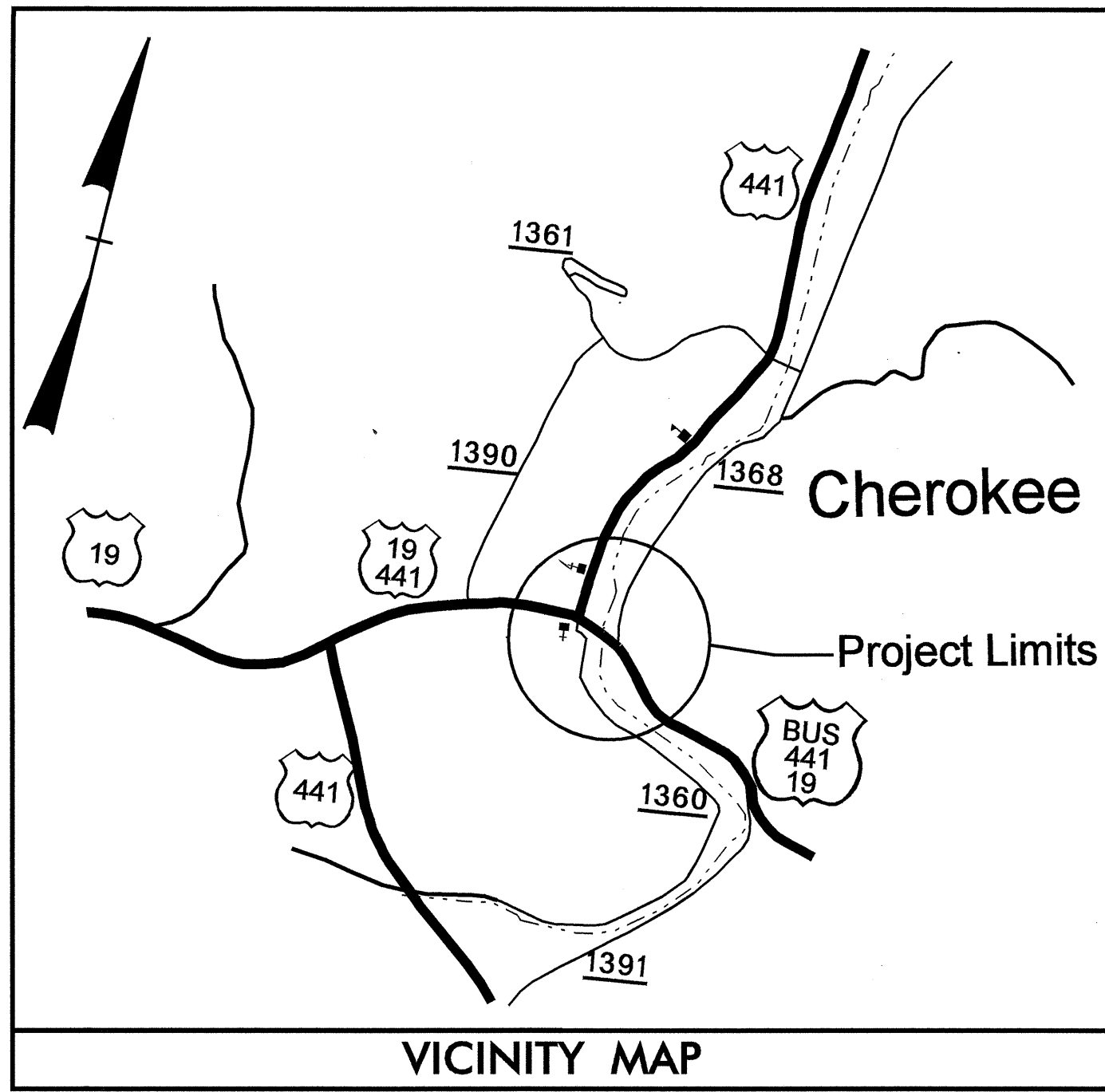


CONTRACT: C200794 TIP PROJECT: B-4696

STRUCTURES



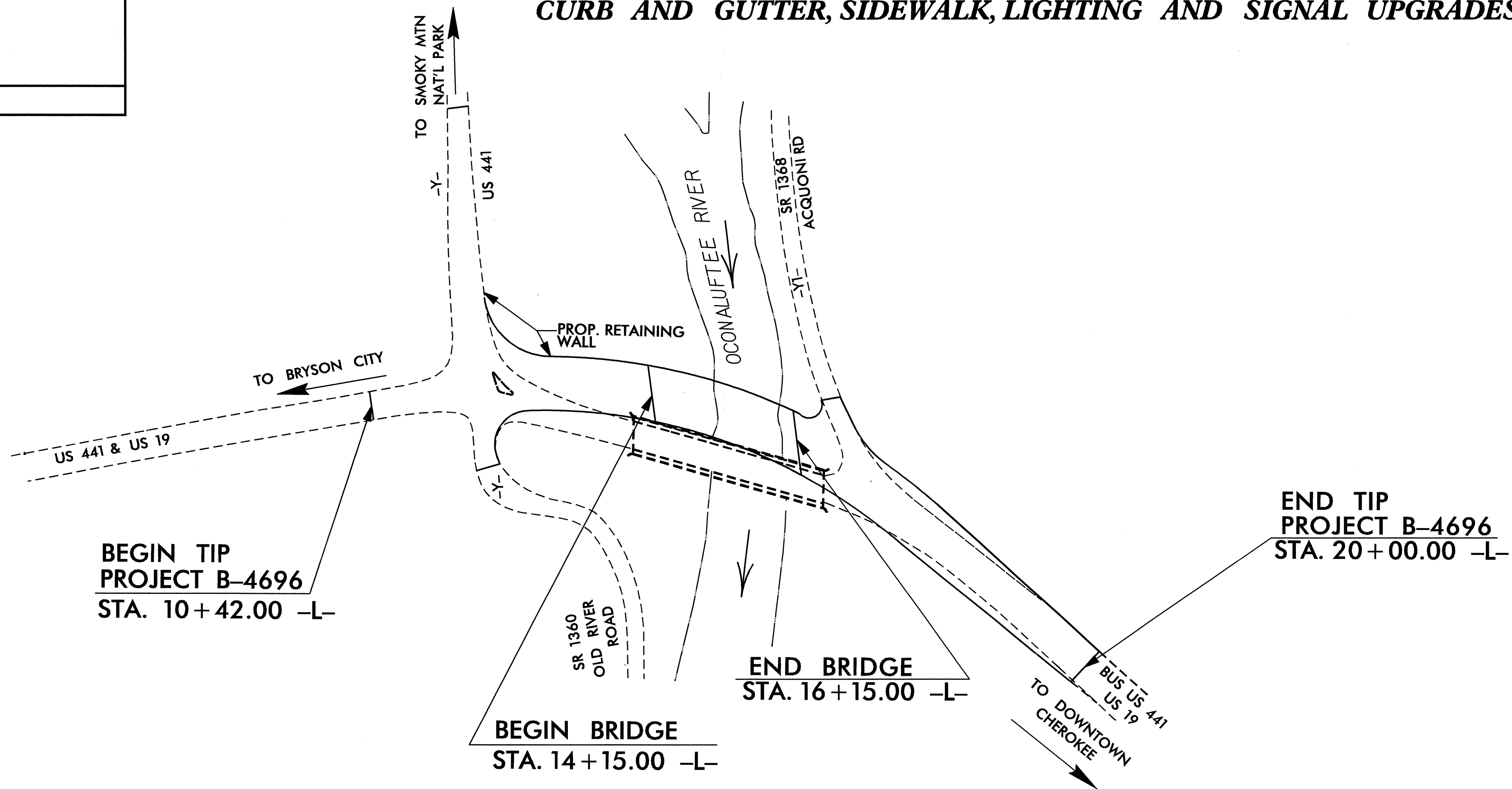
STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

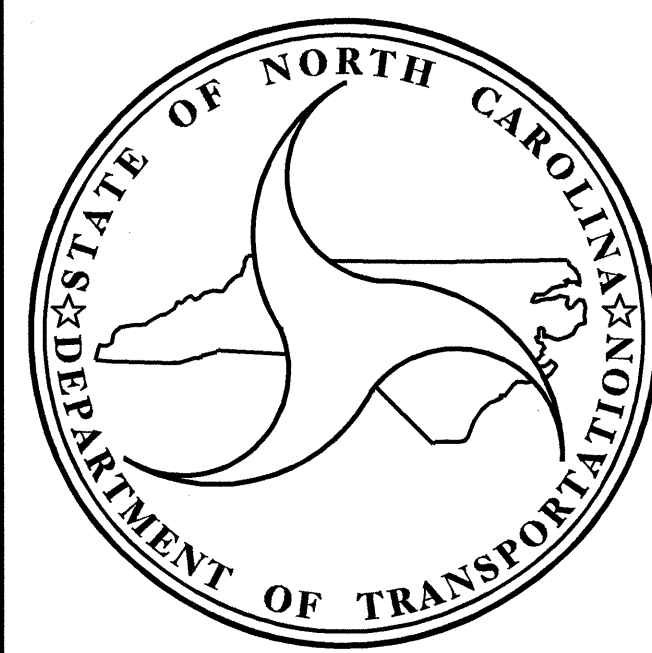
SWAIN COUNTY

LOCATION: BRIDGE #24 ON US 19 OVER THE OCONALUFTEE RIVER IN CHEROKEE

TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE, RETAINING WALL, CURB AND GUTTER, SIDEWALK, LIGHTING AND SIGNAL UPGRADES



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4696		
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33840.1.1	STP-19(11)	P.E.	
33840.2.2	STP-19(11)	R / W & UTIL	
33840.3.2	BRSTP-19(17)	CONST.	



DESIGN DATA

ADT 2002 = 18,280 vpd
 ADT 2025 = 33,800 vpd
 DHV = 25 %
 D = 65 %
 T = 10 % *
 V = 20 MPH

* TTST 2% DUAL 8%

PROJECT LENGTH

LENGTH ROADWAY OF TIP PROJECT B-4696 = 0.143 MILE
 LENGTH STRUCTURE OF TIP PROJECT B-4696 = 0.038 MILE
 TOTAL LENGTH OF TIP PROJECT B-4696 = 0.181 MILE

Prepared In the Office of:

DIVISION OF HIGHWAYS

2006 STANDARD SPECIFICATIONS

LETTING DATE :
January 15, 2008

Q.H. NGUYEN, P.E.
PROJECT ENGINEER

MARC G. CHEEK, P.E.
PROJECT DESIGN ENGINEER

STRUCTURE DESIGN UNIT
1000 BIRCH RIDGE DR.
RALEIGH, N.C. 27610

Gregory R. Perpetti
5.16.07

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER P.E.

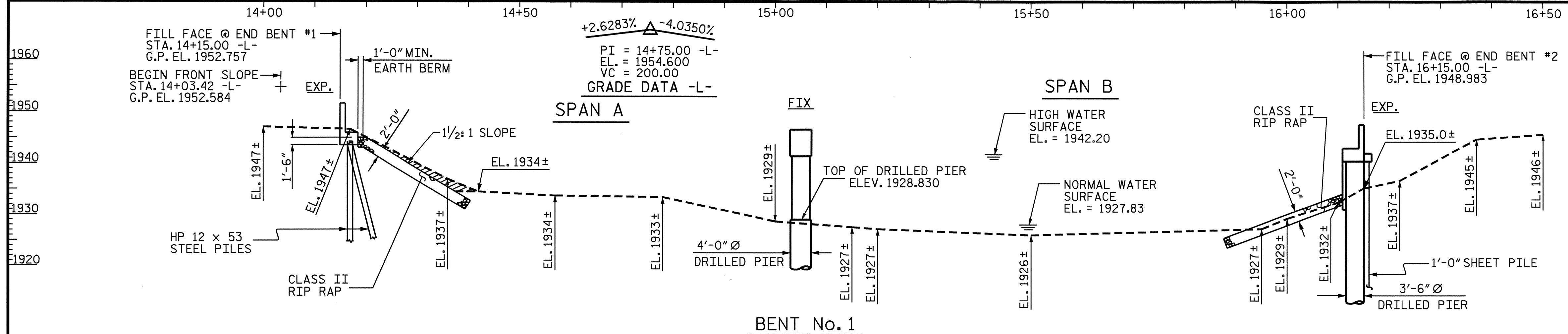
BUREAU OF INDIAN AFFAIRS

APPROVED
EASTERN REGIONAL ROADS ENGINEER DATE

BUREAU OF INDIAN AFFAIRS

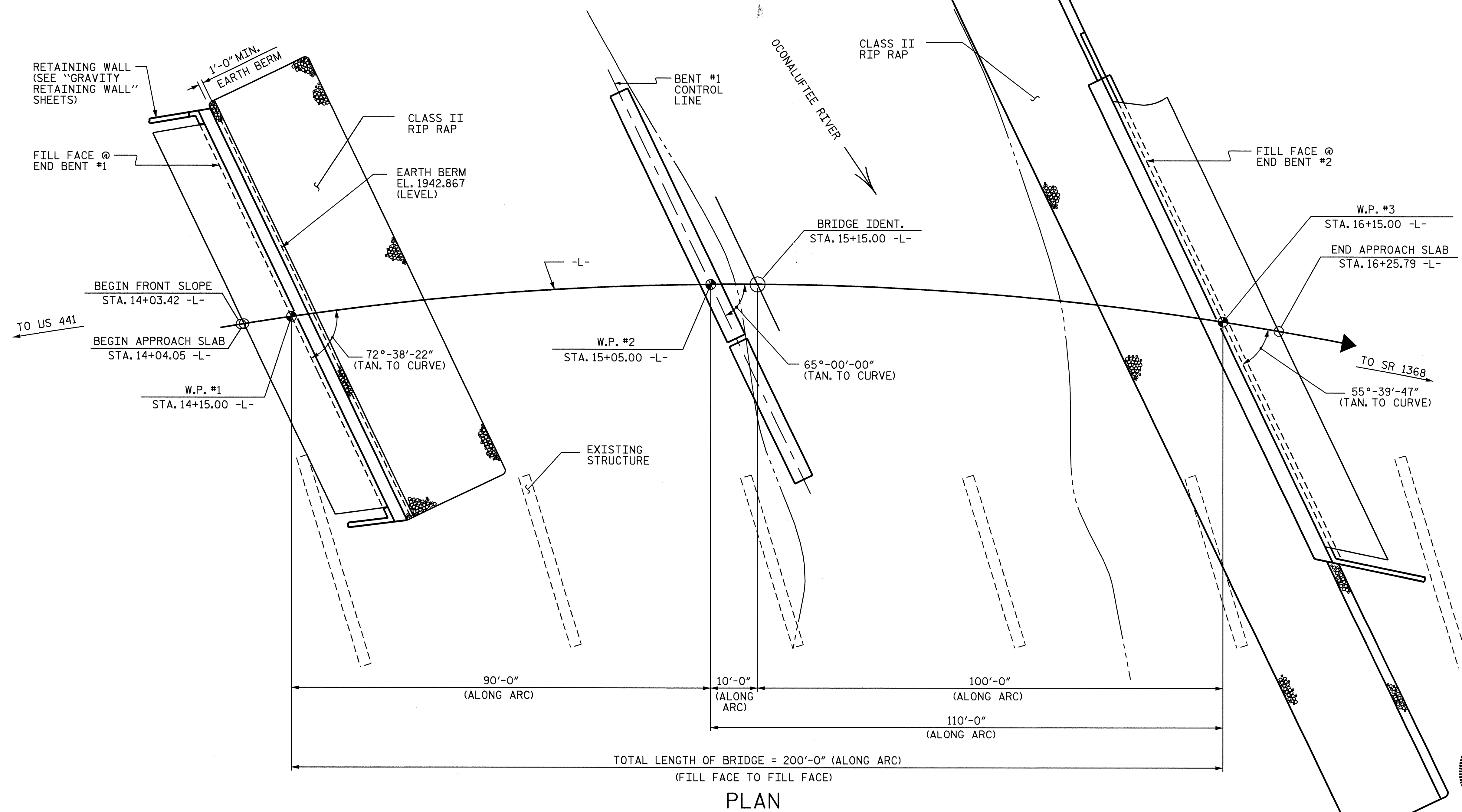
APPROVED
AGENCY SUPERINTENDENT DATE

28-MAR-2007 10:56 R:\Structures\B4696\Final Plans\B469617SI.dgn

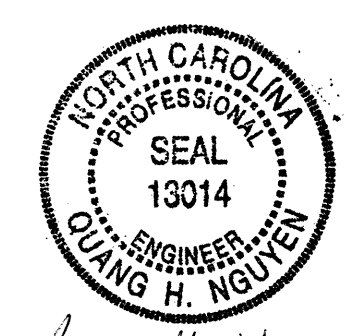


SECTION ALONG -L-
SECTION @ BENTS & END BENTS ARE TAKEN @ RIGHT ANGLES TO BENTS

UNCLASSIFIED
STRUCTURE EXCAVATION



PILES, DRILLED PIERS, AND SHEET PILING NOT SHOWN IN PLAN VIEW FOR CLARITY



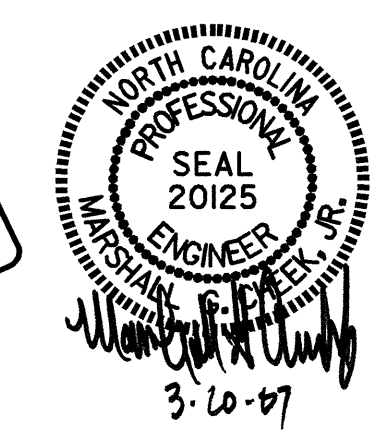
Quang H. Nguyen 3-20-07

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00 -L-
SHEET 1 OF 4 REPLACES BRIDGE No. 24

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
GENERAL DRAWING
FOR BRIDGE OVER OCONALUFTEE RIVER ON US 19/441 BUS BETWEEN US 441 AND SR 1368

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-1	
1			3			TOTAL SHEETS	60
2			4				

DRAWN BY : CR LEWIS/LLM DATE : 08/06
CHECKED BY : MG CHEEK DATE : 08/06



3-20-07

FOUNDATION NOTES

DRIVE PILES AT END BENT NO.1 TO A REQUIRED BEARING CAPACITY OF 100 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT END BENT NO.1 IS 50 TONS PER PILE.

DRILLED PIERS AT BENT NO.1 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 30 TSF.

DRILLED PIERS AT END BENT NO.2 ARE DESIGNED FOR BOTH SKIN FRICTION AND END BEARING. CHECK FIELD CONDITIONS FOR THE REQUIRED END BEARING CAPACITY OF 15 TSF.

THE REQUIRED TIP BEARING CAPACITY AT BENT NO.1 AND END BENT NO.2 SHALL BE VERIFIED.

DRILLED PIERS FOR BENT NO.1 AND END BENT NO.2 HAVE BEEN DESIGNED FOR AN APPLIED LOAD OF 543 TONS AND 87 TONS EACH RESPECTIVELY, AT THE TOP OF THE COLUMN.

PERMANENT STEEL CASING IS REQUIRED FOR DRILLED PIERS AT BENT NO.1. DO NOT EXTEND THE CASING BELOW ELEVATION 1919 FT. WITHOUT PRIOR APPROVAL FROM THE ENGINEER. SEE DRILLED PIERS SPECIAL PROVISION.

PERMANENT STEEL CASING IS NOT REQUIRED FOR DRILLED PIERS AT END BENT NO.2.

DRILLED PIERS AT BENT NO.1 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 1910 FT. AND SATISFY THE REQUIRED END BEARING CAPACITY.

DRILLED PIERS AT END BENT NO.2 SHALL EXTEND TO AN ELEVATION NO HIGHER THAN 1928 FT. (COLUMNS 1-4), 1907 FT. (COLUMNS 5-8), OR 1908 FT. (COLUMNS 9-12) AND SATISFY THE REQUIRED END BEARING CAPACITY.

THE SCOUR CRITICAL ELEVATION FOR BENT NO.1 IS ELEVATION 1919 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE SCOUR CRITICAL ELEVATION FOR END BENT NO.2 IS ELEVATION 1936 FT. (COLUMNS 1-4), ELEVATION 1925 FT. (COLUMNS 5-8), AND ELEVATION 1923 FT. (COLUMNS 9-12). SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

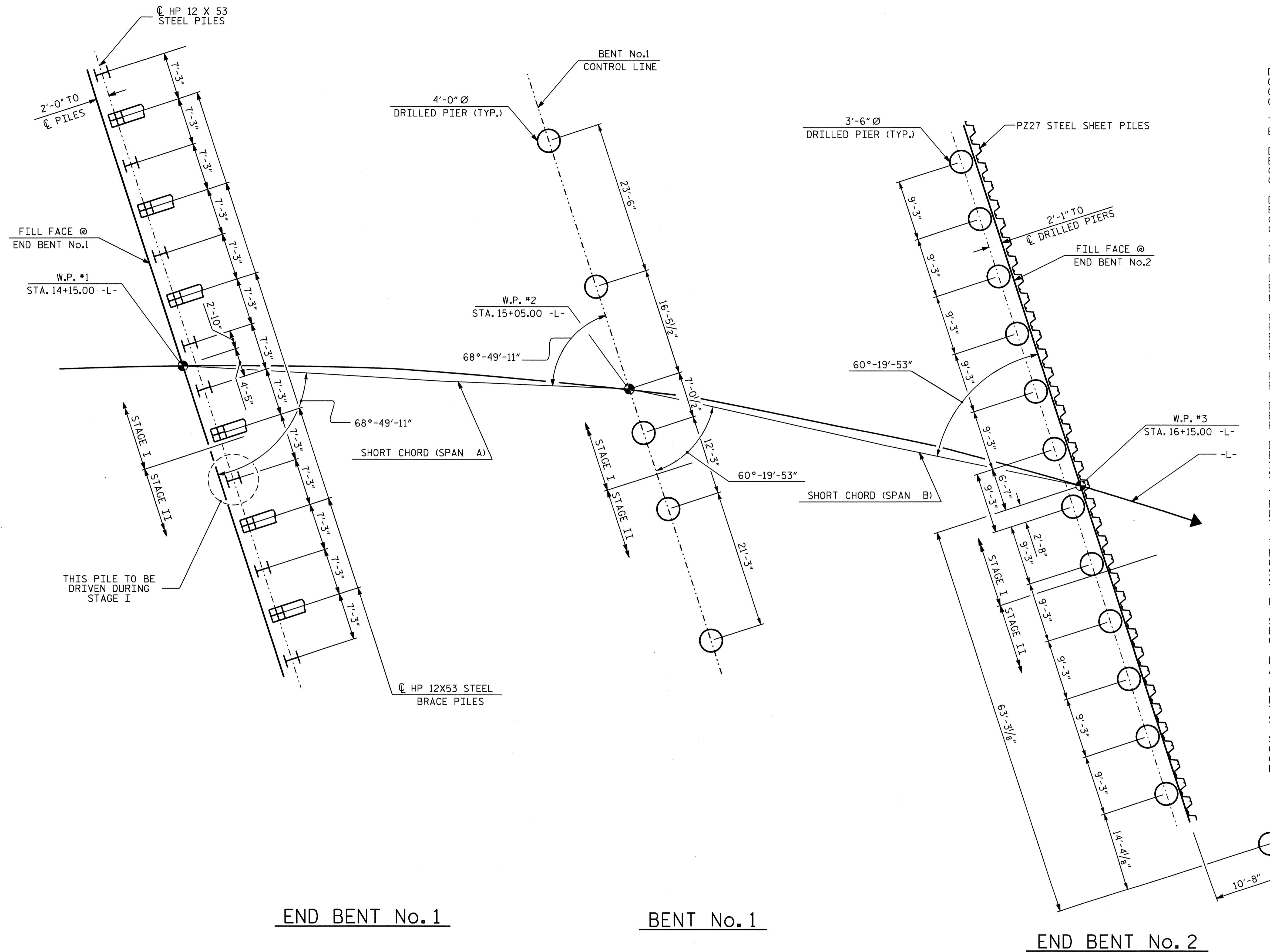
FOR DRILLED PIERS, SEE DRILLED PIER SPECIAL PROVISIONS.

SPT TESTING IS NOT REQUIRED TO DETERMINE THE END BEARING CAPACITY OF THE DRILLED PIERS AT BENT NO.1 OR END BENT NO.2.

DO NOT USE SLURRY CONSTRUCTION FOR DRILLED PIERS AT BENT NO.1 OR AT END BENT NO.2.

CSL TUBES ARE REQUIRED AND CSL TESTING MAY BE REQUIRED FOR THE DRILLED PIERS AT BENT NO.1 OR END BENT NO.2. THE ENGINEER WILL DETERMINE THE NEED FOR CSL TESTING. SEE CROSSHOLE SONIC LOGGING SPECIAL PROVISION.

SID INSPECTIONS MAY BE REQUIRED TO DETERMINE THE BOTTOM CLEANLINESS OF THE DRILLED PIERS AT BENT NO.1 OR END BENT NO.2. THE ENGINEER WILL DETERMINE THE NEED FOR SID INSPECTIONS. SEE DRILLED PIERS SPECIAL PROVISION.



END BENT No. 1

BENT No. 1

END BENT No. 2

FOUNDATION LAYOUT

ALL PILES IN END BENT #1 ARE HP 12 X 53 STEEL PILES
 ALL PILES IN END BENT #1 BRACE PILES ARE BATTERED AT 3:12
 DIMENSIONS LOCATING PILES AND DRILLED PIERS ARE
 SHOWN TO THE PILE AND DRILLED PIER CENTERLINE .

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 2 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

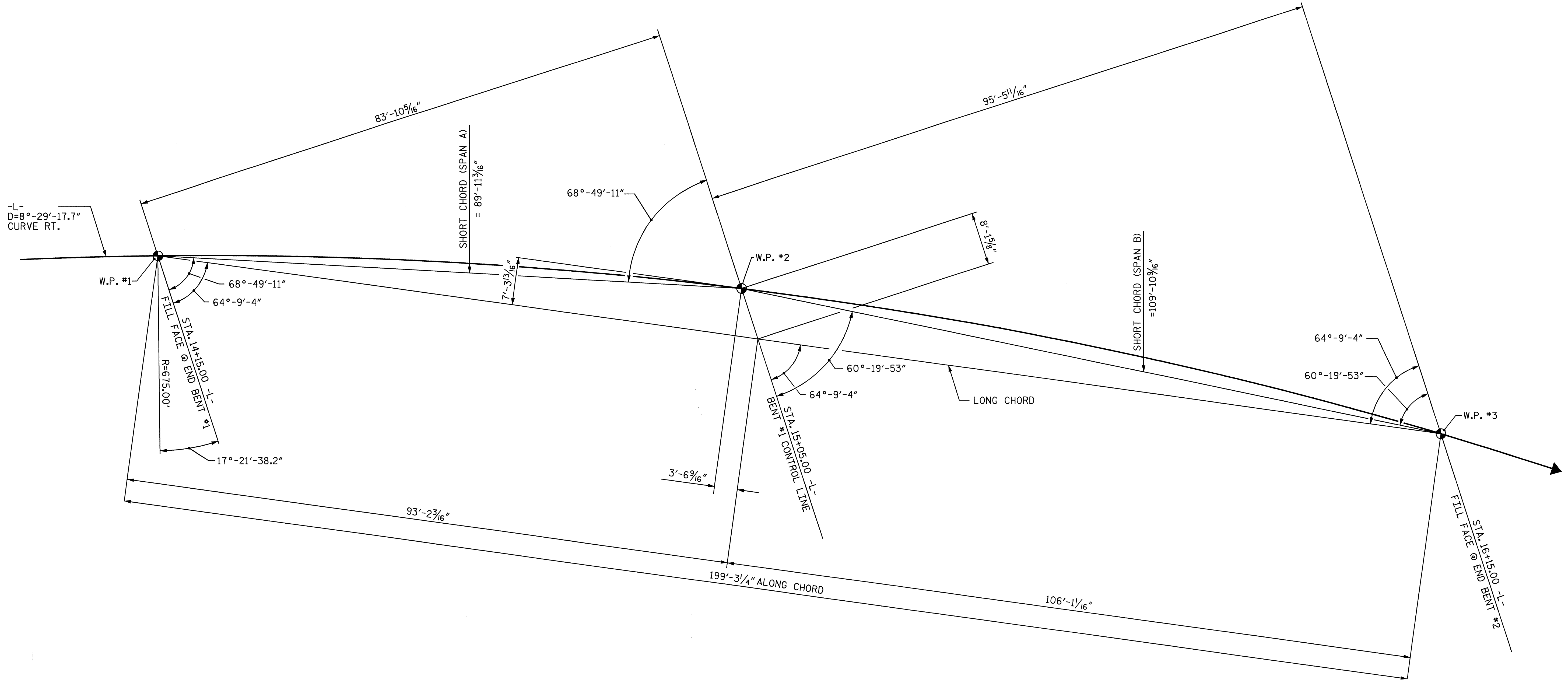
GENERAL DRAWING

FOR BRIDGE OVER OCONALUFTEE RIVER ON US 19/441 BUS. BETWEEN US 441 AND SR 1368



DRAWN BY : A.L. FIGUEROA DATE : 7-31-06
 CHECKED BY : M.G. CHEEK DATE : 7-31-06

REVISIONS						SHEET NO. S-2
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			



-L-
D=8°-29'-17.7"
CURVE RT.

LONG CHORD LAYOUT

NOTE: END BENTS AND BENT ARE PARALLEL.

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 GENERAL DRAWING
 FOR BRIDGE OVER OCONALUFTEE
 RIVER ON US 19/441 BUS
 BETWEEN US 441 AND SR 1368



DRAWN BY : CR YARBROUGH/LLM DATE : 08/06
 CHECKED BY : MG CHEEK DATE : 08/06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-3
1			3			TOTAL SHEETS
2			4			60

TOTAL BILL OF MATERIAL

	CONSTRUCTION MAINTENANCE, AND REMOVAL OF TEMPORARY ACCESS	REMOVAL OF EXISTING STRUCTURE	3'-6" Ø DRILLED PIERS IN SOIL	4'-0" Ø DRILLED PIERS IN SOIL	3'-6" Ø DRILLED PIERS NOT IN SOIL	4'-0" Ø DRILLED PIERS NOT IN SOIL	PERMANENT STEEL CASING FOR 4'-0" Ø DRILLED PIERS	SID INSPECTION	CROSSHOLE SONIC LOGGING	UNCLASSIFIED STRUCTURE EXCAVATION	REINFORCED CONCRETE DECK SLAB	GROOVING BRIDGE FLOORS	CLASS A CONC.	BRIDGE APPROACH SLABS	REINF. STEEL	SPIRAL COLUMN REINF. STEEL	STRUCTURAL STEEL	HP 12 X 53 STEEL PILES	18" STEEL SHEET PILES	RIP RAP CLASS II (2'-0" THICK)	FILTER FABRIC FOR DRAINAGE	POT BEARINGS	ELASTOMERIC BEARINGS	EVAZOTE JOINT SEALS	ELECTRICAL CONDUIT SYSTEM	SELECT MATERIAL CLASS VI	DECORATIVE CONCRETE AND METAL RAIL	
	LUMP SUM	LUMP SUM	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	EA.	EA.	LUMP SUM	SQ. FT.	SQ. FT.	CU. YDS.	LUMP SUM	LBS.	LBS.	APPROX. LBS.	NO.	LIN. FT.	SQ. FT.	TONS	SQ. YDS.	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	TONS	LUMP SUM
SUPERSTRUCTURE	LUMP SUM	LUMP SUM									17,204	14,271					580,000					LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM		LUMP SUM	
END BENT NO. 1										LUMP SUM			63.7		9,257			14	350		280	310						
BENT NO. 1				45.00		50.00	49.17	1	1				95.2		20,116	4,072												
END BENT NO. 2			206.25		71.50			1	1				133.6		43,178	7,819			1,508		495	550					587	
TOTAL	LUMP SUM	LUMP SUM	206.25	45.00	71.50	50.00	49.17	2	2	LUMP SUM	17,204	14,271	292.5	LUMP SUM	72,551	11,891	580,000	14	350	1,508	775	860	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	587	LUMP SUM

NOTES:

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

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

FOR EROSION CONTROL MEASURES, SEE EROSION CONTROL PLANS.

THIS BRIDGE HAS BEEN DESIGNED BY THE STRENGTH DESIGN METHOD AS SPECIFIED IN AASHTO STANDARD SPECIFICATIONS.

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

REMOVABLE FORMS MAY BE USED IN LIEU OF METAL STAY-IN-PLACE FORMS IN ACCORDANCE WITH ARTICLE 420-3 OF THE STANDARD SPECIFICATIONS.

THE EXISTING STRUCTURE CONSISTING OF 5 SPANS, REINFORCED CONCRETE GIRDERS WITH A CONCRETE DECK ON POST AND BEAM BENTS AND CONCRETE ABUTMENTS, A 32 FT. CLEAR ROADWAY AND LOCATED AT THE PROPOSED STRUCTURE SHALL BE REMOVED. THE EXISTING BRIDGE IS PRESENTLY NOT POSTED FOR LOAD LIMIT. SHOULD THE STRUCTURAL INTEGRITY OF THE BRIDGE DETERIORATE DURING CONSTRUCTION OF THE PROPOSED STRUCTURE, A LOAD LIMIT MAY BE POSTED AND MAY BE REDUCED AS FOUND NECESSARY DURING THE LIFE OF THE PROJECT.

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.

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.

THE CLASS AA CONCRETE IN THE BRIDGE DECK SHALL CONTAIN FLY ASH OR GROUND GRANULATED BLAST FURNACE SLAG AT THE SUBSTITUTION RATE SPECIFIED IN ARTICLE 1024-1 AND IN ACCORDANCE WITH ARTICLES 1024-5 AND 1024-6 OF THE STANDARD SPECIFICATIONS. NO PAYMENT WILL BE MADE FOR THIS SUBSTITUTION AS IT IS CONSIDERED INCIDENTAL TO THE COST OF THE REINFORCED CONCRETE DECK SLAB.

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

THIS BRIDGE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR SEISMIC DESIGN OF HIGHWAY BRIDGES FOR SEISMIC PERFORMANCE CATEGORY B.

THE MATERIAL SHOWN IN THE CROSS-HATCHED AREA SHALL BE EXCAVATED FOR A DISTANCE OF 50 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.

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.

AT THE CONTRACTOR'S OPTION, AND UPON REMOVAL OF THE CAUSEWAY, THE CLASS II RIP RAP USED IN THE CAUSEWAY MAY BE PLACED AS RIP RAP SLOPE PROTECTION. SEE SPECIAL PROVISIONS FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

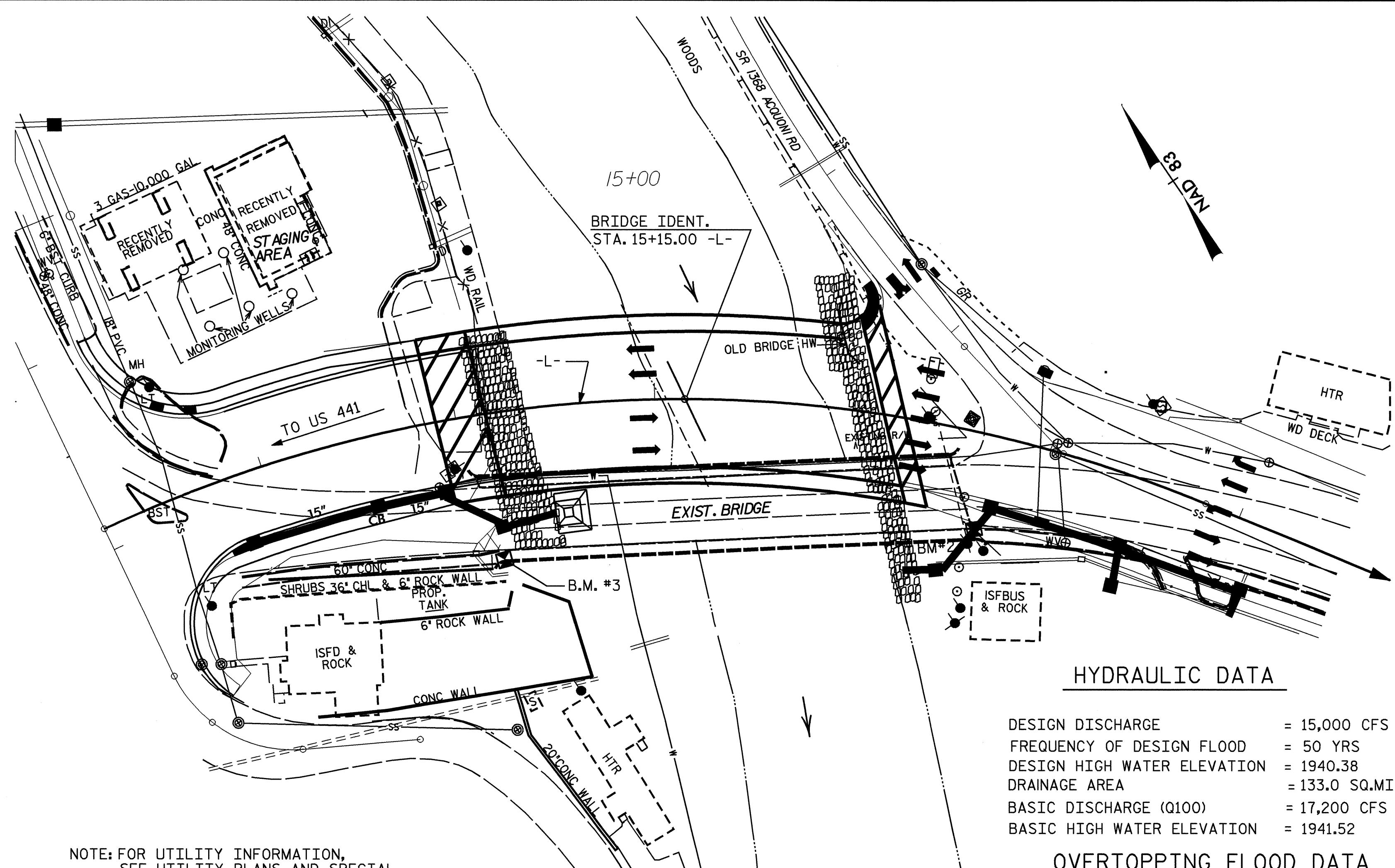
FOR SHIPPING STEEL STRUCTURAL MEMBERS, SEE SPECIAL PROVISIONS.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

NEEDLE BEAMS WILL NOT BE ALLOWED UNLESS OTHERWISE CALLED FOR ON THE PLANS OR APPROVED BY THE ENGINEER.

FOR ELECTRICAL CONDUIT SYSTEM, SEE SPECIAL PROVISIONS.

BM #3: STANDARD TVA BRASS MONUMENT STAMPED "RMD 11" STATION 14+13.32 -L-, 73.50' RIGHT. ELEV. = 1949.13



HYDRAULIC DATA

DESIGN DISCHARGE	= 15,000 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS
DESIGN HIGH WATER ELEVATION	= 1940.38
DRAINAGE AREA	= 133.0 SQ.MI.
BASIC DISCHARGE (Q100)	= 17,200 CFS
BASIC HIGH WATER ELEVATION	= 1941.52

OVERTOPPING FLOOD DATA

OVERTOPPING DISCHARGE	= 22,900 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 500+ YRS.
OVERTOPPING FLOOD ELEVATION	= 1943.93

NOTE: FOR UTILITY INFORMATION, SEE UTILITY PLANS AND SPECIAL PROVISIONS.

LOCATION SKETCH

DRAWN BY : CR LEWIS DATE : 07/03
CHECKED BY : MG CHEEK DATE : 07/06

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00 -L-

SHEET 4 OF 4

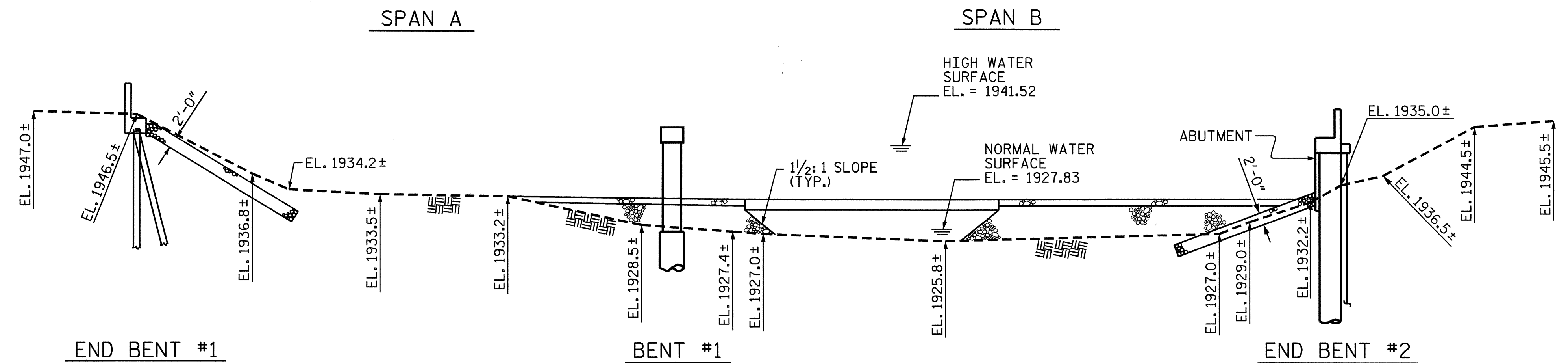
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

GENERAL DRAWING

FOR BRIDGE OVER OCONALUFTEE RIVER ON US 19/441 BUS BETWEEN US 441 AND SR 1368



REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			59
2			4			59



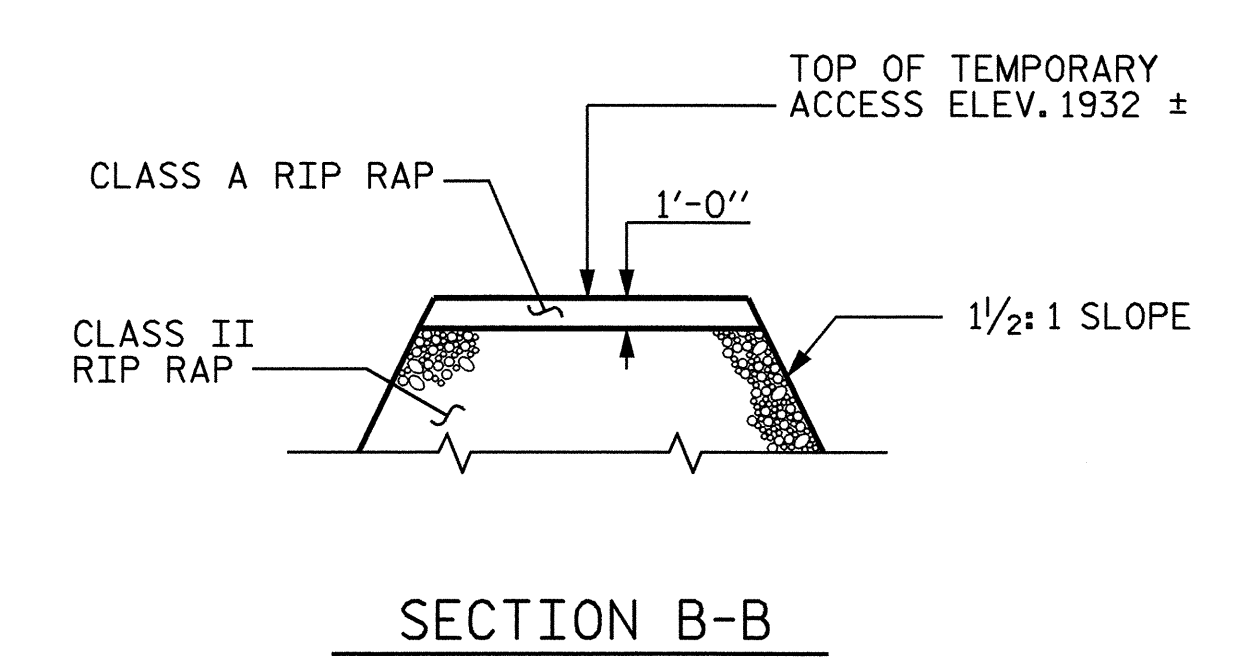
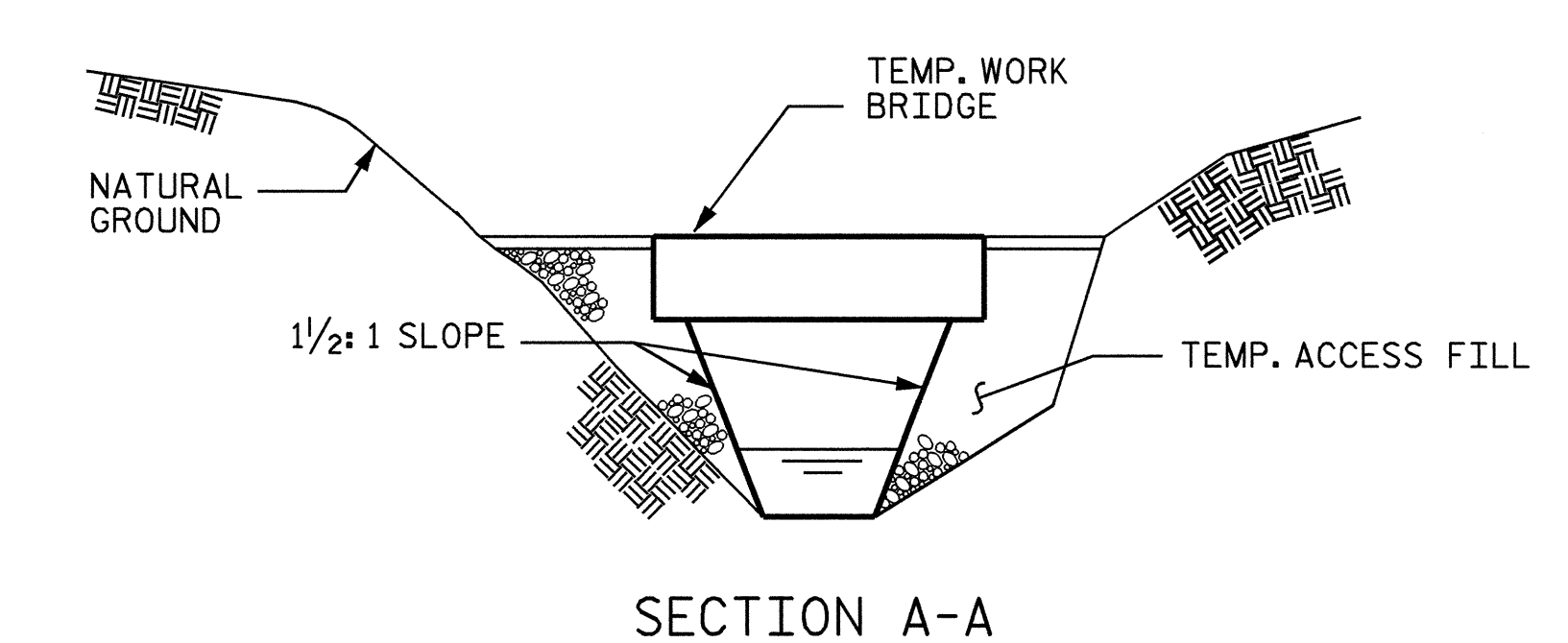
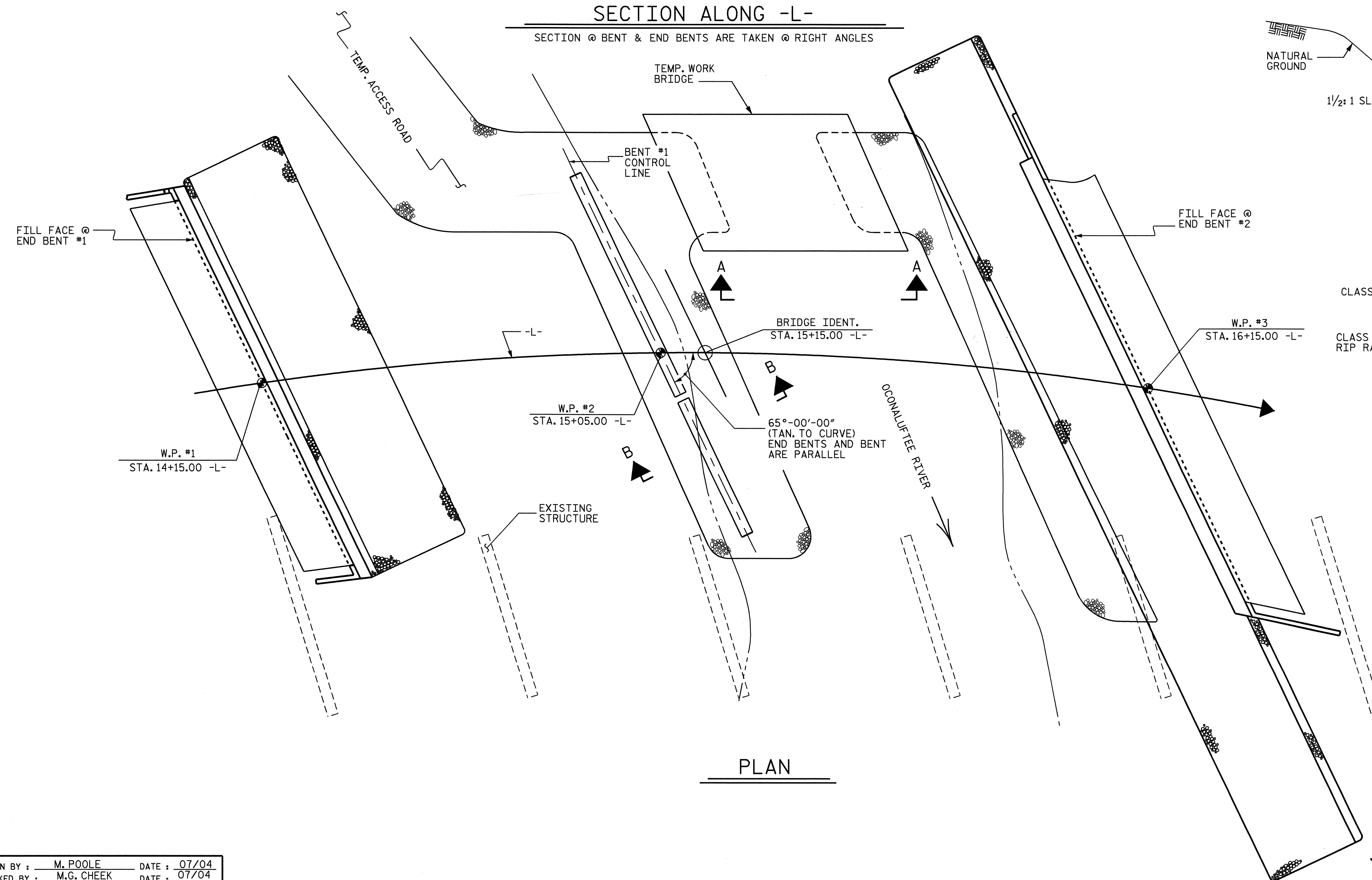
NOTES

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

ALL GRADING REQUIRED FOR ACCESS TO THE TEMPORARY ACCESS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR "CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS".

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LOCATION AND PROFILE OF THE TEMPORARY ACCESS AND TEMPORARY WORK BRIDGE SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY. THE ACTUAL LOCATION AND PROFILE SHALL BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.

FOR CLASS II RIP RAP & CLASS A RIP RAP, SEE SPECIAL PROVISION, "CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS".



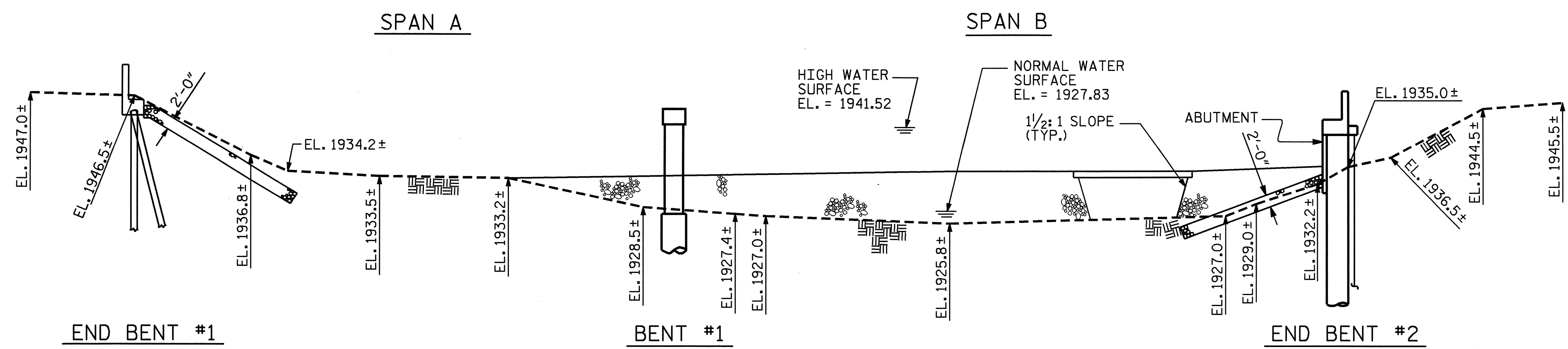
PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00 -L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TEMPORARY ACCESS PHASE I					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-5
					TOTAL SHEETS 60

DRAWN BY : M. POOLE DATE : 07/04
CHECKED BY : M.G. CHEEK DATE : 07/04





NOTES

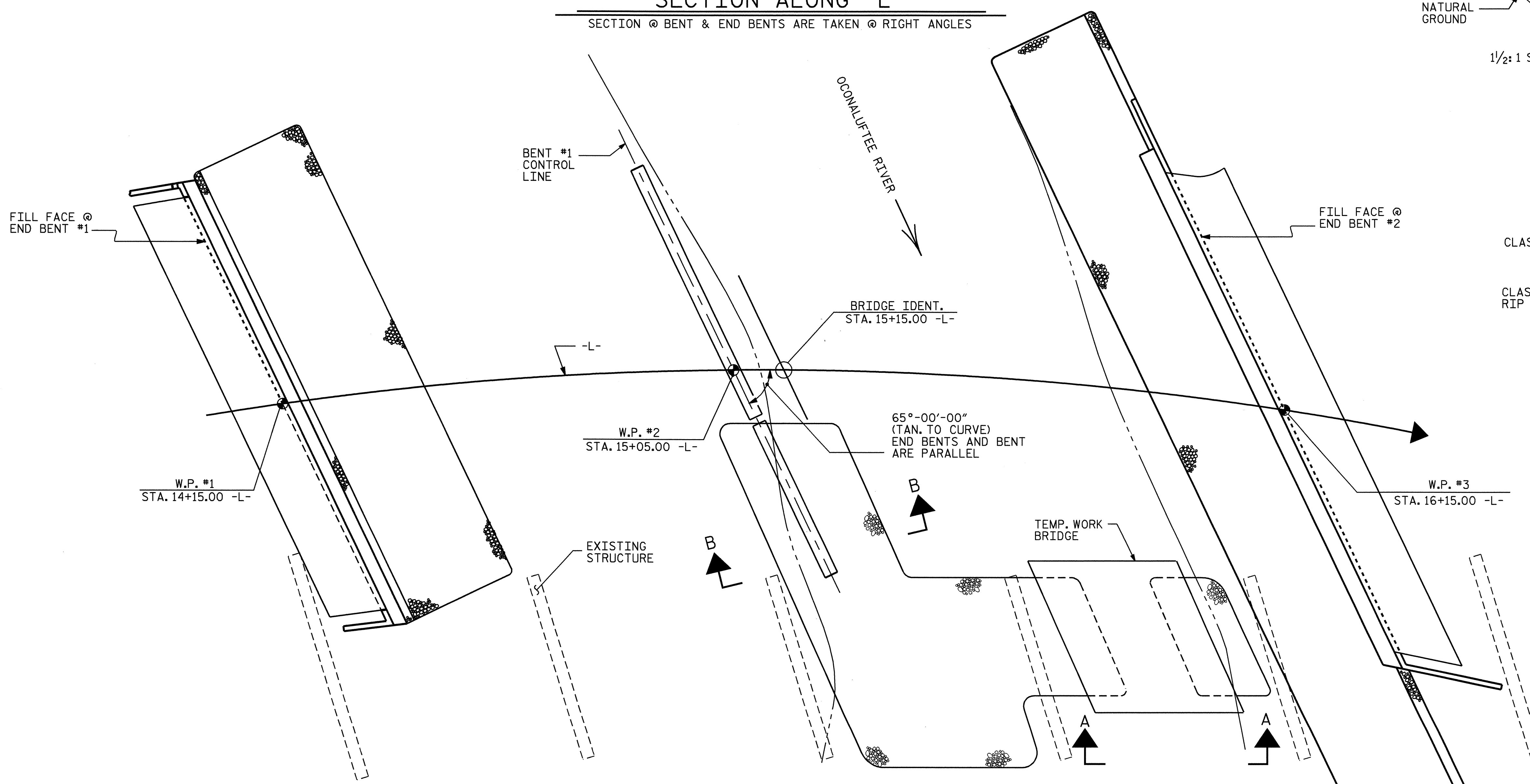
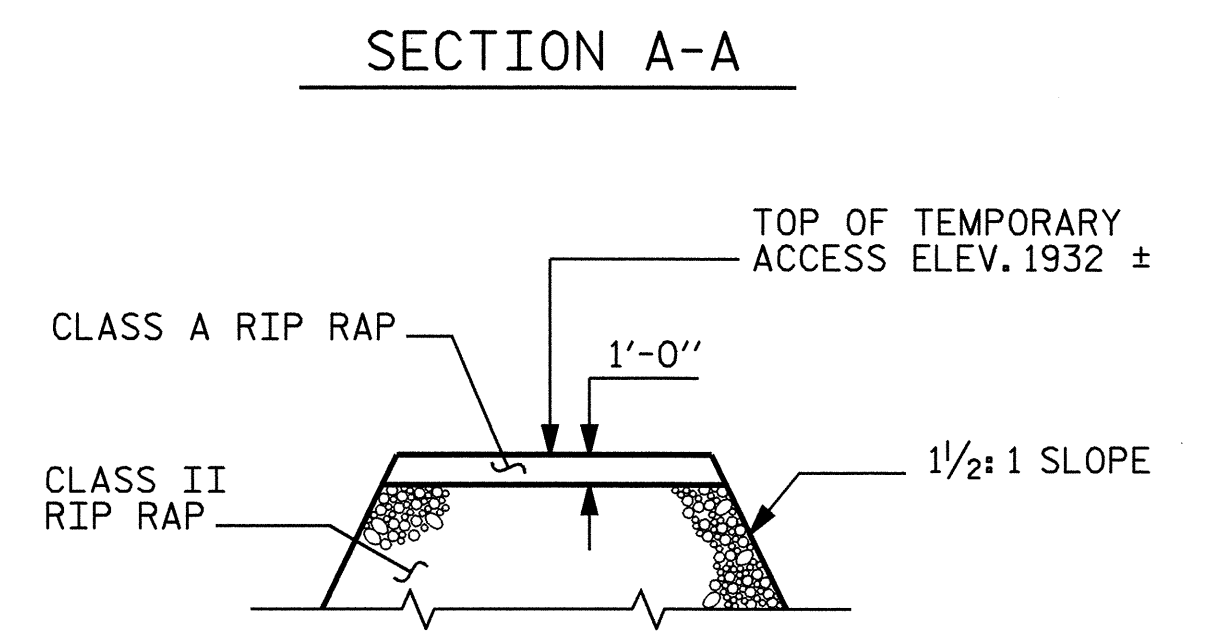
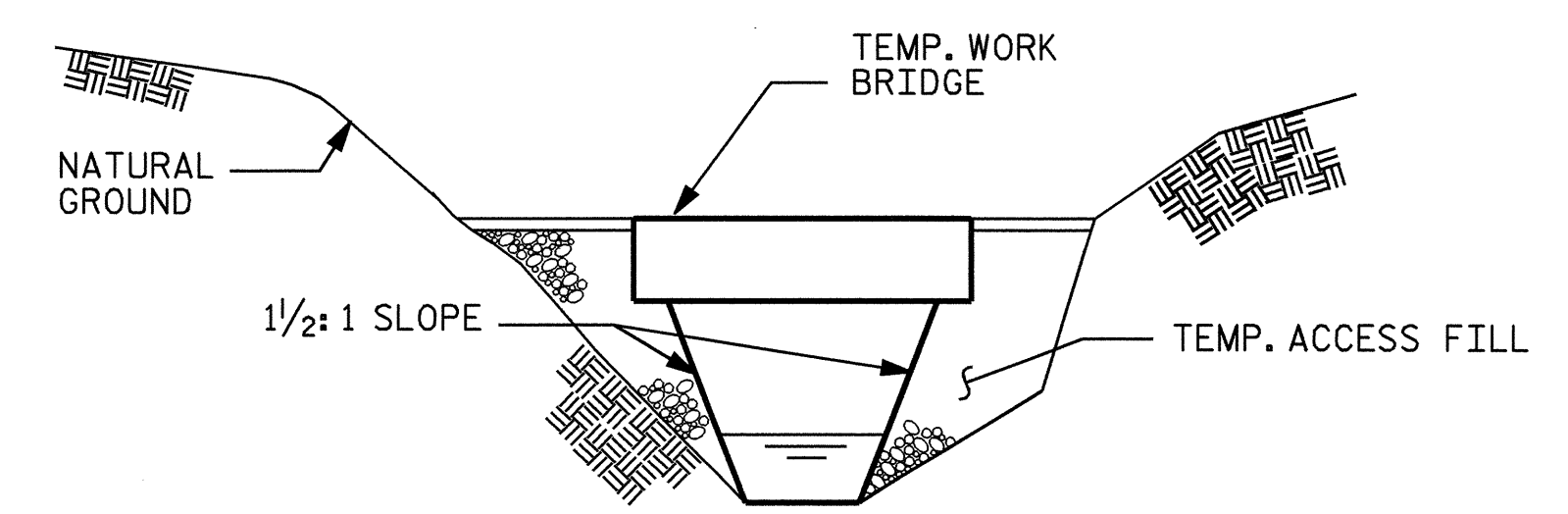
FOR CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS, SEE SPECIAL PROVISIONS.

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THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE LOCATION AND PROFILE OF THE TEMPORARY ACCESS AND TEMPORARY WORK BRIDGE SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY. THE ACTUAL LOCATION AND PROFILE SHALL BE DETERMINED IN THE FIELD WITH THE APPROVAL OF THE ENGINEER.

FOR CLASS II RIP RAP & CLASS A RIP RAP, SEE SPECIAL PROVISION, "CONSTRUCTION, MAINTENANCE AND REMOVAL OF TEMPORARY ACCESS".

SECTION ALONG -L-
 SECTION @ BENT & END BENTS ARE TAKEN @ RIGHT ANGLES



PLAN

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 2 OF 2

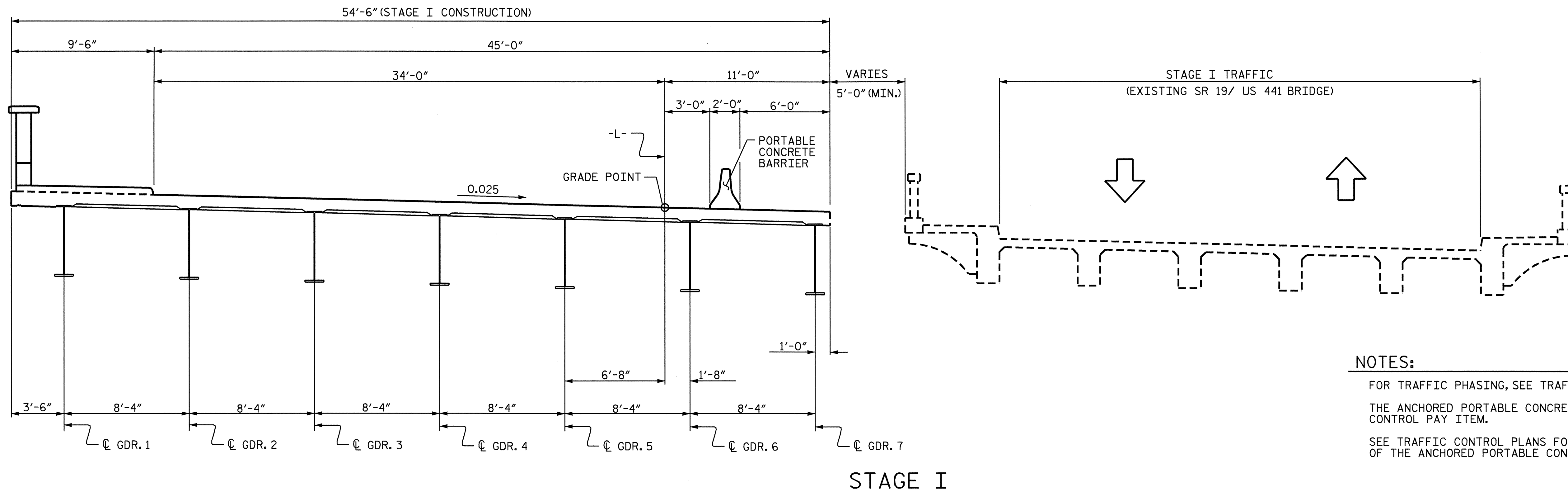
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**TEMPORARY ACCESS
 PHASE II**



DRAWN BY : M. POOLE DATE : 07/04
 CHECKED BY : M.G. CHEEK DATE : 07/04

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6
1			3			TOTAL SHEETS
2			4			60

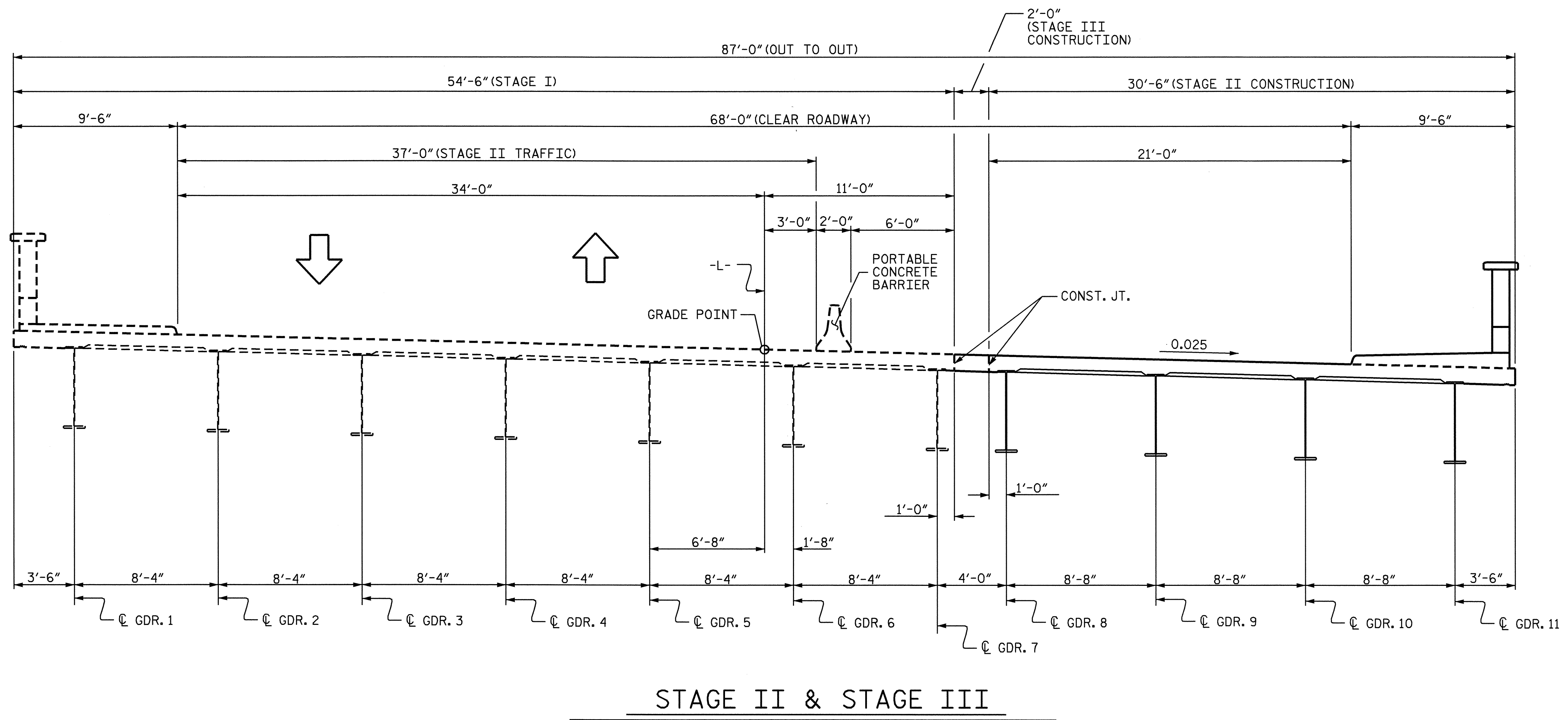


NOTES:

FOR TRAFFIC PHASING, SEE TRAFFIC CONTROL PLANS.

THE ANCHORED PORTABLE CONCRETE BARRIER IS A TRAFFIC CONTROL PAY ITEM.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.



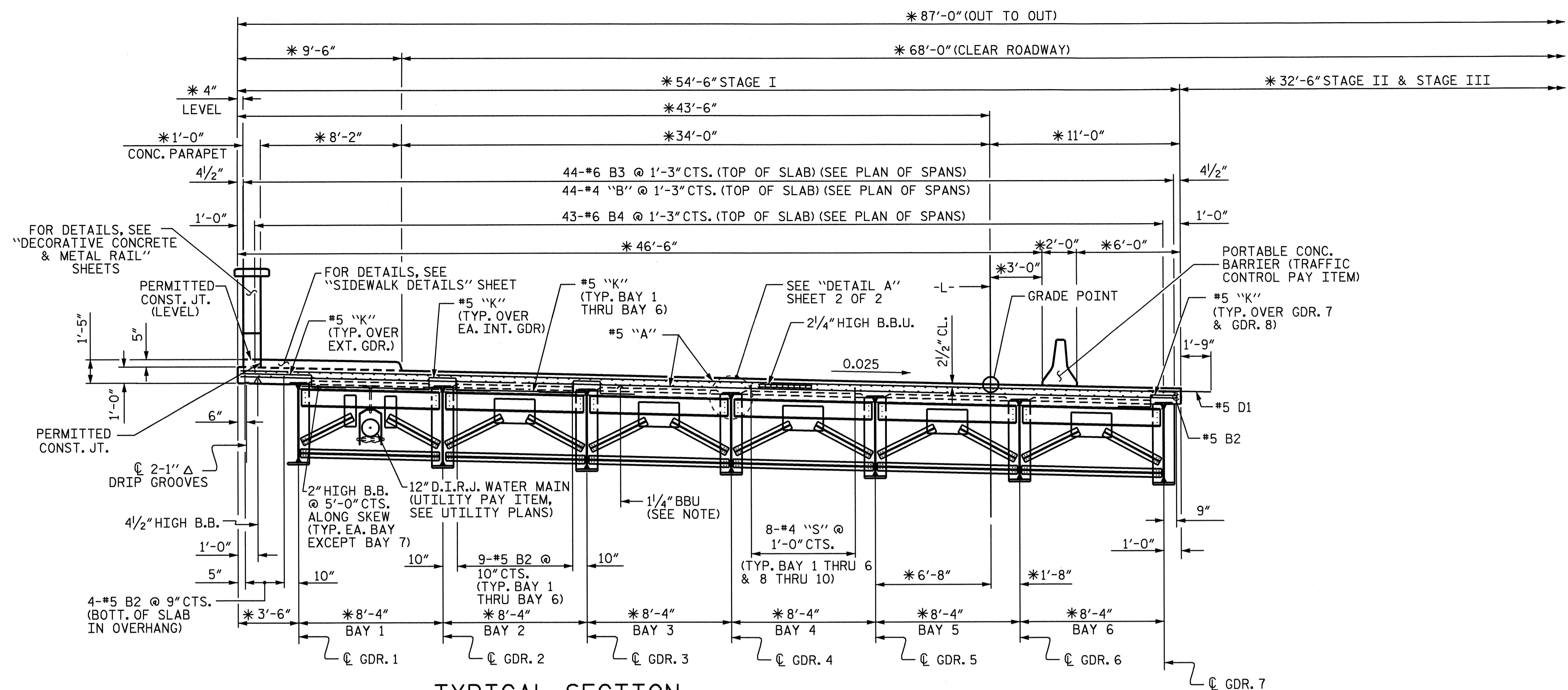
STAGING SEQUENCE

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
CONSTRUCTION STAGING SEQUENCE					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-7
					TOTAL SHEETS 60

DRAWN BY : D. HODGE DATE : 6/04
 CHECKED BY : M.G. CHEEK DATE : 8/04





TYPICAL SECTION

SHOWING END BENT DIAPHRAGMS

* RADIAL DIMENSIONS

NOTES

PROVIDE 1/4" HIGH BEAM BOLSTERS UPPER AT 4'-0" CTS. ATOP THE METAL STAY-IN-PLACE FORMS TO SUPPORT THE BOTTOM MAT OF 'A' BARS. WHEN USING REMOVABLE FORMS, PROVIDE CONTINUOUS HIGH CHAIRS FOR METAL DECK (C.H.C.M.) @ 4'-0" CTS. WITH A HEIGHT TO SUPPORT THE BOTTOM MAT OF 'A' BARS A CLEAR DISTANCE OF 2 1/2" ABOVE THE TOP OF THE REMOVABLE FORM.

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.

METAL STAY-IN-PLACE FORMS SHALL NOT BE WELDED TO GIRDER FLANGES IN THE ZONES REQUIRING CHARPY V-NOTCH TEST. SEE STRUCTURAL STEEL DETAIL SHEETS.

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

THE CONTRACTOR MAY, WHEN NECESSARY, PROPOSE A SCHEME FOR AVOIDING INTERFERENCE BETWEEN METAL STAY-IN-PLACE FORM SUPPORTS OR FORMS AND GIRDER STIFFENERS OR CONNECTOR PLATES. THE PROPOSAL SHALL BE INDICATED, AS APPROPRIATE, ON EITHER THE STEEL WORKING DRAWINGS OR THE METAL STAY-IN-PLACE FORM WORKING DRAWINGS.

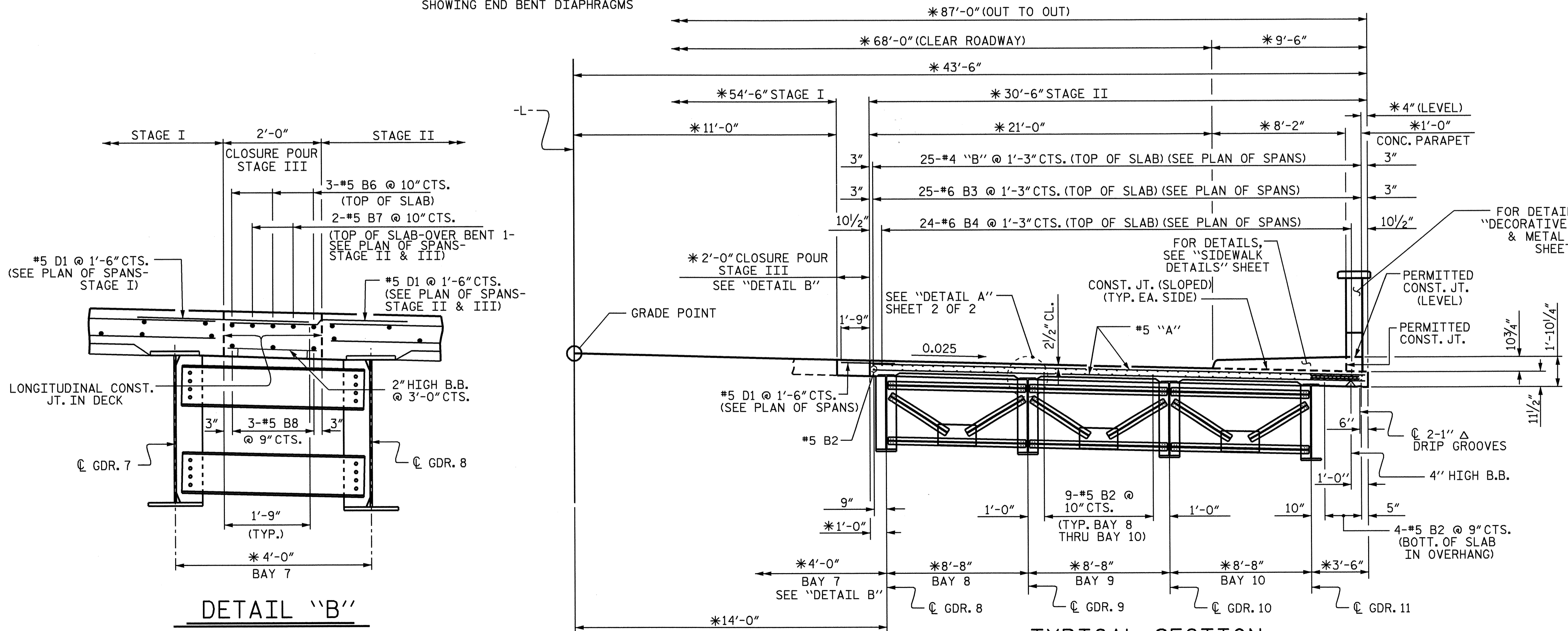
THE CONTRACTOR SHALL ADJUST THE GIRDER BUILDUPS AS NECESSARY TO INCORPORATE A MAXIMUM PERMISSIBLE VARIATION IN POT BEARING DEPTH OF 1/2"; SEE SPECIAL PROVISION FOR POT BEARINGS.

PREVIOUSLY CAST CONCRETE IN A CONTINUOUS UNIT SHALL HAVE ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI BEFORE ADDITIONAL CONCRETE IS CAST IN THE UNIT.

THE DECORATIVE CONCRETE RAIL AND SIDEWALK SHALL NOT BE CAST UNTIL ALL SLAB CONCRETE IN THE UNIT HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI.

SEE TRAFFIC CONTROL PLANS FOR LOCATION AND PAY LIMITS OF THE ANCHORED PORTABLE CONCRETE BARRIER.

FOR 12" D.I.R.J. WATER MAIN, SEE UTILITY PLANS AND SPECIAL PROVISIONS.



TYPICAL SECTION

SHOWING INTERMEDIATE DIAPHRAGMS

DRAWN BY: V. X. NGUYEN DATE: 4-10-06
 CHECKED BY: D. HODGE DATE: 10-06

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PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

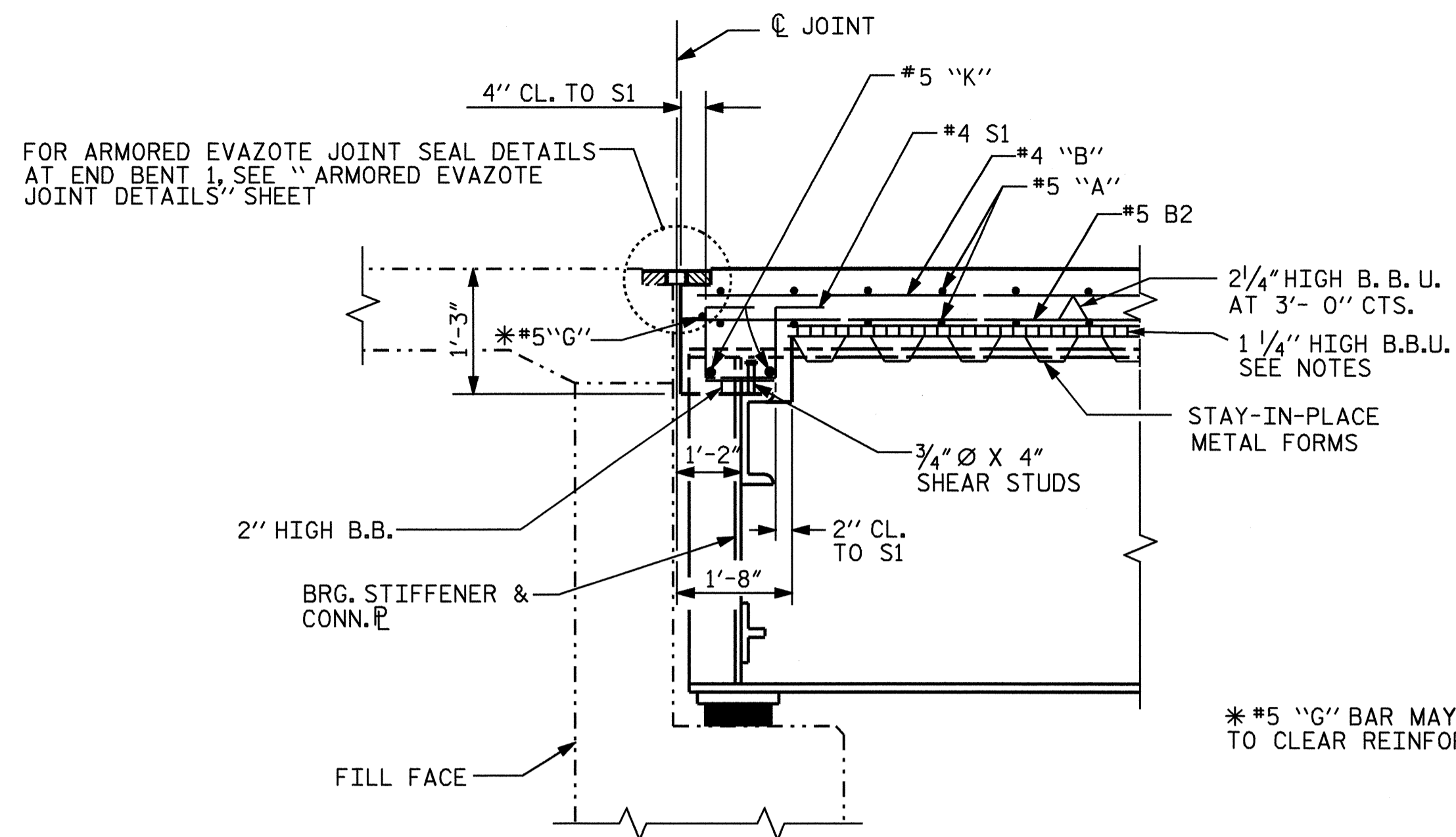
SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

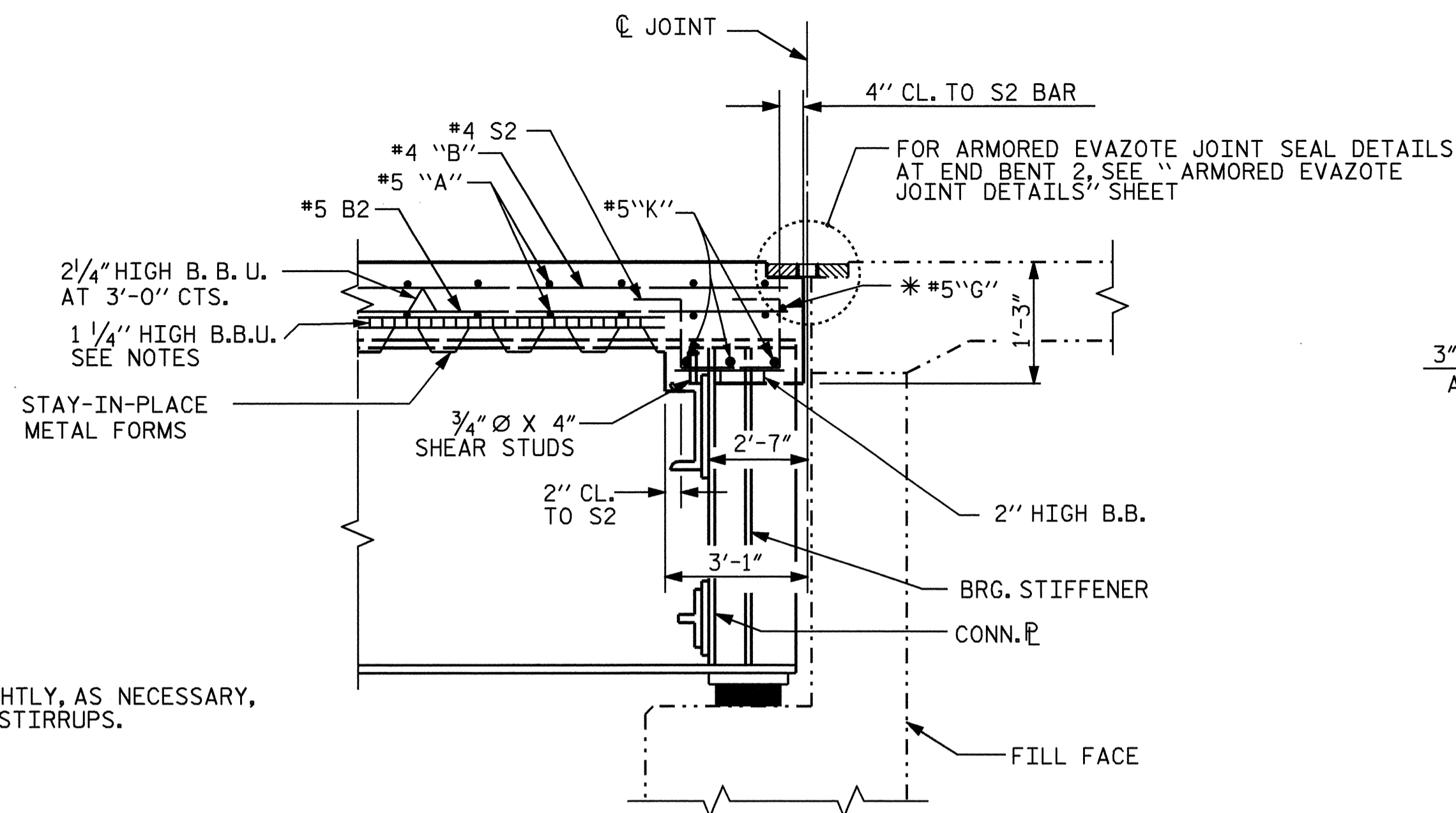
**SUPERSTRUCTURE
 TYPICAL SECTION**



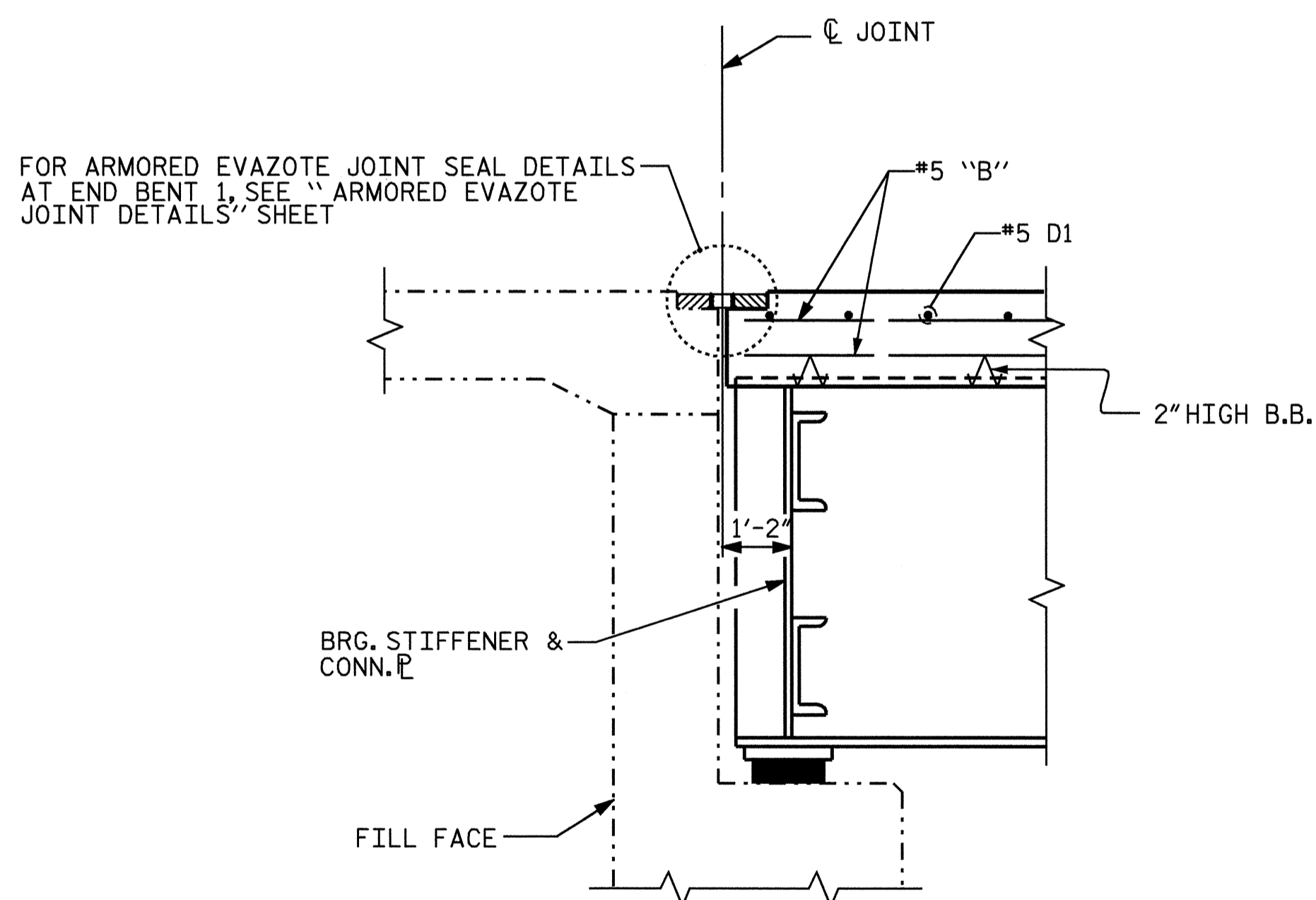
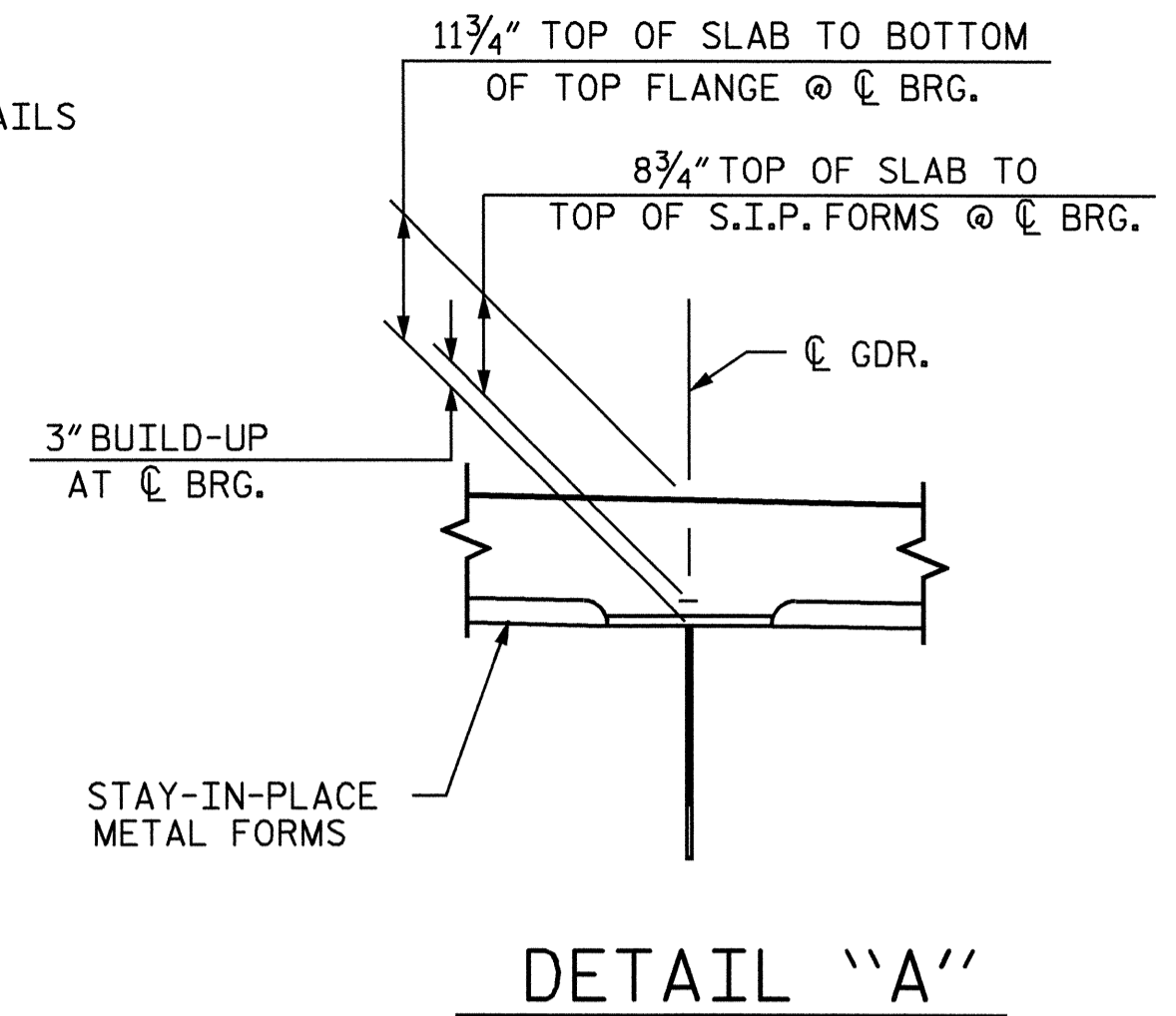
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
1			3			TOTAL SHEETS	
2			4			60	



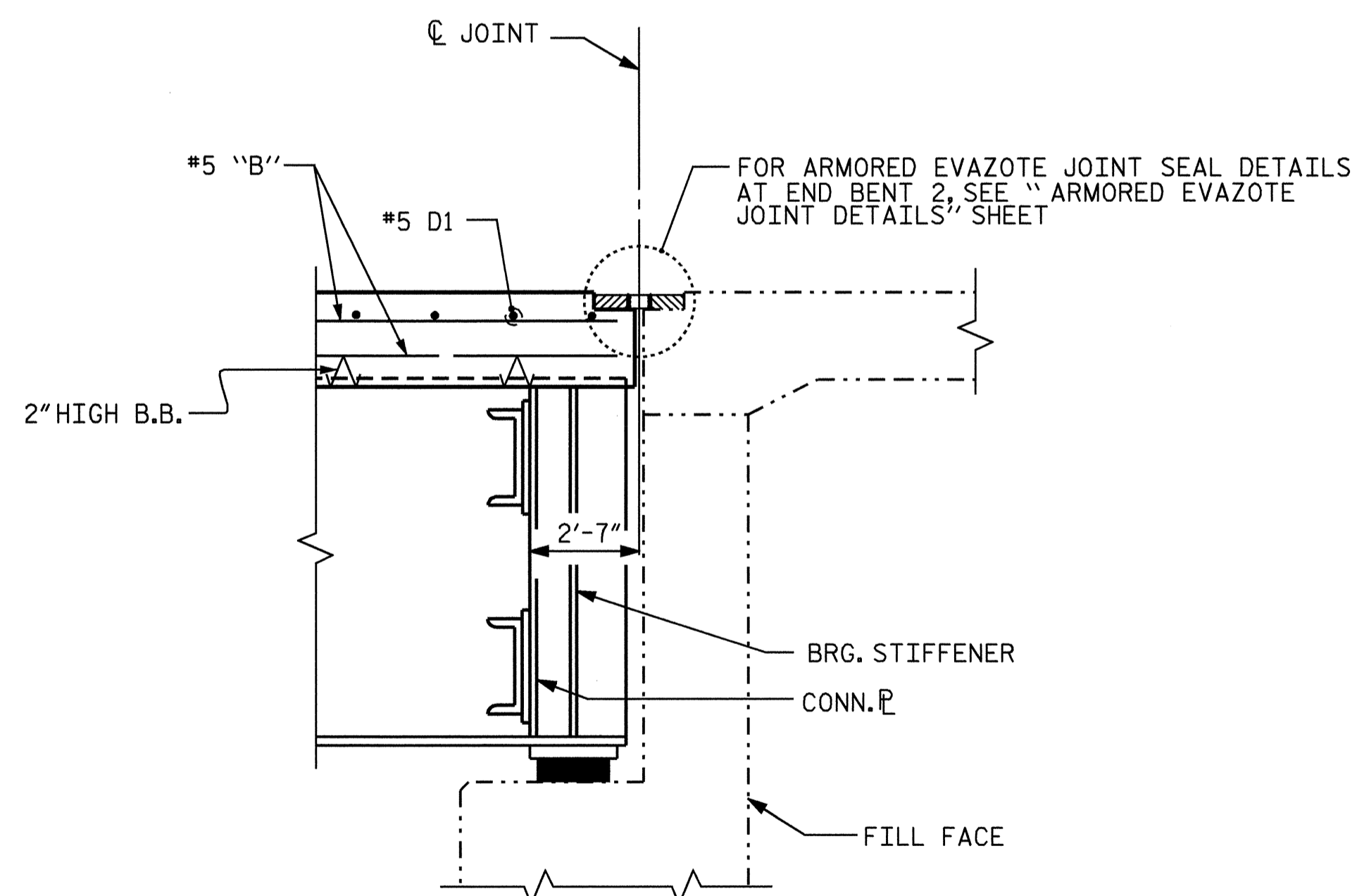
SECTION @ END BENT 1
(BAYS 1-6 & 8-10)



SECTION @ END BENT 2
(BAYS 1-6 & 8-10)



SECTION @ END BENT 1
(BAY 7)



SECTION @ END BENT 2
(BAY 7)

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 2 OF 2

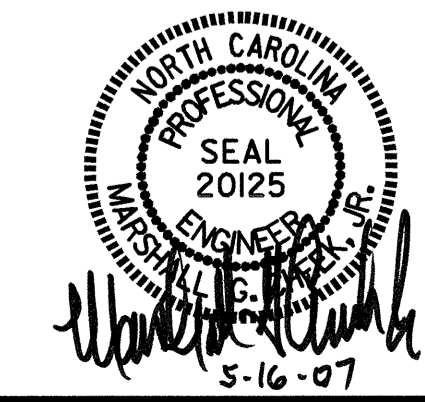
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

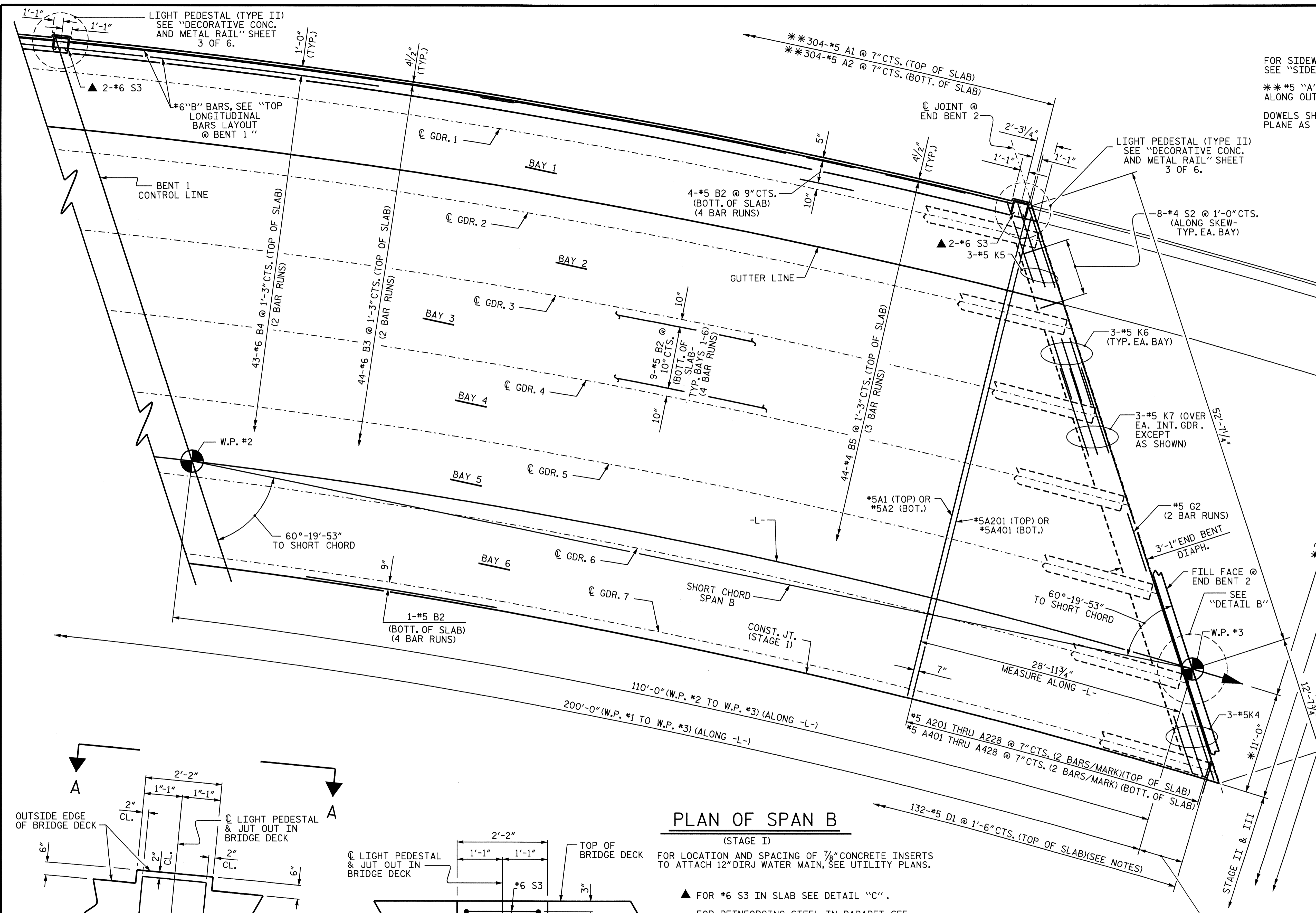
**SUPERSTRUCTURE
TYPICAL SECTION**

REVISIONS						SHEET NO.
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2			4			60

DRAWN BY: V. X. NGUYEN DATE: 4-10-06
CHECKED BY: D. HODGE DATE: 10-06

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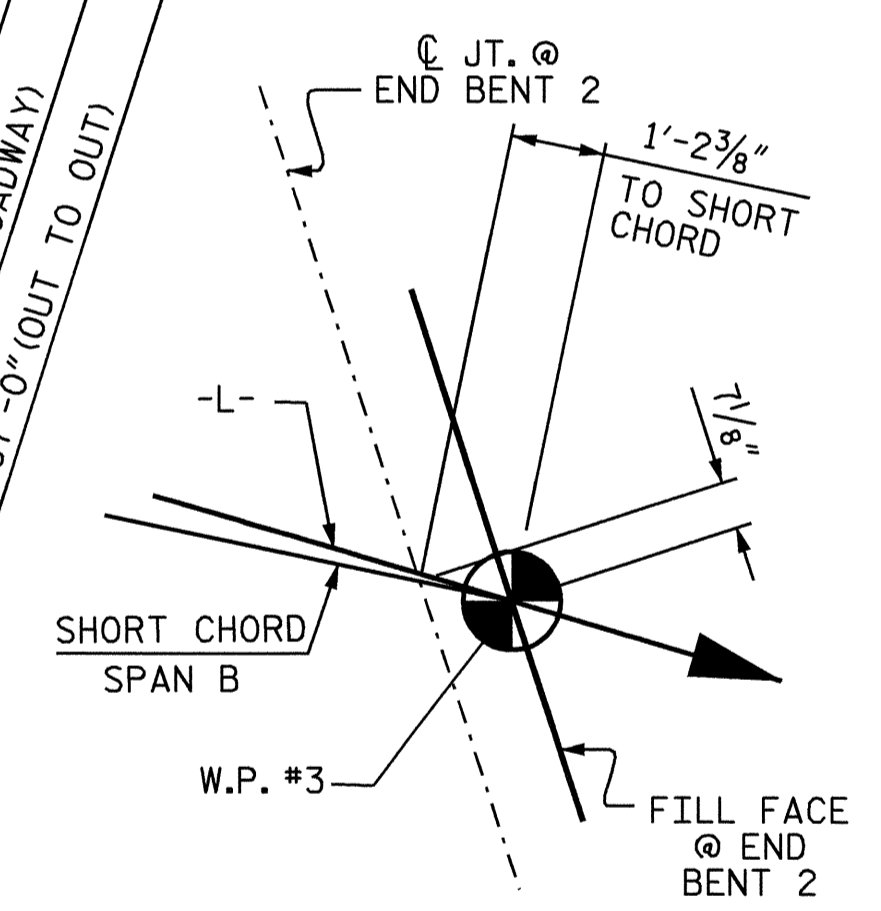
NOTES

FOR SIDEWALK REINFORCING STEEL AND DETAILS SEE "SIDEWALK PLAN AND DETAILS" SHEET.

