

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

CLI-US22-11.75 PART 1

CITY OF WILMINGTON

CLINTON COUNTY

FOR PART 2, SEE CLI-US22-10.00

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8-9 10-11 12-13 14-20 21-33 34-36 37 38-40, 42-46, 48-52, 57-61 62-77

NOT USED

41, 47, 53, 54, 55, 56

	LINGINELING SLAL:											
]	MATTHEW MATTHEW R GARDNER E-72393											
-	SISTER C				STANDAR	D CONSTR	UCTION L	ORAWINGS			MENTAL CATIONS	SPECIAL PROVISIONS
	STONED. Mitt Farthers	BP-3.1	01/17/20	RM-3.1	7/20/18	MT-97.12	1/20/17	TC-85.10	4/17/20	800-2019	1/15/21	
	SIGNED:	BP-4.1	7/19/13	RM-4.2	4/17/20	MT-101.70	1/17/20	TC-85.20	7/20/18	809	7/17/20	
	DATE: <u>12/01/2020</u>	BP-5.1	1/18/19			MT-101.75	1/17/20			815	4/20/18	
1	ENGINEERS SEAL:	BP-7.1	7/17/20	HL-30.22	4/17/20	MT-101.90	7/17/20			821	4/20/12	
	ENGINEERS SEAL:					MT-105.10	1/17/20			<i>832</i>	10/19/18	
		CB-1.1		MT-95.31		MT-110.10	7/19/13			878	1/17/20	
-4	TE OF OK	CB-2.1		MT-95.32	4/19/19					902	7/19/19	
		CB-2.3		MT-95.41		TC-41.20	10/18/13			916	1/19/18	
	I E^/ A. \^E			MT-95.45		TC-41.30	10/18/13			921	4/20/12	
	P SACK E49837	MH-1.2		MT-95.50		TC-42.20	10/18/13					
	CISTER G			MT-95.60		TC-52.20	7/20/18					
	MINIS IONAL ENUM	DM-1.1	7/17/20			TC-65.10	1/17/14					
ed,		DM-4.3		MT-97.10	4/19/19	TC-65.11	7/21/17					
ed, zation nnify, ability, arising	SHEETS: 38-61	DM-4.4	1/15/16			TC-71.10	1/19/18					
ability, grising	SIGNED: Jawam U. Sul					TC-83.10	1/17/20					
'9	DATE: 12/01/2020					TC-83.20	7/21/17					

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PROJECT DESCRIPTION

THIS PROJECT WILL CONSTRUCT A LOON ACCOMMODATING EASTBOUND TRAFFIC AT THE PROGRESS WAY INTERSECTION. THE SIGNAL WILL BE REPLACED AT THE INTERSECTION OF U.S. 22 WITH THE WALMART DRIVE. THE NORTHEAST RADIUS AT THE U.S. 22 AND LOWES DRIVE WILL BE IMPROVED TO ACCOMMODATE TRUCK TURNING MOVEMENTS. 1960 FEET OF SHARED USE PATH WILL BE CONSTRUCTED ALONG THE SOUTH SIDE OF U.S. 22.

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EARTH DISTURBED AREAS

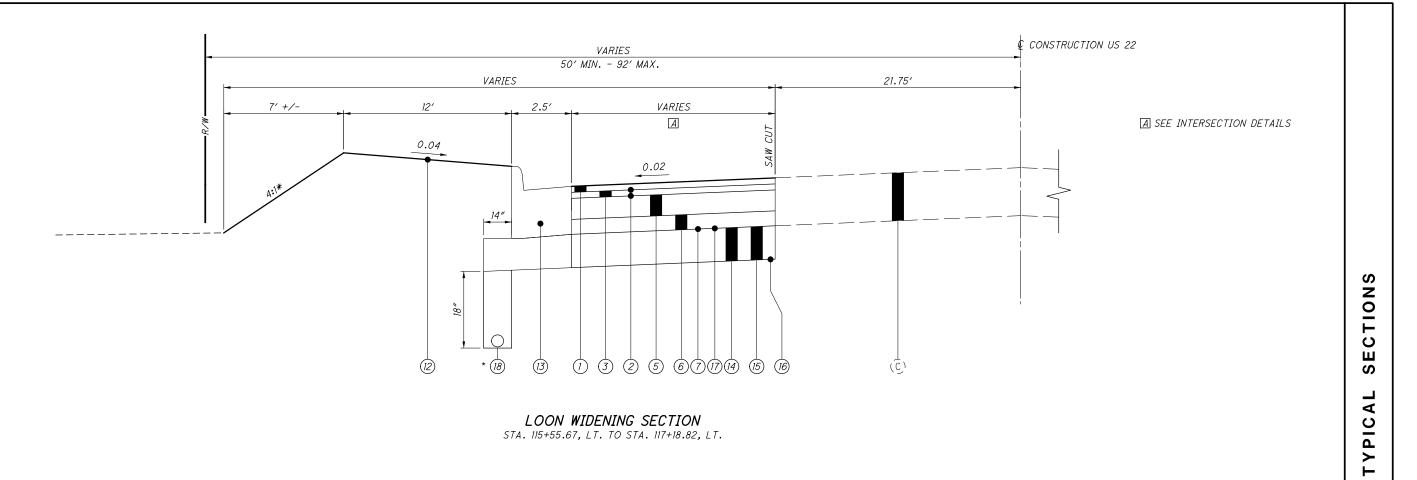
PROJECT EARTH DISTURBED AREA:1.19 ACRESESTIMATED CONTRACTOR EARTH DISTURBED AREA:0.25 ACRESNOTICE OF INTENT EARTH DISTURBED AREA:1.44 ACRES

2019 SPECIFICATIONS

THE STANDARD SPECIFICATIONS OF THE STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, INCLUDING SUPPLEMENTAL SPECIFICATIONS LISTED IN THE PLANS AND CHANGES LISTED IN THE PROPOSAL SHALL GOVERN THIS IMPROVEMENT.

I HEREBY APPROVE THESE PLANS AND DECLARE THAT THE MAKING OF THIS IMPROVEMENT WILL NOT REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT PROVISIONS FOR THE MAINTENANCE AND SAFETY OF TRAFFIC WILL BE AS SET FORTH ON THE PLANS AND ESTIMATES.

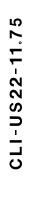
APPROVED Tam K G Lell DATEL2-22-2020 STRICT DEPUTY DIRECTOR APPROVED JACK HARCHESDOWKS OKS DATE 310 12 21 DIRECTOR, DEPARTMENT OF TRANSPORTATION



LOON WIDENING SECTION STA. 115+55.67, LT. TO STA. 117+18.82, LT.

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NOTE: *ITEM 605- 6" BASE PIPE UNDERDRAIN - SEE TYPICAL FOR STA. RANGE - 202 FT CARRIED TO GENERAL SUMMARY

NOTE: THE EXISTING PAVEMENT SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE PER SEC. 203.04(E) OF THE CMS.

* SEE CROSS SECTIONS FOR GRADING

				SH	EET NU	лW °	 		RT.	ALT	ITEM	ITEM	GRAND	UNIT	
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				3				 2	1		202	20010	3	EACH	HEADWALL REMOVED
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				489 463			 	 56	489 407		202 202	30000 32500	489 463	SF FT	WALK REMOVED CURB AND GUTTER REMOVED
				100					101		202	32000	100		
				156				136	20		202	35100	156	FT	PIPE REMOVED, 24" AND UNDER
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				463				384	79		608	52000	463	SF	CURB RAMP
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		100							100		611	00900	100	FT	6" CONDUIT, TYPE B
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		50						 	50		611	01500	50	F I	6" CONDUIT, TYPE F
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				49			 		49		611	04600	49	FT	12" CONDUIT, TYPE C
				36 124			 	36			611 611	06100 07400	36 124	FT FT	15" CONDUIT, TYPE C 18" CONDUIT, TYPE B
				6			 	124	6		611	22600	6	FT	54" CONDUIT, TYPE C
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				2		-	 	 1	2		611 611	98470 98330	2	EACH EACH	CATCH BASIN, NO. 2-2B CATCH BASIN, NO. 5 WITHOUT APRON
				3			 	1 '	3		611	99574	3	EACH	MANHOLE, NO. 3
				1					1		611	99574	1	EACH	MANHOLE, NO. 3, (84")
		2							2		611	99710	2	EACH	PRECAST REINFORCED CONCRETE OUTLET
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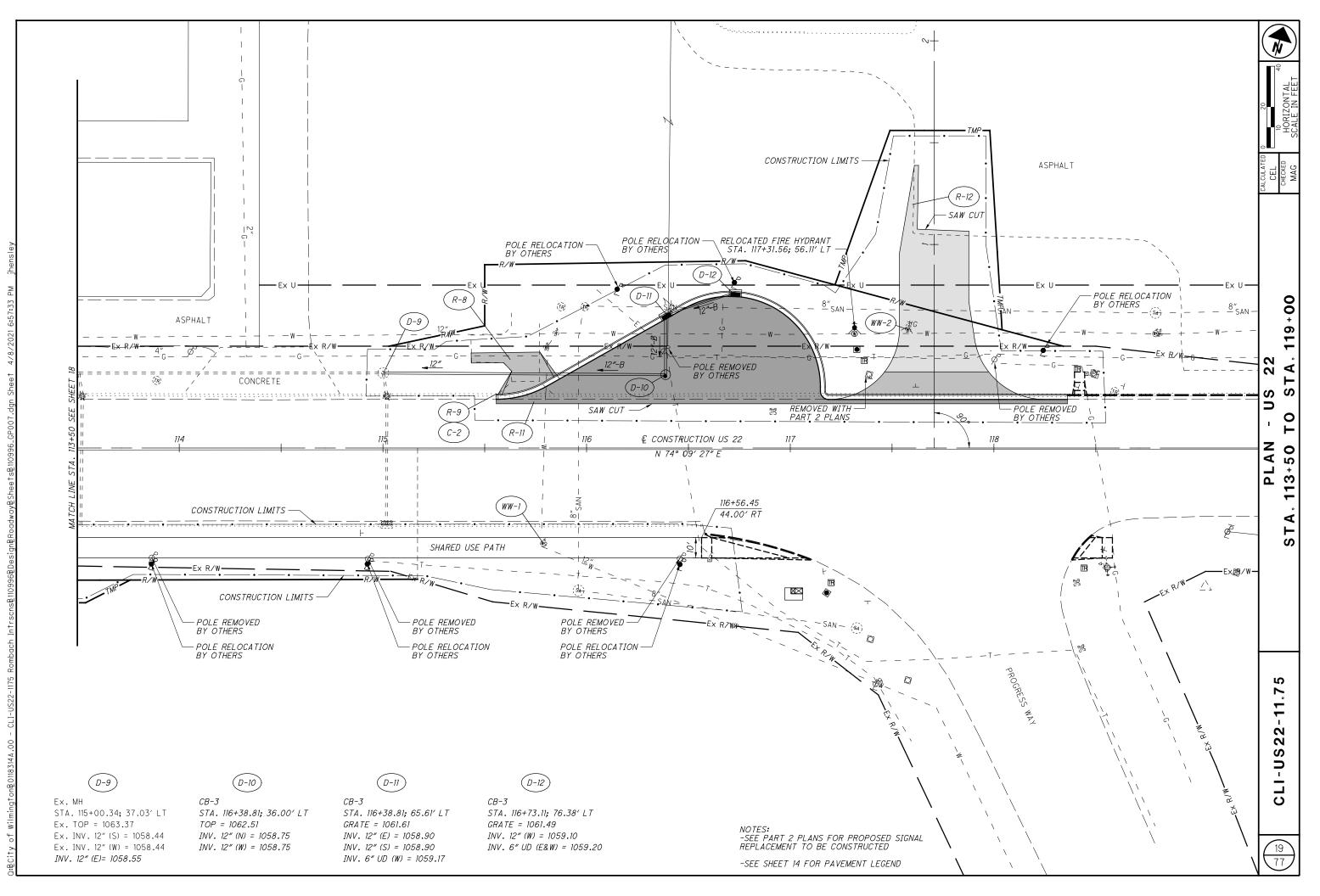
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REF NO.	SHEET NO.	STATION TO S	STATION	HEADWALL REMOVED	PAVEMENT REMOVED	PAVEMENT REMOVED, ASPHALT	WALK REMOVED	CURB AND GUTTER REMOVED	PIPE REMOVED, 24" AND UNDER	PIPE REMOVED, OVER 24"	CATCH BASIN REMOVED	4" CONCRETE WALK	CURB RAMP	COMBINATION CURB AND GUTTER, TYPE 2	COMBINATION CURB AND GUTTER, TYPE 2, AS PER PLAN	CONCRETE MASONRY	12" CONDUIT, TYPE B	12" CONDUIT. TYPE C
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R-2	14		50+99.25 LT	1				126	20									
R-3 R-4	14	50+52.00 LT TO 50+78.62 LT TO	50+71.15 LT 50+99.26 LT	1		5			20									
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<i>H</i> -5	14	50+58.54 LT TO	51+09.25 LI				409											
R-6	18	110+45.18 H	DT							6	1							
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R-8	19	115+43.31 LT TO	115+83.27 LT	1	49													
R-9	19		118+36.05 LT					281										
R-10	10	NOT USEL						201										
			-															
R-11	19	115+55.67 LT TO	118+36.05 LT			74												
R-12	19		117+87.64 LT			13												
R-13	20		129+82.00 RT	1					122		1							
R-14	20		129+06.35 RT					39										
R-15	20		129+08.15 RT			106												
R-16		NOT USEL																
R-17	20		129+79.66 RT					9										
R-18	20		129+95.37 RT	1					14		1							
R-19	20		129+94.07 RT			1		8										
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C-1	14		50+99.25 LT											113				
C-2	19		118+36.05 LT											323				
C-3	20 20	128+71.59 RT TO 129+73.23 RT TO	129+06.32 RT 129+93.16 RT											38	27			
C-4 C-5	20	NOT USEL													27			
C-6	20	129+87.07 LT TO												7				
	20	123181.01 ET 10	123134.01 LI											1				
W-1	14	50+55.97 LT TO	50+76.29 LT									263						
W-2	14		50+80.92 LT									200	79					
W-3	14		51+09.24 LT									168	,,,,					
W-4	20	128+75.63 RT TO	129+06.32 RT									,	244					
W-5	20	129+75.06 RT TO											51					
W-6	20		129+93.07 RT									55						
W-7	20	129+88.07 RT TO	129+94.07 RT										49					
W-8	20	129+87.07 LT TO											40					
D-1	14	50+52.00 LT TO															6	
D-2	14	50+57.97 LT TO															33	
D-3	14	50+86.92														0.2		
D-4		NOT USEL																
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			07.00.00															
D-6	15	96+88.00 RT TO																14
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D-9	10	NOT USEL	U														170	
D-10	19	115+00.18 LT TO															139	
D-11	•••	116+38.81 L															30	
D-12	19	116+38.81 LT TO															36	
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D-14	20	128+81.13 RT TO																
D-15	20	129+81.00 RT TO														0.0		
D-16	20	130+04.38	πι													0.2		
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12" CONDUIT, TYPE C	15" CONDUIT, TYPE C	18" CONDUIT, TYPE B	54" CONDUIT, TYPE C	CATCH BASIN, NO. 3	CATCH BASIN, NO. 2-2B	E CATCH BASIN, NO. 5, WITHOUT APRON	МАМНОГЕ, NO. 3	MANHOLE, NO. 3 (84")	CALCULATED BMG CHECKED MAG
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633, CONTROLLER ITEM MISC.; CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2

IN ADDITION TO ODOT ITEM 633 AND ITEM 733, THE CONTROLLER SHALL MEET ALL CURRENT APPLICABLE NEMA TS2 STANDARDS AND THE REQUIREMENTS OF ODOT CMS ITEM 633. THE TS2 TYPE 2 CONTROLLER SHALL BE FURNISHED WITH THE MOST RECENT SOFTWARE AND PROVIDE ALL FEATURES OF THE LATEST MODEL AVAILABLE.

CONTROLLER TESTING

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THE CONTRACTOR SHALL PERFORM BENCH TESTING OF THE COMPONENTS OF THIS SECTION ON THE CONTROLLER. SOFTWARE AND FIRMWARE SHALL BE LOADED ON THE SYSTEM/CONTROLLER AND CHECKED FOR CORRECT OPERATION OF TIMING PLANS, PHASING SCHEMES, PRE-EMPTS AND INTERCONNECTED OPERATION. THE SUCCESSFUL TESTING SHALL BE DEMONSTRATED TO THE ENGINEER PRIOR TO INSTALLATION IF REQUESTED.

TESTING OF COMPONENTS BY THE CONTRACTOR FOR PROPER OPERATION SHALL INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS:

TEST FOR OPERATION ON MIN RECALL, MAX RECALL, NO CALL AND PROPER FLASH SEQUENCE

THE CONTRACTOR IN CASE OF MINOR PROBLEMS SHALL MAKE NECESSARY REPAIRS/CORRECTIONS. (MAJOR PROBLEMS SHALL BE IMMEDIATELY REFERRED TO THE PRIME VENDOR WHO SHALL BE RESPONSIBLE FOR RESOLVING ANY EQUIPMENT PROBLEM). THE ENGINEER SHALL ALSO BE NOTIFIED OF ANY PROBLEMS. THE CONTROLLER IS TO OPERATE, WITHOUT THE APPEARANCE OF PROBLEMS, ON MINIMUM RECALL OF ALL MINOR PHASES FOR 48 HOURS WITH FULL LOAD ON EACH OUTPUT. (NOTE THAT TESTING ALSO REQUIRES OPERATION WITH DETECTORS IN A NO CALL AND CALL TO MAXIMUM CONFIGURATION).

