

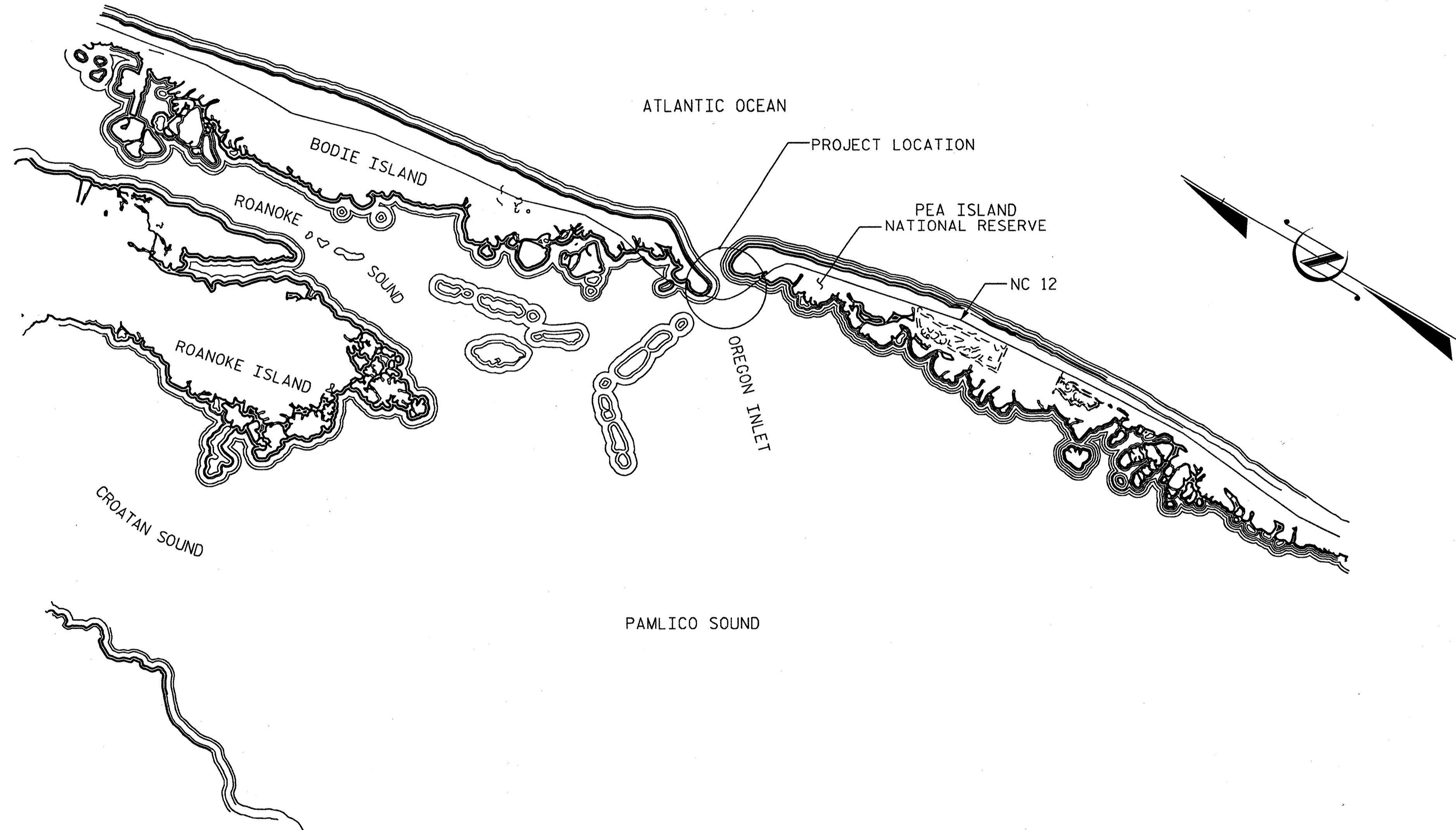
CONTRACT NO: C203168 TIP NO: B-5014C

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

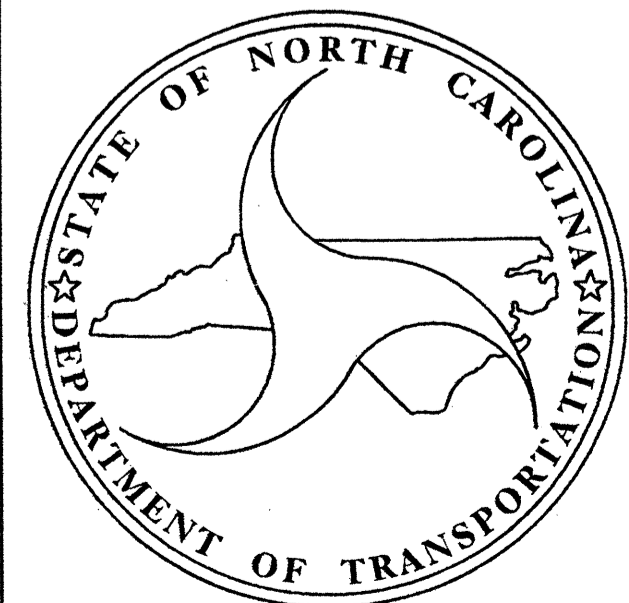
DARE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5014C		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41470.3.4	BRNHS-0012(53)	CONST.	

LOCATION: BRIDGE NO. 11 OVER THE OREGON INLET ON NC 12.
TYPE OF WORK: SCOUR PROTECTION AT BENT 158 - 162 & BENT 159 REHABILITATION.



STRUCTURES



Prepared in the Office of:
DIVISION OF HIGHWAYS
2012 STANDARD SPECIFICATIONS

LETTING DATE :
 JULY 17, 2012

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

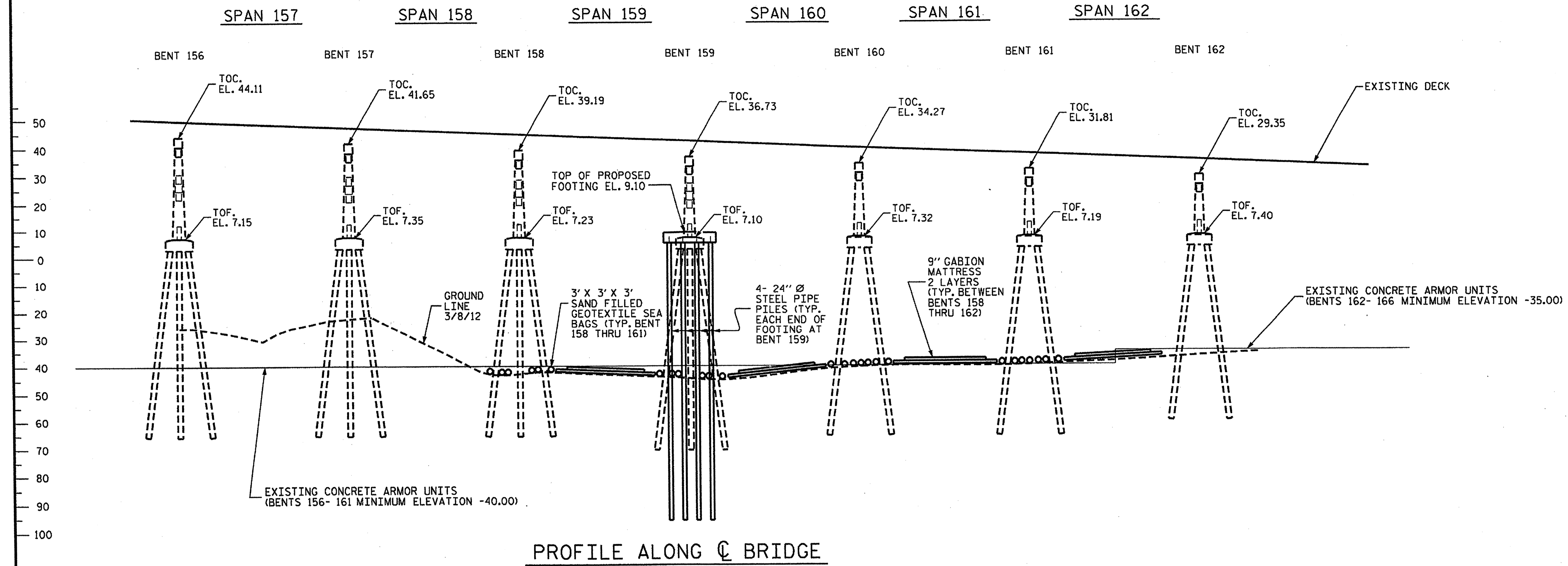
SUMMARY OF QUANTITIES

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
ROADWAY SUMMARY OF QUANTITIES FOR CONTRACT - C203099

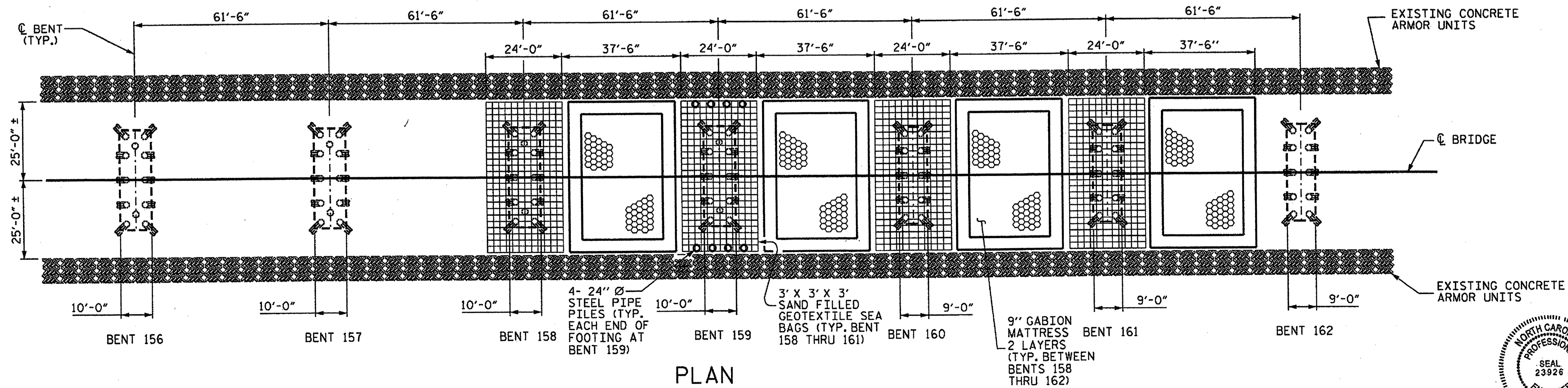
ItemNumber	Sec #	Quantity	Unit	Description
0000100000-N	800	Lump Sum		MOBILIZATION
4589000000-N	SP	Lump Sum		GENERIC TRAFFIC CONTROL ITEM TEMPORARY TRAFFIC CONTROL
8112730000-N	450	1	EA	PDA TESTING
8175000000-E	420	120.5	CY	CLASS AA CONCRETE (BRIDGE)
8224000000-E	425	8,021	LB	EPOXY COATED REINFORCING STEEL (BRIDGE)
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM CONSTRUCTION, MAINTENANCE & REMOVAL OF TEMPORARY ACCESS
8860000000-N	SP	Lump Sum		GENERIC STRUCTURE ITEM PARTIAL REMOVAL OF EXISTING STRUCTURE AT BENT 159
8867000000-E	SP	880	LF	GENERIC STRUCTURE ITEM PP 24 X 0.50 GALVANIZED STEEL PILES
8893000000-E	SP	1,270	SY	GENERIC STRUCTURE ITEM GABION MATTRESS (9" THICK)
8897000000-N	SP	540	EA	GENERIC STRUCTURE ITEM 3' SAND BAGS
8897000000-N	SP	4	EA	GENERIC STRUCTURE ITEM PILE REDRIVES

