

633 CONTROLLER ITEM MISC.: PREEMPTION

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION EQUIPMENT IN THE LOCATIONS AND LOCAL CONTROLLERS AS SHOWN IN THE PLANS.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT THE LOCATIONS TO DETERMINE THE TYPE OF EQUIPMENT THAT WILL BE REQUIRED AT EACH LOCATION TO PROVIDE A TESTED AND ACCEPTED SIGNAL PREEMPTION CONTROL SYSTEM. THIS SHALL INCLUDE DETERMINING THE ROUTING OF CABLES AND THE PLACEMENT AND ORIENTATION OF THE DETECTORS.

THE PREEMPTION SHALL BE MANUFACTURED BY 3M OPTICOM AND SHALL UTILIZE COMMUNICATIONS TO IDENTIFY THE PRESENCE OF AN EMERGENCY PRIORITY VEHICLE. IT SHALL CAUSE THE TRAFFIC SIGNAL CONTROLLER TO SELECT A PRE-PROGRAMMED PREEMPTIONS PLAN THAT WILL DISPLAY AND HOLD THE DESIRED SIGNAL PHASE FOR THE DIRECTION OF THE EMERGENCY VEHICLE.

THE COMMUNICATIONS MEDIUM SHALL EMPLOY LIGHT DETECTION TECHNIQUES TO DETERMINE AND LOG THE PRESENCE OF THE EMERGENCY VEHICLE. THE SYSTEM SHALL DETECT THE PRESENCE OF THE VEHICLE THROUGH AN EMITTING DEVICE LOCATED ON THE EMERGENCY VEHICLE.

THE SYSTEM SHALL ACTIVATE THE PREEMPTION SEQUENCE BY APPLYING A SIGNAL TO ONE OF THE CONTROLLERS PREEMPT DISCRETE INPUTS. THE SYSTEM SHALL BE COMPLETELY COMPATIBLE WITH THE NEMA CONTROLLER.

THE EQUIPMENT SHALL BE SHELF MOUNTED AND EASILY REMOVABLE AND REPLACEABLE WITHIN THE CABINET. THE EQUIPMENT SHALL BE SUPPLIED COMPLETELY WIRED IN THE CONTROLLER CABINET AND TESTED. (OPTICOM MODEL 760 CARD RACK)

THE SYSTEM SHALL BE CAPABLE OF PREEMPTING AND RECEIVING PRIORITY FOR EACH APPROACH TO THE INTERSECTION, AS INDICATED IN THE PLANS. IT SHALL BE POSSIBLE TO DETECT THE EMERGENCY VEHICLE UP TO 1200 FEET FROM THE INTERSECTION.

EACH INTERSECTION SHOWN IN THE PLANS SHALL BE SUPPLIED WITH THE FOLLOWING COMPONENTS, EACH BID SEPARATELY:

- 1. PREEMPT DETECTORS
2. PREEMPTION DETECTOR CABLE
3. PREEMPT PHASE SELECTOR ASSEMBLY & INTERFACE WIRING PANEL
4. CONFIRMATION LIGHT

THE CITY SHALL BE SUPPLIED WITH THE EMITTERS, TRANSMITTERS, SWITCHES, WIRING AND ALL REQUIRED VEHICLE EQUIPMENT FOR 10 EMERGENCY VEHICLES. THE CITY SHALL BE RESPONSIBLE FOR INSTALLING ALL VEHICLE EQUIPMENT.

THE CONTRACTOR SHALL THOROUGHLY CHECK OUT THE INSTALLED SYSTEM. AS A MINIMUM, THE CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS ARE PROPERLY MADE TO THE CONTROLLER CABINETS. THE CONTRACTOR SHALL CHECK THAT THE RANGE SETTING IS PROPER FOR EACH INTERSECTION. THE CONTRACTOR SHALL DETERMINE THAT ALL PHASE SELECTORS ARE SELECTING THE PROPER PHASE AND TIMING ACCURATELY. THE CONTRACTOR SHALL VERIFY THAT ALL VEHICLE EMITTERS ARE BEING PROPERLY DETECTED.

THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FOUR (4) PERSONS IN THE INSTALLATION AND MAINTENANCE OF THE SYSTEM. IT SHALL CONSIST OF A MINIMUM OF EIGHT (8) HOURS OF INSTRUCTION. TRAINING SHALL BE SUPPLIED WITHIN SEVEN (7) DAYS OF THE INSTALLATION OF THE SYSTEM.

ALL TRAINING SHALL BE HELD IN CITY SUPPLIED LOCATION. TRAINING SHALL BE CONDUCTED BY SOMEONE WHO HAS PERFORMED THIS WITHIN THE LAST YEAR AND DOES IT ON A REGULAR BASIS. THE COST OF TRAINING, INCLUDING COURSE MATERIAL, TRAVEL SUBSISTENCE AND RELATED COSTS, SHALL BE ENTIRELY BORN BY THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE PREEMPTION EQUIPMENT.

PAYMENT FOR 633 CONTROLLER ITEM MISC.: PREEMPTION, WILL BE MADE AT THE CONTRACT LUMP SUM PRICE FOR PREEMPTION IN PLACE AT ALL LOCATIONS AND FULLY OPERATIONAL AS SHOWN IN THE PLANS EXCEPT FOR THOSE ITEMS BID SEPARATELY.

633 CONTROLLER ITEM MISC.: PREEMPTION DETECTOR, AS PER PLAN

DETECTORS SHALL CONSIST OF A LIGHT WEIGHT, WEATHERPROOF AND DIRECTIONAL ASSEMBLY. EACH DETECTOR SHALL BE 360 DEGREE ADJUSTABLE. DETECTOR SHALL BE CAPABLE OF SENDING THE PROPER ELECTRICAL SIGNAL TO THE TRAFFIC SIGNAL CONTROLLER VIA THE PREEMPTION DETECTOR HOME RUN CABLE. DETECTORS SHOWN SHALL BE SUPPLIED WITH SPAN WIRE MOUNTING HARDWARE AS SHOWN IN THE PLANS. (OPTICOM MODEL 711, 721, 722)

PAYMENT FOR 633 CONTROLLER ITEM MISC.: PREEMPTION DETECTOR WILL BE AT THE CONTRACT UNIT PRICE FOR EACH DETECTOR IN PLACE, COMPLETELY INSTALLED AT THE LOCATION SHOWN IN THE PLANS, WIRED TESTED AND ACCEPTED.

632 SIGNAL CABLE MISC.: PREEMPT CABLE, AS PER PLAN

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION DETECTOR HOME RUN CABLE IN THE LOCATIONS SHOWN IN THE PLANS. IT SHALL CONNECT THE PREEMPT DETECTORS TO THE PHASE SELECTORS IN THE LOCAL CONTROLLER CABINET.

PREEMPTION DETECTOR CABLE SHALL BE OPTICOM MODEL 138. THE CABLE SHALL BE APPROVED FOR BOTH OVERHEAD AND UNDERGROUND USE. THE JACKET SHALL WITHSTAND EXPOSURE TO SUNLIGHT AND ATMOSPHERIC TEMPERATURES AND STRESSES REASONABLY EXPECTED IN NORMAL INSTALLATIONS.

