

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



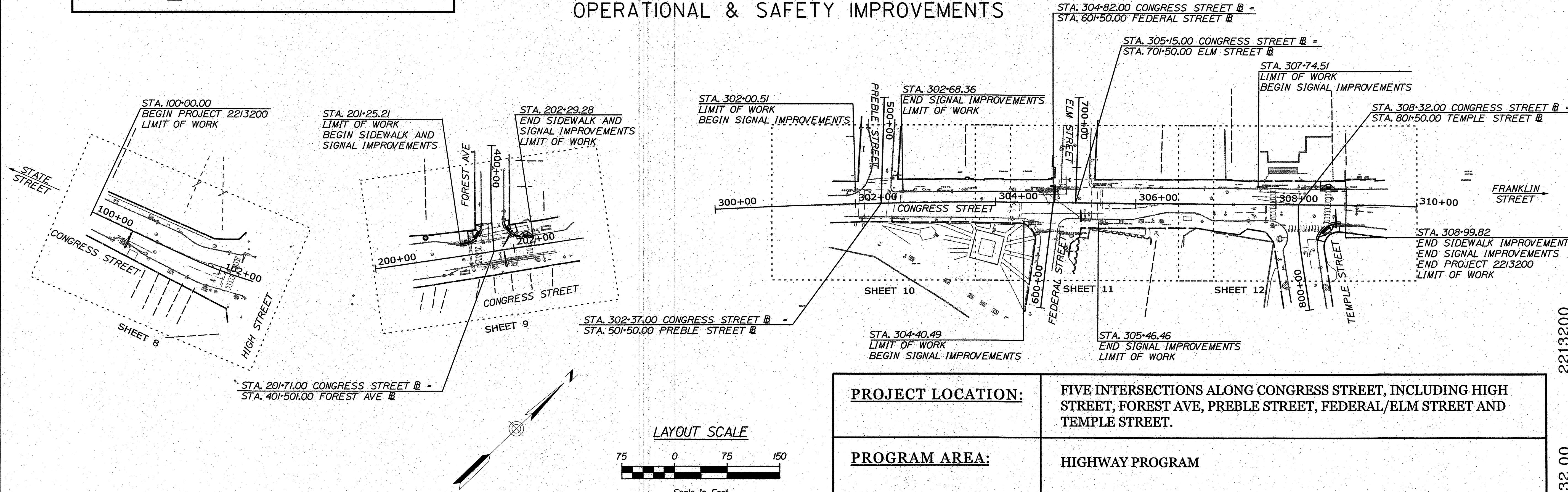
PORTLAND
CUMBERLAND COUNTY
CONGRESS STREET SIGNAL IMPROVEMENTS
FEDERAL PROJECT 2213200
5 INTERSECTIONS
OPERATIONAL & SAFETY IMPROVEMENTS

PLAN LEGEND

Town, County, State	_____	Catch Basins	▣ Existing ■ Proposed
Property Lines	-----	Manholes	○ Existing ● Proposed
R/W Lines-Existing	-----	Proposed Underdrain	-----
R/W Lines-Proposed	-----	Proposed Ditch	-----
Culvert-Existing	-----	Existing Ditch	-----
Culvert Proposed	-----	Utility Poles	◇ Existing ◆ Proposed
Curbing Existing	-----	Fire Hydrants	⊙ Existing ⊙ Proposed
Type 1	-----	Existing Water Line	-----
Type 3	-----	Existing San. Sewer	-----
Type 5	-----	Existing San. Sewer Manhole	⊙
Outline of Bodies of Water	-----	Guardrail-Existing	-----
Exposed Bedrock	-----	Guardrail-Proposed	-----
Buildings	-----	Guardrail-Cable, Other	-----
Trees	◀ Conifer ◉ Deciduous	Centerline-Existing	-----
Tree Line	-----	Centerline-Proposed	-----
Clearing Limit Line	-----	Travelway-Existing	-----
Railroad	-----	Travelway-Proposed	-----
Boring	⊕ HB-XXX-###	Probe	⊕ P-#.X
Pavement Core	● PC-#	## = Depth	
Test Pit	⊕ TP-XXX-###	X = W (Weathered Rock)	
		R (Refusal)	
		NR (No Refusal)	

INDEX OF SHEETS

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PROJECT LOCATION:	FIVE INTERSECTIONS ALONG CONGRESS STREET, INCLUDING HIGH STREET, FOREST AVE, PREBLE STREET, FEDERAL/ELM STREET AND TEMPLE STREET.
PROGRAM AREA:	HIGHWAY PROGRAM
SCOPE OF WORK:	SIGNAL IMPROVEMENTS AND SIDEWALK RAMP RECONSTRUCTION

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED
[Signature]
COMMISSIONER: *[Signature]*
CHIEF ENGINEER: *[Signature]*

