

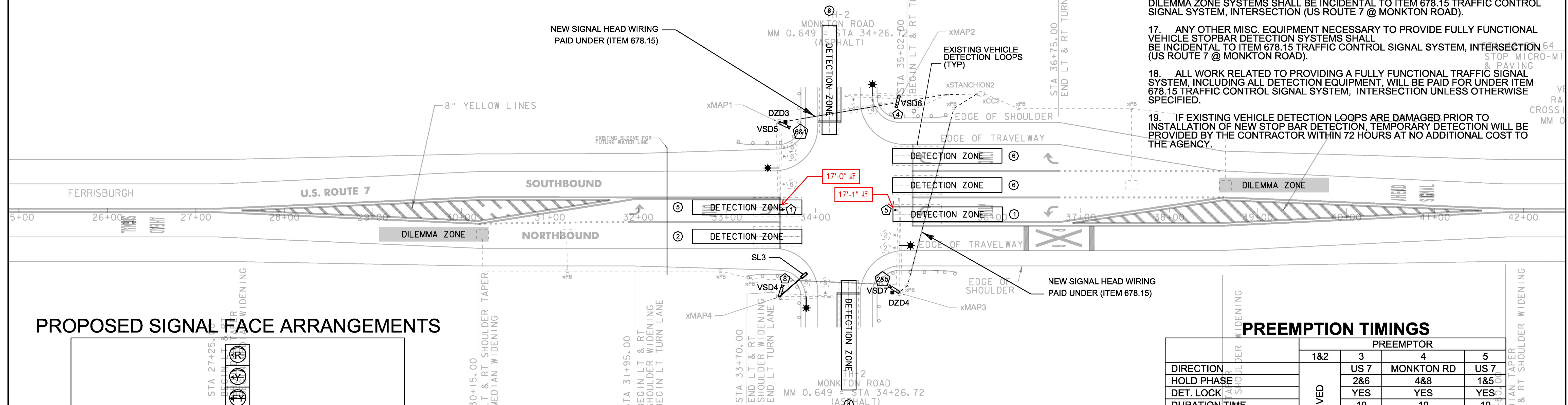
LIST OF MAJOR EQUIPMENT

EQUIPMENT ITEM 678.15 - (US ROUTES 7 & MONKTON ROAD)	QUANTITY	REMARKS
NEW 12-INCH POLYCARBONATE LED SIGNAL HEADS (ONE-WAY, 4-SECTION, VISORS, DISCONNECT HANGERS, 5" LOUVERED BACKPLATES WITH 1-1/2" RETROREFLECTIVE TAPE AND MOUNTING HARDWARE	2	FLAT BLACK FINISH SALVAGE EXIST. TO AOT DIST. SIGNAL TECH
SIGNAL WIRING	500	#12 GAUGE
DETECTOR ASSEMBLY	4-6	AS REQUIRED
VEHICLE DETECTOR PROCESSOR (CARDS)	1-4	AS REQUIRED
EMERGENCY PREEMPTION PRIORITY DETECTOR	1	TOMAR, OPTICOM, EMTRAC
EMERGENCY PREEMPTION OPTICAL SENSOR	4	TOMAR, OPTICOM, EMTRAC
EMERGENCY PREEMPTION AC STROBE - RED	4	
LOUVERED BACKPLATES WITH 1-1/2" RETROREFLECTIVE TAPE AND MOUNTING HARDWARE	5	INSTALL NEW FLAT BLACK LOUVERED BACKPLATES ON EXISTING NORTHBOUND & SOUTHBOUND SIGNAL HEADS
1-1/2" RETROREFLECTIVE TAPE	4	ADD TAPE TO EXISTING EASTBOUND & WESTBOUND BACKPLATES
TRAFFIC SIGNAL CONTROLLER (NEMA TS2)	1	ECONOLITE ASC/3-2100, SALVAGE EXISTING TO AOT DIST. SIGNAL TECH
MALFUNCTION MANAGEMENT UNIT	1	SMART MONITOR WITH FYA FUNCTIONALITY

