GENERAL NOTES:

Work this Standard with Index Nos. 21900, 21920 and 21930.

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.

INSTRUCTIONS TO DESIGNER:

Design Standards Index Series 21900 includes designs and details for Heavy, Medium and Light Duty Fender Systems. Refer to Florida Department of Transportation (FDOT) "Structures Design Guidelines", current edition, for Fender System design criteria and the selection of the appropriate standard Fender System for use at a given site. Design project specific Fender Systems for sites that do not, as a minimum, satisfy the design criteria which was used to develop these standards. Utilize standardized details and components as appropriate for project specific designs.

Complete the "Fender System Table of Variables", the "Estimated Bill of Materials" and the "Estimated Quantities" table and include them in the Plans.

In the Plans the type of decking material to be used for catwalks: 2" x 12" Plastic Lumber or fiberglass Open Grating. Catwalk decking material shall be determined by the District.

Prepare and include in the Plans supplemental project specific designs and details for the following items:

- Electrical service for navigation lights including conduit path from bridge to fender system and identification of service point. Coordinate design with Index No. 21220 and Specification Section 510.
- Access ladders and catwalks from bridge to fender system are optional and may be included at the discretion of the District.

16" DIAMETER COMPOSITE PLASTIC PILES - INDEX NOS. 21900 AND 21920 ONLY: Provide 16" Diameter Composite Plastic Piles in accordance with Specification Section 973. Provide piles of sufficient length to achieve a minimum embedment of 24" into soil satisfying a blow count greater than 6 (N > 6). Pile splices and build-ups are not permitted. Installation shall be in accordance with manufacturer's recommendations.

14" SQUARE PRESTRESSED CONCRETE PILES - INDEX NO. 21930 ONLY: Provide 14" Square Prestressed Concrete Piles of sufficient length to achieve a minimum embedment of 20 into soil satisfying a blow count greater than 6 (N > 6). Pile splices and build-ups are not permitted. Use only 14" Square Prestressed Concrete Piles with E = 20,000 psi Low Relaxation Strands fabricated in accordance with Index No. 20614.

PLASTIC LUMBER AND STRUCTURAL COMPOSITE LUMBER WALES: Provide Plastic Lumber and Structural Composite Lumber Waies in accordance with Specification Section 973. Waies 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 1/2". Design live loads and deflections shall be 50 psf uniformly distributed load with a maximum deflection of 1/360 or L/200 at the center of a simple span or a concentrated load of 250 pounds with a maximum deflection of 1/200 at the center of a simple span. Color of Fiberglass Open Grating shall vary gray or black.

Install Fiberglass Open Grating according to manufacturer's recommendations using stainless steel hardware, screws, bolts, nuts and washers. Attach Fiberglass Grating to Waies and Deck Supports at a 2-3/4" minimum 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 numerance is dependent 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, THREADS 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 A413 Grade 88M. Furnish stainless steel nuts in accordance with ASTM F594 Type 316. Furnish stainless steel screws in accordance with ASTM F593 Type 316. Furnish stainless steel washers compatible with bolts, threaded rods and nuts under heads and nuts. Torque Nuts on 2" diameter bolts and threaded rods to 150 ft-lbf. Keep Threads on Bolts, Threaded bars and nuts free from dirt, coarse grime and sand to prevent galling and seizing during tightening.

SPIKE PLATES: Furnish Spike Plates in accordance with ASTM A4240 Type 316.

WIRE ROPE - INDEX NO. 21930 ONLY: Furnish Wire Rope in accordance with Specification Section 936.
SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE BRIDGE WITH NONSKEWED CHANNEL

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

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

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

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.