

NOTES

ASSUMED LIVE LOAD = HS 20-44 OR ALTERNATE LOADING.  
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.  
 THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AASHTO LFD BRIDGE DESIGN SPECIFICATIONS.  
 THE EXISTING STRUCTURE CONSISTING OF ONE 42'-0" LONG STEEL BEAM SPAN; 19'-1" CLEAR ROADWAY; 4" x 8" TIMBER FLOOR SUPPORTED BY MASONRY ABUTMENTS WITH H-PILE HELPER BENT AT ABUTMENT #2. THE EXISTING BRIDGE IS PRESENTLY POSTED BELOW THE LEGAL LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE THIS LOAD LIMITATION MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.  
 REMOVAL OF 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.

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.

THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGE", MAY 2001.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS PAY ITEMS.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 25 FT. EACH SIDE OF CENTERLINE ROADWAY AS DIRECTED BY THE ENGINEER. THIS WORK WILL BE PAID FOR AT THE CONTRACT LUMP SUM PRICE FOR UNCLASSIFIED STRUCTURE EXCAVATION. SEE SECTION 412 OF THE STANDARD SPECIFICATIONS.

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 CONTRACTOR SHALL TRANSPORT AND INSTALL EXISTING CORED SLAB UNITS AND PRECAST BARRIER RAIL.

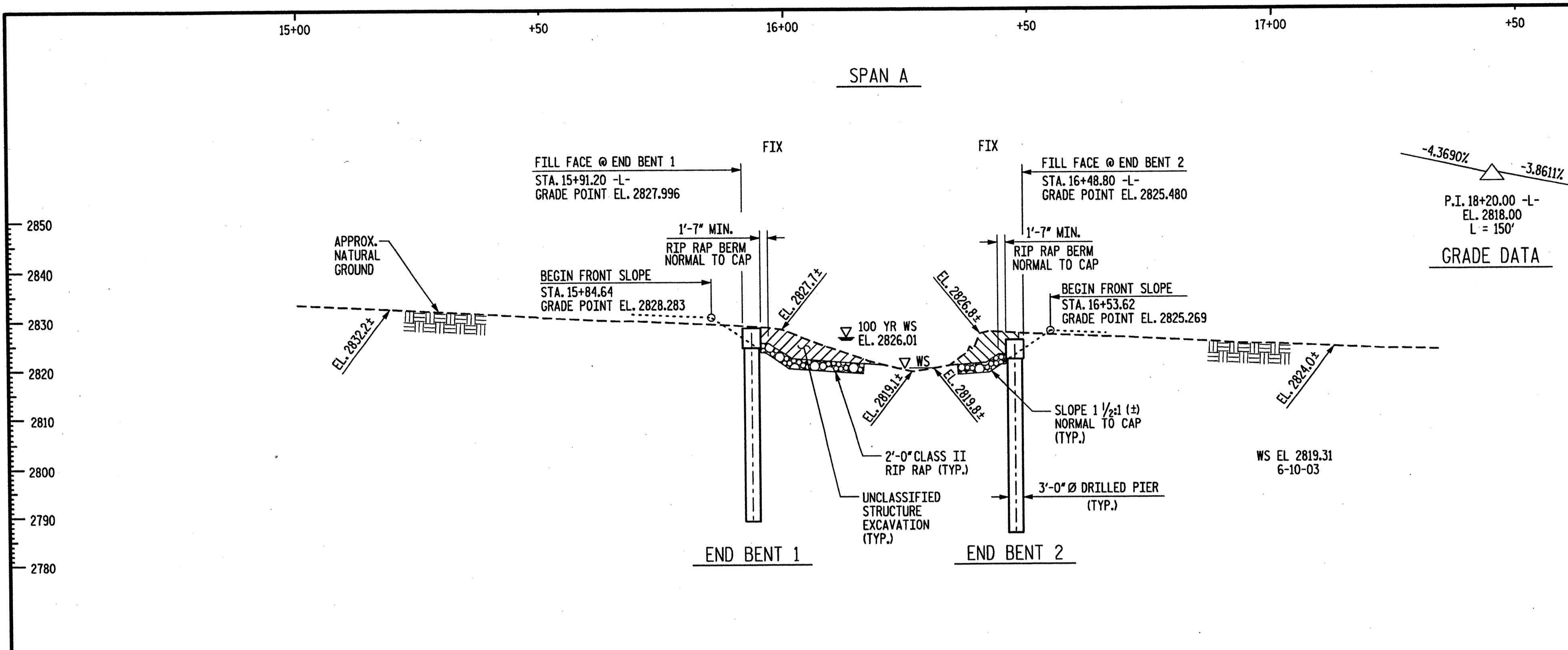
FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

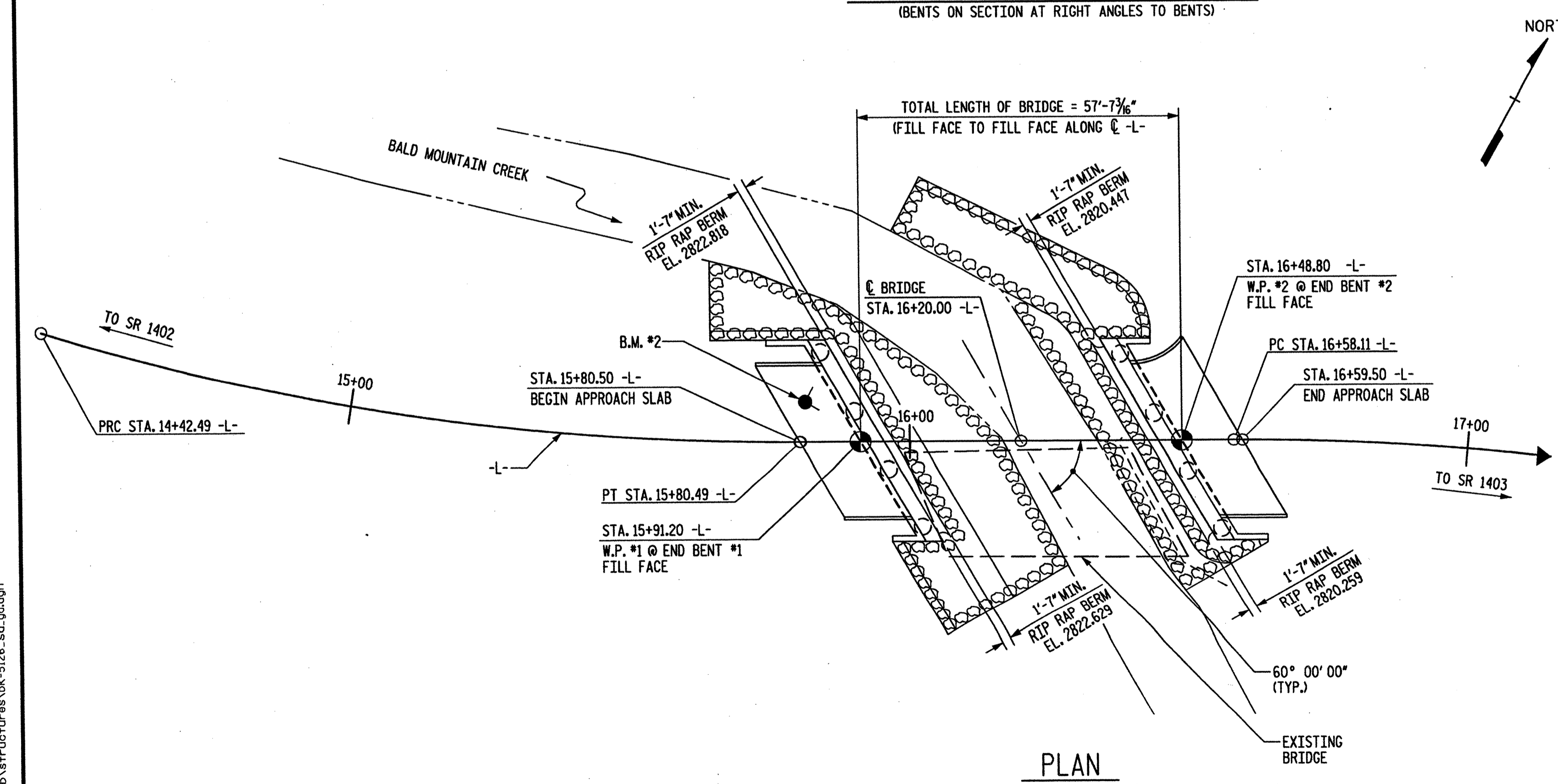
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

GRADE DATA  
 P.I. 18+20.00 -L-  
 EL. 2818.00  
 L = 150'  
 -4.3690%      -3.8611%



SECTION ALONG C SURVEY

(BENTS ON SECTION AT RIGHT ANGLES TO BENTS)



PLAN

HORIZONTAL CURVE DATA

PI STA. 15+11.99	PI STA. 17+84.98
Δ = 16°49'20.7" (L.T.)	Δ = 30°12'49.1" (R.T.)
D = 12°11'25.5"	D = 12°11'26.1"
L = 138.00'	L = 247.84'
T = 69.50'	T = 126.88'
R = 470.01'	R = 470.00'

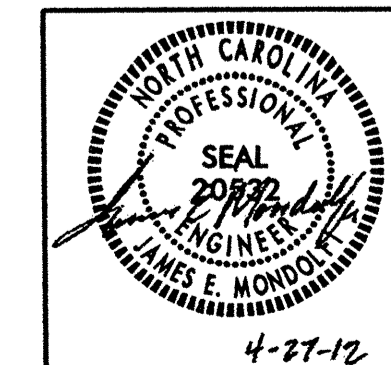
PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-  
 SHEET 1 OF 2 REPLACES BRIDGE NO. 119

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

BRIDGE NO. 119 ON SR 1395  
 OVER BALD MOUNTAIN CREEK

REVISIONS						SHEET NO. S-1
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 18
2			4			

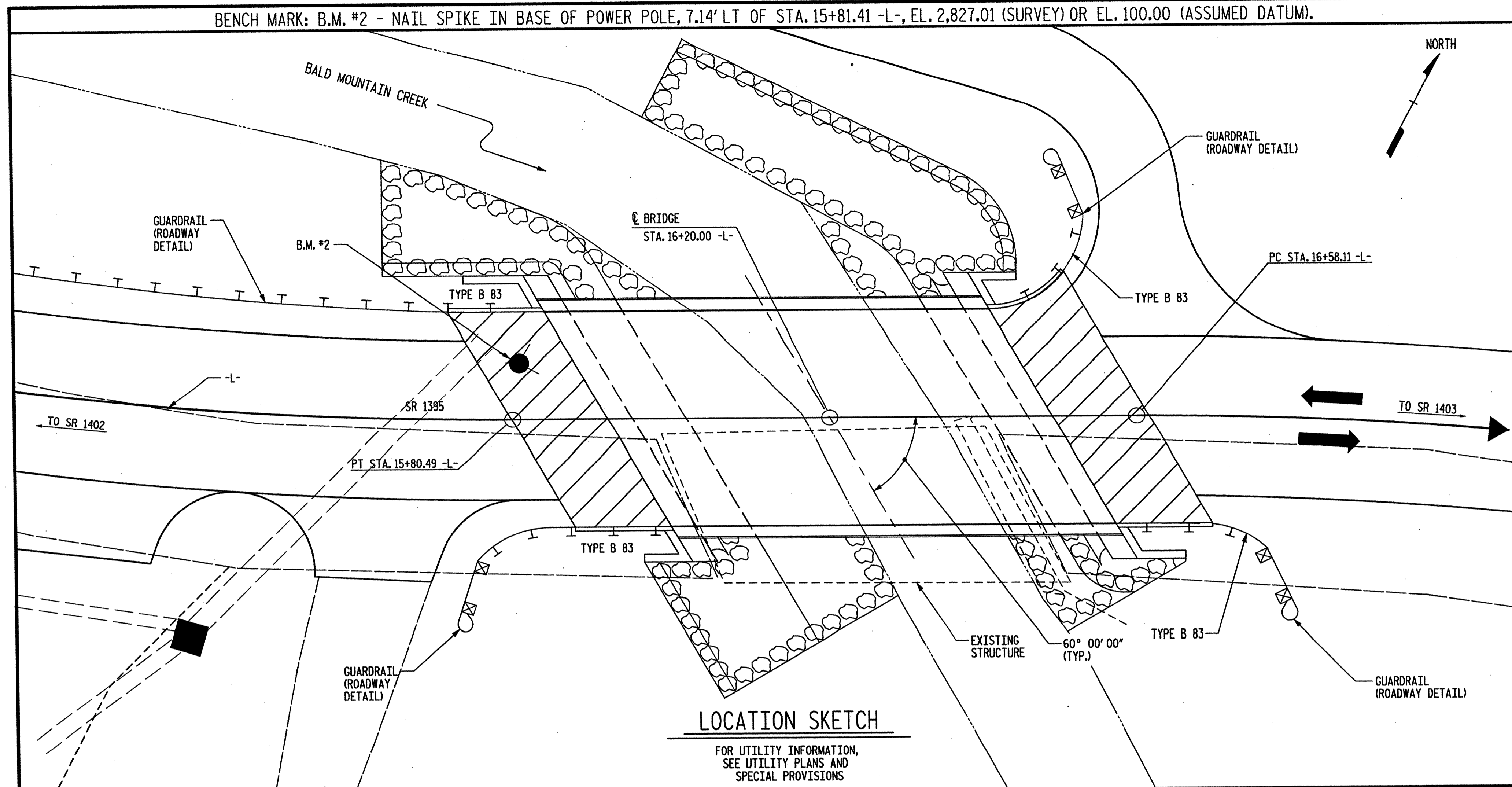
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No: F-0288



4/25/2012  
 p:\vnc\div\13\yancey\119\mtd\3007b\structures\bk-5126\_sd.gddgn  
 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

BENCH MARK: B.M. #2 - NAIL SPIKE IN BASE OF POWER POLE, 7.14' LT OF STA. 15+81.41 -L-, EL. 2,827.01 (SURVEY) OR EL. 100.00 (ASSUMED DATUM).



**LOCATION SKETCH**

FOR UTILITY INFORMATION,  
SEE UTILITY PLANS AND  
SPECIAL PROVISIONS

**NOTES (CONT.)**

- ASPHALT WEARING SURFACE IS INCLUDED IN ROADWAY QUANTITIES.
- THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH HEC 18, "EVALUATING SCOUR AT BRIDGES", MAY, 2001.
- FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
- FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
- FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
- FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
- FOR BRIDGE APPROACH FILLS, SEE SPECIAL PROVISIONS.
- FOR DRILLED PIERS, SEE SPECIAL PROVISIONS.
- DRILLED PIERS AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR AN APPLIED LOAD OF 92 TONS EACH AT THE TOP OF THE DRILLED PIER.
- DRILLED PIERS AT END BENT NO. 1 AND END BENT NO. 2 ARE DESIGNED FOR END BEARING ONLY. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 45 TSF.
- INSTALL DRILLED PIERS AT END BENT NO. 1 THAT EXTEND TO AN ELEVATION NO HIGHER THEN 2787 FT FOR PIERS 1 & 2 AND 2785 FT FOR PIERS 3 & 4 AND SATISFY THE REQUIRED END BEARING CAPACITY.
- INSTALL DRILLED PIERS AT END BENT NO. 2 THAT EXTEND TO AN ELEVATION NO HIGHER THEN 2787 FT FOR PIERS 1 & 2 AND 2783 FT FOR PIERS 3 & 4 AND SATISFY THE REQUIRED END BEARING CAPACITY.
- SPT TESTING IS REQUIRED FOR DRILLED PIERS AT END BENT NO. 1 AND END BENT NO. 2. THE REQUIRED N60 SPT VALUE IS 100 BLOWS IN THE FIRST FOOT OF THE DRIVE.
- SID INSPECTIONS MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS.
- CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR DRILLED PIERS. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. FOR CROSSHOLE SONIC LOGGING, SEE SPECIAL PROVISIONS.

**HYDRAULIC DATA**

DESIGN DISCHARGE	= 1700 CFS
FREQUENCY OF DESIGN FLOOD	= 25 YRS.
DESIGN HIGH WATER ELEVATION	= 2824.61
DRAINAGE AREA	= 7.0 SQ MI
BASIC DISCHARGE (Q100)	= 2500 CFS
BASIC HIGH WATER ELEVATION	= 2826.01

**OVERTOPPING FLOOD DATA**

OVERTOPPING DISCHARGE	= 1700 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 25 YRS.
OVERTOPPING FLOOD ELEVATION	= 2824.61

**TOTAL BILL OF MATERIAL**

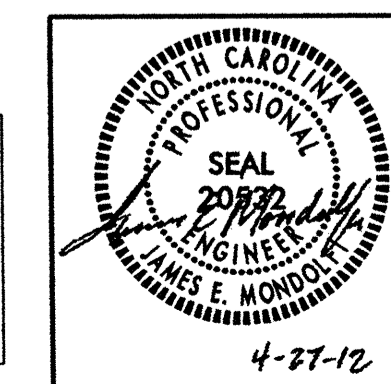
	REMOVAL OF EXISTING STRUCTURE	BRIDGE APPROACH FILL SUB REGIONAL TIER, STA. 16+20.00 -L-	3'-0" DIA. DRILLED PIERS IN SOIL	3'-0" DIA. DRILLED PIERS NOT IN SOIL	UNCLASSIFIED STRUCTURE EXCAVATION	CLASS A CONCRETE	REINFORCING STEEL (BRIDGE)	SPIRAL COLUMN REINFORCING STEEL	BRIDGE APPROACH SLABS	SID INSPECTION	SPT INSPECTION	CSL TESTING	RIP RAP CLASS II	GEOTEXTILE FOR DRAINAGE	ELASTOMERIC BEARINGS	CONCRETE BARRIER RAIL (TRANSPORT & INSTALL ONLY)	3'-0" X 1'-9" PRESTRESSED CONCRETE CORED SLABS (TRANSPORT & INSTALL ONLY)
	LUMP SUM	LUMP SUM	LF	LF	LUMP SUM	CU. YD.	LB.	LB.	LUMP SUM	EA.	EA.	EA.	TON	SQ. YD.	LUMP SUM	LF	LF
SUPERSTRUCTURE	LUMP SUM								LUMP SUM						LUMP SUM	110	550
END BENT NO. 1		LUMP SUM	116	28	LUMP SUM	26.6	9,523	2,662		1	4	1	139	154			
END BENT NO. 2		LUMP SUM	118	20	LUMP SUM	26.6	9,277	2,562		1	4	1	125	139			
TOTAL	LUMP SUM	LUMP SUM	234	48	LUMP SUM	53.2	18,800	5,224	LUMP SUM	2	8	2	264	293	LUMP SUM	110	550

**PROJECT NO. 42577**  
**COUNTY: YANCEY**  
**STATION: 16+20.00 -L-**  
 SHEET 2 OF 2

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**BRIDGE NO. 119 ON SR 1395**  
**OVER BALD MOUNTAIN CREEK**

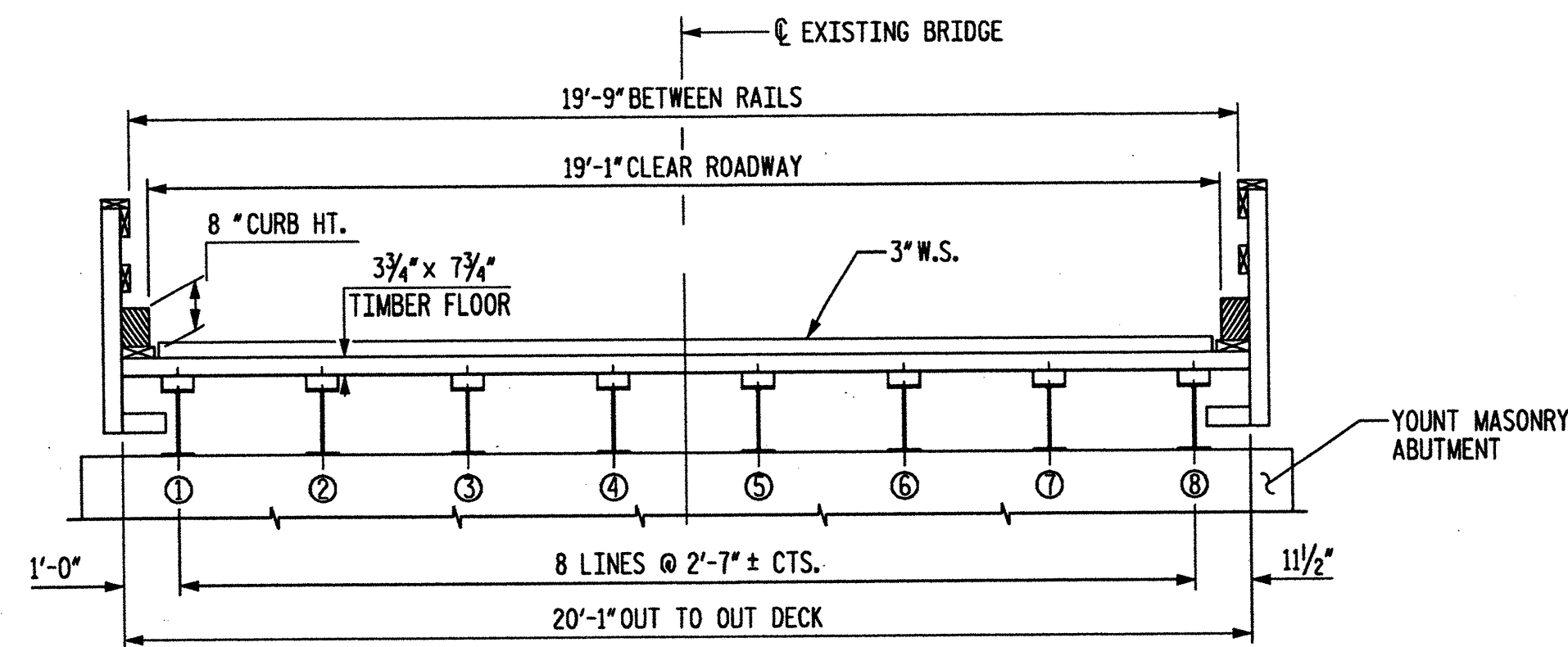
**FH Florence & Hutcheson**  
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 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No: F-0268



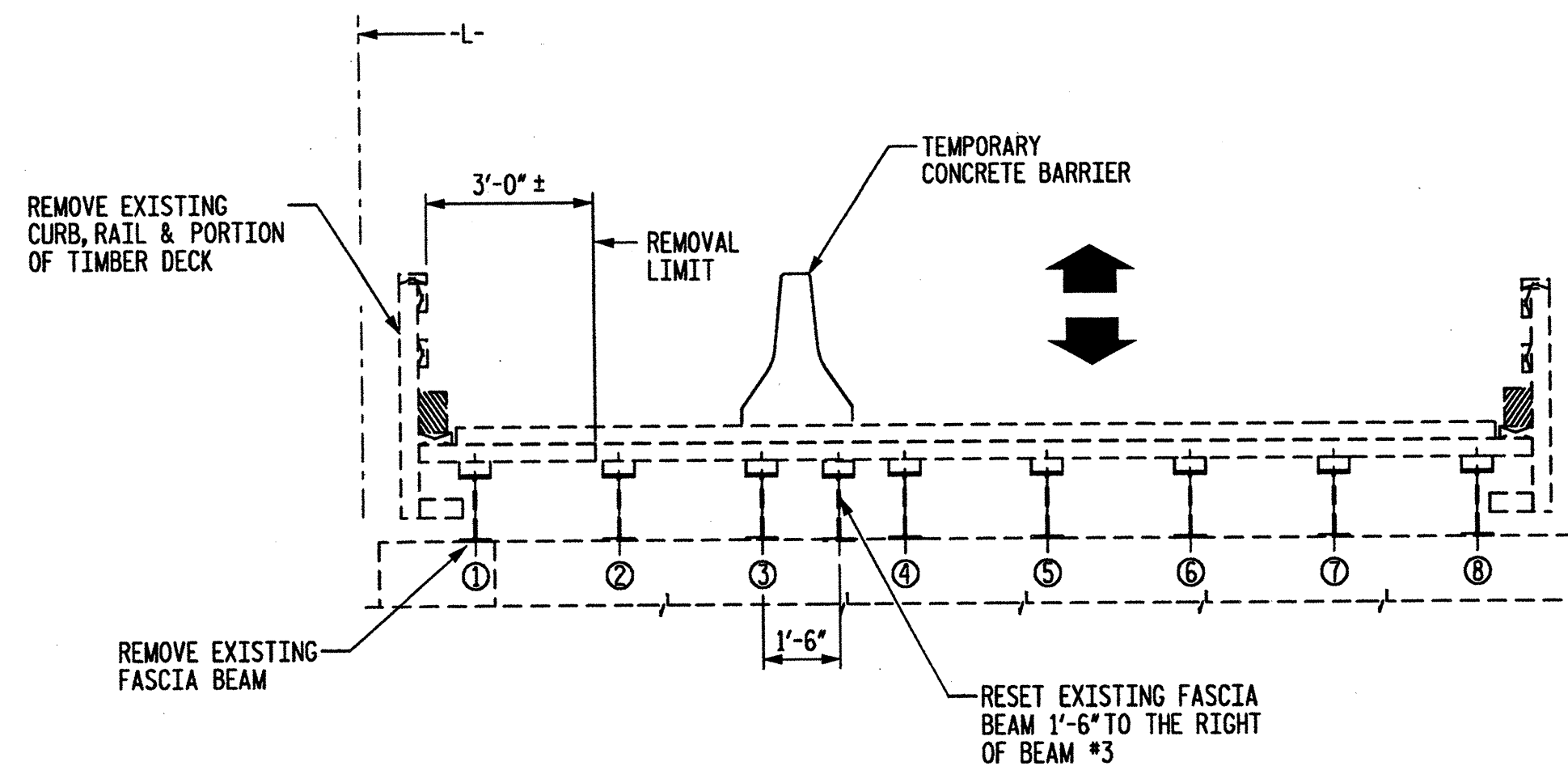
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-2
1			3			TOTAL SHEETS
2			4			18

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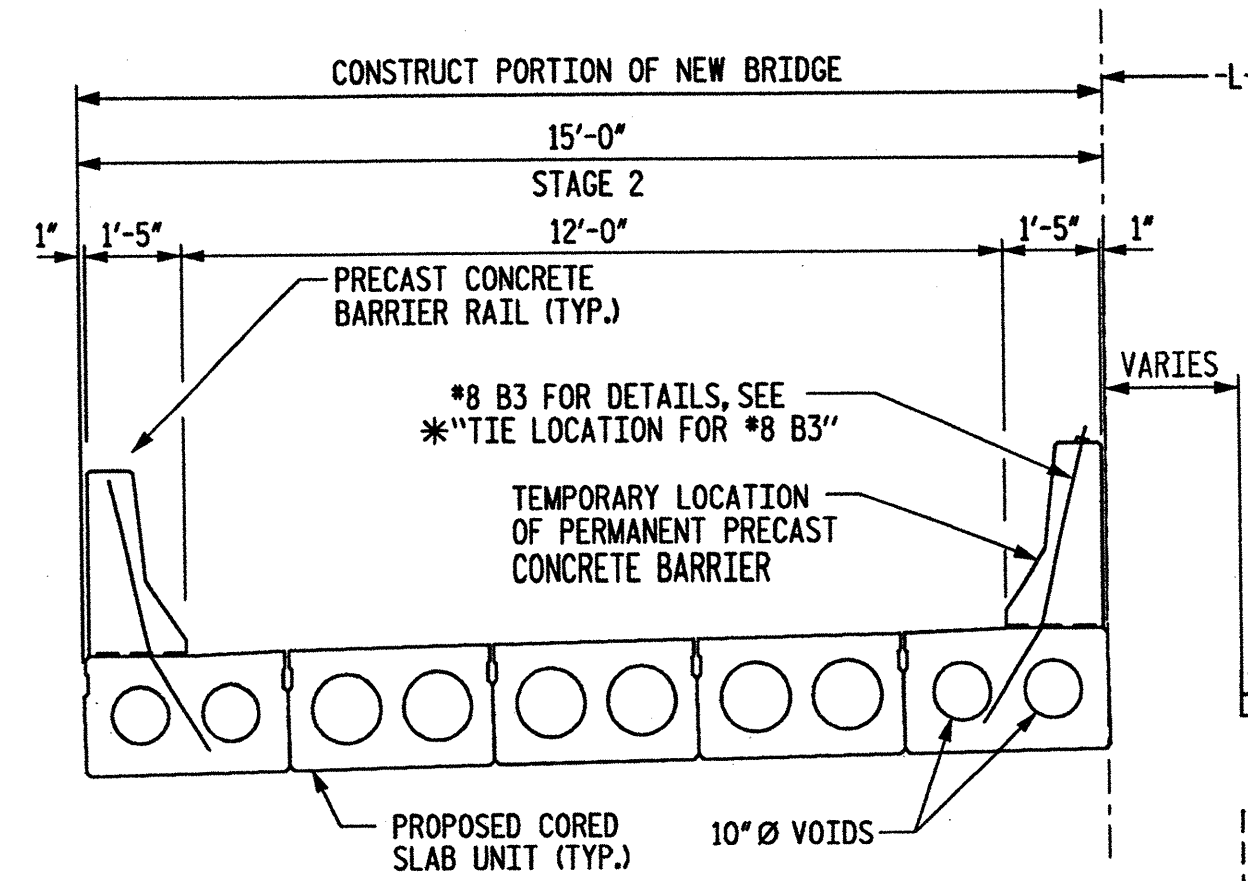
DRAWN BY: M.T. MORLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012



**EXISTING BRIDGE SECTION**



**STAGE 1**



**STAGE 2**

\* PLACE BARRIER OVER REBARS EXTENDING OUT OF CORED SLAB UNIT. DO NOT GROUT HOLES IN BARRIER SECTIONS. SNUG TIGHT REBAR ANCHOR RODS.

**NOTES**

**STAGE 1:**

2. REMOVE AND RELOCATE EXISTING FASCIA BEAM 1'-6" TO THE RIGHT OF BEAM #3.
3. INSTALL TEMPORARY CONNECTION BETWEEN THE RELOCATED FASCIA BEAM AND BEAM #3.
4. SET TEMPORARY PORTABLE CONCRETE BARRIER CENTERED ABOVE THE TWO BEAMS SPACED AT 1'-6" ON THE EXISTING BRIDGE.

**STAGE 2:**

1. CONSTRUCT PORTION OF NEW END BENTS AND NORTH FASCIA WINGS.
2. INSTALL FIVE CORED SLAB UNITS AND PERMANENT CONCRETE BARRIER RAILS.
3. MOVE TRAFFIC TO CONSTRUCTED PORTION OF NEW BRIDGE.

**STAGE 3:**

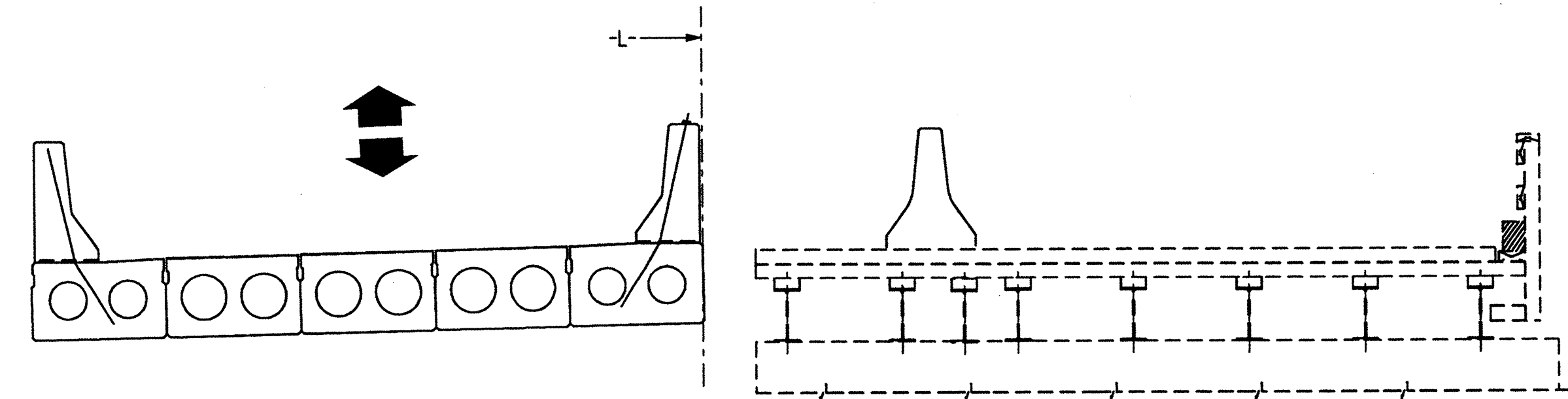
1. REMOVE REMAINDER OF EXISTING BRIDGE.

