GENERAL NOTES:

1. For locations where pole foundation is lower than roadway, mount CCTV cabinet on pole. Clear zone shall be measured to the edge of drilled shaft if drilled shaft is more than 4" above adjacent grade.

2. Distance must be in accordance with project design documents and greater than or equal to minimum clear zone requirements.
TYPICAL CCTV SITE

Dome Type CCTV Camera
(See Index 18107)

For Ground Mounted Cabinet
(See Index 18107)
For Ground Mounted Cabinet
(See Index 18108)

Concrete

Dome Type CCTV Camera
(See Index 18107)

For Ground Mounted Cabinet
(See Index 18107)
For Ground Mounted Cabinet
(See Index 18108)

Concrete

STEE LE POLE

CONCRETE POLE
STEEL CCTV POLE

Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.

Dome Type Camera

Concrete

2" Min

8" Max

#2 AWG Tin-Plated Bare Solid Copper Wire.

Pole Mounted Cabinet

Wire Screen

Conduit for Grounding Conductors

Finished Grade

2" Min, 12" Max

Primary Ground Rod As Required

Exothermic Weld

#2 AWG To Ground Rod C Or Greater.

#2 AWG To Ground Rod D Or Greater.

8" Diameter By 20' Long Copper-Clad Steel Ground Rods Driven Into Undisturbed Earth

40' Typ.

CONCRETE CCTV POLE

Bond #6 AWG Tin-Plated Bare Solid Copper Wire To Camera Support Base As Required.

Dome Type Camera

Concrete

2" Min

8" Max

#2 AWG Tin-Plated Bare Solid Copper Wire.

Pole Mounted Cabinet

Wire Screen

Conduit for Grounding Conductors

Finished Grade

2" Min, 12" Max

Primary Ground Rod As Required

Exothermic Weld

#2 AWG To Ground Rod C Or Greater.

#2 AWG To Ground Rod D Or Greater.

8" Diameter By 20' Long Copper-Clad Steel Ground Rods Driven Into Undisturbed Earth

40' Typ.
Per NFPA 780-4.16.3
Minimum Contact Area
Surface Base Of 8 Square-Inch
Air Terminal (Class II)
Bonds To Air Terminals

2' Min

1/2" ETP Alloy 110 Copper
Air Terminal (Class II)
Surface Base Of 8 Square-Inch
Minimum Contact Area
Per NFPA 780-4.16.3

2' Min

2' Min

2' Min

#2 AWG Tin-Plated Bare Solid Copper Ground Wire. Bond To Air Terminals

AIR TERMINAL PLACEMENT
(Lowering Device Pole)

AIR TERMINAL PLACEMENT
(Span DMS)

AIR TERMINAL PLACEMENT
(Cantilever DMS)
Ground Rods B, C, and D are required. Wire to ground is bare solid copper #2 AWG tin-plated.

Grounding and Lightning Protection

Ground Rod Array Placement (Typical)
20' Rods, 40' Spacing

Ground Rod Array Placement (Typical Modified)
20' Rods, 40' Spacing

Inset "A"
GENERAL NOTES:

1. Cabinet layout is for pole or base mounted installations.

2. All dimensions and scale are approximate.

3. The minimum CCTV cabinet dimensions shall be 36"H X 24"W X 22"D.

4. Conduit entrances are at bottom of cabinet.

5. There shall be a front and rear doors. Both doors shall have the hinged side next to the pole when pole mounted.

6. Cabinet layout represents preferred placement of typical devices. Project-specific designs may not include all components illustrated here.
GENERAL NOTES:

