

TRAFFIC CONTROL NOTES

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| CALC. BY: _____ | LAKE COUNTY LAK-91-4.56 | OHIO |
| DATE: _____ | | FHWA REGION 5 |
| CHKD. BY: _____ | | FEDERAL PROJECT |
| DATE: _____ | | |

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WEIGHTING.

- C. SYSTEM SENSOR DATA SHALL BE AVERAGED ON A MOVING BASIS, UTILIZING A USER PROGRAMMABLE TIME FACTOR.
- D. EACH SYSTEM SENSOR SHALL BE MONITORED FOR CONSTANT CALL, ABSENCE OF CALL AND ERRATIC OUTPUT. THERE SHALL BE AN OPTION TO ELIMINATE THE MONITORING OF ABSENCE OF CALLS DURING LIGHT TRAFFIC PERIODS ON A TIME OF DAY BASIS. SENSORS WHICH FAIL ANY MONITORING TEST SHALL BE AUTOMATICALLY DELETED FROM VOLUME AND OCCUPANCY CALCULATIONS. UPON RESUMPTION OF SATISFACTORY OPERATION, SENSORS SHALL AUTOMATICALLY RESUME INPUT TO VOLUME AND OCCUPANCY CALCULATIONS. A USER PRESCRIBED MINIMUM NUMBER OF DESIGNATED SENSORS SHALL BE REQUIRED TO MAINTAIN RESPONSIVE OPERATION. THE MINIMUM NUMBER OF OPERATIONAL SENSORS SHALL BE PROGRAMMABLE FOR EACH COMPUTATIONAL CHANNEL. IF FEWER THAN THE PRESCRIBED NUMBER OF SYSTEM SENSORS ARE OPERATIONAL, THEN THE MASTER SHALL REVERT TO THE TIME OF DAY, DAY OF WEEK MODE.
- E. EACH COMPUTATIONAL CHANNEL SHALL BE ASSIGNED FROM UP TO TWELVE (12) DIFFERENT SYSTEM SENSORS FROM THE TOTAL OF 48.
5. IT SHALL BE POSSIBLE TO SELECT ANY SYSTEM PATTERN FROM THE MASTER ON A PRE-PROGRAMMED TIME OF DAY, DAY OF WEEK BASIS. THERE SHALL BE TIME OF DAY OVERRIDE OF RESPONSIVE OPERATION. TIME OF DAY OPERATION SHALL UTILIZE A 99 YEAR CALENDAR-CLOCK WITH AUTOMATIC DAYLIGHT SAVINGS TIME CHANGE.
6. MEANS SHALL BE PROVIDED TO ALLOW INTER-MASTER LINKING IN ORDER TO AFFORD COORDINATION BETWEEN CONTIGUOUS SYSTEM CONTROL AREAS. THIS SHALL INCLUDE SYNCHRONIZATION OF MASTER REFERENCE CLOCKS.
7. PATTERN CHANGES FOR EACH LOCAL CONTROLLER IN THE SYSTEM SHALL BE IMPLEMENTED SMOOTHLY AND IN THE SHORTEST TIME FRAME POSSIBLE WITHOUT VIOLATING MINIMUM INTERVAL VALUES.
8. THE MASTER CONTROLLER SHALL STORE AND FORMAT MONITORED FUNCTION DATA FOR EITHER IMMEDIATE OUTPUT TO THE CENTRAL OFFICE MONITOR OR SHALL STORE DATA FOR FUTURE OUTPUT FOR A MINIMUM STORAGE PERIOD OF FORTY-EIGHT HOURS. AS A MINIMUM THE FOLLOWING REPORTS SHALL BE INCLUDED:
- A. AN ACTIVITY LOG WHICH INCLUDES TIME, INTERSECTION AND ACTIVITY TYPE OF ALL MONITORED LOCAL INTERSECTION FAILURE CONDITIONS.
- B. A SYSTEM SENSOR FAILURE LOG WHICH INCLUDES TIME, SENSOR LOCATION AND TYPE OF FAILURE.
- C. A PATTERN CHANGE LOG WHICH INCLUDES THE OPERATING PATTERN AND THE TIME OF CHANGE WHILE IN THE RESPONSIVE MODE.
- D. A SYSTEM STATUS REPORT WHICH SHOWS THE CURRENT OPERATING MODE AND PATTERN FOR ALL LOCAL INTERSECTION CONTROLLERS ON LINE.
- E. A SYSTEM SENSOR DATA REPORT WHICH INCLUDES VOLUME, OCCUPANCY AND AVERAGE SPEED FOR ALL SYSTEM SENSORS.