5/28/99

08-DEC-2009 07:52
s:\cortr\cortr\contracts\special_details\english\misc\summary of quantities sheet.dgn
tscall AT 1827452



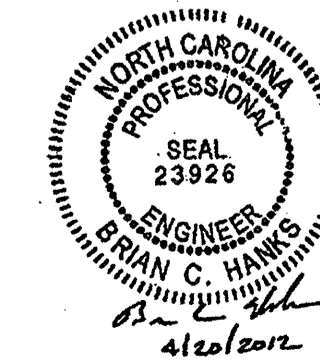
PROFILE ALONG C BRIDGE



PLAN

PROJECT NO. B-5014C
DARE COUNTY
 REHABILITATION OF BRIDGE NO. 11
 SHEET 1 OF 2 AT BENT 159

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH
**GENERAL DRAWING
 FOR REPAIR WORK
 ON BRIDGE OVER
 OREGON INLET**



DRAWN BY: R.W. WRIGHT DATE: 3/12
 CHECKED BY: M.A. ALLEN DATE: 3/12

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

NOTES:

ASSUMED LIVE LOAD = H15-S12(44).

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

REMOVAL OF A PORTION OF THE EXISTING FOOTING 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.

ALL FALSEWORK AND FORMS FOR THE PROPOSED FOOTING AT BENT 159 SHALL REMAIN IN PLACE UNTIL THE ENTIRE FOOTING IS CAST AND CURED.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR GABION MATTRESS, SEE SPECIAL PROVISIONS.

FOR SAND FILLED GEOTEXTILE SEA BAGS, SEE SPECIAL PROVISIONS.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR EPOXY RESIN INJECTION, SEE SPECIAL PROVISIONS.

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

FOR WORK IN, OVER OR NEAR NAVIGABLE WATERS, SEE SPECIAL PROVISIONS.

FOR TEMPORARY TRAFFIC CONTROL, SEE SPECIAL PROVISIONS.

FOR PARTIAL REMOVAL OF EXISTING STRUCTURE, SEE SPECIAL PROVISIONS.

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

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

NO WELDING WILL BE PERMITTED TO 24" STEEL PIPE PILES.

SUBMIT WORK PLAN FOR REVIEW AND APPROVAL FOR ALL OPERATIONS RELATED TO FOOTING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: REMOVAL OF CONCRETE, PLACEMENT OF FORMWORK AND FALSEWORK AND CONCRETE POUR SEQUENCE.

DEMOLITION AND CONSTRUCTION OF THE PROPOSED FOOTING SHALL PROCEED IN A CONTINUOUS MANNER WITHOUT DELAYS BETWEEN SUBSEQUENT OPERATIONS.

FOR PILES, SEE SPECIAL PROVISIONS.

DRIVE PILES AT PROPOSED FOOTING AT BENT 159 TO A REQUIRED BEARING CAPACITY OF 280 TONS PER PILE. THE REQUIRED BEARING CAPACITY IS EQUAL TO THE ALLOWABLE BEARING CAPACITY WITH A MINIMUM FACTOR OF SAFETY OF TWO PLUS ANY ADDITIONAL CAPACITY TO ACCOUNT FOR DOWNDRAG OR NEGATIVE SKIN FRICTION AND SCOUR.

INSTALL PILES AT PROPOSED FOOTING AT BENT 159 TO A TIP ELEVATION NO HIGHER THAN -96 FT.

THE SCOUR CRITICAL ELEVATION FOR PROPOSED FOOTING AT BENT 159 IS ELEVATION -60 FT. SCOUR CRITICAL ELEVATIONS ARE USED TO MONITOR POSSIBLE SCOUR PROBLEMS DURING THE LIFE OF THE STRUCTURE.

THE ALLOWABLE BEARING CAPACITY FOR PILES AT PROPOSED FOOTING AT BENT 159 IS 90 TONS PER PILE.

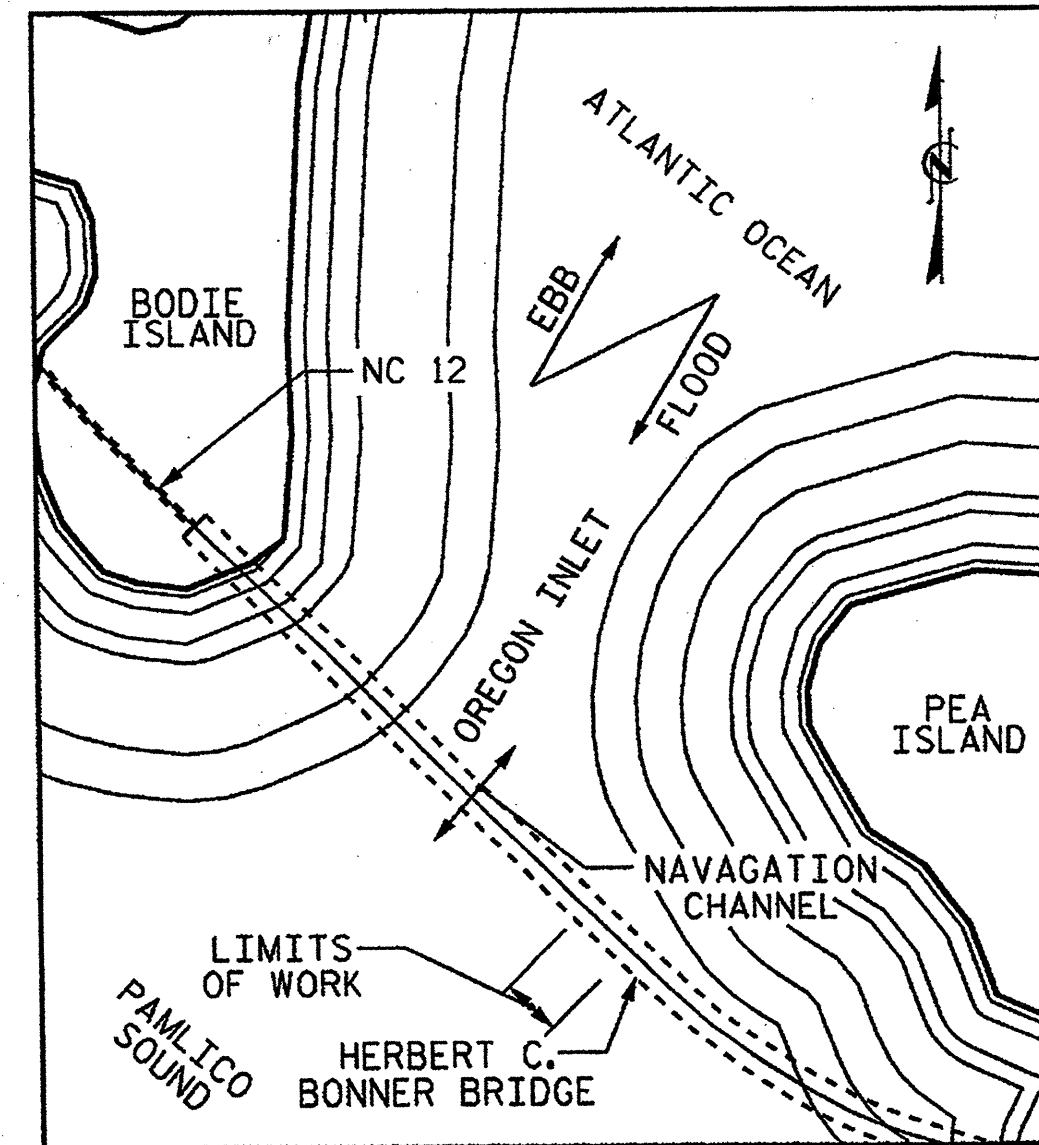
PIPE PILE PLATES ARE NOT REQUIRED FOR STEEL PIPE PILES AT PROPOSED FOOTING AT BENT 159.

IT HAS BEEN ESTIMATED THAT A HAMMER WITH AN EQUIVALENT RATED ENERGY IN THE RANGE OF 55 TO 80 FT-KIPS PER BLOW WILL BE REQUIRED TO DRIVE PILES AT PROPOSED FOOTING AT BENT 159. THIS ESTIMATED ENERGY RANGE DOES NOT RELEASE THE CONTRACTOR FROM ARTICLE 450-5 OF THE STANDARD SPECIFICATIONS.

TESTING THE FIRST PRODUCTION OR TEST PILE WITH THE PILE DRIVING ANALYZER DURING DRIVING, RESTRIKING OR REDRIVING IS REQUIRED AT PROPOSED FOOTING AT BENT 159. FOR PILE DRIVING ANALYZER, SEE SPECIAL PROVISIONS.

CLASS AA CONCRETE SHALL BE USED IN THE PROPOSED CAST-IN-PLACE FOOTING.

ALL BAR SUPPORTS USED IN THE PROPOSED FOOTING AND ALL INCIDENTAL REINFORCING STEEL SHALL BE EPOXY COATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.