1. Contractor shall splice fiber optic cables in cabinet to preterminator patch panel.
2. Furnish and install TVSS protection on all video, data, and power cabling in cabinet.
3. Ensure that all electronic equipment power is protected and conditioned with TVSS devices.
4. Sizes and types of conduits and innerducts for network communications between the pullbox and cabinet are stated in the contract documents.
5. See Index 18102 for grounding requirements.
6. All network communications conduits and ducts shall be sealed with approved waterproof duct plugs and seals.
1. Contractor shall splice fiber optic cables in cabinet to preterminated patch panel.
2. Furnish and install TVSS protection on all cabling in cabinet.
3. Furnish and install secondary TVSS protection on outlets for equipment in cabinet.
4. Sizes and types of conduits and inducts for network communications between the pull box and cabinet are stated in the contract documents.
5. Ensure that equipment cabinet is bonded to CCTV pole grounding system.
6. All network communications conduits and ducts shall be sealed with approved waterproof duct plugs and seals.
7. Pole mounted cabinets shall be mounted with hinges next to the pole.
GENERAL NOTES:

1. Lowering device to be shipped ready for pole attachment to include 100 ft. of composite power and signal cable prewired to lowering device at the factory.
2. The lowering device manufacturer shall supply both a portable lowering tool with a manual hand crank and a half-inch chuck variable-speed reversible industrial-duty electric drill that matches the winch's manufacturer-recommended revolutions per minute. One lowering tool per every 10 lowering devices is required.
3. The lowering device manufacturer shall provide an on-site installation inspection and operator instruction and certification. This ensures the product is assembled correctly and that all necessary persons are trained in the proper, safe operation of the system. Before erecting the first pole, the contractor must contact the lowering device supplier and schedule a manufacturer's representative to be on-site.
5. Camera to be mounted to camera junction box and stabilizing weight via 1\(\frac{1}{2}\) Standard NPT Pipe Thread.
6. Use air terminal extension when the pole top junction box is wider than top of pole.
7. The stainless steel device lowering cable shall be installed inside the pole within a 1\(\frac{1}{2}\) diameter PVC conduit.
8. All communication and power cables must be neatly bundled and secured.
10. See Index 18113 for concrete pole details and Index 18111 for steel pole details.
GENERAL NOTES:

1. Verify the pole type, the dimensions of the pole at the point of installation of the camera mount, and angle with respect to the roadway before manufacturing camera mount assembly.

2. Design camera mounting arm and connection to the pole according to FDOT Structures Manual (current edition).

3. No field welding shall be permitted.

4. Mounting bracket arm shall be level after installation.

5. The contractor shall submit shop drawings for the proposed fixed mounting arm, signed and sealed by a Professional Engineer registered in the State of Florida, to the Engineer for review and approval.

6. See Index 18113 for concrete pole details and Index 18111 for steel pole details.

7. Galvanized pipe connections and conduit entry points shall be sealed in accordance with Section 630 of the Standard Specifications.
1. Concrete: Class IV (Drilled Shaft) with a minimum 4,000 psi compressive strength at 28 days for all environment classifications.

2. Reinforcing Steel: ASTM A615 Grade 60.

3. Anchor Bolts: ASTM F1554 Grade 5 with ASTM A563 Grade 60, high-strength nuts and plate washers. ASTM F2329 galvanization.

4. Install Anchor Bolts in accordance with Section 649-5 of the Specifications.

5. Foundation applies to slopes 1:4 or flatter.

6. The foundation for the CCTV structure shall be constructed in accordance with Section 455 of the Specifications except that no payment for the foundation shall be made under Section 455.

**INSTALLATION NOTES:**

1. Cable Supports: Electrical Cable Guides and Eyebolts.
   a. Locate top and bottom cable guides within the pole aligned with each other.
   b. Position one cable guide 2" below the handhole.
   c. Position other cable guide 1" directly below the top of the tenon.
   d. Position Park Stands 2" below the top of the handhole.

2. Lowering Device Installation Notes:
   a. Place the lowering cable that moves within the pole in an interior recess to prevent it from tangling or interfering with the pole or that is in the pole. Ensure that all electrical wire within the pole is routed securely and free from slack.
   b. 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.
   c. Coordinate all lowering device hardware requirements (including Tenon, Tenon mounting plates, parking stands, etc.) with lowering device manufacturer.

