GENERAL NOTES

1. All structural steel shall conform to the requirements shown in the materials table on sheet 2.

2. High-strength bolted connections shall conform to the provisions in section 300.28 of the standard specifications. All high-strength bolts with friction type connections for steel structures may be made with galvanizing or paint on the contact bearing surfaces.

3. All shear connections shall be fabricated into the largest practical sections prior to installation. Structural fabrication shall be submitted to the Engineer for approval and the Contractor shall submit fabrication plans to the Engineer for approval and the Contractor shall submit fabrication plans to the Engineer for approval.

4. All concrete structure shall be cast or built with an environment, leave the structure steel before installing the concrete structure. Concrete must have a minimum compressive strength of 2,700 psi and must be placed after concrete strength has increased to 2,700 psi.

5. A disconnect for the power supply to the DMS shall be provided as shown in the roadway plans.

6. All concrete shall be cast in accordance with the applicable electrical codes.

GENERAL NOTES (CONTINUED)

7. Sheets in the final binding shall be arranged to facilitate insertion of the sheet into the appropriate sheet holder in the proper order:

8. A disconnect for the power supply to the DMS shall be provided as shown in the roadway plans.

9. Shop drawings shall be submitted to the Engineer for review in accordance with section 105.02 of the standard specifications.

10. Cables, steel support and support work shall be finished in accordance with section 105.02 of the standard specifications.

11. These shall be no interruptions or obstructions in the roadway plans.

12. Application of stainless steel bands and stainless steel plates edged brackets with hex head bolts shall be provided as shown in the roadway plans.

13. Install structure identification panel in accordance with M and S Standards S-614-12 using 3/8" wide stainless steel bands and stainless steel plates edged brackets with hex head bolts and required testing shall be complete before any material is galvanized.

14. Welding of steel shall conform to the requirements of AWS D1.1. All welds to be welded shall be completed before any material is galvanized. These welds to be welded shall be complete before any material is galvanized.

ENHANCED MAGNETIC PARTICLE TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH AWS D1.1. ALL AREAS TO BE GALVANIZED SHALL BE FREE FROM DEFECTS IN GROOVE AND FILLET WELDS, PLATE CUT EDGES, CORRECTION OF FABRICATION ERRORS IN CUTTING, PUNCHING, DRILLING, OR FITTING, AND MEMBERS WHICH ARE TACKED OR WELDED AND SUBSEQUENTLY CUT OR WELDED. ENHANCED MAGNETIC PARTICLE TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH AWS D1.1. ALL AREAS TO BE GALVANIZED SHALL BE FREE FROM DEFECTS IN GROOVE AND FILLET WELDS, PLATE CUT EDGES, CORRECTION OF FABRICATION ERRORS IN CUTTING, PUNCHING, DRILLING, OR FITTING, AND MEMBERS WHICH ARE TACKED OR WELDED AND SUBSEQUENTLY CUT OR WELDED. ENHANCED MAGNETIC PARTICLE TESTING SHALL BE CONDUCTED IN ACCORDANCE WITH AWS D1.1. ALL AREAS TO BE GALVANIZED SHALL BE FREE FROM DEFECTS IN GROOVE AND FILLET WELDS, PLATE CUT EDGES, CORRECTION OF FABRICATION ERRORS IN CUTTING, PUNCHING, DRILLING, OR FITTING, AND MEMBERS WHICH ARE TACKED OR WELDED AND SUBSEQUENTLY CUT OR WELDED.
CANTILEVER NOTES
1. ALL STRUCTURES SHALL BE CONSTRUCTED TRUE TO THE SPECIFIED DIMENSIONS, SHALL BE FREE FROM KINKS, TWISTS OR BENDS, AND SHALL BE CONFORM TO THE APPEARANCE. THE COMPLETED SECTION SHALL BE ASSEMBLED IN THE WORKSHOP, ACCORDING TO THE SPECIFICATIONS AS APPLIED.
2. ALL MEMBERS SHALL BE TEMPORARILY SUPPORTED TO AVOID ALL LOADING OF THE FIELD SPACES ON THE STRUCTURES, ENSURING CONSTRUCTION ACCURACY. ANY VARIATION FROM THE CONSTRUCTION OF THE SHAPES.
3. POST MEMBERS SHALL BE STOPPED TO THE HEIGHT SHOWN ON THE PRINTS BY NECESSITY OF THEスペース FOR LISSING AND MOVING DURING ERECTION. THE POST FOR ALL STRUCTURES AND SHAPES SHALL BE STOPPED TO THE END OF THE BOARD SHOWN.
4. CLEATS EYES OR REMOVABLE BRACKETS SHALL BE APPLIED TO POST AND WASHER AS NECESSARY, TO SECURE THE SHAPES AND BEING DURING ERECTION, TO PREVENT DAMAGE TO THE SHAPES OR STITCHED SURFACES. BRACKETS IN TURNOVER GROOM STYLES SHALL BE EXPERIENCED. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE SHOP DRAWINGS.
5. WALKWAYS SHALL LEAD TO THE CABINET ACCESS DOOR AS SPECIFIED ON THE SIGN CONDITIONS SHOWN IN THE SECURITY PLAN.
6. ALL PIPE MEMBERS SHALL BE HANG ON THE SHAPES AND BEING AFTER FABRICATION AS PER ASTF A123. PIPES IN ALL SHAPES FOR CONTACTS AS NEEDED. WASHERS MUST BE FORMED TO THE RADIUS SHOWN ON THE PLANS.
7. CANTELEVERING BARS MOUNTED WITH A 6 AND 10 LEVEL OR TILTED UPWARD NO MORE THAN 1° WILL BE MOUNTED ON THE INSTALLATION DETAILS OF THE BAR.
8. CLEATS EYES OR REMOVABLE BRACKETS SHALL BE APPLIED TO POST AND WASHER AS NECESSARY, TO SECURE THE SHAPES AND BEING DURING ERECTION, TO PREVENT DAMAGE TO THE SHAPES OR STITCHED SURFACES. BRACKETS IN TURNOVER GROOM STYLES SHALL BE EXPERIENCED. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE SHOP DRAWINGS.
9. PIPES AND BARS SHALL BE SHOWN ON THE DRAWINGS. ERECTION LUGS ARE REQUIRED ON ONE END OF THE CROSS ARMS FOR ERECTION. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE DRAWINGS.
10. POST MEMBERS SHALL BE SHOWN ON THE DRAWINGS. ERECTION LUGS ARE REQUIRED ON ONE END OF THE CROSS ARMS FOR ERECTION. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE DRAWINGS.

