STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLAN LEGEND

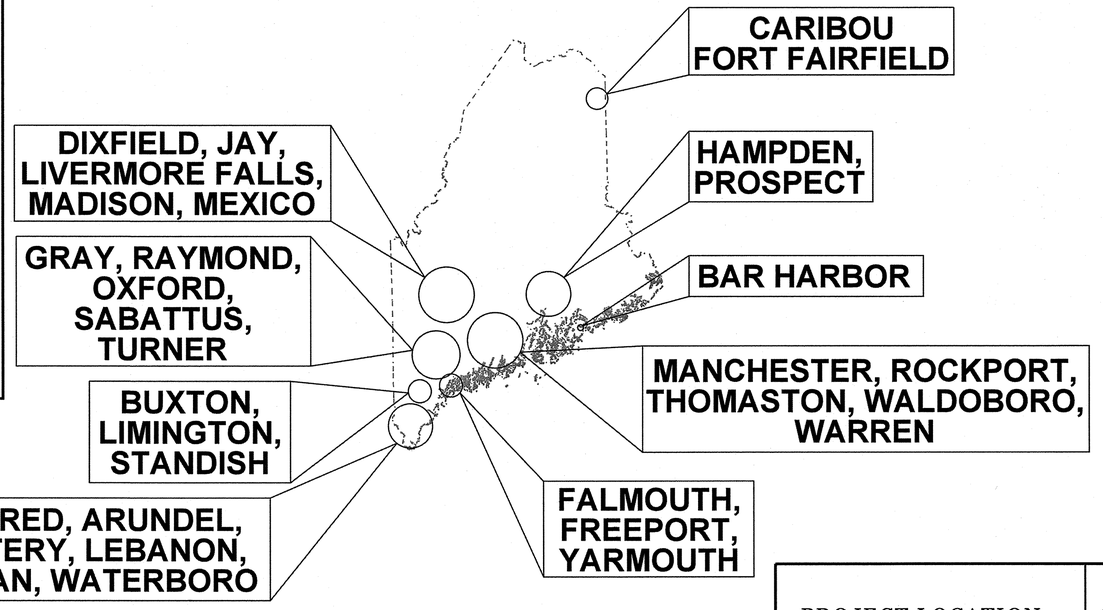
Town, County, State		Centerline-Existing	
Property Lines		Centerline-Proposed	10+00
R/W Lines-Existing		Travelway-Existing	
R/W Lines-Proposed		Travelway-Proposed	
Culvert-Existing		Railroad	
Culvert Proposed		Catch Basins	Existing ■ Proposed
Curbing Existing / Proposed		Manholes	Existing ● Proposed
Type 1		Proposed Underdrain	
Type 3		Proposed Ditch	
Type 5		Existing Ditch	
Outline of Bodies of Water		Utility Poles	Existing ◆ Proposed
Exposed Bedrock		Fire Hydrants	Existing ◈ Proposed
Buildings		Existing Water Line	W
Trees	Conifer, Deciduous	Existing San. Sewer	
Tree Line		Existing San. Sewer Manhole	
Clearing Limit Line	CLL	Guardrail-Existing	
Boring		Guardrail-Proposed	
Existing Overhead Line	OHU	Guardrail-Cable, Other	

	Existing	Proposed
Fiber Optic Cable		
Signal Conduit		
Accessible Pedestrian Signal (APS) Button		
Pedestrian Signal Head w/ Pushbutton		
Pedestrian Signal Post w/ equipment		
Steel Strain Pole		
Mast Arm Pole		
Receiver		
Signal Head (no backplate)		
Signal Head (w/ Backplate)		
Confirmation Strobe		
Mast Arm Mounted Sign		
Controller Cabinet		
Meter Pedestal		
Pullbox		
Video Detection Camera		
Video Detection Camera (360°)		
Advance Detection		
Dual Mode DSRC/C-V2X (Dedicated Short Range Communications)		
Detection Zone (& ID)		

STATEWIDE

TRAFFIC SIGNAL MODERNIZATION

FEDERAL PROJECT NO. 2532100
STATE WIN 025321.00



INDEX OF SHEETS

PROJECT LOCATION:	Statewide
PROGRAM AREA:	Multimodal
OUTLINE OF WORK:	Traffic Signal Upgrades and Other Incidental Work

WIN 025321.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER: DATE 6/5/23

DEPUTY CHIEF ENGINEER: DATE 6/7/2023

STATE OF MAINE · JASON READY No. 12844 · LICENSED PROFESSIONAL ENGINEER

SIGNATURE 12844

P.E. NUMBER 5/22/23

DATE

PROJECT INFORMATION

PROGRAM	MULTIMODAL
PROJECT MANAGER	B. KEEZER
DESIGNER	J. READY
CONSULTANT	VHB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

STATEWIDE

TITLE SHEET

SHEET NUMBER 1 OF 60

Filename: 001_Title.dgn Username: jarobert Date:6/8/2023 Division: HIGHWAY

GENERAL NOTES:

1. WORK FOR THIS PROJECT WILL RESULT IN THE MODERNIZATION OF TRAFFIC CONTROL SIGNALS IN ALFRED, ARUNDEL, BAR HARBOR, BUXTON, CARIBOU, DIXFIELD, FALMOUTH, FORT FAIRFIELD, FREEPORT, GRAY, HAMPDEN, JAY, KITTERY, LEBANON, LIMINGTON, LIVERMORE FALLS, LYMAN, MADISON, MANCHESTER, MEXICO, OXFORD, PROSPECT, RAYMOND, ROCKPORT, SABATTUS, STANDISH, THOMASTON, TURNER, WALDOBORO, WARREN, WATERBORO, YARMOUTH. EQUIPMENT INCLUDES BUT IS NOT LIMITED TO, FURNISHING AND INSTALLING ADVANCED TRANSPORTATION CONTROLLERS, VEHICULAR SIGNAL HEADS WITH RETROREFLECTIVE BACKPLATES, WIRING, SIGNAL CABLE, OVERHEAD MAST ARM AND SPAN WIRE MOUNTED SIGNS, NON-INVASIVE STOP BAR VEHICLE DETECTION, NON-INVASIVE ADVANCE VEHICLE DETECTION, EMERGENCY VEHICLE PREEMPTION, SIGNAL PRIORITY, AND ALL APPURTENANCES AND INCIDENTALS REQUIRED FOR COMPLETE FUNCTIONING INSTALLATIONS. IN ADDITION, THE PROJECT WILL PROVIDE THE MEANS FOR REMOTE COMMUNICATIONS TO THE TRAFFIC SIGNAL CONTROL CABINET EQUIPMENT BY FIELD MONITORING UNIT FROM MAINEDOT'S EXISTING CLOUD-BASED CENTRAL MANAGEMENT SYSTEM VIA A SECURE VIRTUAL PRIVATE NETWORK TUNNEL. THE PROJECT ADDITIONALLY PROVIDES FOR DUAL MODE DEDICATED SHORT RANGE COMMUNICATIONS/4GLTE 5G ON BOARD UNITS AND ROAD SIDE UNITS PROVIDING SELECTED CONNECTED VEHICLE APPLICATIONS INTEGRATED WITH THE ADVANCED TRANSPORTATION CONTROLLER AND MAINEDOT TRAFFIC MANAGEMENT CENTER.

2. ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH THE LATEST REVISIONS OF THE STATE OF MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGES, MAINEDOT STANDARD DETAILS, SUPPLEMENTAL SPECIFICATIONS, SPECIAL PROVISIONS FOR THIS CONTRACT, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE NATIONAL ELECTRICAL CODE, AND ANY REQUIREMENTS OF THE POWER COMPANY.

3. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY OPERATIONS ARE CONDUCTED THAT COULD POTENTIALLY CONFLICT WITH AERIAL UTILITIES.

4. ANY RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITY FACILITIES WILL BE MADE BY THE RESPECTIVE UTILITIES IN COORDINATION WITH THE WORK OF THE CONTRACTOR.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY OPENING PERMITS.

6. ALL NEW SIGNAL HEADS SHALL BE FIX MOUNTED TO MAST ARMS WITH ASTROBRACKETS, OR MOUNTED TO MAST ARM POLES WITH BRACKET ARMS, OR TETHERED TO SPAN WIRE, AS INDICATED ON PLANS.

7. THE BOTTOM OF THE HOUSING OF NEW SIGNAL FACES SHALL BE AT LEAST 17 FEET BUT NO MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. FOR POLE MOUNTED SIGNAL HEADS, THE BOTTOM OF THE HOUSING SHALL BE MOUNTED AT LEAST 8 FEET BUT NOT MORE THAN 19 FEET ABOVE THE SIDEWALK, OR IF THERE IS NO SIDEWALK, ABOVE THE PAVEMENT GRADE AT THE HIGH POINT OF THE ROAD.

8. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC.

9. ALL EXISTING DRIVEWAY ACCESSES SHALL BE MAINTAINED AT ALL TIMES.

10. THE CONTRACTOR SHALL PROVIDE THE RESIDENT AND MAINEDOT WITH A SCHEDULE OF WORK FOR CONSTRUCTING THE TRAFFIC IMPROVEMENTS AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.

11. THE CONTRACTOR SHALL PERFORM THE WORK IN A MANNER THAT WILL REQUIRE THE LEAST AMOUNT OF DOWNTIME TO THE TRAFFIC SIGNAL OPERATIONS.

12. TWO COPIES OF AS-BUILT PLANS, WIRING DIAGRAMS, BOX PRINTS, AND EQUIPMENT MANUALS SHALL BE LEFT IN EACH OF THE CONTROLLER CABINETS.

13. ALL MATERIAL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE HIS OWN MATERIAL SCHEDULES BASED UPON HIS PLAN REVIEW. ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.

14. ALL NEW VEHICULAR SIGNAL HEADS SHALL BE EQUIPPED WITH NEW LED LENSES 12 INCHES IN DIAMETER AND EQUIPPED WITH NEW 5-INCH LOUVERED BACK PLATES, INCLUDING 3-INCH RETROREFLECTIVITY.

15. RETROREFLECTIVE BACKPLATES

THE CONTRACTOR SHALL IN THE BID CARRY THE PROCUREMENT OF NEW BACKPLATES WITH 3-INCH RETROREFLECTIVITY TO BE RETROFITTED ON EXISTING SIGNAL HEADS AS SHOWN IN THE PLANS. PRIOR TO CONSTRUCTION, THE CONTRACTOR MAY REQUEST RETROREFLECTIVE TAPING OF EXISTING BACKPLATES FOR APPROVAL BY THE RESIDENT AT SELECTED LOCATIONS RECOMMENDED BY THE CONTRACTOR. A CREDIT TO THE PROJECT WILL BE NEGOTIATED IF TAPING VERSUS NEW BACKPLATES INSTALLATION IS APPROVED. THIS PERTAINS AT A MINIMUM TO 14 PROJECT LOCATIONS 1, 6, 8,12, 16, 18-20, 28, 31-33, 38 AND 42, NOTING THAT THE FOLLOWING 15 PROJECT INTERSECTIONS HAVE BEEN IDENTIFIED AS HAVING EXISTING RETROREFLECTIVE BACKPLATES (LOCATIONS 2, 9, 10, 13, 15, 26, 30, 34-37, 39-41 AND 43).

16. TRAFFIC SIGNAL EQUIPMENT

CONTRACTOR FURNISHED EQUIPMENT THE TRAFFIC SIGNAL CONTROLLERS, SUPPLEMENTAL CABINETS, AND VARIOUS OTHER EQUIPMENT ITEMS SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE TRAFFIC SIGNAL CONTROLLERS SUPPLIED UNDER THIS CONTRACT SHALL BE ETHERNET EQUIPPED ECONOLITE EOS ADVANCED TRANSPORTATION CONTROLLERS.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING THE PROJECT WITH WORKING AND FULLY CONFIGURED TRAFFIC SIGNAL CONTROLLERS FOR EACH INTERSECTION. COMPLETE INTEGRATION WITHIN THE EXISTING CLOUD-BASED CENTRAL MANAGEMENT SYSTEM, SIGNAL PERFORMANCE MEASURE APPLICATIONS, CONNECTED VEHICLE SYSTEM, , INSTALLATION OF THE CENTRAL AND LOCAL INTERSECTION COMMUNICATIONS INTERFACE, AND COORDINATION WITH MAINEDOT OFFICE OF INFORMATION TECHNOLOGY. THE CONTRACTOR IS FURTHER RESPONSIBLE FOR SYSTEM START-UP AND SYSTEM LOADING, ACCEPTANCE TESTING, AND TRAINING. IN ADDITION, THE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR EXPAND THE EXISTING LIGHT-BASED EMERGENCY VEHICLE PREEMPTION SYSTEM COMPATIBLE WITH THE PREEMPTION EMITTERS OWNED BY THE MUNICIPAL FIRE DEPARTMENT, NOTING THAT SYSTEM SHALL BE CONFIGURED SUCH THAT PREEMPTION OR PRIORITY CONTROL CAN ALSO BE INITIATED THROUGH DEDICATED SHORT-RANGE COMMUNICATIONS (DSRC)/5G THROUGH A ROADSIDE UNIT BY WAY OF AN APPROACHING AUTHORIZED VEHICLE WITH AN ON-BOARD UNIT.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FURNISHING AND INSTALLING ALL OTHER EQUIPMENT DETAILED IN GENERAL NOTE 1 AND SHALL BE AWARE OF AND CONFORM TO ALL DETAILS FOR THE MATERIAL SPECIFICATIONS IN SPECIAL PROVISION 718.

17. COMMUNICATIONS

THE SYSTEM SHALL SUPPORT COMMUNICATIONS TO ADVANCED TRANSPORTATION CONTROLLERS, ASSOCIATED EQUIPMENT, AND VEHICLE DETECTION AS SHOWN IN THE PLANS. ALL CONNECTIONS TO THE CLOUD-BASED CENTRAL MANAGEMENT SYSTEM SHALL BE VIA A SECURE VPN NETWORK. COMMUNICATIONS FROM THE CLOUD-BASED SYSTEM TO THE ON-STREET TRAFFIC SIGNAL CONTROLLERS SHALL BE MADE THROUGH THE FIELD MONITORING UNIT.

CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHICH COMPATIBLE CELLULAR PROVIDER CAN PROVIDE THE BEST NETWORK COVERAGE TO THE SHELF MOUNT FMU FOR REMOTE COMMUNICATIONS TO THE CMS AND PROVIDE THE PROPER SIM CARD ON A PER SITE BASIS.

CONTRACTOR SHALL PROVIDE SUFFICIENT SLACK CABLE TO THE SHELF MOUNT FMU HARNESS SO THE DEVICE CAN BE ROTATED AROUND WITHOUT HAVING TO DISCONNECT THE HARNESS.

CONTRACTOR SHALL ADDITIONALLY PROCURE A HIGH GAIN ANTNNA FOR EACH LOCATION IN LEIU OF THE STANDARD FMU PETRI DISH ANTENNA.

18. VEHICLE DETECTION

THE CONTRACTOR SHALL FURNISH AND INSTALL NON-INVASIVE STOP LINE AND ADVANCE VEHICLE DETECTION AS SHOWN IN THE PLANS. AS PAYMENT FOR THIS WORK, THE CONTRACTOR SHALL SUBMIT A LUMP SUM BID PER INTERSECTION FOR NON-INVASIVE STOP LINE AND A LUMP SUM BID PER INTERSECTION FOR NON-INVASIVE ADVANCE (WHERE APPLICABLE) DETECTION. THE VEHICLE DETECTORS ARE TO BE CONNECTED TO THE INTERSECTION TRAFFIC CONTROLLER FOR LOCAL VEHICLE DETECTION AND REMOTELY CONNECTED TO THE MAINEDOT TRAFFIC MANAGEMENT CENTER TO ALLOW VISUAL CONFIRMATION (STOP LINE) AND ADJUSTMENT OF THE DETECTION ZONES AS SHOWN IN THE PLANS. WORK SHALL BE CONSTRUCTED AND PAID FOR AS OUTLINED IN SPECIAL PROVISION 643.

THE LOCATION OF THE DETECTION DEVICES SHOWN IN THE PLANS ARE CONCEPTUAL FOR OPTIMAL APPROACH COVERAGE ASSUMING ONE TYPE (ADVANCE, IF APPLICABLE, AND/OR STOP LINE) DEVICE PER APPROACH. THE ACTUAL NUMBER OF DETECTION DEVICES AND MOUNTING LOCATIONS SHALL BE PER MANUFACTURES RECOMMENDATION. THIS INCLUDES SECURE MOUNTING OF ADVANCE DETECTION ON SPAN WIRE WITH TETHER IF IT IS DETERMINED BY MANUFACTURER TO PROVIDE BETTER RESULTS THAN AS PROPOSED IN THE PLANS.

THE NON-INVASIVE VEHICLE DETECTION ZONES SHOWN IN THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DETECTION ZONES SHALL BE LOCATED IN THE FIELD AND APPROVED BY MAINEDOT AND THE RESIDENT.

THE RESIDENT RESERVES THE RIGHT TO DIRECT THE CONTRACTOR TO ADJUST THE VIDEO DETECTOR MOUNTING HEIGHT FOR LOCAL CONDITIONS IDENTIFIED DURING OR AFTER INSTALLATION. NO ADDITIONAL COST WILL BE ALLOWED FOR FIELD ADJUSTING PIPE EXTENSIONS OR REWIRING AS NECESSARY. THIS WORK WILL BE INCIDENTAL TO THE 643.21 AND/OR 643.22 ITEM.

THE CONTRACTOR SHALL RE-INSPECT EACH SIGNALIZED INTERSECTION DURING THE ACCEPTANCE TESTING PERIOD AND CERTIFY DETECTORS ARE FUNCTIONING PROPERLY BEFORE FINAL ACCEPTANCE IS GRANTED.

19. ROAD SIDE UNIT (RSU)

THE CONTRACTOR MAY MOUNT RSU IN AN ALTERNATE LOCATION THAN SHOWN ON THE PLANS PROVIDED THE ANTENNAE HAVE A CLEAR LINE OF SIGHT FOR ALL APPROACHES. THIS PROVISION IS TO BETTER ASSIST THE CONTRACTOR TO STAY WITHIN THE 100 METER LIMITATION OF THE CAT5 CABLE RUN WITHOUT HAVING TO PURCHASE REPEATERS TO MATCH PROPOSED PLAN LOCATIONS.

20. ON BOARD UNIT (OBU) VEHICLE EQUIPMENT

CONTRACTOR SHALL FURNISH AND INSTALL 20 OBUS INTO VEHICLES IDENTIFIED AND SUPPLIED BY MAINEDOT. THE OBU SYSTEM SHALL BE FULLY OPERATIONAL IN ALL IDENTIFIED VEHICLES.

21. START-UP AND SYSTEM LOADING

THE SYSTEM SUPPLIER SHALL INITIATE COMPLETE SYSTEM OPERATION INCLUDING ATC, CMS, SPM, STOP LINE VEHICLE DETECTION SYSTEM, ADVANCED VEHICLE DETECTION SYSTEM, CV SYSTEM, HOSTED CLOUD-BASED SYSTEMS, FMU, THE COMMUNICATIONS SYSTEM, AND REMOTE MONITORING AND CONTROL OF CMS OPERATIONS AS SHOWN ON THE PLANS AND/OR DIRECTED BY MAINEDOT AND THE RESIDENT. AFTER THE SUPPLIER HAS INITIATED SYSTEM OPERATION, THE SYSTEM SHALL BE RUN FOR A CONTINUOUS 7-DAY INITIAL OPERATIONAL TESTING PERIOD. IF ANY MAJOR FUNCTIONS OF THE SYSTEM FAIL TO OPERATE DURING THIS TESTING PERIOD, AS DETERMINED BY MAINEDOT AND/OR THE RESIDENT, THE SUPPLIER SHALL CORRECT OR REPAIR THE SYSTEM AND THE CONTINUOUS 7-DAY TESTING PERIOD SHALL BE RESTARTED. AT THE COMPLETION OF A SUCCESSFUL 7-DAY TESTING PERIOD, THE SUPPLIER SHALL ADVISE MAINEDOT AND/OR THE RESIDENT THAT THE SYSTEM IS READY FOR THE START-UP PHASE. ANY MAJOR SYSTEM MALFUNCTIONS ENCOUNTERED DURING THE START-UP PHASE SHALL BE CORRECTED BY THE SUPPLIER, AND THE TEST RESTARTED. DURING THIS PERIOD, MAINEDOT AND/OR THE RESIDENT MAY MAKE MODIFICATIONS TO THE SYSTEM TIMING PARAMETERS, BUT THIS WILL NOT CAUSE RESTARTING OF THE TESTING PERIOD. AT THE COMPLETION OF THE TESTING PERIOD, THE SYSTEM WILL BE DEEMED READY FOR FINAL ACCEPTANCE TESTING AS DESCRIBED IN ACCEPTANCE TESTING.

22. ACCEPTANCE TESTING

UPON COMPLETION OF THE 7-DAY TESTING PERIOD, MAINEDOT AND/OR THE RESIDENT SHALL EVALUATE SYSTEM OPERATIONS. IT IS EXPECTED THAT THE COMPLETE SYSTEM SHALL OPERATE FULLY FUNCTIONAL FOR A PERIOD OF 30 CONSECUTIVE DAYS WITHOUT MALFUNCTION. MINOR MALFUNCTIONS OF INOPERABILITY NOT THE FAULT OF THE CONTRACTOR, AS JUDGED BY MAINEDOT AND/OR THE RESIDENT, ARE NOT INCLUDED IN THE 30-DAY PERIOD. IF THE SYSTEM FAILS TO OPERATE AS INTENDED BY THIS SPECIFICATION THE MALFUNCTION SHALL BE CORRECTED BY THE CONTRACTOR AT ITS COST AND A NEW 30- DAY TESTING PERIOD SHALL BEGIN. THIS PROCESS SHALL CONTINUE UNTIL A COMPLETELY OPERABLE SYSTEM IS DEMONSTRATED FOR A CONSECUTIVE 30-DAY PERIOD.

ACCEPTANCE TESTING MUST DEMONSTRATE TO MAINEDOT AND/OR THE RESIDENT S REASONABLE SATISFACTION THAT THE HARDWARE AND LICENSED SOFTWARE FUNCTION IN ACCORDANCE WITH THE SPECIFICATIONS, REQUIREMENTS, FUNCTIONALITIES, PERFORMANCE CRITERIA OR OTHER BENEFITS STATED IN DOCUMENTATION, PROPOSALS, AND/OR DEMONSTRATIONS GIVEN TO MAINEDOT.

23. SALVAGE RIGHTS

MAINEDOT SHALL HAVE FIRST RIGHTS TO ALL EQUIPMENT REMOVED OR REPLACED BY THE PROJECT (CONTACT BROOKE GLIDDEN AT BROOKE.GLIDDEN@MAINE.GOV). THE LOCAL MUNICIPALITIES SHALL HAVE SECOND SALVAGE RIGHTS TO ALL EQUIPMENT NOT CLAIMED BY MAINEDOT. THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ALL EQUIPMENT CLAIMED BY EITHER MAINEDOT OR THE MUNICIPALITY FOR RETRIEVAL BY MAINEDOT OR THE MUNICIPALITY. THE STORAGE AREA SHALL BE SECURE AND ALL CONTROL EQUIPMENT REMOVED THAT HAS COMPUTER CHIP TECHNOLOGY SHALL BE STORED IN AN INTERIOR CLIMATE CONTROLLED ENVIRONMENT.
ANY EQUIPMENT NOT CLAIMED BY EITHER MAINEDOT OR THE MUNICIPALITY FOR SALVAGE SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN A MANNER ACCEPTABLE TO THE RESIDENT.

24. THE RESIDENT AND MAINEDOT SHALL HAVE THE RIGHT AND AUTHORITY TO DETERMINE THE ACCEPTABILITY OF WORK AND MATERIALS IN PROGRESS OR COMPLETED AND SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIALS WHICH DO NOT CONFORM, IT ITS SOLE OPINION, TO THE PLANS OR SPECIFICATIONS.

25. THE MAINTENANCE OF TRAFFIC SIGNALS SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY MAINEDOT.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING RED-LINE AS-BUILT DRAWINGS OF THE FINAL WORK TO THE RESIDENT. THOSE DRAWINGS SHALL BE ON A CLEAN SET OF PLANS SHOWING ALL CHANGES OR MODIFICATIONS TO THE BID PLANS.

27. THE CONTRACTOR SHALL REMAIN ALERT FOR ANY EVIDENCE OF CONTAMINATED SOILS. THE CONTRACTOR SHALL EMPLOY APPROPRIATE HEALTH AND SAFETY MEASURES TO PROTECT ITS WORKERS AGAINST HAZARDS ASSOCIATED WITH EXCAVATING AND WORKING NEAR CONTAMINATED SOILS. IF THE CONTRACTOR ENCOUNTERS EVIDENCE OF SOIL OR GROUNDWATER CONTAMINATION, THE CONTRACTOR SHALL SECURE THE EXCAVATION, STOP WORK IN THE CONTAMINATED AREA, AND IMMEDIATELY NOTIFY THE RESIDENT. THE RESIDENT SHALL CONTACT THE HYDROGEOLOGIST IN MAINEDOT S ENVIRONMENTAL OFFICE AT 207-624-3100 AND THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION AT 800-482-0777. WORK MAY ONLY CONTINUE WITH AUTHORIZATION FROM THE RESIDENT.

28. THE CONTRACTOR IS DIRECTED TO PROJECT SPECIAL PROVISION 718 FOR ADDITIONAL INFORMATION RELATED TO THE FOLLOWING:

- 718.13 TRAFFIC SIGNAL CONTROL SYSTEM
- 718.14 FIELD MONITORING UNIT (NOTE: DIFFERS FROM MAINEDOT REPAIR SPEC)
- 718.15 EMERGENCY VEHICLE PREEMPTION SYSTEM

SPECIAL PROVISION 718 EXPANDS UPON THE INFORMATION FOUND IN THESE GENERAL NOTES, MAINEDOT STANDARD SPECIFICATIONS DATED MARCH 2020, AND MAINEDOT STANDARD DETAILS DATED MARCH 2020. AS SUCH, THE MORE RESTRICTIVE LANGUAGE BETWEEN THESE GENERAL NOTES, MAINEDOT STANDARD SPECIFICATIONS, MAINEDOT STANDARD DETAILS, AND SPECIAL PROVISION 718 SHALL GOVERN THE WORK TO BE PERFORMED UNDER THIS PROJECT.

29. RIGHT-OF-WAY

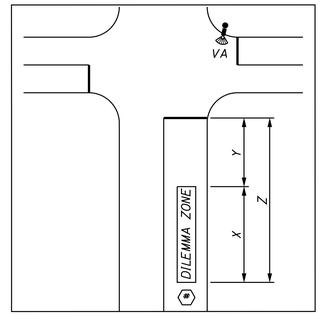
RIGHT-OF-WAY WHERE NOTED IN THE PLANS IS APPROXIMATE.

30. OVERLAPPING PROJECTS (BY OTHERS) TO BE COORDINATED

THE CONTRACTOR AND RESIDENT ARE TO BE AWARE OF, AND COORDINATE WITH, THE BULLETED KNOWN PROJECTS THAT OVERLAP WITH THE FOLLOWING ATCMTD PROJECT INTERSECTIONS:

- ARUNDEL (LOCATION 2) WIN 022823.00
- FALMOUTH (LOCATION 10) WIN 022672.00
- FREEPORT (LOCATION 12) WIN 021726.01
- KITTERY (LOCATION 17) WIN 025435.00
- LEBANON (LOCATION 19) WIN 025955.04
- OXFORD (LOCATIONS 28 AND 29) WIN 026244.00
- RAYMOND (LOCATIONS 31 AND 32) WIN 026242.00
- ROCKPORT (LOCATION 34) WIN 025955.03
- SABATTUS (LOCATION 35) WIN 025955.01
- YARMOUTH (LOCATION 43) WIN 023825.00

SEE SPECIAL PROVISION 105 (COOPERATION BETWEEN CONTRACTORS) FOR ADDITIONAL INFORMATION.



SPEED MILES PER HOUR	X (DISTANCE)	Y (DISTANCE)	Z (DISTANCE)
35	152'	102'	254'
40	162'	122'	284'
45	175'	152'	327'
50	181'	172'	353'
55	152'	234'	386'

ADVANCE DILEMMA ZONE SETUP

SOURCE: TRAFFIC DETECTOR HANDBOOK: THIRD EDITION - VOLUME 1

MANCHESTER
DAILY AND WEEKLY COORDINATION SCHEDULE

	MON.-FRI.	SATURDAY	SUNDAY
NTCIP PATTERN 254 FREE OPERATIONS MAX 1	0000 - 0645 0830 - 1530 1745 - 2400	0000 - 1100 1300 - 2400	0000 - 2400
PATTERN 1 60/120 SECS (AM) MAX 2	0645 - 0830	-	-
PATTERN 2 110 SECS (PM/WEEKEND) MAX 2	1530 - 1745	1100 - 1300	-
PATTERN 11 120 SECS (CONDITIONAL) MAX 2	-	-	-
PATTERN 12 110 SECS (CONDITIONAL) MAX 2	-	-	-

MANCHESTER LOCATION 25
COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PATTERN 1	PATTERN 2	PATTERN 11	PATTERN 12	
CYCLE LENGTH	120	110	120	110	COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET	0	0	0	0	
COORDINATED ϕ	ϕ 6	ϕ 6	ϕ 6	ϕ 2	
SPLIT TIME ϕ 1	16	16	16	16	
SPLIT TIME ϕ 2	46	41	46	41	
SPLIT TIME ϕ 3	27	27	27	27	
SPLIT TIME ϕ 4	31	26	31	26	
SPLIT TIME ϕ 5	16	16	16	21	
SPLIT TIME ϕ 6	46	41	46	36	
SPLIT TIME ϕ 7	0	0	0	0	
SPLIT TIME ϕ 8	0	0	0	0	

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE GREEN (SEE TABLE ABOVE).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE DAILY AND WEEKLY COORDINATION SCHEDULE ON ABOVE) UNLESS PEER-TO-PEER PROGRAMMING IS ACTIVE.
3. PATTERN 11 AND 12 ARE TO BE PROGRAMMED AND RESERVED FOR CONDITIONAL USE.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	REVISIONS 1	
CHECKED-REVIEWED	C. BOBAY	REVISIONS 2	
DESIGN2-DETAILED2	J. ROBERT	REVISIONS 3	
DESIGN3-DETAILED3	C. BOBAY	REVISIONS 4	
		FIELD CHANGES	

	BY	DATE
B. KEEZER		
J. READY	J. ROBERT	07/21
C. BOBAY	C. BOBAY	07/21
J. ROBERT	C. BOBAY	02/23

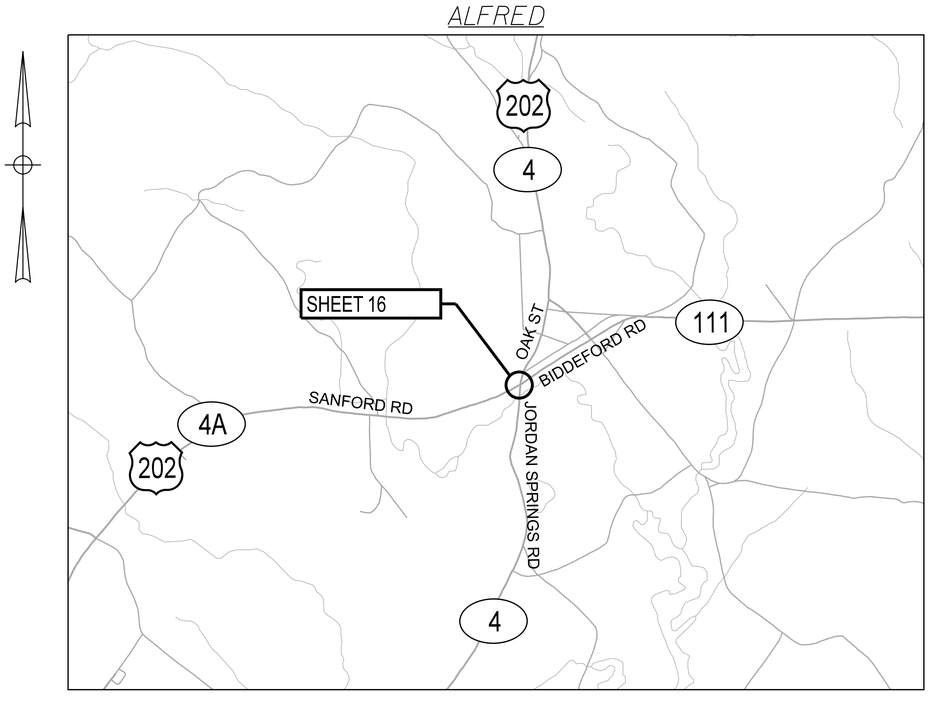
STATEWIDE

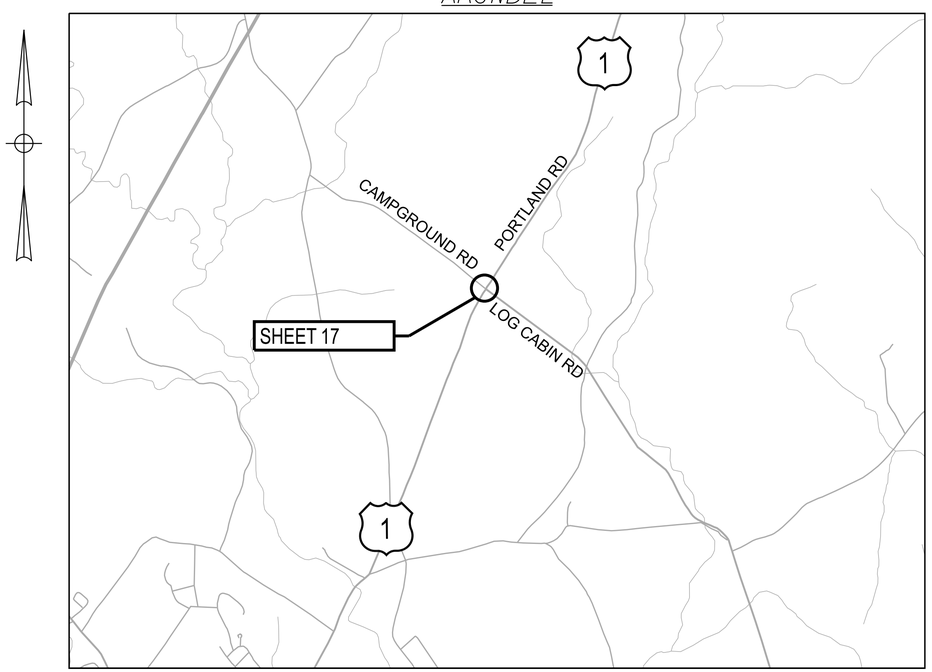
GENERAL NOTES

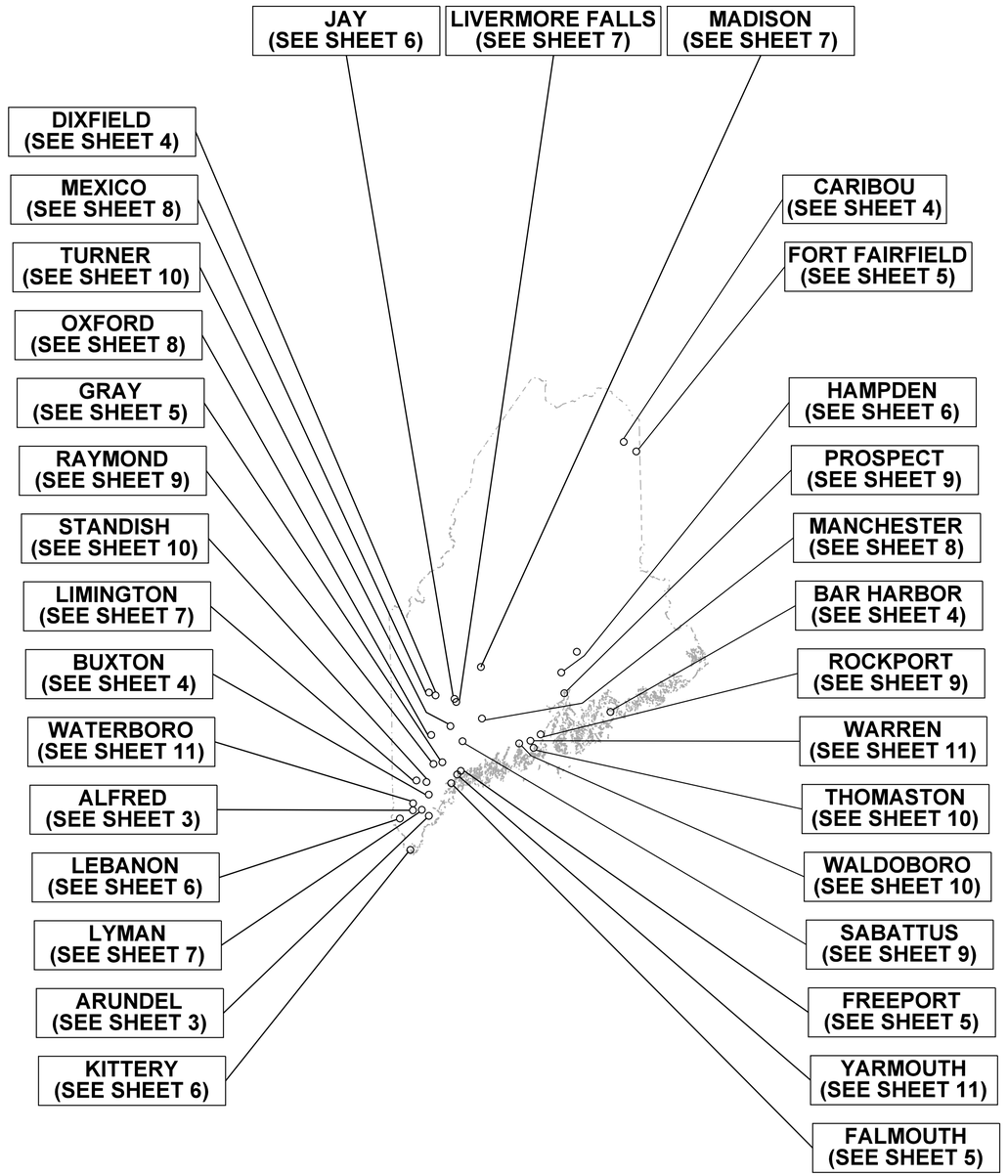
SHEET NUMBER

2

OF 60







PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

LOCATION MAPS
(1 OF 9)

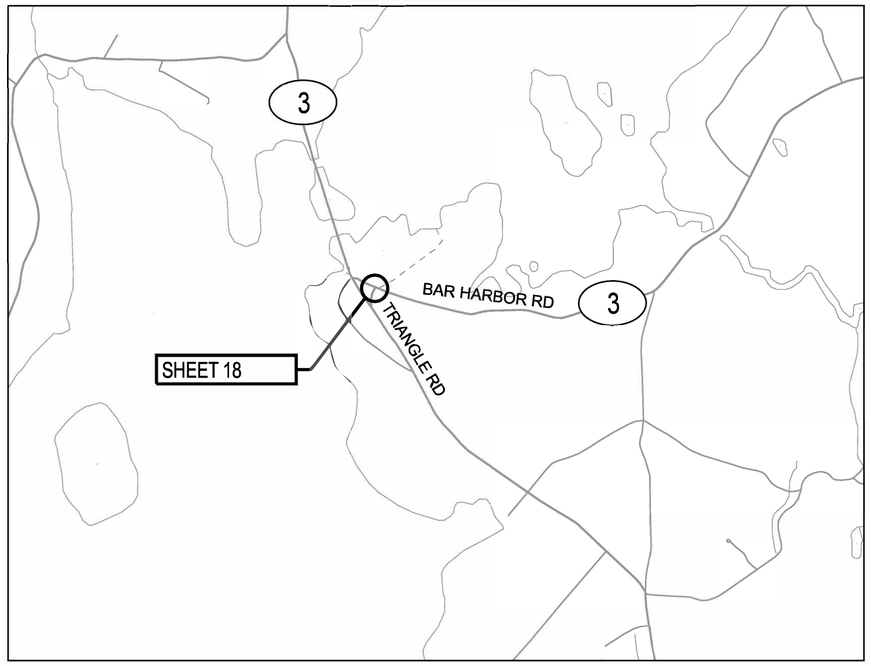
SHEET NUMBER

3

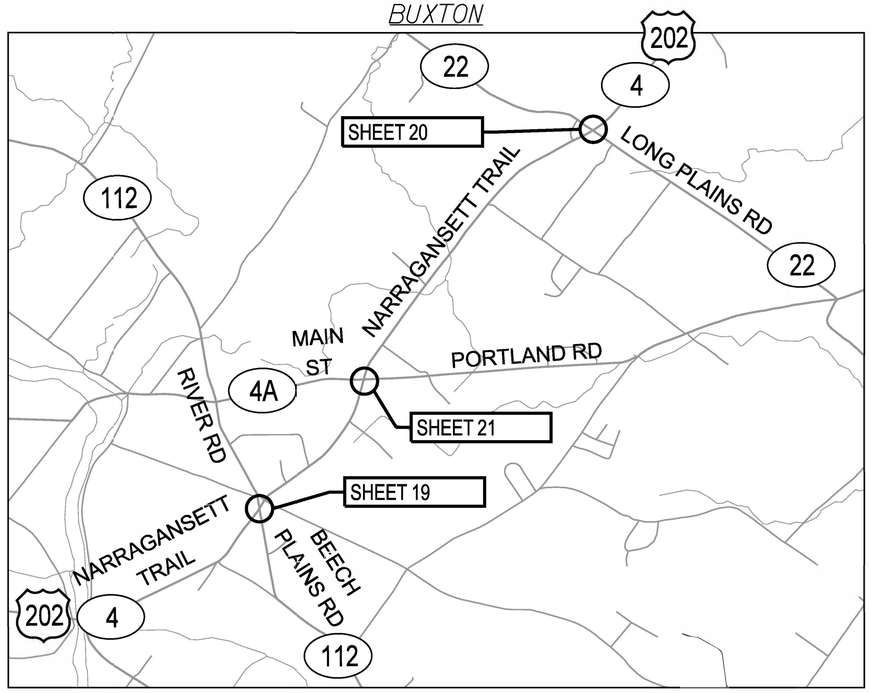
OF 60

Filename: 003_Map_01.dgn Division: HIGHWAY Username: jorobert Date:6/8/2023

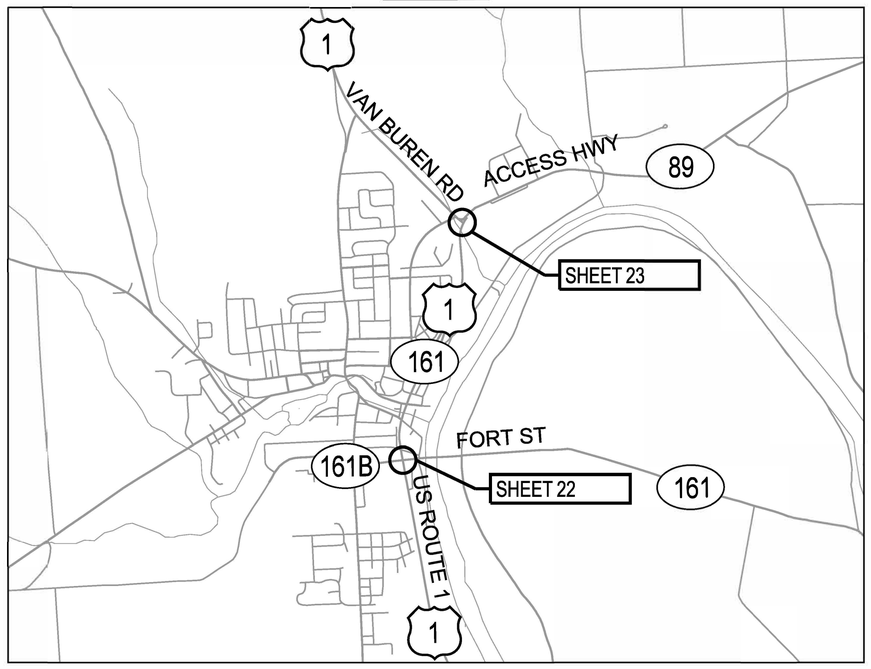
BAR HARBOR



BUXTON



CARIBOU

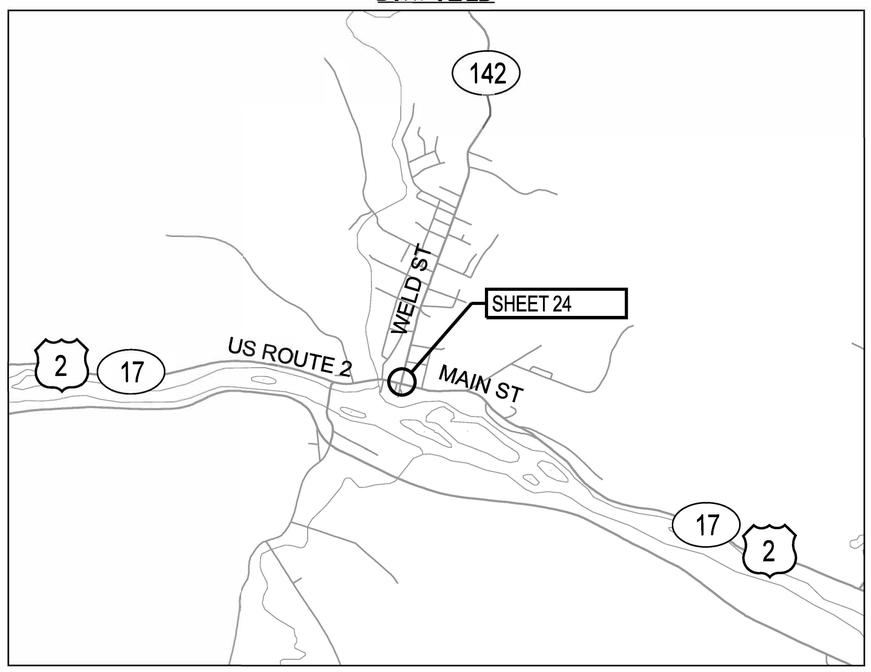


PLAN

2000 0 2000 4000

Scale of Feet

DIXFIELD



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	BY
CHECKED-REVIEWED	C. BOBAY	J. ROBERT 07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 07/21
DESIGN3-DETAILED3		C. BOBAY 02/23
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

LOCATION MAPS
(2 OF 9)

SHEET NUMBER

4

OF 60

PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	J. ROBERT 07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY 07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

LOCATION MAPS
(3 OF 9)

SHEET NUMBER

5

OF 60

Filename: 005_Map_03.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	BY
CHECKED-REVIEWED	C. BOBAY	J. ROBERT
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY
DESIGN3-DETAILED3		C. BOBAY
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

DATE
07/21
07/21
02/23

STATEWIDE

LOCATION MAPS
(4 OF 9)