** #5 "A" BARS ARE TO BE PLACED RADIALLY ALONG OUTSIDE LEFT EDGE OF SUPERSTRUCTURE.

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.

* RADIAL DIMENSIONS



DETAIL "B"

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 2 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE I**

REVISIONS						SHEET NO. S-11
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

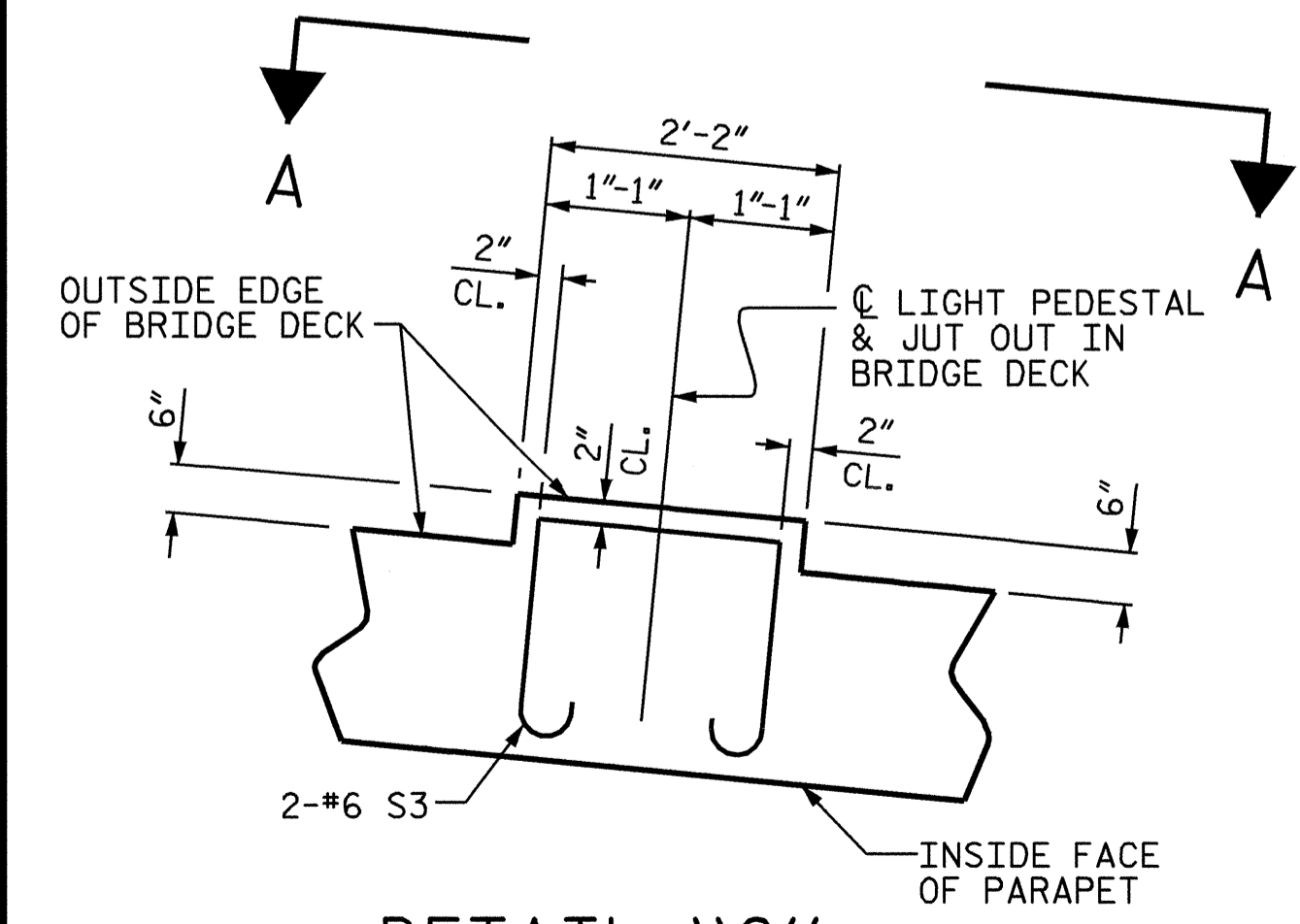
PLAN OF SPAN B

(STAGE I)

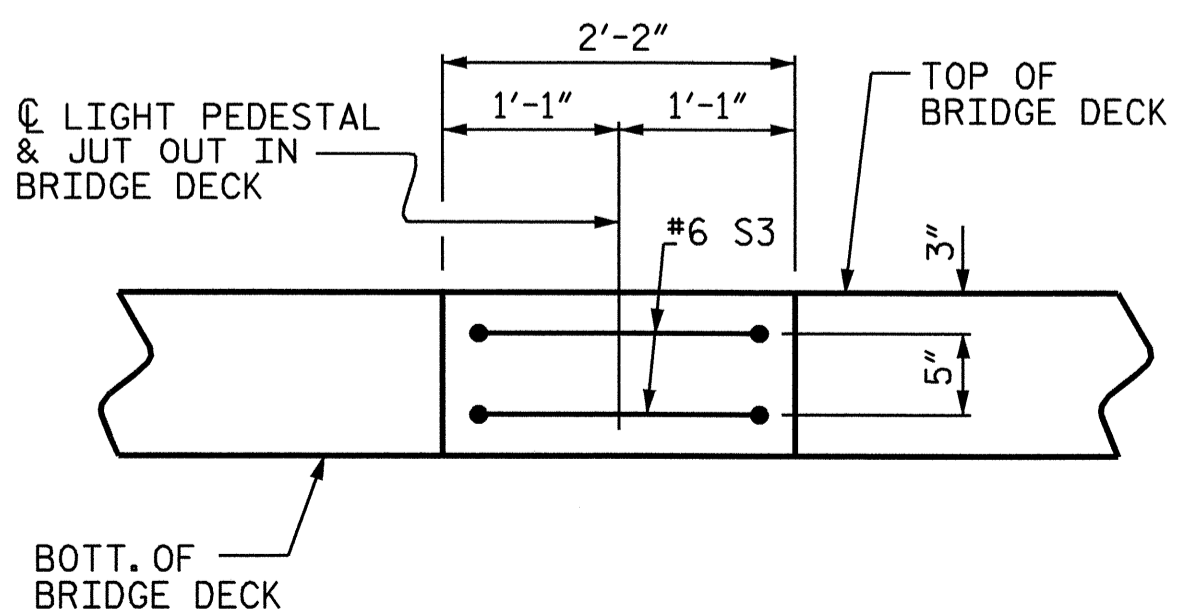
FOR LOCATION AND SPACING OF 7/8" CONCRETE INSERTS TO ATTACH 12" DIRJ WATER MAIN, SEE UTILITY PLANS.

▲ FOR #6 S3 IN SLAB SEE DETAIL "C".

FOR REINFORCING STEEL IN PARAPET, SEE "DECORATIVE CONCRETE AND METAL RAIL" SHEETS.



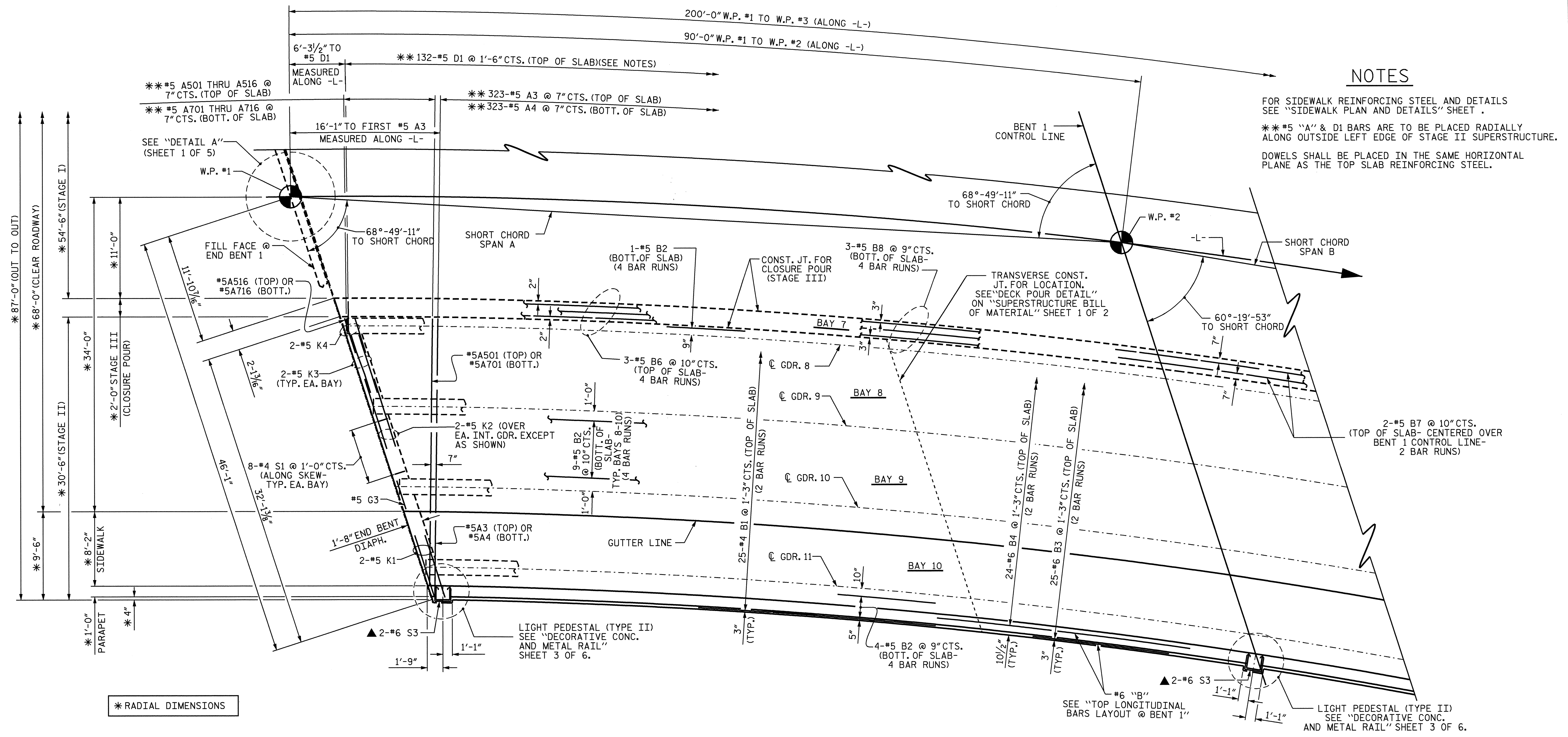
DETAIL "C"



VIEW "A-A"

DRAWN BY: V.X. NGUYEN DATE: 4-16-06
 CHECKED BY: D. HODGE DATE: 10-06





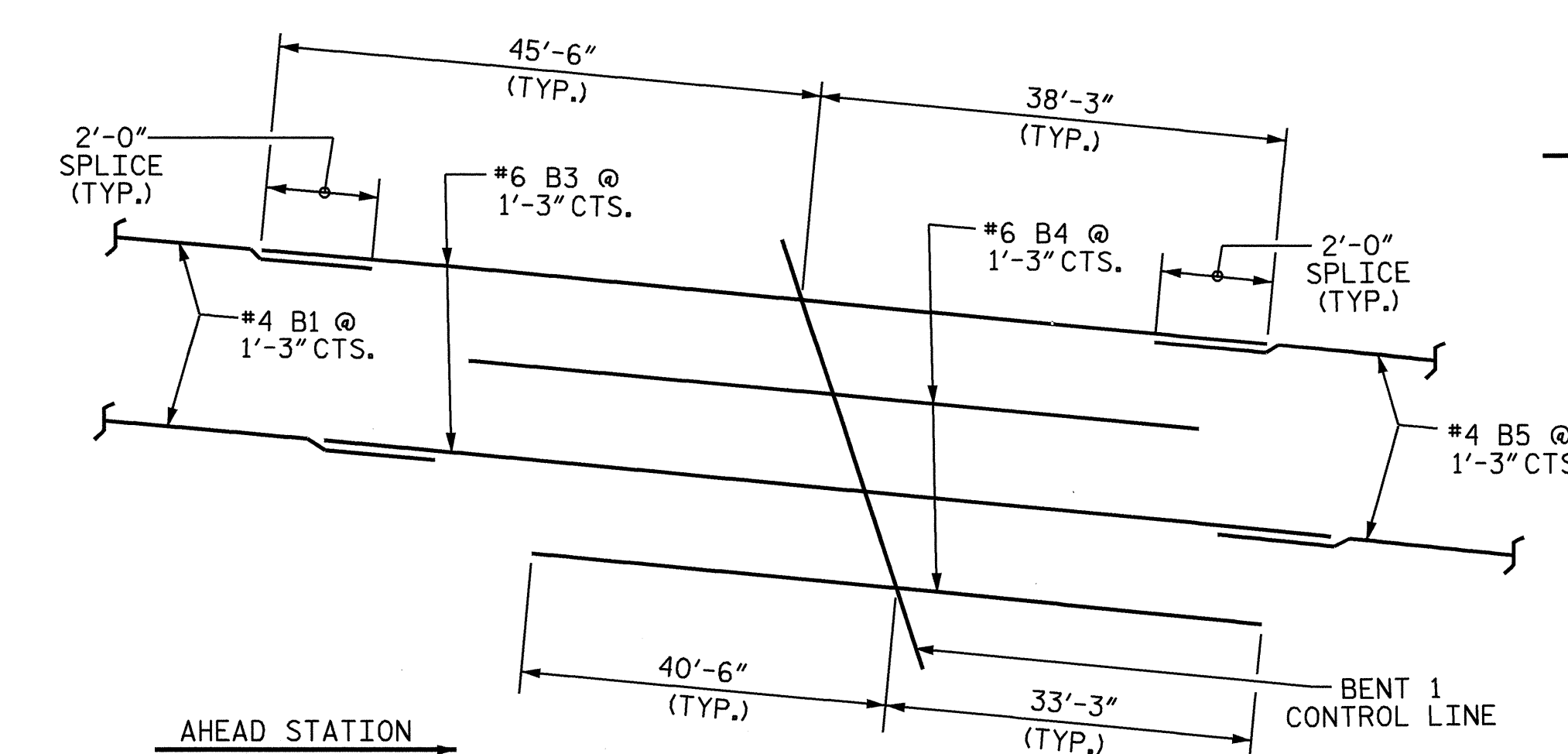
NOTES

FOR SIDEWALK REINFORCING STEEL AND DETAILS SEE "SIDEWALK PLAN AND DETAILS" SHEET .

** #5 "A" & D1 BARS ARE TO BE PLACED RADIALLY ALONG OUTSIDE LEFT EDGE OF STAGE II SUPERSTRUCTURE.

DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.

* RADIAL DIMENSIONS



TOP LONGITUDINAL BARS LAYOUT @ BENT 1

PLAN OF SPAN A

(STAGE II & STAGE III)

▲ FOR #6 S3 IN SLAB SEE DETAIL "C" ON SHEET 2 OF 5.

FOR REINFORCING STEEL IN PARAPET, SEE "DECORATIVE CONCRETE AND METAL RAIL" SHEETS.

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 3 OF 5

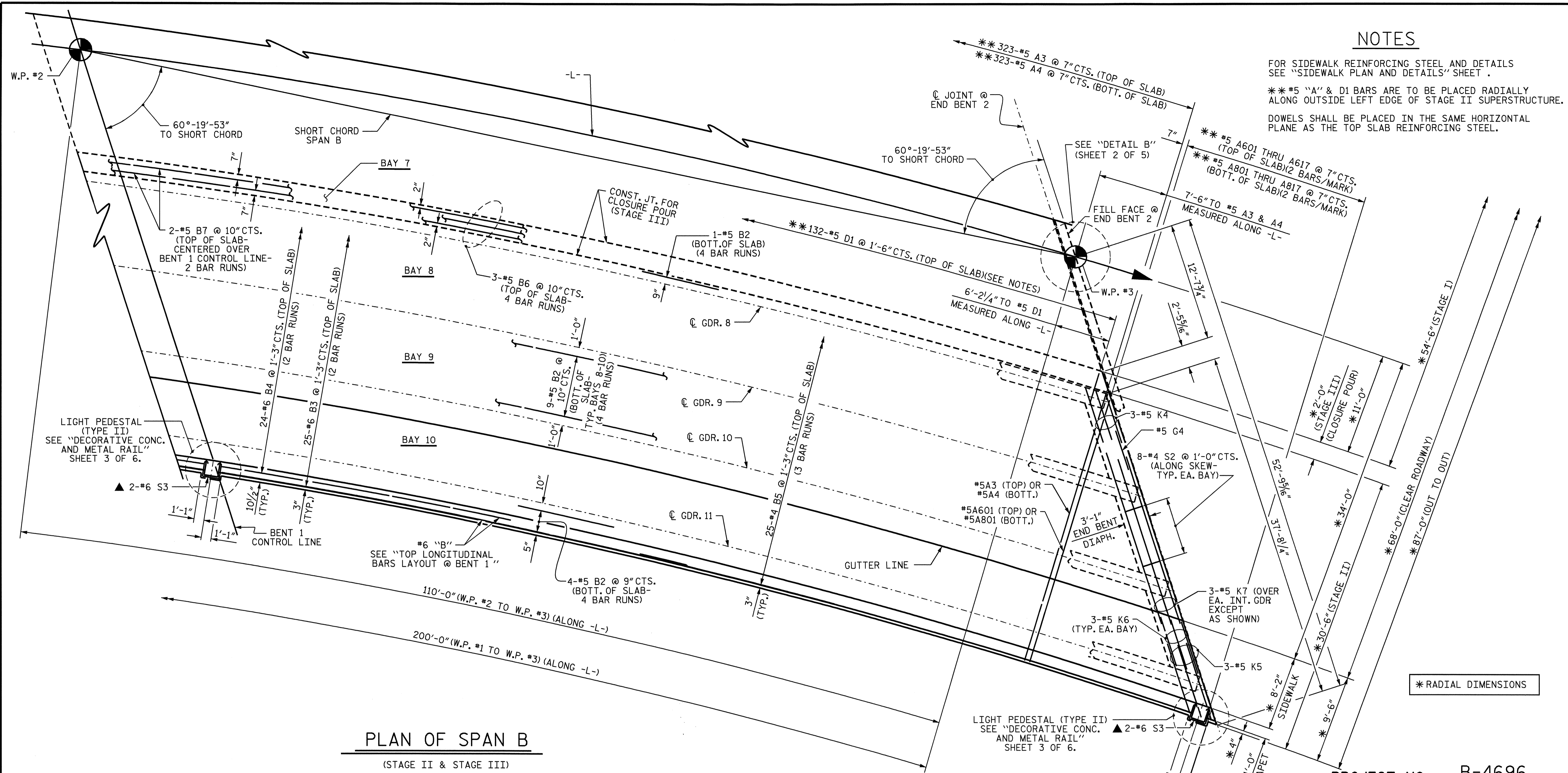
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			60



DRAWN BY: V.X. NGUYEN DATE: 4-16-06
 CHECKED BY: D. HODGE DATE: 10-06

NOTES

FOR SIDEWALK REINFORCING STEEL AND DETAILS SEE "SIDEWALK PLAN AND DETAILS" SHEET .
 ** #5 "A" & D1 BARS ARE TO BE PLACED RADIALLY ALONG OUTSIDE LEFT EDGE OF STAGE II SUPERSTRUCTURE.
 DOWELS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE TOP SLAB REINFORCING STEEL.



PLAN OF SPAN B
 (STAGE II & STAGE III)

▲ FOR #6 S3 IN SLAB SEE DETAIL "C" ON SHEET 2 OF 5.
 FOR REINFORCING STEEL IN PARAPET, SEE "DECORATIVE CONCRETE AND METAL RAIL" SHEETS.

* RADIAL DIMENSIONS

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 4 OF 5

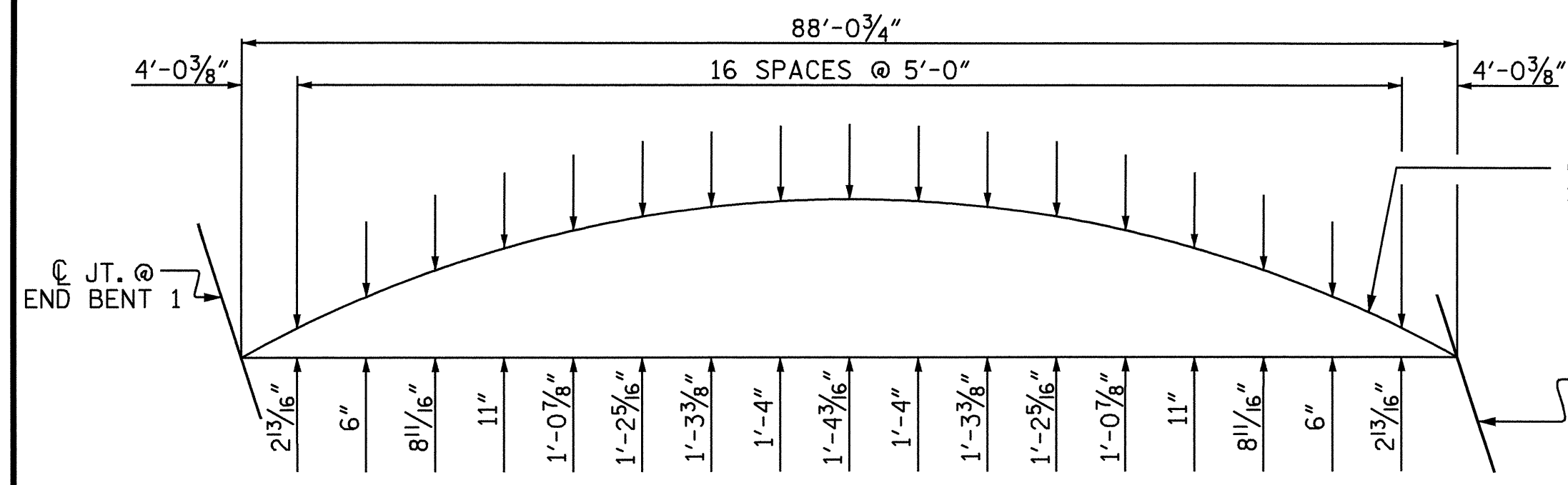
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 PLAN OF SPAN B
 STAGE II & III

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-13
1			3			TOTAL SHEETS
2			4			60

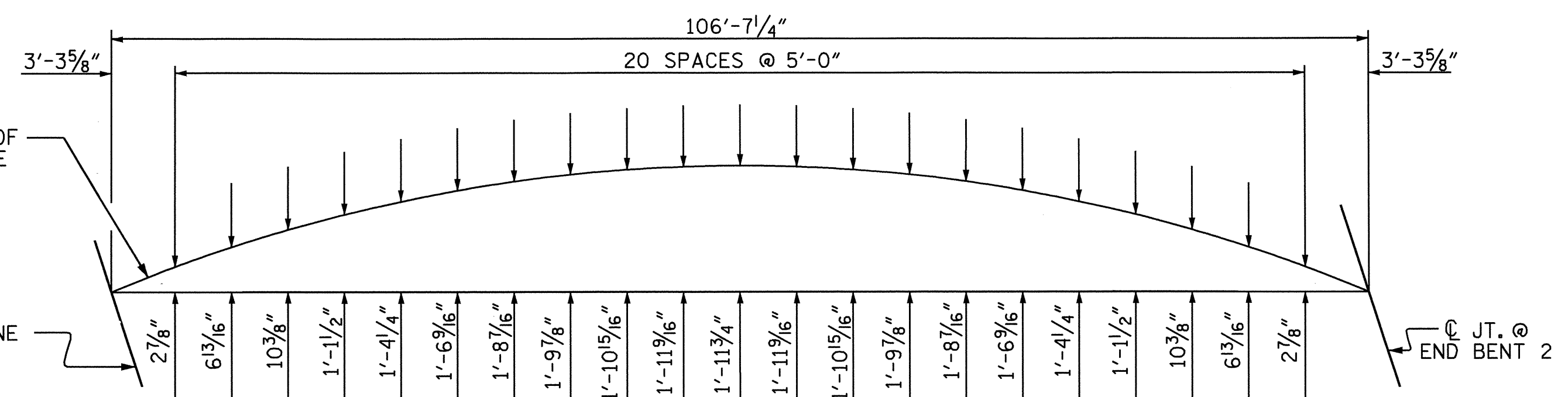


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 CHECKED BY : D. HODGE DATE : 10-06



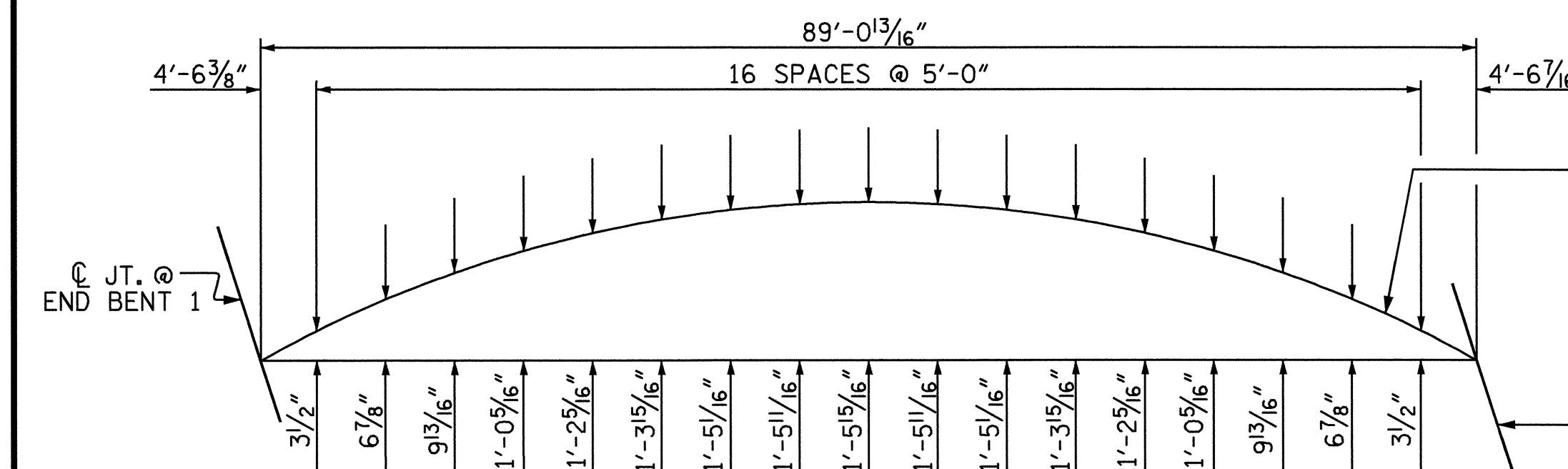
ARC OFFSETS - STAGE I - LEFT SIDE

SPAN A



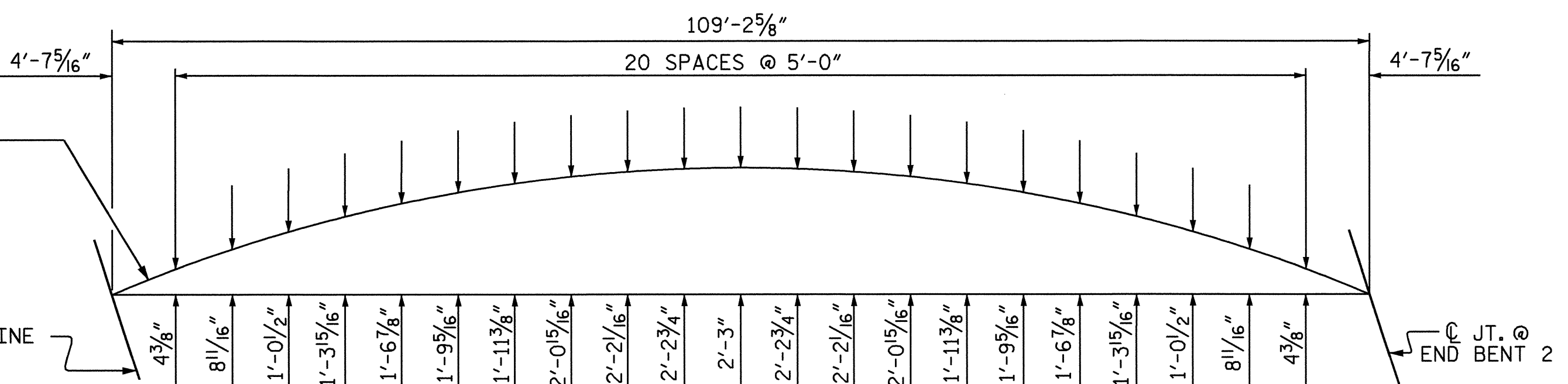
ARC OFFSETS - STAGE I - LEFT SIDE

SPAN B



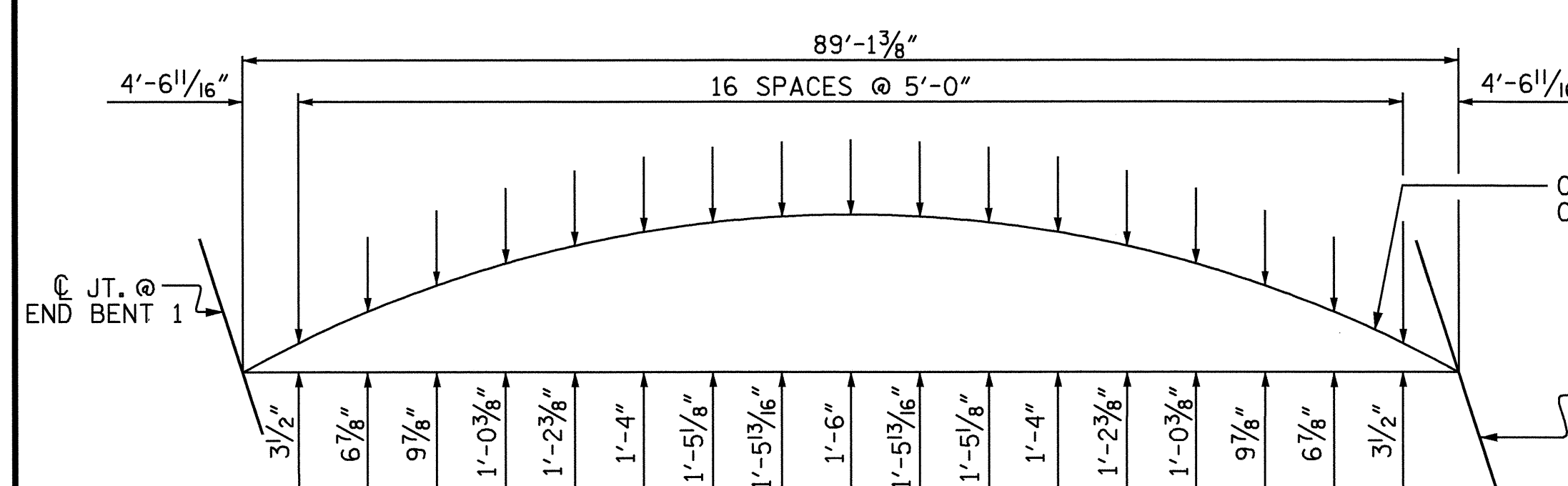
ARC OFFSETS - STAGE I - RIGHT SIDE

SPAN A



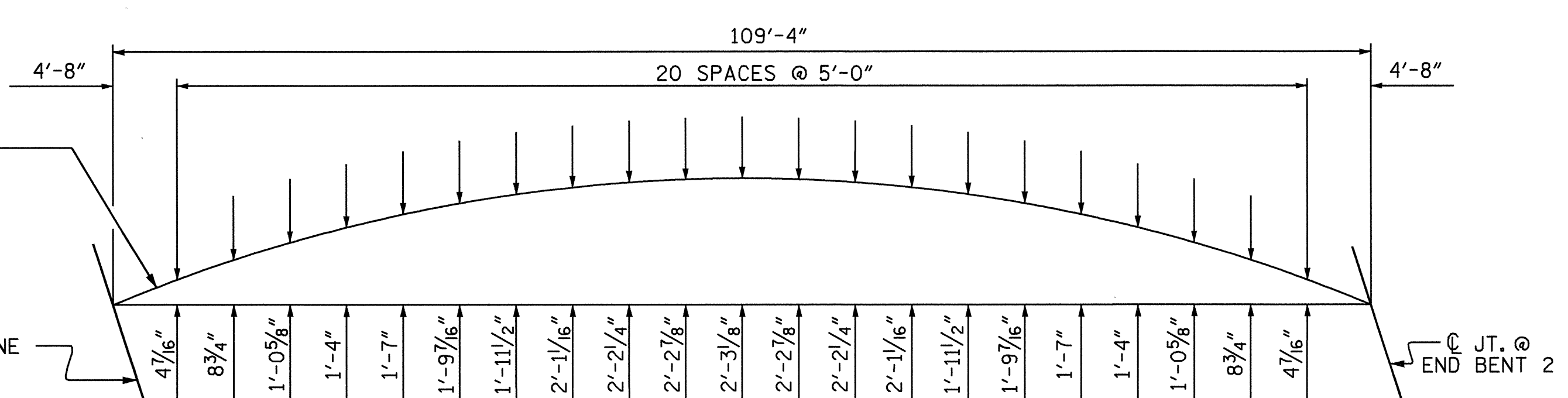
ARC OFFSETS - STAGE I - RIGHT SIDE

SPAN B



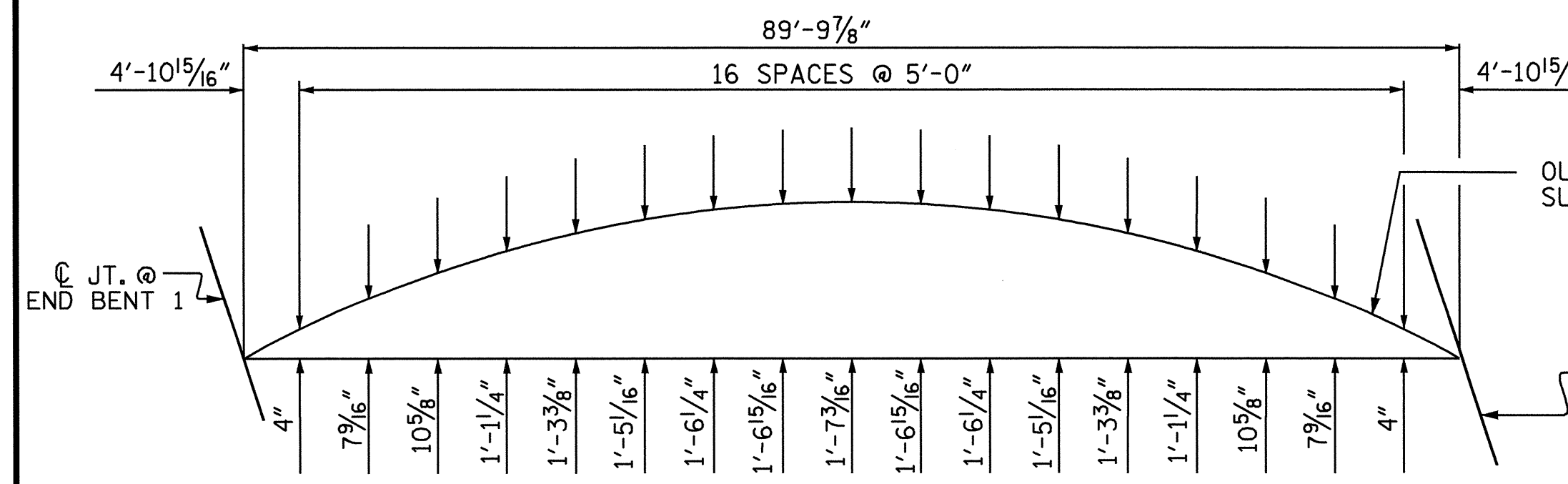
ARC OFFSETS - STAGE II - LEFT SIDE

SPAN A



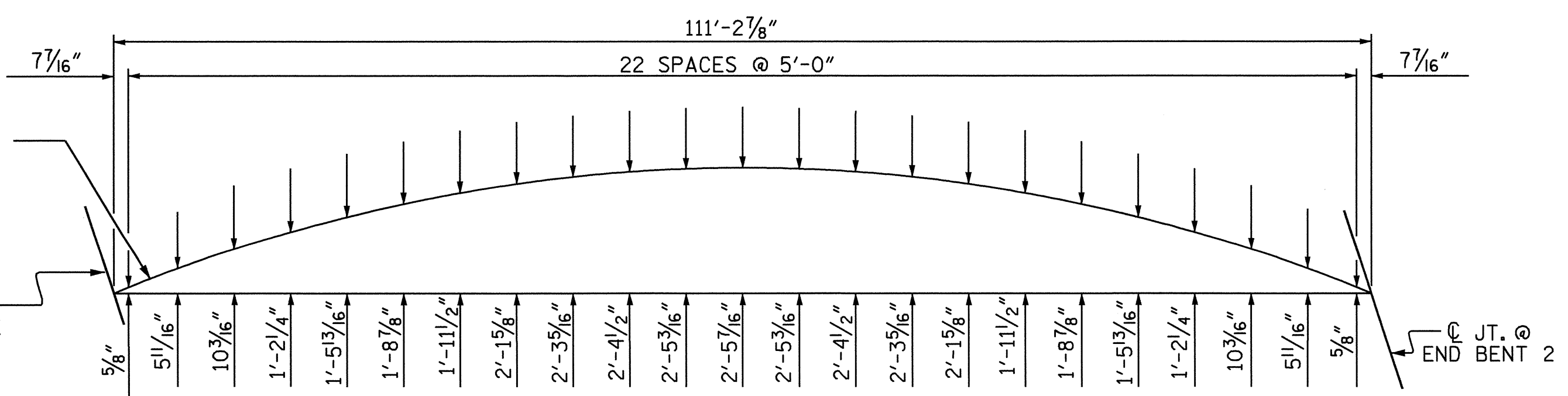
ARC OFFSETS - STAGE II - LEFT SIDE

SPAN B



ARC OFFSETS - STAGE II - RIGHT SIDE

SPAN A



ARC OFFSETS - STAGE II - RIGHT SIDE

SPAN B

DRAWN BY: V.X. NGUYEN DATE: 4-27-06
 CHECKED BY: D. HODGE DATE: 10-06

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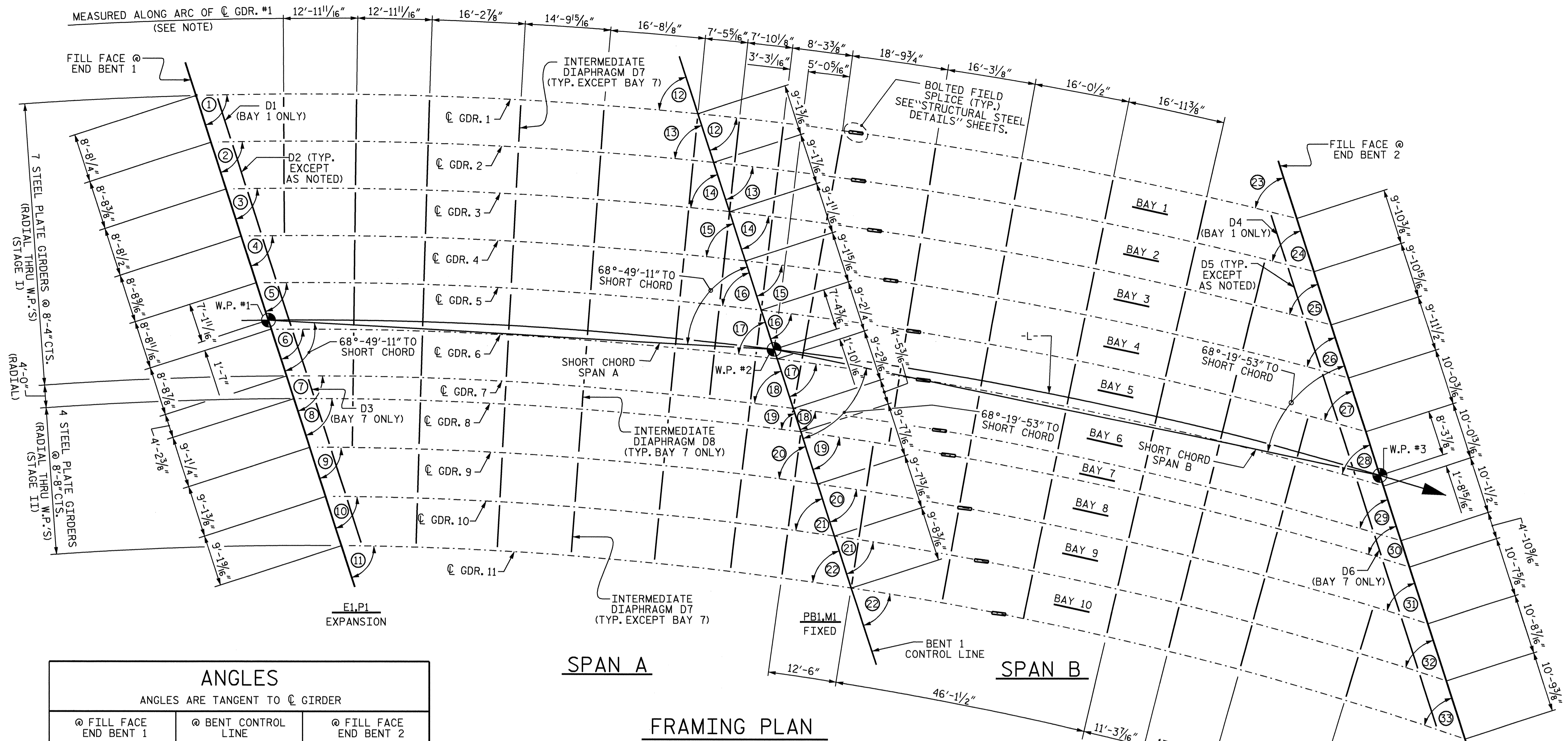


PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 5 OF 5

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-14
1			3			TOTAL SHEETS
2			4			60

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 ARC OFFSETS
 STAGE I & II



SPAN A

SPAN B

FRAMING PLAN

NOTE : ALL INTERMEDIATE DIAPHRAGMS ARE TO BE PLACED RADIALLY TO GIRDERS

ANGLES		
ANGLES ARE TANGENT TO G GIRDER		
@ FILL FACE END BENT 1	@ BENT CONTROL LINE	@ FILL FACE END BENT 2
① 73°-38'-20"	⑫ 66°-29'-09"	⑳ 57°-49'-31"
② 73°-26'-25"	⑬ 66°-11'-30"	㉑ 57°-23'-57"
③ 73°-14'-13"	⑭ 65°-53'-22"	㉒ 56°-57'-38"
④ 73°-01'-42"	⑮ 65°-34'-46"	㉓ 56°-30'-34"
⑤ 72°-48'-52"	⑯ 65°-15'-40"	㉔ 56°-02'-41"
⑥ 72°-35'-42"	⑰ 64°-56'-02"	㉕ 55°-33'-57"
⑦ 72°-22'-11"	⑱ 64°-35'-51"	㉖ 55°-04'-20"
⑧ 72°-15'-35"	⑲ 64°-25'-58"	㉗ 54°-49'-47"
⑨ 72°-00'-57"	㉀ 64°-04'-05"	㉘ 54°-17'-30"
⑩ 71°-45'-55"	㉁ 63°-41'-32"	㉙ 53°-44'-07"
⑪ 71°-30'-27"	㉂ 63°-18'-18"	㉚ 53°-09'-33"

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 FRAMING PLAN

REVISIONS						SHEET NO. S-15
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			



DRAWN BY : V.X. NGUYEN DATE : 4-25-06
 CHECKED BY : D. HODGE DATE : 10-06

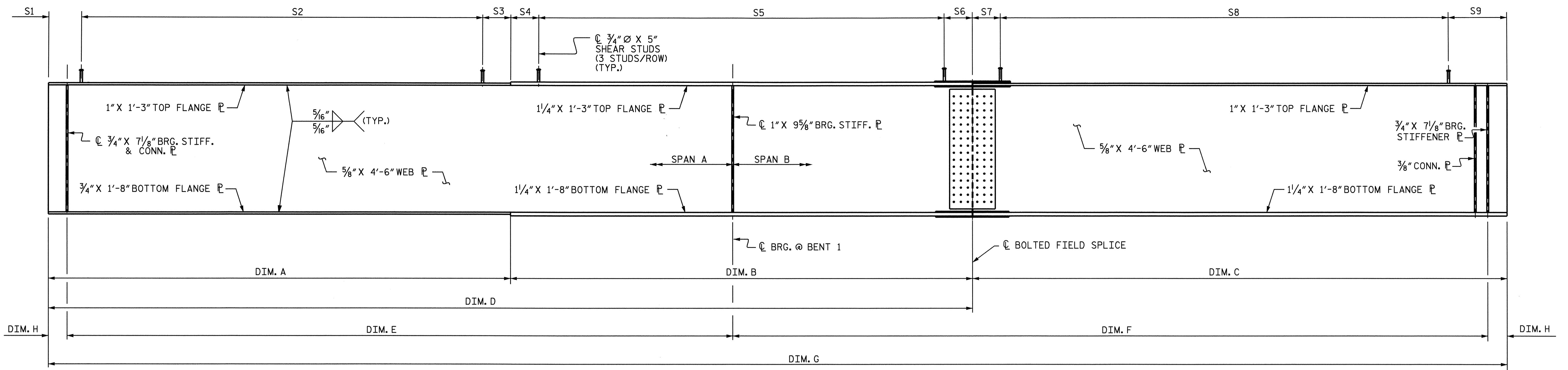
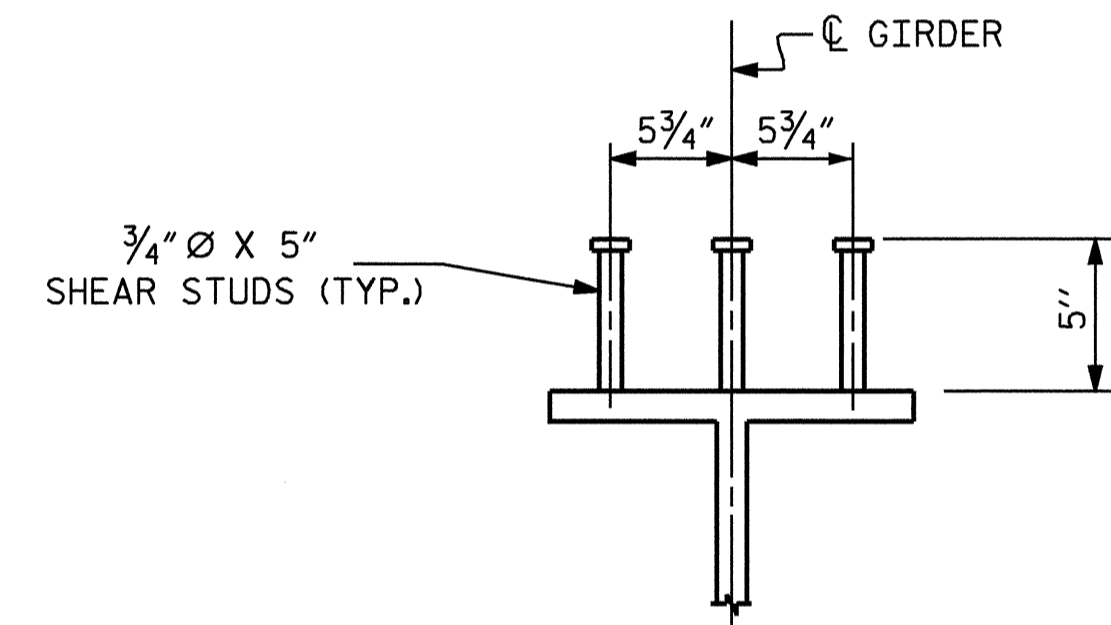


PLATE GIRDER ELEVATION
SHOWING SHEAR STUD LOCATION & SPACING FOR GIRDERS



SHEAR STUD DETAILS
TYPICAL ALL GIRDERS EXCEPT @ FIELD SPLICE LOCATIONS

SHEAR STUD SPACING TABLE FOR GIRDERS									
GIRDERS	S1	S2	S3	S4	S5	S6	S7	S8	S9
GIRDER 1	1'-0 1/2"	69 SPA. @ 10"	5"	4 3/4"	57 SPA. @ 11"	1'-8"	1'-8"	78 SPA. @ 1'-0"	8 1/2"
GIRDER 2	4 1/4"	70 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	80 SPA. @ 1'-0"	10 3/8"
GIRDER 3	5 5/16"	70 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	81 SPA. @ 1'-0"	2 7/8"
GIRDER 4	7 3/4"	70 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	81 SPA. @ 1'-0"	7 1/2"
GIRDER 5	9 11/16"	70 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	81 SPA. @ 1'-0"	1'-0 3/8"
GIRDER 6	11 5/8"	70 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	82 SPA. @ 1'-0"	5 1/2"
GIRDER 7	3 11/16"	71 SPA. @ 10"	5"	5"	55 SPA. @ 11"	1'-8"	1'-8"	82 SPA. @ 1'-0"	10 7/8"
GIRDER 8	8 3/4"	70 SPA. @ 10"	5"	4"	51 SPA. @ 1'-0"	1'-8"	1'-8"	82 SPA. @ 1'-0"	1'-1 1/2"
GIRDER 9	11 1/16"	70 SPA. @ 10"	5"	4"	51 SPA. @ 1'-0"	1'-8"	1'-8"	83 SPA. @ 1'-0"	7 1/2"
GIRDER 10	3 7/16"	71 SPA. @ 10"	5"	4"	51 SPA. @ 1'-0"	1'-8"	1'-8"	83 SPA. @ 1'-0"	1'-1 7/8"
GIRDER 11	5 5/16"	71 SPA. @ 10"	5"	4"	51 SPA. @ 1'-0"	1'-8"	1'-8"	84 SPA. @ 1'-0"	8 11/16"

GIRDER DIMENSIONS									
GIRDERS	DIM. A	DIM. B	DIM. C	DIM. D	DIM. E	DIM. F	DIM. G	DIM. H	RADIUS
GIRDER 1	58'-11 9/16"	54'-3 3/4"	80'-4 7/16"	113'-3 5/16"	87'-0 1/16"	105'-2 11/16"	193'-7 3/4"	8 1/2"	715'-0"
GIRDER 2	59'-1 3/16"	52'-6"	82'-6 7/16"	111'-7 3/16"	87'-1 11/16"	105'-6 15/16"	194'-1 5/8"	8 1/2"	706'-8"
GIRDER 3	59'-2 5/16"	52'-6"	82'-10 7/8"	111'-8 5/16"	87'-3 7/16"	105'-11 3/8"	194'-7 13/16"	8 1/2"	698'-4"
GIRDER 4	59'-4 3/4"	52'-6"	83'-3 1/2"	111'-10 3/4"	87'-5 1/4"	106'-4"	195'-2 1/4"	8 1/2"	690'-0"
GIRDER 5	59'-6 1/16"	52'-6"	83'-8 3/8"	112'-0 11/16"	87'-7 3/16"	106'-8 7/8"	195'-9 1/16"	8 1/2"	681'-8"
GIRDER 6	59'-8 5/8"	52'-6"	84'-1 1/2"	112'-2 5/8"	87'-9 1/8"	107'-2"	196'-4 1/8"	8 1/2"	673'-4"
GIRDER 7	59'-10 11/16"	52'-6"	84'-6 7/8"	112'-4 11/16"	87'-11 3/16"	107'-7 3/8"	196'-11 9/16"	8 1/2"	665'-0"
GIRDER 8	59'-5 3/4"	53'-0"	84'-9 1/2"	112'-5 3/4"	88'-0 1/4"	107'-10"	197'-3 1/4"	8 1/2"	661'-0"
GIRDER 9	59'-8"	53'-0"	85'-3 9/16"	112'-8"	88'-2 1/2"	108'-4 1/16"	197'-11 9/16"	8 1/2"	652'-4"
GIRDER 10	59'-10 7/16"	53'-0"	85'-9 7/8"	112'-10 7/16"	88'-4 7/8"	108'-10 7/16"	198'-8 5/16"	8 1/2"	643'-8"
GIRDER 11	60'-1"	53'-0"	86'-4 5/8"	113'-1"	88'-7 1/2"	109'-5 5/8"	199'-5 5/8"	8 1/2"	635'-0"

DRAWN BY : V.X. NGUYEN DATE : 4-28-06
 CHECKED BY : D. HODGE DATE : 10-06

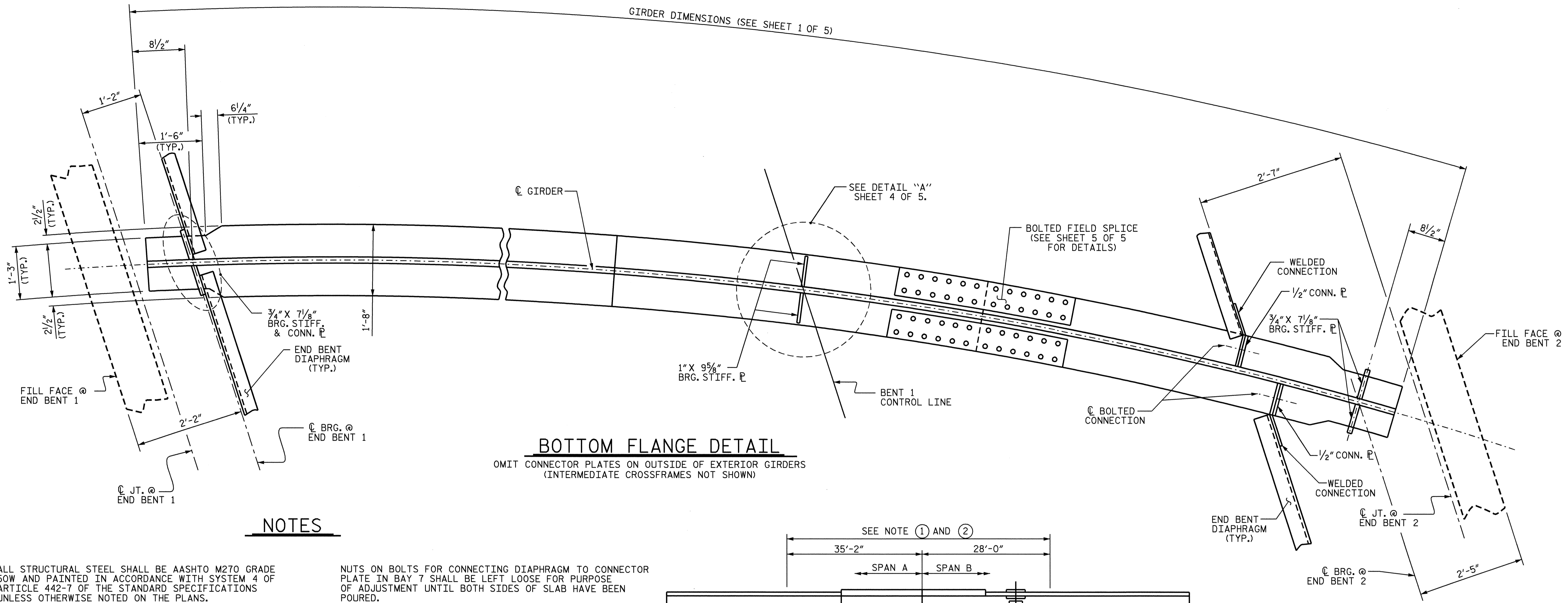
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PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-
 SHEET 1 OF 5

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO.					S-16
TOTAL SHEETS					60



GIRDER DIMENSIONS (SEE SHEET 1 OF 5)



BOTTOM FLANGE DETAIL

OMIT CONNECTOR PLATES ON OUTSIDE OF EXTERIOR GIRDERS (INTERMEDIATE CROSSFRAMES NOT SHOWN)

NOTES

ALL STRUCTURAL STEEL SHALL BE AASHTO M270 GRADE 50W AND PAINTED IN ACCORDANCE WITH SYSTEM 4 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE 7/8" DIA. HIGH STRENGTH BOLTS UNLESS OTHERWISE NOTED.

BEARING STIFFENERS PLATES AT END BENT 1 SHALL BE PLACED ALONG THE SKEW AND SHALL BE PLUMB. ALL OTHER BEARING STIFFENERS AND ALL CONNECTOR PLATES ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

SHOP SPLICES ARE PERMITTED TO LIMIT THE MAXIMUM REQUIRED FLANGE PIECE LENGTHS TO 60 FEET AND WEB PIECE LENGTHS TO 45 FEET. PERMITTED FLANGE AND WEB SHOP SPLICES SHALL NOT BE LOCATED WITHIN 15 FEET OF MAXIMUM DEAD LOAD DEFLECTION (NOR WITHIN 15 FEET OF INTERMEDIATE BEARINGS OF CONTINUOUS UNITS). KEEP 2 FEET MINIMUM BETWEEN WEB AND FLANGE SHOP SPLICES. KEEP 6" MINIMUM BETWEEN CONNECTOR PLATE OR TRANSVERSE STIFFENER WELDS AND WEB OR FLANGE SHOP SPLICES.

STUDS ON GIRDERS MAY BE SHIFTED UP TO 1" IF NECESSARY TO CLEAR FLANGE SPLICE WELD.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

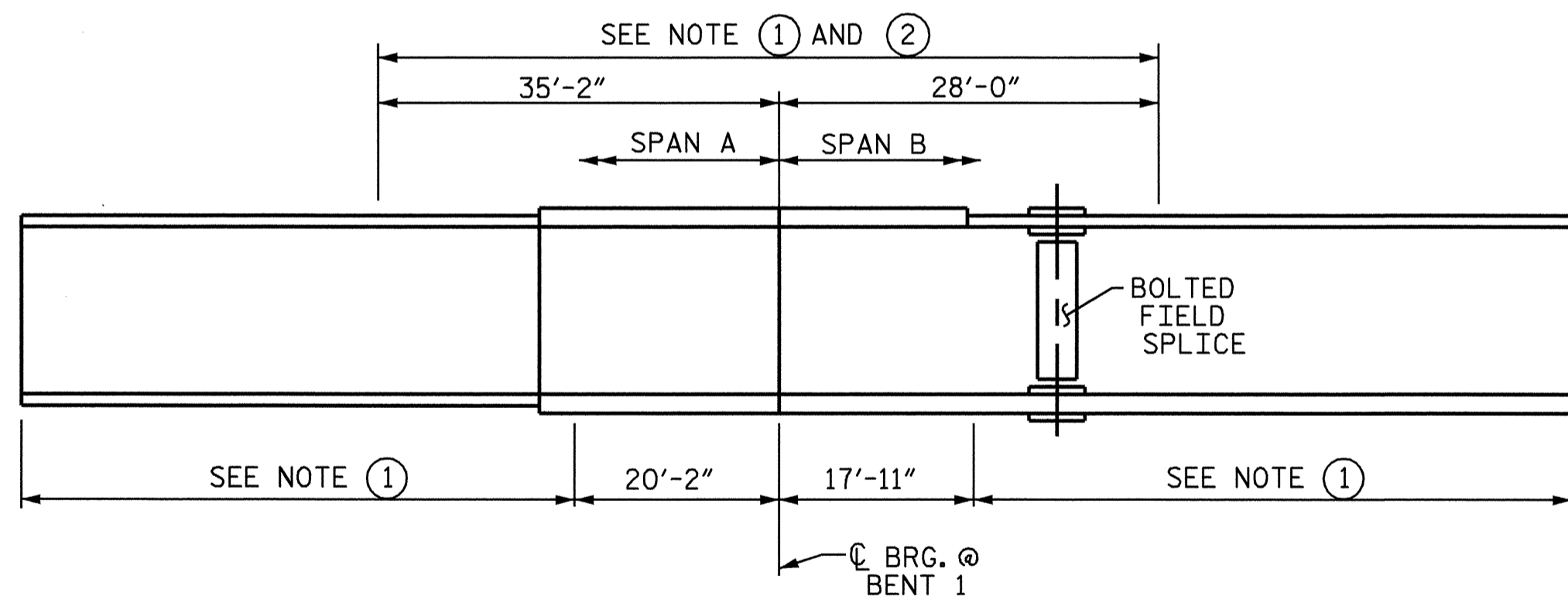
END OF GIRDERS SHALL BE PLUMB.

NUTS ON BOLTS FOR CONNECTING DIAPHRAGM TO CONNECTOR PLATE IN BAY 7 SHALL BE LEFT LOOSE FOR PURPOSE OF ADJUSTMENT UNTIL BOTH SIDES OF SLAB HAVE BEEN POURED.

BEARING STIFFENER MAY REQUIRE COPING IF WIDER THAN BOTTOM FLANGE TO AVOID INTERFERENCE WITH THE ANCHOR BOLT.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

FOR HEAT CURVING GIRDERS, SEE SPECIAL PROVISIONS.



ELEVATION

NOTE ①: CHARPY V-NOTCH TESTS ARE REQUIRED FOR ALL TOP OR BOTTOM FLANGE PLATES WHICH FALL WITHIN THESE LIMITS, ALL WEB PLATES, AND ALL SPLICE PLATES. IF A PERMITTED SHOP FLANGE SPLICE IS NOT USED, CHARPY V-NOTCH TESTS WILL BE REQUIRED FOR THE ENTIRE FLANGE PLATE. FOR CHARPY V-NOTCH TESTS, SEE ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

NOTE ②: NO WELDING OF FORMS OR FALSEWORK TO THE TOP FLANGE WILL BE PERMITTED IN THIS REGION

CHARPY V-NOTCH TESTS FOR CONTINUOUS PLATE GIRDERS

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 2 OF 5

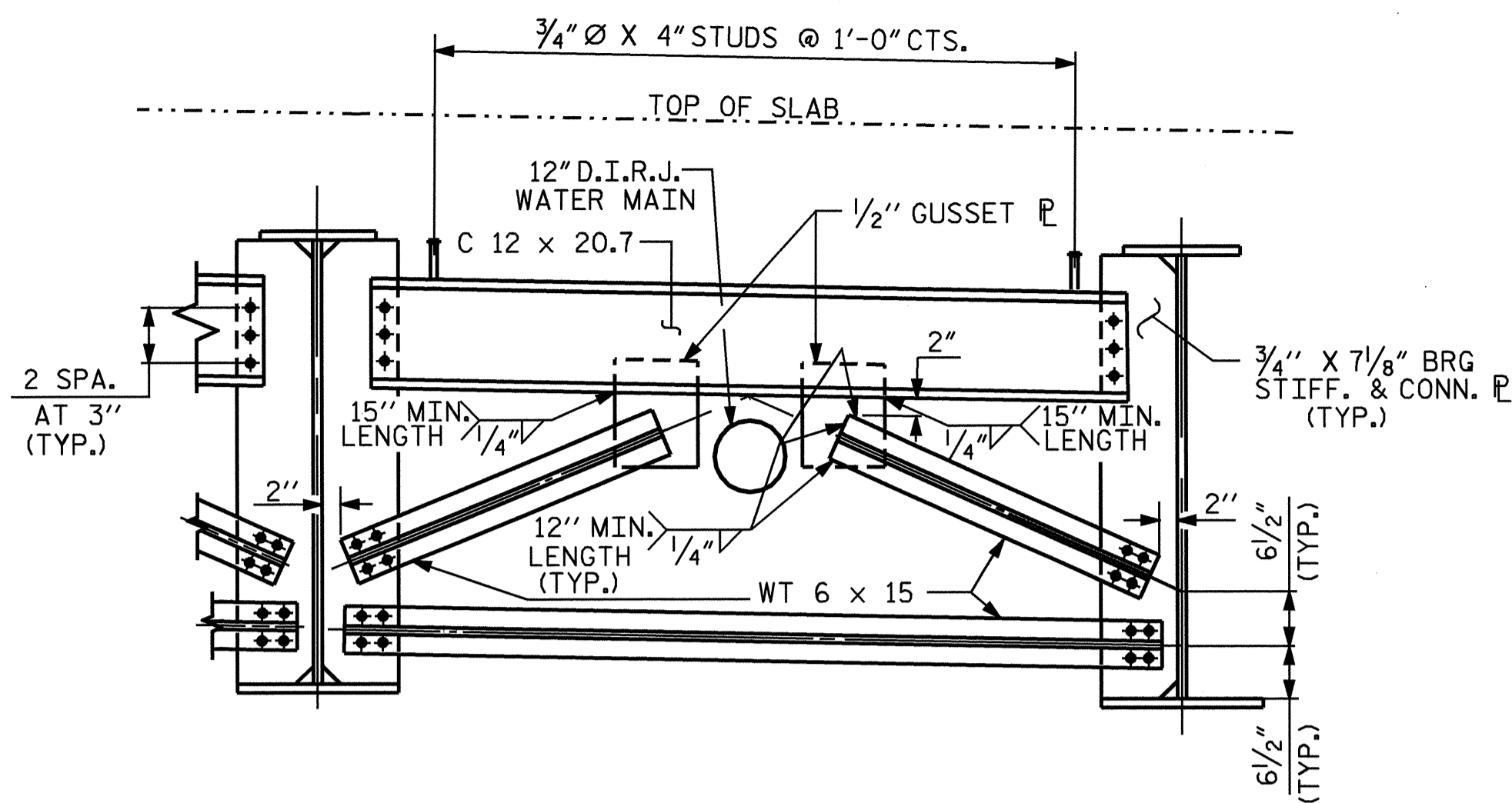
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS



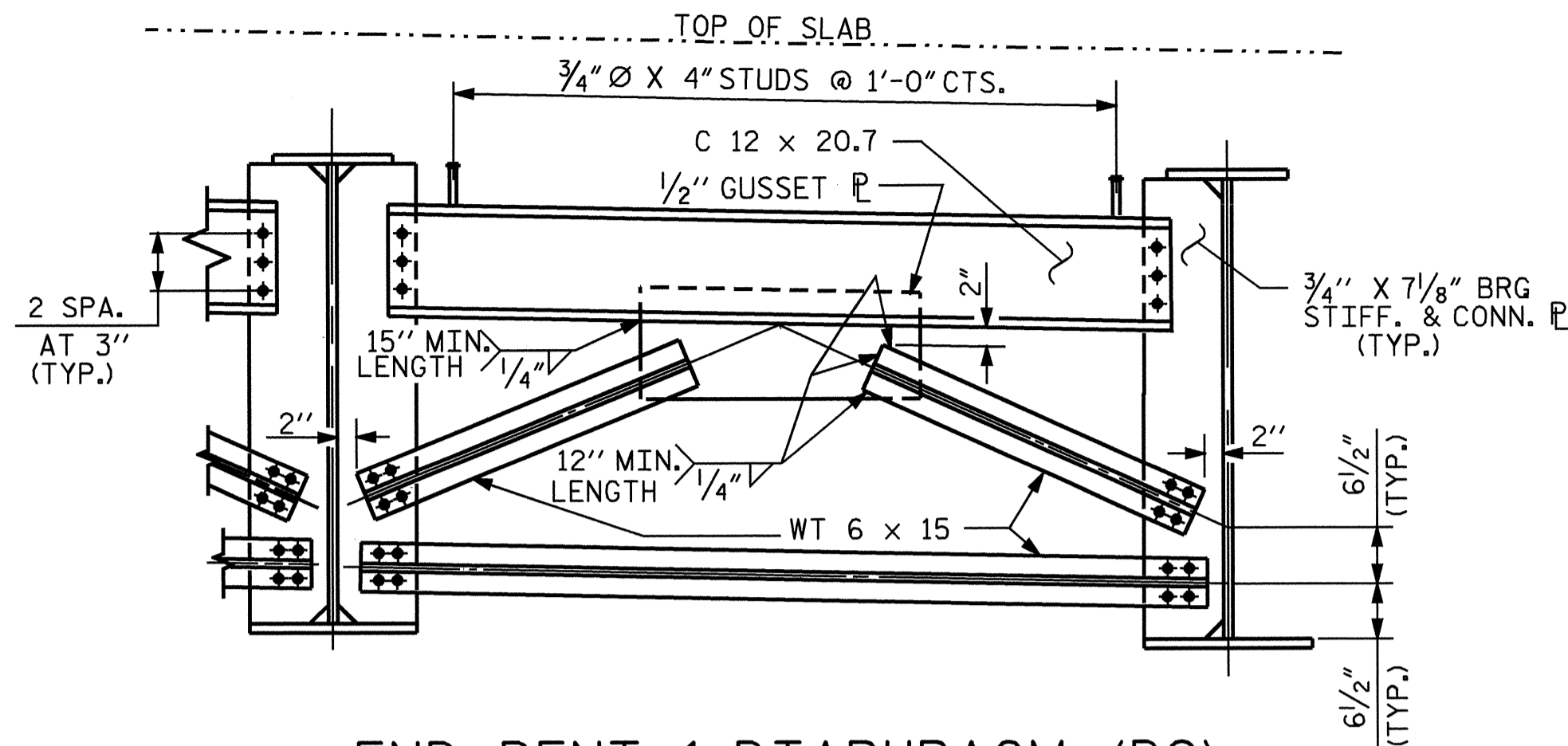
REVISIONS						SHEET NO. S-17
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

DRAWN BY: V.X. NGUYEN DATE: 4-28-06
 CHECKED BY: D. HODGE DATE: 10-06



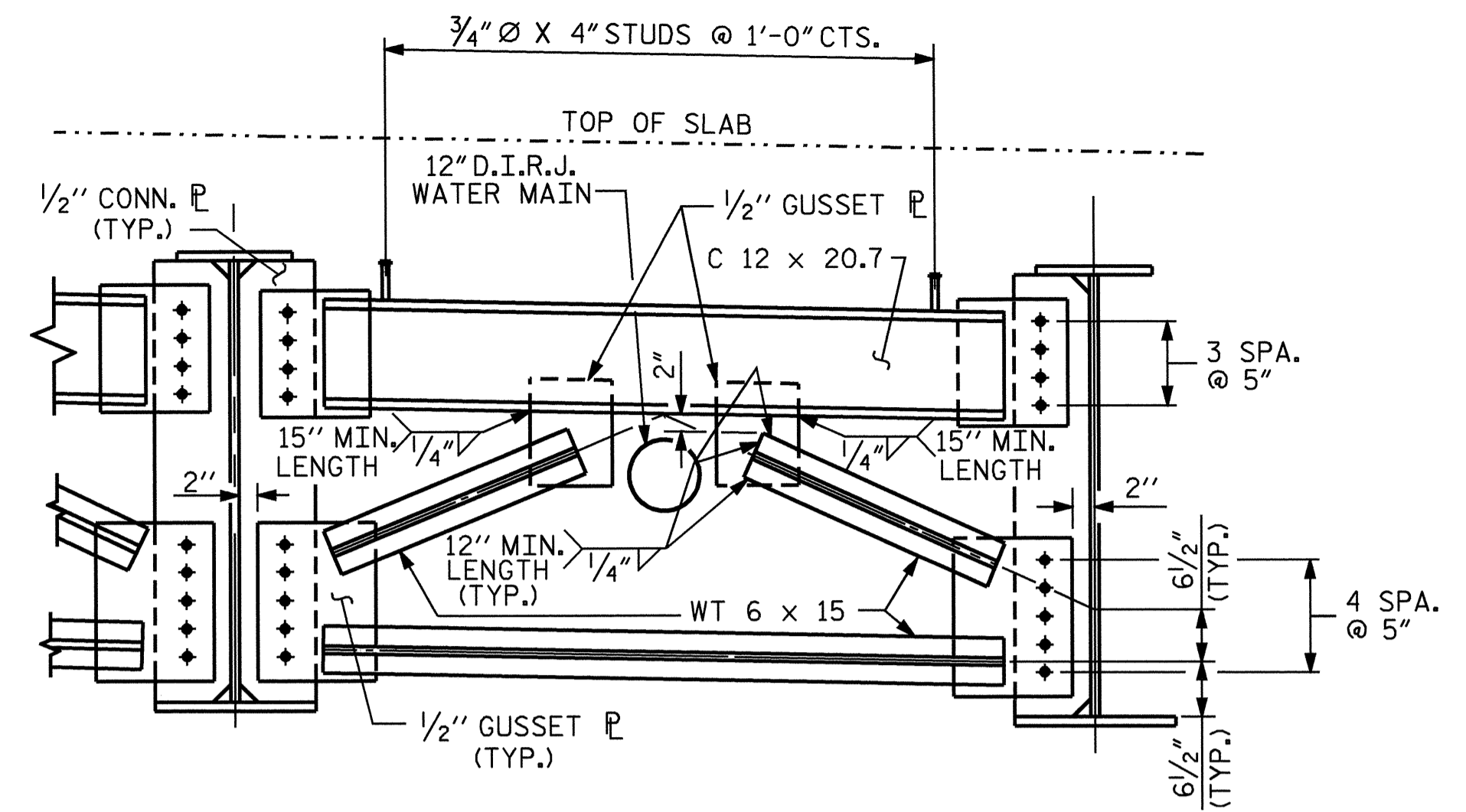
END BENT 1 DIAPHRAGM (D1)

(IN BAY 1 ONLY)



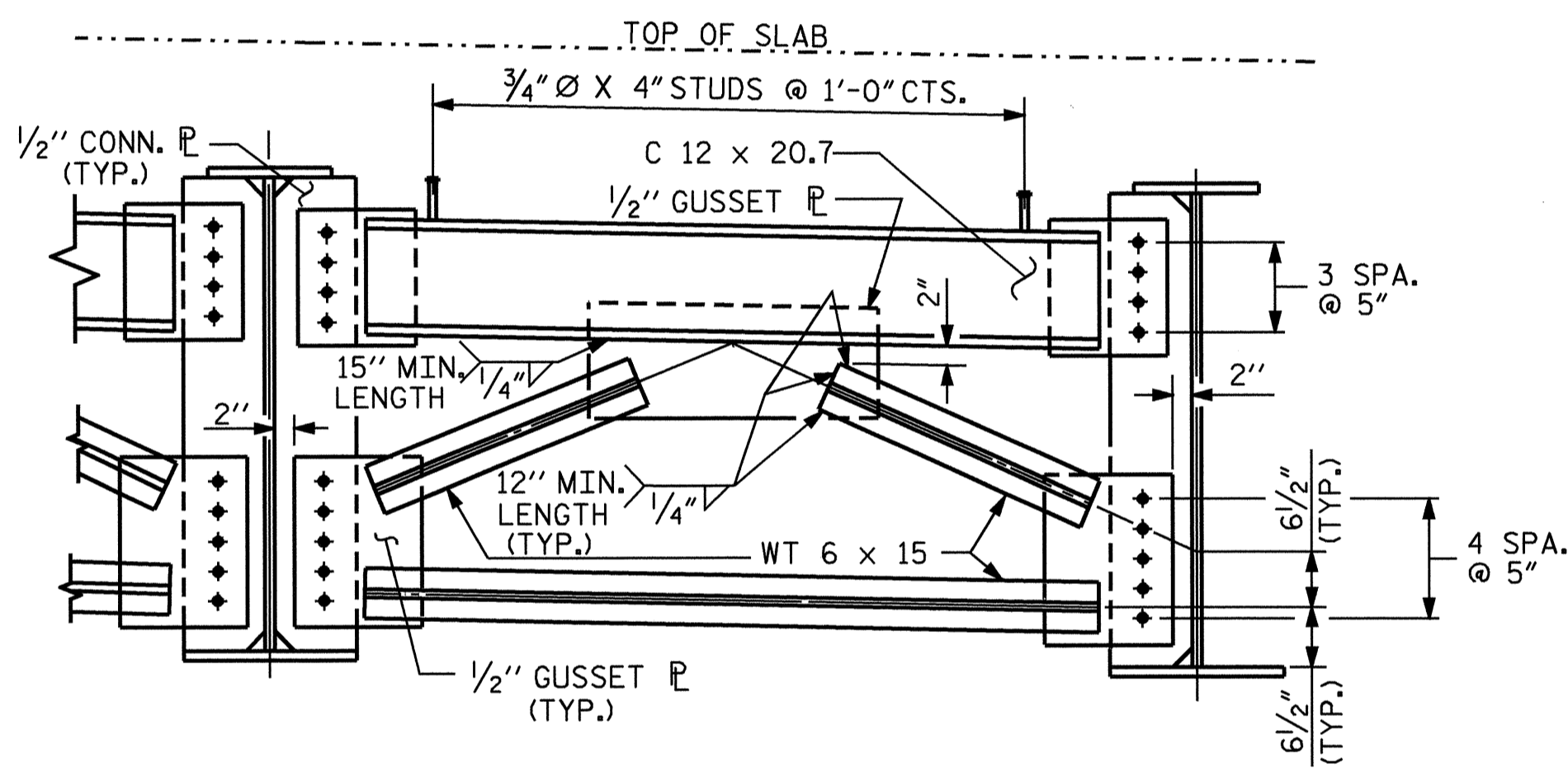
END BENT 1 DIAPHRAGM (D2)

(IN BAYS 2-6 & 8-10)



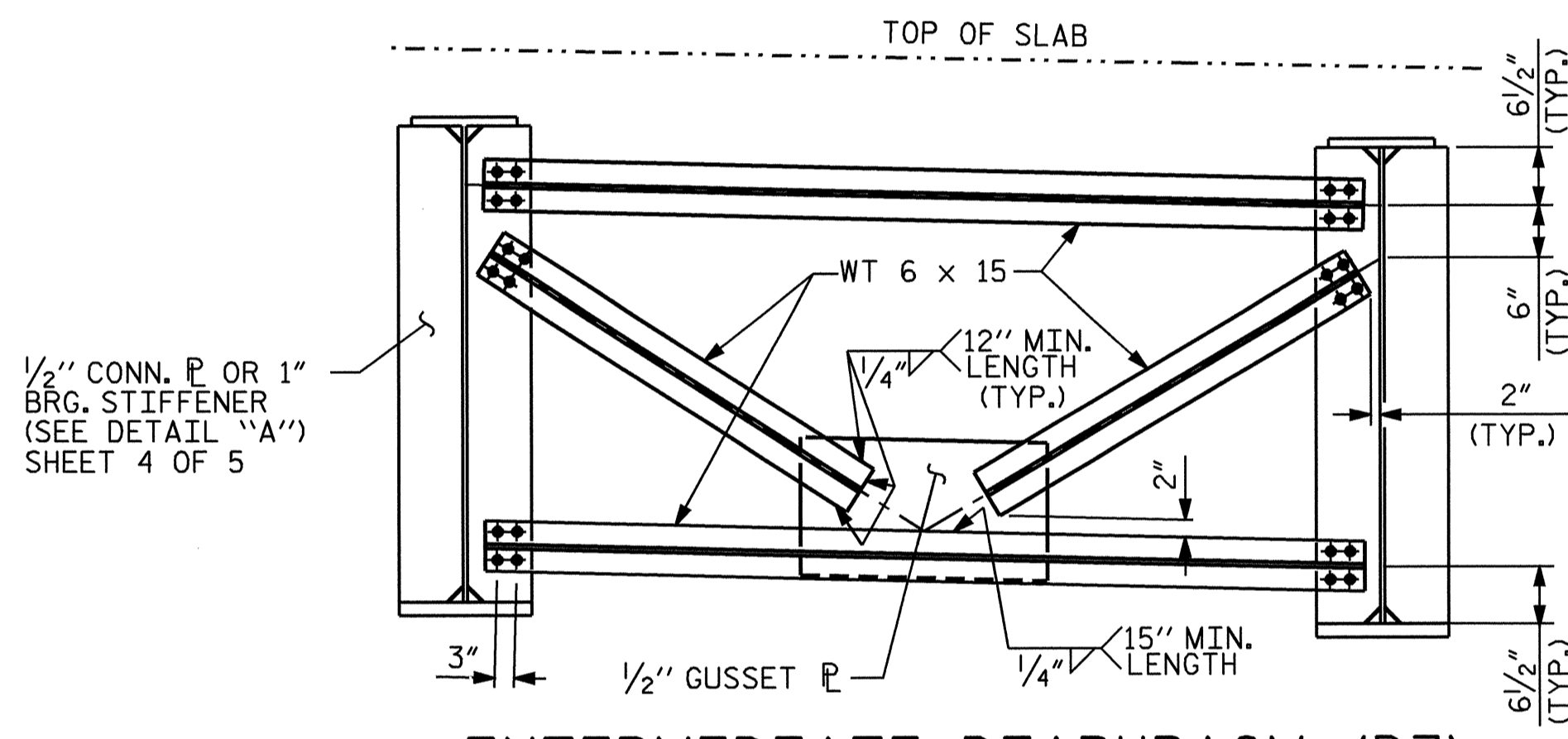
END BENT 2 DIAPHRAGM (D4)

(IN BAY 1 ONLY)



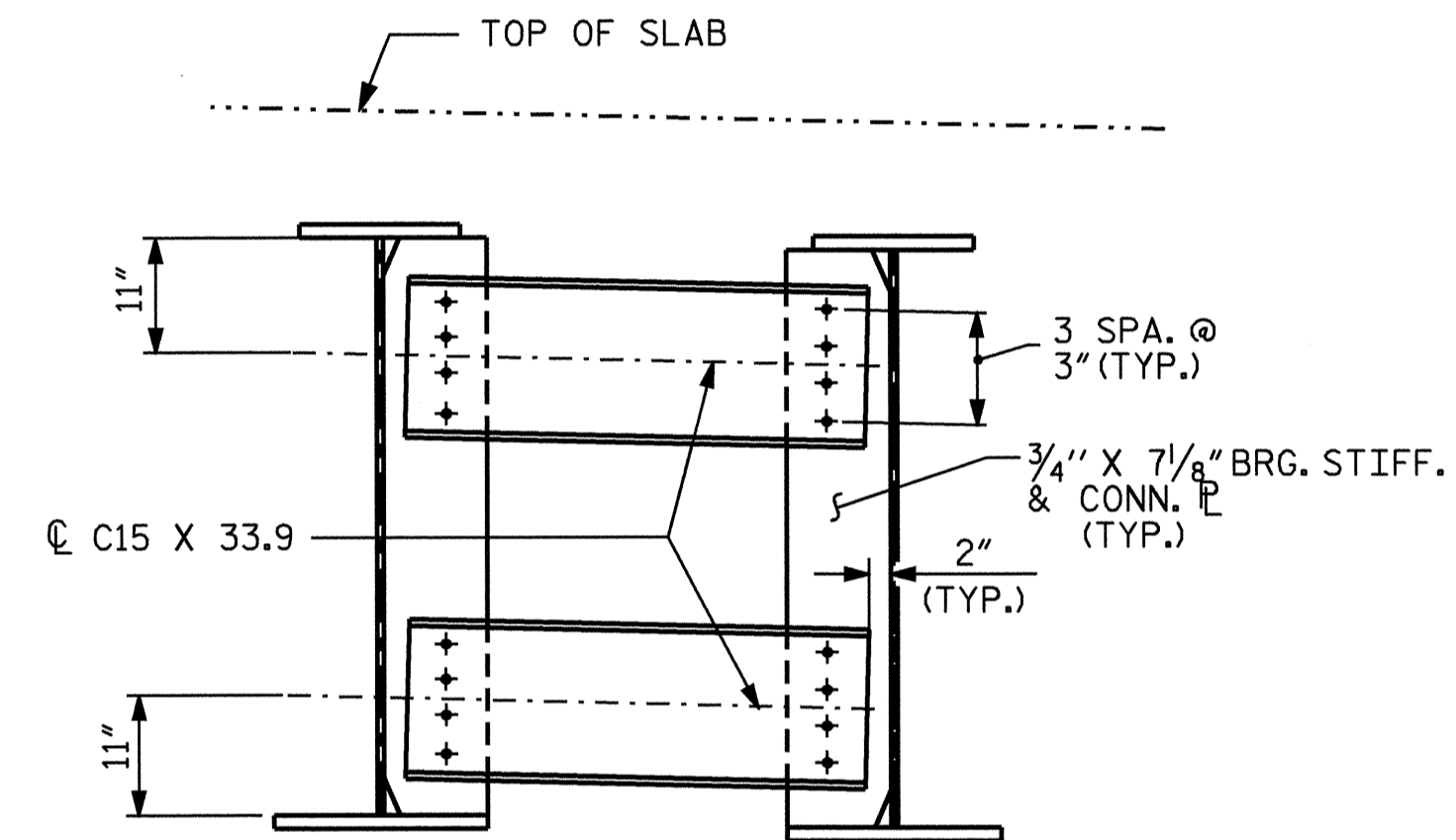
END BENT 2 DIAPHRAGM (D5)

(IN BAYS 2-6 & 8-10)



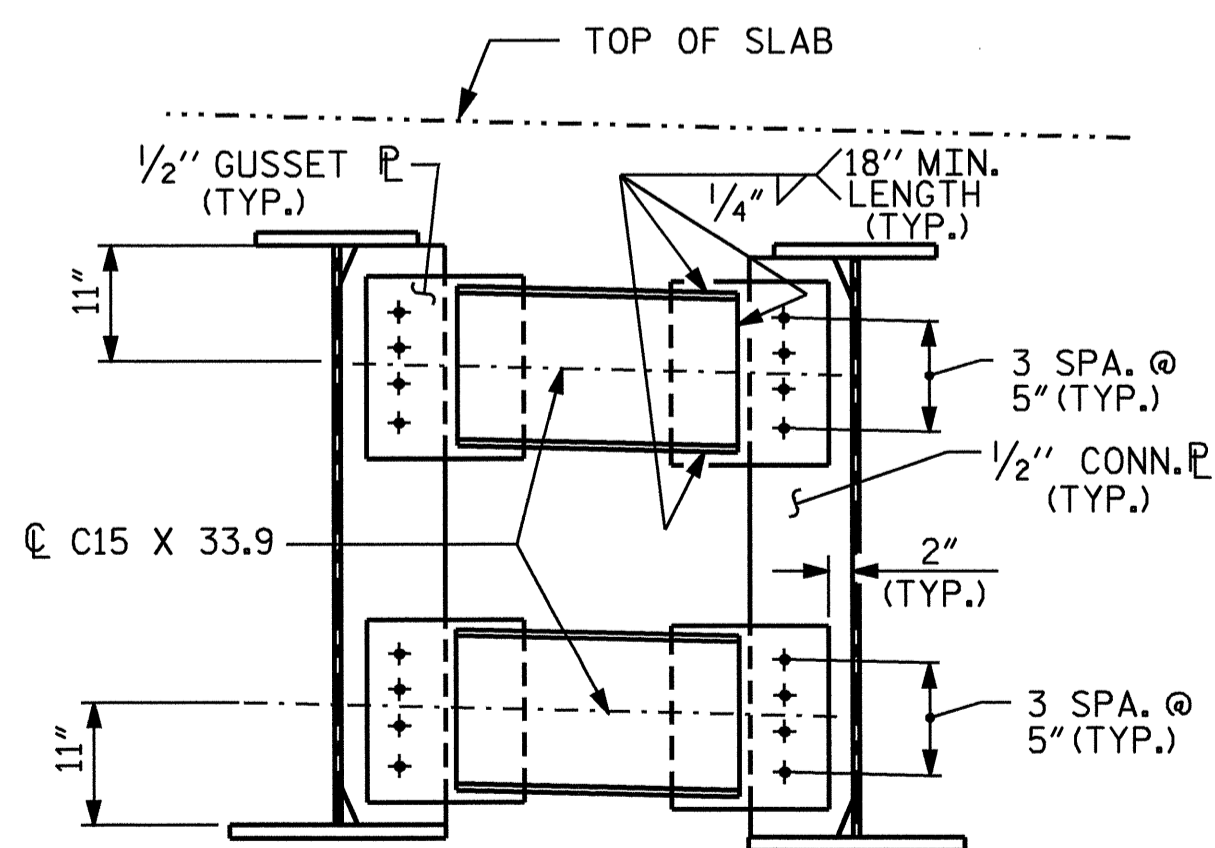
INTERMEDIATE DIAPHRAGM (D7)

