

**ITEM 632 - SIGNAL SUPPORT, MISC.: INSTALLATION OF MAST ARM TC-81.22 DESIGN 2 ON EXISTING SIGNAL SUPPORT**

THIS ITEM OF WORK SHALL FOLLOW ALL REQUIREMENTS OF CMS 632.15 AND 732.11 AND ADDITIONAL DESCRIPTION OF WORK AS STATED BELOW.

THIS ITEM OF WORK SHALL INCLUDE THE FURNISHING AND INSTALLATION OF MAST ARM TC-81.22 DESIGN 2 ON AN EXISTING SIGNAL SUPPORT POLE.

PAYMENT SHALL BE MADE AT THE UNIT BID PRICE UNDER CMS ITEM 632, SIGNAL SUPPORT, MISC.: INSTALLATION OF MAST ARM TC-81.22 DESIGN 2 ON EXISTING SIGNAL SUPPORT FOR EACH INSTALLED, AND SHALL INCLUDE ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS TO COMPLETE THE WORK.

**ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN**

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINETS, CONTROLLERS, PULL BOXES, SIGNAL SUPPORT MOUNTED SIGNS, ETC., SHALL BE REMOVED IN ACCORDANCE WITH CMS 625.21, 630.12, 632.26, AND AS INDICATED ON THE PLANS AND AT THE FOLLOWING INTERSECTION:

E. 93RD ST AND KINSMAN RD

PULL BOXES SHALL BE REMOVED ENTIRELY WITH BACK FILLING, RESTORATION OF SURFACES AND DISPOSAL OF SURPLUS MATERIAL.

ALL ABANDONED CABLES SHALL BE REMOVED FROM AERIAL SPANS, CONDUIT, AND PULL BOXES. DIRECT BURIED CABLES MAY BE ABANDONED IN PLACE. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED CABLES.

THE CONTRACTOR SHALL NOTIFY ODOT AND THE CITY OF CLEVELAND 48 HOURS PRIOR TO THE REMOVAL OF ANY EXISTING TRAFFIC SIGNAL EQUIPMENT. ALL REMOVALS SHALL BE PERFORMED IN THE PRESENCE OF A DESIGNATED REPRESENTATIVE OF ODOT. ITEMS SHALL NOT BE REMOVED UNTIL A NEW OR TEMPORARY INSTALLATION IS IN OPERATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

REMOVED ITEMS AS INDICATED BY CITY STAFF SHALL BE RETURNED TO THE CITY OF CLEVELAND TO THE FOLLOWING LOCATION:

TRAFFIC SIGNAL UNIT  
4150 E. 49TH ST. BLDG. #4  
CLEVELAND, OH 4105

ITEMS TO BE RETURNED SHALL INCLUDE TRAFFIC SIGNAL HEADS, CONTROLLERS, PEDESTRIAN PUSH BUTTONS, PEDESTRIAN SIGNAL HEADS, CABINETS, PEDESTRIAN POLES, AND LUMINAIRES. OTHER MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY CITY OF CLEVELAND-TRAFFIC AND STORE THE MATERIALS ON SITE, SUITABLE PROTECTED, AT A DESIGNATED LOCATION FOR INSPECTION BY CITY STAFF WITHIN FIVE (5) BUSINESS DAYS OF NOTIFICATION BY THE CONTRACTOR. CITY STAFF WILL INDICATE WHICH REMOVED ITEMS WILL BE RETURNED TO THEIR FACILITY. THE CONTRACTOR WILL DELIVER THESE REMOVED ITEMS TO THE CITY FACILITY. THE CONTRACTOR MAY DISPOSE OF MATERIALS THAT ARE NOT INDICATED FOR RETURN WITHIN THE FIVE-DAY TIMEFRAME.

