LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEMS 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION(VT ROUTE 15 & VT 289 EASTBOUND RAMPS)	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	
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	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)	6	FLAT BLACK	TO BE PROVIDED AND INSTALLED BY CONTRACTOR
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	3	FLAT BLACK	
OPTICAL PREEMPTION DETECTORS (FLAT BLACK)	2	**TOMAR DETOC OR OPTICOM INFRARED**	
OPTICAL PREEMPTION SIGNAL PROCESS CARD & CAGE	2	**TOMAR OSPOCx OPTICAL OR OPTICOM INFRARED**	
PREEMPTION AC STROBE - RED	2		
SIGNAL HEAD BRACKETS AND ANCILLARY EQUIPMENT	9	FLAT BLACK	
STEEL MAST ARM SIGNAL POLE (FLAT BLACK)	2		
STEEL MAST ARMS (FLAT BLACK)	3	MA-2=50', MA-3A & MA-3B=30'	
POWER STANCHION WITH DISCONNECTS	1		
HARDENED NETWORK SWITCH	1	CISCO IE 2000	TO BE PROVIDED AND INSTALLED BY OTHERS
DIRECTIONAL WIRELESS INTERCONNECT ANTENNA	1		
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 RESONSIBLE FOR ENSURING THAT THERE IS ADEQUATE ROOM FOR THESE ITEMS INSIDE THE CABINET.

CONDUIT SCHEDULE

	WIRED CONDUIT 2"	WIRED CONDUIT 4"	ELECTRICAL CONDUIT 2"	ELECTRICAL CONDUIT 4"	DESCRIPTION
POWER TO STANCHION	~~22'~~ 35.01'				SERVICE
~~STANCHION TO CONTROLER~~	~~63'~~ USED EXISTING				POWER
CONTROLLER TO JB-9	~~13'~~ 32.01'				SIGNAL/LIGHTING
CONTROLLER TO JB-9	~~13'~~ 32.01'				DETECTION
CONTROLLER TO JB-9			~~13'~~ 32.01'		FUTURE USE
JB-9 TO JB-10	~~88'~~ 80'				SIGNAL/LIGHTING
JB-9 TO JB-10	~~88'~~ 80'				DETECTION
JB-9 TO JB-10			~~88'~~ 80'		FUTURE USE
JB-10 TO MAP-2	~~13'~~ 12.59'				SIGNAL/LIGHTING
JB-10 TO MAP-2	~~13'~~ 12.59'				DETECTION
JB-10 TO MAP-2			~~13'~~ 12.59'		FUTURE USE
JB-9 TO JB-11	~~79'~~ 83.67'				SIGNAL/LIGHTING
JB-9 TO JB-11	~~79'~~ 83.67'				DETECTION
JB-9 TO JB-11			~~79'~~ 83.67'		FUTURE USE
JB-11 TO JB-12	~~58'~~ 60.34'				SIGNAL/LIGHTING
JB-11 TO JB-12	~~58'~~ 60.34'				DETECTION
JB-11 TO JB-12			~~58'~~ 60.34'		FUTURE USE
JB-12 TO MAP-3	~~47'~~ 44.34'				SIGNAL/LIGHTING
JB-12 TO MAP-3	~~47'~~ 44.34'				DETECTION
JB-12 TO MAP-3			~~47'~~ 44.34'		FUTURE USE
~~SUBTOTAL~~	~~681'~~		~~298'~~		
~~ROUNDING~~	~~9'~~		~~7'~~		
~~TOTALS~~	~~690'~~		~~305'~~		
EXISTING JB TO CC	42.34'				
TOTALS	709.25'		312.95'		

PREEMPTION TIMINGS

	PREEMPTOR 1	2	3	4
DIRECTION	EB	WB		
HOLD PHASE	2	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	REFERNCE
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
	7:00 PM	TO	10:00 PM
MAX 3 - PM PEAK	3:00 PM	TO	7:00 PM
FREE	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	16	11.5	43.5		37		55		
2	211	98	24	15	43		40		58		
3	311	110	54	11.5	51.5		47		63		

CONTROLLER TIMING CHART

PHASE	1	2	3	4	5	6	7	8
IN USE	X	X		X		X		
TRAFFIC MOVEMENT	↰	→		↓		→		
MIN. GREEN	5	8		5		8		
MAX 1 - GREEN (OFF)	5	37		31		48.5		
MAX 2 - GREEN (AM)	8.5	36.5		34		51.5		
MAX 3 - GREEN (PM)	5	45		41		56.5		
YELLOW CLEARANCE	4.5	4.5		4.0		4.5		
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	0.0		0.0		0.0		
WALK								
PEDESTRIAN CLEAR								
RECALL MODE		SOFT				SOFT		
COORDINATED		X				X		

ELECTRICAL WIRING

ELECTRICAL WIRING	LENGTH	DESCRIPTION
MAP-2 WIRING		
POLE BASE TO SIGNAL HEAD	68'	PHASE 1
POLE BASE TO SIGNAL HEAD	68'	PHASE 4
POLE BASE TO SIGNAL HEAD	68'	PHASE 4
POLE BASE TO SIGNAL HEAD	68'	PHASE 6
POLE BASE TO SIGNAL HEAD	68'	PHASE 6
POLE BASE TO DETECTION	68'	STOP BAR
POLE BASE TO DETECTION	68'	ADVANCE
POLE BASE TO PREEMPTION	68'	DETECTOR
POLE BASE TO STROBE LIGHT	68'	PREEMPTION
MA-3A WIRING		
POLE BASE TO SIGNAL HEAD	48'	PHASE 2
POLE BASE TO SIGNAL HEAD	48'	PHASE 2
POLE BASE TO DETECTION	48'	STOP BAR
POLE BASE TO DETECTION	48'	ADVANCE
POLE BASE TO PREEMPTION	48'	DETECTOR
POLE BASE TO STROBE LIGHT	48'	PREEMPTION
MA-3B WIRING		
POLE BASE TO SIGNAL HEAD	48'	PHASE 4
POLE BASE TO SIGNAL HEAD	48'	PHASE 4
POLE BASE TO DETECTION	48'	STOP BAR
SUBTOTAL	1044'	
ROUNDING	56'	
TOTALS	1100'	

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 & VT 289 EASTBOUND RAMPS).

REVISION	DATE	DESCRIPTION	BY
1	5/10/17	CHART REVISED	KAR

MS 553: VT ROUTE 15 & VT 289 EASTBOUND RAMPS

PROJECT NAME: WILLISTON-ESSEX
PROJECT NUMBER: STPG SGNL(46)

FILE NAME: t15t017sig.dgn
PROJECT LEADER: M. LACROIX
DESIGNED BY: K. RECORD
TRAFFIC SIGNAL LAYOUT SHEET 8B

PLOT DATE: 5/10/2017
DRAWN BY: K. RECORD
CHECKED BY: M. LACROIX
SHEET 34 OF 66