GENERAL NOTES:

- U.S. COAST GUARD NOTIFICATION: Notify the local office of the U.S. Coast Guard at least 30 days prior to beginning of construction of the Fender System.
- POLYMERIC PILES Provide polymeric piles in accordance with Specification Section 471. Installation shall be in accordance with manufacturer's recommendations. All piles shall be plumb.
- PLASTIC LUMBER AND STRUCTURAL COMPOSITE LUMBER WALES: Provide only Plastic Lumber and Structural Composite Lumber Wales in accordance with Specification Section 973. Wales shall be continuous and spliced only at locations shown on the plans.
- PLASTIC LUMBER DECKING FOR CATWALKS: Provide Plastic Lumber decking for catwalks when called for in the Plans in accordance with Specification Section 973.

Install Plastic Lumber Decking according to manufacturer's recommendations using stainless steel #10 x 3" (minimum) deck screws.

FIBERGLASS OPEN GRATING FOR CATWALKS: Provide Fiberglass Open Grating for catwalks when called for in the Plans. Fiberglass Open Grating shall be a heavy duty design suitable for exterior installations. Maximum gap opening on the walkway surface shall be $1\frac{1}{2}$ ". Design live loads and deflections shall be a 50 psf uniformly distributed load with a maximum deflection of $\frac{3}{6}$ " or L/120 at the center of a simple span and a concentrated load of 250 pounds with a maximum deflection of $\frac{1}{4}$ " at the center of a simple span. Color of Fiberglass Open Grating shall be gray or black.

Install Fiberglass Open Grating according to manufacturer's recommendations using stainless steel hardware, screws, bolts, nuts and washers. Attach Fiberglass Open Grating to Wales and Deck Supports at a 2'-0" maximum spacing so as to resist pedestrian live loads and uplift forces from wind, buoyancy and wave

- CLEARANCE GAUGE AND LIGHT: Clearance Gauge to be furnished by the FDOT and erected by the Contractor. Clearance Gauge width and numeral height is dependant on visibility distance. The required visibility distance shall be determined by the United States Coast Guard District Commander. Provide and install Clearance Gauge Light in accordance with Specification Section 510 and Index No. 21220.
- NAVIGATION LIGHTS: Provide and install Navigation Lights in accordance with Specification Section 510, Index No. 21220 and/or project specific details. Provide and maintain Temporary Navigation Lights during construction until permanent Navigation Lights are operational.
- BOLTS, THREADED BARS, NUTS, SCREWS AND WASHERS: Furnish stainless steel Bolts in accordance with ASTM F593 Type 316. Furnish stainless steel Threaded Bars in accordance with ASTM A193 Grade B8M. Furnish stainless steel Nuts in accordance with ASTM F594 Type 316. Furnish stainless steel Screws in accordance with ASTM F593 Type 305. Furnish stainless steel Washers compatible with Bolts, Threaded Rods and Nuts under heads and nuts. Torque Nuts on 1" diameter Bolts and Threaded Bars to 150 lb-ft. Keep threads on Bolts, Threaded Bars and Nuts free from dirt, coarse grime and sand to prevent galling and seizing during tightening.

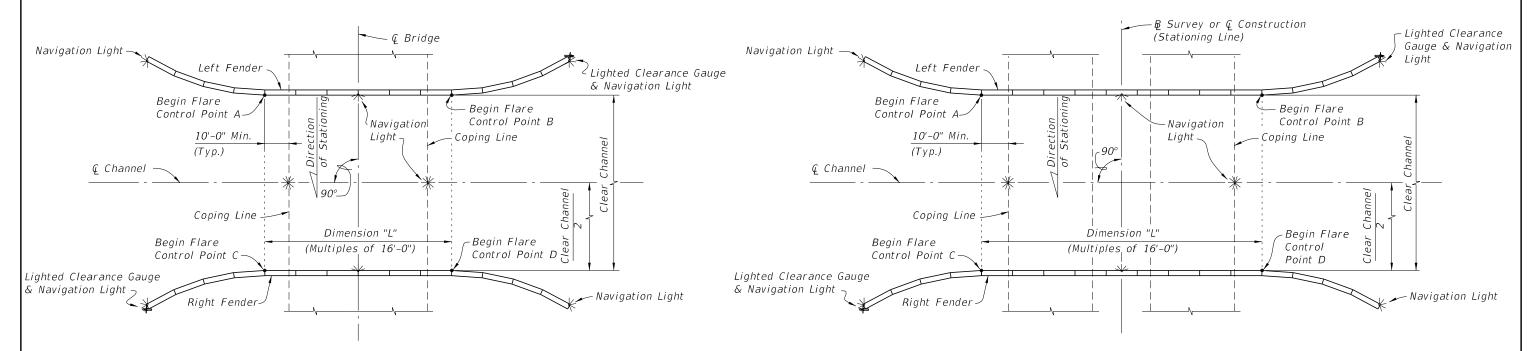
SPLICE PLATES: Furnish Splice Plates in accordance with ASTM A240 Type 316.

GENERAL NOTES

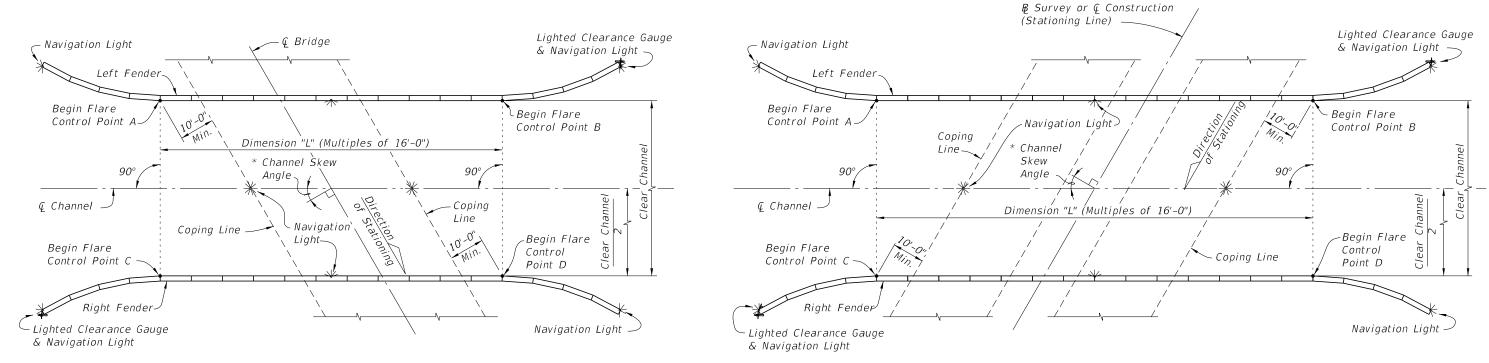
Sheet No.

1 of 7

Interim Date **REVISIONS** 2010 Interim Design Standard DESCRIPTION 07/01/11 FENDER SYSTEM -Deleted "INSTRUCTION TO DESIGNERS" note; Changed title, piling, wales, and dimensional lumber notes to reflect Index No. POLYMERIC PILES 21900 changes to specifications.



SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE FIXED BRIDGE WITH NONSKEWED CHANNEL SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF DUAL FIXED BRIDGES WITH NONSKEWED CHANNEL (PARALLEL DUAL FIXED BRIDGES SHOWN, NONPARALLEL DUAL FIXED BRIDGES SIMILAR)



SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE FIXED BRIDGE WITH SKEWED CHANNEL

SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF DUAL FIXED BRIDGES WITH SKEWED CHANNEL (PARALLEL DUAL FIXED BRIDGES SHOWN, NONPARALLEL DUAL FIXED BRIDGES SIMILAR)

* See Structures Plans, Plan and Elevation and Foundation Layout Sheets for magnitude and orientation of Channel Skew Angle.

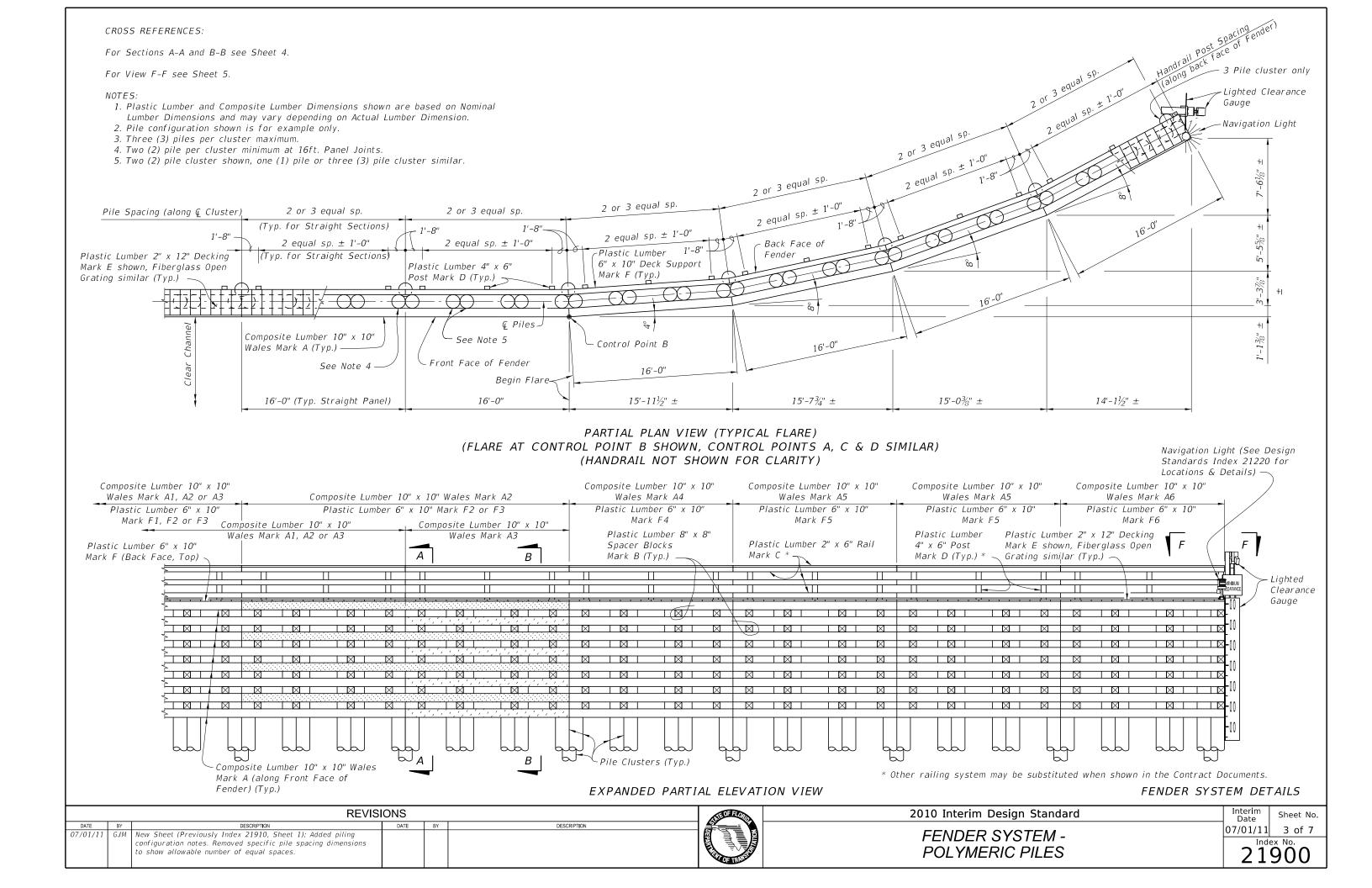
CROSS REFERENCES:

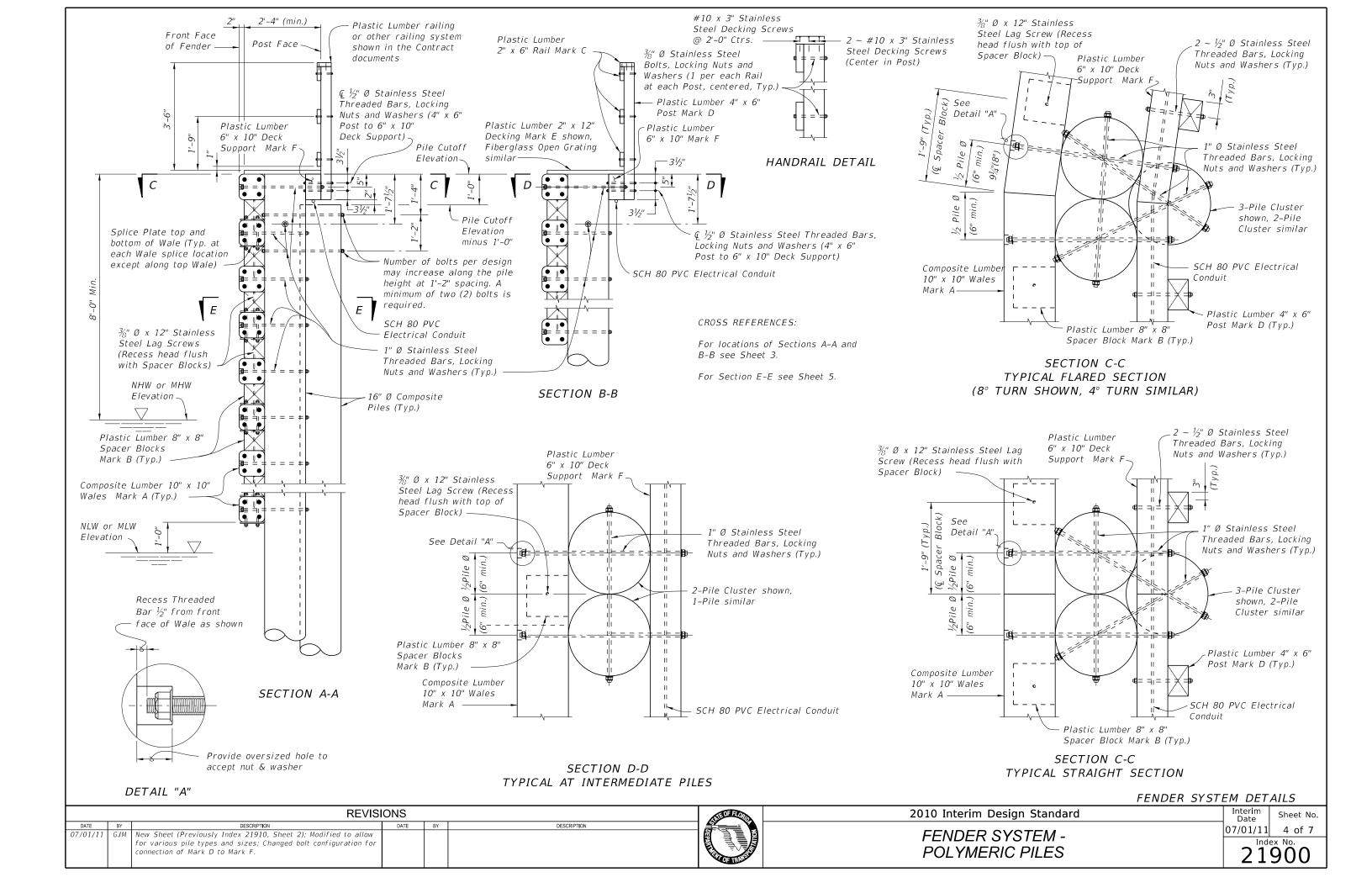
For Stations and Offsets of referenced Control Points A, B, C and D, Dimension "L" and Clear Channel Width see Fender System Table of Variables in Structures Plans.

