

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 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. IN THE CASE OF A 332/336 CABINET TYPE, THE CONTROLLER WILL BE PROVIDED WITH THE POWER CORD.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROGRAMMING THE CONTROLLER TO THE PROPOSED CONDITIONS ACCORDING TO THE PLANS. ODOT WILL NOT BE RESPONSIBLE FOR THE PROGRAMMING.

THE CONTROLLER SHALL BE LISTED ON THE TAP AND BE AN ECONOLITE COBALT AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

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

ITEM 631 SCHOOL SPEED LIMIT SIGN ASSEMBLY, 30" X 60", AS PER PLAN

THIS ITEM SHALL INCLUDE A S5-H1 30"x60" SCHOOL SIGN, TWO FORWARD FACING 12" AMBER LED BEACONS MOUNTED ABOVE AND BELOW THE SCHOOL SIGN, AND ONE REAR FACING 12" AMBER LED BEACON MOUNTED ON THE OPPOSITE SIDE OF THE MAST ARM BEHIND TOP FORWARD FACING BEACON. THIS ASSEMBLY SHALL BE INSTALLED ON THE MAST ARM AND BE LOCATED ABOVE THE LANE LINE. THIS ITEM SHALL INCLUDE ALL MOUNTING EQUIPMENT FOR THE ABOVE ITEMS AND REQUIRED WIRING FROM THE TIMER ENCLOSURE TO THE MAST ARM MOUNTED SCHOOL SPEED LIMIT SIGN ASSEMBLY.

ITEM 631 TIMER WITH ENCLOSURE, AS PER PLAN (INSTALL ONLY)

THIS ITEM SHALL CONSIST OF THE INSTALLATION OF CABINET, TIMER AND SCHOOL ZONE TIMER EQUIPMENT TO BE PROVIDED BY THE DEPARTMENT. THE CABINET SHALL BE POLE MOUNTED ON THE SIGNAL SUPPORT PER TC -83.10.

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 MEET WITH 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 SUPPORT POLES.

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.

ITEM 632 SIGNAL SUPPORT FOUNDATION, AS PER PLAN

SAN-20-2.86:

CONSTRUCT THE SIGNAL FOUNDATION PER CMS 632.14 AND TC-21.21, EXCEPT USE THE FOLLOWING PROCEDURE. USE DESIGN NUMBER 7 SIGNAL SUPPORTS 1 & 2. CONSTRUCT THE SUPPORT TO A DEPTH AS SPECIFIED IN TC-21.21. USE A CASING TO THE DEPTH SPECIFIED AUGERING THE EXISTING SOIL FOR THE SIGNAL SUPPORT FOUNDATION. IT IS IMPORTANT THAT THE CONTRACTOR BEGINS REMOVAL OF THE TEMPORARY CASING WHILE THE CONCRETE REMAINS WORKABLE. FAILURE TO REMOVE THE CASING COULD RESULT IN A DRILLED SHAFT THAT IS NOT CAPABLE OF SUPPORTING THE DESIGN LOAD.

WHEN THE CASING IS BEING WITHDRAWN, THERE IS THE POSSIBILITY THAT FLUID THAT MIGHT BE TRAPPED BEHIND THE CASING WILL CONTAMINATE THE CONCRETE. TO PREVENT THIS, IT IS IMPORTANT TO MAINTAIN A HEAD OF CONCRETE AT LEAST 5 FOOT (1.5 METER) IN THE CASING. THIS MINIMUM HEAD MAY NEED TO BE INCREASED TO COUNTERACT ANY GROUND HEAD THAT MIGHT BE IN THE CASING AT THE TIME IT IS WITHDRAWN. CASING SHOULD BE REMOVED BY PULLING AT A SLOW UNIFORM RATE. HOWEVER, IF THE CASING GETS STUCK, THE CONTRACTOR MAY ROTATE, VIBRATE, OR TAP THE CASING TO FACILITATE EXTRACTION. ROTATING THE CASING MAY TWIST THE REINFORCING CAGE, SO ONLY ROTATE THE CASING ENOUGH TO GET IT UNSTUCK.

WOO-795-2.39 STA 126+98.41, 28.49' LT:

FOLLOW ALL REQUIREMENTS OF TC-21.21 EXCEPT THE FOLLOWING:

REVISIONS TO PLAN NOTE 8: THE LENGTH WAS ALREADY ADJUSTED FOR THE EXISTING SLOPE IN THIS NOTE. SET THE TOP OF THE FOUNDATION 2 INCHES ABOVE THE EXISTING SURFACE ON THE HIGH SIDE OF THE SLOPE. THE MINIMUM 8 INCH FORM DEPTH WILL NEED TO BE ADJUSTED IN THE FIELD BY THE CONTRACTOR TO ACCOMMODATE THE LOW SIDE OF THE SLOPE. THE BURIED DEPTH OF THE FORM SHALL BE A MINIMUM OF 8 INCHES BELOW THE GROUND SURFACE AT THE TIME OF POURING THE FOUNDATION.

D(FEET) = 16

DESIGN AGENCY



DESIGNER
DEK

REVIEWER
JJM

PROJECT ID
105705

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ITEM 614 MAINTAINING TRAFFIC

IN ADDITION TO ITEM 614 MAINTAINING TRAFFIC, IN THE CONSTRUCTION AND MATERIAL SPECIFICATIONS HANDBOOK, THE FOLLOWING SHALL APPLY:

THE CONSTRUCTION WORK NOTED HEREIN SHALL BE PERFORMED WHILE TRAFFIC IS MAINTAINED. THE MAINTENANCE OF TRAFFIC SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO TRAFFIC CONTROL ASSISTANCE OTHER THAN TECHNICAL GUIDANCE WILL BE PROVIDED BY THE STATE. ALL PROPOSED WORK SHALL BE PERFORMED ON THE SHOULDER IF POSSIBLE.

THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE TRAFFIC CONTROL IN ACCORDANCE WITH THE "OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" FOR STREETS AND HIGHWAYS (OMUTCD).

THE CONTRACTOR SHALL NOTIFY THE ENGINEER, THE RESPONSIBLE SAFETY ENFORCEMENT AGENCIES, AND THE OHIO DEPARTMENT OF TRANSPORTATION, DISTRICT 2 PUBLIC INFORMATION OFFICER, (419) 373-4428 NOT LESS THAN 24 HOURS PRIOR TO A SCHEDULED DISRUPTION OF TRAFFIC.

THE CONTRACTOR SHALL NOTIFY THE ODOT PERMIT OFFICE 14 DAYS PRIOR TO ANY MAINLINE TRAFFIC STOPPAGE (419-373-4414).

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH C&MS 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR ITEM 614, MAINTAINING TRAFFIC.

W00-795-2.39

IT IS ANTICIPATED THAT MOST WORK WILL BE PERFORMED WITH SHOULDER CLOSURES. IF A LANE CLOSURE IS REQUIRED, THEN A MINIMUM OF 2 THROUGH LANES, ALL TURN LANES, AND ALL RAMP LANES SHALL BE OPEN TO TRAFFIC FROM 6:30AM TO 8:30AM & 3:00PM TO 6:00PM DAILY MONDAY THROUGH FRIDAY.

HOLIDAY CLOSURES

NO WORK SHALL BE PERFORMED AND ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC DURING THE FOLLOWING DESIGNATED HOLIDAYS OR EVENTS:

CHRISTMAS	NEW YEARS
EASTER	MEMORIAL DAY
FOURTH OF JULY	LABOR DAY
THANKSGIVING	

THE PERIOD OF TIME THAT THE LANES ARE TO BE OPEN DEPENDS ON THE DAY OF THE WEEK ON WHICH THE HOLIDAY OR EVENT FALLS. THE FOLLOWING SCHEDULE SHALL BE USED TO DETERMINE THIS PERIOD:

DAY OF THE WEEK	TIME ALL LANES MUST BE OPEN TO TRAFFIC
SUNDAY	12:00 PM FRIDAY THROUGH 12:00 PM MONDAY
MONDAY	12:00 PM FRIDAY THROUGH 12:00 PM TUESDAY
TUESDAY	12:00 PM MONDAY THROUGH 12:00 PM WEDNESDAY
WEDNESDAY	12:00 PM TUESDAY THROUGH 12:00 PM THURSDAY
THURSDAY	12:00 PM WEDNESDAY THROUGH 12:00 PM MONDAY
FRIDAY	12:00 PM THURSDAY THROUGH 12:00 PM MONDAY
SATURDAY	12:00 PM FRIDAY THROUGH 12:00 PM MONDAY

NO EXTENSIONS OF TIME SHALL BE GRANTED FOR DELAYS IN MATERIAL DELIVERIES, UNLESS SUCH DELAYS ARE INDUSTRYWIDE, OR FOR LABOR STRIKES, UNLESS SUCH STRIKES ARE AREA WIDE.

SHOULD THE CONTRACTOR FAIL TO MEET ANY OF THESE REQUIREMENTS, THE CONTRACTOR SHALL BE ASSESSED LIQUIDATED DAMAGES IN ACCORDANCE WITH 108.07.

ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE DURING CONSTRUCTION OPERATIONS

USE OF LAW ENFORCEMENT OFFICERS (LEOS) BY CONTRACTORS OTHER THAN THE USES SPECIFIED BELOW WILL NOT BE PERMITTED AT PROJECT COST. LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED.

IN ADDITION TO THE REQUIREMENTS OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHALL BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS:

DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED.

DURING A TRAFFIC SIGNAL INSTALLATION WHEN IMPACTING THE NORMAL FUNCTION OF THE SIGNAL OR THE FLOW OF TRAFFIC, OR WHEN TRAFFIC NEEDS TO BE DIRECTED THROUGH AN ENERGIZED TRAFFIC SIGNAL CONTRARY TO THE SIGNAL DISPLAY (E.G., DIRECTING MOTORISTS THROUGH A RED LIGHT).

IN ADDITION TO THE REQUIREMENT OF C&MS 614 AND THE OMUTCD, A UNIFORMED LEO WITH AN OFFICIAL PATROL CAR (CAR WITH TOP-MOUNTED EMERGENCY FLASHING LIGHTS AND COMPLETE MARKINGS OF THE APPROPRIATE LAW ENFORCEMENT AGENCY) SHOULD BE PROVIDED FOR THE FOLLOWING TRAFFIC CONTROL TASKS AS APPROVED BY THE ENGINEER:

FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT OR WHEN NEW LANE CLOSURE ARRANGEMENTS ARE INITIATED FOR LONG-TERM LANE CLOSURES/SHIFTS (FOR THE FIRST AND LAST DAY OF MAJOR CHANGES IN TRAFFIC CONTROL SETUP).

FOR OPERATIONS WITHOUT POSITIVE PROTECTION OCCURRING WITHIN 10 FEET OF AN OPEN TRAVELED LANE THAT MEET ALL OF THE FOLLOWING CRITERIA: ON A MULTI-LANE DIVIDED INTERSTATE, OTHER FREEWAY OR EXPRESSWAY; AND AN AUTHORIZED SPEED LIMIT OF 45 MPH OR GREATER THAT IS IN EFFECT AT THE TIME OF THE OPERATION; AND, AADT OF 50,000 (OR AADT OF 30,000 WITH 25% OR HIGHER PERCENT TRUCKS)

"WITHOUT POSITIVE PROTECTION" MEANS USE OF DRUMS, CONES, SHADOW VEHICLE, ETC. WITHOUT PROTECTION FROM PORTABLE BARRIER OR OTHER RIGID BARRIER ALONG THE WORK AREA. THIS PHRASE DOES NOT APPLY TO CASES WHERE POSITIVE PROTECTION IS REQUIRED. MOBILE OPERATIONS ARE REGARDED AS "WITHOUT POSITIVE PROTECTION". FOR WORK ZONES USING A COMBINATION OF BARRIER AND TEMPORARY TRAFFIC CONTROL DEVICES (CONES, DRUMS, ETC), THE DESIGNATION SHALL BE BASED UPON THE TYPE OF DEVICES USED IN THE AREA THAT WORKERS ARE LOCATED.

