

**NOTES**

- A1. See **Standard Plan G-90.20** and Monotube Sign Structure details for details not shown here.
- A2. Hand holes installed at time of fabrication; only conduit and terminal cabinet mounting holes may be field installed. Proper repairs shall be made to the structure for any field drilling performed. A hand hole shown on this plan may be omitted if there is another hand hole within **18" (in)** of the location shown here. Hand holes shown here shall be **6" (in)** in diameter with gasket and reinforcing ring.
- A3. Hand holes shall be installed on the bottom or rear of the beam and in line with any NEMA enclosure.
- A4. Hand holes at the top of the column shall be installed at the locations shown, with the outside hand hole centered on the horizontal centerline of the beam.
- A5. NEMA box shall be located between the last two w-beam supports on the structure for the sign. NEMA box must be located at least **12" (in)** away from the hand hole for any bolted splice connection to provide clearance for bolted connection tools.
- A6. Secure conduit to sign support w-beam using two hole clamps. Clamps may be bolted directly to w-beam or secured with stainless steel straps and conduit supporting hardware (channel steel or similar mount). Bolts shall not disturb web of w-beam. all hardware shall be stainless steel.
- A7. Phenolic tag shall include highest operating voltage and identification number of supplying cabinet. This tag is separate from the sign structure ID tag.
- A8. Wiring for beacon systems may be **2C, 2CS, 5CS** or two **#10 AWG** meeting the requirements of the applicable section of **Standard Specification Section 9-29.3**. One or two sets of wires/cables may be required, depending on the location of the flasher control - See contract plans. Wiring shall be routed inside the monotube column and crossbeam to the NEMA box on the back of the crossbeam.
- A9. Terminate Liquid-Tight Flexible Metal Conduit (LFMC) no more than **4 inches** above bottom of NEMA cabinet.
- A10. All conduits embedded in foundation shall be terminated with a grounding end bushing (RMC) or end bell (PVC) as appropriate for the type of conduit. Grounding end bushings shall be bonded to the sign structure ground lug.
- A11. Supplemental grounding jumper shall be **#4 AWG** non-insulated copper with **3' (ft)** (min.) of slack. Clamp to vertical reinforcing steel in foundation using a listed connector suitable for use embedded in concrete.
- A12. Signal displays shall be **12" (in)** diameter yellow LED type, meeting the requirements of **Standard Specification Section 9-29.21**, including dimming. Signal displays shall use cap visors. Housings, visors, and backplates shall be aluminum. Backplates shall be **5" (in)** wide and shall not have reflective tape.
- A13. Beacon placement is dependent on the number of w-beams used to support the overhead sign. where four or fewer w-beams are used, install beacons on the outermost w-beams. Where five or more w-beams are used, install beacons on the second to last w-beam at each side of the sign.

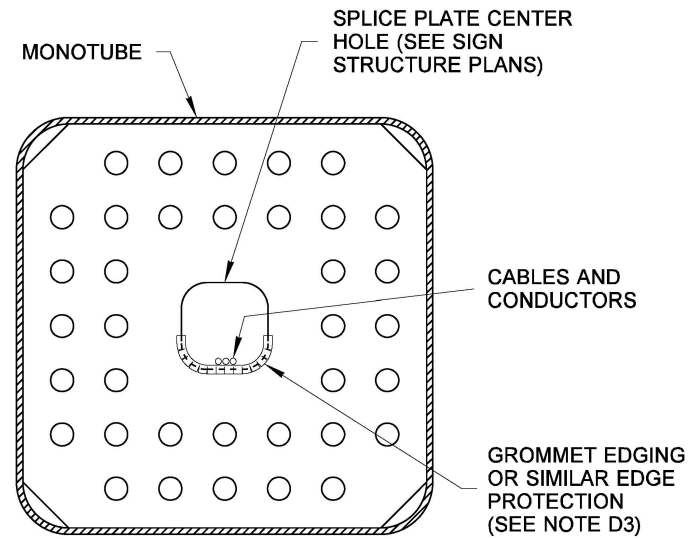


Aug 30, 2022

**OVERHEAD SIGN STRUTURE  
FLASHING BEACON SYSTEM  
INSTALLATION DETAILS  
STANDARD PLAN J-75.50-00**

SHEET 1 OF 2 SHEETS

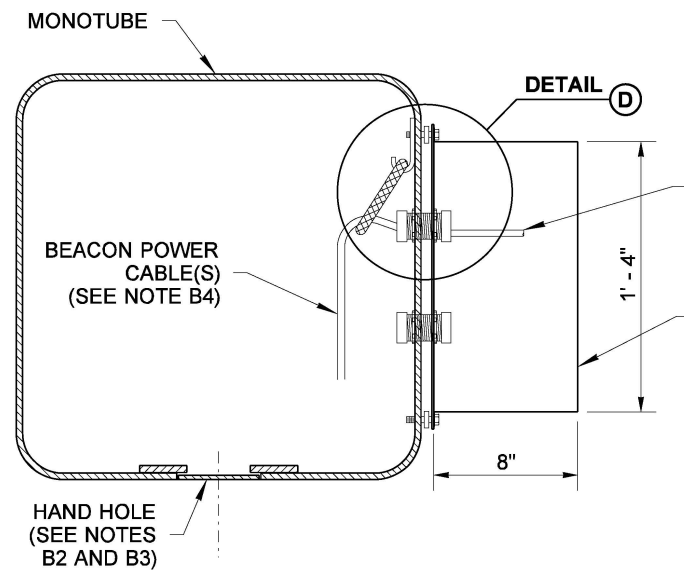
APPROVED FOR PUBLICATION  
*Mark Gaines*  
 Mark Gaines (Aug 30, 2022 11:26 PDT)  
 STATE DESIGN ENGINEER  
 Washington State Department of Transportation  
 Aug 30, 2022