**POINTS OF CONTACT FOR TRAFFIC SIGNALS**

POINTS OF CONTACT FOR COORDINATION OF TRAFFIC SIGNAL WORK ARE:

ANDY CROSS  
CITY OF CLEVELAND  
DIVISION OF TRAFFIC ENGINEERING  
601 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
(216) 664-3197  
ACROSS@CITY.CLEVELAND.OH.US

CHRIS HIRZEL  
DEPARTMENT OF PUBLIC UTILITIES  
CLEVELAND PUBLIC POWER  
1300 LAKESIDE AVENUE  
CLEVELAND, OHIO 44114  
(216) 664-3922  
CHRIZEL@CPP.ORG

JOHN ZASSICK  
CLEVELAND ELECTRIC ILLUMINATING COMPANY  
6896 MILLER ROAD, SUITE 101  
BRECKSVILLE, OHIO 44141  
OFFICE: (440) 546-8706  
CELL: (216) 538-1580  
JMZASSICK@FIRSTENERGYCORP.COM

**ITEM 632 - SIGNALIZATION, MISC.: BACKPLATES**

THIS ITEM OF WORK CONSISTS OF INSTALLING BACKPLATES ON THE EXISTING VEHICULAR SIGNAL HEADS AT THE INTERSECTION OF EAST 93RD STREET AND RAMONA BOULEVARD. ALL LABOR, EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK SHALL BE INCLUDED IN THE CONTRACT BID PRICE FOR EACH ITEM 632 - SIGNALIZATION, MISC.: BACKPLATES.

THE FOLLOWING ESTIMATED QUANTITY IS PROVIDED FOR THE BACKPLATES AND HAS BEEN CARRIED TO THE TRAFFIC SIGNAL GENERAL SUMMARY:

**ITEM 632 - SIGNALIZATION, MISC.: BACKPLATES 6 EACH**

**ITEM 633 - CABINET, TYPE TS-2, AS PER PLAN**

IN ADDITION TO THE REQUIREMENTS OF 633.08 AND 733.03, THE FOLLOWING REQUIREMENTS SHALL APPLY:

CABINETS SHALL BE TS-2, TYPE 1 AND SHALL INCLUDE THE FOLLOWING FEATURES:

- THE FOLLOWING SWITCHES SHALL BE MOUNTED ON THE SWITCH PANEL IN THE CABINET:
  - RUN / STOP TIME
  - CONTROLLER TIME POWER
  - COORDINATION / FREE
  - DETECTOR TEST
  - FLASH CONTROL
- THE FOLLOWING SWITCHES SHALL BE ACCESSIBLE VIA A POLICE PANEL DOOR:
  - SIGNAL SHUTDOWN
  - FLASH CONTROL
  - MANUAL PUSH BUTTON AND 10-FOOT EXTENSION CORD
  - AUTOMATIC / MANUAL TRANSFER
- A SERVICE LAMP WITH DOOR ACTIVATED ON / OFF SWITCH.
- A RISER WITH A MINIMUM HEIGHT OF 12 INCHES SHALL BE INSTALLED AT THE BASE CONTROLLER CABINET IN ACCORDANCE WITH C&MS 733.04, PART A. THE RISER SHALL BE PAID FOR UNDER ITEM 633 - CONTROLLER ITEM, MISC.: CABINET RISER.
- THE CABINET DOOR SHALL BE KEYED WITH A CORBIN #2 LOCK.
- LIGHTNING PROTECTION SHALL BE PROVIDED.
- THE CONTROLLERS SHALL BE PRE-PROGRAMMED WITH ALL CURRENT SETTINGS.
- ALL CONTROLLER CABINETS SHALL BE CAPABLE OF RUNNING A MINIMUM OF EIGHT (8) VEHICLE PHASES WITH FOUR (4) PEDESTRIAN PHASES AND FOUR (4) OVERLAPS WITH A MINIMUM OF 16 LOAD SWITCH BAYS.
- TRAFFIC CONTROL EQUIPMENT SHALL COMPLY WITH C&MS 633 AND 733.
- CABINETS SHALL BE PAINTED DARK BRONZE, FEDERAL COLOR NUMBER F-283 USING THE PROCESS DESCRIBED IN ITEM 632 - SIGNAL SUPPORT, TYPE TC-81.22, AS PER PLAN.
- ALL TRAFFIC SIGNAL INSTALLATIONS SHALL BE DESIGNED AND EQUIPPED FOR APPROACH MONITORING. IF A TWO-PHASE SIGNAL IS USED, A DUAL RING CONTROLLER AND CABINET WIRING UTILIZING PHASES 2+6 AND 4+8 SHALL BE FURNISHED AND INSTALLED.
- TWO-CHANNEL, RACK-MOUNTED DETECTOR UNITS SHALL BE PROVIDED FOR EACH LOOP DETECTOR.

