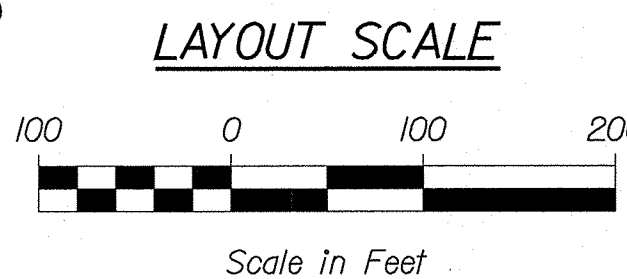
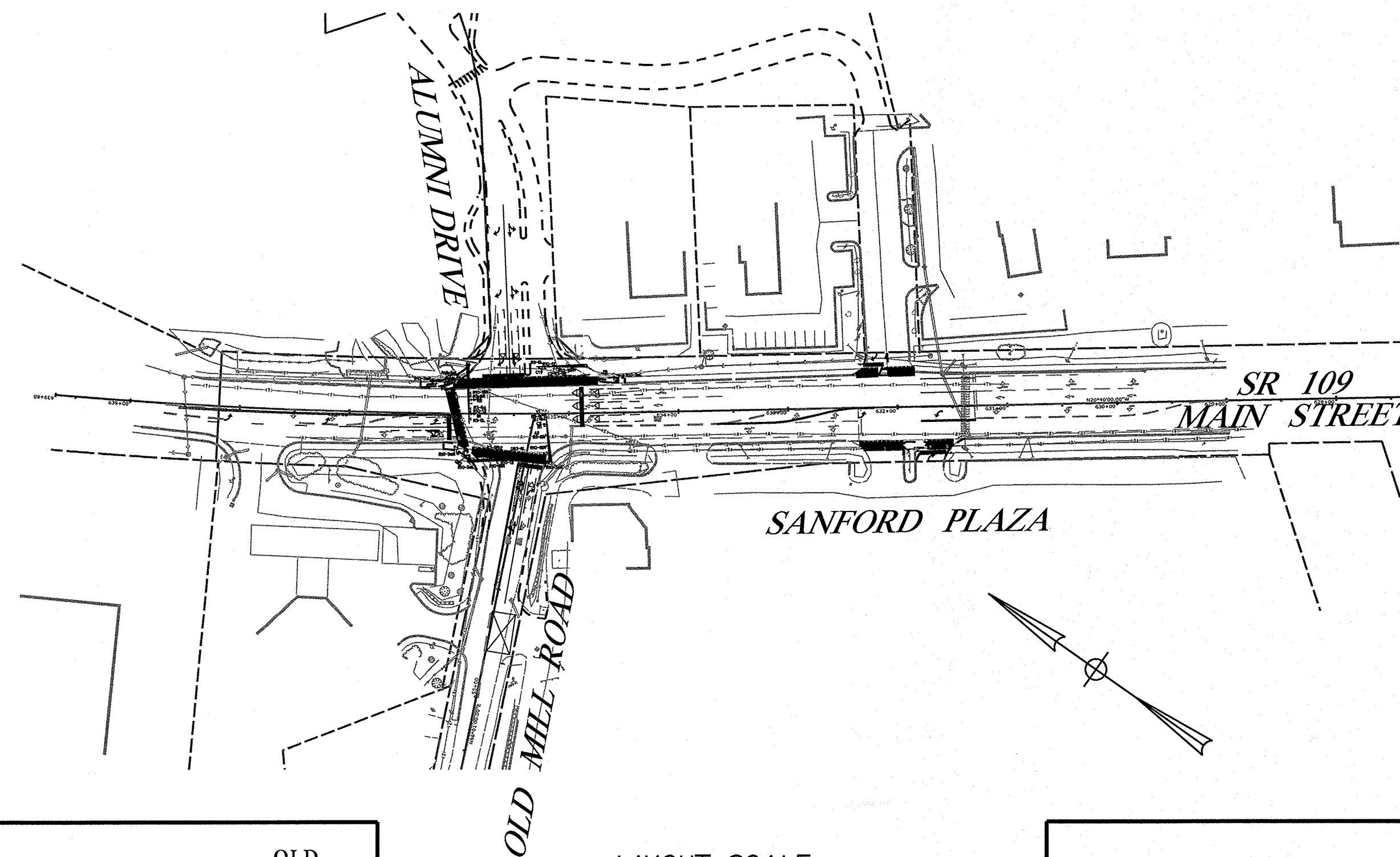


STATE OF MAINE DEPARTMENT OF TRANSPORTATION



SANFORD YORK COUNTY

SIGNALIZATION OF OLD MILL ROAD
23346.00
PROJECT LENGTH : 0.15 MILES



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 Conifer	Existing San. Sewer Manhole
Trees Deciduous	Guardrail-Existing
Tree Line	Guardrail-Proposed
Clearing Limit Line	Guardrail-Cable, Other
Boring	
Controller with Cabinet	Existing
Vehicular Signal Head	Proposed
Video Detection Camera	
Emergency Vehicle Preemption Receiver	
Emergency Preemption Confirmation Strobe	
Junction Box	
Mast Arm with Steel Pole	
Pedestal Post and Foundation	
Mast Arm, Post, or Span Wire Mounted Sign	
Countdown Pedestrian Signal Head with APS	
Push Button and Informational Sign	

INDEX OF SHEETS	
Description	Sheet No.
Title Sheet	1
General Notes	2
Traffic Signal Plans	3-6
Boring Location Plan with Foundation Design Requirements	7
Boring Logs	8-9
Revised Mast Arm Mountings	10

TRAFFIC DATA	SR 109 (MAIN ST) S/O BERWICK RD	OLD MILL ROAD
Current (2014) AADT	17,150	4,210
Future (2024) AADT	18,950	4,600
DHV - % of AADT	9%	11%
Design Hour Volume	1,630	500
% Heavy Trucks (AADT)	2%	1%
% Heavy Trucks (DHV)	1%	1%
Directional Distribution (DHV)	54%	50%
18 kip Equivalent P 2.0	n/a	n/a
18 kip Equivalent P 2.5	n/a	n/a
Design Speed (mph)	35	25
Functional Class:	Other Principal Arterial	Minor Collector

PROJECT LOCATION:	In the City of Sanford at Route 109 (Main Street) and Old Mill Road / Alumni Drive, and Route 109 (Main Street) and Sanford Plaza / KFC / Taco Bell and Burger King Drives.
PROGRAM AREA:	Multimodal
OUTLINE OF WORK:	Highway Safety and Spot Improvements Traffic Signal Relocation and Other Incidental Work

WIN23346.00

STATE OF MAINE DEPARTMENT OF TRANSPORTATION APPROVED: _____ COMMISSIONER: _____ DATE: 5/2/18 CHIEF ENGINEER: _____
PROJECT INFORMATION PROGRAM: MULTIMODAL PROJECT MANAGER: B. KEEZER DESIGNER: M. GRAHAM CONSULTANT: V/HB PROJECT RESIDENT: _____ CONTRACTOR: _____ PROJECT COMPLETION DATE: _____
SANFORD ROUTE 109 AND OLD MILL ROAD TITLE SHEET
SHEET NUMBER 1 OF 10

Date: 4/4/2018

Username: J. ROBERT

Division:

Filename: ...cod\vis\planset\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 RETROREFLECTIVITY.
2. ALL NEW SIGNAL HEADS SHALL BE FIX MOUNTED TO MAST ARMS WITH ASTROBRACKETS, OR MOUNTED TO MAST ARM POLE UPRIGHTS WITH BRACKET ARMS AS INDICATED ON PLANS.
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. 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, WIRING DIAGRAMS, BOX PRINTS, AND EQUIPMENT MANUALS SHALL BE LEFT IN EACH OF THE CONTROLLER CABINETS.
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.
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, IT 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 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 CITY OF SANFORD 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 CONTROLLERS AND VARIOUS OTHER EQUIPMENT ITEMS SHOWN ON THE PLANS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. THE TRAFFIC SIGNAL CONTROLLERS SUPPLIED UNDER THIS CONTRACT SHALL BE ETHERNET EQUIPPED NEMA TS-2, TYPE I WITH THE CAPABILITY OF SUPPORTING NTCIP PROTOCOLS.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING THE PROJECT WITH WORKING AND FULLY CONFIGURED CONTROLLERS FOR EACH INTERSECTION. IN ADDITION, THE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR EXPAND THE EXISTING LIGHT-BASED EMERGENCY VEHICLE PREEMPTION SYSTEM COMPATIBLE WITH THE PREEMPTION EMITTERS OWNED BY THE CITY OF SANFORD FIRE DEPARTMENT.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR FURNISHING AND INSTALLING ALL OTHER EQUIPMENT TO INCLUDE VEHICLE TRAFFIC SIGNALS, PEDESTRIAN SIGNALS, APS PEDESTRIAN BUTTONS AND SIGNS, EMERGENCY VEHICLE PREEMPTION PHASE SELECTORS AND RECEIVERS, EMERGENCY VEHICLE PREEMPTION CONFIRMATION LIGHTS, 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.

16. FOUNDATIONS

FOUNDATIONS FOR CONTROL CABINETS, PROPOSED MAST ARMS, OR PROPOSED TRAFFIC SIGNAL POSTS ARE 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 CABINETS, MAST ARMS, AND TRAFFIC SIGNAL POSTS 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.

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.
17. VIDEO DETECTION INSTALLATION

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

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.
18. SALVAGE RIGHTS; MAINEDOT SHALL HAVE FIRST RIGHTS TO ALL EQUIPMENT REMOVED OR REPLACED BY THE PROJECT (CONTACT MIKE DELOIS AT 207-624-3625). THE CITY OF SANFORD 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 CITY OF SANFORD AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL CAREFULLY REMOVE AND STORE ALL EQUIPMENT CLAIMED BY EITHER MAINEDOT OR THE CITY OF SANFORD 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 CITY OF SANFORD 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 MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION (MDEP) HAS REPORTED SPILLS AND RELEASES INVOLVING PETROLEUM PRODUCTS ADJACENT TO THE PROJECT. IN PARTICULAR, ON THE PROPERTIES LOCATED AT THE SOUTHWEST CORNER (T.D. BANK) AND NORTHWEST CORNERS (IRVING MAINWAY) OF THE INTERSECTION OF OLD MILL ROAD AND MAIN STREET. BASED ON THE SCOPE OF WORK AND SUBSURFACE WORK BY OTHERS, AVAILABLE DATA SUGGESTS THAT THIS CONTAMINATION MAY ONLY BE ADJACENT TO AND DEEPER IN THE IMMEDIATE AREAS OF ANY EXCAVATION PROPOSED BY THE CITY OF SANFORD AT THESE LOCATIONS. HOWEVER, IN LIGHT OF THESE 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 ADDITIONALLY EVIDENCE OF CONTAMINATION. IF THE CONTRACTOR ENCOUNTERS EVIDENCE OF SOIL OR GROUNDWATER CONTAMINATION, THE CONTRACTOR SHALL SECURE THE EXCAVATION, STOP WORK IN THE CONTAMINATED AREA, AND IMMEDIATELY NOTIFY THE RESIDENT. THE RESIDENT SHALL CONTACT THE SANFORD CITY ENGINEER AND THE MDEP AT 800-482-0777. WORK MAY ONLY CONTINUE WITH AUTHORIZATION FROM THE RESIDENT.
22. THE CONTRACTOR IS DIRECTED TO PROJECT SPECIAL PROVISION 718 FOR ADDITIONAL INFORMATION RELATED TO THE FOLLOWING:
 - 718.13 VIDEO BASED 360 DEGREE DETECTION DEVICE
 - 718.14 EMERGENCY VEHICLE PREEMPTION SYSTEM
 - 718.15 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.
23. THE INTERSECTION BASE PLANS SHOWN ON SHEETS 3-5 ARE BASED ON INTEGRATION OF SURVEY AND RIGHT-OF-WAY PLANS DATED NOVEMBER 2017 AND JUNE 1977, RESPECTIVELY THAT WERE PROVIDED BY MAINEDOT. SUPPLEMENTAL INFORMATION WAS OBTAINED BY VHB FIELD REVIEW AND INVENTORY CONDUCTED IN SEPTEMBER 2014, JANUARY 2015, AUGUST 2017, AND NOVEMBER 2017.
24. MAST ARM POLES


