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 0 – 1/2" diameter Low Relaxation Strands Fabricated in accordance with Index No. 20614.

PLASTIC LUMBER AND STRUCTURAL COMPOSITE LUMBER WALES: Provide only Plastic Lumber (Thermoplastic Structural Shapes) and Structural Composite Lumber (Reinforced Thermoplastic Structural Shapes) 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 1/2". Design live loads and deflections shall be a 50 psf uniformly distributed load with a maximum deflection of 1/48 or L/120 at the center of a simple span and a concentrated load of 250 pounds with a maximum deflection of 1/8 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 and installed by the Contractor. Clearance Gauge width and numeral height 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, 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 8M. Furnish stainless steel Nuts in accordance with ASTM F594 Type 316. Furnish stainless steel Screws in accordance with ASTM A574 Type 316. Furnish stainless steel Threaded Bars in accordance with ASTM A193 Grade 8M. 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.

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

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

1. ½" 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 5/16" 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.

GENERAL NOTES
CROSS REFERENCES:
* See Structures Plans, Plan and Elevation and Foundation Layout Sheets for magnitude and orientation of Channel Skew Angle.

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.
**DESCRIPTION:**

Composite Lumber 10" x 10" Wales Mark A (Typ.)

**SECTION A-A**

1" Ø Stainless Steel Threaded Bars, Locking Nuts and Washers (Typ.)

Plastic Lumber 8" x 8" Spacer Blocks Mark B (Typ.)

14" Sq. Prestressed Concrete Piles (Typ.)

SIDE EDGE OF PILE

SIDE EDGE OF PILE

14" Sq. Prestressed Concrete Piles (Typ.)

Plastic Lumber 8" x 8" Spacer Blocks Mark B (Typ.)

Composite Lumber 10" x 10" Wales Mark A (Typ.)

**SECTION D-D**

TYPICAL AT INTERMEDIATE PILES

**SECTION C-C**

TYPICAL STRAIGHT SECTION

**SECTION B-B**

TYPICAL FLARED SECTION

(8° TURN SHOWN, 4° TURN SIMILAR)

**CROSS REFERENCES:**

For location of Sections A-A and B-B see Sheet 3.

For Section E-E and Detail "A" see Sheet 5.

**HANDRAIL DETAIL**

Plastic Lumber 6" x 10" Deck Support Mark F (Typ.)

1" Ø Stainless Steel Threaded Bars, Locking Nuts and Washers (Typ.)

Plastic Lumber 8" x 8" Post Mark D (Typ.)

14" Sq. Prestressed Concrete Piles (Typ.)

**CROSS REFERENCES:**

For location of Sections A-A and B-B see Sheet 3.

For Section C-C see Sheet 5.
Physical Description:

- Partial View F-F (showing fender end; decking and handrail not shown for clarity)
- Section E-E: Typical flared section (8° turn shown, 4° turn similar)
- Section E-E: Typical straight section

CROSS REFERENCES:

- For navigation lights and SCH 80 PVC electrical conduit details see Design Standard Index 21220.
- For view G-G and clearance gauge details see Sheet 2.
- For detail 'B' and location of section E-E see Sheet 4.
- For location of view F-F see Sheet 1.

Keywords:

- Composite lumber 10" x 10" Wales Mark A (Typ.)
- Plastic lumber 8" x 8" spacer blocks Mark B (Typ.)
- 14" sq. prestressed concrete piles
- Plastic lumber 4" x 4" clearance gauge support mark G11
- Plastic lumber 6" x 6" bracing mark G2
- SCH 80 PVC electrical conduit
- Partial view F-F (showing fender end; decking and handrail not shown for clarity)
- Section E-E: typical flared section (8° turn shown, 4° turn similar)
- Section E-E: typical straight section
- Splice plate detail

Special Notes:

- Orientation line for navigation light
- Recess head flush with top of spacer block
- Provide oversized hole to accept nut & washer

Material Specifications:

- 1" Ø Stainless Steel Threaded bars, Locking Nuts and Washers (Typ.)
- 3/8" Ø x 12" Stainless Steel Lag Screw (recess head flush with top of spacer block)
- 1/2" Ø Holes (Typ.)
- 1/2" Stainless Steel Plate
- 3/8" Stainless Steel Plate
- 1" Ø x 12" Stainless Steel Lag Screw (recess head flush with top of spacer block)
### Structural Composite Lumber Bill of Materials

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE (NOMINAL)</th>
<th>DIMENSIONS</th>
<th>BOARD FT. PER EACH</th>
<th>NO. REQD.</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>10&quot; X 10&quot; COMPOSITE LUMBER</td>
<td>32'-0&quot; (STRAIGHT)</td>
<td>266.6</td>
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<tr>
<td>A3</td>
<td>10&quot; X 10&quot; COMPOSITE LUMBER</td>
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<td>133.3</td>
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<td></td>
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<tr>
<td>A4</td>
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<td>18'-0&quot;</td>
<td>133.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A5</td>
<td>10&quot; X 10&quot; COMPOSITE LUMBER</td>
<td>18'-0&quot;</td>
<td>133.3</td>
<td></td>
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<tr>
<td>A6</td>
<td>10&quot; X 10&quot; COMPOSITE LUMBER</td>
<td>18'-0&quot;</td>
<td>133.3</td>
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</tr>
</tbody>
</table>

* 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.

### Plastic Lumber Bill of Materials

<table>
<thead>
<tr>
<th>MARK</th>
<th>SIZE (NOMINAL)</th>
<th>DIMENSIONS</th>
<th>BOARD FT. PER EACH</th>
<th>NO. REQD.</th>
<th>QUANTITY</th>
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<td>159.6</td>
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<tr>
<td>F2</td>
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<tr>
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<tr>
<td>H1</td>
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* See Estimated Structural Composite and Plastic Lumber Bill of Materials Table in Structures Plans.