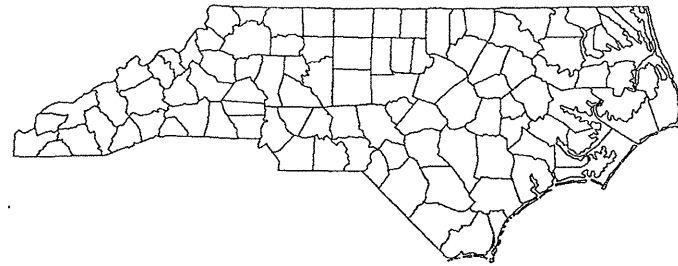


TIP NO: B-5014E

CONTRACT NO: C203340

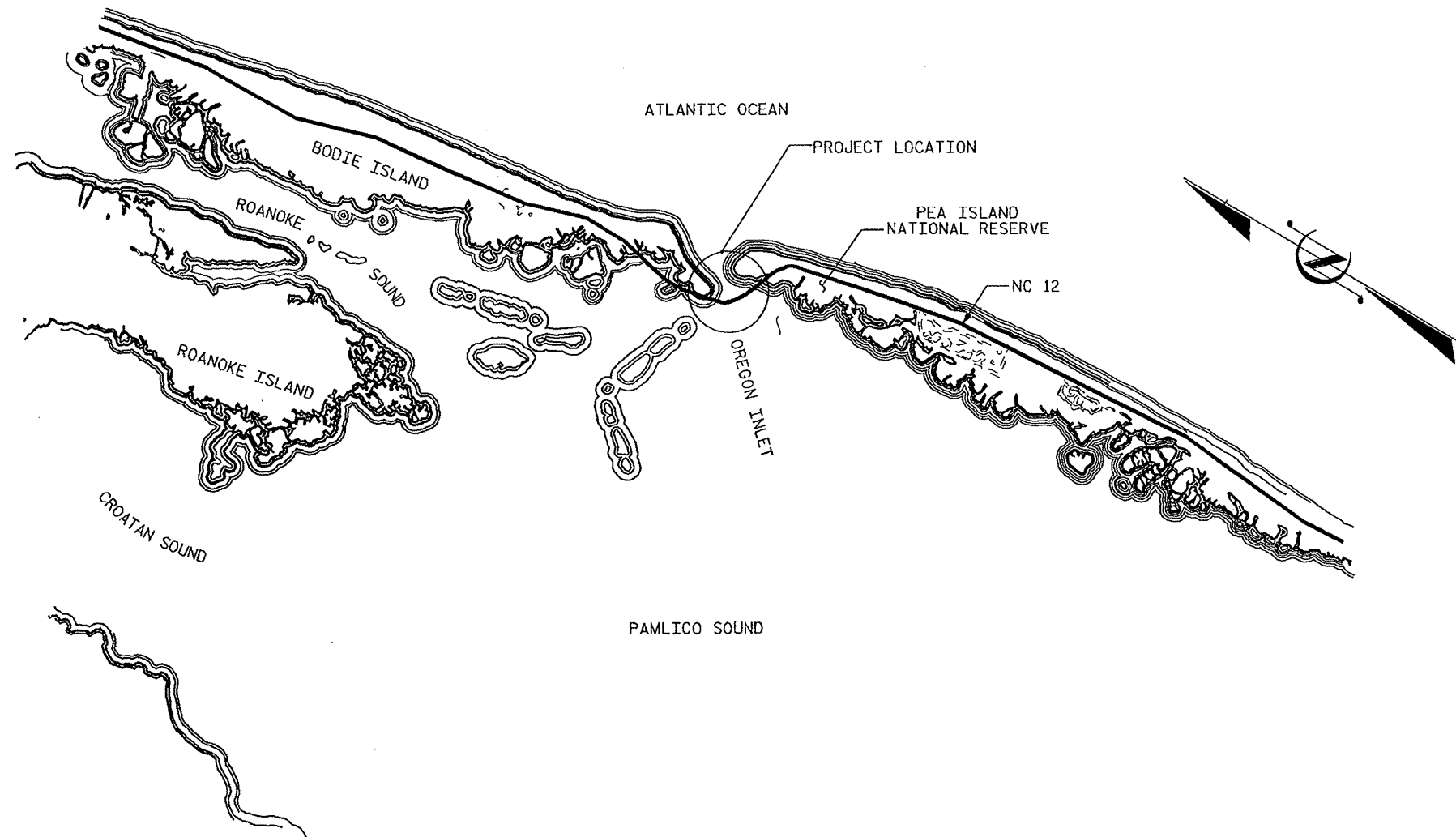


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

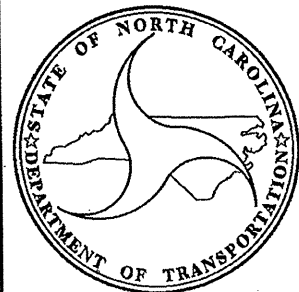
**DARE COUNTY**

LOCATION: BRIDGE NO. 11 OVER THE OREGON INLET ON NC 12.  
TYPE OF WORK: CRUTCH BENT REPAIRS AT BENT 115 - 123.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5014E	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41470.1.1	NHPP-0012(59)	P.E.	
41470.3.6	NHPP-0012(59)	CONST.	



**STRUCTURES**



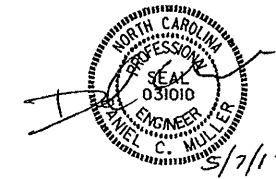
Prepared In the Office of:

**DIVISION OF HIGHWAYS**

2012 STANDARD SPECIFICATIONS

LETTING DATE :  
JUNE 18, 2013

STRUCTURES MANAGEMENT UNIT  
1000 BIRCH RIDGE DR.  
RALEIGH, N.C. 27610



DANIEL MULLER, PE  
PROJECT DESIGN ENGINEER

**TIP NO: B-5014E**

**CONTRACT NO: C203340**

STATE OF NORTH CAROLINA

DIVISION OF HIGHWAYS

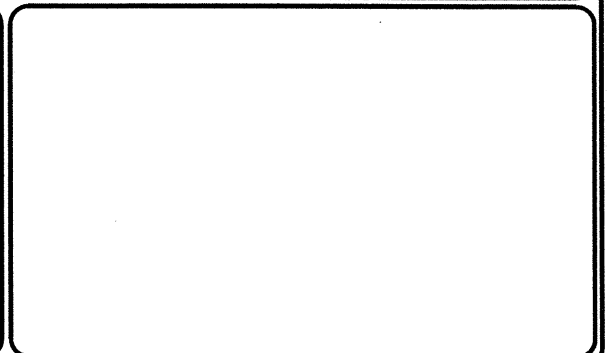
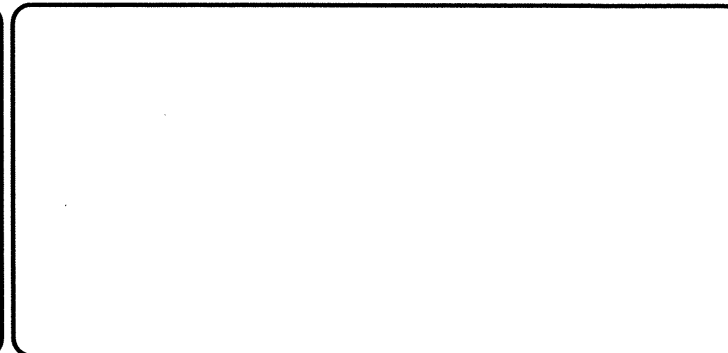
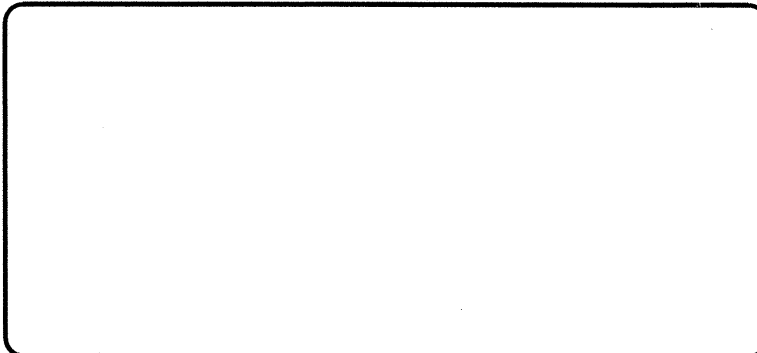
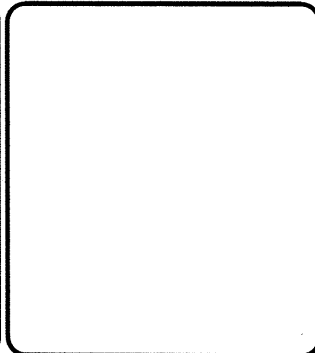
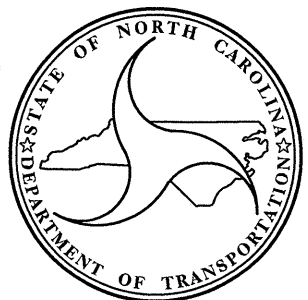
***DARE COUNTY***

*LOCATION: BRIDGE NO. 11 OVER THE OREGON INLET ON NC 12.  
TYPE OF WORK: CRUTCH BENT REPAIRS AT BENT 115 - 123.*

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5014E	1A	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41470.1.1		P.E.	
41470.3.6		CONST.	

INDEX OF SHEETS

1	<i>TITLE SHEET</i>
1A	<i>INDEX OF SHEETS</i>
2	<i>SUMMARY OF QUANTITIES</i>
S-1 THRU S-10	<i>STRUCTURES</i>

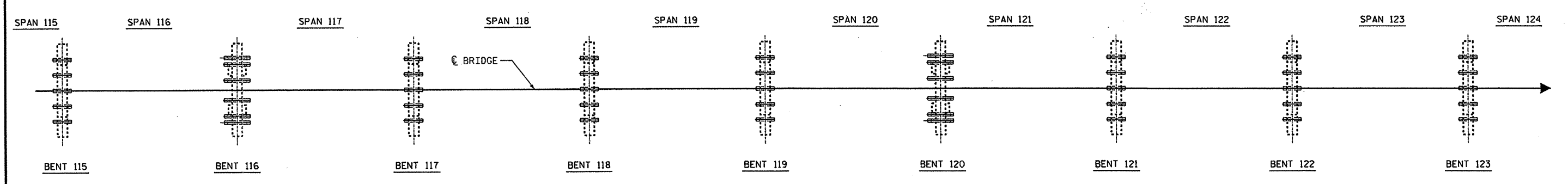
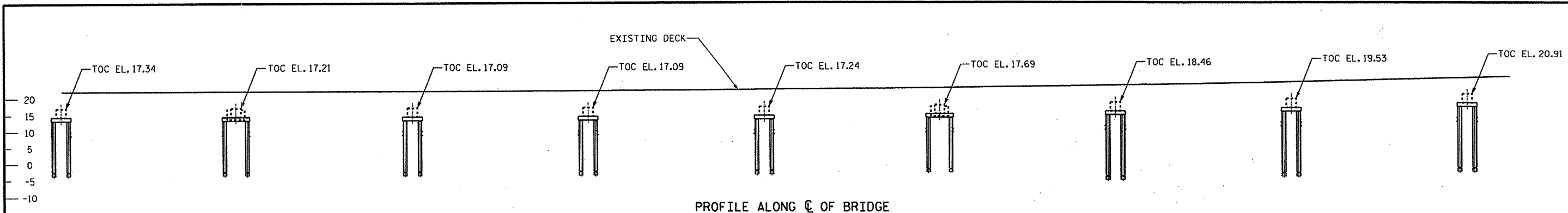


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**SUMMARY OF QUANTITIES**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203340

ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
4589000000-N	SP	Lump Sum		GENERIC TRAFFIC CONTROL ITEM TEMPORARY TRAFFIC CONTROL
8280000000-E	440	148,250	LS	APPROX ..... LBS STRUCTURAL STEEL
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE



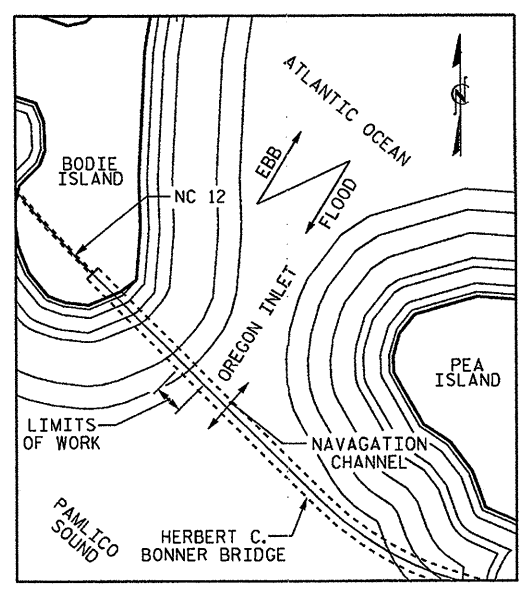
PARTIAL PLAN OF BRIDGE

— TOTAL BILL OF MATERIAL —

	MOBILIZATION	TEMPORARY TRAFFIC CONTROL	PARTIAL REMOVAL OF EXISTING STRUCTURE	STRUCTURAL STEEL
	LUMP SUM	LUMP SUM	LUMP SUM	APPROX. LBS.
BENT 115				13,900
BENT 116				17,300
BENT 117				13,900
BENT 118				13,900
BENT 119				13,900
BENT 120				17,300
BENT 121				19,350
BENT 122				19,350
BENT 123				19,350
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	148,250

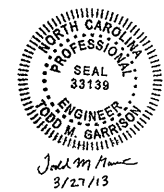
NOTES

ASSUMED LIVE LOAD = H15-S12(44).  
 FOR OTHER DESIGN DATA AND GENERAL NOTES, SEE SHEET SN.  
 PARTIAL REMOVAL OF THE EXISTING CRUTCH BENTS TO 17'-0" BELOW BOTTOM OF CONCRETE CAP AT BENTS 115 THROUGH 120 AND 20'-0" BELOW BOTTOM OF CONCRETE CAP AT BENTS 121 THROUGH 123 SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER.  
 THE CONTRACTOR SHALL 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.  
 FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.  
 FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.  
 FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.  
 FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.  
 FOR WORK IN, OVER OR NEAR NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.  
 FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.  
 SUBMIT WORK PLAN FOR REVIEW AND APPROVAL FOR ALL OPERATIONS RELATED TO CRUTCH BENT CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: PARTIAL REMOVAL OF EXISTING CRUTCH BENT, PLACEMENT OF FORMWORK AND FALSEWORK, AND CRUTCH BENT ERECTION.



