

## LIGHTING NOTES

SPECIFICATIONS

THESE NOTES ARE SUPPLEMENTAL TO ITEMS 625 AND 713 OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS.

REFERENCE SHALL BE MADE TO STANDARD CONSTRUCTION DRAWINGS LISTED ON THE TITLE SHEET OF THESE PLANS.

GENERAL

THE PROJECT WILL RECEIVE 480-VOLT, TWO-WIRE, CONTROLLED SECONDARY SERVICE WITH ONE SIDE GROUNDED FROM:

CLEVELAND ELECTRIC ILLUMINATING COMPANY (CEI)  
P.O. BOX 5000, 55 PUBLIC SQUARE, CLEVELAND, OHIO 44101

THE CONTRACTOR WILL NOT BE REQUIRED TO FURNISH OR INSTALL THE PRIMARY DISTRIBUTION LINES, TRANSFORMERS, TRANSFORMER POLE, PHOTOCCELL, ARRESTERS OR LINE FUSES. THE CONTRACTOR SHALL PROVIDE CONNECTION TO BRANCH CIRCUITS AND GROUNDS AS HEREINAFTER SPECIFIED, AND SHALL ASSURE THAT ALL POWER SERVICE REQUIREMENTS WITH THE POWER SUPPLYING AGENCY ARE PROVIDED.

THIS PROJECT HAS BEEN DESIGNED ON THE BASIS OF A 5% MAXIMUM VOLTAGE DROP IN ALL BRANCH CIRCUITS.

TOWER LUMINAIRES

LUMINAIRES FOR TOWER LIGHTING SHALL HAVE A SINGLE RATED 480 VOLT REGULATOR TYPE, 400 WATT BALLAST DESIGNED FOR USE WITH A 400 WATT HIGH PRESSURE SODIUM LAMP, AND SHALL CONFORM TO THE PHOTOMETRIC REQUIREMENTS FOR THE LIGHT DISTRIBUTION, AS SPECIFIED.

LAMPS-HIGH PRESSURE SODIUM (HPS)

SUPPLEMENTING 713.14 OF THE SPECIFICATIONS, HIGH PRESSURE SODIUM (HPS) LAMPS SHALL BE OF THE WATTAGE INDICATED IN THE PLANS AND SHALL BE GENERAL ELECTRIC "LUCALOX", WESTINGHOUSE "CERAMALUX", SYLVANIA "LUMALUX" OR EQUAL AS APPROVED BY THE ENGINEER.

ELECTRICAL SERVICE FOR ILLUMINATED SIGNS

THE PAY ITEMS IN THE LIGHTING GENERAL SUMMARY INCLUDE THE PULL BOX OR JUNCTION BOX ADJACENT TO EACH LIGHTED SIGN AND THE ELECTRICAL SERVICE CONNECTIONS LEADING INTO THE BOX, INCLUDING SPLICES OR CONNECTOR KITS IN THE PULL BOX OR JUNCTION BOX. QUANTITIES FOR ELECTRICAL SERVICE FROM THE CONNECTION IN THE PULL BOX OR JUNCTION BOX TO THE SIGN ARE INCLUDED IN THE TRAFFIC CONTROL GENERAL SUMMARY.

STANDARD CONSTRUCTION DRAWING HL-3

POLE BASE DETAILS SHOWN ON THIS DRAWING ARE ESSENTIALLY FOR GALVANIZED STEEL POLES. FOR ALUMINUM DESIGN, OR OTHER PERMITTED STEEL MATERIAL DESIGNS, VARIATIONS FROM THESE DETAILS WILL BE ACCEPTABLE, AS APPROVED BY THE ENGINEER.

