

SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
5	6	7	8	19	20	21	40	49	53	01/SAF/PV	02/SAF/OT/AQUA						
								12				632	20731	12	EACH	TRAFFIC SIGNALS	
								15				632	25000	15	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	43
								12				632	25010	12	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
								12				632	26000	12	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
								1,983				632	40200	1,983	FT	PEDESTRIAN PUSHBUTTON	
								2,706				632	40500	2,706	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG	
								2,382				632	40700	2,382	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
								4				632	64011	4	EACH	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
								6				632	64020	6	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	42
								100				632	69300	100	FT	PEDESTAL FOUNDATION	
								215				632	69900	215	FT	POWER CABLE, 3 CONDUCTOR, NO. 4 AWG	
								1				632	70001	1	EACH	SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG	
								1				632	70400	1	EACH	POWER SERVICE, AS PER PLAN	42
								1				632	72110	1	EACH	CONDUIT RISER, 2" DIAMETER	
								1				632	72150	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4	
								2				632	79130	2	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 14	
								1				632	89300	1	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12	
								2				632	89800	2	EACH	WOOD POLE	
								4				632	89904	4	EACH	PEDESTAL, 3', TRANSFORMER BASE	
								1				632	90101	1	EACH	PEDESTAL, 10', TRANSFORMER BASE	
								1				633	65511	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	42
								1				633	67101	1	EACH	CABINET, TYPE TS-2, AS PER PLAN	43
								1				633	67200	1	EACH	CABINET FOUNDATION, AS PER PLAN	44
								1				633	68511	1	EACH	CONTROLLER WORK PAD	
								1				633	75001	1	EACH	COMMUNICATIONS, AS PER PLAN	43
								4				809	69001	4	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	43
								4				809	69101	4	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	44
								1				809	69123	1	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	44
								1				809	69201	1	EACH	ATC CONTROLLER, AS PER PLAN	44
								4				809	69211	4	EACH	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN	44A
								302				809	69221	302	FT	PREEMPT RECEIVING UNIT, AS PER PLAN	44A
								4				809	69231	4	EACH	PREEMPT DETECTOR CABLE, AS PER PLAN	44A
								4				809	69241	4	EACH	PREEMPT PHASE SELECTOR, AS PER PLAN	44A
								4				809	69241	4	EACH	PREEMPT CONFIRMATION LIGHT, AS PER PLAN	44A
								160				614	11110	160	hour	MAINTENANCE OF TRAFFIC	
								10				614	12420	10	LS	LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE	
								12				614	12460	12	EACH	DETOUR SIGNING	
								0.03				614	18601	0.03	SNMT	WORK ZONE MARKING SIGN	
								0.1				614	20010	0.03	MILE	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	8
								0.03				614	20550	0.03	MILE	WORK ZONE LANE LINE, CLASS I, 6"	
								0.1				614	21000	0.1	MILE	WORK ZONE LANE LINE, CLASS III, 4", 642 PAINT	
								0.27				614	21550	0.27	MILE	WORK ZONE CENTER LINE, CLASS I	
								0.2				614	22010	0.2	MILE	WORK ZONE CENTER LINE, CLASS III, 642 PAINT	
								958				614	23010	958	FT	WORK ZONE EDGE LINE, CLASS I, 6"	
								150				614	23680	150	FT	WORK ZONE EDGE LINE, CLASS III, 4", 642 PAINT	
								50				614	26610	50	FT	WORK ZONE CHANNELIZING LINE, CLASS I, 12"	
								4				614	30650	4	EACH	WORK ZONE CHANNELIZING LINE, CLASS III, 8", 642 PAINT	
								4				616	10000	4	M GAL	WORK ZONE STOP LINE, CLASS III, 642 PAINT	
																WORK ZONE ARROW, CLASS III, 642 PAINT	
																WATER	
																INCIDENTALS	
																MAINTAINING TRAFFIC	
																FIELD OFFICE, TYPE B	
																CONSTRUCTION LAYOUT STAKES AND SURVEYING	
																MOBILIZATION	

CALCULATED	NMG	CHECKED	BJA
GENERAL SUMMARY			
STA - 687 - 3.03			
18			
59			

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), OR APPROVED EQUAL. THE DETECTION UNIT SHALL INCLUDE THE FOLLOWING:

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- 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.
- 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.
- 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.
- 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.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
- 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.
- THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
- 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.

633 CABINET FOUNDATION, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF ODOT CMS 633, 733 AND SCD TC-83.20, THE CABINET FOUNDATION WILL BE CONSTRUCTED PER THE DETAILS ON THIS SHEET.