LOCATION SKETCH

PROJECT NO. B-5014E  
DARE COUNTY

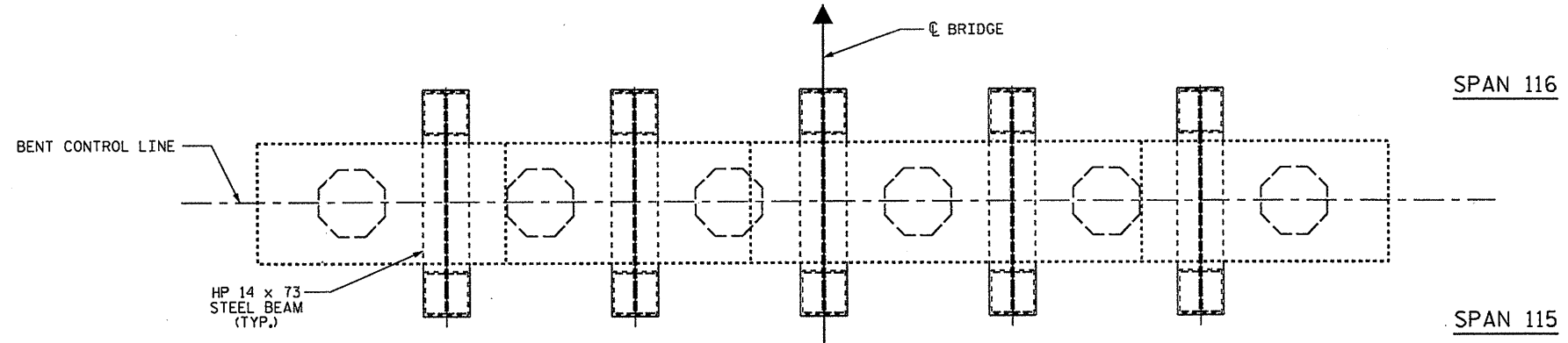


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

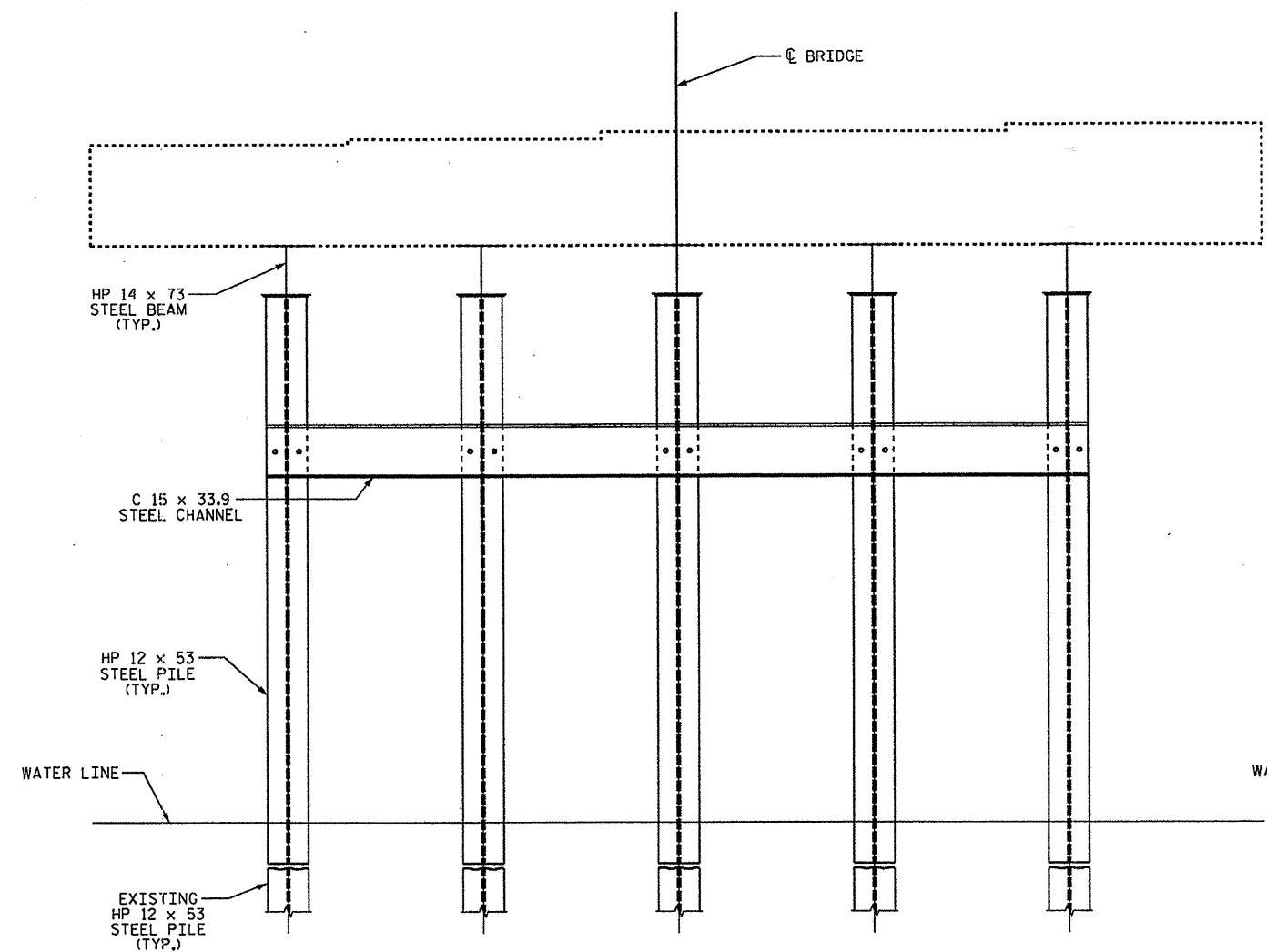
BENTS 115 THROUGH 123

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

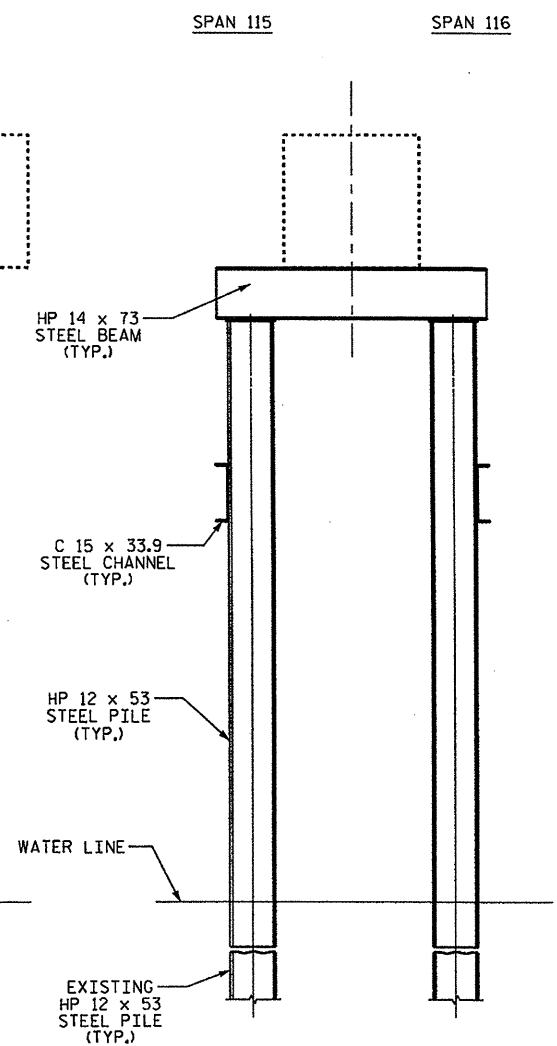
DRAWN BY : M.A. ALLEN DATE : 3/13  
 CHECKED BY : T.M. GARRISON DATE : 3/13



PLAN - BENT 115



ELEVATION - BENT 115  
BENT 115 SHOWN - BENT 117, 118 & 119 SIMILAR  
(CONCRETE PILES NOT SHOWN FOR CLARITY)



ELEVATION - CRUTCH BENTS

NOTES

- STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.
- TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- GALVANIZE ALL PILES, BEAMS, CHANNELS, PLATES, HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- USE AN ASTM F436 HARDENED WASHER OR DTI OVER STANDARD HOLES UNDER EACH NUT OR BOLT.
- USE A 5/16" MIN. PLATE WASHER OVER SLOTTED HOLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL AT ONE BENT				
MEMBER TYPE	*APPROXIMATE LENGTH	NO. REQ'D	TOTAL LENGTH	WEIGHT (LBS.)
HP 14x73	6'-0"	5	30'-0"	2,190
HP 12x53	15'-9 1/2"	10	157'-11"	8,370
C 15x33.9	21'-0"	2	42'-0"	1,424
PLATES, BOLTS & ETC.				1,916
TOTAL WEIGHT				13,900 LBS.

\*CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO FABRICATION.

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 1 OF 5

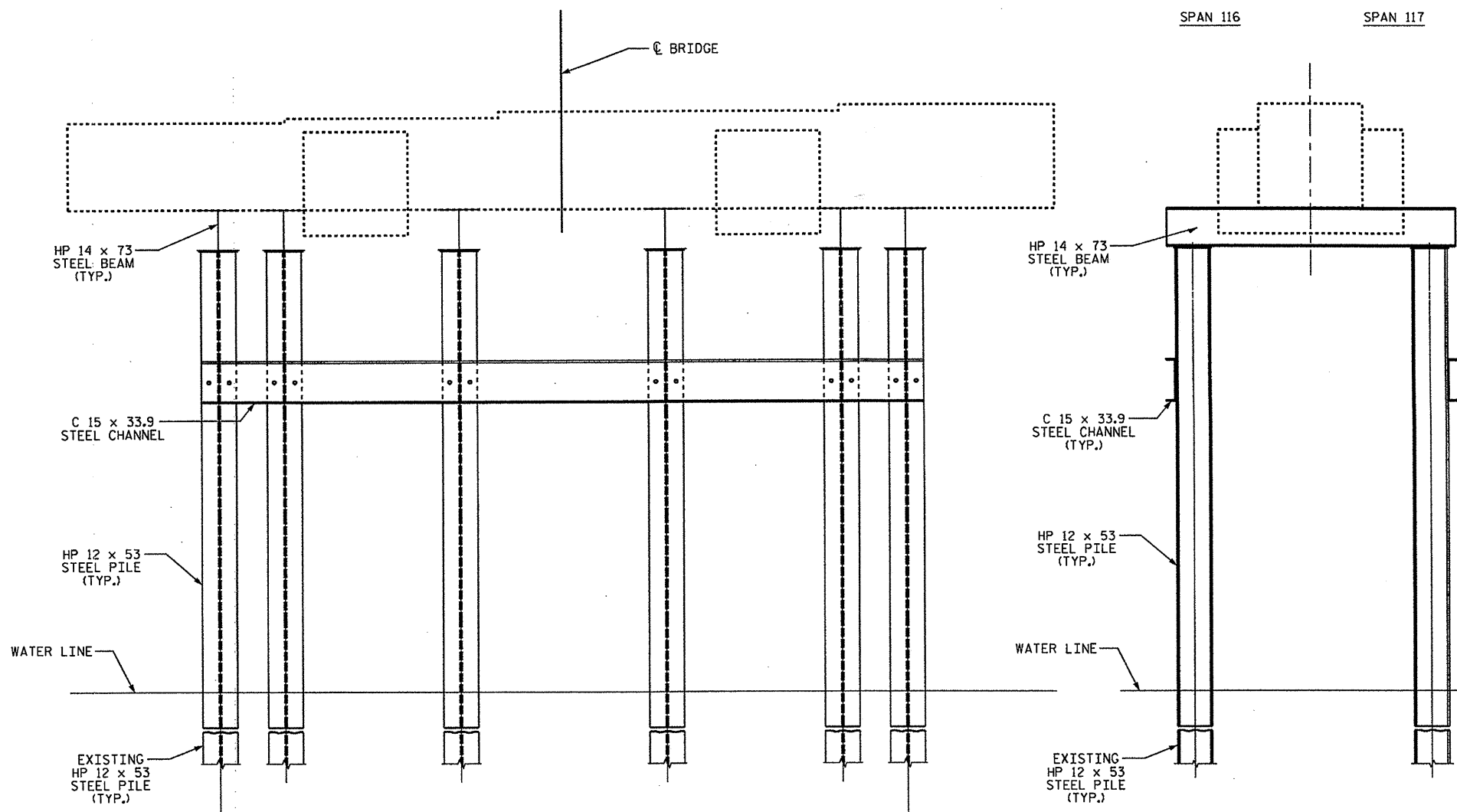
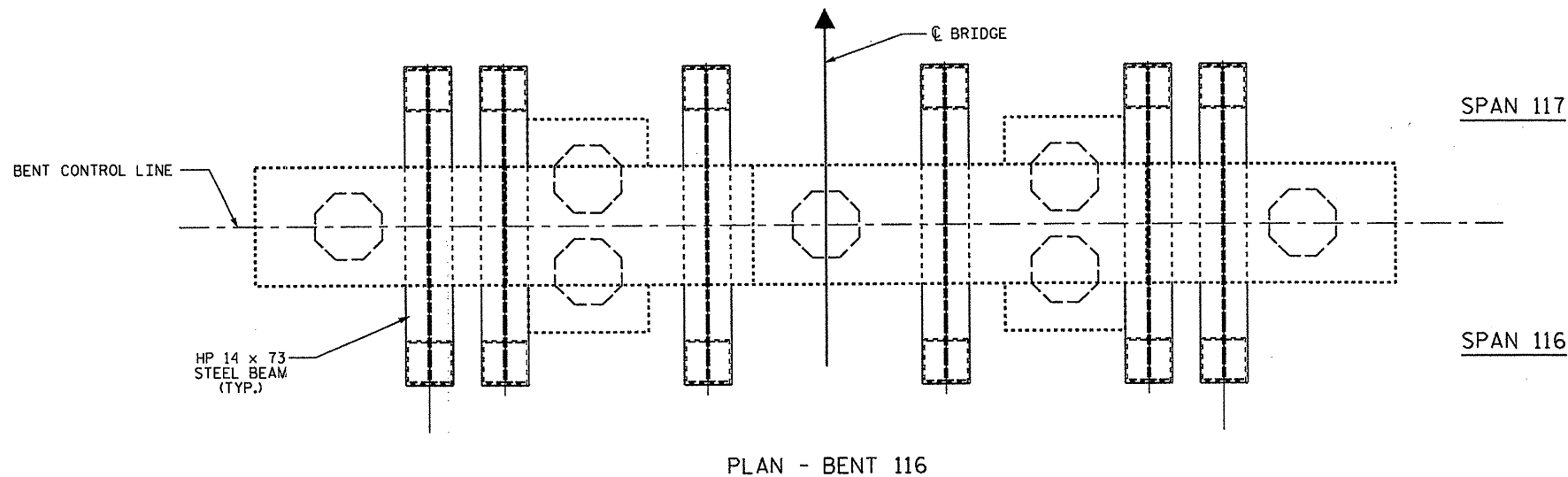
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

