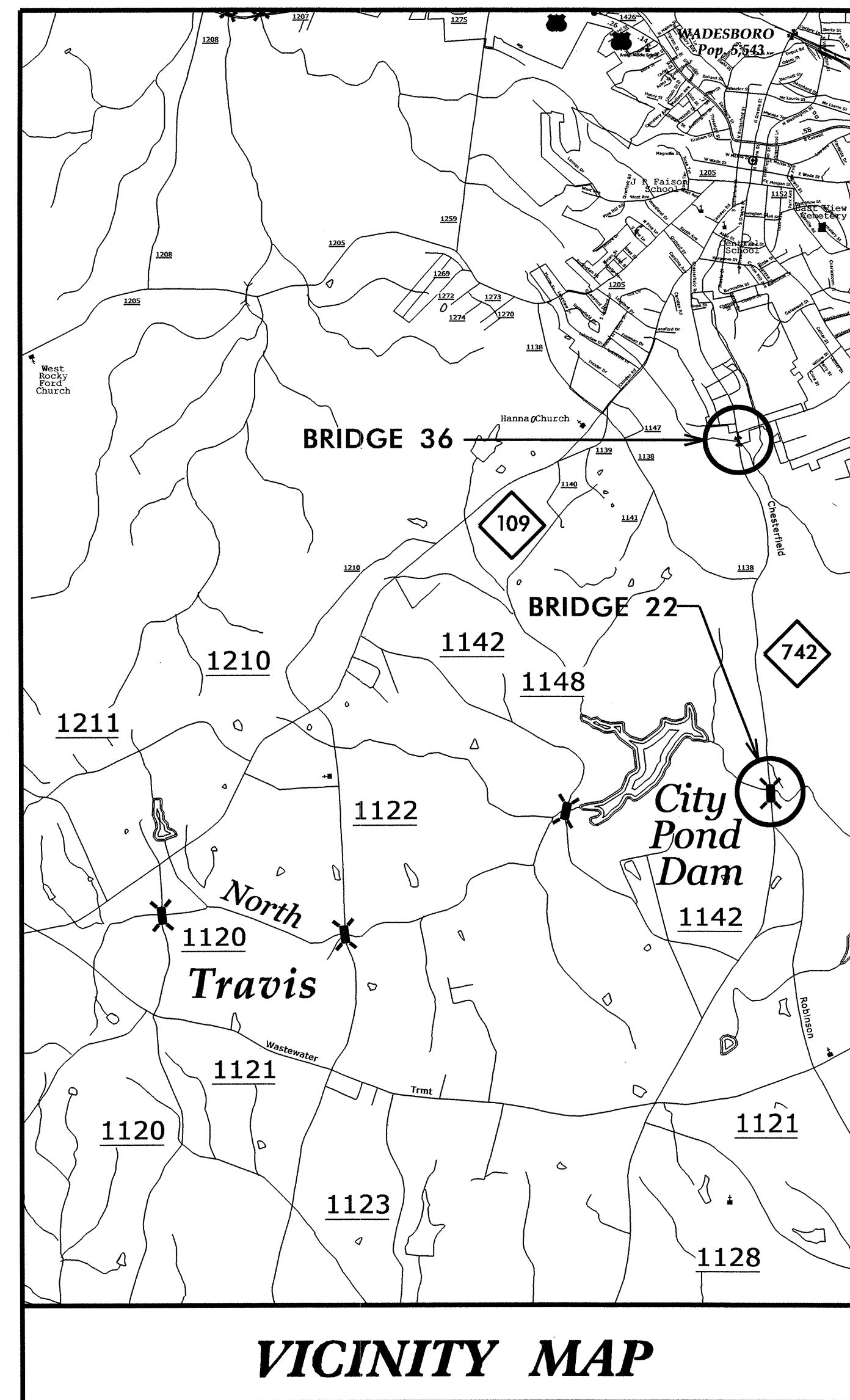


CONTRACT: D000145 PROJECT 17BP.10.H.2 & TIP PROJECT: BK-5113



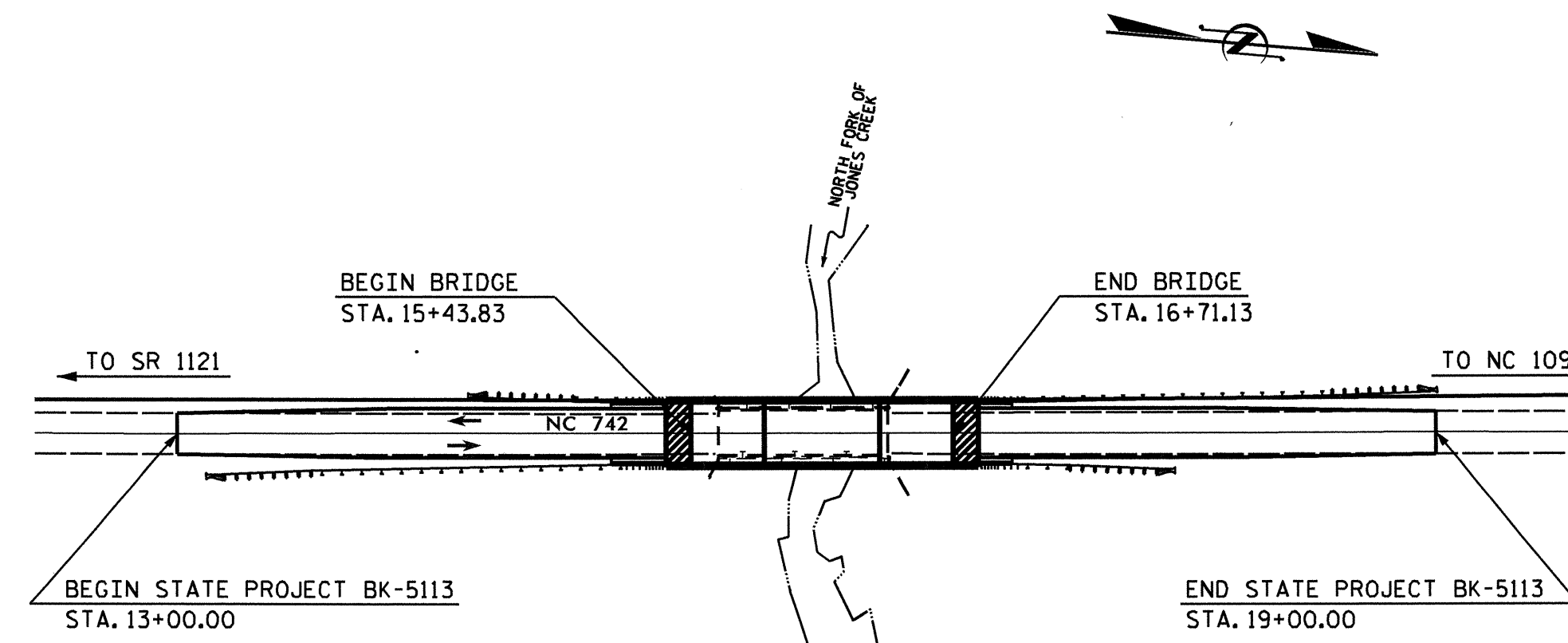
STRUCTURES

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

ANSON COUNTY

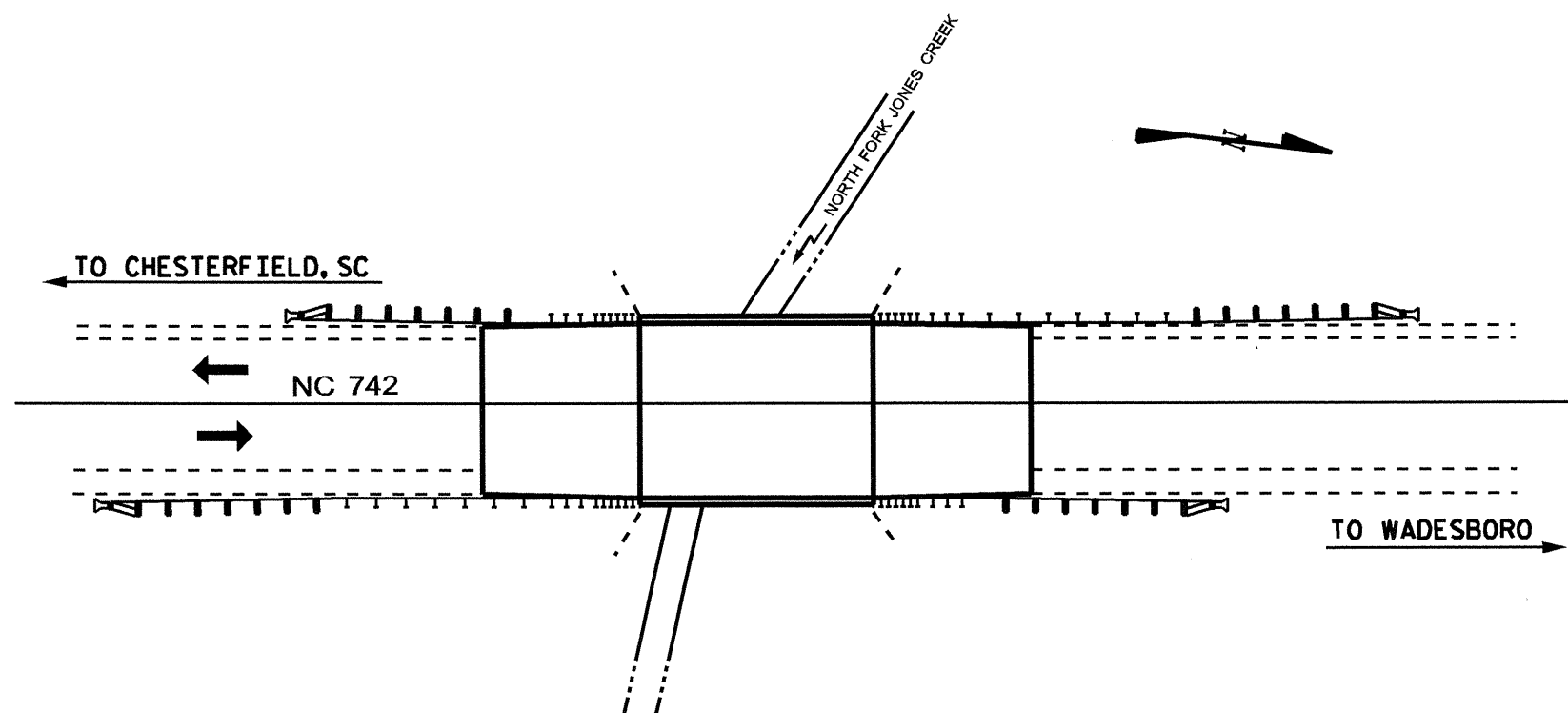
**LOCATION: BRIDGE NO. 22 ON NC 742 OVER NORTH FORK JONES CREEK
2.8 MILES SOUTH OF JUNCTION OF NC 109**

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



**LOCATION: BRIDGE #36 ON NC 742 OVER NORTH FORK JONES CREEK
0.1 MILES SOUTH OF JUNCTION OF NC 109**

TYPE OF WORK: BRIDGE SUPERSTRUCTURE REPLACEMENT

[illegible]

PROJECT LENGTHS

LENGTH ROADWAY STATE PROJECT BK-5113	=	0.090 MILES
LENGTH STRUCTURES STATE PROJECT BK-5113	=	0.024 MILES
TOTAL LENGTH STATE PROJECT BK-5113	=	0.114 MILES

LENGTH ROADWAY STATE PROJECT 17BP.10.H.2	=	0.009 MILES
LENGTH STRUCTURES STATE PROJECT 17BP.10.H.2	=	0.007 MILES
TOTAL LENGTH STATE PROJECT 17BP.10.H.2	=	0.016 MILES

Prepared in the Office of:

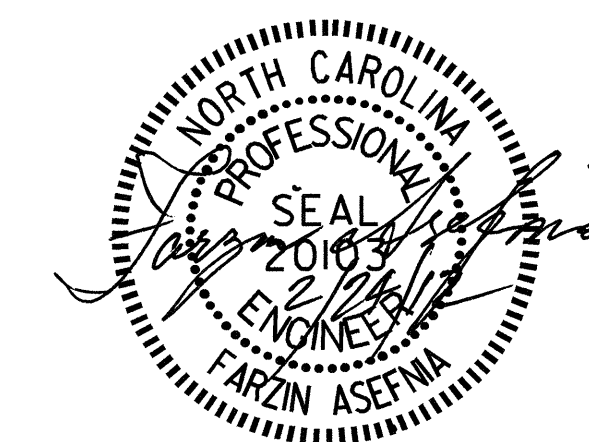
STRUCTURES MANAGEMENT UNIT

for the
NCDOT STRUCTURES MANAGEMENT UNIT

2012 STANDARD SPECIFICATIONS

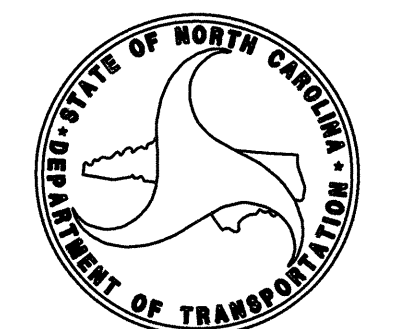
LETTING DATE:
MARCH 22, 2012

ERIC NELSON, P.E.
PROJECT ENGINEER



FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



P.E.

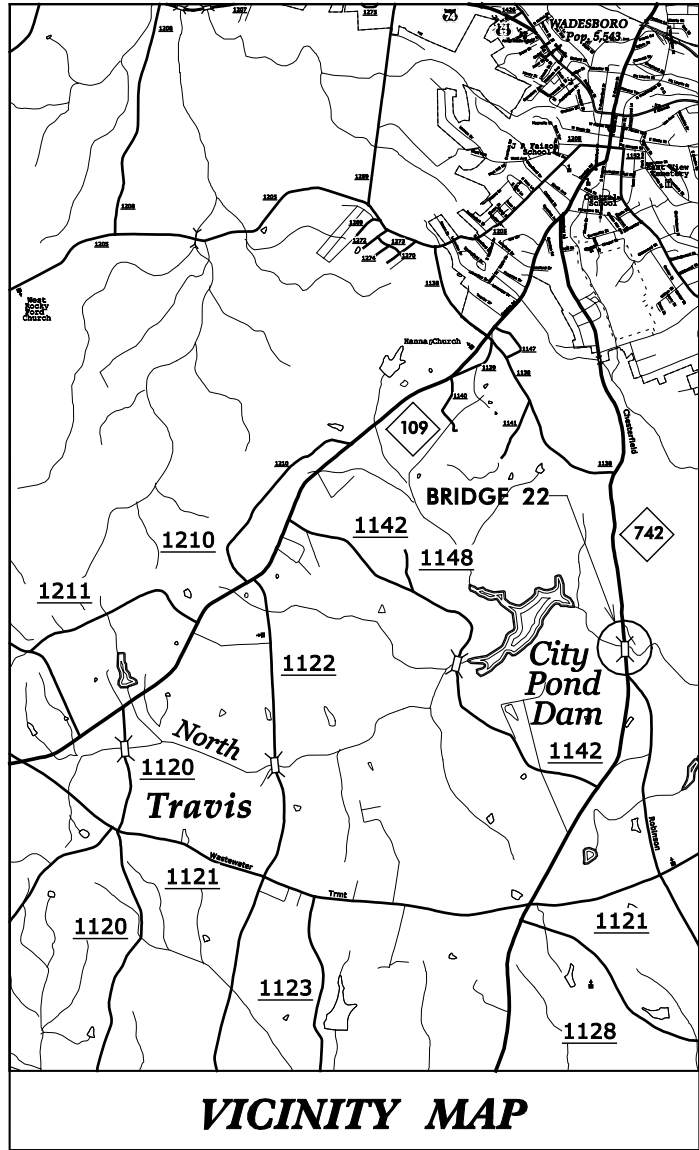
STATE HIGHWAY DESIGN ENGINEER

2/22/2012
Florence & Hutcheson, Inc.

09/28/99

TIP PROJECT: BK-5113

CONTRACT: D0000145



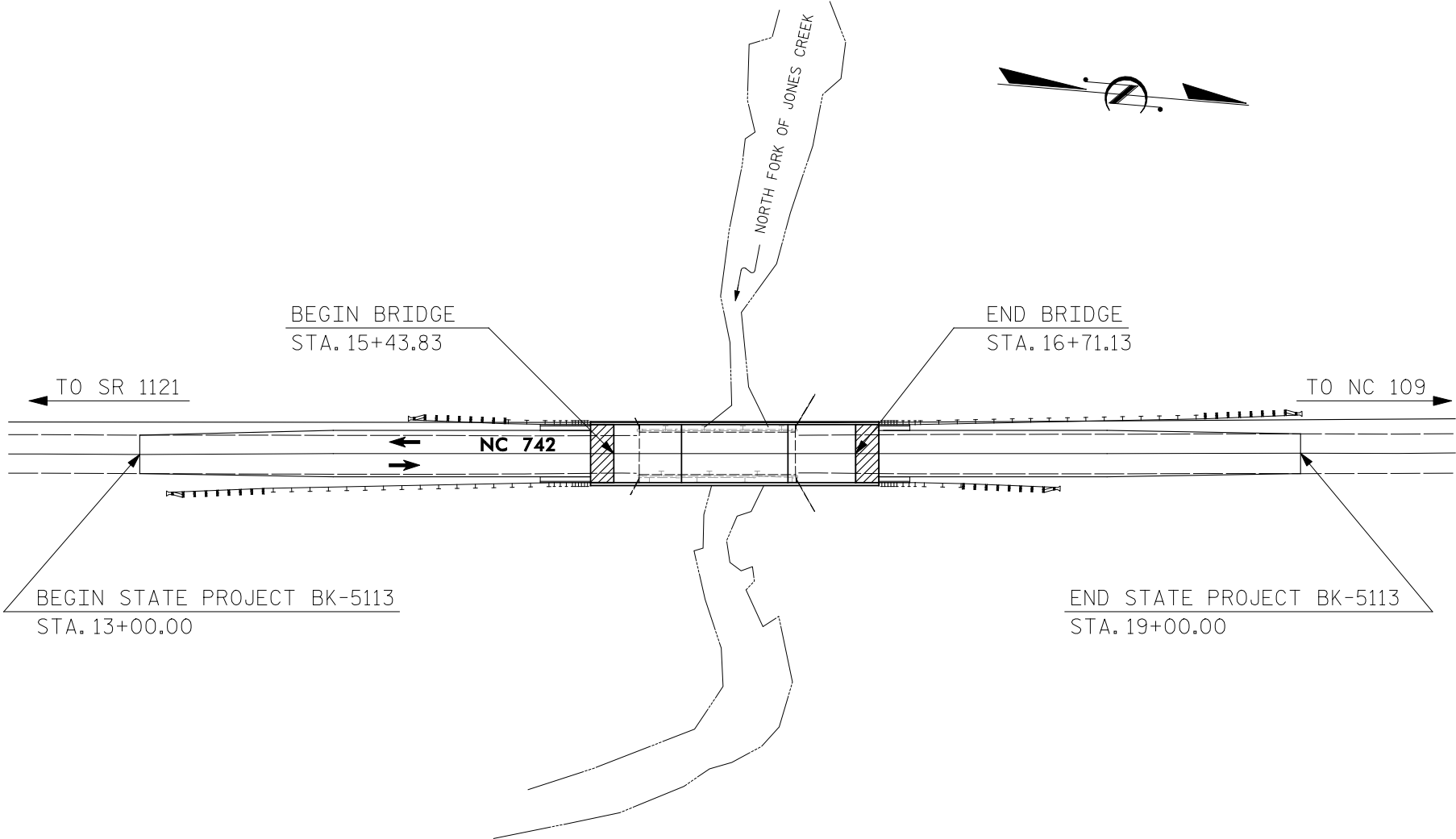
STRUCTURES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ANSON COUNTY

LOCATION: BRIDGE NO. 22 ON NC 742 OVER NORTH FORK JONES CREEK
2.8 MILES SOUTH OF JUNCTION OF NC 109

TYPE OF WORK: GRADING, DRAINAGE, PAVING,
& STRUCTURE



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BK-5113		25
ANSON COUNTY #22			
WBS PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42564.1.1		P.E.	
42564.1.3		CONST	

PROJECT LENGTH		
LENGTH ROADWAY STATE PROJECT BK-5113	=	0.090 MILES
LENGTH STRUCTURES STATE PROJECT BK-5113	=	0.024 MILES
TOTAL LENGTH STATE PROJECT BK-5113	=	0.114 MILES

Prepared In the Office of:
Florence & Hutcheson
CONSULTING ENGINEERS
1121 Douglas Way, Suite 100 Raleigh, NC 27607
NC License No. P-0105

for the
NCDOT STRUCTURES MANAGEMENT UNIT
2012 STANDARD SPECIFICATIONS

LETTING DATE:
MARCH 22, 2012

ERIC NELSON, P.E.
PROJECT ENGINEER

FARZIN ASEFNIA, P.E.
PROJECT DESIGN ENGINEER

2-16-12

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

NOTES

ASSUMED LIVE LOAD = HS 20 OR ALTERNATE LOADING, EXCEPT THAT THE BEAMS HAVE BEEN DESIGNED FOR HS 25.

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LFD BRIDGE DESIGN SPECIFICATIONS.

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

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COST 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".

THE MATERIAL IN THE CROSS HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 46 FEET EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AS "UNCLASSIFIED STRUCTURE EXCAVATION", LUMP SUM.

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.

REMOVAL OF THE EXISTING BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE AND SUBMIT PLANS FOR DEMOLITION IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

FOR PILES, SEE SPECIAL PROVISIONS.

STEEL H PILE POINTS ARE REQUIRED FOR STEEL H PILES AT END BENT NO. 1, BENT NO. 1, BENT NO. 2 AND END BENT NO. 2. FOR STEEL PILE POINTS, SEE PILES PROVISION.

THE EXISTING STRUCTURE CONSISTING OF 4 SPANS TOTALING 81± FEET LONG STEEL BEAM SPANS; 22.0 ± FEET CLEAR ROADWAY WITH CONCRETE DECK AND 4.5" ASPHALT OVERLAY; ON TIMBER CAPS WITH TIMBER PILES, LOCATED ON THE PROPOSED ALIGNMENT SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE FURTHER DETERIORATE, THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

THE SCOUR CRITICAL ELEVATION FOR INTERIOR BENT NO. 1 AND INTERIOR BENT NO. 2 IS BOTTOM OF FOOTING ELEVATION 301.994 FT. THE SCOUR CRITICAL ELEVATION IS FOR USE BY MAINTENANCE FORCES TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

PIER SCOUR PROTECTION SHALL BE REQUIRED AT INTERIOR BENT NO. 1 AND INTERIOR BENT NO. 2. RIP RAP NOT TO BE PLACED ABOVE THE STREAM BANK.

PILES AT END BENT NO. 1 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 286.0 FT. (LT.), 282.0 FT. (RT.), AND SATISFY THE ULTIMATE BEARING CAPACITY OF 100 TONS EACH.

PILES AT INTERIOR BENT NO. 1 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 284.0 FT. (LT.), 275.0 FT. (RT.), AND SATISFY THE ULTIMATE BEARING CAPACITY OF 100 TONS EACH.

PILES AT INTERIOR BENT NO. 2 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 272.0 FT. (LT.), 271.0 FT. (RT.), AND SATISFY THE ULTIMATE BEARING CAPACITY OF 100 TONS EACH.

PILES AT END BENT NO. 2 SHALL BE DRIVEN TO AN ELEVATION NO HIGHER THAN 272.0 FT. (LT.), 274.0 FT. (RT.), AND SATISFY THE ULTIMATE BEARING CAPACITY OF 100 TONS EACH.

THE STEEL PILES SHALL BE GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

WHEN DRIVING PILES, THE MAXIMUM BLOW COUNT SHALL NOT BE EXCEEDED.

DELINEATORS ON BARRIER RAIL AND ON STEEL BEAM GUARDRAIL SHALL BE INCLUDED IN THE PRICE BID FOR STEEL BEAM GUARDRAIL.

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

NOTES CONTINUED ON SHEET S-2.

