PLAN I	LEGEND
own, County, State	Catch Basins
roperty Lines ——————	Manholes ○ Existing ● Proposed
X/W Lines-Existing —————	Proposed Underdrain
A/W Lines-Proposed	Proposed Ditch
ulvert-Existing ————	Existing Ditch
ulvert Proposed —	Utility Poles
urbing Existing Proposed	Fire Hydrants 🚳 Existing 🚳 Proposed
Sype 1	Existing Water Line
Sype 3 ———————————————————————————————————	Existing San. Sewer
Type 5 ————	Existing San. Sewer Manhole 💿
Outline of Bodies of Water ————	Guardrail-Existing F-F-F-F-F-F-F-F-F-F-F-F-F-F-F-F-F-F-F-
xposed Bedrock remainstrational memorial and a second seco	Guardrail-Proposed
uildings ————	Guardrail-Cable, Other
rees 🦋 Conifer 🤃 Deciduous	Centerline-Existing
ree Line	Centerline-Proposed
Clearing Limit Line—aı—aı—aı—aı—	Travelway-Existing ————
Railroad	Travelway-Proposed ————
	77 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7

NR (No Refusal)

TP-XXX-###

## STATE OF MAINE DEPARTMENT OF TRANSPORTATION



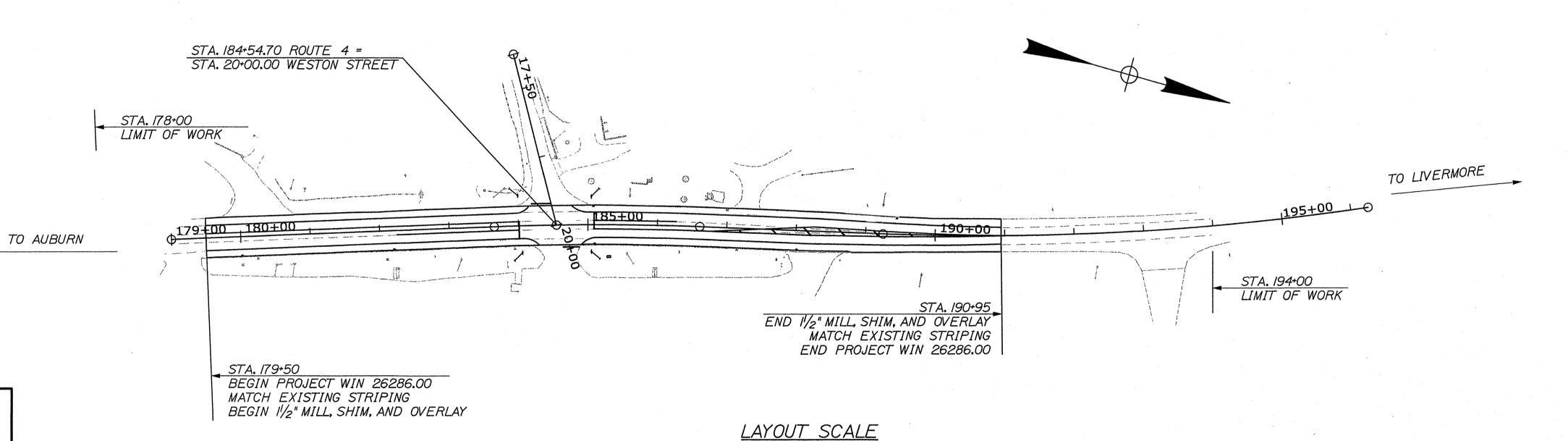
# TURNER

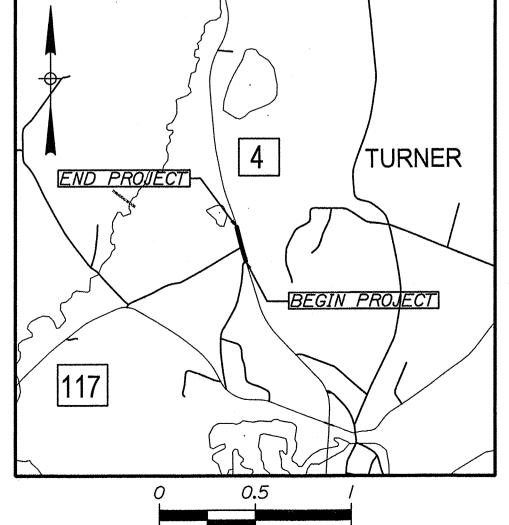
## **ANDROSCOGGIN COUNTY**

ROUTE 4

### FEDERAL AID PROJECT NO. 2628600

PROJECT LENGTH: 0.21 MILES





Scale in Miles

LOCATION MAP

	•	SR 4 (SE/O WESTON RD)	WESTON RD
Current (2024) AADT	_		
Future (2044) AADT			2130
DHV - % of AADT			
Design Hour Volume			215
% Heavy Trucks (AADT)	11%_		9%
% Heavy Trucks (DHV)		5%	4%
Directional Distribution (DHV	() 62%	61%	53%
18 kip Equivalent P 2.0			
18 kip Equivalent P 2.5			
Design Speed (mph)	45 MPH.	45 MPH	35 MPH
Corridor Priority	1		4

PROJECT LOCATION:	In the town of Turner located at the intersection of Route 4 and Weston Road
PROGRAM AREA:	Highway Program