SHEET NUMBER

6

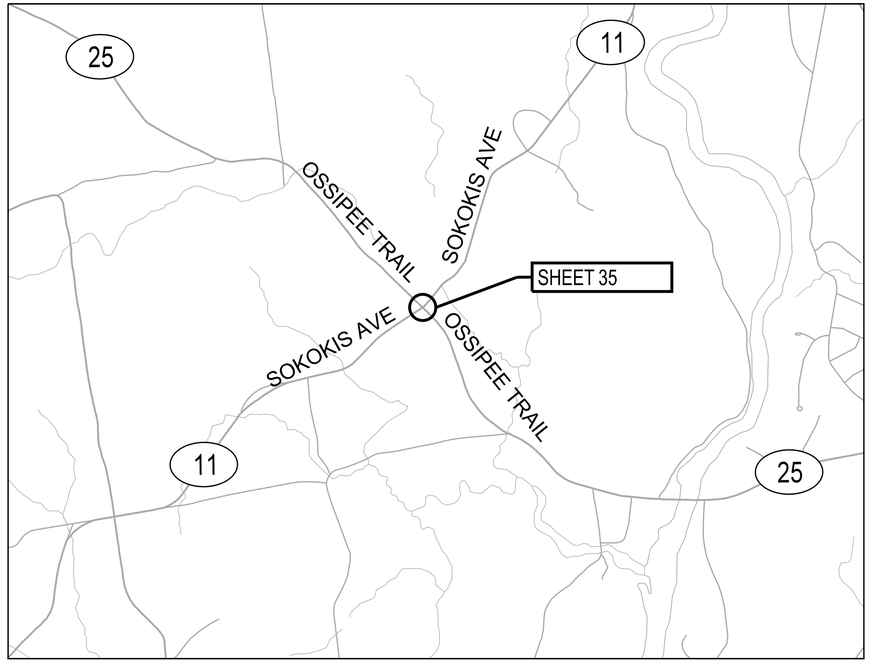
OF 60

Username: jorobert Date:5/17/2023

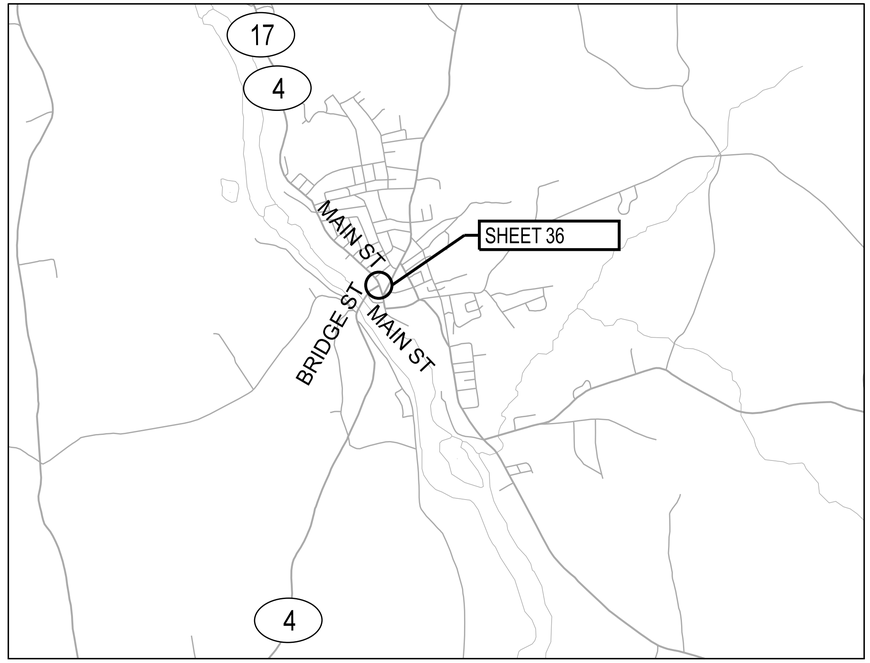
Division: HIGHWAY

Filename: 006_Map_04.dgn

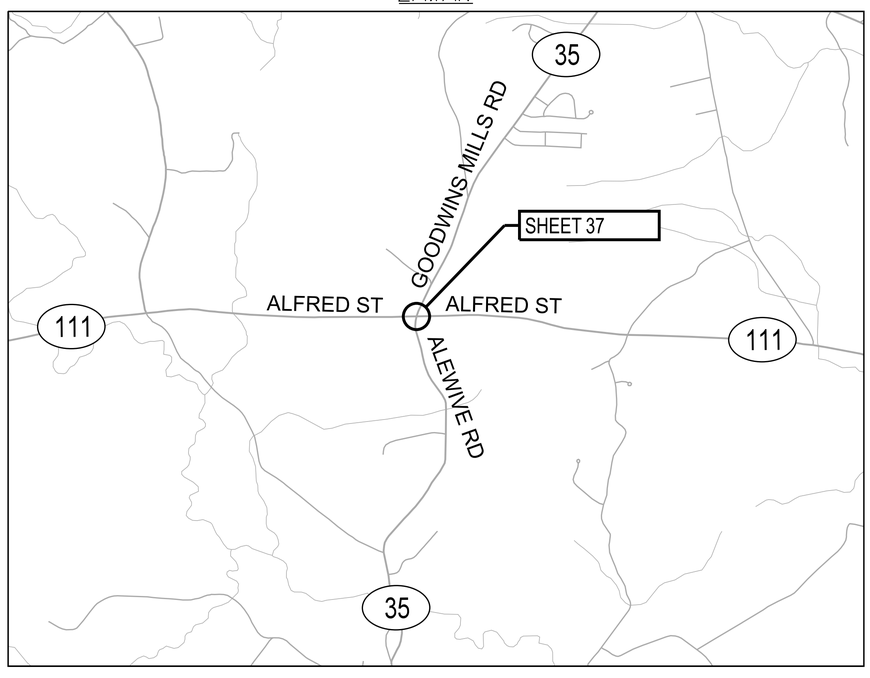
LIMINGTON



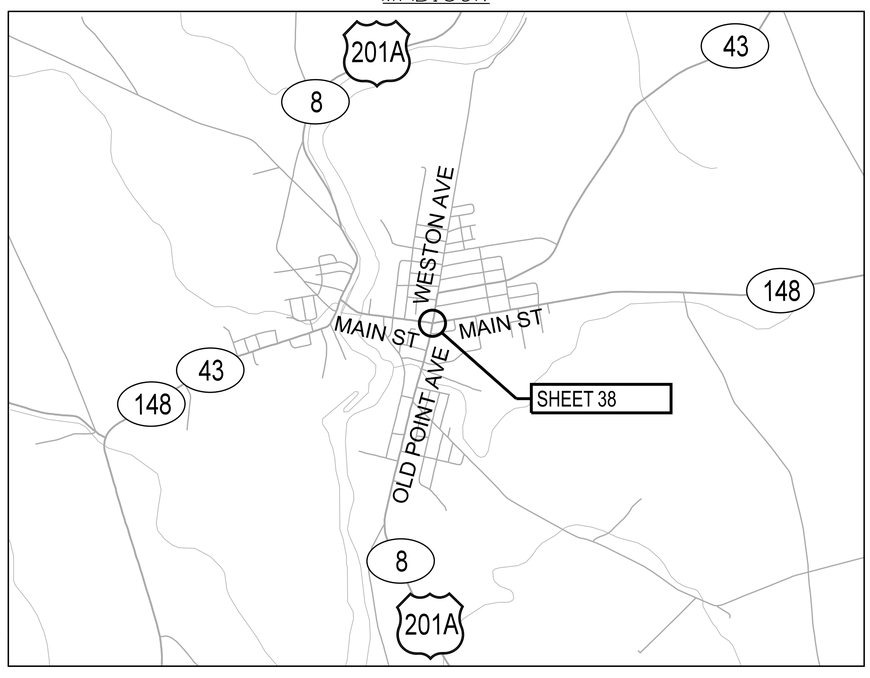
LIVERMORE FALLS



LYMAN



MADISON



PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

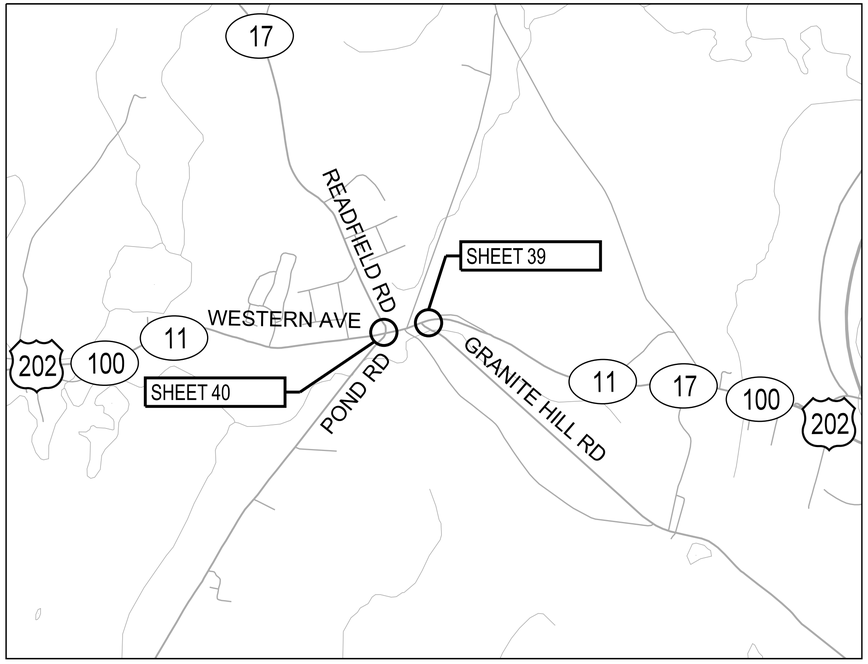
LOCATION MAPS
(5 OF 9)

SHEET NUMBER

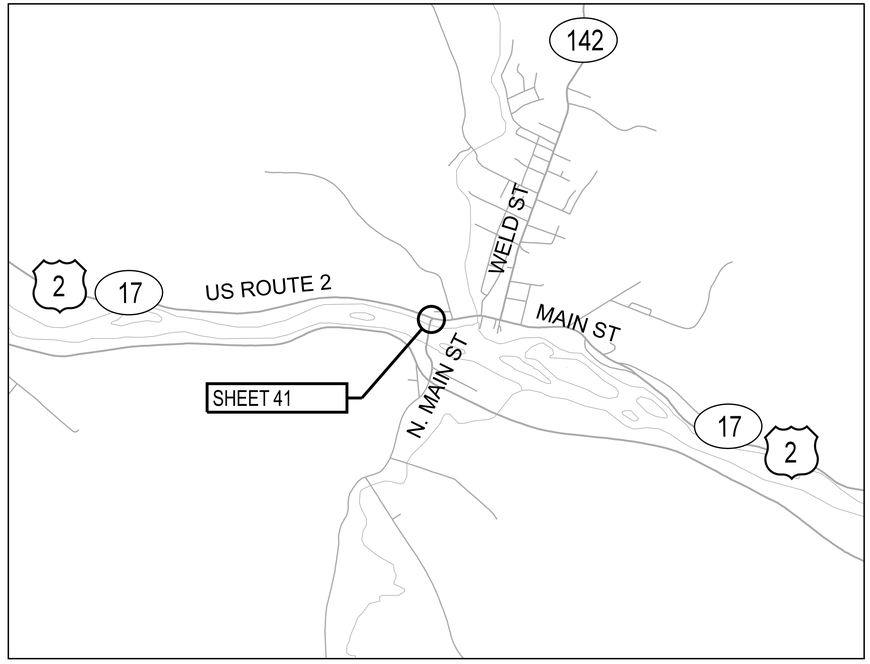
7

OF 60

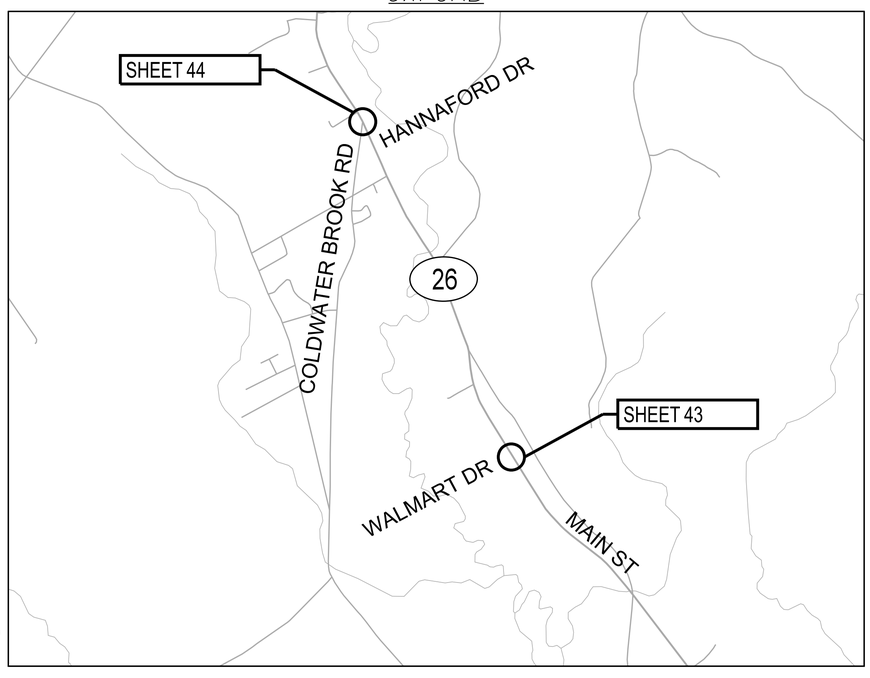
MANCHESTER



MEXICO



OXFORD



PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

LOCATION MAPS
(6 OF 9)

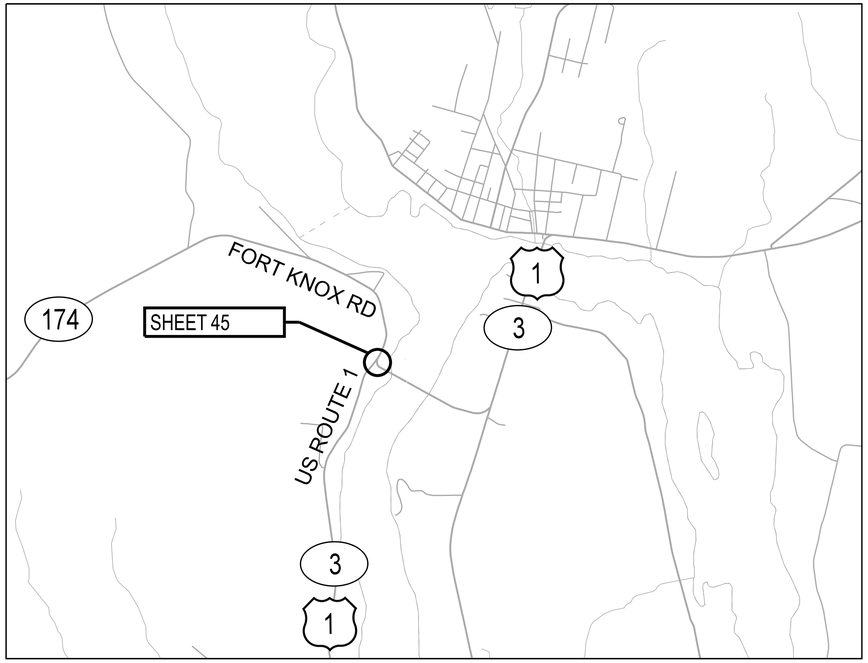
SHEET NUMBER

8

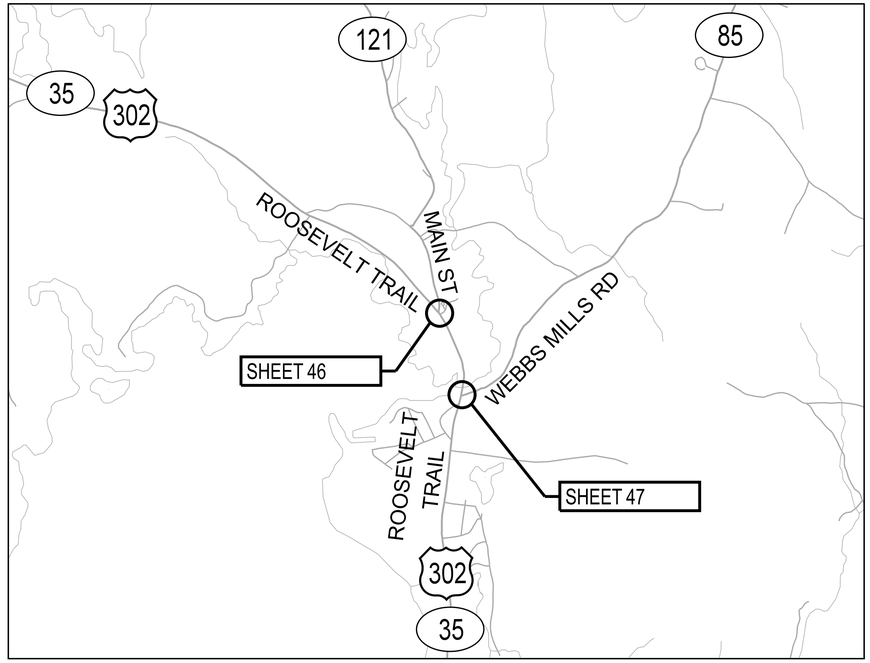
OF 60

Username: jorobert
Date:5/17/2023
Division: HIGHWAY
Filename: 009_Map_07.dgn

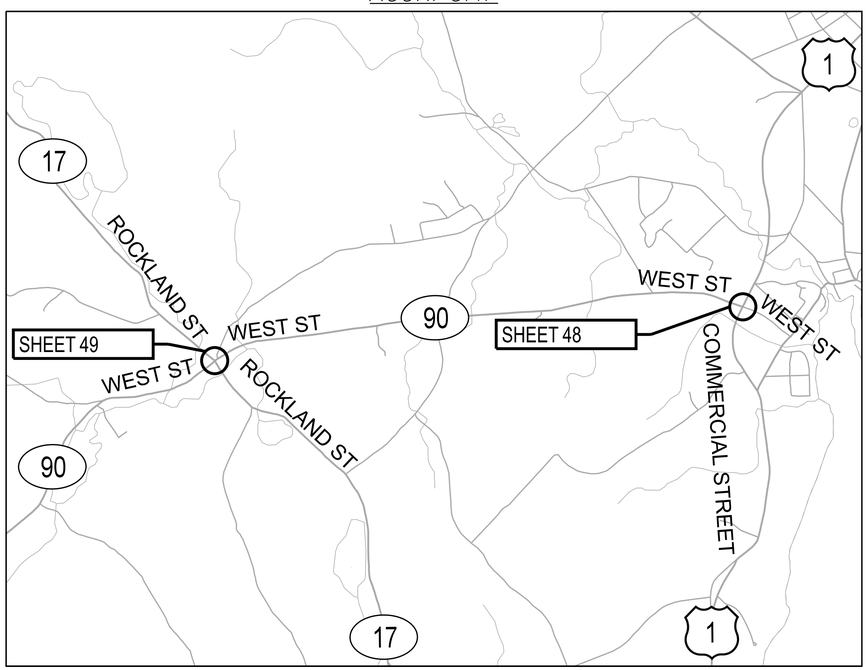
PROSPECT



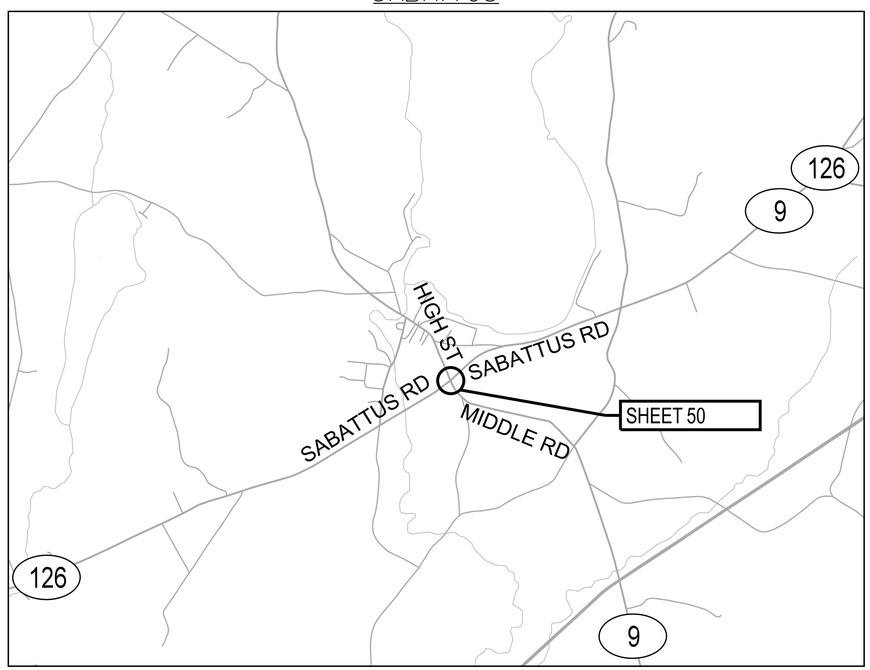
RAYMOND



ROCKPORT



SABATTUS



PLAN

2000 0 2000 4000

Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	BY
CHECKED-REVIEWED	C. BOBAY	J. ROBERT 07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 07/21
DESIGN3-DETAILED3		C. BOBAY 02/23
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

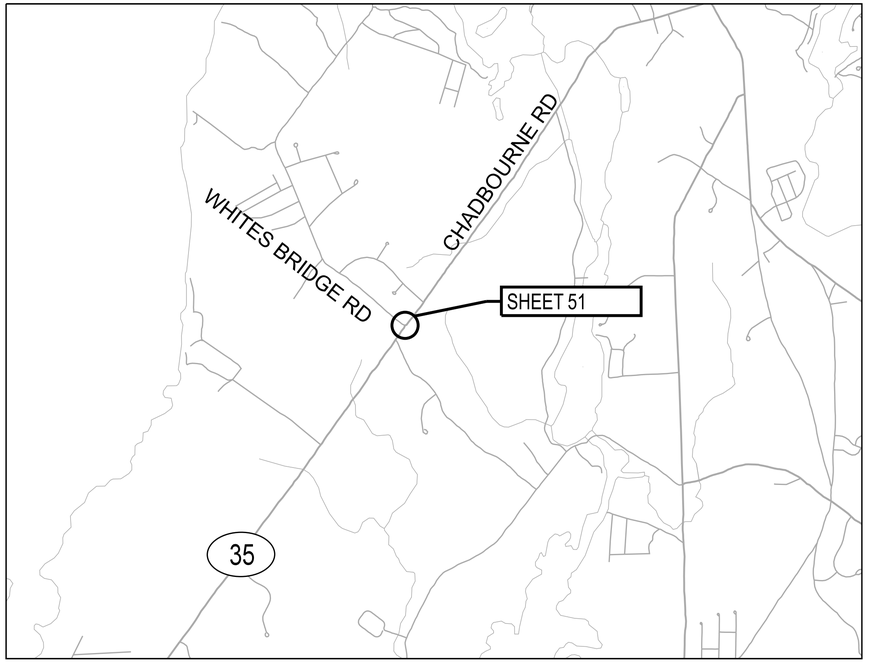
LOCATION MAPS
(7 OF 9)

SHEET NUMBER

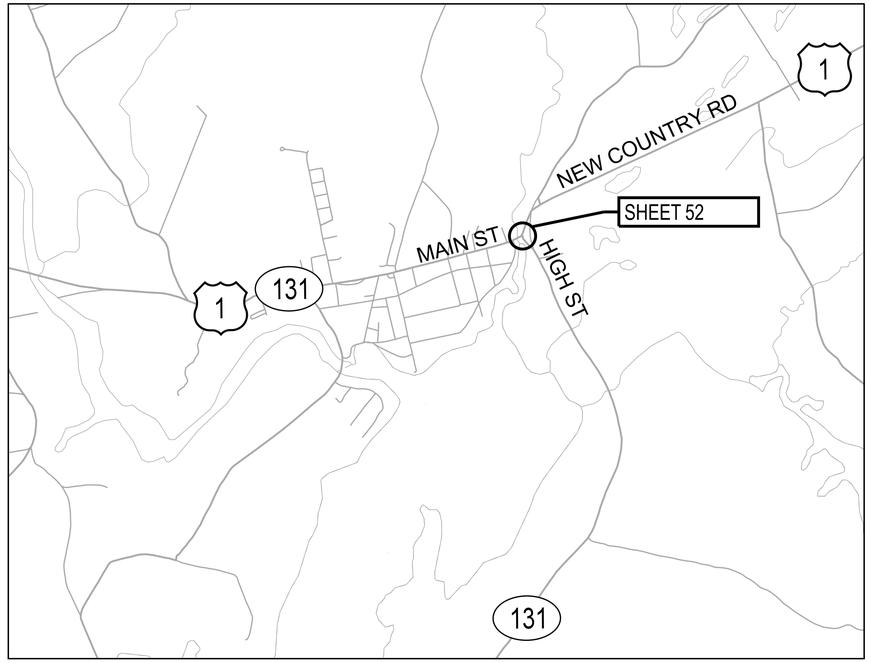
9

OF 60

STANDISH

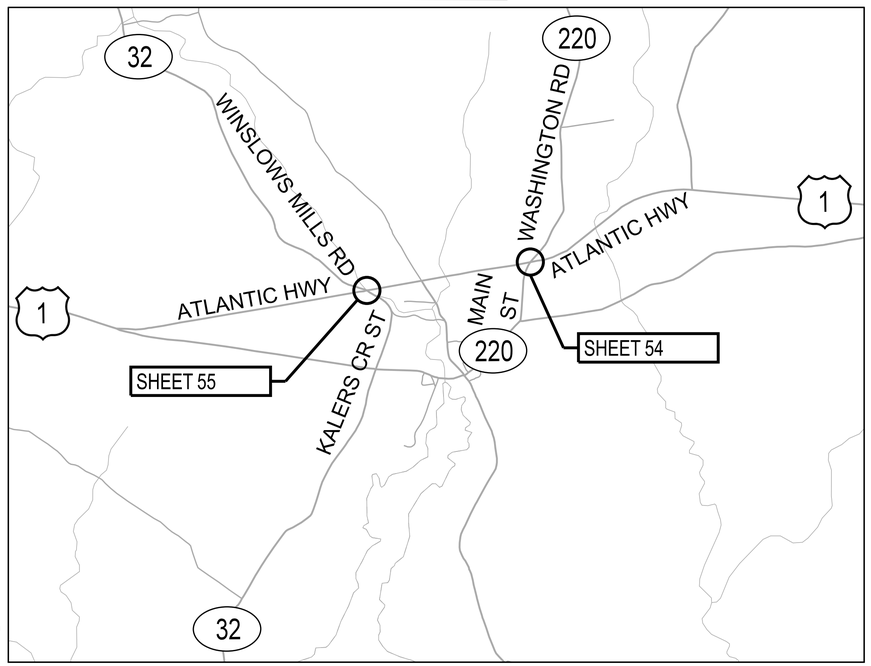


THOMASTON



TURNER

WALDOBORO



PLAN

2000 0 2000 4000
Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

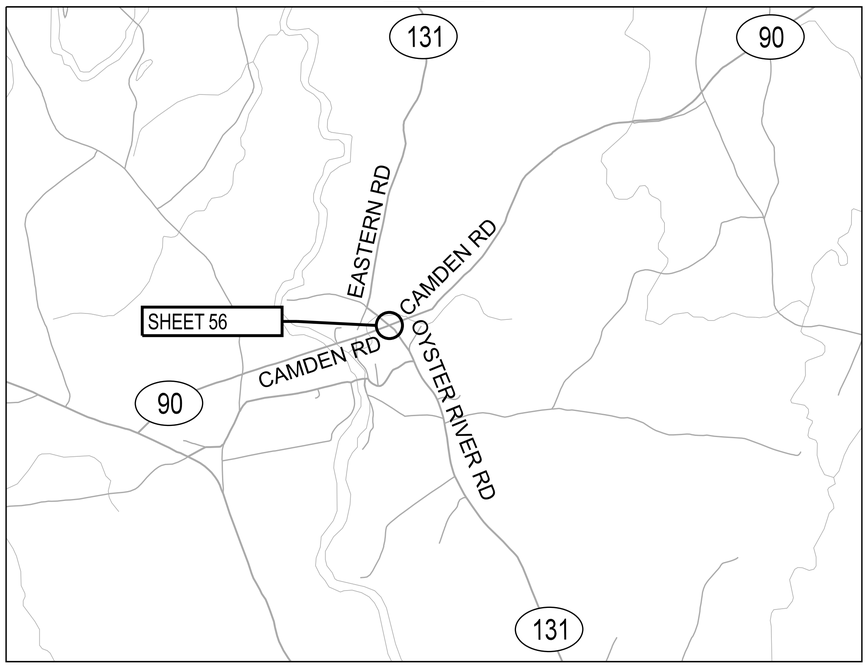
LOCATION MAPS
(8 OF 9)

SHEET NUMBER

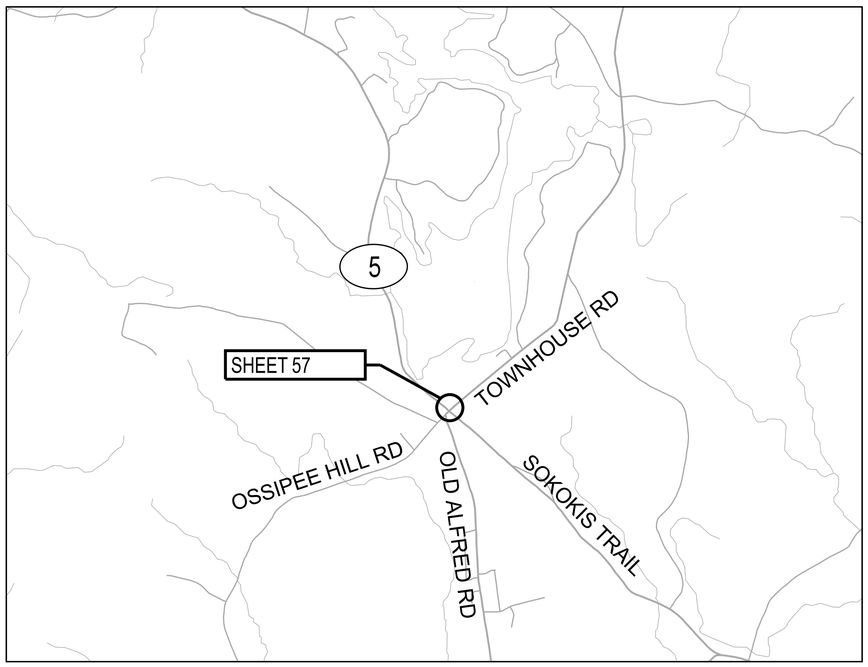
10

OF 60

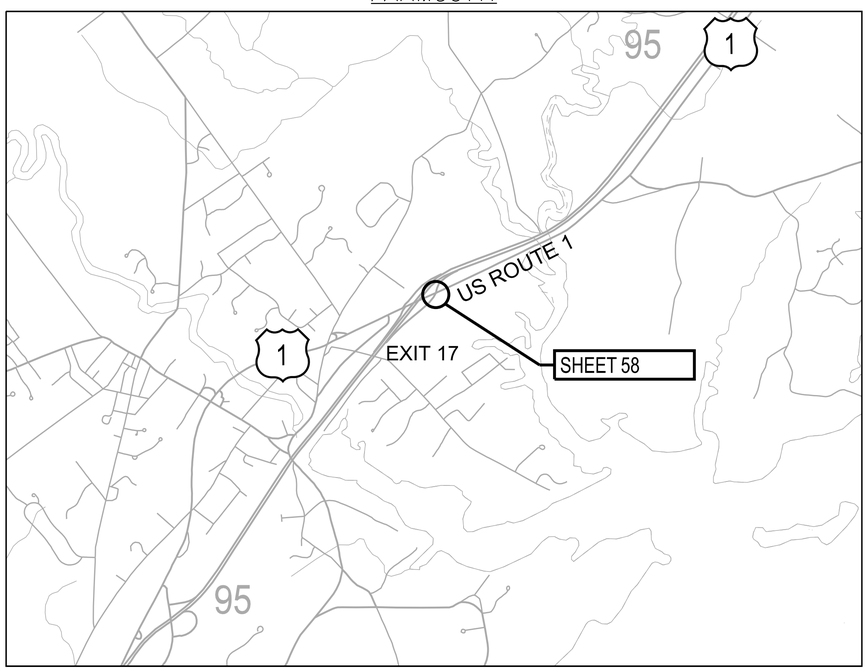
WARREN



WATERBORO



YARMOUTH



PLAN

2000 0 2000 4000
Scale of Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

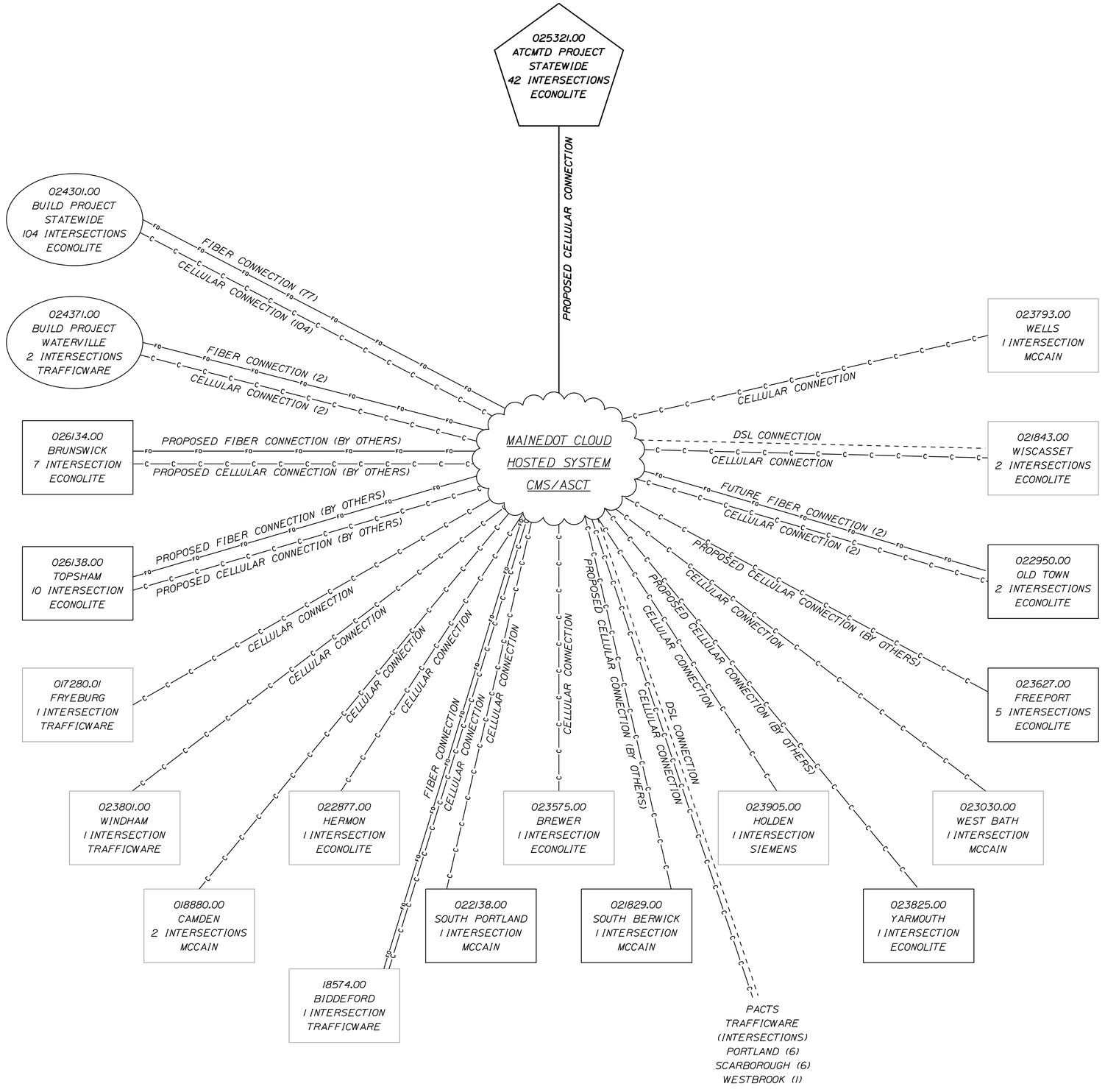
LOCATION MAPS
(9 OF 9)

SHEET NUMBER

11

OF 60

STATE WIDE SYSTEM



LEGEND

- ATCMTD PROJECT
- BUILD PROJECT
- EXISTING INTERSECTION
- PROPOSED OR UNDER CONSTRUCTION INTERSECTION
- CELLULAR CONNECTION
- DSL CONNECTION
- FIBER CONNECTION

* - ADDITIONALLY MAINEDOT TMC HAS SECONDARY MONITORING FMU CELLULAR CONNECTION TO BIDDEFORD (1 INTERSECTION), SCARBOROUGH (5 INTESECTIONS), PORTLAND (6 INTERSECTIONS). THESE INTERSECTIONS ARE PRIMARILY MONITORED THROUGH PACTS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

MAINEDOT CLOUD HOSTED NETWORK (1 OF 4)

SHEET NUMBER

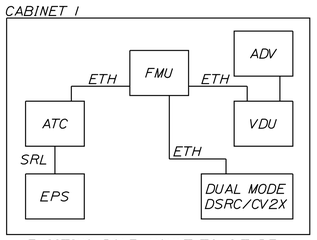
12

OF 60

Filename: 012_Comm_01.dgn Username: jorobert Division: HIGHWAY Date:6/8/2023

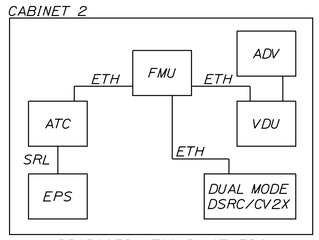
STATE WIDE SYSTEM

LOCATION 1
ALFRED
BIDDEFORD RD, JORDAN SPRINGS RD,
OAK ST, SANFORD RD



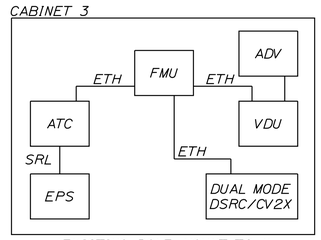
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 2
ARUNDEL
PORTLAND RD (US ROUTE 1),
CAMPGROUND RD, LOG CABIN RD



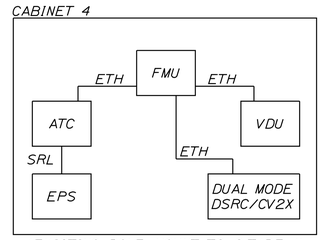
(PROPOSED ATCC BY OTHERS)

LOCATION 3
BAR HARBOR
BAR HARBOR RD (ROUTE 3),
TRIANGLE RD



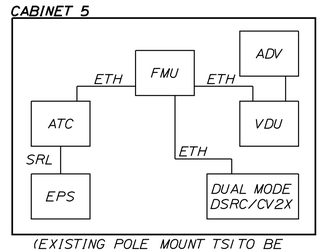
(EXISTING POLE MOUNT TS 1)

LOCATION 4
BUXTON
NARRAGANSETT TRAIL,
BEECH PLAINS RD



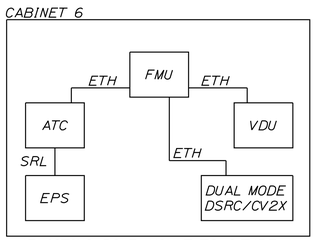
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 5
BUXTON
NARRAGANSETT TRAIL,
LONG PLAINS RD



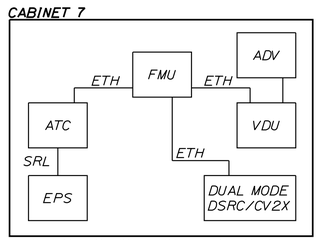
(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 54)

LOCATION 6
BUXTON
NARRAGANSETT TRAIL,
MAIN ST, PORTLAND RD



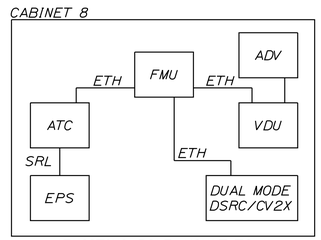
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 7
CARIBOU
VAN BUREN RD (US ROUTE 1),
FORT ST



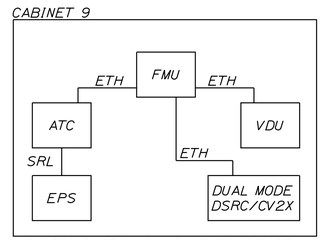
(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 44)

LOCATION 8
CARIBOU
VAN BUREN RD (US ROUTE 1),
ACCESS HIGHWAY



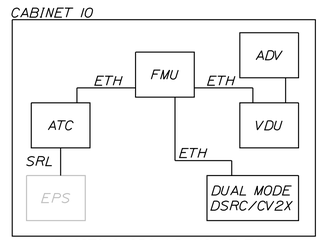
(EXISTING POLE MOUNT TS 1)

LOCATION 9
DIXFIELD
MAIN ST (US ROUTE 2),
WELD ST (ROUTE 142)



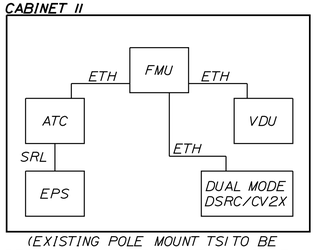
(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 10
FALMOUTH
BUCKNAM RD,
EXIT 10 NB RAMPS



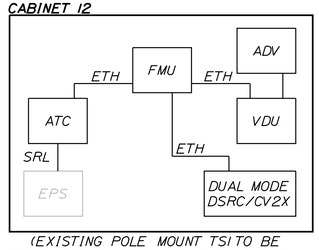
(EXISTING GROUND MOUNT TS 1)

LOCATION 11
FORT FAIRFIELD
PRESQUE ISLE ST, BRIDGE ST,
HIGH ST, MAIN ST



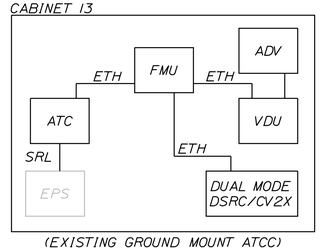
(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 97)

LOCATION 12
FREEPORT
DESERT RD, LOWER MAIN ST,
US ROUTE 1



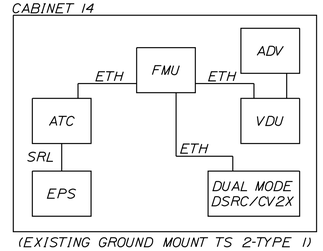
(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 94)

LOCATION 13
GRAY
SHAKER RD (ROUTE 26),
N RAYMOND RD



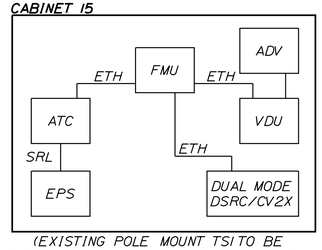
(EXISTING GROUND MOUNT ATCC)

LOCATION 14
HAMPDEN
US ROUTE 202,
WESTERN AVE (ROUTE 9)

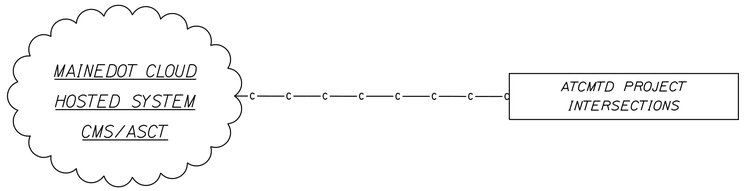


(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 15
HAMPDEN
US ROUTE 202,
COLDBROOK RD



(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 46)



LEGEND

ADV -	ADVANCE VEHICLE DETECTION
ATC -	ADVANCED TRANSPORTATION CONTROLLER
CV2X -	CELLULAR VEHICLE-TO-EVERYTHING
DSRC -	DEDICATED SHORT RANGE COMMUNICATIONS
ETH -	ETHERNET CABLE
SRL-	SERIAL TWISTED PAIR CONNECTION
EPS -	EMERGENCY PREEMPTION SYSTEM
FMU -	FIELD MONITORING UNIT
VDU -	NON-INVASIVE VIDEO DETECTION UNIT
▭	EXISTING EQUIPMENT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	BY	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

MAINEDOT CLOUD HOSTED NETWORK (2 OF 4)

SHEET NUMBER

13

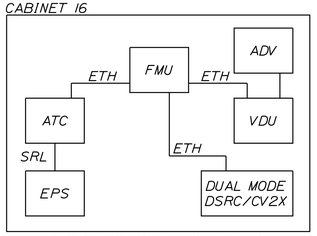
OF 60

Filename: 013_Comm_02.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

STATE WIDE SYSTEM

LOCATION 16
JAY
MAIN ST (ROUTE 4), RILEY RD

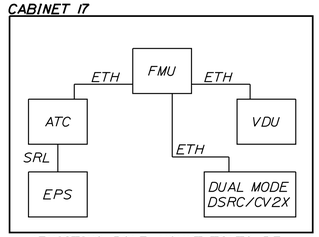
CABINET 16



(EXISTING POLE MOUNT TS 1)

LOCATION 17
KITTERY
US ROUTE 1, MAIN OUTLET, SHOPPING CENTER DR

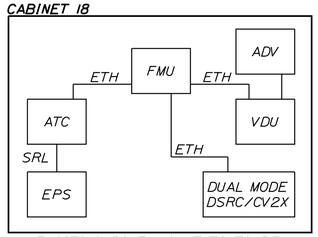
CABINET 17



(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 14)

LOCATION 18
LEBANON
CARL BROGGI HWY (US ROUTE 202), W. LEBANON RD, HUBBARD RD

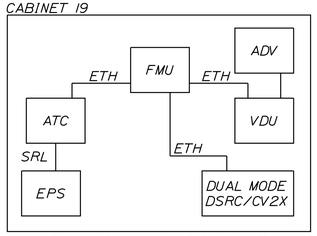
CABINET 18



(EXISTING POLE MOUNT TS1TO BE REPLACED BY POLE MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 09)

LOCATION 19
LEBANON
CARL BROGGI HWY (US ROUTE 202), DEPOT RD, LITTLE RIVER RD

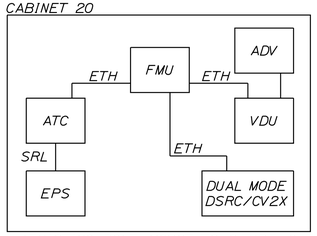
CABINET 19



(EXISTING POLE MOUNT TS 1)

LOCATION 20
LIMINGTON
OSSIPEE TRAIL (ROUTE 25), SOKOKIS AVE (ROUTE 11)