CRUTCH BENTS AT  
BENTS 115, 117, 118 & 119



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

DRAWN BY: M.A. ALLEN DATE: 3-13  
CHECKED BY: T.M. GARRISON DATE: 3-13



**NOTES**

- STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.
- TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- GALVANIZE ALL PILES, BEAMS, CHANNELS, PLATES, HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- USE AN ASTM F436 HARDENED WASHER OR DTI OVER STANDARD HOLES UNDER EACH NUT OR BOLT.
- USE A 5/16" MIN. PLATE WASHER OVER SLOTTED HOLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

BILL OF MATERIAL AT ONE BENT				
MEMBER TYPE	*APPROXIMATE LENGTH	NO. REQ'D	TOTAL LENGTH	WEIGHT (LBS.)
HP 14x73	8'-0"	6	48'-0"	3,504
HP 12x53	15'-9 1/2"	12	189'-6"	10,044
C 15x33.9	21'-0"	2	42'-0"	1,424
PLATES, BOLTS & ETC.:				2,328
TOTAL WEIGHT				17,300 LBS.

\*CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO FABRICATION.

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 2 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

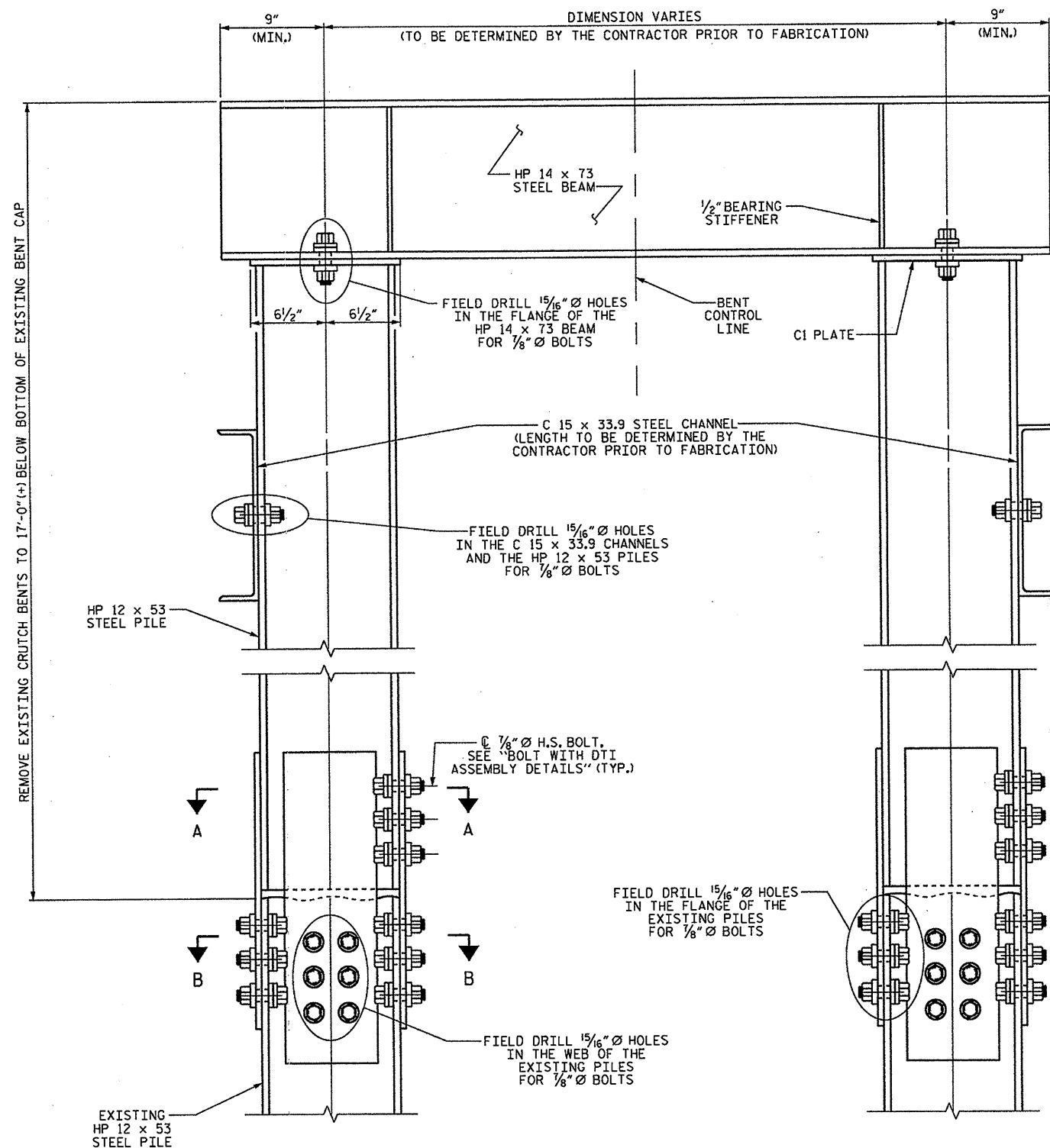
CRUTCH BENTS AT  
BENTS 116 & 120



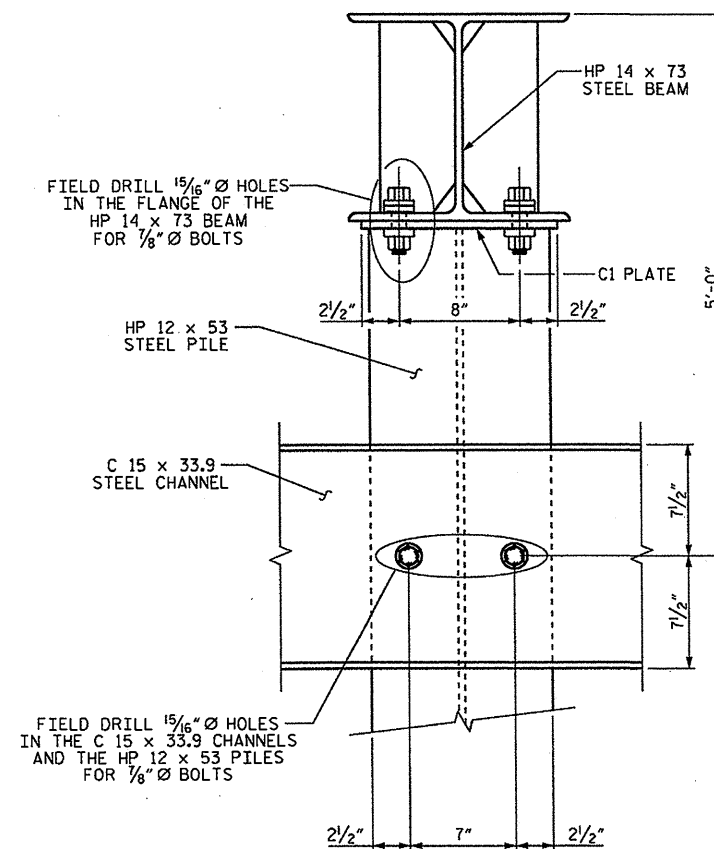
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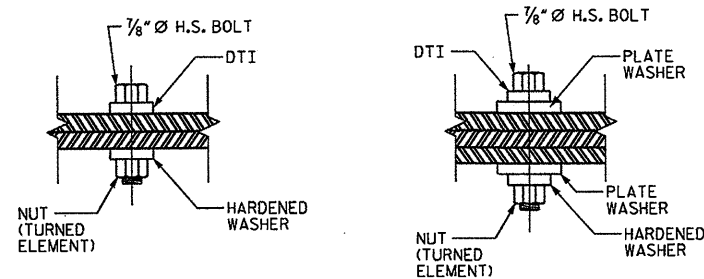
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2			4				



TYPICAL CRUTCH BENT ELEVATION



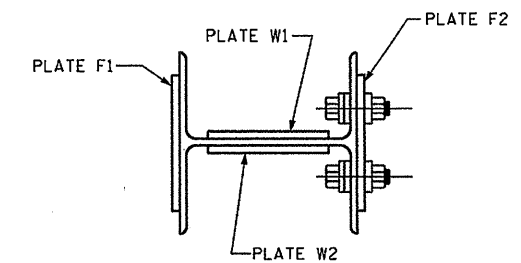
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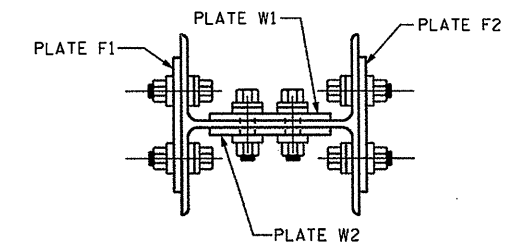
AT TYPICAL 15/16" Ø HOLES

AT SLOTTED HOLES IN WEB PLATES

BOLT WITH DTI ASSEMBLY DETAILS



SECTION A-A



SECTION B-B

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 3 OF 5

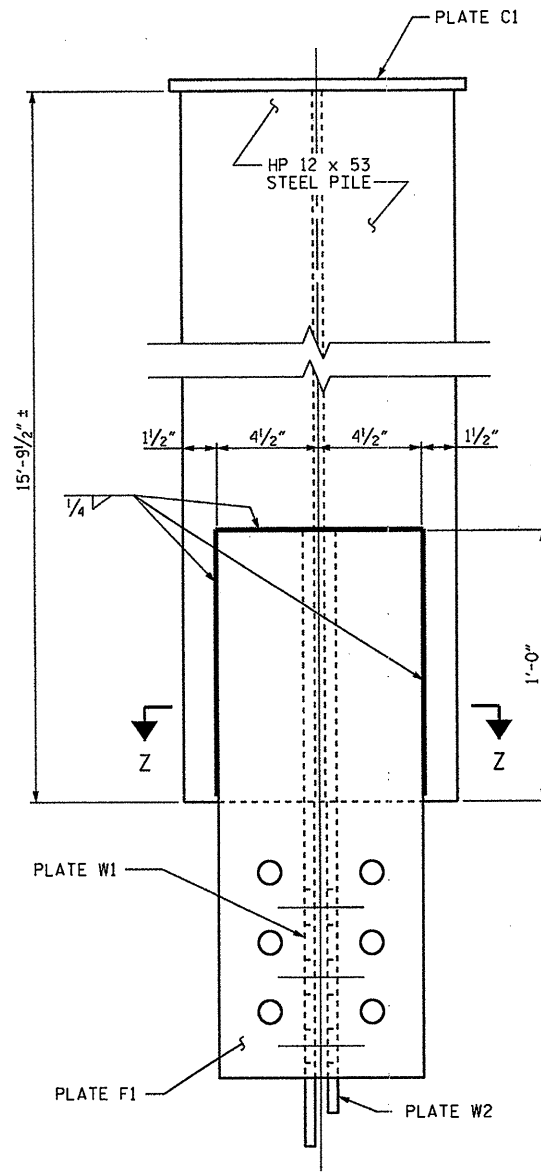
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