**OUTLINE OF WORK:** Intersection safety improvement including traffic signal installation

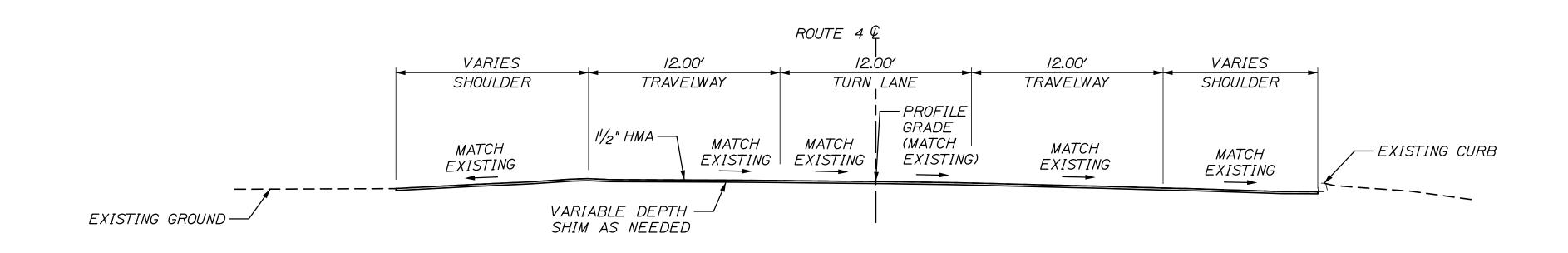
#### **INDEX OF SHEETS**

<u>Description</u>	Sheet No.
Citle Sheet	1
Typical Sections	
General Notes & Estimated Quantities	
Signal Plan and Notes	
Signing and Striping Plans	
General Plans	

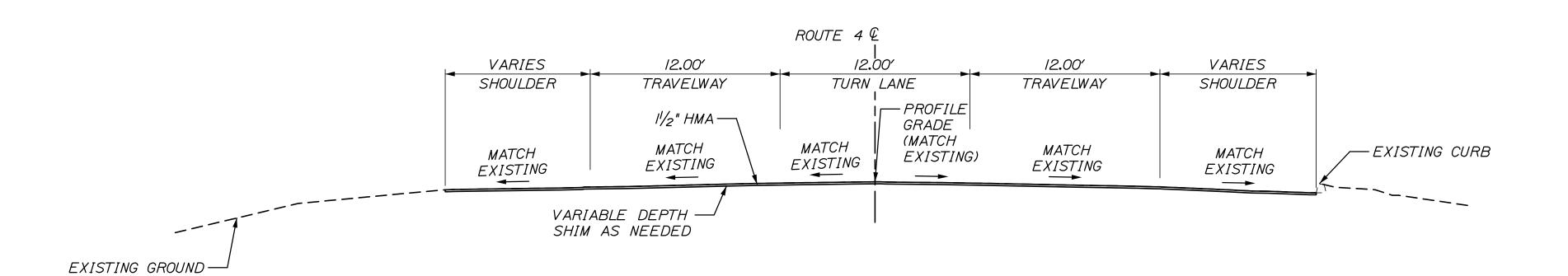
26286.00

TURNER ROUTE 4 SHEET NUMBER

OF 10



## ROUTE 4 - SUPERELEVATED STA. 184+00 TO STA. 186+50



ROUTE 4 - NORMAL CROWN STA. 180+00 TO STA. 182+50

#### NOTES:

- I. THE PAVEMENT DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
- 2. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF PAVEMENT SHALL BE STRAIGHT.
- 3. THE ALGEBRAIC DIFFERENCE BETWEEN THE SHOULDER AND TRAVELWAY CROSS SLOPES "ROLLOVER" SHALL NOT EXCEED 8%.
- 4. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.

HNTB

2

OF 10

SHEET NUMBER

NOT TO SCALE

2. GRIND TRANSITION TAPERS AT CATCH BASINS UNDER STANDARD SPECIFICATIONS ITEM 202.203, PAVEMENT BUTT JOINTS IN ACCORDANCE WITH STANDARD DETAIL 609(05), GUTTER GRADE TRANSITION AT CATCH BASIN, OR AS DIRECTED BY THE RESIDENT.

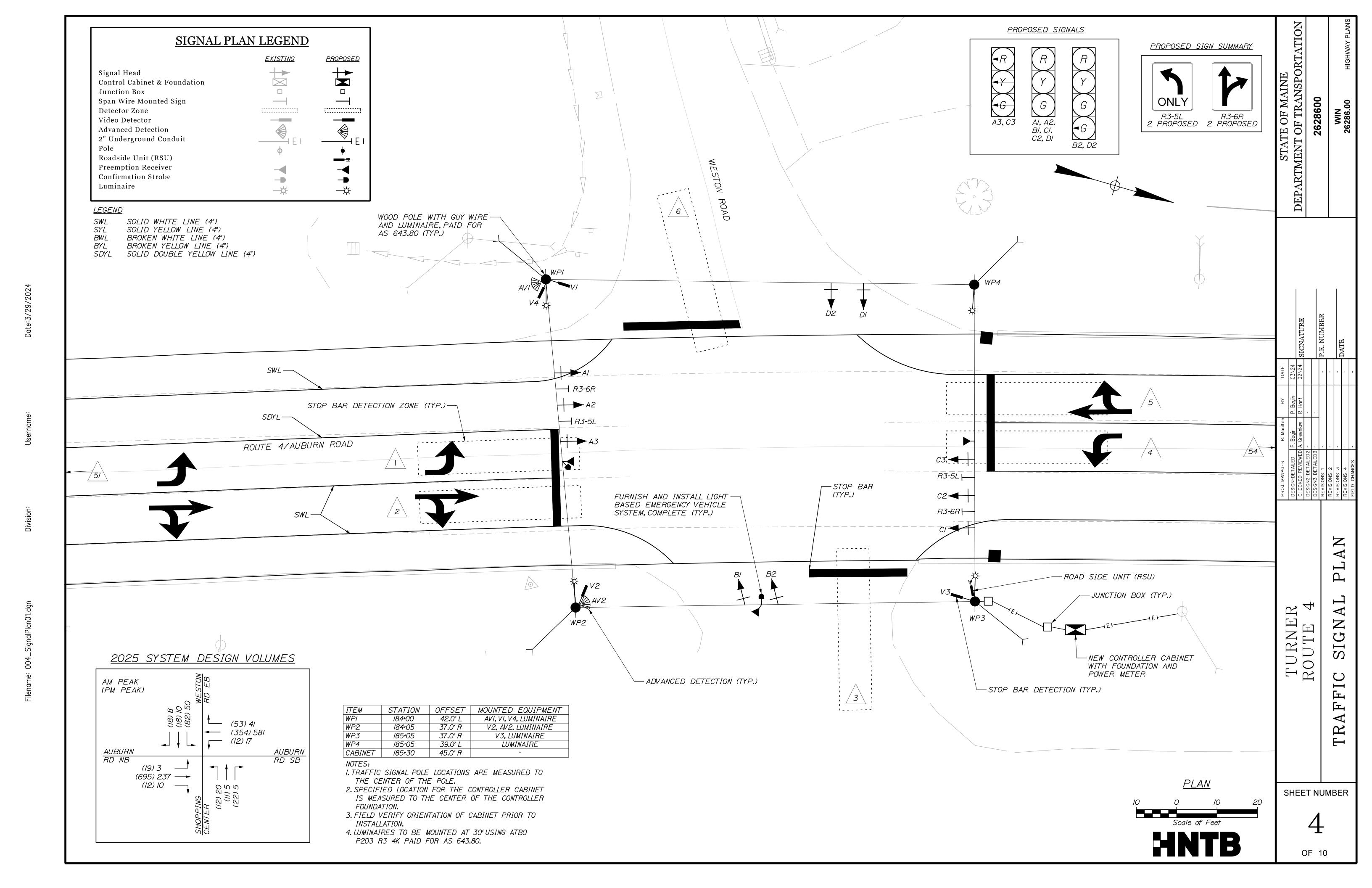
FROM THE EDGE OF THE SHOULDER PAVEMENT.