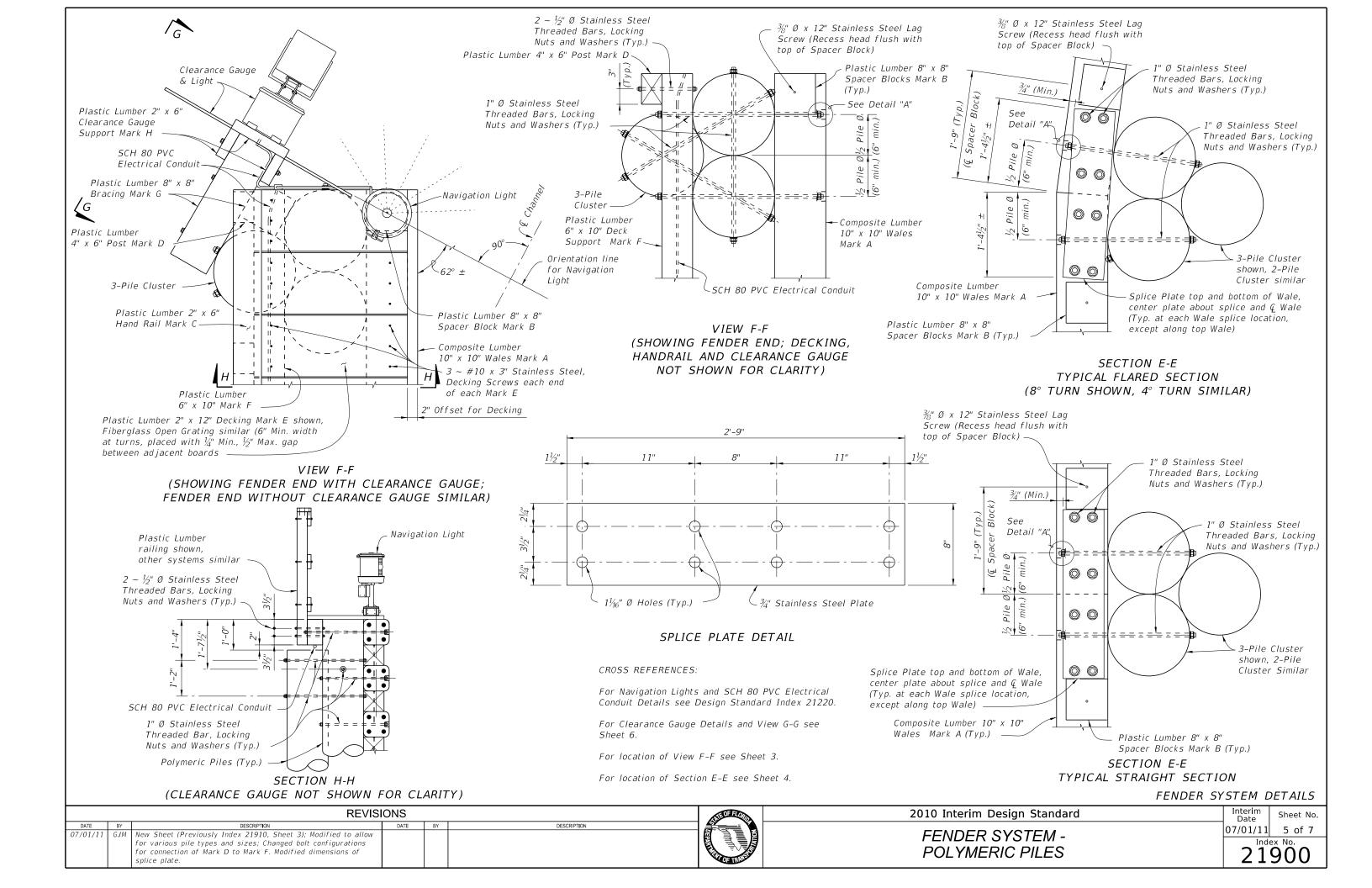
For Navigation Light Details see Design Standards Index 21220.