MAST ARM POLES AND ANCHOR BOLTS FOR THIS PROJECT WERE PROCURED UNDER MAINEDOT WIN 23346J0 AND ARE TO BE OBTAINED FROM SANFORD PUBLIC WORKS FACILITY LOCATED AT 156 SCHOOL STREET (CONTACT MATTHEW HILL 207-324-9135). THE CONTRACTOR WILL BE RESPONSIBLE FOR LOADING, DELIVERING, AND INSTALLING MAST ARM POLES FROM THE STORAGE AREA TO THE ROUTE 109 (MAIN STREET) AND OLD MILL ROAD INTERSECTION. CARE SHOULD BE TAKEN TO NOT DAMAGE/SCRATCH THE BLACK PAINTED POLES DURING TRANSPORT AND INSTALLATION. PAYMENT FOR INSTALLATION SHALL BE SUBSIDIARY TO ITEM 643.71.

DAILY AND WEEKLY COORDINATION SCHEDULE

	MON.-FRI.	SATURDAY	SUNDAY
NTCIP PLAN 254 FREE OPERATIONS MAX 1	0000 - 0645 0830 - 1100 1800 - 2400	0000 - 1000 1800 - 2400	0000 - 1000 1800 - 2400
PLAN 1 100 SECS (MIDDAY/SAT/SUN) MAX 1	1100 - 1445	1000 - 1800	1000 - 1800
PLAN 2 110 SECS (AM) MAX 2	0645 - 0830	-	-
PLAN 3 120 SECS (PM/SAT) MAX 2	1445 - 1800	-	-

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

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

STATE OF MAINE DEPARTMENT OF TRANSPORTATION LPA PROJECT NO. 23346.00 WIN 23346.00		DATE: 02-2018 BY: J. ROBERT B. KEEZER: M. GRAHAM CHECKED-REVIEWED: C. BOBBAY DESIGNS DETAILED: [] REVISIONS 1: [] REVISIONS 2: [] REVISIONS 3: [] REVISIONS 4: [] FIELD CHANGES: []	SANFORD GENERAL NOTES	SHEET NUMBER 2 OF 10
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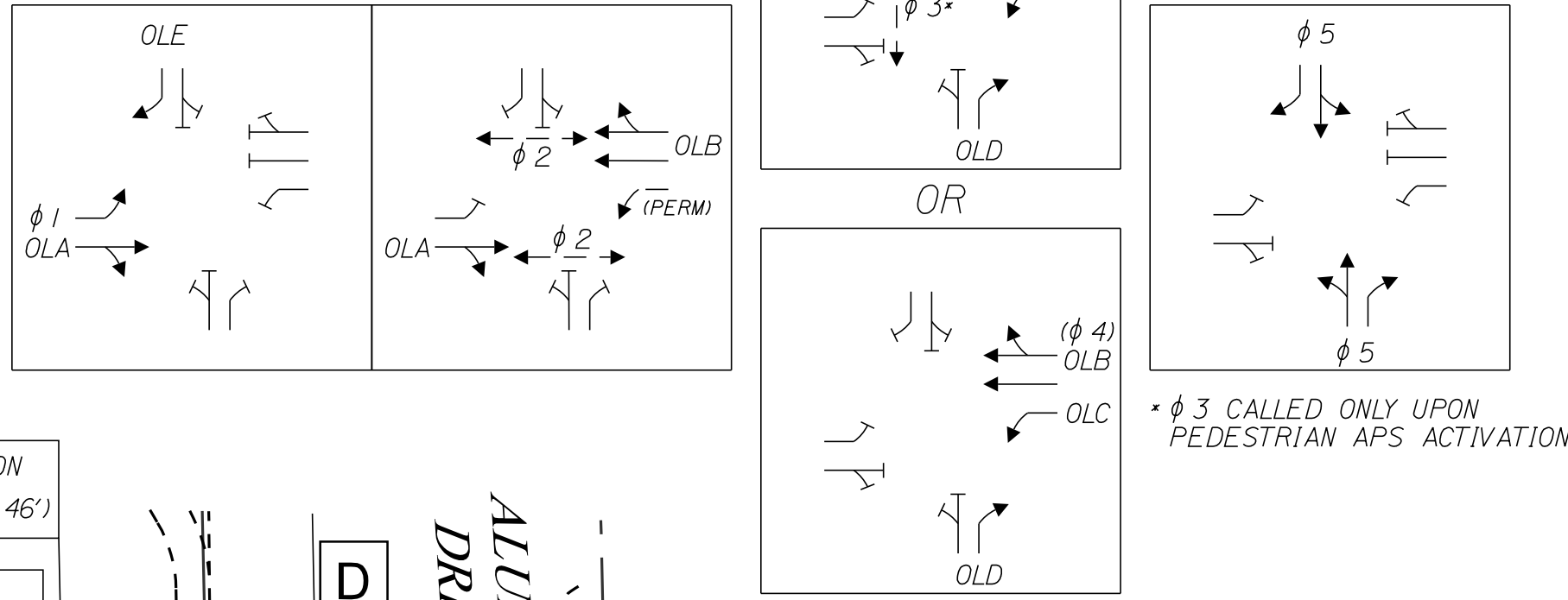
LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71	QUANTITY
FURNISH AND INSTALL NEW P-TYPE BASE MOUNTED NEMA TS2, TYPE 1 MAINEDOT SPEC CABINET PAINTED GLOSS BLACK COMPLETE WITH GENERATOR TRANSFER SWITCH AND ALL ANCILLARY EQUIPMENT AND WIRING.	1
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	1
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH BLACK WITH BLACK DOOR TRAFFIC SIGNAL HEADS WITH BLACK TUNNEL VISORS AND RETROREFLECTIVE BACKPLATES MOUNTED ON TOP OF PED POLE	1
FURNISH AND INSTALL ONE-WAY, 3-SECTION, 12-INCH BLACK WITH BLACK DOOR TRAFFIC SIGNAL HEADS WITH BLACK TUNNEL VISORS AND RETROREFLECTIVE BACKPLATES MOUNTED ON MAST ARMS	6
FURNISH AND INSTALL ONE-WAY, 5-SECTION, 12-INCH BLACK WITH BLACK DOOR TRAFFIC SIGNAL HEADS WITH BLACK TUNNEL VISORS AND RETROREFLECTIVE BACKPLATES MOUNTED ON MAST ARMS	3
FURNISH AND INSTALL ONE-WAY, 16 X 18-INCH LED SIDE OF POLE MOUNTED BLACK COUNTDOWN PEDESTRIAN SIGNAL HEAD	1
FURNISH AND INSTALL ONE-WAY, 16 X 18-INCH LED TOP OF POST MOUNTED BLACK COUNTDOWN PEDESTRIAN SIGNAL HEAD	5
FURNISH AND INSTALL ADA COMPLIANT ACCESSIBLE PEDESTRIAN SIGNAL (APS) BUTTON WITH 9'X15' RIO-3e INFORMATIONAL SIGN	6
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH SYSTEM CHASSIS	1
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	2
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	1
INSTALL 45-FOOT PAINTED GLOSS BLACK MAST ARM *	3
INSTALL 55-FOOT PAINTED GLOSS BLACK MAST ARM *	1
FURNISH AND INSTALL MAST ARM MOUNTED REGULATORY SIGNS	16
FURNISH AND INSTALL POLE RISER	1
FURNISH AND INSTALL NEW GPS UNIT	1
IMPLEMENT SYSTEM BASED AND LOCAL SIGNAL TIMINGS	-

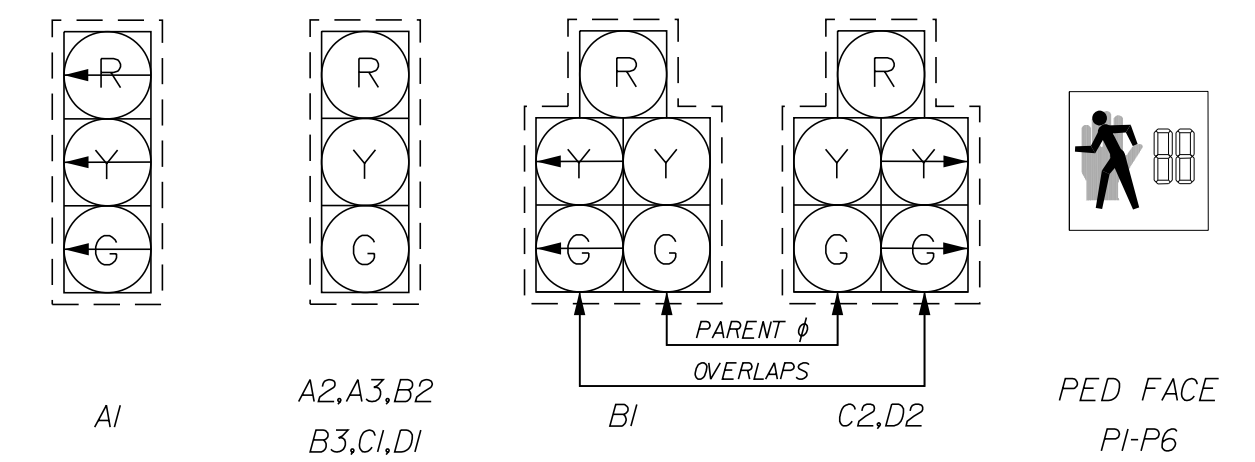
** SEE SHEET 2, NOTE 24
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

PROPOSED SEQUENTIAL PHASING SEQUENCE

OLA = $\phi 1 \cdot \phi 2$, OLB = $\phi 2 \cdot \phi 4$, OLC = $\phi 3 \cdot \phi 4$,
OLD = $\phi 3 \cdot \phi 4$, OLE = $\phi 1$
 $\phi 3$ OMTS $\phi 4$



PROPOSED INDICATIONS



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

SIGNAL TIMING SCHEDULE

RING	1	2	3	4	5
OVERLAPS	A E	A B	C D	B C D	(NONE)
OMITS	(NONE)	(NONE)	4	(NONE)	(NONE)

