625 MERCUURY VAPOR SIGN LIGHTING LUMINAIRE, WITH BALLAST AND LAMP, BY RATING

This item of work shall consist of furnishing mercury vapor sign lighting luminaires with lamp and integral ballast as specified below.

The luminaire shall be no more than 8½" high overall by 16" wide by 18¾" deep including the ballast enclosure. These measurements shall be checked when the luminaire is resting on a horizontal table top with the lens up.

The outer housing of the luminaire, the frame for the lens, and the ballast housing shall be of cast aluminum with a finish of gray baked acrylic base enamel.

The lamp housing body shall bave 3-5/16" diameter holes drilled according to the mounting plate design shown on Sheet 100. The centerline of two of the boltholes shall be 1 3/8" away from and parallel with the projection of the lamp centerline on the base of the lamp housing.

The reflector shall be made of a single piece of aluminum, die formed to shape and processed to distribute the light evenly over the sign area. A heavy duty mogul base lampholder shall be securely fastened to the reflector and the reflector shall be securely fastened to the lamp housing.

The luminaire shall have a borosilicate glass lens capable of withstanding thermal shock and impact of freezing rain and hail. The lens shall be either clear or have a mild diffusion pattern molded into its inner surface. A permanent, flexible, waterproof sealer shall be used to seal the lens into its frame. A continuous water proof gasket shall be provided to seal the lens and frame unit to the lamp housing. This gasket shall be so designed to stay in the proper position for at least 10 years regardless of the number of times the lens unit is opened for service or adjustment.

The lens unit shall be hinged on one edge and fastened on the other edge with spring loaded latches that require no tools to open. The hinges, latches and all other external fasteners shall be of stainless steel.

The luminaire shall be provided with an integral ballast of at least 90% power factor, and of the constant wattage autotransformer type to provide plus or minus 5% lamp watt variation for a plus or minus 10% line voltage variation. Primary supply voltage shall be 60 hertz and 120, 208, 240, 277 or 480 volts as specified in the plans. The luminaire shall operate satifactorily over any expected outdoor temperatures down to -20 degrees F. Self-ballasted mercury vapor lamp type luminaires are not acceptable.

Basis of payment for this item shall be at contract unit price per each "625 Mercury Vapor Sign Lighting Luminaire With Ballast and Lamp, By Rating" furnished to the job for installation under item 625 Mercury Vapor Lighted Sign Wired Complete.

625 MERCURY VAPOR LIGHTED SIGN, WIRED COMPLETE:

This item shall consist of the installation of the mercury vapor luminaires furnished under "625 Mercury Vapor Sign Lighting Luminaire, with Lamp By Rating". It will also include furnishing and installation of the electrical components and hardware from the disconnect switch to the luminaire including furnishing and installing the 2.16#/ft. aluminum channel and fixture mounting plate with "J" bolts. These items will be mounted on the "G" Support arm which is included with Item 816 Overhead Sign Support By Type.

Luminaires shall be mounted as shown on Sheet 100. Wiring shall be not less than #12 THW in 3/4" dia. conduit. The wires should be continuous from a junction box on the top chord of the sign support or on structure mounted conduit to the first fixture, and then continuous to the second, third and fourth fixtures on a single sign. On multiple sign installations each sign shall have a separate junction box so that, if maintenance is needed, the sign and all electrical devices attached to it can be disconnected as a unit from the support by disconnecting only two wires and the U bolts attaching it to the support.

Conduit for the mercury vapor sign lighting shall be as follows:

1. A screw-on-cover, 1¼" double hub junction box shall be fastened to a 1¼" coupling welded to the top truss chord of the sign support arm with a short 1¼" nipple. On structure mounted signs the junction box shall be attached to the conduit mounted on structure.

2. A length of 3/4" P.V.C. covered flexible waterproof conduit shall connect the junction box through a 1¼"x3/4" bushing to a 3/4" LR or LL condulet on the sign bracket nearest tha pole on which the switch enclosure is mounted.