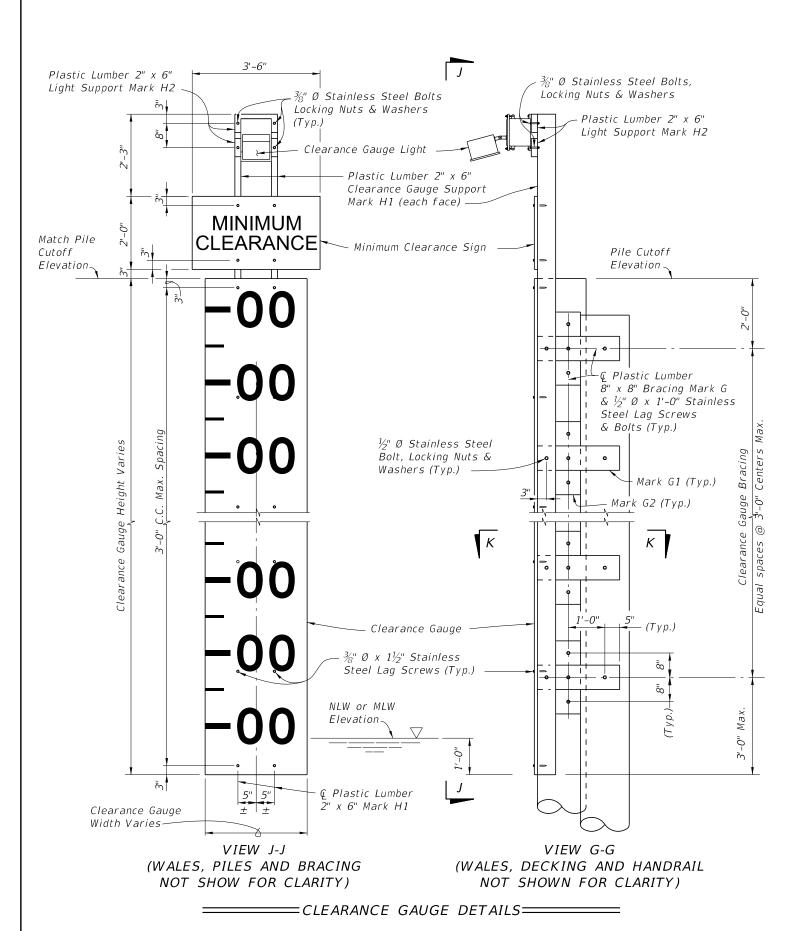
LAYOUT GEOMETRY

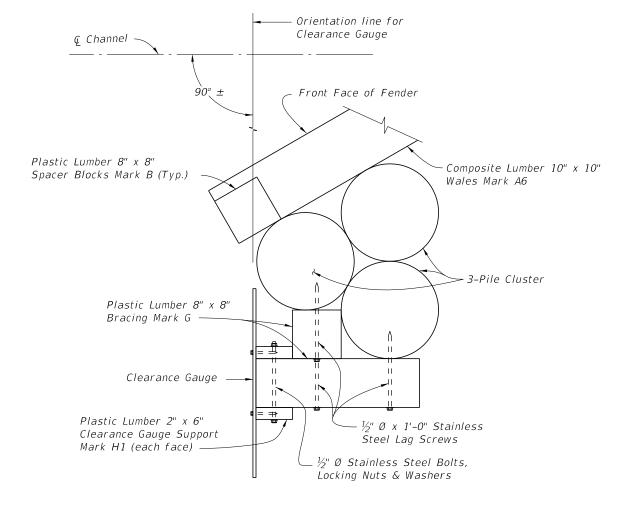
REV	SIONS	ALEO FROM	2010 Interim Design Standard	Interim Sheet No.
DATE BY DESCRIPTION 07/01/11 GJM Added clarification that this layout geometry is for fixed bridges only; Changed title.	DATE BY DESCRIPTION	The state of the s	FENDER SYSTEM - POLYMERIC PILES	07/01/11 2 of 7 2 1900











SECTION K-K

CROSS REFERENCES:

For Structural Composite and Plastic Lumber Bill of Materials Quantities and Fender System Table of Variables see Structures Plans.

For location of View G-G see Sheet 5.

FENDER SYSTEM DETAILS

	REVIS	ONS			A TOP TO S	2010 Interim Design Standard	Interim Date	Sheet No.
DATE BY 07/01/11 GJM	DESCRIPTION New Sheet (Previously Index 21910, Sheet 4); Modified to allow for various pile types and sizes.	DATE	BY	DESCRIPTION	TOTAL STREET	FENDER SYSTEM - POLYMERIC PILES	07/01/11 2 1	6 of 7 lex No.

	* STRUCTURAL COMPOSITE LUMBER BILL OF MATERIALS								
MARK	SIZE (NOMINAL)	DIMENSIONS	BOARD FT. PER EACH	NO. REQD.	QUANTITY				
A1	10" X 10" COMPOSITE LUMBER	32'-0" (STRAIGHT)	266.6	mber					
A2	10" X 10" COMPOSITE LUMBER	32'-0"	266.6		res Plans				
АЗ	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	posite	e in Structures				
A4	10" X 10" COMPOSITE LUMBER	3%" 5%"	133.3	le	of Materials Table				
A5	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	sted	Bill of Ma				
A6	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	See					

	*	PLASTIC LUMBER BILL OF MA	ATERIALS		
MARK	SIZE (NOMINAL)	DIMENSIONS	BOARD FT. PER EACH	NO. REQD.	QUANTITY
В	8" X 8" PLASTIC LUMBER	8" (STRAIGHT)	3.6		
С	2" X 6" PLASTIC LUMBER	16'-0" (STRAIGHT) (Trim & Miter Ends as required)	16.0		
D	4" X 6" PLASTIC LUMBER	4'-4" (STRAIGHT)	8.7		
** E	2" X 12" PLASTIC LUMBER	2'-6" (STRAIGHT) (Miter as required)	5.0	mber	
F 1	6" X 10" PLASTIC LUMBER	32'-0" (STRAIGHT)	160.0	stic Lu	Plans
F2	6" X 10" PLASTIC LUMBER	31'-11"	159.6	Estimated Structural Composite and Plastic Lumber	Bill of Materials Table in Structures Plans
F3	6" X 10" PLASTIC LUMBER	15'-11"	79.6	ural Compo:	ıls Table in
F 4	6" X 10" PLASTIC LUMBER	15'-91/4"	78.8	nated Struct	l of Materia
F5	6" X 10" PLASTIC LUMBER	15'-81/4"	78.4	See Estir	
F6	6" X 10" PLASTIC LUMBER	15'-101/4"	79.2		
G 1	8" X 8" PLASTIC LUMBER	2'-3" (STRAIGHT)	12.0		
G2	8" X 8" PLASTIC LUMBER	2'-0" (STRAIGHT)	10.7		
Н1	2" X 6" PLASTIC LUMBER	PILE CUTOFF ELEV. MINUS NLW OR MLW ELEV. PLUS 5'-6" (STRAIGHT)	1.0 PER LF EACH		
Н2	2" X 6" PLASTIC LUMBER	1'-0" (STRAIGHT)	1.0		

	REVISIONS							
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION			
07/01/11	GJM	New Sheet (Previously Index 21910, Sheet 5); Removed reference to "Index 21900".						



^{*} All Plastic Lumber and Composite Lumber Dimensions and Quantities shown are based on Nominal Lumber Dimensions and may vary depending on Actual Lumber Dimension.

^{**} Provide Fiberglass Open Grating in lieu of 2" X 12" Plastic Lumber when called for in the Plans. Mounting hardware shall be Stainless Steel, install per Manufacturer's recommendations. See Structures Plans for Notes and Details.

