GENERAL NOTES:

Work this Standard with Index Nos. 21910, 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.

16" DIAMETER COMPOSITE PLASTIC PILES - INDEX NOS. 21910 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 having 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 having a blow count greater than 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 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 1½". Design live loads and deflections shall be a 50 psf uniformly distributed load with a maximum deflection of ⅜" or L/120 at the center of a simple span or a concentrated load of 250 pounds with a maximum deflection of ¼" 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 GUAGE 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.

WIRE ROPE - INDEX NO. 21930 ONLY: Furnish Wire Rope in accordance with Specification Section 936.

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 satisfy the given design criteria. 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.

Designate 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.

REVISIONS

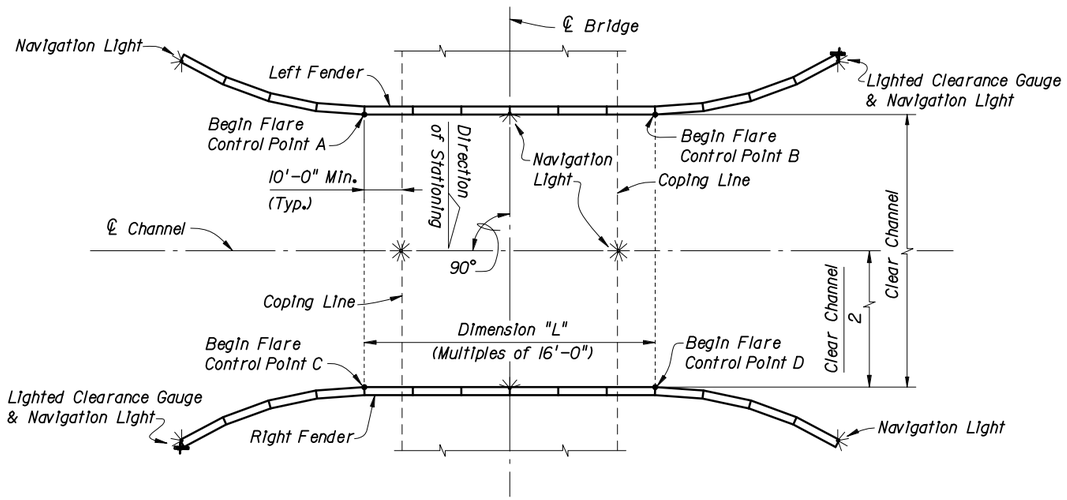
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01/01/06	SDO	New Design Standard Issued			