- 3. THE CONTRACTOR SHALL PLACE SUITABLE EXISTING OR OTHER MATERIAL ACCEPTABLE TO THE RESIDENT ON ALL PAVEMENT EDGES TO ALLOW A DROP-OFF NO GREATER THAN THE SURFACE PAVEMENT THICKNESS. THE MATERIAL SHALL BE GRADED TO MATCH THE EXISTING INSLOPE OR AS DIRECTED BY THE RESIDENT BEFORE SURFACE IS PLACED. THE CONTRACTOR WILL BE PAID UNDER APPROPRIATE EQUIPMENT RENTAL ITEMS. BORROW IS NOT AUTHORIZED UNTIL ALL ACCEPTABLE WASTE MATERIAL HAS BEEN UTILIZED. SEED AND MULCH WILL BE PAID FOR AT THE CONTRACT UNIT PRICE.
- 4. ALL WASTE MATERIAL NOT USED ON THE PROJECT SHALL BE DISPOSED OF OFF THE PROJECT IN ACCEPTABLE WASTE AREAS REVIEWED BY THE RESIDENT. GRADING, SEEDING AND MULCHING OF WASTE AREAS SHALL BE CONSIDERED INCIDENTAL.
- 5. ANY NECESSARY CLEANING OF EXISTING PAVEMENT PRIOR TO PAVING (OR MILLING) SHALL BE INCIDENTAL TO THE RELATED PAVING (OR MILLING) ITEMS. THIS INCLUDES KILLING AND REMOVAL OF ALL VEGETATIVE MATTER.
- 6. EXISTING CULVERTS AND CATCH BASINS WILL BE CLEANED AS DIRECTED BY THE RESIDENT UNDER THE APPROPRIATE PAY ITEMS.
- 7. ANY DAMAGE TO THE SLOPES CAUSED BY THE CONTRACTOR'S EQUIPMENT, PERSONNEL, OR OPERATION SHALL BE REPAIRED TO THE SATISFACTION OF THE RESIDENT. ALL WORK, EQUIPMENT, AND MATERIALS REQUIRED TO MAKE REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 8. NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT AND LAYOUT OF WORK BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.
- 9. "UNDETERMINED LOCATIONS" SHALL BE DETERMINED BY THE RESIDENT.
- IO.FINAL STRIPING FOR THE PROJECT SHALL BE DONE BY THE CONTRACTOR PER THE STRIPING LAYOUT IN THE CONTRACT DOCUMENTS OR AS PROVIDED BY THE DEPARTMENT. PAYMENT SHALL BE MADE UNDER APPROPRIATE CONTRACT ITEMS.
- II. ALL HMA FOR PATCHING AROUND ADJUSTED, ALTERED, OR REBUILT UTILITY STRUCTURES SHALL BE A 9.5 MM OR 12.5 MM MAINEDOT APPROVED MIX DESIGN. EXCLUDING WATER AND GAS GATE VALVES, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT FOR THE PATCH AT LEAST TWO FEET AWAY FROM THE NEAREST EDGE OF THE STRUCTURE. THE CONTRACTOR SHALL PLACE HMA IN LIFTS OF 2 INCHES OR LESS TO MATCH THE EXISTING PAVEMENT DEPTH OR A MAXIMUM OF 6 INCHES, AS DIRECTED BY THE RESIDENT, AND COMPACT THE HMA USING A MINIMUM OF A 150-POUND PLATE COMPACTOR. HMA FOR PATCHING AROUND ADJUSTED, ALTERED, OR REBUILT UTILITY STRUCTURES IS CONSIDERED INCIDENTAL TO THE RESPECTIVE PAY ITEM FOR ADJUST, ALTER, OR REBUILD UTILITY STRUCTURE.
- 12.NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED, OR PLUGGED WITHOUT PRIOR APPROVAL OF THE RESIDENT.