**STAGE 4:**

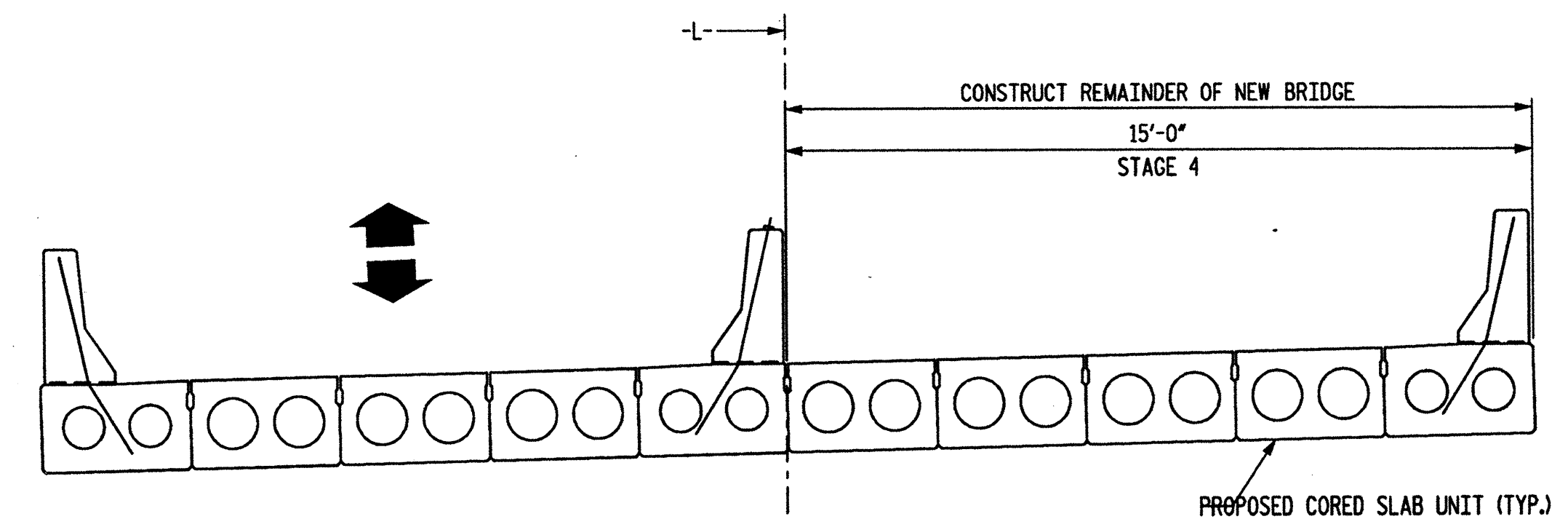
1. CONSTRUCT REMAINDER OF NEW END BENTS AND SOUTH FASCIA WINGS.
2. INSTALL REMAINING CORED SLAB UNITS.
3. RELOCATE PRECAST CONCRETE BARRIER RAIL TO THE EXTERIOR CORED SLAB UNIT.

**STAGE 5:**

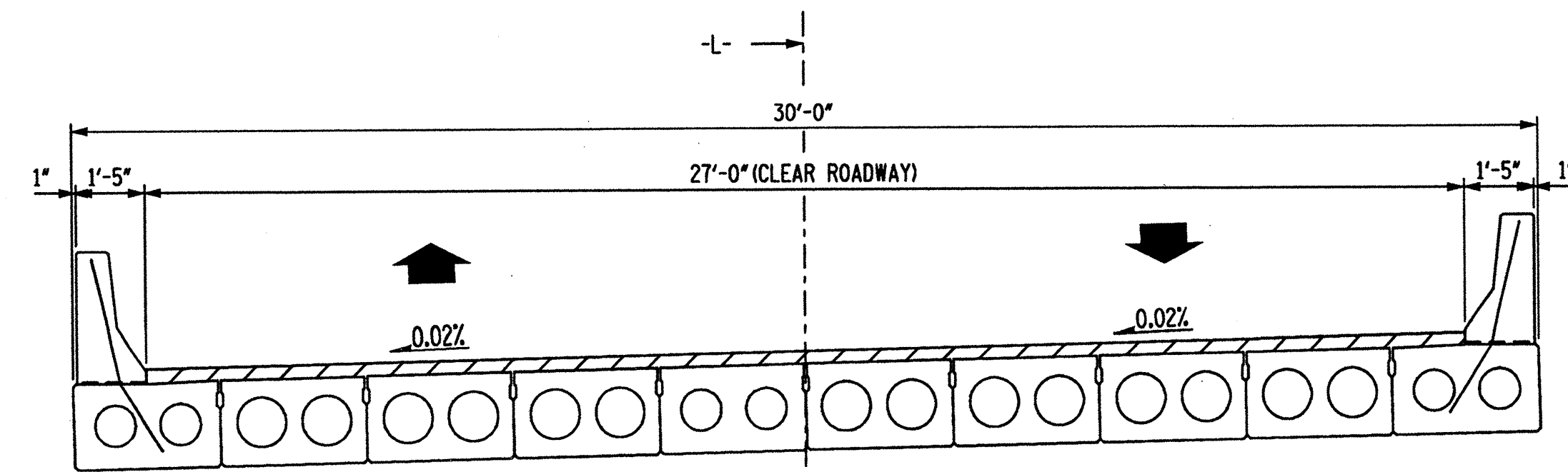
1. INSTALL ASPHALT WEARING SURFACE.



**STAGE 3**



**STAGE 4**



**STAGE 5**

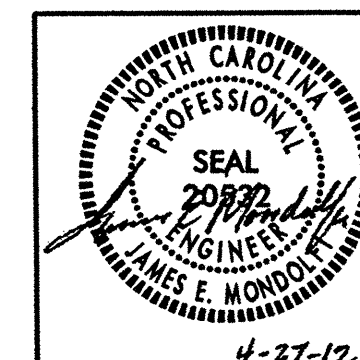
PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**CONSTRUCTION STAGING LAYOUT**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-3
1			3			TOTAL SHEETS 18
2			4			

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DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

NOTES

ASSUMED LIVE LOAD = HS 20-44 OR ALTERNATE LOADING.  
 CONCRETE: f'c = 7000 psi  
 \* CONCRETE: f'c.1 = 4500 psi

\*(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. 1/2" Ø HIGH STR. 0.153" PER CABLE 41,300\*

APPLIED FORCE 30,980\* PER CABLE EXP. JT. 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 1028-4 OF THE STANDARD SPECIFICATIONS.

STRUCTURAL STEEL ITEMS SHALL BE OF A GRADE CONFORMING TO EITHER ASTM A36 OR A373, 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 2002 AND WITH THE SPECIAL PROVISIONS.

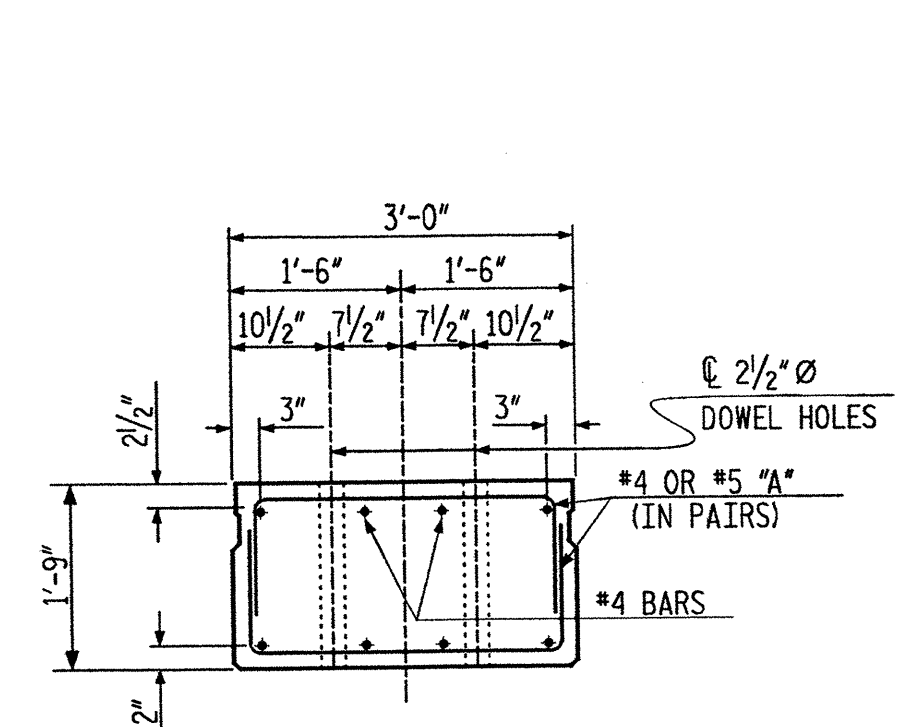
THE ULTIMATE STRENGTH OF THE CORED SLAB UNIT MUST MEET THE REQUIREMENTS OF THE APPLICABLE AASHTO SPECIFICATIONS.

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.

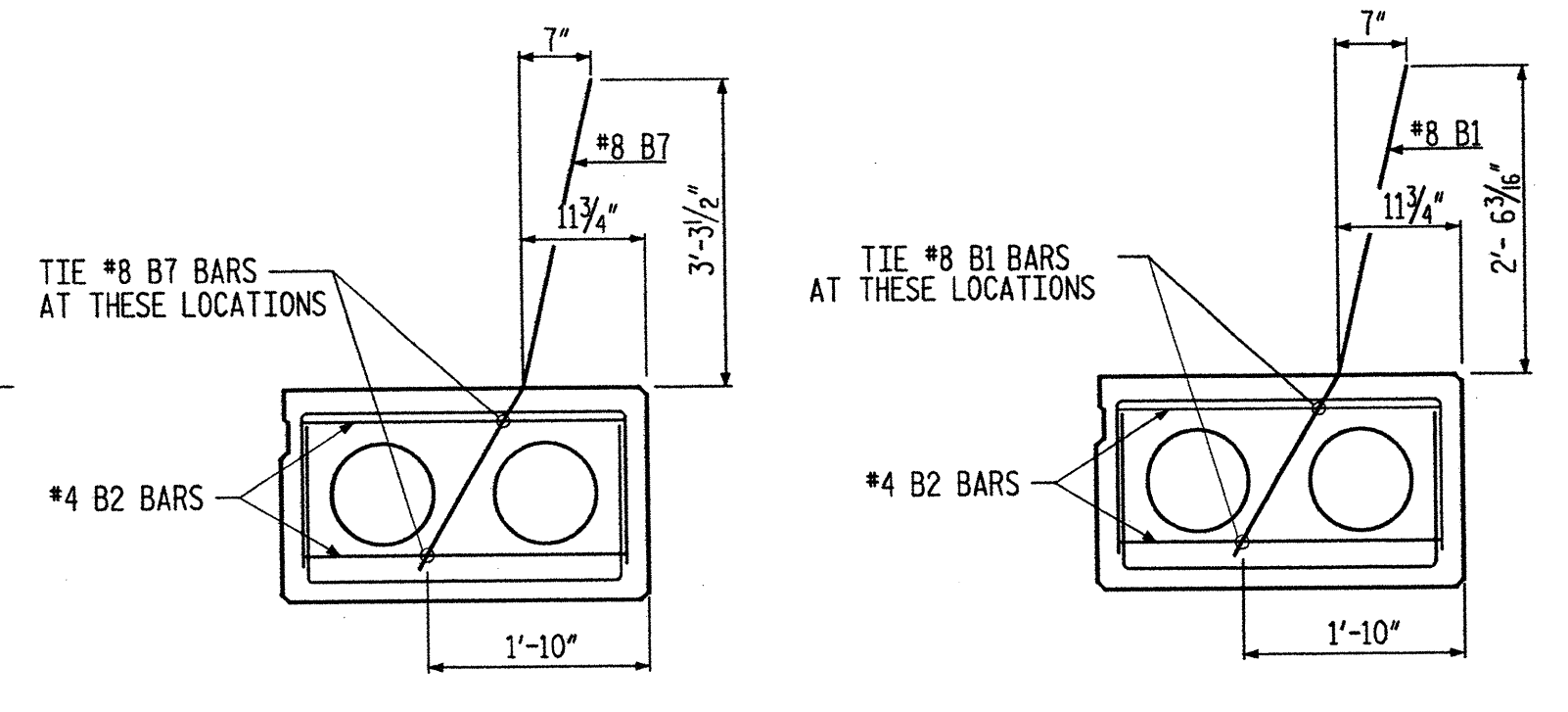
SPIRAL WIRE REINFORCEMENT MAY BE USED IN LEIU OF DEFORMED BARS FOR STIRRUPS. MIN. W 3.5" X 6" PITCH.

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

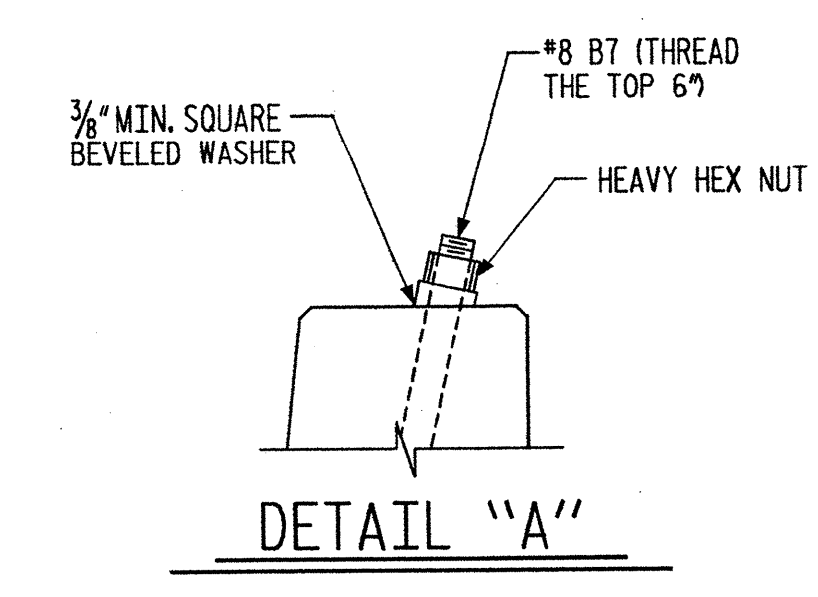


SLAB END ELEVATION

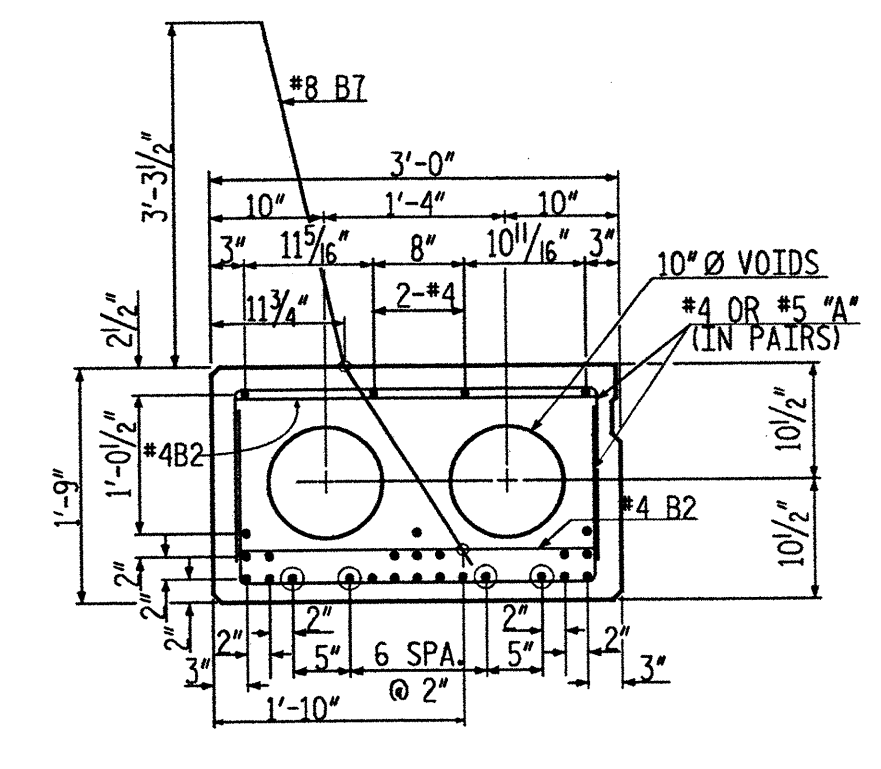
THE 2 1/2" Ø DOWEL HOLES AT EXPANSION ENDS OF SLAB SECTIONS SHALL BE FILLED WITH LOW MODULUS SILICONE MATERIAL TO 1/2" ABOVE TOP OF DOWELS AND THEN FILLED WITH GROUT.



TIE LOCATION FOR #8 B1 & B7



DETAIL "A"



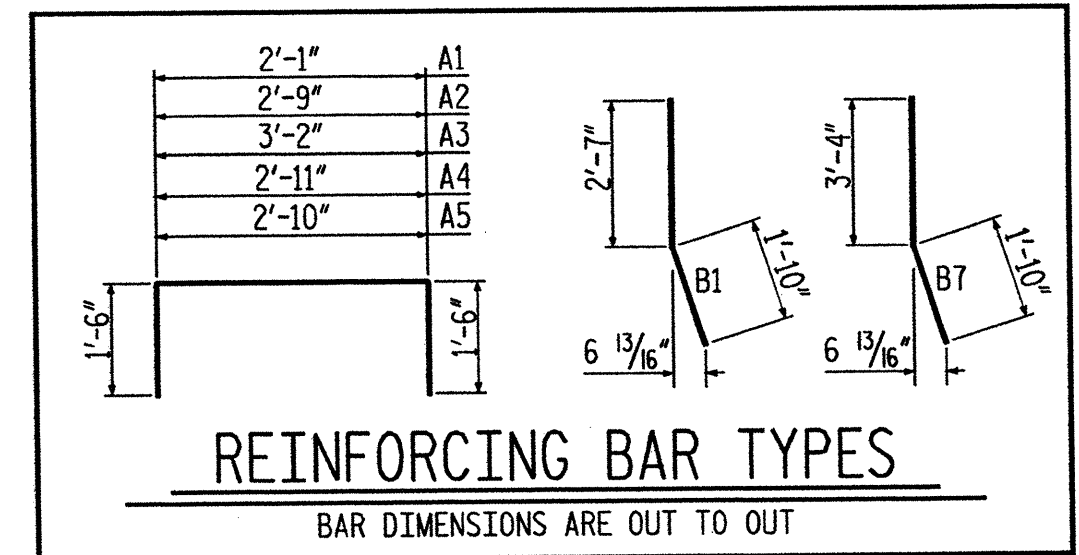
55' SPAN

25 - 1/2" Ø H.S. STRANDS INTERIOR SLAB SECTION SPECIAL

⊙ STRAND IS SHEATHED. SEE SHEATH CHART.

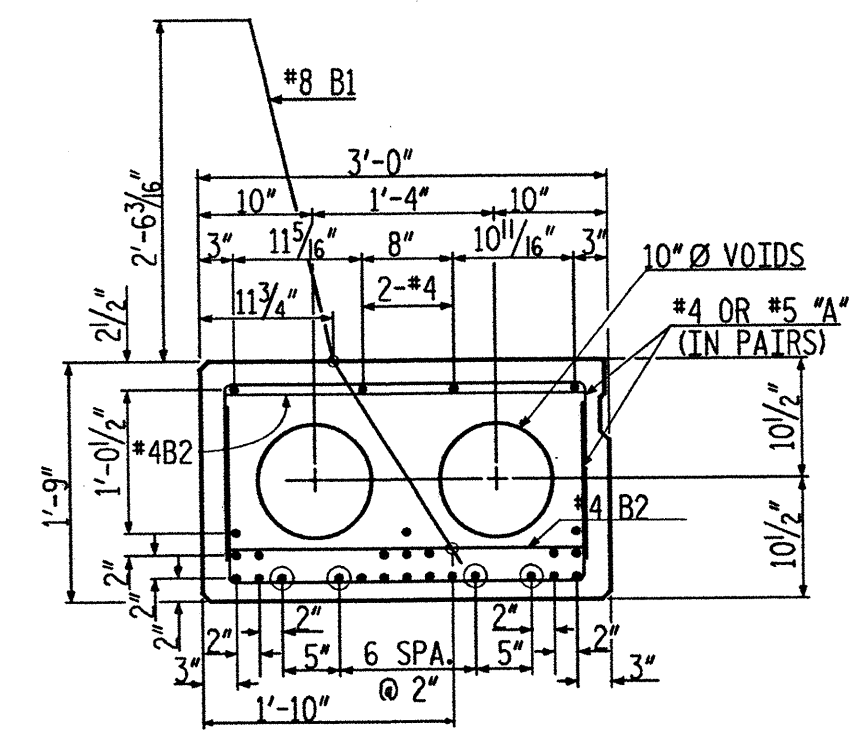
SHEATH CHART			
SPAN LENGTH	NUMBER OF SHEATHED STRANDS PER EXTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER INTERIOR SLAB SECTIONS	NUMBER OF SHEATHED STRANDS PER UNIT #5 SLAB SECTIONS
55'	* 4 @ 2"	* 3 @ 2"	* 4 @ 2"

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



REINFORCING BAR TYPES

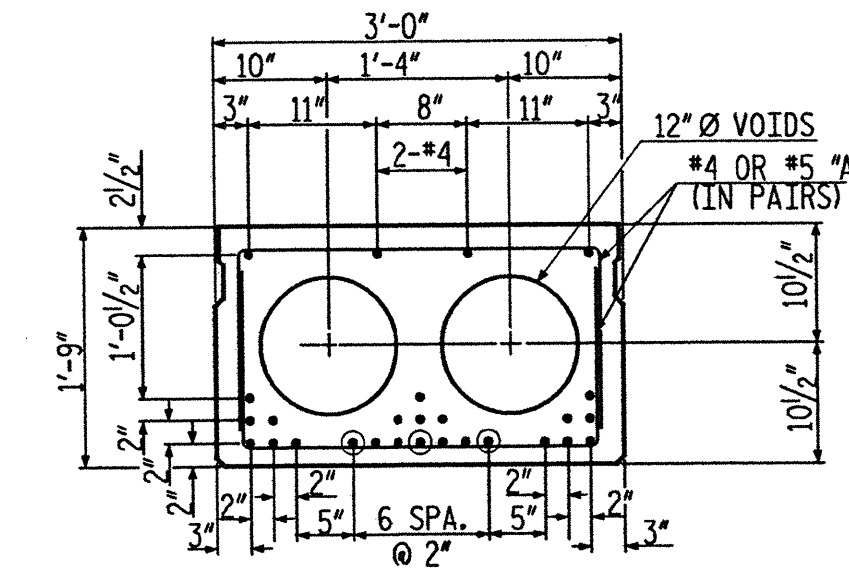
BAR DIMENSIONS ARE OUT TO OUT



55' SPAN

25 - 1/2" Ø H.S. STRANDS EXTERIOR SLAB SECTIONS

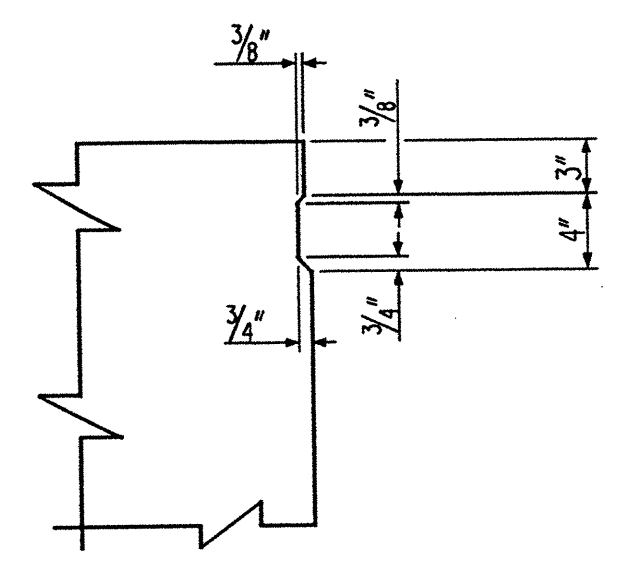
⊙ STRAND IS SHEATHED. SEE SHEATH CHART.



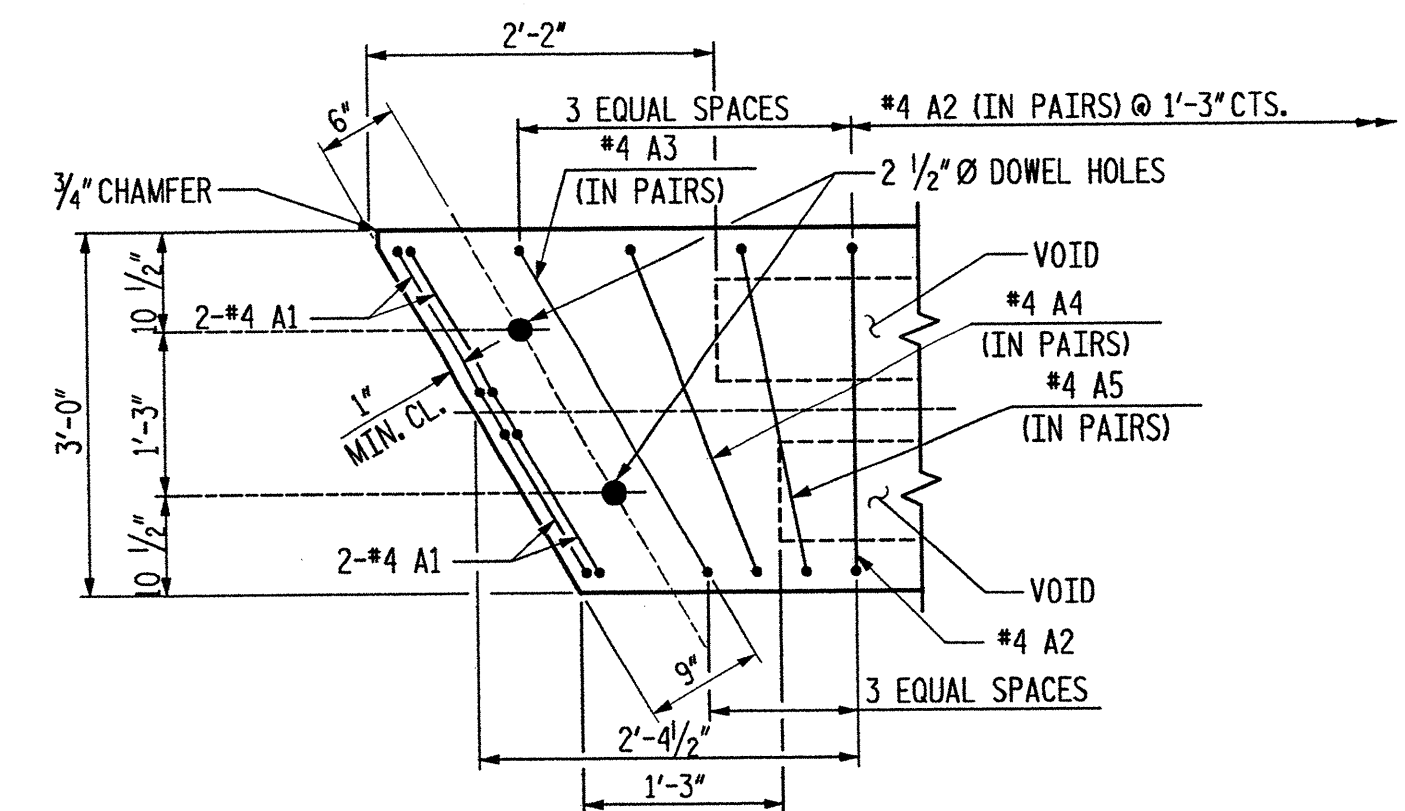
55' SPAN

25 - 1/2" Ø H.S. STRANDS INTERIOR SLAB SECTIONS

⊙ STRAND IS SHEATHED. SEE SHEATH CHART.