(IN BAYS 1-6 & 8-10)



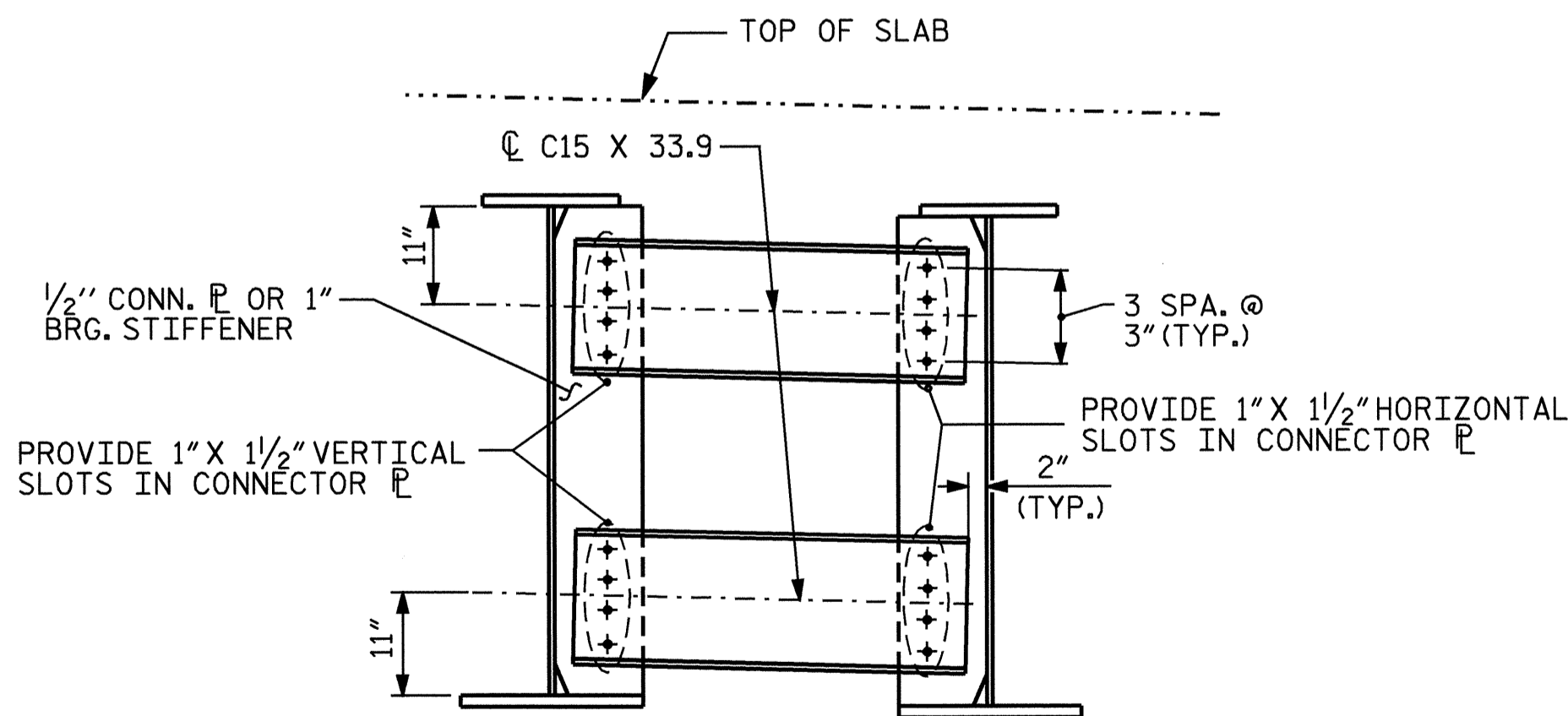
END BENT 1 DIAPHRAGM (D3)

(IN BAY 7)



END BENT 2 DIAPHRAGM (D6)

(IN BAY 7)



INTERMEDIATE DIAPHRAGM (D8)

(IN BAY 7)

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 3 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

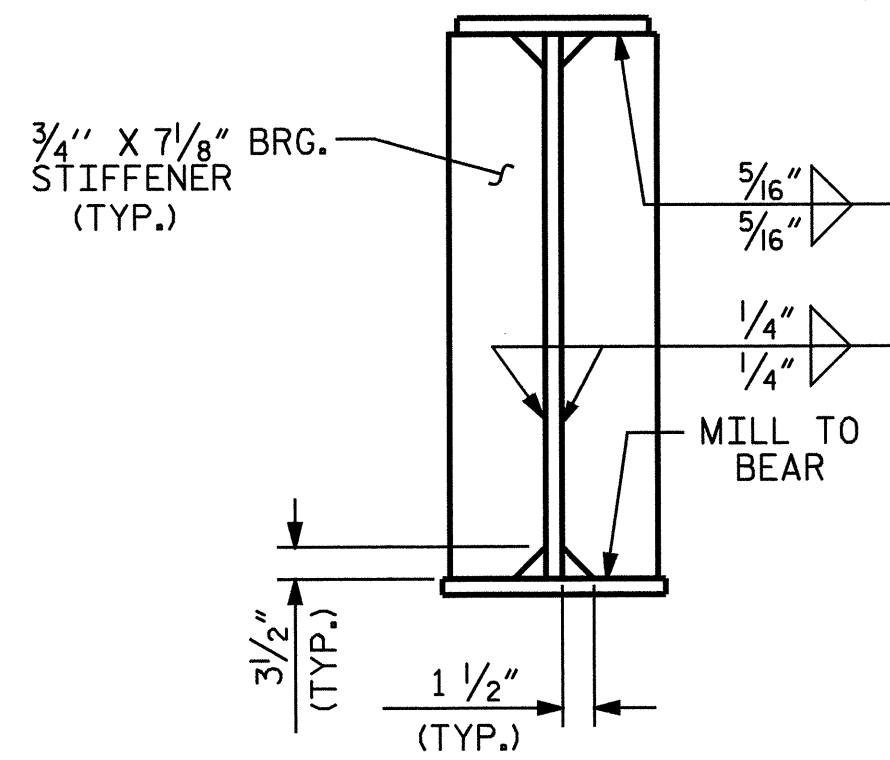


REVISIONS						SHEET NO. S-18
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

DRAWN BY: V.X. NGUYEN DATE: 10-30-06
 CHECKED BY: D. HODGE DATE: 10-06

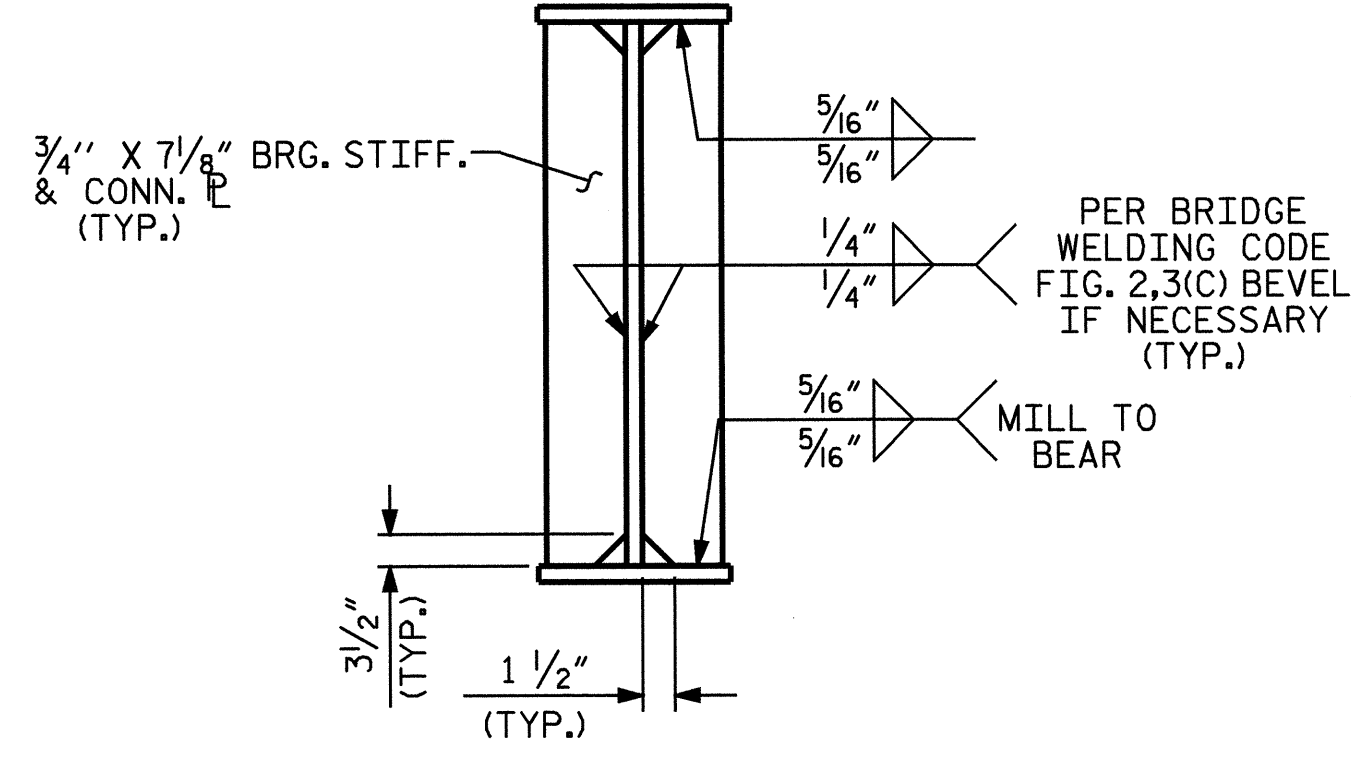
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 RA\Structures\B4696\Final Plans\B4696.ed.SS.dgn
 dhodge

NCBDS



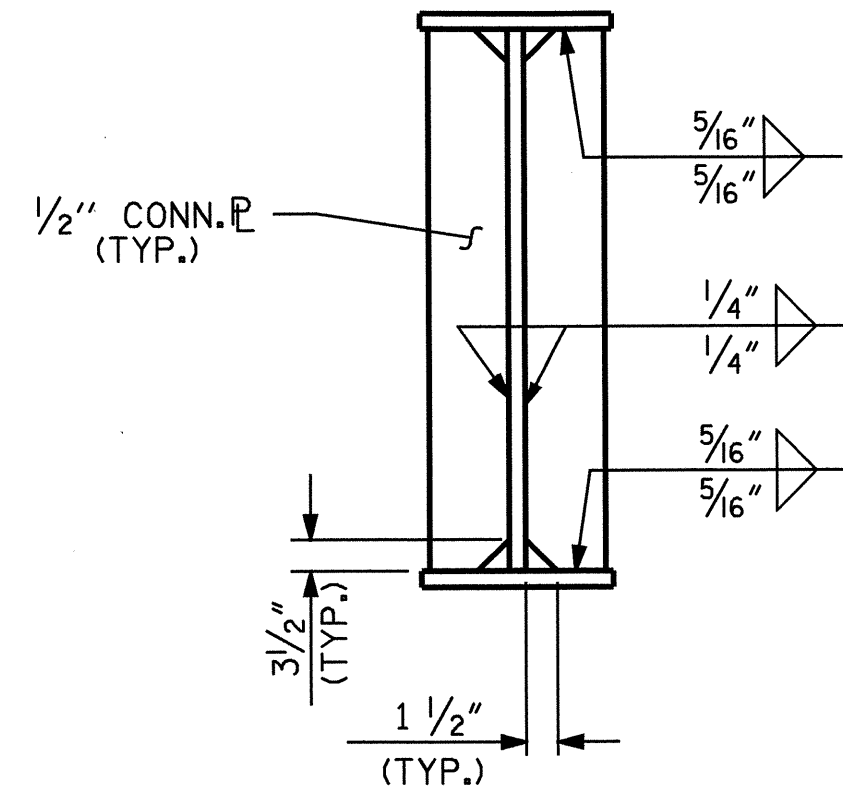
BEARING STIFFENER

(@ END BENT 2)



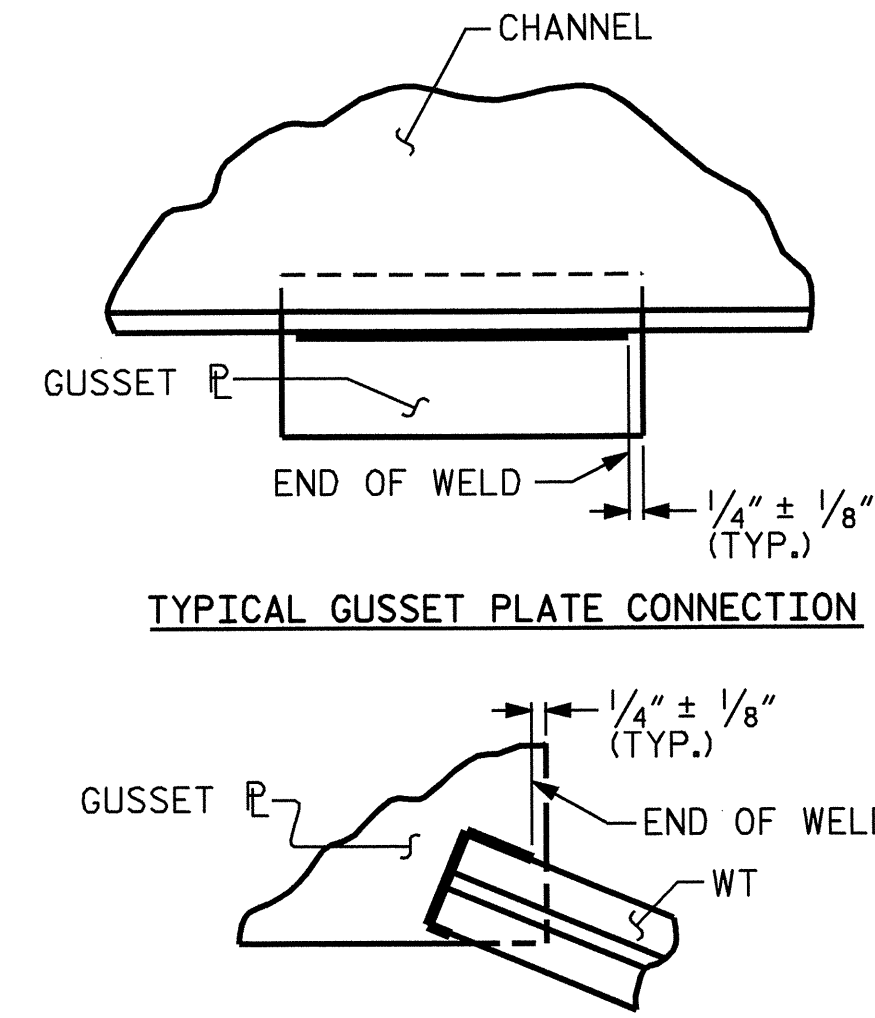
BEARING STIFFENER & CONNECTOR PL

(@ END BENT 1)

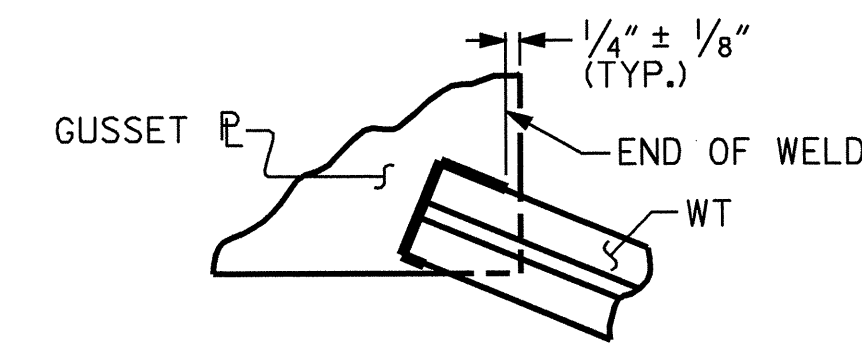


CONNECTOR PLATE

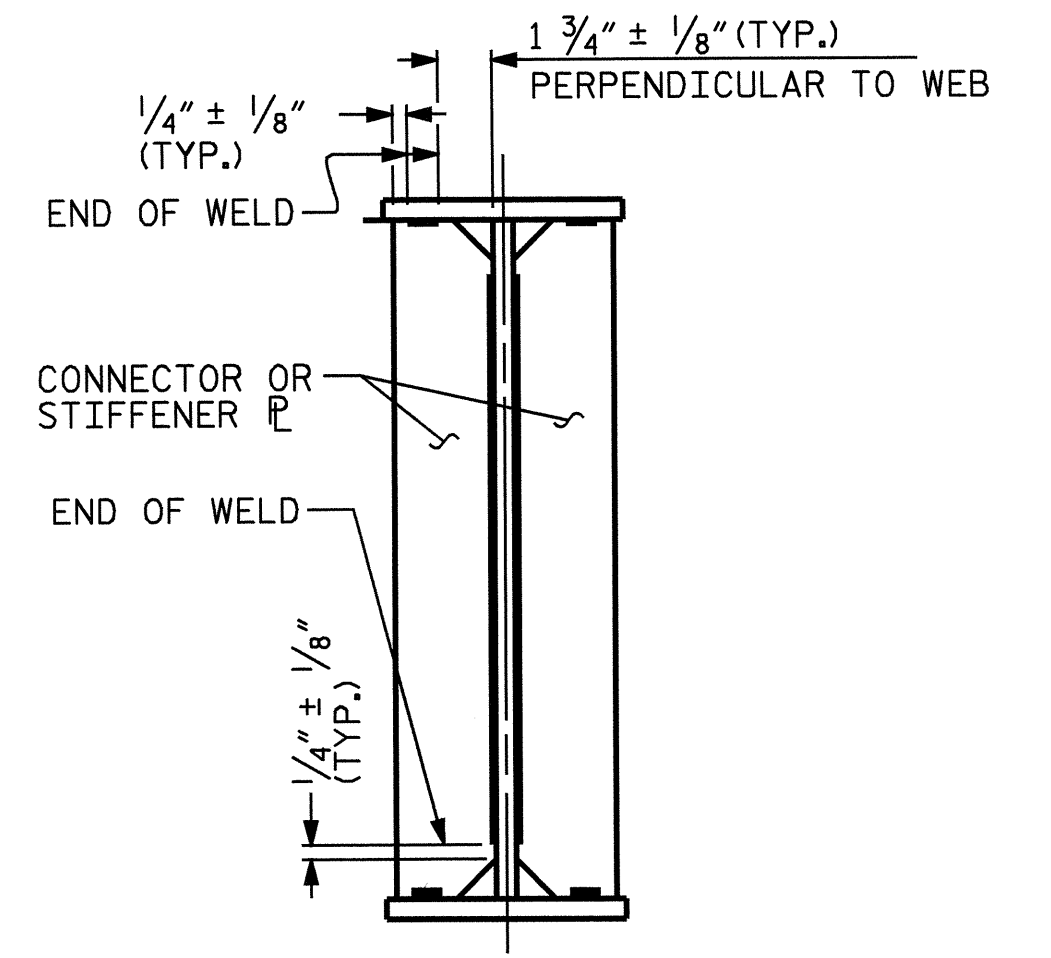
(@ END BENT 2 & INTERMEDIATE DIAPHRAGM)



TYPICAL GUSSET PLATE CONNECTION

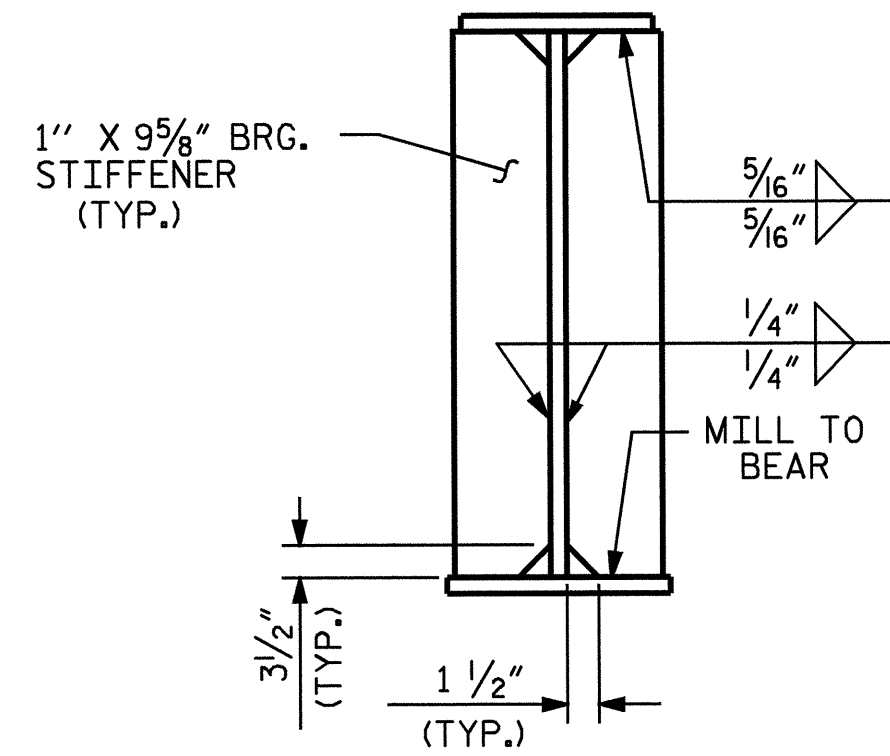


TYPICAL "TEE" TO GUSSET PLATE CONNECTION



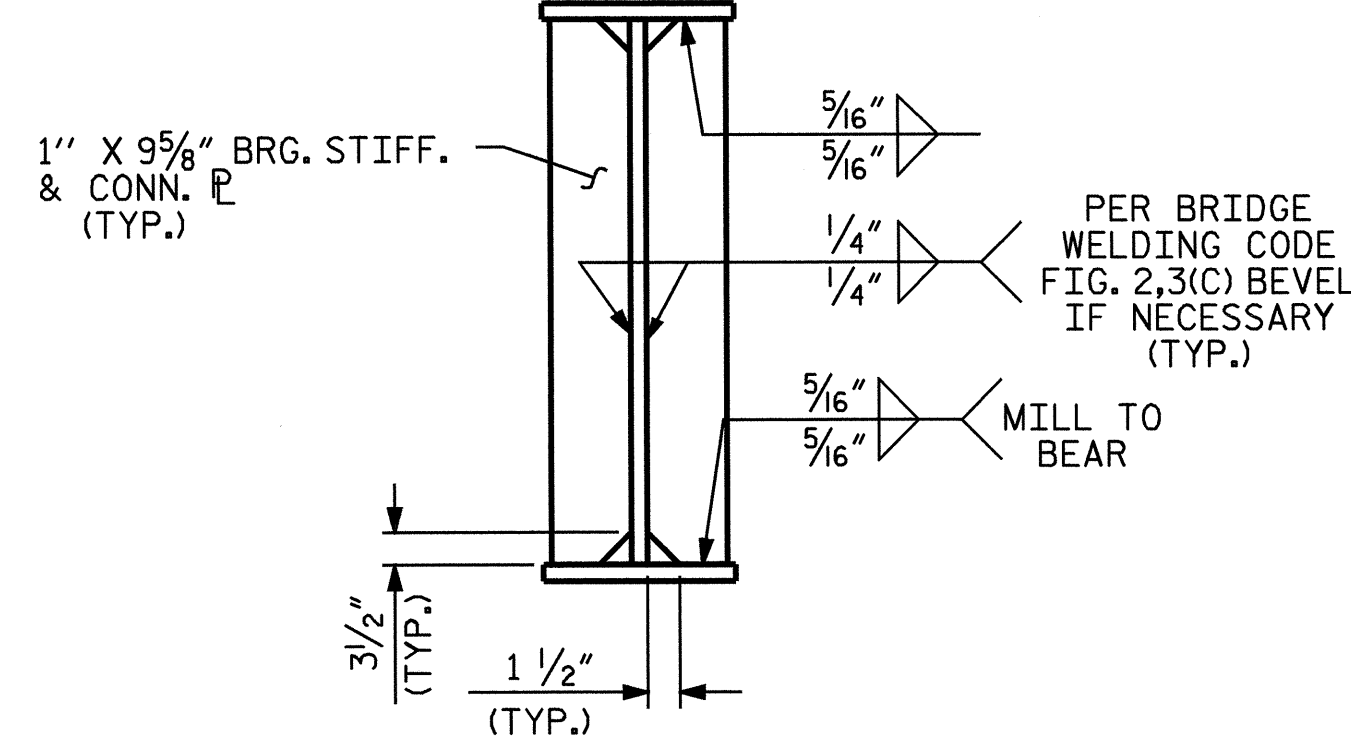
TYPICAL STIFFENER OR CONNECTOR PLATE CONNECTIONS

WELD TERMINATION DETAILS



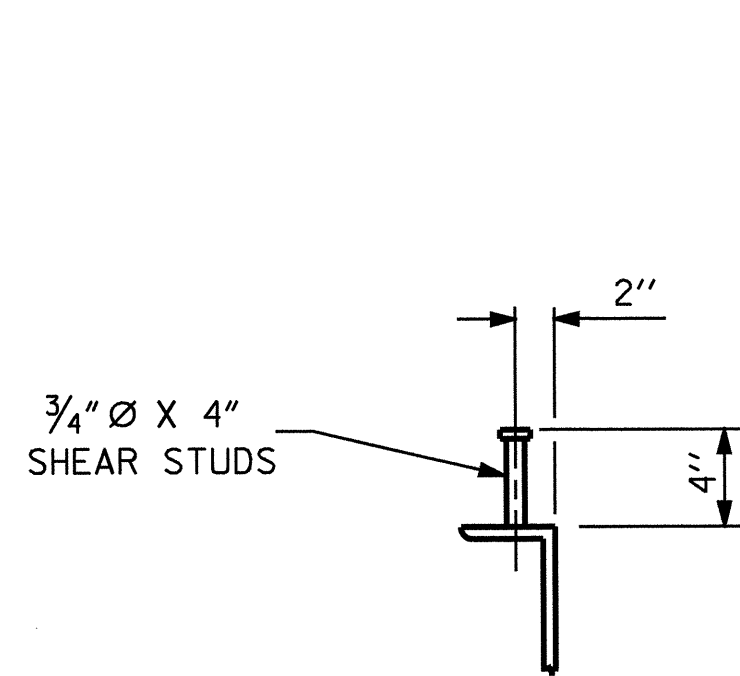
BEARING STIFFENER

(@ BENT 1)

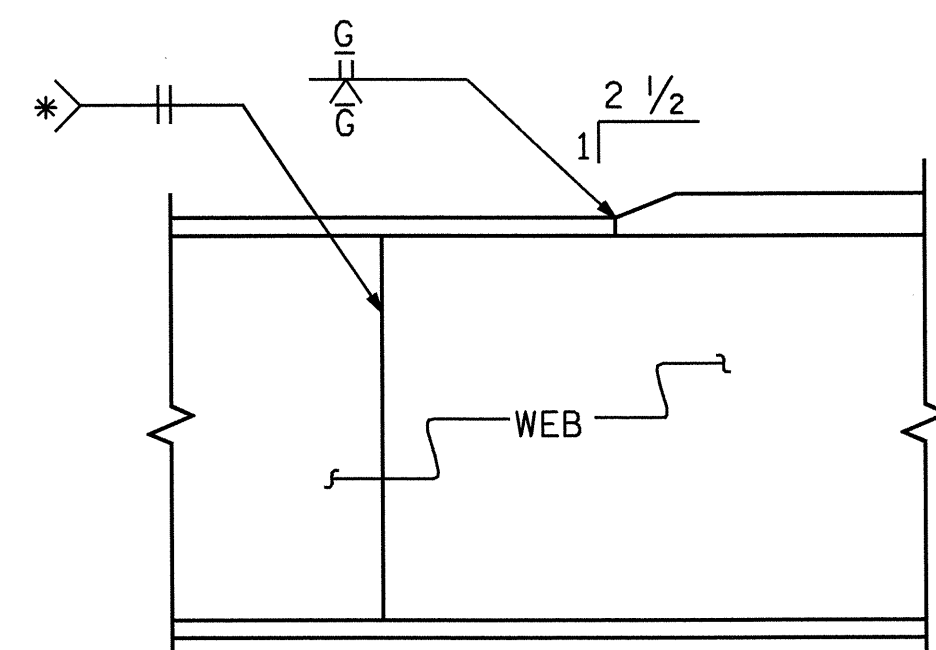


BEARING STIFFENER & CONNECTOR PL

(@ BENT 1)



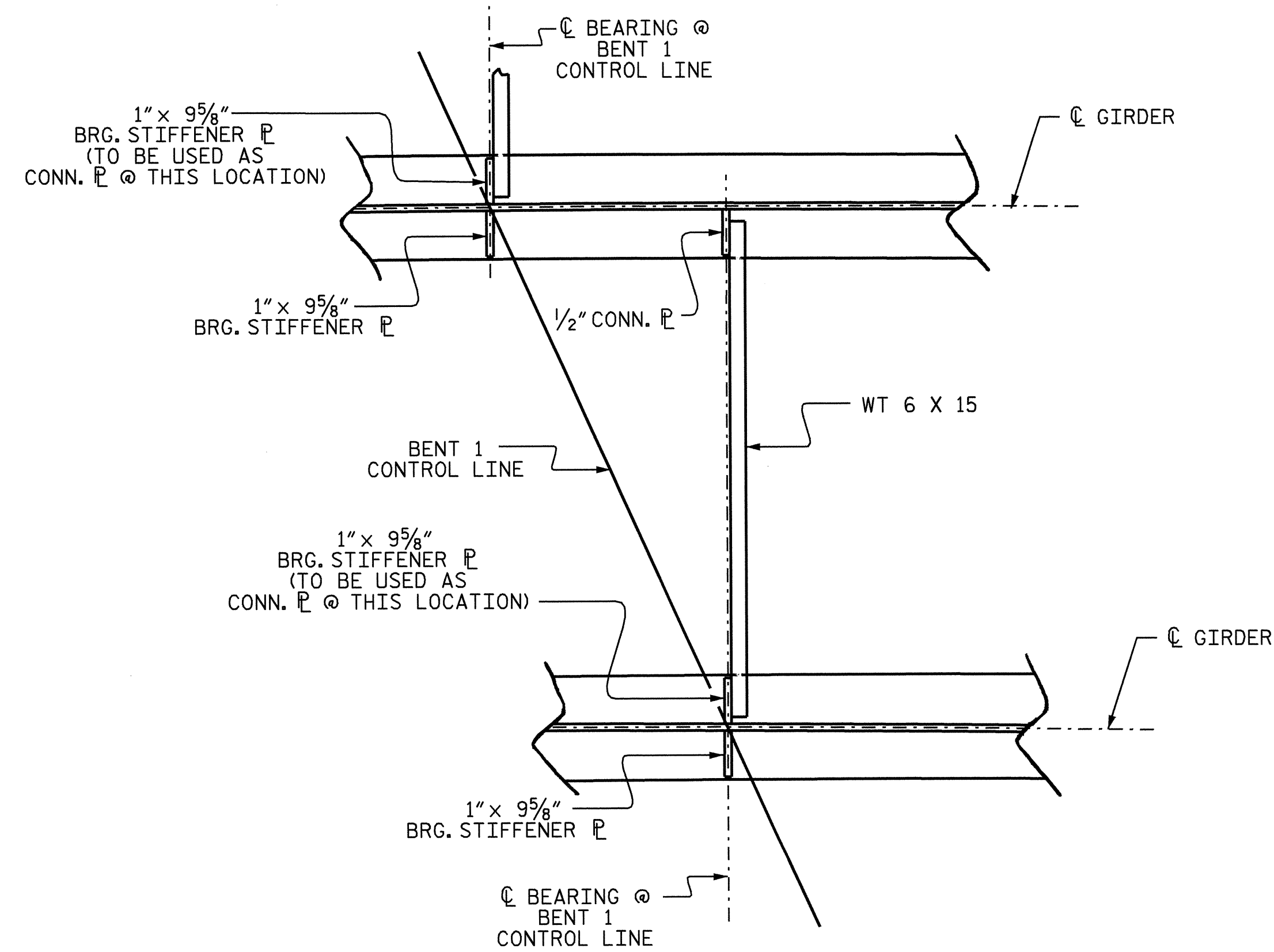
SHEAR STUD DETAILS



ELEVATION

* GRIND SMOOTH AND FLUSH ON OUTER FACE OF EXTERIOR GIRDERS

TYPICAL FLANGE AND WEB BUTT JOINT



DETAIL "A"

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 4 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

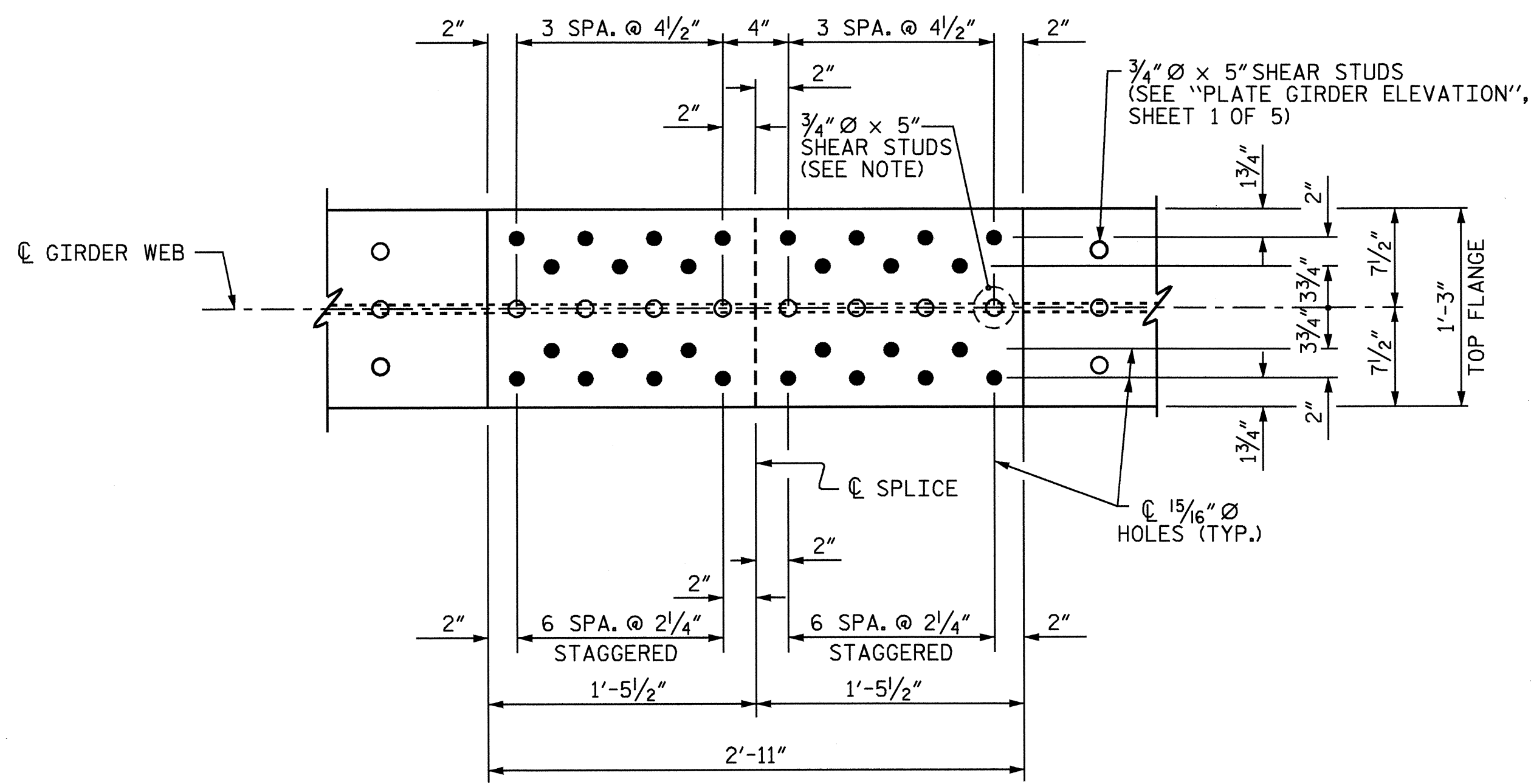
REVISIONS

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

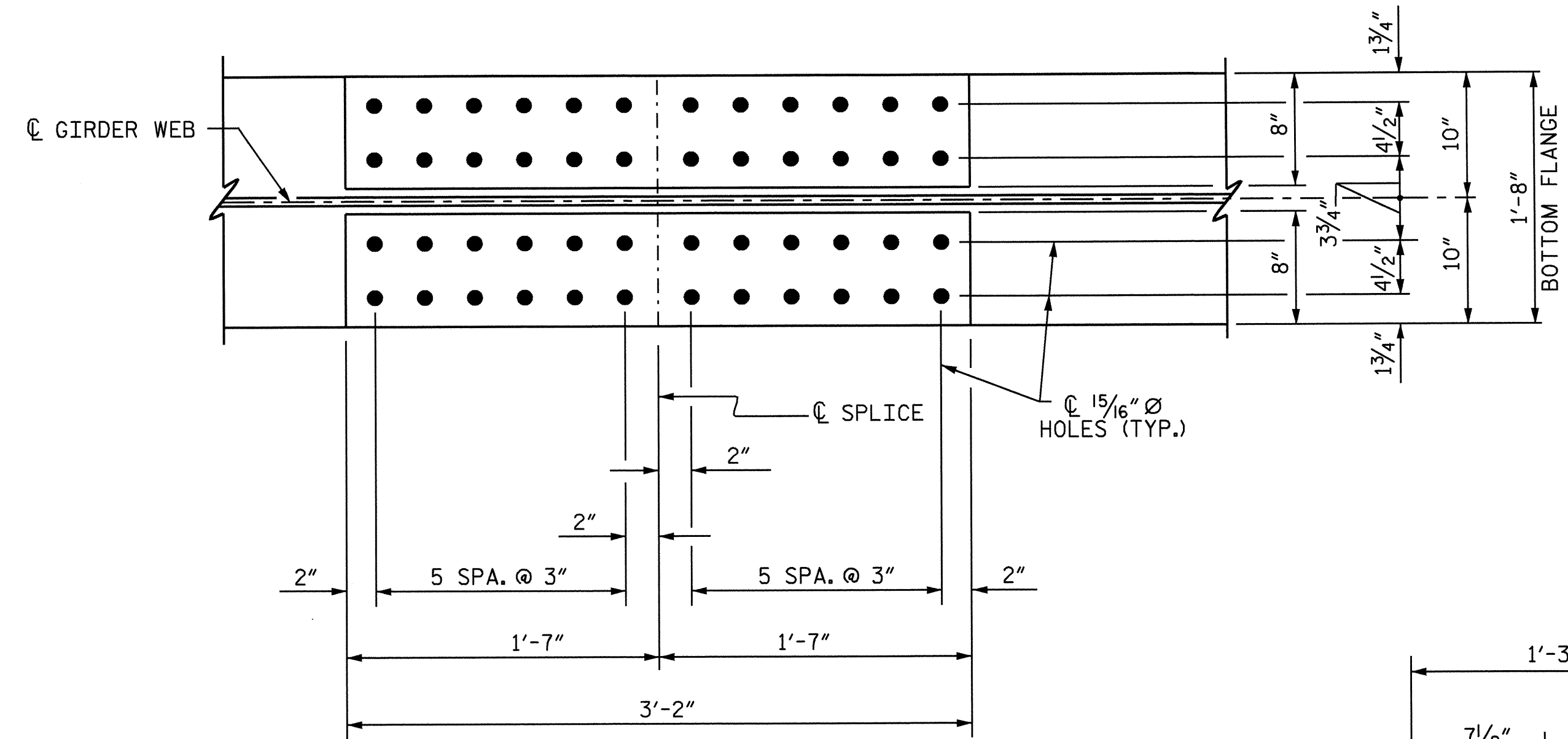
SHEET NO.	
S-19	TOTAL SHEETS 60



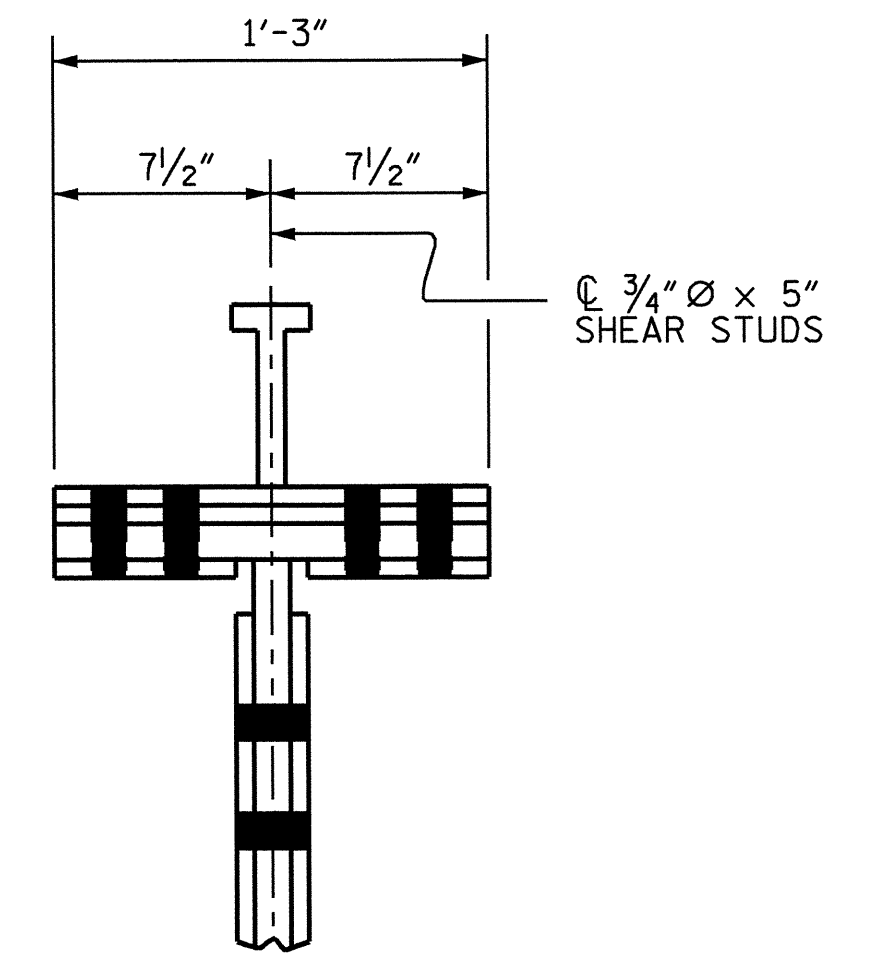
DRAWN BY: V.X. NGUYEN DATE: 5-8-06
 CHECKED BY: D. HODGE DATE: 10-06



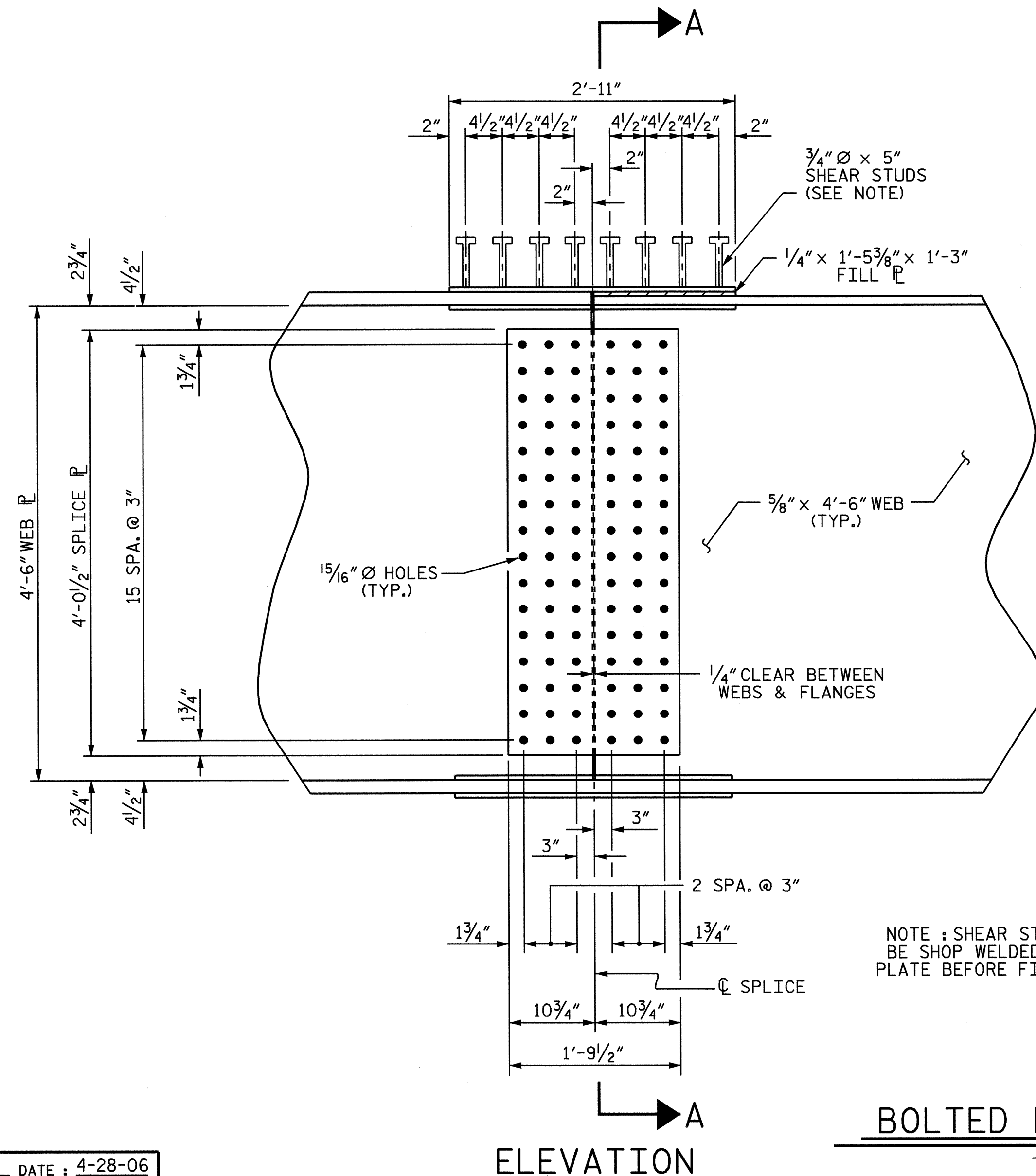
PLAN (TOP OF TOP FLANGE)



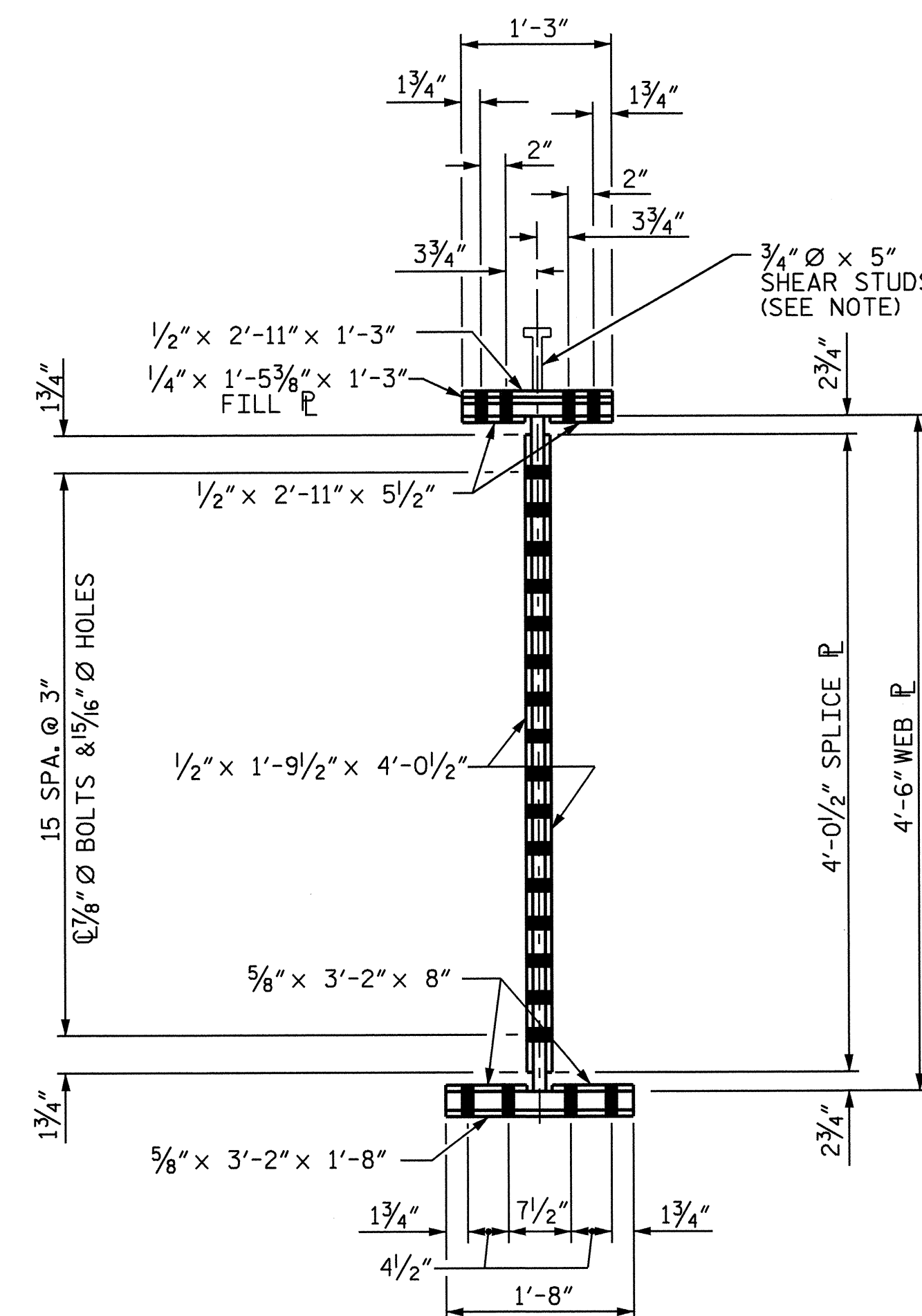
PLAN (TOP OF BOTTOM FLANGE)



SHEAR STUD DETAIL FOR TOP FLANGE SPLICE PLATE



ELEVATION



SECTION A-A

BOLTED FIELD SPLICE DETAILS

TYPICAL EACH GIRDER

NOTE: SHEAR STUDS ARE TO BE SHOP WELDED ON TOP OF PLATE BEFORE FIELD ASSEMBLY.

DRAWN BY: V.X. NGUYEN DATE: 4-28-06
 CHECKED BY: D. HODGE DATE: 10-06

16-MAR-2007 10:20
 R:\Structures\B4696\vnguyen\B4696_sd.SS.dgn
 vnguyen

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 5 OF 5

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUPERSTRUCTURE
 STRUCTURAL STEEL
 DETAILS

REVISIONS

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

SHEET NO.
 S-20
 TOTAL SHEETS
 60



DEAD LOAD DEFLECTION TABLE FOR GIRDERS																							
TWENTIETH POINTS	SPAN A - GIRDER #1																						
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0		
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000		
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.016	0.022	0.028	0.032	0.035	0.036	0.036	0.035	0.032	0.029	0.024	0.018	0.013	0.008	0.003	0.000	-0.001	-0.001	0.000		
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.004	0.008	0.011	0.014	0.016	0.018	0.019	0.019	0.019	0.019	0.017	0.015	0.013	0.010	0.008	0.005	0.003	0.001	0.000	0.000		
TOTAL DEAD LOAD DEFLECTION	0.000	0.014	0.027	0.037	0.047	0.054	0.059	0.062	0.062	0.060	0.057	0.051	0.043	0.034	0.025	0.017	0.008	0.002	-0.001	-0.002	0.000		
VERTICAL CURVE ORDINATE	0.000	0.054	0.101	0.144	0.180	0.211	0.237	0.256	0.270	0.279	0.282	0.279	0.270	0.256	0.237	0.211	0.180	0.144	0.101	0.054	0.000		
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.004	0.007	0.010	0.013	0.015	0.016	0.017	0.017	0.016	0.015	0.014	0.012	0.009	0.003	0.002	0.001	0.000	0.000	0.000	0.000		
REQUIRED CAMBER	0	7/8"	1 5/8"	2 5/16"	2 7/8"	3 3/8"	3 3/4"	4"	4 3/16"	4 1/4"	4 1/4"	4 1/8"	3 7/8"	3 3/16"	3 3/16"	2 3/4"	2 1/4"	1 3/4"	1 3/16"	5/8"	0		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																							
TWENTIETH POINTS	SPAN A - GIRDER #2																						
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0		
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000		
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.015	0.021	0.027	0.031	0.034	0.035	0.035	0.034	0.032	0.028	0.023	0.018	0.013	0.008	0.004	0.001	-0.001	-0.002	0.000		
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.003	0.005	0.007	0.009	0.011	0.012	0.012	0.012	0.012	0.011	0.009	0.008	0.006	0.004	0.002	0.001	0.000	-0.001	-0.001	0.000		
TOTAL DEAD LOAD DEFLECTION	0.000	0.013	0.023	0.032	0.041	0.048	0.052	0.054	0.054	0.052	0.050	0.044	0.036	0.029	0.021	0.013	0.006	0.001	-0.002	-0.004	0.000		
VERTICAL CURVE ORDINATE	0.000	0.055	0.104	0.148	0.185	0.217	0.243	0.263	0.278	0.286	0.289	0.286	0.278	0.263	0.243	0.217	0.185	0.148	0.104	0.055	0.000		
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.004	0.007	0.011	0.013	0.015	0.017	0.017	0.017	0.017	0.016	0.014	0.012	0.009	0.004	0.002	0.001	0.000	0.000	0.001	0.000		
REQUIRED CAMBER	0	7/8"	1 5/8"	2 5/16"	2 7/8"	3 3/8"	3 3/4"	4"	4 3/16"	4 1/4"	4 1/4"	4 1/8"	3 5/16"	3 5/8"	3 3/16"	2 13/16"	2 5/16"	1 13/16"	1 1/4"	5/8"	0		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																							
TWENTIETH POINTS	SPAN A - GIRDER #3																						
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0		
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000		
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.015	0.021	0.027	0.031	0.034	0.035	0.035	0.034	0.032	0.028	0.024	0.019	0.013	0.008	0.004	0.001	-0.002	-0.002	0.000		
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	0.000		
TOTAL DEAD LOAD DEFLECTION	0.000	0.012	0.021	0.029	0.037	0.043	0.046	0.049	0.049	0.047	0.044	0.038	0.033	0.026	0.018	0.011	0.005	0.000	-0.004	-0.004	0.000		
VERTICAL CURVE ORDINATE	0.000	0.057	0.107	0.152	0.190	0.223	0.250	0.270	0.285	0.294	0.297	0.294	0.285	0.270	0.250	0.223	0.190	0.152	0.107	0.057	0.000		
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.004	0.008	0.011	0.014	0.016	0.017	0.018	0.018	0.017	0.016	0.014	0.012	0.009	0.004	0.002	0.001	0.000	0.000	0.000	0.000		
REQUIRED CAMBER	0	7/8"	1 13/16"	2 5/16"	2 7/8"	3 3/8"	3 3/4"	4 1/16"	4 1/4"	4 5/16"	4 5/16"	4 1/8"	3 15/16"	3 11/16"	3 1/4"	2 13/16"	2 3/8"	1 13/16"	1 1/4"	5/8"	0		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																							
TWENTIETH POINTS	SPAN A - GIRDER #4																						
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0		
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000		
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.015	0.021	0.026	0.031	0.033	0.035	0.035	0.034	0.032	0.028	0.024	0.019	0.013	0.008	0.004	0.001	-0.002	-0.002	0.000		
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	0.000		
TOTAL DEAD LOAD DEFLECTION	0.000	0.011	0.019	0.027	0.033	0.039	0.042	0.045	0.045	0.042	0.040	0.035	0.029	0.023	0.016	0.009	0.004	-0.001	-0.004	-0.004	0.000		
VERTICAL CURVE ORDINATE	0.000	0.058	0.110	0.156	0.196	0.229	0.257	0.278	0.293	0.302	0.305	0.302	0.293	0.278	0.257	0.229	0.196	0.156	0.110	0.058	0.000		
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.004	0.008	0.011	0.014	0.016	0.018	0.019	0.019	0.018	0.017	0.015	0.012	0.009	0.004	0.002	0.001	0.000	0.000	0.000	0.000		
REQUIRED CAMBER	0	7/8"	1 5/8"	2 5/16"	2 15/16"	3 1/16"	3 13/16"	4 1/8"	4 5/16"	4 3/8"	4 3/8"	4 1/4"	4"	3 3/4"	3 5/16"	2 7/8"	2 7/16"	1 7/8"	1 1/4"	5/8"	0		

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 1 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS

DEAD LOAD DEFLECTION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-21
1			3			TOTAL SHEETS
2			4			60

DRAWN BY: VXN/LLM/ALF DATE: 08/06
CHECKED BY: M.G. CHEEK DATE: 12/06

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																						
TWENTIETH POINTS	SPAN A - GIRDER #5																					
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0	
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000	
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.015	0.020	0.025	0.029	0.032	0.033	0.033	0.032	0.030	0.027	0.023	0.018	0.013	0.008	0.004	0.000	-0.002	-0.002	0.000	
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
TOTAL DEAD LOAD DEFLECTION	0.000	0.0010	0.018	0.025	0.031	0.036	0.040	0.041	0.041	0.039	0.037	0.033	0.028	0.021	0.015	0.009	0.004	-0.001	-0.003	-0.003	0.000	
VERTICAL CURVE ORDINATE	0.000	0.060	0.113	0.160	0.201	0.236	0.264	0.286	0.302	0.311	0.314	0.311	0.302	0.286	0.264	0.236	0.201	0.160	0.113	0.060	0.000	
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.008	0.012	0.015	0.017	0.019	0.019	0.019	0.018	0.017	0.015	0.013	0.010	0.004	0.002	0.001	0.000	0.000	0.000	0.000	
REQUIRED CAMBER	0	7/8"	1 1/16"	2 3/8"	2 5/8"	3 1/16"	3 3/8"	3 7/8"	4 1/8"	4 3/8"	4 7/16"	4 7/16"	4 5/8"	4 1/8"	3 3/16"	3 3/8"	2 5/16"	2 1/2"	1 5/16"	1 5/16"	1 1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.013	0.018	0.023	0.027	0.029	0.030	0.030	0.029	0.027	0.024	0.020	0.015	0.011	0.007	0.003	0.000	-0.002	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000	-0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.016	0.023	0.029	0.034	0.036	0.038	0.038	0.036	0.034	0.030	0.025	0.019	0.014	0.008	0.003	-0.001	-0.003	-0.003	0.000
VERTICAL CURVE ORDINATE	0.000	0.061	0.116	0.164	0.207	0.242	0.271	0.294	0.310	0.320	0.323	0.320	0.310	0.294	0.271	0.242	0.207	0.165	0.116	0.061	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.012	0.015	0.018	0.019	0.020	0.020	0.019	0.018	0.016	0.013	0.010	0.004	0.002	0.001	0.000	0.001	0.001	0.000
REQUIRED CAMBER	0	7/8"	1 1/16"	2 3/8"	3"	3 1/2"	3 5/16"	4 1/4"	4 7/16"	4 1/2"	4 1/2"	4 3/8"	4 3/16"	3 7/8"	3 7/16"	3"	2 9/16"	1 5/16"	1 3/8"	1 1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.006	0.011	0.015	0.019	0.022	0.024	0.025	0.025	0.024	0.022	0.019	0.016	0.012	0.008	0.004	0.001	-0.001	-0.002	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.000	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.008	0.015	0.020	0.025	0.029	0.031	0.034	0.034	0.032	0.030	0.026	0.021	0.016	0.011	0.006	0.002	-0.001	-0.003	-0.003	0.000
VERTICAL CURVE ORDINATE	0.000	0.063	0.120	0.170	0.213	0.249	0.279	0.303	0.319	0.329	0.333	0.329	0.319	0.303	0.279	0.249	0.213	0.170	0.120	0.063	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.013	0.016	0.018	0.020	0.020	0.020	0.020	0.018	0.016	0.013	0.010	0.003	0.002	0.001	0.001	0.001	0.001	0.000
REQUIRED CAMBER	0	15/16"	1 3/4"	2 7/16"	3 1/16"	3 5/16"	3 5/16"	4 5/16"	4 1/2"	4 9/16"	4 9/16"	4 7/16"	4 1/4"	3 5/16"	3 1/2"	3 1/16"	2 9/16"	2 1/16"	1 7/16"	3/4"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #8																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.002	-0.002	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.006	0.012	0.017	0.021	0.024	0.026	0.027	0.027	0.026	0.023	0.020	0.016	0.012	0.007	0.003	0.000	-0.002	-0.004	-0.003	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.001	0.002	0.002	0.003	0.003	0.003	0.004	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.017	0.023	0.029	0.033	0.035	0.038	0.036	0.035	0.031	0.026	0.021	0.015	0.009	0.003	-0.001	-0.005	-0.007	-0.005	0.000
VERTICAL CURVE ORDINATE	0.000	0.064	0.121	0.172	0.216	0.253	0.283	0.307	0.324	0.334	0.337	0.334	0.324	0.307	0.283	0.253	0.216	0.172	0.121	0.064	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.013	0.016	0.018	0.020	0.020	0.020	0.019	0.017	0.015	0.012	0.008	0.002	0.001	0.000	0.000	0.000	0.000	0.000
REQUIRED CAMBER	0	15/16"	1 3/4"	2 1/2"	3 1/8"	3 5/8"	4 1/16"	4 3/8"	4 9/16"	4 5/8"	4 5/8"	4 1/2"	4 5/16"	3 5/16"	3 1/2"	3 1/16"	2 9/16"	2"	1 3/8"	1 1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 2 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS
DEAD LOAD DEFLECTION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-22
1			3			TOTAL SHEETS
2			4			60

DRAWN BY: V.X. NGUYEN/LLM DATE: 08/06
CHECKED BY: M.G. CHEEK DATE: 12/06

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #9																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.014	0.019	0.024	0.028	0.030	0.032	0.032	0.031	0.028	0.025	0.021	0.016	0.011	0.007	0.003	-0.001	-0.002	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.002	0.004	0.005	0.007	0.008	0.009	0.009	0.010	0.010	0.009	0.008	0.008	0.006	0.005	0.004	0.002	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.011	0.021	0.028	0.036	0.042	0.045	0.047	0.048	0.047	0.042	0.037	0.032	0.024	0.017	0.011	0.004	-0.001	-0.003	-0.003	0.000
VERTICAL CURVE ORDINATE	0.000	0.066	0.125	0.177	0.223	0.261	0.292	0.317	0.334	0.344	0.348	0.344	0.334	0.317	0.292	0.261	0.223	0.177	0.125	0.066	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.013	0.016	0.018	0.020	0.021	0.021	0.020	0.019	0.017	0.014	0.011	0.004	0.002	0.001	0.000	0.000	0.000	0.000
REQUIRED CAMBER	0	1"	1 7/8"	2 5/8"	3 5/16"	3 7/8"	4 5/16"	4 5/8"	4 3/16"	4 5/16"	4 5/16"	4 3/4"	4 9/16"	4 1/4"	3 3/4"	3 5/16"	2 3/4"	2 1/8"	1 7/16"	3/4"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #10																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.006	0.007	0.006	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.015	0.021	0.026	0.031	0.034	0.035	0.035	0.034	0.031	0.028	0.024	0.018	0.013	0.008	0.003	0.000	-0.002	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.003	0.006	0.009	0.011	0.013	0.014	0.015	0.016	0.016	0.015	0.014	0.012	0.010	0.008	0.006	0.004	0.002	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.013	0.024	0.034	0.042	0.050	0.054	0.057	0.057	0.056	0.052	0.047	0.040	0.031	0.023	0.015	0.007	0.001	-0.003	-0.003	0.000
VERTICAL CURVE ORDINATE	0.000	0.068	0.129	0.183	0.230	0.269	0.302	0.327	0.345	0.355	0.359	0.355	0.345	0.327	0.302	0.269	0.230	0.183	0.129	0.068	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.013	0.016	0.019	0.021	0.022	0.022	0.021	0.020	0.018	0.015	0.012	0.005	0.003	0.001	0.000	0.000	0.000	0.000
REQUIRED CAMBER	0	1 1/16"	1 5/16"	2 3/4"	3 7/16"	4 1/16"	4 1/2"	4 7/8"	5 1/16"	5 3/16"	5 3/16"	5 1/16"	4 3/16"	4 7/16"	3 5/16"	3 7/16"	2 7/8"	2 3/16"	1 1/2"	3/4"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN A - GIRDER #11																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.003	0.004	0.005	0.006	0.007	0.007	0.007	0.006	0.006	0.005	0.004	0.003	0.002	0.001	0.000	-0.001	-0.001	-0.001	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.008	0.016	0.022	0.028	0.033	0.035	0.037	0.037	0.036	0.033	0.030	0.024	0.019	0.014	0.008	0.004	0.000	-0.002	-0.002	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.005	0.009	0.012	0.016	0.018	0.020	0.021	0.022	0.021	0.020	0.019	0.016	0.014	0.011	0.008	0.005	0.002	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.015	0.028	0.038	0.049	0.057	0.062	0.065	0.066	0.063	0.059	0.054	0.044	0.036	0.027	0.017	0.009	0.001	-0.003	-0.003	0.000
VERTICAL CURVE ORDINATE	0.000	0.070	0.133	0.189	0.237	0.278	0.311	0.337	0.356	0.367	0.371	0.367	0.356	0.337	0.311	0.278	0.237	0.189	0.133	0.070	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.005	0.009	0.013	0.017	0.019	0.021	0.022	0.022	0.022	0.020	0.018	0.015	0.012	0.005	0.003	0.002	0.000	0.000	0.000	0.000
REQUIRED CAMBER	0	1 1/16"	2 1/16"	2 7/8"	3 5/8"	4 1/4"	4 3/4"	5 1/16"	5 5/16"	5 7/16"	5 3/8"	5 1/4"	5"	4 5/8"	4 1/8"	3 9/16"	3"	2 1/4"	1 9/16"	1 3/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 3 OF 6



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

SUPERSTRUCTURE
STRUCTURAL STEEL
DETAILS
DEAD LOAD DEFLECTION TABLES

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-23
1			3			TOTAL SHEETS
2			4			60

DRAWN BY : V.X. NGUYEN/LLM DATE : 08/06
CHECKED BY : M.G. CHEEK DATE : 12/06

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #1																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.009	0.013	0.017	0.021	0.024	0.027	0.029	0.031	0.032	0.031	0.030	0.028	0.025	0.021	0.017	0.011	0.006	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.018	0.031	0.045	0.061	0.077	0.090	0.101	0.109	0.116	0.119	0.119	0.115	0.107	0.096	0.081	0.064	0.044	0.023	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.003	0.007	0.013	0.019	0.025	0.031	0.036	0.040	0.043	0.045	0.046	0.046	0.044	0.041	0.037	0.031	0.024	0.017	0.009	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.012	0.030	0.053	0.077	0.103	0.129	0.150	0.168	0.181	0.192	0.197	0.196	0.189	0.176	0.158	0.133	0.105	0.072	0.038	0.000
VERTICAL CURVE ORDINATE	0.000	0.078	0.147	0.208	0.260	0.305	0.341	0.368	0.388	0.399	0.402	0.397	0.383	0.361	0.331	0.292	0.245	0.190	0.128	0.064	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.004	0.007	0.010	0.013	0.018	0.021	0.024	0.026	0.027	0.028	0.028	0.027	0.025	0.022	0.019	0.015	0.010	0.005	0.000
REQUIRED CAMBER	0	1/8"	2 3/16"	3 3/16"	4 3/16"	5 1/16"	5 7/8"	6 7/16"	6 5/16"	7 1/4"	7 7/16"	7 7/16"	7 5/16"	6 5/16"	6 3/8"	5 11/16"	4 3/4"	3 3/4"	2 1/2"	1 5/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #2																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.009	0.012	0.016	0.020	0.023	0.026	0.028	0.029	0.030	0.030	0.028	0.026	0.024	0.020	0.016	0.011	0.005	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.018	0.030	0.044	0.059	0.073	0.086	0.096	0.104	0.110	0.113	0.112	0.108	0.100	0.089	0.075	0.059	0.041	0.021	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.002	0.006	0.010	0.015	0.019	0.023	0.026	0.029	0.031	0.032	0.032	0.032	0.030	0.028	0.025	0.021	0.016	0.011	0.006	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.011	0.029	0.049	0.071	0.094	0.116	0.135	0.151	0.163	0.171	0.175	0.174	0.166	0.154	0.138	0.116	0.091	0.063	0.032	0.000
VERTICAL CURVE ORDINATE	0.000	0.079	0.149	0.210	0.264	0.308	0.344	0.371	0.390	0.401	0.402	0.396	0.380	0.357	0.324	0.283	0.234	0.177	0.118	0.059	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.005	0.009	0.013	0.016	0.020	0.023	0.026	0.028	0.030	0.030	0.030	0.029	0.027	0.024	0.020	0.016	0.011	0.005	0.000
REQUIRED CAMBER	0	1/8"	2 3/16"	3 3/16"	4 3/16"	5"	5 3/4"	6 3/8"	6 3/16"	7 1/8"	7 1/4"	7 3/16"	7"	6 5/8"	6 1/16"	5 5/16"	4 7/16"	3 7/16"	2 9/16"	1 1/8"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #3																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.016	0.019	0.022	0.025	0.027	0.028	0.029	0.029	0.028	0.026	0.023	0.019	0.015	0.010	0.005	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.017	0.029	0.043	0.057	0.070	0.083	0.094	0.101	0.106	0.109	0.108	0.104	0.097	0.086	0.073	0.057	0.039	0.020	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.002	0.004	0.007	0.010	0.012	0.015	0.017	0.019	0.020	0.021	0.021	0.020	0.019	0.018	0.016	0.013	0.010	0.007	0.004	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.011	0.026	0.044	0.065	0.085	0.104	0.122	0.138	0.148	0.155	0.159	0.157	0.151	0.141	0.125	0.105	0.082	0.056	0.029	0.000
VERTICAL CURVE ORDINATE	0.000	0.080	0.150	0.212	0.265	0.310	0.345	0.372	0.390	0.399	0.399	0.390	0.373	0.347	0.312	0.268	0.216	0.162	0.108	0.054	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.005	0.009	0.013	0.017	0.021	0.024	0.027	0.029	0.031	0.031	0.031	0.030	0.028	0.025	0.021	0.016	0.011	0.006	0.000
REQUIRED CAMBER	0	1/8"	2 3/16"	3 3/16"	4 1/8"	4 5/16"	5 5/8"	6 3/16"	6 1/16"	6 5/16"	7"	6 5/16"	6 3/4"	6 5/8"	5 3/4"	5"	4 1/8"	3 7/8"	2 7/8"	1 1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #4																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.015	0.019	0.022	0.025	0.027	0.028	0.029	0.029	0.027	0.025	0.023	0.019	0.015	0.010	0.005	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.016	0.029	0.042	0.055	0.069	0.081	0.091	0.098	0.103	0.106	0.105	0.101	0.094	0.084	0.071	0.056	0.039	0.020	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.001	0.002	0.004	0.005	0.007	0.008	0.009	0.010	0.011	0.011	0.012	0.011	0.011	0.010	0.009	0.007	0.006	0.004	0.002	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.010	0.023	0.041	0.059	0.077	0.096	0.112	0.126	0.136	0.142	0.147	0.145	0.139	0.129	0.116	0.097	0.077	0.053	0.027	0.000
VERTICAL CURVE ORDINATE	0.000	0.080	0.151	0.212	0.265	0.308	0.343	0.368	0.384	0.391	0.389	0.378	0.358	0.329	0.290	0.243	0.194	0.144	0.095	0.046	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.005	0.009	0.014	0.017	0.021	0.025	0.028	0.030	0.032	0.032	0.032	0.031	0.029	0.026	0.022	0.017	0.012	0.006	0.000
REQUIRED CAMBER	0	1/8"	2 1/8"	3 1/8"	4 1/16"	4 13/16"	5 1/2"	6 1/16"	6 7/16"	6 11/16"	6 3/4"	6 11/16"	6 7/16"	6"	5 3/8"	4 5/8"	3 3/4"	2 7/8"	1 5/16"	1 5/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 4 OF 6



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS DEAD LOAD DEFLECTION TABLES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 60

DRAWN BY: V.X. NGUYEN/LLM DATE: 08/06
CHECKED BY: M.G. CHEEK DATE: 12/06

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #5																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.015	0.019	0.022	0.025	0.027	0.028	0.029	0.029	0.027	0.025	0.023	0.019	0.015	0.010	0.005	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.016	0.028	0.041	0.054	0.067	0.079	0.088	0.095	0.100	0.103	0.102	0.098	0.091	0.081	0.068	0.054	0.037	0.019	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.001	0.001	0.002	0.003	0.004	0.004	0.005	0.006	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.004	0.003	0.002	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.010	0.022	0.038	0.056	0.073	0.090	0.106	0.119	0.128	0.134	0.138	0.137	0.131	0.121	0.109	0.091	0.072	0.049	0.025	0.000
VERTICAL CURVE ORDINATE	0.000	0.079	0.150	0.210	0.261	0.303	0.336	0.359	0.373	0.377	0.372	0.357	0.334	0.300	0.258	0.213	0.168	0.123	0.078	0.036	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.006	0.010	0.014	0.018	0.022	0.026	0.029	0.031	0.033	0.034	0.033	0.032	0.030	0.027	0.022	0.018	0.012	0.006	0.000
REQUIRED CAMBER	0	1/16"	2/8"	3/8"	4"	4 3/4"	5 3/8"	5 7/8"	6 1/4"	6 7/16"	6 7/16"	6 3/8"	6 1/16"	5 9/16"	4 5/16"	4 3/16"	3 3/8"	2 9/16"	1 11/16"	1 3/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #6																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.016	0.019	0.022	0.025	0.027	0.029	0.029	0.029	0.028	0.026	0.023	0.019	0.015	0.010	0.005	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.016	0.027	0.039	0.052	0.064	0.075	0.084	0.091	0.095	0.097	0.096	0.092	0.086	0.076	0.064	0.050	0.034	0.018	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.003	0.004	0.003	0.003	0.003	0.003	0.002	0.002	0.001	0.001	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.022	0.036	0.052	0.070	0.085	0.100	0.112	0.121	0.127	0.130	0.128	0.123	0.115	0.102	0.085	0.067	0.045	0.024	0.000
VERTICAL CURVE ORDINATE	0.000	0.078	0.147	0.206	0.255	0.295	0.324	0.344	0.355	0.355	0.346	0.328	0.299	0.261	0.220	0.179	0.137	0.096	0.059	0.027	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.002	0.006	0.010	0.014	0.019	0.023	0.027	0.030	0.033	0.034	0.035	0.035	0.033	0.031	0.027	0.023	0.018	0.012	0.006	0.000
REQUIRED CAMBER	0	1/16"	2/8"	3"	3 7/8"	4 5/8"	5 3/16"	5 5/8"	5 5/16"	6 1/8"	6 1/16"	5 5/16"	5 9/16"	5"	4 3/8"	3 11/16"	2 5/16"	2 3/16"	1 3/8"	1 1/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #7																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.016	0.020	0.023	0.026	0.028	0.029	0.029	0.029	0.028	0.026	0.023	0.019	0.015	0.011	0.006	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.015	0.025	0.036	0.048	0.059	0.069	0.078	0.084	0.088	0.090	0.089	0.086	0.080	0.071	0.060	0.047	0.033	0.017	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.001	0.000	0.000	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.009	0.020	0.033	0.048	0.065	0.080	0.093	0.105	0.114	0.119	0.121	0.120	0.116	0.108	0.096	0.080	0.063	0.045	0.023	0.000
VERTICAL CURVE ORDINATE	0.000	0.076	0.143	0.199	0.245	0.281	0.308	0.324	0.330	0.326	0.312	0.288	0.254	0.216	0.178	0.140	0.102	0.068	0.040	0.017	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.003	0.006	0.010	0.015	0.019	0.024	0.028	0.031	0.034	0.035	0.036	0.036	0.035	0.032	0.029	0.024	0.019	0.013	0.007	0.000
REQUIRED CAMBER	0	1/16"	2"	2 7/8"	3 11/16"	4 3/8"	4 5/16"	5 9/16"	5 9/16"	5 11/16"	5 9/16"	5 5/16"	4 5/16"	4 3/8"	3 3/16"	3 3/16"	2 1/2"	1 13/16"	1 3/16"	9/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #8																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.003	0.006	0.010	0.015	0.019	0.024	0.028	0.031	0.034	0.036	0.037	0.036	0.035	0.033	0.029	0.025	0.019	0.014	0.007	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.017	0.029	0.043	0.057	0.070	0.083	0.093	0.101	0.106	0.109	0.109	0.105	0.097	0.087	0.073	0.058	0.041	0.021	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.001	0.003	0.005	0.007	0.009	0.011	0.013	0.014	0.015	0.015	0.016	0.015	0.014	0.013	0.012	0.010	0.008	0.005	0.003	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.011	0.026	0.044	0.065	0.085	0.105	0.124	0.138	0.150	0.157	0.162	0.160	0.154	0.143	0.128	0.108	0.085	0.060	0.031	0.000
VERTICAL CURVE ORDINATE	0.000	0.075	0.140	0.195	0.239	0.273	0.297	0.311	0.315	0.308	0.292	0.265	0.229	0.193	0.156	0.120	0.084	0.055	0.031	0.012	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.003	0.006	0.011	0.015	0.019	0.024	0.028	0.032	0.034	0.036	0.037	0.037	0.035	0.033	0.029	0.025	0.019	0.014	0.007	0.000
REQUIRED CAMBER	0	1/16"	2/16"	3"	3 3/16"	4 1/2"	5 1/8"	5 9/16"	5 13/16"	5 7/8"	5 13/16"	5 9/16"	5 1/8"	4 9/16"	4"	3 5/16"	2 5/8"	1 5/16"	1 1/4"	5/8"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DRAWN BY: V.X. NGUYEN/LLM DATE: 08/06
CHECKED BY: M.G. CHEEK DATE: 12/06

24-JAN-2007 15:00
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PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 5 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS DEAD LOAD DEFLECTION TABLES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS 60



DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #9																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.003	0.006	0.010	0.014	0.018	0.022	0.026	0.029	0.031	0.033	0.033	0.033	0.032	0.029	0.026	0.022	0.017	0.012	0.006	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.018	0.031	0.044	0.058	0.073	0.085	0.095	0.103	0.109	0.111	0.110	0.106	0.099	0.088	0.075	0.059	0.041	0.020	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.002	0.005	0.008	0.011	0.015	0.019	0.022	0.024	0.026	0.027	0.028	0.028	0.027	0.025	0.022	0.019	0.015	0.010	0.005	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.012	0.029	0.049	0.069	0.091	0.114	0.133	0.148	0.160	0.169	0.172	0.171	0.165	0.153	0.136	0.116	0.091	0.063	0.031	0.000
VERTICAL CURVE ORDINATE	0.000	0.072	0.133	0.183	0.223	0.252	0.271	0.279	0.277	0.264	0.240	0.207	0.173	0.140	0.106	0.073	0.047	0.026	0.011	0.003	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.003	0.006	0.011	0.016	0.020	0.025	0.029	0.033	0.035	0.037	0.038	0.038	0.036	0.034	0.030	0.026	0.020	0.014	0.007	0.000
REQUIRED CAMBER	0	1/16"	2"	2 5/16"	3 1/16"	4 3/8"	4 5/16"	5 5/16"	5 1/2"	5 1/2"	5 3/8"	5"	4 9/16"	4 1/16"	3 1/2"	2 7/8"	2 1/4"	1 5/8"	1 1/16"	1/2"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #10																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.006	0.009	0.013	0.017	0.021	0.024	0.027	0.029	0.031	0.031	0.031	0.029	0.027	0.024	0.021	0.016	0.011	0.006	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.007	0.019	0.031	0.045	0.060	0.075	0.087	0.098	0.107	0.112	0.114	0.114	0.109	0.101	0.091	0.077	0.060	0.041	0.021	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.003	0.007	0.012	0.017	0.023	0.028	0.032	0.036	0.039	0.041	0.041	0.041	0.039	0.036	0.033	0.028	0.022	0.015	0.008	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.012	0.032	0.052	0.075	0.100	0.124	0.143	0.161	0.175	0.184	0.186	0.186	0.177	0.164	0.148	0.126	0.098	0.067	0.035	0.000
VERTICAL CURVE ORDINATE	0.000	0.067	0.123	0.168	0.202	0.225	0.237	0.239	0.229	0.208	0.178	0.146	0.114	0.082	0.052	0.027	0.010	0.002	0.008	0.007	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.003	0.007	0.011	0.016	0.021	0.026	0.031	0.034	0.037	0.039	0.040	0.039	0.038	0.035	0.031	0.027	0.021	0.014	0.007	0.000
REQUIRED CAMBER	0	1"	1 5/16"	2 3/4"	3 1/2"	4 1/8"	4 5/8"	4 5/16"	5 1/16"	5 1/16"	4 3/16"	4 1/16"	4 1/16"	3 9/16"	3"	2 1/2"	1 5/16"	1 7/16"	1 1/16"	9/16"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

DEAD LOAD DEFLECTION TABLE FOR GIRDERS																					
TWENTIETH POINTS	SPAN B - GIRDER #11																				
	0	.05	.10	.15	.20	.25	.30	.35	.40	.45	.50	.55	.60	.65	.70	.75	.80	.85	.90	.95	0
DEFLECTION DUE TO WEIGHT OF GIRDER	0.000	0.002	0.005	0.008	0.012	0.016	0.020	0.023	0.026	0.028	0.029	0.030	0.029	0.028	0.026	0.023	0.020	0.015	0.011	0.006	0.000
DEFLECTION DUE TO WEIGHT OF SLAB *	0.000	0.009	0.020	0.032	0.047	0.063	0.077	0.091	0.102	0.110	0.116	0.118	0.117	0.112	0.104	0.093	0.078	0.061	0.043	0.022	0.000
DEFLECTION DUE TO WEIGHT OF RAIL AND SIDEWALK	0.000	0.005	0.010	0.017	0.024	0.032	0.038	0.044	0.049	0.052	0.054	0.055	0.054	0.051	0.047	0.042	0.035	0.027	0.019	0.010	0.000
TOTAL DEAD LOAD DEFLECTION	0.000	0.016	0.035	0.057	0.083	0.111	0.135	0.158	0.177	0.190	0.199	0.203	0.200	0.191	0.177	0.158	0.133	0.103	0.073	0.038	0.000
VERTICAL CURVE ORDINATE	0.000	0.061	0.111	0.149	0.176	0.192	0.196	0.189	0.170	0.142	0.111	0.080	0.050	0.021	0.002	0.017	0.027	0.030	0.026	0.016	0.000
CAMBER DUE TO DISSIPATION RESULTING FROM HEAT CURVING	0.000	0.003	0.007	0.011	0.016	0.022	0.028	0.032	0.036	0.039	0.040	0.041	0.041	0.039	0.036	0.032	0.027	0.021	0.015	0.008	0.000
REQUIRED CAMBER	0	15/16"	1 13/16"	2 5/8"	3 5/16"	3 7/8"	4 5/16"	4 9/16"	4 5/16"	4 7/16"	4 3/16"	3 7/8"	3 1/2"	3"	2 9/16"	2 1/2"	2 1/4"	1 7/8"	1 3/8"	3/4"	0

* INCLUDES SLAB, BUILDUPS & STAY-IN-PLACE FORMS.
ALL VALUES ARE SHOWN IN FEET (DECIMAL FORM), EXCEPT "FINAL CAMBER", WHICH IS GIVEN IN INCHES (FRACTION FORM).

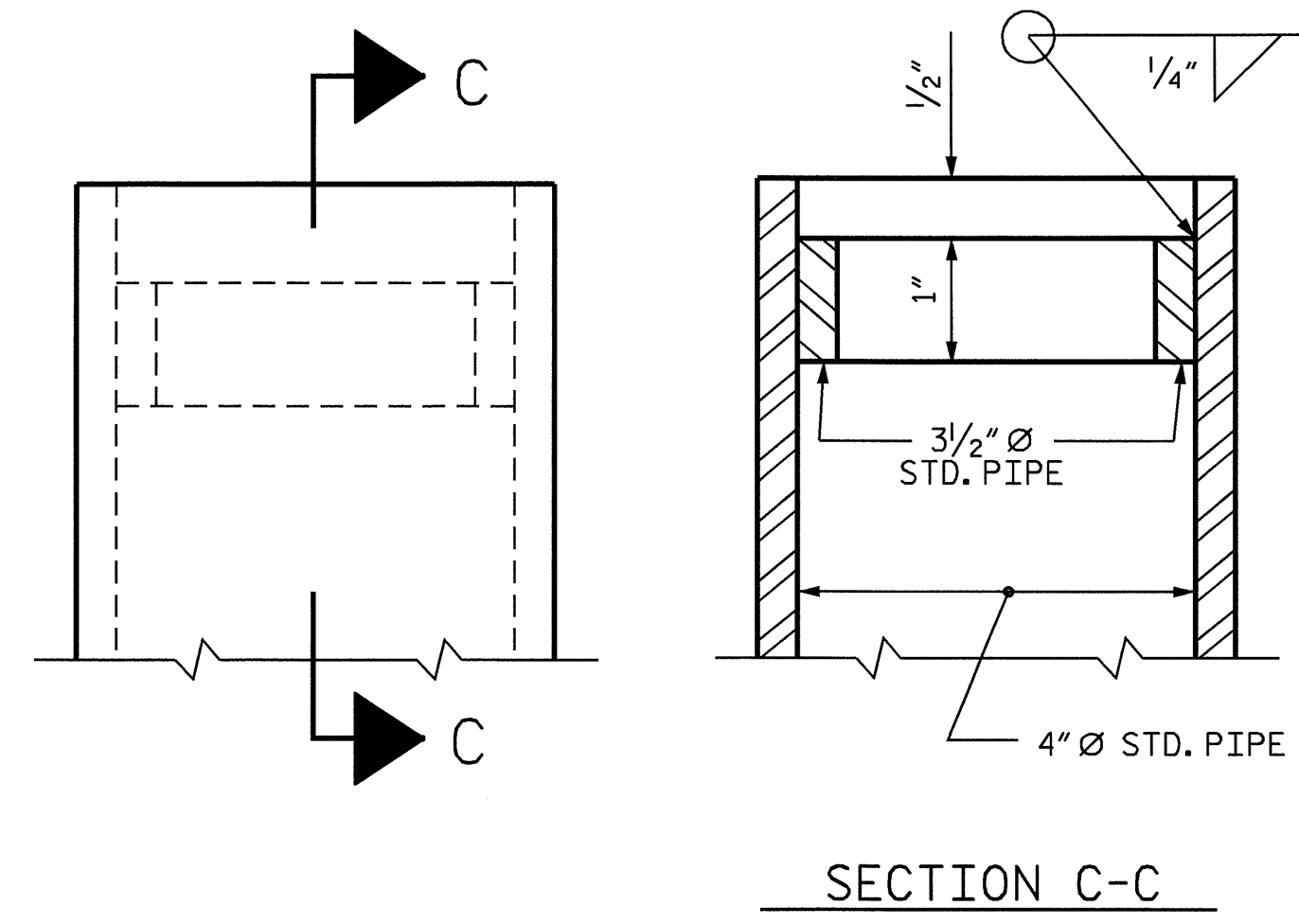
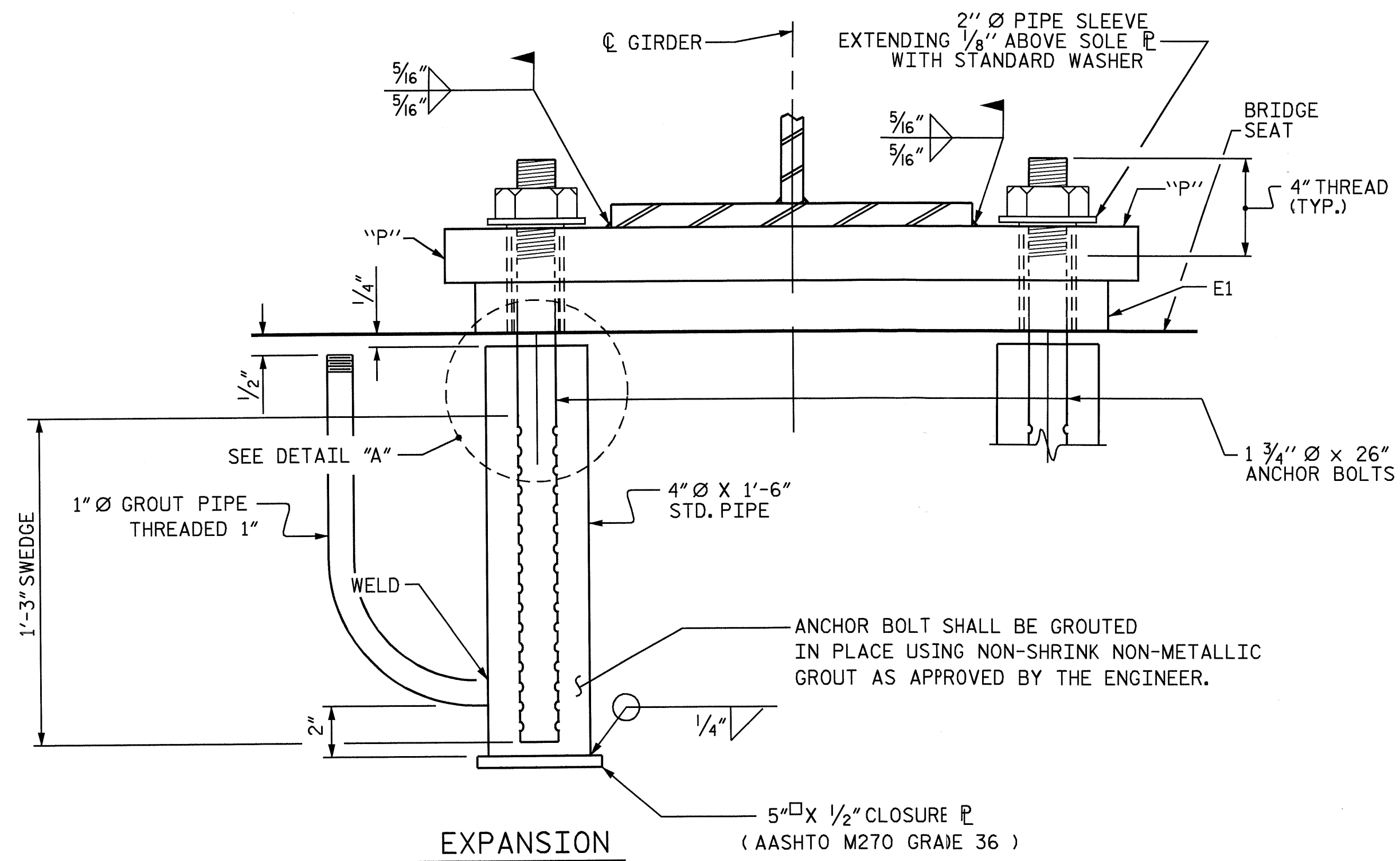
PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 6 OF 6



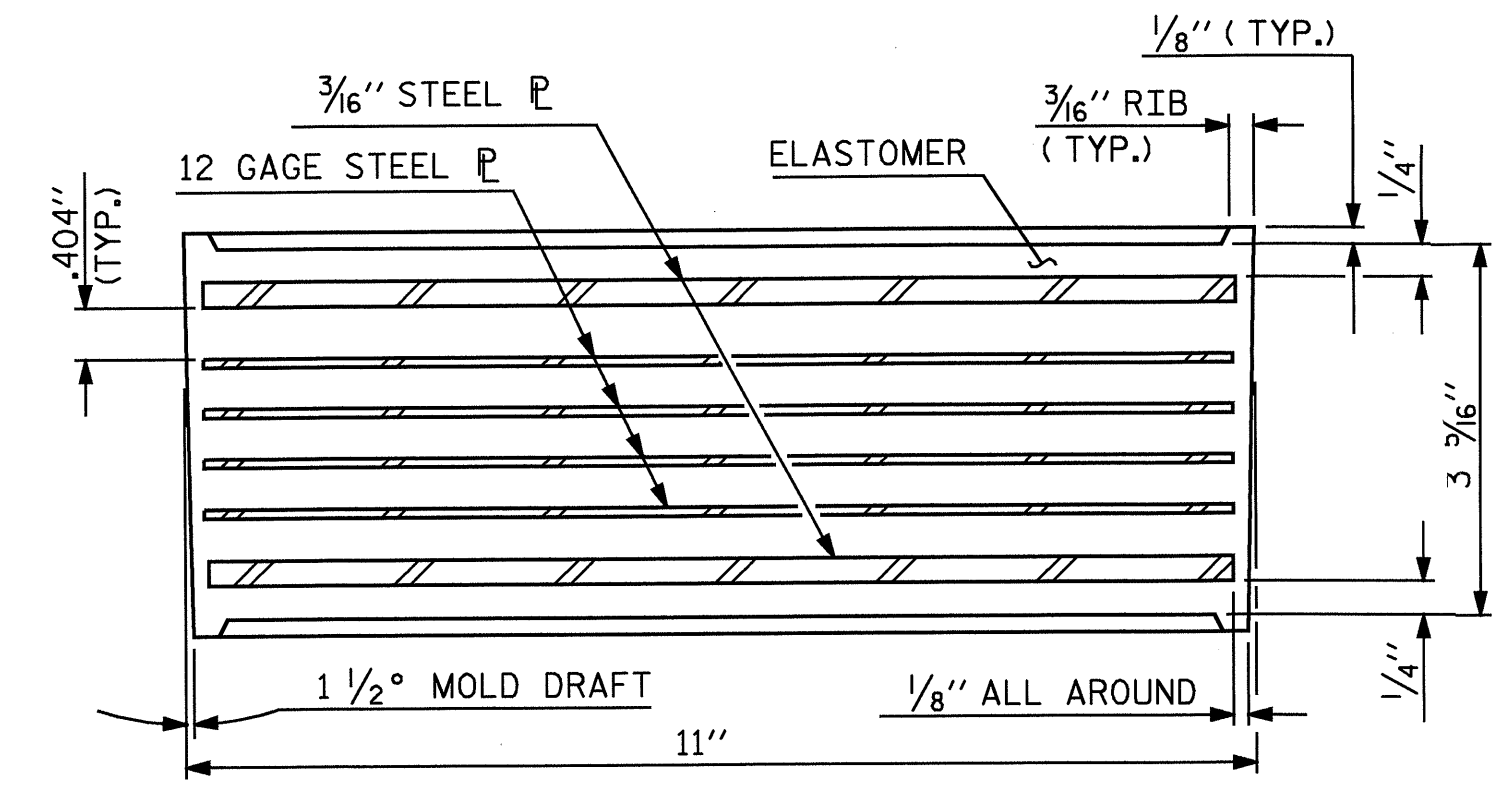
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE STRUCTURAL STEEL DETAILS					
DEAD LOAD DEFLECTION TABLES					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
TOTAL SHEETS					60

DRAWN BY: V.X. NGUYEN/LLM DATE: 08/06
CHECKED BY: M.G. CHEEK DATE: 12/06

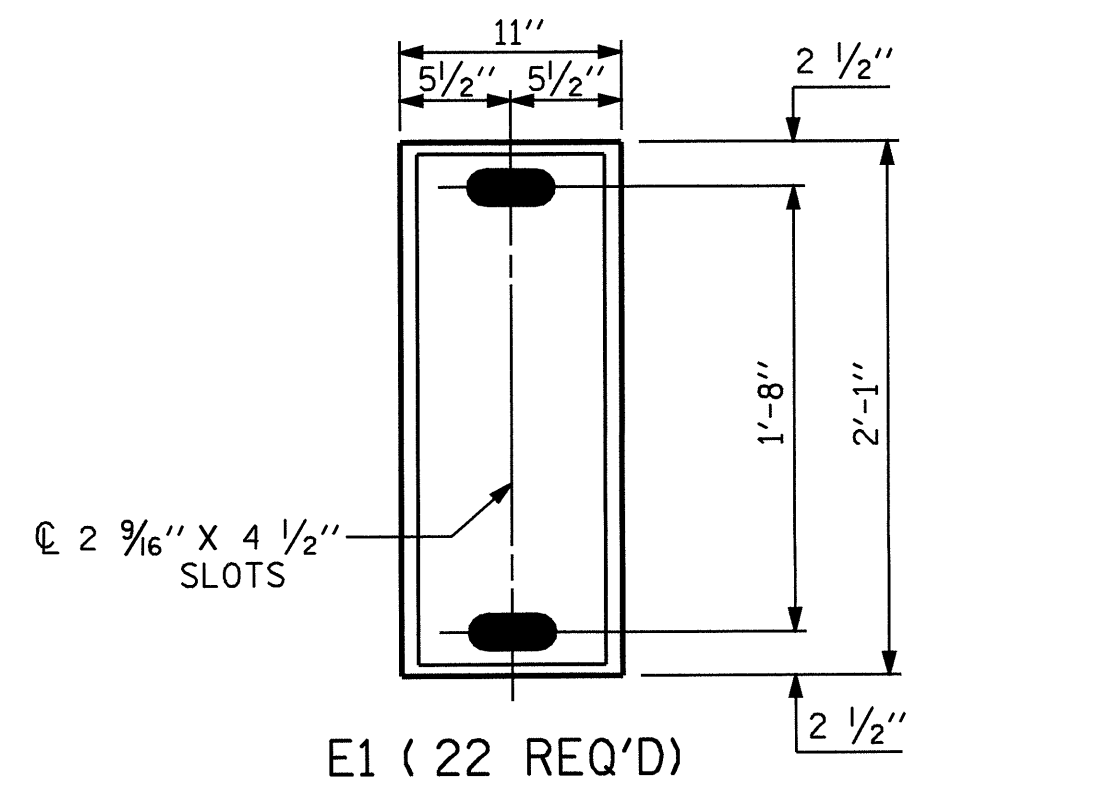


DETAIL "A"

END VIEW @ END BENT 1 & 2

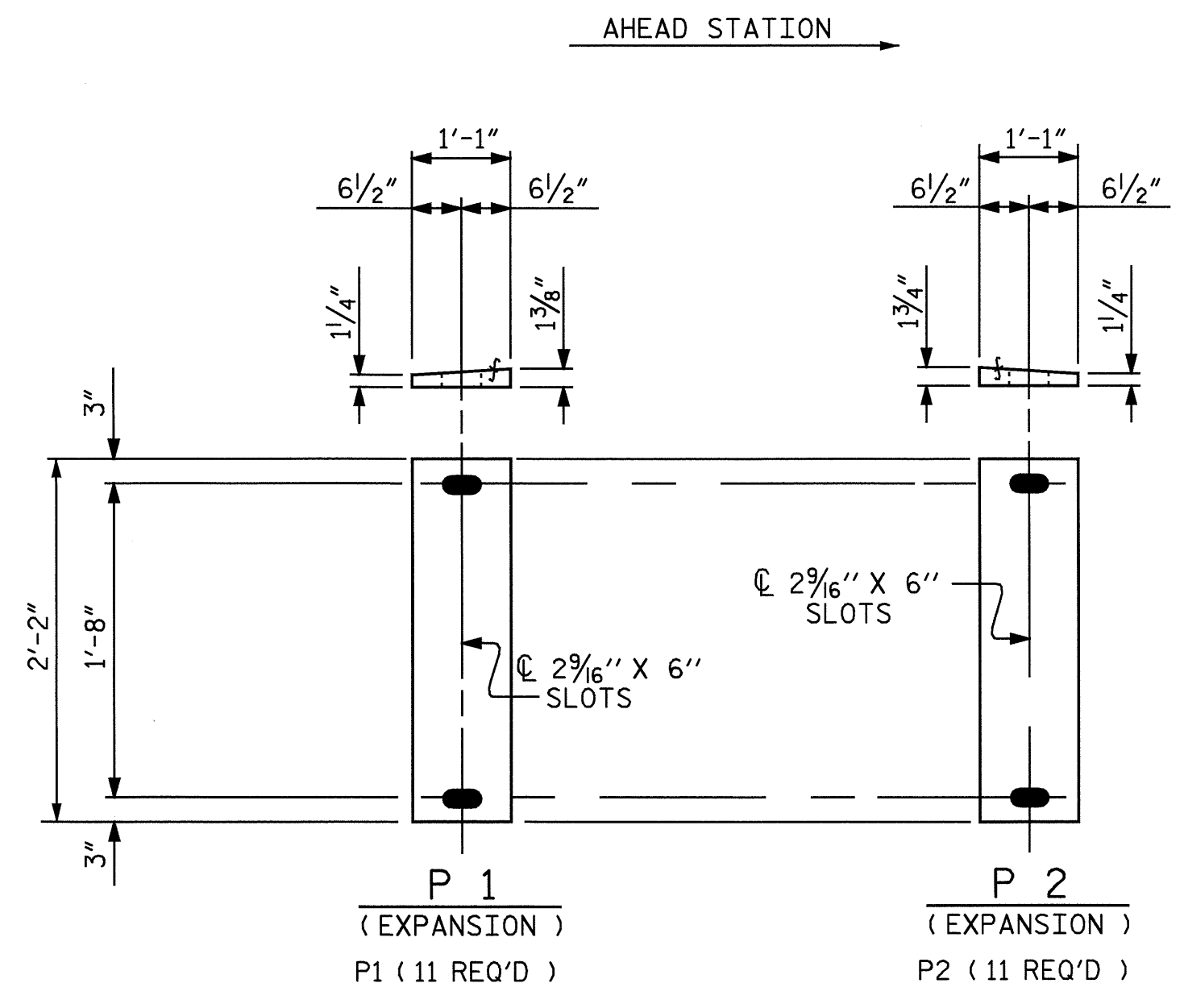


TYPICAL SECTION OF ELASTOMERIC BEARING



PLAN VIEW OF ELASTOMERIC BEARING TYPE IV

-LOAD RATINGS-	
	MAX.D.L.+ L.L.
TYPE IV	184 K



SOLE PLATE DETAILS ("P")

NOTES

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

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

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

FOR AASHTO M270 GRADE 50W STRUCTURAL STEEL, SOLE PLATE SHALL BE AASHTO M270 GRADE 50W AND SHALL NOT BE GALVANIZED. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

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

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

ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

THE CLOSURE PLATE GROUT PIPE AND STANDARD PIPE FOR THIS ASSEMBLY NEED NOT BE GALVANIZED.

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FOLLOWING PROCEDURES TO ACCOMMODATE GIRDER TRANSLATION AND END ROTATION:

1. ONCE THE DECK HAS CURED, THE GIRDERS SHALL BE JACKED AND THE ANCHOR BOLTS, SOLE PLATE, AND ELASTOMERIC BEARING SLOTS SHALL BE CENTERED AS NEARLY AS PRACTICAL ABOUT THE BEARING STIFFENER. THIS OPERATION SHALL BE PERFORMED AT APPROXIMATELY 60° F (16° C)
2. AFTER CENTERING THE SLOTS AND ANCHOR BOLTS, THE SOLE PLATES SHALL BE FIELD WELDED TO THE GIRDER FLANGES AND ANCHOR BOLTS GROUTED.

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

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00-L-

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 STANDARD
 ELASTOMERIC BEARING
 DETAILS



REVISIONS						SHEET NO. S-27
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

ASSEMBLED BY: V.X. NGUYEN	DATE: 10-30-06
CHECKED BY: D. HODGE	DATE: 10-06
DRAWN BY: EEM	10/95
CHECKED BY: PEK	10/95
REV. 10/17/00	RWN/LES
REV. 7/10/01	LES/RDR
REV. 5/1/06	TLA/GM

NOTES

FOR POT BEARINGS, SEE SPECIAL PROVISIONS.

AT ALL POINTS OF SUPPORT AT BENT No.1, NUTS FOR ANCHOR BOLTS SHALL BE TIGHTENED FINGER TIGHT AND GIVEN AN ADDITIONAL 1/4 TURN. THE THREAD OF THE NUT AND BOLT SHALL THEN BE BURRED WITH A SHARP POINTED TOOL.

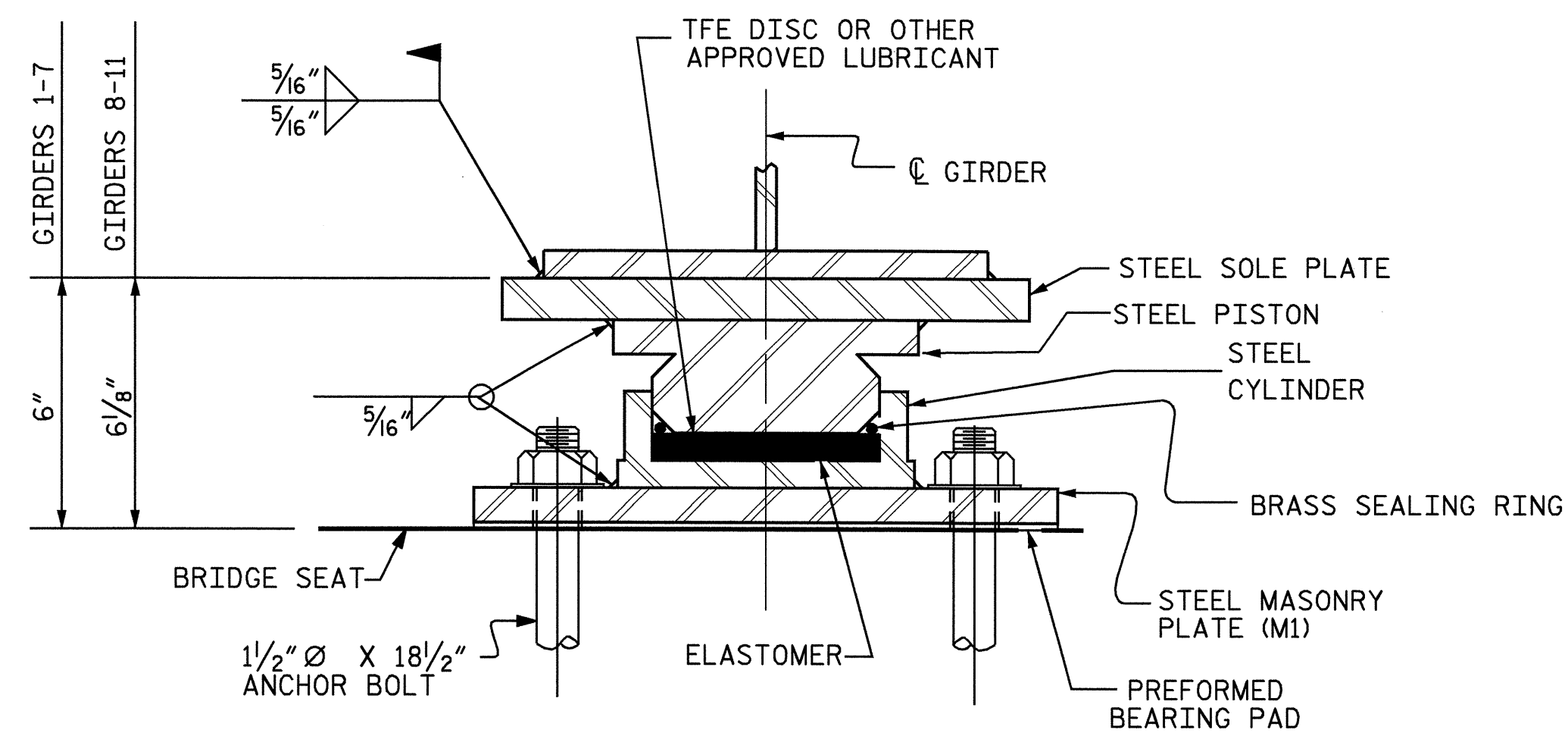
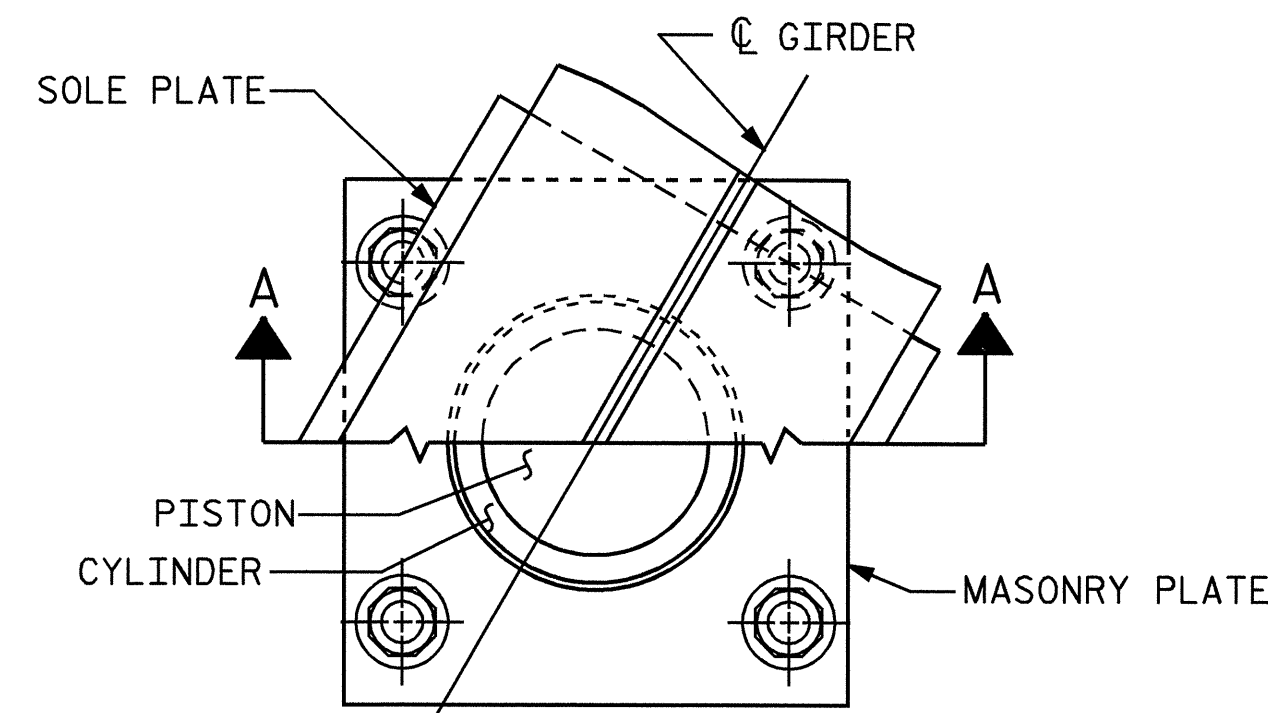
WHEN WELDING THE SOLE PLATE TO THE GIRDER, USE TEMPERATURE INDICATING WAX PENS, OR OTHER SUITABLE MEANS, TO ENSURE THAT THE TEMPERATURE OF THE BEARING DOES NOT EXCEED 250°F. TEMPERATURES ABOVE THIS MAY DAMAGE THE TFE OR ELASTOMER.

SOLE PLATES SHOULD BE WELDED TO GIRDER FLANGES BEFORE FALSEWORK IS PLACED.

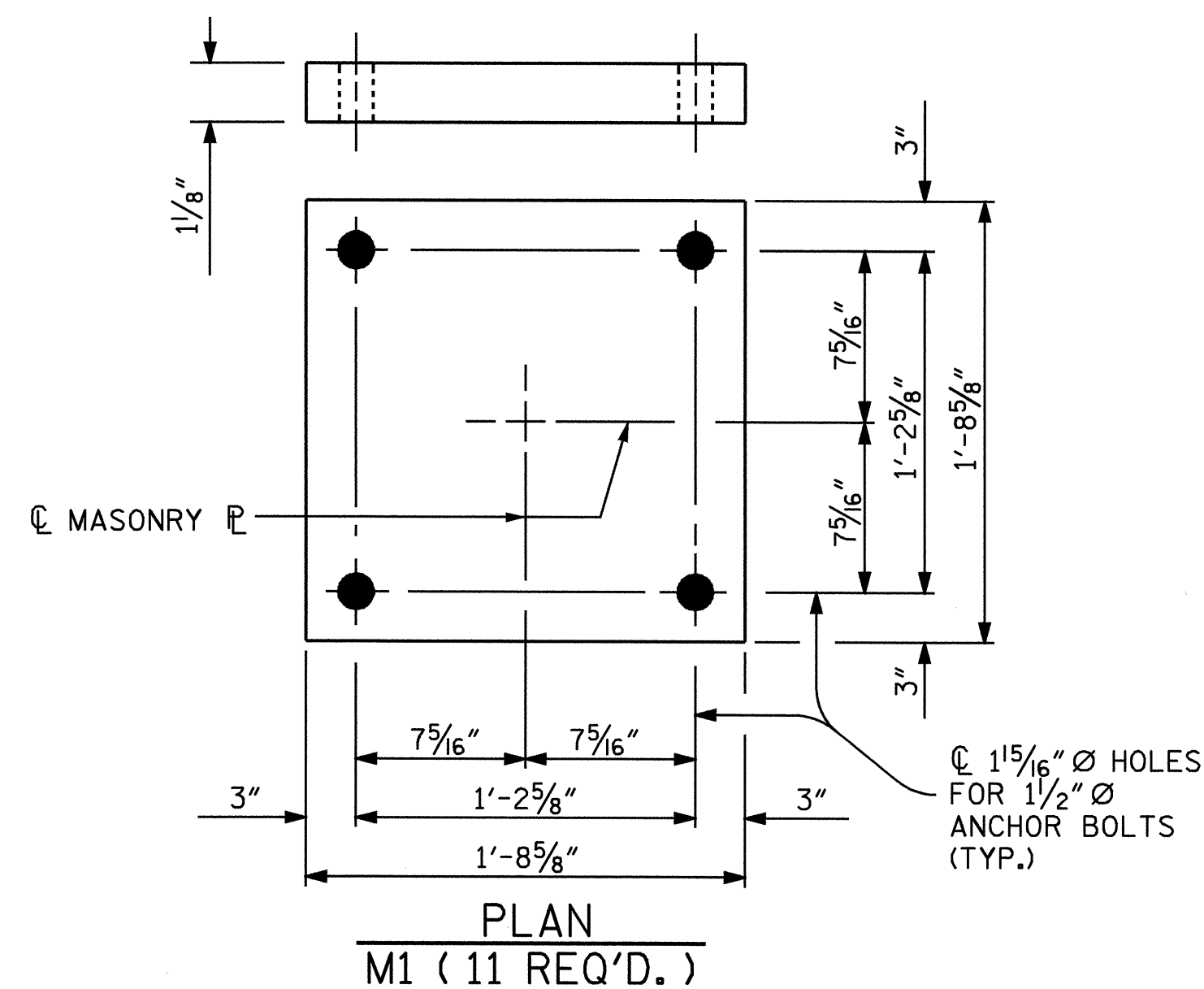
ALL SURFACES OF BEARING PLATES SHALL BE SMOOTH AND STRAIGHT.

FOR THERMAL SPRAYED COATINGS (METALLIZATION), SEE SPECIAL PROVISIONS.

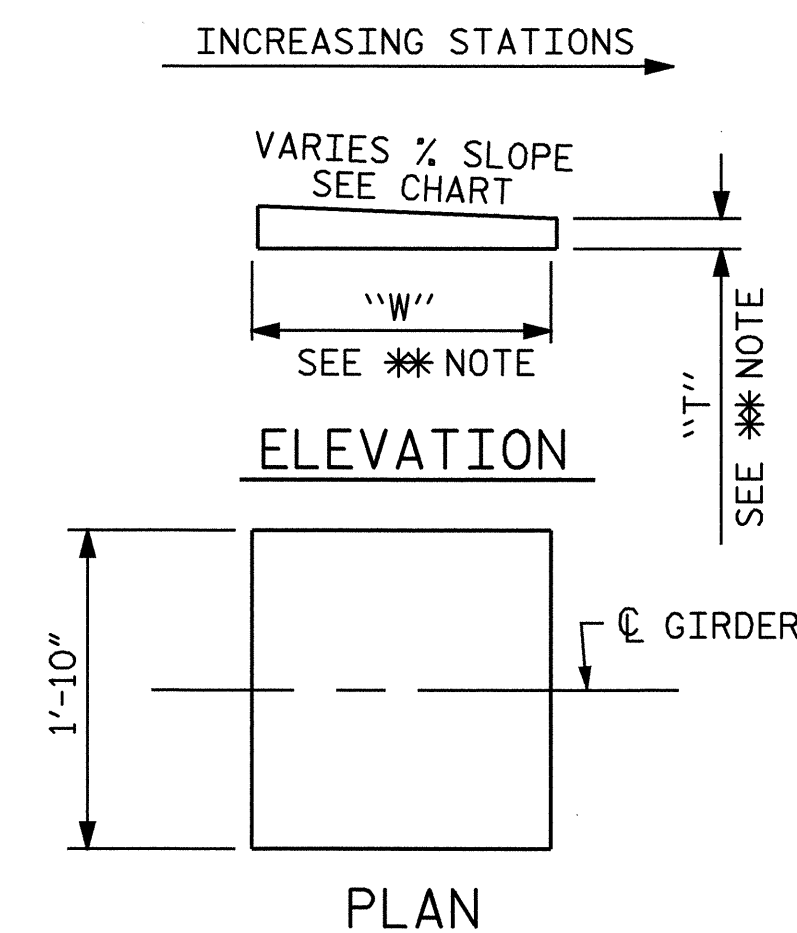
THE CONTRACTOR MAY SUBSTITUTE DISC BEARINGS FOR THE POT BEARINGS SHOWN. FOR OPTIONAL DISC BEARINGS, SEE SPECIAL PROVISIONS.



POT BEARING DETAILS



MASONRY PLATE DETAILS



** NOTE: DIMENSIONS "W" AND "T" ARE TO BE DETERMINED BY THE MANUFACTURER.

SOLE PLATE DETAILS

SLOPE CHART	
GIRDERS	% SLOPE
GIRDERS 1-7	1.0%
GIRDERS 8-11	2.0%

TABLE FOR LOADS AND MOVEMENTS						
BEARING	LOCATION	VERTICAL LOAD (KIPS)			LATERAL LOAD (KIPS)	TOTAL MOVEMENT (INCHES)
		DEAD	LIVE	TOTAL		
PB1 (FIXED)	BENT #1	276.7	59.1	335.8	55.3	0

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

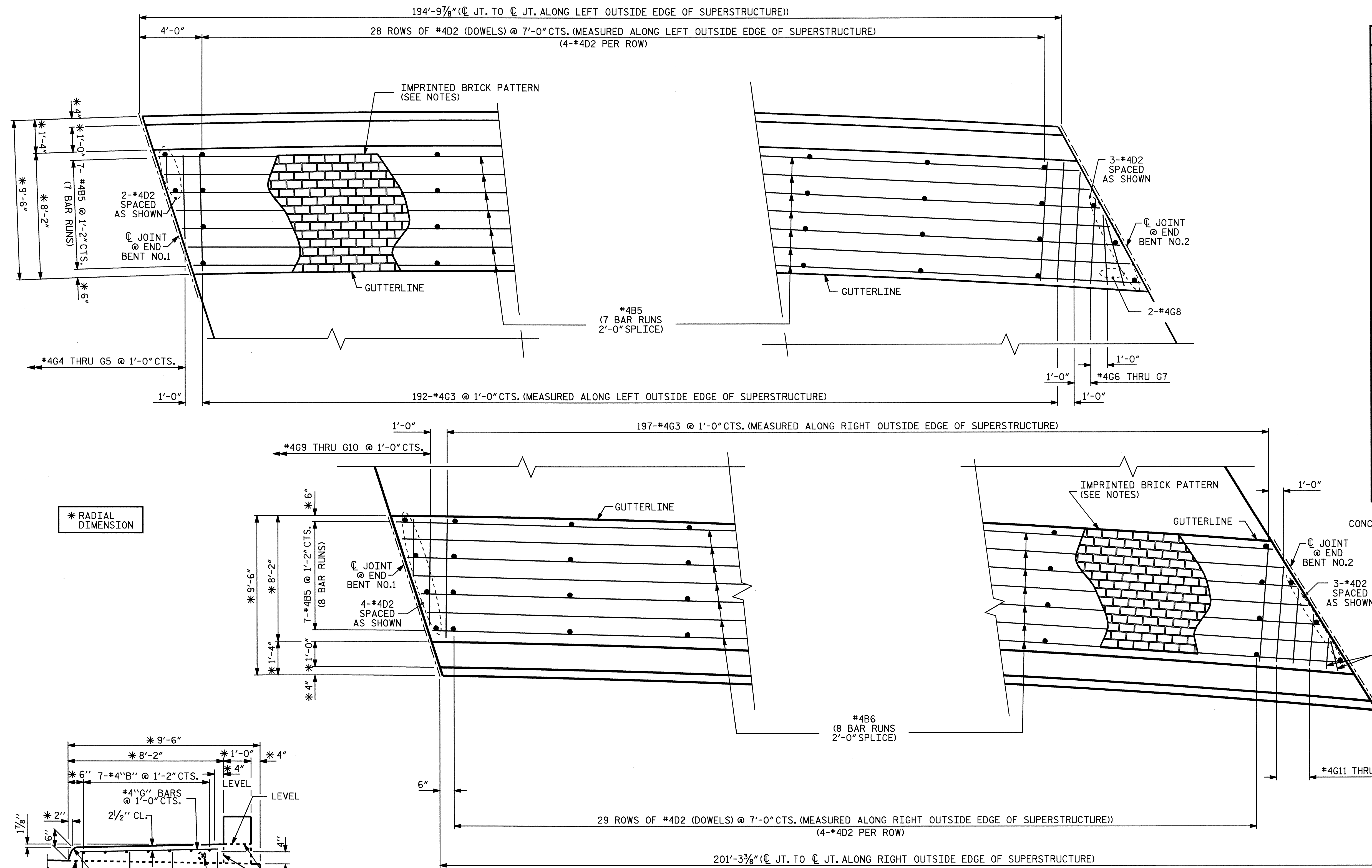
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 POT BEARING
 DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-28
2			4			TOTAL SHEETS 60

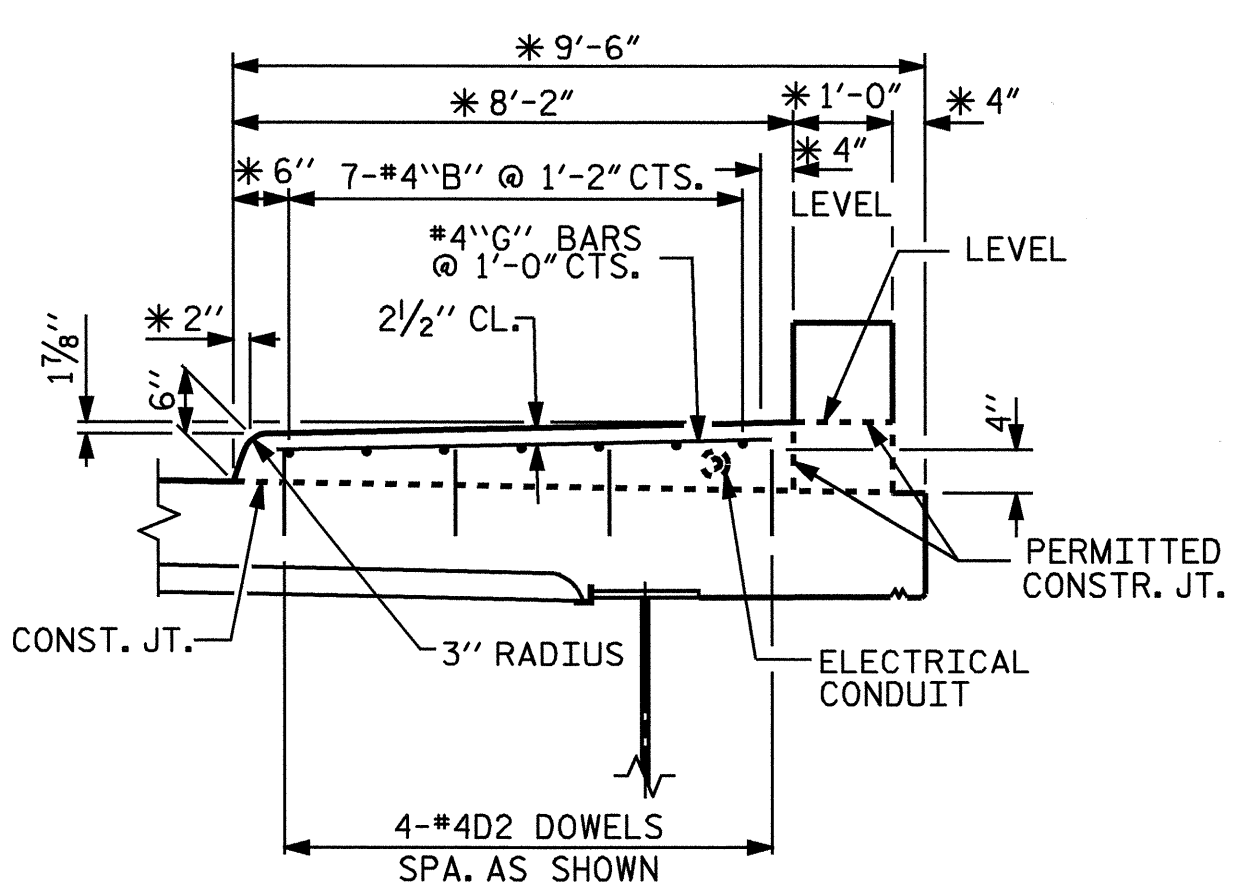


ASSEMBLED BY : V.X. NGUYEN DATE : 10-30-06
 CHECKED BY : D. HODGE DATE : 10-06
 DRAWN BY : RWW 8/99 REV. 7/10/01 LES/RDR
 CHECKED BY : LES 8/99 REV. 5/7/03 RWW/JTE
 REV. 5/1/06 TLA/GM



BILL OF MATERIAL						
STAGE I						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B5	49	#4	STR	29'-8"	971	
*D2	117	#4	STR	1'-0"	78	
*G3	192	#4	STR	7'-8"	983	
*G4	1	#4	STR	5'-8"	4	
*G5	1	#4	STR	2'-4"	2	
*G6	1	#4	STR	6'-5"	4	
*G7	1	#4	STR	4'-10"	3	
*G8	2	#4	STR	3'-2"	4	
* EPOXY COATED REINF. STEEL = 2049 LBS						
CLASS AA CONCRETE				28.8	CU. YDS.	
STAGE II						
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	
*B6	56	#4	STR	26'-9"	1001	
*D2	123	#4	STR	1'-0"	82	
*G3	197	#4	STR	7'-8"	1009	
*G9	1	#4	STR	6'-2"	4	
*G10	1	#4	STR	3'-2"	2	
*G11	1	#4	STR	6'-6"	4	
*G12	1	#4	STR	5'-1"	3	
*G13	1	#4	STR	3'-9"	3	
*G14	2	#4	STR	2'-5"	3	
* EPOXY COATED REINF. STEEL = 2111 LBS						
CLASS AA CONCRETE				40.2	CU. YDS.	

* THESE BARS ARE EPOXY COATED
CONCRETE QUANTITY DOES NOT INCLUDE THE PARAPET.



SECTION THRU SIDEWALK

THE #4D2 DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER SPAN HAS BEEN SCREED OFF.

NOTES

FOR ELECTRICAL CONDUIT, SEE "ELECTRICAL CONDUIT" SHEETS.

PAYMENT FOR SIDEWALK SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR "REINFORCED CONCRETE DECK SLAB". SEE SUPERSTRUCTURE BILL OF MATERIAL SHEETS.

THE TOP SURFACES OF THE SIDEWALKS SHALL BE CONSTRUCTED WITH AN IMPRINTED BRICK PATTERN AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE IMPRINTED FINISH SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR "REINFORCED CONCRETE DECK SLAB". SEE SPECIAL PROVISIONS FOR AESTHETICALLY TREATED CONCRETE SIDEWALKS.

PLAN

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

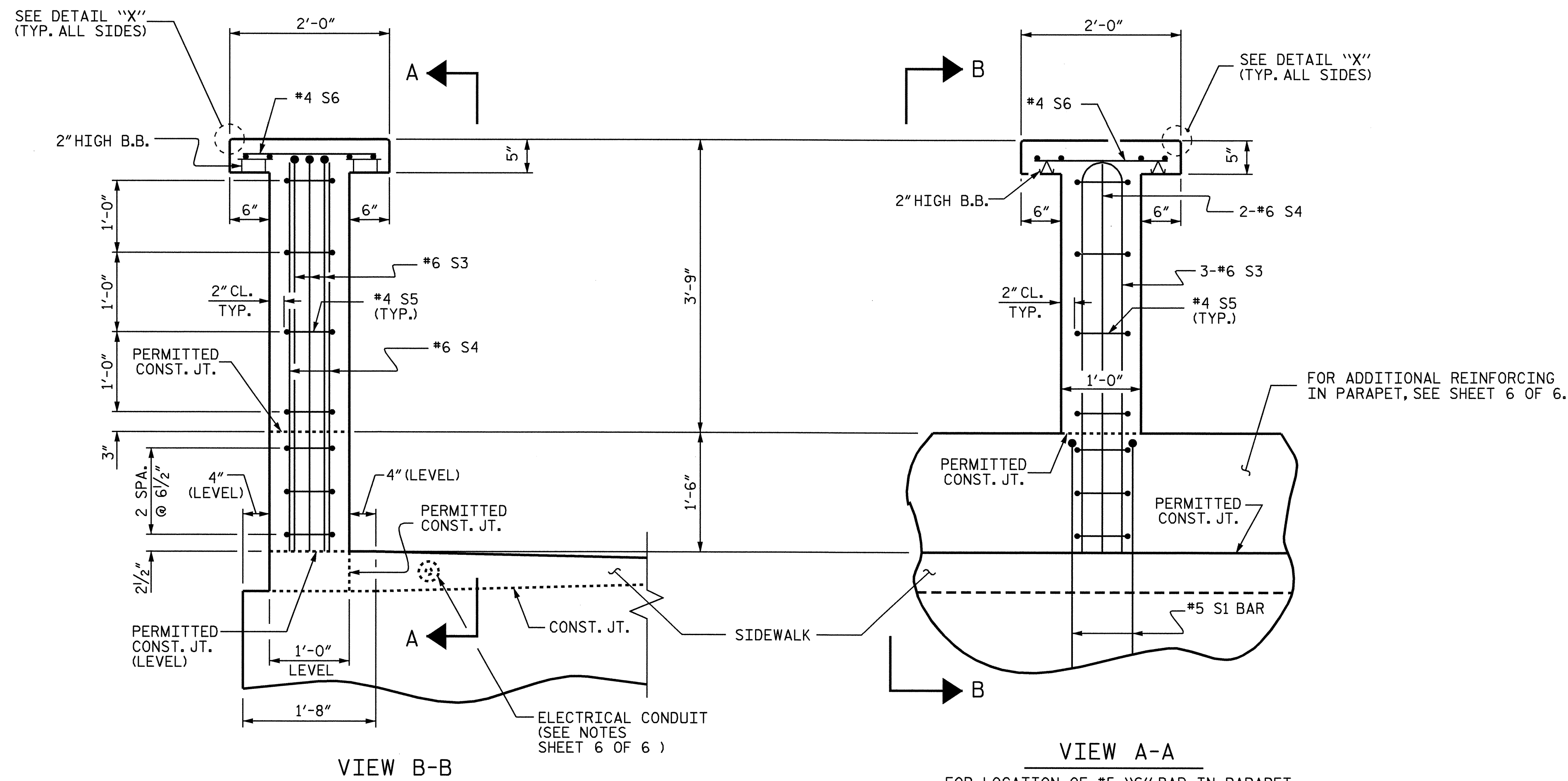
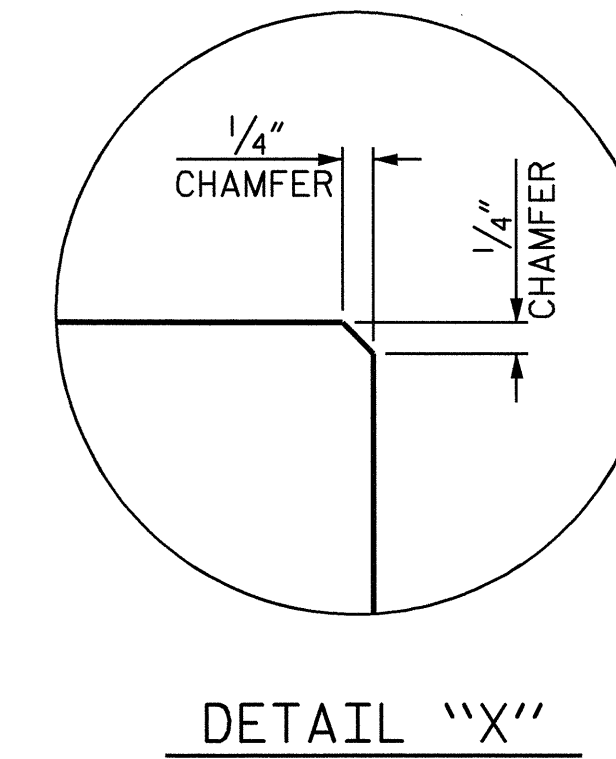
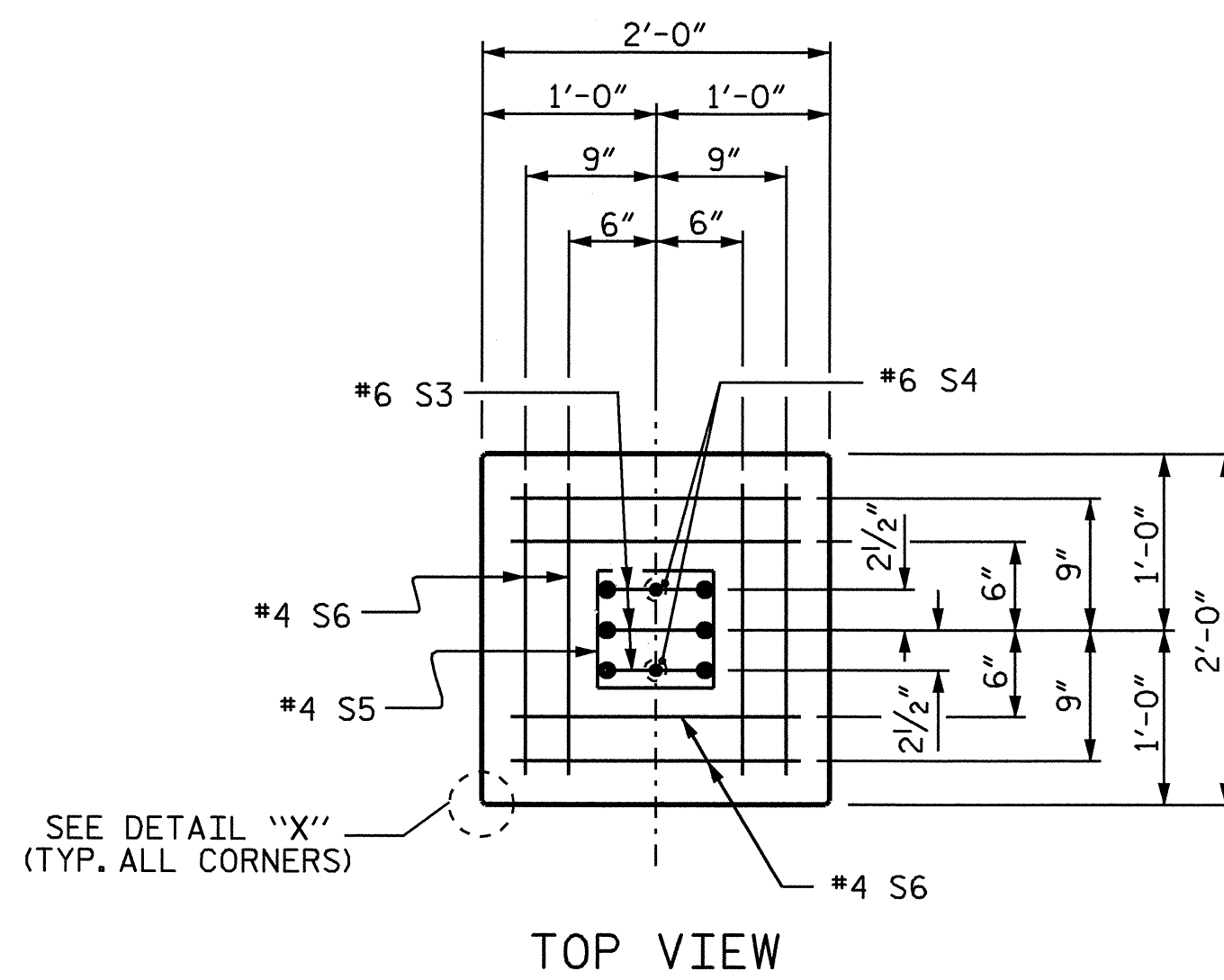
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

**SUPERSTRUCTURE
 SIDEWALK DETAILS**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			S-29
2			4			TOTAL SHEETS 60



DRAWN BY : CR YARBROUGH/LLM DATE : 08/06
 CHECKED BY : MG CHEEK DATE : 08/06



*#5 "S" BARS AND #5 "B" BARS IN PARAPET OMITTED FOR CLARITY FOR SECTION THRU PARAPET, SEE SHEET 6 OF 6.
FOR REINFORCING IN SIDEWALK, SEE "SIDEWALK DETAILS" SHEET.

PEDESTAL DETAILS - TYPE I
(18 REQUIRED STAGE I)
(18 REQUIRED STAGE II)

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 2 OF 6

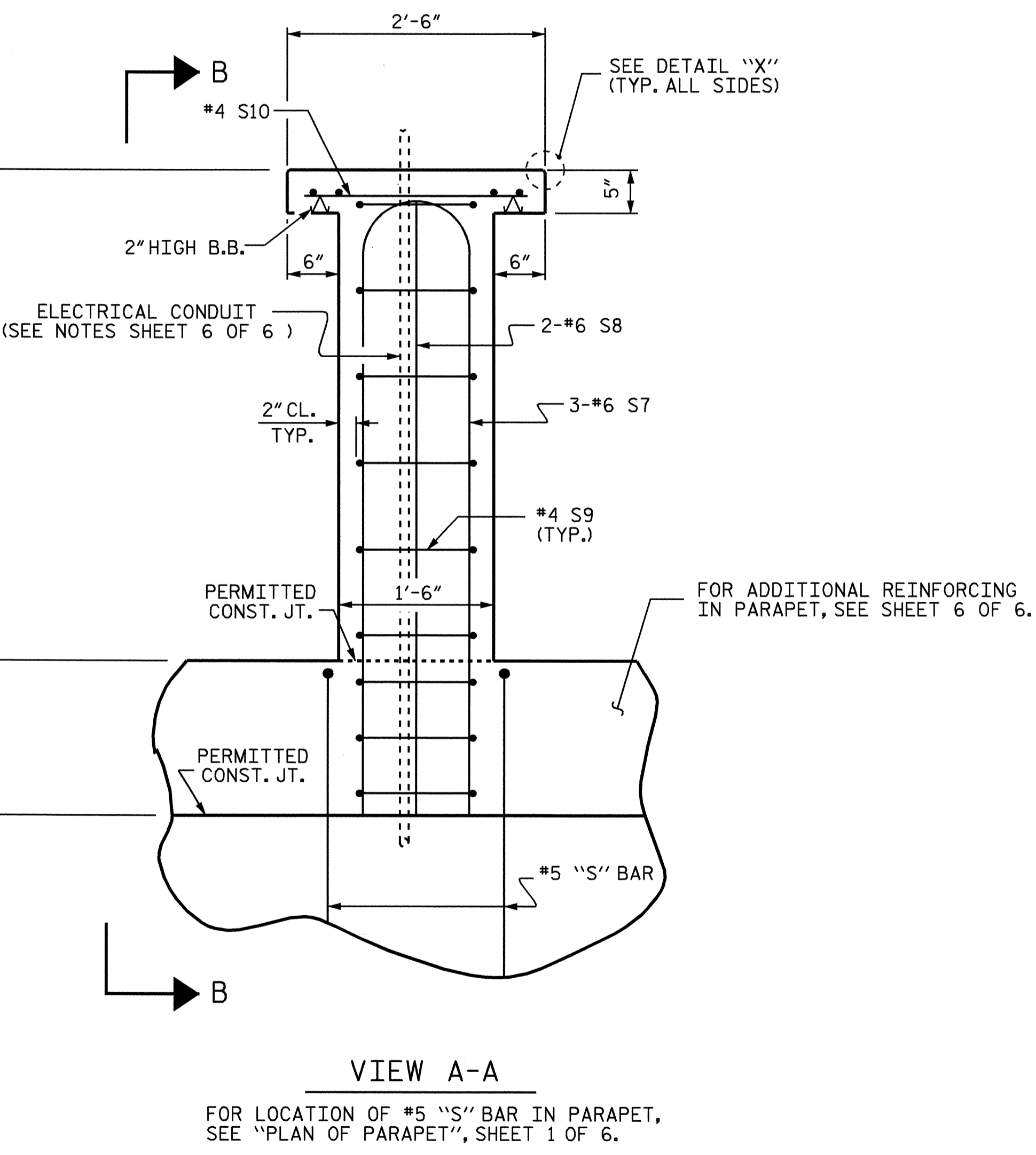
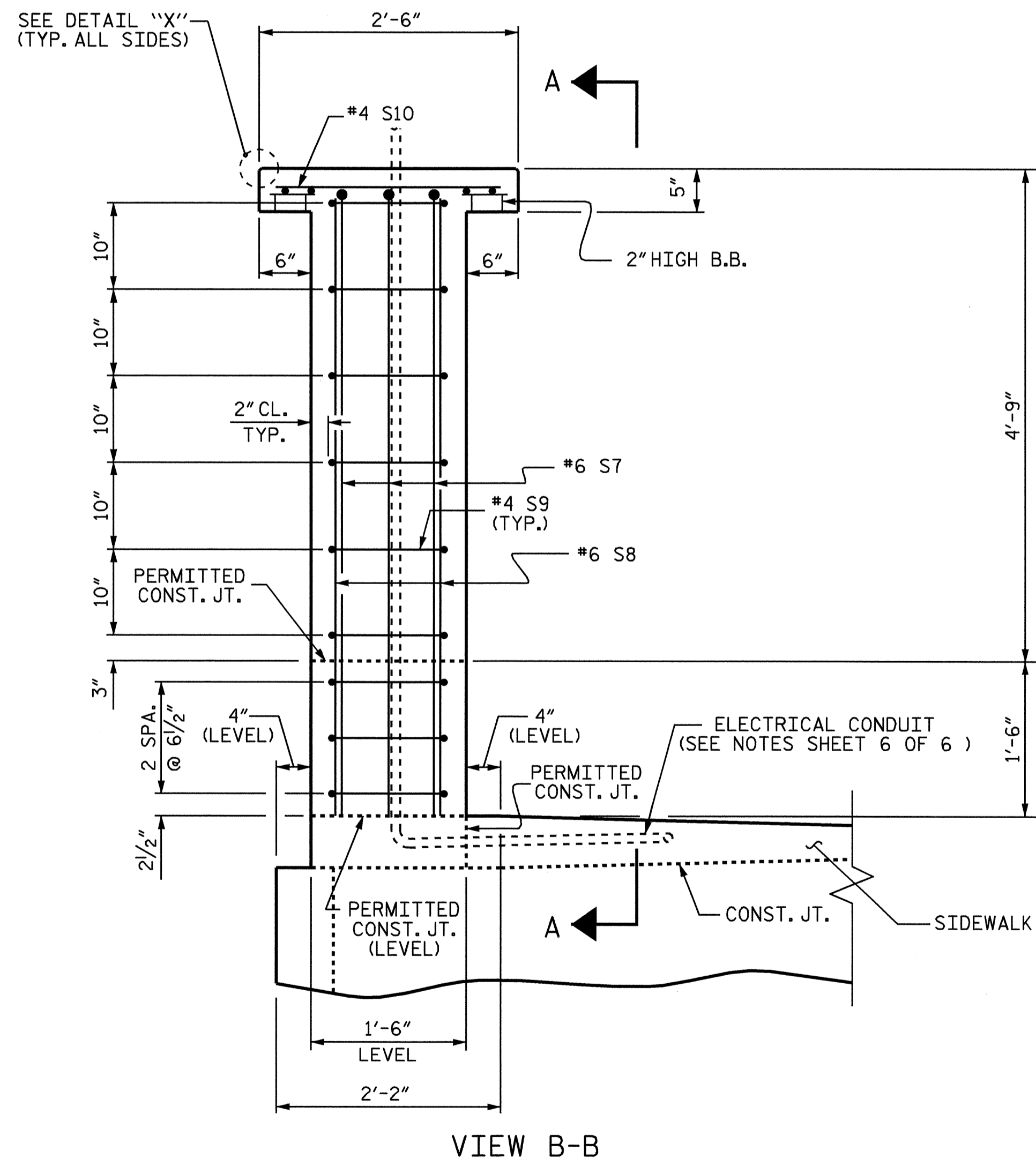
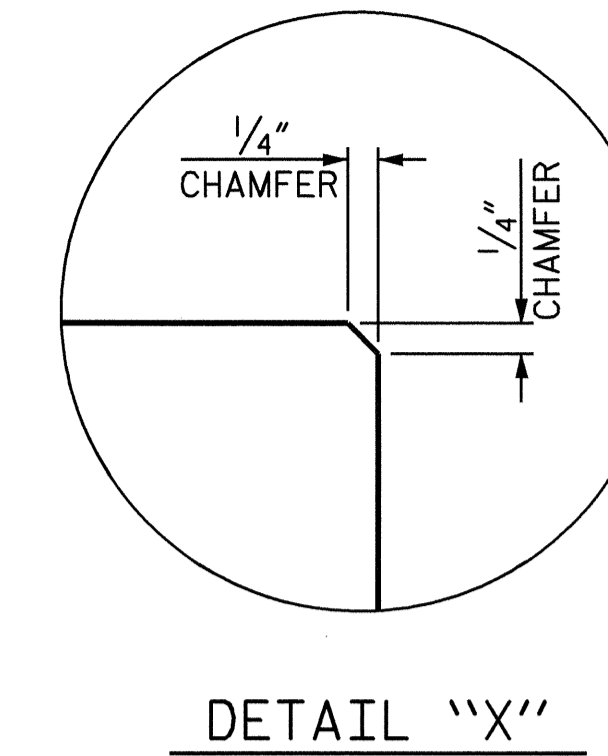
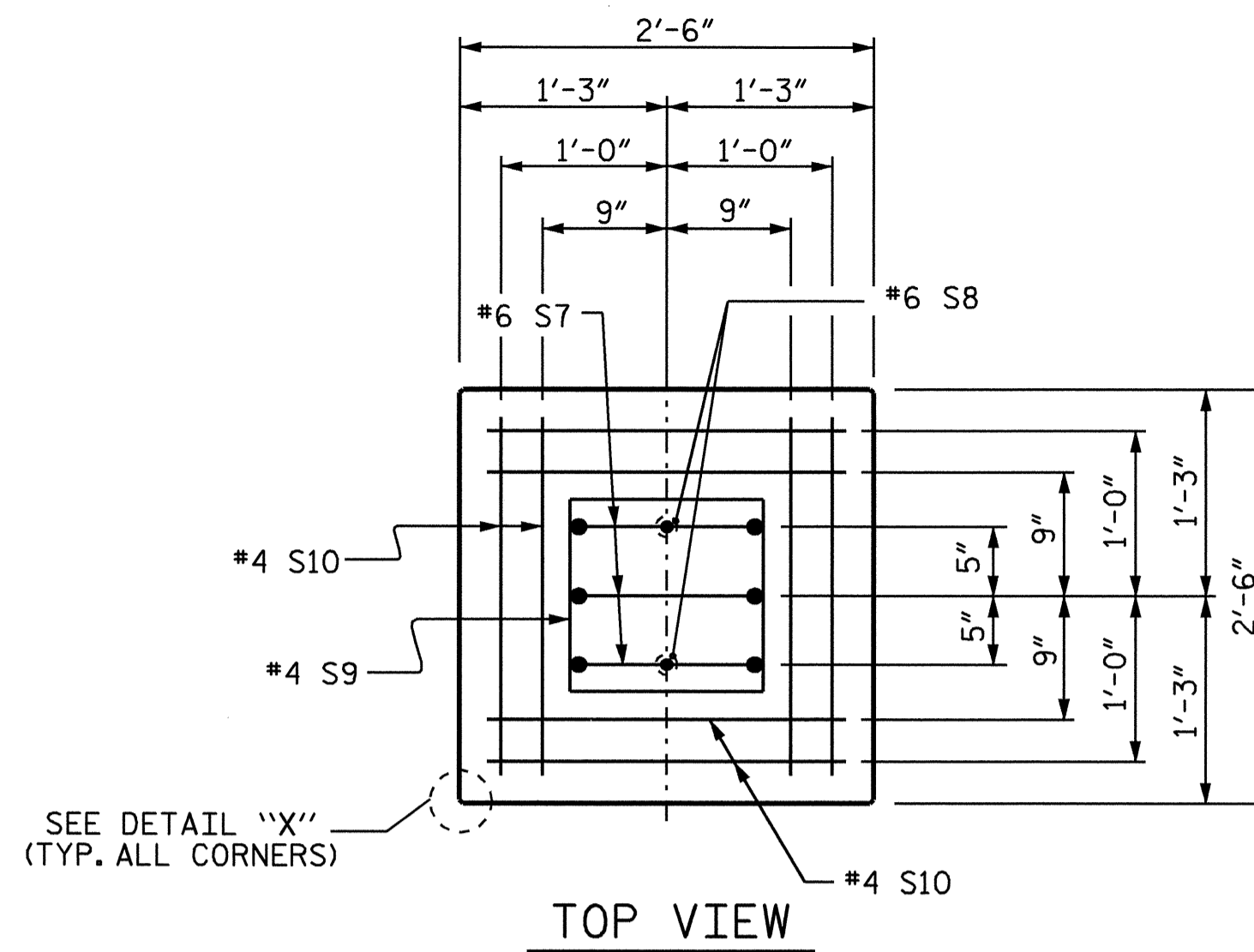
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
SUPERSTRUCTURE
DECORATIVE CONCRETE
AND METAL RAIL
STAGES I & II



DRAWN BY : L.L. MURPHY/DAH DATE : 3/06
CHECKED BY : MG CHEEK DATE : 8/06

16-MAR-2007 10:25
RA\Structures\B4696\dhodge\B4696_sd_BR_special rail.dgn
vnguyen

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-31
1			3			TOTAL SHEETS
2			4			60



*5 "S" BARS AND #5 "B" BARS IN PARAPET OMITTED FOR CLARITY FOR SECTION THRU PARAPET, SEE SHEET 6 OF 6. FOR REINFORCING IN SIDEWALK, SEE "SIDEWALK DETAILS" SHEET.

LIGHT PEDESTAL DETAILS - TYPE II
 (3 REQUIRED STAGE I)
 (3 REQUIRED STAGE II)

DRAWN BY : L.L. MURPHY/DAH DATE : 3/06
 CHECKED BY : MG CHEEK DATE : 8/06

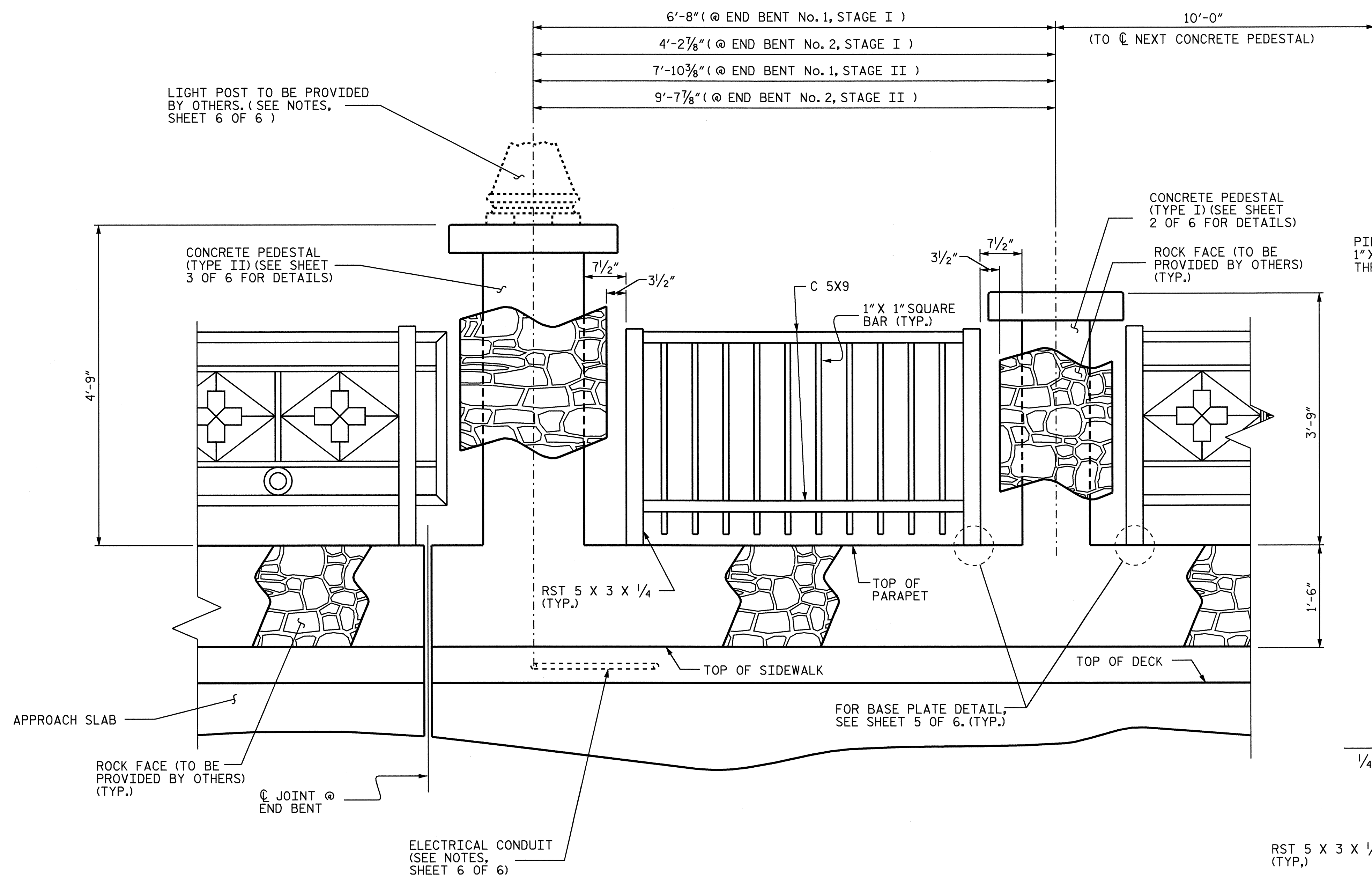
16-MAR-2007 10:25
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 vnguyen

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 3 OF 6

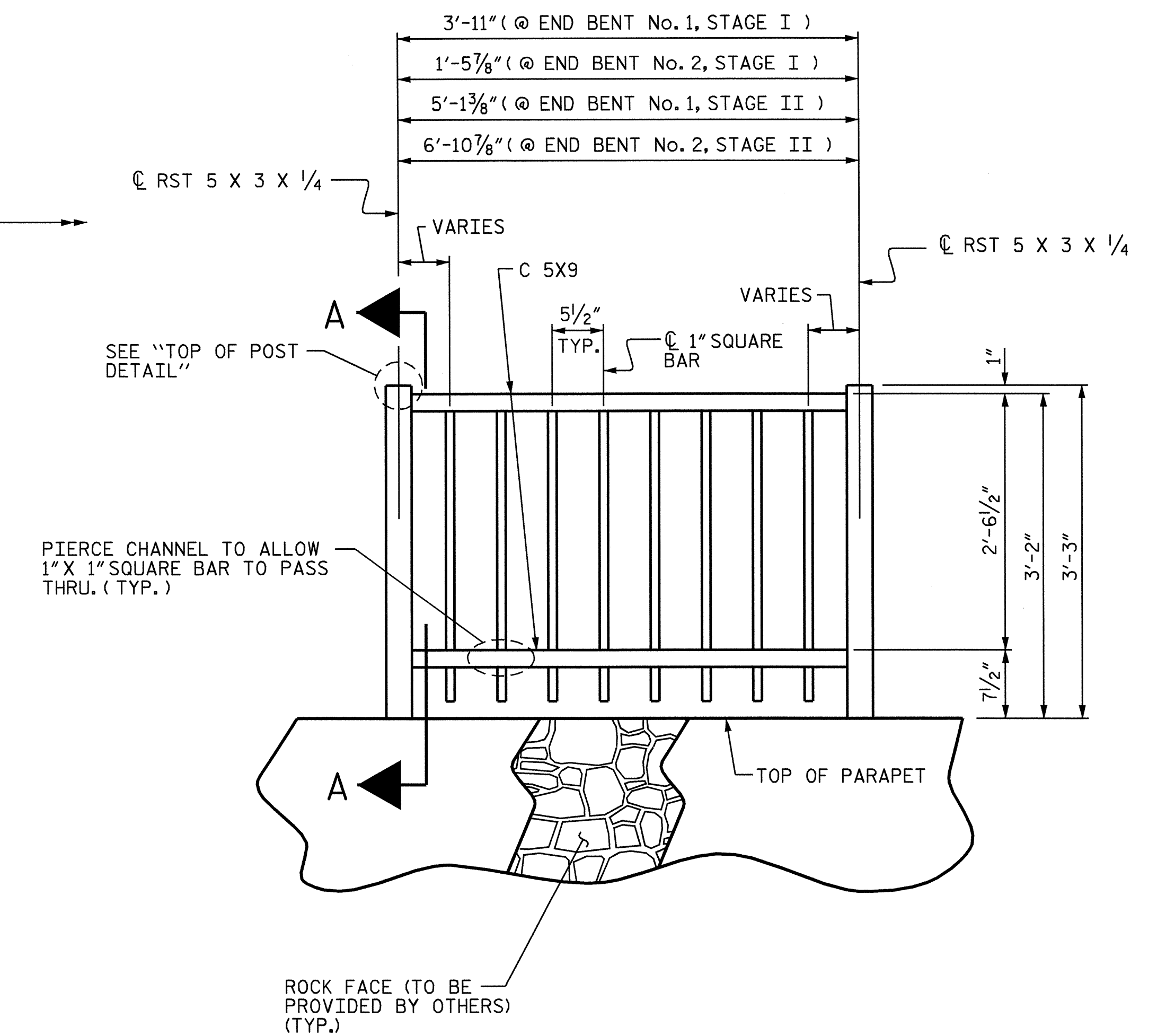
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUPERSTRUCTURE DECORATIVE CONCRETE AND METAL RAIL STAGES I & II					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-32
					TOTAL SHEETS 60



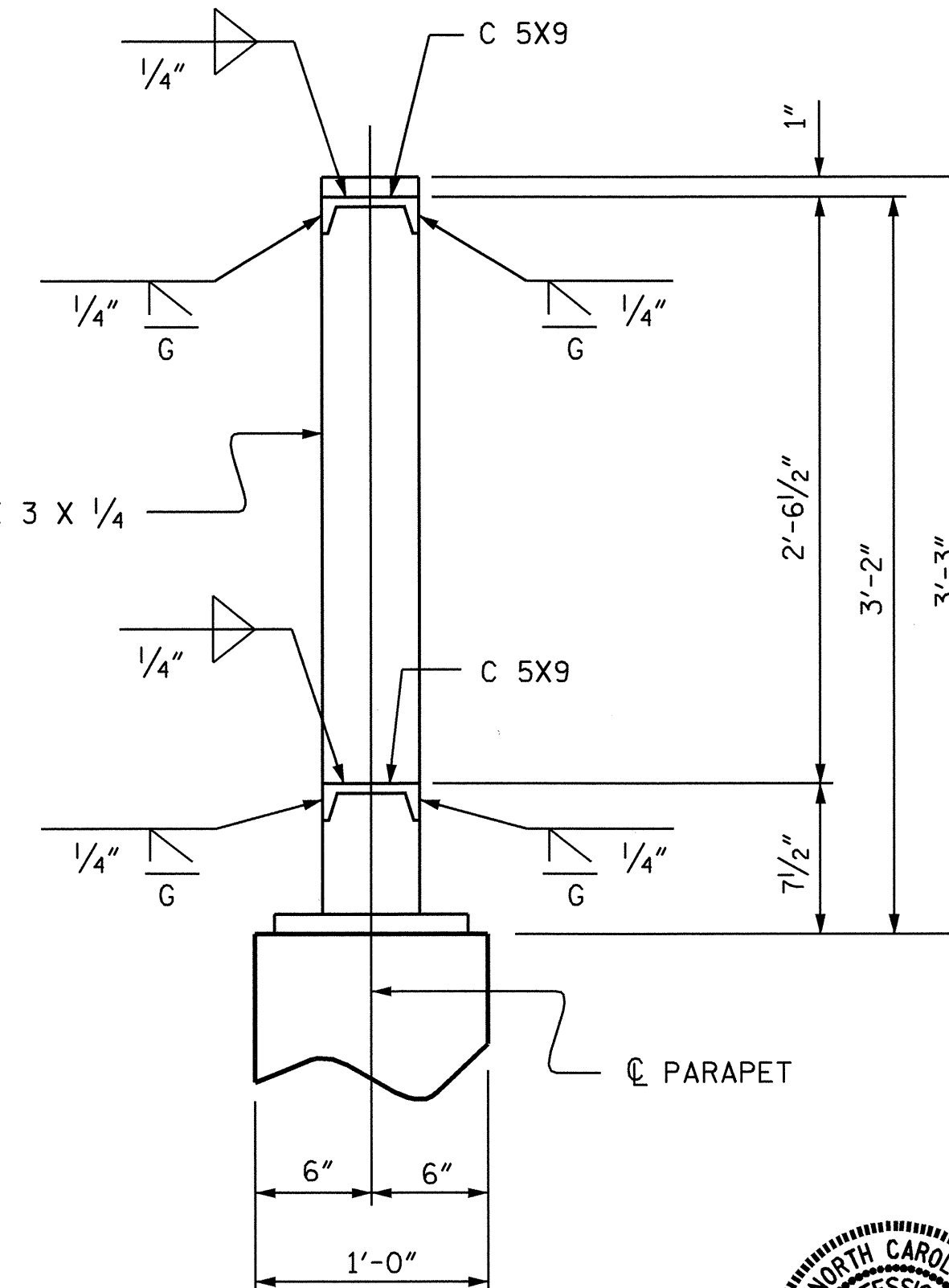


ELEVATION AT END BENTS

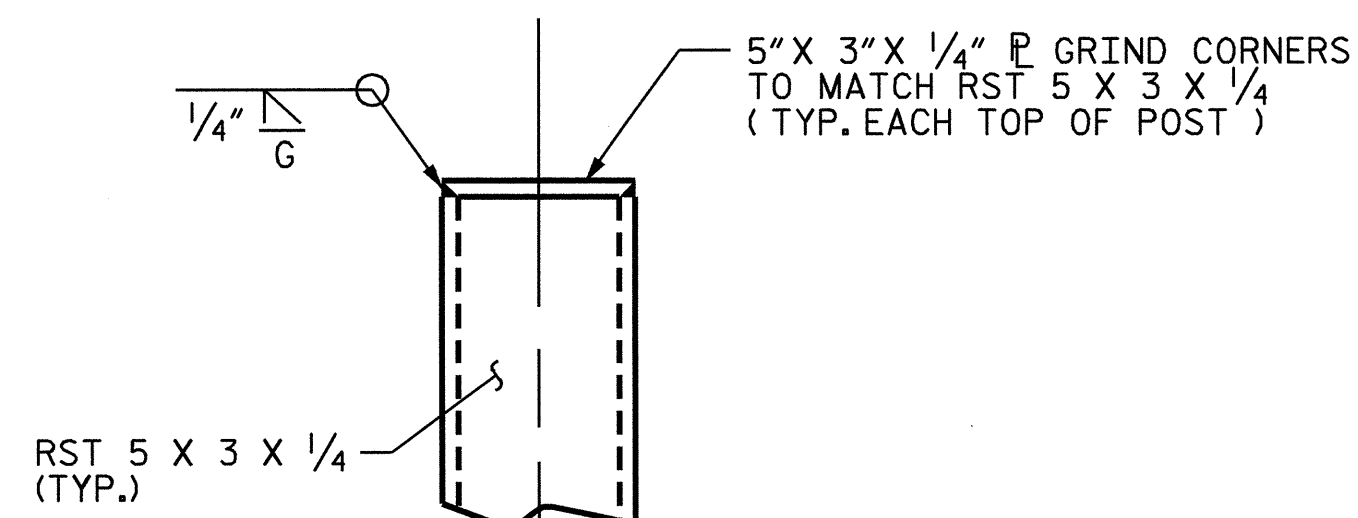
FOR PEDESTAL LOCATION, SEE "PLAN OF PARAPET" SHEET 1 OF 6.
 SEE "PLAN OF PARAPET AT END BENT" SHEET 1 OF 6 FOR PLACEMENT OF #5 "S" BARS.
 FOR CONCRETE PARAPET, PEDESTAL AND METAL RAIL ON APPROACH SLAB, SEE "BRIDGE APPROACH SLAB" SHEETS.
 ALL WELDS TO BE SEALED PRIOR TO BEING PAINTED.



RAIL DETAIL



SECTION A-A



TOP OF POST DETAIL

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

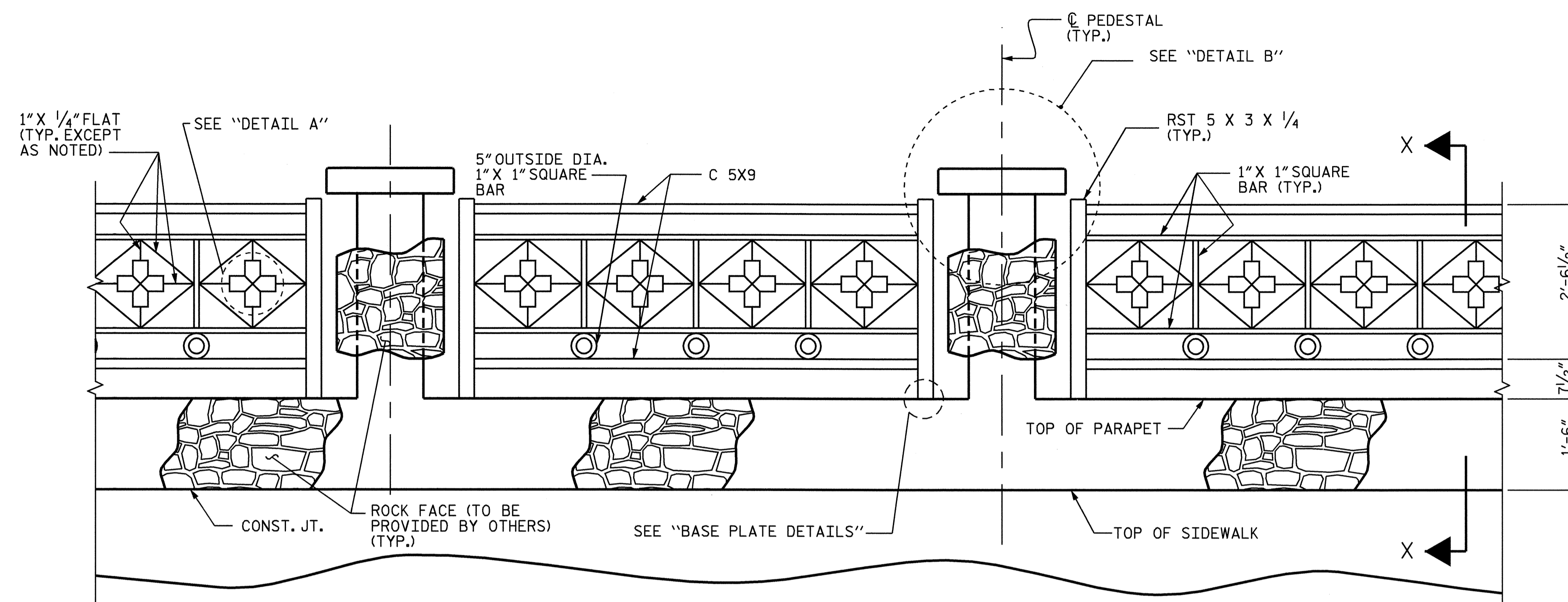
SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 DECORATIVE CONCRETE
 AND METAL RAIL
 STAGES I & II

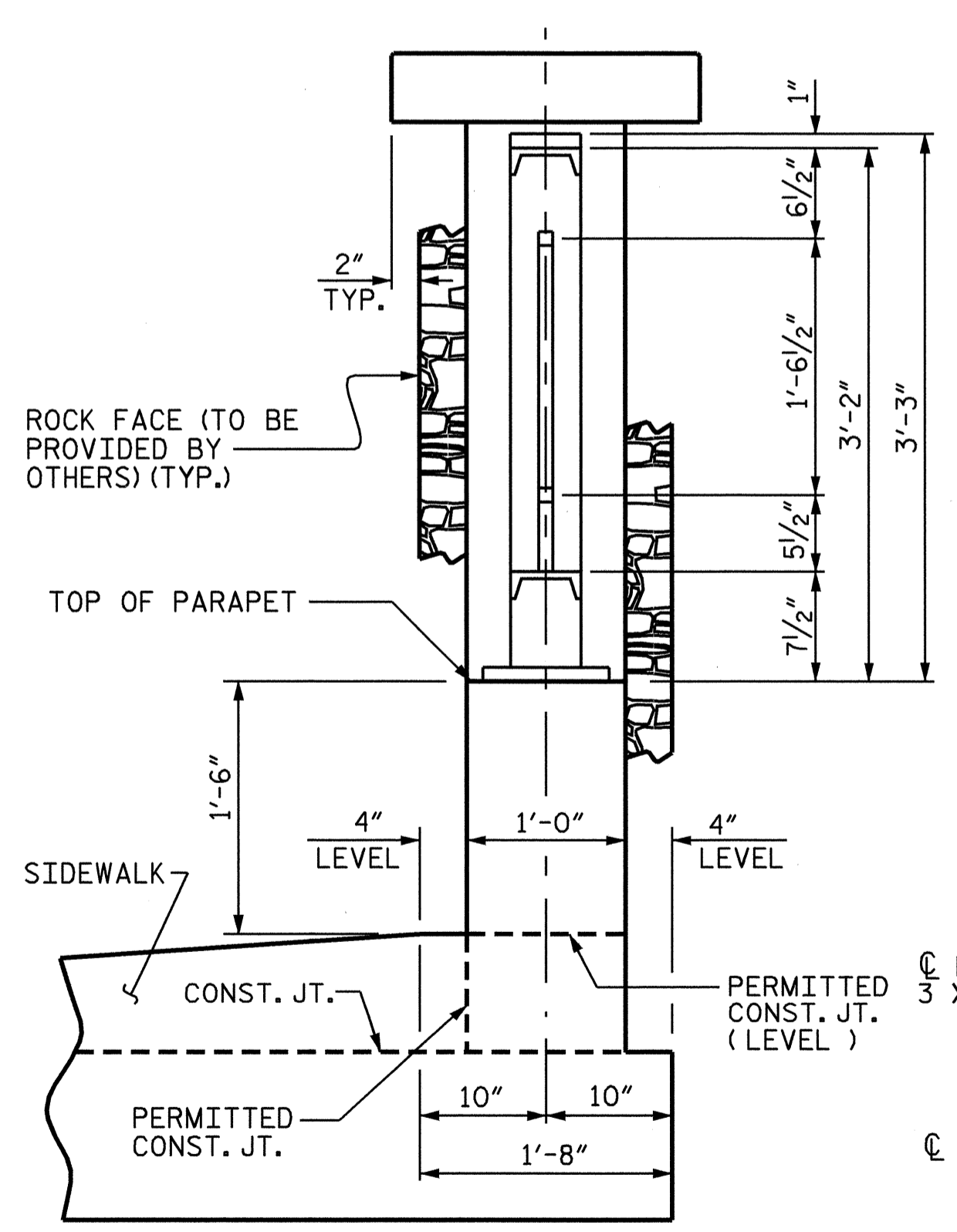
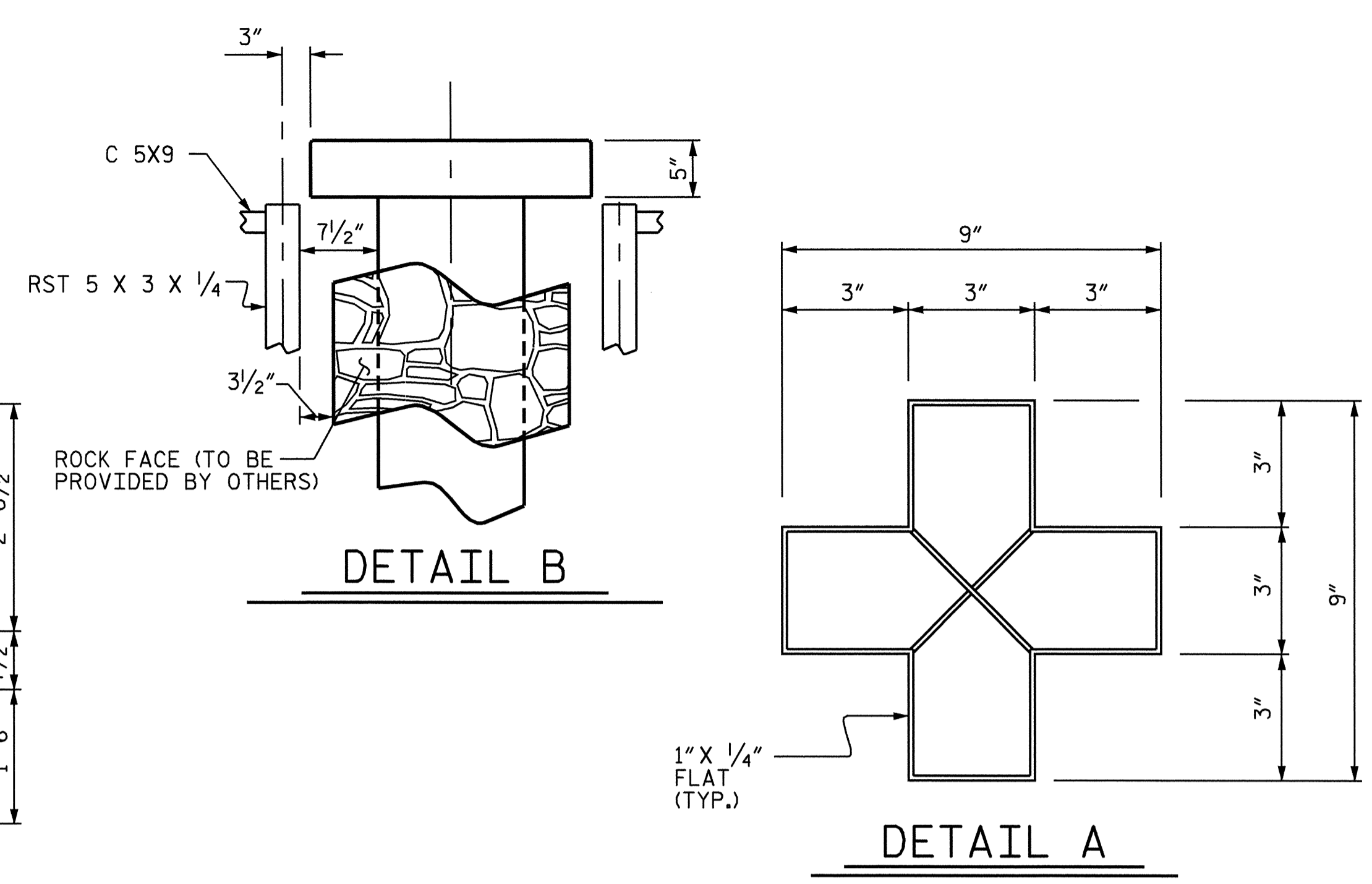


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-33
1			3			TOTAL SHEETS
2			4			60

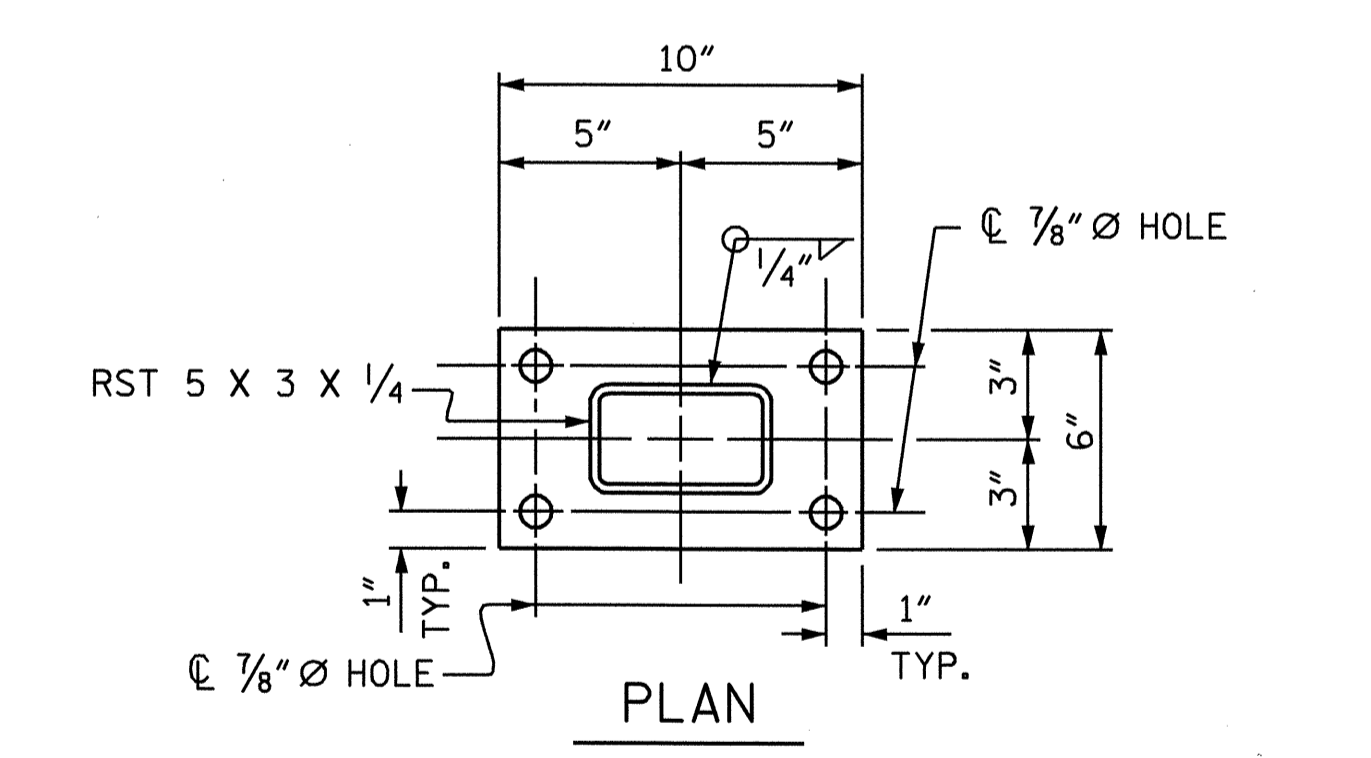
DRAWN BY: L.L. MURPHY/DAH DATE: 11/05
 CHECKED BY: MG CHEEK DATE: 8/06



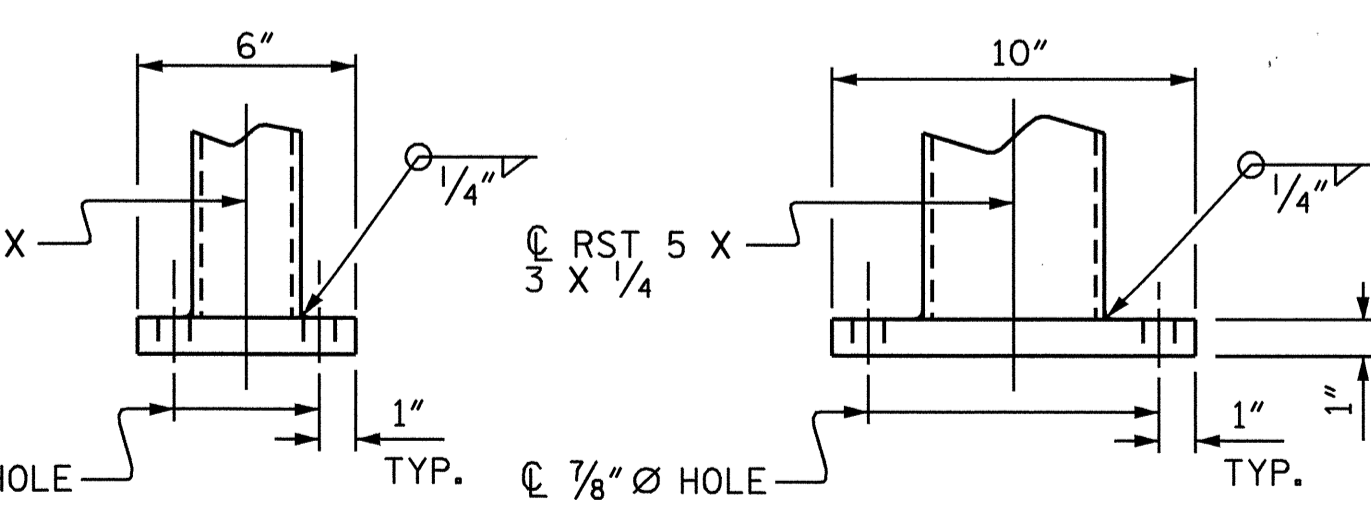
ELEVATION OF PARAPET
(TYP. EA. SIDE)



SECTION X-X



PLAN

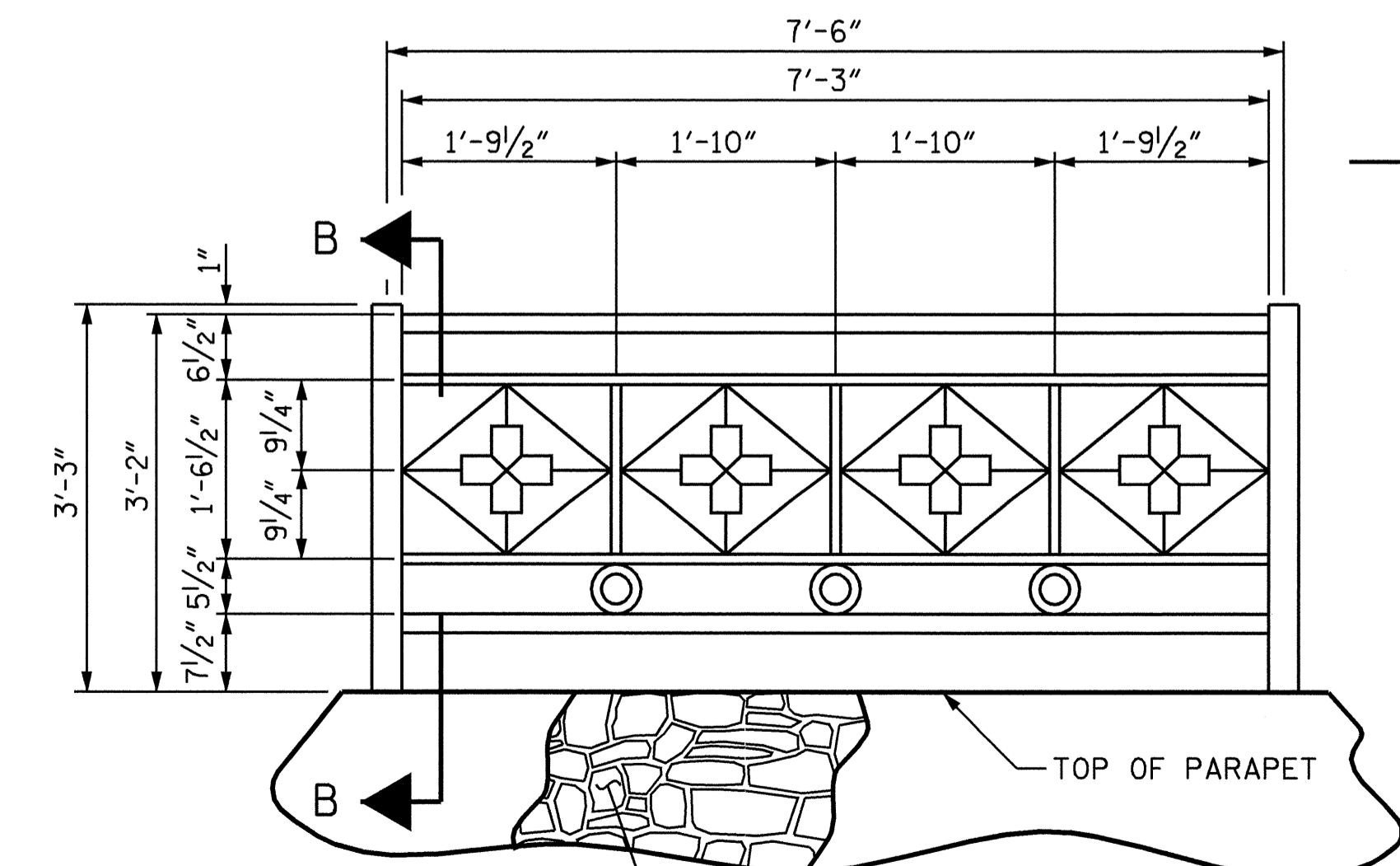


SIDE ELEVATION

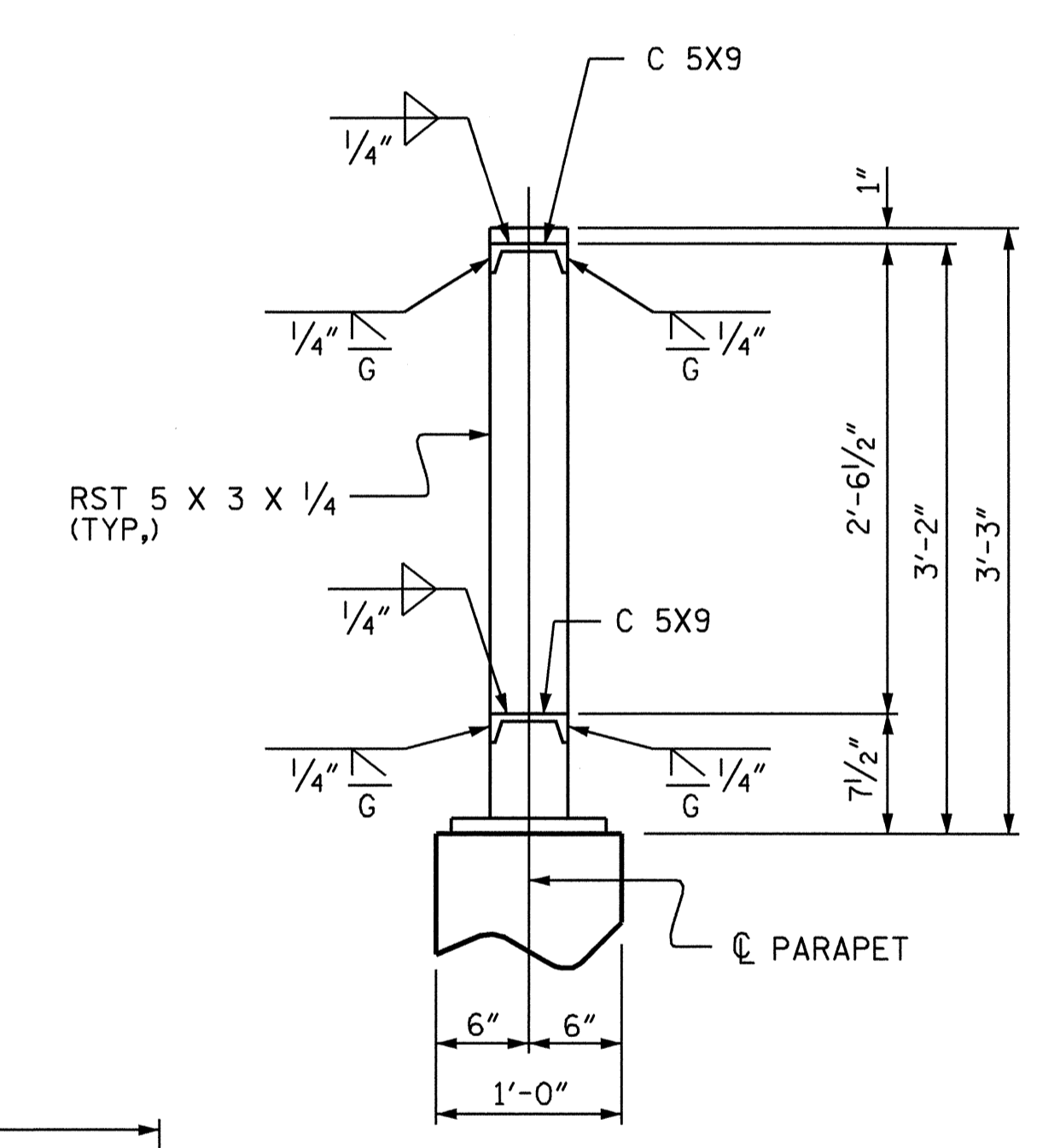
FRONT ELEVATION

BASE PLATE DETAIL

ALL WELDS TO BE SEALED PRIOR TO BEING PAINTED.