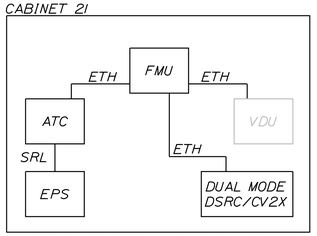
CABINET 20



(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 21
LIVERMORE FALLS
MAIN ST (ROUTE 4), BRIDGE ST

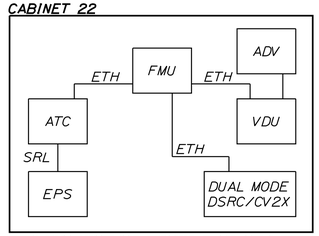
CABINET 21



(EXISTING PEDESTAL MOUNT TS 2-TYPE 1)

LOCATION 22
LYMAN
ALFRED ST (ROUTE 111), ALEWIVE RD, GOODWINS MILLS RD

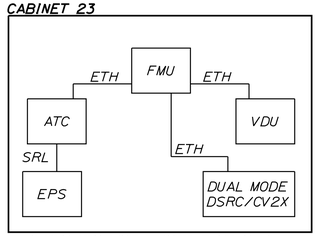
CABINET 22



(EXISTING POLE MOUNT TS1TO BE REPLACED BY PEDESTAL MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 15)

LOCATION 23
MADISON
MAIN ST (ROUTE 148), OLD POINT AVE, WESTON AVE

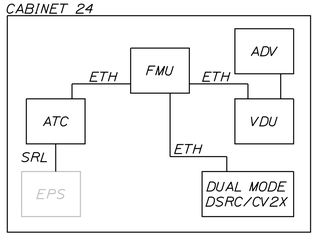
CABINET 23



(EXISTING POLE MOUNT TS1TO BE REPLACED BY PEDESTAL MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 12)

LOCATION 24
MANCHESTER
US ROUTE 202, ROUTE 100, ROUTE 11 (WESTERN AVE), GRANITE HILL RD

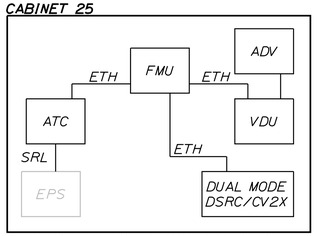
CABINET 24



(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 25
MANCHESTER
US ROUTE 202, ROUTE 100, ROUTE 11 (WESTERN AVE), ROUTE 17 (READFIELD RD), POND RD

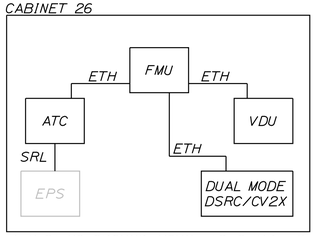
CABINET 25



(EXISTING POLE MOUNT TS1TO BE REPLACED BY PEDESTAL MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 93)

LOCATION 26
MEXICO
RIVER RD (US ROUTE 2), N. MAIN ST

CABINET 26



(EXISTING GROUND MOUNT TS 2-TYPE 1)

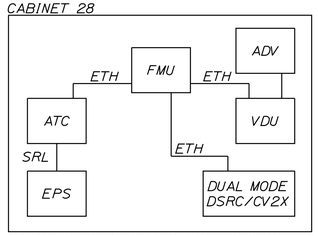
LOCATION 27
FUTURE

CABINET 27

RESERVED FOR FUTURE INTERSECTION

LOCATION 28
OXFORD
MAIN ST (ROUTE 26), WALMART DR

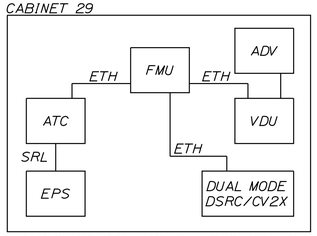
CABINET 28



(EXISTING PEDESTAL MOUNT TS 2-TYPE 1)

LOCATION 29
OXFORD
MAIN ST (ROUTE 26), COLDWATER BROOK RD, HANNAFORD DR

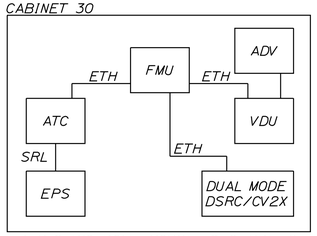
CABINET 29



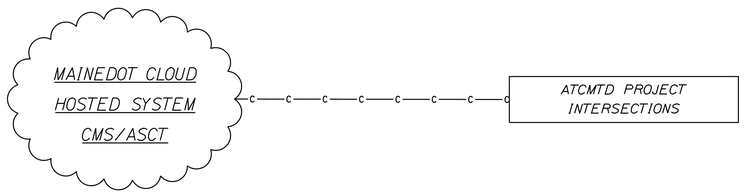
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 30
PROSPECT
US ROUTE 1, FORT KNOX RD

CABINET 30



(EXISTING POLE MOUNT TS 2-TYPE 1)



LEGEND

ADV -	ADVANCE VEHICLE DETECTION
ATC -	ADVANCED TRANSPORTATION CONTROLLER
CV2X -	CELLULAR VEHICLE-TO-EVERYTHING
DSRC -	DEDICATED SHORT RANGE COMMUNICATIONS
ETH -	ETHERNET CABLE
SRL-	SERIAL TWISTED PAIR CONNECTION
EPS -	EMERGENCY PREEMPTION SYSTEM
FMU -	FIELD MONITORING UNIT
VDU -	NON-INVASIVE VIDEO DETECTION UNIT
▭	EXISTING EQUIPMENT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STATEWIDE

MAINEDOT CLOUD HOSTED NETWORK (3 OF 4)

SHEET NUMBER

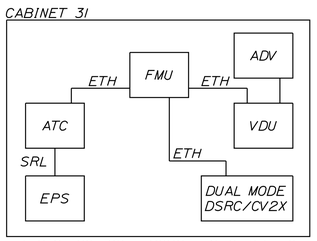
14

OF 60

Division: HIGHWAY
Username: jorobert
Date:6/8/2023
Filename: 014_Comm_03.dgn

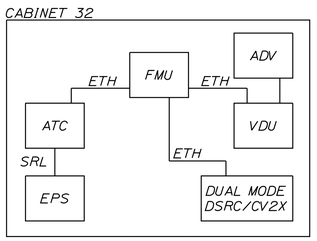
STATE WIDE SYSTEM

LOCATION 31
RAYMOND
ROOSEVELT TRAIL (US ROUTE 302),
MAIN ST (ROUTE 121)



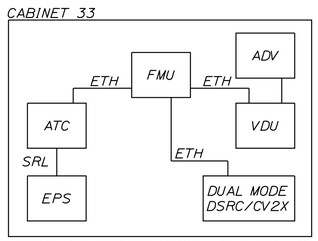
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 32
RAYMOND
ROOSEVELT TRAIL (US ROUTE 302),
WEBBS MILLS RD (ROUTE 85)



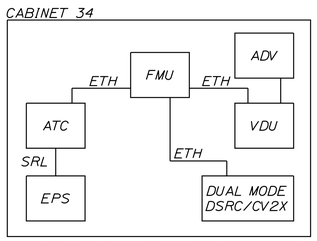
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 33
ROCKPORT
COMMERCIAL ST (US ROUTE 1),
WEST ST (ROUTE 90)



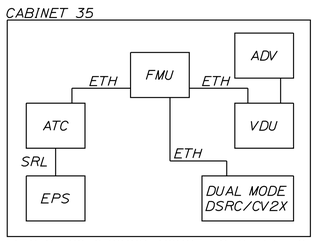
(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 34
ROCKPORT
ROCKLAND ST (ROUTE 17),
WEST ST (ROUTE 90)



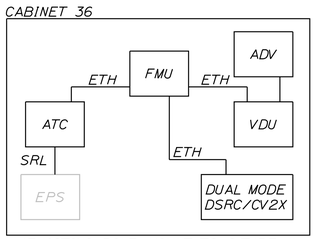
(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 35
SABATTUS
SABATTUS RD (ROUTE 126),
HIGH ST, MIDDLE ST



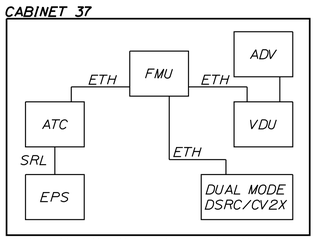
(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 36
STANDISH
CHADBOURNE RD (ROUTE 35),
WHITES BRIDGE RD



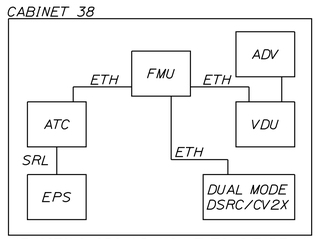
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 37
THOMASTON
MAIN ST (US ROUTE 1),
NEW COUNTRY RD (US ROUTE 1), HIGH ST



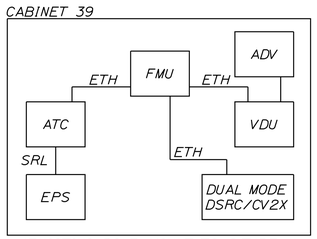
(EXISTING POLE MOUNT TSI TO BE REPLACED BY PEDESTAL MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 16)

LOCATION 38
TURNER
AUBURN RD (ROUTE 4),
SNELL HILL RD, MAIN ST



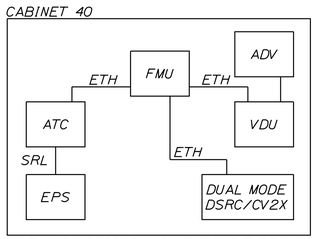
(EXISTING GROUND MOUNT TS 2-TYPE 1)

LOCATION 39
WALDOBORO
ATLANTIC HWY (US ROUTE 1),
WASHINGTON RD



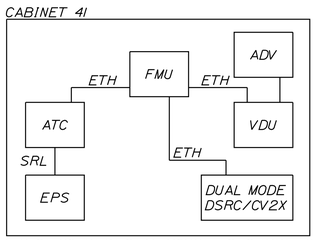
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 40
WALDOBORO
ATLANTIC HWY (US ROUTE 1),
WINSLOWS MILLS RD, KALERS CR ST



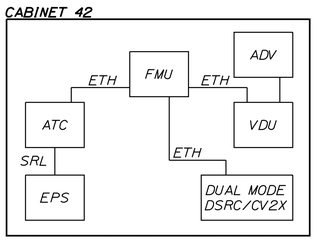
(EXISTING POLE MOUNT TS 2-TYPE 1)

LOCATION 41
WARREN
CAMDEN RD (ROUTE 90),
EASTERN RD, OYSTER RIVER RD



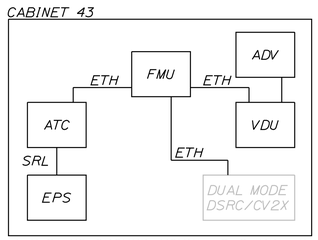
(EXISTING PEDESTAL MOUNT TS 2-TYPE 1)

LOCATION 42
WATERBORO
SOKOKIS TRAIL (ROUTE 5),
OSSIPEE HILL RD, TOWNHOUSE RD

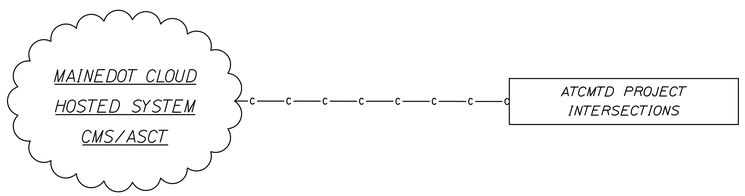


(EXISTING POLE MOUNT TSI TO BE REPLACED BY PEDESTAL MOUNT TS 2-TYPE 1 FROM 24301.00 LOCATION 92)

LOCATION 43
YARMOUTH
US ROUTE 1,
EXIT 17 NB RAMPS



(EXISTING GROUND MOUNT TS 2-TYPE 1)



LEGEND

ADV -	ADVANCE VEHICLE DETECTION
ATC -	ADVANCED TRANSPORTATION CONTROLLER
CV2X -	CELLULAR VEHICLE-TO-EVERYTHING
DSRC -	DEDICATED SHORT RANGE COMMUNICATIONS
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FMU -	FIELD MONITORING UNIT
VDU -	NON-INVASIVE VIDEO DETECTION UNIT
▭	EXISTING EQUIPMENT

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	BY	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

MAINEDOT CLOUD HOSTED NETWORK (4 OF 4)

SHEET NUMBER
15
OF 60

Filename: 015_Comm_04.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

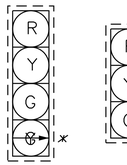
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12 INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	7
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12 INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	3
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR SB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	12
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	SANFORD RD EB LEFT	1	1	B	-	-
②	SANFORD RD EB THRU-RIGHT	6	6	B	-	-
③	BIDDEFORD RD WB LEFT	5	5	B	-	-
④	BIDDEFORD RD WB THRU-RIGHT	2	2	B	-	-
⑤	OAK ST SB LEFT-THRU	8	8	B	-	-
⑥	OAK ST SB SB RIGHT	8	8	B	5	-
⑦	JORDAN SPRINGS RD NB LEFT-THRU	4	4	B	-	-
⑧	JORDAN SPRINGS RD NB RIGHT	4	4	B	5	-
㊾	SANFORD RD EB ADVANCE	6	6	A	-	-
㊷	BIDDEFORD RD WB ADVANCE	2	2	A	-	-
㊺	OAK ST SB SB ADVANCE	8	8	A	-	-

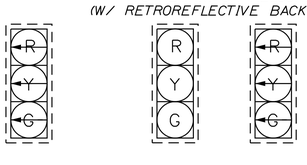
PROPOSED INDICATIONS



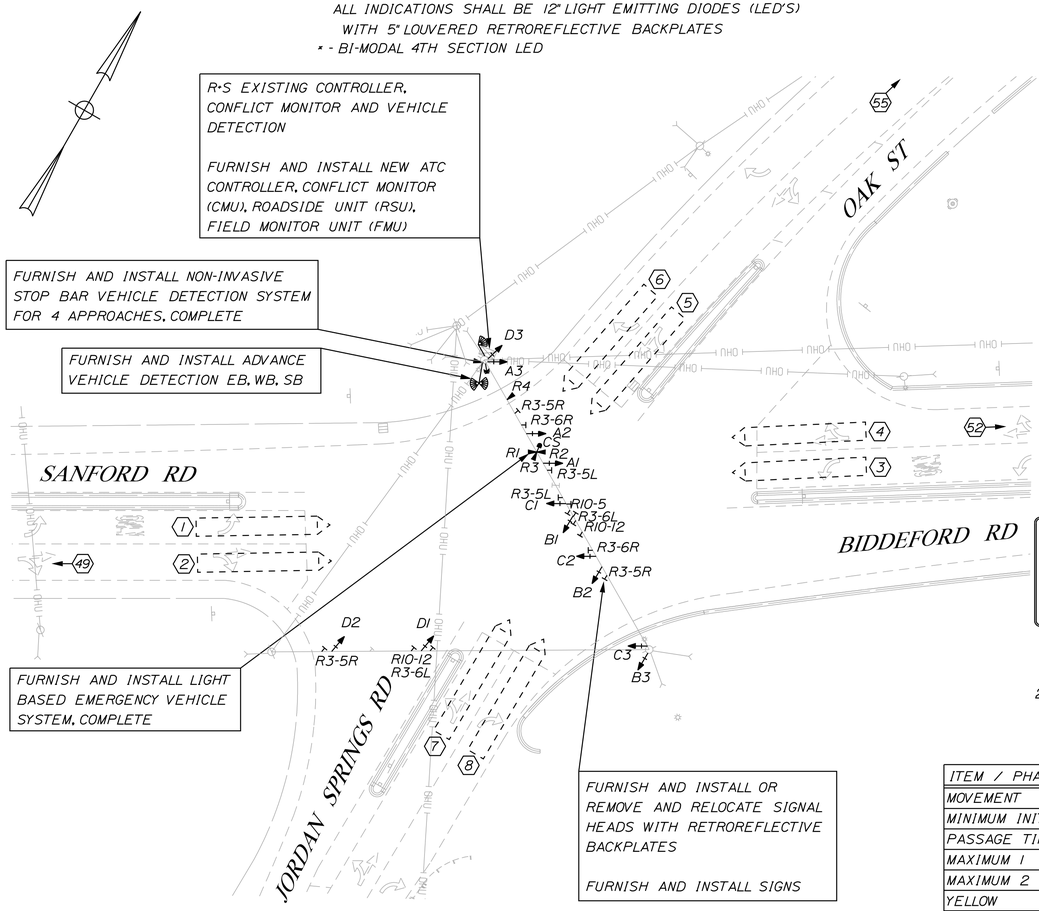
B3,D3 | A3,B2 C2,C3,D1,D2 | A1 | A2,B1 | C1

EXISTING INDICATIONS

TO REMAIN OR RELOCATE (W/ RETROREFLECTIVE BACKPLATES)



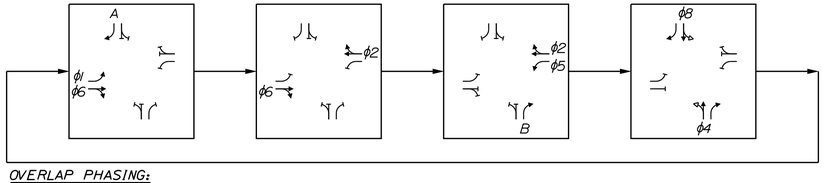
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES
* - BI-MODAL 4TH SECTION LED



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 || 4
6 5 || 8



OVERLAP PHASING:
OVL A = 1+8
OVL B = 4+5

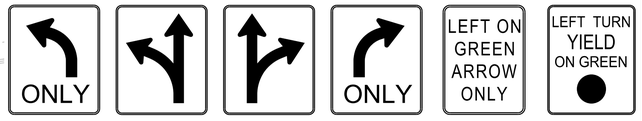
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (EB)
4	8	2	φ2&φ5 (WB)
5	9	3	φ4 (NB)
6	10	4	φ8 (SB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-5L	R3-6L	R3-6R	R3-5R	R10-5	R10-12
30"x36"	30"x36"	30"x36"	30"x36"	24"x30"	30"x36"
2-PROPOSED	2-PROPOSED	2-PROPOSED	2-PROPOSED	2-PROPOSED	2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	EBL	WBTR	-	NB	WBL	EBTR	-	SB
MINIMUM INITIAL	5	10	-	5	5	10	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	15	30	-	20	15	30	-	20
MAXIMUM 2	20	35	-	25	20	35	-	25
YELLOW	3.5	3.5	-	4.5	3.5	3.5	-	4.5
ALL RED	3.5	3.5	-	2.5	3.5	3.5	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	40	-	30	-	40	-	30
DYN MAX STEP	-	5	-	5	-	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	4/8	3/7	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	OFF	-	ON	OFF	OFF	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 1

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

DATE	BY
07/21	J. ROBERT
07/21	C. BOBAY
02/23	C. BOBAY
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

ALFRED
BIDDEFORD RD, JORDAN SPRINGS RD, OAK ST, SANFORD RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
16
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

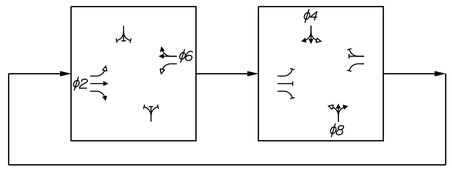
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	PORTLAND RD SB LEFT	6	6	B	-	-
②	PORTLAND RD SB THRU-RIGHT	6	6	B	-	-
③	PORTLAND RD NB LEFT	2	2	B	-	-
④	PORTLAND RD NB THRU	2	2	B	-	-
⑤	PORTLAND RD NB RIGHT	2	2	B	5	-
⑥	LOG CABIN RD WB MOVEMENTS	8	8	B	-	-
⑦	CAMPGROUND RD EB MOVEMENTS	4	4	B	-	-
㊾	PORTLAND RD SB ADVANCE	6	6	A	-	-
㊷	PORTLAND RD NB ADVANCE	2	2	A	-	-
㊺	LOG CABIN RD WB ADVANCE	8	8	A	-	-
㊽	CAMPGROUND RD EB ADVANCE	4	4	A	-	-

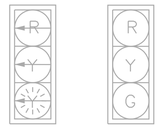
PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 | 4
6 | 8

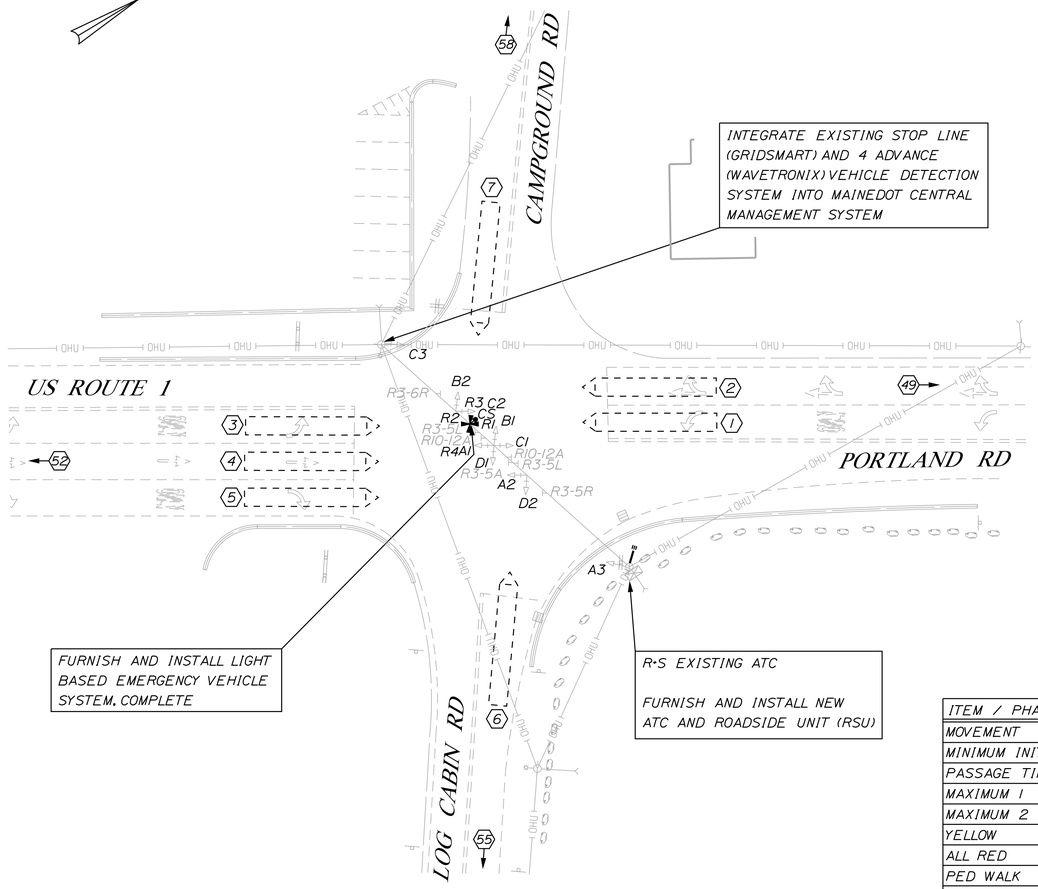


EXISTING INDICATIONS (PROVIDED UNDER WIN 22823.00)



A1,C1 A2,A3,B1,B2 C2,C3,D1,D2

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



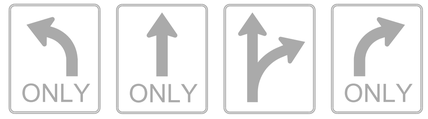
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ6 (SB)
4	8	2	φ2 (NB)
5	9	3	φ4 (EB)
6	10	4	φ8 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING SIGNS (PROVIDED UNDER WIN 22823.00)



R3-5L 30"x36" 2-EXISTING
R3-5A 30"x36" 1-EXISTING
R3-6R 30"x36" 1-EXISTING
R3-5R 30"x36" 1-EXISTING

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NB	-	EB	-	SB	-	WB
MINIMUM INITIAL	-	7	-	7	-	7	-	7
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	40	-	30	-	40	-	30
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	5.0	-	5.0	-	5.0	-	5.0
ALL RED	-	2.5	-	2.5	-	2.5	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	50	-	-	-	50	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	-	S	-	0	-	S	-	0
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	4/8	-	5/9	-	3/7	-	6/10
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 2

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	J. ROBERT	C. BOBAY	J. ROBERT
PROJ. MANAGER	B. KEEZER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21	
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21	
DESIGN2-DETAILED2	C. BOBAY	C. BOBAY	02/23	
DESIGN3-DETAILED3	J. ROBERT			
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				

ARUNDEL
PORTLAND RD (US ROUTE 1), CAMPGROUND RD, LOG CABIN RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
17
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH SIGNAL HEADS WITH LED MODULES TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	6
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	1

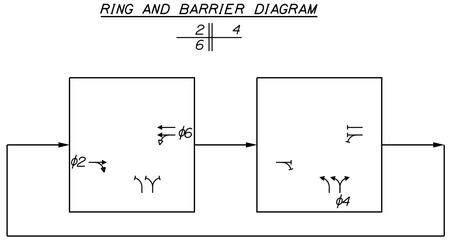
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

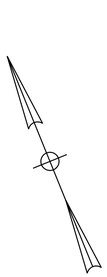
DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	BAR HARBOR RD WB LEFT-THRU	6	6	B	-	-
2	BAR HARBOR RD WB THRU	6	6	B	-	-
3	BAR HARBOR RD EB MOVEMENTS	2	2	B	-	-
4	TRIANGLE RD NB LEFT-RIGHT	4	4	B	-	-
49	BAR HARBOR RD WB ADVANCE	6	6	A	-	-
52	BAR HARBOR RD EB ADVANCE	2	2	A	-	-
55	TRIANGLE RD NB ADVANCE	4	4	A	-	-

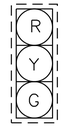
EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM



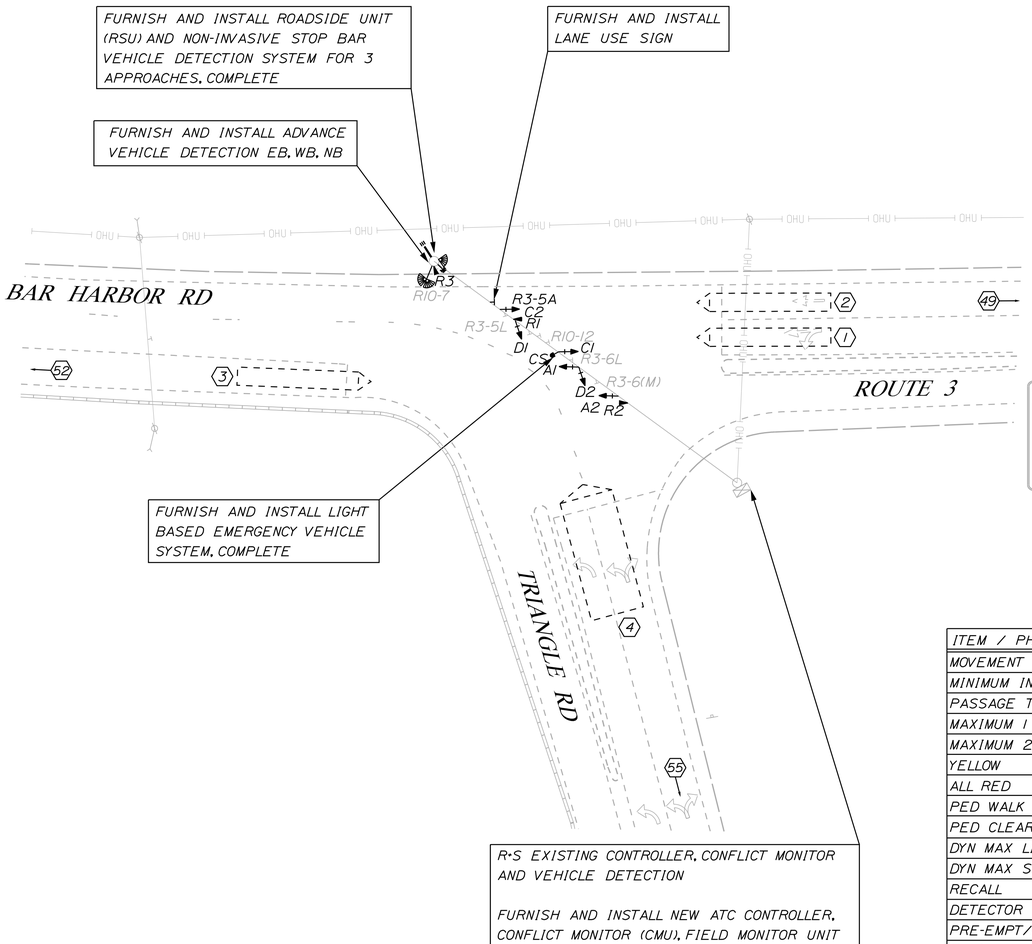
PROPOSED INDICATIONS





A1, A2, C1, C2, D1, D2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



R-S EXISTING CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), FIELD MONITOR UNIT

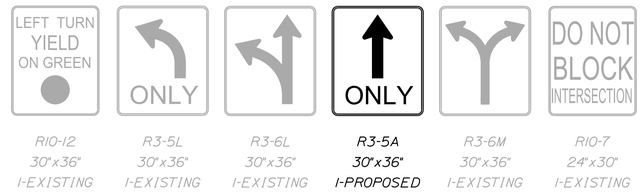
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ6 (WB)
4	8	2	φ2 (EB)
5	9	3	φ4 (NB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS



R10-12	R3-5L	R3-6L	R3-5A	R3-6M	R10-7
30"x36"	30"x36"	30"x36"	30"x36"	30"x36"	24"x30"
I-EXISTING	I-EXISTING	I-EXISTING	I-PROPOSED	I-EXISTING	I-EXISTING

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	EB	-	NBLR	-	WBLT	-	-
MINIMUM INITIAL	-	7	-	5	-	7	-	-
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	-
MAXIMUM 1	-	60	-	30	-	60	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	5.0	-	4.0	-	5.0	-	-
ALL RED	-	2.5	-	3.5	-	2.5	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	70	-	35	-	70	-	-
DYN MAX STEP	-	5	-	5	-	5	-	-
RECALL	-	S	-	O	-	S	-	-
DETECTOR	-	NL	-	NL	-	NL	-	-
PRE-EMPT/PRIORITY	-	4/8	-	5/9	-	3/7	-	-
FLASH	-	Y	-	R	-	Y	-	-
DUAL ENTRY	-	ON	-	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 3

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

BAR HARBOR
BAR HARBOR RD (ROUTE 3), TRIANGLE RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
18
OF 60

Filename: 018_Signal_03.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	6
FURNISH AND INSTALL ONE-WAY, 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

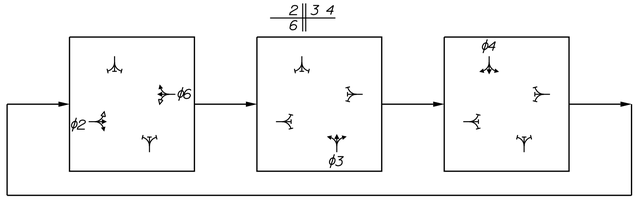
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

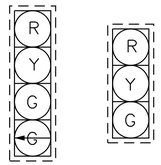
DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
⑦	NARRAGANSETT TRL SB MOVEMENTS	6	6	B	-	-
②	NARRAGANSETT TRL NB LEFT-THRU	2	2	B	-	-
③	NARRAGANSETT TRL NB RIGHT	2	2	B	5	-
④	BEECH PLAINS RD WB MOVEMENTS	3	3	B	-	-
⑤	RIVER RD EB MOVEMENTS	4	4	B	-	-
㊾	NARRAGANSETT TRL SB ADVANCE	6	6	A	-	-
㊷	NARRAGANSETT TRL NB ADVANCE	2	2	A	-	-
㊺	BEECH PLAINS RD WB ADVANCE	3	3	A	-	-
㊽	RIVER RD EB ADVANCE	4	4	A	-	-

PROPOSED PHASE SEQUENCE

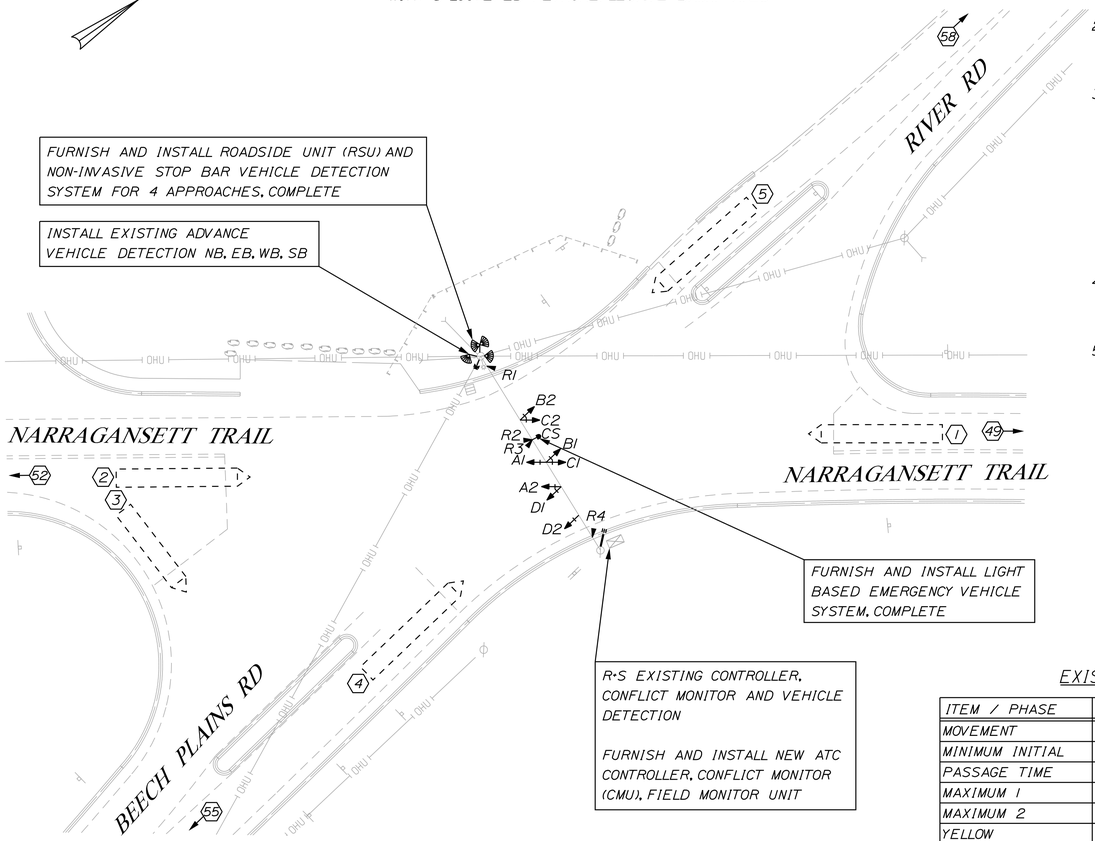
RING AND BARRIER DIAGRAM



PROPOSED INDICATIONS



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ6 (SB)
4	8	2	φ2 (NB)
5	9	3	φ3 (WB)
6	10	4	φ4 (EB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 4.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NB	WB	EB	-	SB	-	-
MINIMUM INITIAL	-	7	8	8	-	7	-	-
PASSAGE TIME	-	2.0	2.0	2.0	-	2.0	-	-
MAXIMUM 1	-	45	25	25	-	45	-	-
MAXIMUM 2	-	45	15	35	-	45	-	-
YELLOW	-	4.5	4.0	4.5	-	4.5	-	-
ALL RED	-	4.5	2.0	3.0	-	4.5	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	55	30	30	-	55	-	-
DYN MAX STEP	-	5	5	5	-	5	-	-
RECALL	-	S	0	0	-	S	-	-
DETECTOR	-	NL	NL	NL	-	NL	-	-
PRE-EMPT/PRIORITY	-	4/8	5/9	6/10	-	3/7	-	-
FLASH	-	Y	R	R	-	Y	-	-
DUAL ENTRY	-	ON	OFF	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
0 = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 4

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

BUXTON
NARRAGANSETT TRAIL,
BEECH PLAINS RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
19
OF 60

Filename: 019_Signal_04.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-54)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	8
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

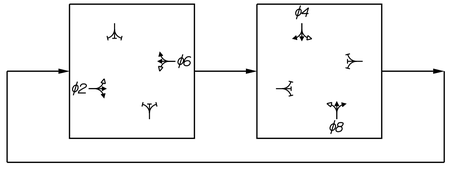
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
⑴	NARRAGANSETT TRL WB MOVEMENTS	6	6	B	-	-
⑵	NARRAGANSETT TRL EB MOVEMENTS	2	2	B	-	-
⑶	LONG PLAINS RD NB MOVEMENTS	8	8	B	-	-
⑷	LONG PLAINS RD SB MOVEMENTS	4	4	B	-	-
㊾	NARRAGANSETT TRL WB ADVANCE	6	6	A	-	-
㊿	NARRAGANSETT TRL EB ADVANCE	2	2	A	-	-
(55)	LONG PLAINS RD NB ADVANCE	8	8	A	-	-
(58)	LONG PLAINS RD SB ADVANCE	4	4	A	-	-

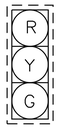
PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 ‖ 4
6 ‖ 8

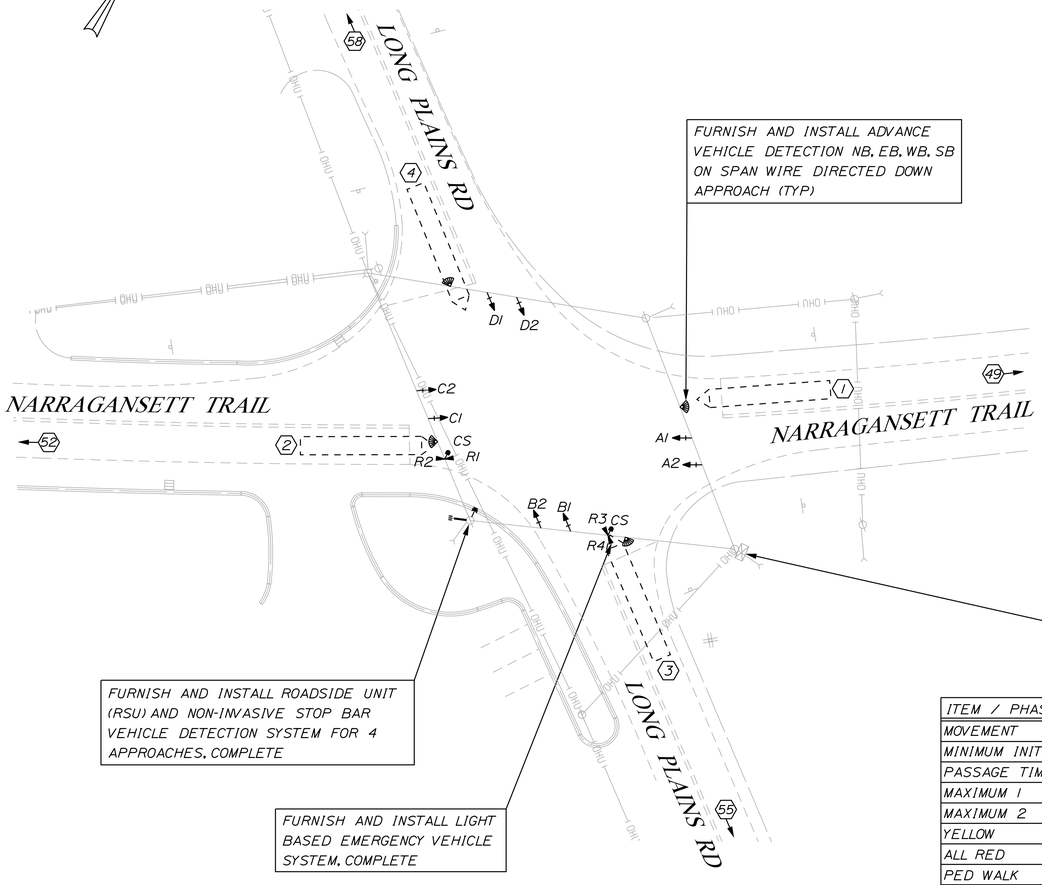


PROPOSED INDICATIONS



A1, A2, B1, B2,
C1, C2, D1, D2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



FURNISH AND INSTALL ADVANCE VEHICLE DETECTION NB, EB, WB, SB ON SPAN WIRE DIRECTED DOWN APPROACH (TYP)

R-S EXISTING CABINET AND ALL INTERNAL TRAFFIC SIGNAL CONTROL COMPONENTS.

INSTALL MAINEDOT FURNISHED M-TYPE TS-2 CABINET (REF: 02430100-54)

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), AND FIELD MONITORING UNIT.