SHEAR KEY DETAIL



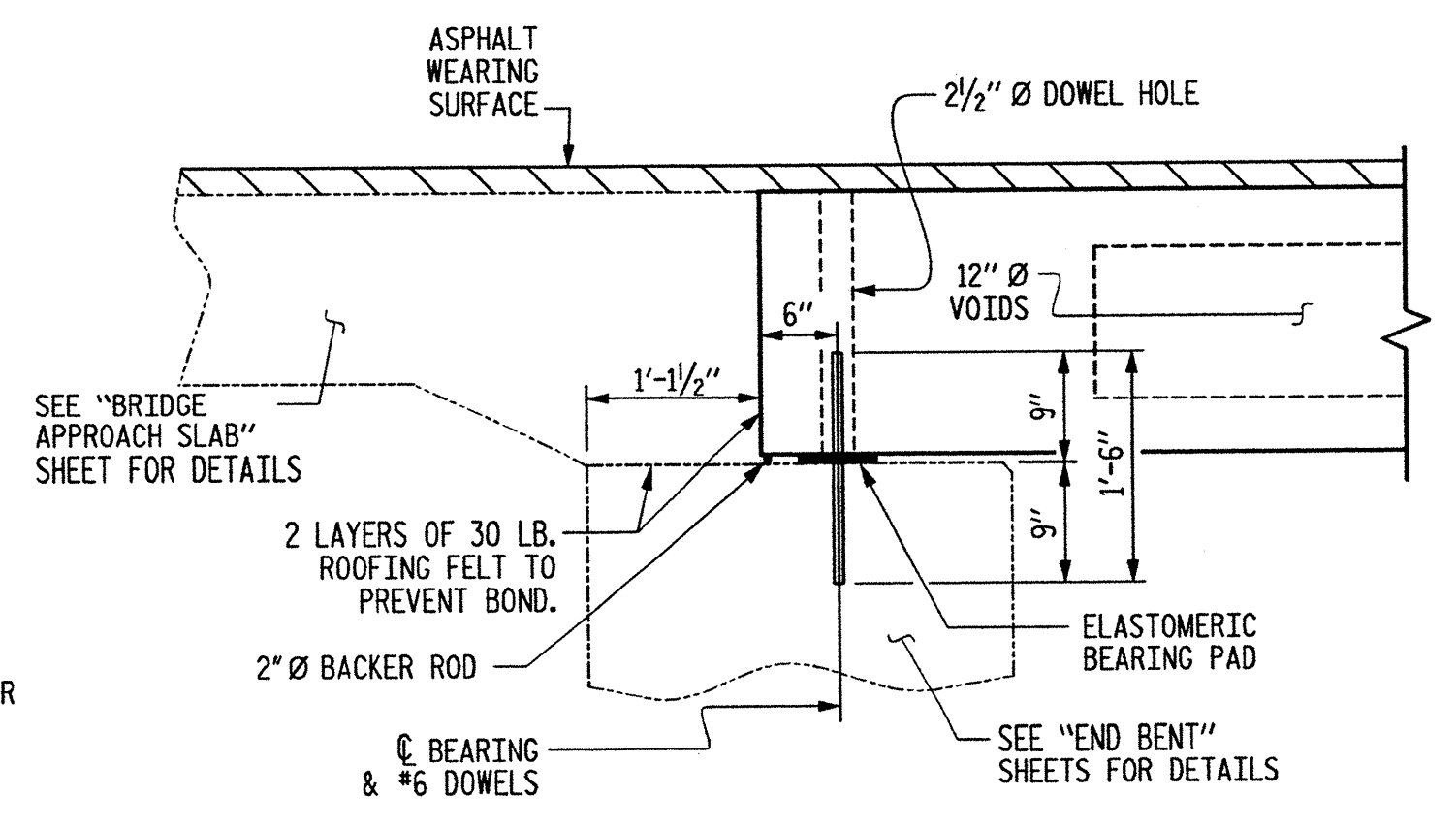
PART PLAN - SLAB

SPECIAL SLAB UNIT & EXTERIOR SLAB UNIT	55'
CAMBER (SLAB UNIT ALONE IN PLACE)	1.791" (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	*0.293" (DOWN)
FINAL DEFLECTION	1.498" (UP)

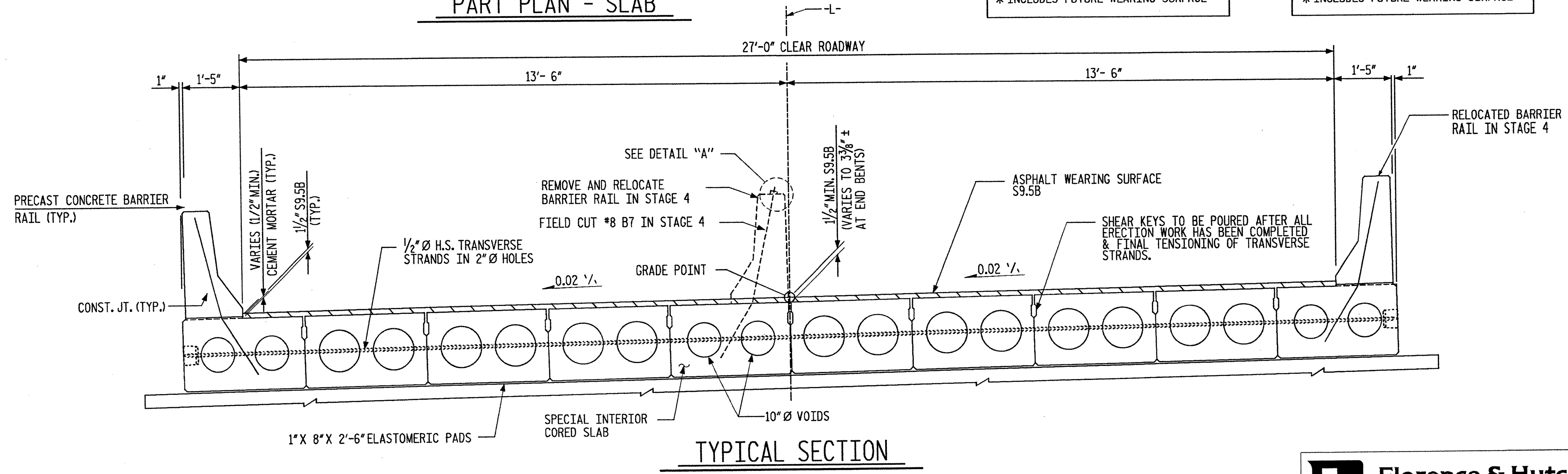
\* INCLUDES FUTURE WEARING SURFACE

INTERIOR SLAB UNIT	55'
CAMBER (SLAB UNIT ALONE IN PLACE)	2.098" (UP)
DEFLECTION (SUPERIMPOSED DEAD LOAD)	*0.293" (DOWN)
FINAL DEFLECTION	1.805" (UP)

\* INCLUDES FUTURE WEARING SURFACE



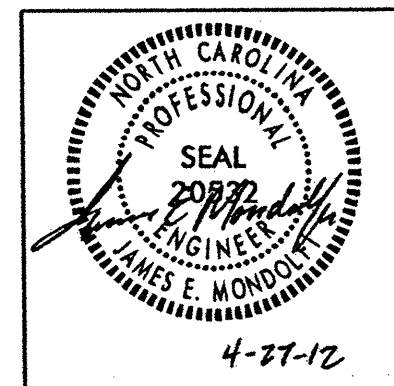
SECTION AT END BENT



TYPICAL SECTION

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 3'-0" x 1'-9" PRESTRESSED  
 CONCRETE CORED SLAB UNIT  
 60 SKEW

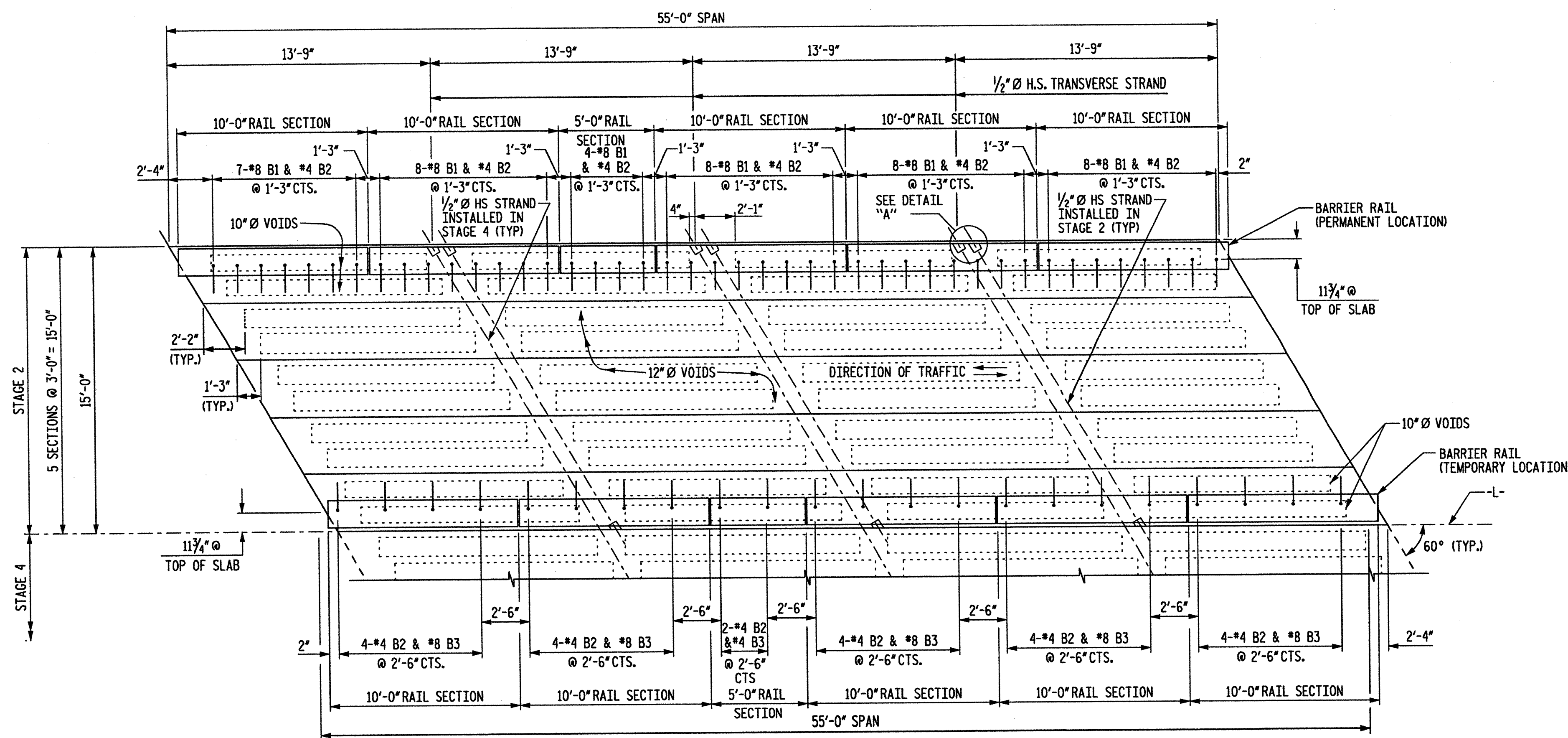


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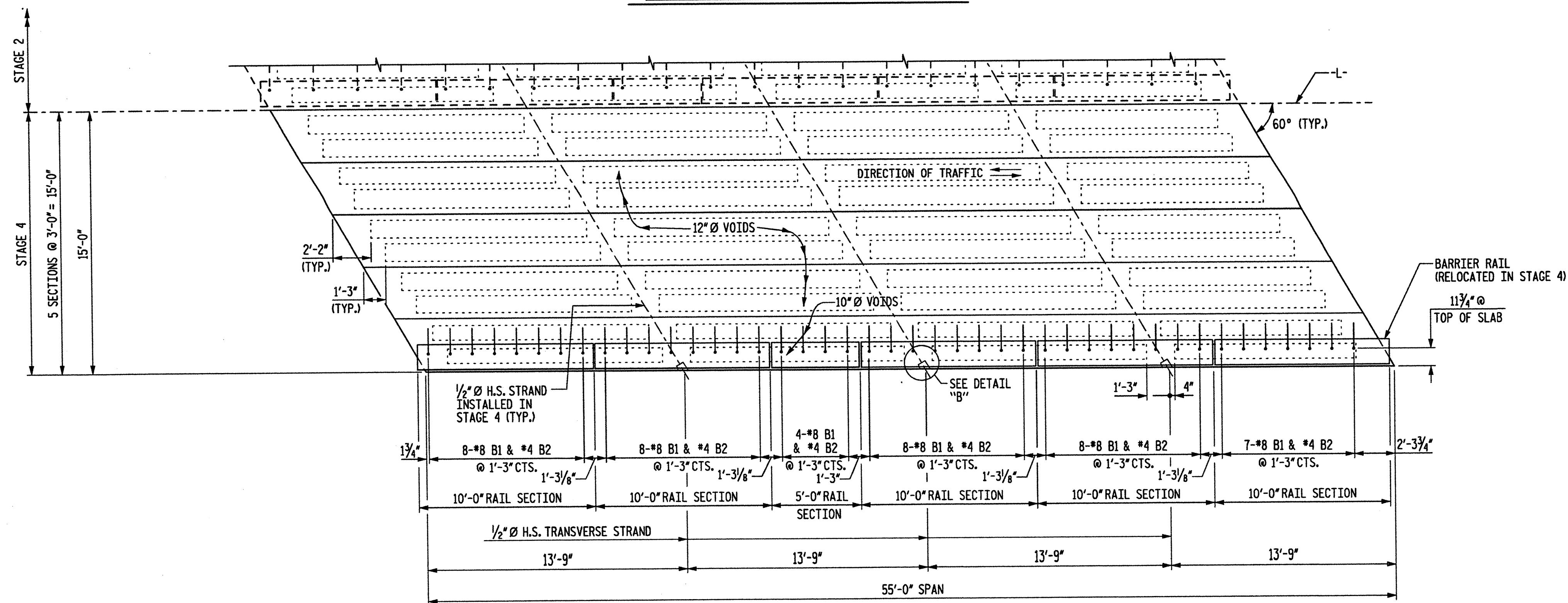
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-4
1			3			TOTAL SHEETS
2			4			18

1/6/2013  
 KO & ASSOCIATES, P.C.

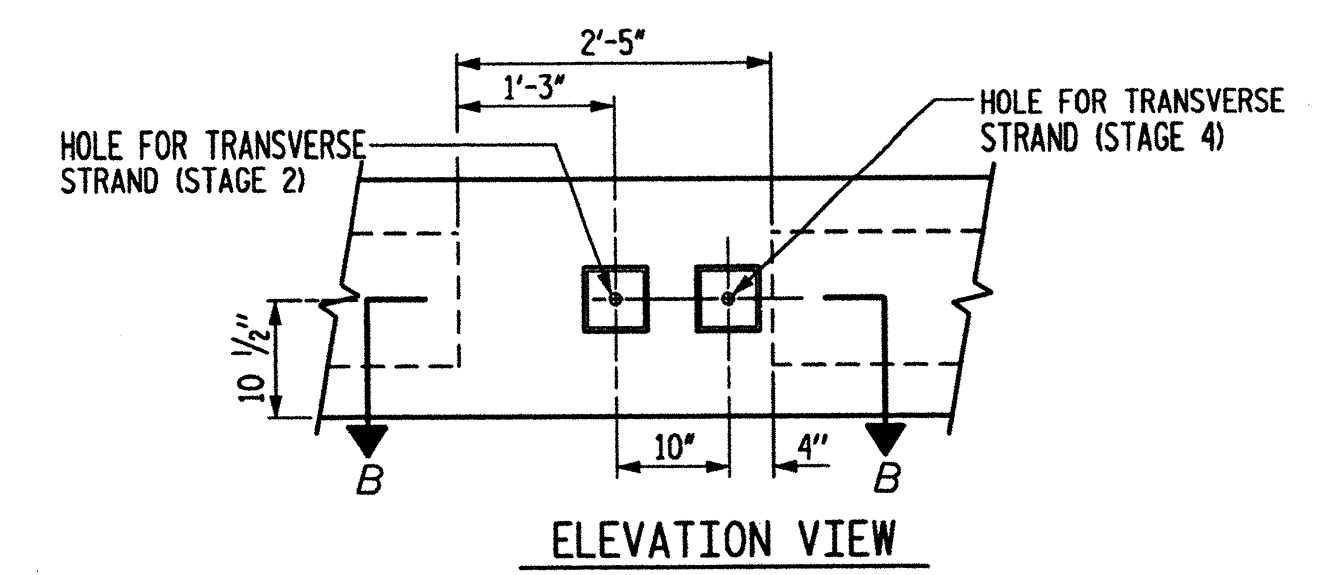
DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012



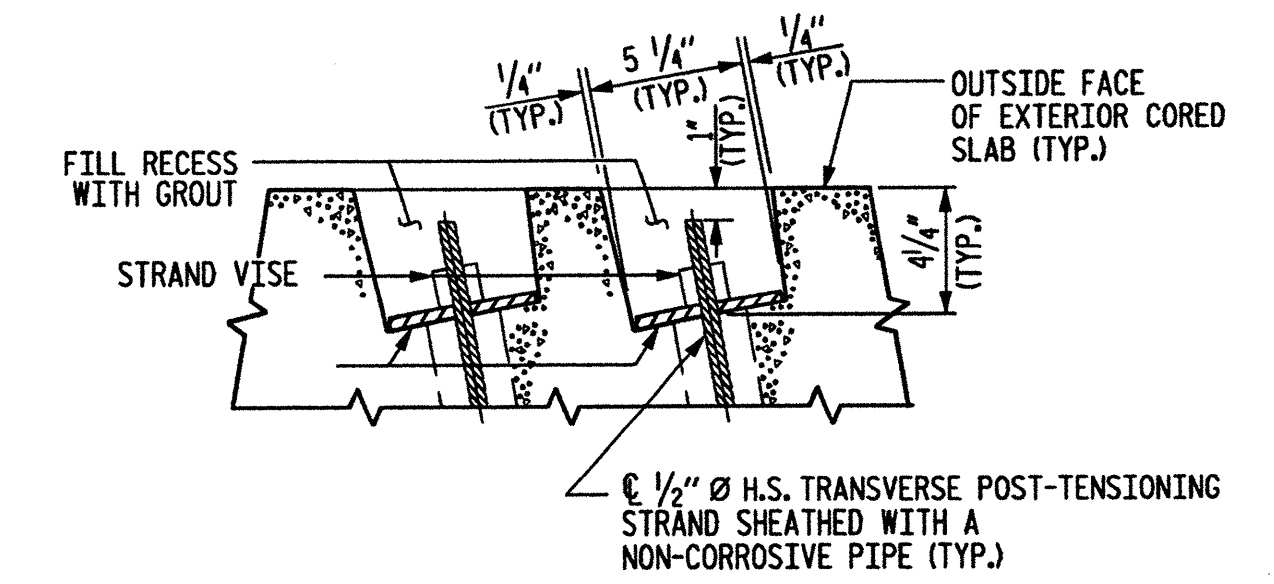
STAGE 2-PLAN OF SPAN A



STAGE 4-PLAN OF SPAN A



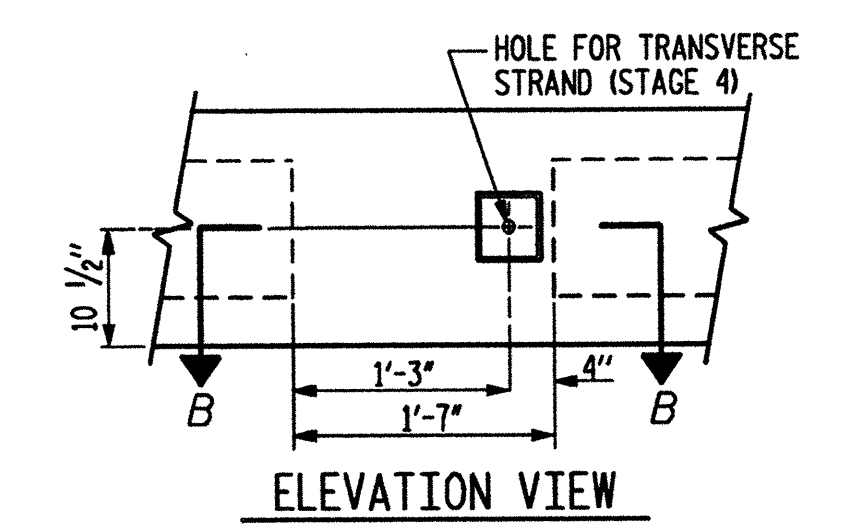
ELEVATION VIEW



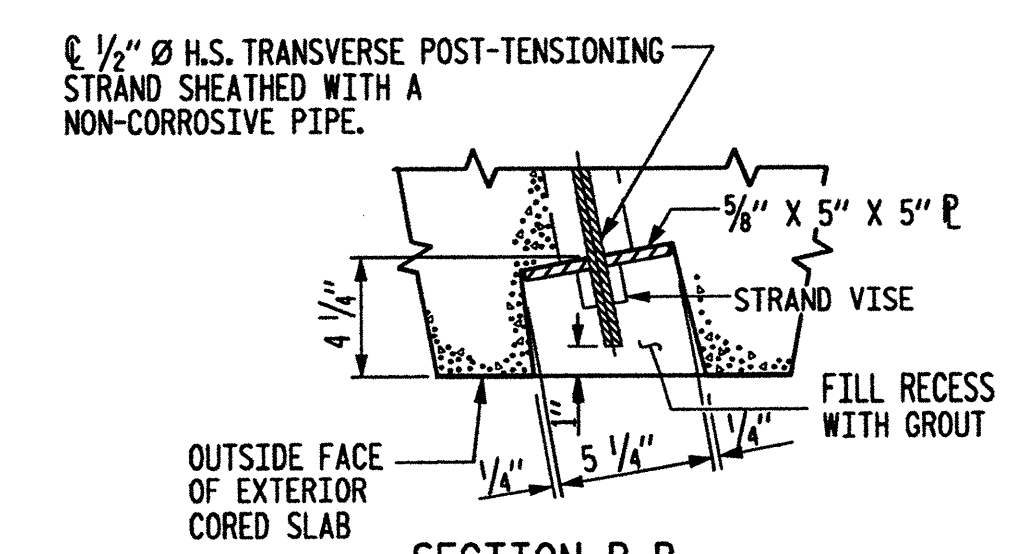
SECTION B-B

DETAIL "A"

GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS



ELEVATION VIEW



SECTION B-B

DETAIL "A"

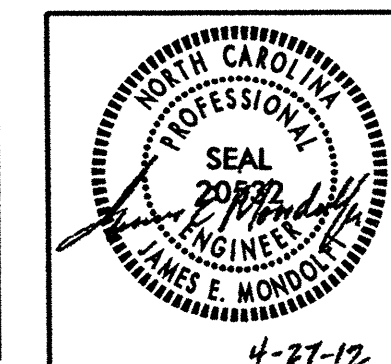
GROUTED RECESS AT END OF POST-TENSIONED STRAND CORED SLABS

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

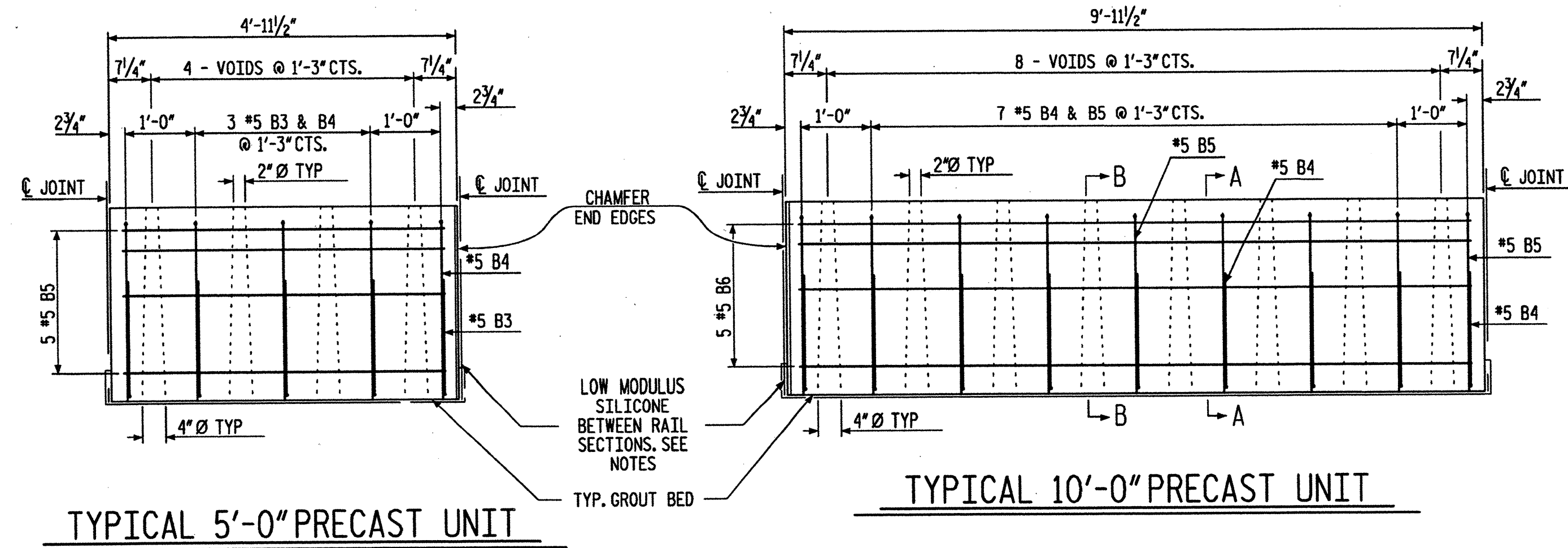
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH  
 PLAN OF SPAN  
 27' CLEAR ROADWAY  
 60° SKEW

REVISIONS						SHEET NO. S-5
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 18
2			4			

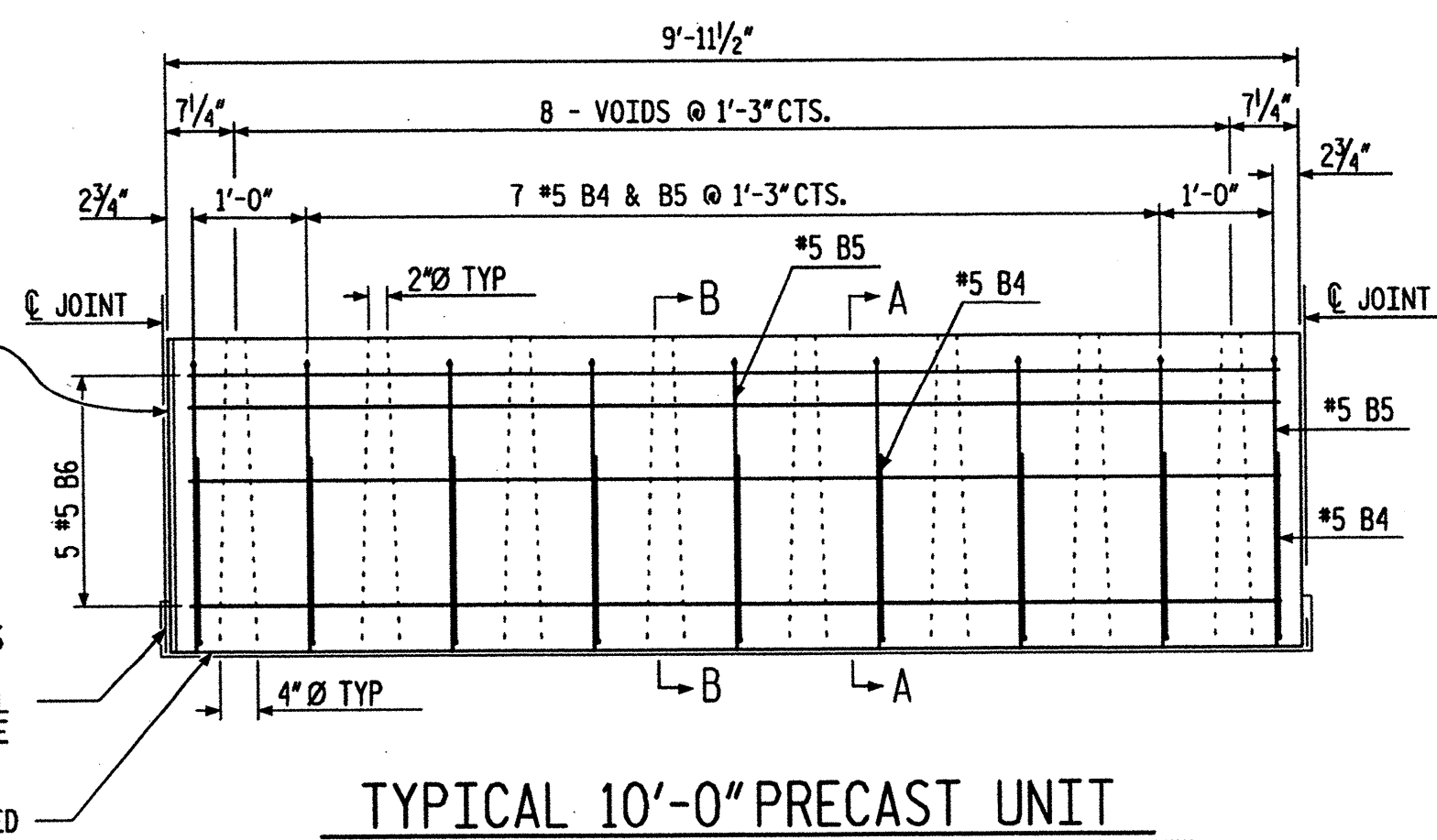
**FH** Florence & Hutcheson  
 CONSULTING ENGINEERS  
 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No: F-0258



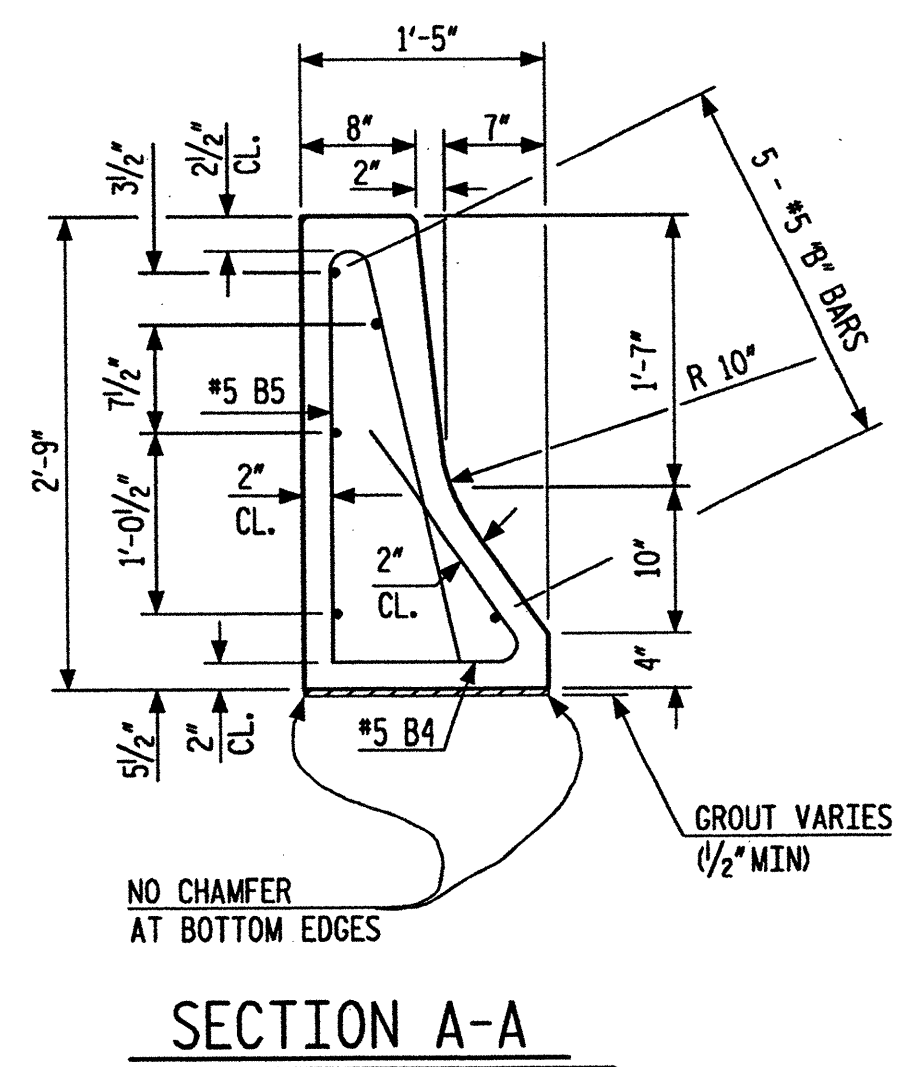
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 Florence & Hutcheson, Inc.  
 DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012



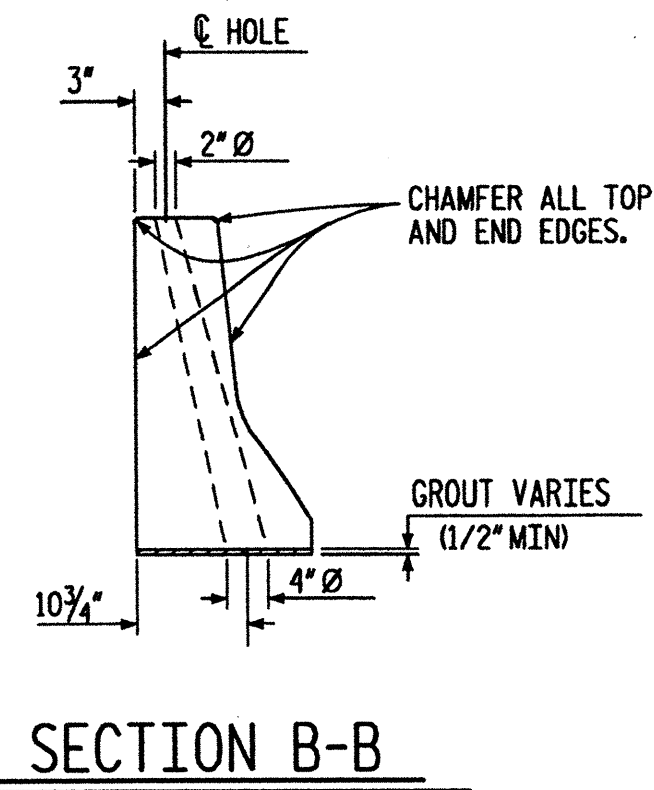
TYPICAL 5'-0" PRECAST UNIT



TYPICAL 10'-0" PRECAST UNIT



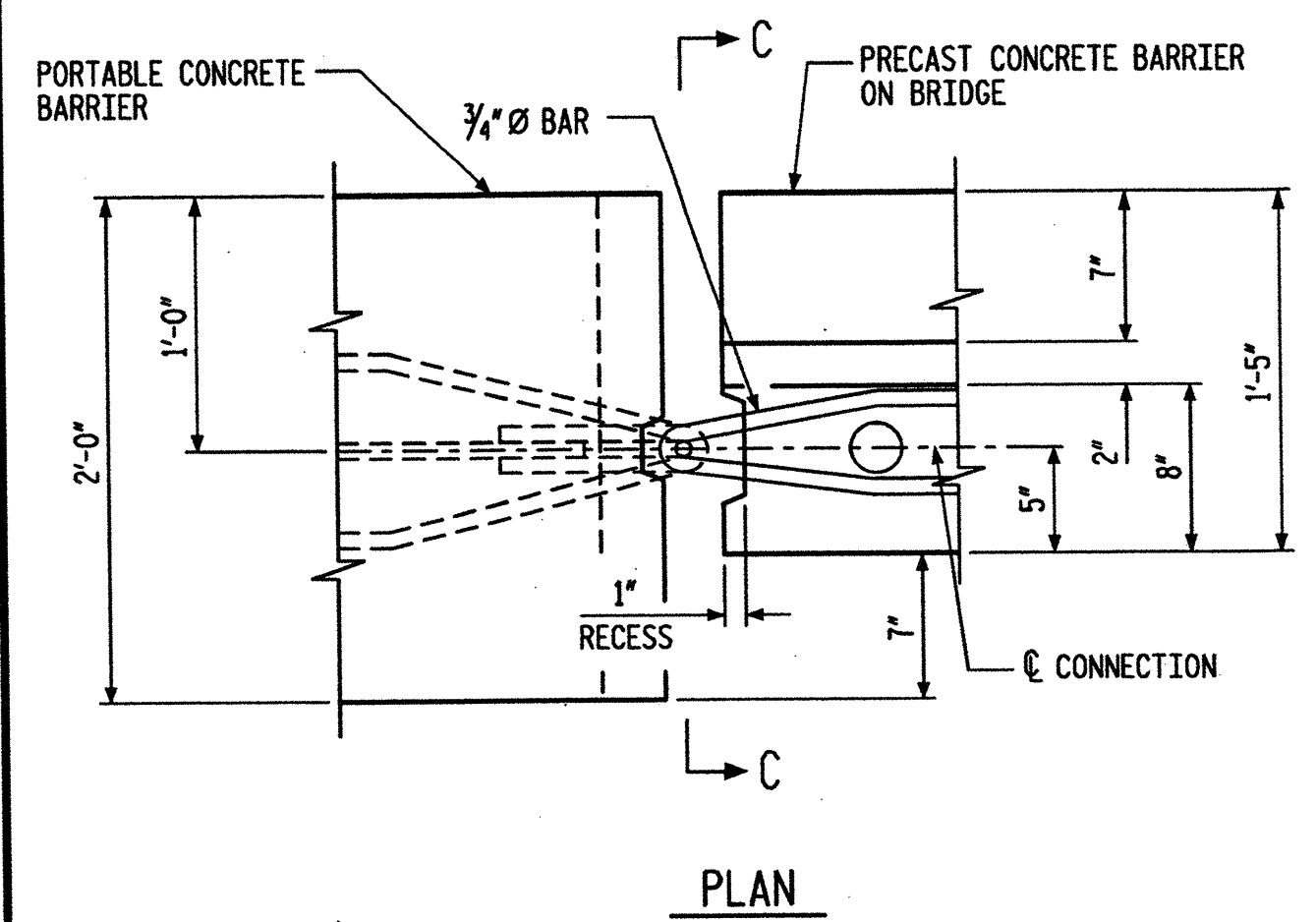
SECTION A-A



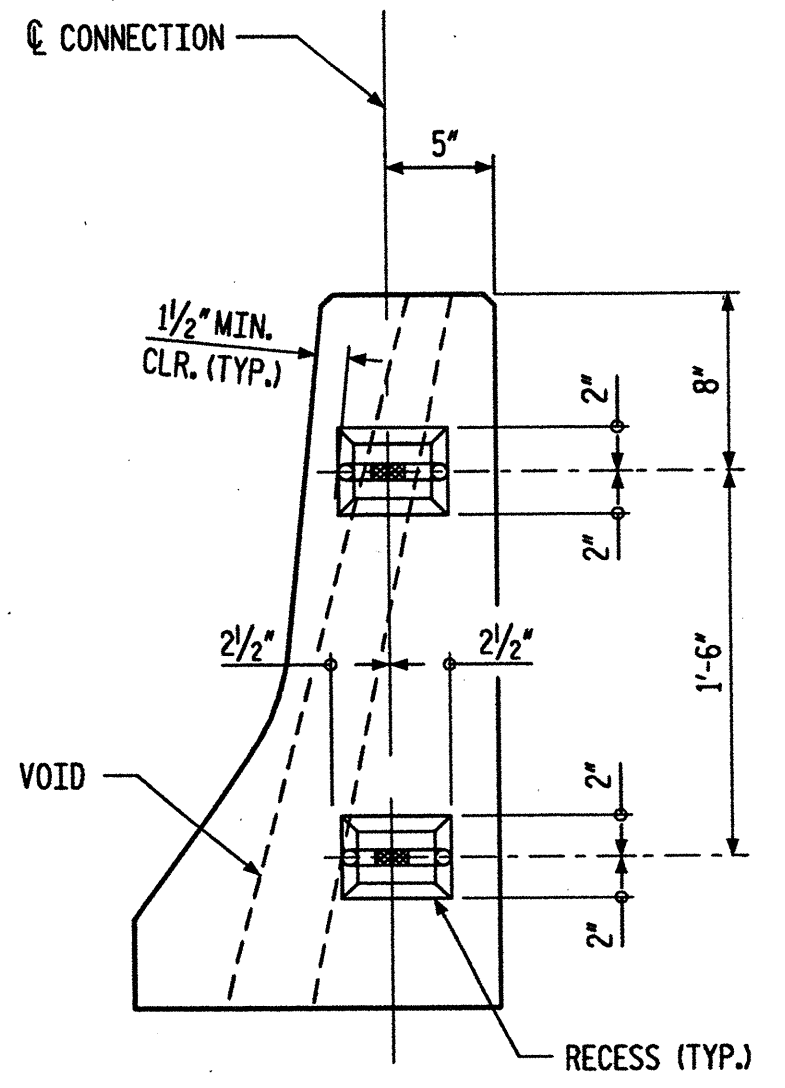
SECTION B-B

BILL OF MATERIAL FOR ONE 10'-0" RAIL SECTION					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B4	#5	1	4'-11"	46	
B5	#5	2	2'-8"	25	
B6	#5	STR	9'-7"	50	
REINFORCING STEEL LBS. = 121					
CLASS AA CONCRETE CU. YDS. = 1.0					

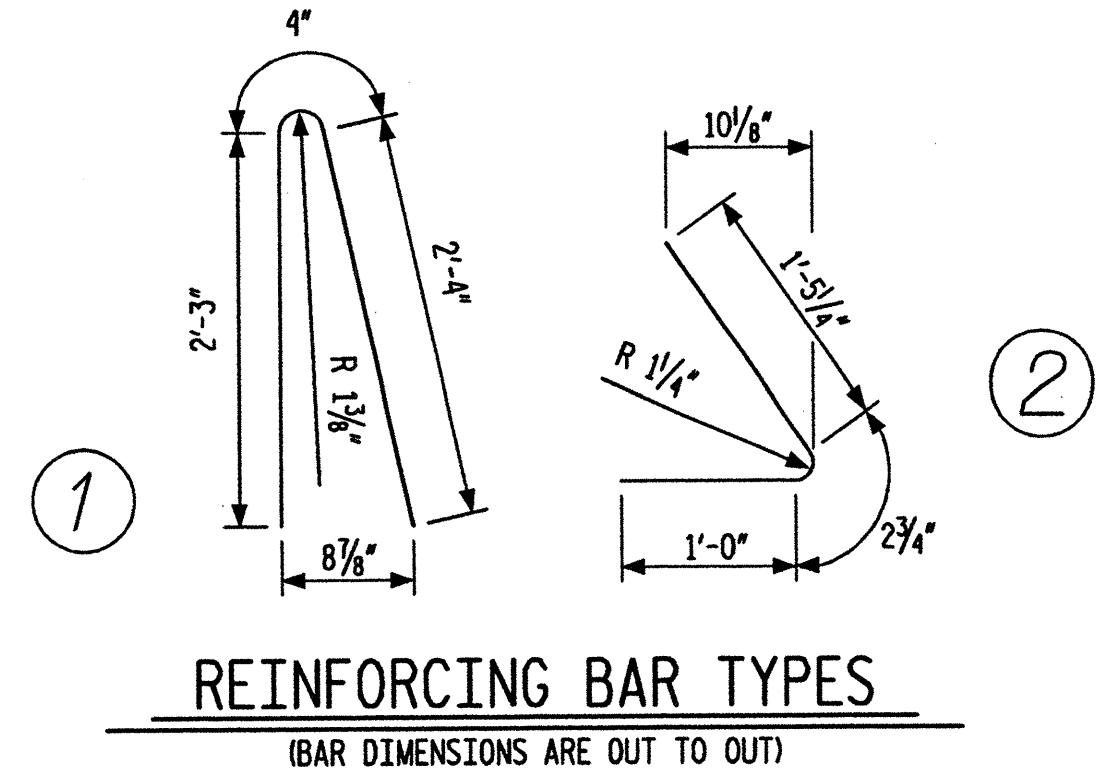
BILL OF MATERIAL FOR ONE 5'-0" RAIL SECTION					
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	
B3	#5	1	4'-11"	26	
B4	#5	2	2'-8"	14	
B5	#5	STR	4'-7"	24	
REINFORCING STEEL LBS. = 64					
CLASS AA CONCRETE CU. YDS. = 0.5					



PLAN



SECTION C-C

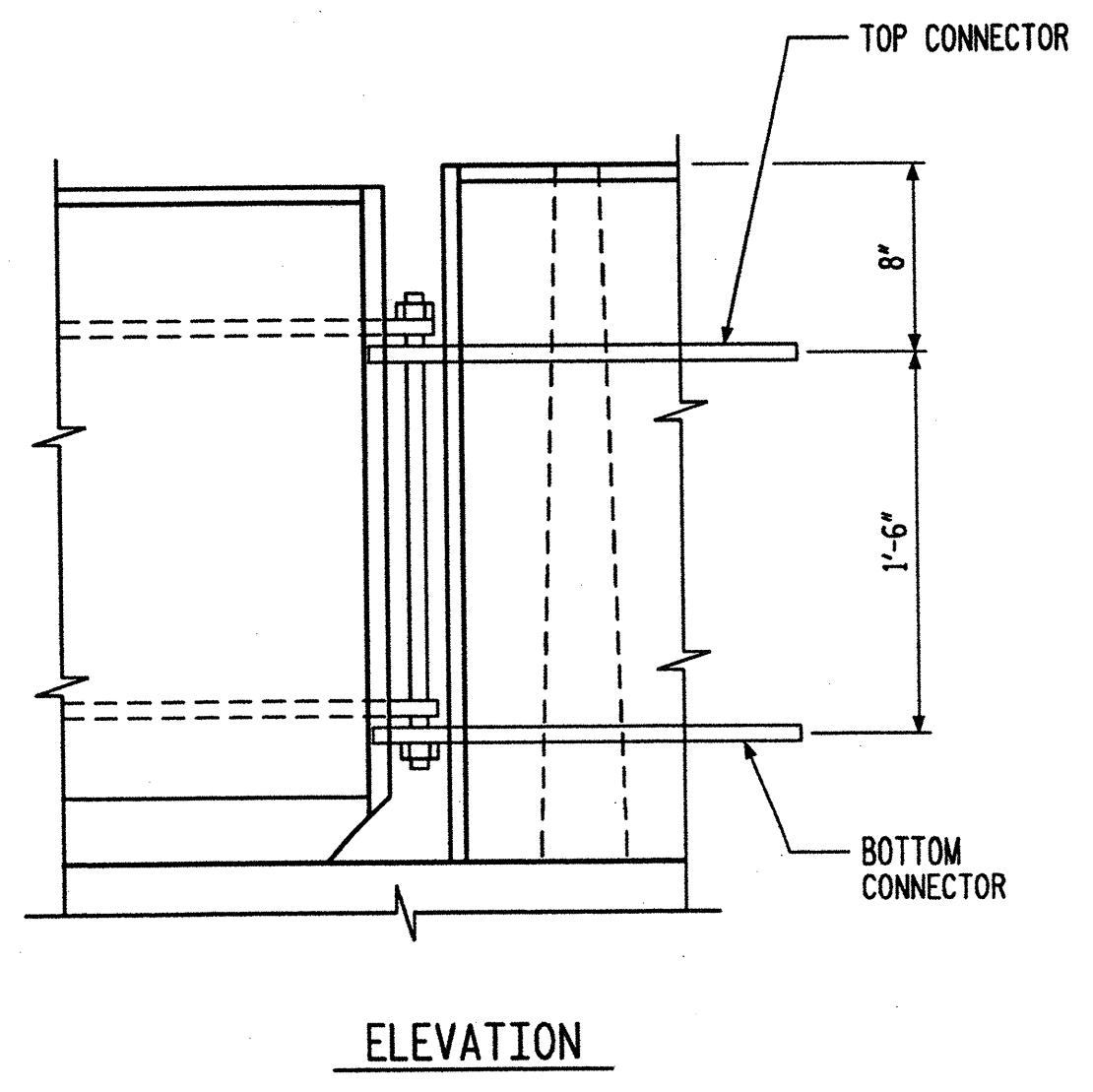


REINFORCING BAR TYPES

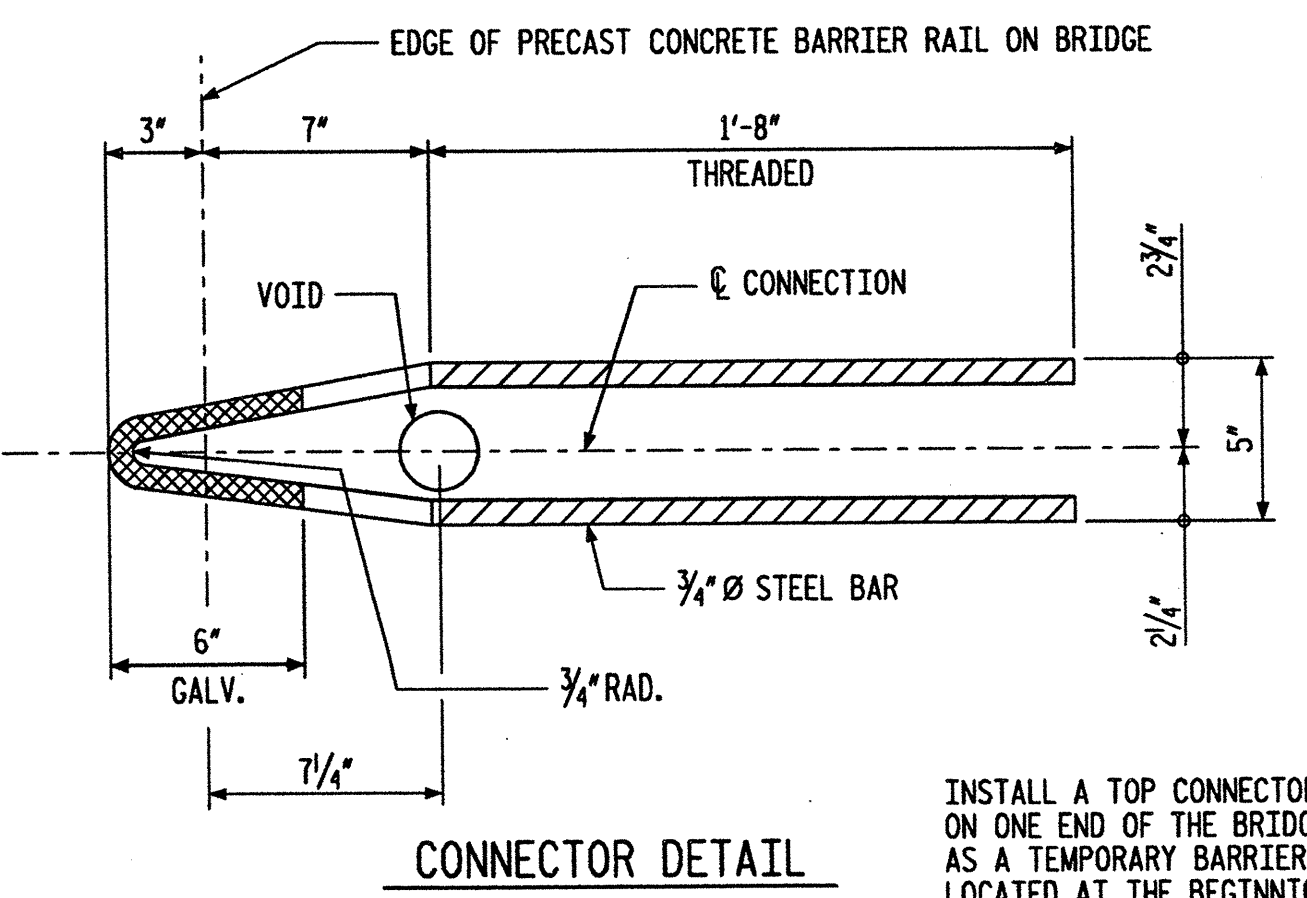
(BAR DIMENSIONS ARE OUT TO OUT)

NOTES

EACH PRECAST RAIL UNIT SHALL BE CAST WITH CLASS AA CONCRETE.  
 EACH PRECAST RAIL UNIT SHALL BE SUPPLIED WITH LIFTING DEVICES. NO CABLES ARE TO BE WRAPPED AROUND THE RAIL UNITS FOR LIFTING.

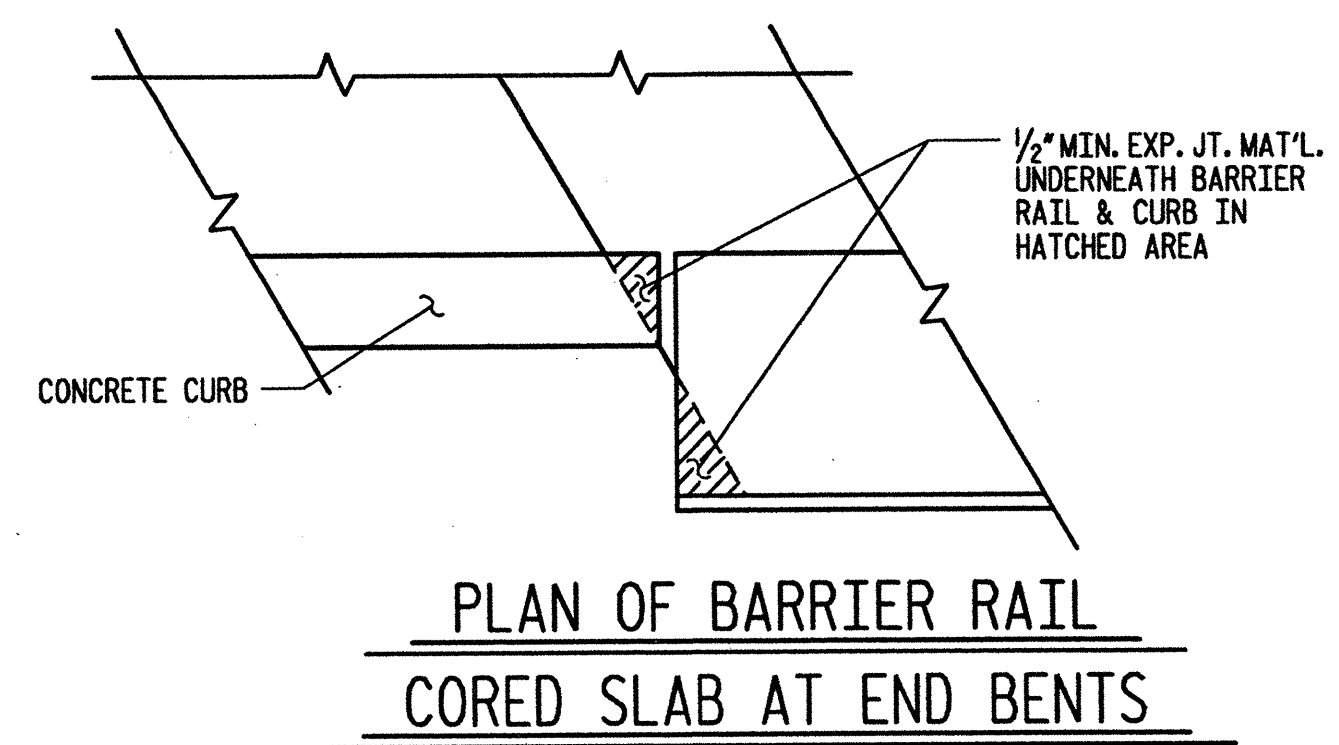


ELEVATION



CONNECTOR DETAIL

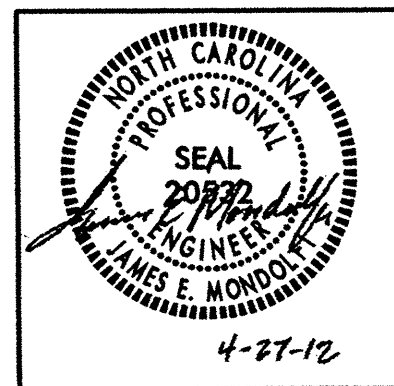
INSTALL A TOP CONNECTOR AND A BOTTOM CONNECTOR ON ONE END OF THE BRIDGE BARRIER RAIL UNIT, USED AS A TEMPORARY BARRIER RAIL FOR STAGE 3 CONSTRUCTION, LOCATED AT THE BEGINNING AND AT THE END OF THE BRIDGE.  
 AFTER MOVING THE BARRIER RAIL TO ITS PERMANENT LOCATION IN STAGE 5, CUT THE 3/4" Ø BAR CONNECTOR FLUSH WITH THE CONCRETE SURFACE. FILL RECESS WITH NON-SHRINK, NON-METALLIC GROUT TO THE NEAT LINE OF BARRIER RAIL UNIT.



PLAN OF BARRIER RAIL CORED SLAB AT END BENTS

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
PRECAST CONCRETE BARRIER RAIL SECTIONS					
55' SPAN					
27' CLEAR ROADWAY - 60° SKEW					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		



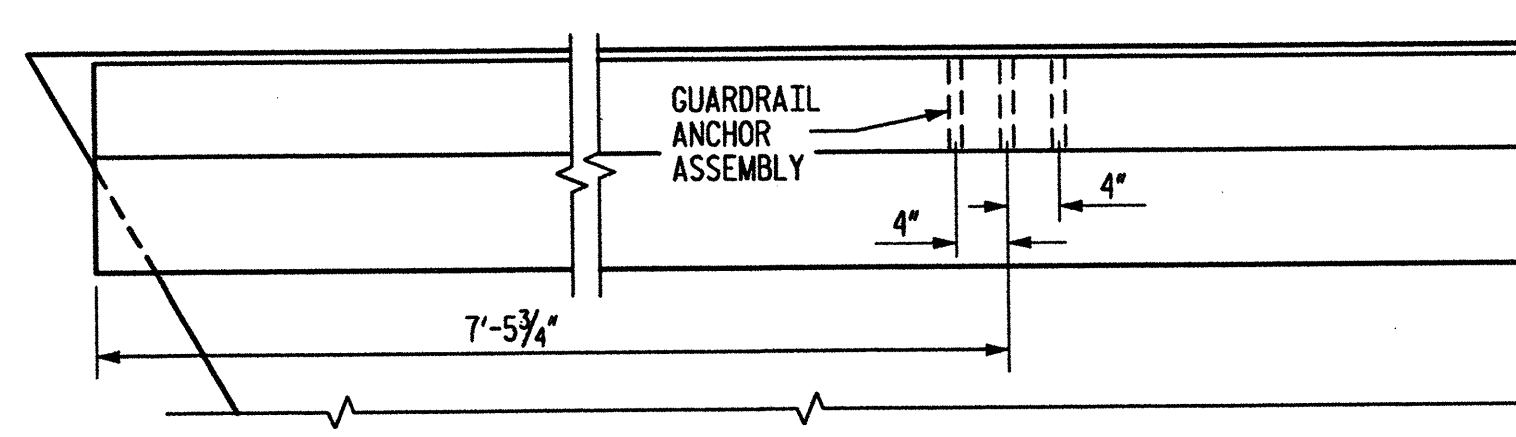
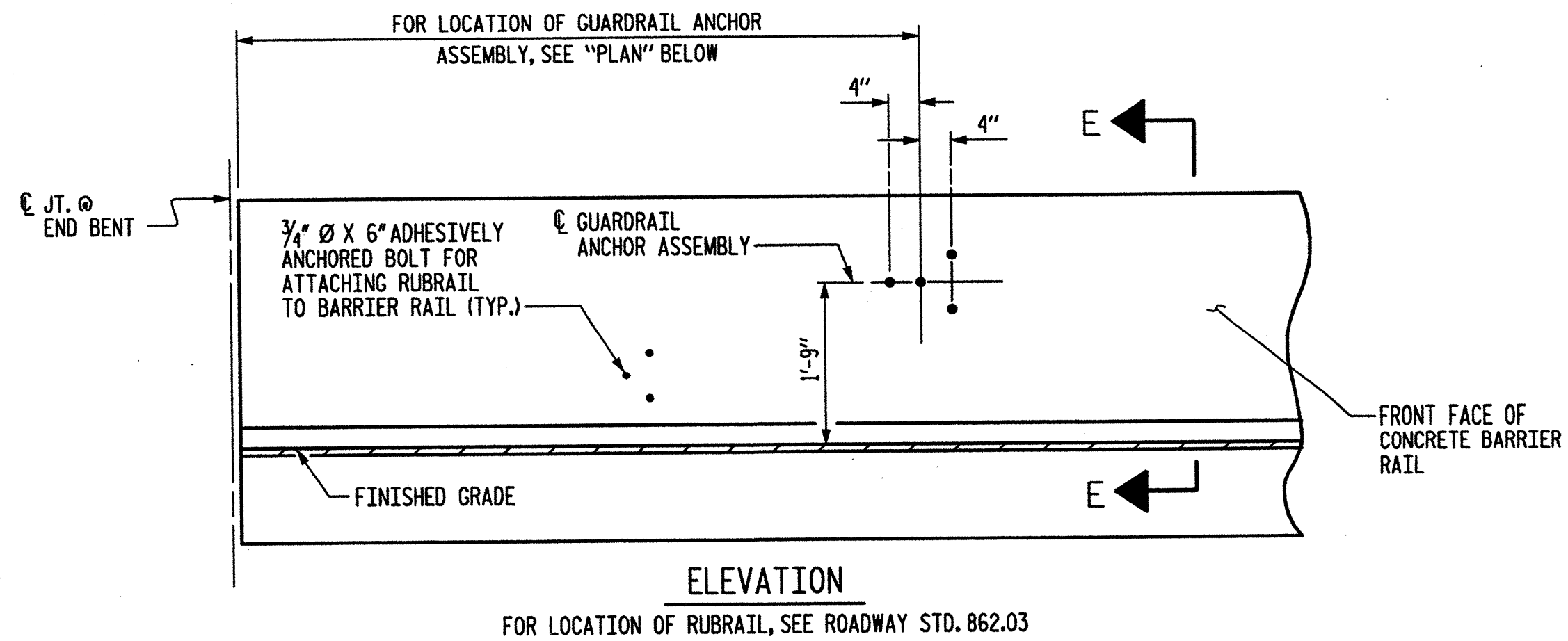
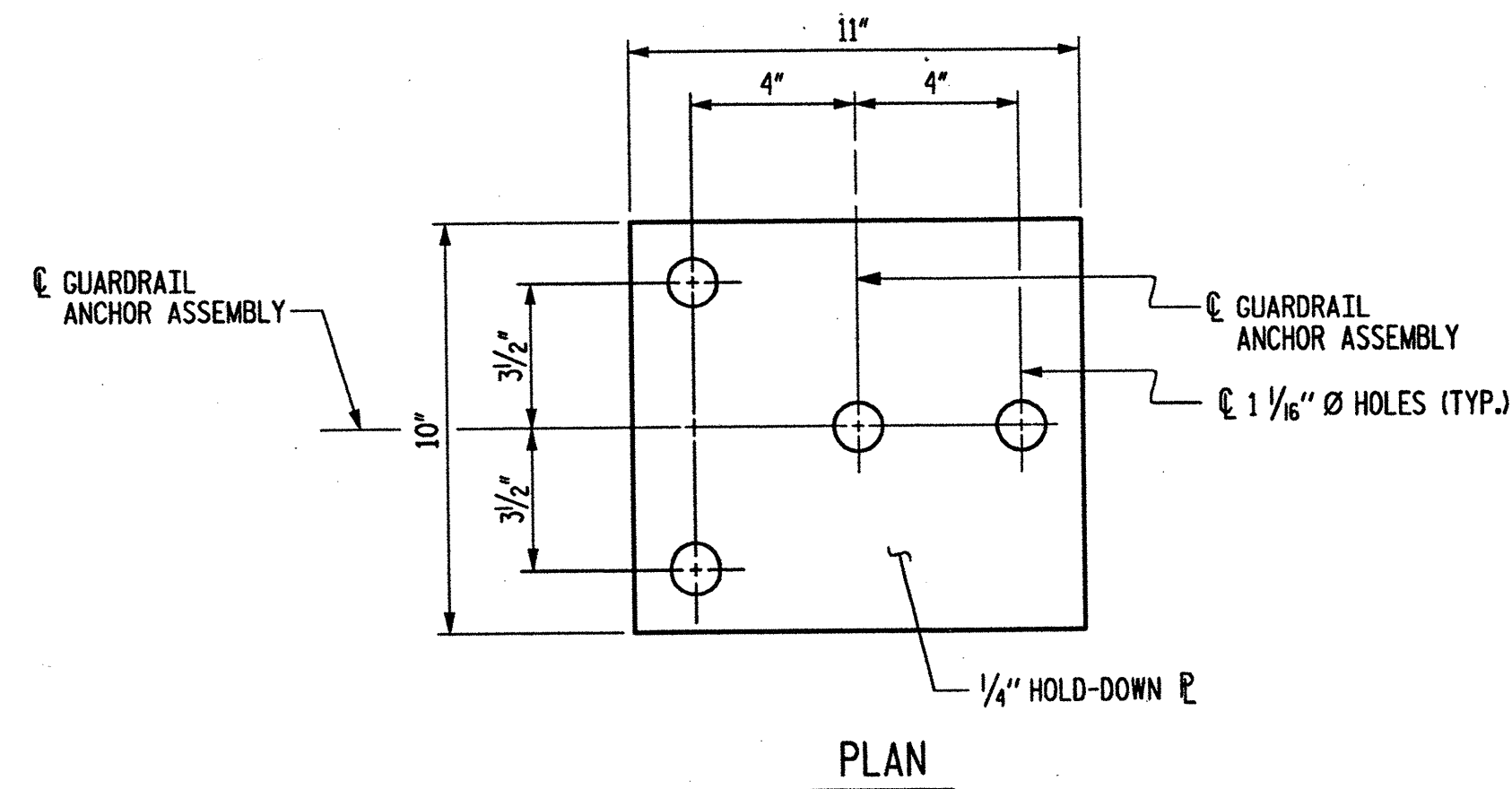
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4/16/2012  
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 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

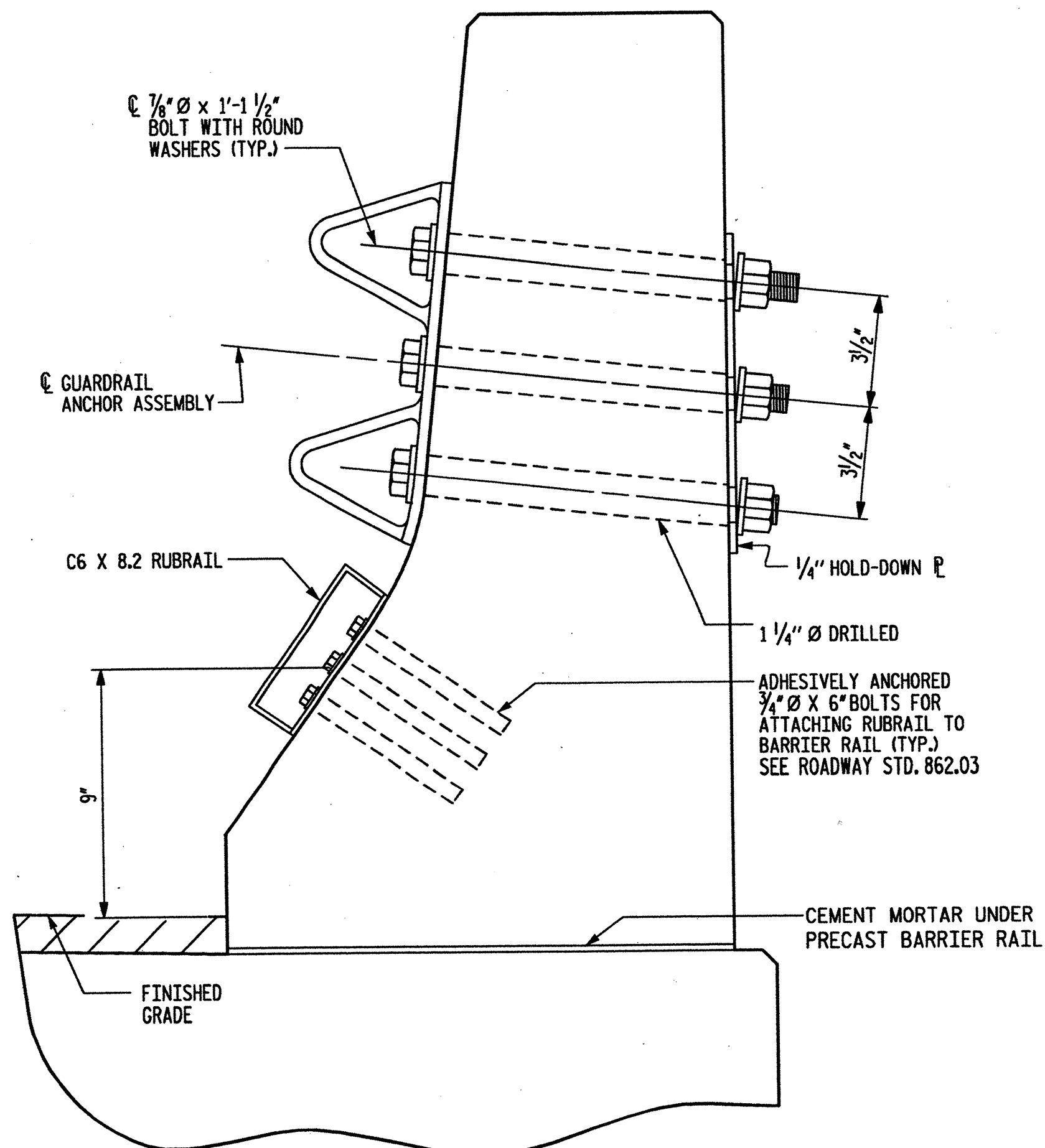
CONNECTION DETAIL  
 (PORTABLE CONCRETE BARRIER AT END OF BRIDGE)

SHEET NO. S-6  
 TOTAL SHEETS 18



LOCATION OF ANCHORS FOR GUARDRAIL

FOR CONCRETE BARRIER RAIL  
END BENT #1 SHOWN, END BENT #2 SIMILAR



GUARDRAIL ANCHOR ASSEMBLY DETAILS

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

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 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 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.)