BUTTERFLY NOTES
1. ALL STRUCTURES SHALL BE CONSTRUCTED TRUE TO THE SPECIFIED DIMENSIONS, SHALL BE FREE FROM KINKS, TWISTS OR BENDS, AND SHALL BE CONFORM TO THE APPEARANCE. THE COMPLETED SECTION SHALL BE ASSEMBLED IN THE WORKSHOP, ACCORDING TO THE SPECIFICATIONS AS APPLIED.
2. POST MEMBERS SHALL BE STOPPED TO THE HEIGHT SHOWN ON THE PRINTS BY NECESSITY OF THEスペース FOR LISSING AND MOVING DURING ERECTION. THE POST FOR ALL STRUCTURES AND SHAPES SHALL BE STOPPED TO THE END OF THE BOARD SHOWN.
3. CROSS AND CROSS ARMS SHALL BE STOPPED TO THE HEIGHT SHOWN ON THE SHAPES AND BEING AFTER FABRICATION AS PER ASTF A123. PIPES IN ALL SHAPES FOR CONTACTS AS NEEDED. WASHERS MUST BE FORMED TO THE RADIUS SHOWN ON THE PLANS.
4. ALL PIPE MEMBERS SHALL BE HANG ON THE SHAPES AND BEING AFTER FABRICATION AS PER ASTF A123. PIPES IN ALL SHAPES FOR CONTACTS AS NEEDED. WASHERS MUST BE FORMED TO THE RADIUS SHOWN ON THE PLANS.
5. CANTELEVERING BARS MOUNTED WITH A 6 AND 10 LEVEL OR TILTED UPWARD NO MORE THAN 1° WILL BE MOUNTED ON THE INSTALLATION DETAILS OF THE BAR.
6. CLEATS EYES OR REMOVABLE BRACKETS SHALL BE APPLIED TO POST AND WASHER AS NECESSARY, TO SECURE THE SHAPES AND BEING DURING ERECTION, TO PREVENT DAMAGE TO THE SHAPES OR STITCHED SURFACES. BRACKETS IN TURNOVER GROOM STYLES SHALL BE EXPERIENCED. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE SHOP DRAWINGS.
7. PIPES AND BARS SHALL BE SHOWN ON THE DRAWINGS. ERECTION LUGS ARE REQUIRED ON ONE END OF THE CROSS ARMS FOR ERECTION. DETAILS OF SUCH DEVICES SHALL BE SHOWN ON THE DRAWINGS.
CANTILEVER INSTALLATION DETAILS

ANCHORAGE NOTES
1. An OSHA compliant anchor device shall be mounted to the outstanding leg of the angle as directed by the engineer. Anchorage device shall not be installed where minimum fall protection clearance requirements below the sign are not met. A minimum unobstructed clear distance of 12 feet below the sign cabinet is required for this installation.