CRUTCH BENT  
DETAILS AT  
BENTS 115 - 120

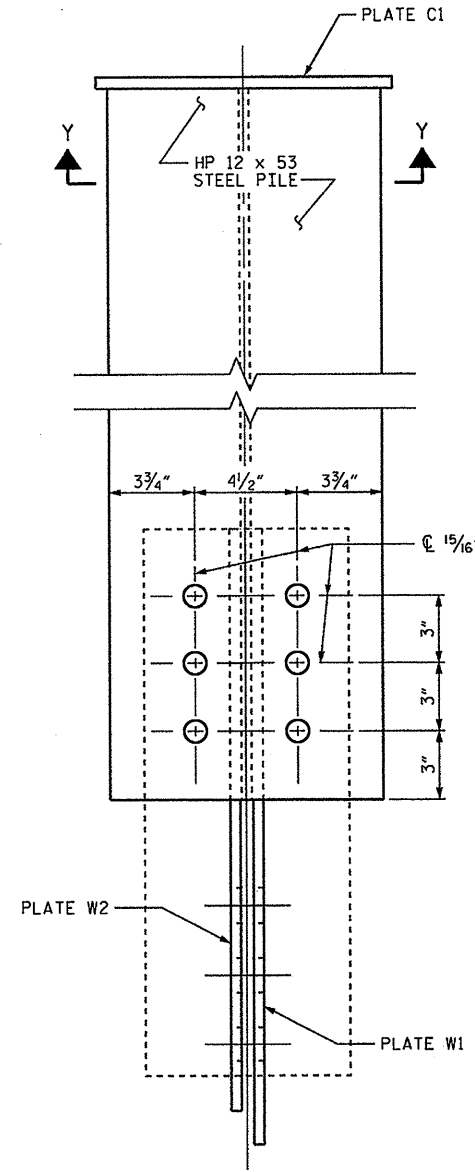
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2			4			SHEETS	

DRAWN BY: M.A. ALLEN DATE: 3-13  
CHECKED BY: T.M. GARRISON DATE: 3-13

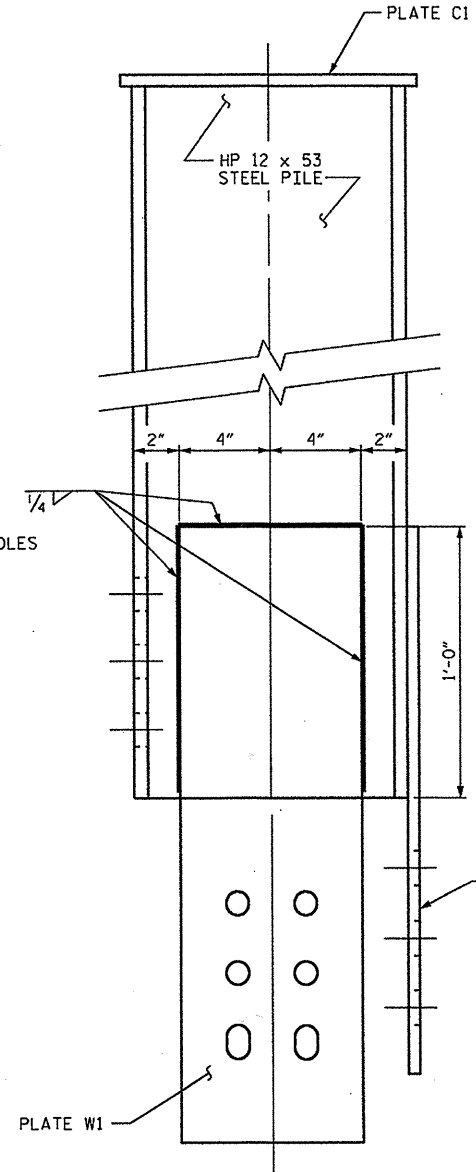




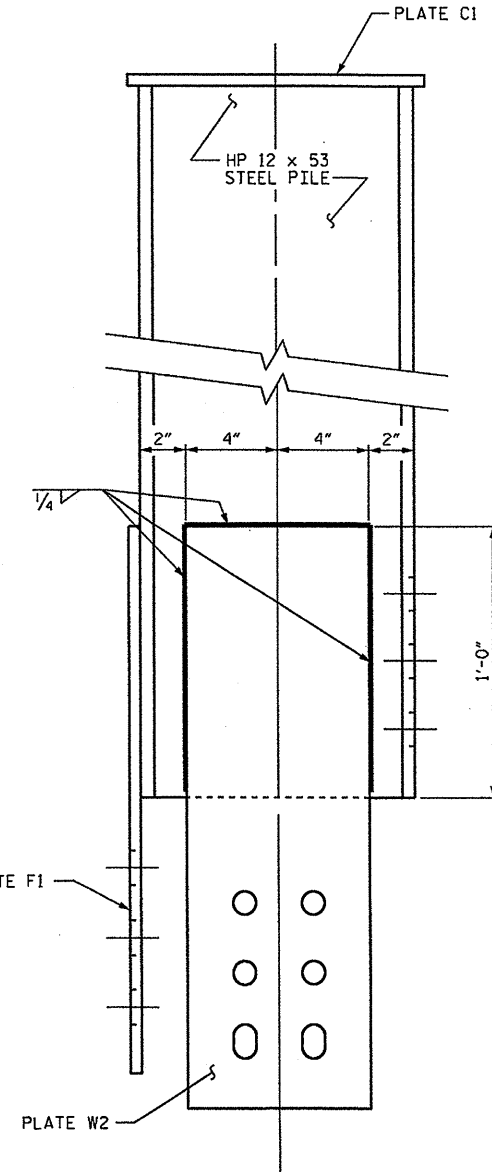
ELEVATION AT PLATE F1



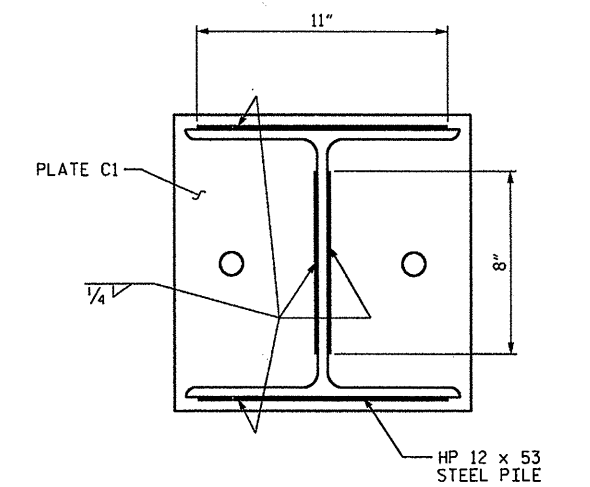
ELEVATION AT PLATE F2  
(PLATE F2 TO BE BOLTED IN FIELD)



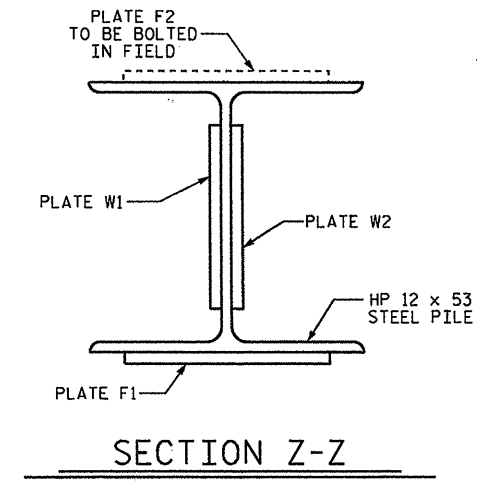
ELEVATION AT PLATE W1  
(HOLES AND SLOTS IN PLATE W1 & W2 SHALL BE PRECISELY ALIGNED WHEN WELDED TO PILES)



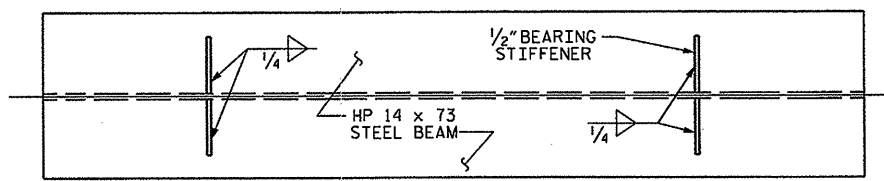
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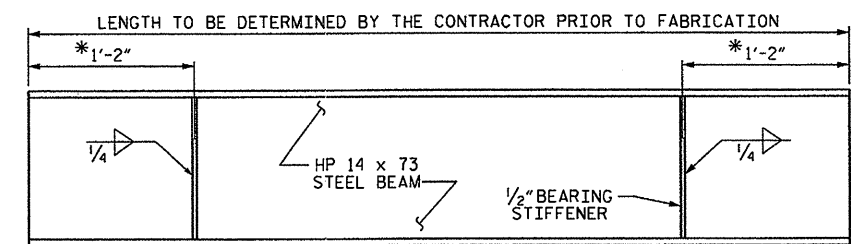
SECTION Y-Y



SECTION Z-Z



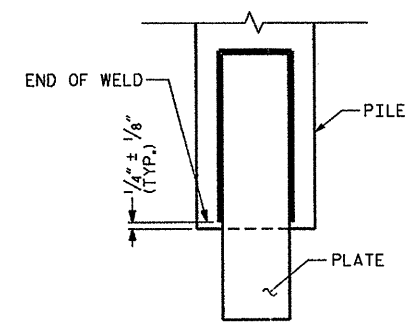
HP 14 x 73 PLAN



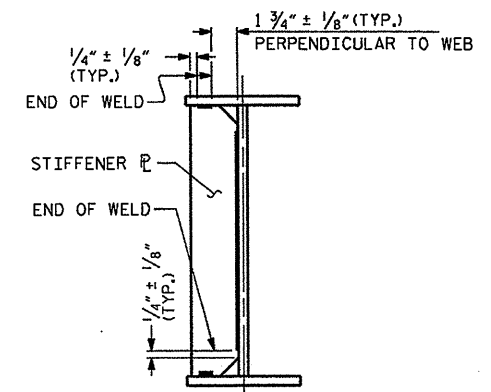
HP 14 x 73 ELEVATION

\* BEARING STIFFENER SHOULD LINE UP WITH EDGE OF PILE.

PILE ELEVATIONS



TYPICAL PLATE TO PILE CONNECTION



TYPICAL STIFFENER PLATE CONNECTIONS

WELD TERMINATION DETAILS

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 4 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