13. THE CONTRACTOR SHALL FURNISH A CABINET PLAN SHOWING COMPONENT PLACEMENT FOR APPROVAL BY THE ENGINEER AND THE CITY OF CLEVELAND.

INCIDENTAL TO THE TRAFFIC SIGNAL CABINET PAYMENT, THE CONTRACTOR SHALL PROVIDE ELTEC GPS TIMESYNC1-GPS (CONTACT CLOSURE OUTPUT) FOR ALL PROPOSED TRAFFIC SIGNAL CONTROLLERS. THIS ITEM INCLUDES A GPS ANTENNA AND THE GPS CONTACT CLOSURE OUTPUT MODULE WITH OUTPUT INTERFACE CABLE FOR AN ATC CONTROLLER WITH SUPPORTED SEPAC FIRMWARE, CONNECTORS, MOUNTING HARDWARE, AND POWER PIGTAIL FOR 12 TO 24 VOLT VDC CABINET POWER SUPPLY. THE CITY OF CLEVELAND WILL CONFIRM PROPER FUNCTIONALITY PRIOR TO ACCEPTANCE AND PAYMENT.

**ITEM 633 - CONTROLLER ITEM, MISC.: CABINET RISER**

IN ADDITION TO THE REQUIREMENTS OF 632.09 AND 733.04, THE FOLLOWING REQUIREMENTS SHALL APPLY:

RISERS SHALL BE PAINTED DARK BRONZE, FEDERAL COLOR NUMBER F-283 USING THE PROCESS DESCRIBED IN ITEM 632 - SIGNAL SUPPORT, TYPE TC-81.22, AS PER PLAN.

**ITEM 816 - TRAINING FOR VIDEO DETECTION SYSTEM**

THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE TRAFFIC SIGNAL GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER:

**ITEM 816 - TRAINING FOR VIDEO DETECTION SYSTEM LS**

**ITEM 809 - ATC CONTROLLER, AS PER PLAN**

THE ATC CONTROLLER SHALL CONFORM TO ITEM 809 AND SHALL BE CURRENT MODEL OF SIEMENS TS-2, TYPE 2, M-60 CONTROLLER. PRIOR TO ORDERING, CONTRACTOR SHALL SUBMIT PRODUCT NUMBER TO CITY OF CLEVELAND: DIVISION OF TRAFFIC ENGINEERING FOR APPROVAL.

**ITEM 816 - VIDEO DETECTION SYSTEM, AS PER PLAN**

THIS ITEM CONSISTS OF FURNISHING AND INSTALLING A COMPLETE WORKING VIDEO DETECTION SYSTEM AS SHOWN IN THE PLANS AT E. 93RD ST. & RAMONA BLVD. THE WORK SHALL INCLUDE ONE VIDEO DETECTION CAMERA, BNC TYPE INTERFACE CONNECTOR, VIDEO PROCESSING UNIT, RACK MOUNT CARDS, POWER SUPPLY, ALL NECESSARY VIDEO AND POWER CABLING WITH END CONNECTORS, MOUNTING BRACKETS, LIGHTNING PROTECTION AND ALL OTHER EQUIPMENT AND INCIDENTALS NEEDED TO PROVIDE A COMPLETE WORKING SYSTEM.

THE WORK, MATERIALS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF ODOT SUPPLEMENTAL SPECIFICATIONS 816 AND 907.

THE VIDEO DETECTION SYSTEM SHALL BE MANUFACTURED BY ITERIS. PRIOR TO ORDERING, CONTRACTOR SHALL SUBMIT PRODUCT NUMBER TO CITY OF CLEVELAND: DIVISION OF TRAFFIC ENGINEERING FOR APPROVAL.

THE VIDEO DETECTION HARDWARE SHALL BE PLACED IN THE NEW CONTROLLER CABINET. UNSPLICED VIDEO CABLE AND POWER CABLE SHALL BE PROVIDED BETWEEN EACH CAMERA AND THE CONTROLLER CABINET PROCESSING UNIT.

SEVEN (7) BUSINESS DAYS PRIOR TO INSTALLATION OF THE VIDEO DETECTION CABINET HARDWARE, THE CONTRACTOR SHALL CONTACT THE CITY OF CLEVELAND SO THE CITY ENGINEER CAN BE PRESENT DURING THE INSTALLATION AND CONFIGURATION OF THE VIDEO DETECTION SYSTEM.