FURNISH AND INSTALL ROADSIDE UNIT (RSU) AND NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 4 APPROACHES, COMPLETE

FURNISH AND INSTALL LIGHT BASED EMERGENCY VEHICLE SYSTEM, COMPLETE

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ6 (WB)
4	8	2	φ2 (EB)
5	9	3	φ4 (SB)
6	10	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	EB	-	SB	-	WB	-	NB
MINIMUM INITIAL	-	7	-	7	-	7	-	7
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	60	-	40	-	60	-	40
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	5.0	-	4.5	-	5.0	-	4.5
ALL RED	-	2.0	-	2.5	-	2.0	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	70	-	45	-	70	-	45
DYN MAX STEP	-	5	-	5	-	5	-	5
RECALL	-	S	-	O	-	S	-	O
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	4/8	-	5/9	-	3/7	-	6/10
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 5

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BUXTON
NARRAGANSETT TRAIL,
LONG PLAINS RD

TRAFFIC SIGNAL PLAN

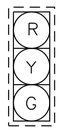
SHEET NUMBER
20
OF 60

LIST OF WORK ITEMS

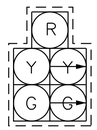
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	3
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	4
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 5-SECTION TRAFFIC SIGNAL HEAD	2
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	3

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

MODIFIED INDICATIONS

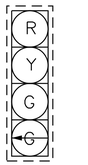


A2,B1, C2,D1

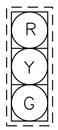


B2,D2

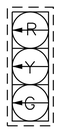
PROPOSED INDICATIONS



A1

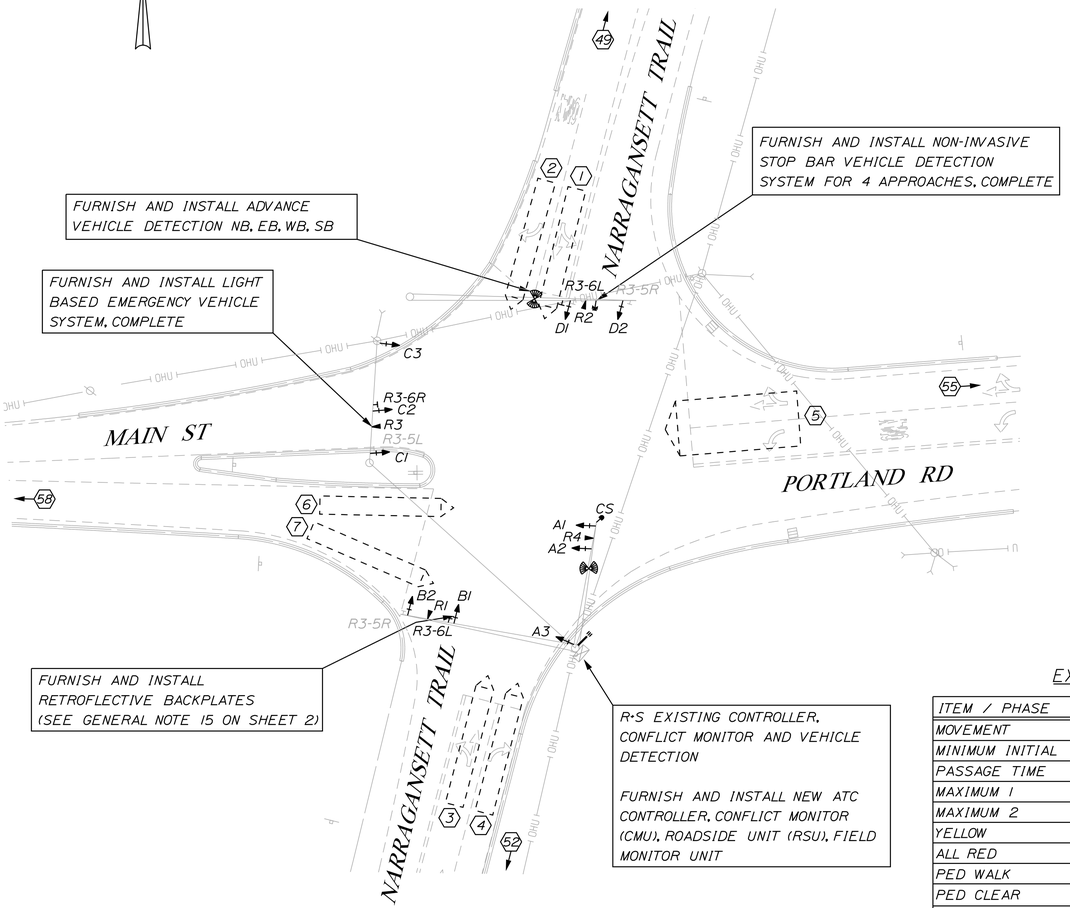


A3,C3



C1

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



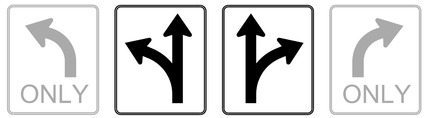
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ6 (SB)
4	8	2	ϕ2 (NB)
5	9	3	ϕ3 (WB)
6	10	4	ϕ4 (EB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS



R3-5L 30"x36" 1-EXISTING | R3-6L 30"x36" 2-PROPOSED | R3-6R 30"x36" 1-PROPOSED | R3-5R 30"x36" 2-EXISTING

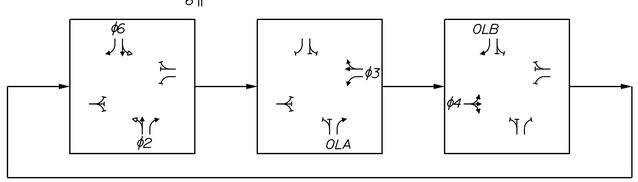
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	NARRAGANSETT TRL SB LEFT-THRU	6	6	B	-	-
2	NARRAGANSETT TRL SB RIGHT	6	6	B	5	-
3	NARRAGANSETT TRL NB LEFT-THRU	2	2	B	-	-
4	NARRAGANSETT TRL NB RIGHT	2	2	B	5	-
5	PORTLAND RD WB LEFT-THRU-RIGHT	3	3	B	-	-
6	MAIN ST EB LEFT-THRU	4	4	B	-	-
7	MAIN ST EB RIGHT	4	4	B	5	-
49	NARRAGANSETT TRL SB ADVANCE	6	6	A	-	-
52	NARRAGANSETT TRL NB ADVANCE	2	2	A	-	-
55	PORTLAND RD WB ADVANCE	3	3	A	-	-
58	MAIN ST EB ADVANCE	4	4	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 ‖ 3 4
6 ‖



OVERLAP PHASING:
OVL A = 3-2
OVL B = 4-6

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	-	NB	WB	EB	-	SB	-	-
MINIMUM INITIAL	-	5	5	5	-	5	-	-
PASSAGE TIME	-	4.0	3.0	3.0	-	4.0	-	-
MAXIMUM 1	-	40	20	25	-	40	-	-
MAXIMUM 2	-	45	15	45	-	45	-	-
YELLOW	-	5.0	4.5	4.5	-	5.0	-	-
ALL RED	-	3.0	2.5	2.5	-	3.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	50	25	30	-	50	-	-
DYN MAX STEP	-	5	5	5	-	5	-	-
RECALL	-	S	O	O	-	S	-	-
DETECTOR	-	NL	NL	NL	-	NL	-	-
PRE-EMPT/PRIORITY	-	4/8	5/9	6/10	-	3/7	-	-
FLASH	-	Y	R	R	-	Y	-	-
DUAL ENTRY	-	ON	OFF	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 6

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	DATE	BY
REVISIONS 1	07/21	J. ROBERT
REVISIONS 2	07/21	C. BOBAY
REVISIONS 3	02/23	C. BOBAY
REVISIONS 4		
FIELD CHANGES		

BUXTON
NARRAGANSETT TRAIL,
MAIN ST, PORTLAND RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
21
OF 60

Filename: 021_Signal_06.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

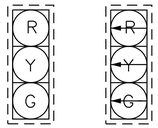
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 024301-44)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	10
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	2

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL SIGNS (ITEM 645.271)	13

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED INDICATIONS



A2,A3,B1,B2
C2,C3,D1,D2

A1,C1

EXISTING INDICATIONS TO REMAIN

P1-P4

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

EMERGENCY VEHICLE PREEMPTION OPERATION

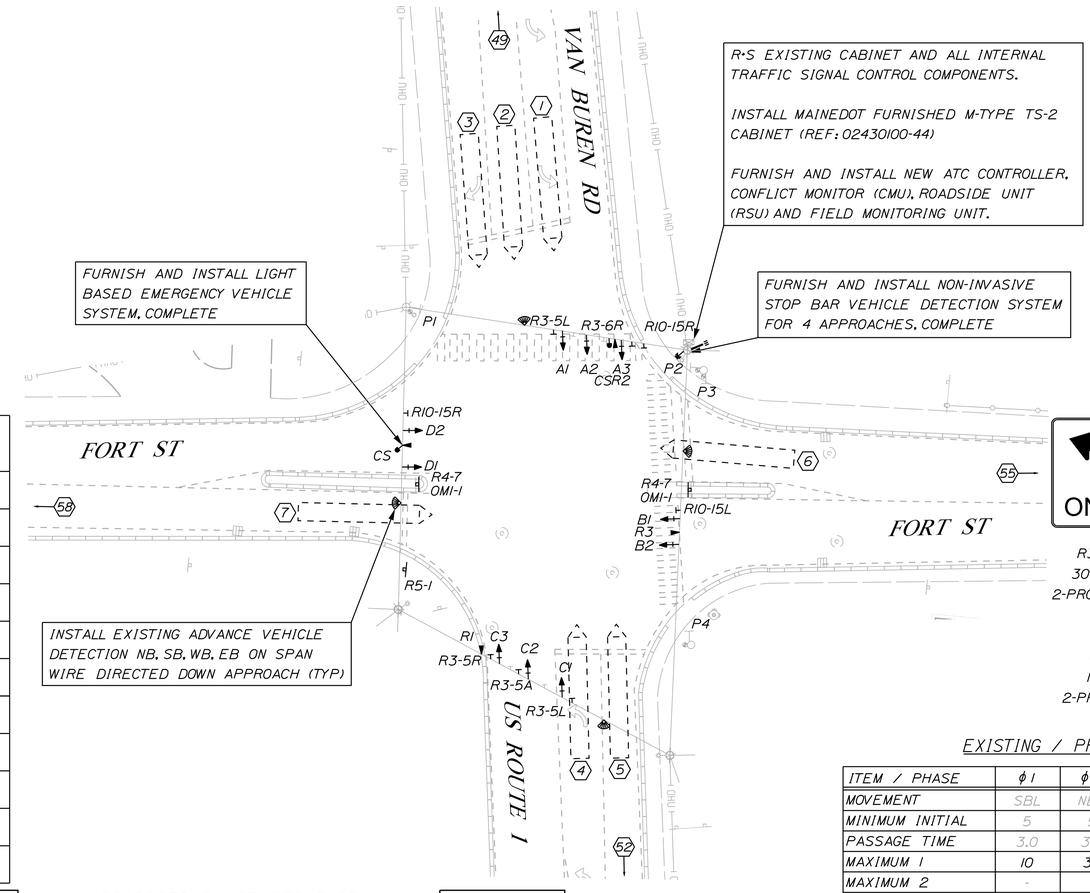
PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ1&ϕ6 (SB)
4	8	2	ϕ2&ϕ5 (NB)
5	9	3	ϕ4 (EB)
6	10	4	ϕ8 (WB)

PRE-EMPTION NOTES:

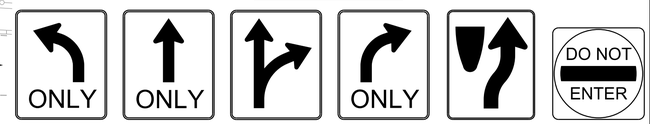
1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

DETECTOR SCHEDULE

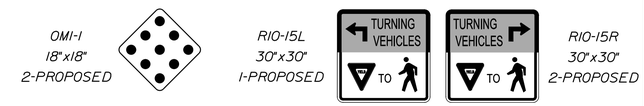
DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	VAN BUREN RD SB LEFT	1	1	B	-	-
2	VAN BUREN RD SB THRU	6	6	B	-	-
3	VAN BUREN RD SB RIGHT	6	6	B	5	-
4	VAN BUREN RD NB LEFT	5	5	B	-	-
5	VAN BUREN RD NB THRU-RIGHT	2	2	B	-	-
6	FORT ST EB MOVEMENTS	8	8	B	-	-
7	FORT ST WB MOVEMENTS	4	4	B	-	-
49	VAN BUREN RD SB ADVANCE	6	6	A	-	-
52	VAN BUREN RD NB ADVANCE	2	2	A	-	-
55	FORT ST EB ADVANCE	8	8	A	-	-
58	FORT ST WB ADVANCE	4	4	A	-	-



PROPOSED SIGNS



R3-5L	R3-5A	R3-6R	R3-5R	R4-7	R5-1
30"x36"	30"x36"	30"x36"	30"x36"	24"x30"	30"x30"
2-PROPOSED	1-PROPOSED	1-PROPOSED	1-PROPOSED	2-PROPOSED	1-PROPOSED

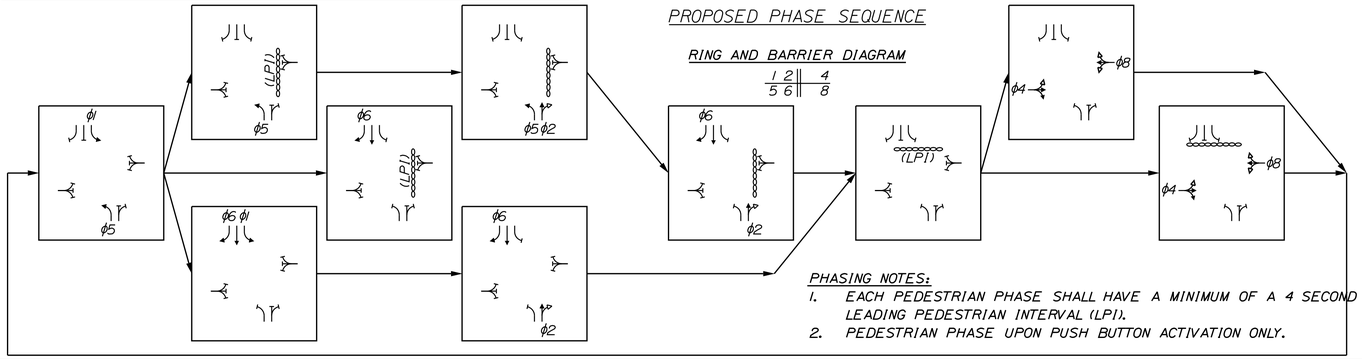


OM1-1	RI0-15L	RI0-15R
18"x18"	30"x30"	30"x30"
2-PROPOSED	1-PROPOSED	2-PROPOSED

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 | | 4
5 6 | | 8



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	SBL	NBT	-	EB	NBL	SBT	-	WB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	10	30	-	30	10	30	-	30
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	3.5	4.0	-	4.0	3.5	4.0	-	4.0
ALL RED	3.5	2.0	-	2.5	3.5	2.0	-	2.5
PED WALK	-	5	-	-	-	-	-	5
PED CLEAR	-	20	-	-	-	-	-	16
DYN MAX LIMIT	-	40	-	-	-	40	-	35
DYN MAX STEP	-	5	-	-	-	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	4/8	3/7	-	6/10
FLASH	R	R	-	R	R	R	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 7

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

BY	DATE
J. ROBERT	07/21
C. BOBAY	07/21
C. BOBAY	02/23

CARIBOU
VAN BUREN RD (US ROUTE 1), FORT ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER
22
OF 60

LIST OF WORK ITEMS

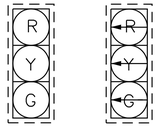
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, AND EB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	1
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	7
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	*
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	3

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	VAN BUREN RD NB LEFT	1	1	B	-	-
2	VAN BUREN RD NB THRU	6	6	B	-	-
3	ACCESS HWY SB THRU	2	2	B	-	-
4	VAN BUREN RD EB LEFT	4	4	B	-	-
49	VAN BUREN RD NB ADVANCE	6	6	A	-	-
52	ACCESS HWY SB ADVANCE	2	2	A	-	-
55	VAN BUREN RD EB ADVANCE	4	4	A	-	-

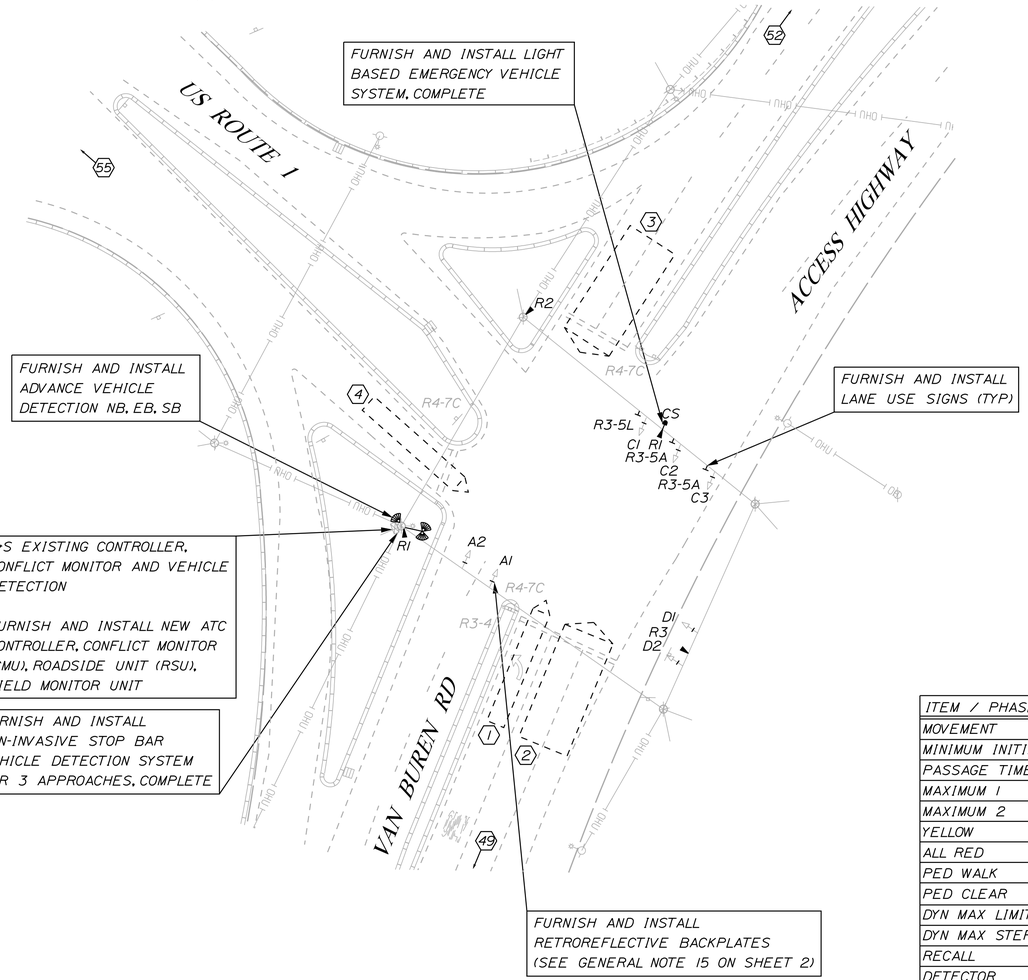
MODIFIED INDICATIONS



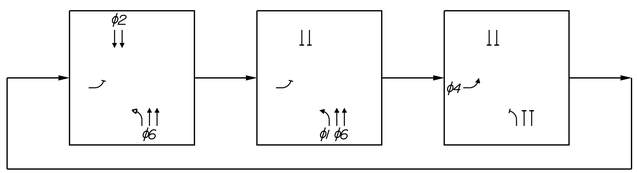
A1, A2, C2, C3
D1, D2

C1

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EXISTING PHASE SEQUENCE



RING AND BARRIER DIAGRAM

2 1 4
6

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (NB)
4	8	2	φ2 (SB)
5	9	3	φ4 (EB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS

R3-5L 30"x36" 1-PROPOSED
R3-5A 30"x36" 2-PROPOSED
R4-7C 18"x30" 3-EXISTING
R3-4 18"x30" 1-EXISTING

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	NBL	SB	-	EB	-	NBT	-	-
MINIMUM INITIAL	5	5	-	5	-	5	-	-
PASSAGE TIME	3.0	4.0	-	3.0	-	4.0	-	-
MAXIMUM 1	25	30	-	20	-	30	-	-
MAXIMUM 2	25	10	-	40	-	10	-	-
YELLOW	3.5	4.5	-	3.5	-	4.5	-	-
ALL RED	2.5	2.0	-	2.5	-	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	45	-	25	-	45	-	-
DYN MAX STEP	-	5	-	5	-	5	-	-
RECALL	O	S	-	O	-	S	-	-
DETECTOR	NL	NL	-	NL	-	NL	-	-
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	-	3/7	-	-
FLASH	R	Y	-	R	-	Y	-	-
DUAL ENTRY	OFF	ON	-	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 8

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

CARIBOU
VAN BUREN RD (US ROUTE 1), ACCESS HIGHWAY

TRAFFIC SIGNAL PLAN

SHEET NUMBER
23
OF 60

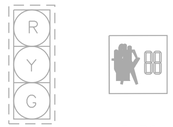
Filename: 023_Signal_08.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.7I	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	I
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	I
FUNISH AND INSTALL ONE-WAY 4-SECTION, I2-INCH SIGNAL HEADS WITH LED MODULES, TUNNEL VISORS AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	I
FURNISH AND INSTALL NEW I6-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	I
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	I
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.35I)	I
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.2I)	I
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	I
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	5
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	I
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.27I)	6

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

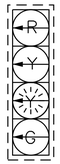
EXISTING INDICATIONS



P1-P6

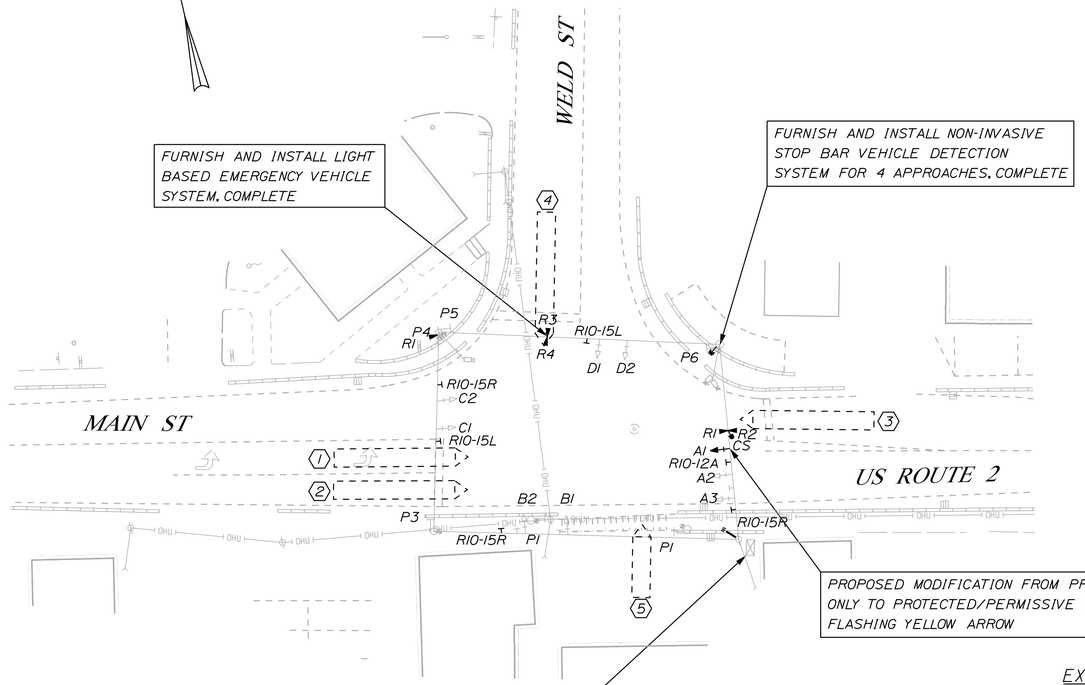
A2,B1,B2, C1,C2,D1,D2

PROPOSED INDICATIONS



A1

NOTE:
ALL INDICATIONS I2" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



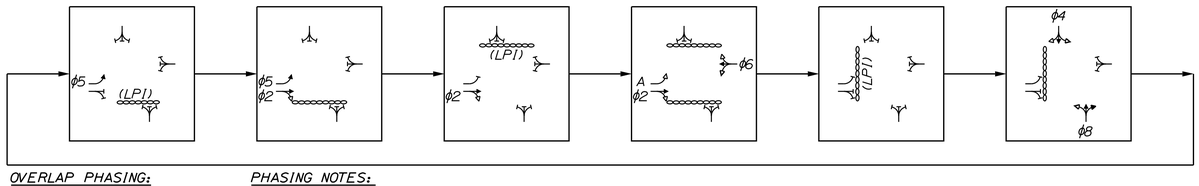
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	MAIN ST EB LEFT	5	5	B	-	-
②	MAIN ST EB THRU-RIGHT	2	2	B	-	-
③	MAIN ST WB MOVEMENTS	6	6	B	-	-
④	WELD ST SB MOVEMENTS	4	4	B	-	-
⑤	DRIVEWAY NB MOVEMENTS	8	8	B	-	-

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 ‖ 4
5 6 ‖ 8



OVERLAP PHASING:
OVL A = 5 (PROT) + 6 (PERM)

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY
3. OVERLAP A SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROW

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
I		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	I	φ2&φ5 (EB)
4	8	2	φI&φ6 (WB)
5	9	3	φ4 (SB)
6	I0	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (I = HIGHEST, I0 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF I0 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

RIO-15L 30"x30" 2-PROPOSED

RIO-15R 30"x30" 3-PROPOSED

RIO-12A 30"x36" I-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ I	φ 2	φ 3	φ 4	φ 5	φ 6	φ 7	φ 8
MOVEMENT	-	EBTR	-	SB	EBL	WB	-	NB
MINIMUM INITIAL	-	8	-	5	5	8	-	5
PASSAGE TIME	-	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM I	-	30	-	20	20	30	-	I0
MAXIMUM 2	-	30	-	20	30	30	-	20
YELLOW	-	3.5	-	4.0	3.5	3.5	-	4.0
ALL RED	-	2.5	-	2.0	2.0	2.5	-	2.0
PED WALK	-	5	-	5	-	5	-	-
PED CLEAR	-	I0	-	I4	-	I8	-	-
DYN MAX LIMIT	-	40	-	25	-	40	-	-
DYN MAX STEP	-	5	-	5	-	5	-	-
RECALL	-	S	-	-	-	S	-	-
DETECTOR	-	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	5/9	3/7	4/8	-	6/I0
FLASH	-	Y	-	R	R	Y	-	R
DUAL ENTRY	-	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 9

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	DATE
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

DIXFIELD
MAIN ST (US ROUTE 2), WELD ST (ROUTE 142)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
24
OF 60

Filename: 024_Signal_09.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR EB, SB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

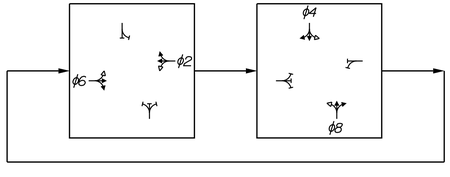
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
(1)	BUCKNAM RD EB MOVEMENTS	6	6	B	-	-
(2)	BUCKNAM RD WB MOVEMENTS	2	2	B	-	-
(3)	EXIT 10 RAMP SB LEFT-THRU	4	4	B	-	-
(4)	LEGION RD NB MOVEMENTS	8	8	B	-	-
(49)	BUCKNAM RD EB ADVANCE	6	6	A	-	-
(52)	BUCKNAM RD WB ADVANCE	2	2	A	-	-
(55)	EXIT 10 RAMP SB ADVANCE	4	4	A	-	-

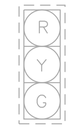
EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 4
6 8

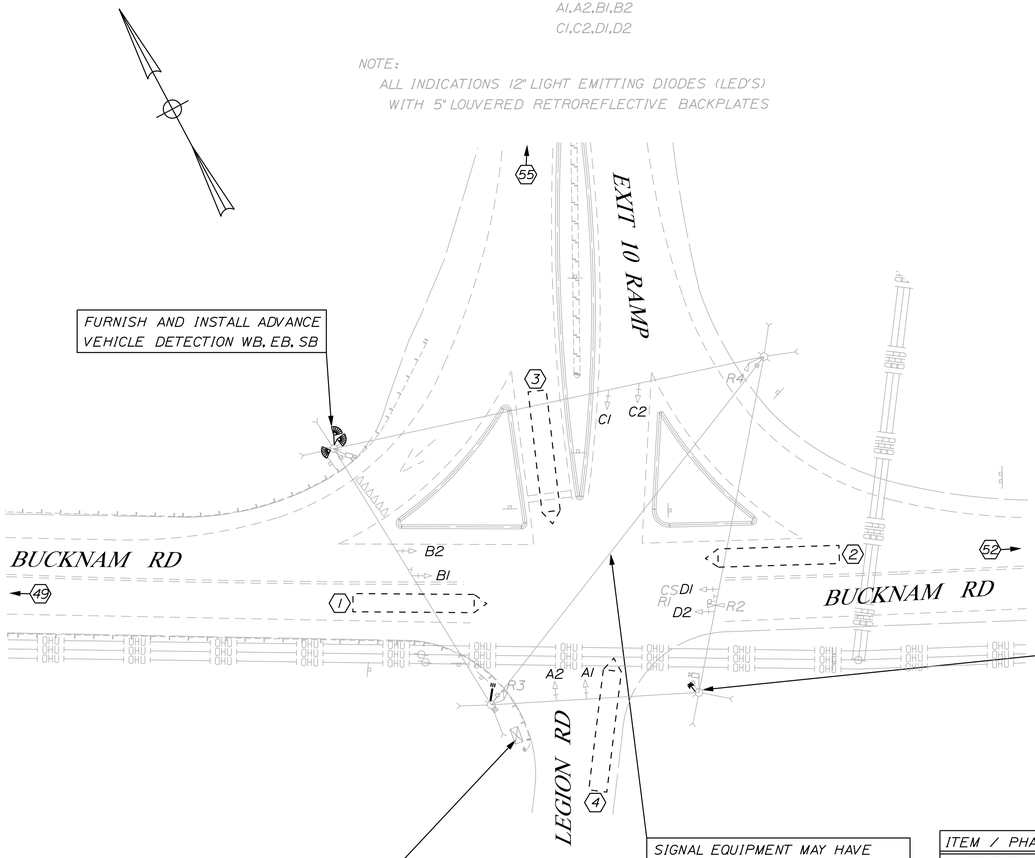


EXISTING INDICATIONS



A1,A2,B1,B2
C1,C2,D1,D2

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



R-S EXISTING CONTROLLER, PREEMPTION CARD, CONFLICT MONITOR AND VEHICLE DETECTION

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), PREEMPTION CARD, ROADSIDE UNIT (RSU), FIELD MONITOR UNIT

SIGNAL EQUIPMENT MAY HAVE BEEN MOVED TO DIAGONAL SPAN (BY OTHERS AND PROVIDED UNDER WIN 22672.00)

FURNISH AND INSTALL NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 4 APPROACHES, COMPLETE

EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	φ6 (EB)
R2	4	8	2	φ2 (WB)
R3	5	9	3	φ4 (SB)
R4	6	10	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING, AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	WB	-	SB	-	EB	-	NB
MINIMUM INITIAL	-	6	-	6	-	6	-	6
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	70	-	30	-	70	-	30
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.5	-	3.5	-	4.5	-	3.5
ALL RED	-	2.5	-	2.0	-	2.5	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	80	-	40	-	80	-	-
DYN MAX STEP	-	5	-	5	-	5	-	-
RECALL	-	S	-	O	-	S	-	O
DETECTOR	-	-	-	-	-	-	-	-
PRE-EMPT/PRIORITY	-	4/8	-	5/9	-	3/7	-	6/10
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 10

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PRO. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

FALMOUTH
BUCKNAM RD,
EXIT 10 SB RAMPS

TRAFFIC SIGNAL PLAN

SHEET NUMBER
25
OF 60

Filename: 025_Signal_10.dgn Username: jorobert Date:5/17/2023
Division: HIGHWAY

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.7I	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-97)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	7
FURNISH AND INSTALL ONE-WAY 5-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL 16-INCH L.E.D. COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	8
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	6
FURNISH AND INSTALL SPAN WIRE AND TEATHER	120 LF

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

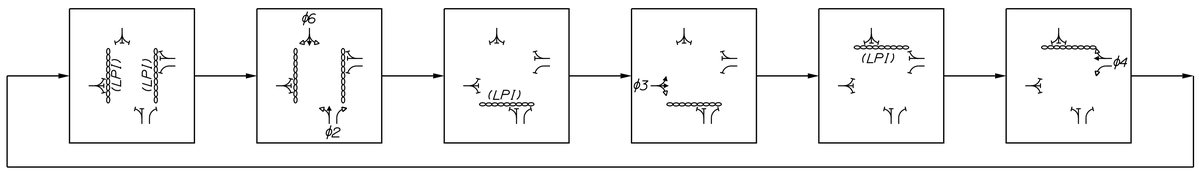
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	BRIDGE ST SB MOVEMENTS	6	6	B	-	-
②	PRESQUE ISLE ST NB LEFT-THRU	2	2	B	-	-
③	PRESQUE ISLE ST NB RIGHT	2	2	B	5	-
④	HIGH ST EB MOVEMENTS	3	3	B	-	-
⑤	MAIN ST WB LEFT-THRU	4	4	B	-	-

PROPOSED PHASE SEQUENCE

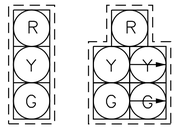
RING AND BARRIER DIAGRAM

2 ‖ 3 4
6



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

PROPOSED INDICATIONS

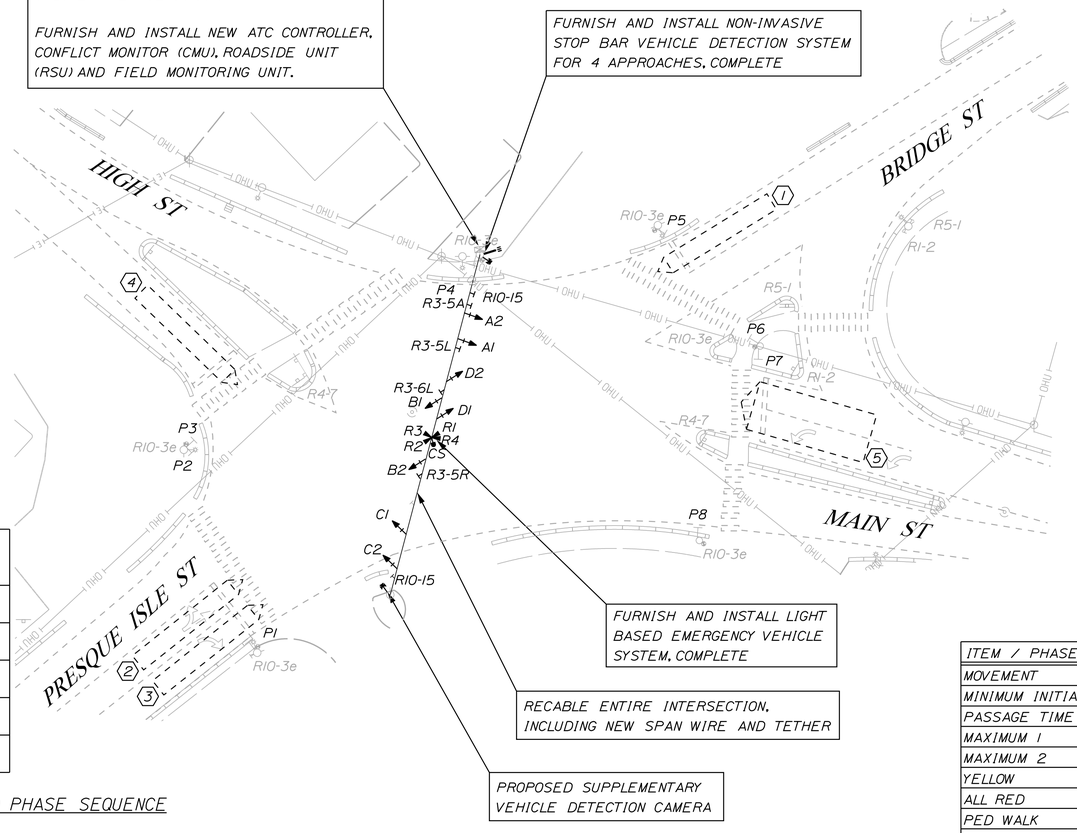


A1,A2,B1, C1,C2,D1,D2 — B2

EXISTING INDICATIONS TO REMAIN

P1-P8

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES
EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ6 (SB)
4	8	2	φ2 (NB)
5	9	3	φ3 (EB)
6	10	4	φ4 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (3.5 SECONDS YELLOW AND 4.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L	R3-6L	R3-5A	R3-5R	RIO-15
30"x36"	30"x36"	30"x36"	30"x36"	30"x30"
1-PROPOSED	1-PROPOSED	1-PROPOSED	1-PROPOSED	2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 1	φ 2	φ 3	φ 4	φ 5	φ 6	φ 7	φ 8
MOVEMENT	-	NB	HIGH	MAIN	-	SB	-	-
MINIMUM INITIAL	-	8	5	5	-	8	-	-
PASSAGE TIME	-	3.0	3.0	3.0	-	3.0	-	-
MAXIMUM 1	-	20	15	20	-	20	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	3.5	3.5	3.5	-	3.5	-	-
ALL RED	-	3.0	4.5	4.5	-	3.0	-	-
PED WALK	-	5	5	5	-	5	-	-
PED CLEAR	-	21	11	11	-	21	-	-
DYN MAX LIMIT	-	30	25	30	-	30	-	-
DYN MAX STEP	-	5	5	5	-	5	-	-
RECALL	-	S	0	0	-	S	-	-
DETECTOR	-	NL	NL	NL	-	NL	-	-
PRE-EMPT/PRIORITY	-	4/8	5/9	6/10	-	3/7	-	-
FLASH	-	R	R	R	-	R	-	-
DUAL ENTRY	-	ON	OFF	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 11

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

FORT FAIRFIELD
PRESQUE ISLE ST, BRIDGE ST, HIGH ST, MAIN ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER
26
OF 60

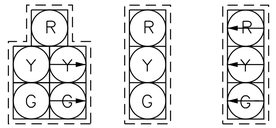
Filename: 026_Signal_11.dgn Division: HIGHWAY Username: jorobert Date:5/22/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	6
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 5-SECTION TRAFFIC SIGNAL HEAD	1
FURNISH AND INSTALL 16-INCH L.E.D. COUNTDOWN PEDESTRIAN LENSE IN EXISTING HOUSING	2
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

MODIFIED INDICATIONS

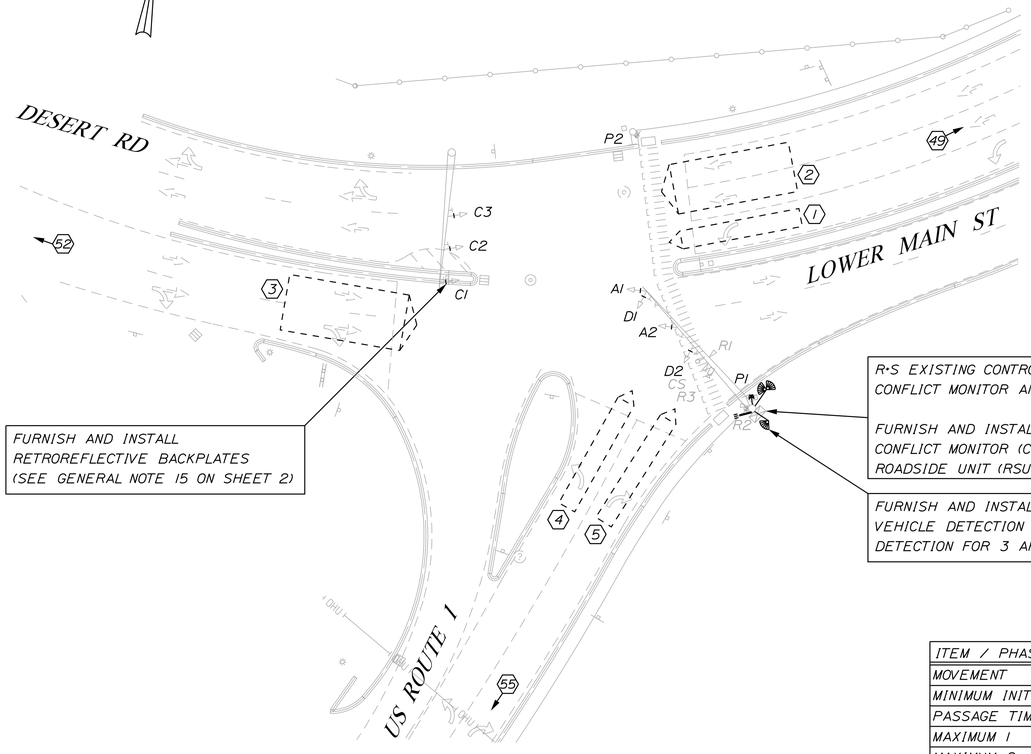


D2 | A1,A2, C2,C3,D1 | C1

EXISTING INDICATIONS TO REMAIN

P1-P2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES
EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED



EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	ϕ1&ϕ6 (WB)
R2	4	8	2	ϕ2 (EB)
R3	5	9	3	ϕ4 (NB)
R4	6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING, AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

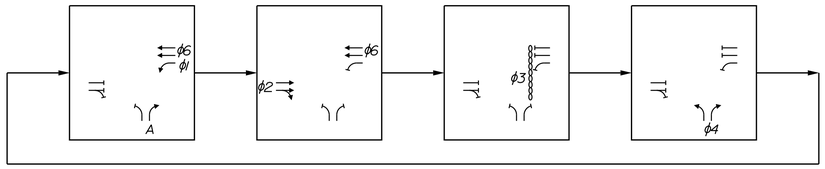
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	LOWER MAIN ST WB LEFT	1	1	B	-	-
2	LOWER MAIN ST WB THRU	6	6	B	-	-
3	DESERT RD EB THRU-RIGHT	2	2	B	-	-
4	US RTE 1 NB LEFT	4	4	B	-	-
5	US RTE 1 NB RIGHT	4	4	B	5	-
49	LOWER MAIN ST WB ADVANCE	6	6	A	-	-
62	DESERT RD EB ADVANCE	2	2	A	-	-
55	US RTE 1 NB ADVANCE	4	4	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	WBL	EB	PED	NB	-	WB	-	-
MINIMUM INITIAL	7	7	2	7	-	7	-	-
PASSAGE TIME	3.0	5.0	0.0	3.0	-	5.0	-	-
MAXIMUM 1	25	35	0	35	-	35	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	3.5	4.5	3.0	3.0	-	4.5	-	-
ALL RED	2.5	2.0	0.0	3.0	-	2.0	-	-
PED WALK	-	-	5	-	-	-	-	-
PED CLEAR	-	-	22	-	-	-	-	-
DYN MAX LIMIT	-	45	-	-	-	45	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	O	S	O	O	-	S	-	-
DETECTOR	NL	NL	NL	NL	-	NL	-	-
PRE-EMPT PRIORITY	3/7	4/8	-	5/9	-	3/7	-	-
FLASH	R	Y	R	R	-	Y	-	-
DUAL ENTRY	OFF	ON	OFF	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY



OVERLAP PHASING:
OVL A = 1+4

PHASING NOTES:
1. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 ‖ 3 4
6 ‖

PLAN

25 0 25 50
Scale of Feet

LOCATION 12

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

FREEPORT
DDESERT RD, LOWER MAIN ST, US ROUTE 1

TRAFFIC SIGNAL PLAN

SHEET NUMBER
27
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW RACK MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB AND SB APPROACHES (ITEM 643.22)	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	*
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

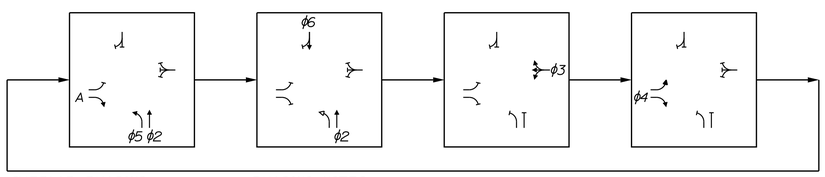
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	SHAKER RD SB THRU	6	6	B	-	-
2	SHAKER RD NB LEFT	5	5	B	-	-
3	SHAKER RD NB THRU	2	2	B	-	-
4	DRIVEWAY WB THRU	3	3	B	-	-
5	RAYMOND RD EB LEFT	4	4	B	-	-
6	RAYMOND RD EB RIGHT	4	4	B	5	-
49	SHAKER RD SB ADVANCE	6	6	A	-	-
52	SHAKER RD NB ADVANCE	2	2	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

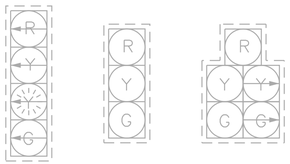
2 ‖ 3 4
5 6 ‖



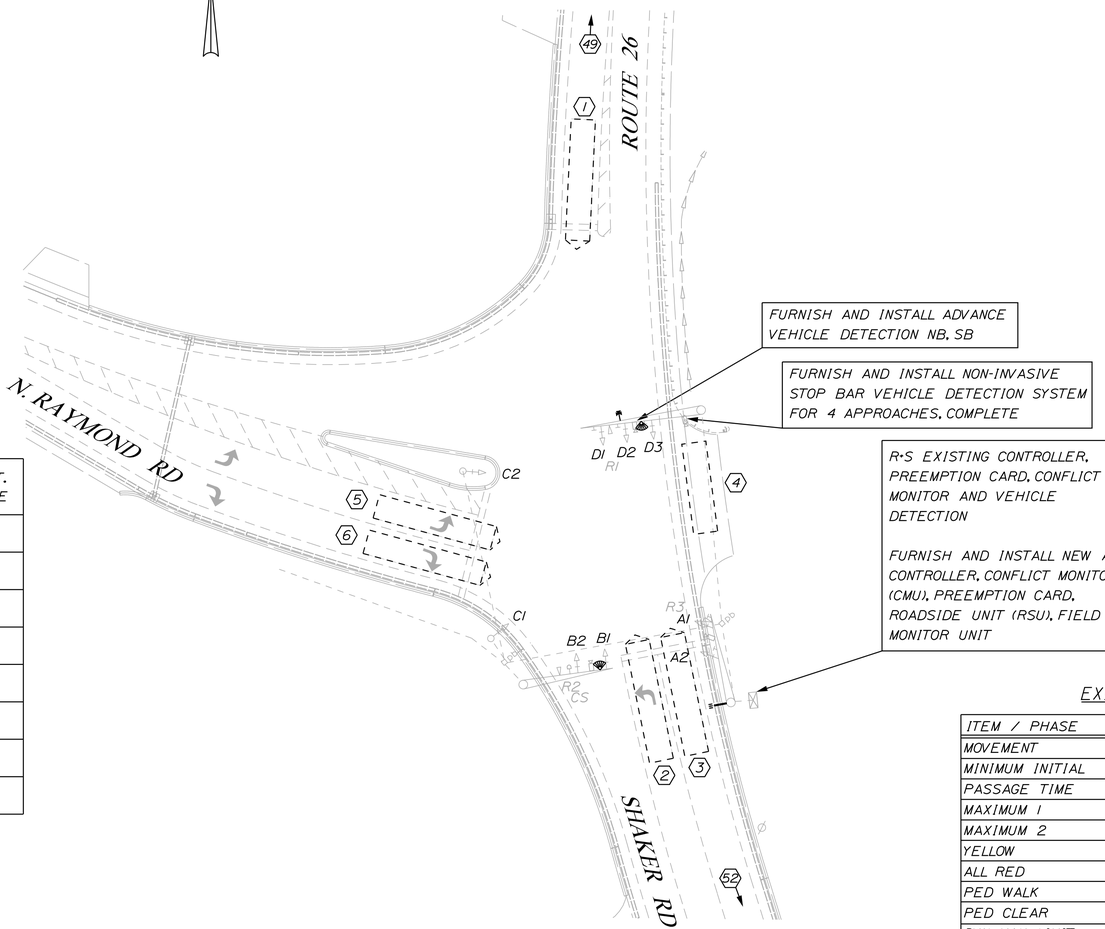
OVERLAP PHASING:
OVL A = 5-4
OLV B = 5 (PROT) - 6 (PERM)

PHASING NOTES:
1. OVERLAP B SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROW

EXISTING INDICATIONS



NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	φ2&φ5 (NB)
R2	4	8	2	φ6 (SB)
R3	5	9	3	φ3 (WB)
R4	6	10	4	φ4 (EB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING, AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 1	φ 2	φ 3	φ 4	φ 5	φ 6	φ 7	φ 8
MOVEMENT	-	NBT	WB	EB	NBL	SB	-	-
MINIMUM INITIAL	-	10	5	5	5	10	-	-
PASSAGE TIME	-	3.0	3.0	3.0	3.0	3.0	-	-
MAXIMUM 1	-	30	10	25	30	30	-	-
MAXIMUM 2	-	30	10	35	35	30	-	-
YELLOW	-	5.0	3.5	3.0	3.5	5.0	-	-
ALL RED	-	2.0	2.5	2.0	2.5	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	40	-	-	-	40	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	-	S	O	O	O	S	-	-
DETECTOR	-	NL	NL	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	-	3/7	5/9	6/10	3/7	4/8	-	-
FLASH	-	Y	R	R	R	Y	-	-
DUAL ENTRY	-	ON	OFF	ON	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 13

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	J. READY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GRAY
SHAKER RD (ROUTE 26),
N RAYMOND RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
28
OF 60

Filename: 028_Signal_13.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

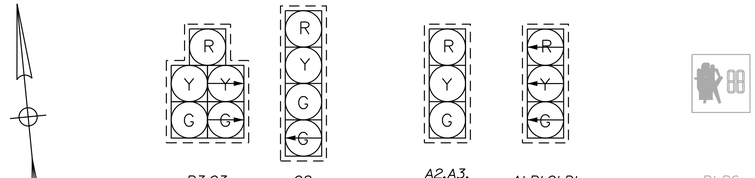
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 5-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU) FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR EB AND SB APPROACHES (ITEM 643.22)	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	9
FURNISH AND INSTALL 16-INCH LED COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	6
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.2711)	8
FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

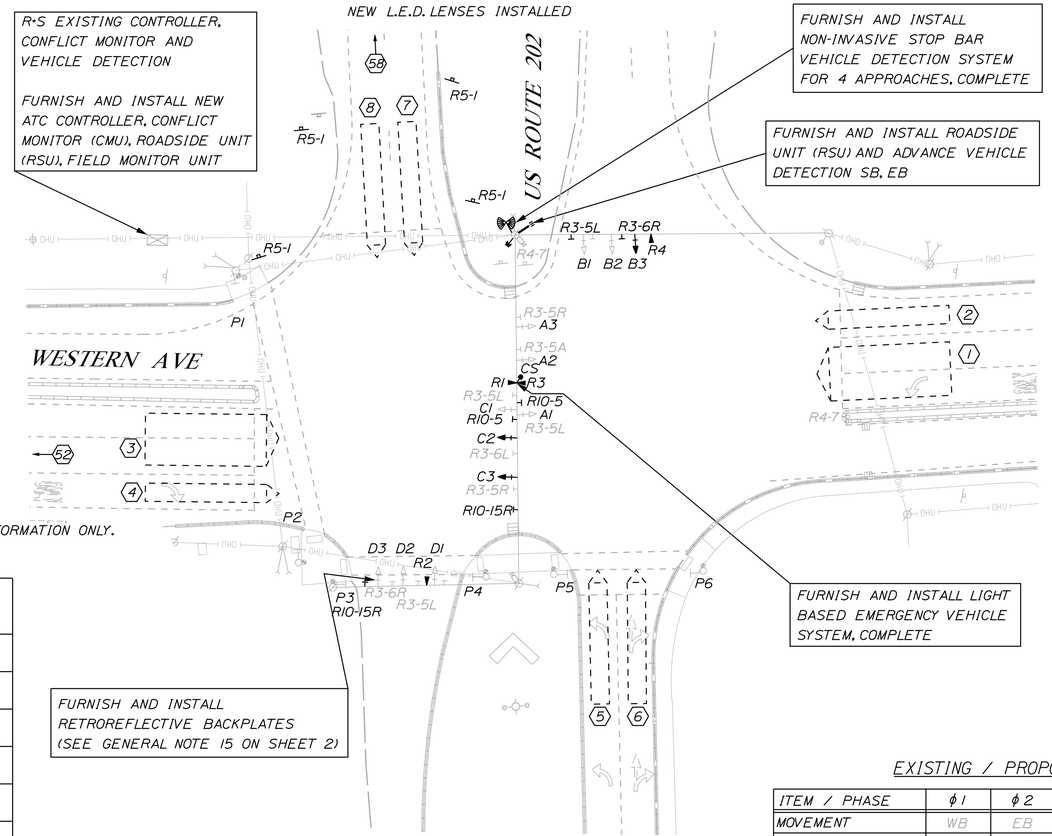
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	WESTERN AVE WB LEFT-THRU	1	1	B	-	-
②	WESTERN AVE WB RIGHT	1	1	B	5	-
③	WESTERN AVE EB LEFT-THRU	2	2	B	-	-
④	WESTERN AVE EB RIGHT	2	2	B	5	-
⑤	SCHOOL DWY NB LEFT	3	3	B	-	-
⑥	SCHOOL DWY NB THRU-RIGHT	8	8	B	-	-
⑦	US 202 SB LEFT	7	7	B	-	-
⑧	US 202 SB THRU-RIGHT	4	4	B	-	-
52	WESTERN AVE EB ADVANCE	2	2	A	-	-
58	US 202 SB ADVANCE	4	4	A	-	-

