STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLAN LEGEND

	Existing	Proposed
Controller with Cabinet		
Vehicular Head		
Video Detection Camera		
Junction Box		
Mast Arm with Steel Pole		
Pole with Foundation		
Pedestal Post and Foundation		
Span wire or Mast Arm Mounted Sign		
Pedestrian Signal Head with Push Button and Informational Sign		
Existing Aerial Copper Interconnect Cable		
Existing Underground Copper Interconnect Cable		
Proposed Underground Conduit		

PORTLAND
CUMBERLAND COUNTY
US ROUTE 302 (FOREST AVENUE)
STP-1785(700)X
PROJECT LENGTH : 13 SIGNALS
PACTS RTMS IMPROVEMENTS

INDEX OF SHEETS

Description	Sheet No.
Title Sheet	1
General Notes	2
Overall Map	3
Traffic Signal Plans	4-14
Interconnect Plan	15
Railroad Preemption Plans	16
Time Space Diagrams	17-18
Conditional Pattern No. 14	19
Bid Alternate No. 1	20
Bid Alternate No. 2	21-22

KEY:
(X/X) Project Intersection Number / Sheet Number

TRAFFIC DATA

	FOREST AVE. N/O WARREN AVE.	FOREST AVE. S/O REVERE ST.
Current (2012) AADT	15,710	19,180
Future (2030) AADT	20,420	24,930
DHV - % of AADT	9%	8%
Design Hour Volume	1420	1550
% Heavy Trucks (AADT)	10%	6%
% Heavy Trucks (DHV)	6%	3%
Directional Distribution (DHV)	57%	61%
18 kip Equivalent P 2.0	n/a	n/a
18 kip Equivalent P 2.5	n/a	n/a
Design Speed (mph)	35	30
Functional Class:	Principal Urban Arterial	

LAYOUT SCALE
1500 0 1500 3000
Scale in Feet

VHB
Vanasse Hangen Brustlin, Inc.

PROJECT LOCATION:	In the City of Portland along US Route 302 (Forest Avenue) at 13 existing traffic signals from Warren Avenue easterly to High Street.
PROGRAM AREA:	Traffic Program
OUTLINE OF WORK:	Traffic Signal Interconnection, Modernization, and other incidental work

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED
COMMISSIONER: DATE 10/31/11
CHIEF ENGINEER: DATE 10/20/11

STATE OF MAINE Christopher M Bobay 9374 LICENSED PROFESSIONAL ENGINEER
SIGNATURE
P.E. NUMBER 9374
DATE 10-28-11

PROJECT INFORMATION

PROGRAM	TRAFFIC
PROJECT MANAGER	S. LANDRY
DESIGNER	C. BOBAY
CONSULTANT	VHB
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

PORTLAND
FOREST AVENUE
TITLE SHEET

WIN 17857.00 STP-1785(700)X

SHEET NUMBER
1
OF 22

Filename: ...\ts\planset\001_52134000OV.dgn Division:
Username: J ROBERT Date:10/27/2011

Username: J ROBERT Date:10/28/2011
Filename: ...\planset\002_5213400NOTES.dgn Division:

GENERAL NOTES:

1. The Contractor shall meet all utility requirements for new service connections.

2. All splices will be made in the cabinets meeting MaineDOT specifications.

3. 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.

4. Two copies of as-built plans, shall be left in each of the controller cabinets.

5. The Contractor is responsible for finding exact locations of existing utilites prior to construction. The Contractor shall contact Dig-Safe and appropriate authorities prior to any subsurface activities.

6. Traffic signal work shall be completed in a manner and order that will cause the minimum disruption to traffic.

7. The Engineer, MaineDOT, and City of Portland 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, in its sole opinion, to the plans or specifications.

8. All signing, signal and striping materials and placement shall conform to the MaineDOT standard specifications, supplemental specifications and standard details and with the Federal Highway Administration "Manual on Uniform Traffic Control Devices" (MUTCD) dated 2009, as amended.

9. Any relocations or adjustments of existing utility facilites will be made by the respective utilities in coordination with the work of the Contractor.

10. Contractor shall be responsible for obtaining any necessary street/sidewalk occupancy or opening permits.

11. All existing driveway accesses shall be maintained at all times.

12. The Contractor shall provide the Engineer, MaineDOT, and the City of Portland with a schedule of work and work zone control plans in accordance with the City Code of Ordinance Chapter 25 Article VII for constructing the traffic improvements at least two weeks prior to the commencement of work.

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 non-paved areas disturbed during construction shall be loamed and seeded, unless otherwise directed by the owner. All paved areas disturbed during construction shall be repaired by the Contractor in accordance with the City Technical Manual. Costs for repair of disturbed areas shall be incidental to other contract items.

15. Equipment

Contractor Furnished Equipment - The traffic signal controllers and various other equipment items shown on the plans shall be furnished and installed by the Contractor. Per the specifications listed in the City of Portland Technical Manual dated 7/19/10 and as revised on 6/17/11 and 7/21/11, the traffic signal controllers supplied under this contract shall be Naztec NEMA TS-2 and shall have the capability of supporting NTCIP protocols. Traffic signal controllers shall support direct Ethernet communications from the proposed in-cabinet DSL modem to the controller's Ethernet port. The equipment supplied and installed shall be capable of supporting all of the system functionality currently in place between recently supplied and installed Naztec traffic signal controllers operating as on-street closed loop systems and shown as being retained for reprogramming and reuse in this project.

The system shall employ an IP-based communications network to and from the central system control computer. The equipment supplied and installed shall be capable of upload to and download from each of the system's traffic signal controller databases, remotely access local intersection reports, remotely access processed vehicle detector data, and provide real time intersection status to support graphical local and system maps.

The Contractor shall be solely responsible for providing the project with working and fully configured controllers for each intersection, delivery and complete set-up of the central system, installation of the central and local intersection communications interface, and coordination with the information technology (MIS) personnel at the City of Portland or other locations as directed by the City. The Contractor is further responsible for any local wiring at the City of Portland's system computer location, system Start-up and System Loading, Acceptance Testing, and System Maintenance.

The Contractor shall be solely responsible for furnishing and installing all other equipment to include pedestrian signals, pedestrian pushbuttons and signs, copper interconnect and connections, field wiring, and all other equipment necessary to provide complete and operational traffic signal systems. The Contractor shall be aware of and conform to all details for the material specifications in Special Provision 718.

16. Foundations and Conduit

Foundations for pedestrian pushbuttons on proposed TS posts are conceptually located to avoid underground conflicts with information that was provided by utilities during design; however the contractor may relocate TS posts as needed and upon consultation with and approval from the resident engineer to avoid unanticipated utility conflicts as long as the final location meets the guidelines in Section 4E.08 of the 2009 MUTCD.

When new conduit is extended or installed into new or existing mast arm signal foundations, Contractor shall break into existing foundation to expose the existing conduit bend. New conduit shall be attached to existing conduit bend and should be installed at a depth of 36 inches. Junction boxes (not shown on the plans but budgeted in the project) may be used at the discretion of the Contractor and if approved by the resident engineer to complete proposed connections to the existing underground conduit system.

In lieu of installing new controller cabinet foundations with new, extended or modified conduit connections to the existing signal system, the Contractor may at his discretion and upon approval by the Engineer form and pour a new controller cabinet foundation suitable to accommodate a P-type cabinet around any existing controller foundation. If this option is chosen, the Contractor must meet the following conditions:

1. Minimum 6-inches on the vertical faces and 4-inches of new concrete on top above the old concrete. This may mean chipping down a few of inches of old concrete.
2. Existing anchor bolts must be cut below the new finished top surface.
3. New anchor bolts shall be drilled into the new concrete foundation.
4. Strengthen the new concrete jacket with adequate reinforcement, following standard details for new concrete installation.
5. Meet American with Disabilities Act (ADA) requirements.

17. Video Detection Installation - At locations where video detection cameras are proposed to be installed on mast arms, an initial six-foot vertical pipe extension shall be installed on the mast arm with the video detector mounted on the top of the extension pipe. The Engineer reserves the right to direct the Contractor to field adjust the video detector mounting height for local conditions identified during or after installation. No additional cost will be allowed for field adjusting the pipe extensions or rewiring as necessary. This work will be incidental to the Video Detection System items.

18. Start-Up and System Loading

The system supplier shall initiate complete system operation from the controller and system timing schedules shown on the plans or data supplied by the Engineer and shall initiate stopline detectors logging operation at the direction of the Engineer. After the supplier has initiated system operation and detector logging, 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 the Engineer, 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 the Engineer that the system is ready for the Start-up Phase. Within 7 days of completion of the initial testing period the supplier's engineer will begin loading the system for full coordinated operations. After coordination has been initiated and run for approximately two weeks, the Engineer shall evaluate system operation and make adjustments as necessary. The Supplier's engineer does not need to be on-site during this period, but must be available by telephone or by demand on-site as needed. Any major system malfunctions encountered during this testing period shall be corrected by the supplier, and the test restarted. During this period the Engineer may make modifications to the system timing parameters, but this will not cause restarting of the testing period. At the completion of the coordination testing period the system will be deemed ready for final Acceptance Testing as described below. Testing of controllers per section 718.07 is not required.

19. Acceptance Testing

Upon completion of the 14-day coordination testing period, the Engineer shall evaluate system operation. It is expected that the complete system shall operate fully functional at the City of Portland and the remote locations for a period of 30 consecutive days without malfunction. Minor malfunctions of inoperability not the fault of the Contractor, as judged by the Engineer, are not included in the 30-day period. If the system fails to operate as intended or the supplier's claims, 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 the Engineer's reasonable satisfaction that the hardware and licensed software function in accordance with the specifications, requirements, through-puts, functionalities, performance criteria or other benefits stated in documentation, promotional materials, proposals, and/or demonstrations given to MaineDOT and the City of Portland.

20. Training

The Contractor shall provide a 1-day (6 hour minimum) hands-on system training class, which shall cover the general operations and maintenance of the Forest Avenue video detection using new software applications installed on the ATMS server. In addition, the training shall highlight modifications that were made to the Streetwise ATMS software for the addition of the project intersections. The training shall be designed for the primary local jurisdiction personnel (City of Portland) and supplemental personnel who will use and monitor the system.

21. System Maintenance

The system must come with a minimum five (5) year software maintenance agreement to become effective when the proposed system has been accepted, in writing, by MaineDOT and the City of Portland.

Software updates shall be provided free of charge for five (5) years from date of system acceptance. Software corrections or required modifications for proper system operation per these specifications shall be furnished to MaineDOT and the City of Portland at no additional cost during the warranty period.

Hardware equipment shall be warranted for three (3) years, effective when the installed and functional system has been accepted, in writing, by MaineDOT, the City of Portland.

Third party hardware and software licenses and warranties shall be passed to MaineDOT and the City of Portland.

22. As payment for work on this project, the Contractor shall submit a lump sum bid per intersection and in addition a lump sum bid for video detection. Any modifications to existing copper interconnect cable shall be subsidiary to ITEM 643.71. See Special Provision 643 for additional information.

23. Salvage Rights: The City of Portland shall have first rights to all equipment removed or replaced by the project (contact Kevin Thomas 207:756:8291). The Contractor shall carefully remove and store all equipment claimed by the City of Portland at a central location on site for retrieval by the City. The storage area shall be secure and all control equipment removed that has computer chip technology shall be stored in an interior heated environment.

Any equipment not claimed by the City of Portland for salvage shall be removed from the site by the Contractor and disposed of in a manner acceptable to the Engineer.

24. The Contractor shall be responsible for submitting RED-LINE AS-BUILT drawings of the final work to the Engineer. Those drawings shall be on a clean set of plans showing all changes or modifications to the Bid Plans.

25. The Contractor will be responsible for the relocation of power meters if required. This work will be incidental to item 643.71 as applicable to the location of the work.

26. The Contractor shall perform the work in a manner that will require the least amount of downtime to the traffic signal operations. Any police detail required (as deemed necessary by the Resident Engineer) will be paid for by the Contractor.

27. The Maine Department of Environmental Protection (MDEP) has reported spills and releases involving petroleum products adjacent to the project. Based on the scope of work presented, installation of pedestrian crossing poles, available data suggests that this contamination may only be adjacent to the immediate areas of any excavation proposed by the Maine Department of Transportation (MDOT). However, in light of MDEP's findings, the Contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with working near petroleum-impacted soils. Furthermore, the Contractor shall remain alert for any additional evidence of contamination. If the Contractor encounters evidence of soil or groundwater contamination, the Contractor shall secure the excavation, stop work in te contaminated area, and immediately notify the Resident. The Resident shall contact the Hydrogeologist in MDOT'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:

- 718.12 Traffic signal control system
- 718.13 Pedestrian crossing system

Special provision 718 expands upon the information found in these general notes. As such, the more restrictive language between these general notes and special provision 718 shall govern the work to be performed under this project.

29. The intersection base plans shown on Sheets 4-16 were digitized by VHB based on aerial photography provided by the City of Portland. Supplemental information was obtained by VHB from field reviews and inventory conducted April 6-9, 2009; February 17, 2011; and April 27, 2011.

30. Forest Avenue pedestrian crossings at signalized project intersections shall provide pedestrian signals that count down during the pedestrian clearance interval. The pedestrian countdown modules shall be GE Lumination GT1 Series in either existing or proposed McCain Model (black finish) housings as identified in the plan sheets. Accessible Pedestrian Signal (APS) push buttons with locator tones shall be provided at intersections identified in the plan sheets and be at a minimum Campbell Company Advisor Model A915. Two-inch Pelco brand mushroom type push buttons shall be installed along Forest Avenue at all remaining signalized intersections not installed with APS or that do not already provide two-inch push buttons. All Forest Avenue intersections shall have 9-inch by 15-inch R10-3e informational signs either provided with new APS buttons, provided with new two-inch mushroom type push buttons, or provided to replace existing R10-3 series signs above existing and to be retained two-inch mushroom type push buttons. R10-3e sign information applicable to all project intersections is provided in the detail below.

PROPOSED R10-3e INFORMATIONAL SIGNS

9" x 15"
LOCATION 51
4 - PROPOSED

9" x 15"
LOCATIONS 43-50, 52-54
43 - PROPOSED

9" x 15"
LOCATIONS 43-50, 52-54
37 - PROPOSED

9" x 15"
LOCATIONS 43 AND 52
2 - PROPOSED

DAILY AND WEEKLY COORDINATION SCHEDULE

WEEK	DAY OF WEEK						
PROG	SUN	MON	TUE	WED	THU	FRI	SAT
JAN-DEC	3	1	1	1	1	1	2

EVENT	TIME HR	TIME MIN	TIME SEC	ACTION
DAY PLAN 1				
1	00	00	00	54
2	06	00	00	1
3	06	45	00	3
4	08	45	00	2
5	10	30	00	2
6	11	45	00	5
7	13	05	00	3
8	14	45	00	4
9	18	00	00	2
10	19	00	00	1
11	20	00	00	54
DAY PLAN 2				
1	00	00	00	54
2	10	00	00	2
3	11	15	00	3
4	15	30	00	2
5	18	00	00	1
6	19	00	00	54
DAY PLAN 3				
1	00	00	00	54
2	10	00	00	2
3	11	15	00	2
4	15	30	00	2
5	18	30	00	54

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN
17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

GENERAL NOTES

SHEET NUMBER

2

OF 22

Username: J. ROBERT Date:10/28/2011
Division:
Filename: ...\tts\planset\003_5213400MAP.dgn

WASHINGTON STREET
ALLEN AVE
READ ST
FOREST AVE
WARREN AVE
STEVENS AVENUE
WALTON ST
OCEAN AVE
VANNAH AVE
BELMONT ST
SAUNDERS ST
ASHMONT ST
DARTMOUTH ST
FALMOUTH ST
DEERING AVE
WOODFORD ST
BRIGHTON AVE
ST JOHN STREET
PREBLE ST
MARGINAL WAY
HANOVER ST
PORTLAND ST
HIGH ST
SPRING ST
295

LOCATION 54 SHEET 14 W/RR PREEMPT SHEET 16
LOCATION 52 SHEET 12 W/RR PREEMPT SHEET 16
LOCATION 53 SHEET 13 W/RR PREEMPT SHEET 16
LOCATION 51 SHEET 11
LOCATION 50 SHEET 10 W/RR PREEMPT SHEET 16
LOCATION 47 SHEET 7
LOCATION 46 SHEET 6
LOCATION 45 SHEET 5
LOCATION 44 SHEET 4
LOCATION 43 SHEET 21
LOCATION 43a SHEET 22
LOCATION 48 SHEET 8 W/RR PREEMPT SHEET 16
LOCATION 49 SHEET 9 W/RR PREEMPT SHEET 16

38 39 40 41 42 19 20 21 37 22 23

MAP LEGEND

- ○ - 17857.00 PROJECT INTERSECTION (LOCATION NUMBER IS PROPOSED PORTLAND TRAFFIC SERVER STREETWISE DROP NUMBER)
- ◌ - 17730.00 EXISTING PORTLAND TRAFFIC SERVER STREETWISE INTERSECTION
- △ - EXISTING SIGNALIZED INTERSECTION TO BE INCORPORATED INTO STREETWISE SERVER UNDER A FUTURE PROJECT
- ## - 17730.00 EXISTING PORTLAND TRAFFIC SERVER STREETWISE IDENTIFICATION (DROP) NUMBER
- ◌ - 17730.00, 17856.00, AND 17857.00 EXISTING SIGNAL SYSTEM SERVER LOCATION (65 HANOVER STREET)

LAYOUT SCALE
600 0 600 1200
Scale in Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

OVERALL MAP

SHEET NUMBER
3
OF 22

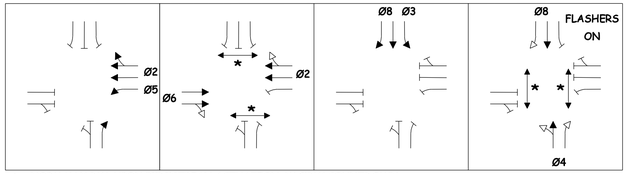
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL NEW TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1
ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON WITH R10-3e INFORMATIONAL SIGN	8
ACTELIS ML688 DSL MODEM	1
R10-15R 30" X 30" RETROREFLECTIVE SIGN	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	4
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	4
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	90 LF

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

EXISTING PHASING SEQUENCE (RETAINED)



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø5 LEADS AND Ø3 LEADS

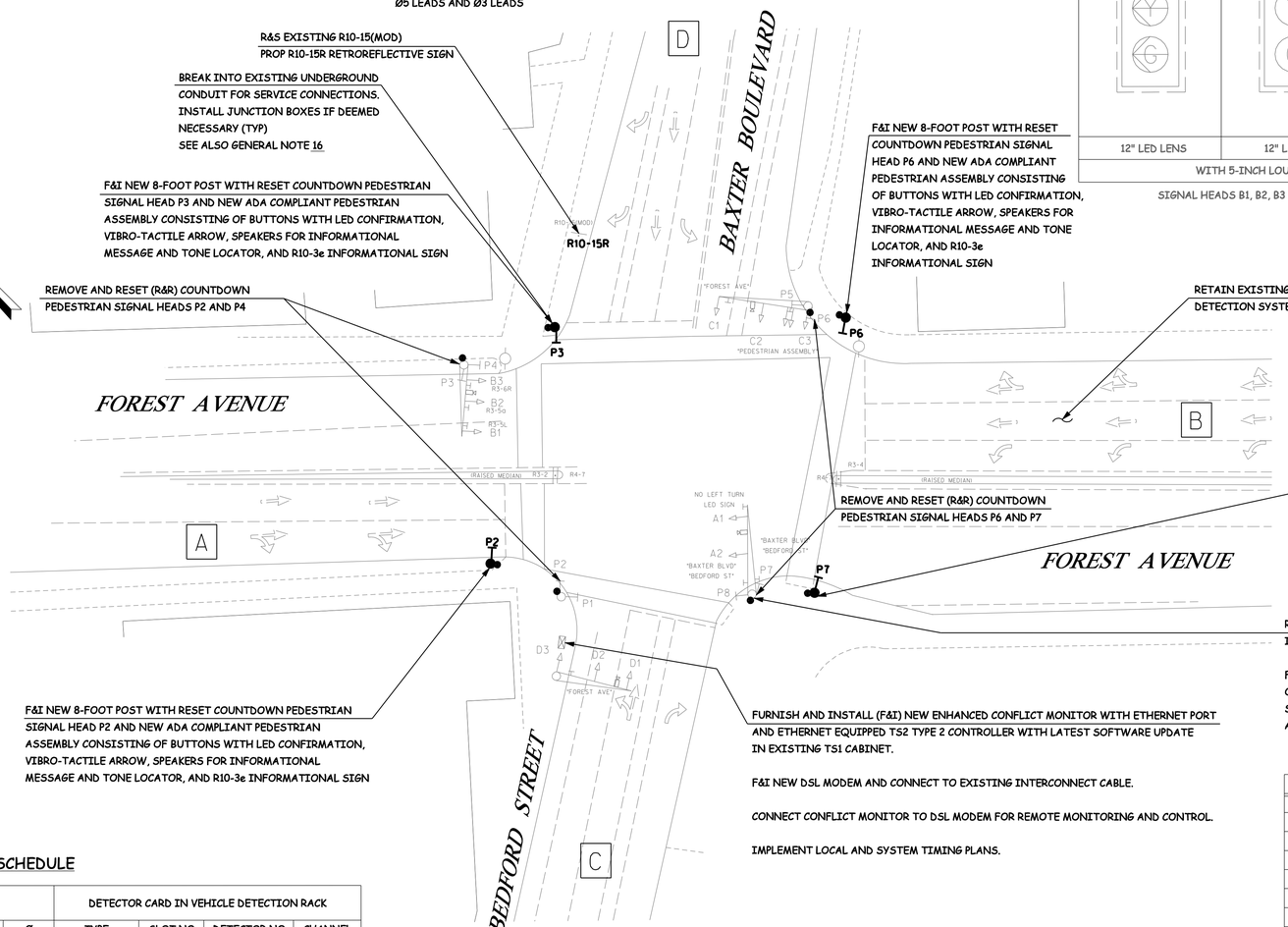
SIGNAL HEAD DATA

EXISTING			
B1,D1	A1,A2,B2,B3,C1,C2 D2,D3	C3	P1 - P8
12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL
WITH 5-INCH LOUVERED BACKPLATES			