2006 Interim Design Standard

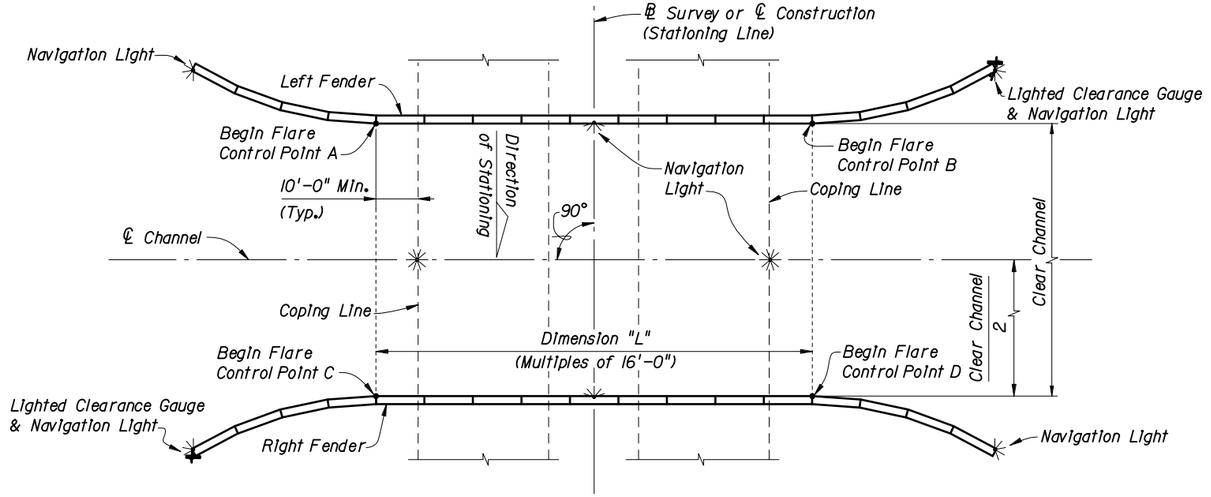
FENDER SYSTEM GENERAL NOTES AND LAYOUT

Interim Date 01/01/06

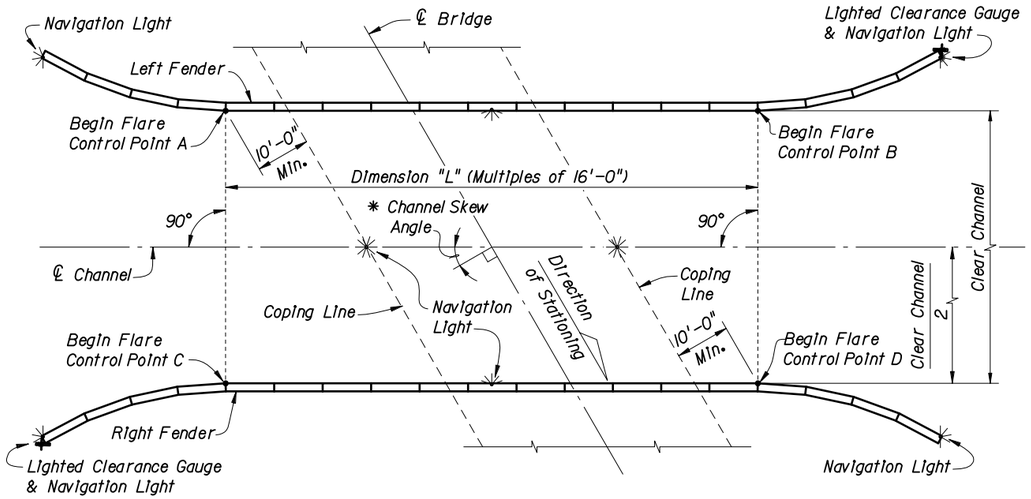
Index No. 21900



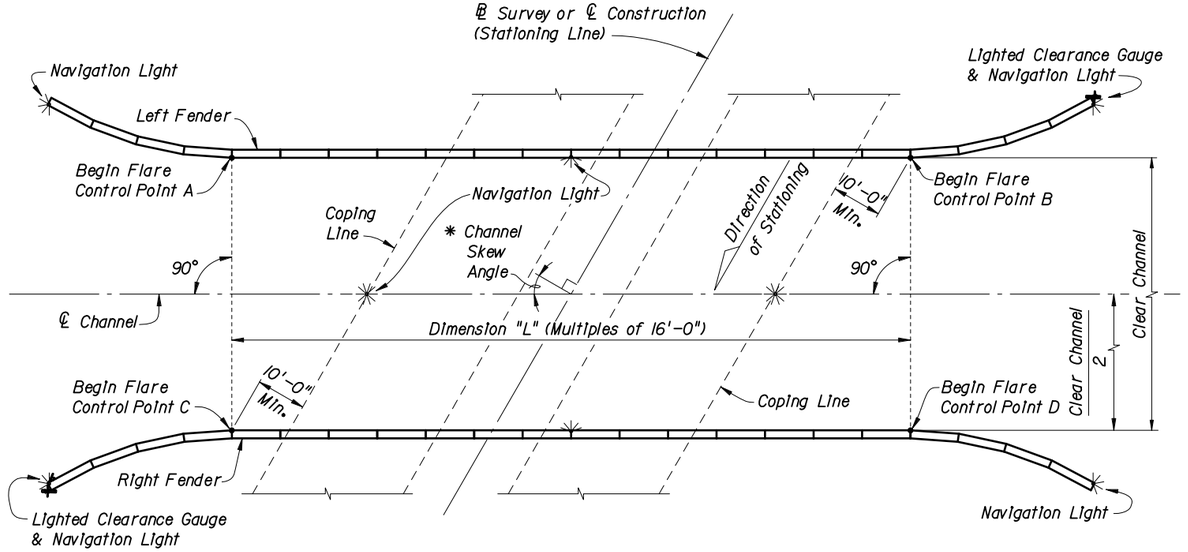
SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF SINGLE BRIDGE WITH NON-SKEWED CHANNEL



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



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



SCHEMATIC OF FENDER SYSTEM SHOWING TREATMENT OF DUAL BRIDGES WITH SKEWED CHANNEL
(PARALLEL DUAL BRIDGES SHOWN, NON-PARALLEL DUAL 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.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
01-01-06	SDO	New Design Standard Issued			

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

2006 Interim Design Standard

FENDER SYSTEM GENERAL NOTES AND LAYOUT

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