IF MULTIPLE ACTIVE LOCALIZED QUALIFYING WORK AREAS OCCUR WITHOUT POSITIVE PROTECTION, PER MAINLINE TRAFFIC DIRECTION, PROVIDE A UNIFORMED LEO AND OFFICIAL PATROL CAR IN ADVANCE OF: THE FIRST ACTIVE WORK AREA THAT DRIVERS WILL ENCOUNTER; OR THE ACTIVE WORK AREA LATERALLY CLOSEST TO THE OPEN TRAVELED LANE; OR OTHER LOCATION AS APPROVED BY THE ENGINEER. THE UNIFORMED LEO AND OFFICIAL PATROL CAR MAY RELOCATE AMONG THE LISTED LOCATIONS AS APPROPRIATE AS THE OPERATIONS PROCEED IN THE LOCALIZED QUALIFYING WORK AREAS.

IN GENERAL, LEOS SHOULD BE POSITIONED IN ADVANCE OF AND ON THE SAME SIDE AS THE LANE RESTRICTION (OR AT THE POINT OF ROAD CLOSURE), AND TO MANUALLY CONTROL TRAFFIC MOVEMENTS THROUGH SIGNALIZED INTERSECTIONS IN WORK ZONES.

LEOS SHOULD NOT FORGO THEIR TRAFFIC CONTROL RESPONSIBILITIES TO APPREHEND MOTORISTS FOR ROUTINE TRAFFIC VIOLATIONS. HOWEVER, IF A MOTORIST'S ACTIONS ARE CONSIDERED TO BE RECKLESS, THEN PURSUIT OF THE MOTORIST IS APPROPRIATE.

THE LEOS WORK AT THE DIRECTION OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE SERVICES OF THE LEOS WITH THE APPROPRIATE AGENCIES AND COMMUNICATING THE INTENTIONS OF THE PLANS WITH RESPECT TO DUTIES OF THE LEOS. THE ENGINEER SHALL HAVE FINAL CONTROL OVER THE LEOS' DUTIES AND PLACEMENT, AND WILL RESOLVE ANY ISSUES THAT MAY ARISE BETWEEN THE TWO PARTIES.

ENSURE PROVIDED LEOS HAVE BEEN TRAINED APPROPRIATE TO THE JOB DECISIONS THEY ARE REQUIRED TO MAKE WHILE ON THE PROJECT, IN ACCORDANCE WITH C&MS 614.03.

THE LEO SHALL REPORT IN TO THE CONTRACTOR PRIOR TO THE START OF THE SHIFT, IN ORDER TO RECEIVE INSTRUCTIONS REGARDING SPECIFIC WORK ASSIGNMENTS DURING HIS/HER SHIFT. THE LEO IS EXPECTED TO STAY AT THE PROJECT SITE FOR THE ENTIRE DURATION OF HIS/HER SHIFT. THE LEO SHALL REPORT TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT. SHOULD IT BE NECESSARY TO LEAVE THE PROJECT SITE, THE LEO SHALL NOTIFY THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE LEO WITH A TWO-WAY COMMUNICATION DEVICE THAT SHALL BE RETURNED TO THE CONTRACTOR AT THE END OF HIS/HER SHIFT.

LEOS (WITH PATROL CAR) REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614, LAW ENFORCEMENT OFFICER (WITH PATROL CAR) FOR ASSISTANCE. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY.

ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE 40 HOURS

THE HOURS PAID SHALL INCLUDE ANY MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED.

ANY ADDITIONAL COSTS (ADMINISTRATIVE OR OTHERWISE) INCURRED BY THE CONTRACTOR TO OBTAIN THE SERVICES OF A LEO ARE INCLUDED WITH THE BID UNIT PRICE FOR ITEM 614, LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE.

THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH:

WOOD COUNTY

STATE HIGHWAY PATROL 12891 MIDDLETON PIKE BOWLING GREEN, OH 43402 419-373-6803	WOOD COUNTY SHERIFF 1960 EAST GYPSY LANE ROAD BOWLING GREEN, OH 43402 419-354-9001
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SANDUSKY COUNTY

STATE HIGHWAY PATROL 511 FREMONT AVE. SANDUSKY, OH 44870 419-865-5544	SANDUSKY COUNTY SHERIFF 2323 COUNTRYSIDE DR. FREMONT, OH 43420 419-332-2613
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ITEM 614, MAINTAINING TRAFFIC (LANE CLOSURE/ REDUCTION REQUIRED)

LENGTH AND DURATION OF LANE CLOSURES AND RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. IT IS THE INTENT TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

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 AN 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 OR REUSED SIGNAL/FLASHER 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 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.

DESIGN AGENCY
DESIGNER
DEK
REVIEWER
JJM
PROJECT ID
105705
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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 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 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 7AM TO 7PM. 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.

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 CREWS 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.

NOTIFICATION OF TRAFFIC RESTRICTIONS

THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING OF ALL TRAFFIC RESTRICTIONS AND UPCOMING MAINTENANCE OF TRAFFIC CHANGES. THE CONTRACTOR SHALL ENSURE THE WRITTEN NOTIFICATION IS SUBMITTED IN A TIMELY MANNER TO ALLOW THE PROJECT ENGINEER TO MEET THE REQUIRED TIME FRAMES SET FORTH IN THE TABLE BELOW TO INFORM THE SPECIAL HAULING PERMITS SECTION (HAULING.PERMITS@DOT.OHIO.GOV) AND THE DISTRICT PUBLIC INFORMATION OFFICE (PIO). THIS NOTIFICATION SHALL BE RECEIVED BY THE PROJECT ENGINEER PRIOR TO THE PHYSICAL SETUP OF ANY APPLICABLE SIGNS OR MESSAGE BOARDS.

INFORMATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, ALL CONSTRUCTION ACTIVITIES THAT IMPACT OR INTERFERE WITH TRAFFIC AND SHALL LIST THE SPECIFIC LOCATION, TYPE OF WORK, ROAD STATUS, DATE AND TIME OF RESTRICTION, DURATION OF RESTRICTION, NUMBER OF LANES MAINTAINED, NUMBER OF LANES CLOSED, MINIMUM VERTICAL CLEARANCE, MINIMUM WIDTH OF DRIVABLE PAVEMENT, DETOUR ROUTES, IF APPLICABLE, AND ANY OTHER INFORMATION REQUESTED BY THE PROJECT ENGINEER.

NOTIFICATION OF TRAFFIC RESTRICTIONS TIME TABLE
ITEM DURATION OF NOTICE DUE TO
CLOSURE PERMITS & PIO

RAMP & >= 2 WEEKS 21 CALENDAR DAYS
ROAD CLOSURES PRIOR TO CLOSURE

> 12 HOURS 14 CALENDAR DAYS
& < 2 WEEKS PRIOR TO CLOSURE

<= 12 HOURS 4 CALENDAR DAYS
PRIOR TO CLOSURE

LANE >= 2 WEEKS 14 CALENDAR DAYS
CLOSURES & PRIOR TO CLOSURE
RESTRICTIONS
< 2 WEEKS 5 BUSINESS DAYS
PRIOR TO CLOSURE

START OF N/A 14 CALENDAR DAYS
CONSTRUCTION & PRIOR TO
TRAFFIC PATTERN IMPLEMENTATION
CHANGES

ANY UNFORESEEN CONDITIONS NOT SPECIFIED IN THE PLANS REQUIRING TRAFFIC RESTRICTIONS SHALL ALSO BE REPORTED TO THE PROJECT ENGINEER USING THE NOTIFICATION TIME TABLE.

DESIGN AGENCY



DESIGNER

DEK

REVIEWER

JJM

PROJECT ID

105705

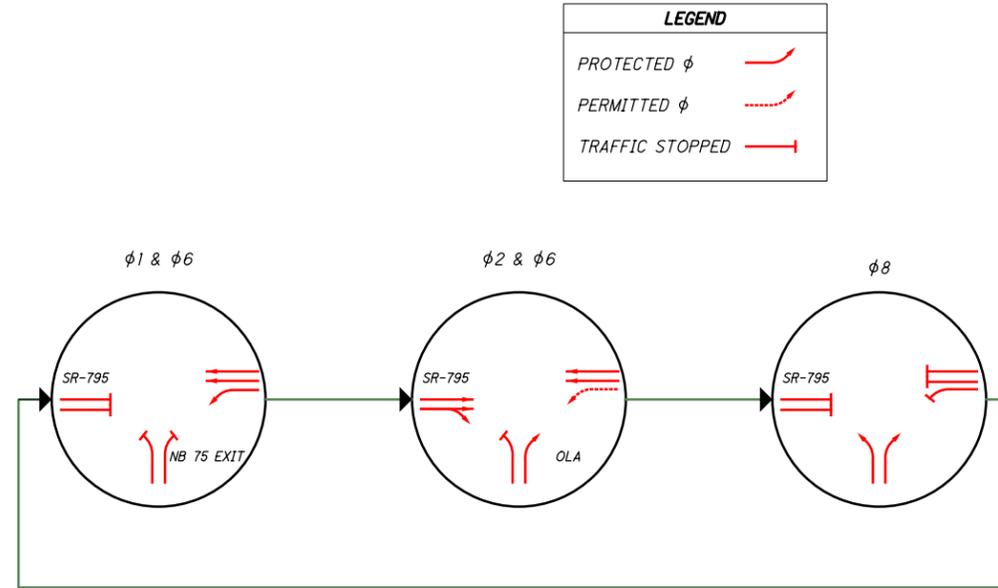
SHEET TOTAL

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SIGNAL TIMING CHART (TEM FORM 496-3)

INTERSECTION: WOO-795 & I-75 E (NB Ramps)									
MAINTAINING AGENCY:									
START UP		DUAL ENTRY: YES		PHASES: 2 & 6					
START IN: ALL-RED FLASH		REST IN RED:		RING 1 -		RING 2 -			
TIME FOR: FLASH, ALL RED (SEC.): 9, 6		OVERLAP		A	B	C	D		
FIRST PHASE(S): 2 & 6		PHASES		NBR 1	-	-	-		
COLOR DISPLAYED: GREEN				& 8					
INTERVAL OR FEATURE		CONTROLLER MOVEMENT NO.							
INTERSECTION MOVEMENT (PHASE)		1	2	3	4	5	6	7	8
DIRECTION		7	20	-	-	-	20	-	10
MINIMUM GREEN (INITIAL) (SEC.)		-	-	-	-	-	-	-	-
ADDED INITIAL *(SEC./ACTUATION)		-	-	-	-	-	-	-	-
MAXIMUM INITIAL *(SEC.)		-	-	-	-	-	-	-	-
PASSAGE TIME (PRESET GAP) (SEC.)		3	3	-	-	-	3	-	3
TIME BEFORE REDUCTION *(SEC.)		-	-	-	-	-	-	-	-
MINIMUM GAP *(SEC.)		-	-	-	-	-	-	-	-
TIME TO REDUCE *(SEC.)		-	-	-	-	-	-	-	-
MAXIMUM GREEN I (SEC.)		20	60	-	-	-	60	-	30
MAXIMUM GREEN II (SEC.)		20	60	-	-	-	60	-	30
YELLOW CHANGE (SEC.)		5	6	-	-	-	6	-	3.8
ALL RED CLEARANCE (SEC.)		1.4	1	-	-	-	1	-	1.7
DELAYED GREEN (LPI) (SEC.)		-	-	-	-	-	-	-	-
FLASHING YELLOW ARROW DELAY (SEC.)		-	-	-	-	-	-	-	-
WALK (SEC.)		-	-	-	-	-	-	-	-
PEDESTRIAN CLEARANCE (SEC.)		-	-	-	-	-	-	-	-
RECALL	MAXIMUM (ON/OFF)	NO	NO	-	-	-	NO	-	NO
	MINIMUM (ON/OFF)	NO	YES	-	-	-	YES	-	NO
	PEDESTRIAN (ON/OFF)	-	-	-	-	-	-	-	-
MEMORY (ON/OFF)		NO	NO	-	-	-	NO	-	NO