LOCATION SKETCH

TOTAL BILL OF MATERIAL

	MOBILIZATION	TEMPORARY TRAFFIC CONTROL	CONSTRUCTION, MAINTENANCE, & REMOVAL OF TEMPORARY ACCESS	PARTIAL REMOVAL OF EXISTING STRUCTURE @ BENT 159	PDA TESTING	CLASS AA CONCRETE	EPOXY COATED REINFORCING STEEL	PP 24 X 0.50 GALVANIZED STEEL PILES	PILE REDRIVES	GABION MATTRESS (9" THICK)	3' SAND BAGS	
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	EA.	CU. YDS.	LBS.	NO.	LIN.FT.	EA.	SO.YDS.	EACH
SCOUR PROTECTION											1270	540
BENT 159					1	120.5	8,021	8	880	4		
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	1	120.5	8,021	8	880	4	1270	540

PROJECT NO. B-5014C
DARE COUNTY

SHEET 2 OF 2

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

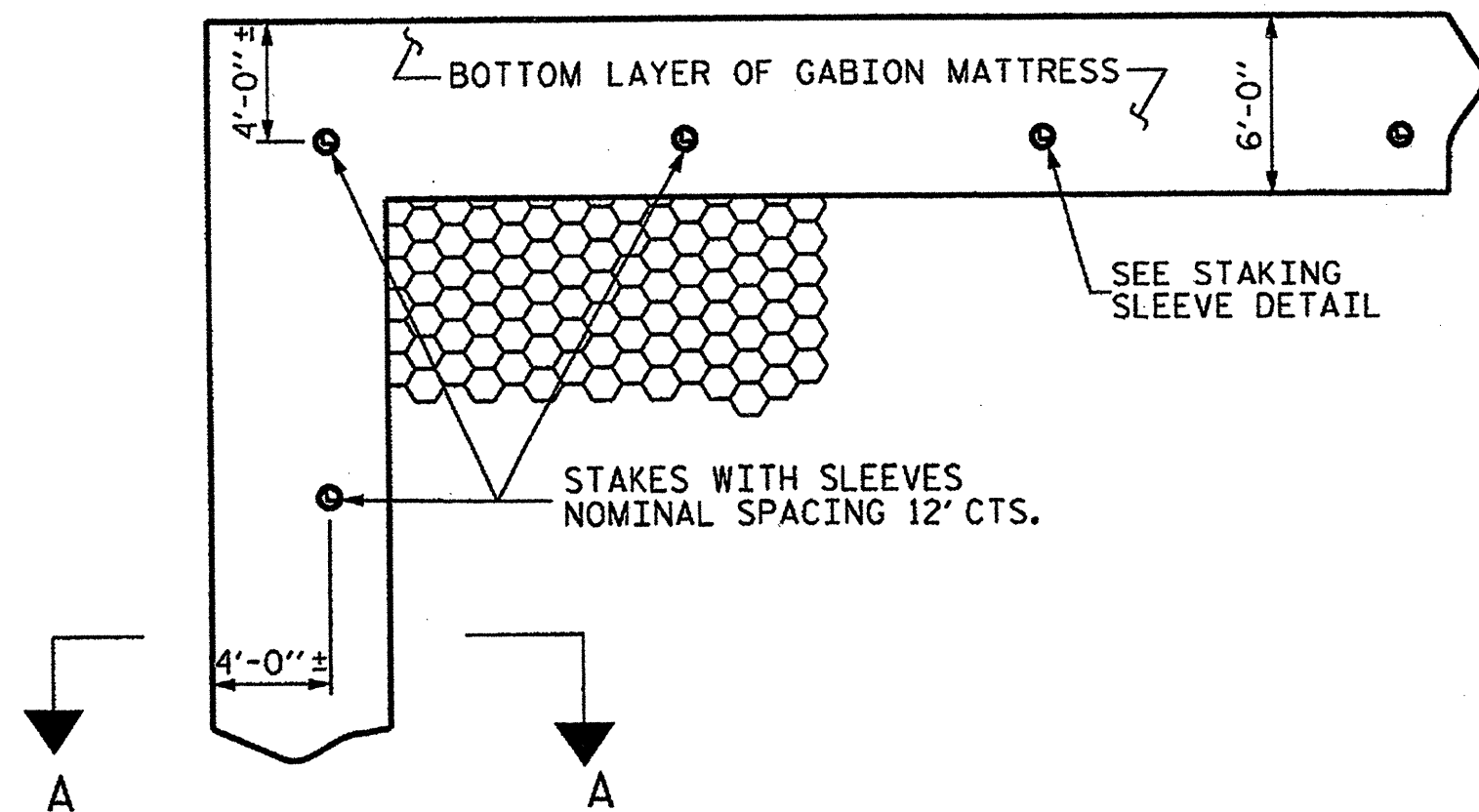
GENERAL DRAWING
 FOR REPAIR WORK
 ON BRIDGE OVER
 OREGON INLET



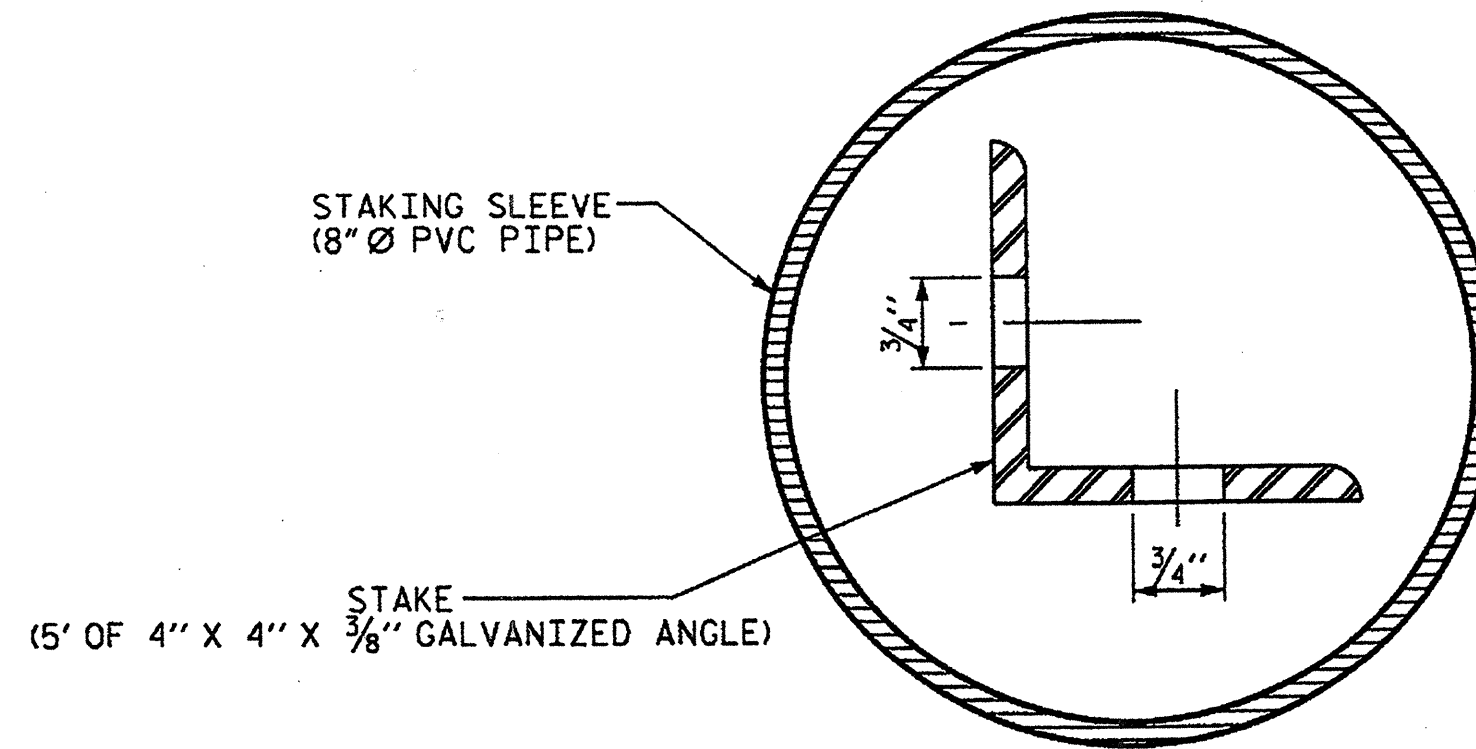
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-2
1			3			TOTAL SHEETS
2			4			7