A WRITTEN REPORT STATING THE CABINET INTERSECTION NUMBER, DATE AND TIME OF TEST, SIGNED OFF BY THE TECHNICIAN WHO PERFORMED THE TESTS, SHALL BE SUBMITTED TO THE ENGINEER UPON SUCCESSFUL COMPLETION OF THE ABOVE TESTS.

THE CONTROLLER AND ALL RELATED COMPONENTS SHALL BE IN PERFECT WORKING ORDER AND READY FOR INSTALLATION/OPERATION AT THE SPECIFIED INTERSECTION AS A RESULT OF THE WORK DESCRIBED IN THIS ITEM. THE TEST AREA MAY BE ERECTED AT A LOCATION DETERMINED BY THE CONTRACTOR. THE COST FOR THE CONTROLLER AND CABINET TESTING SHALL BE INCLUDED IN THE PRICE OF THE CONTROLLER FURNISHED COMPLETE.

DOCUMENTATION

TWO (2) COMPLETE SET OF DOCUMENTATION SHALL BE FURNISHED WITH EACH CONTROLLER FOR EACH UNIT OF EQUIPMENT THAT INCLUDES THE FOLLOWING MATERIAL:

--USER MANUALS

--DEVICE PROGRAMMING MANUALS

--WIRING DIAGRAMS AND PARTS LISTS WHICH SHOW BOTH THE MANUFACTURERS PART NUMBER AND THE GENERIC EQUIVALENT PART OF REFERENCE NUMBER AND DESCRIPTION TO ALLOW FOR PURCHASE AT A LOCAL ELECTRONIC SUPPLY HOUSE.

--INSTALLATION AND DIAGNOSTIC MANUALS

SOFTWARE OR FIRMWARE UPDATES SHALL BE ACCOMPANIED BY COMPLETE DOCUMENTATION THAT REFERENCES AN UPGRADE VERSION, PROVIDES A LIST OF IMPROVED CAPABILITIES WITH THE UPGRADE, AND PROVIDES A LIST OF PROBLEMS RESOLVED WITH THE UPGRADE (IF APPLICABLE). ALL FUNCTIONS, FEATURES, AND CAPABILITIES NOT ADDRESSED SHALL OPERATE AS INTENDED BEFORE THE UPGRADE WAS IMPLEMENTED.

CABINET EQUIPMENT

THE CABINET EXTERIOR SHALL BE COMMERCIALLY SMOOTH AND FREE OF DEFECTS THAT WOULD IMPAIR SERVICEABILITY OR DETRACT FROM GENERAL APPEARANCE. THE CABINET SHALL BE FURNISHED FULLY EQUIPPED WITH THE FOLLOWING FEATURES READY FOR CONTROLLER INSTALLATION AS REQUIRED:

1. ALL CABINETS SHALL BE FURNISHED WITH 2 REMOVABLE SHELVES MOUNTED ON ADJUSTABLE CHANNELS. ALL MOUNTING HARDWARE SHALL BE INCLUDED.

2 THE CABINET SHALL BE NATURAL ALUMINUM OUTSIDE AND WHITE INSIDE IN ACCORDANCE WITH ODOT SECTION 514.02.

3. A DOOR ALARM/LIGHT SWITCH SHALL BE FURNISHED AND INSTALLED IN THE CABINET. A 25W INCANDESCENT LAMP SHALL BE FURNISHED AND INSTALLED WITH A 355 MM (14 INCH) MINIMUM FLEXIBLE ARM TO ILLUMINATE THE FIELD TERMINALS. THE LAMP SHALL BE WIRED TO EITHER AN ON/OFF TOGGLE SWITCH MOUNTED ON THE POWER PANEL OR TO A DOOR-ACTIVATED SWITCH MOUNTED NEAR THE TOP OF THE DOOR.

4. THE CABINET SHALL BE FURNISHED WITH LOAD SWITCHES FOR A 12-POSITION BACKBOARD TO ALLOW FOR MAXIMUM PHASE UTILIZATION FOR WHICH THE CABINET IS DESIGNED. A BRACKET EXTENDING AT LEAST HALF THE LENGTH OF THE LOAD SWITCH SHALL SUPPORT ALL LOAD SWITCHES. ALL LOAD SWITCHES SHALL BE SUPPLIED WITH INPUT AND OUTPUT LED INDICATORS MOUNTED ON THE FRONT PANEL. 5. ALL CONTROLLER AND MALFUNCTION MANAGEMENT UNIT CABLES SHALL BE OF SUFFICIENT LENGTH TO ALLOW THE UNITS TO BE PLACED ON EITHER SHELF OR ON THE TOP OF THE CABINET IN THE OPERATING MODE. CONNECTING CABLES SHALL BE SLEEVED IN A BRAIDED NYLON MESH. THE USE OF EXPOSED TIE-WRAPS OR INTERWOVEN CABLES ARE UNACCEPTABLE.

6. ALL CABINET CONFIGURATIONS SHALL BE PROVIDED WITH ENOUGH RS-485 PORT 1 COMMUNICATION CABLES TO ALLOW FULL CAPABILITIES OF THAT CABINET. EACH COMMUNICATION CABLE CONNECTOR SHALL BE A 15 PIN METAL SHELL D SUBMINIATURE TYPE WITH A SHIELDED CABLE SUITABLE FOR RS-485 COMMUNICATIONS.

7. THE CABINET SHALL BE EQUIPPED WITH A MOMENTARY PUSHBUTTON CONTACT SWITCH FOR SUBSTITUTING MANUAL OPERATION OF INTERNAL TIMING FOR AUTOMATIC INTERVAL TIMING. THE SWITCH IS TO BE MOUNTED ON A 5-FOOT MINIMUM FLEXIBLE WEATHERPROOF EXTENSION CORD IN ACCORDANCE WITH ITEM 733.03B (H).

8. THE CONTROLLER TEST PANEL SHOULD BE EQUIPPED WITH THE FOLLOWING SWITCHES (TSI) AS A MINIMUM PER ODOT ITEM 733.03:

SIGNAL SHUTDOWN SWITCH

FLASH CONTROL SWITCH (BIU#2-INPUT 3)

RUN/STOP TIME SWITCH (BIU#1-INPUT 1)

AUTOMATIC/MANUAL TRANSFER SWITCH (BIU#1-I/O 20)

COORDINATED/FREE SWITCH (BIU#2-INPUT 7)

DETECTOR TEST SWITCHES SHALL BE PROVIDED FOR EACH VEHICULAR AND PEDESTRIAN PHASE. THE SWITCHES SHALL BE CAPABLE OF PLACING MANUAL CALLS INTO THE CONTROLLER DURING ACTIVATED OPERATION. THE SWITCHES SHALL BE IN PARALLEL WITH THE VEHICULAR DETECTOR RELAY CLOSURE AND PEDESTRIAN PUSHBUTTON CIRCUITS.

1. THE CABINETS SHALL BE OF A DOOR IN DOOR TYPE WITH A #1 KEY FOR THE POLICE DOOR AND A CORBIN TYPE TUMBLE LOCK KEYED FOR A #2 KEY ON THE MAIN DOOR. A RESEALABLE POUCH SHALL BE SECURELY MOUNTED TO THE INSIDE DOOR OF THE CABINET AND SHALL BE SUFFICIENT TO ACCOMMODATE ONE COMPLETE SET OF WIRING, SIGNAL, AND TIMING PLANS.

IN ADDITION TO THE REQUIREMENTS OF ITEMS 632.10 AND 732.08, THE RACK MOUNTED AMPLIFIER SHALL BE CAPABLE OF MULTIPLE FREQUENCIES, MODES (PRESENCE/PULSE), AND LEVELS OF SENSITIVITY AS NOTED:

2. LONG PRESENCE MODE SHALL PROVIDE CONTINUOUS LOOP TRACKING WITH 8-15 MINUTE MAXIMUM HOLD TIME.

3. MEDIUM PRESENCE MODE SHALL PROVIDE CONTINUOUS LOOP TRACKING WITH 4-10 MINUTES MAXIMUM HOLD TIME.

4. PULSE MODE SHALL BE CAPABLE OF TUNING OUT A VEHICLE AFTER A 2 SECOND PERIOD SO AS TO DETECT ANY OTHER VEHICLE OCCUPYING THE REMAINDER OF THE LOOP. THE LOOP ZONE SHALL BE AT FULL SENSITIVITY WITHIN 100 MILLISECONDS.

A SIMPLE LOOP DETECTOR UNIT CHART SHALL BE INCLUDED AS PART OF THE CABINET DOCUMENTATION FOR EXISTING AND PROPOSED CABINETS THAT SHOWS EACH VEHICLE DETECTOR REFERENCE ASSIGNED TO THE RESPECTIVE INPUT CHANNEL. THE LOOP DETECTOR UNIT SHALL BE PROVIDED WITH ONE (I) SET OF WIRING DIAGRAMS AND OPERATIONAL MANUALS AND A PARTS LIST WHICH DETAILS ALL PROPRIETARY COMPONENTS AND OTHER COMPONENTS, IDENTIFYING GENERIC EQUIVALENTS IF AVAILABLE.

THE EIGHT (8) PHASE (12 POSITION) CABINETS SHALL BE GROUND MOUNTED OR POLE MOUNTED AS SPECIFIED IN THE PLANS AND FURNISHED WITH GROUND MOUNTING OR POLE MOUNTING HARDWARE. THE CABINET SHALL INCLUDE TWELVE (12) LOAD SWITCH SOCKETS, SIX (6) FLASH TRANSFER RELAY SOCKETS, ONE FLASHER SOCKET, TWO MAIN PANEL BUS INTERFACE UNITS (BIU), A 16 CHANNEL DETECTOR RACK AND A BIU WITH TWO (2) ADDITIONAL SLOTS WIRED FOR PREEMPTION DEVICES, AND ONE TYPE 16 MALFUNCTION MANAGEMENT UNIT. AS A MINIMUM.

PREEMPTION CIRCUITRY SHALL BE RACK MOUNTED ON THE TOP SHELF OF THE CONTROLLER CABINET. THE CONTRACTOR SHALL PROVIDE A CABINET PLAN SHOWING COMPONENT PLACEMENT FOR APPROVAL PRIOR TO INSTALLATION.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH INCLUDING TESTING, TRAINING, AND DOCUMENTATION OF "ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN", COMPLETE.

633, CONTROLLER ITEM, MISC.: SPREAD SPECTRUM REPEATER

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, THE FOLLOWING REQUIREMENTS SHALL APPLY:

--INCLUDE ALL EQUIPMENT NECESSARY TO COMPLETE A FUNCTIONAL DATA INTERCONNECTION BETWEEN THE MASTER CONTROLLER AND THE LOCAL CONTROLLERS.

--PROVIDE TWO ITEM 815 SPREAD SPECTRUM RADIO, AS PER PLAN AS A PART OF THIS PAY ITEM.

---THE SPREAD SPECTRUM RADIO REPEATER MAY BE MOUNTED ON A SIGNAL POLE OR ON A LIGHT POLE LOCATED AS DIRECTED BY THE ENGINEER. THE EXACT LOCATION OF THE REPEATER AND POLE SHALL BE DETERMINED BASED ON A SITE SURVEY PROVIDED BY THE CONTRACTOR PER 815.02 --THE PROPOSED POLI ANTENNA(S) AND THE F

--THE SPREAD SPECTR WEATHERPROOF ENCLO 120 VOLT POWER SUPP PROVIDE LIGHTNING PR LINES. ROTATE THE CA

--PROVIDE ALL NECESS ANTENNA(S), CABLE(S), TO CONNECT THE SPRE

--INSTALL THE SPREAD SPECTRUM RADIO MANU

--NO FCC LICENSING F OPERATE THE RADIO I FOR ANY RADIO LICEN

NECESSARY TO MEET F ANTENNA FEED LINE W

-- APPLY TWO WRAPS

--APPLY A LAYER OF SURE THAT THERE ARE RUBBER SPLICING TAPI TAPE DIRECTLY TO TH

--APPLY TWO WRAPS WITH THE FINAL WRAP

--FOR CONNECTIONS T ELECTRICAL SEALING (

PAYMENT WILL BE MAD. CONTROLLER ITEM, MIS RADIOS, CABINET, FEE MATERIALS, LABOR AN.

809 EMERGENCY VEHICL THIS ITEM OF WORK SH EQUIPMENT IN THE LOO THE PREEMPTION SHAL

THE PREEMPTION SHAL SHALL UTILIZE COMMU PRIORITY VEHICLE.IT SELECT A PRE-PROGRA THE DESIRED SIGNAL F

THE COMMUNICATIONS TO DETERMINE AND LC SHALL DETECT THE PR LOCATED ON THE EMEF PREEMPTION SEQUENCE PREEMPT DISCRETE IN WITH THE CONTROLLER

THE EQUIPMENT SHALL AND REPLACEABLE WIT WIRED IN THE CONTRO CAPABLE OF PREEMPT. THE INTERSECTION. IT VEHICLE AT LEAST 200 NOISE ENVIRONMENT.

ALL PREEMPTION PLAN TRAP, UNLESS AS DIRE TRAP PREVENT WILL F RED CLEARANCE FOR R THE PREEMPTION CLEA OR FLASHING YELLOW ACTIVATED AND THE P.

SUPPLY EACH INTERSE COMPONENTS, EACH BI

1. PREEMPT RECEIVING 2. PREEMPT DETECTOR 3. PREEMPT PHASE SEL 4. CONFIRMATION LIGH

AS PART OF THE RADIO SUPPLY THE CITY (AT EMITTERS, TRANSMITT VEHICLE EQUIPMENT FO THE CITY SHALL BE RE VEHICLE EQUIPMENT.

THE CITY SHALL BE SU LOG, AND OPERATE TH MANUALS SHALL BE SU

E SHALL SUPPORT THE SPREAD SPECTRUM RADIO REPEATER, POWER SERVICE.	CALCULATED TVF CHECKED LAS
RUM RADIO REPEATER SHALL BE POLE MOUNTED IN A NEMA 4X OSURE MEETING THE REQUIREMENTS OF ITEM 633. PROVIDE A PLY, WORK OUTLET AND WORK LIGHT IN THE ENCLOSURE. PROTECTION DEVICES FOR THE ANTENNA FEED LINE AND POWER CABINET AWAY FROM CURB AND SIDEWALK.	CF
SSARY SPREAD SPECTRUM RADIOS, POWER SUPPLIES, , BAND PASS FILTER(S), AND ANTENNA FEED LINE(S) REQUIRED READ SPECTRUM RADIO AND ANTENNA.	
D SPECTRUM RADIO, ANTENNA, AND FEED LINE PER THE SPREAD IUFACTURER'S INSTALLATION INSTRUCTIONS.	
PERMITS AND/OR APPLICATIONS SHOULD BE NECESSARY TO INTERCONNECT SYSTEM. THE CITY SHALL NOT BE RESPONSIBLE NSING PERMITS, TYPE ACCEPTANCE AND/OR APPLICATIONS FCC REGULATIONS.	s
VATERPROOFING	Ξ.
OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT.	01
BUTYL RUBBER TAPE/VAPOR WRAP OVER THE JOINT MAKING E NO AIR CAVITIES OR OPENINGS IN THE WRAP. USE LINERLESS PE OR RUBBER SPLICING TAPE. DO NOT APPLY BUTYL RUBBER HE CONNECTOR.	AL NO
OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT ? GOING UP TO MINIMIZE WATER MIGRATION.	ER/
THAT WILL BE ON OR UNDER THE GROUND, COAT JOINT WITH COMPOUND.	Z U
DE AT THE CONTRACT UNIT PRICE BID PER EACH "ITEM 633 ISC.: SPREAD SPECTRUM REPEATER" AND SHALL INCLUDE ED LINES, ANTENNAS, INCIDENTAL ITEMS, WIRING, TESTING, ND DOCUMENTATION.	NAL G
CLE PREEMPTION, AS PER PLAN SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION OCATIONS AND LOCAL CONTROLLERS AS SHOWN IN THE PLANS. LL CONFORM TO ODOT SUPPLEMENTAL SPECIFICATION 809 AND JNICATIONS TO IDENTIFY THE PRESENCE OF AN EMERGENCY T SHALL CAUSE THE TRAFFIC SIGNAL CONTROLLER TO AMMED PREEMPTION PLAN THAT WILL DISPLAY AND HOLD PHASE FOR THE DIRECTION OF THE EMERGENCY VEHICLE.	FFIC SIG
MEDIUM SHALL EMPLOY RADIO ACTIVATED GPS TECHNIQUES OG THE PRESENCE OF THE EMERGENCY VEHICLE. THE SYSTEM RESENCE OF THE VEHICLE THROUGH AN EMITTING DEVICE REGENCY VEHICLE. THE SYSTEM SHALL ACTIVATE THE E BY APPLYING A SIGNAL TO ONE OF THE CONTROLLER'S WPUTS. THE SYSTEM SHALL BE COMPLETELY COMPATIBLE R.	TRA
L BE SHELF OR RACK MOUNTED AND EASILY REMOVABLE THIN THE CABINET. SUPPLY EQUIPMENT COMPLETELY OLLER CABINET AND TESTED. THE SYSTEM SHALL BE TING AND RECEIVING PRIORITY FOR EACH APPROACH TO T SHALL BE POSSIBLE TO DETECT THE EMERGENCY DOO FEET FROM THE INTERSECTION IN AN 80DB-A	
NS SHOULD BE PROGRAMMED TO PREVENT THE YELLOW YECTED BY THE DISTRICT TRAFFIC ENGINEER. YELLOW FORCE THE TRANSITION THROUGH YELLOW CHANGE AND RESOLUTION OF YELLOW TRAP IF ANY PHASE OPPOSING ARANCE PHASE(S) IS ACTIVE AND DISPLAYING A GREEN ARROW INDICATION WHEN THE PREEMPTION PLAN IS PREEMPTION CLEARANCE PHASE(S) ARE GREEN.	
ECTION SHOWN IN THE PLANS WITH THE FOLLOWING BID SEPARATELY:	°75
G UNIT. R CABLE. ELECTOR ASSEMBLY AND INTERFACE WIRING PANEL. HT.	22-11.
IO ACTIVATED GPS SYSTEM, THE CONTRACTOR SHALL COSTS INCIDENTAL TO THE SYSTEM) WITH THE TERS, SWITCHES, WIRING AND ALL REQUIRED FOR FOUR EMERGENCY VEHICLES PER INTERSECTION. TESPONSIBLE FOR INSTALLING	CLI-US
UPPLIED WITH SOFTWARE REQUIRED TO CALIBRATE, HE SYSTEM. TWO (2) OPERATING AND INSTRUCTION UPPLIED WITH THE SOFTWARE.	
	44

THE CONTRACTOR SHALL THOROUGHLY TEST THE INSTALLED SYSTEM. AS A MINIMUM, THE CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS ARE PROPERLY MADE TO THE CONTROLLER CABINETS. THE CONTRACTOR SHALL CHECK THAT THE RANGE SETTING IS PROPER FOR EACH INTERSECTION. THE CONTRACTOR SHALL DETERMINE THAT ALL PHASE SELECTORS ARE SELECTING THE PROPER PHASE AND TIMING ACCURATELY. THE CONTRACTOR SHALL VERIFY THAT ALL VEHICLE EMITTERS ARE BEING PROPERLY DETECTED.

THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FIFTEEN (15) PERSONS IN THE OPERATION OF THE SYSTEM. IT SHALL BE PROVIDED WITHIN 48 HOURS OF THE INSTALLATION OF THE SYSTEM. IT SHALL CONSIST OF HANDS-ON INSTRUCTION FOR A MINIMUM OF SIXTEEN (16) HOURSIST OF HANDS-ON INSTRUCTION FOR A MINIMUM OF SIXTEEN (16) HOURS. THE CONTRACTOR SHALL PROVIDE TRAINING FOR UP TO FOUR (4) PERSONS IN THE INSTALLATION AND MAINTENANCE OF THE SYSTEM. IT SHALL CONSIST OF A MINIMUM OF EIGHT (8) HOURS OF INSTRUCTION. TRAINING SHALL BE SUPPLIED WITHIN SEVEN (7) DAYS OF THE INSTALLATION OF THE SYSTEM. ALL TRAINING SHALL BE HELD IN A CITY SUPPLIED LOCATION. TRAINING SHALL BE CONDUCTED BY SOMEONE WHO HAS PERFORMED THIS WITHIN THE LAST YEAR AND DOES IT ON A DEDUCTION FOR THE OWNED TO THE INFORMATION OF THE TRAINING STATUS THE PERFORMED THIS WITHIN THE LAST YEAR AND DOES IT ON A REGULAR BASIS. THE COST OF TRAINING, INCLUDING COURSE MATERIAL, TRAVEL SUBSISTENCE AND RELATED COSTS, SHALL BE ENTIRELY BORNE BY THE CONTRACTOR AND SHALL BE INCIDENTAL TO THE PREEMPTION FOUTPMENT.

PAYMENT FOR ITEM 809 EMERGENCY VEHICLE PREEMPTION. AS PER PLAN SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PREEMPTION IN PLACE AND FULLY OPERATIONAL AS SHOWN IN THE PLANS, EXCEPT FOR THOSE ITEMS BID SEPARATELY.

809 PREEMPT RECEIVING UNIT

AND DIRECTIONAL ASSEMBLY. EACH RECEIVING UNIT SHALL BE 360 DEGREE ADJUSTABLE. THE RECEIVING UNIT SHALL BE CAPABLE OF SENDING THE PROPER ELECTRICAL SIGNAL TO THE TRAFFIC SIGNAL CONTROLLER VIA THE PREEMPTION DETECTOR CABLE. RECEIVING UNITS SHALL BE SUPPLIED WITH MAST ARM MOUNTING HARDWARE AS SHOWN IN THE PLANS.

FURNISH PREEMPTION RECEIVING UNITS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER**¹⁵/₂S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR ITEM 809 PREEMPTION RECEIVING UNIT SHALL BE AT THE CONTRACT UNIT FOR EACH RECEIVING UNIT IN PLACE, COMPLETELY INSTALLED AT THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

809 PREEMPT DETECTOR CABLE

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION DETECTOR HOME RUN CABLE IN THE LOCATIONS SHOWN IN THE PLANS. IT SHALL CONNECT THE PREEMPT RECEIVING UNITS TO THE PHASE SELECTORS IN THE LOCAL CONTROLLER CABINET.

PREEMPTION DETECTOR CABLE SHALL CONFORM TO ODOT SPECIFICATION 632. ONLY ONE EXTERNAL SPLICE SHALL BE PERMITTED BETWEEN PREEMPTION RECEIVER UNIT AND CONTROLLER CABINET. THIS SPLICE SHALL MEET THE REQUIREMENTS OF C&MS 632.23 USING A WATERPROOF EPOXY SPLICE KIT. THE CABLE SHALL BE APPROVED FOR BOTH OVERHEAD AND UNDERGROUND USE. THE JACKET SHALL WITHSTAND EXPOSURE TO SUNLIGHT AND ATMOSPHERIC TEMPERATURES AND STRESSES REASONABLY EXPECTED IN NORMAL INSTALLATIONS.

PAYMENT FOR ITEM 809 PREEMPT DETECTOR CABLE SHALL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT FOR THE CABLE FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

809 PREEMPT PHASE SELECTOR

BOY PREEMPT PHASE SELECTOR THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT PHASE SELECTORS INCLUDING WIRING INTERFACE PANELS IN THE LOCAL CONTROLLER CABINET AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREMPT PHASE SELECTORS COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

THIS ITEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINETS WHERE INDICATED IN THE PLANS. THE PHASE SELECTORS SHALL CONSIST OF A MODULE OR MODULES THAT WILL PROVIDE THE NECESSARY INPUTS TO THE CONTROLLER. PHASE SELECTORS SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF CHANNELS TO PROVIDE PREEMPTION FOR ALL APPROACHES TO THE INTERSECTION SEPARATELY. POWER SHALL BE OBTAINED FROM THE PHASE SELECTOR OR PHASE SELECTOR POWER SUPPLY AND NOT FROM THE LOCAL CONTROLLER TIMER.

THE PHASE SELECTORS SHALL HAVE FRONT PANEL INDICATORS FOR ACTIVE PREEMPT CHANNEL STATUS. IT SHALL HAVE TEST SWITCHES TO ACTIVATE ALL PREEMPT CHANNELS.

FURNISH PREEMPT PHASE SELECTORS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

СС	YMENT FOR ITEM 809 PREEMF DNTRACT UNIT PRICE FOR EAC.	H PHASE S	ELECTOR IN PL	ACE, COMPLE		•	D SPECTRUM RADIO, AS PER PLAN	TVF TVF CHECKED
IN:	STALLED IN THE LOCAL CONTR STED AND ACCEPTED.	ROLLER SH	OWN IN THE PL	ANŚ, WIRED,		THE FOLLO	WING REQUIREMENTS SHALL APPLY:	C
ŤĤ	9 PREEMPT CONFIRMATION LI IIS ITEM SHALL CONSIST OF F INFIRMATION LIGHTS INCLUDIN	URNISHING	AND INSTALLI	NG PREEMPT	RIES	PROVIDE SPECTRUM DEVICES.	AND INSTALL RADIO INTERCONNECT EQUIPMENT, INCLUDING SPREAD RADIO, ANTENNA, MOUNTING HARDWARE, CABLING, AND INTERFACE	
TH	METRMATION LIGHTS INCLUDIN NAT ARE NECESSARY TO MAKE DMPLETELY FUNCTIONAL AND (THE PREEN	<i>MPT CONFIRMA</i>	TION LIGHT			SH COMMUNICATIONS BETWEEN ADJACENT INTERSECTIONS AND THE MASTER ER IN THE DAVIDS DRIVE AND ROMBACH AVENUE CONTROLLER CABINET.	
INI	CONFIRMATION LIGHT SHALL E DICATE THAT THE EMERGENCY PAFFIC SIGNAL.	BE SUPPLIE VEHICLE H	ED FOR EACH II AS ACHIEVED (NTERSECTION CONTROL OF 1	TO HE	<i>PROVIDE INTERFERIN</i>	A BANDPASS FILTER WITH A MINIMUM OF 30 DB ATTENUATION OF IG SIGNALS.	
TH	E CONFIRMATION LIGHT SHALL SHALL BE SUPPLIED WITH A (L BE A WEA	ATHER TIGHT L	IGHTING FIXTU	RE.		THE SITE ANALYSIS AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 815. E RESULTS TO THE ENGINEER.	
HA LIU	RDWARE TO ATTACH TO THE : GHT SHALL BE POWERED BY A	TRAFFIC SI LOAD SWI	'GNAL MAST AR TCH IN THE TR	M. THE CONFI AFFIC SIGNAL	RMATION-	APPLY TV FEED LINE	WO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER ANTENNA JOINTS.	S
СС	DNTROLLER. SIGNAL CABLE CC DNFIRMATION LIGHTS. A MINIM TH THE GREEN WIRE SERVING .	IUM OF 4-C	CONDUCTOR CAL	BLE SHALL BE	OR USED	SURE THAT RUBBER SPL	LAYER OF BUTYL RUBBER TAPE/VAPOR WRAP OVER THE JOINT MAKING THERE ARE NO AIR CAVITIES OR OPENINGS IN THE WRAP. USE LINERLESS LICING TAPE OR RUBBER SPLICING TAPE. DO NOT APPLY BUTYL RUBBER	OTE
SH	YMENT FOR ITEM 809 PREEMF ALL BE MADE AT THE CONTRA ACE, COMPLETELY INSTALLED	CT UNIT P	RICE FOR EACH	H LIGHT IN	15	APPLY TV	CTLY TO THE CONNECTOR. WO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT INAL WRAP GOING UP TO MINIMIZE WATER MIGRATION.	Z
WI	RED, TESTED AND ACCEPTED.				.,	FOR CON	NAL WHAT BOINS OF TO MINIMIZE WATCH MIGHATION. NECTIONS THAT WILL BE ON OR UNDER THE GROUND, COAT JOINT WITH L SEALING COMPOUND.	RAL
	ADDITION TO THE REQUIREME		•				HALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH OF "ITEM SPECTRUM RADIO, AS PER PLAN", COMPLETE AND ACCEPTED.	Ш И И
	POVIDE THE GENERATOR INTER						E OF VEHICULAR SIGNAL HEAD	Б Ш
PL SU	YMENT FOR "ITEM 633 UNINTE AN" WILL BE MADE AT THE CC IPPLY IN PLACE, WIRED, TEST	ONTRACT U ED AND AC	NIT PRICE FOR CEPTED.	LY (UPS), AS F 'EACH POWER	PER	INTERSECTI THROUGH M FEET FROM	STRUCTING THE PROPOSED TRAFFIC CONTROL AT THE LOWES DRIVE TON, MOVE THE THREE-SECTION SIGNAL HEAD FOR THE SOUTHBOUND TOVEMENT (SIGNAL HEAD 4A IN CLI-US22-10.00 PLANS) SO THAT IT IS 8 THE SUPPORT. ADJUST DETECTION ZONES AS SHOWN ON SHEET 44 OF	NAL
IN	5, SPREAD SPECTRUM RADIO, ADDITION TO THE REQUIREME	ENTS OF SU	UPPLEMENTAL S	SPECIFICA TION	815		SET, PROGRAMMING THEM AS SHOWN IN THE FOLLOWING TABLE. WING QUANTITY IS FORWARDED TO THE GENERAL SUMMARY:	5 D
AN	ID 915, THE FOLLOWING REQUI PROVIDE AND INSTALL RADIO	IREMENTS S	SHALL APPLY:			REUSE OF N	VEHICULAR SIGNAL HEAD, AS PER PLAN I EACH	S
SP	TREAD SPECTRUM RADIO, ANTE TERFACE DEVICES.							FIC
MA	ESTABLISH COMMUNICATIONS (STER CONTROLLER IN THE DA NNTROLLER CABINET.				D THE			ΑFI
	PROVIDE A BANDPASS FILTER F INTERFERING SIGNALS.	WITH A MI	NIMUM OF 30 L	DB ATTENUATI	ON			ТВ
	PERFORM THE SITE ANALYSIS ECIFICATION 815. SUBMIT THE							
	APPLY TWO WRAPS OF PREMIL ITENNA FEED LINE JOINTS.	JM UV RESI	STANT ELECTR	PICAL TAPE OV	ER			
MA WFr	APPLY A LAYER OF BUTYL RU KING SURE THAT THERE ARE I RAP. USE LINERLESS RUBBER S NOT APPLY BUTYL RUBBER T	NO AIR CA SPLICING T	VITIES OR OPE APE OR RUBBE	NINGS IN THE R SPLICING TA				
, TH	APPLY TWO WRAPS OF PREMIU E JOINT WITH THE FINAL WRA GRATION.	JM UV RESI	STANT ELECTR	PICAL TAPE OV	ER			
,	FOR CONNECTIONS THAT WILL TH ELECTRICAL SEALING COMP		ONDER THE G	ROUND, COAT	JOINT		-	
PA	YMENT SHALL BE MADE AT TH TEM 815 SPREAD SPECTRUM RA	E CONTRA			I OF			75
	CCEPTED.	<i>D</i> 10, A3 T	en l'env, com	ILLIL AND				11。7
								2-
	ZONE VT SE SE	q) IN (SEC)	EXTENSION PROGRAMMED IN CONTROLLER (SEC)	817		(FT)	JS2
		ASSOCIATED PHASE	DELAY PROGRAMMED . CONTROLLER (S	ENSIO AMMEL LLER	DELAY INHIBIT PHASE	PURPOSE	NOT	N -I
	DETECTION MOVEME PULSE (PRESEN	ASSO	DE ROGR, NTROI	EXTE ROGR, NTRO	PH	PUK	DE TEC TION LENGTH (I	СГ
\vdash	HZS1SB LTPRESENCE	4	- FP	- BH		CALL/EXTEND PHASE 4	<u>H</u> 15	
F	ZS2SB THRUPRESENCEZS3SB LTPRESENCE	4	10		4	CALL/EXTEND PHASE 4 CALL/EXTEND PHASE 7	30 15	45
			1	1	1			77

