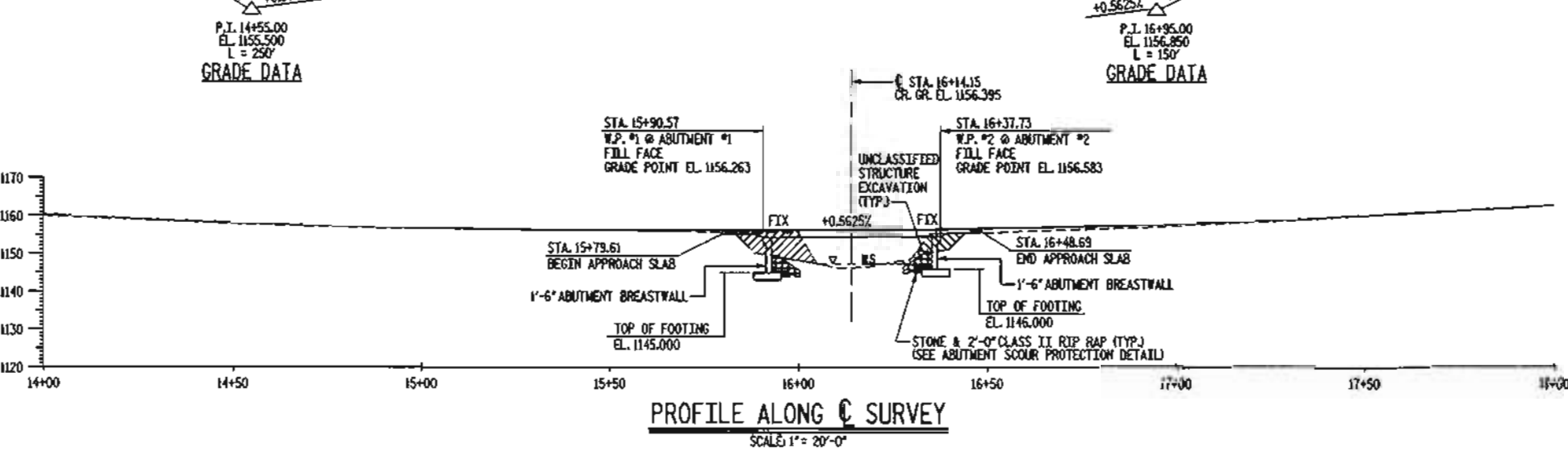
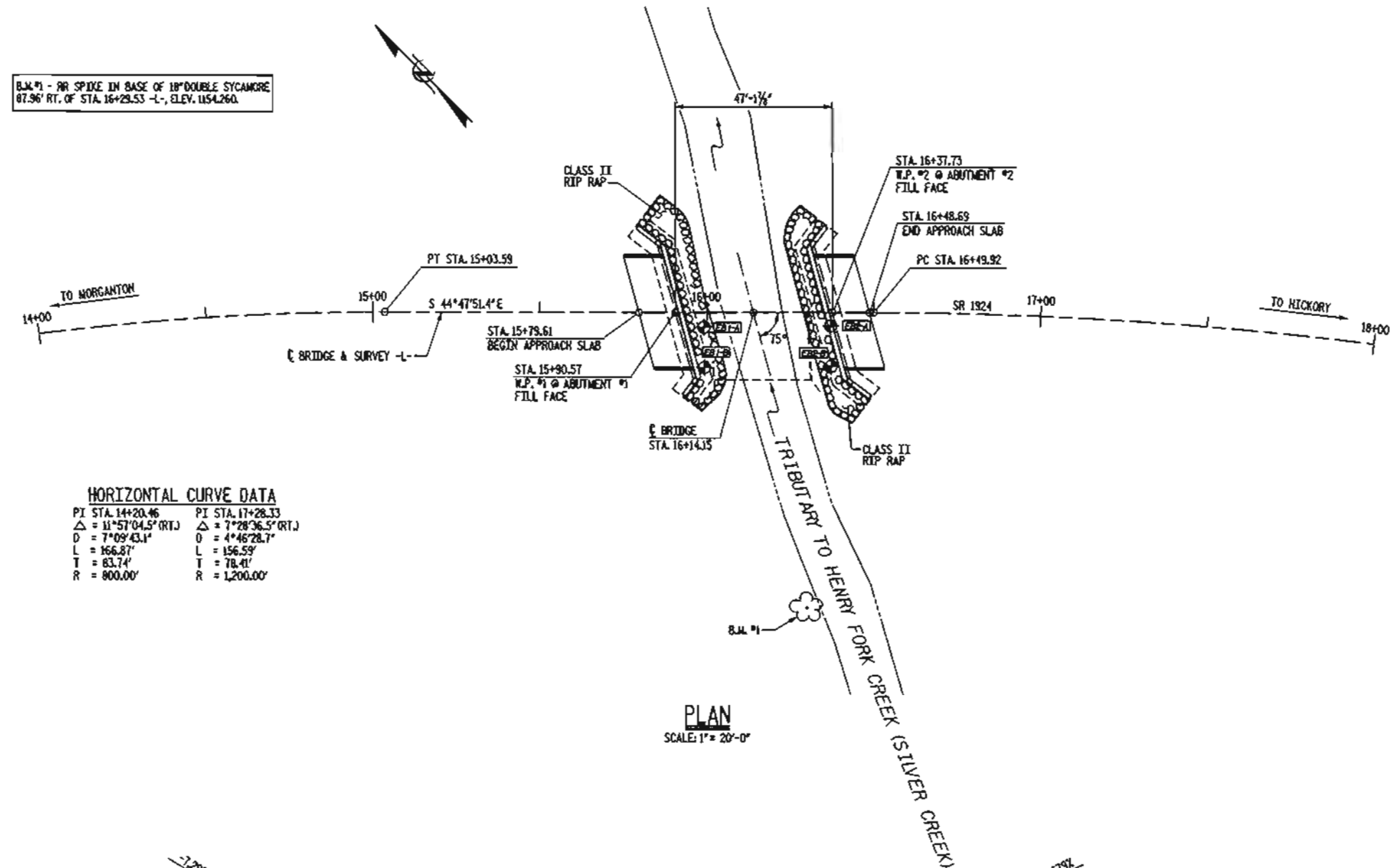
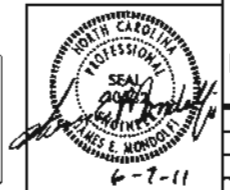


307 BURKE COUNTY PROJ. NO. BK-5124



DRAWN BY: B.L. MAROTTA DATE: NOV 2009  
CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

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NC License No. 7-0868



NOTES

- THE QUANTITY OF RIP RAP TO BE PAID FOR WILL BE THE ACTUAL NUMBER OF TONS OF EACH CLASS OF RIP RAP WHICH HAS BEEN INCORPORATED INTO THE COMPLETED AND ACCEPTED WORK. THE RIP RAP WILL BE MEASURED BY BEING WEIGHED IN TRUCKS ON CERTIFIED PLATFORM SCALES OR OTHER CERTIFIED WEIGHING DEVICES. THE QUANTITY OF RIP RAP WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER TON.
  - THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH FHWA'S TECHNICAL ADVISORY T5140.20 (SCOUR AT BRIDGES).
  - THE MATERIAL IN THE CROSS HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 35 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION", LUMP SUM.
  - THE SCOUR CRITICAL ELEVATION FOR ABUTMENT NO. 1 AND ABUTMENT NO. 2 IS THE BOTTOM OF THE FOOTING. THE SCOUR CRITICAL ELEVATIONS ARE FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.
  - THE REQUIRED BEARING CAPACITY OF THE SPREAD FOOTINGS AT ABUTMENT NO. 1 AND ABUTMENT NO. 2 IS 3 TSF. THE REQUIRED BEARING CAPACITY SHALL BE VERIFIED.
  - TO PROVIDE PROTECTION FROM POSSIBLE SCOUR, THE FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.
  - FOOTINGS SHALL BE KEYED AT LEAST 12 INCHES INTO ROCK WITH MINIMUM THICKNESS AS SHOWN ON THE PLANS.
  - FOOTING SCOUR PROTECTION SHALL BE REQUIRED AT ABUTMENT NO. 1 AND ABUTMENT NO. 2. RIP RAP SHALL NOT BE PLACED ABOVE THE STREAM BED.
  - CURRENT ADT = 910 VPD.
  - DELINEATORS ON BARRIER RAIL AND ON STEEL BEAM GUARDRAIL SHALL BE INCLUDED IN THE PRICE BID FOR THESE ITEMS.
- ◆ GEOTECH BORE HOLES LOCATION

PLAIN RIP RAP CLASS II (2'-0" THICK)		FILTER FABRIC	
ABUTMENT NO. 1	100 TONS		60 SQUARE YARDS
ABUTMENT NO. 2	110 TONS		60 SQUARE YARDS
TOTAL	210 TONS		120 SQUARE YARDS

CLASS B RIP RAP (1'-0" THICK)		
ABUTMENT NO. 1	1 TON	5 SQUARE YARDS

DESCRIPTION OF EXISTING BRIDGE  
1 SPAN @ 32'-35" ASPHALT WEARING SURFACE; 3" x 4" TIMBER FLOORING ON I BEAMS; REINFORCED CONCRETE ABUTMENTS AND TIMBER CAP HELPER BENT WITH TIMBER PILES IN FRONT OF ABUTMENT #2; 19'-4" CLEAR ROADWAY WIDTH SHALL BE REMOVED.

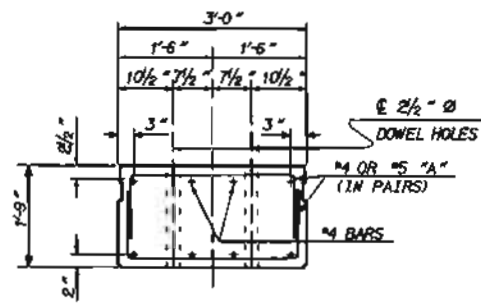
PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BRIDGE NO. 307 ON SR 1924  
OVER TRIBUTARY TO  
HENRY FORK CREEK (SILVER CREEK)

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

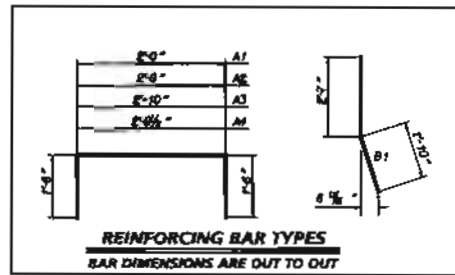
1  
27



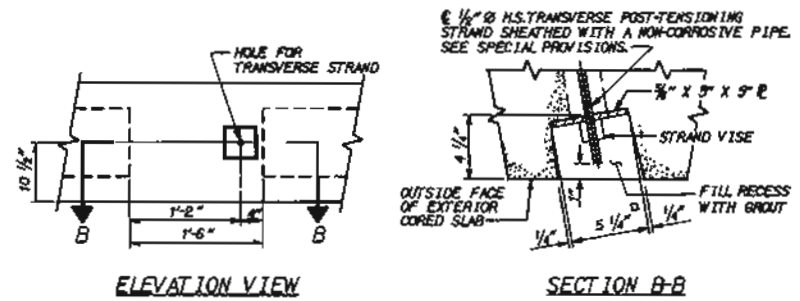
**SLAB END ELEVATION**

THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH LOW MODULUS SILICONE MATERIAL TO 1/2" ABOVE TOP OF DOWELS AND THEN FILLED WITH GROUT.

THE 2 1/2" DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT.



**REINFORCING BAR TYPES**  
BAR DIMENSIONS ARE OUT TO OUT



**ELEVATION VIEW**

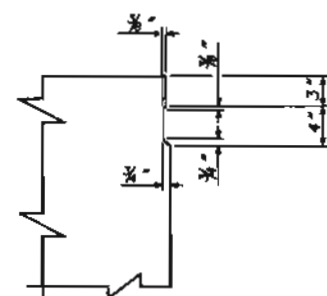
**DETAIL "A"**

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

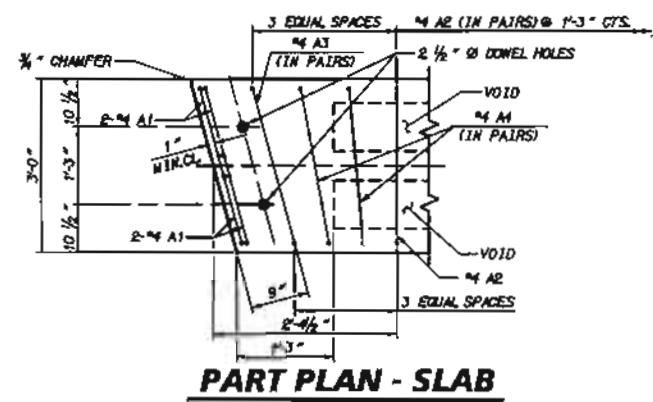
**GENERAL NOTES**  
ASSUMED LIVE LOAD - HS 20-44 OR ALTERNATE LOADINGS.  
CONCRETE, F<sub>CD</sub> - 5000 PSI  
W. CONCRETE, F<sub>CD</sub> - 4000 PSI  
W. (COMPRESSIVE STRENGTH @ TRANSFER OF STRESSING FORCE.)  
ALL PRESTRESS STRANDS SHALL MEET THE REQUIREMENTS OF ASTM A416.  
ALL PRESTRESS STRANDS SHALL BE 7 WIRE, LOW RELAXATION, HIGH STRENGTH CABLES IN ACCORDANCE WITH THE SPECIFICATIONS.  
SIZE TYPE AREA ULTIMATE STR. STR. PER CABLE  
1/2" Ø HIGH 0.153 sq. in. 41,300 lbs.

SHEATH CHART		
SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS
45'	* 5 @ 2"	* 4 @ 2"

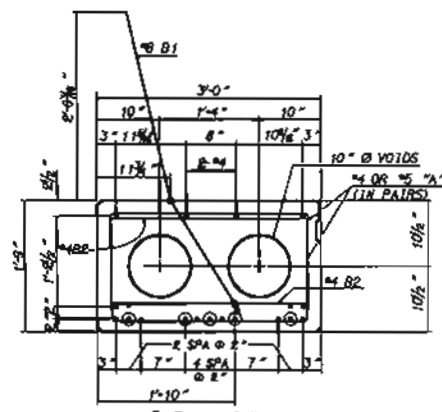
\* BOND SHALL BE BROKEN ON THESE STRANDS AT A DISTANCE OF 4 FEET FROM THE END OF THE SLAB



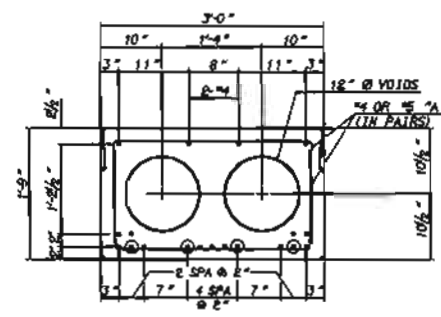
**SHEAR KEY DETAIL**



**PART PLAN - SLAB**



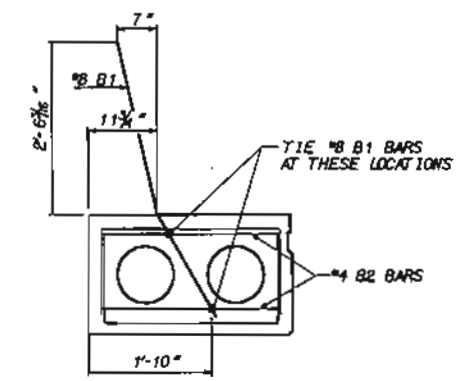
**45' SPAN**  
17 - 1/2" Ø H.S. STRANDS EXTERIOR SLAB SECTIONS



**45' SPAN**  
17 - 1/2" Ø H.S. STRANDS INTERIOR SLAB SECTIONS

APPLIED FORCE 30,980 LBS PER CABLE  
EXP. J. MAT'L SHALL MEET THE REQUIREMENTS OF AASHTO SPECIFICATION M153 TYPE I, TYPE II, OR TYPE III.  
JOINT SEALER SHALL BE LOW MODULUS SILICONE SEALANT, SEE SECTION 108B-4 OF THE STANDARD SPECIFICATIONS.  
STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A36 OR A573, EXCEPT HIGH STRENGTH BOLTS. HIGH STRENGTH BOLTS SHALL BE ASTM A325. ALL STRUCTURAL STEEL SHALL BE GALVANIZED AS PER THE SPECIFICATIONS.  
ALL MATERIAL AND WORKMANSHIP SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OF THE NC DEPARTMENT OF TRANSPORTATION DATED JANUARY 2008 AND WITH THE SPECIAL PROVISIONS.  
THE ULTIMATE STRENGTH OF THE CORED SLAB UNIT MUST MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS.  
STRANDS SHALL BE CUT FLUSH WITH ENDS OF SLABS AND EPOXY COATED, SEE SPECIAL PROVISIONS.  
A POSITIVE HOLD DOWN SYSTEM MUST BE EMPLOYED TO PREVENT VOIDS FROM RISING.  
NOTE: SPIRAL WIRE REINFORCEMENT MAY BE USED IN LIEU OF DEFORMED BARS FOR STIRRUPS. MIN. W. 3.5 X 6" PITCH.  
UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 1/4".

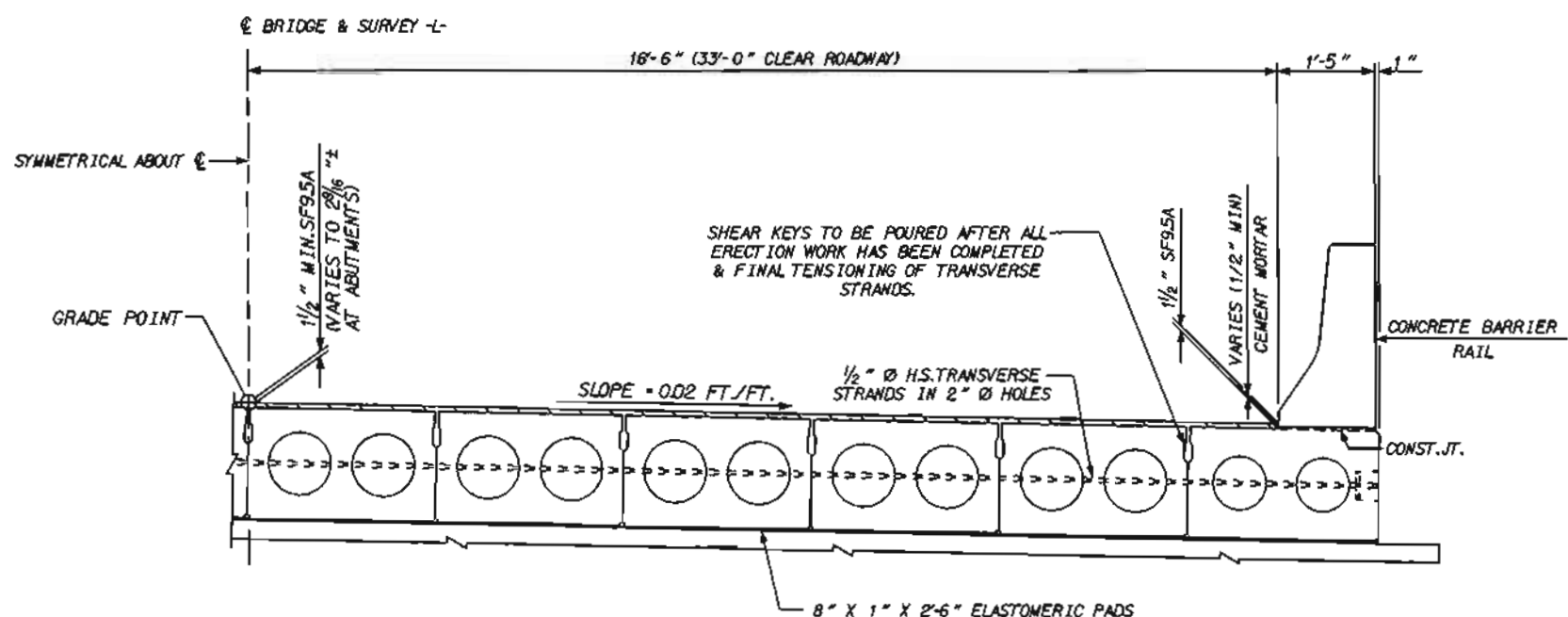
1 REPLACES DRAWING 2 (67-11)



**TIE LOCATION FOR #8 B1**

EXTERIOR SLAB UNIT		INTERIOR SLAB UNIT	
ITEM	45'	ITEM	45'
CHAMBER (SLAB UNIT ALONE IN PLACE)	1.089' (UP)	CHAMBER (SLAB UNIT ALONE IN PLACE)	1.089' (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	0.170' (DOWN)	DEFLECTION (SUPERIMPOSED DEAD LOAD)	0.177' (DOWN)
FINAL DEFLECTION	0.919' (UPS)	FINAL DEFLECTION	1.007' (UP)

EXTERIOR SLAB UNIT		INTERIOR SLAB UNIT	
ITEM	45'	ITEM	45'
CHAMBER (SLAB UNIT ALONE IN PLACE)	1.089' (UP)	CHAMBER (SLAB UNIT ALONE IN PLACE)	1.089' (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	0.170' (DOWN)	DEFLECTION (SUPERIMPOSED DEAD LOAD)	0.177' (DOWN)
FINAL DEFLECTION	0.919' (UPS)	FINAL DEFLECTION	1.007' (UP)



**TYPICAL HALF SECTION**

NOT TO SCALE

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NC License No. P-0268

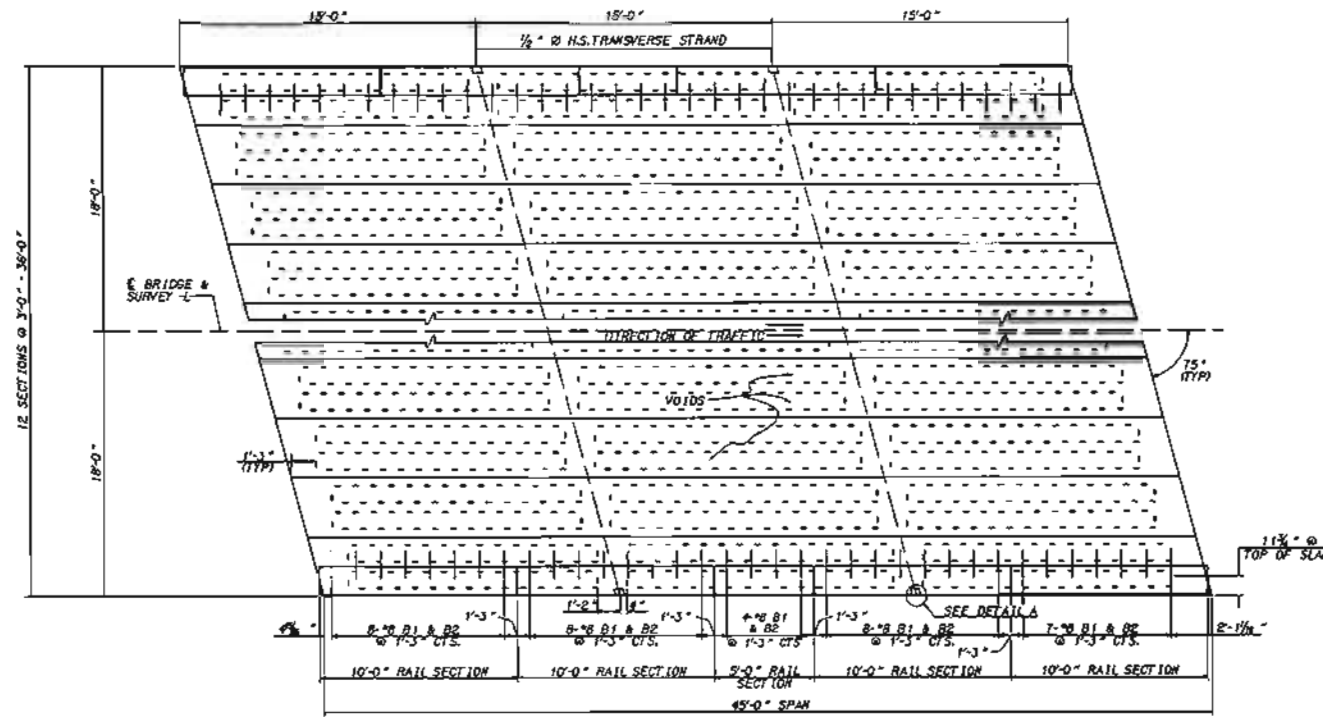
PROFESSIONAL SEAL  
20532  
6-22-11

PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

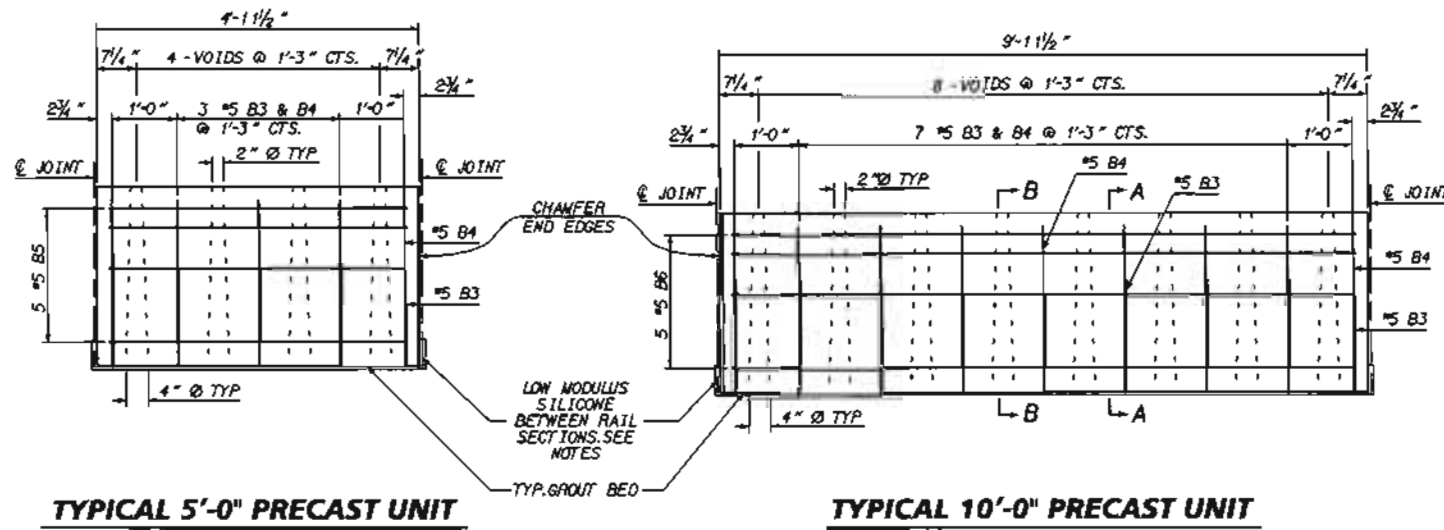
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
1 3'-0" X 1'-9" PRESTRESSED CORED SLAB UNIT 33'-0" CLEAR ROADWAY - 75° SKEW