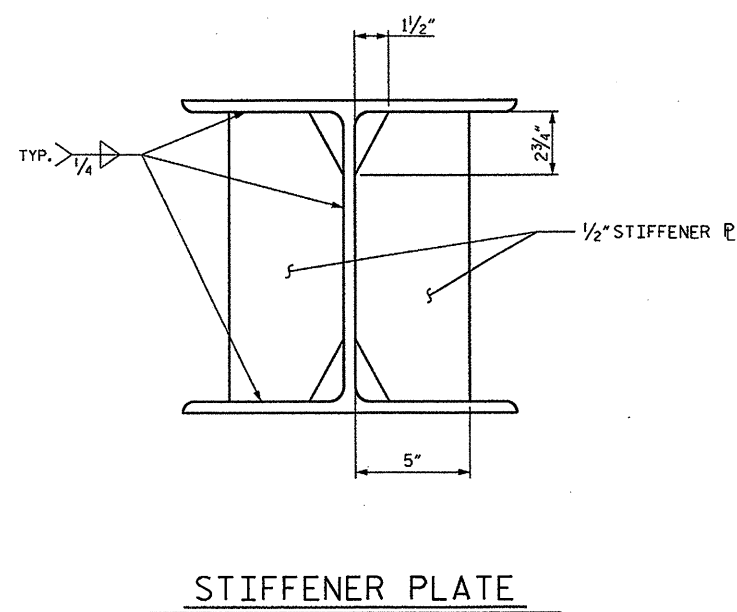
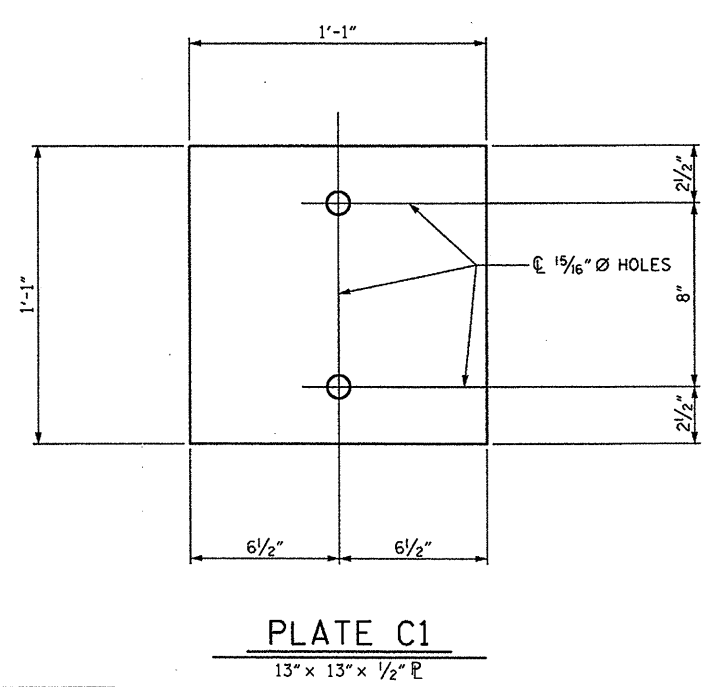
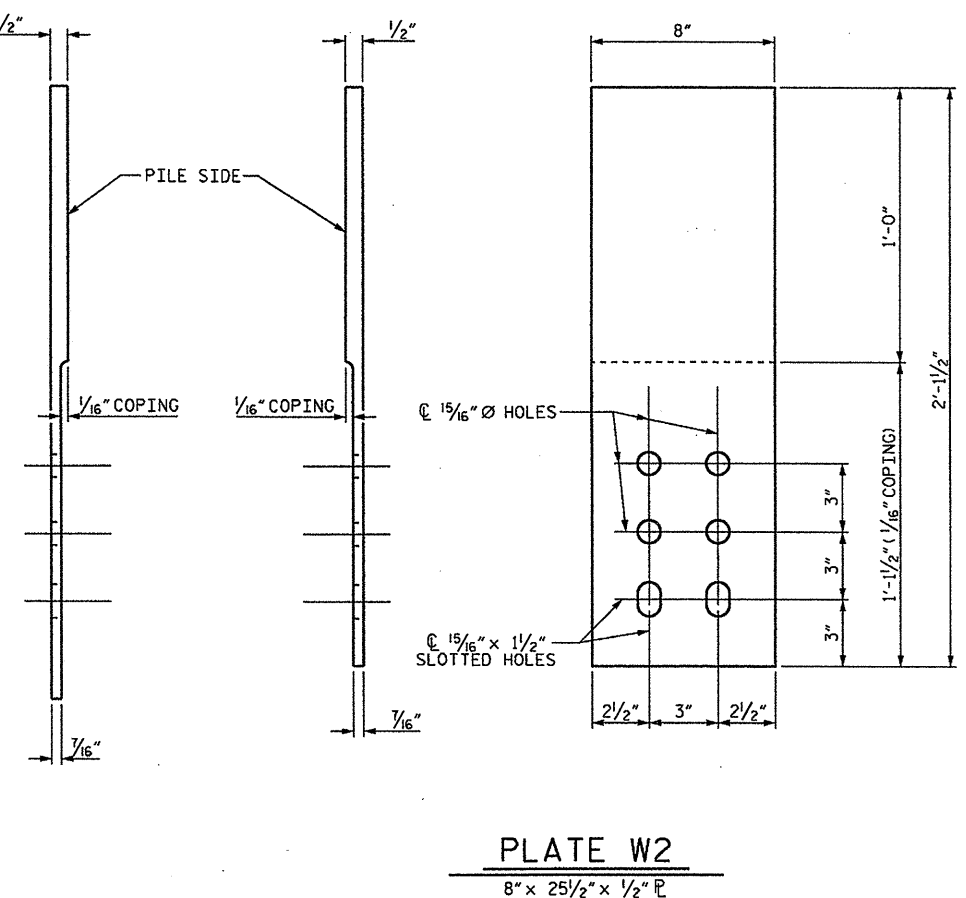
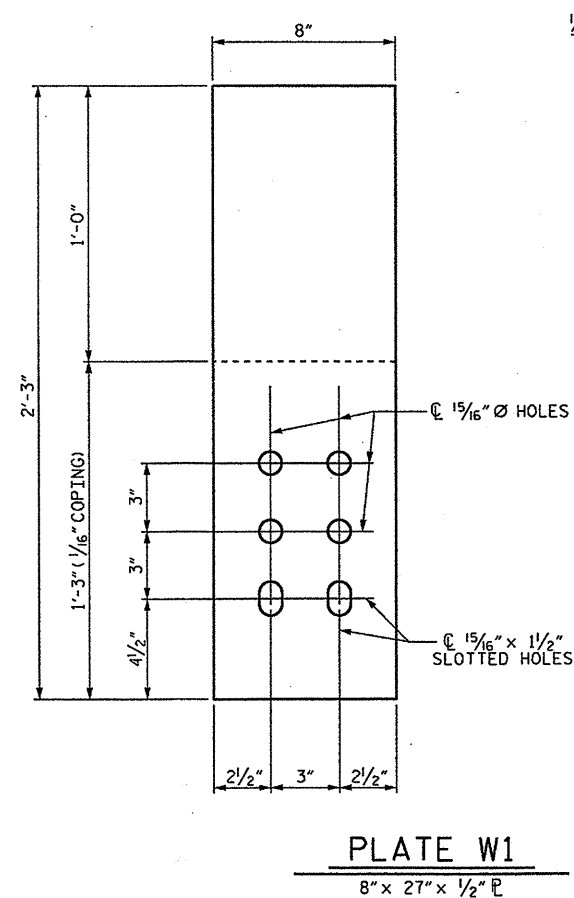
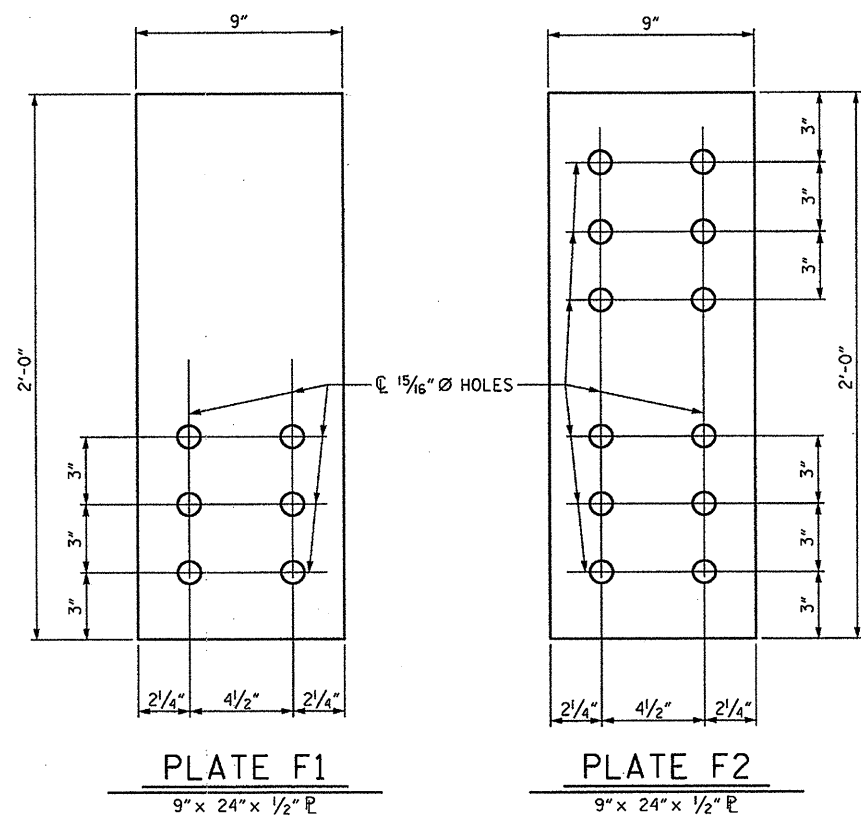
CRUTCH BENT  
DETAILS AT  
BENTS 115 - 120



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5	
1			3			TOTAL SHEETS	10
2			4				

DRAWN BY: M.A. ALLEN DATE: 3-13  
CHECKED BY: T.M. GARRISON DATE: 3-13





DRAWN BY : M.A. ALLEN DATE : 3-13  
 CHECKED BY : T.M. GARRISON DATE : 3-13

27-MAR-2013 14:22  
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 maallen

PROJECT NO. B-5014E  
 DARE COUNTY

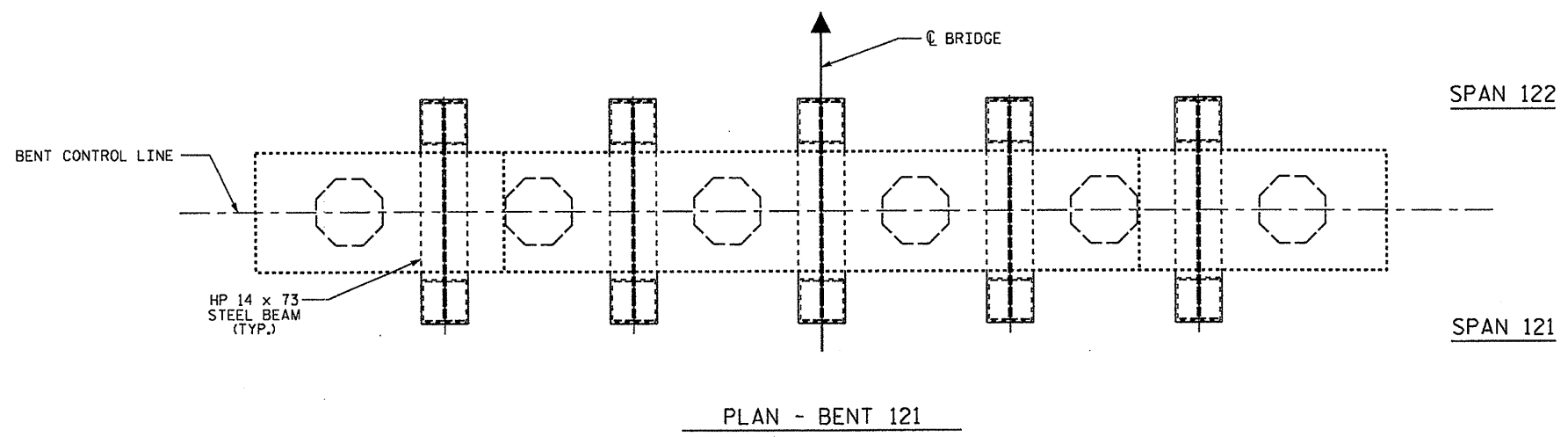
SHEET 5 OF 5

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

CRUTCH BENT  
 DETAILS AT  
 BENTS 115 - 120



REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-6	
1			3			TOTAL	10
2			4			SHEETS	



**NOTES**

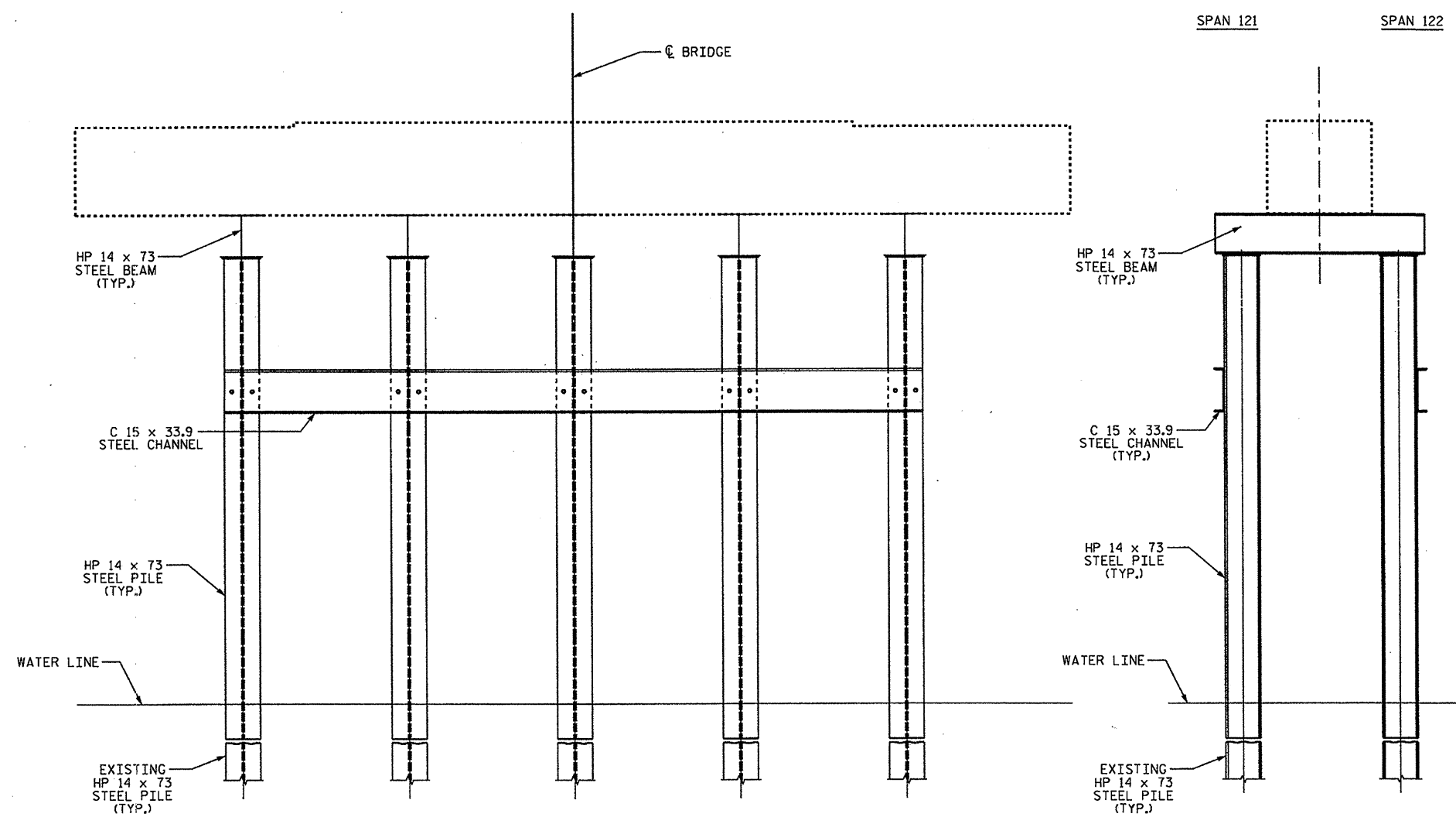
STEEL AND CONNECTOR PLATES SHALL BE AASHTO M270 GRADE 50 OR APPROVED EQUAL.