RAIL DETAIL



SECTION B-B

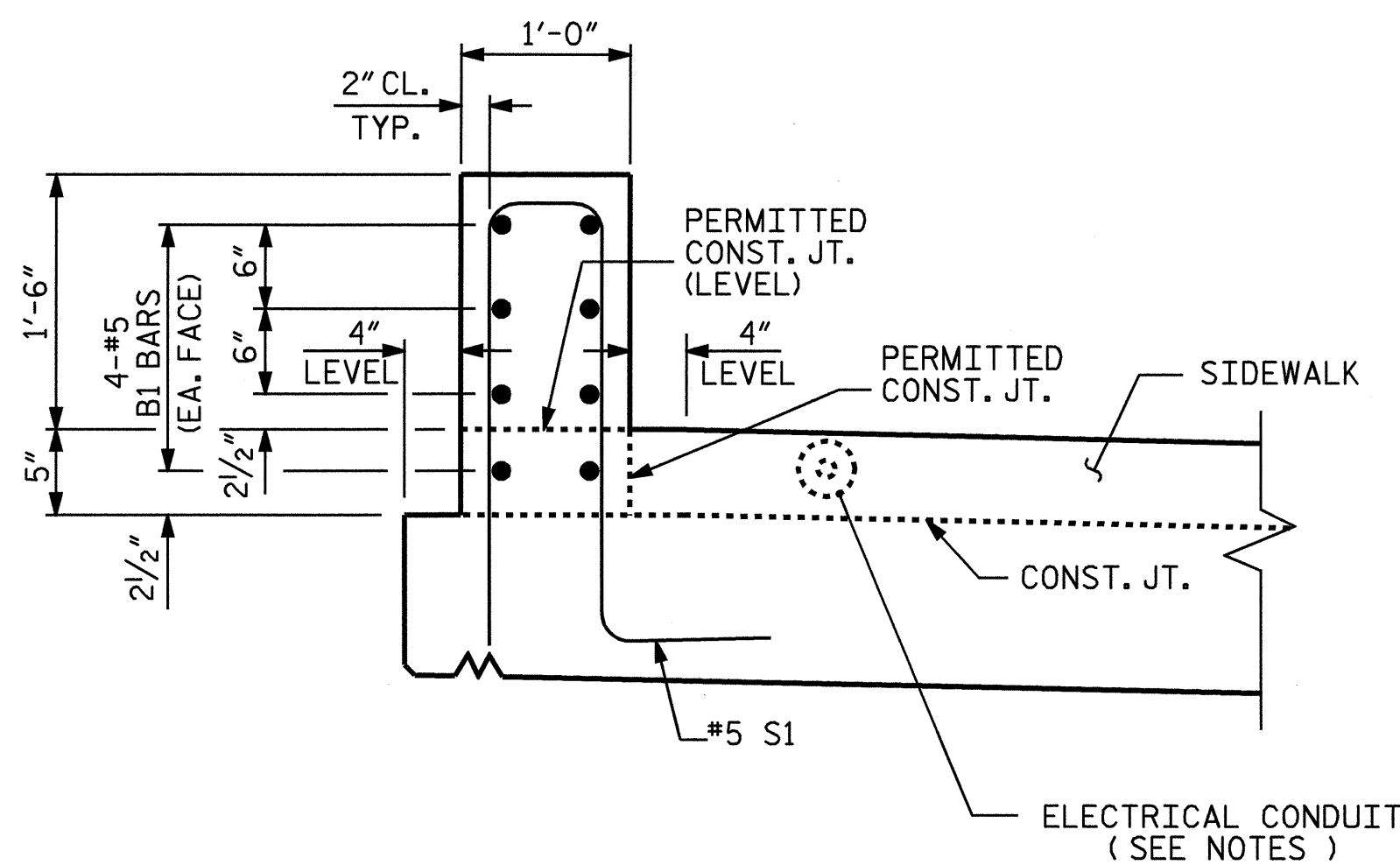
PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-
 SHEET 5 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUPERSTRUCTURE
 DECORATIVE CONCRETE
 AND METAL RAIL

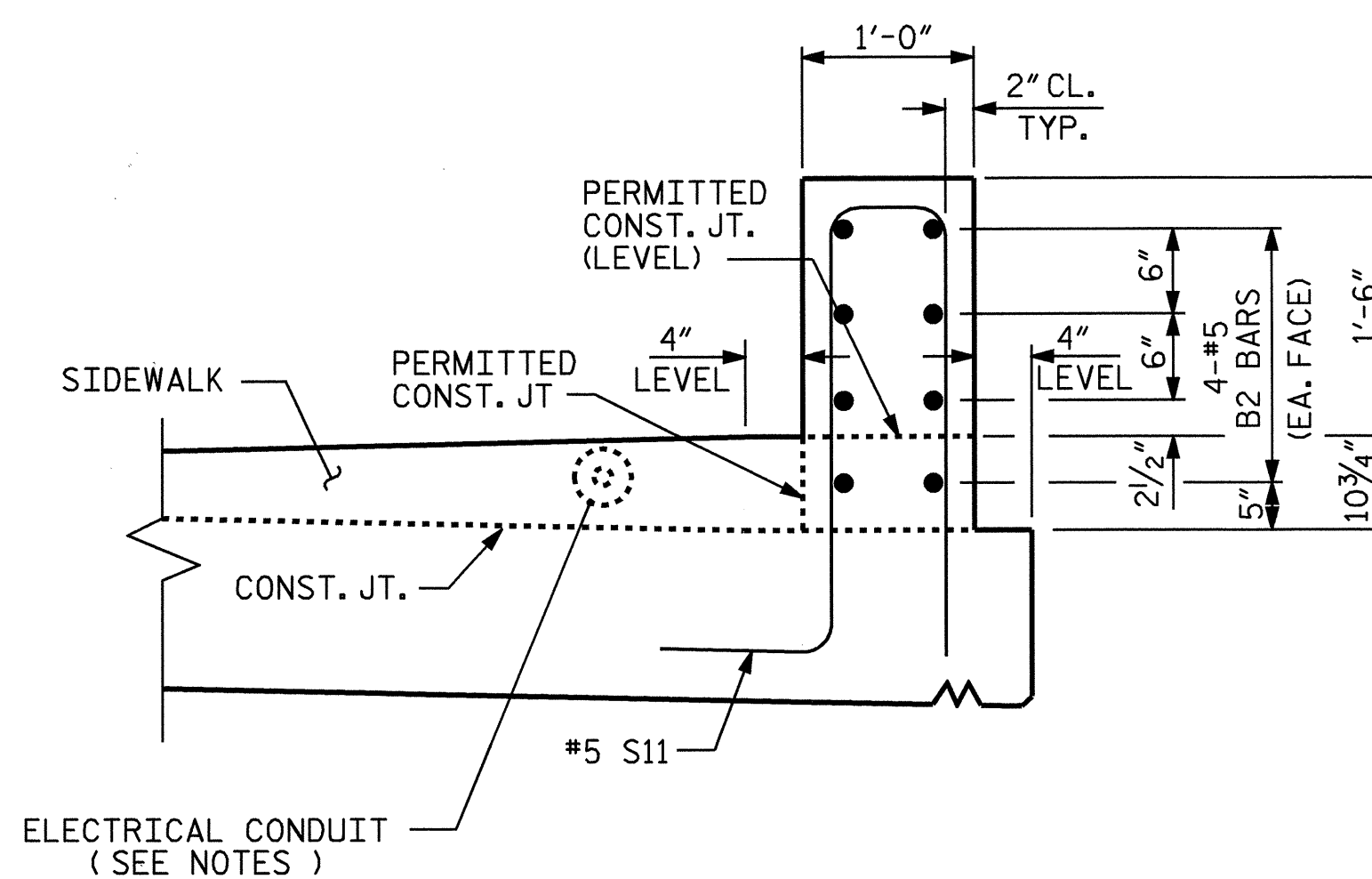
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-34
1			3			TOTAL SHEETS 60
2			4			



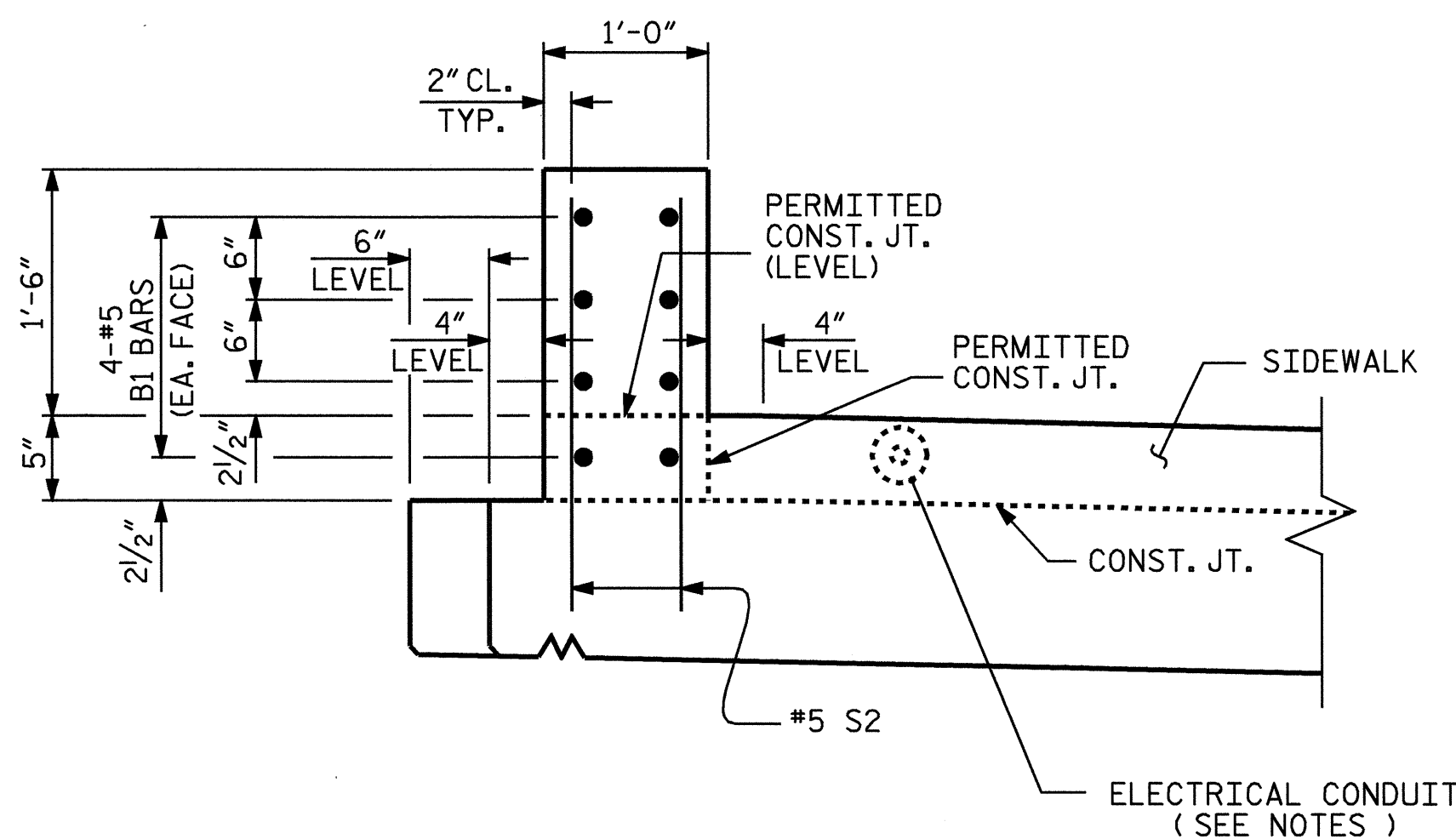
DRAWN BY: S.E.FIELD/DAH DATE: 4/06
 CHECKED BY: MG.CHEEK DATE: 8/06



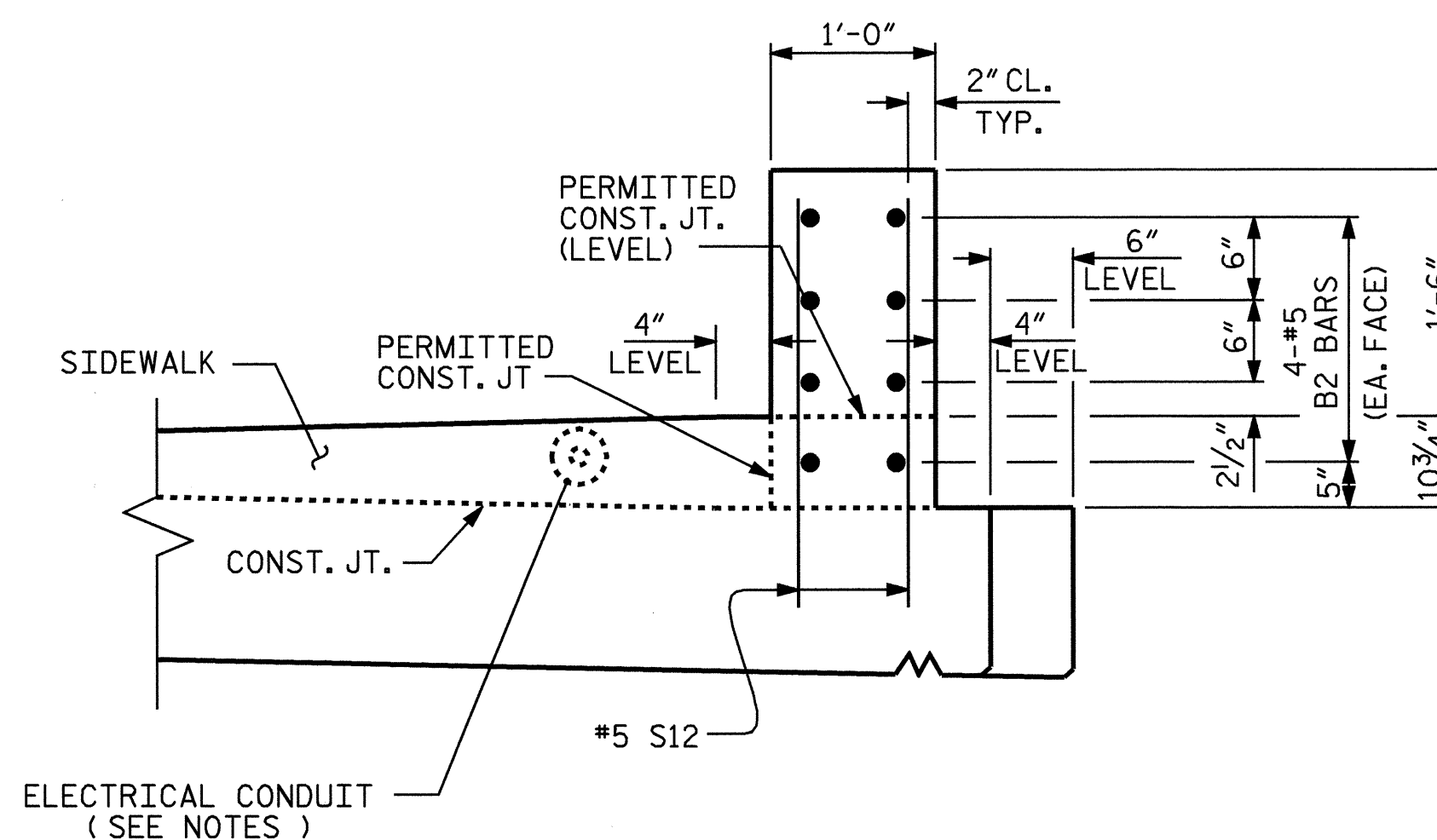
SECTION THRU PARAPET
(STAGE I - LEFT SIDE)



SECTION THRU PARAPET
(STAGE II - RIGHT SIDE)



SECTION THRU PARAPET AT END BENT
(STAGE I - LEFT SIDE)



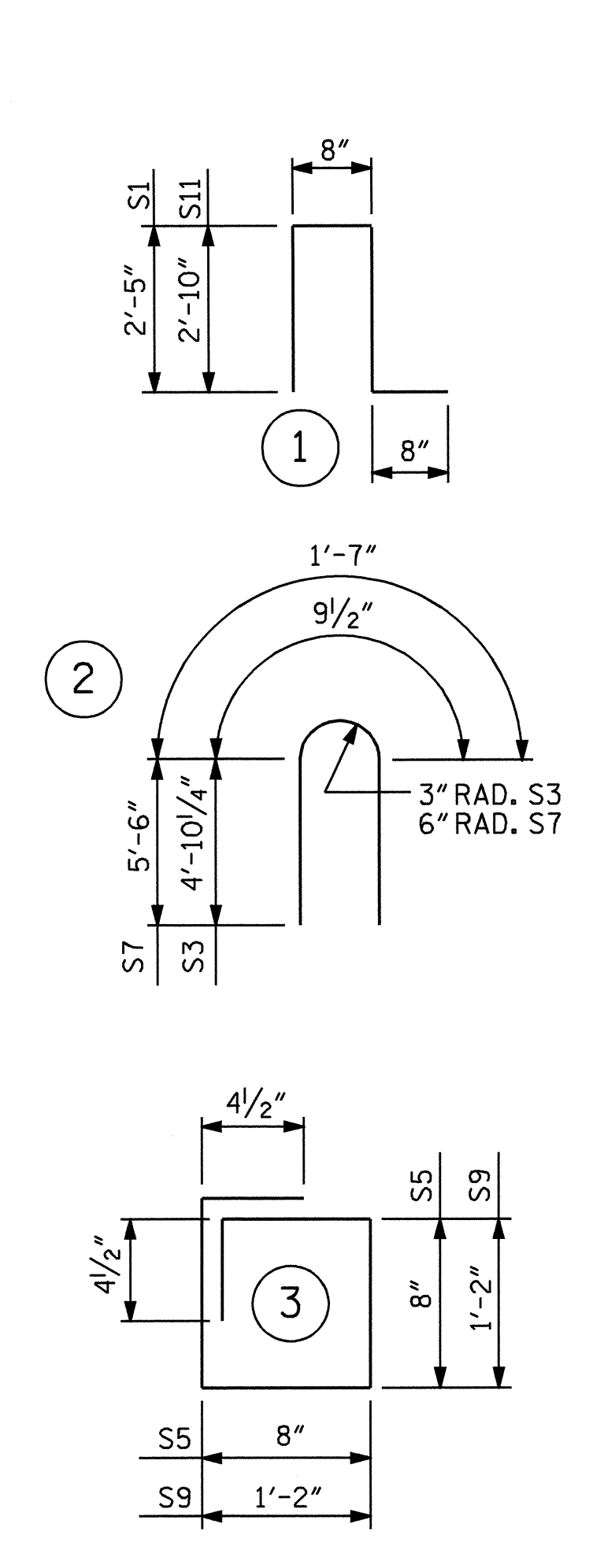
SECTION THRU PARAPET AT END BENT
(STAGE II - RIGHT SIDE)

NOTES

- FOR DECORATIVE CONCRETE AND METAL RAIL, SEE SPECIAL PROVISIONS.
- FOR ELECTRICAL CONDUIT AND DETAILS, SEE "ELECTRICAL CONDUIT SYSTEM" SHEET.
- PARAPET SHALL NOT BE CAST UNTIL ALL SIDEWALK CONCRETE HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
- ALL REINFORCING STEEL IN PARAPETS AND PEDESTALS SHALL BE EPOXY COATED.
- ALL PEDESTALS AND PARAPET ENDS ARE TO BE VERTICAL.
- PARAPETS FOLLOW THE VERTICAL CURVE OF THE BRIDGE DECK.
- SHIMS MAY BE USED AS NECESSARY FOR POST ALIGNMENT.
- CHANNELS SHALL BE AASHTO M270 GRADE 50 STRUCTURAL STEEL.
- STRUCTURAL TUBING USED FOR THE POSTS SHALL BE COLD-FORMED WELDED OR SEAMLESS TUBING CONFORMING TO ASTM 500, GRADE B, F_y = 50 KSI.
- CERTIFIED MILL REPORTS ARE REQUIRED FOR STRUCTURAL TUBING AND CHANNELS. SHOP INSPECTION IS NOT REQUIRED.
- ALL DISTANCES BETWEEN PEDESTALS SHALL BE VERIFIED BY THE ENGINEER PRIOR TO FABRICATION OF METAL RAILS.
- METAL RAILING SHALL BE CONTINUOUS BETWEEN PEDESTALS.

- THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE METAL RAIL SHALL BE ATTACHED TO THE CONCRETE PARAPET BY THE USE OF AN ADHESIVE BONDING SYSTEM. FIELD TESTING OF THE ADHESIVE BONDING SYSTEM IS NOT REQUIRED.
- ALL COMPONENTS OF THE METAL RAIL SHALL BE PAINTED IN ACCORDANCE WITH SYSTEM 3 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATION, EXCEPT ALL COATS SHALL BE SHOP APPLIED AND THE FINAL COAT COLOR SHALL BE FEDERAL STANDARD 595B #30160.
- 3/4" DIAMETER BOLTS, WASHERS, AND NUTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307. BOLTS, WASHERS AND NUTS SHALL BE GALVANIZED. AFTER RAILS ARE INSTALLED ALL EXPOSED BOLTS, WASHERS AND NUTS SHALL BE PAINTED.
- 3/4" DIAMETER BOLTS SHALL PROJECT 2/2" ABOVE THE TOP OF THE PARAPET. THE EMBEDMENT LENGTH SHALL BE DETERMINED BY THE ADHESIVE BONDING SYSTEM USED.
- THE LIGHT POSTS AND ANCHORAGE TO BE PROVIDED BY OTHERS.
- ROCK FACING FOR THE PARAPET AND PEDESTALS SHALL BE PROVIDED BY OTHERS AND IS NOT PART OF THIS CONTRACT.
- FOR PARAPET, PEDESTALS, AND RAIL ON APPROACH SLAB, SEE "APPROACH SLAB" SHEETS.
- ANCHOR BOLTS IN THE LIGHT PEDESTAL SHALL NOT BE SET UNTIL AFTER BOLTS AND ANCHOR BOLT TEMPLATE IS SUPPLIED BY THE LIGHT POLE MANUFACTURER. INSTALLATION OF THE ANCHOR BOLTS SHALL BE CONSIDERED INCIDENTAL TO THE PAY ITEM "DECORATIVE CONCRETE AND METAL RAIL".
- PAYMENT FOR THE PARAPET, PEDESTAL, AND RAIL SHALL BE PAID FOR IN THE PAY ITEM "DECORATIVE CONCRETE AND METAL RAIL".

BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

STAGE I					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
* B1	32	5	STR	51'- 3"	1711
* S1	172	5	1	5'- 8"	1017
* S2	4	5	STR	2'- 5"	10
* S3	54	6	2	10'- 6"	852
* S4	36	6	STR	5'- 0"	270
* S5	126	4	3	3'- 5"	288
* S6	144	4	STR	1'- 8"	160
* S7	9	6	2	12'- 7"	170
* S8	6	6	STR	6'- 0"	54
* S9	27	4	3	5'- 5"	98
* S10	24	4	STR	2'- 2"	35
* EPOXY COATED REINFORCING STEEL				LBS.	4,665
CLASS AA CONCRETE				CU. YDS.	15.6
STAGE II					
BAR	NO	SIZE	TYPE	LENGTH	WEIGHT
* B2	32	5	STR	52'- 9"	1761
* S11	178	5	1	6'- 8"	1238
* S12	4	5	STR	2'- 10"	12
* S3	54	6	2	10'- 6"	852
* S4	36	6	STR	5'- 0"	270
* S5	126	4	3	3'- 5"	288
* S6	144	4	STR	1'- 8"	160
* S7	9	6	2	12'- 7"	170
* S8	6	6	STR	6'- 0"	54
* S9	27	4	3	5'- 5"	98
* S10	24	4	STR	2'- 2"	35
* EPOXY COATED REINFORCING STEEL				LBS.	4,938
CLASS AA CONCRETE				CU. YDS.	16.0
DECORATIVE CONCRETE AND METAL RAIL				LUMP SUM	
* THESE BARS ARE EPOXY COATED					

DRAWN BY : L.L. MURPHY DATE : 11/05
CHECKED BY : MG. CHEEK DATE : 8/06

16-APR-2007 15:40
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dahodge

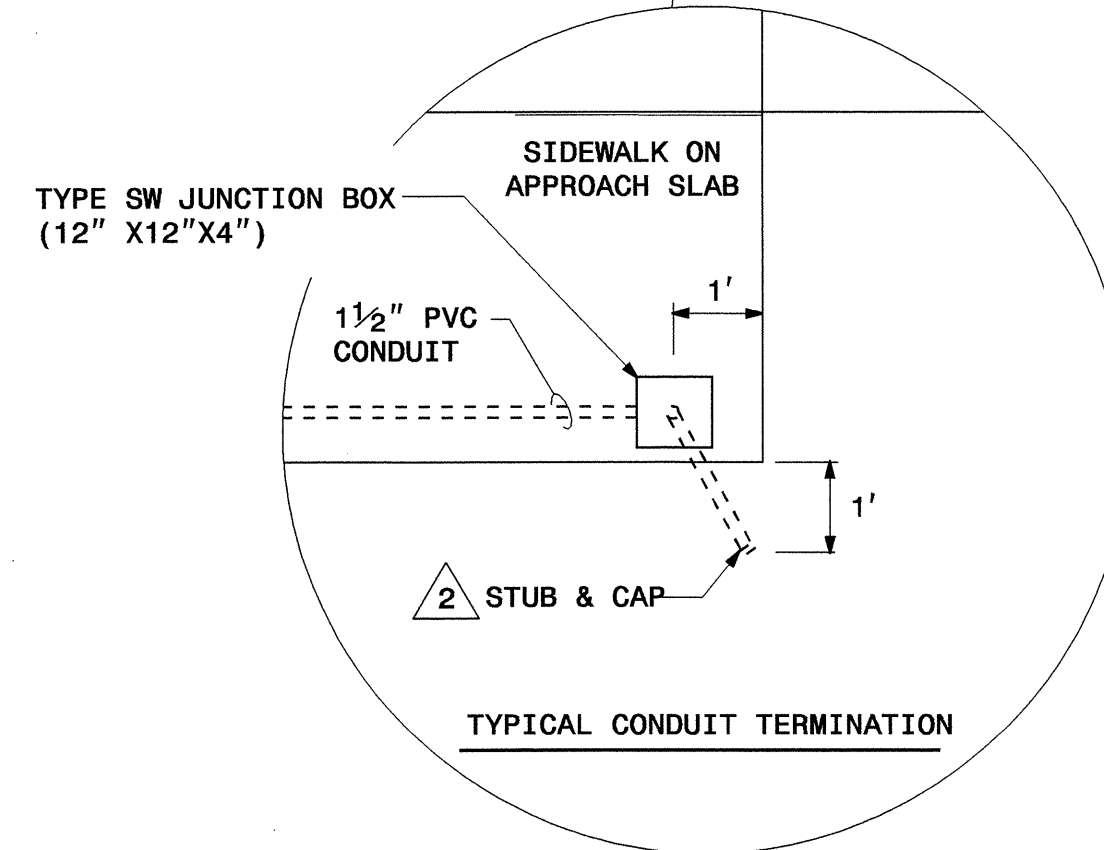
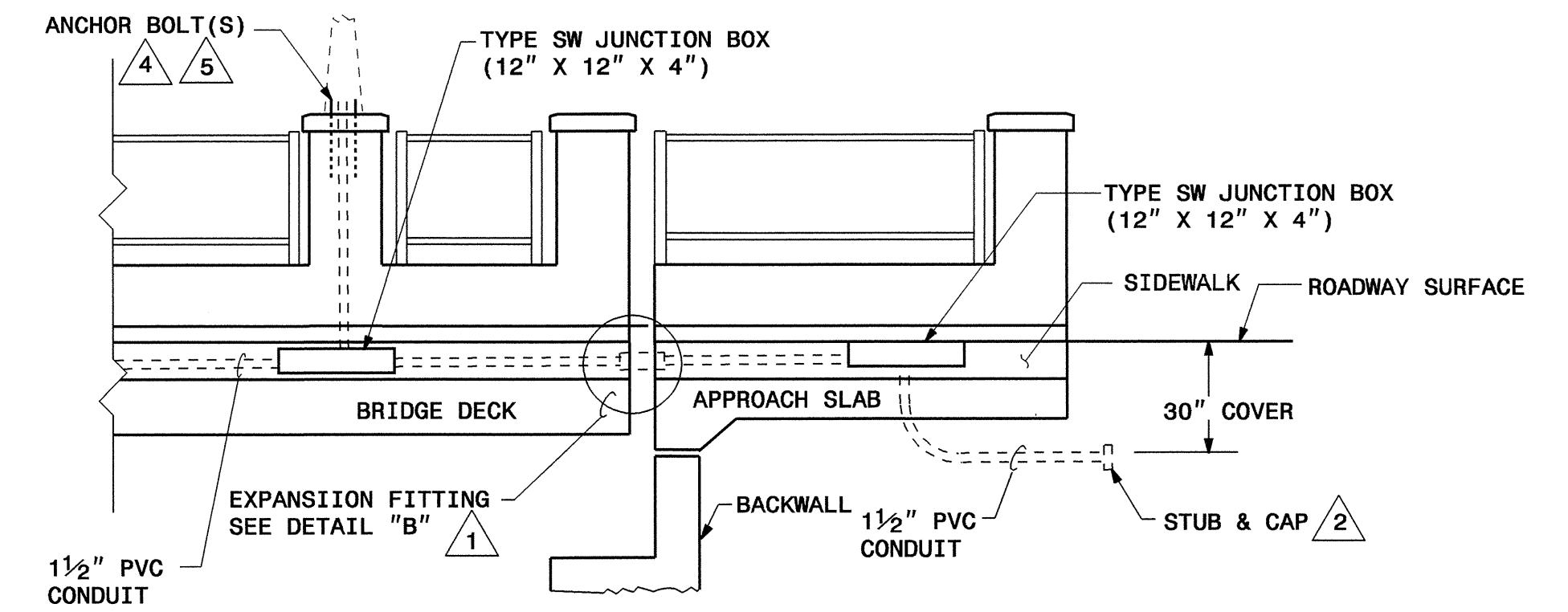
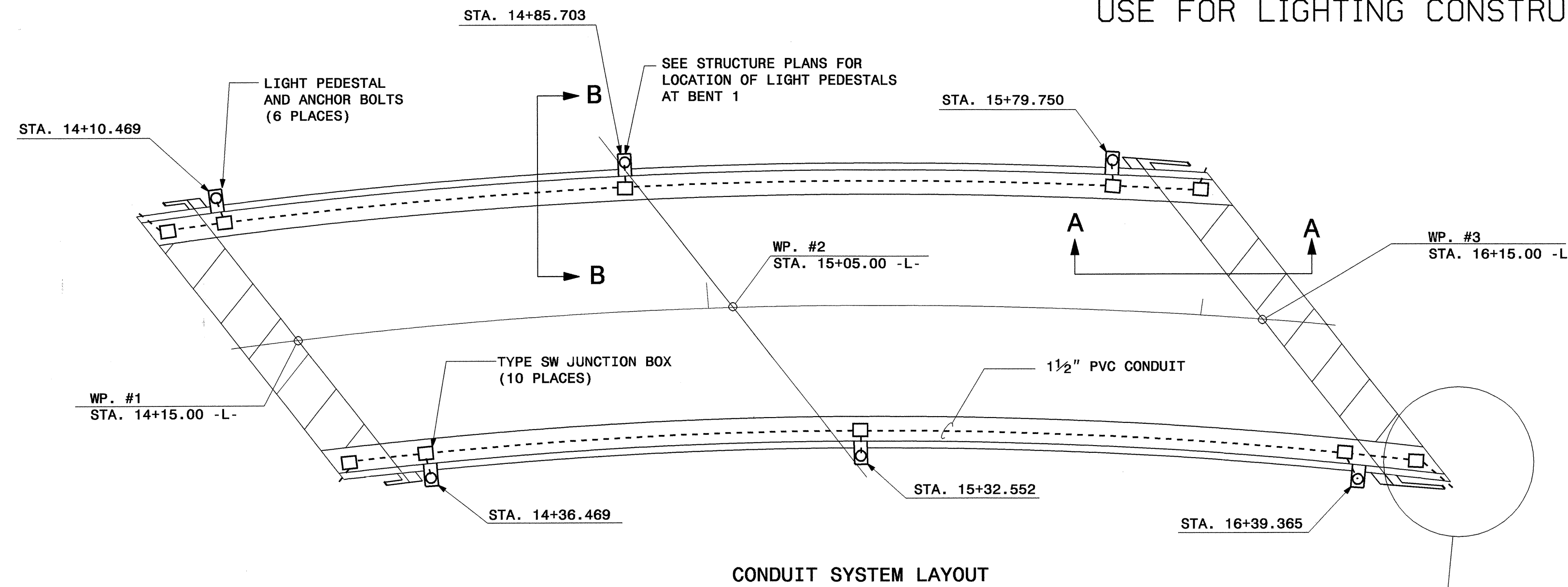


PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 6 OF 6

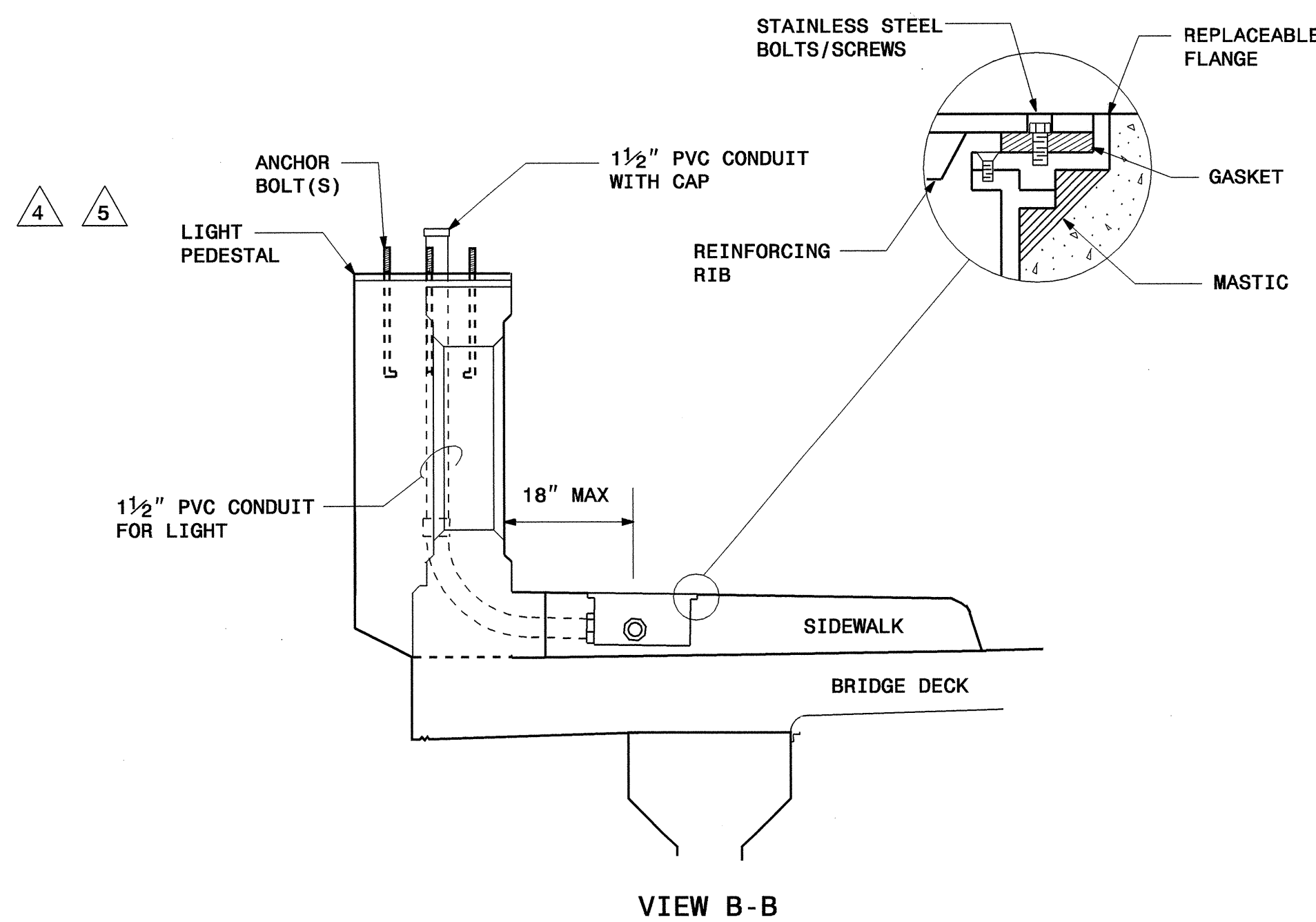
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH SUPERSTRUCTURE DECORATIVE CONCRETE AND METAL RAIL (STAGES I & II)					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					SHEET NO. S-35
					TOTAL SHEETS 60

USE FOR LIGHTING CONSTRUCTION ONLY



VIEW A-A
LIGHT STANDARD INSTALLATION AT END BENTS

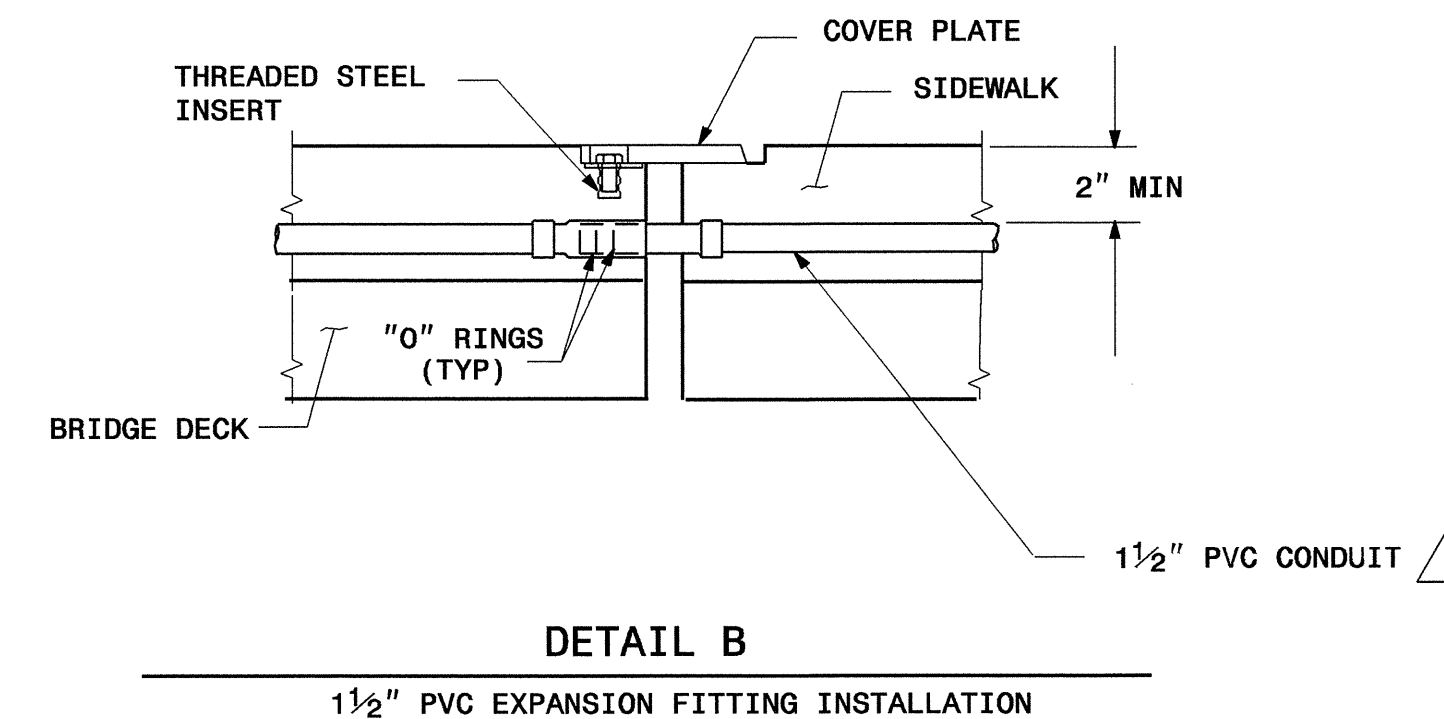
ESTIMATED BILL OF MATERIAL ELECTRICAL CONDUIT SYSTEM		
UNIT	ITEMS	QTY
EA.	TYPE SW JN. BOX (12" X 12" X 4")	10
FT	1 1/2" PVC CONDUIT	510
EA.	1 1/2" PVC EXPANSION JOINT	4
FT	POLYETHYLENE PULL LINE	520



VIEW B-B
CONDUIT AND JUNCTION BOX INSTALLATION AT LIGHT PEDESTALS

NOTES

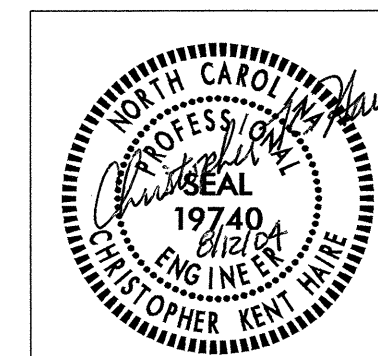
- 1 PROVIDE AND INSTALL EXPANSION FITTINGS AT ALL SIDEWALK EXPANSION JOINTS.
- 2 COORDINATE CONNECTION OF CONDUIT WITH OTHERS. ENSURE THAT CONDUIT IS NOT IN CONFLICT WITH GUARD RAIL POSTS.
- 3 SEE STRUCTURE PLANS FOR LOCATION AND DETAILS FOR LIGHT PEDESTALS.
- 4 INSTALL ANCHOR BOLTS ACCORDING TO MANUFACTURER'S RECOMMENDATION.
- 5 ANCHOR BOLTS, POLES AND LUMINAIRES TO BE PROVIDED BY THE EASTERN BAND OF THE CHEROKEE INDIANS.
- 6 FIELD BEND CONDUIT TO MISS COVER PLATE HARDWARE.



DETAIL B

1 1/2" PVC EXPANSION FITTING INSTALLATION

PROJECT NO. B-4696
Swain COUNTY
 STATION: 15+15.00 -L-



STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 DESIGN SERVICES LIGHTING & ELECTRICAL
ELECTRICAL CONDUIT SYSTEM
 BRIDGE OVER OCONAALUFTEE RIVER ON
 SR19/US441 BUS BETWEEN SR 1368 ACQUONI
 RD. AND US441

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-36
1			3			TOTAL SHEETS
2			4			60

SEE PROJECT SPECIAL PROVISIONS TITLED
 "ELECTRICAL CONDUIT SYSTEM" FOR MATERIALS
 CONSTRUCTION METHODS AND PAYMENT.

02/03/98

11-AUG-2004 17:06 C:\ECS\PlanShets\B4696ecs.dgn
 esd\Projects\11-AUG-2004 17:06 C:\ECS\PlanShets\B4696ecs.dgn

DRAWN BY: S.K. SAHA DATE: 07/10/03
 CHECKED BY: [Signature] DATE: 8-12-04

NOTES

ANGLES SHALL CONFORM TO AASHTO M270 GRADE 36 STEEL OR APPROVED EQUAL. ALL STUD ANCHORS SHALL CONFORM TO AASHTO M169 GRADES 1010 THRU 1020 OR APPROVED EQUAL.

STUD ANCHORS SHALL BE SHOP WELDED AND ALL HOLES SHALL BE SHOP DRILLED AS SHOWN ON THE PLANS. STUD ANCHORS SHALL BE ELECTRIC ARC END WELDED WITH COMPLETE FUSION.

UPON COMPLETION OF SHOP FABRICATION, THE ENTIRE ANCHOR ASSEMBLY SHALL BE METALLIZED. THE 1/2" Ø STUD ANCHORS AND ANCHOR TABS NEED NOT BE METALLIZED. SEE SPECIAL PROVISION FOR THERMAL SPRAYED COATINGS (METALLIZATION).

ANCHOR ASSEMBLY SHALL BE MADE CONTINUOUS THE LENGTH OF THE JOINT FROM GUTTER TO GUTTER. FOR FIELD SPLICES AT ALL CROWN BREAK POINTS, THE ENDS OF THE STEEL ANGLES SHALL BE CUT PARALLEL TO THE BRIDGE CENTERLINE. FINISHED FIELD WELDS SHALL BE GRIND SMOOTH AND COATED WITH A MINIMUM THICKNESS OF 4 DRY MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

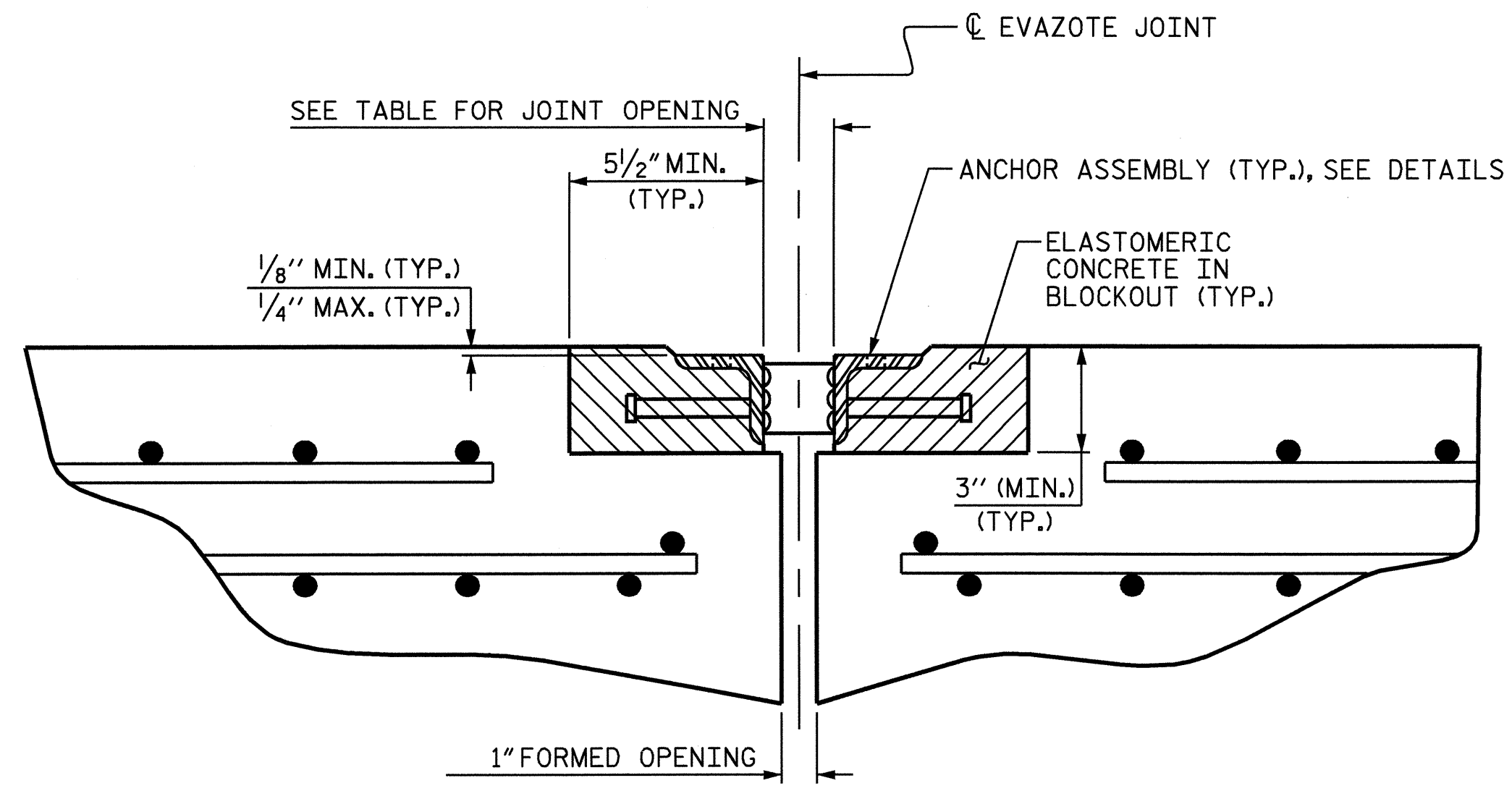
ANCHOR ASSEMBLY SEGMENTS SHALL NOT BE LESS THAN 12 FEET NOR MORE THAN 20 FEET IN LENGTH. SHORTER SEGMENTS MAY BE USED AT THE EDGE OF ROADWAY OR AT POINTS OF STAGED CONSTRUCTION.

THE ANCHOR ASSEMBLY SHALL BE SECURED AND LEVELED AS SHOWN IN THE "ARMORED JOINT ANCHOR ASSEMBLY DETAILS". NO SUBMITTALS ARE REQUIRED FOR 3/8" Ø EXPANSION ANCHORS, NUTS OR WASHERS. THE CONTRACTOR MAY SUBMIT FOR APPROVAL AN ALTERNATE METHOD OF ALIGNING AND LEVELING THE ANGLES. THE ALTERNATE METHOD SHALL NOT INCLUDE ANY WELDING TO THE OUTSIDE FACE OF THE ANGLES.

AFTER THE ELASTOMERIC CONCRETE HAS BEEN CAST ON BOTH SIDES OF THE JOINT, REMOVE ANY EXCESS CONCRETE THAT COMES THROUGH THE WEEP HOLES AND THOROUGHLY CLEAN THE ANGLES. ANY DAMAGED STEEL SHALL BE COATED WITH A MINIMUM OF 4 MILS OF ZINC-RICH PAINT IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

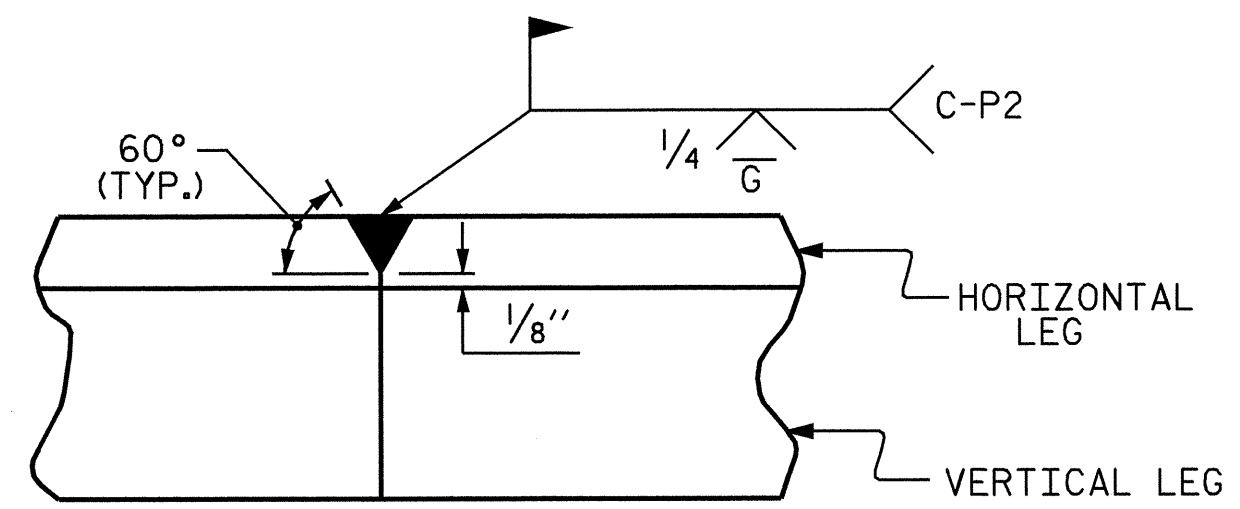
SEE SPECIAL PROVISIONS FOR EVAZOTE JOINT SEALS.

SEE SPECIAL PROVISIONS FOR ELASTOMERIC CONCRETE.

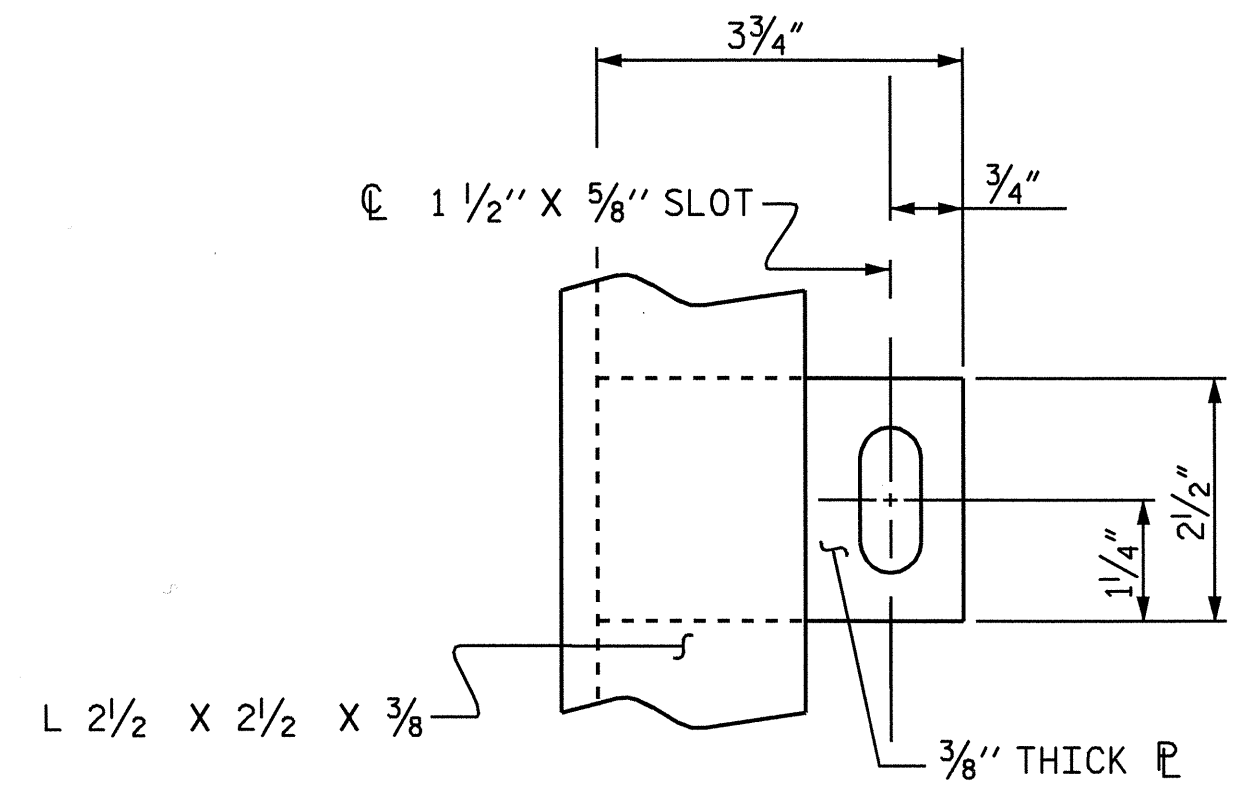


ARMORED JOINT DETAILS

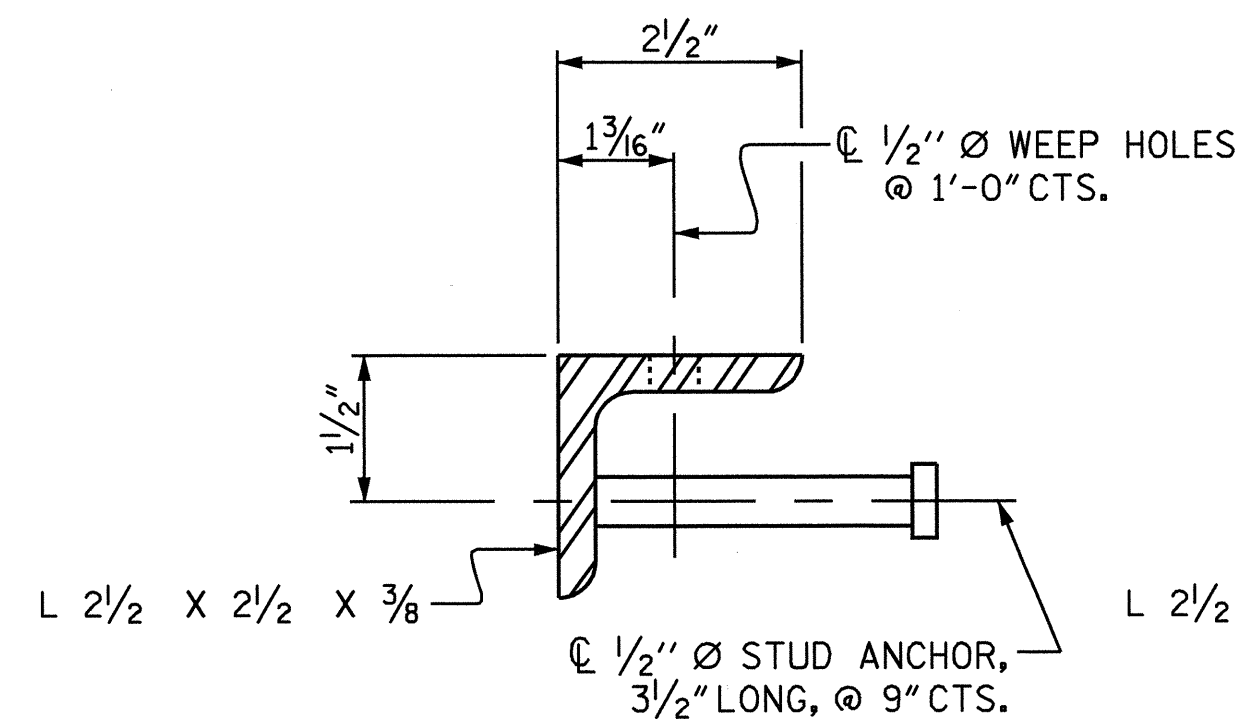
SECTION NORMAL TO JOINT AT END BENT



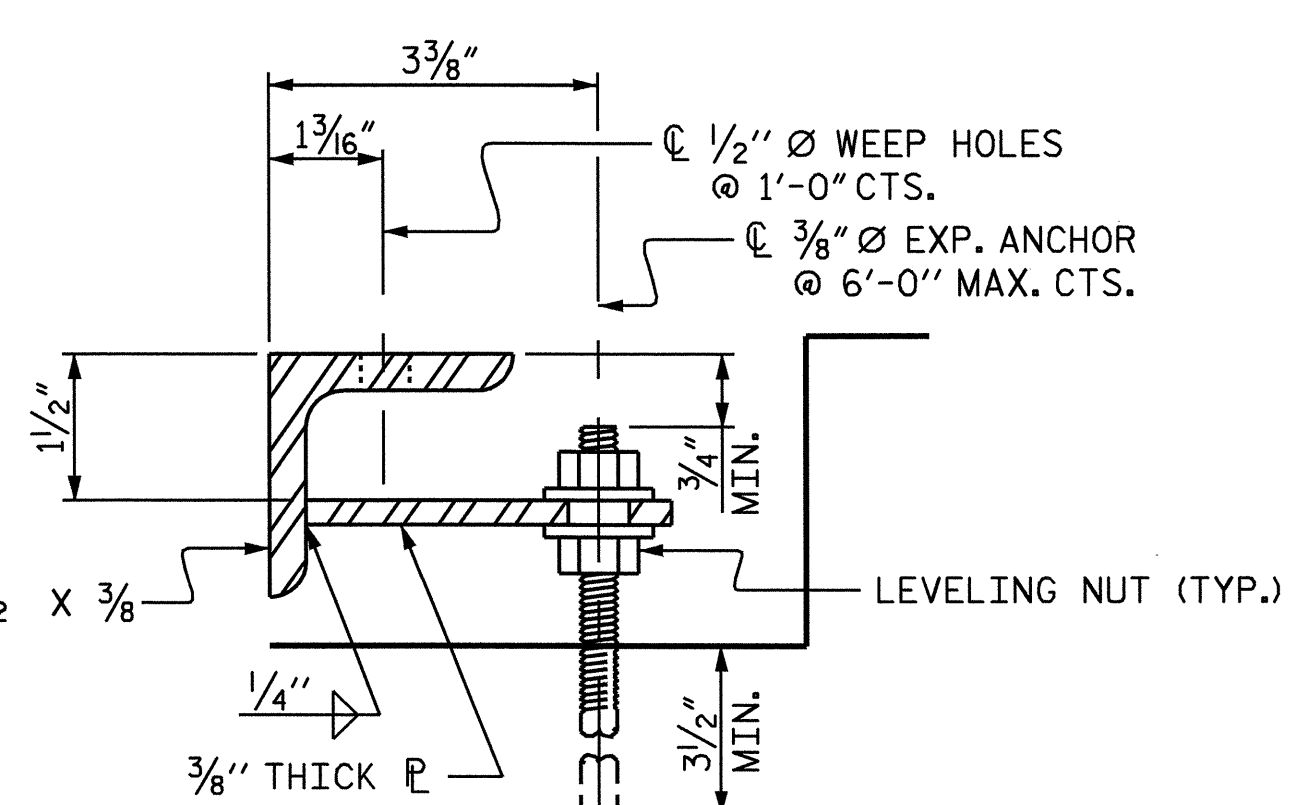
DETAIL- FIELD WELD SPLICE OF ANGLE



PLAN VIEW OF TAB



SECTION VIEW OF STUD



SECTION VIEW OF TAB

ARMORED JOINT ANCHOR ASSEMBLY DETAILS

MOVEMENT AND SETTING AT EVAZOTE JOINT						
	SKEW ANGLE TAN. TO -L- @ C JOINT	NOMINAL UNCOMPRESSED SEAL WIDTH	TOTAL MOVEMENT (ALONG C RDWY)	PERPENDICULAR JOINT OPENING AT 45° F	PERPENDICULAR JOINT OPENING AT 60° F	PERPENDICULAR JOINT OPENING AT 90° F
END BENT 1	72°-32'-48"	2 1/2"	7/8"	2 1/16"	1 7/8"	1 5/8"
END BENT 2	55°-46'-12"	2 1/2"	1 5/16"	2 1/16"	1 7/8"	1 5/8"

TOTAL MOVEMENT IS CALCULATED ALONG THE CENTERLINE OF ROADWAY. JOINT OPENINGS ARE MEASURED PERPENDICULAR TO THE JOINT.

BILL OF MATERIAL				
	STAGE I		STAGE II	
	ELASTOMERIC CONCRETE * (CU. FT.)	TOTAL LENGTH OF ANGLE (FT)	ELASTOMERIC CONCRETE * (CU. FT.)	TOTAL LENGTH OF ANGLE (FT.)
END BENT 1	10.8	94'-2 3/8"	5.5	48'-4 5/8"
END BENT 2	12.4	108'-0 3/4"	6.5	56'-6 1/8"

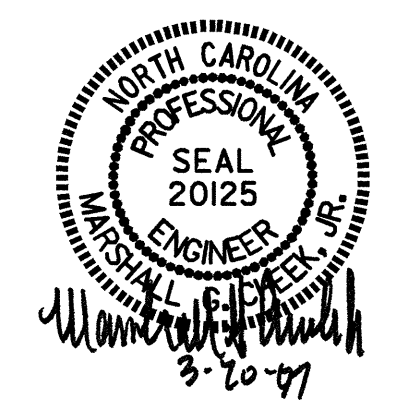
* BASED ON THE MINIMUM BLOCKOUT SHOWN.

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

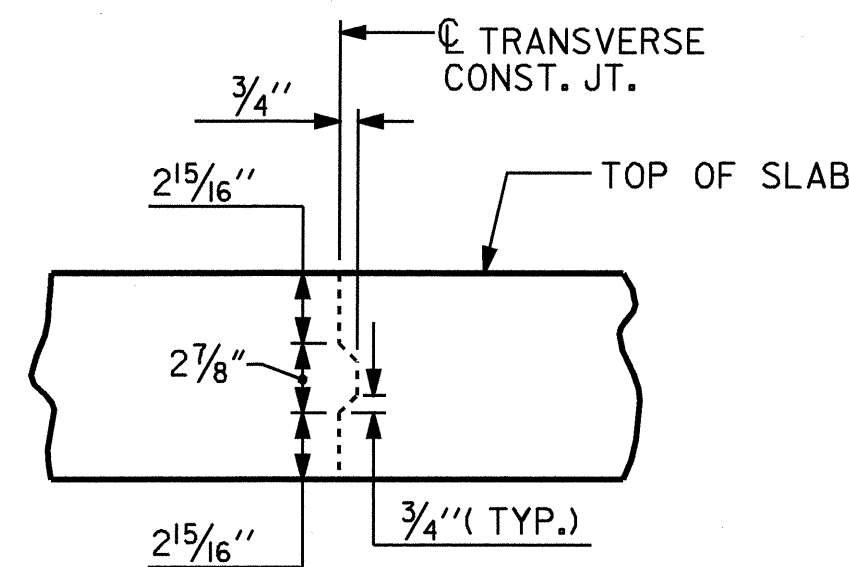
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STANDARD
 ARMORED EVAZOTE
 JOINT DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-37
1			3			TOTAL SHEETS
2			4			60

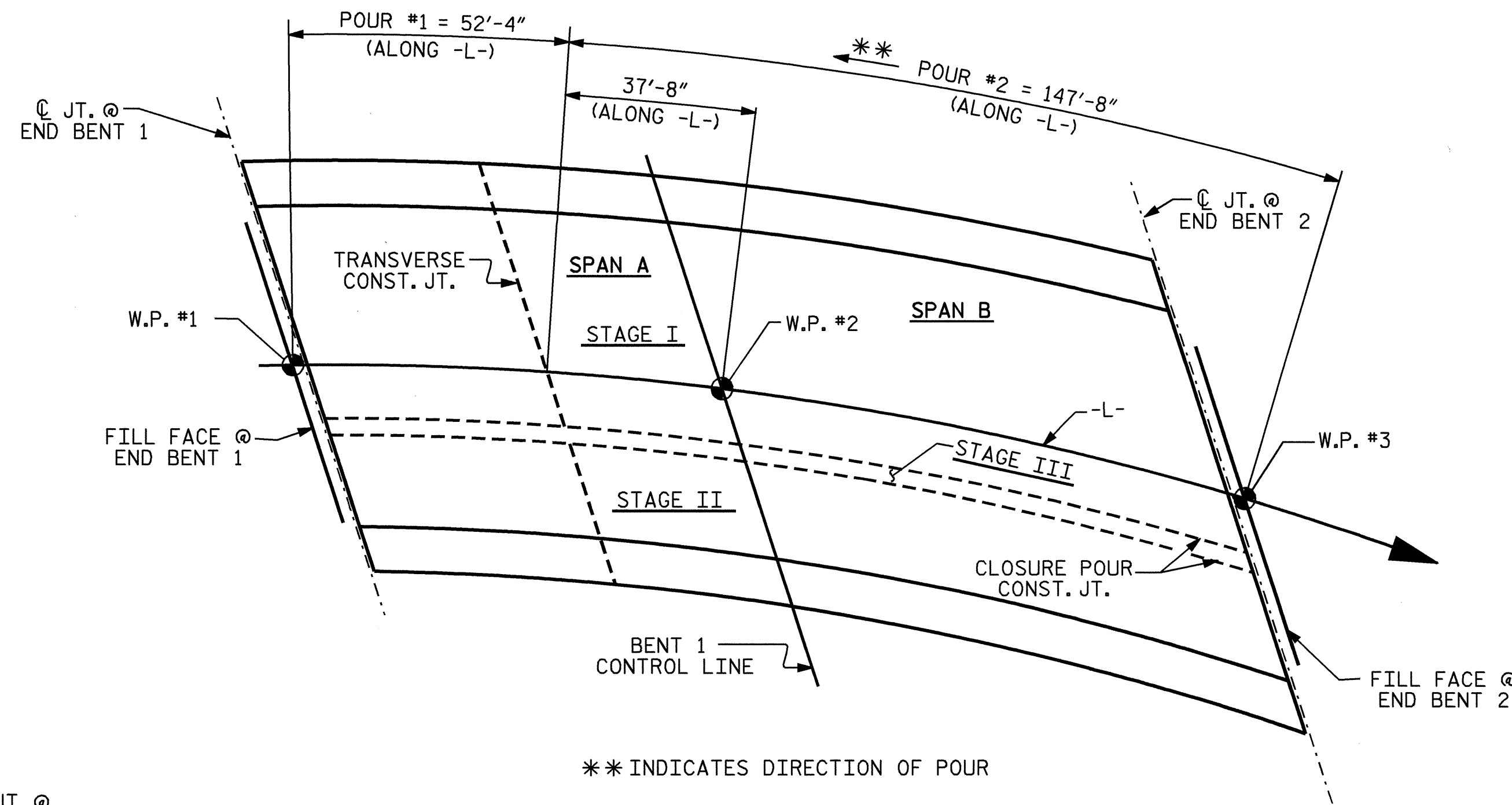


ASSEMBLED BY : V.X. NGUYEN DATE : 10-31-06
 CHECKED BY : D. HODGE DATE : 10-06
 DRAWN BY : EEM 1/96 REV. 7/10/01 LES/RDR
 CHECKED BY : RCW 1/96 REV. 5/7/03RR RWW/JTE
 REV. 5/1/06 TLA/GM



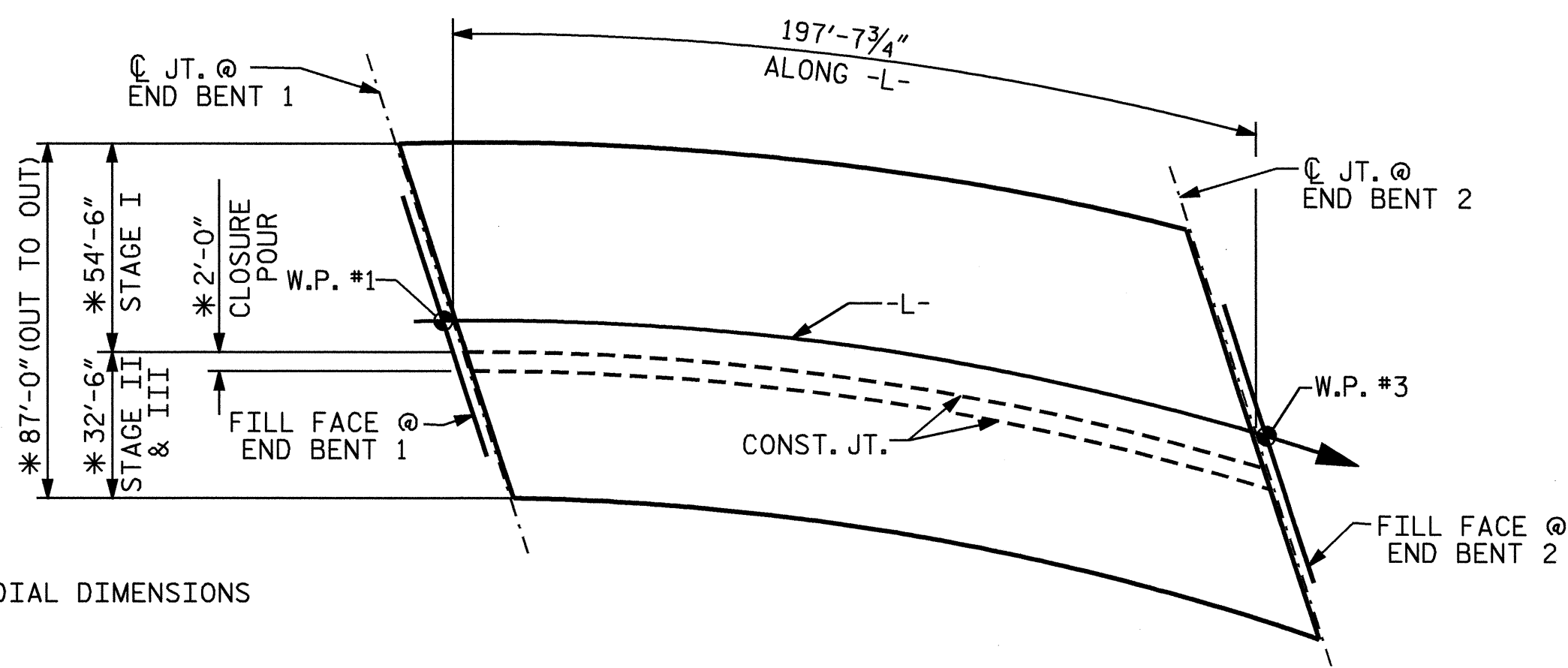
TRANSVERSE CONSTRUCTION JOINT DETAIL

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



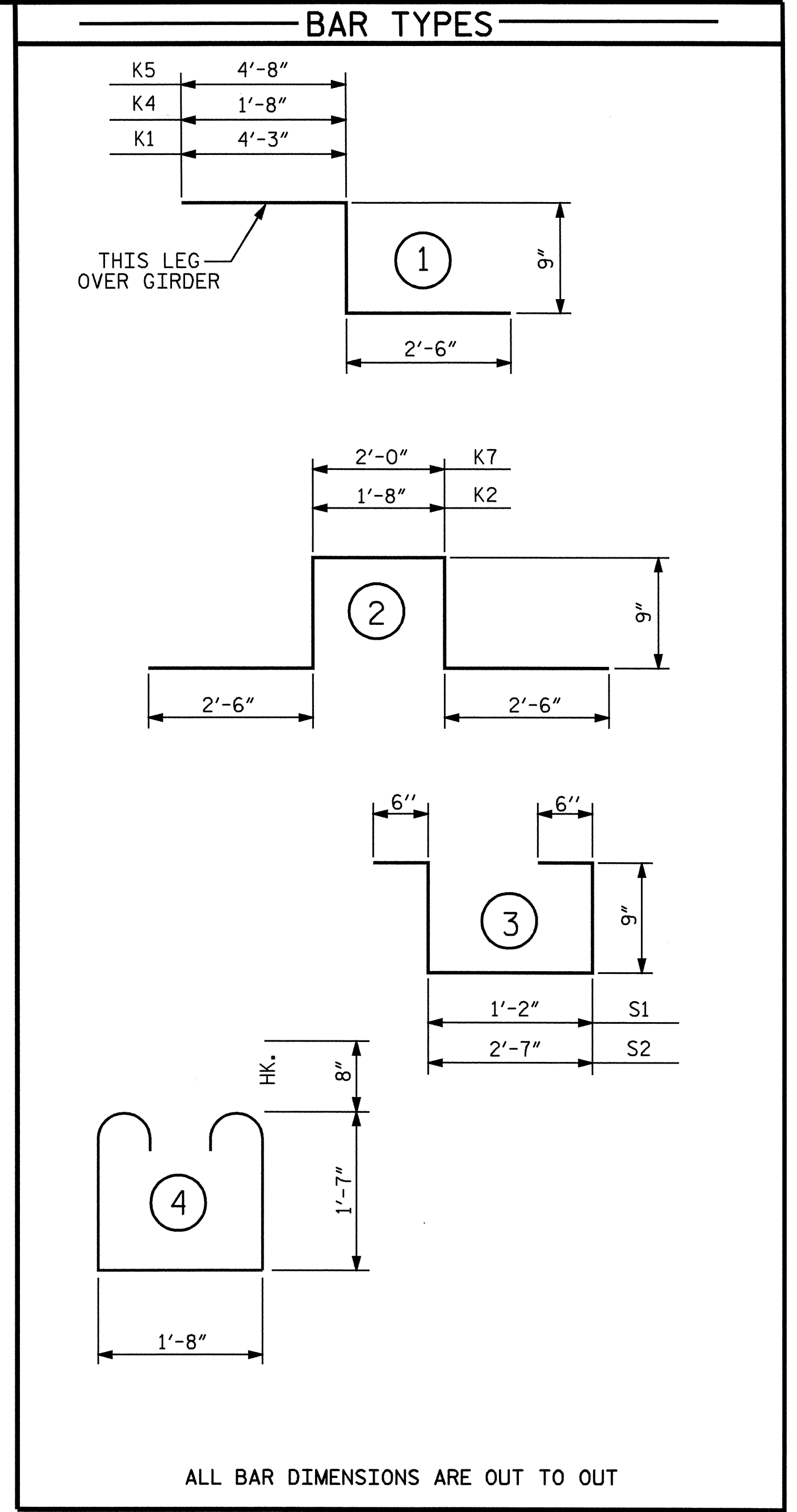
** INDICATES DIRECTION OF POUR

DECK POUR DETAIL



LAYOUT FOR COMPUTING AREA OF REINFORCED CONCRETE DECK SLAB (TOTAL SQ. FT. = 17,204)

(STAGE I = 10,710 SQ. FT.)
(STAGE II & III = 6,494 SQ. FT.)



ALL BAR DIMENSIONS ARE OUT TO OUT

SUPERSTRUCTURE BILL OF MATERIAL			
	CLASS AA CONCRETE	REINFORCING STEEL	EPOXY COATED REINFORCING STEEL
	(CU.YDS.)	(LBS.)	(LBS.)
SPAN "A & B"- STAGE I	394.9	32,602	35,259
SPAN "A & B"- STAGE II	234.2	18,013	20,829
STAGE III	14.4	18,013	20,829
SIDEWALK			4,160
TOTALS**	643.5	50,615	60,248

**QUANTITIES FOR DECORATIVE CONCRETE RAIL & PARAPET ARE NOT INCLUDED

POUR SEQUENCE BREAKDOWN			
	CLASS AA CONCRETE		
	STAGE I	STAGE II	STAGE III
	(CU.YDS.)	(CU.YDS.)	(CU.YDS.)
POUR #1	95.3	50.1	14.4
POUR #2	270.8	143.9	
SIDEWALK	28.8	40.2	
TOTALS**	394.9	234.2	14.4

**QUANTITIES FOR DECORATIVE CONCRETE RAIL & PARAPET ARE NOT INCLUDED

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

**SUPERSTRUCTURE
BILL OF MATERIAL**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-38
1			3			TOTAL SHEETS 60
2			4			



ASSEMBLED BY : V. X. NGUYEN DATE : 6-9-06
CHECKED BY : D. HODGE DATE : 10-06
DRAWN BY : JMB 5/87 REV. 6/1/94 EEM/GRP
CHECKED BY : SJD 9/87 REV. 8/16/99 RWW/LES

BAR SCHEDULE

SPANS A & B - STAGE I

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	304	5	STR	54'-2"	17,175	*A201	2	5	STR	52'-5"	109	*B1	88	4	STR	24'-2"	1421
A2	304	5	STR	54'-2"	17,175	*A202	2	5	STR	50'-5"	105	B2	236	5	STR	51'-10"	12759
						*A203	2	5	STR	48'-5"	101	*B3	88	6	STR	43'-5"	5739
*A101	1	5	STR	52'-10"	55	*A204	2	5	STR	46'-5"	97	*B4	86	6	STR	38'-5"	4962
*A102	1	5	STR	51'-2"	53	*A205	2	5	STR	44'-6"	93	*B5	132	4	STR	26'-4"	2322
*A103	1	5	STR	49'-5"	52	*A206	2	5	STR	42'-6"	89						
*A104	1	5	STR	47'-9"	50	*A207	2	5	STR	40'-7"	85	*D1	132	5	STR	3'-6"	482
*A105	1	5	STR	46'-0"	48	*A208	2	5	STR	38'-7"	80						
*A106	1	5	STR	44'-3"	46	*A209	2	5	STR	36'-8"	76	*G1	1	5	STR	56'-7"	59
*A107	1	5	STR	42'-6"	44	*A210	2	5	STR	34'-9"	72	*G2	2	5	STR	33'-8"	70
*A108	1	5	STR	40'-9"	43	*A211	2	5	STR	32'-11"	69						
*A109	1	5	STR	39'-0"	41	*A212	2	5	STR	31'-0"	65	*K1	2	5	1	7'-6"	16
*A110	1	5	STR	37'-3"	39	*A213	2	5	STR	29'-2"	61	*K2	10	5	2	8'-2"	85
*A111	1	5	STR	35'-6"	37	*A214	2	5	STR	27'-3"	57	K3	12	5	STR	7'-7"	95
*A112	1	5	STR	33'-8"	35	*A215	2	5	STR	25'-5"	53	*K4	5	5	1	4'-11"	26
*A113	1	5	STR	31'-11"	33	*A216	2	5	STR	23'-7"	49	*K5	3	5	1	7'-11"	25
*A114	1	5	STR	30'-1"	31	*A217	2	5	STR	21'-9"	45	K6	18	5	STR	8'-10"	166
*A115	1	5	STR	28'-3"	29	*A218	2	5	STR	20'-0"	42	*K7	15	5	2	8'-6"	133
*A116	1	5	STR	26'-5"	28	*A219	2	5	STR	18'-2"	38						
*A117	1	5	STR	24'-7"	26	*A220	2	5	STR	16'-5"	34	*S1	48	4	3	3'-8"	118
*A118	1	5	STR	22'-9"	24	*A221	2	5	STR	14'-7"	30	*S2	48	4	3	5'-1"	163
*A119	1	5	STR	20'-11"	22	*A222	2	5	STR	12'-10"	27	*S3	6	6	4	6'-2"	56
*A120	1	5	STR	19'-0"	20	*A223	2	5	STR	11'-1"	23						
*A121	1	5	STR	17'-2"	18	*A224	2	5	STR	9'-4"	19	REINFORCING					
*A122	1	5	STR	15'-3"	16	*A225	2	5	STR	7'-7"	16	STEEL					
*A123	1	5	STR	13'-4"	14	*A226	2	5	STR	5'-11"	12	(LBS.)					
*A124	1	5	STR	11'-5"	12	*A227	2	5	STR	4'-2"	9	*EPOXY COATED					
*A125	1	5	STR	9'-6"	10	*A228	2	5	STR	2'-6"	5	REINFORCING STEEL					
*A126	1	5	STR	7'-7"	8						(LBS.)						
*A127	1	5	STR	5'-8"	6												
*A128	1	5	STR	3'-8"	4	A401	2	5	STR	52'-5"	109	*THESE BARS ARE EPOXY COATED					
*A129	1	5	STR	1'-9"	2	A402	2	5	STR	50'-5"	105						
A301	1	5	STR	52'-10"	55	A403	2	5	STR	48'-5"	101						
A302	1	5	STR	51'-2"	53	A404	2	5	STR	46'-5"	97						
A303	1	5	STR	49'-5"	52	A405	2	5	STR	44'-6"	93						
A304	1	5	STR	47'-9"	50	A406	2	5	STR	42'-6"	89						
A305	1	5	STR	46'-0"	48	A407	2	5	STR	40'-7"	85						
A306	1	5	STR	44'-3"	46	A408	2	5	STR	38'-7"	80						
A307	1	5	STR	42'-6"	44	A409	2	5	STR	36'-8"	76						
A308	1	5	STR	40'-9"	43	A410	2	5	STR	34'-9"	72						
A309	1	5	STR	39'-0"	41	A411	2	5	STR	32'-11"	69						
A310	1	5	STR	37'-3"	39	A412	2	5	STR	31'-0"	65						
A311	1	5	STR	35'-6"	37	A413	2	5	STR	29'-2"	61						
A312	1	5	STR	33'-8"	35	A414	2	5	STR	27'-3"	57						
A313	1	5	STR	31'-11"	33	A415	2	5	STR	25'-5"	53						
A314	1	5	STR	30'-1"	31	A416	2	5	STR	23'-7"	49						
A315	1	5	STR	28'-3"	29	A417	2	5	STR	21'-9"	45						
A316	1	5	STR	26'-5"	28	A418	2	5	STR	20'-0"	42						
A317	1	5	STR	24'-7"	26	A419	2	5	STR	18'-2"	38						
A318	1	5	STR	22'-9"	24	A420	2	5	STR	16'-5"	34						
A319	1	5	STR	20'-11"	22	A421	2	5	STR	14'-7"	30						
A320	1	5	STR	19'-0"	20	A422	2	5	STR	12'-10"	27						
A321	1	5	STR	17'-2"	18	A423	2	5	STR	11'-1"	23						
A322	1	5	STR	15'-3"	16	A424	2	5	STR	9'-4"	19						
A323	1	5	STR	13'-4"	14	A425	2	5	STR	7'-7"	16						
A324	1	5	STR	11'-5"	12	A426	2	5	STR	5'-11"	12						
A325	1	5	STR	9'-6"	10	A427	2	5	STR	4'-2"	9						
A326	1	5	STR	7'-7"	8	A428	2	5	STR	2'-6"	5						
A327	1	5	STR	5'-8"	6												
A328	1	5	STR	3'-8"	4												
A329	1	5	STR	1'-9"	2												

DRAWN BY : V. X. NGUYEN DATE : 6-9-06
 CHECKED BY : D. HODGE DATE : 10-06

26-MAR-2007 11:25
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 dahodge

BAR SCHEDULE

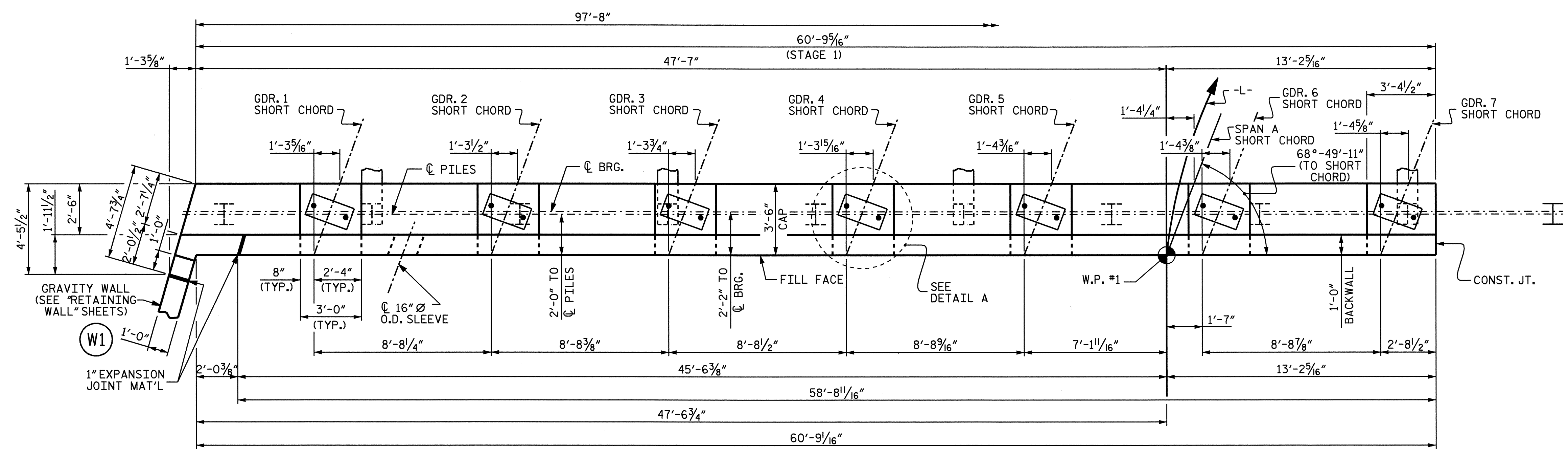
SPANS A & B - STAGE II

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A3	322	5	STR	30'-2"	10131	*A601	2	5	STR	28'-8"	60	*B1	50	4	STR	24'-2"	807
A4	322	5	STR	30'-2"	10131	*A602	2	5	STR	27'-1"	56	B2	128	5	STR	51'-10"	6920
						*A603	2	5	STR	25'-5"	53	*B3	50	6	STR	43'-5"	3261
*A501	1	5	STR	28'-10"	30	*A604	2	5	STR	23'-9"	50	*B4	48	6	STR	38'-5"	2770
*A502	1	5	STR	27'-2"	28	*A605	2	5	STR	22'-2"	46	*B5	75	4	STR	26'-4"	1319
*A503	1	5	STR	25'-6"	27	*A606	2	5	STR	20'-6"	43						
*A504	1	5	STR	23'-10"	25	*A607	2	5	STR	18'-11"	39	*D1	132	5	STR	3'-6"	482
*A505	1	5	STR	22'-2"	23	*A608	2	5	STR	17'-4"	36						
*A506	1	5	STR	20'-6"	21	*A609	2	5	STR	15'-9"	33	*G3	1	5	STR	31'-9"	33
*A507	1	5	STR	18'-10"	20	*A610	2	5	STR	14'-2"	30	*G4	1	5	STR	37'-3"	39
*A508	1	5	STR	17'-1"	18	*A611	2	5	STR	12'-8"	26						
*A509	1	5	STR	15'-4"	16	*A612	2	5	STR	11'-1"	23	*K1	2	5	1	7'-6"	16
*A510	1	5	STR	13'-8"	14	*A613	2	5	STR	9'-6"	20	*K2	4	5	2	8'-2"	34
*A511	1	5	STR	11'-11"	12	*A614	2	5	STR	8'-0"	17	K3	6	5	STR	7'-7"	47
*A512	1	5	STR	10'-2"	11	*A615	2	5	STR	6'-6"	14	*K4	5	5	1	4'-11"	26
*A513	1	5	STR	8'-5"	9	*A616	2	5	STR	4'-11"	10	*K5	3	5	1	7'-11"	25
*A514	1	5	STR	6'-7"	7	*A617	2	5	STR	3'-5"	7	K6	9	5	STR	8'-10"	83
*A515	1	5	STR	4'-10"	5							*K7	6	5	2	8'-6"	53
*A516	1	5	STR	3'-1"	3	A801	2	5	STR	28'-8"	60						
						A802	2	5	STR	27'-1"	56	*S1	24	4	3	3'-8"	59
						A803	2	5	STR	25'-5"	53	*S2	24	4	3	5'-1"	81
A701	1	5	STR	28'-10"	30	A804	2	5	STR	23'-9"	50	*S3	6	6	4	6'-2"	56
A702	1	5	STR	27'-2"	28	A805	2	5	STR	22'-2"	46	REINFORCING					
A703	1	5	STR	25'-6"	27	A806	2	5	STR	20'-6"	43	STEEL					
A704	1	5	STR	23'-10"	25	A807	2	5	STR	18'-11"	39	(LBS.)					
A705	1	5	STR	22'-2"	23	A808	2	5	STR	17'-4"	36	*EPOXY COATED					
A706	1	5	STR	20'-6"	21	A809	2	5	STR	15'-9"	33	REINFORCING STEEL					
A707	1	5	STR	18'-10"	20	A810	2	5	STR	14'-2"	30	(LBS.)					
A708	1	5	STR	17'-1"	18	A811	2	5	STR	12'-8"	26	*THESE BARS ARE EPOXY COATED					
A709	1	5	STR	15'-4"	16	A812	2	5	STR	11'-1"	23						
A710	1	5	STR	13'-8"	14	A813	2	5	STR	9'-6"	20						
A711	1	5	STR	11'-11"	12	A814	2	5	STR	8'-0"	17						
A712	1	5	STR	10'-2"	11	A815	2	5	STR	6'-6"	14						
A713	1	5	STR	8'-5"	9	A816	2	5	STR	4'-11"	10						
A714	1	5	STR	6'-7"	7	A817	2	5	STR	3'-5"	7						
A715	1	5	STR	4'-10"	5												
A716	1	5	STR	3'-1"	3												

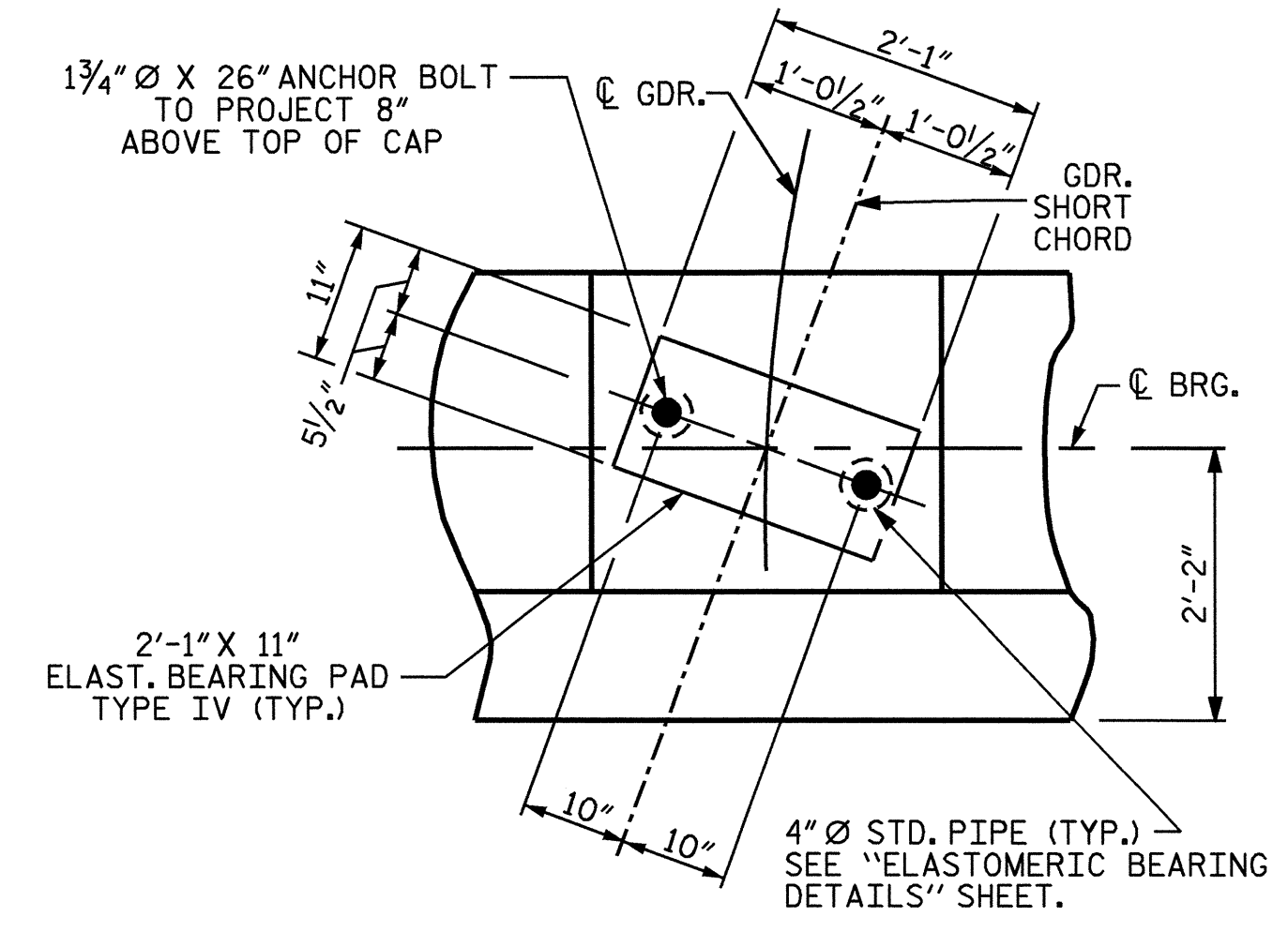
GROOVING BRIDGE

NOTES:

- STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.
- BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.
- THE TOP SURFACE AREAS OF THE END BENT CAP SHALL BE CURED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THE MEMBRANE CURING COMPOUND METHOD SHALL NOT BE USED.
- THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.
- EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.
- CENTER UTILITY IN BLOCKOUT AND FILL ANNULAR SPACE AROUND UTILITY PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1.



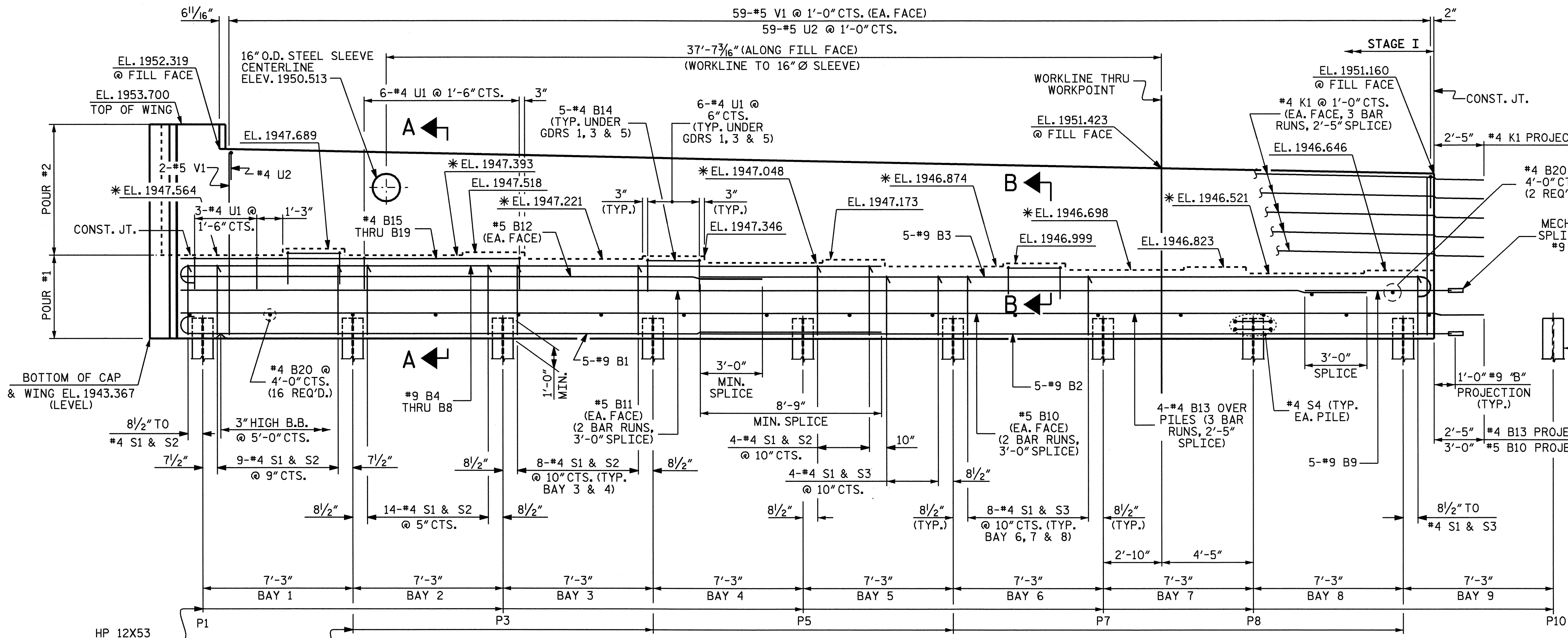
PLAN-STAGE I



DETAIL A

(DIMENSIONS TYP. EA. BRG.)

* FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILDUPS, SEE SECTION A-A AND C-C, SHEET 2 OF 4.



ELEVATION-STAGE I

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 1 OF 4

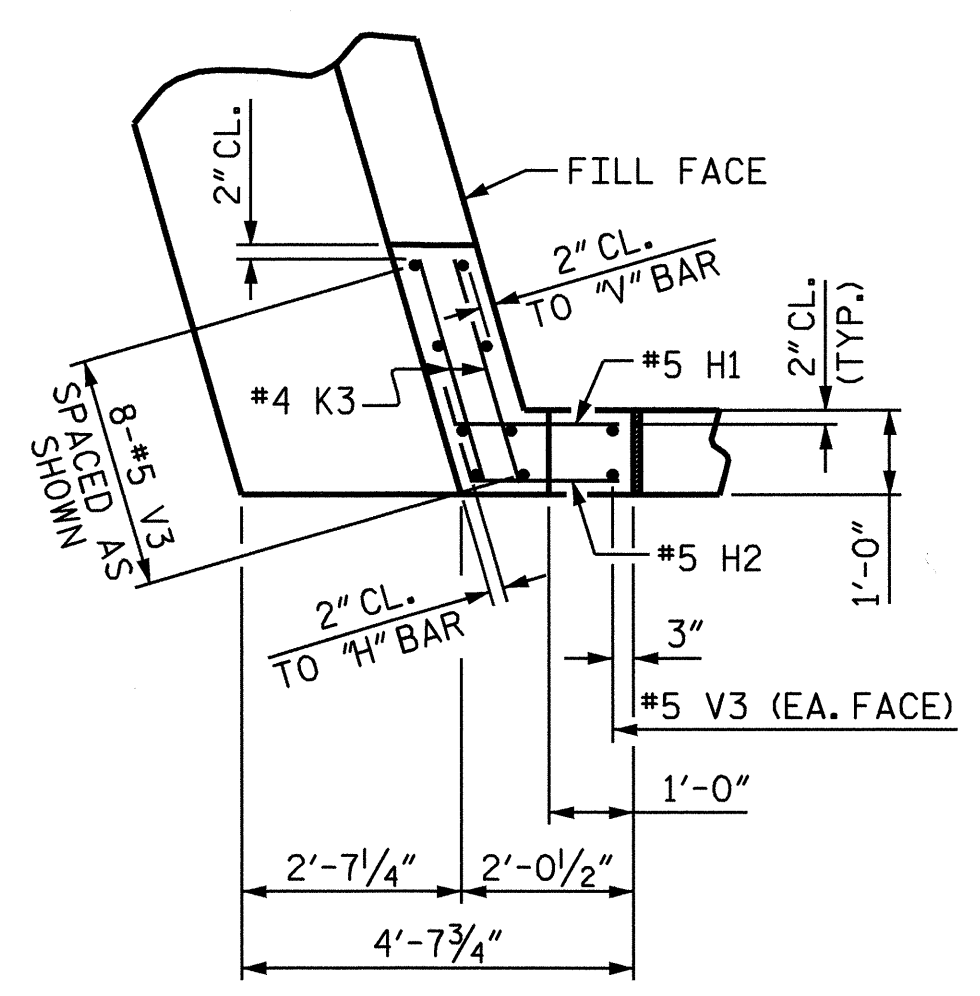
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT NO. 1
 STAGE I

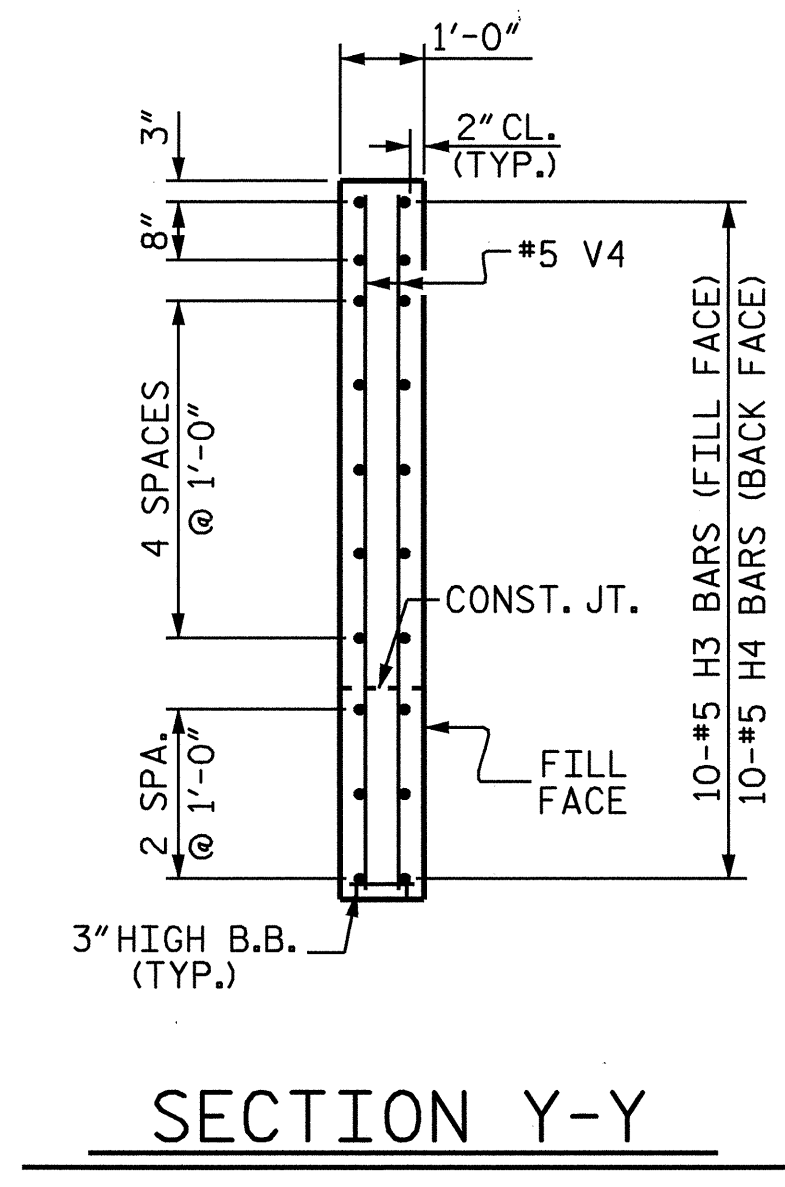
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

TOTAL SHEETS: 60

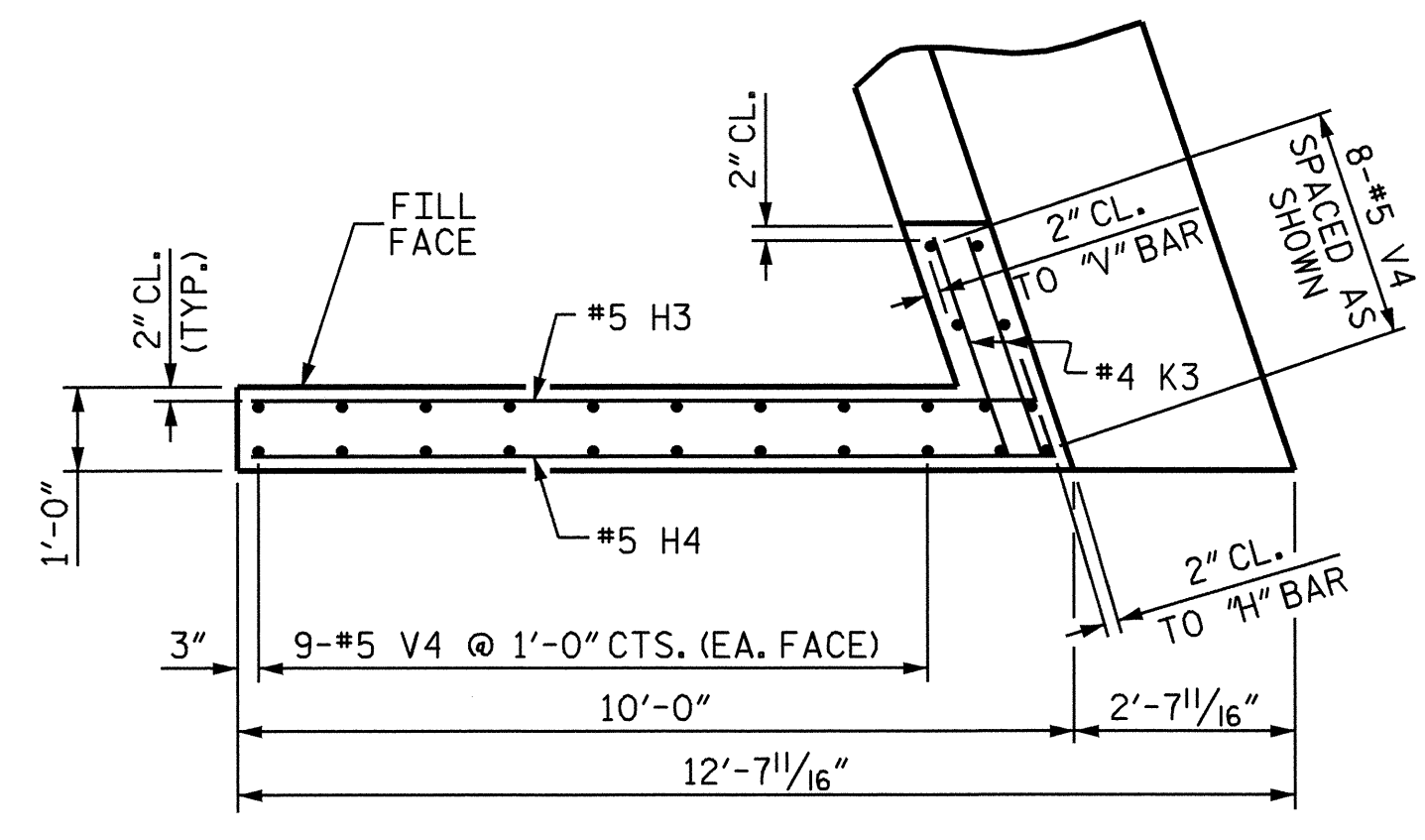




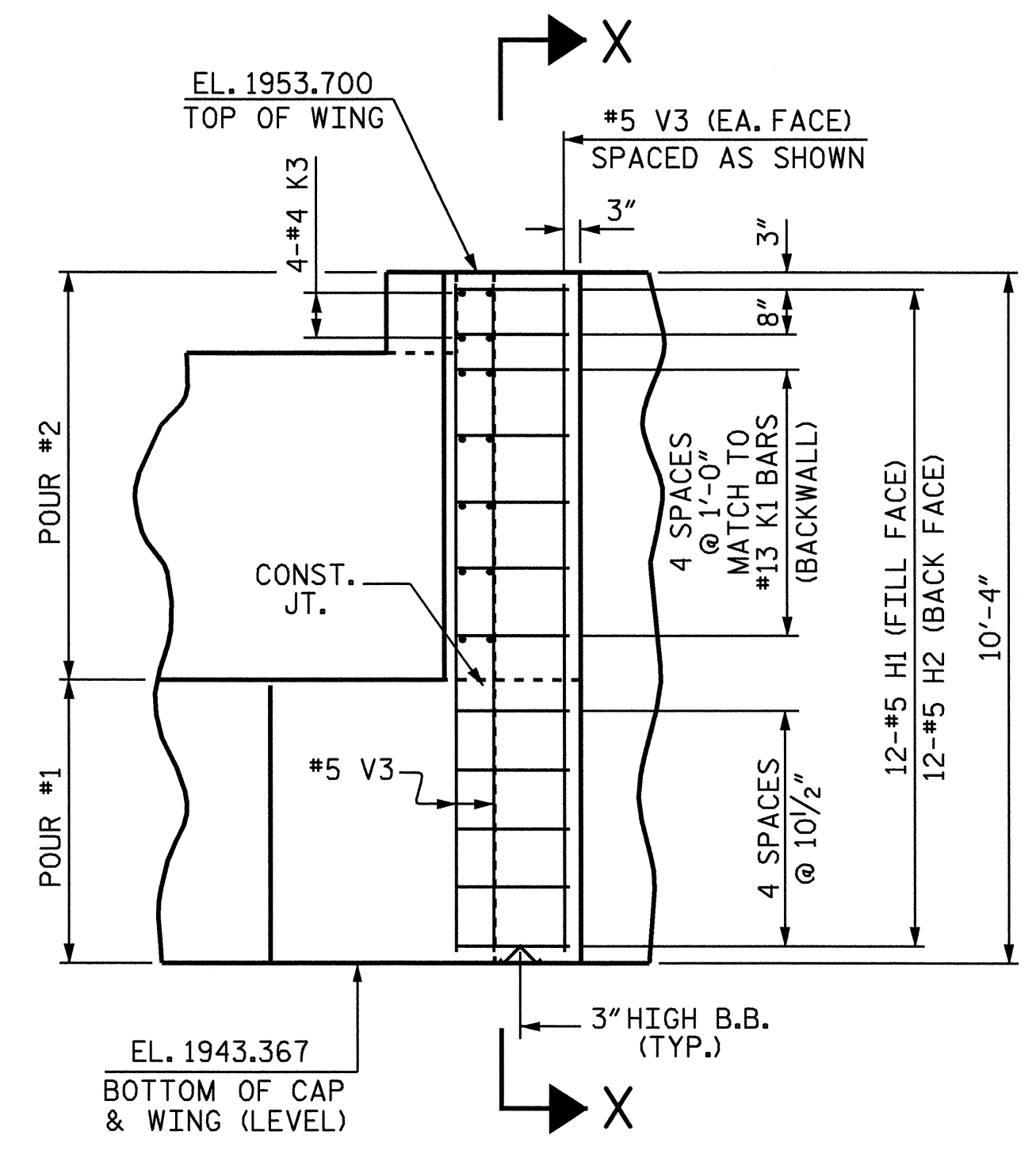
PLAN OF LEFT WING (W1)



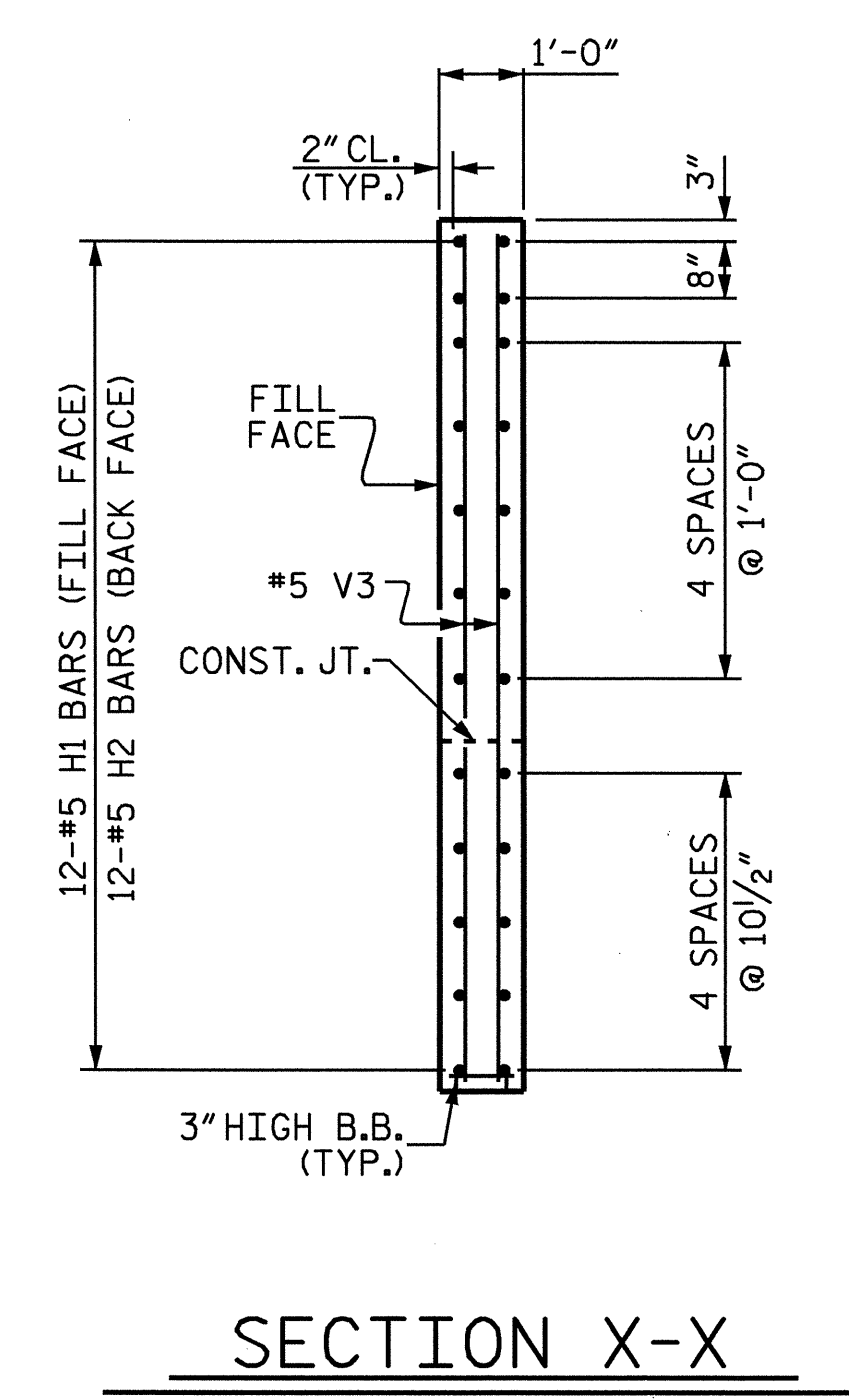
SECTION Y-Y



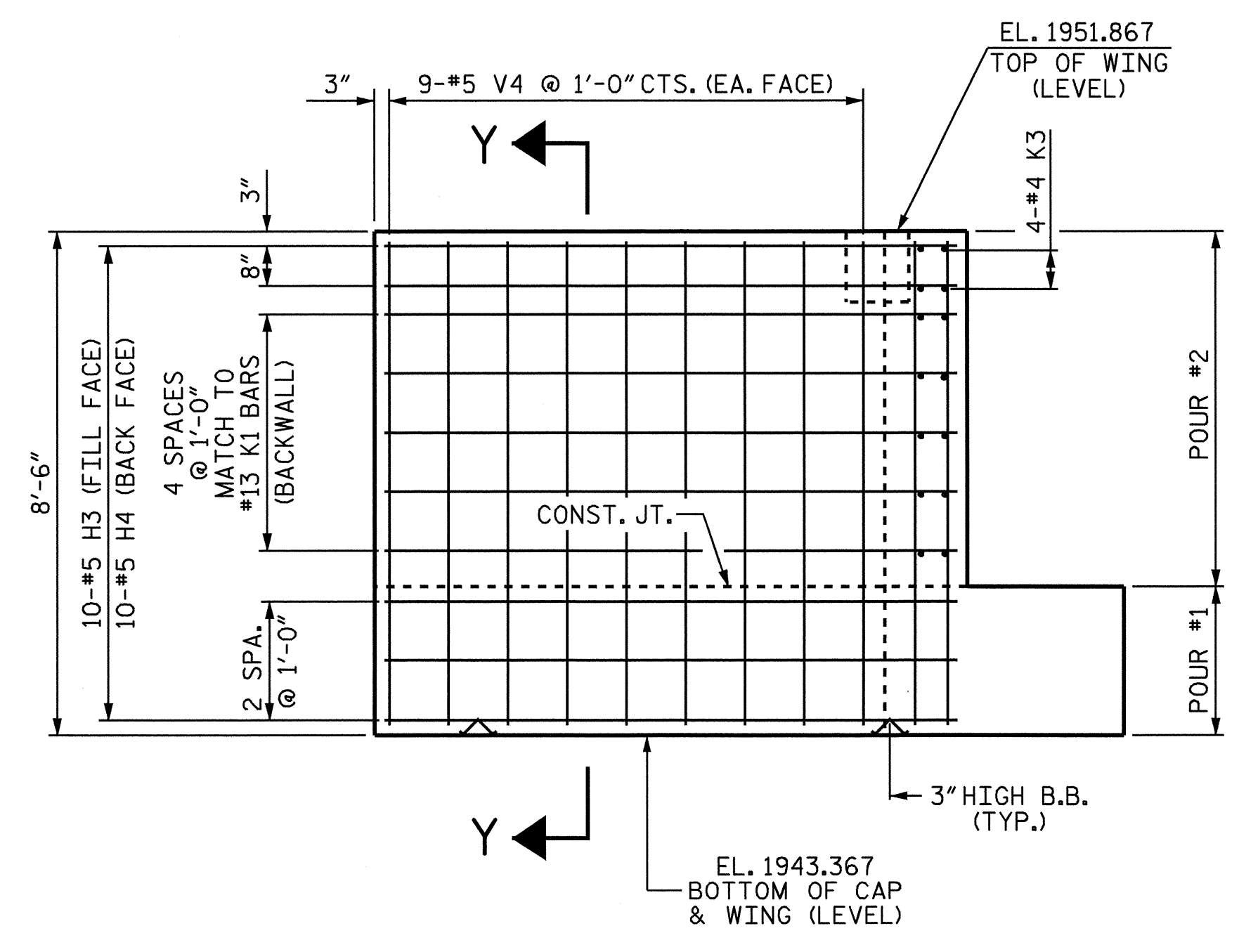
PLAN OF RIGHT WING (W2)



ELEVATION OF LEFT WING (W1)



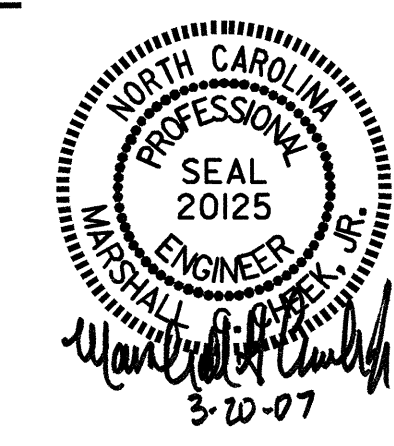
SECTION X-X



ELEVATION OF RIGHT WING (W2)

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-
 SHEET 3 OF 4

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
 SUBSTRUCTURE
 END BENT NO. 1



DRAWN BY: A. SORSENGINH DATE: 4/18/06
 CHECKED BY: L.L. MURPHY DATE: 5/11/06

REVISIONS						SHEET NO. S-42
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			60

NOTES

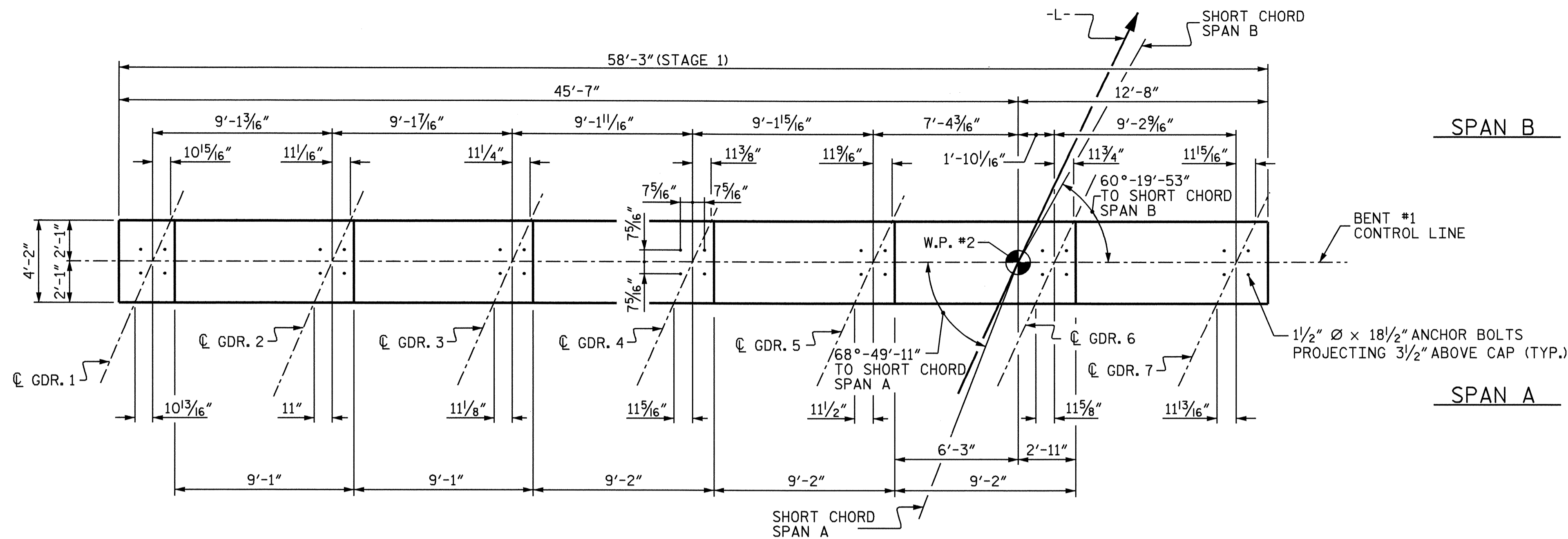
STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".

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.

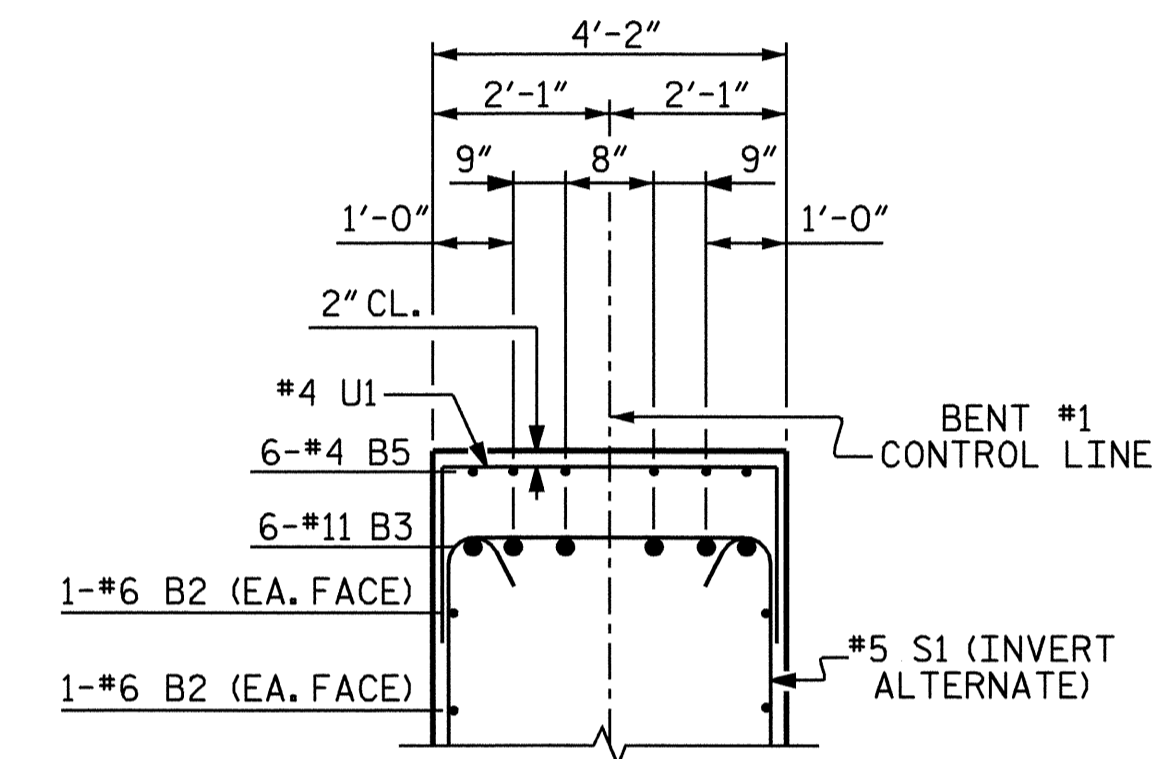
NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.



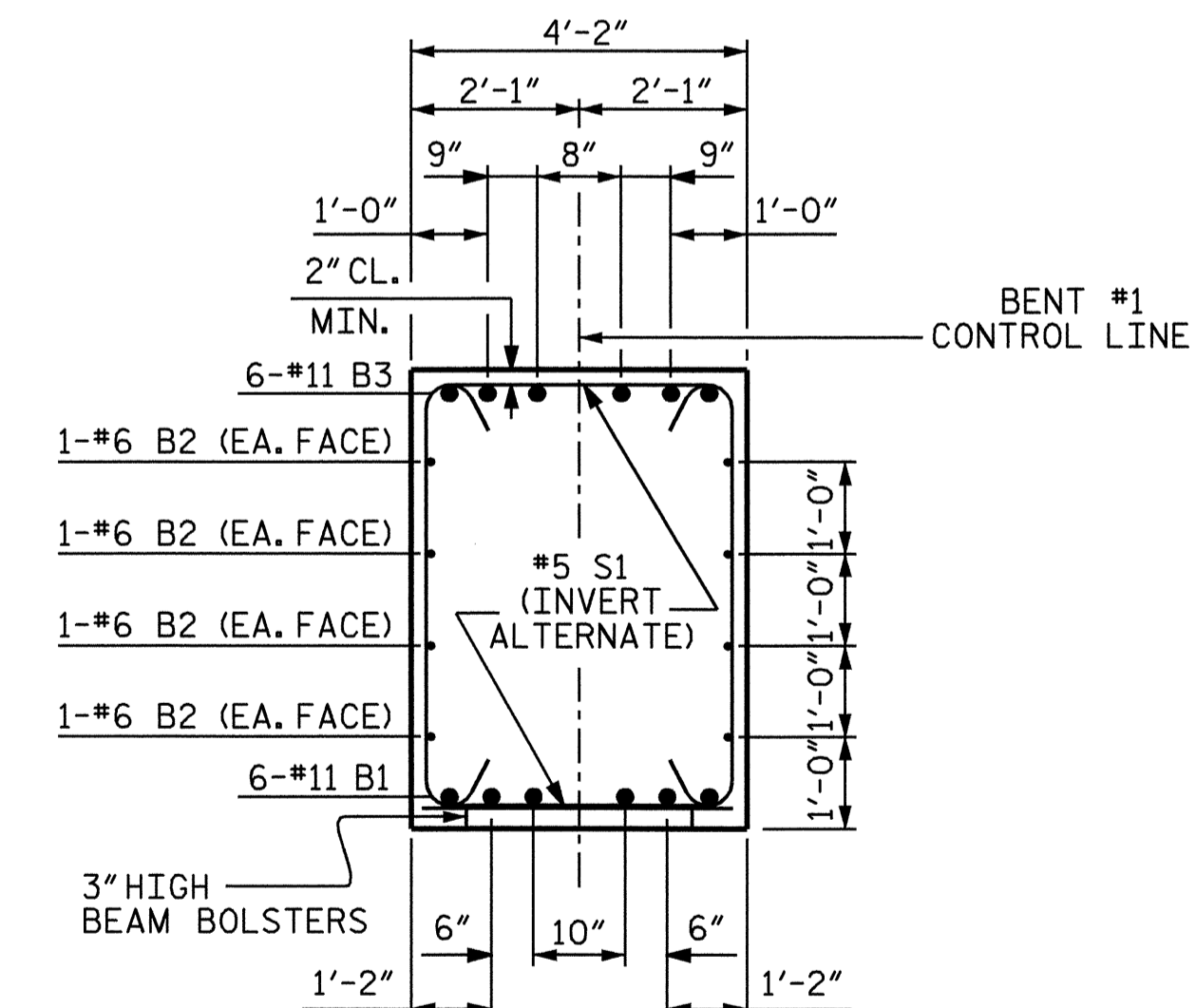
PLAN - STAGE I

SPAN B

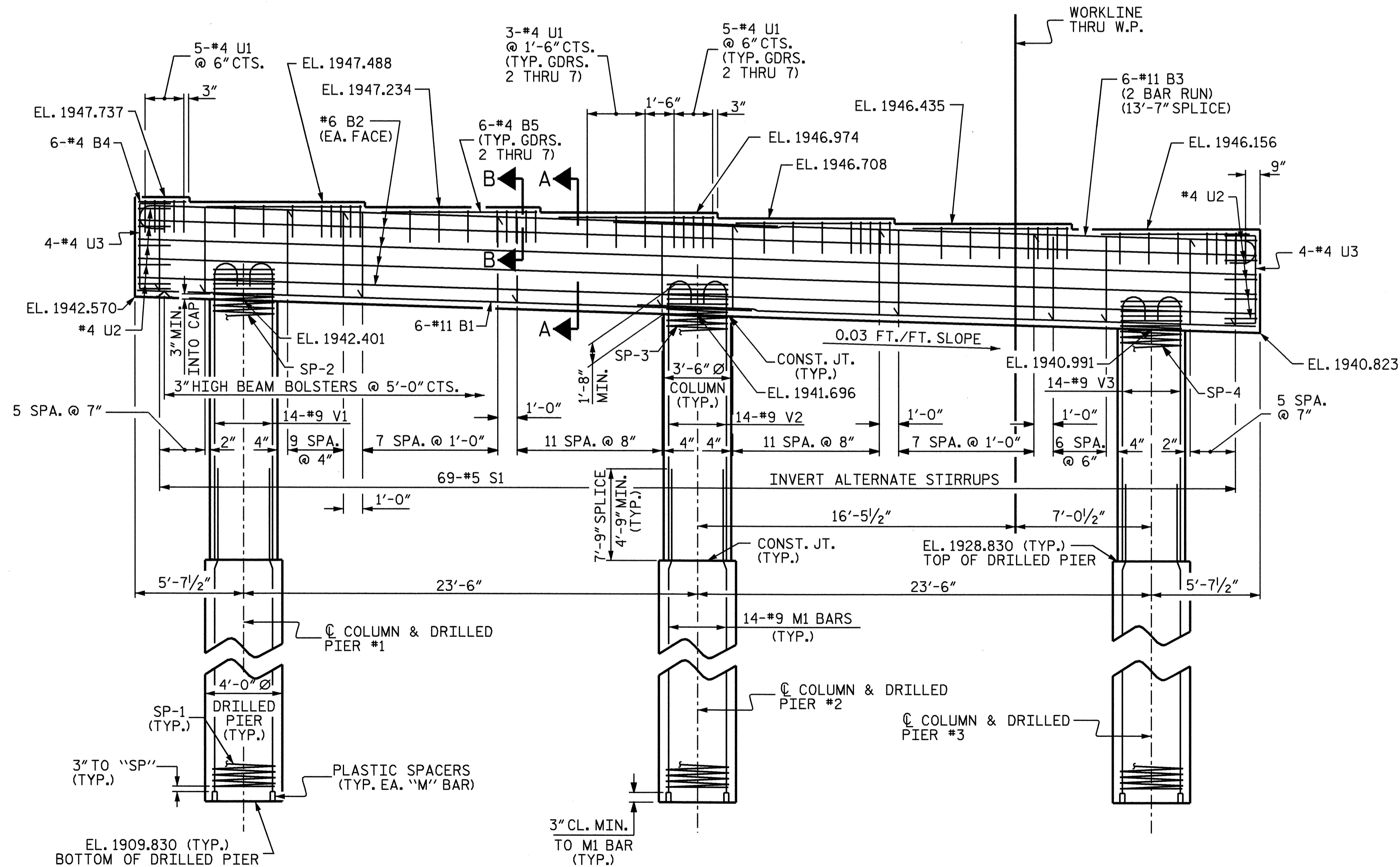
SPAN A



SECTION B-B



SECTION A-A



ELEVATION - STAGE I

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 1 OF 3

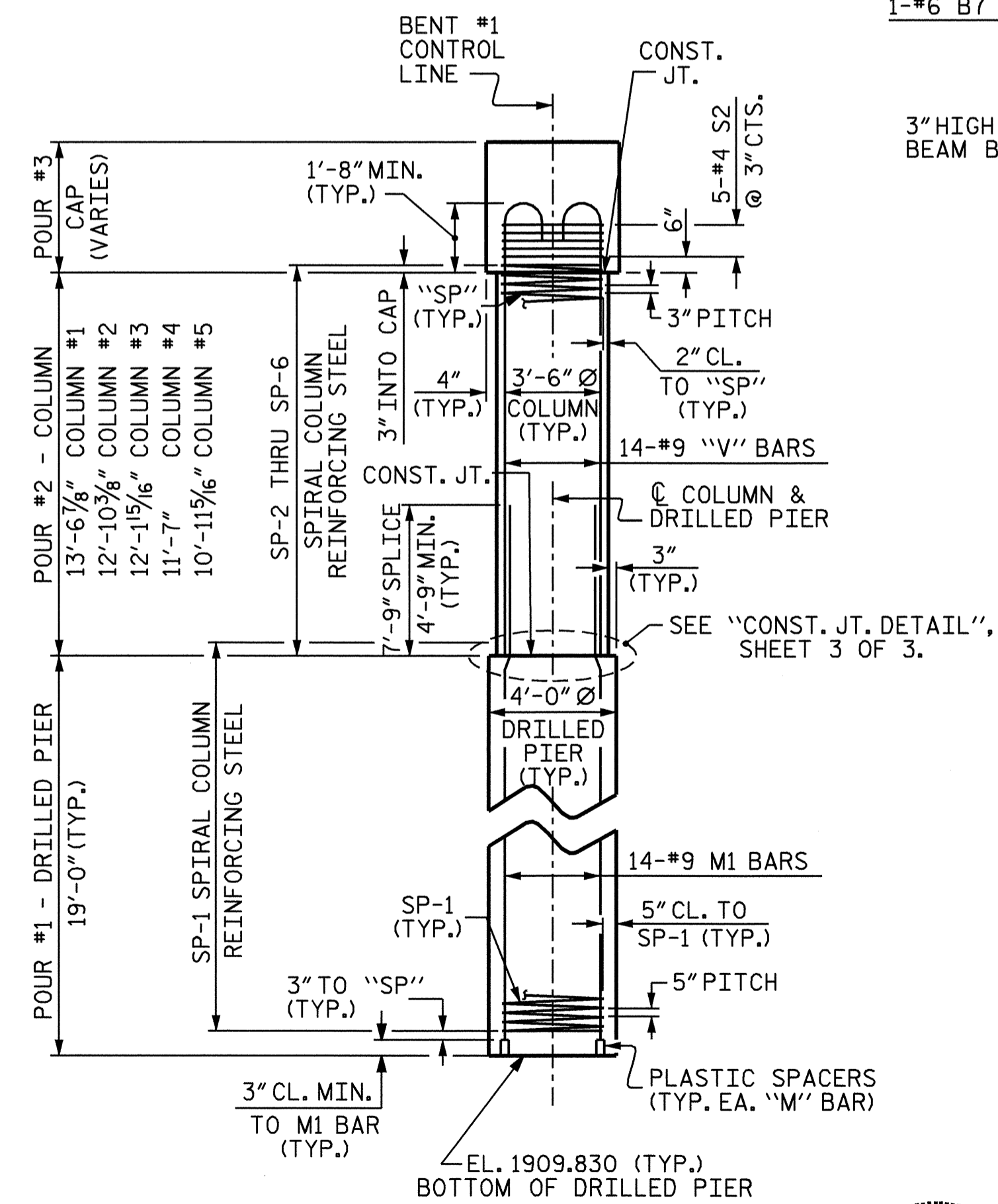
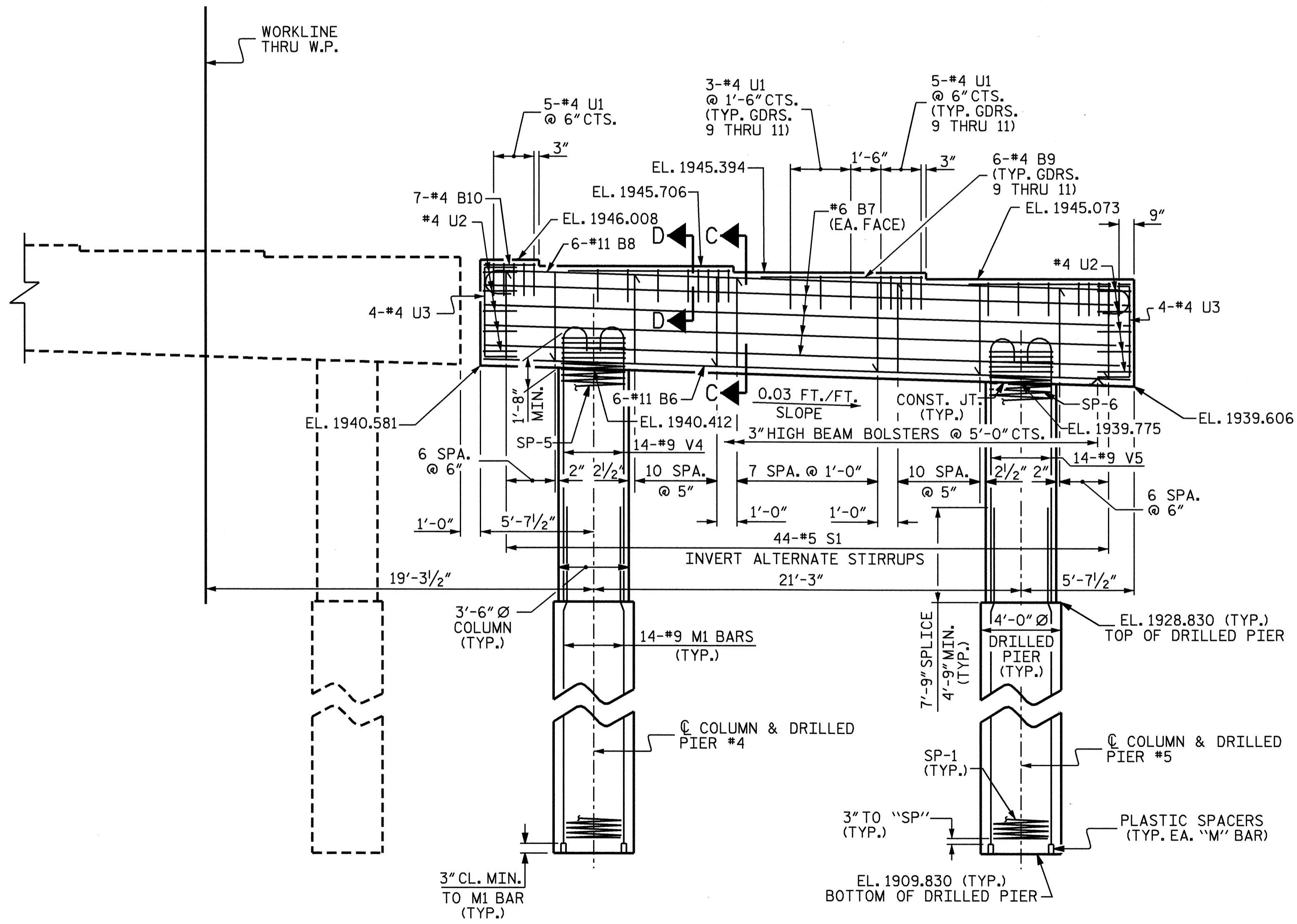
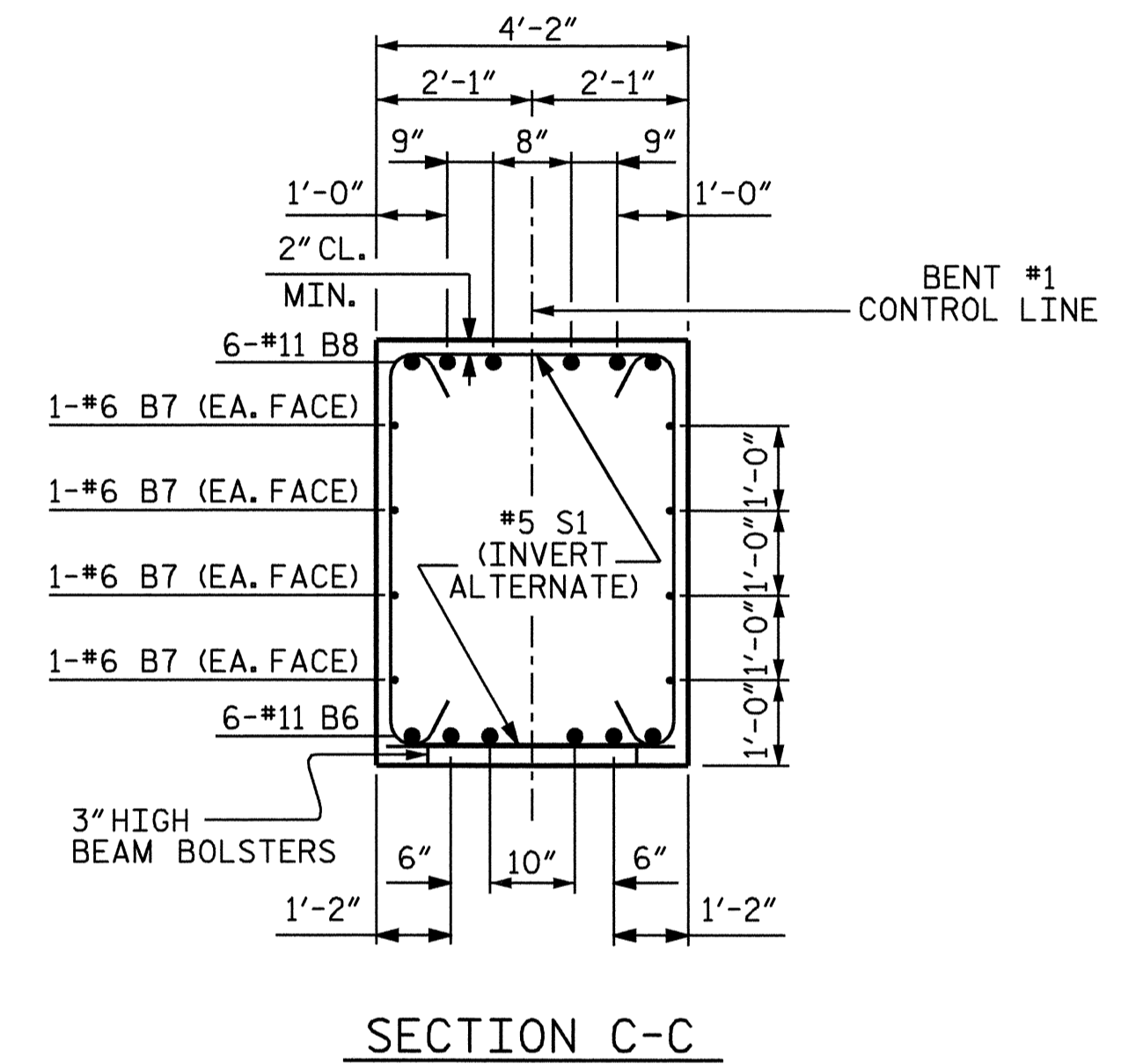
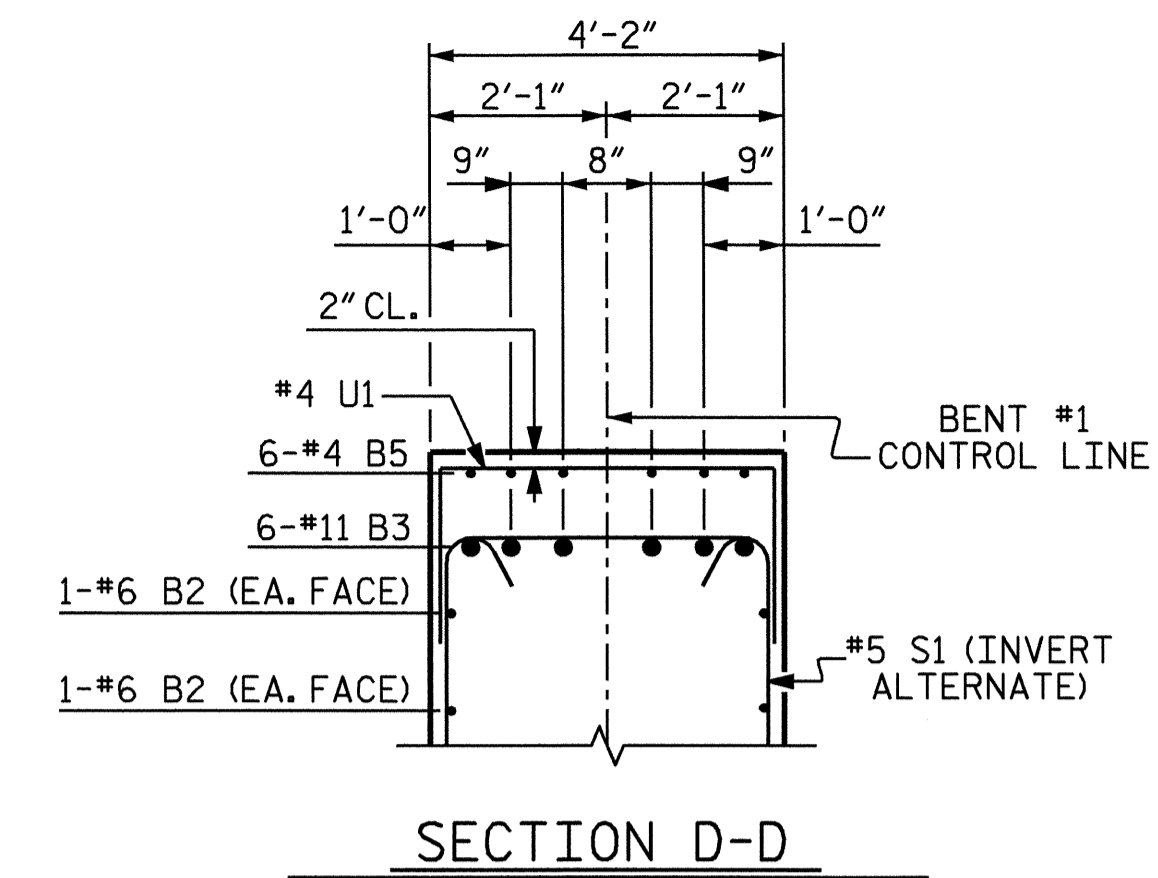
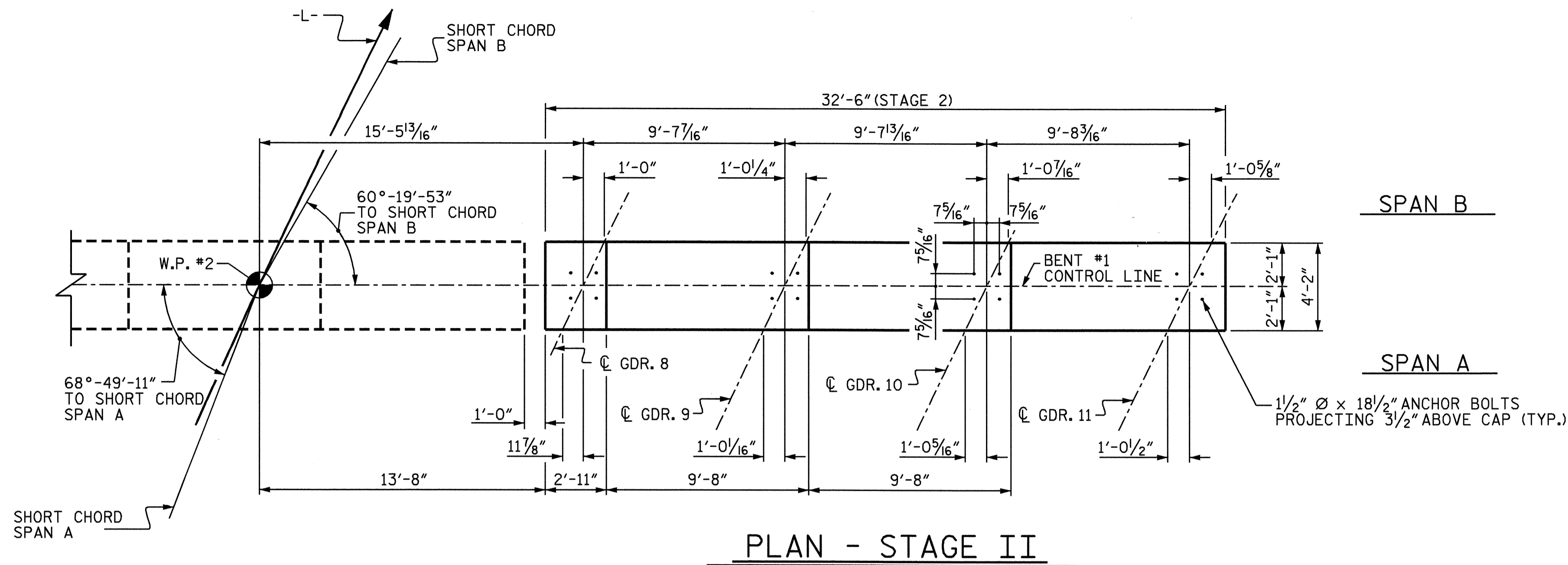
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 BENT #1
 STAGE I



DRAWN BY: D. HODGE/A.S. DATE: 6/03
 CHECKED BY: MG CHEEK DATE: 8/06

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-44
1			3			TOTAL SHEETS
2			4			60



PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

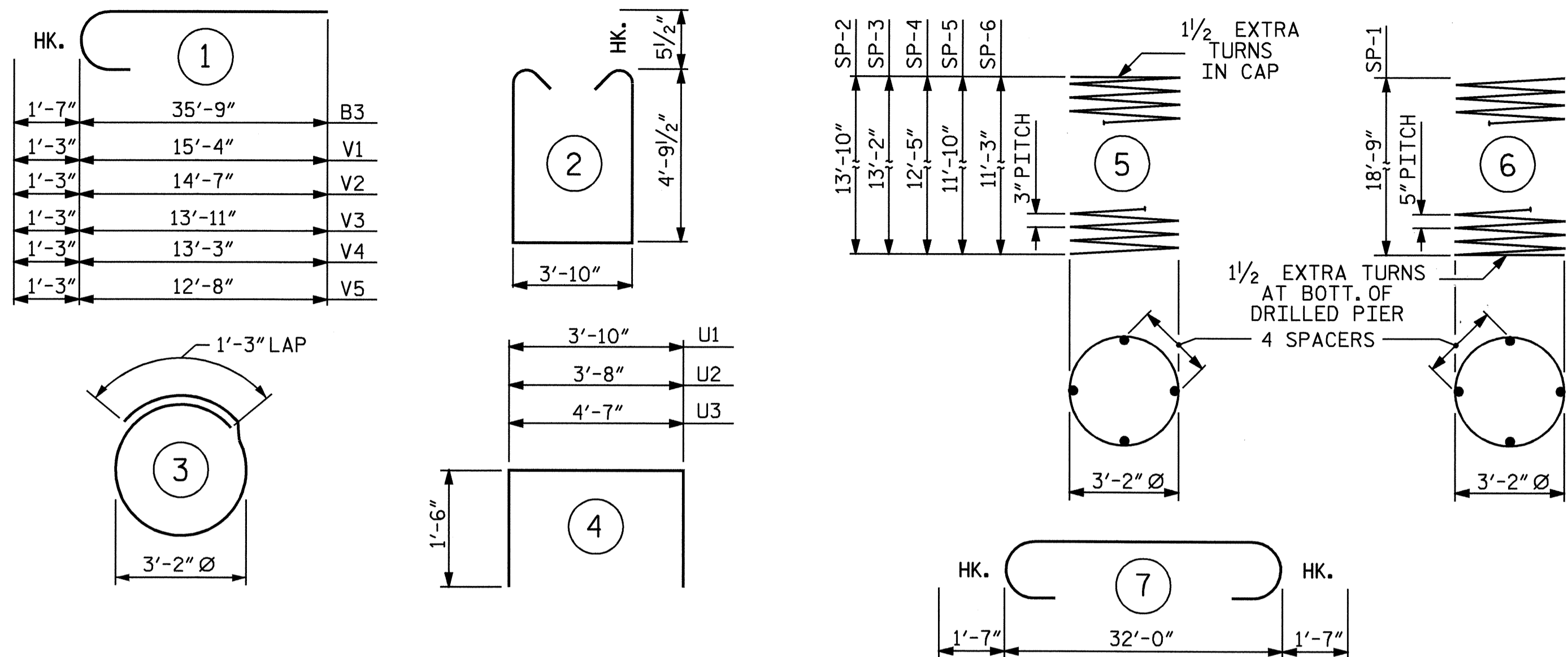
SUBSTRUCTURE
 BENT #1
 STAGE II



DRAWN BY: D. HODGE/A.S. DATE: 6/03
 CHECKED BY: MG. CHEEK DATE: 8/06

REVISIONS						SHEET NO. S-45
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

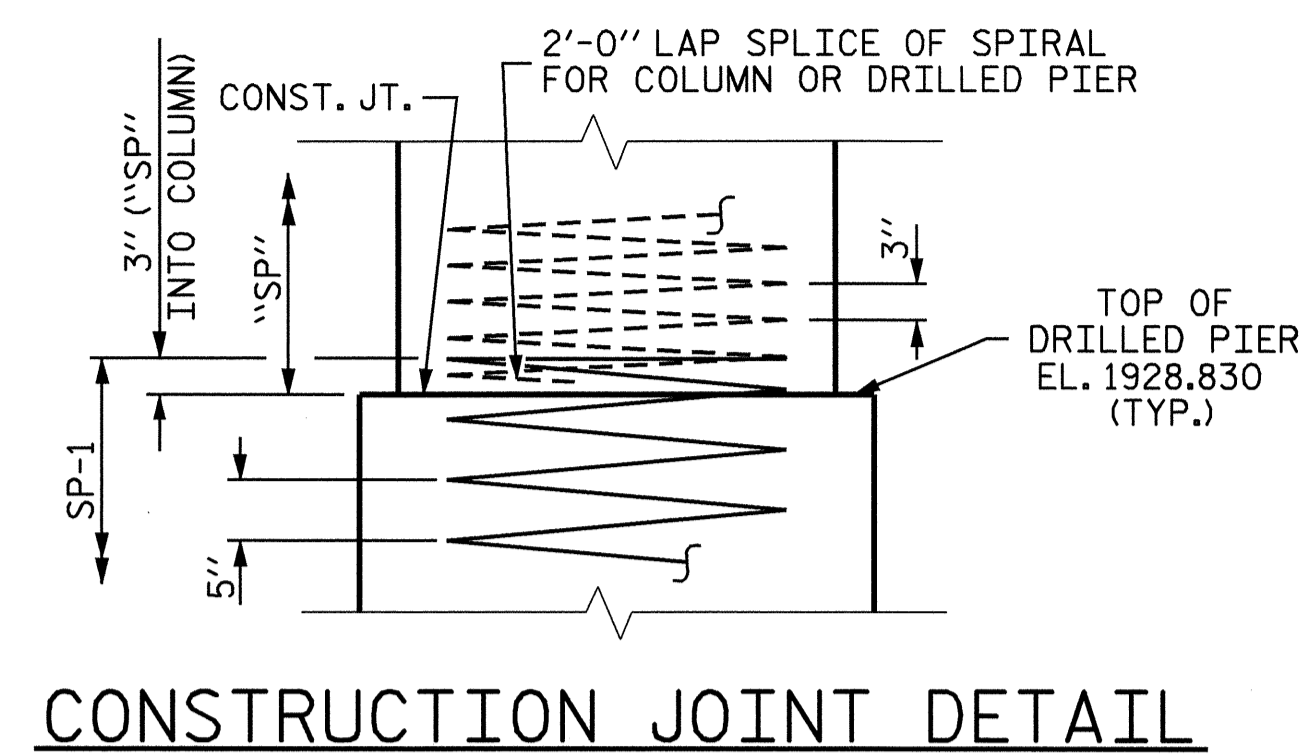
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

BILL OF MATERIAL

BENT #1 (STAGE I)						BENT #1 (STAGE II)							
BAR NO	SIZE	TYPE	LENGTH	WEIGHT		BAR NO	SIZE	TYPE	LENGTH	WEIGHT			
B1	6	11	STR	57'-11"	1846	B6	6	11	STR	32'-2"	1025		
B2	8	6	STR	57'-11"	696	B7	8	6	STR	32'-2"	387		
B3	12	11	1	37'-4"	2380	B8	6	11	7	35'-2"	1121		
B4	6	4	STR	2'-6"	10	B9	18	4	STR	8'-6"	102		
B5	36	4	STR	8'-0"	192	B10	6	4	STR	2'-7"	10		
M1	42	9	STR	26'-6"	3784	M1	28	9	STR	26'-6"	2522		
S1	69	5	2	14'-4"	1032	S1	44	5	2	14'-4"	658		
S2	15	4	3	11'-3"	113	S2	10	4	3	11'-3"	75		
U1	53	4	4	6'-10"	242	U1	29	4	4	6'-10"	132		
U2	10	4	4	6'-8"	45	U2	10	4	4	6'-8"	45		
U3	8	4	4	7'-7"	41	U3	8	4	4	7'-7"	41		
V1	14	9	1	16'-7"	789	V4	14	9	1	14'-6"	690		
V2	14	9	1	15'-10"	754	V5	14	9	1	13'-11"	662		
V3	14	9	1	15'-2"	722								
REINFORCING STEEL					LBS.	12,646	REINFORCING STEEL					LBS.	7,470
SP-1	3	**	6	456'-8"	1429	SP-1	2	**	6	456'-8"	953		
SP-2	1	*	5	559'-10"	374	SP-5	1	*	5	481'-3"	321		
SP-3	1	*	5	530'-4"	354	SP-6	1	*	5	456'-8"	305		
SP-4	1	*	5	503'-4"	336	SPIRAL COLUMN REINFORCING STEEL					LBS.	1,579	
SPIRAL COLUMN REINFORCING STEEL					LBS.	2,493							



CONSTRUCTION JOINT DETAIL

TOTAL QUANTITIES (BENT No. 1)

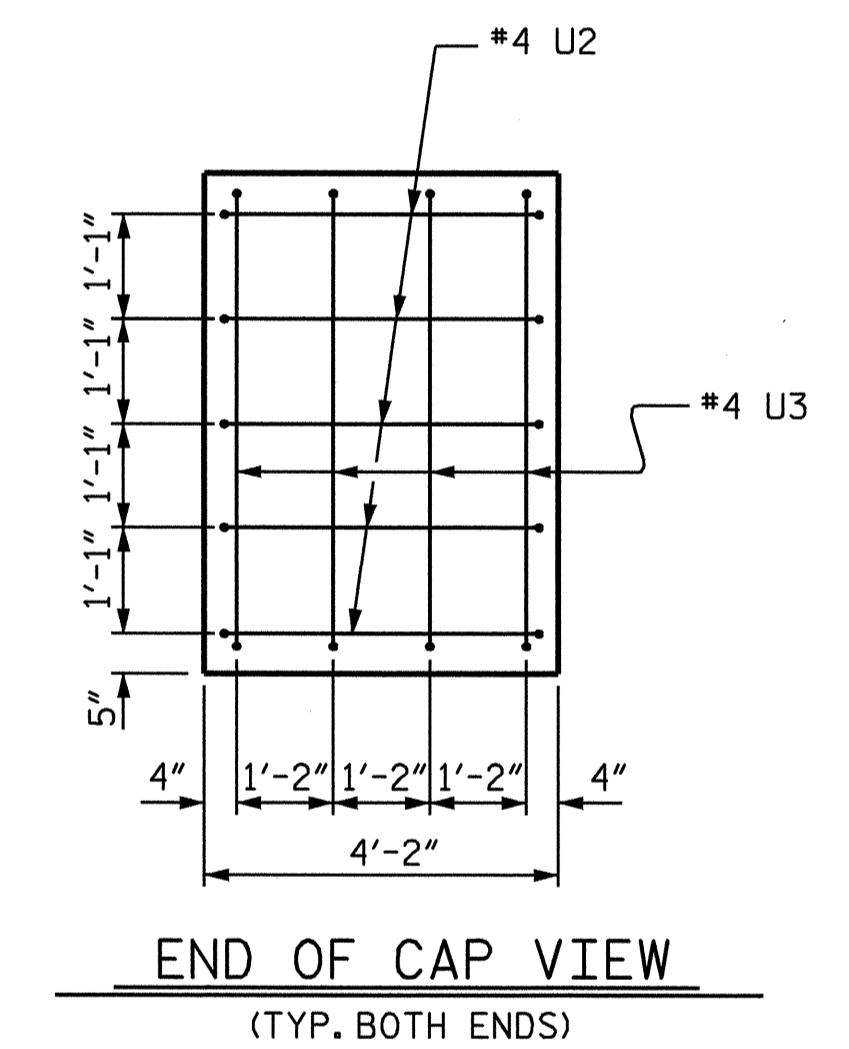
ITEM	STAGE I	STAGE II	TOTAL
REINFORCING STEEL	12,646 LBS.	7,470 LBS.	20,116 LBS.
SPIRAL COLUMN REINFORCING STEEL	2,493 LBS.	1,579 LBS.	4,072 LBS.
CLASS A CONCRETE	60.4 C.Y.	34.8 C.Y.	95.2 C.Y.
DRILLED PIER CONCRETE	26.5 C.Y.	17.7 C.Y.	44.2 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	30.00 LIN. FT.	20.00 LIN. FT.	50.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	27.00 LIN. FT.	18.00 LIN. FT.	45.00 LIN. FT.
4'-0" Ø PERMANENT STEEL CASING	29.50 LIN. FT.	19.67 LIN. FT.	49.17 LIN. FT.
▲ CSL TUBES	258.00 LIN. FT.	172.00 LIN. FT.	430.00 LIN. FT.
CROSSHOLE SONIC LOGGING		1 EACH	1 EACH
SID INSPECTION	1 EACH		1 EACH

* THE SP-2, SP-3 & SP-4 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 ** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.
 * THE SP-5 & SP-6 SPIRAL REINFORCING STEEL SHALL BE W20 OR D-20 COLD DRAWN WIRE OR #4 PLAIN OR DEFORMED BAR.
 ** THE SP-1 SPIRAL REINFORCING STEEL SHALL BE W31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR.

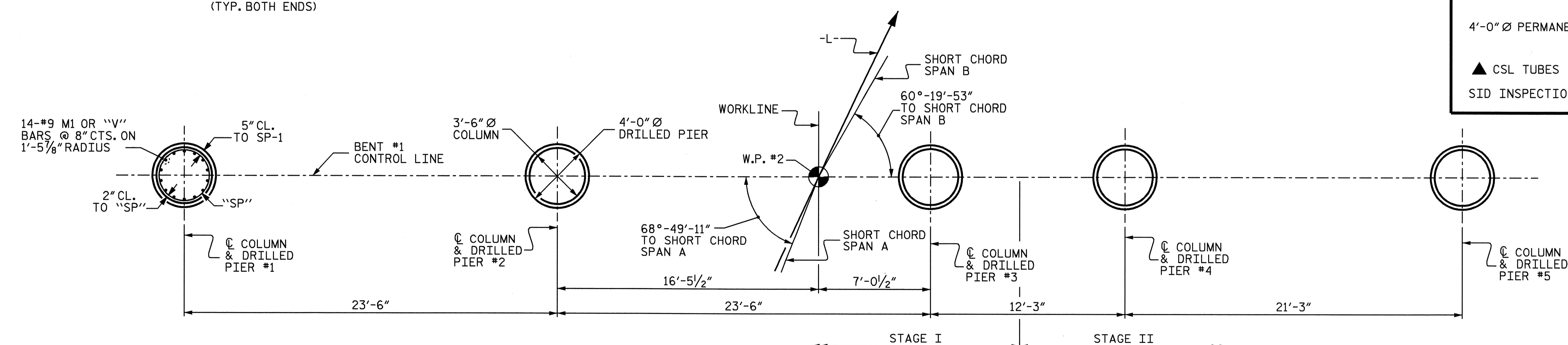
CLASS A CONCRETE BREAKDOWN		CLASS A CONCRETE BREAKDOWN	
POUR #2 (COLUMNS)	13.4 C.Y.	POUR #2 (COLUMNS)	8.0 C.Y.
POUR #3 (CAP)	47.0 C.Y.	POUR #3 (CAP)	26.8 C.Y.
TOTAL	60.4 C.Y.	TOTAL	34.8 C.Y.

DRILLED PIER QUANTITIES

DRILLED PIERS :		DRILLED PIERS :	
DRILLED PIER CONCRETE		DRILLED PIER CONCRETE	
POUR #1 (DRILLED PIERS)	26.5 C.Y.	POUR #1 (DRILLED PIERS)	17.7 C.Y.
4'-0" Ø DRILLED PIERS NOT IN SOIL	30.00 LIN. FT.	4'-0" Ø DRILLED PIERS NOT IN SOIL	20.00 LIN. FT.
4'-0" Ø DRILLED PIERS IN SOIL	27.00 LIN. FT.	4'-0" Ø DRILLED PIERS IN SOIL	18.00 LIN. FT.
4'-0" Ø PERMANENT STEEL CASING	29.50 LIN. FT.	4'-0" Ø PERMANENT STEEL CASING	19.67 LIN. FT.
▲ CSL TUBES	258.00 LIN. FT.	▲ CSL TUBES	172.00 LIN. FT.
SID INSPECTION	1 EACH	CROSSHOLE SONIC LOGGING	1 EACH



▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.

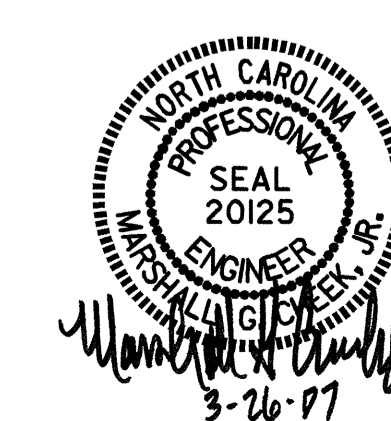


PLAN OF DRILLED PIERS & COLUMNS

(REINFORCING STEEL AND DIMENSIONS ARE TYPICAL FOR EACH COLUMN & DRILLED PIER)

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00 -L-
 SHEET 3 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE BENT #1					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					60



DRAWN BY: D. HODGE/A.S. DATE: 6/03
 CHECKED BY: MG CHEEK DATE: 8/06

NOTES

STIRRUPS IN CAP MAY BE SHIFTED AS NECESSARY TO CLEAR ANCHOR BOLTS.

HOOKS ON "V" BARS MAY BE TURNED AS NECESSARY FOR PLACING REINFORCING STEEL.

BACKWALL SHALL BE PLACED BEFORE APPLYING THE EPOXY PROTECTIVE COATING.

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

THE TOP SURFACE OF THE CAP EXCEPT THE BRIDGE SEAT BUILDUPS SHALL BE SLOPED TRANSVERSELY FROM THE FILL FACE TO THE BACK FACE AT THE RATE OF 2%.

ALL STEEL IN THE DRILLED PIERS IS INCLUDED IN THE PAY ITEMS FOR "REINFORCING STEEL" AND "SPIRAL COLUMN REINFORCING STEEL".

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 SHALL PROVIDE FOR INSTALLATION OF THE 4" DIAMETER DRAIN PIPE THROUGH THE WING WALL "W2" AS REQUIRED FOR REINFORCED BRIDGE APPROACH FILLS, SEE THE ROADWAY PLANS. REINFORCING STEEL IN THE WING WALL "W2" MAY BE SHIFTED AS NECESSARY TO CLEAR THE DRAIN PIPE.

EPOXY COAT THE END BENT CAP AFTER ADJUSTMENTS ARE MADE TO BEARINGS AND ANCHOR BOLTS ARE GROUTED.

CENTER UTILITY IN BLOCKOUT AND FILL ANNULAR SPACE AROUND UTILITY PIPE WITH JOINT FILLER IN ACCORDANCE WITH STANDARD SPECIFICATION ARTICLE 1028-1

CONSTRUCTION SEQUENCE

1. EXCAVATE TRENCH, PLACE PERMANENT CASING AND BACKFILL WITH SELECT MATERIAL CLASS VI, SEE DETAIL SHEET 5 OF 6. TRENCH SHALL BE EXCAVATED, THE ENTIRE LENGTH OF THE END BENT INCLUDING TURNED BACK PORTIONS.
2. CONSTRUCT DRILLED PIERS.
3. DRIVE STEEL SHEET PILES.
4. CONSTRUCT END BENT CAP.
5. BACKFILL WITH SELECT MATERIAL CLASS VI, SEE DETAIL SHEET 5 OF 6.

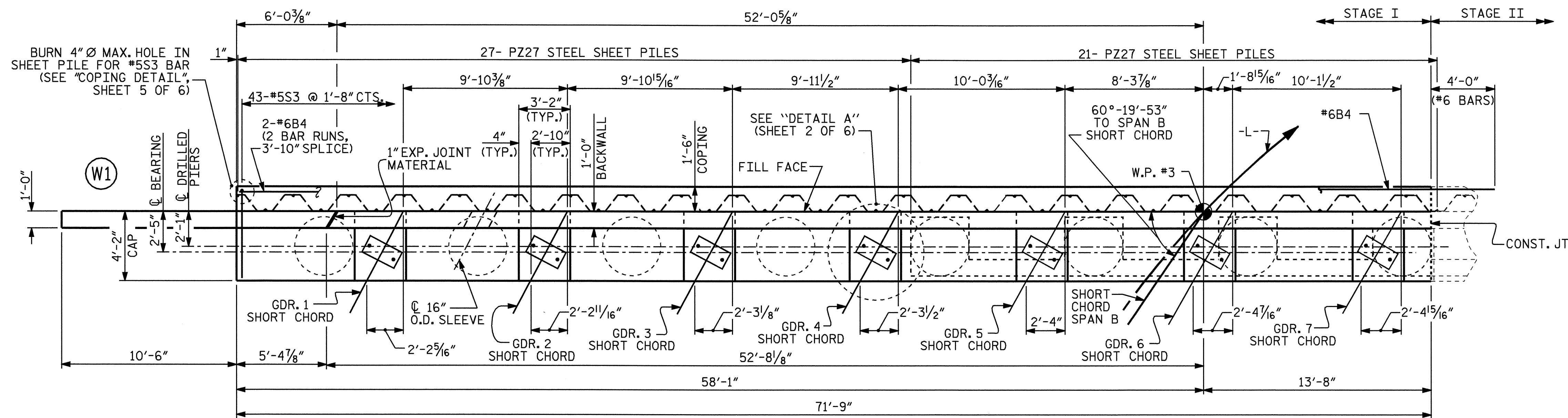
PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 1 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

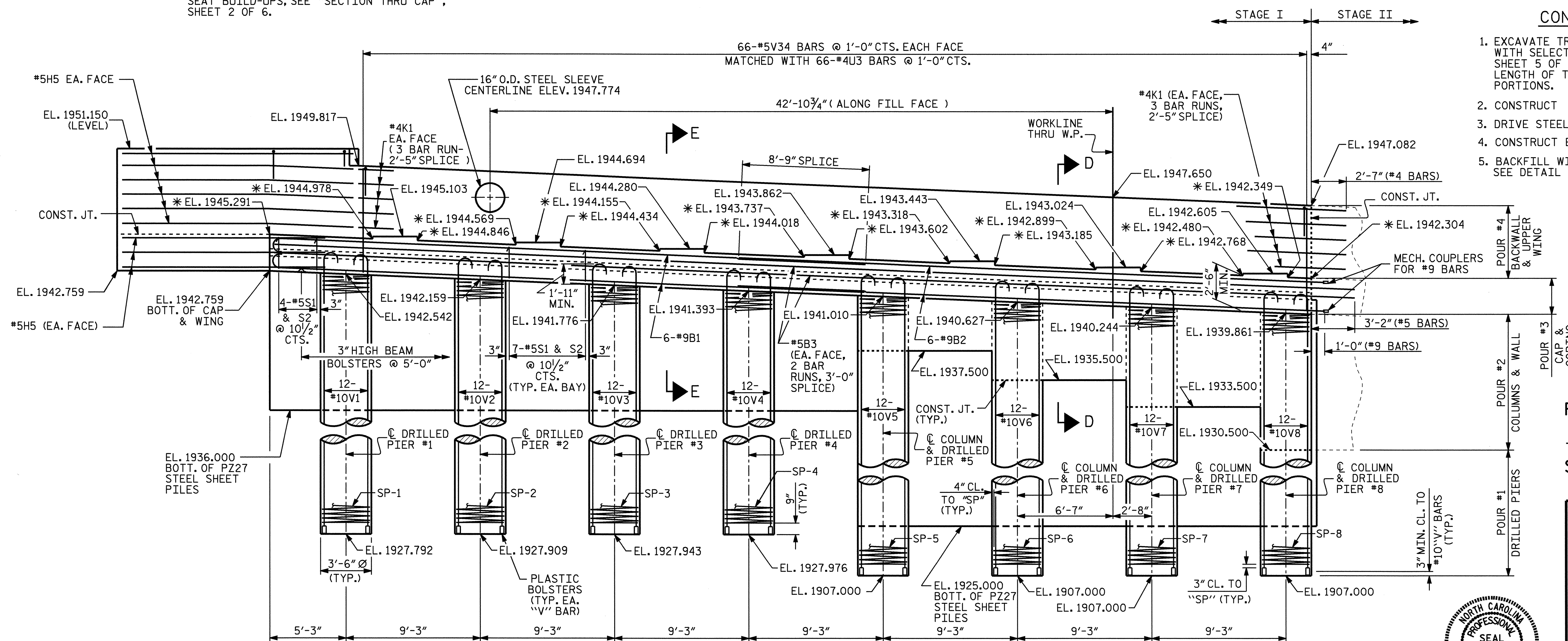
SUBSTRUCTURE
 END BENT #2
 STAGE I

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-47
1			3			TOTALS
2			4			60



PLAN-STAGE I

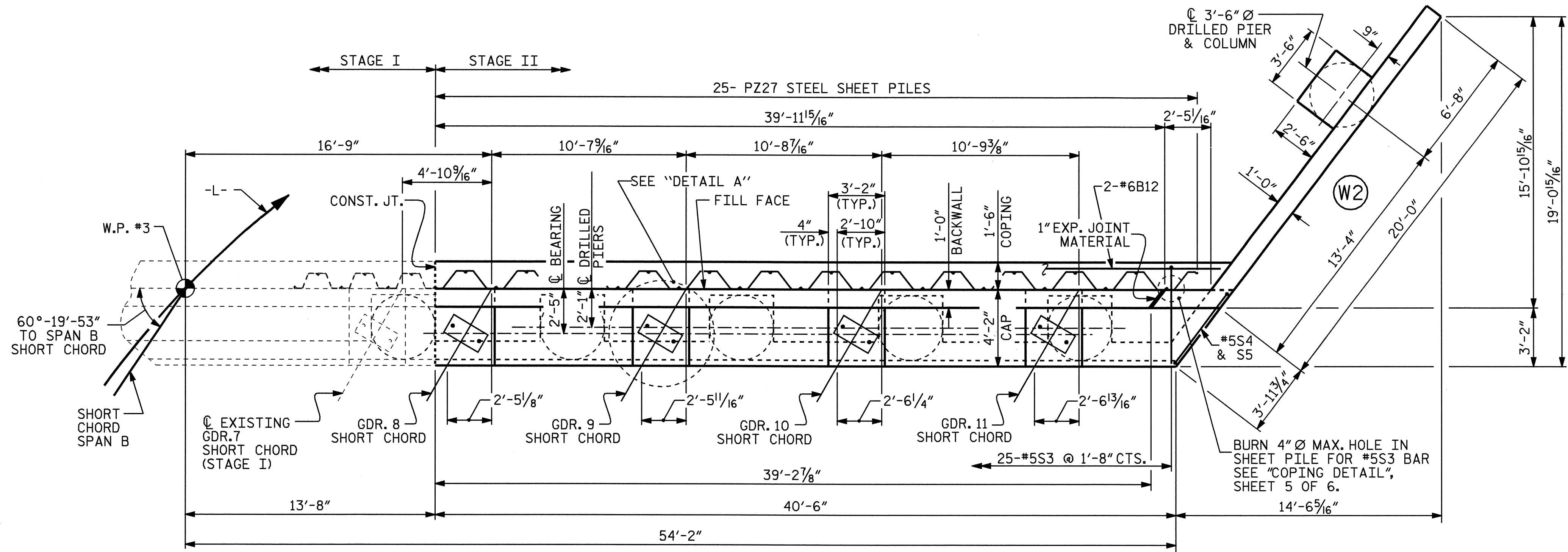
* FOR LOCATION OF ELEVATIONS BETWEEN BRIDGE SEAT BUILD-UPS, SEE "SECTION THRU CAP", SHEET 2 OF 6.



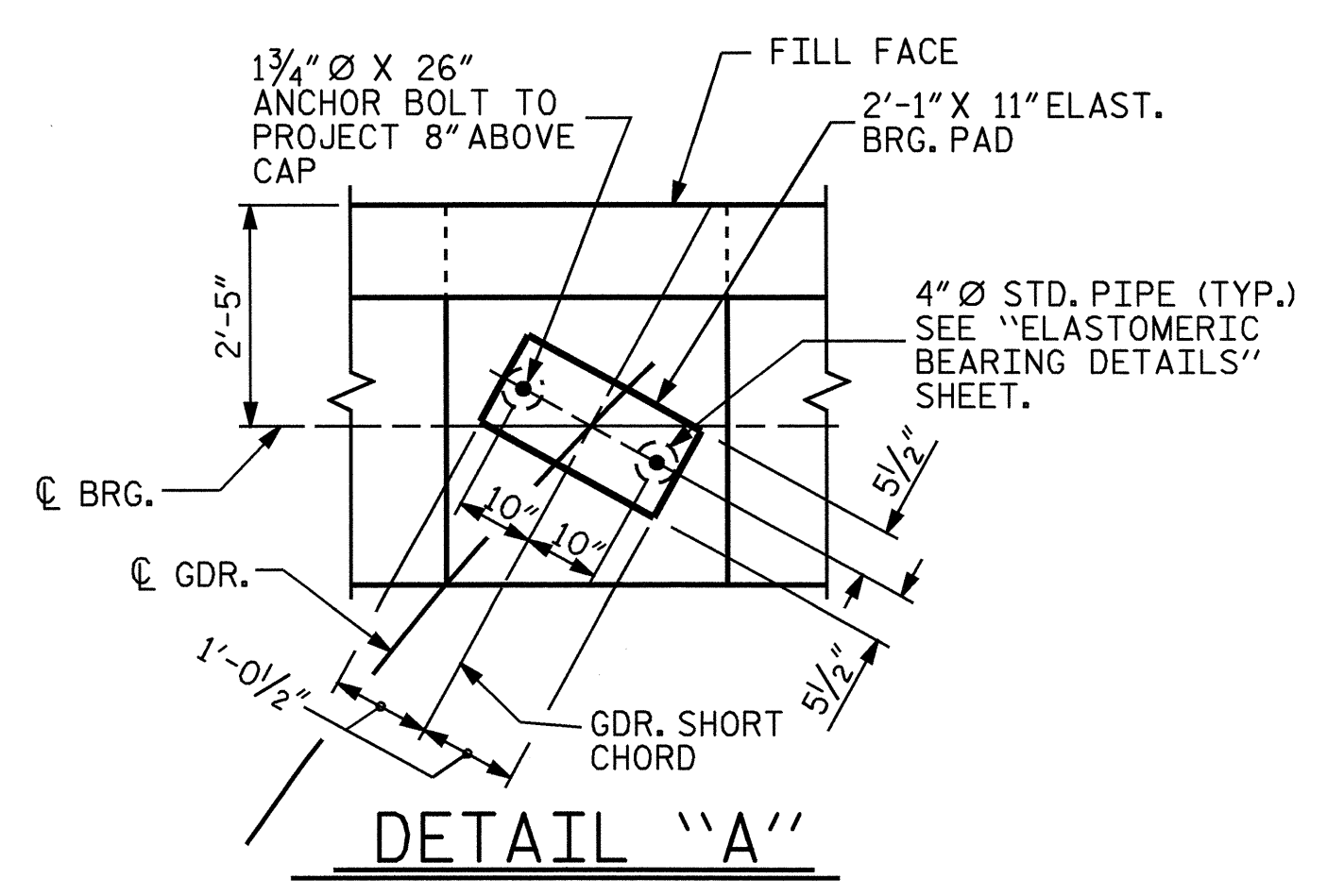
ELEVATION-STAGE I

(SEE "PLAN" FOR LOCATION OF B4 AND S3 BARS)

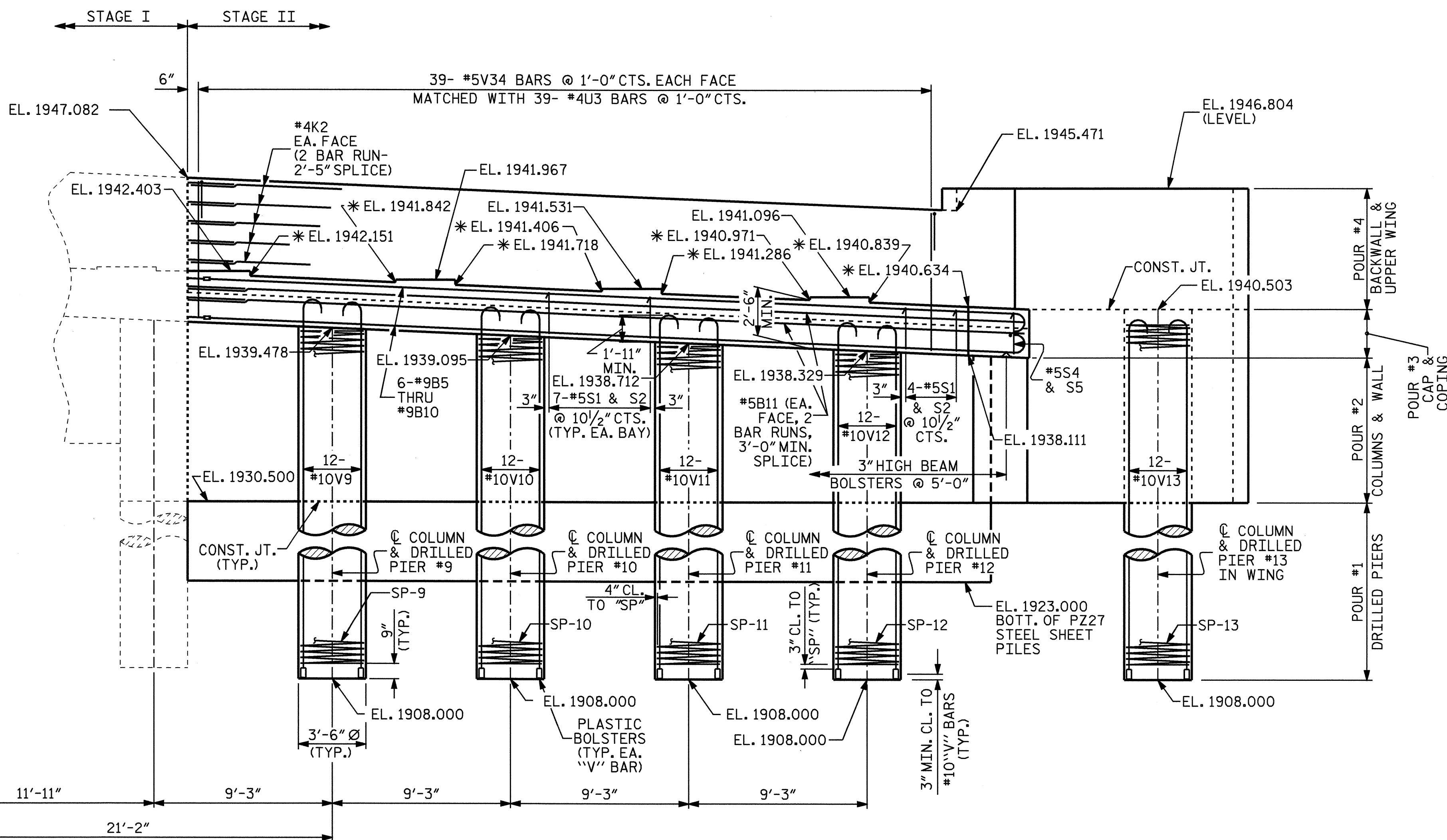
DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06
 CHECKED BY: J. HARRIS DATE: 10-06



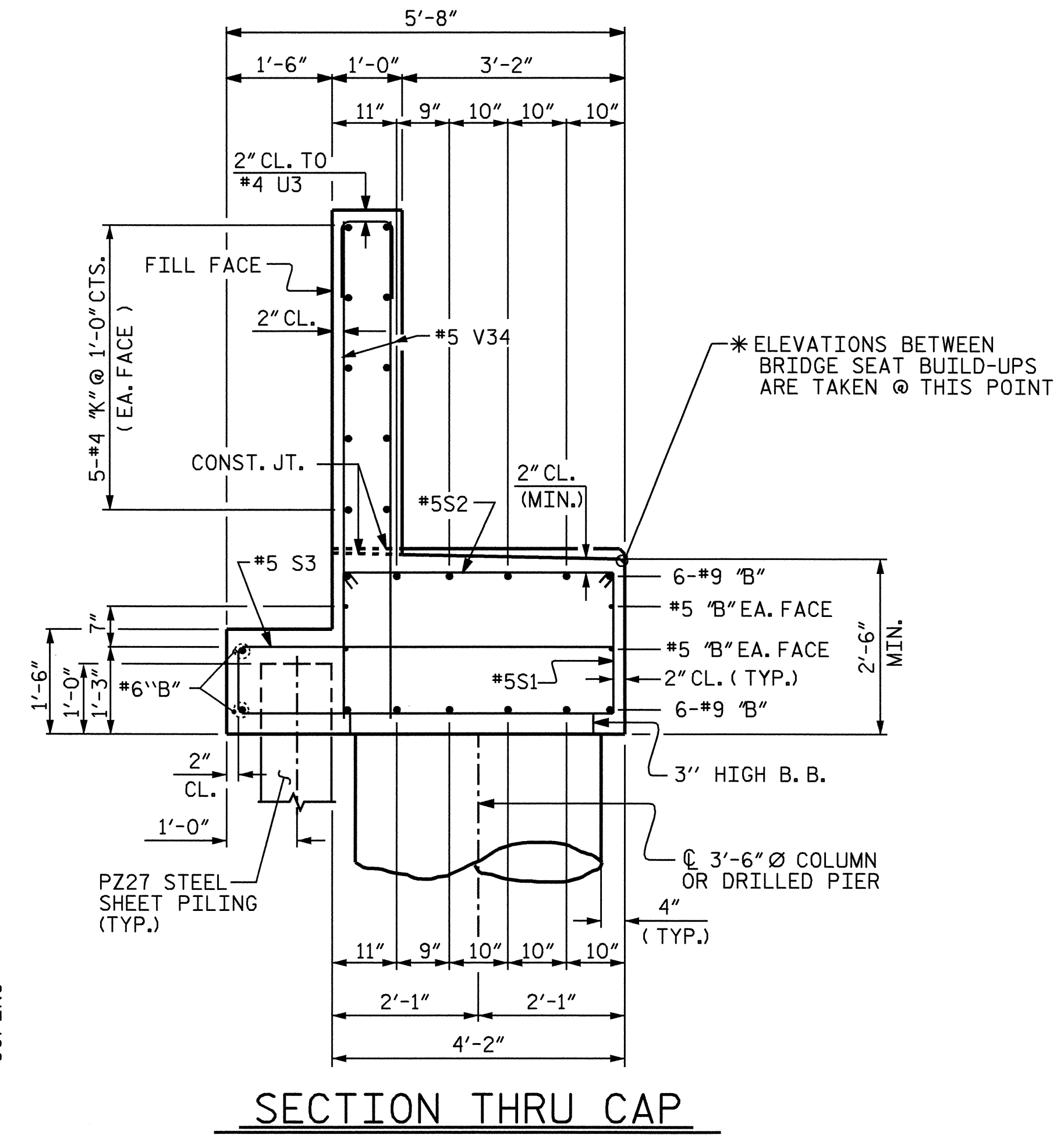
PLAN-STAGE II



DETAIL "A"



ELEVATION-STAGE II



SECTION THRU CAP

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00 -L-

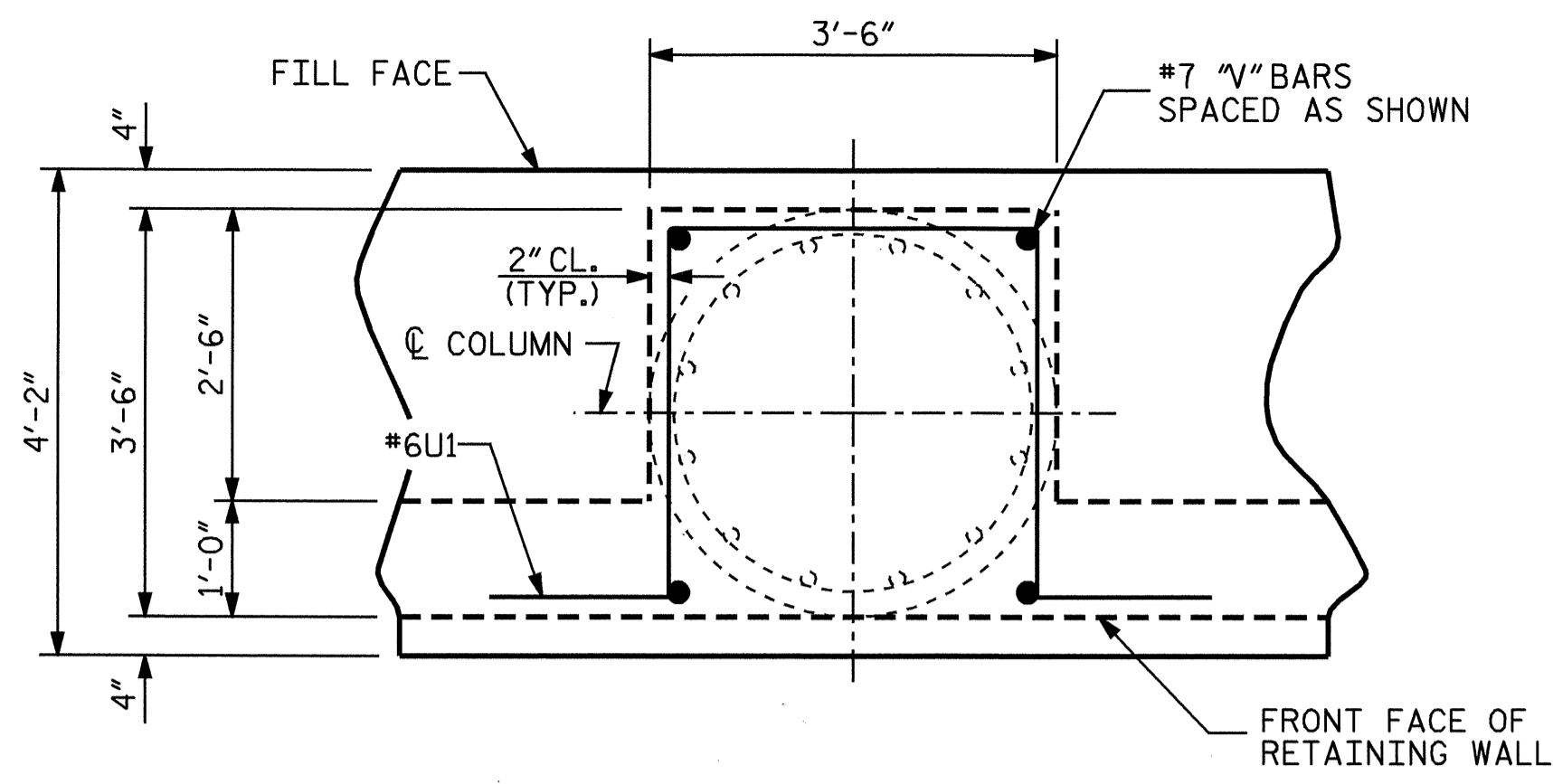
SHEET 2 OF 6

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2 STAGE II					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-48					TOTAL SHEETS 60