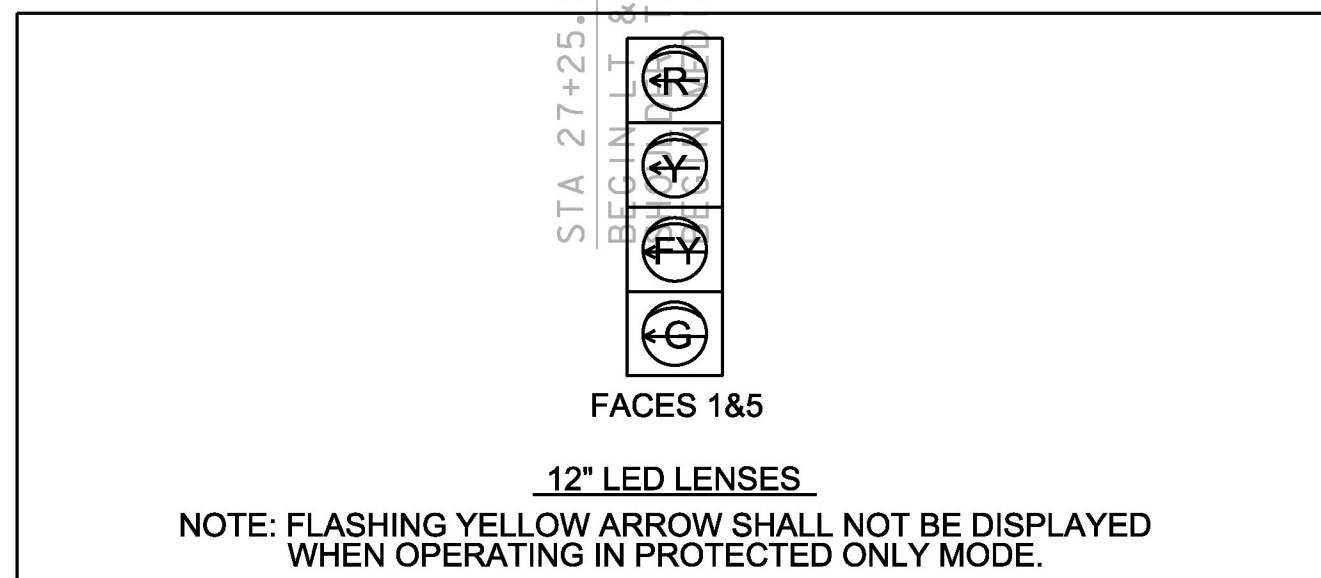
TRAFFIC SIGNAL NOTES:

- ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE STATE OF VERMONT AGENCY OF TRANSPORTATION(S(VAOT) "STANDARD SPECIFICATIONS FOR CONSTRUCTION" DATED 2011, WITH CURRENT MODIFICATIONS.
- THIS PLAN SHEET IS NOT TO SCALE AND SHALL ONLY BE USED AS A GUIDE FOR TRAFFIC SIGNAL SYSTEM EQUIPMENT PLACEMENT. THE CONTRACTOR SHALL CONFIRM ALL LOCATIONS IN THE FIELD WITH THE ENGINEER PRIOR TO INSTALLATION. LOCATIONS MAY BE REVISED AS A RESULT OF THE SITE SURVEY.
- VEHICLE DETECTORS SHALL BE PLACED SO THAT OCCLUSION IS MINIMIZED AND PHASING IS NOT AFFECTED.
- STOP BAR AND ADVANCED VEHICLE DETECTOR LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S GUIDANCE FOR THE TYPE OF DETECTOR SUPPLIED. THE CONTRACTOR SHALL SUBMIT PROPOSED MOUNTING LOCATIONS AND DOCUMENTATIONS OF CONFORMANCE WITH THE MANUFACTURER'S GUIDANCE TO THE ENGINEER FOR APPROVAL.
- THE ACTUAL STOP BAR DETECTION LOCATIONS WILL BE DETERMINED DURING CONSTRUCTION BASED ON THE OPTIMAL LOCATION FOR THE TYPE OF DETECTOR SELECTED. FINAL LOCATIONS TO BE APPROVED BY THE ENGINEER.
- STOP BAR VEHICLE DETECTION AREAS SHALL EXTEND FIVE FEET PAST THE FINAL, PERMANENT STOP BAR.
- ADVANCED VEHICLE DETECTION AREAS SHALL BE A MINIMUM OF 350 TO 400 FEET UPSTREAM OF THE FINAL, PERMANENT STOP BAR.
- ADVANCED VEHICLE ZONE DETECTION SHALL EXTEND THE GREEN TIME BY TWO SEC.
- VEHICLE DETECTION SYSTEM SHALL BE ECONOLITE ACCUSCAN BRAND, SMARTMICRO TRAFFIC RADAR BRAND OR WAVETRONIX SMARTSENSOR BRAND.