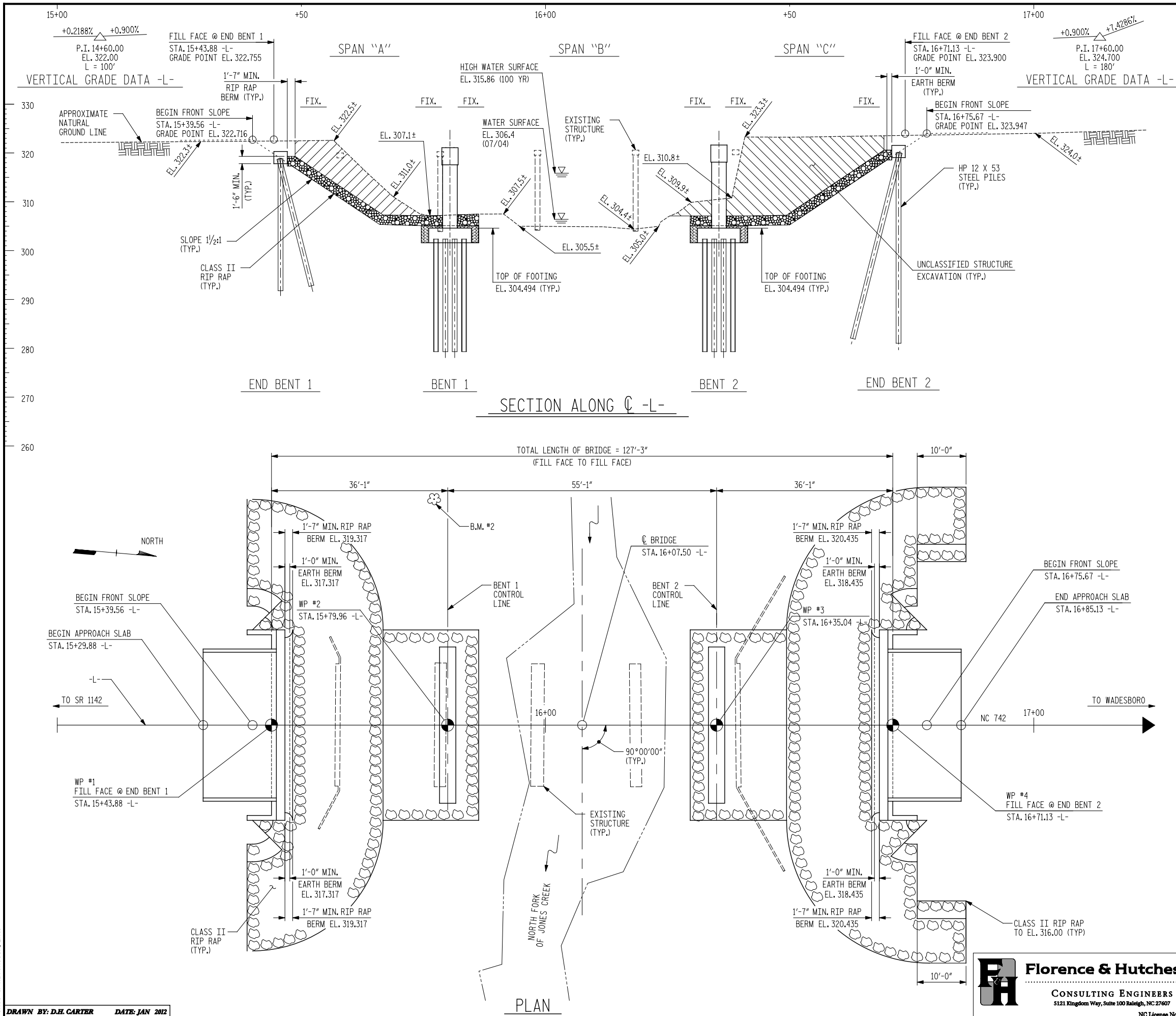
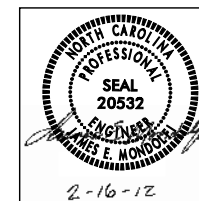
PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 1 OF 2 REPLACES BRIDGE NO. 22

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

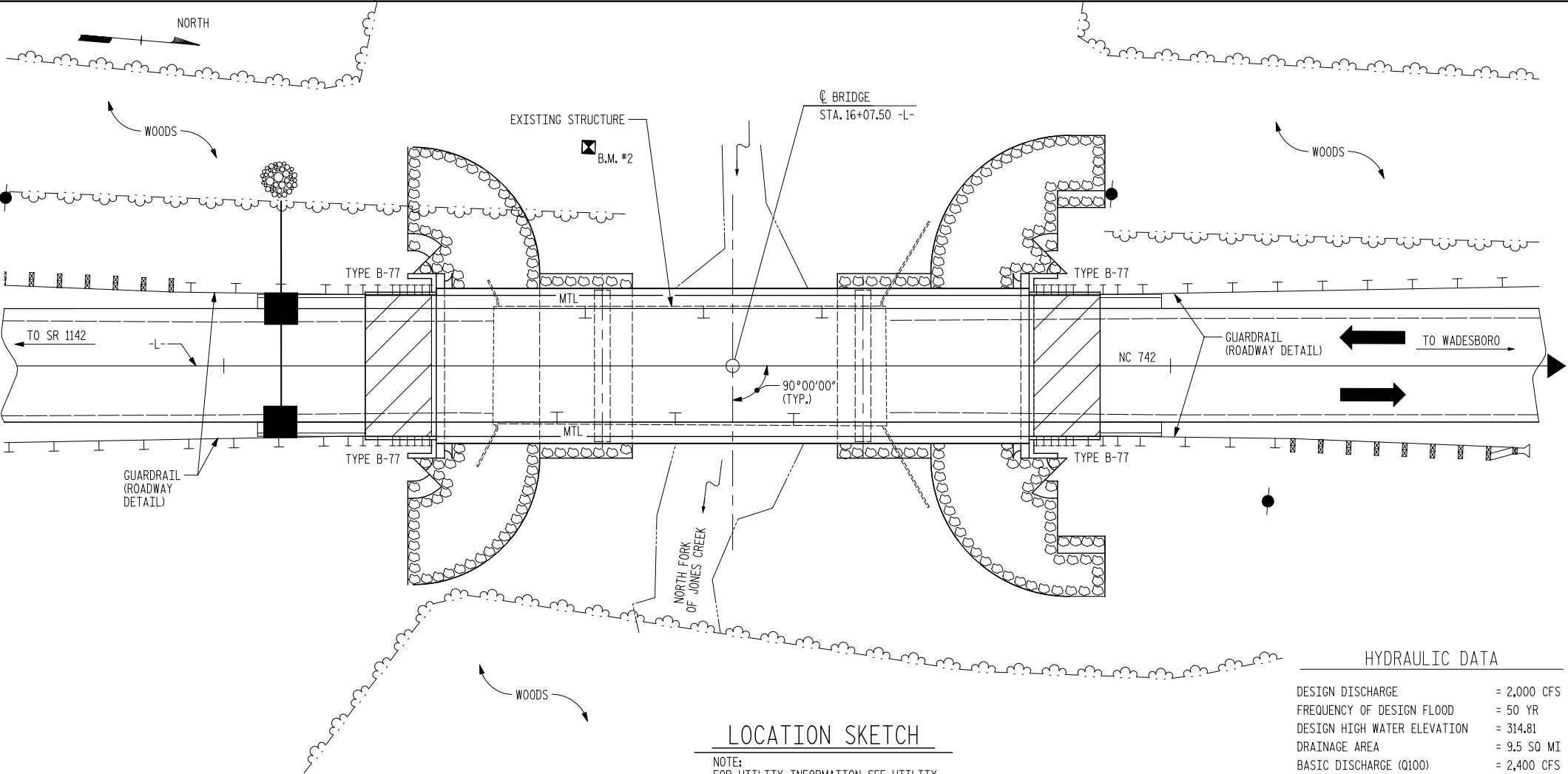
GENERAL DRAWING
BRIDGE NO. 22 ON NC 742 OVER
NORTH FORK JONES CREEK

REVISIONS						SHEET NO. S-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 15
2			4			



DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

BENCH MARK: B.M. #2, RR SPIKE IN BASE OF 36" TULIP POPLAR, 46.26' LT OF STA. 15+77.08 -L-, EL. 315.06



NOTES (CONT.)

ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITY.
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

TOTAL BILL OF MATERIAL															
	REMOVAL OF EXISTING STRUCTURE	FOUNDATION EXCAVATION	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	BRIDGE APPROACH SLABS	REINFORCING STEEL (BRIDGE)	SPIRAL COLUMN REINFORCING STEEL	HP 12 X 53 GALVANIZED STEEL PILES	STEEL PILE POINTS	CONCRETE BARRIER RAIL	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS	
	LUMP SUM	LUMP SUM	LUMP SUM	CU. YD.	LUMP SUM	LB.	LB.	NO.	LIN. FT.	NO.	LIN. FT.	TON	SQ. YD.	LUMP SUM	NO.
SUPERSTRUCTURE											250				33
END BENT 1				12.6		2,145		6	204	6		300	333		
BENT 1				42.1		6,463	584	16	368	16					
BENT 2				42.4		6,504	606	16	496	16					
END BENT 2				12.6		2,145		6	276	6		332	369		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	109.7	LUMP SUM	17,257	1,190	44	1,344	44	250	632	702	LUMP SUM	33

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
BRIDGE NO. 22 ON NC 742 OVER
NORTH FORK JONES CREEK



REVISIONS						SHEET NO. S-2 TOTAL SHEETS 15
NO.	BY	DATE	NO.	BY	DATE	
1			3			
2			4			

2/16/2012
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Florence & Hutcheson, Inc.

DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

GENERAL NOTES

ASSUMED LIVE LOAD = HS25 OR ALTERNATE LOADING.

- CONCRETE: $f'c$ = 5000 psi, 35' SPAN ONLY
- * CONCRETE: $f'c$ = 4000 psi, 35' SPAN ONLY
- * CONCRETE: $f'c$ = 7000 psi, 55' SPAN ONLY
- * CONCRETE: $f'c$ = 5000 psi, 55' SPAN ONLY
- * (COMPRESSIVE STRENGTH @ TRANSFER OF STRESSING FORCE.)

ALL PRESTRESS STRANDS SHALL BE 7 WIRE, LOW RELAXATION, HIGH STRENGTH CABLES IN ACCORDANCE WITH THE SPECIFICATIONS.
SIZE TYPE AREA ULTIMATE STR.
0.6" Ø HIGH 0.217 sq. 58,600#
STR. PER CABLE

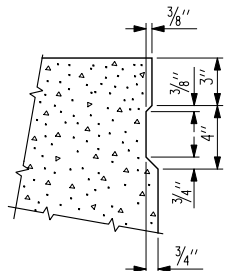
APPLIED FORCE
43,950# PER CABLE

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 2012 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.

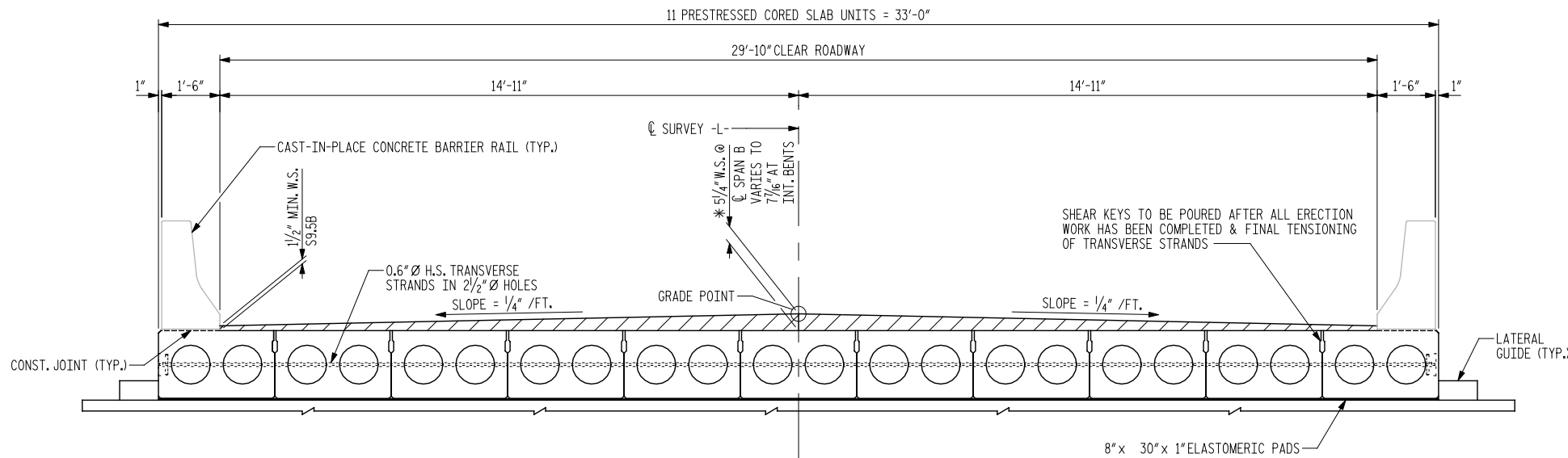
A POSITIVE HOLD DOWN SYSTEM MUST BE EMPLOYED TO PREVENT VOIDS FROM RISING.

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED $\frac{3}{4}"$.



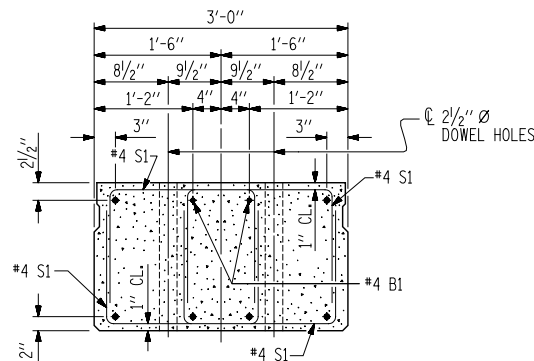
SHEAR KEY DETAIL

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



TYPICAL SECTION

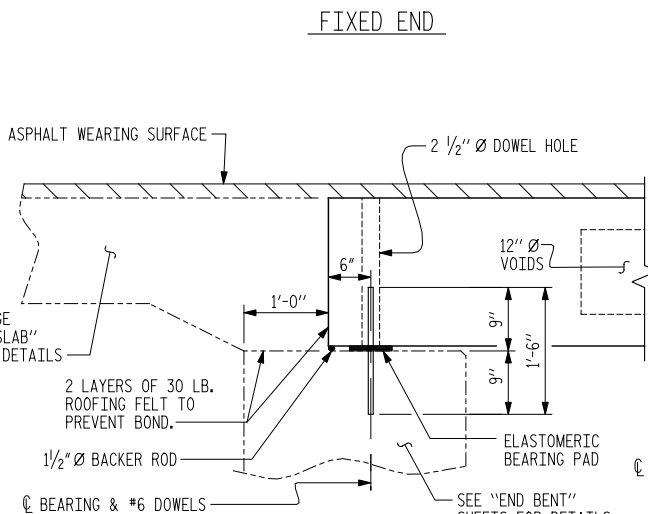
* 7" W.S. @ SPANS A & C VARIES TO 7 7/8" AT END BENTS AND INTERIOR BENTS



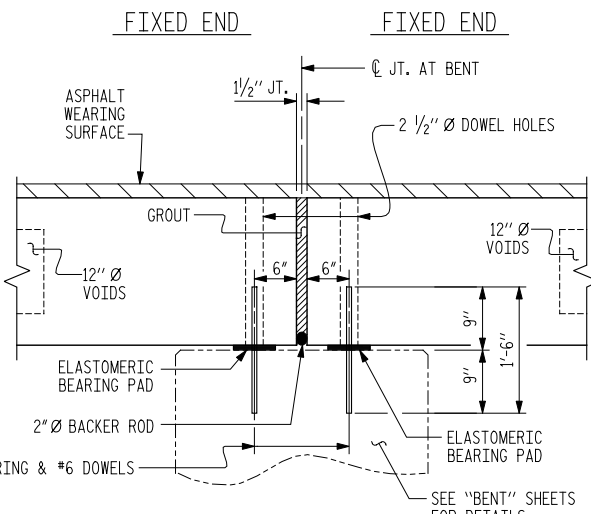
END ELEVATION

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

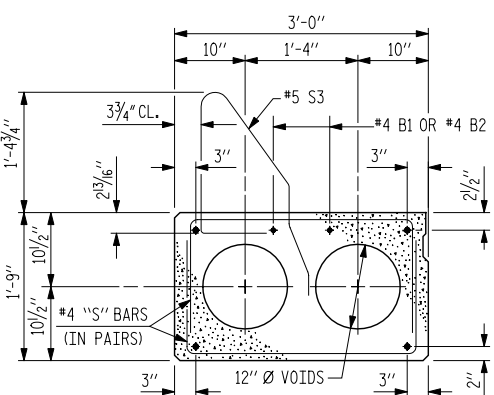
THE 2 1/2" DOWEL HOLES AT FIXED ENDS OF SLAB SECTIONS SHALL BE FILLED WITH GROUT.



SECTION AT END BENT

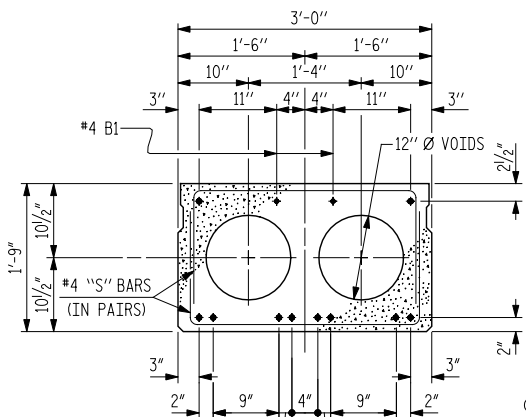


SECTION AT BENT



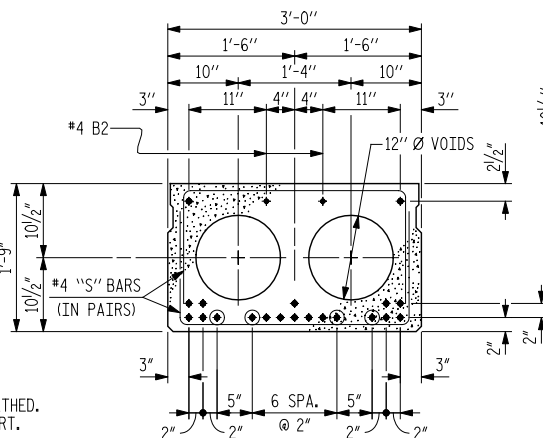
EXTERIOR SLAB SECTION

(FOR PRESTRESSED STRAND LAYOUT, SEE INTERIOR SLAB SECTIONS)



35' SPAN-INTERIOR SLAB SECTION

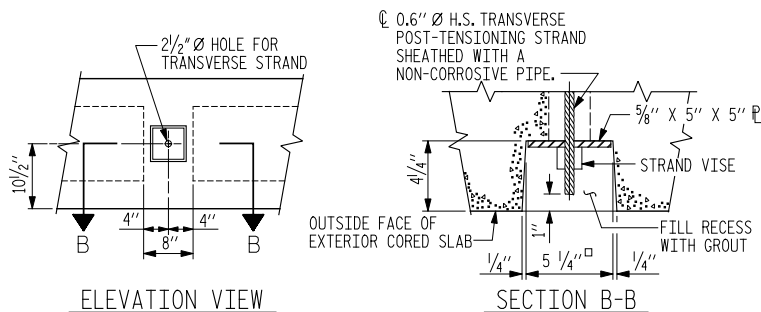
10 - 0.6" Ø H.S. STRANDS
INTERIOR SLAB SECTIONS



55' SPAN-INTERIOR SLAB SECTION

20 - 0.6" Ø H.S. STRANDS
INTERIOR SLAB SECTIONS

NOT TO SCALE



ELEVATION VIEW

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

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

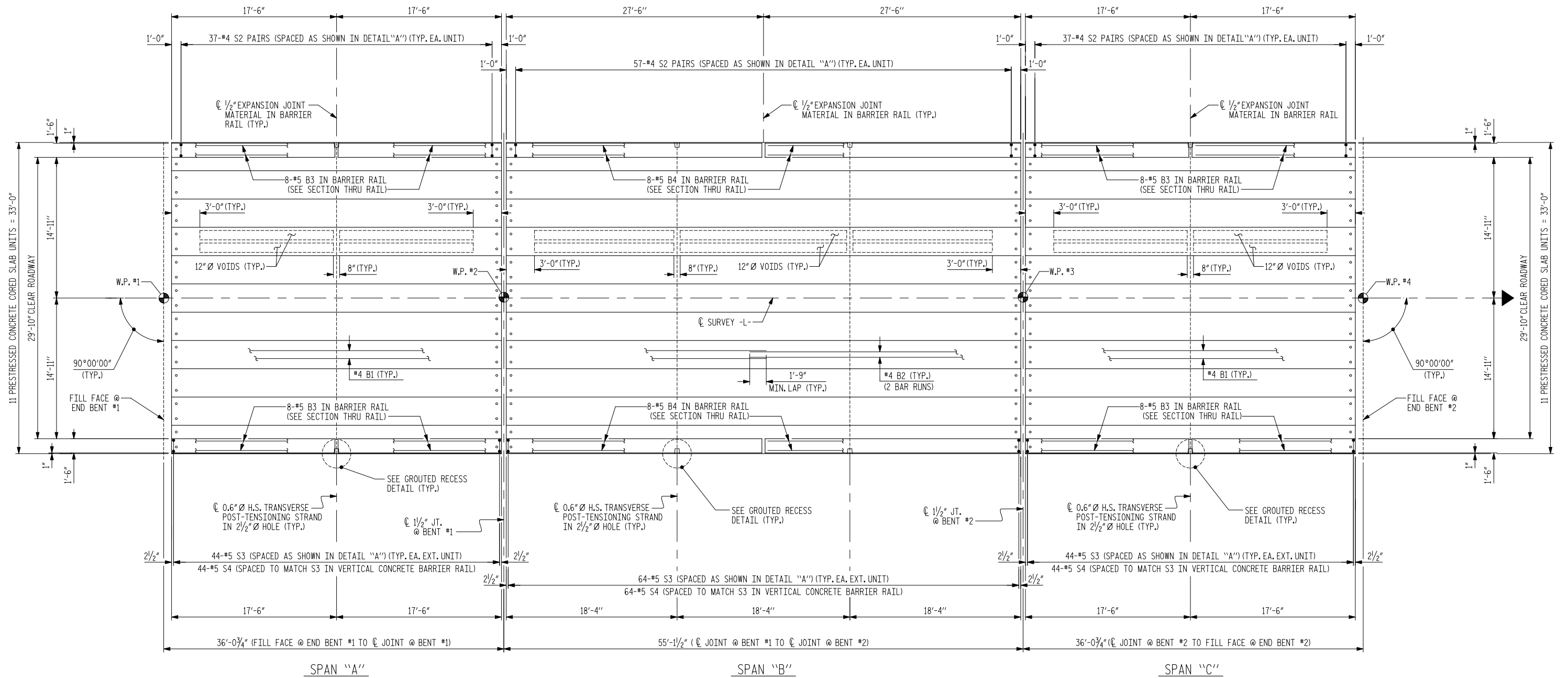
3'-0" X 1'-9"
PRESTRESSED CORED SLAB UNIT
29'-10" CLEAR ROADWAY - 90° SKEW

REVISIONS						SHEET NO. S-3
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 15
2			4			

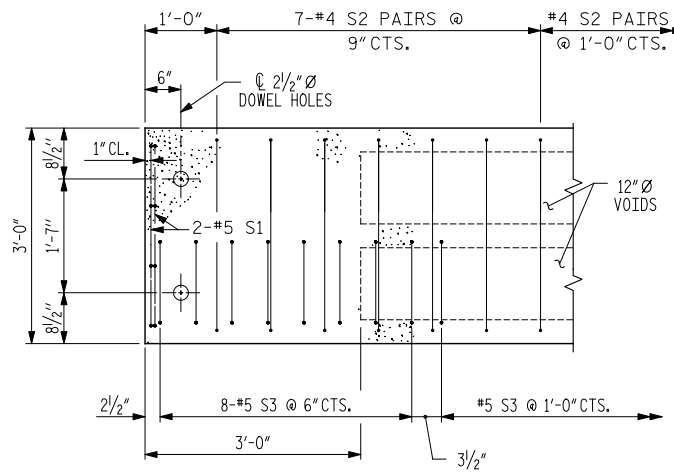
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CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0288



2-16-12



PLAN OF SPANS

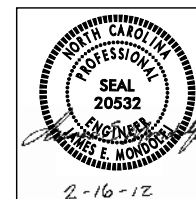


DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

NOT TO SCALE

Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0268



PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

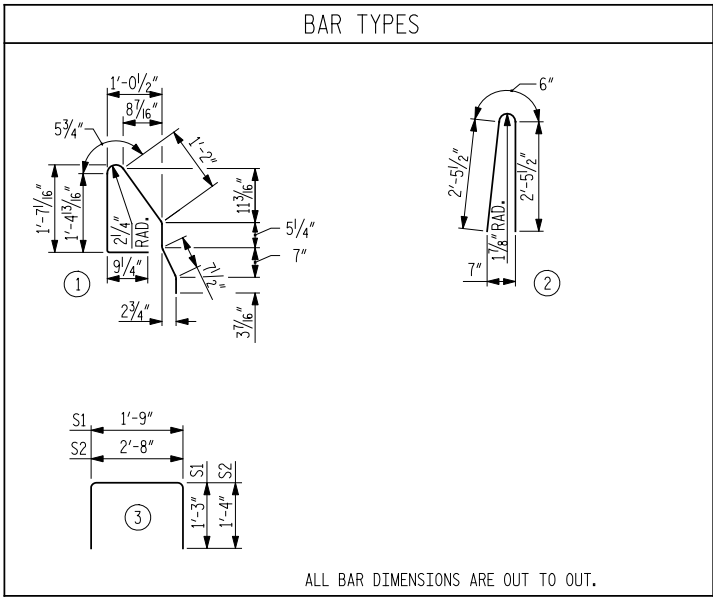
SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PLAN OF SPANS CORED SLAB DETAILS SPANS "A", "B" & "C"					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO. S-4					TOTAL SHEETS 15

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Florence & Hutcheson, Inc.

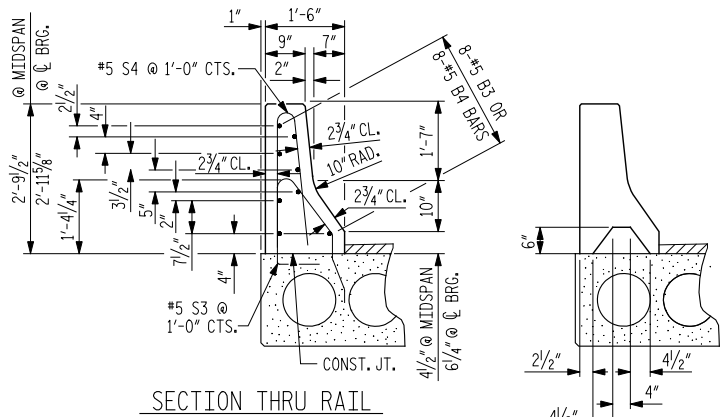
DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

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Flores & Hutcheson, Inc.

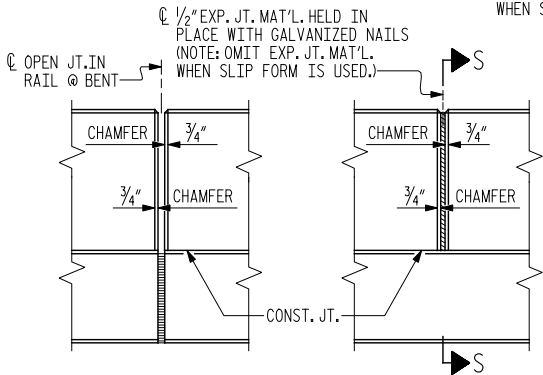


DEAD LOAD DEFLECTION AND CAMBER		
	SPANS "A" & "C"	SPAN "B"
	3'-0" x 1'-9"	3'-0" x 1'-9"
	0.6" Ø L.R. STRAND	0.6" Ø L.R. STRAND
CAMBER (SLAB ALONE IN PLACE)	0.522" ↑	2.595" ↑
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	0.090" ↓	0.426" ↓
FINAL CAMBER	0.432" ↑	2.169" ↑

** INCLUDES FUTURE WEARING SURFACE



SECTION S-S
AT DAM IN OPEN JOINT
(THIS IS TO BE USED ONLY
WHEN SLIP FORM IS USED)



ELEVATION AT EXPANSION JOINTS
BARRIER RAIL DETAILS

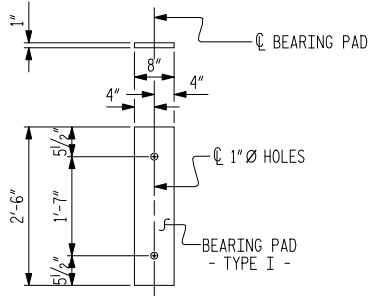
BILL OF MATERIAL FOR ONE 35'-0" INTERIOR CORED SLAB SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#4	STR	18'-3"	49
S1	8	#5	3	4'-3"	35
S2	74	#4	3	5'-4"	264
REINFORCING STEEL				LBS.	348
5000 P.S.I. CONCRETE				C. Y.	4.7
0.6" Ø L.R. STRANDS				NO.	10

BILL OF MATERIAL FOR ONE 35'-0" EXTERIOR CORED SLAB SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	4	#4	STR	18'-3"	49
S1	8	#5	3	4'-3"	35
S2	74	#4	3	5'-4"	264
* S3	44	#5	1	5'-2"	237
REINFORCING STEEL				LBS.	348
*EPOXY COATED REINFORCING STEEL				LBS.	237
5000 P.S.I. CONCRETE				C. Y.	4.7
0.6" Ø L.R. STRANDS				NO.	10

CORED SLABS REQUIRED							
	NUMBER			LENGTH			TOTAL LENGTH
	SPAN A	SPAN B	SPAN C	SPAN A	SPAN B	SPAN C	
EXTERIOR C.S.	2	2	2	35'-0"	55'-0"	35'-0"	250'-0"
INTERIOR C.S.	9	9	9	35'-0"	55'-0"	35'-0"	1125'-0"

SUMMARY FOR EXTERIOR CORED SLAB SECTIONS					
		SPAN "A"	SPAN "B"	SPAN "C"	TOTAL
REINFORCING STEEL	LBS.	696	1032	696	2424
*EPOXY COATED REINFORCING STEEL	LBS.	474	690	474	1638
5000 P.S.I. CONCRETE	C. Y.	9.4	--	9.4	18.8
7000 P.S.I. CONCRETE (SPAN B)	C. Y.	--	14.8	--	14.8
0.6" Ø L.R. STRANDS	NO.	20	40	20	80

SUMMARY FOR INTERIOR CORED SLAB SECTIONS					
		SPAN "A"	SPAN "B"	SPAN "C"	TOTAL
REINFORCING STEEL	LBS.	3132	4644	3132	10908
5000 P.S.I. CONCRETE	C. Y.	42.3	--	42.3	84.6
7000 P.S.I. CONCRETE (SPAN B)	C. Y.	--	66.6	--	66.6
0.6" Ø L.R. STRANDS	NO.	90	180	90	360



FIXED END
(TYPE I - 66 REQ'D.)