2. Anchorage device shall be mounted with a minimum of two 5/8" Diameter Stainless Steel bolts.

3. Stainless Steel bolts connecting shall conform to ASTM A320. Stainless Steel nuts shall conform to ASTM F594, Group 1. Stainless Steel bolts shall conform to ASTM F593, Group 1. A hardened flat washer shall be provided under the nut. Flat washers shall be fabricated from the same material as the nuts.

4. Aluminum angle shall conform to ASTM B308.

5. Vertical frame member shall be a primary framing component, adjacent to the doorways and on the support face of the cabinet.

OSHA COMPLIANT ANCHORAGE DETAILS

CANTILEVER NOTES
1. The maximum cabinet overlap onto elbow shall not exceed 7'-0" from the field splice.

2. All posts between base plate and field splice shall have a tube wall thickness of 1/4" 0.688". All mast arms shall have a tube wall thickness of 3/8".

3. See Sheet 6 for field splice details.

ANCHORAGE DEVICE ATTACHED TO OUTSTANDING LEG OF ANGLE. SEE DETAIL 1.

NOTE: ANCHORAGE POINT SHALL BE 4'-6" ABOVE PLATFORM.

ANCHORAGE DEVICE MOUNTED WITH A MINIMUM OF TWO 5/8" DIAMETER STAINLESS STEEL BOLTS.
-CANTILEVER POST AND ARM DETAILS-

HANDHOLE AND COVER DETAILS

POST BASE ELEVATION

POST OR MAST ARM
3/8" NBR RING GASKET CEMENTED TO COVER PL
3/8" THICK COVER PL

COVER PL NOT SHOWN

PIPE WALL

MISS 8 x 4 1/2 x 0.25" M A R K E D S E - S E C T I O N  S H E E T

HSS 6 x 4 x 1/8 x 0'-2"

TOP OF BASE PLATE
CABINET
ACCESS
REMOTE

PLACEMENT OF HANDHOLE
1" X 1" CLIP (TYP.)

POST & CASSET
1/2" COVER PL

MAST ARM
LIFTING EYE - SEE DETAIL

M A S T  A R M  E N D  D E T A I L

CONDUIT PENETRATION DETAILS

* PLUG WITH RECESSED PIPE PLUGS
* DISCONNECT CABINET FOR THE POWER SUPPLY
  SHALL BE LOCATED OUTSIDE OF THE CLEAR-ZONE.

DIRECTION OF TRAFFIC

PLACEMENT OF HANDHOLE

HANDHOLE = PIPE

NOT SHOWN

COVER PL

PIPED WALL

NEOPRENE GASKET

DIA = PIPE OD + 1/8" COVER PL

TAPERED VENT HOLE PLUGS AFTER GALVANIZING

PLACE AS SHOWN. INSTALL ALUMINUM 4-1/2" DRAIN HOLES FOR GALVANIZING

MAST ARM END DETAIL

LIFTING EYE DETAIL

PIPE WALL

MAST ARM
PL 3" ID = (PIPE OD - 3"

FIELD SPLICE DETAILS

STIFFENER DETAILS

NOTES:

1. STIFFENERS ARE TO BE PLACED ON ALL CANTILEVER
   FIELD SPLICES. STIFFENERS ARE NOT SHOWN
   ELSEWHERE IN THESE SHEETS FOR CLARITY.

2. TERMINATE WELD 3/4" SHORT OF THE END OF
   THE STIFFENER PLATE. AT THE OTHER 3 WELDS
   TERMINATE WELD 1/2" SHORT OF THE TOP OF
   THE STIFFENER PLATE. SEE WELD DETAIL.

3. SPLICE DESIGN BASED ON ARM CAPACITY.

4. THE WELDED SURFACES OF THE SPLICE PLATE
   MUST BE MACHINED TO A COMMON PLANE
   WITHIN A TOLERANCE OF ±1/4" USING A PORTABLE
   FLANGE FACER AFTER WELDING AND PRIOR TO
   GALVANIZING.

FIELD SPLICE

PLATE = 3/4" X 12" 0.125 THICKNESS

BOLTS HAVE BEEN INITIALLY TIGHTENED. THE TIGHTENING SEQUENCE WOULD BE 12, 6, 1, 7 ETC. THE TIGHTENING PROCESS SHALL BE CONTINUED UNTIL NO LOOSE BOLTS ARE FOUND AFTER ALL BOLTS HAVE BEEN TIGHTENED.