TENSION ON THE ASTM A325 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

GALVANIZE ALL PILES, BEAMS, CHANNELS, PLATES, HIGH STRENGTH BOLTS, NUTS, WASHERS AND DIRECT TENSION INDICATORS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

USE AN ASTM F436 HARDENED WASHER OR DTI OVER STANDARD HOLES UNDER EACH NUT OR BOLT.

USE A 5/16" MIN. PLATE WASHER OVER SLOTTED HOLES IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



**BILL OF MATERIAL AT ONE BENT**

MEMBER TYPE	*APPROXIMATE LENGTH	NO. REQ'D	TOTAL LENGTH	WEIGHT (LBS.)
HP 14x73	6'-0"	5	30'-0"	2,190
HP 14x73	18'-9 1/2"	10	187'-11"	13,718
C 15x33.9	21'-0"	2	42'-0"	1,424
PLATES, BOLTS & ETC.				2,018
<b>TOTAL WEIGHT</b>				<b>19,350 LBS.</b>

\* CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO FABRICATION.

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 1 OF 4

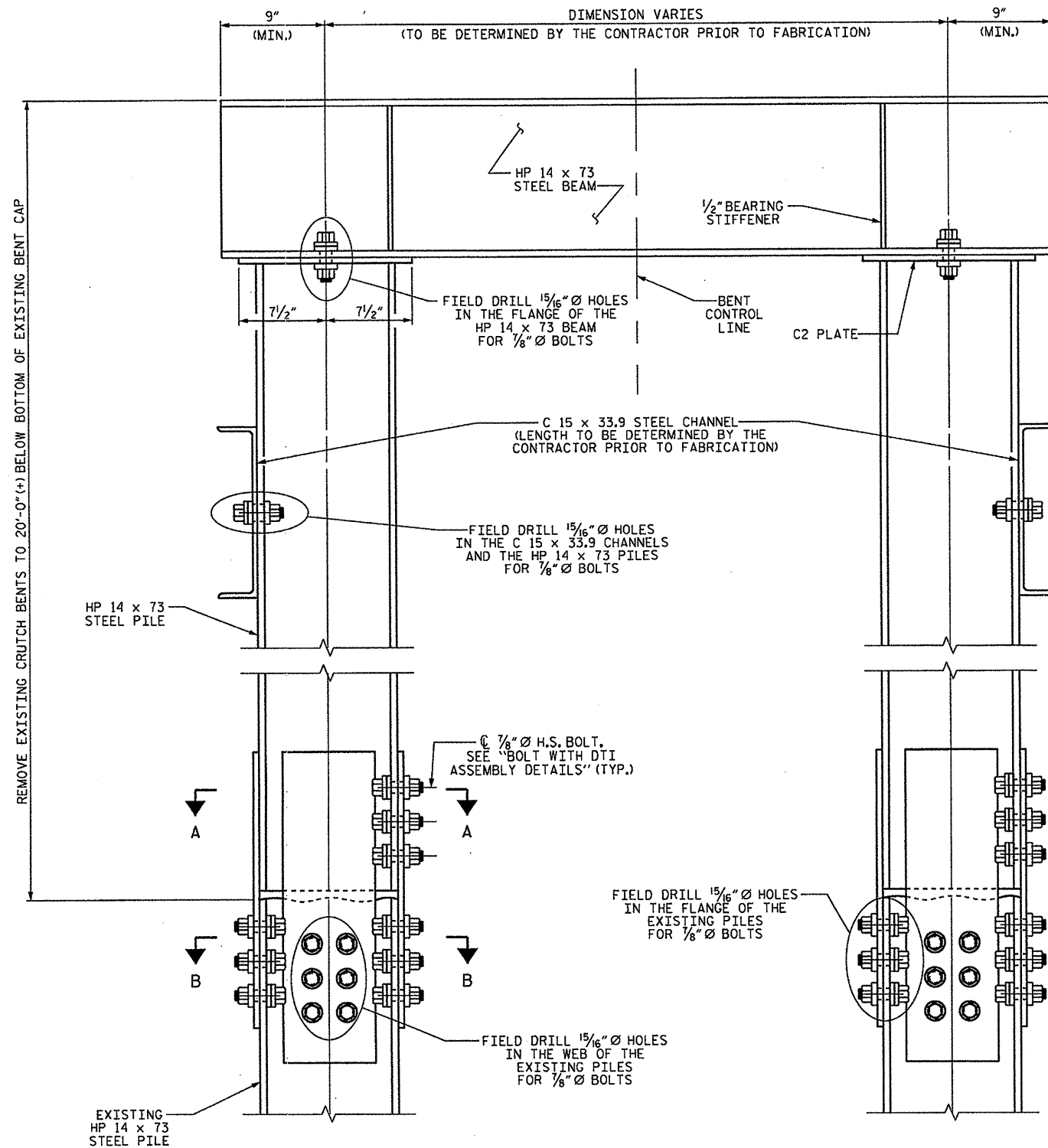
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**CRUTCH BENTS AT  
 BENTS 121, 122 & 123**

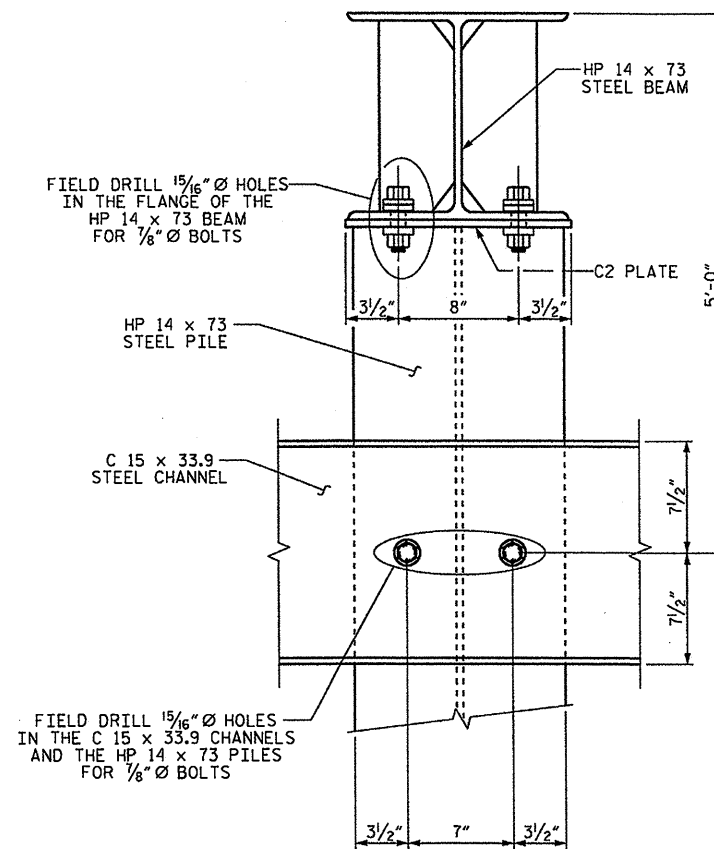


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2			4			10

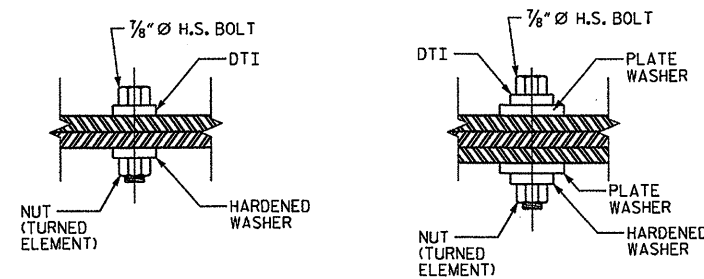
DRAWN BY : M.A. ALLEN DATE : 3-13  
 CHECKED BY : T.M. GARRISON DATE : 3-13



TYPICAL CRUTCH BENT ELEVATION



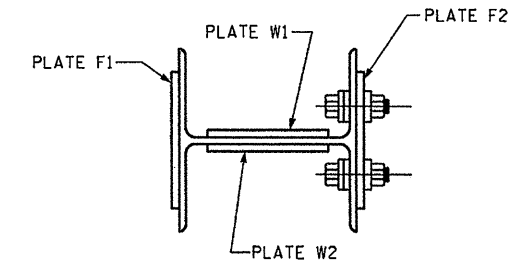
PARTIAL END ELEVATION



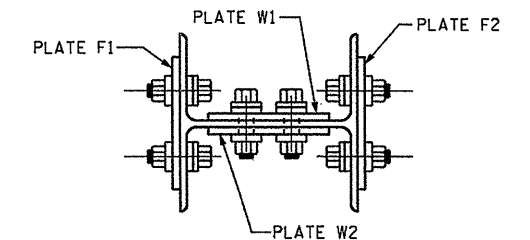
AT TYPICAL 1 5/16\"/>

AT SLOTTED HOLES IN WEB PLATES

BOLT WITH DTI ASSEMBLY DETAILS



SECTION A-A



SECTION B-B

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 2 OF 4

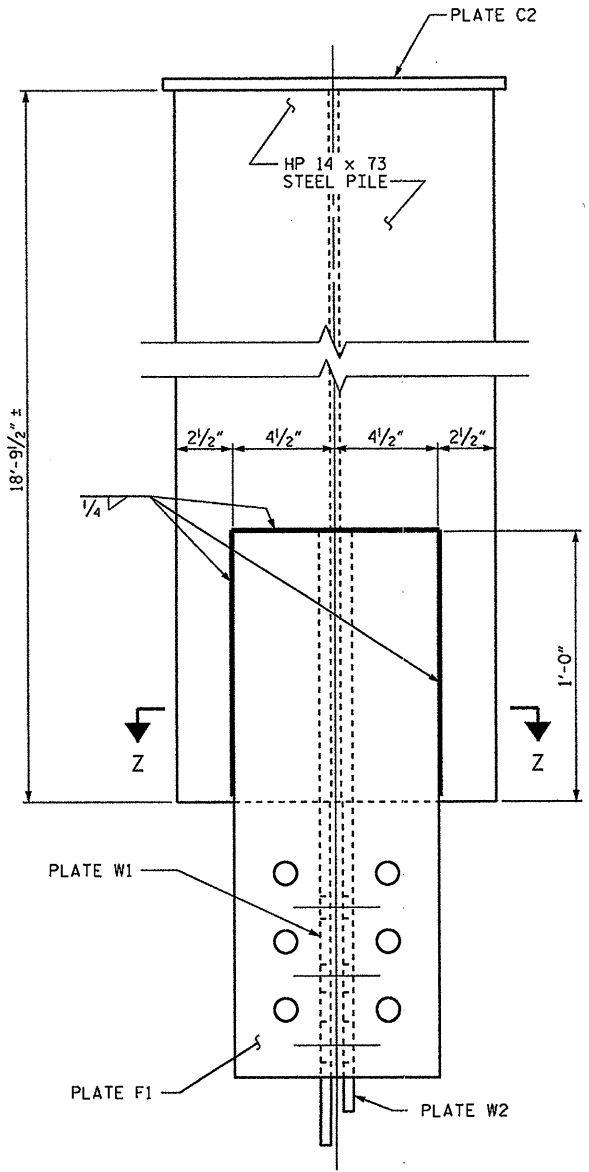
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

CRUTCH BENT  
DETAILS  
AT BENTS 121 - 123

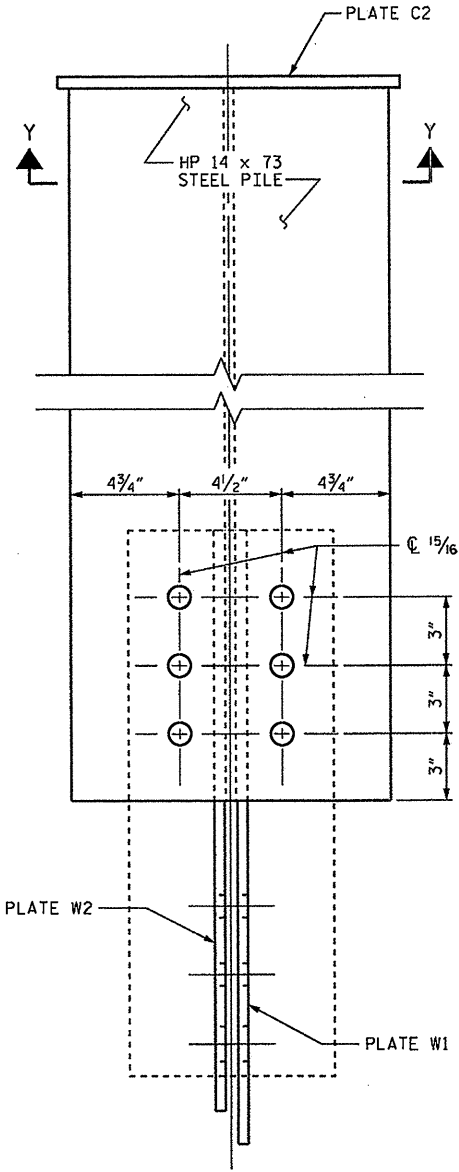
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-8	
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DRAWN BY: M.A. ALLEN DATE: 3-13  
CHECKED BY: T.M. GARRISON DATE: 3-13

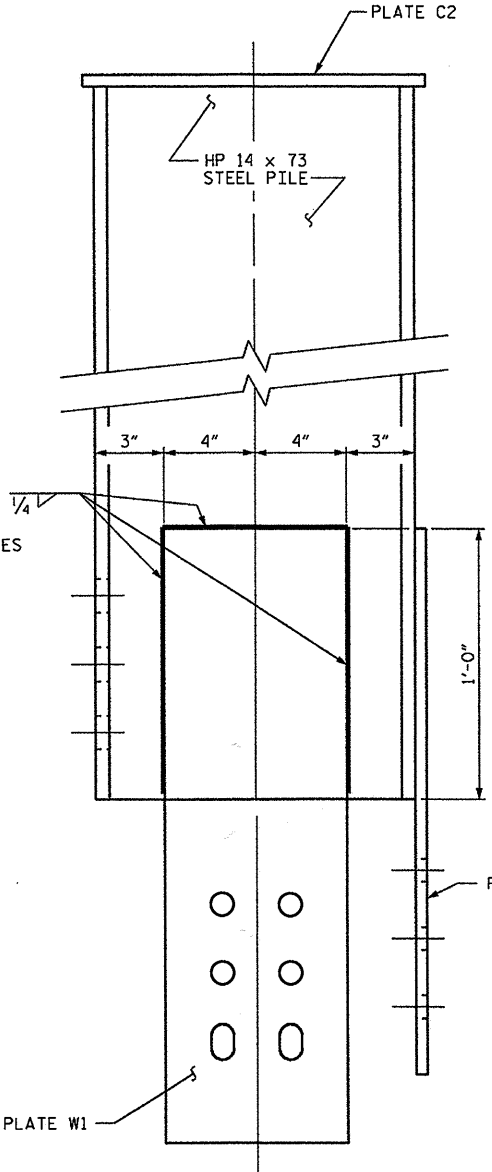




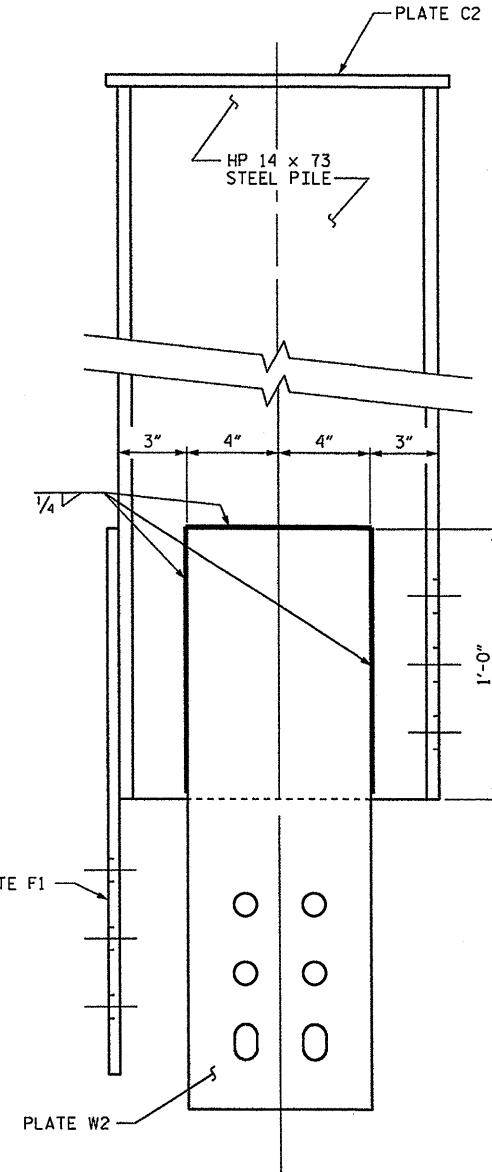
ELEVATION AT PLATE F1



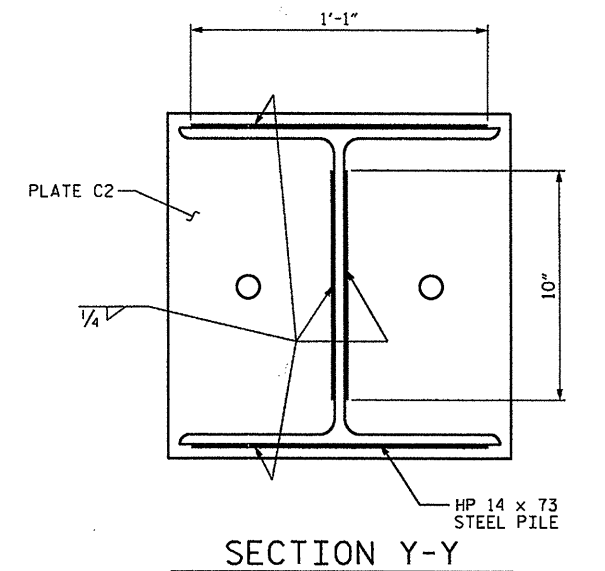
ELEVATION AT PLATE F2  
(PLATE F2 TO BE BOLTED IN FIELD)



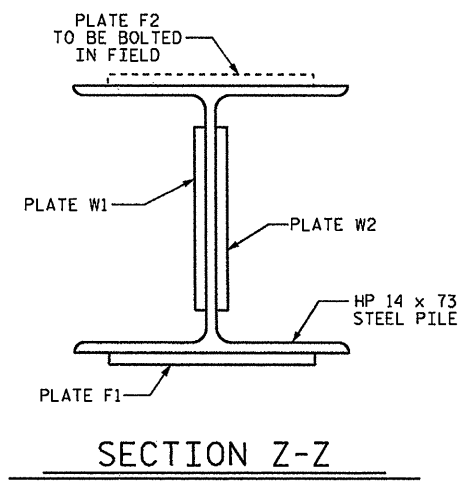
ELEVATION AT PLATE W1  
(HOLES AND SLOTS IN PLATE W1 & W2 SHALL BE PRECISELY ALIGNED WHEN WELDED TO PILES)



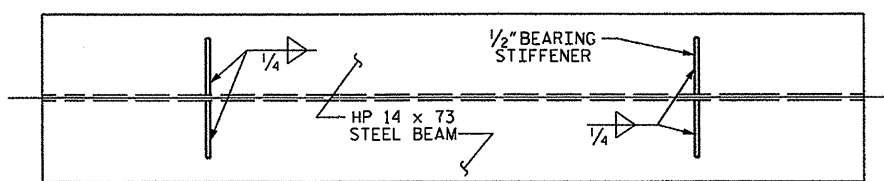
ELEVATION AT PLATE W2  
(HOLES AND SLOTS IN PLATE W1 & W2 SHALL BE PRECISELY ALIGNED WHEN WELDED TO PILES)



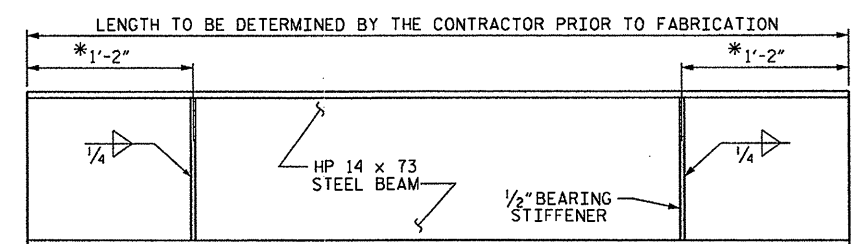
SECTION Y-Y



SECTION Z-Z



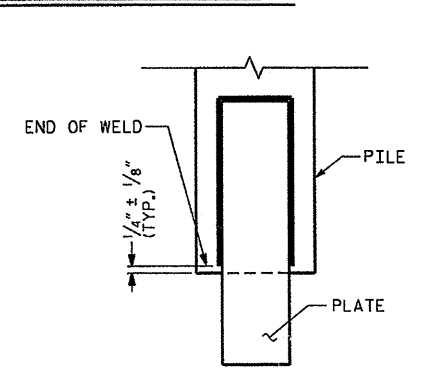
HP 14 x 73 PLAN



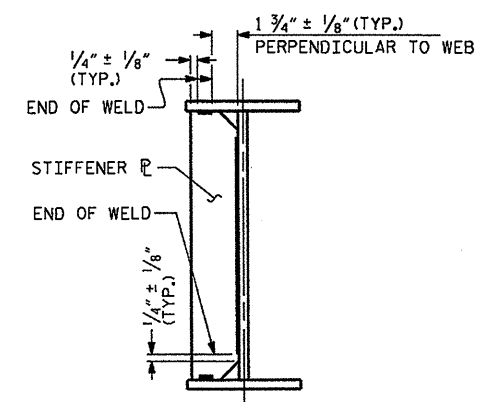
HP 14 x 73 ELEVATION

\*BEARING STIFFENER SHOULD LINE UP WITH EDGE OF PILE.