ELASTOMERIC BEARING DETAILS

BILL OF MATERIAL FOR ONE 55'-0" INTERIOR CORED SLAB SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B2	4	#4	STR	28'-3"	75
S1	8	#5	3	4'-3"	35
S2	114	#4	3	5'-4"	406
REINFORCING STEEL				LBS.	516
7000 P.S.I. CONCRETE				C. Y.	7.4
0.6" Ø L.R. STRANDS				NO.	20

BILL OF MATERIAL FOR ONE 55'-0" EXTERIOR CORED SLAB SECTION					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B2	4	#4	STR	28'-3"	75
S1	8	#5	3	4'-3"	35
S2	114	#4	3	5'-4"	406
* S3	64	#5	1	5'-2"	345
REINFORCING STEEL				LBS.	516
*EPOXY COATED REINFORCING STEEL				LBS.	345
7000 P.S.I. CONCRETE				C. Y.	7.4
0.6" Ø L.R. STRANDS				NO.	20

BILL OF MATERIAL FOR CONCRETE BARRIER RAIL					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B3	64	#5	STR	17'-1"	1140
* B4	32	#5	STR	27'-1"	904
* S4	304	#5	2	5'-5"	1718
*EPOXY COATED REINFORCING STEEL				LBS.	3762
CLASS AA CONCRETE				C. Y.	27.3
TOTAL LIN. FT. OF CONCRETE BARRIER RAIL					250.0

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

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 DOWEL 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 SIDEWAYS. 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 FOR 35' SPANS AND 5000 PSI FOR 55' SPANS.

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.

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.

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BILL OF MATERIALS

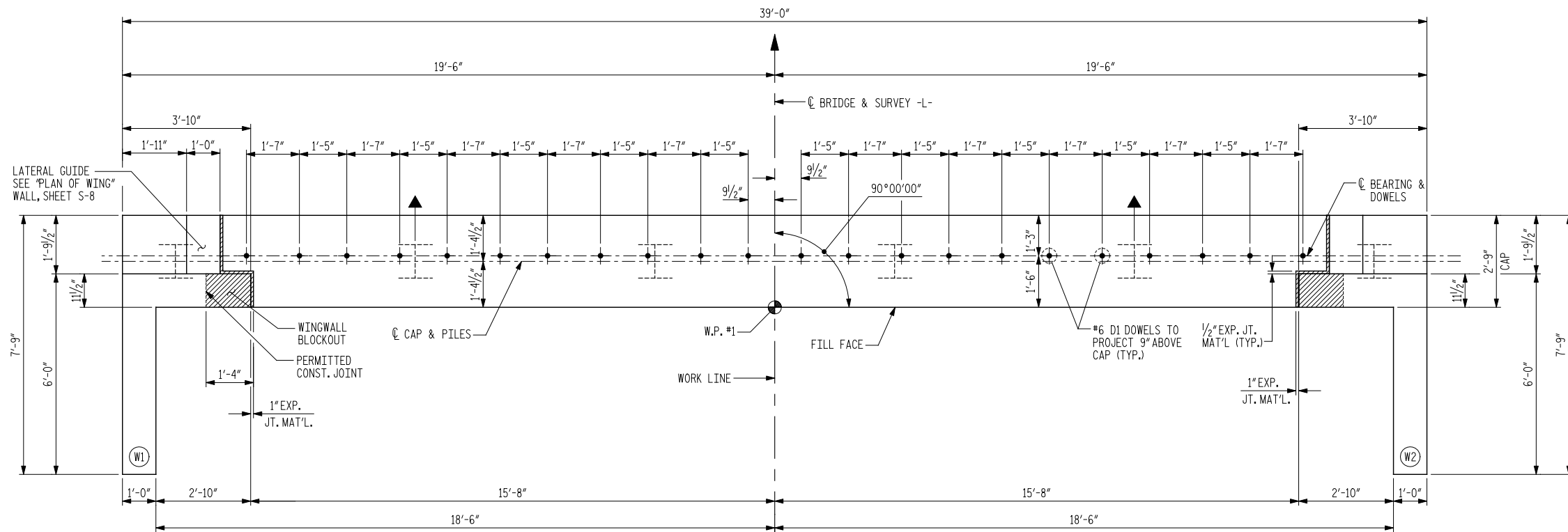
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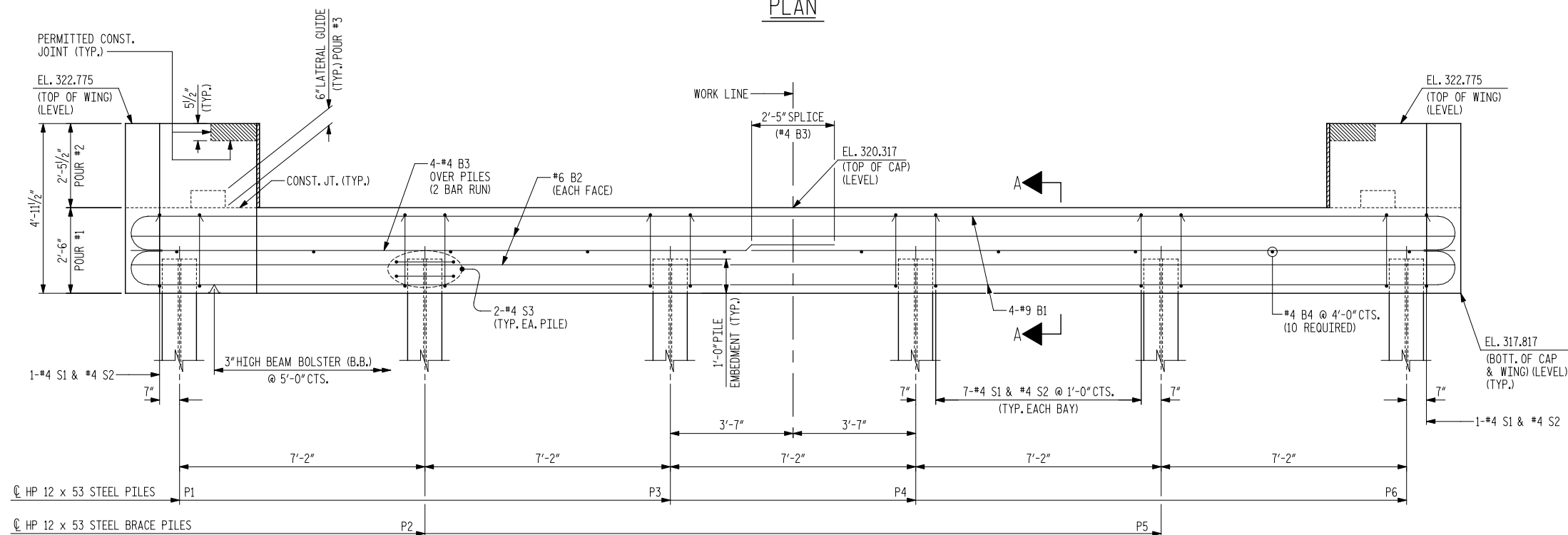
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PLAN



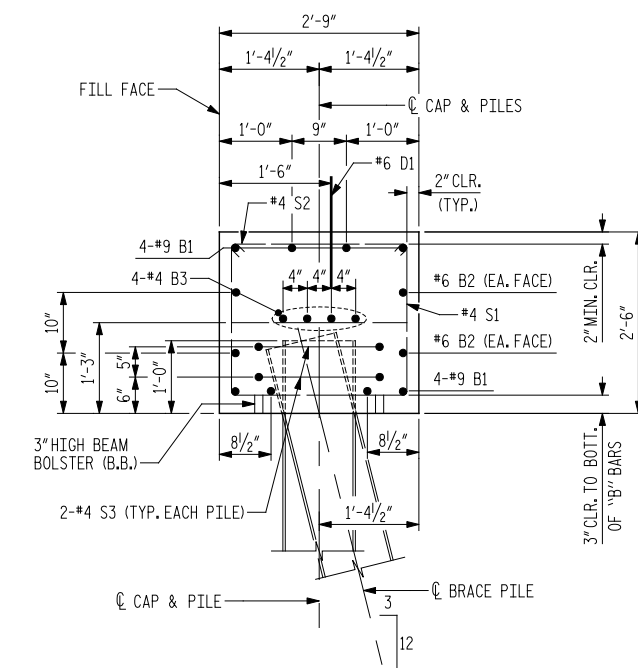
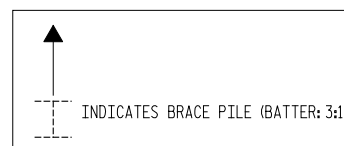
ELEVATION

NOTES:

STIRRUPS IN CAP MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.

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

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDES IF APPROVED BY THE ENGINEER.



SECTION A-A

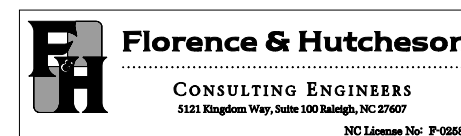
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COUNTY: ANSON
STATION: 16+07.50

SHEET 1 OF 3

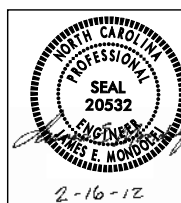
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RALEIGH

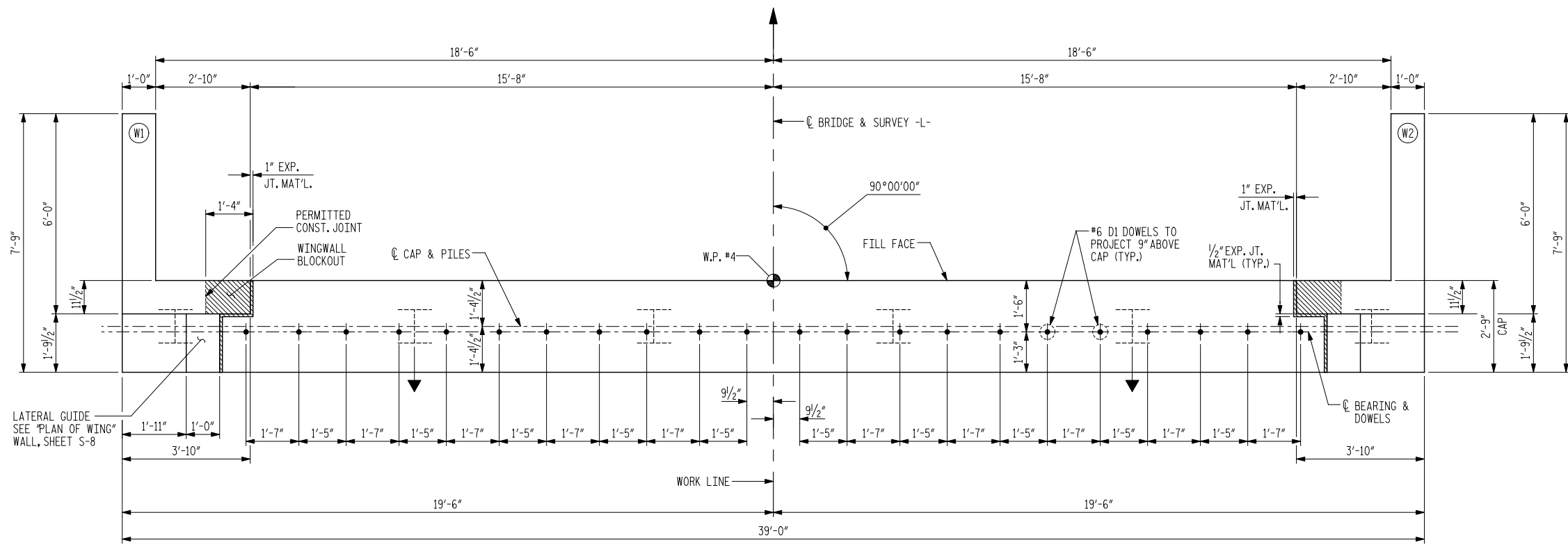
SUBSTRUCTURE
END BENT 1

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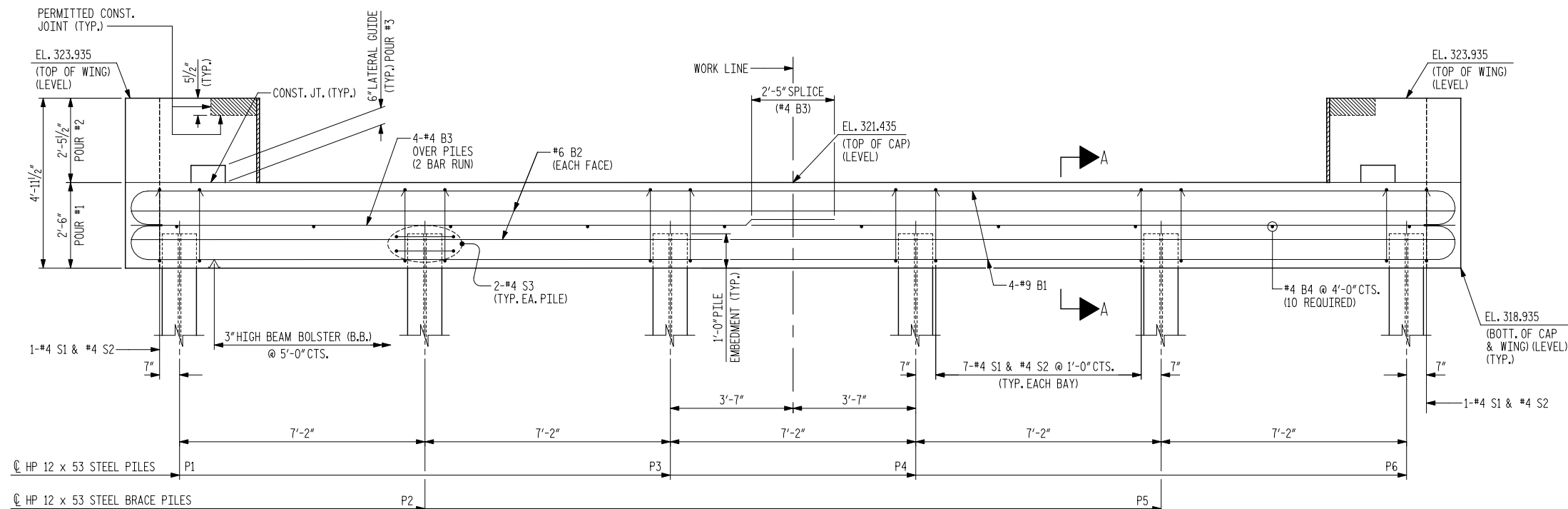


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PLAN



ELEVATION

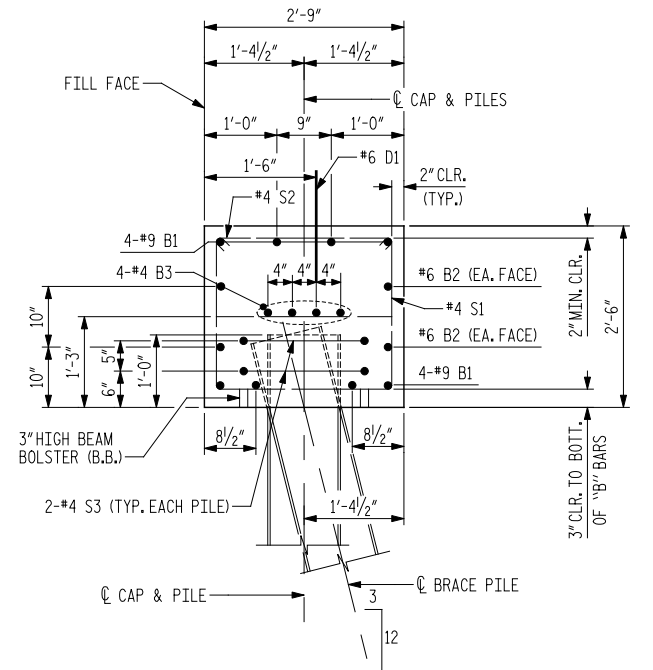
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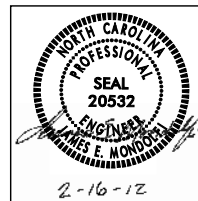
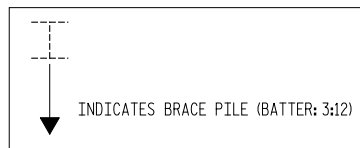
THE CONCRETE IN THE SHADED AREA OF THE WING SHALL BE POURED AFTER THE BARRIER RAIL IS CAST IF SLIP FORMING IS USED.

THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDES IF APPROVED BY THE ENGINEER.

NOT TO SCALE



SECTION A-A



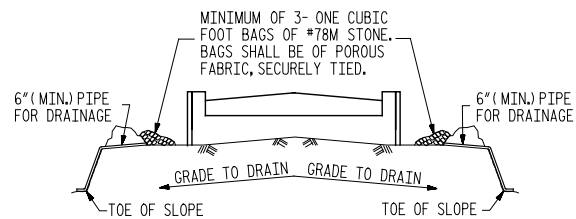
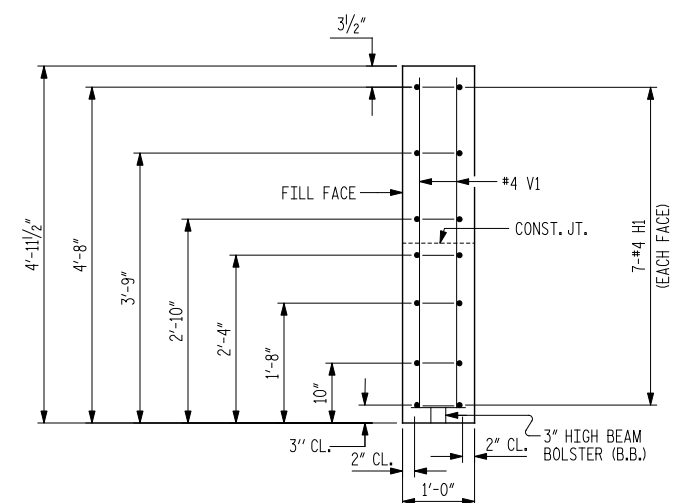
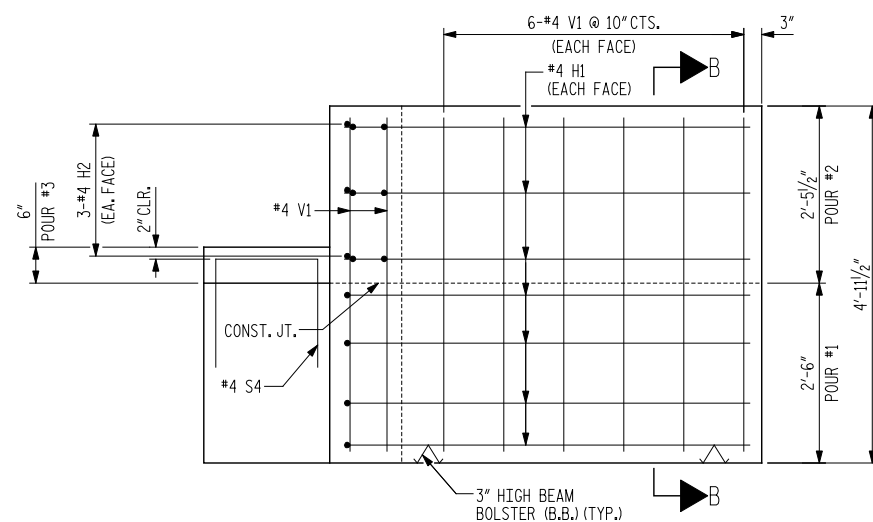
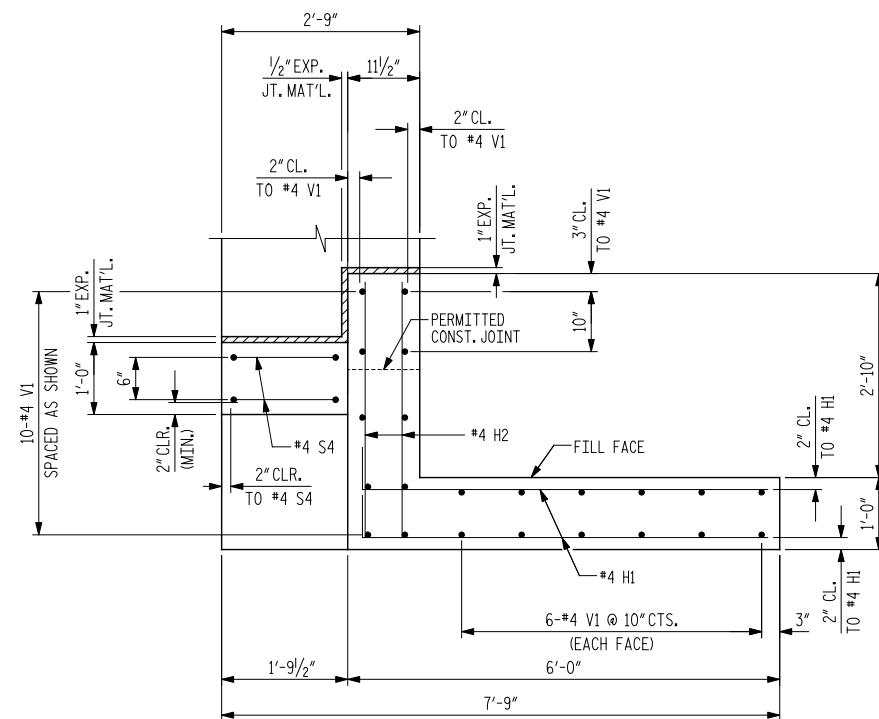
PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 2 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT 2					
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2			4		
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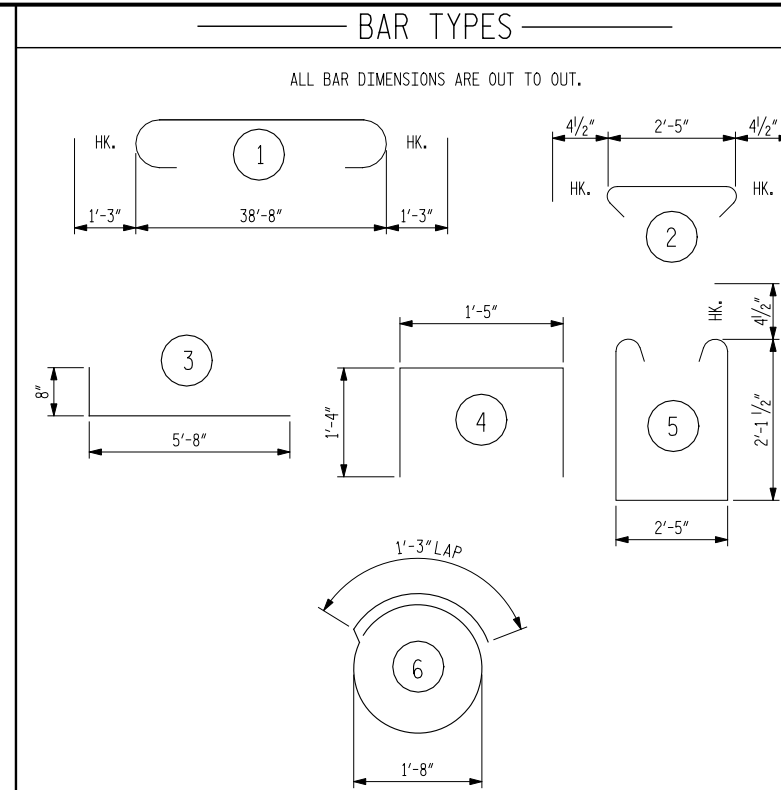
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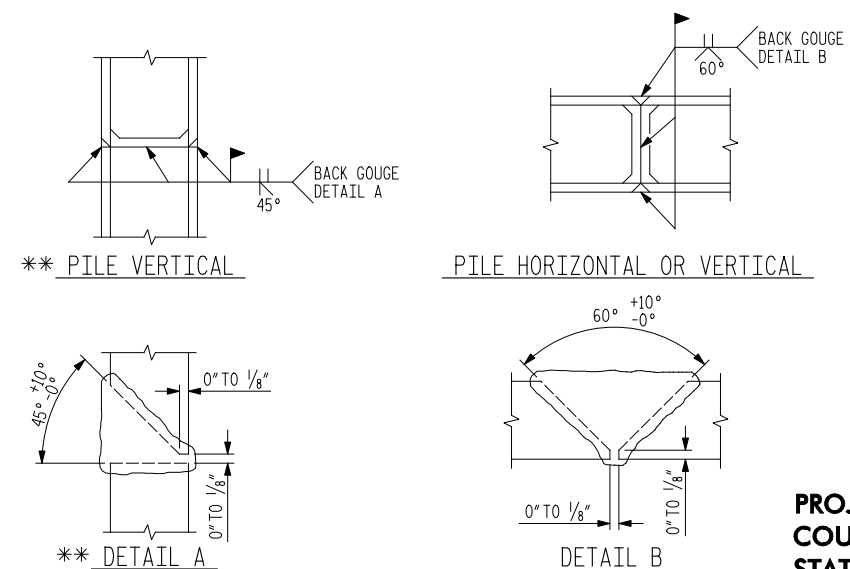
BAGGED STONE AND PIPE SHALL BE PLACED IMMEDIATELY AFTER COMPLETION OF END BENT EXCAVATION. PIPE MAY BE EITHER CONCRETE, CORRUGATED STEEL, CORRUGATED ALUMINUM ALLOY, OR CORRUGATED PLASTIC. PERFORATED PIPE WILL NOT BE ALLOWED.

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.



