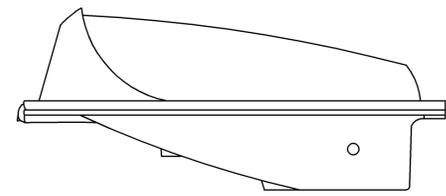


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TYPICAL SIGN LUMINAIRE

CONSTRUCTION AND MATERIAL REQUIREMENTS

SECONDARY CABLE: SECONDARY CABLE SHALL BE COPPER SINGLE CONDUCTOR CABLE FOR OPERATION AT 600 VOLTS MAXIMUM MATERIAL SHALL MEET THE APPLICABLE REQUIREMENTS OF I.C.E.A. STANDARD S-19-81, WITH THERMO-PLASTIC INSULATION OF GRS-RUBBER BASE MEETING APPENDIX K(A) OF I.C.E.A. AND LISTED BY U.L. AS TYPE USE-2. FOR DIRECT BURIAL. MATERIAL SHALL MEET THE APPLICABLE REQUIREMENTS OF I.C.E.A. STANDARD S-66-524, WITH THERMO-SETTING INSULATION OF CROSS LINK POLYETHYLENE MEETING REQUIREMENTS OF COLUMN "A" OF I.C.E.A. AND LISTED BY U.L. AS TYPE USE-2.

DUCT: THE DUCT FOR SECONDARY CABLE UNDERGROUND SHALL BE POLYETHYLENE DUCT WITH MINIMUM TENSILE STRENGTH OF 3100 P.S.I., DUCT TO PROVIDE FOR 40% MAXIMUM FILL. THE DUCT SHALL MEET ASTM D3485 (latest revision).

METALLIC CONDUIT: METALLIC CONDUIT SHALL BE RIGID STEEL CONDUIT MEETING THE REQUIREMENTS OF AMERICAN STANDARD SPECIFICATIONS C-80.1.

SAFETY SWITCH SHALL BE 480 VOLT, 15 AMP, SINGLE THROW, DOUBLE POLE, FRONT OPERATED, FUSIBLE, HEAVY DUTY, IN A N.E.M.A. TYPE 3R ENCLOSURE.

GROUND: GROUND WIRE SHALL BE A #6 A.W.G. SOLID BARE COPPER WIRE.

250 WATT SIGN LUMINAIRE: 250 WATT SIGN LUMINAIRE SHALL HAVE DIE CAST ALUMINUM HOUSING WITH A BUILT-IN BALLAST OF 480 VOLTS. THE LUMINAIRE SHALL HAVE A HYDROFORMED ALZAK ALUMINUM HOUSING REFLECTOR AND GLASS REFRACTOR WITH INNER PRISMS TO PROVIDE MAXIMUM UNIFORMITY.

PERFORMANCE SPECIFICATION: THE 250 WATT SIGN LUMINAIRE SHALL PERFORM WITHIN THE FOLLOWING STANDARDS ON A 5.5 m WIDE BY 3 m HIGH SIGN PANEL MOUNTED 305 mm DOWN AND 1219 m OUT FROM THE SIGN FACE:

MAX/MIN	7:1
AVG/MIN	3:1
MAX	25 FC
LLF	.72

250 WATT LAMPS: 250 WATT LAMPS SHALL BE 11,200 LUMEN, CLEAR MERCURY VAPOR.

INSTALL A JUNCTION BOX OVER THE EXISTING BURIED SOUTH FRONTAGE ROAD LIGHTING CONDUIT AT STATION 4+098. INSTALL WIRE AND CONDUIT BETWEEN THE SIGN STRUCTURE AND THE JUNCTION BOX AND CONNECT THE THREE FIXTURES ON THE SIGN STRUCTURE AT STATION 4+098, SOUTH FRONTAGE ROAD.

ELECTRICAL DETAILS

ALL WIRING FROM HANDHOLE TO SAFETY SWITCH ON OVERHEAD SIGN BRIDGE SHALL BE NO. 8 A.W.G. 1/C CABLE.

ALL WIRING FROM SAFETY SWITCH ON OVERHEAD SIGN BRIDGE TO LIGHT FIXTURES SHALL BE NO. 10 A.W.G. 1/C CABLE.