PAYMENT FOR 633 CONTROLLER, MASTER, SOLID STATE DIGITAL MICROPROCESSOR, TRAFFIC RESPONSIVE, AS PER PLAN WILL BE MADE AT THE CONTRACT PRICE FOR EACH CONTROLLER IN PLACE, COMPLETELY INSTALLED IN THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED, TESTED, AND ACCEPTED.

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

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING ACTUATED, SOLID STATE DIGITAL MICROPROCESSOR TYPE CONTROLLERS 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 O.D.O.T. SPECIFICATION 633 AND SHALL HAVE THE FOLLOWING FEATURES:

1. THE LOAD SWITCHES SHALL PROVIDE INPUT AND OUTPUT INDICATIONS.
2. THE CONFLICT MONITOR CAPABLE OF 6 OR 12 CHANNEL OPERATION, EXTENDED MONITORING, LCD DISPLAY, RS-232 PORT AND FAULT/EVENT MONITORING, STORAGE AND REPORTING.
3. THE FOLLOWING SWITCHES SHALL BE ACCESSIBLE VIA THE POLICE PANEL DOOR:
 - A. SIGNAL SHUTDOWN
 - B. FLASH CONTROL
 - C. MANUAL CONTROL & PUSHBUTTON
4. THE FOLLOWING SWITCHES SHALL BE MOUNTED ON THE SWITCH PANEL IN THE CABINET:
 - A. RUN/STOP TIMING
 - B. CONTROLLER TIMER POWER
 - C. DETECTOR TEST
5. A SERVICE LAMP WITH DOOR ACTIVATED ON/OFF SWITCH.
6. THE CABINET EXTERIOR SHALL BE ALUMINUM COLORED AND INTERIOR SHALL BE WHITE.
7. AT CONTROLLER LOCATIONS INDICATED IN THE PLANS TO HAVE A "PHONE DROP", THE CONTROLLER AND CABINET SHALL INCLUDE A TELEPHONE MODEM COMPLETELY WIRED TO REPORT CABINET FAILURES, DETECTOR FAILURES AND TRAFFIC COUNTS.
8. THE CONTRACTOR SHALL FURNISH FOR APPROVAL A CABINET PLAN SHOWING COMPONENT PLACEMENT.

ALL TWO AND THREE PHASE CONTROLLERS SHALL HAVE FOUR PHASE TIMERS AND BE EXPANSIBLE TO FOUR PHASES COMPLETE WITH AT LEAST EIGHT (8) LOAD SWITCH POSITIONS. ALL FIVE, SIX AND SEVEN PHASE CONTROLLERS SHALL HAVE EIGHT PHASE TIMERS AND BE EXPANSIBLE TO EIGHT PHASES COMPLETE WITH AT LEAST TWELVE (12) LOAD SWITCH POSITIONS.

PAYMENT FOR 633 CONTROLLER, ACTUATED, BY PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN WILL BE MADE AT THE CONTRACT PRICE FOR EACH CONTROLLER IN PLACE, INCLUDING PRE-WIRED CABINET COMPLETELY INSTALLED, WIRED, TESTED, AND ACCEPTED.

619 - FIELD OFFICE, TYPE A, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS SPECIFIED IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS FOR ITEM 619 - FIELD OFFICE, TYPE A, THE CONTRACTOR SHALL PROVIDE ONE COPY MACHINE, PAPER SUPPLIES, MAINTENANCE AND COPY MACHINE CAPABILITIES SHALL BE AS PER 619.02 OF THE C.M.S.