BILL OF MATERIAL					
FOR ONE END BENT (2 REQUIRED)					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	#9	1	41'-2"	1120
B2	4	#6	STR	38'-8"	232
B3	8	#4	STR	20'-7"	110
B4	14	#4	STR	2'-5"	23
D1	22	#6	STR	1'-6"	50
H1	28	#4	3	6'-4"	118
H2	12	#4	STR	3'-6"	28
S1	37	#4	5	7'-5"	183
S2	37	#4	2	3'-2"	78
S3	12	#4	6	6'-6"	52
S4	4	#4	4	4'-1"	11
V1	44	#4	STR	4'-9"	140
REINFORCING STEEL TOTAL				LBS.	2,145
POUR #1 CAP & BOTTOM OF WINGS				10.9	CY
POUR #2 TOP OF WINGS				1.6	CY
POUR #3 LATERAL GUIDES				0.1	CY
TOTAL				12.6	CY



** POSITION OF PILE DURING WELDING

PILE SPLICE DETAILS

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUBSTRUCTURE END BENT DETAILS

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

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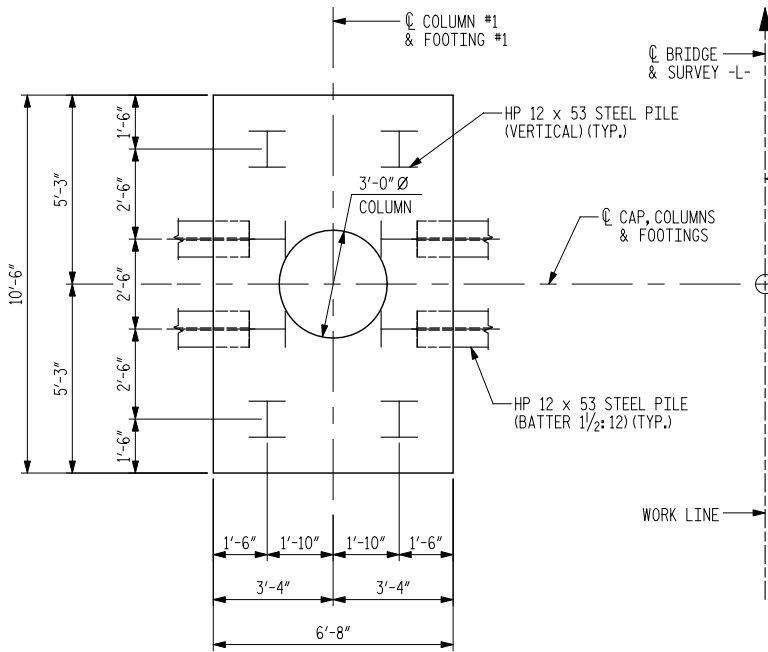
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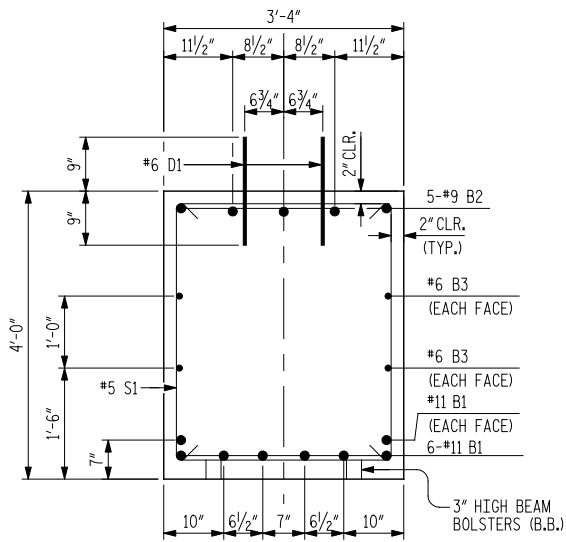
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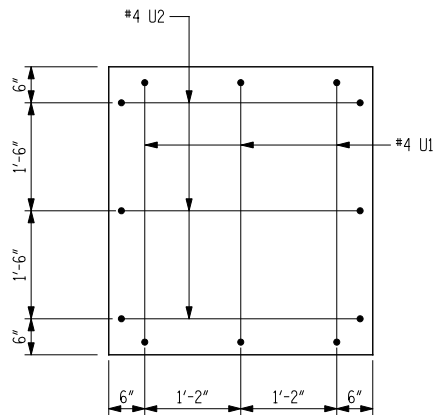


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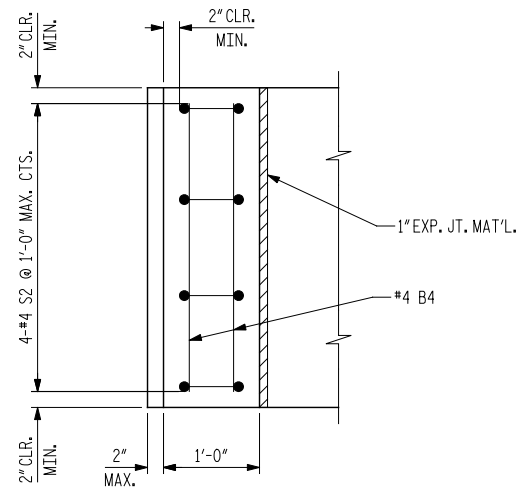
DETAILS SHOWN FOR FOOTINGS AND COLUMNS ARE TYPICAL.



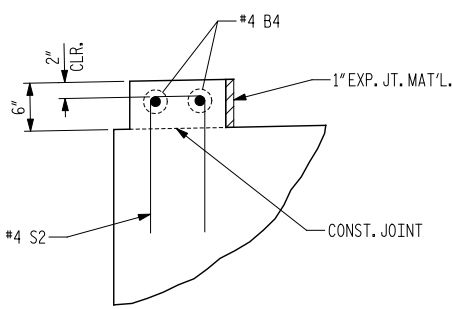
SECTION A-A



CAP END VIEW

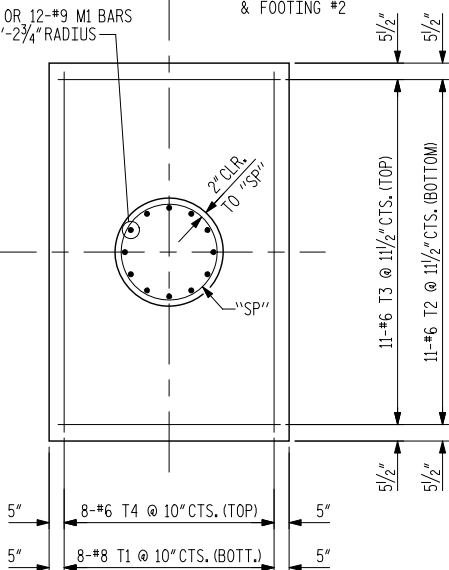


PLAN



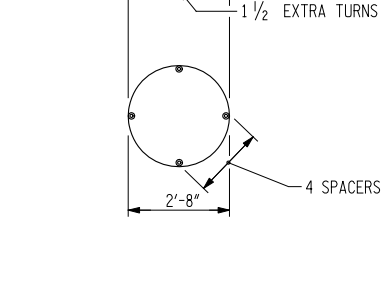
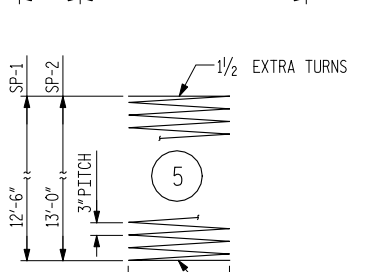
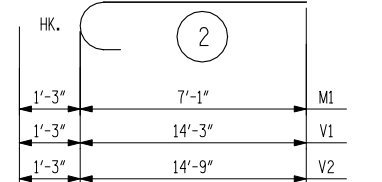
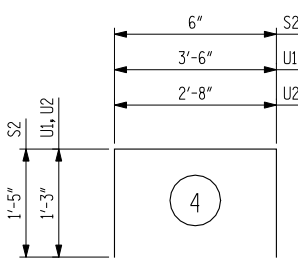
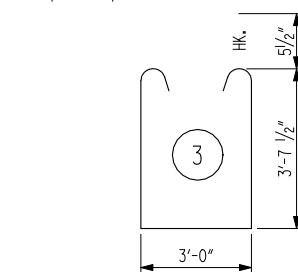
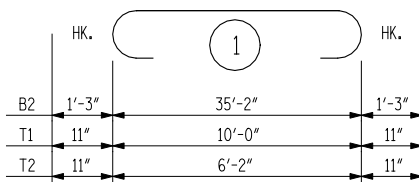
ELEVATION

DETAIL "A"



BAR TYPES

ALL BAR DIMENSIONS ARE OUT TO OUT.



BILL OF MATERIAL

BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	11	STR	35'-2"	1495
B2	5	9	1	37'-8"	640
B3	4	6	STR	35'-2"	211
B4	4	4	STR	3'-0"	8

D1	44	6	STR	1'-6"	99
----	----	---	-----	-------	----

M1	24	9	2	8'-4"	680
----	----	---	---	-------	-----

S1	50	5	3	11'-2"	582
----	----	---	---	--------	-----

S2	8	4	4	3'-4"	18
----	---	---	---	-------	----

T1	16	8	1	11'-10"	506
----	----	---	---	---------	-----

T2	22	8	1	8'-0"	470
----	----	---	---	-------	-----

T3	22	6	STR	6'-2"	204
----	----	---	-----	-------	-----

T4	16	6	STR	10'-0"	240
----	----	---	-----	--------	-----

U1	6	4	4	6'-0"	24
----	---	---	---	-------	----

U2	6	4	4	5'-2"	21
----	---	---	---	-------	----

V1	24	9	2	15'-6"	1,265
----	----	---	---	--------	-------

REINFORCING STEEL TOTAL					6,463 LB
-------------------------	--	--	--	--	----------

SPIRAL COLUMN REINFORCING STEEL					
---------------------------------	--	--	--	--	--

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-1	2	**	5	437'-3"	584

SPIRAL COLUMN REINFORCING STEEL TOTAL					584 LB
---------------------------------------	--	--	--	--	--------

POUR #1 FOOTING					18.1 CY
-----------------	--	--	--	--	---------

POUR #2 COLUMN					6.4 CY
----------------	--	--	--	--	--------

POUR #3 CAP					17.5 CY
-------------	--	--	--	--	---------

POUR #4 LATERAL GUIDE					0.1 CY
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TOTAL CY					42.1
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BILL OF MATERIAL

BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	8	11	STR	35'-2"	1495
B2	5	9	1	37'-8"	640
B3	4	6	STR	35'-2"	211
B4	4	4	STR	3'-0"	8

D1	44	6	STR	1'-6"	99
----	----	---	-----	-------	----

M1	24	9	2	8'-4"	680
----	----	---	---	-------	-----

S1	50	5	3	11'-2"	582
----	----	---	---	--------	-----

S2	8	4	4	3'-4"	18
----	---	---	---	-------	----

T1	16	8	1	11'-10"	506
----	----	---	---	---------	-----

T2	22	8	1	8'-0"	470
----	----	---	---	-------	-----

T3	22	6	STR	6'-2"	204
----	----	---	-----	-------	-----

T4	16	6	STR	10'-0"	240
----	----	---	-----	--------	-----

U1	6	4	4	6'-0"	24
----	---	---	---	-------	----

U2	6	4	4	5'-2"	21
----	---	---	---	-------	----

V2	24	9	2	16'-0"	1,306
----	----	---	---	--------	-------

REINFORCING STEEL TOTAL					6,504 LB
-------------------------	--	--	--	--	----------

SPIRAL COLUMN REINFORCING STEEL					
---------------------------------	--	--	--	--	--

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
SP-2	2	**	5	453'-9"	606

SPIRAL COLUMN REINFORCING STEEL TOTAL					606 LB
---------------------------------------	--	--	--	--	--------

POUR #1 FOOTING					18.1 CY
-----------------	--	--	--	--	---------

POUR #2 COLUMN					6.7 CY
----------------	--	--	--	--	--------

POUR #3 CAP					17.5 CY
-------------	--	--	--	--	---------

POUR #4 LATERAL GUIDE					0.1 CY
-----------------------	--	--	--	--	--------

TOTAL CY					42.4
----------	--	--	--	--	------

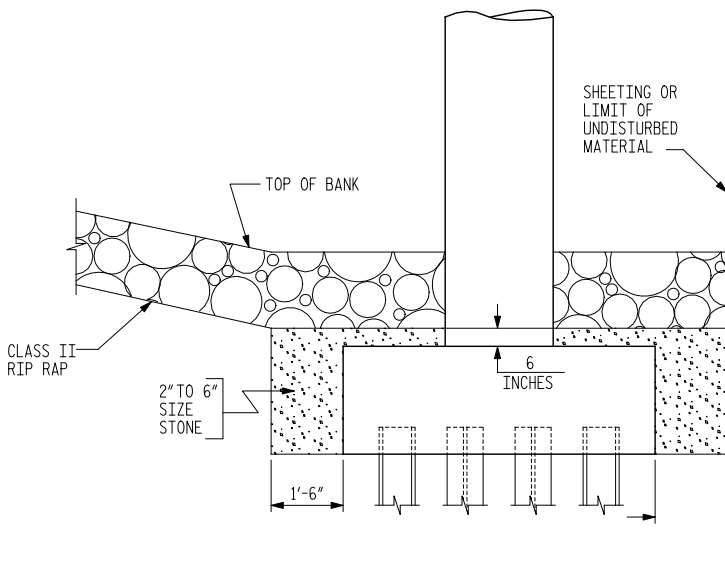
** NOTE: THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.

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 FOOTING FORMWORK HAS BEEN REMOVED AND WHILE THE EXCAVATION IS DEWATERED. THE RIP RAP STONE SHALL BE PLACED BEFORE COFFERDAM SHEETING IS REMOVED. EITHER BEFORE OR AFTER THE EXCAVATION IS ALLOWED TO FLOOD. WHEN NO SHEETING IS USED, EACH STONE TYPE SHALL BE PLACED TO THE REQUIRED THICKNESS AND SHALL EXTEND HORIZONTALLY TO THE UNDISTURBED MATERIAL.

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.

THE COST OF THE ABOVE 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. FOUNDATION EXCAVATION COST SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EXCAVATION AND EMBANKMENT.



PIER SCOUR PROTECTION

(BENT #1 SHOWN, BENT #2 SIMILAR)

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

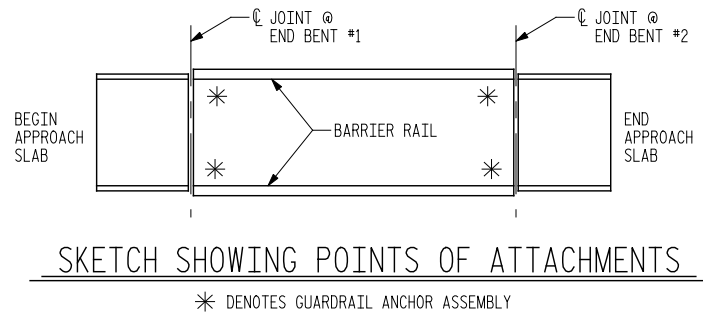
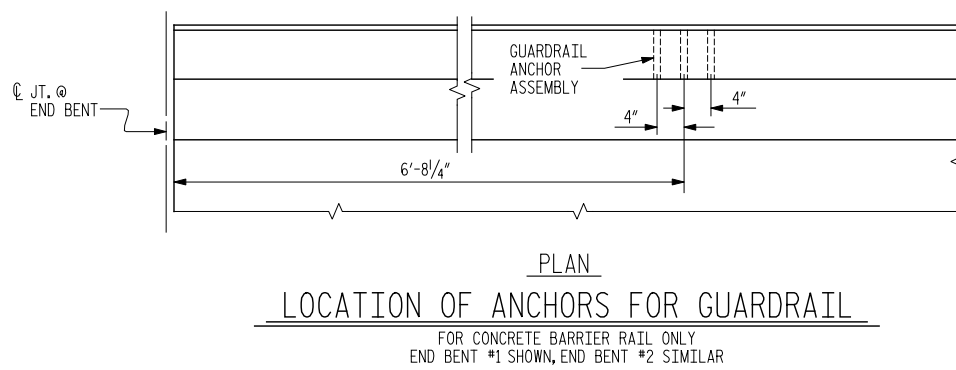
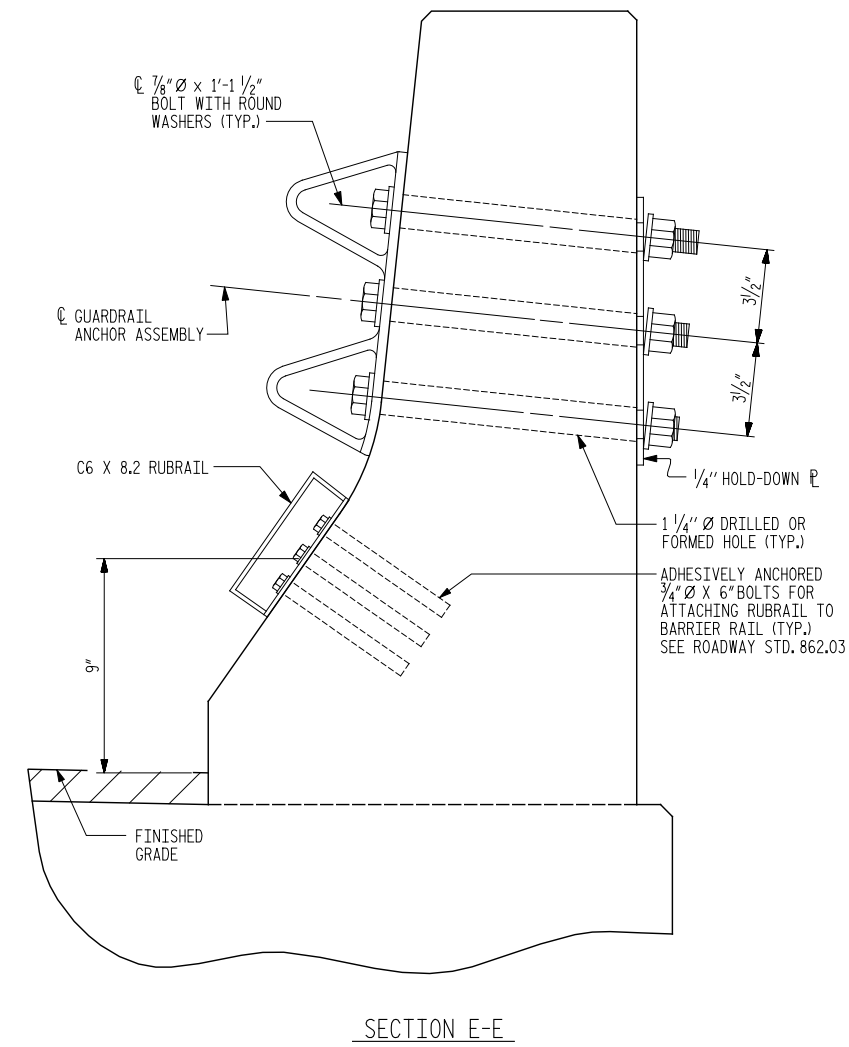
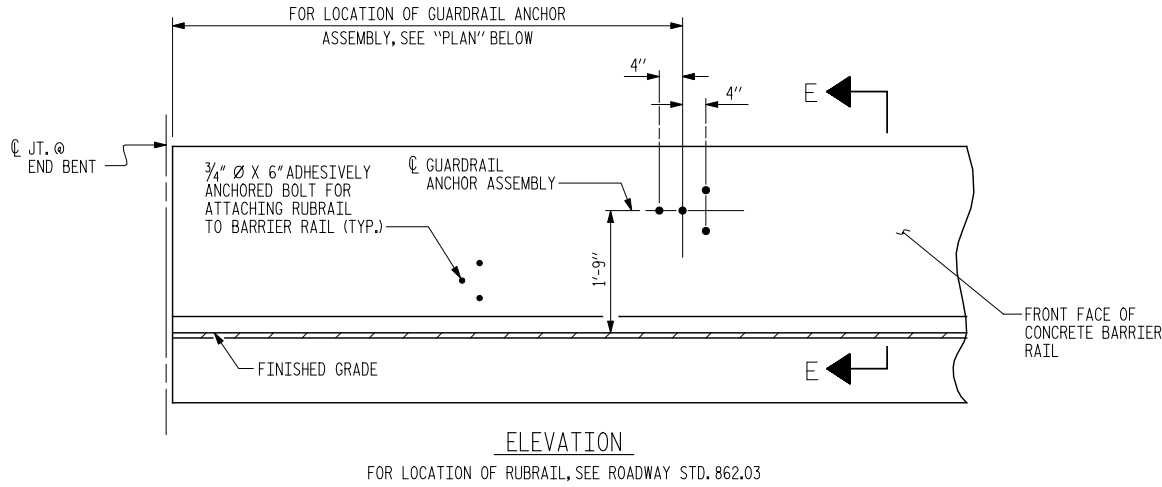
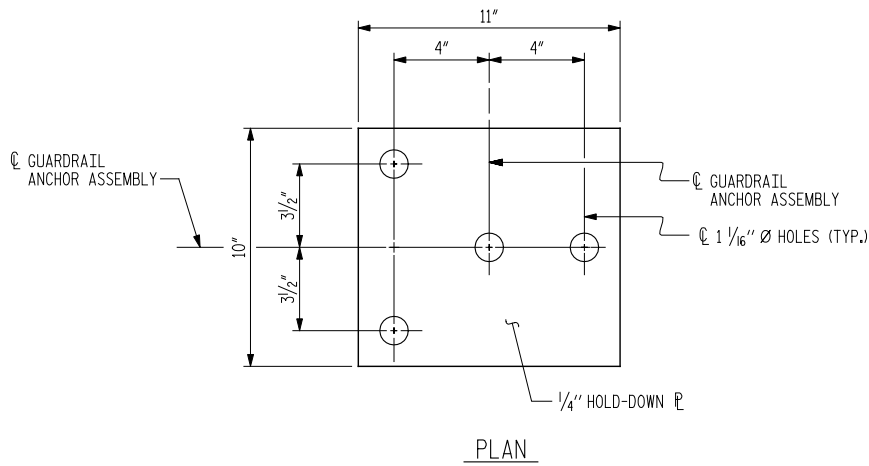
SUBSTRUCTURE
BENT DETAILS

REVISIONS						SHEET NO. S-11	TOTAL SHEETS 15
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2			4				

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NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 1/8" 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 M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. 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 1/8" 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 COCONCRETE 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 FORMED OR 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.

GUARDRAIL ANCHOR ASSEMBLY DETAILS

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

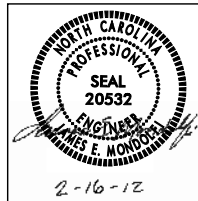
PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 1 OF 2 REPLACES BRIDGE NO. 22

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
GUARDRAIL ANCHORAGE DETAILS

REVISIONS						SHEET NO. S-12	TOTAL SHEETS 15
NO.	BY	DATE	NO.	BY	DATE		
1			3				
2			4				



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NOT TO SCALE

STD. NO. GRA2

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DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

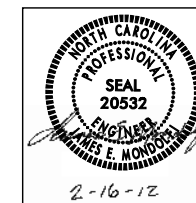


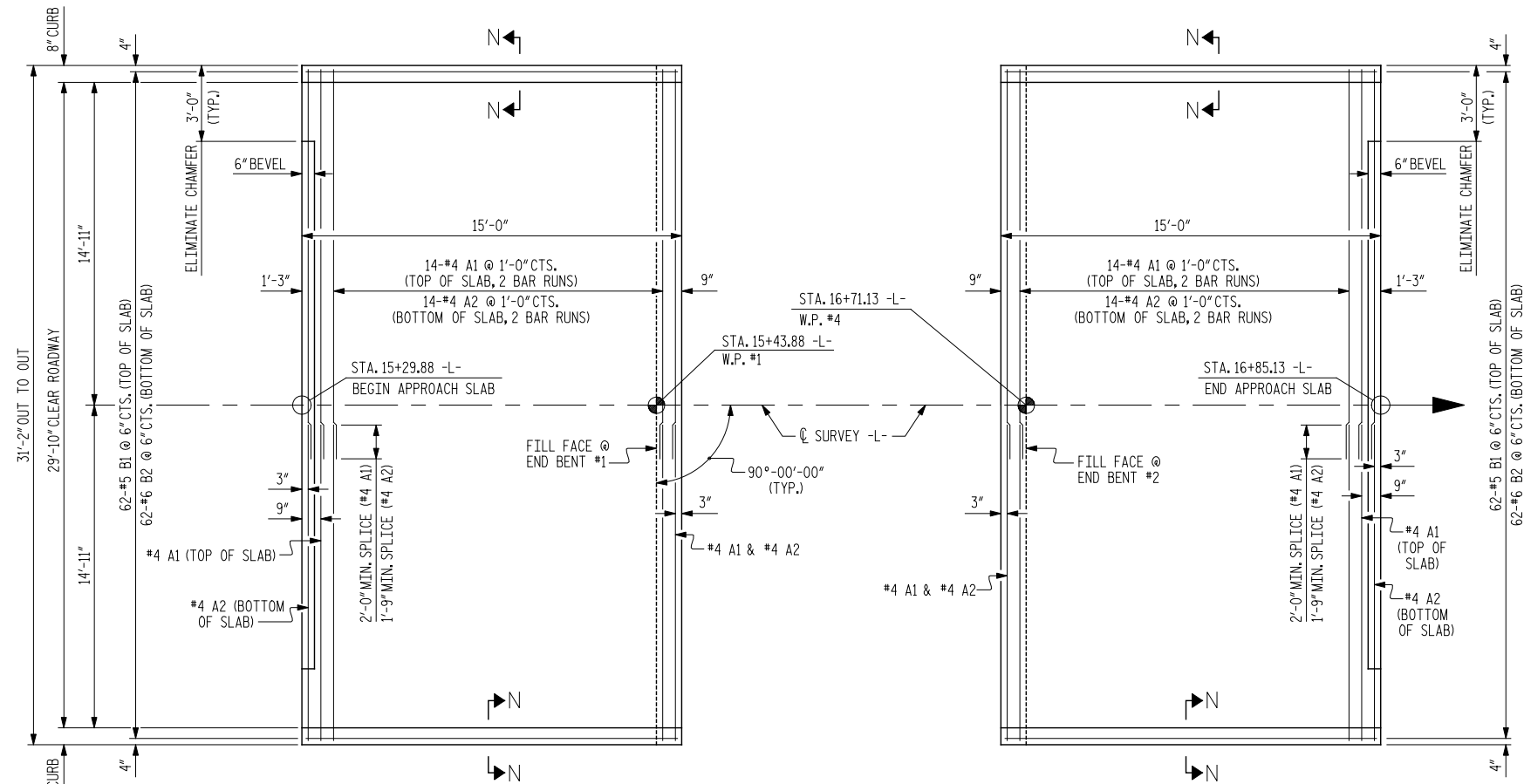
PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

RIP RAP DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-13
1			3			TOTAL SHEETS
2			4			15



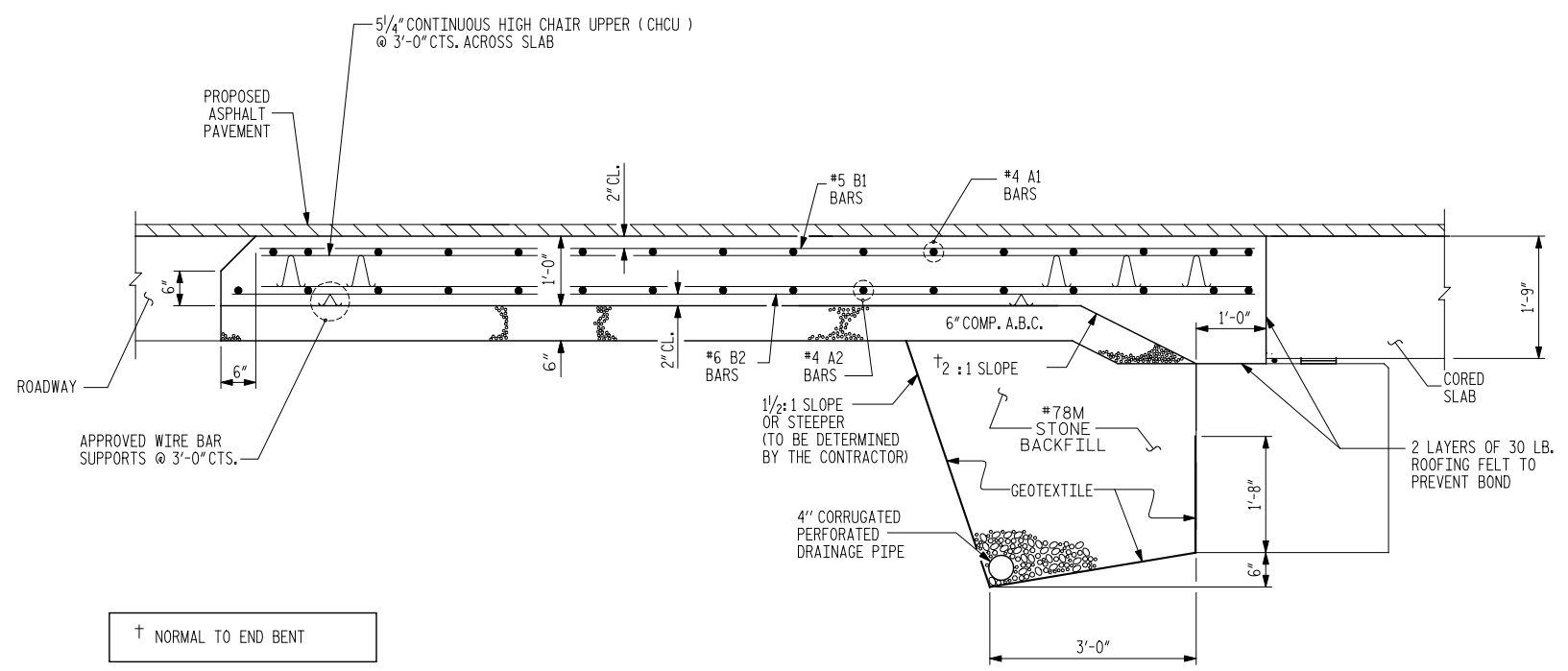


AT END BENT #1

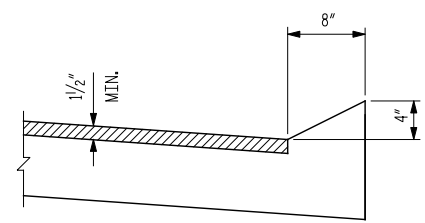
AT END BENT #2

PLAN OF APPROACH SLABS

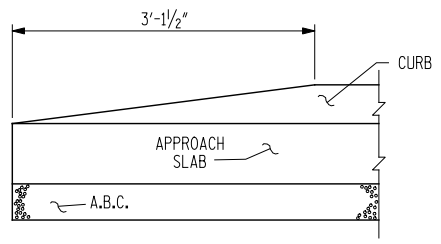
DIMENSIONS ARE TYPICAL FOR BOTH APPROACH SLABS



SECTION THRU SLAB



SECTION N-N



END OF CURB WITHOUT SHOULDER BERM GUTTER

CURB DETAILS

NOTES

FOR BRIDGE APPROACH FILL INCLUDING FABRIC, 4"Ø DRAINAGE PIPE, 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 GEOTEXTILE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS SECTION 1056.

