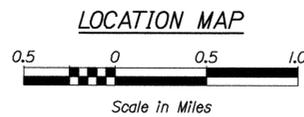
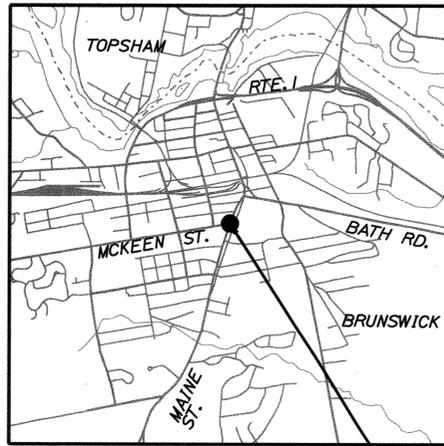


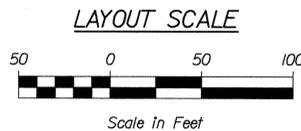
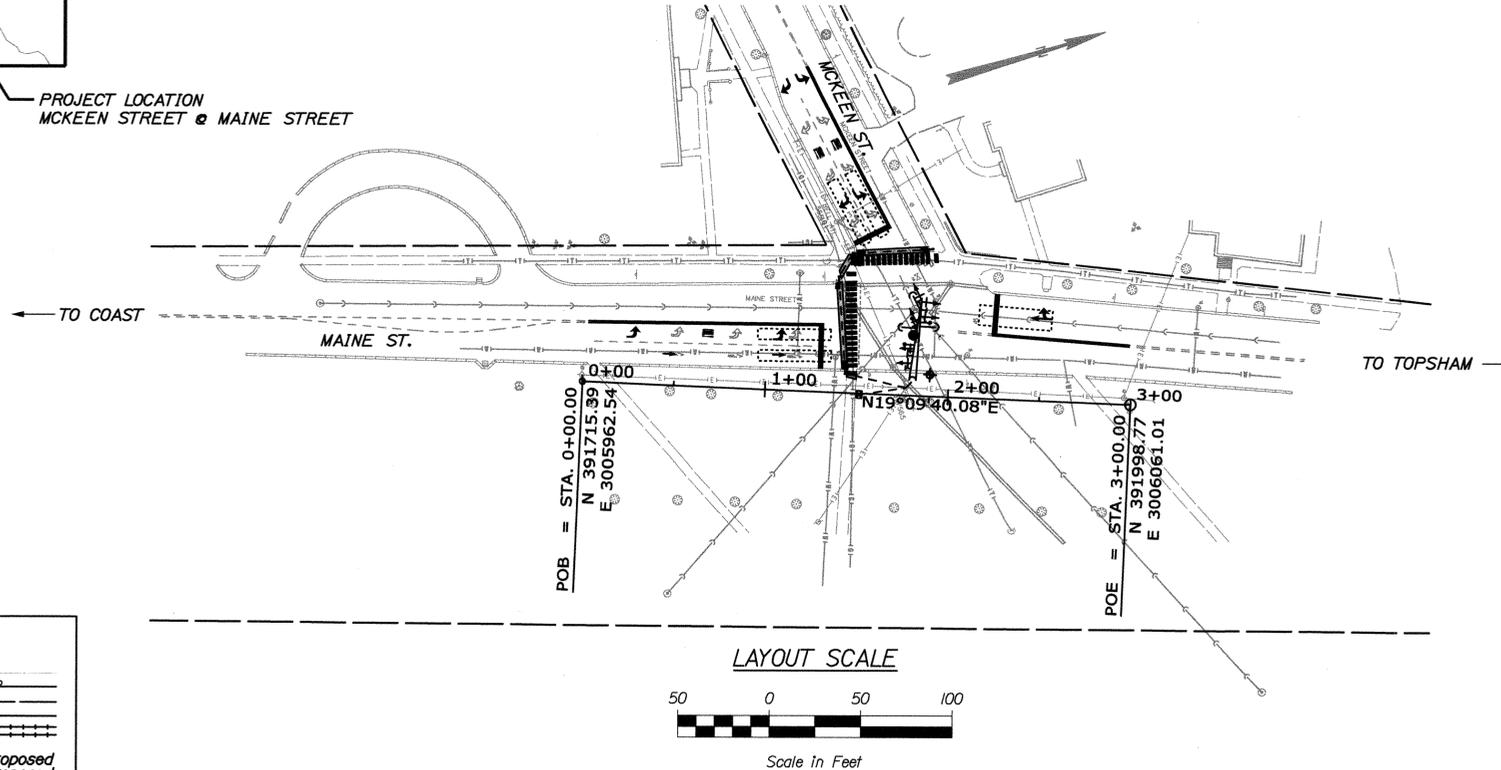
STATE OF MAINE DEPARTMENT OF TRANSPORTATION