SIGNAL HEADS B1, B2, B3 DO NOT HAVE BACKPLATES

PROPOSED POST MOUNTED SIGN

R10-15R
30" x 30"
1 - PROPOSED



COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	3	91	82	9	82
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	0	0	0	0	0
SPLIT TIME Ø2	48	52	58	64	64
SPLIT TIME Ø3	13	19	23	26	26
SPLIT TIME Ø4	29	29	29	30	30
SPLIT TIME Ø5	14	18	23	27	27
SPLIT TIME Ø6	34	34	35	37	37
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	42	48	52	56	56

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

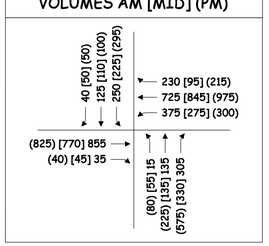
DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, BEDFORD STREET AND BAXTER BLVD APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / BEDFORD ST/ BAXTER BLVD
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
44

SYSTEM DESIGN VOLUMES AM [MID] (PM)



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		10	5	7	5	10		5	
PASSAGE TIME		3.0	2.0	2.0	3.0	3.0		2.0	
MAXIMUM 1		63	20	20	24	33		44	
MAXIMUM 2		60	20	20	30	60		20	
YELLOW		4.0	4.0	4.0	4.0	4.0		4.0	
ALL RED		2.0	2.0	2.0	2.0	2.0		2.0	
PEDESTRIAN WALK		4		4		4		4	
PEDESTRIAN CLEARANCE		23		18		23		18	
RECALL		S	O	O	O	S		O	
DETECTOR OPERATION		PR	PR	PR	PR	PR		PR	
PREEMPTION PRIORITY									
FLASH		R	R	R	R	R		R	
DUAL ENTRY		OFF	OFF	OFF	OFF	OFF		OFF	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
BEDFORD STREET AND BAXTER BOULEVARD

TRAFFIC SIGNAL PLAN

SHEET NUMBER
4
OF 22

Filename: ...\ts\planset\004_5213400SG01.dgn Division: Username: J ROBERT Date:10/28/2011

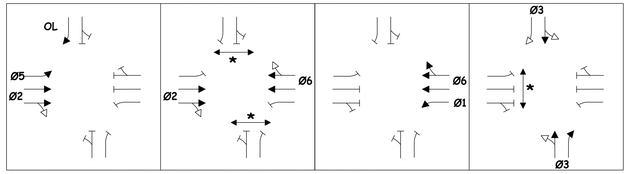
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
SOFTWARE UPDATE TO EXISTING ETHERNET EQUIPPED SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	6
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	6
ACTELIS ML688 MODEM	1
R10-15R 30" X 30" RETROREFLECTIVE SIGN	3
R10-15L 30" X 30" RETROREFLECTIVE SIGN	1
CARD RACK VIDEO COMMUNICATIONS BOARD	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	2
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	35 LF

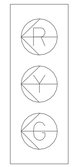
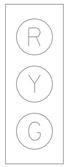
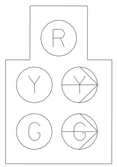
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING PHASING SEQUENCE (RETAINED)

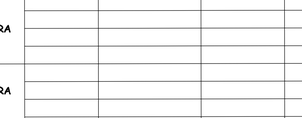


★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 LAGS AND Ø5 LEADS

SIGNAL HEAD DATA

EXISTING			PROPOSED
A1,B1	A2,A3,B2,B3, C1,C2,C3,D1	D2	P1 - P6
			
12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

PROPOSED MAST ARM MOUNTED SIGNS



R10-15L
30" x 30"
1 - PROPOSED

R10-15R
30" x 30"
3 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	90	100	110	120	120	COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET (END GRN)	87	80	65	21	73	
COORDINATED Ø	2	2	2	2	2	
SPLIT TIME Ø1	18	24	26	18	18	
SPLIT TIME Ø2	40	44	52	70	70	
SPLIT TIME Ø3	32	32	32	32	32	
SPLIT TIME Ø4	0	0	0	0	0	
SPLIT TIME Ø5	18	24	26	24	24	
SPLIT TIME Ø6	40	44	52	64	64	
SPLIT TIME Ø7	0	0	0	0	0	
SPLIT TIME Ø8	32	32	32	32	32	

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

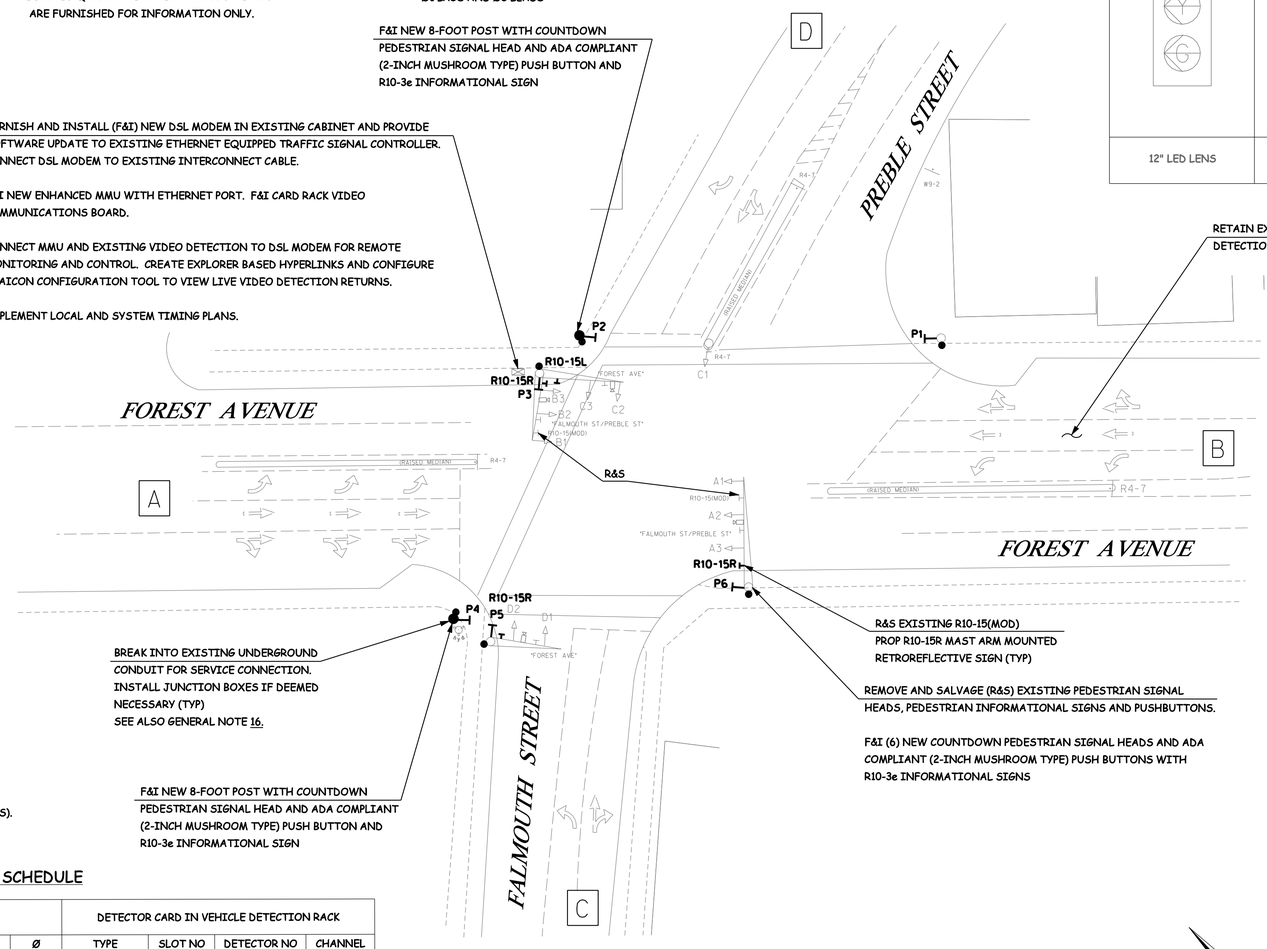
DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, FALMOUTH STREET AND PREBLE ST APPROACHES ARE ALL VIDEO-BASED DETECTION.



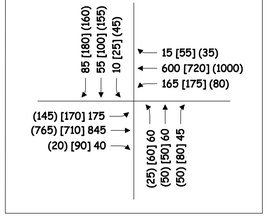
SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5		5	10			
PASSAGE TIME	2.0	3.0	2.5		2.0	3.0			
MAXIMUM 1	20	40	25		20	40			
MAXIMUM 2	20	60	25		25	60			
YELLOW	4.0	4.0	4.0		4.0	4.0			
ALL RED	2.0	2.0	2.0		2.0	2.0			
PEDESTRIAN WALK		4	4			4			
PEDESTRIAN CLEARANCE		14	21			26			
RECALL	O	S	O		O	S			
DETECTOR OPERATION	PR	PR	PR		PR	PR			
PREEMPTION PRIORITY									
FLASH	R	R	R		R	R			
DUAL ENTRY	OFF	OFF	OFF		OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

INTERSECTION:
FOREST AVE / FALMOUTH ST/ PREBLE ST
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
45

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN
25 0 25 50
SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PORTLAND STP-1785(700)X
WIN 17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE
P.E. NUMBER
DATE

FOREST AVENUE
FALMOUTH STREET AND PREBLE STREET
TRAFFIC SIGNAL PLAN

SHEET NUMBER
5
OF 22

Filename: ...\tis\planset\005_5213400SG02.dgn Username: J ROBERT Division: Date:10/28/2011

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL NEW TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
ACTELIS ML688 DSL MODEM	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1
ENERGY EFFICIENT, GELCORE GT1 COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	8
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	8
FURNISH AND INSTALL 24" X 30" W25-1 BLANKOUT SIGN	1
R10-15 30" X 30" RETROREFLECTIVE SIGN	4
CARD RACK VIDEO COMMUNICATIONS BOARD	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

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

PROPOSED POST MOUNTED SIGNS

R10-15
30" x 30"
4 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

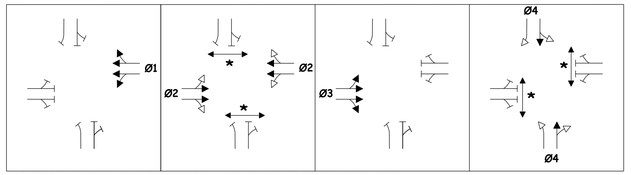
	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	44	42	29	59	19
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	13	16	16	16	16
SPLIT TIME Ø2	36	43	50	60	60
SPLIT TIME Ø3	13	13	16	16	16
SPLIT TIME Ø4	28	28	28	28	28
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	49	59	66	76	76
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	41	41	44	44	44

COORDINATION MODE SET TO FLOATING FORCE-OFF

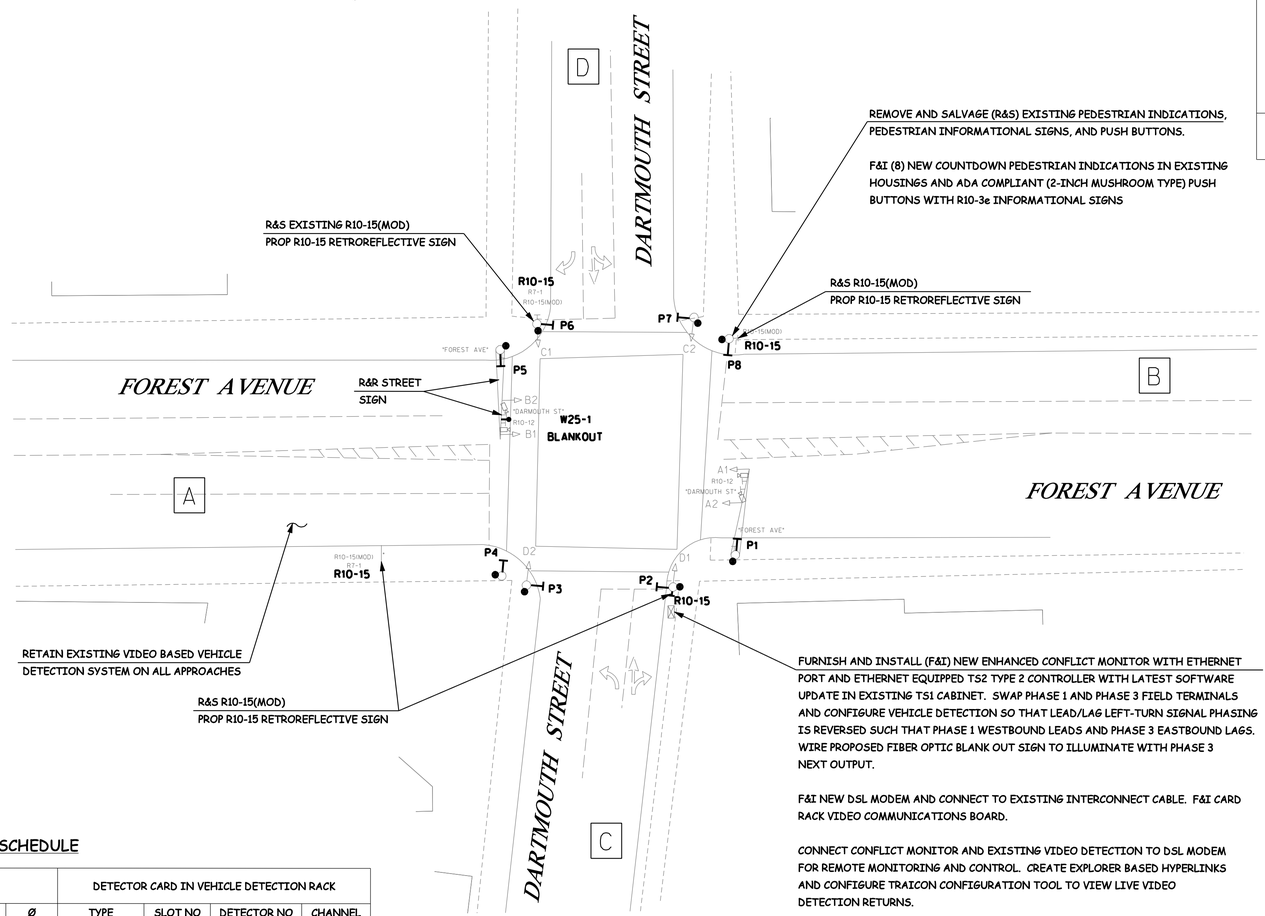
COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 6 AND PHASE 8 ARE DUMMY PHASES TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

PROPOSED PHASING SEQUENCE



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
(CONTRACTOR SHALL SWAP EXISTING Ø1 AND Ø3 FIELD TERMINALS AND CONFIGURE VEHICLE DETECTION SO LEAD/LAG SIGNAL PHASING IS AS SHOWN)



R&S EXISTING R10-15(MOD)
PROP R10-15 RETROREFLECTIVE SIGN

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INDICATIONS, PEDESTRIAN INFORMATIONAL SIGNS, AND PUSH BUTTONS.

F&I (8) NEW COUNTDOWN PEDESTRIAN INDICATIONS IN EXISTING HOUSINGS AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS WITH R10-3e INFORMATIONAL SIGNS

R&S R10-15(MOD)
PROP R10-15 RETROREFLECTIVE SIGN

RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

R&S R10-15(MOD)
PROP R10-15 RETROREFLECTIVE SIGN

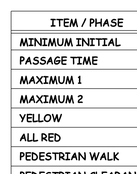
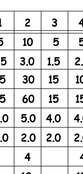
FURNISH AND INSTALL (F&I) NEW ENHANCED CONFLICT MONITOR WITH ETHERNET PORT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING TS1 CABINET. SWAP PHASE 1 AND PHASE 3 FIELD TERMINALS AND CONFIGURE VEHICLE DETECTION SO THAT LEAD/LAG LEFT-TURN SIGNAL PHASING IS REVERSED SUCH THAT PHASE 1 WESTBOUND LEADS AND PHASE 3 EASTBOUND LAGS. WIRE PROPOSED FIBER OPTIC BLANK OUT SIGN TO ILLUMINATE WITH PHASE 3 NEXT OUTPUT.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE. F&I CARD RACK VIDEO COMMUNICATIONS BOARD.

CONNECT CONFLICT MONITOR AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

SIGNAL HEAD DATA

EXISTING		PROPOSED
A1,B1	A2,B2,C1,C2 D1,D2	P1 - P8
		(RETROFIT INDICATIONS IN EXISTING HOUSINGS)
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

PROPOSED MAST ARM MOUNTED BLANK OUT SIGN

W25-1
24" x 30"
1 - PROPOSED
"BLANK OUT"

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5	5					
PASSAGE TIME	2.5	3.0	1.5	2.0					
MAXIMUM 1	15	30	15	10					
MAXIMUM 2	15	60	15	15					
YELLOW	4.0	5.0	4.0	4.0					
ALL RED	2.0	2.0	2.0	2.0					
PEDESTRIAN WALK		4		4					
PEDESTRIAN CLEARANCE		12		17					
RECALL	O	S	O	O					
DETECTOR OPERATION	PR	PR	PR	PR					
PREEMPTION PRIORITY									
FLASH	R	R	R	R					
DUAL ENTRY	OFF	OFF	OFF	OFF					

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

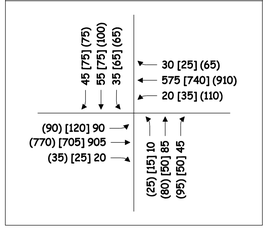
FOREST AVE, BEDFORD STREET AND BAXTER BLVD APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / DARTMOUTH ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
46

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN
17857.00

PROJ. MANAGER	S. LANDRY			
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11	REVISIONS 1
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11	REVISIONS 2
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11	REVISIONS 3
DESIGN3-DETAILED3				REVISIONS 4
				FIELD CHANGES

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
DARTMOUTH STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
6
OF 22

Filename: ...\ts\plonset\006_52134005G03.dgn Division: Username: J ROBERT Date:10/28/2011

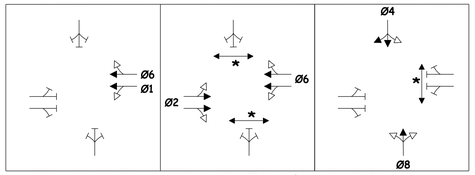
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1
ENERGY EFFICIENT, GELCORE GT1 COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	6
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSHBUTTONS WITH R10-3e INFORMATIONAL SIGN	2
R10-3e INFORMATIONAL SIGN	4
ACTELIS ML688 MODEM	1
R10-15R 30" X 30" RETROREFLECTIVE SIGN	3
R10-15L 30" X 30" RETROREFLECTIVE SIGN	3
CARD RACK VIDEO COMMUNICATIONS BOARD	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	2
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	30 LF

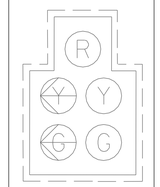
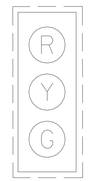
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING PHASING SEQUENCE (RETAINED)



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 LEADS

SIGNAL HEAD DATA

EXISTING		PROPOSED
B1	A1,A2,B2,C1,C2 D1,D2	P1 - P6
		(RETROFIT INDICATIONS IN EXISTING HOUSINGS)
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