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

*78M STONE BACKFILL IS TO BE CONTINUOUS ALONG FILL FACE OF END BENT CAP FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.

*78 STONE BACKFILL, 4"Ø DRAINAGE PIPE AND FABRIC SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR APPROACH SLABS.

FOR THE 4"Ø DRAINAGE PIPE OUTLET(S), SEE "BRIDGE APPROACH FILLS", ROADWAY STANDARD DRAWING 422.11.

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 B-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.

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

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

APPROACH SLAB GROOVING IS NOT REQUIRED.

BILL OF MATERIAL

APPROACH SLAB AT END BENT #1

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	16'-5"	351
A2	32	#4	STR	16'-4"	349
*B1	62	#5	STR	14'-3"	921
B2	62	#6	STR	14'-8"	1,366

REINFORCING STEEL	LBS.	1,715
*EPOXY COATED REINFORCING STEEL	LBS.	1,272

CLASS AA CONCRETE		
AT END BENT #1	C. Y.	19.0

APPROACH SLAB AT END BENT #2

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	32	#4	STR	16'-5"	351
A2	32	#4	STR	16'-4"	349
*B1	62	#5	STR	14'-3"	921
B2	62	#6	STR	14'-8"	1,366

REINFORCING STEEL	LBS.	1,715
*EPOXY COATED REINFORCING STEEL	LBS.	1,272

CLASS AA CONCRETE		
AT END BENT #2	C. Y.	19.0

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH SLAB
29'-10" CLEAR ROADWAY
90° SKEW

REVISIONS						SHEET NO. S-14	TOTAL SHEETS 15
NO.	BY	DATE	NO.	BY	DATE		
1			3				
2			4				



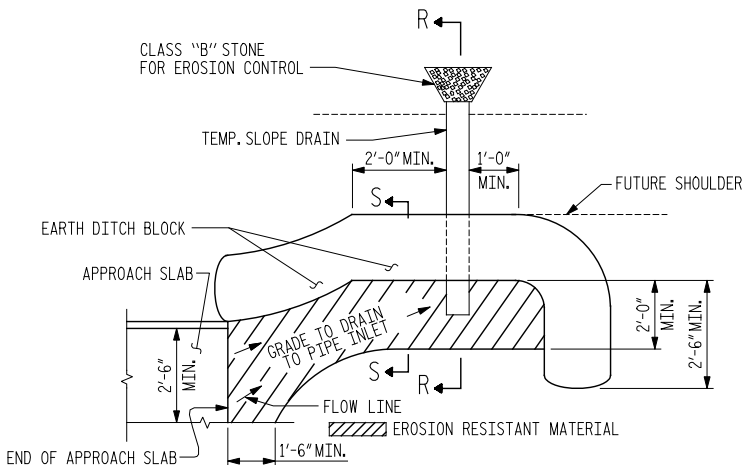
FH Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingdom Way, Suite 100 Raleigh, NC 27607
NC License No: F-0268

NOT TO SCALE

STD. NO. BAS13

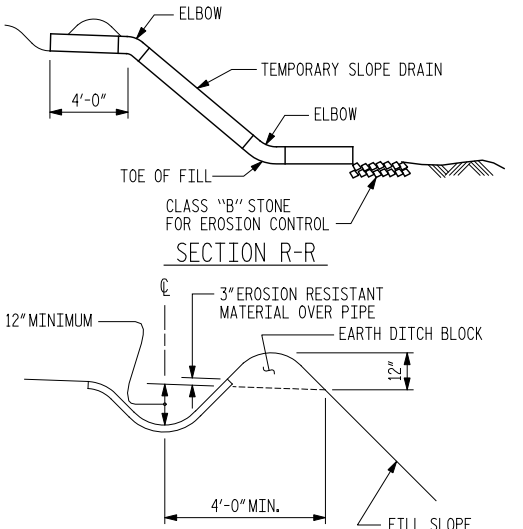
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DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

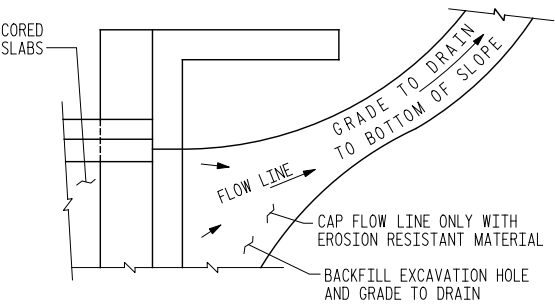


NOTE: IMMEDIATELY AFTER THE CONSTRUCTION OF THE APPROACH SLAB, THE CONTRACTOR SHALL PROVIDE TEMPORARY BERM AND SLOPE DRAIN. CONTRACTOR SHALL GRADE TO PIPE INLET AND PROVIDE EROSION RESISTANT MATERIAL AS SHOWN. THE EROSION RESISTANT MATERIAL SHALL BE EITHER 1) ASPHALT PLANT MIX, TYPE 1 OR TYPE 2, MIN. 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 R-R



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

TEMPORARY BERM AND SLOPE DRAIN DETAILS

(TO BE USED WHEN SHOULDER BERM GUTTER IS REQUIRED)

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

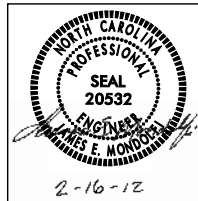
SHEET 2 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

STANDARD
BRIDGE APPROACH
SLAB DETAILS

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-15
1			3			TOTAL SHEETS 15
2			4			

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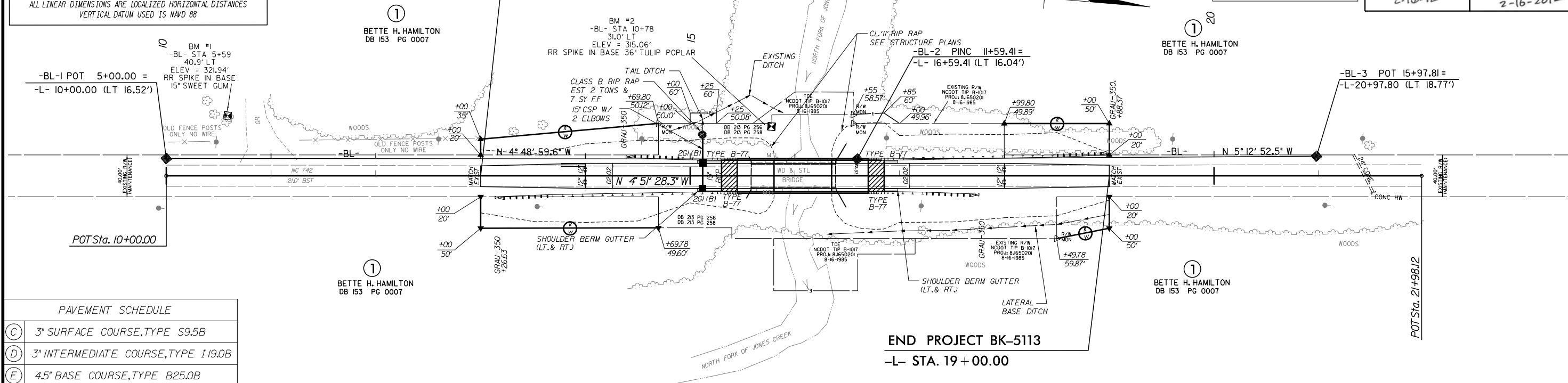
DRAWN BY: D.H. CARTER DATE: JAN 2012
CHECKED BY: J.E. MONDOLFI DATE: JAN 2012

STD. NO. BAS10

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT
IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY
ESP FOR MONUMENT "BL-1"
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 4267732954(Ft) EASTING: 16779.193675(Ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT
(GROUND TO GRID) IS: 0.999873293
THE N.C. LAMBERT GRID BEARING AND
LOCALIZED HORIZONTAL GRID DISTANCE FROM
"BL-1" TO #1 STATION 13+00.00 IS
N 1° 42' 21.9" W, 300.45'
ALL LINEAR DISTANCES ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

PARCEL NO.	PROPERTY OWNERS NAME	TOTAL ACREAGE	AREA TAKEN	AREA REMAINING RIGHT	AREA REMAINING LEFT	CONSTR. EASEMENT	PERMANENT DRAINAGE EASEMENT	TEMPORARY DRAINAGE EASEMENT
1	BETTE H HAMILTON		0.31 ac			597 sf		

—L— STA. 13 + 00.00

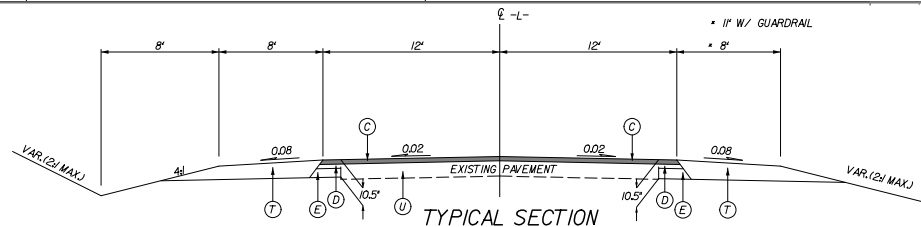


PAVEMENT SCHEDULE

(C)	3" SURFACE COURSE, TYPE S9.5B
(D)	3" INTERMEDIATE COURSE, TYPE I19.0B
(E)	4.5" BASE COURSE, TYPE B25.0B
(T)	EARTH MATERIAL
(U)	EXISTING PAVEMENT

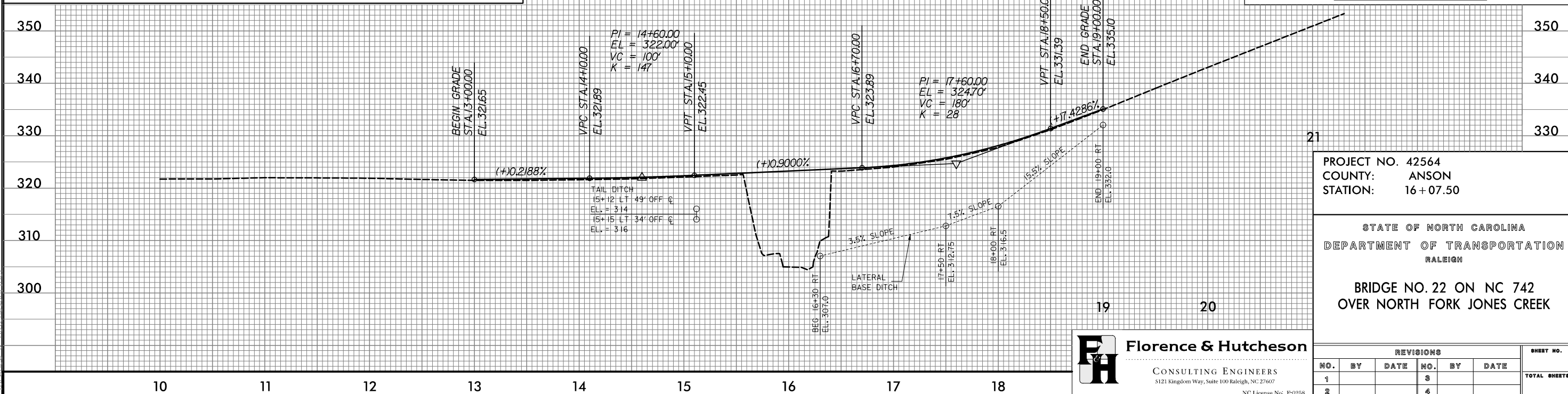
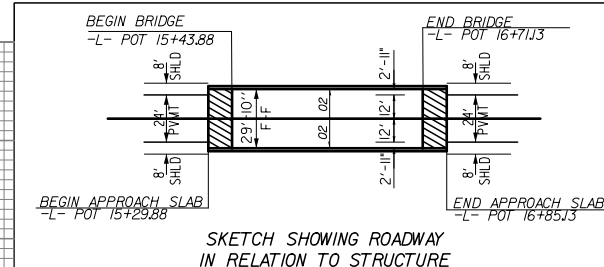
NOTE:
OVERLAY EXISTING PAVEMENT WITH A
MINIMUM OF 1.5" SURFACE COURSE, TYPE S9.5B

NOTE: PER BILL WILHELM (DIVISION 10 R/W OFFICE), THESE R/W AND EASEMENTS WERE PURCHASED IN NOVEMBER, 1985. THE PROJECT (B-107) WAS NEVER BUILT, THE R/W WAS PURCHASED IN FEE SIMPLE AND IS STILL VALID. IT IS UNCLEAR AT THIS TIME WHETHER OR NOT THE TEMPORARY EASEMENTS ARE STILL VALID AFTER 10 YEARS OF NON-USE.



BM * 1
-L- STA. 10+58.60, 57.43' LT
RR SPIKE SET IN BASE OF 15" SWEET GUM
EL. 321.94

BM * 2
-L- STA. 15+77.63, 47.09' LT
RR SPIKE SET IN BASE OF 36" TULIP POPLAR
EL. 315.06



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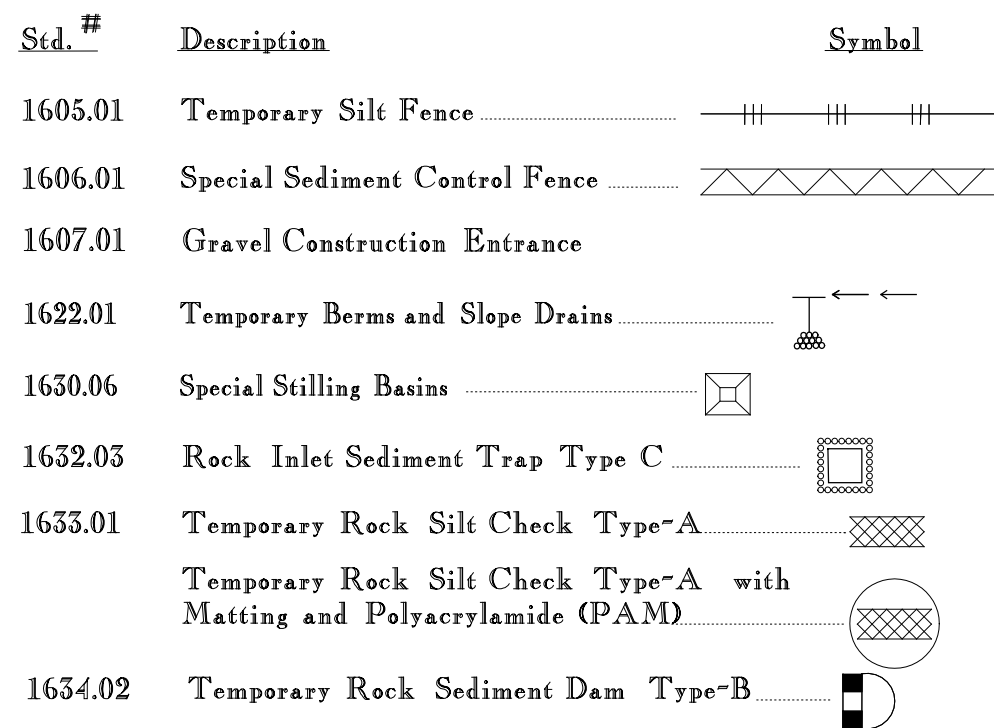
PROJECT NO. 42564
COUNTY: ANSON
STATION: 16 + 07.50

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 22 ON NC 742
OVER NORTH FORK JONES CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			

PROJECT REFERENCE NO.		SHEET NO.	
BK-5113		EC-1	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

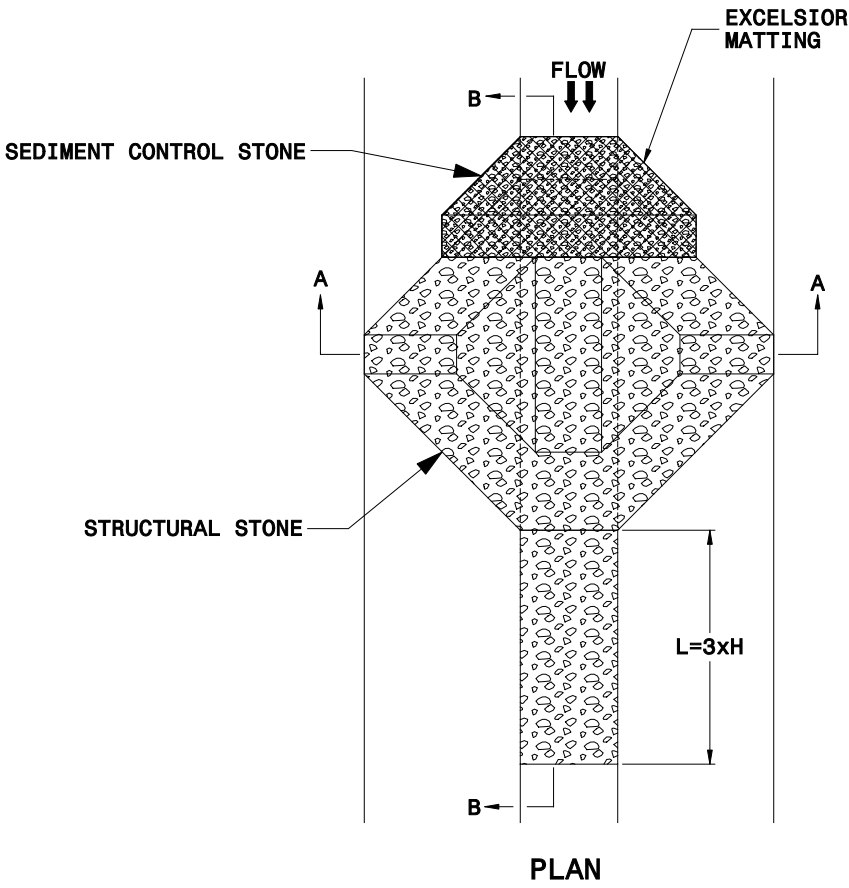


REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	1
1			3			TOTAL SHEETS
2			4			4

EROSION CONTROL PLAN

PROJECT REFERENCE NO.	SHEET NO.
BK-5113	EC-2
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

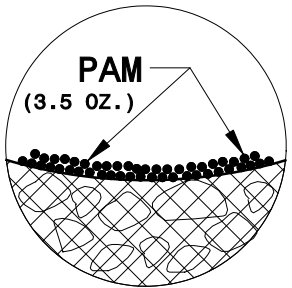


NOTES

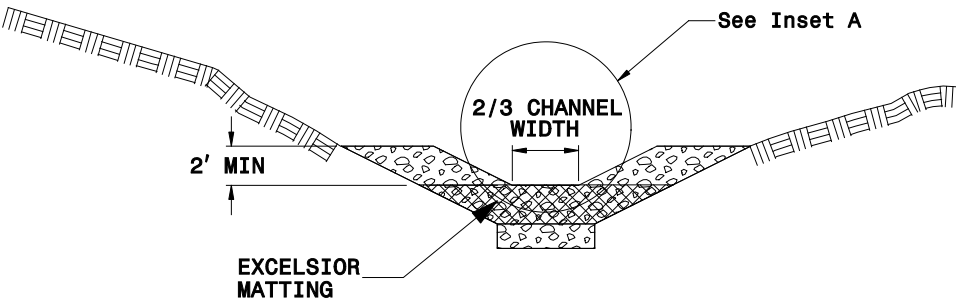
USE EXCELSIOR FOR MATTING MATERIAL AND ANCHOR MATTING SECTION AT TOP AND BOTTOM WITH CLASS B STONE.

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.

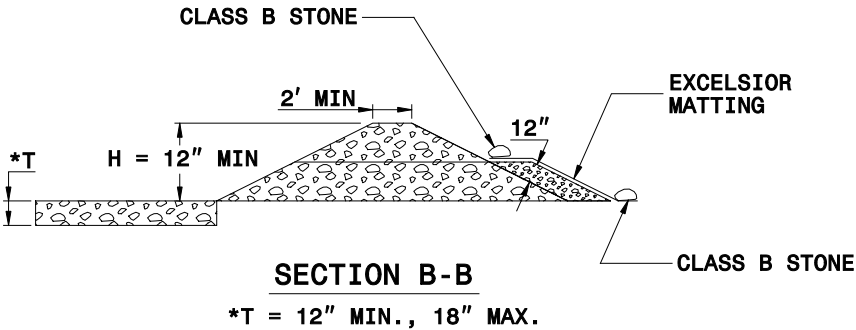
INITIALLY APPLY 3.5 OUNCES OF POLYACRYLAMIDE (PAM) TO TOP OF MATTING SECTION AND AFTER EVERY RAINFALL EVENT THAT EQUALS OR EXCEEDS 0.50 INCHES.



INSET A



SECTION A-A



SECTION B-B

NOT TO SCALE

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

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.

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50
REPLACES BRIDGE NO. 22

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 22 ON NC 742
OVER NORTH FORK JONES CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	2
1			3			TOTAL SHEETS
2			4			4

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

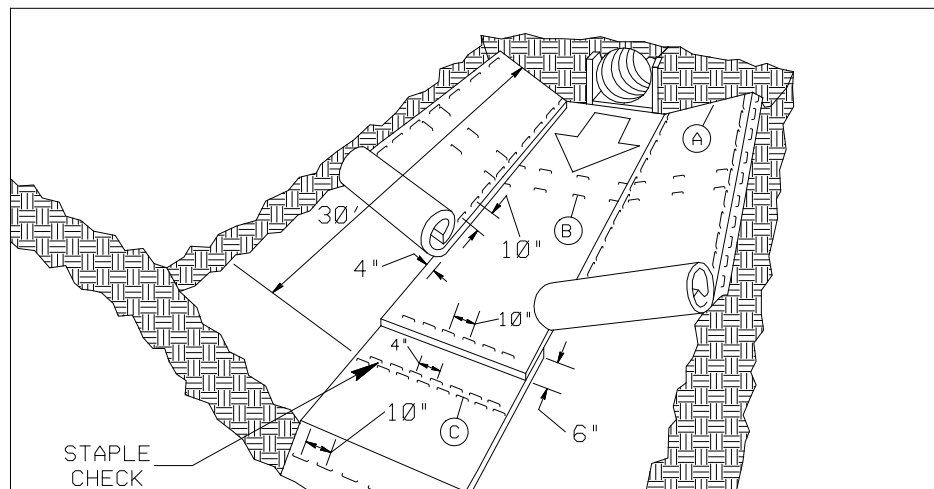
SOIL STABILIZATION TIMEFRAMES

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

EROSION CONTROL PLAN

MATTING INSTALLATION DETAIL

PROJECT REFERENCE NO.		SHEET NO.	
BK-5113		EC-4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	



MATTING IN DITCHES

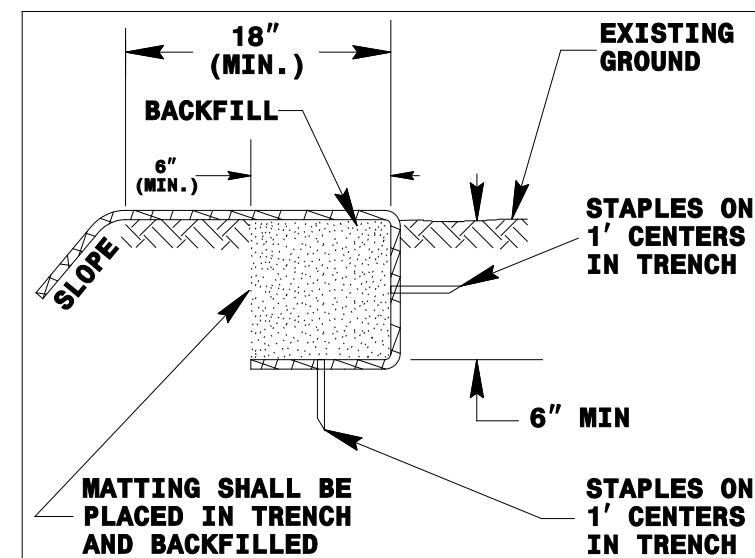
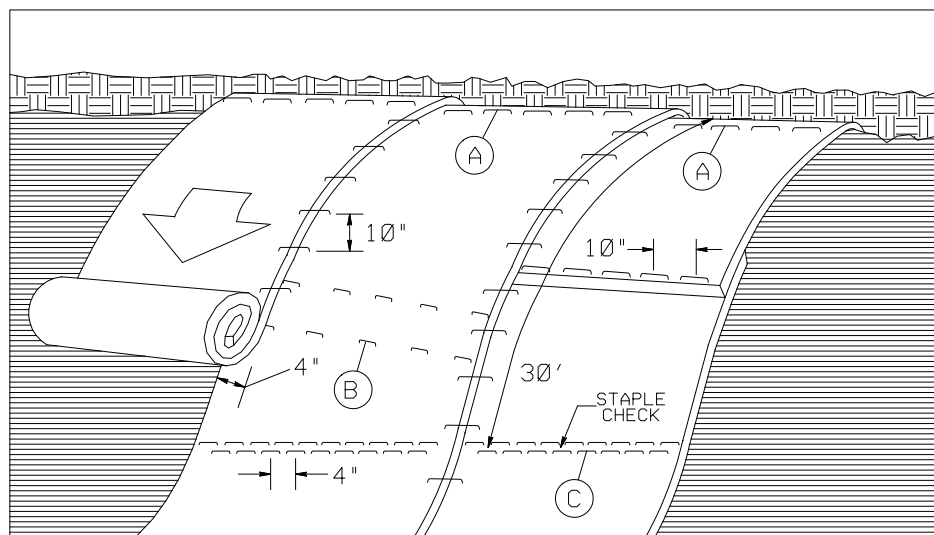


DIAGRAM (A)



MATTING ON SLOPES

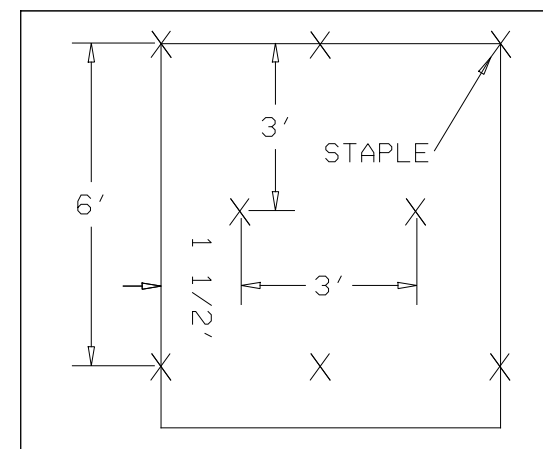


DIAGRAM (B)

STAPLE CHECK PATTERN

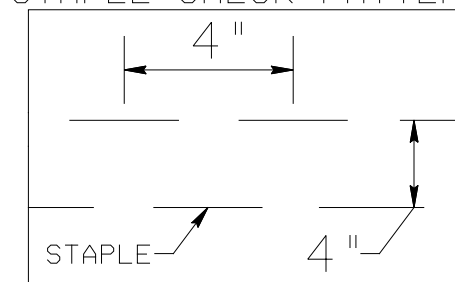


DIAGRAM (C)

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.