BRUNSWICK CUMBERLAND COUNTY MAINE ST. / MCKEEN ST. PROJECT NUMBER STP-1728(400)X PROJECT LENGTH : 0.087 MILES TRAFFIC SIGNAL INSTALLATION



PROJECT LOCATION
MCKEEN STREET @ MAINE STREET



Description	Sheet No.
Title Sheet	1
Traffic Signal/Special Details	2
Pavement Marking Plan	3
Traffic Signal Plan	4

Town, County, State	Centerline-Existing	Centerline-Proposed
Property Lines	R/W Lines-Existing	R/W Lines-Proposed
Culvert-Existing	Culvert Proposed	Catch Basins
Curbing	Type 1	Type 3
Outline of Bodies of Water	Ledge	Buildings
Trees	Tree Line	Clearing Limit Line
Manholes	Underdrain	Ditch
Utility Poles	Fire Hydrants	Existing Water Line
Guardrail-Existing	Guardrail-Proposed	Guardrail-Cable, Other

TRAFFIC DATA

	Maine Street	McKeen Street
Current (2008) AADT	11,260	6,740
DHV - % of AADT	10	10
Design Hour Volume	1,130	675
Design Speed (mph)	25	25
Functional Class.	Major Urban Collector	Urban Collector

PROGRAM AREA: MAINTENANCE & OPERATIONS
SCOPE OF WORK: INSTALL NEW TRAFFIC SIGNAL

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	DATE
APPROVED	4/26/10
COMMISSIONER	4/23/10
CHIEF ENGINEER	



SIGNATURE	DATE
11083	4-30-2010
P.E. NUMBER	

PROJECT INFORMATION	MAINT. & OPERATIONS
PROJECT MANAGER	JIM WANSR
DESIGNER	JOHN ADAMS
CONSULTANT	SEBAGO TECHNIQS, INC.
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

STP-1728(400)X PIN 17284.00

BRUNSWICK
MAINE ST. / MCKEEN ST.
TITLE SHEET

SHEET NUMBER	1
OF 4	

GENERAL NOTES:

- EXISTING CONDITIONS INFORMATION PROVIDED BY JIM HIGGINS @ THE TOWN OF BRUNSWICK ON 9/21/2009. EXISTING CONDITIONS AND ROW INFORMATION IS A COMBINATION OF AN EXISTING SURVEY FOR MAINE STREET AND A CONSTRUCTION PLAN FOR THE RIGHT TURN LANE ON MCKEEN STREET.
- THE BEARINGS, COORDINATES, AND ELEVATIONS SHOWN HEREON ARE BASED UPON THE MAINE STATE PLANE COORDINATE GRID, CENTRAL ZONE 2000 ON NAD 83 AND NAVD88 IN US FEET.
- PRIOR TO ANY CONSTRUCTION, EXCAVATION, TEST BORINGS, ETC. DIG SAFE MUST BE NOTIFIED AND A SITE IDENTIFICATION NUMBER ALONG WITH A SAFE TO DIG DATE OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING THE LOCATION, DEPTH, AND MATERIAL OF ALL SUBSURFACE UTILITY LINES LOCATED WITHIN THE CONSTRUCTION AREA.
- REMOVAL OF EXISTING PAVEMENT AT CURB RAMPS SHALL BE PAID FOR AS COMMON EXCAVATION.
- THE CONTRACTOR SHALL MEET ALL UTILITY REQUIREMENTS FOR NEW SERVICE CONNECTIONS. THE TRAFFIC SIGNAL ELECTRICAL METER IS TO BE SUPPLIED WITH A GENERLINK METER COLLAR MODEL MA 23/24-N/S OR APPROVED EQUAL TO ENABLE CONNECTION TO A PORTABLE GENERATOR.
- TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE A MINIMUM DISRUPTION TO TRAFFIC.
- SIGNAL DESIGNER SHALL BE NOTIFIED PRIOR TO TURN ON.

DETECTION

- INSTALL 3 TRAFICON TRAFICAM (OR APPROVED EQUAL) CMOS PRESENCE SENSORS (BLACK AND WHITE) AS SHOWN ON THE PLANS, AND RELATED HARDWARE IN THE CABINET. VIDEO DETECTORS SHALL BE MOUNTED ON THE MAST ARMS AT THE OPTIMAL HEIGHT AS DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE RESIDENT ENGINEER.