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	JEM	6-20-11	2		
2			3		

DRAWN BY: B.L. MARIOTTE DATE: NOV 2009  
CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

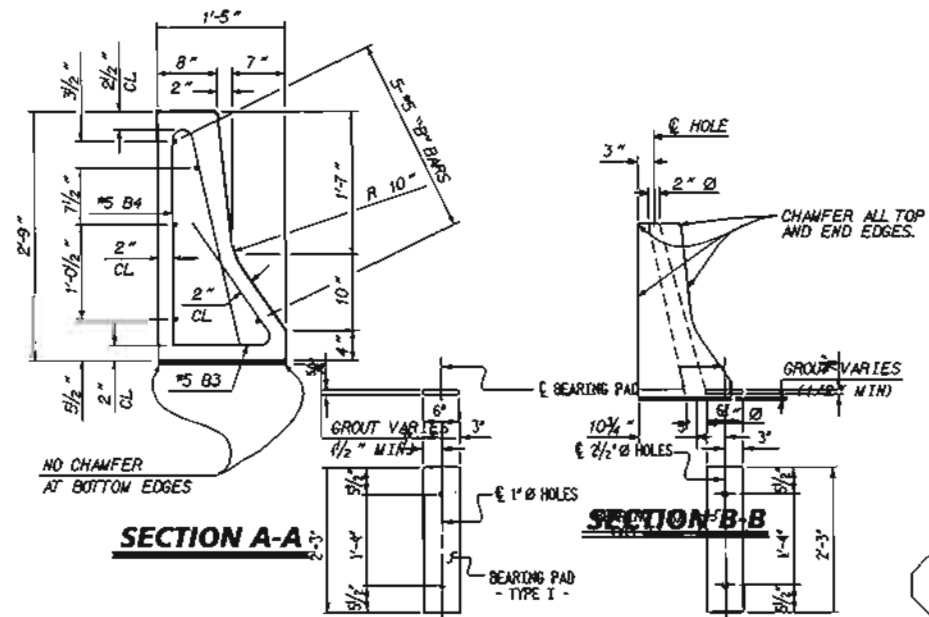


**PLAN VIEW - 45' SPAN**



**TYPICAL 5'-0" PRECAST UNIT**

**TYPICAL 10'-0" PRECAST UNIT**



**ELASTOMERIC BEARING DETAILS**

**NOTES**

EACH PRECAST RAIL UNIT SHALL BE CAST WITH CLASS AA CONCRETE.  
RAIL TO BE FLUSH WITH CORED SLAB UNITS AT EACH END OF SPAN.  
EACH PRECAST RAIL UNIT SHALL BE SUPPLIED WITH LIFTING DEVICES. NO CABLES ARE TO BE WRAPPED AROUND THE RAIL UNITS FOR LIFTING.  
THE EXPANSION JOINT SEALER SHALL BE LOW MODULUS SILICONE SEALANT. SEE SECTION 102B-4 OF THE STANDARD SPECIFICATIONS.

1 REPLACES DRAWING 3 (67-11).

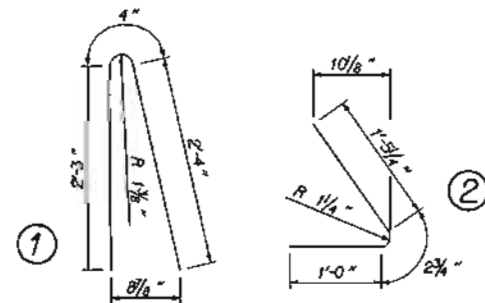
PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STANDARD PRECAST CONCRETE  
BARRIER RAIL SECTIONS

BILL OF MATERIAL FOR ONE 10'-0" RAIL SECTION				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	#5	1	4'-11"	46
B4	#5	3	2'-8"	25
B6	#5	STR	9'-7"	50
REINFORCING STEEL LBS. = 121				
CLASS AA CONCRETE CU. YDS. = 1.0				

BILL OF MATERIAL FOR ONE 5'-0" RAIL SECTION				
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT
B3	#5	1	4'-11"	26
B4	#5	2	2'-8"	14
B5	#5	STR	4'-7"	24
REINFORCING STEEL LBS. = 64				
CLASS AA CONCRETE CU. YDS. = 0.5				

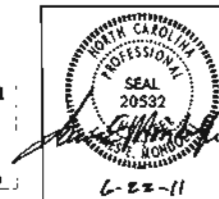


**REINFORCING BAR TYPES**  
BAR DIMENSIONS ARE OUT TO OUT

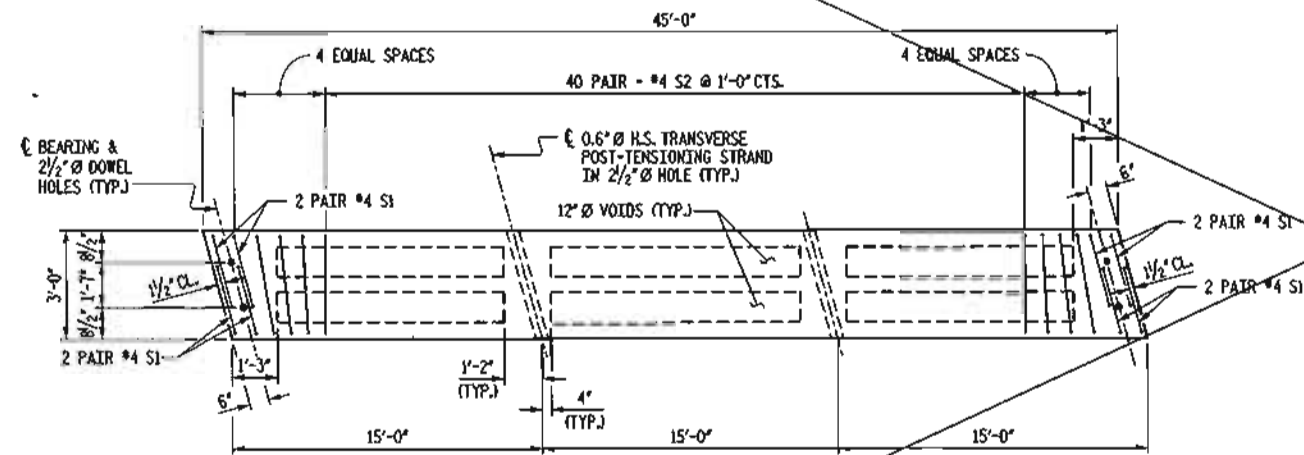
DRAWN BY: B.J. MARJOTTE DATE: NOV 2009  
CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

NOT TO SCALE

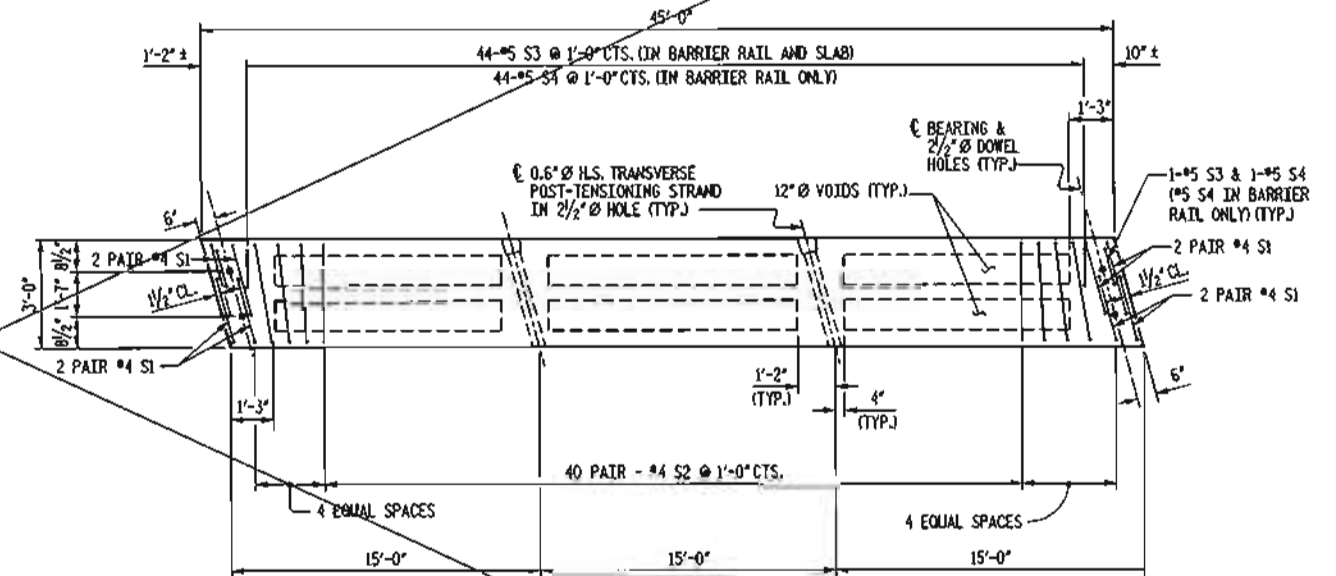
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NC License No. F-0258



REVISIONS						SHRINK
NO.	BY	DATE	NO.	BY	DATE	NO.
1	JEM	6-20-11	3			3
2			4			27



45' SPAN - PLAN OF INTERIOR CORED SLAB UNIT



45' SPAN - PLAN OF EXTERIOR CORED SLAB UNIT

NOTE: FOR PART PLAN SLAB, SEE SHEET 2.

1 DELETE DRAWING.

PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

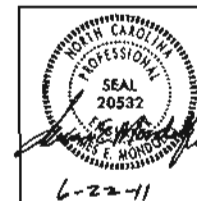
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

1

3'-0" X 1'-9"  
 PRESTRESSED CORED SLAB UNIT

REVISIONS						NO. OF SHEETS
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1	JEM	6-20-11	2			27
2			4			

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 NC License No. 3-0286



NOT TO SCALE

DRAWN BY: B.L. MARIOTTE DATE: NOV 2009  
 CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

NOTES

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

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

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

THE 2 1/2" Ø BOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH NON-SHRINK GROUT.

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

WHEN CORED SLABS ARE CAST, A POSITIVE HOLD-DOWN SYSTEM SHALL BE EMPLOYED TO PREVENT VOIDS FROM RISING OR MOVING SIDWAYS. THIS SYSTEM SHALL BE DESIGNED TO BE LEFT IN PLACE UNTIL THE CONCRETE HAS REACHED RELEASE STRENGTH. AT LEAST THREE WEEKS PRIOR TO CASTING CORED SLABS, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND COMMENT, DETAILED DRAWINGS OF THE PROPOSED HOLD-DOWN SYSTEM IN ADDITION TO STRUCTURAL DETAILS, LOCATION AND SPACING OF THE HOLD-DOWNS SHALL BE INDICATED.

THE TRANSFER OF LOAD FROM THE ANCHORAGES TO THE CORED SLAB UNIT SHALL BE DONE WHEN THE CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI.

ALL REINFORCING STEEL IN BARRIER RAILS SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

VERTICAL GROOVED CONTRACTION JOINTS, 1/2" IN DEPTH SHALL BE TOOLED IN ALL EXPOSED FACES OF THE BARRIER RAIL, AND IN ACCORDANCE WITH ARTICLE 825-10(B) OF THE STANDARD SPECIFICATIONS, A VERTICAL CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS.

TRANSVERSE POST-TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, EXCEPT THAT THE STRANDS SHALL BE 0.600" AND TENSIONED TO 43,950 POUNDS.

THE MINIMUM AND MAXIMUM HEIGHTS OF THE BARRIER RAIL ARE SHOWN. THE HEIGHT OF THE BARRIER RAIL VARIES WHILE THE TOP OF THE RAIL FOLLOWS THE PROFILE OF THE GUTTERLINE.

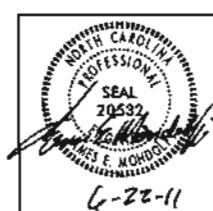
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PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

1 BILL OF MATERIALS

REVISIONS						NO. 5
NO.	BY	DATE	NO.	BY	DATE	TOTAL
1	JEM	6-20-11	2			27
2			4			



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NOT TO SCALE

**BILL OF MATERIAL FOR ONE 45'-0" INTERIOR CORED SLAB SECTION**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	#4	STR	23'-3"	62	
S1	#4	3	4'-6"	48	
S2	#4	3	5'-4"	328	
REINFORCING STEEL				LB.	438
5000 P.S.I. CONCRETE				C. Y.	6.4
0.6" Ø L.R. STRANDS				NO.	13

**BILL OF MATERIAL FOR ONE 45'-0" EXTERIOR CORED SLAB SECTION**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	#4	STR	23'-3"	62	
S1	#4	3	4'-6"	48	
S2	#4	3	5'-4"	328	
*S3	#5	1	5'-2"	248	
REINFORCING STEEL				LB.	438
*EPOXY COATED REINFORCING STEEL				LB.	248
5000 P.S.I. CONCRETE				C. Y.	6.5
0.6" Ø L.R. STRANDS				NO.	13

**BILL OF MATERIAL FOR CONCRETE BARRIER RAIL**

BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B2	#5	STR	13'-0"	868	
*S4	#5	2	5'-5"	520	
*EPOXY COATED REINFORCING STEEL				LB.	1,388
CLASS AA CONCRETE				C. Y.	9.8
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					90.0

**SUMMARY FOR EXTERIOR CORED SLAB SECTIONS**

	45'-0" SPAN	TOTAL
REINFORCING STEEL	LBS. 876	876
*EPOXY COATED REINFORCING STEEL	LBS. 496	496
5000 P.S.I. CONCRETE	C. Y. 13.0	13.0
0.6" Ø L.R. STRANDS	NO. 26	26

**SUMMARY FOR INTERIOR CORED SLAB SECTIONS**

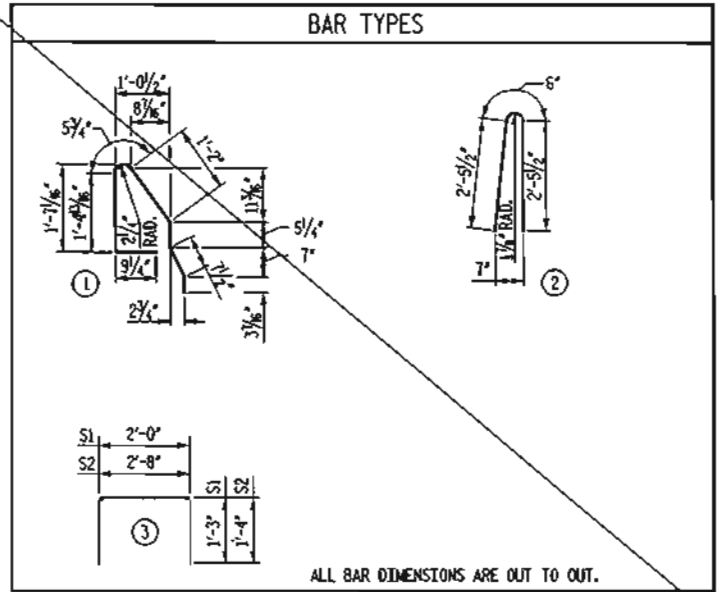
	45'-0" SPAN	TOTAL
REINFORCING STEEL	LBS. 4380	4380
*EPOXY COATED REINFORCING STEEL	LBS. —	—
5000 P.S.I. CONCRETE	C. Y. 64.0	64.0
0.6" Ø L.R. STRANDS	NO. 130	130

**CORED SLABS REQUIRED**

	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	45'-0"	90'-0"
INTERIOR C.S.	10	45'-0"	450'-0"

**GRADE 270 STRANDS**

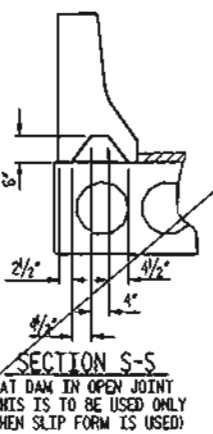
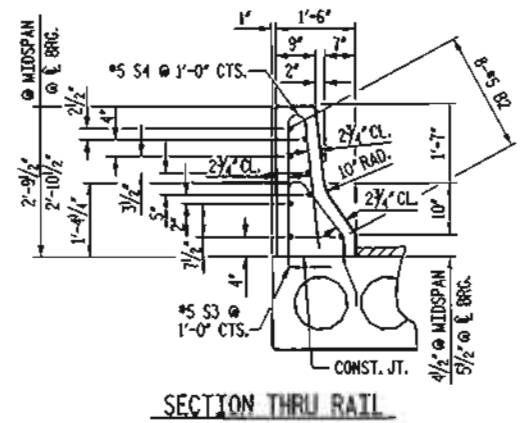
	0.6" Ø L.R.
AREA (SQ. INCHES)	0.217
ULTIMATE STRENGTH (LBS. PER STRAND)	58,600
APPLIED PRESTRESS (LBS. PER STRAND)	43,950



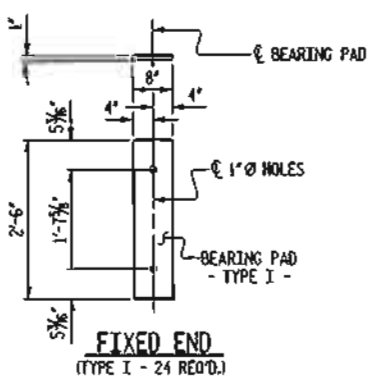
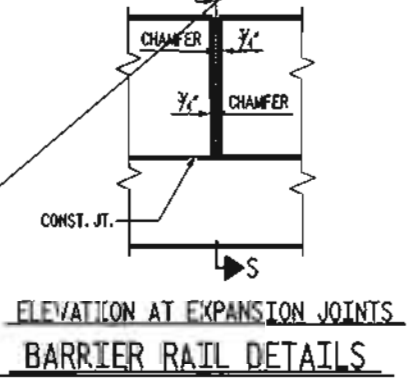
**DEAD LOAD DEFLECTION AND CAMBER**

	3'-0" x 1'-9" CORED SLAB
CAMBER (SLAB ALONE IN PLACE)	1.167
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0.161
FINAL CAMBER	1.006

\*\* INCLUDES FUTURE WEARING SURFACE



1/2" EXP. JT. MAT'L HELD IN PLACE WITH GALVANIZED NAILS (NOTE OMIT EXP. JT. MAT'L WHEN SLIP FORM IS USED)



**ELASTOMERIC BEARING DETAILS**  
 ELASTOMER IN BEARING PAD SHALL BE 50 DUROMETER HARDNESS

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 3/4" Ø BOLTS WITH NUTS AND WASHERS, RUBRAIL, AND ADHESIVELY ANCHORED BOLTS.

THE HOLD-DOWN PLATE SHALL CONFORM TO AASHTO M270 GRADE 36. AFTER FABRICATION, THE HOLD-DOWN PLATE SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M11.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M29L. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED. (AT THE CONTRACTOR'S OPTION, STAINLESS STEEL BOLTS, NUTS AND WASHERS MAY BE USED AS AN ALTERNATE FOR THE 3/4" Ø GALVANIZED BOLTS, NUTS AND WASHERS. THEY SHALL CONFORM TO OR EXCEED THE MECHANICAL REQUIREMENTS OF ASTM A307. THE USE OF THIS ALTERNATE SHALL BE APPROVED BY THE ENGINEER.)

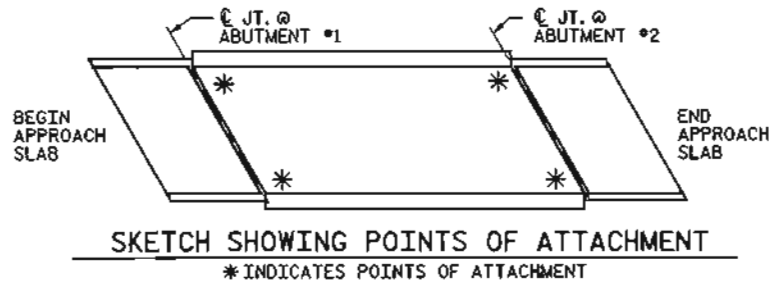
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF CONCRETE BARRIER RAIL OR CONCRETE END POSTS. FOR POINTS OF ATTACHMENT, SEE SKETCH.

AFTER INSTALLATION, THE EXPOSED THREAD OF THE BOLT SHALL BE BURRED WITH A SHARP POINTED TOOL.

THE COST OF THE GUARDRAIL ANCHOR ASSEMBLY SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE BID FOR CONCRETE BARRIER RAIL.

THE 1 1/4" Ø HOLES SHALL BE DRILLED WITH A CORE BIT. IMPACT TOOLS WILL NOT BE PERMITTED. ANY CONCRETE DAMAGED BY THIS WORK SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER.

THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS AND LOCATION OF THE RUBRAIL.

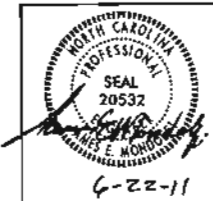


1 REPLACES DRAWING 6 (6-7-11)

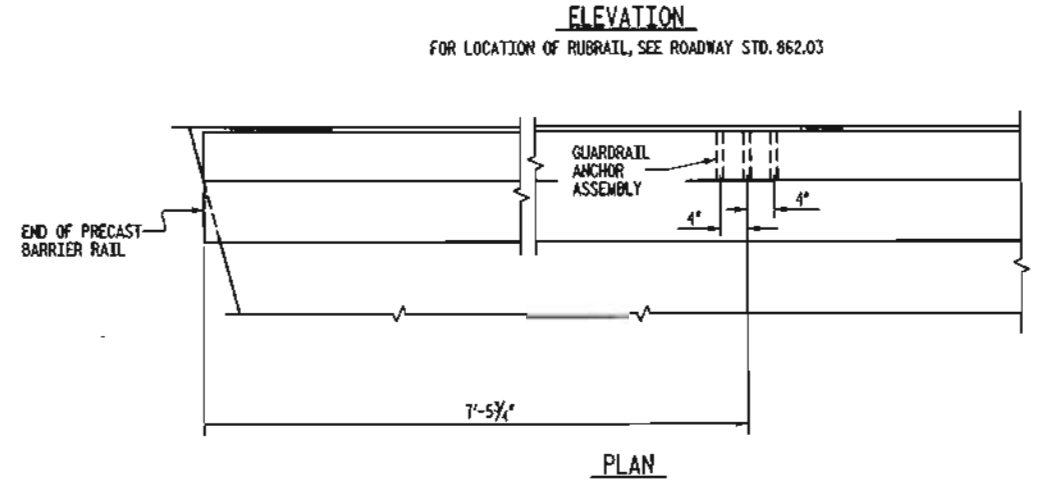
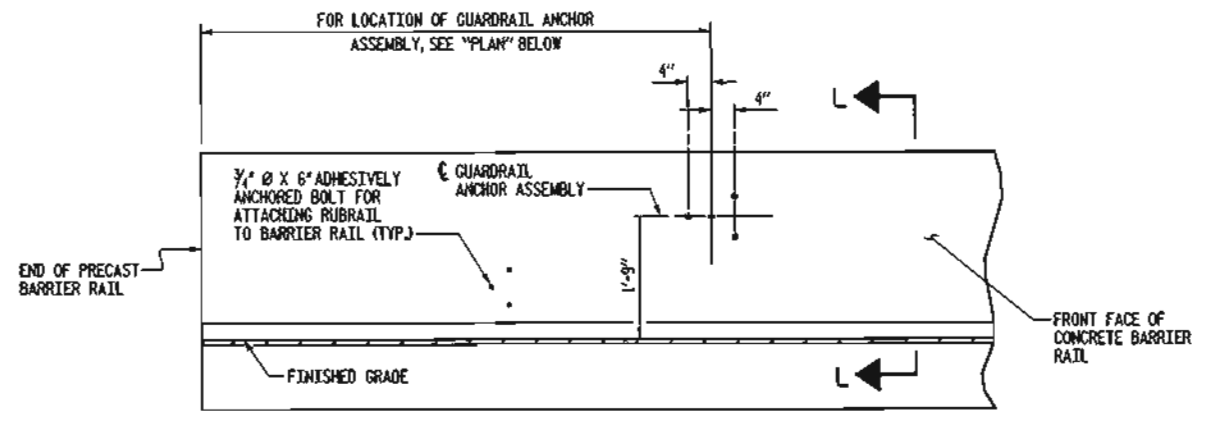
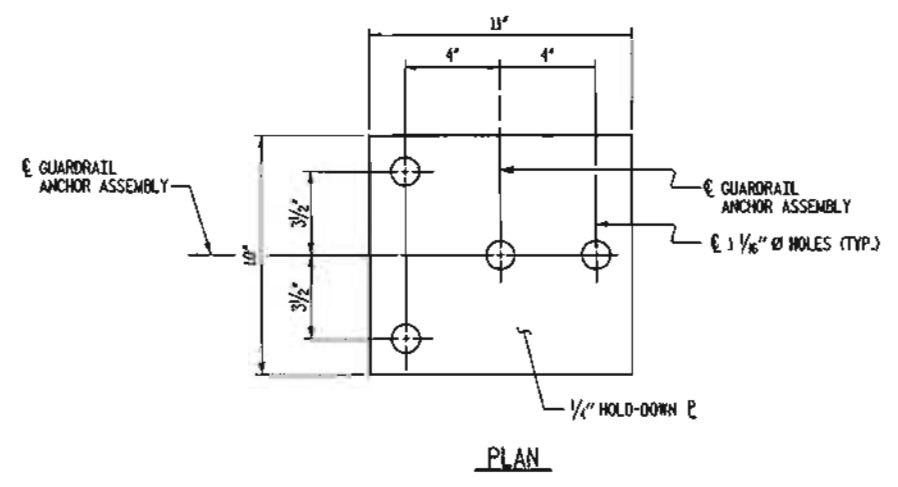
PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 SUPERSTRUCTURE  
 GUARDRAIL ANCHORAGE  
 DETAILS