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

2006 STANDARD SPECIFICATIONS

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

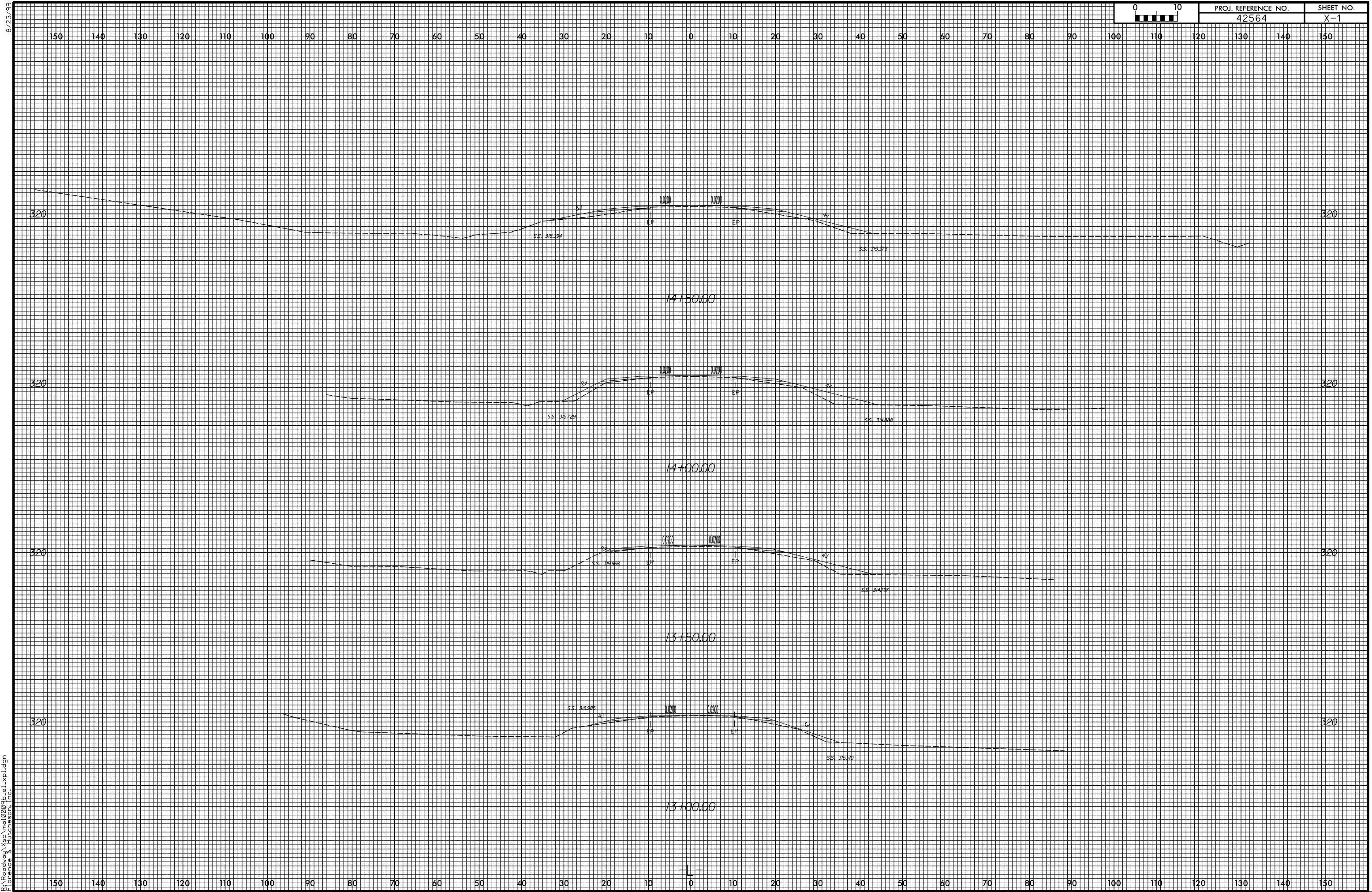
ADDITIONAL EROSION CONTROL DEVICES MAY
NEED TO BE INSTALLED AS DIRECTED BY THE
ENGINEER.

PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50
REPLACES BRIDGE NO. 22

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

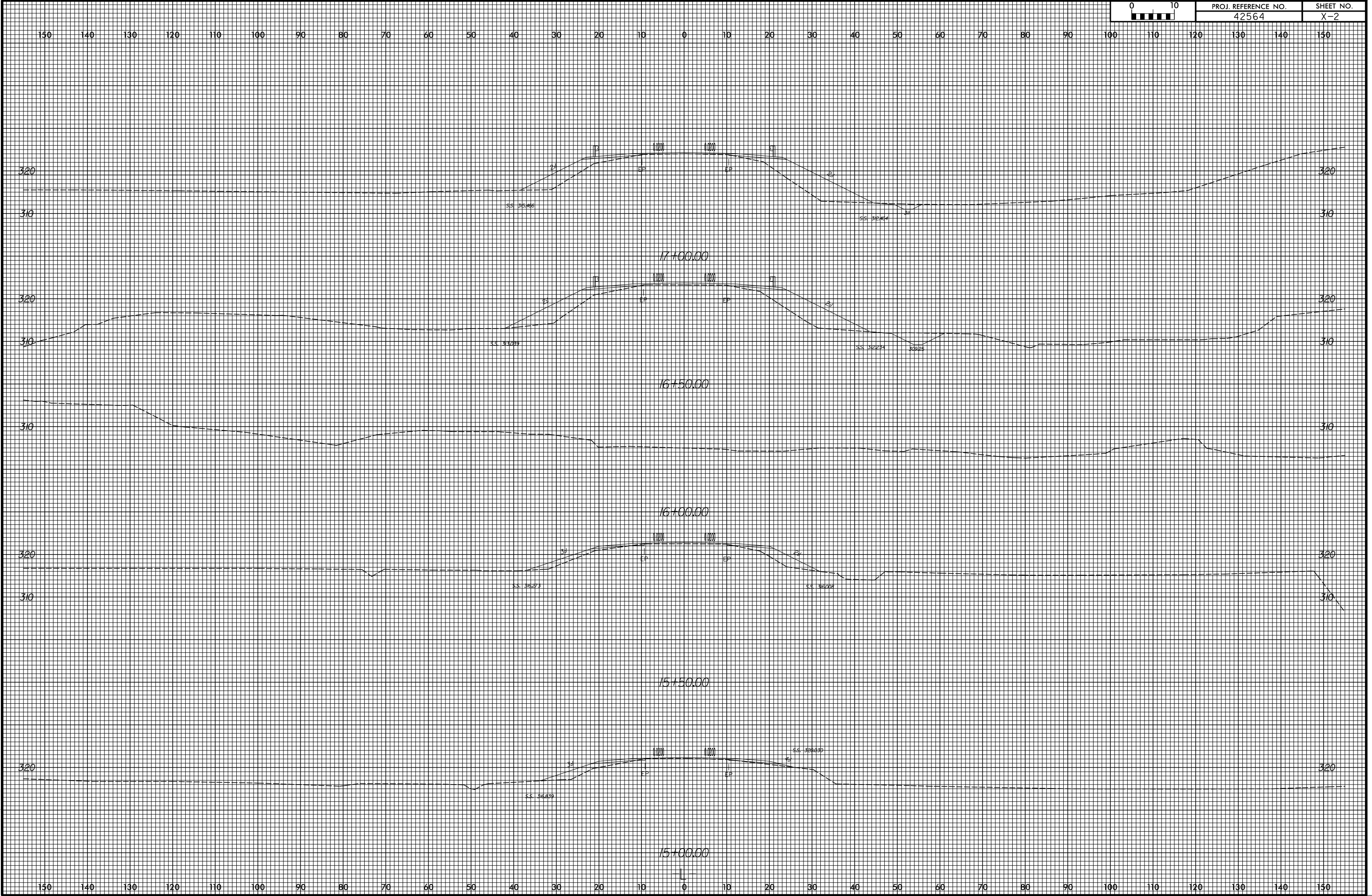
BRIDGE NO. 22 ON NC 742
OVER NORTH FORK JONES CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	4
1			3			TOTAL SHEETS
2			4			4



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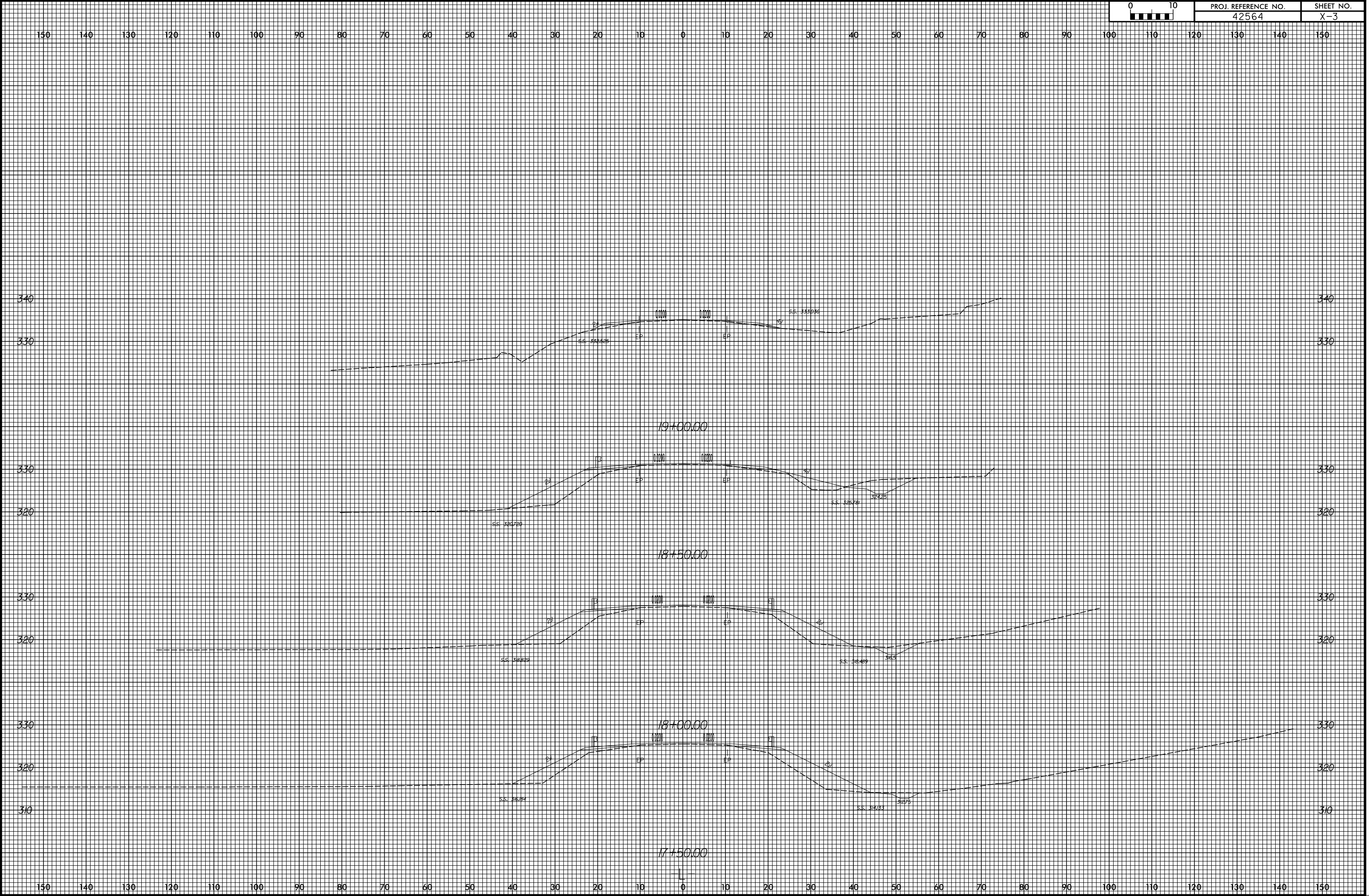


PROJ. REFERENCE NO.
42564

SHEET NO.
X-2

8/23/99

2/16/2012
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Flores & Hutchison, Inc.



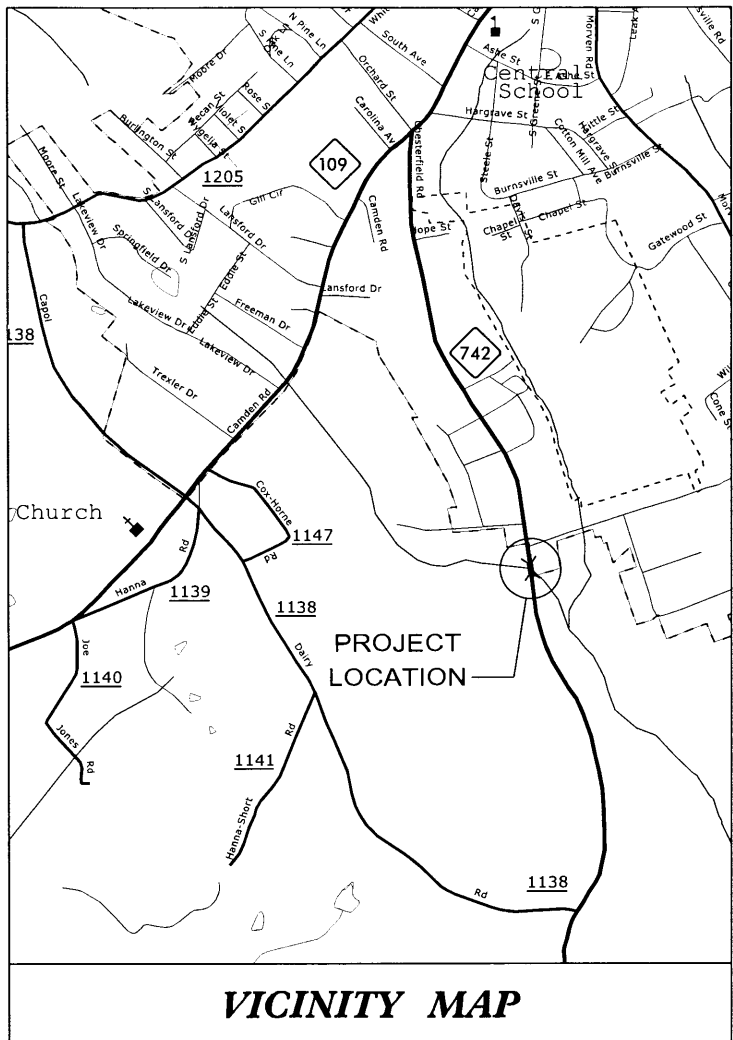
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29-06-44

CONTRACT: DO00145

TIP PROJECT: 17BP.10.H.2



VICINITY MAP

INDEX OF SHEETS

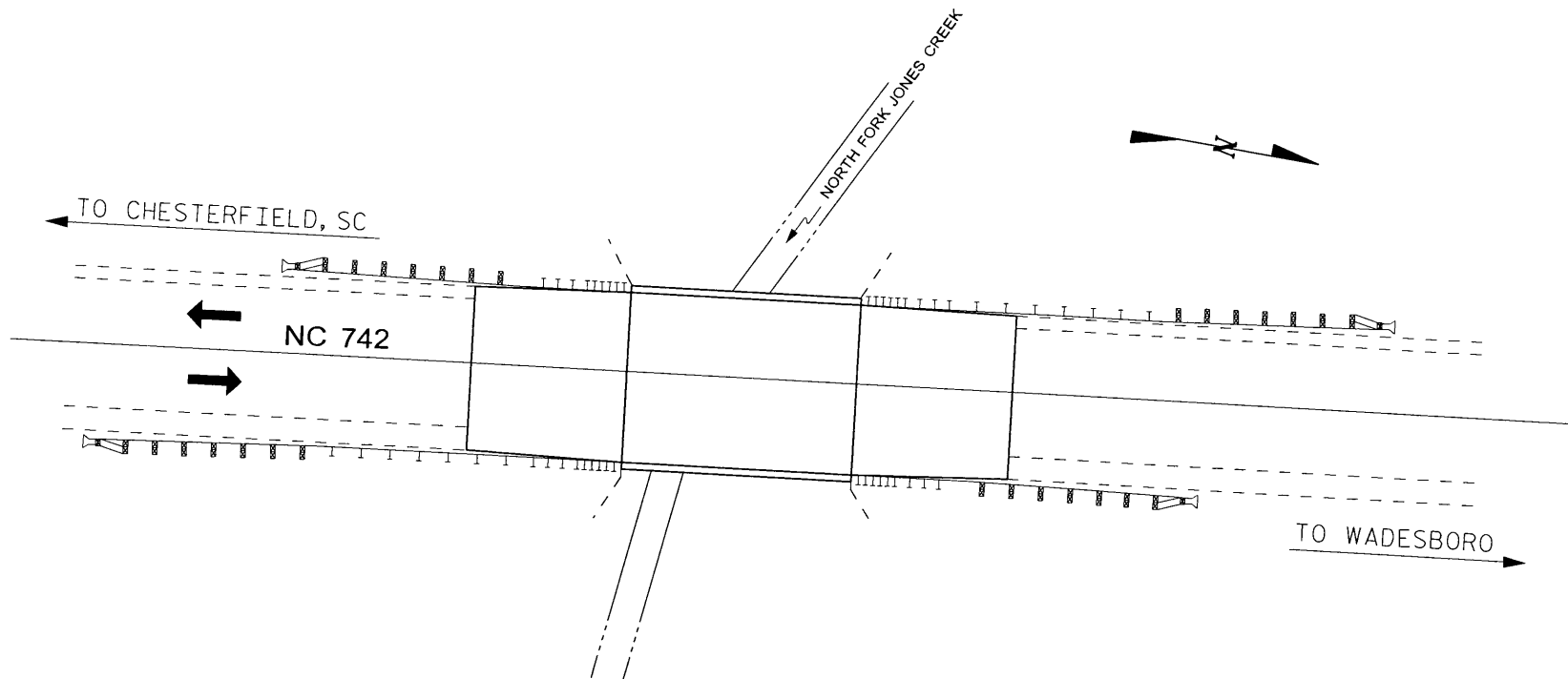
SHEET NO.	DESCRIPTION
1	TITLE SHEET
S-1 THRU S-10	STRUCTURE PLANS
SN	STANDARD NOTES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ANSON COUNTY

LOCATION: BRIDGE #36 ON NC 742 OVER NORTH FORK JONES CREEK
0.1 MILES SOUTH OF JUNCTION OF NC 109

TYPE OF WORK: BRIDGE SUPERSTRUCTURE REPLACEMENT

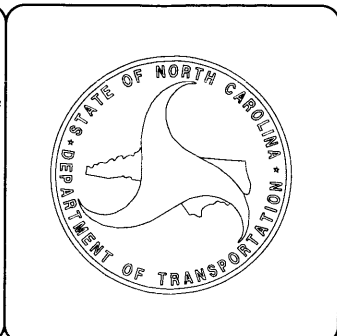


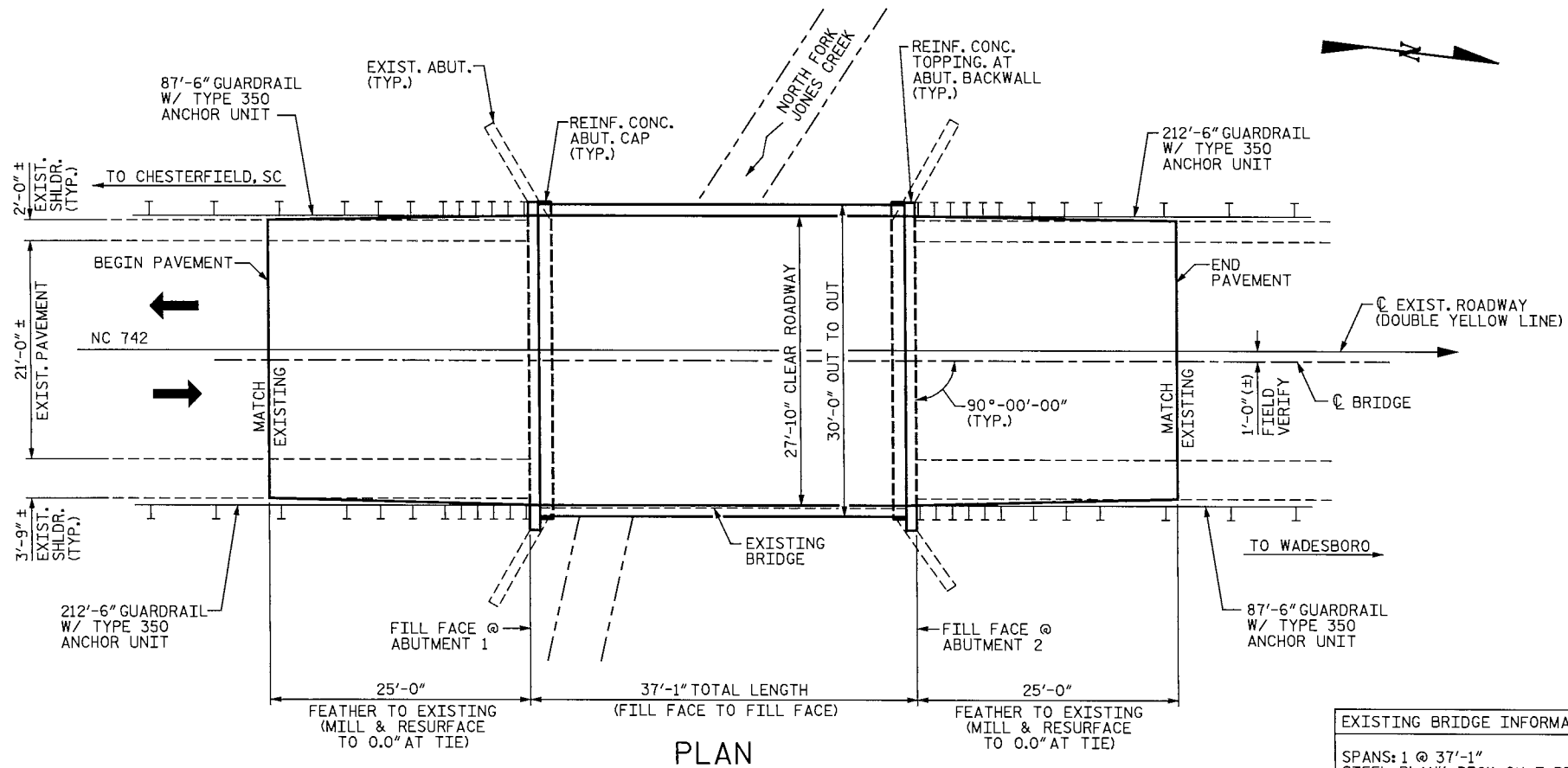
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.		1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
17BP.10.H.2		PE	
17BP.10.H.2		CONST.	

PROJECT LENGTH

PREPARED IN THE OFFICE OF: MI ENGINEERING 1011 SHAUB DRIVE, SUITE 100 RALEIGH, NC 27605 (919) 851-6606 FIRM PE NUMBER: P-0671	
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION	
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: N.A.	MORRIS ISRAELNAIM, PE PROJECT ENGINEER
LETTING DATE: MARCH 22, 2012	
RICK NELSON, PE STRUCTURES MANAGEMENT PROJECT MANAGER	

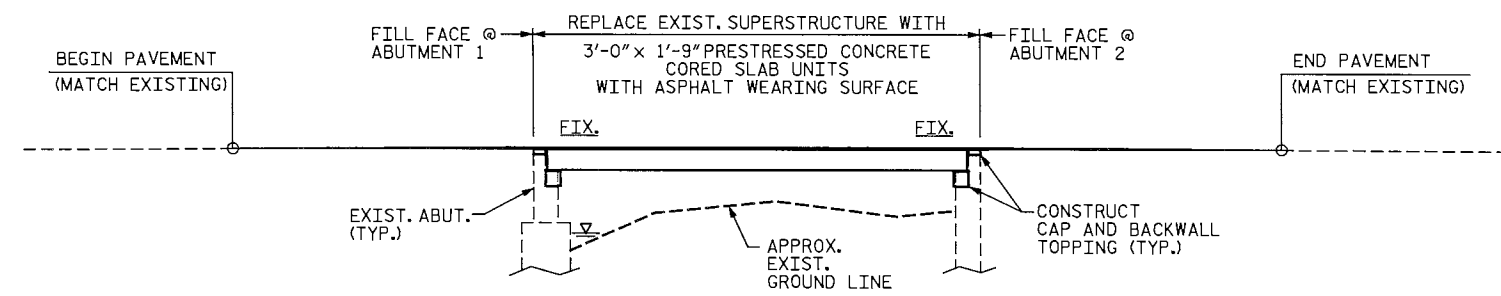
FARZIN ASEFNIA, PE PROJECT DESIGN ENGINEER





PLAN

EXISTING BRIDGE INFORMATION
SPANS: 1 @ 37'-1"
STEEL PLANK DECK ON I-BEAMS
ABUTMENTS: REINFORCED CONCRETE
REMOVE SUPERSTRUCTURE



PROFILE

GENERAL NOTES

ASSUMED LIVE LOAD = HL-93 OR ALTERNATE LOADING (SUPERSTRUCTURE ONLY).

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

THE BRIDGE SUPERSTRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS.

