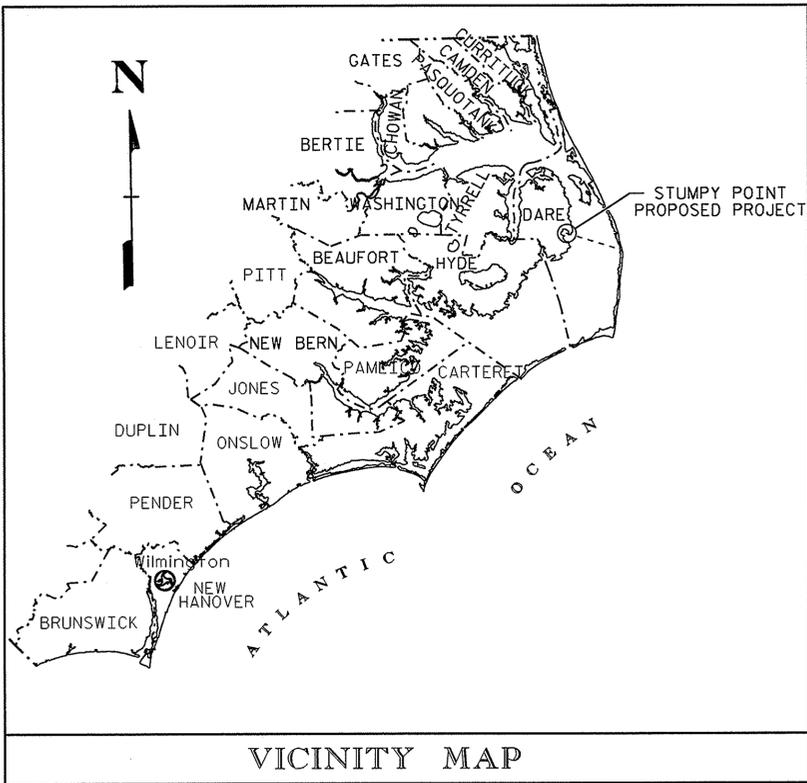


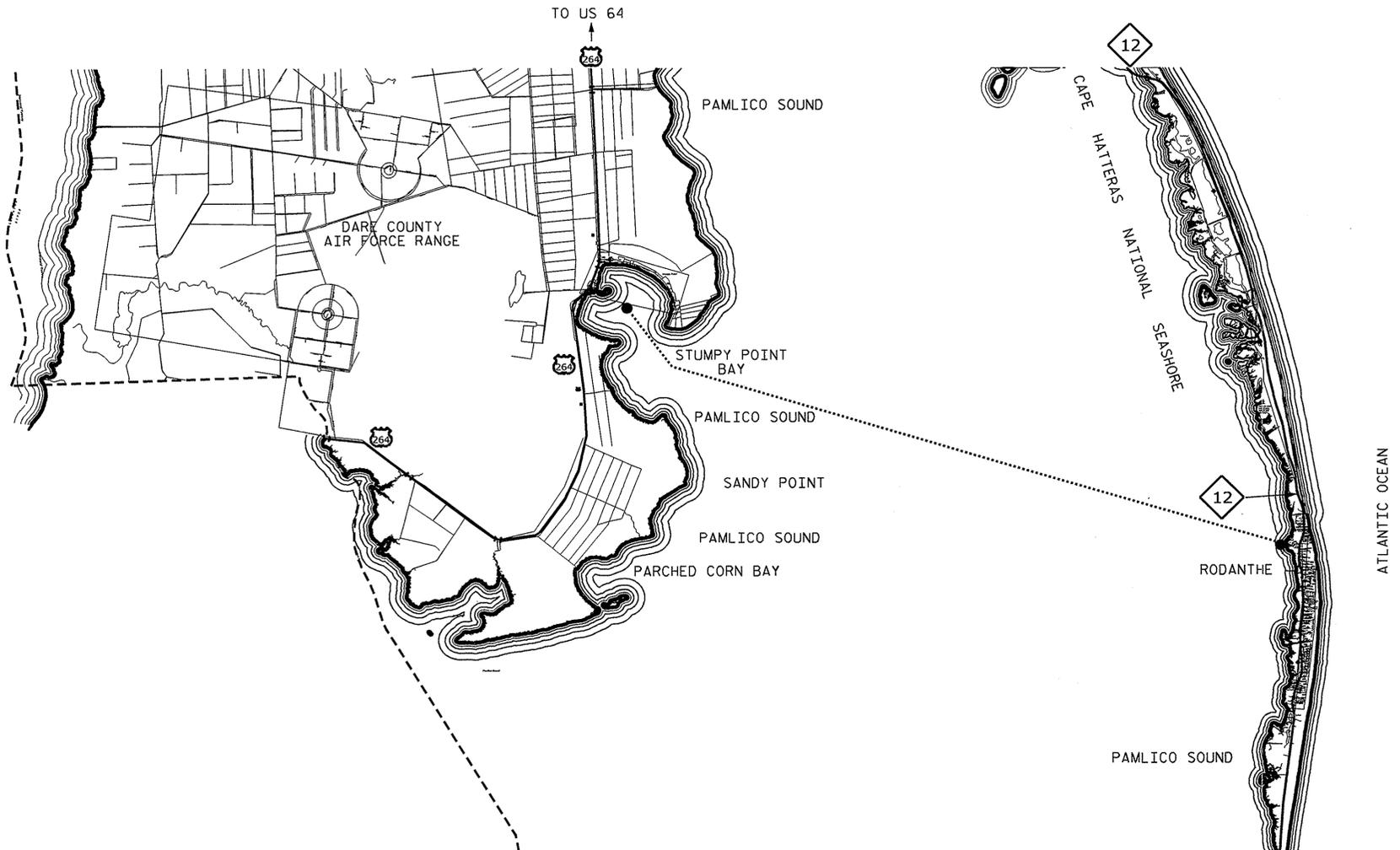
F-5503A

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	F-5503A		
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
F-5503A			
43652.1.1		P.E.	
43652.3.1		CONST.	



STATE OF NORTH CAROLINA  
 DIVISION OF HIGHWAYS  
**DARE COUNTY**

**LOCATION: STUMPY POINT FERRY BASIN**  
**TYPE OF WORK: SAFETY IMPROVEMENTS, PAINTING,**  
**LIFT SYSTEM REPLACEMENT**  
**& STRUCTURAL MAINTENANCE**



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

LETTING DATE:  
 FEBRUARY 19, 2013

O. R. AZIZI, P.E.  
 PROJECT ENGINEER

A. K. PASCHAL, P.E.  
 PROJECT DESIGN ENGINEER

STRUCTURES MANAGEMENT UNIT

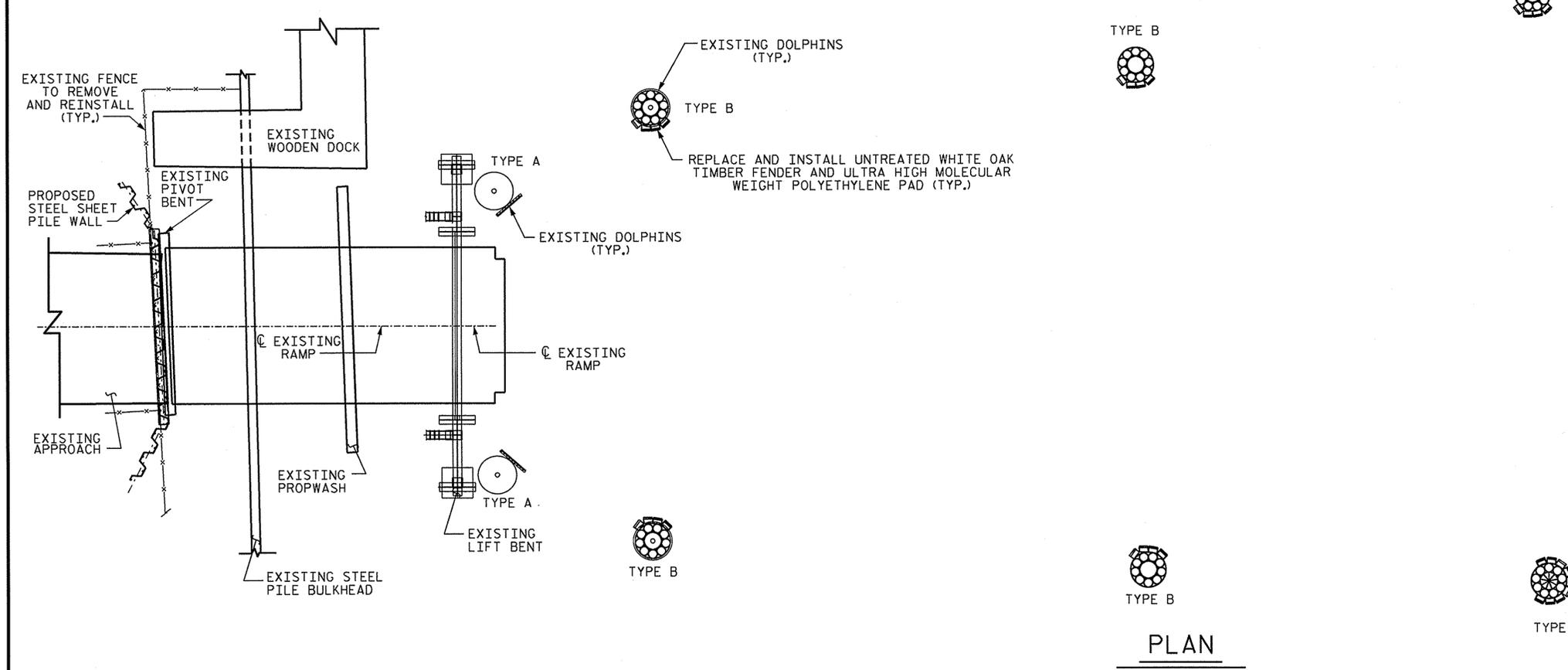
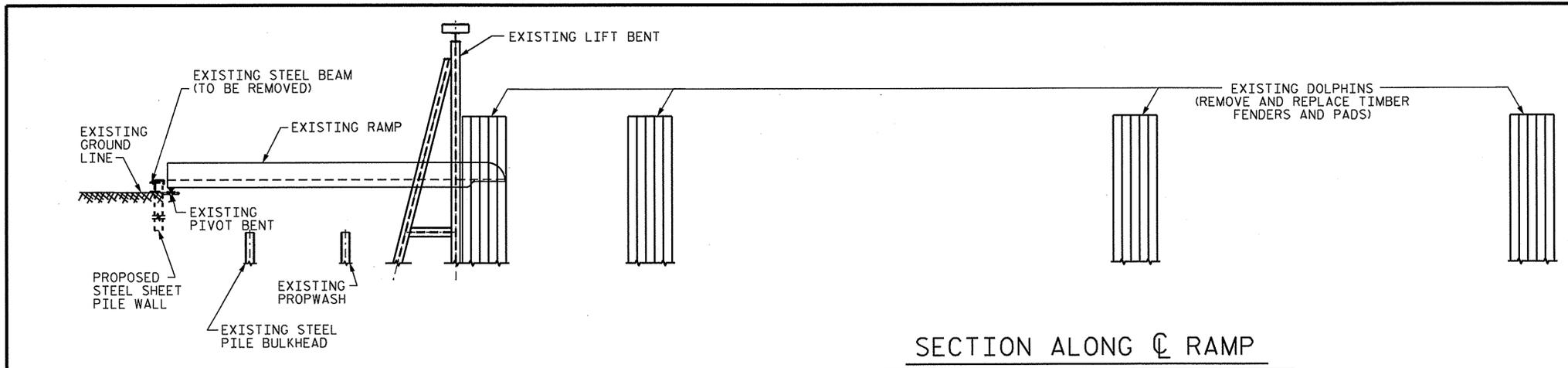
DIVISION OF HIGHWAYS  
 STATE OF NORTH CAROLINA

P.E.  
 STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION

APPROVED FOR  
 DIVISION ADMINISTRATOR

DATE



- NOTES:**
- FOR SECURING OF VESSELS, SEE SPECIAL PROVISIONS.
  - FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.
  - FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.
  - FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.
  - FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.
  - FOR SCOPE OF WORK, SEE SPECIAL PROVISIONS.
  - FOR CLEANING AND PAINTING EXISTING LIFT BENT, SEE SPECIAL PROVISIONS.
  - FOR CLEANING AND PAINTING EXISTING RAMP, SEE SPECIAL PROVISIONS.
  - FOR SKID RESISTANT COATING, SEE SPECIAL PROVISIONS.
  - FOR ELECTRICAL SPECIFICATIONS, SEE SPECIAL PROVISIONS.
  - FOR DOLPHINS, SEE SPECIAL PROVISIONS.
  - FOR MECHANICAL SPECIFICATIONS, SEE SPECIAL PROVISION.
  - FOR STEEL SHEET PILES, SEE SPECIAL PROVISIONS.
  - FOR REMOVE AND REINSTALL EXISTING LIFT BENT CAP, SEE SPECIAL PROVISIONS.
  - FOR REMOVE AND REPLACE RAMP APRON, SEE SPECIAL PROVISIONS.
  - FOR PAINTING STEEL PILES, SEE SPECIAL PROVISIONS.
  - FOR CHAIN LINK FENCE, SEE SPECIAL PROVISIONS.

PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

TOTAL BILL OF MATERIAL													
	MOBILIZATION	REMOVE AND REPLACE RAMP APRON	SKID RESISTANT COATING	CLEANING AND PAINTING EXISTING LIFT BENT	LIFT BENT CAP	STEEL SHEET PILES	MECHANICAL SYSTEM	ELECTRICAL SYSTEM	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE	UNTREATED STRUCTURAL TIMBER	CLEANING AND PAINTING EXISTING RAMP	PAINTING STEEL PILES	
	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	EACH	SQ. FT.	LUMP SUM	LUMP SUM	SQ. FT.	M.B.F.	LUMP SUM	LUMP SUM	
LIFT BENT				LUMP SUM	EACH		LUMP SUM	LUMP SUM				LUMP SUM	LUMP SUM
RAMP		LUMP SUM	LUMP SUM								LUMP SUM	LUMP SUM	
PIVOT BENT						1025							
DOLPHINS									210	2.772			
TOTAL	LUMP SUM	LUMP SUM	LUMP SUM	LUMP SUM	EACH	1025	LUMP SUM	LUMP SUM	210	2.772	LUMP SUM	LUMP SUM	

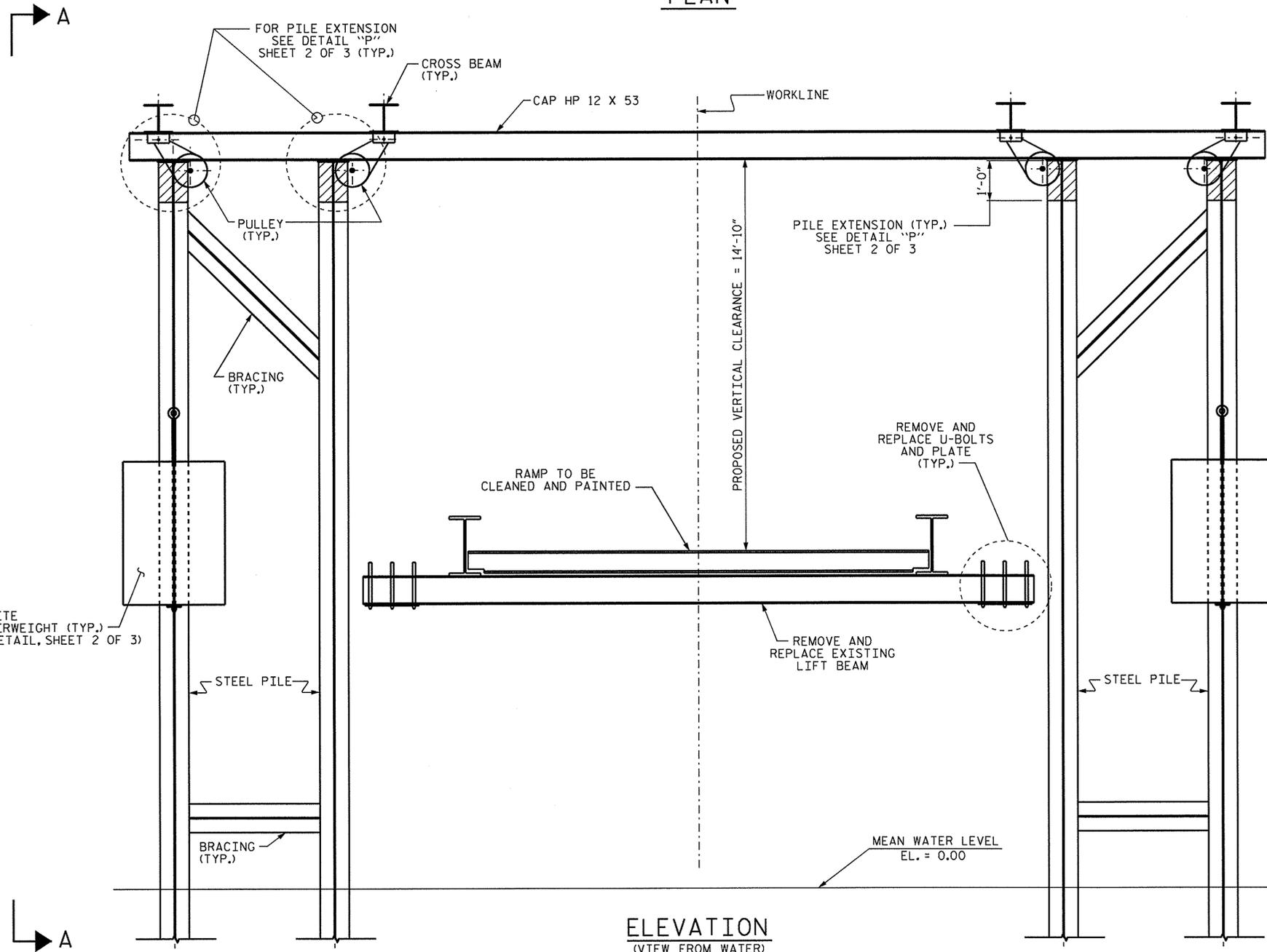
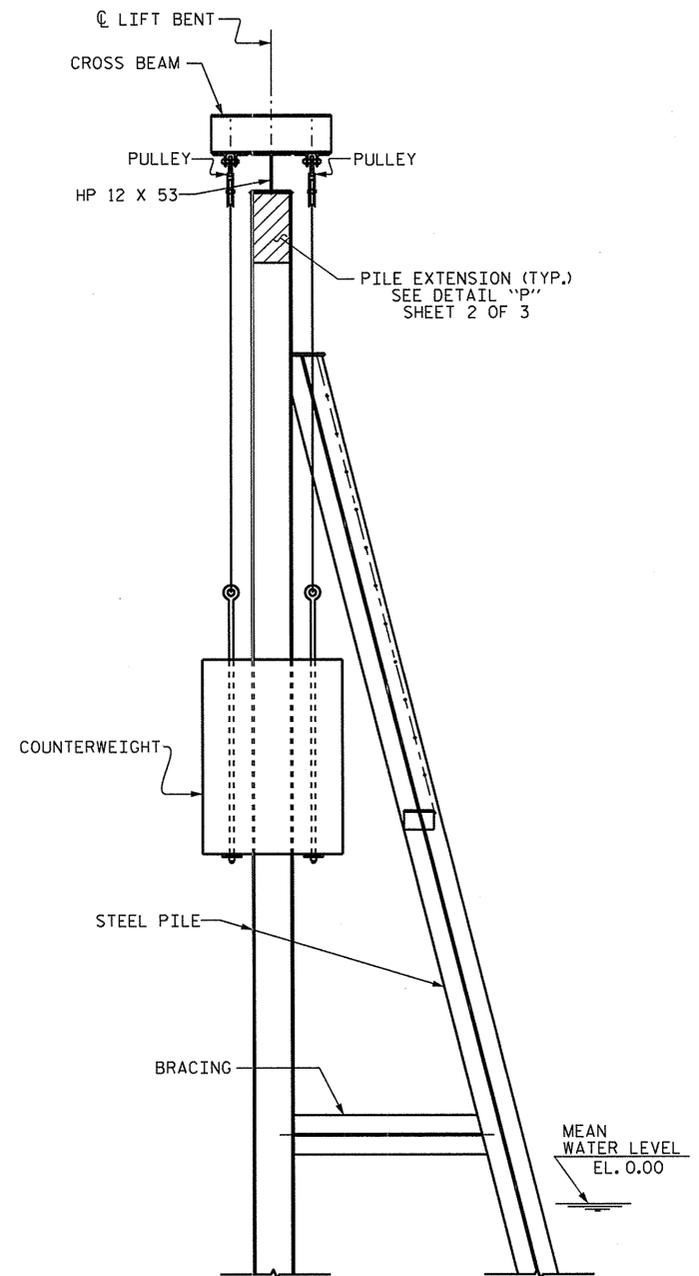
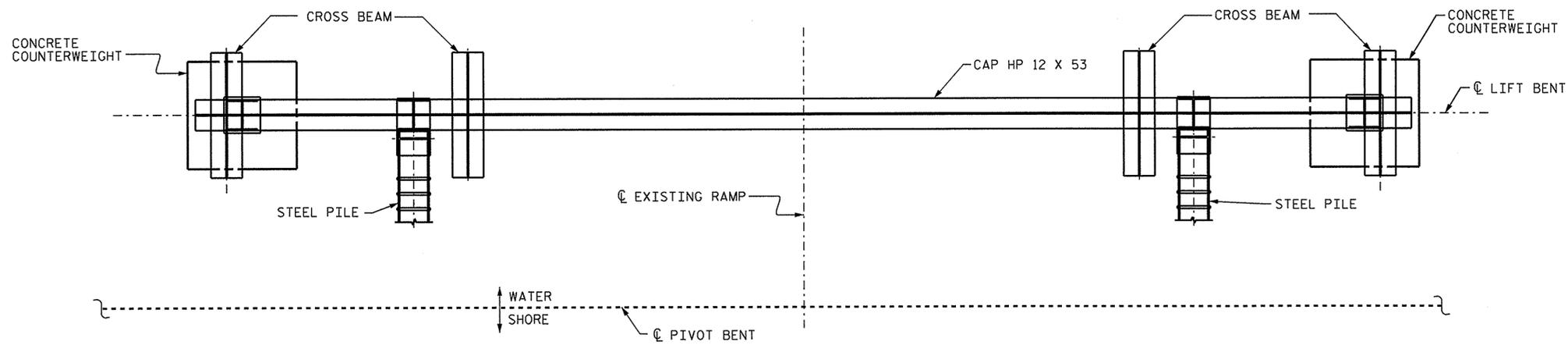
DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDA DATE : 12-19-12



STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

GENERAL DRAWING  
 STUMPY POINT FERRY BASIN

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



PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

SHEET 1 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

LIFT BENT  
 STUMPY POINT  
 FERRY BASIN



REVISIONS

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

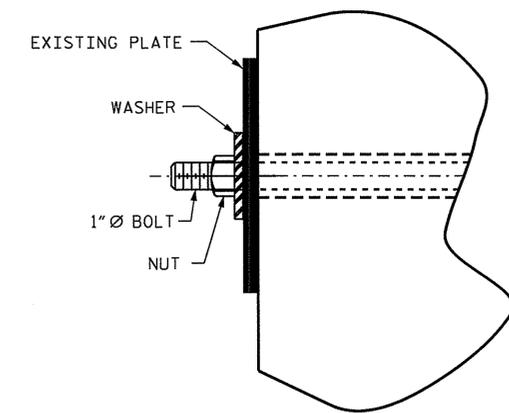
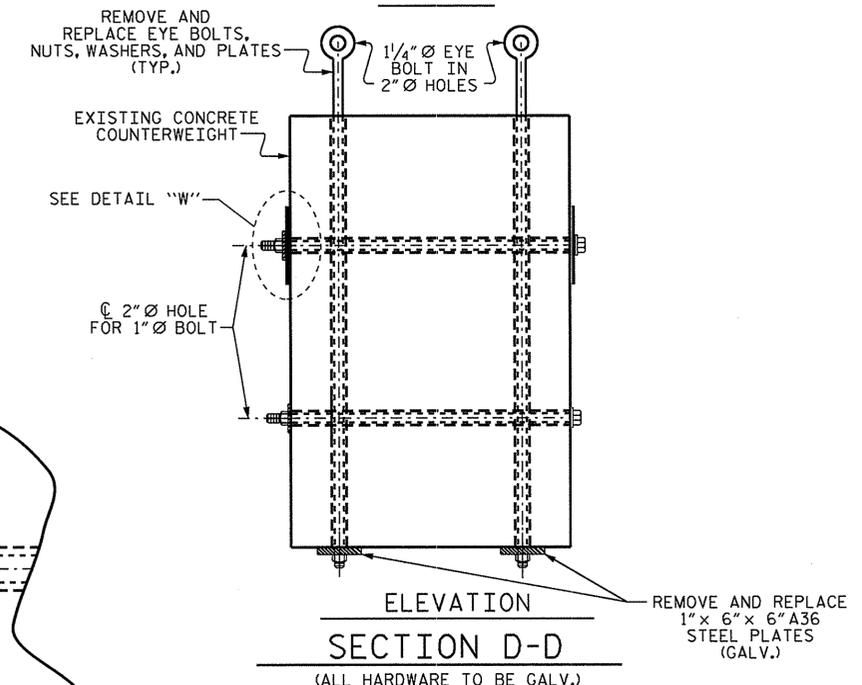
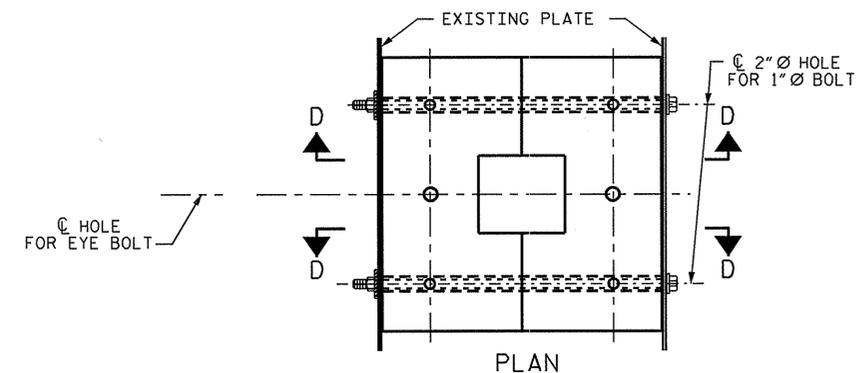
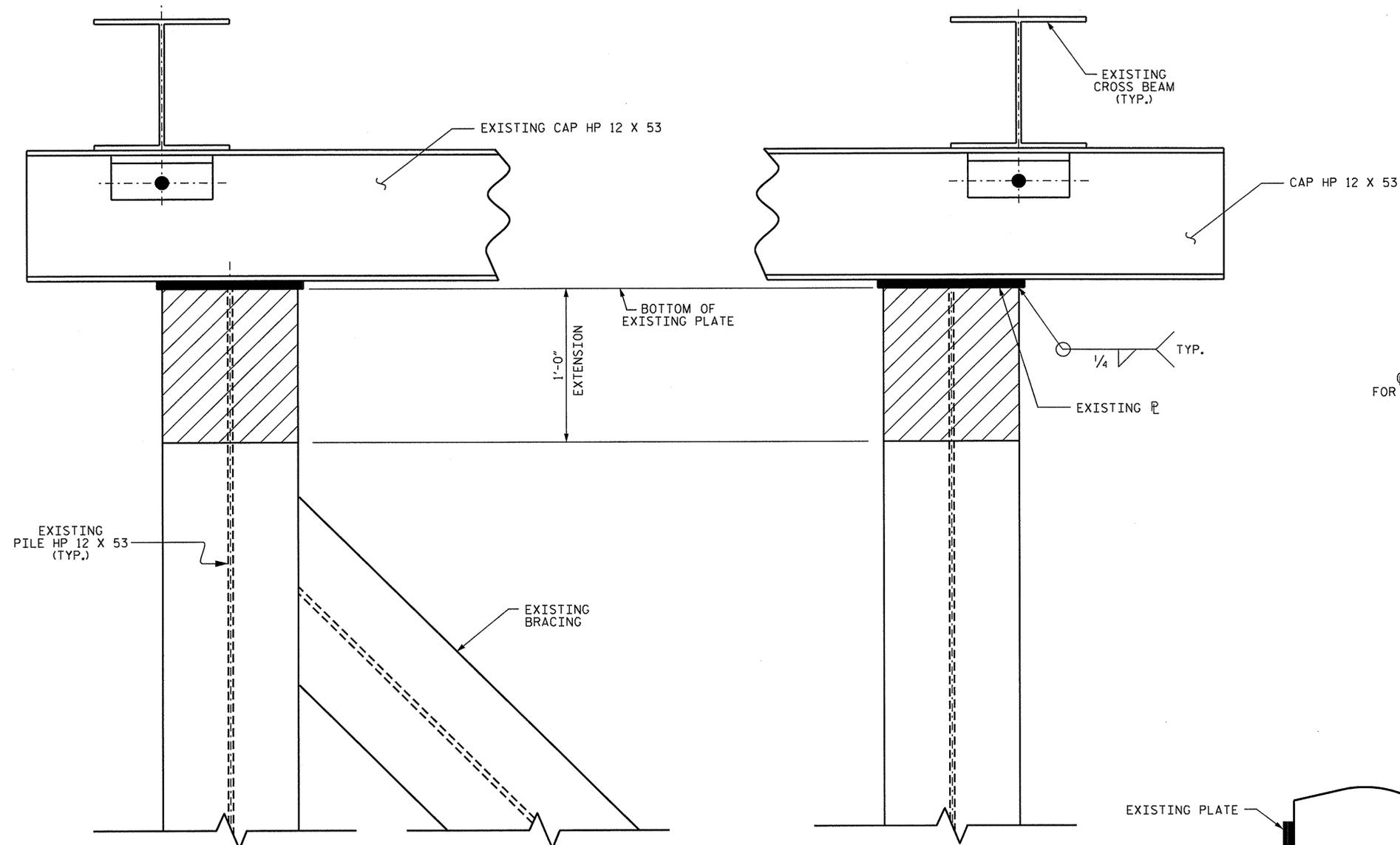
SHEET NO.
S-2
TOTAL SHEETS 13

DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDAI DATE : 12-19-12

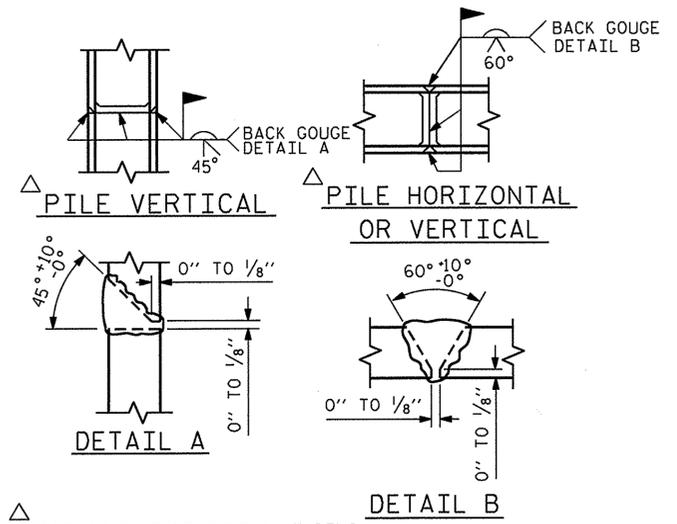
FOR MECHANICAL AND ELECTRIC SYSTEM DETAILS,  
 SEE MECHANICAL AND ELECTRIC SHEETS

**NOTES**

ALL STEEL M270 GRADE A36 UNLESS NOTED OTHERWISE.  
 ALL EYE BOLTS, BOLTS, NUTS, WASHERS AND PLATES SHALL BE GALVANIZED.  
 ALL STRUCTURAL STEEL SHALL BE GALVANIZED.  
 FOR CLEANING AND PAINTING EXISTING LIFT BENT, SEE SPECIAL PROVISIONS.  
 PILE EXTENSIONS SHALL BE SHOP PRIMED AND FIELD PAINTED.  
 FOR REMOVE AND REINSTALL EXISTING LIFT BENT CAP, SEE SPECIAL PROVISIONS.  
 FOR PAINTING OF STEEL PILES, SEE SPECIAL PROVISIONS.



**DETAIL "P"**

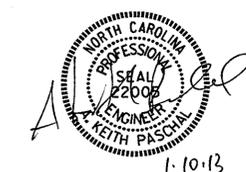


BILL OF MATERIAL		
HP 12 X 53 PILES	4 NOS.	4 LIN FT.
1" Ø BOLTS, WASHERS & NUTS		4 NOS.
1/4" Ø EYE BOLTS, WASHERS, PLATES & NUTS	2 NOS.	

**DETAIL "W"**  
 REMOVE AND REPLACE 1" Ø BOLTS, NUTS AND WASHERS.

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_  
 SHEET 2 OF 3

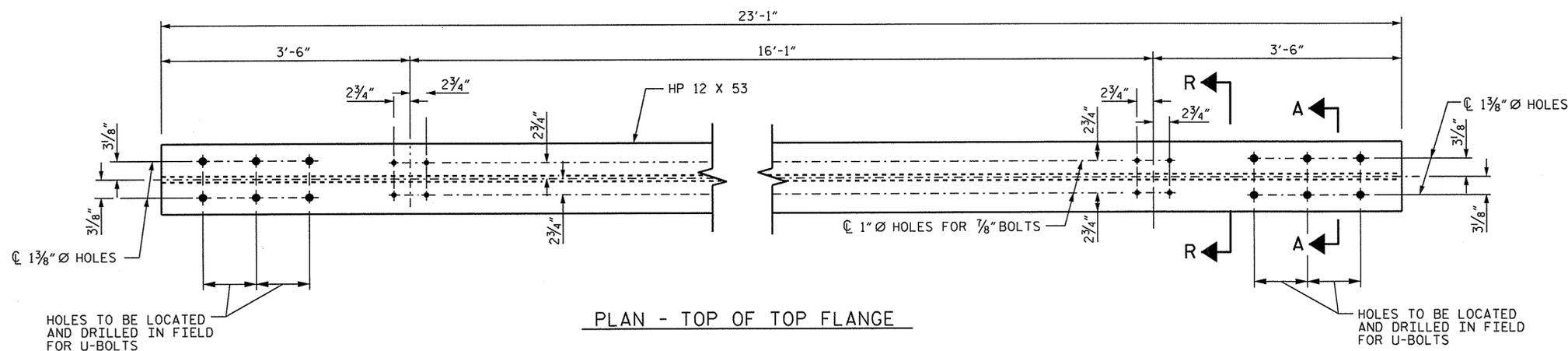


STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

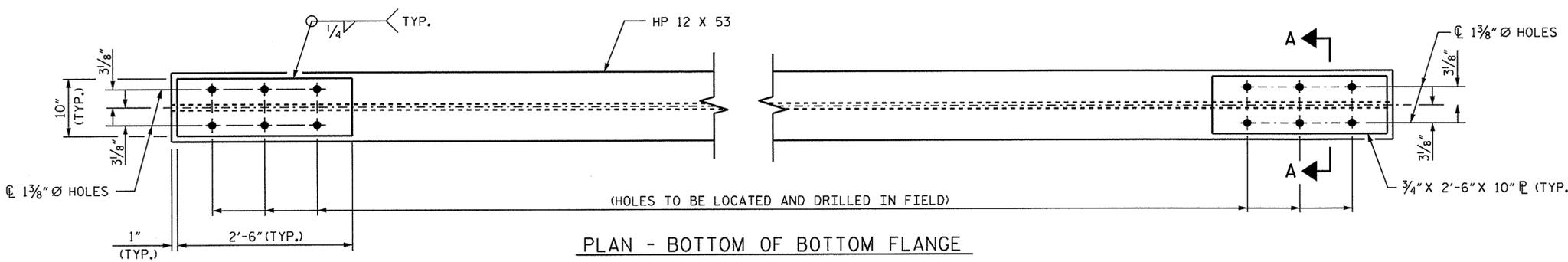
**LIFT BENT  
 STUMPY POINT  
 FERRY BASIN**

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

DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDA DATE : 12-19-12

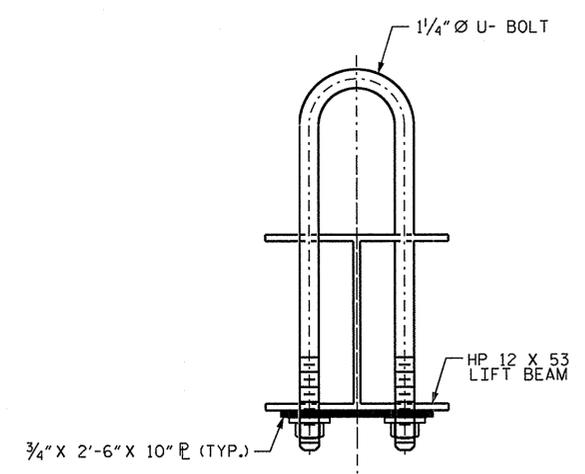


PLAN - TOP OF TOP FLANGE

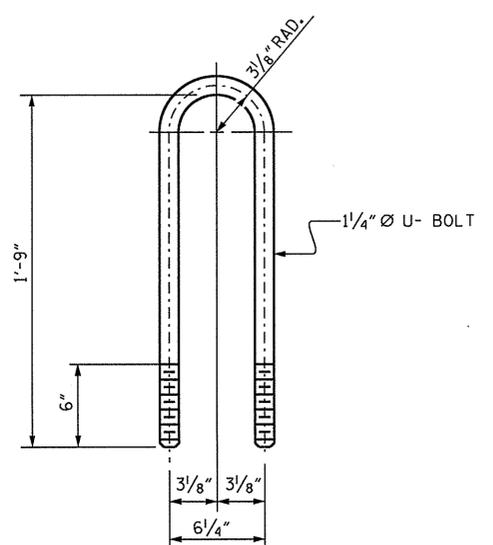


PLAN - BOTTOM OF BOTTOM FLANGE

LIFT BEAM

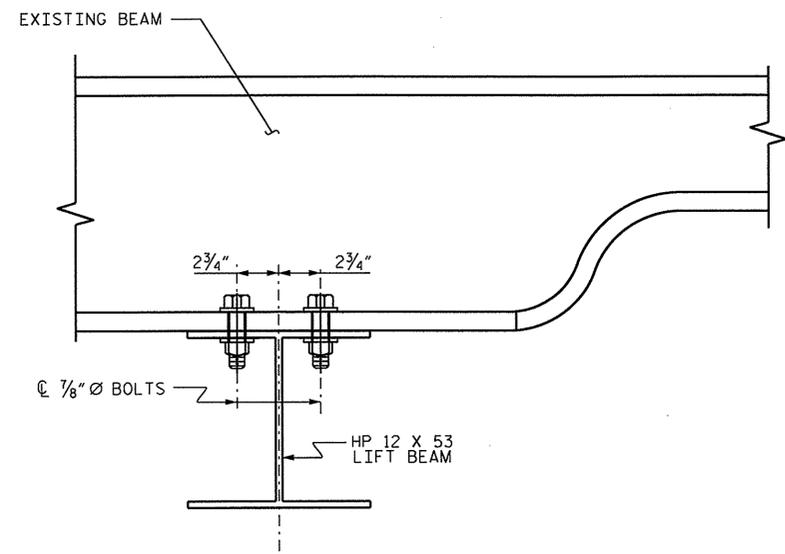


VIEW A-A



DETAIL OF U-BOLT FOR LIFT BEAM

THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE HOLES IN THE HP 12 X 53 SHALL BE FIELD DRILLED.



