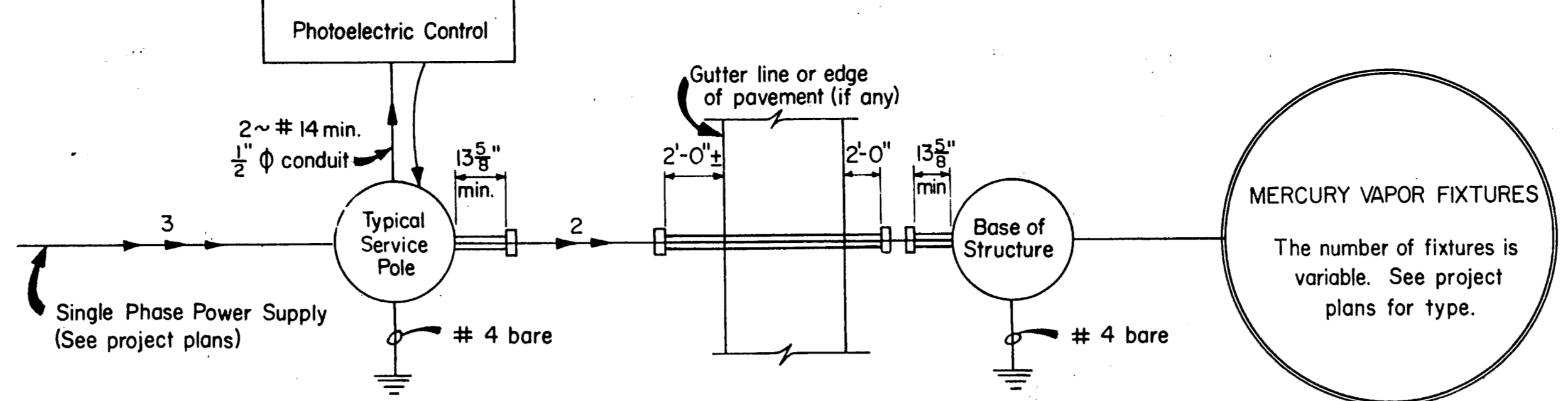
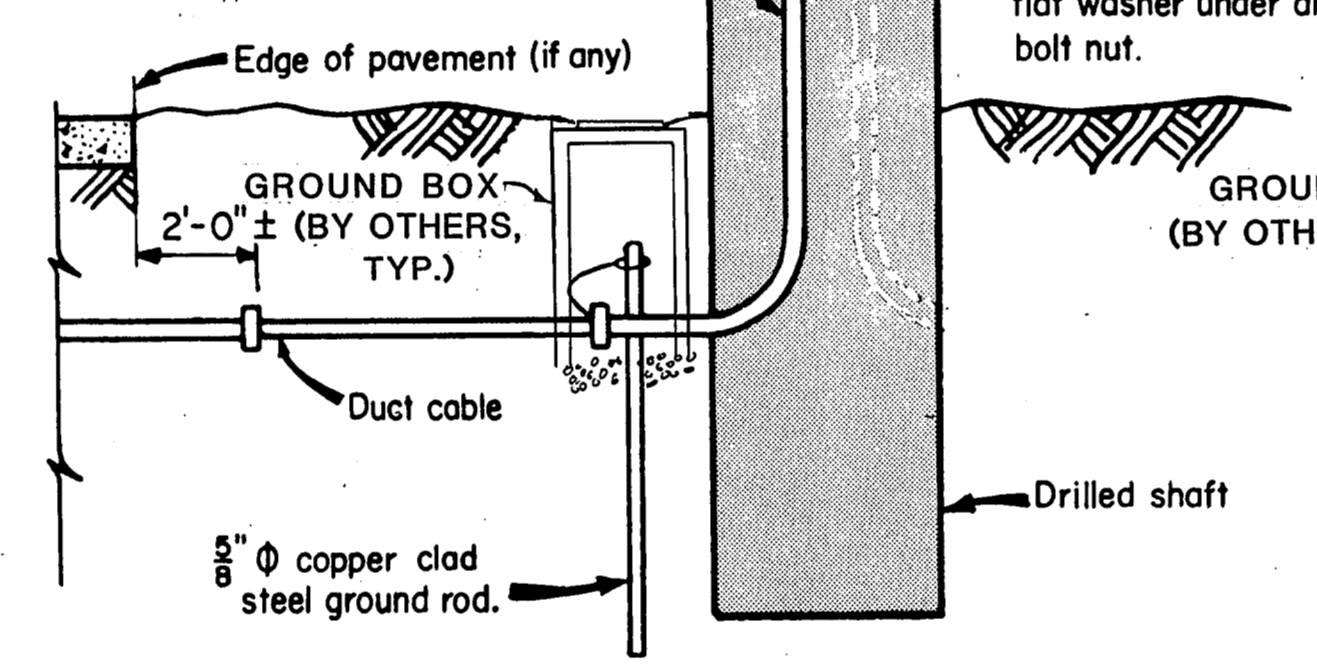