THE EXISTING SUPERSTRUCTURE CONSISTING OF 1 SPAN @ 37'-1" WITH A BITUMINOUS CONCRETE FILLED STEEL PLANK DECK ON STEEL I-BEAMS ON REINFORCED CONCRETE ABUTMENTS, AND LOCATED AT THE SITE OF THE PROPOSED BRIDGE REHABILITATION SHALL BE REMOVED. THE EXISTING STRUCTURE IS PRESENTLY POSTED BELOW LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE STRUCTURE FURTHER DETERIORATE, THE LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

REMOVAL OF THE EXISTING BRIDGE SUPERSTRUCTURE SHALL BE PERFORMED SO AS TO NOT ALLOW DEBRIS TO FALL INTO THE WATER. THE CONTRACTOR SHALL REMOVE THE BRIDGE SUPERSTRUCTURE AND SUBMIT PLANS IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

PROPERTIES AND DIMENSIONS OF 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 THE DIFFERENCES BETWEEN THE EXISTING BRIDGE SUBSTRUCTURE SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR FORMWORK AND FALSEWORK, SEE SPECIAL PROVISIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

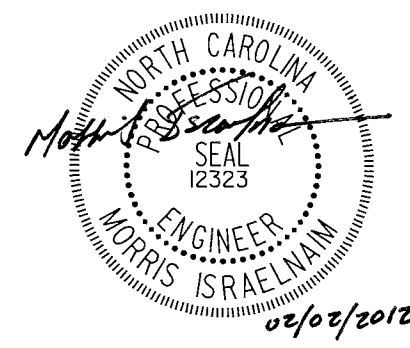
FOR CONCRETE REPAIRS, SEE SPECIAL PROVISIONS.

PLANS DEVELOPED BASED ON FIELD MEASUREMENTS. NO SURVEY DATA AVAILABLE. CONTRACTOR MUST VERIFY FIELD CONDITIONS.

FOR TRAFFIC CONTROL PLANS, SEE STRUCTURE PLANS FOR BRIDGE #22, PROJECT NO. 42564.1.3 .

TOTAL BILL OF MATERIAL

	REMOVAL OF EXISTING STRUCTURE	CLASS A CONCRETE	REINFORCING STEEL (BRIDGE)	VERTICAL CONCRETE BARRIER RAIL	ELASTOMERIC BEARINGS	CONCRETE REPAIRS	EPOXY RESIN INJECTION	3'-0"x1'-9" PRESTRESSED CONCRETE CORED SLABS		INCIDENTAL MILLING	ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B	ASPHALT BINDER FOR PLANT MIX GRADE PG 64-22	STEEL BEAM GUARDRAIL	ADDITIONAL GUARDRAIL POSTS	GUARDRAIL ANCHOR UNIT TYPE 350
	LUMP SUM	CU. YDS.	LBS.	LIN. FT.	LUMP SUM	CU. FT.	LIN. FT.	NO.	LIN. FT.	SY	TONS	TONS	LIN. FT.	EACH	EACH
SUPERSTRUCTURE				69.92				10	348.33						
END BENT 1		2.3	652			2	7								
END BENT 2		2.3	652				5								
TOTAL	LUMP SUM	4.6	1,304	69.92	LUMP SUM	2	12	10	348.33	150	42.5	3	602	5	4



PROJECT NO. WBS 17BP.10.H.2
ANSON COUNTY
STATION: N/A
BRIDGE NO.: 36

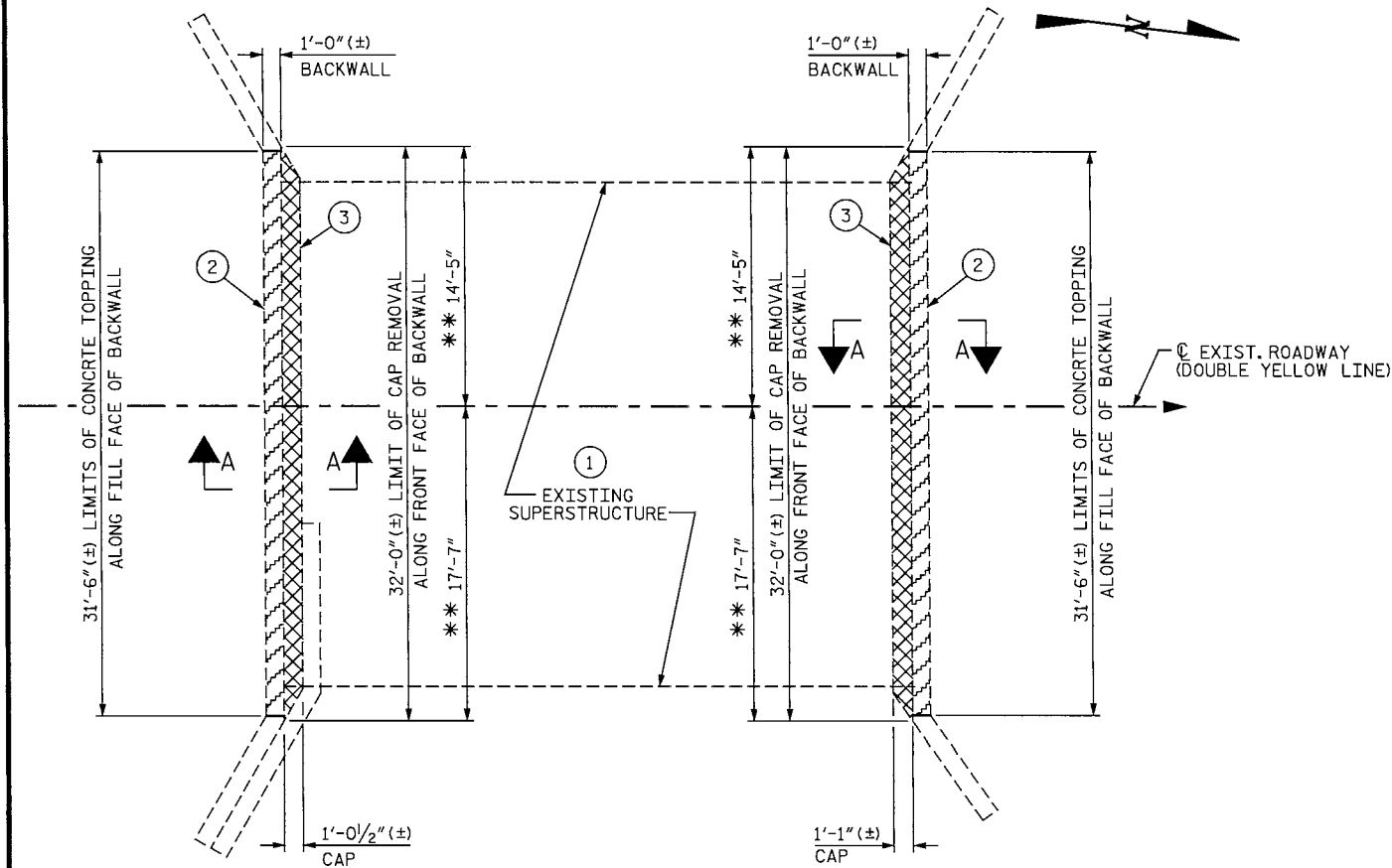
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE #36 ON
NC HWY 742 OVER
NORTH FORK JONES CREEK

MI ENGINEERING
1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

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

DRAWN BY: B.E. ATKINSON DATE: 10/11
CHECKED BY: M. ISRAELNAIM DATE: 11/11

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User: bdkinson
Filename: P:\NC Projects\MI1007 - 2011-2013 Design_LSC\MI1007.01 - Anson 36 Rehab\DSN\Anson36_SD_001.dgn

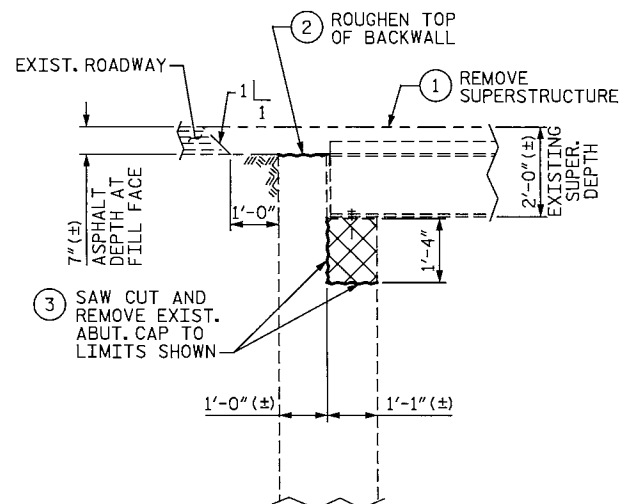


ABUTMENT 1

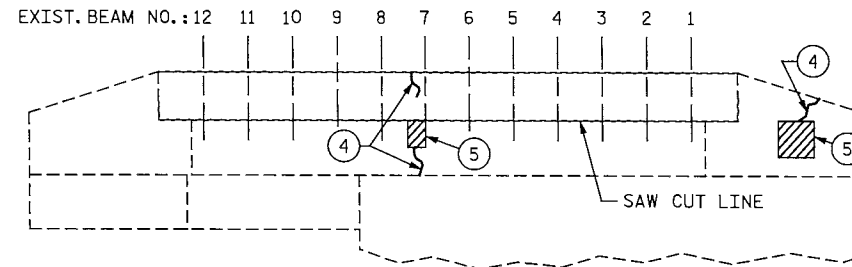
ABUTMENT 2

DEMOLITION PLAN

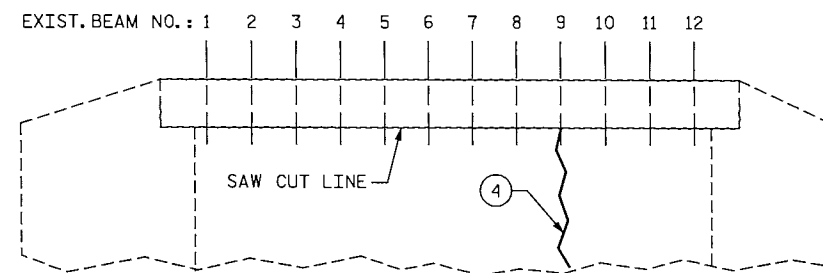
- ① REMOVE EXISTING SUPERSTRUCTURE.
 - ② ROUGHEN TOP OF BACKWALL TO PREPARE SURFACE FOR CONCRETE TOPPING.
 - ③ SAW CUT ABUTMENT CAP FROM FRONT FACE OF BACKWALL TO FRONT FACE OF ABUTMENT CAP TO DEPTH OF 1'-4".
- ** FIELD VERIFY DISTANCE ALONG FRONT FACE OF BACKWALL



SECTION A-A



ABUTMENT 1
(LOOKING SOUTH)



ABUTMENT 2
(LOOKING NORTH)

REPAIR PLAN

- ④ INJECT EPOXY RESIN IN CRACK ALONG FRONT FACE OF BACKWALL, CAP AND WINGWALL AS SHOWN.
- ⑤ CLEAN AND PATCH SPALLED AND CRACKED SURFACE AREA ALONG FRONT FACE OF CAP AND WINGWALL AS SHOWN.

NOTES

DIMENSIONS SHOWN IN THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE AND ARE APPROXIMATE.

REMOVE PORTIONS OF EXISTING STRUCTURE IN ACCORDANCE WITH SECTION 402 OF THE STANDARD SPECIFICATIONS EXCEPT AS NOTED HEREIN.

THE CONTRACTOR SHALL EXERCISE CARE TO ENSURE THAT EXISTING STRUCTURAL ELEMENTS THAT ARE TO REMAIN IN PLACE ARE UNDamAGED BY DEMOLITION ACTIVITIES. ALL DAMAGE TO EXISTING STRUCTURAL ELEMENTS THAT ARE TO REMAIN SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO COST TO THE DEPARTMENT.

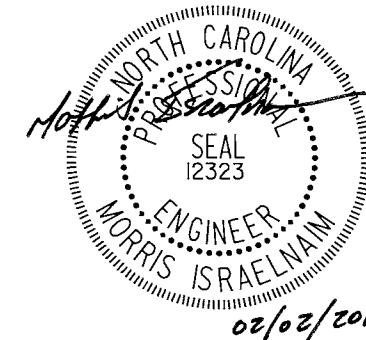
ALL REINFORCING STEEL EXPOSED IN THE ABUTMENT DURING SAW CUT ACTIVITIES SHALL BE CUT FLUSH AT THE SAW CUT LINE AND DISCARDED.

PROJECT NO. WBS 17BP.10.H.2

ANSON COUNTY

STATION: N/A

BRIDGE NO.: 36



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

EXISTING BRIDGE
DEMOLITION AND REPAIR
PLAN

DRAWN BY: B.E. ATKINSON DATE: 10/11
CHECKED BY: M. ISRAELNAIM DATE: 11/11

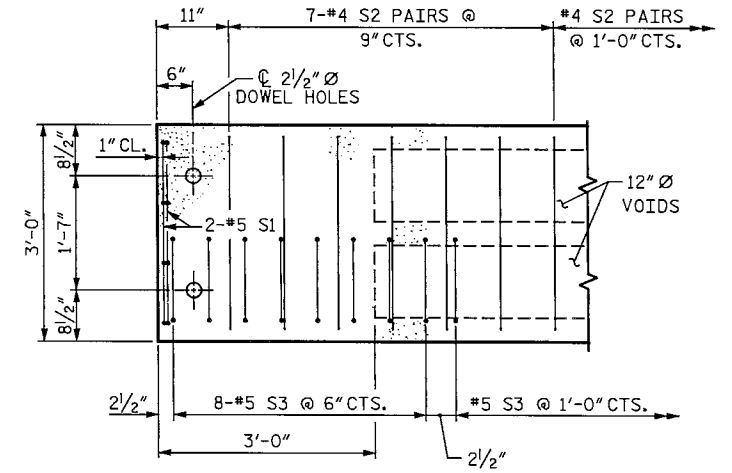
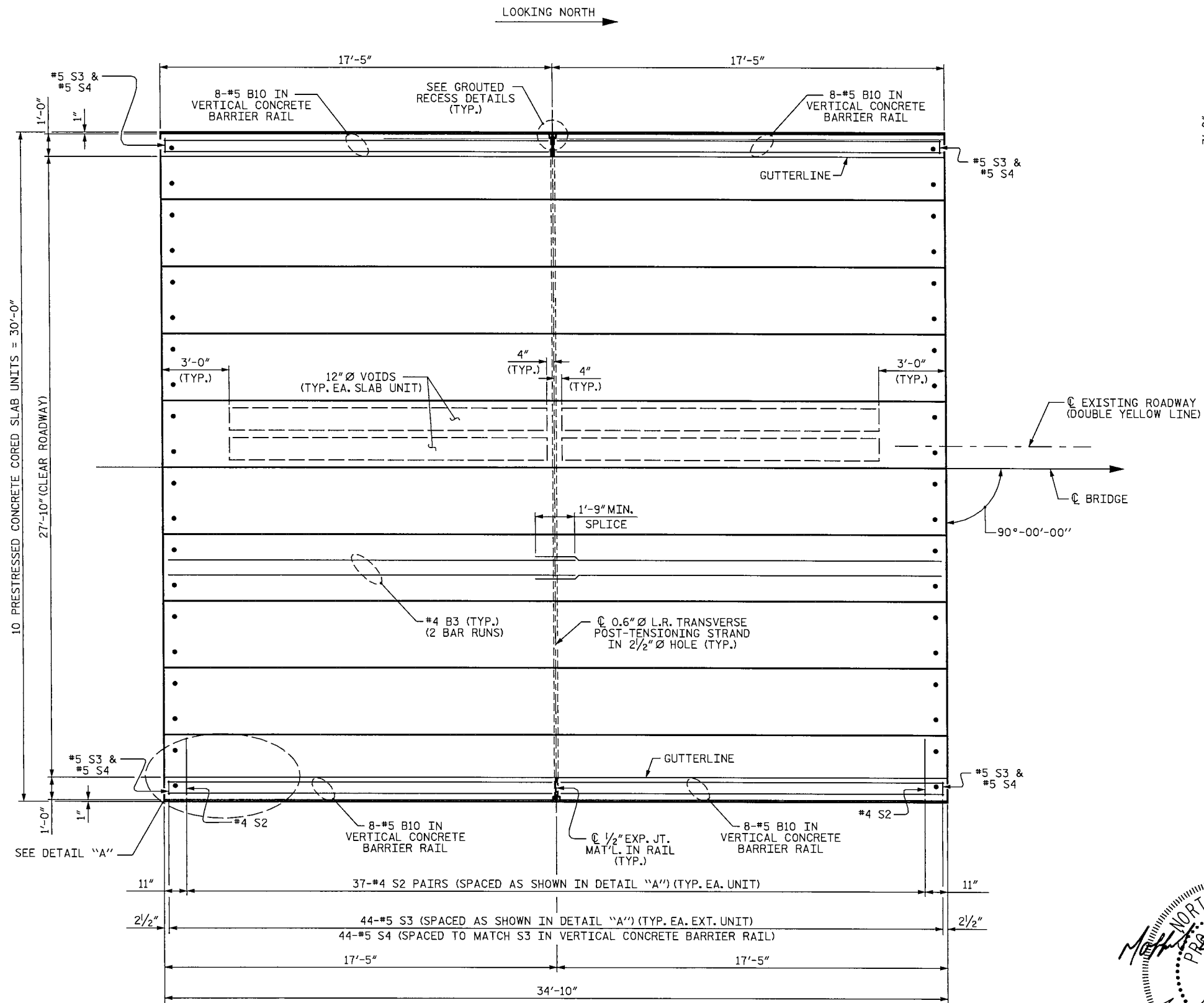


MI ENGINEERING
1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

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1			3			S-2
2			4			

TOTAL
SHEETS
11

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DETAIL "A"

NOTE: EXTERIOR UNIT SHOWN - INTERIOR UNIT SIMILAR EXCEPT OMIT #5 S3 BARS.

PLAN OF UNIT

PROJECT NO. WBS 17BP.10.H.2
ANSON COUNTY
STATION: N/A
BRIDGE NO.: 36

SHEET 2 OF 3



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

PLAN OF 34'-10" UNIT
27'-10" CLEAR ROADWAY
90° SKEW

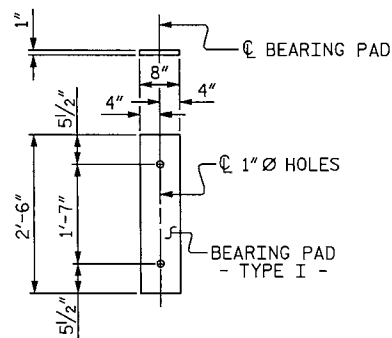
DRAWN BY: B.E. LANNING DATE: 10/11
CHECKED BY: B.E. ATKINSON DATE: 10/11



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(919) 851-6606
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1			3		
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S-4
TOTAL SHEETS
11



FIXED END
(TYPE I - 20 REQ'D)

ELASTOMERIC BEARING DETAILS

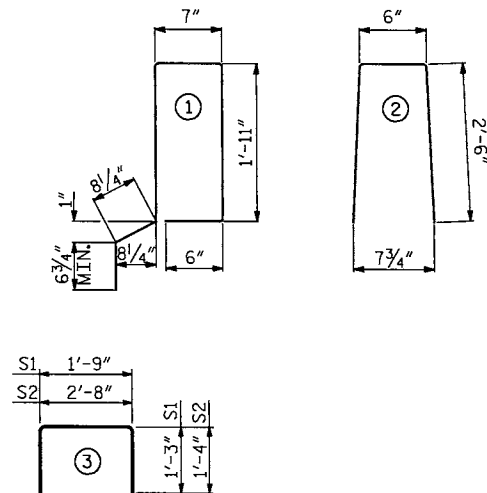
ELASTOMER IN ALL BEARINGS SHALL BE 50 DUROMETER HARDNESS.

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

CORED SLABS REQUIRED			
34'-10" UNIT	NUMBER	LENGTH	TOTAL LENGTH
EXTERIOR C.S.	2	34'-10"	69'-8"
INTERIOR C.S.	8	34'-10"	278'-8"
TOTAL	10	--	348'-4"

CONCRETE RELEASE STRENGTH	
UNIT	PSI
34'-10" UNITS	4000

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

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

THE 2" Ø BACKER ROD SHALL CONFORM TO THE REQUIREMENTS OF TYPE M BOND BREAKER. SEE SECTION 1028 OF THE STANDARD SPECIFICATIONS.

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

ALL REINFORCING STEEL IN THE VERTICAL CONCRETE BARRIER RAIL SHALL BE EPOXY COATED.

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

APPLY EPOXY PROTECTIVE COATING TO CORED SLAB UNIT ENDS.

GROOVED CONTRACTION JOINTS, 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 CONTRACTION JOINT SHALL BE LOCATED AT EACH THIRD POINT BETWEEN BARRIER RAIL EXPANSION JOINTS. ONLY ONE CONTRACTION JOINT IS REQUIRED AT MIDPOINT OF BARRIER RAIL SEGMENTS LESS THAN 20 FEET IN LENGTH AND NO CONTRACTION JOINTS ARE REQUIRED FOR THOSE SEGMENTS LESS THAN 10 FEET IN LENGTH.

TRANSVERSE POST TENSIONING OF THE CORED SLAB UNITS SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

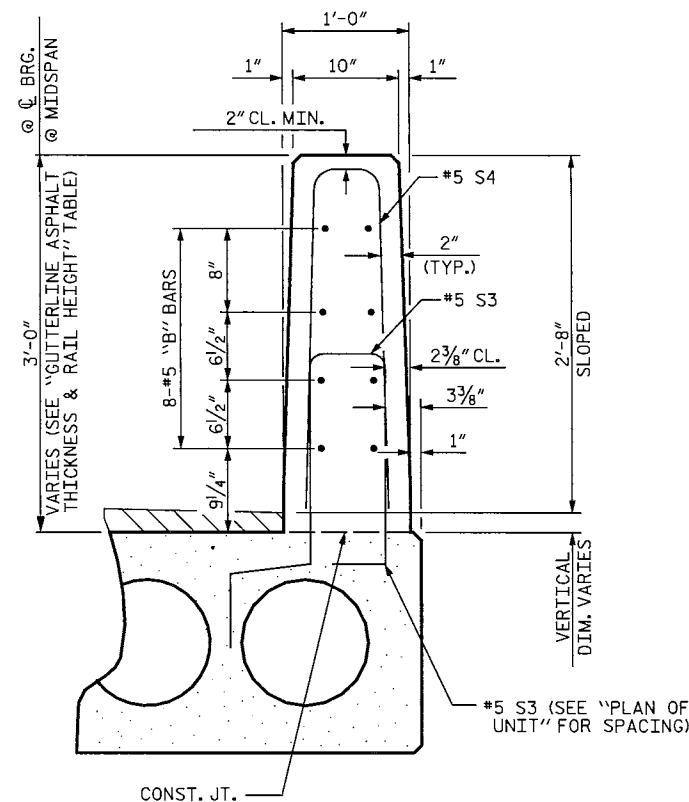
GUTTERLINE ASPHALT THICKNESS & RAIL HEIGHT		
27'-10" CLEAR ROADWAY	ASPHALT OVERLAY THICKNESS	RAIL HEIGHT
	@ MID-SPAN	@ MID-SPAN
	NORMAL CROWN SECTION	
34'-10" UNITS	3 3/8"	2'-11 5/8"

BILL OF MATERIAL FOR VERTICAL CONCRETE BARRIER RAIL						
BAR	BARS PER PAIR OF EXTERIOR UNITS	TOTAL NO.	SIZE	TYPE	LENGTH	WEIGHT
	34'-10" UNIT					
*B10	32	32	#5	STR	17'-0"	567
*S4	88	88	#5	2	5'-6"	505
*EPOXY COATED REINFORCING STEEL				LBS.		1072
CLASS AA CONCRETE				CU.YDS.		7.1
TOTAL VERTICAL CONCRETE BARRIER RAIL				LN.FT.		69.92

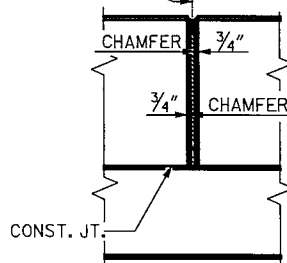
DEAD LOAD DEFLECTION AND CAMBER	
34'-10" CORED SLAB UNIT	3'-0" x 1'-9"
CAMBER (SLAB ALONE IN PLACE)	0.6" Ø L.R. STRAND
DEFLECTION DUE TO SUPERIMPOSED DEAD LOAD **	1/2" ↓
FINAL CAMBER	1/8" ↓

** INCLUDES FUTURE WEARING SURFACE

BILL OF MATERIAL FOR ONE 34'-10" CORED SLAB UNIT							
BAR	NUMBER	SIZE	TYPE	EXTERIOR UNIT LENGTH	EXTERIOR UNIT WEIGHT	INTERIOR UNIT LENGTH	INTERIOR UNIT WEIGHT
B3	4	#4	STR	18'-3"	49	18'-3"	49
S1	8	#5	3	4'-3"	35	4'-3"	35
S2	74	#4	3	5'-4"	264	5'-4"	264
*S3	44	#5	1	6'-2"	283		
REINFORCING STEEL				LBS.	348		348
*EPOXY COATED REINFORCING STEEL				LBS.	283		
5000 P.S.I. CONCRETE				CU.YDS.	5.1		5.1
0.6" Ø L.R. STRANDS				No.	9		9



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



ELEVATION AT EXPANSION JOINTS

VERTICAL CONCRETE BARRIER RAIL SECTION

PROJECT NO. WBS 17BP.10.H.2

ANSON COUNTY

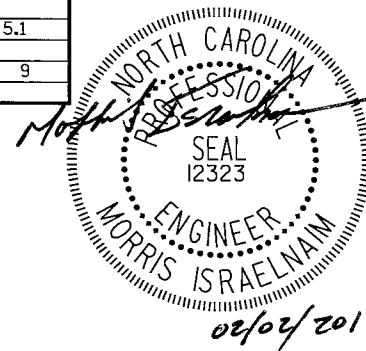
STATION: N/A

BRIDGE NO.: 36

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

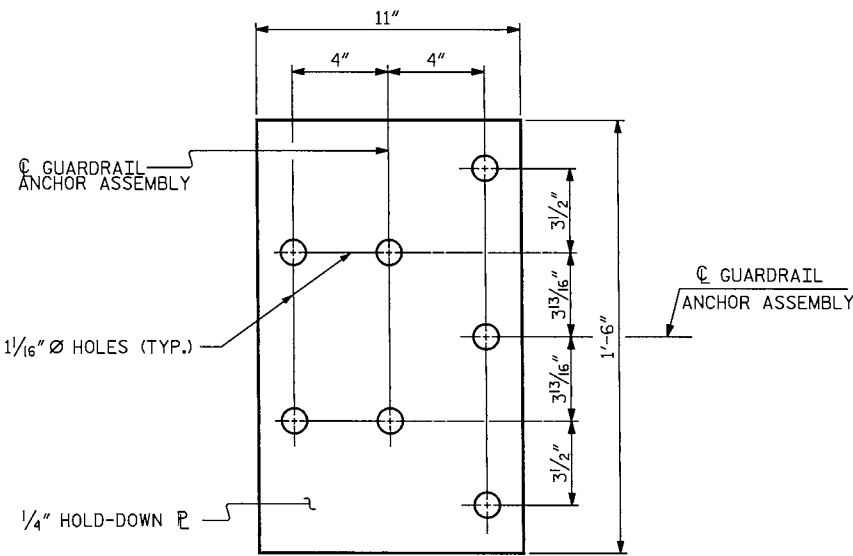
3'-0" X 1'-9"
PRESTRESSED CONCRETE
CORED SLAB UNIT
90° SKEW