SPECIAL: CENTRAL OFFICE MONITOR

THIS ITEM OF WORK SHALL CONSIST OF INSTALLING THE CENTRAL OFFICE MONITOR TO BE LOCATED AT THE CITY OF EASTLAKE SERVICE DIRECTOR'S OFFICE. THE BASIC CENTRAL EQUIPMENT COMPLEMENT SHALL BE SUPPLIED AND SHALL CONSIST OF THE FOLLOWING:

1. AN IBM OR IBM COMPATIBLE PERSONAL COMPUTER, 486/33 MHZ PROCESSOR WITH 4 MB USER MEMORY, 1.44 MB INTERNAL 3.5 INCH FLOPPY DISKETTE DRIVE, 70 MB HARD DISK DRIVE, SVGA GRAPHICS, THREE EXPANSION SLOTS, MATH CO-PROCESSOR, ONE SERIAL PORT, ONE PARALLEL PORT AND DOS VERSION 5.0 OR LATER.
 - A. AN EPSON FX-850 DOT MATRIX PRINTER OR AN OKIDATA ML380 DOT MATRIX PRINTER OR AN APPROVED EQUAL.
 - B. 14 INCH SVGA COLOR MONITOR.
 - C. A 2400 BAUD EXTERNAL MODEM.
 - D. A POWER LINE FILTER, VOLTAGE SURGE PROTECTOR AND A FUSE PROTECTED MULTI-SERVICE OUTLET WITH AT LEAST SIX POSITIONS.
 - E. ALL NECESSARY CABLES AND ACCESSORIES NEEDED TO MAKE THE SYSTEM OPERATE ACCORDING TO THESE SPECIFICATIONS.
 - F. PHONE DROP SHALL BE PROVIDED BY THE CITY OF EASTLAKE.
2. THE GRAPHICS SHALL DISPLAY IN COLOR, THE VEHICULAR SIGNALS, PEDESTRIAN SIGNALS AND DETECTOR ACTUATION. EACH INTERSECTION IN ANY OF THE SUBSYSTEMS SHALL BE CAPABLE OF VIEWING ONE INTERSECTION AT A TIME. THE INTERSECTION LAYOUT SHALL BE GRAPHICALLY CONSTRUCTED BY THE USER USING PREDETERMINED SHAPES (EG: "T" INTERSECTION). ALSO IT SHALL BE POSSIBLE TO DISPLAY THE STATUS OF A COMPLETE SUBSYSTEM AT ONE TIME ON THE MONITOR. THE NAME AND SIGNAL STATUS (G-Y-R) OF EACH INTERSECTION SHALL BE DISPLAYED. THE SUBSYSTEM NETWORK SHALL BE CAPABLE OF BEING CONFIGURED IN ANY USER DEFINED GRID.
3. UPON COMMAND FROM THE CENTRAL OFFICE FACILITY, IT SHALL BE POSSIBLE TO DOWNLOAD ALL STORED SETTING ON THE DATA DISK FOR INTERSECTION CONTROLLER TIMING AS WELL AS COORDINATION SETTINGS AND TIME OF DAY PLANS. IT SHALL BE POSSIBLE TO DOWNLOAD ALL SETTINGS TO ALL INTERSECTIONS IN A SUBSYSTEM OR SELECT ANY/ALL PARAMETERS TO ANY INDIVIDUAL INTERSECTION. ALSO, UPON COMMAND IT SHALL BE POSSIBLE TO UPLOAD ALL THE INFORMATION MENTIONED ABOVE FROM EACH LOCAL INTERSECTION TO THE CENTRAL FACILITY.

IT SHALL ALSO BE POSSIBLE TO DOWNLOAD/UPLOAD ALL MASTER SETTINGS BETWEEN THE CENTRAL AND MASTER.

UPON COMMAND FROM THE ON-STREET MASTER IT SHALL BE POSSIBLE TO DOWNLOAD ALL MASTER SETTINGS FROM THE CENTRAL. THIS DOWNLOAD SHALL BE POSSIBLE EVEN WHEN THE CENTRAL IS UNATTENDED.

IT SHALL BE POSSIBLE TO COMPARE AN UPLOADED LOCAL INTERSECTION DATA BASE WITH A PREVIOUSLY DEVELOPED DATA BASE STORED IN THE CENTRAL OFFICE MONITOR'S MEMORY. DIFFERENCES IN THE DATA BASES SHALL BE REPORTED.