DATE
3-6-19

PROJECT INFORMATION

PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
HIGHWAY	LARRY HAMILTON	DON ETINGER	CORRILL PALMER			

PORTLAND - CONGRESS STREET
SIGNAL IMPROVEMENTS

WIN 22132.00 2213200

TITLE SHEET

SHEET NUMBER
1
OF 19

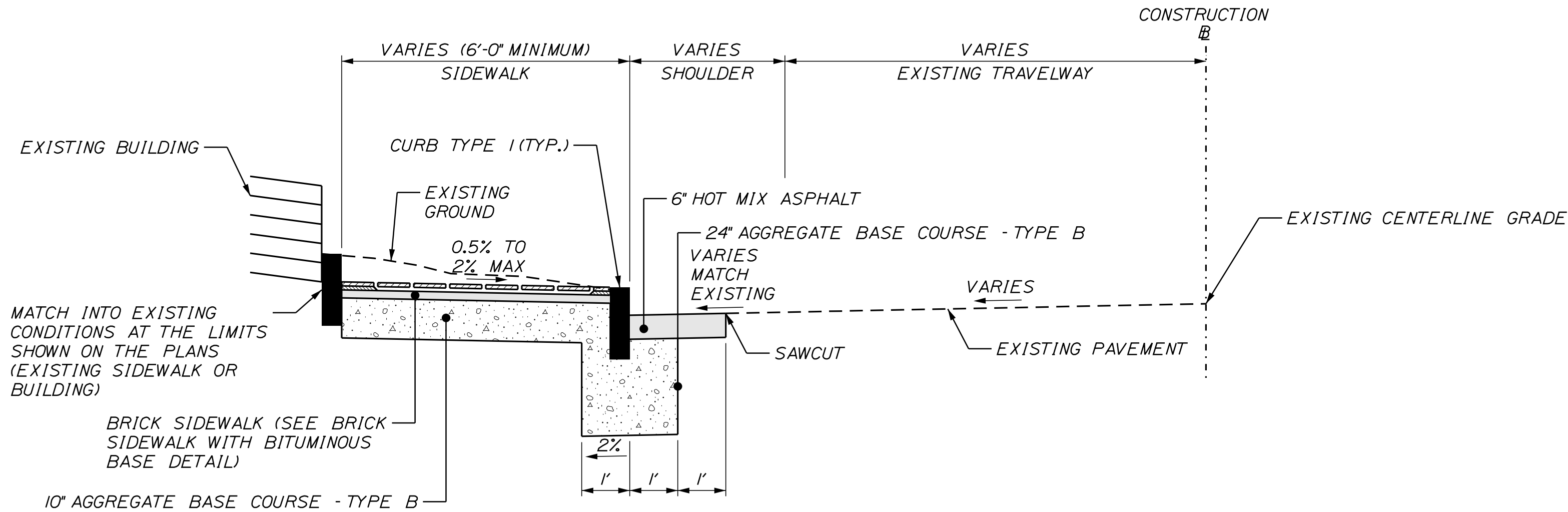
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Date: 2/6/2019

Date:2/6/2019

Username: Mike.Cundiff

Division: HIGHWAY

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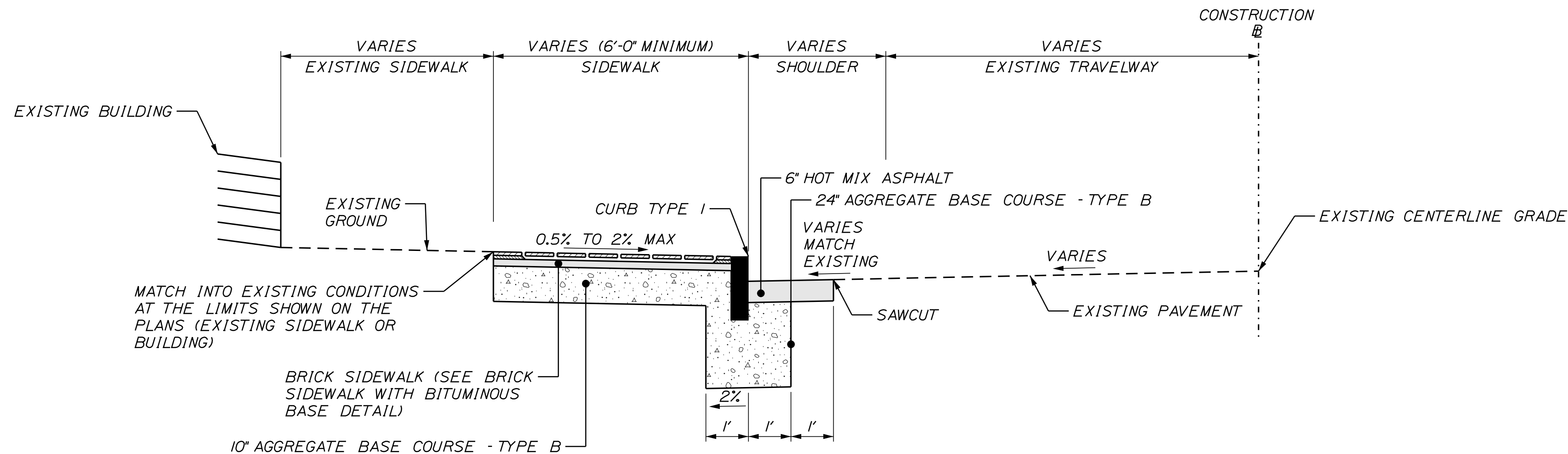


**TYPICAL SECTION
BRICK SIDEWALK WITH CURB AND
BACKCURB AGAINST BUILDING**

STA. 201+38 LT. TO STA. 401+11 RT.
STA. 401+06 LT. TO STA. 202+06 LT.