PHASING DIAGRAM (TYPICAL)



RADAR DETECTION CHART

Radar Detection Chart

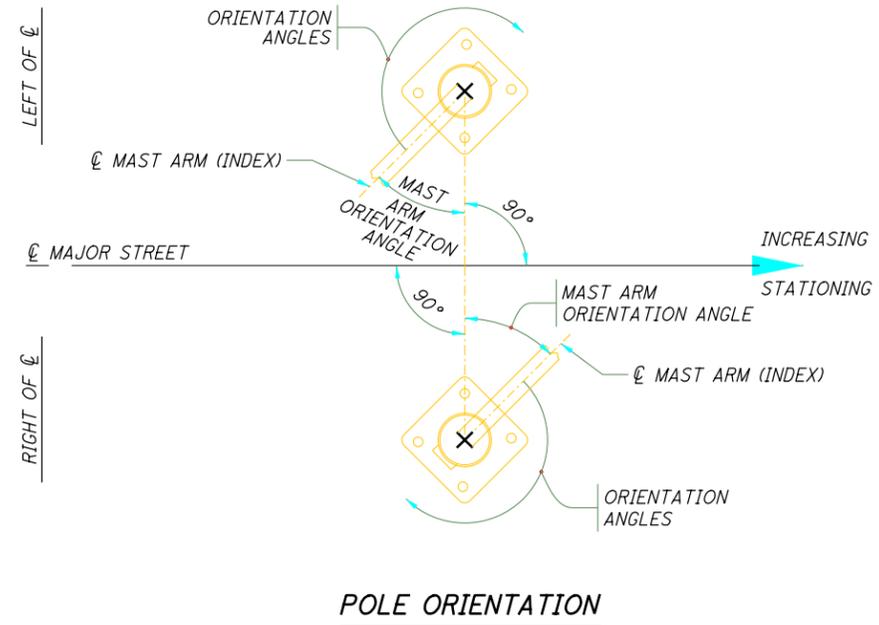
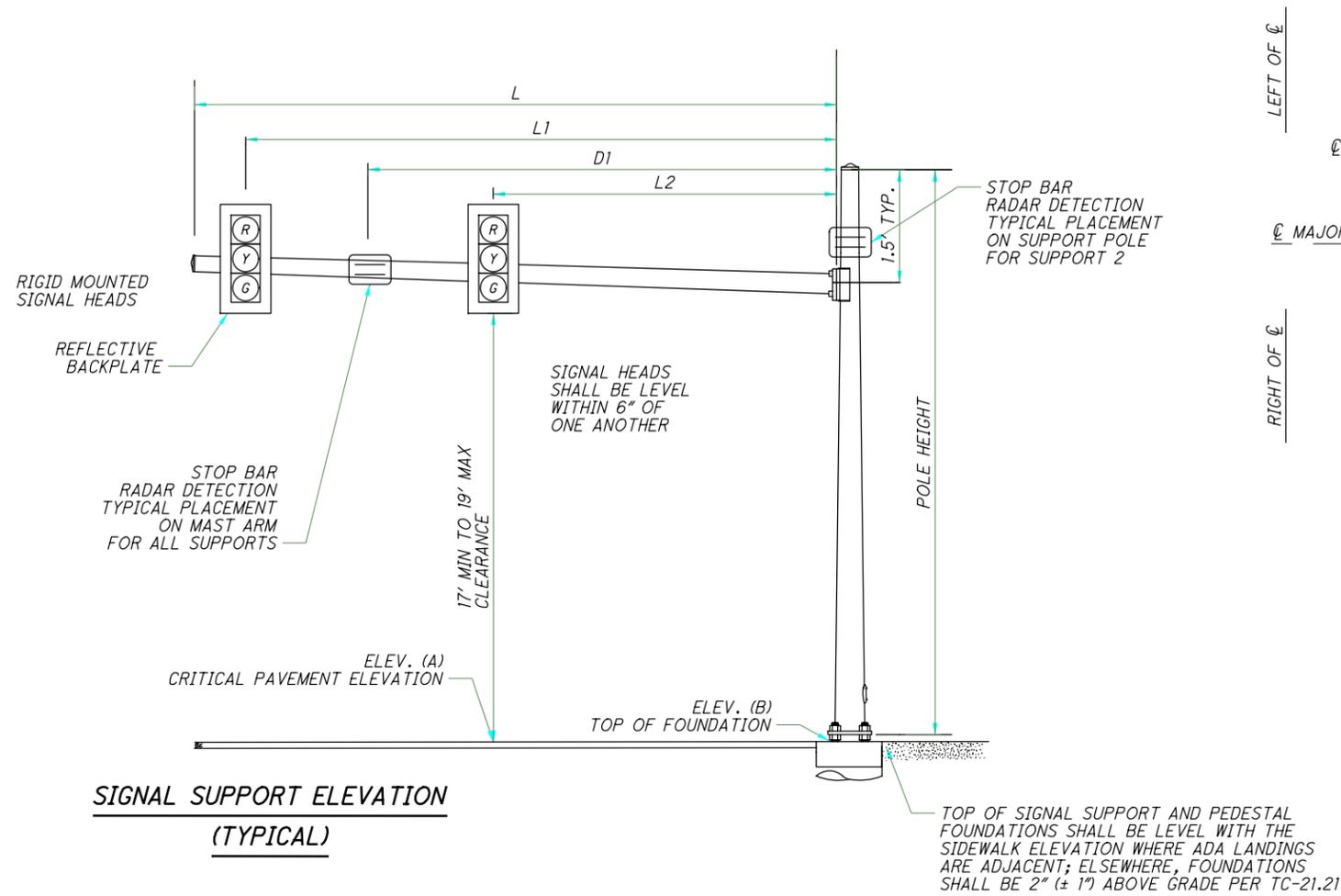
DETECTION ZONE	MOVEMENT	PULSE OR PRESENCE	ASSOCIATED PHASE	DELAY PROGRAMMED IN CONTROLLER (SEC.)	EXTENSION PROGRAMMED IN CONTROLLER (SEC.)	DETECTOR NO.	PURPOSE	DETECTION ZONE LENGTH (FT)
1A	WB LEFT	PRESENCE	1	0	0	0	CALL/EXTEND PHASE 1	50
2A	EB THRU	PRESENCE	2	0	0	0	EXTEND PHASE 2	700
6A	WB THRU	PRESENCE	6	0	0	0	EXTEND PHASE 6	700
8A	NB LEFT/RIGHT	PRESENCE	8	0	0	0	CALL/EXTEND PHASE 8	50