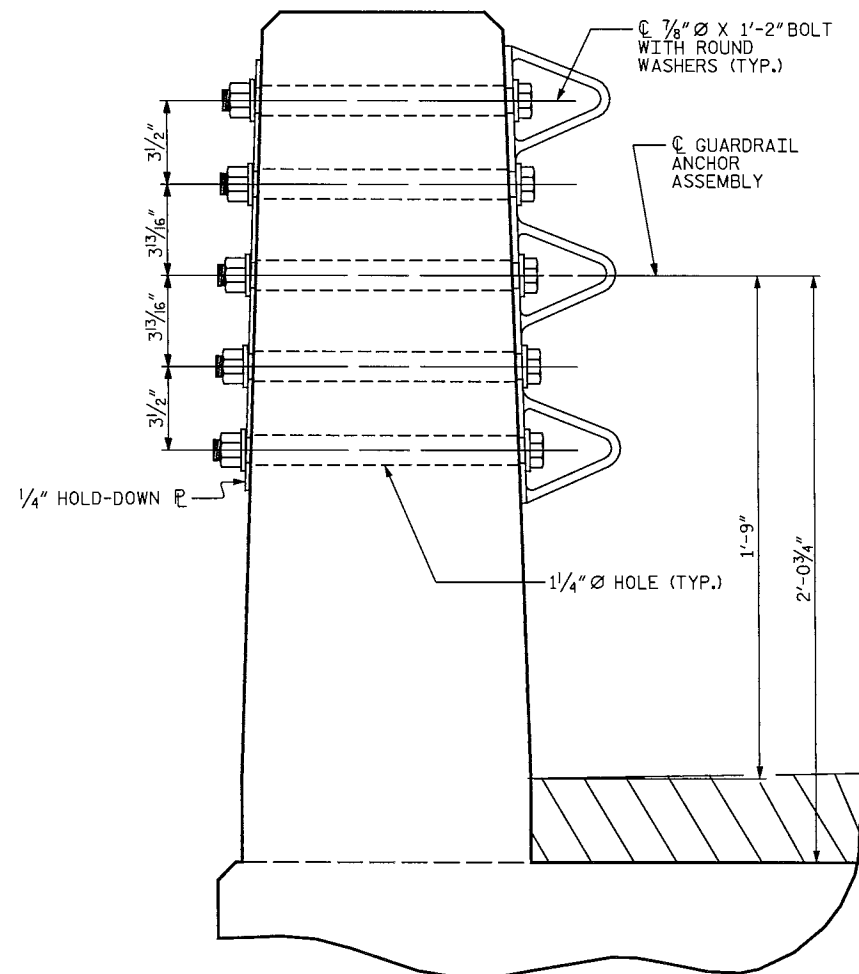
MI ENGINEERING
1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

REVISIONS						SHEET NO.
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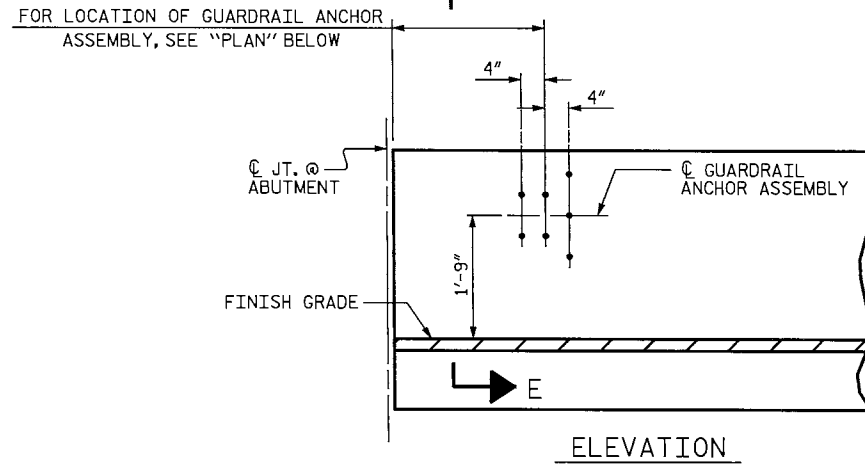
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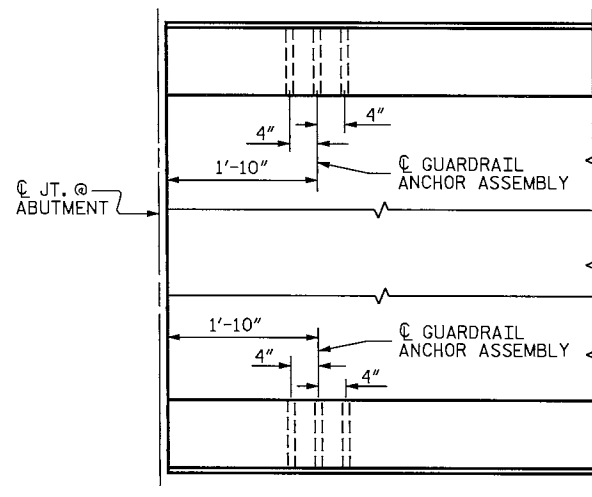
PLAN



SECTION E-E
GUARDRAIL ANCHOR ASSEMBLY DETAILS



ELEVATION



PLAN

LOCATION OF ANCHORS FOR GUARDRAIL

ABUTMENT #1 SHOWN, ABUTMENT #2 SIMILAR.

NOTES

THE GUARDRAIL ANCHOR ASSEMBLY SHALL CONSIST OF A 1/4" HOLD DOWN PLATE AND 7 - 7/8" Ø BOLTS WITH NUTS AND WASHERS.

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 M111.

BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M291. 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 7/8" 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.)

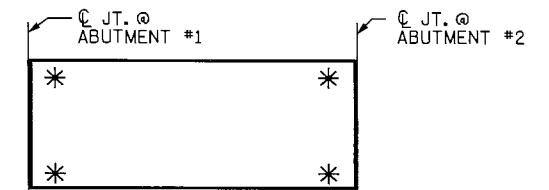
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 VERTICAL CONCRETE BARRIER RAIL.

THE VERTICAL REINFORCING BARS MAY BE SHIFTED SLIGHTLY IN THE VERTICAL CONCRETE BARRIER RAIL TO CLEAR ASSEMBLY BOLTS.

THE 1 1/4" Ø HOLES SHALL BE FORMED OR 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.



SKETCH SHOWING POINTS OF ATTACHMENT

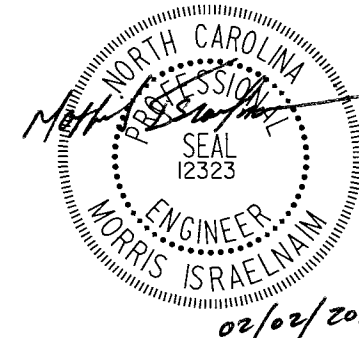
* DENOTES GUARDRAIL ANCHOR ASSEMBLY

PROJECT NO. **WBS 17BP.10.H.2**

ANSON COUNTY

STATION: **N/A**

BRIDGE NO.: **36**



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
GUARDRAIL ANCHORAGE
FOR VERTICAL CONCRETE
BARRIER RAIL

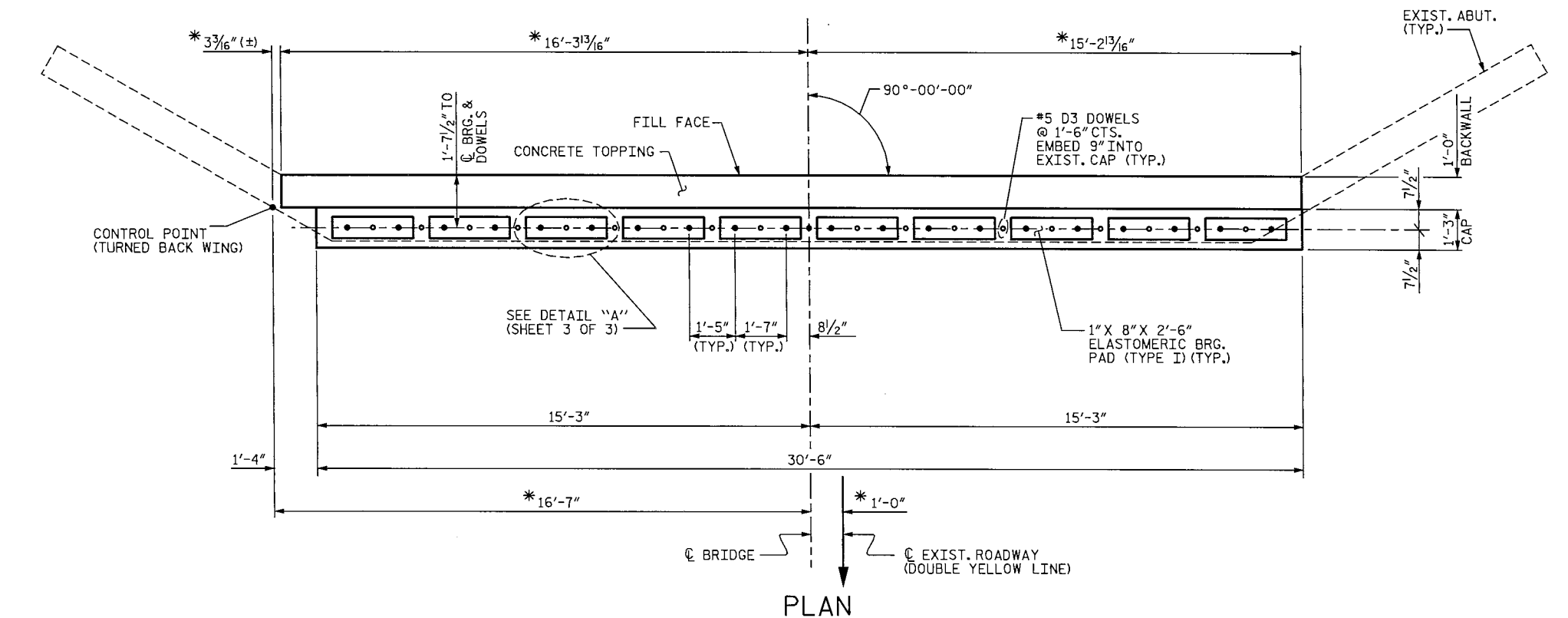
ASSEMBLED BY : B.E. LANNING DATE : 10/11
CHECKED BY : B.E. ATKINSON DATE : 10/11
DRAWN BY : MAA 5/10
CHECKED BY : GM 5/10
ADDED 5/6/10

MI ENGINEERING
1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

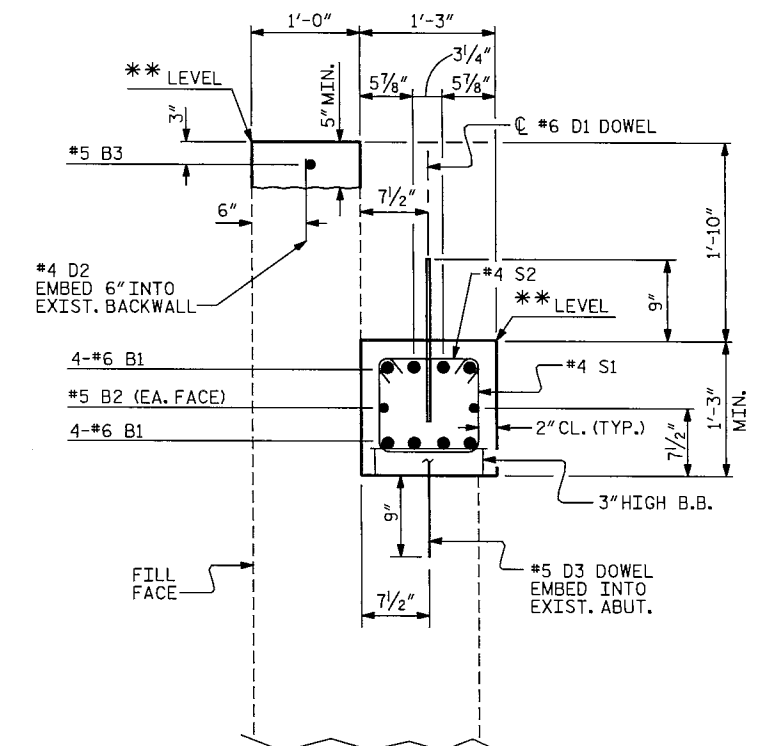
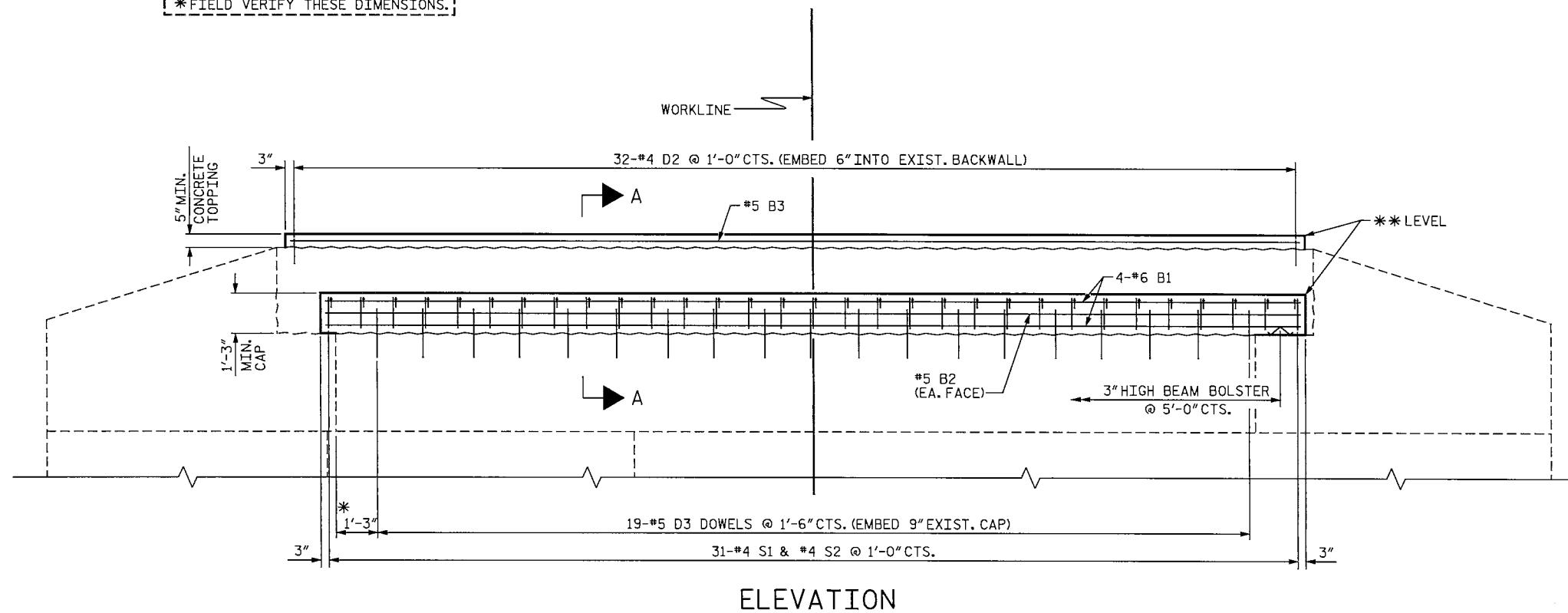
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1			3			S-6
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TOTAL SHEETS						II

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR DOWELS.



*FIELD VERIFY THESE DIMENSIONS.



PROJECT NO. WBS 17BP.10.H.2

ANSON COUNTY

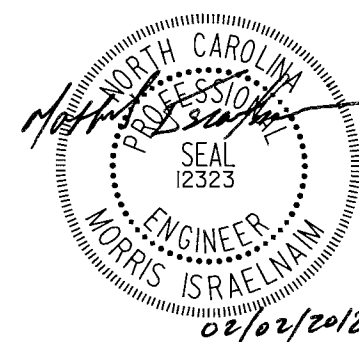
STATION: N/A

BRIDGE NO.: 36

SHEET 1 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

ABUTMENT I
MODIFICATIONS
DETAILS



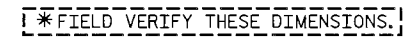
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1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER: P-0671

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STIRRUPS IN CAP MAY BE SHIFTED AS
NECESSARY TO CLEAR DOWELS.



WORKLINE



FIELD VERIFY TOP OF CONCRETE SURFACES ARE LEVEL.

SHEET 2 OF 3

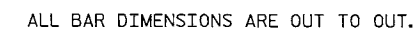
ABUTMENT 2 MODIFICATIONS DETAILS



REVISIONS						SHEET NO.
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PROJECT NO. WBS 17BP.10.H.2
ANSON COUNTY
 STATION: N/A
 BRIDGE NO.: 36

ABUTMENT
DETAILS &
BILL OF MATERIAL

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			11

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

LEVEL		VEHICLE	WEIGHT (W) (TONS)	CONTROLLING LOAD RATING	MINIMUM RATING FACTORS (RF)	TONS = W X RF	STRENGTH I LIMIT STATE										SERVICE III LIMIT STATE						COMMENT NUMBER	
							LIVELOAD FACTORS	MOMENT					SHEAR					LIVELOAD FACTORS	MOMENT					
								DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN (ft)	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)	DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN (ft)	GIRDER LOCATION	DISTANCE FROM LEFT END OF SPAN (ft)		DISTRIBUTION FACTORS (DF)	RATING FACTOR	SPAN (ft)	GIRDER LOCATION		DISTANCE FROM LEFT END OF SPAN (ft)
DESIGN LOAD RATING		HL-93(Inv)	N/A	1	1.032	--	1.75	0.28	1.36	34.8'	EL	16.9	0.561	1.03	34.8'	EL	1.7	0.80	0.28	1.05	34.8'	EL	16.9	
		HL-93(0pr)	N/A	--	1.338	--	1.35	0.28	1.77	34.8'	EL	16.9	0.561	1.34	34.8'	EL	1.7	N/A	--	--	--	--	--	
		HS-20(Inv)	36.000	2	1.189	42.810	1.75	0.28	1.79	34.8'	EL	13.5	0.561	1.19	34.8'	EL	1.7	0.80	0.28	1.39	34.8'	EL	16.9	
		HS-20(0pr)	36.000	--	1.542	55.494	1.35	0.28	2.32	34.8'	EL	13.5	0.561	1.54	34.8'	EL	1.7	N/A	--	--	--	--	--	
LEGAL LOAD RATING	SV	SNSH	13.500	--	2.400	32.402	1.4	0.28	3.89	34.8'	EL	16.9	0.561	3.06	34.8'	EL	1.7	0.80	0.28	2.40	34.8'	EL	16.9	
		SNGARBS2	20.000	--	2.052	41.044	1.4	0.28	3.29	34.8'	EL	13.5	0.561	2.32	34.8'	EL	1.7	0.80	0.28	2.05	34.8'	EL	13.5	
		SNAGRIS2	22.000	--	2.053	45.174	1.4	0.28	3.26	34.8'	EL	13.5	0.561	2.21	34.8'	EL	1.7	0.80	0.28	2.05	34.8'	EL	13.5	
		SNCOTTS3	27.250	--	1.202	32.744	1.4	0.28	1.95	34.8'	EL	16.9	0.561	1.54	34.8'	EL	1.7	0.80	0.28	1.20	34.8'	EL	16.9	
		SNAGGRS4	34.925	--	1.111	38.816	1.4	0.28	1.80	34.8'	EL	16.9	0.561	1.38	34.8'	EL	1.7	0.80	0.28	1.11	34.8'	EL	16.9	
		SNS5A	35.550	--	1.079	38.354	1.4	0.28	1.75	34.8'	EL	16.9	0.561	1.46	34.8'	EL	1.7	0.80	0.28	1.08	34.8'	EL	16.9	
		SNS6A	39.950	--	1.041	41.601	1.4	0.28	1.69	34.8'	EL	16.9	0.561	1.37	34.8'	EL	1.7	0.80	0.28	1.04	34.8'	EL	16.9	
		SNS7B	42.000	3	1.000	42.000	1.4	0.28	1.61	34.8'	EL	16.9	0.561	1.40	34.8'	EL	1.7	0.80	0.28	1.00	34.8'	EL	16.9	
	TTST	TNAGRIT3	33.000	--	1.286	42.439	1.4	0.28	2.08	34.8'	EL	16.9	0.561	1.60	34.8'	EL	1.7	0.80	0.28	1.29	34.8'	EL	16.9	
		TNT4A	33.075	--	1.285	42.512	1.4	0.28	2.08	34.8'	EL	16.9	0.561	1.51	34.8'	EL	1.7	0.80	0.28	1.29	34.8'	EL	16.9	
		TNT6A	41.600	--	1.126	46.840	1.4	0.28	1.82	34.8'	EL	16.9	0.561	1.48	34.8'	EL	1.7	0.80	0.28	1.13	34.8'	EL	16.9	
		TNT7A	42.000	--	1.163	48.833	1.4	0.28	1.89	34.8'	EL	16.9	0.561	1.37	34.8'	EL	1.7	0.80	0.28	1.16	34.8'	EL	16.9	
		TNT7B	42.000	--	1.144	48.061	1.4	0.28	1.85	34.8'	EL	16.9	0.561	1.33	34.8'	EL	1.7	0.80	0.28	1.14	34.8'	EL	16.9	
		TNAGRIT4	43.000	--	1.158	49.810	1.4	0.28	1.86	34.8'	EL	13.5	0.561	1.28	34.8'	EL	1.7	0.80	0.28	1.16	34.8'	EL	16.9	
		TNAGT5A	45.000	--	1.068	48.071	1.4	0.28	1.73	34.8'	EL	16.9	0.561	1.35	34.8'	EL	1.7	0.80	0.28	1.07	34.8'	EL	16.9	
		TNAGT5B	45.000	--	1.031	46.373	1.4	0.28	1.67	34.8'	EL	16.9	0.561	1.21	34.8'	EL	1.7	0.80	0.28	1.03	34.8'	EL	16.9	

LOAD FACTORS:

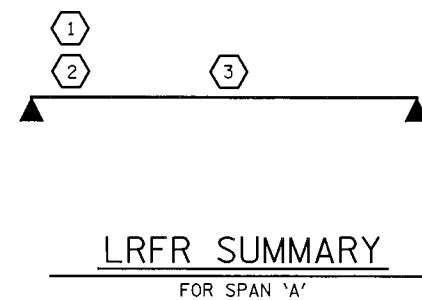
DESIGN LOAD RATING FACTORS	LIMIT STATE	γ_{DC}	γ_{DW}
	STRENGTH I	1.25	1.50
	SERVICE III	1.00	1.00

NOTES:

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

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

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

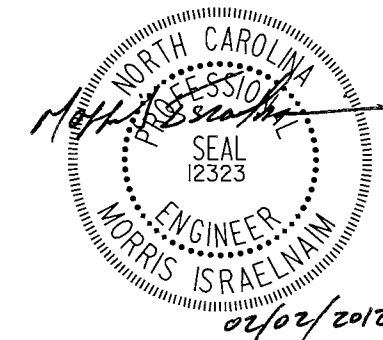


PROJECT NO. WBS 17BP.10.H.2

ANSON COUNTY

STATION: N/A

BRIDGE NO.: 36



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
LRFR SUMMARY FOR
34'-10" CORED SLAB UNIT
90° SKEW
(NON-INTERSTATE TRAFFIC)

DRAWN BY : B.E. LANNING DATE : 10/11
CHECKED BY : B.E. ATKINSON DATE : 10/11



MI ENGINEERING
1011 SHAUB DRIVE, SUITE 100
RALEIGH, NC 27606
(919) 851-6606
FIRM PE NUMBER : P-0671

REVISIONS						SHEET NO. S-10 TOTAL SHEETS 11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			

2/3/2012 10:20:51 AM User: bnfk\hneon Filename: P:\NC Projects\MI1007 - 2011-2013 Design LSC\MI1007.01 - Anson 36 Rehab\JGN\Anson36_SD_SN.dgn

STANDARD NOTES

DESIGN DATA:

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

MATERIAL AND WORKMANSHIP:

EXCEPT AS MAY OTHERWISE BE SPECIFIED ON PLANS OR IN THE SPECIAL PROVISIONS, ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2012 "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" OF THE N. C. DEPARTMENT OF TRANSPORTATION.

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

CONCRETE:

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

CONCRETE CHAMFERS:

UNLESS OTHERWISE NOTED ON THE PLANS, ALL EXPOSED CORNERS ON STRUCTURES SHALL BE CHAMFERED 3/4" WITH THE FOLLOWING EXCEPTIONS: TOP CORNERS OF CURBS MAY BE ROUNDED TO 1-1/2" RADIUS WHICH IS BUILT INTO CURB FORMS; CORNERS OF TRANSVERSE FLOOR EXPANSION JOINTS SHALL BE ROUNDED WITH A 1/4" FINISHING TOOL UNLESS OTHERWISE REQUIRED ON PLANS; AND CORNERS OF EXPANSION JOINTS IN THE ROADWAY FACES AND TOPS OF CURBS AND SIDEWALKS SHALL BE ROUNDED TO A 1/4" RADIUS WITH A FINISHING STONE OR TOOL UNLESS OTHERWISE REQUIRED ON PLANS.

DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER. DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS. WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0". EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED. WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16 INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB. METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

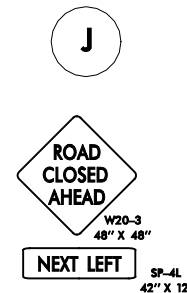
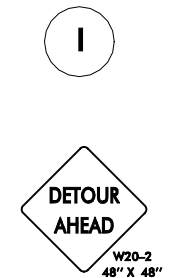
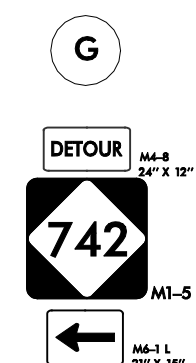
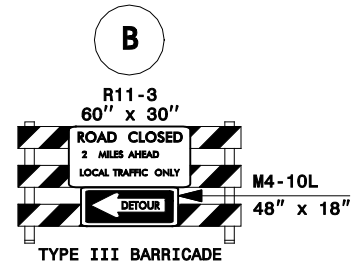
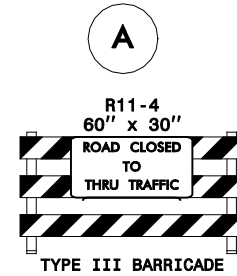
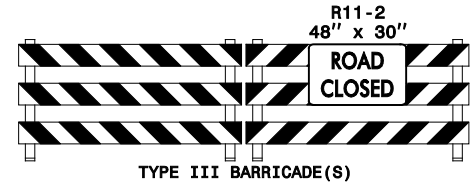
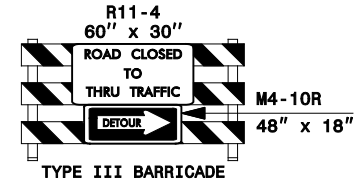
SPECIAL NOTES:

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

ENGLISH

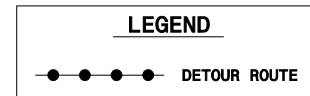
JANUARY, 1990

STD. NO. SN



PROJECT NO. 42564
COUNTY: ANSON
STATION: 16+07.50

PROJECT NO. 17BP.10.H.2
COUNTY: ANSON
STATION: N/A



Florence & Hutcheson
CONSULTING ENGINEERS
5121 Kingston Way, Suite 100 Raleigh, NC 27607
NC License No. P-0858

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

BRIDGE NO. 22 AND BRIDGE NO. 36
ON NC 742 OVER
NORTH FORK JONES CREEK

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			