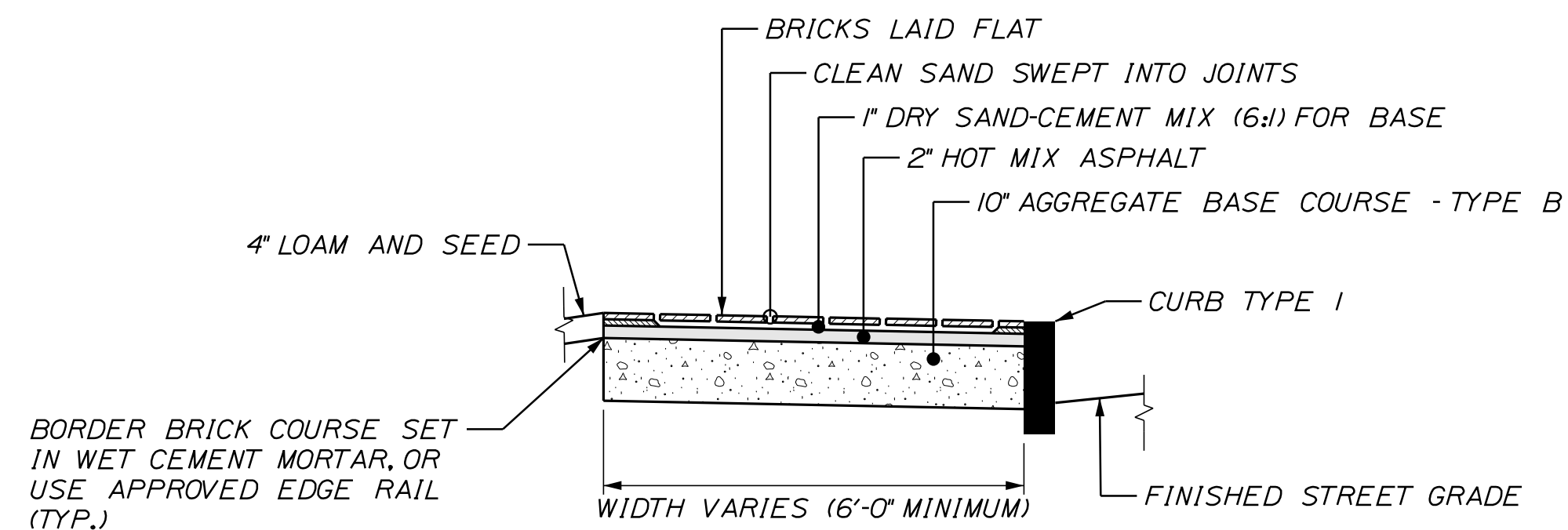
NON-SLIP WHITE CROSSWALK
STRIPING REFLECTIVE PAINT

**CROSSWALK STRIPING
DETAIL**



**TYPICAL SECTION
BRICK SIDEWALK WITH CURB**

STA. 201+25 LT. TO STA. 201+61 LT.
STA. 201+89 LT. TO STA. 202+29 LT.
STA. 308+57 RT. TO STA. 309+92 RT.
STA. 308+64 LT. TO STA. 309+00 LT.



**BRICK SIDEWALK WITH
BITUMINOUS BASE DETAIL**

- NOTES:
1. THE PAVEMENT, BASE AND SUBBASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
 2. CROWNS FOR BOTH NORMAL AND SUPERELEVATION SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
 3. ALL DETECTABLE WARNING PLATES SHALL BE CAST IRON.
 4. FULL DEPTH PAVEMENT (6") SHALL BE PROVIDED IN SHOULDERS WITHIN LIMITS OF WORK.
 5. DO NOT EXCAVATE FOR AGGREGATE SUBBASE COURSE GRAVEL WHERE EXISTING MATERIAL IS SUITABLE AS DETERMINED BY THE RESIDENT.
 6. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.

NOT TO SCALE

STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
2213200	
WIN	
22132.00	HIGHWAY PLANS

DATE	02/19	BY	T. WARREN	PROJ. MANAGER	L. HAMILTON
SIGNATURE		CHECKED-REVIEWED	T. LANDRY	DESIGN-DETAILED	T. LANDRY
P.E. NUMBER		DESIGN-DETAILED	D. ETINGER	DESIGN-DETAILED	D. ETINGER
DATE		REVISIONS 1		REVISIONS 1	
		REVISIONS 2		REVISIONS 2	
		REVISIONS 3		REVISIONS 3	
		REVISIONS 4		REVISIONS 4	
		FIELD CHANGES		FIELD CHANGES	