SIGNAL HEADS

- SHALL BE 1-WAY, 12" DIAMETER WITH LED LENSES.
- SHALL HAVE 5" BLACK LOUVERED BACKPLATES.
- SHALL BE EQUIPPED WITH CAP (CUT-AWAY) VISORS.
- SHALL BE YELLOW POLYCARBONATE WITH BLACK FACES.

SIGNAL HEAD MOUNTING

- SIGNAL HEADS SHALL BE FIX MOUNTED TO MAST ARMS WITH ASTROBRACKETS.
- BOTTOM OF HOUSING OF NEW SIGNAL HEADS SHALL BE AT LEAST 16"

MAST ARMS / TRAFFIC STRUCTURES

- MAST ARM AND PEDESTAL POLES SHALL BE HOT DIPPED GALVANIZED STEEL.
- ALL POLES, MAST ARMS, MOUNT HARDWARE, PEDESTRIAN AND VEHICULAR SIGNAL HOUSINGS, P-44 CABINETS AND EXTENSION BASES, PUSH BUTTON ASSEMBLIES AND OTHER EXTERNAL ITEMS SHALL BE A 2 COAT POWDER COATING (BLACK) INCLUDING A ZINC PRIMER AND PREMIUM TOP COAT.

CABINET AND CONTROLLER

- INSTALL TS-2 TYPE 1 CONTROLLER IN A NEMA P-44 BASE MOUNTED CABINET WITH A 15" EXTENSION.
- ALL SPLICES WILL BE MADE IN THE CABINET AND MEET MAINEDOT'S SPECIFICATIONS.
- ONE COPY OF AS-BUILT PLANS, WIRING DIAGRAMS, BOX PRINTS AND EQUIPMENT MATERIALS SHALL BE LEFT IN THE CABINET AND SENT TO DESIGNER.
- ALL MAJOR COMPONENTS OF THE CONTROLLER CABINET ASSEMBLY SHALL BE FROM THE SAME MANUFACTURER. THIS INCLUDES CABINET ASSEMBLY, CONTROLLER, MMU, BIU'S, AND CABINET POWER SUPPLY.

SIGNAL POLE FOUNDATION

- A BORING WAS TAKEN AS PART OF THIS PROJECT FOR THE PROPOSED MAST ARM LOCATION (LOCATION SHOWN ON SHEET 4). THE BORING LOG CAN BE FOUND IN THE PROJECT SPECIFICATIONS.

PRE EMPTION

- INSTALL PRE EMPT SYSTEM SOFTWARE. INSTALL 3 OPTICAL DETECTORS AND A CONFIRMATION STROBE.
- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) MOUNTED ON EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
- PRE-EMPTION SIGNALS SHALL BE SERVICED ON A FIRST DETECTED-FIRST SERVED BASIS.
- IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR #1 (OR #2, #3), THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE EMPTION PHASE #1 (OR #2, #3) GREEN FOR A MINIMUM OF FIVE (5) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (3.0 SECONDS; YELLOW AND 2.0 SECONDS; ALL RED) AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION AS NECESSARY, THEN TIME PHASE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
- MINIMUM GREEN & NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- CONFIRMATION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY PRE-EMPTION GREEN IS ON.

PEDESTRIAN SIGNALS & PUSH BUTTONS

- HEADS SHALL BE 1-WAY 1-SECTION 16" X 18" HAND/MAN WITH COUNTDOWN MODULE BY GE LUMINATION GTI SERIES - MCCAIN MODEL 1000 SERIES (OR EQUAL) HOUSING. HAND/MAN SYMBOL SHALL BE FILLED AND NOT OUTLINED.
- HEADS SHALL BE EQUIPPED WITH CAP (CUT-AWAY) VISORS.
- HEADS SHALL BE CONSTRUCTED OF YELLOW POLYCARBONATE MATERIAL WITH BLACK FACES.
- INSTALL 4 ACCESSIBLE PEDESTRIAN SIGNAL (APS) PUSH BUTTONS CAMPBELL COMPANY ADVISOR MODEL (A-57) (OR EQUAL) WITH RIO-3e PUSH BUTTON SIGNS. SIGNS SHALL BE POSTED AT EACH AUDIBLE SIGNAL PUSH BUTTON STATING WHICH STREET MAY BE CROSSED BASED UPON THE RELATED PUSH BUTTON.

