

LIST OF MAJOR EQUIPMENT		
EQUIPMENT ITEMS - 678.15	QUANTITY	REMARKS
TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (US ROUTE 2 @ NORTH BROWNELL ROAD AND SOUTH BROWNELL ROAD)		
STEEL MAST ARM SIGNAL POLE (FLAT BLACK)	3	
STEEL MAST ARM (FLAT BLACK)	4	MA-1 & MA-3 = 35', MA-2 = 55' & MA-4 = 30'
POWER STANCHION WITH DISCONNECTS	1	
TRAFFIC SIGNAL CONTROLLER (NEMA TS2)	1	ECONOLITE COBALT
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 (FLAT BLACK))	8	
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 (FLAT BLACK))	3	△
SIGNAL HEAD BRACKETS AND ANCILLARY EQUIPMENT	11	△
PEDESTRIAN PUSH BUTTON ASSEMBLIES POLE MOUNTED WITH LOCATOR TONE, RIO-3e SIGN, FLAT BLACK HOUSING	2	
PEDESTRIAN SIGNAL HEAD COUNTDOWN STYLE, FLAT BLACK HOUSING	2	
NEMA P44 BASE-MOUNTED CONTROLLER CABINET WITH 15-INCH EXTENDED BASE ON A CONCRETE FOUNDATION	1	PAINTED FLAT BLACK WITH ANCILLARY EQUIPMENT, FACING AWAY FROM TRAFFIC
ELECTRICAL WIRING	1000'	SEE SUMMARY THIS SHEET
SMART MALFUNCTION MONITORING UNIT (MMU)	1	ECONOLITE MMU2-16E SMART MONITOR
BIU	1	ECONOLITE BIU-64
DETECTOR BRACKET FOR MAST ARM OR POLE	4	
STOP BAR DETECTOR ASSEMBLY	4	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
DETECTION PROCESSOR (CARDS)	1	WAVETRONIX CLICK 650
DETECTION CABINET RACK	2	
OPTICAL PREEMPTION DETECTORS	2	TOMAR
OPTICAL PREEMPTION SIGNAL PROCESS CARD & CAGE	2	TOMAR
PREEMPTION AC STROBE - RED	2	TOMAR
HARDENED NETWORK SWITCH	1	CISCO IE 2000
CONTROLLER IDENTIFICATION PLAQUE	1	SEE TRAFFIC SIGNAL SYSTEM NOTES
GPS CLOCK	1	

CONTROLLER TIMING CHART									
PHASE	1	2	3	4	5	6	7	8	9
IN USE	X	X		X	X	X		X	
TRAFFIC MOVEMENT	←	→	↓	↓	→	←		↓	
MIN. GREEN	5	8		8	5	8		8	
MAX 2 - GREEN (AM)	10	46		30	10	46		30	
MAX 1 - GREEN (OFF)	10	37		35	10	37		35	
MAX 3 - GREEN (PM)	10	53		31	10	53		31	
YELLOW CLEARANCE	3	4.5		4	3	4.5		4	
ALL RED CLEARANCE	2	2		2	2	2		2	
VEHICLE EXTENSION	2	2		2	2	2		2	
DELAY GREEN	0	5		5	0	5		5	
WALK	0	7		7	0	7		7	
PEDESTRIAN CLEAR	0	9		10	0	9		10	
RECALL MODE (SOFT)		X				X			