GENERAL NOTES:

- U.S. COAST GUARD NOTIFICATION: Notify the local office of the U.S. Coast Guard at least 30 days prior to beginning of construction of the Fender System.
- 14" SQUARE PRESTRESSED CONCRETE PILES Provide 14" Square Prestressed Concrete Piles of sufficient length to achieve a minimum embedment of 20' into soil having a blow count greater than or equal to 6 (N ≥ 6). Pile splices and build-ups are not permitted. Use only 14" Square Prestressed Concrete Piles with 8 ½" diameter Low Relaxation Strands fabricated in accordance with Index No. 20614.
- PLASTIC LUMBER AND STRUCTURAL COMPOSITE LUMBER WALES: Provide only Plastic Lumber and Structural Composite Lumber Wales in accordance with Specification Section 973. Wales shall be continuous and spliced only at locations shown on the plans.
- PLASTIC LUMBER DECKING FOR CATWALKS: Provide Plastic Lumber decking for catwalks when called for in the Plans in accordance with Specification Section 973.

Install Plastic Lumber Decking according to manufacturer's recommendations using stainless steel $\#10 \times 3$ " (minimum) deck screws.

FIBERGLASS OPEN GRATING FOR CATWALKS: Provide Fiberglass Open Grating for catwalks when called for in the Plans. Fiberglass Open Grating shall be a heavy duty design suitable for exterior installations. Maximum gap opening on the walkway surface shall be $1\frac{1}{2}$ ". Design live loads and deflections shall be a 50 psf uniformly distributed load with a maximum deflection of $\frac{3}{6}$ " or L/120 at the center of a simple span and a concentrated load of 250 pounds with a maximum deflection of $\frac{1}{4}$ " at the center of a simple span. Color of Fiberglass Open Grating shall be gray or black.

Install Fiberglass Open Grating according to manufacturer's recommendations using stainless steel hardware, screws, bolts, nuts and washers. Attach Fiberglass Open Grating to Wales and Deck Supports at a 2'-0" maximum spacing so as to resist pedestrian live loads and uplift forces from wind, buoyancy and wave action.

- CLEARANCE GAUGE AND LIGHT: Clearance Gauge to be furnished by the FDOT and erected by the Contractor. Clearance Gauge width and numeral height is dependant on visibility distance. The required visibility distance shall be determined by the United States Coast Guard District Commander. Provide and install Clearance Gauge Light in accordance with Specification Section 510 and Index No. 21220.
- NAVIGATION LIGHTS: Provide and install Navigation Lights in accordance with Specification Section 510, Index No. 21220 and/or project specific details. Provide and maintain Temporary Navigation Lights during construction until permanent Navigation Lights are operational.

REVISIONS

BOLTS, THREADED BARS, NUTS, SCREWS AND WASHERS: Furnish stainless steel Bolts in accordance with ASTM F593 Type 316. Furnish stainless steel Threaded Bars in accordance with ASTM A193 Grade B8M. Furnish stainless steel Nuts in accordance with ASTM F594 Type 316. Furnish stainless steel Screws in accordance with ASTM F593 Type 305. Furnish stainless steel Washers compatible with Bolts, Threaded Rods and Nuts under heads and nuts. Torque Nuts on 1" diameter Bolts and Threaded Bars to 150 lb-ft. Keep threads on Bolts, Threaded Bars and Nuts free from dirt, coarse grime and sand to prevent galling and seizing during tightening.

SPLICE PLATES: Furnish Splice Plates in accordance with ASTM A240 Type 316.

WIRE ROPE: Provide wire rope meeting one of the following requirements:

New Sheet; Added General Notes to separate this Index from

polymeric piling fenders.

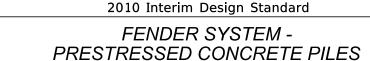
- 1. $\frac{1}{2}$ " diameter 6x19, 6x25 or 6x37 class IWRC Type 316 stainless steel wire rope with a minimum breaking strength of 18,000 lbs.
- 2. ½" diameter 6x19 galvanized wire rope with ultraviolet ray resistant polypropylene impregnation having an outside diameter of 5/8" with a minimum breaking strength of 22,000 lbs. Protect all ends with heat shrinkable end caps compatible with the rope's polypropylene that provide an effective water-tight seal.

FENDER SYSTEM ENERGY CAPACITY: Energy Capacity = 38 ft-k

GENERAL NOTES

07/01/11

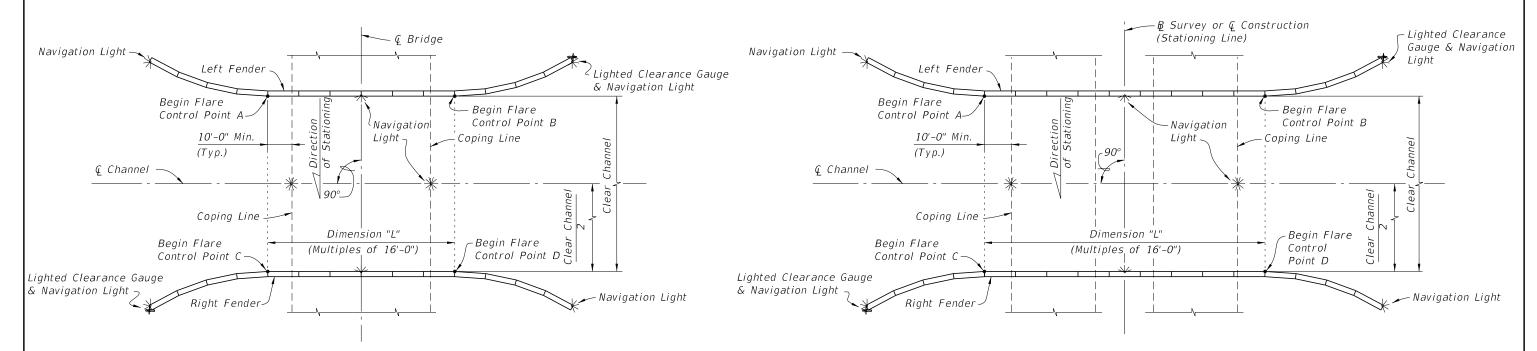
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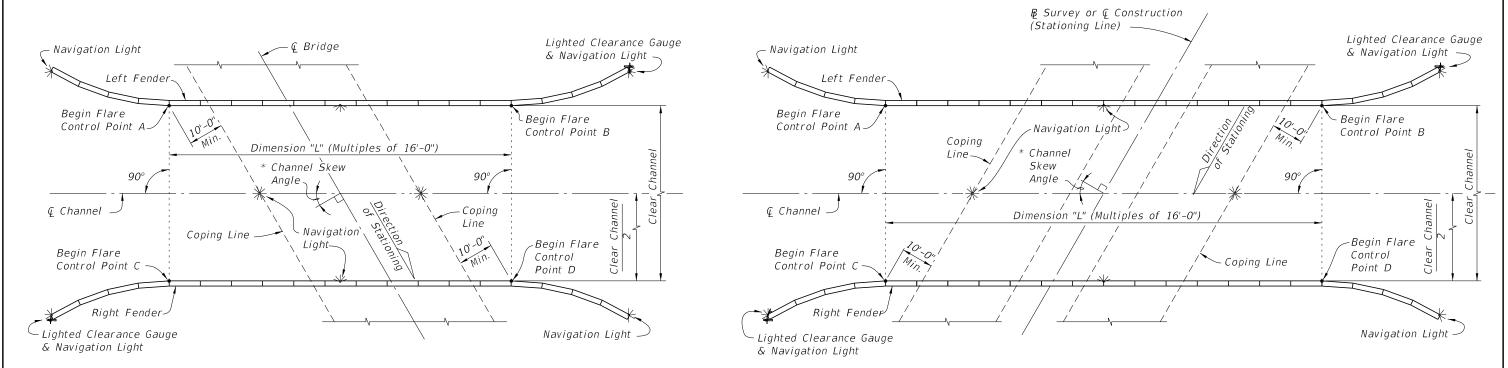
Interim Sheet No.