THE AUDIBLE WALK INTERVAL MESSAGES USED SHALL BE AS FOLLOWS:

"MCKEEN, WALK SIGN IS ON TO CROSS MCKEEN".

THE NAME OF THE STREET TO CROSS WILL CHANGE WITH EACH AUDIBLE PUSH BUTTON.

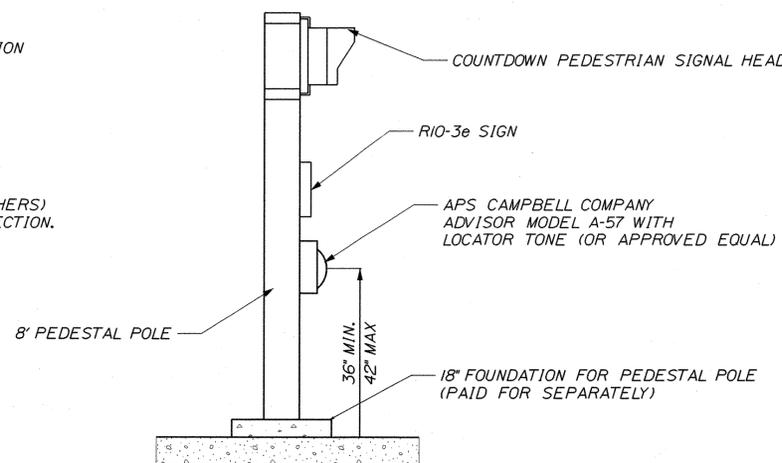
THE AUDIBLE PUSH BUTTON IDENTIFICATION INFORMATION MESSAGES USED DURING THE NON-WALK PHASES SHALL BE AS FOLLOWS:

"WAIT TO CROSS MCKEEN AT MAINE"

PAYMENT FOR RIO-3e SIGNS AND PUSH BUTTONS SHALL BE INCLUDED IN THE RESPECTIVE 8' PEDESTAL POLE (ITEM 643.92).

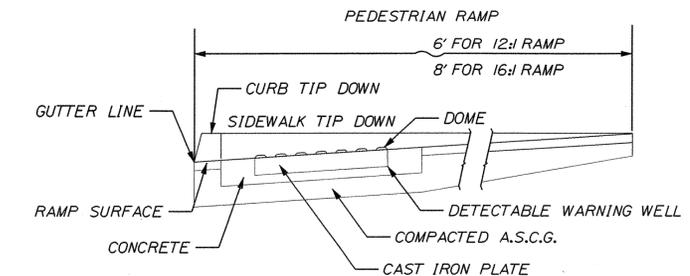
5. PEDESTRIAN SIGNALS SHALL BE BLANK DURING FLASHING OPERATION.

6. LOCATOR TONES FOR ALL PUSH BUTTONS ARE REQUIRED. VOLUME IS TO AUTOMATICALLY ADJUST TO AMBIENT NOISE LEVELS.

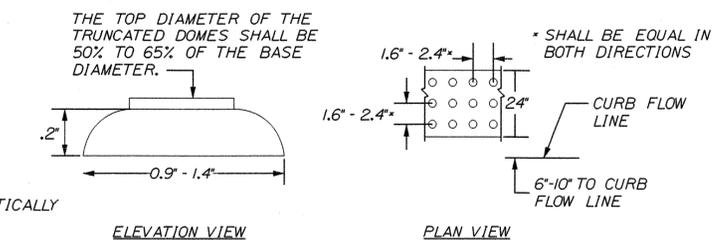


APS PUSH BUTTON ASSEMBLY SINGLE MOUNTED DETAIL

VIEWS AND DETAILS OF THE DETECTABLE WARNING FIELDS (NOT TO SCALE)



