

LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEMS 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION(VT ROUTE 15 & ESSEX WAY)	QUANTITY	REMARKS	PROCUREMENT
NEMA P44 BASE-MOUNTED CONTROLLER CABINET WITH 15-INCH EXTENDED BASE ON A NEW CONCRETE FOUNDATION INCLUDING TRAFFIC SIGNAL CONTROLLER (NEMA TS2), BIU, SMART MALFUNCTIONING MONITORING UNIT (MMU), CONTROLLER IDENTIFICATION PLAQUE, AND GPS CLOCK	1	FLAT BLACK WITH ANCILLARY EQUIPMENT, FACING AWAY FROM TRAFFIC. CONTROLLER SHALL BE ECONOLITE COBALT. MMU SHALL BE ECONOLITE MMU2-16LE SMARTMONITOR. BIU SHALL BE ECONOLITE BIU-64.	TO BE PROVIDED BY AGENCY, INSTALLED BY CONTRACTOR
STOP BAR DETECTOR ASSEMBLY (FLAT BLACK)	3	ECONOLITE AUTOSCOPE ENCORE	
ADVANCED DETECTOR ASSEMBLY	2	WAVETRONIX SMARTSENSOR ADVANCE	
STOP BAR DETECTION PROCESSOR (CARDS)	1	ECONOLITE AUTOSCOPE TIP	
STOP BAR DETECTION PROCESSOR (CARDS)	1	ECONOLITE AUTOSCOPE TAP	
ADVANCE DETECTION PROCESSOR (CARDS)	2	WAVETRONIX CLICK 650	
DETECTION CABINET RACK	1		
DETECTOR BRACKET FOR MAST ARM OR POLE	5	FLAT BLACK	
NEW 12-INCH LED SIGNAL HEADS (ONE-WAY 3-SECTION, VISORS, DISCONNECT HANGERS, 5 INCH LOUVERED BACKPLATES WITH 2 INCH RETRO-REFLECTIVE BORDER AND MOUNTING HARDWARE)	5	FLAT BLACK	
NEW 12-INCH LED SIGNAL HEADS (ONE-WAY 4-SECTION, VISORS, DISCONNECT HANGERS, 5 INCH LOUVERED BACKPLATES WITH 2 INCH RETRO-REFLECTIVE BORDER AND MOUNTING HARDWARE)	1	FLAT BLACK	
NEW 12-INCH LED SIGNAL HEADS (ONE-WAY 5-SECTION, VISORS, DISCONNECT HANGERS, 5 INCH LOUVERED BACKPLATES WITH 2 INCH RETRO-REFLECTIVE BORDER AND MOUNTING HARDWARE)	2	FLAT BLACK	TO BE PROVIDED AND INSTALLED BY CONTRACTOR
SIGNAL HEAD BRACKETS AND ANCILLARY EQUIPMENT	8	FLAT BLACK	
OPTICAL PREEMPTION DETECTORS (FLAT BLACK)	2	TOMAR DETOC OR OPTICOM INFRARED	
OPTICAL PREEMPTION SIGNAL PROCESS CARD & CAGE	2	TOMAR OSPOCx OR OPTICOM INFRARED	
PREEMPTION AC STROBE - RED	2		
ACCESSIBLE PEDESTRIAN PUSH BUTTON ASSEMBLIES POLE MOUNTED WITH LOCATOR TONE, R10-3e SIGN	4	FLAT BLACK	
ACCESSIBLE PEDESTRIAN SIGNAL HEADS COUNTDOWN STYLE	4	FLAT BLACK	
PEDESTRIAN PEDESTAL POST ON NEW FOUNDATION	2	FLAT BLACK	
STEEL MAST ARM SIGNAL POLE (FLAT BLACK)	3		
STEEL MAST ARMS (FLAT BLACK)	3	MA-10 & MA-12=45', MA-11=25'	
POWER STANCHION WITH DISCONNECTS	1		
NEW LED BLANK OUT SIGN	2		
HARDENED NETWORK SWITCH	1	CISCO IE 2000	
DIRECTIONAL WIRELESS INTERCONNECT ANTENNA	2		
WIRELESS INTERCONNECT PROCESSOR CARD	1		

NOTE: THE NETWORK SWITCH, WIRELESS ANTENNA, AND PROCESSOR CARD ARE FOR INFORMATION PURPOSES REGARDING THE INSTALLATION AND CONFIGURATION OF THE CABINET. THESE ITEMS WILL BE PURCHASED AND INSTALLED UNDER A SEPARATE CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THERE IS ADEQUATE ROOM FOR THESE ITEMS INSIDE THE CABINET.