PROPOSED INDICATIONS MODIFIED INDICATIONS EXISTING INDICATIONS TO REMAIN



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES
EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED



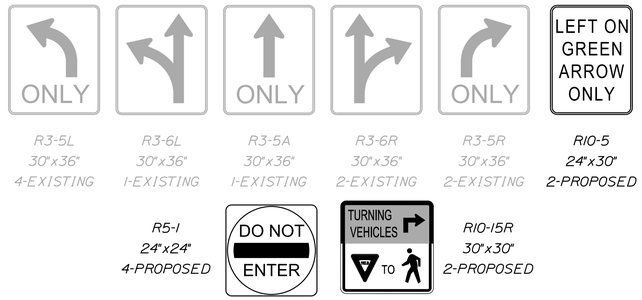
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2 (EB)
4	8	2	φ4&φ7 (SB)
5	9	3	φ1 (WB)
6	10	4	φ3&φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 4.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

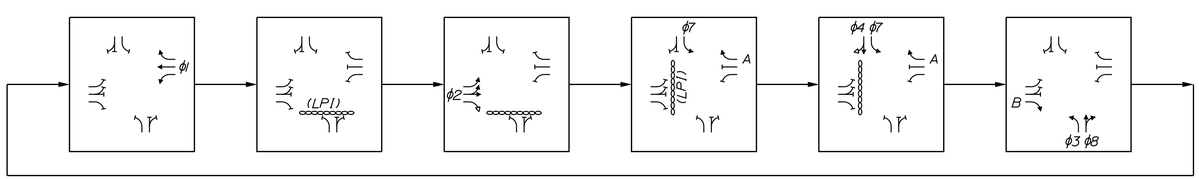
EXISTING / PROPOSED SIGNS



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 | 4 3
7 8



OVERLAP PHASING:
OVL A = 7-1 OVL B = 3-2

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	WB	EB	NBL	SBTR	-	-	SBL	NB
MINIMUM INITIAL	8	8	5	8	-	-	5	8
PASSAGE TIME	2.0	2.0	2.0	2.0	-	-	2.0	2.0
MAXIMUM 1	45	45	30	30	-	-	30	30
MAXIMUM 2	40	40	40	40	-	-	40	40
YELLOW	4.0	4.0	3.5	3.5	-	-	3.5	3.5
ALL RED	4.0	4.0	4.0	4.0	-	-	4.0	4.0
PED WALK	-	5	-	5	-	-	-	-
PED CLEAR	-	9	-	19	-	-	-	-
DYN MAX LIMIT	50	50	50	-	-	-	45	50
DYN MAX STEP	5	5	5	-	-	-	5	5
RECALL	O	S	O	O	-	-	O	O
DETECTOR	NL	NL	NL	NL	-	-	NL	NL
PRE-EMPT/PRIORITY	5/9	3/7	6/10	4/8	-	-	4/8	6/10
FLASH	R	R	R	R	-	-	R	R
DUAL ENTRY	OFF	ON	OFF	OFF	-	-	OFF	OFF

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 14

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

HAMPDEN
US ROUTE 202,
WESTERN AVE (ROUTE 9)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
29
OF 60

Filename: 029_Signal_14.dgn Division: HIGHWAY Username: jorobert Date:5/22/2023

LIST OF WORK ITEMS

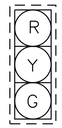
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-46)	1
FUNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	12

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

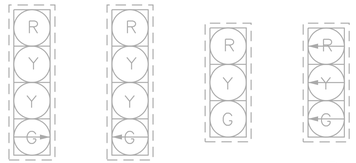
DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	US 202 EB LEFT	1	1	B	-	-
②	US 202 EB THRU	6	6	B	-	-
③	US 202 EB RIGHT	6	6	B	5	-
④	US 202 WB LEFT	5	5	B	-	-
⑤	US 202 WB THRU	2	2	B	-	-
⑥	US 202 WB RIGHT	2	2	B	5	-
⑦	COLDBROOK RD NB LEFT-THRU	3	3	B	-	-
⑧	COLDBROOK RD NB RIGHT	3	3	B	5	-
⑨	COLDBROOK RD SB LEFT	4	4	B	-	-
⑩	COLDBROOK RD SB LEFT-THRU	4	4	B	-	-
49	US 202 EB ADVANCE	6	6	A	-	-
52	US 202 WB ADVANCE	2	2	A	-	-
55	COLDBROOK RD NB ADVANCE	3	3	A	-	-
58	COLDBROOK RD SB ADVANCE	4	4	A	-	-

PROPOSED INDICATIONS

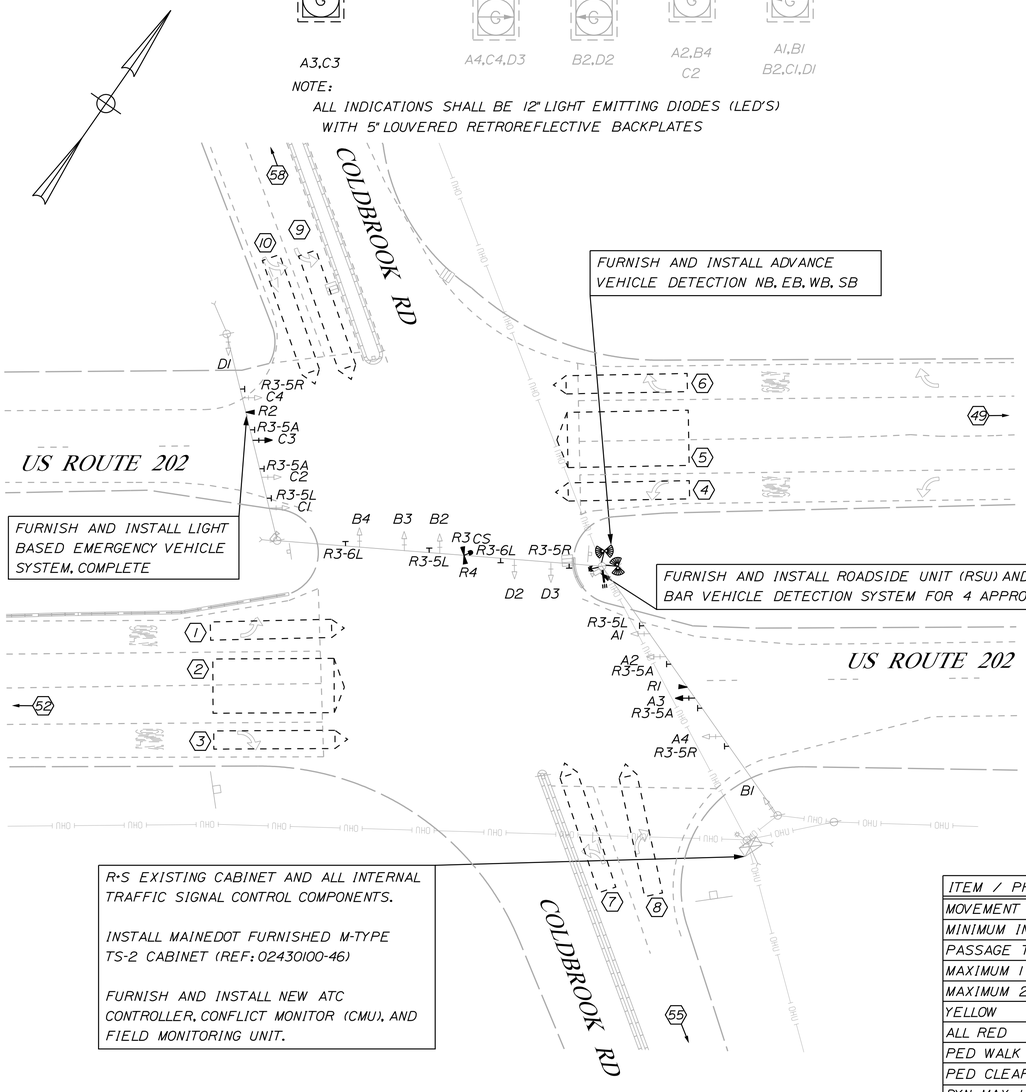


A3,C3

EXISTING INDICATIONS



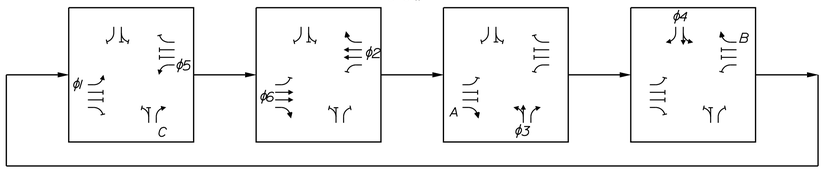
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 | 3 4
5 6



OVERLAP PHASING:
OVL A = 3-6 OVL B = 4-2 OVL C = 5-3

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (NB)
4	8	2	φ2 (SB)
5	9	3	φ4 (EB)
6	10	4	φ3 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 4.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L 30"x36" 3-PROPOSED
R3-6L 30"x36" 2-PROPOSED
R3-5A 30"x36" 4-PROPOSED
R3-5R 30"x36" 3-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	NBL	SBTR	WB	EB	SBL	NBTR	-	-
MINIMUM INITIAL	5	5	5	5	5	5	-	-
PASSAGE TIME	2.0	1.5	3.0	3.0	2.0	1.5	-	-
MAXIMUM 1	15	50	30	30	15	50	-	-
MAXIMUM 2	15	45	15	45	15	45	-	-
YELLOW	3.5	5.0	4.0	4.0	3.5	5.0	-	-
ALL RED	3.5	2.0	4.0	4.0	3.5	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	60	-	-	-	60	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	O	S	O	O	O	S	-	-
DETECTOR	NL	NL	NL	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	3/7	4/8	6/10	5/9	-	3/7	-	-
FLASH	R	Y	R	R	R	Y	-	-
DUAL ENTRY	OFF	ON	OFF	OFF	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 15

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

HAMPDEN
US ROUTE 202,
COLDBROOK RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
30
OF 60

Filename: 030_Signal_15.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB APPROACHE (ITEM 643.22)	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	4
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 4-SECTION TRAFFIC SIGNAL HEAD	2
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	6

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

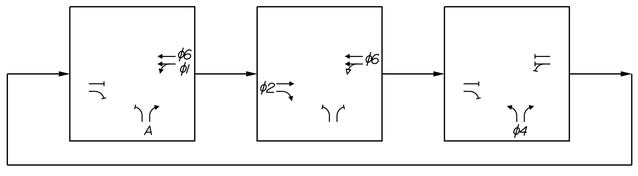
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	MAIN ST WB LEFT-THRU	1	1	B	-	-
②	MAIN ST WB THRU	6	6	B	-	-
③	MAIN ST EB THRU	2	2	B	-	-
④	MAIN ST EB RIGHT	2	2	B	5	-
⑤	RILEY RD NB LEFT	4	4	B	-	-
⑥	RILEY RD NB RIGHT	4	4	B	5	-
⑤⑧	RILEY RD NB ADVANCE	4	4	A	-	-

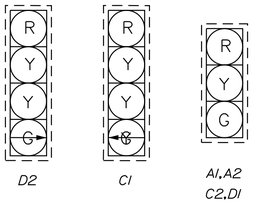
EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

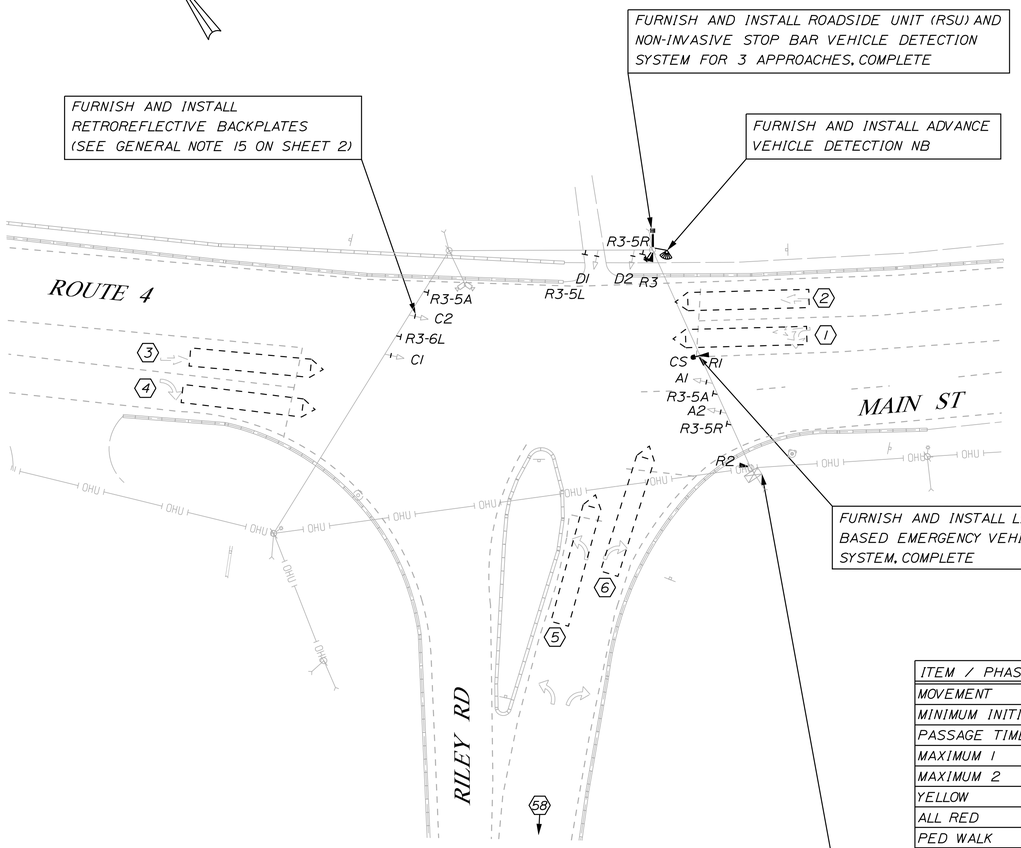
1 2 ‖ 4
5 ‖



MODIFIED INDICATIONS



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



R-S EXISTING CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), ROADSIDE UNIT (RSU), FIELD MONITOR UNIT

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (WB)
4	8	2	φ2 (EB)
5	9	3	φ4 (NB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L	R3-6L	R3-5A	R3-5R
30"x36"	30"x36"	30"x36"	30"x36"
1-PROPOSED	1-PROPOSED	2-PROPOSED	2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	WBL	EB	-	NBLR	-	WBT	-	-
MINIMUM INITIAL	4	5	-	5	-	5	-	-
PASSAGE TIME	2.0	4.0	-	3.0	-	4.0	-	-
MAXIMUM 1	15	45	-	35	-	45	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.5	4.5	-	3.5	-	4.5	-	-
ALL RED	2.5	2.5	-	3.0	-	2.5	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	55	-	40	-	55	-	-
DYN MAX STEP	-	5	-	5	-	5	-	-
RECALL	O	S	-	O	-	S	-	-
DETECTOR	NL	NL	-	NL	-	NL	-	-
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	-	3/7	-	-
FLASH	R	Y	-	R	-	Y	-	-
DUAL ENTRY	OFF	ON	-	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 16

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

JAY
MAIN ST (ROUTE 4),
RILEY RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
31
OF 60

Filename: 031_SignoL_16.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

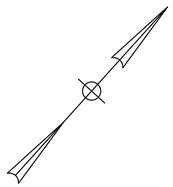
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-14)	1
FUNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	4
FUNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FUNISH AND INSTALL ONE-WAY 5-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	15
FINISH AND INSTALL SPAN WIRE AND TETHER	380 LF

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

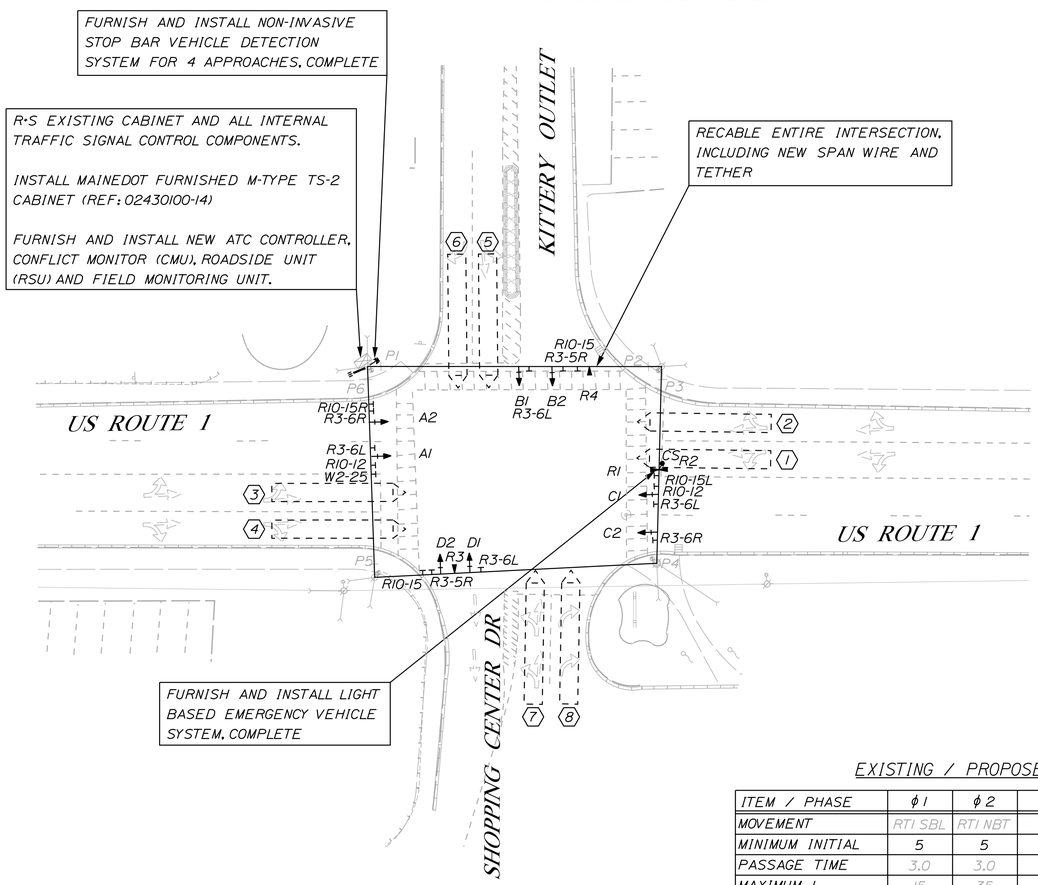
DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	US 1 SB LEFT-THRU	1	1	B	-	-
②	US 1 SB THRU-RIGHT	6	6	B	-	-
③	US 1 NB LEFT-THRU	5	5	B	-	-
④	US 1 NB THRU-RIGHT	2	2	B	-	-
⑤	KITTERY OUTLET EB LEFT-THRU	4	4	B	-	-
⑥	KITTERY OUTLET EB RIGHT	4	4	B	5	-
⑦	SHOPPING CTR DR WB LEFT-THRU	8	8	B	-	-
⑧	SHOPPING CTR DR WB RIGHT	8	8	B	5	-

PROPOSED INDICATIONS



EXISTING INDICATIONS TO REMAIN

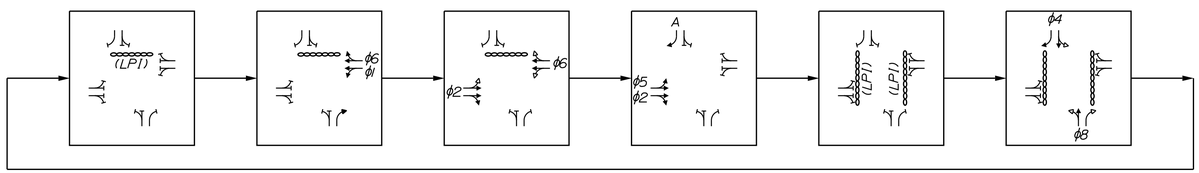
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 | 4
6 5 | 8



OVERLAP PHASING:
OVL A = 4-5
OVL B = 1-8

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

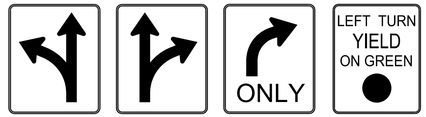
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5 (NB)
4	8	2	φ1&φ6 (SB)
5	9	3	φ4 (EB)
6	10	4	φ8 (WB)

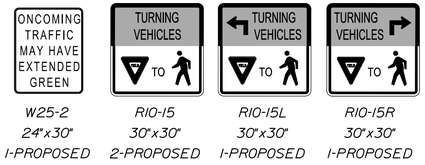
PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-6L 30"x36" 4-PROPOSED
R3-6R 30"x36" 2-PROPOSED
R3-5R 30"x36" 2-PROPOSED
R10-12 30"x36" 2-PROPOSED



W25-2 24"x30" 1-PROPOSED
R10-15 30"x30" 2-PROPOSED
R10-15L 30"x30" 1-PROPOSED
R10-15R 30"x30" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	RTI SBL	RTI NBT	-	EB	RTI NBL	RTI SBT	-	WB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	15	35	-	25	15	35	-	25
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	3.5	4.0	-	3.5	3.5	4.0	-	3.5
ALL RED	2.5	2.0	-	2.0	2.5	2.0	-	2.0
PED WALK	-	-	-	5	-	5	-	5
PED CLEAR	-	-	-	14	-	18	-	14
DYN MAX LIMIT	-	45	-	-	-	45	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	4/8	3/7	-	5/9	3/7	4/8	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 17

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

KITTERY
US ROUTE 1, MAINE OUTLET, SHOPPING CENTER DR

TRAFFIC SIGNAL PLAN

SHEET NUMBER
32
OF 60

LIST OF WORK ITEMS

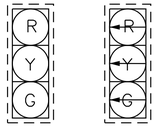
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-09)	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB AND SB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	10
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	4

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

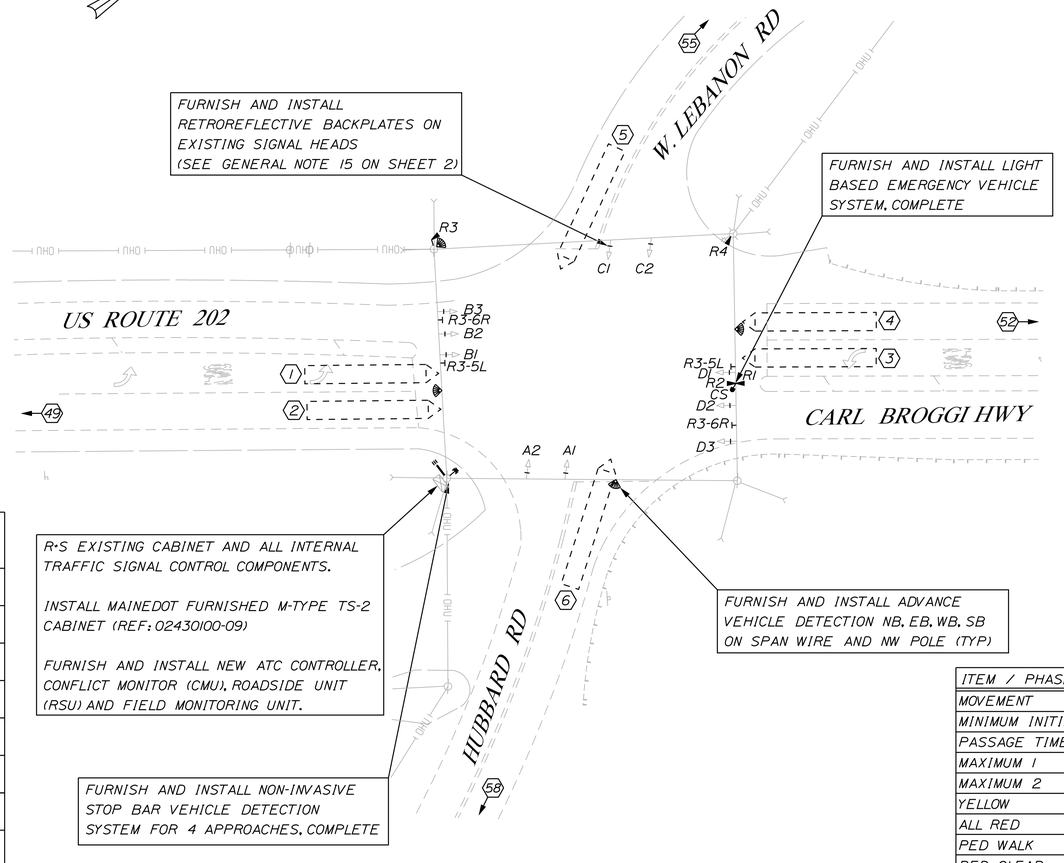
DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	US 202 EB LEFT	1	1	B	-	-
②	US 202 EB THRU-RIGHT	6	6	B	-	-
③	US 202 WB LEFT	5	5	B	-	-
④	US 202 WB THRU-RIGHT	2	2	B	-	-
⑤	W. LEBANON RD SB MOVEMENTS	4	4	B	-	-
⑥	HUBBARD RD NB MOVEMENTS	8	8	B	-	-
49	US 202 EB ADVANCE	6	6	A	-	-
52	US 202 WB ADVANCE	2	2	A	-	-
55	W. LEBANON RD SB ADVANCE	4	4	A	-	-
58	HUBBARD RD NB ADVANCE	8	8	A	-	-

MODIFIED INDICATIONS



A1,A2,B2 B3,C1,C2 D2,D3 — B1,D1

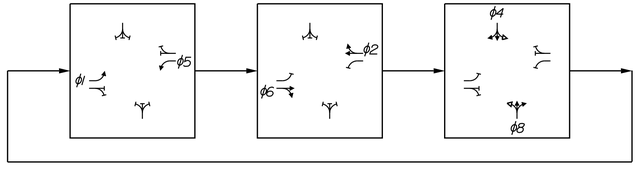
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 4
5 6 8



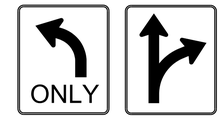
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ2&ϕ5 (WB)
4	8	2	ϕ1&ϕ6 (EB)
5	9	3	ϕ4 (SB)
6	10	4	ϕ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-5L 30"x36" 2-PROPOSED

R3-6R 30"x36" 2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	EB LT	WB	-	SB	WB LT	EB	-	NB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	5.0	-	3.0	3.0	5.0	-	3.0
MAXIMUM 1	15	35	-	25	15	35	-	25
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.5	5.0	-	4.5	4.5	5.0	-	4.5
ALL RED	2.5	2.0	-	2.0	2.5	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	45	-	-	-	45	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	4/8	3/7	-	5/9	3/7	4/8	-	5/9
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 18

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

		DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

LEBANON
CARL BROGGI HWY (US ROUTE 202), W. LEBANON RD, HUBBARD RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
33
OF 60

Filename: 033_Signal_18.dgn Date:5/17/2023
Division: HIGHWAY Username: jorobert

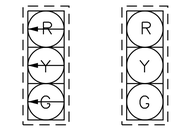
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SENSORS ONLY FOR NB, SB, EB AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

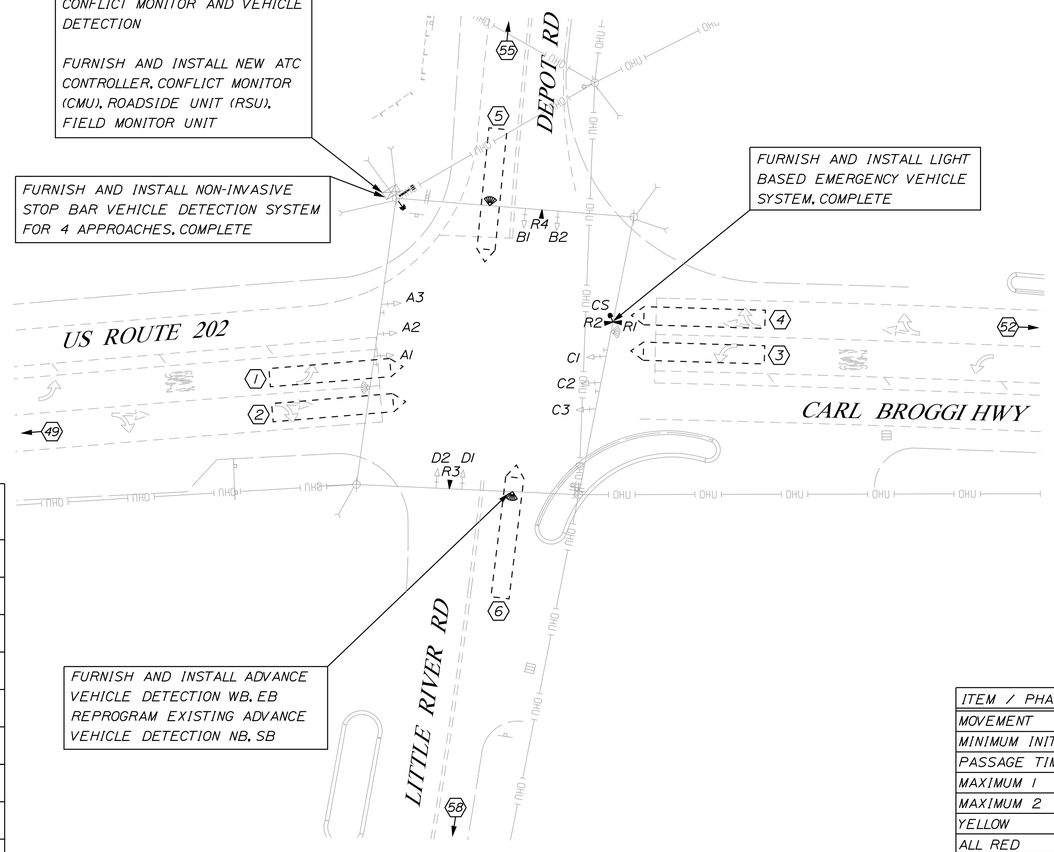
EXISTING INDICATIONS

(PROVIDED BY OTHERS UNDER WIN 25955.04)



A1,C1 — A2,A3,B1,B2, C2,C3,D1,D2

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	ϕ2&ϕ5 (WB)
R2	4	8	2	ϕ1&ϕ6 (EB)
R3	5	9	3	ϕ4 (SB)
R4	6	10	4	ϕ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING, AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS LOCATED AT THE INTERSECTION.

2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)

3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.

4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.

5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	US 202 EB LEFT	1	1	B	-	-
2	US 202 EB THRU-RIGHT	6	6	B	-	-
3	US 202 WB LEFT	5	5	B	-	-
4	US 202 WB THRU-RIGHT	2	2	B	-	-
5	DEPOT RD SB MOVEMENTS	4	4	B	-	-
6	LITTLE RIVER RD NB MOVEMENTS	8	8	B	-	-
49	US 202 EB ADVANCE	6	6	A	-	-
52	US 202 WB ADVANCE	2	2	A	-	-
55	DEPOT RD SB ADVANCE	4	4	A	-	-
58	LITTLE RIVER RD NB ADVANCE	8	8	A	-	-

EXISTING SIGNS

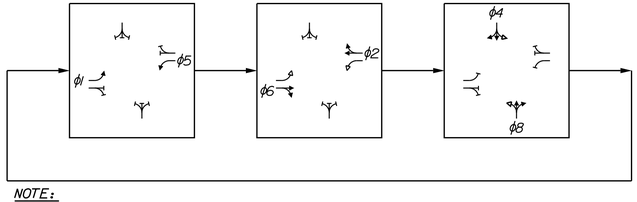
(ALL EXISTING TO REMAIN PROVIDED BY OTHERS UNDER WIN 25955.04)

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	EBL	WBTR	-	SB	WBL	EBTR	-	NB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	2.5	1.5	-	2.5	2.5	1.5	-	2.5
MAXIMUM 1	20	45	-	20	12	45	-	20
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.0	5.0	-	4.5	4.0	5.0	-	4.5
ALL RED	2.0	2.0	-	2.0	2.0	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	55	-	-	-	55	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	4/8	3/7	-	5/9	3/7	4/8	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PROPOSED PHASE SEQUENCE



RING AND BARRIER DIAGRAM

1 2 | 4
5 6 | 8

NOTE:
1. EXISTING PHASE 3 AND 7 DILEMMA ZONE DUMMY PHASES ELIMINATED FOR THROUGH PHASE 2 AND 6 ALL RED EXTENSION THROUGH PROGRAMMING IN NEW CONTROLLER.

PLAN

25 0 25 50
Scale of Feet

LOCATION 19

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

LEBANON
CARL BROGG HWY (US ROUTE 202), DEPOT RD, LITTLE RIVER RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
34
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	8
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	2
FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1

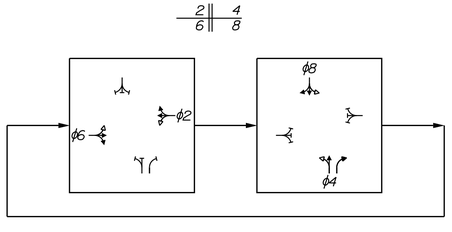
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

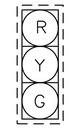
DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	SOKOKIS AVE EB MOVEMENTS	6	6	B	-	-
2	SOKOKIS AVE WB MOVEMENTS	2	2	B	-	-
3	OSSIPEE TRL NB LEFT	4	4	B	-	-
4	OSSIPEE TRL NB THRU-RIGHT	4	4	B	-	-
5	OSSIPEE TRL SB MOVEMENTS	8	8	B	-	-
49	SOKOKIS AVE EB ADVANCE	6	6	A	-	-
52	SOKOKIS AVE WB ADVANCE	2	2	A	-	-
55	OSSIPEE TRL NB ADVANCE	4	4	A	-	-
58	OSSIPEE TRL SB ADVANCE	8	8	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

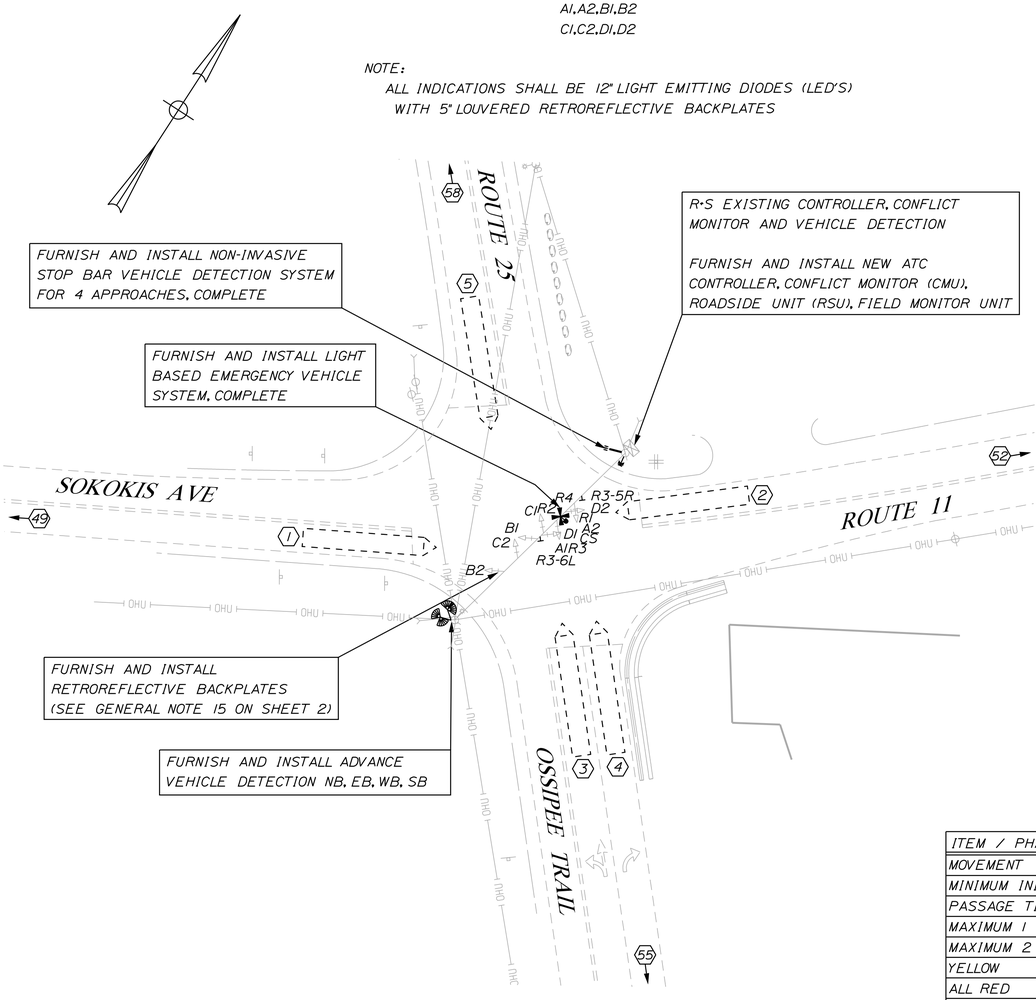


MODIFIED INDICATIONS



A1,A2,B1,B2
C1,C2,D1,D2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



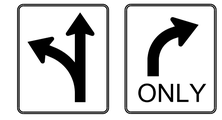
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2 (WB)
4	8	2	φ6 (EB)
5	9	3	φ4 (NB)
6	10	4	φ8 (SB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.

PROPOSED SIGNS



R3-6L
30"x36"
1-PROPOSED

R3-5R
30"x36"
1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	WB	-	NB	-	EB	-	SB
MINIMUM INITIAL	-	5	-	5	-	5	-	5
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	30	-	25	-	30	-	25
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.5	-	5.0	-	4.5	-	5.0
ALL RED	-	2.0	-	2.0	-	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	40	-	-	-	40	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	-	S	-	O	-	S	-	O
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	5/9	-	4/8	-	6/10
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 20

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	07/21	
CHECKED-REVIEWED	C. BOBAY	07/21	
DESIGN2-DETAILED2	J. ROBERT	02/23	
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

LIMINGTON
OSSIPEE TRAIL (ROUTE 25),
SOKOKIS AVE (ROUTE 11)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
35
OF 60

LIST OF WORK ITEMS

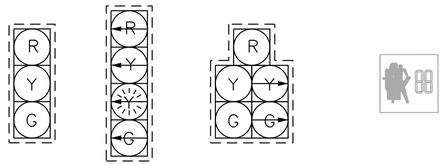
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	6
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 5-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL PERFORMANCE PLUS MODULE IN EXISTING GS2	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL 16-INCH LED COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	8
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	5

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	MAIN ST SB LEFT-THRU	6	6	B	-	-
②	MAIN ST SB RIGHT	6	6	B	5	-
③	MAIN ST NB LEFT	5	5	B	-	-
④	MAIN ST NB THRU-RIGHT	2	2	B	-	-
⑤	DRIVEWAY WB MOVEMENTS	3	3	B	-	-
⑥	BRIDGE ST EB LEFT-THRU	4	4	B	-	-
⑦	BRIDGE ST EB RIGHT	4	4	B	5	-

PROPOSED INDICATIONS



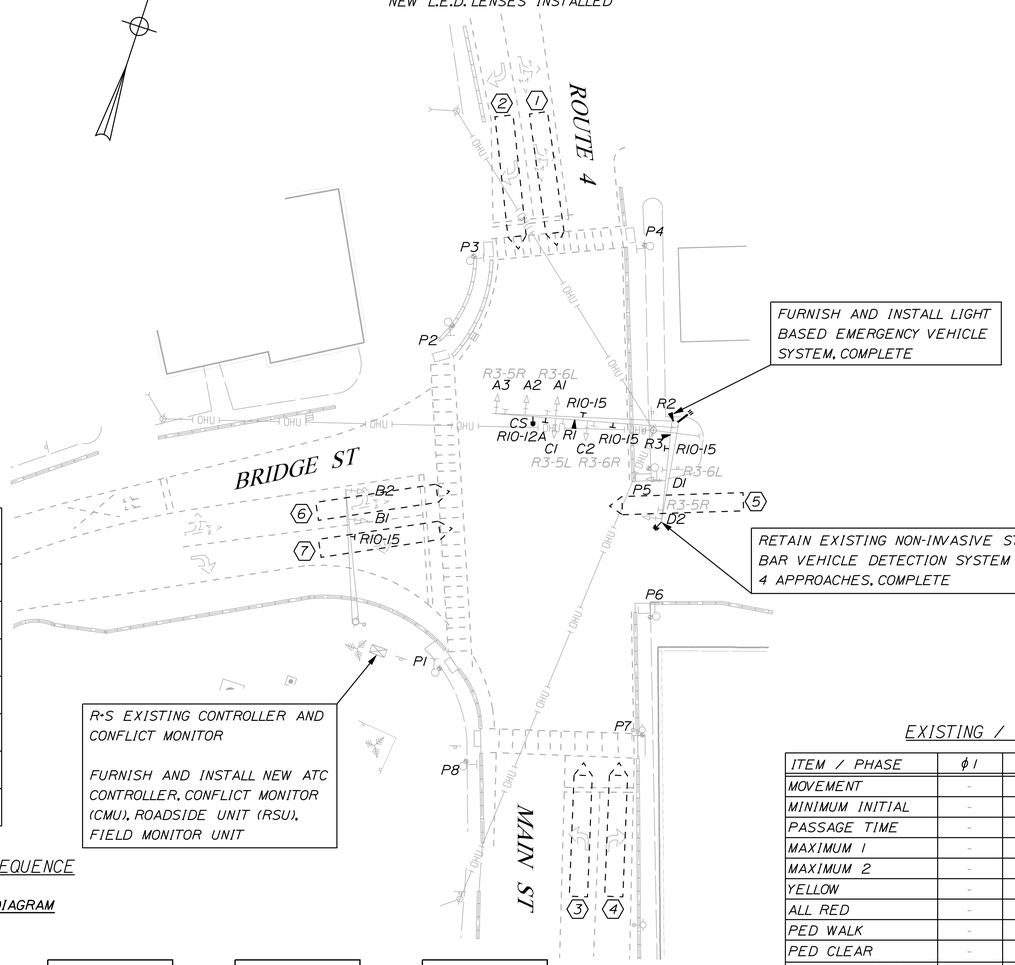
A1,A2,B1, B2,C2,D1 | C1 | A3,D2

EXISTING INDICATIONS TO REMAIN

P1-P8

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED



FURNISH AND INSTALL LIGHT BASED EMERGENCY VEHICLE SYSTEM, COMPLETE

RETAIN EXISTING NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 4 APPROACHES, COMPLETE

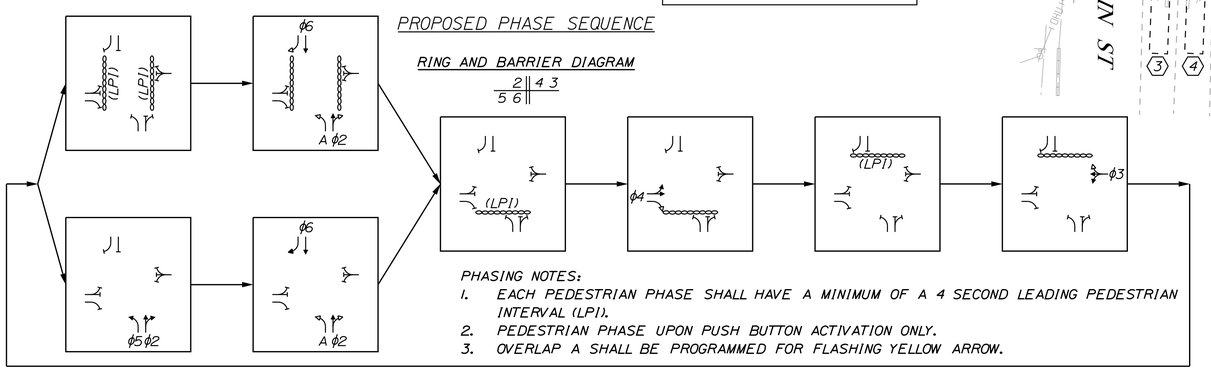
R-S EXISTING CONTROLLER AND CONFLICT MONITOR

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), ROADSIDE UNIT (RSU), FIELD MONITOR UNIT

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 | 1 4 3
5 6



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY.
3. OVERLAP A SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROW.

