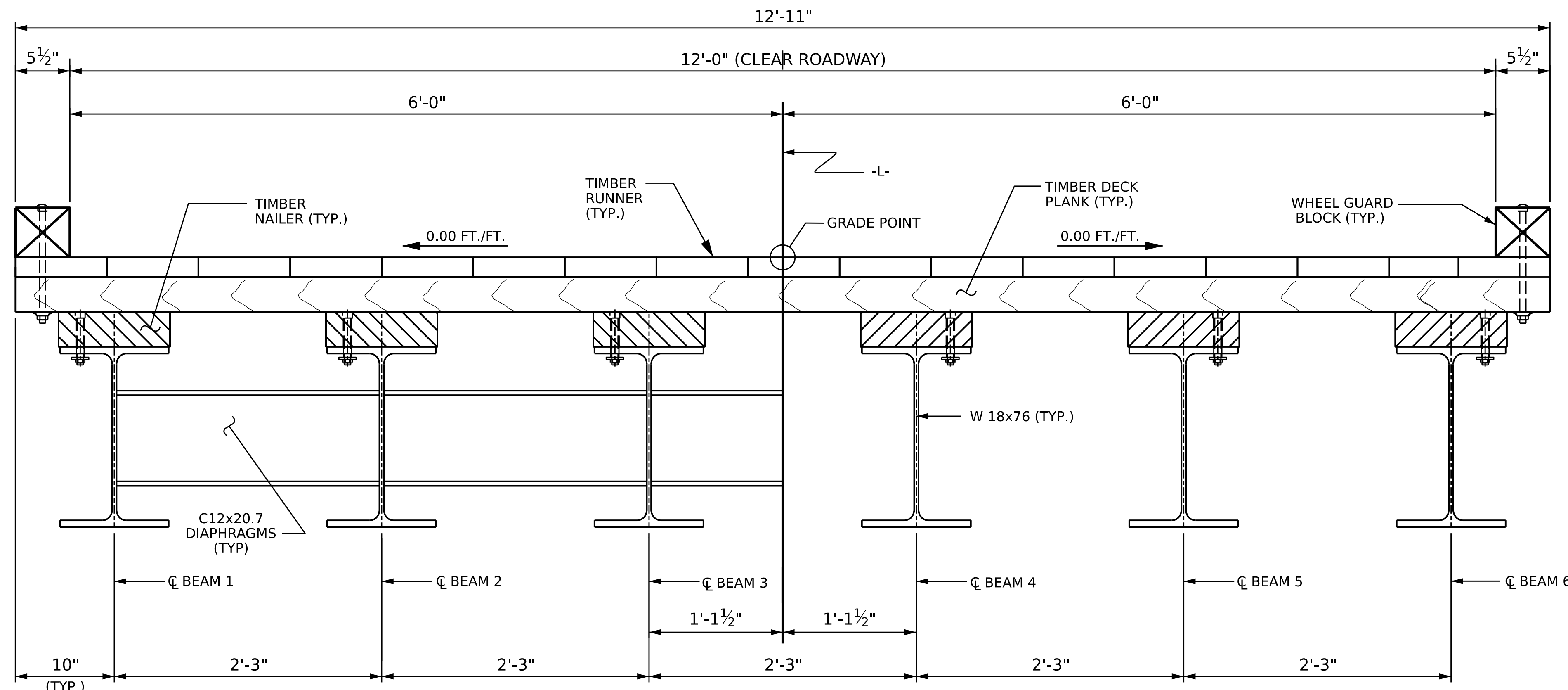
PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
STATION: **10+84.75 -L-**

SHEET 3 OF 3
NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT

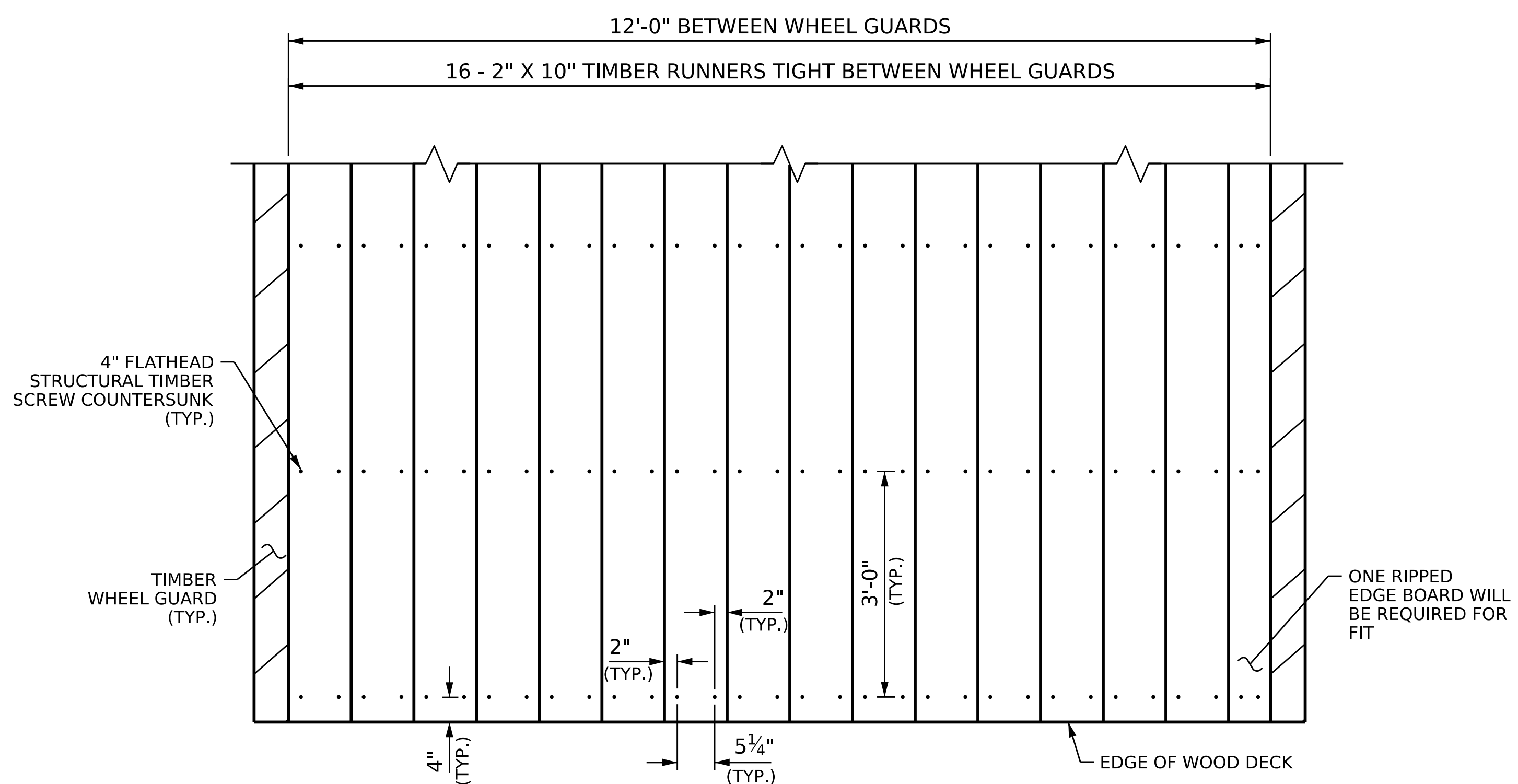
GENERAL DRAWING
PRIVATE BRIDGE REPLACEMENT
LOCATED AT 548 AVERY CREEK RD,
ARDEN, NC 28704

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

S-3
TOTAL SHEETS 11

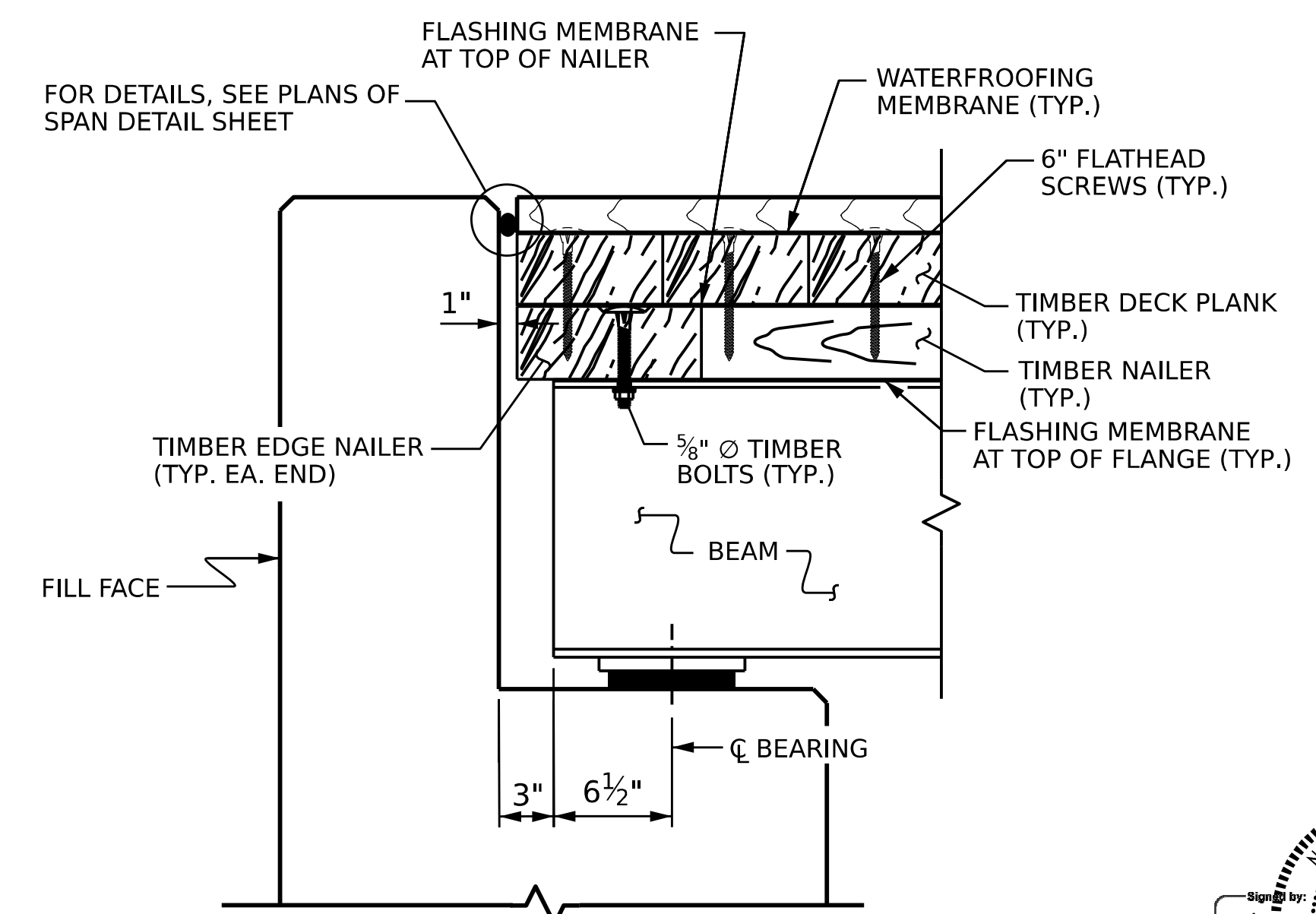


TYPICAL SECTION



PARTIAL PLAN OF TIMBER RUNNERS

(10" X 10" DECK TIMBERS NOT SHOWN FOR CLARITY)
(TIMBER RUNNER BUTT JOINTS WILL BE STAGGERED BY 4' MINIMUM)

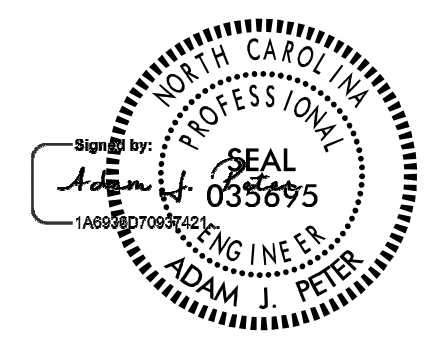


SECTION AT ABUTMENT

NOTES

- FOR TIMBER BRIDGE DECK SYSTEM DETAILS, SEE PLAN OF SPAN.
- PRIOR TO PLACING TIMBER BEAM NAILER AND EDGE NAILER MEMBERS, PLACE A FLASHING MEMBRANE ON THE TOP OF THE STEEL BEAMS.
- PRIOR TO PLACING TIMBER PLANK MEMBERS, PLACE A SELF-ADHERING FLASHING MEMBRANE ON THE TOP OF THE TIMBER NAILERS.
- FOR BEAM AND DIAPHRAGM DETAILS, SEE FRAMING PLAN SHEET.

PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
 STATION: **10+84.75 -L-**



NORTH CAROLINA
 OFFICE OF EMERGENCY MANAGEMENT

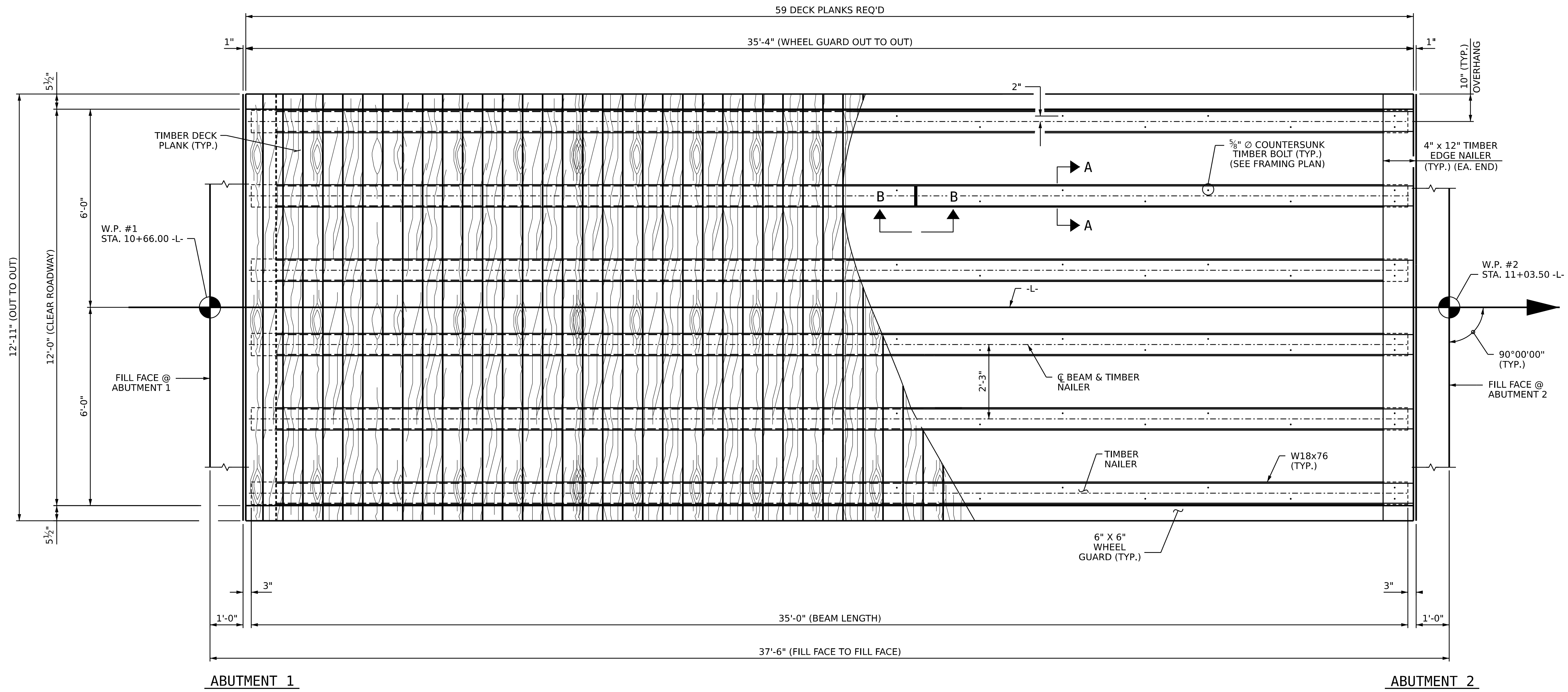
**SUPERSTRUCTURE
 TYPICAL SECTION**

DRAWN BY :	M. HOGAN	DATE :	11/25
CHECKED BY :	B. BARNHILL	DATE :	12/25
DESIGN ENGINEER OF RECORD :	A. PETER	DATE :	01/26

VOLKERT
 5430 Wade Park Blvd., Suite 410
 Raleigh, NC 27607
 Tel: 919-854-0344 Fax: 919-854-0355
 NC License No. F-0765

DOCUMENT NOT CONSIDERED
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 SIGNATURES COMPLETED

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



DECK LAYOUT

NOTES

FOR ADDITIONAL NOTES, SEE TYPICAL SECTION AND GENERAL DRAWING SHEETS.

STAGGER TIMBER DECK PLANKS BUTT JOINTS AT 4FT MINIMUMS FORM ADJACENT RUNS.

ATTACH TIMBER DECK PLANKS TO NAILERS WITH TWO STRUCTURAL SCREWS PER TIMBER DECK PLANK.

AVOID HITTING NAILER BOLT WHEN DRIVING TIMBER DECK SCREWS.

SEE BEAM DETAILS FOR SPACING OF TIMBER BOLTS IN TOP FLANGE OF ROLLED BEAM.

COUNTERSINK TIMBER BOLTS AND STRUCTURAL SCREW HEADS TO BE FLUSH WITH TIMBER SURFACE.

TRIM THE EDGE NAILER FLUSH WITH THE EDGE OF DECK.

DECK PLANK WIDTH MAY BE CUT TO 6" (MIN.) TO FIT WITHIN LIMITS OF TIMBER DECK. ALL DECK PLANKS ATTACHED TO THE EDGE NAILER SHALL BE FULL WIDTH. CUT BOARDS WILL NOT BE PERMITTED TO BE PLACED ADJACENT TO ONE ANOTHER.

FINAL JOINT SEALS SHALL NOT BE INSTALLED UNTIL THE OVERLAY IS COMPLETE.

THE MANUFACTURER IS TO PROVIDE THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE BACKER ROD FOR THE SIZE OF THE OPENING ON THE PLANS AND ACCOMODATE THE MINIMUM EXPANSION SHOWN ON THE PLANS

POURABLE SILICONE JOINT SEALANT SHALL BE INSTALLED AS PER THE MANUFACTURER'S RECOMMENDATIONS.

THE CONTRACTOR WILL NOT BE PERMITTED TO FORM THE JOINTS IN LIEU OF SAWING THE JOINT.

FOR POURABLE SILICONE JOINT SEALANT, SEE SPECIAL PROVISIONS.

PROJECT NO. **001-01-70345**

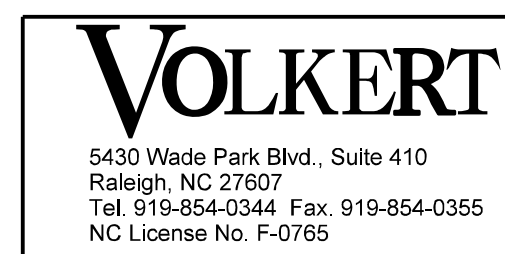
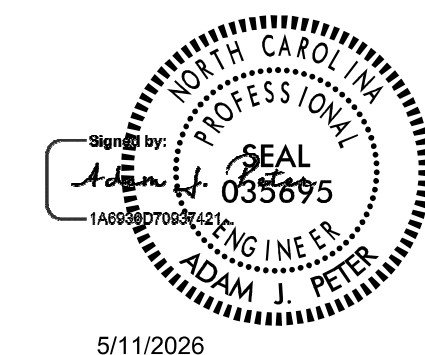
BUNCOMBE COUNTY