UNDERDRAINS FOR PULL BOXES

REFERENCE IS MADE TO STANDARD DRAWING HL-10 FOR DETAILS OF DRAINING PULL BOXES. UNDERDRAINS FOR PULL BOXES SHALL BE USED AS DIRECTED BY THE ENGINEER AND SHALL BE PROVIDED WHERE THE LENGTH REQUIRED FOR A SATISFACTORY OUTLET DOES NOT EXCEED APPROXIMATELY 20 FEET. AN ESTIMATED QUANTITY OF 380 LINEAR FEET OF ITEM 603, 6" CONDUIT, TYPE F IS INCLUDED IN THE LIGHTING GENERAL SUMMARY FOR THIS PURPOSE.

PADLOCKS AND KEYS

EACH TOWER AND EACH ENCLOSURE SHALL BE FURNISHED WITH A PADLOCK. PADLOCKS SHALL BE EITHER BRASS OR BRONZE EQUAL TO MASTER NO. 4 BKA OR WILSON BOHANNAN 660A AND SHALL BE KEYPED IN ACCORDANCE WITH SPECIFICATION 631.08, PARAGRAPH 3. PAYMENT WILL BE INCLUDED IN THE BID FOR ITEM(S) BEING LOCKED.

ITEM SPECIAL - PLASTIC CAUTION TAPE

THE LOCATION OF UNDERGROUND DUCT CABLE OR NON-METALLIC CONDUIT, WHEN INSTALLED IN LOCATIONS OTHER THAN THE NORMAL OR ALTERNATE TRENCH ALIGNMENT SHOWN ON STANDARD CONSTRUCTION DRAWING HL-1, SHALL BE MARKED BY THE USE OF A CONTINUOUS IDENTIFYING TAPE BURIED IN THE TRENCH ABOVE THE LINE. THE IDENTIFYING TAPE SHALL BE AN INERT MATERIAL, APPROXIMATELY 6" WIDE, COMPOSED OF POLYETHYLENE PLASTIC, HIGHLY RESISTANT TO ALKALIS, ACID OR OTHER CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS. THE TAPE SHALL BE BRIGHT YELLOW WITH IDENTIFYING PRINTING "ELECTRIC" IN BLACK LETTERS, ONE SIDE ONLY. TAPES SHALL BE SUPPLIED IN CONTINUOUS ROLLS WITH THE IDENTIFYING LETTERING REPEATED CONTINUOUSLY THE FULL LENGTH OF THE TAPE. IDENTIFYING TAPES SHALL BE BURIED IN THE ELECTRIC LINE TRENCH WITH ONE STRIP PLACED APPROXIMATELY DOWN THE CENTERLINE AND LOCATED APPROXIMATELY 8" TO 12" BELOW THE FINAL FINISHED GRADE. THE TAPE SHALL BE PLACED IN THE TRENCH WITH THE PRINTED SIDE UP AND SHALL BE ESSENTIALLY PARALLEL WITH THE FINISHED SURFACE. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO INSURE THAT THE TAPE IS NOT PULLED, DISTORTED, OR OTHERWISE MISPLACED IN COMPLETING THE TRENCH BACKFILL. TAPE SHALL BE ALLEN SYSTEMS, TERRA TAPE, TECTA TAPE OR EQUAL AS APPROVED BY THE ENGINEER.

THE TAPE SHALL BE PAID PER LINEAR FEET OF "ITEM SPECIAL-PLASTIC CAUTION TAPE", COMPLETE AND IN PLACE.

POWER SERVICE BY-PASS SWITCH

A 20 AMP BY-PASS SWITCH RATED 240 VOLTS, COMPLETE WITH WIRE AND CONDUIT SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

THE CLEVELAND ELECTRIC ILLUMINATING COMPANY WILL MAKE FINAL CONNECTION TO THE SWITCH OR MANUAL BY-PASS CONTROL OF THEIR LIGHTING CONTROLLER

