


MAR-4/4D-11.63/0.74

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2022-04-21 TIME: 1:22:16 PM USER: Tm.Williams
\\uspeas\c\1125613_MAR_04-4D\7_0_Production\Worksheets\111383\40p-Engineering\Roadway\Sheets\111383_GG001.dgn

OFFICE CALCS	SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.			
	6	25	26	63	84	88					01/S<2/BR	02/SAF/OT									
		906	46										952		202	23000	952	SY	PAVEMENT REMOVED		
		2,165												2,165	202	30000	2,165	SF	WALK REMOVED		
		24											24		202	30600	24	SY	CONCRETE MEDIAN REMOVED		
		15	16										31		202	30800	31	SY	TRAFFIC ISLAND REMOVED		
		376												376	202	32000	376	FT	CURB REMOVED		
		104	30										134		202	35100	134	FT	PIPE REMOVED, 24" AND UNDER		
		1,016	561										1,577		202	38500	1,577	FT	BRIDGE RAILING REMOVED		
		2	2										4		202	58100	4	EACH	CATCH BASIN REMOVED		
	173												173		203	10000	173	CY	EXCAVATION		
	12												12		203	20000	12	CY	EMBANKMENT		
1,195													1,195		204	10000	1,195	SY	SUBGRADE COMPACTION		
	2												2		204	45000	2	HOUR	PROOF ROLLING		
		427	736											1,163	608	10000	1,163	SF	4" CONCRETE WALK		
		574	499											1,073	608	52000	1,073	SF	CURB RAMP		
													5,000		832	30000	5,000	EACH	EROSION CONTROL		
													80		611	04400	80	FT	12" CONDUIT, TYPE B		
		69											69		611	05900	69	FT	15" CONDUIT, TYPE B		
			4										4		611	98150	4	EACH	CATCH BASIN, NO. 3		
		1											1		611	98180	1	EACH	CATCH BASIN, NO. 3A		
													1,437		254	01000	1,437	SY	PAVEMENT PLANING, ASPHALT CONCRETE, 3"		
1,437													15		301	56000	15	CY	ASPHALT CONCRETE BASE, PG64-22, (449)		
15													205		304	20001	205	CY	AGGREGATE BASE, AS PER PLAN		
205													384		407	20000	384	GAL	NON-TRACKING TACK COAT	6	
384													216		442	22100	216	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (449), 3"		
216													1,075		451	14010	1,075	SY	9" REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
1,075													24		452	10010	24	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
24		155	46										20	201	609	26000	201	FT	CURB, TYPE 6		
20													20		609	56000	20	CY	6" CONCRETE TRAFFIC ISLAND		
													195		625	00470	195	EACH	CONNECTION, UNFUSED BOLTED		
													14		625	10490	14	EACH	LIGHT POLE, CONVENTIONAL, A12B30		
													56		625	10614	56	EACH	LIGHT POLE ANCHOR BOLTS ON STRUCTURE		
													13,689		625	23200	13,689	FT	NO. 4 AWG 2400 VOLT DISTRIBUTION CABLE		
													4,164		625	23400	4,164	FT	NO. 10 AWG POLE AND BRACKET CABLE		
													842		625	25300	842	FT	CONDUIT, 1-1/2", 725.04		
					3,329	4,463							4,463	3,329	625	25402	7,792	FT	CONDUIT, 2", 725.05		
													100		625	25910	100	FT	CONDUIT CLEANED AND CABLES REMOVED		
													14		625	26252	14	EACH	LUMINAIRE, CONVENTIONAL, SOLID STATE (LED), 200W HPS EQUIVALENT, TYPE II, 3000K		
													32		625	27502	32	EACH	LUMINAIRE, UNDERPASS, SOLID STATE (LED), 100W HPS EQUIVALENT, TYPE II, 3000K		
													60		625	29920	60	EACH	STRUCTURE JUNCTION BOX		
													32		625	29921	32	EACH	STRUCTURE JUNCTION BOX, AS PER PLAN	86	
													1		625	30706	1	EACH	PULL BOX, 725.08, 24"		
				2	8								16	8	625	32000	24	EACH	GROUND ROD		
													2		625	33000	2	EACH	STRUCTURE GROUNDING SYSTEM		
													2		625	34010	2	EACH	POWER SERVICE REFURBISHED		
													LS		LS	SPECIAL	62540000	LS		MAINTAIN EXISTING LIGHTING	86
													14		625	75400	14	EACH	LIGHT POLE REMOVED		
													46		625	75506	46	EACH	LUMINAIRE REMOVED		
													946		630	02100	946	FT	GROUND MOUNTED SUPPORT, NO. 2 POST		
													104		630	03100	104	FT	GROUND MOUNTED SUPPORT, NO. 3 POST		
													2		630	72540	2	EACH	OVERHEAD SIGN SUPPORT, TYPE TC-16.22, DESIGN 12		
													4	14	630	79100	18	EACH	SIGN HANGER ASSEMBLY, MAST ARM		
													13	9	630	79500	22	EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED		