PAYMENT FOR 632 SIGNAL CABLE MISC.: PREEMPT CABLE, AS PER PLAN WILL BE MADE AT THE CONTRACT UNIT PRICE FOR THE CABLE FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

633 CONTROLLER ITEM MISC.: PREEMPTION PHASE SELECTOR

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT PHASE SELECTORS INCLUDING WIRING INTERFACE PANELS IN THE LOCAL CONTROLLER CABINET, AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT PHASE SELECTORS COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS. THIS ITEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINETS WHERE INDICATED IN THE PLANS. (OPTICOM MODEL 754)

THE PHASE SELECTORS SHALL CONSIST OF A MODULE OR MODULES THAT WILL PROVIDE THE NECESSARY INPUTS TO THE CONTROLLER. PHASE SELECTORS SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF CHANNELS TO PROVIDE PREEMPTION FOR ALL APPROACHES TO THE INTERSECTION SEPARATELY. POWER SHALL BE OBTAINED FROM THE PHASE SELECTOR OR PHASES SELECTOR POWER SUPPLY AND NOT FROM THE LOCAL CONTROLLER TIMER.

THE PHASE SELECTORS SHALL HAVE FRONT PANEL INDICATORS FOR ACTIVE PREEMPT CHANNEL STATUS. IT SHALL HAVE TEST SWITCHES TO ACTIVATE ALL PREEMPT CHANNELS.

PAYMENT FOR ITEM 633 MISC.: PREEMPT PHASE SELECTOR WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PHASE SELECTOR IN PLACE, COMPLETELY INSTALLED IN THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

633 CONTROLLER ITEM MISC.: PREEMPT CONFIRMATION LIGHT

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT CONFIRMATION LIGHTS INCLUDING MOUNTING HARDWARE AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT CONFIRMATION LIGHT COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS. (OPTICOM MODEL 575)

A CONFIRMATION LIGHT SHALL BE SUPPLIED FOR EACH INTERSECTION TO INDICATE THAT THE EMERGENCY VEHICLE HAS ACHIEVED CONTROL OF THE TRAFFIC SIGNAL.

THE CONFIRMATION LIGHT SHALL BE A VAPOR TIGHT ALUMINUM LIGHTING FIXTURE. IT SHALL BE SUPPLIED WITH A BLUE COLORED GLOBE, 150 WATT INCANDESCENT LAMP AND MOUNTING HARDWARE TO ATTACH TO THE SPAN WIRE. THE CONFIRMATION LIGHT SHALL BE POWERED BY A LOAD SWITCH IN THE TRAFFIC SIGNAL CONTROLLER.

PAYMENT FOR ITEM 633 MISC.: PREEMPT CONFIRMATION LIGHT WILL BE MADE AT THE CONTRACT PRICE FOR EACH LIGHT IN PLACE, COMPLETELY INSTALLED IN THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

NEW SIGNAL OPERATION

2/24/00

PLEASE REFER TO SHEET T2A FOR REQUIRED WARNING SIGNS AND FLASHERS FOR EACH NEW SIGNAL OPERATION.

ITEM 633 CONTROLLER ACTUATED, B PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING AN ACTUATED, SOLID STATE DIGITAL MICROPROCESSOR TYPE CONTROLLER WITH SECONDARY COORDINATOR, MENU DRIVEN PROMPTS, INTERNAL TBC, TELEMETRY UNIT AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE CONTROLLER COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

THE CONTROLLER AND CABINET SHALL CONFORM TO ODOT SPECIFICATION 633 AND SHALL HAVE THE FOLLOWING FEATURES:

- A) THE LOAD SWITCHES SHALL PROVIDE INPUT AND OUTPUT INDICATIONS.
B) THE CONFLICT MONITOR SHALL BE CAPABLE OF 12 CHANNEL OPERATION AS PER PLAN AND SHALL HAVE EXTENDED MONITORING, LCD DISPLAY, FAULT/EVENT STORAGE AND REPORTING.
C) THE FOLLOWING SWITCHES SHALL BE ACCESSIBLE VIA THE POLICE PANEL DOOR:
1) SIGNAL SHUTDOWN
2) FLASH CONTROL
3) MANUAL CONTROL JACK ACTIVATING MANUAL CONTROL WITH SEPARATE MANUAL PUSHBUTTON CORD.
D) THE FOLLOWING SWITCHES SHALL BE MOUNTED ON THE SWITCH PANEL IN THE CABINET:
1) RUN-STOP NORMAL
2) CONTROLLER SHUTDOWN
3) DETECTOR TEST
E) A FLUORESCENT SERVICE LAMP WITH DOOR ACTIVATED ON/OFF SWITCH.
F) THE CABINET EXTERIOR SHALL BE ALUMINUM COLORED AND THE INTERIOR SHALL BE WHITE.
G) THE CONTRACTOR SHALL FURNISH FOR APPROVAL A CABINET PLAN SHOWING COMPONENT PLACEMENT.
H) BACK PANEL SHALL HAVE A MINIMUM OF 12 LOAD BAYS.
I) ONE SPARE 2" CONDUIT TO THE CLOSEST PULLBOX.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATIONS

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

- A) NEW SIGNAL INSTALLATIONS OR 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 CITY 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 (4) HOURS AFTER THE CONTRACTOR HAS BEEN NOTIFIED OF THE OUTAGE.

IN THE EVENT NEW SIGNALS ARE DAMAGED PRIOR TO ACCEPTANCE, ALL DAMAGED EQUIPMENT SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER. THE SIGNAL SHALL BE BACK IN SERVICE WITHIN EIGHT (8) HOURS AFTER THE CONTRACTOR'S NOTIFICATION OF THE OUTAGE OR MALFUNCTION.

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 INTO 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 OUTAGE OCCURS AT ANY ONE LOCATION, THEN THE ALLOTTED TIME LIMIT SHALL BE FOR THE WORST SINGLE OUTAGE.

WHERE OUTAGES ARE THE DIRECT RESULT OF A VEHICLE ACCIDENT, THE RESPONSE OF THE CONTRACTOR SHALL BE AS OUTLINED ABOVE. THE 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 KIRTLAND FOR POLICE SERVICE AND MAINTENANCE SERVICES BY CITY FORCES SHALL BE DEDUCTED FROM MONEYS 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.

ANY VEHICULAR TRAFFIC SIGNAL HEAD, EITHER NEW OR EXISTING, WHICH WILL BE OUT OF OPERATION SHALL BE COVERED IN THE MANNER DESCRIBED IN SECTION 632.24.

THIS ITEM SHALL BE CONSIDERED A SUBSIDIARY WORK ITEM AND THE COST SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR THE VARIOUS ITEMS MAKING UP THE SIGNAL SYSTEM.

632 SPECIAL, 12' PEDESTAL POLE, TRANSFORMER BASE, AS PER PLAN

THE PEDESTAL POLE SHALL HAVE A BREAKAWAY TRANSFORMER BASE. EACH CABLE ENTERING THE TRANSFORMER BASE SHALL BE PROVIDED WITH A PULL-APART FUSE HOLDER (632-SIGNAL CABLE MISC.: IN-LINE FUSE KIT) FOR EACH CONDUCTOR WITHIN THE WIRE. EACH FUSE SHALL BE RATED FOR THE PROPER LOAD. THE FUNCTION OF THE FUSE HOLDER IS TO SERVE AS A MEANS TO SAFELY DISCONNECT THE CABLE IN THE EVENT OF A COLLISION.

PAVEMENT MARKING, MISC.: TEMPORARY PAVEMENT MARKINGS, AS DIRECTED

THIS ITEM IS INTENDED FOR USE DURING VARIOUS PHASES OF THE CONSTRUCTION PROCESS AND SHALL CONSIST OF ALL LABOR, EQUIPMENT AND MATERIALS NECESSARY TO APPLY TEMPORARY PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. AN ESTIMATED QUANTITY OF 1.0 MILE HAS BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE ON AN AS DIRECTED BASIS. THE ENGINEER RESERVES THE RIGHT TO NON-PERFORM ANY UNUSED PORTION OF THIS QUANTITY.

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CALCULATED A.E.P. CHECKED I.M.H.

TRAFFIC CONTROL GENERAL NOTES

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