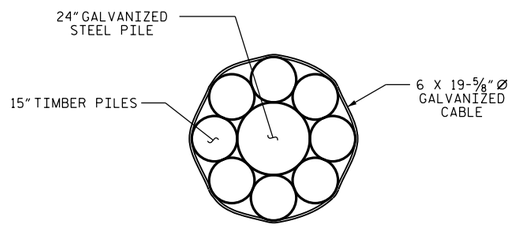
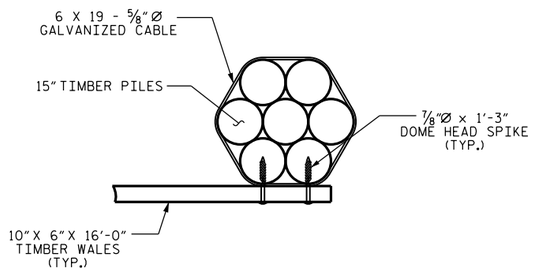


DETAIL OF 9-PILE CLUSTER (DOLPHINS)

PILES 15' FROM ENDS OF FENDER SYSTEM

EIGHT (8) OUTSIDE PILES TO BE EQUALLY SPACED ON A 7 FT. CIRCLE AND BATTERED 1½:12. DRAW TOGETHER AT TOP AND WITH 3 TURNS OF 6 X 19- 5/8" Ø GALVANIZED CABLE AT 1'-6" AND 4'-6" FROM THE TOP OF CLUSTER. CABLE SHALL BE SECURED WITH 3/8" Ø X 4" GALVANIZED STAPLES AND THREE WIRE CLAMPS AT EACH END. AFTER INSTALLATION, FILL GALAVANIZED STEEL PILE WITH SAND TO AN ELEVATION 5'-0" FROM THE TOP OF THE PILE. THE REMAINING PORTION OF THE PILE IS TO BE FILLED WITH CLASS A CONCRETE.



DETAIL OF 7-PILE CLUSTER (DOLPHINS)

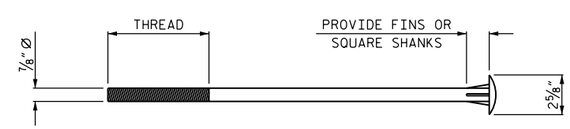
PILES AT ENDS OF FENDER SYSTEM

SIX (6) OUTSIDE PILES TO BE EQUALLY SPACED ON A 6 FT. CIRCLE AND DRAWN TOGETHER AT TOP, WRAPPED WITH 3 TURNS OF 6 X 19 - 5/8" Ø GALVANIZED CABLE AT 1'-1" AND 5'-1" FROM TOP OF CLUSTER. CABLE SHALL BE SECURED WITH 3/8" Ø X 4" GALVANIZED STAPLES AND THREE WIRE CLAMPS AT EACH END. ALL PILES SHALL BE VERTICAL; CONSTRUCT DOLPHIN SO FACE OF FENDER IS VERTICALLY PLUMB.

STRUCTURAL TIMBER					
ITEM	UNIT	LENGTH	SIZE	NO.	TOTAL
15" TREATED TIMBER PILE	LIN. FT.	60'-0"	15"	222	13,320'-0"
10" X 6" TREATED TIMBER	LIN. FT.	16'-0"	10" X 6"	144	2,304'-0"
10" X 10" TREATED TIMBER	LIN. FT.	7'-6"	10" X 10"	24	180'-0"

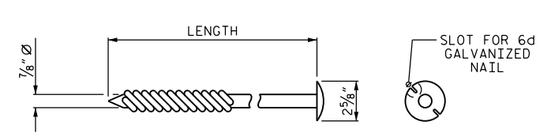
STRUCTURAL PILES					
ITEM	UNIT	LENGTH	SIZE	NO.	TOTAL
PP 24X0.50 GALVANIZED STEEL PILE	LIN. FT.	60'-0"	24"	4	240'-0"

STRUCTURAL HARDWARE (GALVANIZED)			
ITEM	UNIT	NO.	TOTAL
6 X 19 - 5/8" Ø GALV. STEEL CABLE	LIN. FT.	——	2,166'-0"
5/8" CABLE CLAMPS	LBS.	272	272 LBS.
3/8" X 4" STAPLES	83 LBS./100	884	734 LBS.
7/8" Ø X 15" DOME HEAD DRIVE SPIKE	240 LBS./100	312	750 LBS.
7/8" Ø x 18" DOME HEAD DRIVE SPIKE	337 LBS./100	48	161 LBS.
6d COMMON NAIL	BOX	1	1
7/8" Ø X 24" DOME HEAD TIMBER BOLT	427 LBS./100	144	616 LBS.
7/8" Ø X 34" DOME HEAD TIMBER BOLT	596 LBS./100	48	287 LBS.
7/8" Ø X 38" DOME HEAD TIMBER BOLT	664 LBS./100	48	320 LBS.
7/8" Ø X 42" DOME HEAD TIMBER BOLT	731 LBS./100	48	352 LBS.
O.G. WASHER	150 LBS./100	288	432 LBS.
7/8" HEAVY HEX NUT	30 LBS./100	288	87 LBS.



TYPICAL DOME HEAD TIMBER BOLT

ALL BOLT HEADS MUST BE IN FULL CONTACT WITH THE SURFACE OF THE TIMBER PILES OR WALES.



TYPICAL DOME HEAD DRIVE SPIKE

ALL DRIVE SPIKE HEADS MUST BE IN FULL CONTACT WITH THE SURFACE OF THE TIMBER PILES OR WALES.

PROJECT NO. 41732.7

DARE COUNTY

BRIDGE NO. 9

SHEET 2 OF 2

DocuSigned by:
William M. Clarke
1EB20097EAAF437...

7/16/2015

NORTH CAROLINA PROFESSIONAL SEAL 40257 ENGINEER W. MATTHEW CLARKE

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

FENDER SYSTEM DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	F-5
1			3			TOTAL SHEETS
2			4			7

DRAWN BY : S. T. SANDOR DATE : 08/2014
CHECKED BY : W. M. CLARKE DATE : 08/2014

16-JUL-2015 11:44
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