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER
AJP

REVIEWER
SRB 01-12-22

PROJECT ID
111383

SHEET TOTAL
P.21 190

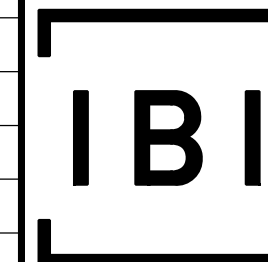
MAR-4/4D-11.63/0.74

MODEL: Sheet PAPER: 34x22 (in.) DATE: 2022-04-21 TIME: 2:32:21 PM USER: Tm.Williams
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SHEET NUM.										PART.		ITEM	ITEM EXT	GRAND TOTAL	UNIT	DESCRIPTION	SEE SHEET NO.
60	63	84	85							01/S<2/BR	02/SAF/OT						
TRAFFIC CONTROL CONTINUED																	
	5									5		630	79610	5	EACH	SIGN SUPPORT ASSEMBLY, BARRIER MOUNTED	
	425.8	122.7								425.8	122.7	630	80100	548.5	SF	SIGN, FLAT SHEET	
	94									94		630	80224	94	SF	SIGN, OVERHEAD EXTRUSHEET	
	2									2		630	84510	2	EACH	RIGID OVERHEAD SIGN SUPPORT FOUNDATION	
	30									30		630	97700	30	EACH	SIGNING, MISC.:PIER MOUNTED SIGN ASSEMBLY	72
	9									9		630	84900	9	EACH	REMOVAL OF GROUND MOUNTED SIGN AND DISPOSAL	
	29									29		630	87500	29	EACH	REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL	
	4									4		630	86002	4	EACH	REMOVAL OF GROUND MOUNTED POST SUPPORT AND DISPOSAL	
	4									4		630	87401	4	EACH	REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL, AS PER PLAN	72
	2									2		630	89703	2	EACH	REMOVAL OF OVERHEAD SIGN SUPPORT AND DISPOSAL, AS PER PLAN	72
0.33										0.33		644	00104	0.33	MILE	EDGE LINE, 6"	
0.16										0.16		644	00204	0.16	MILE	LANE LINE, 6"	
89										89		644	00500	89	FT	STOP LINE	
775										775		644	00620	775	FT	CROSSWALK LINE, 12"	
849										849		644	30000	849	FT	REMOVAL OF PAVEMENT MARKING	
0.68										0.68		646	10010	0.68	MILE	EDGE LINE, 6"	
0.34										0.34		646	10110	0.34	MILE	LANE LINE, 6"	
212										212		646	10800	212	SF	ISLAND MARKING	
TRAFFIC SIGNALS																	
		55									55	625	25500	55	FT	CONDUIT, 3", 725.04	
		420									420	625	25600	420	FT	CONDUIT, 4", 725.04	
		564									564	625	29400	564	FT	TRENCH IN PAVED AREA	
		4									4	625	29940	4	EACH	BARRIER JUNCTION BOX	
		7									7	625	30510	7	EACH	PULL BOX, 725.06, SIZE 4	
		2									2	625	30520	2	EACH	PULL BOX, 725.06, SIZE 7	
		9									9	625	31510	9	EACH	PULL BOX REMOVED	
		566									566	625	36010	566	FT	UNDERGROUND WARNING/MARKING TAPE	
		14									14	632	05006	14	EACH	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE	
		16									16	632	20731	16	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	74
		14									14	632	25000	14	EACH	COVERING OF VEHICULAR SIGNAL HEAD	
		16									16	632	25010	16	EACH	COVERING OF PEDESTRIAN SIGNAL HEAD	
		2,126									2,126	632	40500	2,126	FT	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG	
		1,196									1,196	632	40700	1,196	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG	
		4									4	632	64010	4	EACH	SIGNAL SUPPORT FOUNDATION	73
		4									4	632	64020	4	EACH	PEDESTAL FOUNDATION	
			200								200	632	68200	200	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	
			400								400	632	69500	400	FT	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	
			2								2	632	70000	2	EACH	POWER SERVICE	73
			1								1	632	72110	1	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4	
			2								2	632	72140	2	EACH	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13	
			1								1	632	71372	1	EACH	SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 13	
			3								3	632	89900	3	EACH	PEDESTAL, 8', TRANSFORMER BASE	
			1								1	632	90008	1	EACH	PEDESTAL, 15', TRANSFORMER BASE	
			2								2	632	90100	2	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	73
			6								6	632	90400	6	EACH	SIGNALIZATION, MISC.:REUSE OF PUBLIC ADDRESS SPEAKERS	74
			2								2	633	65511	2	EACH	CABINET, TYPE TS-2, AS PER PLAN	75
			2								2	633	75001	2	EACH	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	75
			2								2	633	99000	2	EACH	CONTROLLER ITEM, MISC.:CONNECTION OF EXISTING INTERCONNECT SYSTEM	75
			4,487								4,487	804	15010	4,487	FT	FIBER OPTIC CABLE, 24 FIBER	
			4								4	804	32012	4	EACH	DROP CABLE, 24 FIBER	
			2								2	804	34022	2	EACH	FIBER TERMINATION PANEL, 24 FIBER	
			8								8	804	35000	8	EACH	FUSION SPLICE	
			5								5	809	69100	5	EACH	STOP LINE RADAR DETECTION	
			2								2	809	69201	2	EACH	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN	74
TRAFFIC SIGNALS ALTERNATES																	
			2								2	809	69122	2	EACH	ATC CONTROLLER, V6.24 (GENERIC) (ALTERNATE 1)	75
			2								2	809	69122	2	EACH	ATC CONTROLLER, V6.24 (YUNEX/SIEMENS) (ALTERNATE 2)	75

GENERAL SUMMARY

DESIGN AGENCY



DESIGNER

AJP

REVIEWER

SRB 01-12-22

PROJECT ID

111383

SHEET

P.22

TOTAL

190

ITEM 632 - POWER SERVICE

THE CONTRACTOR SHALL CONTACT THE METER SECTION OF OHIO EDISON 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 BE RESPONSIBLE TO CONTACT THE POWER COMPANY FOR THE ELECTRICAL SERVICE CONNECTION. 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 WITH THE EXCEPTION OF NORMAL MONTHLY ENERGY CHARGES. WHERE THERE IS AN EXISTING TRAFFIC SIGNAL THAT IS BEING REPLACED, THE CONTRACTOR SHALL COORDINATE WITH THE POWER COMPANY TO CONTINUE BILLING ON THE EXISTING ACCOUNT.

UTILITIES

SEE SHEET 6 FOR A LIST OF UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS.

THE LOCATION OF THE UNDERGROUND UTILITIES ARE AS OBTAINED FROM THE OWNERS AS REQUIRED BY SECTION 153.64 O.R.C.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL SYSTEM INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF ONE YEAR FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL SYSTEM: CONTROLLERS AND ASSOCIATED EQUIPMENT, DETECTOR UNITS, INTERCONNECTION ITEMS AND MASTER CONTROL EQUIPMENT.

CUSTOMARY MANUFACTURER'S GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE STATE OR THE MAINTAINING AGENCY FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

WORK INSPECTION

BEFORE ANY WORK IS STARTED ON THE TRAFFIC SIGNAL, THE CITY ENGINEER (740-387-2240) AND THE CONTRACTORS REPRESENTATIVE SHALL REVIEW AND RESOLVE ANY POTENTIAL PROBLEMS AT THE LOCATION WHERE THE NEW SIGNAL WILL BE CONSTRUCTED.

THE CONTRACTOR SHALL PROVIDE THE PROJECT ENGINEER AND CITY ENGINEER WITH 72 HOUR NOTICE OF ANY SIGNAL WORK TO BE PERFORMED AT THE INTERSECTION SITE(S) SO THAT INSPECTION SERVICES CAN BE SUPPLIED.

SIGNAL ACTIVATION

PRIOR TO ACTIVATING THE NEW SIGNAL TO STOP-AND-GO MODE AND/OR REMOVING THE EXISTING TRAFFIC SIGNAL FROM SERVICE, ALL ITEMS IN THE PROPOSED SIGNAL PLAN SHALL BE FULLY COMPLETED, (I.E., VEHICLE DETECTION, PEDESTRIAN SIGNAL HEADS, ETC.) IF THERE ARE CONSTRUCTABILITY ISSUES (I.E., ROADWAY WIDENING, ETC.) THAT PREVENT THE SIGNAL FROM BEING COMPLETED PRIOR TO ACTIVATION, IT SHALL BE BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER. THE DISTRICT TRAFFIC ENGINEER WILL THEN REVIEW, APPROVE OR REJECT PROPOSALS TO ACTIVATE THE TRAFFIC SIGNAL PRIOR TO COMPLETION.

THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND DISTRICT TRAFFIC ENGINEER AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING THE FINAL INSPECTION OF THE SIGNAL INSTALLATION. FINAL INSPECTION IS NOT CONSIDERED COMPLETE UNTIL DESIGNATED DISTRICT TRAFFIC PERSONNEL INSPECT THE TRAFFIC SIGNAL AND ISSUE WRITTEN APPROVAL. IF ISSUES ARE FOUND DURING THE FINAL INSPECTION THAT AFFECT THE SAFETY OF THE TRAVELING PUBLIC AND/OR THE EFFICIENCY OF THE INTERSECTION, THE SIGNAL SHALL NOT BE ACTIVATED ON THE PROPOSED DATE. ANY PUNCH LIST ITEMS THAT ARE FOUND SHALL BE CORRECTED AND REINSPECTED BY DISTRICT TRAFFIC PERSONNEL PRIOR TO FINAL ACCEPTANCE. ODOT FORCES SHALL ONLY ASSUME DAY TO DAY MAINTENANCE OF THE TRAFFIC SIGNAL AFTER FINAL WRITTEN ACCEPTANCE HAS BEEN ISSUED.

ITEM 632 - REMOVAL OF TRAFFIC SIGNAL INSTALLATION

TRAFFIC SIGNAL INSTALLATIONS, INCLUDING SIGNAL HEADS, CABLE, MESSENGER WIRE, STRAIN POLES, CABINET, CONTROLLER, ETC. SHALL BE REMOVED IN ACCORDANCE WITH C&MS 632.26 AND AS INDICATED ON THE PLANS. REMOVED ITEMS SHALL BE REUSED AS PART OF A NEW INSTALLATION ON THE PROJECT OR STORED ON THE PROJECT FOR SALVAGE BY THE CITY OF MARION IN ACCORDANCE WITH THE LISTING GIVEN HEREIN.

