

ITEM 632 - POWER SERVICE, AS PER PLAN

POWER SERVICE SHALL BE AS PER SPECIFICATION 632 AND STANDARD CONSTRUCTION DRAWING TC-83.10 WITH THE FOLLOWING EXCEPTIONS:

- 1. THE METER BASE MOUNTING HEIGHT SHALL BE NO MORE THAN FIVE (5) FEET HIGH TO THE CENTER OF THE METER BASE FROM THE GROUND.
- 2. THE CONTRACTOR SHALL SUPPLY THE NECESSARY METER BASES.
- 3. ALL POWER SERVICES SHALL BE METERED. THE METER SHALL HAVE A LEVER OPERATED BYPASS.
- 4. THE POWER SERVICE BLIND HALF COUPLING SHALL BE TWENTY-SEVEN (27) INCHES ABOVE THE BOTTOM OF THE STRAIN POLE BASE PLATE AND SHALL BE WELDED TO THE STRAIN POLE.

5. CONDUIT FROM THE BOTTOM OF THE DISCONNECT SWITCH ENCLOSURE INTO THE BOTTOM OF THE CONTROLLER CABINET WILL NOT BE PERMITTED. POWER SERVICE WIRES FROM THE DISCONNECT SWITCH ENCLOSURE TO THE CONTROLLER CABINET SHALL BE ROUTED THROUGH THE STRAIN POLE.

6. IF INTERSECTION LIGHTING IS SPECIFIED, SEPARATE DISCONNECT SWITCHES SHALL BE INSTALLED AND LABELED "LIGHTING" AND "TRAFFIC SIGNAL" WITH A WEATHER PROOF STICKER. MARKER ON THE OUTSIDE OF THE ENCLOSURE IS NOT ACCEPTABLE.

DISCONNECT SWITCH ENCLOSURES FURNISHED SHALL INCLUDE A PADLOCK EQUAL TO MASTER NO. 4BKA OR WILSON BOHANNON 660, WITH LOCK BODY OF BRONZE OR BRASS AND KEYING SHALL BE TO THE STATE MASTER.

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF THE POWER COMPANY FOR INFORMATION REGARDING THE METER BASE INSTALLATION PRIOR TO ORDERING POLES. THE CONTRACTOR WILL BE RESPONSIBLE FOR REQUESTING AND SCHEDULING ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. THE CONTRACTOR SHALL CONTACT ODOT DISTRICT 8 TRAFFIC OPERATIONS TO ACQUIRE THE ADDRESS TO BE USED ON THE INSPECTION FORMS. ONCE THE SERVICE HAS PASSED INSPECTION, THE CONTRACTOR SHALL ONCE AGAIN NOTIFY ODOT DISTRICT 8 TRAFFIC OPERATIONS WHO WILL THEN MAKE APPLICATION FOR POWER WITH THE UTILITY COMPANY. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR SPLICE POWER CABLE INTO THE POWER COMPANY'S CIRCUITS. THE VOLTAGE SUPPLIED SHALL BE NOMINALLY 120/240 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES.

THE CONTRACTOR SHALL FURNISH AND INSTALL AN ADDRESS STICKER WITH 4-INCH LETTERING TO THE CABINET. ADDRESS MUST BE VISIBLE FROM THE STREET. THE ENGINEER WILL PROVIDE THE ADDRESS TO THE CONTRACTOR FOR EACH INSTALLATION.

THE DEPARTMENT WILL MEASURE ITEM 632, POWER SERVICE, AS PER PLAN, BY THE NUMBER OF COMPLETE UNITS AND WILL INCLUDE: WEATHERHEAD, CONDUIT, FITTINGS, CLAMPS, AND OTHER NECESSARY HARDWARE, INSTALLATION OF METER BASE, GROUND WIRE CONNECTIONS, DISCONNECT SWITCH WITH ENCLOSURE, AND COORDINATION WORK WITH UTILITIES.

ITEM 633 - REUSE OF TRAFFIC SIGNAL ITEM: UBIQUITI RADIO

THIS ITEM WILL CONSIST OF REMOVING THE UBIQUITI RADIOS AND ROUTER SWITCH FROM THE EXISTING CABINET AND STRAIN POLES, AND RE-INSTALLING IN THE NEW CABINET AND SIGNAL SUPPORTS IN WORKING ORDER. ENSURE THAT RADIOS ARE RE-INSTALLED IN THE SAME POSITIONING AND ORIENTATION AS THE EXISTING SET-UP.

ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE RELOCATION AND INSTALLATION OF THE EXISTING RADIOS SHALL BE PAID UNDER THIS PAY ITEM BY THE NUMBER OF EACH COMPLETE SYSTEM RELOCATED.