DRAWN BY : M.A. ALLEN DATE : 3/12
 CHECKED BY : T.M. GARRISON DATE : 4/12

BILL OF MATERIAL	
GABION MATTRESS (9" THICK) (SO. YDS)	3' SAND BAGS (EACH)
1270	540

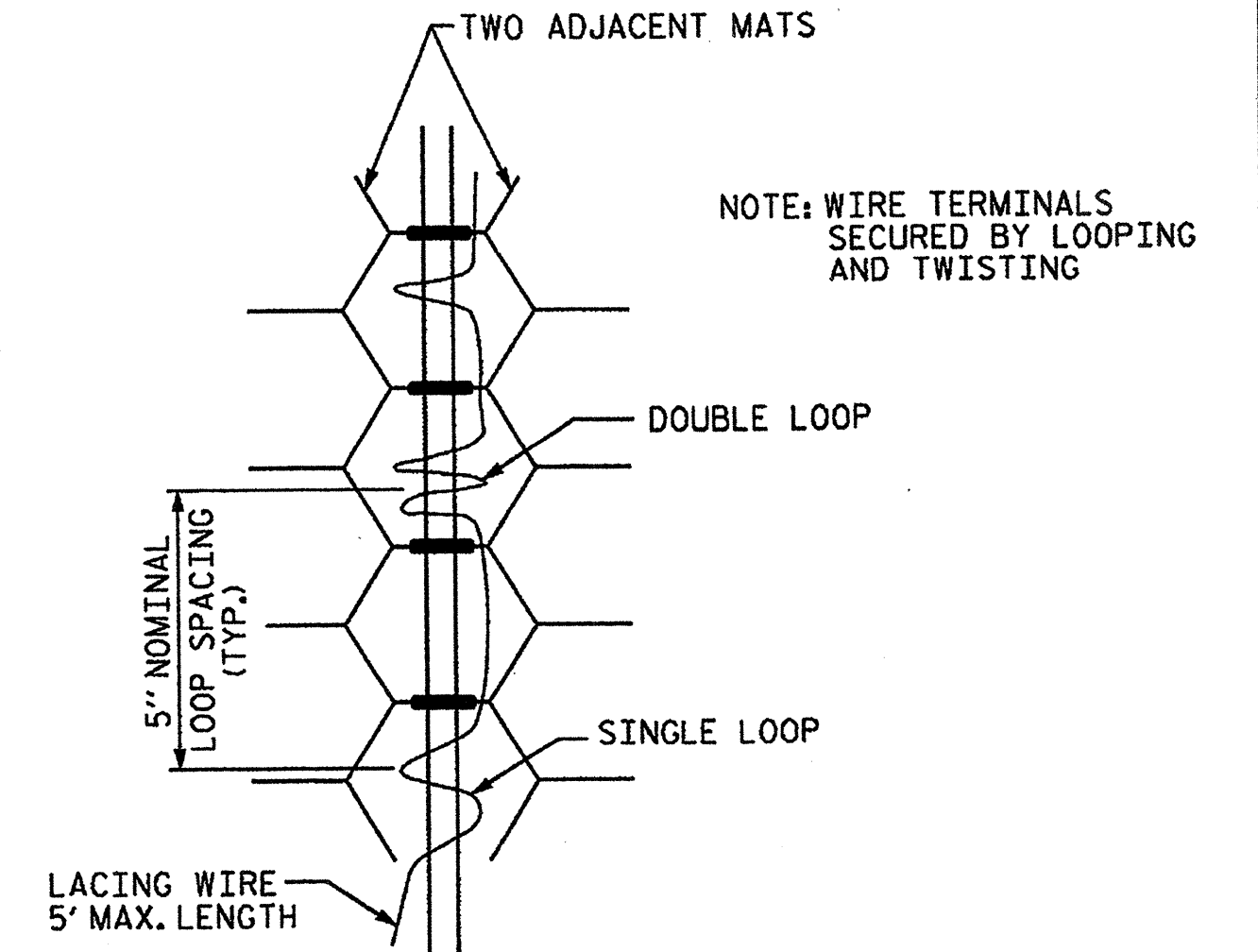


GABION MATTRESS PERIMETER DETAIL

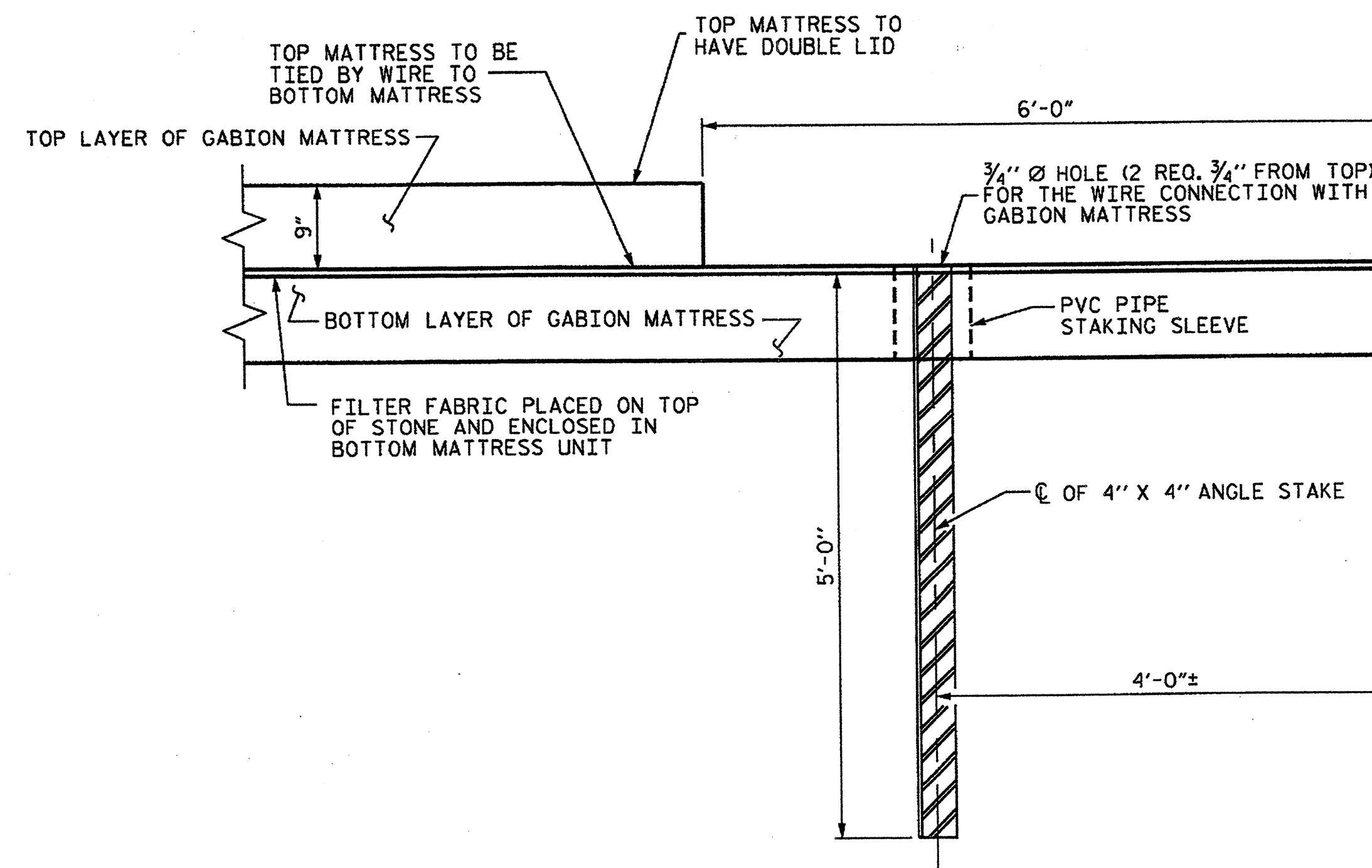


STAKING SLEEVE DETAIL

NOTE: PVC PIPE SHALL BE AWWA GRADE DR25 (PC 100) LENGTH OF STAKING SLEEVE SHALL BE 8.5'