REMOVED ITEMS SHALL BE DELIVERED TO:

CITY OF MARION
ATTN: JIM BISCHOFF
233 W. CENTER ST.
MARION, OH 43302

IN THE EVENT THE ITEMS STORED ON THE PROJECT FOR SALVAGE BY THE LOCAL AGENCY ARE NOT REMOVED, THE CONTRACTOR SHALL, WHEN DIRECTED BY THE ENGINEER IN WRITING, REMOVE AND DISPOSE OF THE ITEMS AT NO ADDITIONAL COST TO THE PROJECT.

ITEM 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 LOCATION OF THE SUPPORT POLES.

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.

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 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.

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 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 OR DELAWARE COUNTY FOR POLICE SERVICES AND MAINTENANCE SERVICES BY COUNTY FORCES SHALL BE DEDUCTED FROM MONIES DUE OR TO BECOME DUE THE CONTRACTOR IN ACCORDANCE WITH PROVISIONS OF SECTION 105.15.

MAINTENANCE OF TRAFFIC SIGNAL/FLASHER INSTALLATION (CONTINUED)

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 2 HOURS AND SHALL NOT INCLUDE THE HOURS OF 6 AM TO 7 PM. 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, SHALL BE PROTECTED, BY THE CONTRACTOR, BY THE INSTALLATION OF TEMPORARY "STOP" SIGNS.

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 RECORD OF MALFUNCTION 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.

DESIGN AGENCY



DESIGNER

JMB

REVIEWER

BSS 01-12-22

PROJECT ID

111383

SHEET TOTAL

P.73 | 190

ITEM 633 - UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS 633 AND 733, A CABINET RISER (8 INCH MINIMUM) AND ANCHOR BOLTS SHALL BE PROVIDED WITH THE BASE MOUNTED CABINET. BEFORE PERFORMING THE WORK, THE CONTRACTOR, THE DISTRICT TRAFFIC ENGINEER AND THE PROJECT ENGINEER WILL PERFORM A SITE INSPECTION TO ESTABLISH THE LOCATION OF THE UPS CABINET AND FOUNDATION.

THE UPS CABINET SHALL INCLUDE A GENERATOR POWER PANEL WITH A HEAVY DUTY POWER RELAY VERSUS THE LINE VOLTAGE GENERATOR SWITCH. THE GENERATOR INLET SHALL BE A RECESSED PANEL WITH A DOOR THAT IS FLUSH WITH THE EXTERNAL SIDE OF THE UPS CABINET. IT SHALL INCLUDE A RECESSED PLUG, AUTOMATIC TRANSFER SWITCH, A DOOR THAT SECURELY CLOSES OVER THE POWER CORD, AND AN LED LIGHT THAT INDICATES LINE POWER IS AVAILABLE.

THE UPS OUTPUT NOTIFICATIONS FOR ON BATTERY, BATTERY 2 HOUR TIMER, AND LOW BATTERY-NO LINE POWER SHALL BE WIRED INTO THE TRAFFIC SIGNAL CABINET BACK PANEL TO PROVIDE SPECIAL STATUS ALARMS FOR EACH OUTPUT INTO THE SIGNAL CONTROLLER. SPECIAL STATUS ALARMS SHALL BE PROGRAMMED INTO THE CONTROLLER.

THIS ITEM SHALL INCLUDE A RED LED STATUS INDICATOR LAMP TO ALLOW MAINTENANCE PERSONNEL AND LAW ENFORCEMENT TO QUICKLY ASSESS WHETHER A TRAFFIC SIGNAL CABINET IS BEING POWERED BY A UPS. THE LED HOUSING SHALL BE NEMA 4X, IP65 OR IR66, RATED FOR OUTDOOR USE AND BE TAMPER/ SHATTER RESISTANT. IT SHALL BE A DOMED ENCLOSURE CONTAINING A RED LENS WITH LED THAT IS VISIBLE FROM 100 FEET MINIMUM. THE ENCLOSURE AND LED LAMP UNIT SHALL BE PLACED ON THE STREET-SIDE OF THE CABINET OR CENTERED ON THE TOP SURFACE OF THE UPS CABINET AND SEALED FROM WATER INTRUSION. IT SHOULD BE WIRED USING MINIMUM 20GA STRANDED, INSULATED HOOKUP WIRE TO THE STATUS RELAY OUTPUTS OF THE UPS. THE WIRES SHALL BE TERMINATED BY LUGS AT THE DISPLAY END AND PERMANENTLY LABELED "BACKUP POWER STATUS DISPLAY", WITH WIRE POLARITY INDICATED. THE RED LED SHALL ONLY ILLUMINATE TO INDICATE THE CABINET IS OPERATING UNDER UPS BACKUP POWER (THE "BACKUP" OPERATING CONDITION). THIS ITEM ALSO INCLUDES PROGRAMMING THE UPS STATUS RELAY OUTPUTS TO PRODUCE THE LAMP STATUS DISPLAYS. THESE STATUS DISPLAYS WILL BE SOLID 100% DUTY CYCLE (NOT FLASHING) DISPLAYS. THE OPERATING VOLTAGE OF THE LED LAMP SHALL BE 120V AC UNLESS OTHERWISE INDICATED.

A BATTERY BALANCER SHALL BE FURNISHED AND INSTALLED WITH THE SYSTEM.

THIS ITEM SHALL INCLUDE A 60 MONTH WARRANTY AS REQUIRED PER ODOT CMS AND SUPPLEMENTAL SPEC 800.

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

THE CABINET SHALL BE FURNISHED AND INSTALLED ACCORDING TO CMS 633 AND 733, BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS LIST (TAP).

THE EQUIPMENT PROVIDED AS PART OF THIS CONTRACT SHALL BE THE LATEST MODEL, CURRENTLY UNDER PRODUCTION AND NEW. THE GROUND MOUNTED CABINET SIZE 7 SHALL HAVE A MINIMUM OF THREE SHELVES. THE CABINET SHALL BE ALUMINUM WITH THE NATURAL ALUMINUM FINISH INSIDE AND OUTSIDE. THE LOAD BAY SHALL BE THE TF5016 OR NEWER, WITH 16 LOAD SWITCH POSITIONS. PROVIDE ONLY THE EXACT NUMBER OF LOAD SWITCHES REQUIRED. EACH LOAD SWITCH SHALL HAVE LIGHT EMITTING DIODES (LEDS) FOR THE CONTROLLER OUTPUT AND LOAD SWITCH OUTPUT. ALSO PROVIDE 8 FLASH RELAY POSITIONS (BUT ONLY SUPPLY THE EXACT NUMBER OF RELAYS NEEDED FOR EACH SPECIFIC INTERSECTION), 1 NEMA 2-CIRCUIT FLASHER, AND AN MMU MONITOR. EACH CABINET SHALL COME EQUIPPED WITH TWO 16-CHANNEL CABINET DETECTOR RACKS (CDR) INCLUDING BUS INTERFACE UNITS (BIU). THE LOOP DETECTOR TERMINATION PANEL FOR THE SECOND DETECTOR RACK SHALL BE OMITTED. WHERE LOOP DETECTORS ARE SPECIFIED, THE CABINET SHALL INCLUDE THE EXACT NUMBER OF FOUR CHANNEL DETECTOR CARDS WITH SOFTWARE REQUIRED FOR EACH INTERSECTION. THE CABINET SHALL BE EQUIPPED WITH A CABINET POWER SUPPLY (CPS). THE CABINET SHALL BE WIRED TO ALLOW THE USE OF EVP CONFIRMATION LIGHTS. THE POLICE PANEL ON THE OUTSIDE OF THE CABINET DOOR SHALL HAVE A FLASH SWITCH, A SWITCH FOR AUTOMATIC/MANUAL OPERATION, SIGNAL ON/OFF SWITCH AND A MANUAL PUSHBUTTON WITH A MINIMUM CORD LENGTH OF 10 FEET. THE TECHNICIAN PANEL ON THE INSIDE OF THE CABINET DOOR SHALL INCLUDE A FLASH SWITCH, A STOP TIME SWITCH, AND AN EQUIPMENT ON/OFF SWITCH. A CABINET DOOR OPEN SWITCH AND A CABINET LIGHT ON / OFF SWITCH SHALL ALSO BE SUPPLIED.