STATION: **10+84.75 -L-**

SHEET 1 OF 2

NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT

**PLAN OF 35'-0" BEAM
12'-0" CLEAR ROADWAY
90° SKEW**

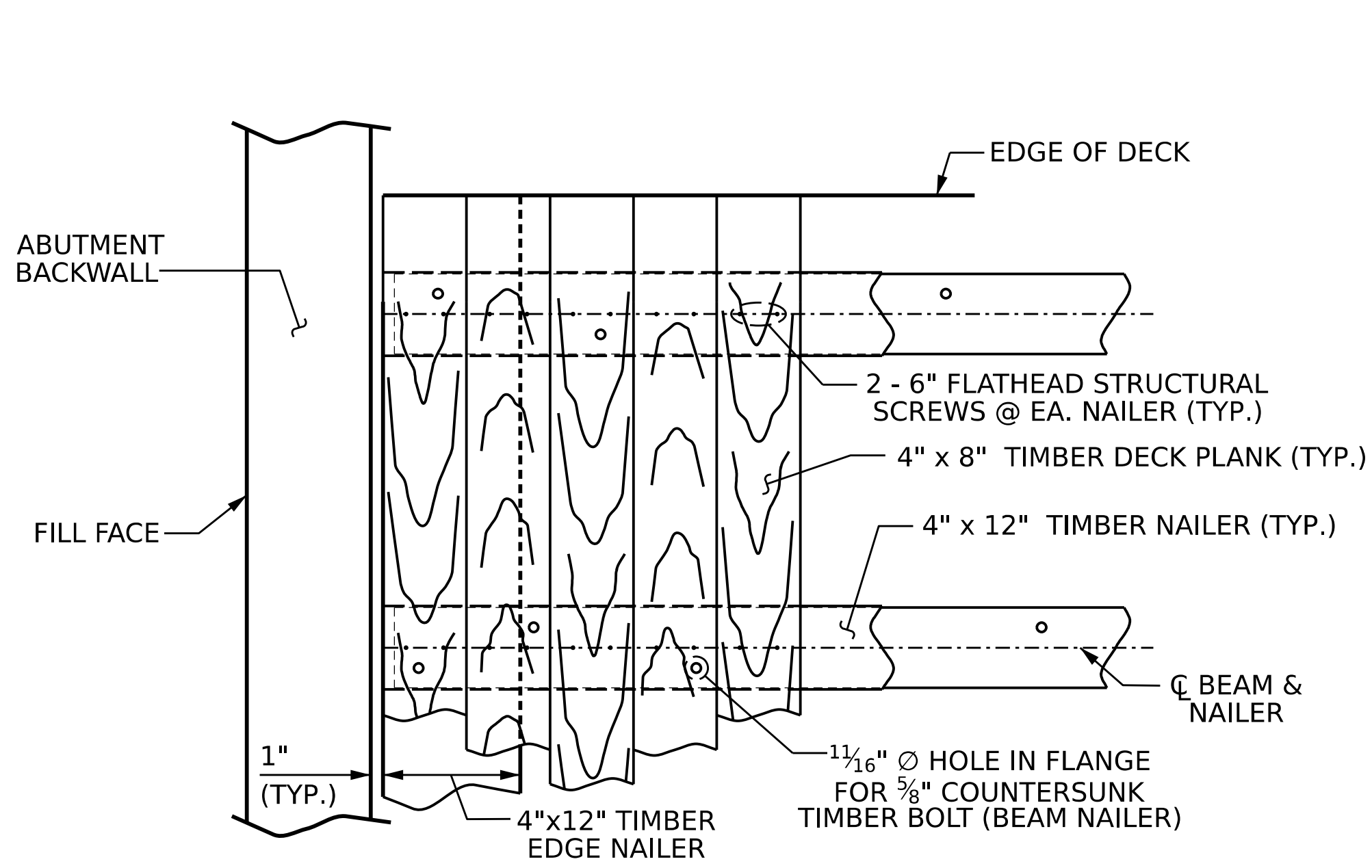


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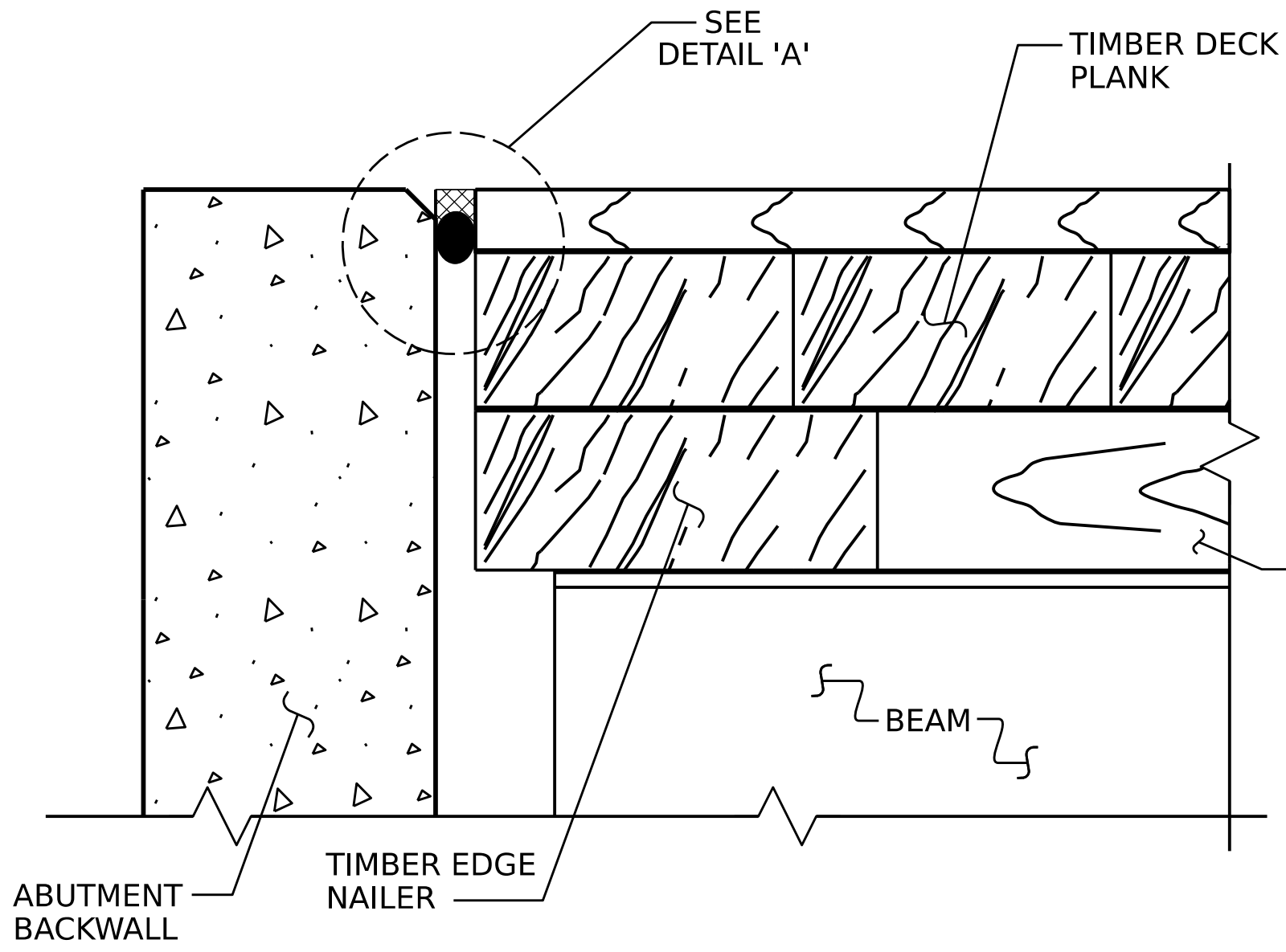
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NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-5
TOTAL SHEETS
11

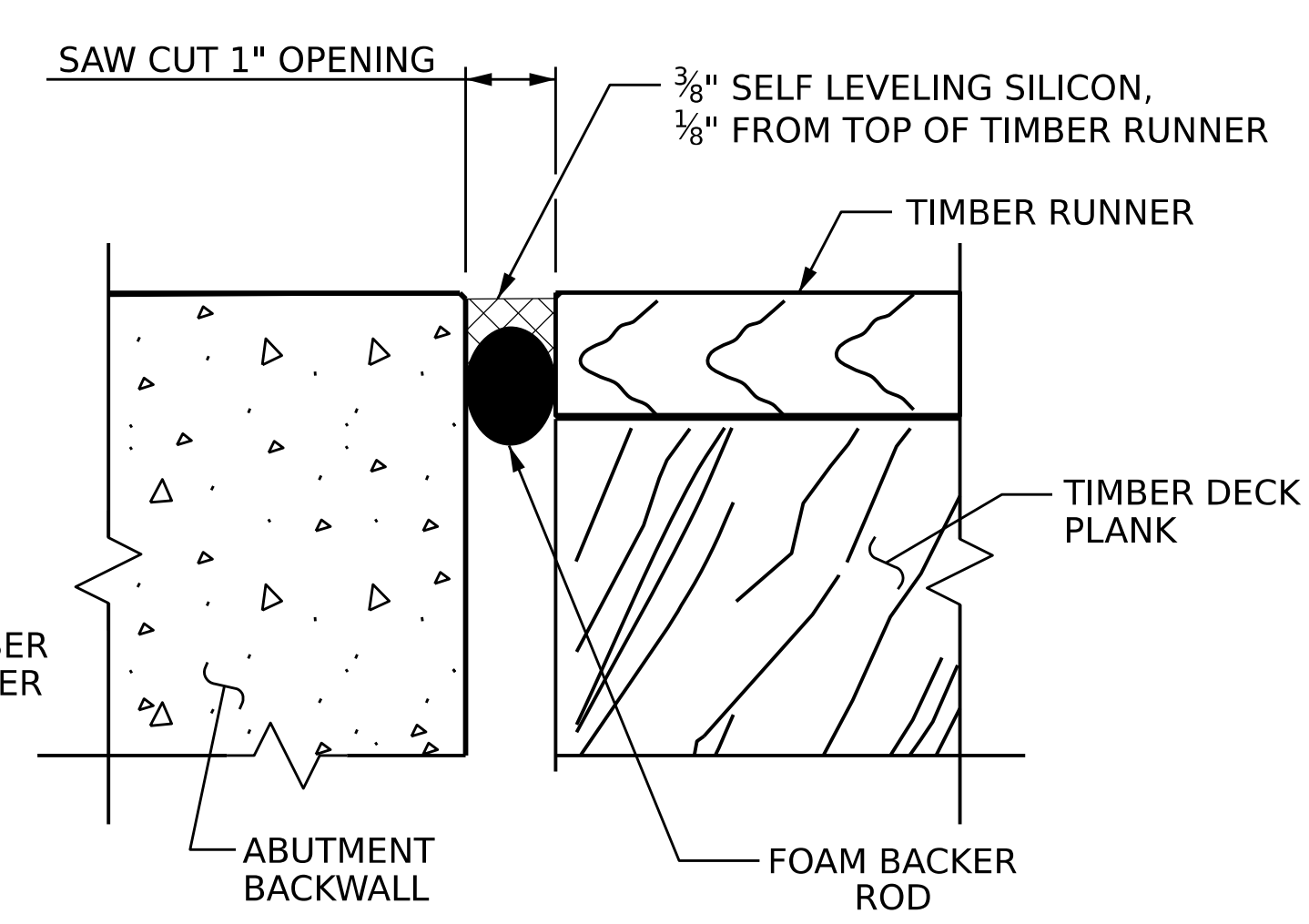
DRAWN BY :	M. HOGAN	DATE :	11/25
CHECKED BY :	B. BARNHILL	DATE :	12/25
DESIGN ENGINEER OF RECORD:	A. PETER	DATE :	01/26



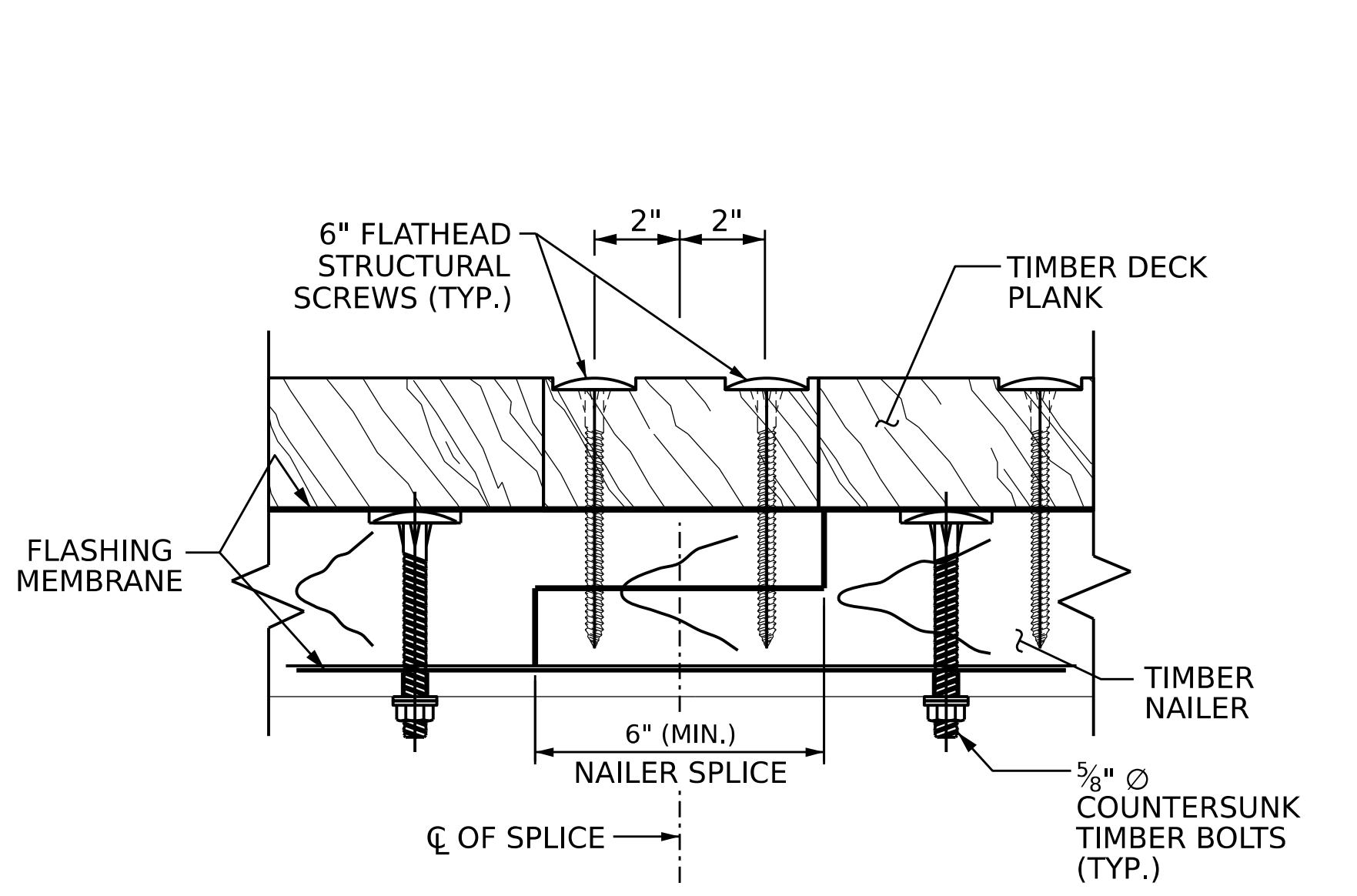
TYPICAL DECK DETAIL AT ABUTMENT



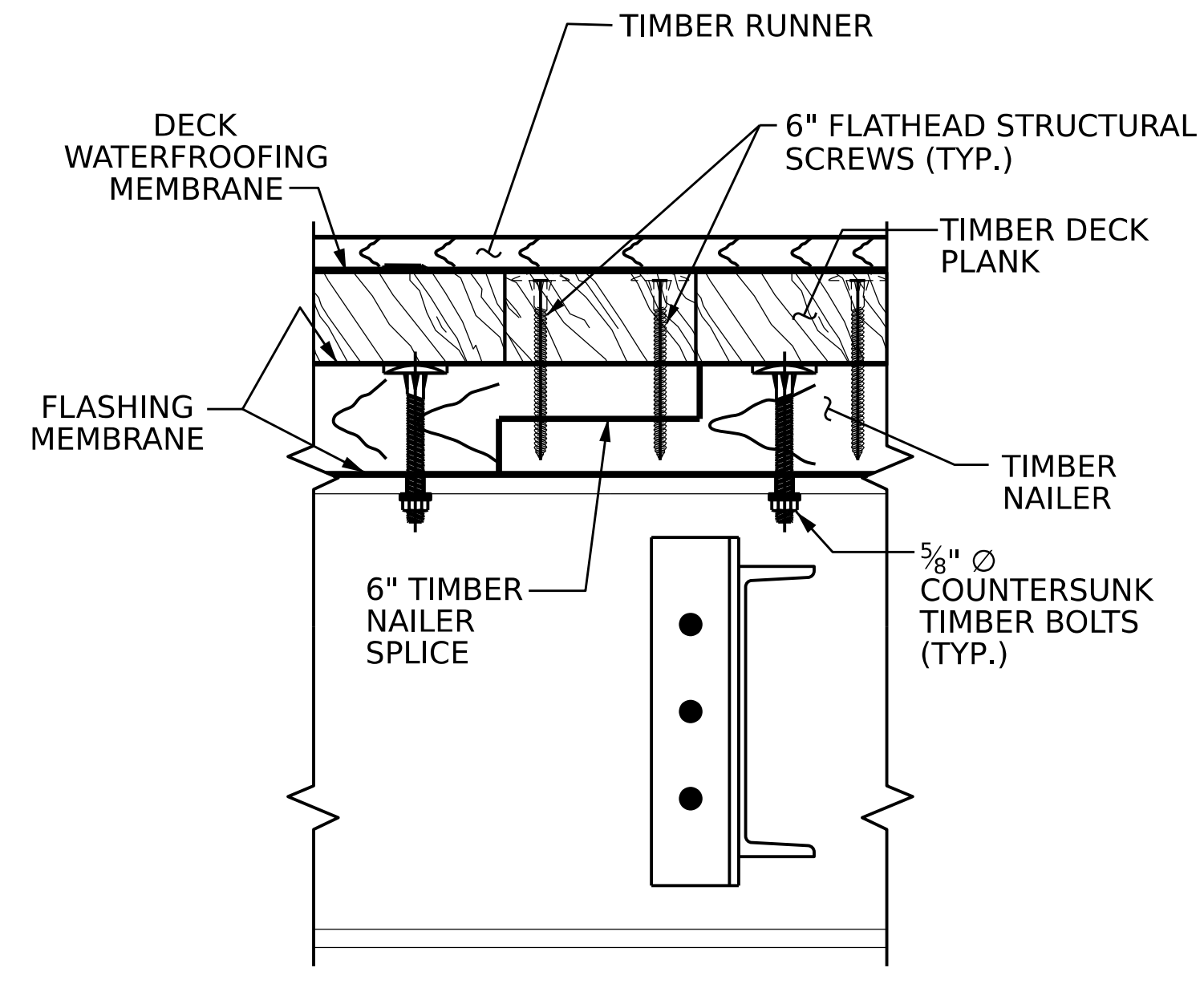
PROPOSED POURABLE SILICONE JOINT DETAIL



DETAIL 'A'

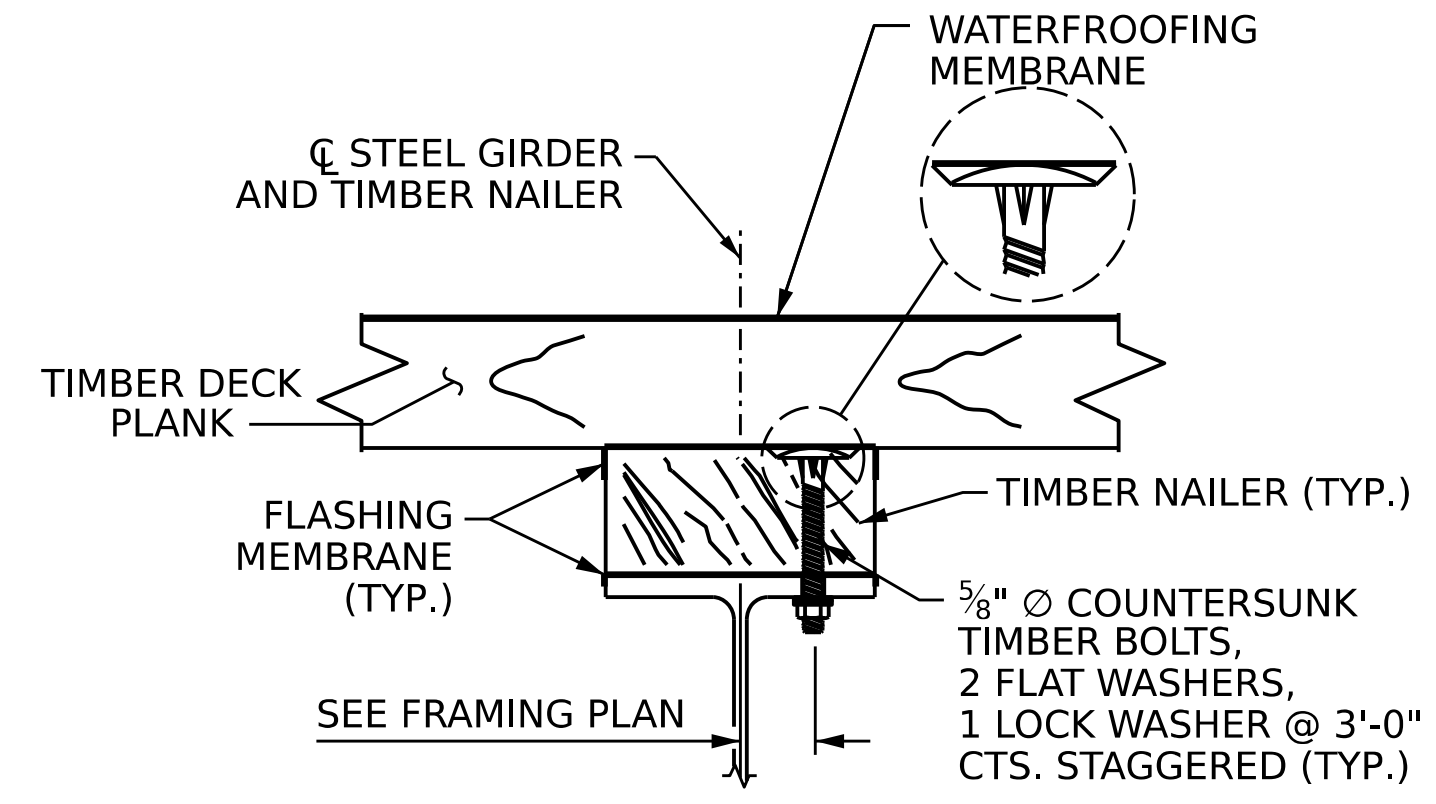


NAILER SPLICE DETAIL



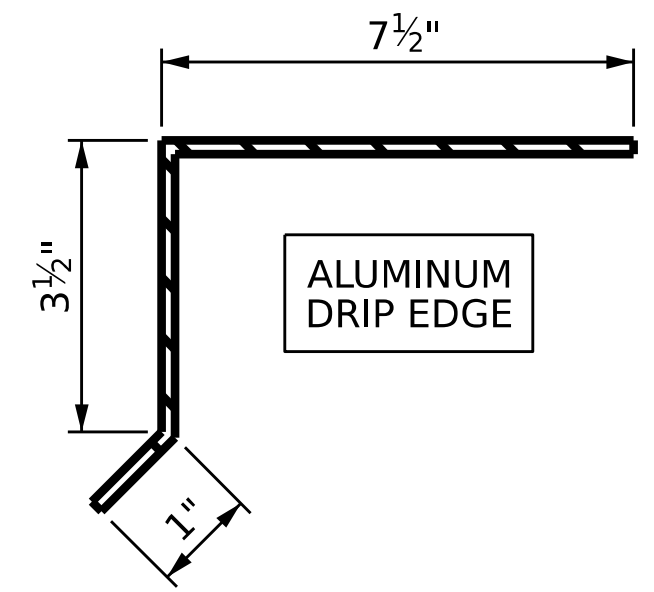
SECTION A-A

NAILER SPLICE & TIMBER PLANK ATTACHMENT DETAILS



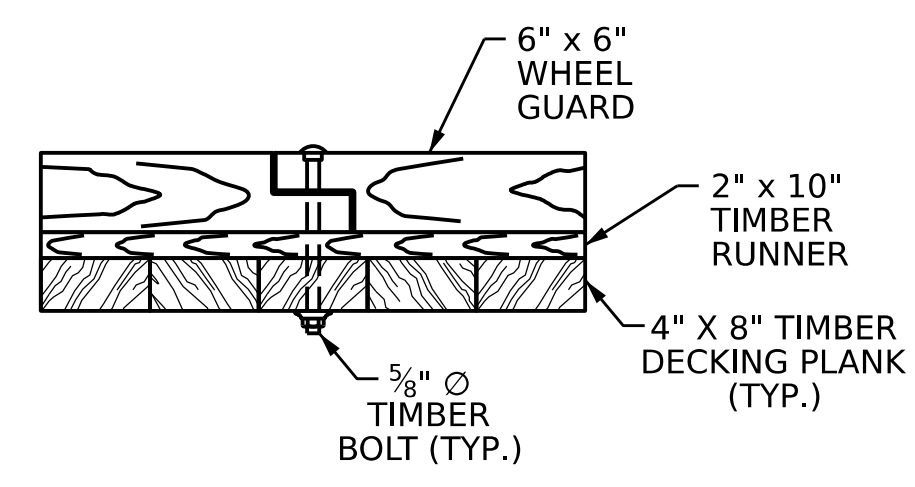
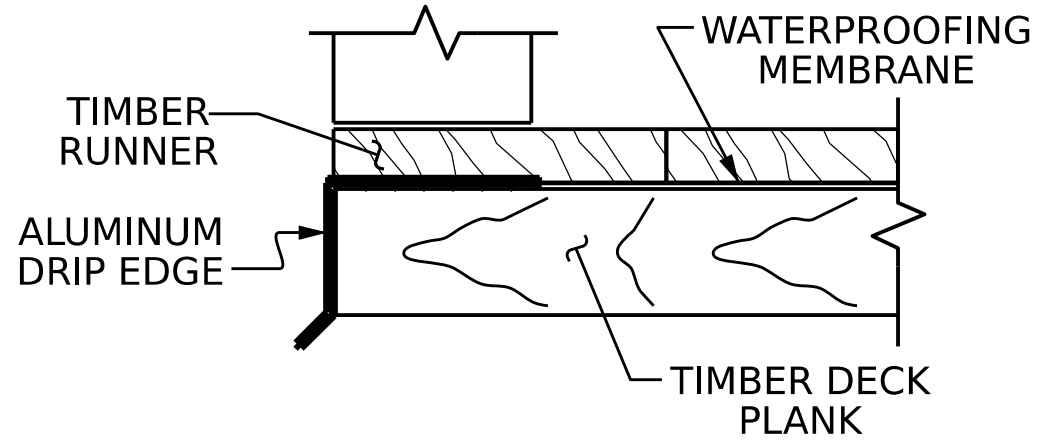
SECTION B-B