PROPOSED MAST ARM MOUNTED SIGNS

R10-15L
30" X 30"
3 - PROPOSED

R10-15R
30" X 30"
3 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

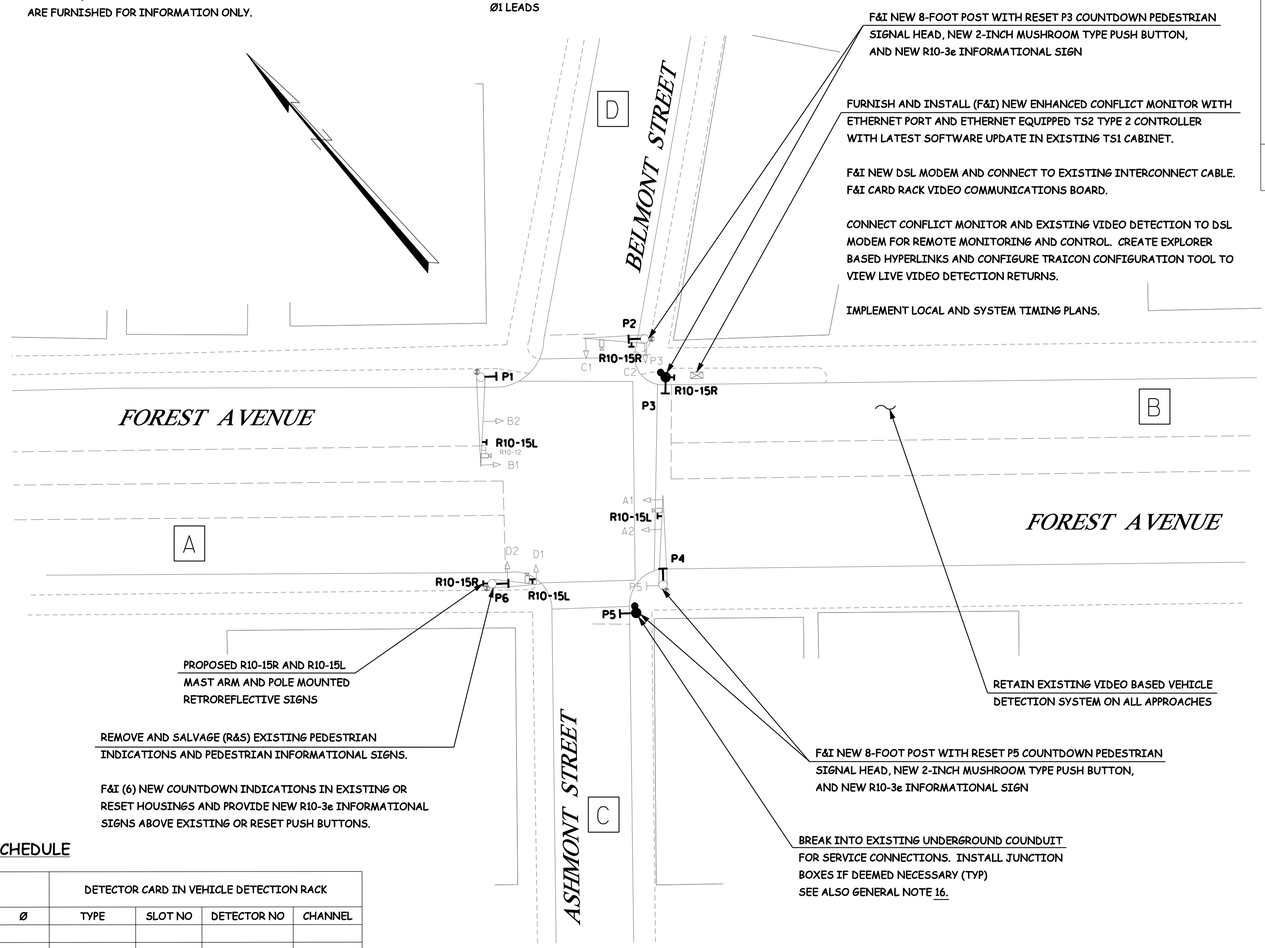
ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	55	44	27	79	42
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	13	16	16	16	16
SPLIT TIME Ø2	51	58	68	78	78
SPLIT TIME Ø3	0	0	0	0	0
SPLIT TIME Ø4	26	26	26	26	26
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	64	74	84	94	94
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	26	26	26	26	26

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.



F&I NEW 8-FOOT POST WITH RESET P3 COUNTDOWN PEDESTRIAN SIGNAL HEAD, NEW 2-INCH MUSHROOM TYPE PUSH BUTTON, AND NEW R10-3e INFORMATIONAL SIGN

FURNISH AND INSTALL (F&I) NEW ENHANCED CONFLICT MONITOR WITH ETHERNET PORT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING TS1 CABINET.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE. F&I CARD RACK VIDEO COMMUNICATIONS BOARD.

CONNECT CONFLICT MONITOR AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

PROPOSED R10-15R AND R10-15L MAST ARM AND POLE MOUNTED RETROREFLECTIVE SIGNS

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INDICATIONS AND PEDESTRIAN INFORMATIONAL SIGNS.

F&I (6) NEW COUNTDOWN INDICATIONS IN EXISTING OR RESET HOUSINGS AND PROVIDE NEW R10-3e INFORMATIONAL SIGNS ABOVE EXISTING OR RESET PUSH BUTTONS.

RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

F&I NEW 8-FOOT POST WITH RESET P5 COUNTDOWN PEDESTRIAN SIGNAL HEAD, NEW 2-INCH MUSHROOM TYPE PUSH BUTTON, AND NEW R10-3e INFORMATIONAL SIGN

BREAK INTO EXISTING UNDERGROUND COUNDUIT FOR SERVICE CONNECTIONS. INSTALL JUNCTION BOXES IF DEEMED NECESSARY (TYP) SEE ALSO GENERAL NOTE 16.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10		5		10		5	
PASSAGE TIME	1.5	3.0		2.0		3.0		2.0	
MAXIMUM 1	12	45		15		45		15	
MAXIMUM 2	10	60		10		60		10	
YELLOW	4.0	4.0		4.0		4.0		4.0	
ALL RED	2.0	2.0		2.0		2.0		2.0	
PEDESTRIAN WALK		4				4		4	
PEDESTRIAN CLEARANCE		8				8		15	
RECALL	O	S		O		S		O	
DETECTOR OPERATION	PR	PR		PR		PR		PR	
PREEMPTION PRIORITY									
FLASH	R	R		R		R		R	
DUAL ENTRY	OFF	OFF		ON		OFF		ON	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

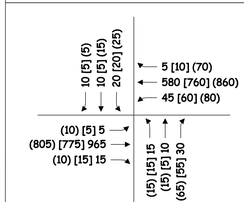
DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, ASHMONT STREET AND BELMONT ST APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / ASHMONT ST / BELMONT ST
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
47

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	J. ROBERT	9/20/11
CHECKED-REVIEWED	M. GRAHAM	9/23/11
DESIGN2-DETAILED2	M. SUENNEN	
DESIGN3-DETAILED3	C. BOBAY	10/26/11
REVISIONS 1	J. ROBERT	
REVISIONS 2	C. BOBAY	
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
ASHMONT STREET AND BELMONT STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
7
OF 22

Filename: ...\ts\planset\007_5213400SG04.dgn Division: Username: J ROBERT Date:10/28/2011

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY	EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	2	FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	2	FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	2
ENERGY EFFICIENT GELCORE GTI COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	1	FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	60 LF
R10-3e INFORMATIONAL SIGN	2		
R10-15R 30" X 30" RETROREFLECTIVE SIGN	1		
LOAD SWITCH	1		

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

SIGNAL TIMING SCHEDULE

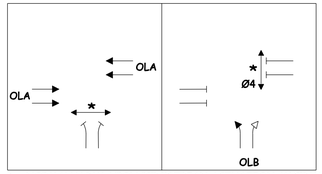
ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	INTERSECTION CONTROLLED BY WOODFORD AND DEERING AVE TRAFFIC SIGNAL CONTROLLER SEE SHEET 9 FOR SIGNAL TIMINGS								
PASSAGE TIME									
MAXIMUM 1									
MAXIMUM 2									
YELLOW									
ALL RED									
PEDESTRIAN WALK									
PEDESTRIAN CLEARANCE									
RECALL									
DETECTOR OPERATION									
PREEMPTION PRIORITY									
FLASH									
DUAL ENTRY									

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	INTERSECTION CONTROLLED BY WOODFORD AND DEERING AVE TRAFFIC SIGNAL CONTROLLER SEE SHEET 9 FOR COORDINATION DATA					COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET (END GRN)						
COORDINATED Ø						
SPLIT TIME Ø1						
SPLIT TIME Ø2						
SPLIT TIME Ø3						
SPLIT TIME Ø4						
SPLIT TIME Ø5						
SPLIT TIME Ø6						
SPLIT TIME Ø7						
SPLIT TIME Ø8						

EXISTING PHASING SEQUENCE (RETAINED)



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
EXISTING OLA = Ø2 + Ø5 + Ø6
EXISTING OLB = Ø3 + Ø4 + Ø7 + Ø8

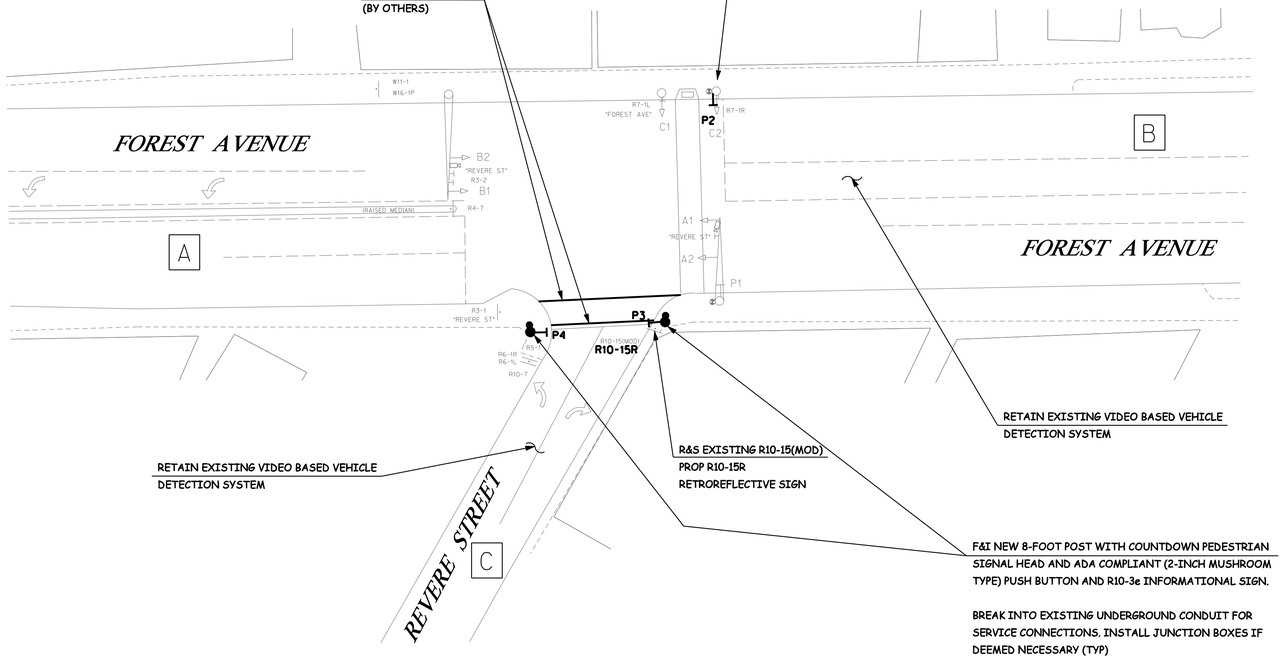
SIGNAL HEAD DATA

EXISTING			PROPOSED
A1,A2,C1,C2	B1,B2	P1	P2-P4
R Y G	R Y G	(WITH AUDIO SIGNAL)	(RETROFIT P2 INDICATION IN EXISTING HOUSING)
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL	16" x 18" LED PEDESTRIAN SIGNAL

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INDICATIONS AND PEDESTRIAN INFORMATIONAL SIGNS

FURNISH AND INSTALL (F&I) NEW COUNTDOWN INDICATION IN EXISTING P2 HOUSING AND PROVIDE NEW (2) R10-3e INFORMATIONAL SIGN ABOVE EXISTING P1 AND P2 PUSH BUTTONS.

PAINTED CROSSWALK (BY OTHERS)



PROPOSED MAST ARM MOUNTED BLANK OUT SIGN (SEE SHEET 9)

R10-15R
30" x 30"
1 - PROPOSED
"BLANK OUT"

NOTE:
BLANK OUTS SHALL BE SIMILAR TO SIGN PROVIDED FOR MAINEDOT PROJECT 17288.00 WATERVILLE-WINSLOW.
CONTRACTOR MAY SUBMIT VARIATION OF BLANK OUT SIGN LEGEND AS LONG AS "YIELD TO PEDESTRIAN/ PEDESTRIANS IN THE CROSSWALK" MESSAGE IS CONVEYED IN ACCORDANCE WITH MUTCD GUIDELINES WHEN CONCURRENT PED IS ACTIVE.

PROPOSED POST MOUNTED SIGN (SEE ALSO SHEET 9)

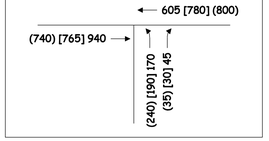
R10-15R
30" x 30"
4 - PROPOSED

INTERSECTION:
FOREST AVE / REVERE ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
48 (FUTURE)

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LAMORY
DESIGN-DETAILED	M. GRAHAM
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	9/20/11
REVISIONS 2	M. SUENNEN	9/23/11
REVISIONS 3	J. ROBERT	10/26/11
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
REVERE STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
8
OF 22

Filename: ...\ts\planset\008_5213400SG05.dgn Division: Username: J ROBERT Date:10/28/2011

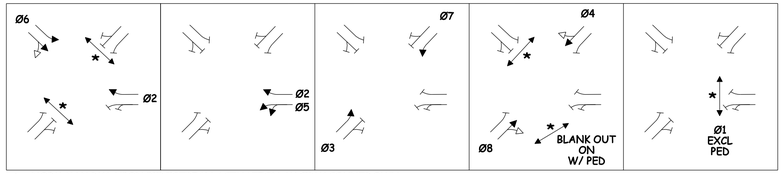
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
ACTELIS ML688 DSL MODEM	1
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	10
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	10
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH TRAFFIC SIGNAL HEADS ON MAST ARMS WITH ASTRO-BRACKETS	9
FURNISH AND INSTALL ONE-WAY, 4-SECTION, 12-INCH TRAFFIC SIGNAL HEADS ON MAST ARMS WITH ASTRO-BRACKETS	2
FURNISH AND INSTALL 30" X 30" R10-15R "TURNING TRAFFIC YIELD TO PEDESTRIANS" BLANKOUT SIGN	1
R10-15R 30" X 30" RETROREFLECTIVE SIGN	3
CARD RACK VIDEO COMMUNICATIONS BOARD	1
LOAD SWITCH	1
VALIDATE RAILROAD PREEMPTION PROGRAMMING	-
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	5
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	5
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	120 LF

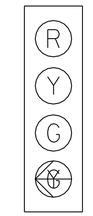
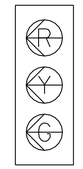
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

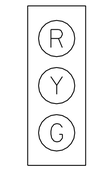
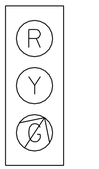
EXISTING PHASING SEQUENCE (RETAINED)

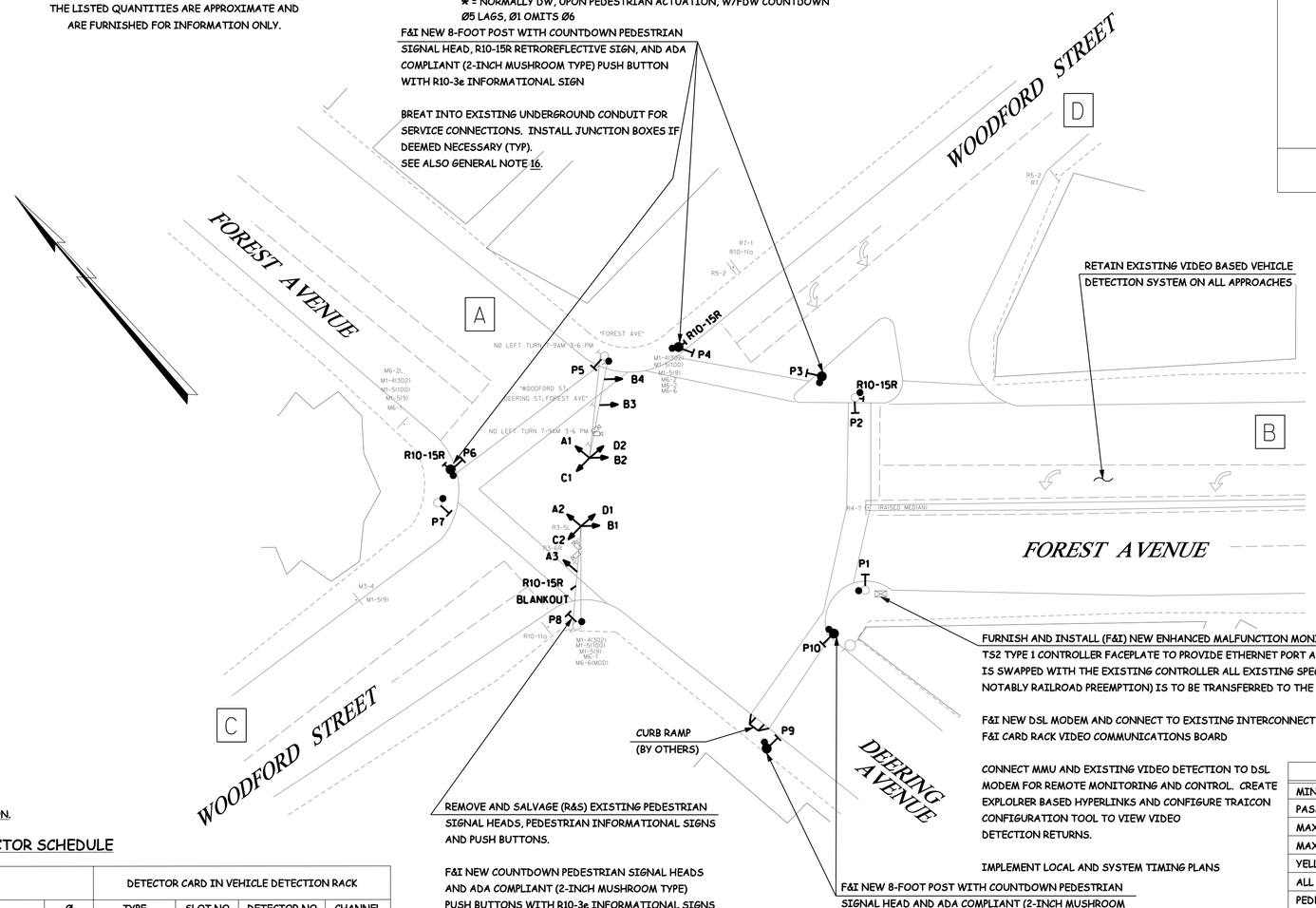


★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø5 LAGS, Ø1 OMITS Ø6

SIGNAL HEAD DATA

PROPOSED		PROPOSED
C1,D1	B1,B2	P1 - P10
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

PROPOSED	
A1,A2,A3, C2,D2	B3,B4
	
12" LED LENS	12" LED LENS



RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN SIGNAL HEADS, PEDESTRIAN INFORMATIONAL SIGNS AND PUSH BUTTONS.

F&I NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS WITH R10-3e INFORMATIONAL SIGNS

F&I NEW 8-FOOT POST WITH COUNTDOWN PEDESTRIAN SIGNAL HEAD, R10-15R RETROREFLECTIVE SIGN, AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN

BREAT INTO EXISTING UNDERGROUND CONDUIT FOR SERVICE CONNECTIONS. INSTALL JUNCTION BOXES IF DEEMED NECESSARY (TYP).
SEE ALSO GENERAL NOTE 16.