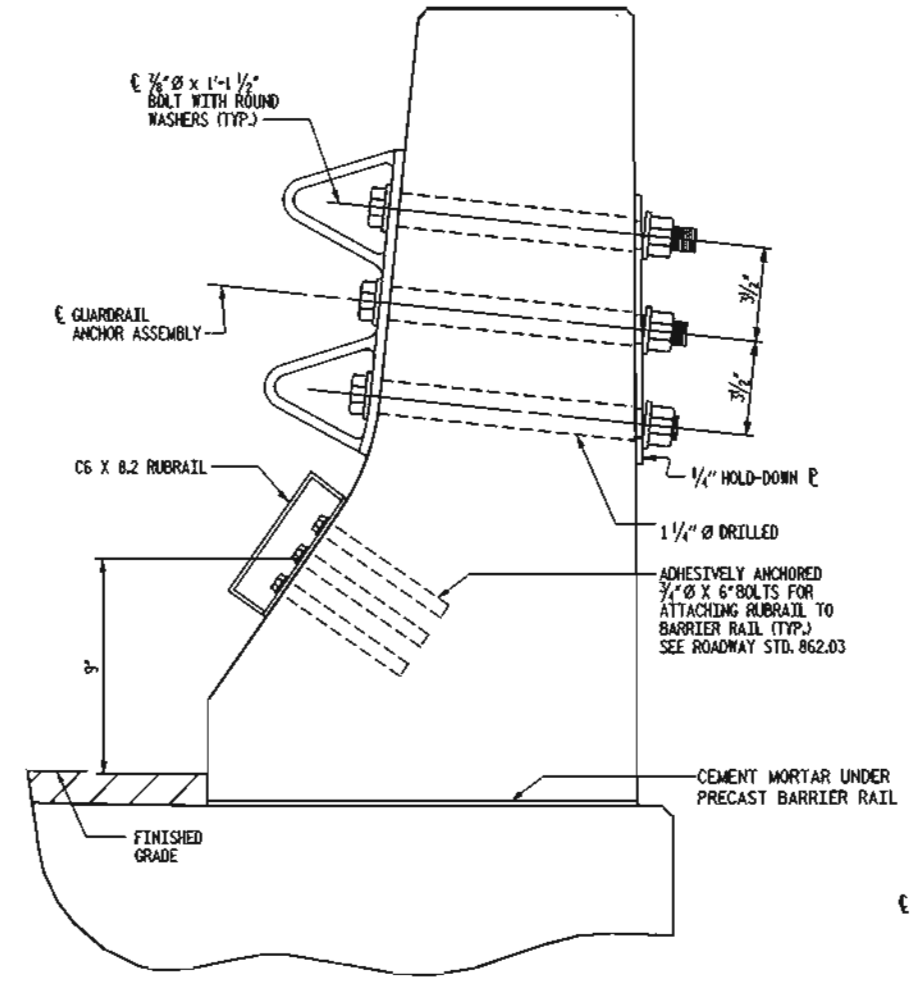
REVISIONS						ISSUE NO.
NO.	BY	DATE	NO.	BY	DATE	TOTAL SHEETS
1	JEM	6-20-11	2			27
2			4			



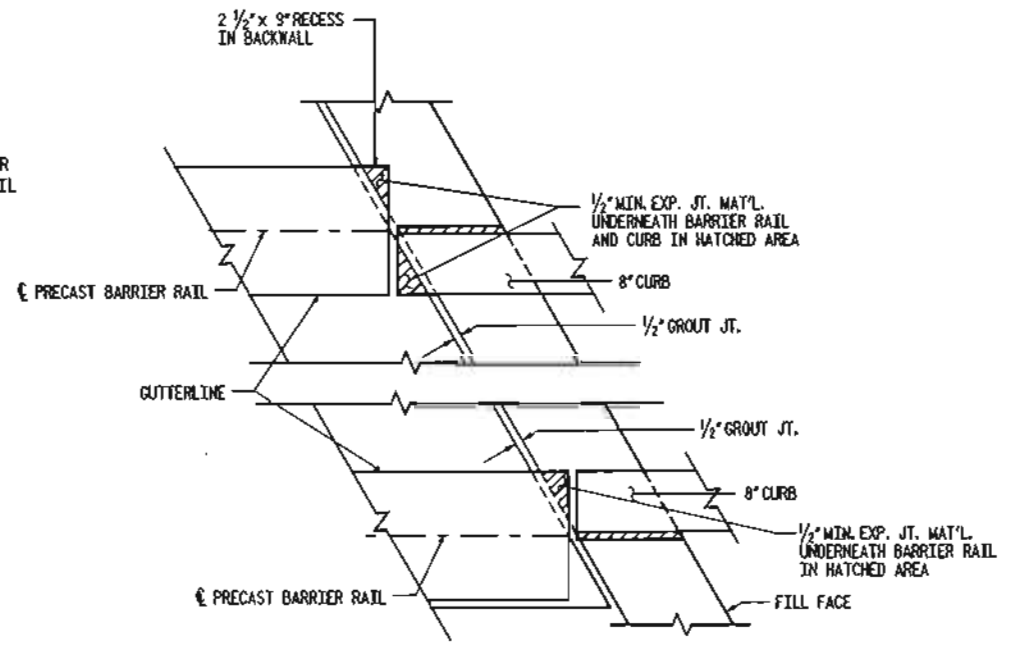
**Florence & Hutcheson**  
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 5121 Kingscom Hwy, Suite 100 Raleigh, NC 27607  
 NC License No. P-0250



LOCATION OF ANCHORS FOR GUARDRAIL  
 FOR CONCRETE BARRIER RAIL ONLY  
 ABUTMENT #1 SHOWN, ABUTMENT #2 SIMILAR



GUARDRAIL ANCHOR ASSEMBLY DETAILS  
 FOR CONCRETE BARRIER RAIL ONLY  
 (FOR LOCATION OF GUARDRAIL ANCHOR ASSEMBLY, SEE THIS SHEET)



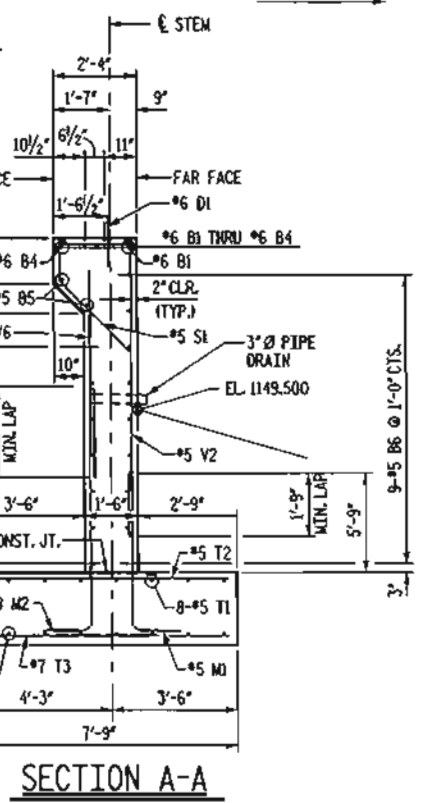
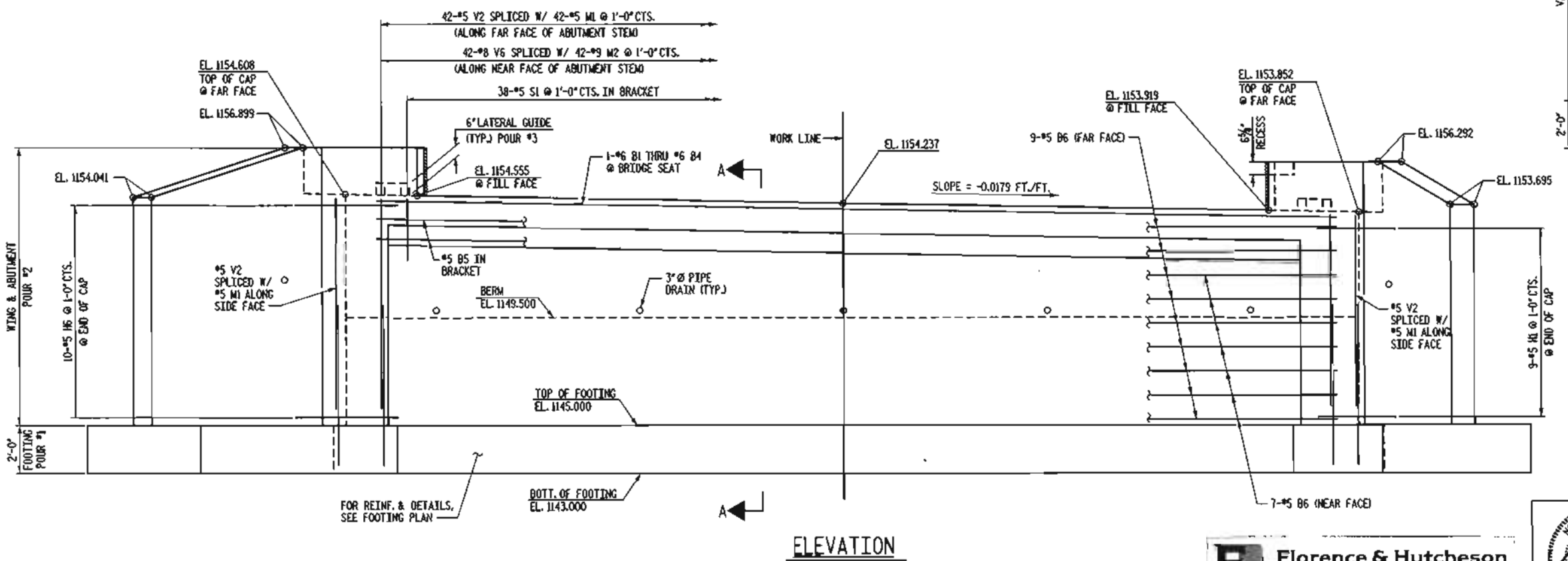
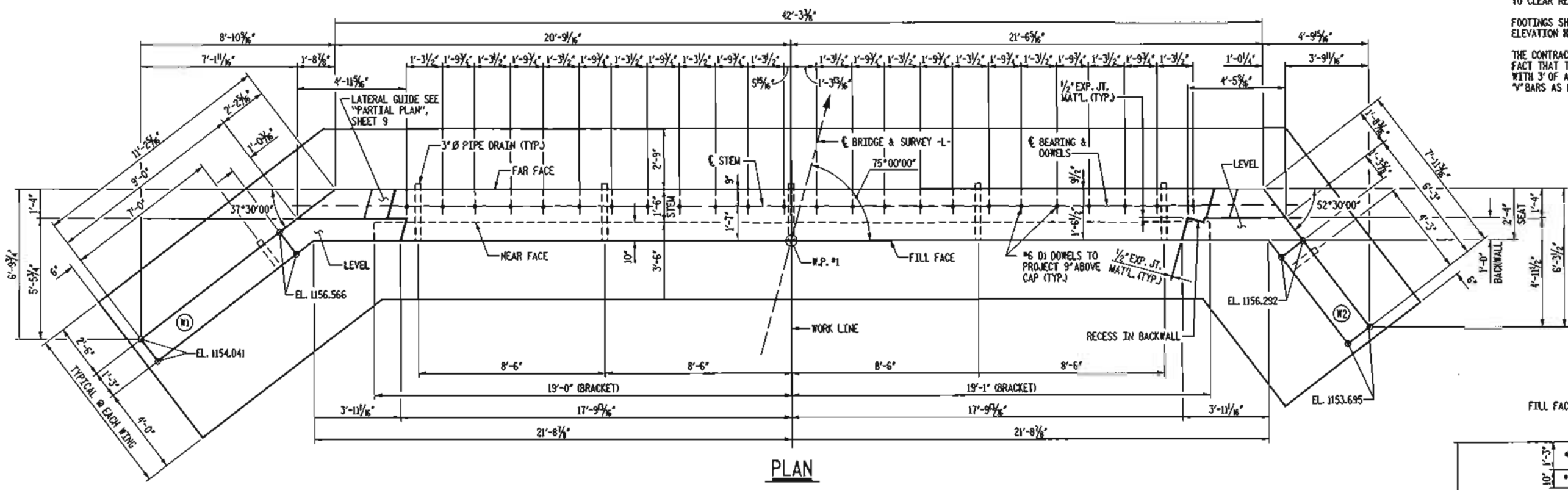
PLAN OF BARRIER RAIL AND CURB  
 CORED SLAB AT END BENTS

NOT TO SCALE

DRAWN BY: B.L. MAROTTE DATE: NOV 2009  
 CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

10/27/09 10:22:29 AM  
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 PLOT: 4/22/2011 10:22:29 AM  
 PLOT: 4/22/2011 10:22:29 AM

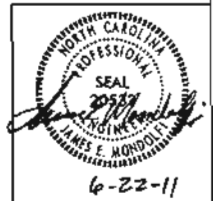
NOTES:  
 STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.  
 PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND DOWELS.  
 FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.  
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE WALL "V" BARS ARE DETAILED WITH 3' OF ADDITIONAL LENGTH, FIELD CUT "V" BARS AS NEEDED.



1 REPLACES DRAWING 7 (6-7-11)  
 PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

1 SUBSTRUCTURE ABUTMENT NO. 1



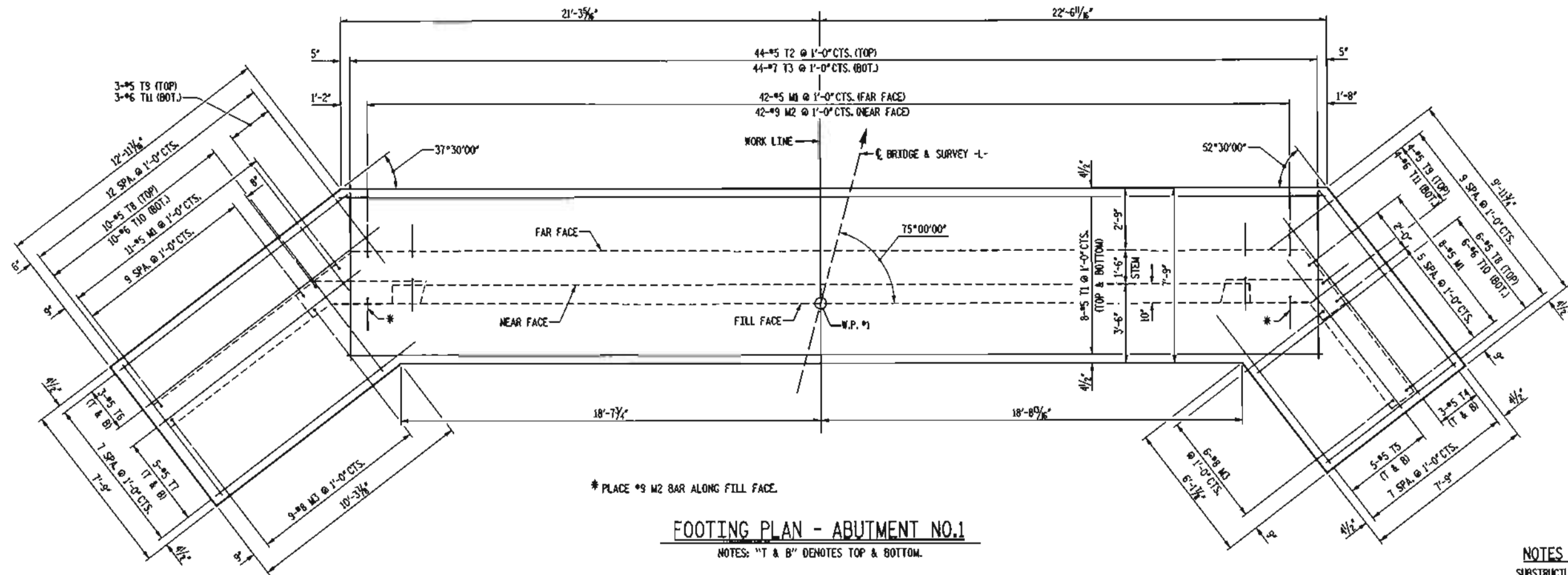
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5111 Kingsize Way, Suite 300 Raleigh, NC 27607  
 NC License No. F-0256

REVISIONS				SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE
1	JEM	6-20-11	3		
2			4		
					7
					27

NOT TO SCALE

DRAWN BY: B.L. MARIOTTI DATE: NOV 2009  
 CHECKED BY: J.E. MONDOLFF DATE: NOV 2009

11/18/2009 04:11:00 PM C:\Users\jmondolff\Documents\42575\Substructure\Substructure.dwg  
 11/18/2009 04:11:00 PM C:\Users\jmondolff\Documents\42575\Substructure\Substructure.dwg  
 11/18/2009 04:11:00 PM C:\Users\jmondolff\Documents\42575\Substructure\Substructure.dwg



\* PLACE #9 M2 BAR ALONG FILL FACE.

**FOOTING PLAN - ABUTMENT NO.1**

NOTES: "T & B" DENOTES TOP & BOTTOM.

**NOTES FOR SUBSTRUCTURE SCOUR PROTECTION**

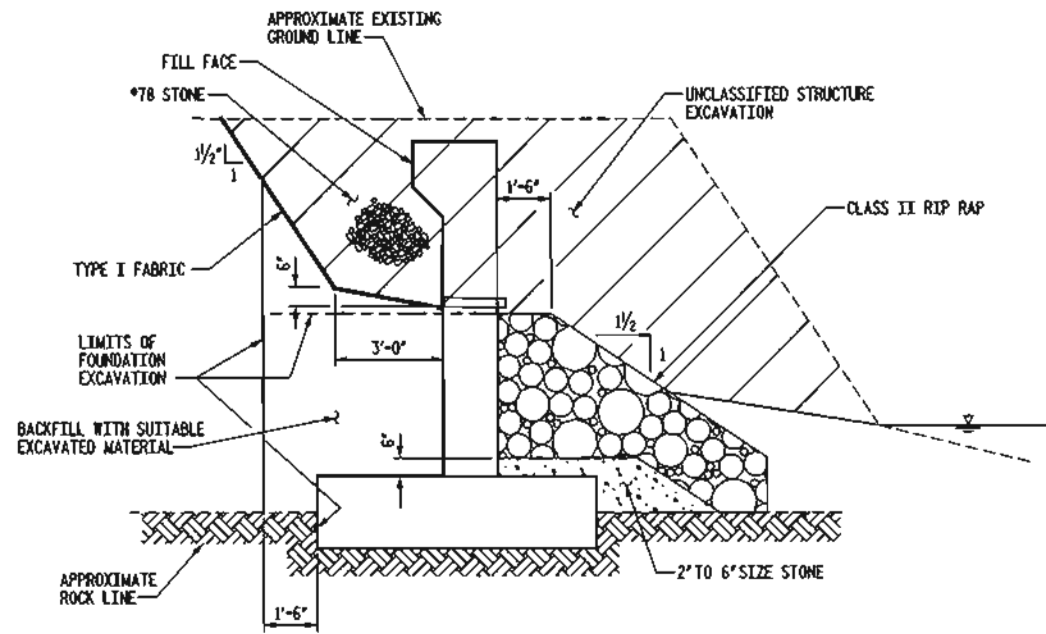
SUBSTRUCTURE SCOUR PROTECTION SHALL BE PROVIDED AS INDICATED IN THE PLANS. THE TWO TO SIX INCH SIZE STONE SHALL BE PLACED AFTER FORMWORK HAS BEEN REMOVED AND WHILE THE EXCAVATION IS DEWATERED.

THE TWO TO SIX INCH SIZE SCOUR PROTECTION STONE SHALL BE HARD AND DURABLE IN NATURE, WHILE NO SPECIFIC GRADATION IS REQUIRED THE VARIOUS SIZES OF STONE SHALL BE REASONABLY EQUALLY DISTRIBUTED WITHIN THE REQUIRED SIZE RANGE. THE STONE SHALL BE ESSENTIALLY CUBICAL IN SHAPE.

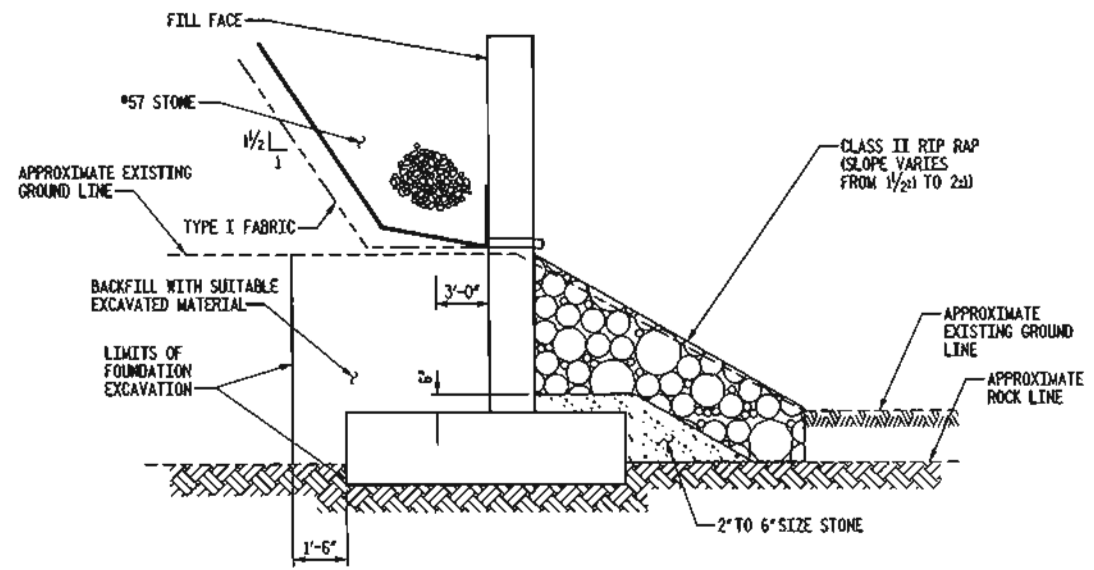
**BASIS OF PAYMENT**

THE ENTIRE COST OF ABOVE THE WORK INCLUDING THE TWO TO SIX INCH SIZE STONE, MATERIALS, EQUIPMENT, TOOLS, LABOR AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR PLACEMENT OF SUBSTRUCTURE. CLASS II RIP RAP SHALL BE PAID FOR AT THE UNIT PRICE BID FOR CLASS II RIP RAP PER TON UNCLASSIFIED STRUCTURE EXCAVATION AND FOUNDATION EXCAVATION COSTS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EXCAVATION AND EMBANKMENT.

\*78 STONE BACKFILL AND FABRIC SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR APPROACH SLABS.