TIMBER NAILER ATTACHMENT DETAILS



DRIP EDGE DETAILS

POST AND BOLTS NOT SHOWN FOR CLARITY



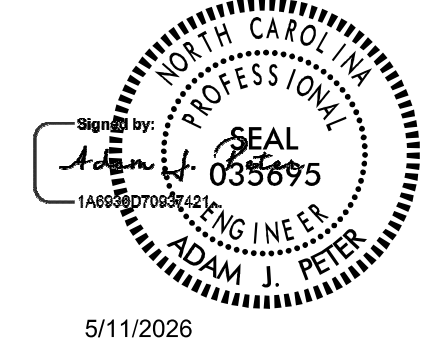
WHEEL GUARD SPLICE DETAIL

BILL OF MATERIAL FOR 35' -0" SPAN			
TREATED LUMBER			
ITEM	SIZE	LIN. FT.	
TIMBER DECK PLANKS	4"x8"	762.1	
TIMBER NAILERS	4"x8"	200.8	
TIMBER EDGE NAILERS	4"x12"	25.8	
TIMBER DECK RUNNERS	2"x10"	600.7	
WHEEL GUARD	6"x6"	70.7	
TOTAL TREATED LUMBER		1660.1 LIN. FT.	
FLASHING MEMBRANE			
ITEM	SIZE	LIN. FT.	
TOP OF BEAM	25 MILS	210.0	
TOP OF TIMBER NAILERS	25 MILS	200.8	
TOP OF TIMBER EDGE NAILERS	25 MILS	25.8	
FLASHING MEMBRANE		436.6 LIN. FT.	
HARDWARE			
ITEM	NO.	SIZE	LBS
5/8" Ø TIMBER BOLTS	216	5/8"	303
HEAVY HEX NUTS	216	5/8"	26
STANDARD WASHER	216	5/8"	17
LOCK WASHER	216	5/8"	17
FLATHEAD STR. SCREWS	416	4"	71
	708	6"	34
HARDWARE FOR CONNECTIONS		468 LBS.	
DECK WATERPROOFING MEMBRANE			
ITEM	SIZE	SQ. YDS.	
DECK WATERPROOFING MEMBRANE	65 MILS	50.7	
DRIP EDGE			
ITEM	SIZE	LIN. FT.	
22 GA. ALUMINUM DRIP EDGE	1'-0"	70.7	

PROJECT NO. **011-01-70345**
BUNCMBE COUNTY
 STATION: **10+84.75 -L-**

SHEET 2 OF 2

NORTH CAROLINA
 OFFICE OF EMERGENCY MANAGEMENT
 STANDARD
 SUPERSTRUCTURE
**PLAN OF SPAN
 DETAILS**



5/11/2026

ASSEMBLED BY: M. HOGAN	DATE: 11/25
CHECKED BY: B. BARNHILL	DATE: 12/25
DRAWN BY: BNB	4/24
CHECKED BY: JDH	10/24

VOLKERT
 5430 Wade Park Blvd., Suite 410
 Raleigh, NC 27607
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

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

S-6
TOTAL SHEETS
11

NOTES

NO SALVAGED BEAMS SHALL BE USED, UNLESS OTHERWISE NOTED ON THE PLANS.

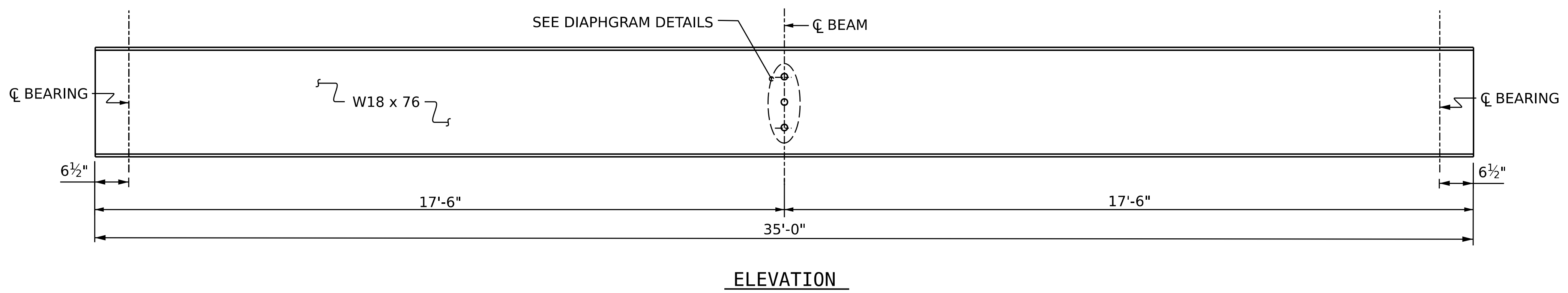
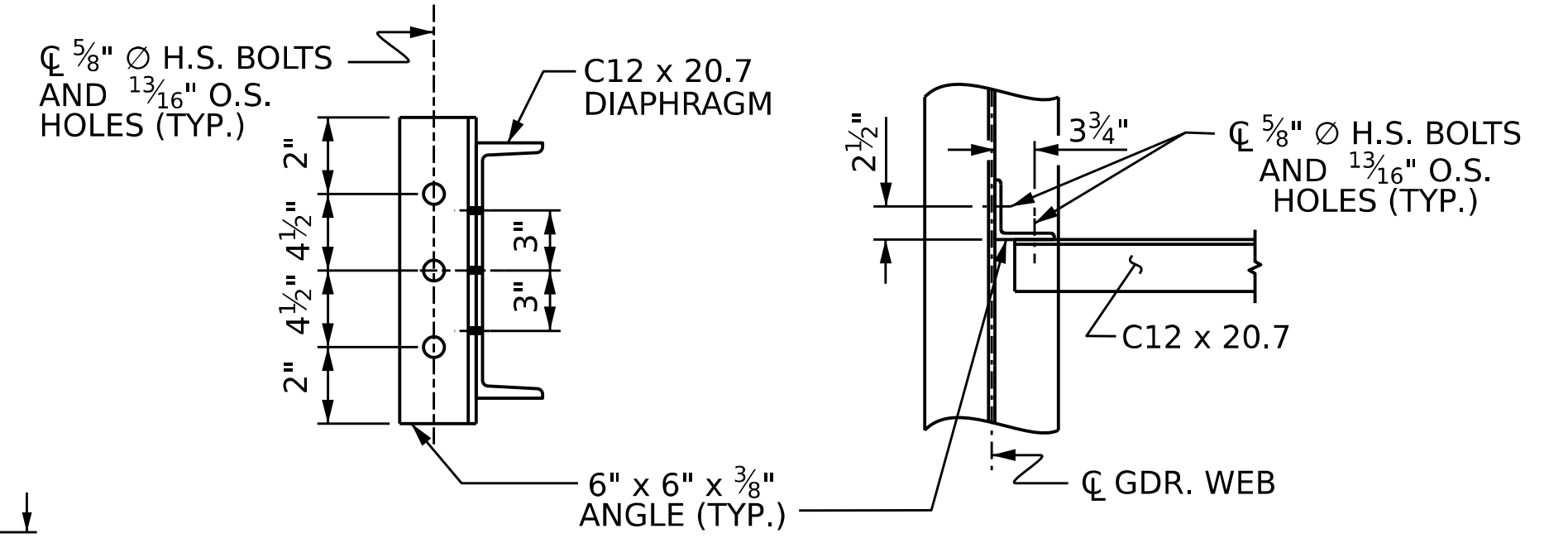
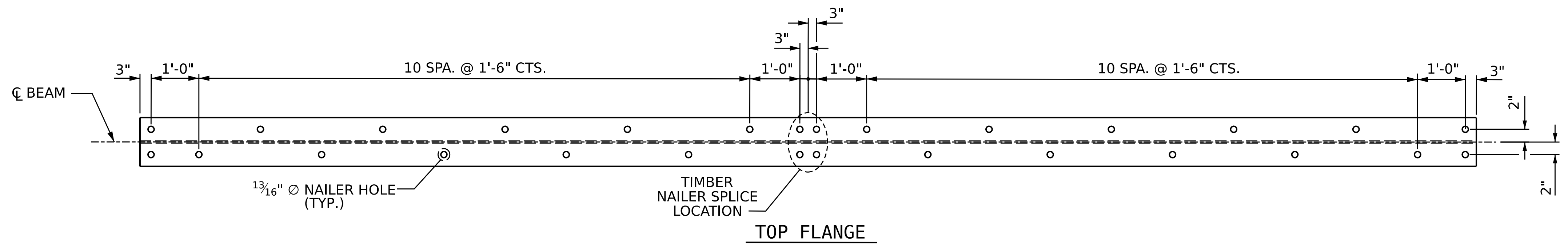
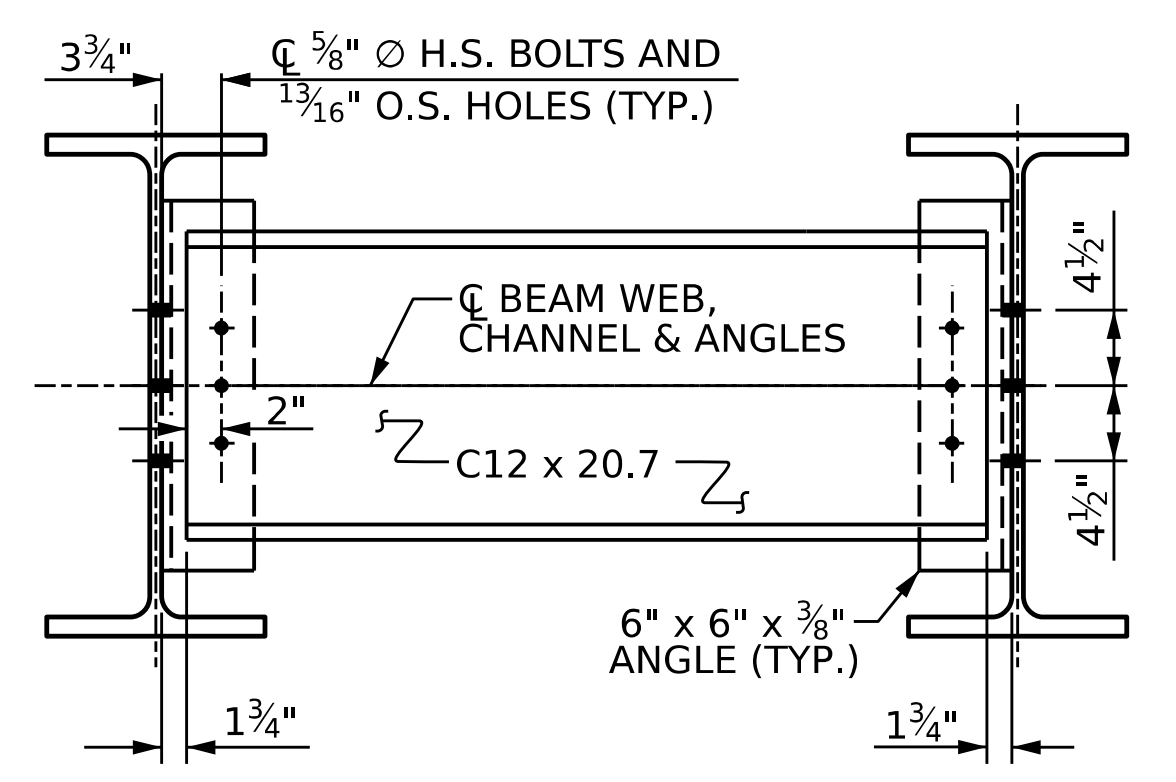
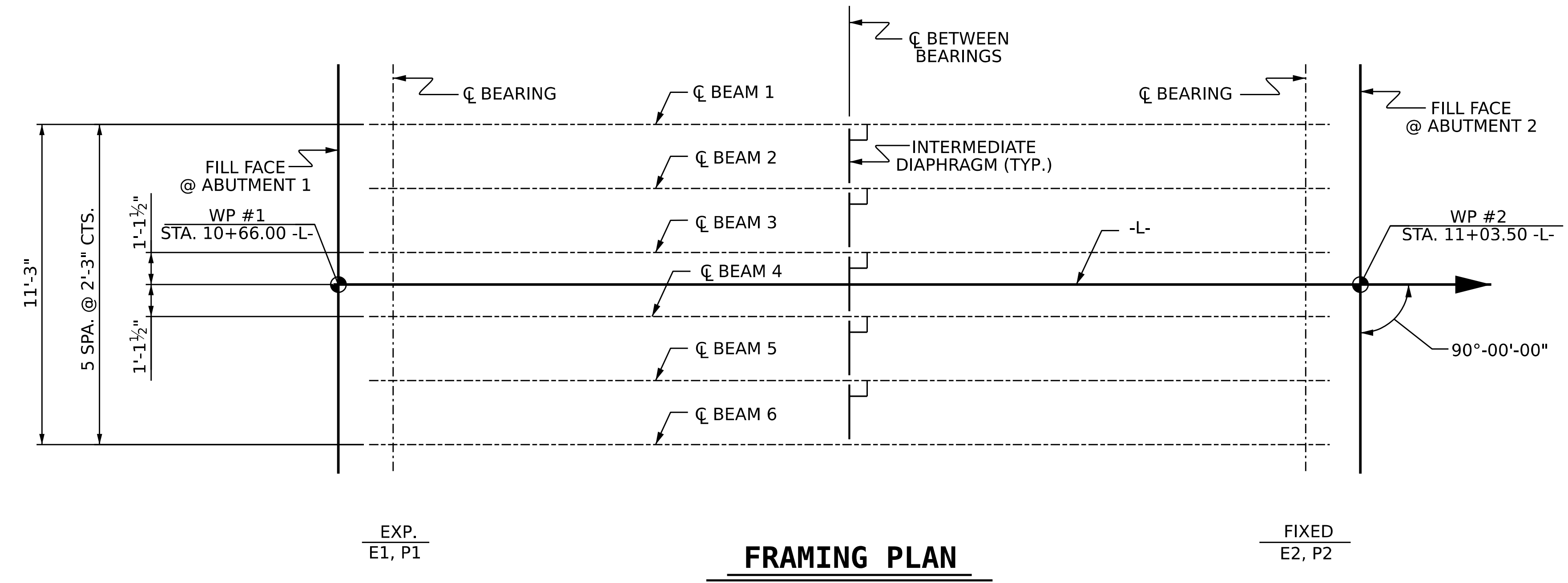
NO SHOP CAMBER REQUIRED, TURN NATURAL MILL CAMBER UP.

ALL STRUCTURAL STEEL FIELD CONNECTIONS SHALL BE 5/8" DIA. GALVANIZED HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

CONTRACTORS OPTION TO WELD CONNECTOR TO BEAM PRIOR TO SHOP COATING.

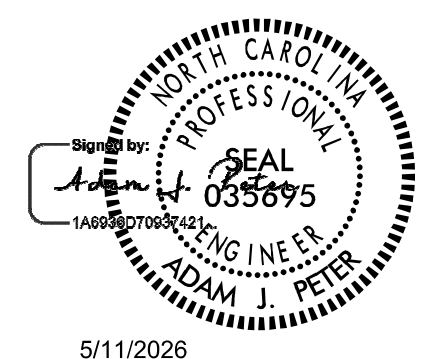
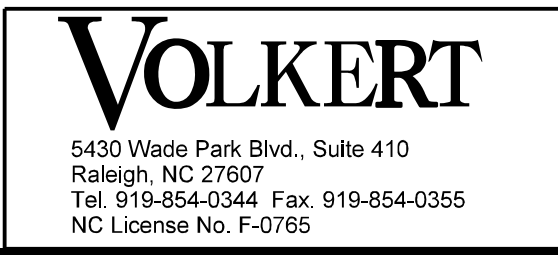
SEE GENERAL DRAWING NOTES FOR COATING.

FOR SIZE AND LOCATION OF OPTIONAL BOLTED SOLE PLATE, SEE BEARING DETAILS SHEET.



BEAM DETAILS

ASSEMBLED BY:	M. HOGAN	DATE :	11/25
CHECKED BY :	B. BARNHILL	DATE :	12/25
DRAWN BY :			
CHECKED BY :			



PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
STATION: **10+84.75 -L-**

NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT			
STANDARD SUPERSTRUCTURE FRAMING PLAN FOR 40' BEAM LENGTH 90° SKEW			
REVISIONS			SHEET NO.
NO.	BY:	DATE:	S-7
1			TOTAL SHEETS
2			11
3			
4			

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTES

ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

AT ALL SUPPORTS, NUTS FOR ANCHOR BOLTS ARE TO BE TIGHTENED FINGER TIGHT AND THEN BACKED OFF 1/2 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

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

ALL BEARING PLATES SHALL BE AASHTO M270 GRADE 36.

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. SHOP INSPECTION IS REQUIRED.

AT THE APPROVAL OF THE ENGINEER, SOLE PLATES AT THE EXPANSION END MAY BE FIELD WELDED.

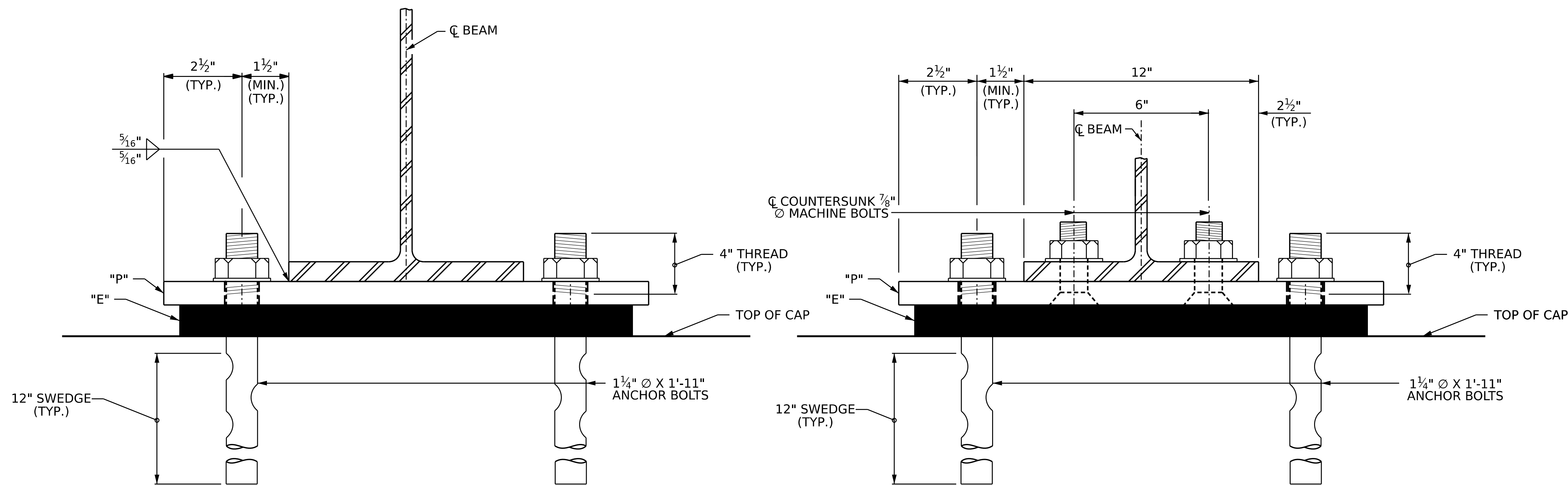
WHEN FIELD WELDING THE SOLE PLATE TO THE GIRDER FLANGE, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE SOLE PLATE DOES NOT EXCEED 300° F. TEMPERATURES ABOVE THIS MAY DAMAGE THE ELASTOMER.

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

AT NO ADDITIONAL COST TO THE DEPARTMENT, THE CONTRACTOR MAY USE ADHESIVELY ANCHORED ANCHOR BOLTS IN PLACE OF CAST-IN-PLACE ANCHORS. LEVEL 1 FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE ANCHOR BOLT IS 30 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE STANDARD SPECIFICATIONS.

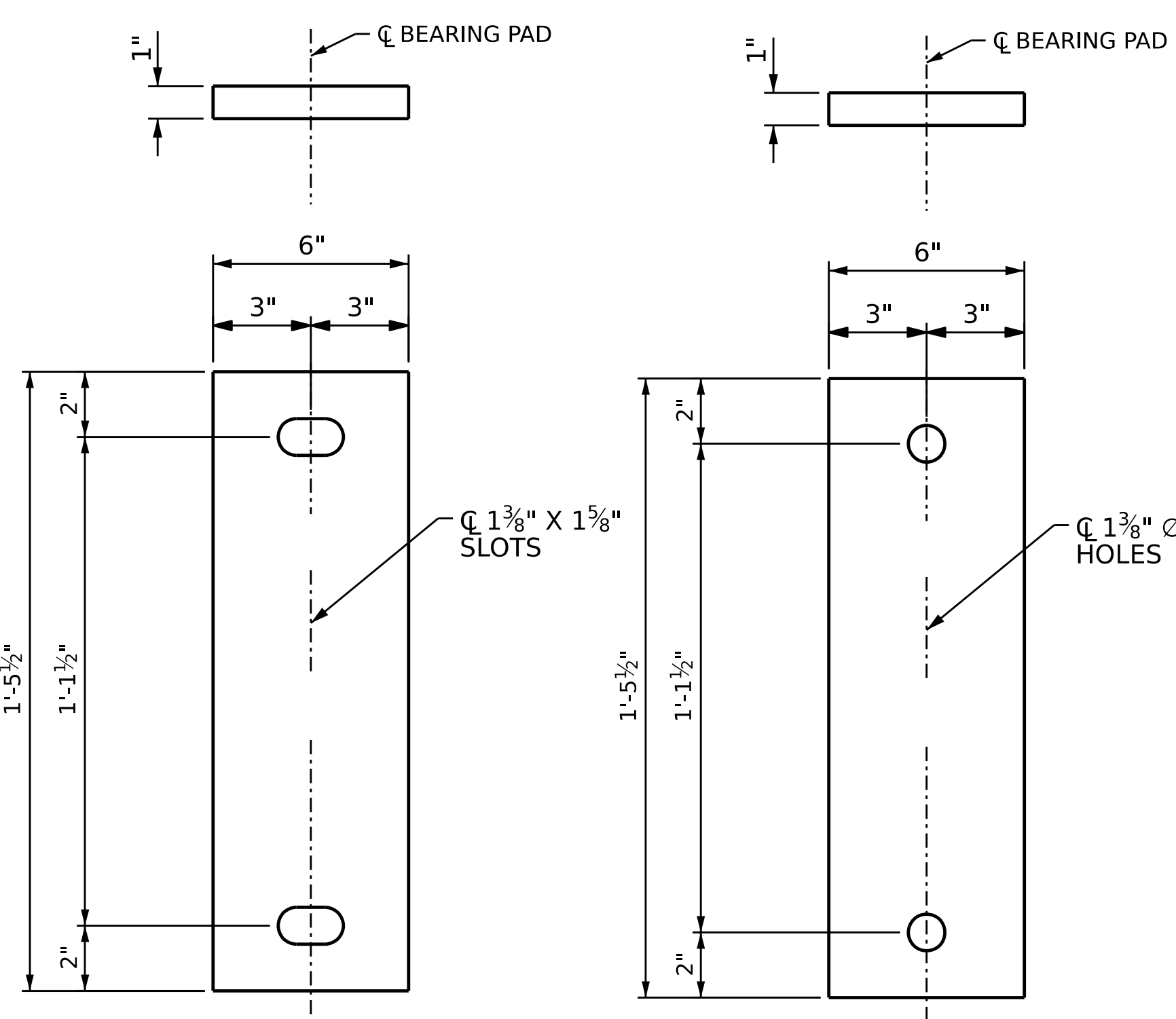
ADHESIVELY ANCHORED ANCHOR BOLTS SHALL BE THREADED FULL LENGTH.

AT THE APPROVAL OF THE ENGINEER, THE OPTIONAL BOLTED SOLE PLATE MAY BE USED AT NO ADDITIONAL COST TO THE DEPARTMENT.

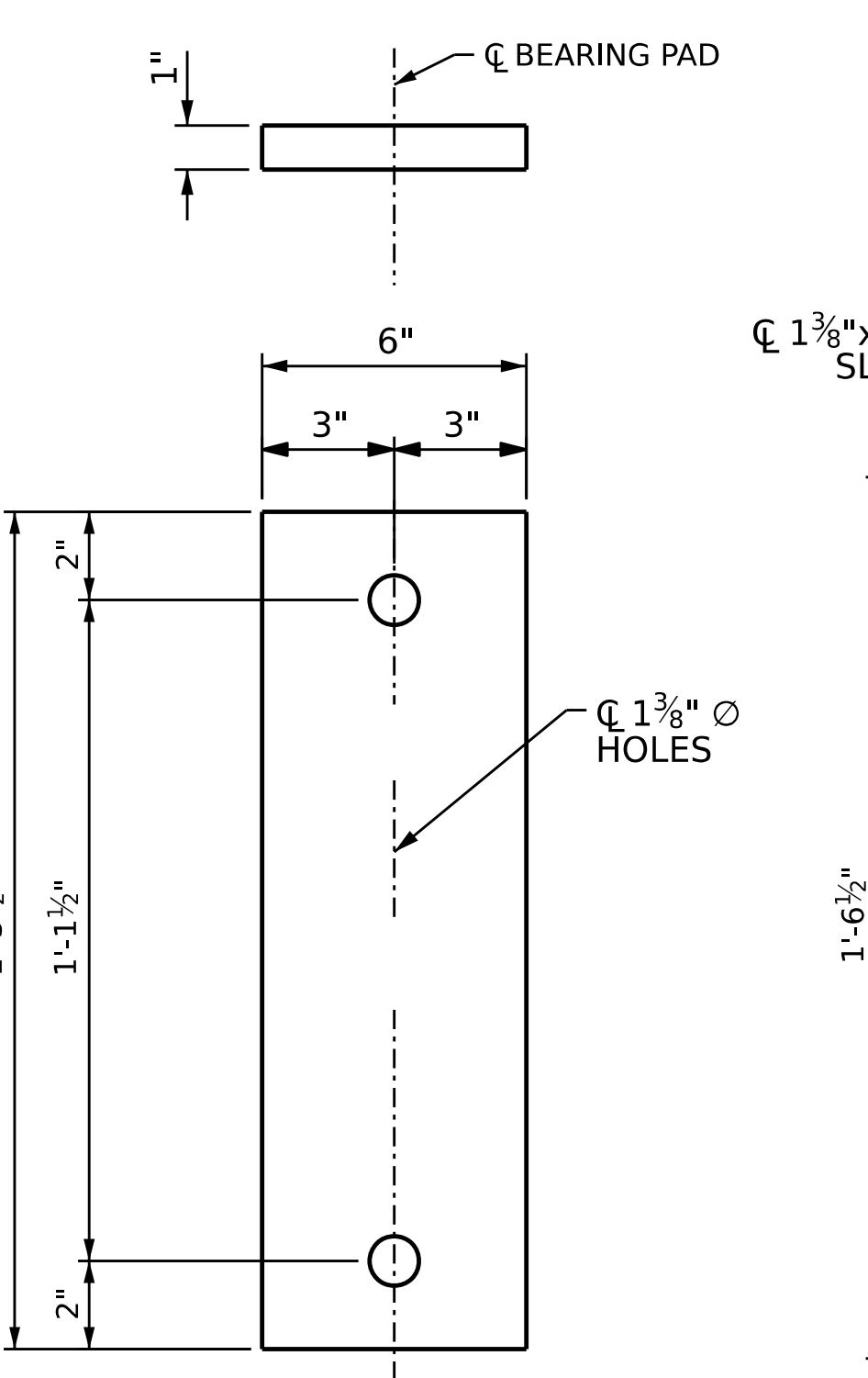


**END VIEW
WELDED**

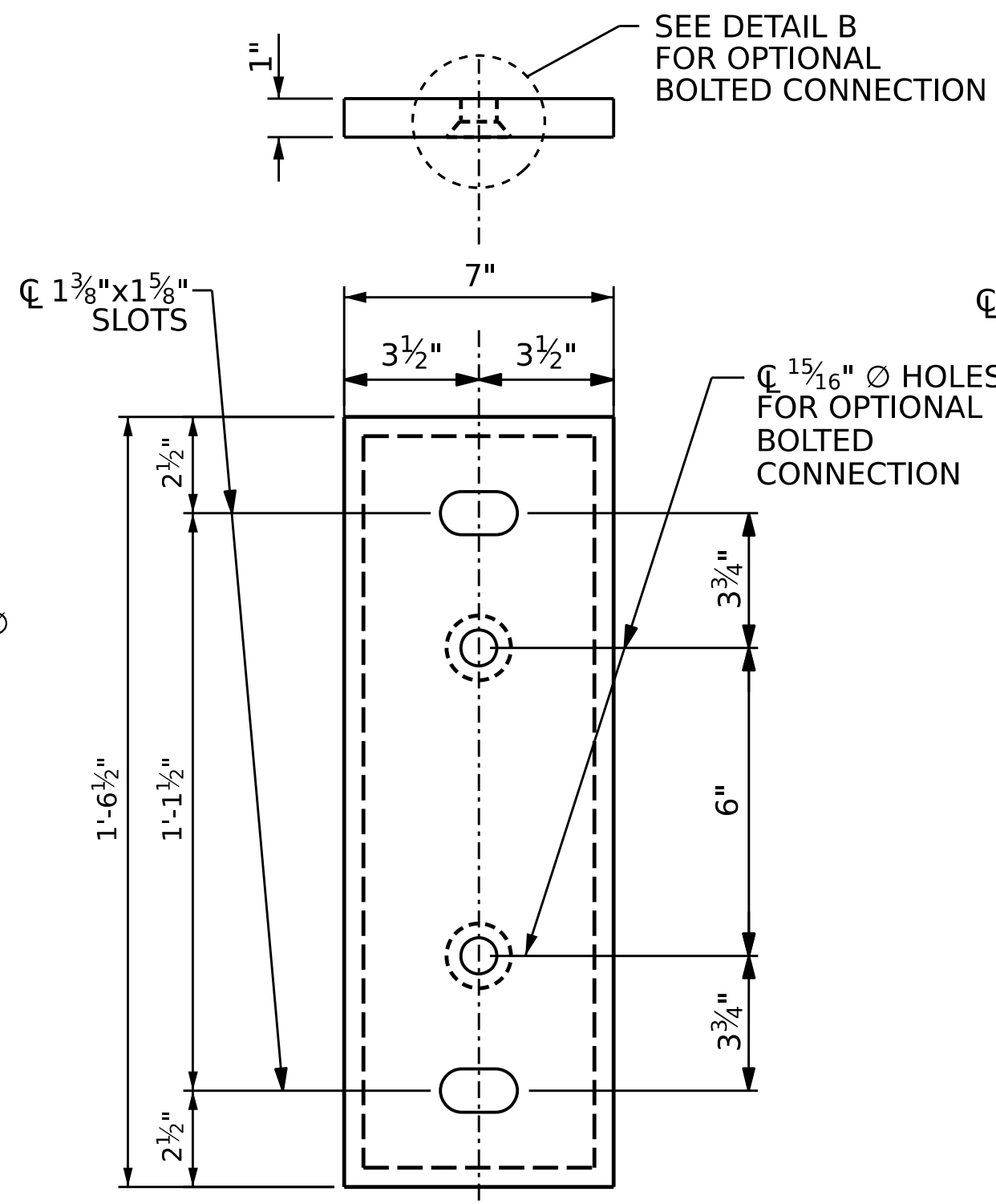
**END VIEW
OPTIONAL BOLTED**



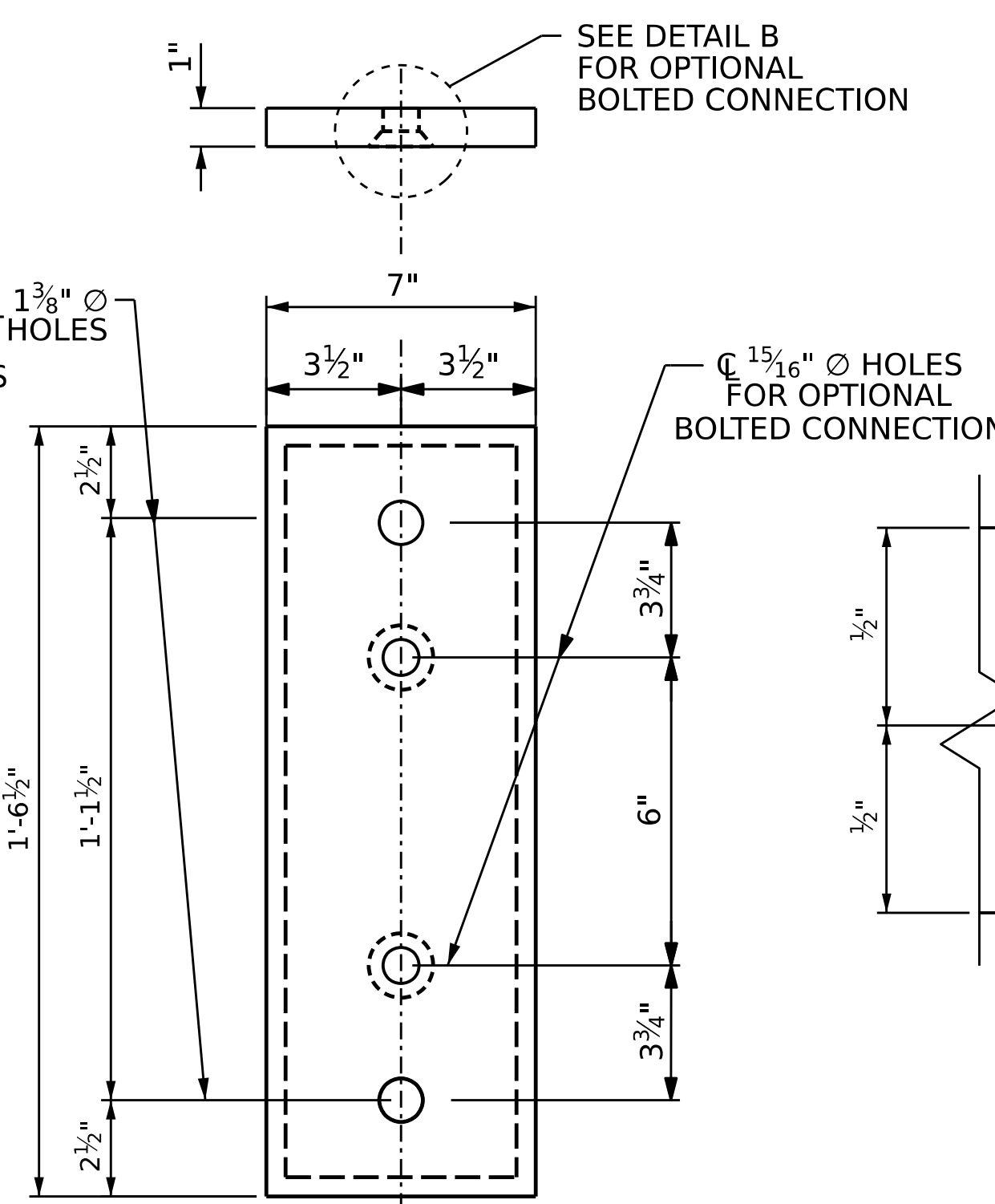
E1 ELASTOMERIC BEARING DETAILS
(6 REQ'D)
EXPANSION



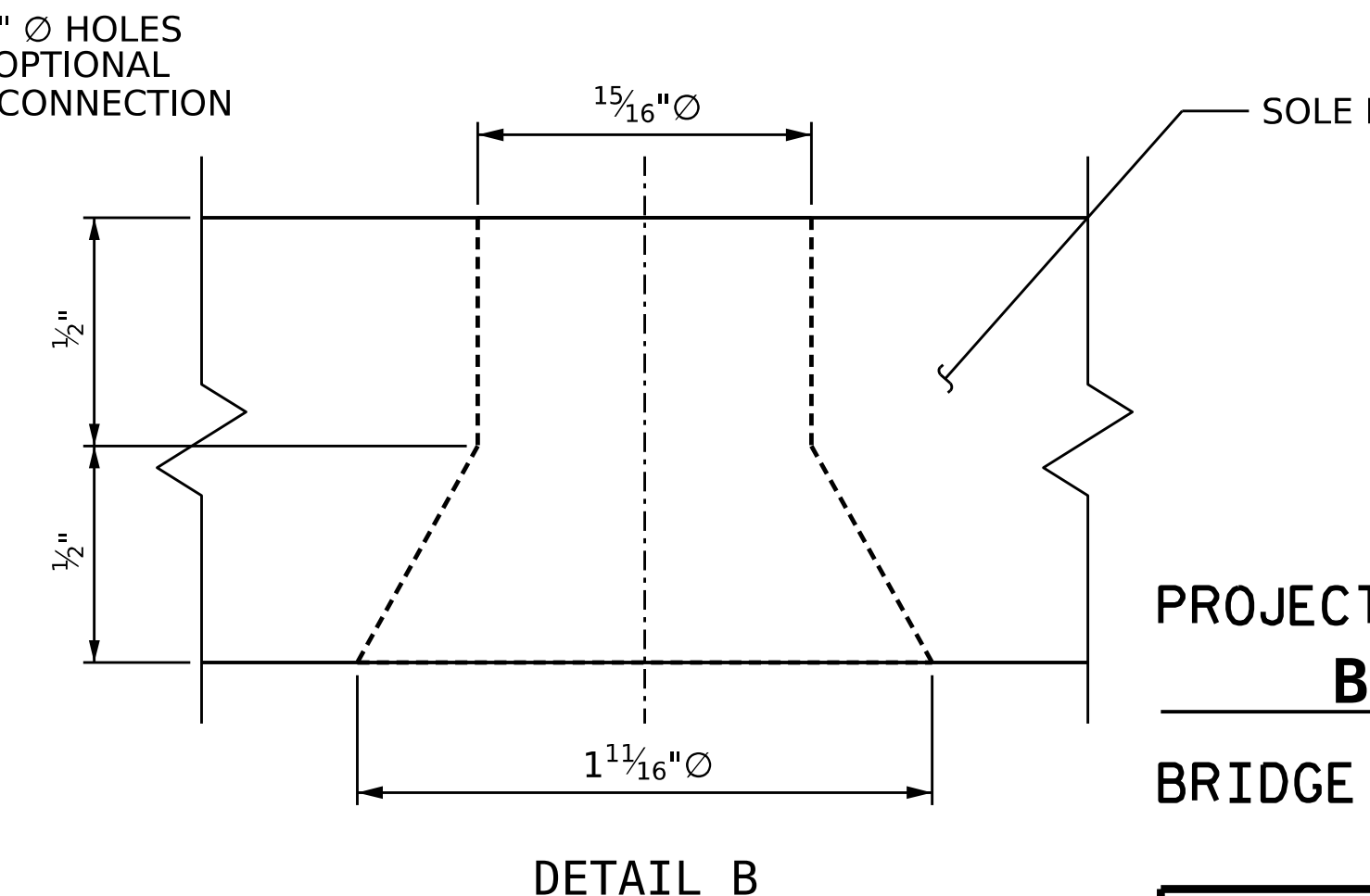
E2 ELASTOMERIC BEARING DETAILS
(6 REQ'D)
FIXED



P1 SOLE PLATE DETAILS
(6 REQ'D)
EXPANSION

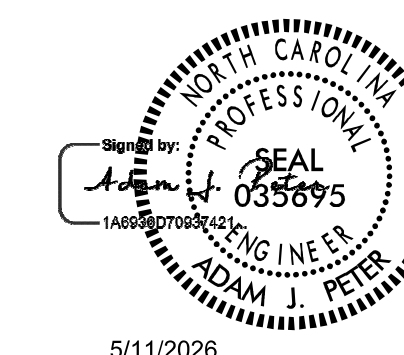


P2 SOLE PLATE DETAILS
(6 REQ'D)
FIXED



DETAIL B

PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
BRIDGE NO. **10+84.75 -L-**



