**LOWERED DEVICE INSTALLATION NOTES:**

1. Place the lowering cable that moves within the pole in an internal conduit to prevent it from tangling or interfering with any electrical wire that is in the pole. Ensure that any electrical wire within the pole is routed securely and free from slack.
2. Mount lowering arm perpendicular to the roadway or as shown in the plans. Position CCTV pole so that the camera can be safely lowered without requiring lane closures.
3. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stand, etc.) with lowering device manufacturer.

**POLE NOTES:**

1. Pole Material Specifications:
   a. Pole: Use the Class VI Concrete with 6 ksi minimum strength at transfer.
   c. Reinforcing Steel: ASTM A615 Grade 60.
   d. Spiral Reinforcing: ASTM A1064 Cold-Drawn.
   e. Bolts: ASTM F1554, Grade 55.
   f. Steel plates and Pole Cap: ASTM A36 or ASTM A709 Grade 50.
2. The pole shall be round or 12-sided.
3. Cut the tip end of the prestressed strand first or simultaneously with the butt end.
4. For spiral reinforcing, one turn is required for spiral splices and two turns are required at the top and bottom of poles.
5. For reinforcing steel, lap splice to consist of a 3'-0" lap length at each splice. No more than two opposing rebars to be spliced at the same cross section. Stagger lap splices as needed.
6. Provide a Class 3 surface finish in accordance with Specification Section 460.
7. Provide a 1" minimum cover.
8. Provide handhole and cover plates made of non-corrosive materials. Attach cover plates to poles using lead anchors or threaded inserts embedded in the poles in conjunction with round headed chrome plated screws.
9. Provide identification markings on the poles where indicated on the following sheets. Include the following information using inset numerals with 1" height or as approved in the Producers’ Quality Control Program. Financial Project ID: Pole Manufacturer, Pole Length.
10. Install pole plumb.
11. Tie ground wires to the interior of reinforcing steel as necessary to prevent displacement during concreting operations.
12. This Design Standard is considered fully detailed and no shop drawings are necessary. Submit Shop Drawings for minor modifications not detailed in the plans.
13. Storage, Handling and Erection locations shown may vary within ± 3'.
### Pole Configuration Top View

#### 12-sided Pole Design Table*

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* Diameter measured flat to flat

** Total taper applies to pole, strands, and reinforcing.

*** For 12-sided pole and Round Pole Option 2 Stress prestressed strand to 70% of Ultimate before Transfer.

### Round Pole Design Table

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* Diameter measured flat to flat

** Total taper applies to pole, strands, and reinforcing.

*** For 12-sided Pole and Round Pole Option 2 Stress prestressed strand to 70% of Ultimate before Transfer.

For Round Pole, Option 1 Stress Prestressed strand to 60% of Ultimate before Transfer.
SPIRAL REINFORCING ELEVATION
(Strands, Holes, and Fixtures Not Shown)

POLE ELEVATION
(Strands and Reinforcing Not Shown)

POLE ELEVATION
(Strands and Reinforcing Not Shown)

STRAND LEGEND
* - Prestressed Strand
Δ - (4) #5 Rebar (Shown) or (6) #4 Rebar

Note:
Strands and Rebar shown are continuous from Tip End to Butt End.
**DESCRIPTION:**

**Recent Revision:**

- **Date:** 07/01/13
- **Revision No.:** 4
- **Design Standards:** FY 2016-17

**Concrete CCTV Pole**

**Notes:**

1. Install all handhole and opening covers prior to shipping.
2. Install 1/2" Ø x 5" long stud with hex nut in insert before shipment.
3. As an alternate, embed (4) 3/8" x 18" stainless steel threaded rods with a threaded nut 3" top of rod, thread a coupling nut to attach plate with (4) 3/8" x 1 1/2" stainless steel bolts.
4. Handhole frame may be Cast Aluminum 356.2.

**Handhole Detail**

- (2) Park Stands, Each Side of Handhole (Pipe Option Shown)
- 1/2" Ø x 20" Min. Insert To Be Cast Into Pole (See Note 2)
- 15" Embedment, Equally Spaced
- (4) 3/8" Ø x 18" Galv. Bolts with 1 1/2" Embedment, equally spaced (See Note 3 for alternate connector)
- Pipe Option Shown
- 1 1/2" Inner Ø
- (± ¼") Tip Dia. - 2 3/4"
- 1/2" Ø Eye Bolt with Flat Washer
- 1/2" Ø Nut
- 3 1/2" SCH. 40 Pipe

**Top of Pole Detail**

- 3" Cap Plate
- 1/2" Ø Through Hole (Typ.)
- 3/8" Ø Nut
- 1 1/2" Ø Bolt Circle

**Cap Plate Detail**

- 1/2" Ø Hole
- 3/8" Ø Nut
- 1 1/2" Ø Bolt Circle
- 1/2" Ø Cap Plate

**SECTION B-B**

- Top Dia. - 3 1/4"
- Top Dia. (x 1/2"
- Top Dia. (x 3/4"
- 1 1/2" Ø Plate
- (3) 3/8" Ø Holes
- (4) 1/2" Ø x 18" Galv. Bolts with 1 1/2" Embedment, equally spaced (See Note 3 for alternate connector)
- Provide a Tenon Cap and Fix to the Tenon Wall with 3-5/8" Ø x 1/2" Hex Head Cap Bolt Screws, Equally Spaced.
- Provide Cable Guide
- 3/8" O.D. x 1/2" Wall x 12" (Min.) Long Tenon
- 3/8" Ø Hole
- (4) 1/2" Ø Nut with Flat Washer

**SECTION D-D - Park Stand Detail**

- 1/2" Ø x 20" Min. Insert To Be Cast Into Pole (See Note 2)
- 15" Embedment, Equally Spaced
- (4) 3/8" Ø x 18" Galv. Bolts with 1 1/2" Embedment, equally spaced (See Note 3 for alternate connector)
- Pipe Option Shown
- 1 1/2" Inner Ø
- (± ¼") Tip Dia. - 2 3/4"
- 1/2" Ø Eye Bolt with Flat Washer
- 1/2" Ø Nut
- 3 1/2" SCH. 40 Pipe

**SECTION B-B**

- Top Dia. - 3 1/4"
- Top Dia. (x 1/2"
- Top Dia. (x 3/4"
- 1 1/2" Ø Plate
- (3) 3/8" Ø Holes
- (4) 1/2" Ø x 18" Galv. Bolts with 1 1/2" Embedment, equally spaced (See Note 3 for alternate connector)
- Provide a Tenon Cap and Fix to the Tenon Wall with 3-5/8" Ø x 1/2" Hex Head Cap Bolt Screws, Equally Spaced.
- Provide Cable Guide
- 3/8" O.D. x 1/2" Wall x 12" (Min.) Long Tenon
- 3/8" Ø Hole
- (4) 1/2" Ø Nut with Flat Washer

**SECTION D-D - Park Stand Detail**

- 1/2" Ø x 20" Min. Insert To Be Cast Into Pole (See Note 2)
- 15" Embedment, Equally Spaced
- (4) 3/8" Ø x 18" Galv. Bolts with 1 1/2" Embedment, equally spaced (See Note 3 for alternate connector)
- Pipe Option Shown
- 1 1/2" Inner Ø
- (± ¼") Tip Dia. - 2 3/4"
- 1/2" Ø Eye Bolt with Flat Washer
- 1/2" Ø Nut
- 3 1/2" SCH. 40 Pipe