TYPICAL SERVICE POLE
 Serving Sign Lights Only. Conduit and wire sizes are minimum, larger sizes shall be provided for if called for elsewhere in the plans.
 (NOT IN CONTRACT)

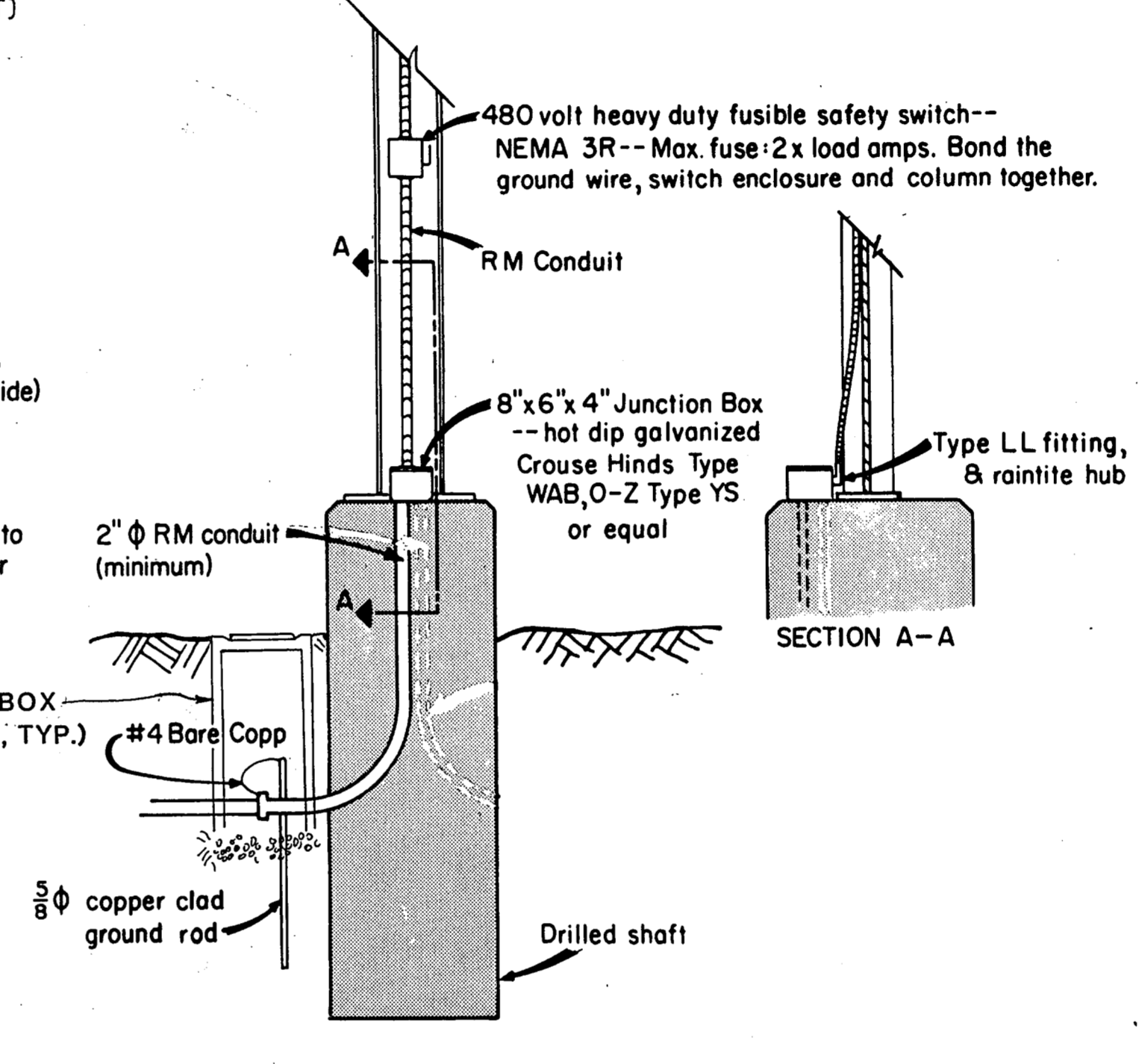


TYPICAL WIRING AND CONDUIT DIAGRAM
 BASED ON ONE SERVICE POLE PER SIGN STRUCTURE. WIRE AND CONDUIT SIZE SHALL BE AS REQUIRED BY THE ELECTRICAL LOAD (SERVICE POLES NOT IN CONTRACT)