THE CONTROLLER CABINET SHALL ALSO INCLUDE:

- A. SLIDE-OUT LAPTOP SHELF
- B. INTERIOR, UNDERSHELF LED CABINET LIGHTING, INCLUDING A MINIMUM OF 2 PANELS OF 6 HIGH-INTENSITY LED'S EACH AND A DOOR-ACTIVATED SWITCH. THE LED PANELS SHALL BE MOUNTED IN LOCATIONS TO MAXIMIZE LIGHT ON THE CABINET EQUIPMENT.
- C. A GOOSENECK/ADJUSTABLE LIGHT FIXTURE WITH AN LED LAMP. THE ADJUSTABLE LIGHT FIXTURE SHALL BE MOUNTED ON THE LOWER RIGHT SIDE OF THE CONTROLLER CABINET.
- D. A MINIMUM OF TWO (2) GFCI PROTECTED RECEPTACLES
- E. A MINIMUM OF SIX (6) SURGE PROTECTED (NON-GFCI)RECEPTACLES

CONTROLLER CABINET LABELING TO IDENTIFY THE WIRING AND FUNCTION DETECTOR LEAD-IN CABLE: PHASE NUMBER SERVICE, DIRECTION, MOVEMENT TYPE, AND LOOP PLAN NUMBER.

SIGNAL HEAD FIELD WIRING: PHASE NUMBER, DIRECTION, MOVEMENT TYPE, AND COLOR (RED, YELLOW, GREEN, YELLOW ARROW, GREEN ARROW) OR PEDESTRIAN MOVEMENT.

THE MALFUNCTION MANAGEMENT UNIT SHALL BE MANUFACTURED BY EDI AND HAVE A RJ-45 PORT FOR PC/NETWORK COMMUNICATIONS.

EACH CONDUIT ENTRANCE TO THE CABINET SHALL BE SEALED WITH A RUBBER PIPE/CONDUIT SEAL GASKET. THE SEAL SHALL BE OF A MATERIAL AND TYPE TIGHTLY FITTING AND ABLE TO SEAL OUT WATER, INSECTS, RODENTS, AND DIRT. THE SEAL SHALL BE EASILY REMOVED FOR SERVICE INSTALLATIONS OR CABLE REPLACEMENTS.

ITEM 633 - CABINET, TYPE TS-2, AS PER PLAN (CONTINUED)

PROVIDE A DEDICATED CIRCUIT BREAKER FOR HIGHWAY LIGHTING. DEDICATE ONE LEG OF THE 120/240 POWER SERVICE TO THE TRAFFIC SIGNAL AND ONE LEG TO THE HIGHWAY LIGHTING. DO NOT POWER LIGHTS THROUGH THE UPS.

THE CONTRACTOR SHALL PROVIDE THE CABINET WIRING DIAGRAM/PLANS IN .PDF FORMAT TO ODOT DISTRICT 6 TRAFFIC.

PAYMENT FOR ITEM 633 CABINET, TYPE TS-2, AS PER PLAN, WILL BE AT THE CONTRACT BID PRICE COMPLETE AND IN PLACE AND CONNECTIONS TESTED AND ACCEPTED.

ITEM 633 - CONTROLLER ITEM, MISC.: CONNECTION TO EXISTING INTERCONNECT SYSTEM

THIS ITEM OF WORK SHALL INVOLVE PROVIDING CONNECTION TO EXISTING INTERCONNECT SYSTEMS AS DETAILED BELOW.

PRIOR TO PHASE 1 CONSTRUCTION, CONTRACTOR SHALL DISCONNECT EXISTING INTERCONNECT ON PROSPECT STREET FROM THE CONTROLLER AT THE INTERSECTION OF PROSPECT AND CENTER. INTERCONNECT SHALL BE REMOVED FROM CONDUIT ON THE EAST SIDE OF THE BRIDGE AND PULLED FROM EXISTING CONDUIT TO THE INTERSECTION AT SILVER STREET. EXISTING INTERCONNECT SHALL ALSO BE REMOVED FROM THE INTERSECTION AT CENTER STREET, SOUTH ALONG PROSPECT STREET TO THE EXISTING PULL BOX AT STA. 581+91 (+/-).

THE CONTRACTOR SHALL INSTALL 24 STRAND FIBER OPTIC FROM THE PROPOSED CONTROLLER AT THE INTERSECTION OF PROSPECT & CENTER, THROUGH NEW CONDUIT LOCATED IN THE BRIDGE PARAPET TO THE EXISTING PULL BOX AT THE NORTH END OF THE BRIDGE, THEN THROUGH EXISTING CONDUIT AND PULL BOXES TO THE CONTROLLER AT SILVER STREET.

PRIOR TO PHASE 2 CONSTRUCTION, CONTRACTOR SHALL DISCONNECT EXISTING INTERCONNECT ON STATE STREET FROM THE CONTROLLER AT THE INTERSECTION OF STATE AND CENTER. INTERCONNECT SHALL BE REMOVED FROM CONDUIT IN THE EAST PARAPET AND PULLED FROM EXISTING CONDUIT TO THE INTERSECTION AT GEORGE STREET.

THE CONTRACTOR SHALL INSTALL 24 STRAND FIBER OPTIC INTERCONNECT CABLE FROM THE CONTROLLER TO THE EXISTING PULL BOX IN THE RAISED CONCRETE MEDIAN AT THE SOUTHEAST END OF THE STATE STREET BRIDGE, THROUGH NEW CONDUIT LOCATED IN THE BRIDGE PARAPET, TO THE EXISTING PULL BOX AT THE NORTH END OF THE BRIDGE, THEN THROUGH EXISTING CONDUIT AND PULL BOXES TO THE CONTROLLER AT GEORGE STREET.

THE EXISTING AND PROPOSED CONTROLLERS ALONG PROSPECT STREET AND STATE STREET SHALL BE PROGRAMMED TO MATCH THE EXISTING COORDINATED SYSTEM TIMING. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXISTING TIMING INFORMATION FROM THE CONTROLLERS, THE CITY OF MARION, OR FROM EXISTING PLANS. NO SYSTEM ANALYSIS SHALL BE PERFORMED.

ESTIMATED QUANTITIES FOR FIBER OPTIC CABLE, CONDUIT IN NEW LOCATIONS, AND PULL BOXES REQUIRED AS PART OF THE SIGNAL RECONSTRUCTION HAVE BEEN ITEMIZED SEPARATELY. ALL OTHER EQUIPMENT NECESSARY TO COMPLETE THIS ITEM IS CONSIDERED INCIDENTAL.

PAYMENT FOR "ITEM 633 CONTROLLER ITEM, MISC.: CONNECTION TO EXISTING INTERCONNECT SYSTEM" WILL BE AT THE CONTRACT BID PRICE PER EACH INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND OTHER INCIDENTALS TO PROVIDE A CONNECTION TO THE INTERCONNECT SYSTEM COMPLETE AND IN PLACE, TESTED, AND ACCEPTED.

ALTERNATE BID ITEMS

ITEM 809 - ATC V6.24 CONTROLLER (GENERIC) (ALTERNATE 1)
THE CONTROLLER UNIT SHALL BE FURNISHED AND INSTALLED PER SS809 AND BE LISTED ON THE TRAFFIC AUTHORIZED PRODUCTS (TAP) LIST.

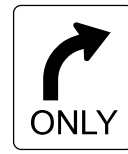
ITEM 809 - ATC V6.24 CONTROLLER (YUNEX/SIEMENS) (ALTERNATE 2)
IN ADDITION TO MEETING THE REQUIREMENTS OF ITEM 809 - ATC V6.24 CONTROLLER, AS PER PLAN, THE CONTROLLER FURNISHED SHALL BE A YUNEX/SIEMENS m60 ATC CONTROLLER.