	ESTIMATED QUANTITIES		
ITEM NO.	DESCRIPTION	UNIT	QUANTITY
			WIN 26286.00
		C.V.	
202.202	REMOVING PAVEMENT SURFACE	SY	6950
	PAVEMENT BUTT JOINTS	SY	53
	HOT MIX ASPHALT, 12.5 mm NOMINAL MAXIMUM SIZE (POLYMER MODIFIED)	TON	580
403.211	HOT MIX ASPHALT, 9.5 mm NOMINAL MAXIMUM SIZE (SHIMMING)	TON	200
409.15	BITUMINOUS TACK COAT, APPLIED	GAL	560
604.18	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	EA	7
626.11	PRECAST CONCRETE JUNCTION BOX	EA	2
626.21	METALLIC CONDUIT	LF	50
626.22	NON-METALLIC CONDUIT	LF	50
626.38	GROUND MOUNTED CABINET FOUNDATION	EA	1
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	LF	4000
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	SF	530
629.05	HAND LABOR, STRAIGHT TIME	HR	10
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	HR	10
631.172	TRUCK-LARGE (INCLUDING OPERATOR)	HR	10
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	HR	10
639.20	FIELD OFFICE, TYPE C	EA	1
643.21	NON-INVASIVE DETECTION - STOP BAR: AUBURN ROAD, WESTON ROAD AND SHOPPING PLAZA	LS	1
643.22	NON-INVASIVE DETECTION - ADVANCE: AUBURN ROAD, WESTON ROAD AND SHOPPING PLAZA	LS	1
643.80	TRAFFIC SIGNAL AT: AUBURN ROAD, WESTON ROAD, AND SHOPPING PLAZA	LS	1
645.106	DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS	EA	1
645.108	DEMOUNT POLE	EA	1
645.292	REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS, TYPE II	SF	78
652.33	DRUM	EA	170
652.34	CONE	EA	170
652.35	CONSTRUCTION SIGNS	SF	290
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	CD	120
652.38	FLAGGERS	HR	530
652.381	TRAFFIC OFFICER	HR	16
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	EA	3
654.351	CONNECTED ROADSIDE UNIT (RSU)	EA	1
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LS	1
659.10	MOBILIZATION	LS	1 1

P.E. NUMBER NERAL SHEET NUMBER

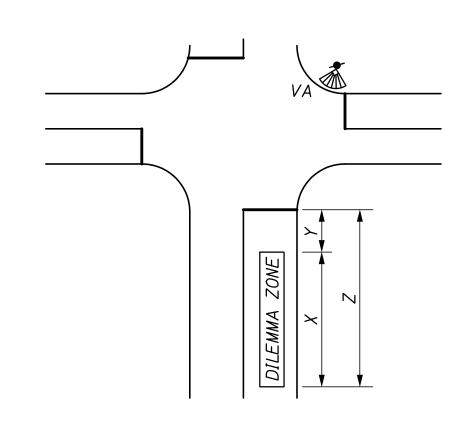
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#### LIST OF MAJOR ITEMS

<u>LIST OF MAJOR TIEMS</u>	
EQUIPMENT AND WORK ITEMS	WESTON RD
FURNISH AND INSTALL NEW ATC MAINEDOT 32/48 SPEC GROUND MOUNT CABINET AND ATC CONTROLLER COMPLETE WITH ALL ANCILLARY EQUIPMENT WIRING INCLUDING BATTERY BACKUP WITH INTEGRATION INTO CLOUD BASED CENTRAL MANAGEMENT SYSTEM.	/
FURNISH AND INSTALL NEW 16-CHANNEL ETHERNET EQUIPPED ENHANCED MALFUNCTION MANAGEMENT UNIT (MMU)	/
FURNISH AND INSTALL AI FIELD MONITORING UNIT (FMU)	/
FURNISH AND INSTALL 4-CHANNEL PREEMPTION PHASE SELECTOR WITH CHASSIS	/
FURNISH AND INSTALL LIGHT-BASED PREEMPTION RECEIVERS WITH DETECTOR CABLE	3
FURNISH AND INSTALL PREEMPTION CONFIRMATION RED STROBE WITH CABLE	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	8
FURNISH AND INSTALL ONE-WAY 4-SECTION, 12 INCH TRAFFIC SIGNAL HEADS, WITH LED MODULES, TUNNEL VISORS, AND 5-INCH LOUVERED BACK PLATE WITH 3-INCH RETROREFLECTIVITY	2
IMPLEMENT LOCAL AND COORDINATED SYSTEM SIGNAL TIMINGS	/
FURNISH AND INSTALL WOOD POLES WITH LUMINAIRES, GUYS AND SPAN WIRE (ITEM 643.80)	4
FURNISH AND INSTALL PRECAST JUNCTION BOX (ITEM 626.11)	2
FURNISH AND INSTALL CONTROLLER CABINET FOUNDATION (ITEM 626.38)	/
FURNISH AND INSTALL 2-INCH METALLIC CONDUIT (626.21)	50
FURNISH AND INSTALL 2-INCH NON-METALLIC CONDUIT (626.22)	50
FURNISH AND INSTALL NON-INVASIVE GRIDSMART STOPLINE VEHICLE DETECTION SYSTEM WITH PERFORMANCE PLUS MODULE FOR ALL APPROACHES (ITEM 643.21)	/
FURNISH AND INSTALL NON-INVASIVE WAVETRONIX ADVANCE VEHICLE DETECTION SYSTEM FOR ALL APPROACHES 35 MPH OR GREATER (ITEM 643.22)	2
FURNISH AND INSTALL C-V2X ROADSIDE UNIT (ITEM 654.351)	/

THE LISTED QUANTITIES ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY



### ADVANCE DILEMMA ZONE SETUP

SOURCE: TRAFFIC DETECTOR HANDBOOK: THIRD EDITION - VOLUME I

SPEED	X	Υ	Z
MILES PER HOUR	(DISTANCE)	(DISTANCE)	(DISTANCE)
35	152'	102'	254′
40	162'	122'	284′
<i>4</i> 5	<i>175′</i>	<i>152'</i>	327′
50	181′	172'	<i>353′</i>
55	<i>152'</i>	234′	386′

