

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC SIGNAL/FLASHER INSTALLATIONS WITHIN THE PROJECT UNDER THE FOLLOWING CONDITIONS:

1. EXISTING SIGNAL/FLASHER INSTALLATIONS WHICH THE PLANS REQUIRE THE CONTRACTOR TO ADJUST, MODIFY, ADD ONTO OR REMOVE, OR WHICH THE CONTRACTOR ACTUALLY ADJUSTS, MODIFIES, OR OTHERWISE DISTURBS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ENTIRE INSTALLATION (AT EACH INTERSECTION) FROM THE TIME HIS OPERATIONS FIRST DISTURB THE INSTALLATION UNTIL THE INSTALLATION HAS BEEN SUBSEQUENTLY REMOVED OR MODIFIED AND THE WORK IS ACCEPTED.
2. NEW OF REUSED SIGNAL/FLASHER INSTALLATIONS OF DEVICES, INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF THESE FROM THE TIME OF INSTALLATION UNTIL THE WORK IS ACCEPTED.

THE CONTRACTOR SHALL CORRECT AS QUICKLY AS POSSIBLE ALL OUTAGES OR MALFUNCTIONS. HE SHALL PROVIDE THE MAINTAINING AGENCY AND THE ENGINEER SUCH ADDRESSES AND PHONE NUMBERS WHERE HIS MAINTENANCE FORCES CAN BE CONTACTED. THE CONTRACTOR SHALL PROVIDE ONE OR MORE PERSONS TO RECEIVE ALL CALLS AND DISPATCH THE NECESSARY MAINTENANCE FORCES TO CORRECT OUTAGES. SUCH A PERSON OR PERSONS MAY BE USED TO PERFORM OTHER DUTIES AS LONG AS PROMPT ATTENTION IS GIVEN TO THESE CALLS AND A PERSON IS READILY AVAILABLE CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK. ALL LAMP OUTAGES, CABLE OUTAGES, ELECTRICAL FAILURES, EQUIPMENT MALFUNCTIONS AND MISALIGNED SIGNAL HEADS SHALL BE CORRECTED TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK TO SERVICE WITHIN FOUR HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT EXCEPT POLES AND CONTROL EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER WITH THE SIGNAL BACK IN SERVICE WITHIN 8 HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE. THE CONTRACTOR SHALL ARRANGE FOR FULL TRAFFIC CONTROL UNTIL THE SIGNAL IS BACK IN OPERATION.

IF POLES AND/OR CONTROL EQUIPMENT ARE DAMAGED AND MUST BE REPLACED, THE CONTRACTOR SHALL MAKE TEMPORARY REPAIRS AS NECESSARY TO BRING THE SIGNAL BACK TO FULL OPERATION WITHIN THE ALLOWED 8-HOUR PERIOD, AND SHALL MAKE PERMANENT REPAIRS OR REPLACEMENT AS SOON THEREAFTER AS POSSIBLE.

NONE OF THE ABOVE SHALL BE CONSTRUED AS COLLECTIVE OR CONSECUTIVE OUTAGE TIME PERIODS AT ANY ONE LOCATION. THAT IS, WHERE MORE THAN ONE PUTAGE OCCURS AT ANY ONE LOCATION THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE A DIRECT RESULT OF A VEHICLE CRASH THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. TJE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTION OF ANY COMPENSATION FOR THIS WORK FROM THOSE PARTIES RESPONSIBLE FOR THE DAMAGE.

WHERE THE CONTRACTOR HAS FAILED TO, OR CANNOT RESPOND TO, AN OUTAGE OR SIGNAL EQUIPMENT MALFUNCTION, AT THESE LOCATIONS WITHIN HIS RESPONSIBILITY, WITHIN PERIODS AS SPECIFIED ABOVE, THE ENGINEER MAY INVOKE THE PROVISIONS OF SECTION 105.15 AND ANY SUBSEQUENT BILLINGS TO THE STATE OR THE CITY OF MARION FOR POLICE SERVICES AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

