

809 ADVANCE RADAR DETECTION, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A WAVETRONIX SMARTSENSOR ADVANCE 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 CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION, AS PER PLAN 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-LINE RADAR DETECTION, AS PER PLAN

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. EACH UNIT IS TO USE 3 BANDS TO ATTACH UNITS PER MANUFACTURERS RECOMMENDATIONS.
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 CABINET TO PROTECT THE CABINET ELECTRONICS.
5. THE MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE DURING INSTALLATION AND TESTING AND SHALL PROVIDE ONSITE TRAINING ON THE SETUP, OPERATION AND MAINTENANCE OF THE UNIT.
6. A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
7. THE POWER SUPPLY AND COMMUNICATION MODULES SHALL BE SECURED TO A SINGLE PANEL THAT CAN BE MOUNTED INTERIOR TO THE TRAFFIC CABINET. THE PANEL SHALL INCLUDE MODULAR-PLUG STYLE CONNECTIONS FOR UP TO FOUR (4) SENSOR CABLES. ADDITIONAL SENSORS MAY BE HARD-WIRED TO THE COMMUNICATION MODULES, AS NECESSARY.
8. THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
9. THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.

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

ITEM 632 - POWER SERVICE, AS PER PLAN

THE POWER SUPPLYING AGENCY FOR THIS PROJECT IS:

SOUTH CENTRAL POWER COMPANY
2780 COONPATH ROAD NE
LANCASTER, OH 43130
PHONE: (800) 282-5064
CONTACT: MICHAEL CONRAD

THE CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. A MINIMUM OF THREE MONTHS NOTICE SHALL BE GIVEN TO THE POWER COMPANY FOR NEW INSTALLATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK-UP.

UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE SERVICE CABLE INTO THE POWER COMPANY'S CIRCUITS.

THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES ASSOCIATED WITH THE SERVICE. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNALS AND LIGHTING SYSTEM IS ACCEPTED BY ODOT.

IF THE PROPOSED POWER SERVICE LOCATION SHOWN IN THE PLANS IS NOT FEASIBLE THEN THE CONTRACTOR SHALL MOVE THE POWER SERVICE LOCATION AT THE APPROVAL OF THE ENGINEER. ITEMIZED QUANTITIES SHALL BE ADJUSTED.

PADLOCKS FURNISHED SHALL BE EITHER BRASS OR BRONZE, EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660A, AND KEYING SHALL BE TO THE ODOT MASTER.

THE CONTRACTOR SHALL INSTALL A POWER SERVICE CONFORMING TO SCD TC-83.10. THE PHOTO-CELL SHALL BE MOUNTED 10 FEET ABOVE THE NEAREST EDGE OF PAVEMENT ELEVATION. THE POWER SERVICE SHALL BE A MINIMUM OF 60 AMP SERVICE. PROVIDE SEPARATE DISCONNECTS FOR THE 120/240V LIGHTING CIRCUIT, AS WELL AS THE 120/240V TRAFFIC SIGNALS.

PAYMENT SHALL BE MADE AT THE UNIT PRICE BID FOR THE POWER SERVICE, COMPLETE AND IN PLACE, INCLUDING, PHOTO-CELL, CONDUIT RISER, ALL CABLE, CONDUIT, CLAMPS, TRENCHING, POWER CABLE, FITTINGS, DISCONNECT SWITCH WITH ENCLOSURE, METER BASE, GROUND RODS, PADLOCK AND KEY, PULL BOX, WOOD POLE, AND ALL INCIDENTALS NECESSARY FOR COMPLETE SERVICE, ALL CONNECTIONS TESTED AND ACCEPTED.

THE FOLLOWING QUANTITY HAS BEEN INCLUDED IN THE GENERAL SUMMARY:

ITEM 632, POWER SERVICE, AS PER PLAN 1 EACH

POWER SERVICE DATA					
POWER SERVICE	LINE VOLTS	CONNECTED LOAD (KVA)	SERVICE ENTRANCE CONDUCTOR SIZE NO.	ENCLOSURE RATING (AMPS)	CIRCUIT NO.
EXISTING POWER POLE STA 312+82.05, 71.96' LT	120/240V 1 PHASE 3-WIRE 3-COND. W/ GND. NEUTRAL	5	1/0	60	SIGNAL
		CIRCUIT LOAD (AMPS)	CIRCUIT FUSE SIZE (AMPS)	CIRCUIT CABLE SIZE (AWG)	MAINTAINING AGENCY
		7	30	6	ODOT DISTRICT 5

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SHEET NO.	REFERENCE		STATION	CODE	SIZE (INCHES)			625	625	625	625	625	625	625	625	625	625	630	630	632	632	632
	FROM	TO			CONNECTION, FUSED PULL APART	CONNECTION, UNFUSED PULL APART	BRACKET ARM, 30'	CONDUIT, 2", 725.051	CONDUIT, 4", 725.051	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), AS PER PLAN, 150 W, 120V, TYPE II	TRENCH	PULL BOX, 725.08, 18"	GROUND ROD	UNDERGROUND WARNING/MARKING TAPE	ARC FLASH CALCULATIONS AND LABEL	SIGN SUPPORT ASSEMBLY, POLE MOUNTED	SIGN, FLAT SHEET	VEHICULAR SIGNAL HEAD, (LED), 3 SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	VEHICULAR SIGNAL HEAD, (LED), 5 SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK	COVERING OF VEHICULAR SIGNAL HEAD		
			W	x	H	EACH	EACH	EACH	FT	FT	EACH	FT	EACH	EACH	LF	EACH	EACH	SF	EACH	EACH	EACH	
INTERSECTION OF LANCASTER-KIRKERSVILLE ROAD (SR 158) AND PLEASANTVILLE ROAD (CR 17)																						
104	C1		313+25.94																			
	C1	PB1					25	25		25					1							
	PB1	SP1				10	10		10							25						
	PB1		313+00.00																			
	SP1		312+92.69	R9-3-18	18	x	24											1	3	1	1	
	SP2		311+82.07	R9-3-18	18	x	24											1	3	1	1	
	SP3		313+18.53	R9-3-18	18	x	24											1	3	1	1	
	SP4		312+23.33	R9-3-18	18	x	24											1	3	1	1	
	SP1	SP3																		1	2	
	SP3	SP4																		2	2	
	SP4	SP2																		1	2	
	SP2	SP1																		2	2	
	L-SP1						1	1	1			1										
	L-SP4						1	1	1			1										
TOTALS CARRIED TO GENERAL SUMMARY							2	2	2	35	35	2	35	1	5	35	1	4	12	10	2	12

TRAFFIC SIGNAL SUBSUMMARY

PULLBOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	313+00.00	LT	55.00	18
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GROUND MOUNTED CONTROLLER W/ UPS
STA 313+25.94, 52.02' LT

25'-2" CONDUIT - POWER (SIGNALS)
25'-4" CONDUIT - (8) 7/C, (8) 8/C
IN TRENCH

10'-2" CONDUIT - POWER (SIGNALS)
10'-4" CONDUIT - (8) 7/C, (8) 8/C
IN TRENCH

LOCATION OF PROPOSED POWER SERVICE AND SIGNAL POLE
STA 312+92.69, 47.84' LT

EXISTING POWER POLE
STA 312+82.05, 71.96' LT

SIGNAL POLE
STA 313+18.53, 60.66' RT

SIGNAL POLE
STA 311+82.07, 56.98' LT

SIGNAL POLE
STA 312+23.33, 43.93' LT

STA. 312+62.53, C S.R. 158 =
STA. 106+06.84, C C.R. 17

LEGEND

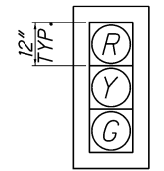
- TRAFFIC SIGNAL, 3 HEAD
- TRAFFIC SIGNAL, 5 HEAD
- SIGNAL SUPPORT POLE
- GROUND MOUNTED CONTROLLER W/ UPS
- ELECTRIC PULL BOX
- STOP LINE RADAR DETECTION UNIT
- DILEMMA ZONE RADAR DETECTION UNIT
- RADAR DETECTION ZONE
- BRACKET ARM WITH LUMINAIRE
- PROPOSED POLE MOUNTED SIGN

PROPOSED SIGNING

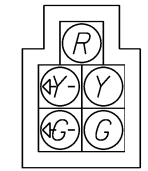


PROPOSED SIGNAL HEADS

12 IN. LED, WITH BACKPLATES
BLACK POLYCARBONATE



2B, 2C, 4A, 4B, 4C
6B, 6C, 8A, 8B, 8C



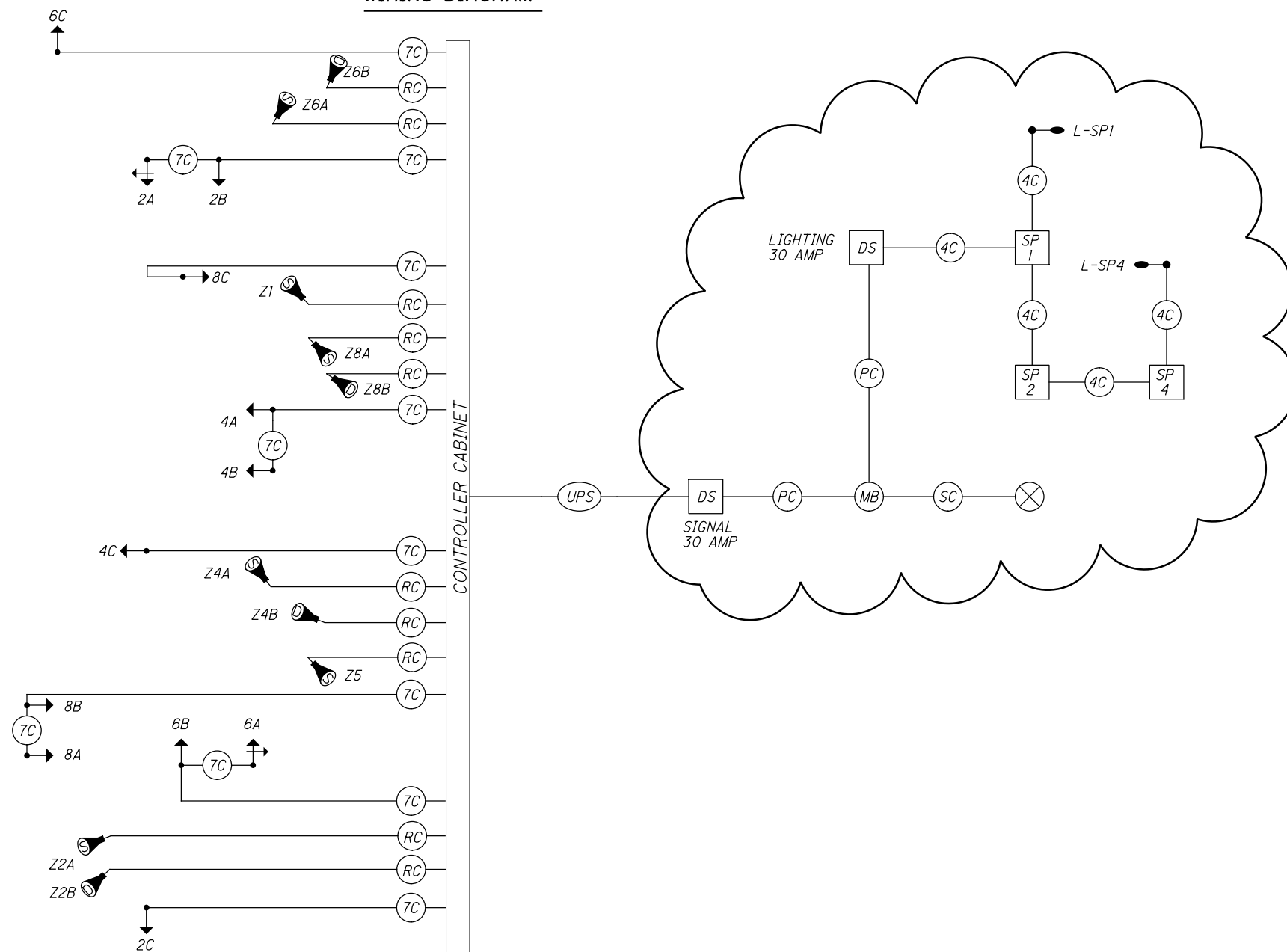
2A, 6A

NOTE: RADAR DETECTION ZONES SHOWN ON SHEET 105

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WIRING DIAGRAM



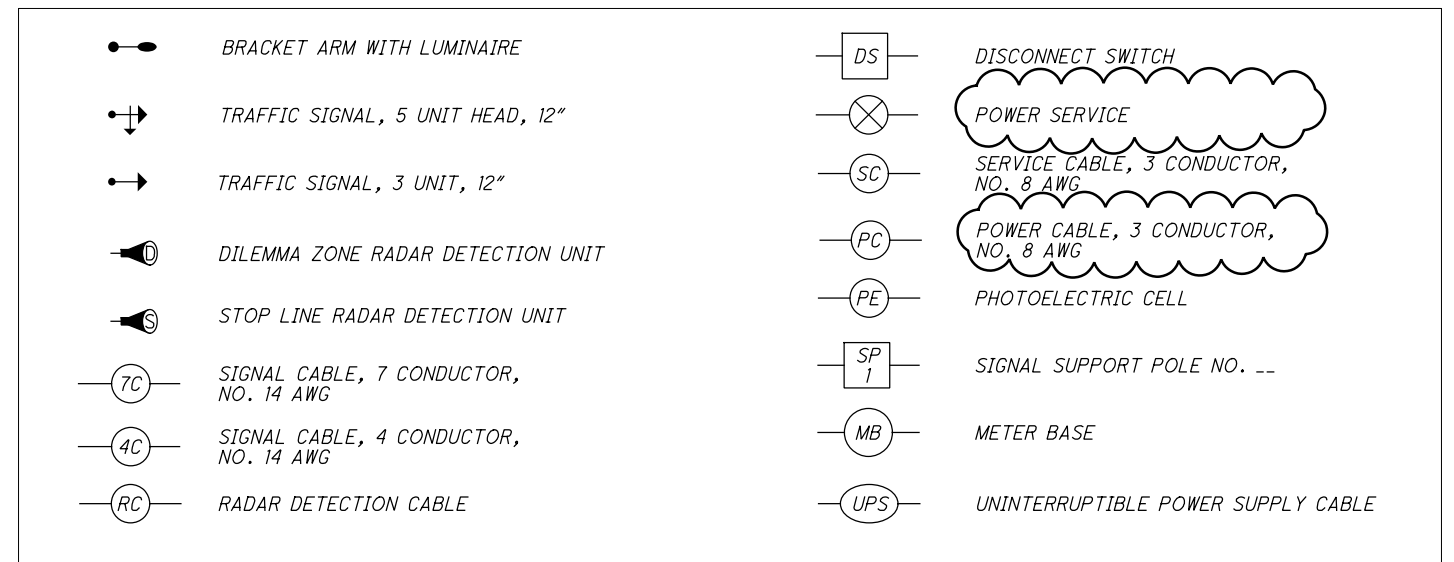
FIELD WIRING HOOK-UP CHART

TEM Form 496-16 Field Wiring Hook-up Chart

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
2A (NB LT)	R	Ø2 R	Y	8A, 8B, 8C (WB)	R	Ø8 R	R
	Y	Ø2 Y			Y	Ø8 Y	
	G	Ø2 G			G	Ø8 G	
	<-Y--	Ø5 Y/LS 5 Y			PEDESTRIAN MOVEMENTS		
	<-G--	Ø5 G/LS 5 G					
2B, 2C (NB)	R	Ø2 R	Y				
	Y	Ø2 Y					
	G	Ø2 G					
4A, 4B, 4C (EB)	R	Ø4 R	R				
	Y	Ø4 Y					
	G	Ø4 G					
6A (SB LT)	R	Ø6 R	Y	OVERLAPS			
	Y	Ø6 Y					
	G	Ø6 G					
	<-Y--	Ø1 Y/LS 1 Y					
	<-G--	Ø1 G/LS 1 G					
6B, 6C (SB)	R	Ø6 R	Y				
	Y	Ø6 Y					
	G	Ø6 G					

LS = LOAD SWITCH

LEGEND



CALCULATED
AC
CHECKED
SJB

TRAFFIC SIGNAL PLAN DETAILS
S.R. 158 AND PLEASANTVILLE ROAD (C.R. 17)

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107
131