- THE CONTRACTOR SHALL VERIFY IN THE FIELD THAT THERE IS ADEQUATE SPACE IN THE CONDUIT AND CONTROLLER FOR SIGNAL/DETECTION CABLE AND EQUIPMENT. THE CONTRACTOR SHALL CONTACT THE ENGINEER IF SUFFICIENT SPACE IS NOT AVAILABLE OR TO GET ACCESS FOR CHECKING THE AVAILABILITY OF ENOUGH SPACE. IF ADDITIONAL CONDUIT INSTALLATION IS REQUIRED ALL WORK ASSOCIATED WITH INSTALLATION SHALL BE INCIDENTAL TO CONTRACT ITEM 678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (US ROUTE 7 @ MONKTON ROAD). MATERIALS AND CONSTRUCTION TO BE IN ACCORDANCE WITH SECTION 678. ALL TRAFFIC SIGNAL/STREET LIGHTING CONDUIT SHALL BE SCHEDULE 80 PVC.
- ALL SIGNAL EQUIPMENT AND MAST ARM MOUNTED SIGNS SHALL HAVE SAFETY CABLES.
- THERE SHALL BE NO WIRING SPLICES BETWEEN THE SIGNAL CABINET AND THE VEHICLE DETECTORS, UNLESS MADE IN A MANUFACTURER APPROVED JUNCTION.
- EMERGENCY PREEMPTION EQUIPMENT SHALL BE PLACED ON MAST ARMS TO THE EXTENT POSSIBLE. THE LOCATION OF THE OPTICAL RECEIVER SHALL BE UNOBSTRUCTED BY EXISTING INFRASTRUCTURE, NATURAL ELEMENTS, AND OTHER PROPOSED TRAFFIC SIGNAL AND STREET LIGHTING EQUIPMENT.
- ALL ELECTRICAL WIRING SHALL BE PERFORMED BY A LICENSED ELECTRICIAN AND OVERSEEN BY A MASTER ELECTRICIAN.
- A UNIFORMED TRAFFIC OFFICER WITH A BLUE LIGHT SHALL BE PRESENT DURING ALL LANE CLOSURES.
- ANY OTHER MISC. EQUIPMENT NECESSARY TO PROVIDE FULLY FUNCTIONAL DILEMMA ZONE SYSTEMS SHALL BE INCIDENTAL TO ITEM 678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (US ROUTE 7 @ MONKTON ROAD).
- ANY OTHER MISC. EQUIPMENT NECESSARY TO PROVIDE FULLY FUNCTIONAL VEHICLE STOPBAR DETECTION SYSTEMS SHALL BE INCIDENTAL TO ITEM 678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (US ROUTE 7 @ MONKTON ROAD).
- ALL WORK RELATED TO PROVIDING A FULLY FUNCTIONAL TRAFFIC SIGNAL SYSTEM, INCLUDING ALL DETECTION EQUIPMENT, WILL BE PAID FOR UNDER ITEM 678.15 TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION UNLESS OTHERWISE SPECIFIED.
- IF EXISTING VEHICLE DETECTION LOOPS ARE DAMAGED PRIOR TO INSTALLATION OF NEW STOP BAR DETECTION, TEMPORARY DETECTION WILL BE PROVIDED BY THE CONTRACTOR WITHIN 72 HOURS AT NO ADDITIONAL COST TO THE AGENCY.



PROPOSED SIGNAL FACE ARRANGEMENTS



PREEMPTION TIMINGS

DIRECTION	PREEMPTOR			
	1&2	3	4	5
HOLD PHASE		US 7	MONKTON RD	US 7
DET. LOCK		2&6	4&8	1&5
DURATION TIME		YES	YES	YES
MIN. GREEN		10	10	10
HOLD GREEN		4.0	4.0	4.0
HOLD YELLOW		12.0	12.0	12.0
HOLD RED		4.0	4.0	4.0
		2.0	2.0	2.0

* FINAL EMERGENCY PREEMPTION TIMINGS TO BE DETERMINED BY THE CONTRACTOR AFTER INSTALLATION WITH INPUT FROM LOCAL EMERGENCY SERVICES DEPARTMENTS

LEGEND

- MAST ARM & POLE
- CONTROLLER CABINET
- JUNCTION BOX / PULLBOX
- SIGNAL HEAD WITH PHASE NO.
- WIRED CONDUIT
- WIRED CONDUIT IN ELECTRICAL CONDUIT SLEEVE
- VEHICLE STOPBAR DETECTOR
- VEHICLE STOPBAR DETECTION AREA
- PREEMPTION STROBE LIGHT & DETECTOR
- DILEMNA ZONE DETECTOR
- DILEMNA ZONE DETECTION AREA
- LUMINAIRE

TRAFFIC CONTROL SIGNAL SYSTEM, INTERSECTION (US ROUTE 7 @ MONKTON ROAD)
SEE LIST OF MAJOR EQUIPMENT, THIS SHEET

SPECIAL PROVISION (LUMINAIRE, LED)
STA. 34+05, 54' RT(SL3)

NOTES:

- CALL DIG SAFE PRIOR TO PERFORMING ANY EXCAVATION WORK. 1-888-DIG-SAFE
- CALL DISTRICT 5 SIGNAL TECH PRIOR TO PERFORMING ANY EXCAVATION. 802-655-1580
- SEE UTILITIES SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS

MS-504

PROJECT NAME:	MIDDLEBURY-FERRISBURGH
PROJECT NUMBER:	NH SURF(55)
FILE NAME:	I5v015_s1g02.dgn
PROJECT LEADER:	L. BULLOCK
DESIGNED BY:	S. PALMER
TRAFFIC SIGNAL PLAN	
PLOT DATE:	6-APR-2016
DRAWN BY:	S. PALMER
CHECKED BY:	D. LYMAN
SHEET	79 OF 88

5/2/2016 - REVISED TO INCLUDE NEW CONTROLLER AND MALFUNCTION MANAGEMENT UNIT TO ACCOMMODATE FLASHING YELLOW ARROW OPERATION.