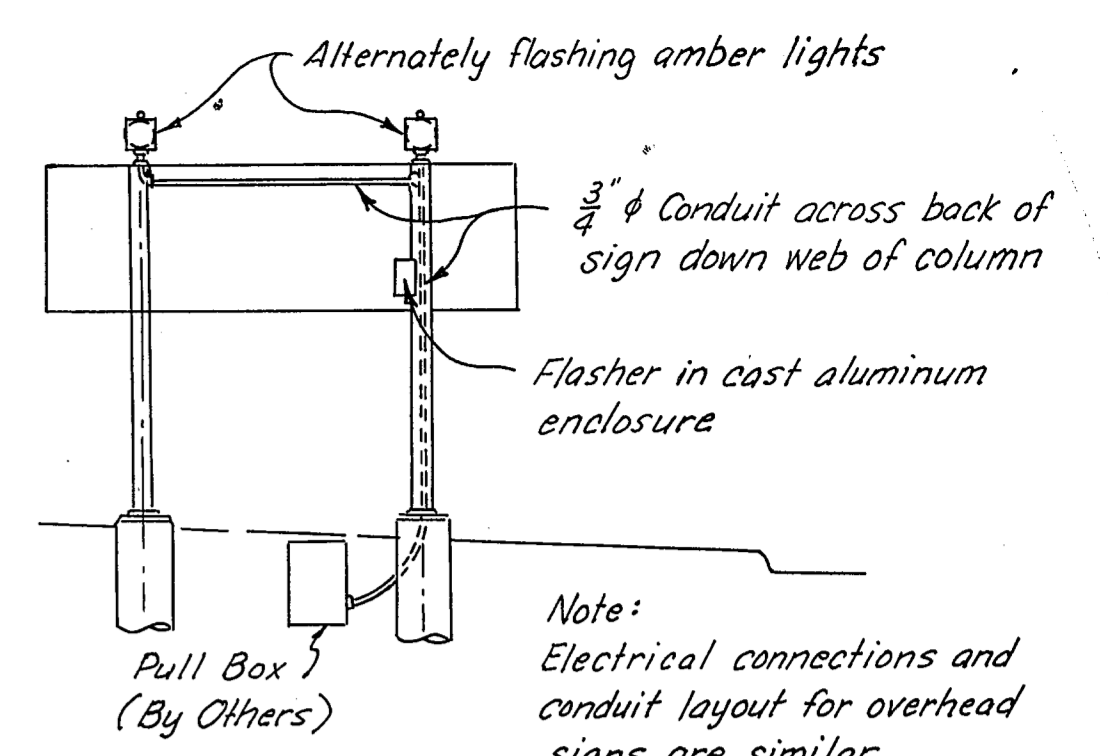


CABLE TRENCH DETAILS