THE MATING SURFACES OF THE FLANGE SPLICE PLATE SHALL BE MACHINED TO A COMMON PLANE.

STIFFENERS SHALL BE LOCATED ON BOTH SIDES OF THE FIELD SPLICE.

STIFFENERS ARE TO BE PLACED ON ALL CANTILEVER FIELD SPLICES. STIFFENERS ARE NOT SHOWN ELSEWHERE IN THESE SHEETS FOR CLARITY.

STEEL PLATES SHALL BE MACHINED TO A COMMON PLANE.

CLIP WASHERS AS NEEDED TO AVOID INTERFERENCE WITH STIFFENER WELDS.

PLATES SHALL BE MACHINED TO A COMMON PLANE.

THE MATING SURFACES OF THE FLANGE SPLICE PLATE SHALL BE MACHINED TO A COMMON PLANE.

THE MATING SURFACES OF THE FLANGE SPLICE PLATE MUST BE MACHINED TO A COMMON PLANE WITHIN A TOLERANCE OF ±1/4" USING A PORTABLE FLANGE FACER AFTER WELDING AND PRIOR TO GALEVANIZING.
-CANTILEVER BASE PLATE DETAILS-

DETAIL

POST WALL OR MAST WALL
SHOWN RING FLANGE
 FLANGE
CUP

POST WALL OR MAST WALL
BACKING PLATE
PLATE

STIFFENER DETAILS
(OF POST BASE - SEE NOTES)

BASE PLATE DETAILS

NOTES:
1. STIFFENERS ARE NOT SHOWN ELSEWHERE IN THESE SHEETS FOR CLARITY.
2. TERMINATE WELD 3" SHORT OF THE TOP OF THE STIFFENER PLATE AT THE OTHER 3 WELD TERMINATIONS ON THESE TWO TYPICAL WELDS.
3. TERMINATE WELD 3" SHORT OF THE END OF THE PLATE.
-CANTILEVER SIGN WALKWAY DETAILS (1 OF 2)-

NOTES
1.  Maintain uniform post spacing where possible.
2.  Maximum post spacing shall not exceed 6'-0".
3.  See sheets 4 and 9 for additional details not shown herein.
4.  Length of beam shall be based on one width (W) to permit clearance between rails for unobstructed opening of sign access door.
   "W + W/4" nominal.
5.  Safety chain shall be 3/8" galvanized steel coil chain, approximately 35 lbs. per yard.
6.  Top of stanchion must be elevated shall be 5" below top of sign cabinet with the vertical brake in the "C" (unconstrained) position.

SECTION

W6x15 POST

1" NPS STD PIPE (TYP.)

W6x15 BEAM

1 1/2" MAST ARM

W6x15 POST

3/8" #8 BOLT (TYP.)

3/8" x 6" x 1'-4" (TOTAL 4)

W6x15 BEAM

3/8" x 6" x 1'-4" (TOTAL 4)

W6x15 POST

3/8" x 6" x 1'-4" (TOTAL 4)

SAFETY CHAIN

SECTION

VIEW

MONOTUBE STRUCTURES

DYNAMIC SIGN

STANDARD PLAN NO.

S-614-60

Sheet No. 8 of 14
CAISSON DRILLING AND INSTALLATION NOTES

1. Caissons shall be placed against undisturbed earth. Caissons shall be centered within excavations and installed within three days of excavation.

2. The design method assumed that the caissons are installed without the use of a casing.

3. The ground water shall be considered.

4. The contractor shall provide a survey of the caisson foundation to verify placement size. After work on the foundation has been completed, the survey shall be made to determine the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

5. The survey shall conform to the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

6. The survey shall conform to the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

7. The survey shall conform to the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

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10. The survey shall conform to the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

11. The survey shall conform to the requirements of Section 625, Construction Surveying. The contractor shall submit a copy of the survey to the engineer, who shall approve it.

NOTES

1. Thread upper 10° and gage plate 19°.

2. Anchor bolts shall be set with a steel template until the concrete has cured at least 8 days.

3. There shall be no gage plate installed on top of the existing foundation.

4. The anchor bolts shall be tightened using the turn-of-nut method.

5. The anchor bolts shall be tightened using the turn-of-nut method.

6. The anchor bolts shall be tightened using the turn-of-nut method.

7. The anchor bolts shall be tightened using the turn-of-nut method.

8. The anchor bolts shall be tightened using the turn-of-nut method.

9. The anchor bolts shall be tightened using the turn-of-nut method.

10. The anchor bolts shall be tightened using the turn-of-nut method.

11. The anchor bolts shall be tightened using the turn-of-nut method.