3. Pole Installation Notes:
   a. Install pole plumb.
   b. The pole shall not be erected until the foundation concrete has achieved 70% of the minimum specified 28 day compressive strength.

4. Refer to Index No. 18108 for conduit and cabinet mounting details.

**POLE NOTES:**

1. The pole shall be round or 16 sided or more with a constant taper of 0.14 inches per foot.

2. Pole shall may be either One or Two sections (with telescopic field splice).

3. Use only circumferential welds at base.

4. Up to two longitudinal seam welds are permitted.

5. Longitudinal seam welds within 4" of circumferential welds shall be complete penetration welds. Longitudinal seam welds on female section of telescopic field splices shall be complete penetration welds for the splice length plus six inches. All other areas, size the partial penetration welds to at least 60% of the pole tube thickness.


7. Identification Tag: Furnish each pole with a 2"x4" (max.) aluminum identification tag, secured to pole with stainless steel screws. Locate inside pole and visible from handhole. Provide financial Project ID, pole height, manufacturer’s name, yield strength (Fy) of steel and pole base wall thickness.

8. Fixed for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus 1/16", prior to galvanizing. Bolt diameters for anchor bolts shall not exceed the bolt diameter plus 1/8".

9. This Design Standard is considered fully detailed and no shop drawings are necessary. Submit Shop Drawings for minor modifications not detailed in the plans.

10. Pole Material Specifications:
   a. Pole:
      - ASTM A1011 Grade 50, 55, 60 or 65 (less than 1/2") or
      - ASTM A572 Grade 50, 60 or 65 (greater than or equal to 1/2") or
      - ASTM A495 Grade A (53 ksi yield) or Grade B (60 ksi yield)
   b. Steel Plates and Pole Cap: ASTM A36 or ASTM A570 Grade 50.
   c. Weld Metal: E70XX.
   d. Bolts: ASTM A325, Type 1.
      - Nuts: ASTM A563
      - Washers: ASTM F-436.
   e. Handhole Frame: ASTM A709 or ASTM A36.
   f. Handhole cover: ASTM A1011 Grade 50, 55, 60 or 65.
   g. Stainless steel screws: AISI Type 316.
   h. Galvanization:
      - Nuts, bolts and washers: ASTM F2329.
      - All other steel: ASTM A123.

11. Additional wire access holes not shown in this Design Standard shall not exceed 1/2" in diameter.

12. Verify CSL access tubes will not interfere with anchor bolt installation before excavating the shaft. When CSL access tube locations conflict with anchor bolt locations, move the CSL access tube location a two inches along the inner circumference of the reinforcing cage. Notify the Engineer before excavating the shaft if the CSL access tube locations cannot be moved out of conflict with anchor bolt locations.
STANDARD STEEL CCTV POLE

**POLE DETAILS**

**Pole Cap Plate**

(POLE WITHOUT LOWERING DEVICE)

Note: Install all handhole and opening covers prior to shipping. For Poles with Lowering Device, install Pole Cap Plate when Tenon Assembly is not installed.

**Pole Tenon Assembly Detail**

(POLE WITH LOWERING DEVICE)

**Handhole Detail**

- Provide Cover Plate Steel Chain Mounted or Hinge Mounted With Padlock Tab
- (12) 1⁄2" x 3" Slots
- (4) 1⁄2" Ø Holes Equally Spaced
- 1⁄4" Stainless Steel hex Head Screws, Typ.
- Partial Penetration Weld
- Handhole Cover Plate By Thrust
- Identification Tag (See Pole Notes)
- 1⁄4" Ø Drill & Tap Hole In Handhole Rim, Supplied With 3⁄8" Ø x 3" Bolt
- (2) Cable Guides For Wire Tie Off
- 3⁄8" Nut Holder With Fastener At 180° From Handhole (Interior Of Pole)

**Working Park Stand**

- 1⁄4" x 3⁄16" x 1 1/2" Plate
- Typical
- 3⁄4" Ø Rod With 1" Inner Ø
- Bend Rod to allow 1½" legs, similar to Cable Guide Detail

**Park Stand Detail**

- 3⁄4" Ø Rod With 1" Inner Ø
- Typical

**Cable Guide Detail**

- 3⁄4" Ø Hole
- 2½" Min.