SIGNS



S1
R6-2R-24



S2, S5
R3-5R-30



S3
R6-2L-24



S4
R3-1-24



S6
R3-5L-30

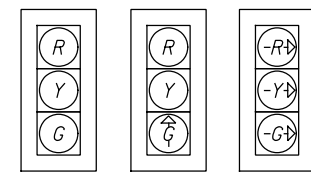


S7, S8, S9
R3-5a-30



S10
R5-1-30
POLE MTD.

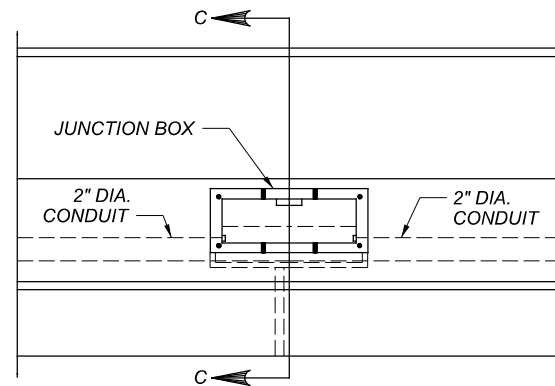
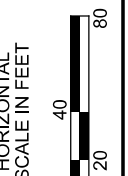
SIGNAL HEADS



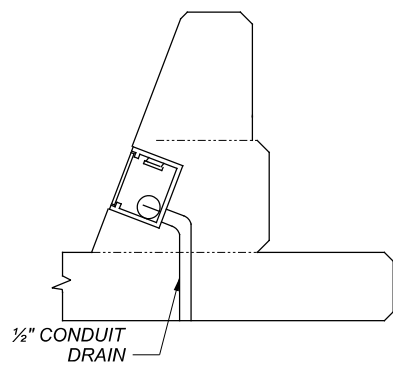
2A, 2B, 2C, 4A, 4B
4C
8A, 8B



PEDESTRIAN HEADS
(LED, COUNTDOWN, TYPE D2)



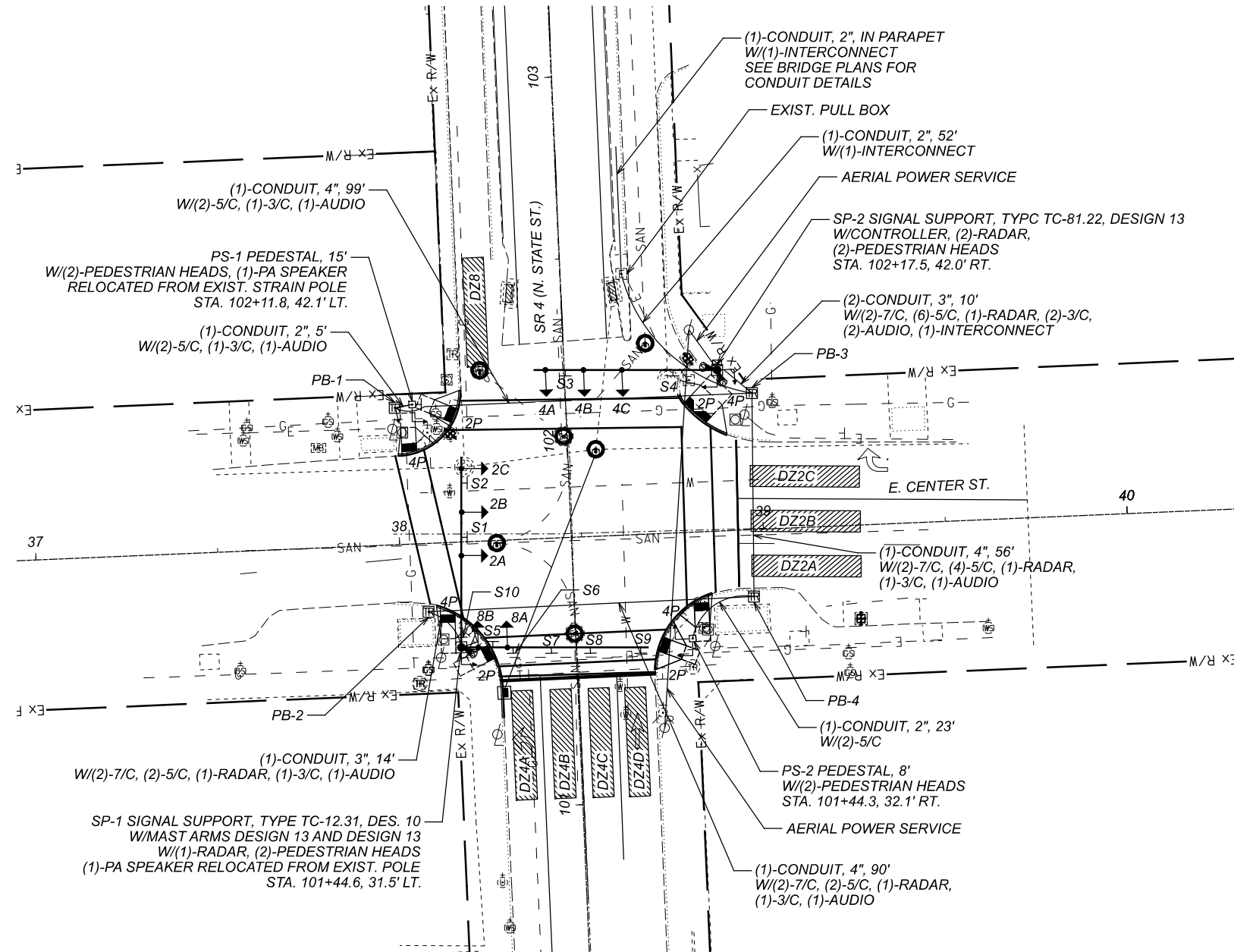
TYPICAL INTERCONNECT JUNCTION BOX ELEVATION



SECTION C-C

BARRIER JUNCTION BOXES TO BE INSTALLED IN RIGHT PARAPET AT THE FOLLOWING LOCATIONS:

STA. 107+00
STA. 111+50



FOR SIGNAL QUANTITIES, SEE SHEETS 84-85.

ALL EXCAVATION FOR POLE AND PEDESTAL FOUNDATIONS, PULL BOXES, AND TRENCHING SHALL BE PERFORMED BY HAND DIGGING, VACUUM EXCAVATION, OR OTHER NON-DESTRUCTIVE MEANS DUE TO SHALLOW UTILITIES.

THE CONDUIT SHALL BE PLACED AT A DEPTH OF 24".

PULL BOX TABLE

PULL BOX #	STATION	SIDE	OFFSET	SIZE (IN.)
PB-1	102+11.1	LT	47.0	13x24
PB-2	101+54.8	LT	40.1	13x24
PB-3	102+11.0	RT	51.3	17x30
PB-4	101+55.0	RT	49.4	13x24

LEGEND

	PROP	EXIST
TRAFFIC SIGNAL, 3 UNIT HEAD, 12"		
SIGNAL SUPPORT POLE		
PEDESTRIAN SIGNAL		
PEDESTAL SUPPORT		
POLE MOUNTED CONTROLLER CABINET		
TRAFFIC PULL BOX		
STOP BAR RADAR DETECTION UNIT		
DETECTION ZONE		

TRAFFIC SIGNAL PLAN
E. CENTER ST. (SR 95) AND STATE ST. (SR 4)