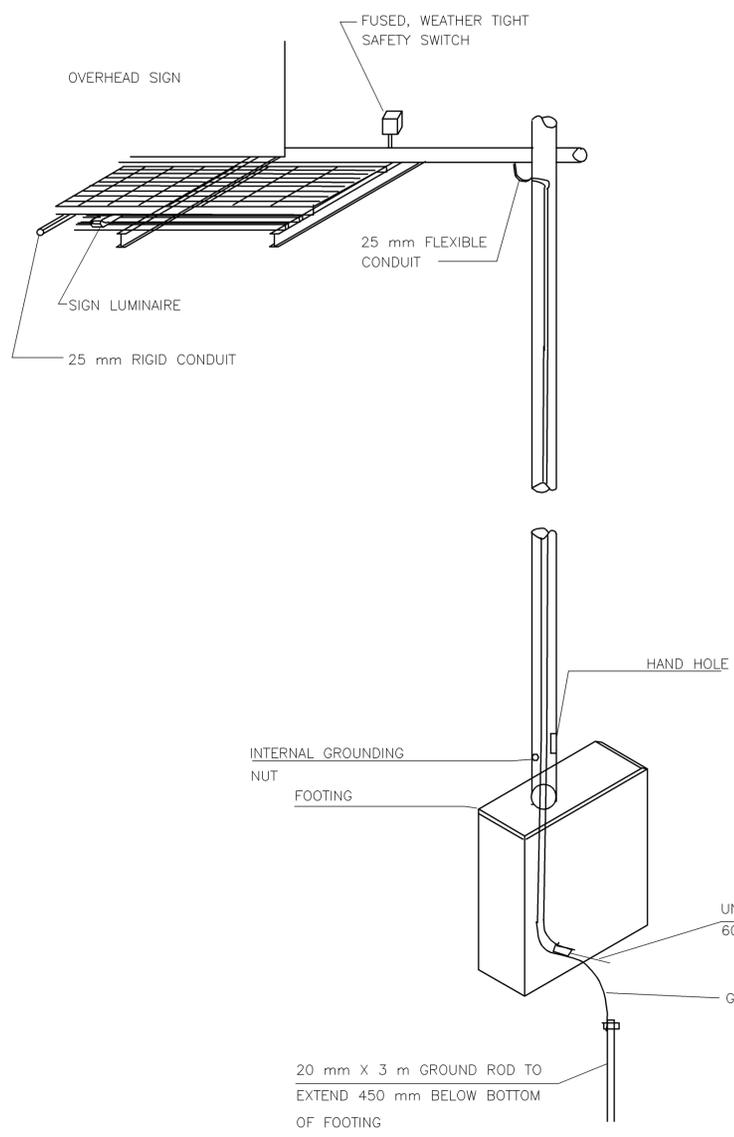
ALL WIRING SHALL BE ENCLOSED IN CONDUIT, A STRUCTURAL MEMBER, OR CABLE DUCT.

CONDUIT BETWEEN STRUCTURE END MEMBER AND TRUSS MEMBER SHALL BE 25 mm FLEXIBLE CONDUIT OTHER CONDUIT SHALL BE RIGID CONDUIT.

SAFETY SWITCH ON OVERHEAD SIGN BRIDGE SHALL BE MOUNTED AS SHOWN AT END OF MAINTENANCE WALKWAY.

LEAD IN CABLE FROM HANDHOLE IN THE SUPPORT TO SAFETY SWITCH ON OVERHEAD SIGN BRIDGE SHALL NOT BE IN DUCT.

SIGN LIGHTING FIXTURES SHALL BE MOUNTED IN A MANNER APPROVED BY THE ENGINEER.

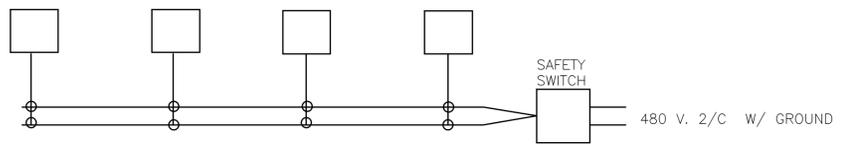


QUANTITIES FOR OVERHEAD SIGN STRUCTURE

STATION	FIXTURES	25 mm CONDUIT LIN. METER	NO. 8 A.W.G. CONDUCTOR LIN. METER	NO. 10 A.W.G. CONDUCTOR LIN. METER	TWO NO. 6 A.W.G. SINGLE CONDUCTOR LIN. METER	TRENCHING LIN. METER	GROUND RODS 20 mm X 3 m	NO. 6 A.W.G. GROUNDWIRE LIN. METER	SAFETY SWITCH
3+970.000	3	20.0	20.0	31.0			1	2	1
	3	20.0	20.0	31.0			1	2	1

QUANTITIES ARE FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL VERIFY QUANTITIES REQUIRED FOR SUCCESSFUL COMPLETION OF THE PROJECT.

NOTE: ALL WORK REQUIRED FOR INSTALLING FIXTURES, SAFETY SWITCHES AND NECESSARY WIRING AND CONDUIT SHALL BE AS BID AS "ELECTRIC LIGHTING SYSTEM - LUMP SUM".



TYPICAL WIRING LAYOUT

REVISED PER ADDENDUM
KANSAS DEPARTMENT OF TRANSPORTATION
CONSTRUCTION AND MATERIAL REQUIREMENTS AND QUANTITIES FOR SIGN LIGHTING
TE203SI