SURVEY CONTROL POINTS:

POINT	NORTH	EAST	ELEVATION	STATION	OFFSET	FEATURE
JDCL1	485477.16	1412782.91	0	49+00.00	0	
JDCL2	485986.01	1412825.72	0	54+10.65	0	
JDCL3	485987.72	1412825.87	0	54+12.36	0	
JDCL4	486374.20	1412859.74	0	58+00.33	0	
JDCL5	485942.55	1412327.91	0	53+25.60	492.42' LT	
JDCL8	485917.04	1413320.94	0	53+83.43	499.26' RT	
SA1	485905.96	1413092.76	731.41	53+53.27	272.80' RT	IPINS
SA2	485893.65	1412913.62	727.99	53+25.98	95.33' RT	IPIN

*NOT ALL POINTS LISTED ARE SHOWN IN THE PLAN VIEW

ITEM 809 - ADVANCE RADAR DETECTION

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 (MIN. 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.

PAYMENT FOR ITEM 809 ADVANCE RADAR DETECTION 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.

ITEM 633 - REUSE OF TRAFFIC SIGNAL ITEM: PREEMPTION

THIS ITEM WILL CONSIST OF REMOVING ALL PREEMPTION EQUIPMENT FROM THE EXISTING CABINET AND STRAIN POLES, AND RE-INSTALLING IN THE NEW CABINET AND SIGNAL SUPPORTS IN WORKING ORDER. THE CONTRACTOR SHALL NOTIFY ODOT DISTRICT 8 TRAFFIC OPERATIONS WHEN THE PREEMPT IS TAKEN OUT OF SERVICE FOR RELOCATION PURPOSES. THE DOWNTIME SHOULD BE MINIMIZED AS MUCH AS POSSIBLE. THE CONTRACTOR SHALL CONTACT ODOT DISTRICT 8 TRAFFIC OPERATIONS FOR ASSISTANCE WITH PROGRAMMING THE PREEMPTION PHASES IN THE NEW CONTROLLER.

ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE RELOCATION AND INSTALLATION OF THE EXISTING PREEMPTION EQUIPMENT SHALL BE PAID UNDER THIS PAY ITEM BY THE NUMBER OF EACH COMPLETE PREEMPT SYSTEM RELOCATED.

ITEM 633 - REUSE OF TRAFFIC SIGNAL ITEM: CCTV

THIS ITEM WILL CONSIST OF REMOVING THE EXISTING CCTV CAMERA, CABLES AND MOUNTING BRACKETS AND RELATED EQUIPMENT FROM THE EXISTING CABINET AND STRAIN POLE, AND RE-INSTALLING IN THE NEW CABINET AND SIGNAL SUPPORT IN WORKING ORDER. THE CAMERA DOWNTIME SHALL ADHERE TO THE PROVISIONS OF SS 809.

ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY FOR THE RELOCATION AND INSTALLATION OF THE EXISTING CCTV SHALL BE PAID UNDER THIS PAY ITEM BY THE NUMBER OF EACH COMPLETE SYSTEM RELOCATED.

ITEM 632 - SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 39' IN LENGTH), AS PER PLAN

THIS ITEM SHALL CONSIST OF THE CONTRACTOR INSTALLING A TUNED MASS-SPRING TYPE DAMPER ON A TC-81.21 MAST ARM SIGNAL SUPPORT TO REDUCE THE POSSIBILITY OF HARMONIC VIBRATIONS CAUSED BY WIND LOADS. A MECHANICAL DAMPER SHALL BE APPLIED TO ALL MAST ARMS OVER 39 FEET IN LENGTH. THE INSTALLED DAMPER SHALL BE CAPABLE OF REDUCING THE LOADED MAXIMUM VERTICAL MOVEMENT AT THE TIP OF THE ARM TO 8 INCHES MEASURED FROM THE HIGHEST TO THE LOWEST POINT OF DEFLECTION AT WIND SPEEDS OF 5-20 MPH. THE INSTALLED DAMPER SHALL BE CAPABLE OF DAMPENING +/- 1 FOOT OSCILLATIONS AFTER A MAXIMUM OF 25 OSCILLATIONS UNDER NORMAL CONDITIONS.

ALL ATTACHMENT HARDWARE CONNECTIONS SHALL BE STAINLESS STEEL. THE DAMPER SHALL BE ATTACHED TO THE ARM WITHIN 8 FEET OF MAST ARM TIP. INSTALLATION SHALL BE PER THE MANUFACTURER'S GUIDELINES. STATIC DAMPERS SUCH AS HORIZONTAL FLAT SIGN MOUNTINGS SHALL NOT BE USED. ACCEPTABLE DEVICES INCLUDE THE FOLLOWING OR APPROVED EQUAL:

- 1. VALMONT STRUCTURES MITIGATOR - MODEL TRI

PAYMENT FOR ITEM 632 SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 39' IN LENGTH), AS PER PLAN, SHALL BE MADE AT THE CONTRACT UNIT PRICE PER EACH COMPLETE AND IN PLACE, AND SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK.