809 STOP-LINE RADAR DETECTION, AS PER PLAN

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

- POWER SHALL BE PROVIDED FROM THE TRAFFIC CABINET.
- 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.
- 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.
- 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.
- 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.
- A SERIAL TO ETHERNET COMMUNICATIONS MODULE AND ETHERNET CABLE (MINIMUM 7 FEET).
- 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.
- THE CONTRACTOR SHALL INSTALL THE RADAR DETECTION PRIOR TO MILLING/DISABLING EXISTING LOOPS.
- THE INSTALLATION SHALL INCLUDE ALL CONTROLLER PROGRAMMING FOR COMPLETE INSTALLATION, WHICH INCLUDES MODIFICATIONS FOR REMOVAL OF EXISTING DETECTION.
- FOR THE NORTHBOUND AND SOUTHBOUND APPROACHES, THE STOP BAR RADAR DETECTORS SHALL BE INSTALLED ON THE MAST ARM POLE NEAR THE LUMINAIRE BRACKET ARM TO MAXIMIZE VISIBILITY OF THE STOP BARS ON THE NORTHBOUND AND SOUTHBOUND APPROACHES.

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.

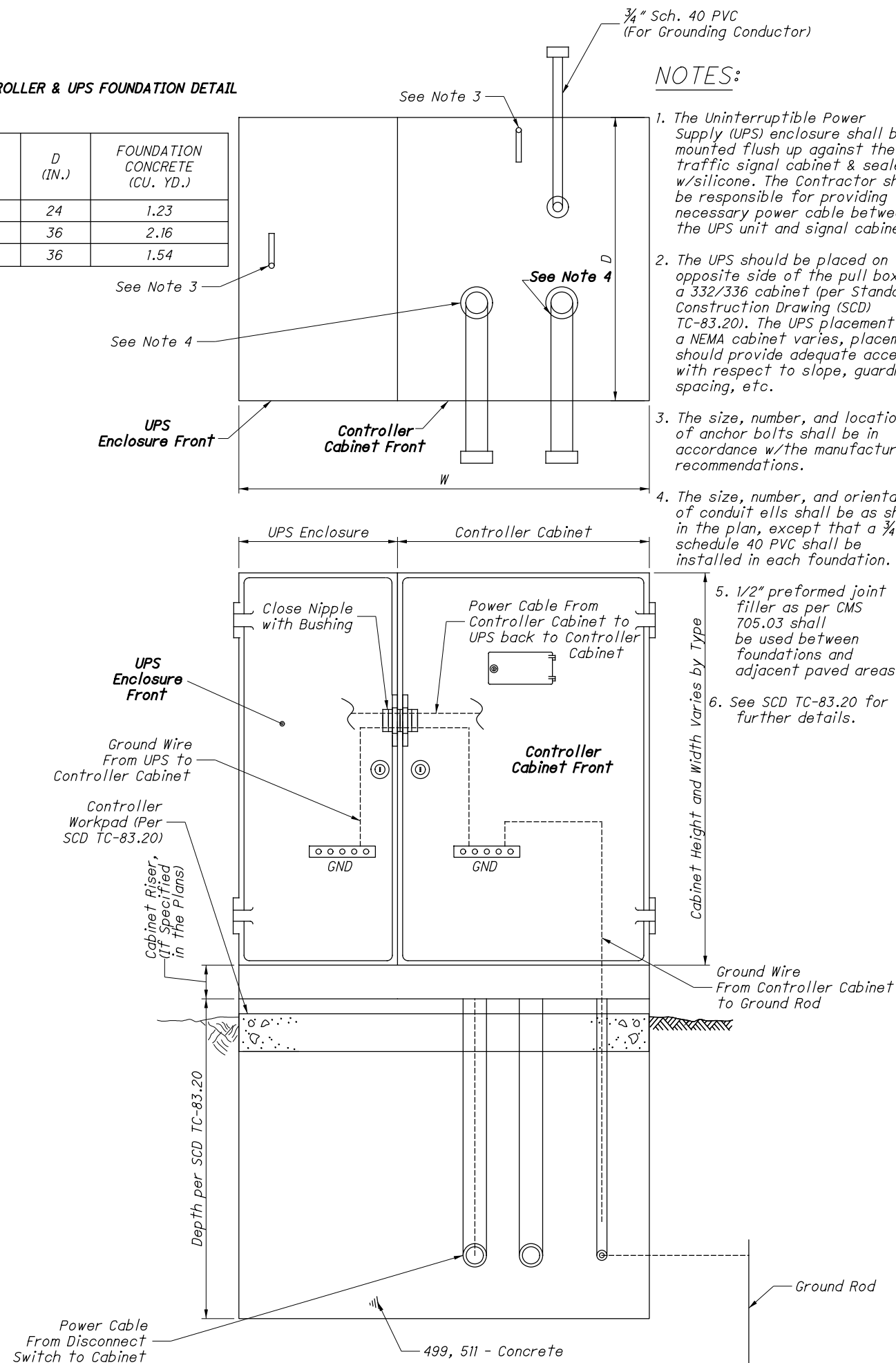
809 ATC CONTROLLER, AS PER PLAN

THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS 809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

THE CONTROLLER SHALL BE AN ECONOLITE COBALT, AND COMPATIBLE WITH THE CABINET TYPE BEING INSTALLED.

