

LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEMS 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION(VT ROUTE 15 & BILLIE BUTLER DRIVE)	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)	4	ECONOLITE AUTOSCOPE ENCORE	
ADVANCE 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)	1	WAVETRONIX CLICK 650	
DETECTION CABINET RACK	2		
DETECTOR BRACKET FOR MAST ARM OR POLE	6	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)	8	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)	2	FLAT BLACK	
SIGNAL HEAD BRACKETS AND ANCILLARY EQUIPMENT	10	FLAT BLACK	TO BE PROVIDED AND INSTALLED BY CONTRACTOR
OPTICAL PREEMPTION DETECTORS (FLAT BLACK)	2	TOMAR DETOC OR OPTICOM INFRARED	
OPTICAL PREEMPTION SIGNAL PROCESS CARD & CAGE	2	TOMAR OSPOC 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	4	FLAT BLACK	
STEEL MAST ARM SIGNAL POLE	4	FLAT BLACK	
STEEL MAST ARMS (FLAT BLACK)	4	MA-6=55', MA-7 & MA-9=50', MA-8=30'	
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.

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	14	11.5	49.5		31	11.5	49.5	31	
2	211	98	12	11.5	55.5		31	11.5	55.5	31	
3	311	110	40	11.5	67.5		31	11.5	67.5	31	

CONTROLLER TIMING CHART

PHASE	1	2	3	4	5	6	7	8
IN USE	X	X		X	X	X		X
TRAFFIC MOVEMENT	↓	→		↓	↓	→		↓
MIN. GREEN	5	8		5	5	8		5
MAX 1 - GREEN (OFF)	5	43		25	5	43		25
MAX 1 - GREEN (AM)	5	49		25	5	49		25
MAX 3 - GREEN (PM)	5	61		25	5	61		25
YELLOW CLEARANCE	4.5	4.0		4.0	4.5	4.0		4.0
ALL RED CLEARANCE	2.0	2.0		2.0	2.0	2.0		2.0
VEHICLE EXTENSION	2.0	2.0		2.0	2.0	2.0		2.0
DELAY GREEN	0.0	5.0		5.0	0.0	5.0		5.0
WALK	0	7		7	0	7		7
PEDESTRIAN CLEAR	0	32		23	0	32		23
RECALL MODE		SOFT				SOFT		
COORDINATED		X				X		

PREEMPTION TIMINGS

DIRECTION	PREEMPTOR			
	1	2	3	4
HOLD PHASE	2 & 5	1 & 6		
DET LOCK	YES	YES		
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	
	TO	TO
MAX 2 - AM PEAK	6:00 AM	9:00 AM
MAX 1 - OFF PEAK	9:00 AM	3:00 PM
MAX 3 - PM PEAK	7:00 PM	10:00 PM
FREE	3:00 PM	7:00 PM
	10:00 PM	6:00 AM

ADDED TO CONDUIT SCHEDULE	WIRED (2")	ELECTRICAL (2")
CONTROLLER TO JB-19	28.47'	30.14'
CONTROLLER TO JB-19	28.47'	
CONTROLLER TO MAP-6	24.67'	24.67'
CONTROLLER TO MAP-6	24.67'	
PED POSTS MADE BY ECI (3 POSTS)	11.25'	11.25'
POWER POLE TO STANCHION	8.00'	