**EYE BOLT OPTION**

- 3⁄4" Ø x 3⁄16" x 1 1/2" Plate
- Typical

**POLE TOP PLATE DETAIL**

**POLE SECTION E-E**

- 1⁄2" Ø Hole
- 3⁄4" Ø Plate
- (4) 3⁄8" x 3⁄8" Bolt With Hex Nut, 1⁄2" Washer, and 1 Lock Washer
- Pole Top Plate
- 3⁄4" Thick Tenon Plate With 3⁄8" Ø Center Hole
- 3⁄4" O.D. x 3⁄8" Wall x 1/2" (Min.) Long Tenon
- 1½" Cable Guide

**SECTION F-F**

- Pole Wall
- Partial Penetration Weld
- Handhole Cover Plate By Thrust
- Tip Dia. + ½"
- (12) 1⁄2" x 3" Slots
- Cable Guide For Wire Tie Off
- 3⁄8" Tenon Plate
- 3⁄8" Ø Hole
- 3⁄4" Plate
- 1⁄2" Plate
- 3⁄4" Ø Drill & Tap Hole In Handhole Rim, Supplied With 3⁄8" Ø x 3" Bolt
- (2) Cable Guides For Wire Tie Off
- 3⁄8" Nut Holder With Fastener At 180° From Handhole (Interior Of Pole)

**POLE DETAILS**

- 2015 DESIGN STANDARDS
- STEEL CCTV POLE

**Notes**

- (Interior of Pole)
- At 180° From Handhole (Interior of Pole)
- Partial Penetration Weld
- Identification Tag (See Pole Notes)
- 1⁄4" Ø Drill & Tap Hole In Handhole Rim, Supplied With 3⁄8" Ø x 3" Bolt
- (2) Cable Guides For Wire Tie Off
- 3⁄8" Nut Holder With Fastener At 180° From Handhole (Interior Of Pole)

**LATEST REVISION**

07/01/13

**DESCRIPTION**

2015 DESIGN STANDARDS

**STEEL CCTV POLE**

**INDEX NO.**

18111

**SHEET NO.**

4 of 4
LOWERING DEVICE INSTALLATION NOTES:

1. Place the lowering cable that moves within the pole in an interior 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 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 F3554, Grade 55.
      Nuts: ASTM A563, Grade A Heavy Hex.
      Washers: ASTM F436.
   f. Steel plates and Pole Cap: ASTM A36 or ASTM A709 Grade 50.
   g. Galvanization: Bolts, nuts and washers: ASTM F3529.
      All other steel: ASTM A633.
   h. The pole shall be round or 12-sided.
   i. Cut the tip end of the prestressed strand first or simultaneously with the butt end.
   j. For spiral reinforcing, one turn is required for spiral splices and two turns are required at the top and bottom of poles.
   k. For Reinforcing Steel, lap splice to consist of a 3'-0" lap length at each splice. All 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 400.
7. Provide a 1" minimum cover.
8. Provide handhole and coupler 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 in the plans. This Design Standard is considered fully detailed and no shop drawings are necessary. Submit Shop Drawings for minor modifications not detailed in the plans.
10. Install pole plumb.
11. This Design Standard is considered fully detailed and no shop drawings are necessary. Submit Shop Drawings for minor modifications not detailed in the plans.
12. 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. For Round Pole, Option 1 Stress Prestressed strand to 60% of Ultimate before Transfer.
**SPRITAL REINFORCING ELEVATION**
(Strands, Holes, and Fixtures Not Shown)

- **Tip End (Top):**
  - ½" Grd. Lug to Reinf. Cage
  - ½" Grd. Lug Grounded (Bottom)