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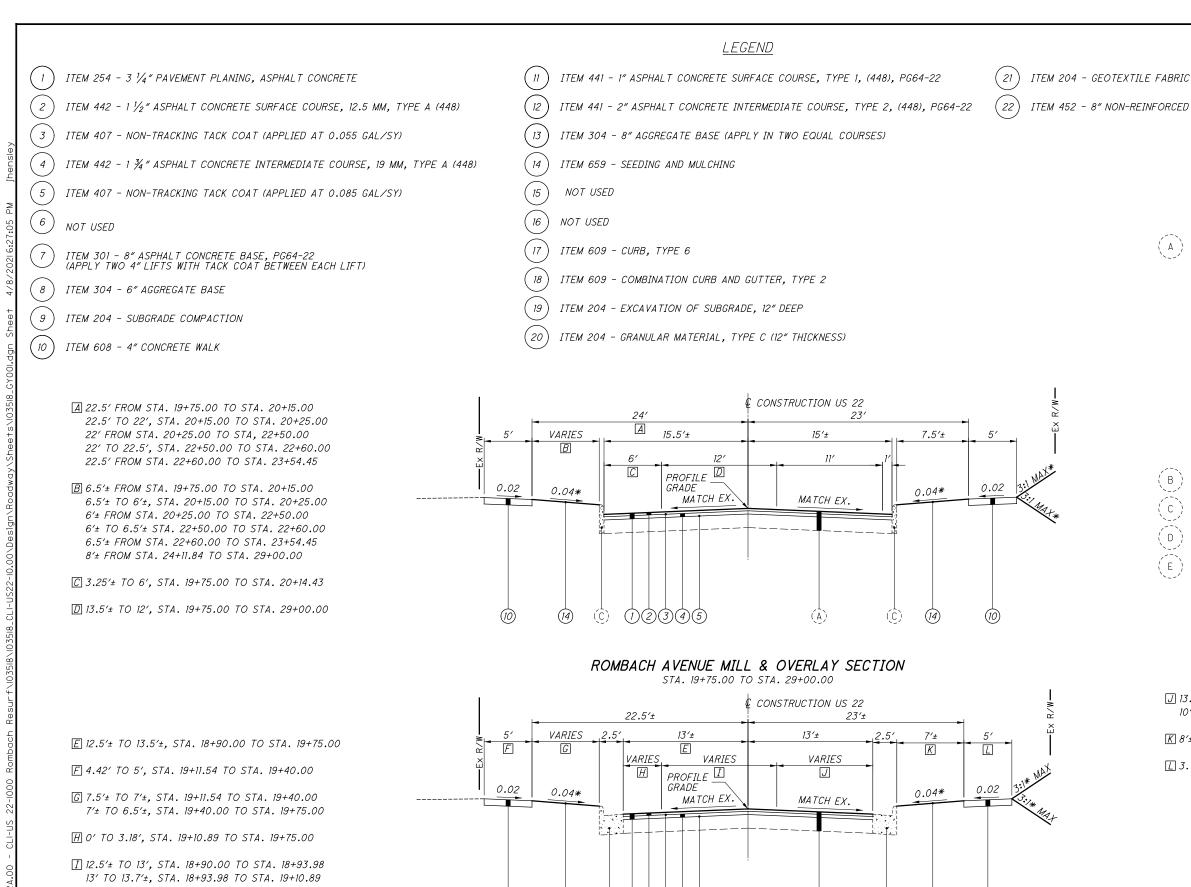
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		GRAND	ITEM		RT.	PAI		UM.	IEET NU	SH			
DESCR	UNIT	TOTAL	EXT	ITEM		01/SAF/ OT				50	49	48	45
TRAFFIC													
CONDUIT, 2", 725.051	FT	17	25408	625		17				17			
CONDUIT, 3", 725.051	FΤ	52	25504	625		52				52			
CONDUIT, 4", 725.051		26	25604	625		26				26			
CONDUIT, JACKED OR DRILLED, AS PER PLAN, 4", 725.04	FΤ	279	25901	625		279				279			
TRENCH	FT	69	29000	625		69				69			
PULL BOX, 725.08, 18″		3	30700	625		3					3		
PULL BOX, 725.08, 24″		1	30706	625		1					1		
PULL BOX REMOVED	EACH	2	31510	625		2					2		
GROUND ROD	EACH	7	32000	625		7					7		
SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	EACH	7	79101	630		7						7	
SIGN SUPPORT ASSEMBLY, POLE MOUNTED	EACH	4	79500	630		4						4	
SIGN, FLAT SHEET	SF	45	80100	630		45						45	
SIGN, STREET NAME	EACH	2	80510	630		2						2	
REMOVAL OF OVERHEAD MOUNTED SIGN AND DISPOSAL		4	87400	630		4						4	
REMOVAL OF POLE MOUNTED SIGN AND DISPOSAL		4	87500	630		4						4	
VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POL	EACH	4	05007	632		4						4	
VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POL		4	05087	632		4						4	
PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PL		4	20731	632		4						4	
COVERING OF VEHICULAR SIGNAL HEAD		8	25000	632		8						8	
COVERING OF PEDESTRIAN SIGNAL HEAD		4	25010	632		4						4	
	Enon		20010	002									
PEDESTRIAN PUSHBUTTON	EACH	2	26000	632		2						2	
SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG		769	40500	632		769				769		_	
SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG		914	40700	632		914				914			
SIGNAL SUPPORT FOUNDATION	EACH	4	64010	632		4				Q11		4	
PEDESTAL FOUNDATION		2	64020	632		2						2	
	EAGH	2	01020	032		2							
LOOP DETECTOR LEAD-IN CABLE	FT	390	65200	632		390				390			
POWER CABLE, 2 CONDUCTOR, NO. 8 AWG		25	67200	632		25				25			
SERVICE CABLE, 2 CONDUCTOR, NO. 8 AWG		109	69400	632		109				109			
POWER SERVICE, AS PER PLAN		1	70001	632		1				10.5		1	
CONDUIT RISER, 2" DIAMETER	EACH	1	70400	632		1				1		I	
CONDULL RISER, 2 DIAMETER	LAUN		10400	032						1			
SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 3, AS PER PLAN	EACH	1	80303	632		1					1		
SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 11, AS PER PLAN		2	80503	632		2					1	2	
		1				1						1	
SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 13, AS PER PLAN PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN		2	80621 89901	632 632		2						2	
PEDESTAL, 8, TRANSFORMER BASE, AS PER PLAN	EACH	2	89901	032		2						Ζ	
REMOVAL OF TRAFFIC SIGNAL INSTALLATION	EACU	1	0.010.0	632		1					1		
			90100								1		
CONTROLLER ITEM, MISC.: CONTROLLER UNIT, TYPE TS2/A2, WITH			99000	633		1	 	 					
CABINET FOUNDATION			67100	633		1		 			1		
CONTROLLER WORK PAD	EACH	1	67200	633		1					1		
	E L OLL												
EMERGENCY VEHICLE PREEMPTION, AS PER PLAN			69201	809		1							
PREEMPT RECEIVING UNIT		4	69210	809		4					4		
PREEMPT DETECTOR CABLE		520	69220	809		520					520		
PREEMPT PHASE SELECTOR		1	69230	809		1					1		
PREEMPT CONFIRMATION LIGHT	EACH	4	69240	809		4					4		
UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN		1	74001	633		1					1		
SPREAD SPECTRUM RADIO, AS PER PLAN		1	30001	815		1					1		
ADVANCE RADAR DETECTION		2	69000	809		2					2		
STOP LINE RADAR DETECTION		4	69100	809		4					4		
REUSE OF VEHICULAR SIGNAL HEAD, AS PER PLAN	EACH	1	90201	632		1							1

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GNAL S		
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ARBONATE, AS PER PLAN ARBONATE, AS PER PLAN	43 43	AL
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		TRAFFIC SIGNAL GENERAL SUMMARY
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	43 43	F
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ABINET, TYPE TS2	44	
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(14)

(D)

(1)(2)(3)(4)(5)

13.7'± FROM STA. 19+10.89 TO STA. 19+68.97 13.7'± TO 13.5'±, STA. 19+68.97 TO STA. 19+75.00

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ROMBACH AVENUE MILL & OVERLAY SECTION STA. 18+90.00 TO STA. 19+75.00

(A)

(14)

(D)

(10)

ITEM 452 - 8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P

EXISTING PAVEMENT: A) STA. 18+80.00 TO STA. 29+00.00 10 $\frac{1}{4}$ " ASPHALT, 16" AGGREGATE STA. 29+00.00 TO STA. 116+56.82 10 γ_2'' ASPHALT, 7 γ_2'' AGGREGATE STA. 119+75.00 TO STA. 129+00.00 10 $\frac{1}{2}^{\prime\prime}$ ASPHALT, 6" AGGREGATE STA. 129+00.00 TO STA. 134+40.00 6" ASPHALT, 6" CONCRETE, 4" AGGREGATE STA. 134+40.00 TO STA. 162+10.00 11" ASPHALT, 6" AGGREGATE STA. 162+10.00 TO STA. 174+00.00 6" ASPHALT, 6" CONCRETE, 4" AGGREGATE EAST SIDE DRIVE 10 $\frac{1}{2}$ " ASPHALT, 7 $\frac{1}{2}$ " AGGREGATE (B) 1 1/2" ASPHALT, 8" AGGREGATE BARRIER CURB CÌ

 $2 \frac{1}{2}$ CURB AND GUTTER

E) CONCRETE WALK

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☑ 13.5'± TO 10', STA. 18+90.00 TO STA. 19+69.00 10' FROM STA. 19+69.00 TO STA. 19+75.00

K 8'± TO 7'±, STA. 19+03.83 TO STA. 19+20.00

[3.79′ TO 5′, STA. 19+03.83 TO STA. 19+20.00

NOTE:

THE EXISTING PAVEMENT SHALL BE SAW CUT TO LOCATE A SOUND PAVEMENT EDGE PER SEC. 203.04(E) OF THE CMS.

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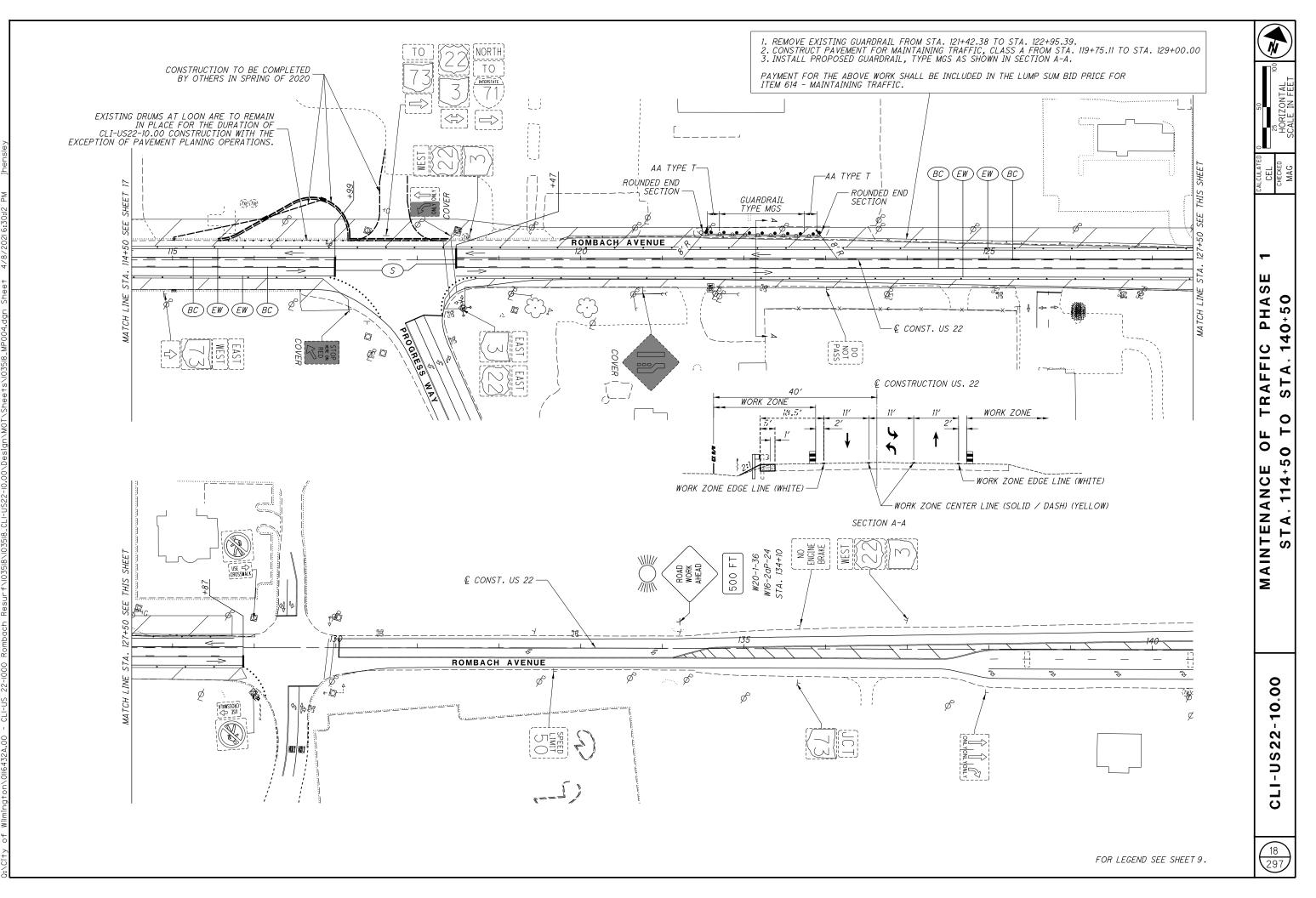
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* SEE CROSS SECTIONS FOR GRADING



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	UNIT	GRAND	ITEM	ITEM	₹ Т.	P A F							NUM.	SHEET					
	UNIT	TOTAL	EXT		05/S<2/PV	04/STR/PV	03/S<2/PV	132	127	46	45	44	41	40	39	38	8	7	OFFICE CALCS
CLEARING AND		LS	11000	201	LS														
PAVEMENT REM		1,951	23000	202	 1,951								397	751	286	251	266		
																	200		
WALK REMOVED		16,171	30000	202	16,171								126	955	5,852	9,238			
CURB REMOVED		1,337	32000	202	1,337								76	237	425	599			
CURB AND GUT	FT	2,535	32500	202	 2,535								936	843	492	264			
PIPE REMOVED,	FT	735	35100	202	735								297	159	60	219			
PIPE REMOVED,	FT	96	35200	202	96								12	72	12				
MANHOLE REMO		20	58000	202	20								5	7	1	7			
CATCH BASIN R INLET REMOVED		18 24	58100 58200	202 202	18 24	├────┤							4	4	2	8 3			
	EACH	24	58200	202									11	0	4	3			
REMOVAL MISC	FT	42	98200	202	42											42			
EXCAVATION		1,442	10000	203	1,442			35	1407										
EMBANKMENT	СҮ	907	20000	203	907			44	863										
SUBGRADE COM	SY	4,096	10000	204	 4,096														4,096
EXCAVATION OF		2,513	13000	204	2,513								l						2,513
GRANULAR MAT		2,513	30020	204	2,513														2,513
GEOTEXTILE FA		7,538	50000	204	7,538														7,538
4" CONCRETE W	SF	19,288	10000	608	19,288							19,288							
CURB RAMP		7,693	52000	608	7,693							7,693							
												.,							
INSPECTION AN		LS	25000	878	LS														
TIED CONCRETE	SY	20	21050	601	 20												20		
SOIL ANALYSIS	EACH	2	00100	659	2	1												2	
TOPSOIL		1,901	00300	659	1,901								1					1,901	
SEEDING AND M	SY	15,861	10000	659	15,861													15,861	
REPAIR SEEDIN		793	14000	659	793													793	
INTER-SEEDING	SY	793	15000	659	793													793	
COMMERCIAL FE	TON	2.21	11000	654	2.21													2.21	
LIME		3.28	31000	659	3.28								1					3.28	
WATER	MGAL	90	35000	659	90													90	
STORM WATER		LS	15000	832	LS														
STORM WATER		LS	15002	832	LS														
STORM WATER		LS	15010	832	LS														
EROSION CONT	EACH	200,000	30000	832	200,000														
CONCRETE MAS		1	20000	602	1						1								
6" UNCLASSIFIE	FT	100	13300	605	 100												100		
6" CONDUIT, T	FT	250	00900	611	250												250		
6" CONDUIT, T	FT	250	01100	611	250								1				250		
6" CONDUIT, T		200	01500	611	200								1				200		
8" CONDUIT, T		6	01800	611	6						6								
12" CONDUIT, T	FT	756	04400	611	756					242	514								
12" CONDUIT, T	FT	33	04900	611	33					33									
15" CONDUIT, T	FT	129	05900	611	129					61	68								
18" CONDUIT, T		66	07400	611	66						66								
24" CONDUIT, 1 27" CONDUIT, 1		60 6	10400 11900	611 611	 60 6	l				54 6	6								
	F I	Ö	HAOO	110	0					D									
30" CONDUIT,	FT	30	13400	611	30						30								
36" CONDUIT, 1		18	16400	611	 18	l				6	12		·'						
42" CONDUIT, 1		18	19400	611	 18	l					18		,						
	FT	12	23800	611	12	⊢				0	12								
60" CONDUIT,		10	00100	C 11	 10														
		10	98150	611	10	ļ				2	8		l						