#### <u>DETECTOR SCHEDULE</u>

DETECTOR ZONE NO.	DETECTOR	LOCATION	φ CALLED	φ EXT.	INDICATION R-RED G-GREEN	MODE A-ADVANCE B-STOPLINE	DELAY TIME	EXT. TIME
/	V4	AUBURN ROAD: NB L	<b>φ</b> 5	<i>\$</i> 5	-	В	-	1
2	V <del>7</del>	AUBURN ROAD: NB TR	<i>φ</i> 2	<i>\$</i> 2	-	В	-	ı
3	V/	SHOPPING CENTER: WB LTR	<i>φ</i> 4	φ4	-	В	-	-
4	V2	AUBURN ROAD:SB L	$\phi$ /	φ/	_	В	-	ı
5	\ \Z	AUBURN ROAD: SB TR	<b>ø</b> 6	<i>ø</i> 6	-	В	-	-
6	<i>V3</i>	WESTON ROAD: EB LTR	<i>φ</i> 3	<i>\$</i> 3	-	В	1	ı
5/	AV/	AUBURN ROAD: NB LTR		<i>\$</i> 2	R	A	•	1.0
54	AV2	AUBURN ROAD: SB LTR		<i>\$</i> 6	R	A	-	1.0

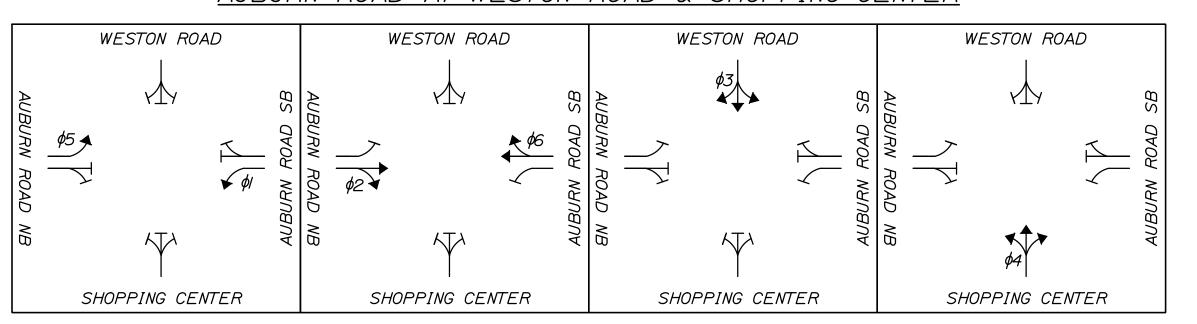
## AUBURN ROAD WITH WESTON ROAD AND SHOPPING CENTER PROPOSED SIGNAL TIMING

	ROUTE 4	ROUTE 4	WESTON RD	SHOPPING CENTER	ROUTE 4	ROUTE 4	NOT USED	NOT USED
	SBL	NBTR	EBŁTR	WBLTR	NBL	SBTR	-	-
	φ/	<i>\$</i> 2	<i>φ</i> 3	φ4	φ5	<i>\$</i> 6	<i>φ</i> 7	<i>φ</i> 8
MINIMUM GREEN	5	<i>1</i> 5	5	5	5	<i>1</i> 5	-	-
VEHICLE EXTENSION	3	5	3	3	3	5	-	-
MAXIMUM /	10	<i>4</i> 5	20	25	10	<i>4</i> 5	_	-
MAXIMUM 2	-	-	-	-	-	-	-	-
YELLOW	3	3	3	3	3	3	-	-
ALL RED	2	2	2	3	2	2	-	-
RECALL MODE	N	S	N	N	N	S	-	ı
DUAL ENTRY	Υ	Υ	-	-	Y	Y	-	-
WALK	-	_	-	_	-	-	_	_
PED CLEAR	_	_	_	_	-	-	_	_

#### SIGNAL OPERATION NOTES

- I. SIGNAL SHALL OPERATE IN COLORS AT ALL TIMES
- 2. SIGNAL SHALL OPERATE IN FLASH IN EMERGENCIES ONLY.
- 3. SIGNALS SHALL BE ALL RED FOR 3 SECONDS TO RESUME FROM FLASH.

#### <u>SIGNAL PHASING SEQUENCE -</u> <u>AUBURN ROAD AT WESTON ROAD & SHOPPING CENTER</u>



#### EMERGENCY VEHICLE PREEMPTION OPERATION

PREEMPT	TSP	RECEIVER	<i>ACTIVE</i>
ASSIGNMENT	ASSIGNMENT	PRIORITY	PHASE
1		NOT USED/	RESERVED
2		NOT USED/	RESERVED
3	7	1	\$1&\$6 (SB)
4	8	2	φ2&φ5 (NB)
5	9	3	φ3 (EB)
6		NOT USED/	RESERVED