F&I NEW 8-FOOT POST WITH COUNTDOWN PEDESTRIAN SIGNAL HEAD AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN

CURB RAMP (BY OTHERS)

FURNISH AND INSTALL (F&I) NEW ENHANCED MALFUNCTION MONITOR UNIT (MMU) WITH ETHERNET PORT AND UPGRADE EXISTING TS2 TYPE 1 CONTROLLER FACEPLATE TO PROVIDE ETHERNET PORT AND LATEST SOFTWARE UPDATE. IF A NEW ETHERNET CONTROLLER IS SWAPPED WITH THE EXISTING CONTROLLER ALL EXISTING SPECIAL PROGRAMMING UNIQUE TO THE INTERSECTION (MOST NOTABLY RAILROAD PREEMPTION) IS TO BE TRANSFERRED TO THE ETHERNET CONTROLLER.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.
F&I CARD RACK VIDEO COMMUNICATIONS BOARD

CONNECT MMU AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLOLRER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	90	100	110	120	120	COORDINATION MODE SET TO FIXED FORCE-OFF
OFFSET (END GRN)	12	85	92	98	98	
COORDINATED Ø	2	6	6	6	6	
SPLIT TIME Ø1	15	20	20	20	20	
SPLIT TIME Ø2	37	40	49	59	59	
SPLIT TIME Ø3	12	13	14	14	14	
SPLIT TIME Ø4	26	27	27	27	27	
SPLIT TIME Ø5	13	15	18	22	22	
SPLIT TIME Ø6	24	25	31	37	37	
SPLIT TIME Ø7	12	13	14	14	14	
SPLIT TIME Ø8	26	27	27	27	27	

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 OR Ø6 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5	5	5	10	5	5	
PASSAGE TIME	1.0	3.0	2.0	3.0	2.0	3.0	2.0	3.0	
MAXIMUM 1	16	90	25	30	35	90	25	30	
MAXIMUM 2	16	90	25	25	25	90	25	25	
YELLOW	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
ALL RED	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
PEDESTRIAN WALK	4	4		4		4		4	
PEDESTRIAN CLEARANCE	12	13		16		13		16	
RECALL	O	S	O	O	O	S	O	O	
DETECTOR OPERATION	PED	PR	PR	PR	PR	PR	PR	PR	
PREEMPTION PRIORITY			C			1		C	
FLASH	D	R	R	R	R	R	R	R	
DUAL ENTRY	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	

NOTES:
S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK
C = CLEAR
(SEE SHEET 16 FOR ADDITIONAL INFORMATION ON RAILROAD PREEMPT TO BE RETAINED)

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

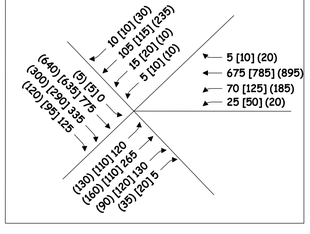
DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, ASHMONT STREET AND BELMONT ST APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / WOODFORD ST/ DEERING AVE
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
49

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LAMORY	
DESIGN-DETAILED	M. GRAHAM	9/20/11
CHECKED-REVIEWED	C. BOBAY	9/23/11
DESIGN2-DETAILED2	C. BOBAY	10/26/11
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REVISIONS 1	J. ROBERT	9/20/11
REVISIONS 2	M. SUENNEN	9/23/11
REVISIONS 3	J. ROBERT	10/26/11
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
WOODFORD STREET AND DEERING AVENUE

TRAFFIC SIGNAL PLAN

SHEET NUMBER
9
OF 22

Filename: ...\ts\planset\009_5213400SG06.dgn Division: Username: J ROBERT Date:10/28/2011

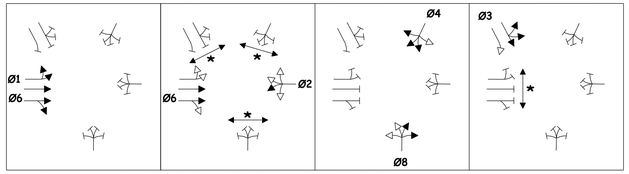
Filename: ...\ts\planset\010_5213400SG07.dgn Division: Username: J ROBERT Date:10/28/2011

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY	EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1	FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1	FURNISH AND INSTALL 10-FOOT PEDESTAL POST (ITEM 643.92)	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	8	FURNISH AND INSTALL 4-FOOT PEDESTAL POST (ITEM 643.92)	2
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	8	FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	4
ACTELIS ML688 DSL MODEM	1	FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	50 LF
R3-5R 30" X 36" POST MOUNTED SIGN	1		
R10-15R 30" X 30" RETROREFLECTIVE SIGN	3		
R10-15R 30" X 30" RETROREFLECTIVE POST MOUNTED SIGN	1		
CARD RACK VIDEO COMMUNCIATIONS BOARD	1		
LOAD SWITCH	1		
VALIDATE RAILROAD PREEMPTION PROGRAMMING	-		
IMPLEMENT LOCAL AND SYSTEM TIMING	-		

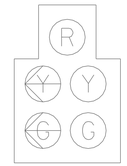
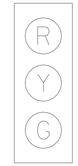
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

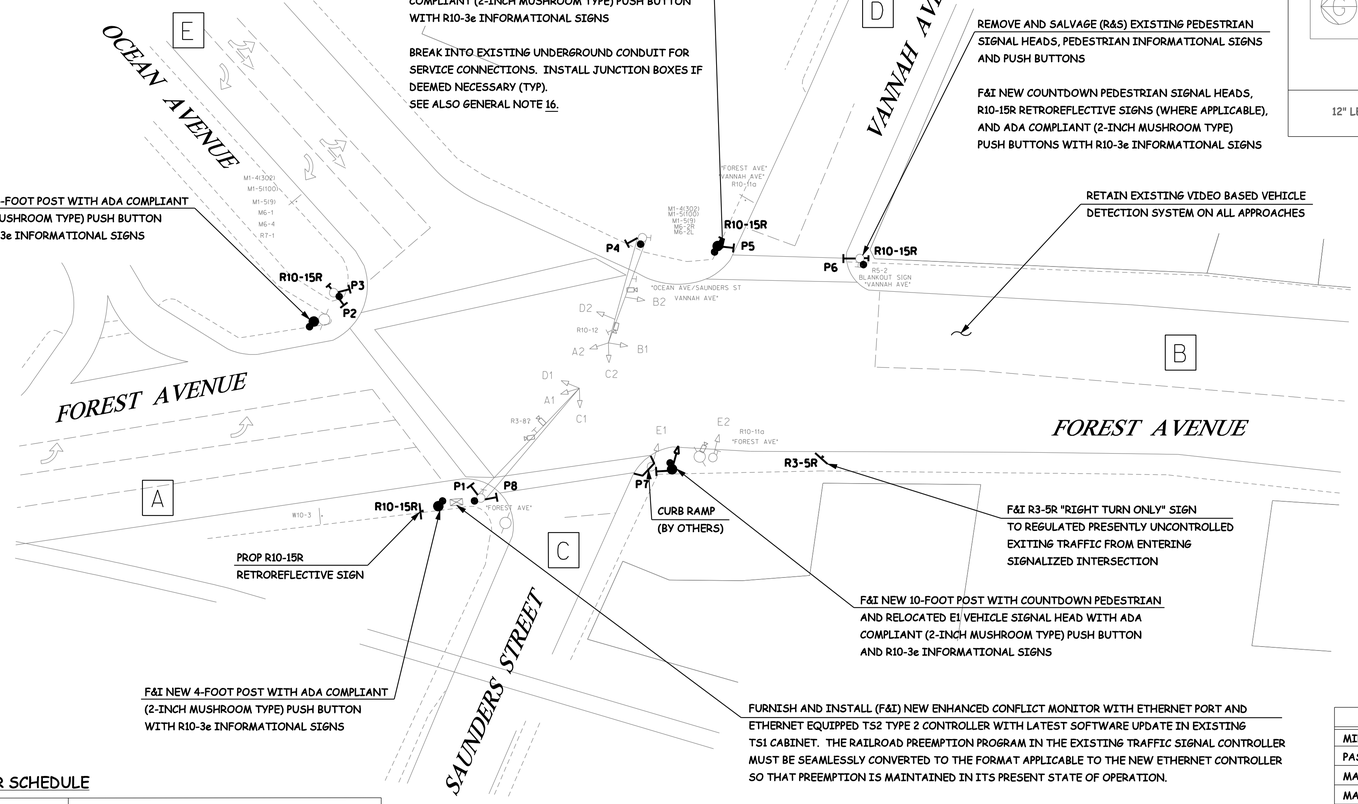
EXISTING PHASING SEQUENCE (RETAINED)



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 AND Ø4 LEAD, Ø3 OMITS Ø8

SIGNAL HEAD DATA

EXISTING		PROPOSED
A2	A1,B1,B2,C1,C2 D1,D2,E1,E2	P1 - P8
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



F&I NEW 8-FOOT POST WITH COUNTDOWN PEDESTRIAN SIGNAL HEAD, R10-15R RETROREFLECTIVE SIGN AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGNS

BREAK INTO EXISTING UNDERGROUND CONDUIT FOR SERVICE CONNECTIONS. INSTALL JUNCTION BOXES IF DEEMED NECESSARY (TYP).
SEE ALSO GENERAL NOTE 16.

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN SIGNAL HEADS, PEDESTRIAN INFORMATIONAL SIGNS AND PUSH BUTTONS

F&I NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS, R10-15R RETROREFLECTIVE SIGNS (WHERE APPLICABLE), AND ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS WITH R10-3e INFORMATIONAL SIGNS

F&I NEW 4-FOOT POST WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGNS

RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

PROP R10-15R RETROREFLECTIVE SIGN

CURB RAMP (BY OTHERS)

F&I R3-5R "RIGHT TURN ONLY" SIGN TO REGULATED PRESENTLY UNCONTROLLED EXITING TRAFFIC FROM ENTERING SIGNALIZED INTERSECTION

F&I NEW 10-FOOT POST WITH COUNTDOWN PEDESTRIAN AND RELOCATED E1 VEHICLE SIGNAL HEAD WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON AND R10-3e INFORMATIONAL SIGNS

F&I NEW 4-FOOT POST WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGNS

FURNISH AND INSTALL (F&I) NEW ENHANCED CONFLICT MONITOR WITH ETHERNET PORT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING TS1 CABINET. THE RAILROAD PREEMPTION PROGRAM IN THE EXISTING TRAFFIC SIGNAL CONTROLLER MUST BE SEAMLESSLY CONVERTED TO THE FORMAT APPLICABLE TO THE NEW ETHERNET CONTROLLER SO THAT PREEMPTION IS MAINTAINED IN ITS PRESENT STATE OF OPERATION.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.
F&I CARD RACK VIDEO COMMUNICATIONS BOARD

CONNECT CONFLICT MONITOR AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

PROPOSED POLE MOUNTED SIGNS

R10-15R
30" X 30"
4 - PROPOSED

R3-5R
30" X 36"
1 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	90	100	110	120	120	
OFFSET (END GRN)	3	4	8	10	4	COORDINATION MODE SET TO FIXED FORCE-OFF
COORDINATED Ø	2	2	2	2	2	
SPLIT TIME Ø1	14	15	16	16	16	
SPLIT TIME Ø2	35	43	52	60	60	
SPLIT TIME Ø3	26	26	26	26	26	
SPLIT TIME Ø4	15	16	16	18	18	
SPLIT TIME Ø5	0	0	0	0	0	
SPLIT TIME Ø6	49	58	68	76	76	
SPLIT TIME Ø7	0	0	0	0	0	
SPLIT TIME Ø8	41	42	42	44	44	

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									
CAMERA V5									

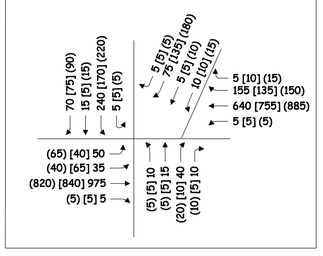
DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, BEDFORD STREET AND BAXTER BLVD APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / OCEAN AVE / SAUNDERS ST / VANNAH AVE
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
50

SYSTEM DESIGN VOLUMES AM [MID] (PM)



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	7	5		10		5	
PASSAGE TIME	1.5	3.0	2.0	2.0		3.0		2.0	
MAXIMUM 1	20	90	35	35		90		35	
MAXIMUM 2	15	90	25	20		90		20	
YELLOW	4.0	4.0	4.0	4.0		4.0		4.0	
ALL RED	2.0	2.0	2.0	2.0		2.0		2.0	
PEDESTRIAN WALK		4	4			4			
PEDESTRIAN CLEARANCE		21	15			11			
RECALL	O	S	O	O		S		O	
DETECTOR OPERATION	PR	PR	PR	PR		PR		PR	
PREEMPTION PRIORITY			1			C		C	
FLASH	R	R	R	R		R		R	
DUAL ENTRY	OFF	OFF	OFF	OFF		OFF		OFF	

NOTES:
S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK
C = CLEAR
(SEE SHEET 16 FOR ADDITIONAL INFORMATION ON RAILROAD PREEMPT TO BE RETAINED)

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	J. ROBERT	9/20/11
CHECKED-REVIEWED	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	J. ROBERT	10/26/11
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
OCEAN / VANNAH AVENUE AND SAUNDERS STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
10
OF 22

Filename: ...\ts\planset\011_52134005G08.dgn Division: Username: J ROBERT Date:10/28/2011

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1
ACTELIS ML688 DSL MODEM	1
R10-12 30" X 36" RETROREFLECTIVE SIGN	1
R10-3e INFORMATIONAL SIGN	4
IMPLEMENT LOCAL AND SYSTEM TIMING	-

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

PROPOSED MAST ARM MOUNTED SIGN

R10-12
30" X 36"
1 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

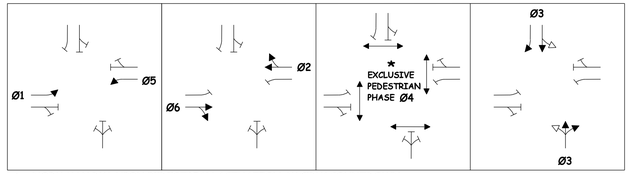
	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	74	57	12	71	16
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	16	16	21	16	16
SPLIT TIME Ø2	33	43	44	61	61
SPLIT TIME Ø3	16	16	20	18	18
SPLIT TIME Ø4	25	25	25	25	25
SPLIT TIME Ø5	16	16	16	16	16
SPLIT TIME Ø6	33	43	49	61	61
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	41	41	45	43	43

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

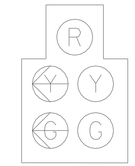
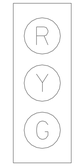
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

PROPOSED PHASING SEQUENCE



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 AND Ø5 LEFTS LEAD, Ø4 PED LEADS AND Ø3 VEHICLE PHASE LAGS

SIGNAL HEAD DATA

EXISTING		
A1,B1	A2,B2,C1,C2 D1,D2	P1 - P8
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

FURNISH AND INSTALL (F&I) NEW ENHANCED CONFLICT MONITOR WITH ETHERNET PORT AND ETHERNET EQUIPPED TS2 TYPE 2 CONTROLLER WITH LATEST SOFTWARE UPDATE IN EXISTING TS1 CABINET.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.

CONNECT CONFLICT MONITOR TO DSL MODEM FOR REMOTE MONITORING AND CONTROL.

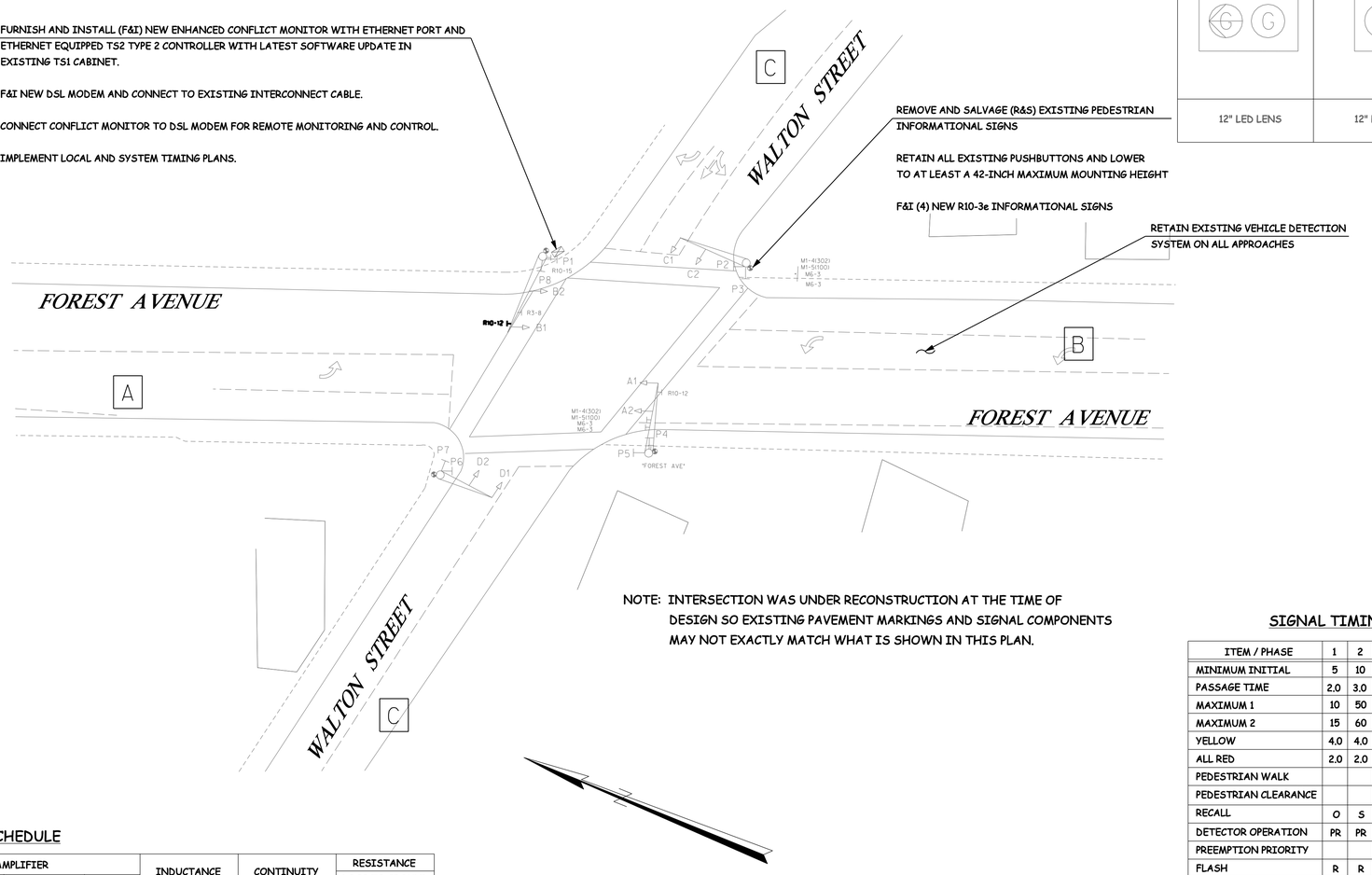
IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INFORMATIONAL SIGNS

RETAIN ALL EXISTING PUSHBUTTONS AND LOWER TO AT LEAST A 42-INCH MAXIMUM MOUNTING HEIGHT

F&I (4) NEW R10-3e INFORMATIONAL SIGNS

RETAIN EXISTING VEHICLE DETECTION SYSTEM ON ALL APPROACHES



NOTE: INTERSECTION WAS UNDER RECONSTRUCTION AT THE TIME OF DESIGN SO EXISTING PAVEMENT MARKINGS AND SIGNAL COMPONENTS MAY NOT EXACTLY MATCH WHAT IS SHOWN IN THIS PLAN.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5		5	10			
PASSAGE TIME	2.0	3.0	2.0		2.0	3.0			
MAXIMUM 1	10	50	20		10	50			
MAXIMUM 2	15	60	20		10	60			
YELLOW	4.0	4.0	4.0	3.0	4.0	4.0			
ALL RED	2.0	2.0	2.0	0.0	2.0	2.0			
PEDESTRIAN WALK				4					
PEDESTRIAN CLEARANCE				17					
RECALL	O	S	O		O	S			
DETECTOR OPERATION	PR	PR	PR		PR	PR			
PREEMPTION PRIORITY									
FLASH	R	R	R	D	R	R			
DUAL ENTRY	OFF	OFF	OFF		OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

DETECTOR SCHEDULE

DETECTOR				AMPLIFIER				INDUCTANCE		CONTINUITY		RESISTANCE	
STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO.	DETECTOR NO.	CHANNEL					LOOP TO GROUND	
RECORD FIELD MEASUREMENTS HERE													

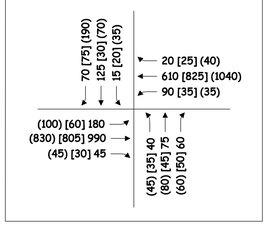
DETECTOR NOTES:
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

INTERSECTION:
FOREST AVE / WALTON ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
51

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
WALTON STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
11
OF 22

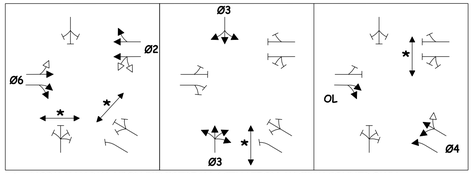
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
TRAFFIC PRESENCE SENSOR (TRAFCAM OR EQUAL)	1
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
ENERGY EFFICIENT, GELCORE GT1 COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	8
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	2
R10-3e INFORMATIONAL SIGN	6
ACTELIS ML688 DSL MODEM	1
ONE-WAY, 3-SECTION 12-INCH POLYCARBONATE TRAFFIC SIGNAL HEADS WITH TUNNEL VISORS	2
CARD RACK VIDEO COMMUNICATIONS BOARD	1
VALIDATE RAILROAD PREEMPTION PROGRAMMING	-
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
FURNISH AND INSTALL 10-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	2
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	20 LF

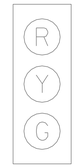
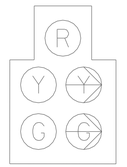
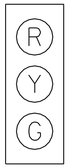
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED PHASING SEQUENCE