3. 3/4" rigid conduit shall connect the LR or LL condulet to a 3/4" LB condulet so arranged to line up the short end with the 1 1/8" dia. holes in the sign bracket and fixture support arm. This rigid conduit shall be fastened to the sign bracket with not less than 2 conduit clamps placed within 3" of the condulet fittings and not more than 24" c/c.

4. 3/4" rigid conduit shall connect the above LB condulet to the short end of another LB condulet fitting at the other end of the fixture support arm. This conduit shall be run through both 1 1/8" dia. holes in the fixture support arm, be jogged out of the way of the fasteners on the diagonal bracing rods, when required, be fastened near each end an at not less than 24" c/c, and be made to a length that, when screwed into both condulet fittings, the rear condulet shall be approximately centered on the sign bracket web and the front condulet shall fit snugly against the outer plate of the fixture support arm. The long end of the front condulet shall be angled downward approximately 30 degrees, when viewed from the front of the sign, to allow the next piece of conduit to be jogged easily to lay along the centerline and approxmiately 3/8" in front of flange of the channel that supports the lighting fixtures.

5. A 3/4" type "T" condulet fitting shall be located within approximately 18" of the near edge of each fixture on the sign. 3/4" rigid conduit shall be connected from the LB condulet fitting described above to the first "T" condulet. Straight lengths of conduit shall connect as many "T" condulets as are required for the number of luminaires specified for the sign. A threaded plug shall be used to close the opening in the last "T" condulet used on each sign installation. Suitable conduit clamps shall be used on 24" centers to hold the entire run of conduit on the centerline of the channel flange as listed under Item 4 above. The Type "T" condulets shall be so oriented that the third tapped opening shall be perpendicular to the face of the sign.

6. A length of 2/4" P.V.C. covered waterproof flexible conduit shall connect each fixture to each corresponding "T" condulet. The length of this conduit shall be so arranged to make a neat and graduàl curve into the fixture without either sharp bends or drooping appearance. Wiring for mercury vapor sign lighting shall be sized and installed according to the National Electrical Code but shall be not less than No. 12 THW and shall be spliced only in junction boxes or in the wiring enclosure of the luminaire. All wiring shall be in conduit, inside structural chords and poles, or in electrical boxes and fixtures. Solderless connectors, of the proper size and type, may be used where splices and junctions are allowed above ground level. However, when used, they shall be securely taped with water resistant electrical tape to form a waterproof joint. When solderless connectors are not used, all splices and junctions above ground shall be soldered and double taped to make a waterproof electrical joint.

Payment for this item shall be at the contract unit price bid for the following:

1. 625 Mercury Vapor Lighted Sign, Wired Complete.

2. 625 Mercury Vapor Lighted Sign, Wired Complete (Structure Mounted).

Payment shall include all labor and materials to connect all luminaires on one sign into the disconnect switch enclosure, including conuit on structure for structure mounted signs. When more than one sign is mounted on an installation, each sign shall be considered as a separate pay item.

DISCONNECT SWITCH WITH ENCLOSURE

This item shall include furnishing of a 30 amp. 600 volt fused disconnect switch in a NEMA 4 stainless steel enclosure attached to each sign support by means of mounting brackets as described in detail on sheet 99.

The disconnect switch shall be a 3 pole, solid neutral type meeting the requirements of 713.19, 10.

The enclosure shall meet the requirements of 713.20 with the following exceptions.

1) The stenciled legend or plate shall read "sign lighting".

2) A chase nipple shall be furnished and installed in the back of the enclosure.

3) Factory installed hubs shall not be provided on the top.

4) A screened ventilation opening shall not be provided.

5) Mounting poles, slots and chase nipple location shall match those provided on the switch enclosure bracket and sign support.

Each switch enclosure shall be furnished with one padlock. Padlocks shall have a brass body and wrought iron shackle equal to Russwin No. 2882 KA or Master No. KA or approved equal. Padlocks shall be all keyed alike with Master Key 3476.

Basis of payment for this item shall be per each at contract unit price, which shall include all labor, material, and equipment to complete this item of work.