ELECTRICAL WIRING		
	LENGTH	DESCRIPTION
MAP-1 TO MA-1	19'	DETECTION
MAP-1 TO MA-1	19'	PREEMPTION DETECTOR
MAP-1 TO MA-1	19'	SIGNAL HEAD
MAP-1 TO MA-1	19'	SIGNAL HEAD
MAP-1 TO MA-2	19'	DETECTION
MAP-1 TO MA-2	19'	PREEMPTION DETECTOR
MAP-1 TO MA-2	19'	SIGNAL HEAD
MAP-1 TO MA-2	19'	SIGNAL HEAD
MAP-1 TO MA-2	19'	SIGNAL HEAD
MAP-1 TO MA-2	19'	STROBE LIGHT
MAP-1 TO PEDESTRIAN HEAD	10'	CROSSING N. BROWNELL
MAP-1 TO PEDESTRIAN HEAD	10'	CROSSING N. BROWNELL
MAP-1 TO DETECTION	30'	SIDELINE STOP BAR
MAP-1 TO PREEMPTION DETECTOR	30'	SIDELINE PREEMPTION
MAP-1 TO SIGNAL HEAD	30'	SIGNAL HEAD (OUTTER)
MAP-1 TO SIGNAL HEAD	30'	SIGNAL HEAD (INNER)
MAP-2 TO DETECTION	45'	MAINLINE ADVANCE
MA-2 TO PREEMPTION DETECTOR	45'	MAINLINE PREEMPTION
MA-2 TO PREEMPTION LIGHT	45'	STROBE LIGHT
MA-2 TO SIGNAL HEAD	45'	FLASHING YELLOW ARROW
MA-2 TO SIGNAL HEADS	45'	SIGNAL HEAD (MIDDLE)
MA-2 TO SIGNAL HEADS	45'	SIGNAL HEAD (INNER)
MAP-2 TO MA-3	19'	DETECTION
MAP-2 TO MA-3	19'	PREEMPTION DETECTOR
MAP-2 TO MA-3	19'	SIGNAL HEAD
MAP-2 TO SIGNAL HEAD	10'	ON POLE
MAP-2 TO PEDESTRIAN HEAD	10'	CROSSING U.S. ROUTE 2
MAP-2 TO PEDESTRIAN PUSH BUTTON	10'	CROSSING U.S. ROUTE 2
MA-3 TO DETECTION	25'	SIDELINE STOP BAR
MA-3 TO SIGNAL HEAD	25'	ON ARM
MA-3 TO PREEMPTION DETECTOR	25'	SIDELINE PREEMPTION
MAP-3 TO MA-4	19'	DETECTION
MAP-3 TO MA-4	19'	PREEMPTION DETECTOR
MAP-3 TO MA-4	19'	STROBE LIGHT
MAP-3 TO MA-4	19'	SIGNAL HEAD
MAP-3 TO MA-4	19'	SIGNAL HEAD
MAP-3 TO MA-4	19'	SIGNAL HEAD
MA-4 TO DETECTOR	20'	MAINLINE ADVANCE
MA-4 TO PREEMPTION DETECTOR	20'	MAINLINE PREEMPTION
MA-4 TO PREEMPTION LIGHT	20'	STROBE LIGHT
MA-4 TO SIGNAL HEAD	20'	FLASHING YELLOW ARROW
MA-4 TO SIGNAL HEAD	20'	SIGNAL HEAD (MIDDLE)
MA-4 TO SIGNAL HEAD	20'	SIGNAL HEAD (INNER)
SUBTOTAL	996'	
ROUNDING	4'	
TOTAL	1000'	(SEE NOTES BELOW)

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	9
1	III	84	42	15	38	0	31	15	38	0	31	0
2	2II	88	49	15	44	0	29	15	44	0	29	0
3	3II	96	13	15	48	0	33	15	48	0	33	0

DAY PLAN			
PLAN NO.	EVENT	ACTION PLAN	START TIME
1	1	254	12:00 AM
1	2	2	6:00 AM
1	3	1	10:00 AM
1	4	3	2:30 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	3	9:00 AM
2	4	254	10:00 PM

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	MAX 1

WEEKDAY PEAKS			
	HOURS		
MAX 2 - AM PEAK	6:00 AM	TO	10:00 AM
	10:00 AM	TO	2:30 PM
MAX 1 - OFF PEAK	7:00 PM	TO	10:00 PM
MAX 3 - PM PEAK	2:30 PM	TO	7:00 PM
FREE	10:00 PM	TO	6:00 AM