DESIGN AGENCY



DESIGNER

JMB

REVIEWER

BSS 01-12-22

PROJECT ID

111383

SHEET

P.76

TOTAL

190

SHEET NO.	LOCATION	625									630			632								
		CONDUIT, 2", 725.05 FT	CONDUIT, 3", 725.04 FT	CONDUIT, 4", 725.04 FT	TRENCH IN PAVED AREA FT	BARRIER JUNCTION BOX EACH	PULL BOX, 725.06, SIZE 4 EACH	PULL BOX, 725.06, SIZE 7 EACH	PULL BOX REMOVED EACH	GROUND ROD EACH	UNDERGROUND WARNING/MARKING TAPE FT	SIGN HANGER ASSEMBLY, MAST ARM EACH	SIGN SUPPORT ASSEMBLY, POLE MOUNTED EACH	SIGN, FLAT SHEET SF	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE EACH	PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN EACH	COVERING OF VEHICULAR SIGNAL HEAD EACH	COVERING OF PEDESTRIAN SIGNAL HEAD EACH	SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG FT	SIGNAL SUPPORT FOUNDATION EACH	PEDESTAL FOUNDATION EACH
76	CENTER ST & STATE ST																					
76	SP-1								1		7	1	56.3	5	2	5	2	478	624	1		
76	SP-1 TO PB-2		14		14					14												
76	PB-2						1			1												
76	PB-2 TO PB-4			90	90																	
76	PS-2								1						2							1
76	PS-2 TO PB-4	23			23					23												
76	PB-4						1			1												
76	PB-4 TO PB-3			56	56																	
76	PS-1								1						2							1
76	PS-1 TO PB-1	5			5					5												
76	PB-1						1			1												
76	PB-1 TO PB-3			99	99																	
76	PB-3							1		1												
76	PB-3 TO SP-2		20		10																	
76	SP-2/CONTROLLER									1		3		19	3	2	3	2	40	119	1	
76	SP-2 TO EX. PULL BOX	52																				
76	EX. PULL BOX TO GEORGE	1470				2																
80	CENTER ST. & PROSPECT ST																					
80	SP-1								1		2		11	2	2	2	2	384	259	1		
80	SP-1 TO PB-1		5		5					5												
80	PB-1						1			1												
80	PB-1 TO PB-2			60	60																	
80	PS-1								1			8	26.4		2			2	256			1
80	PS-1 TO PB-2	4			4					4												
80	PB-2						1			1												
80	PB-2 TO PB-4			57	57																	
80	PS-2								1						2							1
80	PS-2 TO PB-3	10			10					10												
80	PB-3						1			1												
80	PB-3 TO PB-4			58	58																	
80	PB-4							1		1												
80	PB-4 TO SP-2		16		8																	
80	SP-2/CONTROLLER									1		2		10	4	2	4	2	40	194	1	
80	SP-2 TO PB-5	65			65			1		1												
80	PB-5 TO SILVER ST	1700				2																
TOTALS CARRIED TO GENERAL SUMMARY		3329	55	420	564	4	7	2	9	8	564	14	9	122.7	14	16	14	16	2126	1196	4	4



SHEET NO.	LOCATION	632										633			804				809		
		POWER CABLE, 2 CONDUCTOR, NO. 6 AWG	SERVICE CABLE, 2 CONDUCTOR, NO. 6 AWG	POWER SERVICE	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 4	SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 13	SIGNAL SUPPORT, TYPE TC-12.31, DESIGN 10 WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 13	PEDESTAL, 8', TRANSFORMER BASE	PEDESTAL, 15', TRANSFORMER BASE	REMOVAL OF TRAFFIC SIGNAL INSTALLATION	SIGNALIZATION, MISC.: REUSE OF PUBLIC ADDRESS SPEAKERS	CABINET, TYPE TS-2, AS PER PLAN	UNINTERRUPTIBLE POWER SUPPLY (UPS), 1000 WATT, AS PER PLAN	CONTROLLER ITEM, MISC.: CONNECTION TO EXISTING INTERCONNECT SYSTEM	FIBER OPTIC CABLE, 24 FIBER	DROP CABLE, 24 FIBER	FIBER TERMINATION PANEL, 24 FIBER	FUSION SPLICE	STOP LINE RADAR DETECTION	ATC V6.24 CONTROLLER, AS PER PLAN	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN
		FT	FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EACH	
76	CENTER ST & STATE ST																				
76	SP-1					1				1	1								1		1
76	SP-1 TO PB-2																				
76	PB-2																				
76	PB-2 TO PB-4																				
76	PS-2							1													
76	PS-2 TO PB-4																				
76	PB-4																				
76	PB-4 TO PB-3																				
76	PS-1								1	1											
76	PS-1 TO PB-1																				
76	PB-1																				
76	PB-1 TO PB-3																				
76	PB-3																				
76	PB-3 TO SP-2																				
76	SP-2/CONTROLLER	100	200	1		1					1	1	1		2	1	4	2	1		
76	SP-2 TO EX. PULL BOX													202							
76	EX. PULL BOX TO GEORGE													1920							
80	CENTER ST. & PROSPECT ST																				
80	SP-1				1					1	2								1		1
80	SP-1 TO PB-1																				
80	PB-1																				
80	PB-1 TO PB-2																				
80	PS-1							1													
80	PS-1 TO PB-2																				
80	PB-2																				
80	PB-2 TO PB-4																				
80	PS-2							1													
80	PS-2 TO PB-3																				
80	PB-3																				
80	PB-3 TO PB-4																				
80	PB-4																				
80	PB-4 TO SP-2																				
80	SP-2/CONTROLLER	100	200	1		1					2	1	1		2	1	4	1	1		
80	SP-2 TO PB-5													215							
80	PB-5 TO SILVER ST													2150							
TOTALS CARRIED TO GENERAL SUMMARY		200	400	2	1	2	1	3	1	2	6	2	2	2	4487	4	2	8	5	2	2



MAR-4/4D-11.63/0.74

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STANDARD DRAWINGS:

REFER TO THE FOLLOWING STANDARD BRIDGE DRAWINGS:

- AS-1-15 REVISED 07/17/2015
- AS-2-15 REVISED 01/18/2019
- EXJ-5-93 REVISED 01/19/2018
- SBR-3-20 REVISED 07/17/2020
- VPF-1-90 REVISED 07/20/2018

AND TO THE FOLLOWING SUPPLEMENTAL SPECIFICATION(S):

SS848 DATED 01/15/2021

DESIGN SPECIFICATIONS:

THIS STRUCTURE CONFORMS TO THE 9TH EDITION OF THE "LRFD BRIDGE DESIGN SPECIFICATIONS" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 2020, AND THE ODOT BRIDGE DESIGN MANUAL, 2020.

OPERATIONAL IMPORTANCE:

A LOAD MODIFIER OF 1.0 HAS BEEN ASSUMED FOR THE DESIGN OF THIS STRUCTURE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, ARTICLE 1.3.5 AND THE ODOT BRIDGE DESIGN MANUAL.

DESIGN LOADING:

DESIGN LOADING: HL-93

DESIGN DATA:

CONCRETE CLASS QC2 - COMPRESSIVE STRENGTH 4.5 KSI (SUPERSTRUCTURE)

CONCRETE CLASS QC1 - COMPRESSIVE STRENGTH 4.0 KSI (SUBSTRUCTURE)

REINFORCING STEEL - MINIMUM YIELD STRENGTH 60 KSI

DECK PROTECTION METHOD:

EPOXY COATED REINFORCING STEEL

2½" CONCRETE COVER

CLASS QC2 CONCRETE

MONOLITHIC WEARING SURFACE:

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1 INCH THICK.

NON-USE OF ASBESTOS-CONTAINING MATERIAL:

THE CONTRACTOR SHALL AT NO TIME INCORPORATE ANY MATERIALS WHICH ARE COMPOSED OF OR CONTAIN ANY AMOUNTS OF ASBESTOS. THE SUBSTITUTION OF MATERIALS WHICH CONTAIN ANY AMOUNTS OF ASBESTOS WILL IN NO CIRCUMSTANCES BE ACCEPTABLE. UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF CERTIFICATION ASSERTING THAT NO ASBESTOS CONTAINING MATERIALS WERE USED IN ANY PORTION OF THE CONSTRUCTION.