THE CONTRACTOR SHALL PROVIDE THE MAINTENANCE SERVICE ENTIRELY WITH HIS FORCES OR HE MAY CHOOSE TO ENTER INTO A COOPERATIVE UNDERSTANDING WITH THE LOCAL MAINTAINING AGENCY TO PROVIDE THE MAINTENANCE. THE CONTRACTOR SHALL INFORM THE ENGINEER, IN WRITING, OF THE MAINTENANCE METHOD SELECTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ANY TRAFFIC SIGNAL COMPONENTS REQUIRED TO BE HANDLED DURING THE RELOCATION OF POLES AND REVISIONS TO THE SIGNAL SYSTEM. WHEN A TRAFFIC SIGNAL MUST BE TAKEN OUT OF SERVICE BY THE CONTRACTOR, DUE TO CONSTRUCTION PROCEDURES, THIS OUTAGE SHALL NOT EXCEED 8 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6 TO 9 AM OR 3 TO 7 PM. ANY SIGNALIZED INTERSECTION, WHERE THE SIGNAL IS OUT OF SERVICE DUE TO CONSTRUCTION PROCEDURES, OR DUE TO AN OUTAGE OR MALFUNCTION OF EQUIPMENT AS DESCRIBED ABOVE, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION, CONT'D

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING, WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN 632.25.

THE CONTRACTOR SHALL MAINTAIN COMPLETE RECORDS OF MALFUNCTIONS INCLUDING:

1. TIME OF NOTIFICATION OF MALFUNCTION;
2. TIME OF WORK CREW'S ARRIVAL TO CORRECT THE MALFUNCTION;
3. ACTIONS TAKEN TO CORRECT THE MALFUNCTION, INCLUDING A LIST OF PARTS REPAIRED OR REPLACED;
4. A DIAGNOSIS OF REASON FOR THE MALFUNCTION AND PROBABILITY OF REOCCURRENCE;
5. TIME OF COMPLETION OF THE REPAIR AND SYSTEM RESTORED TO FULL SERVICE.

A COPY OF THESE RECORDS SHALL BE PROVIDED TO THE ENGINEER WITHIN THREE (3) WORKING DAYS FOLLOWING COMPLETION OF EACH REPAIR.

ALL COSTS RESULTING FROM THE ABOVE REQUIREMENTS SHALL BE CONSIDERED TO BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614, MAINTAINING TRAFFIC.

ITEM 632 POWER SERVICE

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF AEP FOR INFORMATION REGARDING THE METER BASE INSTALLATION PRIOR TO ORDERING POLES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS.

THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 120/240 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS. ODOT 632.24 WILL BE FOLLOWED FOR THE CONNECTION OF POWER SERVICE. WHERE THERE IS AN EXISTING TRAFFIC SIGNAL THAT IS BEING REPLACED, THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO CONTINUE BILLING ON THE EXISTING DISTRICT 6 ACCOUNT. WHERE A NEW SIGNAL IS BEING INSTALLED, THE CONTRACTOR SHALL ESTABLISH THE ACCOUNT IN THE DISTRICT'S NAME FROM THE ONSET.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW TRAFFIC SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.). IF THERE ARE CONSTRUCTIBILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING SAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT EFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

632 REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, SIGNAL SUPPORTS, CABINET(S), CONTROLLERS, ETC., SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. UNLESS NOTED, POWER SERVICES SHALL BE REMOVED IN ACCORDANCE WITH C&MS 625.21.F. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED FOR SALVAGE BY ODOT IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

REMOVE:
SIGNAL CABINET AND COMPONENTS
WAVETRONIX DETECTION EQUIPMENT
UPS

REUSE:
ETHERNET RADIO
MODEM

REMOVED ITEMS SHALL BE DELIVERED TO THE NEAREST ODOT FACILITY WHOSE ADDRESS IS LISTED BELOW:

ODOT DISTRICT 6, ATTN: DAVID CARLIN, P.E. (740-833-8198)
400 E. WILLIAM STREET
DELAWARE, OH 43015

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

WORK INSPECTION

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND DISTRICT ENGINEER WITH 72-HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

DETECTION MAINTENANCE

IF VEHICLE DETECTION BECOMES UNEXPECTEDLY DISABLED, REQUIRES MODIFICATION, OR IS SCHEDULED TO BE TEMPORARILY REMOVED DURING THE CONSTRUCTION PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER.