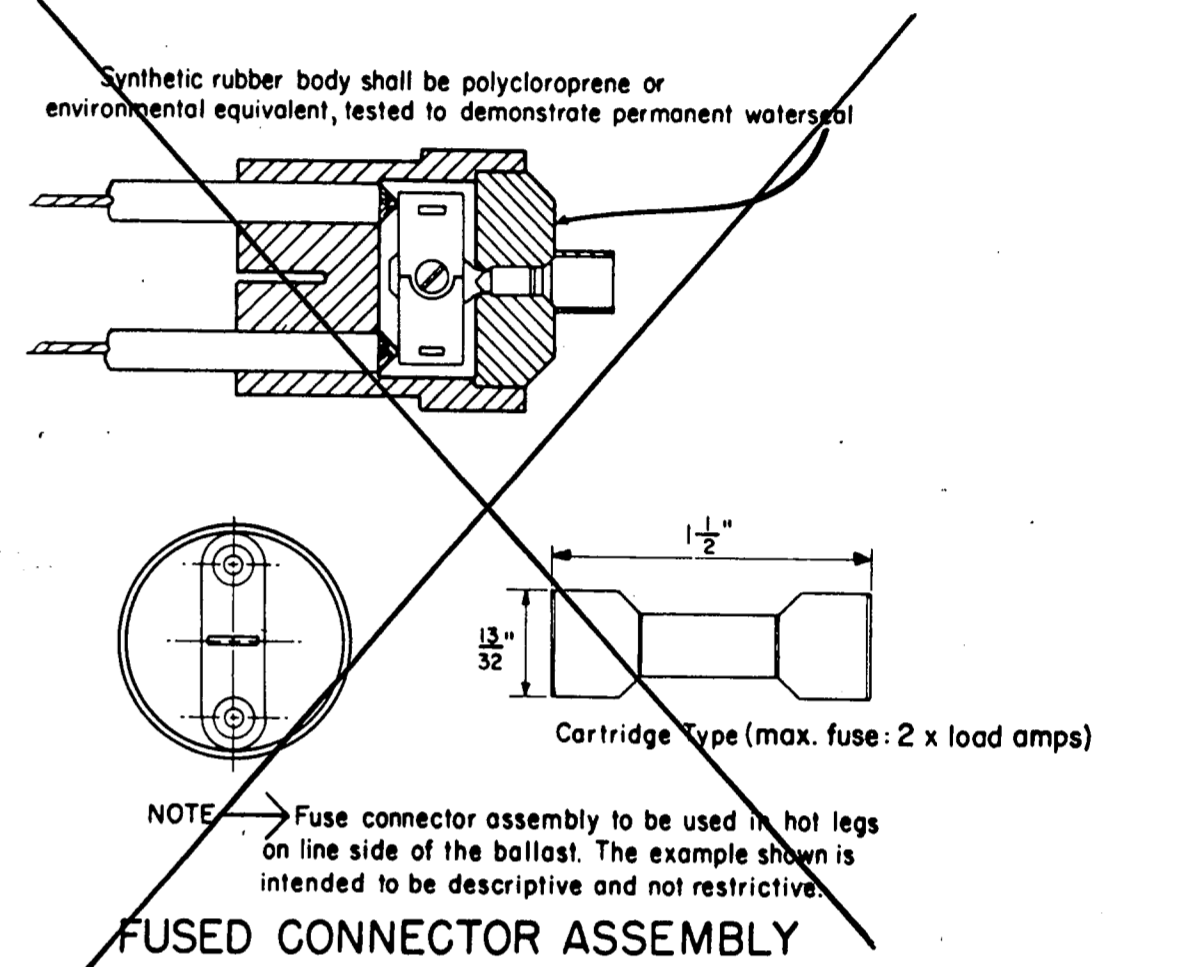
BASE OF OVERHEAD SIGN STRUCTURE TYPE COSS