Note: Advance/Dilemma Zone Speed Threshold: 30 MPH
 Purpose: Stop-Line or Advance Detection

NOTES:

- ALL MOVEMENTS SHALL BE ACTUATED. THE PRIMARY THRU MOVEMENT SHOULD HAVE MIN RECALL ACTIVE TO REST IN GREEN.
- RADAR DETECTION UNITS FOR DILEMMA ZONE DETECTION SHALL PLACE A CONSTANT CALL TO THE CONTROLLER WHEN VEHICLES TRAVEL TIMES TO THE STOP BAR ARE BETWEEN 2.5 AND 6 SECONDS. SPEED TRIGGER SHALL BE SET FOR VEHICLES TRAVELING 35 MPH AND GREATER.
- RADAR SHALL HAVE QUEUE DETECTION CONFIGURED AND A ZONE PLACED AT 100-200 FEET FROM STOP BAR FOR SLOW MOVING VEHICLE EXTENSIONS. SPEED TRIGGER SHALL BE SET AT 1-35 MPH.
- ALL DETECTOR DELAYS SHALL BE PLACED IN THE CONTROLLER.

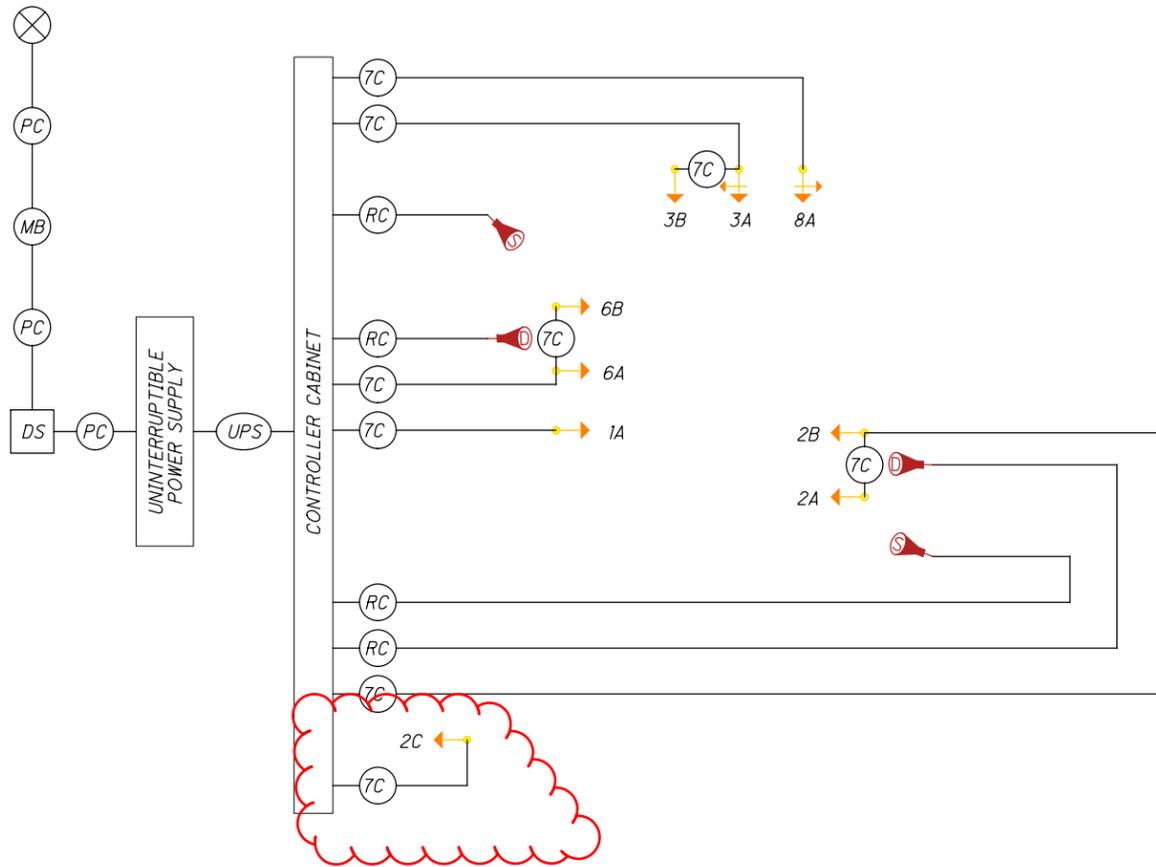




MAST ARM TABLE (TEM FIGURE 498-37 & 38)

TEM Fig. 498-37: Plan Details for Signal Supports - Arm Lengths												TEM Fig. 498-38: Plan Details for Signal Supports - Mast Arm Orientation												
SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS							ORIENTATION ANGLES FROM MAST ARM A												
			A (Pavt. Elev.)	B (Top of Found.)	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	D1	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN PUSHBUTTON	POWER SERVICE	SIGNAL CABINET	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP		
							FT	FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	
SP-1	127+74.30	79.54' RT.	643.25	642.7	TC-81.22	12	22	20.5	47	44	32	-	38	0	-	-	-	-	-	-	-	-	180	-
SP-2 A	126+98.41	28.49' LT.	645.47	642.86	TC-12.31	12	24	22.5	47	44	32	20	26	0	-	-	-	-	-	-	-	-	180	-
SP-2 B	126+98.42	28.49' LT.	645.47	642.86	TC-12.31	4	24	22.5	35	32	24	14	-	-	270	-	-	-	-	-	-	-	-	-

WIRING DIAGRAM (TYPICAL)

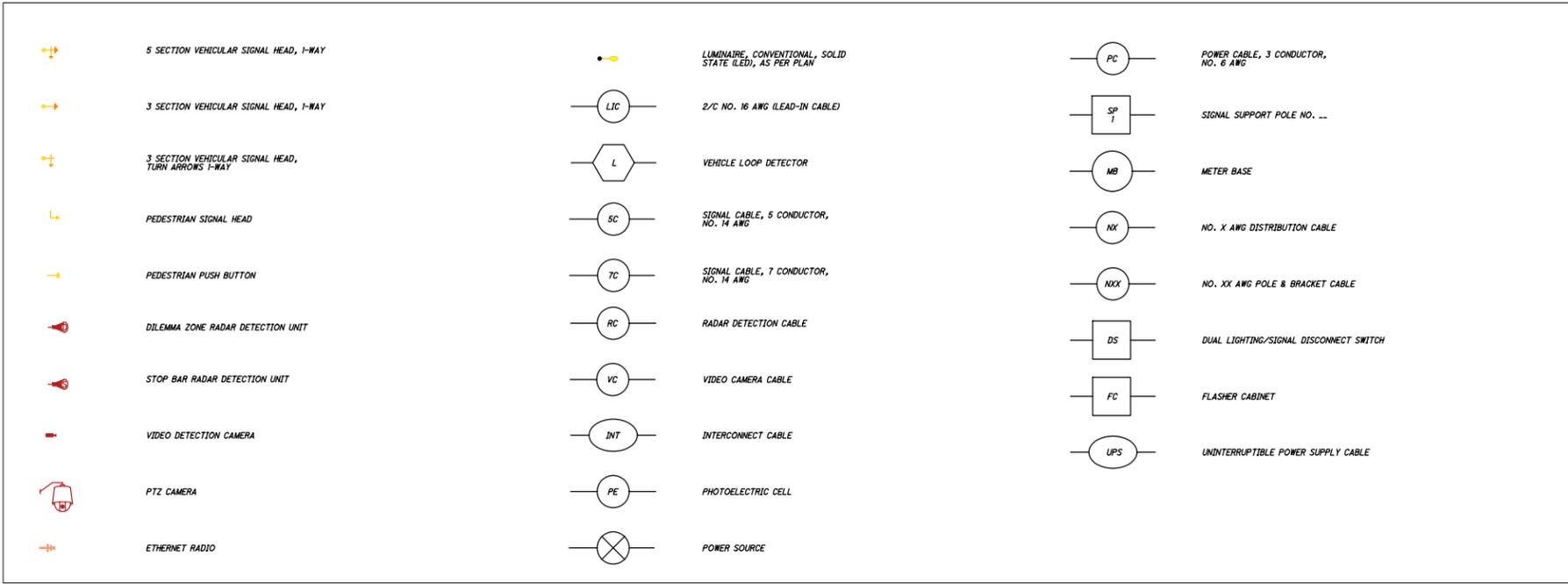


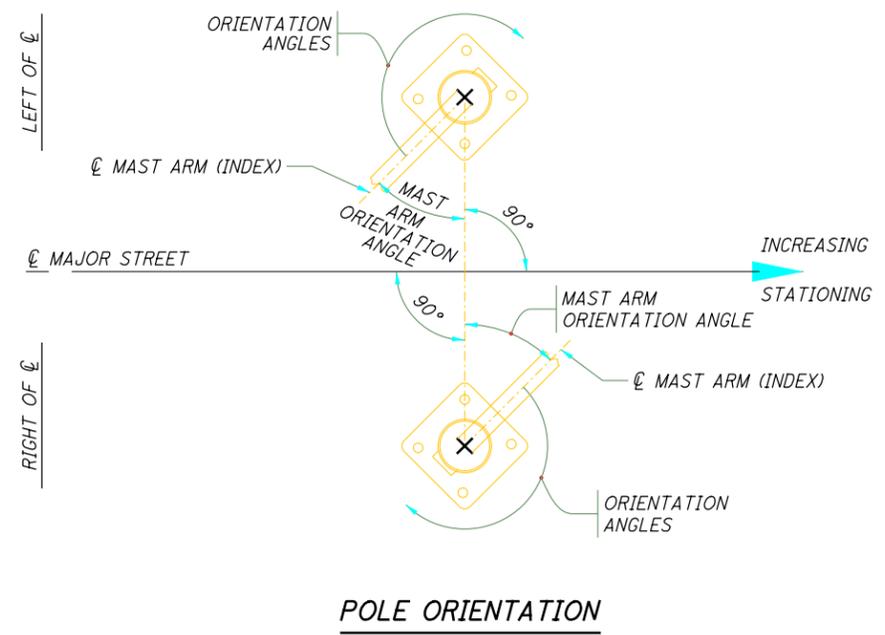
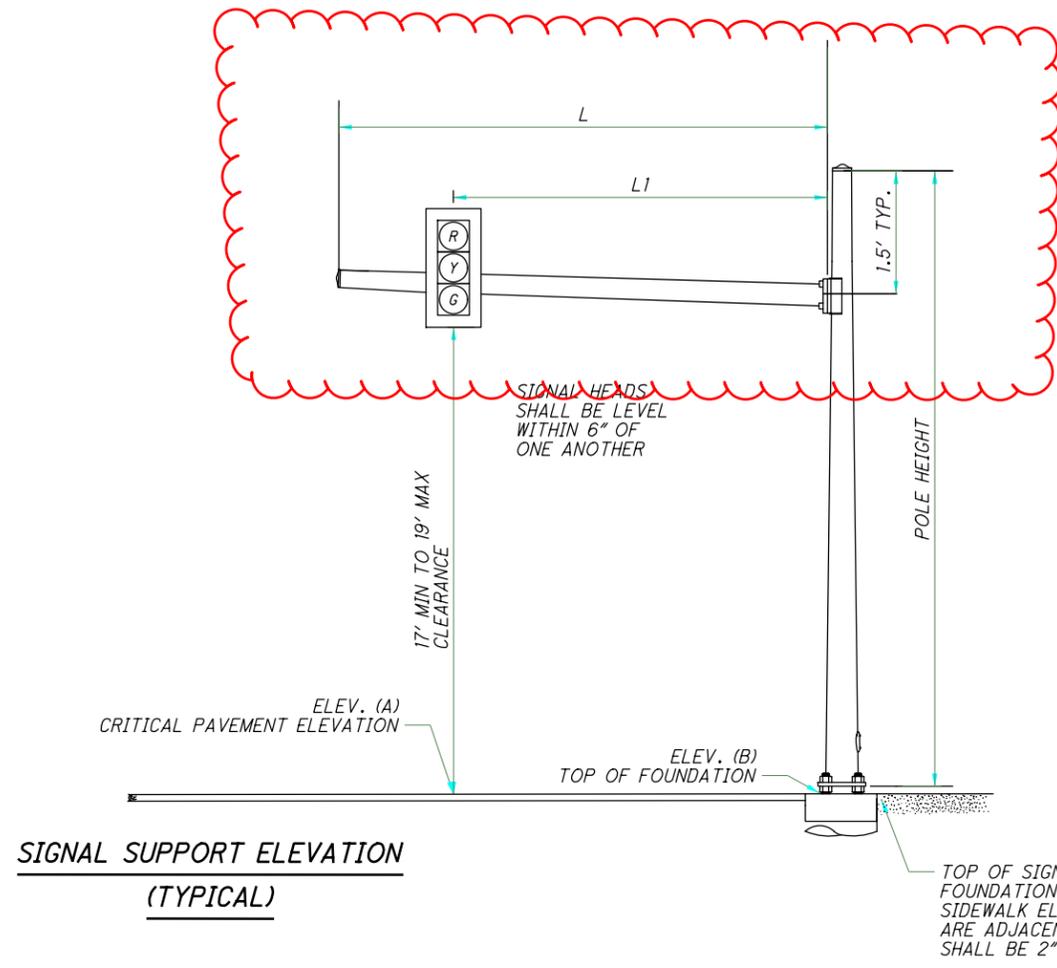
FIELD WIRING HOOK-UP CHART (TEM FORM 496-16)

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1A (WB LT)	R	6R	R	-	-	-	-
	Y	6Y		-	-	-	
	G	6G		-	-	-	
	<--Y---	1Y		-	-	-	
2A, B (EB)	R	2R	R	-	-	-	-
	Y	2Y		-	-	-	
	G	2G		-	-	-	
	-	-		-	-	-	
3A (NB LT)	R	8R	R	-	-	-	-
	Y	8Y		-	-	-	
	G	8G		-	-	-	
	<--Y---	3Y		-	-	-	
3B (NB LT)	<--R--	3R	R	-	-	-	-
	<--Y---	3Y		-	-	-	
	<--G---	3G		-	-	-	
8A (NB RT)	R	8R	R	-	-	-	-
	Y	8Y		-	-	-	
	G	8G		-	-	-	
	---Y-->	3Y		-	-	-	
6A WB	R	6R	R	OLA	---Y-->	8Y	OUT
	Y	6Y		-	---G-->	8G	
	G	6G		-	-	-	
LS = LOAD SWITCH				-	-	-	-

PEDESTRIAN MOVEMENTS

OVERLAPS





MAST ARM TABLE (TEM FIGURE 498-37 & 38)

TEM Fig. 498-37: Plan Details for Signal Supports - Arm Lengths													TEM Fig. 498-38: Plan Details for Signal Supports - Mast Arm Orientation									
SUPPORT NO.	STATION	OFFSET	ELEVATION		SIGNAL SUPPORT DETAILS								ORIENTATION ANGLES FROM MAST ARM A									
			A (Pavt. Elev.)	B (Top of Found.)	DESIGN TYPE	DESIGN NO.	POLE HEIGHT	ARM HEIGHT	L	L1	L2	L3	D1	MAST ARM A ANGLE	MAST ARM B ANGLE	PEDESTRIAN SIGNAL	PEDESTRIAN PUSHBUTTON	POWER SERVICE	SIGNAL CABINET	BRACKET ARM	HANDHOLE	CABLE ENTRANCE 12" FROM TOP
							FT	FT	FT	FT	FT	FT	FT	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG	DEG
SP-1	151+30.93	49.23' RT	636.1	636.57	TC-81.22	12	21.5	20	41	37	-	-	-	0	-	-	-	-	-	-	-	-
SP-2	153+80.37	30.66' LT	635.9	636.32	TC-81.22	2	21.5	20	21	17	-	-	-	0	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-