21930

1 of 7



SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE FIXED BRIDGE WITH NONSKEWED CHANNEL SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF DUAL FIXED BRIDGES WITH NONSKEWED CHANNEL (PARALLEL DUAL FIXED BRIDGES SHOWN, NONPARALLEL DUAL FIXED BRIDGES SIMILAR)



SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE FIXED BRIDGE WITH SKEWED CHANNEL

SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF DUAL FIXED BRIDGES WITH SKEWED CHANNEL (PARALLEL DUAL FIXED BRIDGES SHOWN, NONPARALLEL DUAL FIXED BRIDGES SIMILAR)

* See Structures Plans, Plan and Elevation and Foundation Layout Sheets for magnitude and orientation of Channel Skew Angle.

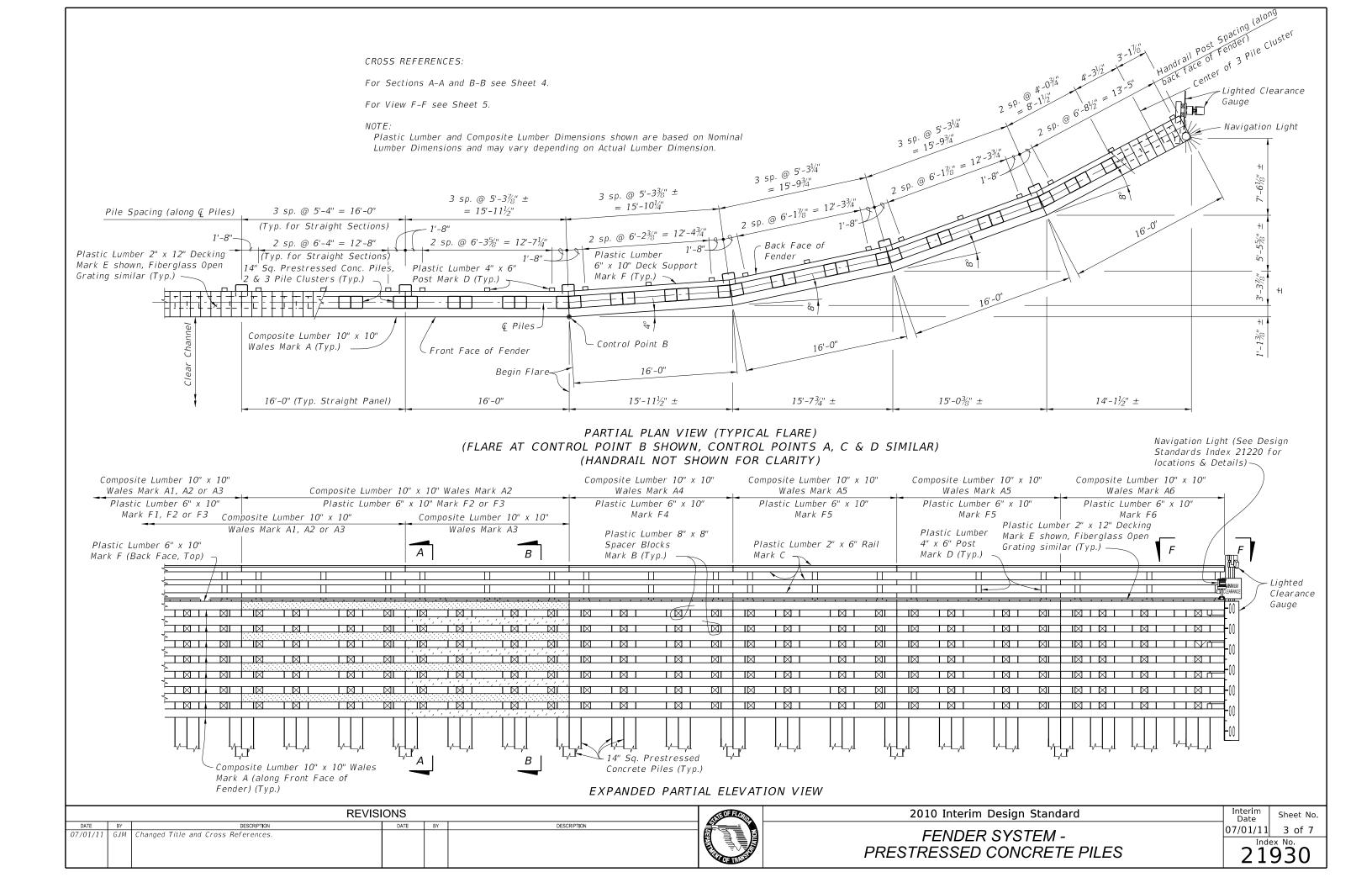
CROSS REFERENCES:

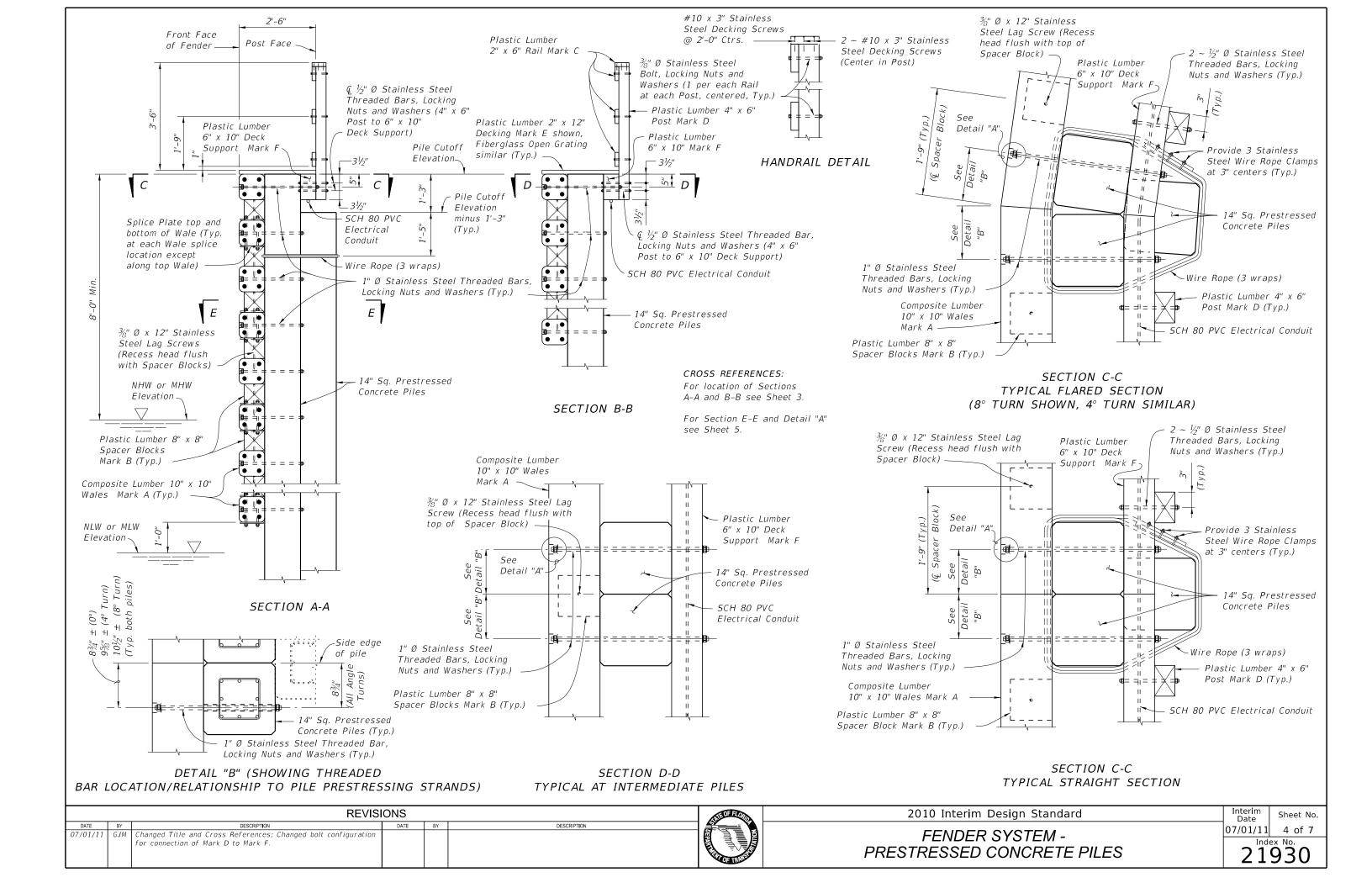
For Stations and Offsets of referenced Control Points A, B, C and D, Dimension "L" and Clear Channel Width see Fender System Table of Variables in Structures Plans.

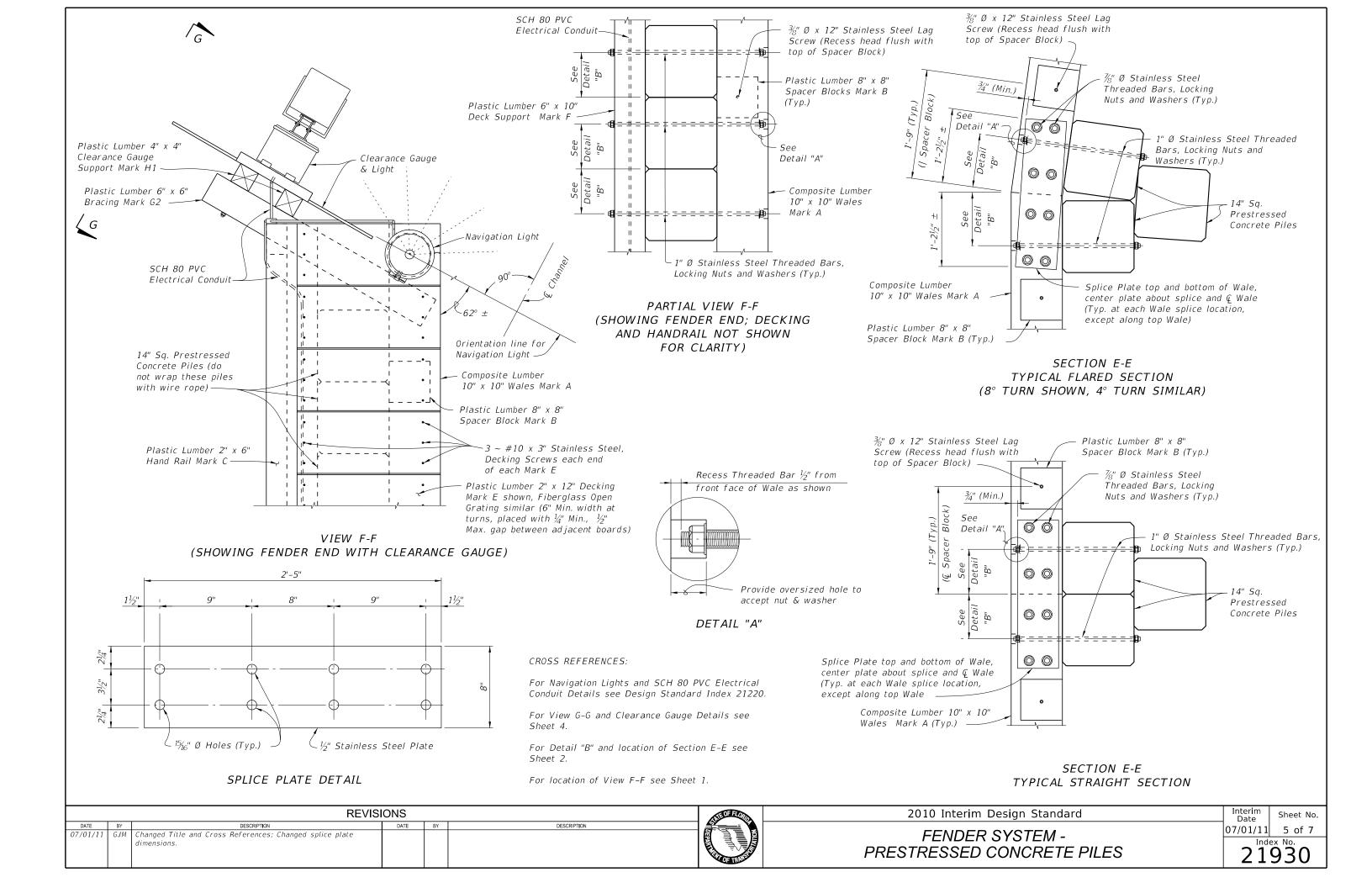
For Navigation Light Details see Design Standards Index 21220.