5/11/2026

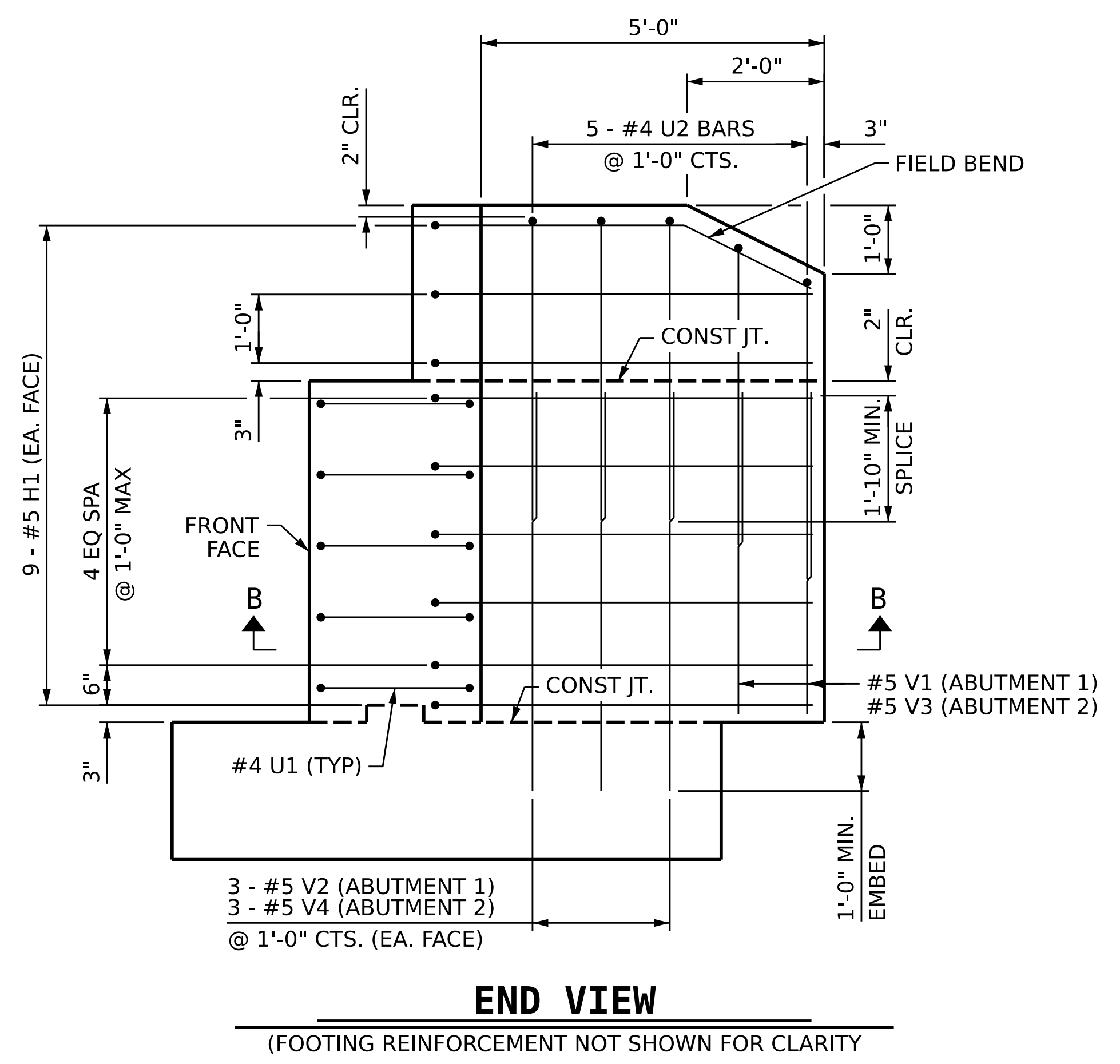
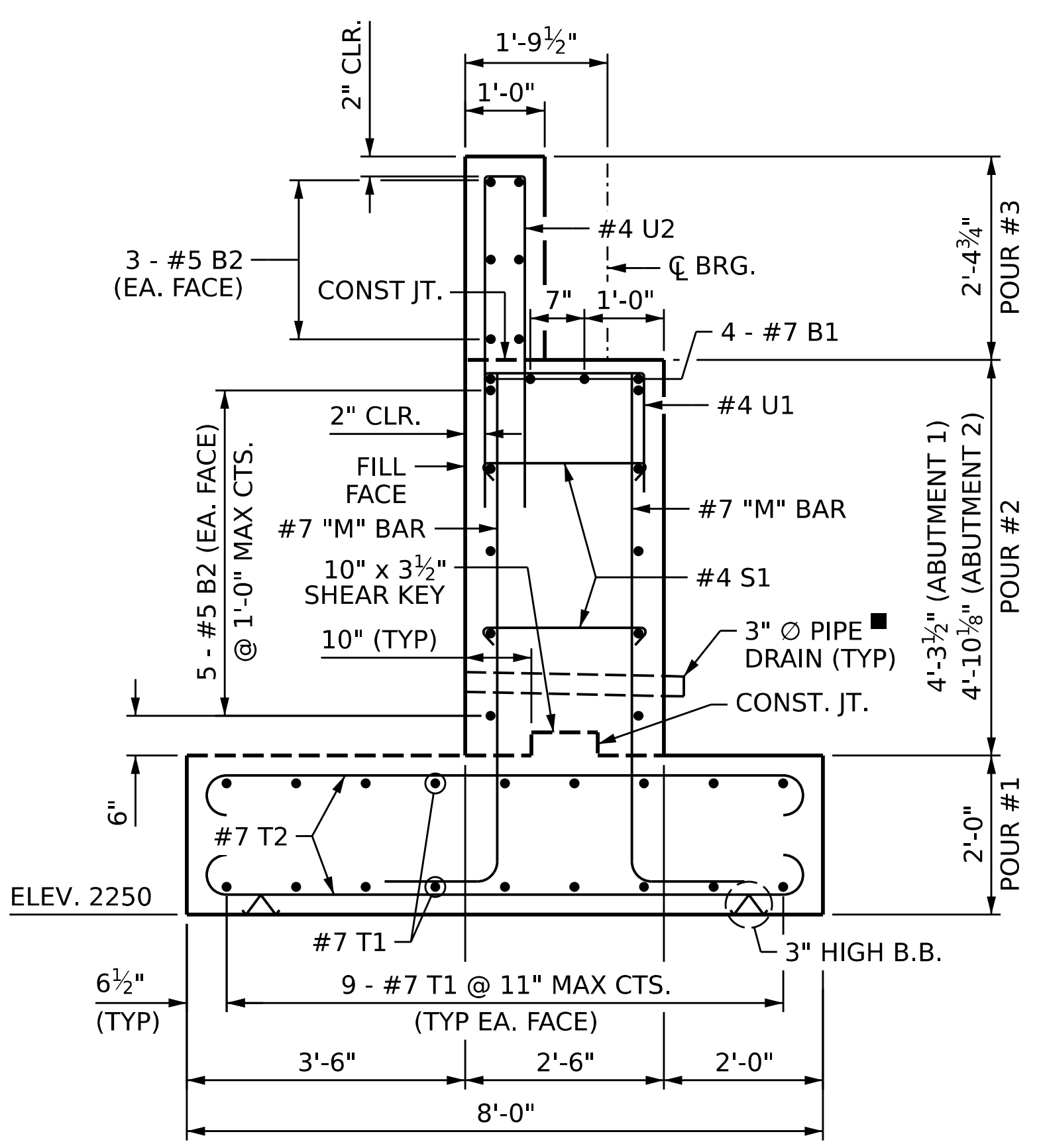
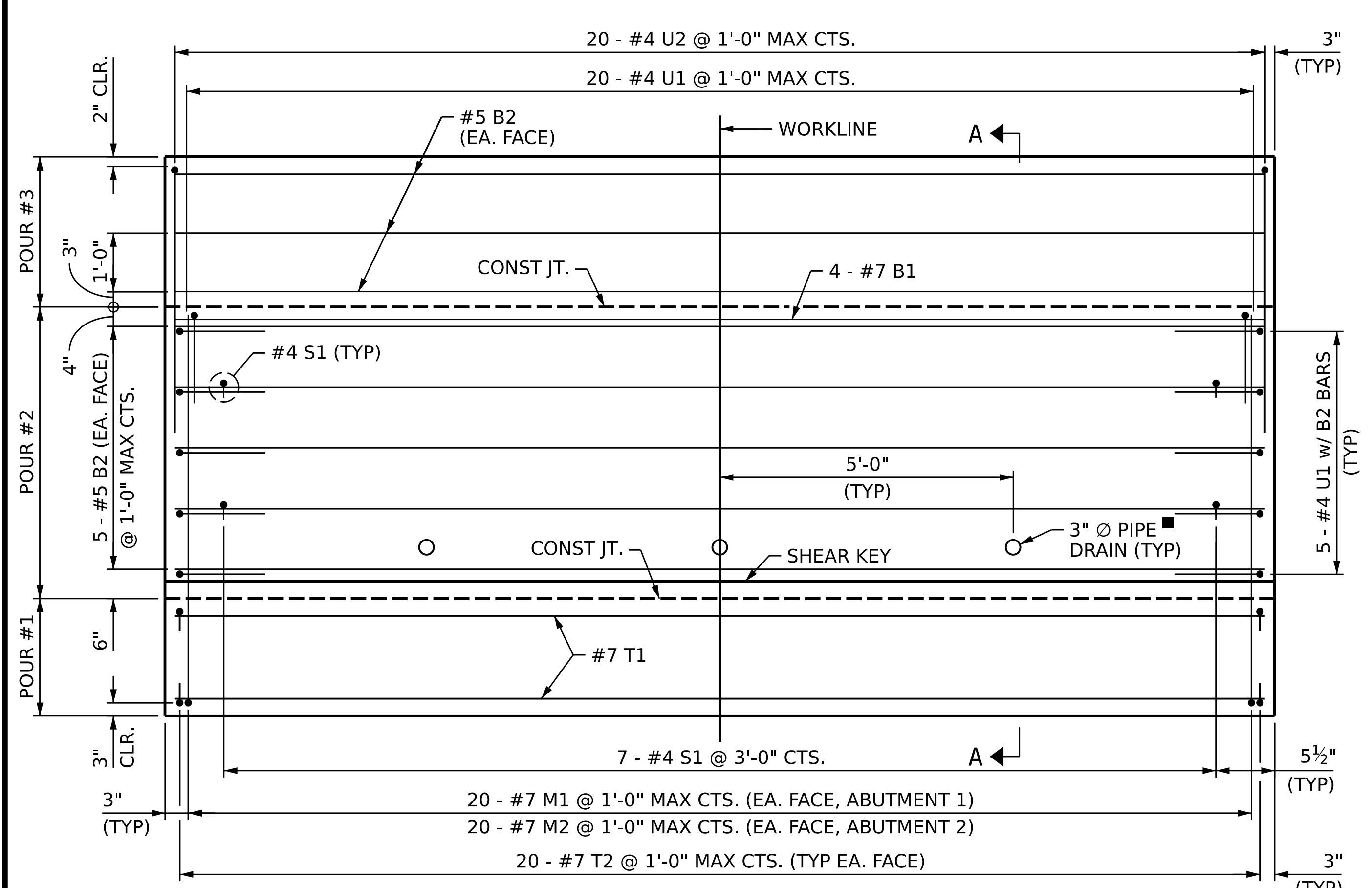
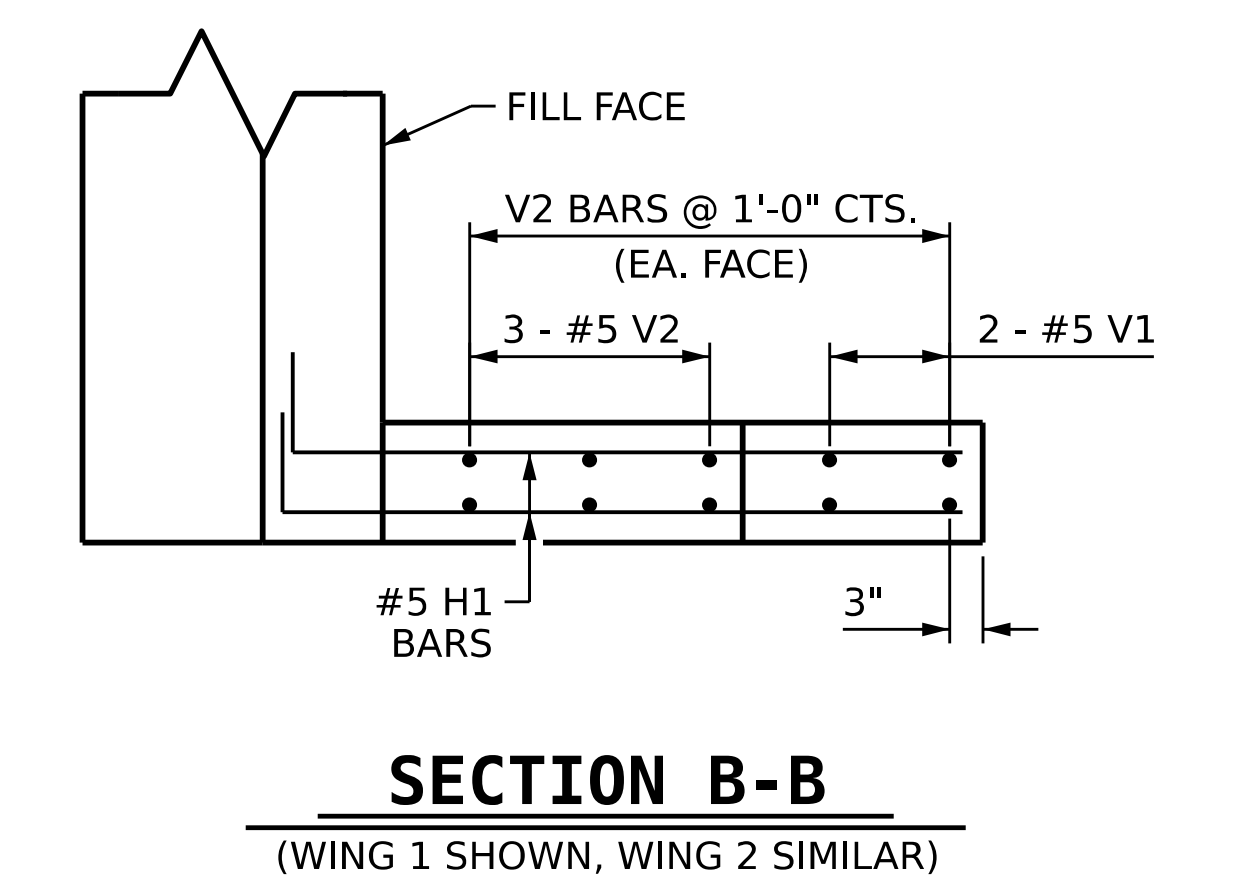
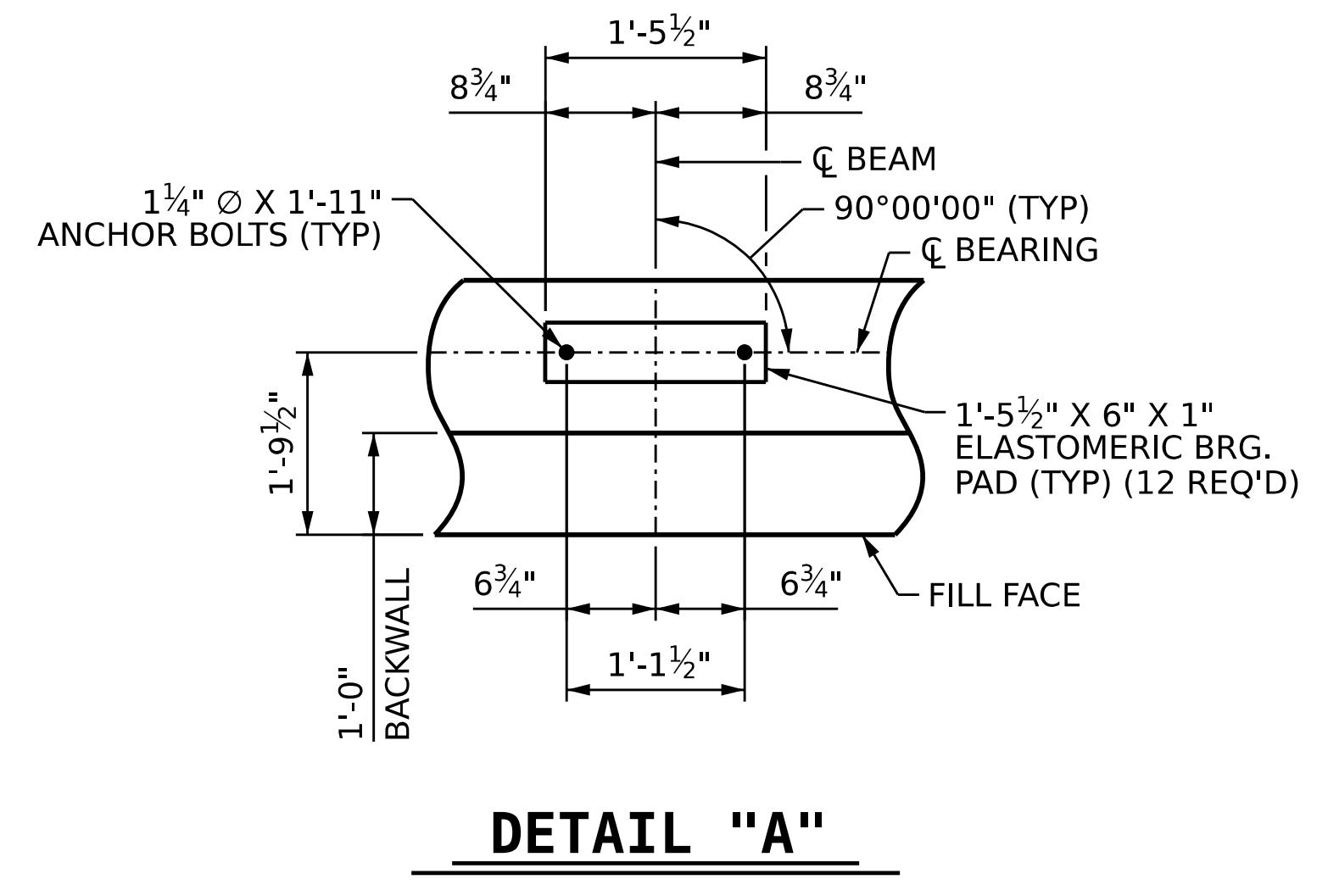
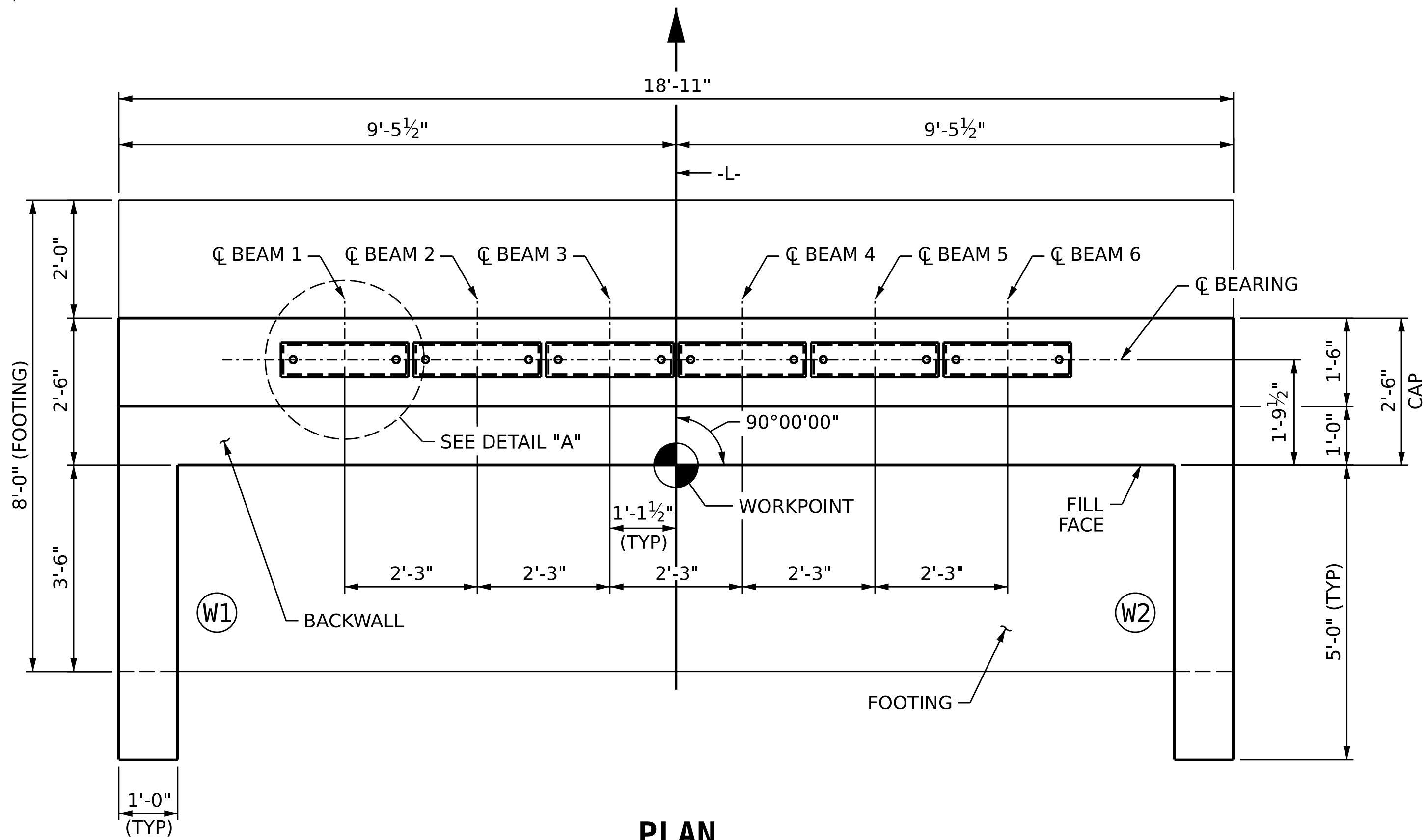
NORTH CAROLINA
OFFICE OF EMERGENCY MANAGEMENT
STANDARD
**BEARING DETAILS
TYPE II**

ASSEMBLED BY: M. HOGAN	DATE: 11/25
CHECKED BY: B. BARNHILL	DATE: 12/25
DRAWN BY: GA	10/2024
CHECKED BY: JDH	11/2024

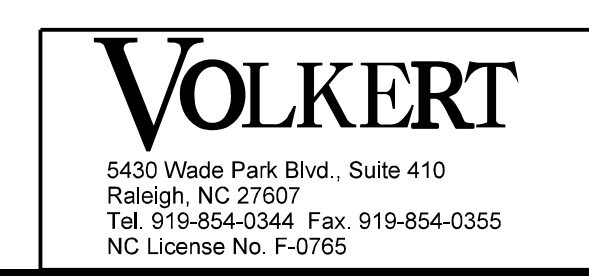
VOLKERT
5430 Wade Park Blvd., Suite 410
Raleigh, NC 27607
Tel: 919-854-0344 Fax: 919-854-0355
NC License No. F-0765

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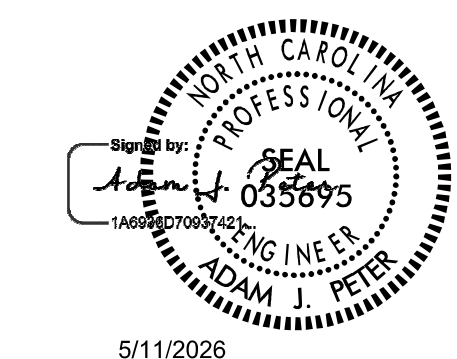
REVISIONS				SHEET NO.		
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			11



DRAWN BY : B. BARNHILL DATE : 12/2025
 CHECKED BY : A. PETER DATE : 12/2025
 DESIGN ENGINEER OF RECORD : A. PETER DATE : 01/2026



DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED



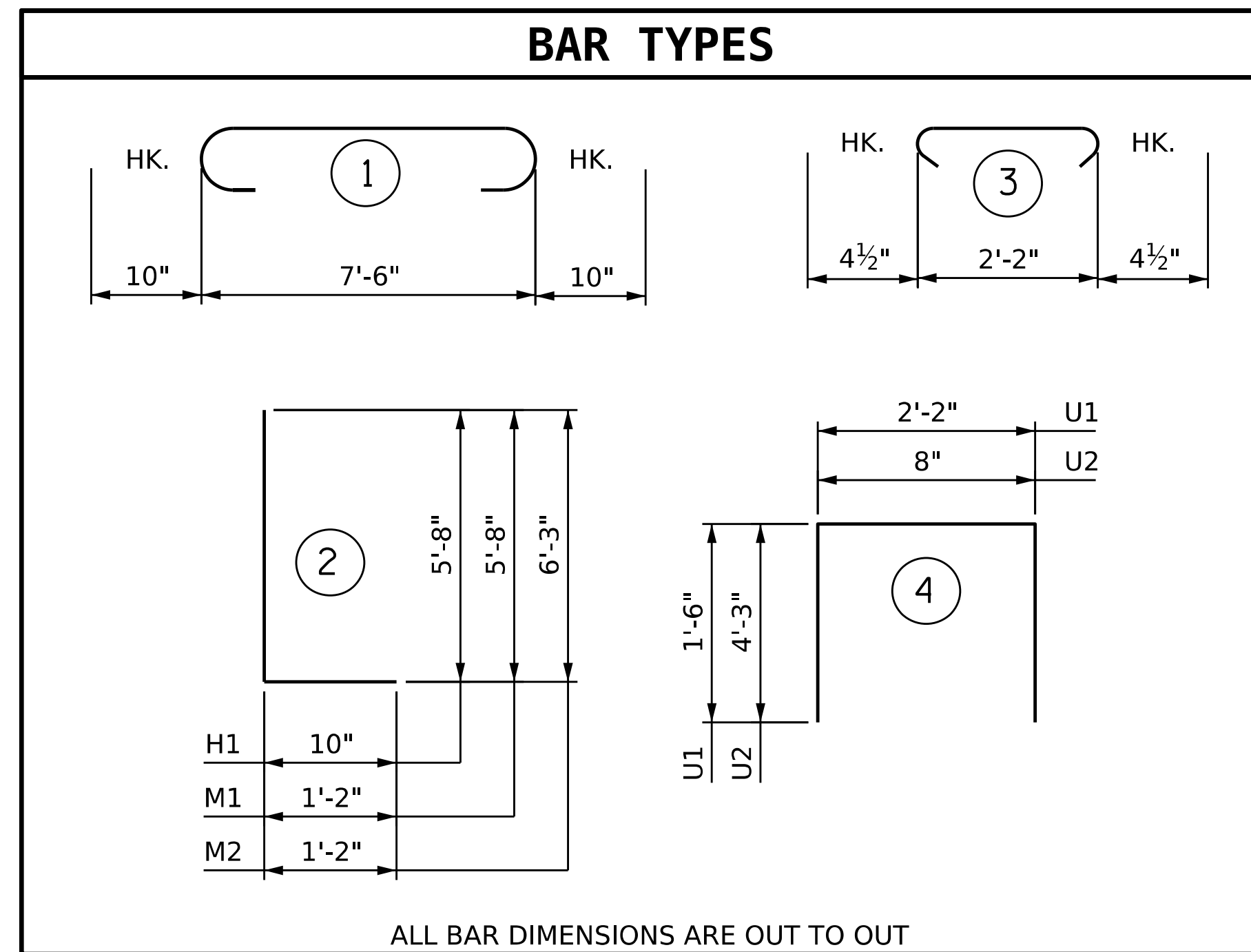
PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
 STATION: **10+84.75 -L-**
 SHEET 1 OF 2

STATE OF NORTH CAROLINA OFFICE OF EMERGENCY MANAGEMENT RALEIGH						SHEET NO.
SUBSTRUCTURE						S-9
ABUTMENT 1 & 2						TOTAL SHEETS
						11
REVISIONS						
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

9/26/20

BILL OF MATERIAL					
ABUTMENT 1					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#7	STR	18'-7"	152
B2	16	#5	STR	18'-7"	310
H1	36	#5	2	6'-6"	244
M1	40	#7	2	6'-10"	559
S1	14	#4	3	2'-11"	27
T1	18	#7	STR	18'-5"	678
T2	40	#7	1	9'-2"	749
U1	30	#4	4	5'-2"	104
U2	30	#4	4	9'-2"	184
V1	8	#5	STR	4'-0"	33
V2	12	#5	STR	5'-4"	82
REINFORCING STEEL				3122 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR 1: FOOTING				11.2 C.Y.	
POUR 2: STEM AND LOWER PART OF WINGS				9.1 C.Y.	
POUR 3: BACKWALL AND UPPER PART OF WINGS				2.6 C.Y.	
CLASS A CONCRETE TOTAL				22.9 C.Y.	