SHEET NUMBER

OF 10



#### TRAFFIC SIGNAL NOTES

- I. SCOPE OF WORK:
- TRAFFIC SIGNAL WORK AT THE INTERSECTION OF ROUTE 4/WESTON ROAD SHALL INCLUDE, BUT NOT BE LIMITED TO: FURNISHING AND INSTALLING A COMPLETE GROUND-MOUNTED ADVANCED TRAFFIC CONTROLLER SIGNAL CABINET AND FOUNDATION, ADVANCED TRAFFIC CONTROLLER, FIELD MONITORING UNIT, MONITORING MALFUNCTION UNIT, NON-INVASIVE STOP BAR AND ADVANCED DETECTION, PRE-EMPTION, VEHICULAR SIGNAL HEADS WITH RETROREFLECTIVE BACKPLATES, WIRING, SIGNAL CABLE, OVERHEAD SPAN WIRE MOUNTED SIGNS, LUMINAIRES, WOOD POLES, GUY WIRES, SPAN WIRES, AND ALL APPURTENANCES AND INCIDENTALS REQUIRED FOR COMPLETE FUNCTIONING SIGNAL INSTALLATIONS, IN ADDITION, THE PROJECT WILL PROVIDE THE MEANS FOR REMOTE COMMUNICATION TO THE TRAFFIC SIGNAL CABINET BY FIELD MONITORING UNIT FROM MAINEDOT'S EXISTING CLOUD-BASED CENTRAL MANAGEMENT SYSTEM VIA A SECURE VIRTUAL PRIVATE NETWORK TUNNEL, THE PROJECT ADDITIONALLY PROVIDES FOR CONNECTED VEHICLE APPLICATED INTEGRATED WITH THE ADVANCED TRANSPORTATION CONTROLLED AND MAINEDOT TRAFFIC MANAGEMENT CENTER.
- 2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING THE PROJECT WITH WORKING AND FULLY CONFIGURED TRAFFIC SIGNAL CONTROLLERS FOR THE INTERSECTION, COMPLETE WITH INTEGRATION INTO THE CLOUD BASED CENTRAL MANAGEMENT SYSTEM, SIGNAL PERFORMANCE MEASURE APPLICATIONS, CONNECTED VEHICLE SYSTEM, INSTALLATION OF THE CENTRAL AND LOCATION INTERSECTION COMMUNICATION INTERFACE AND COORDINATION WITH THE MAINEDOT OFFICE OF INFORMATION TECHNOLOGY, THE CONTRACTOR IS FURTHER RESPONSIBLE FOR SYSTEM START-UP AND SYSTEM LOADING, ACCEPTANCE TESTING, AND TRAINING. IN ADDITION, THE CONTRACTOR SHALL FURNISH AND INSTALL AND/OR EXPAND THE EXISTING LIGHT-BASED EMERGENCY VEHICLE PREEMPTION SYSTEM COMPATIBLE WITH THE PREEMPTION EMITTERS OWNED BY THE MUNICIPAL FIRE DEPARTMENT, NOTING THAT THE SYSTEM SHALL BE CONFIGURED SUCH THAT PREEMPTION OR PRIORITY CONTROL CAN ALSO BE INITIATED THROUGH CONNECTED VEHICLE ON BOARD UNITS.
- 3. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC AND THE LEAST AMOUNT OF DOWNTIME TO THE TRAFFIC SIGNAL OPERATIONS.
- 4. ALL EXISTING DRIVEWAY ACCESS SHALL BE MAINTAINED AT ALL TIMES.
- 5. THE CONTRACTOR SHALL PROVIDE THE RESIDENT AND MAINEDOT WITH A SCHEDULE OF WORK FOR CONSTRUCTING THE TRAFFIC IMPROVEMENTS AT LEAST TWO WEEKS PRIOR TO THE COMMENCEMENT OF
- 6. ALL SCHEDULES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE CONTRACTOR SHALL PREPARE THEIR OWN MATERIAL SCHEDULES BASED UPON PLAN REVIEW, ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING
- 7. THE RESIDENT AND MAINEDOT SHALL HAVE THE RIGHT AND AUTHORITY TO DETERMINE THE ACCEPTABILITY OF WORK AND MATERIALS IN PROGRESS OR COMPLETED AND SHALL HAVE THE RIGHT TO REJECT ANY WORK OR MATERIALS WHICH DO NOT CONFORM, IN ITS SOLE OPINION, TO THE PLANS OR SPECIFICATIONS.
- B. THE MAINTENANCE OF THE TRAFFIC SIGNALS SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY MAINEDOT.

#### GENERAL EQUIPMENT

- I. TWO COPIES OF AS-BUILT PLANS, WIRING DIAGRAMS, BOX PRINTS, AND EQUIPMENT MANUALS SHALL BE LEFT IN EACH OF THE CONTROLLER CABINETS.
- 2. THE EQUIPMENT PROVIDED FOR THIS PROJECT SHALL MATCH THE EQUIPMENT APPROVED AND INSTALLED BY WIN 025321.0: STATEWIDE TRAFFIC SIGNAL MODERNIZATION. SEE COMPLETE LIST ON THIS PAGE FOR MORE INFORMATION.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING RED-LINE AS-BUILT DRAWINGS OF THE FINAL WORK TO THE RESIDENT. THOSE DRAWINGS SHALL BE ON A CLEAN SET OF PLANS SHOWING ALL CHANGES OR MODIFICATIONS TO THE BID PLANS.
- 4. THE CONTRACTOR IS DIRECTED TO PROJECT SPECIAL PROVISION 718 FOR ADDITIONAL INFORMATION RELATED TO THE FOLLOWING:
  - 718.13 TRAFFIC SIGNAL CONTROL SYSTEM
- 718.14 FIELD MONITORING UNIT (NOTE: DIFFERS FROM MAINEDOT REPAIR SPEC) 718.15 EMERGENCY VEHICLE PREEMPTION SYSTEM
- SPECIAL PROVISION 718 EXPANDS UPON THE INFORMATION FOUND IN THESE GENERAL NOTES, MAINEDOT STANDARD SPECIFICATION DATED MARCH 2020, AND MAINEDOT STANDARD DETAILS DATED MARCH 2020, AS SUCH, THE MORE RESTRICTIVE LANGUAGE BETWEEN THESE GENERAL NOTES, MAINEDOT STANDARD SPECIFICATIONS, MAINEDOT STANDARD DETAILS, AND SPECIAL PROVISION 718 SHALL GOVERN THE WORK TO BE PERFORMED UNDER THIS PROJECT.