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DESCRIPTION	SEE Sheet No.	CALCULATED JRW CHECKED MAG
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		 SI	HEET	NUM.			· · · ·				P A	RT.	ITEM	ITEM	GRAND	UNIT	DESCRIPTION	SEE Sheet	
FFICE CALCS	8		42	43	45	46		182	184	03/S<2/PV	04/STR/PV	05/S<2/PV		ЕХТ	TOTAL			NO.	CALC
																	DRAINAGE		
					6	2						8	611	98180	8	EACH	CATCH BASIN, NO. 3A		
	_	 			1	1						2	611	98370	2	EACH	CATCH BASIN, NO. 6		_
					e	4						4	611 611	98470 98840	4 15	EACH	CATCH BASIN, NO. 2-2B		
		 			6 5	9						15 6	611	98850	6	EACH EACH	INLET, NO. 2-A-6 INLET, NO. 2-A-8		-
		 			5							0	011	30030	0	LACIT	INLLI, NO. 2 A O		-
					3	1						4	611	98860	4	EACH	INLET, NO. 2-A-10		-
					1							1	611	98870	1	EACH	INLET, NO. 2-A-12		
					9	4						13	611	99574	13	EACH	MANHOLE, NO. 3 (48")		
					1	6						7	611	99574	7	EACH	MANHOLE, NO. 3 (60")		
					3							3	611	99574	3	EACH	MANHOLE, NO. 3 (72")		
		 			1							1	611	00574	1		MANHOLE, NO. 3 (90″)		
	5				1							5	611	99574 99710	5	EACH EACH	PRECAST REINFORCED CONCRETE OUTLET		
	Ű											<u> </u>	011	00110		LAGIT			-
																	PAVEMENT		_
3,612												3,612	253	02001	3,612	CY	PAVEMENT REPAIR, AS PER PLAN	8	
8,802										75,645	23,157		254	01000	98,802	SY	PAVEMENT PLANING, ASPHALT CONCRETE (T = 3.25″)		
	59	 										59	301	46000	59	CY	ASPHALT CONCRETE BASE, PG64-22		_
693			117	29								839	304	20000	839	CY	AGGREGATE BASE		_
7 097										10,591	7 0 4 7	15.7	407	20000	17 097	CAL	NON-TRACKING TACK COAT		—
3,987 78		 								10,591	3,243	153 78	407	20000 50000	13,987 78	GAL CY	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22		
156		 										156	441	50300	156	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448)		
4,117										3,152	965	100	442	20000	4,117	CY	ASPHALT CONCRETE SURFACE COURSE, 12.5 MM, TYPE A (448)		
,803										3,677	1,126		442	20200	4,803	CY	ASPHALT CONCRETE INTERMEDIATE COURSE, 19 MM, TYPE A (448)		-
										,	, í				,				_
331												331	452	10010	331	SY	6" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
863			36									899	452	12010	899	SY	8" NON-REINFORCED CONCRETE PAVEMENT, CLASS QC 1P		
		 	1041	0.40								0557	000	400.00	0557				
		 	1911 ,408	646 452								2557	609 609	12000 26000	2557 1,860	FT	COMBINATION CURB AND GUTTER, TYPE 2 CURB, TYPE 6		
		 · · ,	,400	729								1,860 729	609	71000	729	FT SF	CONCRETE MEDIAN		-
		 		120								LS	690	98400	LS	51	SPECIAL - CONSULTANT FOR CONCRETE QUALITY CONTROL	8	-
																	INCLUDING TESTING AND INSPECTION		_
																			_
																	WATER WORK		
									30			30	202	32001	30	FT	CURB REMOVED, AS PER PLAN	182	
		 							_				070			51011			
		 							3			3	638	10480	3	EACH	FIRE HYDRANT REMOVED	470	
		 							80 228			80	SPECIAL SPECIAL	63820416 63820418	80	FT	4" WATER MAIN POLYVINYL CHLORIDE PIPE AND FITTINGS (WILMINGTON) 6" WATER MAIN POLYVINYL CHLORIDE PIPE AND FITTINGS (WILMINGTON)	172	
									228 1,957			228 1,957	 SPECIAL	63820418	228 1,957	FT FT	8" WATER MAIN POLYVINTL CHLORIDE PIPE AND FITTINGS (WILMINGTON) 8" WATER MAIN POLYVINYL CHLORIDE PIPE AND FITTINGS (WILMINGTON)	172	
									1,957			1,957	SPECIAL	63820420	1,957	EACH	2" GATE VALVE (WILMINGTON)	172 & 180	
		 											JILCIAL	03020304	1	LACIT		112 & 100	<u> </u>
									1			1	SPECIAL	63820516	1	EACH	2" CUTTING IN SLEEVE (WILMINGTON)	172 & 180	30
									3			3	SPECIAL	63820532	3	EACH	4" CUTTING IN SLEEVE (WILMINGTON)	172 & 180	
									3			3	SPECIAL	63820522	3	EACH	4" GATE VALVE WITH VALVE BOX (WILMINGTON)	172 & 180	30
									4			4	SPECIAL	63820538	4	EACH	6" GATE VALVE WITH VALVE BOX (WILMINGTON)	172 & 180	
									1			1	SPECIAL	63820542	1	EACH	6" INSERTING VALVE WITH VALVE BOX (WILMINGTON)	172 & 180	30
	+	 											CDEOTAL	67000540		E A OU		170 0 400	
									3			3	SPECIAL SPECIAL	63820548 63820554	3	EACH EACH	6" CUTTING IN SLEEVE (WILMINGTON) 8" GATE VALVE WITH VALVE BOX (WILMINGTON)	172 & 180 172 & 180	
		 							2			1	 SPECIAL	63820554	2	EACH	6" X 6" TAPPING SLEEVE, VALVE AND VALVE BOX (WILMINGTON)	172 & 180	
	+ +	 						L	3			3	SPECIAL	63820692	3	EACH	8" X 6" TAPPING SLEEVE, VALVE AND VALVE BOX (WILMINGTON)	172 & 180	
	+ +								3			3	SPECIAL	63820694	3	EACH	8" X 8" TAPPING SLEEVE, VALVE AND VALVE BOX (WILMINGTON)	172 & 180	
									3			3	SPECIAL	63820750	3	EACH	6" FIRE HYDRANT (WILMINGTON)	177 & 178	_
	_ _		[4			4	SPECIAL	63820754	4	EACH	FIRE HYDRANT RELOCATED (WILMINGTON)	178	
		 							1,128	ļ		1,128	 SPECIAL	63820772	1,128	FT	1" POLYETHYLENE WATER SERVICE LINE (WILMINGTON)	172 & 179	
		 							44			44	SPECIAL	63820780	44	FT	2" POLYETHYLENE WATER SERVICE LINE (WILMINGTON)	172 & 179	
		 							2			2	SPECIAL	63820876	2	EACH	CUT AND PLUG EXISTING 4" WATER LINE (WILMINGTON)	181	
	+	 							38			38	SPECIAL	63820894	38	EACH	1" CORPORATION STOP (WILMINGTON)	172 & 179	19
	+ $+$	 															SANITARY SEWER		_
	+ +							100				100	611	00900	100	FT	6" CONDUIT, TYPE B, FOR SANITARY CONNECTION		-
								100				100	611	01100	100	FT	6" CONDUIT, TYPE C, FOR SANITARY CONNECTION		-
									05	1	1		611	02000	25	FT			-
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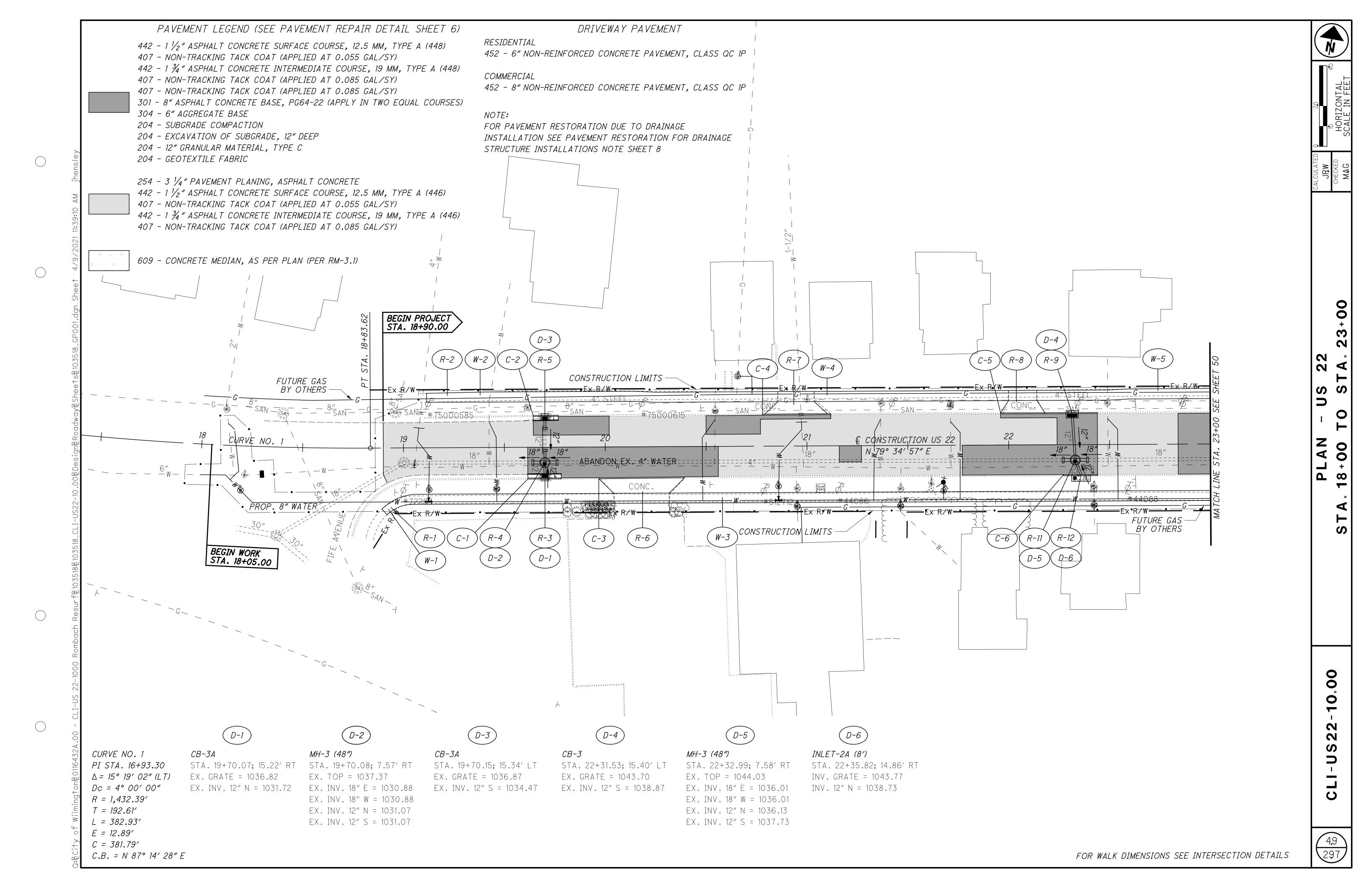
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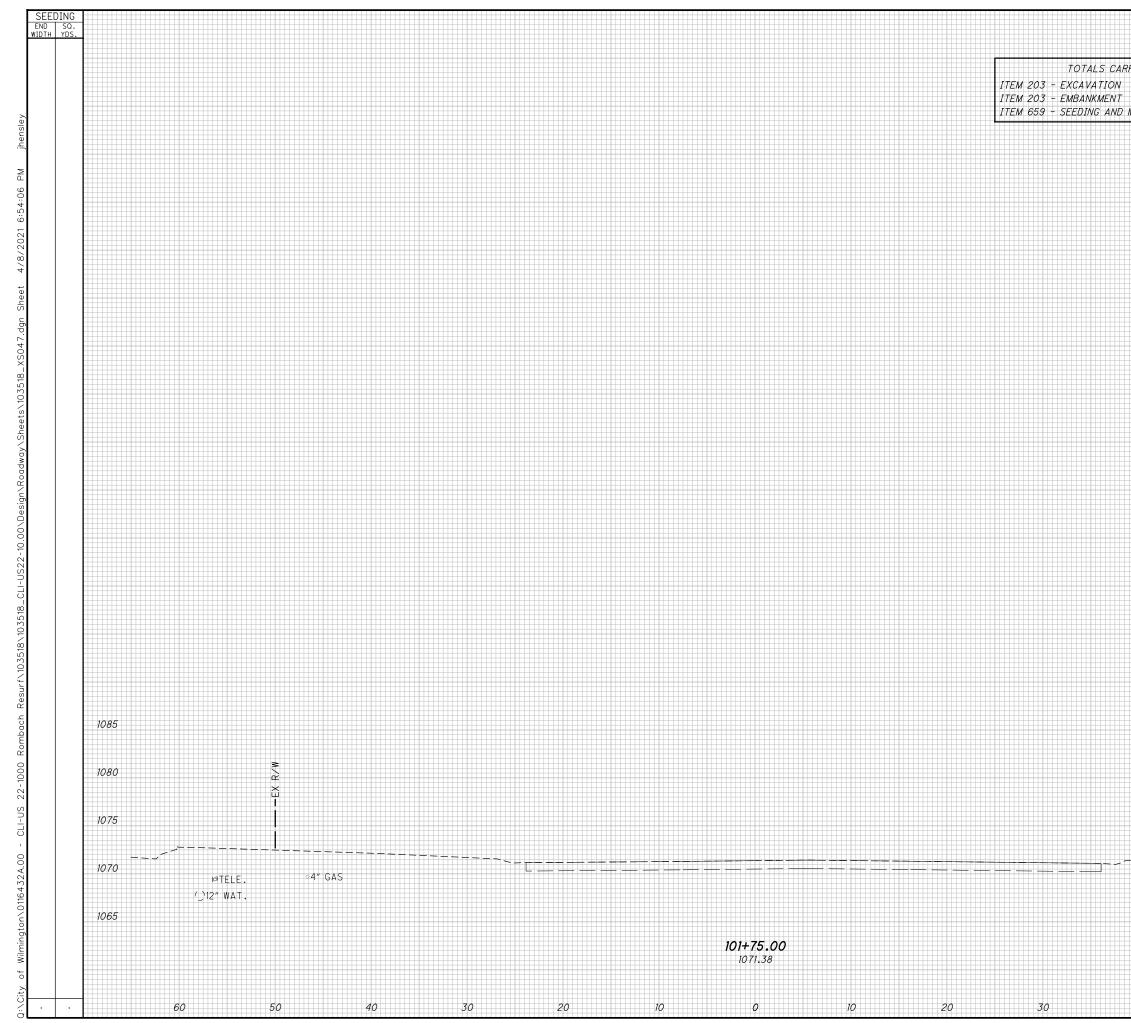
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INLET, NO. 2-A-8	INLET, NO. 2-A-10	INLET, NO. 2-A-12	MANHOLE, NO. 3 (48")	MANHOLE, NO. 3 (60″)	MANHOLE, NO. 3 (72")	MANHOLE, NO. 3 (90″)	
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11. ALL SIGNAL HEADS SHALL BE POSITIONED SO THAT THE SIGNAL HEAD IS CORRECTLY AIMED AT APPROACHING TRAFFIC. IF PROPER ORIENTATION OF THE LED UNIT IS REQUIRED FOR OPTIMUM PERFORMANCE, AN UP ARROW, FOR CORRECT INDEXING AND ORIENTATION SHALL EXIST ON THE UNIT.

12. THE BOTTOM OF THE SIGNAL HEADS FOR THE SAME APPROACH SHALL BE WITHIN 6 INCHES OF EACH OTHER AND MOUNTED AT A MINIMUM HEIGHT OF 17 FEET AND A MAXIMUM HEIGHT OF 19 FEET (DISTANCE BETWEEN THE BOTTOM OF SIGNAL HEAD TO PAVEMENT).

PAYMENT FOR "ITEM 632 VEHICULAR SIGNAL HEAD, LED, (BY TYPE), AS PER PLAN (WITH AND WITHOUT BACKPLATES)" SHALL BE MADE FOR COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS, AND NEW ATTACHMENT HARDWARE.

632, PEDESTAL, <LENGTH>, TRANSFORMER BASE, AS PER PLAN

THE EXTERIOR OF PEDESTALS SHALL BE POWDER COATED BLACK AFTER GALVANIZING IN ACCORDANCE WITH ODOT SUPPLEMENTAL SPECIFICATION 916.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR "ITEM 632 PEDESTAL, (LENGTH), TRANSFORMER BASE, AS PER PLAN", COMPLETE.

632, SIGNAL SUPPORT, TYPE TC-81.21, <BY DESIGN>, AS PER PLAN 632, SIGNAL SUPPORT, <BY TYPE>, WITH MAST ARMS TYPE TC-81.21 <BY DESIGN AND TYPE TC-81.21 <BY DESIGN>, AS PER PLAN 632, SIGNAL SUPPORT, MISC.:SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 11 POLE, WITH MAST ARMS TC-81.21 DESIGN 14 AND DESIGN 13

THE EXTERIOR OF SIGNAL SUPPORTS SHALL BE POWDER COATED BLACK AFTER GALVANIZING IN ACCORDANCE WITH ODOT SUPPLEMENTAL SPECIFICATION 916.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID FOR "ITEM 632 SIGNAL SUPPORT, TYPE TC-81.21, <BY DESIGN>, AS PER PLAN", "ITEM 632, SIGNAL SUPPORT, <BY TYPE>, WITH MAST ARMS TYPE TC-81.21 <BY DESIGN AND TYPE TC-81.21 <BY DESIGN>, AS PER PLAN", SIGNAL SUPPORT, OR 'MISC::SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 11 POLE, WITH MAST ARMS TC-81.21 DESIGN 14 AND DESIGN 13', COMPLETE.

632, COVERING OF VEHICULAR SIGNAL HEAD

COVER VEHICULAR SIGNAL HEADS IF ERECTED AT INTERSECTIONS WHERE TRAFFIC IS MAINTAINED BEFORE ENERGIZING THE SIGNALS. USE A STURDY OPAQUE COVERING MATERIAL SPECIFICALLY MADE FOR USE WITH TRAFFIC SIGNALS, AND ENSURE THAT THE COLOR OF THE COVER IS DIFFERENT THAN THE SIGNAL HEAD, TAN OR BEIGE, SO THAT IT IS CLEAR TO DRIVERS THE HEADS ARE COVERED, NOT DARK. USE A METHOD OF COVERING TO COVER ATTACHMENT AND MATERIALS, INCLUDING BACKPLATES, AS APPROVED BY THE ENGINEER. COVERS ARE TO BE FREE OF TEXT, PICTURES, OR ANY TYPE OF ADVERTISING. MAINTAIN COVERS, AND REMOVE THEM WHEN DIRECTED BY THE ENGINEER.

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:

 THE METER BASE MOUNTING HEIGHT SHALL BE NO MORE THAN FIVE (5) FEET HIGH TO THE CENTER OF THE METER BASE FROM THE GROUND.
 THE CONTRACTOR SHALL SUPPLY THE NECESSARY METER BASES.
 ALL POWER SERVICES SHALL BE METERED.
 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.