- **Burr End:**
  - 4" x 12" Handhole
  - 4" x 30" Handhole
  - 1" Lifting Hole

- **Burial Depth:**
  - 0.30 L
  - 0.53 L
  - 0.70 L

- **Pole Length (L):**
  - 0.30 L
  - 0.53 L
  - 0.70 L

- **Final Grade Location:**
  - 2" Couplings With Cap

- **Storage and Handling:**
  - 1½" Ø Drain Hole

- **Erection:**
  - #2 AWG Stranded Ground Conductor

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

**POLE ELEVATION**
(Strands and Reinforcing Not Shown)

- **Pole Height:**
  - 1'-0" Plug

- **Tip or Butt Diameter:**
  - Measured Flat to Flat

- **Circular Void:**
  - #5 Gage Spiral

- **Void & Section:**
  - Measured Flat to Flat

**STRAND LEGEND**
- - Prestressed Strand
- - Dormant Strand 0.6 in.
- (a) - (4) #5 Rebar (Shown)
- (b) - #4 Rebar

**SECTION A-A**

- **STRAND PATTERN 1**
  - (12 - SIDED)
- **STRAND PATTERN 2**
  - (12 - SIDED)
- **STRAND PATTERN 3**
  - (ROUND - OPTION 1)
- **STRAND PATTERN 4**
  - (ROUND - OPTION 2)

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

Provide a Tenon Cap and Fix to the Tenon Wall with 3½" Ø x 3/4" Hex Head Cap Set Screws, Equally Spaced.

Provide Cable Guide

Provide ⅝" Ø Hole

Provide ⅜" Ø Nut with Flat Washer

(4) ⅝" Ø x 18" Galv. Bolts with 15" Embedment, Equally Spaced (See Note 3 for alternate connector)

**SECTION B-B**

**CAP PLATE DETAIL**

**TENON COVER**

**TOP OF POLE DETAIL WITH LOWERING DEVICE**

Notes:

1. Install all handhole and opening covers prior to shipping.

2. Install ⅝" Ø x 5" long stud with hex nut in insert before shipment.

3. As an alternate, embed (4) ⅝" Ø x 18" stainless steel threaded rods with a threaded nut. At top of rod, thread a coupling nut to attach plate w/ (4) ⅝" Ø x 1½" stainless steel bolts.

4. Handhole frame may be Cast Aluminum 356.2.
NOTES:
1. If no guardrail or barrier wall exists, structure shall be outside the clear zone.
2. Extend Catwalk from DMS to outer edge of paved shoulder but not less than four feet in length.
3. Clear zone distance and setbacks from edge of travel lane shall be in accordance with Plans Preparation Manual Volume I, Chapters 2 and 4.

according to Plans Preparation Manual Volume I, Table 2.10.4.

19'-6" Min. Clearance Per DMS Structure

Guardrail

Drilled Shaft

DMS Structure

Shoulder (Paved)

Travel Lane

Note: Actual number and direction of travel lanes varies.

Varies See Note 2

Clear Zone

See Note 2

Travel Lane

Travel Lane

Travel Lane

Varies See Note 2

Clear Zone

See Note 1

Min. 4'

Min. 4'

Min. 4'

Varies See Note 2

See Note 2

Varies

Ground Line

Catwalk

Walk-In Dynamic Message Sign (DMS)

\frac{1}{2} ETP Alloy 110 Copper Air Terminal (Class II) Surface Base of 8 Square-Inch Minimum Contact Area Per NFPA 780-4.16.3

07/01/14

NOTES:

1. If no guardrail or barrier wall exists, structure shall be outside the clear zone.

2. Extend Catwalk from DMS to outer edge of paved shoulder but not less than four feet in length.

3. Clear zone distance and setbacks from edge of travel lane shall be in accordance with Plans Preparation Manual Volume I, Chapters 2 and 4.