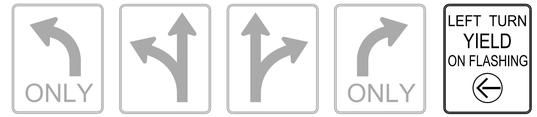
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5 (NB)
4	8	2	φ6 (SB)
5	9	3	φ4 (EB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 4.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS



R3-5L 30"x36" 1-EXISTING | R3-6L 30"x36" 2-EXISTING | R3-6R 30"x36" 1-EXISTING | R3-5R 30"x36" 2-EXISTING | R10-12A 30"x36" 1-PROPOSED

R10-15 30"x30" 4-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NBTR	WB	EB	NBL	SB	-	-
MINIMUM INITIAL	-	8	5	8	5	8	-	-
PASSAGE TIME	-	3.0	3.0	3.0	2.0	3.0	-	-
MAXIMUM 1	-	45	18	20	10	35	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.0	4.0	3.5	4.0	4.0	-	-
ALL RED	-	4.0	2.0	2.5	4.0	4.0	-	-
PED WALK	-	5	5	5	-	5	-	-
PED CLEAR	-	24	9	12	-	24	-	-
DYN MAX LIMIT	-	55	-	30	15	45	-	-
DYN MAX STEP	-	5	-	5	5	5	-	-
RECALL	-	S	0	0	0	S	-	-
DETECTOR	-	NL	NL	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	-	3/7	-	5/9	3/7	4/8	-	-
FLASH	-	R	R	R	R	R	-	-
DUAL ENTRY	-	ON	OFF	OFF	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
0 = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 21

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

REVISIONS	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

LIVERMORE FALLS
MAIN ST (ROUTE 4),
BRIDGE ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER
36
OF 60

Filename: 036_Signal_21.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

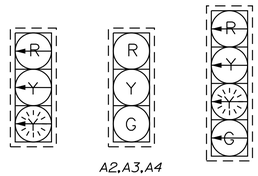
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY	EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1	FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	4
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-15)	1	IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	12	FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	10
		FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2		
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1		
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1		
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1		
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1		
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1		
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	1		
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1		
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4		
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	2		

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED INDICATIONS

* BI AND DI TO BE 3-SECTION RYY LEFT ARROWS WITH BOTTOM SECTION FYA

EXISTING BI AND DI TO BE RESET TO POLE UPRIGHTS



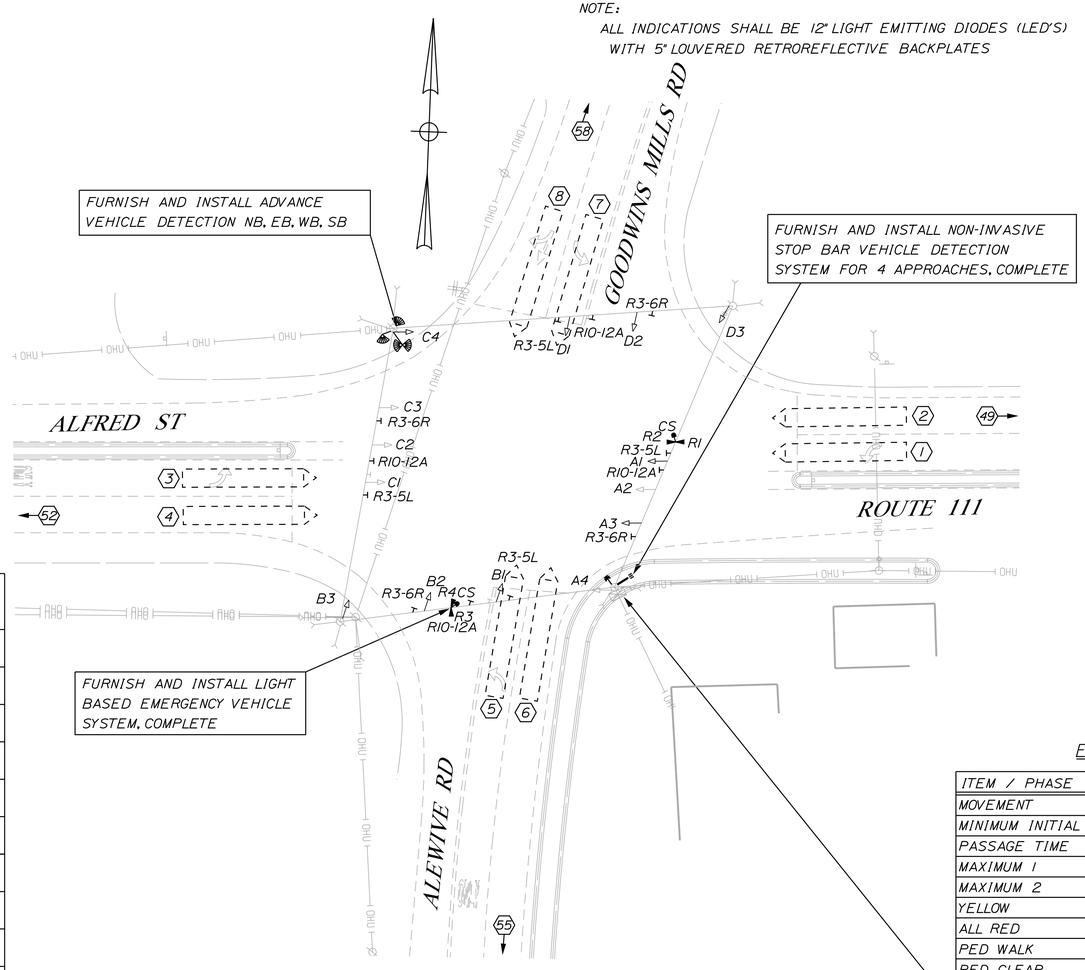
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ1&ϕ6 (WB)
4	8	2	ϕ2&ϕ5 (EB)
5	9	3	ϕ4 (NB)
6	10	4	ϕ8 (SB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.

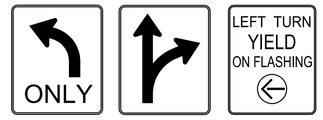


R-S EXISTING CABINET AND ALL INTERNAL TRAFFIC SIGNAL CONTROL COMPONENTS.

INSTALL MAINEDOT FURNISHED M-TYPE TS-2 CABINET (REF: 02430100-15)

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), ROADSIDE UNIT (RSU) AND FIELD MONITORING UNIT.

PROPOSED SIGNS



R3-5L 30"x36" 4-PROPOSED

R3-6R 30"x36" 4-PROPOSED

R10-12A 30"x36" 2-PROPOSED

DETECTOR SCHEDULE

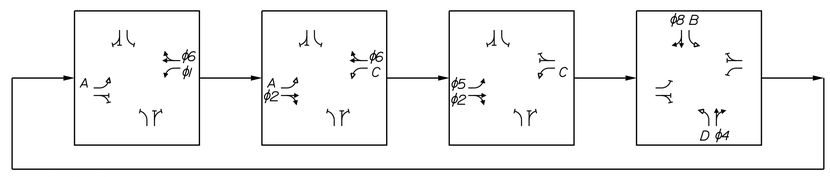
DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	RTE 111 WB LEFT	1	1	B	-	-
②	RTE 111 WB THRU-RIGHT	6	6	B	-	-
③	RTE 111 EB LEFT	5	5	B	-	-
④	RTE 111 EB THRU-RIGHT	2	2	B	-	-
⑤	ALEWIVE RD NB LEFT	4	4	B	-	-
⑥	ALEWIVE RD NB THRU-RIGHT	4	4	B	-	-
⑦	GOODWINS MILLS SB LEFT	8	8	B	-	-
⑧	GOODWINS MILLS SB THRU-RIGHT	8	8	B	-	-
㊾	RTE 111 WB ADVANCE	6	6	A	-	-
㊷	RTE 111 EB ADVANCE	2	2	A	-	-
㊺	ALEWIVE RD NB ADVANCE	4	4	A	-	-
㊽	GOODWINS MILLS SB ADVANCE	8	8	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ 1	ϕ 2	ϕ 3	ϕ 4	ϕ 5	ϕ 6	ϕ 7	ϕ 8
MOVEMENT	WBLT	EB III	-	NB	EBLT	WB III	-	SB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	15	45	-	35	15	45	-	35
MAXIMUM 2	20	35	-	25	20	35	-	25
YELLOW	4.0	5.0	-	5.0	4.0	5.0	-	5.0
ALL RED	3.0	2.0	-	2.0	3.0	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	55	-	40	-	55	-	40
DYN MAX STEP	-	5	-	5	-	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	4/8	3/7	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PROPOSED PHASE SEQUENCE



PHASING NOTES
1. OVERLAP A, B, C AND D SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROW.

RING AND BARRIER DIAGRAM

1 2 4
6 5 8

OVERLAP PHASING
1. OLV A = 5 (PROT) + 6 (PERM)
2. OLV B = 4
3. OLV C = 1 (PROT) + 2 (PERM)
4. OLV D = 8

PLAN

25 0 25 50
Scale of Feet

LOCATION 22

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

LYMAN
ALFRED ST (ROUTE 111), ALEWIVE RD, GOODWINS MILLS RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
37
OF 60

Filename: 037_Signal_22.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-12)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	8
FURNISH AND INSTALL 16-INCH L.E.D. COUNTDOWN PEDESTRIAN LENS IN NEW HOUSING	8
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH EXTENSION BRACKET AND 9"x15" R10-3e INFORMATIONAL SIGNS	8
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	4

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

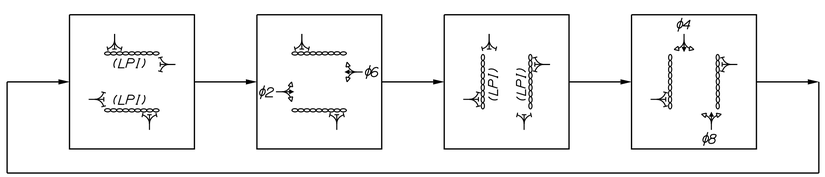
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 148 WB MOVEMENTS	6	6	B	-	-
②	MAIN ST EB MOVEMENTS	2	2	B	-	-
③	WESTON AVE SB MOVEMENTS	4	4	B	-	-
④	OLD POINT AVE NB MOVEMENTS	8	8	B	-	-

PROPOSED PHASE SEQUENCE

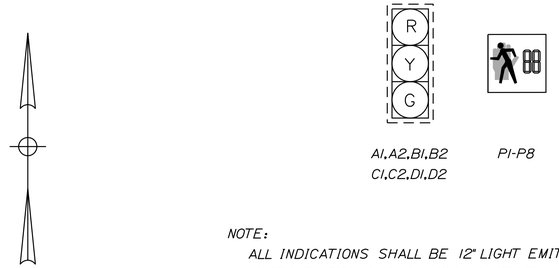
RING AND BARRIER DIAGRAM

2 ‖ 4
6 ‖ 8



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

PROPOSED INDICATIONS



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

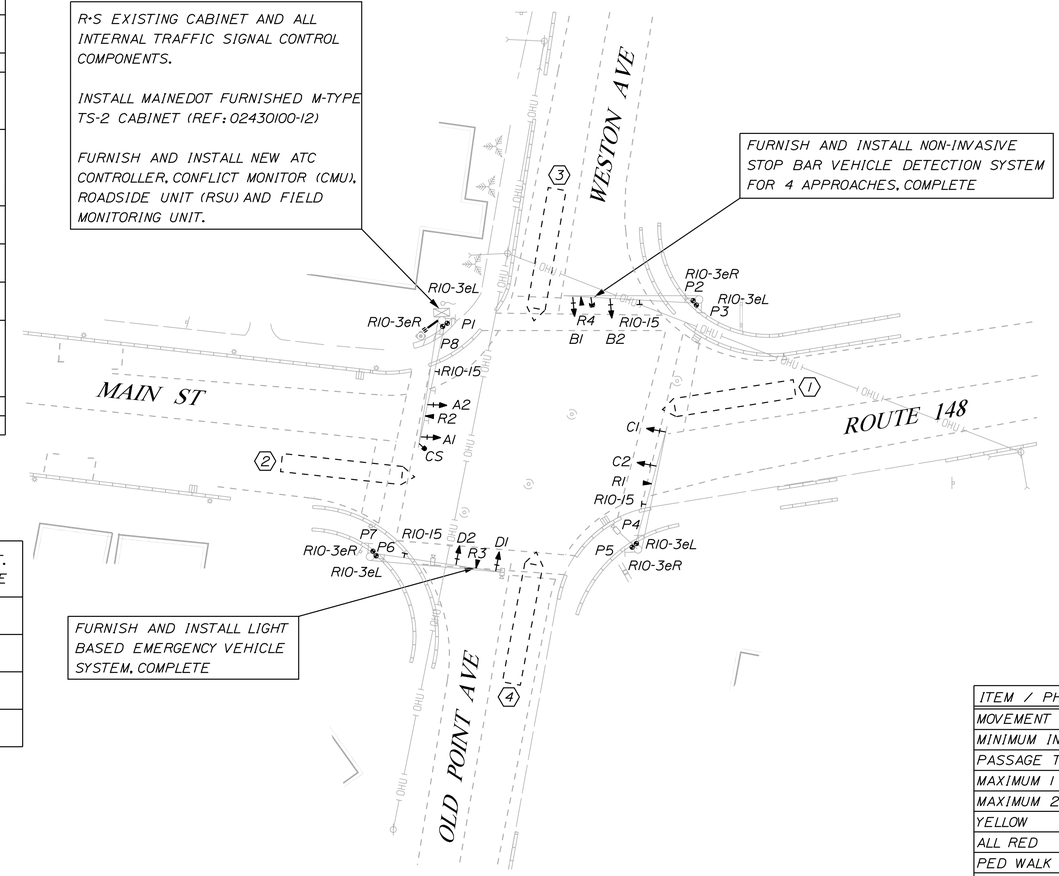
R-S EXISTING CABINET AND ALL INTERNAL TRAFFIC SIGNAL CONTROL COMPONENTS.

INSTALL MAINEDOT FURNISHED M-TYPE TS-2 CABINET (REF: 02430100-12)

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), ROADSIDE UNIT (RSU) AND FIELD MONITORING UNIT.

FURNISH AND INSTALL NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 4 APPROACHES, COMPLETE

FURNISH AND INSTALL LIGHT BASED EMERGENCY VEHICLE SYSTEM, COMPLETE



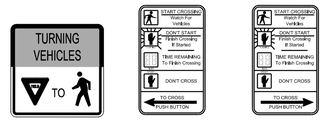
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2 (EB)
4	8	2	φ6 (WB)
5	9	3	φ4 (SB)
6	10	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (3.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R10-15 30"x30" 4-PROPOSED

10-3eL 9"x15" 4-PROPOSED

R10-3eR 9"x15" 4-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	EB	-	SB	-	WB	-	NB
MINIMUM INITIAL	-	5	-	5	-	5	-	5
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	25	-	20	-	25	-	20
MAXIMUM 2	-	15	-	45	-	15	-	45
YELLOW	-	3.5	-	3.5	-	3.5	-	3.5
ALL RED	-	2.5	-	2.0	-	2.5	-	2.0
PED WALK	-	5	-	5	-	5	-	5
PED CLEAR	-	16	-	16	-	16	-	16
DYN MAX LIMIT	-	35	-	25	-	35	-	25
DYN MAX STEP	-	5	-	5	-	5	-	5
RECALL	-	S	-	0	-	S	-	0
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	5/9	-	4/8	-	6/10
FLASH	-	R	-	R	-	R	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 23

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

MADISON
MAIN ST (ROUTE 148), OLD POINT AVE, WESTON AVE

TRAFFIC SIGNAL PLAN

SHEET NUMBER
38
OF 60

Filename: 038_Signal_23.dgn Division: HIGHWAY Username: jarobert Date:5/22/2023

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	9
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	6
FURNISH AND INSTALL SPAN WIRE AND TETHER	370 LF

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

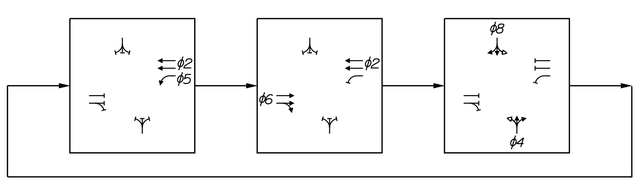
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
①	WESTERN AVE EB THRU-RIGHT	6	6	B	-	-
②	WESTERN AVE WB LEFT	5	5	B	-	-
③	WESTERN AVE WB THRU-RIGHT	2	2	B	-	-
④	GRANITE HILL RD NB MOVEMENTS	4	4	B	-	-
⑤	DRIVEWAY SB MOVEMENTS	8	8	B	5	-
㊾	WESTERN AVE EB ADVANCE	6	6	A	-	-
㊷	WESTERN AVE WB ADVANCE	2	2	A	-	-
㊺	GRANITE HILL RD NB ADVANCE	4	4	A	-	-

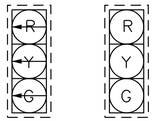
EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 ‖ 4
5 6 ‖ 8

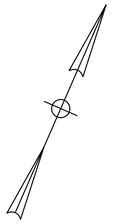


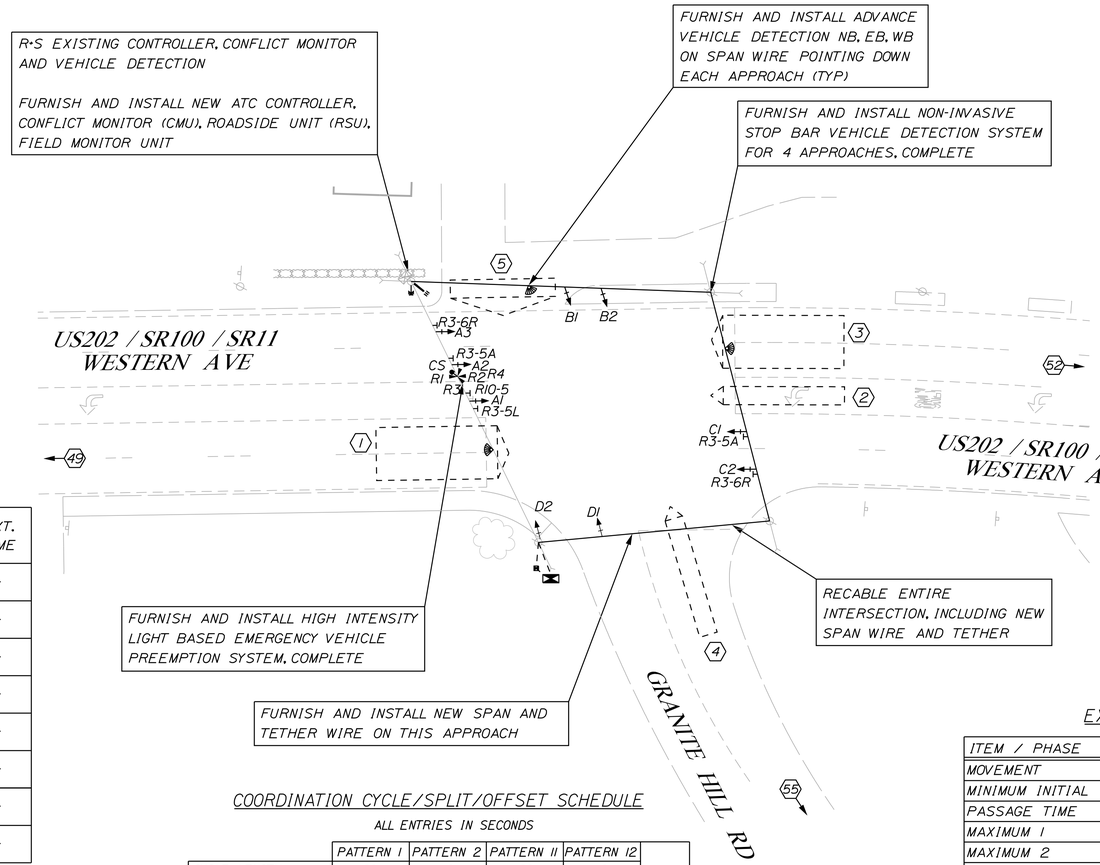
PROPOSED INDICATIONS



A1 A2,A3,B1,B2 C1,C2,D1,D2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED BACKPLATES AND 3" RETROREFLECTIVITY





COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PATTERN 1	PATTERN 2	PATTERN 11	PATTERN 12	
CYCLE LENGTH	60	110	120	110	COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET	0	22	22	5	
COORDINATED φ	φ6	φ6	φ6	φ6	
SPLIT TIME φ1	0	0	0	0	
SPLIT TIME φ2	46	79	84	69	
SPLIT TIME φ3	0	0	0	0	
SPLIT TIME φ4	14	31	36	41	
SPLIT TIME φ5	14	23	23	23	
SPLIT TIME φ6	32	56	61	46	
SPLIT TIME φ7	0	0	0	0	
SPLIT TIME φ8	14	31	36	41	

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE GREEN (SEE TABLE ABOVE).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE DAILY AND WEEKLY COORDINATION SCHEDULE ON SHEET 2) UNLESS PEER-TO-PEER PROGRAMMING IS ACTIVE.
3. PATTERN 11 AND 12 ARE TO BE PROGRAMMED AND RESERVED FOR CONDITIONAL USE.

EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
RI	3	7	1	φ6 (EB)
R2	4	8	2	φ2&φ5 (WB)
R3	5	9	3	φ4 (NB)
R4	6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L 30"x36" 1-PROPOSED
R3-5A 30"x36" 2-PROPOSED
R3-6R 30"x36" 2-PROPOSED
R10-5 24"x30" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	WBTR	-	NB	WBL	EBTR	-	SB
MINIMUM INITIAL	-	5	-	5	5	5	-	5
PASSAGE TIME	-	3.5	-	3.5	2.0	2.0	-	3.5
MAXIMUM 1	-	40	-	20	15	15	-	20
MAXIMUM 2	-	50	-	30	20	20	-	30
YELLOW	-	4.5	-	4.5	4.5	4.5	-	4.5
ALL RED	-	2.0	-	2.5	2.0	2.0	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	50	-	-	-	50	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	-	S	-	0	0	0	-	0
DETECTOR	-	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	-	4/8	-	5/9	4/8	3/7	-	-
FLASH	-	Y	-	R	R	R	-	R
DUAL ENTRY	-	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 24

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MANCHESTER
US202/SR100/SR11 (WESTERN AVE)
AT GRANITE HILL RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
39
OF 60

Filename: 039_Signal_24.dgn Division: HIGHWAY Username: jorobert Date:5/22/2023

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 024301100-93)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	10
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL LED BLANK-OUT SIGN, POLE MOUNTED (ITEM 645.512)	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	13
FURNISH AND INSTALL SPAN WIRE AND TETHER	380 LF

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
①	WESTERN AVE EB LEFT	1	1	B	-	-
②	WESTERN AVE EB THRU	6	6	B	-	-
③	WESTERN AVE WB LEFT	5	5	B	-	-
④	WESTERN AVE WB THRU-RIGHT	2	2	B	-	-
⑤	POND RD NB LEFT-THRU	4	4	B	-	-
⑥	POND RD NB RIGHT	4	4	B	5	-
⑦	READFIELD RD SB MOVEMENTS	3	3	B	-	-
㊾	WESTERN AVE EB ADVANCE	6	6	A	-	-
㊷	WESTERN AVE WB ADVANCE	2	2	A	-	-
㊺	POND RD NB ADVANCE	4	4	A	-	-
㊽	READFIELD RD SB ADVANCE	3	3	A	-	-

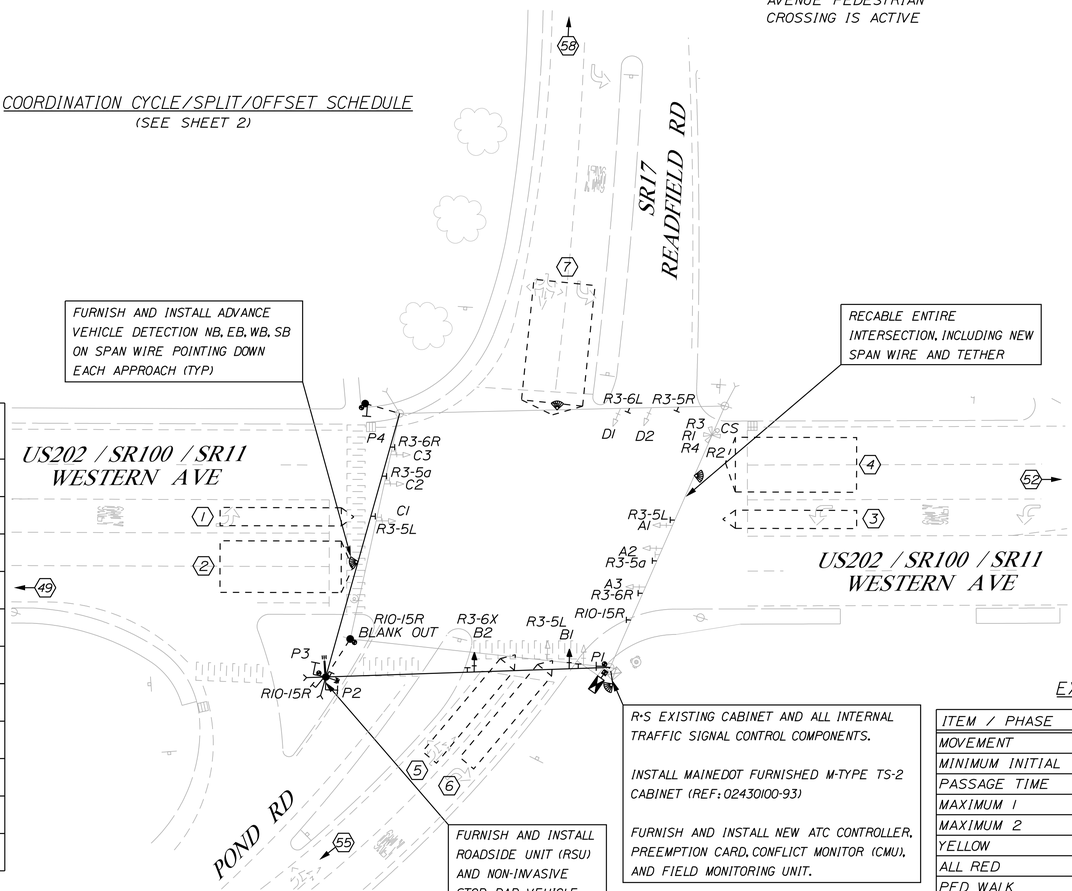
PROPOSED INDICATIONS

EXISTING INDICATIONS TO REMAIN

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED BACKPLATES AND 3" RETROREFLECTIVITY

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

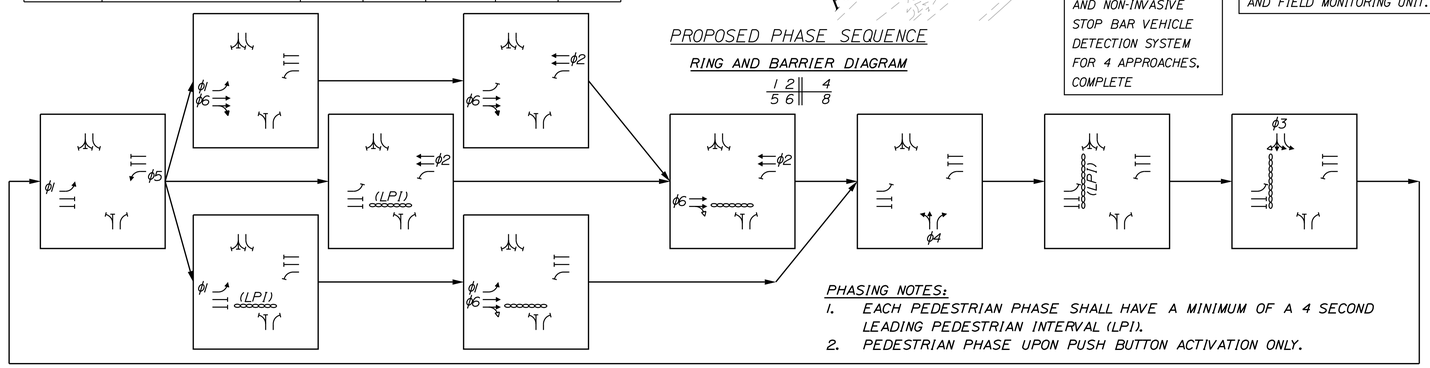
(SEE SHEET 2)



PROPOSED PHASE SEQUENCE

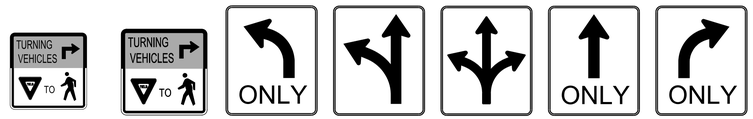
RING AND BARRIER DIAGRAM

1 2 4
5 6 8



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY.

PROPOSED SIGNS



R10-15R (BLANK OUT) 30"x30" 1-PROPOSED	R10-15R 30"x30" 2-PROPOSED	R3-5L 30"x36" 3-PROPOSED	R3-6L 30"x36" 1-PROPOSED	R3-6X 30"x36" 1-PROPOSED	R3-5A 30"x36" 4-PROPOSED	R3-5R 30"x36" 2-PROPOSED

NOTE:
BLANK OUT SIGN SHALL BE LINKED TO PHASE 3 AND BE ON ONLY WHEN WESTERN AVENUE PEDESTRIAN CROSSING IS ACTIVE

EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	φ2&φ5 (WB)
R2	4	8	2	φ3 (SB)
R3	5	9	3	φ1&φ6 (EB)
R4	6	10	4	φ4 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	EB L	WB T	SB	NB	WB L	EB T/R	-	-
MINIMUM INITIAL	5	7	5	5	5	7	-	-
PASSAGE TIME	2.0	3.5	3.5	3.5	2.0	3.5	-	-
MAXIMUM 1	20	50	30	20	20	50	-	-
MAXIMUM 2	15	50	40	15	20	50	-	-
YELLOW	3.5	4.5	4.5	4.5	3.5	4.0	-	-
ALL RED	3.5	2.0	2.5	2.5	3.5	2.0	-	-
PED WALK	-	-	5	-	-	5	-	-
PED CLEAR	-	-	15	-	-	19	-	-
DYN MAX LIMIT	-	60	40	-	-	60	-	-
DYN MAX STEP	-	5	5	-	-	5	-	-
RECALL	O	S	O	O	O	S	-	-
DETECTOR	NL	NL	NL	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	5/9	3/7	4/8	6/10	3/7	5/9	-	-
FLASH	R	Y	R	R	R	Y	-	-
DUAL ENTRY	OFF	ON	OFF	OFF	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 25

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

MANCHESTER
US202/SR100/SR11 (WESTERN AVE) AT SR17 (READFIELD RD) AND POND RD

TRAFFIC SIGNAL PLAN

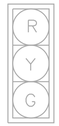
SHEET NUMBER
40
OF 60

LIST OF WORK ITEMS

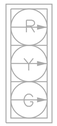
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE WAY 4-SECTION 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	1
FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING INDICATIONS



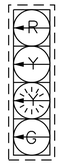
B2, B3, C1, C2, D1, D2



D3

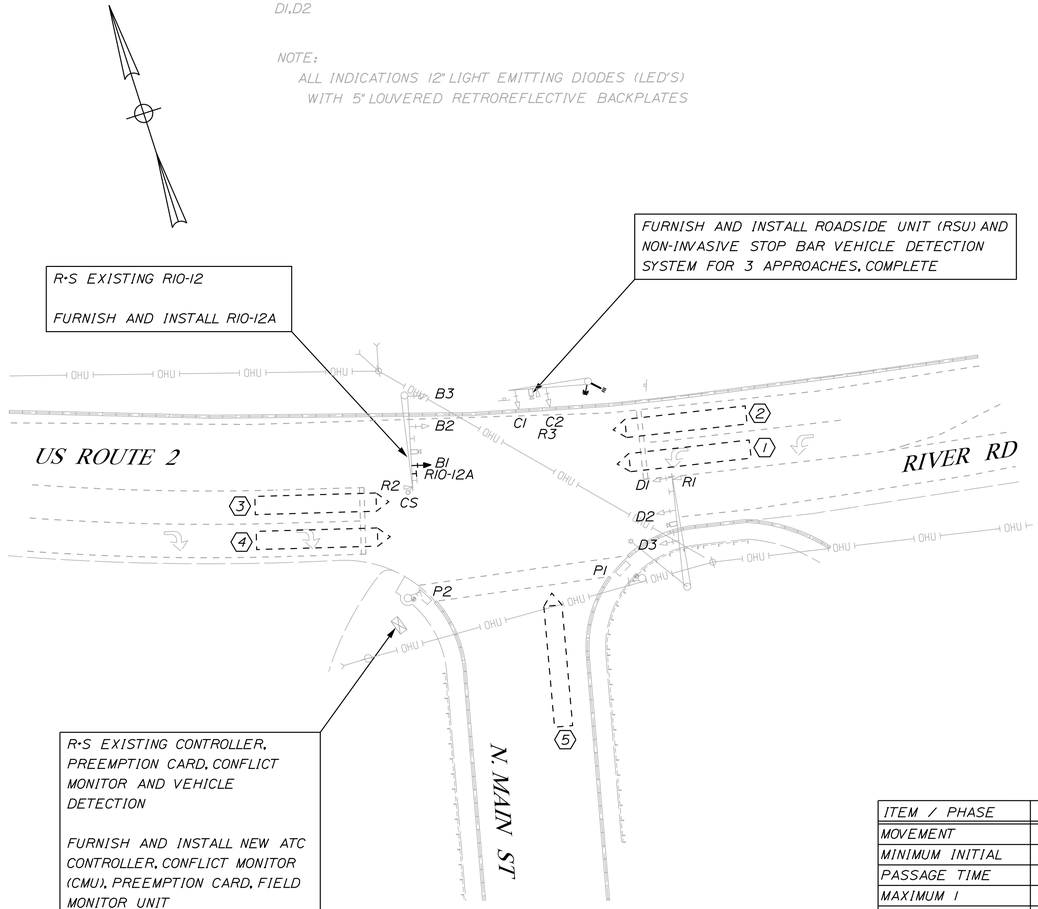
P1-P2

PROPOSED INDICATIONS



B1

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



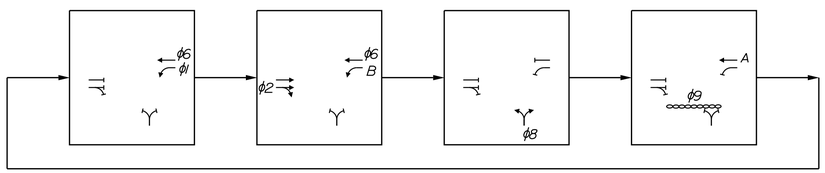
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	RIVER RD WB LEFT	1	1	B	-	-
②	RIVER RB WB THRU	6	6	B	-	-
③	RIVER RD EB THRU	2	2	B	-	-
④	RIVER RD EB RIGHT	2	2	B	5	-
⑤	N. MAIN ST NB MOVEMENTS	8	8	B	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 | |
6 | 8 9



OVERLAP PHASING:
OVL A = 9-6
OVL B = 1(PROT) - 2 (PERM)

PHASING NOTES:
1. OVERLAP B SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROW.
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY.

EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	φ1&φ6 (WB)
R2	4	8	2	φ2 (EB)
R3	5	9	3	φ8 (NB)
R4	6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

PROPOSED SIGNS

R10-12A
30"x36"
1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9
MOVEMENT	WBL	EB	-	-	-	WBT	-	NB	PED
MINIMUM INITIAL	5	5	-	-	-	5	-	8	-
PASSAGE TIME	3.0	3.0	-	-	-	3.0	-	3.0	-
MAXIMUM 1	30	30	-	-	-	30	-	30	-
MAXIMUM 2	-	-	-	-	-	-	-	-	-
YELLOW	4.0	4.0	-	-	-	4.0	-	3.5	3.0
ALL RED	2.0	2.0	-	-	-	2.0	-	2.5	0.0
PED WALK	-	-	-	-	-	-	-	-	5
PED CLEAR	-	-	-	-	-	-	-	-	16
DYN MAX LIMIT	35	40	-	-	-	40	-	35	-
DYN MAX STEP	5	5	-	-	-	5	-	5	-
RECALL	O	S	-	-	-	S	-	O	-
DETECTOR	NL	NL	-	-	-	NL	-	NL	L
PRE-EMPT/PRIORITY	3/7	4/8	-	-	-	3/7	-	5/9	-
FLASH	R	Y	-	-	-	Y	-	R	-
DUAL ENTRY	OFF	ON	-	-	-	ON	-	OFF	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 26

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

MEXICO
RIVER RD (US ROUTE 2), N. MAIN ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER
41
OF 60

Filename: 041_Signal_26.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

THIS SHEET INTENTIONALLY LEFT BLANK

LOCATION 27

SHEET NUMBER 42 OF 60

RESERVED
FUTURE INTERSECTION

TRAFFIC SIGNAL PLAN

PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

vhb

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00 TRAFFIC PLANS

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB AND SB APPROACHES (ITEM 643.22)	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	7
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	2
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	2

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

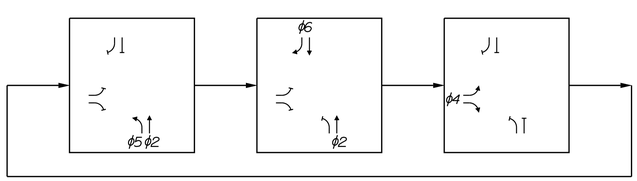
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 26 SB THRU	6	6	A	-	-
②	ROUTE 26 SB RIGHT	6	6	B	5	-
③	ROUTE 26 NB LEFT	5	5	B	-	-
④	ROUTE 26 NB THRU	2	2	B	-	-
⑤	WALMART DR EB LEFT	4	4	B	-	-
⑥	WALMART DR EB RIGHT	4	4	B	5	-
㊾	ROUTE 26 SB ADVANCE	6	6	A	-	-
㊷	ROUTE 26 NB ADVANCE	2	2	A	-	-

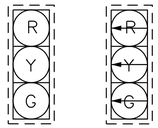
EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 | 4
5 6

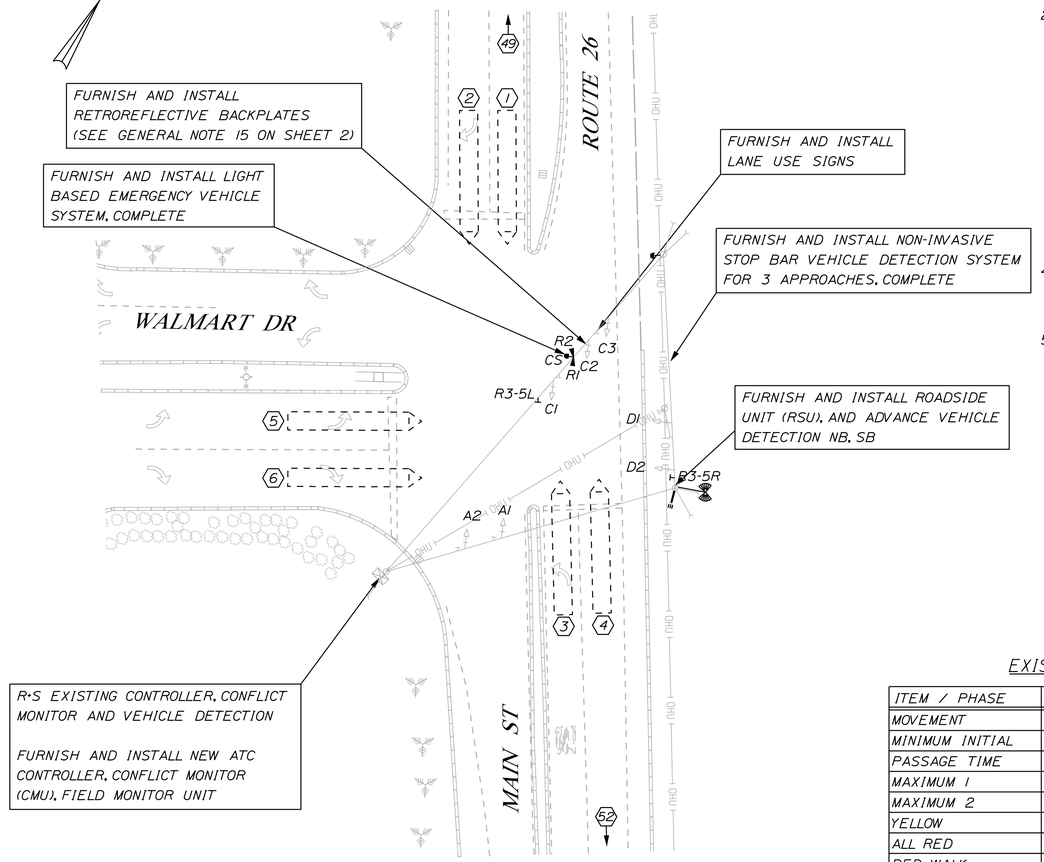


MODIFIED INDICATIONS



A1, A2, C2, C3, D1, D2 | C1

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5
4	8	2	φ6
5	9	NOT USED	
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L
30"x36"
1-PROPOSED

R3-5R
30"x36"
1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NBT	-	EB	NBL	SB	-	-
MINIMUM INITIAL	-	7	-	7	7	7	-	-
PASSAGE TIME	-	3.0	-	3.0	3.0	3.0	-	-
MAXIMUM 1	-	45	-	30	30	45	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	5.0	-	3.5	4.5	5.0	-	-
ALL RED	-	2.0	-	2.5	2.5	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	65	-	-	-	65	-	-
DYN MAX STEP	-	10	-	-	-	10	-	-
RECALL	-	S	-	O	O	S	-	-
DETECTOR	-	NL	-	NL	-	NL	-	-
PRE-EMPT/PRIORITY	-	3/7	-	-	3/7	4/8	-	-
FLASH	-	Y	-	R	-	Y	-	-
DUAL ENTRY	-	ON	-	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 28

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

OXFORD
MAIN ST (ROUTE 26),
WALMART DR

TRAFFIC SIGNAL PLAN

SHEET NUMBER
43
OF 60

Filename: 043_Signal_28.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

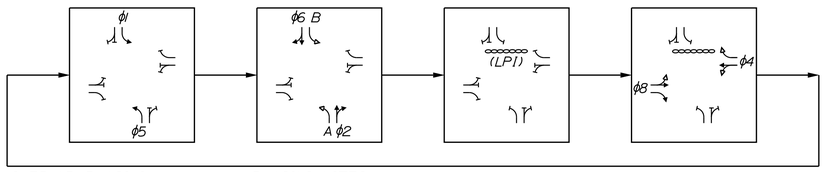
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	8
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL LED COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB AND SB APPROACHES (ITEM 643.22)	2
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	11

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 26 SB LEFT	1	1	B	-	-
②	ROUTE 26 SB THRU-RIGHT	6	6	B	-	-
③	ROUTE 26 NB LEFT	5	5	B	-	-
④	ROUTE 26 NB THRU	2	2	B	-	-
⑤	COLDWATER BROOK RD EB LEFT-THRU	4	4	B	-	-
⑥	COLDWATER BROOK RD EB RIGHT	4	4	B	5	-
⑦	HANNAFORD DR WB LEFT-THRU	8	8	B	-	-
⑧	HANNAFORD WB RIGHT	8	8	B	5	-
㊾	ROUTE 26 SB ADVANCE	6	6	A	-	-
㊿	ROUTE 26 NB ADVANCE	2	2	B	-	-



PROPOSED PHASE SEQUENCE

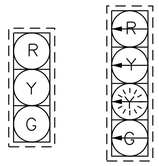
RING AND BARRIER DIAGRAM

1 2 4
5 6 8

OVERLAP PHASING:
OVL A = 5 (PROT) • 6 (PERM)
OVL B = 1 (PROT) • 2 (PERM)

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY
3. OVERLAP A AND B SHALL BE PROGRAMMED FOR FLASHING YELLOW ARROWS

PROPOSED INDICATIONS



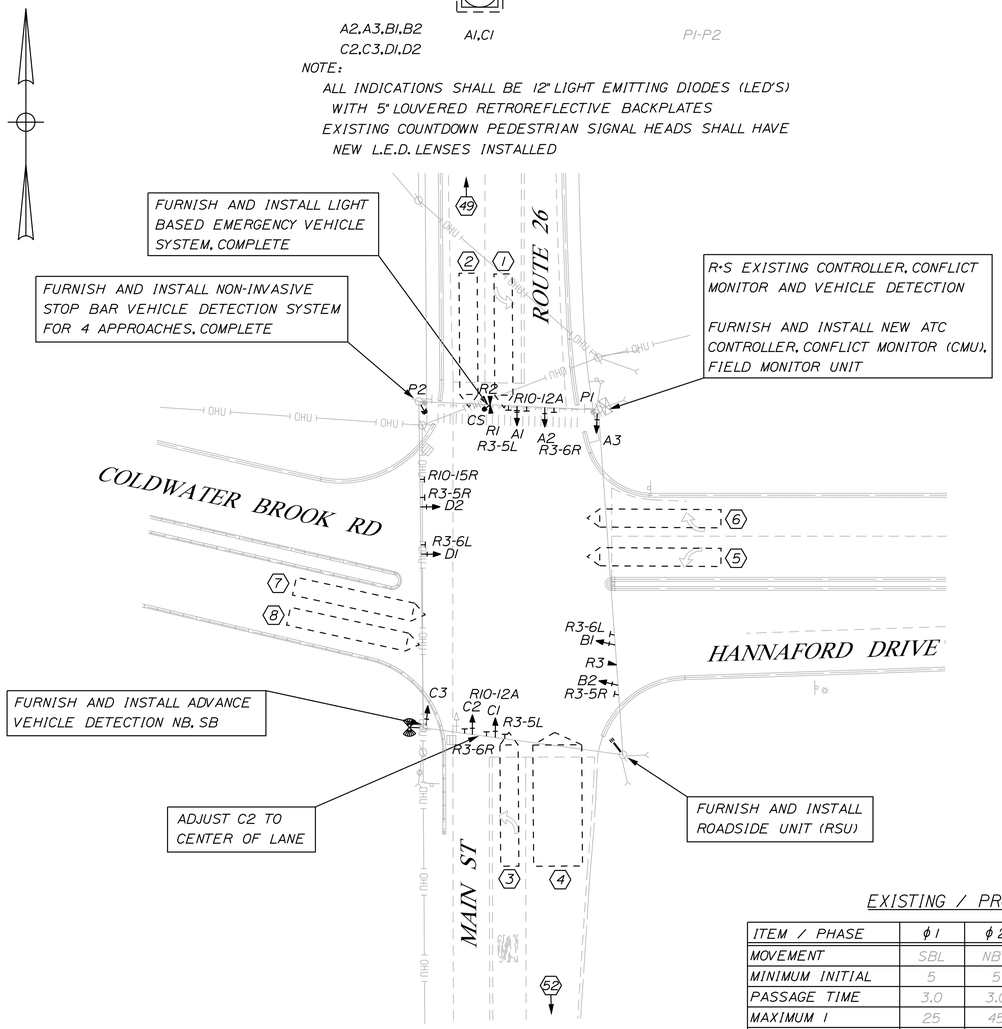
A2, A3, B1, B2
C2, C3, D1, D2

A1, C1

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES
EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED

EXISTING INDICATIONS TO REMAIN

P1-P2



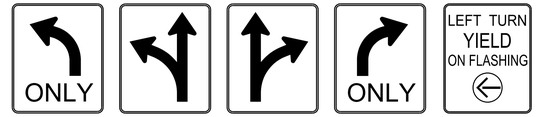
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5 (NB)
4	8	2	φ1&φ6 (SB)
5	9	3	φ8 (EB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-5L 30"x36" 2-PROPOSED
R3-6L 30"x36" 2-PROPOSED
R3-6R 30"x36" 2-PROPOSED
R3-5R 30"x36" 2-PROPOSED
R10-12A 30"x36" 2-PROPOSED

R10-15R 30"x30" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	SBL	NBT	-	WB	NBL	SBT	-	EB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	25	45	-	25	25	45	-	15
MAXIMUM 2	50	50	-	50	50	50	-	15
YELLOW	3.5	4.5	-	3.5	3.5	4.5	-	3.5
ALL RED	2.5	3.0	-	2.0	2.5	3.0	-	2.0
PED WALK	-	-	-	-	-	-	-	5
PED CLEAR	-	-	-	-	-	-	-	11
DYN MAX LIMIT	30	75	-	-	-	75	-	-
DYN MAX STEP	5	10	-	-	-	10	-	-
RECALL	0	S	-	0	0	S	-	0
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	4/8	3/7	-	-	3/7	4/8	-	5/9
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
0 = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 29