TYPICAL GABION LACING DETAIL

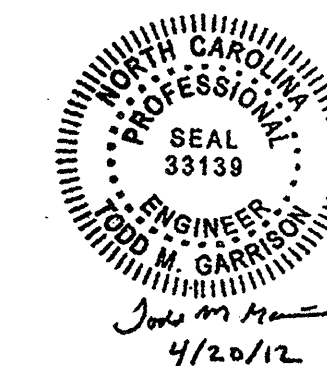


GABION MATTRESS SECTION

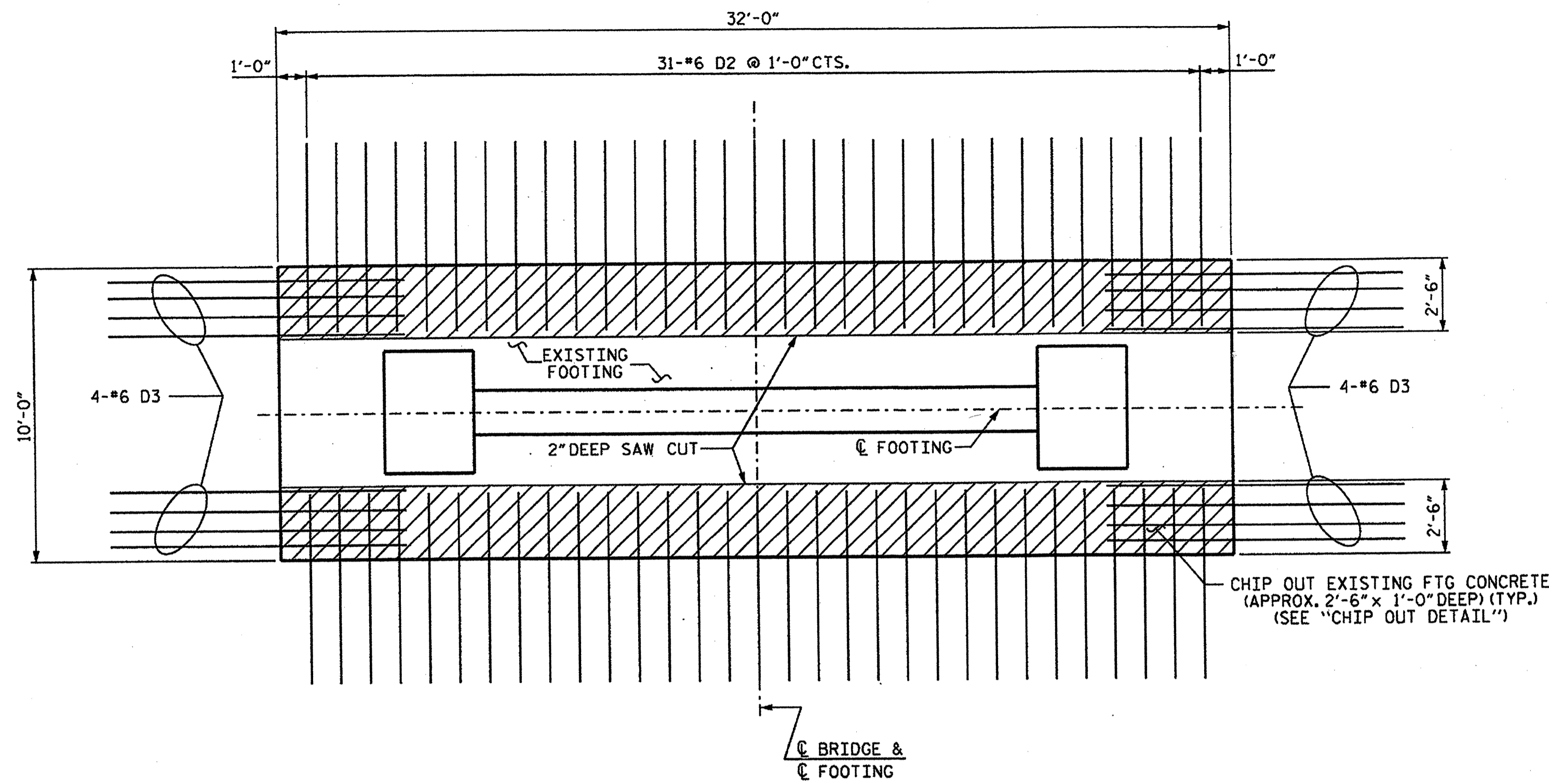
SECTION A-A

PROJECT NO. B-5014C
DARE COUNTY

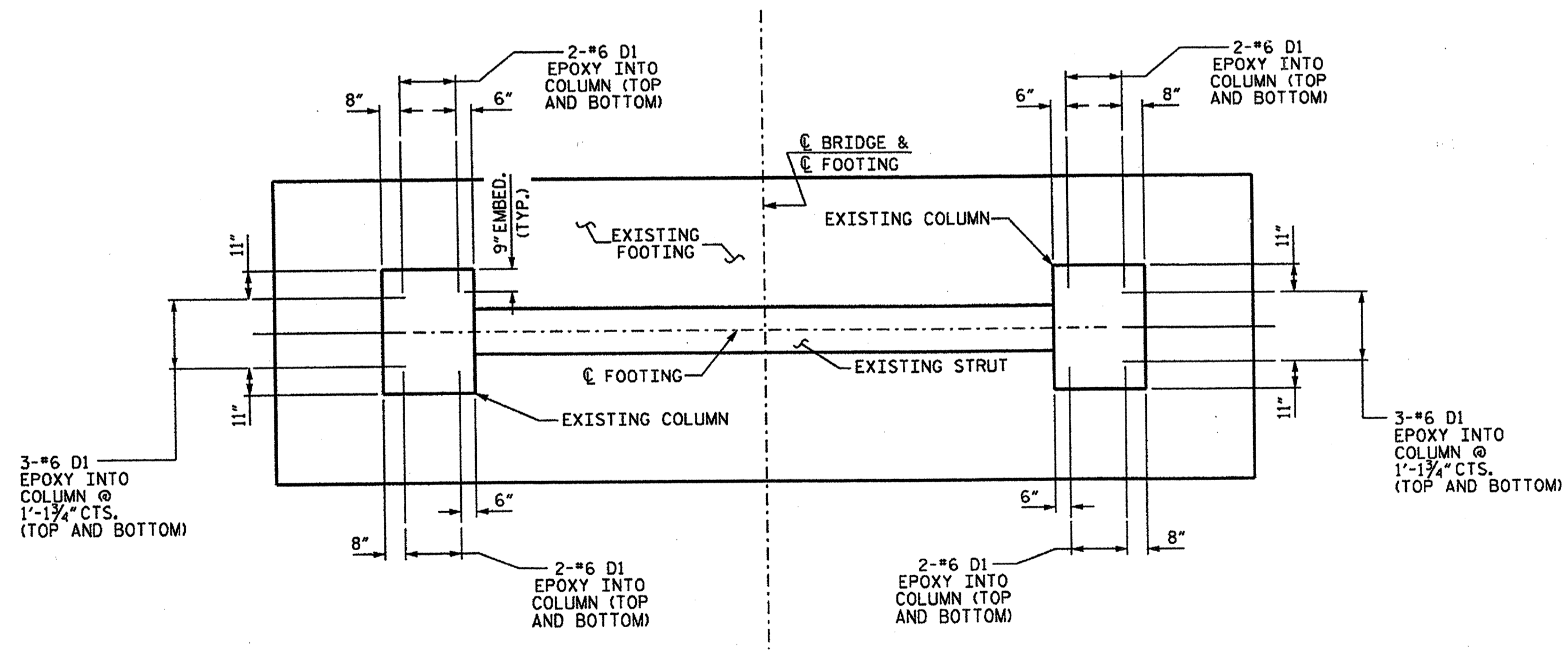
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					SHEET NO.
SCOUR PROTECTION DETAILS					S-3
REVISIONS					TOTAL SHEETS
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
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DRAWN BY: R.W. WRIGHT DATE: 3/12
 CHECKED BY: M.A. ALLEN DATE: 3/12

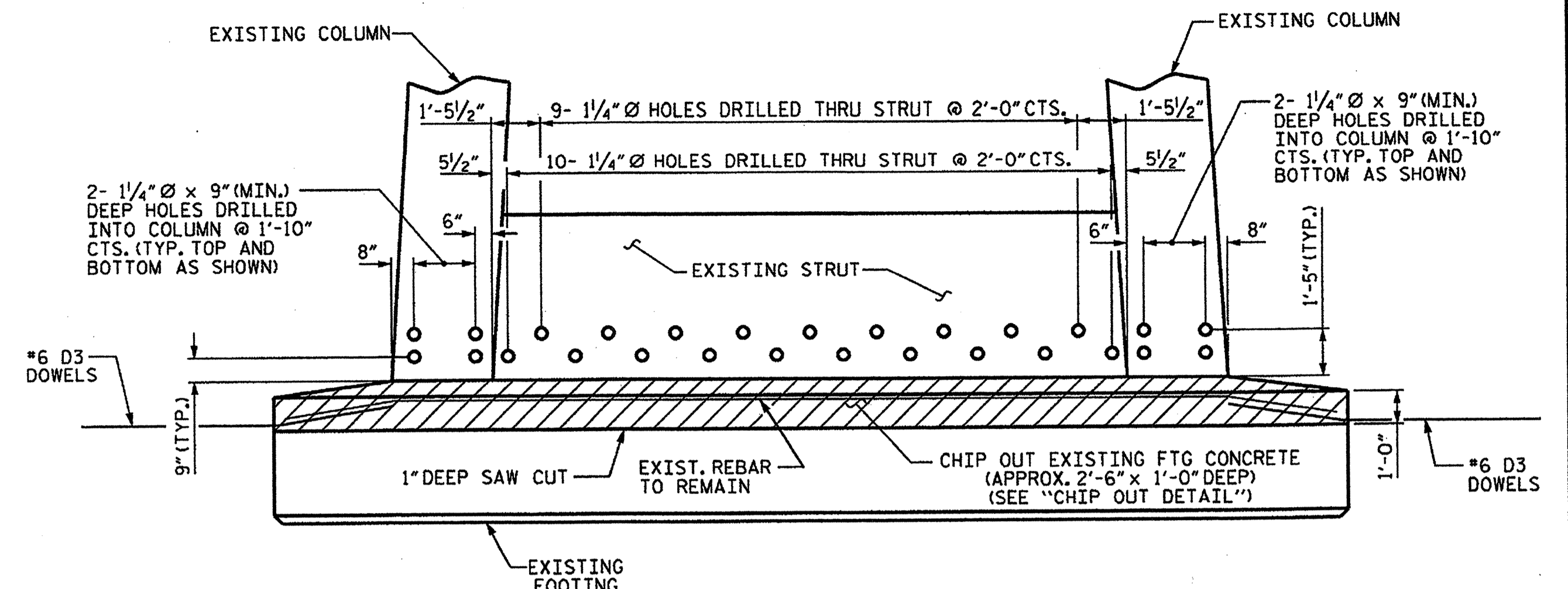


DOWEL DETAIL FOR EXISTING FOOTING



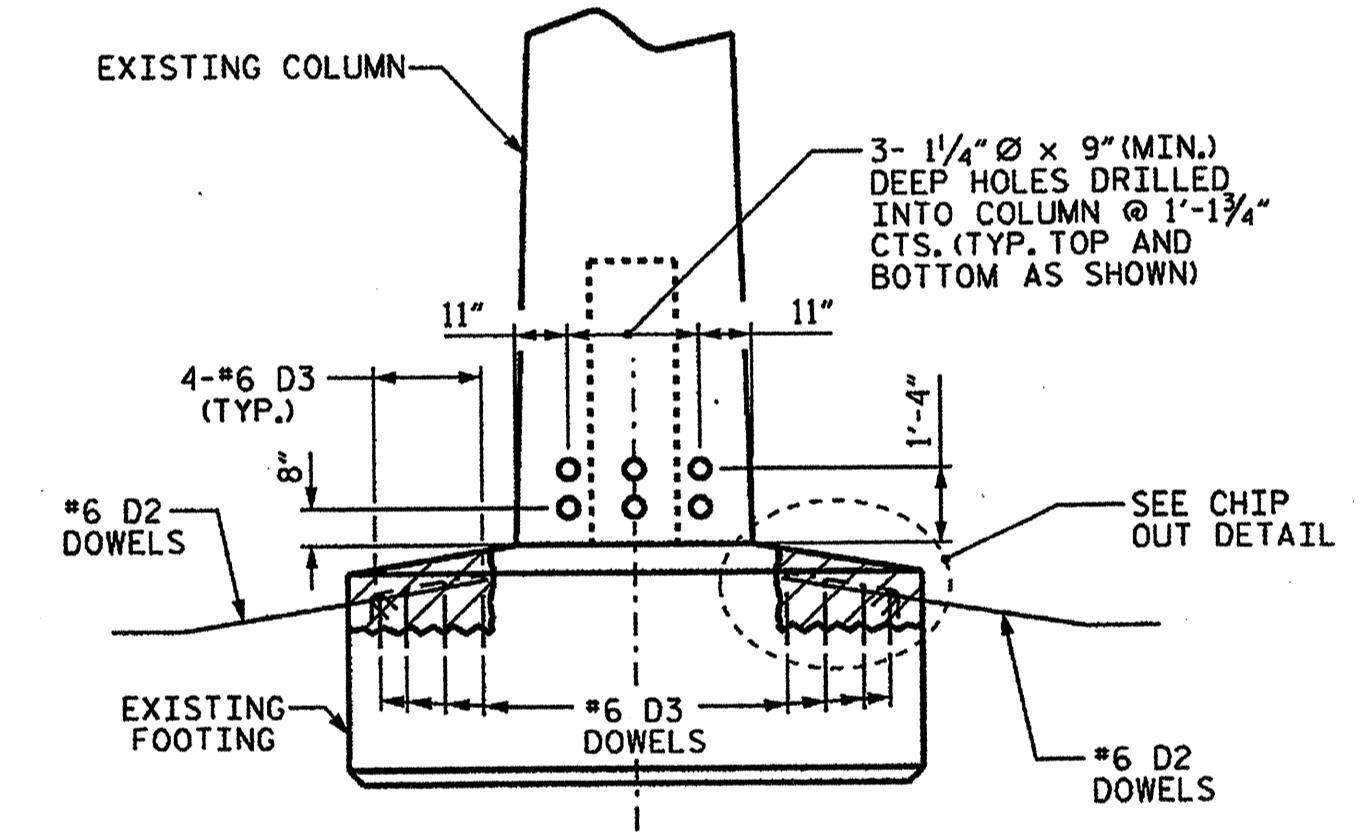
DOWEL DETAIL FOR EXISTING COLUMNS

*6 D1 DOWELS ARE 5'-0" LONG, WITH 9" OF EMBEDMENT INTO EXISTING COLUMNS AND TO BE SPLICED TO "T" BARS WITH A SPLICE LENGTH OF 4'-0". DOWELS SHOWN WILL BE IN 2 LAYERS.

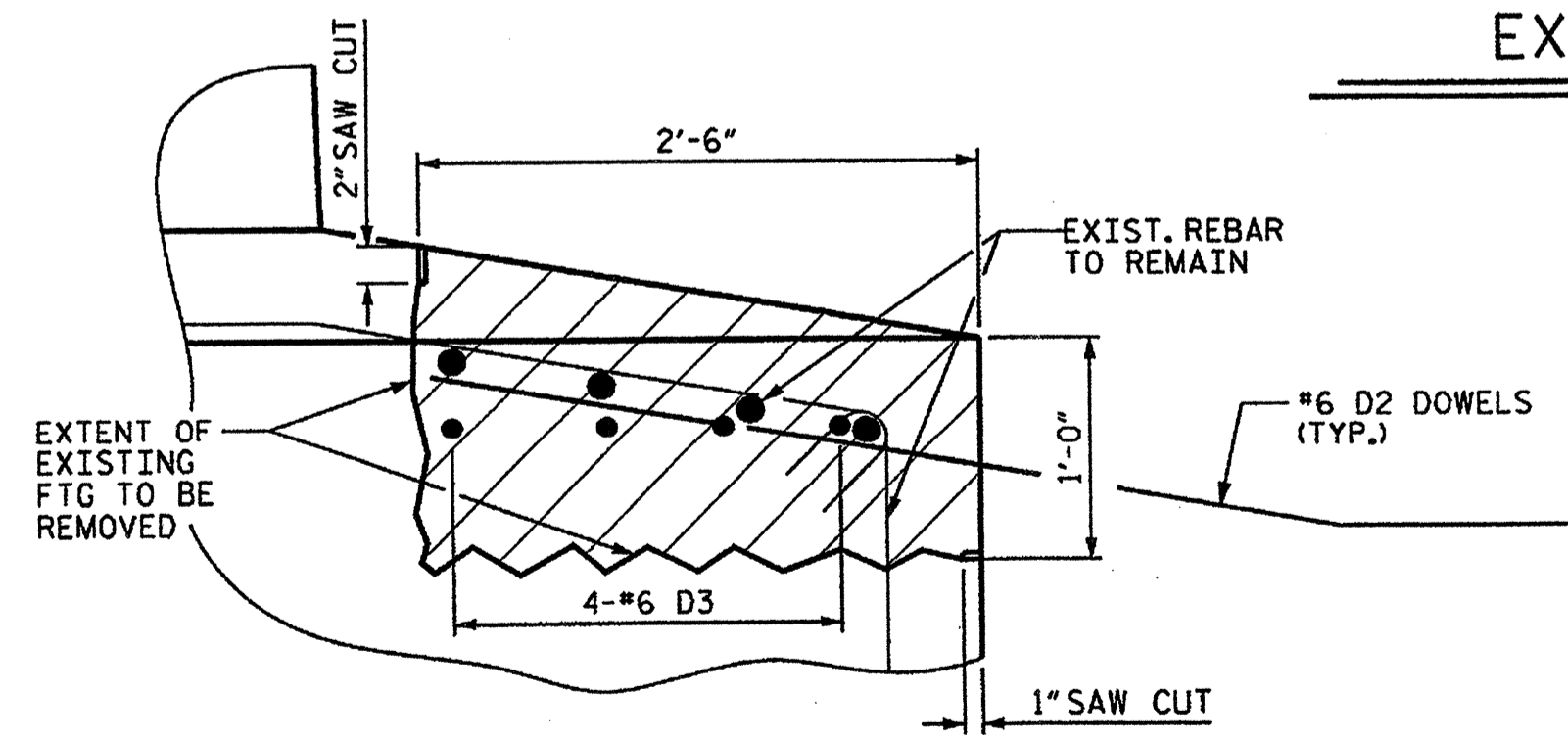


ELEVATION OF EXISTING FOOTING

- *6 D2 DOWELS NOT SHOWN FOR CLARITY.
- *6 D1 DOWELS SHALL BE ADHESIVELY ANCHORED INTO 1/4" Ø HOLES AT THE EXISTING COLUMNS.
- *6 T5 BARS SHALL BE GROUTED INTO 1/4" Ø HOLES DRILLED THRU THE EXISTING STRUT.



SIDE VIEW OF EXISTING FOOTING



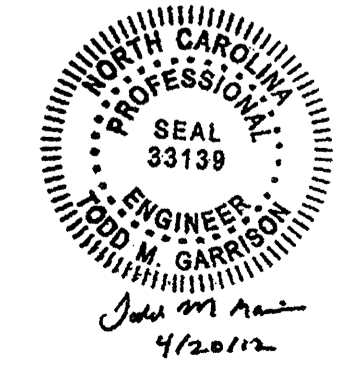
CHIP OUT DETAIL

PROJECT NO. B-5014C
DARE COUNTY

SHEET 1 OF 3

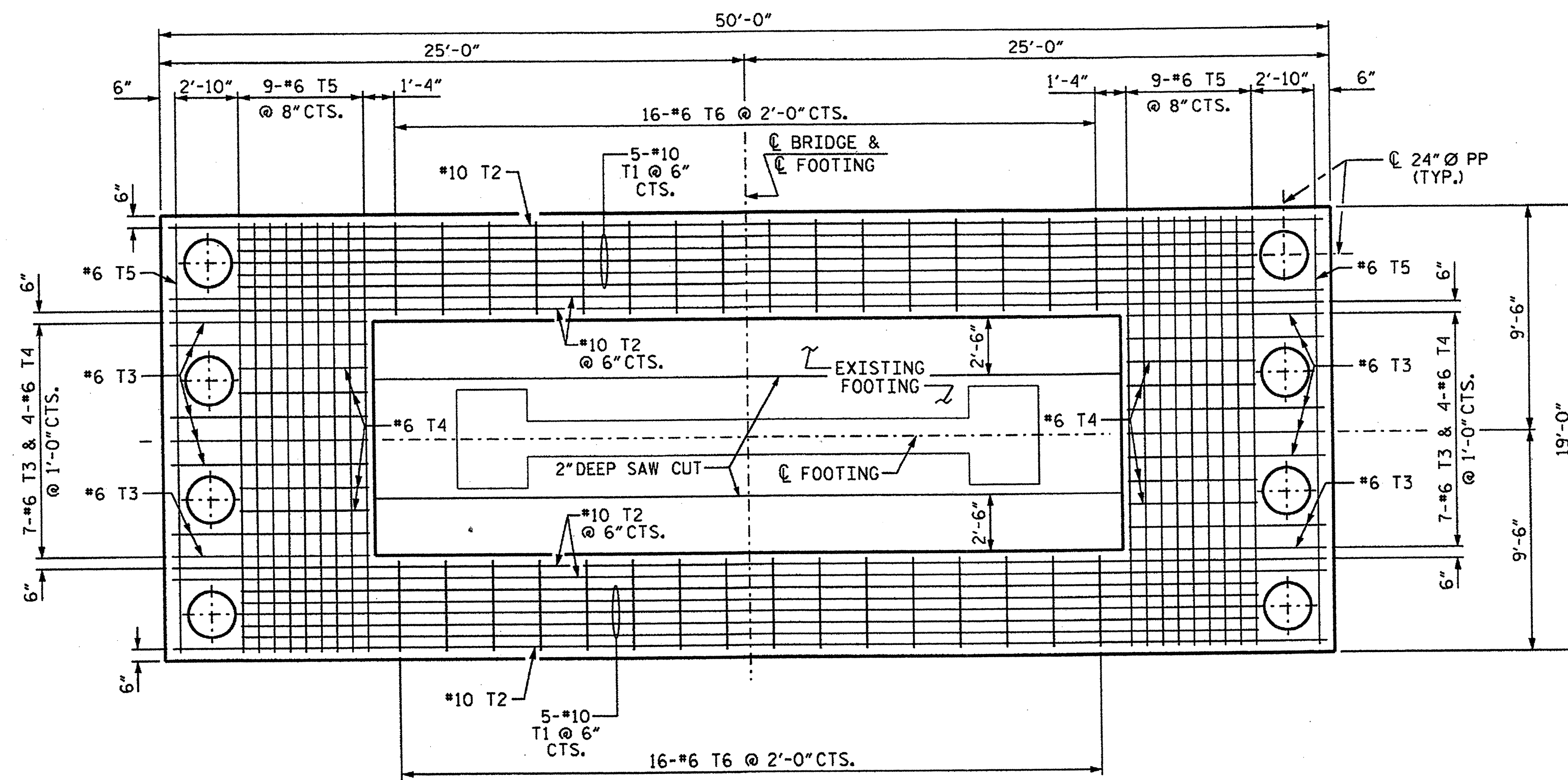
STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