★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING		PROPOSED	
A1,A2,B1,B2,C1,C2 C3,D1,D2	A3	P1 - P8	E1,E2
		(RETROFIT INDICATIONS IN EXISTING HOUSINGS)	
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL	12" LED LENS

FURNISH AND INSTALL (F&I) NEW ENHANCED MALFUNCTION MONITOR UNIT (MMU) WITH ETHERNET PORT AND UPGRADE EXISTING TS2 TYPE 1 CONTROLLER FACEPLACE TO PROVIDE ETHERNET PORT AND LATEST SOFTWARE UPDATE. IF A NEW ETHERNET CONTROLLER IS SWAPPED WITH THE EXISTING CONTROLLER ALL EXISTING SPECIAL PROGRAMMING UNIQUE TO THE INTERSECTION (MOST NOTABLY RAILROAD PREEMPTION) IS TO BE TRANSFERRED TO THE ETHERNET CONTROLLER.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.
F&I CARD RACK VIDEO COMMUNICATIONS BOARD

CONNECT MMU AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

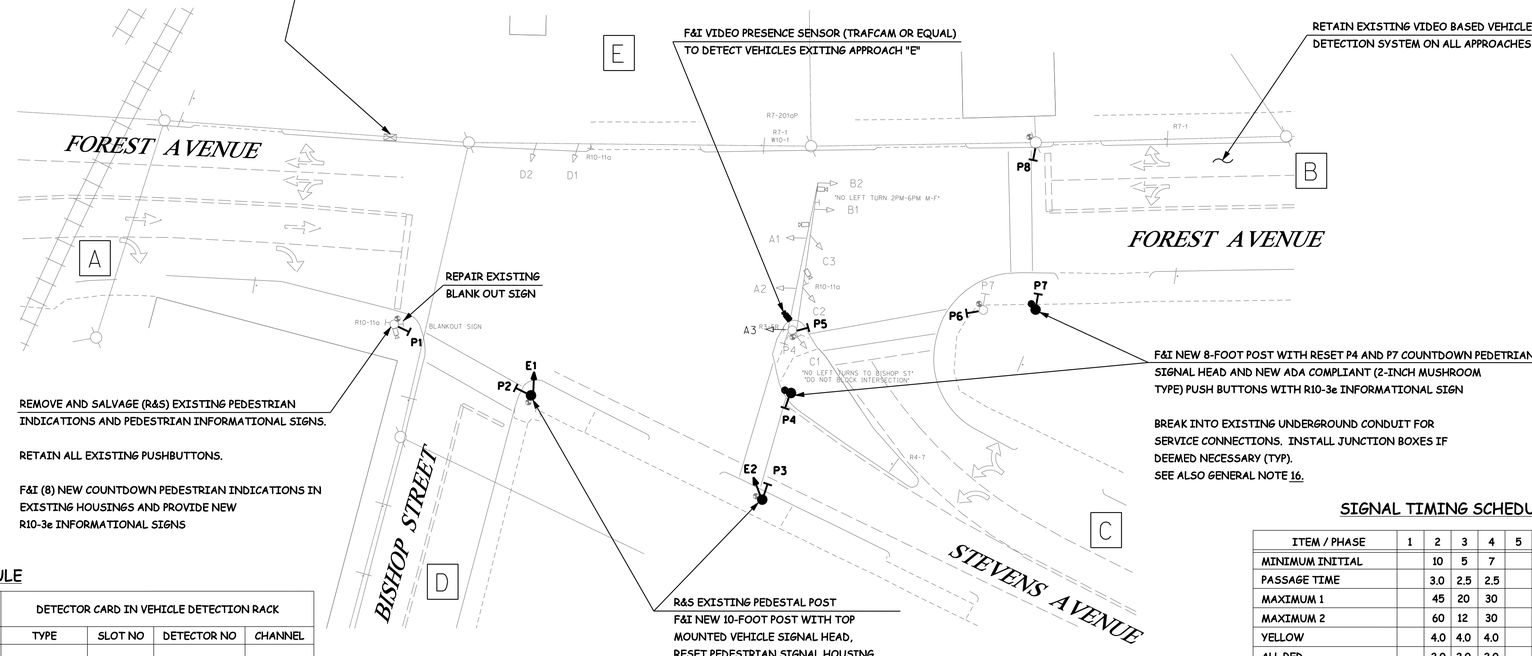
ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	67	48	73	23	100
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	0	0	0	0	0
SPLIT TIME Ø2	48	58	68	69	69
SPLIT TIME Ø3	20	20	20	20	20
SPLIT TIME Ø4	22	22	22	31	31
SPLIT TIME Ø5	0	0	0	0	0
SPLIT TIME Ø6	48	58	68	69	69
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	42	42	42	51	51

COORDINATION MODE SET TO FLOATING FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.



F&I VIDEO PRESENCE SENSOR (TRAFCAM OR EQUAL) TO DETECT VEHICLES EXITING APPROACH "E"

RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

REPAIR EXISTING BLANK OUT SIGN

REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INDICATIONS AND PEDESTRIAN INFORMATIONAL SIGNS.

RETAIN ALL EXISTING PUSHBUTTONS.

F&I (8) NEW COUNTDOWN PEDESTRIAN INDICATIONS IN EXISTING HOUSINGS AND PROVIDE NEW R10-3e INFORMATIONAL SIGNS

F&I NEW 8-FOOT POST WITH RESET P4 AND P7 COUNTDOWN PEDETRIAN SIGNAL HEAD AND NEW ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS WITH R10-3e INFORMATIONAL SIGN

BREAK INTO EXISTING UNDERGROUND CONDUIT FOR SERVICE CONNECTIONS. INSTALL JUNCTION BOXES IF DEEMED NECESSARY (TYP). SEE ALSO GENERAL NOTE 16.

R&S EXISTING PEDESTAL POST
F&I NEW 10-FOOT POST WITH TOP MOUNTED VEHICLE SIGNAL HEAD, RESET PEDESTRIAN SIGNAL HOUSING WITH RETROFIT COUNTDOWN INDICATION, AND RESET EXISTING MUSHROOM TYPE PUSH BUTTON WITH NEW R10-3e INFORMATIONAL SIGN

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		10	5	7		10			
PASSAGE TIME		3.0	2.5	2.5		3.0			
MAXIMUM 1		45	20	30		45			
MAXIMUM 2		60	12	30		60			
YELLOW		4.0	4.0	4.0		4.0			
ALL RED		2.0	2.0	2.0		2.0			
PEDESTRIAN WALK			4	4		4			
PEDESTRIAN CLEARANCE			9	10		10			
RECALL		S	O	O		S			
DETECTOR OPERATION		PR	PR	PR		PR			
PREEMPTION PRIORITY						C/1			
FLASH		R	R	R		R			
DUAL ENTRY		OFF	OFF	OFF		OFF			

NOTES: S = SOFT RECALL; O = RECALL OFF; PR = PRESENCE; MAX2 = UNDER COORDINATION; Y = YELLOW; R = RED; D = DARK; C = CLEAR
(SEE SHEET 16 FOR ADDITIONAL INFORMATION ON RAILROAD PREEMPT TO BE RETAINED)

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									
CAMERA V5									

DETECTOR NOTES:

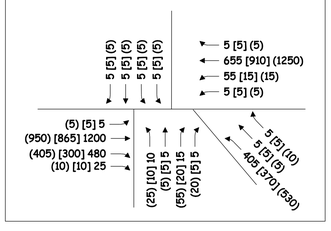
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, STEVENS AVE AND BISHOP STREET APPROACHES ARE ALL EXISTING VIDEO-BASED DETECTION.

GAS STATION APPROACH IS PROPOSED VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / STEVENS AVE / BISHOP ST
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
52

SYSTEM DESIGN
VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PORTLAND STP-1785(700)X
WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	9/20/11
CHECKED-REVIEWED	C. BOBAY	9/23/11
DESIGN2-DETAILED2	C. BOBAY	10/26/11
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
STEVENS AVENUE AND BISHOP STREET
TRAFFIC SIGNAL PLAN

SHEET NUMBER
12
OF 22

Filename: ...\ts\planset\012_52134005G09.dgn Division: Username: J ROBERT Date:10/28/2011

Filename: ...\ts\plonset\013_52134005G10.dgn Division: Username: J. ROBERT Date:10/28/2011

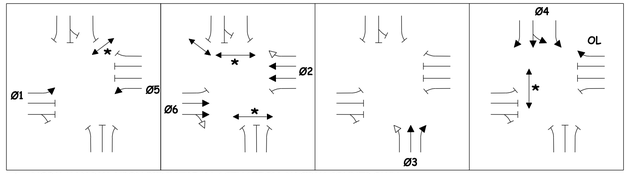
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH POLYCARBONATE TRAFFIC SIGNAL HEAD WITH TUNNEL VISORS ON EXISTING MAST ARM POLE	1
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
ENERGY EFFICIENT, GELCORE GT1 COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	7
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	5
R10-3e INFORMATIONAL SIGN	5
ACTELIS ML688 DSL MODEM	1
R10-15R 30" X 30" RETROREFELECTIVE SIGN	1
CARD RACK VIDEO COMMUNICATIONS BOARD	1
VALIDATE RAILROAD PREEMPTION PROGRAMMING	-
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	1
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	1
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	15 LF

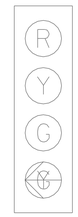
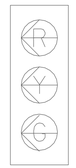
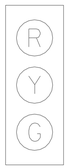
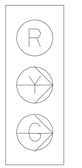
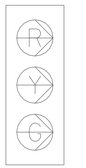
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

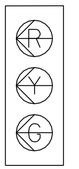
EXISTING PHASING SEQUENCE (RETAINED)



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING				
C1,D1,D2	A1,B1	A2,A3,B2,B3,C2,D3	D4	B4,B5
				
12" LED LENS	12" LED LENS	12" LED LENS	12" LED LENS	12" LED LENS

EXISTING	PROPOSED	
P6, P9 - P10	P1-P5, P7-P8	D1
	(RETROFIT INDICATION IN EXISTING HOUSINGS)	
16" x 18" LED PEDESTRIAN SIGNAL	16" x 18" LED PEDESTRIAN SIGNAL	12" LED LENS

PROPOSED MAST ARM MOUNTED SIGNS

R10-15R
30" X 30"
1 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	62	39	64	21	91
COORDINATE Ø	2	2	2	2	2
SPLIT TIME Ø1	25	29	31	36	36
SPLIT TIME Ø2	25	30	38	41	41
SPLIT TIME Ø3	13	14	14	16	16
SPLIT TIME Ø4	27	27	27	27	27
SPLIT TIME Ø5	14	14	14	16	16
SPLIT TIME Ø6	36	45	55	61	61
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	40	41	41	43	43

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

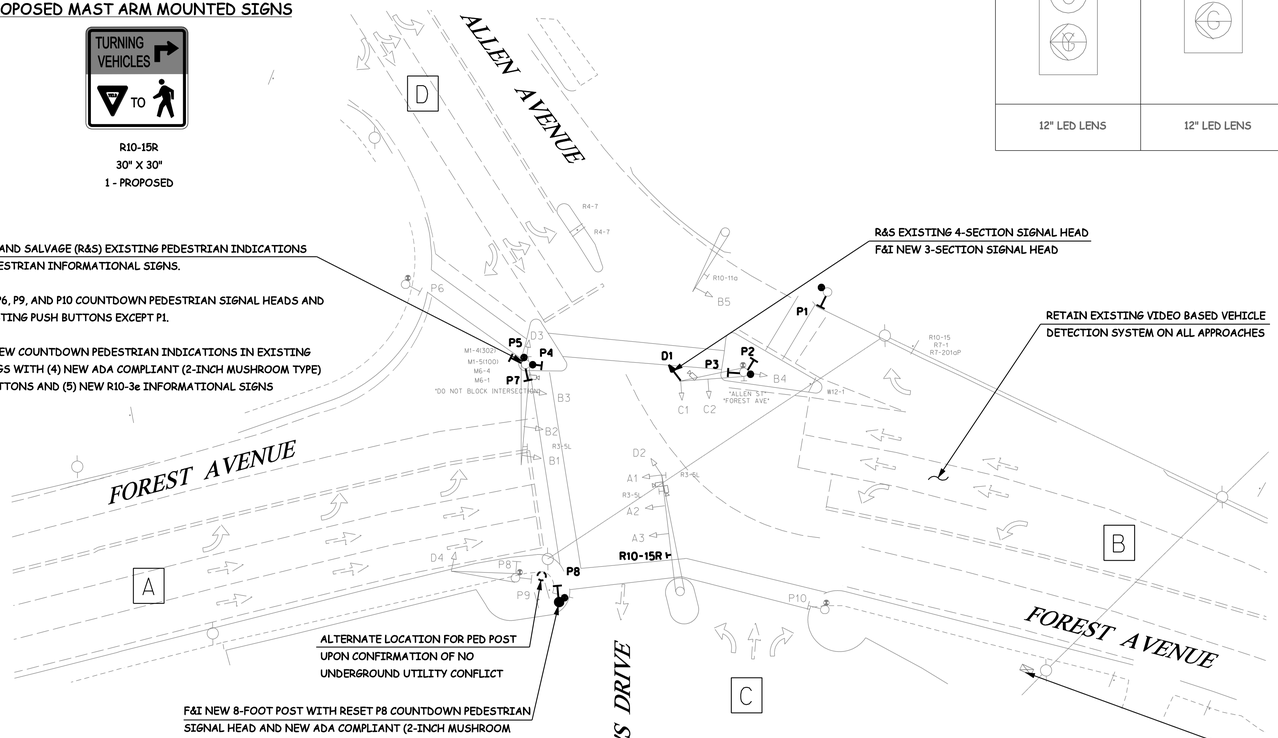
DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

FOREST AVE, ALLEN AVE AND MCDONALDS DRIVE APPROACHES ARE ALL EXISTING VIDEO-BASED DETECTION.



REMOVE AND SALVAGE (R&S) EXISTING PEDESTRIAN INDICATIONS AND PEDESTRIAN INFORMATIONAL SIGNS.

RETAIN P6, P9, AND P10 COUNTDOWN PEDESTRIAN SIGNAL HEADS AND ALL EXISTING PUSH BUTTONS EXCEPT P1.

F&I (7) NEW COUNTDOWN PEDESTRIAN INDICATIONS IN EXISTING HOUSINGS WITH (4) NEW ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS AND (5) NEW R10-3e INFORMATIONAL SIGNS

R&S EXISTING 4-SECTION SIGNAL HEAD
F&I NEW 3-SECTION SIGNAL HEAD

RETAIN EXISTING VIDEO BASED VEHICLE DETECTION SYSTEM ON ALL APPROACHES

ALTERNATE LOCATION FOR PED POST UPON CONFIRMATION OF NO UNDERGROUND UTILITY CONFLICT

F&I NEW 8-FOOT POST WITH RESET P8 COUNTDOWN PEDESTRIAN SIGNAL HEAD AND NEW ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN

BREAK INTO EXISTING UNDERGROUND CONDUIT FOR SERVICE CONNECTIONS. INSTALL ALL JUNCTION BOXES IF DEEMED NECESSARY (TYP).
SEE ALSO GENERAL NOTE 16.

FURNISH AND INSTALL (F&I) NEW ENHANCED MALFUNCTION MONITOR UNIT (MMU) WITH ETHERNET PORT AND UPGRADE EXISTING TS2 TYPE 1 CONTROLLER FACEPLATE TO PROVIDE ETHERNET PORT AND LATEST SOFTWARE UPDATE. IF A NEW ETHERNET CONTROLLER IS SWAPPED WITH THE EXISTING CONTROLLER ALL EXISTING SPECIAL PROGRAMMING UNIQUE TO THE INTERSECTION (MOST NOTABLY RAILROAD PREEMPTION) IS TO BE TRANSFERRED TO THE ETHERNET CONTROLLER.

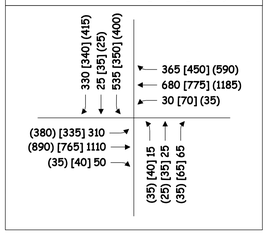
F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.
F&I CARD RACK VIDEO COMMUNICATIONS BOARD

CONNECT MMU AND EXISTING VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

INTERSECTION:
FOREST AVE / ALLEN AVE / MCDONALDS DRIVE
SIGNAL GROUP:
2
LOCATION / PROPOSED DROP:
53

SYSTEM DESIGN VOLUMES AM [MID] (PM)



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5	5	5	10			
PASSAGE TIME	3.0	3.0	3.0	3.0	2.0	3.0			
MAXIMUM 1	30	45	15	30	15	45			
MAXIMUM 2	35	60	10	30	15	60			
YELLOW	4.0	4.0	4.0	4.0	4.0	4.0			
ALL RED	2.0	2.0	2.0	2.0	2.0	2.0			
PEDESTRIAN WALK	4	4		4		4			
PEDESTRIAN CLEARANCE	8	14		16		20			
RECALL	O	S	O	O	O	S			
DETECTOR OPERATION	PR	PR	PR	PR	PR	PR			
PREEMPTION PRIORITY	2	C/2		C/1	1	1			
FLASH	R	R	R	R	R	R			
DUAL ENTRY	OFF	OFF	OFF	OFF	OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK
C = CLEAR
(SEE SHEET 16 FOR ADDITIONAL INFORMATION ON RAILROAD PREEMPT TO BE RETAINED)

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
ALLEN AVENUE AND MCDONALD'S DRIVE

TRAFFIC SIGNAL PLAN

SHEET NUMBER
13
OF 22

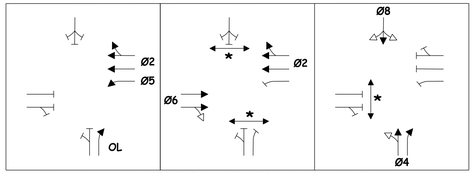
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
NAZTEC TS2 TYPE 1 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER FACEPLATE AND SOFTWARE UPDATE	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	2
ENERGY EFFICIENT, GELCORE GT1 COUNTDOWN PEDESTRIAN LED OR APPROVED EQUAL	4
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	3
R10-3e INFORMATIONAL SIGN	3
ACTELIS ML688 DSL MODEM	1
R10-15R 30" X 30" RETROREFLECTIVE SIGN	4
R10-15L 30" X 30" RETROREFLECTIVE SIGN	1
CARD RACK VIDEO COMMUNICATION BOARD	1
LOAD SWITCH	1
VALIDATE RAILROAD PREEMPTION PROGRAMMING	-
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	2
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	2
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	100 LF

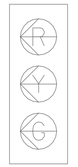
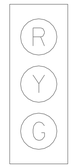
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EXISTING PHASING SEQUENCE (RETAINED)

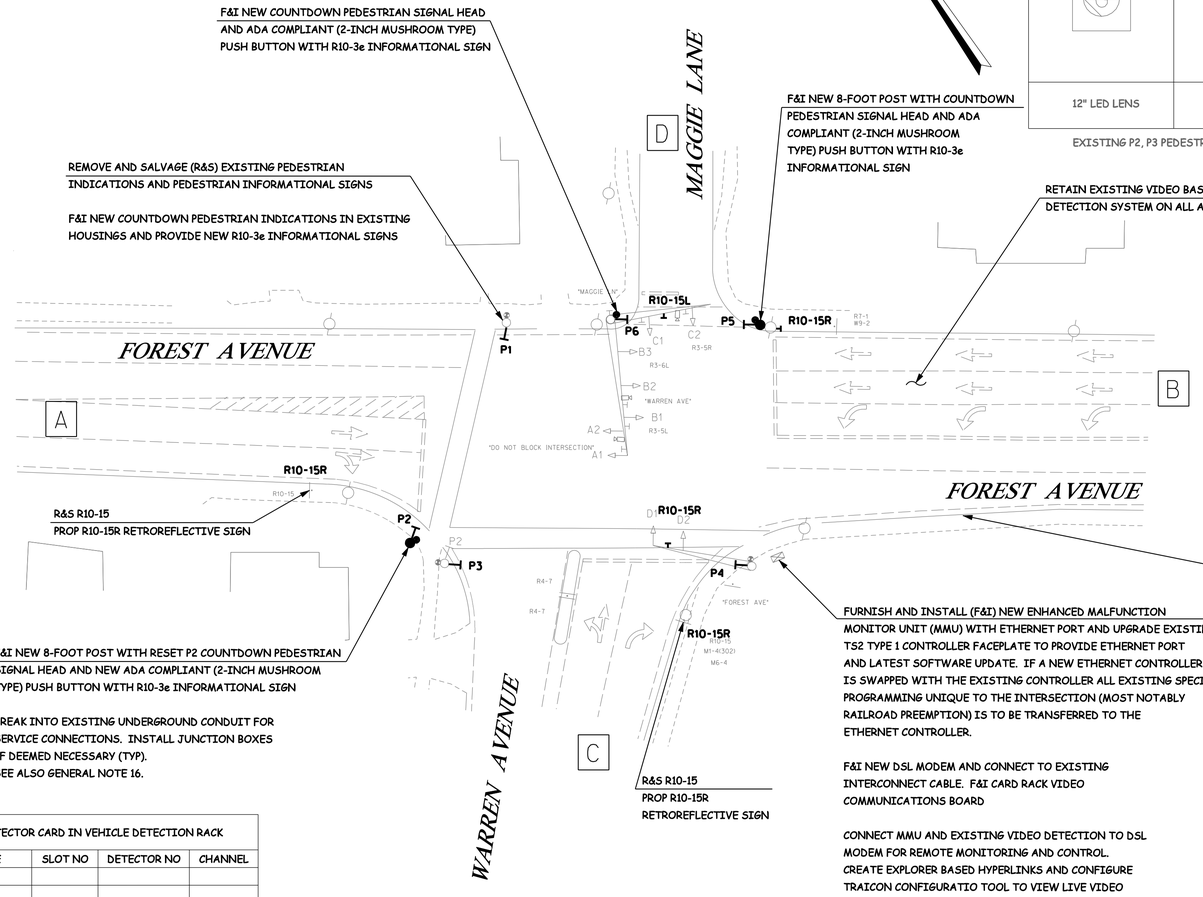


★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN

SIGNAL HEAD DATA

EXISTING			PROPOSED
B1	A1,A2,B2,B3,C1,D1,D2	C2	P1 - P6
			(RETROFIT P1-P4 INDICATIONS IN EXISTING HOUSINGS)
12" LED LENS	12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL

EXISTING P2, P3 PEDESTRIAN HEADS ARE AUDIBLE PED HEADS



PROPOSED MAST ARM AND POLE MOUNTED SIGNS

R10-15L
30" X 30"
1 - PROPOSED

R10-15R
30" X 30"
4 - PROPOSED

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	33	15	30	94	43
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	0	0	0	0	0
SPLIT TIME Ø2	62	72	82	92	92
SPLIT TIME Ø3	0	0	0	0	0
SPLIT TIME Ø4	28	28	28	28	28
SPLIT TIME Ø5	25	35	32	46	46
SPLIT TIME Ø6	37	37	50	46	46
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	28	28	28	28	28

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1									
CAMERA V2									
CAMERA V3									
CAMERA V4									

DETECTOR NOTES:

CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTOR PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

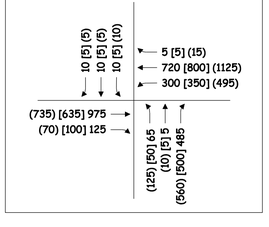
FOREST AVE AND WARREN AVE APPROACHES ARE ALL VIDEO-BASED DETECTION.