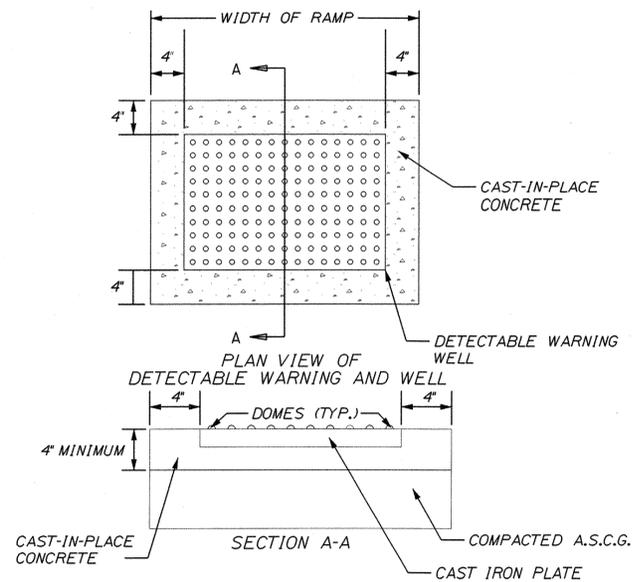
SIDE SECTION VIEW OF DETECTABLE WARNING, WELL, CURB AND GUTTER



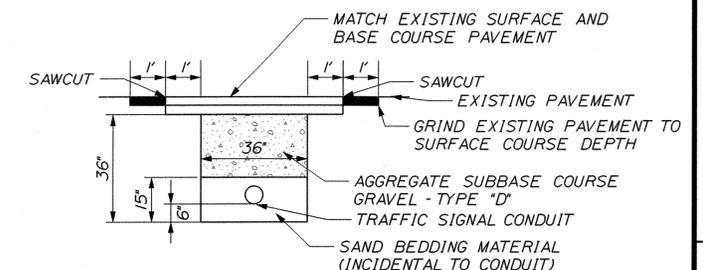
ELEVATION VIEW

PLAN VIEW

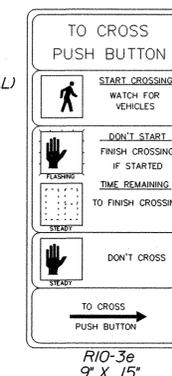
DOMES AND DETECTABLE WARNING DETAILS



CONDUIT TRENCH DETAIL



TACK COAT VERTICAL EDGES PRIOR TO PLACING NEW PAVEMENT (PAYMENT INCIDENTAL TO OTHER ITEMS)



RIO-3e 9' X 15'

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1728(400)X
PIN 17284.00
TRAFFIC SIGNAL PLANS

DATE	4-9-10
BY	B. LYON
J. MARSH	J. ADAMS
PROJ. MANAGER	J. ADAMS
DESIGN-DETAILED	J. ADAMS
CHECKED-REVIEWED	J. ADAMS
DESIGN-DETAILED	J. ADAMS
DESIGN-DETAILED	J. ADAMS
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	
SIGNATURE	
P.E. NUMBER	
DATE	

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REVISIONS 1	
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REVISIONS 4	
FIELD CHANGES	
SIGNATURE	
P.E. NUMBER	
DATE	

BRUNSWICK
MAINE ST. / MCKEEN ST.
TRAFFIC SIGNAL/SPECIAL DETAILS

SHEET NUMBER

2

OF 4

Date: 4/26/2010

Username: blyon

Division: HIGHWAY

Filename: ... \MSTA 002_GeneralNotes.dgn

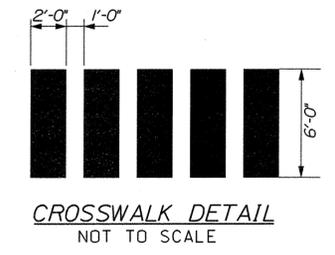
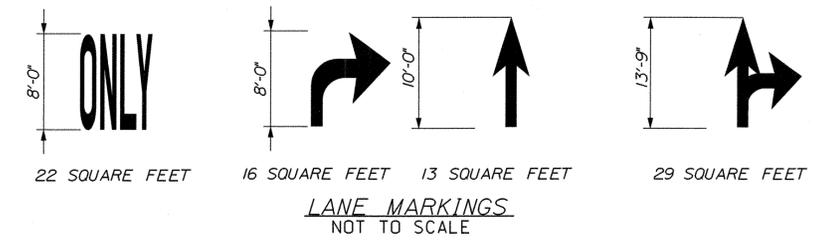
Date: 4/26/2010

