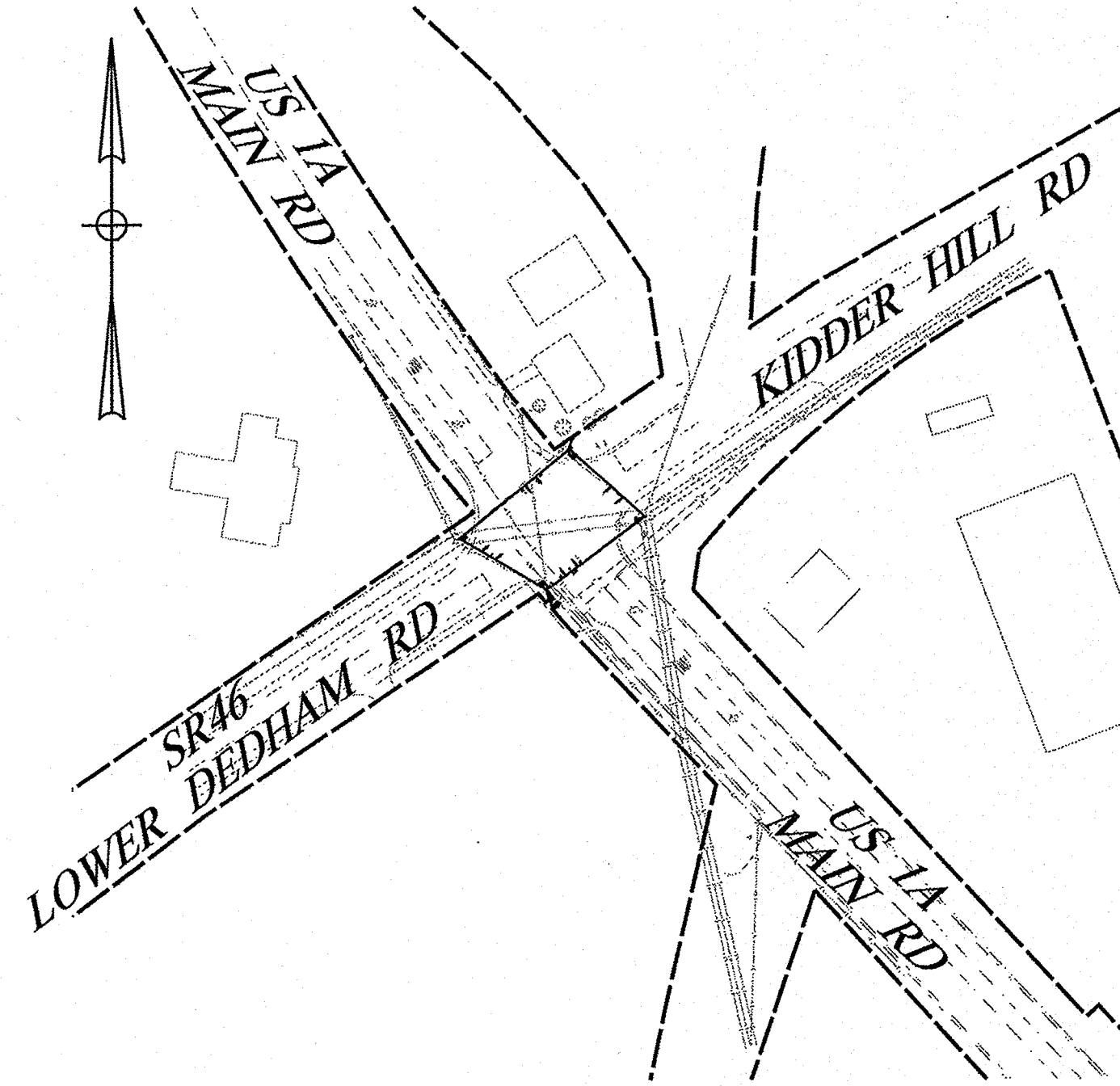


STATE OF MAINE DEPARTMENT OF TRANSPORTATION



HOLDEN PENOBSCOT COUNTY TRAFFIC SIGNAL MODERNIZATION FEDERAL PROJECT NO. 2390500 STATE WIN 023905.00



PLAN LEGEND	
Town, County, State	Centerline-Existing
Property Lines	Centerline-Proposed
R/W Lines-Existing	Travelway-Existing
R/W Lines-Proposed	Travelway-Proposed
Culvert-Existing	Railroad
Culvert Proposed	Catch Basins
Curbing Existing	Manholes
Curbing Proposed	Proposed Underdrain
Type 1	Proposed Ditch
Type 3	Existing Ditch
Type 5	Utility Poles
Outline of Bodies of Water	Fire Hydrants
Exposed Bedrock	Existing Water Line
Buildings	Existing San. Sewer
Trees	Existing San. Sewer Manhole
Tree Line	Guardrail-Existing
Clearing Limit Line	Guardrail-Proposed
	Guardrail-Cable, Other
	Existing
	Proposed
Controller with Cabinet	
Meter Pedestal	
Vehicular Signal Head	
Video Detection Camera	
Advance Detection	
Combination Stopline and Advance Detection	
Emergency Vehicle Preemption Receiver	
Emergency Preemption Confirmation Strobe	
Post or Span Wire Mounted Sign	
Dedicated Short Range Communications (DSRC) Roadside Unit (RSU)	
Video Detection Zone (& ID)	
Wood Pole with Guys	

INDEX OF SHEETS	
Description	Sheet No.
Title Sheet	1
General Notes	2
ATCC Details	3
Traffic Signal Plans	4-5
DSRC & Queue Detection	
Layout Plan	6

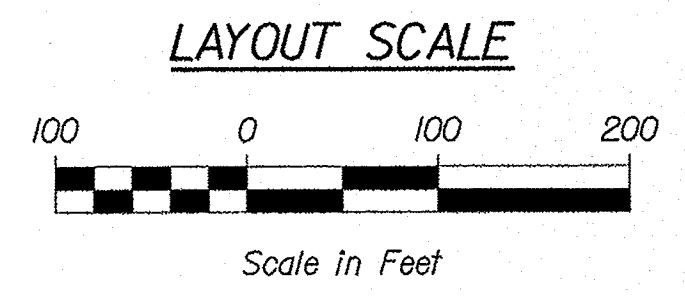
STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	DATE
APPROVED		2-27-2019
COMMISSIONER		
CHIEF ENGINEER		

STATE OF MAINE	PROFESSIONAL ENGINEER
Christopher M. Bobay	9874
SIGNATURE	P.E. NUMBER
	11/25/2019
	DATE

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

HOLDEN	TITLE SHEET
--------	-------------

TRAFFIC DATA	US 1 A NW/O SR 46	US 1 A SE/O SR 46	SR46 (KIDDER HILL) E/O IR 631 (MANN HILL)	SR46 (LWR DEDHAM) SW/O US 1A
Current (2019) AADT	19,630	14,360	3,990	2,190
Future (2039) AADT	21,600	15,800	4,390	2,410
DHV - % of AADT	10%	11%	10%	9%
Design Hour Volume	1,958	1,617	408	208
% Heavy Trucks (AADT)	4%	3%	7%	4%
% Heavy Trucks (DHV)	2%	2%	3%	3%
Directional Distribution (DHV)	51%	53%	59%	55%
18 kip Equivalent P 2.0	n/a	n/a	n/a	n/a
18 kip Equivalent P 2.5	n/a	n/a	n/a	n/a
Design Speed (mph)	35	35	30	35
Functional Class:	Other Principal Arterial	Major Collector	Minor Arterial	Major Collector