VIEW R-R

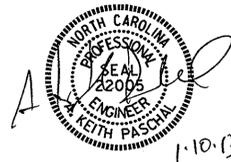
PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

LIFT BENT  
STUMPY POINT  
FERRY RAMP

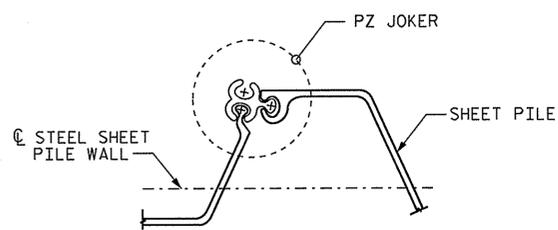


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-4
1			3			TOTAL SHEETS
2			4			13

DRAWN BY : B.N.BARODAWALA DATE : 12-12-12  
CHECKED BY : K. P. SEDAI DATE : 12-12-12

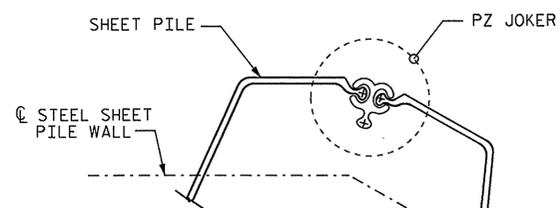
**NOTES:**

FOR STEEL SHEET PILES, SEE SPECIAL PROVISIONS.  
 FOR PAINTING STEEL PILES, SEE SPECIAL PROVISIONS.  
 FOR CHAIN LINK FENCE, SEE SPECIAL PROVISIONS.



**DETAIL "J1"**

THE PZ JOKER IN THE SHEET PILE SHALL BE DETERMINED BY THE FABRICATOR.

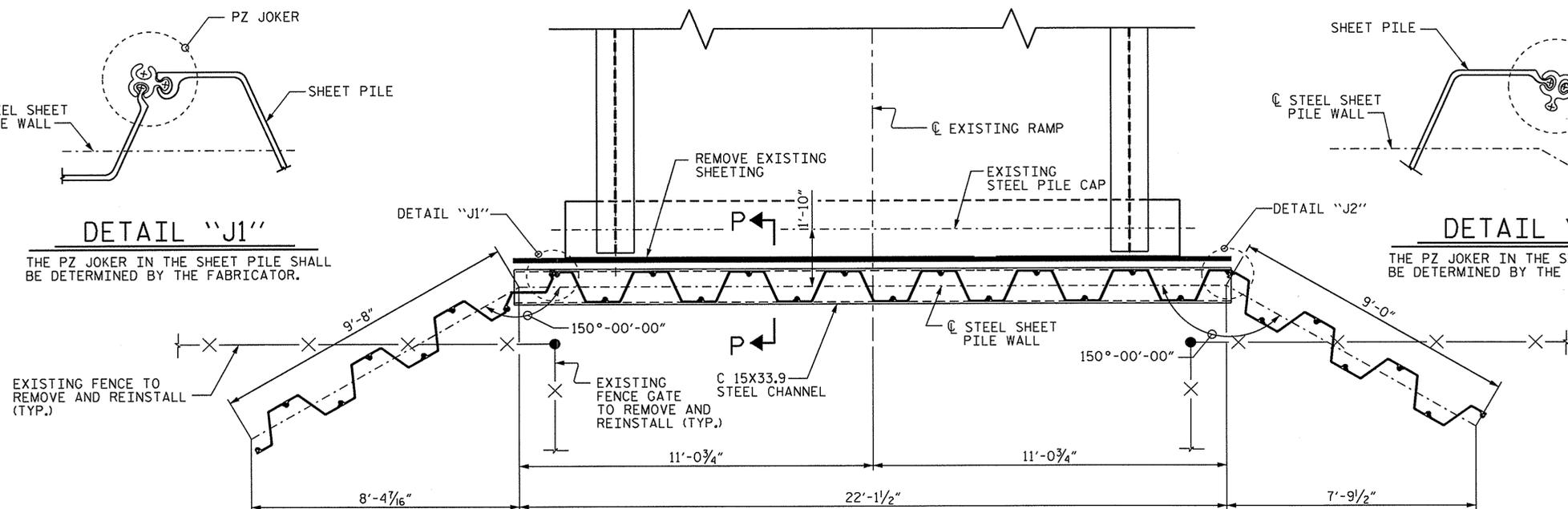


**DETAIL "J2"**

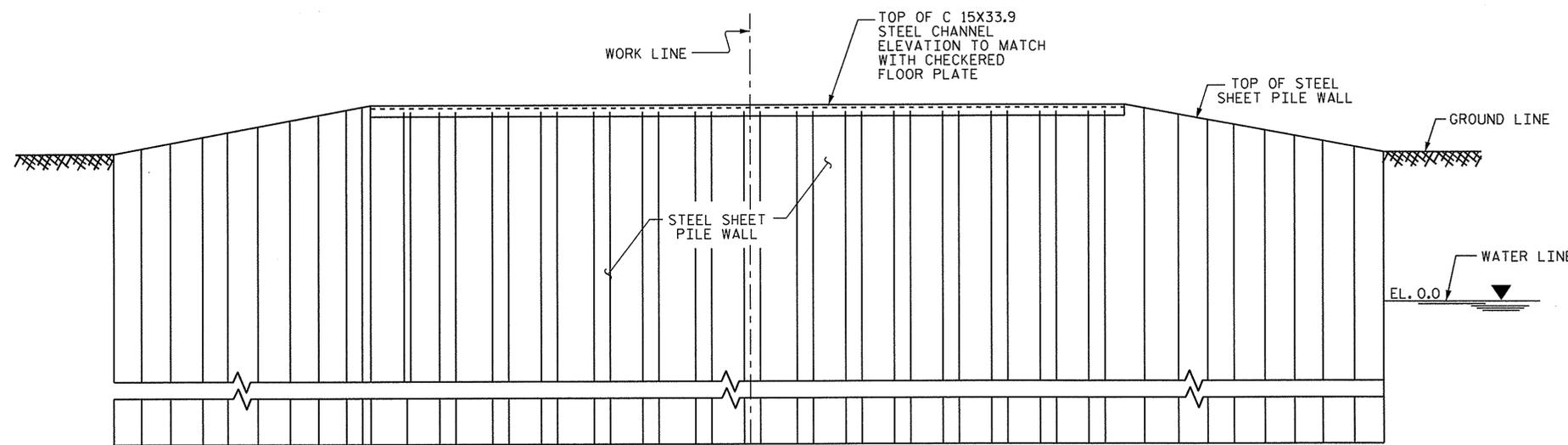
THE PZ JOKER IN THE SHEET PILE SHALL BE DETERMINED BY THE FABRICATOR.

**BILL OF MATERIAL**

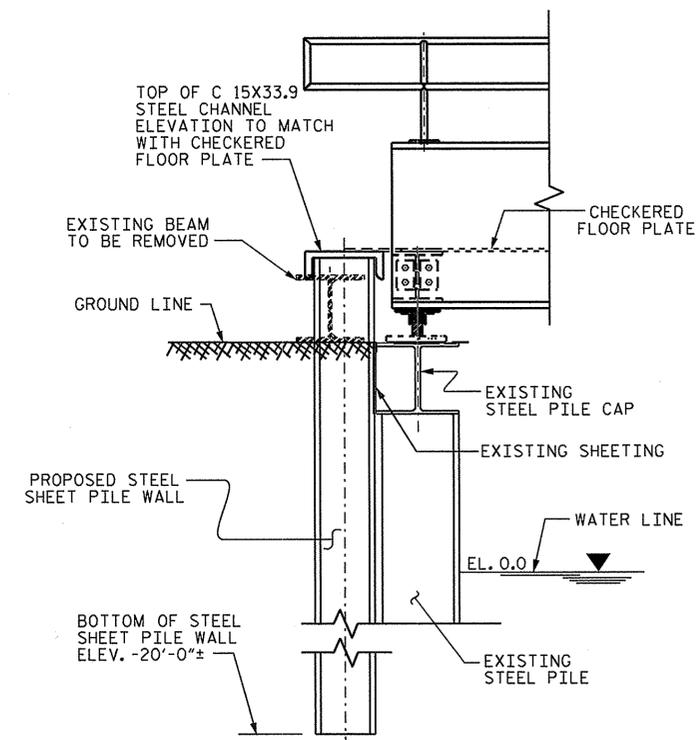
STEEL SHEET PILES	1025 SQ. FTS.
STRUCTURAL STEEL	760 LBS.



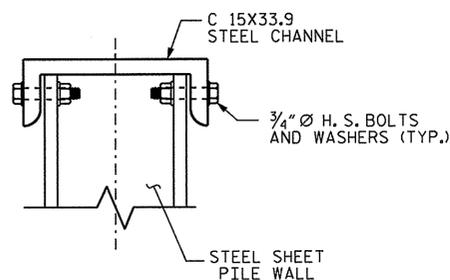
**PLAN**



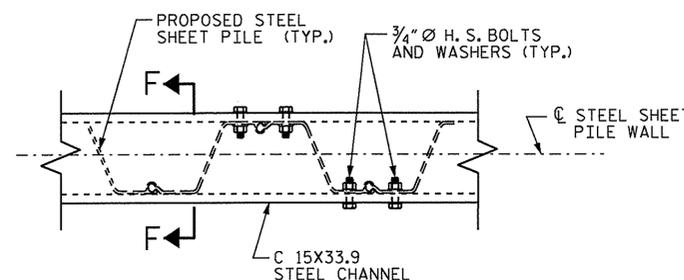
**ELEVATION VIEW**



**SECTION P-P**



**SECTION F-F**



**PLAN VIEW**

PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

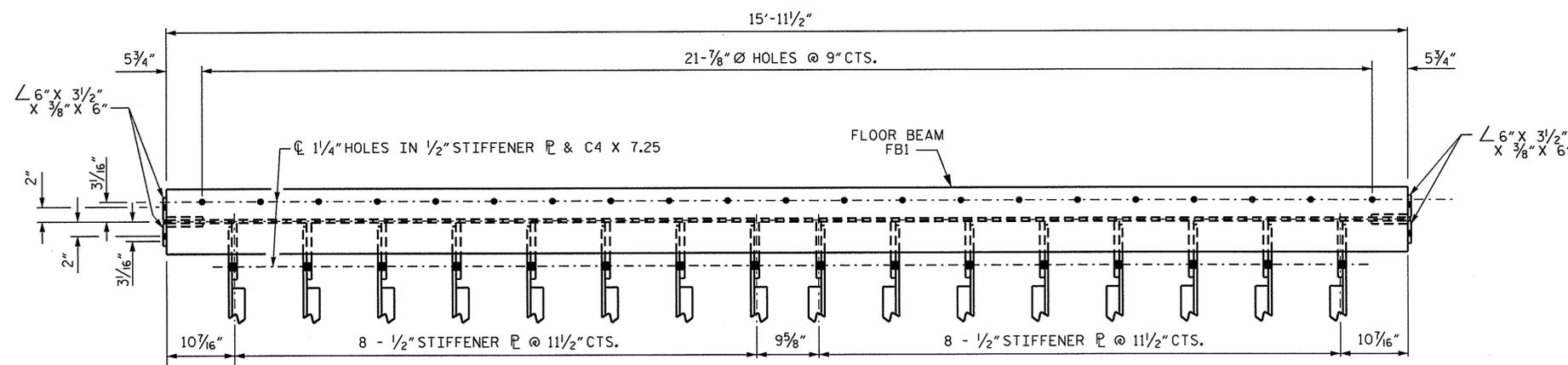
**STEEL SHEET PILE WALL**  
**STUMPY POINT FERRY BASIN**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-5
1			3			TOTAL SHEETS
2			4			13

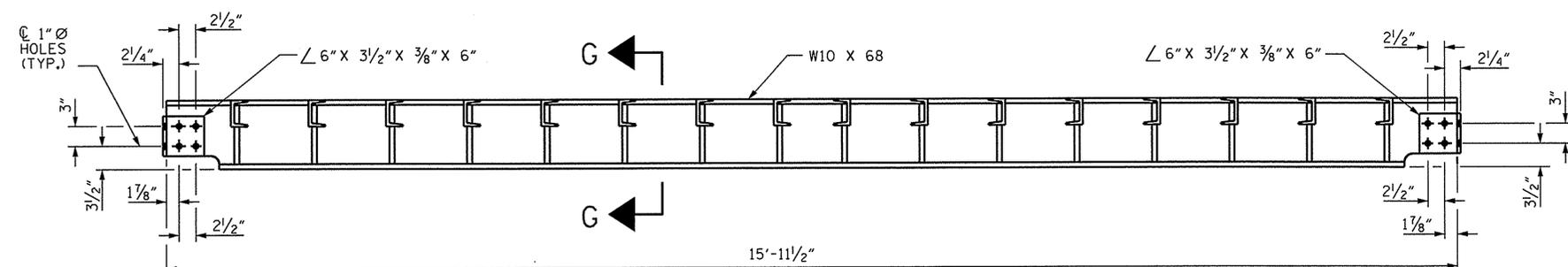


DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDAI DATE : 12-19-12

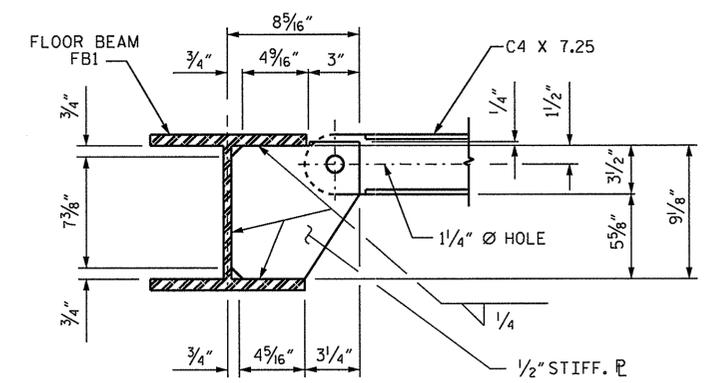




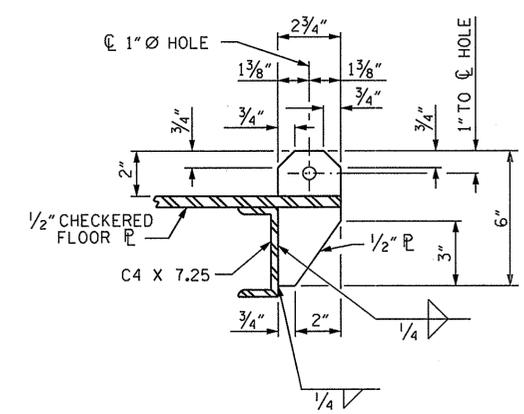
PLAN - TOP FLANGE



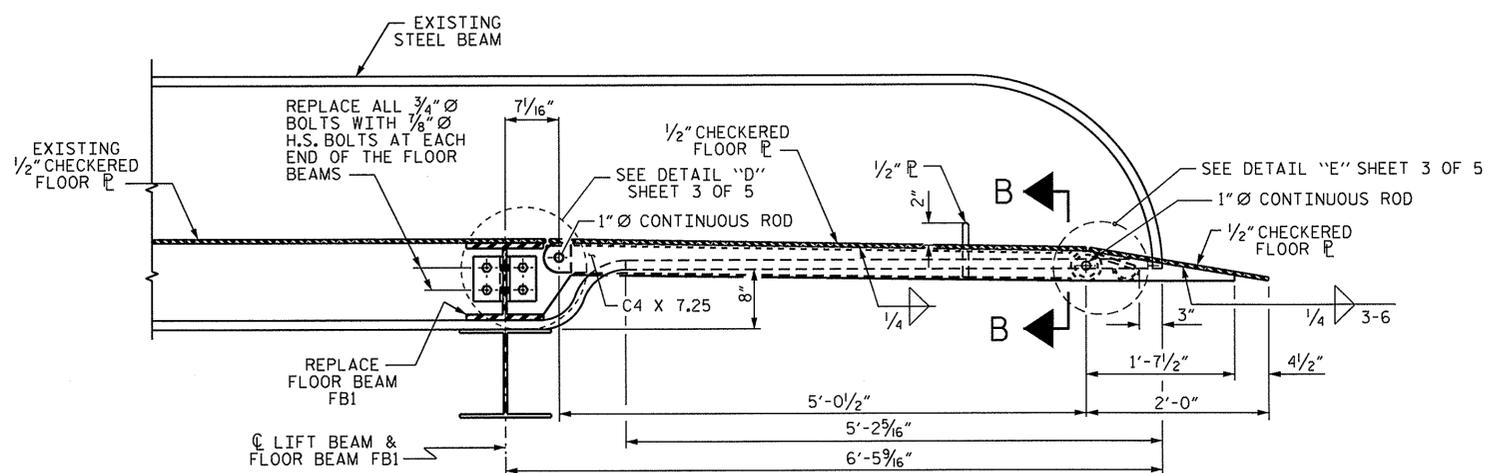
ELEVATION  
FB 1  
(FLOOR BEAM)



SECTION G-G



VIEW B-B  
NOTE: 1/2\"/>

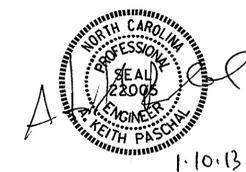


SECTION C-C

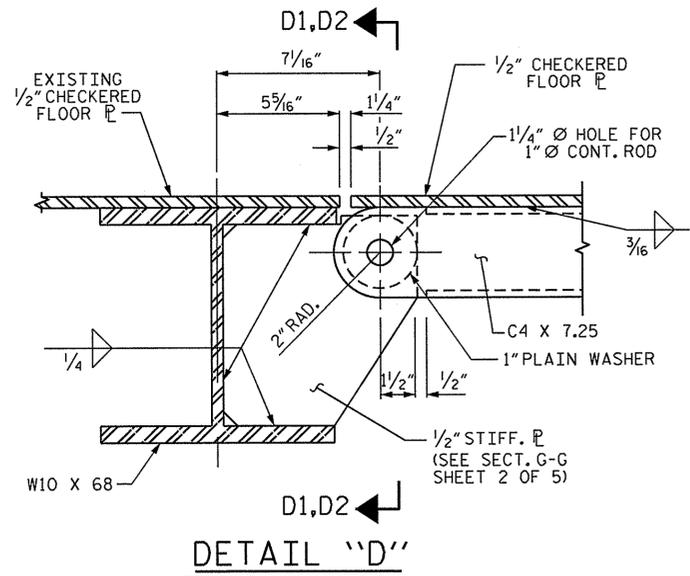
PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_  
SHEET 2 OF 5