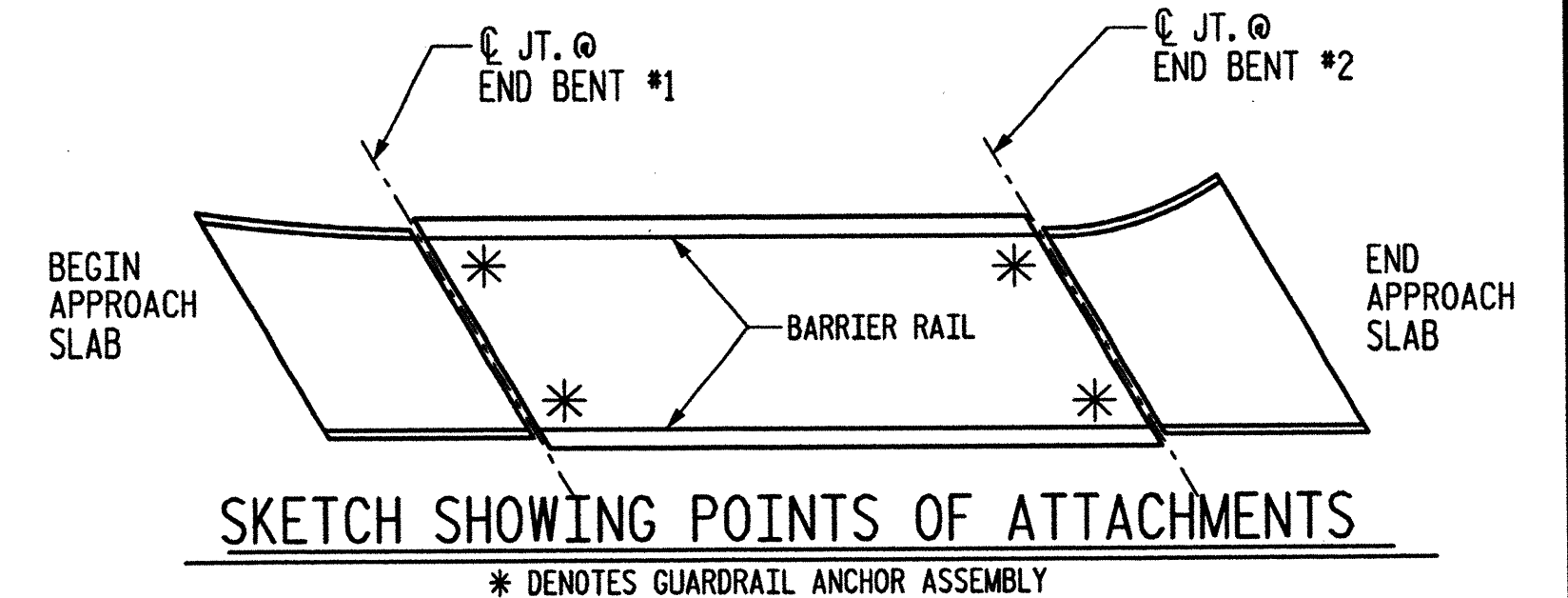
THE GUARDRAIL ANCHOR ASSEMBLY IS REQUIRED AT ALL POINTS WHERE APPROACH GUARDRAIL IS TO BE ATTACHED TO THE END OF CONCRETE BARRIER RAIL. FOR POINTS OF ATTACHMENT, SEE SKETCH.

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 1/4" 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.

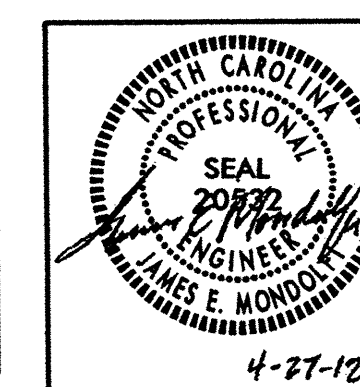
THE C6 X 8.2 RUBRAIL IS TO BE ADHESIVELY ANCHORED TO THE RAIL USING THREE 3/4" Ø X 6" BOLTS WITH WASHERS. LEVEL ONE FIELD TESTING IS REQUIRED, AND THE YIELD LOAD OF THE 3/4" Ø BOLT IS 12 KIPS. FOR ADHESIVELY ANCHORED ANCHOR BOLTS OR DOWELS, SEE SPECIAL PROVISIONS. SEE ROADWAY STANDARD 862.03 FOR DETAILS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



4/26/2012 1:13:13 PM Yancey-119\mat30070\structures\sk-5126.sd.sh7.dgn  
Florence & Hutcheson, Inc.

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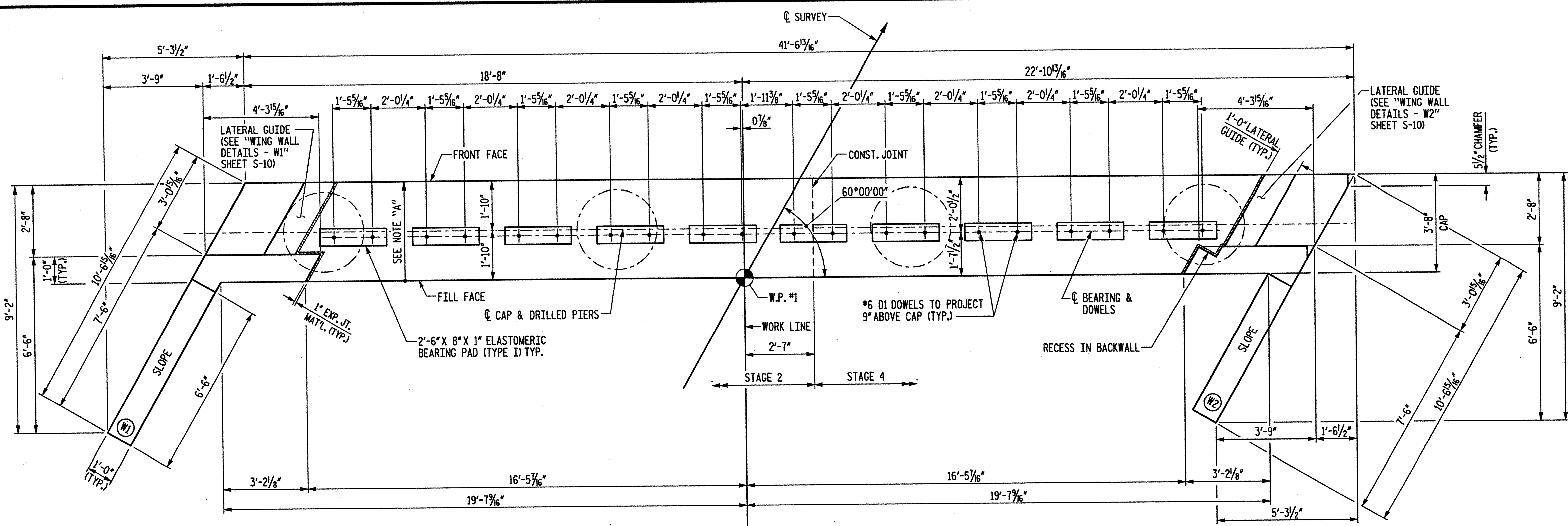
PROJECT NO. 42577  
COUNTY: YANCEY  
STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

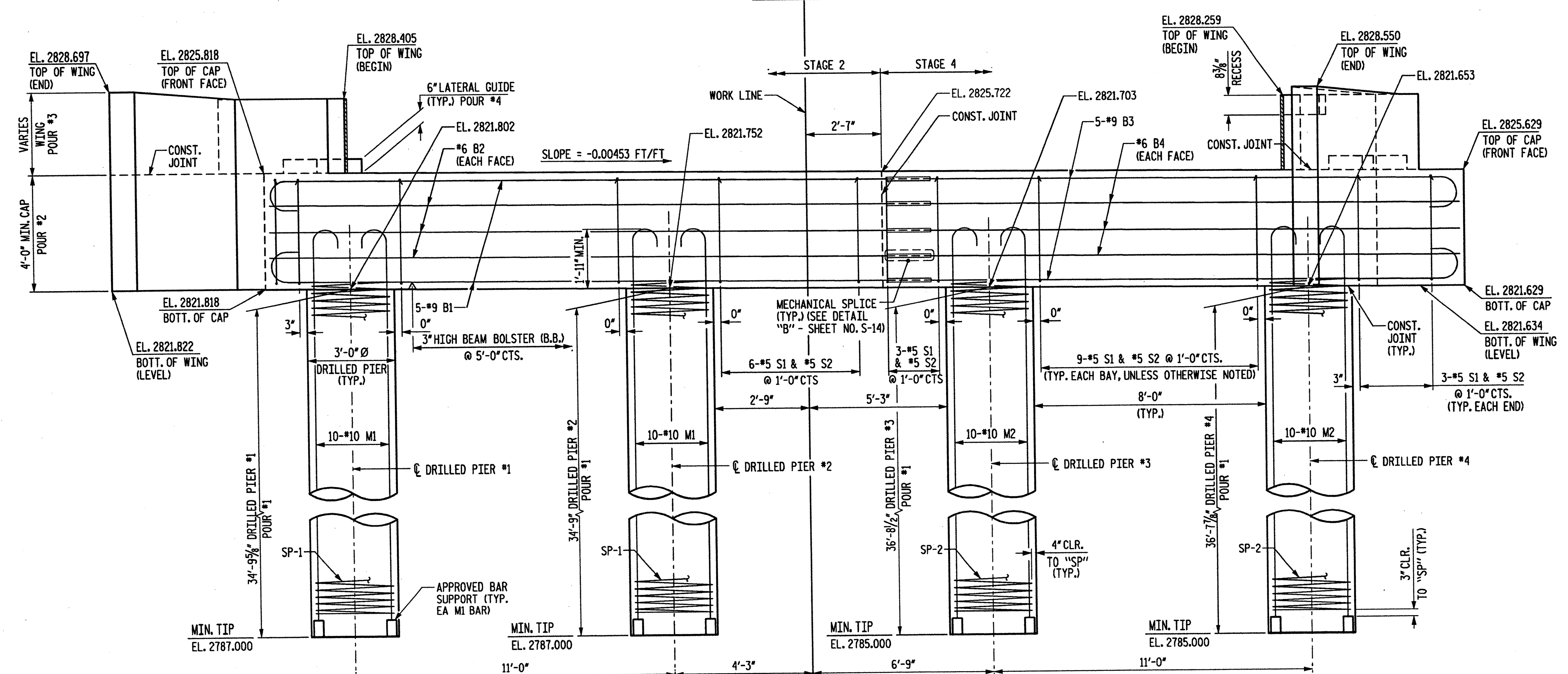
SUPERSTRUCTURE  
GUARDRAIL ANCHORAGE DETAILS

REVISIONS						SHEET NO. S-7
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 18
2			4			

NOTE "A":  
THE TOP SURFACE OF THE END BENT CAP SHALL BE SLOPED DOWN TRANSVERSELY FROM THE FILL FACE TO THE FRONT FACE AT THE RATE OF 0.0376 FOOT PER FOOT.



PLAN

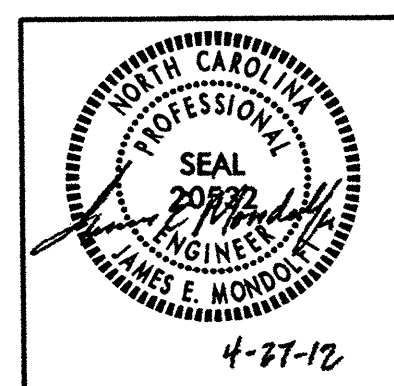


ELEVATION

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Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

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NC License No: F-0268



PROJECT NO. 42577  
COUNTY: YANCEY  
STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

SUBSTRUCTURE  
END BENT NO. 1

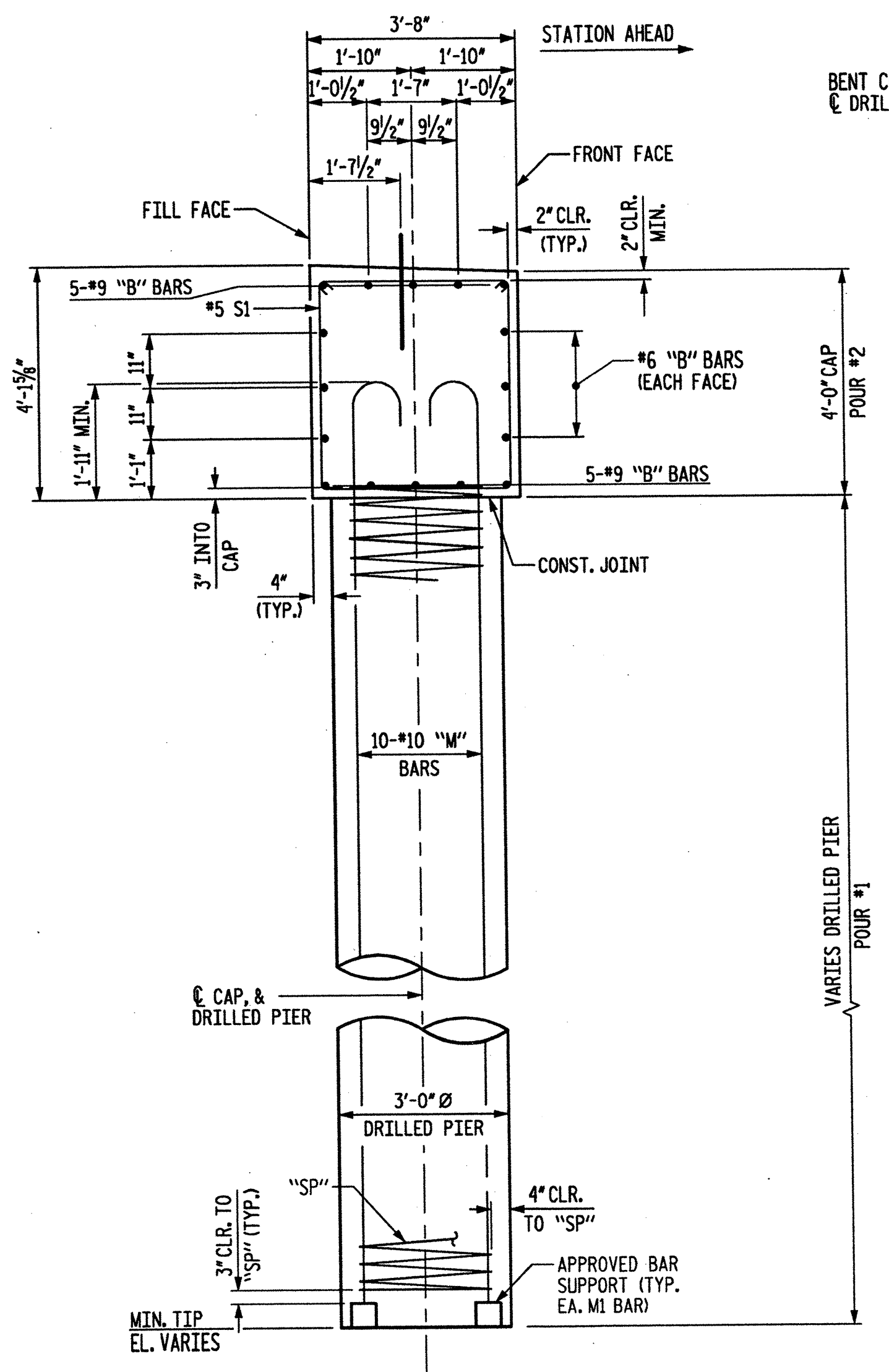
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

SHEET NO. S-8  
TOTAL SHEETS 18

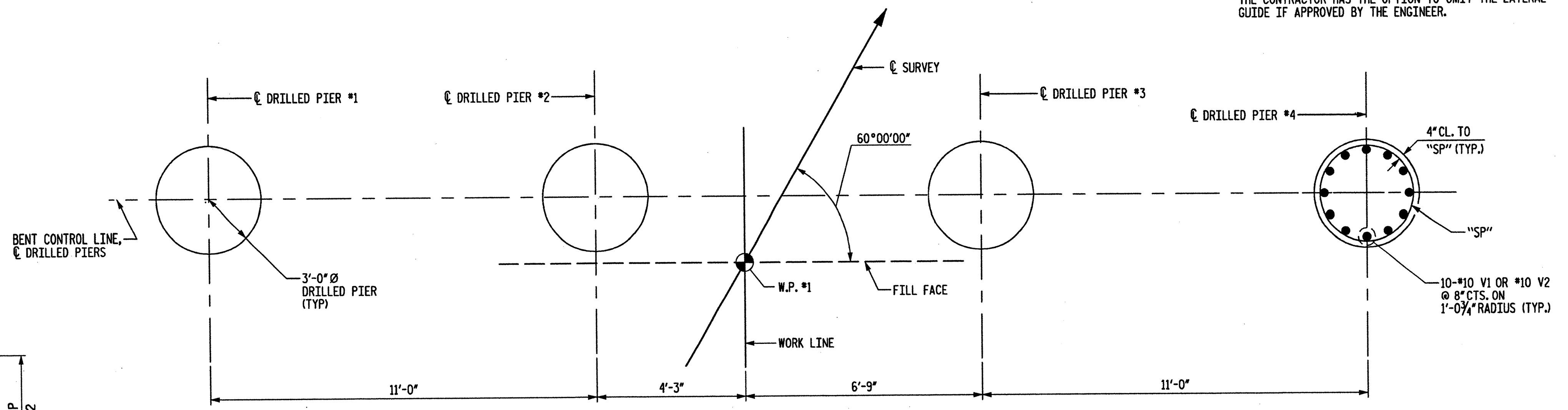
4-27-12



NOTES:  
 STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.  
 ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."  
 HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.  
 THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.  
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.  
 THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



END ELEVATION

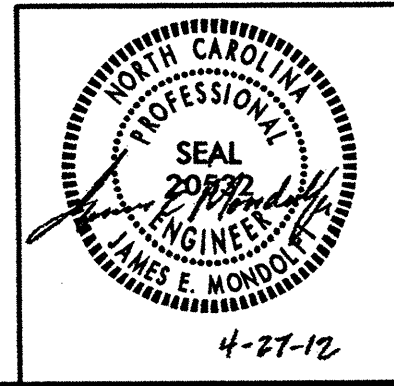


PLAN OF DRILLED PIERS

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 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012


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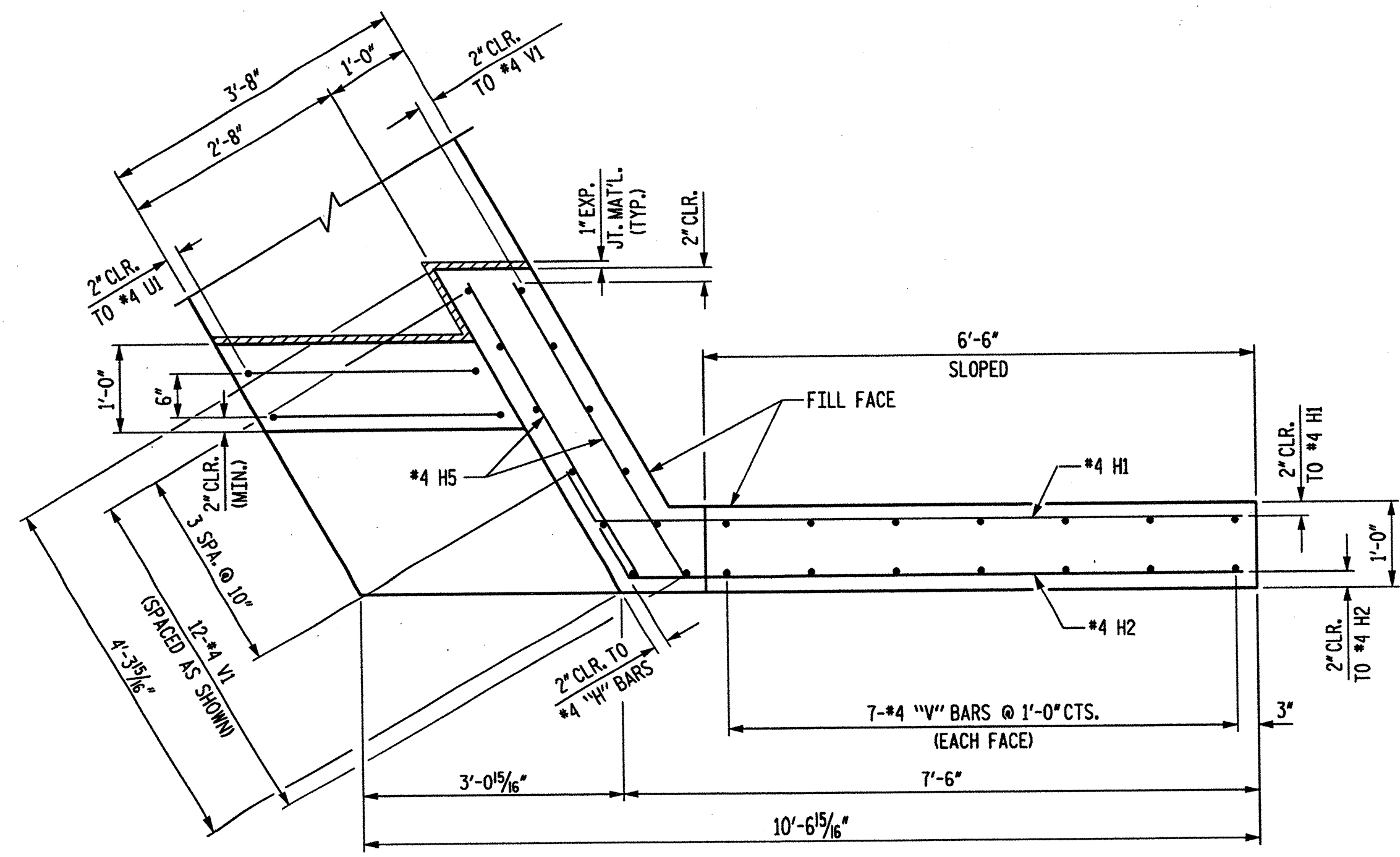


PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

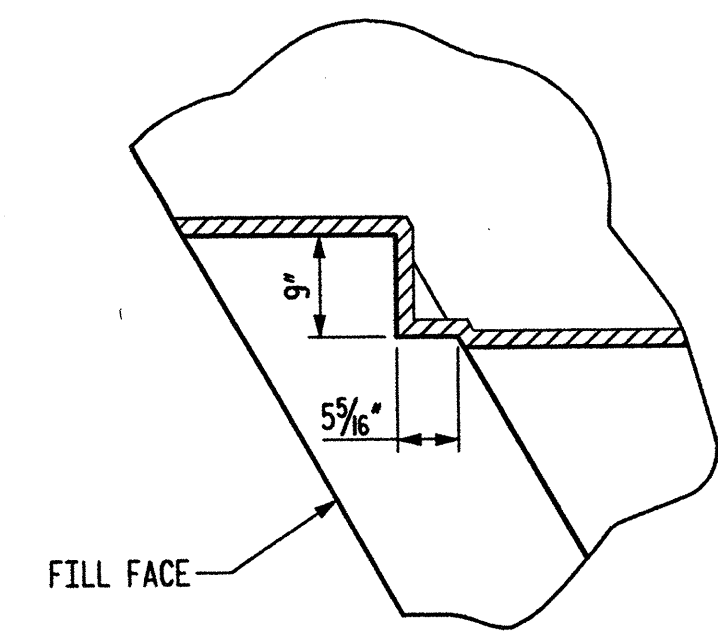
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT NO. 1 DETAILS

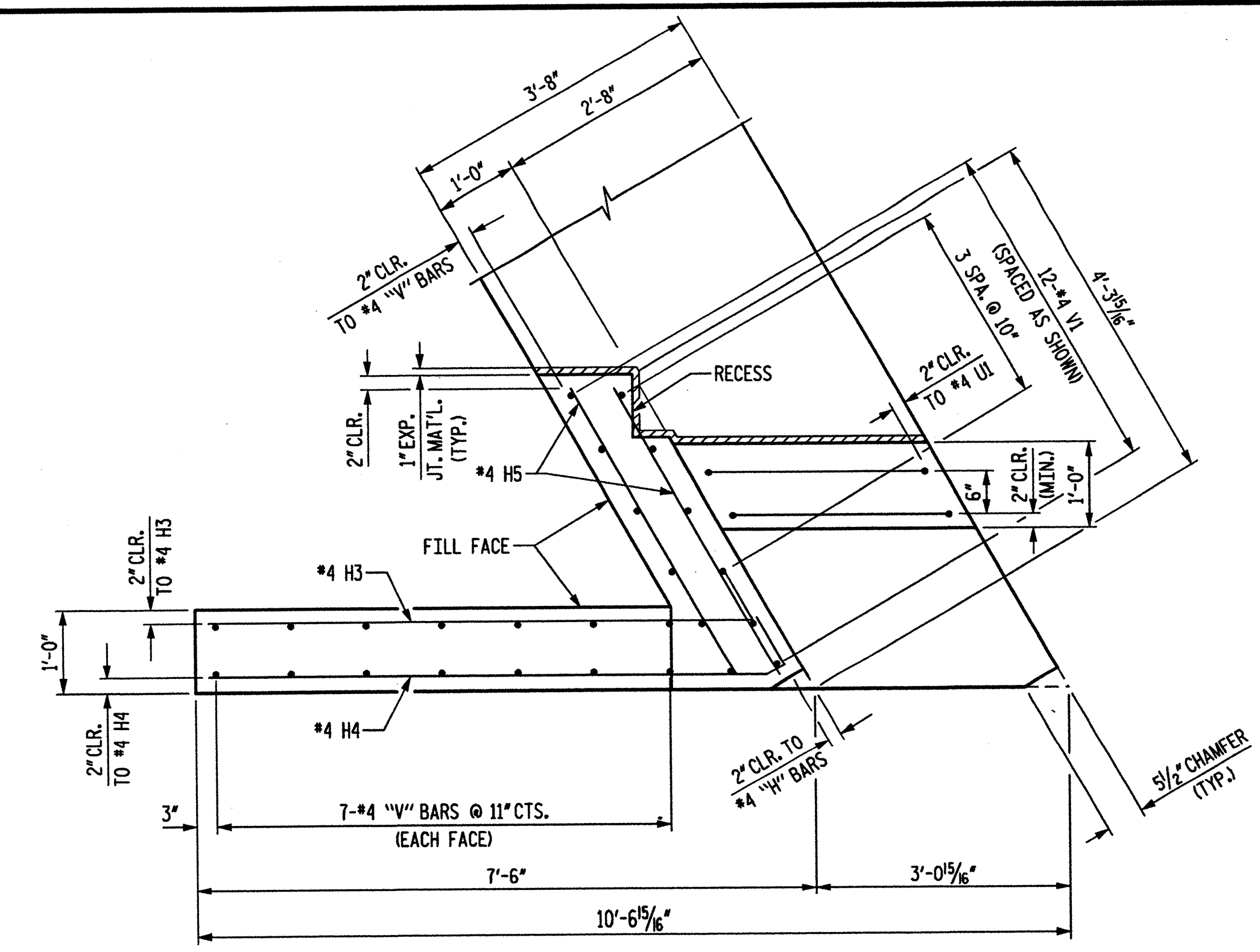
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-9
1			3			TOTAL SHEETS
2			4			18



