<table>
<thead>
<tr>
<th>CELL / MODEL NAME</th>
<th>DESCRIPTION</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>F-HP</td>
<td>Steel H piles</td>
<td>2/17/2017</td>
</tr>
<tr>
<td>F-MS</td>
<td>Metal shell piles</td>
<td>2/17/2017</td>
</tr>
<tr>
<td>F-PC</td>
<td>Precast piles</td>
<td>2/17/2017</td>
</tr>
</tbody>
</table>
**STEEL PILE TABLE**

<table>
<thead>
<tr>
<th>Designation</th>
<th>Depth</th>
<th>Flange width</th>
<th>Flange thickness l'</th>
<th>Incresament A</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 14x127</td>
<td>14W</td>
<td>145&quot;</td>
<td>1/4&quot;</td>
<td>32&quot;</td>
</tr>
<tr>
<td>140</td>
<td>145&quot;</td>
<td>1/4&quot;</td>
<td>32&quot;</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td>145&quot;</td>
<td>1/4&quot;</td>
<td>30&quot;</td>
<td></td>
</tr>
<tr>
<td>130</td>
<td>145&quot;</td>
<td>1/4&quot;</td>
<td>30&quot;</td>
<td></td>
</tr>
<tr>
<td>HP 12x84</td>
<td>120&quot;</td>
<td>12&quot;</td>
<td>1/2&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>110</td>
<td>120&quot;</td>
<td>1/2&quot;</td>
<td>24&quot;</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>120&quot;</td>
<td>1/2&quot;</td>
<td>24&quot;</td>
<td></td>
</tr>
<tr>
<td>115</td>
<td>120&quot;</td>
<td>1/2&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>110</td>
<td>120&quot;</td>
<td>1/2&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>120&quot;</td>
<td>1/2&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>HP 8x36</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>3/8&quot;</td>
<td>18&quot;</td>
</tr>
</tbody>
</table>

**INDIVIDUAL PILE CONCRETE ENCASEMENT**

(Forms for encasement may be omitted when soil conditions permit.)

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

PART NO.

**SECTION A-A**

Welded wire fabric 6 x 6

- **Bottom of pile cap**
  - Use 3/8" rebar
  - 2" of concrete

**END VIEW**

- Weld along edges of flange
- Weld along four edges of web

**DETAILS**

**WELDED COMMERCIAL SPLICE ALTERNATE**

- **Interrupt welds** 1/4" from end of web and/or each flange.
- **Remove portions** of backup plates that extend outside the flanges.
- **Weld size** per pile shew manufacturer (95% min.)

**WELDED PLATE FIELD SPLICE**

**F-HP 2-17-2017**

**DETAILS**

- **Welded commercial splicer**
- **Commercial splicer**
- **Backup plate**
- **Backup plate**
- **Splice plate**

**NOTE:** The steel piles shall be according to AASHTO M270 Grade 50.
**Metal Shell Pile Details**

**Metal Shell Pile Table**

<table>
<thead>
<tr>
<th>Designation</th>
<th>Wall Thickness</th>
<th>Weight per foot (lbs./ft)</th>
<th>Inside volume (c.f.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP12</td>
<td>0.250&quot;</td>
<td>31.34</td>
<td>0.0364</td>
</tr>
<tr>
<td>PP14</td>
<td>0.250&quot;</td>
<td>36.71</td>
<td>0.0368</td>
</tr>
<tr>
<td>PP16</td>
<td>0.312&quot;</td>
<td>54.61</td>
<td>0.0361</td>
</tr>
<tr>
<td>PP12</td>
<td>0.312&quot;</td>
<td>52.32</td>
<td>0.0416</td>
</tr>
<tr>
<td>PP16</td>
<td>0.377&quot;</td>
<td>63.64</td>
<td>0.0410</td>
</tr>
</tbody>
</table>

**Notes:**

1. The pile segments shall be driven to solid contact with fill bar may be constructed of fill bars with a 1/4 in. max. gap between them.

2. The pile segments shall be driven to solid contact with splicer before welding.

**End Plate Attachment**

When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall be tapered to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

**Pile Shoe Attachment**

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically region with partial joint penetration weld.

**Complete Penetration Weld Splice**

When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall be tapered to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

**Welded Commercial Splice**

The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.
**PRECAST CONCRETE PILE**

**PRECAST PRESTRESSED CONCRETE PILE**

**STANDARD PILE EXTENSION**

**ALTERNATE PILE EXTENSION**

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**DESIGN STRESSES**

- $f_{cc} = 4,500$ p.s.i. (precast)
- $f_{cs} = 5,000$ p.s.i. (prestressed)
- $f_{ps} = 270,000$ p.s.i. (41,300 lbs.-in.)
- $f_{ps} = 189,000$ p.s.i. (28,900 lbs.-in.)

**NOTES**

Prestressing steel shall be uncoated high strength, low-relaxation 7-wire strand. The nominal diameter shall be $\frac{1}{4}$ with a cross-sectional area of 0.133 in\(^2\).

For pile lengths up to 65', use two slings placed at a distance of 0.31 L* from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L* from each end and at midpoint of pile. *L = Overall length of pile to be handled.

For handling pile lengths up to 45', use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 65', use three slings placed at a distance of 0.12 L from each end and midpoint of pile.

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**END PLAN**

(End reinforcement only)

**END ELEVATION**

(End reinforcement only)