#### PROPRIETARY SIGNAL EQUIPMENT TO BE INCLUDED FOR CROSS COORDINATION AND COMPATIBILITY WITH WIN 025321.0:

- I. SIGNAL CONTROLLER: ECONOLITE COBALT SHELF MOUNT ATC WITH BASIC DISPLAY, EOS SOFTWARE AND CENTRACS MOBILITY SUITE STANDARD LICENSE
- 2. MMU: ECONOLITE MMU2-16LEIP CONFLICT MONITOR
- 3. ADVANCE DETECTION: WAVETRONIX ADVANCE WITH ARC6 SDLC CABINET INTERFACE DEVICE 102-0594 AND SMARTSENSOR ADVANCE EXTENDED RANGE SS-200E + MOUNTING EQUIPMENT AND INCIDENTALS (FIELD)
- 4. STOPLINE DETECTION: MIOVISION DETECTION PLUS + STREAMING WITH MIOVISION CORE DCM, MIOVISION SMARTVIEW 360 CAMERA (FIELD), SKYBRACKET PENDANT MOUNT CABLE CLAMP (FIELD), AND TRAFFICLINK PLATFORM (SOFTWARE)
- 5. FMU: APPLIED INFORMATION FMU MODEL FMU AI-500-085-04 + INCIDENTALS WITH GLANCE LICENSE AND CONFIGURATION AND IO YEAR C&S PREEMPT & PRIORITY W/ VIDEO, IODBI OMNI-DIRECTIONAL 4G/5G ANTENNA (FIELD)
- 6. EMERGENCY VEHICLE PREEMPTION: TOMAR STROBECOMII 4140V2-4 PROCESSOR, TOMAR STROBECOMII 4090-I-ST-IC-X RECEIVERS (FIELD), AND TOMAR 804 MAXI STROBE 804-IIO (FIELD)

#### ELECTRICAL NOTES

- I. CONDUIT FROM THE POWER SOURCE TO THE METER SHALL BE RIGID METAL CONDUIT. OTHER CONDUIT NOT UNDER PAVEMENT SHALL BE 2 INCH PVC SCHEDULE 40. MINIMUM BURIAL DEPTH SHALL BE 36".
- 2. TOP 3" OF CONDUIT SHALL BE SEALED TO PREVENT ENTRY BY RODENTS. BUSHINGS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS AND PULL WIRE SHALL BE INSTALLED IN ALL CONDUIT. ALL CONDUIT THREADS ARE TO BE REDHEADED. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ASSOCIATED CONDUIT ITEM.
- 3. THERE SHALL BE NO SPLICES OR JUNCTION BOXES EXCEPT AS NOTED ON THE PROJECT PLANS OR APPROVED BY THE RESIDENT, JUNCTION BOXES ARE INTENDED FOR WIRE PULLING ACCESS ONLY. JUNCTION BOX COVERS SHALL BE LABELED "TRAFFIC" AND SHALL BE GROUNDED.
- 4. SECONDARY CIRCUIT WIRING FOR TRAFFIC SIGNALS SHALL BE STRANDED COPPER.

#### VEHICLE DETECTION NOTES

- I. DETECTION ZONES SHOWN IN THE PLANS ARE FOR ILLUSTRATIVE PURPOSES ONLY. FINAL DETECTION ZONES SHALL BE FIELD LOCATED AND APPROVED BY MAINEDOT AND THE RESIDENT.
- 2. THE CONTRACTOR SHALL FURNISH AND INSTALL NON-INVASIVE STOP LINE AND ADVANCED VEHICLE DETECTION AS APPROVED BY MAINEDOT AND THE RESIDENT, THIS SHALL NOT BE A COMBINATION STOP BAR, ADVANCED UNIT.
- 3. THE VEHICLE DETECTORS ARE TO BE CONNECTED TO THE INTERSECTION TRAFFIC CONTROLLER FOR LOCAL VEHICLE DETECTION AND REMOTELY CONNECTED TO THE MAINEDOT TRAFFIC MANAGEMENT CENTER TO ALLOW FOR VISUAL CONFIRMATION (STOP LINE) AND ADJUSTMENT OF THE DETECTION ZONES AS SHOWN IN THE PLANS, WORK SHALL BE CONSTRAUCTED AND PAID FOR AS OUTLINED IN SPECIAL PROVISION 643.
- 4. THE LOCATION OF THE DEVICES SHOWN IN THE PLANS ARE CONCEPTUAL FOR OPTIMAL APPROACH COVERAGE, ACTUAL NUMBER OF DETECTION DEVICES AND MOUNTING LOCATIONS SHALL BE PROVIDED PER MANUFACTURER'S RECOMMENDATION TO ACHIEVE APPROVED DETECTION AREAS.
- 5. THE RESIDENT RESERVES THE RIGHT TO DIRECT THE CONTRACTOR TO ADJUST DETECTOR MOUNTING HEIGHT OR LOCATION FOR LOCAL CONDITIONS IDENTIFIED DURING OR AFTER INSTALLATION AT NO ADDITIONAL COST FOR INSTALLATION OR WIRING, THIS WORK WILL BE INCIDENTAL TO THE STOP BAR OR ADVANCED DETECTION.
- 6. ADVANCE DETECTION MAY BE MOUNTED TO POLE OR SPAN WIRE WITH TETHER IF DETECTION AREAS CAN BE ACHIEVED AS NOTED.
- 7. THE CONTRACTOR SHALL RE-INSPECT EACH SIGNALIZED INTERSECTION DURING THE ACCEPTANCE TESTING PERIOD AND CERTIFY DETECTORS ARE FUNCTIONING PROPERLY BEFORE FINAL ACCEPTANCE IS GRANTED.

#### SIGNAL HEADS NOTES

- I. ALL NEW SIGNAL HEADS SHALL BE TETHERED TO SPAN WIRE OR MOUNTED TO WOOD POLES AS INDICATED ON PLANS.
- 2. 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.
- 3. THE BOTTOM OF THE HOUSING OF ANY 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 NO MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE HIGH POINT OF THE ROAD.

