### Pick-Up Details

**2-Point Pick-Up**

<table>
<thead>
<tr>
<th>Spacing</th>
<th>24 Turns @ 1.5&quot; Pitch</th>
<th>42 Turns @ 2&quot; Pitch</th>
<th>4&quot; Pitch</th>
<th>42 Turns @ 2&quot; Pitch</th>
<th>24 Turns @ 1.5&quot; Pitch</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.21L</td>
<td>0.58L</td>
<td>0.21L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.71L</td>
<td>0.31L</td>
<td>0.145L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-Point Pick-Up</td>
<td>0.21L</td>
<td>0.58L</td>
<td>0.21L</td>
<td>1.071</td>
<td>0.262</td>
</tr>
</tbody>
</table>

**3-Point Support**

<table>
<thead>
<tr>
<th>0.145L</th>
<th>0.355L</th>
<th>0.355L</th>
<th>0.145L</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.71L</td>
<td>0.31L</td>
<td>0.145L</td>
<td></td>
</tr>
<tr>
<td>1-Point Pick-Up</td>
<td>0.21L</td>
<td>0.58L</td>
<td>0.21L</td>
</tr>
</tbody>
</table>

**4-Point Support**

<table>
<thead>
<tr>
<th>0.262L</th>
<th>0.262L</th>
<th>0.127L</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.71L</td>
<td>0.31L</td>
<td>0.145L</td>
</tr>
<tr>
<td>2-Point Pick-Up</td>
<td>0.21L</td>
<td>0.58L</td>
</tr>
</tbody>
</table>

#### ELEVATION

1. Work this Index with the Pile Data Table in the Structures Plans.
2. Concrete:
   - Piles: Class V (Special)
   - Splice Collar: Class IV
   - Silica Fume: See "GENERAL NOTES" in the Structures Plans for locations where the use of silica fume, metakaolin or ultra-fine flyash is required.
3. Concrete Strength at time of prestress transfer:
   - Piles: 4,000 psi minimum.
4. Reinforcing:
   - Bars:
     - Stainless Steel: Meet the requirements of Specification Section 931 for Type 304, Grade 75.
     - Carbon FRP: Meet the requirements of Specification Section 932.
   - Prestressing Strands:
     - Stainless Steel: Seven-wire HSSS, UNS S32205 (Type 2205) or UNS S31803 strand, meeting the requirements of Specification Section 933.
     - Carbon FRP: Meet the requirements of Specification Section 933.
   - Spiral Ties:
     - One half turn is required for carbon steel spiral splice.
     - One full turn is required at the pile head and tip.
5. Pile Splices:
   - Epoxy: Type AB Epoxy Compound or Epoxy Mortar must meet the requirements of Specification Section 927.
     - Use a Type AB Epoxy Bonding Compound or Epoxy Mortar, as recommended by the Manufacturer, to form the joint between pile sections.
     - Use a Type AB Epoxy Bonding Compound as a bonding agent on internal pile surfaces.
   - Splices: Resume pile driving after the splice concrete reaches a minimum strength of 5,500 psi.
6. Mark piles at the pick-up points to indicate the proper points for attaching handling lines.

---

### Table of Maximum Pile Pick-Up and Support Lengths

<table>
<thead>
<tr>
<th>Maximum Pile Length (Feet)</th>
<th>Required Storage and Transportation Detail</th>
<th>Pick-Up Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>122</td>
<td>2, 3, or 4 point</td>
<td>1 Point</td>
</tr>
<tr>
<td>174</td>
<td>2, 3, or 4 point</td>
<td>2 Point</td>
</tr>
</tbody>
</table>

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### Notes

- The 45° Ø Void in the pile shall be positively vented to water or air after the final pile installation. If the 3½° Ø vents are included in the pile cut-off section, then venting shall be provided by the use of a 1" Ø PVC conduit through the substructure cap or column.
ALTERNATE STRAND PATTERNS

- 1/2" Ø, CFRP Single-Strand, at 39 kips
- 2/4" Ø, CFRP 7-Strand, at 40 kips

SECTION A-A

No. 3 Bars or 0.3" Ø CFRP Strand Spiral Ties

No. 4 Bars or 0.3" Ø CFRP Strand Spiral Ties

24 – No. 6 CFRP Bars

36 – CFRP Strands @ Equal Spaces

SECTION B-B

No. 3 Bars or 0.3" Ø CFRP Strand Spiral Ties

24 – No. 6 CFRP Bars

36 – CFRP Strands @ Equal Spaces

Inside Pile Wall

Full epoxy compound joint

Temporary Blocking Form to retain epoxy compound

Gasket

Form to retain epoxy compound

Outside Pile Wall
Concrete Seal

2'-0" M in . C o v e r D riv e n P re s t e s s e d P ile

10'-6"

S p l i c e d P re s t e s s e d P ile S e c tio n

10'-6"

1'-0"

Ø Void, open top and bottom to allow through venting of sections

Clean inside surface of 60" Ø Pile with a high pressure water blast (3000 psi Min.) and apply bonding agent for Driven Prestressed Pile

Roughen inside surface of 60" Ø Pile to Ɓ amplitude for Spliced Pile Section

24 – No. 10 SS Bars @ Equal Spaces

Full Epoxy Compound Joint around cylinder pile wall only (See Detail "A"

2" Min. Cover (Typ.)

3" Min. Cover (Typ.)

0.6" Ø HSSS Strands @ Equal Spaces

2" Min. Cover (Inside)

45° Ø Void (64 Strands)

48° Ø Void (36 Strands)

W11 SS Wire Spirals Ties

ALTERNATE STRAND PATTERNS

44 – 0.6" Ø HSSS Strand, at 36 kips

36 – 0.6" Ø HSSS Strand, at 36 kips

3" Min. Cover (Typ.)

Cast in Place Plug

0.6" Ø HSSS Strands @ Equal Spaces

DETAIL "A"

SS POST-TENSIONED PILE DETAILS

60° Ø Void

W11 SS Wire Spirals Ties

24 – No. 10 SS Bars @ Equal Spaces

No. 4 SS Bars or W20 SS Wire Ties

1'-0" Ø Void

1'-0" Min. Lap Splice

3" Min. Cover (Typ.)

SECTION A-A

SECTION B-B

Full epoxy compound joint

Temporary Blocking Form to retain epoxy compound

Inside Pile Wall

Full epoxy compound joint

Form to retain epoxy compound

Outside Pile Wall

DETAIL "A"

8:23:03 AM

REVISION LAST

FY 2018-19

STANDARD PLANS

60° PRESTRESSED CFRP & SS CONCRETE CYLINDER PILE

INDEX 455-160

SHEET 3 of 3

REVISION 01/01/16

DESCRIPTION:

REVISED OF STANDARD PLANS FY 2018-19 SHEET INDEX 60° PRESTRESSED CFRP & SS CONCRETE CYLINDER PILE

SS POST-TENSIONED PILE DETAILS

DETAIL "A"