Username: blyon

Filename: ... \00\TRAFFIC\MSTA\003_HDPlan.dgn Division: HIGHWAY

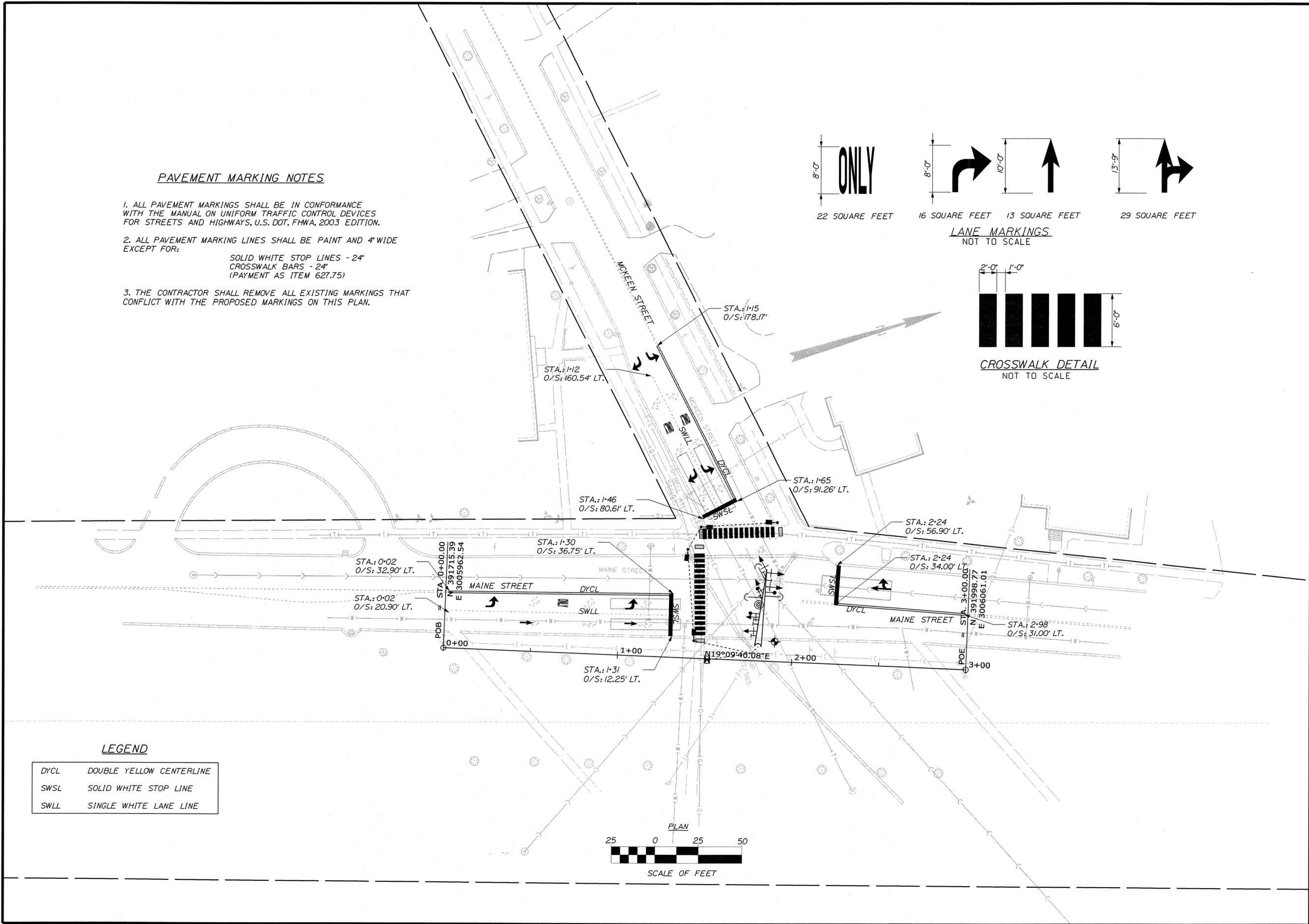
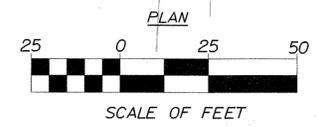
PAVEMENT MARKING NOTES

1. ALL PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, U.S. DOT, FHWA, 2003 EDITION.
2. ALL PAVEMENT MARKING LINES SHALL BE PAINT AND 4" WIDE EXCEPT FOR:
 SOLID WHITE STOP LINES - 2"
 CROSSWALK BARS - 24"
 (PAYMENT AS ITEM 627.75)
3. THE CONTRACTOR SHALL REMOVE ALL EXISTING MARKINGS THAT CONFLICT WITH THE PROPOSED MARKINGS ON THIS PLAN.