**EXCAVATION AND EMBANKMENT AT ABUTMENT**

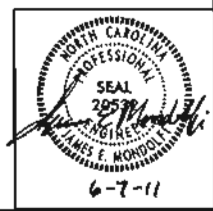


**EXCAVATION AND EMBANKMENT AT WINGS**

PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE ABUTMENT NO. 1 DETAILS**



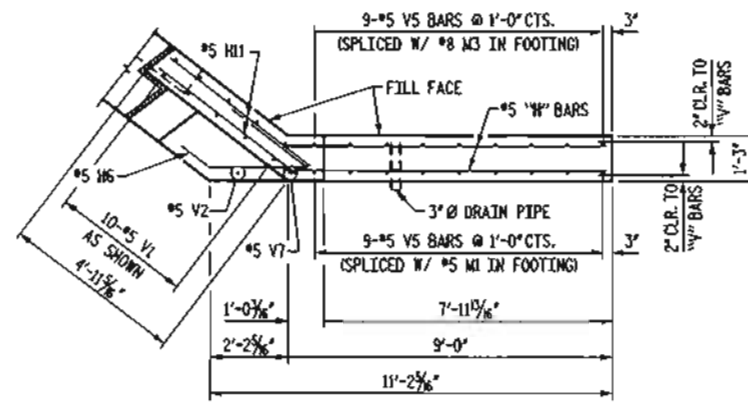
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Staglons Hwy, Suite 100 Raleigh, NC 27607  
 NC License No: 7-0268

NOT TO SCALE

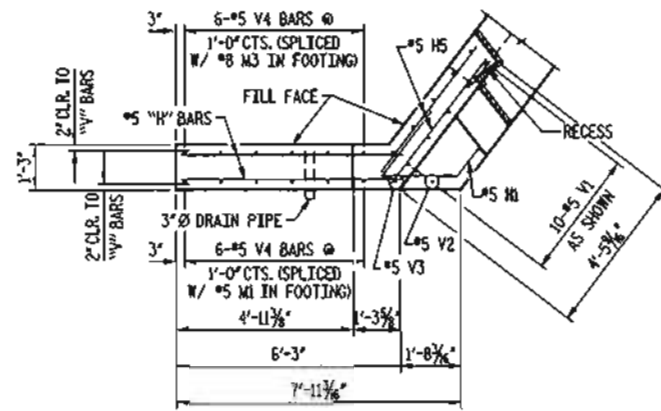
REVISIONS						SHEET NO. 8
NO.	BY	DATE	NO.	BY	DATE	
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2			4			

DRAWN BY: B.L. MARJOTTE DATE: NOV 2009  
 CHECKED BY: J.S. MONDOLFI DATE: NOV 2009

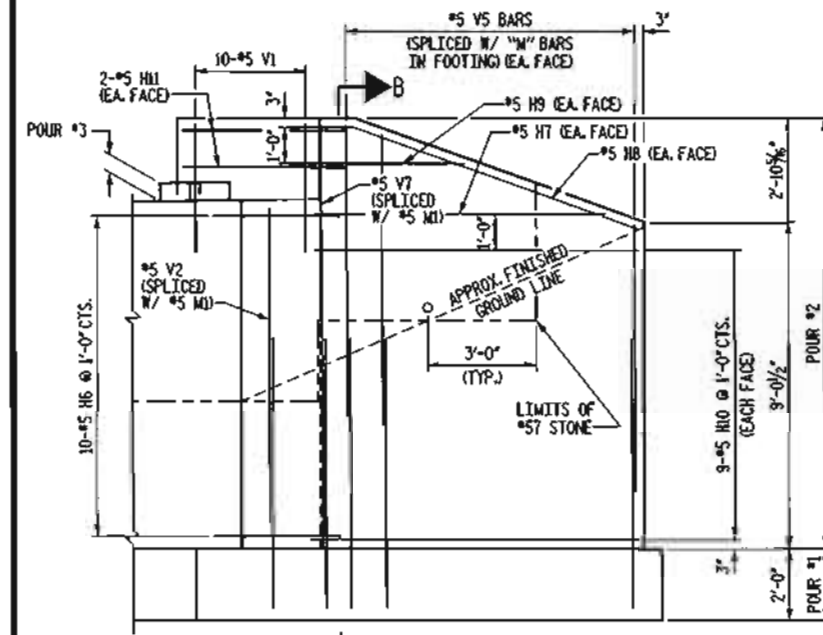




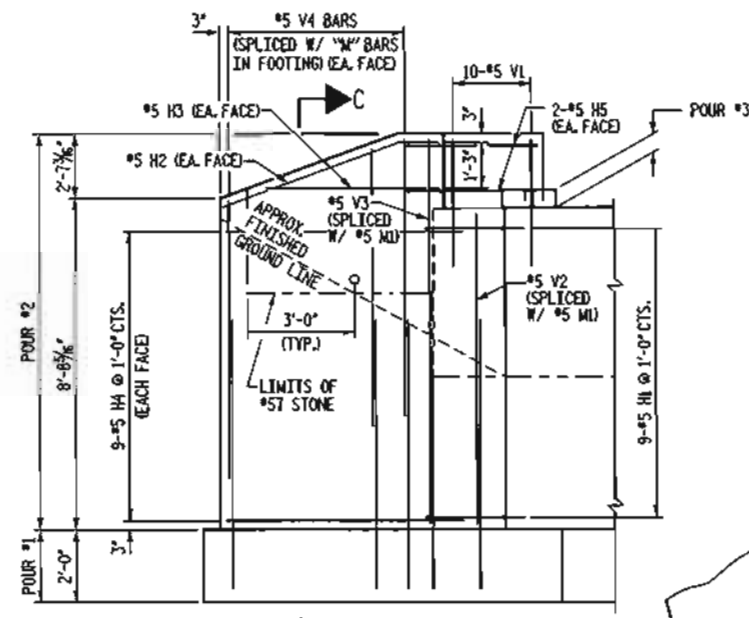
PLAN OF WING - W1



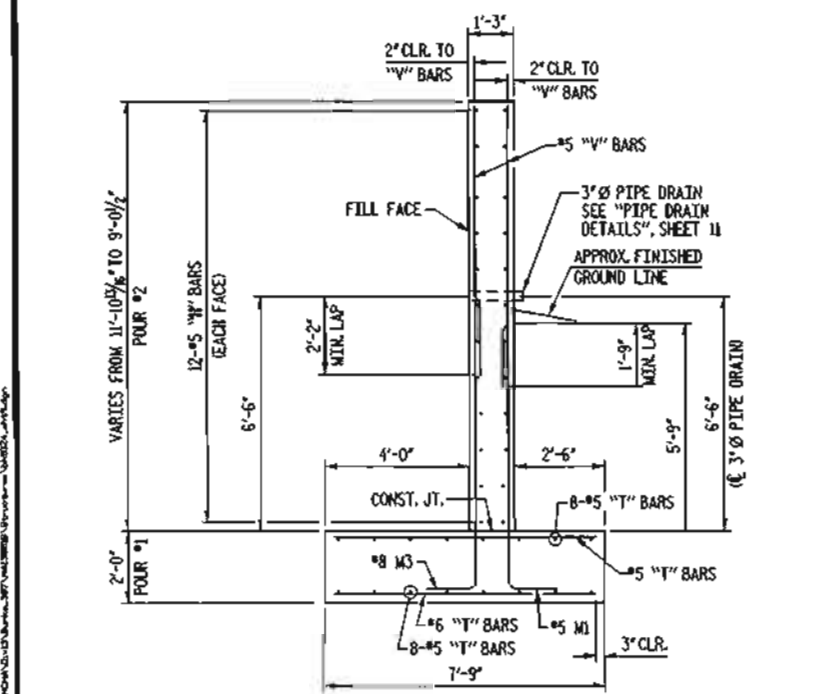
PLAN OF WING - W2



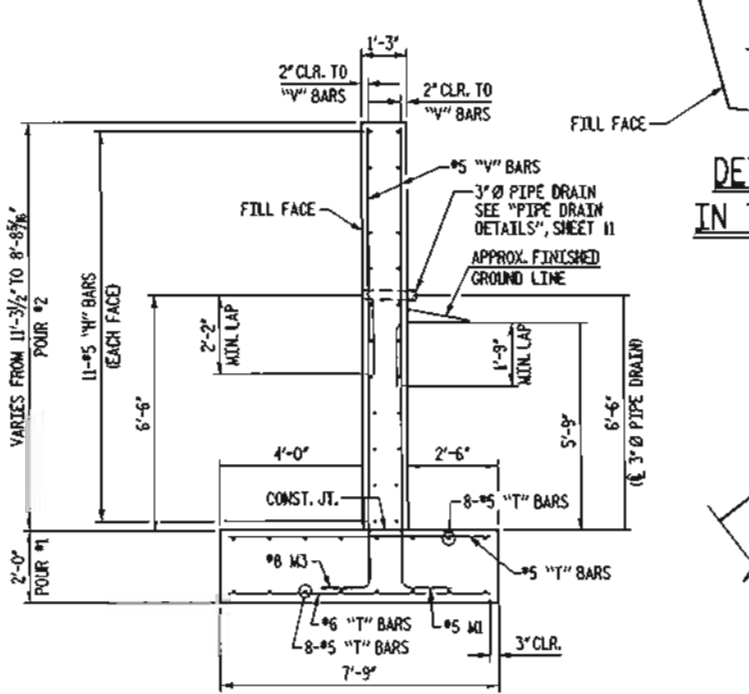
ELEVATION OF WING - W1



ELEVATION OF WING - W2

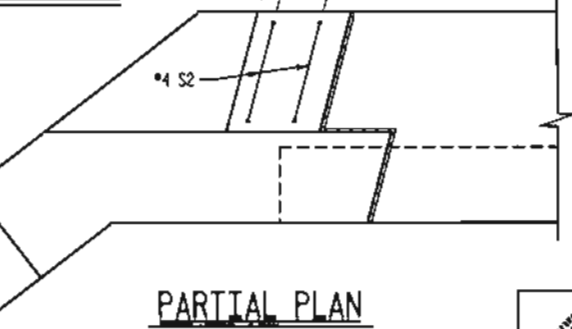
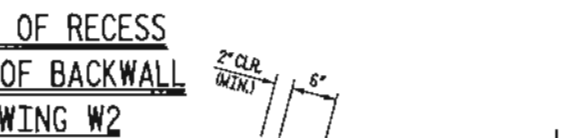
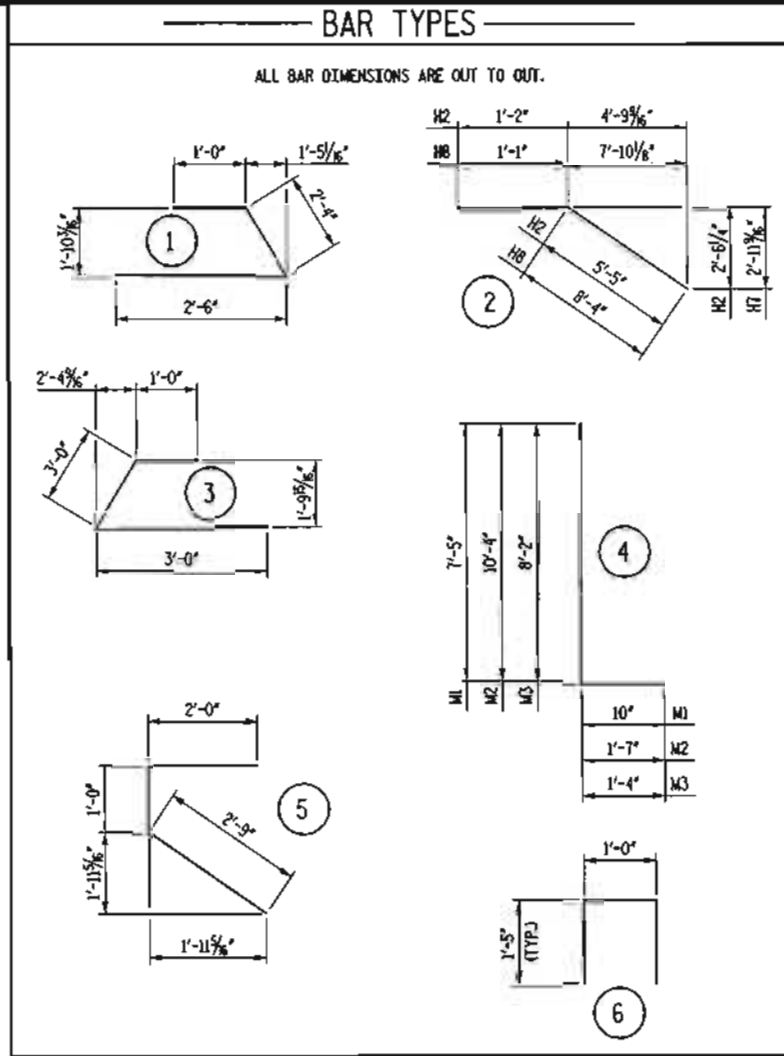


SECTION B-B

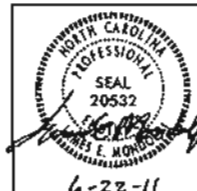


SECTION C-C

NOT TO SCALE



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NC License No. F-0298



BILL OF MATERIAL					
ABUTMENT NO. 1					
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	1	6	STR	42'-3"	63
B2	1	6	STR	43'-8"	66
B3	1	6	STR	44'-10"	67
B4	1	6	STR	46'-2"	69
B5	2	5	STR	44'-0"	83
B6	16	5	STR	42'-3"	705
D1	24	6	STR	1'-6"	54
H1	9	5	1	5'-10"	55
H2	2	5	2	6'-7"	14
H3	2	5	STR	3'-9"	8
H4	18	5	STR	6'-2"	116
H5	4	5	STR	4'-3"	18
H6	10	5	3	7'-0"	73
H7	2	5	STR	8'-0"	17
H8	2	5	2	9'-5"	20
H9	2	5	STR	4'-1"	9
H10	18	5	STR	8'-11"	167
H11	4	5	STR	4'-8"	19
M1	61	5	4	8'-3"	525
M2	42	9	4	11'-11"	1702
M3	15	8	4	9'-6"	380
S1	38	5	5	5'-9"	228
S2	4	4	6	3'-10"	10
T1	16	5	STR	43'-10"	731
T2	44	5	STR	7'-3"	333
T3	44	7	STR	7'-3"	652
T4	6	5	STR	9'-10"	62
T5	10	5	STR	8'-3"	86
T6	6	5	STR	12'-9"	80
T7	10	5	STR	11'-2"	116
T8	16	5	STR	7'-3"	121
T9	7	5	STR	3'-6"	26
T10	16	6	STR	7'-3"	174
T11	7	6	STR	3'-6"	37
V1	20	5	STR	3'-6"	73
V2	44	5	STR	8'-8"	398
V3	1	5	STR	10'-10"	11
V4	12	5	STR	10'-3"	128
V5	18	5	STR	10'-9"	202
V6	42	8	STR	8'-8"	981
V7	1	5	STR	11'-7"	12
REINFORCING STEEL TOTAL					8,691 LB
POUR #1				34.6	CY
POUR #2				34.4	CY
POUR #3				0.1	CY
TOTAL				69.1	CY

PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

1 SUBSTRUCTURE  
ABUTMENT NO. 1  
WING DETAILS

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
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2			4		

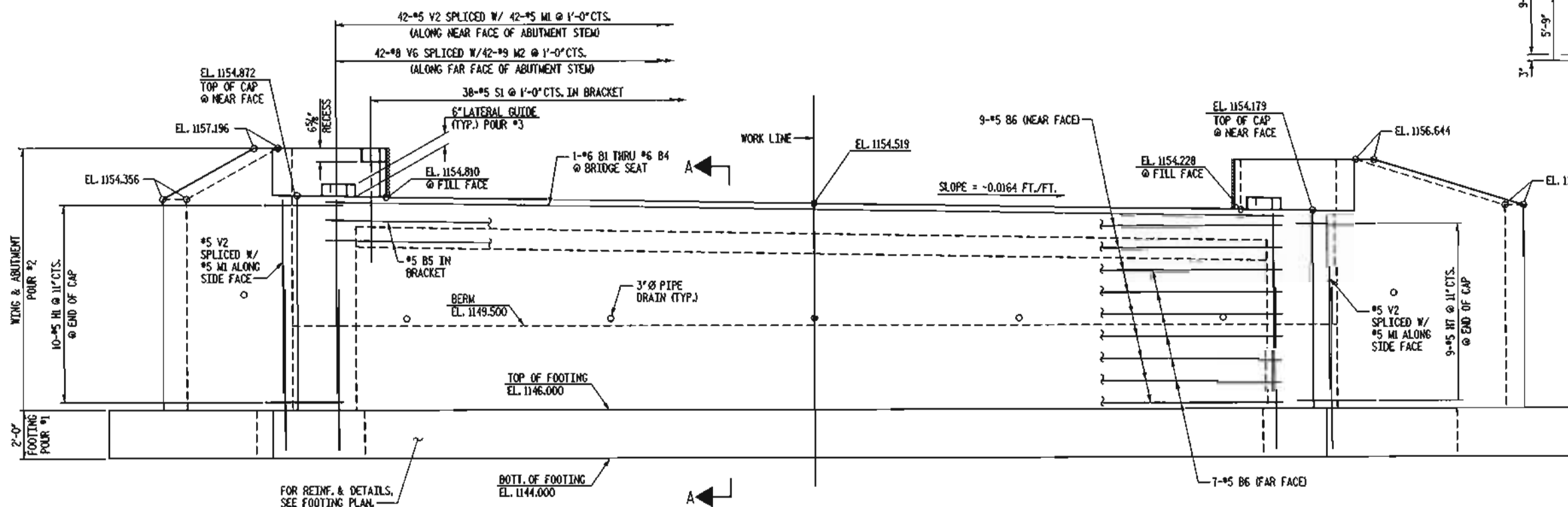
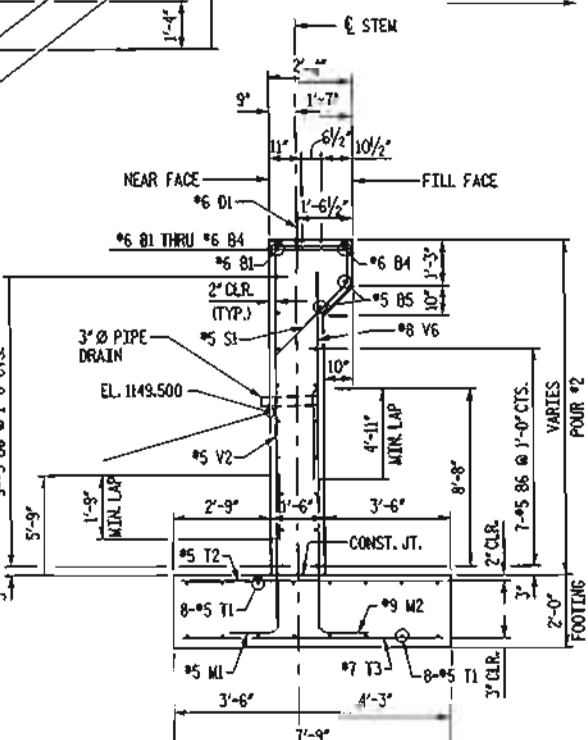
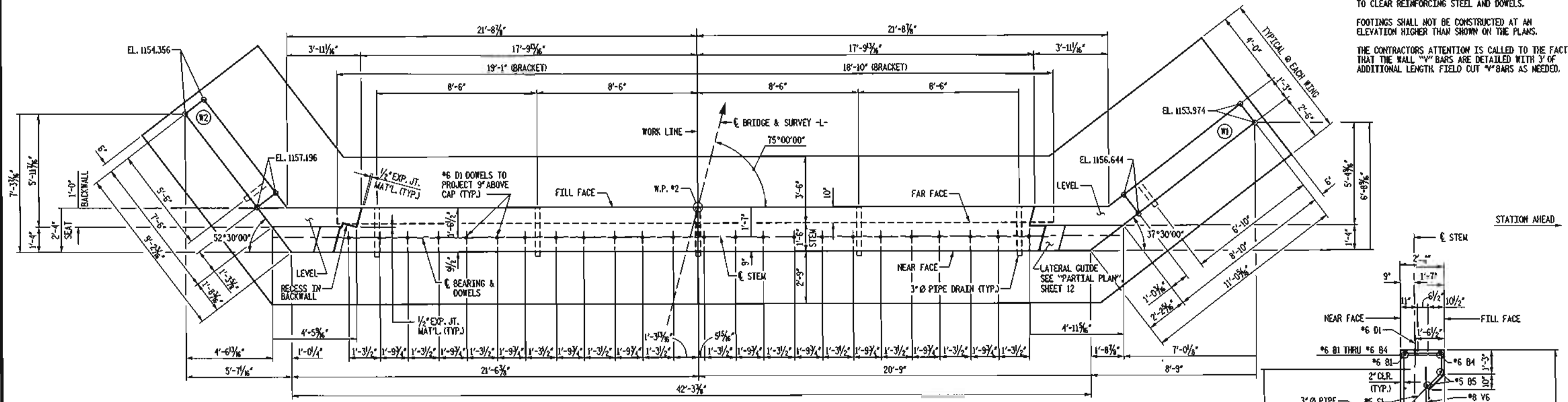
DRAWN BY: B.L. MARIOTTE DATE: NOV 2009  
CHECKED BY: J.E. MONDOLFI DATE: NOV 2009

FILE NAME: P:\WORK\42575\BRIDGE\42575-ABUTMENT NO. 1\WING DETAILS.dwg

6-22-11

9  
27

NOTES:  
 STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR BOWELS.  
 PIPE DRAINS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR REINFORCING STEEL AND DOWELS.  
 FOOTINGS SHALL NOT BE CONSTRUCTED AT AN ELEVATION HIGHER THAN SHOWN ON THE PLANS.  
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE WALL "V" BARS ARE DETAILED WITH 3' OF ADDITIONAL LENGTH FIELD CUT "V" BARS AS NEEDED.



1 REPLACES DRAWING 10 (6-7-11)

PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16 + 14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

1 SUBSTRUCTURE  
 ABUTMENT NO. 2

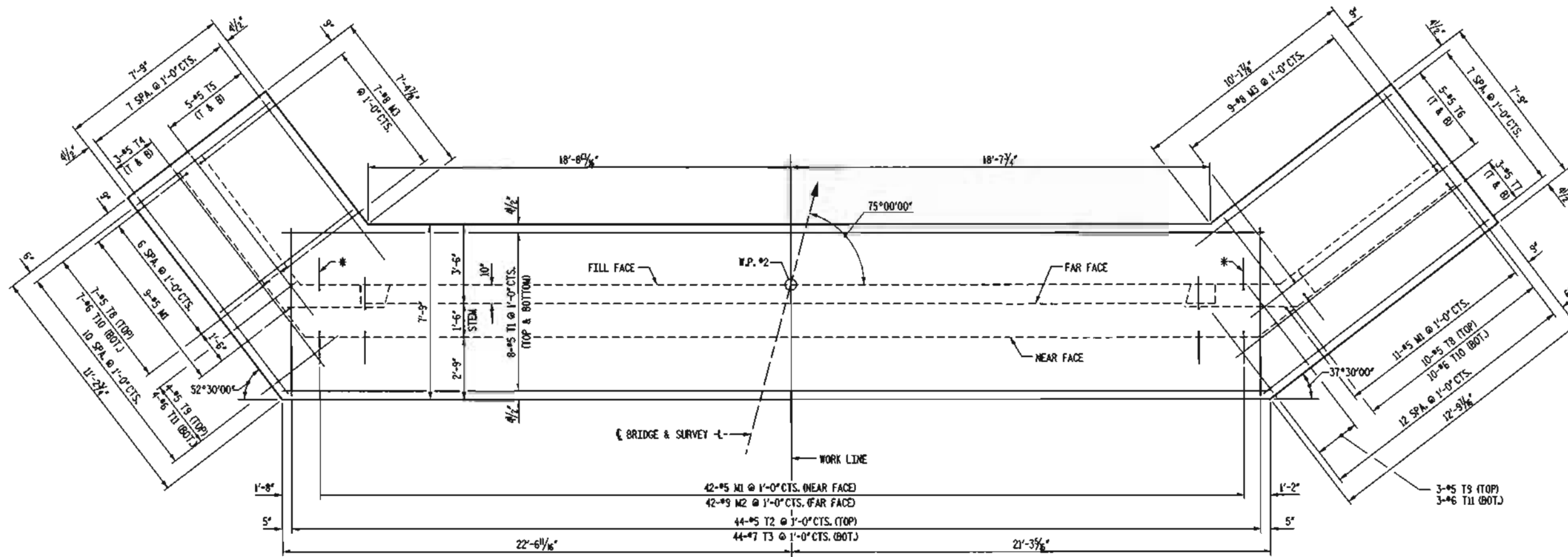
**Florence & Hutcheson**  
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 5121 Kingston Way, Suite 100 Raleigh, NC 27607  
 NC License No. F-0266

PROFESSIONAL SEAL  
 20522  
 JAMES E. HUBBARD  
 6-22-11

REVISIONS					SHEET NO. 10
NO.	BY	DATE	NO.	BY	
1	JEM	6-20-11	3		TOTAL SHEETS 27
2			4		

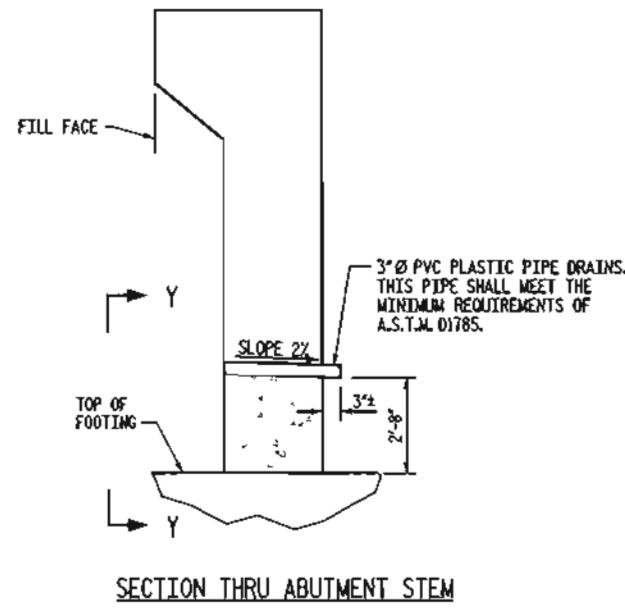
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DRAWN BY: B.L. MARUOTTE DATE: NOV 2009  
 CHECKED BY: J.R. MONDOLFI DATE: NOV 2009

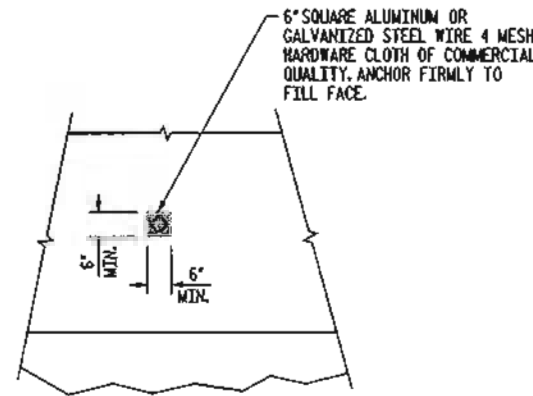


**FOOTING PLAN - ABUTMENT NO. 2**

NOTES: "T & B" DENOTES TOP & BOTTOM.



SECTION THRU ABUTMENT STEM



VIEW Y-Y

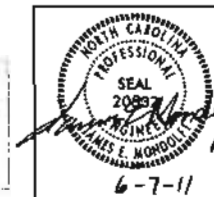
NOTE:  
NO SEPARATE PAYMENT WILL BE MADE FOR FURNISHING AND INSTALLING THE PVC PLASTIC PIPE DRAINS, HARDWARE CLOTH AND FASTENERS. THE ENTIRE COST OF THIS WORK SHALL BE INCLUDED IN THE UNIT CONTRACT PRICE FOR THE SEVERAL PAY ITEMS.