CONTACT THE METER SECTION OF THE POWER COMPANY FOR INFORMATION REGARDING THE POWER SERVICE INSTALLATION. REQUEST AND SCHEDULE ANY INSPECTIONS THE POWER COMPANY MAY REQUIRE FOR THE POWER SERVICE HOOK UP. PROVIDE LOAD CALCULATIONS REQUIRED BY THE POWER COMPANY. 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 VOLTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS AND THE PAYING OF ALL FEES. THE CONTRACTOR SHALL PAY ALL POWER CHARGES UNTIL THE SIGNAL IS ACCEPTED BY THE MAINTAINING AGENCY.

POWER SUPPLY FOR TRAFFIC SIGNALS

ELECTRIC POWER SHALL BE OBTAINED FROM FIRST ENERGY AT THE LOCATIONS INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS.

DAYTON POWER AND LIGHT 1900 DRYDEN ROAD MORAINE, OHIO 45439 PHONE: 937-331-3900

633, CONTROLLER UNIT, TYPE TS2/A2, AS PER PLAN

IN ADDITION TO ODOT ITEM 633 AND ITEM 733, THE CONTROLLER SHALL MEET ALL CURRENT APPLICABLE NEMA TS2 STANDARDS AND THE REQUIREMENTS OF ODOT CMS ITEM 633. THE TS2 TYPE 2 CONTROLLER SHALL BE FURNISHED WITH THE MOST RECENT SOFTWARE AND PROVIDE ALL FEATURES OF THE LATEST MODEL AVAILABLE.

CONTROLLER TESTING

THE CONTRACTOR SHALL PERFORM BENCH TESTING OF THE COMPONENTS OF THIS SECTION ON THE CONTROLLER. SOFTWARE AND FIRMWARE SHALL BE LOADED ON THE SYSTEM/CONTROLLER AND CHECKED FOR CORRECT OPERATION OF TIMING PLANS, PHASING SCHEMES, PRE-EMPTS AND INTERCONNECTED OPERATION. THE SUCCESSFUL TESTING SHALL BE DEMONSTRATED TO THE ENGINEER PRIOR TO INSTALLATION IF REQUESTED.

TESTING OF COMPONENTS BY THE CONTRACTOR FOR PROPER OPERATION SHALL INCLUDE THE FOLLOWING MINIMUM REQUIREMENTS:

TEST FOR OPERATION ON MIN RECALL, MAX RECALL, NO CALL AND PROPER FLASH SEQUENCE

THE CONTRACTOR IN CASE OF MINOR PROBLEMS SHALL MAKE NECESSARY REPAIRS/CORRECTIONS. (MAJOR PROBLEMS SHALL BE IMMEDIATELY REFERRED TO THE PRIME VENDOR WHO SHALL BE RESPONSIBLE FOR RESOLVING ANY EQUIPMENT PROBLEM). THE ENGINEER SHALL ALSO BE NOTIFIED OF ANY PROBLEMS. THE CONTROLLER IS TO OPERATE, WITHOUT THE APPEARANCE OF PROBLEMS, ON MINIMUM RECALL OF ALL MINOR PHASES FOR 48 HOURS WITH FULL LOAD ON EACH OUTPUT. (NOTE THAT TESTING ALSO REQUIRES OPERATION WITH DETECTORS IN A NO CALL AND CALL TO MAXIMUM CONFIGURATION).

A WRITTEN REPORT STATING THE CABINET INTERSECTION NUMBER, DATE AND TIME OF TEST, SIGNED OFF BY THE TECHNICIAN WHO PERFORMED THE TESTS, SHALL BE SUBMITTED TO THE ENGINEER UPON SUCCESSFUL COMPLETION OF THE ABOVE TESTS.

THE CONTROLLER AND ALL RELATED COMPONENTS SHALL BE IN PERFECT WORKING ORDER AND READY FOR INSTALLATION/OPERATION AT THE SPECIFIED INTERSECTION AS A RESULT OF THE WORK DESCRIBED IN THIS ITEM. THE TEST AREA MAY BE ERECTED AT A LOCATION DETERMINED BY THE CONTRACTOR. THE COST FOR THE CONTROLLER AND CABINET TESTING SHALL BE INCLUDED IN THE PRICE OF THE CONTROLLER FURNISHED COMPLETE.

DOCUMENTATION

TWO (2) COMPLETE SE EACH CONTROLLER FC FOLLOWING MATERIAL

--USER MANUALS --DEVICE PROGRAMMIN

--WIRING DIAGRAMS AN MANUFACTURERS PART REFERENCE NUMBER AN ELECTRONIC SUPPLY H

--INSTALLATION AND

SOFTWARE OR FIRMWA DOCUMENTATION THAT OF IMPROVED CAPABL PROBLEMS RESOLVED FUNCTIONS, FEATURES AS INTENDED BEFORE

CABINET EQUIPMENT

THE CABINET EXTERIC DEFECTS THAT WOULD APPEARANCE. THE CA THE FOLLOWING FEAT REQUIRED:

1. ALL CABINETS SHAL MOUNTED ON ADJUSTA INCLUDED.

2 THE CABINET SHALL IN ACCORDANCE WITH

3. A DOOR ALARM/LIC THE CABINET. A 25W INSTALLED WITH A 35. ILLUMINATE THE FIELL EITHER AN ON/OFF TC DOOR-ACTIVATED SWI

4. THE CABINET SHALL POSITION BACKBOARD WHICH THE CABINET IS THE LENGTH OF THE L ALL LOAD SWITCHES S INDICATORS MOUNTED

5. ALL CONTROLLER A OF SUFFICIENT LENGT SHELF OR ON THE TO CONNECTING CABLES S USE OF EXPOSED TIE-

6. ALL CABINET CONF. 485 PORT 1 COMMUNIC THAT CABINET. EACH PIN METAL SHELL D SU SUITABLE FOR RS-485

7. THE CABINET SHALL CONTACT SWITCH FOR TIMING FOR AUTOMAT, MOUNTED ON A 5-FOC IN ACCORDANCE WITH

8. THE CONTROLLER T FOLLOWING SWITCHES

SIGNAL SHUTDOWN SW

FLASH CONTROL SWIT

RUN/STOP TIME SWITC

AUTOMATIC/MANUAL T

COORDINATED/FREE S

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DETECTOR TEST SWITCHES SHALL BE PROVIDED FOR EACH VEHICULAR AND PEDESTRIAN PHASE. THE SWITCHES SHALL BE CAPABLE OF PLACING MANUAL CALLS INTO THE CONTROLLER DURING ACTIVATED OPERATION. THE SWITCHES SHALL BE IN PARALLEL WITH THE VEHICULAR DETECTOR RELAY CLOSURE AND PEDESTRIAN PUSHBUTTON CIRCUITS.

1. THE CABINETS SHALL BE OF A DOOR IN DOOR TYPE WITH A #1 KEY FOR THE POLICE DOOR AND A CORBIN TYPE TUMBLE LOCK KEYED FOR A #2 KEY ON THE MAIN DOOR. A RESEALABLE POUCH SHALL BE SECURELY MOUNTED TO THE INSIDE DOOR OF THE CABINET AND SHALL BE SUFFICIENT TO ACCOMMODATE ONE COMPLETE SET OF WIRING. SIGNAL, AND TIMING PLANS.

IN ADDITION TO THE REQUIREMENTS OF ITEMS 632.10 AND 732.08, THE RACK MOUNTED AMPLIFIER SHALL BE CAPABLE OF MULTIPLE FREQUENCIES, MODES (PRESENCE/PULSE), AND LEVELS OF SENSITIVITY AS NOTED:

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2. LONG PRESENCE MODE SHALL PROVIDE CONTINUOUS LOOP TRACKING WITH 8-15 MINUTE MAXIMUM HOLD TIME.

3. MEDIUM PRESENCE MODE SHALL PROVIDE CONTINUOUS LOOP TRACKING WITH 4-10 MINUTES MAXIMUM HOLD TIME.

4. PULSE MODE SHALL BE CAPABLE OF TUNING OUT A VEHICLE AFTER A 2 SECOND PERIOD SO AS TO DETECT ANY OTHER VEHICLE OCCUPYING THE REMAINDER OF THE LOOP. THE LOOP ZONE SHALL BE AT FULL SENSITIVITY WITHIN 100 MILLISECONDS.

A SIMPLE LOOP DETECTOR UNIT CHART SHALL BE INCLUDED AS PART OF THE CABINET DOCUMENTATION FOR EXISTING AND PROPOSED CABINETS THAT SHOWS EACH VEHICLE DETECTOR REFERENCE ASSIGNED TO THE RESPECTIVE INPUT CHANNEL. THE LOOP DETECTOR UNIT SHALL BE PROVIDED WITH

ONE (1) SET OF WIRING DIAGRAMS AND OPERATIONAL MANUALS AND A PARTS LIST WHICH DETAILS ALL PROPRIETARY COMPONENTS AND OTHER COMPONENTS, IDENTIFYING GENERIC EQUIVALENTS IF AVAILABLE.

THE EIGHT (8) PHASE (12 POSITION) CABINETS SHALL BE GROUND MOUNTED OR POLE MOUNTED AS SPECIFIED IN THE PLANS AND FURNISHED WITH GROUND MOUNTING OR POLE MOUNTING HARDWARE. THE CABINET SHALL INCLUDE TWELVE (12) LOAD SWITCH SOCKETS, SIX (6) FLASH TRANSFER RELAY SOCKETS, ONE FLASHER SOCKET, TWO MAIN PANEL BUS INTERFACE UNITS (BIU), A 16 CHANNEL DETECTOR RACK AND A BIU WITH TWO (2) ADDITIONAL SLOTS WIRED FOR PREEMPTION DEVICES, AND ONE TYPE 16 MALFUNCTION MANAGEMENT UNIT, AS A MINIMUM.

PREEMPTION CIRCUITRY SHALL BE RACK MOUNTED ON THE TOP SHELF OF THE CONTROLLER CABINET. THE CONTRACTOR SHALL PROVIDE A CABINET PLAN SHOWING COMPONENT PLACEMENT FOR APPROVAL PRIOR TO INSTALLATION.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH INCLUDING TESTING, TRAINING, AND DOCUMENTATION OF "ITEM 633 CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN", COMPLETE.

633, CONTROLLER ITEM, MISC.: SPREAD SPECTRUM REPEATER

IN ADDITION TO THE REQUIREMENTS OF C&MS 633 AND 733, THE FOLLOWING REQUIREMENTS SHALL APPLY:

--INCLUDE ALL EQUIPMENT NECESSARY TO COMPLETE A FUNCTIONAL DATA INTERCONNECTION BETWEEN THE MASTER CONTROLLER AND THE LOCAL CONTROLLERS.

--PROVIDE TWO ITEM 815 SPREAD SPECTRUM RADIO, AS PER PLAN AS A PART OF THIS PAY ITEM.

---THE SPREAD SPECTRUM RADIO REPEATER MAY BE MOUNTED ON A SIGNAL POLE OR ON A LIGHT POLE LOCATED AS DIRECTED BY THE ENGINEER. THE EXACT LOCATION OF THE REPEATER AND POLE SHALL BE DETERMINED BASED ON A SITE SURVEY PROVIDED BY THE CONTRACTOR PER 815.02

--THE PROPOSED POLE SHALL SUPPORT THE SPREAD SPECTRUM RADIO REPEATER, ANTENNA(S) AND THE POWER SERVICE.

--THE SPREAD SPECTRUM RADIO REPEATER SHALL BE POLE MOUNTED IN A NEMA 4X WEATHERPROOF ENCLOSURE MEETING THE REQUIREMENTS OF ITEM 633. PROVIDE A 120 VOLT POWER SUPPLY, WORK OUTLET AND WORK LIGHT IN THE ENCLOSURE. PROVIDE LIGHTNING PROTECTION DEVICES FOR THE ANTENNA FEED LINE AND POWER LINES. ROTATE THE CABINET AWAY FROM CURB AND SIDEWALK.

--PROVIDE ALL NECESSARY SPREAD SPECTRUM RADIOS, POWER SUPPLIES, ANTENNA(S), CABLE(S) AND ANTENNA FEED LINE(S) REQUIRED TO CONNECT THE SPREAD SPECTRUM RADIO AND ANTENNA.

--INSTALL THE SPREAD SPECTRUM RADIO, ANTENNA, AND FEED LINE PER THE SPREAD SPECTRUM RADIO MANUFACTURER'S INSTALLATION INSTRUCTIONS.

--NO FCC LICENSING PERMITS AND/OR APPLICATIONS SHOULD BE NECESSARY TO OPERATE THE RADIO INTERCONNECT SYSTEM. THE CITY SHALL NOT BE RESPONSIBLE FOR ANY RADIO LICENSING PERMITS, TYPE ACCEPTANCE AND/OR APPLICATIONS NECESSARY TO MEET FCC REGULATIONS.

ANTENNA FEED LINE WATERPROOFING

-- APPLY TWO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT.

--APPLY A LAYER OF BUTYL RUBBER TAPE/VAPOR WRAP OVER THE JOINT MAKING SURE THAT THERE ARE NO AIR CAVITIES OR OPENINGS IN THE WRAP. USE LINERLESS RUBBER SPLICING TAPE OR RUBBER SPLICING TAPE. DO NOT APPLY BUTYL RUBBER TAPE DIRECTLY TO THE CONNECTOR.

--APPLY TWO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT WITH THE FINAL WRAP GOING UP TO MINIMIZE WATER MIGRATION.

--FOR CONNECTIONS THAT WILL BE ON OR UNDER THE GROUND, COAT JOINT WITH ELECTRICAL SEALING COMPOUND.

PAYMENT WILL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH " ITEM 633 CONTROLLER ITEM, MISC.: SPREAD SPECTRUM REPEATER" AND SHALL INCLUDE RADIOS, CABINET, FEED LINES, ANTENNAS, INCIDENTAL ITEMS, WIRING, TESTING, MATERIALS, LABOR AND DOCUMENTATION.

THE FOLLOWING CONT. SUMMARY FOR USE AS

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PAYMENT FOR ITEM 80 SHALL BE MADE AT TH PLACE AND FULLY OPU THOSE ITEMS BID SEP

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809 PREEMPT RECEIVING UNIT

RECEIVING UNITS SHALL CONSIST OF A LIGHTWEIGHT, WEATHERPROOF AND DIRECTIONAL ASSEMBLY. EACH RECEIVING UNIT SHALL BE 360 DEGREE ADJUSTABLE. THE RECEIVING UNIT SHALL BE CAPABLE OF SENDING THE PROPER ELECTRICAL SIGNAL TO THE TRAFFIC SIGNAL CONTROLLER VIA THE PREEMPTION DETECTOR CABLE. RECEIVING UNITS SHALL BE SUPPLIED WITH MAST ARM MOUNTING HARDWARE AS SHOWN IN THE PLANS.

FURNISH PREEMPTION RECEIVING UNITS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER'S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR ITEM 809 PREEMPTION RECEIVING UNIT SHALL BE AT THE CONTRACT UNIT FOR EACH RECEIVING UNIT IN PLACE, COMPLETELY INSTALLED AT THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

809 PREEMPT DETECTOR CABLE THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPTION DETECTOR HOME RUN CABLE IN THE LOCATIONS SHOWN IN THE PLANS. IT SHALL CONNECT THE PREEMPT RECEIVING UNITS TO THE PHASE SELECTORS IN THE LOCAL CONTROLLER CABINET.

PREEMPTION DETECTOR CABLE SHALL CONFORM TO ODOT SPECIFICATION 632. ONLY ONE EXTERNAL SPLICE SHALL BE PERMITTED BETWEEN PREEMPTION RECEIVER UNIT AND CONTROLLER CABINET. THIS SPLICE SHALL MEET THE REQUIREMENTS OF C&MS 632.23 USING A WATERPROOF EPOXY SPLICE KIT. THE CABLE SHALL BE APPROVED FOR BOTH OVERHEAD AND UNDERGROUND USE. THE JACKET SHALL WITHSTAND EXPOSURE TO SUNLIGHT AND ATMOSPHERIC TEMPERATURES AND STRESSES REASONABLY EXPECTED IN NORMAL INSTALLATIONS.

PAYMENT FOR ITEM 809 PREEMPT DETECTOR CABLE SHALL BE MADE AT THE CONTRACT UNIT PRICE PER FOOT FOR THE CABLE FURNISHED, IN PLACE, ALL CONNECTIONS MADE AND WIRING COMPLETED, TESTED AND ACCEPTED.

809 PREEMPT PHASE SELECTOR

THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT PHASE SELECTORS INCLUDING WIRING INTERFACE PANELS IN THE LOCAL CONTROLLER CABINET AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT PHASE SELECTORS COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

THIS ITEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE THIS THEM SHALL INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINETS WHERE INDICATED IN THE PLANS. THE PHASE SELECTORS SHALL CONSIST OF A MODULE OR MODULES THAT WILL PROVIDE THE NECESSARY INPUTS TO THE CONTROLLER. PHASE SELECTORS SHALL BE SUPPLIED WITH SUFFICIENT QUANTITIES OF CHANNELS TO PROVIDE PREEMPTION FOR ALL APPROACHES TO THE INTERSECTION SEPARATELY. POWER SHALL BE OBTAINED FROM THE PHASE SELECTOR OR PHASE SELECTOR POWER SUPPLY AND NOT FROM THE LOCAL CONTROLLER TIMER.

THE PHASE SELECTORS SHALL HAVE FRONT PANEL INDICATORS FOR ACTIVE PREEMPT CHANNEL STATUS. IT SHALL HAVE TEST SWITCHES TO ACTIVATE ALL PREEMPT CHANNELS.