BASE OF OVERHEAD SIGN STRUCTURE TYPE OSBT



APPROACH WARNING LIGHTS "STOP AHEAD PAY TOLL" SIGN



FUSED CONNECTOR ASSEMBLY

ELECTRICAL NOTES AND SPECIFICATIONS

GENERAL NOTES

ALL WORK, MATERIALS, AND SERVICES NOT SHOWN ON THE PLANS, WHICH MAY BE NECESSARY FOR COMPLETE AND PROPER CONSTRUCTION, SHALL BE PERFORMED, FURNISHED, AND INSTALLED BY THE CONTRACTOR. THE LOCATION OF CONDUCTOR, CONDUIT, OTHER ELECTRICAL EQUIPMENT, AND SERVICE POLE IS DIAGRAMMATIC ONLY AND MAY BE SHIFTED BY THE ENGINEER TO ACCOMMODATE LOCAL CONDITIONS. ALL SPECIFICATIONS AND PROVISIONS NOT COVERED HEREIN SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATION ITEMS AND ANY SPECIAL PROVISIONS THERETO. CONDUIT AND EQUIPMENT SHALL BE SECURELY ATTACHED TO THEIR SUPPORTS.

CONDUCTORS

ALL CONDUCTORS SHALL COMPLY TO ITEM "ELECTRICAL CONDUCTOR" OF THE SPECIFICATIONS.

CONDUIT

ALL INSULATED CONDUCTORS ABOVE GROUND, EXCEPT CONDUCTORS IN PIPE TOWER LEGS, SHALL BE INSTALLED IN CONDUIT BETWEEN EQUIPMENT. CONDUIT SHALL BE PLACED ALONG AND ATTACHED TO THE POLE OR STRUCTURAL FRAME UNLESS OTHERWISE DIRECTED BY THE ENGINEER. CONDUIT ALONG THE MAST OR TOWER LEG SHALL BE RIGID METAL. CONDUIT FROM THE MAST OR TOWER LEG TO AND BETWEEN FIXTURES, AND CONDUIT BETWEEN FIXTURES SHALL PREFERABLY BE RIGID METAL, POLYVINYL CHLORIDE (PVC) OR ELECTRICAL METALLIC TUBING (EMT). HOWEVER, AT PLACES WHERE RIGID METAL, PVC OR EMT IS NOT FEASIBLE, CONDUIT MAY, WITH THE APPROVAL OF THE ENGINEER, BE LIQUID-TIGHT FLEXIBLE CONDUIT. CONDUIT BURIED IN TRENCH OR CONCRETE SHALL BE EITHER RIGID METAL, PVC OR HIGH DENSITY POLYETHYLENE (HDP) AS INDICATED ON THE PLANS OR AS DETERMINED BY THE ENGINEER FROM THE SOIL CHARACTERISTICS. ALL BURIED CONDUIT SHALL HAVE STANDARD BUSHINGS AT THE EXTREMITIES.

CIRCUIT PROTECTOR ASSEMBLY (NOT IN CONTRACT)

THE AMPERE RATING OF THE CIRCUIT BREAKER SHALL BE 1.25 TIMES THE CALCULATED CIRCUIT LOAD CURRENT. THE RATING OF THE ASSEMBLY SHALL BE CONSISTENT WITH THE LOAD SERVED AND SHALL BE AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. THE CIRCUIT BREAKERS SHALL BE DOUBLE POLE, THERMAL-MAGNETIC, FRONT MOUNTED, RATED AT THE SUPPLIED VOLTAGE. THE BREAKER OPERATING HANDLE SHALL BE TRIP FREE SO CONTACT CANNOT BE HELD AGAINST SHORT CIRCUIT OR ABNORMAL OVERLOAD. THE SHORT CIRCUIT INTERRUPTING CAPACITY SHALL BE 15,000 AMPERES SYMMETRICAL.