CONDUIT SCHEDULE	WIRED CONDUIT		ELECTRICAL CONDUIT		DESCRIPTION
	2"	4"	2"	4"	
POWER TO STANCHION	-13'	13.34'			SERVICE POWER
STANCHION TO CONTROLLER	-24'	17.34'			SIGNAL/LIGHTING
CONTROLLER TO MAP-10	-42'	15.92'			DETECTION
CONTROLLER TO MAP-10	-42'	15.92'			FUTURE USE
CONTROLLER TO MAP-10			-42'	15.92'	SIGNAL/LIGHTING
CONTROLLER TO JB-27	-29'	39.34'			DETECTION
CONTROLLER TO JB-27	-29'	39.34'			FUTURE USE
CONTROLLER TO JB-27			-29'	39.34'	SIGNAL/LIGHTING
JB-27 TO JB-28	-92'	98.34'			DETECTION
JB-27 TO JB-28	-92'	98.34'			FUTURE USE
JB-27 TO JB-28			-92'	98.33'	PEDESTRIAN
JB-28 TO PP-19	-42'	16.17'			FUTURE USE
JB-28 TO PP-19			-42'	6.17'	PEDESTRIAN
JB-28 TO SL-6	-41'				FUTURE USE
JB-28 TO SL-6			-41'		SIGNAL/LIGHTING
JB-28 TO JB-29	-120'				DETECTION
JB-28 TO JB-29	-120'				FUTURE USE
JB-28 TO JB-29			-120'		SIGNAL/LIGHTING
JB-29 TO MAP-12	-9'	39.34'			DETECTION
JB-29 TO MAP-12	-9'	39.34'			FUTURE USE
JB-29 TO MAP-12			-9'	39.34'	PEDESTRIAN
JB-29 TO PP-20	-22'	17.34'			FUTURE USE
JB-29 TO PP-20			-22'	17.34'	SIGNAL/LIGHTING
JB-29 TO MAP-11	-84'	53.34'			DETECTION
JB-29 TO MAP-11	-84'	53.34'			FUTURE USE
JB-29 TO MAP-11			-84'	53.34'	
SUBTOTAL	798'		418'		
ROUNDING	7'		7'		
TOTALS	805'		425'		

SEE 'ADDITIONS TO CONDUIT SCHEDULE' FOR CONDUIT TOTALS

PREEMPTION TIMINGS

DIRECTION	PREEMPTOR			
	1	2	3	4
HOLD PHASE	EB	WB		
DET LOCK	2	1 & 6		
DURATION TIME	18.5	18.5		
MIN GREEN	8	8		
HOLD GREEN	12	12		
HOLD YELLOW	4.5	4.5		
HOLD RED	2	2		

ACTION PLAN

PLAN NO.	PATTERN	FLASH	REFERENCE
1	1	NO	MAX 1
2	2	NO	MAX 2
3	3	NO	MAX 3
4	254 - FREE	NO	FREE

WEEKDAY PEAKS

	HOURS	
MAX 2 - AM PEAK	6:00 AM	TO 9:00 AM
MAX 1 - OFF PEAK	9:00 AM	TO 3:00 PM
MAX 3 - PM PEAK	7:00 PM	TO 10:00 PM
FREE	3:00 PM	TO 10:00 PM
	10:00 PM	TO 6:00 AM

DAY PLAN

PLAN NO.	EVENT	ACTION PLAN	START TIME
1	1	254	12:00 AM
1	2	2	6:00 AM
1	3	1	9:00 AM
1	4	3	3:00 PM
1	5	1	7:00 PM
1	6	254	10:00 PM
2	1	254	12:00 AM
2	2	1	6:00 AM
2	3	254	8:00 PM