INTERSECTION:
FOREST AVE / WARREN AVE

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
54

SYSTEM DESIGN VOLUMES AM [MID] (PM)



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL		10		5	5	10		5	
PASSAGE TIME		3.0		1.5	3.0	3.0		1.5	
MAXIMUM 1		50		20	45	50		20	
MAXIMUM 2		60		20	45	60		20	
YELLOW		4.0		4.0	4.0	4.0		4.0	
ALL RED		2.0		2.0	2.0	2.0		2.0	
PEDESTRIAN WALK		4				4		4	
PEDESTRIAN CLEARANCE		10				26		17	
RECALL		S		O	O	S		O	
DETECTOR OPERATION		PR		PR	PR	PR		PR	
PREEMPTION PRIORITY		C			C				
FLASH		R		R	R	R		R	
DUAL ENTRY		ON		ON	OFF	ON		ON	

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
(SEE SHEET 16 FOR ADDITIONAL INFORMATION ON RAILROAD PREEMPT TO BE RETAINED)

Y = YELLOW
R = RED
D = DARK
C = CLEAR

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
WARREN AVENUE AND MAGGIE LANE

TRAFFIC SIGNAL PLAN

SHEET NUMBER
14
OF 22

Filename: ...\ts\planset\014_52134005G11.dgn Username: J ROBERT Division: Date:10/28/2011

Filename: ...\ts\plonset\015_521340OINT.dgn Division: Username: J ROBERT Date:10/28/2011

CONNECT AS MANY PAIRS OF EXISTING COPPER INTERCONNECT CABLE AS NEEDED TO PROPOSED ACTELIS ML688 DSL MODEMS. MODIFY T-TAPS AS NECCESSARY TO ESTABLISH ETHERNET OVER COPPER COMMUNICATION BETWEEN FIELD CONTROLLERS, MONITORS, AND VIDEO BASED DETECTION TO THE ATMS SERVER LOCATED AT 65 HANOVER STREET. MODIFICATION OF T-TAPS SHALL BE SUBSIDIARY TO THE 643.71 ITEM NUMBER FOR EACH SIGNALIZED INTERSECTION.

CONNECT AS MANY PAIRS OF EXISTING COPPER INTERCONNECT CABLE AS NEEDED TO PROPOSED ACTELIS ML688 DSL MODEMS. MODIFY T-TAPS AS NECCESSARY TO ESTABLISH ETHERNET OVER COPPER COMMUNICATION BETWEEN FIELD CONTROLLERS, MONITORS, AND VIDEO BASED DETECTION TO THE ATMS SERVER LOCATED AT 65 HANOVER STREET. MODIFICATION OF T-TAPS SHALL BE SUBSIDIARY TO THE 643.71 ITEM NUMBER FOR EACH SIGNALIZED INTERSECTION.

PORTLAND TRAFFIC OPERATIONS FACILITIES
MANAGEMENT BUILDING
65 HANOVER STREET
UPGRADE EXISTING DSL MODEM TO PROVIDE STABLE ETHERNET BASED COMMUNICATION OVER EXISTING COPPER INTERCONNECT CABLE TO EXISTING BRIGHTON AVENUE AND RIVERSIDE STREET SIGNAL SYSTEM (DROPS 19 THROUGH 36) AND PROPOSED FOREST AVENUE SIGNAL SYSTEM (DROPS 43 THROUGH 54) USING EXISTING STREETWISE ATMS SOFTWARE

MAP LEGEND

- 17857.00 PROJECT INTERSECTION (LOCATION NUMBER IS PROPOSED PORTLAND TRAFFIC SERVER STREETWISE DROP NUMBER)
- 17730.00 EXISTING PORTLAND TRAFFIC SERVER STREETWISE INTERSECTION
- EXISTING SIGNALIZED INTERSECTION TO BE INCORPORATED INTO SIGNAL SYSTEM SERVER UNDER A FUTURE PROJECT
- EXISTING TRAFFIC SIGNAL CABINET WITH CONTROLLER CONNECTED TO PROPOSED DSL MODEMS FOR ETHERNET BASED COMMUNICATIONS BACK TO CENTRAL SIGNAL SYSTEM SERVER LOCATED AT 65 HANOVER STREET
- EXISTING UNDERGROUND COPPER INTERCONNECT CABLE TO BE RETAINED
- EXISTING AERIAL COPPER INTERCONNECT CABLE TO BE RETAINED

LAYOUT SCALE
600 0 600 1200
Scale in Feet

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LAVORY	
DESIGN-DETAILED	M. GRAHAM	J. ROBERT 9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN 9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT 10/26/11
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

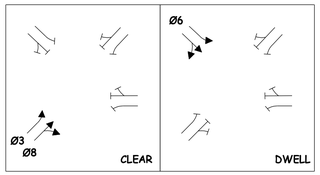
INTERCONNECT PLAN

SHEET NUMBER
15
OF 22

Filename: ...\ts\planset\016_5213400HIB.dgn Division: Username: J. ROBERT Date:10/28/2011

LOCATION 49
FOREST AVE. / WOODFORTH ST. /DEERING AVE.

RAILROAD PRE-EMPTION PROGRAM
(TO BE RETAINED)



LOCATION 49 PRE-EMPTION NOTES:

1. RAILROAD PRE-EMPTION FROM THE EXISTING MULTISONICS TRAFFIC SIGNAL CONTROLLER PROVIDED A 18 SECOND GREEN CLEAR TIME FROM PHASES 3 AND 8 FOLLOWED BY A 35 SECOND GREEN CLEAR TIME FROM PHASE 6. PREEMPT IS PHASE 6 WITH SETTINGS OF A 20 SECOND MINIMUM GREEN TIME, 4 SECOND YELLOW, AND 3 SECOND RED. THE SIGNAL SHALL EXIT PRE-EMPTION TO PHASES 2 AND 6.

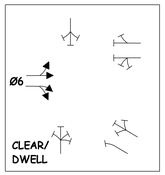
2. RAILROAD INPUT SHALL BE LOCKED WITH AN OVERRIDE TO A HIGHER PREEMPT CALL.

3. IT APPEARS THAT THE TRAFFIC SIGNAL CONTROLLER AND CABINET HAVE BEEN RECENTLY UPGRADED. IT IS UNCLEAR TO WHAT DEGREE THE RAILROAD PRE-EMPTION SETTINGS WERE EITHER TRANSFERRED, RETAINED, OR UPDATED.

4. RELAYS WERE INSTALLED ONLY AFTER RAILROAD WIRES HAD BEEN CONNECTED TO THE TERMINAL STRIP OTHERWISE PREEMPTION WOULD TAKE OVER ALL THE TIME.

LOCATION 52
FOREST AVE. / STEVENS AVE. / BISHOP ST.

RAILROAD PRE-EMPTION PROGRAM
(TO BE RETAINED)



LOCATION 52 PRE-EMPTION NOTES:

1. RAILROAD PRE-EMPTION FROM THE EXISTING NAZTEC TRAFFIC SIGNAL CONTROLLER SHOWS A 20 SECOND GREEN CLEAR TIME FROM PHASE 6. PREEMPT IS PHASE 6 WITH SETTINGS OF A 20 SECOND MINIMUM GREEN TIME, 4 SECOND YELLOW, AND 2 SECOND RED. THE SIGNAL SHALL EXIT PRE-EMPTION TO PHASES 2 AND 6.

2. RAILROAD INPUT SHALL BE LOCKED WITH AN OVERRIDE TO A HIGHER PREEMPT CALL.

GENERAL RAILROAD PRE-EMPTION NOTES:

1. ALL EXISTING RAILROAD PRE-EMPTION IS TO BE RETAINED AT APPLICABLE TRAFFIC SIGNALS ALONG FOREST AVENUE.

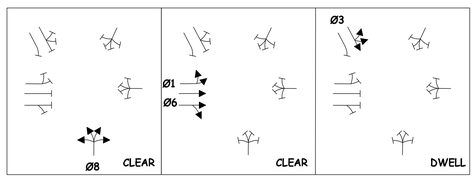
2. THE MOST CONSERVATIVE APPROACH SHALL BE APPLIED IN THE EVENT OF AN UNFORESEEN DISCREPANCY IN PROPOSED SIGNAL OPERATIONS WHEN TRANSFERING PROGRAMMING FROM EXISTING TO PROPOSED TRAFFIC SIGNAL CONTROLLERS.

3. AT NO POINT SHALL A TRAFFIC SIGNAL CONTROLLER THAT PRESENTLY PROVIDES RAILROAD PRE-EMPTION BE LEFT IN A STATE WITHOUT RAILROAD PRE-EMPTION DURING CONSTRUCTION.

4. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL PROGRAM THE RAILROAD PRE-EMPTION COGNOSCENT OF THE FUTURE AMTRAK DOWNEASTER SERVICE TO BE PROVIDED ALONG THE RAIL CORRIDOR THAT CROSSES AND PARALLELS FOREST AVENUE.

LOCATION 50
FOREST AVE. / OCEAN AVE. / VANNAH AVE. / SAUNDERS ST.

RAILROAD PRE-EMPTION PROGRAM
(TO BE RETAINED)



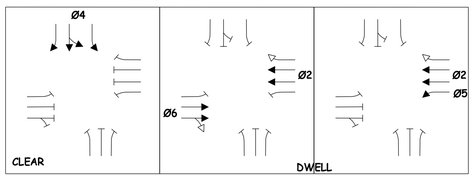
LOCATION 50 PRE-EMPTION NOTES:

1. RAILROAD PRE-EMPTION FROM THE EXISTING MULTISONICS TRAFFIC SIGNAL CONTROLLER PROVIDES A 7 SECOND GREEN CLEAR TIME FROM PHASE 8 FOLLOWED BY A 35 SECOND GREEN CLEAR TIME FROM PHASE 6. PREEMPT IS PHASE 3 WITH SETTINGS OF A 20 SECOND MINIMUM GREEN TIME, 4 SECOND YELLOW, AND 3 SECOND RED. THE SIGNAL SHALL EXIT PRE-EMPTION TO PHASES 2 AND 6.

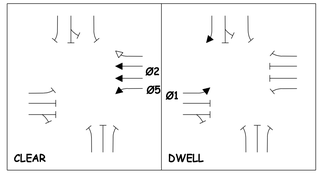
2. RAILROAD INPUT SHALL BE LOCKED WITH AN OVERRIDE TO A HIGHER PREEMPT CALL.

LOCATION 53
FOREST AVE. / ALLEN AVE. / MCDONALD'S DR.

RAILROAD PREEMPTION
PROGRAM 1 (RR CROSSING ALLEN AVENUE)



RAILROAD PREEMPTION
PROGRAM 2 (RR CROSSING FOREST AVENUE)



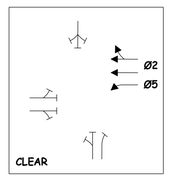
LOCATION 53 PRE-EMPTION NOTES:

1. THERE ARE TWO POTENTIAL RAIL PRE-EMPT CONDITIONS AT THIS LOCATION. THE HIGHER PRE-EMPTION SETTING SHOULD BE FOR RAIL SERVICE CROSSING ALLEN AVENUE. A SECOND SETTING SHOULD BE FOR RAIL SERVICE CROSSING FOREST AVENUE. ALL EXISTING RAIL PROGRAMMING SHALL BE RETAINED.

2. RAILROAD INPUT SHALL BE LOCKED WITH AN OVERRIDE TO A HIGHER PREEMPT CALL.

LOCATION 54
FOREST AVE. / WARREN AVE. / MAGGIE LN.

PROPOSED RAILROAD
PRE-EMPTION PROGRAM



LOCATION 54 PRE-EMPTION NOTES:

1. RAILROAD PREEMPTION IS TO BE PROVIDED USING SPARE CONDUCTORS ON THE EXISTING COPPER INTERCONNECT CABLE TO AID IN CLEARING THE ALLEN AVENUE AND STEVENS AVENUE INTERSECTIONS IN THE EVENT OF VEHICLE CONGESTION IN MORRILLS CORNER AT THE TIME OF A RAIL CALL. A 25 SECOND CLEAR TIME SHOULD BE PROVIDED FOR PHASES 2 AND 5 FOLLOWED BY NORMAL OPERATIONS TO ALL SIGNAL PHASES DURING THE DWELL TIME. THE SIGNAL SHALL EXIT PRE-EMPTION TO PHASES 2 AND 5 TO AID IN CLEARING UPSTREAM VEHICLES QUEUED DURING THE RAIL EVENT.

2. RAILROAD INPUT SHALL BE LOCKED WITH AN OVERRIDE TO A HIGHER PREEMPT CALL.

3. WARREN AVENUE RIGHT-TURN OVERLAP SHALL BE OMITTED DURING PREEMPTION.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN
17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

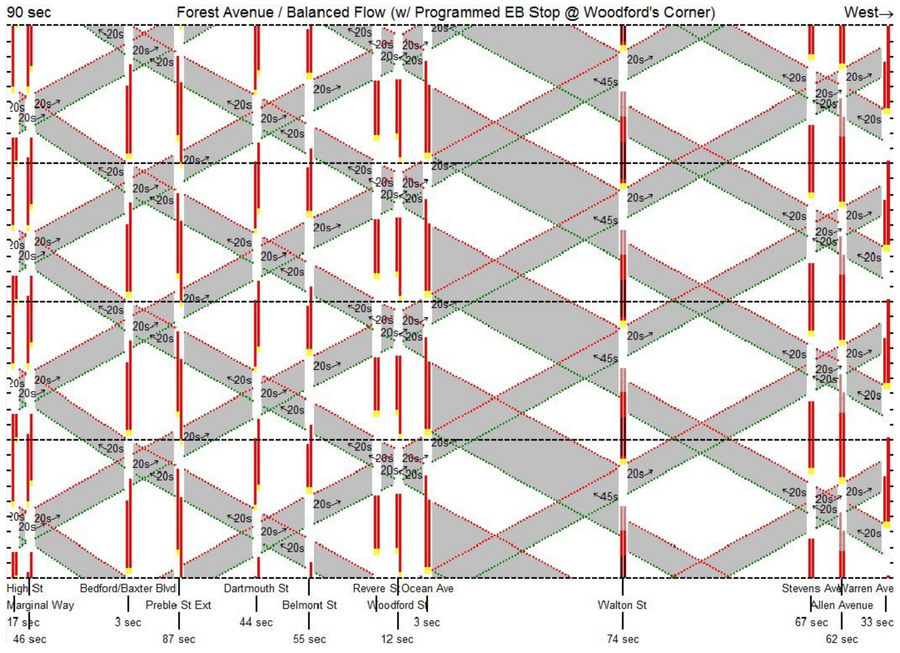
FOREST AVENUE

RAILROAD PREEMPTION PLANS

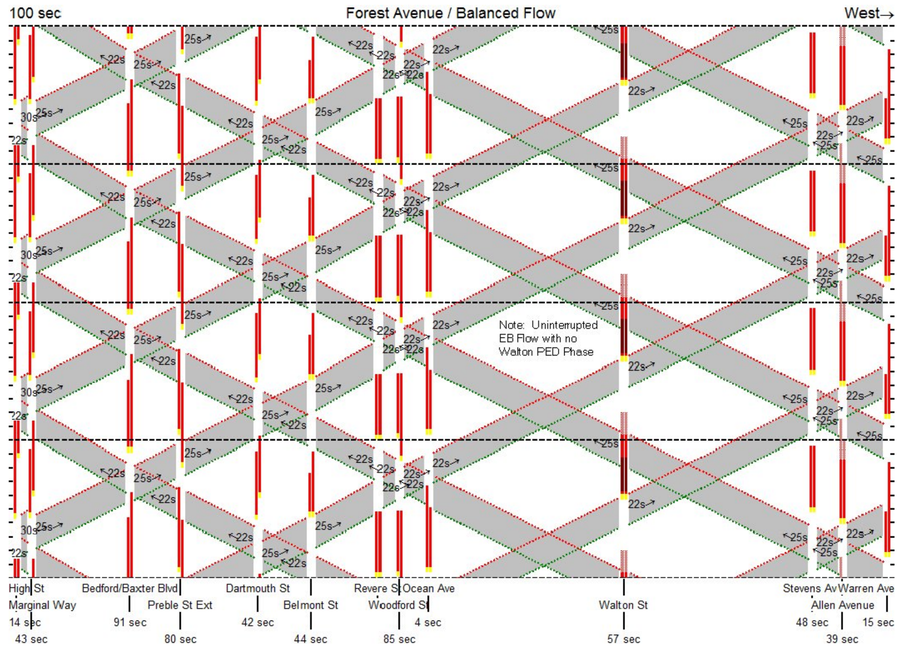
SHEET NUMBER
16
OF 22

Filename: ...\ts\plonset\017_521340DTSD1.dgn Username: J. ROBERT Division: Date:10/28/2011

PLAN 1
90 SECOND BACKGROUND CYCLE



PLAN 2
100 SECOND BACKGROUND CYCLE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY		
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