PLAN OF WING - W1

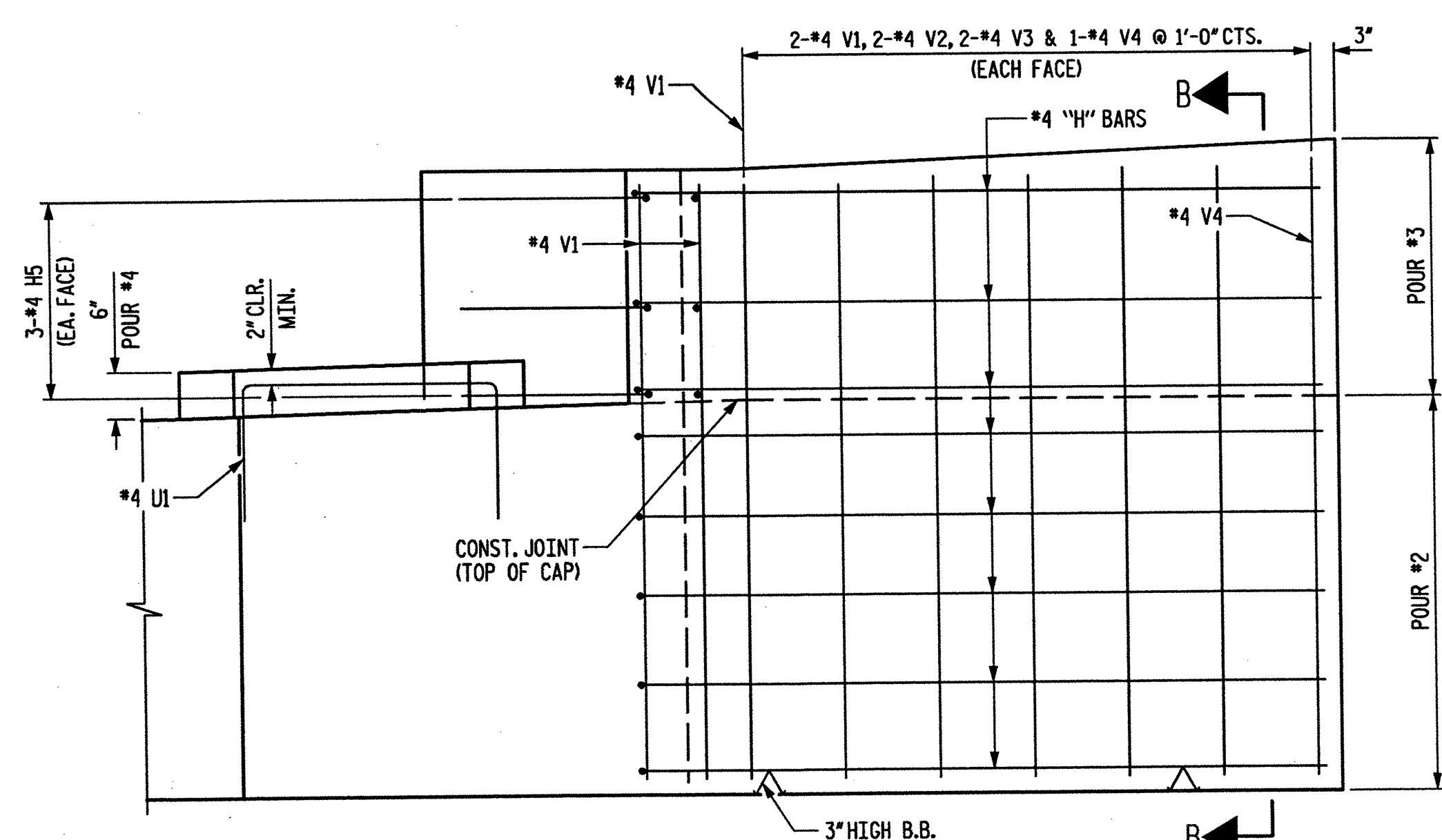


DETAIL OF RECESS IN TOP BACKWALL AT WING W2

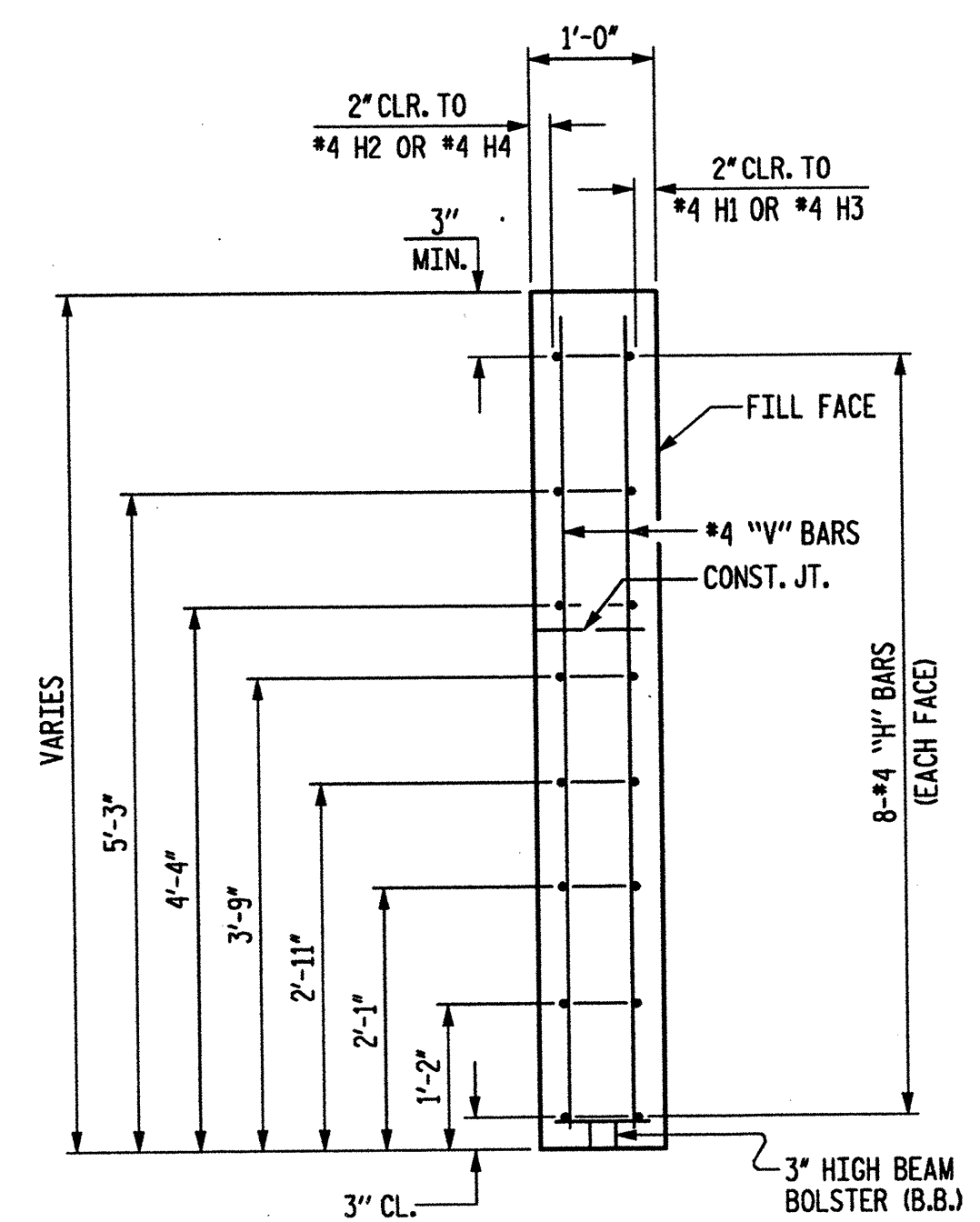


PLAN OF WING - W2

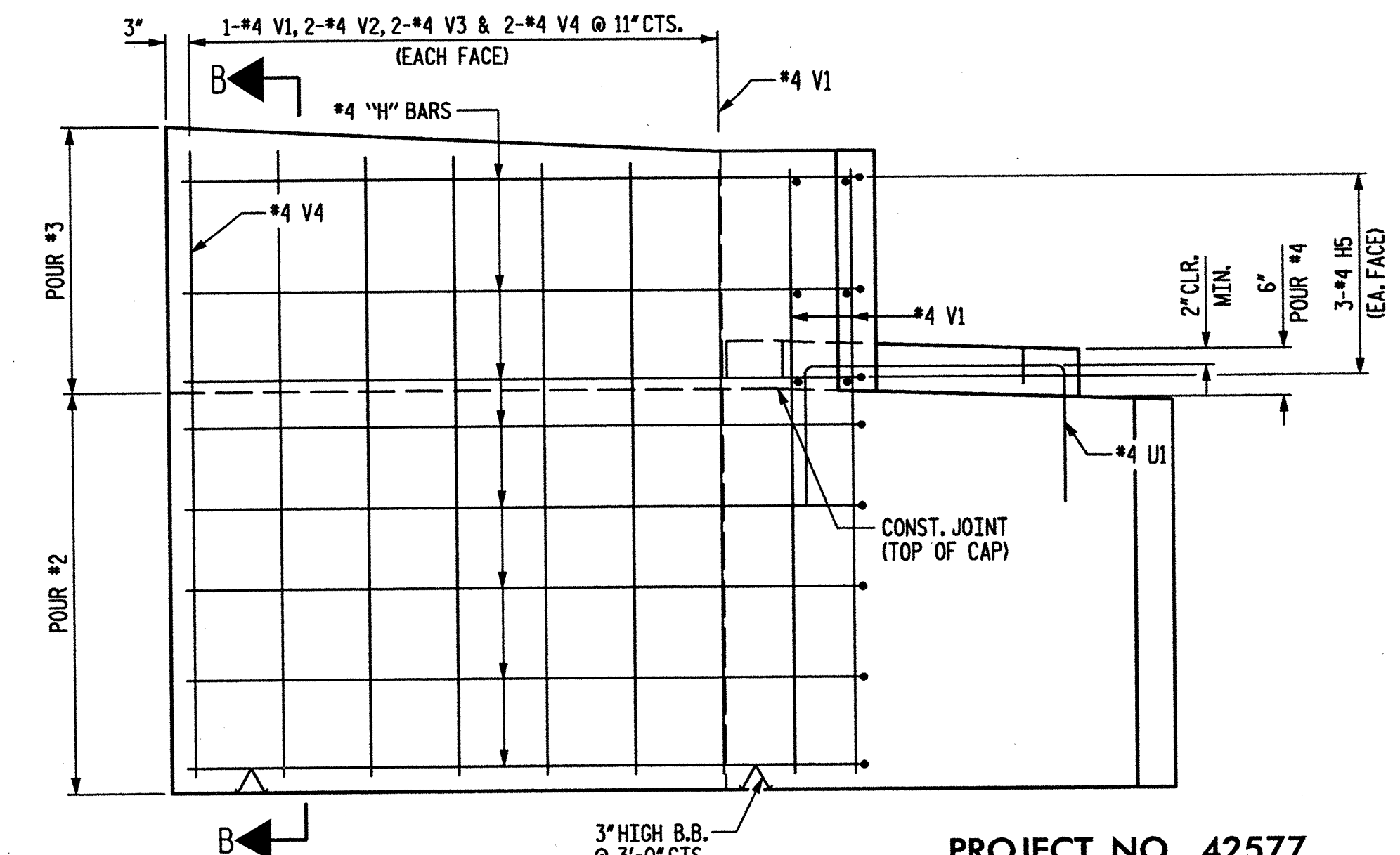
NOTE: SHIFT, FIELD BEND OR CUT REINFORCING AS NECESSARY TO CLEAR RECESS IN TOP OF BACKWALL.



ELEVATION OF WING - W1



SECTION B-B

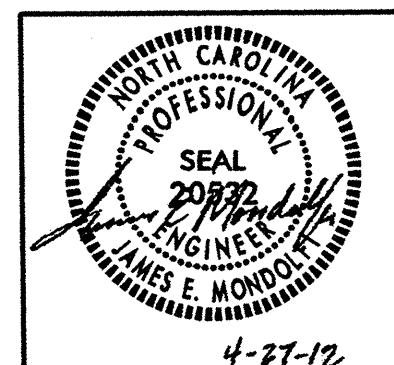


ELEVATION OF WING - W2

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

SUBSTRUCTURE  
 END BENT NO. 1 WING DETAILS



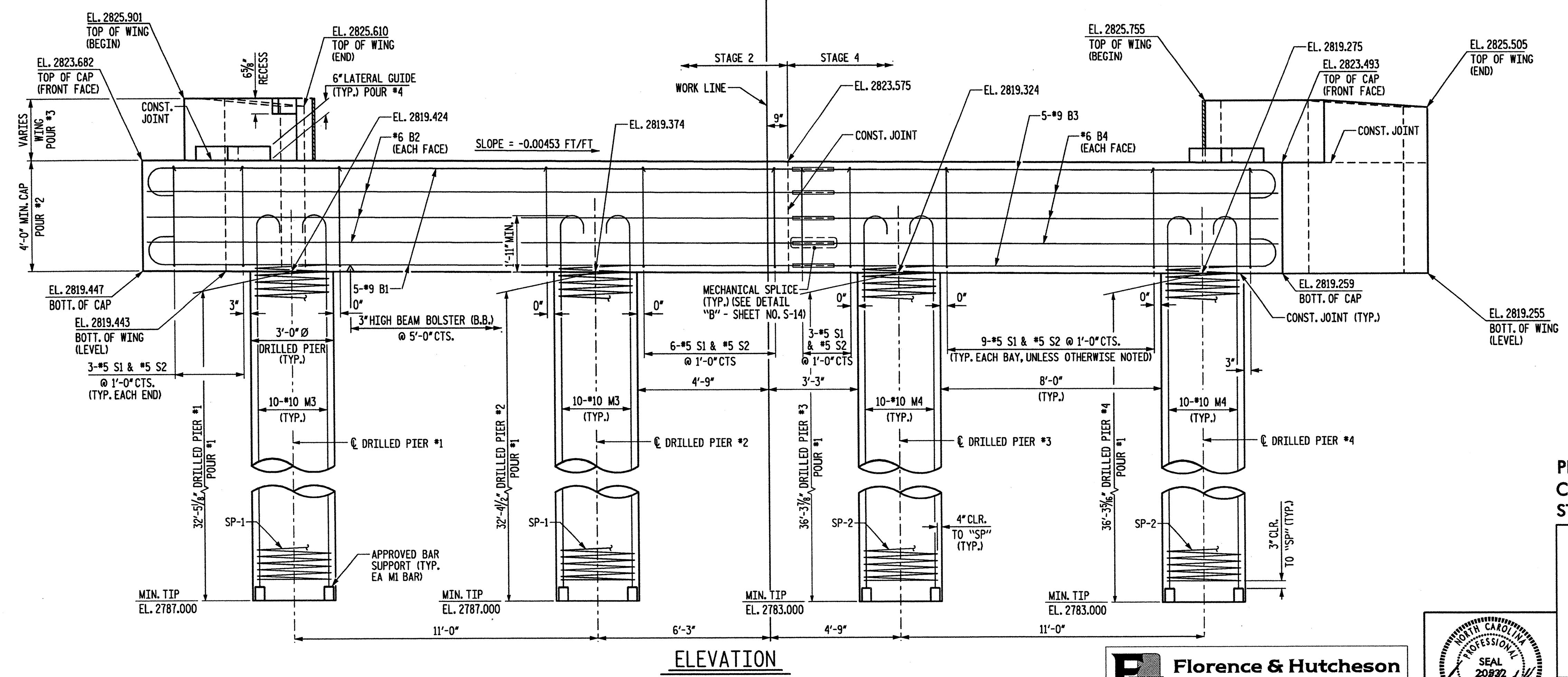
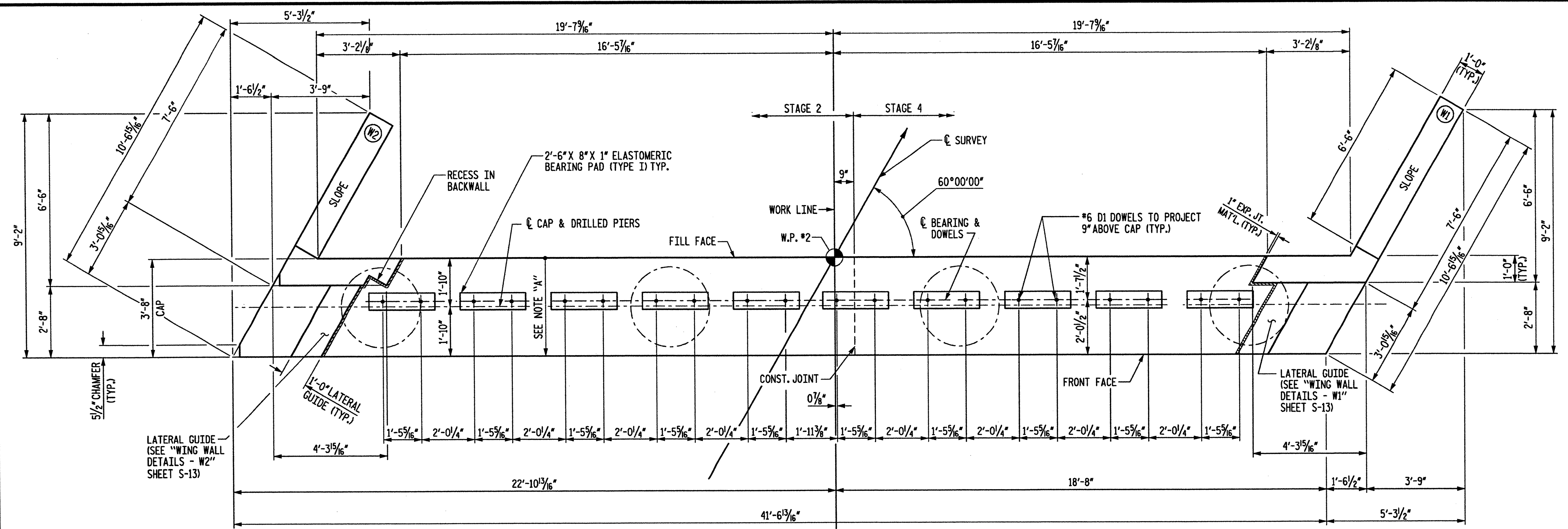
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No. P-0268

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-10	
1			3			TOTAL SHEETS	
2			4			18	

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 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

NOTE "A":  
 THE TOP SURFACE OF THE END BENT CAP SHALL BE  
 SLOPED UP TRANSVERSELY FROM THE FILL FACE TO  
 THE FRONT FACE AT THE RATE OF 0.0634 FOOT PER FOOT.



PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16 + 20.00 -L-

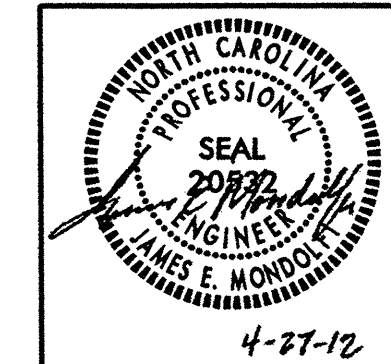
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RAISE

**SUBSTRUCTURE  
 END BENT NO. 2**

REVISIONS			
NO.	BY	DATE	DESCRIPTION
1			
2			

SHEET NO.  
**S-11**  
 TOTAL SHEETS  
**18**

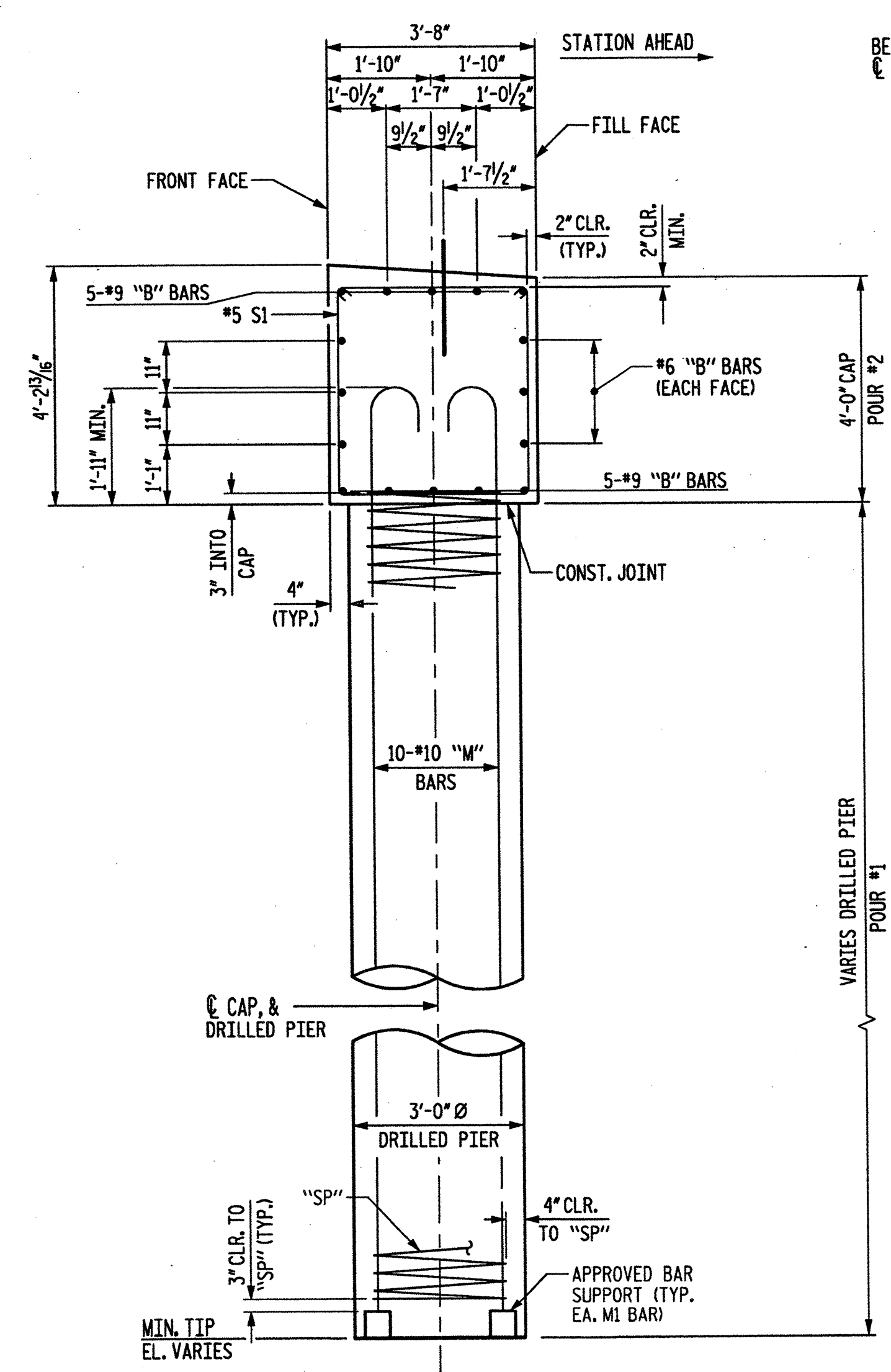
**Florence & Hutcheson**  
 CONSULTING ENGINEERS  
 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No: F-0288



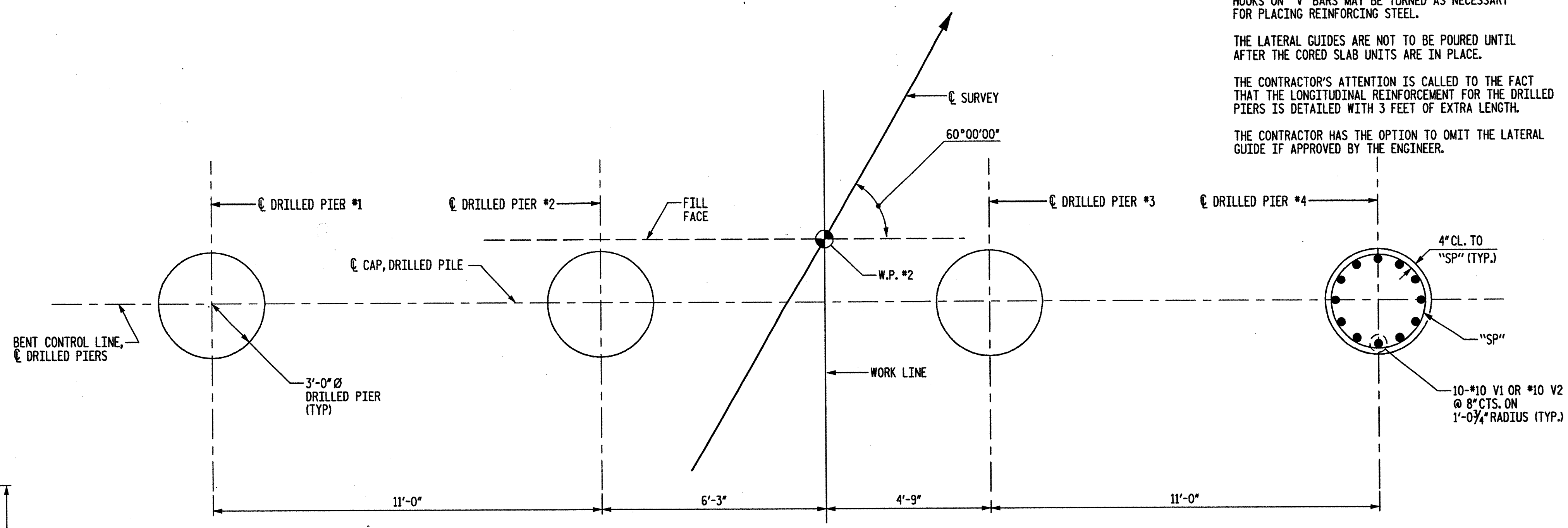
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 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

NOTES:  
 STIRRUPS MAY BE SHIFTED SLIGHTLY AS NECESSARY TO CLEAR DOWELS.  
 ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL."  
 HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.  
 THE LATERAL GUIDES ARE NOT TO BE POURED UNTIL AFTER THE CORED SLAB UNITS ARE IN PLACE.  
 THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LONGITUDINAL REINFORCEMENT FOR THE DRILLED PIERS IS DETAILED WITH 3 FEET OF EXTRA LENGTH.  
 THE CONTRACTOR HAS THE OPTION TO OMIT THE LATERAL GUIDE IF APPROVED BY THE ENGINEER.



**END ELEVATION**

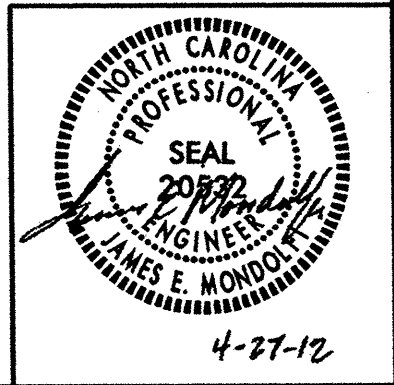


**PLAN OF DRILLED PIERS**

4/26/2012  
 P:\nemo\div13\yancey\_118\mtd30076\structures\bk-5156.ed.sht12.dgn  
 Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012


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 NC License No: F-0258

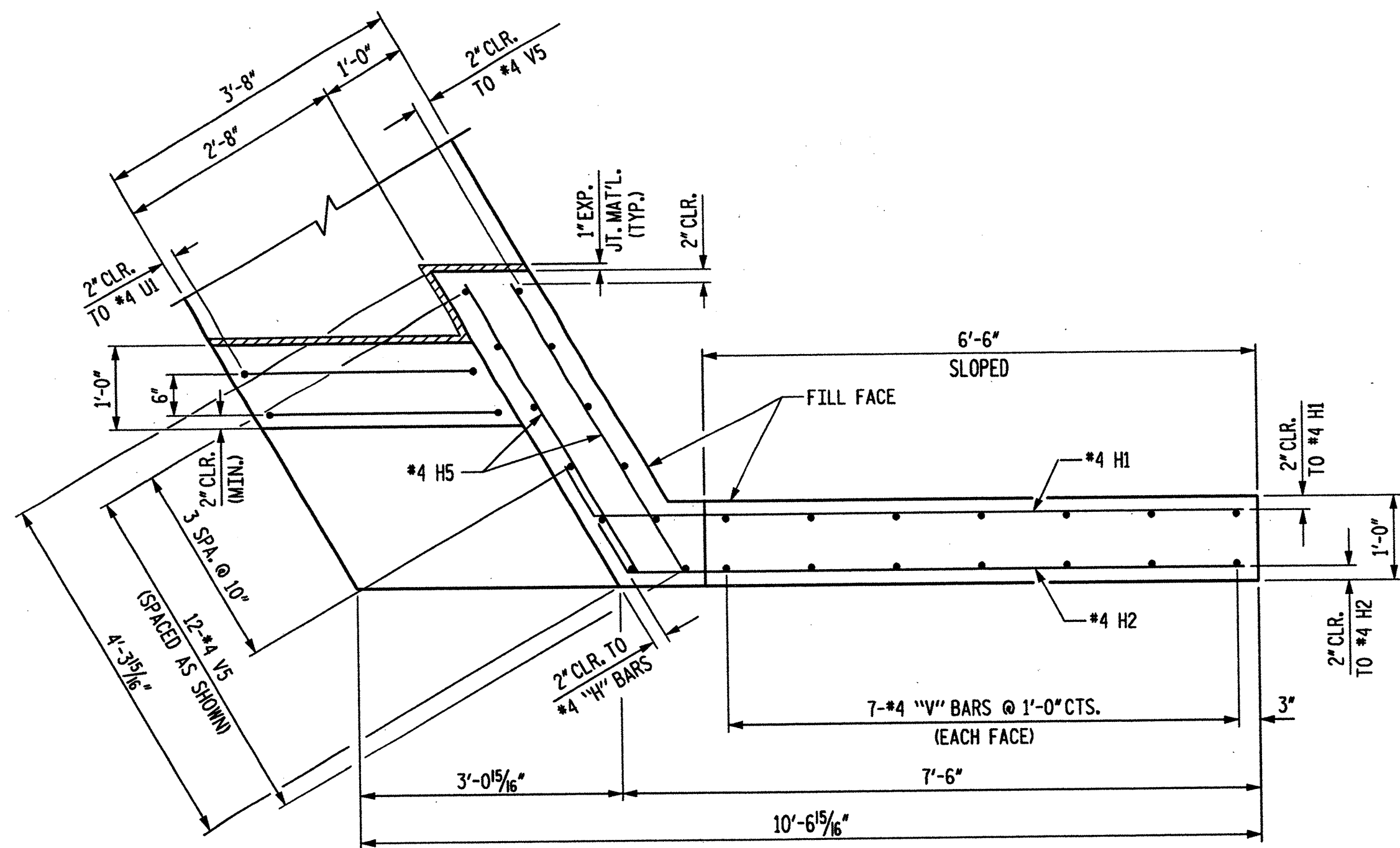


PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

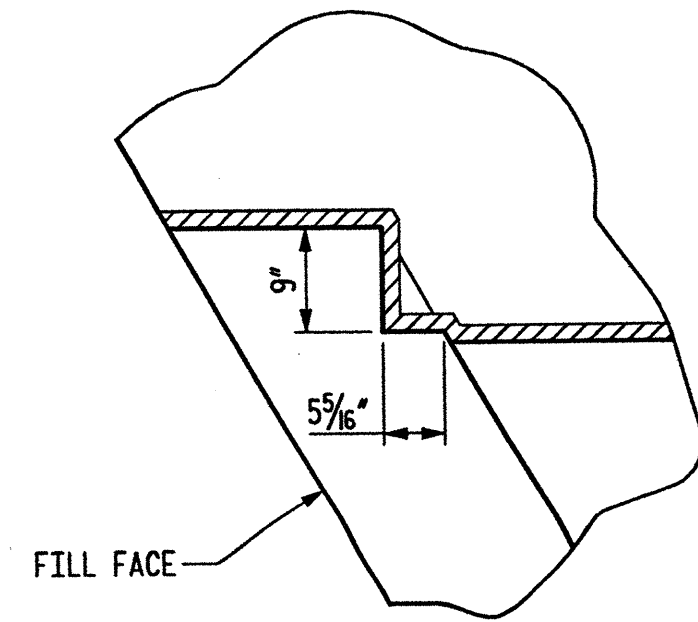
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT NO. 2 DETAILS**

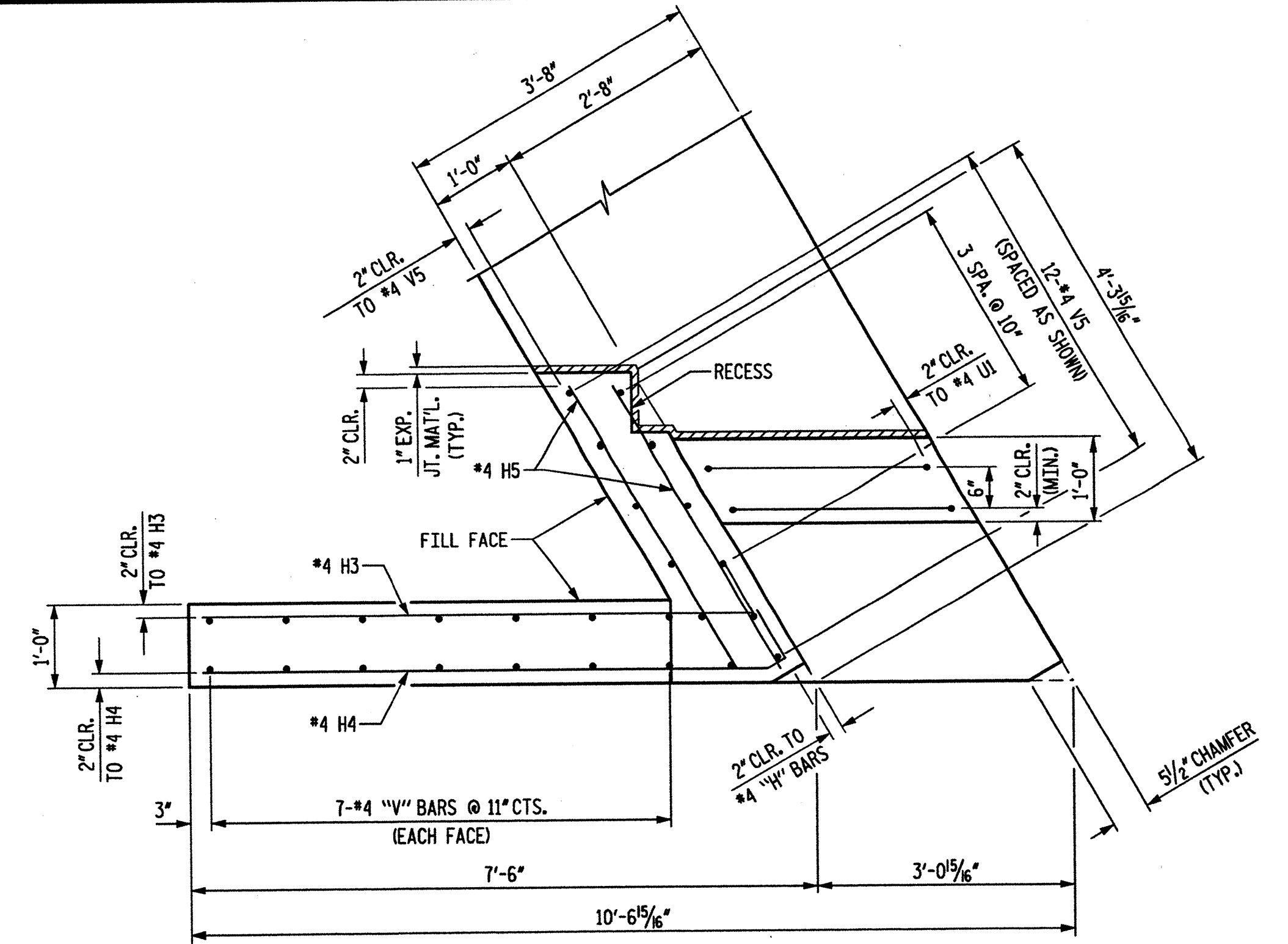
REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-12
1			3			TOTAL SHEETS
2			4			18