FURNISH PREEMPT PHASE SELECTORS WITH 60-MONTH WARRANTIES OR FOR THE MANUFACTURER**¹⁹₂₅S STANDARD WARRANTY WHICHEVER IS GREATER. ENSURE THAT THE WARRANTY PERIOD BEGINS ON THE DATE OF SHIPMENT TO THE PROJECT. ENSURE THAT EACH UNIT HAS A PERMANENT LABEL OR STAMP INDICATING THE DATE OF SHIPMENT.

PAYMENT FOR ITEM 809 PREEMPT PHASE SELECTOR SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH PHASE SELECTOR IN PLACE, COMPLETELY INSTALLED IN THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED. TESTED AND ACCEPTED.

809 PREEMPT CONFIRMATION LIGHT THIS ITEM SHALL CONSIST OF FURNISHING AND INSTALLING PREEMPT CONFIRMATION LIGHTS INCLUDING HARDWARE AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE PREEMPT CONFIRMATION LIGHT COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS.

A CONFIRMATION LIGHT SHALL BE SUPPLIED FOR EACH INTERSECTION TO INDICATE THAT THE EMERGENCY VEHICLE HAS ACHIEVED CONTROL OF THE TRAFFIC SIGNAL.

THE CONFIRMATION LIGHT SHALL BE A WEATHER TIGHT LIGHTING FIXTURE. IT SHALL BE SUPPLIED WITH A CLEAR GLOBE, LED LAMP AND MOUNTING HARDWARE TO ATTACH TO THE TRAFFIC SIGNAL MAST ARM. THE CONFIRMATION LIGHT SHALL BE POWERED BY A LOAD SWITCH IN THE TRAFFIC SIGNAL CONTROLLER. SIGNAL CABLE CONFORMING TO 732.19 SHALL BE USED FOR CONFIRMATION LIGHTS. A MINIMUM OF 4-CONDUCTOR CABLE SHALL BE USED

WITH THE GREEN WIRE SERVING AS THE SAFETY GROUND CONDUCTOR.

PAYMENT FOR ITEM 809 PREEMPT CONFIRMATION LIGHT, SHALL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH LIGHT IN PLACE, COMPLETELY INSTALLED IN THE LOCATION SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

633, UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF CMS ITEM 633:

PROVIDE THE GENERATOR INTERFACE AS DETAILED IN THESE PLANS.

PAYMENT FOR "ITEM 633 UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN" WILL BE MADE AT THE CONTRACT UNIT PRICE FOR EACH POWER SUPPLY IN PLACE, WIRED, TESTED AND ACCEPTED.

815, SPREAD SPECTRUM RADIO, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 815 AND 915, THE FOLLOWING REQUIREMENTS SHALL APPLY:

-PROVIDE AND INSTALL RADIO INTERCONNECT EQUIPMENT, INCLUDING SPREAD SPECTRUM RADIO, ANTENNA, MOUNTING HARDWARE, CABLING, AND INTERFACE DEVICES.

--ESTABLISH COMMUNICATIONS BETWEEN ADJACENT INTERSECTIONS AND THE MASTER CONTROLLER IN THE DAVIDS DRIVE AND ROMBACH AVENUE CONTROLLER CABINET.

--PROVIDE A BANDPASS FILTER WITH A MINIMUM OF 30 DB ATTENUATION OF INTERFERING SIGNALS.

--PERFORM THE SITE ANALYSIS AS DESCRIBED IN SUPPLEMENTAL SPECIFICATION 815. SUBMIT THE RESULTS TO THE ENGINEER.

--APPLY TWO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER ANTENNA FEED LINE JOINTS.

--APPLY A LAYER OF BUTYL RUBBER TAPE/VAPOR WRAP OVER THE JOINT MAKING SURE THAT THERE ARE NO AIR CAVITIES OR OPENINGS IN THE WRAP. USE LINERLESS RUBBER SPLICING TAPE OR RUBBER SPLICING TAPE. DO NOT APPLY BUTYL RUBBER TAPE DIRECTLY TO THE CONNECTOR.

--APPLY TWO WRAPS OF PREMIUM UV RESISTANT ELECTRICAL TAPE OVER THE JOINT WITH THE FINAL WRAP GOING UP TO MINIMIZE WATER MIGRATION.

--FOR CONNECTIONS THAT WILL BE ON OR UNDER THE GROUND, COAT JOINT WITH ELECTRICAL SEALING COMPOUND.

PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE BID PER EACH OF "ITEM 815 SPREAD SPECTRUM RADIO, AS PER PLAN", COMPLETE AND ACCEPTED.

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CALCULATED TVF CHECKED LAS
TRAFFIC SIGNAL GENERAL NOTES
CLI-US22-10.00

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		6			5			6				15	2	632	64010	17	EACH	SIGNAL SUPPORT FOUNDATION
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		4		2,064	5		1,454	1		2,319	1,343	6,396	784	632	65200	7,180	FT	LOOP DETECTOR LEAD-IN CABLE
				10			1,434			5	5	25	5	632	67200	30	FT	POWER CABLE, 2 CONDUCTOR, NO. 8 AWC
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ION, 12″ LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	253	ß
ION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	253	
D2, COUNTDOWN, AS PER PLAN	254	AL
		SIGNAL
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NG AWG		ТВ
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N 12 POLE, WITH MAST ARMS TC-81.21 DESIGN 11	254	
SN 7 POLE, WITH MAST ARMS TC-81.21 DESIGN 13		
SN 8 POLE, WITH MAST ARMS TC-81.21 DESIGN 13	254	
	25.4	
	254	
	0.5	
GN 1, AS PER PLAN GN 2, AS PER PLAN	254 254	
GN 11, AS PER PLAN	254	00
SN 12, AS PER PLAN	254	o
GN 13, AS PER PLAN	254	Ē
RT, TYPE TC-12.30 DESIGN 11 POLE,	254	N
ID DESIGN 13 PER PLAN	254	82
TION	234	ñ
UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2	254	CLI-US22-10.00
		<u>,</u>
OCK ASSEMBLY		
		257
		297

						SHEET	Γ NUM.							PART.			ITEM	GRAND		
	253	255	259	260	261	262	263	264	265	266	267	268	06/SAF/ OT	05/S>2/ PV	05/NHS/ PV	ITEM	ЕХТ	TOTAL	UNIT	
				1										1		809	69201	1	EACH	EMERGENCY VEHICLE PREEMPTIC
				8			8			14				30		809	69210	30	EACH	PREEMPT RECEIVING UNIT
				1,576 2			1,733 2			2,676 4				5,985 8		809 809	69220 69230	5,985 8	F T EACH	PREEMPT DETECTOR CABLE PREEMPT PHASE SELECTOR
				8			8			14				30		809	69240	30	EACH	PREEMPT CONFIRMATION LIGHT
	5			2			2			2			5	1		633	74001	6	EACH	UNINTERRUPTIBLE POWER SUPP
		1											1			633	99000	1	EACH	CONTROLLER ITEM, MISC.:SPRE
				2			2			4			7	1		815 809	30001 69000	8 19	EACH EACH	SPREAD SPECTRUM RADIO, AS F ADVANCE RADAR DETECTION
	-			7			8			12			23	4		809	69100	27	EACH	STOP LINE RADAR DETECTION
с <u>о</u> с,	707				1,576			1,733			2,013	663		5,985		632	40500	5,985	FT	SIGNAL CABLE, 5 CONDUCTOR,
к С / о					1,010			1,133			2,013	005		0,000		032	40300	0,000		SIGNAL CABLE, 5 CONDUCTOR,
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TRAFFIC SIGNALS CONT.		
TION, AS PER PLAN	255 256	
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PPLY (UPS), AS PER PLAN READ SPECTRUM REPEATER S PER PLAN	256 256 256	٢
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SHEET NO.	STA					D SIGN	UNTED	MAST	LED), IAY, PLAN	LED), VAY, PLAN	LED), PER	SIGNAL	SIGNAL	z	LION	z	MER	N
		TION 1	TO STATION	SIGN, FLAT SHEET	SIGN, STREET NAME	REMOVAL OF POLE MOUNTED SIGN	REMOVAL OF OVERHEAD MOUNTED	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER, PLAN	COVERING OF VEHICULAR HEAD	COVERING OF PEDESTRIAN HEAD	PEDESTRIAN PUSHBUTTON	SIGNAL SUPPORT FOUNDATION	PEDESTAL FOUNDATION	PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN	POWER SERVICE. AS PER PLAN
			TO	SF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EAC
		ROMBA										_						
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271	37+93	31' LT		11.3	2			3	5		1	5	1	1	1			
271	37+01	48' I T																
271	36+93	72′ RT																
271	37+80	31' LT																
211	28+06	40° KI																
271	36+91	38′ LT									2		2	1		1	1	
271	36+84	70' RT																1
		ROMBACI	H & LOWES															
275	49+75	46' LT		26.3	3		6	7	1	3	1	4	1		1			
				7.5	1	2		1	1	1	1		1		1			
				1.0				<u>د</u>										
275	49+72	46' LT																
275	49+99 50+69	56' RT																
275	50+55	55′ RT																
275 275	49+65 49+64	38' LT									1		1	1		1	1	
275	49+64 50+65	54' LT		3.8		2					1		1			1	1	
	40+07																	
213	43+01	4/ LI																1
	271 271 271 271 271 271 275 275 275 275 275 275 275 275	271 36+84 271 37+93 271 37+01 271 36+93 271 37+80 271 37+80 271 37+80 271 36+91 271 36+91 271 36+84 271 36+94 271 36+84 271 36+84 271 36+91 271 36+94 275 49+75 275 49+95 275 50+60 275 50+65 275 49+65 275 49+65 275 49+65 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275 49+67 275	271 37+02 52' LT 271 36+84 70' RT 271 37+93 31' LT 271 37+01 48' LT 271 36+93 72' RT 271 37+80 31' LT 271 36+91 38' LT 271 36+91 38' LT 271 36+91 38' LT 271 36+91 38' LT 271 36+94 70' RT 271 36+91 38' LT 271 36+94 70' RT 271 36+94 70' RT 275 49+75 46' LT 275 49+72 46' LT 275 50+60 55' RT 275 50+55 55' RT 275 50+65 38' LT 275 49+65 38' LT 275 49+65 38' LT 275 49+65 38' LT 275 49+67 47' LT 275 49+67 47' LT 275 49+67 47' LT	271 36+84 70' RT 271 37+93 31' LT 271 36+93 72' RT 271 36+93 72' RT 271 37+60 31' LT 271 37+80 31' LT 271 36+91 38' LT 271 36+91 38' LT 271 36+94 70' RT 275 49+75 46' LT 275 50+60 55' RT 275 50+65 55' RT 275 50+65 55' RT 275 50+65 54' LT 275 49+67 41' RT 275 50+65 54' LT 275 49+67 47' LT 275 49+67 47' LT 275 49+67 47' LT	271 37+02 52' LT 7.5 271 36+84 70' RT 11.3 271 37+93 31' LT 11.3 271 37+01 48' LT 11.3 271 37+01 48' LT 11.3 271 36+93 72' RT 11.3 271 36+93 72' RT 11.3 271 36+91 31' LT 11.3 271 36+91 38' LT 11.3 275 49+75 46' LT 26.3 275 49+95 56' RT 11.3 275 50+60 55' RT 11.3 275 50+69 52' LT 11.3 275 50+55 55' RT 11.3	271 37+02 52' LT 7.5 1 271 36+84 70' RT 11.3 2 271 37+33 3Y LT 11.3 2 271 37+33 3Y LT 11.3 2 271 37+80 3Y LT 11.3 2 271 36+93 72' RT 1 1 271 36+93 72' RT 1 1 271 36+93 72' RT 1 1 271 36+94 70' RT 1 1 271 36+84 70' RT 1 1 275 49+75 46' LT 26.3 3 275 49+75 46' LT 1 1 275 50+60 56' RT 1 1 275 50+65 56' RT 1 1 275 50+65 56' RT 1 1 275 49+65 38' LT 1 1 275 50+65 56' RT 1 1 275 49+67 47' LT	271 37+02 52' LT 7.5 1 271 37+93 3Y LT 11.3 2 271 37+93 3Y LT 11.3 2 271 37+01 48' LT 1 1.3 2 271 37+02 3F LT 1 11.3 2 271 37+00 3F LT 1 1 1 271 36+93 72' RT 1 1 1 271 36+91 3F LT 1 1 1 271 36+84 70' RT 1 1 1 271 36+84 70' RT 1 1 1 271 36+84 70' RT 1 2 1 275 49+75 46' LT 26.3 3 1 275 49+85 56' RT 7.5 1 2 275 49+85 56' RT 1 1 1 275 50+65 56' RT 1 1 <	271 37+02 52' LT 7.5 1 271 36+64 70' RT 1.3 2 271 37+01 48' LT 1.3 2 271 37+04 48' LT 1.3 2 271 37+01 48' LT 1.3 2 271 37+01 48' LT 1.4 1.4 271 37+01 48' RT 1.4 1.4 271 36+93 72' RT 1.4 1.4 271 36+91 38' LT 28.3 3 6 275 49+75 46' LT 28.3 3 6 275 49+72 46' LT 28.3 3 6 275 49+72 46' LT 7.5 1 2 275 49+72 46' LT 1.4 1.4 1.4 275 50+66 52' LT 1.4 1.4 1.4 275 49+65 54' LT 3.8<	271 33+02 52" LT 1 1 271 33+64 70" RT 1 1 271 37+93 3Y LT 11.3 2 3 271 37+93 3Y LT 11.3 2 3 271 37+93 3Y LT 11.3 2 3 271 37+93 3Y LT 1 1 1 271 37+93 3Y LT 1 1 1 271 36+93 72" RT 1 1 1 271 36+91 34" LT 1 1 1 271 36+91 34" LT 1 1 1 271 36+94 36" LT 1 1 1 271 36+94 56" RT 1 1 1 271 36+94 56" RT 1 1 1 275 49+75 46" L" 26.3 3 6 7 276 49+75 46" L" 26.3 3 1 1 275 49+75 46" L" 28.3 1 1 1 276 49+75 46" L" 7.5 1 2 2 275	271 37-02 52' LT 1 1 1 1 1 2 3 271 37-85 37 LT 11.3 2 1 1 2 3 5 271 37-95 37 LT 11.3 2 1 3 5 271 37-95 37 LT 1 1 1 2 3 5 271 37-96 37 LT 1 1 1 1 1 1 1 271 37-96 48' LT 1 1 1 1 1 1 271 37-96 48' LT 1 1 1 1 1 1 271 37-96 48' RT 1 1 1 1 1 271 36-91 38' LT 1 1 1 1 1 271 36-96 48' RT 1 1 1 1 1 275 49-15 46' LT 7.5 1 2 2 1 275 50-66 56' RT 1 1 1 1 1 275 50-67 57' RT 1 2 2 1 1 1	271 37-40 52° LT 1 1 1 2 3 271 36-44 70'RT 11.3 2 1 1 2 271 36-45 72'RT 1.3 2 1 1 2 271 36-45 72'RT 1.3 1.3 2 1 1 2 271 36-45 72'RT 1 1 1 1 1 1 271 36-46 70'RT 1 1 1 1 1 1 271 36-46 70'RT 1 1 1 1 1 1 271 36-46 70'RT 1 1 1 1 1 1 271 36-46 70'RT 1 1 1 1 1 275 36-45 70'RT 1 7.5 1 2 1 1 1 275 49-45 6'RT 7 1 3 1 1 1 1 275 50-65 7 1 3 1 1 1 1 275 50-75 50'RT 7.5 1 2 1 1	271 37+62 62 LT I	211 37+02 52 1 Image: sector se	211 31402 32 1 1 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1 2 1 <	3740 3740 592 1 78 1 78 1 1 1 1 1 1 2 1 2 1 2 1 1 2 1 1 2 1 2 1 2 1 2 1 1 1 1 2 1 1 2 1 1 1 2 1 1 2 1 1 1 2 1 <th1< th=""> 1</th1<>	271 374-0 284 176 1	2)1 3)4-2 (2)1 (1) (1) (1) (2) (3) (1	27 31.40 29 31.40 31