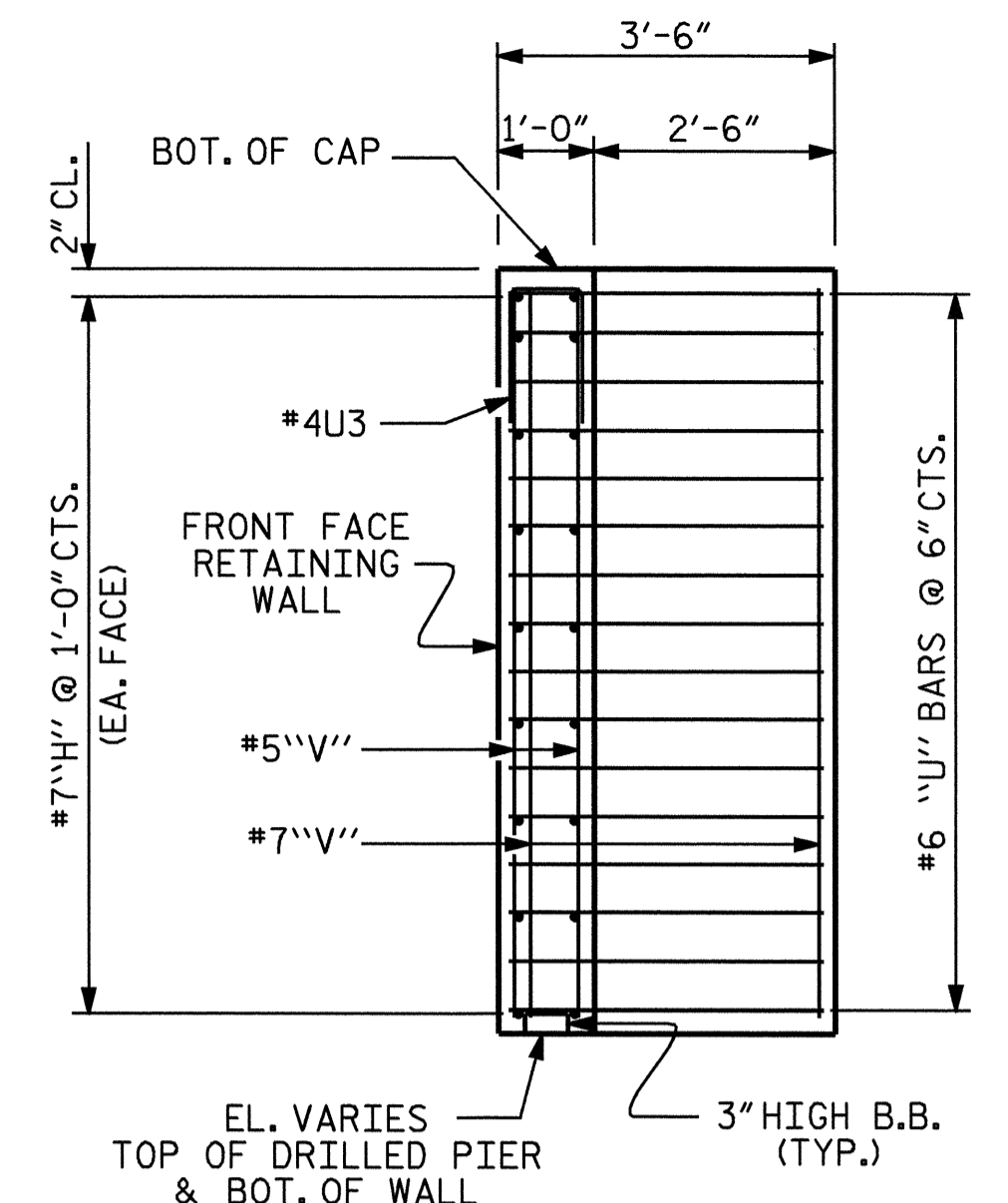


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 CHECKED BY: J. HARRIS DATE: 10-06

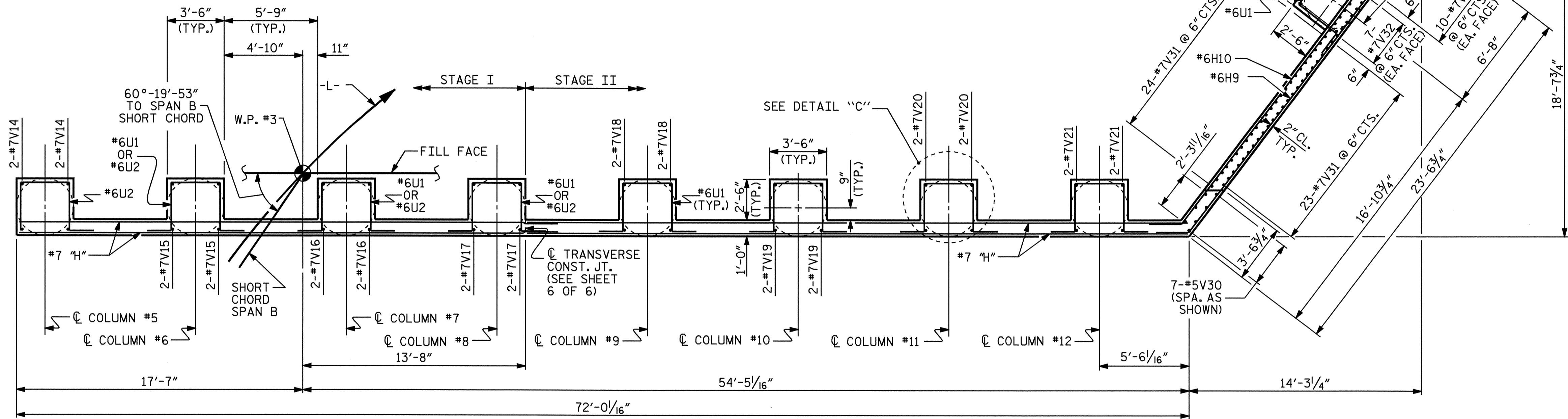
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 dchodge



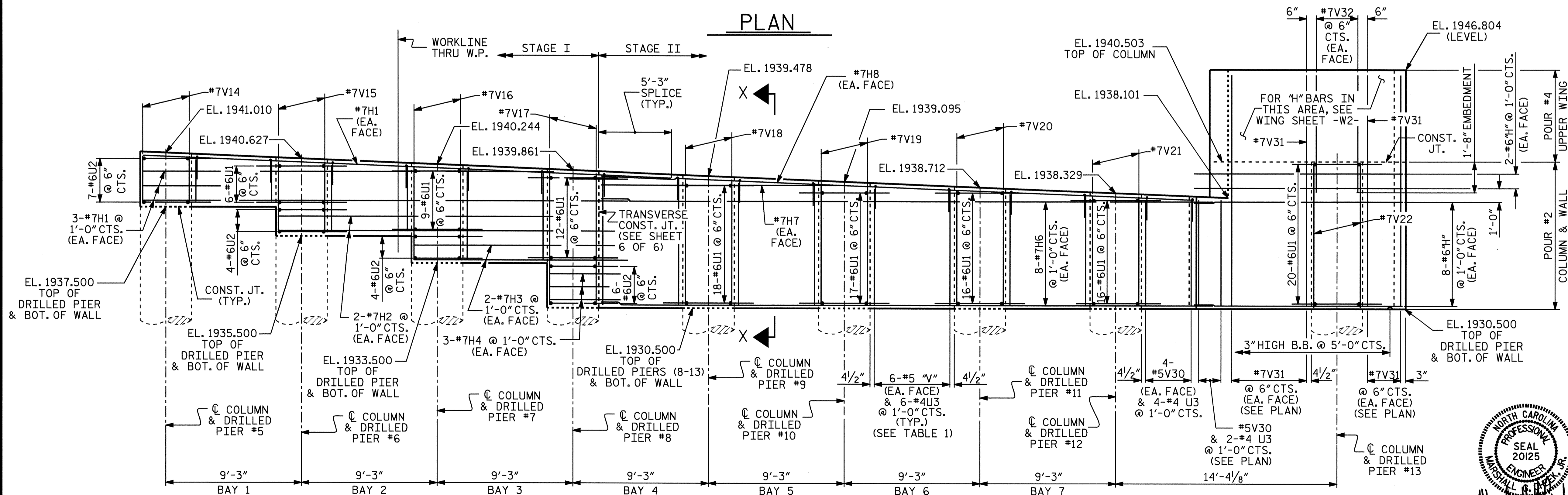
DETAIL "C"



SECTION X-X



PLAN



ELEVATION

STAGE I		
BAY	BAR	NO. REQ'D.
1	V23	6 EA. FACE
2	V24	6 EA. FACE
3	V25	6 EA. FACE
STAGE II		
BAY	BAR	NO. REQ'D.
4	V26	6 EA. FACE
5	V27	6 EA. FACE
6	V28	6 EA. FACE
7	V29	6 EA. FACE

PROJECT NO. B-4696
 SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 3 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2
 WALL DETAILS

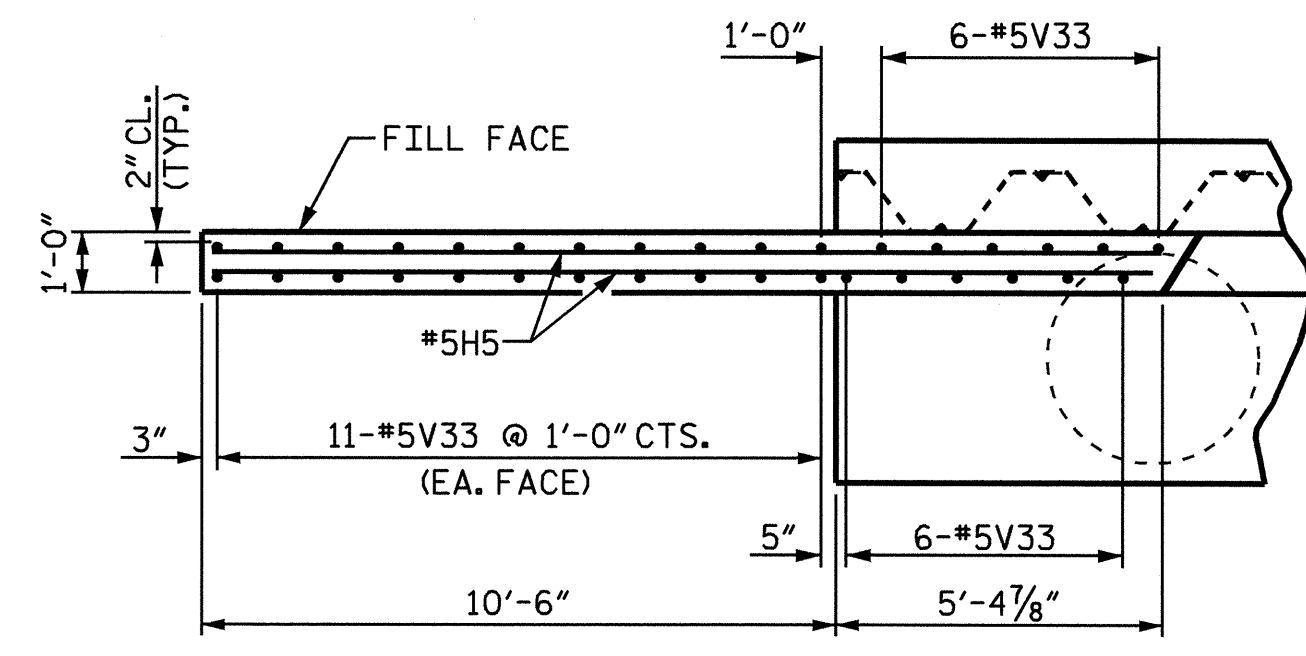
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		

S-49
TOTAL SHEETS 60

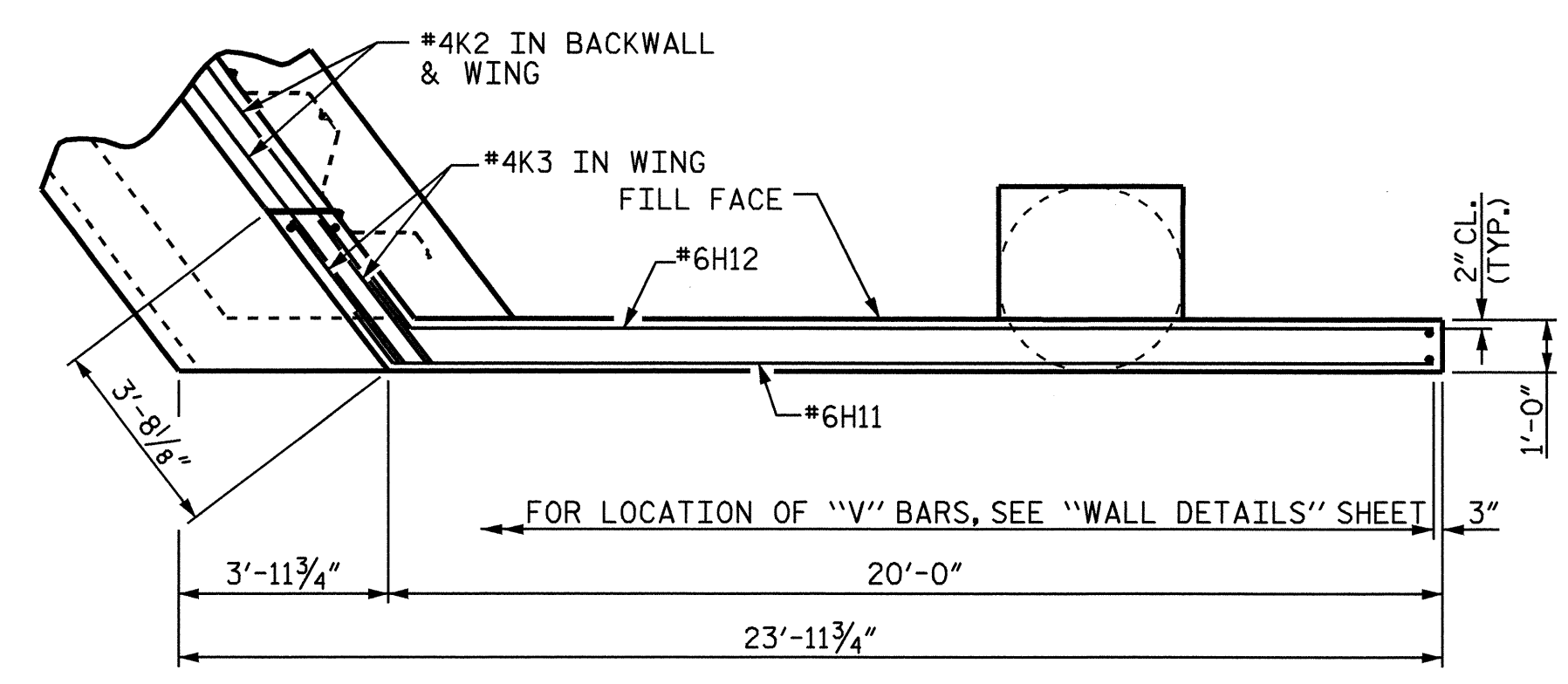
DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06
 CHECKED BY: J. HARRIS DATE: 10-06

26-MAR-2007 11:24
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 dhodge

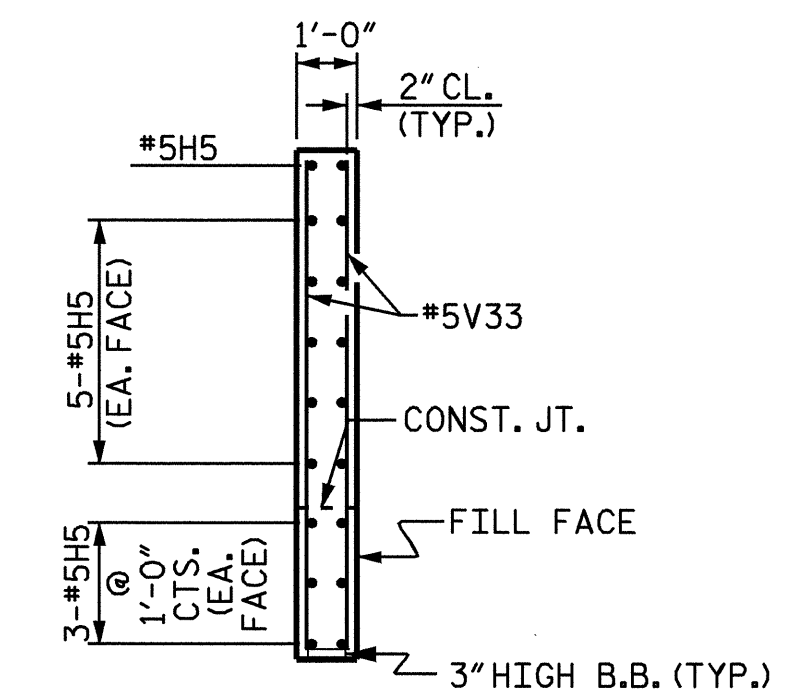




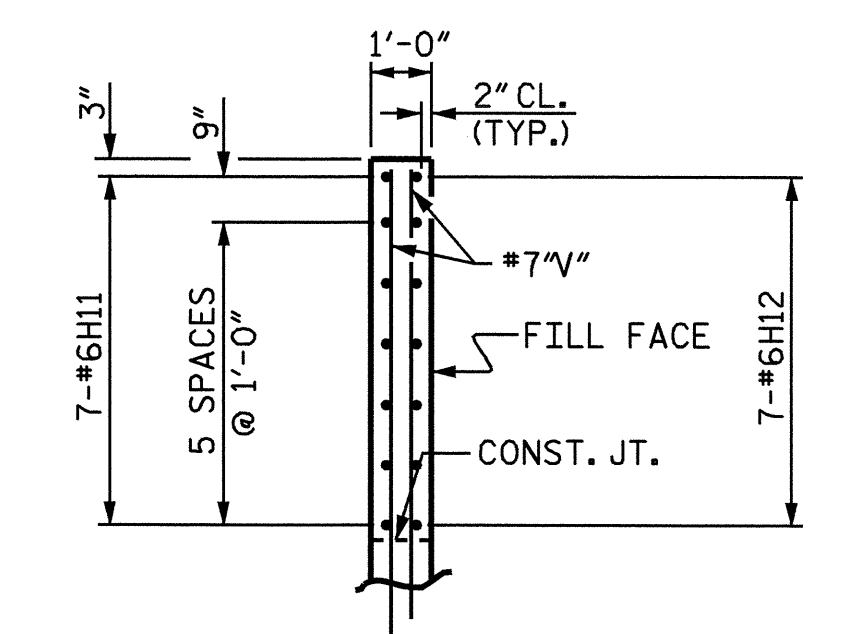
PLAN OF (W1) - STAGE I



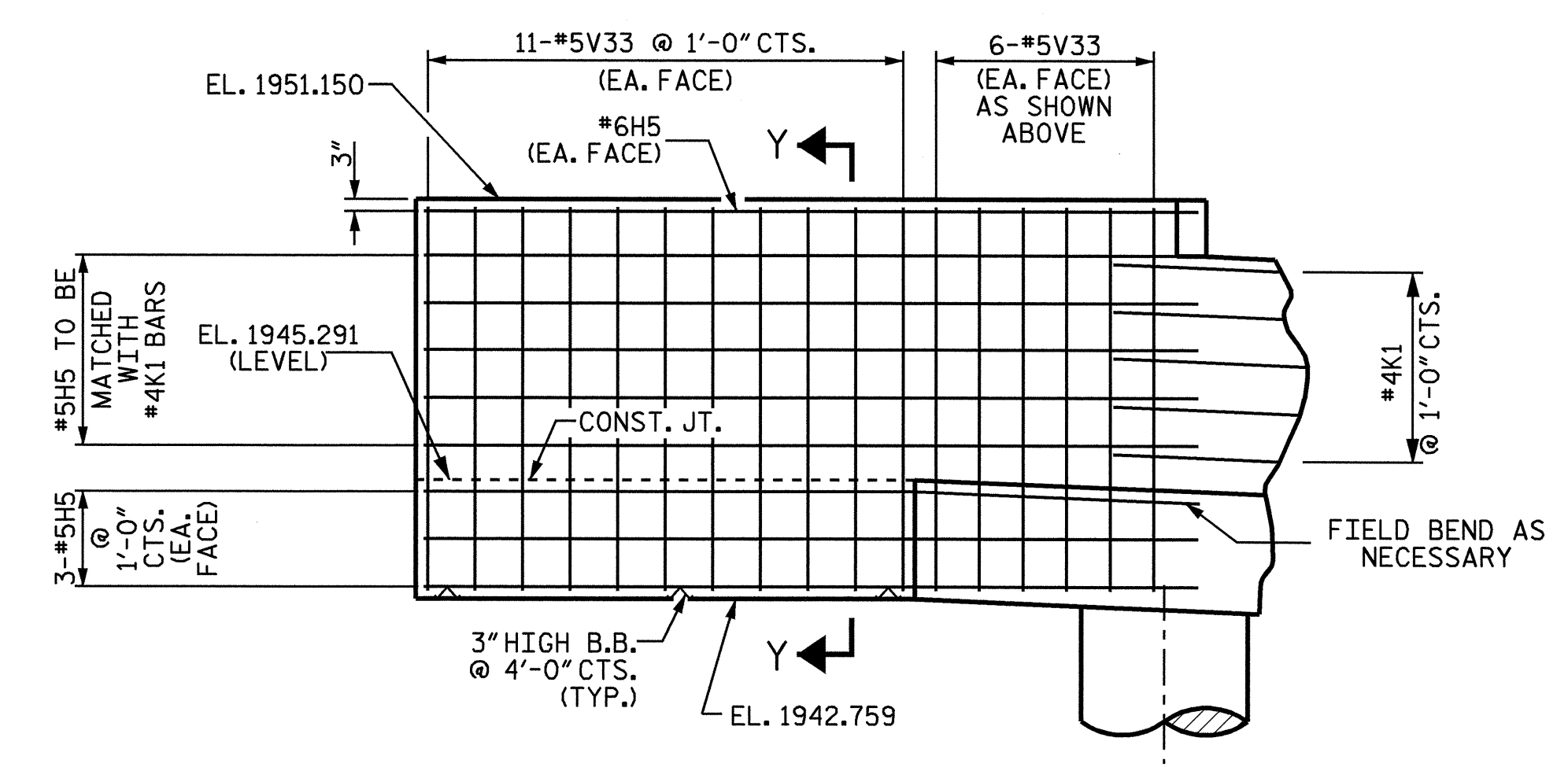
PLAN OF (W2) - STAGE II



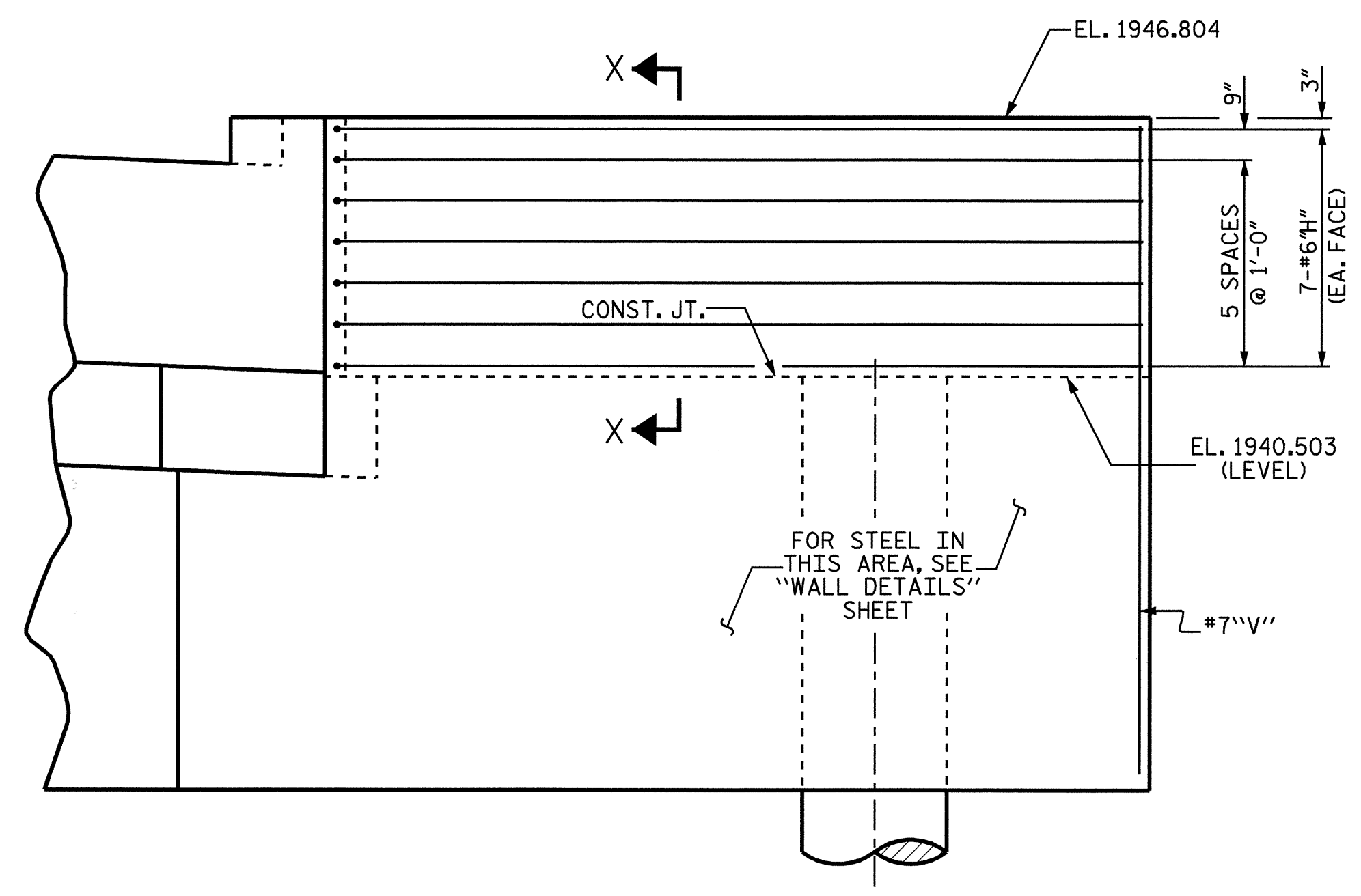
SECTION Y-Y



SECTION X-X



ELEVATION OF (W1) - STAGE I



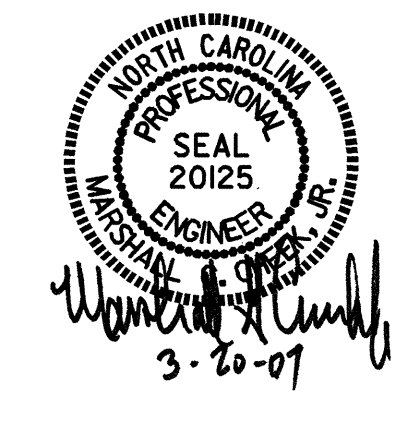
ELEVATION OF (W2) - STAGE II

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 4 OF 6

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

SUBSTRUCTURE
 END BENT #2
 WING DETAILS

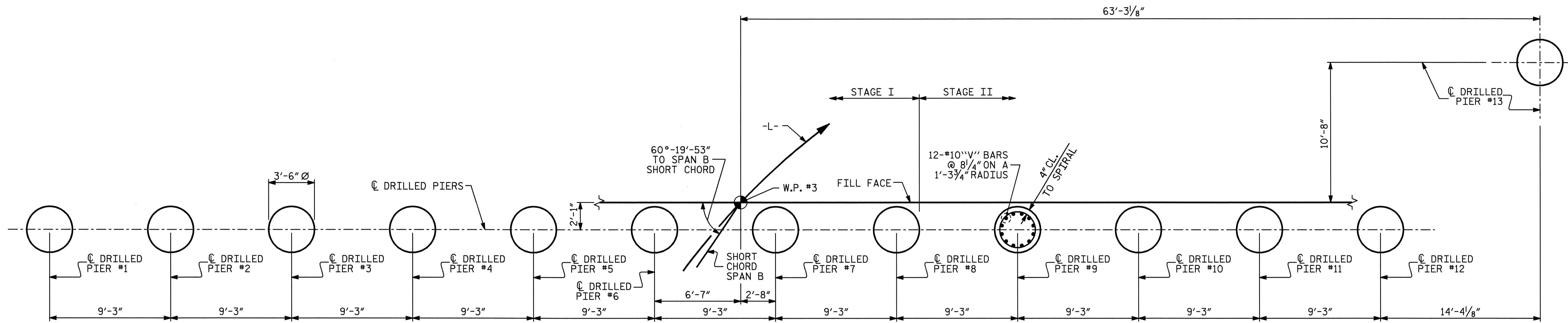


DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06
 CHECKED BY: J. HARRIS DATE: 10-06

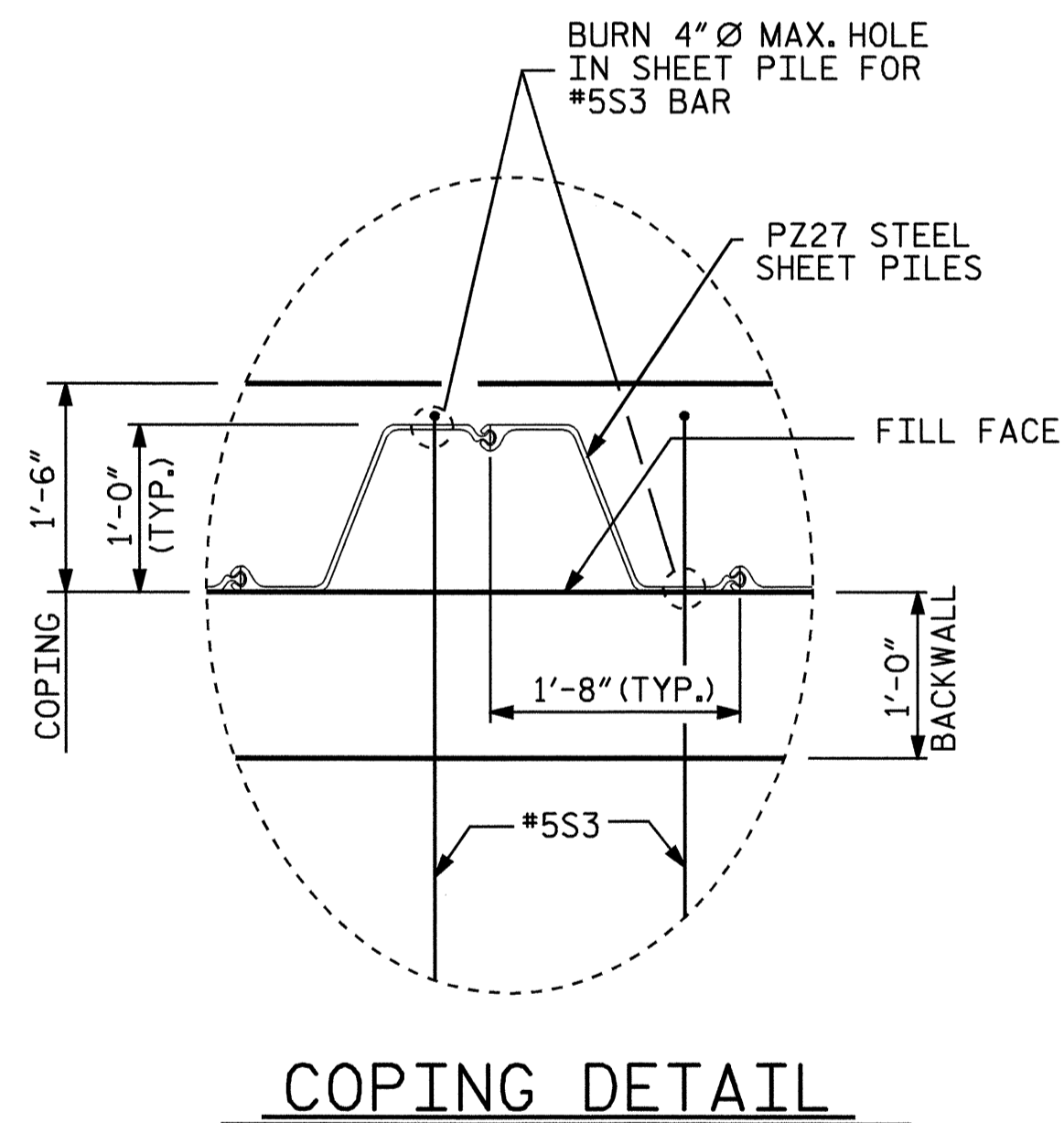
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 vnguyen

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

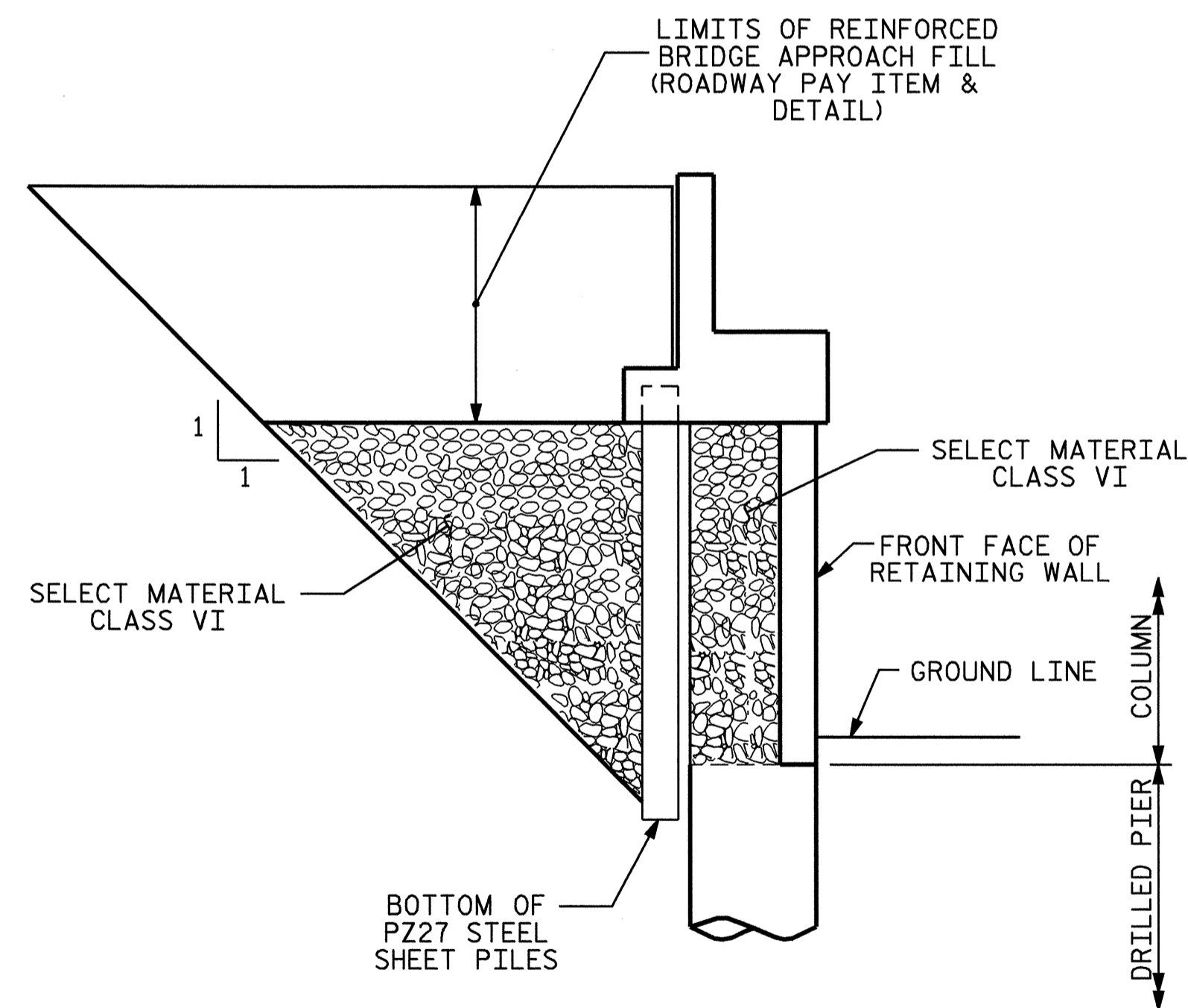
TOTAL SHEETS	60
SHEET NO.	S-50



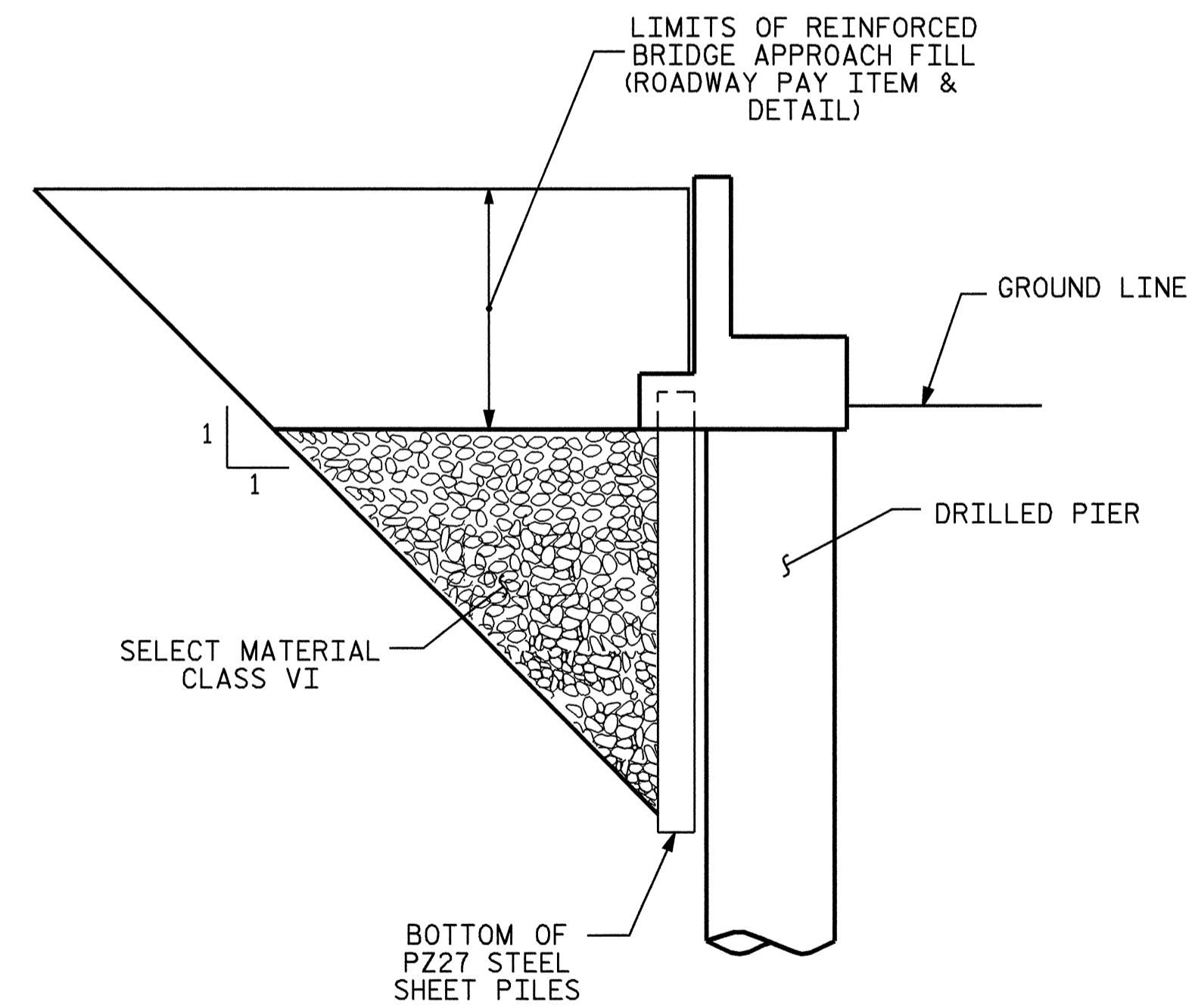
DRILLED PIER LAYOUT
 (INFORMATION SHOWN IS TYPICAL FOR EACH DRILLED PIER)



COPING DETAIL



SECTION D-D
 (SEE SHEET 1 OF 6 FOR LOCATION OF SECTION D-D)



SECTION E-E
 (SEE SHEET 1 OF 6 FOR LOCATION OF SECTION E-E)

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 5 OF 6



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
SUBSTRUCTURE END BENT #2 DETAILS					
REVISIONS					SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
					TOTAL SHEETS
					60

DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06
 CHECKED BY: J. HARRIS DATE: 10-06

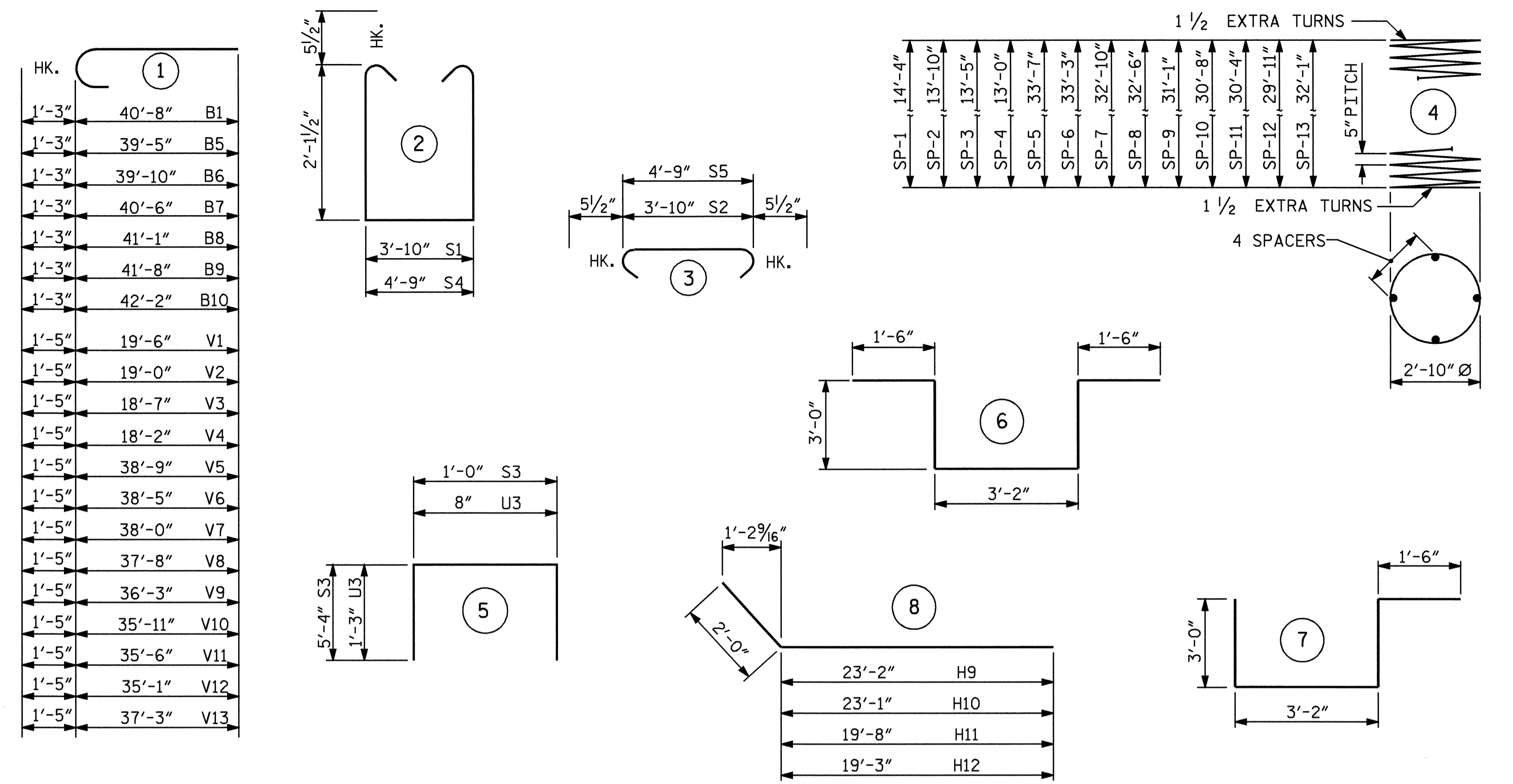
06-DEC-2007 10:19
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 dahodge

BILL OF MATERIAL

STAGE I						STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
B1	12	#9	1	41'-11"	1710	B5	2	#9	1	40'-8"	277
B2	12	#9	STR	40'-8"	1659	B6	2	#9	1	41'-1"	279
B3	8	#5	STR	38'-11"	325	B7	2	#9	1	41'-9"	284
B4	4	#6	STR	39'-9"	239	B8	2	#9	1	42'-4"	288
						B9	2	#9	1	42'-11"	292
H1	8	#7	STR	36'-6"	597	B10	2	#9	1	43'-5"	295
H2	4	#7	STR	27'-3"	223	B11	8	#5	STR	23'-3"	194
H3	4	#7	STR	18'-0"	147	B12	2	#6	STR	43'-4"	130
H4	6	#7	STR	8'-9"	107						
H5	18	#5	STR	15'-8"	294	H6	16	#7	STR	40'-5"	1322
						H7	2	#7	STR	16'-7"	68
K1	30	#4	STR	25'-9"	516	H8	2	#7	STR	40'-5"	165
						H9	10	#6	8	25'-2"	378
S1	53	#5	2	9'-0"	498	H10	10	#6	8	25'-1"	377
S2	53	#5	3	4'-9"	263	H11	7	#6	8	21'-8"	228
S3	43	#5	5	11'-8"	523	H12	7	#6	8	21'-3"	223
U1	27	#6	6	12'-2"	493	K2	20	#4	STR	22'-11"	306
U2	21	#6	7	10'-8"	336	K3	2	#4	STR	3'-4"	4
U3	84	#4	5	3'-2"	178						
						S1	32	#5	2	9'-0"	300
V1	12	#10	1	20'-11"	1080	S2	32	#5	3	4'-9"	159
V2	12	#10	1	20'-5"	1054	S3	25	#5	5	11'-8"	304
V3	12	#10	1	20'-0"	1033	S4	1	#5	2	9'-11"	10
V4	12	#10	1	19'-7"	1011	S5	1	#5	3	5'-8"	6
V5	12	#10	1	40'-2"	2074						
V6	12	#10	1	39'-10"	2057	U1	87	#6	6	12'-2"	1590
V7	12	#10	1	39'-5"	2035	U3	69	#4	5	3'-2"	146
V8	12	#10	1	39'-1"	2018						
V14	4	#7	STR	3'-1"	25	V9	12	#10	1	37'-8"	1945
V15	4	#7	STR	4'-9"	39	V10	12	#10	1	37'-4"	1928
V16	4	#7	STR	6'-4"	52	V11	12	#10	1	36'-11"	1906
V17	4	#7	STR	8'-11"	73	V12	12	#10	1	36'-6"	1885
V23	12	#5	STR	2'-10"	35	V13	12	#10	1	38'-8"	1997
V24	12	#5	STR	4'-6"	56	V18	4	#7	STR	8'-6"	69
V25	12	#5	STR	6'-1"	76	V19	4	#7	STR	8'-2"	67
V33	34	#5	STR	8'-0"	284	V20	4	#7	STR	7'-10"	64
V34	132	#5	STR	6'-11"	952	V21	4	#7	STR	7'-5"	61
						V22	4	#7	STR	9'-8"	79
						V26	12	#5	STR	8'-9"	110
						V27	12	#5	STR	8'-3"	103
						V28	12	#5	STR	8'-0"	100
						V29	12	#5	STR	7'-7"	95
						V30	15	#5	STR	7'-4"	115
						V31	67	#7	STR	15'-11"	2180
						V32	14	#7	STR	7'-10"	224
						V34	78	#5	STR	6'-11"	563
REINFORCING STEEL LBS 22,062						REINFORCING STEEL LBS 21,116					
SP-1	1	*	4	327'-2"	341	SP-9	1	*	4	678'-10"	708
SP-2	1	*	4	316'-8"	330	SP-10	1	*	4	670'-1"	699
SP-3	1	*	4	308'-5"	322	SP-11	1	*	4	663'-1"	692
SP-4	1	*	4	299'-2"	312	SP-12	1	*	4	654'-4"	682
SP-5	1	*	4	731'-4"	763	SP-13	1	*	4	699'-10"	730
SP-6	1	*	4	724'-4"	755						
SP-7	1	*	4	715'-7"	746						
SP-8	1	*	4	708'-7"	739						
SPIRAL COLUMN REINFORCING STEEL LBS 4,308						SPIRAL COLUMN REINFORCING STEEL LBS 3,511					
DRILLED PIER CONCRETE						DRILLED PIER CONCRETE					
POUR #1 DRILLED PIERS CY 58.9						POUR #1 DRILLED PIERS CY 40.1					
CLASS A CONCRETE BREAKDOWN						CLASS A CONCRETE BREAKDOWN					
POUR #2 COLUMNS & WALL CY 14.4						POUR #2 COLUMNS & WALL CY 35.5					
POUR #3 CAP & COPING CY 35.4						POUR #3 CAP & COPING CY 20.8					
POUR #4 BACKWALL & UPPER WALL CY 15.5						POUR #4 BACKWALL & UPPER WALL CY 12.0					
CLASS A CONCRETE TOTAL CY 65.3						CLASS A CONCRETE TOTAL CY 68.3					
3'-6" Ø DRILLED PIERS IN SOIL LF 121.25						3'-6" Ø DRILLED PIERS IN SOIL LF 85.00					
3'-6" Ø DRILLED PIERS NOT IN SOIL LF 44.00						3'-6" Ø DRILLED PIERS NOT IN SOIL LF 27.50					
▲ CSL TUBES LF 741.00						▲ CSL TUBES LF 500.00					
18" STEEL SHEET PILES SF 798						18" STEEL SHEET PILES SF 710					
SELECT MATERIAL CLASS VI TONS 240						SELECT MATERIAL CLASS VI TONS 347					
DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06						DRAWN BY: W.D. CRUTCHER/LLM DATE: 10-06					
CHECKED BY: J. HARRIS DATE: 10-06						CHECKED BY: J. HARRIS DATE: 10-06					

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BAR TYPES

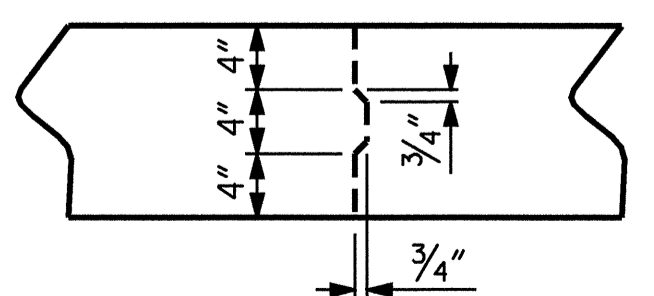


ALL BAR DIMENSIONS ARE OUT TO OUT.

TOTAL QUANTITIES		
REINFORCING STEEL	LBS	43,178
SPIRAL COLUMN REINFORCING STEEL	LBS	7,819
CLASS A CONCRETE	CY.	133.6
DRILLED PIER CONCRETE	CY.	99.0
3'-6" Ø DRILLED PIERS IN SOIL	LF	206.25
3'-6" Ø DRILLED PIERS NOT IN SOIL	LF	71.50
▲ CSL TUBES	LF	1241.00
18" STEEL SHEET PILES	SF	1508
CROSSHOLE SONIC LOGGING	EA.	1
SID INSPECTION	EA.	1
SELECT MATERIAL CLASS VI	TONS	587

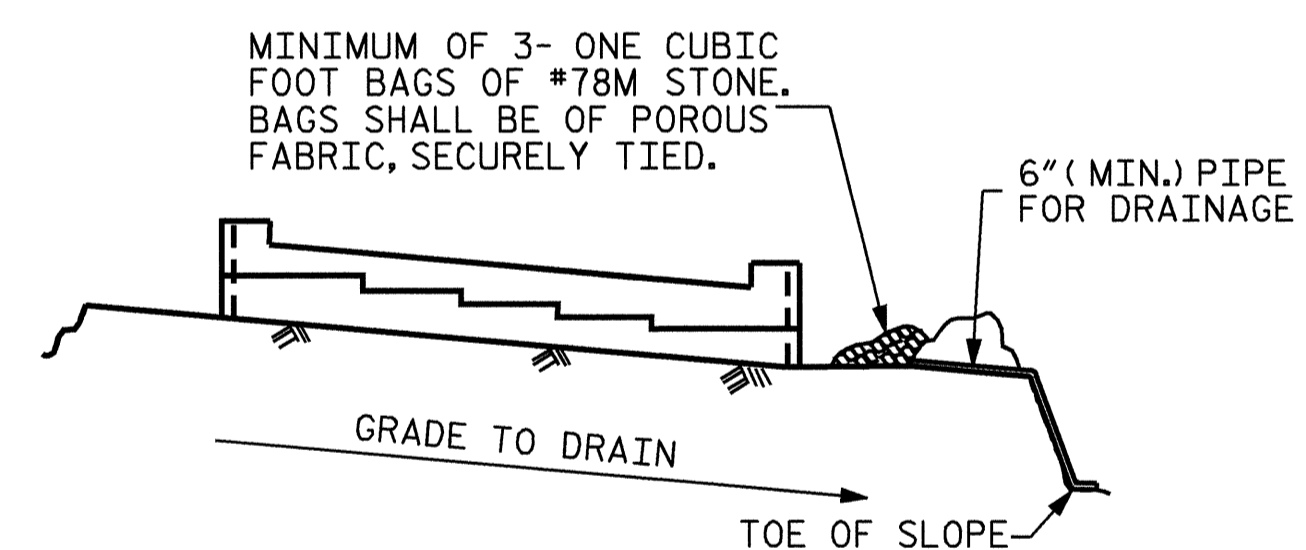
▲ NO SEPARATE PAYMENT WILL BE MADE FOR CSL TUBES. CSL TUBES WILL BE INCLUDED IN THE UNIT BID PRICE FOR DRILLED PIERS.

* - THE SPIRAL REINFORCING STEEL SHALL BE W-31 OR D-31 COLD DRAWN WIRE OR #5 PLAIN OR DEFORMED BAR



TRANSVERSE CONSTRUCTION JOINT DETAIL

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



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.

TEMPORARY DRAINAGE AT END BENT

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00 -L-

SHEET 6 OF 6

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

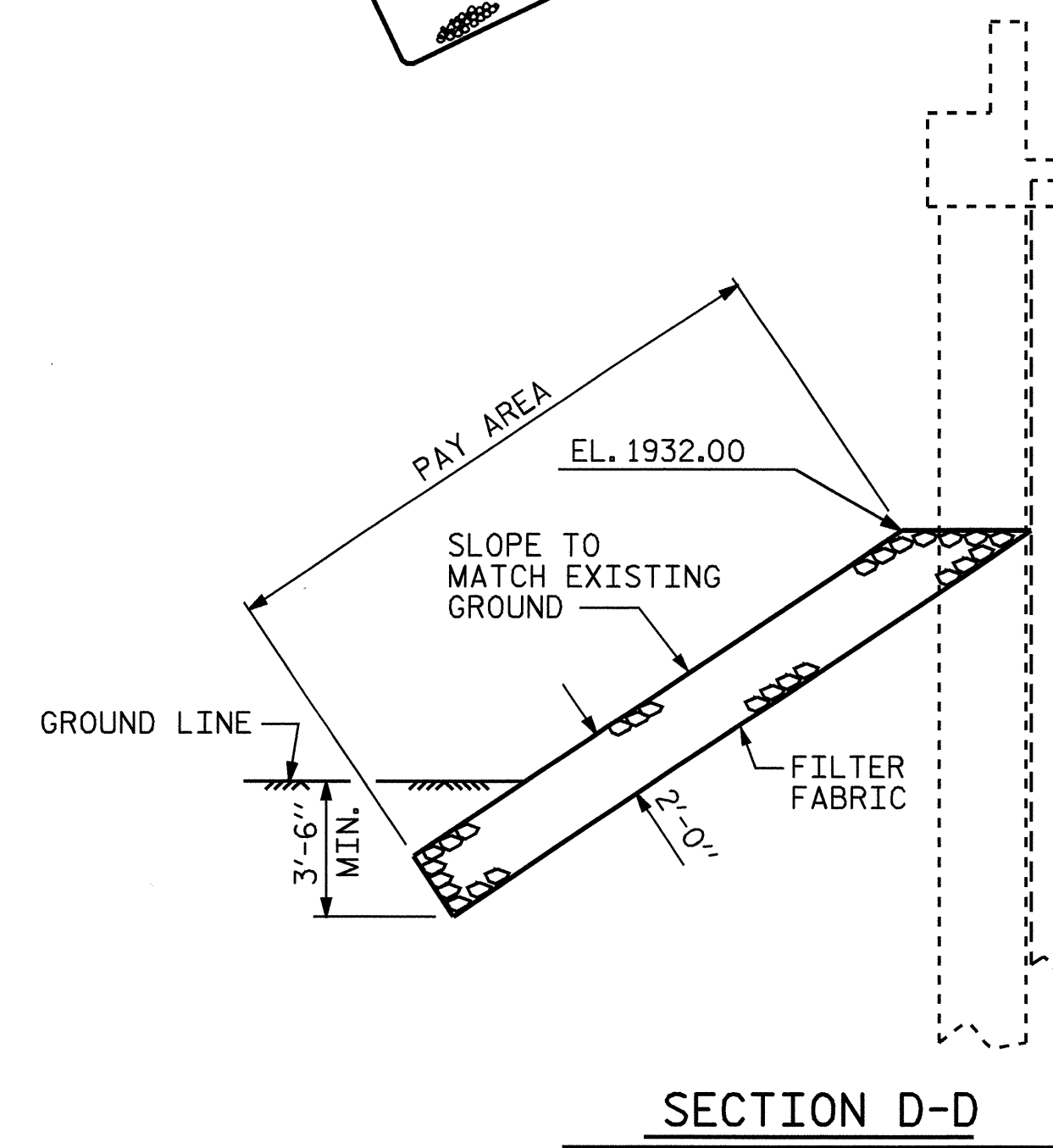
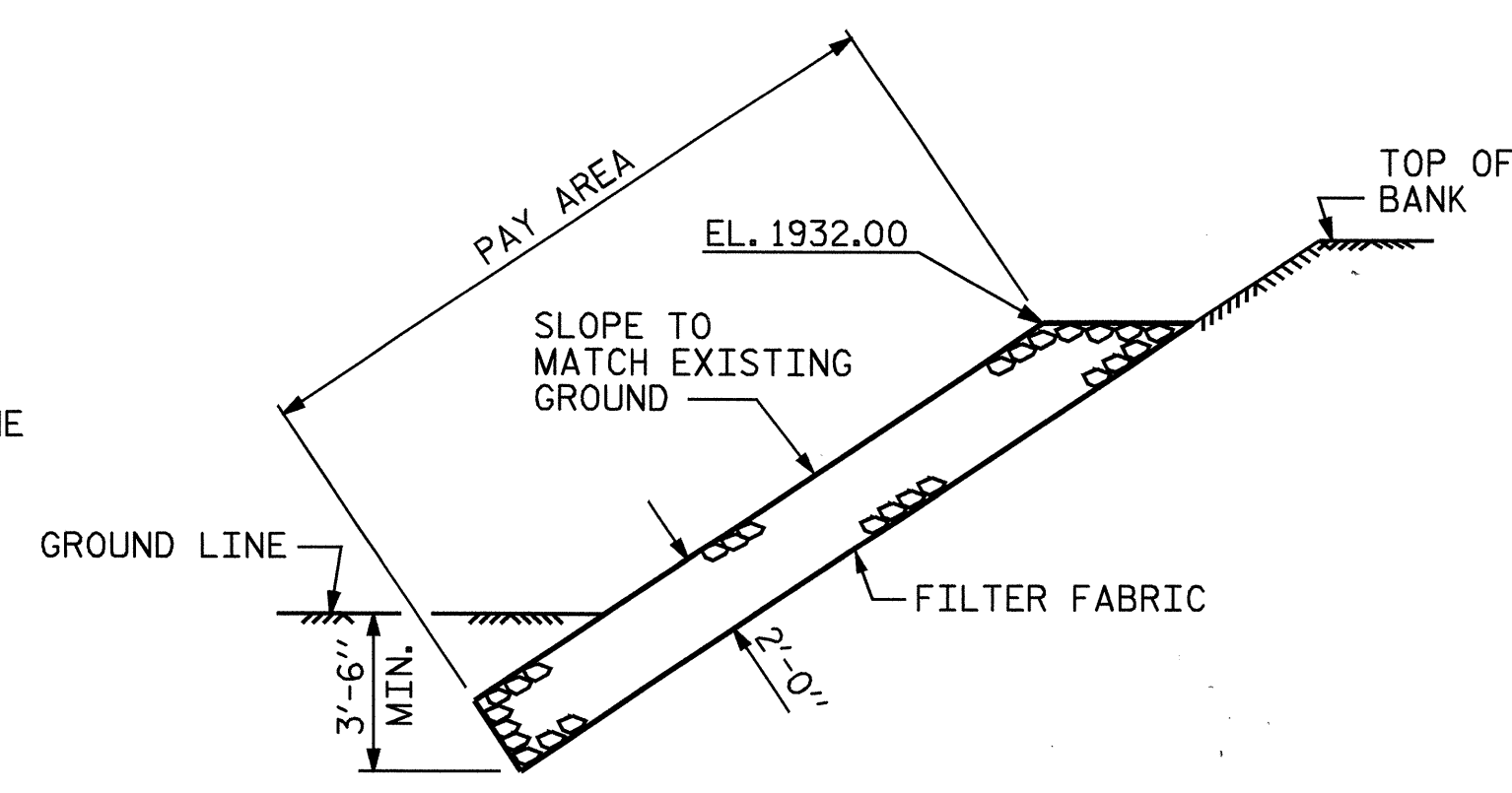
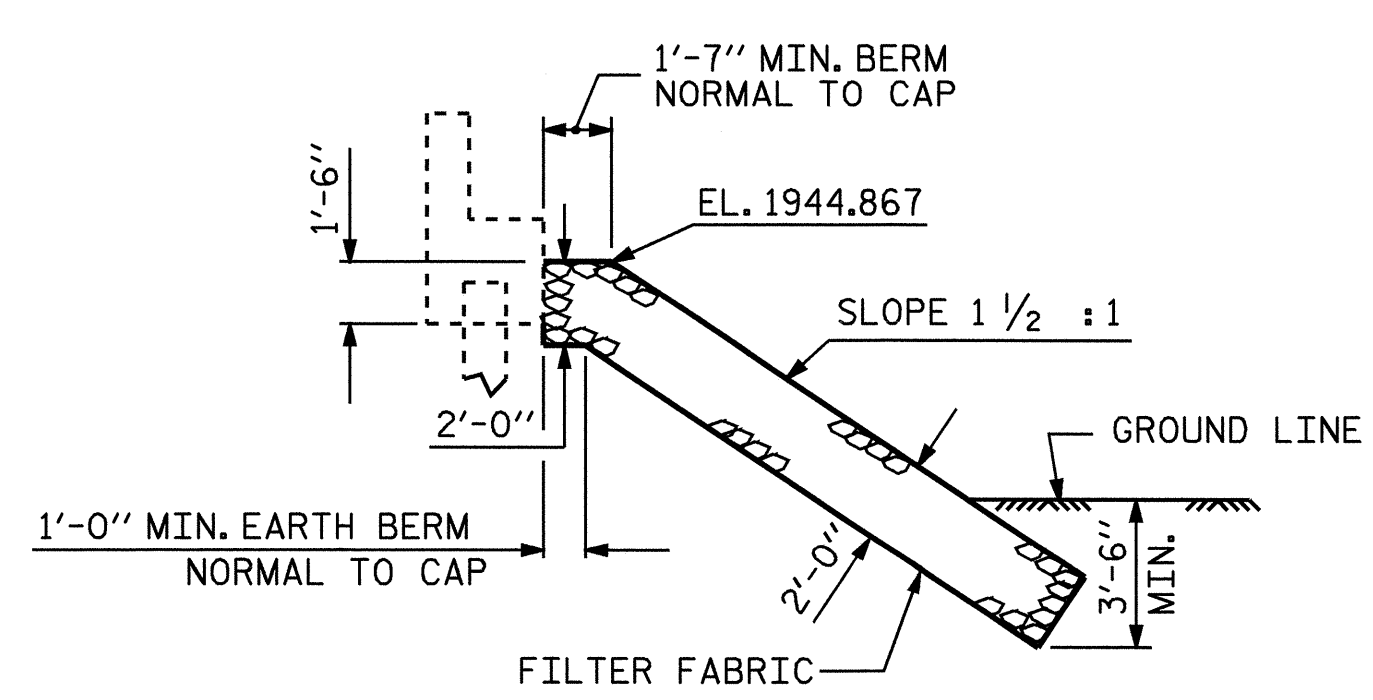
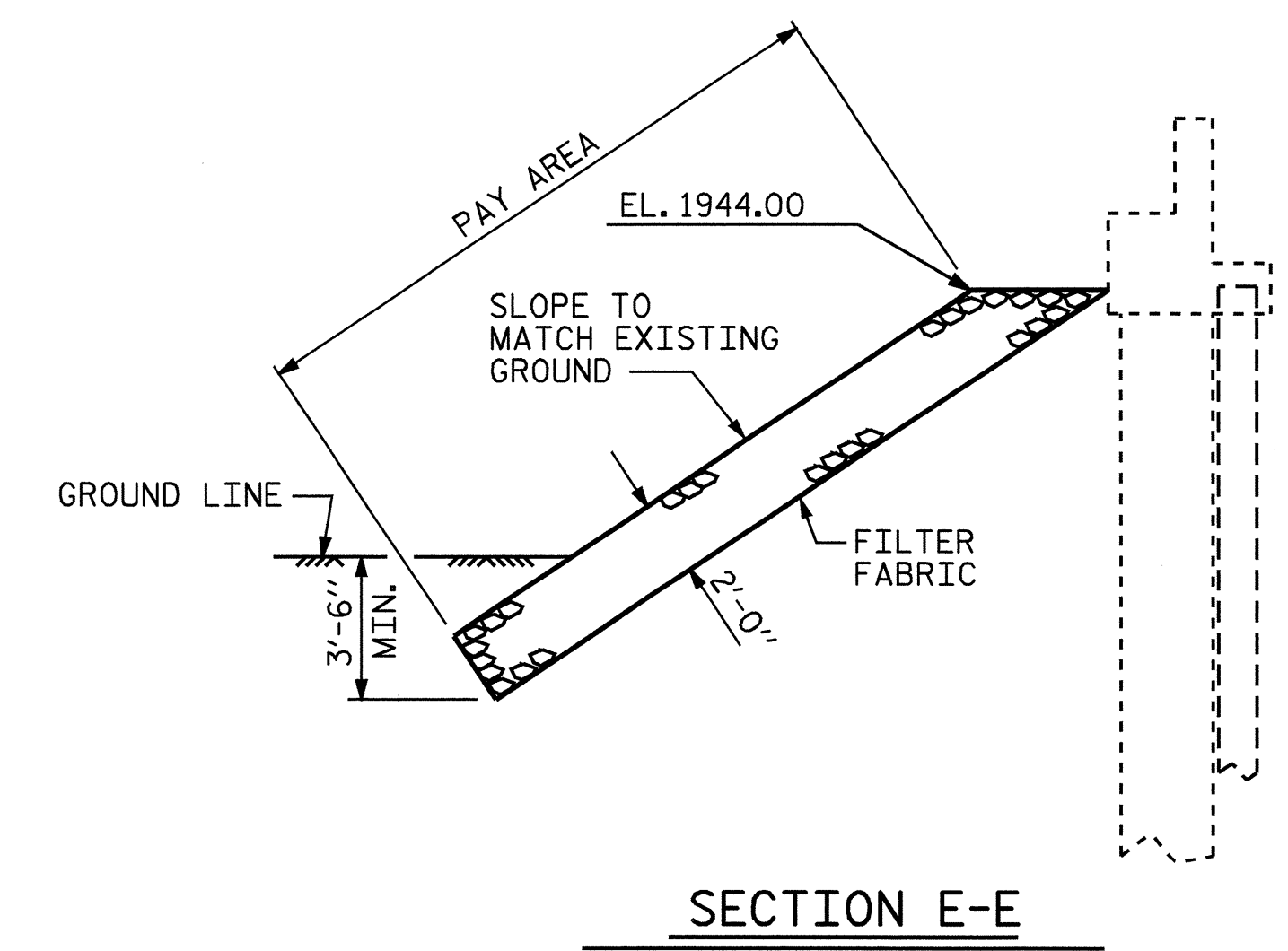
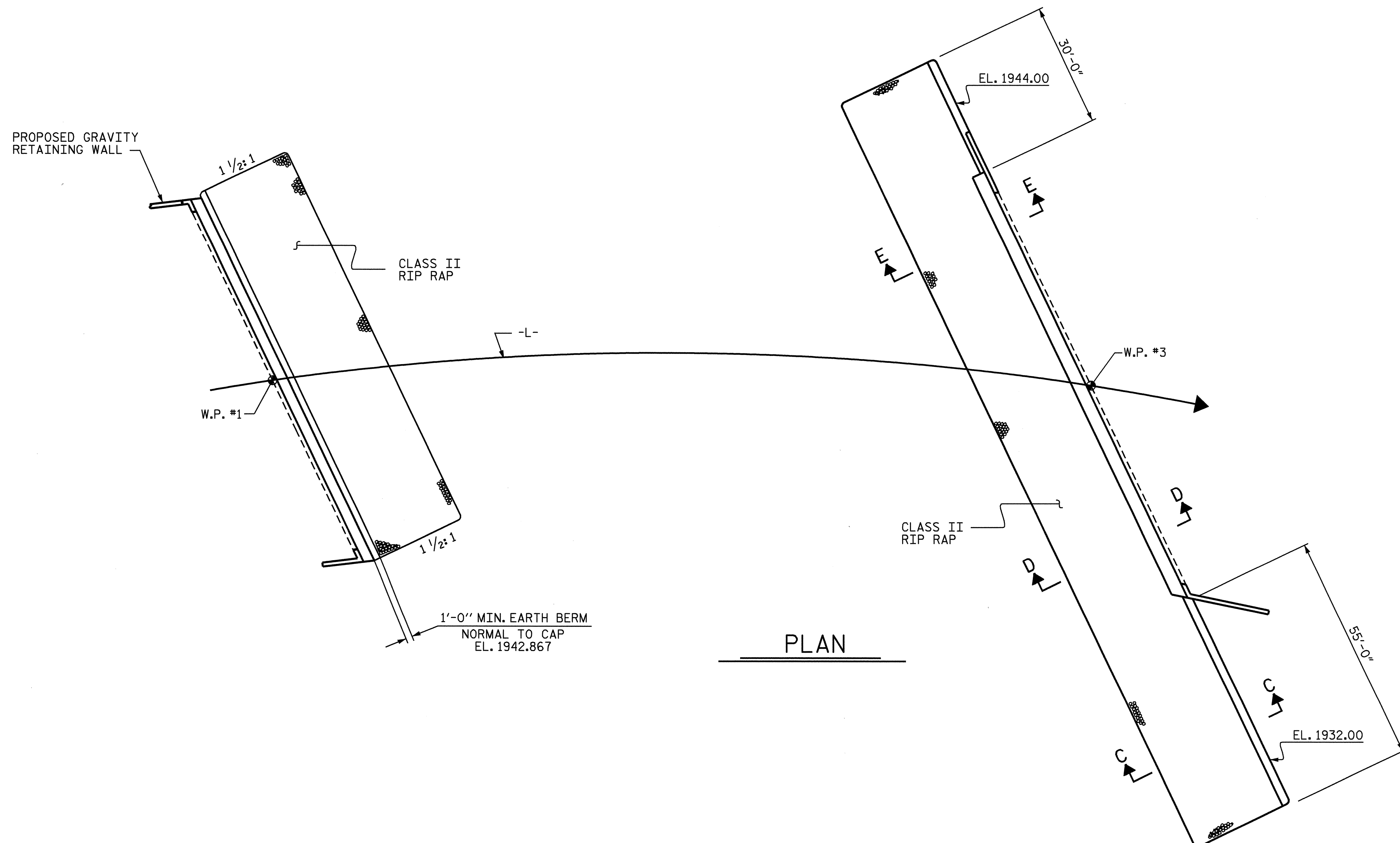
SUBSTRUCTURE
END BENT #2
BILL OF MATERIAL



REVISIONS						SHEET NO. S-52
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

NOTES :
FOR BERM WIDTH DIMENSIONS, SEE GENERAL DRAWING.

ESTIMATED QUANTITIES		
BRIDGE @ STA. 15+15.00 -L-	RIp RAP CLASS II	FILTER FABRIC FOR DRAINAGE
	TONS	SQUARE YARDS
END BENT 1	280	310
END BENT 2	495	550



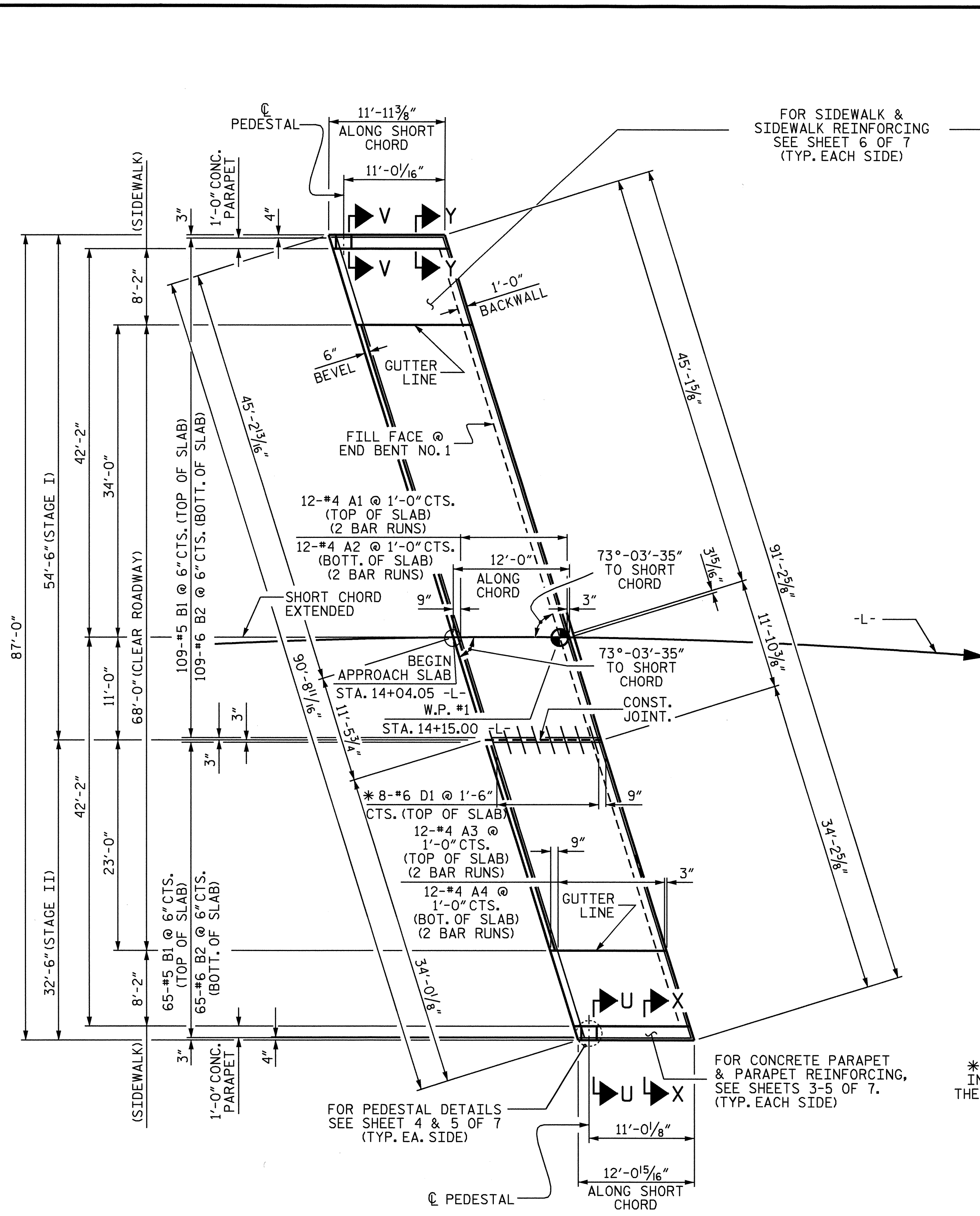
PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
= RIP RAP DETAILS =

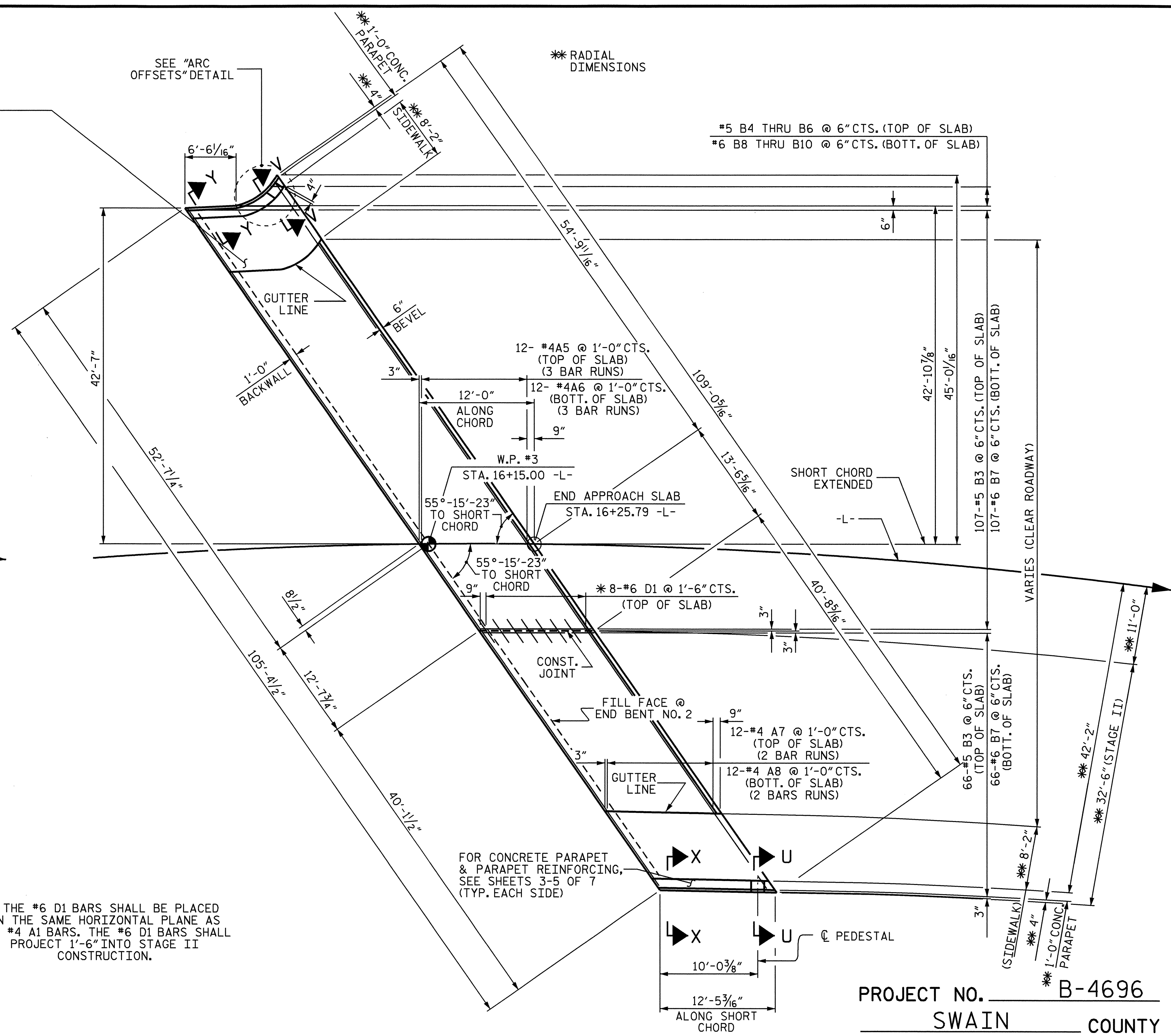
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-53
1			3			TOTAL SHEETS 60
2			4			

ASSEMBLED BY : D. HODGE DATE : 1/2004
CHECKED BY : J. HARRIS DATE : 8/06
DRAWN BY : REK 1/84 REV. 7/17/98 REK/RWW
CHECKED BY : RDU 1/84 REV. 8/16/99 RWW/LES
REV. 10/17/00 RWW/LES



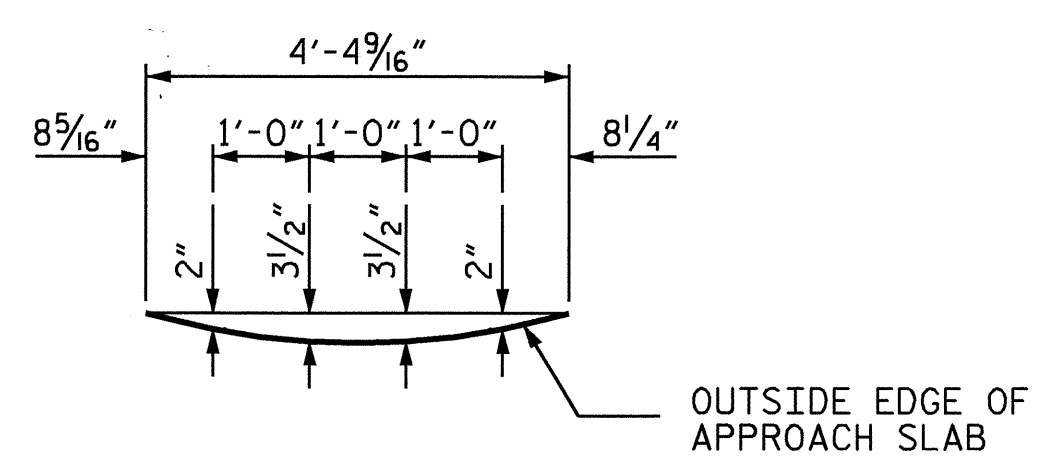


PLAN OF APPROACH SLAB @ END BENT NO. 1



PLAN OF APPROACH SLAB @ END BENT NO. 2

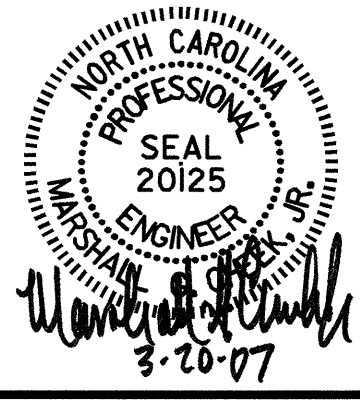
* THE #6 D1 BARS SHALL BE PLACED IN THE SAME HORIZONTAL PLANE AS THE #4 A1 BARS. THE #6 D1 BARS SHALL PROJECT 1'-6" INTO STAGE II CONSTRUCTION.



ARC OFFSETS
LEFT SIDE AT END BENT NO. 2 ONLY
ARC OFFSETS ARE NEGLIGIBLE AND NOT PROVIDED EXCEPT AS SHOWN.

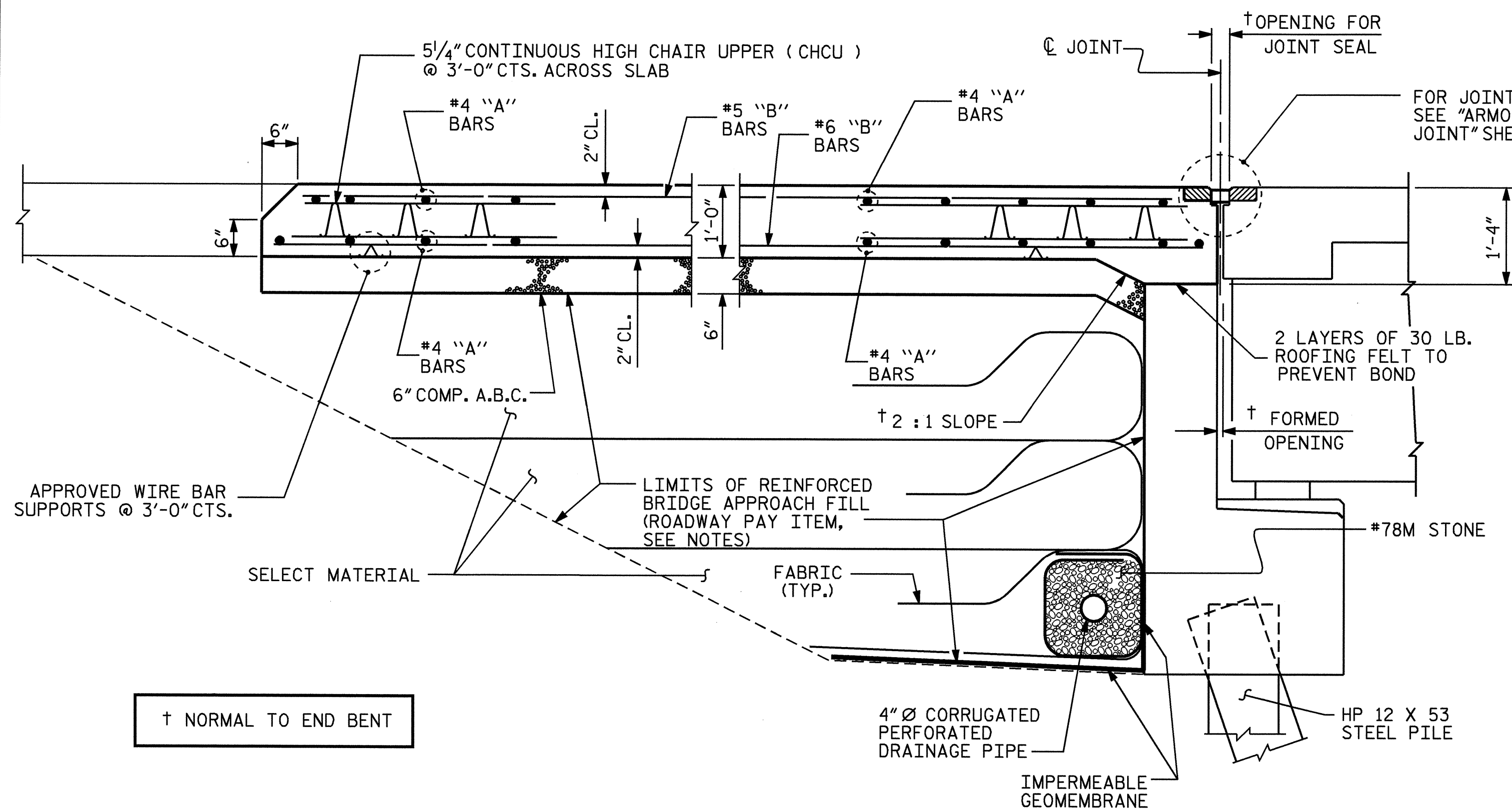
PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00 -L-

SHEET 1 OF 7
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
BRIDGE APPROACH SLAB
FOR FLEXIBLE PAVEMENT



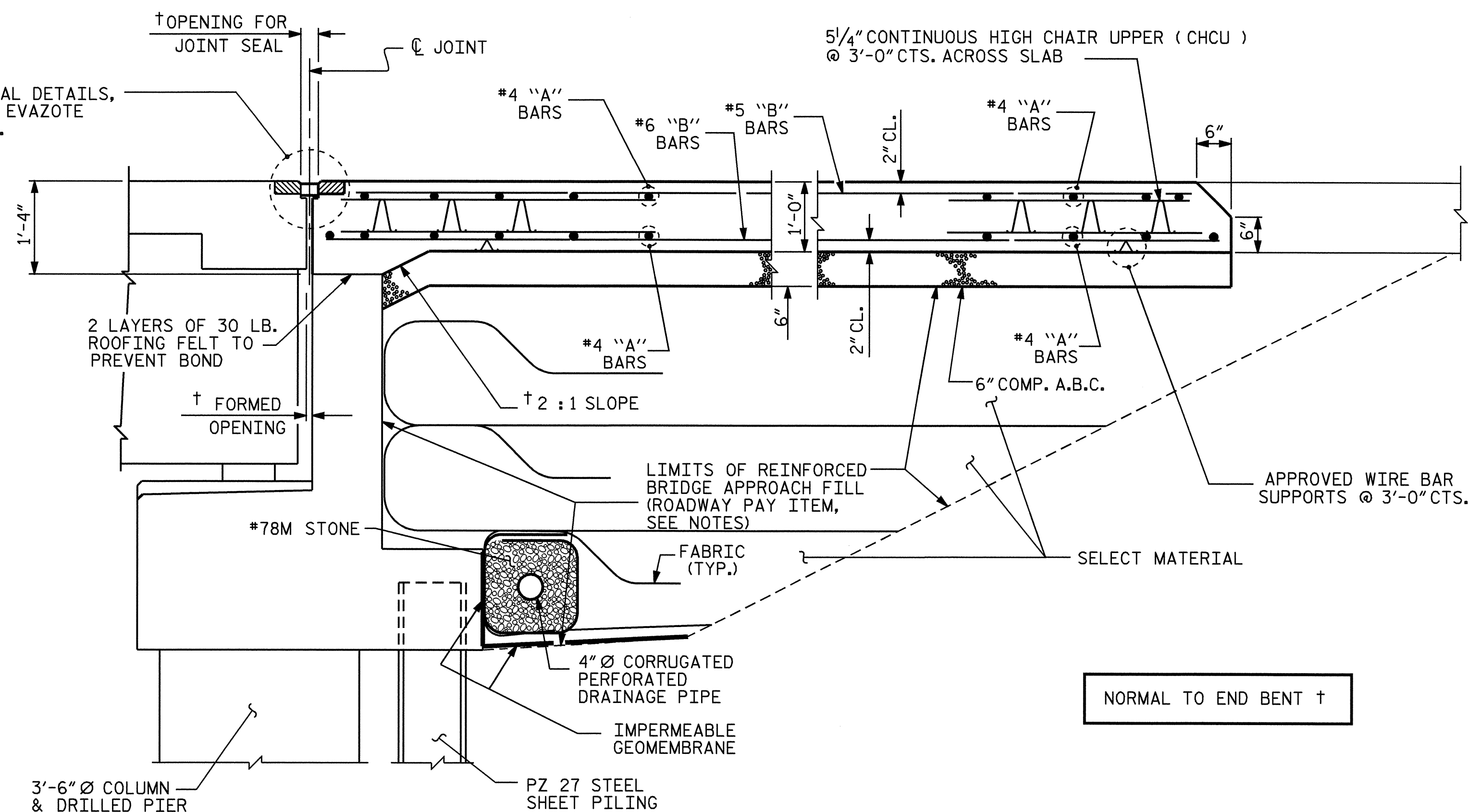
REVISIONS						SHEET NO. S-54
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS 60
2			4			

DRAWN BY: A. SORSENGINH/ ALF DATE: 11/15/06
CHECKED BY: L.L. MURPHY DATE: 11/15/06



SECTION THRU SLAB @ END BENT No. 1

PARAPET, RAIL AND PEDESTAL NOT SHOWN FOR CLARITY



SECTION THRU SLAB @ END BENT No. 2

PARAPET, RAIL AND PEDESTAL NOT SHOWN FOR CLARITY

APPROACH SLAB BILL OF MATERIAL

APPROACH @ END BENT NO. 1 STAGE I						APPROACH @ END BENT NO. 2 STAGE I						APPROACH @ END BENT NO. 2 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*A1	24	#4	STR	29'-5"	472	*A5	36	#4	STR	24'-0"	577	*A7	24	#4	STR	21'-3"	341
A2	24	#4	STR	29'-4"	470	A6	36	#4	STR	23'-10"	573	A8	24	#4	STR	21'-1"	338
*B1	109	#5	STR	10'-9"	1222	*B3	107	#5	STR	10'-9"	1200	*B3	66	#5	STR	10'-9"	740
B2	109	#6	STR	11'-8"	1910	*B4	1	#5	STR	4'-6"	5	B7	66	#6	STR	11'-8"	1157
*D1	8	#6	STR	3'-0"	36	*B5	1	#5	STR	2'-11"	3						
						B6	1	#5	STR	1'-8"	2	REINFORCING STEEL LBS. 1,495					
						B7	107	#6	STR	11'-8"	1875	* EPOXY COATED REINFORCING STEEL LBS. 1,081					
						B8	1	#6	STR	4'-6"	7	CLASS AA CONCRETE					
						B9	1	#6	STR	2'-11"	4	APPROACH SLAB C.Y. 19.1					
						B10	1	#6	STR	1'-8"	3						
						*D1	8	#6	STR	3'-0"	36						
												REINFORCING STEEL LBS. 2,380					
												* EPOXY COATED REINFORCING STEEL LBS. 1,730					
												CLASS AA CONCRETE					
												APPROACH SLAB C.Y. 24.9					
												REINFORCING STEEL LBS. 2,462					
												* EPOXY COATED REINFORCING STEEL LBS. 1,823					
												CLASS AA CONCRETE					
												APPROACH SLAB C.Y. 28.2					
												REINFORCING STEEL LBS. 1,426					
												* EPOXY COATED REINFORCING STEEL LBS. 1,018					
												CLASS AA CONCRETE					
												APPROACH SLAB C.Y. 14.8					

SPLICE CHART		
BAR SIZE	APPROACH SLABS	
	EPOXY COATED	UNCOATED
#4	2'-0"	1'-9"
#5	2'-6"	2'-2"
#6	3'-10"	2'-7"

NOTES

- STAGE I APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF STAGE I OF BRIDGE DECK. STAGE II APPROACH SLAB SHALL NOT BE CONSTRUCTED PRIOR TO COMPLETION OF STAGE II AND III OF BRIDGE DECK.
- FOR REINFORCED BRIDGE APPROACH FILL INCLUDING FABRIC, IMPERMEABLE GEOMEMBRANE, 4" Ø DRAINAGE PIPE, #78M STONE, AND SELECT MATERIAL, SEE ROADWAY PLANS.
- 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. SEE ROADWAY PLANS.
- THE 6" COMP. A.B.C. SHALL BE FLUSH WITH THE ROADWAY END OF THE APPROACH SLAB AND SHALL EXTEND 1'-0" OUTSIDE 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.
- THE TOP SURFACES OF THE SIDEWALKS SHALL BE CONSTRUCTED WITH AN IMPRINTED BRICK PATTERN AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE IMPRINTED FINISH SHALL BE PAID FOR UNDER THE LUMP SUM PRICE BID FOR BRIDGE APPROACH SLAB. SEE SPECIAL PROVISIONS FOR AESTHETICALLY TREATED CONCRETE SIDEWALKS.
- FOR EVAZOTE JOINT SEALS, SEE SPECIAL PROVISIONS.
- THE NOMINAL UNCOMPRESSED SEAL WIDTH OF THE EVAZOTE JOINT SEAL SHALL BE 2 1/2".
- FOR ELASTOMERIC CONCRETE, SEE SPECIAL PROVISIONS.
- PAYMENT FOR ARMORED EVAZOTE JOINT SEALS SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR EVAZOTE JOINT SEALS.
- PAYMENT FOR THE PARAPET, PEDESTALS, AND RAIL SHALL BE PAID FOR IN THE LUMP SUM PRICE FOR DECORATIVE CONCRETE AND METAL RAIL.
- PAYMENT FOR THE SIDEWALK SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR BRIDGE APPROACH SLAB.
- THE PARAPET AND SIDEWALK SHALL NOT BE CAST UNTIL ALL CONCRETE IN THE APPROACH SLAB HAS BEEN CAST AND HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
- ALL BARS IN THE SIDEWALK, PARAPET AND PEDESTALS SHALL BE EPOXY COATED.