PLAN OF WING - W1

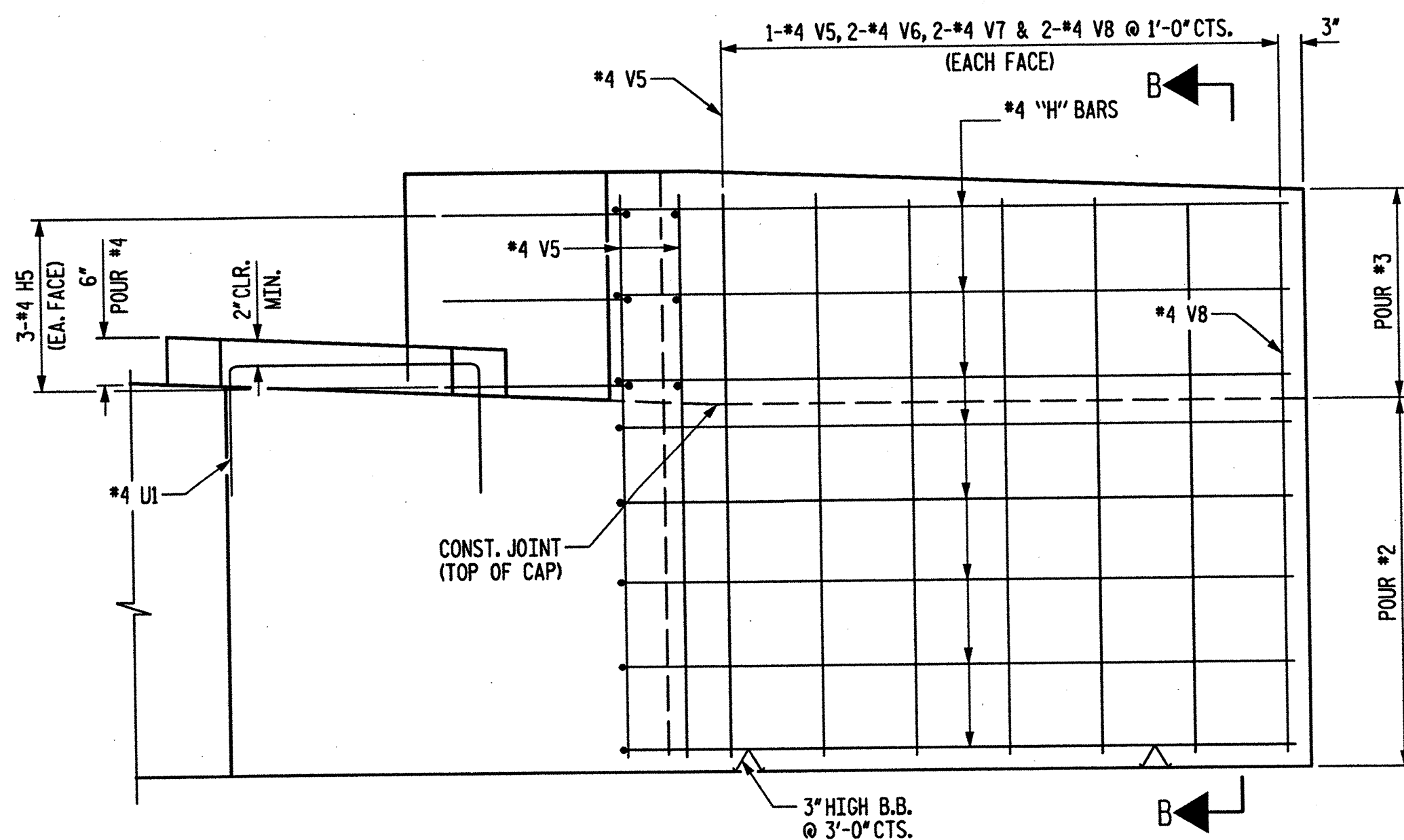


DETAIL OF RECESS IN TOP BACKWALL AT WING W2

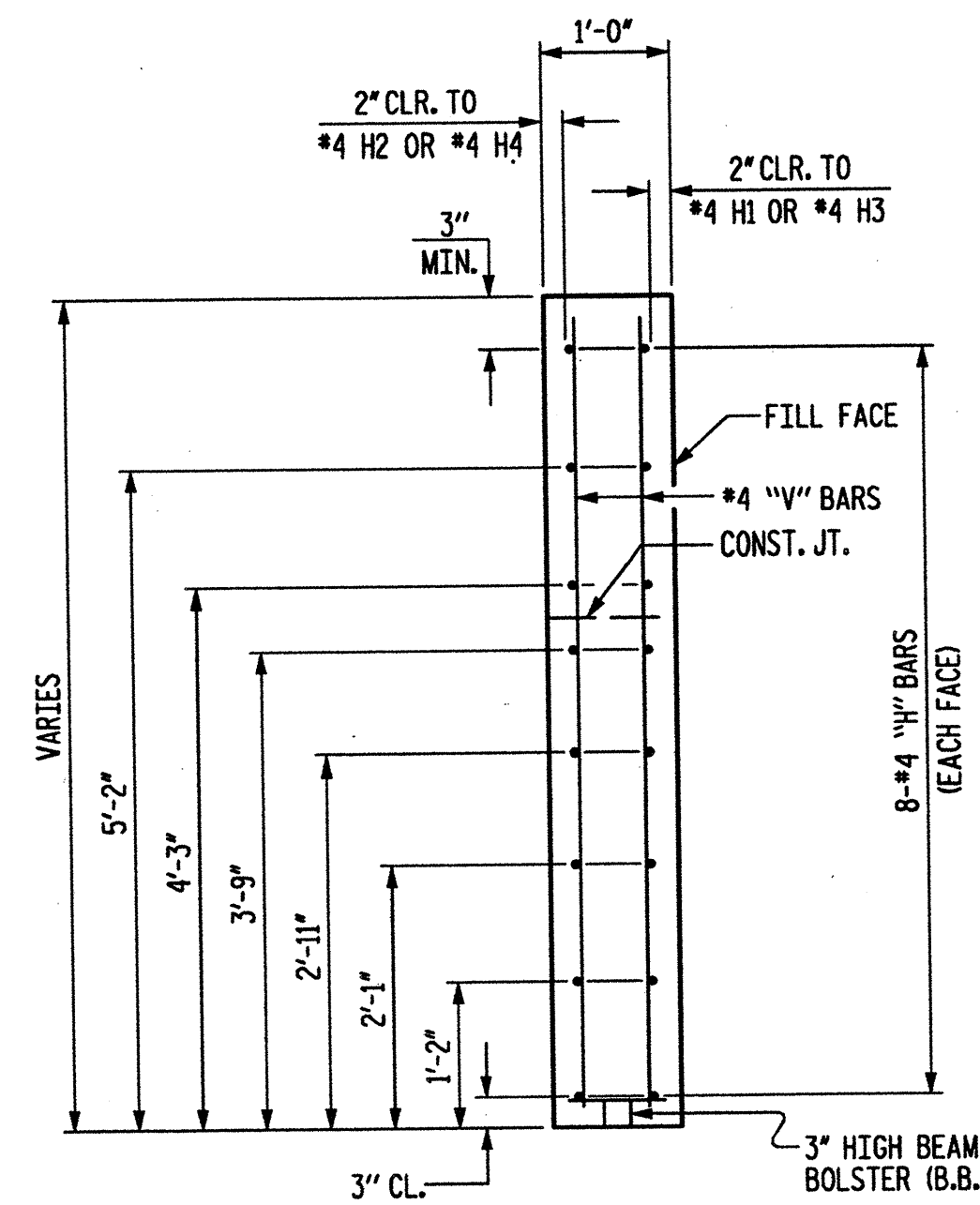


PLAN OF WING - W2

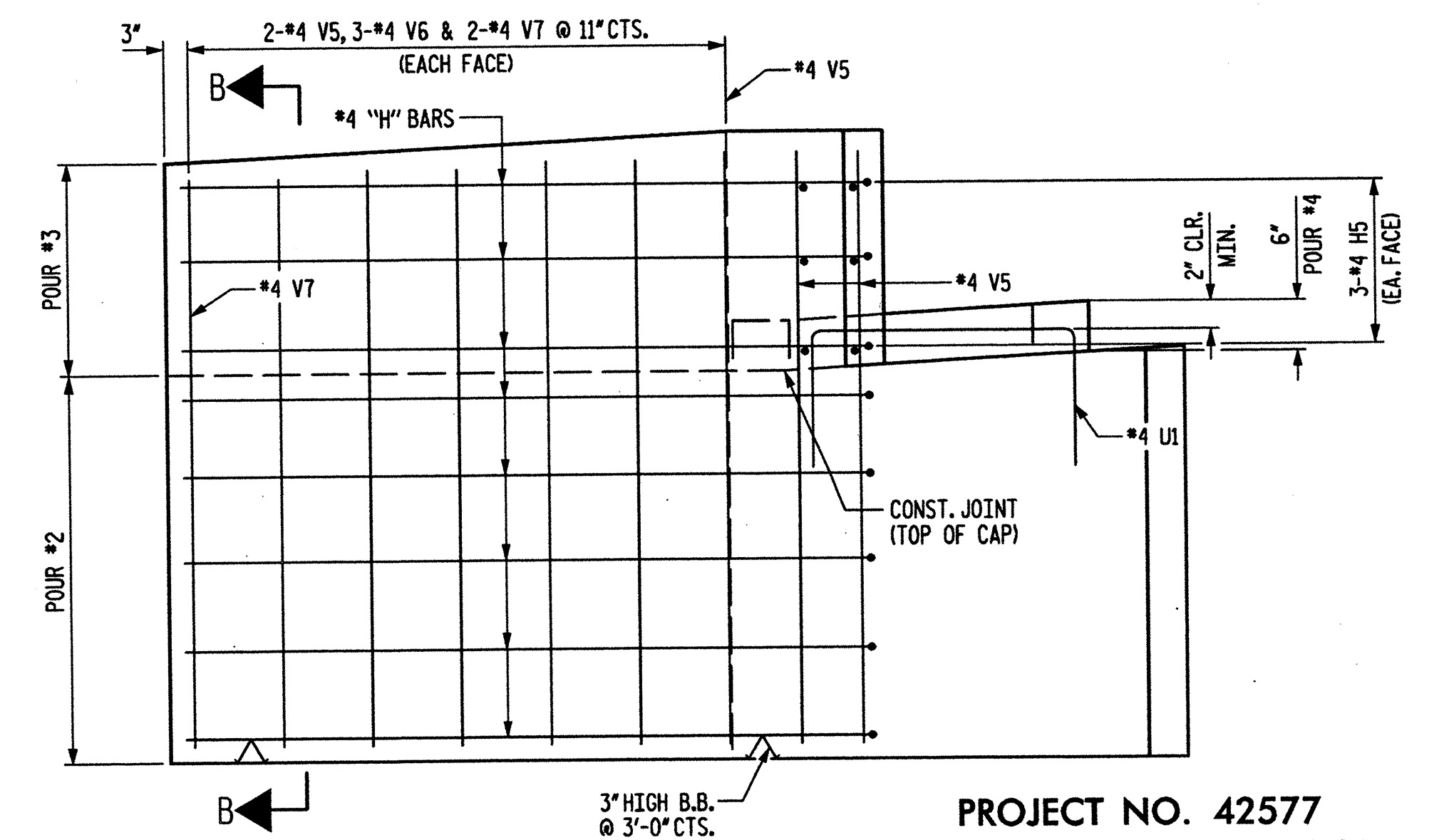
NOTE: SHIFT, FIELD BEND OR CUT REINFORCING AS NECESSARY TO CLEAR RECESS IN TOP OF BACKWALL.



ELEVATION OF WING - W1



SECTION B-B



ELEVATION OF WING - W2

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

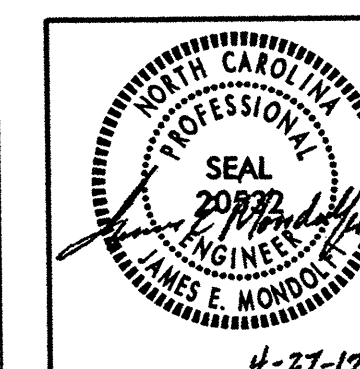
SUBSTRUCTURE  
 END BENT NO. 2 WING DETAILS

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-13	
1			3			TOTAL SHEETS	
2			4			18	

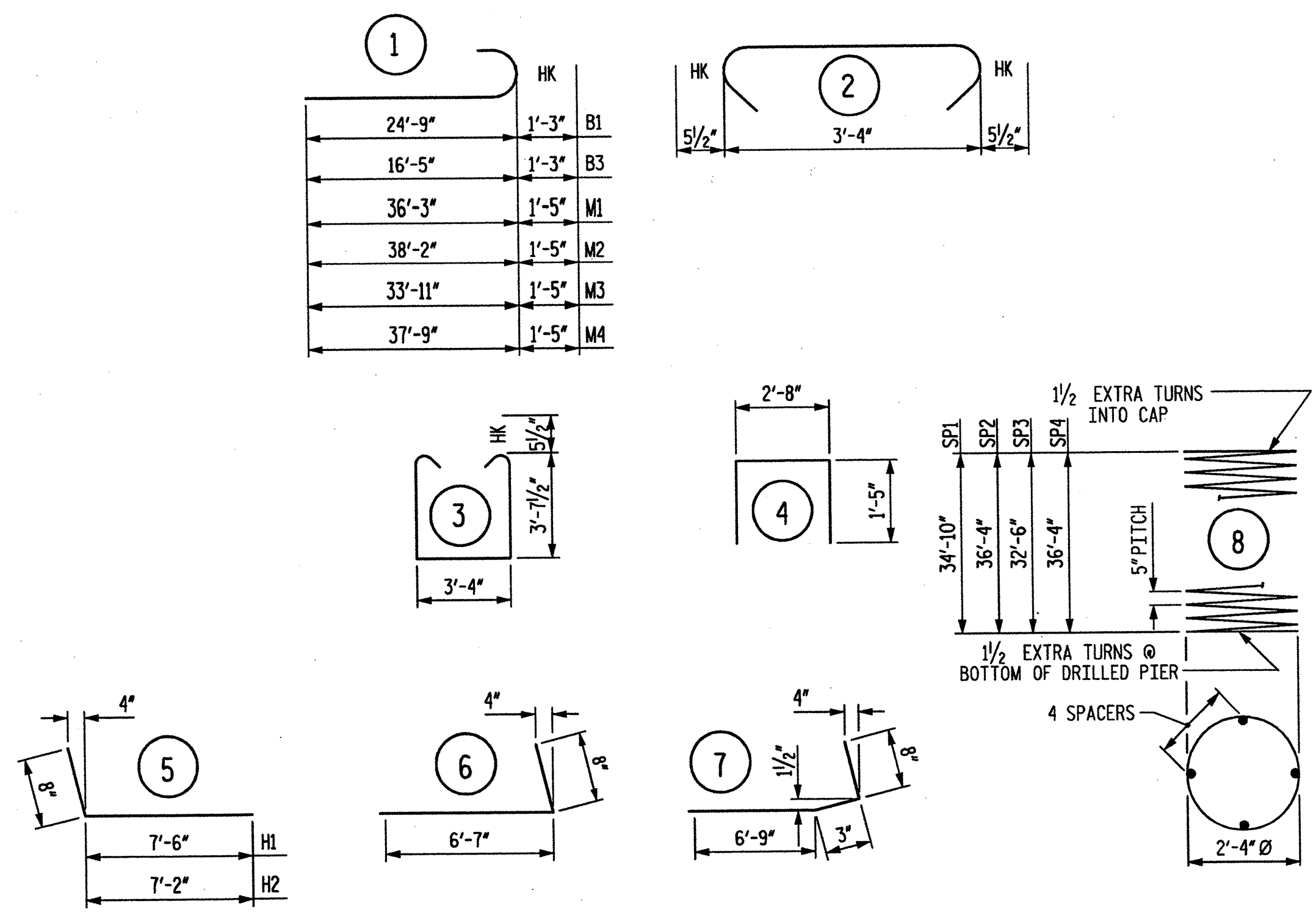
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DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

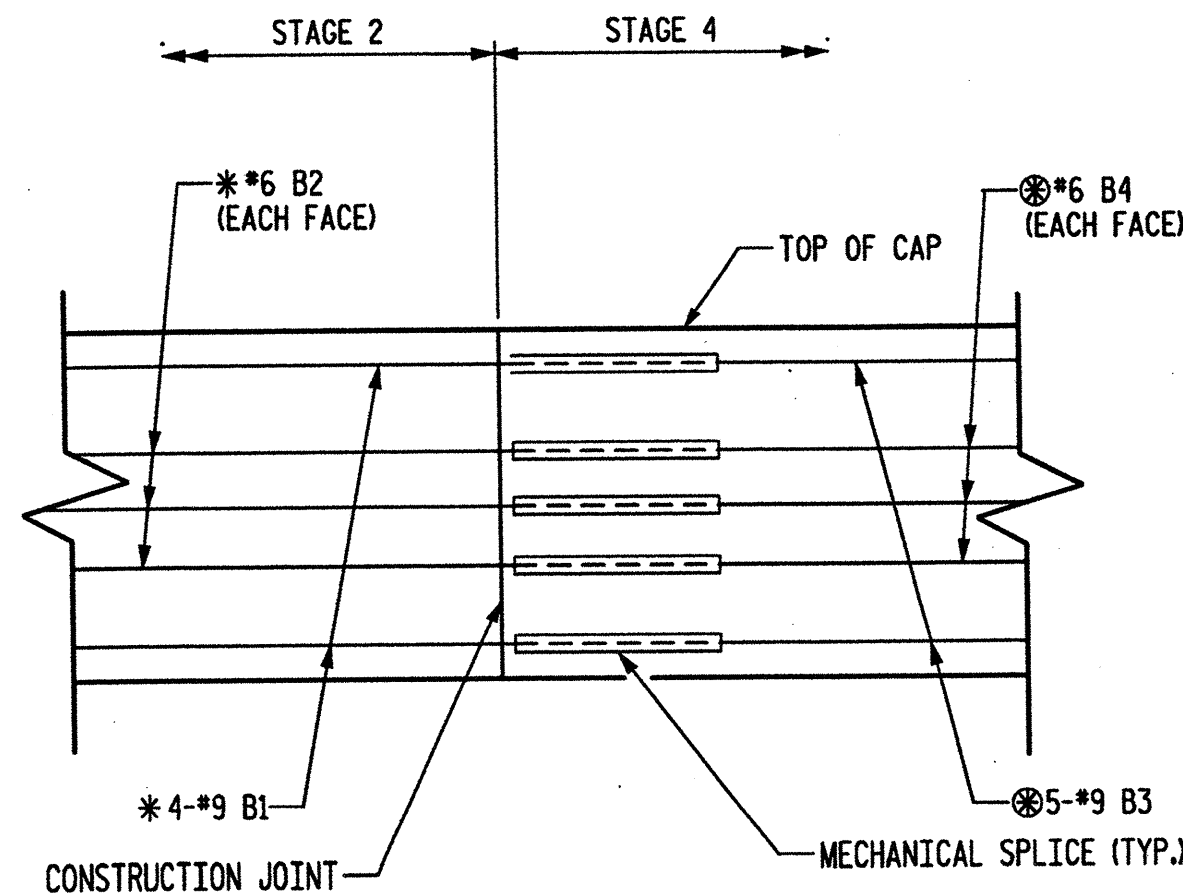
**FH** Florence & Hutcheson  
 CONSULTING ENGINEERS  
 5121 Kingdom Way, Suite 100 Raleigh, NC 27607  
 NC License No: F-0268



**BAR TYPES**



ALL BAR DIMENSIONS ARE OUT TO OUT



**DETAIL "B"**

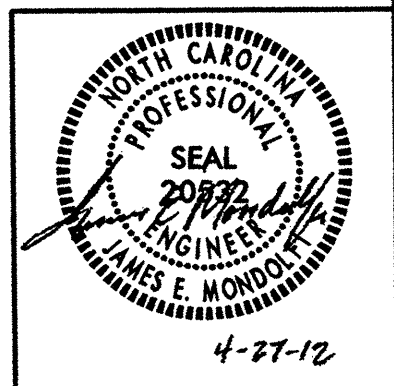
\* EXTEND ALL BARS IN STAGE 2 1'-6" MIN. BEYOND CONST. JOINT  
 \* PLACE ALL BARS IN STAGE 4 AT OR NEAR THE END OF BARS EXTENDING FROM STAGE 2

**BILL OF MATERIAL**

END BENT #1 STAGE 2					END BENT #1 STAGE 4					END BENT #2 STAGE 2					END BENT #2 STAGE 4								
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT				
B1	10	*9	1	26'-0"	884	B3	10	*9	1	17'-8"	601	B1	10	*9	1	26'-0"	884	B3	10	*9	1	17'-8"	601
B2	6	*6	STR	24'-9"	223	B4	6	*6	STR	16'-5"	148	B2	6	*6	STR	24'-9"	223	B4	6	*6	STR	16'-5"	148
D1	11	*6	STR	1'-6"	25	D1	9	*6	STR	1'-6"	20	D1	11	*6	STR	1'-6"	25	D1	9	*6	STR	1'-6"	20
H1	8	*4	5	8'-2"	44	H3	8	*4	6	7'-3"	39	H3	8	*4	6	7'-3"	39	H1	8	*4	5	8'-2"	44
H2	8	*4	5	7'-10"	42	H4	8	*4	7	7'-8"	41	H4	8	*4	7	7'-8"	41	H2	8	*4	5	7'-10"	42
H5	6	*4	STR	3'-11"	16	H5	6	*4	STR	3'-11"	16	H5	6	*4	STR	3'-11"	16	H5	6	*4	STR	3'-11"	16
M1	20	*10	1	37'-8"	3,242	M2	20	*10	1	39'-7"	3,407	M3	20	*10	1	35'-4"	3,041	M4	20	*10	1	39'-2"	3,371
S1	18	*5	3	11'-6"	216	S1	15	*5	3	11'-6"	180	S1	18	*5	3	11'-6"	216	S1	15	*5	3	11'-6"	180
S2	18	*5	2	4'-3"	80	S2	15	*5	2	4'-3"	66	S2	18	*5	2	4'-3"	80	S2	15	*5	2	4'-3"	66
U1	2	*4	4	5'-6"	7	U1	2	*4	4	5'-6"	7	U1	2	*4	4	5'-6"	7	U1	2	*4	4	5'-6"	7
V1	16	*4	STR	6'-3"	67	V1	14	*4	STR	6'-3"	58	V5	16	*4	STR	6'-1"	65	V5	14	*4	STR	6'-1"	57
V2	4	*4	STR	6'-4"	17	V2	4	*4	STR	6'-4"	17	V6	6	*4	STR	6'-0"	24	V6	4	*4	STR	6'-0"	16
V3	4	*4	STR	6'-5"	17	V3	4	*4	STR	6'-5"	17	V7	4	*4	STR	5'-10"	16	V7	4	*4	STR	5'-10"	16
V4	2	*4	STR	6'-6"	9	V4	4	*4	STR	6'-6"	17	V8	4	*4	STR	5'-11"	16	V8	4	*4	STR	5'-11"	16
REINFORCING STEEL 4,889 LB.					REINFORCING STEEL 4,634 LB.					REINFORCING STEEL 4,677 LB.					REINFORCING STEEL 4,600 LB.								
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR NO.	SIZE	TYPE	LENGTH	WEIGHT				
SP-1	2	*	8	621'-8"	1,296	SP-2	2	*	8	647'-6"	1,366	SP-3	2	*	8	581'-6"	1,212	SP-4	2	*	8	647'-6"	1,350
SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,296 LB.					SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,366 LB.					SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,212 LB.					SPIRAL COLUMN REINFORCING STEEL (FOR ONE BENT) 1,350 LB.								
* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR					* THE "SP" SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR								
CLASS A CONCRETE BREAKDOWN					CLASS A CONCRETE BREAKDOWN					CLASS A CONCRETE BREAKDOWN					CLASS A CONCRETE BREAKDOWN								
POUR #2 (CAP) 12.1 C.Y.					POUR #2 (CAP) 10.5 C.Y.					POUR #2 (CAP) 12.3 C.Y.					POUR #2 (CAP) 10.3 C.Y.								
POUR #3 (WING) 2.1 C.Y.					POUR #3 (WING) 1.7 C.Y.					POUR #3 (WING) 1.7 C.Y.					POUR #3 (WING) 2.1 C.Y.								
POUR #4 (LATERAL GUIDE) 0.1 C.Y.					POUR #4 (LATERAL GUIDE) 0.1 C.Y.					POUR #4 (LATERAL GUIDE) 0.1 C.Y.					POUR #4 (LATERAL GUIDE) 0.1 C.Y.								
TOTAL CLASS A CONCRETE 14.3 C.Y.					TOTAL CLASS A CONCRETE 12.3 C.Y.					TOTAL CLASS A CONCRETE 14.1 C.Y.					TOTAL CLASS A CONCRETE 12.5 C.Y.								
DRILLED PIERS:					DRILLED PIERS:					DRILLED PIERS:					DRILLED PIERS:								
DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 18.2 C.Y.					DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 19.2 C.Y.					DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 17.0 C.Y.					DRILLED PIER CONCRETE POUR #1 (DRILLED PIERS) 19.0 C.Y.								
3'-0" DRILLED PIER 70 LIN. FT.					3'-0" DRILLED PIER 74 LIN. FT.					3'-0" DRILLED PIER 65 LIN. FT.					3'-0" DRILLED PIER 73 LIN. FT.								
SPT TESTING 2 EACH					SPT TESTING 2 EACH					SPT TESTING 2 EACH					SPT TESTING 2 EACH								
SID INSPECTION 1 EACH					CSL TUBES 627 LIN. FT.					SID INSPECTION 1 EACH					CSL TUBES 621 LIN. FT.								
CROSSHOLE SONIC LOGGING 1 EACH					CSL TUBES 597 LIN. FT.					CROSSHOLE SONIC LOGGING 1 EACH					CSL TUBES 559 LIN. FT.								

4/26/2012 p:\vnc\div\13\yancey\_119\mcd\3007b\structures\bk-5126\_sd\_sht14.dgn Florence & Hutcheson, Inc.

DRAWN BY: M. M. MOFFET DATE: APR. 2012  
 CHECKED BY: J. B. MONDOLFI DATE: APR. 2012



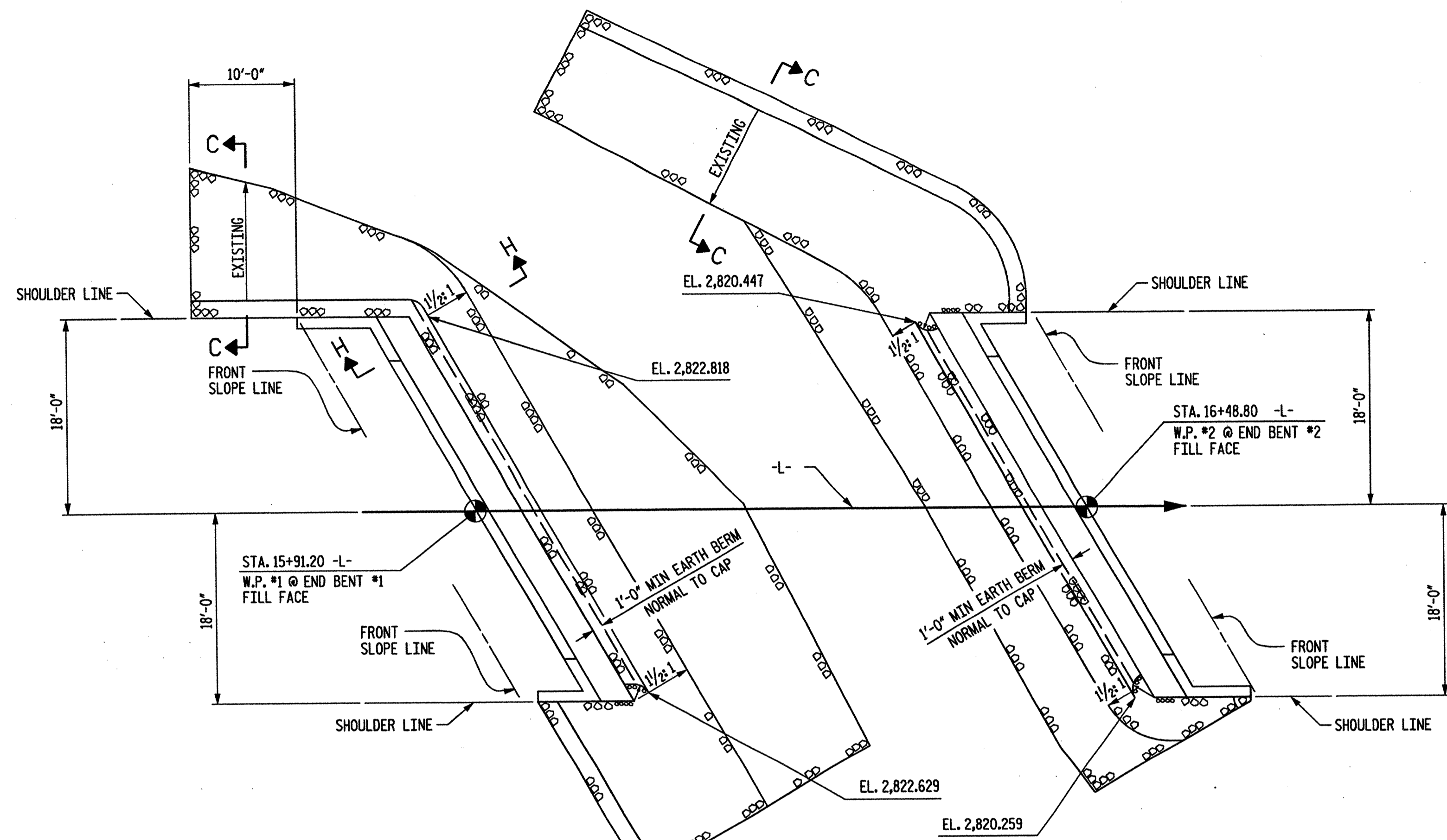
PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**SUBSTRUCTURE  
 END BENT NO. 1 & 2 DETAILS**

REVISIONS						SHEET NO.
NO.	BY	DATE	NO.	BY	DATE	S-14
1			3			TOTAL SHEETS
2			4			18

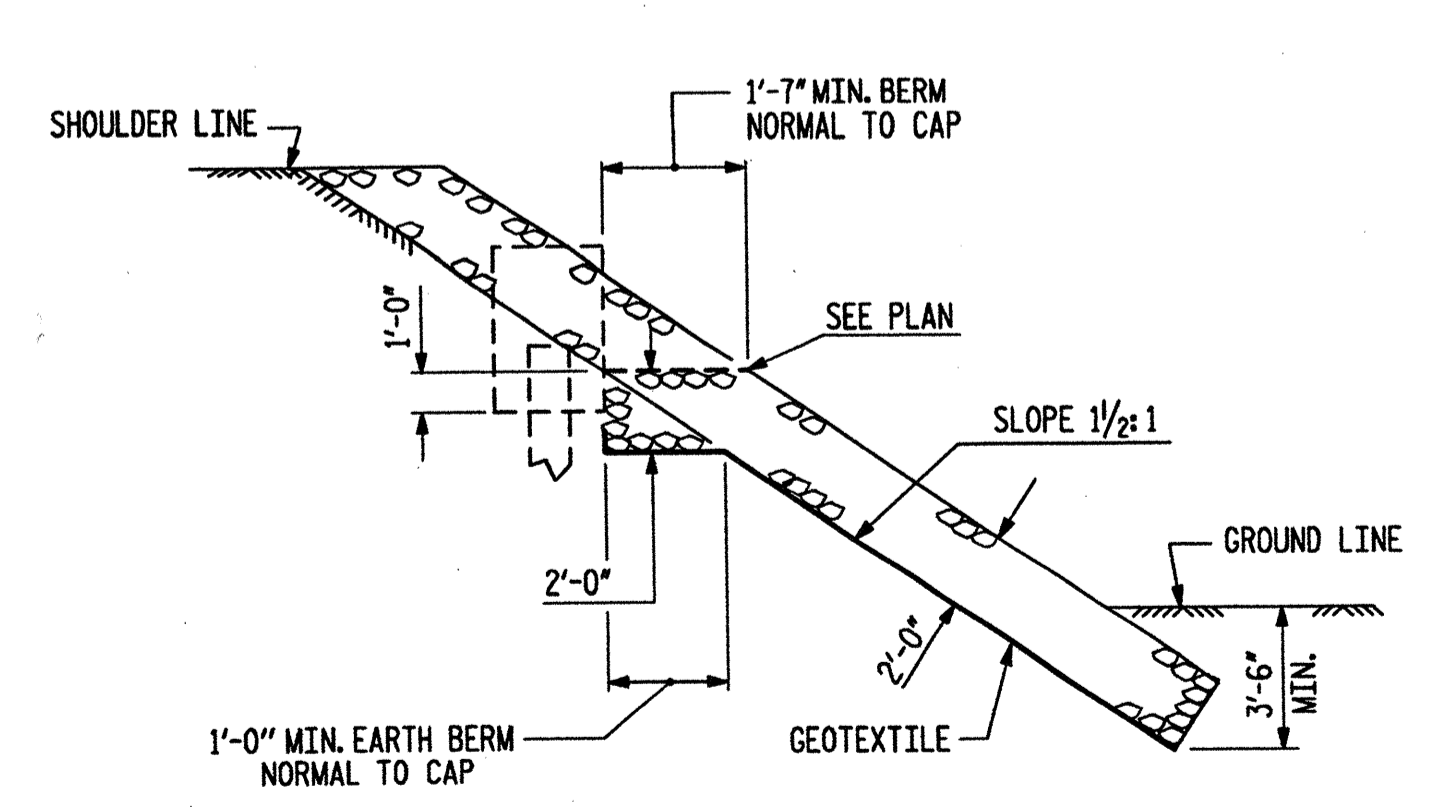
NOTES  
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.