PRIOR TO ACCEPTANCE, THE CONTRACTOR SHALL CERTIFY IN WRITING THAT THE MALFUNCTION MANAGEMENT UNIT HAS BEEN TESTED BY AN AUTOMATIC MONITOR TEST, AND THAT NO CONFLICTS EXIST IN THE PROPER OPERATION OF THE CONTROLLER.

PAYMENT SHALL BE FULL COMPENSATION FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT AND OTHER INCIDENTALS NECESSARY FOR THE COMPLETE INTERSECTION VIDEO DETECTION SYSTEM IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED, AND ACCEPTED. THIS ITEM SHALL BE PAID AT THE CONTRACT PRICE BID PER EACH INTERSECTION FOR ITEM 816 - VIDEO DETECTION SYSTEM, AS PER PLAN.

SHEET NUMBER							ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET
171	172	173	175	176	177	178						
			287		63		625	25408	350	FT	CONDUIT, 2", 725.051	
			133		31		625	25504	164	FT	CONDUIT, 3", 725.051	
			544				625	25906	544	FT	CONDUIT, JACKED OR DRILLED, 725.051, 3"	
			382		94		625	29000	476	FT	TRENCH	
			8		1		625	31600	9	EACH	PULL BOX, MISC.: 17" X 30"	171
			2				625	31600	2	EACH	PULL BOX, MISC.: 24" X 36"	171
			9		4		625	32000	13	EACH	GROUND ROD	
			382		94		625	36011	476	FT	UNDERGROUND WARNING/MARKING TAPE, AS PER PLAN	171
			92		64		630	80101	156	SF	SIGN, FLAT SHEET, AS PER PLAN	171
			4		2		632	05007	6	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, YELLOW	171
			4				632	05087	4	EACH	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN, YELLOW	171
			8		8		632	20731	16	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	171
			8		8		632	20751	16	EACH	ACCESSIBLE PEDESTRIAN PUSHBUTTON, AS PER PLAN	172
			8		2		632	25000	10	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
			8		8		632	25010	16	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
6			8				632	26501	14	EACH	DETECTOR LOOP, AS PER PLAN	172
			8				632	27005	8	EACH	LOOP DETECTOR UNIT, AS PER PLAN	172
					168		632	40201	168	FT	SIGNAL CABLE, 2 CONDUCTOR, NO. 14 AWG, AS PER PLAN	172
			3743		1430		632	40701	5173	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN	172
			4		1		632	64010	5	EACH	SIGNAL SUPPORT FOUNDATION	
			4		3		632	64020	7	EACH	PEDESTAL FOUNDATION	
			2659				632	65201	2659	FT	LOOP DETECTOR LEAD-IN CABLE, AS PER PLAN	172
			81				632	67301	81	FT	POWER CABLE, 3 CONDUCTOR, NO. 8 AWG, AS PER PLAN	172
			1				632	70000	1	EACH	POWER SERVICE	
			1				632	70600	1	EACH	CONDUIT RISER, 3" DIAMETER	
					1		632	72101	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 2, AS PER PLAN	172
				1			632	72111	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4, AS PER PLAN	172
				3			632	72131	3	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 12, AS PER PLAN	172
						1	632	80700	1	EACH	SIGNAL SUPPORT, MISC.: INSTALLATION OF MAST ARM TC-81.22 DESIGN 2 ON EXISTING SIGNAL SUPPORT	173
				4		3	632	89601	7	EACH	PEDESTAL, 8', AS PER PLAN	172
				1			632	90101	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER PLAN	173
				22		14	632	90200	36	EACH	REUSE OF VEHICULAR SIGNAL HEAD	
		6					632	90400	6	EACH	SIGNALIZATION, MISC.: BACKPLATES	173
				1			633	65511	1	EACH	CABINET, TYPE TS-2, AS PER PLAN	173
				1			633	67100	1	EACH	CABINET FOUNDATION	
				1			633	67200	1	EACH	CONTROLLER WORK PAD	
				1			633	99000	1	EACH	CONTROLLER ITEM, MISC.: CABINET RISER	173
				1			809	69123	1	EACH	ATC CONTROLLER, AS PER PLAN	173
						1	816	30001	1	EACH	VIDEO DETECTION SYSTEM, AS PER PLAN	173
		LS					816	30100	LS		TRAINING FOR VIDEO DETECTION SYSTEM	

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