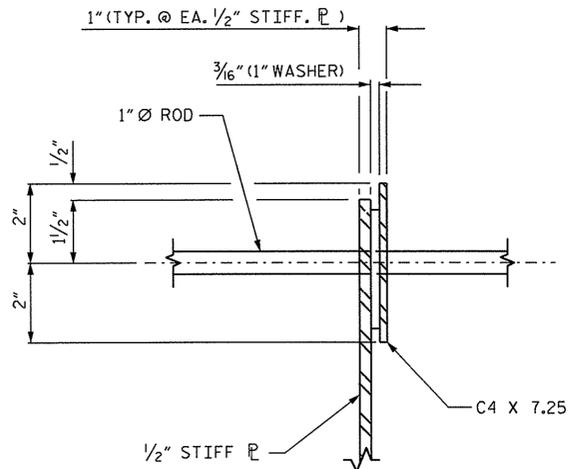
STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH						SHEET NO. S-7
STUMPY POINT FERRY RAMP						TOTAL SHEETS 13
REVISIONS						SHEET NO. S-7 TOTAL SHEETS 13
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			
2			4			



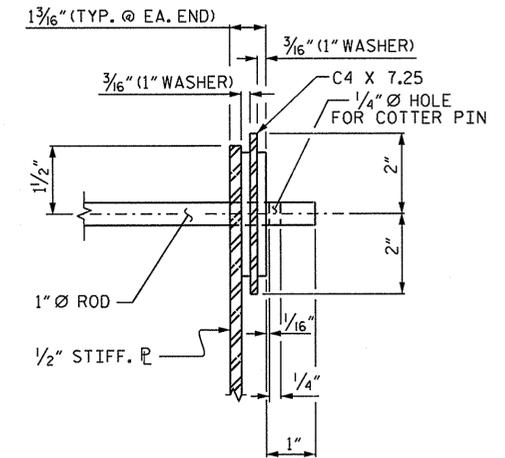
DRAWN BY: B.N.BARODAWALA DATE: 11-6-12  
CHECKED BY: K. P. SEDA DATE: 12-19-12



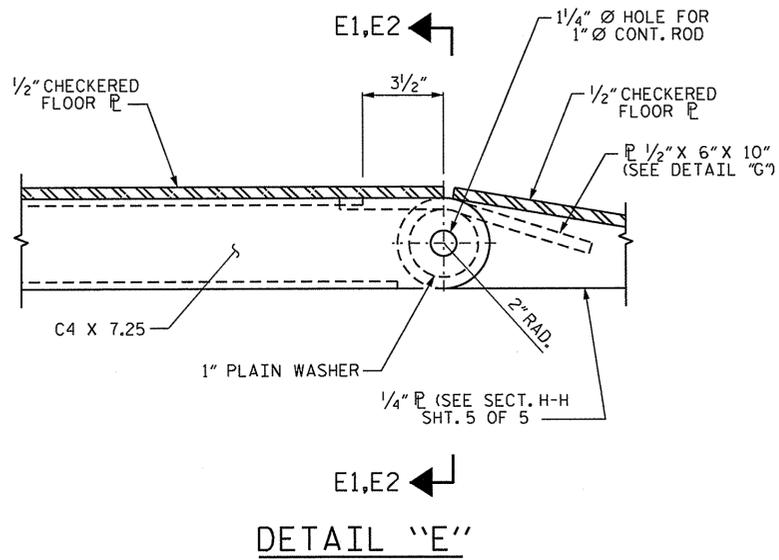
DETAIL "D"



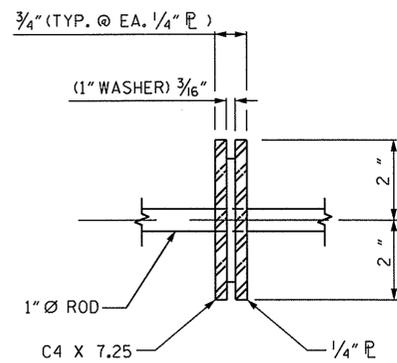
SECTION D1-D1  
(RIGHT SIDE SHOWN,  
LEFT SIDE SIMILAR BY FLIPPING.)



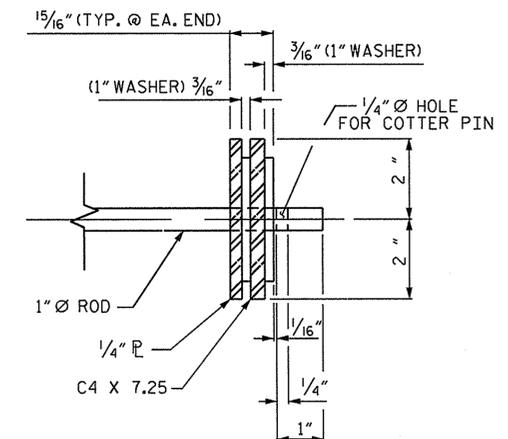
SECTION D2-D2  
(FAR RIGHT SIDE END SHOWN,  
FAR LEFT SIDE SIMILAR BY FLIPPING.)



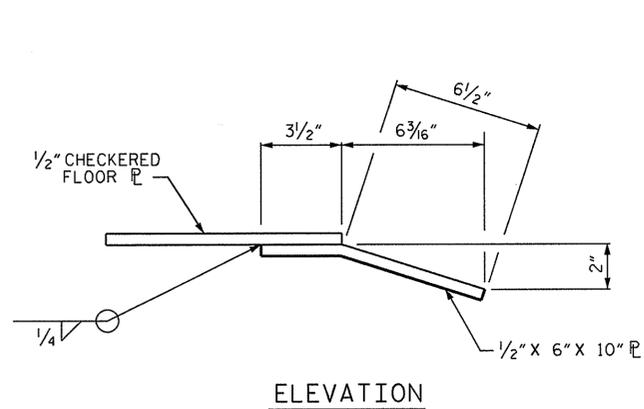
DETAIL "E"



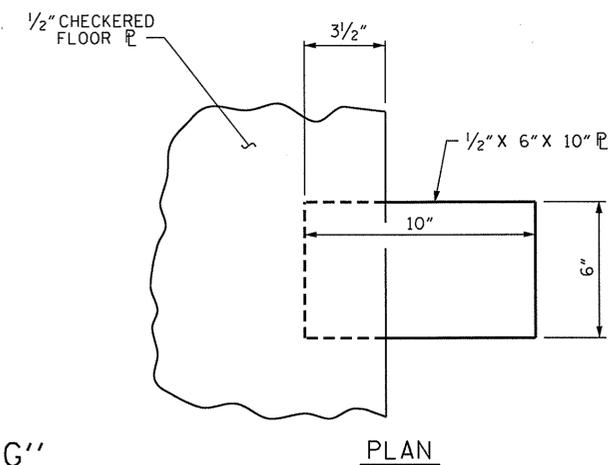
SECTION E1-E1  
(SIMILAR BETWEEN TWO ENDS)



SECTION E2-E2  
(FAR RIGHT SIDE END SHOWN,  
LEFT SIDE SIMILAR BY FLIPPING.)



ELEVATION



PLAN

DETAIL "G"

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 3 OF 5

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

STUMPY POINT  
FERRY RAMP

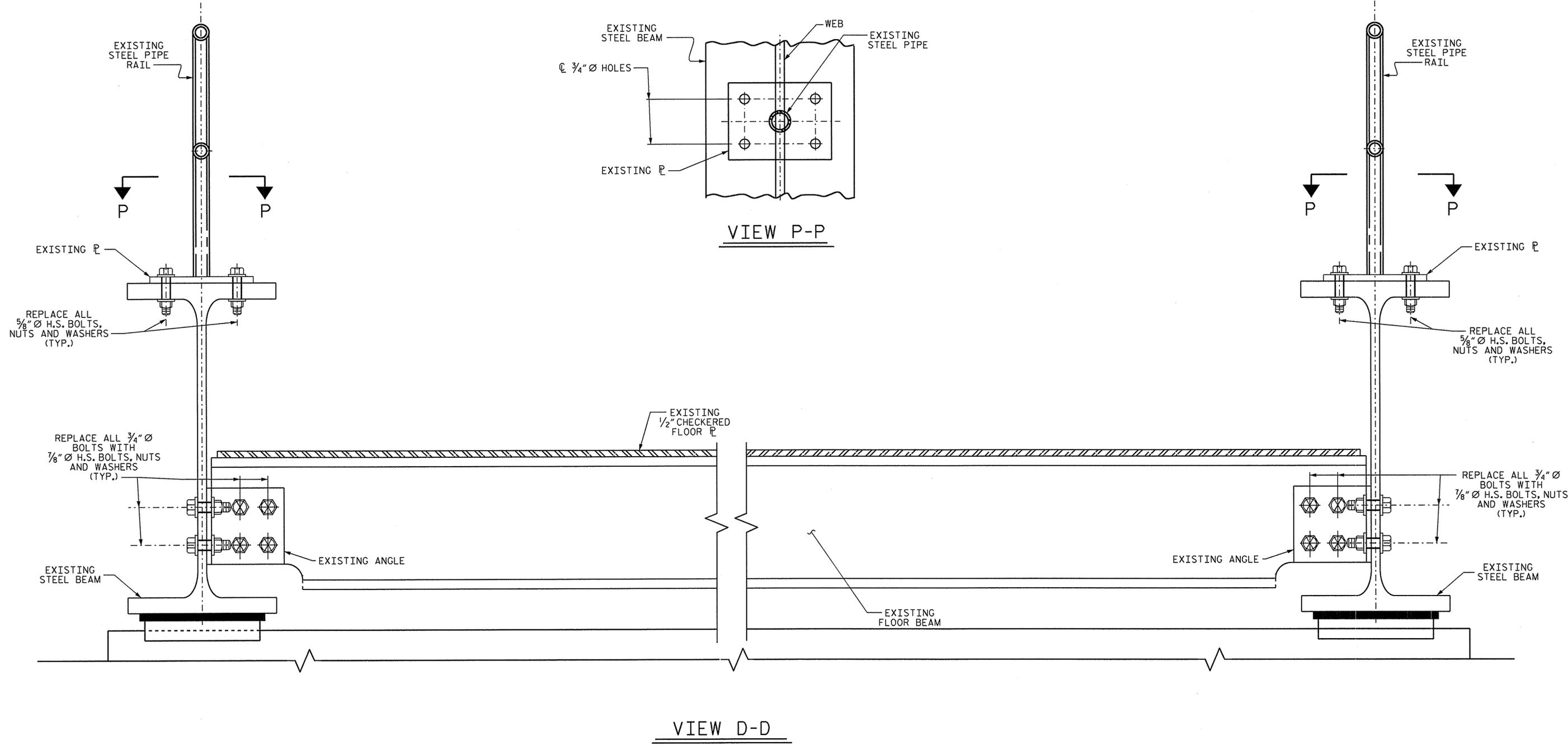


1-10-13

DRAWN BY: B.N.BARODAWALA DATE: 11-6-12  
CHECKED BY: K. P. SEDAII DATE: 12-19-12

10-JAN-2013 09:49  
S:\DPO1\kath\Ferry\Stumpy Point and Rodanthe\BBarodawala\Stumpy Point.dgn  
bbarodawala

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-8
1			3			TOTAL SHEETS
2			4			13



VIEW P-P

VIEW D-D

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 4 OF 5

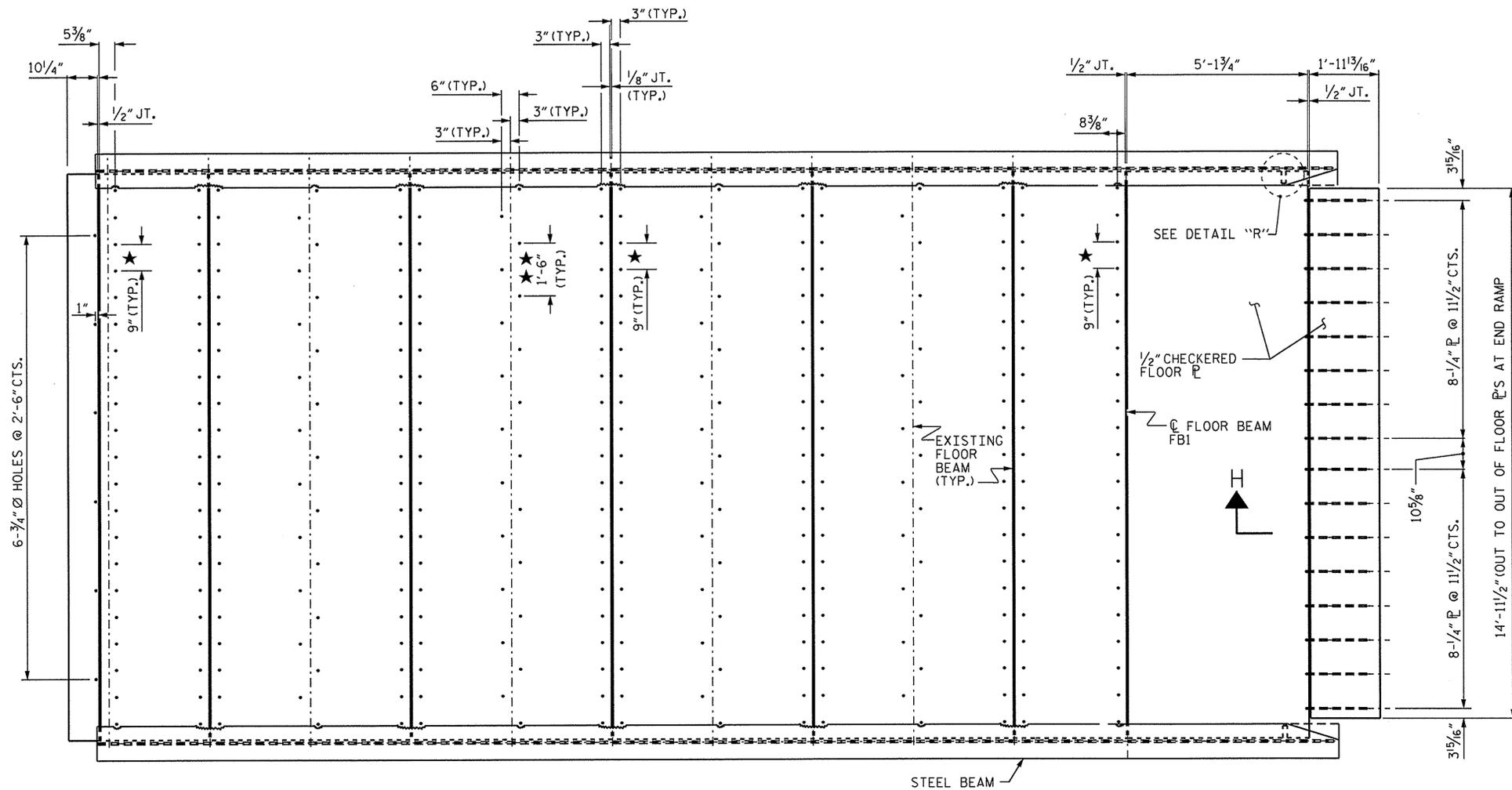
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**STUMPY POINT  
 FERRY RAMP**

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-9
1			3			TOTAL SHEETS
2			4			13



DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDAI DATE : 12-19-12



**NOTES:**

ALL PINS, BOLTS, WASHERS, NUTS, RODS AND OTHER HARDWARE TO BE GALVANIZED.

ALL BOLTS TO BE HIGH STRENGTH (AASHTO M164) UNLESS NOTED OTHERWISE.

CHECKERED FLOOR PLATE BOLTS TO BE A307 CARRIAGE BOLTS, SQUARE NECK WITH WASHER, NUT, AND JAM NUT AND SHALL BE GALVANIZED.

ALL STEEL M270 GRADE A36 UNLESS NOTED OTHERWISE.

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

AT FIXED POINTS OF SUPPORT, NUTS FOR ANCHOR BOLTS SHALL 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.

CHECKERED FLOOR PLATES SHALL RECEIVE A SKID RESISTANT COATING. SEE SPECIAL PROVISIONS.

ALL STRUCTURAL STEEL SHALL BE GALVANIZED.

FOR CLEANING AND PAINTING EXISTING RAMP, SEE SPECIAL PROVISIONS.

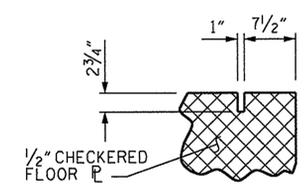
FOR REMOVE AND REPLACE RAMP APRON, SEE SPECIAL PROVISIONS.

CHARPY V-NOTCH TEST REQUIRED FOR W10 X 68 FLOOR BEAM FBI IN ACCORDANCE WITH ARTICLE 1072-9 OF THE STANDARD SPECIFICATIONS.

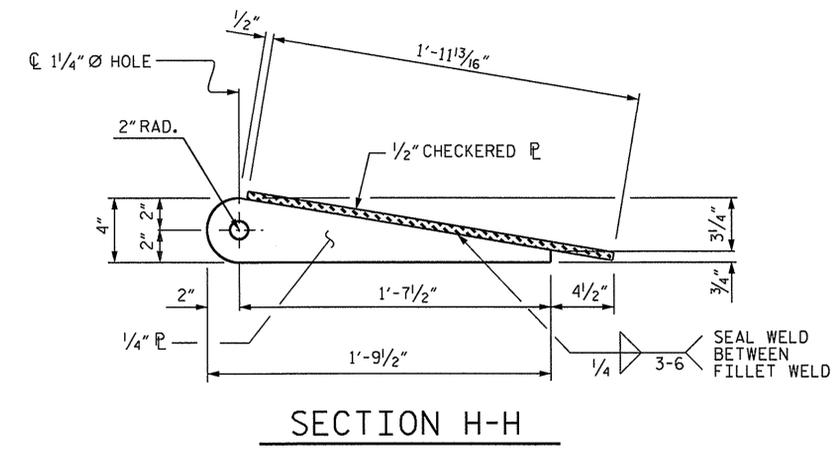
BILL OF MATERIAL	
STRUCTURAL STEEL	6246 LBS.