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 2 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

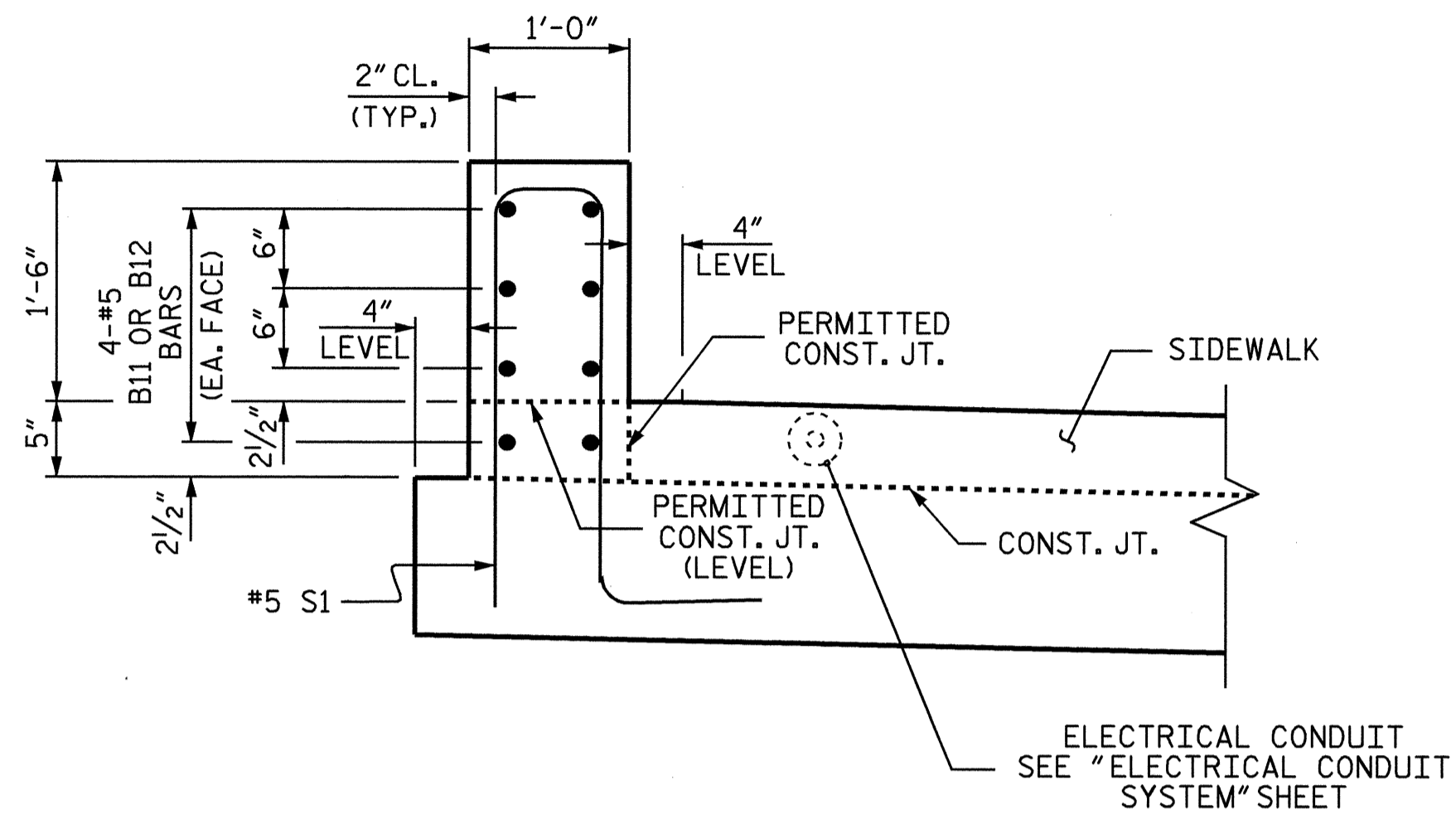
BRIDGE APPROACH SLAB
 FOR FLEXIBLE PAVEMENT

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

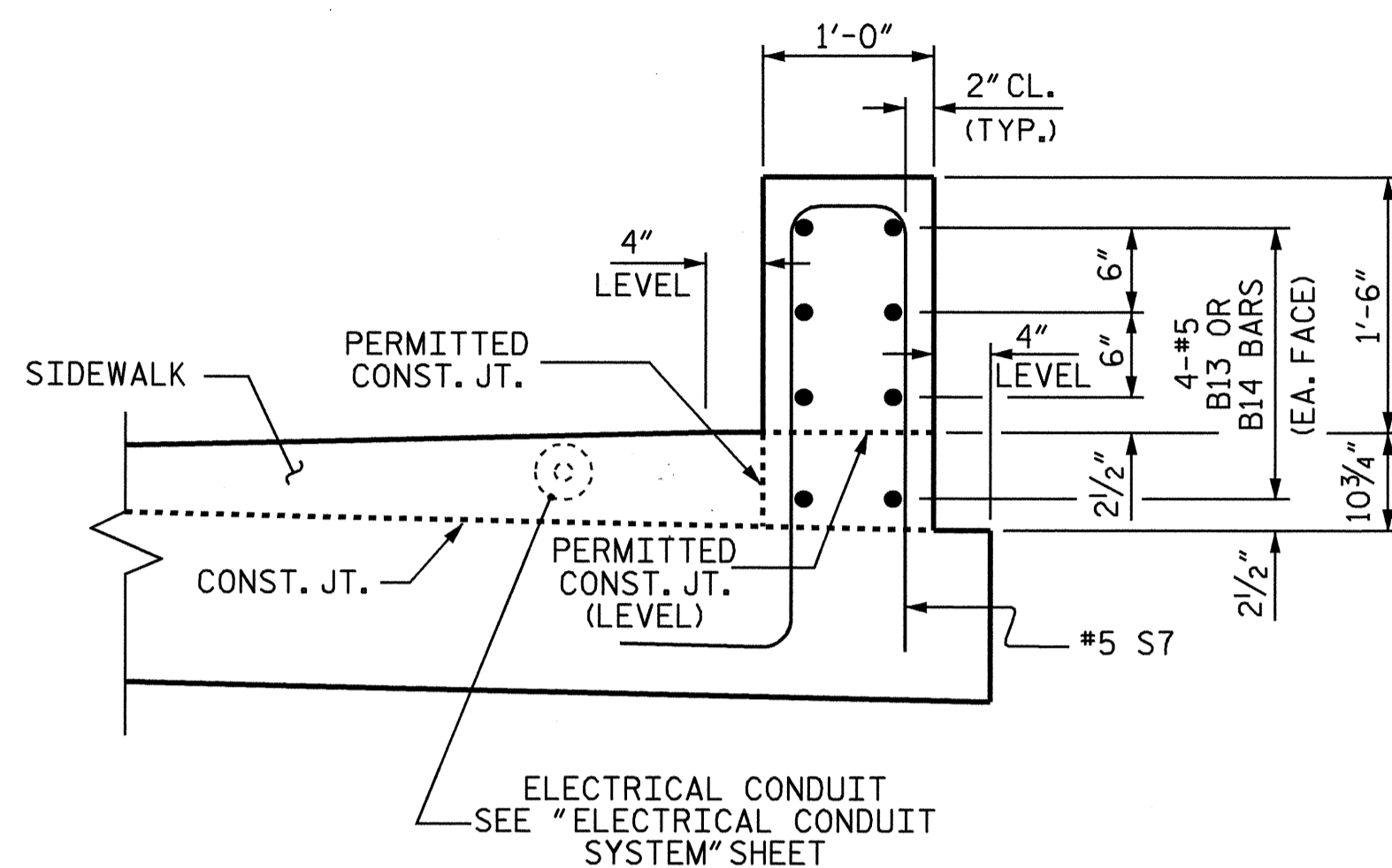
TOTAL SHEETS: 60



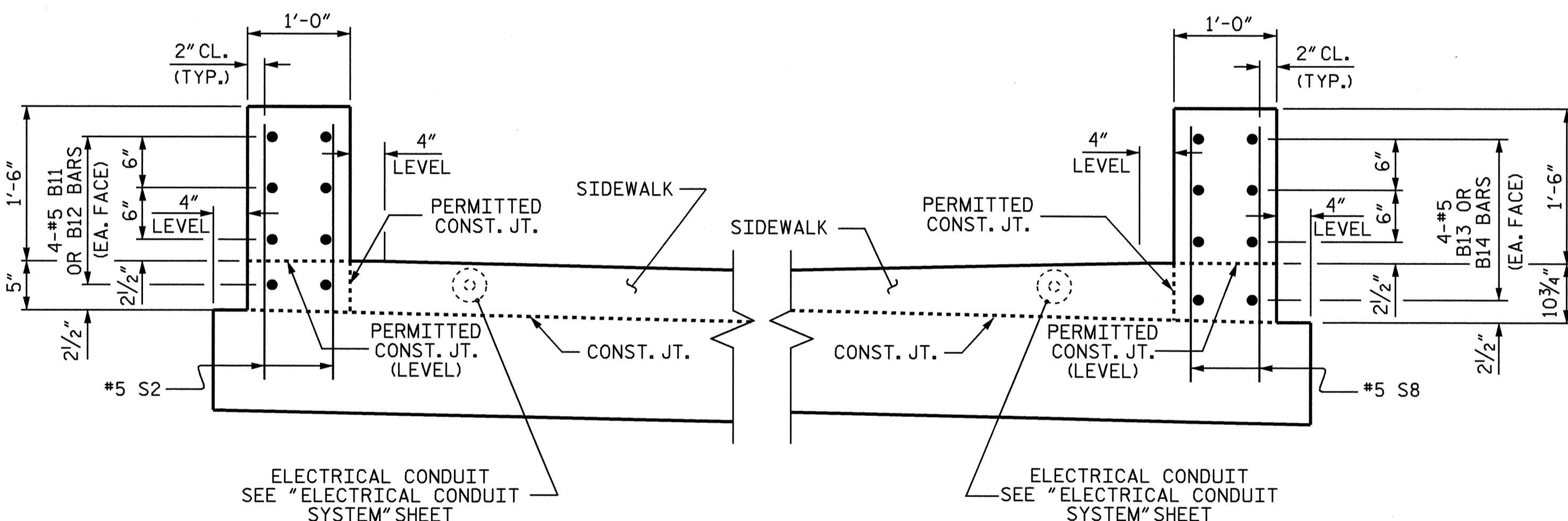
ASSEMBLED BY : A. SORSENGIN/ALF DATE : 12/19/06
 CHECKED BY : L.L. MURPHY DATE : 11/15/06
 DRAWN BY : EEM 3/95 REV. 7/10/01 LES/RDR
 CHECKED BY : VAP 3/95 REV. 5/7/03R RWW/JTE
 REV. 5/1/06 REV. 5/1/06 TLA/GM



SECTION Y-Y
(STAGE I - LEFT SIDE)



SECTION X-X
(STAGE II - RIGHT SIDE)

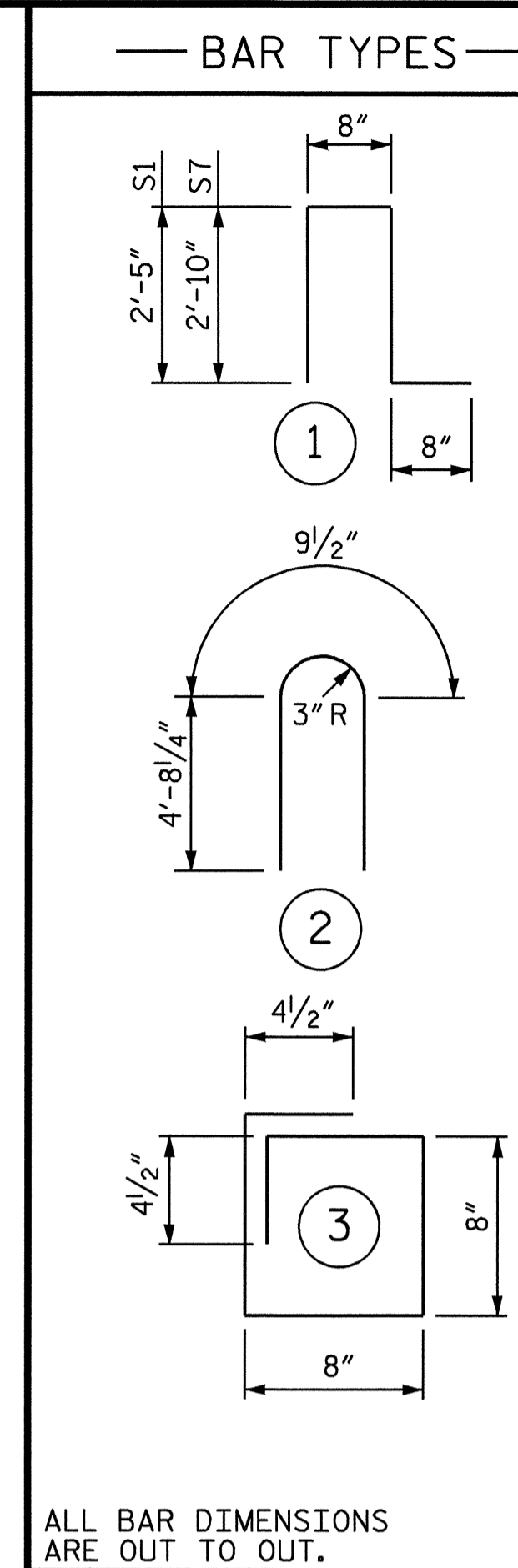


SECTION V-V
(STAGE I - LEFT SIDE)

SECTION U-U
(STAGE II - RIGHT SIDE)

SECTION THRU PARAPETS

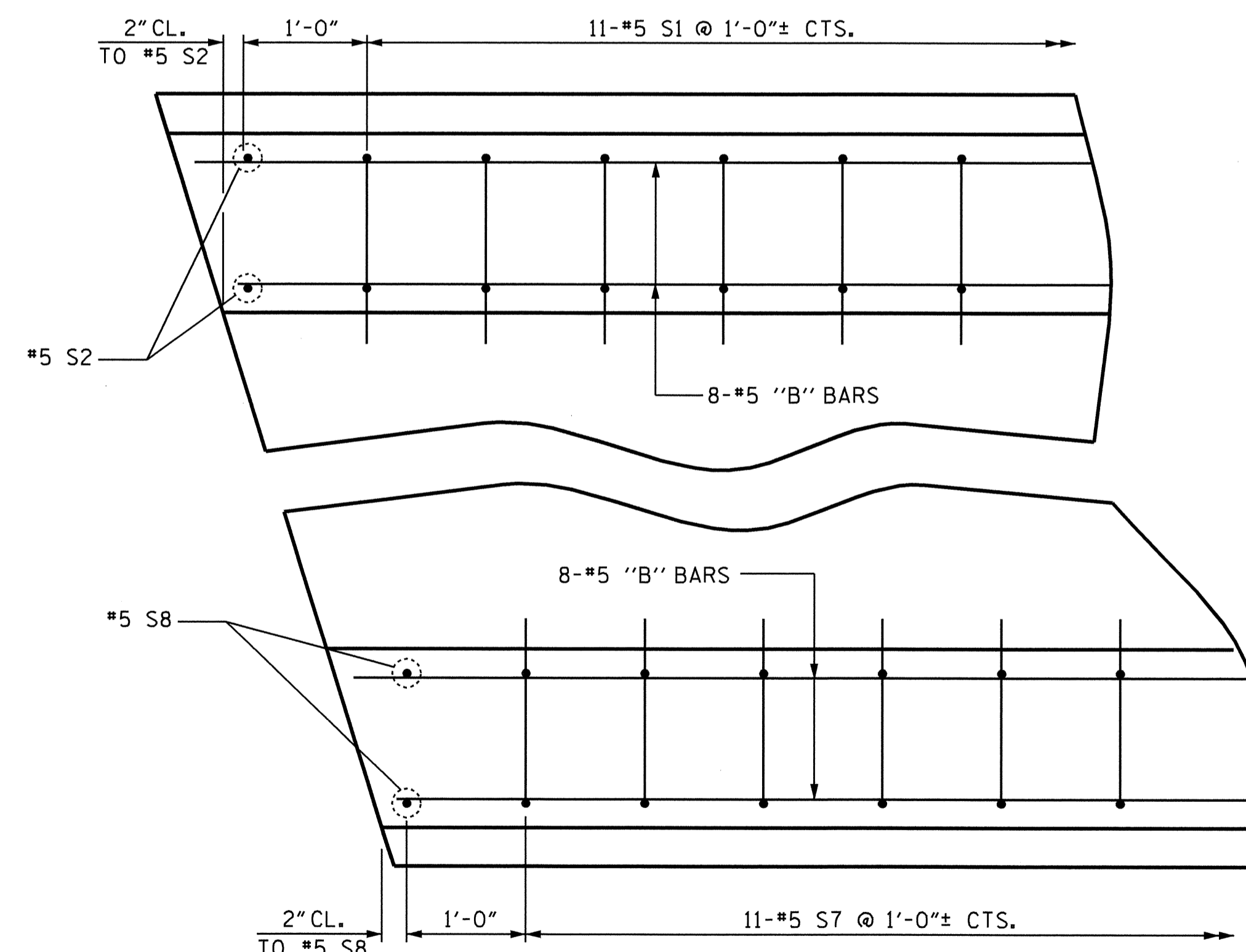
(FOR PEDESTAL AND PEDESTAL DETAILS, SEE SHEET 4 OF 7)
(FOR SIDEWALK AND SIDEWALK REINFORCING, SEE SHEET 6 OF 7)
(FOR LOCATION OF SECTIONS, SEE SHEET 1 OF 7)



ALL BAR DIMENSIONS ARE OUT TO OUT.

PEDESTAL AND PARAPET BILL OF MATERIAL

APPROACH @ END BENT NO. 1 STAGE I						APPROACH @ END BENT NO. 2 STAGE I							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
*B11	8	#5	STR	11'-7"	97	*B13	8	#5	STR	12'-9"	106		
*S1	11	#5	1	6'-2"	71	*S1	11	#5	1	6'-2"	71		
*S2	2	#5	STR	2'-5"	5	*S2	2	#5	STR	2'-5"	5		
*S3	3	#6	2	10'-2"	46	*S3	3	#6	2	10'-2"	46		
*S4	2	#6	STR	5'-0"	15	*S4	2	#6	STR	5'-0"	15		
*S5	7	#4	3	3'-5"	16	*S5	7	#4	3	3'-5"	16		
*S6	8	#4	STR	1'-8"	9	*S6	8	#4	STR	1'-8"	9		
* EPOXY COATED REINFORCING STEEL						* EPOXY COATED REINFORCING STEEL							
					LBS.	259						LBS.	268
CLASS AA CONCRETE PARAPET & PEDESTAL						CLASS AA CONCRETE PARAPET & PEDESTAL							
					C.Y.	1.0						C.Y.	1.4
APPROACH @ END BENT NO. 1 STAGE II						APPROACH @ END BENT NO. 2 STAGE II							
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT		
*B12	8	#5	STR	11'-8"	97	*B14	8	#5	STR	12'-1"	101		
*S7	11	#5	1	7'-0"	80	*S7	11	#5	1	7'-0"	80		
*S8	2	#5	STR	2'-10"	6	*S8	2	#5	STR	2'-10"	6		
*S3	3	#6	2	10'-2"	46	*S3	3	#6	2	10'-2"	46		
*S4	2	#6	STR	5'-0"	15	*S4	2	#6	STR	5'-0"	15		
*S5	7	#4	3	3'-5"	16	*S5	7	#4	3	3'-5"	16		
*S6	8	#4	STR	1'-8"	9	*S6	8	#4	STR	1'-8"	9		
* EPOXY COATED REINFORCING STEEL						* EPOXY COATED REINFORCING STEEL							
					LBS.	269						LBS.	273
CLASS AA CONCRETE PARAPET & PEDESTAL						CLASS AA CONCRETE PARAPET & PEDESTAL							
					C.Y.	1.3						C.Y.	1.3



PLAN OF PARAPET

(APPROACH SLAB @ END BENT NO.1 - END BENT NO.2 SIMILAR)

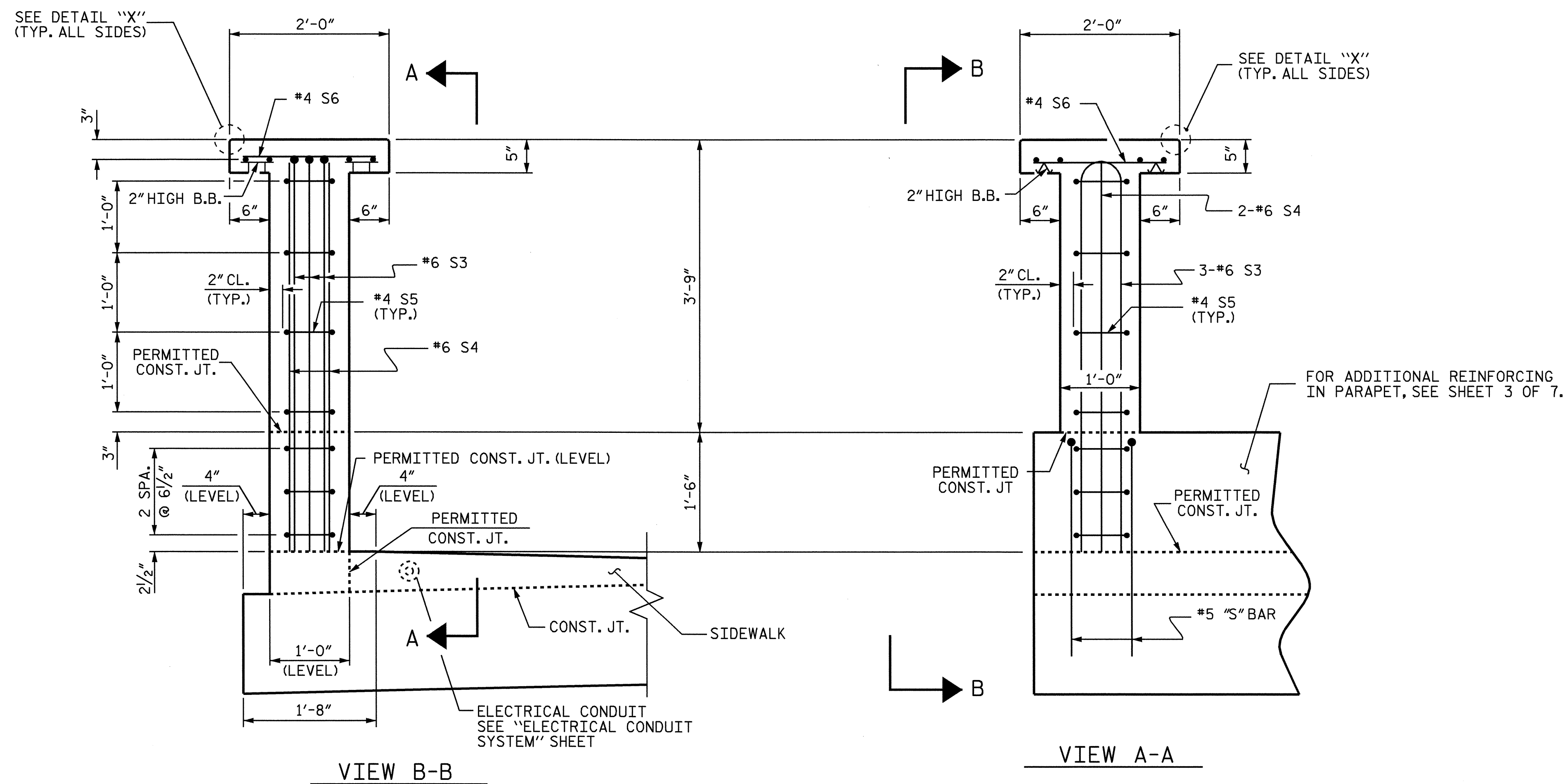
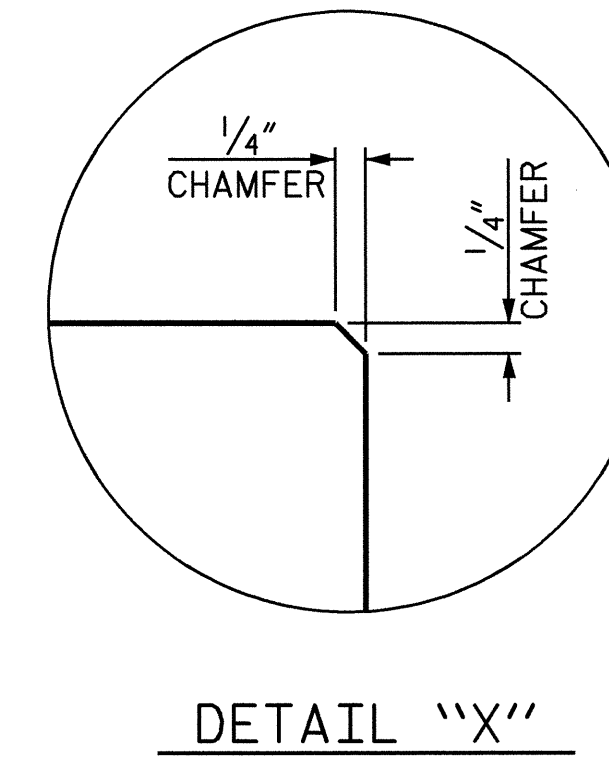
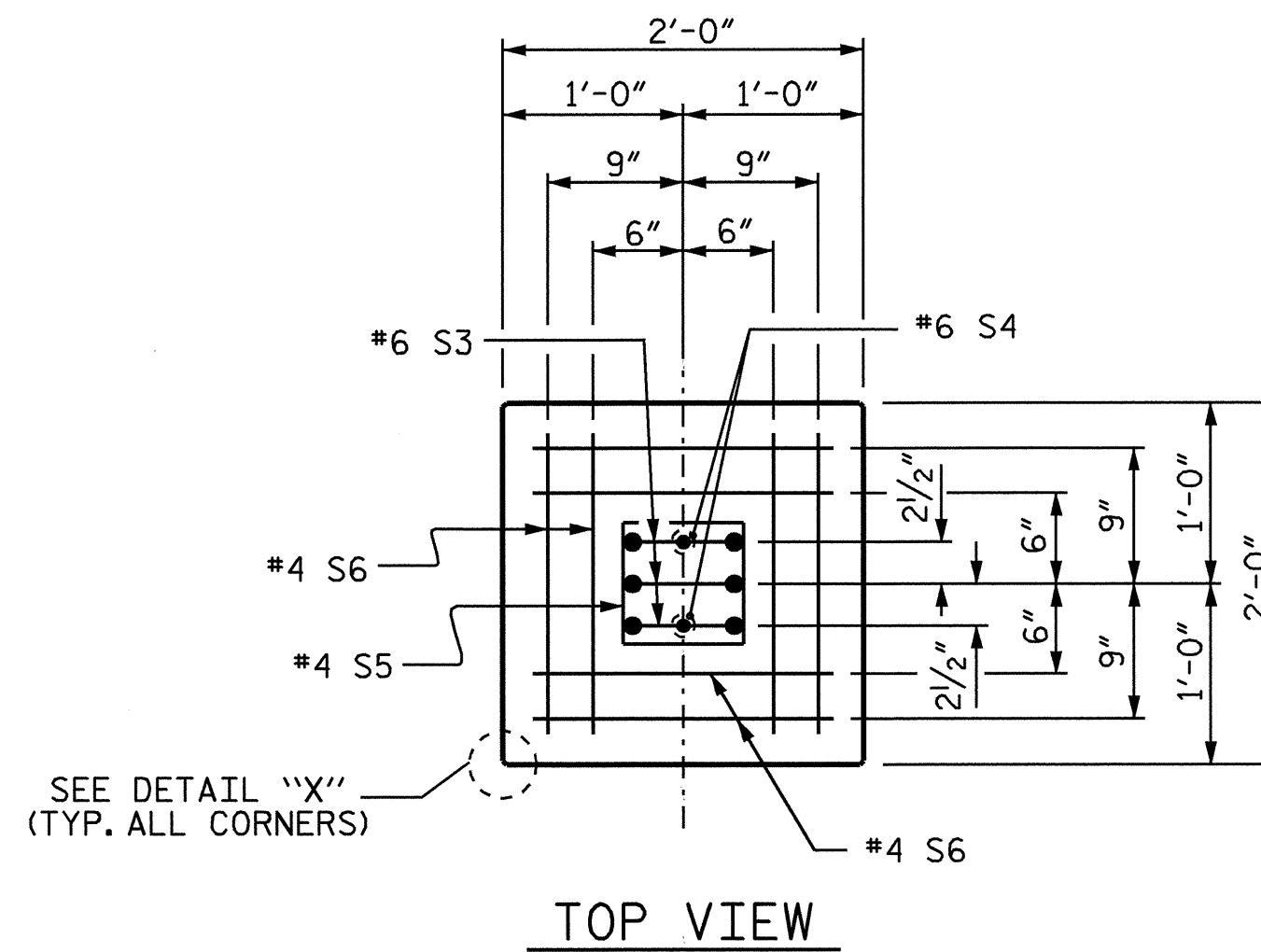
PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 3 OF 7
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
APPROACH SLAB
DECORATIVE CONCRETE
AND METAL RAIL
STAGE I & II



DRAWN BY: A. SORSENGINH/ALF DATE: 11/15/06
CHECKED BY: L.L. MURPHY DATE: 11/15/06

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-56	
1			3			TOTAL SHEETS 60	
2			4				



#5 "S" BARS AND #5 "B" BARS IN PARAPET OMITTED FOR CLARITY
FOR SECTION THRU PARAPET, SEE SHEET 3 OF 7
FOR REINFORCING IN SIDEWALK, SEE SHEET 6 OF 7

PEDESTAL DETAILS

(2 REQUIRED STAGE I)
(2 REQUIRED STAGE II)

PROJECT NO. B-4696
SWAIN COUNTY
STATION: 15+15.00-L-

SHEET 4 OF 7

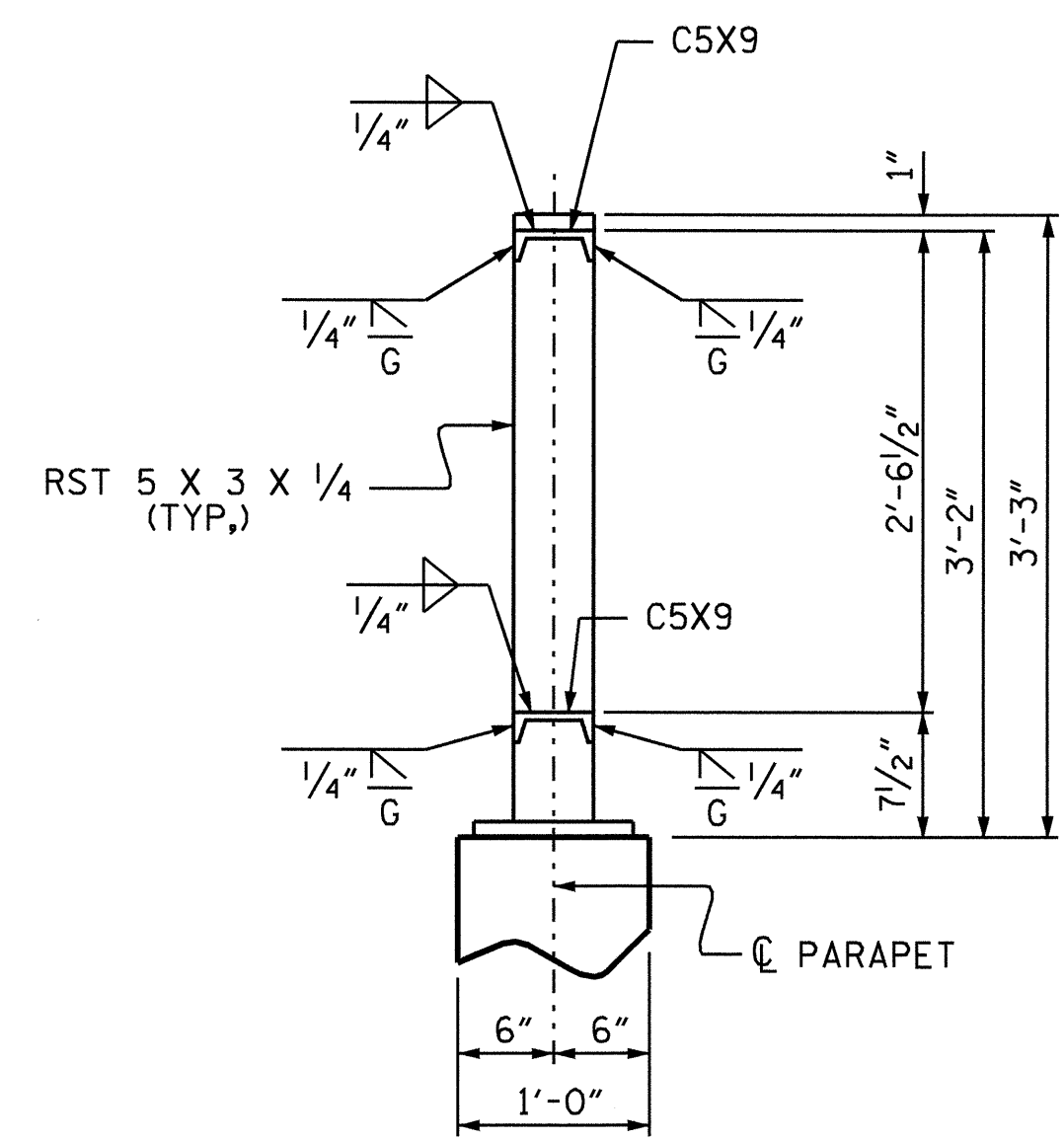
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

APPROACH SLAB
DECORATIVE CONCRETE
AND METAL RAIL
STAGE I & II

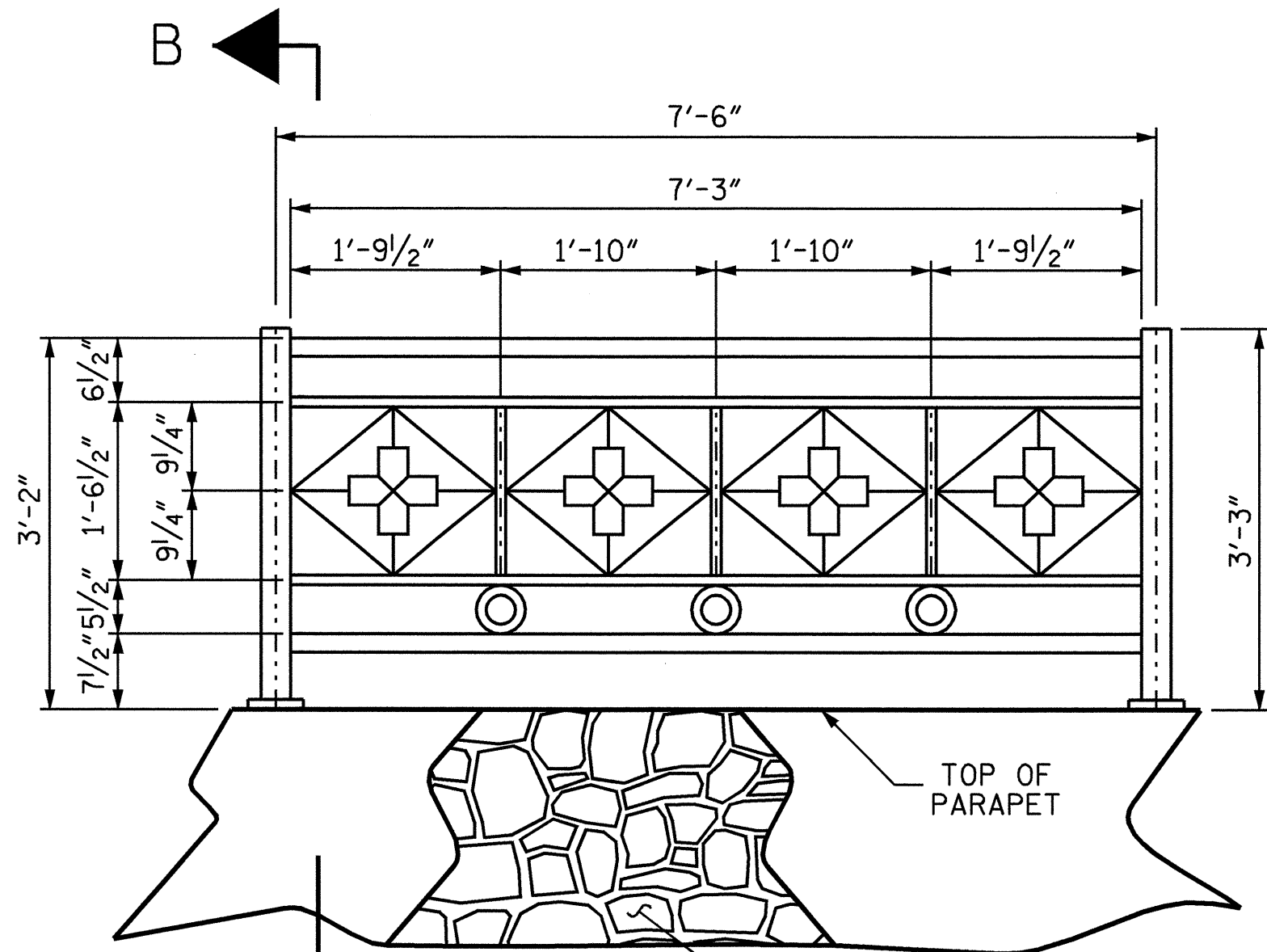


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-57
1			3			TOTAL SHEETS
2			4			60

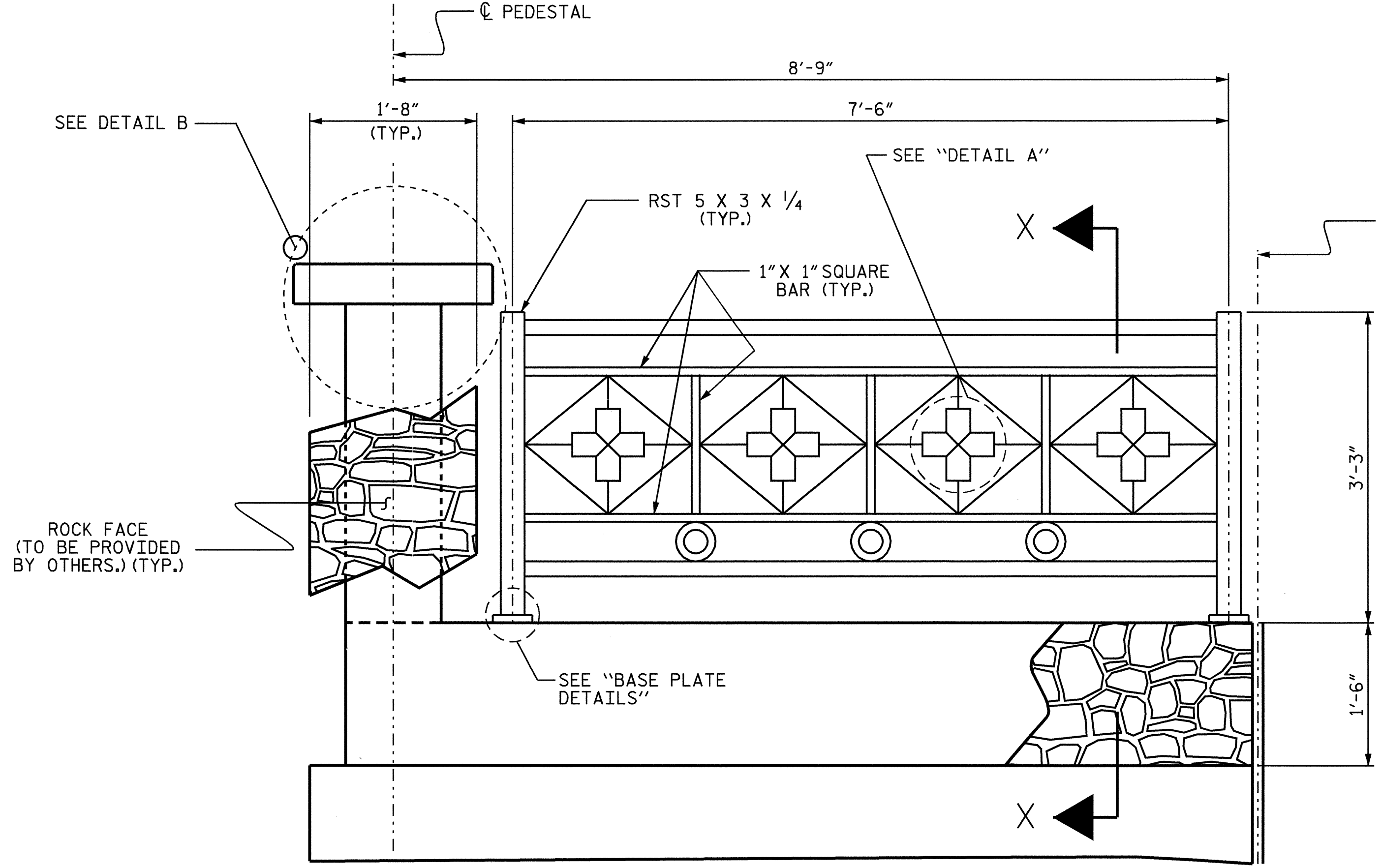
DRAWN BY: A. SORSENGINH/ALF DATE: 11/15/06
CHECKED BY: L.L. MURPHY DATE: 11/15/06



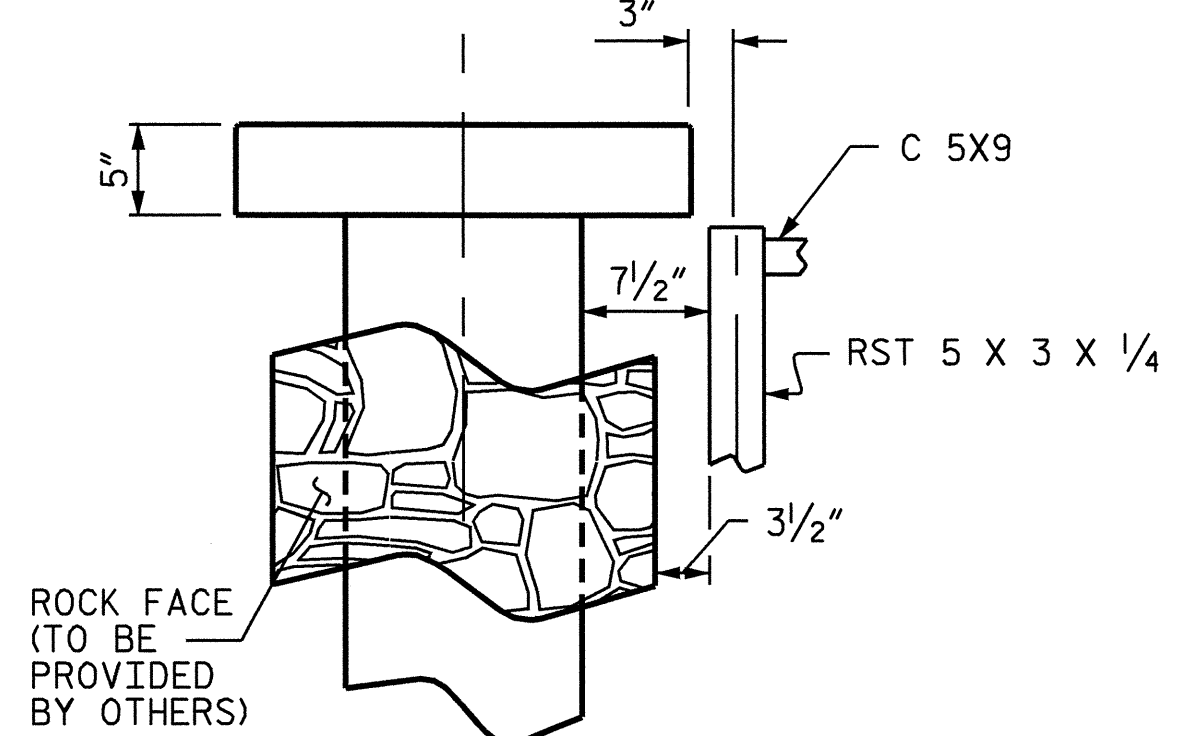
SECTION B-B



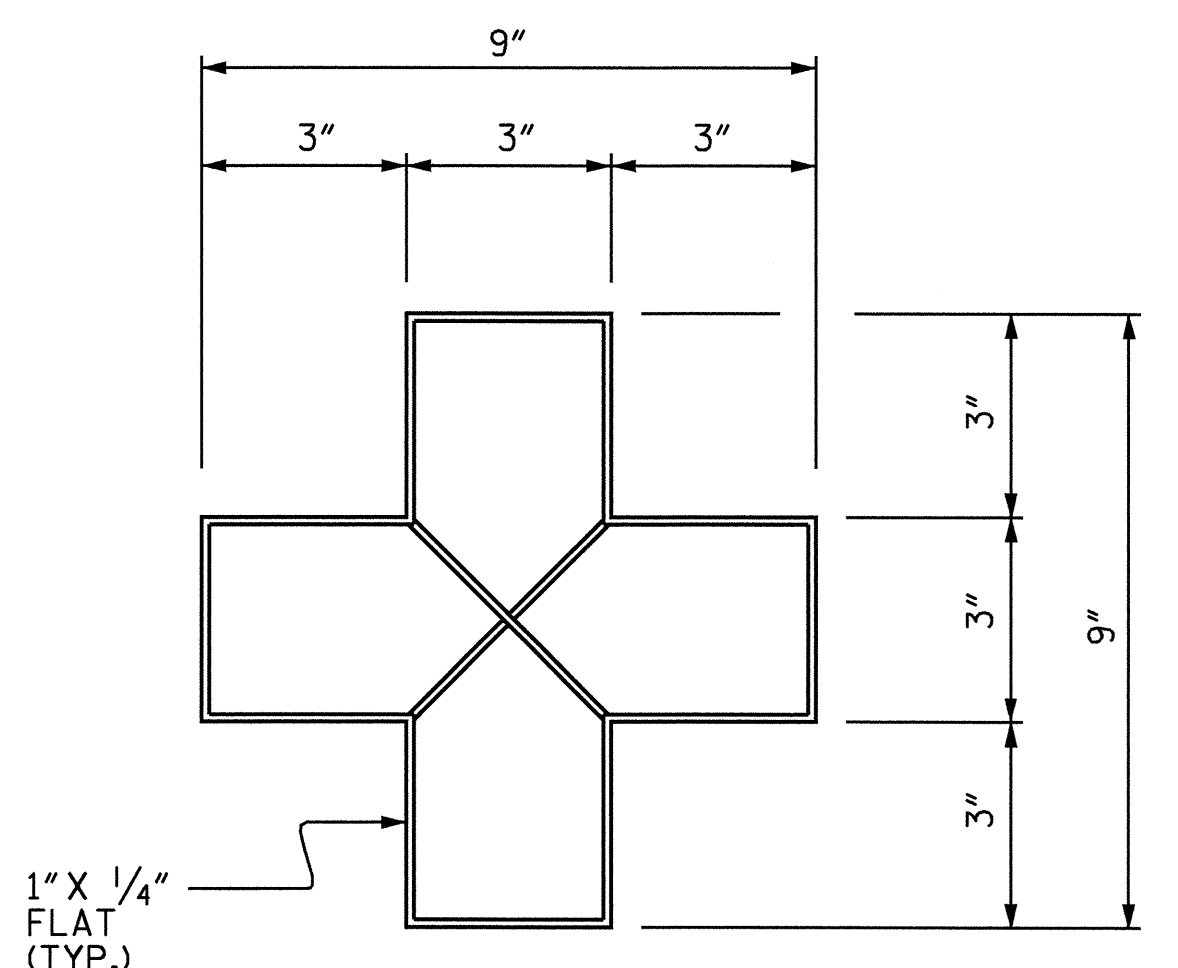
RAIL DETAIL



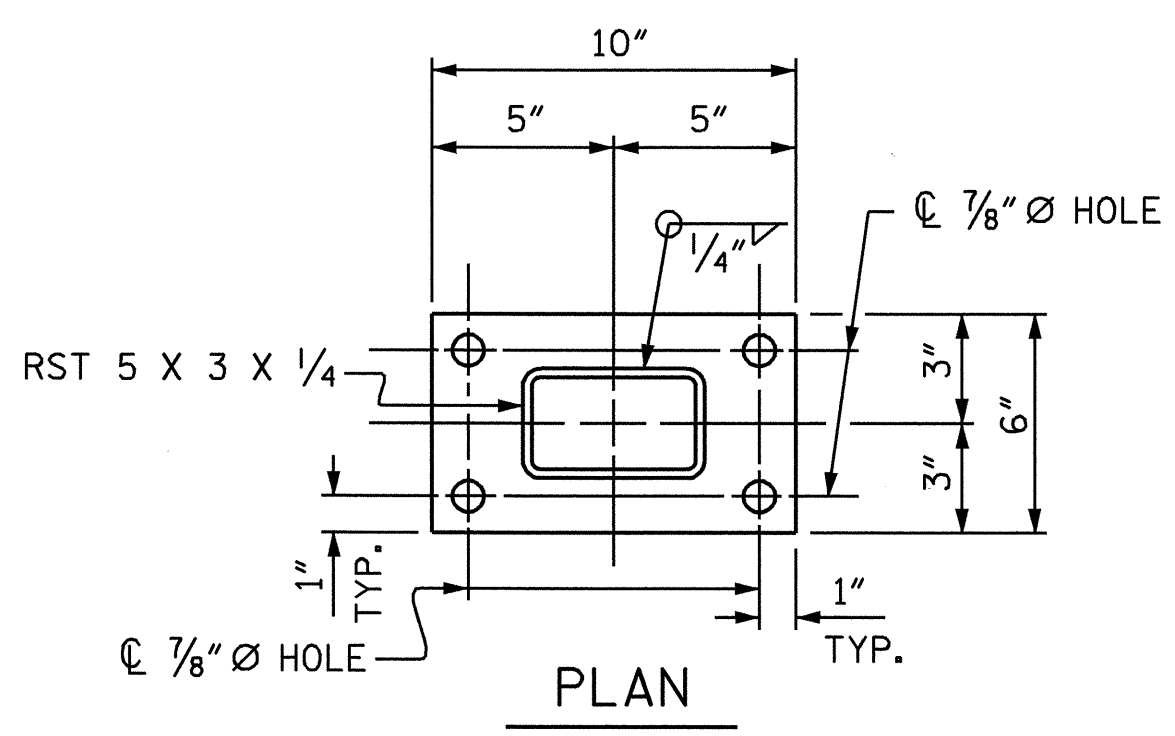
ELEVATION
(TYP. EA. SIDE)



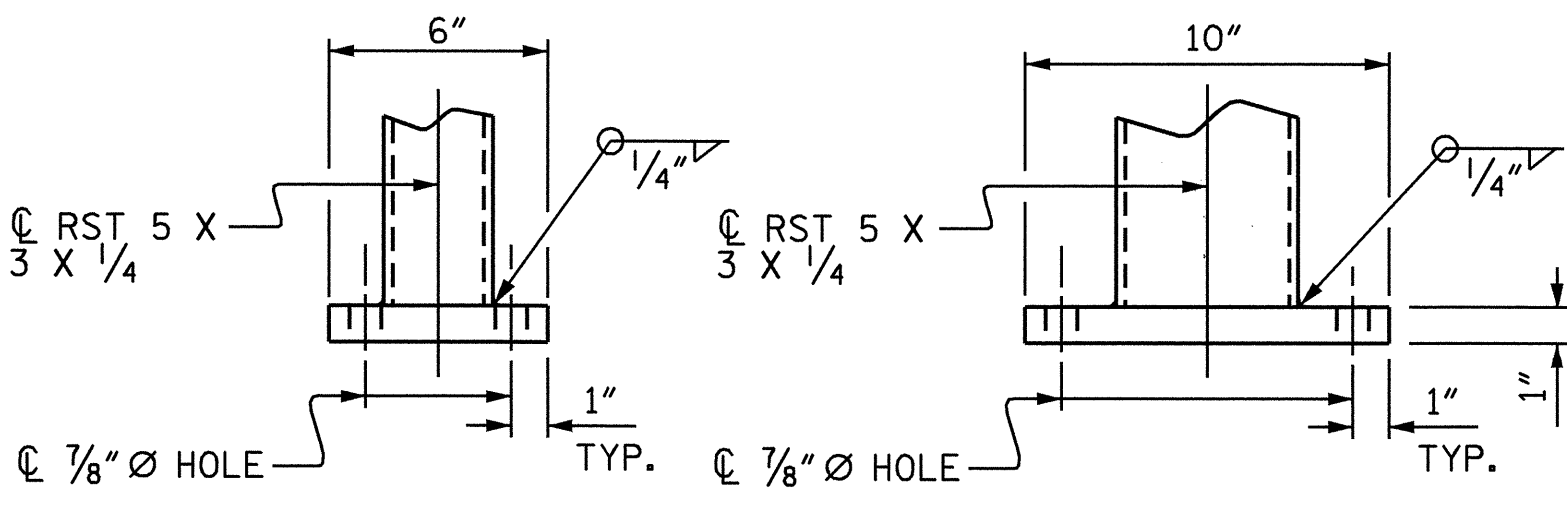
DETAIL B



DETAIL A

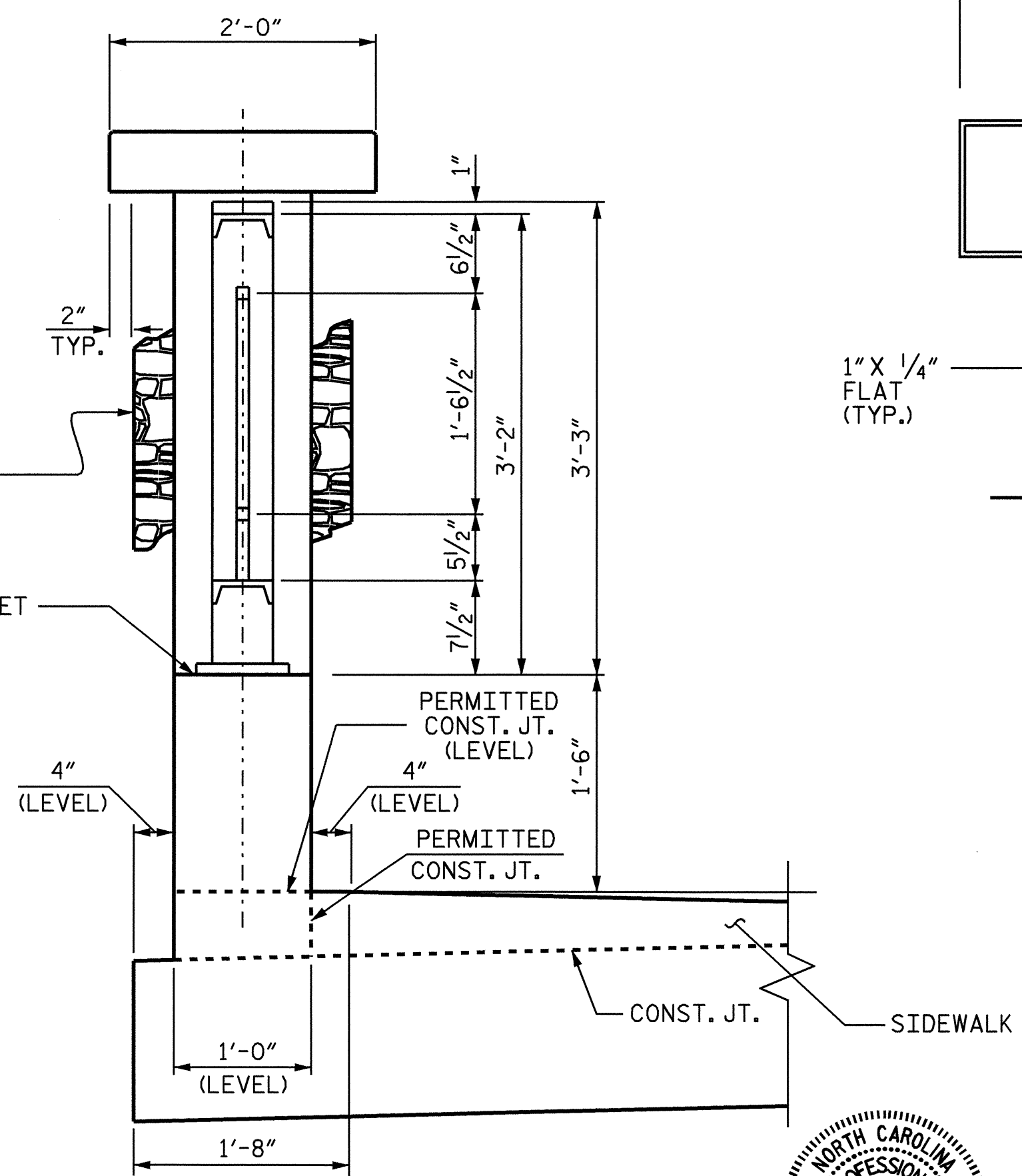


PLAN



SIDE ELEVATION FRONT ELEVATION

BASE PLATE DETAIL



SECTION X-X

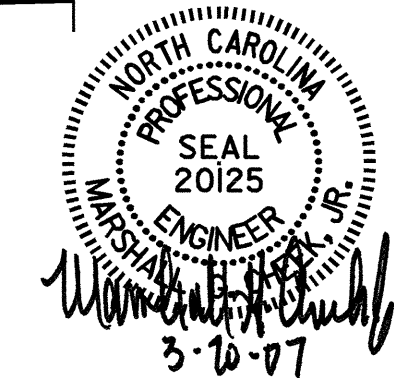
PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00-L-

SHEET 5 OF 7

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

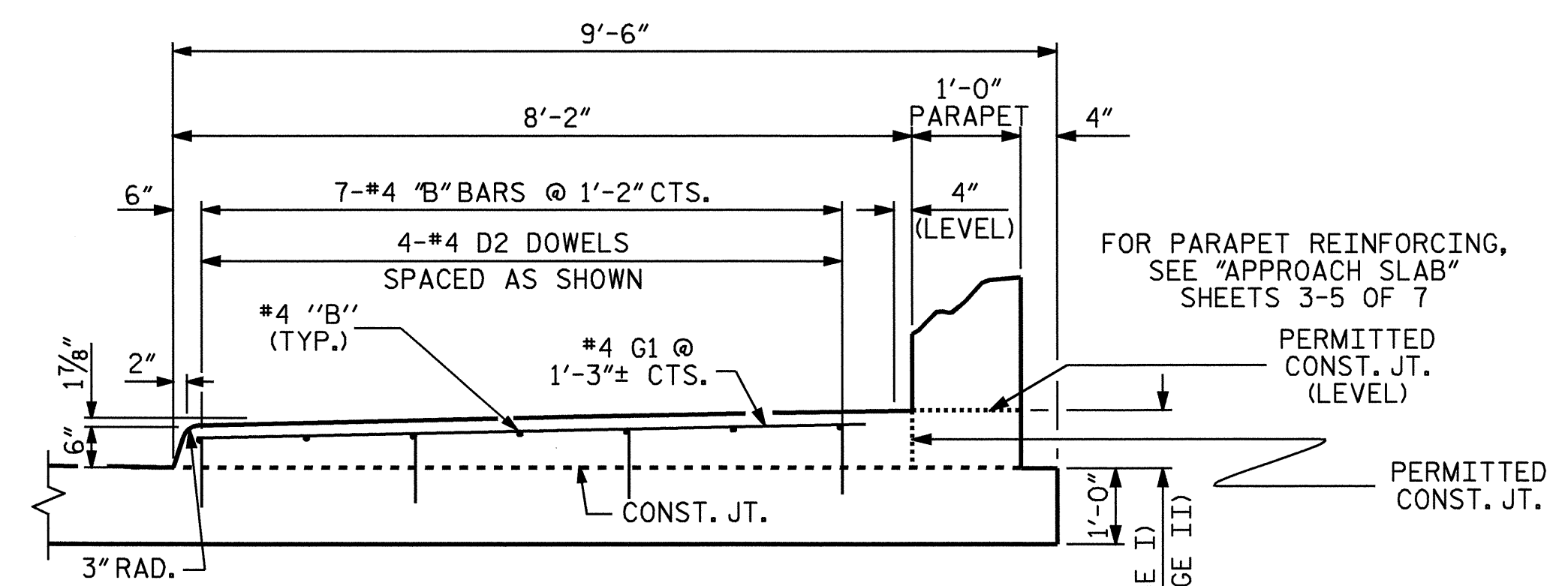
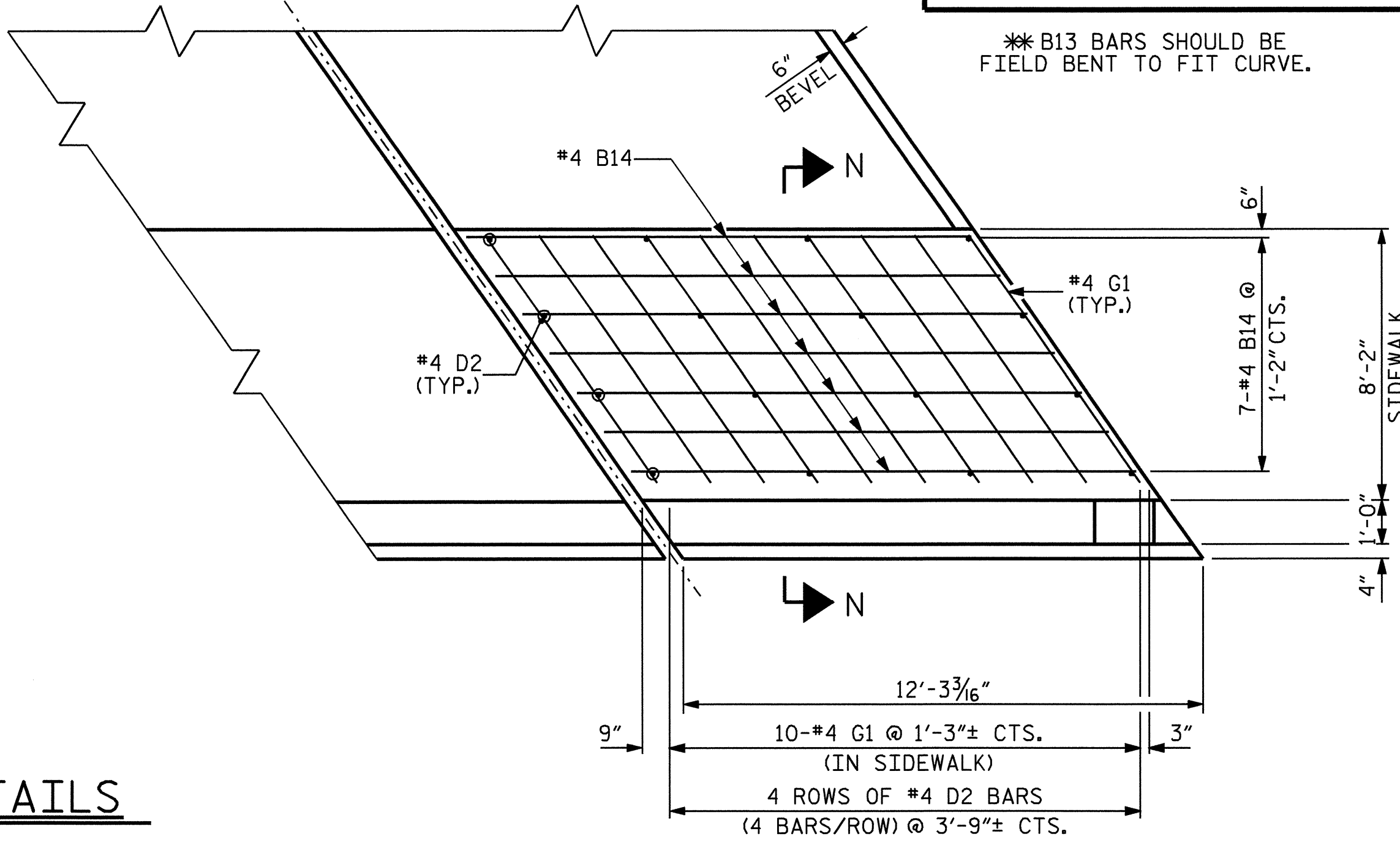
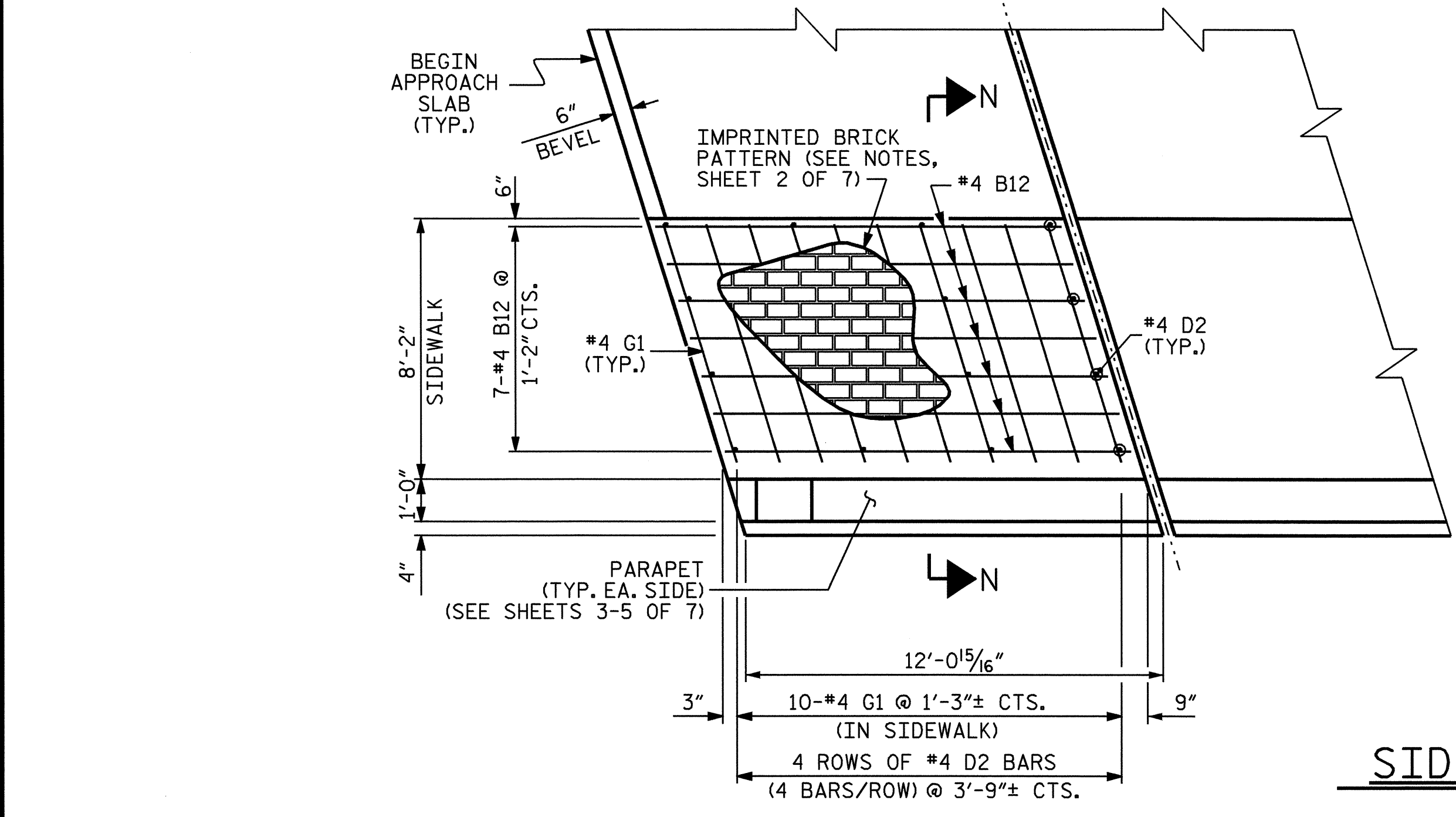
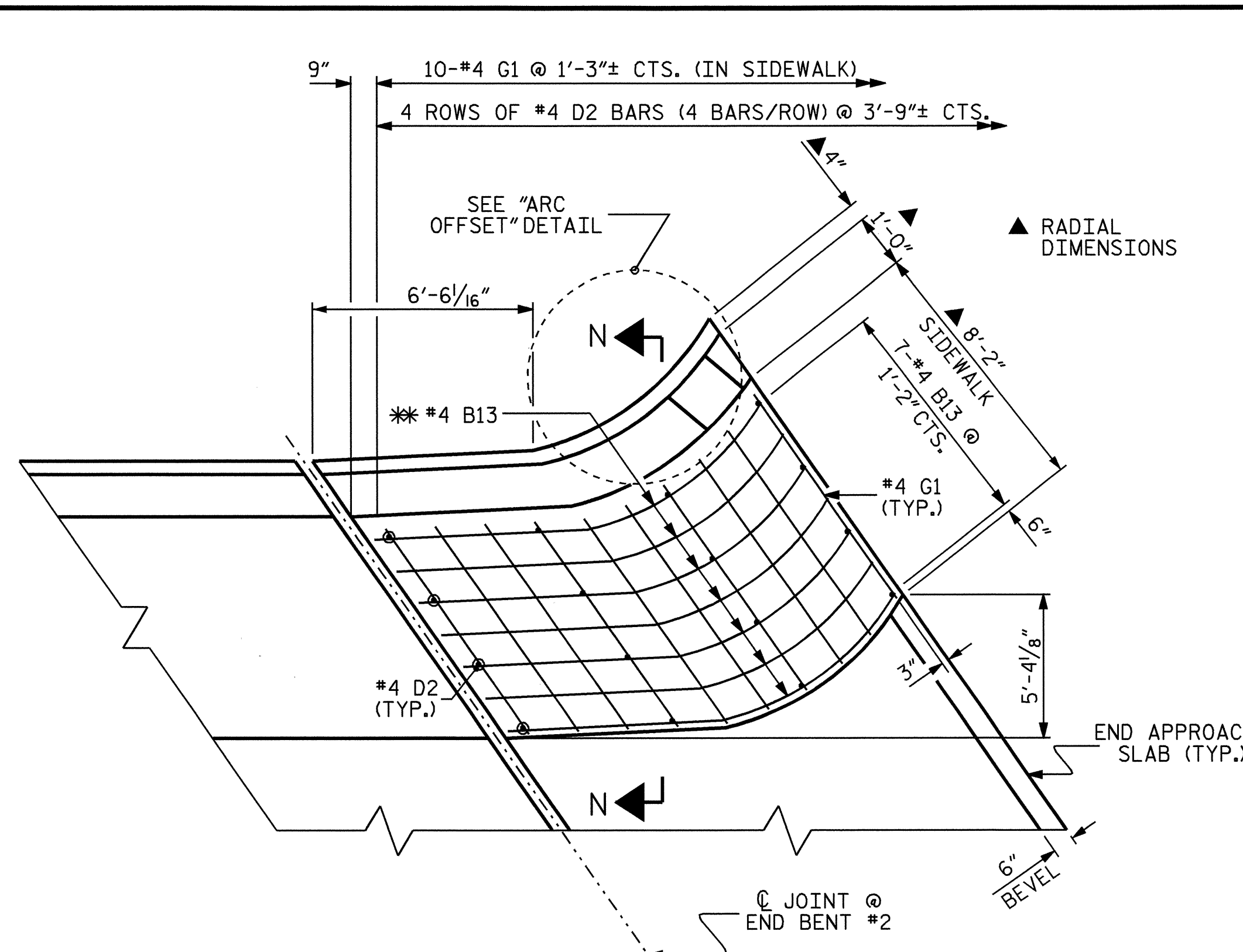
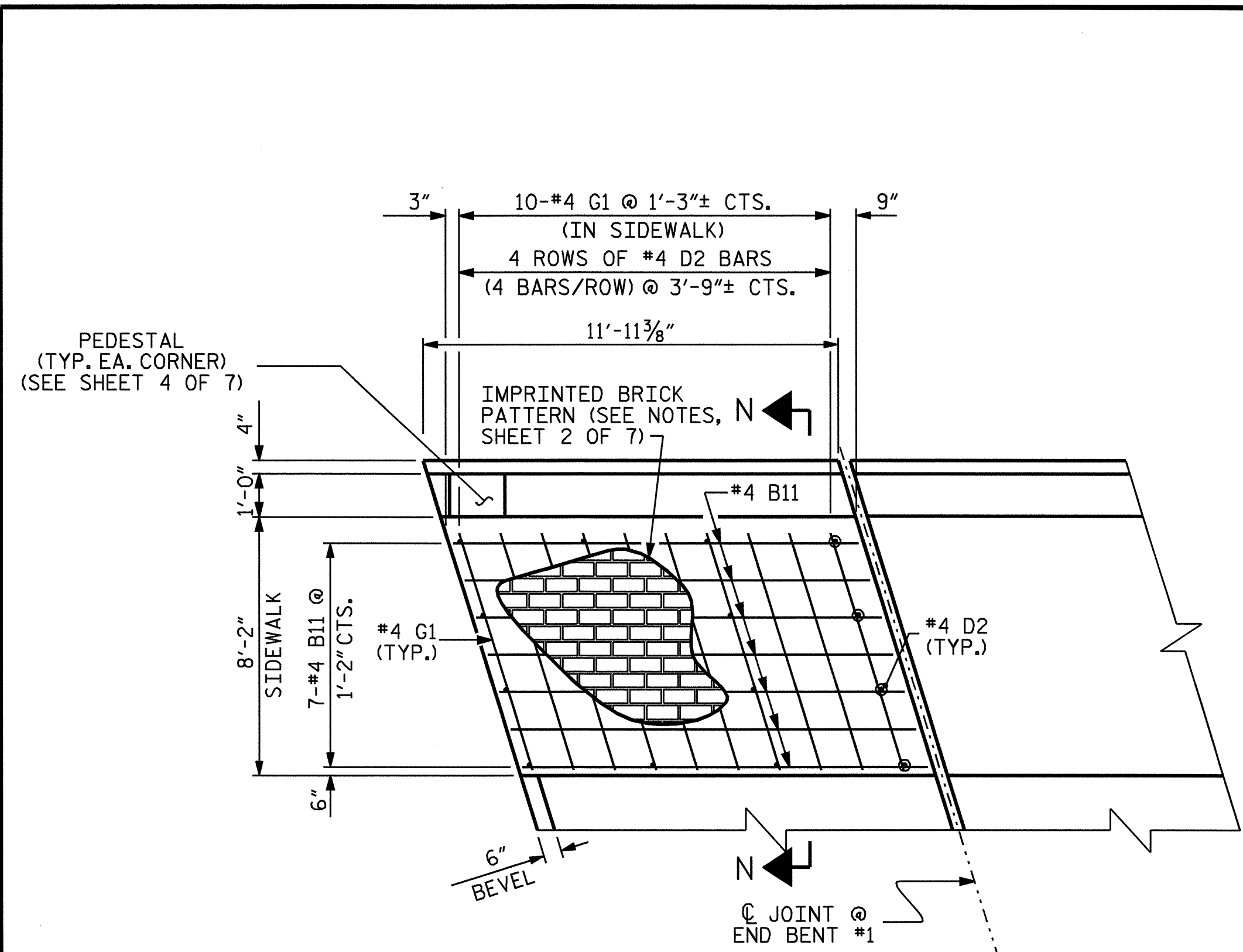
APPROACH SLAB
 DECORATIVE CONCRETE
 AND METAL RAIL
 STAGE I & II

REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-58	
1			3			TOTAL SHEETS 60	
2			4				



DRAWN BY: A. SORSENGINH/ALF DATE: 11/15/06
 CHECKED BY: L.L. MURPHY DATE: 11/15/06

ALL WELDS TO BE SEALED PRIOR TO BEING PAINTED.



ASSEMBLED BY : A. SORSENGINH/ALF DATE : 11/15/06
 CHECKED BY : L.L. MURPHY DATE : 11/15/06
 DRAWN BY : FCJ 11/88 REV. 8/16/99 MAB/LES
 CHECKED BY : ARB 11/88 REV. 10/17/00 RWW/LES
 REV. 5/7/03 RWW/JTE

SECTION N-N
 THE #4 D2 DOWELS MAY BE PUSHED INTO GREEN CONCRETE AFTER APPROACH SLAB HAS BEEN SCREEDED OFF.

SIDEWALK BILL OF MATERIAL											
APPROACH @ END BENT NO. 1 STAGE I						APPROACH @ END BENT NO. 2 STAGE I					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B11	7	#4	STR	11'-7"	54	* B13	7	#4	STR	12'-9"	60
* D2	16	#4	STR	1'-0"	11	* D2	16	#4	STR	1'-0"	11
* G1	10	#4	STR	7'-8"	51	* G1	10	#4	STR	7'-8"	51
* EPOXY COATED REINFORCING STEEL LBS. 116						* EPOXY COATED REINFORCING STEEL LBS. 122					
CLASS AA CONCRETE SIDEWALK C.Y. 2.2						CLASS AA CONCRETE SIDEWALK C.Y. 2.9					
APPROACH @ END BENT NO. 1 STAGE II						APPROACH @ END BENT NO. 2 STAGE II					
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT	BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
* B12	7	#4	STR	11'-8"	55	* B14	7	#4	STR	11'-11"	56
* D2	16	#4	STR	1'-0"	11	* D2	16	#4	STR	1'-0"	11
* G1	10	#4	STR	7'-8"	51	* G1	10	#4	STR	7'-8"	51
* EPOXY COATED REINFORCING STEEL LBS. 117						* EPOXY COATED REINFORCING STEEL LBS. 118					
CLASS AA CONCRETE SIDEWALK C.Y. 2.3						CLASS AA CONCRETE SIDEWALK C.Y. 2.7					

** B13 BARS SHOULD BE FIELD BENT TO FIT CURVE.
 ALL BARS IN SIDEWALK SHALL BE EPOXY COATED

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 15+15.00 -L-

SHEET 6 OF 7

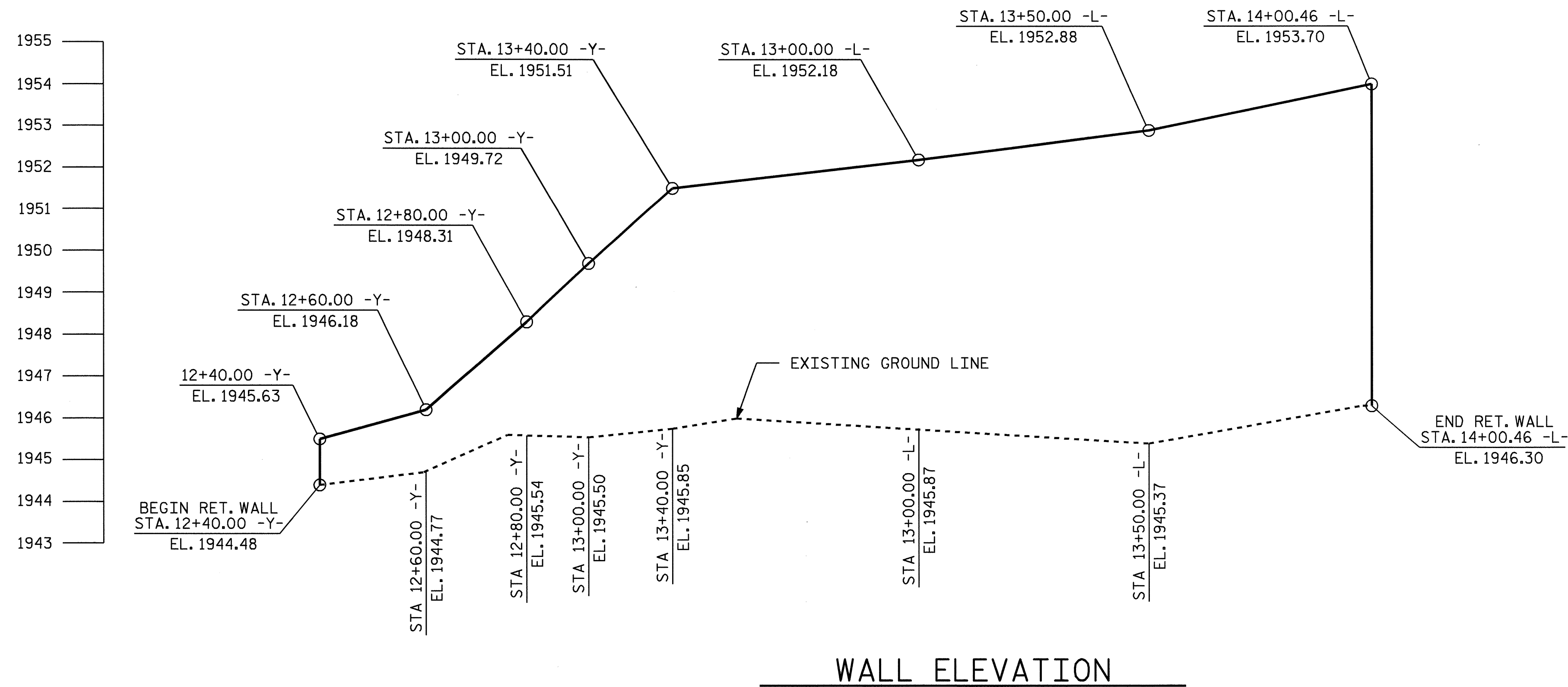
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

BRIDGE APPROACH SLAB DETAILS

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

TOTAL SHEETS: 60





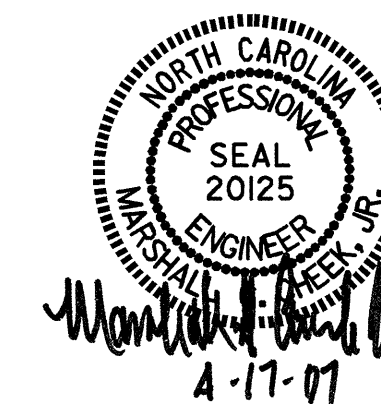
TOTAL BILL OF MATERIAL	
GRAVITY RETAINING WALL @ 12+40.00 -Y-	1366 SQ. FT.

PROJECT NO. B-4696
SWAIN COUNTY
 STATION: 12+40.00 -Y-

SHEET 1 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

GRAVITY
 RETAINING WALL



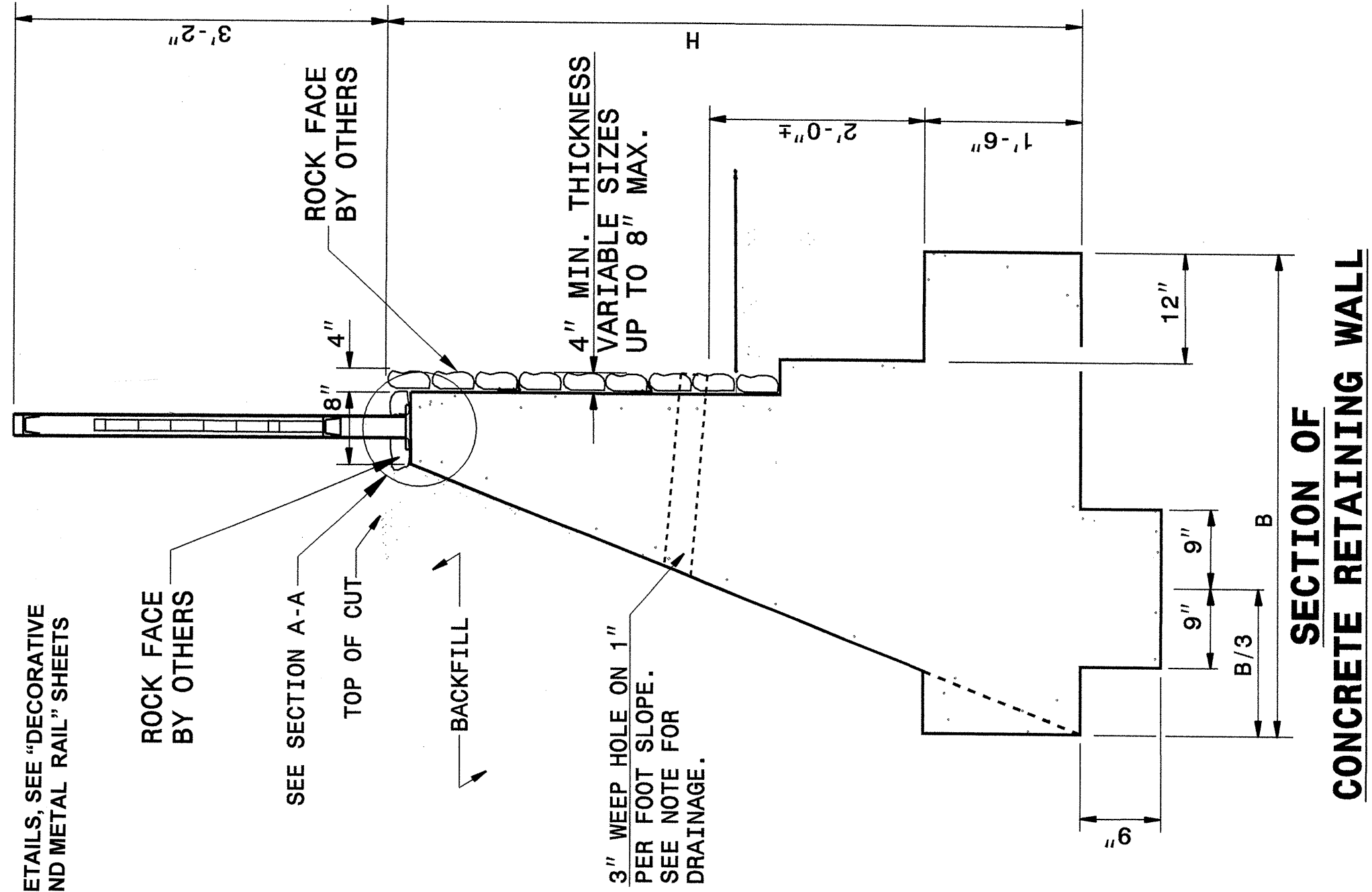
DRAWN BY : A. SORSENGINH DATE : 7/25/06
 CHECKED BY : M.G. CHEEK DATE : 8/06

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

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**GRAVITY RETAINING WALL
WITH ROCK FACE AND HANDRAIL**

SHEET 1 OF 2
842D03



FOR HANDRAIL DETAILS, SEE "DECORATIVE
CONCRETE AND METAL RAIL" SHEETS

ROCK FACE
BY OTHERS

SEE SECTION A-A

TOP OF CUT

BACKFILL

4" MIN. THICKNESS
VARIABLE SIZES
UP TO 8" MAX.

3" WEEP HOLE ON 1"
PER FOOT SLOPE.
SEE NOTE FOR
DRAINAGE.

**SECTION OF
CONCRETE RETAINING WALL**

H	B
4' TO 6'	0.5H + 1'-0"
6' TO 10'	0.6H + 1'-0"

WALL HEIGHT (H) NOT TO EXCEED 10'

GENERAL NOTES:

WELDING TO BE DONE IN ACCORDANCE WITH ARTICLE 1072-20 OF THE STANDARD SPECIFICATIONS
THE PROPOSED HANDRAILING IS TO BE PRE-MEASURED AND CENTERED ON TOP OF WALL FOR
POST SPACINGS.

THIS DESIGN IS A RECOMMENDED GUIDE FOR THE HANDRAIL APPLICATION. FINAL ENGINEERING
JUDGEMENT IS AT THE DISCRETION OF THE ENGINEER.

PAINTING TO BE DONE IN ACCORDANCE WITH SECTION 442 OF THE ROADWAY SPECIFICATIONS.
LOCATIONS AND QUANTITIES GIVEN ARE APPROXIMATE ONLY.

EXACT LOCATIONS AND QUANTITIES TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

ELEVATION OF BOTTOM OF THE FOOTING, WIDTH OF BASE AND HEIGHT OF WALL ARE TO BE
DETERMINED BY THE ENGINEER.

WEEP HOLES 3" IN DIAMETER TO BE PLACED AT ABOUT 10' INTERVALS JUST ABOVE THE SURFACE OF
THE EXISTING GROUND.

A STONE DRAIN CONSISTING OF ONE CUBIC FOOT OF #78M STONE CONTAINED IN A BAG OF POROUS
PLASTIC. SUBDRAIN FINE AGGREGATE TO BE PLACED BENEATH,
AROUND AND UNDER WEEP HOLES. STONE DRAIN SPACING TO BE DETERMINED BY THE ENGINEER. SUBDRAIN
FINE AGGREGATE AT LEAST 1" THICK. A HORIZONTAL DRAIN OF SUBDRAIN FINE AGGREGATE AT LEAST
1" SQUARE IN CROSS SECTION TO BE PLACED TO CONNECT ALL STONE DRAINS.

A VERTICAL DRAIN OF SUBDRAIN FINE AGGREGATE AT LEAST 1" SQUARE IN CROSS SECTION TO BE
PLACED AT EACH WEEP HOLE TO AN ELEVATION OF 2' BELOW THE SURFACE OF THE EMBANKMENT.

USE CLASS "A" CONCRETE THROUGHOUT FOR CONCRETE RETAINING WALLS.

PLACE 1/2" EXPANSION JOINTS EVERY 25' IN CONCRETE RETAINING WALL.

ALL ROCK FACING TO BE PERFORMED BY OTHERS AND NOT PART OF THIS CONTRACT.

REFER TO BASE PLATE DETAIL FOR ANCHORING HANDRAIL TO GRAVITY RETAINING WALL.

SEE "DECORATIVE CONCRETE AND METAL RAIL" SHEETS

QUANTITY OF GRAVITY RETAINING WALL : 1366 SQ. FEET

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

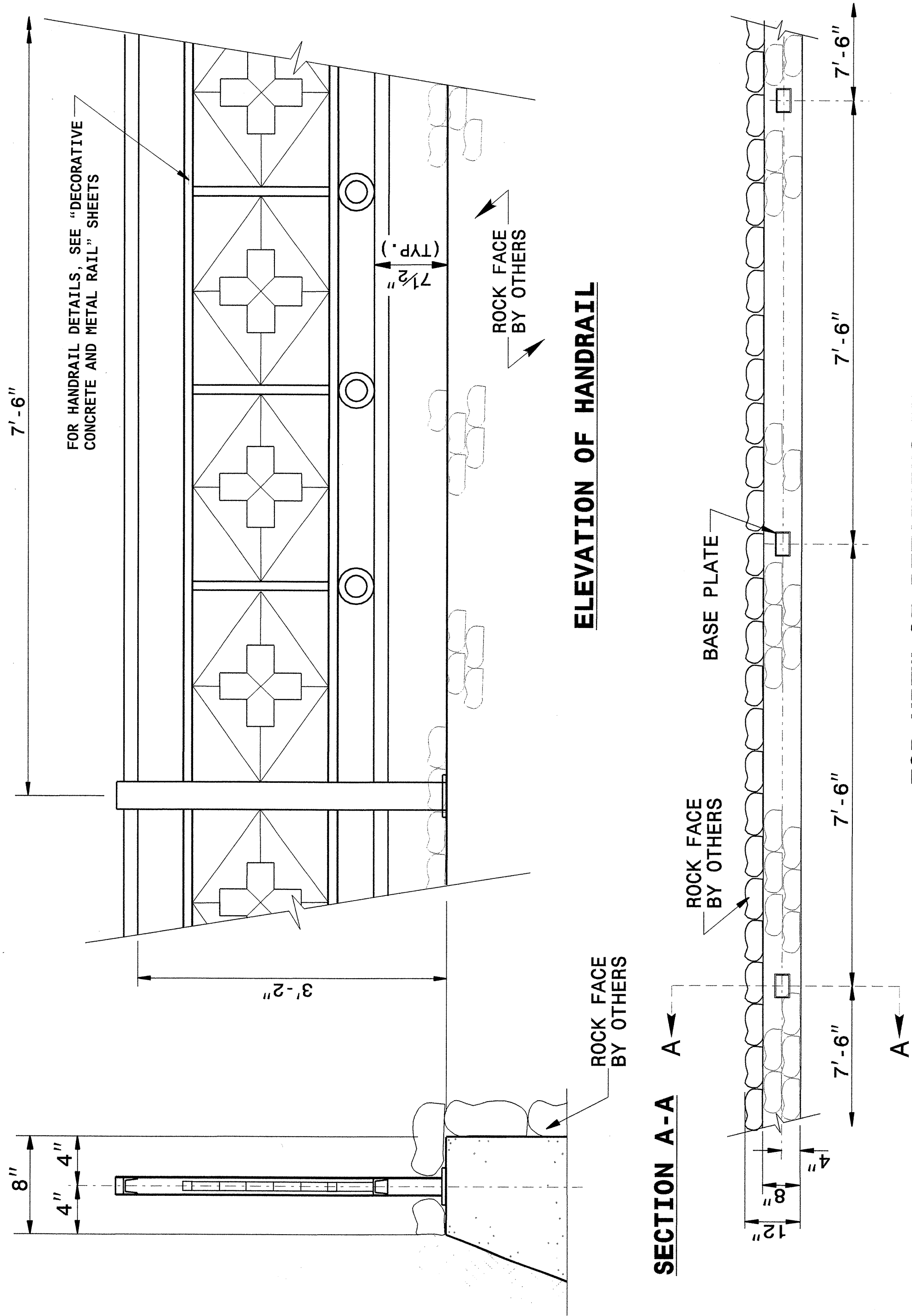
ENGLISH DETAIL DRAWING FOR
**GRAVITY RETAINING WALL
WITH ROCK FACE AND HANDRAIL**

SHEET 1 OF 2
842D03

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ENGLISH DETAIL DRAWING FOR
**GRAVITY RETAINING WALL
WITH ROCK FACE AND HANDRAIL**

SHEET 2 OF 2
842D03



FOR HANDRAIL DETAILS, SEE "DECORATIVE
CONCRETE AND METAL RAIL" SHEETS

ROCK FACE
BY OTHERS

ELEVATION OF HANDRAIL

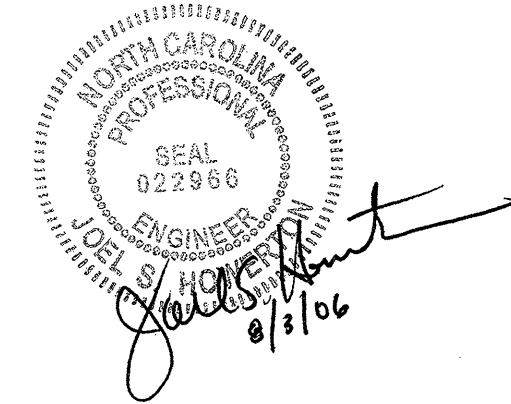
ROCK FACE
BY OTHERS

SECTION A-A

ROCK FACE
BY OTHERS

BASE PLATE

TOP VIEW OF RETAINING WALL



PROJECT NO. B-4696
SWAIN COUNTY
STATION: 12+40.00 -Y-

SHEET 2 OF 2

**PROJECT SERVICES UNIT
STANDARDS AND SPECIAL DESIGN**
Office 919-250-4128 FAX 919-250-4119

GRAVITY RETAINING WALL

ORIGINAL BY: _____ DATE: _____
MODIFIED BY: rnbritt & tspgll DATE: 3-16-06&7-31-06
CHECKED BY: J. S. Hovatter, Jr. DATE: 8/3/16
FILE SPEC.: special_details/nbritt/english/b4696retwall.dgn

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