DUKE ENERGY OVERHEAD ELECTRIC

THE CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS WHEN WORKING AROUND OVERHEAD ELECTRIC LINES AND EQUIPMENT. AT NO TIME SHOULD WORKERS VIOLATE THE CLEARANCE DISTANCE ESTABLISHED BY OSHA OR THEIR OWN COMPANY'S SAFETY STANDARDS REGARDING DUKE'S ELECTRIC LINES AND SAFE WORKING DISTANCE. FOR THE 13KV ENERGIZED ELECTRICAL LINES, A 3' HORIZONTAL CLEARANCE BETWEEN EFFECTIVELY GROUNDED NEUTRALS AND 5' OF HORIZONTAL CLEARANCE PHASE TO GROUND FROM THE PROPOSED SIGNAL POLES (NATIONAL ELECTRIC SAFETY CODE, RULE 234, TABLE 234-1). THE METHOD OF INSTALLATION OF THE SIGNAL POLES WILL NEED TO BE IN COMPLIANCE WITH OSHA REQUIREMENTS AND MAY EVEN INVOLVE PERSONNEL TRAINED AND CERTIFIED TO WORK IN PROXIMITY OF 13KV LINES WHILE UTILIZING AN INSULATED BOOM OR CRANE.

ANY COVER UP REQUIRED FROM DUKE ELECTRIC IS GOOD FOR VISUAL IDENTIFICATION ONLY AND NOT TO BE USED FOR INSULATION PURPOSES. TO REQUEST COVER UP, THE CONTRACTOR MUST CALL 1-800-544-6900 AT LEAST FIVE (5) WORKING DAYS IN ADVANCE OF NEEDING THIS SERVICE. PROCEED WITH CAUTION WHEN WORKING NEAR ELECTRIC OVERHEAD AND/OR UNDERGROUND FACILITIES.

DUKE ENERGY GAS

PRIOR TO BEGINNING ANY EXCAVATION WORK, IT WILL BE NECESSARY TO POTHOLE DUKE'S GAS LINE AT ANY PROPOSED CONDUIT CROSSINGS OR NEAR PROPOSED SIGNAL SUPPORT FOUNDATIONS. DUKE WILL REQUIRE A MINIMUM OF 18" SEPARATION BETWEEN SIGNAL POLE/PEDESTAL FOUNDATIONS AND 12" MINIMUM SEPARATION FOR CONDUIT INSTALLATIONS IN RELATION TO THEIR EXISTING GAS MAINS. CRITICAL LOCATIONS ARE:

747/MULHAUSER - WEST SIDE OF INTERSECTION FOR PLACEMENT OF 4" CONDUIT AND NEAR PROPOSED SIGNAL SUPPORT SP-2 IN SOUTHWEST CORNER

747/PORT UNION - WEST SIDE OF INTERSECTION FOR PLACEMENT OF 4" CONDUIT

THE CONTRACTOR SHALL CONTACT DUKE ENERGY GAS A MINIMUM OF TWO (2) DAYS PRIOR TO PERFORMING THE POTHOLES TO HAVE A DUKE ENERGY REPRESENTATIVE ON SITE FOR THE GAS MAIN LOCATE. THE CONTACT PERSON IS RICHARD HACKER, 513-287-4653.

MCI/VERIZON AND CENTURYLINK FIBER

PRIOR TO BEGINNING ANY EXCAVATION WORK, IT WILL BE NECESSARY TO POTHOLE MCI/VERIZON AND CENTURYLINK'S FIBER OPTIC LINE AT ANY PROPOSED CONDUIT CROSSINGS OR NEAR PROPOSED SIGNAL SUPPORT FOUNDATIONS. CRITICAL LOCATION IS:

747/MULHAUSER - FIBER OPTIC RUNS ACROSS THE SOUTH LEG OF THE INTERSECTION. DEPTH IS UNKNOWN.

CROSSINGS AND CONNECTIONS TO EXISTING PIPES AND UTILITIES

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO LAY THE PROPOSED CONDUIT. THIS MAY ALSO INCLUDE ANY NECESSARY POTHOLES.

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE BID FOR THE PERTINENT CONDUIT OR FOUNDATION ITEM.

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GENERAL NOTES

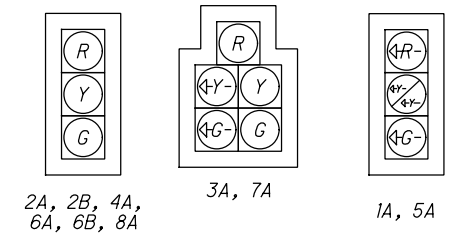
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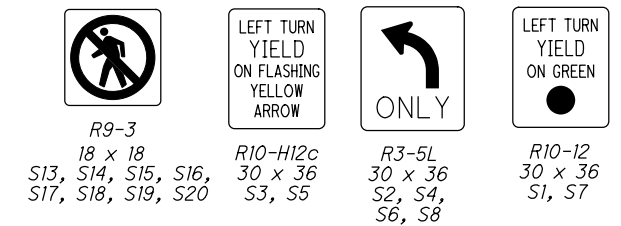
LEGEND