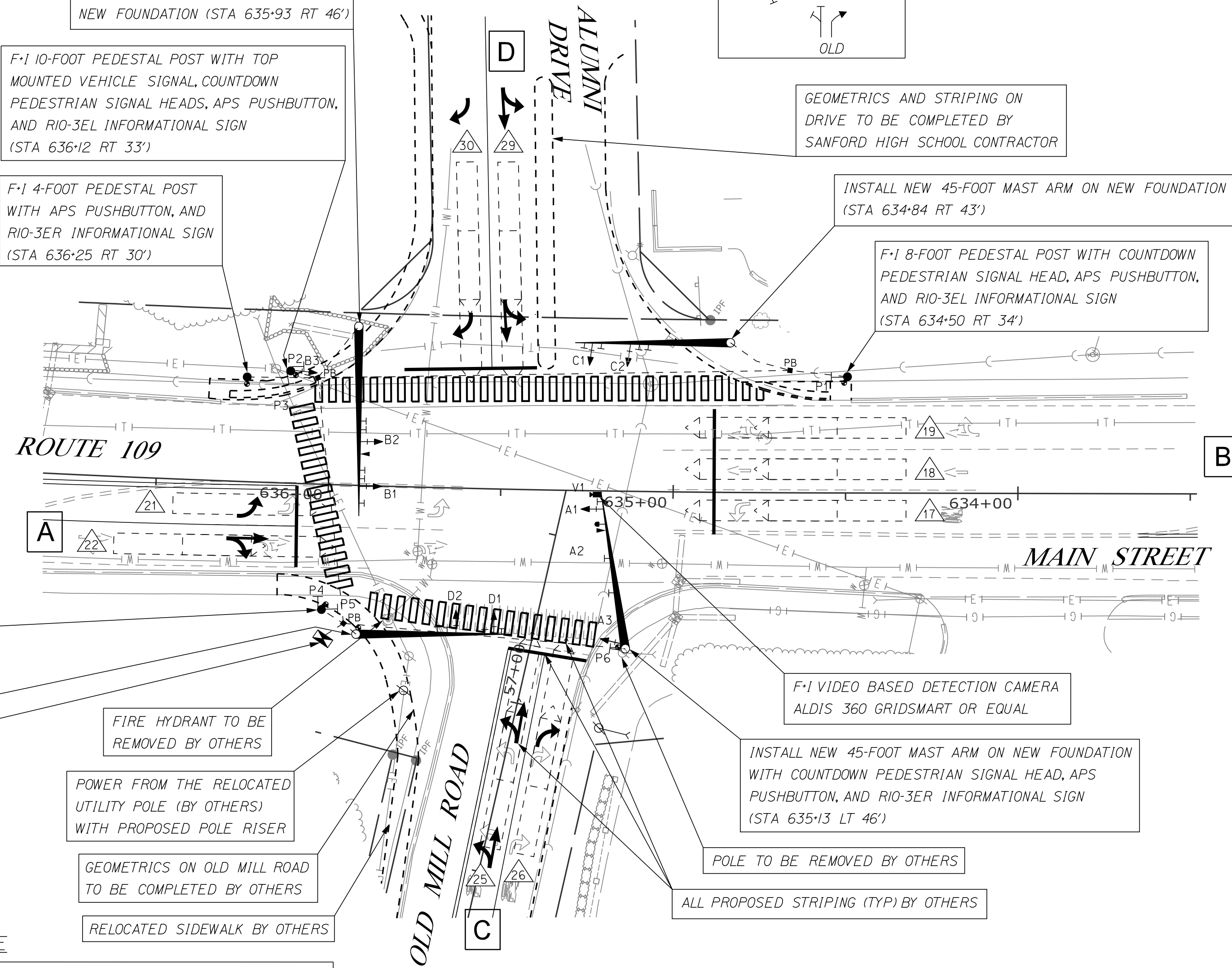
ITEM / PHASE	$\phi 1$	$\phi 2$	$\phi 3$	$\phi 4$	$\phi 5$
MOVEMENT	EB LT OL	EB WB	EX PED OL	WB LT OL	NB SB
MINIMUM INITIAL	5	10	19	4	7
PASSAGE TIME	2.0	5.0	0.0	2.0	3.0
MAXIMUM 1	15	30	19	20	20
MAXIMUM 2	20	30	19	20	25
YELLOW	3.5	3.5	3.5	3.5	3.5
ALL RED	2.5	2.5	2.5	2.5	2.5
PED WALK		4	4		
PED CLEAR		24	15		
RECALL	OFF	MIN	OFF	OFF	OFF
DETECTOR	PR	PR	APS	PR	PR
PREEMPT PRIORITY	3			4	
FLASH	R	Y	D		R
DUAL ENTRY	OFF	OFF	OFF	OFF	OFF

NOTES: S = SOFT RECALL Y = YELLOW
O = RECALL OFF R = RED
PR = PRESENCE D = DARK
MAX2 = UNDER COORDINATED PATTERNS 2 AND 3 ONLY
APS = ACCESSIBLE PEDESTRIAN SIGNAL
OLA = 1-2 PREEMPT ASSIGNMENT 3 = $\phi 3$ OMTS $\phi 4$
OLB = 2-4 PRIORITY 1 = $\phi 1$ AND OLA
OLC = 3-4 PREEMPT ASSIGNMENT 4 =
OLD = 3-4 PRIORITY 2 = $\phi 4$, OLB AND OLC
OLE = 1

COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

CYCLE LENGTH	ALL ENTRIES IN SECONDS				
	PLAN 1	PLAN 2	PLAN 3	PLAN 12	PLAN 13
OFFSET	0	0	0	0	0
COORDINATED $\phi 1$	$\phi 2$	$\phi 2$	$\phi 2$	$\phi 2$	$\phi 2$
SPLIT TIME $\phi 1$	12	24	16	19	24
SPLIT TIME $\phi 2$	36	36	36	36	36
SPLIT TIME $\phi 3$	26	26	26	26	26
SPLIT TIME $\phi 4$	10	10	10	10	10
SPLIT TIME $\phi 5$	16	14	32	19	24
SPLIT TIME $\phi 6$	0	0	0	0	0
SPLIT TIME $\phi 7$	0	0	0	0	0
SPLIT TIME $\phi 8$	0	0	0	0	0

COORDINATION NOTES:
1. OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE GREEN (SEE TABLE ABOVE).
2. COORDINATION TO OPERATE BY TIME-OF-DAY (SEE DAILY AND WEEKLY COORDINATION SCHEDULE, SHEET 2)

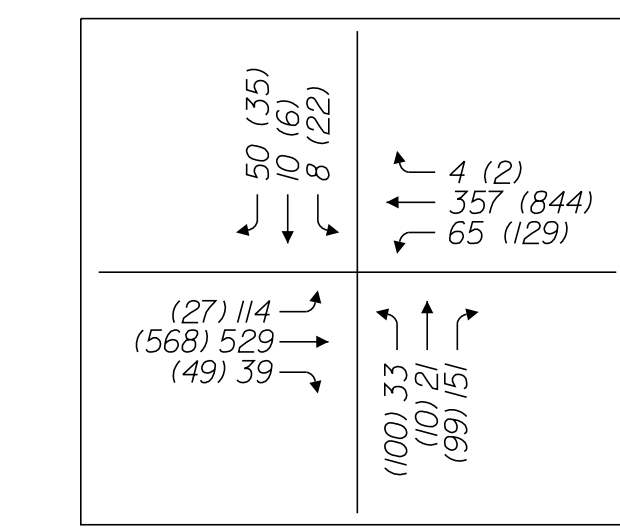


DETECTOR SCHEDULE

PLAN ID	DETECTOR				DETECTOR CARD IN VEHICLE DETECTION RACK			
	STREET	DIRECTION	LANE	ϕ	TYPE	SLOT NO	DETECTOR NO	CHANNEL
17	MAIN ST	NORTHBOUND	LEFT	$\phi 4$	FULL VIDEO			
18	MAIN ST	NORTHBOUND	THROUGH	$\phi 2$	FULL VIDEO			
19	MAIN ST	NORTHBOUND	THRU-RIGHT	$\phi 2$	FULL VIDEO			
(20)	SPARE							
21	MAIN ST	SOUTHBOUND	LEFT	$\phi 1$	FULL VIDEO			
22	MAIN ST	SOUTHBOUND	THRU-RIGHT	$\phi 2$	FULL VIDEO			
(23)	SPARE							
(24)	SPARE							
25	OLD MILL RD	EASTBOUND	LEFT-THRU	$\phi 5$	FULL VIDEO			
26	OLD MILL RD	EASTBOUND	RIGHT	$\phi 5$	FULL VIDEO			
(27)	SPARE							
(28)	SPARE							
29	DRIVE	WESTBOUND	LEFT-THRU	$\phi 5$	FULL VIDEO			
30	DRIVE	WESTBOUND	RIGHT	$\phi 5$	FULL VIDEO			
(31)	SPARE							
(32)	SPARE							

DETECTOR NOTES:
DETECTORS 1-16 SHALL BE CONNECTED TO DETECTOR PANEL TEST INPUT BUTTONS
CONTRACTOR SHALL COMPLETE THE DETECTOR SCHEDULE FOR RECORD OF DETECTION PROGRAMMING INTO THE TRAFFIC SIGNAL CONTROLLER.

2018 SYSTEM DESIGN VOLUMES AM (PM)



VOLUMES FROM SR 109 AND OLD MILL ROAD SIGNALIZATION FEASIBILITY STUDY

PLAN



Date: 4/13/2018

Username: J. ROBERT

Division:

Filename: ... \s\plan\set\003_Signal_1.dgn



PROJ. MANAGER	B. KEIZER	DATE
DESIGN-DETAILED	J. ROBERT	02-2018
CHECKED-REVIEWED	J. ROBERT	03-2018
DESIGN-DETAILED		
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY	EQUIPMENT AND WORK (ITEM XXX.YYZ)	QUANTITY
FURNISH AND INSTALL 14-INCH PRECAST JUNCTION BOX (ITEM 626.11)	3	FURNISH AND INSTALL (4-FOOT) PAINTED GLOSS BLACK PEDESTAL POLE (ITEM 643.92)	1
FURNISH AND INSTALL METALLIC CONDUIT (ITEM 626.21)	10 LF	FURNISH AND INSTALL (8-FOOT) PAINTED GLOSS BLACK PEDESTAL POLE (ITEM 643.92)	2
FURNISH AND INSTALL (3-INCH) NON-METALLIC CONDUIT (ITEM 626.22)	410 LF	FURNISH AND INSTALL (10-FOOT) PAINTED GLOSS BLACK PEDESTAL POLE (ITEM 643.92)	1
FURNISH AND INSTALL 18-INCH FOUNDATION (ITEM 626.31)	4	REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGN, TYPE 1 (ITEM 645.271)	19 SF
FURNISH AND INSTALL 30-INCH DIAMETER, GREATER THAN 8-FEET LONG AND ALL 36-INCH AND 42-INCH DIAMETER FOUNDATIONS (ITEM 626.332)	12 CY		
FURNISH AND INSTALL CONTROLLER CABINET FOUNDATION (ITEM 626.35)	1		
FURNISH AND INSTALL VIDEO DETECTION SYSTEM CONSISTING OF 360 DEGREE ALDI'S GRIDSMART CAMERA, GRIDSMART CONTROL UNIT WITH VIDEO PROCESSOR CARD AND ANCILLARY EQUIPMENT INCLUDING DATA LOGGING SOFTWARE MODULE (ITEM 643.83)	1		

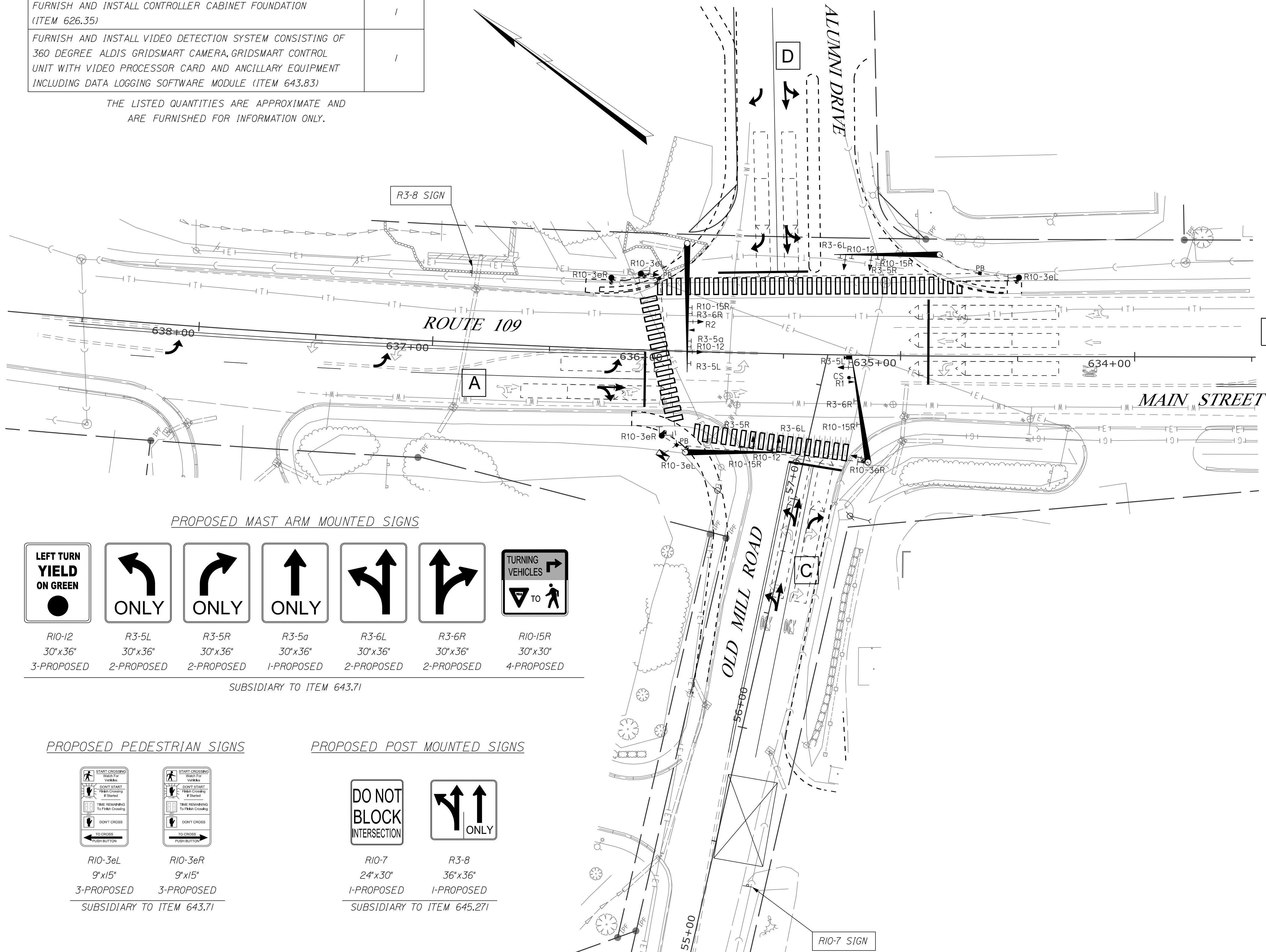
THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY.

EMERGENCY VEHICLE PRE-EMPTION OPERATION

ID	PREEMPT ASSIGNMENT	RECEIVER PRIORITY	ACTIVE PHASE
	1		NOT USED / RESERVED
	2		NOT USED / RESERVED
R1	3	3	φ 1 & OLA (EB)
R2	4	4	φ 4 & OLB, OLC (WB)

EMERGENCY VEHICLE PRE-EMPTION NOTES:

- EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (PROVIDED BY OTHERS) MOUNTED IN EMERGENCY VEHICLES AND 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, 4 = LOWEST).
- IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (3.5 SECONDS YELLOW AND 2.5 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE, THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
- 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 MAST ARM MOUNTED SIGNS

R10-12 30"x36" 3-PROPOSED	R3-5L 30"x36" 2-PROPOSED	R3-5R 30"x36" 2-PROPOSED	R3-5a 30"x36" 1-PROPOSED	R3-6L 30"x36" 2-PROPOSED	R3-6R 30"x36" 2-PROPOSED	R10-15R 30"x30" 4-PROPOSED

SUBSIDIARY TO ITEM 643.71

PROPOSED PEDESTRIAN SIGNS

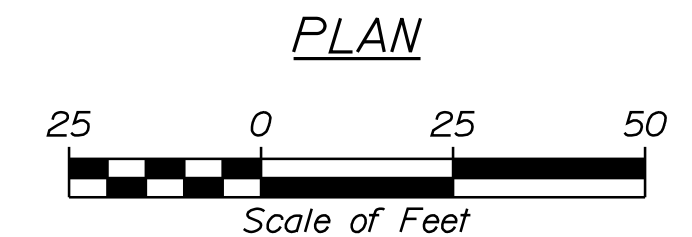
R10-3eL 9'x15" 3-PROPOSED	R10-3eR 9'x15" 3-PROPOSED

SUBSIDIARY TO ITEM 643.71

PROPOSED POST MOUNTED SIGNS

R10-7 24"x30" 1-PROPOSED	R3-8 36"x36" 1-PROPOSED

SUBSIDIARY TO ITEM 645.271



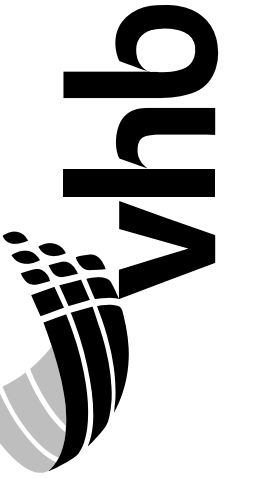
Date: 4/13/2018

Username: J. ROBERT

Division:

Filename: ... \s\planset\004_Signal_2.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
LPA PROJECT NO. 23346.00
WIN
23346.00



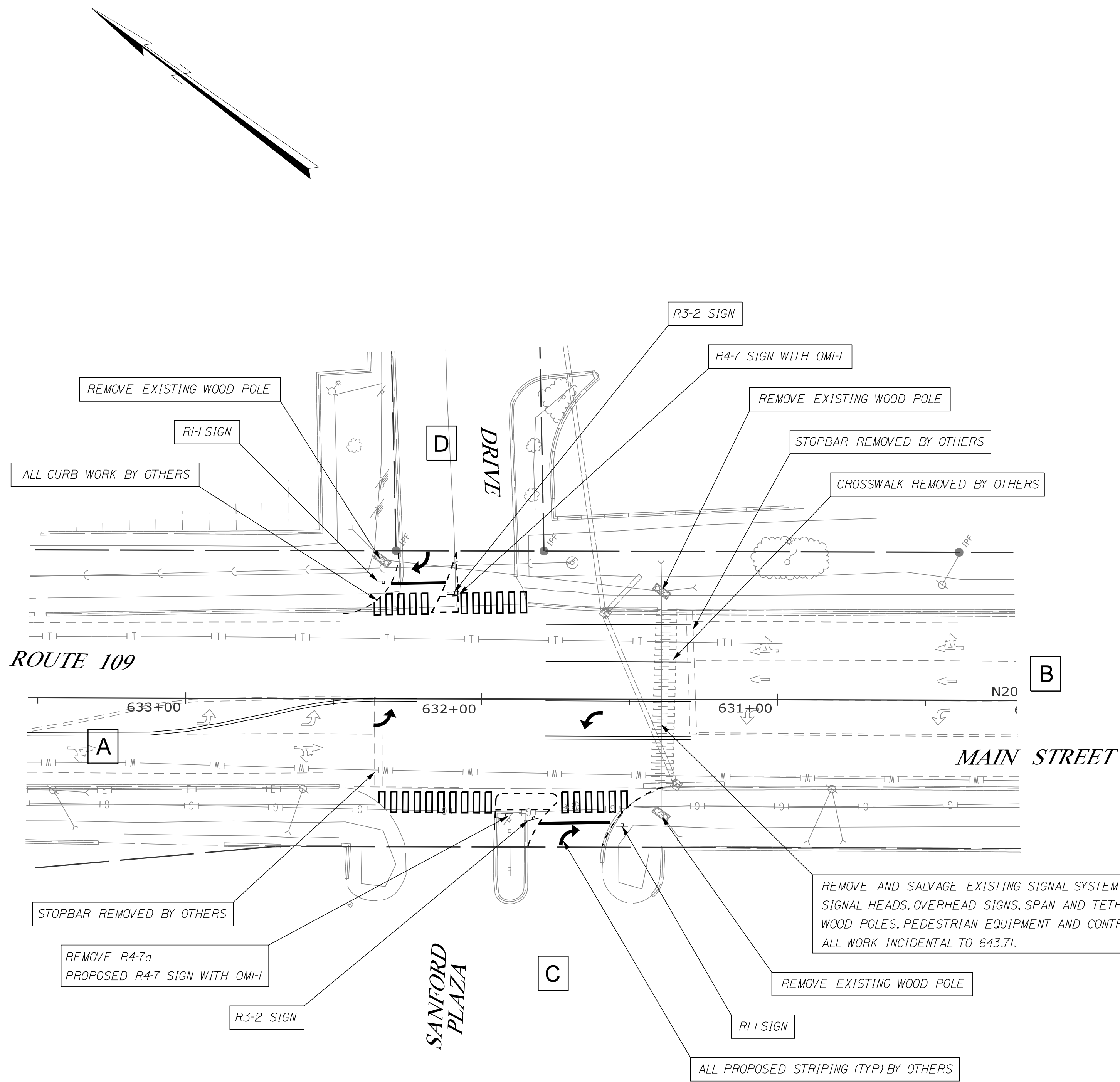
PROJ. MANAGER	B. KEIZER	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	02-2018
CHECKED-REVIEWED	C. BOBBY		03-2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD
ROUTE 109 (MAIN STREET) AT OLD MILL ROAD
TRAFFIC SIGNAL PLAN

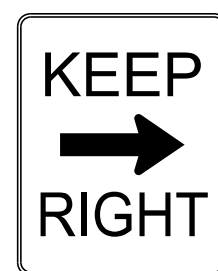
SHEET NUMBER
4
OF 10

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK ITEMS 643.71(SUBSIDIARY TO OLD MILL RD)	QUANTITY
REMOVE AND SALVAGE EXISTING SIGNAL SYSTEM AT ROUTE 109 (MAIN STREET) AND SANFORD PLAZA	1
REGULATORY, WARNING, CONFIRMATION, AND ROUTE ASSEMBLY SIGN, TYPE 1 (ITEM 645.271)	41 SF



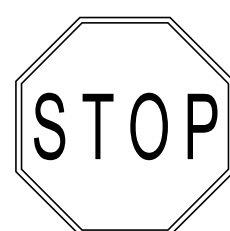
POST MOUNTED SIGNS TO BE REMOVED



R4-7a
1-REMOVED

SUBSIDIARY TO ITEM 645.271

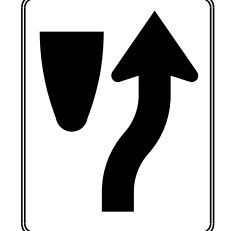
PROPOSED POST MOUNTED SIGNS



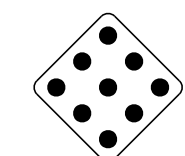
RI-1
30"x30"
2-PROPOSED



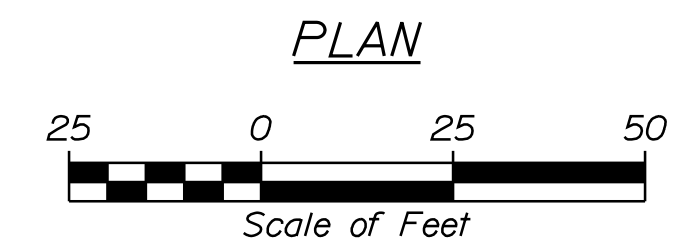
R3-2
36"x36"
2-PROPOSED



R4-7
24"x30"
2-PROPOSED



OMI-1
18"x18"
2-PROPOSED



Date:4/13/2018

Username: J. ROBERT

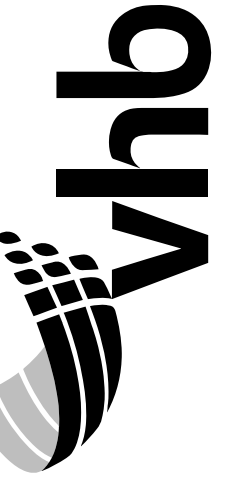
Division:

Filename: ... \ts\planset\005_Signal_3.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

LPA PROJECT NO. 23346.00

WIN
23346.00



PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN DETAILED	M. GRAHAM	J. ROBERT	02-2018
CHECKED/REVIEWED	C. BOBBAY		03-2018
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD
ROUTE 109 (MAIN STREET) AT SANFORD PLAZA

TRAFFIC SIGNAL PLAN

SHEET NUMBER

5

OF 10

ROUTE 109 (MAIN STREET) AT WESTVIEW DRIVE
(LOCATED 1800 FEET SOUTHEAST OF OLD MILL ROAD)

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK	ITEMS 643.71 (SUBSIDIARY TO OLD MILL RD)	QUANTITY
FURNISH AND INSTALL TRAFFIC SIGNAL CONTROLLER	NEW NEMA TS2 TYPE 2	1
FURNISH AND INSTALL NEW GPS UNIT		1
IMPLEMENT SYSTEM BASED AND LOCAL SIGNAL TIMINGS		-

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

SIGNAL TIMING SCHEDULE

RING 1	1	2	3	
RING 2	5	6	7	
OVERLAP	A			

ITEM / PHASE	φ1	φ2	φ3	φ5	φ6	φ7
MOVEMENT	WB TH	EB TH	NB WW	EB LT	WB TH	SB BANK
MINIMUM INITIAL	5	10	5	5	10	5
PASSAGE TIME	2.5	4.0	2.0	2.5	4.0	2.0
MAXIMUM 1	15	45	25	15	45	25
MAXIMUM 2	15	60	15	15	45	15
YELLOW	3.5	3.5	3.0	3.5	3.5	3.0
ALL RED	2.5	2.5	2.0	2.5	2.5	2.0
PED WALK			5			
PED CLEAR			16			
RECALL	OFF	SOFT	OFF	OFF	SOFT	OFF
DETECTOR	PR	PR	PR	PR	PR	PR
PREEMPT PRIORITY	3	4	5	4	3	6
FLASH	R	Y	R	R	Y	R
DUAL ENTRY	OFF	ON	ON	OFF	ON	

NOTES: S = SOFT RECALL Y = YELLOW
O = RECALL OFF R = RED
PR = PRESENCE D = DARK
MAX2 = UNDER COORDINATION
OLA = 1-3
PREEMPT ASSIGNMENT 3 = PRIORITY 1 = φ1 AND φ6 (FUTURE)
PREEMPT ASSIGNMENT 4 = PRIORITY 2 = φ2 AND φ5 (FUTURE)

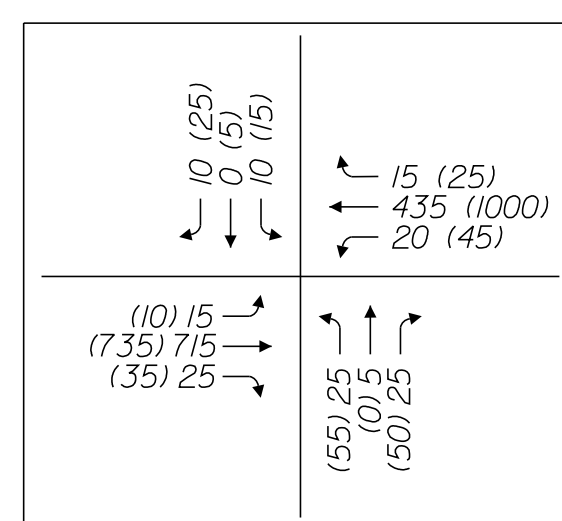
COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

CYCLE LENGTH	ALL ENTRIES IN SECONDS					COORDINATION MODE SET TO FIXED FORCE-OFF
	PLAN 1	PLAN 2	PLAN 3	PLAN 12	PLAN 13	
OFFSET	78	70	0	0	0	
COORDINATED φ	φ2	φ2	φ2	φ2	φ2	
SPLIT TIME φ1	16	21	22	21	14	
SPLIT TIME φ2	56	58	66	58	20	
SPLIT TIME φ3	28	31	32	31	26	
SPLIT TIME φ4	0	0	0	0	0	
SPLIT TIME φ5	16	21	22	21	14	
SPLIT TIME φ6	56	58	66	58	20	
SPLIT TIME φ7	28	31	32	31	26	
SPLIT TIME φ8	0	0	0	0	0	

COORDINATION NOTES:

- OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE GREEN (SEE TABLE ABOVE).
- COORDINATION TO OPERATE BY TIME-OF-DAY (SEE DAILY AND WEEKLY COORDINATION SCHEDULE, SHEET 2).

2015 SYSTEM DESIGN VOLUMES AM (PM)



VOLUMES FROM WIN 22678.00 PRELIMINARY DESIGN REPORT

ROUTE 109 (MAIN STREET) AT SHAW'S DRIVEWAY
(LOCATED 3000 FEET SOUTHEAST OF OLD MILL ROAD)

LIST OF MAJOR ITEMS

EQUIPMENT AND WORK	ITEMS 643.71 (SUBSIDIARY TO OLD MILL RD)	QUANTITY
FURNISH AND INSTALL TRAFFIC SIGNAL CONTROLLER	NEW NEMA TS2 TYPE 2	1
FURNISH AND INSTALL NEW GPS UNIT		1
IMPLEMENT SYSTEM BASED AND LOCAL SIGNAL TIMINGS		-

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

SIGNAL TIMING SCHEDULE

RING 1	2	3	
RING 2	6	5	7

ITEM / PHASE	φ2	φ3	φ5	φ6
MOVEMENT	EB TH	SHAW'S	EB LT	WB TH
MINIMUM INITIAL	7	7	5	7
PASSAGE TIME	4.0	3.0	3.0	4.0
MAXIMUM 1	45	20	20	45
MAXIMUM 2	60	25	20	60
YELLOW	4.0	3.5	4.0	4.0
ALL RED	2.0	2.5	2.0	2.0
PED WALK				
PED CLEAR				
RECALL	SOFT	OFF	OFF	SOFT
DETECTOR	PR	PR	PR	PR
PREEMPT PRIORITY	4	5	4	3
FLASH	Y	R	R	Y
DUAL ENTRY	ON	OFF	OFF	ON

NOTES: S = SOFT RECALL Y = YELLOW
O = RECALL OFF R = RED
PR = PRESENCE D = DARK
MAX2 = UNDER COORDINATION
PREEMPT ASSIGNMENT 3 = PRIORITY 1 = φ6 (FUTURE)
PREEMPT ASSIGNMENT 4 = PRIORITY 2 = φ2 AND φ5 (FUTURE)
PREEMPT ASSIGNMENT 3 = PRIORITY 3 = φ3 (FUTURE)

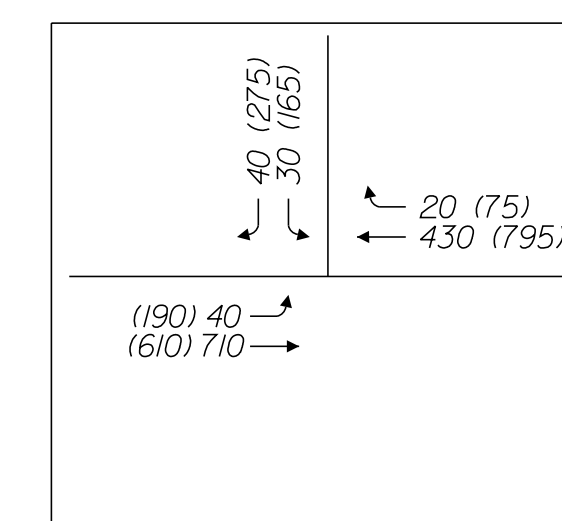
COORDINATION CYCLE/SPLIT/OFFSET SCHEDULE

CYCLE LENGTH	ALL ENTRIES IN SECONDS					COORDINATION MODE SET TO FIXED FORCE-OFF
	PLAN 1	PLAN 2	PLAN 3	PLAN 12	PLAN 13	
OFFSET	90	88	51	54	51	
COORDINATED φ	φ2	φ2	φ2	φ2	φ2	
SPLIT TIME φ1	0	0	0	0	0	
SPLIT TIME φ2	77	80	43	39	43	
SPLIT TIME φ3	23	30	17	16	17	
SPLIT TIME φ4	0	0	0	0	0	
SPLIT TIME φ5	27	30	17	16	17	
SPLIT TIME φ6	50	50	26	23	26	
SPLIT TIME φ7	23	30	17	16	17	
SPLIT TIME φ8	0	0	0	0	0	

COORDINATION NOTES:

- OFFSET IS REFERENCED TO THE END OF THE COORDINATED PHASE GREEN (SEE TABLE ABOVE).
- COORDINATION TO OPERATE BY TIME-OF-DAY (SEE DAILY AND WEEKLY COORDINATION SCHEDULE, SHEET 2).
- PHASE 7 IS A DUMMY PHASE TO BE SET WITH SPLIT TIMES FOR NTCIP COMPLIANCE.

2015 SYSTEM DESIGN VOLUMES AM (PM)



VOLUMES FROM WIN 22678.00 PRELIMINARY DESIGN REPORT

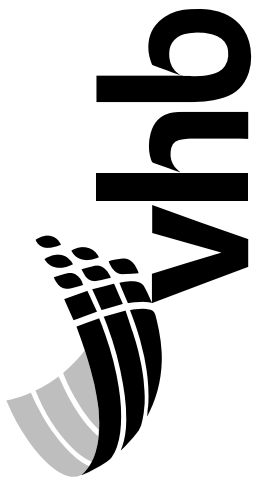
Date: 4/13/2018

Username: J. ROBERT

Division:

Filename: ... \ts\planset\006_Signal_4.dgn

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
LPA PROJECT NO. 23346.00
WIN 23346.00



PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	02-2018
CHECKED-REVIEWED	C. BOBBAY		03-2018
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD
ROUTE 109 AT WESTVIEW DRIVE AND SHAW'S DRIVE
TRAFFIC SIGNAL PLAN

SHEET NUMBER

6

OF 10

Date: 4/26/2018

Username: J. ROBERT

Division:

Filename: ... \cod\is\planset\007_GeoTech.dgn

BORING SCHEDULE

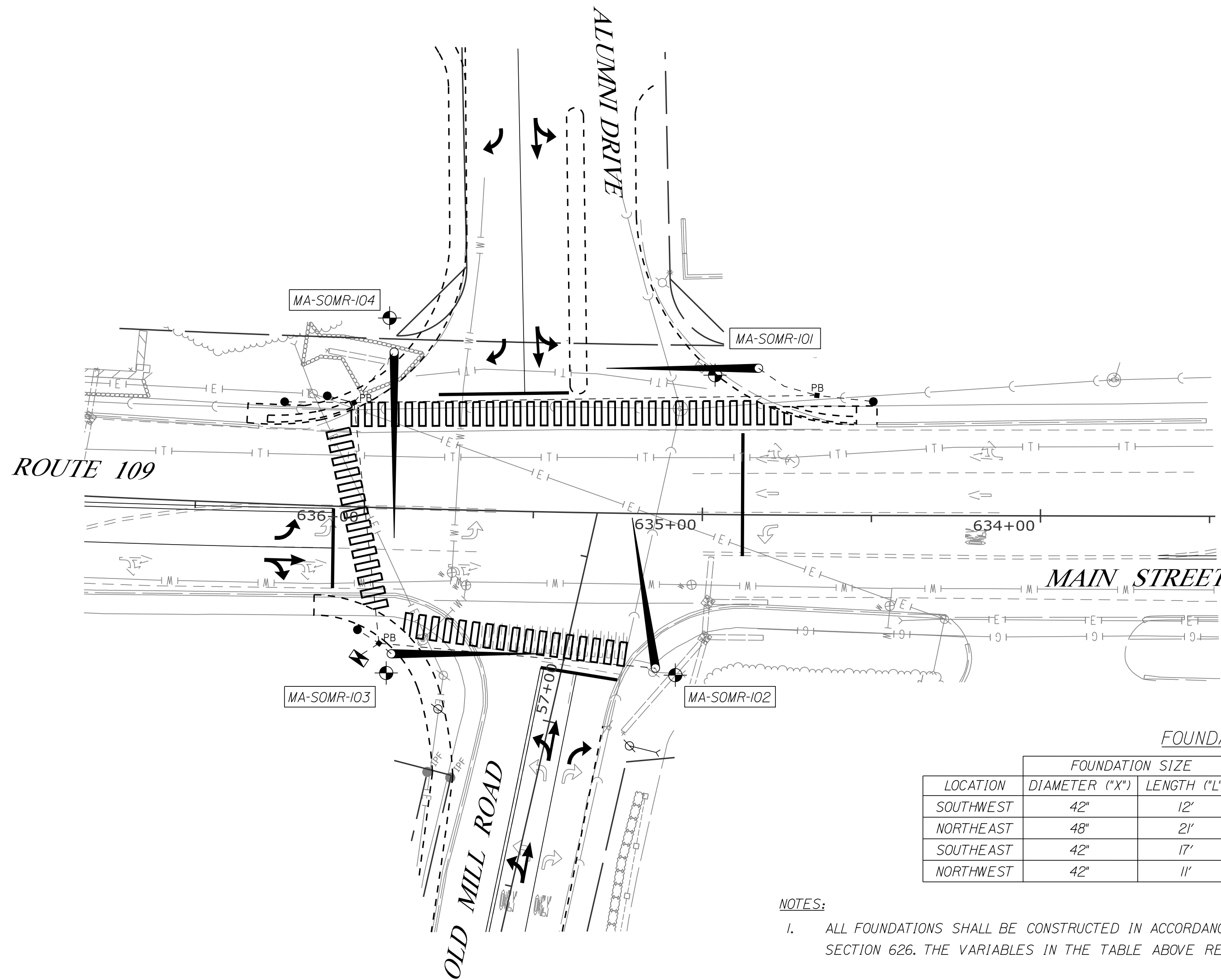
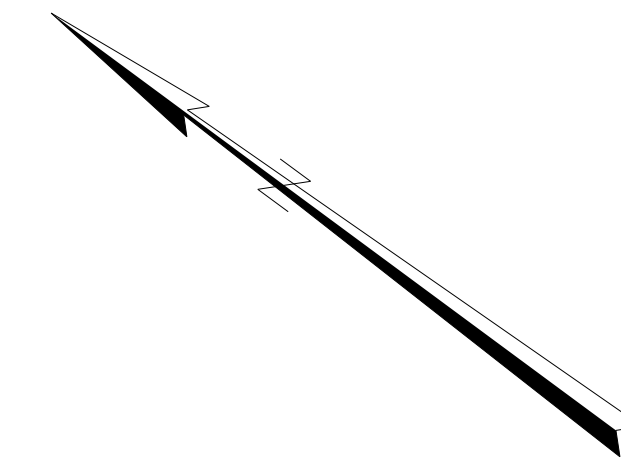
EXPLORATION NUMBER	EXPLORATION TYPE	APPROXIMATE LOCATION ⁽¹⁾		PREDOMINANT SOIL TYPE	DEPTH TO BOTTOM (ft. BGS) ⁽²⁾	BOTTOM CONDITION	GROUNDWATER DEPTH (ft. BGS)	RECOMMENDED INTERNAL ANGLE OF FRICTION (DEGREES)
		STATION	OFFSET					
MA-SOMR-101	BORING	634+97	4' RT	SAND	27	NO REFUSAL	11	28
MA-SOMR-102	BORING	635+07	48' LT	SAND	27	NO REFUSAL	10	30
MA-SOMR-103	BORING	635+92	49' LT	SAND	21.2	REFUSAL	11	32
MA-SOMR-104	BORING	635+94	56' RT	SAND	27	NO REFUSAL	10	28 ⁽³⁾

NOTES:

(1) LOCATIONS OF THE EXPLORATIONS WERE MARKED IN THE FIELD BY VHB IN NOVEMBER 2017

(2) BGS = BELOW GROUND SURFACE

(3) INCREASE PIER LENGTH OBTAINED USING THE FRICTION ANGLE BY 5 FEET TO ACCOUNT FOR PRESENCE OF PEAT DEPOSITS.



FOUNDATION TABLES

LOCATION	FOUNDATION SIZE		REINFORCING STEEL					
	DIAMETER ("X")	LENGTH ("L")	"A"	"B"	"C"	"D (1)"	"D (2)"	"D (3)"
SOUTHWEST	42"	12'	18	#9	#5	4	12	12
NORTHEAST	48"	21'	21	#9	#5	4	12	12
SOUTHEAST	42"	17'	18	#9	#5	4	12	12
NORTHWEST	42"	11'	18	#9	#5	4	12	12

NOTES:

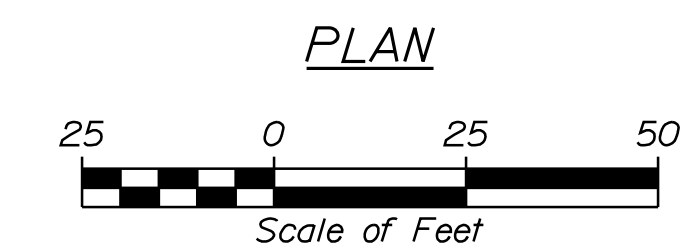
- ALL FOUNDATIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE DETAILS IN THE MAINEDOT STANDARD DETAILS SECTION 626. THE VARIABLES IN THE TABLE ABOVE REFERENCE MAINEDOT STANDARD DETAIL 6261031.
- THE FOUNDATION SIZES SHOWN IN THE TABLE ABOVE ARE BASED ON PRELIMINARY LOADS AND THE SUBSURFACE INFORMATION PROVIDED IN THE GEOTECHNICAL REPORT. PRIOR TO THE CONSTRUCTION OF ANY FOUNDATIONS, THE ENGINEER SHALL VERIFY THE FOUNDATION SIZES BASED ON THE FINAL LOADS TO FOUNDATIONS SHOWN IN THE APPROVED TRAFFIC SIGNAL SHOP DRAWINGS.
- AS NOTED IN THE PROJECT GEOTECHNICAL REPORT, PRIOR TO DRILLED PIER CONSTRUCTION, THE EXPOSED GROUND SURFACE AFTER REMOVAL OF TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE COMPACTED WITH A MINIMUM OF FOUR PASSES OF A 10-TON VIBRATORY ROLLER. SEE THE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

BORING PLAN NOTES:

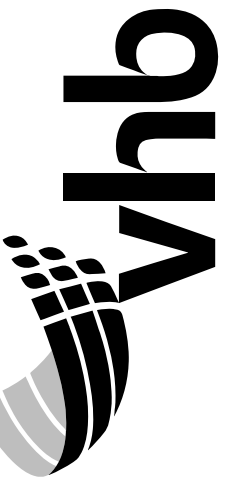
- TEST BORINGS WERE COMPLETED BY NORTHERN TEST BORING ON DEC. 4, 2017 AND OBSERVED AND LOGGED BY R.W. GILLESPIE & ASSOCIATES.

LEGEND

- TEST BORING OR PROBE
- I.D.



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
LPA PROJECT NO. 23346.00
WIN
23346.00



PROJ. MANAGER	B. KEIZER	BY	DATE
DESIGN DETAILED	M. GRAHAM	J. ROBERT	02-2018
CHECKED/REVIEWED	C. BOBBAY		03-2018
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD
ROUTE 109 (MAIN STREET) AT OLD MILL ROAD
BORING LOCATION PLAN WITH
FOUNDATION DESIGN REQUIREMENTS

SHEET NUMBER




OF 10


Date: 4/13/2018


Username: J. ROBERT

Division:

Filename: ... \ts\planset\008_BorLog_1.dgn

		Boring Log: MA-SOMR-101 Total Depth (ft): 27 Sheet 1 of 1					
Project Name: Proposed Traffic Signal Mast Arms RWG&A Project No. 266-012 Location: Sanford, ME Client: City of Sanford RWG&A Representative: D. Walker Boring Location: See Exploration Plan Boring Abandonment Method: Backfill with cuttings Observed Water Depth: 11'		Drilling Contractor: Northern Test Boring Drill Rig: Diedrich D50 Rubber Track Driller Rep.: M. Nadeau Date Started: 12/04/2017 Date Completed: 12/04/2017 Surface Elevation: N/A Drilling Method: 2.25" ID HSA Casing Type: N/A					
DEPTH, FT.	SYMBOL SAMPLES	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	Grass surface and TOPSOIL and ORGANIC MATERIAL (2"). FILL; Moist, medium to fine sand, trace to few silt, some gravel, brown.	12	2 3 5 6	8		
5	S-2	Large rock fragment in tip of spoon.	4	2 2 2	4	7.8	GS MC
10	S-3	SAND (SP); Loose, moist to wet, coarse to fine sand, trace fine gravel, brown.	14	2 4 6 5	10		
15	S-4	Becomes loose.	17	3 4 4 5	8	16.5	GS MC
20	S-5	Becomes medium dense, medium to fine sand, trace silt and fine gravel, gray. Slight petroleum odor.	20	2 3 3 4	6		
25	S-6	Becomes medium to fine sand.	24	3 4 4 5	8		
30		End of exploration at 27'. Not refusal.					
Notes: Water observed at 14.1' in open hole after boring.							

		Boring Log: MA-SOMR-102 Total Depth (ft): 27 Sheet 1 of 1					
Project Name: Proposed Traffic Signal Mast Arms RWG&A Project No. 266-012 Location: Sanford, ME Client: City of Sanford RWG&A Representative: D. Walker Boring Location: See Exploration Plan Boring Abandonment Method: Backfill with cuttings Observed Water Depth: 10'		Drilling Contractor: Northern Test Boring Drill Rig: Diedrich D50 Rubber Track Driller Rep.: M. Nadeau Date Started: 12/04/2017 Date Completed: 12/04/2017 Surface Elevation: N/A Drilling Method: 2.25" ID HSA Casing Type: N/A					
DEPTH, FT.	SYMBOL SAMPLES	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	Grass surface and TOPSOIL and ORGANIC MATERIAL (2"). FILL; Moist, medium to fine sand, some silt, little fine gravel, brown.	2	3 4 4 4	8		
5	S-2	SAND (SP); Very loose to medium dense, moist, coarse to fine sand, tan.	2	1 1 1 1	2		
10	S-3	Becomes loose, wet, brown.	16	5 4 5 5	9		
15	S-4	Increased drilling resistance at 17.5'.	24	2 3 5 9	8		
20	S-5	Becomes medium dense, medium to fine sand, trace silt and fine gravel, gray. Slight petroleum odor.	24	8 16 11 11	27		
25	S-6	Becomes loose.	1	4 4 4 4	8		
30		End of exploration at 27'. Not refusal.					
Notes:							


STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
LPA PROJECT NO. 23346.00	
WIN 23346.00	
	
PROJ. MANAGER DESIGN-DETAILED CHECKED-REVIEWED DESIGNS-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	B. KEIZER M. GRAHAM C. BOBBAY
BY J. ROBERT	DATE 02-2018 03-2018
SANFORD BORING LOGS	
SHEET NUMBER 8 OF 10	


Date: 4/13/2018

Username: J. ROBERT

Division:

Filename: ... \ts\planset\009_BorLog_2.dgn

 R.W. Gillespie & Associates, Inc. Geotechnical Engineering • Geohydrology • Materials Testing Services		Boring Log: MA-SOMR-103 Total Depth (ft): 21.2 Sheet 1 of 1					
Project Name: Proposed Traffic Signal Mast Arms RWG&A Project No. 266-012 Location: Sanford, ME Client: City of Sanford RWG&A Representative: D. Walker Boring Location: See Exploration Plan Boring Abandonment Method: Backfill with cuttings Observed Water Depth: 11'		Drilling Contractor: Northern Test Boring Drill Rig: Diedrich D50 Rubber Track Driller Rep.: M. Nadeau Date Started: 12/04/2017 Date Completed: 12/04/2017 Surface Elevation: N/A Drilling Method: 2.25" ID HSA Casing Type: N/A					
DEPTH, FT.	SYMBOL SAMPLES	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	Grass surface and TOPSOIL and ORGANIC MATERIAL (1"). FILL; Moist, medium to fine sand, some silt, little fine gravel, brown.	16	2 8 14 9	22		
5	S-2	SAND (SP); Loose to medium dense, moist, coarse to fine sand, trace silt, little fine gravel, light brown.	16	4 5 6 8	11	3.0	GS MC
10	S-3	Becomes wet at 11'.	16	11 6 7 8	13		
15	S-4	Becomes loose.	20	3 4 5 5	9		
20	S-5	Becomes reddish brown. Rock fragments in tip of spoon sample. Auger refusal at 21.2'. Possible boulder or bedrock.	9	7 50/4"	57/10"		
Notes:							

 R.W. Gillespie & Associates, Inc. Geotechnical Engineering • Geohydrology • Materials Testing Services		Boring Log: MA-SOMR-104 Total Depth (ft): 27 Sheet 1 of 1					
Project Name: Proposed Traffic Signal Mast Arms RWG&A Project No. 266-012 Location: Sanford, ME Client: City of Sanford RWG&A Representative: D. Walker Boring Location: See Exploration Plan Boring Abandonment Method: Backfill with cuttings Observed Water Depth: 10'		Drilling Contractor: Northern Test Boring Drill Rig: Diedrich D50 Rubber Track Driller Rep.: M. Nadeau Date Started: 12/04/2017 Date Completed: 12/04/2017 Surface Elevation: N/A Drilling Method: 2.25" ID HSA Casing Type: N/A					
DEPTH, FT.	SYMBOL SAMPLES	DESCRIPTION OF MATERIAL	SAMPLE RECOVERY, IN.	BLOWS PER 6"	SPT-N BLOWS PER FT.	MOISTURE CONTENT %	LAB TESTS
0	S-1	Grass surface and TOPSOIL and ORGANIC MATERIAL (8"). FILL; Moist, coarse to fine sand, little medium to fine gravel, light brown.	14	3 4 4 6	8		
5	S-2		4	50/4"	50/4"		
10	S-3	PEAT and ORGANIC SOIL (PT); Very soft, wet, peat with silt and organic material, dark brown.	4	1 1 1 1	2		
15	S-4	SAND (SP); Very loose to loose, wet, coarse to fine sand, little silt and medium to fine gravel, gray. 2" silty seam with trace clay at 16.5'.	16	2 2 2 4	4		
20	S-5		20	2 2 3 3	5		
25	S-6	Becomes light brown. End of exploration at 27'. Not refusal.	16	3 3 4 4	7		
Notes:							

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
LPA PROJECT NO. 23346.00
WIN
23346.00



PROJ. MANAGER	B. KEEZER	BY	DATE
DESIGN-DETAILED	M. GRAHAM	J. ROBERT	02-2018
CHECKED-REVIEWED	C. BOBBAY		03-2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD

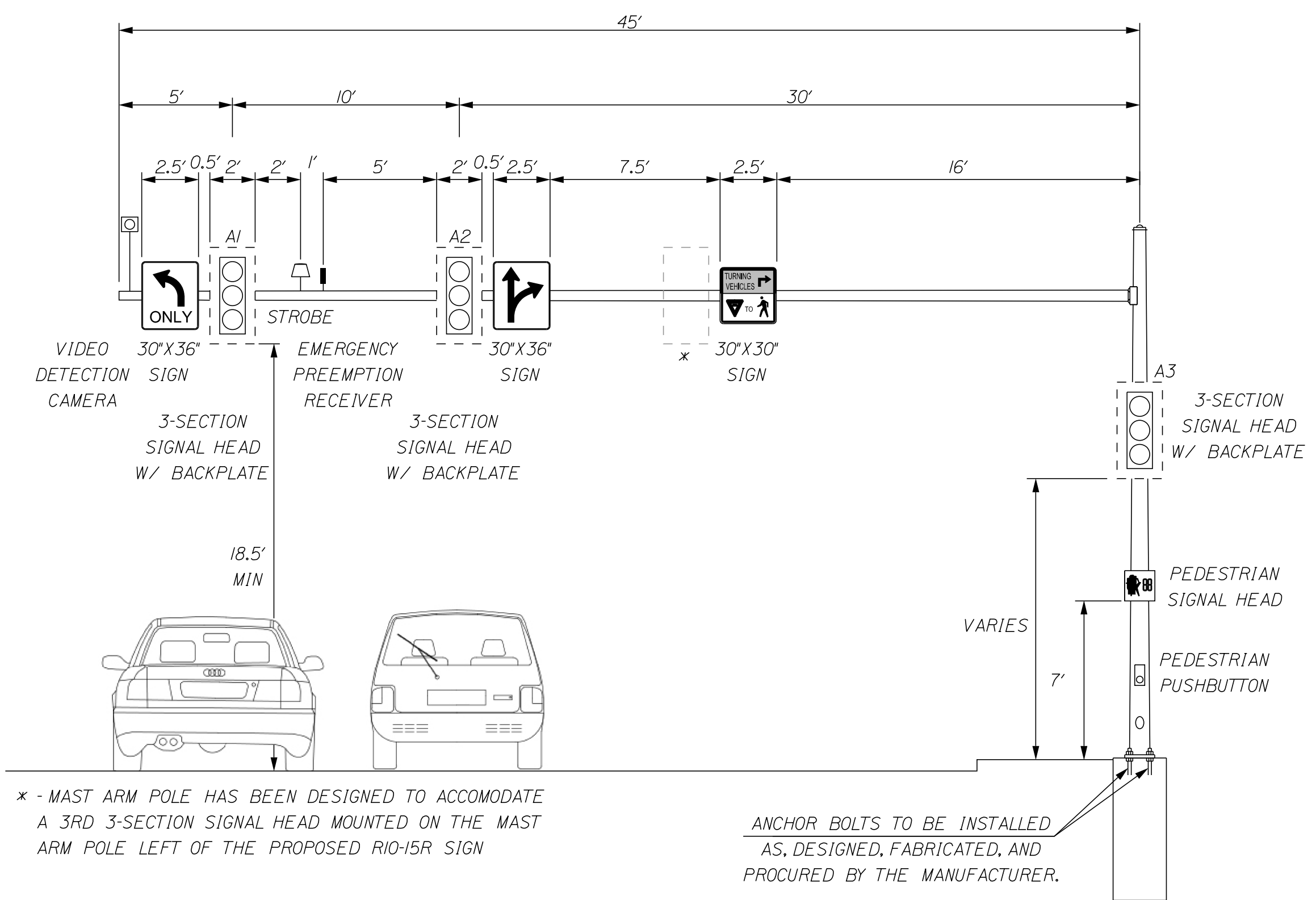
BORING LOGS

SHEET NUMBER

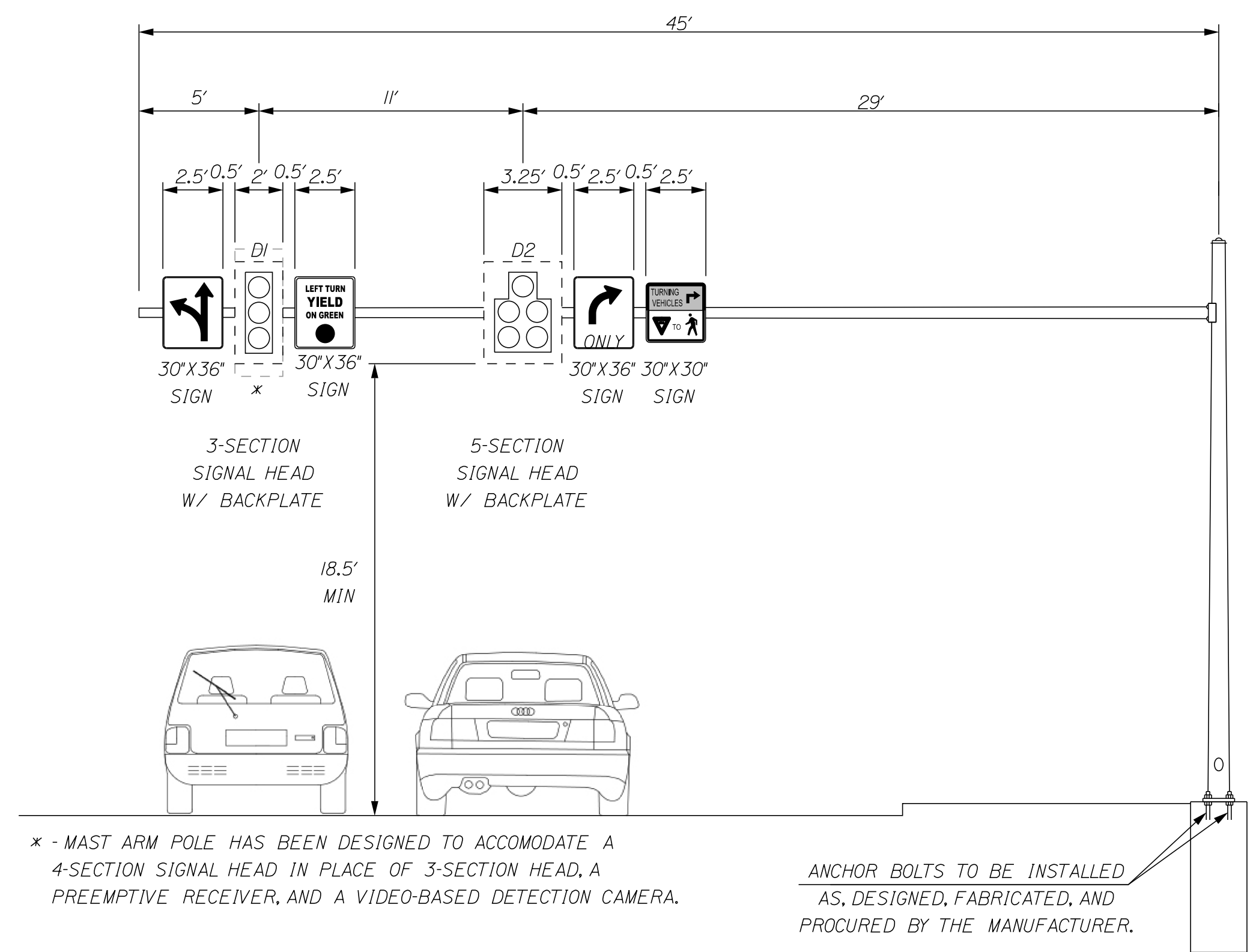
9

OF 10

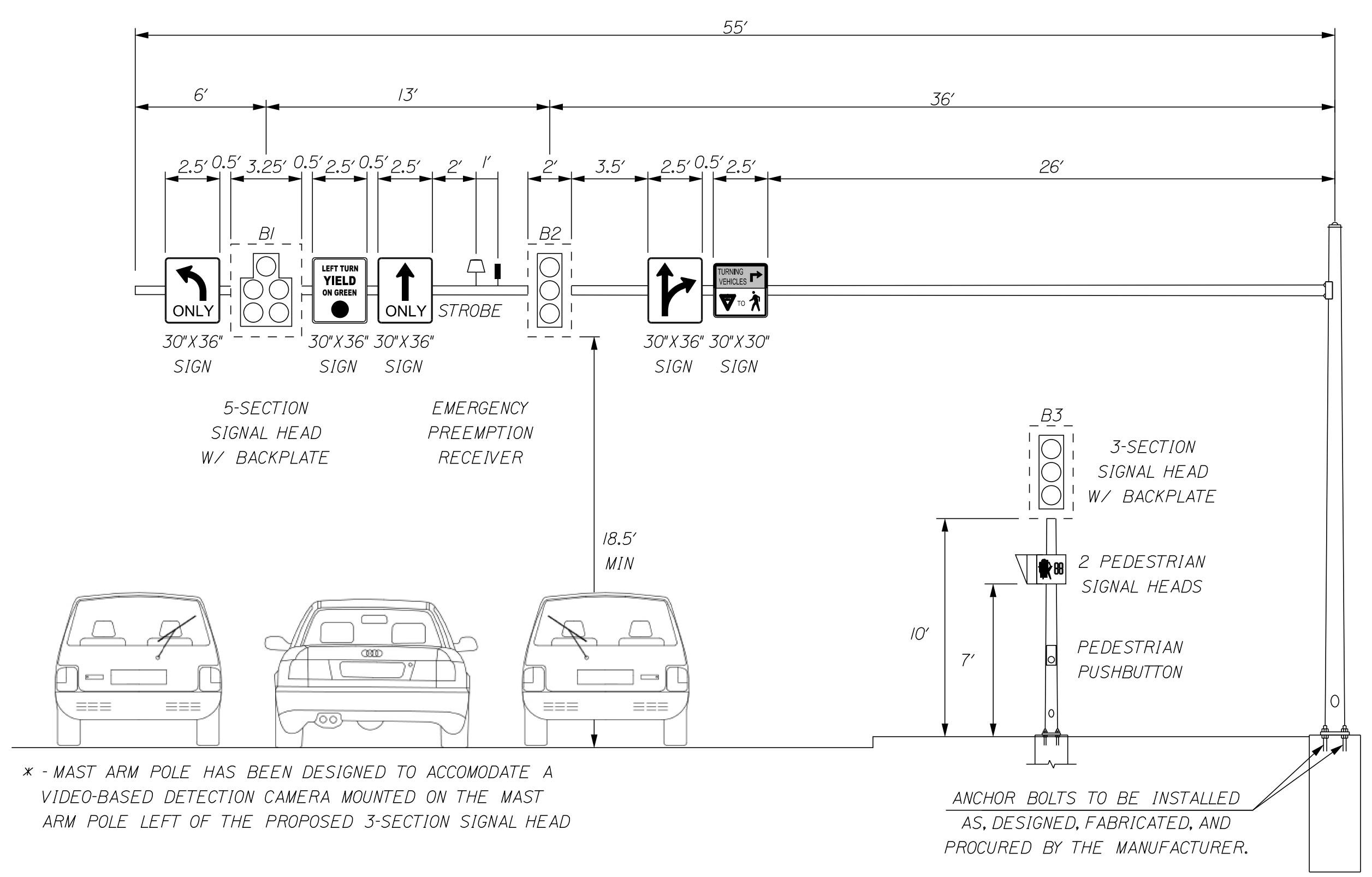
NOTE:
 THE FOLLOWING SUPERSEDES THE PROPOSED MAST ARM POLE LOADING / ATTACHMENTS REFLECTED
 IN MAINEDOT WIN 23346.10. THE REVISED ATTACHMENTS REFLECT A REDUCED LOAD ON EACH POLE,
 THOUGH LOADS MAY BE REALIZED IN THE FUTURE WITH SIGNAL MODIFICATION IF/WHEN WARRANTED.



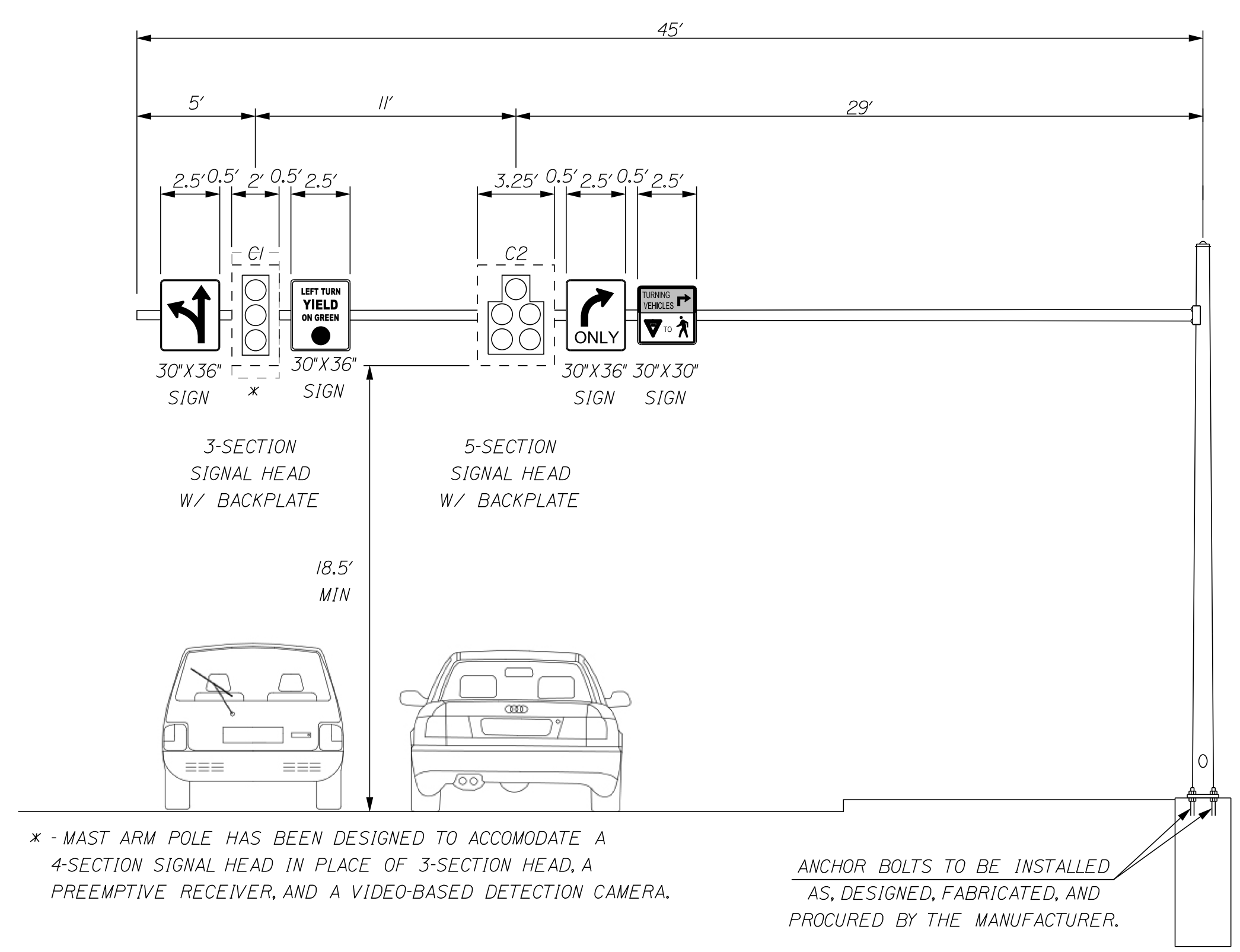
LOOKING SOUTH ALONG SRI09 (MAIN STREET)



LOOKING WEST ALONG ALUMNI DRIVE



LOOKING NORTH ALONG SRI09 (MAIN STREET)



LOOKING EAST ALONG OLD MILL ROAD

Date: 4/13/2018

Username: J. ROBERT

Division:

Filename: ... \ts\planset\010_MastArms.dgn

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 LPA PROJECT NO. 23346.00
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REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SANFORD

REVISED MAST ARM
 POLE MOUNTINGS

SHEET NUMBER

10

OF 10