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 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.

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

Note: Actual number and direction of travel lanes varies.

Variable

19'-6" Min. Clearance Per Plans Preparation Manual Volume I, Table 2.10.4

See Note 1

See Sheet 6 of 10
For Grounding And Lightning Protection

TYPICAL PLAN VIEW
DMS CANTILEVER SIGN STRUCTURE

TYPICAL PLAN VIEW
SPAN SIGN STRUCTURE

TYPICAL ELEVATION VIEW
CANTILEVER SIGN STRUCTURE

TYPICAL ELEVATION VIEW
SPAN SIGN STRUCTURE

GENERAL LAYOUT
GENERAL NOTES:

1. Conductors 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 0.008 square inches or by welding or brazing.

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 cables for the DMS shall be completely encased 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.

Not To Scale
1. Design Specifications: FDOT Structures Manual (current edition) and AASHTO standard specifications for structural supports for highway signs, luminaries and traffic signals.

2. Design Wind Speed: 150 miles per hour. Maximum DMS box weight for design: 4500lb.

3. Shop drawings including the DMS connection are required and fabrication shall not begin until these shop drawings are approved.

4. Before erection, after both the delivery of the DMS sign enclosure and the steel truss, the contractor shall carefully measure the exact locations for field drilling the 3/8" bolt holes in the vertical hangers and horizontal mounting member attached to the sign enclosure.

5. Insure that the field located holes center justify vertically the sign enclosure with the centerline of the truss.

6. Locate the sign laterally on the structure as shown in the plans.

7. Insure that the field located holes allow the vertical hangers to be placed as shown on the plans with no conflicts with gusset or splice plates.

8. All steel items shall be galvanized as follows:
   - All nuts, bolts and washers: ASTM F2129
   - All other steel items: ASTM A123

9. All bolt hole diameters shall be equal to the bolt diameter plus 3/32", prior to galvanizing.

10. All bolts shall have single self-locking nuts or, proprietary locking nut system, installed in accordance with the manufacturer’s recommendations.

11. Cost of the installation of the DMS sign enclosure on truss including the vertical hangers, associated members and hardware shall be incidental to the cost of the sign structure.

12. Threaded couplings shall be located on sign side of column above the sign truss.
DMS Sign Enclosure

ASTM A709 Gr.36 Steel W6x9 Hanger @ 5'(Max.) Spacing

2-1/2" U-Bolts

Galv. With Matching Lock Nuts

Field Drill Holes And Provide
2-1/2" ASTM A325 Bolts

Galvanized With Matching Lock Nuts

Back Face Of
DMS Sign Enclosure

Truss Chord

2'-6" c/c
U-Bolts

SECTION A-A

SECTION B-B

SECTION C-C

6061-T6 Structural Aluminum
2 x 3.13 x 3.58 Horizontal
Member Attached To The Internal Framework And Included With The DMS Sign

W6x9

2-1/2" U-Bolts

Galv. With Matching Lock Nuts

SIGN ATTACHMENT (2 of 2)
All grounding materials shall meet the requirements of Section A620 of the current Minimum Specifications For Traffic Control Signal Devices (MSTCSD), except as noted.

Exothermically weld all connections to ground rods.

The contractor may, upon approval of the Engineer, install a 30-foot sectional ground rod for instances when conditions will not allow for the installation of the 3 auxiliary ground rods.

Install marker tape directly above all grounding electrodes and conductors.

Copper flat surfaces shall be bolted, welded, or brazed securely to framework to maintain electrical continuity.

All air terminals must meet UL-96A.

Grounding system shall be placed within right of way.

See Sheet 7 of 10 for ground rod placement detail.

Lightning protection shall conform to NFPA 780. Spacing between air terminals shall not exceed 20 feet.

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**GENERAL NOTES:**

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8. See Sheet 7 of 10 for ground rod placement detail.

9. Lightning protection shall conform to NFPA 780. Spacing between air terminals shall not exceed 20 feet.
Not To Scale

See Sheet 3 of 10 for Conduit Uses and Sizes

#6 AWG Tin-Plated Bare Solid Copper Ground Wire, Bond To All Air Terminals And Ground Rod With Exothermic Weld.

Exothermic Weld

Main Ground Rod To Be Placed Immediately Adjacent To Pole

12" Min. 20' Max.

3/4" Diameter By 20' Long Copper-Clad Steel Ground Rods Driven Into Undisturbed Earth

Ground Rod B

See Note 3 On Sheet 6 of 10

Transition Conduit Outside Foundation

1" Ground Rod C To Ground Rod D

1" Ground Rod B To Ground Rod C

2" PVC Grounding Conduits

12" Min.

1" Max.

GROUNDED AT AIR TERMINAL

See Inset A

GROUNDING DETAILS (2 of 2)
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. Serial data link is 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 requirements that uninterrupted power must be available in cabinet and sign housing.

LEGEND

- Data Ethernet
- Power
- SPD Surge Protection Device

SIGN AND CABINET WIRING DIAGRAM
**GENERAL 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 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.

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**Left Side View**

**Front View**

**Right Side View**

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**Cabinet Layout (1 of 2)**
DYNAMIC MESSAGE SIGN
WALK-IN

GROUND MOUNTED DMS CABINET

LEFT SIDE VIEW

RIGHT SIDE VIEW

FRONT VIEW

Ground Mount DMS Cabinet Layout (2 of 2)

Not To Scale