PROPOSED FOOTING FOR BENT 159

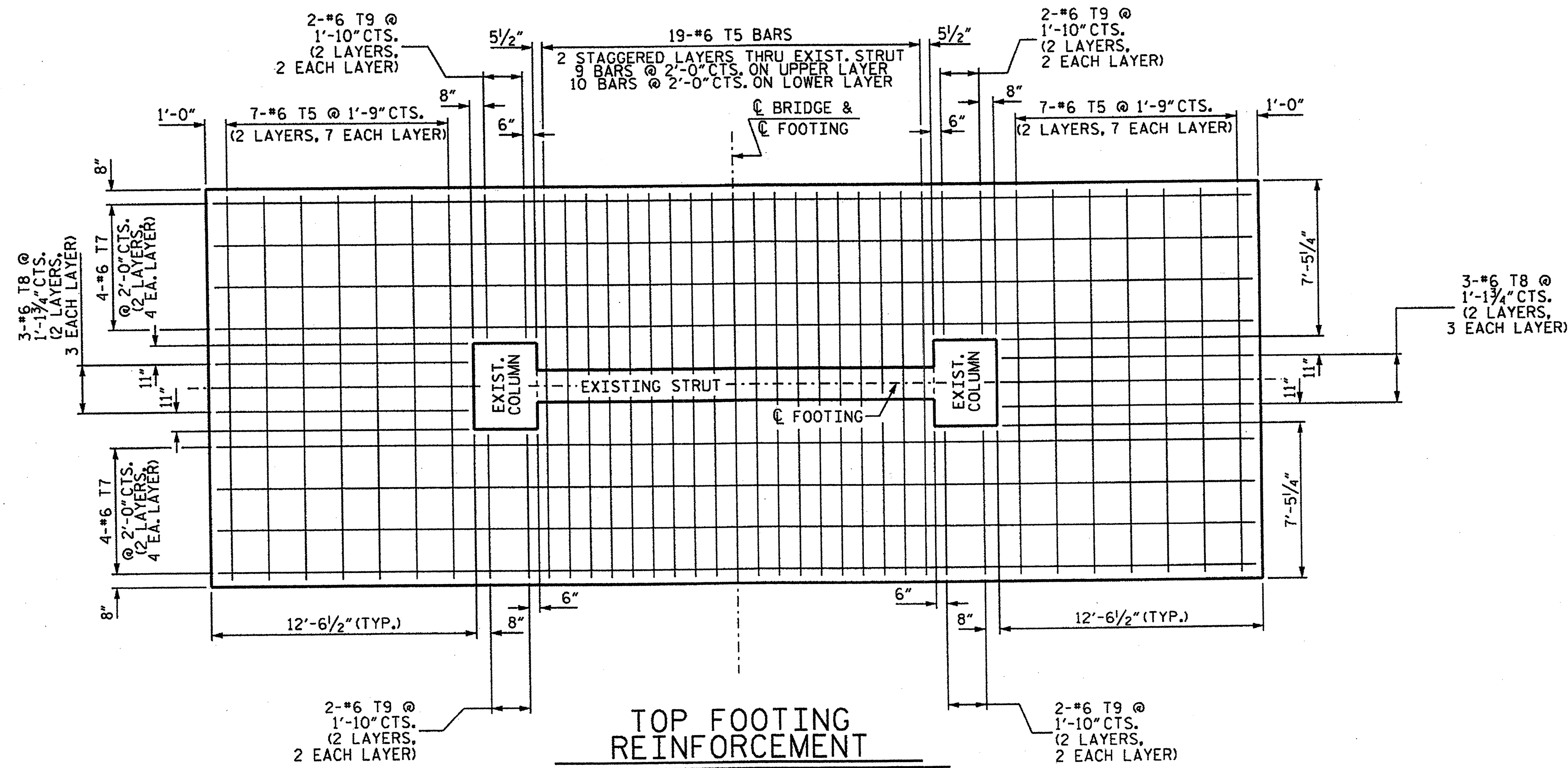


REVISIONS				SHEET NO.	
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1			3		
2			4		

DRAWN BY: M.A. ALLEN DATE: 3/12
 CHECKED BY: T.M. GARRISON DATE: 4/12



BOTTOM FOOTING REINFORCEMENT



TOP FOOTING REINFORCEMENT

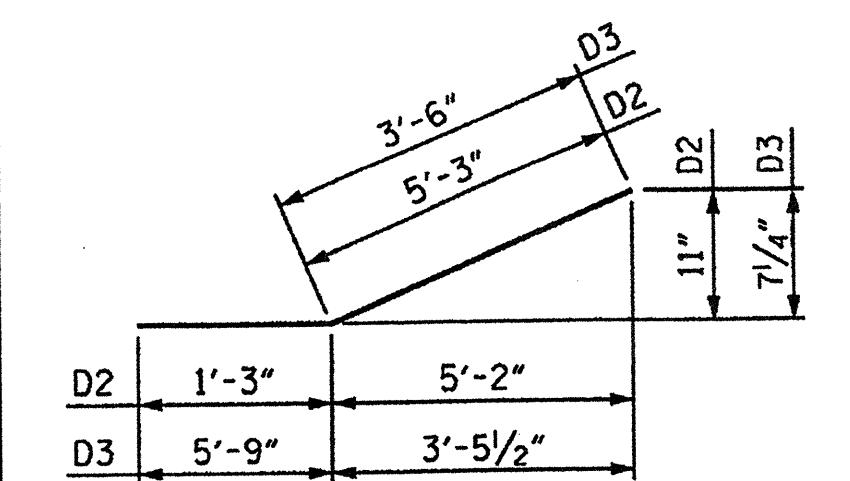
*6 T8 AND *6 T9 BARS TO BE SPLICED TO *6 D1 BARS IN EXISTING COLUMNS, WITH SPLICE LENGTH OF 4'-0"

BILL OF MATERIAL FOR BENT 159

BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*D1	28	#6	STR	5'-0"	210
*D2	62	#6	1	6'-6"	605
*D3	16	#6	1	9'-3"	222
*T1	10	#10	STR	43'-6"	1872
*T2	6	#10	STR	49'-4"	1274
*T3	14	#6	STR	8'-4"	175
*T4	8	#6	STR	5'-4"	64
*T5	67	#6	STR	18'-4"	1845
*T6	32	#6	STR	3'-11"	188
*T7	16	#6	STR	49'-4"	1186
*T8	12	#6	STR	12'-0"	216
*T9	16	#6	STR	6'-10"	164

*EPOXY COATED REINF. STEEL 8021 LBS
CLASS AA CONCRETE ▲ 120.5 C.Y.

BAR TYPES



①

ALL BAR DIMENSIONS ARE OUT TO OUT.

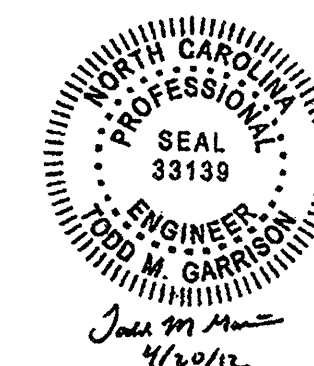
▲ CONCRETE DISPLACED BY THE PP 24 x 0.50 GALVANIZED STEEL PILES HAS BEEN DEDUCTED FROM THE CONCRETE QUANTITY.