Varies See Note 2

Clear Zone

See Note 2

Travel Lane

Travel Lane

Travel Lane

Varies See Note 2

Clear Zone

See Note 1

Min. 4'

Min. 4'

Min. 4'

Varies See Note 2

See Note 2

Varies

Ground Line

Catwalk

Walk-In Dynamic Message Sign (DMS)

\frac{1}{2} ETP Alloy 110 Copper Air Terminal (Class II) Surface Base of 8 Square-Inch Minimum Contact Area Per NFPA 780-4.16.3

07/01/14

NOTES:

1. If no guardrail or barrier wall exists, structure shall be outside the clear zone.

2. Extend Catwalk from DMS to outer edge of paved shoulder but not less than four feet in length.

3. Clear zone distance and setbacks from edge of travel lane shall be in accordance with Plans Preparation Manual Volume I, Chapters 2 and 4.

Varies See Note 2

Clear Zone

See Note 2

Travel Lane

Travel Lane

Travel Lane

Varies See Note 2

Clear Zone

See Note 1

Min. 4'

Min. 4'

Min. 4'

Varies See Note 2

See Note 2

Varies

Ground Line

Catwalk

Walk-In Dynamic Message Sign (DMS)

\frac{1}{2} ETP Alloy 110 Copper Air Terminal (Class II) Surface Base of 8 Square-Inch Minimum Contact Area Per NFPA 780-4.16.3

07/01/14

NOTES:

1. If no guardrail or barrier wall exists, structure shall be outside the clear zone.

2. Extend Catwalk from DMS to outer edge of paved shoulder but not less than four feet in length.

3. Clear zone distance and setbacks from edge of travel lane shall be in accordance with Plans Preparation Manual Volume I, Chapters 2 and 4.
NOTES:

1. Conduit shall be connected to steel framework that has been cleaned to base metal by use of bonding plates having a contact area of not less than 8 square inches or by welding or brazing. Drilling and tapping the steel structure to accept a threaded connector is also an acceptable method.

2. If steel framework is to be drilled and tapped to accept threaded connector, the threaded connector shall be galvanized and have at least 5 threads fully engaged and secured with a jam nut to the steel framework.

3. Bends in the conduit shall not be less than the minimum bending radius for the cable contained in the conduit.

4. Catwalk and handrail design and installation shall comply with AISC, AASHTO, and OSHA requirements as applicable.

5. All data, fiber optic and power cables for the DMS shall be completely enclosed within the sign structure or in conduit.

6. Permanently stamp/mark foundation to conduit locations.

7. Transition conduit in foundation to underground conduit with appropriate reducer outside the limits of the foundation.
NOTES:
1. DMS Cabinet may be pole or ground mounted depending on project requirements.
2. See sheet 4 for additional conduits for grounding. The number and placement of conduits are approximate.
3. Field adjust pole-mounted DMS cabinet height to achieve best access for maintenance personnel given site conditions as directed by the Engineer. Avoid conflicts with stiffeners, handhole and maintenance of anchor bolts.

Fiber Optic Communications Conduit (2" PVC) (As Shown On Plans)
Fiber Optic Pull Box Or Fiber Optic Splice Box (See Index 17700)
Spare Conduit (2" PVC)
Spare Conduit (2" PVC)
Power Conduit (2" PVC) To Power Service Assembly
Grounding Conduit (2" PVC)

Fiber Optic Pull Box Or Fiber Optic Splice Box (See Index 17700)
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2" PVC Conduit (As Shown On Plans)

Power Conduit (2" PVC) To Power Service Assembly

(2" PVC) (As Shown On Plans)
Dynamic Message Sign (DMS)

- 1½ ETP Alloy 110 Copper Air Terminal (Class II) Surface Base of 8 Square-Inch Minimum Contact Area Per NFPA 780-4.16.3

Ground Rods:
- Ground Rod A
- Ground Rod B
- Ground Rod C
- Ground Rod D

Connection Details:
- Ground Rods A, B, C, and D are required.
- Ground Rods B and C are connected with a 1½ ETP Alloy 110 Copper Air Terminal (Class II) Surface Base of 8 Square-Inch Minimum Contact Area.
- Copper-Clad Steel Ground Rods of 2½ Diameter by 20' Long are required.
- Air Terminal and Solid Copper Wire to Power Service Assembly are connected.