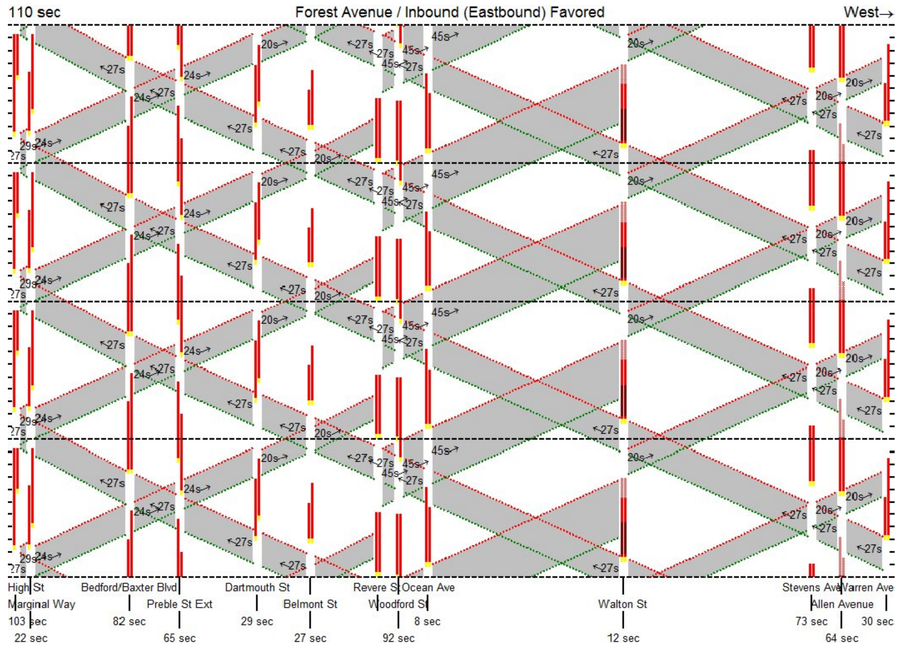
TIME SPACE DIAGRAMS

SHEET NUMBER

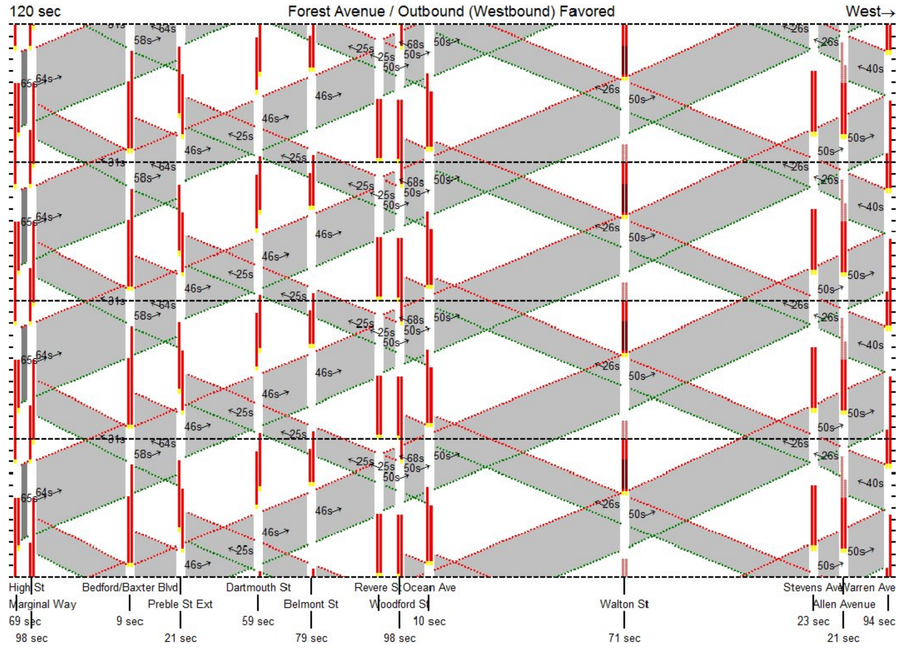
17

OF 22

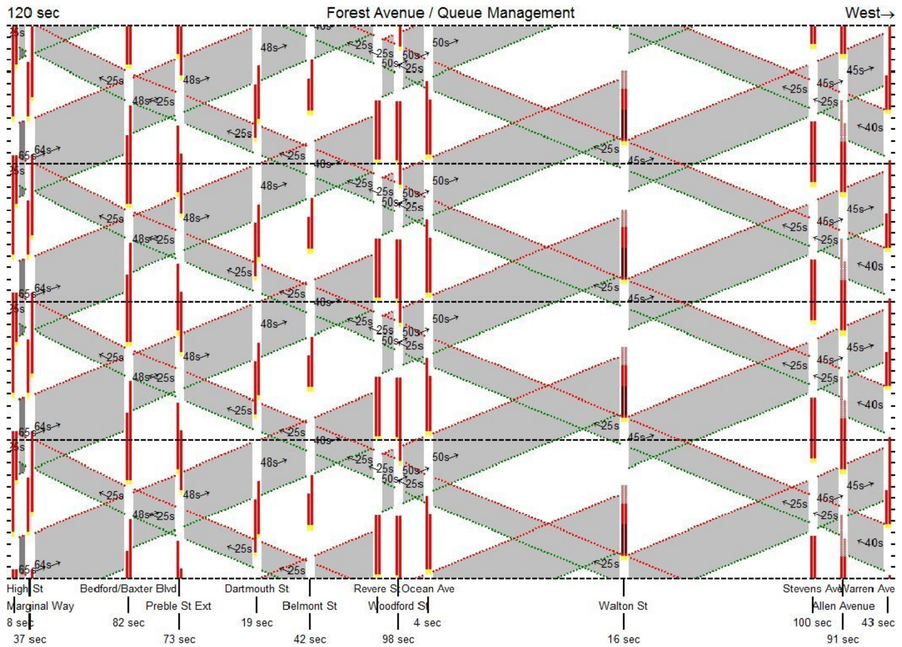
PLAN 3
110 SECOND BACKGROUND CYCLE



PLAN 4
120 SECOND BACKGROUND CYCLE



PLAN 5
120 SECOND BACKGROUND CYCLE



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN
17857.00

PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

TIME SPACE DIAGRAMS

SHEET NUMBER

18

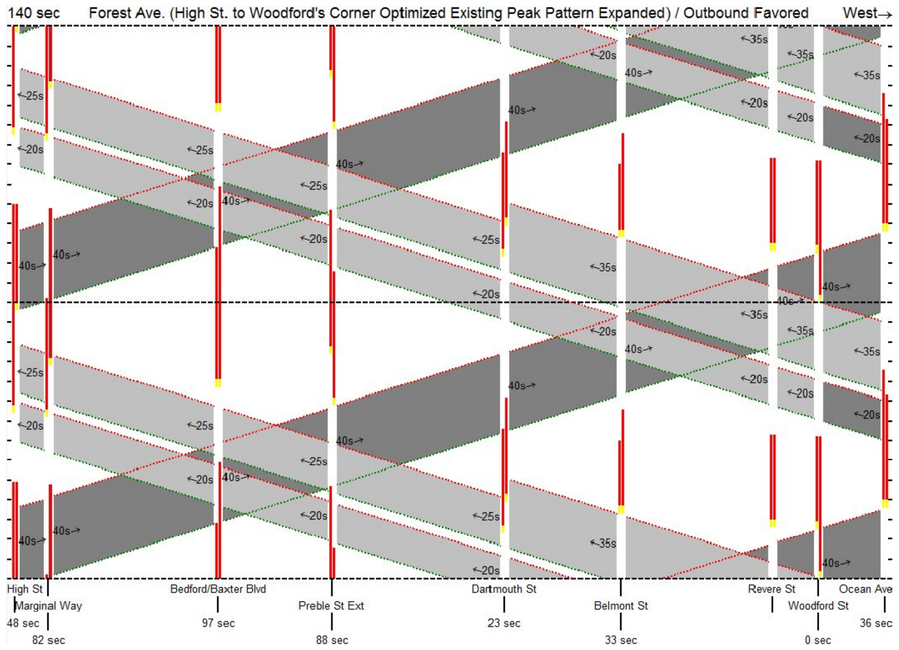
OF 22

Username: J. ROBERT Date:10/28/2011

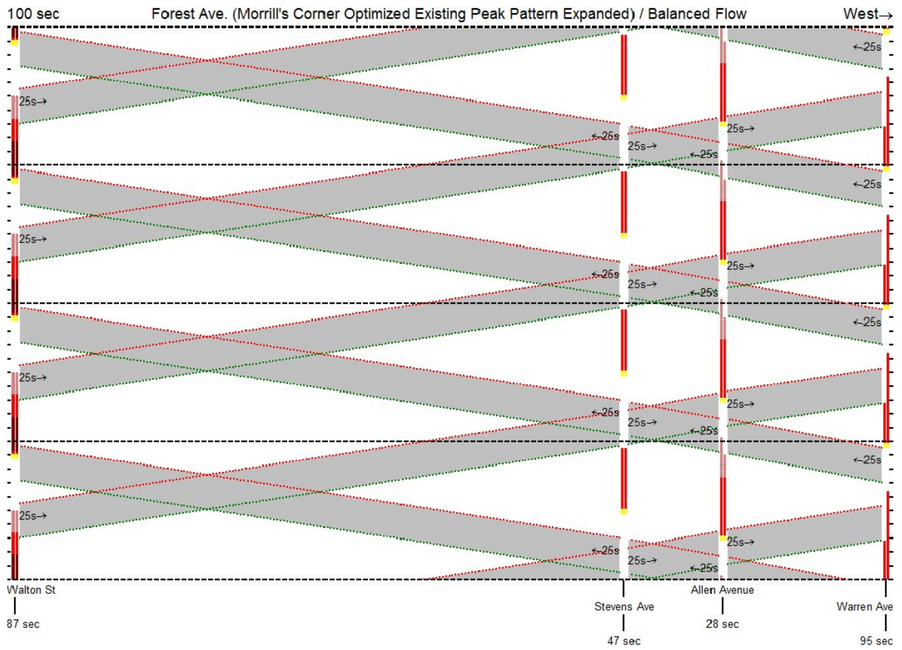
Filename: ...\ts\planset\018_5213400TSD2.dgn Division:

CONDITIONAL SERVICE PATTERN

PLAN 14
140 SECOND BACKGROUND CYCLE



PLAN 14
100 SECOND BACKGROUND CYCLE



COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	LOC 43 MARGINAL	LOC 44 BEDFORD	LOC 45 PREBLE	LOC 46 DARTMOUTH	LOC 47 ASHMONT	LOC 49 WOODFORD	LOC 50 OCEAN	LOC 51 WALTON	LOC 52 STEVENS	LOC 53 ALLEN	LOC 54 WARREN
	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14	PLAN 14
CYCLE LENGTH	140	140	140	140	140	140	140	100	100	100	100
OFFSET (END GRN)	48	97	88	23	33	0	36	87	47	28	95
COORDINATED Ø	4	2	2	2	2	6	2	2	2	2	2
SPLIT TIME Ø1	26	0	26	16	16	20	13	16	0	27	0
SPLIT TIME Ø2	40	75	78	80	98	79	76	43	58	32	72
SPLIT TIME Ø3	28	33	36	16	0	14	26	16	20	14	0
SPLIT TIME Ø4	46	32	0	28	26	27	25	25	22	27	28
SPLIT TIME Ø5	0	31	31	0	0	25	0	16	0	16	35
SPLIT TIME Ø6	66	44	73	96	114	54	89	43	58	43	37
SPLIT TIME Ø7	0	0	0	0	0	14	0	0	0	0	0
SPLIT TIME Ø8	74	65	36	44	26	27	51	41	42	41	28

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE NTCIP BASED COORDINATED PHASE.
2. CONTRACTOR SHALL ENTER COORDINATION PROGRAMMING IN PATTERN 14 AND SPLIT 14.
3. PLAN PATTERN 14 IS INITIALLY TO BE SET AS A CONDITIONAL (ON DEMAND VIA MANUAL CONTROL) PLAN. THE CONDITIONAL PLAN IS BASED ON THE EXISTING

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN 9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT 10/26/11
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE

CONDITIONAL PATTERN NO. 14

SHEET NUMBER

19

OF 22

Username: J ROBERT Date:10/28/2011

Filename: ...\ts\plonset\019_5213400CP14.dgn Division:

BID ALTERNATE NO. 1

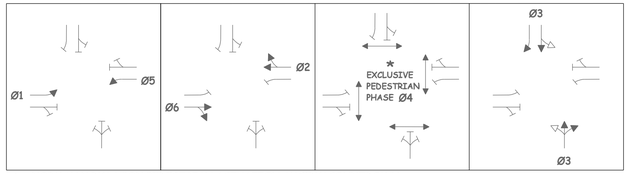
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL TS2 TYPE 2 ETHERNET EQUIPPED TRAFFIC SIGNAL CONTROLLER	1
FURNISH AND INSTALL NEW ETHERNET EQUIPPED ENHANCED CONFLICT MONITOR	1
ACTELIS ML688 DSL MODEM	1
R10-12 30" X 36" RETROREFLECTIVE SIGN	1
R10-3e INFORMATIONAL SIGN	4
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEMS XXX.YYZ)	QUANTITY
FURNISH AND INSTALL CARD RACK MOUNT VIDEO COMMUNICATIONS BOARD (ITEM 643.83)	1
FURNISH AND INSTALL CARD 2-CHANNEL/ 4-OUTPUT RACK MOUNT DATA AND PRESENCE VIDEO DETECTOR CARDS. (ITEM 643.83)	2
FURNISH AND INSTALL CARD RACK VIDEO POWER SUPPLY (ITEM 643.83)	1
FURNISH AND INSTALL VIDEO DETECTION CAMERA (ITEM 643.83)	4

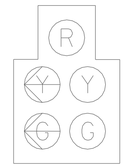
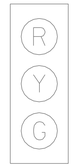
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

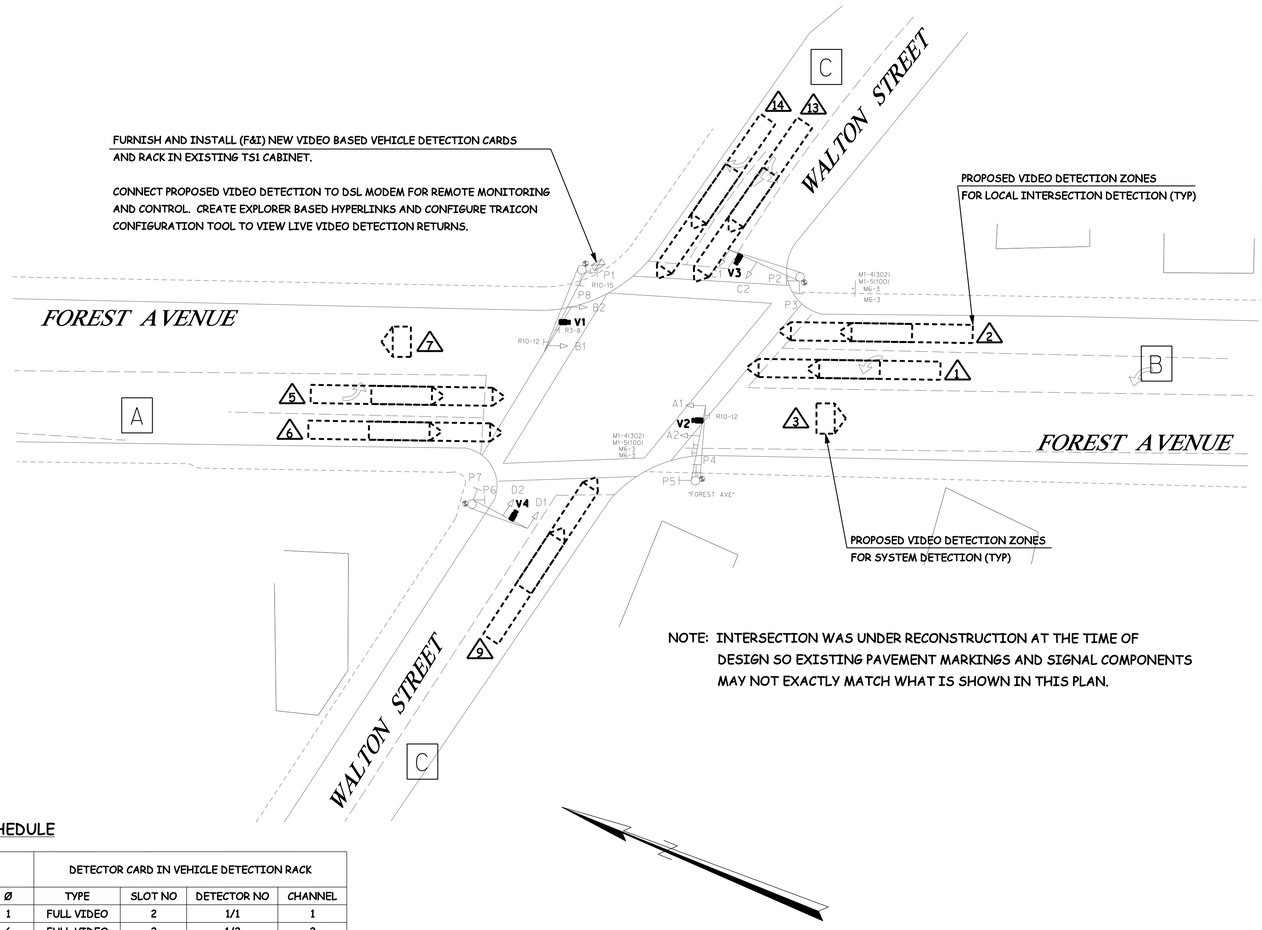
PHASING SEQUENCE



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 AND Ø5 LEFTS LEAD, Ø4 PED LEADS AND Ø3 VEHICLE PHASE LAGS

SIGNAL HEAD DATA

EXISTING		
A1,B1	A2,B2,C1,C2 D1,D2	P1 - P8
		
12" LED LENS	12" LED LENS	16" x 18" LED PEDESTRIAN SIGNAL



NOTE: INTERSECTION WAS UNDER RECONSTRUCTION AT THE TIME OF DESIGN SO EXISTING PAVEMENT MARKINGS AND SIGNAL COMPONENTS MAY NOT EXACTLY MATCH WHAT IS SHOWN IN THIS PLAN.

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	90	100	110	120	120
OFFSET (END GRN)	74	57	12	71	16
COORDINATED Ø	2	2	2	2	2
SPLIT TIME Ø1	16	16	21	16	16
SPLIT TIME Ø2	33	43	44	61	61
SPLIT TIME Ø3	16	16	20	18	18
SPLIT TIME Ø4	25	25	25	25	25
SPLIT TIME Ø5	16	16	16	16	16
SPLIT TIME Ø6	33	43	49	61	61
SPLIT TIME Ø7	0	0	0	0	0
SPLIT TIME Ø8	41	41	45	43	43

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE (Ø2 PER NTCIP).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1	1	FOREST AVE.	NORTHBOUND	LEFT	1	FULL VIDEO	2	1/1	1
	2	FOREST AVE.	NORTHBOUND	THROUGH-RIGHT	6	FULL VIDEO	2	1/2	2
	3	FOREST AVE.	SOUTHBOUND	THROUGH (SYSTEM)	C	FULL VIDEO	2	1/3	3
	4	SPARE						1/4	4
CAMERA V2	5	FOREST AVE.	SOUTHBOUND	LEFT	5	FULL VIDEO	4	2/1	1
	6	FOREST AVE.	SOUTHBOUND	THROUGH-RIGHT	2	FULL VIDEO	4	2/2	2
	7	FOREST AVE.	NORTHBOUND	THROUGH (SYSTEM)	C	FULL VIDEO	4	2/3	3
	8	SPARE						2/4	4
CAMERA V3	9	WALTON ST.	WESTBOUND	LEFT-THROUGH-RIGHT	3	FULL VIDEO	6	3/1	1
	10	SPARE						3/2	2
	(11)	SPARE						3/3	3
	(12)	SPARE						3/4	4
CAMERA V4	13	WALTON ST.	EASTBOUND	LEFT-THROUGH	3	FULL VIDEO	8	4/1	1
	14	WALTON ST.	EASTBOUND	RIGHT	3	FULL VIDEO	8	4/2	2
	(15)	SPARE						4/3	3
	(16)	SPARE						4/4	4

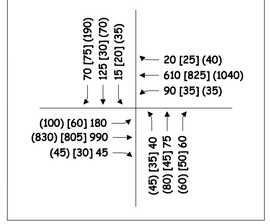
DETECTOR NOTES:
C = COUNTING LOOP
ALL DETECTION SHOULD BE INITIALY SET TO NON-LOCKING OPERATIONS

INTERSECTION:
FOREST AVE / WALTON ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
51

SYSTEM DESIGN
VOLUMES AM [MID] (PM)



SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5		5	10			
PASSAGE TIME	2.0	3.0	2.0		2.0	3.0			
MAXIMUM 1	10	50	20		10	50			
MAXIMUM 2	15	60	20		10	60			
YELLOW	4.0	4.0	4.0	3.0	4.0	4.0			
ALL RED	2.0	2.0	2.0	0.0	2.0	2.0			
PEDESTRIAN WALK				4					
PEDESTRIAN CLEARANCE				17					
RECALL	O	S	O		O	S			
DETECTOR OPERATION	PR	PR	PR		PR	PR			
PREEMPTION PRIORITY									
FLASH	R	R	R	D	R	R			
DUAL ENTRY	OFF	OFF	OFF		OFF	OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	9/20/11
CHECKED-REVIEWED	C. BOBAY	M. SUENNEN	9/23/11
DESIGN2-DETAILED2	C. BOBAY	J. ROBERT	10/26/11
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
WALTON STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
20
OF 22

Filename: ...\020_521340OSG08-BID1.dgn Division: Username: J ROBERT Date:10/28/2011

