NOTES

ALL TIE ROD CONNECTORS AND HARDWARE EXCEPT THOSE OF WELDLINED STEEL SHALL BE GALVANIZED.

TREAT ALL LUMBER AND TIMBER WITH ONE OF THE PRESERVATIVES RECOMMENDED IN THE STANDARD SPECIFICATIONS.

THE TIE RODS SHALL BE COATED WITH THE COAL TAR OR BITUMASTIC COMPOUNDS USED FOR COVERING WING PILING.

TOLERANCES ON LENGTHS AND SPANS ARE TO BE IN ACCORDANCE WITH THE APPROPRIATE ENGINEERING SPECIFICATIONS.

ALL TIMBER CONNECTORS AND HARDWARE SHALL BE INCLUDED IN THE COST AND CHARGED TO THE CONTRACTOR.

ALTERNATE DETAILS MAY BE SUBMITTED USING LUMBER GALVANIZED STEEL, TIMBER OR PRECAST CONCRETE, SUBJECT TO APPROVAL BY THE ENGINEER.

OVER 20°

* USE TIE RODS ON WING PILING.

† USE TIE RODS WITH A DECKING ON WING PILING.

<table>
<thead>
<tr>
<th>DECK ANGLE</th>
<th>POUNDAGE FROM CENTER</th>
<th>SHEAR</th>
<th>MOMENT</th>
<th>ANGLE &quot;A&quot;</th>
<th>ANGLE &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>0° TO 15°</td>
<td>M &lt; 10'-0&quot;</td>
<td>45°</td>
<td>45°</td>
<td></td>
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<tr>
<td>15° TO 20°</td>
<td>M &gt; 10'-0&quot;</td>
<td>50°</td>
<td>50°</td>
<td></td>
<td></td>
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<tr>
<td>20° TO 30°</td>
<td>M &gt; 10'-0&quot;</td>
<td>55°</td>
<td>55°</td>
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</tbody>
</table>

GRADE A 6"x6" (GRADE A X ARMED) 22.9 (F = 18 KSI)

GRADE A 4"x4" (GRADE A X ARMED) 30.0 (F = 18 KSI)

23.01

**ASTM A446**

**BILL OLIVA**

**DATE:**

**STANDARD 23.01**
TREATED TIMBER PILE DECKING

TIMBER GIRDER

HEAVY HEX. NUT

P1

60 d NAILS.

BACKING PLANK

(TIMBER GIRDER)

SECTION THRU DEADMAN

STEEL "HP" PILING

SECTION P1

CONCRETE

CAST-IN-PLACE PILING

WASHER

PLATE.

SHOWN WITH 2-40 d NAILS PER APPROVED EQUAL AT LOCATIONS STANLEY ANCHOR PLATES OR ATTACH BACKING TO PILES WITH FULL LENGTH #4 BARS. WHEN PILES ARE EXPOSED, REFER TO STANDARD 11.01 FOR SECTION WEARING SURFACE

PLANK BACKING PLATE.

NAILING STRIP 6" X 6"

NAILING STRIP 8" X 6"

3 '-0"

PILE CAP DETAIL

PILE CAP 12" X 12"

PILE STAY 8" X 8" X 5'-0"

1'-6"

1'-0"

2'-6"

#4 STIRRUPS 3" CL. TYP. AT 1'-6" CENTERS

#4 BARS FULL LENGTH OF DEADMAN

1/4" DIA. TIE ROD AT 1/4" DIA. PIPE 1/4" DIA. TIE ROD 1 1/2" DIA. BOLTS AT 3'-0" ALTERNATE CENTERS.

1 1/2" DIA. PIPE SLEEVE.

HEAVY HEX. NUT

WELD ROD TO PILE SHELL AS SHOWN.

PILING, WITH SQUARE NUT & WASHER.

1/2" DIA. BOLT WITH PLATE WASHERS.

8" DIA. DRIFT BOLT X 2'-6" LONG

1 1/2" DIA. PIPE SLEEVE.

BOLT NAILING STRIP TO PILING WITH 1/4" DIA. BOLTS AT 3'-0" ALTERNATE CENTERS.

APPORVED:

DATE:

STANDARD 23.03

BILL OLIVA