**BOLTED SPLICE PLATE SHOWN WITHOUT INTERNAL LFMC (STIFFENER PLATE SIMILAR)**

BOLTS, NUTS, AND WASHERS SHALL BE **ASTM F593 OR A193, TYPE 304 OR TYPE 316 STAINLESS STEEL (S. S.)** ~ NUTS AND BOLTS SHALL BE LIBERALLY COATED WITH ANTI-SEIZE COMPOUND.

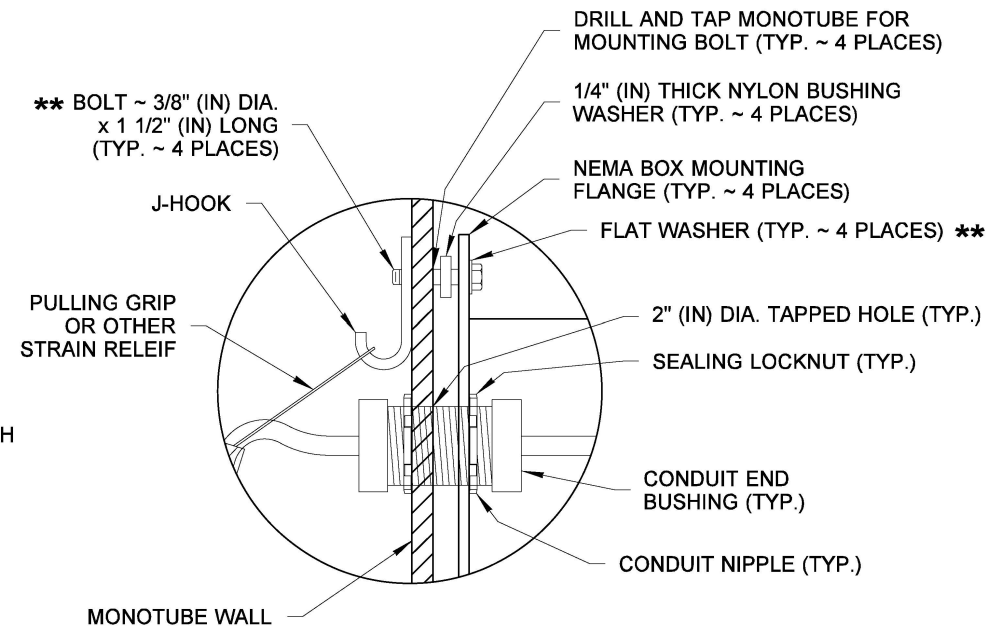
**SECTION B**



**SECTION C**

TERMINATE CONDUCTORS ON TERMINAL BLOCK

NEMA 3R S.S. TERMINAL CABINET (TYPE "a" ~ 12" (IN) W x 16"(IN) H x 8" (IN) D) WITH TWO 12 POSITION TERMINAL BLOCKS ~ SEE **STANDARD SPECIFICATION SECTION 9-29.25**

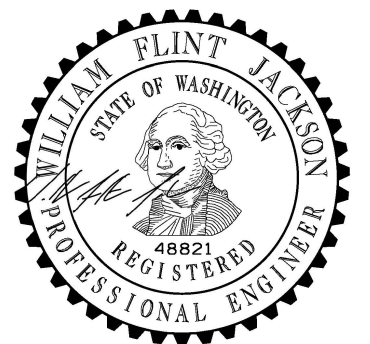


**NEMA BOX CONNECTIONS WITHOUT INTERNAL LFMC**

**DETAIL D**

**NOTES**

- B1. See **Standard Plan G-90.20** and Monotube Sign Structure details for details not shown here.
- B2. Hand holes installed at time of fabrication; Only conduit and terminal cabinet mounting holes may be field installed. Proper repairs shall be made to the structure for any field drilling performed. A hand hole shown on this plan may be omitted if there is another hand hole within **18" (in)** of the location shown here. Hand holes shown here shall be **6" (in)** in diameter with gasket and reinforcing ring.
- B3. Hand holes shall be installed on the bottom or rear of the beam and in line with any NEMA enclosure.
- B4. Wiring for beacon systems may be **2C, 2CS, 5CS** or two **#10AWG** meeting the requirements of the applicable section of **Std. Spec. Section 9-29.3**. One or two sets of wires/cables may be required, depending on the location of the flasher control. See Contract plans. Wiring shall be routed inside the monotube column and crossbeam to the NEMA box on the back of the crossbeam.
- B5. Bolted connection plates and stiffener plates shall have grommet edging or similar edge protection installed along the bottom edge and one third of the way up the side edges of the center hole to prevent damage to wiring. May be omitted for any plate that cannot be reached from hand hole with the approval of the engineer.



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**OVERHEAD SIGN STRUTURE FLASHING BEACON SYSTEM INSTALLATION DETAILS**  
**STANDARD PLAN J-75.50-00**

SHEET 2 OF 2 SHEETS

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*Mark Gaines*  
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STATE DESIGN ENGINEER

Washington State Department of Transportation