PROJECT LOCATION:	In the Town of Holden at US 1A (Main Rd) at SR46 (Lower Dedham Rd) and Kidder Hill Rd
PROGRAM AREA:	Traffic
OUTLINE OF WORK:	Traffic Signal Modifications and Other Incidental Work

WIN 023905.00

SHEET NUMBER	1
OF	6

Date: 11/22/2019

Username: jrobort

Division: HIGHWAY

Filename: 001_Title.dgn

SIGNAL PLAN NOTES:

1. WHERE NOTED ON THE PLANS, ALL NEW VEHICULAR SIGNAL HEADS SHALL BE EQUIPPED WITH NEW LED LENSES 12 INCHES IN DIAMETER AND EQUIPPED WITH NEW 5-INCH LOUVERED BACK PLATES, INCLUDING 3-INCH RETROREFLECTIVITY.
2. ALL NEW SIGNAL HEADS SHALL BE MOUNTED ON SPAN WIRE WITH TETHER.
3. THE BOTTOM OF THE HOUSING OF NEW SIGNAL FACES SHALL BE AT LEAST 17 FEET BUT NOT MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.
4. TWO COPIES OF AS-BUILT PLANS, WIRING DIAGRAMS, BOX PRINTS, AND EQUIPMENT MANUALS SHALL BE LEFT IN THE CONTROLLER CABINET.
5. THE CONTRACTOR IS RESPONSIBLE FOR FINDING EXACT LOCATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DIG-SAFE AND APPROPRIATE AUTHORITIES PRIOR TO ANY SUBSURFACE ACTIVITIES.

THE CONTRACTOR SHALL MEET ALL REQUIREMENTS OF THE UTILITY COMPANIES WHEN INSTALLING EQUIPMENT (RISERS) ON THEIR POLES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES TO DETERMINE THEIR REQUIREMENTS.

6. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC.
7. THE ENGINEER AND MAINEDOT SHALL HAVE THE RIGHT AND AUTHORITY TO DETERMINE THE ACCEPTABILITY OF WORK AND MATERIALS IN PROGRESS OR COMPLETED AND SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIALS WHICH DO NOT CONFORM, 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.

ALL TRAFFIC CONTROL EQUIPMENT, DEVICES AND LAYOUTS SHALL ALSO CONFORM TO THE MAINEDOT STANDARD SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND STANDARD DETAILS AS WELL AS THE MUTCD, CHAPTER 6.

9. ANY RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITY FACILITIES WILL BE MADE BY THE RESPECTIVE UTILITIES IN COORDINATION WITH THE WORK OF THE CONTRACTOR.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY OPENING PERMITS.
11. ALL EXISTING DRIVEWAY ACCESSES SHALL BE MAINTAINED AT ALL TIMES.
12. THE CONTRACTOR SHALL PROVIDE THE ENGINEER, MAINEDOT, AND THE TOWN OF HOLDEN WITH A SCHEDULE OF WORK 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. COSTS FOR REPAIR OF DISTURBED AREAS SHALL BE INCIDENTAL TO OTHER CONTRACT ITEMS.
15. EQUIPMENT

THE TRAFFIC SIGNAL CONTROLLER AND VARIOUS OTHER EQUIPMENT ITEMS SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE TRAFFIC SIGNAL CONTROLLER SUPPLIED UNDER THIS CONTRACT SHALL BE ADVANCED TRANSPORTATION CONTROLLER (ATC) WITH THE CAPABILITY OF SUPPORTING NTCIP PROTOCOLS.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING THE PROJECT WITH WORKING AND FULLY CONFIGURED CONTROLLER AND ATC CABINET.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FURNISHING AND INSTALLING ALL OTHER EQUIPMENT TO INCLUDE NEW WOOD POLE WITH GUY(S) AND SPANWIRE, VEHICLE TRAFFIC SIGNALS, ADVANCED VEHICLE DETECTION DEVICE, REMOTE DETECTION DEVICES, VIDEO DETECTION CAMERA(S), 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.

THE LOCATIONS OF ALL EQUIPMENT SHOWN ARE APPROXIMATE. FINAL LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE RESIDENT ENGINEER.

THE COST OF POLE RISERS SHALL BE INCIDENTAL TO ITEM 643.71.

16. FOUNDATIONS

THE FOUNDATION FOR CONTROL CABINET IS SHOWN IN THE PLANS TO BE WITHIN THE EXISTING RIGHT-OF-WAY (ROW) AND TO AVOID UNDERGROUND CONFLICTS WITH INFORMATION THAT WAS PROVIDED DURING DESIGN; HOWEVER, THE CONTRACTOR MAY UPON CONSULTATION WITH APPROVAL FROM THE RESIDENT ENGINEER, RELOCATE CABINET AS NEEDED TO AVOID UNANTICIPATED CONFLICTS AS LONG AS THE FINAL LOCATION MEETS THE GUIDELINES IN SECTION 4E.08 OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE STRUCTURE IS INSTALLED COMPLETELY WITHIN THE EXISTING ROW.

17. STOP LINE VIDEO DETECTION AND ADVANCE DETECTOR INSTALLATION

AS PAYMENT FOR THIS WORK, THE CONTRACTOR SHALL SUBMIT A LUMP SUM BID FOR VIDEO BASED TRAFFIC PRESENCE DETECTORS AND ADVANCE DETECTOR WHICH ARE TO BE CONNECTED TO THE INTERSECTION FOR LOCAL VEHICLE DETECTION. WORK SHALL BE PAID FOR AS OUTLINED IN SPECIAL PROVISION 643.

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 643.83 VIDEO DETECTION SYSTEM ITEM.

VIDEO DETECTION CAMERAS SHALL BE CONNECTED TO THE FIELD MONITORING UNIT (CELL MODEM) FOR REMOTE MONITORING AND ADJUSTMENTS AT THE MAINEDOT TRAFFIC MANAGEMENT CENTER (TMC).

18. SALVAGE RIGHTS: MAINEDOT SHALL HAVE FIRST RIGHTS TO ALL EQUIPMENT REMOVED OR REPLACED BY THE PROJECT (CONTACT MIKE DELOIS AT 207-624-3625). TOWN OF HOLDEN SHALL HAVE SECOND SALVAGE RIGHTS TO ALL EQUIPMENT NOT CLAIMED BY MAINEDOT. MAINEDOT WILL SUBMIT A LIST OF SALVAGED MATERIAL TO BE DELIVERED TO THE ELECTRICAL SHOP ON LEIGHTON ROAD IN AUGUSTA. CONTACT MIKE EATON 207-215-4975 TO COORDINATE DELIVERY. LIKEWISE CONTRACTOR SHALL DELIVER REQUESTED SALVAGED MATERIAL TO THE TOWN AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ALL EQUIPMENT CLAIMED BY EITHER MAINEDOT OR THE TOWN OF HOLDEN AT A CENTRAL LOCATION ON SITE PRIOR TO DELIVERY. 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 EITHER MAINEDOT OR THE TOWN OF HOLDEN FOR SALVAGE SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF IN A MANNER ACCEPTABLE TO THE ENGINEER.

19. 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.
20. 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.
21. THE CONTRACTOR IS DIRECTED TO PROJECT SPECIAL PROVISION 718 FOR ADDITIONAL INFORMATION RELATED TO THE FOLLOWING:
 - 718.07 CONTROLLERS
 - 718.08 CONTROLLER CABINETS
 - 718.13 FIELD MONITORING UNIT
 - 718.14 REMOTE DETECTION DEVICE
 - 718.15 MESSENGER WIRE
 - 718.16 EMERGENCY VEHICLE PREEMPTION 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.

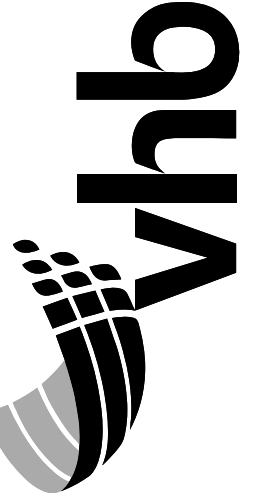
Date: 2/17/2020

Username: jrobert

Division: HIGHWAY

Filename: 002_Notes.dgn

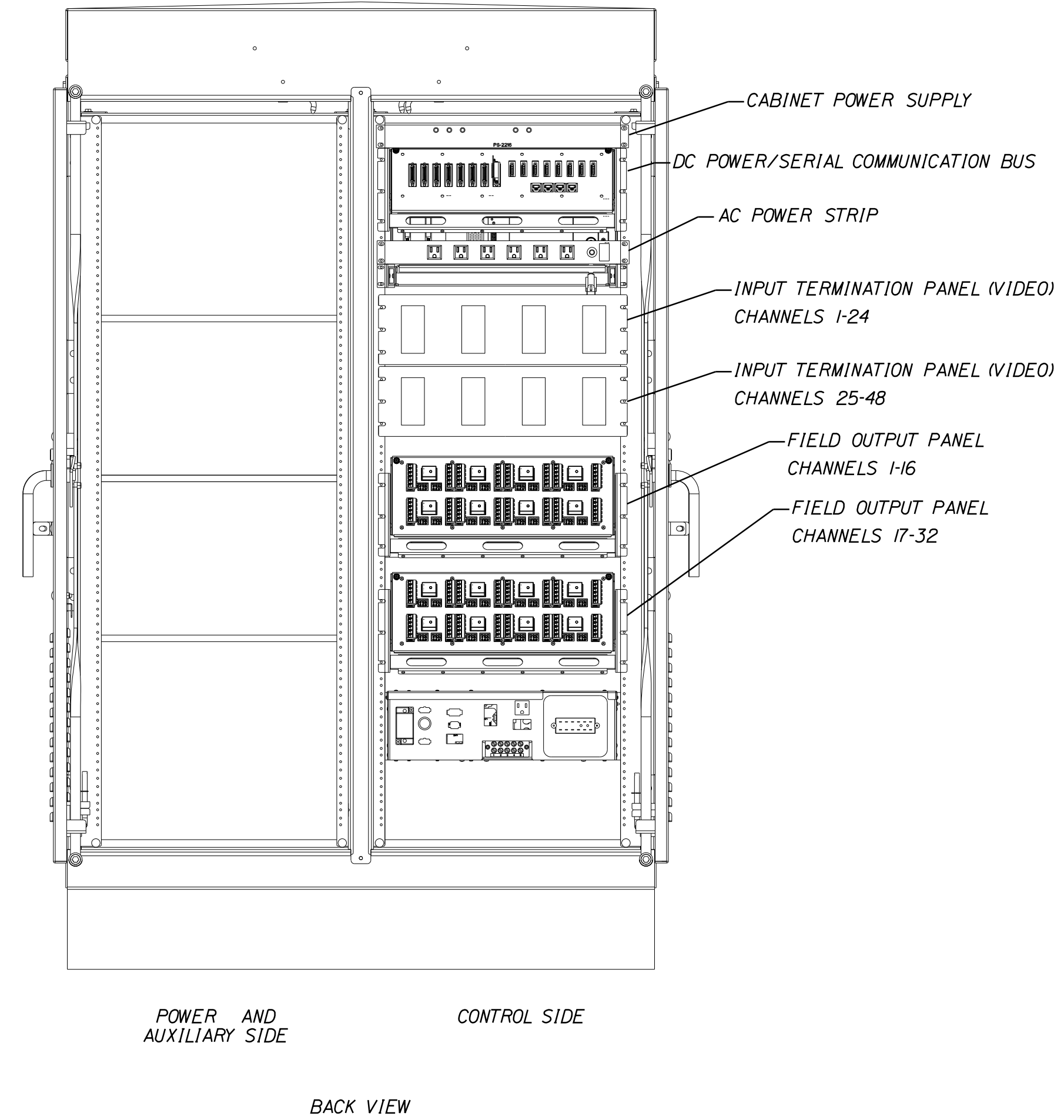
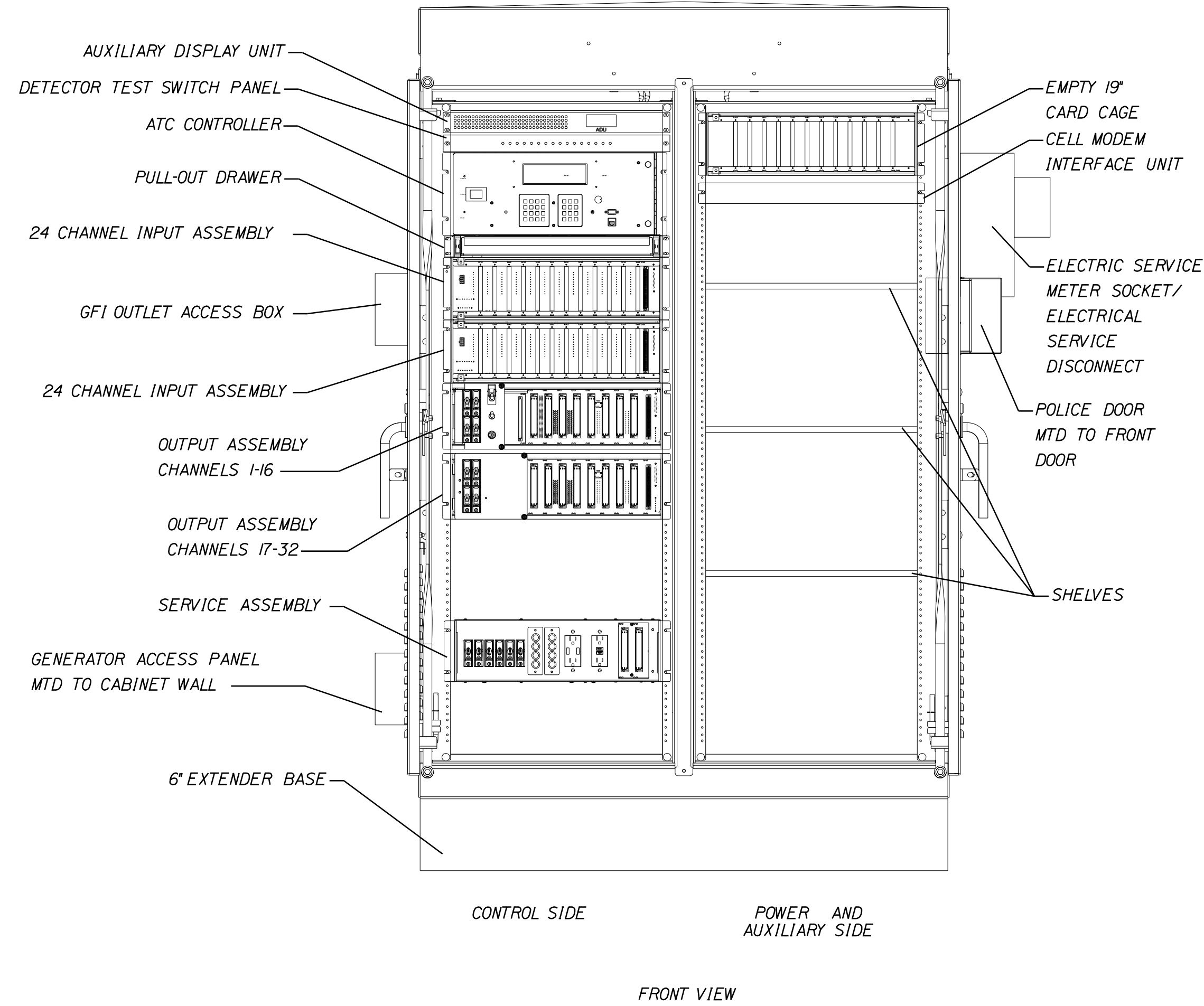
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT NO. 2390500
WIN
023905.00
TRAFFIC PLANS



PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	MJC	JAR	08/18
CHECKED-REVIEWED	CMB	CMB	08/18
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HOLDEN
US1A (MAIN RD) AT SR46 (LOWER
DEDHAM RD) AND KIDDER HILL RD
GENERAL NOTES

SHEET NUMBER
2
OF 6

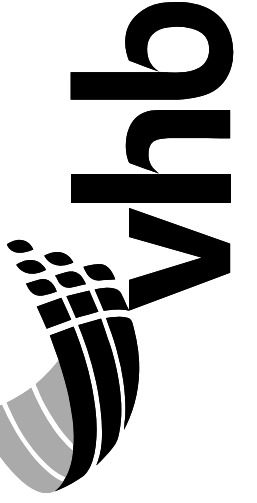


MaineDOT 32/48 ATC CABINET
NOT TO SCALE

NOTES:

1. DRAWING SHOWN IS A SCHEMATIC REPRESENTATION OF THE ATC CABINET DEPICTING THE RELATIVE LOCATION OF VARIOUS IN-CABINET DEVICES AND SUBASSEMBLIES. THE EXACT SIZE OF VARIOUS ELEMENTS MAY VARY PER MANUFACTURER.
2. INPUT TERMINATION PANEL SHOWN IS FOR VIDEO BASED INPUTS.
3. DRAWING DEPICTS TWO INPUT PANELS AND TWO OUTPUT PANELS. THIS QUANTITY MAY BE REDUCED DEPENDING ON APPLICATION; SEE SPECIAL PROVISIONS FOR NUMBER OF PANELS TO BE SUPPLIED.
4. FAN AND THERMOSTAT SHALL BE INSTALLED ON CABINET FRAME ABOVE THE DOOR.
5. LED LIGHT STRIPS SHALL BE INSTALLED ON CABINET FRAME ABOVE THE DOOR AND ON THE UNDERSIDE OF THE LOWER SHELF.
6. THE SIZE OF THE METER SOCKET WILL VARY BASED ON THE LOCAL ELECTRIC UTILITY COMPANY REQUIREMENT.
7. THE METER SHALL BE INSTALLED SUCH THAT THE BOTTOM OF THE METER IS AT LEAST 48 INCHES ABOVE FINAL GRADE.
8. THE LOAD SIDE CABLE SHALL BE ROUTED THROUGH THE INTERIOR OF THE CABINET SUCH THAT IT DOES NOT BLOCK OR ENTER INTO AVAILABLE RACK SPACE. (REMOVED; THUS PREVENTING THAT SPACE FROM BEING USED EITHER BY EQUIPMENT SUPPLIED AS PART OF THE PROJECT, OR FUTURE EQUIPMENT THAT WOULD BE INSTALLED IN THE RACK SYSTEM.) THE CABLE SHALL BE ROUTED BETWEEN THE EDGE OF THE RACK SYSTEM AND THE CABINET SIDE WALL, ALONG THE BOTTOM OF THE CABINET AND BELOW THE BOTTOM OPENING OF THE DOORS.

NOMINAL TERMINAL PANEL SIZE
PER 24 INPUT RACK:
LOOP = 6U HIGH (10.5")
VIDEO = 3U HIGH (5.25")



PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	AC	JAR	08/19
CHECKED-REVIEWED	JH	CMB	08/19
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HOLDEN
US1A (MAIN RD) AT SR46 (LOWER
DEDHAM RD) AND KIDDER HILL RD

ATCC DETAILS

SHEET NUMBER

3

OF 6

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL NEW ATCC MAINE DOT 32/48 SPEC GROUND MOUNT CABINET AND ATC CONTROLLER COMPLETE WITH ALL ANCILLARY EQUIPMENT AND WIRING INCLUDING CELL MODEM / FIELD MONITORING UNIT WITH INTEGRATION INTO CLOUD BASED MONITORING SYSTEM	1
FURNISH AND INSTALL NEW NON-INVASIVE REMOTE DETECTION DEVICE IN A G-SIZED POLE MOUNTED CABINET WITH CELLULAR CONNECTION TO ATCC. CABINET TO INCLUDE 15 AMP CIRCUIT AND GFI OUTLET WITH CONFIRMATION LIGHT OF TRIGGERED EVENT.	2
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH TRAFFIC SIGNAL HEADS WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY MOUNTED ON SPAN AND TETHER WIRE	6
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH TRAFFIC SIGNAL HEADS WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY SIDE MOUNTED ON WOOD POLE	2
FURNISH AND INSTALL ONE-WAY, 4-SECTION, 12-INCH TRAFFIC SIGNAL HEADS WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY MOUNTED ON SPAN AND TETHER WIRE	2
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	4
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
FURNISH AND INSTALL SPAN WIRE MOUNTED SIGNS	4
FURNISH AND INSTALL POLE RISER (2-SIGNAL-ELECTRIC)	3
FURNISH AND INSTALL SPAN AND TETHER WIRE	650 LF
FURNISH AND INSTALL NEW SIGNAL CABLE	-
REMOVE AND SALVAGE EXISTING SIGNAL EQUIPMENT	-
IMPLEMENT LOCAL SIGNAL TIMINGS	-

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

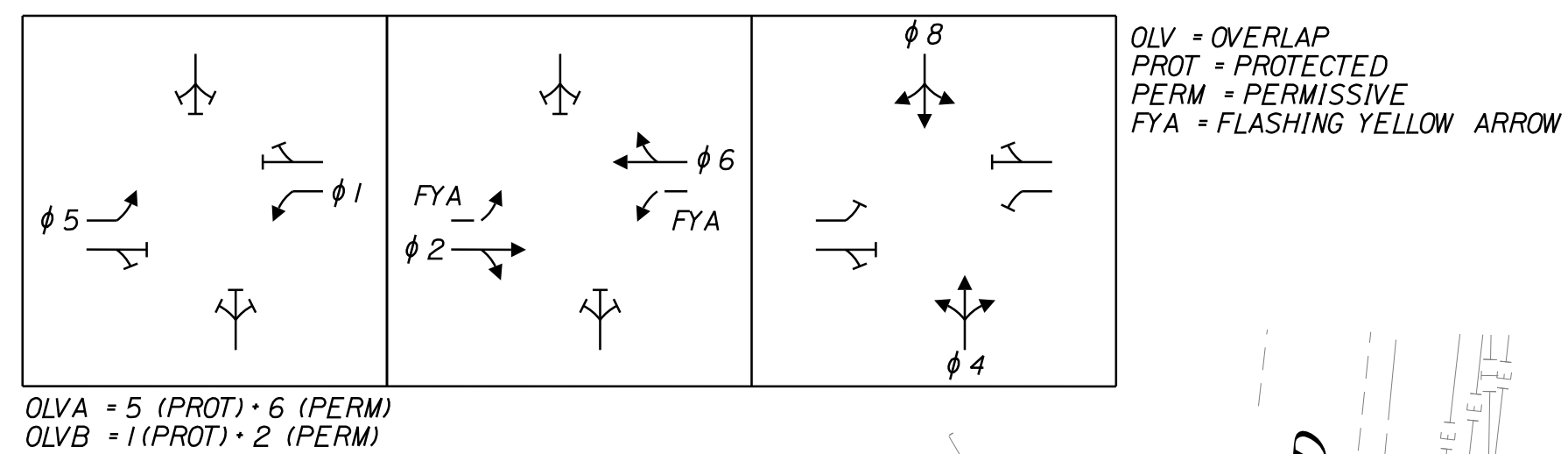
F-1 NON-INVASIVE REMOTE DETECTION DEVICE WITH COMPONENTS HOUSED IN A G-SIZE POLE MOUNTED CABINET THAT INCLUDES A 15 AMP CIRCUIT AND GFI OUTLET WITH CONFIRMATION LIGHT OF TRIGGERED EVENT. SEE REMOTE DETECTION DEVICE SPECIAL PROVISION 718.14. OPERATION OF THE SYSTEM SHALL BE INITIALLY SET TO INITIATE A REQUEST TO THE ATC CONTROLLER VIA CLOUD BASED CELLULAR CONNECTION TO PROVIDE A 4 MINUTE PREEMPT FLUSH FOR PHASE 2 AND 6 AFTER 15 SECONDS OF STOPPED TRAFFIC WITHIN DETECTION ZONE.

CABINET AND DETECTOR ARE PROPOSED TO BE LOCATED ON THE FIRST POLE WHERE UTILITY LINES CROSS TO THE WEST SIDE OF US1A, LOCATED APPROXIMATELY 375 FEET NORTH OF BAGADUCE ROAD OR APPROXIMATELY 1.4 NORTH OF STOP LINE. SEE SHEET 6 FOR ADDITIONAL INFORMATION.

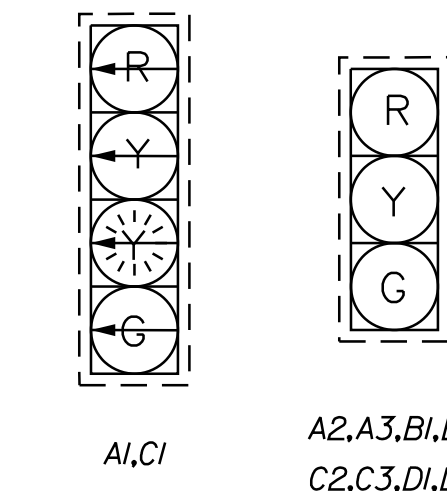
DETECTOR SCHEDULE

DETECTOR ZONE NO.	LOCATION	φ CALLED	φ EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
①	US 1A APPROACH C LEFT	1	1	1	-	-
②	US 1A APPROACH C THRU-RIGHT	6	6	6	-	-
③	US 1A APPROACH C ADVANCE	6	6	6	-	-
④	US 1A APPROACH A ADVANCE	2	2	2	-	-
⑤	US 1A APPROACH A LEFT	5	5	5	-	-
⑥	US 1A APPROACH A THRU-RIGHT	2	2	2	-	-
⑦	LWR DEDHAM RD APPROACH D	4	4	4	-	-
⑧	KIDDER HILL RD APPROACH B	8	8	8	-	-
⑨	LWR DEDHAM RD APPROACH D ADVANCE	4	4	4	-	-

PROPOSED SEQUENTIAL PHASING SEQUENCE



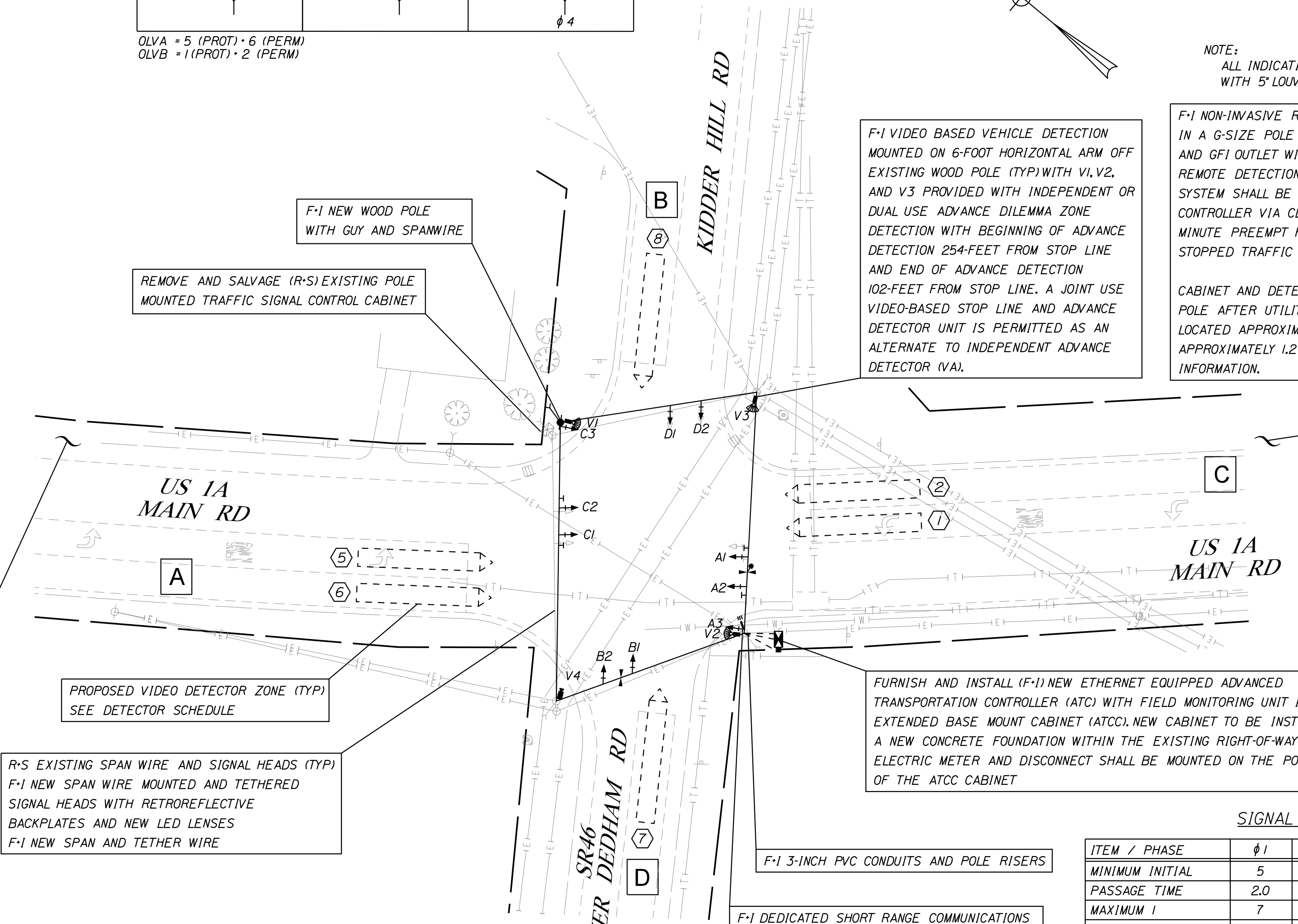
PROPOSED INDICATIONS



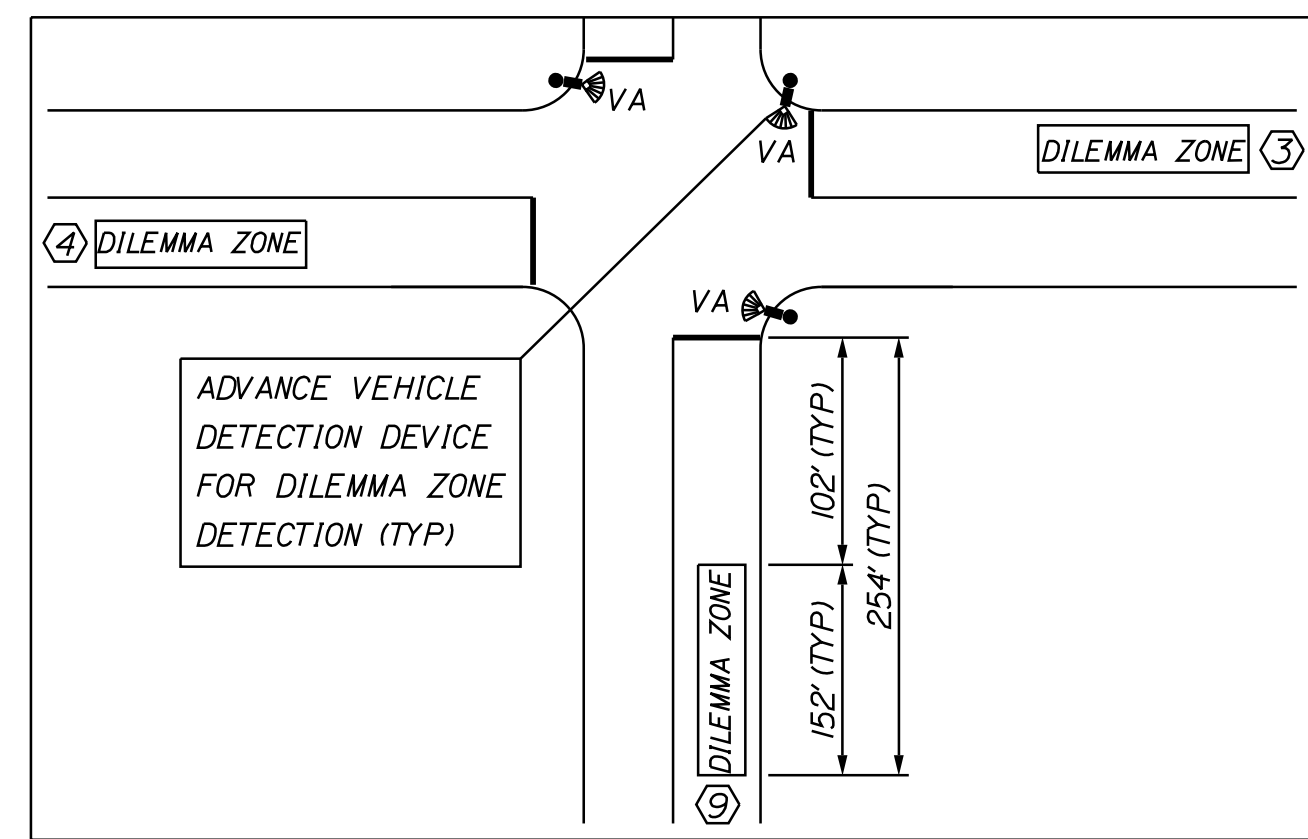
NOTE: ALL INDICATIONS SHALL BE 12" LIGHT EMITTING DIODES (LED'S) WITH 5" LOUVERED BACKPLATES AND 3" RETROREFLECTIVITY

F-1 NON-INVASIVE REMOTE DETECTION DEVICE WITH COMPONENTS HOUSED IN A G-SIZE POLE MOUNTED CABINET THAT INCLUDES A 15 AMP CIRCUIT AND GFI OUTLET WITH CONFIRMATION LIGHT OF TRIGGERED EVENT. SEE REMOTE DETECTION DEVICE SPECIAL PROVISION 718.14. OPERATION OF THE SYSTEM SHALL BE INITIALLY SET TO INITIATE A REQUEST TO THE ATC CONTROLLER VIA CLOUD BASED CELLULAR CONNECTION TO PROVIDE A 4 MINUTE PREEMPT FLUSH FOR PHASE 2 AND 6 AFTER 15 SECONDS OF STOPPED TRAFFIC WITHIN DETECTION ZONE.

CABINET AND DETECTOR ARE PROPOSED TO BE LOCATED ON THE LAST POLE AFTER UTILITY LINES HAVE CROSSED TO THE EAST SIDE OF US1A, LOCATED APPROXIMATELY 100 FEET SOUTH OF FITTS MOUNTAIN ROAD OR APPROXIMATELY 1.2 SOUTH OF STOP LINE. SEE SHEET 6 FOR ADDITIONAL INFORMATION.

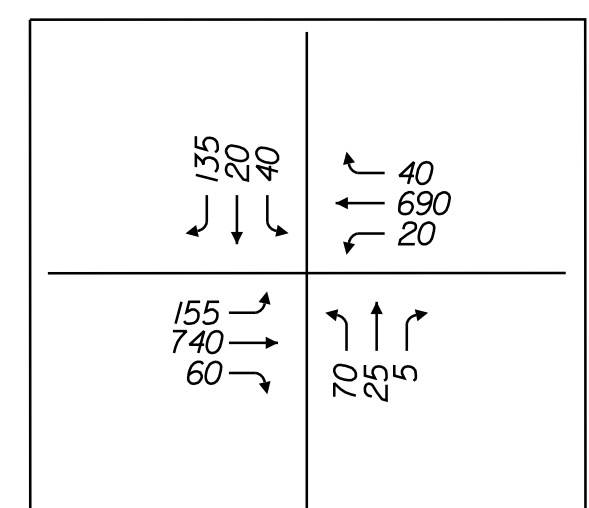


DILEMMA ZONE LAYOUT FOR APPROACH



SOURCE: TRAFFIC DETECTOR HANDBOOK: THIRD EDITION - VOLUME 1

SYSTEM DESIGN VOLUMES

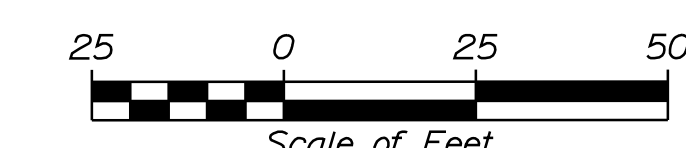


SIGNAL TIMING SCHEDULE

ITEM / PHASE	φ 1	φ 2	φ 4	φ 5	φ 6	φ 8
MINIMUM INITIAL	5	10	5	5	10	5
PASSAGE TIME	2.0	4.0	3.0	2.0	4.0	3.0
MAXIMUM 1	7	60	25	20	60	25
MAXIMUM 2	7	60	30	15	60	30
YELLOW	3.5	4.0	4.0	3.5	4.0	4.0
ALL RED	2.5	2.0	2.0	2.5	2.0	2.0
PED WALK	-	-	-	-	-	-
PED CLEAR	-	-	-	-	-	-
DYN MAX LIMIT	-	225	-	-	225	-
DYN MAX STEP	-	60	-	-	60	-
RECALL	0	S	0	0	S	0
DETECTOR	PR	PR	PR	PR	PR	PR
PREEMPT PRIORITY	3	4	6	4	3	5
FLASH	R	Y	R	R	Y	R
DUAL ENTRY	OFF	ON	ON	OFF	ON	ON

NOTES: S = SOFT RECALL
0 = RECALL OFF
PR = PRESENCE
Y = YELLOW
R = RED
D = DARK

PLAN



RIGHT-OF-WAY REFERENCE TOWN OF HOLDEN TAX MAP 23, SHEET 23, 12/12/2017

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT NO. 2390500
WIN
023905.00
TRAFFIC PLANS



PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN DETAILED	MLC	JAR	06/19
CHECKED-REVIEWED	CMB	CMB	06/19
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HOLDEN
US1A (MAIN RD) AT SR46 (LOWER DEDHAM RD) AND KIDDER HILL RD
TRAFFIC SIGNAL PLAN

SHEET NUMBER

4

OF 6

Date: 2/17/2020

Username: jrobert

Division: HIGHWAY

Filename: 004_Signal_1.dgn

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS (ITEM XXX.YYZ)	QUANTITY
FURNISH AND INSTALL (3-INCH) NON-METALIC CONDUIT (ITEM 626.22)	50 LF
FURNISH AND INSTALL CONTROLLER CABINET FOUNDATION (ITEM 626.35)	1
FURNISH AND INSTALL VIDEO BASED VEHICLE DETECTION SYSTEM WITH CONNECTION TO FIELD MONITORING UNIT FOR REMOTE MONITORING AND ADJUSTMENT (ITEM 643.83)	1
FURNISH AND INSTALL ADVANCE VEHICLE DETECTION (DEVICE) FOR DILEMMA ZONE DETECTION (SUBSIDIARY TO ITEM 643.83)	3
FURNISH AND INSTALL WOOD POLE WITH GUY AND SPAN WIRE (ITEM 643.97)	1
FURNISH AND INSTALL DSRC ROADSIDE UNIT/RSU (ITEM 654.35I)	1
FURNISH AND INSTALL DSRC ON BOARD UNIT/OBU (ITEM 654.352)	8

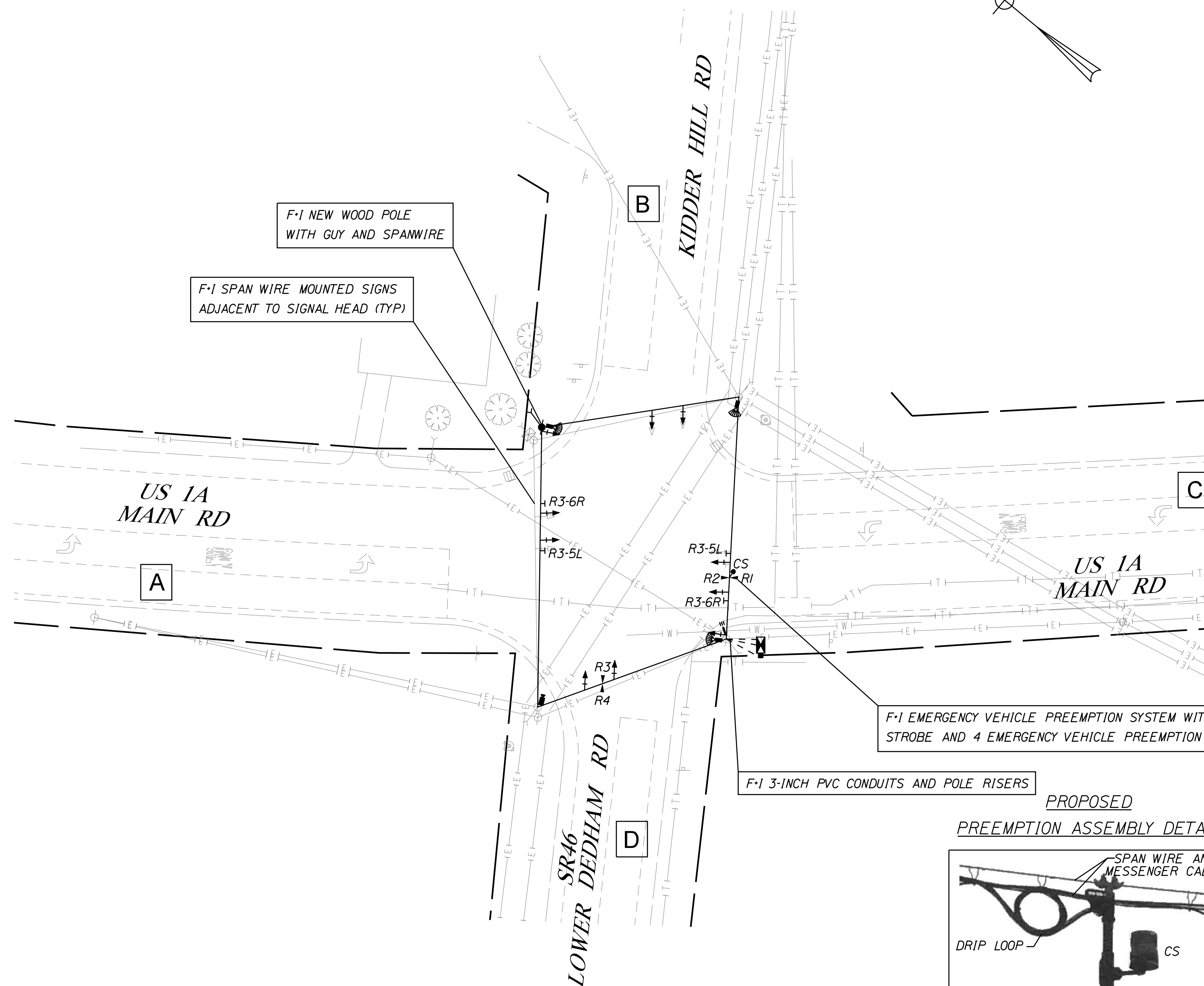
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EMERGENCY VEHICLE PREEMPTION OPERATION

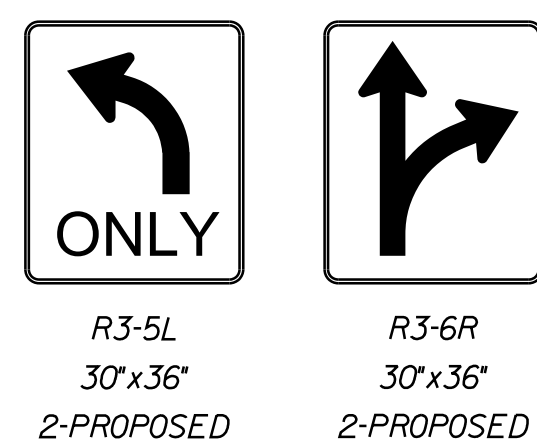
ID	PREEMPT ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
R1	3	3	φ1 & φ6
R2	4	4	φ2 & φ5
R3	5	5	φ8
R4	6	6	φ4

EMERGENCY VEHICLE PRE-EMPTION NOTES:

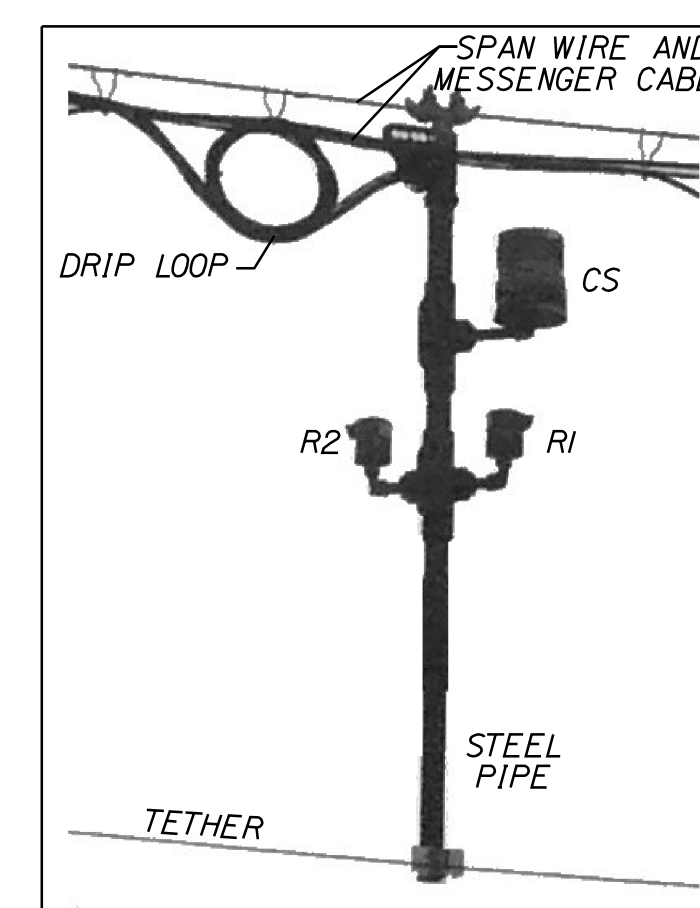
- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (PROVIDED BY OTHERS) AND/OR BY ON-BOARD UNITS (OBUs) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH PROPOSED THE ROAD SIDE UNIT (RSU) AND/OR RECEIVED BY OPTICAL DETECTORS LOCATED AT THE INTERSECTION.
- PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (3 = HIGHEST, 6 = LOWEST)
- IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (4.0 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
- MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- CONFIRMATION STROBES SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PREEMPTION GREEN IS ON.