IF THE LOSS OF VEHICLE DETECTION IS KNOWN PRIOR TO THE START OF CONSTRUCTION, IT SHALL BE DISCUSSED AT THE PRECONSTRUCTION MEETING. AT SUCH TIME, THE DISTRICT TRAFFIC ENGINEER SHALL ADVISE THE PROJECT ENGINEER AND CONTRACTOR ON THE APPROPRIATE ACTION TO RECTIFY ANY LOSS OF VEHICLE DETECTION. THIS MAY INCLUDE PLACING THE TRAFFIC SIGNAL ON MINIMUM OR MAXIMUM RECALL, MODIFYING THE MINIMUM GREEN TIMES, AND REMOVING THE MALFUNCTIONING DETECTION FROM SERVICE. WHERE NON-INTRUSIVE DETECTION (I.E., VIDEO, RADAR) ALREADY EXISTS, THE CONTRACTOR SHALL INSURE THAT DETECTION IS OPERATING AND MAINTAINED BY RECONFIGURING THE DETECTION UNITS ACCORDINGLY DURING ALL CONSTRUCTION PHASES. THIS IS TO AVOID THE SIGNAL FROM MAXING OUT THE EFFECTED SIGNAL PHASE AND CREATING UNNECESSARY DELAYS.

LOCATIONS WHERE NON-INTRUSIVE DETECTION IS PROPOSED AND THE EXISTING VEHICLE DETECTION IS TO BE ABANDONED, THE NON-INTRUSIVE VEHICLE DETECTION SHALL BE INSTALLED, CONFIGURED, AND MADE FULLY FUNCTIONAL PRIOR TO THE EXISTING DETECTION BEING DISABLED. THE CONTRACTOR SHALL CONTINUE TO MAINTAIN AND MODIFY THE DETECTION UNTIL FINAL ACCEPTANCE OF THE TRAFFIC SIGNAL. THIS IS ENSURE VEHICLE DETECTION REMAINS FULLY FUNCTIONAL THROUGHOUT CONSTRUCTION.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 30 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY.

EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLER, CABINET, UNINTERRUPTIBLE POWER SUPPLY, VEHICLE DETECTION EQUIPMENT, LED LAMP UNITS, NETWORK AND COMMUNICATION/INTERCONNECT EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OF THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

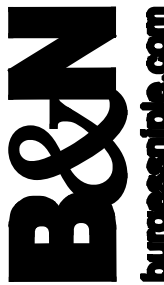
632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, (COUNTDOWN), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
3. PIPE, SPACERS, AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.
5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.
6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, (COUNTDOWN), AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEADS FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

DESIGN AGENCY



DESIGNER

RML

REVIEWER

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SHEET

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TOTAL

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632 SIGNAL SUPPORT FOUNDATION

PRIOR TO ORDERING THE SIGNAL SUPPORTS, THE CONTRACTOR SHALL CONTACT OUPS TO HAVE ALL THE UTILITIES LOCATED IN THE FIELD. THEN, THE CONTRACTOR SHALL MEET THE PROJECT ENGINEER TO LOCATE THE PROPOSED SUPPORT LOCATIONS TO INSURE THERE ARE NO CONFLICTS WITH UTILITIES. IF THERE ARE ISSUES, THE PROJECT ENGINEER SHALL PROVIDE GUIDANCE AS TO THE RELOCATION OF THE SUPPORTS.

DUE TO THE FURTHER POSSIBILITY OF CONFLICT WITH EXISTING OR PROPOSED UNDERGROUND OBSTRUCTIONS (INCLUDING THE POSSIBILITY OF UNRECORDED OBSTRUCTIONS) WHICH COULD AFFECT THE LOCATION OF THE FOUNDATION FOR THIS ITEM, AND CONSEQUENTLY, THE DESIGN OF THE SUPPORT AND/OR ARMS, THE CONTRACTOR SHALL NOT PLACE FINAL ORDERS FOR THE ITEM UNTIL THE FOUNDATIONS HAVE BEEN INSTALLED, AT FINAL GRADE, AND THE CONTRACTOR HAS RECEIVED, FROM ENGINEER, WRITTEN NOTICE TO PROCEED WITH THE ORDERS FOR THE ITEM.

IF ANY FOUNDATION LOCATIONS MUST BE ADJUSTED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND MAINTAINING AGENCY, WHO WILL DETERMINE THE REVISED LOCATION AND IF NEEDED, THE SUPPORT DESIGN. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR DETERMINING THE REVISED DESIGN. THE ENGINEER WILL INFORM THE CONTRACTOR OF ANY CHANGES NECESSARY AND AUTHORIZE THE CONTRACTOR TO ORDER THE SUPPORT.

THE CONTRACTOR SHALL, WHEN DEVELOPING THE PROGRESS SCHEDULE, AND THOSE OF SUBCONTRACTORS, ENSURE THAT THE FOUNDATIONS ARE INSTALLED AT THE EARLIEST TIME AS IS FEASIBLE AND PRACTICAL, AND SHALL INCLUDE SUFFICIENT TIME IN THE PROGRESS SCHEDULE FOR ORDERING, MANUFACTURING, DELIVERY, AND INSTALLATION OF THE SUPPORT ITEMS AFTER THE FOUNDATIONS ARE IN PLACE.