BILL OF MATERIAL					
ABUTMENT 2					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#7	STR	18'-7"	152
B2	16	#5	STR	18'-7"	310
H1	36	#5	2	6'-6"	244
M2	40	#7	2	7'-5"	606
S1	14	#4	3	2'-11"	27
T1	18	#7	STR	18'-5"	678
T2	40	#7	1	9'-2"	749
U1	30	#4	4	5'-2"	104
U2	30	#4	4	9'-2"	184
V3	8	#5	STR	4'-6"	38
V4	12	#5	STR	5'-10"	73
REINFORCING STEEL				3165 LBS.	
CLASS A CONCRETE BREAKDOWN					
POUR 1: FOOTING				11.2 C.Y.	
POUR 2: STEM AND LOWER PART OF WINGS				10.1 C.Y.	
POUR 3: BACKWALL AND UPPER PART OF WINGS				2.6 C.Y.	
CLASS A CONCRETE TOTAL				24.1 C.Y.	



NOTES

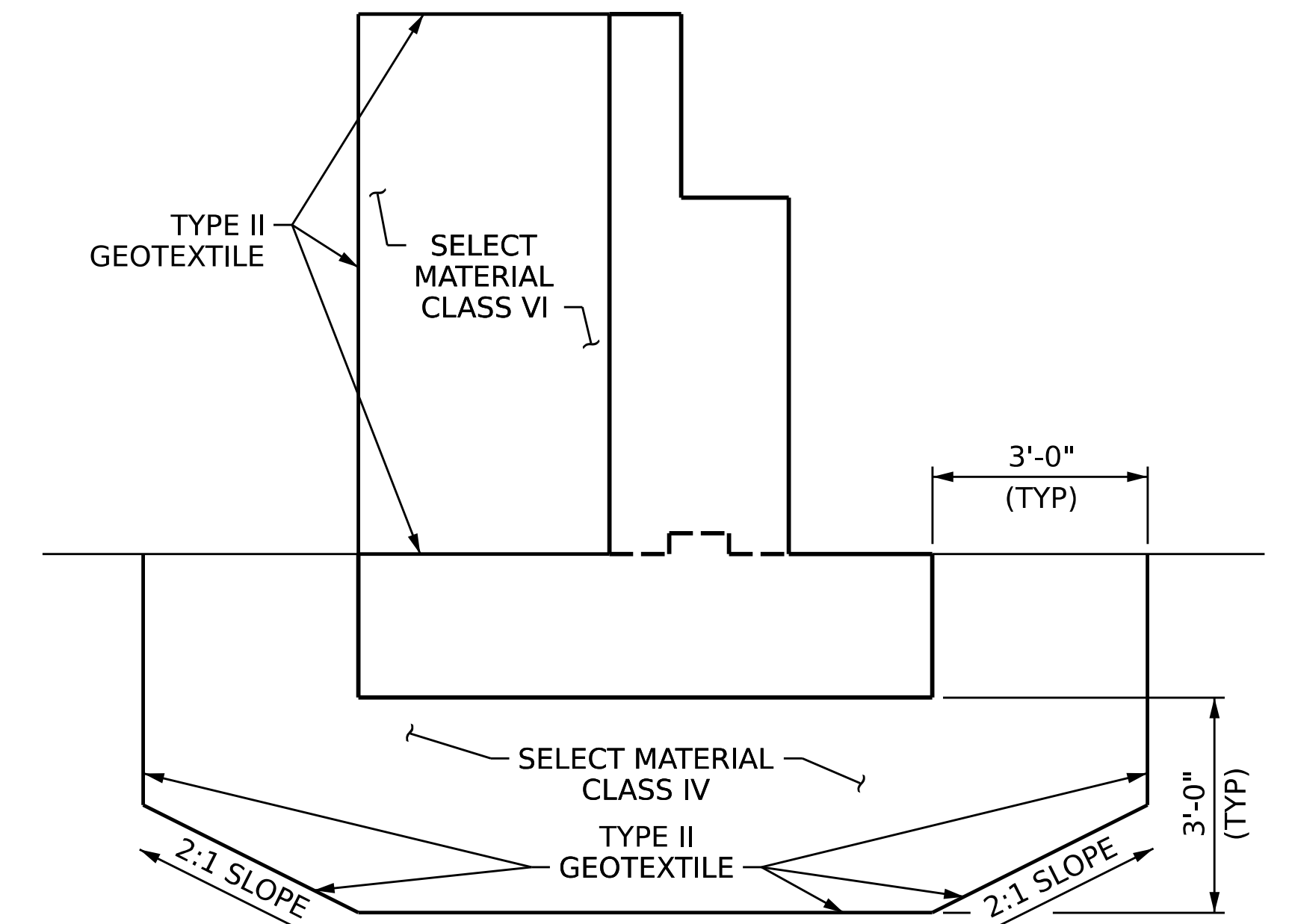
ALL WORK SHALL BE IN ACCORDANCE WITH THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2024.

THE SPREAD FOOTINGS ARE DESIGNED FOR A FACTORED RESISTANCE OF 4.3 KSF. CHECK FIELD CONDITIONS FOR THE REQUIRED RESISTANCE OF 4.3 KSF JUST BEFORE PLACING CONCRETE.

STIRRUPS MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

THE TOP SURFACE AREAS OF THE ABUTMENT SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.

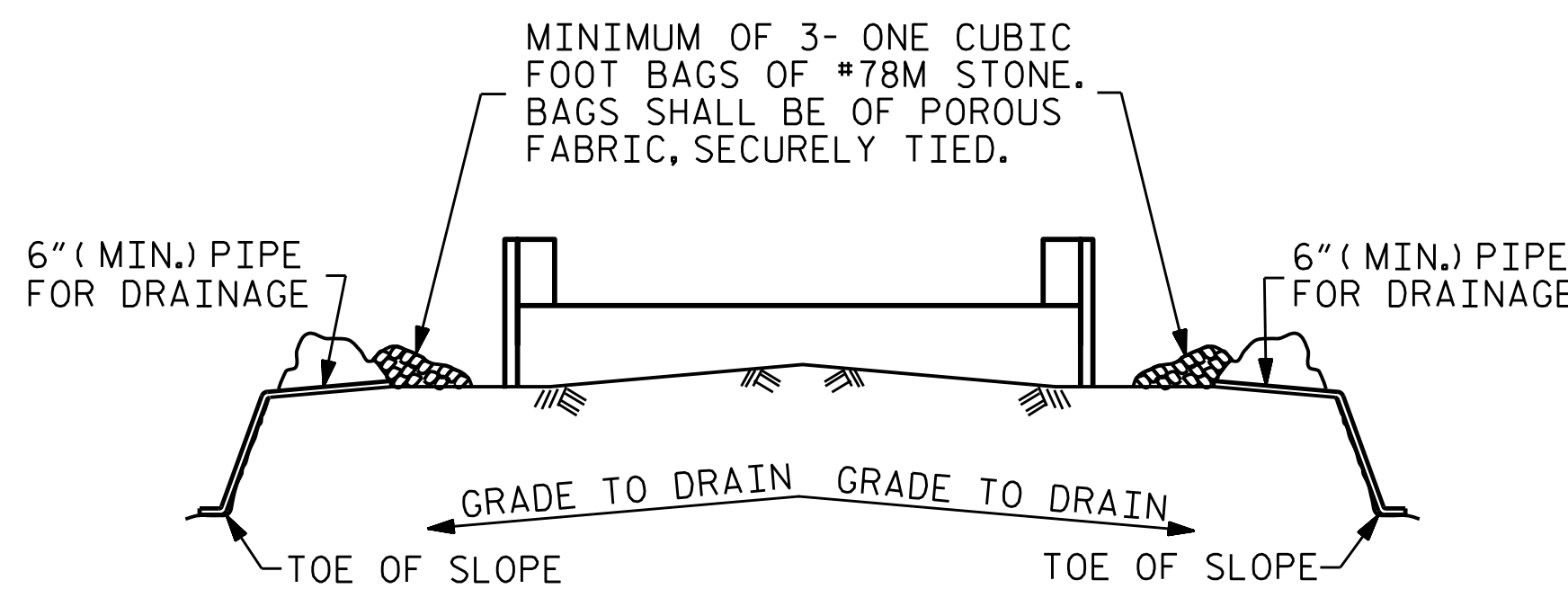
THE 3" Ø PVC PLASTIC DRAIN PIPE SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM D1785, AND SHALL BE SLOPED FOR PROPER DRAINAGE.



SOIL STABILIZATION AT ABUTMENT

ESTIMATED QUANTITIES

BRIDGE @ STA. 10+84.75 -L-	CLASS IV SELECT FILL	CLASS VI SELECT FILL	GEOTEXTILE FOR DRAINAGE
	TONS	TONS	SQUARE YARDS
ABUTMENT 1	83	27	110
ABUTMENT 2	83	29	111

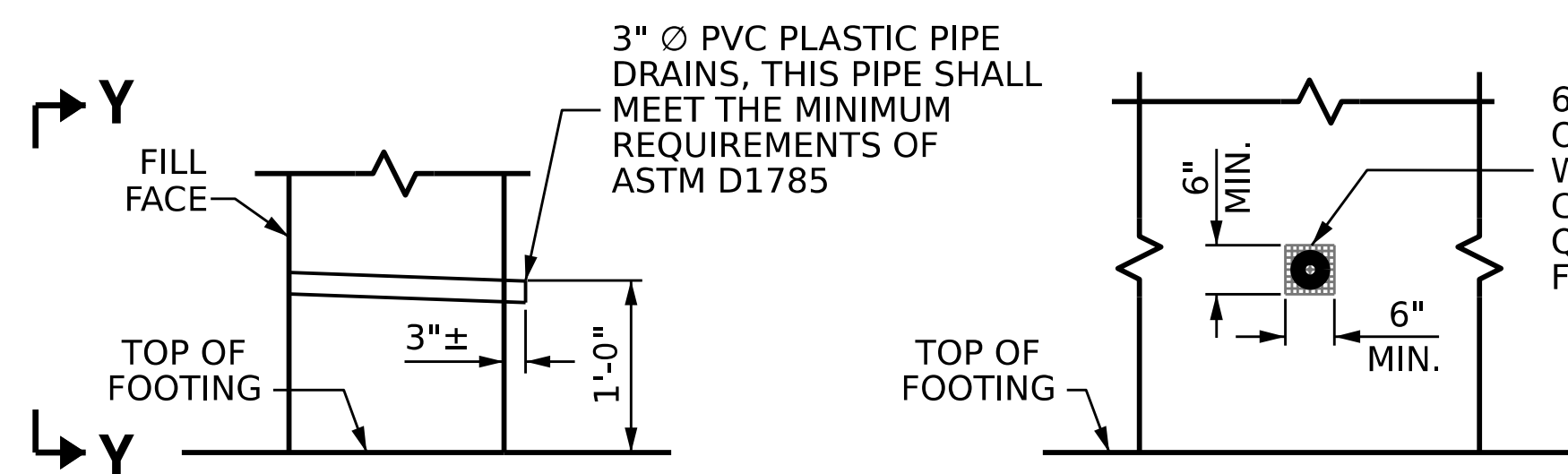


TEMPORARY DRAINAGE AT ABUTMENT

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.



PIPE DRAIN DETAILS

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

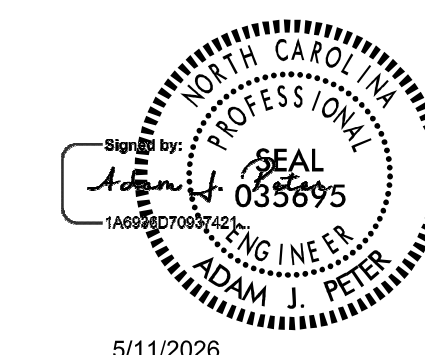
PROJECT NO. **011-01-70345**

BUNCOMBE COUNTY

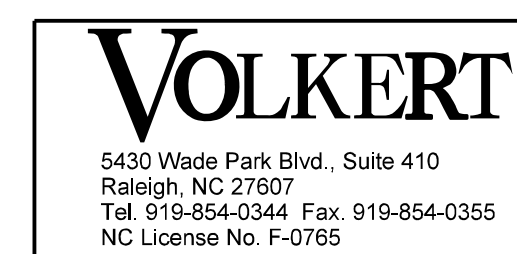
STATION: **10+84.75 -L-**

SHEET 2 OF 2

STATE OF NORTH CAROLINA
OFFICE OF EMERGENCY MANGEMENT
SUBSTRUCTURE
ABUTMENT 1 & 2
DETAILS



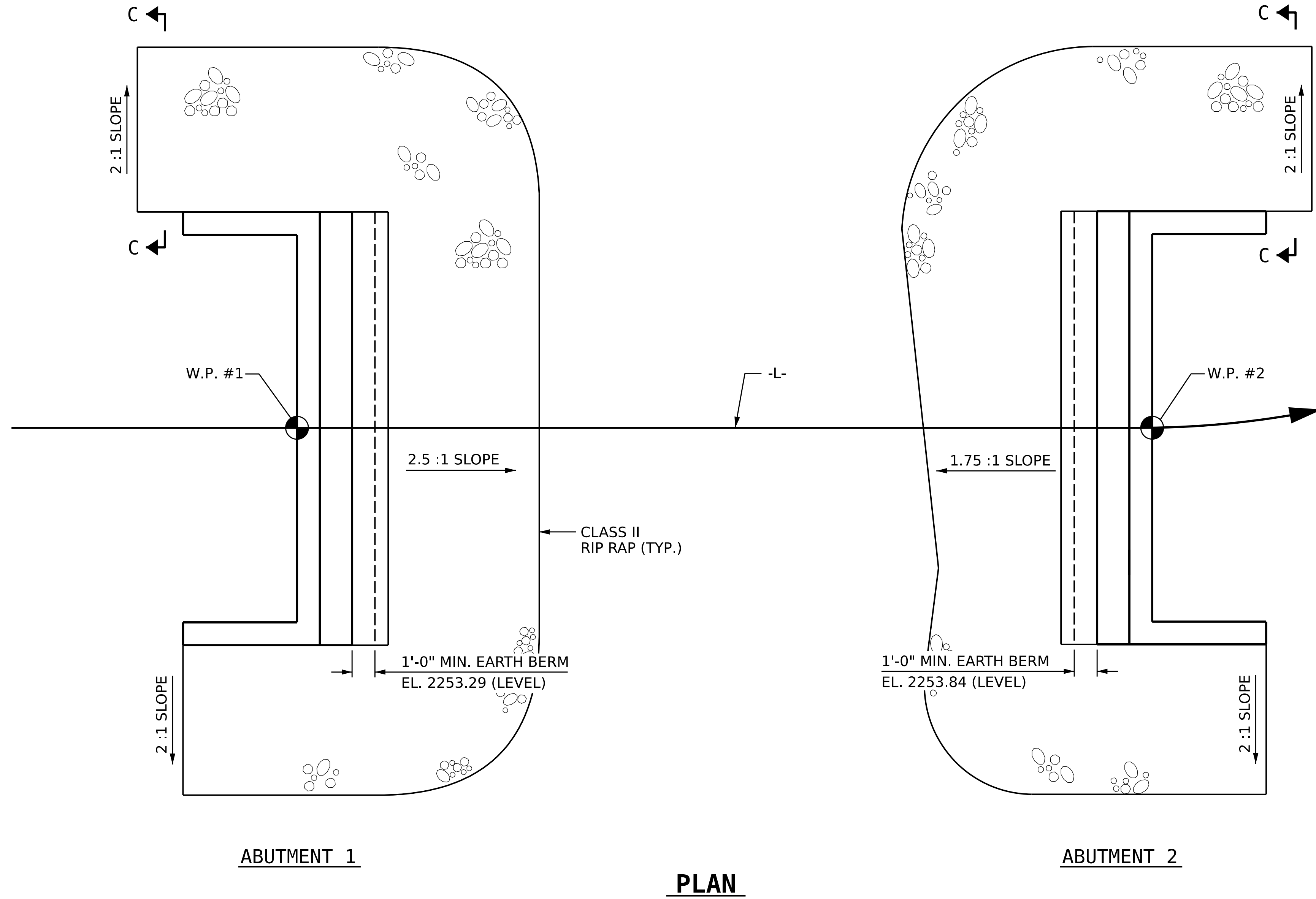
DRAWN BY : B. BARNHILL DATE : 12/2025
CHECKED BY : A. PETER DATE : 12/2025
DESIGN ENGINEER OF RECORD : A. PETER DATE : 01/2026



DOCUMENT NOT CONSIDERED
FINAL UNLESS ALL
SIGNATURES COMPLETED

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

TOTAL SHEETS: 11

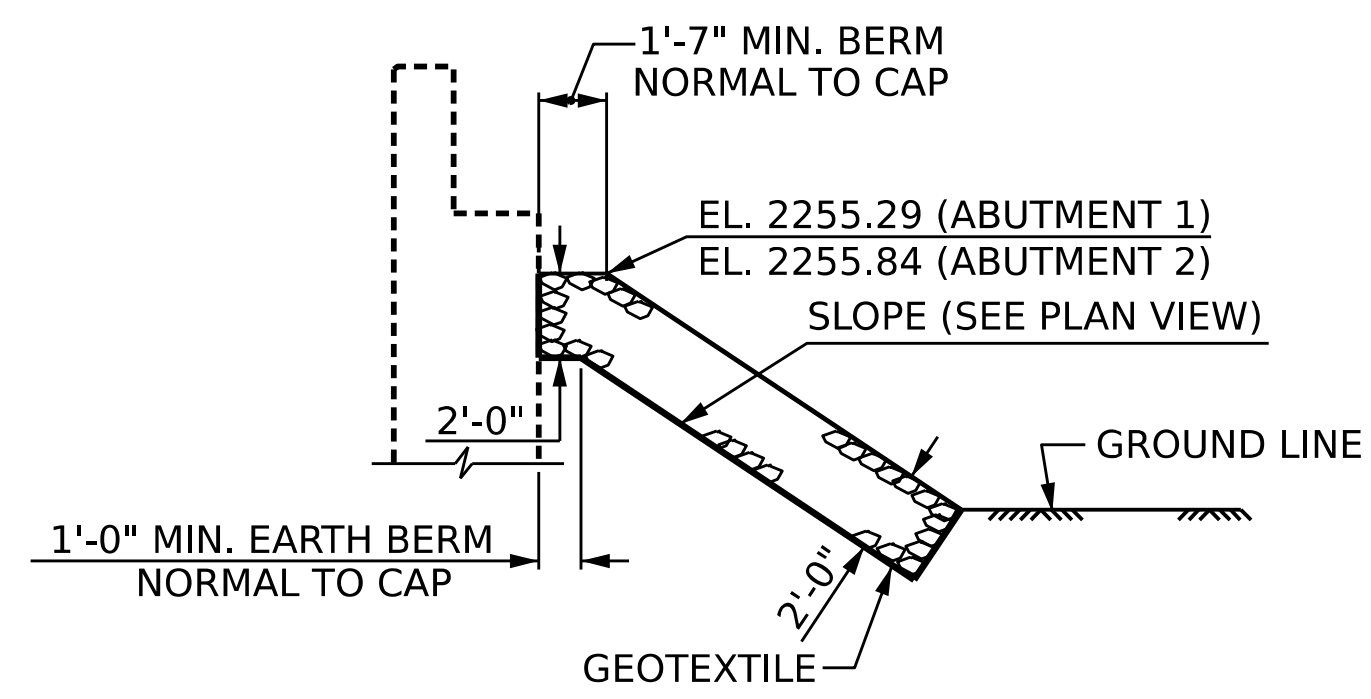


ESTIMATED QUANTITIES		
BRIDGE @ STA. 10+84.75 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
ABUTMENT 1	68	57
ABUTMENT 2	73	61