LEGEND

DYCL	DOUBLE YELLOW CENTERLINE
SWSL	SOLID WHITE STOP LINE
SWLL	SINGLE WHITE LANE LINE



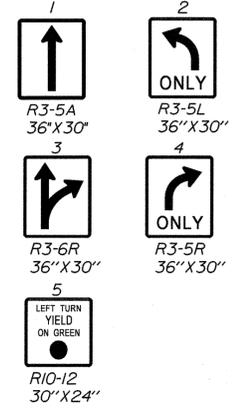
STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-1728(400)X		PIN 17284.00		TRAFFIC SIGNAL PLANS	
PROJ. MANAGER	J. MANSIR	BY	B. LYON	DATE	4-9-10
DESIGN-DETAILED	B. LYON	CHECKED-REVIEWED	J. ADAMS	SIGNATURE	
DESIGN-REVIEWED	J. ADAMS	DESIGN-DETAILED	J. ADAMS	P.E. NUMBER	
DESIGN-REVIEWED	J. ADAMS	DESIGN-REVIEWED	J. ADAMS	DATE	
REVISIONS 1		REVISIONS 1			
REVISIONS 2		REVISIONS 2			
REVISIONS 3		REVISIONS 3			
REVISIONS 4		REVISIONS 4			
FIELD CHANGES		FIELD CHANGES			
SHEET NUMBER 3					
OF 4					

Filename: ... \001\TRAFFIC\MSTA\004_HDP\plan.dgn Division: HIGHWAY Date: 4/26/2010 Username: blyon

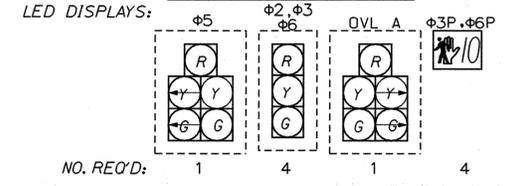
SIGNAL LAYOUT

A. 45' MAST ARM	STA. 1+80, 8' LT.	36" FOUNDATION (10' LONG)
B. CONTROLLER CABINET	STA. 1+52, 1' RT.	24" FOUNDATION
C. 8' PEDESTAL POLE	STA. 1+43, 10' LT.	18" FOUNDATION
D. 8' PEDESTAL POLE	STA. 1+38, 63' LT.	18" FOUNDATION
E. 8' PEDESTAL POLE	STA. 1+45, 76' LT.	18" FOUNDATION
F. 8' PEDESTAL POLE	STA. 1+89, 80' LT.	18" FOUNDATION