**CHECKERED FLOOR PLATE BOLT LAYOUT**

- ★ 3/4" Ø A307 SQUARE NECK CARRIAGE BOLTS @ 9" CTS. (TYP. ALL FLOOR PL'S @ JOINTS UNLESS OTHERWISE NOTED)
- ★★ 3/4" Ø A307 SQUARE NECK CARRIAGE BOLTS @ 1'-6" CTS. (TYP. ALL FLOOR PL'S @ MID-SPAN UNLESS OTHERWISE NOTED)



**DETAIL "R"**  
(TYP. BOTH SIDES OF PL)



**SECTION H-H**

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 5 OF 5

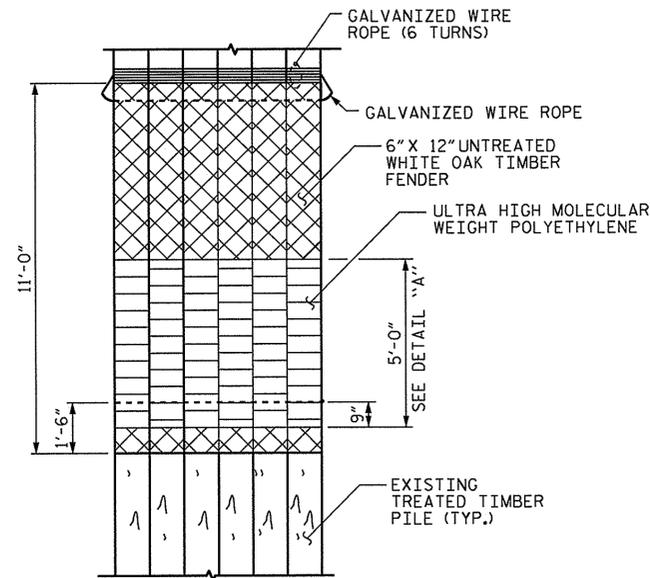
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**STUMPY POINT  
 FERRY RAMP**

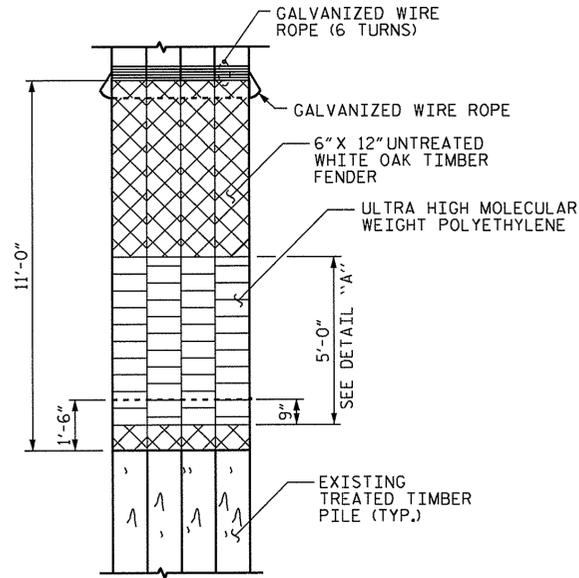


REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-10
1			3			TOTAL SHEETS
2			4			13

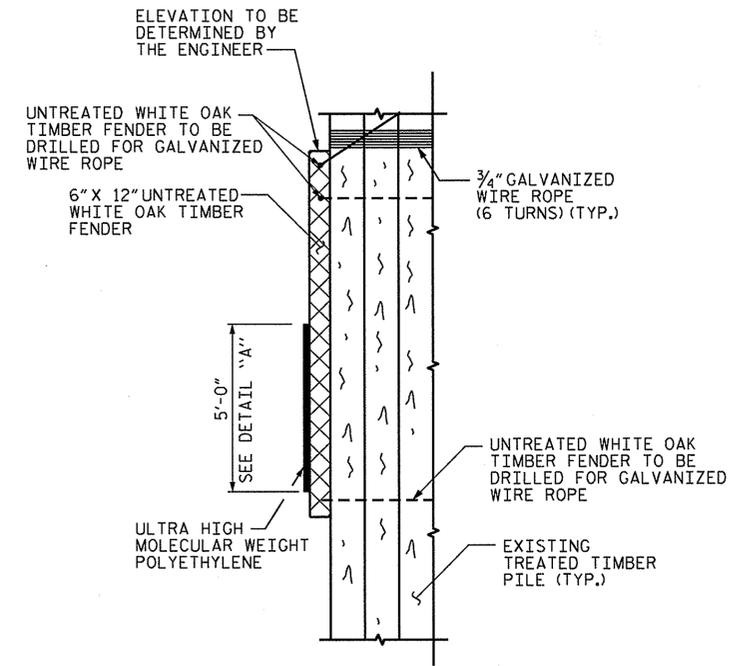
DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
 CHECKED BY : K. P. SEDAI DATE : 12-19-12



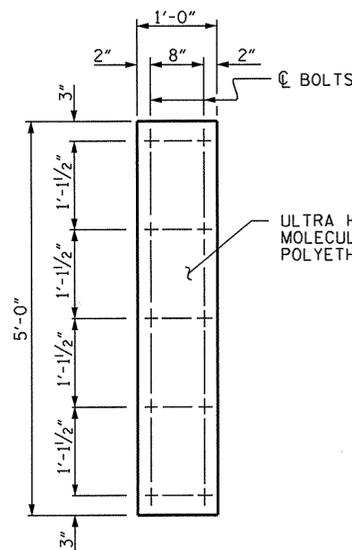
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(TYPE A)



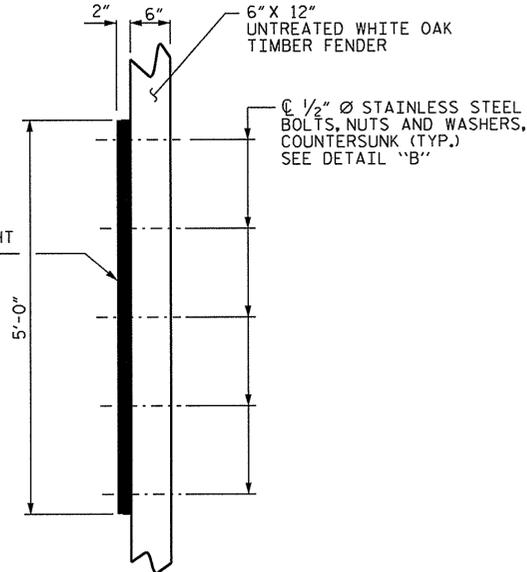
**ELEVATION**  
(TYPE B)



**END VIEW**  
(TYPE A OR B)

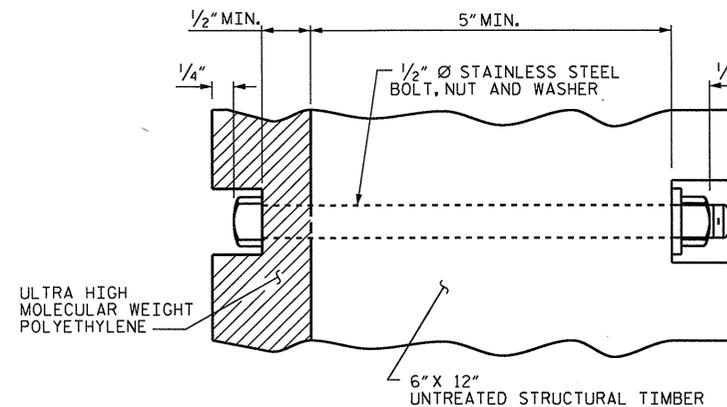


**BOLT SPACING**



**DETAIL "A"**

(SHOWING CONNECTION DETAIL FOR ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE TO WHITE OAK TIMBER FENDER)



**DETAIL "B"**

PROJECT NO. F-5503A  
DARE COUNTY  
STATION: \_\_\_\_\_

SHEET 1 OF 2

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

**DOLPHIN DETAILS**  
**STUMPY POINT**  
**FERRY BASIN**



1-10-13

DRAWN BY : B.N.BARODAWALA DATE : 11-6-12  
CHECKED BY : K. P. SEDAI DATE : 12-19-12

10-JAN-2013 09:49  
S:\DPG\Keith\Ferry\Stumpy Point and Rodanthe\BBarodawala\Stumpy Point.dgn  
bbarodawala

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	S-11
1			3			TOTAL SHEETS
2			4			13

NOTES

FOR ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE, SEE DOLPHINS SPECIAL PROVISIONS.

NO SEPARATE PAYMENT OR MEASUREMENT WILL BE MADE FOR HARDWARE, TOOLS, EQUIPMENT, OR LABOR FOR INSTALLING THE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE. THIS WORK AND MATERIAL SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE.

THE POSITIONING INCLUDING THE FINAL ELEVATIONS OF THE ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE ON THE PILE SHALL BE AS DIRECTED BY THE ENGINEER.

GALVANIZED WIRE ROPE USED FOR INSTALLING UNTREATED WHITE OAK TIMBER FENDERS SHALL CONFORM TO ASTM A603 CLASS B.

ALL HARDWARE SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED.

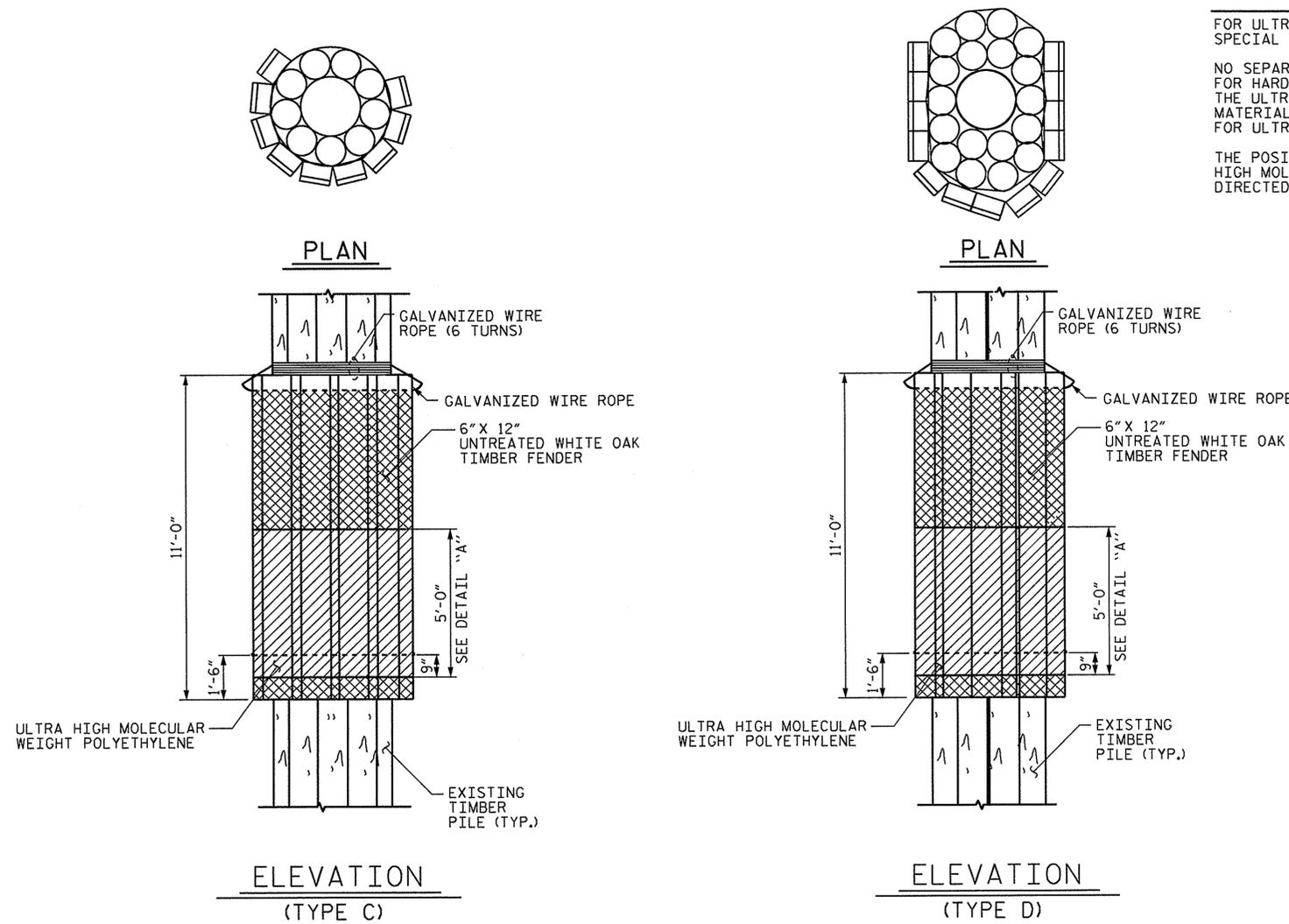
NO SEPARATE MEASUREMENT OR PAYMENT WILL BE MADE FOR WIRE ROPE USED TO INSTALLING UNTREATED WHITE OAK TIMBER FENDER, HARDWARE, TOOLS, EQUIPMENT, OR LABOR. THIS WORK AND MATERIALS SHALL BE INCLUDED IN THE CONTRACT UNIT BID PRICE FOR UNTREATED STRUCTURAL TIMBER.

THE 6" X 12" UNTREATED WHITE OAK TIMBER FENDERS SHALL BE FACED AS SHOWN WITH 2" THICK X 12" WIDE X 5'-0" LONG ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE. SEE DOLPHINS SPECIAL PROVISION.

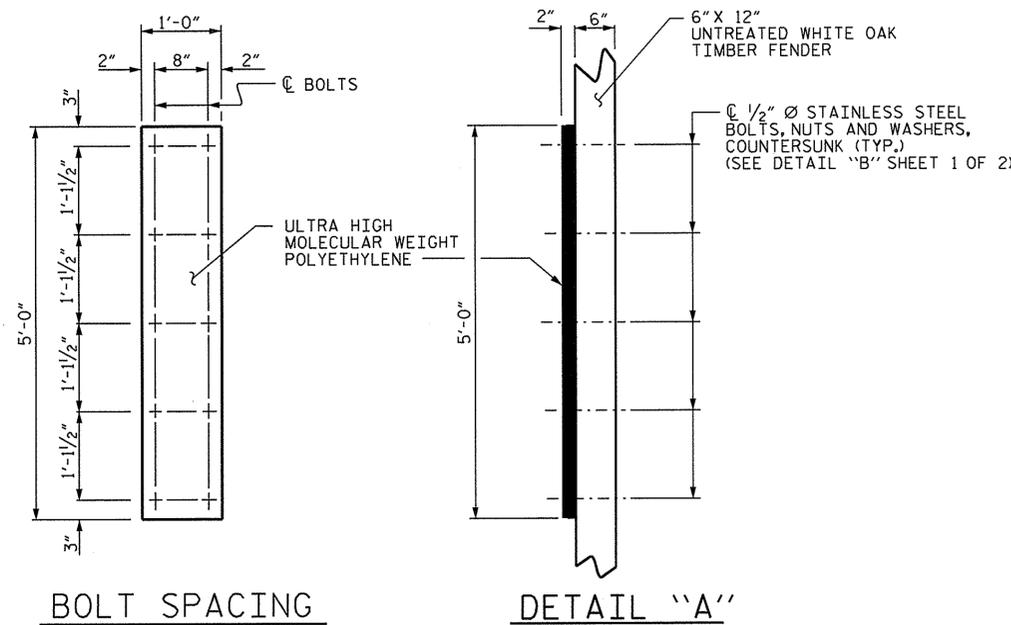
DOLPHINS	NOS. OF DOLPHINS	UNTREATED WHITE OAK TIMBER FENDER	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
TYPE A	2	6	6
TYPE B	5	20	20
TYPE C	1	9	9
TYPE D	1	13	13
TOTAL	9	48	48

BILL OF MATERIAL

UNTREATED STRUCTURE TIMBER	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
M.B.F.	SQ .FT.
3.168	220



THE CONTRACTOR'S ATTENTION IS CALLED TO THE FACT THAT THE NUMBERS OF FENDERS AND ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE PADS AT DOLPHINS TYPE C AND TYPE D MAY VARY AS PER ACTUAL SITE CONDITIONS.



(SHOWING CONNECTION DETAIL FOR ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE TO WHITE OAK TIMBER FENDER)

DRAWN BY : B.N.BARODAWALA DATE : 12-17-12  
 CHECKED BY : K. P. SEDAI DATE : 12-18-12

10-JAN-2013 09:49  
 S:\DPO\Kath\Ferry\Stumpy Point and Rodanthe\BBarodawala\Stumpy Point.dgn  
 bbarodawala



PROJECT NO. F-5503A  
 DARE COUNTY

STATION: \_\_\_\_\_

SHEET 2 OF 2

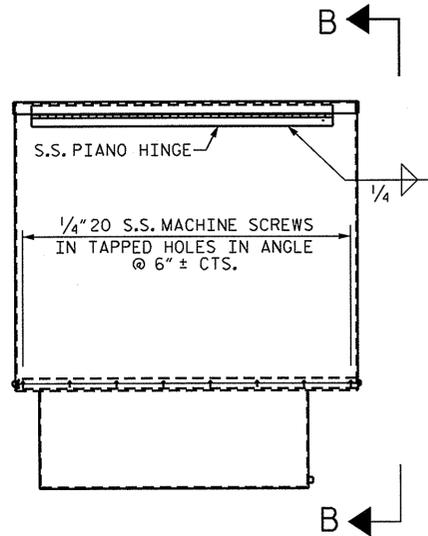
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

DOLPHIN DETAILS  
 STUMPY POINT  
 FERRY BASIN

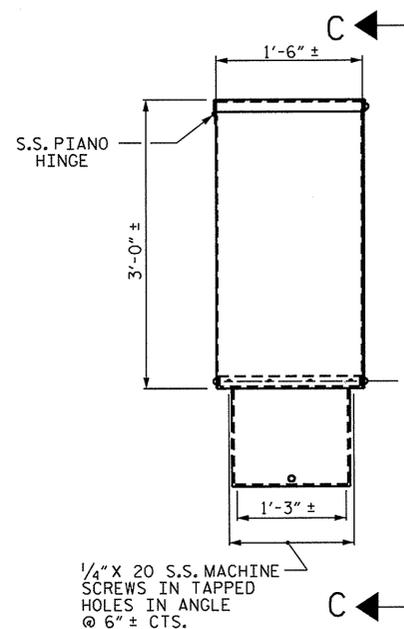
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NO.	BY:	DATE:	NO.	BY:	DATE:	S-12
1			3			TOTAL SHEETS
2			4			13

**NOTES**

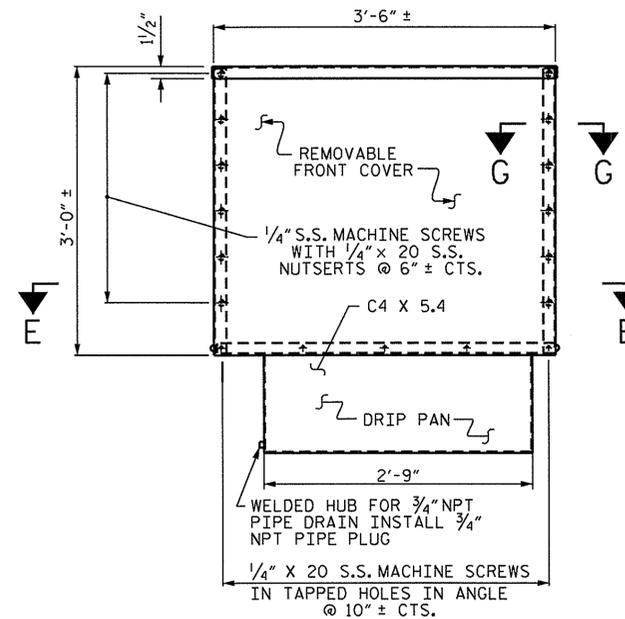
ALL DIMENSIONS ARE TO BE VERIFIED BY CONTRACTOR TO INSURE HYDRAULIC UNIT PROPOSED WILL BE COMPATIBLE WITH BOX SIZE.  
 ALL TUBING MATERIALS FOR RAMP LIFT AND LUBRICATION SYSTEM TO BE STAINLESS STEEL, SEE SPECIAL PROVISION FOR MECHANICAL SPECIFICATIONS.  
 FOR HYDRAULIC SYSTEM, SEE SPECIAL PROVISION FOR MECHANICAL SPECIFICATIONS.