PROJECT NO. B-5014C
DARE COUNTY

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

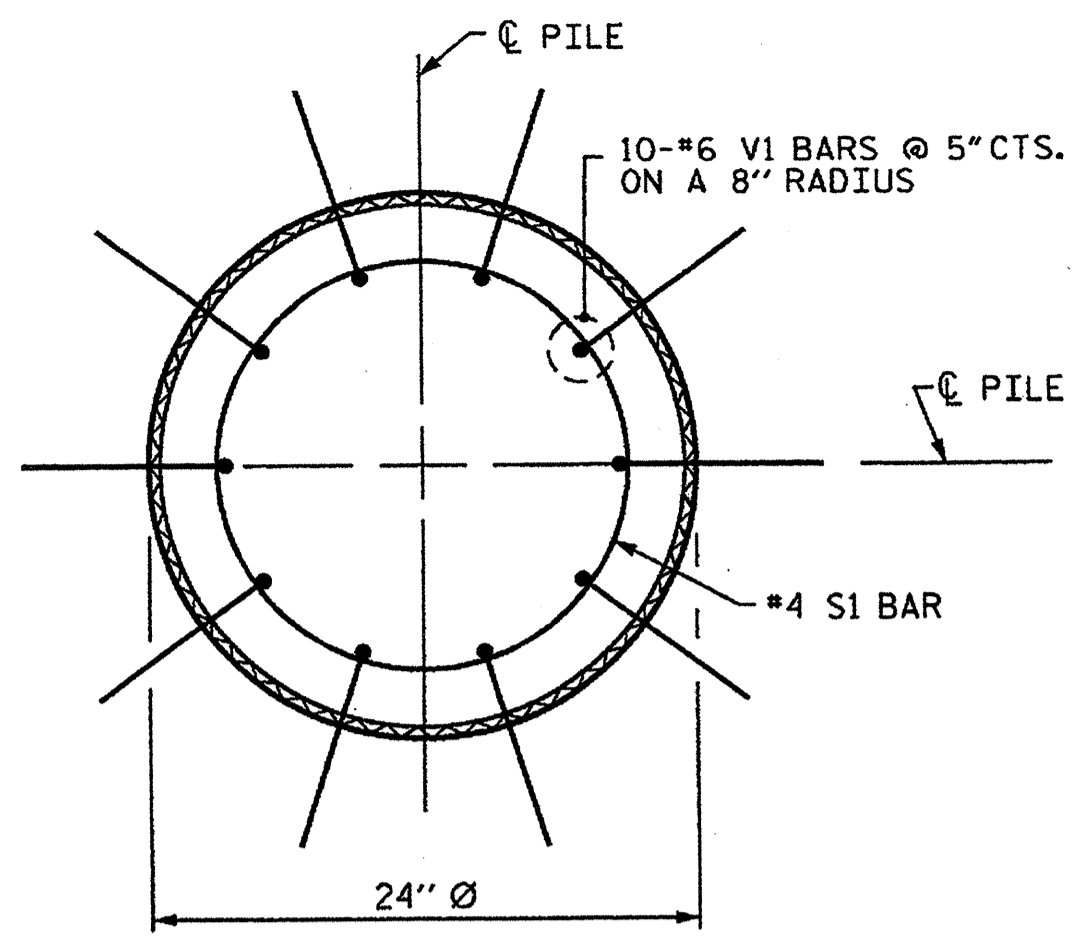
PROPOSED FOOTING FOR BENT 159



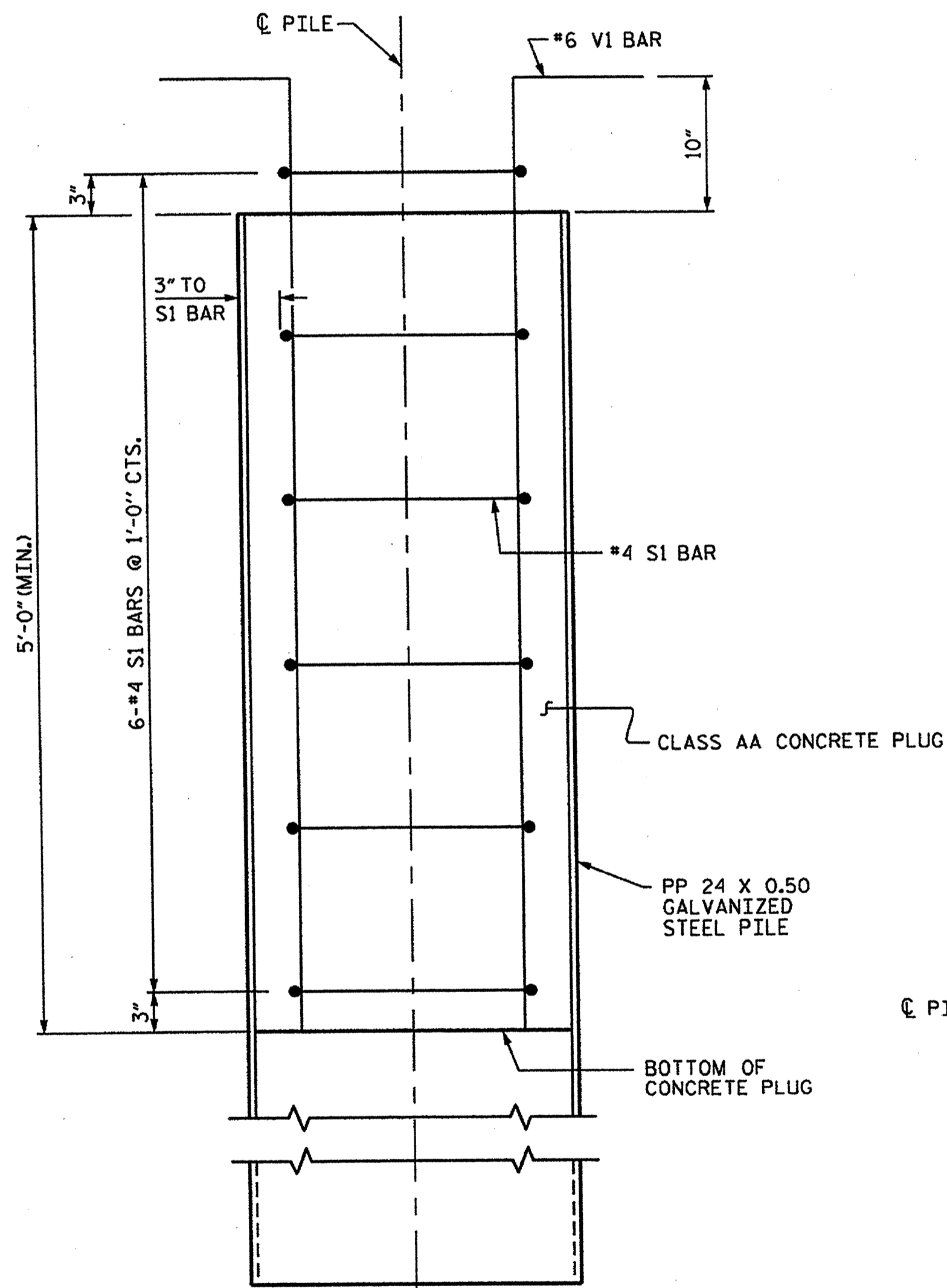
REVISIONS				SHEET NO.	
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
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TOTAL SHEETS 7

DRAWN BY: M.A. ALLEN DATE: 3/12
CHECKED BY: T.M. GARRISON DATE: 4/12

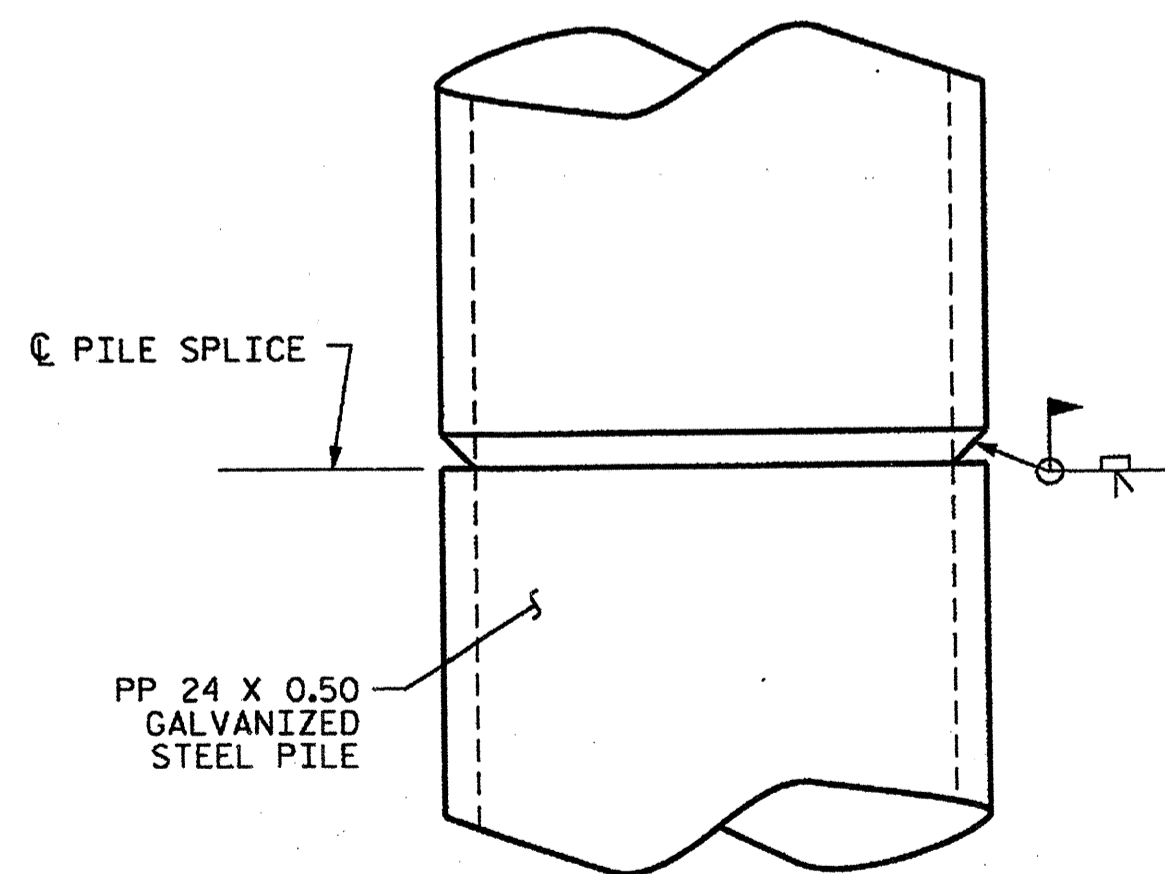


PLAN



ELEVATION

PP 24 X 0.50 GALVANIZED STEEL PILE



PIPE PILE SPLICE DETAIL

NOTES

PIPE PILES SHALL BE IN ACCORDANCE WITH SECTION 1084 OF THE STANDARD SPECIFICATIONS.

GALVANIZE STEEL PIPE PILES IN ACCORDANCE WITH SECTION 1076 OF THE STANDARD SPECIFICATIONS.

REMOVE AND REPLACE OR REPAIR TO THE SATISFACTION OF THE ENGINEER PILES THAT ARE DAMAGED, DEFORMED OR COLLAPSED DURING INSTALLATION OR DRIVING.

PILE SPLICES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND AWS D1.1.

FOR OPEN END PIPE PILES, REMOVE ENOUGH SOIL AND WATER FROM INSIDE THE PILES TO CONSTRUCT THE CONCRETE PLUG WITHOUT FOULING THE CONCRETE.

FORM THE CONCRETE PLUG SUCH THAT THE REINFORCING STEEL OR CONCRETE DOES NOT MOVE AND THE CLEARANCE FROM THE REINFORCING STEEL TO THE INSIDE OF THE PILE IS MAINTAINED AFTER CONCRETE PLACEMENT. DO NOT PLACE CONCRETE IN THE PROPOSED FOOTING UNTIL THE CONCRETE PLUG HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

THE REINFORCING STEEL, CLASS AA CONCRETE, AND GALVANIZING ARE CONSIDERED INCIDENTAL TO THE CONTRACT UNIT PRICE BID PER LINEAR FOOT FOR PP 24 X 0.50 GALVANIZED STEEL PILES.

BILL OF MATERIAL FOR ONE PP 24 X 0.50 GALVANIZED STEEL PILE

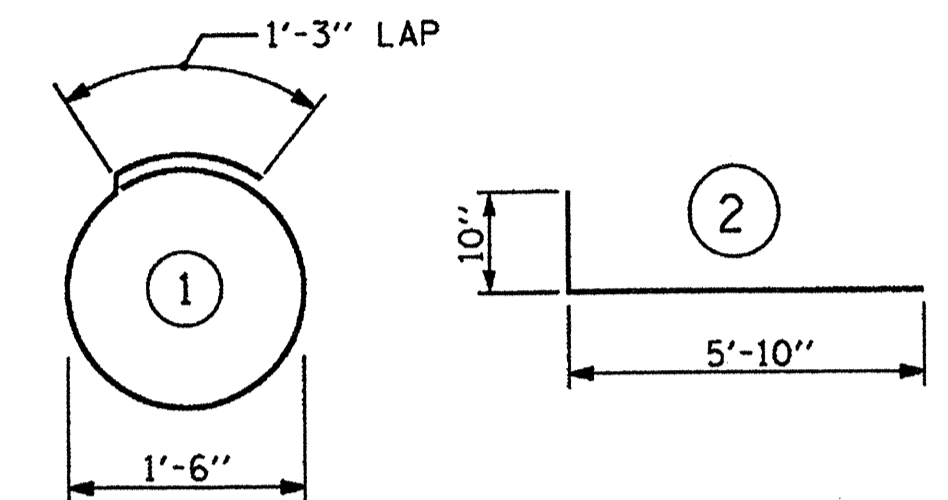
BAR	NO.	SIZE	TYPE	LENGTH	WEIGHT
*S1	6	#4	1	6'-0"	24
*V1	10	#6	2	6'-8"	100

* EPOXY COATED REINFORCING STEEL = 124 lbs

CLASS AA CONCRETE

5'-0" MINIMUM PLUG 0.5 CY

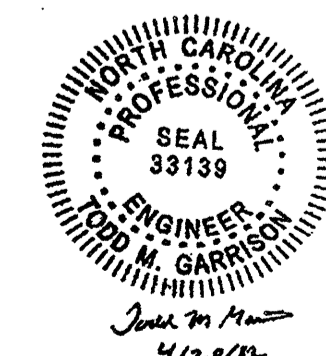
BAR TYPES



ALL BAR DIMENSIONS ARE OUT TO OUT.

PROJECT NO. B-5014C
DARE COUNTY

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH
STANDARD
24" STEEL PIPE PILE



ASSEMBLED BY : M.A. ALLEN	DATE : 3/12
CHECKED BY : T.M. GARRISON	DATE : 4/12
DRAWN BY : TLA 8/05	ADDED 10/1/05
CHECKED BY : GM 9/05	REV. 5/1/06R MAA/KMM
	REV. 10/1/11 MAA/GM

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

STD. NO. SPP4