LANE USE SIGNS



SIGNAL INDICATIONS

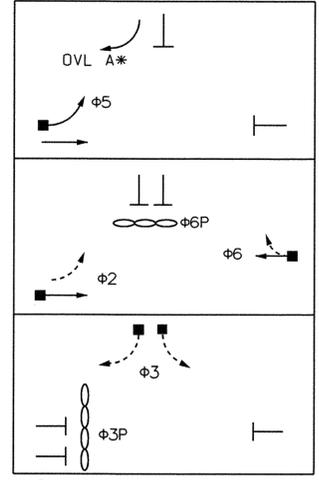


SIGNAL TIMING

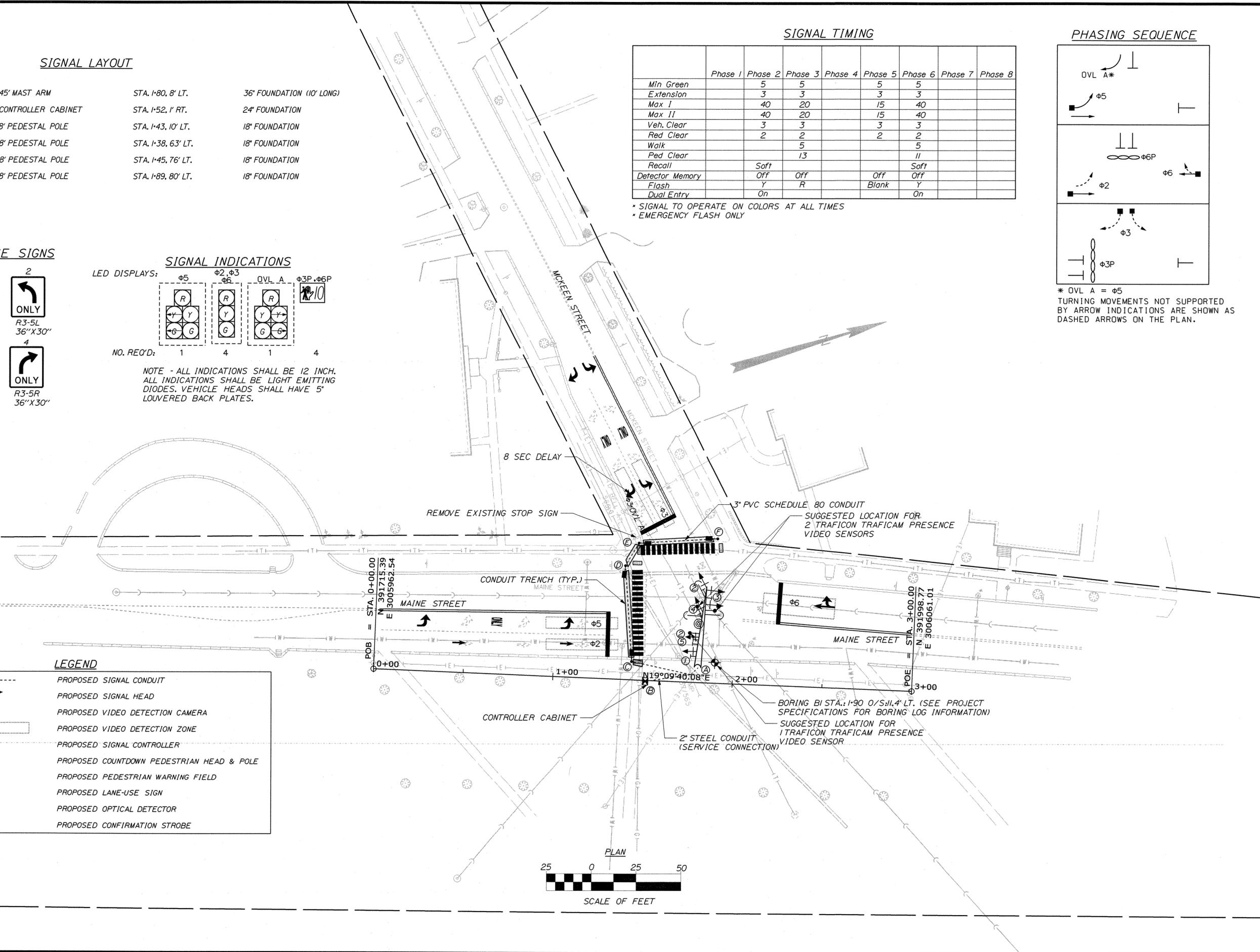
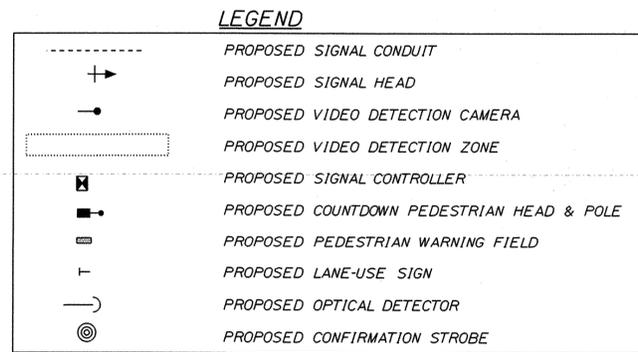
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Min Green	5	5	5	5	5			
Extension	3	3			3	3		
Max I	40	20			15	40		
Max II	40	20			15	40		
Veh. Clear	3	3			3	3		
Red Clear	2	2			2	2		
Walk		5				5		
Ped Clear		13				11		
Recall		Soft				Soft		
Detector Memory		Off			Off	Off		
Flash		Y			Blank	Y		
Dual Entry		On				On		

* SIGNAL TO OPERATE ON COLORS AT ALL TIMES
* EMERGENCY FLASH ONLY

PHASING SEQUENCE



* OVL A = phi 5
TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS ARE SHOWN AS DASHED ARROWS ON THE PLAN.



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		STP-1728(400)X		PIN 17284.00		TRAFFIC SIGNAL PLANS	
BRUNSWICK		MAINE ST./ MCKEN ST.		TRAFFIC SIGNAL PLAN		SHEET NUMBER		4	
DATE: 4-9-10		BY: B. LYON		SIGNATURE: J. ADAMS		P.E. NUMBER:		DATE:	
DESIGN-REVIEWED: J. ADAMS		CHECKED-REVIEWED: J. ADAMS		DESIGN-DETAILED: J. ADAMS		REVISIONS 1:		REVISIONS 2:	
REVISIONS 3:		REVISIONS 4:		FIELD CHANGES:		REVISIONS 1:		REVISIONS 2:	
REVISIONS 3:		REVISIONS 4:		FIELD CHANGES:		REVISIONS 1:		REVISIONS 2:	