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

	B. KEEZER	DATE
PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

OXFORD
MAIN ST (ROUTE 26), COLDWATER BROOK RD, HANNAFORD DR

TRAFFIC SIGNAL PLAN

SHEET NUMBER
44
OF 60

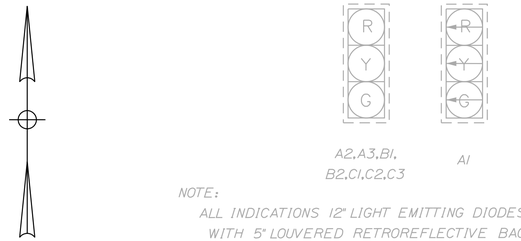
Filename: 044_Signal_29.dgn Division: HIGHWAY Username: jorobert Date:5/22/2023

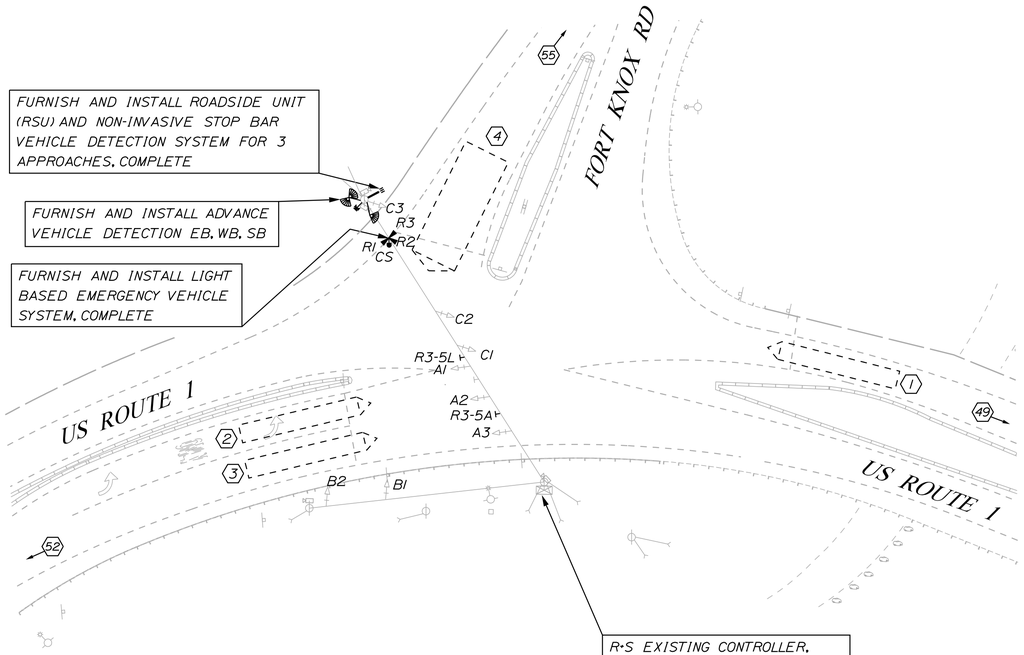
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR SB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	2

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING INDICATIONS





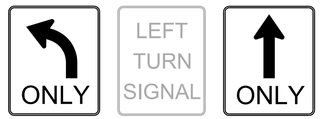
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ2&ϕ5 (EB)
4	8	2	ϕ6 (WB)
5	9	3	ϕ4 (SB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS



R3-5L 30"x36" I-PROPOSED | R10-10L 30"x36" I-EXISTING | R3-5A 30"x36" I-PROPOSED

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	US ROUTE 1 WB MOVEMENTS	6	6	B	-	-
2	US ROUTE 1 EB LEFT	5	5	B	-	-
3	US ROUTE 1 EB THRU	2	2	B	-	-
4	FORT KNOX RD SB LEFT	4	4	B	-	-
49	US ROUTE 1 WB ADVANCE	6	6	A	-	-
52	US ROUTE 1 EB ADVANCE	2	2	A	-	-
55	FORT KNOX RD SB ADVANCE	4	4	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

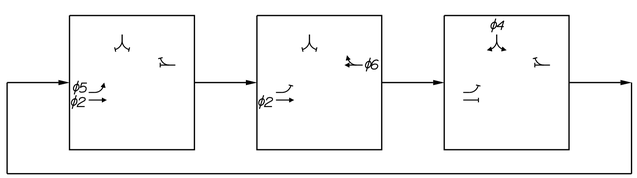
ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	-	EBT	-	SB	EBL	WB	-	-
MINIMUM INITIAL	-	7	-	7	5	7	-	-
PASSAGE TIME	-	3.0	-	3.0	3.0	3.0	-	-
MAXIMUM 1	-	60	-	45	10	60	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.5	-	3.5	3.5	4.5	-	-
ALL RED	-	2.0	-	2.5	2.5	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	70	-	-	-	70	-	-
DYN MAX STEP	-	5	-	-	-	5	-	-
RECALL	-	S	-	0	-	S	-	-
DETECTOR	-	NL	-	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	-	3/7	-	5/9	3/7	4/8	-	-
FLASH	-	Y	-	R	R	Y	-	-
DUAL ENTRY	-	ON	-	OFF	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 4
5 6



PLAN

25 0 25 50
Scale of Feet

LOCATION 30

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	J. ROBERT

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

PROSPECT
US ROUTE 1,
FORT KNOX RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
45
OF 60

Filename: 045_Signal_30.dgn Username: jorobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB AND SB APPROACHES (ITEM 643.22)	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	5
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 5-SECTION TRAFFIC SIGNAL HEAD	1
FURNISH AND INSTALL LED COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	5

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

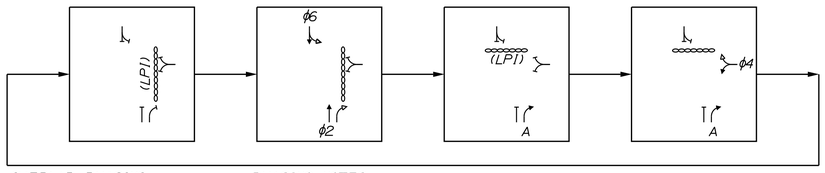
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 302 SB MOVEMENTS	6	6	B	-	-
②	ROUTE 302 NB THRU	2	2	B	-	-
③	ROUTE 302 NB RIGHT	2	2	B	5	-
④	MAIN ST WB LEFT	4	4	B	-	-
⑤	MAIN ST WB RIGHT	4	4	B	5	-
49	ROUTE 302 SB ADVANCE	6	6	A	-	-
52	ROUTE 302 NB ADVANCE	2	2	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

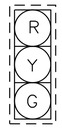
2 ‖ 4
6 ‖



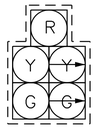
OVERLAP PHASING:
OVL A = 4 + 2

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

MODIFIED INDICATIONS



A1,C1, C2,D1,D2



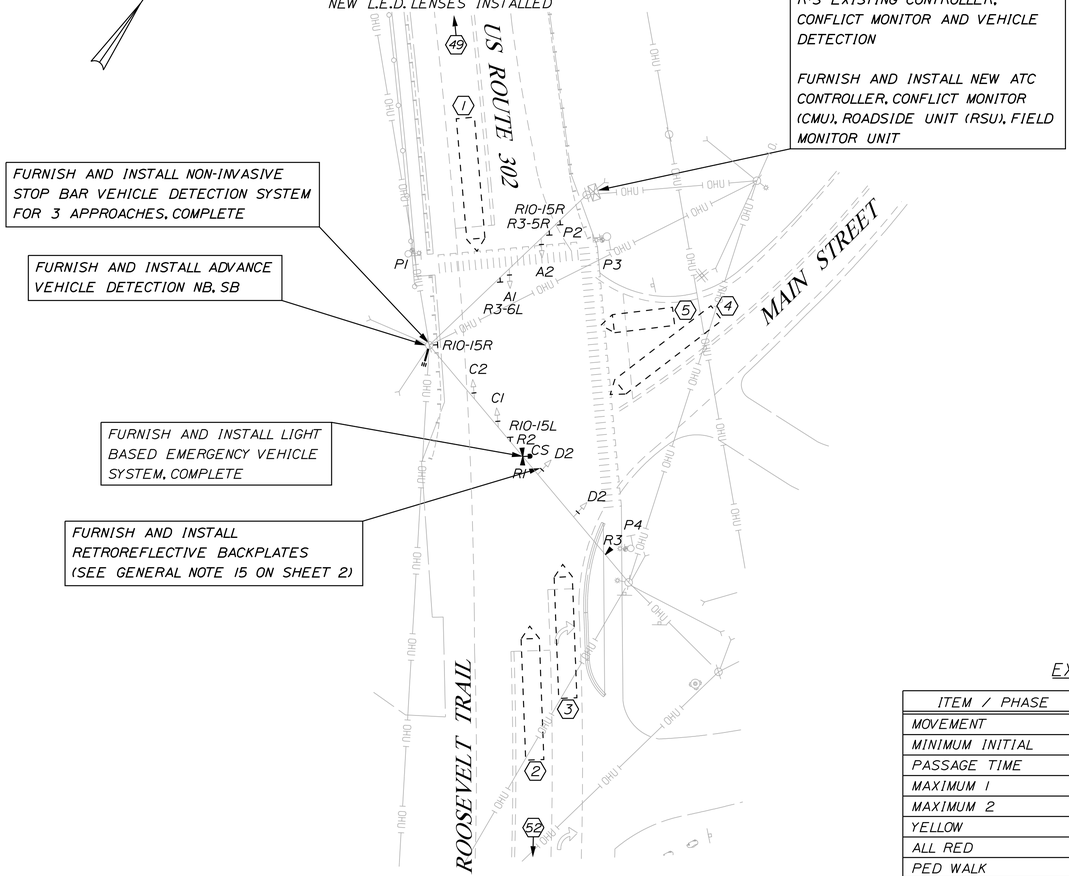
A2

EXISTING INDICATIONS TO REMAIN

P1-P4

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEADS SHALL HAVE NEW L.E.D. LENSES INSTALLED



R-S EXISTING CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), ROADSIDE UNIT (RSU), FIELD MONITOR UNIT

FURNISH AND INSTALL NON-INVASIVE STOP BAR VEHICLE DETECTION SYSTEM FOR 3 APPROACHES, COMPLETE

FURNISH AND INSTALL ADVANCE VEHICLE DETECTION NB, SB

FURNISH AND INSTALL LIGHT BASED EMERGENCY VEHICLE SYSTEM, COMPLETE

FURNISH AND INSTALL RETROREFLECTIVE BACKPLATES (SEE GENERAL NOTE 15 ON SHEET 2)

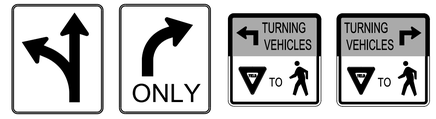
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2 (NB)
4	8	2	φ6 (SB)
5	9	3	φ4 (WB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-6L 30"x36" 1-PROPOSED

R3-5R 30"x36" 1-PROPOSED

R10-15L 30"x30" 1-PROPOSED

R10-15R 30"x30" 2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NB	-	WB	-	SB	-	-
MINIMUM INITIAL	-	10	-	6	-	10	-	-
PASSAGE TIME	-	4.0	-	3.5	-	4.0	-	-
MAXIMUM 1	-	50	-	30	-	50	-	-
MAXIMUM 2	-	75	-	30	-	50	-	-
YELLOW	-	4.5	-	3.0	-	4.5	-	-
ALL RED	-	2.5	-	3.0	-	2.5	-	-
PED WALK	-	5	-	5	-	-	-	-
PED CLEAR	-	21	-	12	-	-	-	-
DYN MAX LIMIT	-	120	-	-	-	120	-	-
DYN MAX STEP	-	10	-	-	-	10	-	-
RECALL	-	S	-	0	-	S	-	-
DETECTOR	-	NL	-	NL	-	NL	-	-
PRE-EMPT PRIORITY	-	3/7	-	5/9	-	4/8	-	-
FLASH	-	Y	-	R	-	Y	-	-
DUAL ENTRY	-	ON	-	OFF	-	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 31

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

RAYMOND
ROOSEVELT TRAIL (US ROUTE 302), MAIN ST (ROUTE 121)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
46
OF 60

Filename: 046_Signal_31.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL 16-INCH L.E.D. COUNTDOWN PEDESTRIAN LENS IN EXISTING HOUSING	4
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH EXTENSION BRACKET AND 9"X15" R10-3e INFORMATIONAL SIGN	4
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, AND EB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	8
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	6

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

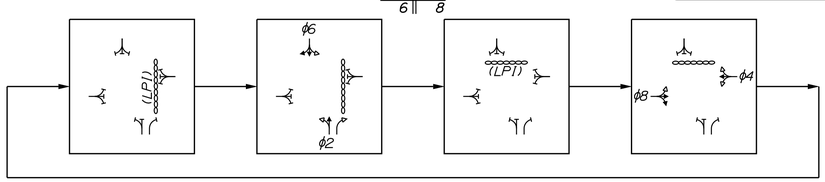
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 302 SB MOVEMENTS	6	6	B	-	-
②	ROUTE 302 NB LEFT-THRU	2	2	B	-	-
③	ROUTE 302 NB RIGHT	2	2	B	5	-
④	MAIN ST WB MOVEMENTS	4	4	B	-	-
⑤	REST AREA EB MOVEMENTS	8	8	B	-	-
㊾	ROUTE 302 SB ADVANCE	6	6	A	-	-
㊷	ROUTE 302 NB ADVANCE	2	2	A	-	-
㊺	MAIN ST WB ADVANCE	4	4	B	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 | 4
6 | 8



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LP1).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

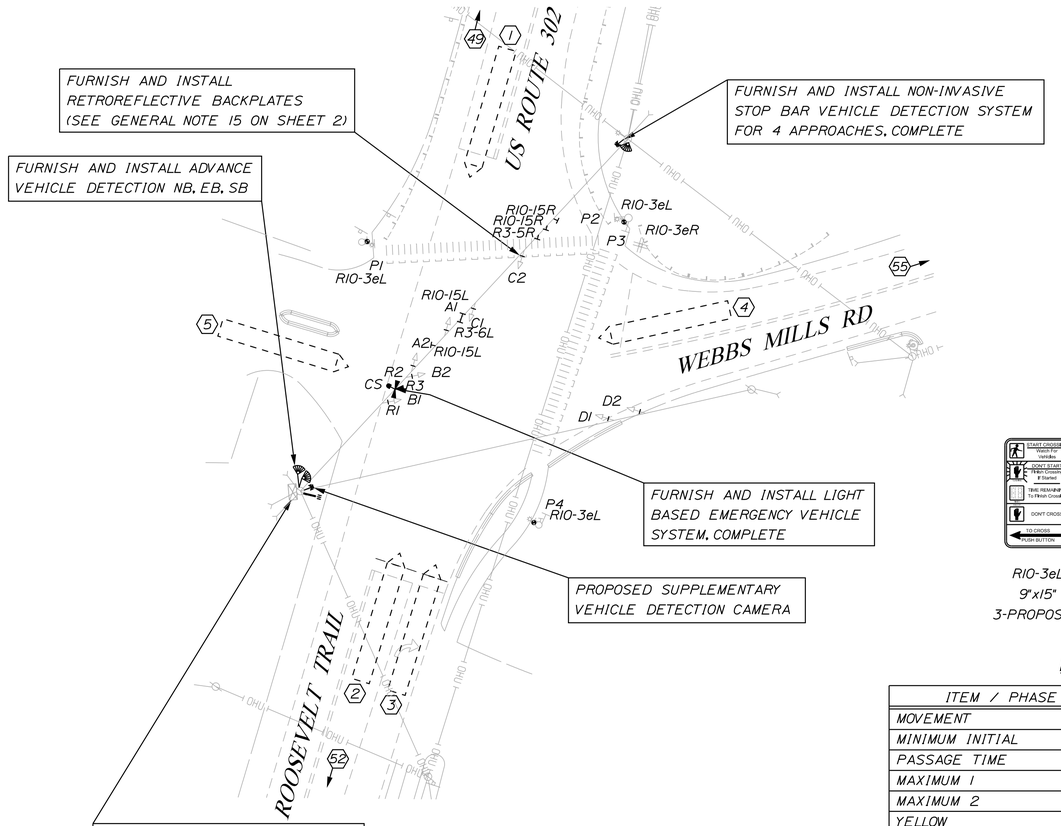
MODIFIED INDICATIONS

A1,A2,B1,B2
C1,C2,D1,D2

PROPOSED INDICATIONS

P1-P4

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



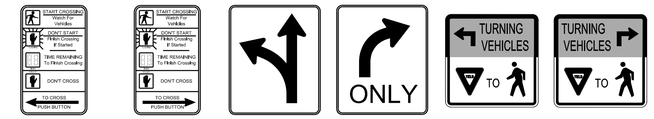
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2 (NB)
4	8	2	φ6 (SB)
5	9	3	φ4 (WB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



RIO-3eL	RIO-3eR	R3-6L	R3-5R	RIO-15L	RIO-15R
9"x15"	9"x15"	30"x36"	30"x36"	30"x30"	30"x30"
3-PROPOSED	1-PROPOSED	1-PROPOSED	1-PROPOSED	2-PROPOSED	2-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	NB	-	WB	-	SB	-	EB
MINIMUM INITIAL	-	10	-	7	-	10	-	5
PASSAGE TIME	-	4.0	-	2.5	-	4.0	-	2.0
MAXIMUM 1	-	50	-	40	-	50	-	5
MAXIMUM 2	-	60	-	50	-	60	-	5
YELLOW	-	4.0	-	4.5	-	4.0	-	4.5
ALL RED	-	3.0	-	3.5	-	3.0	-	3.5
PED WALK	-	5	-	5	-	-	-	-
PED CLEAR	-	19	-	17	-	-	-	-
DYN MAX LIMIT	-	120	-	60	-	120	-	-
DYN MAX STEP	-	10	-	10	-	10	-	-
RECALL	-	S	-	O	-	S	-	O
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	5/9	-	4/8	-	-
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 32

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

RAYMOND
ROOSEVELT TRAIL (US ROUTE 302), WEBBS MILLS RD (ROUTE 85)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
47
OF 60

Filename: 047_Signal_32.dgn Division: HIGHWAY Username: jorobert Date:5/22/2023

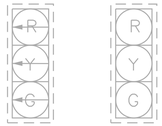
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

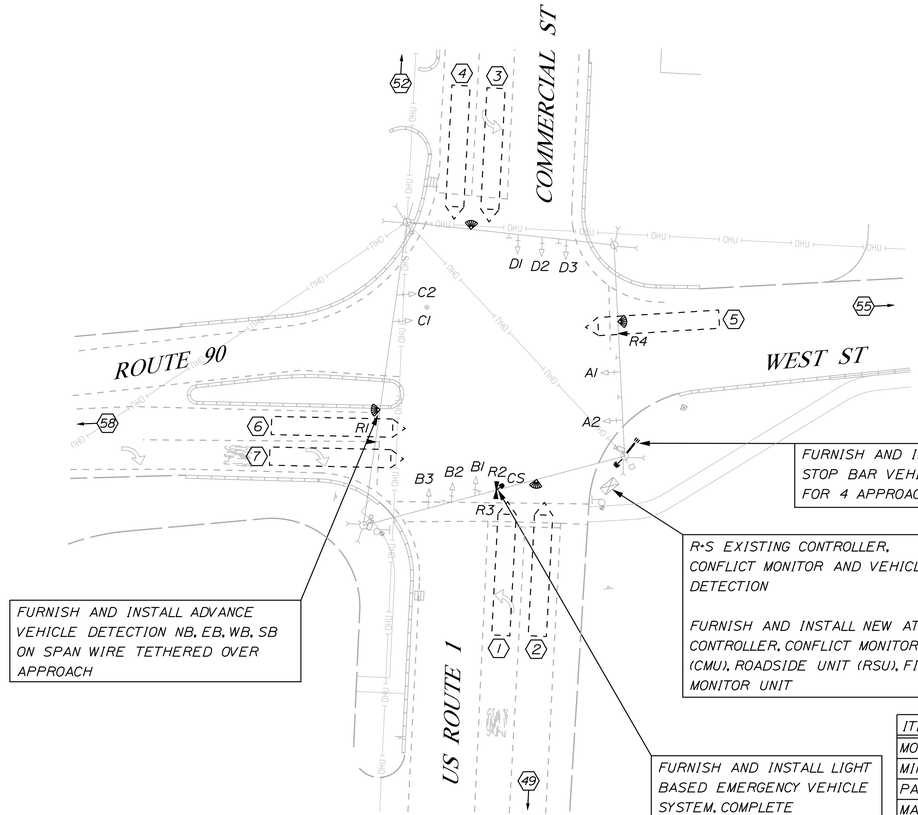
EXISTING INDICATIONS

(PROVIDED BY OTHERS UNDER WIN 25955.02)



B1,D1 A1,A2,B2, B3,C1,C2,D2,D3

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ8 (EB)
4	8	2	ϕ2&ϕ5 (SB)
5	9	3	ϕ1&ϕ6 (NB)
6	10	4	ϕ4 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING SIGNS

(ALL EXISTING TO REMAIN PROVIDED BY OTHERS UNDER WIN 25955.02)

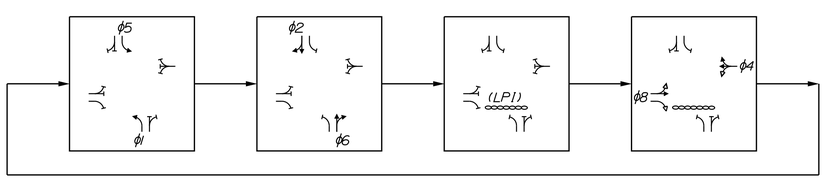
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	US ROUTE 1 NB LEFT	1	1	B	-	-
2	US ROUTE 1 NB THRU-RIGHT	6	6	B	-	-
3	US ROUTE 1 SB LEFT	5	5	B	-	-
4	US ROUTE 1 SB THRU-RIGHT	2	2	B	-	-
5	WEST ST WB MOVEMENTS	4	4	B	-	-
6	ROUTE 90 EB LEFT-THRU	8	8	B	-	-
7	ROUTE 90 EB RIGHT	8	8	B	5	-
49	US ROUTE 1 NB ADVANCE	6	6	A	-	-
52	US ROUTE 1 SB ADVANCE	2	2	A	-	-
55	WEST ST WB ADVANCE	4	4	A	-	-
58	ROUTE 90 EB ADVANCE	8	8	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	NBL	SBTR	-	WB	SBL	NBTR	-	EB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.5	-	3.0	3.0	3.5	-	3.0
MAXIMUM 1	20	45	-	30	20	45	-	35
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.0	4.5	-	4.5	4.0	4.5	-	4.5
ALL RED	2.5	2.0	-	2.5	2.5	2.0	-	2.5
PED WALK	-	-	-	-	-	-	-	5
PED CLEAR	-	-	-	-	-	-	-	15
DYN MAX LIMIT	25	55	-	35	25	55	-	40
DYN MAX STEP	5	5	-	5	5	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	5/9	4/8	-	6/10	4/8	5/9	-	3/7
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 4
5 6 8

PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

PLAN

25 0 25 50
Scale of Feet

LOCATION 33

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

ROCKPORT
COMMERCIAL ST (US ROUTE 1), WEST ST (ROUTE 90)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
48
OF 60

Filename: 048_Signal_33.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

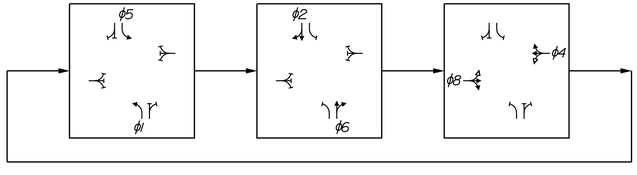
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 17 NB LEFT	1	1	B	-	-
②	ROUTE 17 NB THRU-RIGHT	6	6	B	-	-
③	ROUTE 17 SB LEFT	5	5	B	-	-
④	ROUTE 17 SB THRU-RIGHT	2	2	B	-	-
⑤	ROUTE 90 WB MOVEMENTS	4	4	B	-	-
⑥	ROUTE 90 EB MOVEMENTS	8	8	B	-	-
㊾	ROUTE 17 NB ADVANCE	6	6	A	-	-
㊷	ROUTE 17 SB ADVANCE	2	2	A	-	-
㊺	ROUTE 90 WB ADVANCE	4	4	A	-	-
㊽	ROUTE 90 EB ADVANCE	8	8	B	-	-

EXISTING PHASE SEQUENCE

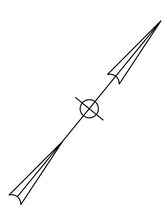
RING AND BARRIER DIAGRAM

1 2 ‖ 4
5 6 ‖ 8

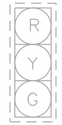


EXISTING INDICATIONS

(PROVIDED BY OTHERS UNDER WIN 25955.03)

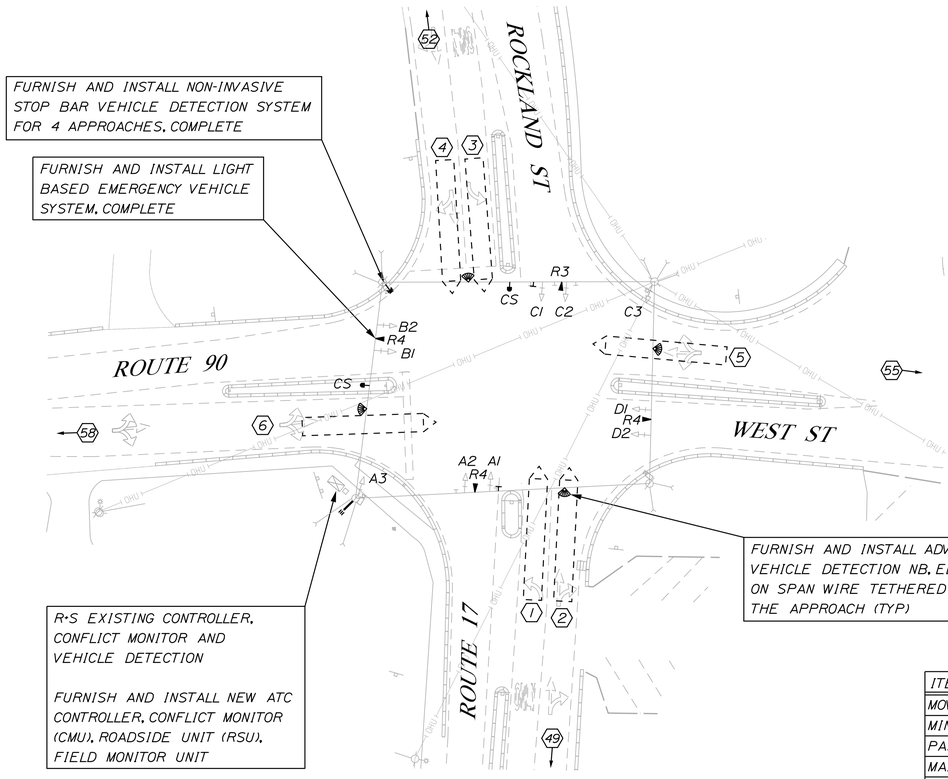


A1,C1



A2,A3,B1,B2, C2,C3,D1,D2

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ4 (WB)
4	8	2	φ2&φ5 (SB)
5	9	3	φ1&φ6 (NB)
6	10	4	φ8 (EB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING SIGNS

(ALL EXISTING TO REMAIN PROVIDED AND ADJUSTED BY OTHERS UNDER WIN 25955.03)

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	NBL	SBTR	-	WB	SBTR	NBTR	-	EB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	4.0	-	3.0	3.0	4.0	-	3.0
MAXIMUM 1	15	30	-	30	15	30	-	30
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	3.5	4.0	-	4.5	3.5	4.0	-	4.5
ALL RED	2.5	2.0	-	2.5	2.5	2.0	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	25	50	-	50	25	50	-	50
DYN MAX STEP	5	5	-	5	5	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	5/9	4/8	-	3/7	4/8	5/9	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 34

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

ROCKPORT
ROCKLAND ST (ROUTE 17), WEST ST (ROUTE 90)

TRAFFIC SIGNAL PLAN

SHEET NUMBER
49
OF 60

Date:5/17/2023
Username: jorobert
Division: HIGHWAY
Filename: 049_Signal_34.dgn

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	5
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

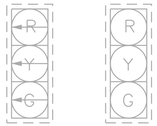
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	ROUTE 126 WB LEFT	1	1	B	-	-
②	ROUTE 126 WB THRU	6	6	B	-	-
③	ROUTE 126 WB RIGHT	6	6	B	5	-
④	ROUTE 126 EB LEFT	5	5	B	-	-
⑤	ROUTE 126 EB THRU	2	2	B	-	-
⑥	ROUTE 126 EB RIGHT	2	2	B	5	-
⑦	HIGH ST SB MOVEMENTS	4	4	B	-	-
⑧	MIDDLE RD NB LEFT-THRU	8	8	B	-	-
49	ROUTE 126 WB ADVANCE	6	6	A	-	-
52	ROUTE 126 EB ADVANCE	2	2	A	-	-
58	MIDDLE RD NB ADVANCE	8	8	A	-	-

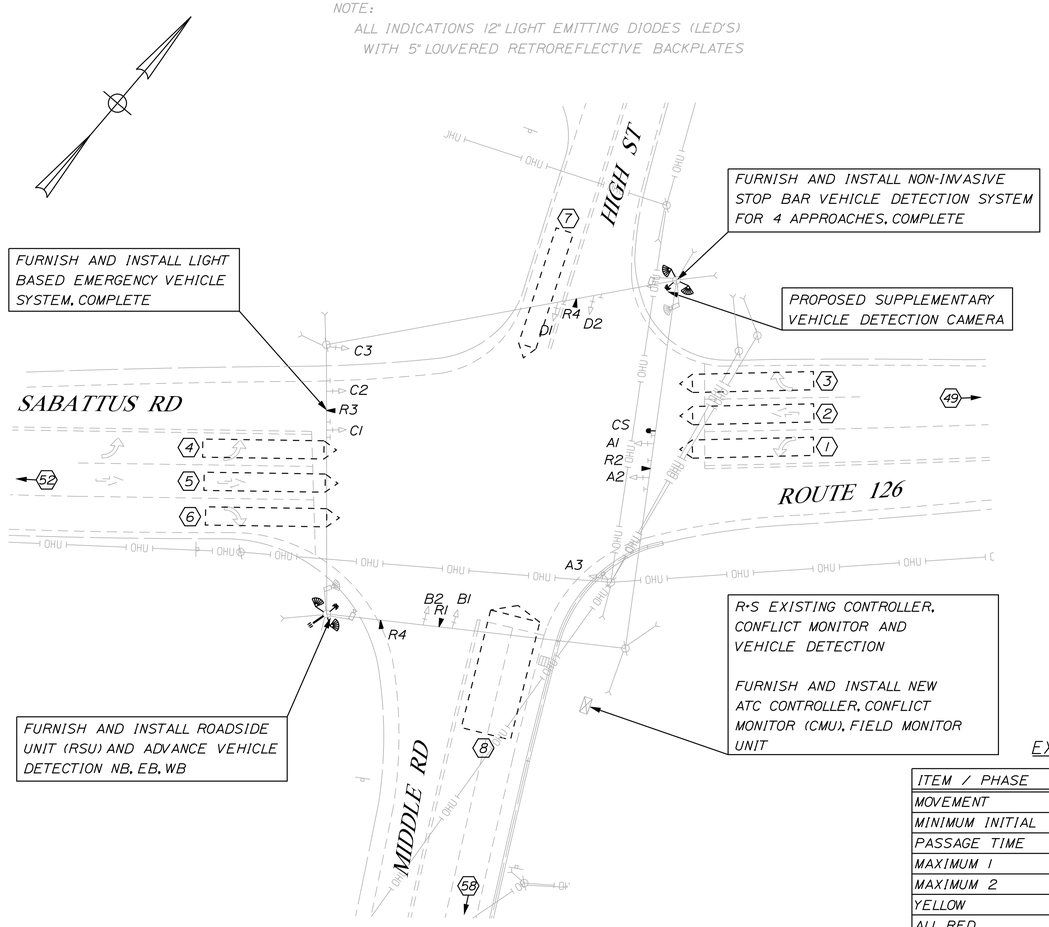
EXISTING INDICATIONS

(BY OTHERS UNDER WIN 25955.01)



A1,C1 A2,A3,B1,B2, C2,C3,D1,D2

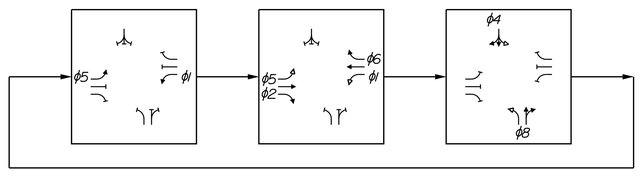
NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 4
5 6 8



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ4 (EB)
4	8	2	φ2&φ5 (NB)
5	9	3	φ1&φ6 (SB)
6	10	4	φ8 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING SIGNS

(ALL EXISTING TO REMAIN PROVIDED AND ADJUSTED BY OTHERS UNDER WIN 25955.01)

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	WBL	EBTR	-	SB	EBL	WBTR	-	NB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	15	35	-	30	15	35	-	30
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.0	4.5	-	4.0	4.0	4.5	-	4.0
ALL RED	2.5	2.0	-	2.0	2.5	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	20	45	-	35	20	45	-	35
DYN MAX STEP	5	5	-	5	5	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	5/9	4/8	-	3/7	4/8	5/9	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 35

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SABATTUS
SSABATTUS RD (ROUTE 126), HIGH ST, MIDDLE ST

TRAFFIC SIGNAL PLAN

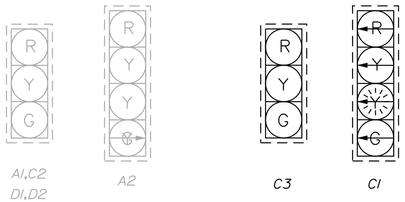
SHEET NUMBER
50
OF 60

LIST OF WORK ITEMS

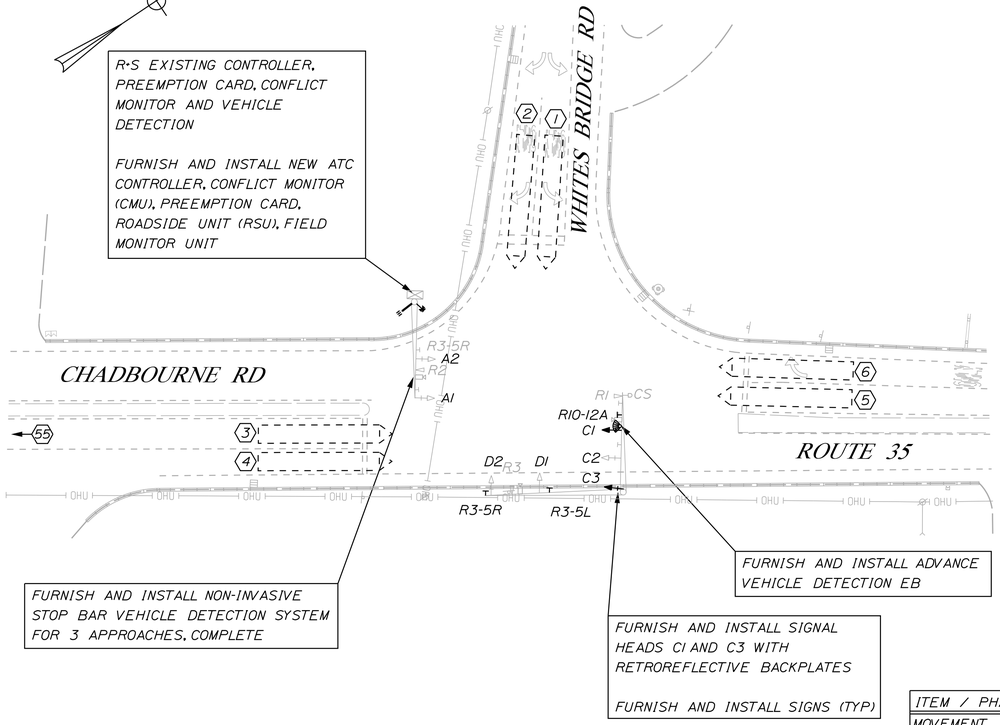
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR EB APPROACH (ITEM 643.22)	1
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	3

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING INDICATIONS / PROPOSED INDICATIONS



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



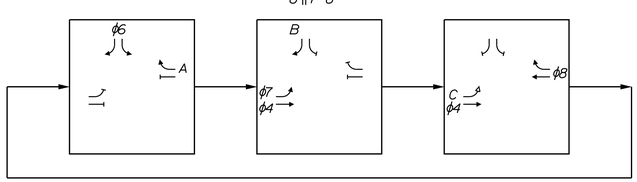
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	WHITES BRIDGE RD EB LEFT	6	6	B	-	-
②	WHITES BRIDGE RD EB RIGHT	6	6	B	5	-
③	ROUTE 35 NB LEFT	7	7	B	-	-
④	ROUTE 35 NB THRU	4	4	B	-	-
⑤	ROUTE 35 SB THRU	8	8	B	-	-
⑥	ROUTE 35 SB RIGHT	8	8	B	5	-
⑤⑤	ROUTE 35 NB ADVANCE	4	4	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

4
6 | 7 8



OVERLAP PHASING:
OVL A = 6-8
OVL B = 7-6
OVL C = 4

PHASING NOTES:
1. OVERLAP C SHALL BE PROGRAMMED WITH FLASHING YELLOW ARROW.

EMERGENCY VEHICLE PREEMPTION OPERATION

ID	PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED/RESERVED	
	2		NOT USED/RESERVED	
R1	3	7	1	φ4&φ7 (NB)
R2	4	8	2	φ8 (SB)
R3	5	9	3	φ6 (EB)
R4	6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS EXISTING, AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.

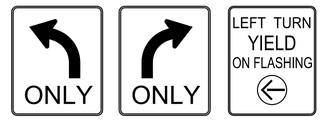
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)

3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU , THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.

4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.

5. CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY PREEMPTION GREEN IS ON.

EXISTING / PROPOSED SIGNS



R3-5L 30"x36" I-PROPOSED

R3-5R 30"x36" I-PROPOSED I-EXISTING

R10-12A 30"x36" I-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 1	φ 2	φ 3	φ 4	φ 5	φ 6	φ 7	φ 8
MOVEMENT	-	-	-	NB	-	EB	NB LT	SB
MINIMUM INITIAL	-	-	-	5	-	5	5	5
PASSAGE TIME	-	-	-	3.0	-	3.0	2.0	3.0
MAXIMUM 1	-	-	-	45	-	25	15	30
MAXIMUM 2	-	-	-	45	-	14	15	30
YELLOW	-	-	-	5.0	-	4.0	5.0	5.0
ALL RED	-	-	-	2.5	-	2.0	2.5	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	-	-	55	-	30	20	55
DYN MAX STEP	-	-	-	5	-	5	5	5
RECALL	-	-	-	S	-	O	O	S
DETECTOR	-	-	-	NL	-	NL	NL	NL
PRE-EMPT/PRIORITY	-	-	-	3/7	-	5/9	3/7	4/8
FLASH	-	-	-	Y	-	R	R	Y
DUAL ENTRY	-	-	-	ON	-	OFF	OFF	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 36

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	BY	DATE
PROJ. MANAGER			
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT		
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

STANDISH
CHADBOURNE RD(ROUTE 35), WHITES BRIDGE RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
51
OF 60

Filename: 051_Signal_36.dgn Username: jarobert Division: HIGHWAY Date:5/17/2023

LIST OF WORK ITEMS

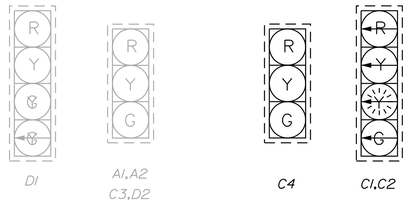
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-16)	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.2711)	5

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

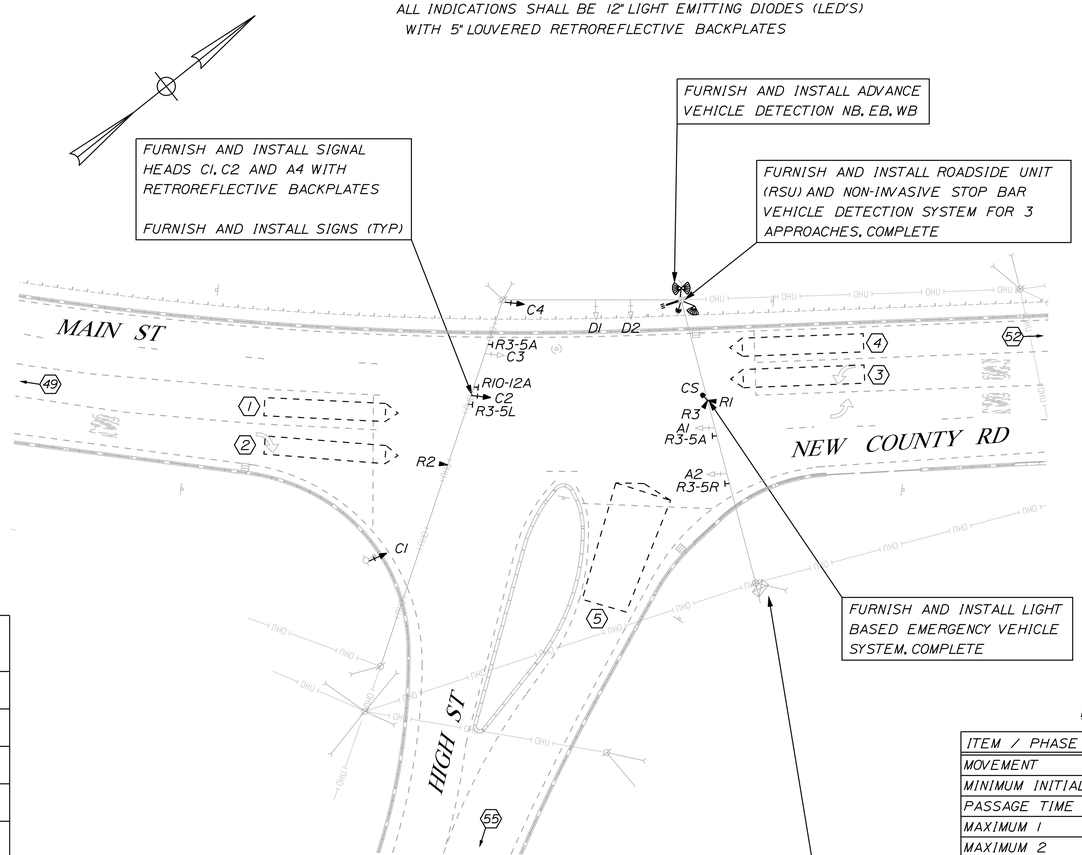
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	US ROUTE 1 NB THRU	6	6	B	-	-
2	US ROUTE 1 NB RIGHT	6	6	B	5	-
3	US ROUTE 1 SB LEFT	5	5	B	-	-
4	US ROUTE 1 SB THRU	2	2	B	-	-
5	HIGH ST WB MOVEMENTS	4	4	B	5	-
49	US ROUTE 1 NB ADVANCE	6	6	A	-	-
52	US ROUTE 1 SB ADVANCE	2	2	A	-	-
55	HIGH ST WB ADVANCE	4	4	A	-	-

EXISTING INDICATIONS / PROPOSED INDICATIONS



NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



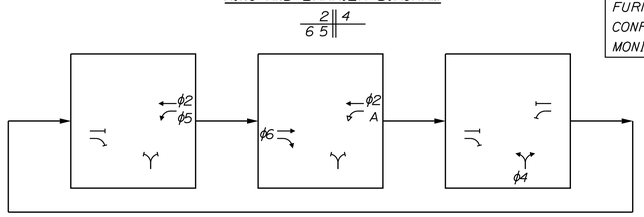
R-S EXISTING CABINET AND ALL INTERNAL TRAFFIC SIGNAL CONTROL COMPONENTS.

INSTALL MAINEDOT FURNISHED M-TYPE TS-2 CABINET (REF: 02430100-16)

FURNISH AND INSTALL NEW ATC CONTROLLER, CONFLICT MONITOR (CMU), AND FIELD MONITORING UNIT.

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM



OVERLAP PHASING:
OVL A = 5 (PROT) - 6 (PERM)

PHASING NOTES:
1. OVERLAP A SHALL BE PROGRAMMED WITH FLASHING YELLOW ARROW.