Note: Inset 'A' shows Ground Rod Placement Detail (Typical) and Ground Wire Details (Typical).
NOTES

2. DMS and Hanger Design Wind Speed: 150 miles per hour. Maximum DMS weight for design: 4500 lb.
3. Shop drawings including the DMS connection are required and fabrication shall not begin until these shop drawings are approved.
4. Locate the sign horizontal on the structure as shown in the plans. Vertically center the sign enclosure with the centerline of the truss.
5. Before erection, after both the delivery of the DMS and the steel truss, the contractor shall carefully measure the exact locations for field drilling the 1/2" bolt holes in the vertical hangers and horizontal mounting member attached to the sign enclosure. Field locate holes to allow vertical hanger placement as shown on the plans with no conflicts with gusset or splice plates.
6. All steel items shall be galvanized as follows:
   - All nuts, bolts and washers: ASTM F 2329
   - All other steel items: ASTM A 450
7. All bolt holes shall be equal to the bolt diameter plus 3/16", prior to galvanizing.
8. All bolts shall have single self-locking nuts, or locking nut system, installed in accordance with the manufacturer's recommendations.
9. Cost of the installation of the DMS on truss including the vertical hanger, associated members, and hardware shall be incidental to the cost of the sign structure.
10. Threaded couplings shall be located on sign side of column above the sign structure.
6061-T6 Structural Aluminum Zee 4x5.13x3.58
Horizontal Member
Attached To The Internal Framework And Included
With The DMS Sign

DMS Sign Enclosure

ASTM A325, Gr.36 Steel W6x9
Hanger @ 9 (Max.) Spacing

Lock Nuts
Galvanized With Matching
2-½" Ø ASTM A325 Bolts
Field Drill Holes And Provide
Truss Chord
Dia. +½" Ø Bolts
Holes For
½" Ø U-Bolts

Truss Chord

2-½" Ø U-Bolts
Back Face Of
DMS Sign Enclosure

6 " ± 6 " ±
Lock Nuts
Galvanized With Matching
2-½" Ø ASTM A325 Bolts

Aluminum Zee

SECTION A-A

W6x9

2½" c/c
U-Bolts

SECTION B-B

2½" Ø U-Bolts

SECTION C-C

2½" Ø U-Bolts

Holes For
½" Ø Bolts

Holes For
½" Ø U-Bolts

Holes For
½" Ø Bolts

2½" Ø U-Bolts

Holes For
½" Ø U-Bolts

Holes For
½" Ø Bolts

Holes For
½" Ø Bolts

Hanger @ 5' (Max.) Spacing
ASTM A709, Gr.36 Steel W6x9
3 Zee Beams Equally Spaced

3 End Drill Holes And Provide
2½" Ø ASTM A325 Bolts
Galv. With Matching Lock Nuts

END VIEW
NOTES:
1. Provide single ethernet connection from the managed field ethernet switch to either the sign controller interface in cabinet or sign controller in sign enclosure.
2. Locate cabinet as shown in plans.
3. AC service entrance may be located in cabinet or sign housing.
4. Cabinet must include at least one breaker to control all cabinet power.
5. Serial data link is for communications directly to the DMS controller.
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SIGN AND CABINET WIRING DIAGRAM

LEGEND

Data
Ethernet
Power
SPD Surge Protection Device

SIGN AND CABINET WIRING DIAGRAM

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NOTES:

1. Cabinet layout is for pole or ground mounted installations.
2. All dimensions and equipment locations are approximate.
3. Conduit entrances are at bottom of cabinet.
4. Minimum number of duplex outlets is three, (2) SPD protected and (1) GFI protected.
5. Either an access controller or local access panel shall be provided to provide full access to DMS for control, programming and troubleshooting.
6. Load center shall be sized for connected equipment and convenience outlets with at least one main disconnect and three circuit breakers.
7. Batteries and UPS may be located in sign housing or cabinet.
8. Power Distribution Assembly component layout, orientation and location may vary.