COST OF SWITCH TO BE INCLUDED IN THE UNIT PRICE BID FOR POWER SERVICE. FOR DETAILS SEE SHEET NO. 149

C. E. I. CAUTION NOTE

NO CRANE OR OTHER MECHANICAL EQUIPMENT OF ANY KIND SHALL BE USED SO THAT ANY PART THEREOF WILL COME WITHIN 25 FEET OF ANY TRANSMISSION LINE WIRE OR 25 FEET OF ANY STRUCTURE OR WITHIN 10 FEET OF ANY WOOD POLE LINE WIRE OR WOOD POLE, AND THAT NO VOLATILE OR EXPLOSIVE MATERIALS SHALL BE STORED IN THE VICINITY. CONTRACTOR UNDERSTANDS AND ACKNOWLEDGES THAT C. E. I. CO.'S ELECTRIC LINES ARE ENERGIZED AND IN SERVICE AND THAT A HIGH DEGREE OF CAUTION SHOULD BE USED WHEN WORKING IN CLOSE PROXIMITY TO THESE LINES.

WHEN AN EQUIPMENT OPERATOR CANNOT OBSERVE, OR BE EXPECTED TO OBSERVE, CLEARANCE BETWEEN THE EQUIPMENT AND WIRES OR STRUCTURES, THE CONTRACTOR SHALL PROVIDE A SEPARATE OBSERVER TO SIGNAL TO THE OPERATOR WHEN AN IMPENDING CLEARANCE VIOLATION IS APPARENTLY ABOUT TO OCCUR, IN ORDER TO STOP EQUIPMENT MOVEMENT AND PREVENT THE CLEARANCE VIOLATION.

625.02 HAZARDOUS MATERIALS

NO MATERIAL FURNISHED UNDER THIS SPECIFICATION SHALL CONTAIN POLYCHLORINATED BIPHENYLS (PCBS). TRANSFORMERS, BALLASTS AND CAPACITORS SHALL BE MARKED "NO PCBS" IN ACCORDANCE WITH FEDERAL ENVIRONMENTAL PROTECTION AGENCY REGULATION 40 CFR 761.

ITEM 625 - CABLE SPLICING KIT

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED CABLE SPLICING KIT AS DESCRIBED IN PARAGRAPH 5 OF SECTION 713.15 OF THE ODOT CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH "ITEM 625 - CABLE SPLICING KIT".

LIGHT TOWER LUMINAIRE MOUNTING ARRANGEMENT

LUMINAIRE MOUNTING ARMS FOR TOWER LIGHTING UNITS SHALL BE INSTALLED BY THE POLE MANUFACTURER SO THAT THE REQUIRED NUMBER OF LUMINAIRES CAN BE INSTALLED ON THE LUMINAIRE MOUNTING RING IN A SYMMETRICAL ARRANGEMENT. WHEN ONLY TWO ARMS ARE REQUIRED THEY SHALL BE POSITIONED SO THE ARMS ARE PARALLEL TO THE CENTERLINE OR BASELINE OF THE PAVEMENT FROM WHICH THE TOWER IS STATIONED.

UNLESS OTHERWISE SPECIFIED IN THE PLANS, ALL LUMINAIRES WITH ASYMMETRIC DISTRIBUTIONS SHALL BE INSTALLED SO THE "ARROW" OR "STREET SIDE" DESIGNATION ON THE OPTICAL ASSEMBLY IS POSITIONED PERPENDICULAR TO THE CENTERLINE OR BASELINE OF THE PAVEMENT FROM WHICH THE TOWER IS STATIONED. ANY OPTICAL ROTATION CALLED FOR WILL BE EXPRESSED AS A CLOCKWISE (CW) OR COUNTERCLOCKWISE (CCW) ANGULAR MEASUREMENT FROM THE NORMAL "ARROW" ORIENTATION.

ITEM SPECIAL - TOWER LIGHTNING PROTECTION SYSTEM

THIS ITEM SHALL CONSIST OF PROVIDING AND INSTALLING AN APPROVED TOWER LIGHTNING PROTECTION SYSTEM AS DETAILED ON STD. DRWG. HL-23. THE COST OF ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THIS ITEM SHALL BE INCLUDED IN THE UNIT PRICE BID FOR EACH "ITEM SPECIAL - TOWER LIGHTNING PROTECTION SYSTEM."