PILE ELEVATIONS



TYPICAL PLATE TO PILE CONNECTION



TYPICAL STIFFENER PLATE CONNECTIONS

WELD TERMINATION DETAILS

PROJECT NO. B-5014E  
DARE COUNTY

SHEET 3 OF 4

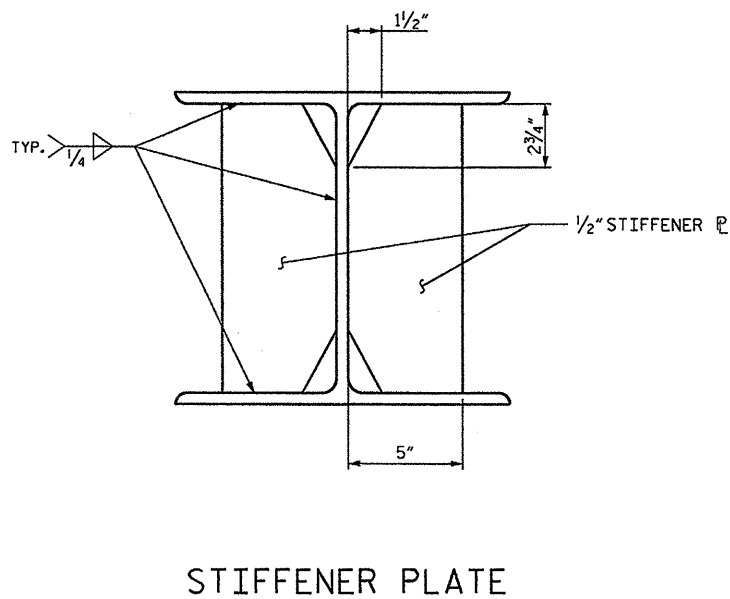
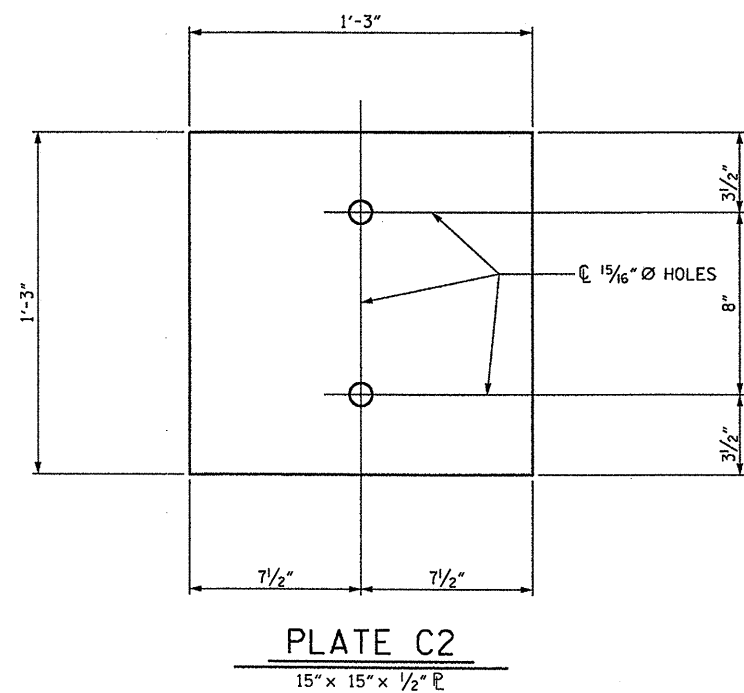
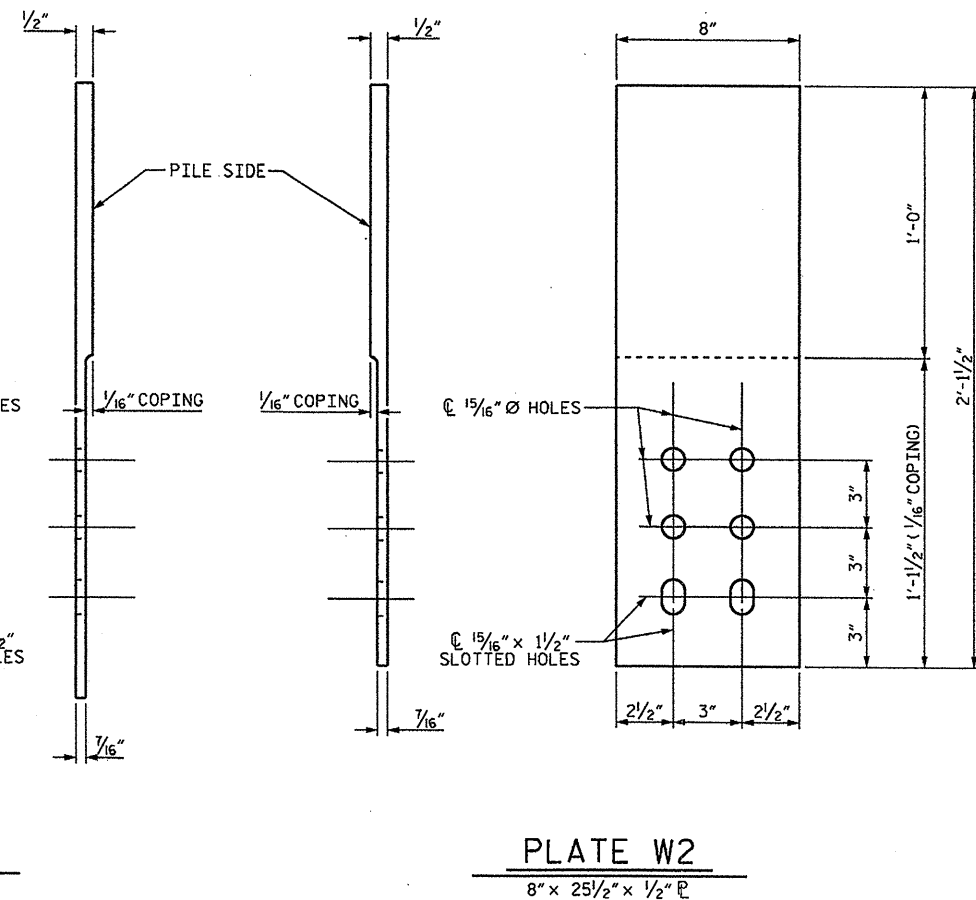
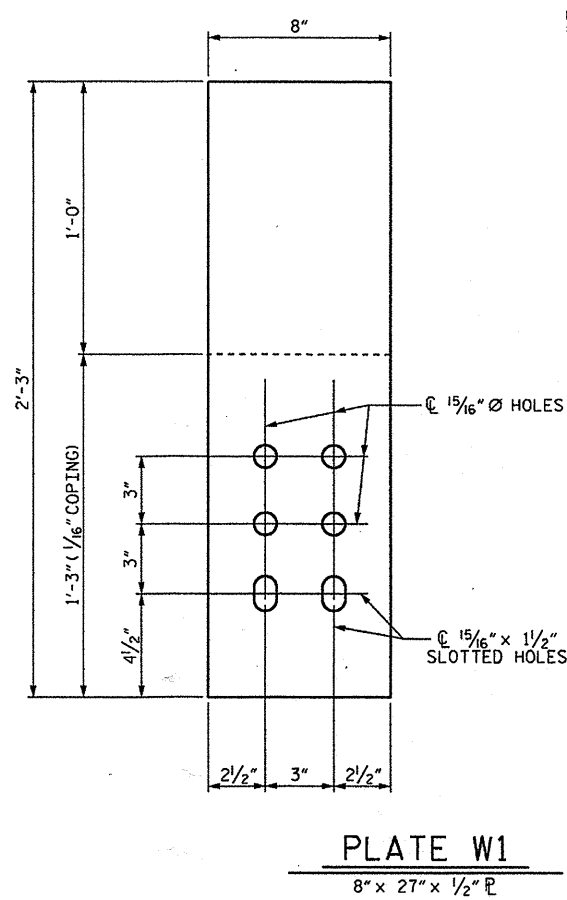
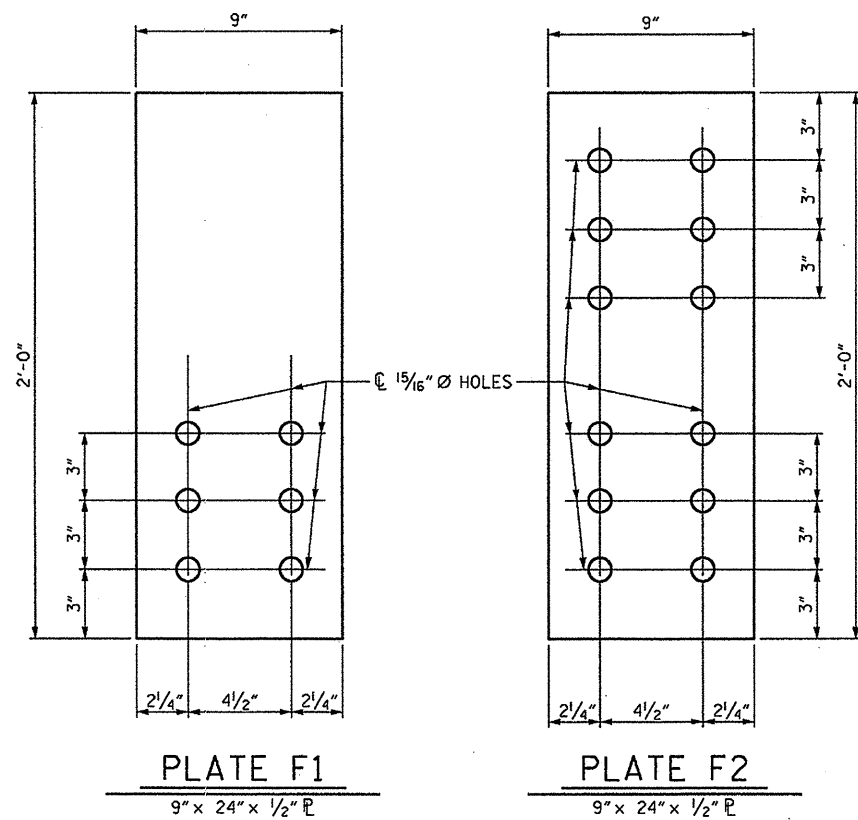
STATE OF NORTH CAROLINA  
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RALEIGH

CRUTCH BENT  
DETAILS  
AT BENTS 121 - 123



DRAWN BY: M.A. ALLEN DATE: 3-13  
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REVISIONS						SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9	
1			3			TOTAL SHEETS	
2			4			10	



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PROJECT NO. B-5014E  
DARE COUNTY

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

CRUTCH BENT  
DETAILS  
AT BENTS 121 - 123



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

## STANDARD NOTES

### DESIGN DATA:

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

### MATERIAL AND WORKMANSHIP:

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

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

### CONCRETE:

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

### CONCRETE CHAMFERS:

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

### DOWELS:

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

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

BRIDGES SHALL BE BUILT ON THE GRADE OR VERTICAL CURVE SHOWN ON PLANS. SLABS, CURBS AND PARAPETS SHALL CONFORM TO THE GRADE OR CURVE. ALL DIMENSIONS WHICH ARE GIVEN IN SECTION AND ARE AFFECTED BY DEAD LOAD DEFLECTIONS ARE DIMENSIONS AT CENTER LINE OF BEARING UNLESS OTHERWISE NOTED ON PLANS. IN SETTING FORMS FOR STEEL BEAM BRIDGES AND PRESTRESSED CONCRETE GIRDER BRIDGES, ADJUSTMENTS SHALL BE MADE DUE TO THE DEAD LOAD DEFLECTIONS FOR THE ELEVATIONS SHOWN. WHERE BLOCKS ARE SHOWN OVER BEAMS FOR BUILDING UP TO THE SLAB, THE VERTICAL DIMENSIONS OF THE BLOCKS SHALL BE ADJUSTED BETWEEN BEARINGS TO COMPENSATE FOR DEAD LOAD DEFLECTIONS, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER. WHERE BOTTOM OF SLAB IS IN LINE WITH BOTTOM OF TOP FLANGES, DEPTH OF SLAB BETWEEN BEARINGS SHALL BE ADJUSTED TO COMPENSATE FOR DEAD LOAD DEFLECTION, VERTICAL CURVE ORDINATE, AND ACTUAL BEAM CAMBER.

IN SETTING FALSEWORK AND FORMS FOR REINFORCED CONCRETE SPANS, AN ALLOWANCE SHALL BE MADE FOR DEAD LOAD DEFLECTIONS, SETTLEMENT OF FALSEWORK, AND PERMANENT CAMBER WHICH SHALL BE PROVIDED FOR IN ADDITION TO THE ELEVATIONS SHOWN. AFTER REMOVAL OF THE FALSEWORK, THE FINISHED STRUCTURES SHALL CONFORM TO THE PROFILE AND ELEVATIONS SHOWN ON THE PLANS AND CONSTRUCTION ELEVATIONS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR FALSEWORK OR FORMS FOR BRIDGE SUPERSTRUCTURE AND ANY STRUCTURE OR PARTS OF A STRUCTURE AS NOTED ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE CONSTRUCTION OF THE FALSEWORK OR FORMS IS STARTED.

### REINFORCING STEEL:

ALL REINFORCING STEEL SHALL BE DEFORMED. DIMENSIONS RELATIVE TO PLACEMENT OF REINFORCING ARE TO CENTERS OF BARS UNLESS OTHERWISE INDICATED IN THE PLANS. DIMENSIONS ON BAR DETAILS ARE TO CENTERS OF BARS OR ARE OUT TO OUT AS INDICATED ON PLANS.

WIRE BAR SUPPORTS SHALL BE PROVIDED FOR REINFORCING STEEL WHERE INDICATED ON THE PLANS. WHEN BAR SUPPORT PIECES ARE PLACED IN CONTINUOUS LINES, THEY SHALL BE SO PLACED THAT THE ENDS OF THE SUPPORTING WIRES SHALL BE LAPPED TO LOCK LEGS ON ADJOINING PIECES.

### STRUCTURAL STEEL:

AT THE CONTRACTOR'S OPTION, HE MAY SUBSTITUTE 7/8" Ø SHEAR STUDS FOR THE 3/4" Ø STUDS SPECIFIED ON THE PLANS. THIS SUBSTITUTION SHALL BE MADE AT THE RATE OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS, AND STUD SPACING CHANGES SHALL BE MADE AS NECESSARY TO PROVIDE THE SAME EQUIVALENT NUMBER OF 7/8" Ø STUDS ALONG THE BEAM AS SHOWN FOR 3/4" Ø STUDS BASED ON THE RATIO OF 3 - 7/8" Ø STUDS FOR 4 - 3/4" Ø STUDS. STUDS OF THE LENGTH SPECIFIED ON THE PLANS MUST BE PROVIDED. THE MAXIMUM SPACING SHALL BE 2'-0".

EXCEPT AT THE INTERIOR SUPPORTS OF CONTINUOUS BEAMS WHERE THE COVER PLATE IS IN CONTACT WITH BEARING PLATE, THE CONTRACTOR MAY, AT HIS OPTION, SUBSTITUTE FOR THE COVER PLATES DESIGNATED ON THE PLANS COVER PLATES OF THE EQUIVALENT AREA PROVIDED THESE PLATES ARE AT LEAST 5/16" IN THICKNESS AND DO NOT EXCEED A WIDTH EQUAL TO THE FLANGE WIDTH LESS 2" OR A THICKNESS EQUAL TO 2 TIMES THE FLANGE THICKNESS. THE SIZE OF FILLET WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ANSI/AASHTO/AWS "BRIDGE WELDING CODE". ELECTROSLAG WELDING WILL NOT BE PERMITTED.

WITH THE SOLE EXCEPTION OF EDGES AT SURFACES WHICH BEAR ON OTHER SURFACES, ALL SHARP EDGES AND ENDS OF SHAPES AND PLATES SHALL BE SLIGHTLY ROUNDED BY SUITABLE MEANS TO A RADIUS OF APPROXIMATELY 1/16" INCH OR EQUIVALENT FLAT SURFACE AT A SUITABLE ANGLE PRIOR TO PAINTING, GALVANIZING, OR METALLIZING.

### HANDRAILS AND POSTS:

METAL STANDARDS AND FACES OF THE CONCRETE END POSTS FOR THE METAL RAIL SHALL BE SET NORMAL TO THE GRADE OF THE CURB, UNLESS OTHERWISE SHOWN ON PLANS. THE METAL RAIL AND TOPS OF CONCRETE POSTS USED WITH THE ALUMINUM RAIL SHALL BE BUILT PARALLEL TO THE GRADE OF THE CURB.

METAL HANDRAILS SHALL BE IN ACCORDANCE WITH THE PLANS. RAILS SHALL BE AS MANUFACTURED FOR BRIDGE RAILING. CASTINGS SHALL BE OF A UNIFORM APPEARANCE. FINIS AND OTHER DEFORMATIONS RESULTING FROM CASTING OR OTHERWISE SHALL BE REMOVED IN A MANNER SO THAT A UNIFORM COLORING OF THE COMPLETED CASTING SHALL BE OBTAINED. CASTINGS WITH DISCOLORATIONS OR OF NON-UNIFORM COLORING WILL NOT BE ACCEPTED. CERTIFIED MILL REPORTS ARE REQUIRED FOR METAL RAILS AND POSTS.

### SPECIAL NOTES:

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

ENGLISH

JANUARY, 1990