PORTLAND - CONGRESS STREET	
SIGNAL IMPROVEMENTS	
TYPICAL SECTIONS & DETAILS	

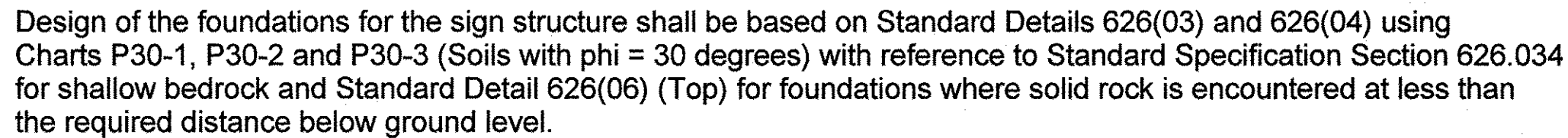
SHEET NUMBER	
2	
OF 19	

		INTERSECTION WITH CONGRESS STREET:						
ITEM NO.	DESCRIPTION	HIGH ST.	FOREST AVE.	PREBLE ST.	ELM ST./ FEDERAL ST.	TEMPLE ST.	TOTAL	UNIT
203.20	COMMON EXCAVATION	0	45	0	0	51	96	CY
203.21	ROCK EXCAVATION	-	-	-	-	-	10	CY
304.15	AGGREGATE BASE COURSE - TYPE B	0	32	0	0	36	68	CY
403.210	HOT MIX ASPHALT 9.5 mm NOMINAL MAXIMUM SIZE	0	8	0	0	6	14	T
604.182	CLEAN EXISTING CB AND MANHOLE	0	1	0	0	1	2	EA
608.15	BRICK SIDEWALK WITH BITUMINOUS BASE	0	69	0	0	92	161	SY
608.26	CURB RAMP DETECTABLE WARNING FIELD	0	50	0	0	42	92	SF
609.11	VERTICAL CURB TYPE 1	0	40	0	0	21	61	LF
609.12	VERTICAL CURB TYPE 1 - CIRCULAR	0	47	0	0	29	76	LF
609.237	TERMINAL CURB TYPE 1 - 7 FOOT	0	1	0	0	0	1	EA
609.238	TERMINAL CURB TYPE 1 - 8 FOOT	0	0	0	0	2	2	EA
609.2381	TERMINAL CURB TYPE 1 - 8 FOOT CIRCULAR	0	5	0	0	2	7	EA
626.11	PRECAST CONCRETE JUNCTION BOX	0	4	0	4	1	9	EA
626.22	NON-METALLIC CONDUIT	0	130	0	130	50	310	LF
626.32	24 INCH DIAMETER FOUNDATION	0	3	0	4	1	8	EA
626.332	30 - INCH DIAMETER GREATER THAN 8 - FEET LONG, 36 - INCH DIA, 42 - INCH DIA FOUNDATIONS	3	6	0	6	3	18	CY
626.35	CONTROLLER CABINET FOUNDATION	0	1	0	1	1	3	EA
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	-	-	-	-	-	100	LF
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	0	410	415	600	610	2035	SF
627.77	REMOVING EXISTING PAVEMENT MARKING	0	410	415	600	610	2035	SF
629.05	HAND LABOR, STRAIGHT TIME	-	-	-	-	-	8	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	-	-	-	-	-	8	HR
631.11	AIR TOOL (INCLUDING OPERATOR)	-	-	-	-	-	8	HR
631.122	MINI ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	-	-	-	-	-	8	HR
631.171	TRUCK - SMALL (INCLUDING OPERATOR)	-	-	-	-	-	8	HR
643.80	TRAFFIC SIGNALS AT CONGRESS STREET AND FOREST AVENUE	0	1	0	0	0	1	LS
643.80	TRAFFIC SIGNALS AT CONGRESS STREET AND PREBLE STREET	0	0	1	0	0	1	LS
643.80	TRAFFIC SIGNALS AT CONGRESS STREET AND FEDERAL/ELM STREET	0	0	0	1	0	1	LS
643.80	TRAFFIC SIGNALS AT CONGRESS STREET AND TEMPLE STREET	0	0	0	0	1	1	LS
643.83	VIDEO DETECTION SYSTEM AT CONGRESS STREET AND FOREST AVENUE	0	1	0	0	0	1	LS
643.83	VIDEO DETECTION SYSTEM AT CONGRESS STREET AND PREBLE STREET	0	0	1	0	0	1	LS
643.83	VIDEO DETECTION SYSTEM AT CONGRESS STREET AND FEDERAL/ELM ST	0	0	0	1	0	1	LS
643.83	VIDEO DETECTION SYSTEM AT CONGRESS STREET AND TEMPLE STREET	0	0	0	0	1	1	LS
643.91	MAST ARM POLE WITH 16' MAST ARM	0	0	0	1	0	1	EA
643.91	MAST ARM POLE WITH 21' MAST ARM	0	1	0	0	0	1	EA
643.91	MAST ARM POLE WITH 23' MAST ARM	0	0	0	1	0	1	EA
643.91	MAST ARM POLE WITH 25' MAST ARM	1	0	0	0	1	2	EA
643.91	MAST ARM POLE WITH 26' MAST ARM	0	1	0	0	0	1	EA
643.92	PEDESTAL POLE	0	4	4	5	5	18	EA
645.271	REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE 1	32	23	8	15	0	78	SF
652.312	TYPE III BARRICADES	-	-	-	-	-	4	EA
652.33	DRUM	-	-	-	-	-	50	EA
652.34	CONE	-	-	-	-	-	50	EA
652.35	CONSTRUCTION SIGNS	-	-	-	-	-	300	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	-	-	-	-	-	90	CD
652.38	FLAGGERS	-	-	-	-	-	750	HR
652.381	TRAFFIC OFFICERS	-	-	-	-	-	120	HR
656.75	TEMP SOIL EROSION AND WATER POLLUTION CONTROL	-	-	-	-	-	1	LS
659.10	MOBILIZATION	-	-	-	-	-	1	LS
801.03	TEST PITS	1	2	0	2	1	6	EA
* UNDETERMINED LOCATIONS								

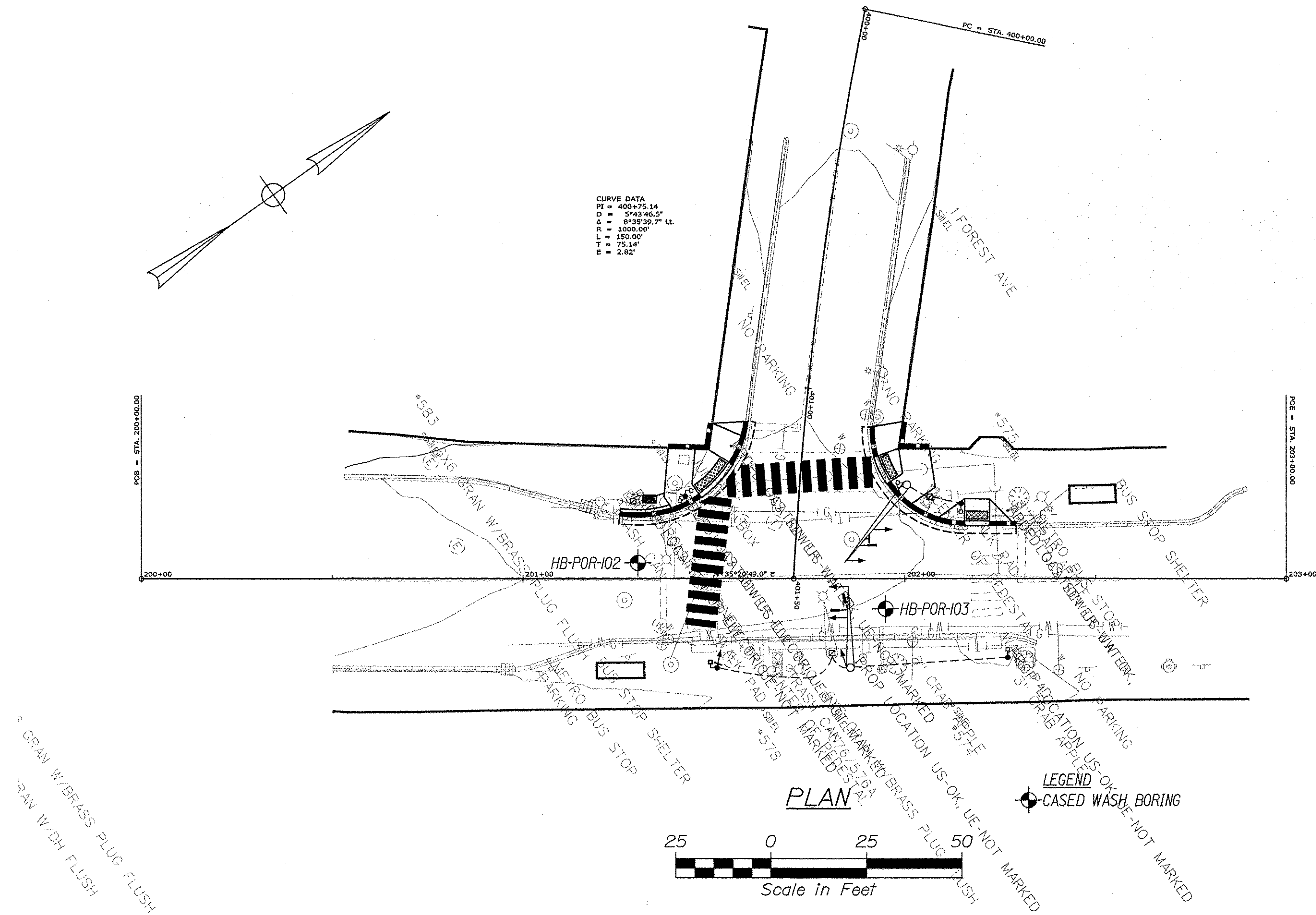
1. THE UTILITIES INVOLVED IN THIS CONTRACT ARE NOTED IN SPECIAL PROVISION 104.
2. ALL UTILITY FACILITIES SHALL BE ADJUSTED BY THE RESPECTIVE UTILITIES UNLESS OTHERWISE NOTED.
3. THE LOCATION OF THE EXISTING UTILITIES AND DRAINAGE SHOWN ON THE PLANS WERE COMPILED FROM FIELD SURVEY AND OTHER SOURCES. LOCATIONS ARE APPROXIMATE AND NOT GUARANTEED TO BE ACCURATE, NOR IS IT GUARANTEED THAT ALL UTILITIES ARE SHOWN. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND THE ACTUAL FIELD CONDITIONS ENCOUNTERED.
4. ANY NECESSARY FINE GRADING OR RECOMPACTION OF EXISTING GRAVEL SHALL NOT BE PAID FOR DIRECTLY AND SHALL BE CONSIDERED INCIDENTAL TO ITEM 304.15.
5. PAVEMENT CUT LINES SHALL BE NEAT, CLEAN AND STRAIGHT AS DIRECTED BY THE RESIDENT. PAYMENT FOR CUTTING OF EXISTING PAVEMENT SHALL BE INCIDENTAL TO 403 ITEMS.
6. SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY" U.S.D.O.T. F.H.W.A. LATEST EDITION.
7. ANY DAMAGE TO EXISTING CONDITIONS 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. "UNDETERMINED LOCATIONS" SHALL BE DETERMINED BY THE RESIDENT.
9. STATIONS REFERENCED ARE APPROXIMATE.
10. REMOVAL OF EXISTING ROADSIDE SIGNS AND RELOCATION OF ROADSIDE SIGNS/POSTS AS NOTED ON THE SIGNING PLANS OR AS DIRECTED BY THE RESIDENT, SHALL BE CONSIDERED INCIDENTAL TO THE 645 PAY ITEMS.
11. DO NOT EXCAVATE FOR AGGREGATE BASE COURSE WHERE EXISTING MATERIAL IS SUITABLE AS DETERMINED BY THE RESIDENT.
12. IN AREAS WHERE THE RESIDENT DIRECTS THE CONTRACTOR NOT TO EXCAVATE TO THE SUBGRADE LINE SHOWN ON THE PLANS, PAYMENT FOR REMOVING EXISTING PAVEMENT, GRUBBING, SHAPING, DITCHING, AND COMPACTING THE EXISTING SUBBASE AND LAYERS OF NEW SUBBASE 6 INCHES OR LESS THICK WILL BE MADE UNDER APPROPRIATE EQUIPMENT RENTAL ITEMS.
13. 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.
14. ANY NECESSARY CLEANING OF EXISTING PAVEMENT PRIOR TO PAVING SHALL BE INCIDENTAL TO THE RELATED PAVING ITEMS.
15. EXISTING CATCH BASINS WILL BE CLEANED AS DIRECTED BY THE RESIDENT UNDER THE APPROPRIATE PAY ITEMS.
16. NO EXISTING DRAINAGE SHALL BE ABANDONED, REMOVED OR PLUGGED WITHOUT PRIOR APPROVAL OF THE RESIDENT.
17. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION'S BEST MANAGEMENT PRACTICES FOR EROSION CONTROL & SEDIMENT CONTROL, FEBRUARY, 2008.
18. NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.
19. ALL JOINTS BETWEEN EXISTING AND PROPOSED HOT BITUMINOUS PAVEMENT SHALL BE SAWCUT AND VERTICAL. IF ANY EXISTING PAVEMENT IS REQUIRED TO BE REMOVED, PAYMENT FOR SAWCUTTING AND REMOVAL WILL BE INCIDENTAL TO PAVING ITEMS.
20. ALL PEDESTRIAN RAMPS SHALL BE 6 FT. WIDE MINIMUM OR AS SHOWN ON PLANS.
21. REMOVAL OF EXISTING CURBING SHALL BE CONSIDERED INCIDENTAL TO ITEM 203.20 COMMON EXCAVATION.
22. ALL GRANITE CURBING THAT IS REMOVED AND STACKED AND NOT REUSED ON THE PROJECT SHALL BE TURNED OVER TO THE CITY. PAYMENT FOR WORK SHALL BE CONSIDERED INCIDENTAL TO ITEM 203.20 COMMON EXCAVATION.
23. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED OR DAMAGED BY CONSTRUCTION ACTIVITIES TO ORIGINAL FINISH SURFACE (ROADWAY, SIDEWALK, ETC.) UNLESS NOTED OTHERWISE ON PLANS. RESTORATION OF PAVED SURFACES, SIDEWALKS AND OTHER AREAS SHALL BE INCIDENTAL TO THE PROJECT. ALL CURB DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND AND SHALL CONFORM TO MAINEDOT STANDARDS. COST SHALL BE INCIDENTAL TO THE PROJECT.

24. ALL WORK TO CONFORM TO CURRENT MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, STANDARD DETAILS, AND CITY OF PORTLAND REQUIREMENTS.
25. THE CONTRACTOR SHALL REMOVE ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED MARKINGS, BY MEANS APPROVED BY THE RESIDENT.
26. DETECTABLE WARNING FIELDS SHALL BE INSTALLED AT EACH CURB RAMP ADJACENT TO A MARKED CROSSWALK. ACTUAL PLACEMENT SHALL BE AS REQUIRED BY THE DETAILS AND DIRECTED BY THE RESIDENT. PAYMENT FOR ITEM 608.26 SHALL INCLUDE ALL CONCRETE AND WORK REQUIRED BY THE DETAILS.
27. ALL RECONSTRUCTED RAMPS SHALL BE ADA COMPLIANT.
28. TEST PITS SHALL BE COMPLETED AT LOCATIONS WHERE PROPOSED EQUIPMENT MAY CONFLICT WITH EXISTING UTILITIES. PAYMENT FOR TEST PITS SHALL BE UNDER ITEM 803.01 TEST PITS.
29. CROSS SLOPES FOR SIDEWALKS AND SHOULDER SECTIONS WILL BE STRAIGHT UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.
30. 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.
31. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL EXISTING OPERATIONAL BUSINESS DIRECTIONAL SIGNS (OBDS) TO ENSURE THAT THEY ARE VISIBLE TO THE TRAVELING PUBLIC. PAYMENT FOR THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
32. 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.
33. FINAL STRIPING FOR THE PROJECT SHALL BE DONE BY THE CONTRACTOR PER THE STRIPING LAYOUT IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE RESIDENT. PAYMENT SHALL BE MADE UNDER APPROPRIATE CONTRACT ITEMS.
34. REMOVAL OF EXISTING BRICK SIDEWALKS REQUIRED FOR PROPOSED SIDEWALK AND SIGNAL WORK WILL BE CONSIDERED INCIDENTAL TO IEM 203.20 COMMON EXCAVATION. NO SEPARATE PAYMENT SHALL BE MADE.
35. REPAIR OF EXISTING BRICK SIDEWALKS MAY BE REQUIRED FOR THE SIGNAL WORK. PAYMENT FOR REPAIR OF SIDEWALKS SHALL BE UNDER 608.15.
36. EXISTING SIGNAGE LOCATED ON MAST ARMS/POLES THAT ARE DESIGNATED TO BE REMOVED SHALL BE RESET OR REPLACED AS DIRECTED BY THE RESIDENT. PAYMENT FOR REMOVAL, RESET, REPLACEMENT AND/OR DISPOSAL SHALL BE CONSIDERED INCIDENTAL TO ITEM 643.80.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2213200		WIN 22132.00		HIGHWAY PLANS	
PORTLAND - CONGRESS STREET SIGNAL IMPROVEMENTS	PROJ. MANAGER DESIGN-DETAILED CHECKED-REVIEWED		L. HAMILTON T. LANDRY	BY T. WARREN	DATE 02/18 02/18	SIGNATURE
	DESIGN-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES		D. ETINGER			
GENERAL NOTES						DATE
SHEET NUMBER						
4						
OF 19						



PORTLAND - CONGRESS STREET
SIGNAL IMPROVEMENTS
BORING LOCATION PLAN &
BORING LOGS WITH
FOUNDATION DESIGN REQUIREMENTS



Design of the foundations for the project signals shall be based on Standard Details 626(03) and 626(04) using Charts P30-1, P30-2 and P30-3 (Soils with $\Phi = 30$ degrees) with reference to Standard Specification Section 626.034 for shallow bedrock and Standard Detail 626(06) (Top) for foundations where solid rock is encountered at less than the required distance below ground level.

Maine Department of Transportation				Project: Congress St. Traffic Signal Improvements		Boring No.: HB-PDR-102	
Soil/Bore Log Evaluation Log				Location: Portland, Maine		WIN: 22132.00	
US CUSTOMER UNITS							
Driller: Malmoot		Elevation (ft.): 108.3		Auger (ft/0): 5' Solid Stem			
Operator: Dodge/Wiles		Datum: MH088		Sampler: Standard Split Stem			
Logged By: B. Wiles		Rig Type: CME 45C		Sampler Wt./Fall: 140W/30"			
Date Start/Finish: 12/18/19/2018: 23:00-01:30		Drilling Method: Cased Wash Boring		Core Barrel: ND-2"			
Boring Location: 20130-2, 4.2 ft. Lvl.		Casing ID/OD: NW-3"		Water Level#: None Observed			
Hammer Efficiency Factor: 0.928		Hammer Type: Automatic B Hydraulic ☐ Rope & Cathead ☐					
S = Split Stem Sample U = Unsuccessful Split Stem Sample Attempt N = Thin Test Tube Sample M = Unsuccessful Thin Test Tube Sample Attempt F = Field Test Tube Test W = Unsuccessful Field Test Tube Test Attempt B = Bulk Core Sample SA = Split Stem Auger ND = No Return Core H = Height of 140lb. Hammer W = Weight of Hammer Wt = Weight of Split Stem Wt = Weight of Split Stem S₁ = Penetration Rate Value Unobserved Strength (psi) S₂ = 140 lb. Penetration Rate Value Unobserved Strength (psi) S₃ = Unobserved Penetration Rate Value R = Resonance H = Hammer Efficiency Factor H = 90% Unobserved Factor for Hammer Efficiency H = 90% Unobserved Factor for Hammer Efficiency H = 90% Unobserved Factor for Hammer Efficiency S₁ = Penetration Rate Value Unobserved Strength (psi) S₂ = 140 lb. Penetration Rate Value Unobserved Strength (psi) S₃ = Unobserved Penetration Rate Value R = Resonance H = Hammer Efficiency Factor H = 90% Unobserved Factor for Hammer Efficiency H = 90% Unobserved Factor for Hammer Efficiency							
Sample Information				Visual Description and Remarks			
Depth (ft.)	Sample No.	Pen. Rate, ft./min.	Sample Depth (ft.)	Blades / 6 in. (ft.)	Strength (lb/ft ²)	Notes	Lab. Results / ASHTO and Unified Class
0							
5	10	24/18	1.00 - 3.00	12/13/11/10	28	43	7" HMA, dense, fine to coarse SAND, some gravel, trace silt (fill).
10	20	24/16	5.00 - 7.00	8/7/5/5	12	19	Brown, moist, medium dense, fine to coarse SAND, little silt, brick pieces (fill).
15	31	60/45	9.10 - 14.10	R20 = 0%			50 blows for 0.1 ft.
20							Top of Bedrock at Elev. 99.4 ft.
25							Bedrock: Siltst. Spring Point Formation. Rock Mass Quality = Very Poor.
30							R10 Core Times (min/sec): 9.1=10.1 ft (1156) 10.1=11.1 ft (1133) 11.1=12.1 ft (1208) 12.1=13.1 ft (1166) no water return 13.1=14.1 ft (1166) no water return 75% Recovery
35							Bottom of Exploration at 14.1 feet below ground surface.
(Below)							

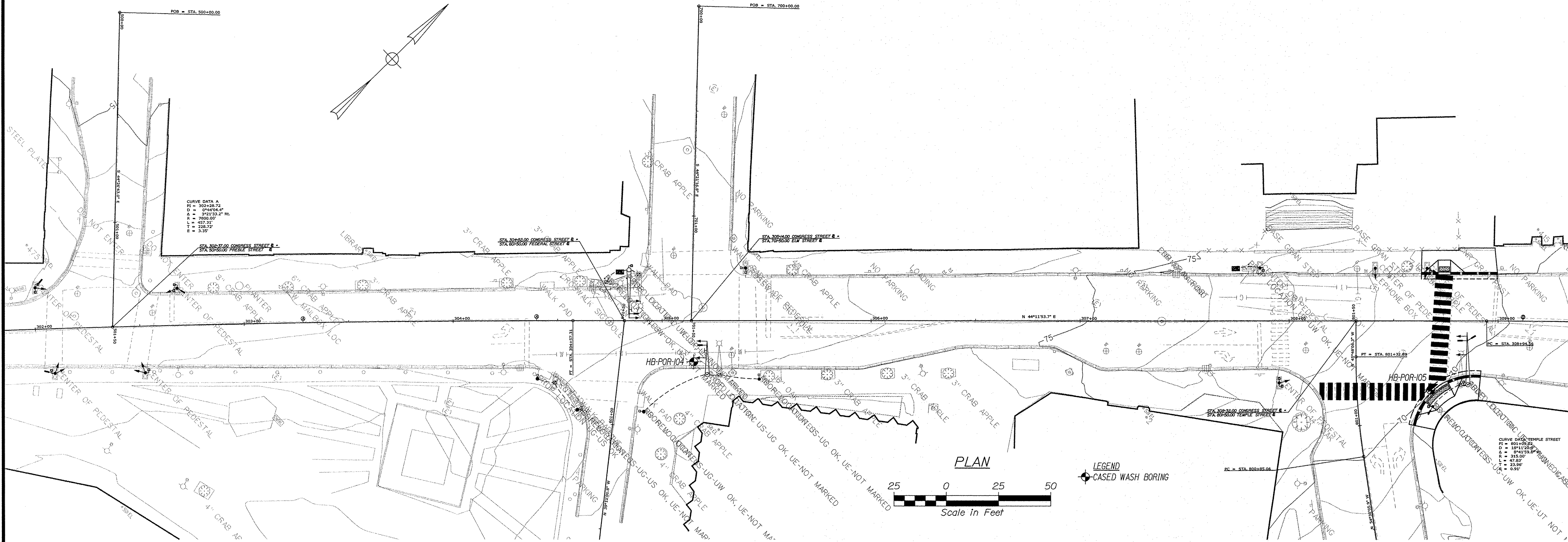
Stratification lines represent approximate boundaries between soil types; transitions may be gradual.