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5 (SB)
4	8	2	φ6 (NB)
5	9	3	φ4 (WB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L 30"x36" 1-PROPOSED
R3-5A 30"x36" 2-PROPOSED
R3-5R 30"x36" 1-PROPOSED
R10-12A 30"x36" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	SBT	-	WB	SBL	NB	-	-
MINIMUM INITIAL	-	5	-	5	5	5	-	-
PASSAGE TIME	-	4.0	-	3.0	3.0	4.0	-	-
MAXIMUM 1	-	50	-	30	20	50	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.0	-	4.0	3.5	4.0	-	-
ALL RED	-	2.0	-	2.5	3.5	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	60	-	30	25	60	-	-
DYN MAX STEP	-	5	-	5	5	5	-	-
RECALL	-	S	-	O	O	S	-	-
DETECTOR	-	NL	-	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	-	3/7	-	5/9	3/7	4/8	-	-
FLASH	-	Y	-	R	R	Y	-	-
DUAL ENTRY	-	ON	-	OFF	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 37

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

REVISIONS	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

THOMASTON
MAIN ST (US ROUTE 1),
NEW COUNTY RD (US ROUTE 1, HIGH ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER
52
OF 60

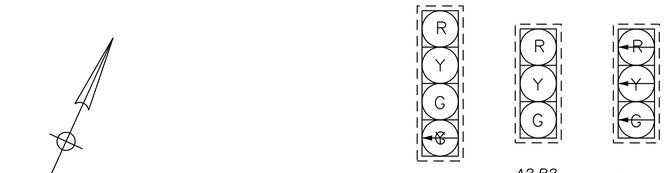
Filename: 052_Signal_37.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

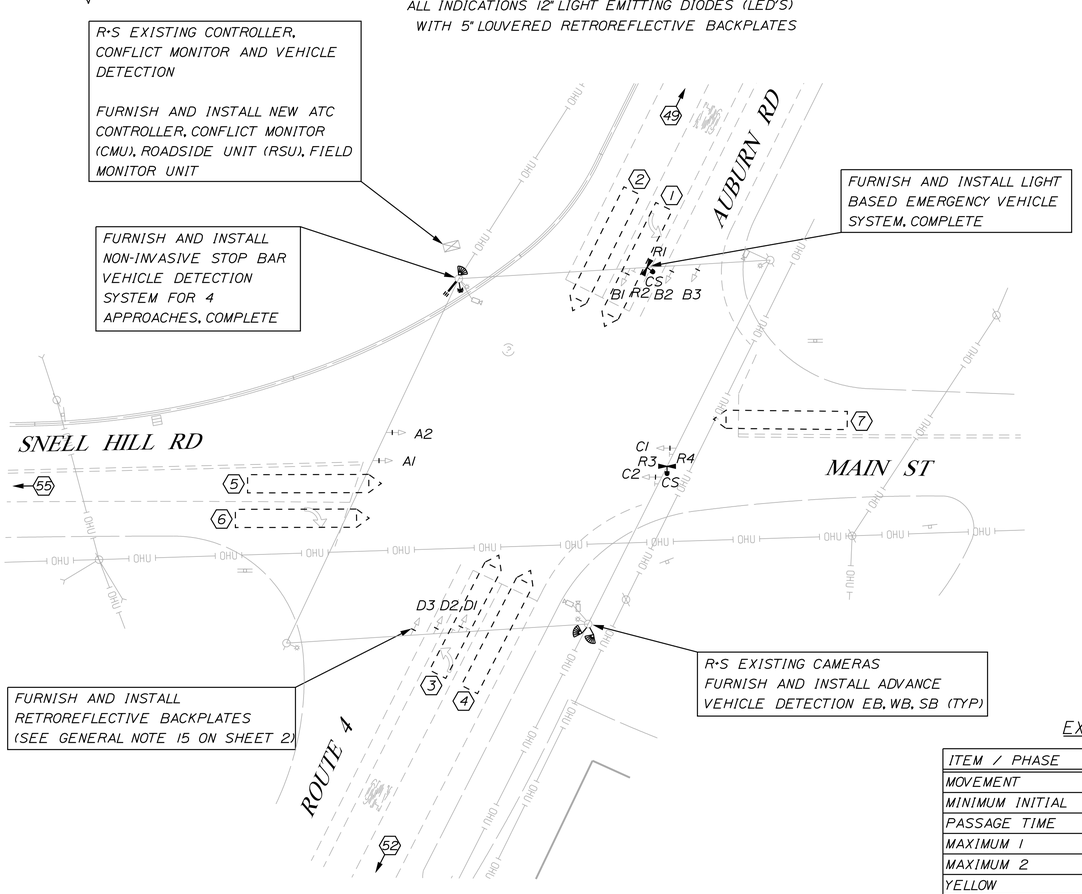
EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR SB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	2
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	6
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 4-SECTION TRAFFIC SIGNAL HEAD	2
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

MODIFIED INDICATIONS



NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ1&ϕ6 (SB)
4	8	2	ϕ2&ϕ5 (NB)
5	9	3	ϕ3 (EB)
6	10	4	ϕ4 (WB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

EXISTING SIGNS

(ALL EXISTING SIGNS TO REMAIN)

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	ROUTE 4 SB LEFT	1	1	B	-	-
2	ROUTE 4 SB THRU-RIGHT	6	6	B	-	-
3	ROUTE 4 NB LEFT	5	5	B	-	-
4	ROUTE 4 NB THRU-RIGHT	2	2	B	-	-
5	SNELL HILL RD EB LEFT-THRU	3	3	B	-	-
6	SNELL HILL RD EB RIGHT	3	3	B	5	-
7	MAIN ST WB MOVEMENTS	4	4	B	-	-
49	ROUTE 4 SB ADVANCE	6	6	A	-	-
52	ROUTE 4 NB ADVANCE	2	2	A	-	-
55	SNELL HILL RD EB ADVANCE	3	3	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

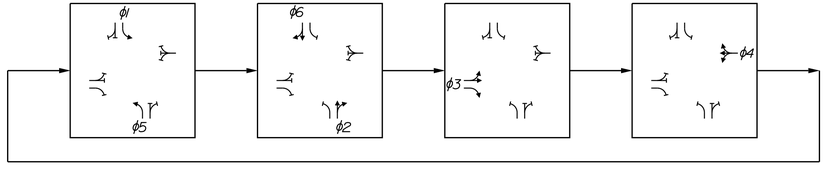
ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	SBL	NBT	EB	WB	NBL	SBT	-	-
MINIMUM INITIAL	5	5	5	5	5	5	-	-
PASSAGE TIME	3.0	4.0	3.0	3.0	3.0	4.0	-	-
MAXIMUM 1	15	50	25	25	15	50	-	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.0	5.0	4.5	3.5	4.0	5.0	-	-
ALL RED	2.0	2.0	3.0	3.0	2.0	2.0	-	-
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	20	90	30	30	20	90	-	-
DYN MAX STEP	5	20	5	5	5	20	-	-
RECALL	O	S	O	O	O	S	-	-
DETECTOR	NL	NL	NL	NL	NL	NL	-	-
PRE-EMPT/PRIORITY	3/7	4/8	5/9	6/10	4/8	3/7	-	-
FLASH	R	Y	R	R	R	Y	-	-
DUAL ENTRY	OFF	ON	ON	ON	OFF	ON	-	-

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PROPOSED PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 ‖ 3 4
5 6



PLAN

25 0 25 50
Scale of Feet

LOCATION 38

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	C. BOBAY	02/23
DESIGN3-DETAILED3	J. ROBERT	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

TURNER
AUBURN RD (ROUTE 4),
SNELL HILL RD, MAIN ST

TRAFFIC SIGNAL PLAN

SHEET NUMBER

53

OF 60

Filename: 053_Signal_38.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

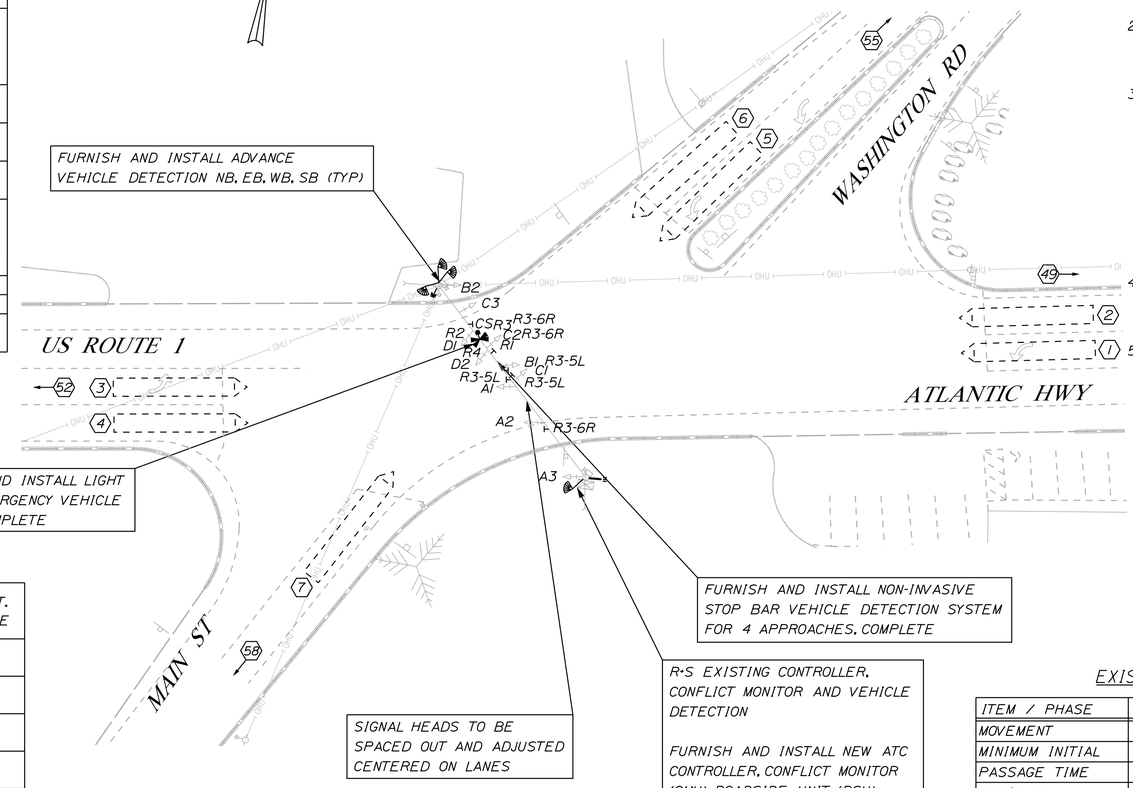
LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	6
FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING INDICATIONS

NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



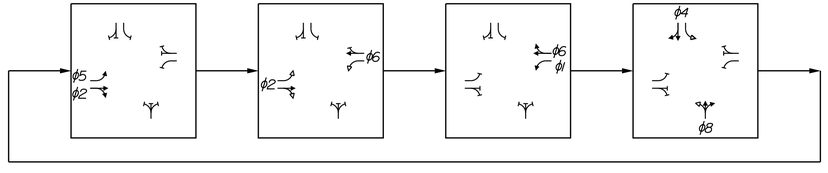
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	US ROUTE 1 WB LEFT	1	1	B	-	-
2	US ROUTE 1 WB THRU-RIGHT	6	6	B	-	-
3	US ROUTE 1 EB LEFT	5	5	B	-	-
4	US ROUTE 1 EB THRU-RIGHT	2	2	B	-	-
5	WASHINGTON RD SB LEFT	4	4	B	-	-
6	WASHINGTON RD SB THRU-RIGHT	4	4	B	-	-
7	MAIN ST NB MOVEMENTS	8	8	B	-	-
49	US ROUTE 1 WB ADVANCE	6	6	A	-	-
52	US ROUTE 1 EB ADVANCE	2	2	A	-	-
55	WASHINGTON RD SB ADVANCE	4	4	A	-	-
58	MAIN ST NB ADVANCE	8	8	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 || 4
6 5 || 8



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (WB)
4	8	2	φ2 (EB)
5	9	3	φ4 (SB)
6	10	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 5.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L
30"x36"
3-PROPOSED

R3-6R
30"x36"
3-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	WBL	EB	-	SB	EBL	WB	-	NB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	3.0	3.0	-	3.0	3.0	3.0	-	3.0
MAXIMUM 1	15	50	-	20	15	50	-	20
MAXIMUM 2	-	30	-	20	-	30	-	20
YELLOW	3.5	5.0	-	4.5	3.5	5.0	-	4.5
ALL RED	5.5	3.0	-	2.5	5.5	3.0	-	2.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	20	70	-	25	-	70	-	30
DYN MAX STEP	5	5	-	5	-	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	4/8	3/7	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 39

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN
025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

WALDOBORO
ATLANTIC HWY (US ROUTE 1), WASHINGTON RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
54
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	5
FURNISH AND INSTALL SUPPLEMENTARY CABINET FOR ANCILLARY EQUIPMENT	1

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

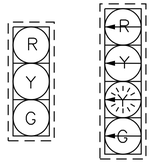
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	US ROUTE 1 WB LEFT	1	1	B	-	-
②	US ROUTE 1 WB THRU-RIGHT	6	6	B	-	-
③	US ROUTE 1 EB LEFT-THRU	2	2	B	-	-
④	US ROUTE 1 EB RIGHT	2	2	B	5	-
⑤	NH ROUTE 32 SB MOVEMENTS	4	4	B	-	-
⑥	NH ROUTE 32 NB MOVEMENTS	8	8	B	-	-
㊾	US ROUTE 1 WB ADVANCE	6	6	A	-	-
㊷	US ROUTE 1 EB ADVANCE	2	2	A	-	-
㊺	NH ROUTE 32 SB ADVANCE	4	4	A	-	-
㊽	NH ROUTE 32 NB ADVANCE	8	8	A	-	-

EXISTING INDICATIONS

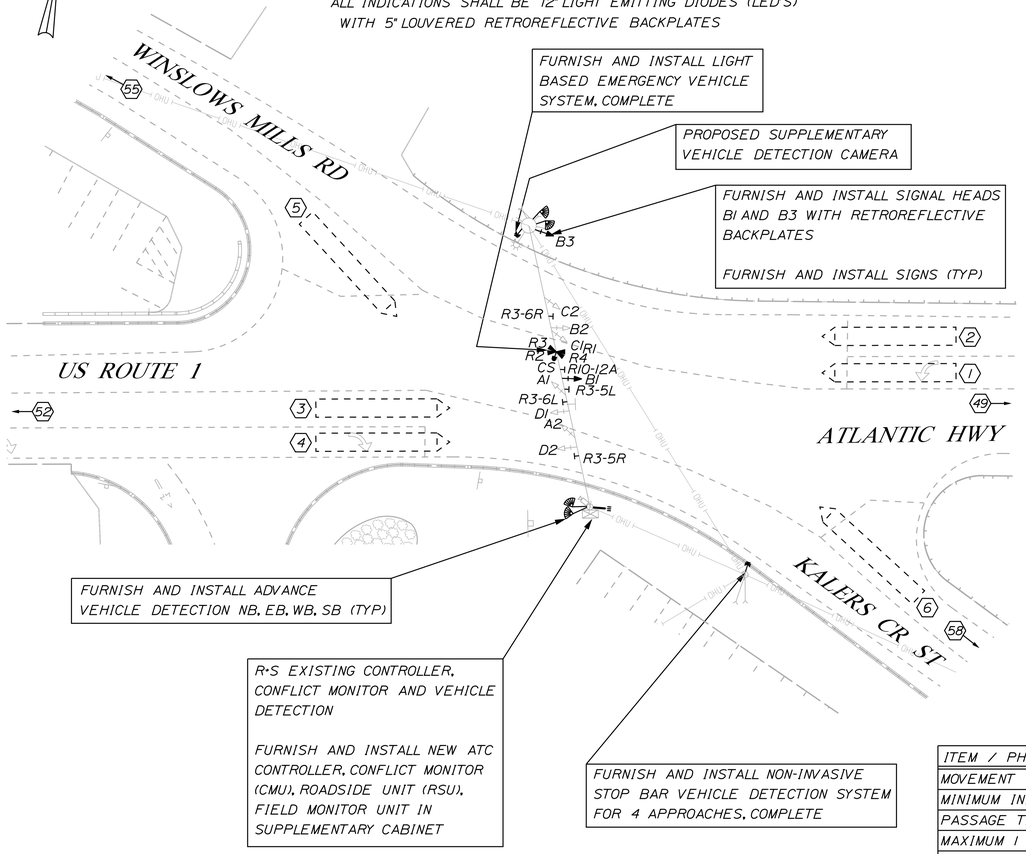
A1,A2,B2, C1,C2 D1,D2

PROPOSED INDICATIONS



B3 B1

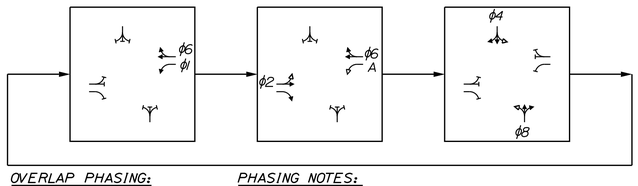
NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 ‖ 4
6 ‖ 8



OVERLAP PHASING:
OVL A = 1 (PROT) + 2 (PERM)

PHASING NOTES:
1. OVERLAP A SHALL BE PROGRAMMED WITH FLASHING YELLOW ARROW.

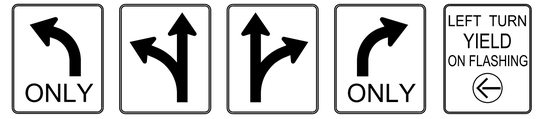
EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ1&φ6 (WB)
4	8	2	φ2 (EB)
5	9	3	φ4 (SB)
6	10	4	φ8 (NB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 4.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS



R3-5L 30"x36" 1-PROPOSED
R3-6L 30"x36" 1-PROPOSED
R3-6R 30"x36" 1-PROPOSED
R3-5R 30"x36" 1-PROPOSED
R10-12A 30"x36" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	WBL	EB	-	SB	-	WBTR	-	NB
MINIMUM INITIAL	5	5	-	5	-	5	-	5
PASSAGE TIME	3.0	4.0	-	3.0	-	4.0	-	3.0
MAXIMUM 1	10	60	-	15	-	60	-	25
MAXIMUM 2	20	75	-	45	-	74	-	45
YELLOW	3.5	5.0	-	3.5	-	5.0	-	3.5
ALL RED	2.5	2.5	-	4.5	-	2.5	-	4.5
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	15	85	-	20	-	85	-	30
DYN MAX STEP	5	5	-	5	-	5	-	5
RECALL	O	S	-	O	-	S	-	O
DETECTOR	NL	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	3/7	4/8	-	5/9	-	3/7	-	6/10
FLASH	R	Y	-	R	-	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 40

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER
DESIGN-DETAILED	J. READY
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	J. ROBERT
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	07/21
REVISIONS 2	C. BOBAY	07/21
REVISIONS 3	C. BOBAY	02/23
REVISIONS 4		
FIELD CHANGES		

WALDOBORO
ATLANTIC HWY (US ROUTE 1), WINSLOWS MILLS RD, KALERS CR ST

TRAFFIC SIGNAL PLAN

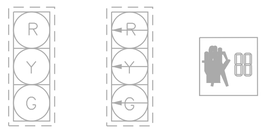
SHEET NUMBER
55
OF 60

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL REGULATORY SIGNS (ITEM 645.271)	2

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING INDICATIONS



NOTE:
ALL INDICATIONS 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES

EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ2&ϕ5 (EB)
4	8	2	ϕ1&ϕ6 (WB)
5	9	3	ϕ4 (NB)
6	10	4	ϕ8 (SB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R10-15L 30"x30" 1-PROPOSED

R10-15R 30"x30" 1-PROPOSED

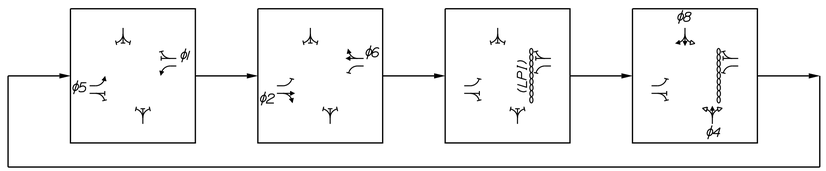
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	ROUTE 90 WB LEFT	1	1	B	-	-
2	ROUTE 90 WB THRU-RIGHT	6	6	B	-	-
3	ROUTE 90 EB LEFT	5	5	B	-	-
4	ROUTE 90 EB THRU-RIGHT	2	2	B	-	-
5	ROUTE 131 NB LEFT-THRU	4	4	B	-	-
6	ROUTE 131 NB RIGHT	4	4	B	5	-
7	ROUTE 131 SB MOVEMENTS	8	8	B	-	-
49	ROUTE 90 WB ADVANCE	6	6	A	-	-
52	ROUTE 90 EB ADVANCE	2	2	A	-	-
55	ROUTE 131 NB ADVANCE	4	4	A	-	-
58	ROUTE 131 SB ADVANCE	8	8	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

1 2 ‖ 4
5 6 ‖ 8



PHASING NOTES:
1. EACH PEDESTRIAN PHASE SHALL HAVE A MINIMUM OF A 4 SECOND LEADING PEDESTRIAN INTERVAL (LPI).
2. PEDESTRIAN PHASE UPON PUSH BUTTON ACTIVATION ONLY

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	ϕ 1	ϕ 2	ϕ 3	ϕ 4	ϕ 5	ϕ 6	ϕ 7	ϕ 8
MOVEMENT	WBL	EBTR	-	NB	EBL	WBTR	-	SB
MINIMUM INITIAL	5	5	-	5	5	5	-	5
PASSAGE TIME	2.5	3.0	-	3.0	2.5	3.0	-	3.0
MAXIMUM 1	20	45	-	25	20	45	-	25
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	4.5	5.0	-	4.5	4.5	5.0	-	4.5
ALL RED	2.5	2.0	-	3.5	2.5	2.0	-	3.5
PED WALK	-	-	-	5	-	-	-	-
PED CLEAR	-	-	-	17	-	-	-	-
DYN MAX LIMIT	25	55	-	35	25	55	-	35
DYN MAX STEP	5	5	-	5	5	5	-	5
RECALL	O	S	-	O	O	S	-	O
DETECTOR	NL	NL	-	NL	NL	NL	-	NL
PRE-EMPT/PRIORITY	4/8	3/7	-	5/9	3/7	4/8	-	6/10
FLASH	R	Y	-	R	R	Y	-	R
DUAL ENTRY	OFF	ON	-	ON	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 41

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

	B. KEEZER	DATE
PROJ. MANAGER		
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	02/23
DESIGN3-DETAILED3	C. BOBAY	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

WARREN
CAMDEN RD (ROUTE 90),
EASTERN RD, OYSTER RIVER RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
56
OF 60

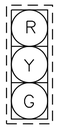
Filename: 056_Signal_41.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
REMOVE EXISTING TRAFFIC SIGNAL CABINET AND INSTALL MAINEDOT FURNISHED M-TYPE TS CABINET (REF: 02430100-92)	1
FURNISH AND INSTALL NEW SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL A1 FIELD MONITORING UNIT (FMU)	1
FURNISH AND INSTALL DUAL MODE DSRC/C-V2X ROADSIDE UNIT (ITEM 654.351)	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 4 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, SB, EB, AND WB APPROACHES (ITEM 643.22)	4
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
FURNISH AND INSTALL ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER FOR EXISTING 3-SECTION TRAFFIC SIGNAL HEAD	8
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-

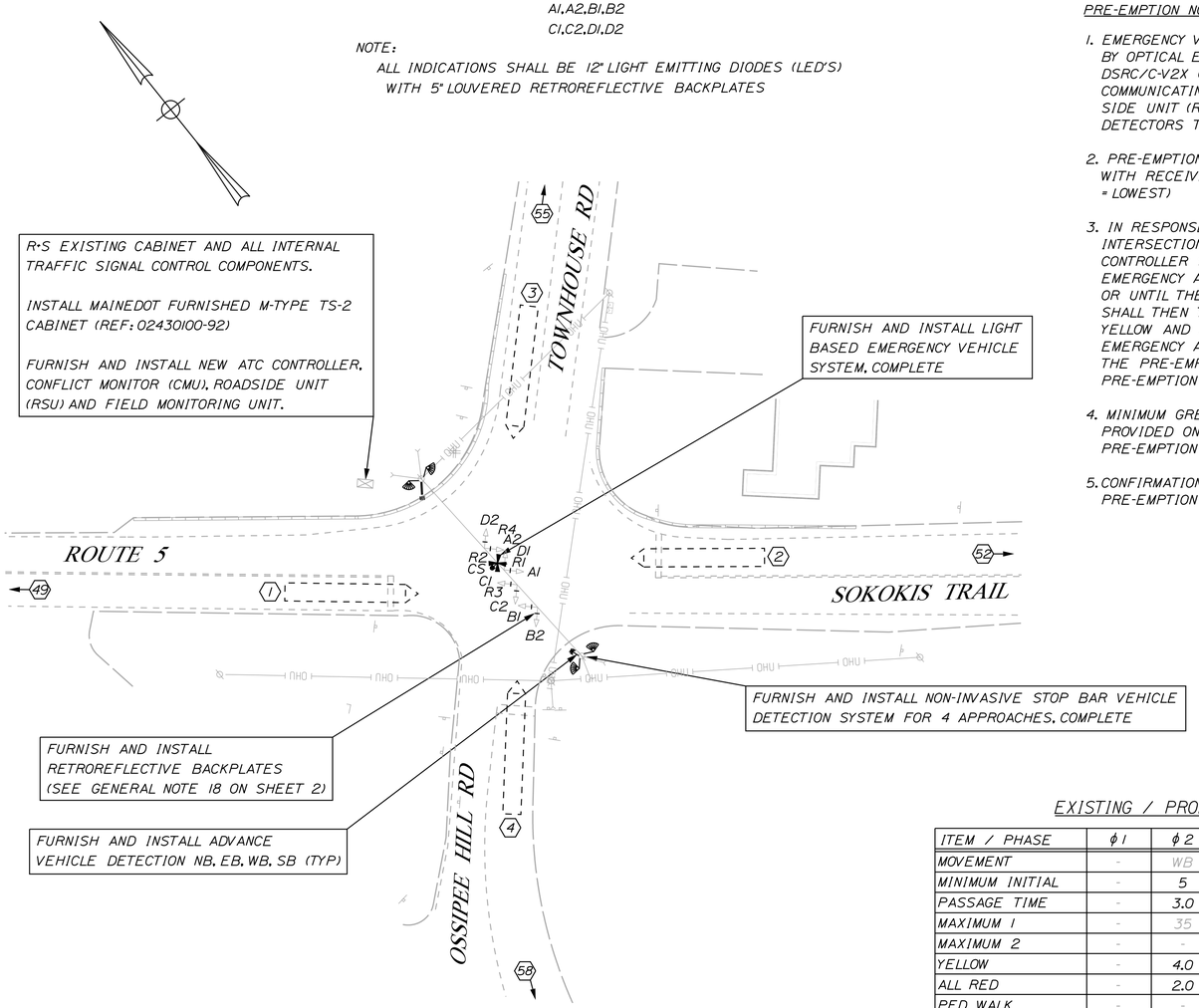
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

MODIFIED INDICATIONS



A1,A2,B1,B2
C1,C2,D1,D2

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	ϕ2 (WB)
4	8	2	ϕ6 (EB)
5	9	3	ϕ8 (NB)
6	10	4	ϕ4 (SB)

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 2.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	ϕ CALLED	ϕ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
1	ROUTE 5 EB MOVEMENTS	6	6	B	-	-
2	ROUTE 5 WB MOVEMENTS	2	2	B	-	-
3	TOWNHOUSE RD SB MOVEMENTS	4	4	B	-	-
4	OSSIPEE HILL RD NB MOVEMENTS	8	8	B	-	-
49	ROUTE 5 EB ADVANCE	6	6	A	-	-
52	ROUTE 5 WB ADVANCE	2	2	A	-	-
55	TOWNHOUSE RD SB ADVANCE	4	4	A	-	-
58	OSSIPEE HILL RD NB ADVANCE	8	8	A	-	-

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

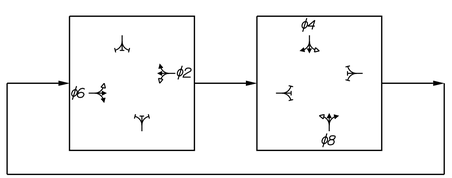
ITEM / PHASE	ϕ1	ϕ2	ϕ3	ϕ4	ϕ5	ϕ6	ϕ7	ϕ8
MOVEMENT	-	WB	-	SB	-	EB	-	NB
MINIMUM INITIAL	-	5	-	5	-	5	-	5
PASSAGE TIME	-	3.0	-	3.0	-	3.0	-	3.0
MAXIMUM 1	-	35	-	25	-	35	-	25
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	-	4.0	-	4.5	-	4.0	-	4.5
ALL RED	-	2.0	-	2.0	-	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	45	-	30	-	45	-	30
DYN MAX STEP	-	5	-	5	-	5	-	5
RECALL	-	S	-	O	-	S	-	O
DETECTOR	-	NL	-	NL	-	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	6/10	-	4/8	-	5/9
FLASH	-	Y	-	R	-	Y	-	R
DUAL ENTRY	-	ON	-	ON	-	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

2 4
6 8



PLAN

25 0 25 50
Scale of Feet

LOCATION 42

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

WATERBORO
SOKOKIS TRAIL (ROUTE 5),
OSSIPEE HILL RD, TOWNHOUSE RD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
57
OF 60

Username: jorobert Date:5/17/2023
Division: HIGHWAY
Filename: 057_Signal_42.dgn

LIST OF WORK ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL CONTROLLER, CONFLICT MONITOR AND VEHICLE DETECTION SYSTEM	1
FURNISH AND INSTALL ONE-WAY 3-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12-INCH SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	1
REPROGRAM EXISTING ECONOLITE EOS ATC CONTROLLER WITH LATEST VERSION OF FIRMWARE	1
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR 3 APPROACHES (ITEM 643.21)	1
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR NB, EB, AND WB APPROACHES (ITEM 643.22)	3
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL PATCH CABLES AND IMPLEMENT REMOTE VIDEO, CONTROLLER, OBU ACTIVATED PREEMPTION, AND MMU COMMUNICATIONS TO EXISTING MAINEDOT CENTRACS MOBILITY SYSTEM	-
IMPLEMENT LOCAL AND SYSTEM SIGNAL TIMINGS	-
FURNISH AND INSTALL LANE USE SIGNS (ITEM 645.271)	3

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

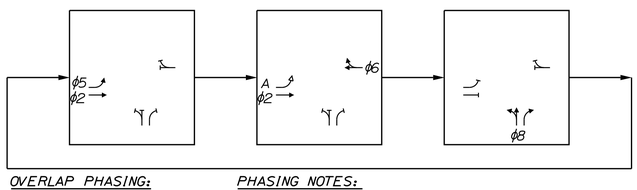
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=ADVANCE B=STOPLINE	DELAY TIME	EXT. TIME
①	US ROUTE 1 WB THRU-RIGHT	6	6	B	-	-
②	US ROUTE 1 EB LEFT	5	5	B	-	-
③	US ROUTE 1 EB THRU	2	2	B	-	-
④	EXIT 17 OFF RAMP NB LEFT-THRU	8	8	B	-	-
⑤	EXIT 17 OFF RAMP NB RIGHT	8	8	B	-	-
㊾	US ROUTE 1 WB ADVANCE	6	6	A	-	-
㊷	US ROUTE 1 EB ADVANCE	2	2	A	-	-
㊺	EXIT 17 OFF RAMP NB ADVANCE	8	8	A	-	-

EXISTING PHASE SEQUENCE

RING AND BARRIER DIAGRAM

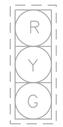
2 | 5 6 | 8



OVERLAP PHASING:
OVL A = 5 (PROT) + 6 (PERM)

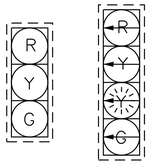
PHASING NOTES:
1. OVERLAP A SHALL BE PROGRAMMED WITH FLASHING YELLOW ARROW.

EXISTING INDICATIONS



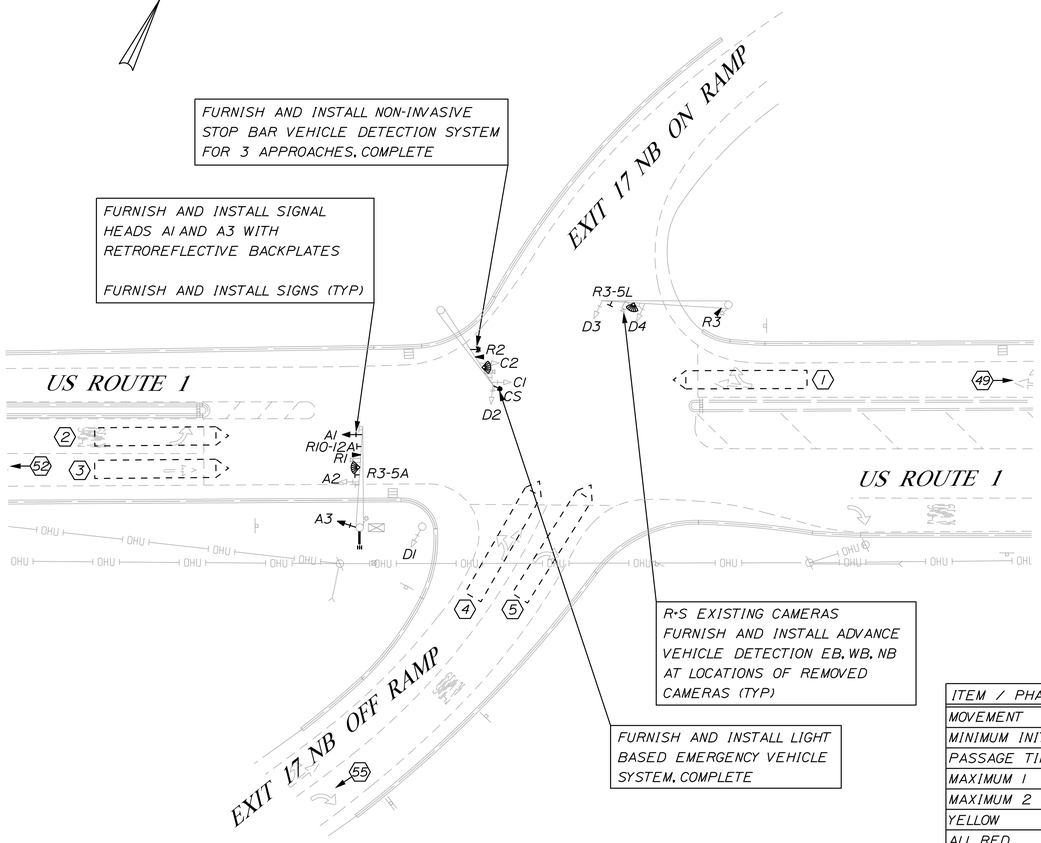
A2,C1,C2, D1,D2,D3,D4

PROPOSED INDICATIONS



A3 A1

NOTE:
ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED RETROREFLECTIVE BACKPLATES



EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT ASSIGNMENT	TSP ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
1		NOT USED/RESERVED	
2		NOT USED/RESERVED	
3	7	1	φ2&φ5 (EB)
4	8	2	φ6 (WB)
5	9	3	φ8 (NB)
6	10	NOT USED	

PRE-EMPTION NOTES:

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (1 = HIGHEST, 10 = LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.5 SECONDS YELLOW AND 3.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

PROPOSED SIGNS

R3-5L 30"x36" 1-PROPOSED

R3-5A 30"x36" 1-PROPOSED

R10-12A 30"x36" 1-PROPOSED

EXISTING / PROPOSED SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8
MOVEMENT	-	EBT	-	-	EBL	WB	-	NB
MINIMUM INITIAL	-	5	-	-	5	5	-	5
PASSAGE TIME	-	3.0	-	-	3.0	3.0	-	3.0
MAXIMUM 1	-	40	-	-	20	60	-	15
MAXIMUM 2	-	65	-	-	25	40	-	20
YELLOW	-	4.5	-	-	4.0	4.5	-	4.0
ALL RED	-	2.0	-	-	3.5	2.0	-	2.0
PED WALK	-	-	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-	-	-
DYN MAX LIMIT	-	75	-	-	25	75	-	25
DYN MAX STEP	-	5	-	-	5	5	-	5
RECALL	-	S	-	-	O	S	-	O
DETECTOR	-	NL	-	-	NL	NL	-	NL
PRE-EMPT/PRIORITY	-	3/7	-	-	3/7	4/8	-	5/9
FLASH	-	Y	-	-	R	Y	-	R
DUAL ENTRY	-	ON	-	-	OFF	ON	-	ON

NOTES: S = SOFT RECALL Y = YELLOW D = DARK
O = RECALL OFF R = RED
L = LOCKING DETECTOR MEMORY
NL = NON-LOCKING DETECTOR MEMORY

PLAN

25 0 25 50
Scale of Feet

LOCATION 43

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER		
DESIGN-DETAILED	J. READY	J. ROBERT	07/21
CHECKED-REVIEWED	C. BOBAY	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY	02/23
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

YARMOUTH
US ROUTE 1, EXIT 17 NB RAMPS

TRAFFIC SIGNAL PLAN

SHEET NUMBER
58
OF 60

Filename: 058_Signal_43.dgn Division: HIGHWAY Username: jorobert Date:5/17/2023

TRAFFIC SIGNAL EQUIPMENT

ITEM NUMBER	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	
LOCATION NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
ITEM	SIGNAL MODIFICATION ALFRED	SIGNAL MODIFICATION ARUNDEL	SIGNAL MODIFICATION BAR HARBOR	SIGNAL MODIFICATION BUXTON BEECH PLAINS	SIGNAL MODIFICATION BUXTON LONG PLAINS	SIGNAL MODIFICATION BUXTON MAIN/PORTLAND	SIGNAL MODIFICATION CARIBOU FORT ST	SIGNAL MODIFICATION CARIBOU ACCESS WAY	SIGNAL MODIFICATION DIXFIELD	SIGNAL MODIFICATION FALMOUTH	SIGNAL MODIFICATION FORT FAIRFIELD	SIGNAL MODIFICATION FREEPORT	SIGNAL MODIFICATION GRAY	SIGNAL MODIFICATION HAMPDEN WESTERN	SIGNAL MODIFICATION HAMPDEN COLDBROOK	SIGNAL MODIFICATION JAY	SIGNAL MODIFICATION KITTERY	SIGNAL MODIFICATION LEBANON HUBBARD	SIGNAL MODIFICATION LEBANON DEPOT	SIGNAL MODIFICATION LIMINGTON	SIGNAL MODIFICATION LIVERMORE FALLS	SIGNAL MODIFICATION LYMAN	SUBTOTAL "A"
UNIT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
REMOVE AND SALVAGE EXISTING TS1 CABINET AND REPLACE WITH REPURPOSED TS2 CABINET	-	-	-	-	1	-	1	-	-	-	1	-	-	-	1	-	-	1	-	-	-	1	**6**
SUPPLEMENTAL CABINET FOR NEW ANCILLARY EQUIPMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	**2**
RACK MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	**1**
SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1	**21**
16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)*	1	-	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	1	1	1	1	1	**20**
APPLIED INFORMATION FIELD MONITORING UNIT (FMU)	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**21**
PATCH CABLES FOR ATC, MMU, STOPLINE, ADVANCE, AND (SERIAL) PREEMPTION TO FMU (PLUS SPARE)	5	1	5	5	5	5	5	5	4	6	4	6	6	5	5	5	4	5	5	5	4	4	**104**
SPAN WIRE AND TETHER LINEAL FOOTAGE **(LF)**	-	-	-	-	-	-	-	-	-	-	120	-	-	-	-	-	380	-	-	-	-	-	**500**
ONE-WAY, 3-SECTION, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	7	-	6	6	8	3	10	-	-	-	7	-	-	-	2	-	4	-	-	-	6	12	**71**
ONE-WAY, 4-SECTION, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	2	-	-	2	-	1	-	-	1	-	-	-	-	1	-	-	2	-	-	-	1	2	**12**
ONE-WAY, 5-SECTION DOGHOUSE, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	2	-	-	-	2	-	**7**
3-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	3	-	-	-	-	4	-	7	-	-	-	6	-	9	-	4	-	10	-	8	-	-	**51**
4-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	**2**
5-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	**3**
16-INCH LED COUNTDOWN PEDESTRIAN LENSE	-	-	-	-	-	-	-	-	-	-	8	2	-	6	-	-	-	-	-	-	8	-	**24**
ONE-WAY 16"X18" PEDESTRIAN SIGNAL HEAD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
ADA-COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9"X15" R10-3e INFORMATIONAL SIGN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
4 CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**22**
LIGHT-BASED PREEMPTION RECEIVER WITH DETECTOR CABLE	4	4	3	4	4	4	4	4	5	-	4	-	-	4	4	3	4	4	4	4	3	4	**74**
PREEMPTION RED CONFIRMATION STROBE WITH CABLE	1	1	1	1	2	1	2	1	1	-	1	-	-	1	1	1	1	1	1	1	1	2	**22**
D-HARNESS AND COMMUNICATIONS BOARD TO INTEGRATE OPTICAL PREEMPTION TO NEW EOS ATC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
GRIDSMART STOPLINE DETECTION SYSTEM WITH PERFORMANCE+ MODULE **(ITEM 643,21)***	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	**20**
NO. OF DETECTORS FOR WAVETRONIX ADVANCE DETECTION SYSTEM **(ITEM 643,22)***	3	-	3	4	4	4	4	3	-	3	-	3	2	2	4	1	-	4	4	2	-	4	**54**
WAVETRONIX CLICK 650 **(ITEM 643,22)***	1	-	1	1	1	1	1	1	-	1	-	1	1	1	1	1	-	1	1		-	1	**16**
NO. OF SIGNS WITH ALL MOUNTING HARDWARE INCIDENTAL **(ITEM 645,271)***	12	-	1	-	-	3	11	3	6	-	6	-	-	6	12	6	15	4	-	2	5	10	**102**
SQUARE FOOTAGE OF REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGN, TYPE 1	85.00	-	7.50	-	-	22.50	72.50	22.50	38.75	-	42.50	-	-	32.50	90.00	45.00	105.00	30.00	-	15.00	32.50	75.00	**716.25**
NO. OF 30"X30" LED BLANK-OUT SIGN, POLE MOUNTED **(ITEM 645,512)**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**
NO. OF DUAL MODE DSRC/C-V2X(5G) ROADSIDE UNITS (RSU) **(ITEM 654,351)**	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**22**

* - ITEM INCLUDES REMOVING AND SALVAGING OF ANY EXISTING ITEMS AS NOTED IN THE PLANS

E TABULATED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN AND SPECIFICATION REVIE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN- DETAILED	J. READY	J. ROBERT 07/21
CHECKED- REVIEWED	C. BOBAY	C. BOBAY 07/21
DESIGN2- DETAILED2	J. ROBERT	C. BOBAY 02/23
DESIGN3- DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

SUMMARY OF QUANTITIES
(1 OF 2)

SHEET NUMBER

59

OF 60

Username: jorobert Date:5/22/2023
Division: HIGHWAY
Filename: 059_Quan_01.dgn

TRAFFIC SIGNAL EQUIPMENT

ITEM NUMBER	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71	643.71		
LOCATION NUMBER	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43		
ITEM	SIGNAL MODIFICATION MADISON	SIGNAL MODIFICATION MANCHESTER GRANITE HILL	SIGNAL MODIFICATION MANCHESTER READFIELD	SIGNAL MODIFICATION MEXICO	FUTURE MODIFICATION [RESERVED]	SIGNAL MODIFICATION OXFORD WALMART	SIGNAL MODIFICATION OXFORD HANNAFORD	SIGNAL MODIFICATION PROSEPCT	SIGNAL MODIFICATION RAYMOND MAIN ST	SIGNAL MODIFICATION RAYMOND WEBB MILLS	SIGNAL MODIFICATION ROCKPORT COMMERCIAL	SIGNAL MODIFICATION ROCKPORT ROCKLAND	SIGNAL MODIFICATION SABATTUS	SIGNAL MODIFICATION STANDISH	SIGNAL MODIFICATION THOMASTON	SIGNAL MODIFICATION TURNER	SIGNAL MODIFICATION WALDOBORO MAIN ST	SIGNAL MODIFICATION WALDOBORO KALERS CO.	SIGNAL MODIFICATION WARREN	SIGNAL MODIFICATION WATERBORO	SIGNAL MODIFICATION YARMOUTH	**SUBTOTAL "A" (SHEET 59)**	**GRAND TOTAL**
UNIT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
REMOVE AND SALVAGE EXISTING TS1 CABINET AND REPLACE WITH REPURPOSED TS2 CABINET	1	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	**6**	**10**
SUPPLEMENTAL CABINET FOR NEW ANCILLARY EQUIPMENT	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**2**	**3**
RACK MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	**1**
SHELF MOUNT ECONOLITE EOS ATC CONTROLLER WITH ETHERNET PORT AND LATEST VERSION OF FIRMWARE	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	**21**	**40**
16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)*	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	**20**	**39**
APPLIED INFORMATION FIELD MONITORING UNIT (FMU)	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	**21**	**40**
PATCH CABLES FOR ATC, MMU, STOPLINE, ADVANCE, AND (SERIAL) PREEMPTION TO FMU (PLUS SPARE)	4	6	6	5	-	5	5	5	5	5	5	5	5	6	5	5	5	5	5	5	1	**104**	**202**
SPAN WIRE AND TETHER LINEAL FOOTAGE **(LF)**	-	370	380	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**500**	**1250**
ONE-WAY, 3-SECTION, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	8	9	10	-	-	-	8	-	-	-	-	-	-	1	1	-	-	1	-	-	1	**71**	**110**
ONE-WAY, 4-SECTION, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	-	-	-	1	-	-	2	-	-	-	-	-	-	1	2	-	-	1	-	-	1	**12**	**20**
ONE-WAY, 5-SECTION DOGHOUSE, 12-INCH LED SIGNAL HEAD WITH TUNNEL VISOR AND RETRO REFLECTIVE BACKPLATE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7**	**7**
3-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	-	-	-	-	-	7	-	-	5	8	-	-	-	-	-	6	-	-	-	8	-	**51**	**85**
4-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	**2**	**4**
5-SECTION ONE-WAY, 5-INCH LOUVERED BACKPLATE WITH 3-INCH RETROREFLECTIVE BORDER	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	**3**	**4**
16-INCH LED COUNTDOWN PEDESTRIAN LENSE	8	-	-	-	-	-	2	-	4	4	-	-	-	-	-	-	-	-	-	-	-	**24**	**42**
ONE-WAY 16"X18" PEDESTRIAN SIGNAL HEAD	8	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	**0**	**12**
ADA-COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9"X15" R10-3e INFORMATIONAL SIGN	8	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	**0**	**12**
4 CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**22**	**42**
LIGHT-BASED PREEMPTION RECEIVER WITH DETECTOR CABLE	4	3	-	-	-	2	3	3	3	3	4	4	5	-	3	4	4	4	4	4	3	**74**	**134**
PREEMPTION RED CONFIRMATION STROBE WITH CABLE	1	1	-	-	-	1	1	1	1	1	1	2	1	-	1	2	1	1	1	1	1	**22**	**41**
D-HARNESS AND COMMUNICATIONS BOARD TO INTEGRATE OPTICAL PREEMPTION TO NEW EOS ATC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**	**0**
GRIDSMART STOPLINE DETECTION SYSTEM WITH PERFORMANCE+ MODULE **(ITEM 643,21)***	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**20**	**40**
NO. OF DETECTORS FOR WAVETRONIX ADVANCE DETECTION SYSTEM **(ITEM 643,22)***	-	3	4	-	-	2	2	3	2	3	4	4	3	1	3	3	4	4	4	4	3	**54**	**110**
WAVETRONIX CLICK 650 **(ITEM 643,22)***	-	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	**16**	**34**
NO. OF SIGNS WITH ALL MOUNTING HARDWARE INCIDENTAL **(ITEM 645,271)***	4	6	13	1	-	2	11	2	5	6	-	-	-	3	5	-	6	5	2	-	3	**102**	**176**
SQUARE FOOTAGE OF REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGN, TYPE 1	25.00	42.50	95.00	7.50	-	15.00	81.25	15.00	33.75	40.00	-	-	-	22.50	37.50	-	45.00	37.50	12.50	-	22.50	**716.25**	**1249**
NO. OF 30"X30" LED BLANK-OUT SIGN, POLE MOUNTED **(ITEM 645,512)**	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0**	**1**
NO. OF DUAL MODE DSRC/C-V2X(5G) ROADSIDE UNITS (RSU) **(ITEM 654,351)**	1	1	1	1	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	**22**	**41**

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PROJECT NO. 2532100

WIN 025321.00

TRAFFIC PLANS

vhb

PROJ. MANAGER	B. KEEZER	
DESIGN-DETAILED	J. READY	07/21
CHECKED-REVIEWED	C. BOBAY	07/21
DESIGN2-DETAILED2	J. ROBERT	C. BOBAY 02/23
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATEWIDE

SUMMARY OF QUANTITIES
(2 OF 2)

SHEET NUMBER

60

OF 60

Username: jorobert Division: HIGHWAY Date:6/8/2023

Filename: 060_Quan_02.dgn