SCHEDULE PLAN

SCHEDULE NO.	DAY PLAN	DAYS	DATES
1	1	MON, TUE, WED, THU, FRI	1-31
1	2	SAT, SUN	1-31

COORDINATION PLAN

PATTERN	COS	CYCLE	OFFSET	SPLIT PHASES / SPLIT TIMES							
				1	2	3	4	5	6	7	8
1	111	92	78	17	44			61		31	
2	211	98	88	16	51			67		31	
3	311	110	4	25	54			79		31	

CONTROLLER TIMING CHART

PHASE	1	2	3	4	5	6	7	8
IN USE	X	X				X		X
TRAFFIC MOVEMENT	←	→				←		↓
MIN. GREEN	5	8				8		5
MAX 1 - GREEN (OFF)	10.5	37.5				54.5		25
MAX 2 - GREEN (AM)	9.5	44.5				60.5		25
MAX 3 - GREEN (PM)	18.5	47.5				72.5		25
YELLOW CLEARANCE	4.0	4.5				4.5		4.0
ALL RED CLEARANCE	2.0	2.0				2.0		2.0
VEHICLE EXTENSION	2.0	2.0				2.0		2.0
DELAY GREEN	0.0	5.0				5.0		5.0
WALK	0	7				7		7
PEDESTRIAN CLEAR	0	20				20		23
RECALL MODE		SOFT				SOFT		
COORDINATED		X				X		

ELECTRICAL WIRING	LENGTH	DESCRIPTION
MAP-10 WIRING		
POLE BASE TO SIGNAL HEAD	67'	PHASE 2
POLE BASE TO SIGNAL HEAD	67'	PHASE 2
POLE BASE TO DETECTION	67'	STOP BAR
POLE BASE TO DETECTION	67'	ADVANCE
POLE BASE TO LED SIGN	67'	NO RIGHT TURN ON RED
POLE BASE TO PREEMPTION	67'	DETECTOR
POLE BASE TO STROBE LIGHT	67'	PREEMPTION
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING ESSEX WAY
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING ESSEX WAY
MAP-11 WIRING		
POLE BASE TO SIGNAL HEAD	40'	PHASE 8
POLE BASE TO SIGNAL HEAD	40'	PHASE 8
POLE BASE TO SIGNAL HEAD	40'	PHASE 8
POLE BASE TO DETECTION	40'	STOP BAR
POLE BASE TO LED SIGN	40'	NO RIGHT TURN ON RED
MAP-12 WIRING		
POLE BASE TO SIGNAL HEAD	60'	PHASE 1
POLE BASE TO SIGNAL HEAD	60'	PHASE 6
POLE BASE TO SIGNAL HEAD	60'	PHASE 6
POLE BASE TO DETECTION	60'	STOP BAR
POLE BASE TO DETECTION	60'	ADVANCE
POLE BASE TO PREEMPTION	60'	DETECTOR
POLE BASE TO STROBE LIGHT	60'	PREEMPTION
PP-19 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING ESSEX WAY
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING ESSEX WAY
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING VT 15
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING VT 15
PP-20 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING VT 15
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING VT 15
SUBTOTAL	1169'	
ROUNDING	31'	
TOTALS	1200'	

ELECTRICAL WIRING IS SHOWN FOR ESTIMATING PURPOSES ONLY. PAYMENT FOR THIS ITEM WILL BE INCIDENTAL TO PAY ITEMS 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION.

ADDITIONS TO CONDUIT SCHEDULE

	WIRED (2")	ELECTRICAL (2")
JB-28B TO JB-29	93.34'	93.33'
JB-28B TO JB-29	93.34'	
JB-28 TO JB-28B	25.34'	25.33'
JB-28 TO JB-28B	25.34'	
JB-28B TO SL-6	18.84'	18.84'
CONDUIT TOTALS	812.95'	407.28'

REVISION	DATE	DESCRIPTION	BY
△	5/10/17	CHART REVISED	KAR

MS 556: VT ROUTE 15 & ESSEX WAY

PROJECT NAME:	WILLISTON-ESSEX	FILE NAME:	t15i017sig.dgn	PLOT DATE:	5/10/2017
PROJECT NUMBER:	STPG SGNL(46)	PROJECT LEADER:	M. LACROIX	DRAWN BY:	K. RECORD
		DESIGNED BY:	K. RECORD	CHECKED BY:	M. LACROIX
		TRAFFIC SIGNAL LAYOUT SHEET 12B		SHEET	42 OF 66