GENERAL NOTES:
1. If no guardrail or barrier wall exists, structure shall be outside the clear zone. Clear zone shall be measured to edge of the drilled shaft if drilled shaft is more than 4' above adjacent grade.
2. Extend Catwalk from DMS to outer edge of paved shoulder but not less than 4' 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.

accordance with Plans Preparation Manual Volume I, Chapters 2 and 4.
2-2" Threaded Couplings

2 Watertight Flexible Conduits
(2" Power And 2" Communications)

2-2" Rigid Metal Conduits With Std Sweeps

DMS Cabinet

Hand Hole

One 2" PVC Conduit For Electrical Service
One 2" PVC Conduit For Fiber-Optic Communications
2" PVC Spare Conduit (As Shown On Plans)

See Sheet 3 for Conduit Details and 7 Grounding Details

Conduit Exit Oriented In Necessary Direction

GENERAL NOTES:

1. Conduits for grounding shall be connected to steel framework that have been cleaned to base metal by use of bonding plates having 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 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 cable 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.
**GENERAL NOTES:**

1. DMS Cabinet may be pole or ground mounted depending on project requirements.

2. See sheet 2 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 as directed by the Engineer. Avoid conflicts with stiffeners, hand-hole and maintenance of anchor bolts.

**DESCRIPTION:**

- **Pole-Mounted DMS Cabinet**
  - 2" PVC Conduit Spares
  - Fiber-Optic Pull Box or Fiber-Optic Splice Box (See Index 17700)
  - 2" PVC Conduit Spares (As Shown on Plans)
  - Fiber-Optic Communications Conduit (2" PVC)
  - Power Conduit (2" PVC) To Power Service Assembly
  - 2" PVC Conduit Spares
  - Fiber-Optic Communications Conduit (2" PVC)
  - Power Conduit (2" PVC) To Power Service Assembly
  - Transition Conduit Outside Foundation
  - 2" PVC Grounding Conduits

- **Ground-Mounted Cabinet**
  - Fiber-Optic Pull Box or Fiber-Optic Splice Box (See Index 17700)
  - 2" PVC Conduit Spares
  - Fiber-Optic Communications Conduit (2" PVC)
  - Power Conduit (2" PVC) To Power Service Assembly
  - Transition Conduit Outside Foundation
  - 2" PVC Grounding Conduits

- **Cabinet**
  - Mounted
  - Pole-Mounted

- **Handhole**
  - 11 Gage Handhole Cover
  - Hex Head Screws, Typ. 1" Stainless Steel
  - Cover Clip, Typ. Tack Welded
  - Handhole Frame
  - Full Penetration Weld

- **Handrailing**
  - Post
  - Grating
  - Catwalk

- **Power Conduit**
  - 2" PVC Conduit Spares
  - Fiber-Optic Pull Box or Fiber-Optic Splice Box (See Index 17700)

- **Communications Conduit**
  - Fiber-Optic Pull Box or Fiber-Optic Splice Box (See Index 17700)

- **Power Conduit (2" PVC)**
  - To Power Service Assembly

**NOTES:**

- See Note 3
- See Pole Top Cut-Away Detail
- Transition Conduit Outside Foundation
- Finished Grade (Varies)
- Wire Screen - See Spec. 649-6
- Hand Hole
- Top Of Conduits
- Handrail
- Post
- Grating
- Catwalk
- Bottom Truss Chord

**DIMENSIONS:**

- 2'-Max
- 5" x 5" Hole, Typ.
- 4" x 4" Pipe

**SPECIFICATIONS:**

- W Stainless Steel Hex Head Screws, Typ.
- Tack Welded Cover Clip, Typ.
- Partial Penetration Weld

**INDEX NO.**

- 18000-03.dgn

**SYMBOLS:**

- Handhole Frame
- Full Penetration Weld

**MDM INFORMATION:**

- 01/01/13
- 18300

**REVISIONS:**

- 01/01/13
- 10
HANGER LOCATION DETAIL
(Cantilever Sign Structure Shown. Span Sign Structure Similar)