CONTROLLER & UPS FOUNDATION DETAIL

TYPE	W (IN.)	D (IN.)	FOUNDATION CONCRETE (CU. YD.)
TS-1	60	24	1.23
TS-2	70	36	2.16
2070/170	50	36	1.54



NOTES:

- The Uninterruptible Power Supply (UPS) enclosure shall be mounted flush up against the traffic signal cabinet & sealed w/silicone. The Contractor shall be responsible for providing the necessary power cable between the UPS unit and signal cabinet.
- The UPS should be placed on the opposite side of the pull box on a 332/336 cabinet (per Standard Construction Drawing (SCD) TC-83.20). The UPS placement for a NEMA cabinet varies, placement should provide adequate access with respect to slope, guardrail spacing, etc.
- The size, number, and location of anchor bolts shall be in accordance w/the manufacturer's recommendations.
- The size, number, and orientation of conduit ells shall be as shown in the plan, except that a 3/4" schedule 40 PVC shall be installed in each foundation.
- 1/2" preformed joint filler as per CMS 705.03 shall be used between foundations and adjacent paved areas.
- See SCD TC-83.20 for further details.

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ITEM	ITEM EXTENSION	TOTAL QUANTITY	UNIT	ITEM DESCRIPTION	SEE SHEET (NO.)
611	00406	28	FT	4" CONDUIT, TYPE F	
625	18100	2	EACH	BRACKET ARM, 12'	
625	23306	368	FT	NO. 10 AWG, 600 VOLT DISTRIBUTION CABLE	
625	23000	1396	FT	NO. 4 AWG, 600 VOLT DISTRIBUTION CABLE	
625	25400	159	FT	CONDUIT, 2", 725.04	
625	25500	10	FT	CONDUIT, 3", 725.04	
625	25902	44	FT	CONDUIT, JACKED OR DRILLED, 725.04, 2"	
625	25902	265	FT	CONDUIT, JACKED OR DRILLED, 725.04, 3"	
625	25902	304	FT	CONDUIT, JACKED OR DRILLED, 725.04, 4"	
625	26252	2	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), 200 WATT	
625	29000	197	FT	TRENCH	
625	30700	1	EACH	PULL BOX, 725.08, 18"	
625	30706	5	EACH	PULL BOX, 725.08, 24"	
625	32000	11	EACH	GROUND ROD	
625	36011	100	FT	UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN	42
625	76000	1	EACH	ARC FLASH CALCULATIONS AND LABEL (SR687/DRESSLER)	42
630	80100	69.75	SF	SIGN, FLAT SHEET	
630	80500	4	EACH	SIGN, DOUBLE FACED, STREET NAME	
630	79100	12	EACH	SIGN HANGER ASSEMBLY, MAST ARM	
632	05006	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK WITH BACKPLATES	
632	05086	8	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, BLACK WITH BACKPLATES	
632	20731	12	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	43
632	25000	15	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
632	25010	12	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
632	26000	12	EACH	PEDESTRIAN PUSHBUTTON	
632	40200	1983	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG	
632	40500	2706	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
632	40700	2382	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
632	64011	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER PLAN	42
632	64020	6	EACH	PEDESTAL FOUNDATION	
632	69300	100	FT	POWER CABLE, 3 CONDUCTOR, NO. 4 AWG	
632	69900	215	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG	
632	70001	1	EACH	POWER SERVICE, AS PER PLAN	42
632	70400	1	EACH	CONDUIT RISER, 2" DIAMETER	
632	72110	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4	
632	72150	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 14	
632	79130	2	EACH	COMBINATION SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12	
632	89300	1	EACH	WOOD POLE	
632	89800	2	EACH	PEDESTAL, 3', TRANSFORMER BASE	
632	89904	4	EACH	PEDESTAL, 10', TRANSFORMER BASE	
632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	42
633	65511	1	EACH	CABINET, TYPE TS-2, AS PER PLAN	43
633	67101	1	EACH	CABINET FOUNDATION, AS PER PLAN	44
633	67200	1	EACH	CONTROLLER WORK PAD	
633	68511	1	EACH	COMMUNICATIONS, AS PER PLAN	43
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	43
809	69001	4	EACH	ADVANCE RADAR DETECTION, AS PER PLAN	44
809	69101	4	EACH	STOP LINE RADAR DETECTION, AS PER PLAN	44
809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	44
809	69201	1	EACH	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN	44A
809	69211	4	EACH	PREEMPT RECEIVING UNIT, AS PER PLAN	44A
809	69221	302	FT	PREEMPT DETECTOR CABLE, AS PER PLAN	44A
809	69231	4	EACH	PREEMPT PHASE SELECTOR, AS PER PLAN	44A
809	69241	4	EACH	PREEMPT CONFIRMATION LIGHT, AS PER PLAN	44A

CALCULATED
PAW
CHECKED
TMA

TRAFFIC SIGNAL SUBSUMMARY

STA - 687 - 3.03