	PROP	EXIST
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		
TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS		
TRAFFIC SIGNAL, 5 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
LUMINAIRE, CONVENTIONAL		
CONTROLLER CABINET AND WORK PAD (332)		
TRAFFIC PULL BOX		
STOP BAR RADAR DETECTION UNIT		
ADVANCE RADAR DETECTION UNIT		
DETECTION ZONE		

SIGNAL HEADS



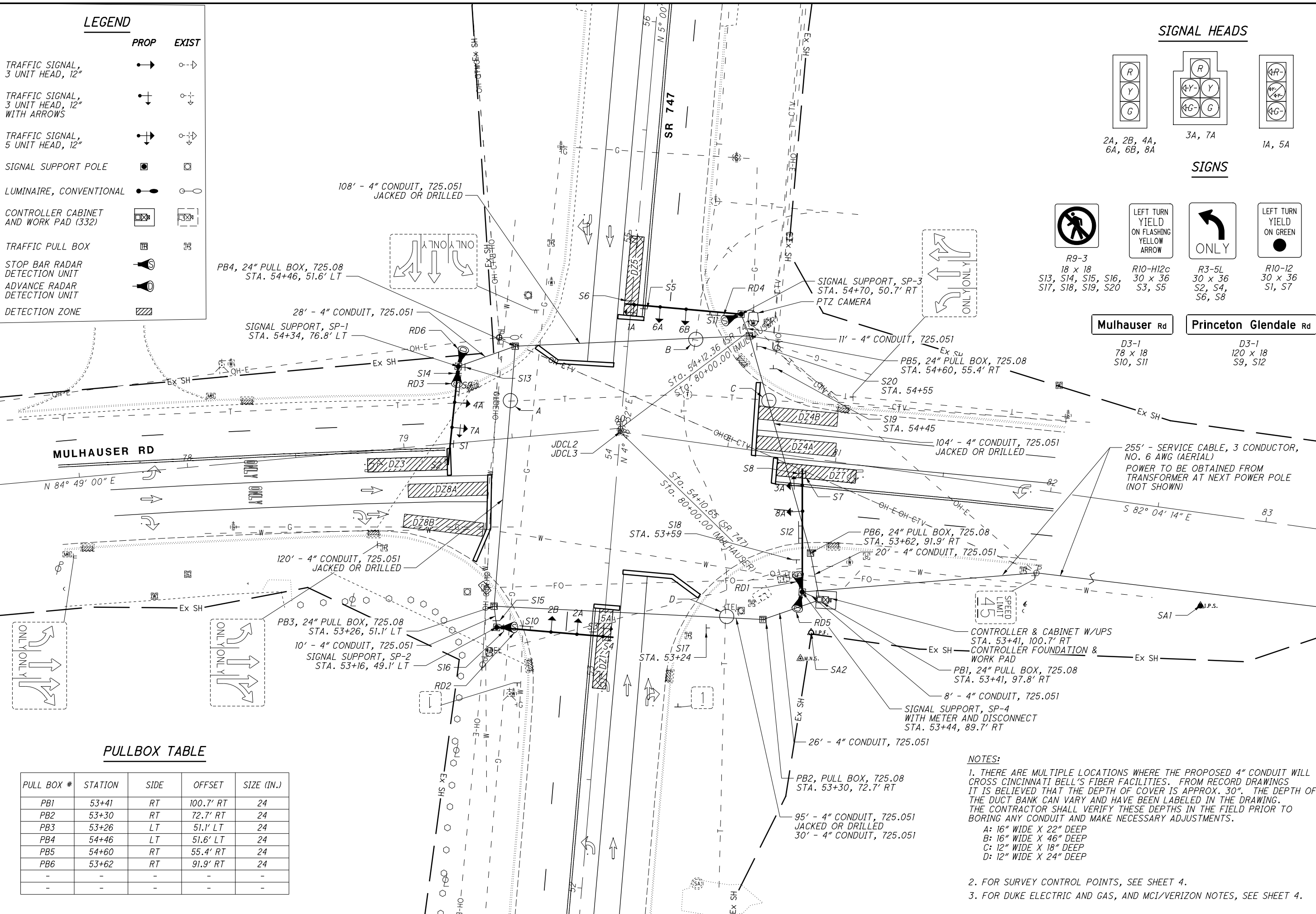
SIGNS



Mulhauser Rd

Princeton Glendale Rd

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PULLBOX TABLE

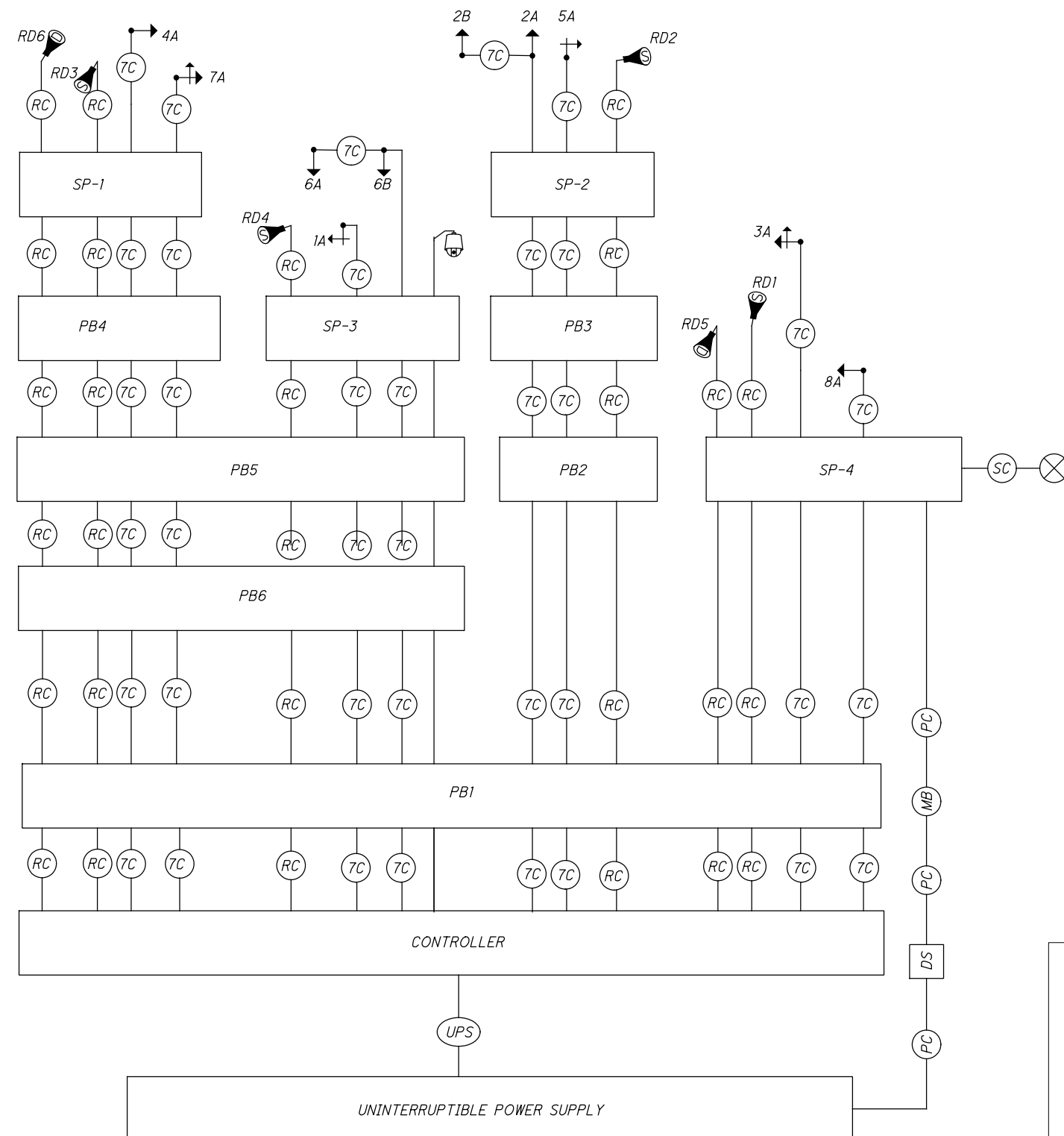
PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB1	53+41	RT	100.7' RT	24
PB2	53+30	RT	72.7' RT	24
PB3	53+26	LT	51.1' LT	24
PB4	54+46	LT	51.6' LT	24
PB5	54+60	RT	55.4' RT	24
PB6	53+62	RT	91.9' RT	24
-	-	-	-	-
-	-	-	-	-

NOTES:

- THERE ARE MULTIPLE LOCATIONS WHERE THE PROPOSED 4" CONDUIT WILL CROSS CINCINNATI BELL'S FIBER FACILITIES. FROM RECORD DRAWINGS IT IS BELIEVED THAT THE DEPTH OF COVER IS APPROX. 30". THE DEPTH OF THE DUCT BANK CAN VARY AND HAVE BEEN LABELED IN THE DRAWING. THE CONTRACTOR SHALL VERIFY THESE DEPTHS IN THE FIELD PRIOR TO BORING ANY CONDUIT AND MAKE NECESSARY ADJUSTMENTS.
 A: 16" WIDE X 22" DEEP
 B: 16" WIDE X 46" DEEP
 C: 12" WIDE X 18" DEEP
 D: 12" WIDE X 24" DEEP
- FOR SURVEY CONTROL POINTS, SEE SHEET 4.
- FOR DUKE ELECTRIC AND GAS, AND MCI/VERIZON NOTES, SEE SHEET 4.