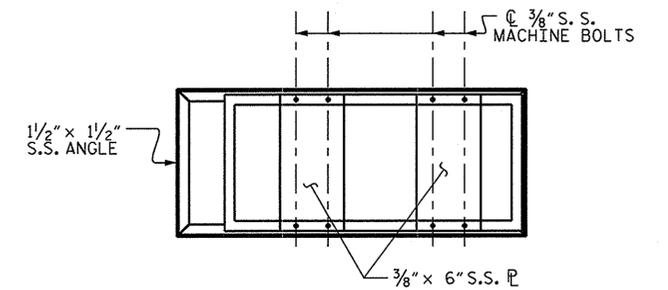
**ELEVATION**



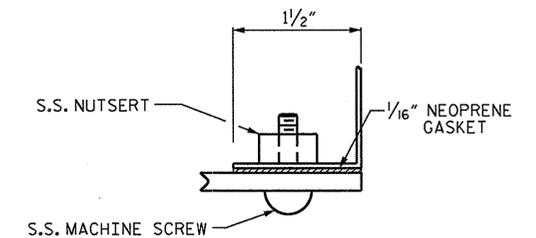
**VIEW B-B**



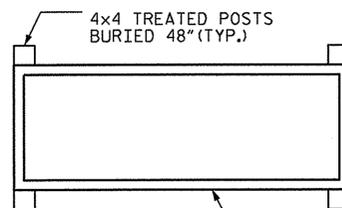
**VIEW C-C**



**SECTION E-E**

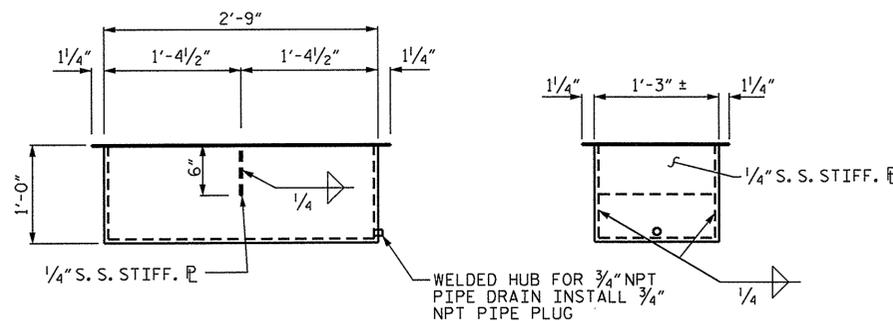


**SECTION G-G**



4x4 TREATED POSTS BURIED 48" (TYP.)  
 2x6 TREATED BANDING TO FIT BASE OF ENCLOSURE MOUNTED 24" ABOVE GRADE (TYP.)

**POWER UNIT STAND**



**DRIP PAN DETAIL**

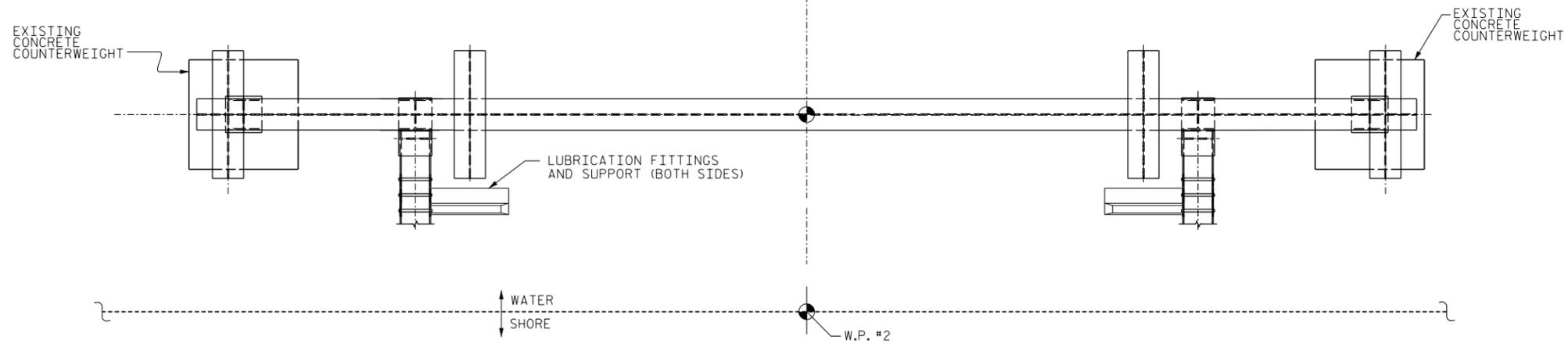
**HYDRAULIC POWER UNIT ENCLOSURE**

PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

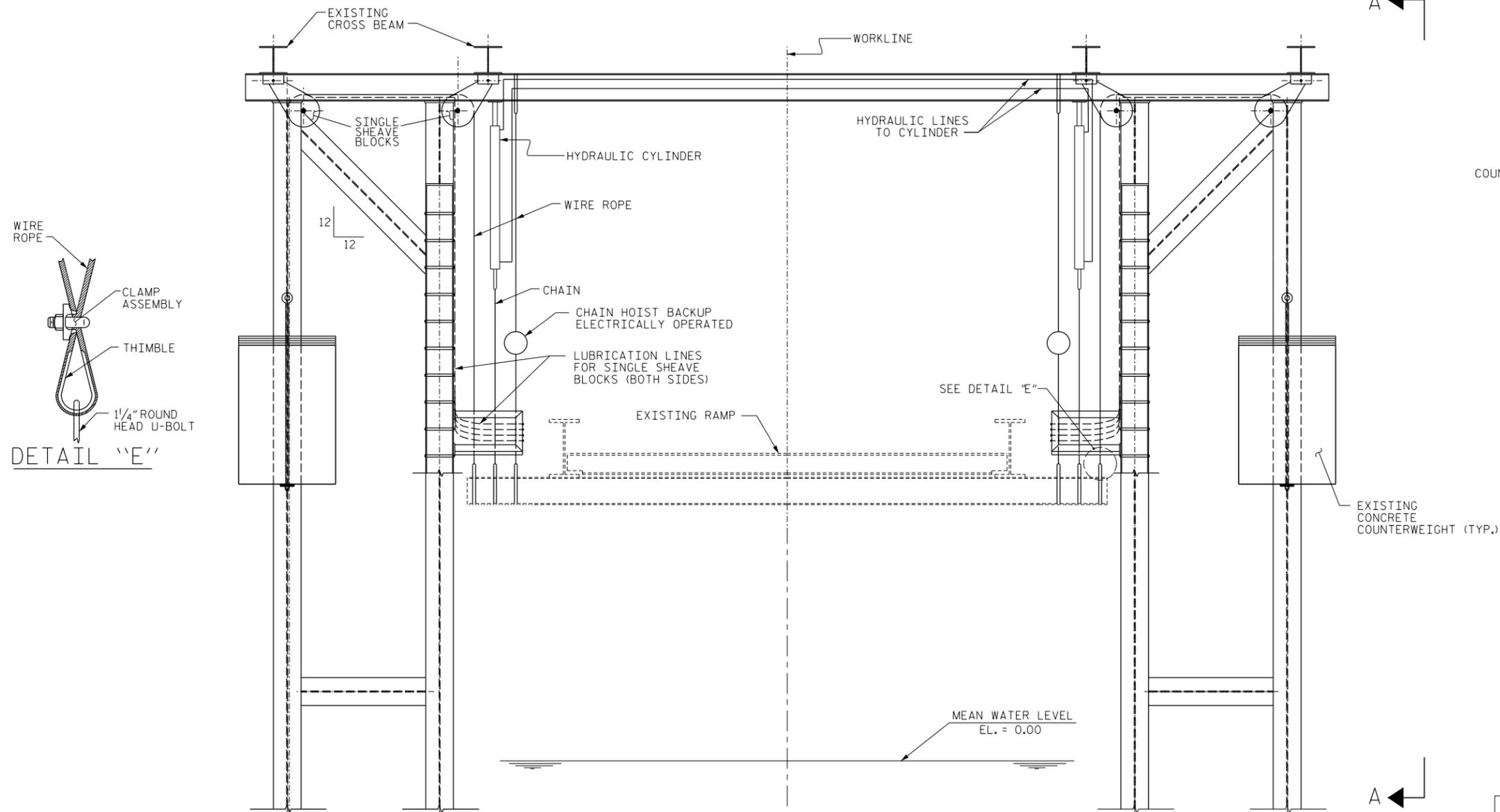


STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
HYDRAULIC POWER ENCLOSURE					
STUMPY POINT FERRY BASIN					
REVISIONS					
NO.	BY:	DATE:	NO.	BY:	DATE:
1			3		
2			4		
SHEET NO. S-13					TOTAL SHEETS 13

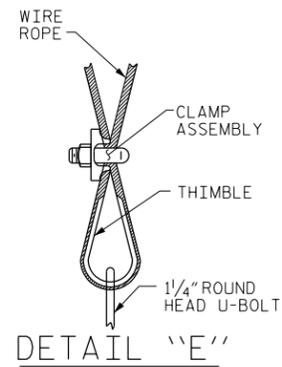
DRAWN BY: B.N. BARODAWALA DATE: 11-6-12  
 CHECKED BY: K. P. SEDAI DATE: 12-19-12



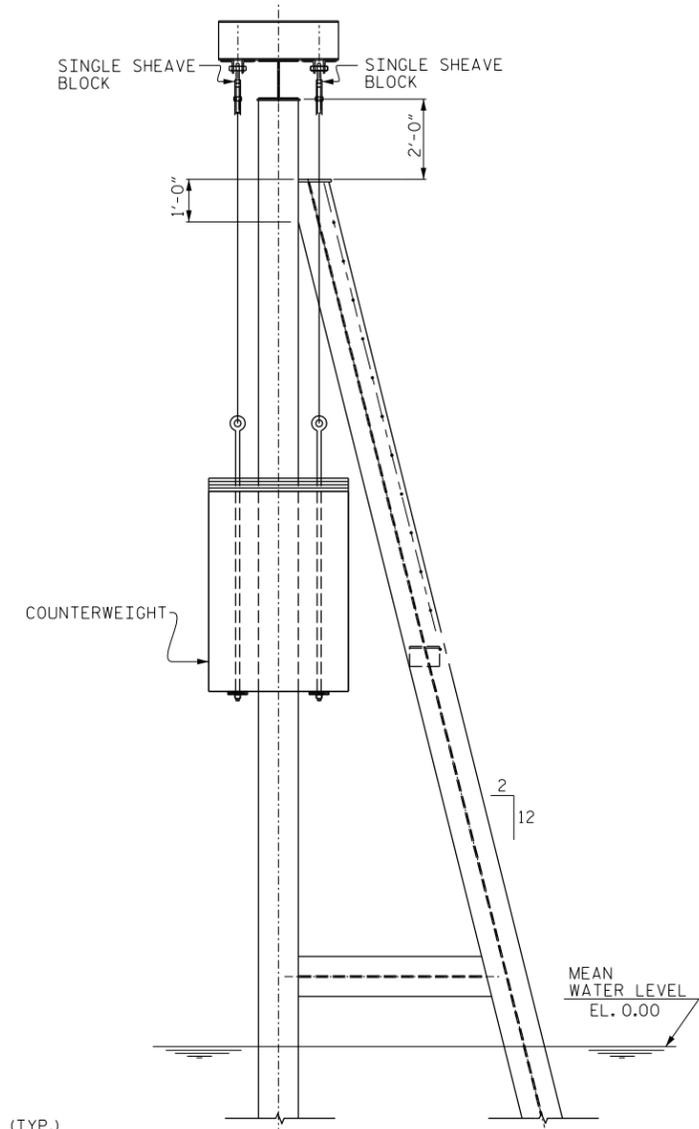
PLAN



ELEVATION  
(VIEW FROM WATER)



DETAIL "E"



VIEW A-A

PROJECT NO. F-5503A  
DARE COUNTY

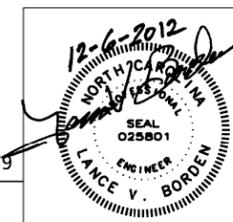
STATION: \_\_\_\_\_

SHEET 1 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

MECHANICAL LAYOUT

STUMPY POINT  
 FERRY BASIN



DRAWN BY : JAB DATE : 11-30-12  
 CHECKED BY : DMB DATE : 11-30-12

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DWG NUMBER M01 TOTAL DWGS 08

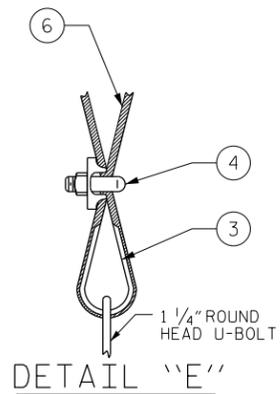
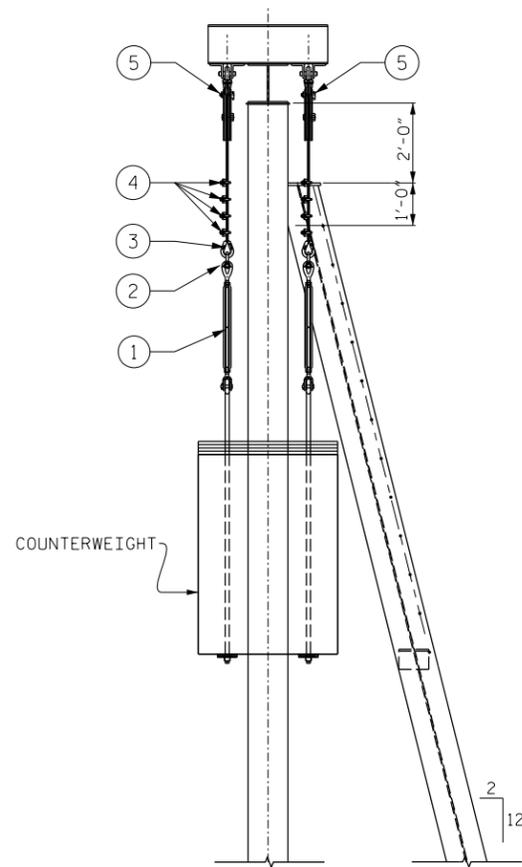
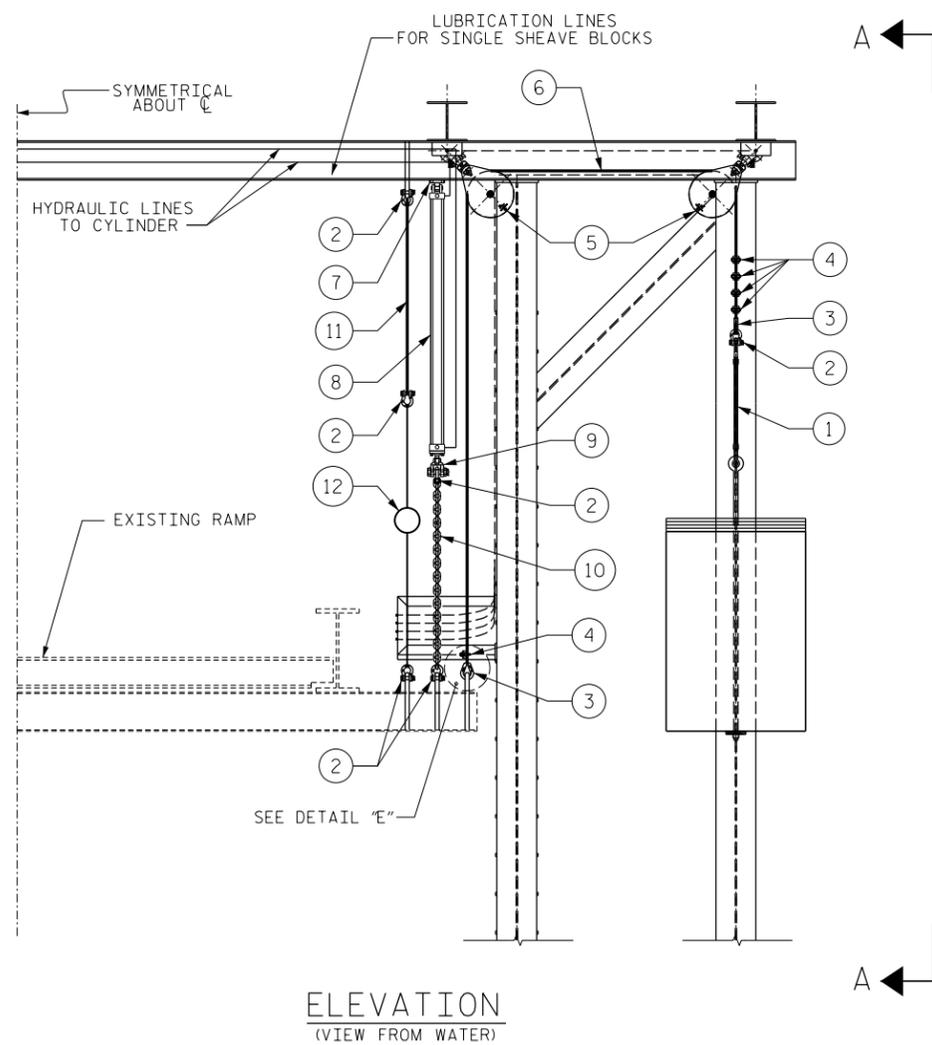
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			

BILL OF MATERIALS			
ITEM NO.	QUANTITY	DESCRIPTION	MATERIAL/MODEL NUMBER
1	4	JAW AND EYE TURNBUCKLE, 1" THREAD WITH 24" TAKE UP BY CROSBY	STOCK NUMBER HG-227, MODEL NUMBER 1032233
2	14	BOLT TYPE ANCHOR SHACKLE, 3/4" SIZE BY CROSBY	STOCK NUMBER G-2130, MODEL NUMBER 1019515
3	6	WIRE ROPE THIMBLE, 3/4" SIZE BY CROSBY	STOCK NUMBER G-414, MODEL 1037773
4	18	FORGED WIRE ROPE CLIPS, 3/4" SIZE BY CROSBY (MINIMUM 4 PER WIRE ROPE END)	STOCK NUMBER G-450, MODEL 1010195
5	8	SINGLE SHEAVE BLOCK WITH BRONZE BUSHINGS, 3/4" WIRE ROPE AND 14" DIAMETER BY MCKISSICK	MODEL 419 SHACKLE (STOCK NO. 109527)
6	2	LENGTHS OF GALVANIZED 3/4" IWRC WIRE ROPE 6X19 CLASSIFICATION WITH MINIMUM STRENGTH 46,000 LBS	IMPROVED PLOW STEEL

BILL OF MATERIALS			
ITEM NO.	QUANTITY	DESCRIPTION	MATERIAL/MODEL NUMBER
7	2	HYDRAULIC CYLINDER EYE BRACKET AND PIN BY PARKER	EYE BRACKET - PN0938700000 PIN - PN0938840000
8	2	HYDRAULIC CYLINDER WITH 3.25" BORE, 72" STROKE BY PARKER	MODEL NUMBER 3.25 $\phi$ -CBB SHLU 18ACx72.000
9	2	SS ROD CLEVIS, 1-1/4 - 12, (W/ STAINLESS STEEL PIN, 1-3/8" DIA x 4.13", WASHERS AND COTTER PINS) BY PARKER	CLEVIS BRACKET - PN0938780000 PIN - PN0938850000
10	2	LENGTHS OF 3/4" SIZE ALLOY CHAIN BY CROSBY	GRADE 100, SPECTRUM 10 ALLOY CHAIN
11	2	MECHANICALLY SPLICED SLING OF 3/4" IWRC 6X19 CLASSIFICATION WIRE ROPE	IMPROVED PLOW STEEL
12	2	ELECTRIC CHAIN HOIST, 115V, 2 TON, 10 FT. LIFT @ 8 FPM BY DAYTON (BACKUP)	MODEL NUMBER 2GXH6

**NOTE:**

- ALL ITEMS TO BE CONFIRMED BY CONTRACTOR AS SUITABLE BEFORE PURCHASE. STOCK AND MODEL NUMBERS ARE LISTED AS REFERENCE AND ARE NOT GUARENTEED TO BE CURRENT OR CORRECT. CONTRACTOR TO VERIFY ALL COMPONENTS AND DIMENSIONS



PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 2 OF 4

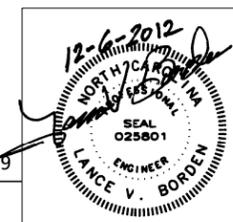
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