GENERAL 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 laterally 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 location on the field drilling the 1/2" bolt holes in the vertical hanger locations attached to the sign enclosure. Field locate holes to allow vertical hanger placement as shown in 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 F2329
   - All other steel items: ASTM A123
7. All bolt holes shall be equal to the bolt diameter plus 
   - 1/6", 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 truss.
6061-T6 Structural Aluminum Zee 4x3.13x3.58
Horizontal Member
Attached To The Internal Framework And Included
With The DMS Sign

ASTM A709, Gr.36 Steel W6x9
Hanger @ 9 (Max.) Spacing

Field Drill Holes And Provide
2-½" Ø ASTM A325 Bolts
Galv. With Matching Lock Nuts

Truss Chord

Back Face Of
DMS Sign Enclosure

W6x9

2½" c/c
U-Bolts

2½" Ø U-Bolts

2½" Ø Bolts

Hanger @ 9 (Max.) Spacing

Aluminum Zee

See Truss Data Sheet

SECTION A-A

Truss Chord

2½" Ø U-Bolts

2½" Ø U-Bolts

Hanger @ 5' (Max.) Spacing

ASTM A709, Gr.36 Steel W6x9

(2) U-Bolts With Matching Lock Nuts

SECTION B-B

Holes For
½" Ø Bolts

SECTION C-C

Holes For
½" Ø Bolts

Holes For
½" Ø U-Bolts

Holes For
½" Ø U-Bolts

END VIEW
GENERAL NOTES:

1. All grounding materials shall meet the requirements of Section 620.
2. Exothermically weld all connections to ground rods.
3. The contractor may, upon approval of the Engineer, install a 20-foot sectional ground rod for instances when conditions will not allow for the installation of the 3 auxiliary ground rods.
4. Install marker tape directly above all grounding electrodes and conductors.
5. Copper flat surfaces shall be bolted, welded, or brazed securely to framework to maintain electrical continuity.
6. All air terminals shall meet UL-96A.
7. Grounding system shall be placed within right of way.
8. See Sheet 7 for ground rod placement detail.
9. Lightning protection shall conform to NFPA 780. Spacing between air terminals shall not exceed 20 feet.

DESCRIPTION:

Ground Rod With Exothermic Weld Bond To All Air Terminals And Solid Copper Ground Wire.

#2 AWG Tin-Plated Bare Solid Copper Ground Wire

Minimum Contact Area Surface Base Of 8 Square-Inch Air Terminal (Class II)

ETP Alloy 110 Copper

SPAN DMS

CANTILEVER DMS

DETAIL A

DETAIL B
GENERAL 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. Use cox line for communications directly to the DMS controller.
4. Cabinet must include at least one breaker to control all cabinet power.
5. AC service entrance may be located in cabinet or sign housing.
6. UPS equipment location may vary. Diagram indicates functional.

LEGEND

- --- Data
- --- Ethernet
- --- Power
- SPD Surge Protection Device

SIGN AND CABINET WIRING DIAGRAM

SIGN AND CABINET WIRING DIAGRAM

DMS Enclosure

Lighting

UPS

Electrical Breaker

Managed Field Ethernet Switch

See Note 1

Managed Field Ethernet Switch

Equipment Cabinet

Convenience Outlets

Equipment Panel with SPD

See Note 6

See Note 4

Sign Controller Interface

Dial-up Telephone

SPD

Power Distribution, Breakers, and UPS

GF1 Convenience Outlet

Voltage, Opto, Temp, Air Flow, Humidity and Filter Sensors

Climate & Temperature Control

Display Modules

Field Tech Computer (Temporary Service Connection)

Field Tech Computer

(LAN/WAN)

Dial-up Telephone and Modem (optional)

See Note 3
1. Cabinet layout is for pole or ground mounted installations.
2. All dimensions and equipment locations are approximate.
3. Conduct entries 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 sign 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.

LEFT SIDE VIEW
FRONT VIEW
POLE MOUNTED DMS CABINET
RIGHT SIDE VIEW

GENERAL NOTES: