STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TMSI

PLAN LEGEND

Town, County, State		Centerline-Existing	
Property Lines		Centerline-Proposed	10+00
R/W Lines-Existing		Travelway-Existing	
R/W Lines-Proposed		Travelway-Proposed	
Culvert-Existing		Railroad	
Culvert Proposed		Catch Basins	Existing ■ Proposed
Curbing Existing / Proposed		Manholes	Existing ● Proposed
Type 1		Proposed Underdrain	
Type 3		Proposed Ditch	
Type 5		Existing Ditch	
Outline of Bodies of Water		Utility Poles	Existing ◊ Proposed
Exposed Bedrock		Fire Hydrants	Existing ◈ Proposed
Buildings		Existing Water Line	
Trees	Conifer ✳ Deciduous	Existing San. Sewer	
Tree Line		Existing San. Sewer Manhole	◎
Clearing Limit Line —CLL—		Guardrail-Existing	
Boring ⊕ HB-XXX-###		Guardrail-Proposed	
Probe ◓ P-#.#X		Guardrail-Cable, Other	

#.# = Depth
X = W (Weathered Rock)
R (Refusal)
NR (No Refusal)

Pavement Core ● PC-#

Test Pit ▣ TP-XXX-###

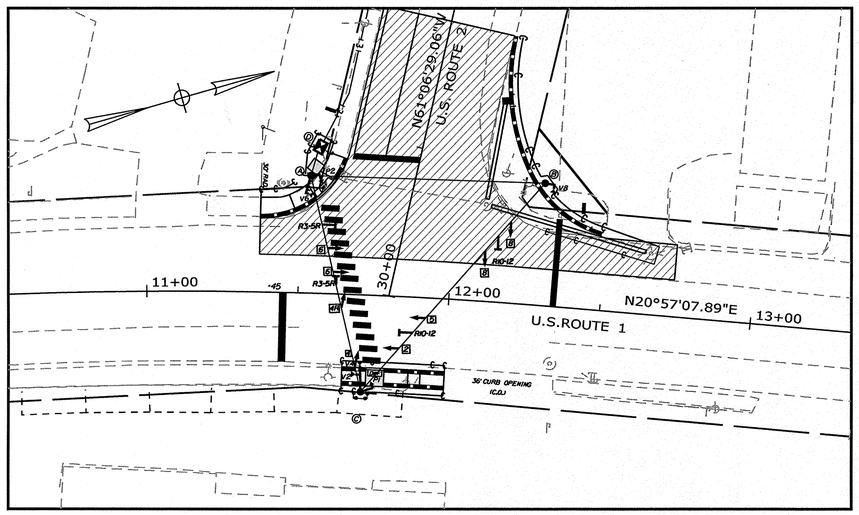
HOULTON

AROOSTOOK COUNTY

U.S. ROUTE 1 & U.S. ROUTE 2 INTERSECTION

2288500

PROJECT LENGTH : 0.00 MILES



INDEX OF SHEETS

TRAFFIC DATA

	US 1/2 S/O US 2	US 1 N/O US 2	US 2 W/O US 1
Current (2019) AADT	12830	12260	3150
Future (2031) AADT	13600	13000	3340
DHV - % of AADT	10%	10%	10%
Design Hour Volume	1411	1349	347
% Heavy Trucks (AADT)	6%	6%	5%
% Heavy Trucks (DHV)	5%	5%	5%
Directional Distribution (DHV)	54%	54%	66%
18 kip Equivalent P 2.0	690	664	184
18 kip Equivalent P 2.5	657	633	175
Design Speed (mph)	25	25	25
Functional Class:	MAJOR URBAN COLLECTOR		
Corridor Priority	3	3	3

LAYOUT SCALE

25 0 25 50

Scale in Feet

PROJECT LOCATION:	INTERSECTION OF U.S. RTE. 1 AND U.S. RTE. 2 IN THE TOWN OF HOULTON
PROGRAM AREA:	MULTIMODAL
SCOPE OF WORK:	INTERSECTION AND TRAFFIC SIGNAL IMPROVEMENTS

WIN 22885.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED — DATE 6-1-2020

COMMISSIONER: [signature]

CHIEF ENGINEER: [signature] 6-1-2020

ALBERT L. GODFREY No. 4226 — STATE OF MAINE — REGISTERED PROFESSIONAL ENGINEER

SIGNATURE 4226 — P.E. NUMBER 4/20/20 — DATE

PROJECT INFORMATION

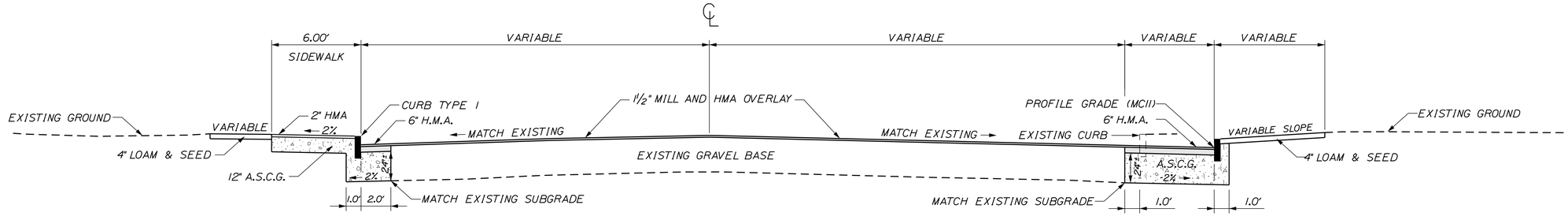
PROGRAM	MULTIMODAL	
PROJECT MANAGER	D.M. LORING	
DESIGNER	A.L. GODFREY	
CONSULTANT	TERRA MAGNA SERVICES, INC.	
PROJECT RESIDENT		
CONTRACTOR		
PROJECT COMPLETION DATE		

HOULTON
U.S. RTE. 1 & U.S. RTE. 2

TITLE SHEET

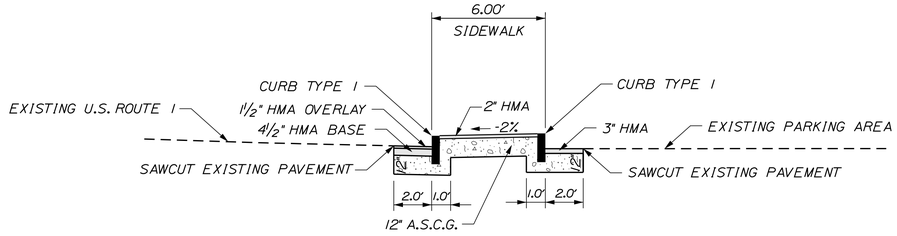
SHEET NUMBER 1 OF 10

Filename: ...\001_Title_01.dgn Division: HIGHWAY Username: common Date:4/20/2020



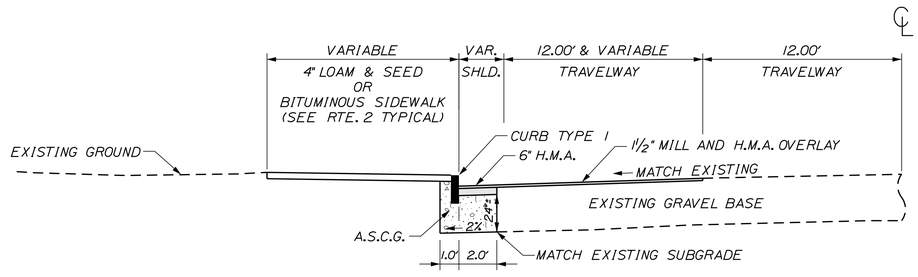
U.S. ROUTE 2

STA. 30+24 TO STA. 30+71



U.S. ROUTE 1

STA. 11+65 TO STA. 12+00 RT



U.S. ROUTE 1

STA. 11+37 TO STA. 12+48 LT

NOTES:

1. THE PAVEMENT, BASE, AND SUBBASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. CROWNS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
3. HMA = HOT MIX ASPHALT
   A.S.C.G. = AGGREGATE SUBBASE COURSE - GRAVEL

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2288500

WIN 22885.00

HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER	M.S.M.	1-2020
DESIGN-DETAILED		
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

D.M. LORING
A.L. GODFREY

SIGNATURE
4226
P.E. NUMBER
4/20/20
DATE

HOULTON
U.S. RTE. 1 & U.S. RTE. 2

TYPICAL SECTIONS

SHEET NUMBER
2
OF 10

Filename: ...\002_Typicals.dgn Division: HIGHWAY Username: common Date:4/20/2020

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.15	REMOVING EXISTING MANHOLE OR CATCH BASIN	1	EACH
202.202	REMOVING PAVEMENT SURFACE	560	SY
203.20	COMMON EXCAVATION	100	CY
203.25	GRANULAR BORROW	15	CY
206.061	STRUCT EARTH EXC BELOW GRADE	10	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	85	CY
403.2081	HOT MIX ASPHALT, 12.5mm (POLYMER MODIFIED)	60	TON
403.209	HOT MIX ASPHALT, 9.5mm (SW,DRIVES,INCIDENTALS)	20	TON
403.211	HOT MIX ASPHALT 9.5 mm (SHIM)	15	TON
403.213	HOT MIX ASPHALT, 12.5mm (BASE)	30	TON
409.15	BITUMINOUS TACK COAT, APPLIED	50	GAL
603.159	12 INCH CULVERT PIPE OPTION III	32	LF
603.179	18 INCH CULVERT PIPE OPTION III	54	LF
604.18	ADJUSTING MH OR CB TO GRADE	3	EACH
604.245	CATCH BASIN TYPE F4-C	1	EACH
608.26	CURB RAMP DETECTABLE WARNING FIELD	26	SF
609.11	VERTICAL CURB TYPE 1	54	LF
609.12	VERTICAL CURB TYPE 1 - CIRCULAR	42	LF
609.238	TERMINAL CURB TYPE 1-8 FOOT	6	EACH
609.2341	TERMINAL CURB TYPE 1-4 FOOT-CIRCULAR	1	EACH
609.2381	TERMINAL CURB TYPE 1-8 FOOT-CIRCULAR	2	EACH
615.07	LOAM	10	CY
618.13	SEEDING METHOD NUMBER 1	1	UNIT
619.12	MULCH	1	UNIT
626.11	PRECAST JUNCTION BOX	1	EACH
626.21	METALLIC CONDUIT	60	LF
626.22	NON-METALLIC CONDUIT	10	LF
626.36	REMOVE OR MODIFY CONCRETE FOUNDATION	1	EACH
626.38	GROUND MOUNTED CABINET FOUNDATION	1	EACH
626.44	36-INCH DIAMETER FOUNDATION	31	LF
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	360	LF
627.75	WHITE OR YELLOW PVMT AND CURB MARKING	410	SF
627.77	REMOVING EXISTING PAVEMENT MARKINGS	140	SF
627.78	TEMP. 4" PAINTED PVMT. MARK LINE, WHITE OR YELLOW	140	LF
629.05	HAND LABOR, STRAIGHT TIME	10	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	5	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	5	HR
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	5	HR
639.19	FIELD OFFICE, TYPE B	1	EACH
643.80	TRAFFIC SIGNALS AT: ROUTE 1 AND ROUTE 2	1	LS
643.83	VIDEO DETECTION SYSTEM	1	LS
643.93	STRAIN POLE	3	EACH
645.106	DEMOUNT REG., WARN., CONF., &RTE. MARK. ASSEMBLY SIGN	11	EACH
645.116	REINSTALL REG. WARN. CONF., & RTE. MARK ASSEMBLY SIGN	11	EACH
645.271	REG., WARN., CONF., & RTE. ASSEMBLY SIGN, TYPE 1	30	SF
652.33	DRUM	20	EACH
652.34	CONE	20	EACH
652.35	CONSTRUCTION SIGNS	350	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	40	CD
652.38	FLAGGERS	400	HR
652.381	TRAFFIC OFFICERS	20	HR
656.75	TEMP. SOIL EROSION AND WATER POLLUTION CONTROL PLAN	1	LS
659.10	MOBILIZATION (10%)	1	LS

GENERAL NOTES

1. ALL JOINTS BETWEEN EXISTING AND PROPOSED HOT BITUMINOUS PAVEMENT SHALL BE BUTTED. PAYMENT SHALL BE MADE UNDER ITEM 202.202 REMOVING PAVEMENT SURFACE.

2. 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.

3. ANY NECESSARY CLEANING OF EXISTING PAVEMENT PRIOR TO PAVING OR MILLING SHALL BE INCIDENTAL TO THE RELATED PAVING OR MILLING ITEMS.

4. IF FOUNDATION MATERIAL IS REQUIRED UNDER CULVERTS, IT SHALL MEET THE REQUIREMENTS FOR GRANULAR BORROW-UNDERWATER BACKFILL AND WILL BE PAID FOR AS GRANULAR BORROW.

5. EXISTING CULVERTS AND CATCH BASINS WILL BE CLEANED AS DIRECTED BY THE RESIDENT UNDER THE APPROPRIATE PAY ITEMS.

6. NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED OR PLUGGED WITHOUT PRIOR APPROVAL OF THE RESIDENT.

7. ANY NECESSARY CUTTING OF EXISTING CATCH BASINS OR MANHOLES TO ALLOW FOR PROPOSED PIPE CONNECTIONS WILL NOT BE PAID FOR SEPARATELY AND WILL BE CONSIDERED INCIDENTAL TO ITEM 603 OR 605.

8. EXISTING ABANDONED WATER MAINS BROKEN BY THE CONTRACTOR DURING CONSTRUCTION SHALL HAVE THE ENDS PLUGGED WITH BRICK AND MORTAR. COST FOR ALL LABOR AND MATERIAL WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO DIRECT PAYMENT WILL BE MADE.

9. LOAM HAS BEEN ESTIMATED FOR DISTURBED LAWN AREAS. ACTUAL PLACEMENT OF THE LOAM SHALL BE AS NOTED ON THE PLANS OR DESIGNATED BY THE RESIDENT.

10. SEEDING METHOD NO. 1 SHALL BE UTILIZED ON ALL LAWNS AND DEVELOPED AREAS.

11. LOAM SHALL BE PLACED TO A NOMINAL DEPTH OF 4 INCHES IN LAWN AREAS UNLESS OTHERWISE NOTED OR DIRECTED.

12. 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.

13. GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE BID DOCUMENTS IS FOR THE USE OF THE BIDDERS. NO ASSURANCE IS GIVEN THAT THE INFORMATION OR INTERPRETATIONS WILL BE REPRESENTATIVE OF THE ACTUAL SUBSURFACE CONDITIONS THROUGHOUT THE CONSTRUCTION SITE. MAINEDOT WILL NOT BE RESPONSIBLE FOR ANY INTERPRETATIONS OR CONCLUSION DRAWN FROM THE GEOTECHNICAL INFORMATION. THE BORING LOGS PROVIDED IN THE BID DOCUMENTS (IF ANY) PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT DISCRETE LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS.

14. AREAS REQUIRING FILL ON THE PROJECT WILL COME FROM SUITABLE EXCAVATION FROM EXCAVATION, DITCH AND INSLOPE OR EQUIPMENT RENTAL AREAS.

15. ESTIMATED QUANTITIES FOR REQUIRED STRUCTURAL EARTH EXCAVATION, DRAINAGE AND MINOR STRUCTURES ARE INFORMATIONAL ONLY AND REPRESENT THE APPROXIMATE MINIMUM QUANTITY REQUIRED TO INSTALL DRAINAGE STRUCTURES. ADDITIONAL EXCAVATION FOR THE CONTRACTOR'S CONVENIENCE OR TO COMPLY WITH BACKSLOPING REQUIREMENTS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED INCIDENTAL TO THE RELATED DRAINAGE ITEMS.

16. 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.

17. 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.

18. EXCLUDING WATER AND GAS GATE VALVES, ALL HMA FOR PATCHING AROUND ADJUSTED, ALTERED, OR REBUILT UTILITY STRUCTURES SHALL MEET THE GRADATION REQUIREMENTS OF A 9.5 MM OR 12.5 MM MIXTURE. 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 3 INCHES OR LESS, 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.

19. DEMOUNTING AND REINSTALLING WOOD AND U-CHANNEL POSTS FOR RELOCATION OF REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNAGE WILL BE CONSIDERED INCIDENTAL TO PAYMENT UNDER ITEM 645.116. POSTS THAT ARE DAMAGED BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR WITH NEW POSTS CONFORMING TO THE APPLICABLE SPECIFICATIONS AT NO ADDITIONAL COST TO THE CONTRACT.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2288500

WIN 22885.00

HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER	D.M. LORING	
DESIGN-DETAILED	A.L. GODFREY	1-2020
CHECKED-REVIEWED	A.L. GODFREY	1-2020
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

4226
P.E. NUMBER

4/20/20
DATE

HOULTON
U.S. RTE. 1 & U.S. RTE. 2

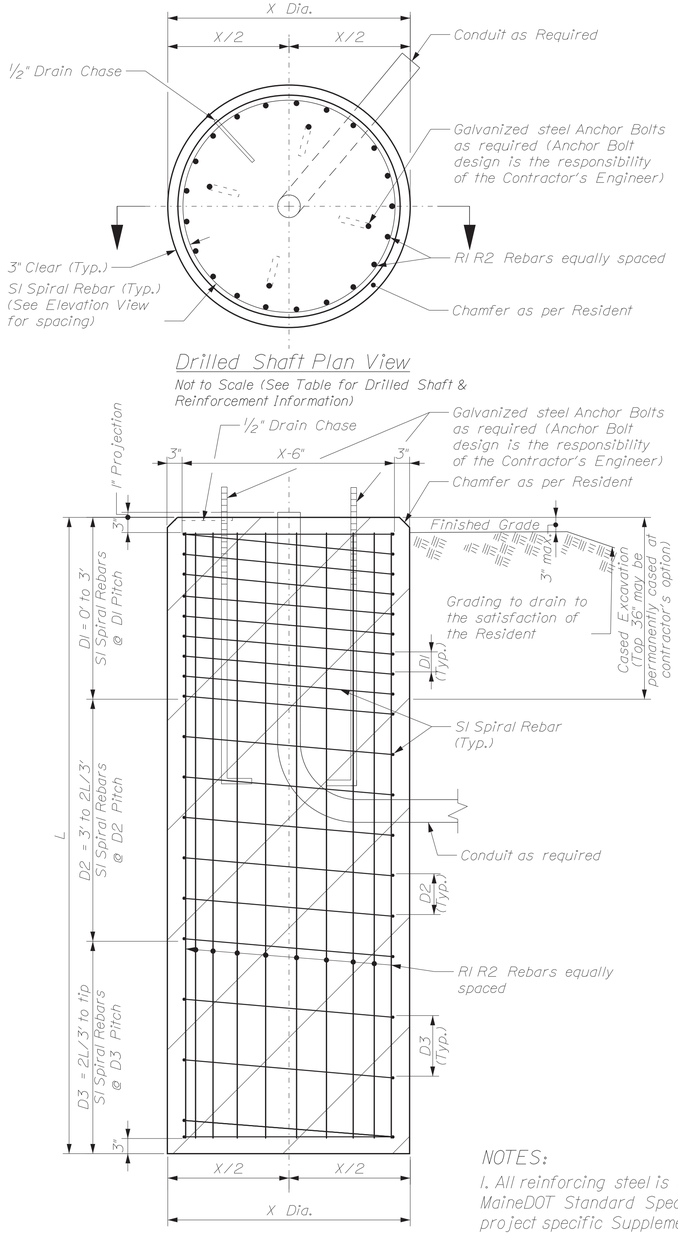
ESTIMATED QUANTITIES
AND GENERAL NOTES

SHEET NUMBER

3

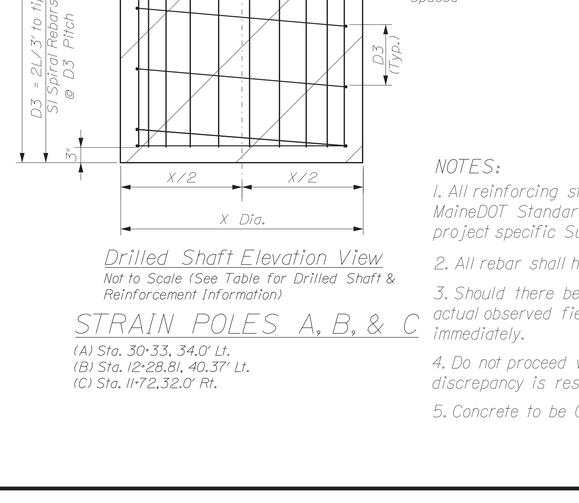
OF 10

Filename: ...\003_Estimate_01.dgn Division: HIGHWAY Username: common Date:4/20/2020



Drilled Shaft Plan View

Not to Scale (See Table for Drilled Shaft & Reinforcement Information)

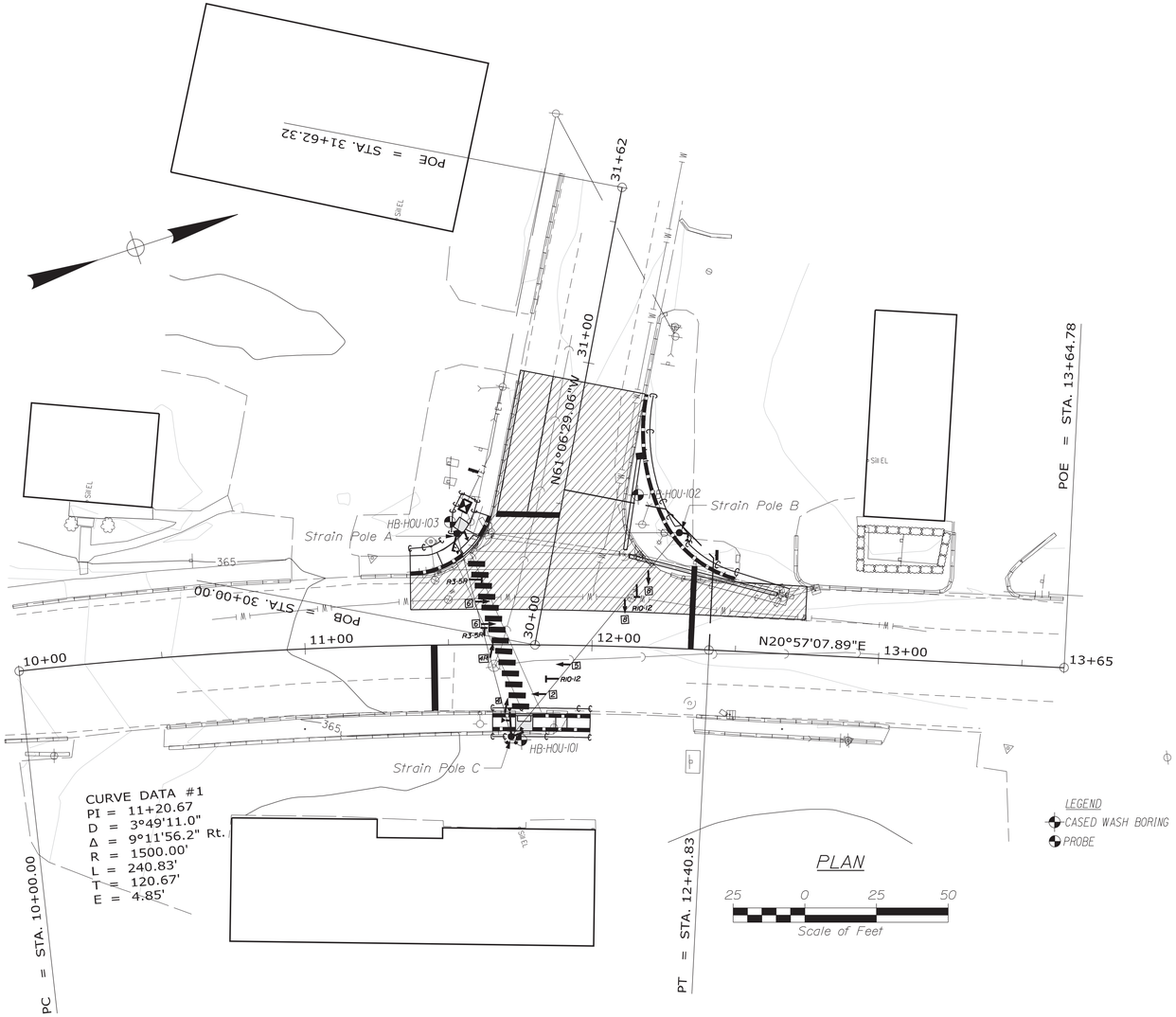


Drilled Shaft Elevation View

Not to Scale (See Table for Drilled Shaft & Reinforcement Information)

STRAIN POLES A, B, & C

(A) Sta. 30+33, 34.0' Lt.
(B) Sta. 12+28.81, 40.37' Lt.
(C) Sta. 11+72, 32.0' Rt.



NOTES:

1. All reinforcing steel is to be grade 60 and conform to MaineDOT Standard Specification requirements along with any project specific Supplementals or Special Provisions.
2. All rebar shall have 3" cover unless otherwise noted.
3. Should there be a discrepancy between these Details and actual observed field conditions report it to the Resident immediately.
4. Do not proceed with dependent work until any such discrepancy is resolved to the satisfaction of the Resident.
5. Concrete to be Class LP with f'c = 5,000 PSI.

		Drilled Shaft Dimentions		Reinforcing Steel			Spiral Bar Spacing		
		X	L	R1	R2	S1	D1 (in)	D2 (in)	D3 (in)
Strain Pole	Approximate Station & Offset	Diameter (feet)	Length (feet)	Longitudinal Rebars Quantity	Longitudinal Rebars Size	Spiral Rebars Size	0 to 3 ft	3 ft to 2L/3 ft	2L/3 ft to tip
A	30+33, 34.0' L	3.0	10.0	15	#8	#5	4	8	12
B	12+28.81, 40.37 L	3.0	10.5	15	#8	#5	4	8	12
C	11+72, 32.0' R	3.0	10.5	15	#8	#5	4	8	12

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

CAPITAL PROJECTS

WIN
22885.00

HIGHWAY PLANS

STATE OF MAINE ★ Kathleen Maguire 7120 ★ PROFESSIONAL ENGINEER

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED		
CHECKED-REVIEWED	K.MAGUIRE	FEB. 2020
DESIGN2-DETAILED2	T.WHITE	
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
7120
P.E. NUMBER
4/22/2020
DATE

HOULTON
U.S. ROUTE 1

STRAIN POLE FOUNDATIONS & BORING LOCATION PLAN

SHEET NUMBER
4
OF 10

Filename: ...\MSTA\006_BORING LOGS1.dgn Division: GEOTECH Username: Kate.Maguire Date:2/26/2020

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Intersection North St. (U.S. Route 1) and Smyrna St. (U.S.
Location: Houlton, Maine

Boring No.: HB-HOU-101
WIN: 22885.00

Driller:	MaineDOT	Elevation (ft.)	365.2	Auger ID/OD:	5" Dia.
Operator:	Daggett/Niles	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	10/10/2018: 07:30-09:00	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	11+75.6, 33.3 ft Rt. (North St.)	Casing ID/OD:	N/A	Water Level*:	None Observed
Hammer Efficiency Factor: 0.928		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test. PP = Pocket Penetrometer WOR/C = Weight of Rods or Casing
MV = Unsuccessful Field Vane Shear Test Attempt WOH = Weight of 140lb. Hammer
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-uncorrected = Raw Field SPT N-value
Hammer Efficiency Factor = Rig Specific Annual Calibration Value
WOH = Weight of One Person
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows / 6 in Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
							SSA	364.8		5" HMA. 0.4	
	1D	24/13	1.50 - 3.50	9/9/7/6	16	25				Brown, damp, medium dense, fine to coarse SAND, some gravel, some silt.	
5								360.7		Light brown, moist, medium dense, Silty fine to medium SAND, trace gravel. 4.5	
	2D	24/17	5.00 - 7.00	3/3/4/5	7	11					
10	3D	24/20	10.00 - 12.00	5/14/23/27	37	57				Similar to above, except very dense.	
								353.2		Bottom of Exploration at 12.0 feet below ground surface. NO REFUSAL 12.0	
15											
20											
25											

Remarks:

Stratification lines represent approximate boundaries between soil typesst transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: HB-HOU-101

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Intersection North St. (U.S. Route 1) and Smyrna St. (U.S.
Location: Houlton, Maine

Boring No.: HB-HOU-102
WIN: 22885.00

Driller:	MaineDOT	Elevation (ft.)	365.7	Auger ID/OD:	5" Solid Stem
Operator:	Daggett/Niles	Datum:	NAVD88	Sampler:	Standard Split Spoon
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	140#/30"
Date Start/Finish:	10/10/2018: 09:30-11:00	Drilling Method:	Cased Wash Boring	Core Barrel:	NQ-2"
Boring Location:	30+58.4, 25.3 ft Rt. (Smyrna Rd.)	Casing ID/OD:	NW-3"	Water Level*:	None Observed
Hammer Efficiency Factor: 0.928		Hammer Type:	Automatic ☒ Hydraulic ☐ Rope & Cathead ☐		

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test. PP = Pocket Penetrometer WOR/C = Weight of Rods or Casing
MV = Unsuccessful Field Vane Shear Test Attempt WOH = Weight of 140lb. Hammer
R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WOH = Weight of 140lb. Hammer
N_{60} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{60} = Hammer Efficiency Factor/60%*N-uncorrected
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
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WC = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows / 6 in Shear Strength (psf) or RQD (%)	N-uncorrected	N_{60}	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
	1D	24/10	0.00 - 2.00	2/6/10/10	16	25	SSA	365.5		3" Grass and Sod. 0.3	
										Brown, damp, medium dense, fine to coarse SAND, some silt, little gravel.	
5								360.2		Light brown, moist, medium dense, Silty fine to medium SAND, trace gravel. 5.5	
	2D	24/15	5.00 - 7.00	2/6/10/30	16	25					
							80				
10	R1	60/60	10.00 - 15.00	RQD = 57%			NQ-2	355.7		Top of Bedrock at Elev. 355.7 ft. 10.0	
										R1: Bedrock: Interbedded pelite and limestone and/or dolostone. [Cary Mills Formation]. Rock Quality = Fair. R1: Core Times (min:sec) 10.0-11.0 ft (3:08) 11.0-12.0 ft (3:16) 12.0-13.0 ft (2:56) 13.0-14.0 ft (3:15) 14.0-15.0 ft (3:30) 100% Recovery	
15								350.7		Bottom of Exploration at 15.0 feet below ground surface. 15.0	
20											
25											

Remarks:

Stratification lines represent approximate boundaries between soil typesst transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: HB-HOU-102

Maine Department of Transportation

Soil/Rock Exploration Log
US CUSTOMARY UNITS

Project: Intersection North St. (U.S. Route 1) and Smyrna St. (U.S.
Location: Houlton, Maine

Boring No.: HB-HOU-103
WIN: 22885.00

Drilling Contractor:	MaineDOT	Elevation (ft.)	365.8	Auger ID/OD:	5" Dia.
Operator:	Daggett/Niles	Datum:	NAVD88	Sampler:	N/A
Logged By:	B. Wilder	Rig Type:	CME 45C	Hammer Wt./Fall:	N/A
Date Start/Finish:	10/10/2018-10/10/2018	Drilling Method:	Solid Stem Auger	Core Barrel:	N/A
Boring Location:	30+36.5, 31.2 ft Lt. (Smyrna Rd.)	Casing ID/OD:	N/A	Water Level*:	None Observed

Definitions:
S = Sample off Auger Flights
B = Bucket Sample off Auger Flights
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
MW = Unsuccessful Field Vane Shear Test Attempt
V = Field Vane Shear Test. PP= Pocket Penetrometer
WOP = Weight of 1 Person
WOR/C = Weight of Rods or Casing
WOH = Weight of 140lb. Hammer
S_u = Peak/Remolded Field Vane Undrained Shear Strength (psf)
$S_{u(lab)}$ = Lab Vane Undrained Shear Strength (psf)
q_p = Unconfined Compressive Strength (ksf)
N-value = Raw Field SPT N-value
T_v = Pocket Torvane Shear Strength (psf)
WC = Water Content, percent ? = Similar or Equal too
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows / 6 in Shear Strength (psf) or RQD (%)	N-value	Casing Blows	Elevation (ft.)	Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
						SSA			Auger probe, very similar soils as HB-HOU-101.	
5										
10								353.70	Bottom of Exploration at 12.1 feet below ground surface. REFUSAL 12.1	
15										
20										
25										

Remarks:

Stratification lines represent approximate boundaries between soil typesst transitions may be gradual.

* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: HB-HOU-103

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

CAPITAL PROJECTS

WIN
22885.00

HIGHWAY PLANS

STATE OF MAINE ★ Kathleen Maguire 7120 ★ REGISTERED PROFESSIONAL ENGINEER

BY	DATE
PROJ. MANAGER	
DESIGN-DETAILED	
CHECKED-REVIEWED	
DESIGN2-DETAILED2	K.MAGUIRE
DESIGN3-DETAILED3	T.WHITE
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

SIGNATURE
P.E. NUMBER 7120
4/22/2020
DATE

HOULTON
U.S. ROUTE 1

BORING LOGS

SHEET NUMBER
5
OF 10

Date:5/13/2020 Username: morin Division: HIGHWAY Filename: ...\006_Signal Plan_10 scale.dgn

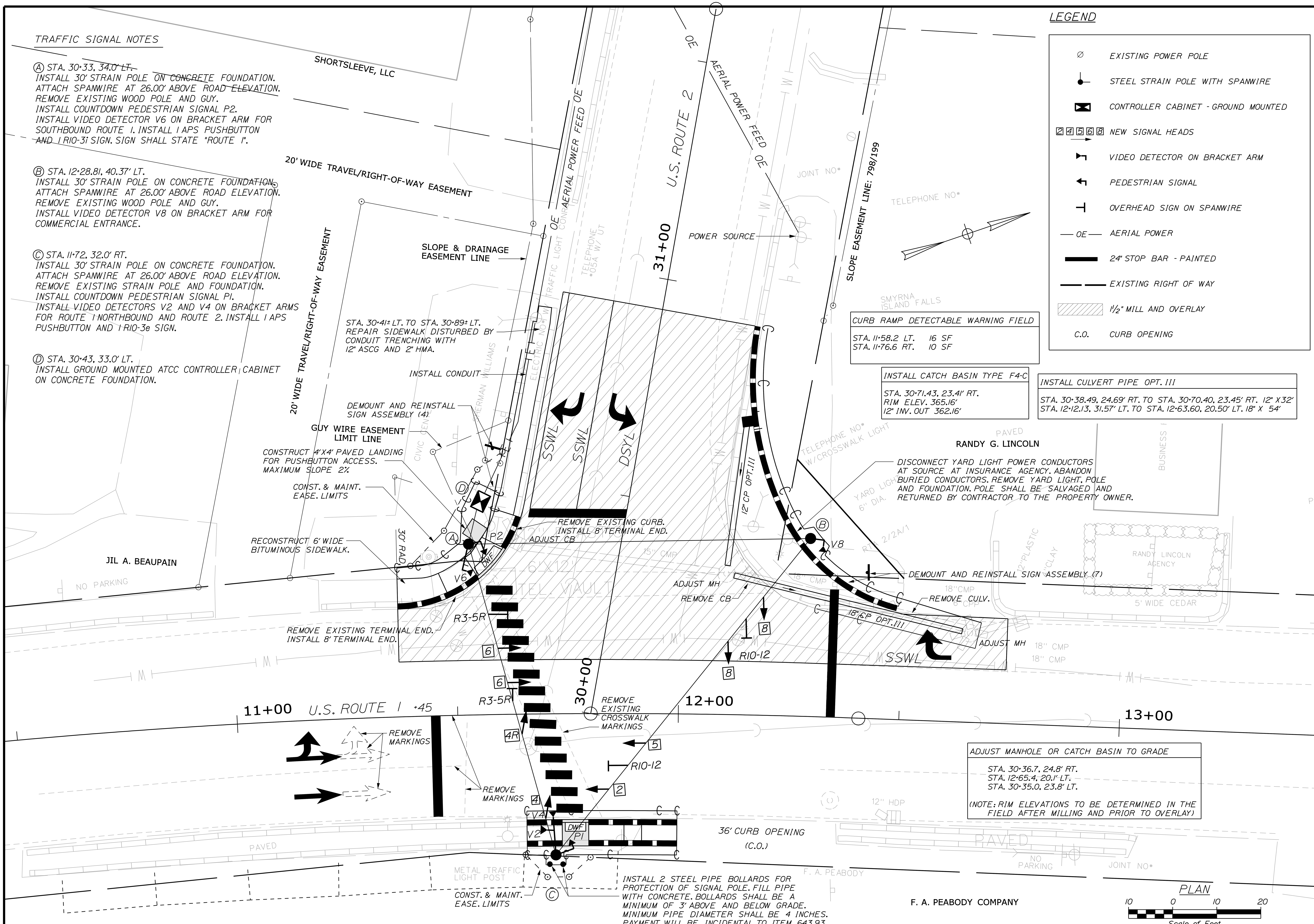
TRAFFIC SIGNAL NOTES

(A) STA. 30+33, 34.0' LT.
INSTALL 30' STRAIN POLE ON CONCRETE FOUNDATION.
ATTACH SPANWIRE AT 26.00' ABOVE ROAD ELEVATION.
REMOVE EXISTING WOOD POLE AND GUY.
INSTALL COUNTDOWN PEDESTRIAN SIGNAL P2.
INSTALL VIDEO DETECTOR V6 ON BRACKET ARM FOR SOUTHBOUND ROUTE 1. INSTALL 1 APS PUSHBUTTON AND 1 R10-31 SIGN. SIGN SHALL STATE "ROUTE 1".

(B) STA. 12+28.81, 40.37' LT.
INSTALL 30' STRAIN POLE ON CONCRETE FOUNDATION.
ATTACH SPANWIRE AT 26.00' ABOVE ROAD ELEVATION.
REMOVE EXISTING WOOD POLE AND GUY.
INSTALL VIDEO DETECTOR V8 ON BRACKET ARM FOR COMMERCIAL ENTRANCE.

(C) STA. 11+72, 32.0' RT.
INSTALL 30' STRAIN POLE ON CONCRETE FOUNDATION.
ATTACH SPANWIRE AT 26.00' ABOVE ROAD ELEVATION.
REMOVE EXISTING STRAIN POLE AND FOUNDATION.
INSTALL COUNTDOWN PEDESTRIAN SIGNAL P1.
INSTALL VIDEO DETECTORS V2 AND V4 ON BRACKET ARMS FOR ROUTE 1 NORTHBOUND AND ROUTE 2. INSTALL 1 APS PUSHBUTTON AND 1 R10-3e SIGN.

(D) STA. 30+43, 33.0' LT.
INSTALL GROUND MOUNTED ATCC CONTROLLER CABINET ON CONCRETE FOUNDATION.



LEGEND

- EXISTING POWER POLE
- STEEL STRAIN POLE WITH SPANWIRE
- CONTROLLER CABINET - GROUND MOUNTED
- NEW SIGNAL HEADS
- VIDEO DETECTOR ON BRACKET ARM
- PEDESTRIAN SIGNAL
- OVERHEAD SIGN ON SPANWIRE
- —OE— AERIAL POWER
- 24" STOP BAR - PAINTED
- EXISTING RIGHT OF WAY
- 1½" MILL AND OVERLAY
- C.O. CURB OPENING

CURB RAMP DETECTABLE WARNING FIELD	
STA. 11+58.2 LT.	16 SF
STA. 11+76.6 RT.	10 SF

INSTALL CATCH BASIN TYPE F4-C

STA. 30+71.43, 23.41' RT.
RIM ELEV. 365.16'
12" INV. OUT 362.16'

INSTALL CULVERT PIPE OPT. III

STA. 30+38.49, 24.69' RT. TO STA. 30+70.40, 23.45' RT. 12" X 32'
STA. 12+12.13, 31.57' LT. TO STA. 12+63.60, 20.50' LT. 18" X 54'

ADJUST MANHOLE OR CATCH BASIN TO GRADE

STA. 30+36.7, 24.8' RT.
STA. 12+65.4, 20.1' LT.
STA. 30+35.0, 23.8' LT.

(NOTE: RIM ELEVATIONS TO BE DETERMINED IN THE FIELD AFTER MILLING AND PRIOR TO OVERLAY)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2288500
HIGHWAY PLANS
WIN 22885.00

	BY	DATE
PROJ. MANAGER		
DESIGN-DETAILED	D.M. LORING	
CHECKED-REVIEWED	A.L. GODFREY	MSM	1-2020
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE 4226
P.E. NUMBER 4/20/20
DATE

HOULTON
U.S. RTE. 1 & U.S. RTE. 2
SIGNAL PLAN

SHEET NUMBER
6
OF 10

TRAFFIC SIGNAL NOTES

1. TRAFFIC SIGNAL WORK FOR THIS PROJECT WILL INCLUDE, BUT NOT BE LIMITED TO, FURNISHING AND INSTALLING A COMPLETE NEW GROUND-MOUNTED ATCC TRAFFIC SIGNAL CABINET AND FOUNDATION, ATC CONTROLLER, FIELD MONITORING UNIT WITH CELLULAR MODEM, AND ANCILLARY EQUIPMENT; VEHICULAR TRAFFIC SIGNAL ASSEMBLIES; VIDEO DETECTION; COUNTDOWN PEDESTRIAN SIGNALS WITH APS PUSHBUTTONS; AND RELATED INCIDENTAL WORK AND MATERIALS.

2. ALL WORK SHALL BE COMPLETED IN CONFORMANCE WITH THE LATEST REVISIONS OF THE STATE OF MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, MAINEDOT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS FOR THIS CONTRACT. THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE NATIONAL ELECTRICAL CODE, AND ANY REQUIREMENTS OF THE POWER COMPANY.

3. LOCATIONS OF ANY EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE PRESENCE OF UNDERGROUND UTILITY FACILITIES PRIOR TO COMMENCING ANY EXCAVATION WORK OR INSTALLATION OF POLES, FOUNDATIONS, CONDUIT, JUNCTION BOXES OR OTHER WORK INVOLVING SUBSURFACE DISTURBANCE AND SHALL NOTIFY UTILITIES OF PROPOSED WORK IN ACCORDANCE WITH MRSA TITLE 23 SECTION 3360-A, MAINE "DIG SAFE" SYSTEM. CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST THREE WORKING DAYS PRIOR TO THE BEGINNING OF EXCAVATION. ALL UTILITIES SHALL BE LOCATED BEFORE BEGINNING EXCAVATION.

4. THE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY OPERATIONS ARE CONDUCTED THAT POTENTIALLY COULD CONFLICT WITH AERIAL UTILITIES.

5. INSTALL NEW 120V/240V POWER SERVICE FOR TRAFFIC SIGNALS.

6. AN EXTERNAL, STANDALONE BREAKER TO DISCONNECT POWER TO THE NEW CONTROL CABINET SHALL BE INSTALLED IN A LOCKABLE NEMA 3R ENCLOSURE BETWEEN THE METER AND THE CABINET.

7. THE CONTROL CABINET AND THE POWER DISCONNECT ENCLOSURE EACH SHALL BE MARKED WITH ARC HAZARD TYPE 2, 3 OR 4 AND THE APPROPRIATE PPE REQUIRED. SEE SECTION 643.09 FOR OTHER REQUIREMENTS.

8. ALL EXISTING TRAFFIC AND PEDESTRIAN SIGNAL EQUIPMENT, POLES AND GUY ANCHORS SHALL BE CAREFULLY REMOVED AND PROTECTED. THE TOWN OF HOULTON SHALL HAVE FIRST RIGHT OF REFUSAL OF EXISTING EQUIPMENT AFTER REMOVAL. IF REQUESTED BY THE TOWN, CONTRACTOR SHALL DELIVER AND UNLOAD THE SALVAGED EQUIPMENT TO THE TOWN OF HOULTON PUBLIC WORKS GARAGE AT A LOCATION TO BE DESIGNATED BY THE TOWN. IF THE TOWN IS NOT INTERESTED IN THE SALVAGED EQUIPMENT, THE CONTRACTOR WILL BE RESPONSIBLE FOR DISPOSAL. WORK WILL BE INCIDENTAL TO PAYMENT UNDER ITEM 643.80.

9. SIGNAL ASSEMBLIES SHALL BE POLYCARBONATE WITH 5-INCH LOUVERED BACKPLATES AND YELLOW RETROREFLECTIVE TAPE AROUND THE DISPLAY FACE PERIMETER OF THE BACKPLATES. ASSEMBLIES SHALL HAVE DOUBLE SPANWIRE SUPPORT. ALL SIGNAL ASSEMBLIES AND SIGNAGE ATTACHED TO SPANWIRES SHALL BE STABILIZED WITH A BOTTOM TETHER.

10. THE BOTTOM OF SIGNAL ASSEMBLIES AND BACKPLATES SHALL HAVE AT LEAST 17 FEET OF VERTICAL CLEARANCE ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY. THE BOTTOM OF THE GREEN LED SIGNAL DISPLAY OF EACH ASSEMBLY SHALL BE NO MORE THAN 19 FEET ABOVE THE PAVEMENT GRADE AT THE CENTER OF THE ROADWAY.

11. CONDUIT FROM THE POWER SOURCE TO THE METER SHALL BE RIGID METAL CONDUIT. OTHER CONDUIT NOT UNDER PAVEMENT SHALL BE 3 INCH MINIMUM. PVC SCHEDULE 40. CONDUIT UNDER PAVEMENT SHALL BE 3 INCH MINIMUM SCHEDULE 80 PVC AND SHALL BE INSTALLED BY DIRECTIONAL BORING. MINIMUM BURIAL DEPTH FOR CONDUIT SHALL BE 36". TOP 3 INCHES OF CONDUIT SHALL BE SEALED TO PREVENT ENTRY BY RODENTS.

12. 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.

13. JUNCTION BOX COVERS SHALL BE LABELED "TRAFFIC" AND SHALL BE GROUNDED.

14. THE TRAFFIC SIGNAL CONTROLLER SHALL BE AN ADVANCED TRANSPORTATION CONTROLLER (ATC) CAPABLE OF SUPPORTING NTCIP PROTOCOLS.

15. DETECTION EQUIPMENT SHALL BE CONNECTED TO THE FIELD MONITORING UNIT AND CELL MODEM WITH REMOTE MONITORING AND ADJUSTMENT CAPABILITY.

16. THE CELL MODEM IN THE ATC CABINET SHALL BE INTEGRATED INTO A CLOUD BASED MONITORING SYSTEM. SIERRA WIRELESS GX450 OR APPROVED EQUAL.

17. SPECIFIED NEW TRAFFIC SIGNAL POLE LOCATIONS ARE MEASURED TO THE CENTER OF THE FOUNDATIONS. SPECIFIED LOCATION FOR THE CONTROLLER IS MEASURED TO THE CENTER OF THE CONTROLLER FOUNDATION.

18. OVERHEAD LANE USE SIGNING INSTALLED ON SPAN WIRES WILL BE PAID AS ITEM 645.271.

19. BUSHINGS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.

20. PULL WIRE SHALL BE INSTALLED IN ALL CONDUIT.

21. ALL CONDUIT THREADS ARE TO BE REDHEADED.

22. ALL EXPOSED STEEL FITTINGS AND HARDWARE SHALL BE GALVANIZED. EXCEPT NON-CONDUCTIVE BUSHINGS SHALL BE USED FOR CONNECTION OF RIGID METAL CONDUIT TO ALUMINUM CABINETS.

23. SECONDARY CIRCUIT WIRING FOR TRAFFIC SIGNALS SHALL BE STRANDED COPPER XHHW-2, NO. 8 AWG OR LARGER.

24. ALL TRAFFIC SIGNAL EQUIPMENT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.

25. STRAIN POLE FOUNDATIONS AND CONTROL CABINET FOUNDATIONS EACH SHALL HAVE ONE OR MORE GROUND RODS LOCATED IN OR ADJACENT TO THE FOUNDATION THAT ARE BONDED TO THE GROUNDING CONDUCTOR.

26. ALL FIELD WIRING SHALL BE NEATLY BUNDLED AND CLEARLY IDENTIFIED WITH PERMANENT, LEGIBLE, WEATHERPROOF TAGS SECURELY ATTACHED TO EACH CABLE.

27. AT THE TIME OF FINAL PROJECT INSPECTION, THE CONTRACTOR SHALL FURNISH TO THE RESIDENT THREE COMPLETE SETS OF AS-BUILT TRAFFIC SIGNAL PLANS, WIRING DIAGRAMS, BOX PRINTS AND EQUIPMENT MANUALS. ONE ADDITIONAL SET SHALL REMAIN IN THE CABINET.

28. THE MAINTENANCE OF TRAFFIC SIGNALS SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY MAINEDOT.

29. PAYMENT UNDER ITEM 643.80 SHALL INCLUDE, BUT NOT BE LIMITED TO, POWER SERVICE AND METER, METER DISCONNECT AND ENCLOSURE, BRACKET ARMS, SPANWIRES, TETHER WIRES, VEHICULAR AND PEDESTRIAN SIGNAL ASSEMBLIES AND LED LAMPS, BACKPLATES, VISORS, CONTROLLER AND CABINET, WIRING, CABLE, POLE RISERS, AND ALL APPURTENANCES AND INCIDENTALS NECESSARY FOR A COMPLETELY FUNCTIONING TRAFFIC SIGNAL INSTALLATION. OTHER THAN RELATED LABOR, MATERIALS AND EQUIPMENT INCLUDED IN OTHER PAY ITEMS OF THE CONTRACT.

30. ACCESSIBLE PEDESTRIAN PUSHBUTTONS SHALL BE PROVIDED WITH A PERCUSSIVE TONE.

31. PEDESTRIAN PUSHBUTTONS SHALL BE INSTALLED AT 3.5' ABOVE ADJACENT ACCESSIBLE SURFACE GRADE.

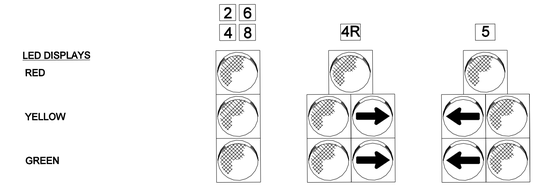
32. MAXIMUM ALLOWABLE REACH DISTANCE FOR PEDESTRIAN PUSHBUTTONS IS 10 INCHES. INSTALL EXTENSION BRACKETS IF REQUIRED.

33. FURNISHING AND INSTALLATION OF STEEL PIPE BOLLARDS WITH CONCRETE FILL FOR PROTECTION OF THE STRAIN POLE WILL BE INCIDENTAL TO PAYMENT UNDER ITEM 643.80.

34. DETECTION OF TRAFFIC IN THE ROUTE 2 RIGHT TURN LANE SHALL BE SET FOR 15 SECONDS DELAY.

35. SNUG-TIGHT CONDITION OF ANCHOR BOLT NUTS ON STRAIN POLE FOUNDATIONS SHALL BE DEFINED AS BETWEEN 20 AND 30 PERCENT OF THE VERIFICATION TORQUE VALUE DETERMINED BY THE FORMULA IN FHWA PUBLICATION NHI 05-036. ADDITIONAL TIGHTENING BEYOND SNUG-TIGHT CONDITION SHALL BE DONE IN ACCORDANCE WITH SECTION 643.04 OF THE MAINEDOT STANDARD SPECIFICATIONS.

SIGNAL HEAD DETAIL



NO.REQUIRED	6	1	1

1. ALL NEW SIGNAL FACE DISPLAYS SHALL BE 12" LED.
2. ALL NEW SIGNAL FACE DISPLAYS SHALL HAVE TUNNEL VISORS.
3. ALL NEW SIGNAL DISPLAYS SHALL HAVE BACKPLATES WITH 3" MINIMUM WIDTH YELLOW RETROREFLECTIVE TAPE AROUND DISPLAY FACE.

OVERHEAD SIGNING

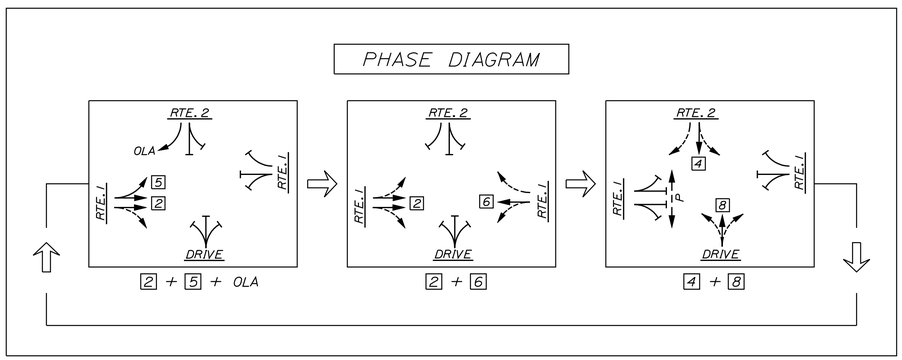
R10-12
30" X 36"
2 REQUIRED

R3-5R
30" X 36"
2 REQUIRED

INITIAL SIGNAL TIMING

PHASE	1	2	3	4	5	6	7	8
MIN. INITIAL	-	5.0	-	5.0	5.0	5.0	-	5.0
VEH. EXT.	-	3.0	-	3.0	3.0	3.0	-	3.0
MAX. GREEN	-	45	-	20	15	30	-	20
YELLOW	-	3.0	-	3.0	3.0	3.0	-	3.0
ALL RED	-	3.0	-	2.5	2.0	3.0	-	2.5
WALK	-	-	-	4.0	-	-	-	-
PED CLEAR	-	-	-	17.0	-	-	-	-
FLASH	-	Y	-	R	R	Y	-	R
RECALL	-	SOFT	-	-	-	SOFT	-	-

PHASE DIAGRAM



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

02288500

HIGHWAY PLANS

WIN 22885.00

PROJ. MANAGER	D.M. LORNG		
DESIGN-DETAILED	AL. GODFREY	BY	MSM
CHECKED-REVIEWED		DATE	1-2020
DESIGN2-DETAILED2		SIGNATURE	
DESIGN3-DETAILED3			4226
REVISIONS 1		P.E. NUMBER	
REVISIONS 2			4/20/20
REVISIONS 3		DATE	
REVISIONS 4			
FIELD CHANGES			

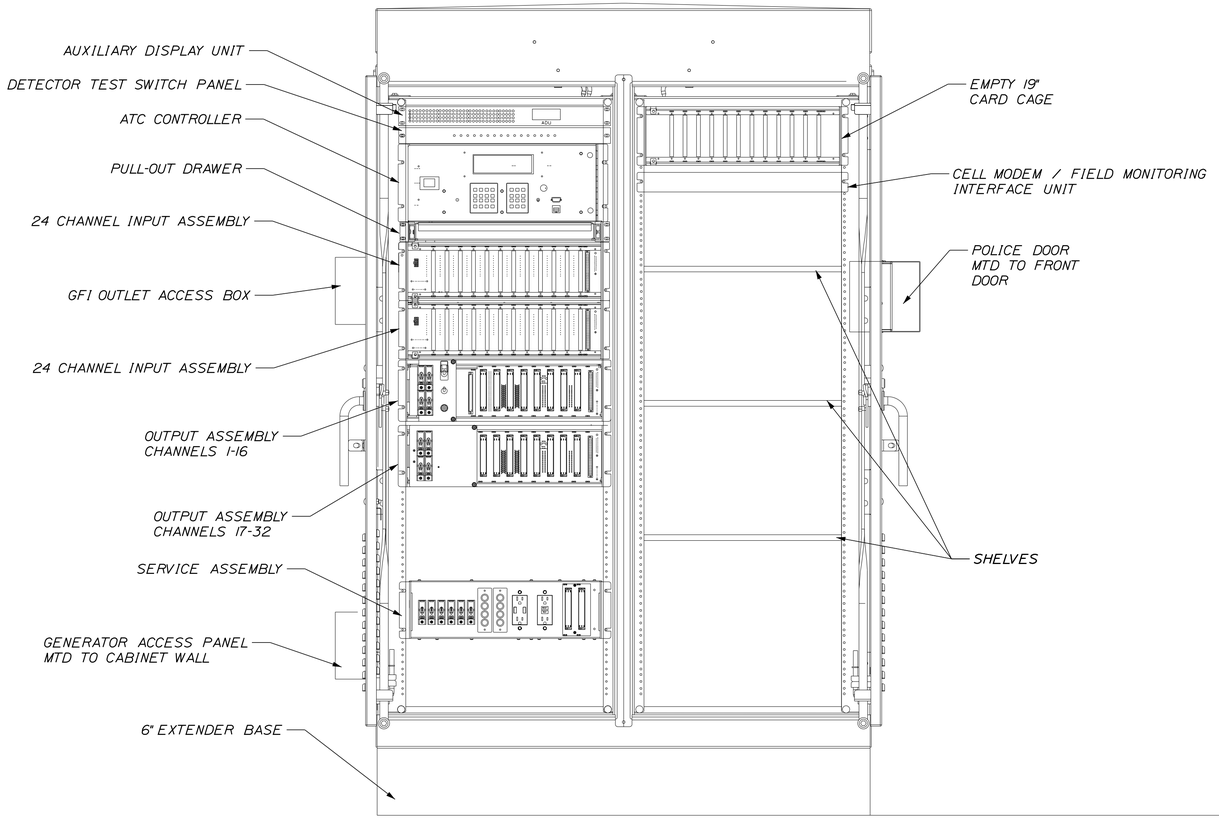
HOULTON
U.S. RTE. 1 & U.S. RTE. 2

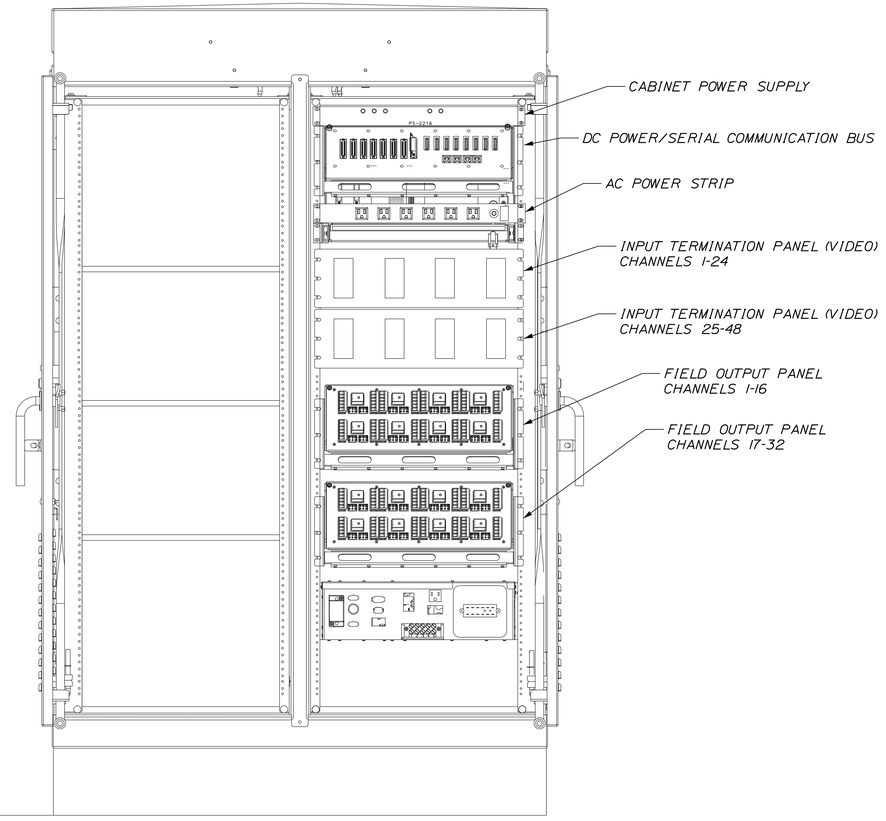
SIGNAL PLAN DETAILS

SHEET NUMBER

7

OF 10





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 UNITS.
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 THE 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.

NOMINAL TERMINAL PANEL SIZE PER 24 INPUT RACK:

LOOP = 6U HIGH (10.5")
VIDEO - 3U HIGH (5.25")

NOT TO SCALE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

02288500

WIN 22885.00

HIGHWAY PLANS

PROJ. MANAGER	D.M. LORING	BY	DATE
DESIGN-DETAILED	ALG	JLE	1-2020
CHECKED-REVIEWED	ALG		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE

4226
P.E. NUMBER

4/20/20
DATE

HOULTON
U.S. RTE. 1 & U.S. RTE. 2

ATCC DETAIL

SHEET NUMBER

8

OF 10

Filename: ...\008_ATCC DETAILS.dgn Division: HIGHWAY Username: common Date:4/20/2020

CURVE DATA MC10			
(POINT NO.)		NORTHING	EASTING
PC	(30) 0+00.00	836574.7073	2304864.2802
PI	0+21.32	836595.0408	2304870.6788
CC	(31)	836583.7124	2304835.6636
PT	(32) 0+37.07	836607.7731	2304853.5824
Radius	30		
Delta	70° 47' 30" LT		
Degree of Curve	190° 59' 09"		
Length	37.07		
Tangent	21.32		
Chord	34.75		
Middle Ordinate	5.54		
External	6.8		

CURVE DATA MC11			
(POINT NO.)		NORTHING	EASTING
POB	(70) 0+00.00	836685.0542	2304806.1614
PC	(36) 0+26.78	836672.0785	2304829.5926
PI	0+50.25	836660.7125	2304850.1169
CC	(39)	836733.3155	2304863.5045
PCC	(38) 0+72.06	836664.0107	2304873.3451
Radius:	70		
Delta:	37°03'30" LT		
Degree of Curve:	81°51'04"		
Length:	45.28		
Tangent:	23.46		
Chord:	44.49		
Middle Ordinate:	3.63		
External:	3.83		
PI	0+95.75	836667.3406	2304896.7971
CC	(37)	836703.6135	2304867.7219
PT	(40) 1+14.83	836689.5057	2304905.1515
Radius:	40		
Delta:	61°15'59" LT		
Degree of Curve:	143°14'22"		
Length:	42.77		
Tangent:	23.69		
Chord:	40.76		
Middle Ordinate:	5.58		
External:	6.49		
POE	(71) 1+83.51	836753.7712	2304929.3741

CURVE DATA MC12			
(POINT NO.)		NORTHING	EASTING
PC	(33) 0+00.00	836587.0269	2304918.9714
PI	0+17.00	836603.1891	2304924.2447
CC	(34)	836129.2005	2306322.1717
PT	(35) 0+34.00	836619.2256	2304929.8889
Radius	1476		
Delta	1° 19' 11" RT		
Degree of Curve	3° 52' 55"		
Length	34		
Tangent	17		
Chord	34		
Middle Ordinate	0.1		
External	0.1		

CURB TYPE 1 - CIRCULAR			
ALIGNMENT	POINT TO POINT	RADIUS	LENGTH
MC10	30 TO 10	30'	12.07'
MC11	38 TO 82	40'	29.81'

TERMINAL CURB TYPE 1-8 FT.		
ALIGNMENT	POINT TO POINT	QTY.
MC12	33 TO 18	1
	19 TO 20	1
	21 TO 35	1
	50 TO 51	1
	52 TO 53	1
	54 TO 55	1

CURB TYPE 1		
ALIGNMENT	POINT TO POINT	LENGTH
MC12	20 TO 21	4'
	53 TO 54	4'
MC11	36 TO 38	45.28'

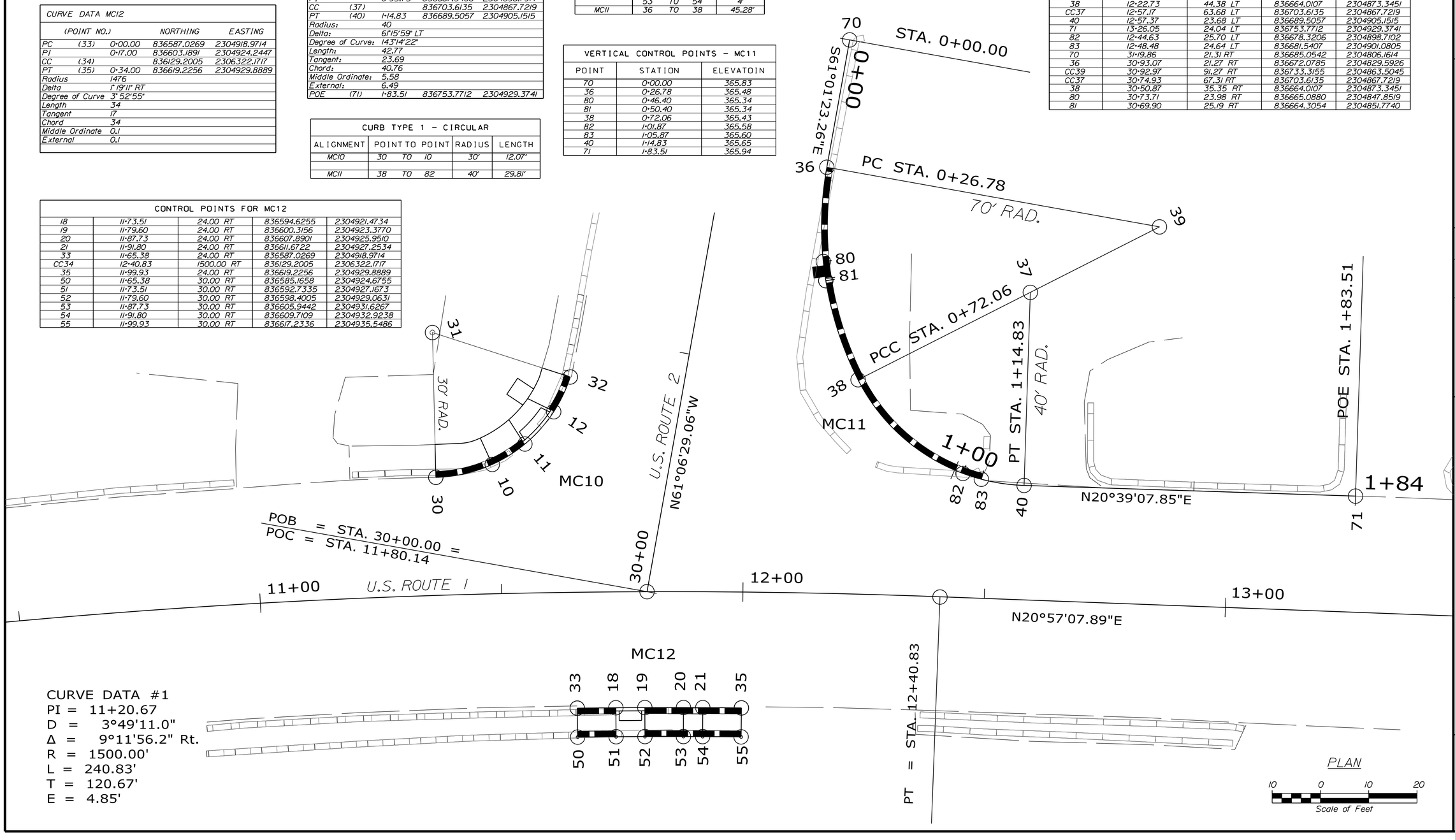
VERTICAL CONTROL POINTS - MC11		
POINT	STATION	ELEVATOIN
70	0+00.00	365.83
36	0+26.78	365.48
80	0+46.40	365.34
81	0+50.40	365.34
38	0+72.06	365.43
82	1+01.87	365.58
83	1+05.87	365.60
40	1+14.83	365.65
71	1+83.51	365.94

TERMINAL CURB TYPE 1-8 FT. CIRC.			
ALIGNMENT	POINT TO POINT	RADIUS	QTY.
MC10	10 TO 11	30'	1
	12 TO 32	30'	1

TERMINAL CURB TYPE 1-4 FT. CIRC.			
ALIGNMENT	POINT TO POINT	RADIUS	QTY.
MC11	82 TO 83	40'	1

CONTROL POINTS FOR MC10				
POINT	STATION	OFFSET	NORTHING	EASTING
10	11+48.71	26.78 LT	836586.6280	2304865.5216
11	11+55.44	30.87 LT	836594.3930	2304863.6980
12	11+61.39	37.45 LT	836602.2007	2304859.2895
30	11+37.16	24.44 LT	836574.7073	2304864.2802
CC31	11+37.40	54.44 LT	836583.7124	2304835.6636
32	11+64.83	44.60 LT	836607.7731	2304853.5824
10	30+20.33	36.18 LT	836586.6280	2304865.5216
11	30+25.68	30.26 LT	836594.3930	2304863.6980
12	30+33.31	25.56 LT	836602.2007	2304859.2895
30	30+15.66	47.22 LT	836574.7073	2304864.2802
CC31	30+45.06	53.16 LT	836583.7124	2304835.6636
32	30+41.00	23.44 LT	836607.7731	2304853.5824
CONTROL POINTS FOR MC11				
38	12+22.73	44.38 LT	836664.0107	2304873.3451
CC37	12+57.17	63.68 LT	836703.6135	2304867.7219
40	12+57.37	23.68 LT	836689.5057	2304905.1515
71	13+26.05	24.04 LT	836753.7712	2304929.3741
82	12+44.63	25.70 LT	836678.3206	2304898.7102
83	12+48.48	24.64 LT	836681.5407	2304901.0805
70	31+19.86	21.31 RT	836685.0542	2304806.1614
36	30+93.07	21.27 RT	836672.0785	2304829.5926
CC39	30+92.97	91.27 RT	836733.3155	2304863.5045
CC37	30+74.93	67.31 RT	836703.6135	2304867.7219
38	30+50.87	35.35 RT	836664.0107	2304873.3451
80	30+73.71	23.98 RT	836665.0880	2304847.8519
81	30+69.90	25.19 RT	836664.3054	2304851.7740

CONTROL POINTS FOR MC12				
18	11+73.51	24.00 RT	836594.6255	2304921.4734
19	11+79.60	24.00 RT	836600.3156	2304923.3770
20	11+87.73	24.00 RT	836607.8901	2304925.9510
21	11+91.80	24.00 RT	836611.6722	2304927.2534
33	11+65.38	24.00 RT	836587.0269	2304918.9714
CC34	12+40.83	1500.00 RT	836129.2005	2306322.1717
35	11+99.93	24.00 RT	836619.2256	2304929.8889
50	11+65.38	30.00 RT	836585.1658	2304924.6755
51	11+73.51	30.00 RT	836592.7335	2304927.1673
52	11+79.60	30.00 RT	836598.4005	2304929.0631
53	11+87.73	30.00 RT	836605.9442	2304931.6267
54	11+91.80	30.00 RT	836609.7109	2304932.9238
55	11+99.93	30.00 RT	836617.2336	2304935.5486



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

02288500

WIN 22885.00

HIGHWAY PLANS

PROJ. MANAGER	D.M. LORING	
DESIGN-DETAILED	ALL GODFREY	BY
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

1-2020 DATE

SIGNATURE
4226
P.E. NUMBER
4/20/20
DATE

HOULTON
U.S. RTE. 1 & U.S. RTE. 2

GEOMETRIC PLAN

SHEET NUMBER
9
OF 10

Filename: ...\009_Geometric Plan_10 scale.dgn Division: HIGHWAY Username: common Date:4/20/2020

PLAN LEGEND

Town, County, State	New R/W Along Existing R/W	Sanitary Sewer	Traveled Way	Cut Line	Fill Line
Approx. Property Lines P.L.	Building / Clearing Limit Line CLL	Telephone Line	Ditch	Stonewall	Retaining Wall
Existing Right of Way	Trees Conifer / Deciduous	Electric Line	Catch Basin	Baseline 10+00 11+00 12+00	
Limits of Wrought Portion L.O.W.P.	Tree Line / Bush Line	Water Line	Manhole	Monument	Traverse Point
Control Of Access C.O.A.	Water Edge	Underdrain Line	Sewer Manhole	Iron Rod Found IRF	Pipe Found IPF
New Right of Way	Ledge / Rock/Boulder / Flag Pole	Gas Line	Utility Pole	Replacement Pin Set	
New Easement	Fence CHAIN LINK / BARB WIRE / STOCKADE	Guardrail	Fire Hydrant		
New Temporary Rights	Sign / Well / Mailbox	Culvert	Curbing		
New R/W Within Existing R/W					

Existing / Proposed

STATE OF MAINE
REGISTRY OF DEEDS
COUNTY _____
RECEIVED _____, _____
at _____h_____m_____M and recorded in
Plan Book _____, Page _____
Attest: _____
REGISTER

THIS PLAN WAS PREPARED IN CONNECTION WITH THE DEPARTMENT'S ACQUISITION OF REAL PROPERTY FOR TRANSPORTATION PURPOSES. IT CANNOT BE USED TO ESTABLISH LEGAL BOUNDARIES BETWEEN ABUTTING PROPERTY OWNERS.

25 0 25 50 75 100
Scale of Feet

GRID
MAINE 2000 EAST ZONE (2011)

NOTE: PRESCRIPTIVE EASEMENT FOR HIGHWAY PURPOSES WITHIN LIMITS OF WROUGHT PORTION (L.O.W.P.)

A NEW START LLC
ITEM NO. (1)
CONST. & MAINT. EASE. 205± S.F. (1)
TOTAL AREA = 0.88± AC. (TOWN)

RANDY G. LINCOLN
PARCEL NO. (2)
LAND TAKEN = 376± S.F. (1)
TOTAL AREA = 0.40± AC.
REM. AREA = 0.39± AC.

F. A. PEABODY COMPANY
ITEM NO. (3)
SIGNAL SYSTEM EASE. = 45± S.F. (1)
TOTAL AREA = 0.87± AC. (TOWN)

EXISTING RIGHT OF WAY INFORMATION

U.S. ROUTE 1 / NORTH STREET / U.S. ROUTE 2 (SOUTH OF INTERSECTION)
1) STATE OF MAINE DEPARTMENT OF TRANSPORTATION
RIGHT OF WAY MAP - STATE HIGHWAY "50"
HOULTON, AROOSTOOK COUNTY
FEDERAL AID PROJECT NO. F-050-3(30)
DATED SEPTEMBER 1987
D.O.T. FILE NO. 2-380, SHEETS 1 & 2 OF 4

2) AROOSTOOK COUNTY RECORDS
VOL. 3, PAGE 277 (OF 1874)

U.S. ROUTE 2 / SMYRNA STREET
1) MAINE STATE HIGHWAY COMMISSION
RIGHT OF WAY MAP
STATE HIGHWAY "319"
HOULTON, AROOSTOOK COUNTY
FEDERAL AID SECONDARY US-0319-9(8)
MAY 1960
S.H.C. FILE NO. 2-144, SHEET 1 OF 2

2) AROOSTOOK COUNTY RECORDS
VOL. 1, PAGE 125 (OF 1843)

NOTE: PRESCRIPTIVE EASEMENT FOR HIGHWAY PURPOSES WITHIN LIMITS OF WROUGHT PORTION (L.O.W.P.)

STATE AID HIGHWAY NO. 24 / U.S. ROUTE 1 / NORTH STREET
TO LITTLETON
TO BANGOR STREET
STATE AID HIGHWAY NO. 24 / U.S. ROUTE 1 / U.S. ROUTE 2 / NORTH STREET
STATE AID HIGHWAY NO. 23 / U.S. ROUTE 2 / SMYRNA STREET
TO NEW LIMERICK
POE = STA. 31+62.32
POB = STA. 30+00.00
POE = STA. 13+64.78
PC = STA. 10+00.00
PT = STA. 12+40.83
BEGIN B.L. 30+00
END B.L. 31+00
BEGIN B.L. 10+00
BEGIN B.L. 11+00
END B.L. 12+00
END B.L. 13+00
13+65
STA. 11+80.14 (S.A.H. NO. 24 / U.S. ROUTE 1 / NORTH ST.)=
STA. 30+00.00 (S.A.H. NO. 23 / U.S. ROUTE 2 / SMYRNA ST.)
N 61°06'29.1" W 100.00'
N 20°57'07.9" E 59.17'
140.83'
20' WIDE TRAVEL/RIGHT-OF-WAY EASEMENT
EXISTING SLOPE & DRAINAGE EASEMENT LINE 798/173
EXISTING GUY WIRE EASEMENT LIMIT LINE 2425/9
ESITTING SLOPE EASEMENT LINE; 798/199
S.H.C. FILE NO. 2-144
SIGNAL SYSTEM POLE & CONTROL BOX
CONST. & MAINT. EASE. LIMITS 205± S.F.
L.O.W.P.
SIGNAL SYSTEM EASE. LIMITS 45± S.F.
PARKING STRIPE LOCATIONS FROM AERIAL IMAGERY ONLY
EXISITNG CONSTRUCTION & MAINTENANCE EASEMENT LIMITS 2075/159
SLOPE EASEMENT LINE 2075/159
HOUSE 2 STY
BUSINESS RANDY LINCOLN
BUSINESS F. A. PEABODY
RANDY LINCOLN AGENCY
P.L.
PAVED
WIN 022885.00

ITEM	TECH	CHECKED
EXISTING CONDITION PLAN	B.S.	G.L.L.
FINAL RIGHT OF WAY	T.L.B.	D.S.G.
AREAS	T.L.B.	D.S.G.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016 - 207-624-3460
HOULTON
RIGHT OF WAY MAP

REVISIONS			
NO.	DATE	DESCRIPTION	BY

PLAN FILED IN PLAN BOOK PAGE	COUNTY RECORD (SOUTH)			
NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE
		COND.	3/23/2020	5997	113

BRUCE A. VAN NOTE
COMMISSIONER
JOYCE NOEL TAYLOR
CHIEF ENGINEER
DATE

STATE AID HIGHWAY NOS. 23 & 24
U.S. ROUTES 1 & 2 / NORTH ST. / SMYRNA ST.
HOULTON AROOSTOOK COUNTY
STATE PROJECT NO. 22885.00

JANUARY 2020 | RIGHT-OF-WAY MAP | D.O.T. FILE NO. 2-615
SCALE 1"= 25' | SHEET 1 OF 1

SHEET NUMBER
10
OF 10