TRAFFIC SIGNAL PLAN
SR 747 & MULHAUSER RD
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 CALCULATED TCS CHECKED MAG
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 HORIZONTAL SCALE IN FEET
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WIRING DIAGRAM



FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1A (NB LT)	<--R-->	AUX CH 9 RED	R	7A (WB LT)	R	φ 4 RED	R
	<--Y-->	AUX CH 9 YEL			Y	φ 4 YEL	
	<--FYA-->	AUX CH 9 GRN			G	φ 4 GRN	
	<--G-->	φ 1 GRN			<--Y-->	φ 7 YEL	
	-	-		<--G-->	φ 7 GRN		
2A, 2B (SB)	R	φ 2 RED	R	8A (EB)	R	φ 8 RED	R
	Y	φ 2 YEL			Y	φ 8 YEL	
	G	φ 2 GRN			G	φ 8 GRN	
	-	-			-	-	
	-	-		-	-		
3A (EB LT)	R	φ 8 RED	R	PEDESTRIAN MOVEMENTS			
	Y	φ 8 YEL		-	-	-	-
	G	φ 8 GRN		-	-	-	-
	<--Y-->	φ 3 YEL		-	-	-	-
	<--G-->	φ 3 GRN		-	-	-	
4A (WB)	R	φ 4 RED	R	OVERLAPS			
	Y	φ 4 YEL		-	-	-	-
	G	φ 4 GRN		-	-	-	-
5A (SB LT)	<--R-->	AUX CH 11 RED	R	OVERLAPS			
	<--Y-->	AUX CH 11 YEL		-	-	-	-
	<--FYA-->	AUX CH 11 GRN		-	-	-	-
	<--G-->	φ 5 GRN		-	-	-	-
	-	-		-	-	-	
6A, 6B (NB)	R	φ 6 RED	R	-	-	-	-
	Y	φ 6 YEL		-	-	-	-
	G	φ 6 GRN		-	-	-	-

LS = LOAD SWITCH

CONFLICT MONITOR MODIFICATIONS:

- CUT DIODES TO ALLOW FYA CHANNELS (9, 11) TO PROCEED WITH PHASES SHOWIN IN PHASING DIAGRAM.
- FYAC SWITCH - *QEF*; STANDARD FYA MODE IS SELECTED.
- FYA 1-9, 5-11 SWITCHES - *QN*; ENABLES A CHANNEL PAIR FOR FYA MONITORING FUNCTIONS.
- THE SSM SWITCH IN *QN* FOR THE PERMISSIVE TURN CHANNELS 9, 11
- THE SSM SWITCH IS *QEF* FOR THE PROTECTED TURN CHANNELS 1,5
-SIGNAL LOADS ARE NOT BEING DRIVEN FROM THE PROTECTED RED AND YELLOW OUTPUTS THEN THE SSM SWITCH FOR THE ASSOCIATED PROTECTED TURN CHANNEL 1,5 SHOULD BE *QEF* AND THE YELLOW DISABLE JUMPER IS INSTALLED.

LEGEND

	5 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		POWER SOURCE
	3 SECTION VEHICULAR SIGNAL HEAD, 1-WAY		SERVICE CABLE, 6 CONDUCTOR, NO. 6 AWG
	3 SECTION VEHICULAR SIGNAL HEAD, TURN ARROWS 1-WAY		POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		SIGNAL SUPPORT POLE NO. --
	STOP BAR RADAR DETECTION UNIT		METER BASE
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	RADAR DETECTION CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE
	PTZ CAMERA		

SUB-SUMMARY

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
625	25604	133	FT	CONDUIT, 4", 725.051
625	25906	427	FT	CONDUIT, JACKED OR DRILLED, 725.051, 4"
625	29000	133	FT	TRENCH
625	30706	6	EACH	PULL BOX, 725.08, 24"
625	32000	5	EACH	GROUND ROD
630	03100	52	FT	GROUND MOUNTED SUPPORT, NO. 3 POST
630	79100	16	EACH	SIGN ATTACHMENT ASSEMBLY, MAST ARM
630	79500	4	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED
630	80100	127.5	SQ FT	SIGN, FLAT SHEET
630	83000	15	SF	COVERING OF SIGN
632	4000	2	EACH	VEHICULAR SIGNAL HEAD, MISC.: 3-SECTION FLASHING YELLOW ARROW (POLYCARBONATE)
632	05007	6	EACH	VEHICULAR SIGNAL HEAD, (LED), BLACK, 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN
632	05087	2	EACH	VEHICULAR SIGNAL HEAD, (LED), BLACK, 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN
632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	40700	1753	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	64010	4	EACH	SIGNAL SUPPORT FOUNDATION
632	68300	43	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
632	69800	265	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
632	70001	1	EACH	POWER SERVICE, AS PER PLAN
632	77232	4	EACH	SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-82.21 MAST ARM (GREATER THAN 39' IN LENGTH), AS PER PLAN
632	80602	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 12
632	80620	3	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13
632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION
632	90104	1	EACH	REUSE OF TRAFFIC SIGNAL ITEM: PREEMPTION
632	90104	1	EACH	REUSE OF TRAFFIC SIGNAL ITEM: UBIQUITI RADIO
632	90104	1	EACH	REUSE OF TRAFFIC SIGNAL ITEM: CCTV
633	67100	1	EACH	CABINET FOUNDATION
633	67200	1	EACH	CONTROLLER WORK PAD
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN
633	99000	1	EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE COBALT, WITH ASC/3 SOFTWARE, WITH CABINET AND RISER, TYPE 332, AS PER PLAN
809	69000	2	EACH	ADVANCE RADAR DETECTION
809	69100	4	EACH	STOP LINE RADAR DETECTION