NO PAYMENTS FOR DELIVERED MATERIALS FOR THE FOUNDATION OR SUPPORT ITEMS SHALL BE MADE UNTIL THE FOUNDATIONS ARE IN PLACE, AND IF CHANGES IN THE DESIGN OF THIS ITEM ARE REQUIRED, NO PAYMENT SHALL BE MADE FOR THE ITEMS MANUFACTURED TO THE ORIGINAL DESIGN.

PAYMENT WILL BE AT THE CONTRACT UNIT PRICE AND WILL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY FOR EACH SUPPORT FURNISHED, IN PLACE, COMPLETE AND ACCEPTED.

MAINTAINING ITS DURING CONSTRUCTION

THE CONTRACTOR SHALL MAINTAIN ALL PREEXISTING OR NEWLY INSTALLED ITS/TRAFFIC DEVICES AND INFRASTRUCTURE DURING CONSTRUCTION ACCORDING TO ODOT SUPPLEMENTAL SPECIFICATION 809.

625 LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), TYPE III DISTRIBUTION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT'S CONSTRUCTION AND MATERIAL SPECIFICATIONS, LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS SHALL BE AS FOLLOWS:

LUMINAIRES FOR CONVENTIONAL LIGHTING UNITS WITH AN IES TYPE III DISTRIBUTION AND 8500-12000 LUMENS, 120-VOLT, OR EQUAL AS APPROVED BY THE ENGINEER.

PAYMENT WILL BE MADE THE UNIT BID PRICE FOR EACH C&MS ITEM 625, "LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), TYPE III DISTRIBUTION, AS PER PLAN" FOR EACH LUMINAIRE WHICH SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, AND INCIDENTALS REQUIRED TO COMPLETE THIS ITEM IN A SATISFACTORY AND WORKMANLIKE MANNER.

809 ADVANCE RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE RADAR DETECTION UNIT (MODEL SS-200E). THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CONTROL CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING OF THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. A CABINET INTERFACE DEVICE SHALL BE PROVIDED THAT SUPPORTS A MINIMUM OF SIX SENSORS OR THE NUMBER OF SENSORS INCLUDED IN THE PLANS, PROVIDES 64 DETECTOR CHANNELS, COMMUNICATES TO THE CONTROLLER THROUGH THE SDLC PORT AND PROVIDES AN ETHERNET PORT FOR NETWORK COMMUNICATIONS.
8. PRIOR TO PROGRAMMING, THE CONTRACTOR SHALL CONTACT THE ODOT DISTRICT 6 DISTRICT TRAFFIC ENGINEER AT 740-833-8198. A DISTRICT 6 TRAFFIC DEPARTMENT REPRESENTATIVE SHALL BE PRESENT DURING THE PROGRAMMING OF THE SYSTEM.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED, AND ANY OTHER NECESSARY HARDWARE TO ESTABLISH A FULLY FUNCTIONAL DETECTION SYSTEM.

809 STOP-BAR RADAR DETECTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR MATRIX DETECTION UNIT. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

1. POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
2. ALL REQUIRED INPUTS CARDS SHALL BE INCLUDED IN THE TRAFFIC CABINET AND SHALL BE COMPATIBLE WITH CALTRANS, NEMA TS1 AND NEMA TS2 DETECTOR RACKS. THE CARDS SHALL PROVIDE TRUE PRESENCE DETECTOR CALLS OR CONTACT CLOSURE TO THE TRAFFIC CONTROLLER.
3. THE UNIT SHALL BE MOUNTED DIRECTLY TO A POLE OR MAST ARM, AS RECOMMENDED BY THE MANUFACTURER. CABLE(S) SHALL BE PROVIDED AS REQUIRED AND RECOMMENDED BY THE MANUFACTURER.
4. SURGE PROTECTION DEVICES, AS RECOMMENDED BY THE MANUFACTURER SHALL BE INCLUDED BOTH AT THE POLE WHERE THE UNIT IS LOCATED TO PROTECT THE UNIT AND IN THE TRAFFIC CONTROL CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING OF THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. A CABINET INTERFACE DEVICE SHALL BE PROVIDED THAT SUPPORTS A MINIMUM OF SIX SENSORS OR THE NUMBER OF SENSORS INCLUDED IN THE PLANS, PROVIDES 64 DETECTOR CHANNELS, COMMUNICATES TO THE CONTROLLER THROUGH THE SDLC PORT AND PROVIDES AN ETHERNET PORT FOR NETWORK COMMUNICATIONS.
8. PRIOR TO PROGRAMMING, THE CONTRACTOR SHALL CONTACT THE ODOT DISTRICT 6 DISTRICT TRAFFIC ENGINEER AT 740-833-8198. A DISTRICT 6 TRAFFIC DEPARTMENT REPRESENTATIVE SHALL BE PRESENT DURING THE PROGRAMMING OF THE SYSTEM.