#### ROADSIDE UNIT (RSU) NOTES

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

#### PRE-EMPTION NOTES

- I. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE TRANSMITTED BY OPTICAL EMITTERS (BY OTHERS) AND/OR BY A DUAL MODE DSRC/C-V2X ON-BOARD UNIT (OBU) MOUNTED IN EMERGENCY VEHICLES COMMUNICATING WITH THE PROPOSED DUAL MODE DSRC/C-V2X ROAD SIDE UNIT 9RSU) AND/OR RECEIVED BY PROPOSED OPTICAL DETECTORS TO BE INSTALLED AT THE INTERSECTION.
- 2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH RECEIVERS ASSIGNED DESCENDING PRIORITIES (I = HIGHEST, IO = LOWEST).
- 3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR AND/OR RSU, THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD THE EMERGENCY ACTIVE PHASE GREEN FOR A MINIMUM OF 10 SECONDS OR UNTIL THE PRE-EMPTION SIGNAL CEASES, THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCE (5.0 SECONDS YELLOW AND 3.0 SECONDS ALL RED) AND SERVICE SUBSEQUENT EMERGENCY ACTIVE PHASES AS NECESSARY. AT THE COMPLETION OF THE PRE-EMPTION CYCLE. THE CONTROLLER SHALL TIME THE PRE-EMPTION CLEARANCE AND RESUME NORMAL SIGNAL OPERATION.
- 4. MINIMUM GREEN AND NORMAL VEHICLE CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
- 5. CONFIRMATION STROBE(S) SHALL BE ILLUMINATED WHENEVER ANY PRE-EMPTION GREEN IS ON.

#### COMMUNICATIONS NOTES

- I. THE SYSTEM SHALL SUPPORT COMMUNICATIONS TO ADVANCED TRANSPORTATION CONTROLLERS, ASSOCIATED EQUIPMENT AND VEHICLE DETECTION AS SHOWN IN THE PLANS, ALL CONNECTIONS TO THE CLOUD-BASED CENTRAL MANAGEMENT SYSTEM SHALL BE VIA A SECURE VPN NETWORK. COMMUNICATIONS FROM THE CLOUD-BASED SYSTEM TO THE ON-STREET TRAFFIC SIGNAL CONTROLLERS SHALL BE MADE THROUGH THE FMU.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING WHICH COMPATIBLE CELLULAR PROVIDER CAN PROVIDE THE BEST NETWORK COVERAGE TO THE FMU FOR REMOTE COMMUNICATIONS AND PROVIDE THE PROPER SIM CARD ON A PER SITE BASIS.
- 3. CONTRACTOR SHALL PROCURE A HIGH GAIN ANTENNA FOR EACH LOCATION IN LEIU OF THE STANDARD FMU PETRI DISH ANTENNA.

#### SYSTEM STARTUP AND SYSTEM LOADING NOTES

- I. THE SIGNAL SHALL BE INSTALLED IN FLASH TWO WEEKS PRIOR TO ACTIVATION.
- 2. THE SYSTEM SUPPLIER SHALL INTIATE COMPLETE SYSTEM OPERATION INCLUDING ATC, CMS, SPM, STOP LINE AND ADVANCED VEHICLE DETECTION SYSTEM, CONNECTED VEHICLE SYSTEM, HOSTED CLOUD-VASED SYSTEMS, FMU, COMMUNICATIONS, REMOTE MOINTORING, AND CONTROL OF OPERATIONS AS SHOWN ON THE PLANS AND/OR DIRECTED BY MAINEDOT AND THE RESIDENT.
- 3. AFTER THE SUPPLIER HAS INITIATED SYSTEM OPERATION, THE SYSTEM SHALL BE RUN FOR A CONTINUOUS 7-DAY INITIAL TESTING PERIOD, THE SUPPLIER SHALL ADVISE MAINEDOT AND/OR THE RESIDENT THAT THE SYSTEM IS READY FOR THE START-UP PHASE, ANY MAJOR SYSTEM MALFUNCTION ENCOUNTERED DURING THE START-UP PHASE SHALL BE CORRECTED BY THE SUPPLIER, AND THE TEST RESTARTED. DURING THIS PERIOD, MAINEDOT AND/OR THE RESIDENT MAY MAKE MODIFCATION TO THE SYSTEM TIMING PARMATERS, BUT THIS WILL NOT CAUSE RESTARTING OF THE TESTING PERIOD. AT THE COMPLETION OF THE TESTING PERIOD, THE SYSTEM WILL BE DEEMED READY FOR FINAL ACCEPTANCE TESTING AS DESCRIBED IN ACCEPTANCE TESTING.

#### ACCEPTANCE TESTING NOTES

- I. UPON COMPLETION OF THE TESTING PERIOD, MAINEDOT AND/OR THE RESIDENT SHALL EVALUATE SYSTEM OPERATIONS, IT IS EXPECTED THAT THE COMPLETE SYSTEM SHALL OPERATE FULLY FUNCTIONAL FOR A PERIOD OF 30 CONSECUTIVE DAYS WITHOUT MALFUNCTION, MINOR MALFUNCTIONS OF INOPERABILITY NOT THE FAULT OF THE CONTRACTOR, AS JUDGED BY MAINEDOT AND/OR THE RESIDENT, ARE NOT INCLUDED IN THE 30-DAY PERIOD, IF THE SYSTEM FAILS TO OPERATE AS INTENDED BY THIS SPECIFICATION THE MALFUNCTION SHALL BE CORRECTED BY THE CONTRACTOR AT ITS COST AND A NEW 30-DAY TESTING PERIOD SHALL BEGIN, THIS PROCESS SHALL CONTINUE UNTIL A COMPLETELY OPERABLE SYSTEM IS DEMONSTRATED FOR A CONSECUTIVE 30-DAY PERIOD.
- 2. ACCEPTANCE TESTING MUST DEMONSTRATE TO MAINEDOT AND/OR THE RESIDENT A REASONABLE SATISFACTION THAT THE HARDWARE AND LICENSED SOFTWARE FUNCTION IN ACCORDANCE WITH THE SPECIFICATIONS, REQUIREMENTS, FUNCTIONALITIES, PERFORMANCE CRITERIA OR OTHER BENEFITS STATED IN DOCUMENTATION, PROPOSALS AND/OR DEMONSTRATIONS GIVEN TO MAINEDOT.

#### SALVAGE RIGHTS NOTES

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

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