EXISTING BRIDGE PLANS:

FOR INFORMATION SHOWN, EXISTING BRIDGE PLANS MAY BE INSPECTED IN THE OFFICE OF STRUCTURE ENGINEERING IN COLUMBUS OHIO OR AT THE DISTRICT 6 OFFICE, 400 EAST WILLIAMS STREET, DELAWARE, OHIO 43015.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN DESCRIPTION:

THIS WORK CONSISTS OF THE REMOVAL OF CONCRETE DECKS INCLUDING SAFETY CURB, CONCRETE BRIDGE RAILINGS, METAL RAILINGS, DECK JOINTS, PORTION OF ABUTMENT WINGWALLS AND RETAINING WALLS, SCUPPERS, AND ALL APPURTENANCES ATTACHED TO THE PIERS (SIGNS, LIGHTING, ETC.). THE PROVISIONS OF ITEM 202 APPLY EXCEPT AS SPECIFIED BY THE FOLLOWING NOTES. PERFORM WORK CAREFULLY DURING DECK REMOVALS TO PROTECT PORTIONS OF SUCH SYSTEMS THAT ARE TO BE SALVAGED AND INCORPORATED INTO THE PROPOSED STRUCTURE. THE USE OF EXPLOSIVES, HEADACHE BALLS AND/OR HOE RAM TYPE OF EQUIPMENT IS PROHIBITED. SUBMIT CONSTRUCTION PLANS ACCORDING TO C&MS 501.05.

PROTECTION OF PRESTRESSED CONCRETE SUPPORT SYSTEMS:

BEFORE DECK SLAB CUTTING IS PERMITTED, DRAW THE OUTLINE OF PRIMARY PRESTRESSED CONCRETE MEMBERS IN CONTACT WITH THE BOTTOM OF THE DECK ON THE SURFACE OF DECK. DRILL SMALL DIAMETER PILOT HOLES 2 INCHES OUTSIDE THESE LINES TO CONFIRM THE LOCATION OF THE EDGES OF THOSE MEMBERS. DECK CUTS OVER OR WITHIN 2 INCHES OF FLANGE EDGES SHALL NOT EXTEND LOWER THAN THE BOTTOM LAYER OF DECK SLAB REINFORCING STEEL. CUTS MADE OUTSIDE 2 INCHES OF FLANGE EDGES MAY EXTEND THE FULL DEPTH OF THE DECK. PERFORM WORK CAREFULLY DURING CUTTING OF THE DECK SLAB TO AVOID DAMAGING PRESTRESSED CONCRETE MEMBERS THAT ARE TO BE INCORPORATED INTO THE PROPOSED STRUCTURE. REPLACE OR REPAIR PRESTRESSED CONCRETE MEMBERS DAMAGED BY THE DECK SLAB CUTTING OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

DECK REMOVALS -COMPOSITE DECK DESIGNS PRESTRESSED SUPERSTRUCTURES:

DUE TO THE PRESENCE OF COMPOSITE REINFORCING STEEL BETWEEN THE DECK AND THE PRESTRESSED BEAM FLANGES, SUBMIT A DETAILED PROCEDURE OF THE DECK REMOVAL TO THE ENGINEER AT LEAST 7 DAYS BEFORE CONSTRUCTION BEGINS. DEPARTMENT ACCEPTANCE IS NOT REQUIRED. THE PROCEDURE SHALL INCLUDE ALL DETAILS, EQUIPMENT AND METHODS OF REMOVAL OVER THE PRESTRESSED BEAMS AND AROUND THE COMPOSITE REINFORCING STEEL. REPLACE OR REPAIR PRESTRESSED MEMBERS AND COMPOSITE REINFORCING DAMAGED BY THE REMOVAL OPERATIONS AT NO COST TO THE PROJECT. AT LEAST 7 DAYS BEFORE PERFORMING REPAIR WORK, SUBMIT A PROPOSED REPAIR PLAN, DEVELOPED BY AN OHIO REGISTERED PROFESSIONAL ENGINEER TO THE ENGINEER. OBTAIN THE ENGINEER'S APPROVAL BEFORE PERFORMING REPAIR.

CONCRETE DECK REMOVAL:

THE CONTRACTOR SHALL HAVE AN OPTION TO REMOVE THE COMPOSITE CONCRETE DECK OVER PRESTRESSED CONCRETE BEAMS BY THE USE OF HYDRO-DEMOLITION CONFORMING TO SS848. THE HYDRO-DEMOLITION EQUIPMENT SHALL BE A SELF-PROPELLED MACHINE THAT UTILIZES A HIGH PRESSURE WATER JET STREAM CAPABLE OF REMOVING CONCRETE TO THE DEPTH SPECIFIED HEREIN AND/OR AS SHOWN ON THE PLANS AND BE CAPABLE OF REMOVING RUST AND CONCRETE PARTICLES FROM REINFORCING STEEL. HAND HELD HIGH PRESSURE (10,000 PSI (690 BAR) MINIMUM) WANDS OR 35 LB (16 KG) MAXIMUM JACKHAMMERS OPERATED AT NO MORE THAN A 45 DEGREE ANGLE FROM HORIZONTAL SHALL BE USED IN AREAS THAT ARE INACCESSIBLE TO THE SELF-PROPELLED MACHINE OR IN AREAS THAT REQUIRE WORK TO REMOVE THE REMAINING CONCRETE.

REMOVE THE COMPOSITE CONCRETE DECK TO 1 INCH ABOVE PRESTRESSED CONCRETE BEAMS BY THE USE OF HYDRO-DEMOLITION. ONCE THE HYDRO-DEMOLITION OPERATIONS ARE COMPLETE, THE CONTRACTOR SHALL SOUND THE ENTIRE DECK, IDENTIFYING AND MARKING ANY UNSOUND MATERIALS THE HYDRO-DEMOLITION OPERATIONS DID NOT REMOVE. AREAS IDENTIFIED SHALL BE VERIFIED WITH THE ENGINEER. REMOVAL FOR THE UNSOUND MATERIAL IS LIMITED TO HAND CHIPPING METHOD DESCRIBED ABOVE. A MINIMUM OF 1 INCH CLEARANCE IS REQUIRED BELOW THE BOTTOM MAT OF NEW REINFORCING STEEL.

SUBMIT A WASTEWATER AND SLUDGE MANAGEMENT PLAN TO THE ENGINEER SIGNED BY AN AUTHORIZED REPRESENTATIVE OF THE CONTRACTOR CERTIFYING COMPLIANCE WITH THE OHIO WATER POLLUTION CONTROL ACT PRIOR TO BEGINNING SURFACE PREPARATION USING HYDRO-DEMOLITION.

IF IT IS DESIRED TO UTILIZE THE CITY OF MARION SANITARY SYSTEM FOR WATER DISPOSAL, THE WASTEWATER AND SLUDGE MANAGEMENT PLAN REQUIRED BY SS 848 SHALL BE SUBMITTED TO THE CITY OF MARION ENGINEER FOR APPROVAL.

ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN DESCRIPTION, CONTINUED:

CONCRETE DECK REMOVAL, CONTINUED:

THE CONTRACTOR IS REQUIRED TO INCLUDE IN THE PLAN, A PH CONTROL COMPONENT THAT WILL MONITOR AND PREVENT THE FORMATION OF WASTEWATER WITH A PH ABOVE 11.5. ENSURE THAT ALL PH MONITORING IS CONSISTENTLY REPRESENTATIVE OF THE WASTEWATER BEING GENERATED. IN THE EVENT THAT THE WASTEWATER PH EXCEEDS THE REGULATORY HAZARDOUS THRESHOLD OF 12.5, THE CONTRACTOR IS REQUIRED TO IMMEDIATELY STOP THE OPERATION AND NOTIFY THE ENGINEER.