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			PE TC-81.21, ER PLAN	IISC.:SIGNAL 12.30 DESIGN AST ARMS ND DESIGN 13	PE TC-81.21, ER PLAN	CALCULATED TVF CHECKED LAS
POWER SERVICE, AS PER PLAN		SIGNAL SUPPORT, TYPE TC-81.21, DESIGN 1, AS PER PLAN	문 SIGNAL SUPPORT, TYPE TC-81.21, 고 DESIGN 2, AS PER PLAN	SIGNAL SUPPORT, MISC.:SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 11 POLE, WITH MAST ARMS TC-81.21 DESIGN 14 AND DESIGN 13	문 SIGNAL SUPPORT, TYPE TC-81.21, 요 DESIGN 13, AS PER PLAN	
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			625	625	625	625	633	633	809	809	809	809	809	633	633	809	80
REF NO.	SHEET NO.	STATION TO STATION	GROUND ROD	PULL BOX, 725.08, 18"	PULL BOX, 725.08, 18″, AS PER PLAN	PULL BOX, 725.08, 24"	CABINET FOUNDATION	CONTROLLER WORK PAD	PREEMPTION, AS PER PLAN	PREEMPTION RECEIVING UNIT	PREEMPTION DETECTOR CABLE	PREEMPTION PHASE SELECTOR	PREEMPTION CONFIRMATION LIGHT, AS PER PLAN	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN	UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN	ADVANCE RADAR DETECTION	STOP-BAR RADAR DETECTION
			EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	EACH	EACH	EACH	EA
		TO ROMBACH & OAK															
SP-1	271	37+02 52' LT	1													2	-
SP-2	271	36+84 70' RT	1														1
SP-3	271	37+93 31' LT	1														2
	071	77+01 49/11		1													
PB-1 PB-2	271 271	37+01 48' LT 36+93 72' RT		1		1											+
PB-3	271	37+80 31' LT		1		- ·		-								-	+
PB-4	271	39+06 48' RT		1													<u> </u>
																	\square
PS-1	271	36+91 38' LT	1														
ABINET	271	36+84 70' RT	1				1	1		4	958	1	4	1	1		+
	211			-						- т 							+
																	+
				-													+
		ROMBACH & LOWES															
SP-1	275	49+75 46' LT 49+95 56' RT	1													1	2
SP-2 SP-3	275 275	49+95 56' RT 50+60 55' RT	1													1	1
51 5	210		'													1	+
PB-1	275	49+72 46' LT				1											
PB-2	275	49+99 56′ RT			1												
PB-3	275	50+69 52' LT		1													
PB-4	275	50+55 55' RT		1													
PB-5 PB-6	275 275	48+58 29' LT 52+35 41' RT		1													+
	210																
PS-1	275	49+65 38' LT	1														
PS-2	275	49+64 45' RT	1														
PS-3	275	50+65 54' LT	1														1
CABINET	275	49+67 47' LT	1				1	1	1	4	618	1	4	1	1		+
								<u> </u>		<u> </u>		<u> </u>	· ·		· ·		+
	275	49+93 56' RT															
	275	50+81 42' LT															<u> </u>
	275	49+19 38' LT															+
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	SPREAD SPECTRUM RADIO, AS PER						CALCULATED TVF CHECKED LAS
STOP-BAR RADAR DETECTION	IM RADIC	PULL BOX REMOVED	REMOVAL OF TRAFFIC SIGNAL INSTALLATION		GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY		
ar rai	PL	-L BOX	L OF 1 INSTAL		(LOBAL M) CLC		
TOP-B	EAD SF	PUI	EMOVA		GPS (G SYSTE		
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REF NO.	SHEET NO.	STA	TION TO	STATION	GROUND ROD	SIGN, FLAT SHEET	SIGN, STREET NAME	SIGN HANGER ASSEMBLY, MAST ARM, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN	COVERING OF VEHICULAR SIGNAL HEAD	COVERING OF PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSHBUTTON	SIGNAL SUPPORT FOUNDATION	PEDESTAL FOUNDATION	PEDESTAL, 8', TRANSFORMER BASE, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-81.21 I DESIGN 12 POLE, WITH MAST ARMS TC-81.21 DESIGN 11 MD DESIGN 1, AS PER PLAN	SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 7 POLE, WITH MAST ARMS
				1	EACH	SF	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EA
		RO	TO MBACH & WILMI																
			(100% LOCAL	FUNDS)															
SP-1 SP-2	279 279	58+48 58+66	32' LT 51' RT		1	13.8 13.8	1	2	4	1	1	5	1		1			1	1
PB-1 PB-2	279 279	58+44 57+89	38' LT 55' RT																
PB-3	279	59+24	30' LT																
PB-4	279	58+94	52′ RT																
PS-1	279	57+72	32' LT		1						1		1	1		1	1		
PS-2	279	57+84	54' RT		1						2		2	1		1	1		
PS-3	279	59+33	32′ LT		1						1		1	1		1	1		
PS-4	279	59+21	51′ RT		1						1		1	1		1	1		+
CABINET	279	58+42	32' LT		1													1	
			ROMBACH &																
SP-1	283	71+07	51' LT		1	7.5	2	3	1	1	2	2	2	1	1				
SP-2	283	72+32	51' LT		1	7.5	1	2	1	1	2	2	2	1	1				
6P-3	283	72+32	44' RT		1	15.0	3	5	2	2	2	4	2	1	1				
PB-1	283	71+20	59' LT																
°B-2	283	71+37	45′ RT																
PB-3 PB-4	283 283	72+06	51' LT 47' RT																
<u>B-4</u>	203	12+40	4/ 11																
S-1	283	71+08	31′ RT		1						2		2	1		1	1		
BINET	283	71+28	60' LT		1														
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632	632	632	632	632		LED LED
뜻 DESIGN 7 POLE, WITH MAST ARMS 오 TC-81.21 DESIGN 13 AND DESIGN 1, AS PER PLAN	SIGNAL SUPPORT, MISC.:SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 11 POLE, WITH MAST ARMS TC-81.21 DESIGN 14 AND DESIGN 13		문 SIGNAL SUPPORT, TYPE TC-81.21, 포 DESIGN 11, AS PER PLAN	명 SIGNAL SUPPORT, TYPE TC-81.21, 요 DESIGN 13, AS PER PLAN		CALCULATED TVF CHECKED LAS
ST A ESIG	SIGNAL SUPPORT, MISC.:SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 11 POLE, WITH MAST ARMS C-81.21 DESIGN 14 AND DESIGN 1		-C-8. LAN	-C-8 LAN		CA
	ISC. 2.3C ST /		PE 1	PE T ER P		
POLE, WITH M. ESIGN 13 AND AS PER PLAN	T, M TC-1 14 MA		S PH	, TY AS P		
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7 PO DES	DES, T		SUPP	SUPP		
IGN 31.21	POR POR 11 PC		IAL S	IAL S		
DESI TC-6	SIG SUP TC-8		SIGN	SIGN		
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REF NO	SHEET NO.	STATION TO	STATION	HDAL BOX, 725.08, 18"	H2H FULL BOX, 725.08, 24"	PULL BOX, 725.08, 24", AS PER PLAN	HOUNDATION	CONTROLLER WORK PAD	EMERGENCY VEHICLE	PREEMPTION RECEIVING UNIT	PREEMPTION DETECTOR CABLE	HDAA PREEMPTION PHASE SELECTOR	PREEMPTION CONFIRMATION LIGHT,	CONTROLLER UNIT, TYPE TS2/A2, WITH CABINET, TYPE TS2, AS PER PLAN	UNINTERRUPTIBLE POWER SUPPLY CUPS), AS PER PLAN	ADVANCE RADAR DETECTION	STOP-BAR RADAR DETECTION	SPREAD SPECTRUM RADIO, AS PER
		TO		EACH	EACH	EACH	EACH	EACH	EACH	EACH	FI	EACH	EACH	EACH	EACH	EACH	EACH	EAU
		ROMBACH & WILMI (100% LOCAL																+
SP-1	279	58+48 32' LT														1	2	
SP-2	279	58+66 51' RT														1	2	
PB-1	279	58+44 38' LT				1												
PB-2	279	57+89 55' RT		1														
PB-3	279 279	59+24 30' LT 58+94 52' RT		1														+
PB-4	213	00734 02 KI																+
PS-1	279	57+72 32' LT																<u> </u>
PS-2	279	57+84 54' RT																+
PS-3 PS-4	279 279	59+33 32' LT 59+21 51' RT																+
																		<u> </u>
CABINET	279	58+42 32' LT					1	1		4	728	1	4	1	1			1
		ROMBACH &																
SP-1	283	71+07 51' LT														1	1	-
SP-2	283	72+32 51' LT															1	<u> </u>
SP-3	283	72+33 30' RT														1	2	+
PB-1	283	71+20 59' LT			1	1												
PB-2	283	71+37 45' RT		1														
PB-3 PB-4	283 283	72+06 51' LT 72+46 47' RT		1														
- FD-4	205																	-
PS-1	283	71+08 31' RT																
CABINET	283	71+28 60' LT					1	1		4	1005	1	4	1	1			1
SADINET	205							1		4	1003				1			
	283	71+25 43' LT																1
	283	72+15 32' RT																+
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CALCULATED TVF CHECKED LAS	TRAFFIC SIGNAL SUBSUMMARY
C SIGNAL	TAFFIC SIGNAL OF TRAFFIC SIGNAL SIGNAL SIGNAL SIGNAL OF TRAFFIC SIGNAL SIGNAL SIGNAL SIGNAL SIGNAL SIG
625 VED	PULL BOX REMOVED
632 DER PLAN	HDAA HDAA HDAA I HDAA I HDAA
IO, AS PER 51	PREAD SPECTRUM RADIO, AS PER

REF NO.	SHEET NO.	STATION TO STATION	SHEET	NAME	TED SIGN	OUNTED	POLE	MAST	LED), VAY, PLAN	LED), IAY, PLAN	LED), PER	SIGNAL	SIGNAL	NC	TION	7	ç
	SF		유 SIGN, FLAT :	SIGN, STREET N	유명 REMOVAL OF POLE MOUNTED 고 AND DISPOSAL	문제 COVERHEAD MOUNTED 고 SIGN AND DISPOSAL	HILL SIGN SUPPORT ASSEMBLY,	SIGN HANGER ASSEMBLY, I ARM, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	VEHICULAR SIGNAL HEAD, (LED), 5-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN	PEDESTRIAN SIGNAL HEAD (LED),	COVERING OF VEHICULAR S HEAD	COVERING OF PEDESTRIAN SIGNAL	PEDESTRIAN PUSHBUTTON	SIGNAL SUPPORT FOUNDATION	HDAA PEDESTAL FOUNDATION	
		ТО	55	EAUN	EACH	EACH	LACH	EACH	EAUN	EACH	LACH	EAUN	LACH	EACH		EACH	
		ROMBACH & DAVIDS/FAIRWAY															
SP-1	287	95+96 57' LT	7.5	1		3		2	1	1	1	2	1		1		
SP-2	287	95+73 57' RT	13.5	1				2	2			2			1	<u> </u>	
SP-3	287	96+55 56' LT	7 5	1				1	1	1	1	2	1		1	<u> </u>	
SP-4	287	96+80 56' RT	7.5	1				2	1	1	1	2	1		1		
PB-1	287	95+89 43' LT		-												<u> </u>	+
PB-1 PB-2	287	95+69 51' RT	+	-												<u> </u>	+
PB-2 PB-3	287	96+61 42' LT	+	-												<u> </u>	+
PB-4	287	96+72 56' RT														<u> </u>	+
PB-5	287	94+65 39' LT	1	+												<u> </u>	+
PB-6	287	98+35 38' RT														<u> </u>	+
																	+
PS-1	287	95+73 44' LT				1			1		1		1	1		1	
PS-2	287	95+53 46' RT									2		2	1		1	
PS-3	287	96+75 44' LT									1		1	1		1	1
PS-4	287	96+93 49' RT									1		1	1		1	
CABINET	287	96+44 56' RT															
															ļ'		<u> </u>
		ROMBACH & PROGRESS													ļ'	<u> </u>	
SP-1	291	117+34 49' LT	35.3	3	1	7	2	4	7	-		7			1	<u> </u>	<u> </u>
SP-2	291	117+19 71' RT	39.3	1			2	9	3	2		5			1	<u> </u>	
		47.00 001 07	_						-						ļ'	<u> </u>	
PB-1	291	117+22 66' RT														<u> </u>	+
PB-2	291	118+46 58' RT														<u> </u>	+
PB-3	291	117+51 40' LT	_													<u> </u>	+
PB-4	291	118+36 37' LT														<u> </u>	+
PB-5	291	116+09 33' LT														<u> </u>	+
PB-6	291	118+03 170' RT														<u> </u>	+
PS-1	291	116+62 54' RT	-	-							1		1			1	+
PS-1 PS-2	291	118+59 42' RT	-								2		2	1		1	+'
PS-3	291	118+47 37' LT									1		1	1		1	+
	201		1								1		-	1		· · ·	+'
CABINET	291	117+06 70' LT															-
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CALCULATED TVF CHECKED LAS	TRAFFIC SIGNAL SUBSUMMARY	CLI-US22-10.00
SIGNAL SUPPORT, TYPE TC-12.30 편 DESIGN 8 POLE, WITH MAST ARMS 23 단 TC-81.21 DESIGN 13 AND DESIGN 11, C3 AS PER PLAN		
SIGNAL SUPPORT, MISC.:SIGNAL SUPPORT, TYPE TC-12.30 DESIGN 9 11 POLE, WITH MAST ARMS TC-81.21 DESIGN 14 AND DESIGN 13		
632 EACH		
TYPE TC-81.21, 29 ESIGNAL SUPPORT, TYPE TC-81.21, 29 DESIGN 13, AS PER PLAN		
문 SIGNAL SUPPORT, TYPE TC-81.21, 50 고 DESIGN 12, AS PER PLAN		
TYPE TC-81.21, 50 ESIGNAL SUPPORT, TYPE TC-81.21, 50 DESIGN 2, AS PER PLAN		
면 PEDESTAL, 8', TRANSFORMER 29 유 BASE, AS PER PLAN 72		

				625	625	625	625	632	633	633	809	809	809	809	809	633	633	8
o	°ON				8, 18"	3", AS PER	8, 24″	PER PLAN	FOUNDATION	CONTROLLER WORK PAD	EMERGENCY VEHICLE PREEMPTION, AS PER PLAN	PREEMPTION RECEIVING UNIT	OR CABLE	SELECTOR	PREEMPTION CONFIRMATION LIGHT	YPE TS2/A2, TS2, AS PER	UNINTERRUPTIBLE POWER SUPPLY (UPS), AS PER PLAN	
NO	z			GROUND ROD	725.08,	PULL BOX, 725.08, 18", PLAN	PULL BOX, 725.08,	AS	UNDA	WOR	VEI VS PE	CEIV	DETECTOR		ONFIF	N L T	ER F	
ш	Ш	STATION TO	STATION	DND	×, 7	25.0 PLA	(, 72	POWER SERVICE,	FOI	LER	N N N	N RE		PREEMPTION PHASE	N CC	UNIT, TY T, TYPE PLAN	BLE AS P	
RE	SHE			GRC	PULL BOX,	(, 7	BO	ERV	CABINET	ROL	GEI	LION	NOI.	NOI		NET	S), (S	
	S				I ULL	BO	nrr	R S	CAB!	ONT	E R	EMP	MPT	L d W	LIG	OLLI	CUP (UP	
					L .	NLL		OWE		<u>ں</u>	E E E	PRE	PREEMPTION	PREE	PRE	CONTROLLER U WITH CABINET,	IINI	
				EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	FT	EACH	EACH	S ¥ EACH	EACH	
		TO		EACH	EACH	LACH	EACH	EACH	EACH	LAUN	EAUN	EACH	F I	EACH	EACH	EACH	EACH	E
CD 1	207	ROMBACH & DAVI	IDS/FAIRWAY	1														
SP-1 SP-2	287 287	95+96 57' LT 95+73 57' RT		1														
SP-3	287	96+55 56' LT		1														
SP-4	287	96+80 56' RT		1														
PB-1	287	95+89 43' LT			1													
PB-2	287	95+69 51' RT			1													_
PB-3 PB-4	287 287	96+61 42' LT 96+72 56' RT			1		1											
PB-4 PB-5	287	94+65 39' LT			1													+
PB-6	287	98+35 38' RT			1													1
PS-1	287	95+73 44' LT		1														
PS-2	287	95+53 46' RT		1														
PS-3	287	96+75 44' LT 96+93 49' RT		1														
PS-4	287	96+93 49' RT																
CABINET	287	96+44 56' RT		1				1	1	1		4	995	1	4	1	1	
	287	95+64 43' LT																
	287	95+94 59' LT																
	287	95+92 44' LT																
	287	96+44 58' LT																
		ROMBACH & P	PROGRESS															
SP-1 SP-2	291 291	117+34 49' LT 117+19 71' RT		1														
				·														
PB-1	291	117+22 66' RT					1											
PB-2 PB-3	291 291	118+46 58' RT 117+51 40' LT			1													
PB-4	291	118+36 37' LT				1												+
PB-5	291	116+09 33' LT			1													
PB-6	291	118+03 170' RT			1													
PS-1	291	116+62 54' RT		1														
PS-2	291	118+59 42' RT		1														
PS-3	291	118+47 37' LT		1														
CABINET	291	117+06 70' LT		1				1	1	1		4	663	1	4	1	1	-
	201	110 - 41 CC/ DT																
	291 291	118+41 66' RT 118+43 98' RT																
	291	118+60 28' LT																-
		ROMBACH & SR 7																
SP-1	295	142+90 60' LT																
SP-2	295	142+85 69' RT																
SP-3 SP-4	295 295	143+90 53' LT 143+88 58' RT										3	385	1	3			
51 1	200																	
		ROMBACH & SR 7	TA NE RAMPS	_														-
SP-1	296	151+60 69' LT																
SP-2	296	151+58 53' RT										3	633	1	3			
SP-3 SP-4	296 296	152+56 69' LT 151+58 53' RT																_
			AL SUMMARY	15	9	1	2	2	2	2		14	2676	4	14	2	2	

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003	003		023	032		CALCULATED TVF CHECKED LAS
z	Z	SPREAD SPECTRUM RADIO, AS PER PLAN		AL		ALCULATE TVF CHECKED LAS
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ANC	-B-	SP	PULL BOX REMOVED			
ADVANCE RADAR DETECTION	STOP-BAR RADAR DETECTION	EAD		REMOVAL OF TRAFFIC SIGNAL INSTALLATION		
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