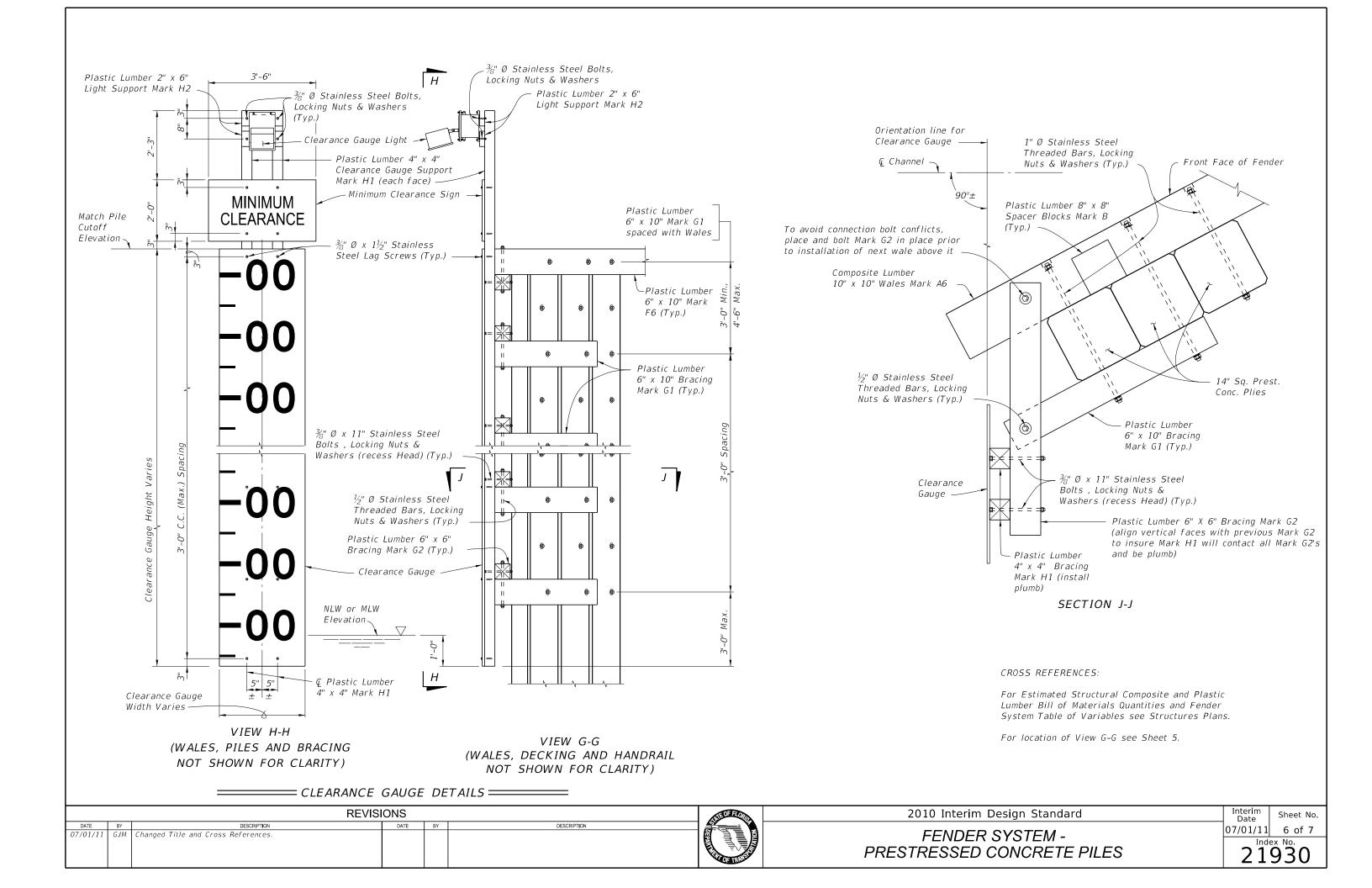
LAYOUT GEOMETRY

REVISIONS				THE OF FLORIDA	2010 Interim Design Standard	Interim Sheet No.
DATE BY 07/01/11 GJM New Sheet; Added Sch polymeric piling fende	ematic details to separate this Index from	DATE	BY DESCRIPTION		FENDER SYSTEM - PRESTRESSED CONCRETE PILES	07/01/11 2 of 7 Index No. 2 1930









	* STRUCTL	IRAL COMPOSITE LUMBER	BILL OF M	IATERIALS	5
MARK	SIZE (NOMINAL)	DIMENSIONS	BOARD FT. PER EACH	NO. REQD.	QUANTITY
A1	10" X 10" COMPOSITE LUMBER	32'-0" (STRAIGHT)	266.6	mber	
A2	10" X 10" COMPOSITE LUMBER	32'-0"	266.6	I Plastic Lur	res Plans
A3	10" X 10" COMPOSITE LUMBER	36'-0"	133.3	imposite and	e in Structu
A4	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	Estimated Structural Composite and Plastic Lumber	Bill of Materials Table in Structures Plans
A5	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	Estimated S	Bill of Ma
A6	10" X 10" COMPOSITE LUMBER	16'-0"	133.3	See	

	*	PLASTIC LUMBER BILL OF MA	TERIALS		
MARK	SIZE (NOMINAL)	DIMENSIONS	BOARD FT. PER EACH	NO. REQD.	QUANTITY
В	8" X 8" PLASTIC LUMBER	8" (STRAIGHT)	3.6		•
С	2" X 6" PLASTIC LUMBER	16'-0" (STRAIGHT) (Trim & Miter Ends as required)	16.0		
D	4" X 6" PLASTIC LUMBER	4'-4" (STRAIGHT)	8.7		
** E	2" X 12" PLASTIC LUMBER	2'-6" (STRAIGHT) (Miter as required, 6" min. width)	5.0		
F 1	6" X 10" PLASTIC LUMBER	32'-0" (STRAIGHT)	160.0	mber	
F2	6" X 10" PLASTIC LUMBER	31'-11"	159.6	Estimated Structural Composite and Plastic Lumber	res Plans
F3	6" X 10" PLASTIC LUMBER	15'-11"	79.6	omposite and	e in Structu
F4	6" X 10" PLASTIC LUMBER	15'-91/4"	78.8	itructural Co	Bill of Materials Table in Structures Plans
F5	6" X 10" PLASTIC LUMBER	15'-81/4"	78.4		
F6	6" X 10" PLASTIC LUMBER	15'-101/4"	79.3	See	
G 1	6" X 10" PLASTIC LUMBER	3'-8" (STRAIGHT)	18.3		
G2	6" X 6" PLASTIC LUMBER	4'-1" (STRAIGHT)	12.3		
H 1	4" X 4" PLASTIC LUMBER	PILE CUTOFF ELEV. MINUS NLW OR MLW ELEV. PLUS 5'-6" (STRAIGHT)	1.3 PER LF EACH		
H2	2" X 6" PLASTIC LUMBER	1'-2" (STRAIGHT)	1.2		

	REVISIONS						
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION		
07/01/11	GJM	Changed Title and Cross References.					



^{*} All Plastic Lumber and Composite Lumber Dimensions and Quantities shown are based on Nominal Lumber Dimensions and may vary depending on Actual Lumber Dimension.

^{**} Provide Fiberglass Open Grating in lieu of 2" X 12" Plastic Lumber when called for in the Plans. Mounting hardware shall be Stainless Steel, install per Manufacturer's recommendations. See Structures Plans for Notes and Details.