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TRAFFIC SIGNAL SUB-SUMMARY
SR 747 & MULHAUSER RD

BUT-747-1.01 / 2.07

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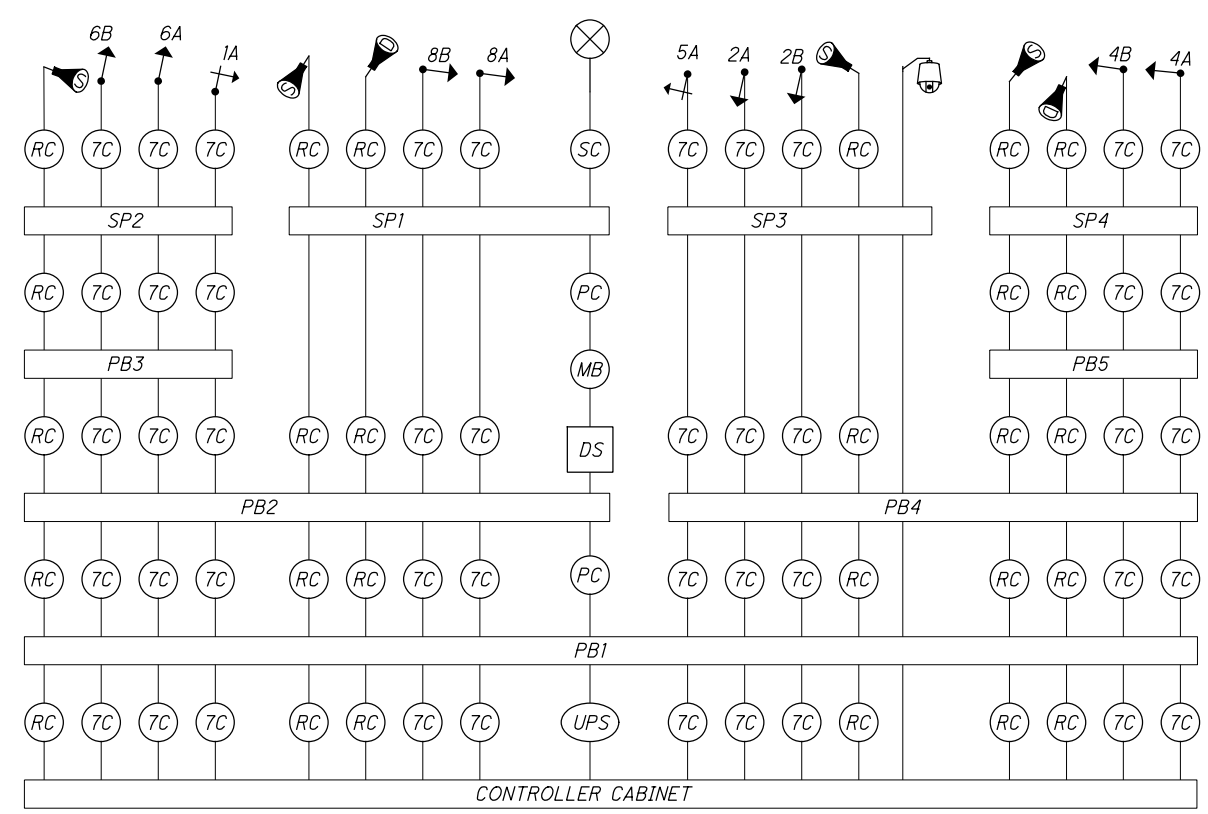
FIELD WIRING HOOK-UP CHART

SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH	SIGNAL HEAD	INDICATION	FIELD TERMINAL	FLASH
1A (SB LT)	<--R---	AUX CH 9 RED	R	-	-	-	-
	<--Y---	AUX CH 9 YEL		-	-	-	
	<--FYA--	AUX CH 9 GRN		-	-	-	
	<--G---	1 GRN		-	-	-	
2A, 2B (NB)	R	2 RED	R	-	-	-	-
	Y	2 YEL		-	-	-	
	G	2 GRN		-	-	-	
	-	-		-	-	-	
4A, 4B (EB)	R	4 RED	R	-	-	-	-
	Y	4 YEL		-	-	-	
	G	4 GRN		-	-	-	
	-	-		-	-	-	
PEDESTRIAN MOVEMENTS							
5A (NB LT)	<--R---	AUX CH 11 RED	R	-	-	-	-
	<--Y---	AUX CH 11 YEL		-	-	-	
	<--FYA--	AUX CH 11 GRN		-	-	-	
	<--G---	5 GRN		-	-	-	
6A, 6B (SB)	R	6 RED	R	-	-	-	-
	Y	6 YEL		-	-	-	
	G	6 GRN		-	-	-	
OVERLAPS							
8A, 8B (WB)	R	8 RED	R	-	-	-	-
	Y	8 YEL		-	-	-	
	G	8 GRN		-	-	-	
LS = LOAD SWITCH							

CONFLICT MONITOR MODIFICATIONS:

- CUT DIODES TO ALLOW FYA CHANNELS (9, 11) TO PROCEED WITH PHASES SHOWIN IN PHASING DIAGRAM.
- FYAC SWITCH - OFF; STANDARD FYA MODE IS SELECTED.
- FYA 1-9, 5-11 SWITCHES - ON; ENABLES A CHANNEL PAIR FOR FYA MONITORING FUNCTIONS.
- THE SSM SWITCH IN ON FOR THE PERMISSIVE TURN CHANNELS 9, 11
- THE SSM SWITCH IS OFF FOR THE PROTECTED TURN CHANNELS 1,5
-SIGNAL LOADS ARE NOT BEING DRIVEN FROM THE PROTECTED RED AND YELLOW OUTPUTS THEN THE SSM SWITCH FOR THE ASSOCIATED PROTECTED TURN CHANNEL 1,5 SHOULD BE OFF AND THE YELLOW DISABLE JUMPER IS INSTALLED.

WIRING DIAGRAM



LEGEND

	TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		POWER SOURCE
	TRAFFIC SIGNAL, 3 UNIT HEAD, 12" WITH ARROWS		SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
	DILEMMA ZONE RADAR DETECTION UNIT		POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
	STOP LINE RADAR DETECTION UNIT		SIGNAL SUPPORT POLE NO. ...
	PTZ CAMERA		METER BASE
	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		DUAL LIGHTING/SIGNAL DISCONNECT SWITCH
	RADAR DETECTION CABLE		UNINTERRUPTIBLE POWER SUPPLY CABLE

SUB-SUMMARY

ITEM	EXTENSION	QUANTITY	UNIT	DESCRIPTION
625	25606	46	FT	CONDUIT, 4", 725.052
625	25908	400	FT	CONDUIT, JACKED OR DRILLED, 725.051, 4"
625	29000	46	FT	TRENCH
625	30706	5	EACH	PULL BOX, 725.08, 24"
625	32000	5	EACH	GROUND ROD
630	03100	52	FT	GROUND MOUNTED SUPPORT, NO. 3 POST
630	79100	18	EACH	SIGN HANGER ASSEMBLY, MAST ARM
630	79500	4	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED
630	80100	161	SQ FT	SIGN, FLAT SHEET
630	83000	15	SF	COVERING OF SIGN
632	04000	2	EACH	VEHICULAR SIGNAL HEAD, MISC.: 3-SECTION FLASHING YELLOW ARROW (POLYCARBONATE)
632	05007	8	EACH	VEHICULAR SIGNAL HEAD, (LED), BLACK, 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, WITH BACKPLATE, AS PER PLAN
632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	40700	1814	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG
632	64010	4	EACH	SIGNAL SUPPORT FOUNDATION
632	68300	54	FT	POWER CABLE, 3 CONDUCTOR, NO. 6 AWG
632	69800	20	FT	SERVICE CABLE, 3 CONDUCTOR, NO. 6 AWG
632	70001	1	EACH	POWER SERVICE, AS PER PLAN
632	77232	3	EACH	SIGNAL SUPPORT, MECHANICAL DAMPER FOR TC-81.21 MAST ARM (GREATER THAN 39' IN LENGTH), AS PER PLAN
632	80402	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 4
632	80502	1	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11
632	80620	2	EACH	SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13
632	90100	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION
632	90104	1	EACH	REUSE OF TRAFFIC SIGNAL ITEM: UBIQUITI RADIO
632	90104	1	EACH	REUSE OF TRAFFIC SIGNAL ITEM: CCTV
633	67100	1	EACH	CABINET FOUNDATION
633	67200	1	EACH	CONTROLLER WORK PAD
633	75001	1	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN
633	99000	1	EACH	CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE COBALT, WITH ASC/3 SOFTWARE, WITH CABINET, TYPE 332, AS PER PLAN
809	69000	2	EACH	ADVANCE RADAR DETECTION
809	69100	4	EACH	STOP LINE RADAR DETECTION

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TRAFFIC SIGNAL SUB-SUMMARY
SR 747 & PORT UNION RD

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