RAMP LIFT SYSTEM

STUMPY POINT  
FERRY BASIN



Mechanicsburg, PA NC License No. C-2979

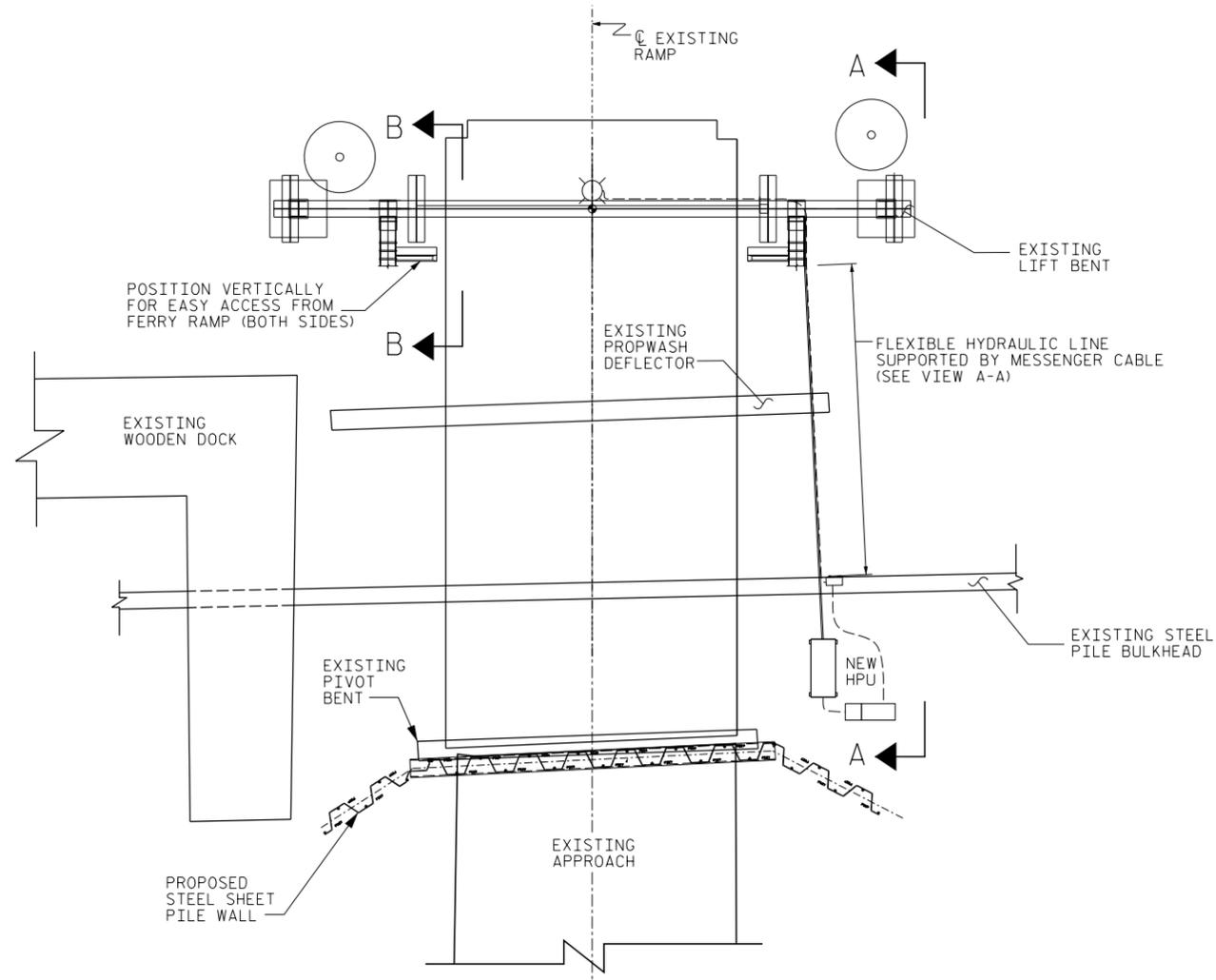
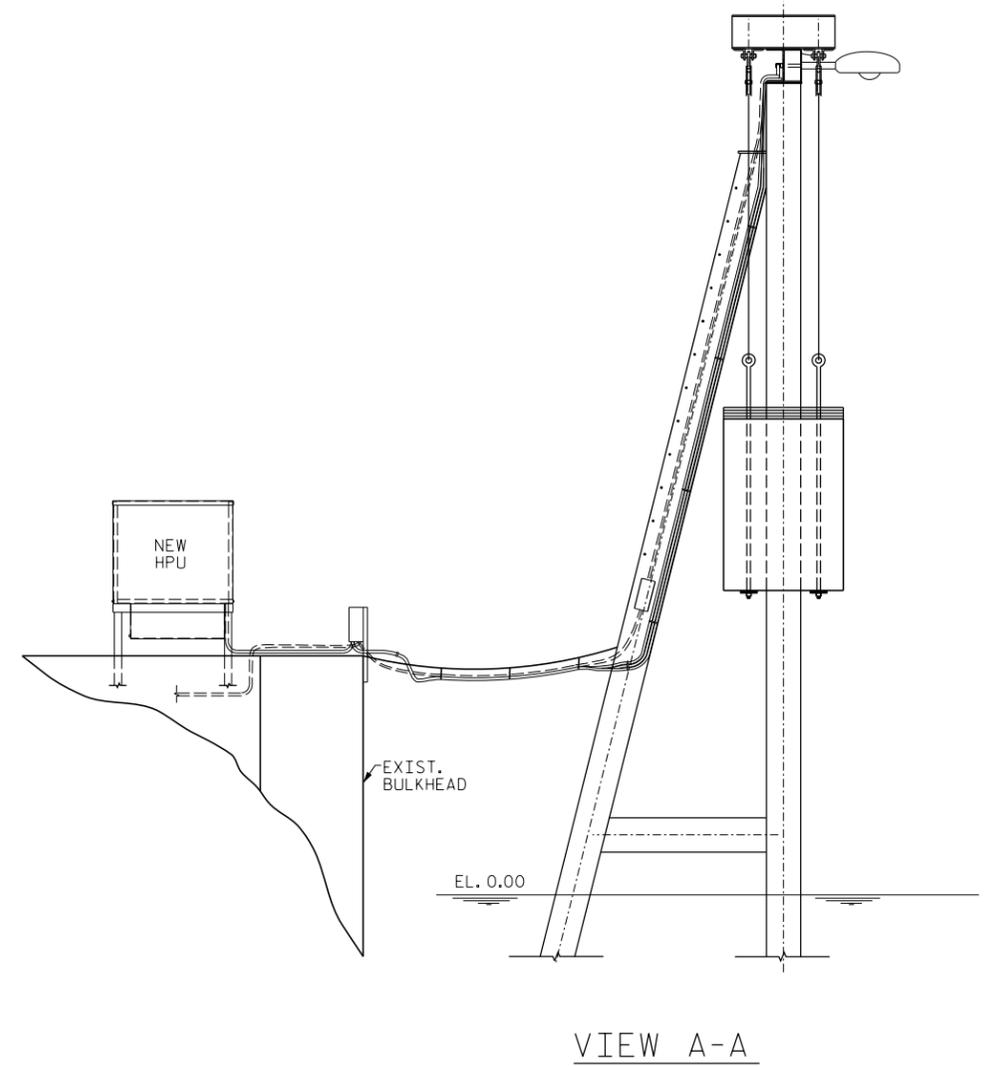
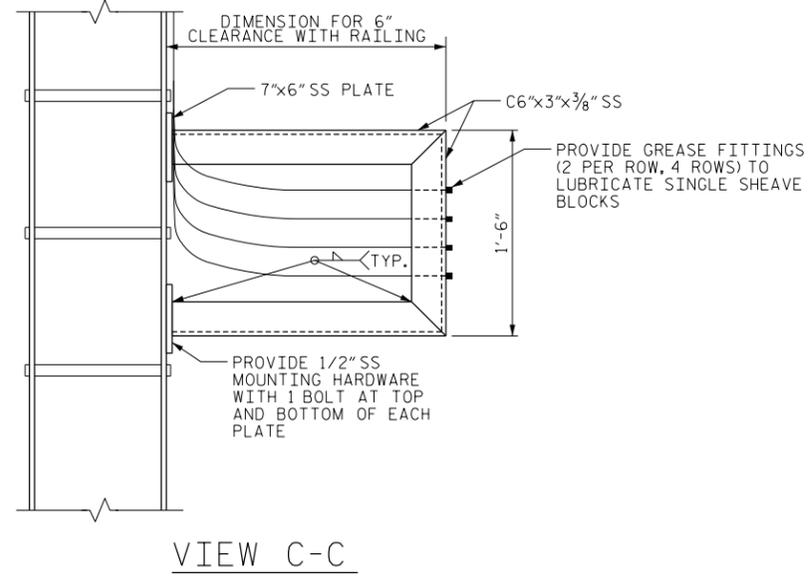
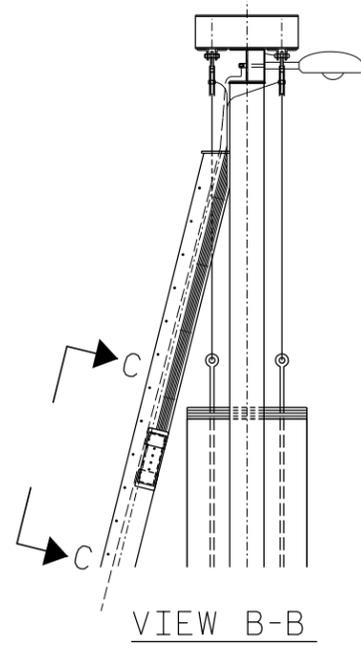


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CHECKED BY : DMB DATE : 11-30-12

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DWG NUMBER	TOTAL DWGS
M02	08

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



- NOTES:
- GREASE LINES HAVE STAINLESS STEEL BRAIDED FLEXIBLE LINES AT FITTING CONNECTION AND AT SINGLE SHEAVE BLOCK CONNECTION.
  - REMAINDER OF GREASE LINES SHALL BE STAINLESS STEEL TUBING RIGIDLY CLAMPED TO STRUCTURE AT LEAST EVERY 2 FT. WITH ALL STAINLESS STEEL HARDWARE

PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

SHEET 3 OF 4

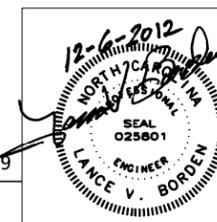
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

HYDRAULIC AND  
 LUBRICATION LINES

STUMPY POINT  
 FERRY BASIN



Mechanicsburg, PA NC License No. C-2979

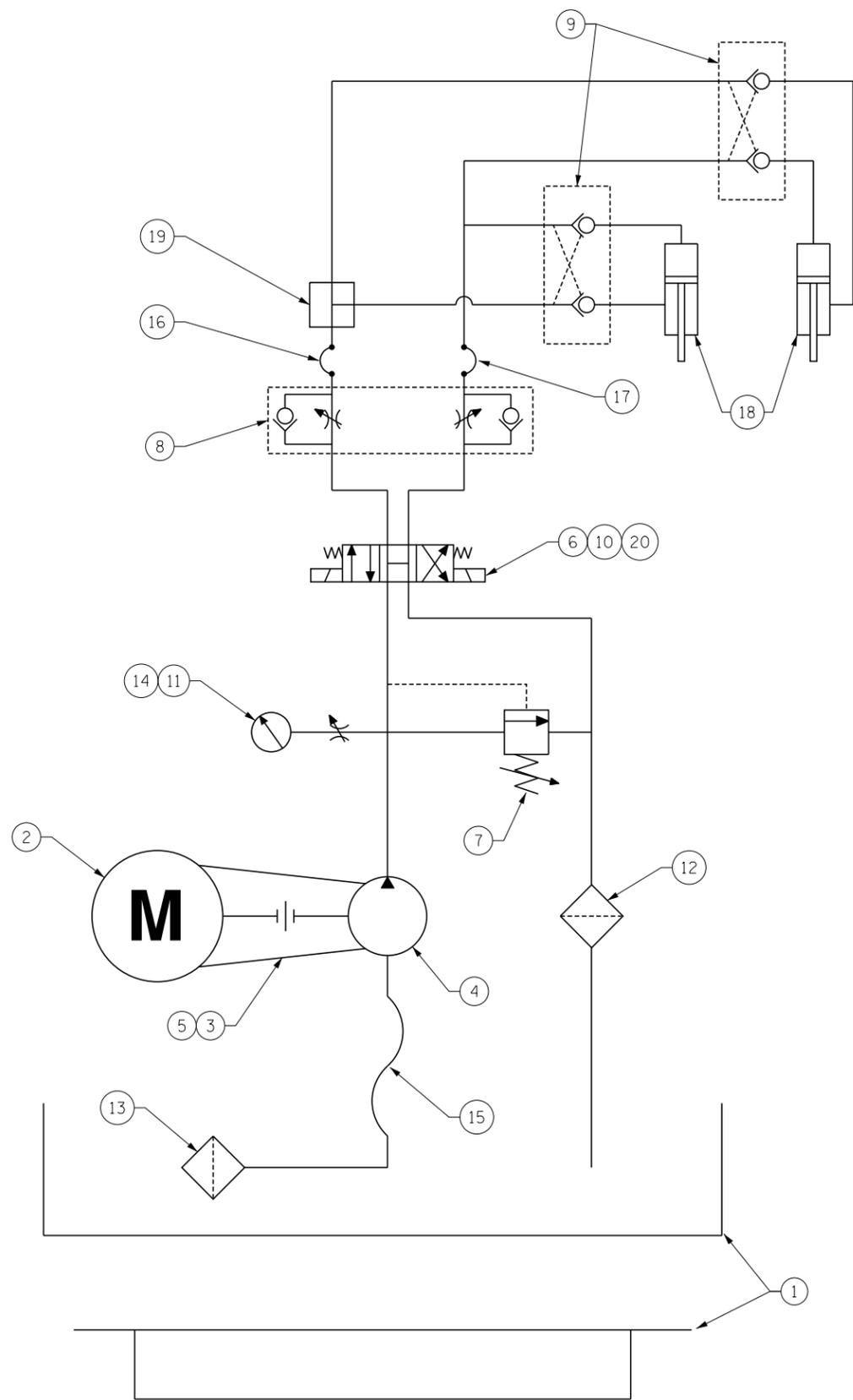


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DWG NUMBER	TOTAL DWGS
M03	08

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



BILL OF MATERIALS			
ITEM NO.	QUANTITY	DESCRIPTION	MATERIAL/MODEL NUMBER
1	1	30 GALLON RESERVOIR BY HPU MANUFACTURER	---
2	1	ELECTRIC MOTOR BY BALDOR	5HP, 1800 RPM, TEFC, 208.60/10, 184 TC
3	1	MOTOR TO PUMP ADAPTOR BY VESCOR	1960 P/M ADAPTOR 184 TC x SAE 2A-5.0
4	1	FIXED DISPLACEMENT UNIDIRECTIONAL SELF-PRIMING EXTERNAL GEAR PUMP BY BOSCH-REXROTH	AZPF-016RRR12MB
5	1	MOTOR TO PUMP ADAPTOR COUPLING BY MAGNALOY	M200 3/4-3/16 x 1-1/8 - 1/4
6	1	SINGLE STATION MANIFOLD BY HPU MANUFACTURER	---
7	1	RELIEF VALVE BY SUN	RDDA-LAN
8	1	DUAL FLOW CONTROL BY SUN	NCCB-KCN
9	2	PILOT OPERATED CHECK VALVES BY SUN	CKCB-XCN
10	1	SOLENOID OPERATED DIRECTIONAL VALVE BY BOSCH REXROTH	4WE6H6X/W110N9
11	1	2 1/2", 3,000 PSI, 1/4" BOTTOM MOUNT PRESSURE GAGE BY WIKA	213.40
12	1	MEDIUM PRESSURE 10 MICRON RETURN LINE FILTER WITH 3 PSI BYPASS BY DONALDSON COMPANY, INC.	P164378 FILTER WITH P166416 HEAD
13	1	SUCTION STRAINER WITH 3 PSI RELIEF VALVE BY DONALDSON COMPANY, INC.	P173912
14	1	GAGE SNUBBER BY SUN	NSAB-KXV-BA
15	1	1/2" INSIDE DIAMETER TYPE AT-ISO 1436 TYPE 2AT EN 853 TYPE 2SN	381-8
16	1	4,250 PSI HOSE BY PARKER	
17	1		
18	2	HYDRAULIC CYLINDER	SEE "RAMP LIFT SYSTEM" DRAWING FOR DETAILS
19	1	FLOW INTEGRATOR BY BRAND	B300-1/2

**NOTES:**

- ITEM #19 TO BE INSTALLED ON THE RETURN LINE FROM CYLINDERS.
- ITEM #1 INCLUDES 30 GAL. RESERVIOR, DRIP PAN, AND COVER.  
(SEE "HYDRAULIC UNIT ENCLOSURE" DRAWING FOR ADDITIONAL DETAILS.)
- HYDRAULIC UNIT AND CYLINDER TO BE PAINTED MARINE ENAMEL.