**PIPE DRAIN DETAILS**

PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

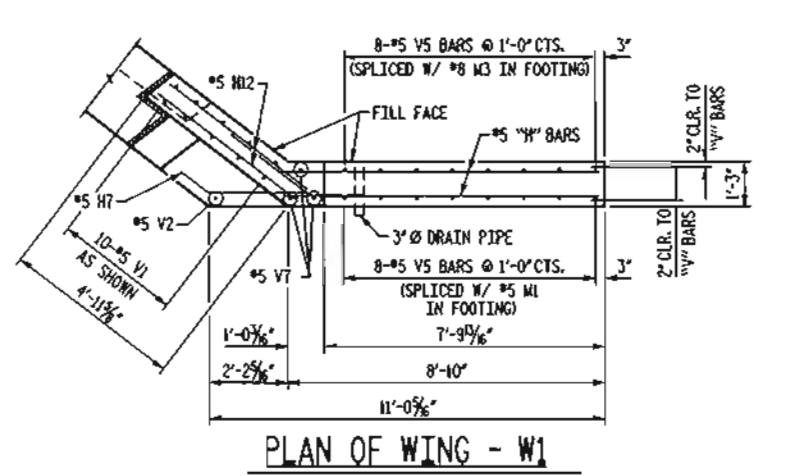
**SUBSTRUCTURE  
ABUTMENT NO. 2 DETAILS**



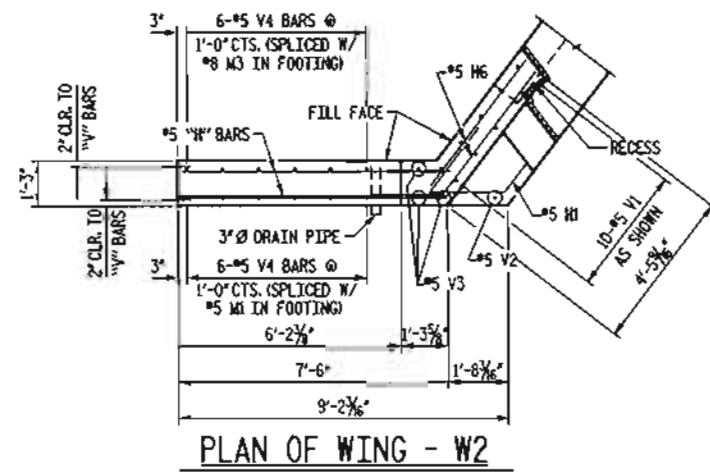
REVISIONS						REVISION NO.
NO.	BY	DATE	NO.	BY	DATE	11
1			2			TOTAL QUANTITY
2			4			27

**Florence & Hutcheson**  
CONSULTING ENGINEERS  
5121 Kipling Way, Suite 100 Raleigh, NC 27607  
N.C. License No: 2-0566

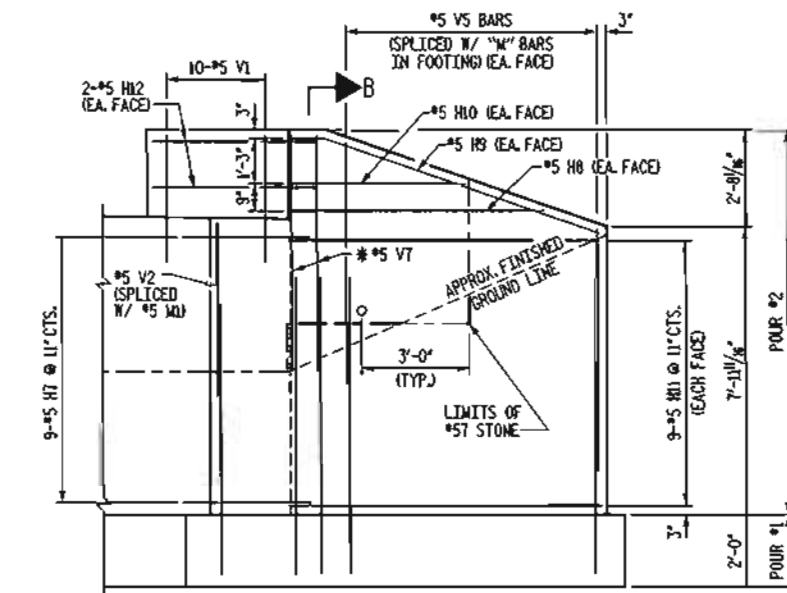
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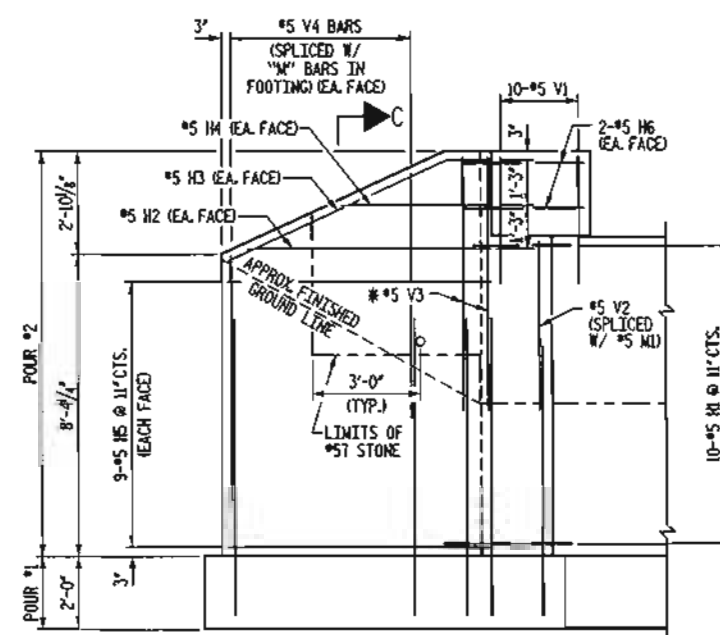
PLAN OF WING - W1



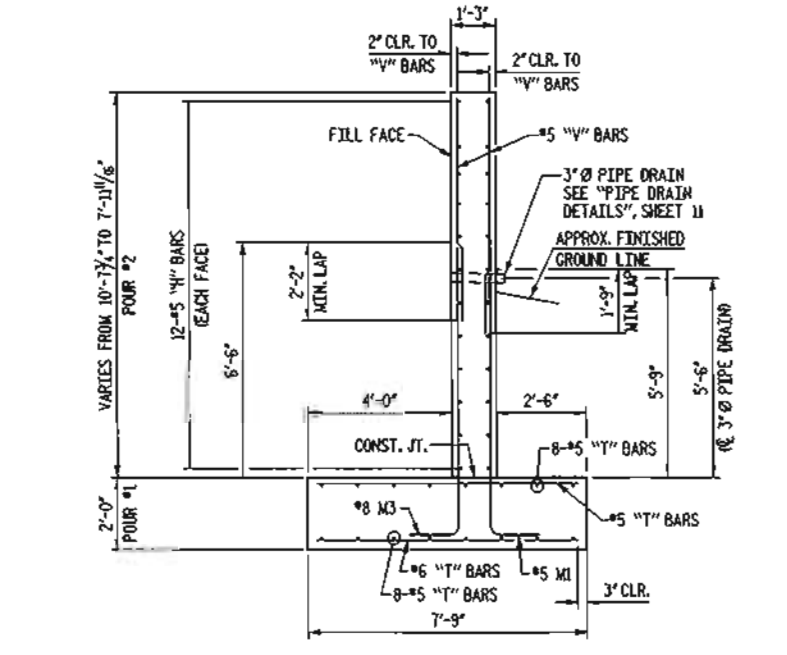
PLAN OF WING - W2



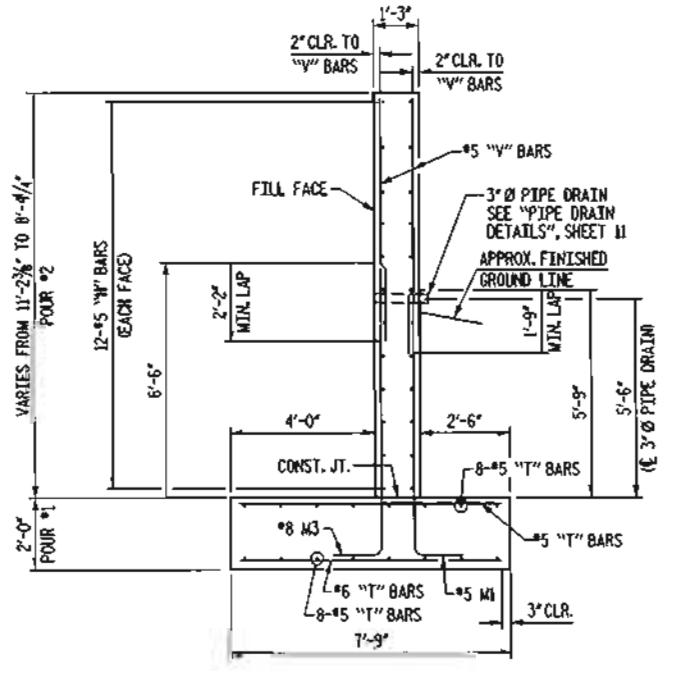
ELEVATION OF WING - W1



ELEVATION OF WING - W2

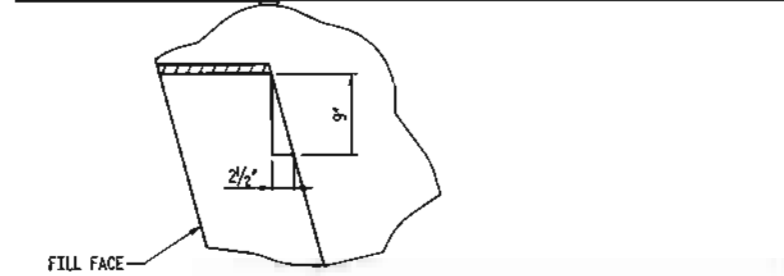
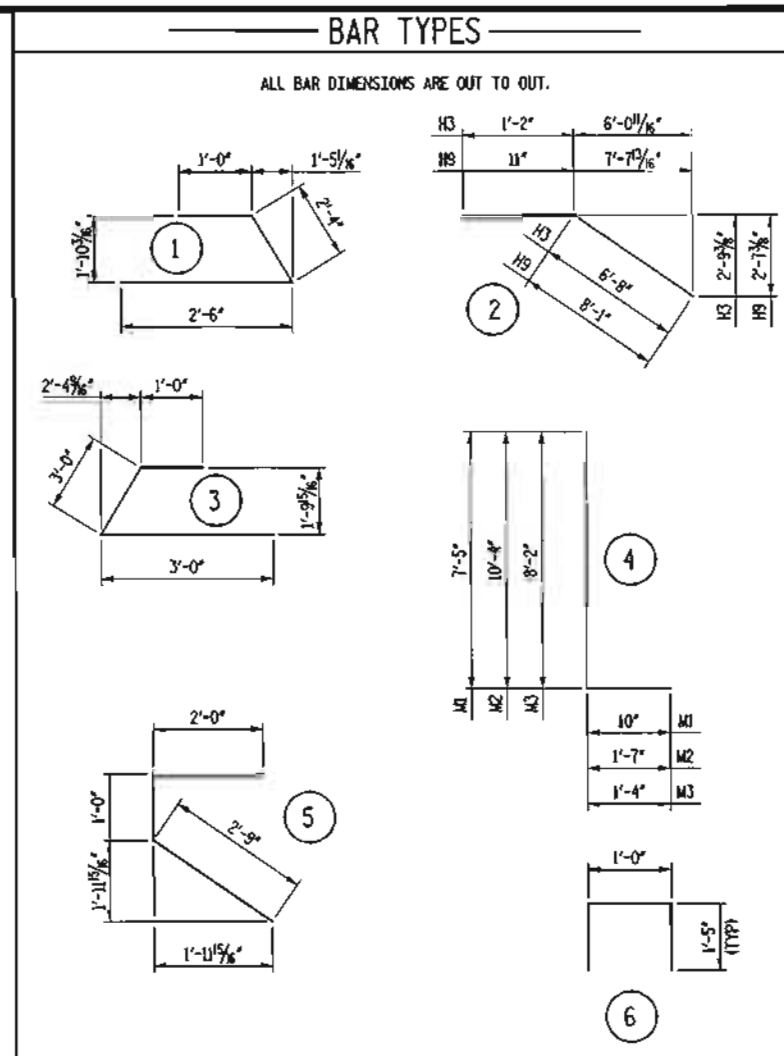


SECTION B-B

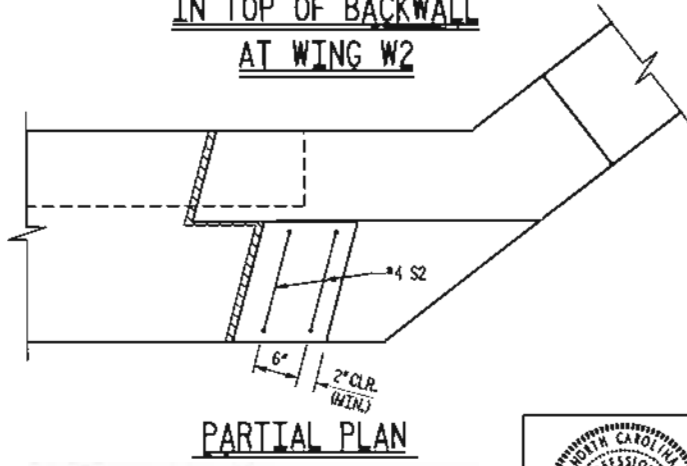


SECTION C-C

NOT TO SCALE

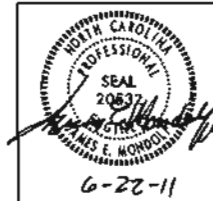


DETAIL OF RECESS IN TOP OF BACKWALL AT WING W2



PARTIAL PLAN

**Florence & Hutcheson**  
CONSULTING ENGINEERS  
5121 Knapton Way, Suite 100 Raleigh, NC 27607  
NO License No: P-2088



BILL OF MATERIAL

ABUTMENT NO. 2						
BAR NO.	NO.	SIZE	TYPE	LENGTH	WEIGHT	
B1	1	6	STR	42'-3"	63	
B2	1	6	STR	43'-8"	66	
B3	1	6	STR	44'-10"	67	
B4	1	6	STR	46'-2"	69	
B5	2	5	STR	40'-0"	83	
B6	16	5	STR	42'-3"	705	
D1	24	6	STR	1'-6"	54	
H1	10	5	J	5'-10"	61	
H2	2	5	STR	6'-8"	14	
H3	2	5	STR	7'-10"	16	
H4	2	5	STR	4'-1"	9	
H5	18	5	STR	7'-3"	136	
H6	4	5	STR	4'-4"	18	
H7	9	5	3	7'-0"	66	
H8	2	5	STR	7'-1"	15	
H9	2	5	STR	9'-0"	19	
H10	2	5	STR	4'-10"	10	
H11	18	5	STR	8'-8"	163	
H12	4	5	STR	4'-9"	20	
M1	62	5	4	8'-3"	533	
M2	42	9	4	11'-11"	1702	
M3	16	8	4	9'-6"	406	
S1	38	5	5	5'-9"	228	
S2	4	4	6	3'-10"	10	
T1	16	5	STR	43'-10"	731	
T2	44	5	STR	7'-3"	333	
T3	44	7	STR	7'-3"	652	
T4	6	5	STR	10'-4"	65	
T5	10	5	STR	8'-10"	92	
T6	10	5	STR	11'-0"	115	
T7	6	5	STR	12'-7"	79	
T8	17	5	STR	7'-3"	129	
T9	7	5	STR	3'-6"	26	
T10	17	6	STR	7'-3"	185	
T11	7	6	STR	3'-6"	37	
V1	20	5	STR	3'-6"	73	
V2	44	5	STR	7'-9"	356	
V3	3	5	STR	10'-0"	10	
V4	12	5	STR	9'-9"	122	
V5	16	5	STR	9'-8"	161	
V6	42	8	STR	8'-0"	897	
V7	3	5	STR	9'-6"	30	
REINFORCING STEEL TOTAL				8,626	L8	
POUR #1				35.2	CY	
POUR #2				32.5	CY	
POUR #3				0.1	CY	
TOTAL				67.8	CY	

1 REPLACES DRAWING 12 16-7-11

PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

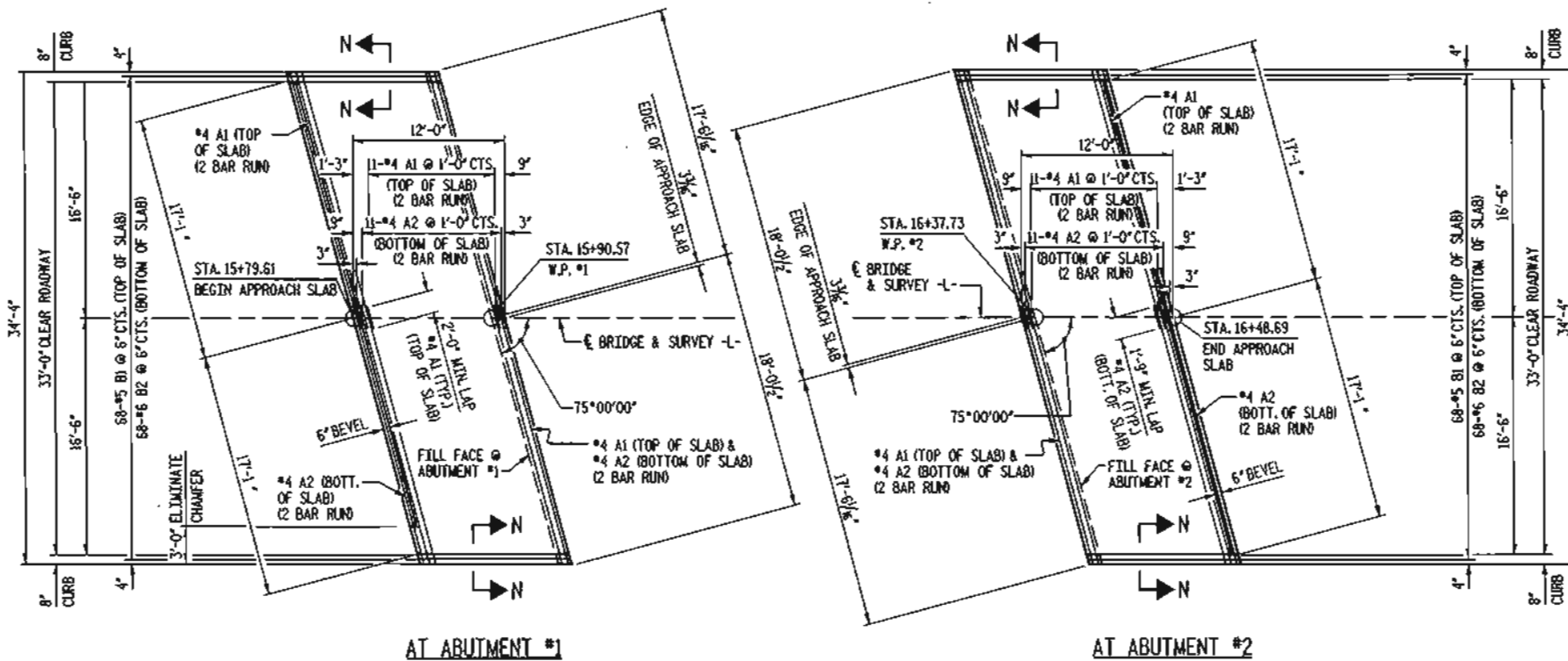
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RAILROAD

1 SUBSTRUCTURE  
ABUTMENT NO. 2  
WING DETAILS

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1	JEM	6-20-11	3		
2			4		

12  
27

6-22-11



**PLAN OF APPROACH SLABS**

DIMENSIONS ARE TYPICAL FOR BOTH APPROACH SLABS

**NOTES**

FOR BRIDGE APPROACH FILL INCLUDING FABRIC AND #78M STONE BACKFILL, SEE ROADWAY STANDARD DRAWINGS.

APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO INSTALLATION OF CORED SLAB.

FABRIC SHALL BE TYPE 1 ENGINEERING FABRIC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

#78M STONE BACKFILL (CLASS V SELECT MATERIAL) SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 1016.

#78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF ABUTMENT FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

#78 STONE BACKFILL AND FABRIC SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR APPROACH SLABS.

AREA BETWEEN THE WINGWALL AND APPROACH SLAB SHALL BE GRADED TO DRAIN THE WATER AWAY FROM THE FILL FACE OF THE BRIDGE AND SHALL BE PAVED.

THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE OF EACH EDGE OF THE APPROACH SLAB.

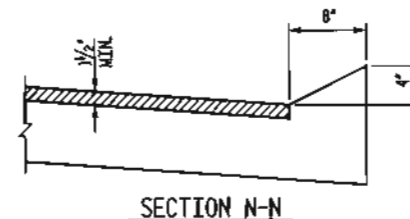
THE CONTRACTOR MAY USE 4" TYPE 8-25.0B ASPHALT CONCRETE BASE COURSE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE BASE COURSE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB.

THE CONTRACTOR MAY USE 5" CLASS "A" CONCRETE BASE IN LIEU OF 6" COMP. A.B.C. IF THIS OPTION IS USED, THE CONCRETE BASE SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB, AND THE WIDTH SHALL BE THE SAME AS THAT OF THE APPROACH SLAB. THE CONCRETE SHALL BE FINISHED TO A SMOOTH SURFACE AND A LAYER OF 30 LB ROOFING FELT SHALL BE PLACED BETWEEN THE CONCRETE BASE AND THE APPROACH SLAB TO PREVENT BOND. THE APPROACH SLAB SHALL NOT BE CAST UNTIL THE CONCRETE BASE HAS REACHED AN AGE OF THREE CURING DAYS.

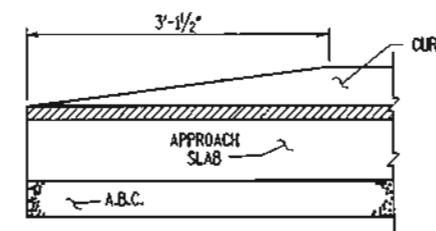
FOR JOINT DETAILS, SEE "PRESTRESSED CONCRETE CORED SLAB UNIT" SHEETS.

THE JOINT AT THE ABUTMENT SHALL BE GROUTED AS SOON AS PRACTICAL AFTER THE CONSTRUCTION OF THE APPROACH SLABS.

APPROACH SLAB GROOVING IS NOT REQUIRED.