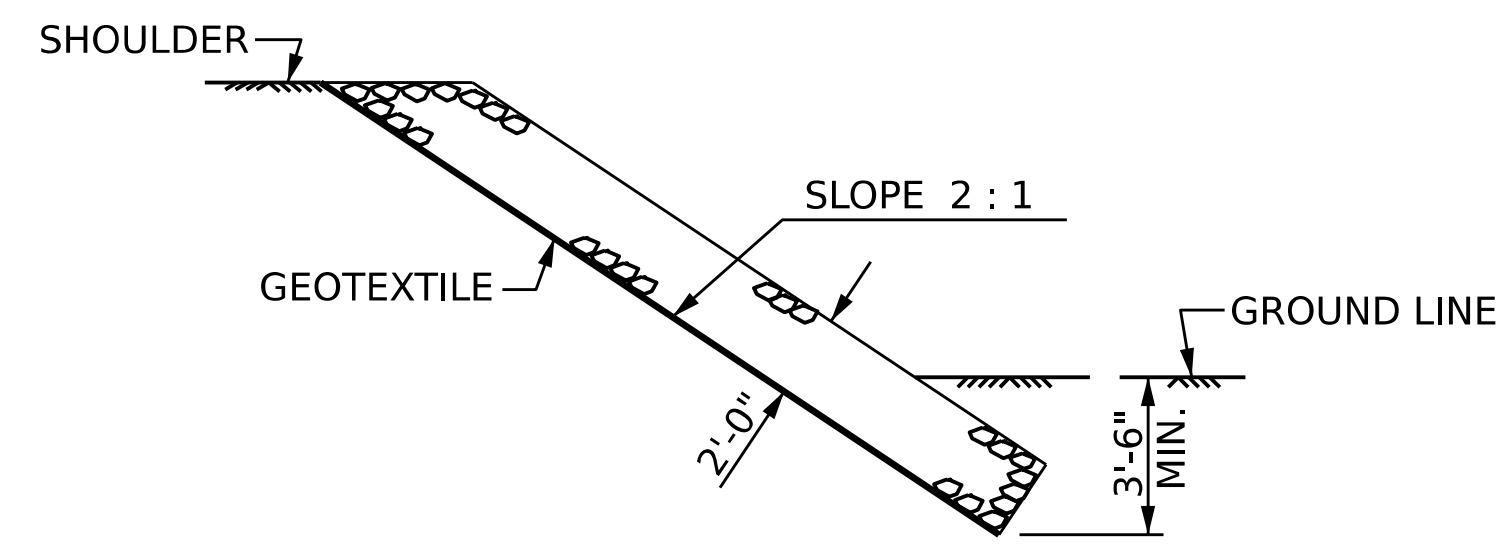
ABUTMENT 1

ABUTMENT 2

PLAN

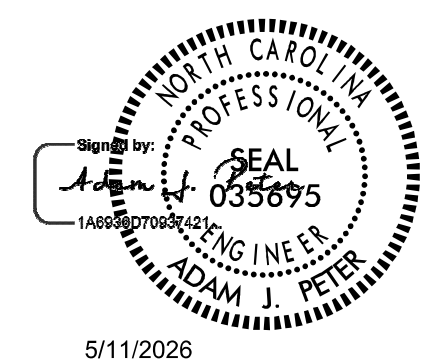


BERM RIP RAPPED



SECTION C-C

PROJECT NO. **011-01-70345**
BUNCOMBE COUNTY
 STATION: **10+84.75 -L-**



NORTH CAROLINA
 OFFICE OF EMERGENCY MANAGEMENT

RIP RAP DETAILS

DRAWN BY :	M. HOGAN	DATE :	11/25
CHECKED BY :	B. BARNHILL	DATE :	12/25
DESIGN ENGINEER OF RECORD :	A. PETER	DATE :	01/26

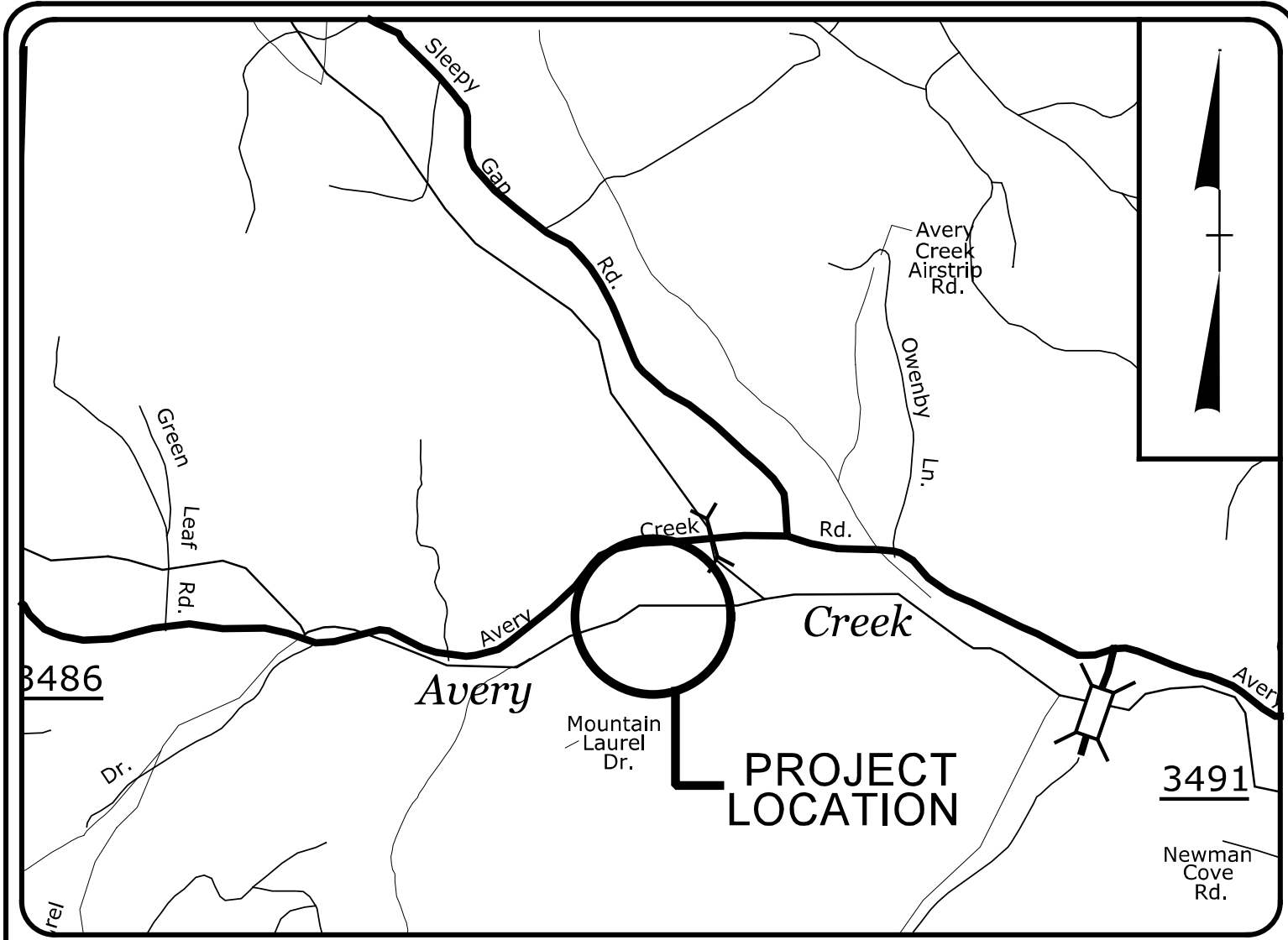
VOLKERT
 5430 Wade Park Blvd., Suite 410
 Raleigh, NC 27607
 Tel. 919-854-0344 Fax. 919-854-0355
 NC License No. F-0765

DOCUMENT NOT CONSIDERED
 FINAL UNLESS ALL
 SIGNATURES COMPLETED

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

TOTAL SHEETS: 11

PROJECT: 011-01-70345



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF EMERGENCY MANAGEMENT

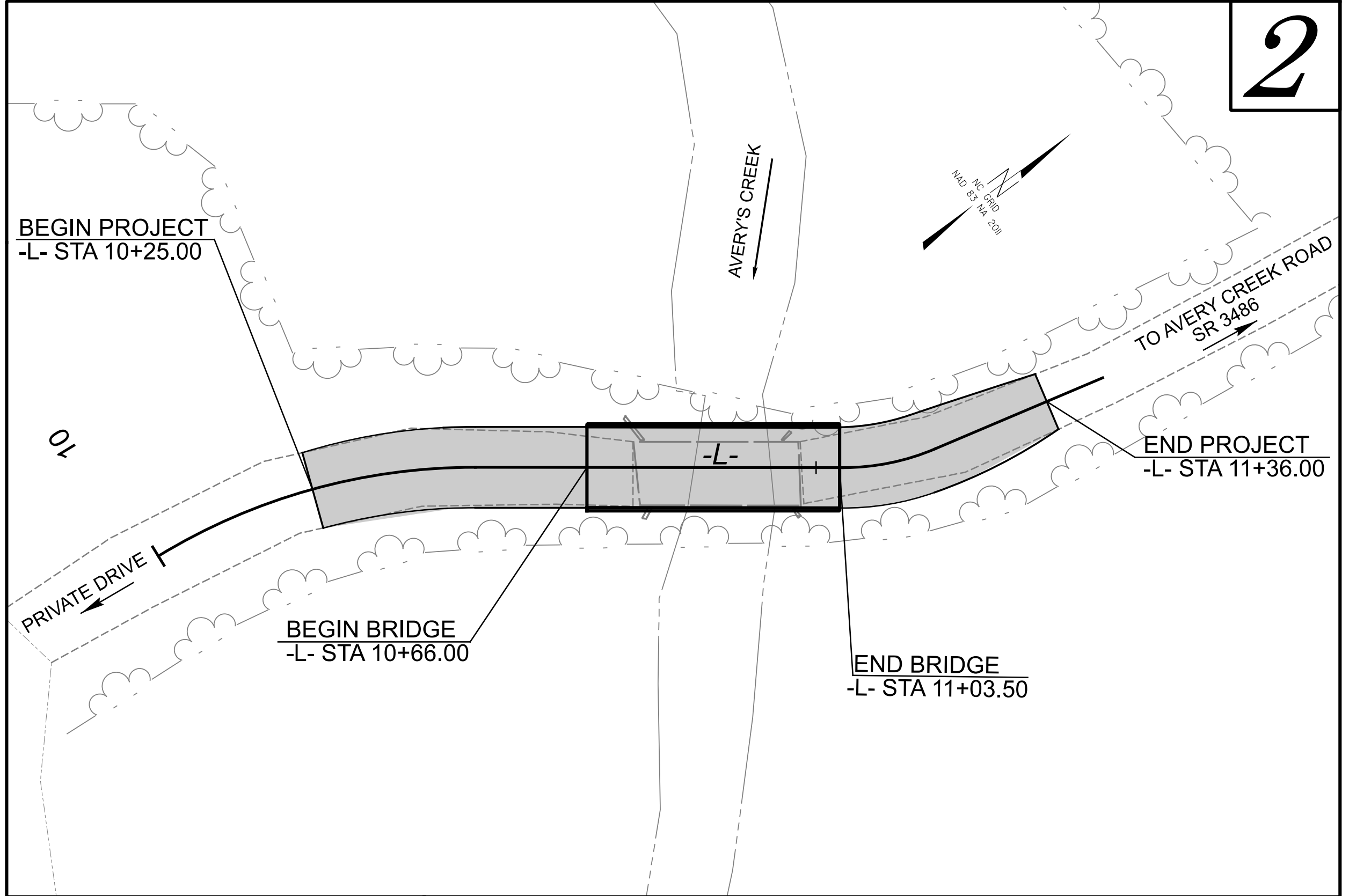
PLAN FOR PROPOSED
EROSION CONTROL

BUNCOMBE COUNTY

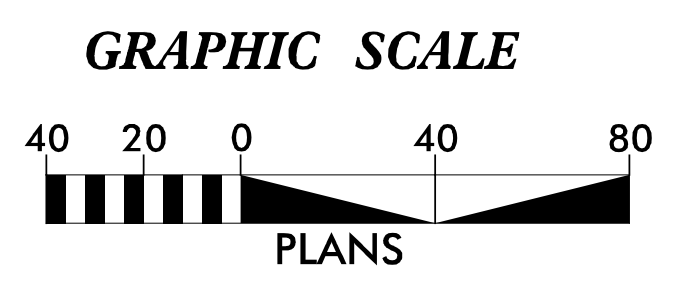
LOCATION: *PRIVATE BRIDGE REPLACEMENT LOCATED AT 548 AVERYCREEK RD, ARDEN, NC 28704. INSIDE OF THE WOODS*

TYPE OF WORK: *GRADING, PAVING, AND STRUCTURE*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	011-01-70345	EC-1	5
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



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



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.

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Prepared In the Office of:
VOLKERT
5430 WADE PARK BLVD., SUITE 410
RALEIGH, NC 27606

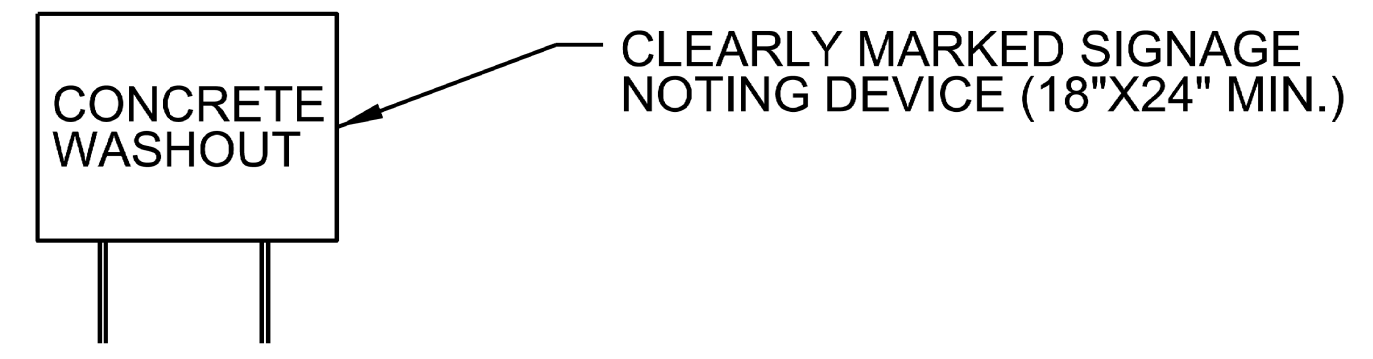
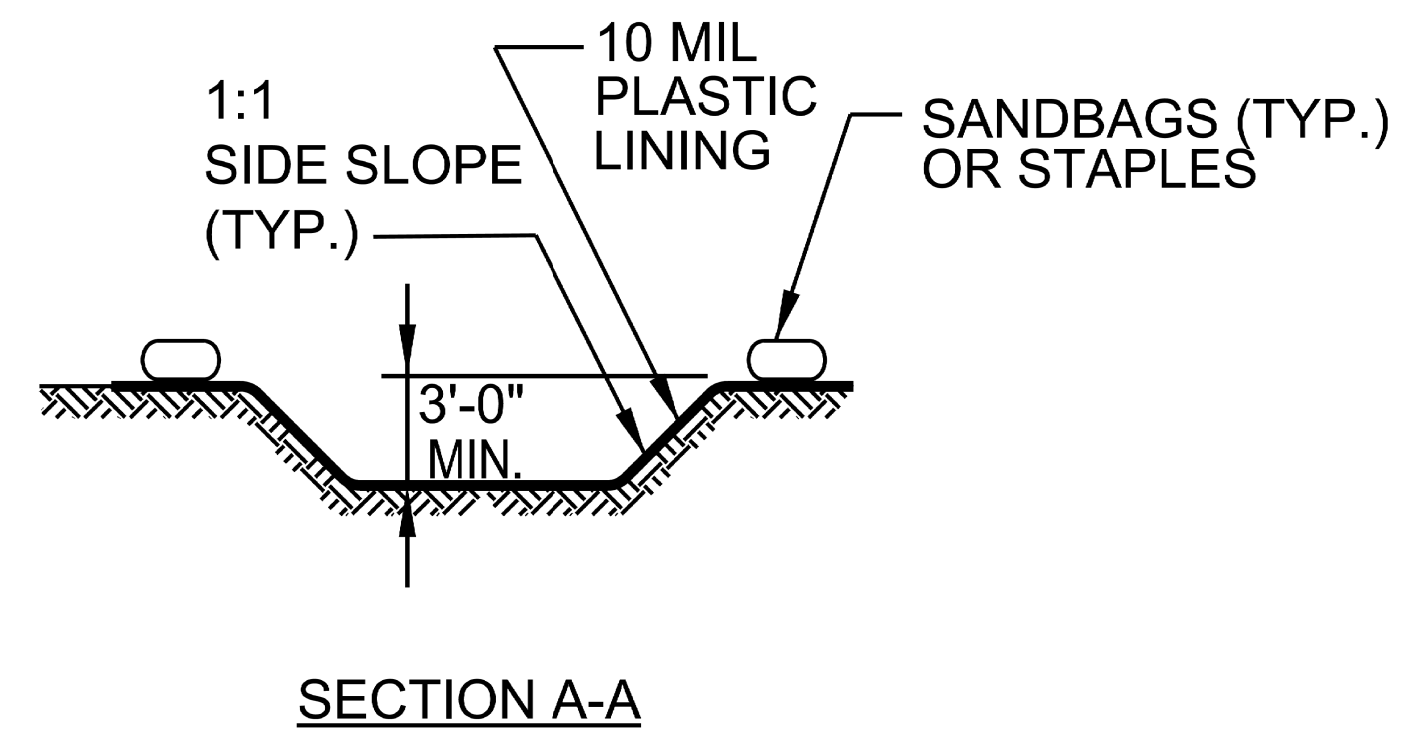
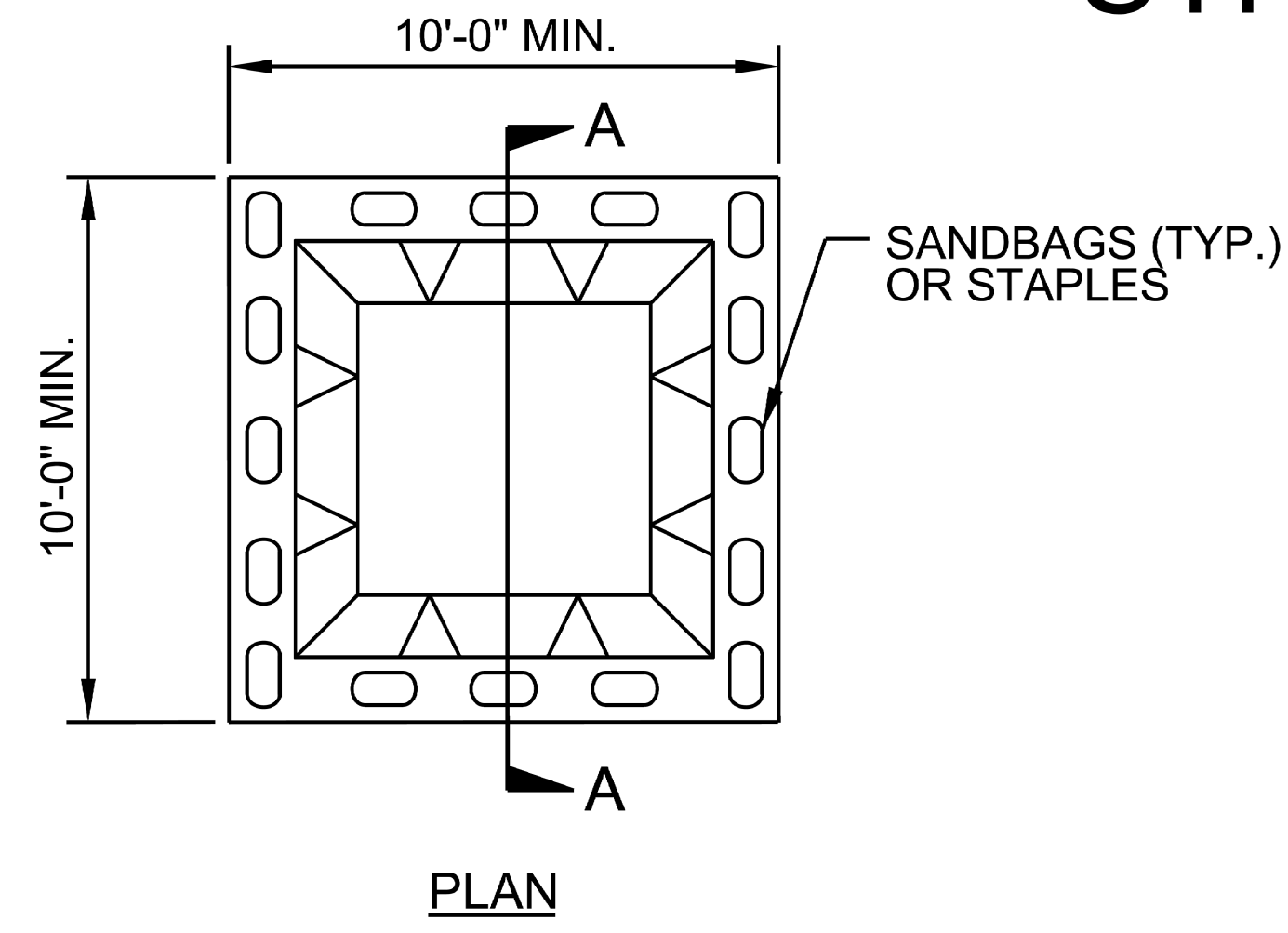
Designed by:
ANA PASSMAN **4897**
NAME LEVEL III CERTIFICATION NO.