THE COST INCLUDING ALL LABOR EQUIPMENT, MATERIALS, AND INCIDENTALS NECESSARY TO REMOVE CONCRETE DECK CONFORMING TO SS848 SHALL BE INCLUDED WITH ITEM 202, PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN FOR PAYMENT.

CUT LINE CONSTRUCTION JOINT PREPARATION:

SAW CUT BOUNDARIES OF PROPOSED CONCRETE REMOVALS 1 INCH DEEP. REMOVE CONCRETE TO A ROUGH SURFACE. LEAVE THE EXISTING REINFORCING STEEL, IF REQUIRED IN THE PLANS, IN PLACE. INSTALL DOWEL BARS IF SPECIFIED. PRIOR TO CONCRETE PLACEMENT ABRASIVELY CLEAN JOINT SURFACES AND EXISTING EXPOSED REINFORCEMENT TO REMOVE LOOSE AND DISINTEGRATED CONCRETE AND LOOSE RUST. THOROUGHLY CLEAN THE JOINT SURFACE AND EXPOSED REINFORCEMENT OF ALL DIRT, DUST, RUST OR OTHER FOREIGN MATERIAL BY THE USE OF WATER, AIR UNDER PRESSURE, OR OTHER METHODS THAT PRODUCE SATISFACTORY RESULTS. EXISTING REINFORCING STEEL DOES NOT HAVE TO HAVE A BRIGHT STEEL FINISH BUT REMOVE ALL PACK AND LOOSE RUST. THOROUGHLY DRENCH EXISTING CONCRETE SURFACES WITH CLEAN WATER AND ALLOW TO DRY TO A DAMP CONDITION BEFORE PLACING CONCRETE.

SUBSTRUCTURE CONCRETE REMOVAL:

REMOVE CONCRETE BY MEANS OF APPROVED PNEUMATIC HAMMERS EMPLOYING POINTED AND BLUNT CHISEL TOOLS. HYDRAULIC HOE-RAM TYPE HAMMERS WILL NOT BE PERMITTED. THE WEIGHT OF THE HAMMER SHALL NOT BE MORE THAN 35 POUNDS FOR REMOVAL WITHIN 18 INCHES OF PORTIONS TO BE PRESERVED. OUTSIDE THE 18 INCH LIMIT, THE CONTRACTOR MAY USE HAMMERS NOT EXCEEDING 90 POUNDS UPON THE APPROVAL OF THE ENGINEER. DO NOT PLACE PNEUMATIC HAMMERS IN DIRECT CONTACT WITH REINFORCING STEEL THAT IS TO BE RETAINED IN THE REBUILT STRUCTURE.

MEASUREMENT & PAYMENT:

THE DEPARTMENT WILL MEASURE THE QUANTITY OF REMOVALS ON A LUMP SUM BASIS. THE DEPARTMENT WILL PAY FOR THE ACCEPTED QUANTITIES OF REMOVALS AT THE CONTRACT PRICE FOR ITEM 202 - PORTIONS OF STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN.

ITEM 510 - DOWEL HOLES:

DRILL DOWEL HOLES WHERE SHOWN IN THE PLANS PER CMS 510. INSTALL REINFORCING STEEL ACCORDING TO CMS 510 USING NON-SHRINK NON METALLIC GROUT, 705.2. IF AN EXISTING BAR IS ENCOUNTERED AT THE SAME LOCATION AS A PROPOSED DOWEL HOLE, MOVE THE DOWEL HOLE TO EITHER SIDE OF THE EXISTING BAR. THE DEPARTMENT WILL PAY FOR DOWEL HOLES AND GROUTING WITH ITEM 510.

ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE):

SEAL EXPOSED CONCRETE SURFACES WITH AN EPOXY-URETHANE SEALER. FEDERAL COLOR #17778, LIGHT NEUTRAL SHALL BE USED FOR THE CONCRETE SEALER.

EXISTING STRUCTURE VERIFICATION:

DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO C&MS SECTIONS 102.05, AND 105.02. BASE CONTRACT BID PRICES UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE. HOWEVER, THE DEPARTMENT WILL PAY FOR ALL PROJECT WORK BASED UPON ACTUAL DETAILS AND DIMENSIONS THAT HAVE BEEN VERIFIED IN THE FIELD.

DECK PLACEMENT DESIGN ASSUMPTIONS:

THE FOLLOWING ASSUMPTIONS OF CONSTRUCTION MEANS AND METHODS WERE MADE FOR THE ANALYSIS AND DESIGN OF THE SUPERSTRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE FALSEWORK SUPPORT SYSTEM WITHIN THESE PARAMETERS AND WILL ASSUME RESPONSIBILITY FOR SUPERSTRUCTURE ANALYSIS FOR DEVIATION FROM THESE DESIGN ASSUMPTIONS.

AN EIGHT WHEEL FINISHING MACHINE WITH A MAXIMUM WHEEL LOAD OF 2.2 KIPS.

A MINIMUM OUT-TO-OUT WHEEL SPACING AT EACH END OF THE MACHINE OF 103".

A MAXIMUM SPACING OF OVERHANG FALSEWORK BRACKETS OF 48 IN.

A MAXIMUM DISTANCE FROM THE CENTERLINE OF THE FASCIA GIRDER TO THE FACE OF THE SAFETY HANDRAIL OF 65".

ITEM 509 - REINFORCING STEEL, REPLACEMENT OF EXISTING REINFORCING STEEL, AS PER PLAN:

REPLACE ALL EXISTING REINFORCING BARS DEEMED BY THE ENGINEER TO BE UNUSABLE BECAUSE OF CORROSION. THE DEPARTMENT WILL MEASURE THE REPLACEMENT REINFORCING STEEL BY THE NUMBER OF POUNDS ACCEPTED IN PLACE. REPLACE ALL EXISTING REINFORCING STEEL BARS WHICH ARE TO BE INCORPORATED INTO THE NEW WORK AND ARE DEEMED BY THE ENGINEER TO BE MADE UNUSABLE BY CONCRETE REMOVAL OPERATIONS WITH NEW REINFORCING STEEL OF THE SAME SIZE AND COATING AT NO COST TO THE DEPARTMENT.

ESTIMATE QUANTITIES OF 50 LBS FOR ABUTMENTS, AND 150 LBS FOR RETAINING WALLS HAVE BEEN INCLUDED IN THE ESTIMATED QUANTITIES FOR THE ABOVE ITEM.

ABBREVIATIONS:

- THE FOLLOWING ABBREVIATIONS ARE USED THROUGHOUT THESE PLANS:
- B.F. = BACK FACE
 - BRG. = BEARING
 - @ = CENTERLINE
 - ± = BASELINE
 - CIP = CAST IN PLACE
 - CMS = CONSTRUCTION AND MATERIAL SPECIFICATIONS
 - E.S. = EACH SIDE
 - EA. = EACH
 - E.F. = EACH FACE
 - EL. = ELEVATION
 - EX. = EXISTING
 - F.F. = FRONT FACE
 - F.S. = FAR SIDE
 - VERT. = VERTICAL
 - HORIZ. = HORIZONTAL
 - N.S. = NEAR SIDE
 - N.P.C.P.P. = NON-PERFORATED CORRUGATED PLASTIC PIPE
 - P.C.P.P. = PERFORATED CORRUGATED PLASTIC PIPE
 - P.E.J.F. = PREFORMED EXPANSION JOINT FILLER
 - TYP. = TYPICAL
 - JT. = JOINT

GENERAL NOTES - 1
BRIDGE NO.: MAR-0004D-00.500
PROSPECT STREET OVER CSXT RR

SFN	5100240
DESIGN AGENCY	
[BI]	
DESIGNER	CHECKER
AIS	SS
REVIEWER	
SRB 01-12-22	
PROJECT ID	
111383	
SUBSET	TOTAL
4	51
SHEET	
TOTAL	
P.143	190