SERVICE POLE (NOT IN CONTRACT)

THE POLE LENGTH SHALL BE 25 FEET UNLESS OTHERWISE NOTED ON THE PLANS. SERVICE POLE SHALL BE CREOSOTE-TREATED TO 8 POUNDS PER CUBIC FOOT RETENTION OR PENTACHLOROPHENOL TREATED TO 0.4 POUNDS PER CUBIC FOOT RETENTION IN ACCORDANCE WITH THE ITEM "TIMBER PRESERVATIVE AND TREATMENT". FOR A PROJECT REQUIRING 10 OR LESS POLES, THE CONTRACTOR MAY PURCHASE POLES LOCALLY IF SOURCE AND TREATMENT ARE DOCUMENTED.

PHOTOELECTRIC CONTROL (NOT IN CONTRACT)

THE PHOTOELECTRIC CONTROL SHALL BE OF THE SINGLE POLE, SINGLE THROW TYPE, DOUBLE BREAK, RATED AT THE SUPPLIED VOLTAGE. CONTROLLER SHALL HAVE FOOTCANDLE ADJUSTMENT, MAGNETICALLY OPERATED RELAY, OPAQUE COVER, AND SHALL BE THE DIRECT ORIENTATION TYPE. THE MOUNTING BRACKET AND CONTROL SHALL BE MOUNTED ON THE SERVICE POLE. THE CONTROL SHALL BE ORIENTED NORTH OR AS SPECIFIED BY THE MANUFACTURER. THE PHOTOELECTRIC CONTROL CIRCUIT SHALL HAVE A THREE POSITION HAND-OFF-AUTOMATIC SELECTOR SWITCH AT A CONVENIENT LOCATION.

MAGNETIC CONTACTOR (NOT IN CONTRACT)

THE MAGNETIC CONTACTOR SHALL BE OF THE TWO POLE TYPE WITH A MINIMUM CONTACT RATING OF 480 VOLTS AND A MINIMUM CONTACT RATING OF 30 AMPS.

GROUNDING

ALL SERVICE POLES AND SIGN STRUCTURE TOWERS SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND DETAILS SHOWN ON THE PLANS. GROUND RODS SHALL BE 5/8" DIAMETER COPPER CLAD STEEL. WHERE DRILLED HOLES ARE REQUIRED, THE RODS SHALL BE 8 FEET LONG AND THE BACKFILL MATERIAL SHALL HAVE AN ADMIXTURE OF COMMON SALT. DRIVEN GROUND RODS SHALL BE 10 FEET LONG.

ENCLOSURES (NOT IN CONTRACT)

ALL ENCLOSURES HOUSING ELECTRICAL EQUIPMENT SHALL BE GALVANIZED, RAIN-TIGHT, AND DESIGNED FOR OUT-DOOR INSTALLATION IN ACCORDANCE WITH THE NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION SPECIFICATIONS. THE MAGNETIC CONTACTOR AND CIRCUIT PROTECTOR SHOWN ON THE SERVICE POLE MAY, AT THE CONTRACTOR'S OPTION, BE GROUPED IN ONE ENCLOSURE, OR MAY BE HOUSED IN SEPARATE ENCLOSURES. EACH ENCLOSURE SHALL BE PROVIDED WITH A LOCK AND THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THREE COPIES OF A MASTER KEY.

PAYMENT

ALL ITEMS NECESSARY TO ACCOMPLISH THE ILLUMINATION OF THE SIGNS SHALL BE MEASURED AND PAID FOR AS STATED IN THE SPECIFICATIONS.

REPRODUCED FROM STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION STANDARD DRAWING SL(1)

FINAL RECORD DRAWING
 Date: 12/25/99

NO.	MISC. REVISIONS	GRB	4-1-88
NO.	REVISION	BY	DATE
TEXAS TURNPIKE AUTHORITY			
DALLAS NORTH TOLLWAY			
SIGN LIGHTING			
(ELECTRICAL DETAILS) 30			
HNTB HOWARD NEEDLES TAMMEN & BERENSON/PCF			
DRAWN	DATE	DESIGNED	DATE
CHECKED	DATE	SCALE	
STANDARD DRAWING NO. SS-26			