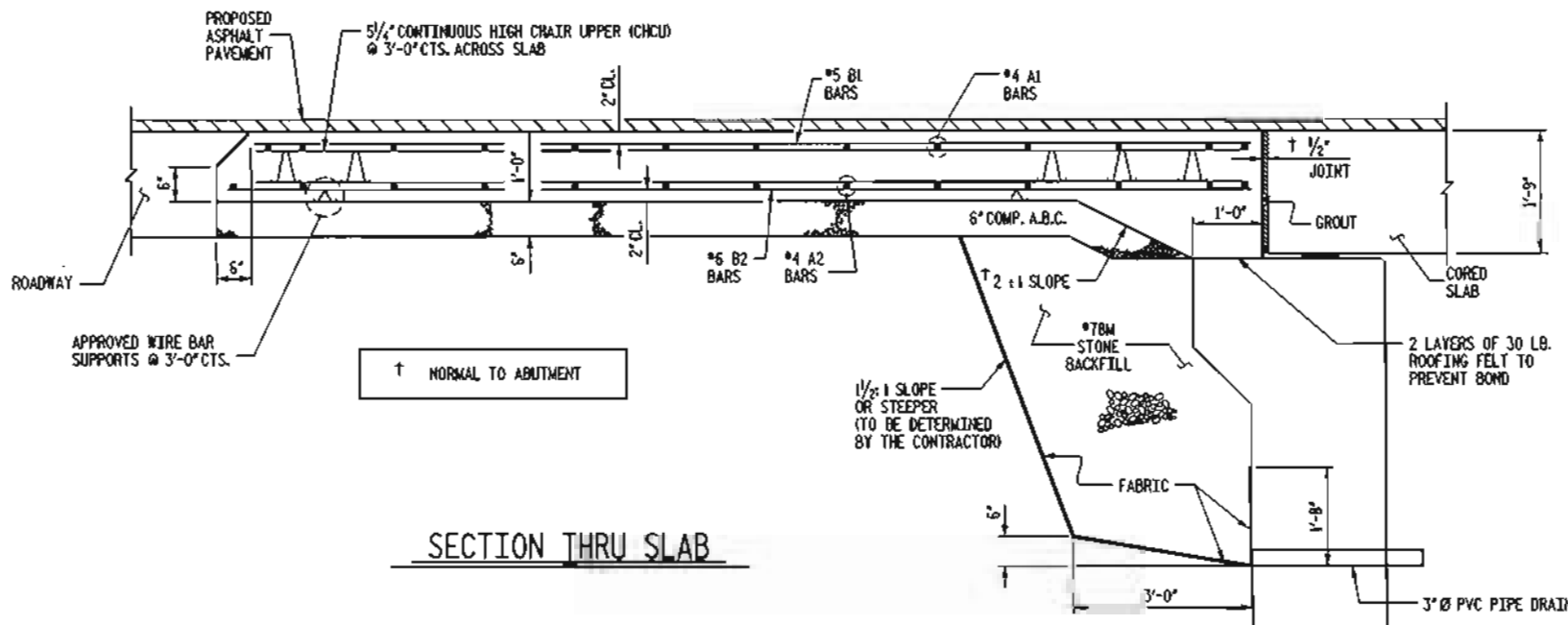


SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

**CURB DETAILS**



SECTION THRU SLAB

NOT TO SCALE

**BILL OF MATERIAL**

APPROACH SLAB FOR ONE (2 REQUIRED)

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
#A1	26	#4	STR	18'-7"	323
A2	26	#4	STR	18'-5"	320
#B1	68	#5	STR	11'-2"	792
B2	68	#6	STR	11'-7"	1,183
REINFORCING STEEL				LBS.	1,503
* EPOXY COATED REINFORCING STEEL				LBS.	1,115
CLASS AA CONCRETE				C. Y.	18.0

1 REPLACES DRAWING 13 (6-7-11)

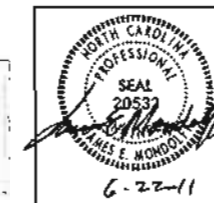
PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

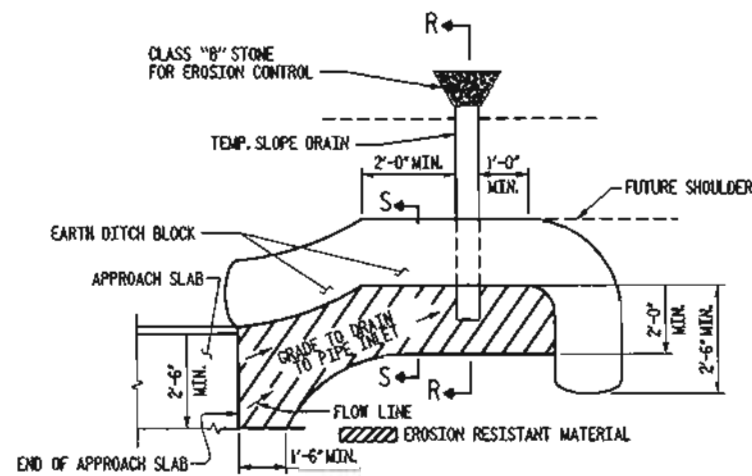
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

1 APPROACH SLAB  
 32'-10" CLEAR ROADWAY  
 75° SKEW  
 (SUB REGIONAL TIER)

REVISIONS						NO.
NO.	BY	DATE	NO.	BY	DATE	13
1	JEM	6-20-11	3			TOTAL QUANTITY 27
2			4			

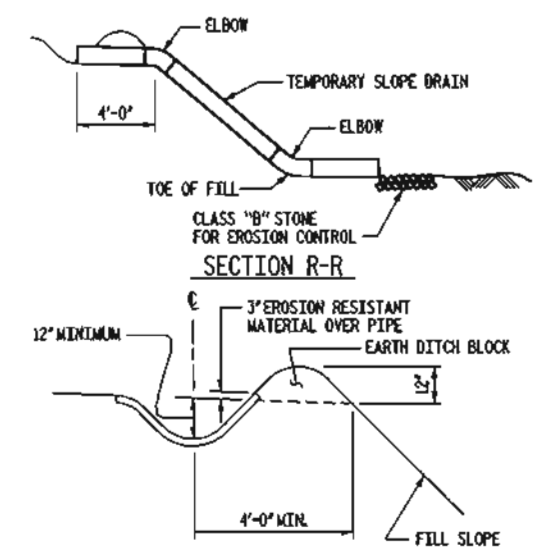
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5123 Kingston Way, Suite 100 Raleigh, NC 27607  
 NC License No. T-0288





NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 2" DEPTH, 2) EROSION CONTROL MAT, OR 3) CONCRETE, AS DIRECTED BY THE ENGINEER. THE SLOPE DRAIN SHALL CONSIST OF A NON-PERFORATED TEMPORARY DRAINAGE PIPE, 12 INCHES IN DIAMETER.

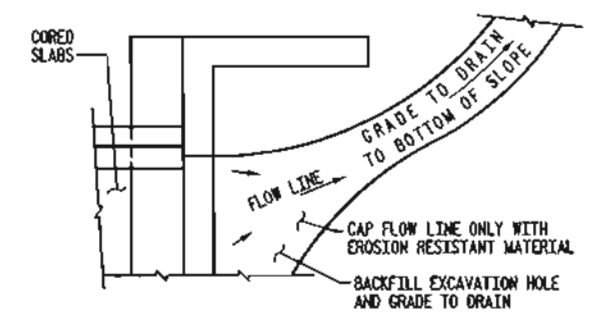
PLAN VIEW



SECTION S-S

**TEMPORARY BERM AND SLOPE DRAIN DETAILS**

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)



NOTE: IF THE APPROACH SLAB IS NOT CONSTRUCTED IMMEDIATELY AFTER THE BACKFILLING OF THE END BENT EXCAVATION, GRADE TO DRAIN TO THE BOTTOM OF THE SLOPE AND PROVIDE EROSION RESISTANT MATERIAL, SUCH AS FIBERGLASS ROVING OR AS DIRECTED BY THE ENGINEER TO PREVENT SOIL EROSION AND TO PROTECT THE AREA ADJACENT TO THE STRUCTURE. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THESE MATERIALS PRIOR TO CONSTRUCTION OF THE APPROACH SLAB.

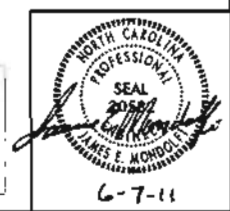
**TEMPORARY DRAINAGE DETAIL**

PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BRIDGE APPROACH  
 SLAB DETAILS

REVISIONS						SHEET NO. 14
NO.	BY	DATE	NO.	BY	DATE	
1			5			TOTAL SHEETS 27
2			4			

**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Virginia Way, Suite 100 Raleigh, NC 27607  
 NC License No. F-0268



NOT TO SCALE

DRAWN BY: B.L. MARIOTTE DATE: NOV 2009  
 CHECKED BY: J.S. MONDOLFI DATE: NOV 2009

6/17/09 BY: Florence & Hutcheson, Inc.  
 6/17/09 BY: J.S. MONDOLFI DATE: NOV 2009

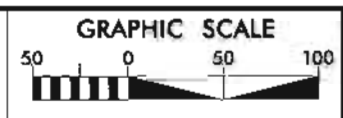
**DATUM DESCRIPTION**  
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "BL-2" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 702134619111 EASTING: 1225764819111 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT IS 0.9999997016 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "BL-2" TO STATION 12+50.00 IS N 43° 23' 00.6" W 764.52' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

PI Sta 11+95.23  
 $\Delta = 28^\circ 38' 24.1" (LT)$   
 $D = 12' 11" 26.1"$   
 $L = 234.94'$   
 $T = 119.98'$   
 $R = 470.00'$

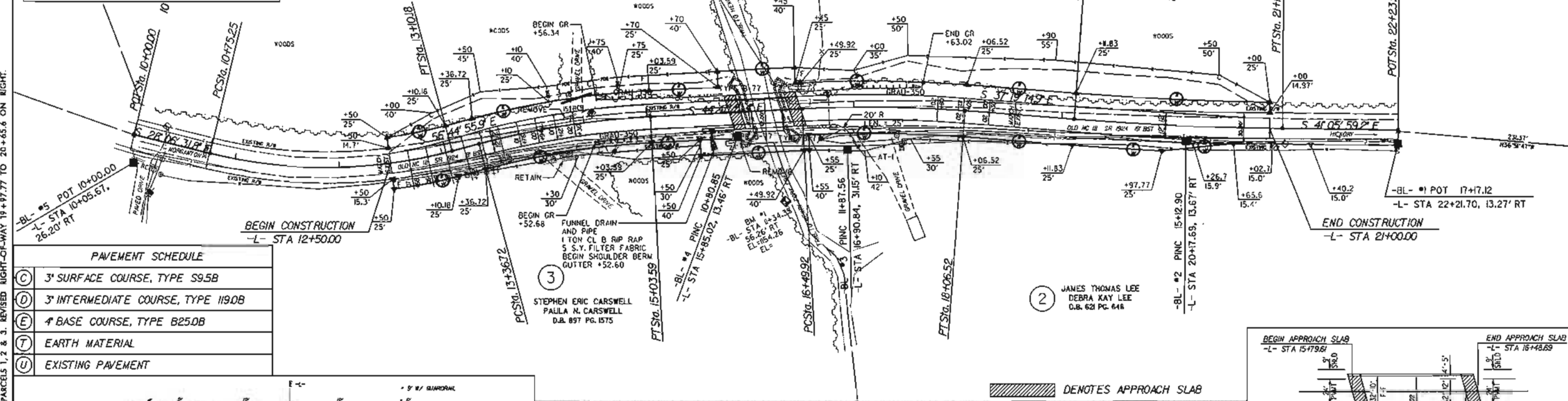
PI Sta 14+20.46  
 $\Delta = 11^\circ 57' 04.5" (RT)$   
 $D = 7' 09" 43.1"$   
 $L = 166.87'$   
 $T = 83.74'$   
 $R = 800.00'$

PI Sta 17+28.33  
 $\Delta = 7^\circ 28' 36.5" (RT)$   
 $D = 4' 46" 28.7"$   
 $L = 156.59'$   
 $T = 78.41'$   
 $R = 1200.00'$

PI Sta 20+12.12  
 $\Delta = 3^\circ 46' 44.4" (LT)$   
 $D = 1' 53" 05.0"$   
 $L = 200.51'$   
 $T = 100.29'$   
 $R = 3,040.00'$

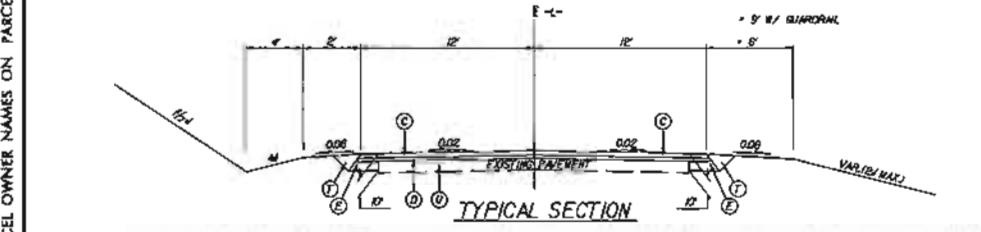


PROJECT REFERENCE NO. BK-5124  
 SHEET NO. 15  
 ROADWAY DESIGN ENGINEER  
 HYDRAULICS ENGINEER  
 NORTH CAROLINA PROFESSIONAL ENGINEER  
 DEBRA KAY LEE  
 LICENSE NO. 16689  
 6/27/11



**PAVEMENT SCHEDULE**

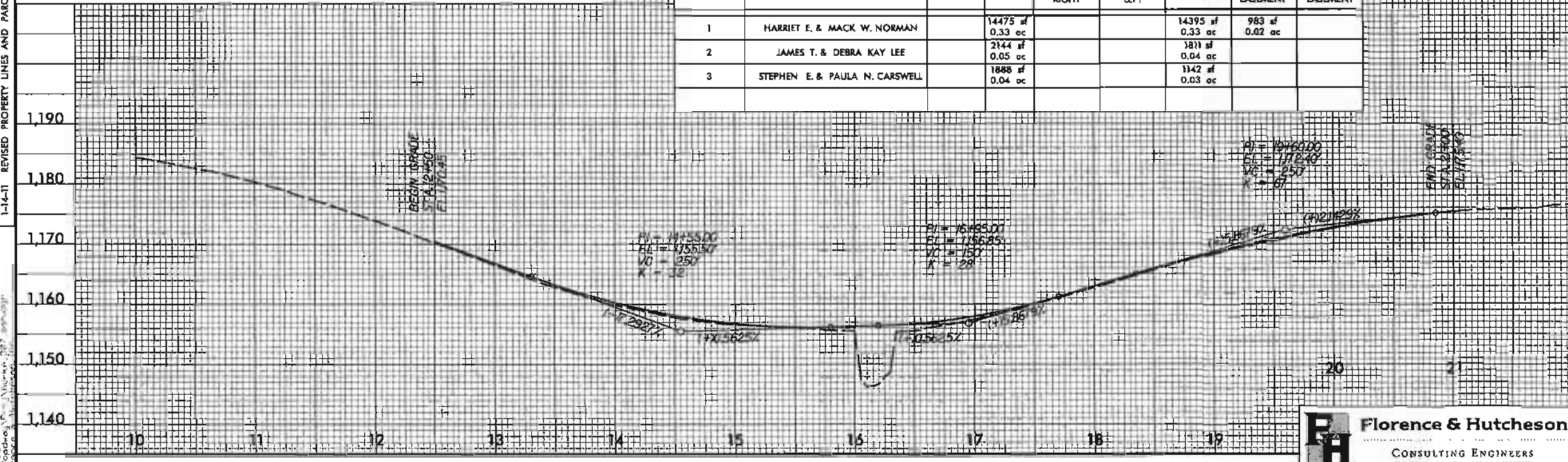
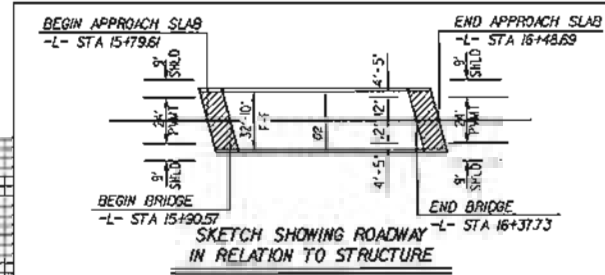
(C)	3" SURFACE COURSE, TYPE S9.5B
(D)	3" INTERMEDIATE COURSE, TYPE I19.0B
(E)	4" BASE COURSE, TYPE B25.0B
(T)	EARTH MATERIAL
(U)	EXISTING PAVEMENT



BM #1  
 L- STA 16+29.53, 87.96' RT  
 RR SPIKE IN BASE OF 18" DOUBLE SYCAMORE  
 EL. 1154.26

**RIGHT OF WAY AREA DATA**

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	HARRIET E. & MACK W. NORMAN	14475 sf 0.33 ac	2144 sf 0.05 ac			14395 sf 0.33 ac	983 sf 0.02 ac	
2	JAMES T. & DEBRA KAY LEE	1888 sf 0.04 ac				1888 sf 0.04 ac		
3	STEPHEN E. & PAULA N. CARSWELL	1888 sf 0.04 ac				1142 sf 0.03 ac		



REVISIONS  
 11-3-04 REVISED EXISTING AND PROPOSED RIGHT-OF-WAY AND AREA TAKEN FROM PARCELS 1 THRU 4  
 2-04-05 REVISED SLOPE STAKE FOR CUT DITCH AND REVISED RIGHT-OF-WAY AND EASEMENTS  
 4-25-05 CHANGED PARCEL OWNER NAMES ON PARCELS 1, 2 & 3  
 1-14-11 REVISED PROPERTY LINES AND PARCEL OWNER NAMES ON PARCELS 1, 2 & 3. REVISED RIGHT-OF-WAY 19+97.77 TO 20+65.6 ON RIGHT.

PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 BRIDGE NO. 307 ON SR 1924  
 OVER TRIBUTARY TO  
 HENRY FORK CREEK

**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Kipling Way, Suite 100 Raleigh, NC 27607  
 NC License No. 7-0286

**REVISIONS**

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

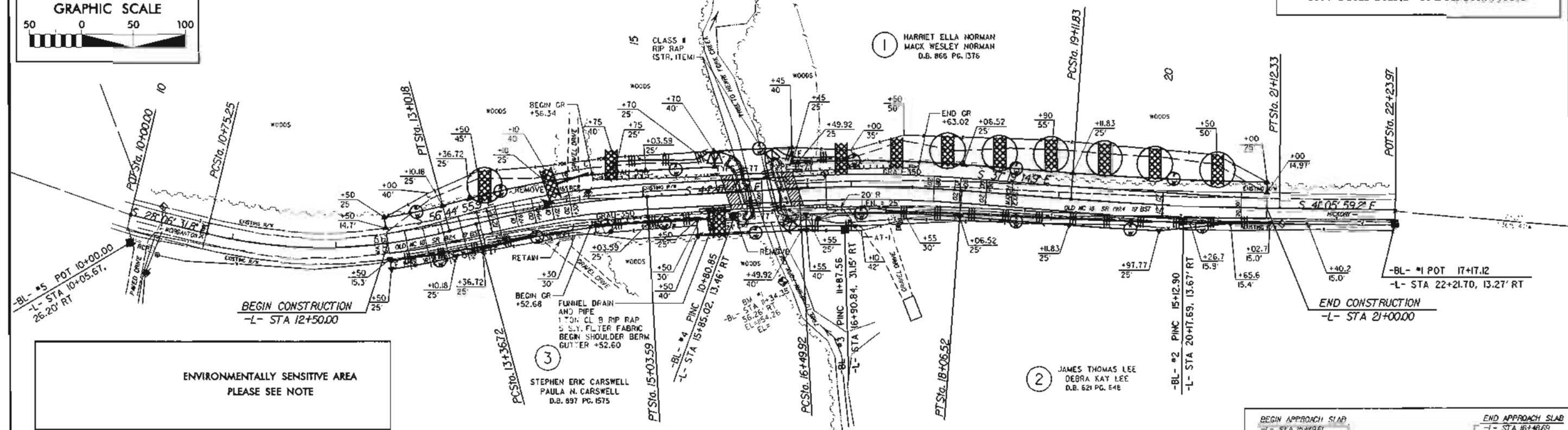
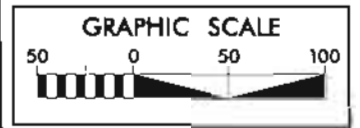
REVISIONS BY DATE  
 15  
 27

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

# EROSION CONTROL PLAN

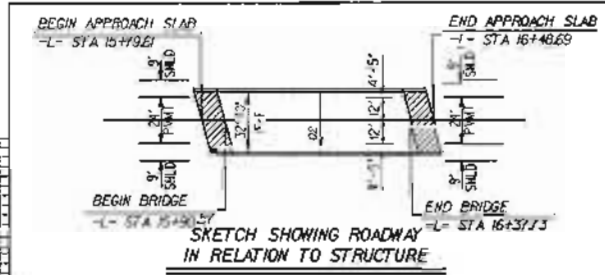
ROADSIDE ENVIRONMENTAL UNIT  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALEIGH, N.C.  
2006 STANDARD SPECIFICATIONS



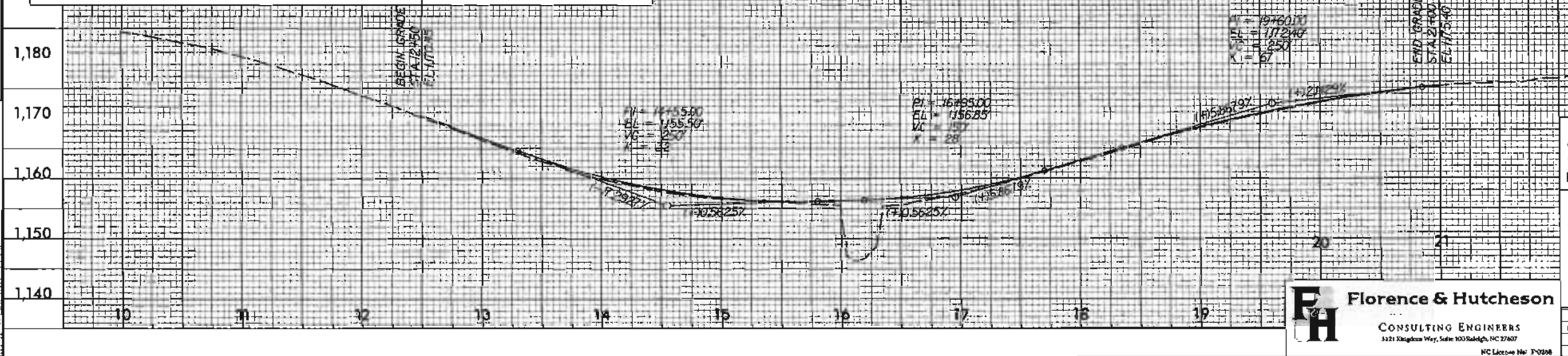
Std. #	Description	Symbol
1605.01	Temporary Silt Fence	
1606.01	Special Sediment Control Fence	▤ ▤ ▤ ▤ ▤
1607.01	Gravel Construction Entrance	▤ ▤ ▤ ▤ ▤
1622.01	Temporary Berms and Slope Drains	▤ ▤ ▤ ▤ ▤
1630.06	Special Stilling Basin	▤ ▤ ▤ ▤ ▤
1633.01	Temporary Rock Silt Check Type-A	▤ ▤ ▤ ▤ ▤
	Temporary Rock Silt Check Type-A with Matting and Polyacrylamide (PAM)	▤ ▤ ▤ ▤ ▤
	Temporary Rock Silt Check Type-B	▤ ▤ ▤ ▤ ▤

BM # 1  
L- STA 16+29.53, 87.96' RT  
RR SPIKE IN BASE OF 18\"

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	HARRIET E. & MACK W. NORMAN	14475 sf	0.33 ac			14395 sf	983 sf	0.02 ac
2	JAMES T. & DEBRA KAY LEE	2144 sf	0.05 ac			1811 sf	0.04 ac	
3	STEPHEN E. & PAULA N. CARSWELL	1888 sf	0.04 ac			1142 sf	0.03 ac	



11-3-04 REVISED EXISTING AND PROPOSED RIGHT-OF-WAY AND AREA TAKEN FROM PARCELS 1 THRU 4  
2-04-05 REVISED SLOPE STAKE FOR CUT GRICH AND REVISED RIGHT-OF-WAY AND EASEMENTS  
4-25-05 CHANGED PARCEL OWNER NAMES ON PARCELS 1, 2 & 3  
From Roadside Environmental Unit, 10/12/05, 10/12/05, 10/12/05



PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

BRIDGE NO. 307 ON SR 1924  
OVER TRIBUTARY TO  
HENRY FORK CREEK

Florence & Hutcheson  
CONSULTING ENGINEERS  
1421 Kingston Way, Suite 100 Raleigh, NC 27607  
NC License No. 70288

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

REVISIONS

16  
27



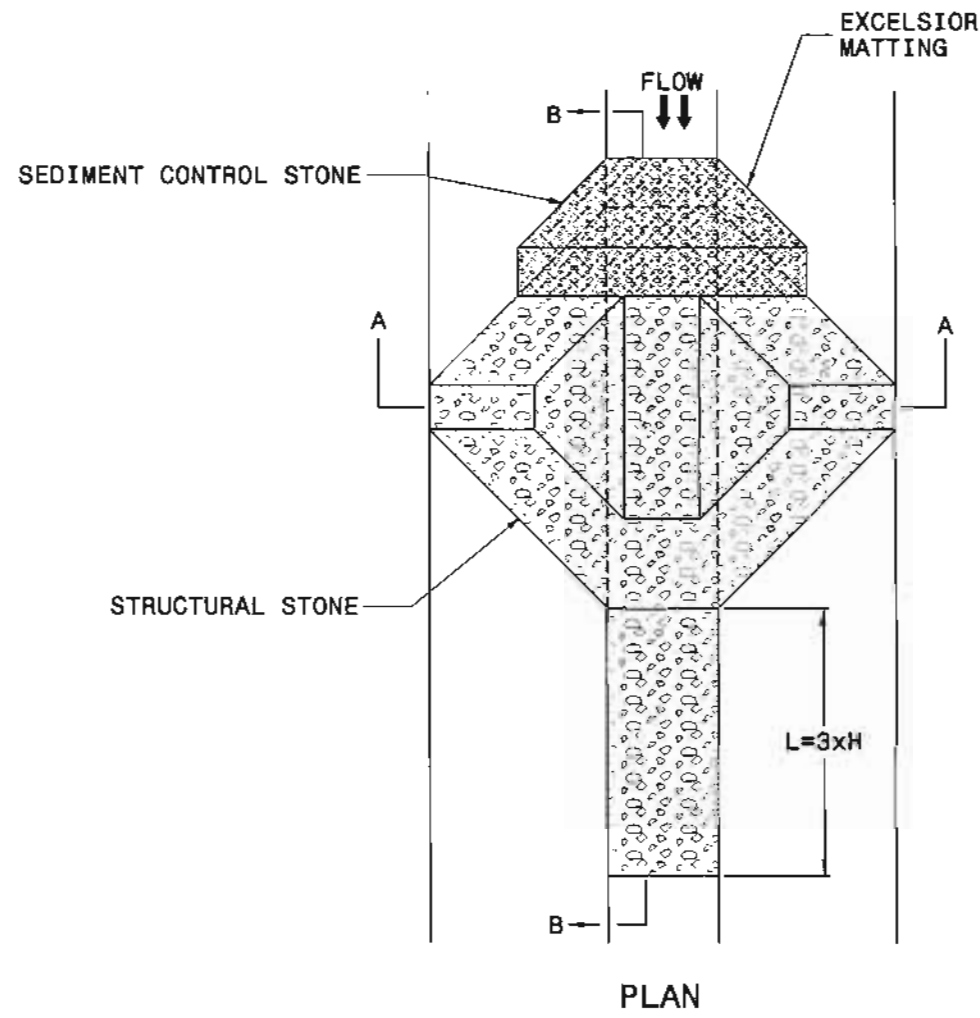
NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

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

2006 STANDARD SPECIFICATIONS

# TEMPORARY ROCK SILT CHECK TYPE 'A' WITH EXCELSIOR MATTING AND POLYACRYLAMIDE (PAM)

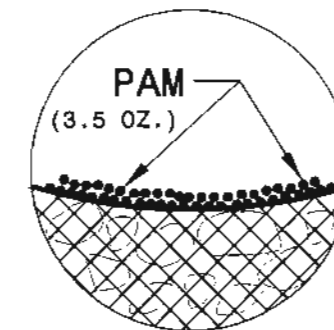


## NOTES

USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

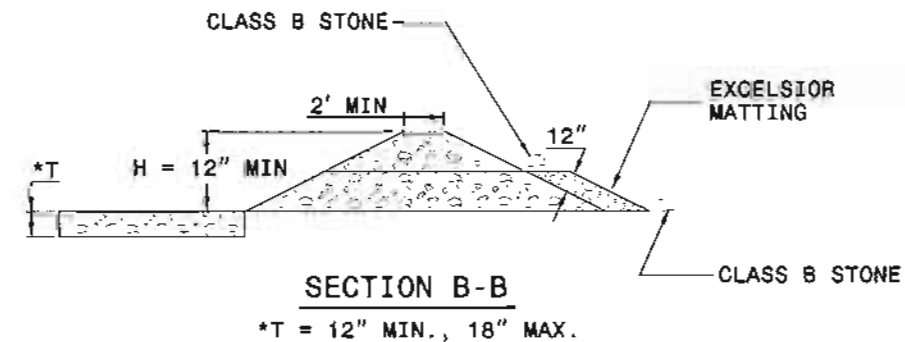
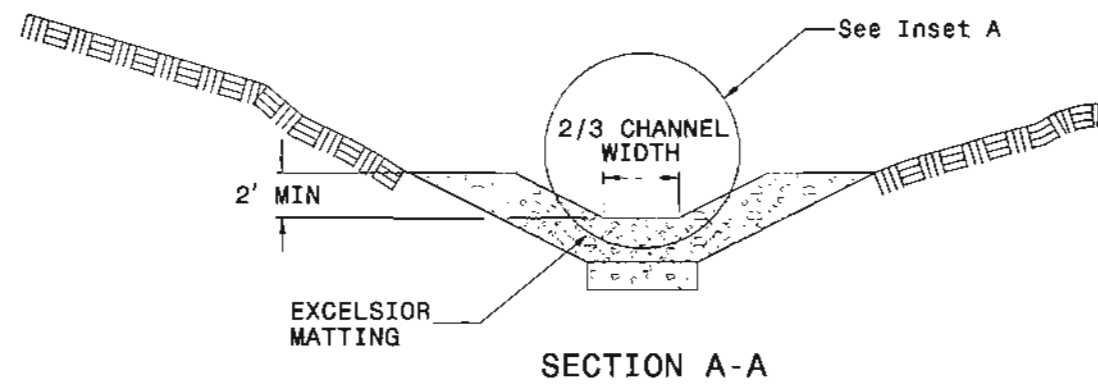
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH ROCK SILT CHECK.

INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A

NOT TO SCALE



PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

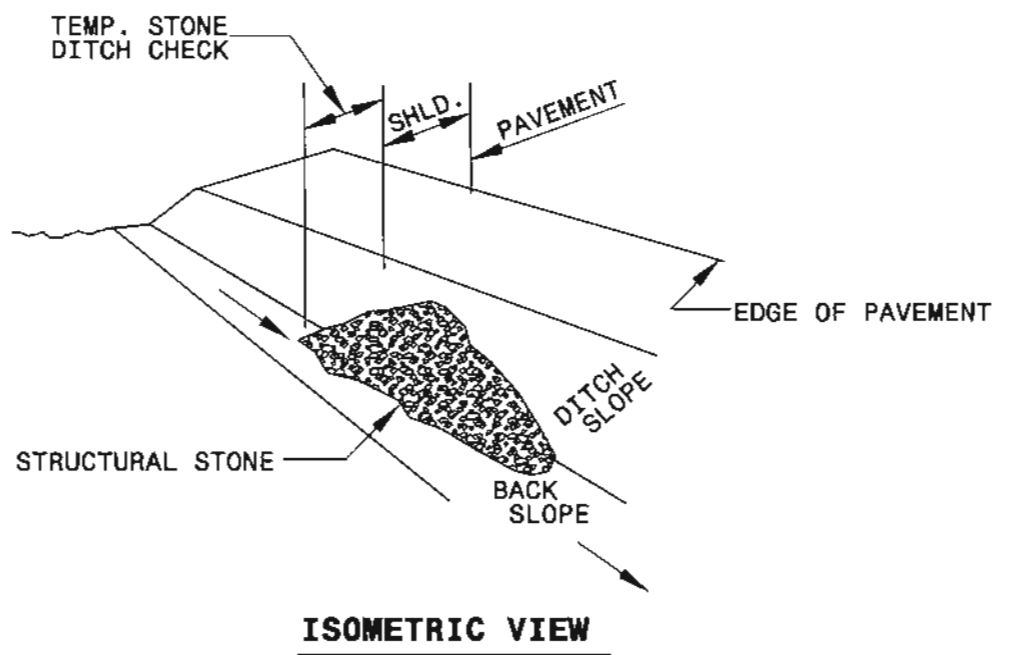
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH  
BRIDGE NO. 307 ON SR 1924  
OVER TRIBUTARY TO  
HENRY FORK CREEK

REVISIONS				NO. 17	
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
TOTAL SHEETS					27

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

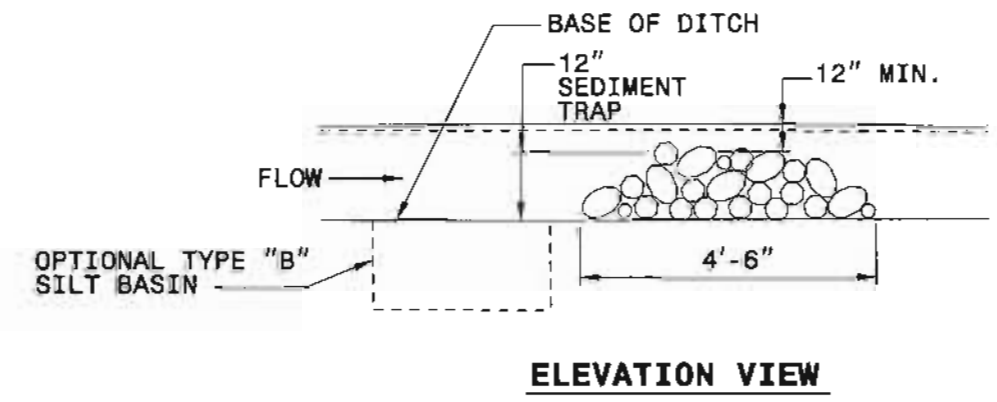
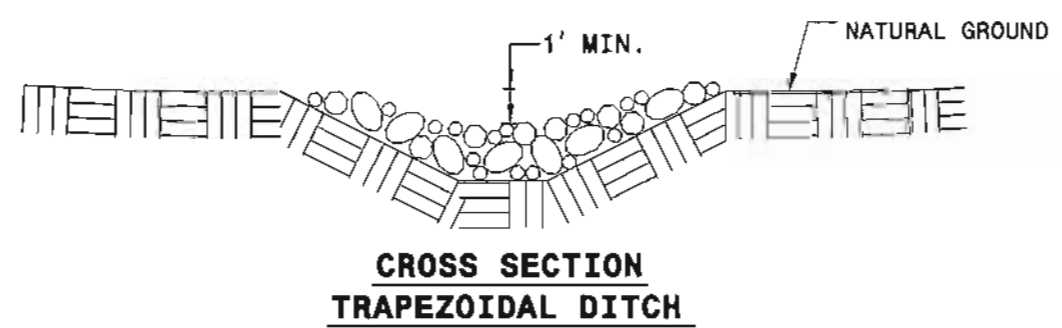
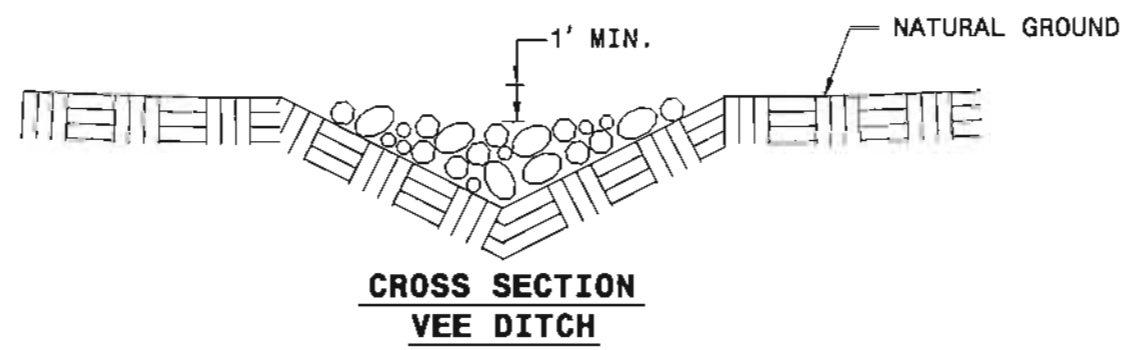
# TEMPORARY ROCK SILT CHECK TYPE 'B' DETAIL



**NOTES:**

USE CLASS 'B' EROSION CONTROL STONE FOR STRUCTURAL STONE.

THE ENGINEER MAY DIRECT THE OPTION OF CLASS "A" STONE FOR SITES HAVING LESS THAN ONE (1) ACRE DRAINAGE AREA AND A DITCH GRADE LESS THAN 3%.



PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+14.15  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BRIDGE NO. 307 ON SR 1924  
 OVER TRIBUTARY TO  
 HENRY FORK CREEK

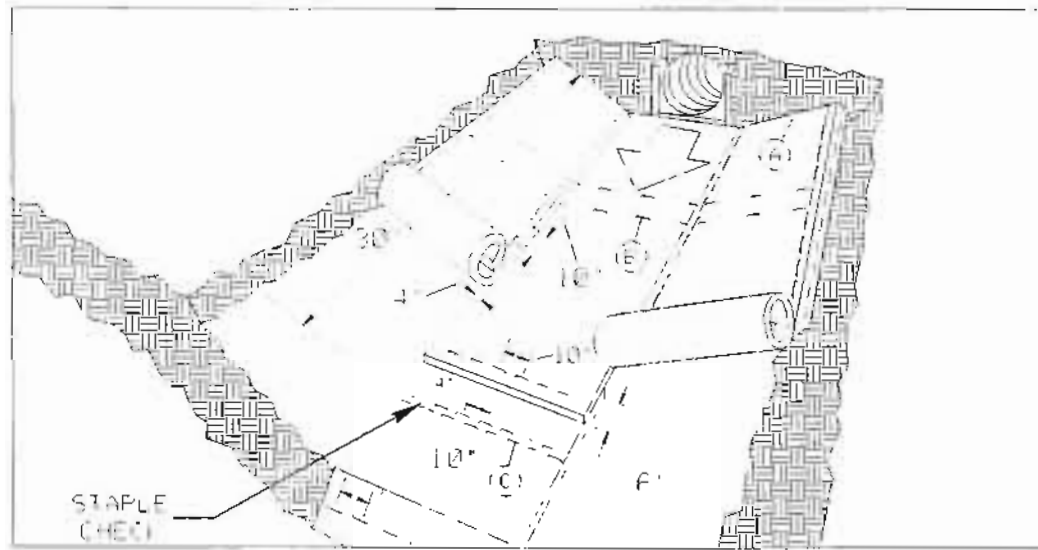
REVISIONS						NO.
NO.	BY	DATE	NO.	BY	DATE	18
1			2			TOTAL SHEETS
2			4			27

NOTES: ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY THE ENGINEER.

ROADSIDE ENVIRONMENTAL UNIT  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
RALPH, N.C.  
2006 STANDARD SPECIFICATIONS

# MATTING INSTALLATION DETAIL



**MATTING IN DITCHES**

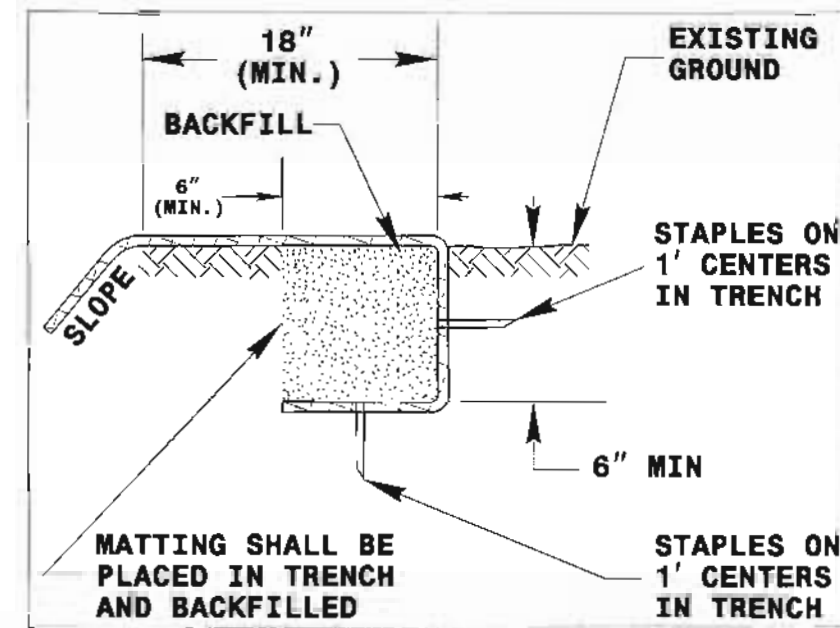
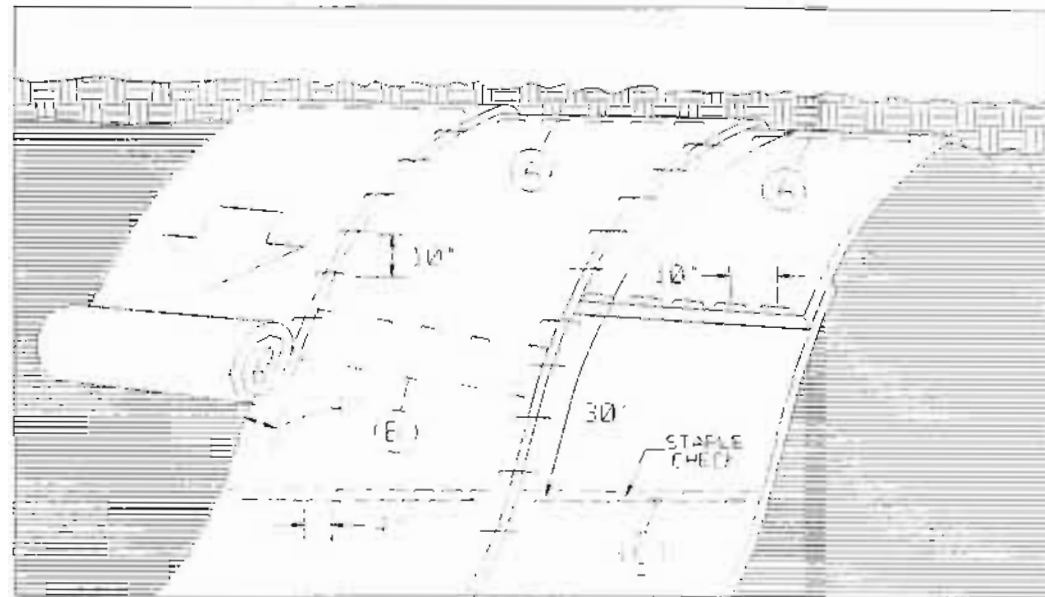


DIAGRAM (6)



**MATTING ON SLOPES**

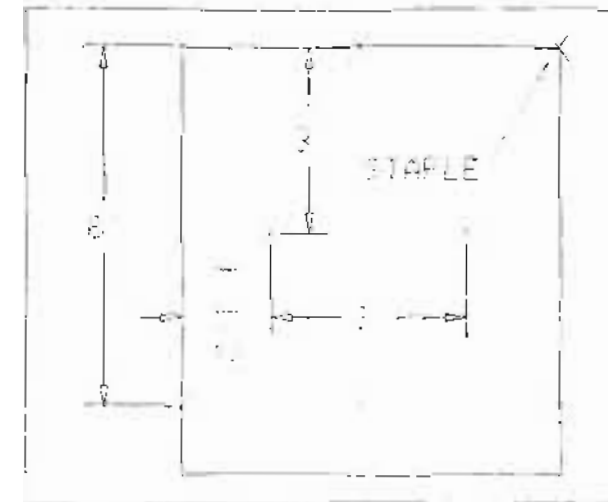


DIAGRAM (5)

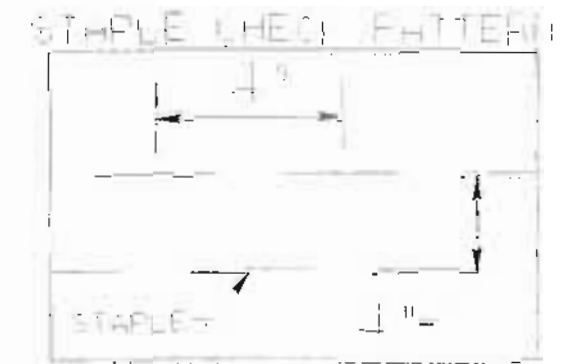


DIAGRAM (7)

NOT TO SCALE

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.  
STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

PROJECT NO. 42575  
COUNTY: BURKE  
STATION: 16+14.15  
REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALPH, N.C.  
BRIDGE NO. 307 ON SR 1924  
OVER TRIBUTARY TO  
HENRY FORK CREEK

REVISIONS						DATE
NO.	BY	DATE	NO.	BY	DATE	DATE
1			2			19
2			4			27

## ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JULY 2008 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1110.01	STATIONARY WORK ZONE SIGNS
1130.01	DRUM
1145.01	BARRICADES
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.12	PAVEMENT MARKINGS - BRIDGES
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

## GENERAL NOTES

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

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

### TRAFFIC PATTERN ALTERATIONS

- A) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### SIGNING

- B) PROVIDE PERMANENT SIGNING.
- C) PROVIDE SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.
- PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTE AS SHOWN IN THE TRAFFIC CONTROL PLANS.
- D) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.
- COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION. TRAFFIC CONTROL PLANS.
- E) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC CONTROL DEVICES

- F) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

### PAVEMENT MARKINGS AND MARKERS

- G) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. SR 1924 (OLD NC 18)	PAINT	PERMANENT RAISED

- H) PLACE AT LEAST TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE ON NEW ASPHALT PAVEMENT. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

- I) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

## LOCAL NOTES

- 1) CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS, WITHIN THE PROJECT LIMITS, AT ALL TIMES.

### PHASE I

STEP 1: - USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, INSTALL ALL DETOUR SIGNING KEEPING SIGNS COVERED (SEE SHEET 20).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2.

STEP 2: - USING ROADWAY STANDARD DRAWING NUMBER 1101.03, SHEET 1 OF 8, CLOSE SR 1924 (OLD NC 18) TO TRAFFIC, UNCOVER ALL DETOUR SIGNING AND SHIFT TRAFFIC TO DETOUR (SEE SHEET 20).

STEP 3: - DISMANTLE AND REMOVE EXISTING BRIDGE NUMBER 307.

STEP 4: - COMPLETE CONSTRUCTION OF PROPOSED STRUCTURE, APPROACH ROADWAY TIE-INS, AND ASSOCIATED ITEMS.

STEP 5: - PLACE FINAL PAVEMENT MARKINGS (PAINT) AND MARKERS (PERMANENT RAISED) ON SR 1924 (OLD NC 18).

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 6.

STEP 6: - USING ROADWAY STANDARD DRAWING NUMBER 1101.04, SHEET 1 OF 1, REMOVE ALL DETOUR SIGNING, ALL TRAFFIC CONTROL DEVICES AND OPEN SR 1924 (OLD NC 18) TO TRAFFIC.

## FINAL PAV'T MARKING SCHEDULE

SYMBOL	DESCRIPTION	QUANTITY BREAKDOWN		PAY ITEM	TOTAL QUANTITY
		PAVEMENT MARKING LINES			
PA	WHITE EDGELINE 2X	2,400 LF		PAINT (4")	4,800 LF
PI	YELLOW DOUBLE CENTER LINE 2X	2,400 LF			
		TOTAL			
		PAVEMENT MARKERS			
MA	YELLOW & YELLOW	8 EA		SNOWFLOWABLE	8 EA
		TOTAL			

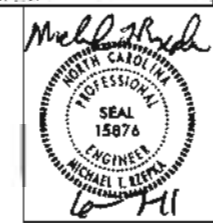
PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+15.00  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

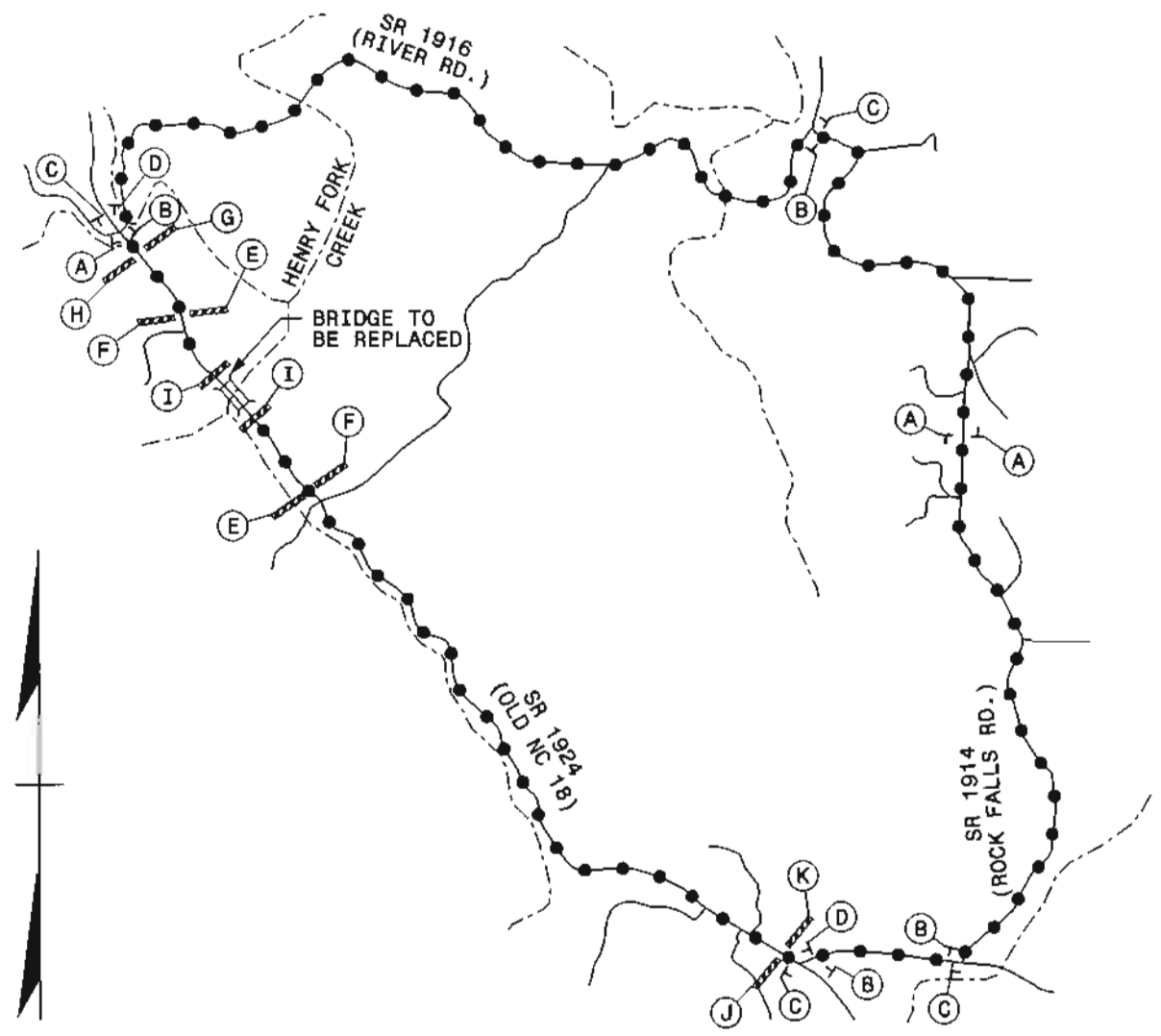
BRIDGE NO. 307 ON SR 1924  
 OVER HENRY FORK CREEK

**FH** Florence & Hutcheson  
 CONSULTING ENGINEERS  
 5131 Kingston Way, Suite 100 Raleigh, NC 27607  
 NC License No. E-0258

REVISIONS				NO.	DATE
1	BY	DATE	20		
2			27		



Project No. 42575, SR 1924, Bridge No. 307, Florence & Hutcheson, Inc., Raleigh, NC.