PAYMENT FOR ITEM 809 STOP-BAR RADAR DETECTION SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH UNIT, COMPLETE AND IN PLACE INCLUDING ALL REQUIRED CABINET HARDWARE, MOUNTING BRACKETS, CABLES, CONDUIT, CONNECTIONS TESTED AND ACCEPTED.

ARC FLASH LABELING REQUIREMENTS

THE NATIONAL ELECTRICAL CODE ARTICLE 110, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS, REQUIRES THAT ARC FLASH HAZARD WARNING MARKINGS BE APPLIED TO MANY ELECTRICAL ENCLOSURES. ODOT SUPPLEMENTAL SPECIFICATIONS 825 ARC-FLASH HAZARD CALCULATIONS AND EQUIPMENT LABEL IS THE CONSTRUCTION ITEM FOR SUCH LABELING. THIS ITEM SHOULD BE INCLUDED FOR EACH LIGHTING POWER SERVICE DISCONNECT ENCLOSURE AND ALL UPSTREAM ENCLOSURES ONT HE CUSTOMER END OF THE POWER SERVICE. ENCLOSURES (INCLUDING LIGHT TOWERS) DOWNSTREAM FROM THE MAIN DISCONNECT VERY RARELY REQUIRE ARC-FLASH ANALYSIS.

THE ARC FLASH LABEL REQUIREMENT OF THE NEC ART. 110 REQUIRES ONLY A "GENERIC" WARNING MARKING, WHICH DOES NEED ANY SITE-SPECIFIC ELECTRICAL ANALYSIS. ODOT SS 825 IS INTENDED TO EXCEED THIS MINIMUM NEC REQUIREMENT BY ANALYZING THE SUBJECT ENCLOSURE AND THE ELECTRICAL SYSTEM FEEDING IT. BASED ON THIS ANALYSIS, THE SS 825 LABEL PROVIDES INFORMATION TO GUIDE MAINTAINERS ON THE PROPER SELECTION OF PPE (PERSONAL PROTECTIVE EQUIPMENT) REQUIRED FOR ENERGIZED ACCESS TO, OR ENERGIZED WITHIN, THAT ENCLOSURE. ODOT STANDARD PROCEDURE 220-006(SP) HAS ADDITIONAL ELECTRICAL SAFETY PROCEDURE DETAILS, AND THE INTENT OF SS 825 ARC FLASH LABELS IS TO SATISFY THIS PROCEDURE.

809 ATC CONTROLLER, AS PER PLAN (PROGRAM AND INSTALL ONLY)

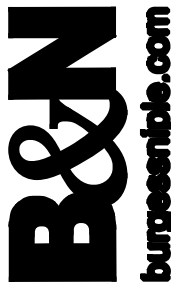
ALL REQUIREMENTS OF SS 809 SHALL BE FOLLOWED, ALONG WITH THE ADDITIONAL DESCRIPTION AS STATED BELOW. THE ATC CONTROLLER WILL BE PROVIDED BY THE DISTRICT WITHOUT PROGRAMMING.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE CONTROLLER. IF AVAILABLE, THE EXISTING CONTROLLER DATA WILL BE PROVIDED TO THE CONTRACTOR BY THE DISTRICT. ODOT WILL NOT BE RESPONSIBLE FOR THE PROGRAMMING. THE EXISTING DATA MAY REQUIRE UPDATES TO REFLECT THE PROPOSED CONDITIONS DESCRIBED IN THE PLANS.

THE CONTROLLER WILL BE A NEMA ECONOLITE COBALT AS LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP). THE CONTRACTOR SHALL INSURE THAT THE CABINET TYPE BEING INSTALLED BY THE PROJECT IS COMPATIBLE WITH THE PROVIDED CONTROLLER.

PAYMENT SHALL BE MADE ONCE THE CONTROLLER IS PROGRAMMED, INSTALLED, TESTED, AND FUNCTIONING ACCORDING TO THE PLANS AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIAL AND INCIDENTALS TO COMPLETE THE WORK.

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