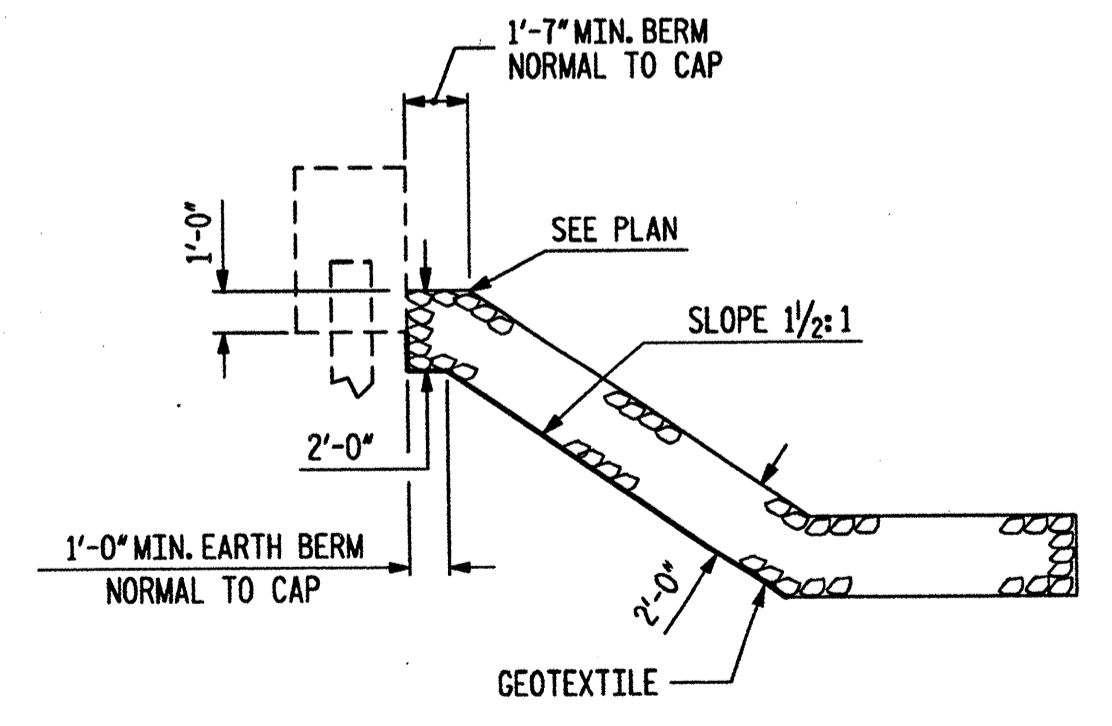
END BENT 1

END BENT 2

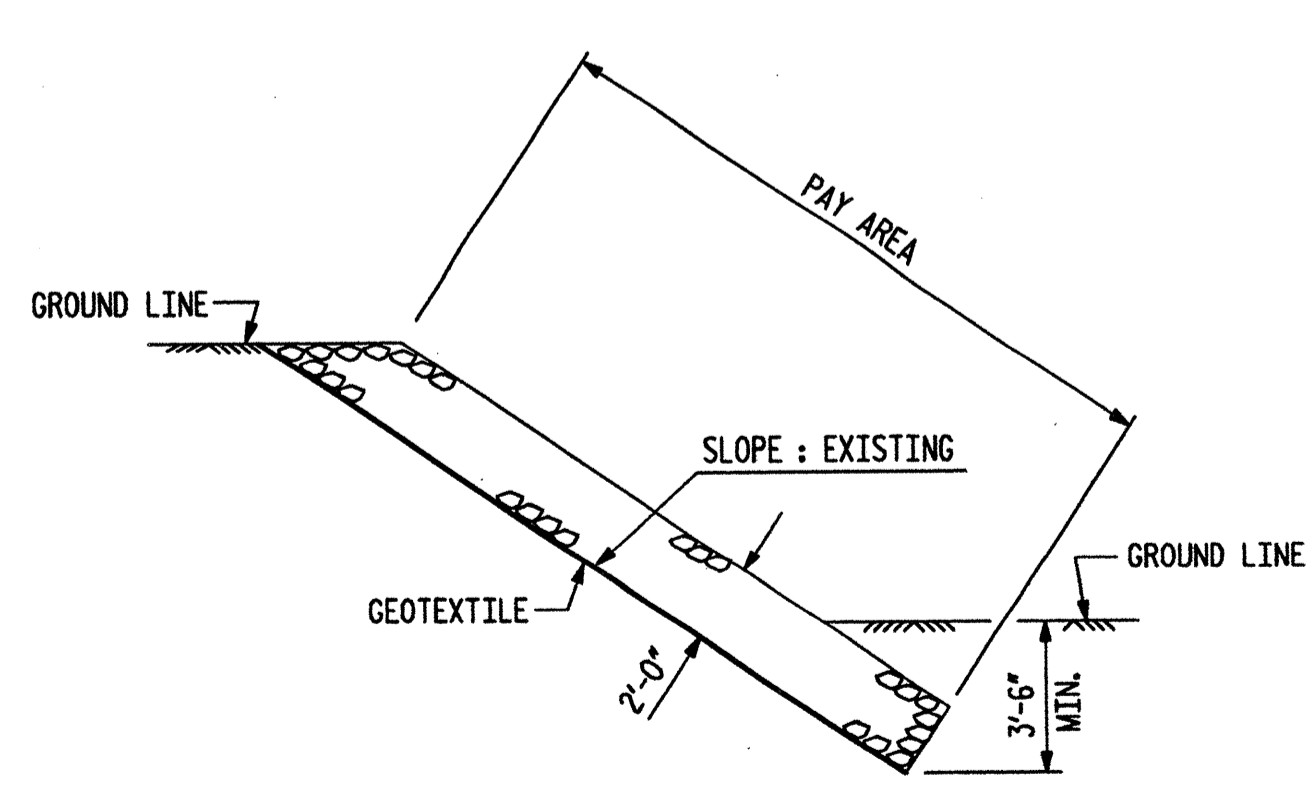
ESTIMATED QUANTITIES		
BRIDGE @ STA. 16+20.00 -L-	RIP RAP CLASS II (2'-0" THICK)	GEOTEXTILE FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	139	154
END BENT 2	125	139



SECTION H-H



SECTION C-C  
BERM RIP RAPPED

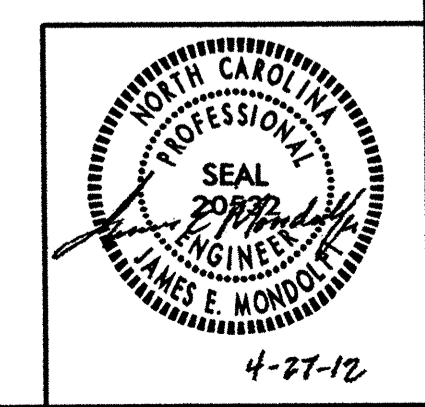


SECTION C-C

PROJECT NO. 42577  
COUNTY: YANCEY  
STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

RIP RAP DETAILS

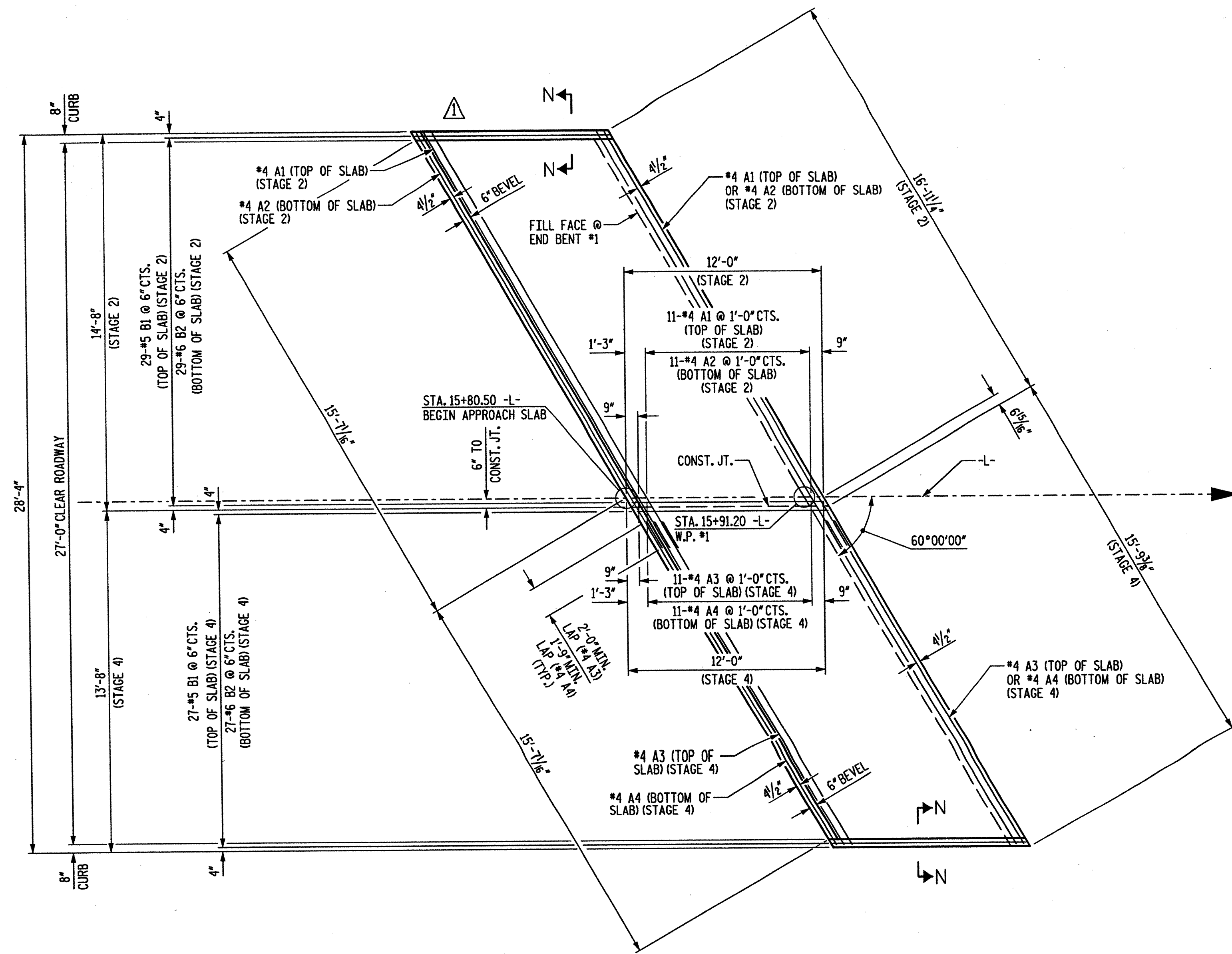


REVISIONS						SHEET NO. S-15
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS 18
2			4			

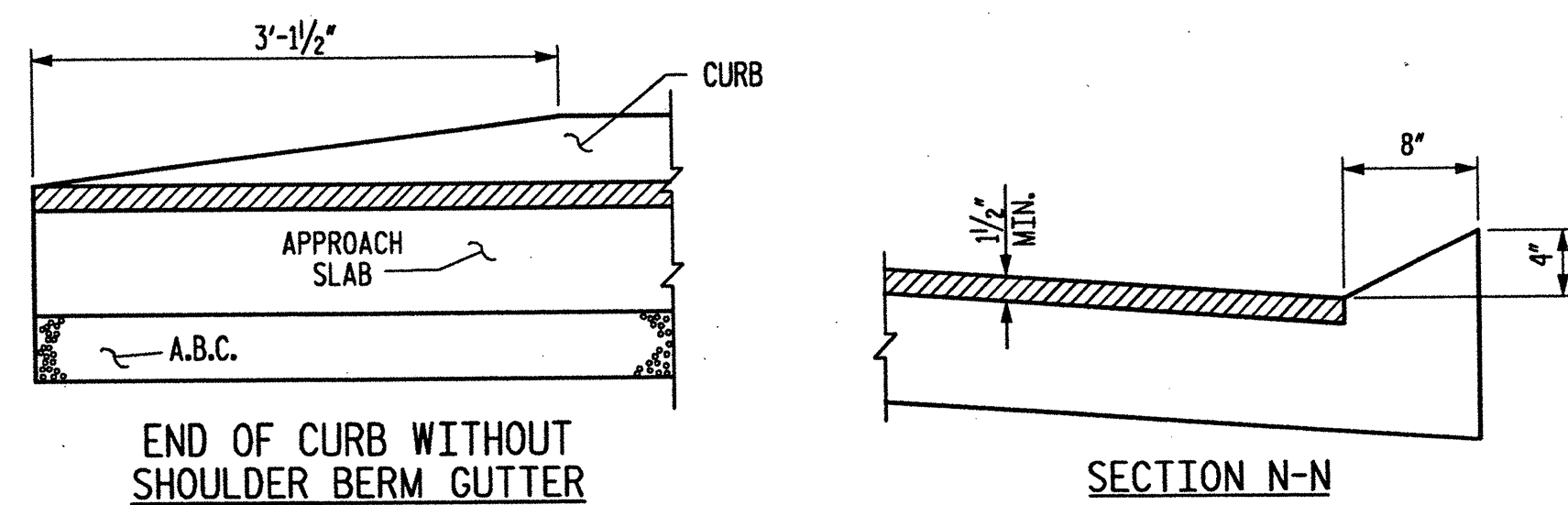
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NC License No: F-0258

4/16/2012 p:\yancey\div13\yancey\_119\mat3007b\structures\bk-5126\_sd\_ah115.dgn Florence & Hutcheson, Inc.

DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
CHECKED BY: J.E. MONDOLFI DATE: APR. 2012



PLAN OF APPROACH SLAB AT END BENT #1



CURB DETAILS

△ REVISED STAGE 2 APPROACH SLAB, LEFT CURB & REINFORCING.

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

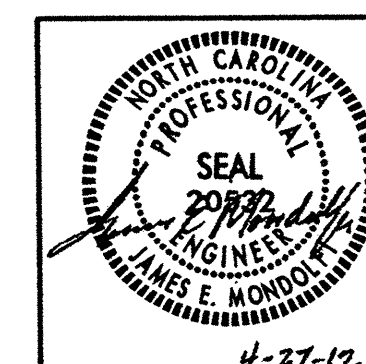
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

APPROACH SLAB  
 AT END BENT NO. 1

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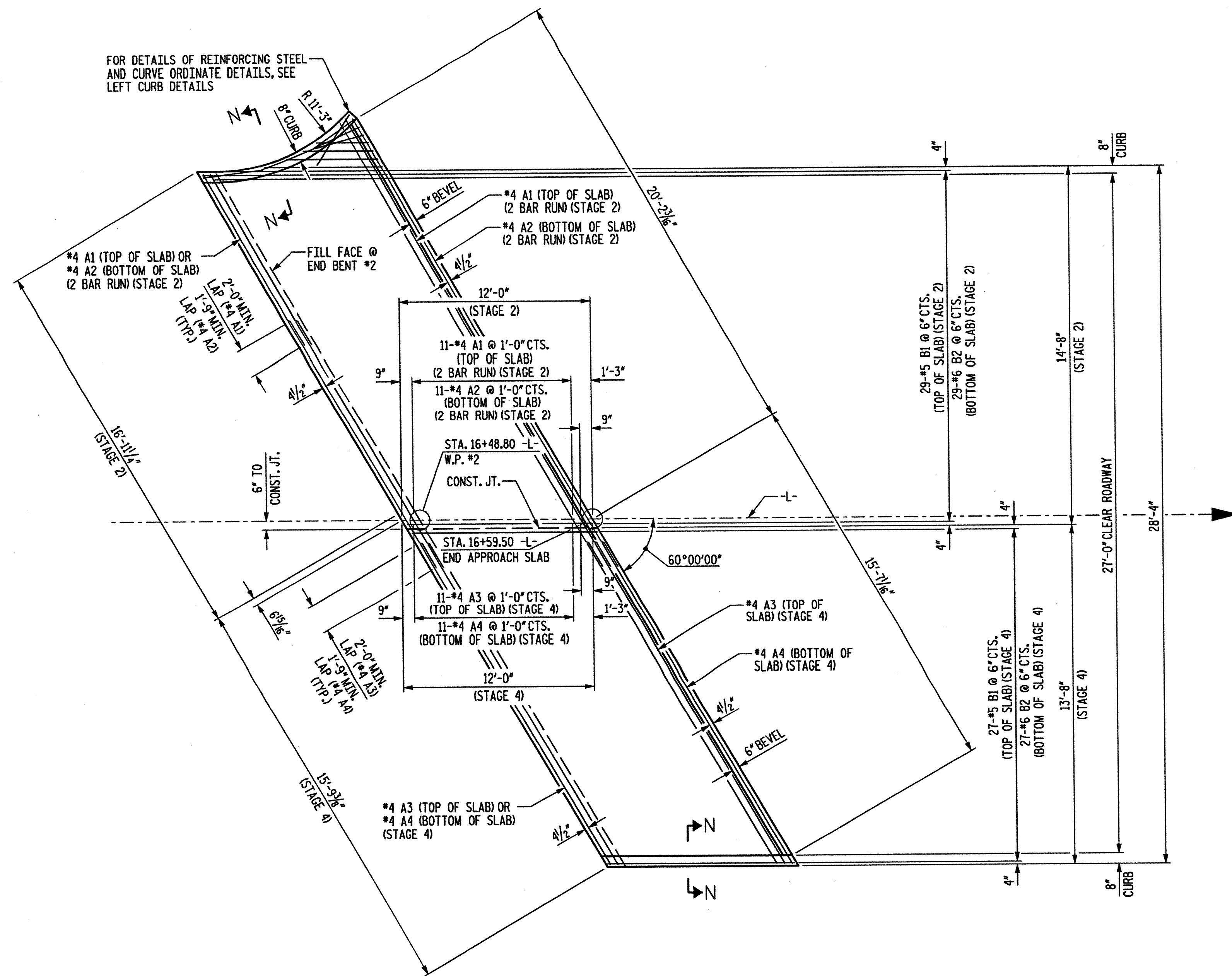
DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

**FH** Florence & Hutcheson  
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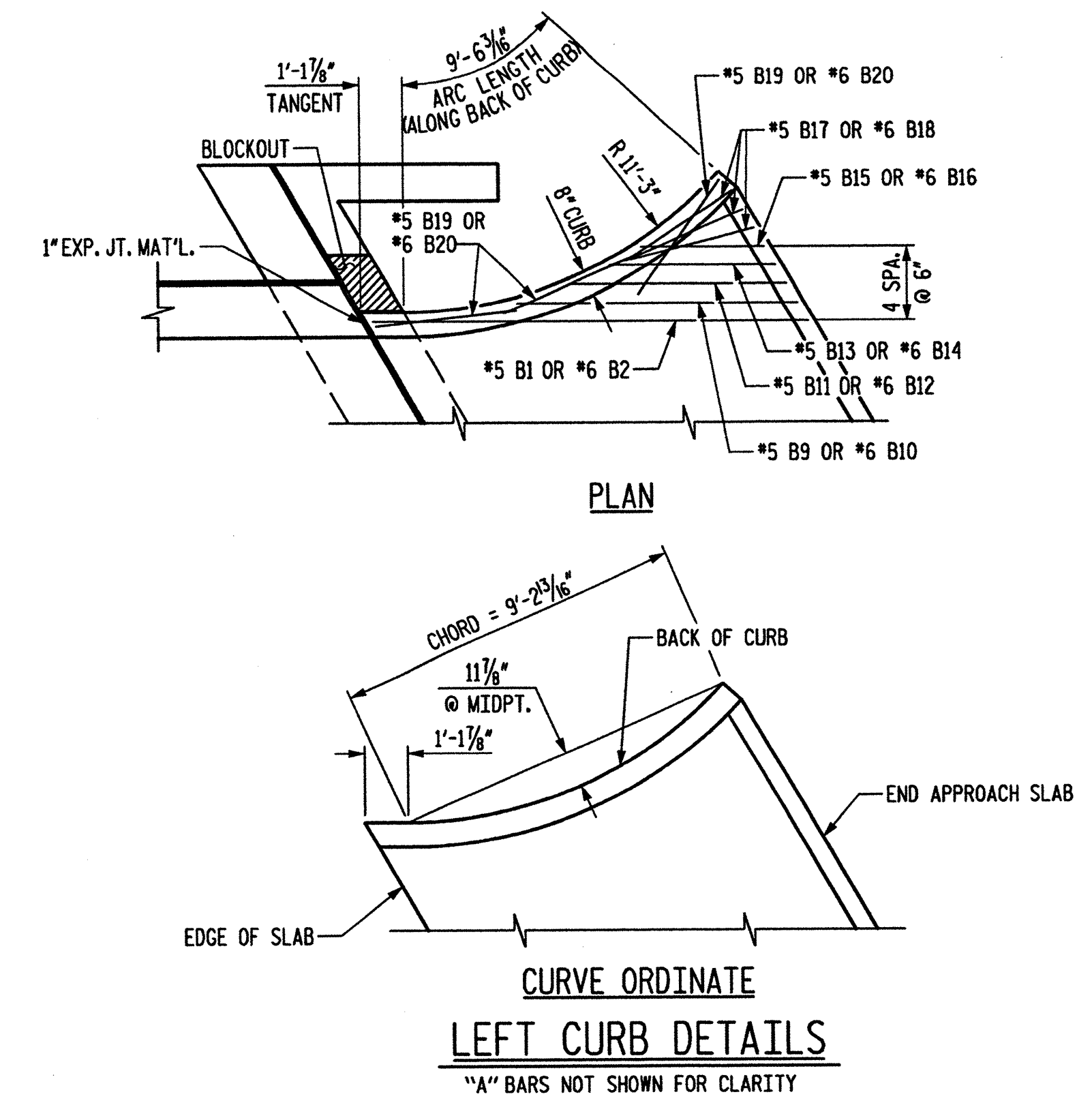


REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-16	
1	JEM	6-13-12	3			TOTAL SHEETS	
2			4			18	

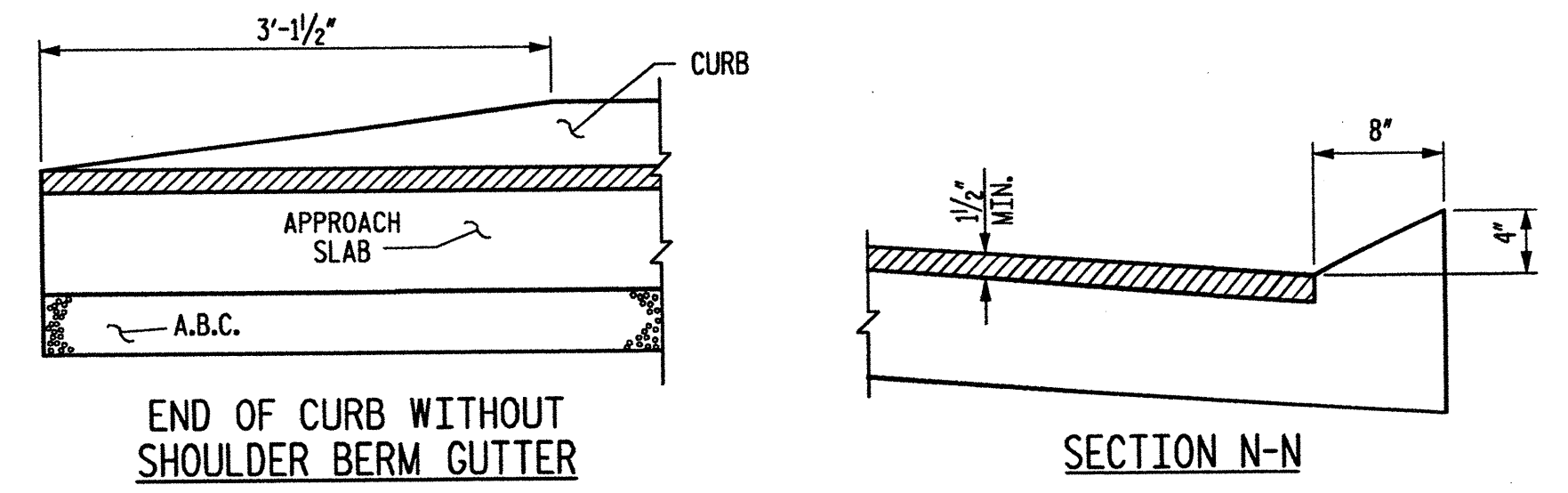




PLAN OF APPROACH SLAB AT END BENT #2



CURVE ORDINATE  
LEFT CURB DETAILS  
"A" BARS NOT SHOWN FOR CLARITY



CURB DETAILS

4/26/2012  
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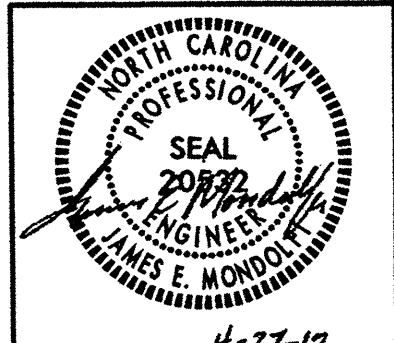
DRAWN BY: M.T. MOBLEY DATE: APR. 2012  
 CHECKED BY: J.E. MONDOLFI DATE: APR. 2012

PROJECT NO. 42577  
 COUNTY: YANCEY  
 STATION: 16+20.00 -L-

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

APPROACH SLAB  
 AT END BENT NO. 2


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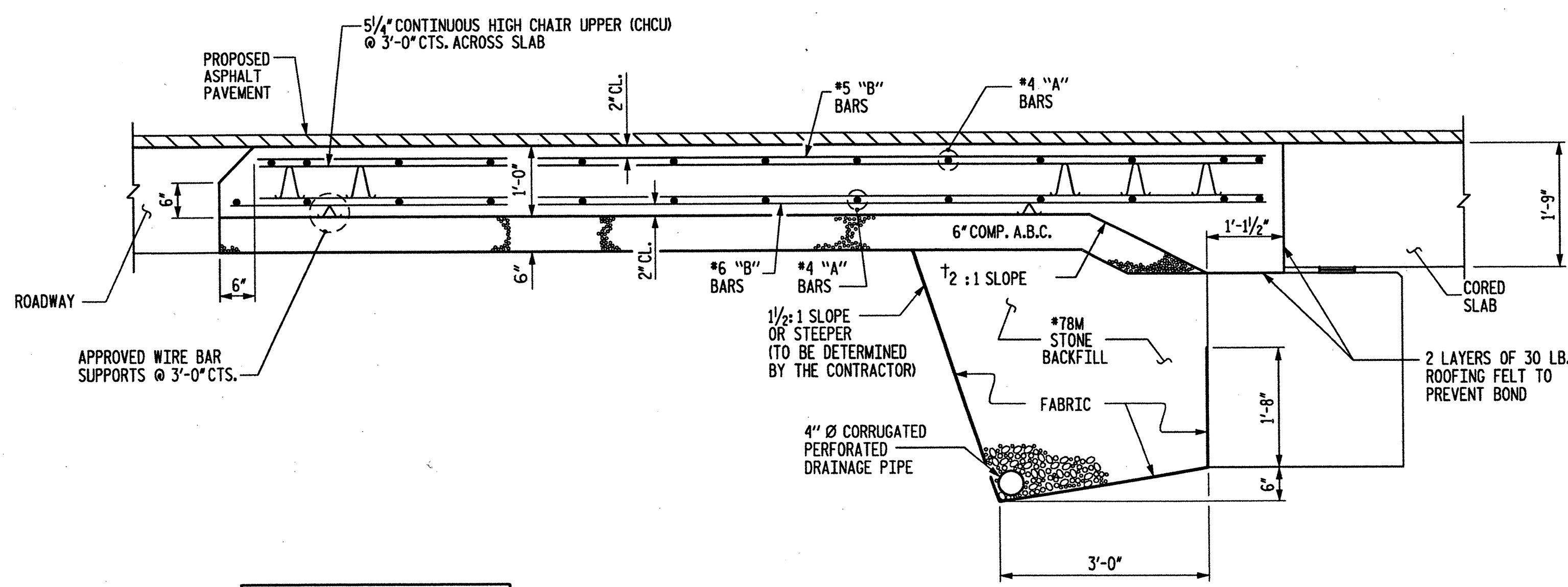
REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-17	
1			3			TOTAL SHEETS	
2			4			18	

### BILL OF MATERIAL

APPROACH SLAB AT END BENT #1 STAGE 2						APPROACH SLAB AT END BENT #1 STAGE 4						APPROACH SLAB AT END BENT #2 STAGE 2						APPROACH SLAB AT END BENT #2 STAGE 4															
BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR NO.	SIZE	TYPE	LENGTH	WEIGHT		BAR NO.	SIZE	TYPE	LENGTH	WEIGHT											
*A1	13	#4	STR	19'-0"	165		*A3	13	#4	STR	15'-7"	135		*A1	26	#4	STR	12'-1"	210		*A3	13	#4	STR	15'-7"	135							
A2	13	#4	STR	19'-0"	165		A4	13	#4	STR	15'-7"	135		A2	26	#4	STR	11'-10"	206		A4	13	#4	STR	15'-7"	135							
*B1	29	#5	STR	11'-1"	335		*B1	27	#5	STR	11'-1"	312		*B1	29	#5	STR	11'-1"	335		*B1	27	#5	STR	11'-1"	312							
B2	29	#6	STR	11'-7"	505		B2	27	#6	STR	11'-7"	470		B2	29	#6	STR	11'-7"	505		B2	27	#6	STR	11'-7"	470							
													*B9	1	#5	STR	7'-7"	8															
													B10	1	#6	STR	8'-1"	12															
REINFORCING STEEL						LB.		670		REINFORCING STEEL						LB.		605		REINFORCING STEEL						LB.		605					
* EPOXY COATED REINFORCING STEEL						LB.		500		* EPOXY COATED REINFORCING STEEL						LB.		447		* EPOXY COATED REINFORCING STEEL						LB.		447					
CLASS AA CONCRETE						C. Y.		7.5		CLASS AA CONCRETE						C. Y.		7.0		CLASS AA CONCRETE						C. Y.		7.0					
												REINFORCING STEEL						LB.		784													
												* EPOXY COATED REINFORCING STEEL						LB.		593													
												CLASS AA CONCRETE						C. Y.		8.3													

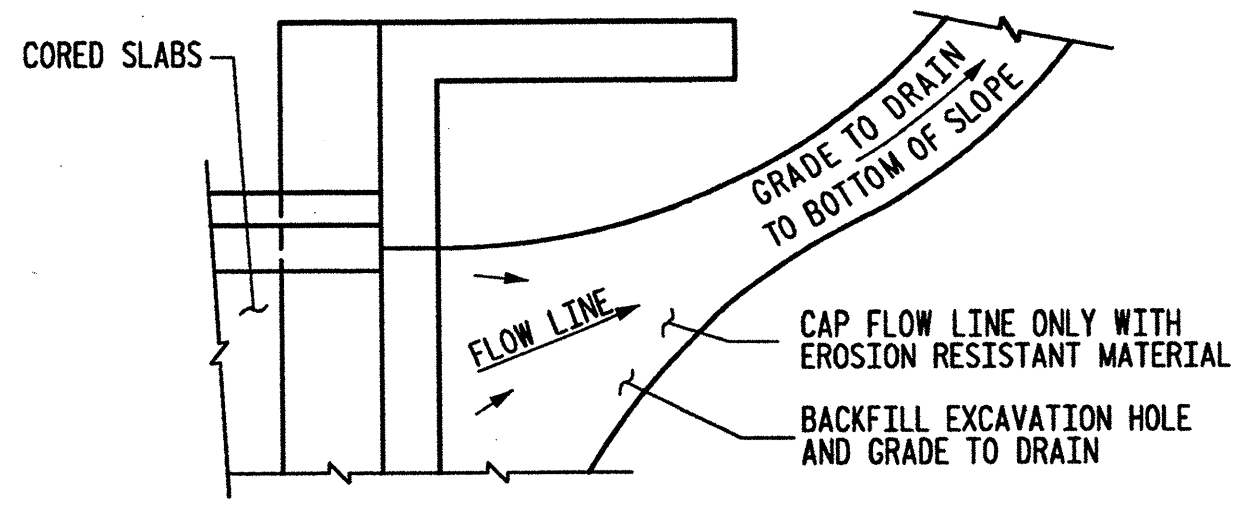
### NOTES

- 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 I 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 END BENT CAP FROM OUTSIDE EDGE TO OUTSIDE EDGE OF APPROACH SLAB.
- FOR THE 4" Ø DRAINAGE PIPE OUTLET(S), SEE ROADWAY STANDARD DRAWINGS.
- 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. 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 CORED SLAB UNIT" SHEET.
- 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.



† NORMAL TO END BENT

**SECTION THRU SLAB**



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**

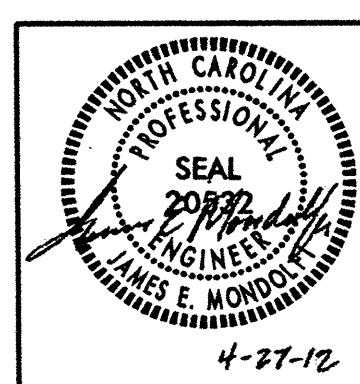
REVISED BOM FOR APPROACH SLAB AT END BENT NO. 1  
**PROJECT NO. 42577**  
**COUNTY: YANCEY**  
**STATION: 16+20.00 -L-**

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**APPROACH SLAB DETAILS**

REVISIONS						SHEET NO.	
NO.	BY	DATE	NO.	BY	DATE	S-18	
1	JEM	6-13-12	3			TOTAL SHEETS	
2			4			18	

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NC License No: F-0268



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DRAWN BY: **MULMOHAYE** DATE: APR. 2012  
 CHECKED BY: **J.E. MONDOLVI** DATE: APR. 2012

## 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. FINISHES 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.

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