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 4 OF 4

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

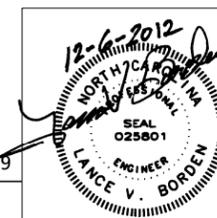
HYRAULIC SCHEMATIC

STUMPY POINT  
 FERRY BASIN



Mechanicsburg, PA NC License No. C-2979

DWG NUMBER	TOTAL DWGS
M04	08



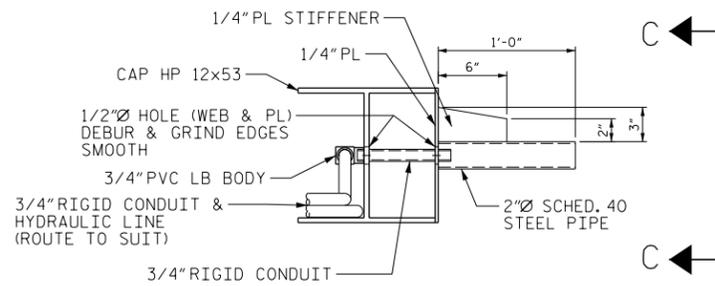
REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	TOTAL SHEETS
1			3			
2			4			

DRAWN BY : JAB DATE : 11-30-12  
 CHECKED BY : DMB DATE : 11-30-12

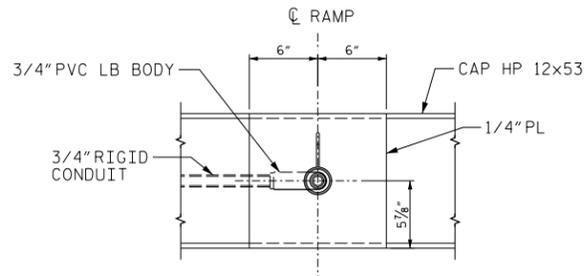
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**NOTES:**

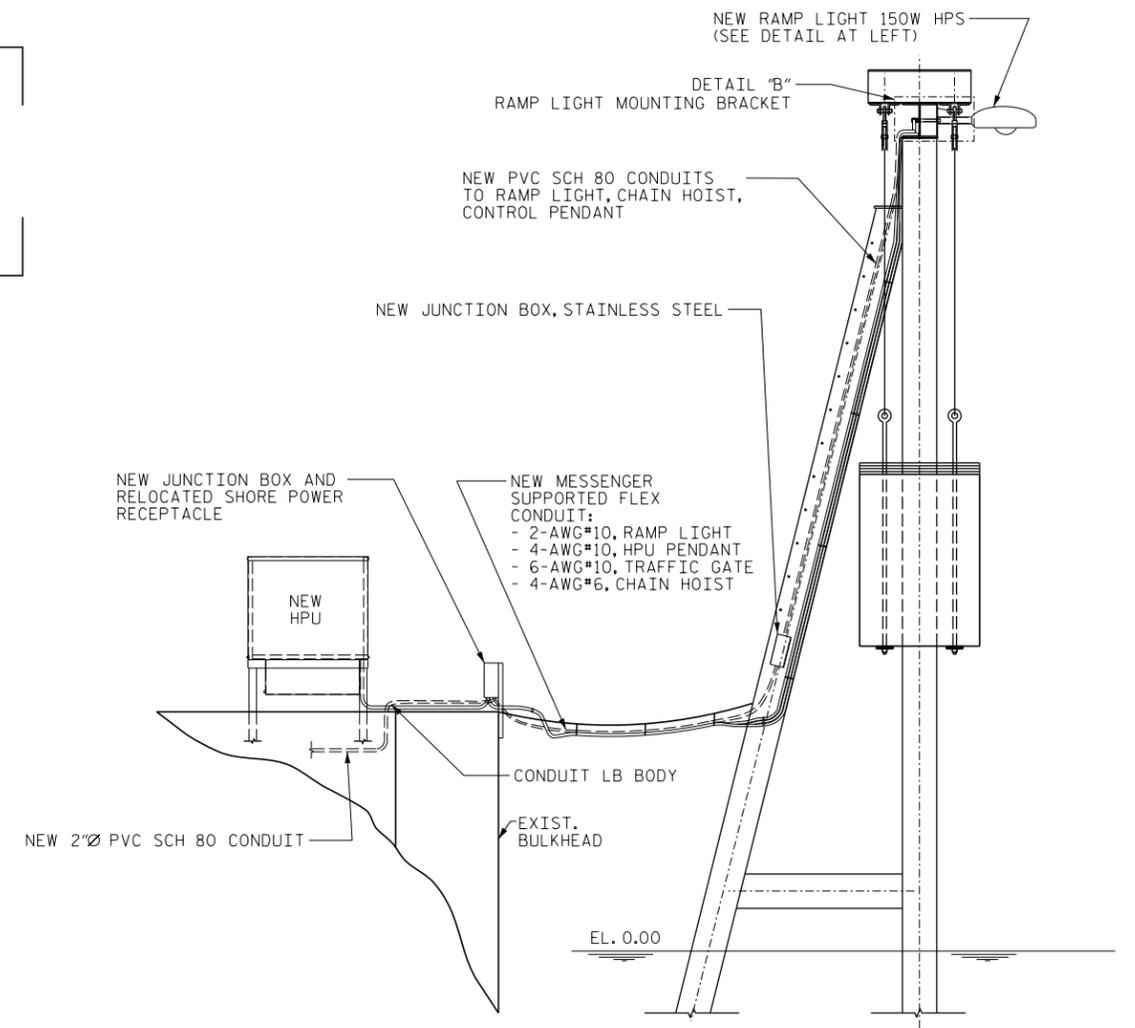
1. ALL WORK SHALL BE INSTALLED IN COMPLIANCE WITH NFPA 70, THE NATIONAL ELECTRICAL CODE.
2. NEW JUNCTION BOX AT NEW HYDRAULIC POWER UNIT SHALL BE MOUNTED ON HORIZONTAL STAINLESS STEEL UNISTRUT SUPPORTED BY TWO 4X4 TREATED TIMBER POSTS EMBEDDED AT LEAST 3 FT INTO THE GROUND. HYDRAULIC POWER UNIT MOTOR STARTER AND CHAIN HOIST DISCONNECT SWITCHES SHALL BE MOUNTED ON SAME FRAMING.
3. NEW JUNCTION BOX MOUNTED ON EXISTING BULKHEAD NEAR MESSENGER CABLE SHALL BE SUPPORTED BY 2 STAINLESS STEEL UNISTRUTS MOUNTED TO BULKHEAD BY 1/2 INCH STAINLESS ADHESIVE ANCHOR BOLTS EMBEDDED AT LEAST 6 INCHES INTO BULKHEAD CONCRETE. USE 3 BOLTS SPACED AT LEAST 18 INCHES APART FOR EACH UNISTRUT.
4. PROVIDE JUNCTION BOXES, PULL BOXES AND CONDUIT RUNS AS REQUIRED TO COMPLETE THE SYSTEM.
5. ALL RIGID PVC CONDUIT SHALL BE SUPPORTED ON STRUCTURE AND ON BULKHEAD AT INTERVALS NO TO EXCEED 6 FEET.



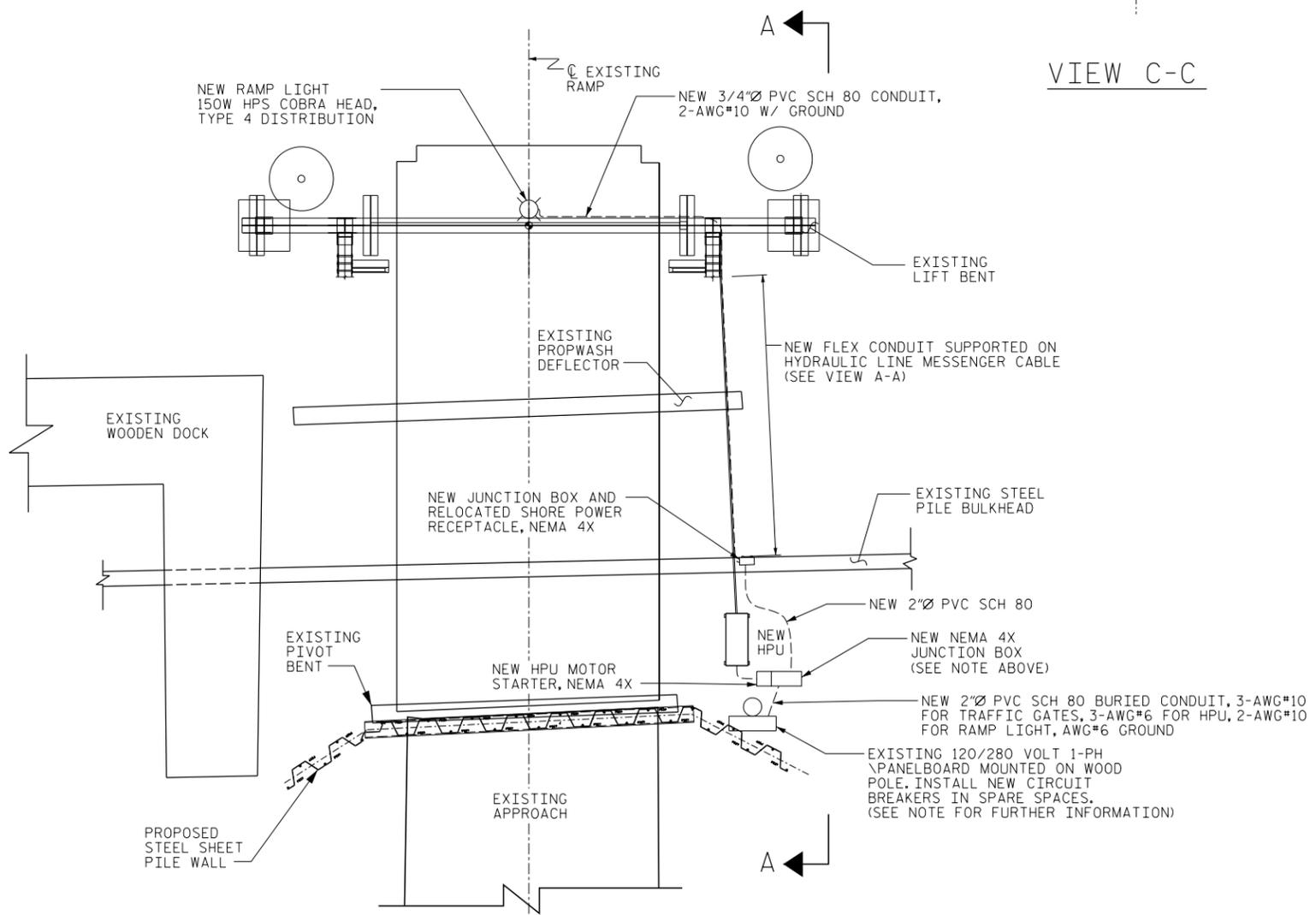
**DETAIL "B"**



**VIEW C-C**



**VIEW A-A**



PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 1 OF 3

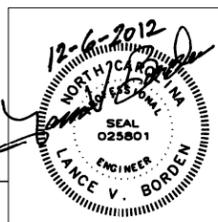
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

**ELECTRICAL LAYOUT**

**STUMPY POINT  
 FERRY BASIN**



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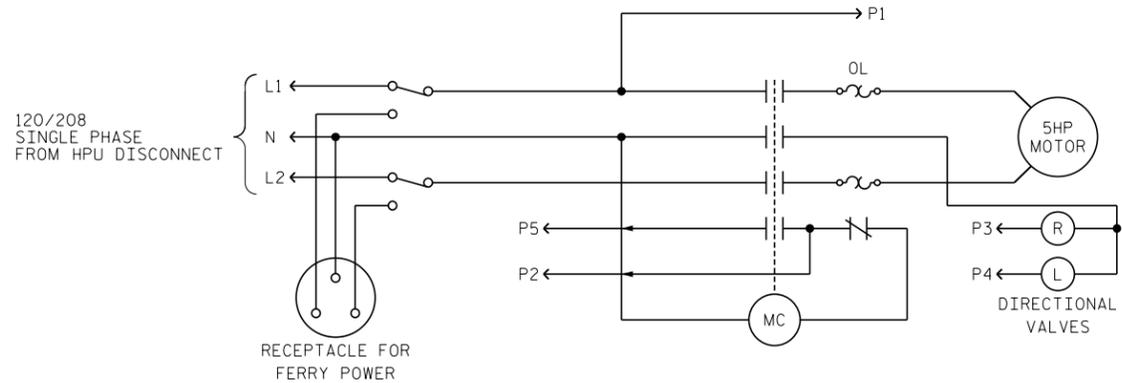


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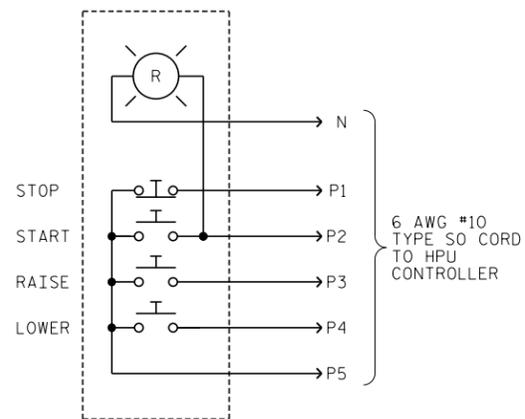
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DWG NUMBER	TOTAL DWGS
E01	08

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



HPU MOTOR CONTROLLER



HPU CONTROL PENDENT

**NOTES:**  
1. FOR ADDITIONAL REQUIREMENTS, SEE SPECIFICATIONS.

PROJECT NO. F-5503A  
DARE COUNTY

STATION: \_\_\_\_\_

SHEET 2 OF 3

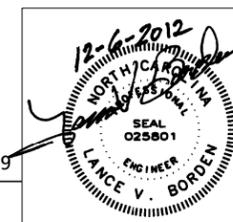
STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH

ELECTRICAL WIRING  
DIAGRAM

STUMPY POINT  
FERRY BASIN

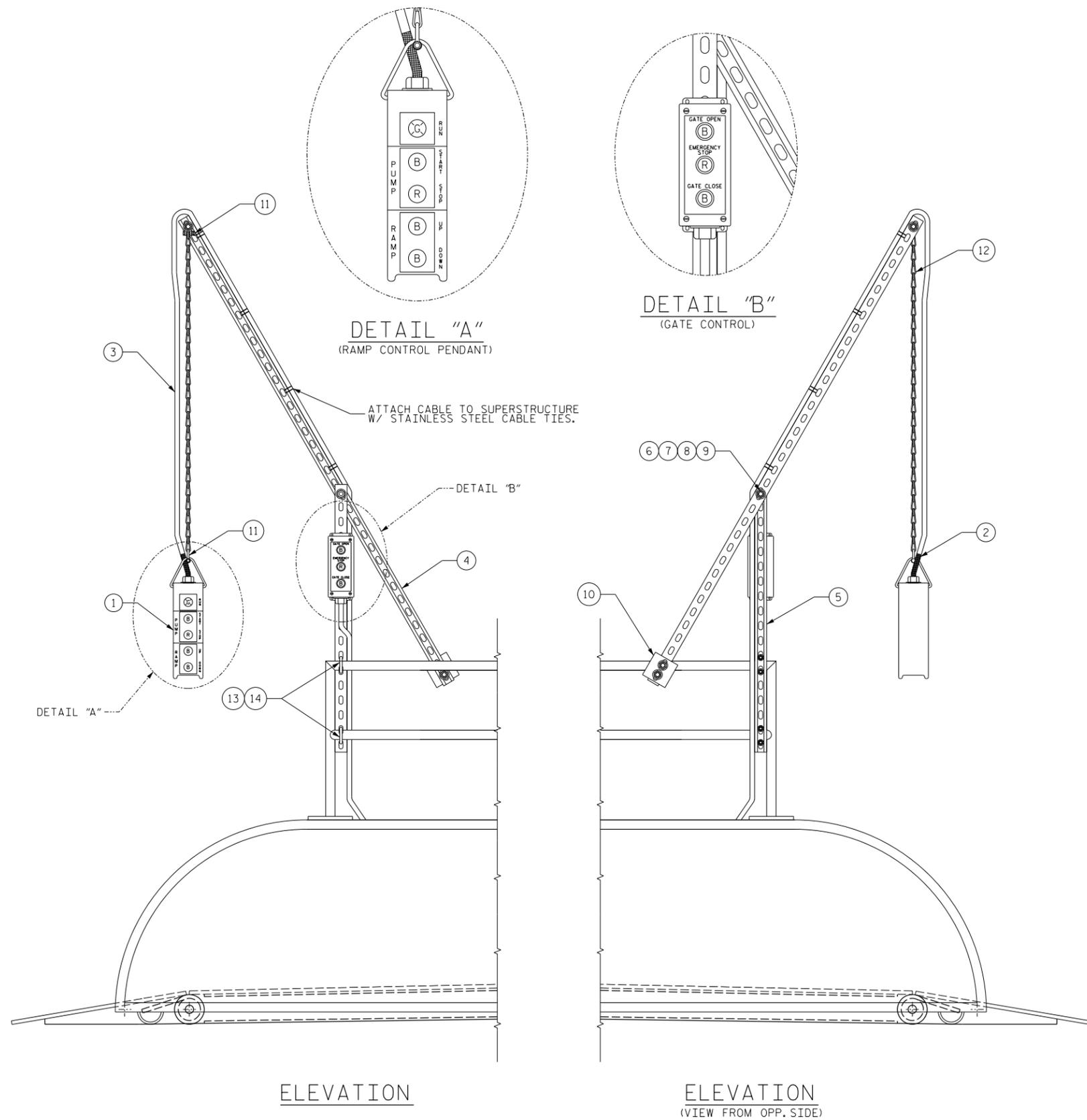


Mechanicsburg, PA NC License No. C-2979



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

DRAWN BY : JAB DATE : 11-30-12  
CHECKED BY : LVB DATE : 11-30-12



BILL OF MATERIALS					
ITEM NO.	QUANTITY	DESCRIPTION	MANUFACTURER	PART NUMBER	
1	1	PENDANT STATION	SQUARE D	CLASS 9001	
		NEMA 4X ENCLOSURE		TYPE SKYP4	
	1	LEGEND PLATE (CUSTOM)	SQUARE D	CLASS 9001	
		RAMP - UP-DOWN		TYPE SKN299	
	1	LEGEND PLATE (CUSTOM)	SQUARE D	CLASS 9001	
		PUMP - START - STOP		TYPE SKN299	
	1	LEGEND PLATE	SQUARE D	CLASS 9001	
		RUN		TYPE SKN124	
	1	1	PILOT LIGHT (LED)	SQUARE D	CLASS 9001
			GREEN		TYPE SKP38LGG9
	1	1	OPERATOR	SQUARE D	CLASS 9001
			PUSH BUTTON		TYPE SKRU-1
	3	1	RUBBER BOOT	SQUARE D	CLASS 9001
			BLACK		TYPE KU-1
1	1	RUBBER BOOT	SQUARE D	CLASS 9001	
		RED		TYPE KU-2	
1	1	OPERATOR	SQUARE D	CLASS 9001	
		PUSH BUTTON		TYPE SKRU-10	
2	1	KELLEMS DELUXE LIQUID-TIGHT CORD GRIP	KELLEMS	07401017	
		LIQUID-TIGHT STAINLESS/ALUMINUM			
3	12 TO 16 FT.	FLEXIBLE CABLE	A.I.W. CORP	16awg-10c-SOOW	
		10 CONDUCTOR - 16awg			
4	5 TO 6 FT.	STAINLESS-STEEL SUPERSTRUT	THOMAS & BETTS	A-1200-HS-SS	
		12 GA. 1-5/8" X 13/16"			
5	3 FT.	STAINLESS-STEEL SUPERSTRUT	THOMAS & BETTS	A-1200-HS-SS	
		12 GA. 1-5/8" X 13/16"			
6	3 IN.	STAINLESS STEEL PIPE	VARIOUS	N/A	
		1/2" IP (CONDUIT OR PIPE)			
7	4 IN.	STAINLESS STEEL PIPE	VARIOUS	N/A	
		1/2" IP (CONDUIT OR PIPE)			
8	10 IN.	THREADED ROD	VARIOUS	N/A	
		5/8" X 11			
9	4	HEX NUT	VARIOUS	N/A	
		5/8" X 11			
10	12 LBS.	WEIGHT - COUNTERBALANCE	CUT TO SUIT, DRILL AND TAP	LEAD	
		3.5" X 3.5" X 2.5" OF LEAD (APPROX.)	TWO 5/16" MOUNTING HOLES	INGOT	
11	2	SHACKLE	VARIOUS	N/A	
		1/4" GALVAIZED			
12	2 TO 3 FT.	CHAIN	VARIOUS	3601T38	
		SAFE AND REGISTER		(MCMaster-CARR)	
13	1 PACKAGE	STAINLESS STEEL U-BOLTS	VARIOUS	8896T56	
		3/8"-16 FOR 1" PIPE		(MCMaster-CARR)	
14	1 PACKAGE	STAINLESS STEEL FENDER WASHERS	VARIOUS	90313A114	
		3/8" X 1-1/4" OD		(MCMaster-CARR)	

**NOTE:**

- BILL OF MATERIALS IS NOT ALL INCLUSIVE. ADDITIONAL HARDWARE AND/OR COMPONENTS MAY BE REQUIRED. CONTRACTOR TO VERIFY ALL COMPONENTS AND DIMENSIONS.
- GATE CONTROL ENCLOSURE SHALL BE A NEMA 4X STAINLESS STEEL ENCLOSURE. ALL CONDUIT CONNECTIONS SHALL BE LIQUID TIGHT AND CONNECTED TO THE BOTTOM OF THE ENCLOSURE.
- ALL HARDWARE SHALL BE STAINLESS STEEL.

PROJECT NO. F-5503A  
DARE COUNTY  
 STATION: \_\_\_\_\_

SHEET 3 OF 3

STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

CONTROL  
 PENDANT DETAILS

STUMPY POINT  
 FERRY BASIN



DRAWN BY : JAB DATE : 11-30-12  
 CHECKED BY : LVB DATE : 11-30-12

12/12/2012 11:11:27 AM  
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DWG NUMBER E03 TOTAL DWGS 08

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