SIGN NUMBER: name TYPE: D QUANTITY: 1  
 SIGN HEIGHT: 4'-6" HEIGHT: 1'-6" TOTAL AREA: 8.8 Sq.Ft.  
 BORDER TYPE: FLUSH RECESS: 0" WIDTH: 0.75" RADIUS: 3"  
 NO. Z BARS: LENGTH: MAT'L: 0.126" (3.2 mm) ALUMINUM

DESIGN BY: GEP PROJECT ID: 42575 CHECKED BY: CHECKED DIV: 13 DATE: Apr 16, 2011

SYMBOL	Y	XID	HT

USE NOTES: 1 & 4  
 1. Legend and border shall be direct applied Type III reflective sheeting.  
 2. Legend and border shall be direct applied non-reflective sheeting.  
 3. Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.  
 4. Background shall be Type III reflective sheeting.  
 5. Background shall be Type I reflective sheeting.  
 6. Center arrow(s) vertically on sign.  
 7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

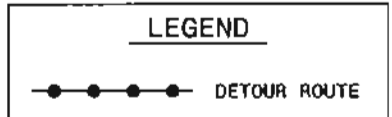
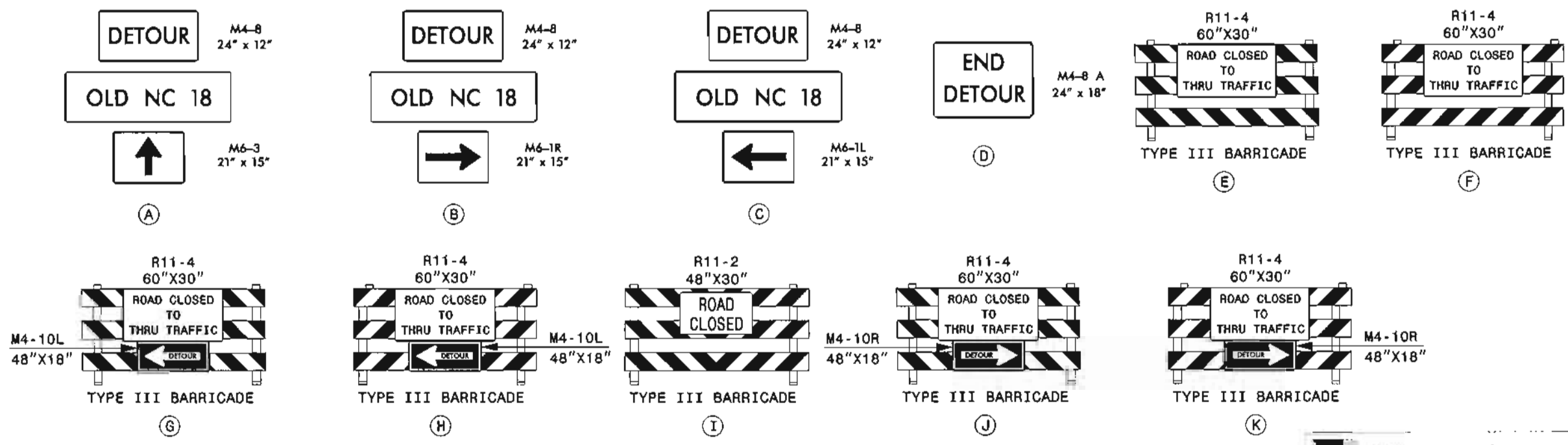
BORDER 5.65" 42.7" 5.65" R=3" TH=0.75"

Letter spacings are to start of next letter

Letter	O	L	D	N	C	I	R
Spacing	5.7	5.6	4.5	4.1	5.4	4.1	5.7

Series/Size Text Length D 2000 42.7

Spacing Factor is 1 unless specified otherwise



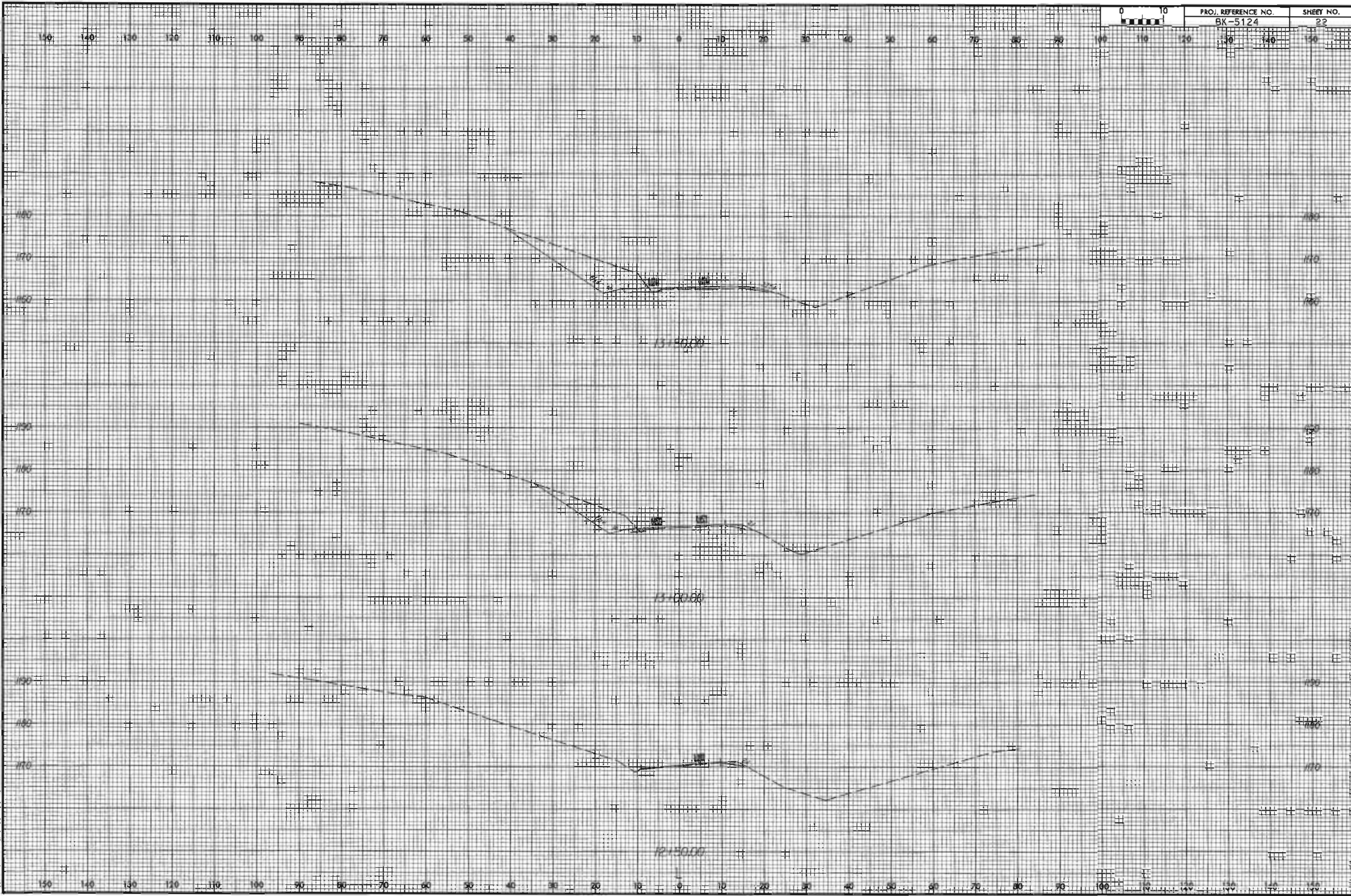
PROJECT NO. 42575  
 COUNTY: BURKE  
 STATION: 16+15.00  
 REPLACES BRIDGE NO. 307

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION

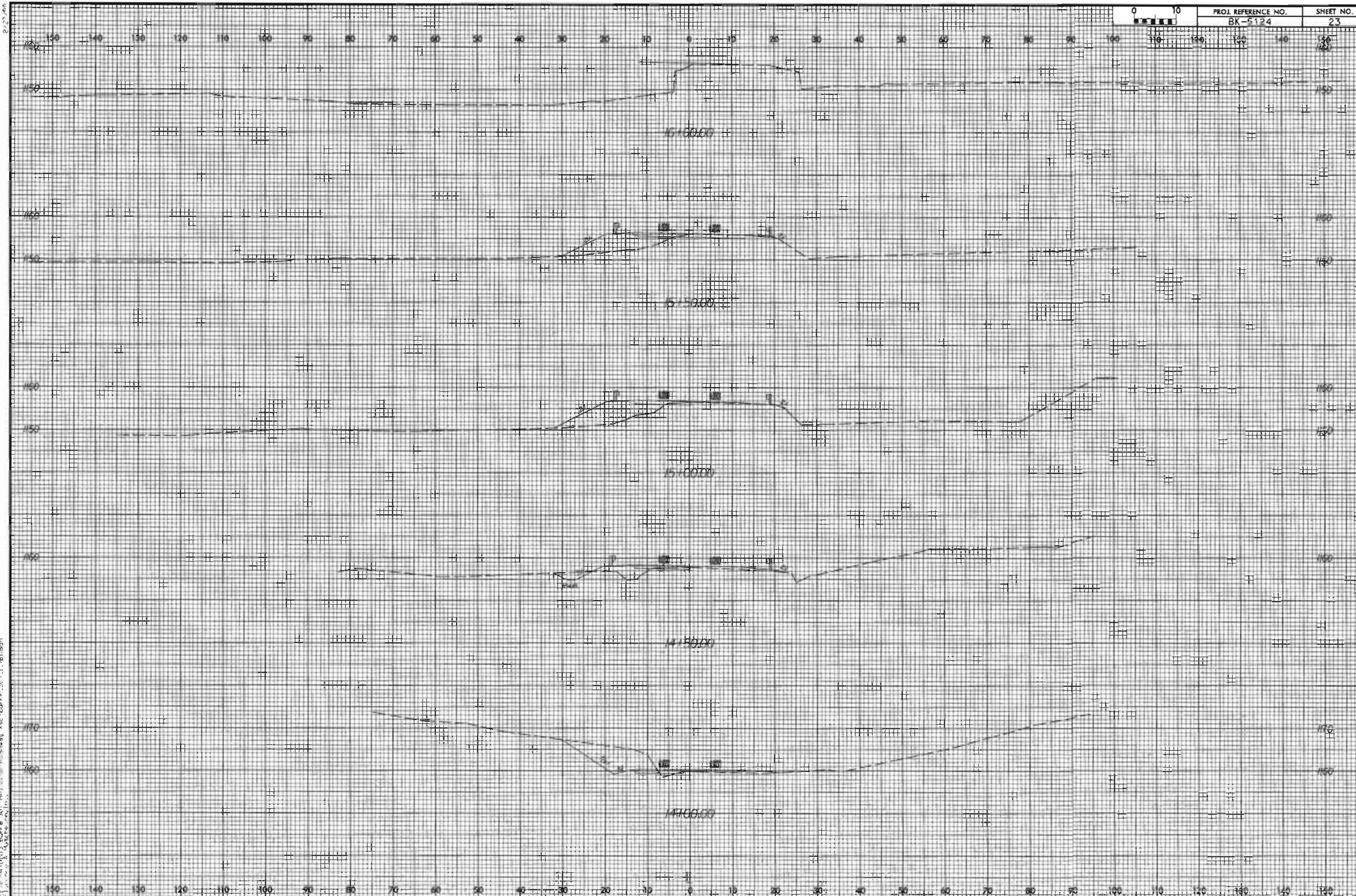
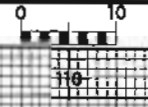
BRIDGE NO. 307 ON SR 1924  
 OVER HENRY FORK CREEK

**FH** Florence & Hutcheson  
 CONSULTING ENGINEERS  
 3121 Stagdon Way, Suite 100 Raleigh, NC 27607  
 NC License No. F-0258

NO.	BY	DATE	NO.	BY	DATE	SHEET NO.
1			2			21
2			3			27

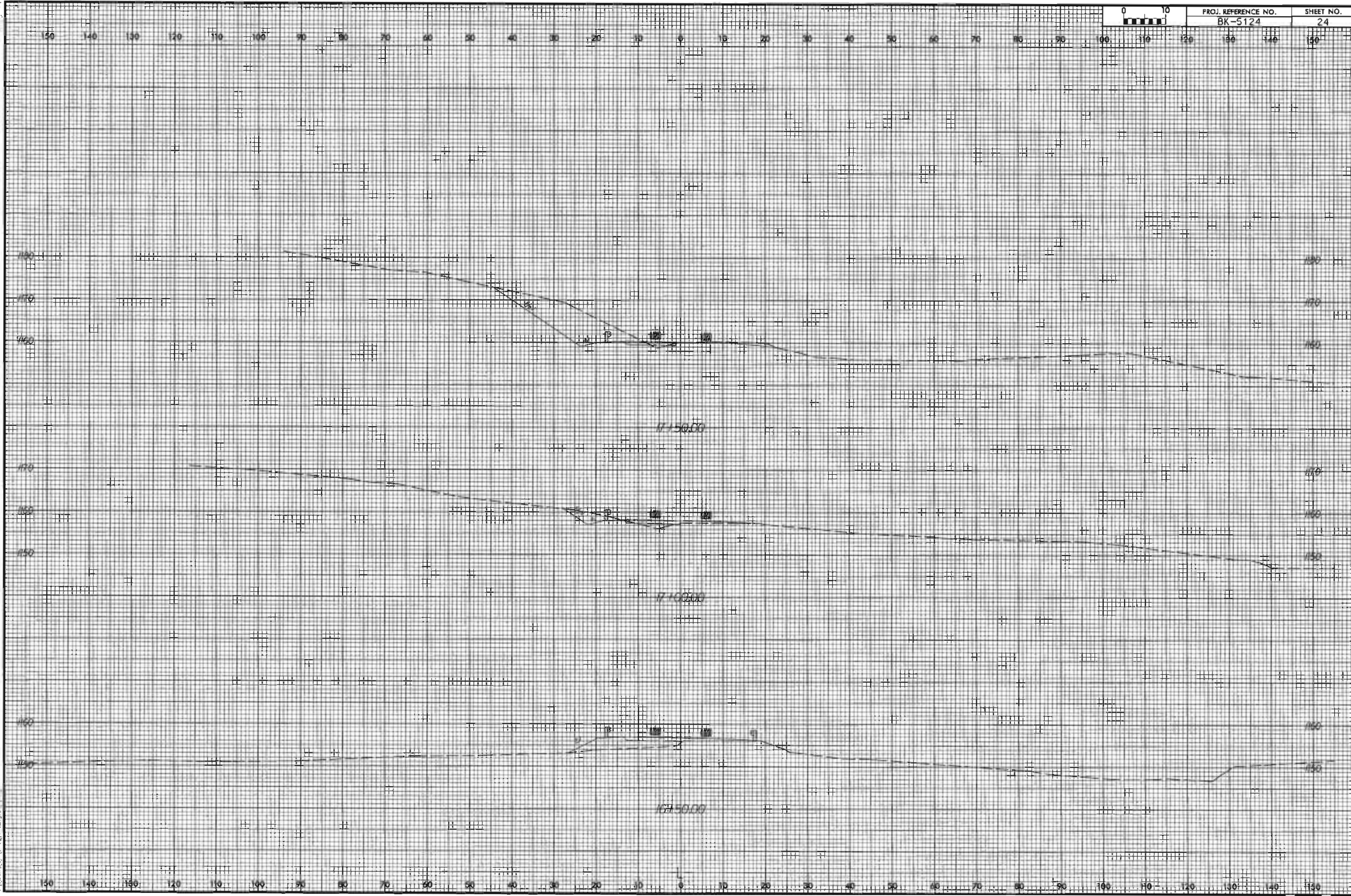


2/21/70  
D. J. O'Connell, Engineer  
D. J. O'Connell & Associates, Inc.



SECTION  
BY  
DATE  
BY  
DATE

2.27.70



5/11/00  
P:\Projects\BK-5124\Map\Map.dwg  
Plot Date: 5/11/00  
Plot Time: 10:00 AM  
Plot User: J. L. Elder

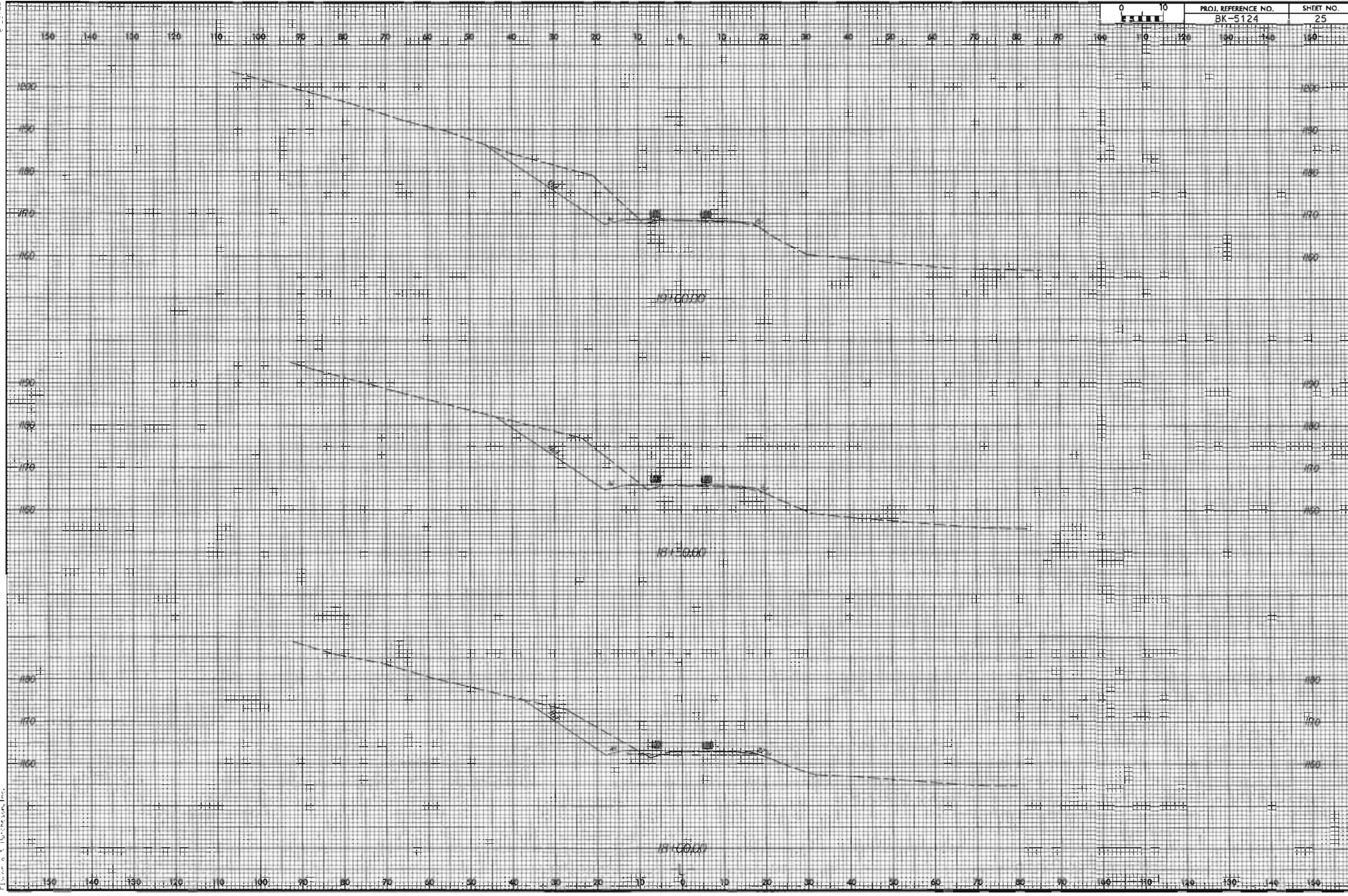


8-12-66

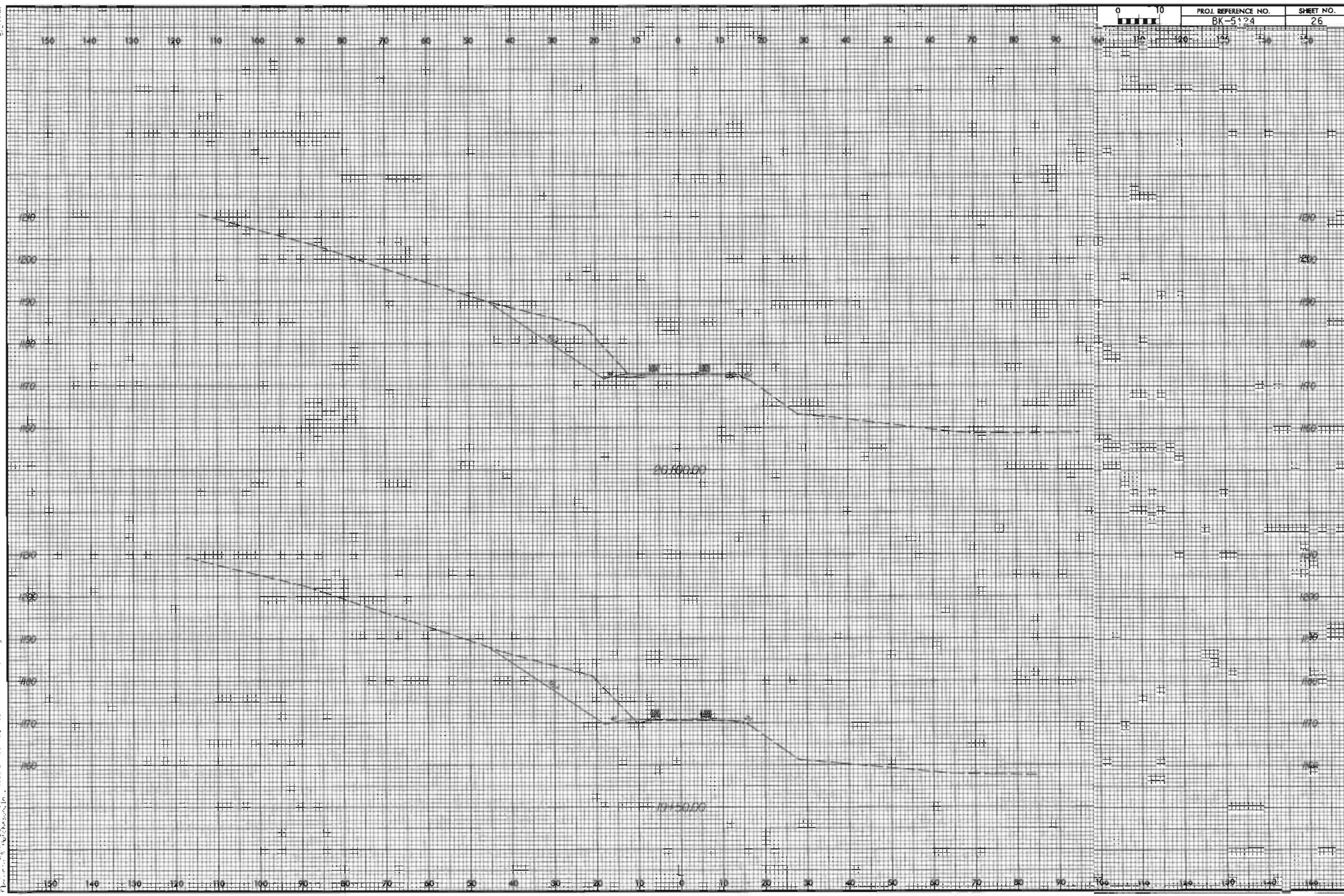


PROJ. REFERENCE NO.  
BK-5124

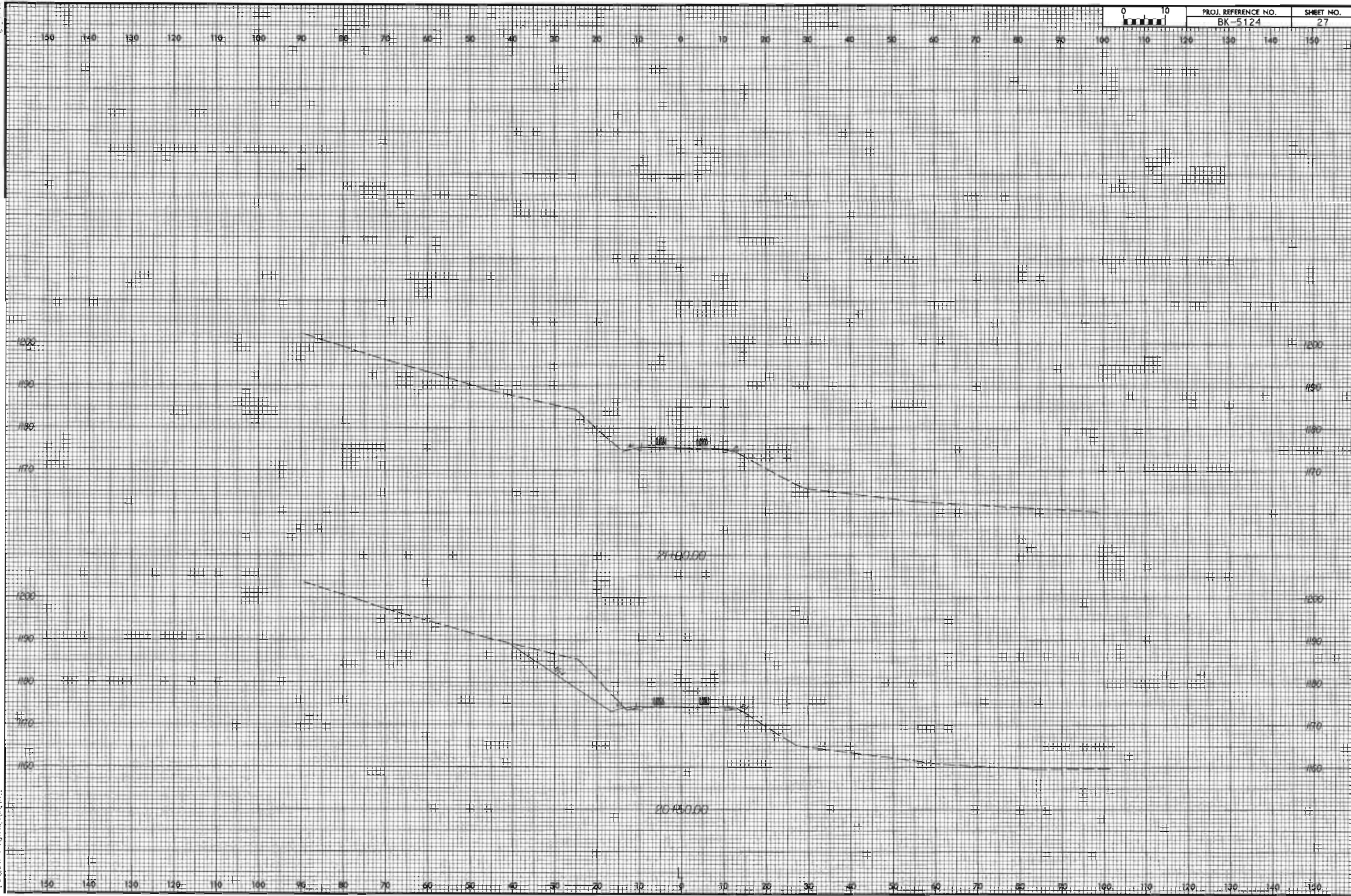
SHEET NO.  
25



S. J. CO. Inc. 11100 E. 1st Ave. Denver, CO 80231  
Produced by S. J. CO. Inc.



307711110018 Roadway + structure, 387.1, 1.0, 1.0  
307711110018 Roadway + structure, 387.1, 1.0, 1.0



Vertical text on the left margin, possibly a scale or coordinate indicator.