CONDUIT SCHEDULE					
	WIRED CONDUIT		ELECTRICAL CONDUIT		DESCRIPTION
	2"	4"	2"	4"	
POWER TO STANCHION	-8'	170.5'			SERVICE
STANCHION TO CONTROLLER	-18'	21'			POWER
CONTROLLER TO MAP-1			24.5'	15'	FUTURE USE
CONTROLLER TO MAP-1	-15'	24.5'			SIGNAL / LIGHTING
CONTROLLER TO MAP-1	-15'	24.5'			DETECTION
CONTROLLER TO JPB-4 JB-4			22'	20'	FUTURE USE
CONTROLLER TO JPB-4 JB-4	-20'	22'			SIGNAL / LIGHTING
CONTROLLER TO JPB-4 JB-4	-20'	22'			DETECTION
JB-4 TO JB-5			52'	50'	FUTURE USE
JB-4 TO JB-5	-50'	52'			SIGNAL / LIGHTING
JB-4 TO JB-5	-50'	52'			DETECTION
JB-5 TO EXISTING PP POST			22'	15'	FUTURE USE
JB-5 TO EXISTING PP POST	-15'	22'			PEDESTRIAN
JB-5 TO JB-6			20'		FUTURE USE
JB-5 TO JB-6	-20'				SIGNAL / LIGHTING
JB-5 TO JB-6	-20'				DETECTION
JB-6 TO MAP-4 3			23.5'	8'	FUTURE USE
JB-6 TO MAP-4 3	-8'	23.5'			SIGNAL / LIGHTING
JB-6 TO MAP-4 3	-8'	23.5'			DETECTION
JB-6 TO JB-7 9 (NEW)			116'	55'	FUTURE USE
JB-6 TO JB-7 9 (NEW)	-55'	116'			SIGNAL / LIGHTING
JB-6 TO JB-7 9 (NEW)	-55'	116'			DETECTION
JB-7 TO MAP-3 2			8'		FUTURE USE
JB-7 TO MAP-3 2	8'				SIGNAL / LIGHTING
JB-7 TO MAP-3 2	8'				DETECTION
SUBTOTAL	393'		191'		
ROUNDING	-7'		-7'		
TOTALS	400'		200'		
SL-2 TO JB11 (NEW)	10'				
POWER - STANCHION	-100'				
PRE-EXISTING CONDUIT					

CONDUIT SCHEDULE (CONTINUED)			
	WIRED 2"	ELECTRICAL 2"	DESCRIPTION
JB-9 TO JB-10	17'		SIGNAL / LIGHTING
JB-9 TO JB-10	17'		DETECTION
JB-9 TO JB-10		17'	FUTURE USE
JB-10 TO JB-11	8'		SIGNAL / LIGHTING
JB-10 TO JB-11	8'		DETECTION
JB-10 TO JB-11		8'	FUTURE USE
JB-11 TO JB-7	24'		SIGNAL / LIGHTING
JB-11 TO JB-7	24'		DETECTION
JB-11 TO JB-7		24'	FUTURE USE
TOTALS	713.5'	317'	

PREEMPTION TIMING		
DIRECTION	PREEMPTOR	
	I	2
HOLD PHASE	2&5	1&6
DETECTOR LOCK	YES	YES
DURATION TIME	12	12
MIN. GREEN	8	8
HOLD GREEN	12	12
YELLOW	4.5	4.5
RED	2	2

DETECTOR OPERATOR	
STOP BAR	PRESENCE
* ADVANCE	PULSE OR ACTUATION
* FOR DATA COLLECTION ONLY	

NOTES:  
1. TOTAL QUANTITY OF ELECTRICAL WIRING SHOWN IS APPROXIMATED FOR BIDDING PURPOSES. THE ACTUAL AMOUNT OF ELECTRICAL WIRING MAY VARY DUE TO FIELD CONDITIONS.  
2. ELECTRICAL WIRING WILL BE PAID UNDER ITEM 678.15 - TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (U.S. ROUTE 2 @ NORTH BROWNELL ROAD AND SOUTH BROWNELL ROAD).

REPLACES SHEET #111

U. S. ROUTE 2 / NORTH BROWNELL / SOUTH BROWNELL ROAD INTERSECTION

PROJECT NAME:	SOUTH BURLINGTON-WILLISTON	PLOT DATE:	6/27/2017
PROJECT NUMBER:	NH 2944(I)	DRAWN BY:	K. RECORD
FILE NAME:	ppms*/Section/-----,dgn	CHECKED BY:	M. LACROIX
DESIGNED BY:	K. RECORD	TRAFFIC SIGNAL SYSTEMS SHEET 2	SHEET III OF 249

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