BID ALTERNATE NO. 2

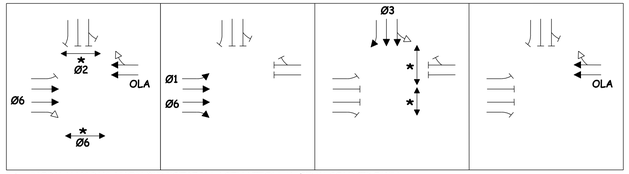
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71 (SEE ALSO SHEET 4)	QUANTITY
FURNISH AND INSTALL NEW NEMA TS2, TYPE 1 ETHERNET EQUIPPED CONTROLLER IN NEW P-TYPE BASE MOUNTED NEMA TS2, TYPE 1 PORTLAND SPEC CABINET COMPLETE WITH ALL ANCILLARY EQUIPMENT AND WIRING INCLUDING 8-SLOT VEHICLE DETECTOR RACK WIRED IN ACCORDANCE WITH NEMA TS-2 SPECIFICATIONS FOR WIRE LOOP AND VIDEO BASED LOCAL DETECTION, SYSTEM DETECTION, AND STOPLINE VEHICLE COUNTING.	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
ACTELIS ML688 MODEM	1
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	2
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	4
FURNISH AND INSTALL 30" X 30" R10-15L AND R10-15R "TURNING TRAFFIC YIELD TO PEDESTRIANS" BLANK OUT SIGN	2
R10-3e SIGN	3
R10-15R RETROREFLECTIVE SIGN	1
IMPLEMENT LOCAL AND SYSTEM TIMING	-

EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	30 LF
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	1
FURNISH AND INSTALL CONTROLLER CABINET FOUNDATION (ITEM 626.35)	1
FURNISH AND INSTALL CARD RACK MOUNT VIDEO COMMUNICATIONS BOARD (ITEM 643.83)	1
FURNISH AND INSTALL CARD 2-CHANNEL/ 4-OUTPUT RACK MOUNT DATA AND PRESENCE VIDEO DETECTOR CARDS. (ITEM 643.83)	2
FURNISH AND INSTALL CARD RACK VIDEO POWER SUPPLY (ITEM 643.83)	1
FURNISH AND INSTALL VIDEO DETECTION CAMERA (ITEM 643.83) - SEE ALSO SHEET 4	4
FURNISH AND INSTALL 8-FOOT PEDESTAL POST ALLOY CASTINGS ACTB-20-695 ONLY (ITEM 643.92)	1

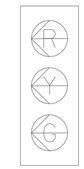
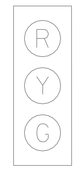
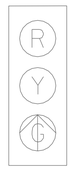
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED PHASING SEQUENCE

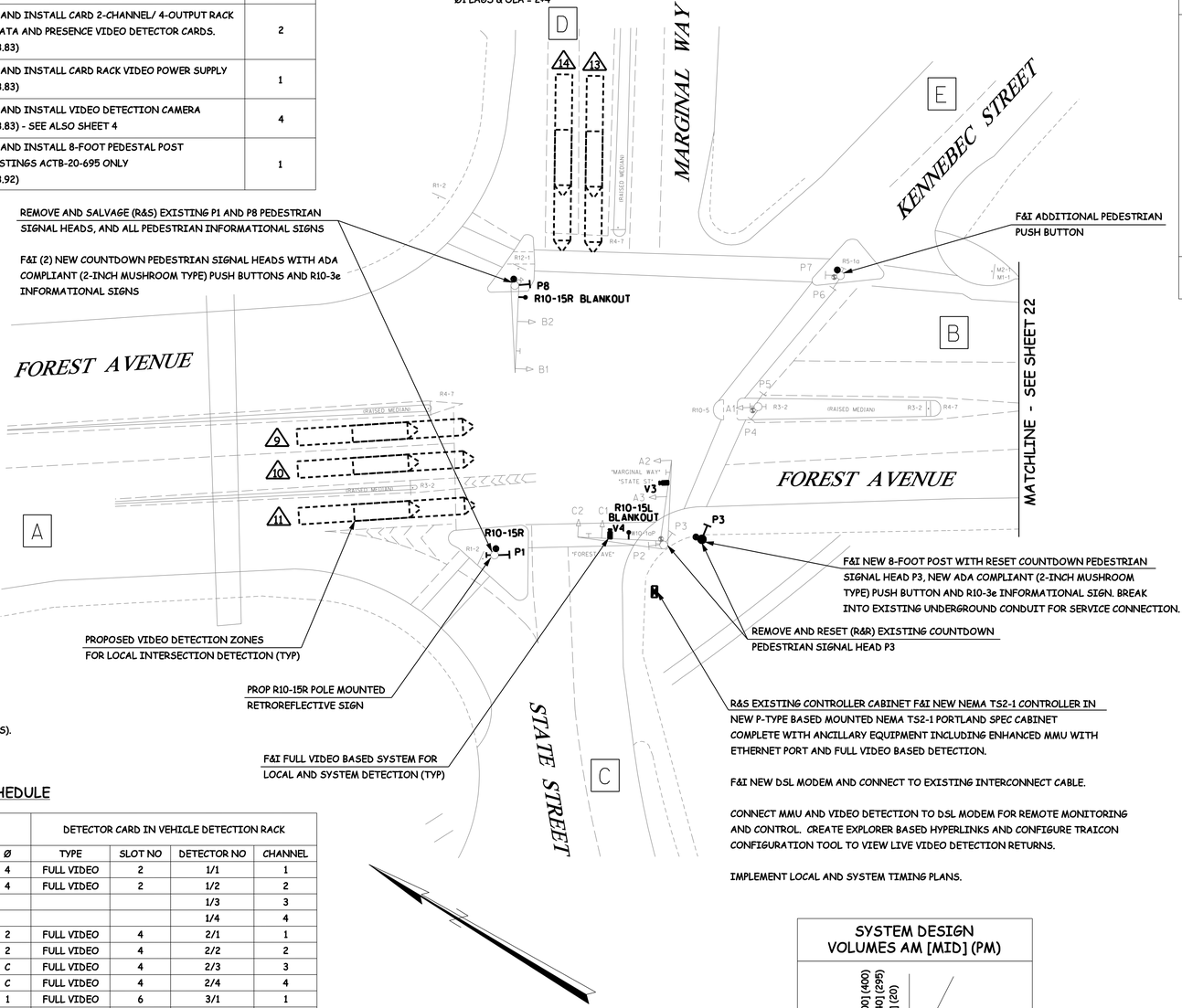


★ = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
Ø1 LAGS & OLA = 2+4

SIGNAL HEAD DATA

EXISTING		
A1	B2,C1,C2	A2,A3,B1
		
12" LED LENS	12" LED LENS	12" LED LENS
	EXISTING	PROPOSED
	P2 - P7	P1, P8
	16" x 18" LED PEDESTRIAN SIGNAL	16" x 18" LED PEDESTRIAN SIGNAL

SEE SHEET 22 FOR LED BLANKOUT SIGNS



REMOVE AND SALVAGE (R&S) EXISTING P1 AND P8 PEDESTRIAN SIGNAL HEADS, AND ALL PEDESTRIAN INFORMATIONAL SIGNS

F&I (2) NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS WITH ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTONS AND R10-3e INFORMATIONAL SIGNS

F&I ADDITIONAL PEDESTRIAN PUSH BUTTON

F&I NEW 8-FOOT POST WITH RESET COUNTDOWN PEDESTRIAN SIGNAL HEAD P3, NEW ADA COMPLIANT (2-INCH MUSHROOM TYPE) PUSH BUTTON AND R10-3e INFORMATIONAL SIGN. BREAK INTO EXISTING UNDERGROUND CONDUIT FOR SERVICE CONNECTION.

REMOVE AND RESET (R&R) EXISTING COUNTDOWN PEDESTRIAN SIGNAL HEAD P3

PROPOSED VIDEO DETECTION ZONES FOR LOCAL INTERSECTION DETECTION (TYP)

PROP R10-15R POLE MOUNTED RETROREFLECTIVE SIGN

F&I FULL VIDEO BASED SYSTEM FOR LOCAL AND SYSTEM DETECTION (TYP)

R&S EXISTING CONTROLLER CABINET F&I NEW NEMA TS2-1 CONTROLLER IN NEW P-TYPE BASED MOUNTED NEMA TS2-1 PORTLAND SPEC CABINET COMPLETE WITH ANCILLARY EQUIPMENT INCLUDING ENHANCED MMU WITH ETHERNET PORT AND FULL VIDEO BASED DETECTION.

F&I NEW DSL MODEM AND CONNECT TO EXISTING INTERCONNECT CABLE.

CONNECT MMU AND VIDEO DETECTION TO DSL MODEM FOR REMOTE MONITORING AND CONTROL. CREATE EXPLORER BASED HYPERLINKS AND CONFIGURE TRAICON CONFIGURATION TOOL TO VIEW LIVE VIDEO DETECTION RETURNS.

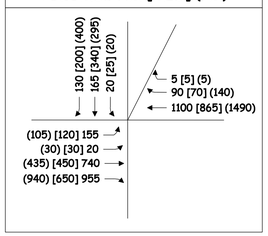
IMPLEMENT LOCAL AND SYSTEM TIMING PLANS.

INTERSECTION:
FOREST AVE / MARGINAL WAY/ STATE ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
43

SYSTEM DESIGN VOLUMES AM [MID] (PM)



COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5	
CYCLE LENGTH	90	100	110	120	120	
OFFSET (END GRN)	17	14	22	69	37	
COORDINATED Ø	4	4	2	4	2	
SPLIT TIME Ø1	13	16	22	17	17	
SPLIT TIME Ø2	35	35	35	35	35	
SPLIT TIME Ø3	28	28	28	28	28	
SPLIT TIME Ø4	14	21	25	40	40	
SPLIT TIME Ø5	0	0	0	0	0	
SPLIT TIME Ø6	48	51	57	52	52	
SPLIT TIME Ø7	0	0	0	0	0	
SPLIT TIME Ø8	42	49	53	68	68	

COORDINATION MODE SET TO FIXED FORCE-OFF

COORDINATION NOTES:

1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE.
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE SHEET 2 FOR DAY PLAN SETTINGS).
3. TRAFFIC SIGNAL CONTROLLER SHALL BE SET FOR STOP TIME IN WALK TO ON.
4. PHASE 8 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	5	7		10			
PASSAGE TIME	3.0	3.0	2.0	2.0		3.0			
MAXIMUM 1	15	30	15	30		30			
MAXIMUM 2	20	60	15	45		60			
YELLOW	4.0	4.0	4.0	4.0		4.0			
ALL RED	2.0	2.0	2.0	2.0		2.0			
PEDESTRIAN WALK		4		10		4			
PEDESTRIAN CLEARANCE		24		11		10			
RECALL	O	S	O	O		S			
DETECTOR OPERATION	PR	PR	PR	PR		PR			
PREEMPTION PRIORITY									
FLASH	R	R	R	R		R			
DUAL ENTRY	OFF	OFF	OFF	OFF		OFF			

NOTES: S = SOFT RECALL
O = RECALL OFF
PR = PRESENCE
MAX2 = UNDER COORDINATION
Y = YELLOW
R = RED
D = DARK

DETECTOR SCHEDULE

	DETECTOR					DETECTOR CARD IN VEHICLE DETECTION RACK			
	PLAN ID	STREET	DIRECTION	LANE	Ø	TYPE	SLOT NO	DETECTOR NO	CHANNEL
CAMERA V1	1	HIGH STREET	NORTHBOUND	LEFT	4	FULL VIDEO	2	1/1	1
	2	HIGH STREET	NORTHBOUND	LEFT-RIGHT	4	FULL VIDEO	2	1/2	2
	(3)	SPARE						1/3	3
	(4)	SPARE						1/4	4
CAMERA V2	5	FOREST AVE.	WESTBOUND	THROUGH	2	FULL VIDEO	4	2/1	1
	6	FOREST AVE.	WESTBOUND	THROUGH	2	FULL VIDEO	4	2/2	2
	7	FOREST AVE.	EASTBOUND	THROUGH (SYSTEM)	C	FULL VIDEO	4	2/3	3
	8	FOREST AVE.	EASTBOUND	THROUGH (SYSTEM)	C	FULL VIDEO	4	2/4	4
CAMERA V3	9	FOREST AVE.	EASTBOUND	LEFT	1	FULL VIDEO	6	3/1	1
	10	FOREST AVE.	EASTBOUND	THROUGH	6	FULL VIDEO	6	3/2	2
	11	FOREST AVE.	EASTBOUND	THROUGH	6	FULL VIDEO	6	3/3	3
	(12)	SPARE						3/4	4
CAMERA V4	13	MARGINAL WAY	SOUTHBOUND	LEFT-THROUGH		FULL VIDEO	8	4/1	1
	14	MARGINAL WAY	SOUTHBOUND	THROUGH	3	FULL VIDEO	8	4/2	2
	(15)	SPARE			3			4/3	3
	(16)	SPARE						4/4	4

DETECTOR NOTES:
C = COUNTING LOOP
ALL DETECTION SHOULD BE INITIALY SET TO NON-LOCKING OPERATIONS

PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN 17857.00

PROJ. MANAGER	S. LANDRY
DESIGN-DETAILED	M. GRAHAM
CHECKED-REVIEWED	C. BOBAY
DESIGN2-DETAILED2	C. BOBAY
DESIGN3-DETAILED3	

	BY	DATE
REVISIONS 1	J. ROBERT	9/20/11
REVISIONS 2	M. SUENNEN	9/23/11
REVISIONS 3	J. ROBERT	10/26/11
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
MARGINAL WAY AND STATE STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
21
OF 22

Filename: ...\021_5213400SG01-BID2.dgn Division: Username: J ROBERT Date:10/28/2011

BID ALTERNATE NO. 2

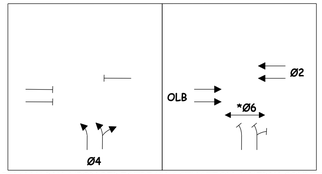
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71 (SEE ALSO SHEET 21)	QUANTITY
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH POLYCARBONATE TRAFFIC SIGNAL HEADS WITH TUNNEL VISORS MOUNTED ON POLES WITH BRACKETS	2
BRACKET MOUNTED 16 x 18 INCH COUNTDOWN PEDESTRIAN SIGNAL HEAD PAINTED BLACK. INDICATION SHALL BE ENERGY EFFICIENT, GELCORE GT1 LED OR APPROVED EQUAL	2
ADA COMPLIANT PEDESTRIAN 2-INCH PELCO MUSHROOM TYPE PUSH BUTTON WITH R10-3e INFORMATIONAL SIGN	2

EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 10-FOOT PEDESTAL POST ALLOY CASTING ACTB-20-695 ONLY (ITEM 643.92)	1
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	1
FURNISH AND INSTALL PVC SIGNAL CONDUIT (ITEM 626.22)	10 LF

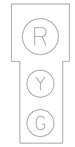
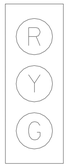
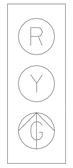
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

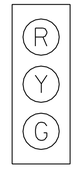
PROPOSED PHASING SEQUENCE



* = NORMALLY DW, UPON PEDESTRIAN ACTUATION, W/FDW COUNTDOWN
OLB = 1+3+6

SIGNAL HEAD DATA

EXISTING		
C1,C4	B2,C2	A1,A2,B1,C3
(R&S) 		
12" LENS 8" LENS	12" LENS	12" LENS

PROPOSED	
P1 - P2	C1,C4
	
16" x 18" LED PEDESTRIAN SIGNAL	12" LENS

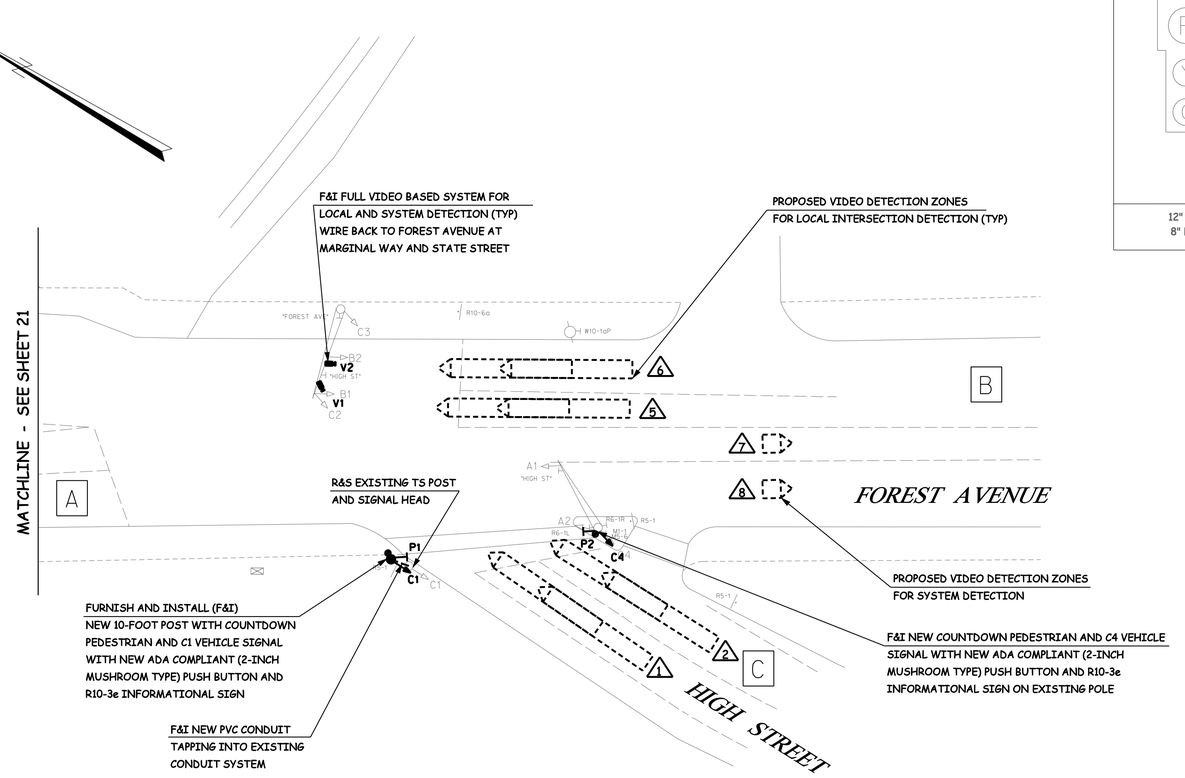
SIGNAL TIMING SCHEDULE

ITEM / PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	INTERSECTION CONTROLLED BY FOREST AVENUE AT MARGINAL WAY AND STATE STREET TRAFFIC SIGNAL CONTROLLER SEE SHEET 21 FOR SIGNAL TIMINGS								
PASSAGE TIME									
MAXIMUM 1									
MAXIMUM 2									
YELLOW									
ALL RED									
PEDESTRIAN WALK									
PEDESTRIAN CLEARANCE									
RECALL									
DETECTOR OPERATION									
PREEMPTION PRIORITY									
FLASH									
DUAL ENTRY									

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

ALL ENTRIES IN SECONDS

	PLAN 1	PLAN 2	PLAN 3	PLAN 4	PLAN 5
CYCLE LENGTH	INTERSECTION CONTROLLED BY FOREST AVENUE AT MARGINAL WAY AND STATE STREET TRAFFIC SIGNAL CONTROLLER SEE SHEET 21 FOR COORDINATION DATA				
OFFSET (END GRN)					
COORDINATED Ø					
SPLIT TIME Ø1					
SPLIT TIME Ø2					
SPLIT TIME Ø3					
SPLIT TIME Ø4					
SPLIT TIME Ø5					
SPLIT TIME Ø6					
SPLIT TIME Ø7					
SPLIT TIME Ø8					



PROPOSED MAST ARM MOUNTED BLANK OUT SIGNS (SEE SHEET 21)

R10-15L
30" x 30"
1- PROPOSED
"BLANK OUT"

R10-15R
30" x 30"
1 - PROPOSED
"BLANK OUT"

NOTE:
BLANK OUTS SHALL BE SIMILAR TO SIGN PROVIDED FOR MAINEDOT PROJECT 17288.00 WATERVILLE-WINSLOW.
CONTRACTOR MAY SUBMIT VARIATION OF BLANK OUT SIGN LEGEND AS LONG AS "YIELD TO PEDESTRIAN/ PEDESTRIANS IN THE CROSSWALK" MESSAGE IS CONVEYED IN ACCORDANCE WITH MUTCD GUIDELINES WHEN CONCURRENT PED IS ACTIVE.

PROPOSED POLE MOUNTED SIGNS (SEE SHEET 21)

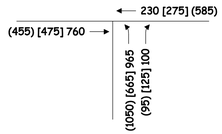
R10-15R
30" x 30"
1 - PROPOSED

INTERSECTION:
FOREST AVE / HIGH ST

SIGNAL GROUP:
2

LOCATION / PROPOSED DROP:
43

SYSTEM DESIGN VOLUMES AM [MID] (PM)



PLAN

25 0 25 50

SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PORTLAND STP-1785(700)X

WIN
17857.00

	BY	DATE
PROJ. MANAGER	S. LANDRY	
DESIGN-DETAILED	M. GRAHAM	9/20/11
CHECKED-REVIEWED	C. BOBAY	9/23/11
DESIGN2-DETAILED2	M. SUENNEN	10/26/11
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REVISIONS 1	J. ROBERT	
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FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

FOREST AVENUE
HIGH STREET

TRAFFIC SIGNAL PLAN

SHEET NUMBER
22
OF 22

Filename: ...\022_521340OSG02-BID2.dgn Division: Username: J ROBERT Date:10/28/2011