EROSION & SEDIMENT CONTROL LEGEND

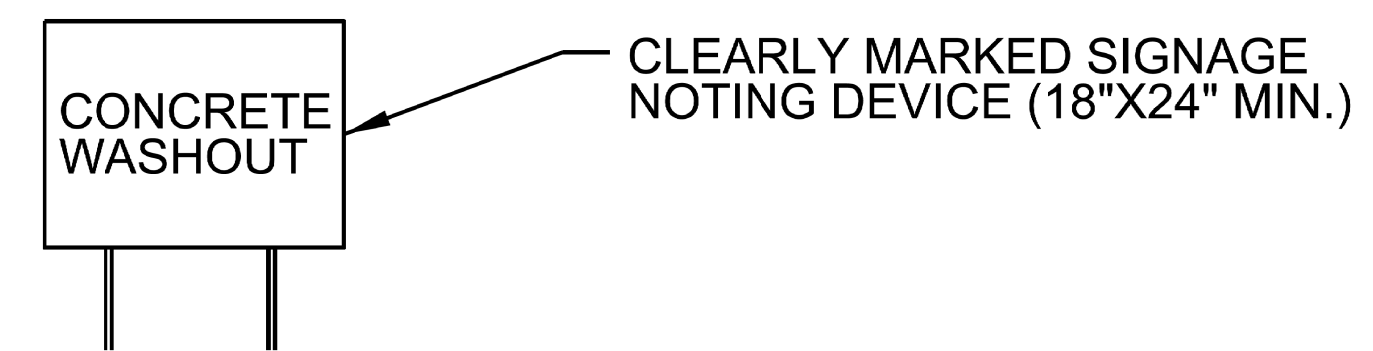
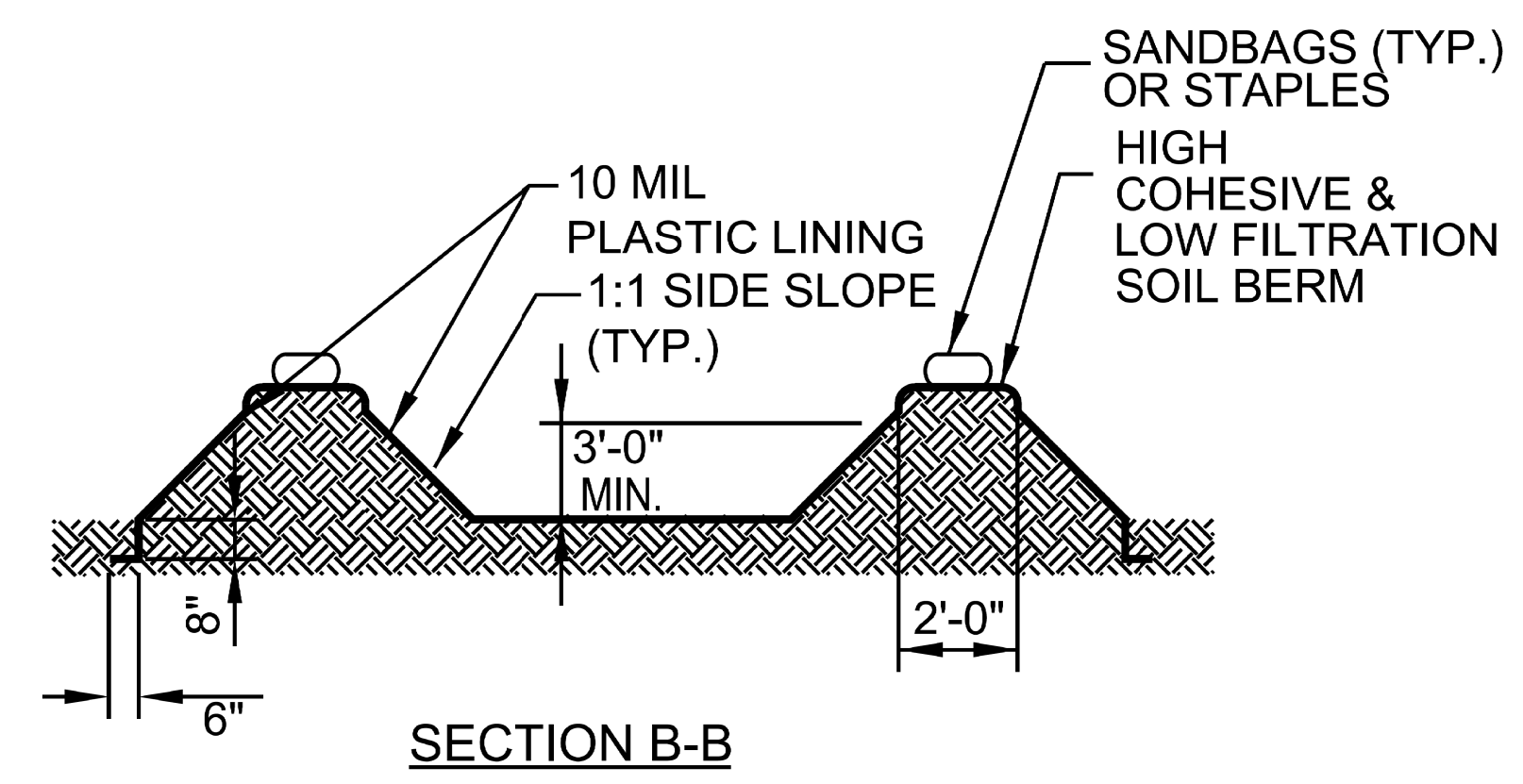
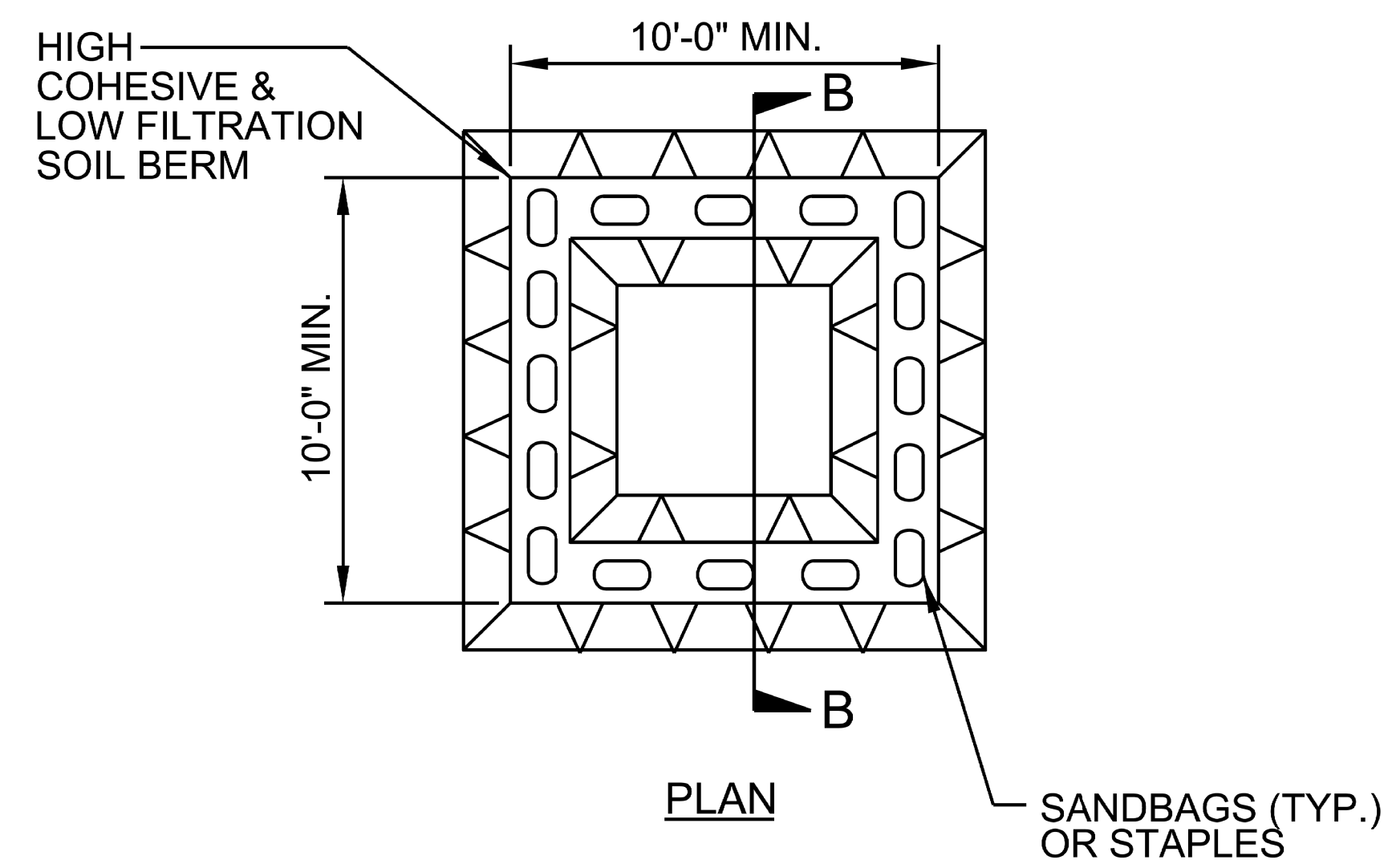
<u>Std. #</u>	<u>Description</u>	<u>Symbol</u>	<u>Std. #</u>	<u>Description</u>	<u>Symbol</u>
1605.01	Temporary Silt Fence		1633.01	Temporary Rock Silt Check Type A	
1606.01	Special Sediment Control Fence		1633.02	Temporary Rock Silt Check Type B	
1622.01	Temporary Berms and Slope Drains		1633.03	Temporary Rock Silt Check Type A with Excelsior Matting and Flocculant	
1630.02	Silt Basin Type B		1634.01	Temporary Rock Sediment Dam Type A	
1630.03	Temporary Silt Ditch		1634.02	Temporary Rock Sediment Dam Type B	
1630.04	Stilling Basin		1635.01	Rock Pipe Inlet Sediment Trap Type A	
1630.05	Temporary Diversion		1635.02	Rock Pipe Inlet Sediment Trap Type B	
1630.06	Special Stilling Basin		1636.01	Excelsior Wattle Check	
1630.07	Skimmer Basin		1636.01	Excelsior Wattle Check with Flocculant	
1630.08	Tiered Skimmer Basin		1636.01	Coir Fiber Wattle Check	
1630.09	Earthen Dam with Skimmer		1636.01	Coir Fiber Wattle Check with Flocculant	
	Infiltration Basin		1636.02	Silt Fence Excelsior Wattle Break	
	Rock Inlet Sediment Trap:			Silt Fence Coir Fiber Wattle Break	
1632.01	Type A		1636.03	Excelsior Wattle Barrier	
1632.02	Type B		1636.03	Coir Fiber Wattle Barrier	
1632.03	Type C				

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE

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

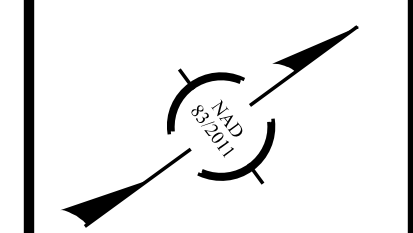


ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

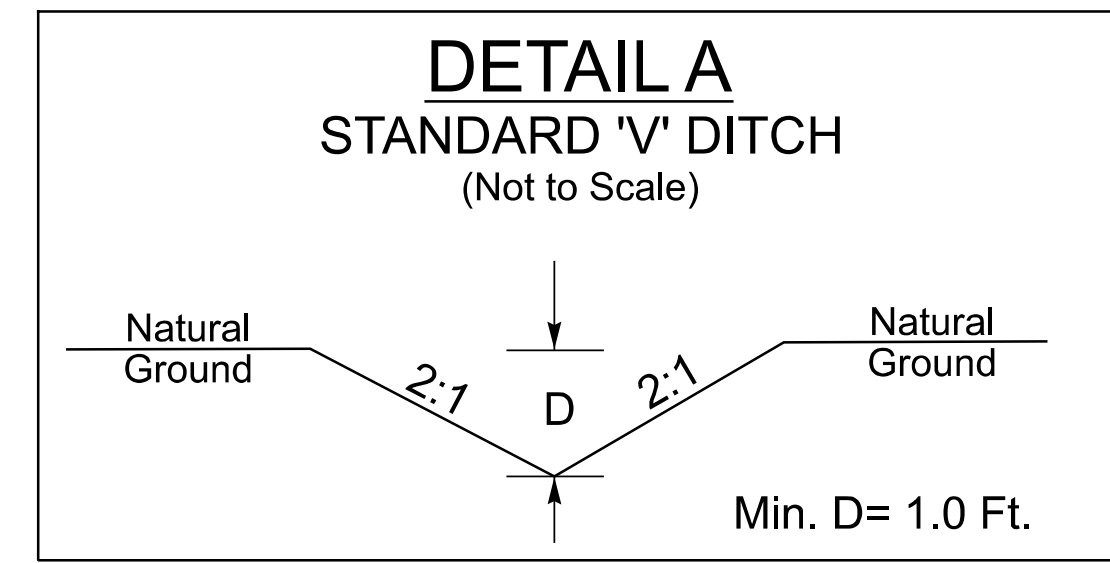
- NOTES:**
1. ACTUAL LOCATION DETERMINED IN FIELD
 2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
 3. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY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

SOIL STABILIZATION TIMEFRAMES

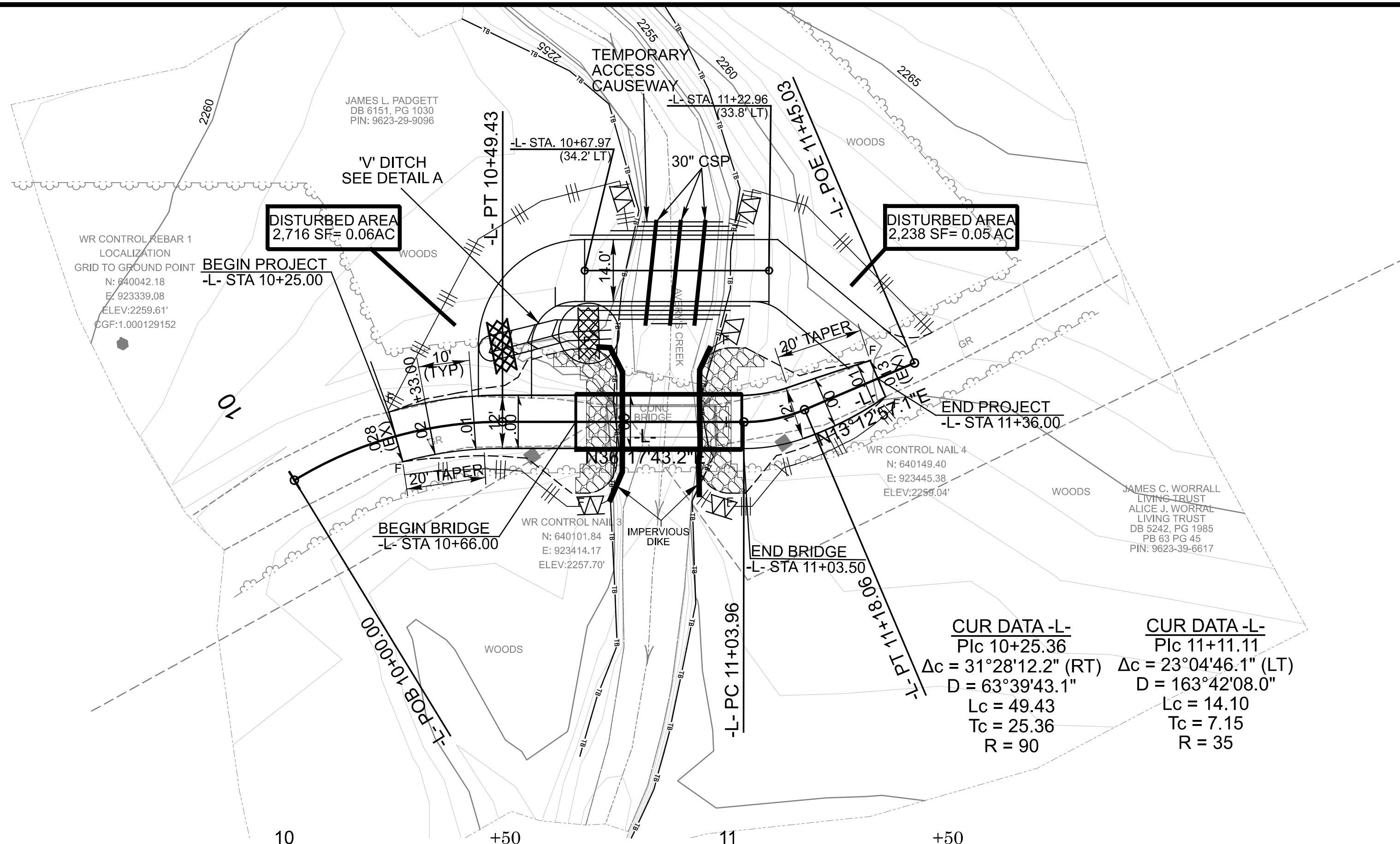
<i>SITE DESCRIPTION</i>	<i>STABILIZATION TIME</i>	<i>TIMEFRAME EXCEPTIONS</i>
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 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



BRIDGE AT 548 AVERY CREEK RD, ARDEN, NC 28704
BUNCOMBE COUNTY
12'-0" CLEAR ROADWAY AND 90' SKEW



FROM -L- STA. 10+45 TO STA. 10+74 LT

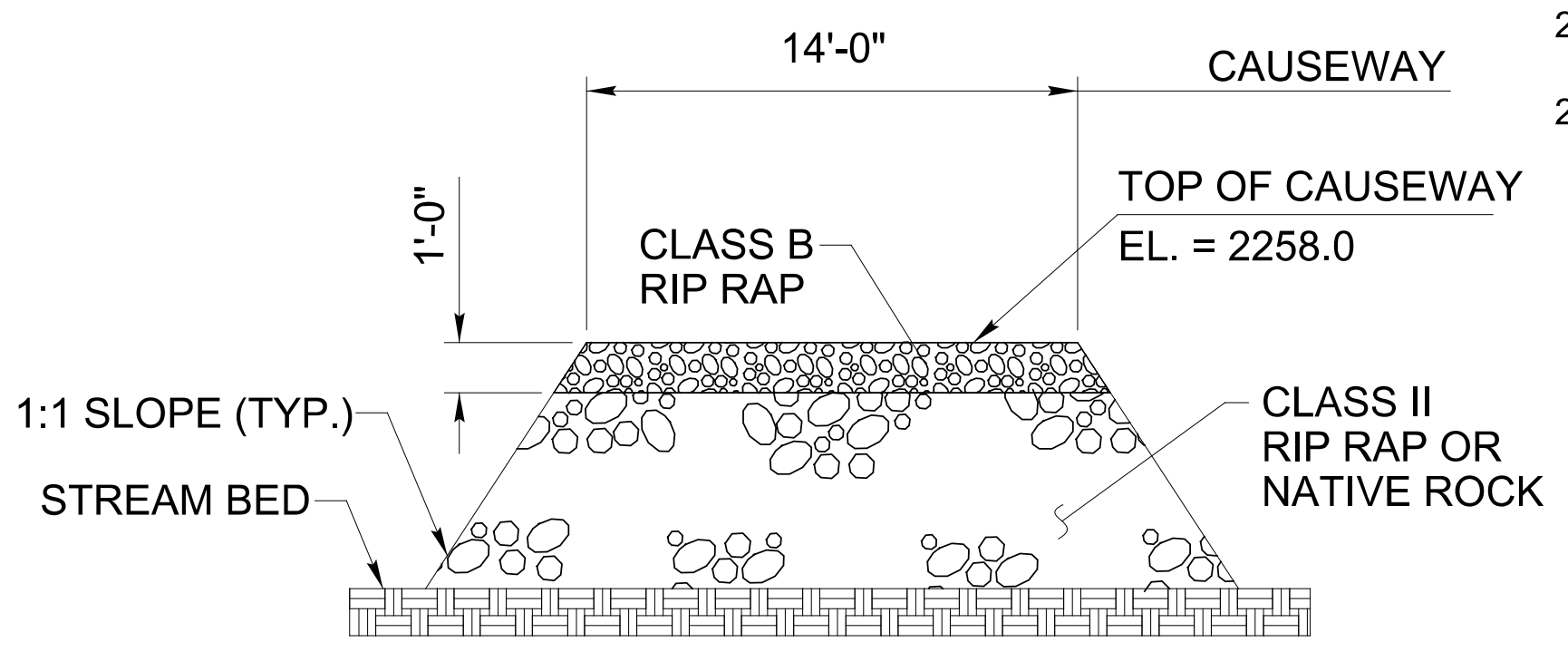
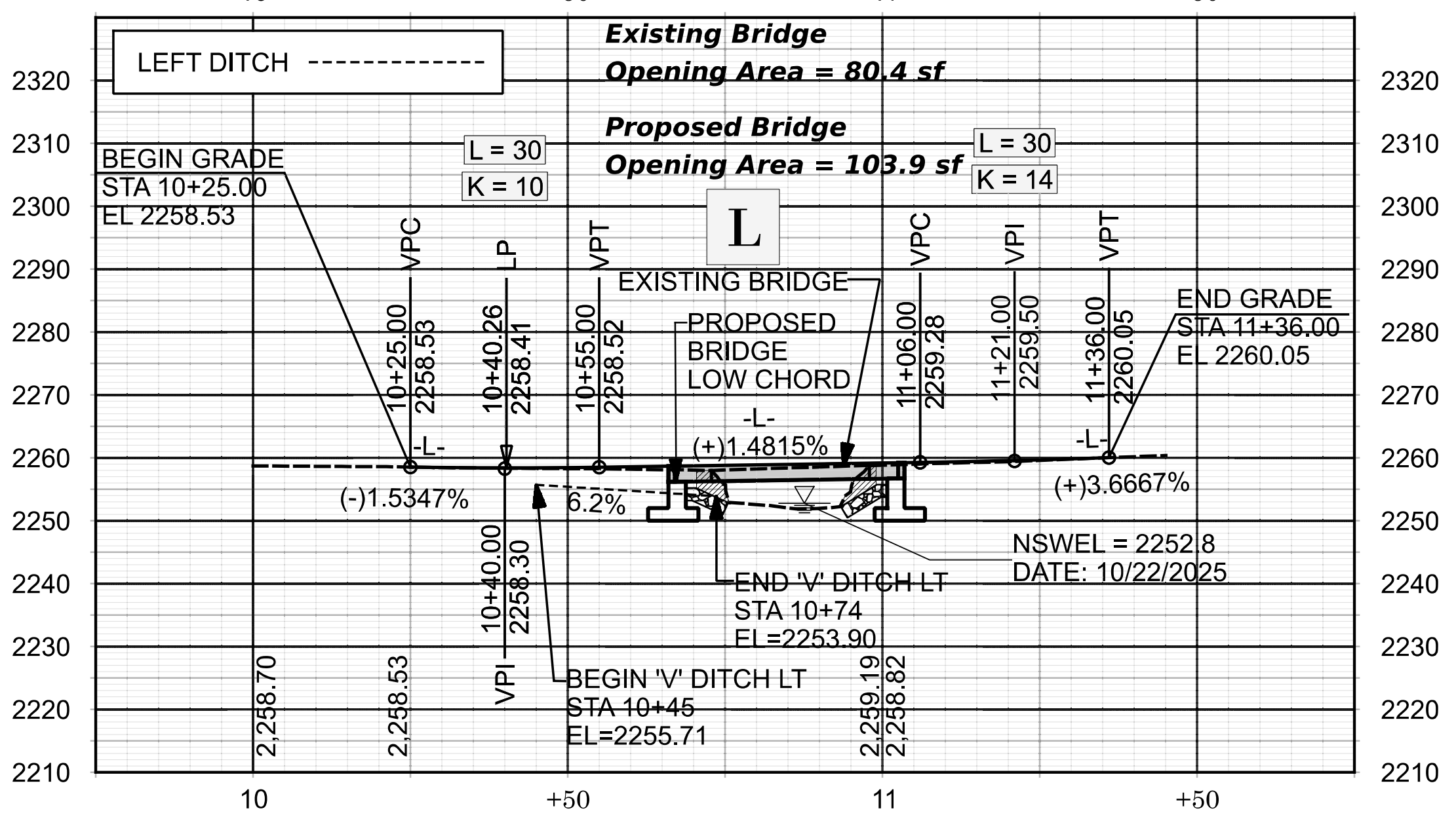


CUR DATA -L- P/c 10+25.36
 $\Delta c = 31^\circ 28' 12.2''$ (RT)
 $D = 63^\circ 39' 43.1''$
 $Lc = 49.43$
 $Tc = 25.36$
 $R = 90$

CUR DATA -L- P/c 11+11.11
 $\Delta c = 23^\circ 04' 46.1''$ (LT)
 $D = 163^\circ 42' 08.0''$
 $Lc = 14.10$
 $Tc = 7.15$
 $R = 35$

EROSION CONTROL QUANTITIES

DESCRIPTION	QUANTITY	UNIT
GEOTEXTILE FOR DRAINAGE	400	SY
TEMPORARY SILT FENCE	360	LF
EROSION CONTROL STONE, CLASS A	40	TON
EROSION CONTROL STONE, CLASS B	130	TON
SEDIMENT CONTROL STONE	170	TON
TEMPORARY MULCHING	0.50	ACR
SEED FOR TEMPORARY SEEDING	100.00	LB
FERTILIZER FOR TEMPORARY SEEDING	0.50	TON
TEMPORARY SLOPE DRAINS	200	LF
SAFETY FENCE	260	LF
SILT EXCAVATION	90	CY
MATTING FOR EROSION CONTROL	7510	SY
COIR FIBER MAT	100	SY
1/4" HARDWARE CLOTH	75	LF
TEMPORARY PIPE FOR STREAM CROSSIN	25	LF
SPECIAL STILLING BASINS	2	EA
FLOCCULANT	5	LB
SEEDING AND MULCHING	0.20	ACR
MOWING	0.20	ACR
SEED FOR REPAIR SEEDING	50.00	LB
FERTILIZER FOR REPAIR SEEDING	0.25	TON
SEED FOR SUPPLEMENTAL SEEDING	50.00	LB
FERTILIZER TOPDRESSING	0.50	TON
IMPervIOUS DIKE	72	LF
SPECIALIZED HAND MOWING	10	MHR
RESPONSE FOR EROSION CONTROL	13	EA
PREFABRICATED CONCRETE WASHOUT	2	EA



DETAIL OF CAUSEWAY (NTS)