CONDUIT SCHEDULE

	WIRED CONDUIT		ELECTRICAL CONDUIT		DESCRIPTION
	2"	4"	2"	4"	
STANCHION TO CONTROLLER	-20'	13.34'			POWER
CONTROLLER TO JB-16	-18'	9.34'			SIGNAL/LIGHTING
CONTROLLER TO JB-16	-18'	9.34'			DETECTION
CONTROLLER TO JB-16			-18'	18.68'	FUTURE USE
JB-16 TO PP-15	-24'	16.67'			PEDESTRIAN
JB-16 TO PP-15			-24'	16.67'	DETECTION
JB-16 TO JB-17	-96'	96.34'			SIGNAL/LIGHTING
JB-16 TO JB-17	-96'	96.34'			DETECTION
JB-16 TO JB-17			-96'	190.68'	FUTURE USE
JB-17 TO MAP-7	-25'	23.01'			SIGNAL/LIGHTING
JB-17 TO MAP-7	-25'	23.01'			DETECTION
JB-17 TO MAP-7			-25'	23.01'	FUTURE USE
JB-17 TO JB-18	-145'	135.34'			SIGNAL/LIGHTING
JB-17 TO JB-18	-145'	135.34'			DETECTION
JB-17 TO JB-18			-145'	135.34'	FUTURE USE
JB-18 TO PP-18	-13'	10.17'			PEDESTRIAN
JB-18 TO PP-18			-13'	10.17'	DETECTION
JB-18 TO MAP-8	-22'	37.59'			SIGNAL/LIGHTING
JB-18 TO MAP-8	-22'	37.59'			DETECTION
JB-18 TO MAP-8			-22'	37.59'	FUTURE USE
JB-16 TO JB-19	-25'				SIGNAL/LIGHTING
JB-16 TO JB-19	-25'				DETECTION
JB-16 TO JB-19			-25'		FUTURE USE
JB-19 TO MAP-6	-17'	19.17'			SIGNAL/LIGHTING
JB-19 TO MAP-6	-17'	19.17'			DETECTION
JB-19 TO MAP-6			-17'	19.17'	FUTURE USE
JB-19 TO JB-20	-140'	117.84'			SIGNAL/LIGHTING
JB-19 TO JB-20	-140'	117.84'			DETECTION
JB-19 TO JB-20			-140'	117.83'	FUTURE USE
JB-20 TO MAP-9	-17'	5.67'			SIGNAL/LIGHTING
JB-20 TO MAP-9	-17'	5.67'			DETECTION
JB-20 TO MAP-9			-17'	5.67'	FUTURE USE
JB-20 TO PP-16	-15'	32.01'			PEDESTRIAN
JB-20 TO PP-16			-15'	23.34'	FUTURE USE
JB-20 TO PP-17	-22'	27.67'			PEDESTRIAN
JB-20 TO PP-17			-22'	27.67'	FUTURE USE
SUBTOTAL	1044'	549'			
ROUNDING	11'	6'			
TOTALS	1055'	555'			
TOTALS	1113.99'	691.88'			

ELECTRICAL WIRING	LENGTH	DESCRIPTION
MAP-6 WIRING		
POLE BASE TO SIGNAL HEAD	75'	PHASE 2
POLE BASE TO SIGNAL HEAD	75'	PHASE 2
POLE BASE TO SIGNAL HEAD	75'	PHASE 5
POLE BASE TO DETECTION	75'	STOP BAR
POLE BASE TO DETECTION	75'	ADVANCE
POLE BASE TO LED SIGN	75'	NO RIGHT TURN ON RED
POLE BASE TO PREEMPTION	75'	DETECTOR
POLE BASE TO STROBE LIGHT	75'	PREEMPTION
MAP-7 WIRING		
POLE BASE TO SIGNAL HEAD	65'	PHASE 4
POLE BASE TO SIGNAL HEAD	65'	PHASE 4
POLE BASE TO DETECTION	65'	STOP BAR
MAP-8 WIRING		
POLE BASE TO SIGNAL HEAD	47'	PHASE 1
POLE BASE TO SIGNAL HEAD	47'	PHASE 6
POLE BASE TO SIGNAL HEAD	47'	PHASE 6
POLE BASE TO DETECTION	47'	STOP BAR
POLE BASE TO DETECTION	47'	ADVANCE
POLE BASE TO PREEMPTION	47'	DETECTOR
POLE BASE TO STROBE LIGHT	47'	PREEMPTION
MAP-9 WIRING		
POLE BASE TO SIGNAL HEAD	68'	PHASE 8
POLE BASE TO SIGNAL HEAD	68'	PHASE 8
POLE BASE TO LED SIGN	68'	NO RIGHT TURN ON RED
POLE BASE TO DETECTION	68'	STOP BAR
PP-15 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING BILLIE BUTLER
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING BILLIE BUTLER
PP-16 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING BILLIE BUTLER
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING BILLIE BUTLER
PP-17 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING VT 15
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING VT 15
PP-18 WIRING		
POLE BASE TO PEDESTRIAN HEAD	10'	CROSSING VT 15
POLE BASE TO PEDESTRIAN BUTTON	10'	CROSSING VT 15
SUBTOTAL	1476'	
ROUNDING	24'	
TOTALS	1500'	

ELECTRICAL WIRING IS SHOWN FOR ESTIMATING PURPOSES ONLY. PAYMENT FOR THIS ITEM WILL BE INCIDENTAL TO PAY ITEM 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (VT ROUTE 15 & BILLIE BUTLER DRIVE).

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

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

MS 555: VT ROUTE 15 & BILLIE BUTLER DRIVE

PROJECT NAME:	WILLISTON-ESSEX
PROJECT NUMBER:	STPG SGNL(46)
FILE NAME: t15i017sig.dgn	PLOT DATE: 5/10/2017
PROJECT LEADER: M. LACROIX	DRAWN BY: K. RECORD
DESIGNED BY: K. RECORD	CHECKED BY: M. LACROIX
TRAFFIC SIGNAL LAYOUT SHEET 10B	SHEET 38 OF 66