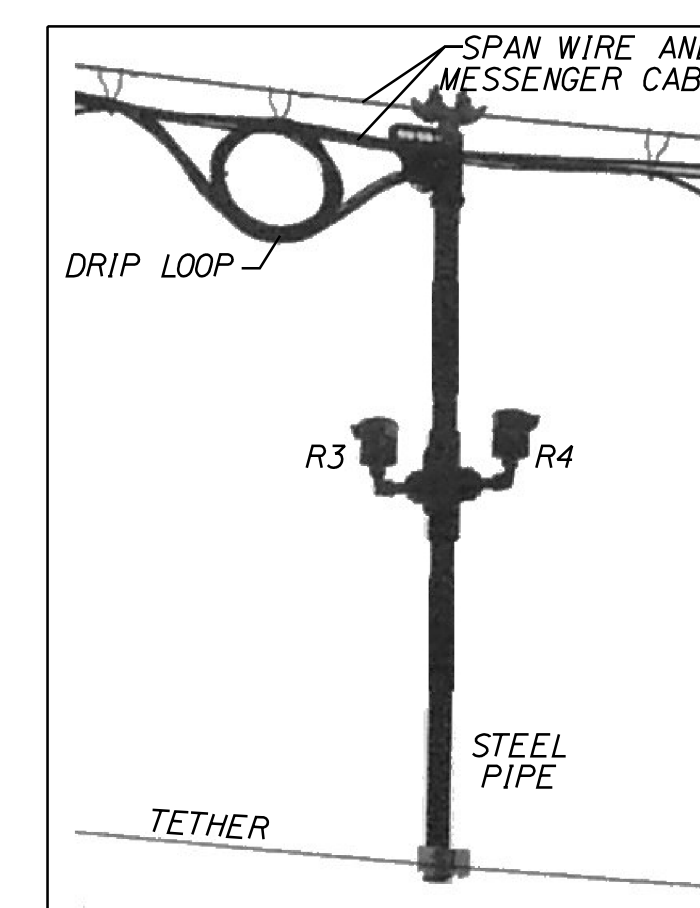
PROPOSED SIGNS



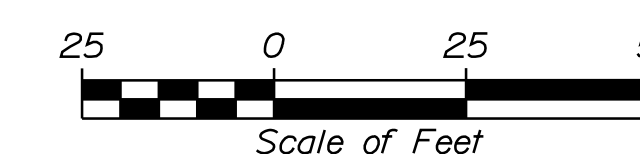
PROPOSED PREEMPTION ASSEMBLY DETAIL



PROPOSED PREEMPTION ASSEMBLY DETAIL



PLAN



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROJECT NO. 2390500
WIN
023905.00
TRAFFIC PLANS



PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN DETAILED	MJC	JAR	08/19
CHECKED-REVIEWED	CMB	CMB	08/19
DESIGN DETAILED			
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HOLDEN
US1A (MAIN RD) AT SR46 (LOWER DEDHAM RD) AND KIDDER HILL RD
TRAFFIC SIGNAL PLAN

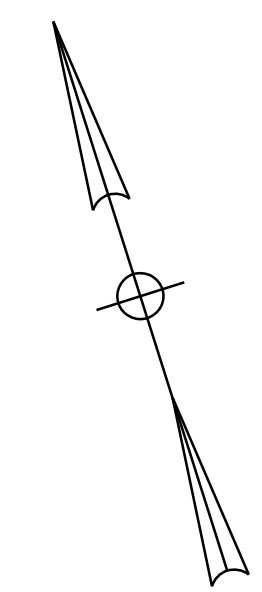
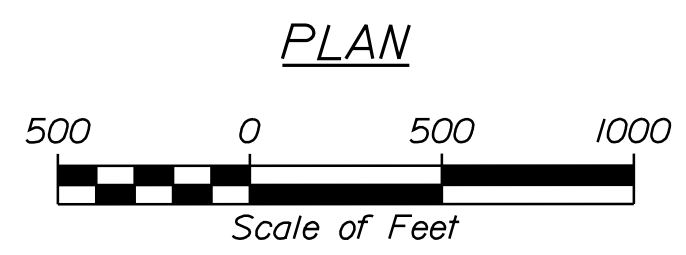
SHEET NUMBER
5
OF 6

F-1 NON-INVASIVE REMOTE DETECTION DEVICE WITH COMPONENTS HOUSED IN A G-SIZE POLE MOUNTED CABINET THAT INCLUDES A 15 AMP CIRCUIT AND GFI OUTLET WITH CONFIRMATION LIGHT OF TRIGGERED EVENT. SEE REMOTE DETECTION DEVICE SPECIAL PROVISION 718.14.

F-1 NON-INVASIVE REMOTE DETECTION DEVICE WITH COMPONENTS HOUSED IN A G-SIZE POLE MOUNTED CABINET THAT INCLUDES A 15 AMP CIRCUIT AND GFI OUTLET WITH CONFIRMATION LIGHT OF TRIGGERED EVENT. SEE REMOTE DETECTION DEVICE SPECIAL PROVISION 718.14.

FURNISH AND INSTALL (F-1) DEDICATED SHORT RANGE COMMUNICATIONS (DSRC) ROAD SIDE UNIT (RSU) ON EXISTING MAINEDOT WOOD POLE

- NOTES:**
- POLES LABELED ON PLAN WERE IDENTIFIED AS POTENTIAL SUPPLEMENTAL DSRC ACCESS POINTS (FOR INFORMATIONAL PURPOSES ONLY) THROUGH FIELD INSPECTION OF AVAILABLE LINES OF SIGHT TO ACHIEVE UP TO DESIRED 2,600-FOOT RANGE IF RSU COMMUNICATION TO OBU IS TO BE SOLELY BY FCC DEDICATED 75 MHz OF BANDWIDTH AT 5.9 GHz. NOTE: AS PROPOSED, RSU TO BE HYBRID WITH CELL BASED RSU AND OBU CHIPS TO EXTEND RANGE FROM INTERSECTION BASED RSU. SEE SECTION 654 SPECIAL PROVISIONS.
 - DSRC SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURE RECOMMENDATIONS.



PROJ. MANAGER	S. LANDRY	BY	DATE
DESIGN-DETAILED	MLC	JAR	05/19
CHECKED-REVIEWED	CMB	CMB	05/19
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HOLDEN
US1A (MAIN RD) AT SR46 (LOWER
DEDHAM RD) AND KIDDER HILL RD
DSRC & QUEUE DETECTION
LAYOUT PLAN

