**54" PRECAST/POST-TENSIONED CONCRETE CYLINDER PILE**

**DESIGN SPECIFICATIONS:**

**SPIRAL TIES:**
- One full wrap of spirals is required at both the head and tip of pile. One half turn required for spiral splices.

**CONCRETE CLASS:**
- Concrete for all piles shall be Class V (Special). Concrete for pile splices shall be Class IV. See "GENERAL NOTES" in Structures Plans for any specific locations where the use of Silica Fume is required.

**CONCRETE STRENGTH:**
- The cylinder strength shall be 6,000 psi minimum at time of transfer of the Prestressing Force.

**SPLICE BONDING MATERIAL:**
- The material to form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Section 926 of the Specifications. The bonding agent used on internal pile surfaces shall be a Type A Epoxy Compound in accordance with Section 926 of the Specifications. Epoxy Compounds used shall be contained on the Approved Products List (APL). Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the Manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

**PICK-UP POINTS:**
- Piles shall be marked at the pick-up points to indicate proper points for attaching handling lines.

**REINFORCING STEEL:**
- All reinforcing steel shall meet the requirements of Specification Section 450.

**PRESTRESSING STEEL:**
- Prestressing tendons shall be made up of two seven-wire strands. Prestressing strands shall be 3⁄8" Ø (Special), Grade 270 low relaxation, at 33.8 kips.

**PILE DRIVING AFTER SPlicing:**
- Pile splices shall reach a minimum strength of 3500 psi before driving is resumed.

---

**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>119</td>
<td>2, 3, or 4 point</td>
<td>1 Point</td>
</tr>
<tr>
<td>170</td>
<td>2, 3, or 4 point</td>
<td>2 Point</td>
</tr>
</tbody>
</table>

---

**NOTES**

- Provide one (1) 3⁄8" Ø vent hole (at Pile) on two (2) opposite faces of pile (Typ. each Pile Section).
Outside Pile Wall
Form to retain epoxy compound

Gasket (Typ.)

1' - 0" Ø Void

Inside Pile Wall
Temporary Blocking
Form to retain epoxy compound

W20 Wire Ties
No. 4 Bars or 1'-0" Min. Lap Splice

W11 Wire Spiral Ties
4 ~ Longitudinal Spacer Bars (No. 3 Bars or W11 wire) for Spiral Ties @ Equal Spaces

Cover (Typ.)
24 - No. 11 Bars @ Equal Spaces

Cast in Place Plug
Cover (Typ.)

W11 Spiral Wire Ties

3 ½" Ø Void

W20 Wire Spiral Ties

24 - 1½" Ø Formed Holes for Tendons @ Equal Spaces

SECTION A-A

SECTION B-B

DETAIL "A"

For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:

1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in2 per year or less; otherwise, a 3-inch concrete cover is required.

For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:

1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in2 per year or less; otherwise, a 3-inch concrete cover is required.

For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:

1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in2 per year or less; otherwise, a 3-inch concrete cover is required.

For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:

1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in2 per year or less; otherwise, a 3-inch concrete cover is required.

For Spun Cast Cylinder Piles, the following requirements for concrete cover apply:

1. Slightly or Moderately Aggressive Environments: The concrete cover may be reduced to 2 inches.
2. Extremely Aggressive Environments: The concrete cover may be reduced to 2 inches as long as the concrete has a documented chloride ion penetration apparent diffusion coefficient with a mean value of 0.005 in2 per year or less; otherwise, a 3-inch concrete cover is required.