* 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-PDR-102

[illegible]



Maine Department of Transportation Soil/Bore Exploration Log US CUSTOMARY UNITS				Project: Congress St. Traffic Signal Improvements Location: Portland, Maine				Boring No.: HB-POR-104 WIN: 22132.00			
Driller: MairDOT		Elevation (ft.): 76.2		Auger ID/OD: 5" Dia.		Sampler: Standard Split Spoon		Operator: Daggett/Niles		Datum: NAVD88	
Logged By: B. Wilder		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"		Core Barrel: N/A		Date Start/Finish: 12/19/2018: 21:00-22:30		Drilling Method: Solid Stem Auger	
Boring Location: 305+15.11, 19.6 ft Rt.		Casing ID/OD: N/A		Water Level: None Observed		Hammer Type: Automatic Q		Hydraulic Q		Logs & Cathode Q	
Soil/Bore Information				Visual Description and Remarks							
Hammer Efficiency Factor: 0.928		q = max Core Depth		SPT = Lab Value corrected for Strength (SPR)		q = Water Content, percent		q = Plastic Limit		q = Plasticity Index	
SPR = 1400 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
q = 1000 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
q = 1000 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
q = 1000 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
q = 1000 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
q = 1000 lbs. Split Spoon Impact		SA = Solid Stem Auger		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact		SPR = 1400 lbs. Split Spoon Impact	
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Design of the foundations for the project signals shall be based on Standard Details 626(03) and 626(04) using Charts P30-1, P30-2 and P30-3 (Soils with Phi = 30 degrees) with reference to Standard Specification Section 626.034 for shallow bedrock and Standard Detail 626(06) (Top) for foundations where solid rock is encountered at less than the required distance below ground level.

Maine Department of Transportation Soil/Bore Exploration Log US CUSTOMARY UNITS				Project: Congress St. Traffic Signal Improvements Location: Portland, Maine				Boring No.: HB-POR-105 WIN: 22132.00			
Driller: MairDOT		Elevation (ft.): 70.1		Auger ID/OD: 5" Solid Stem		Sampler: Standard Split Spoon		Operator: Daggett/Niles		Datum: NAVD88	
Logged By: B. Wilder		Rig Type: CME 45C		Hammer Wt./Fall: 140#/30"		Core Barrel: NQ-2"		Date Start/Finish: 12/19/2018: 22:30-00:30		Drilling Method: Cased Wash Boring	
Boring Location: 308+67.7, 32.8 ft Rt.		Casing ID/OD: N/A		Water Level: None Observed		Hammer Type: Automatic Q		Hydraulic Q		Logs & Cathode Q	
Soil/Bore Information				Visual Description and Remarks							
Depth (ft.)	Sample No.	Pen./Blow (in)	Sample Depth (ft.)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)	Shore V/S (ft)
	Soil/Bore Information										
10	24/14	1.00 - 3.00	4/5/3/3	8	12						
	Soil/Bore Information										
5	20	21.6/17	5.00 - 6.80	7/12/52/5013.5"	64	99					
	Soil/Bore Information										
10	R1	60/60	10.00 - 15.00	RSP = 0%							
	Soil/Bore Information										
15											
	Soil/Bore Information										
20											
	Soil/Bore Information										
25											
	Soil/Bore Information										
Borehole											
Stratification lines represent approximate boundaries between soil types; 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.											
Boring No.: HB-POR-105										Page 1 of 1	

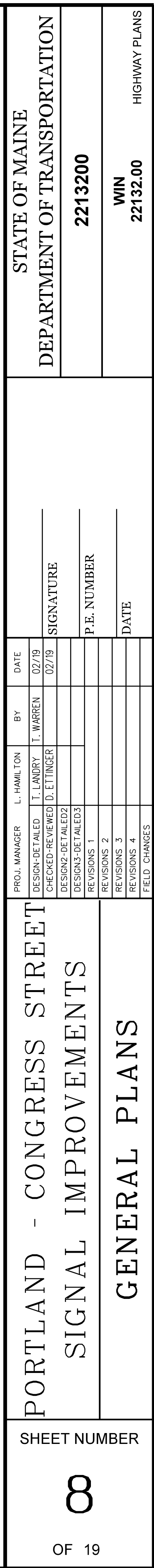
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
2213200
WIN
22132.00
HIGHWAY PLANS

STATE OF MAINE
Kathleen Maguire
7120
PROFESSIONAL ENGINEER

SIGNATURE
9/1/20
P.E. NUMBER
1/30/2019
DATE

PORTLAND - CONGRESS STREET
SIGNAL IMPROVEMENTS
BORING LOCATION PLAN &
BORING LOGS WITH
FOUNDATION DESIGN REQUIREMENTS

SHEET NUMBER
7
OF 19

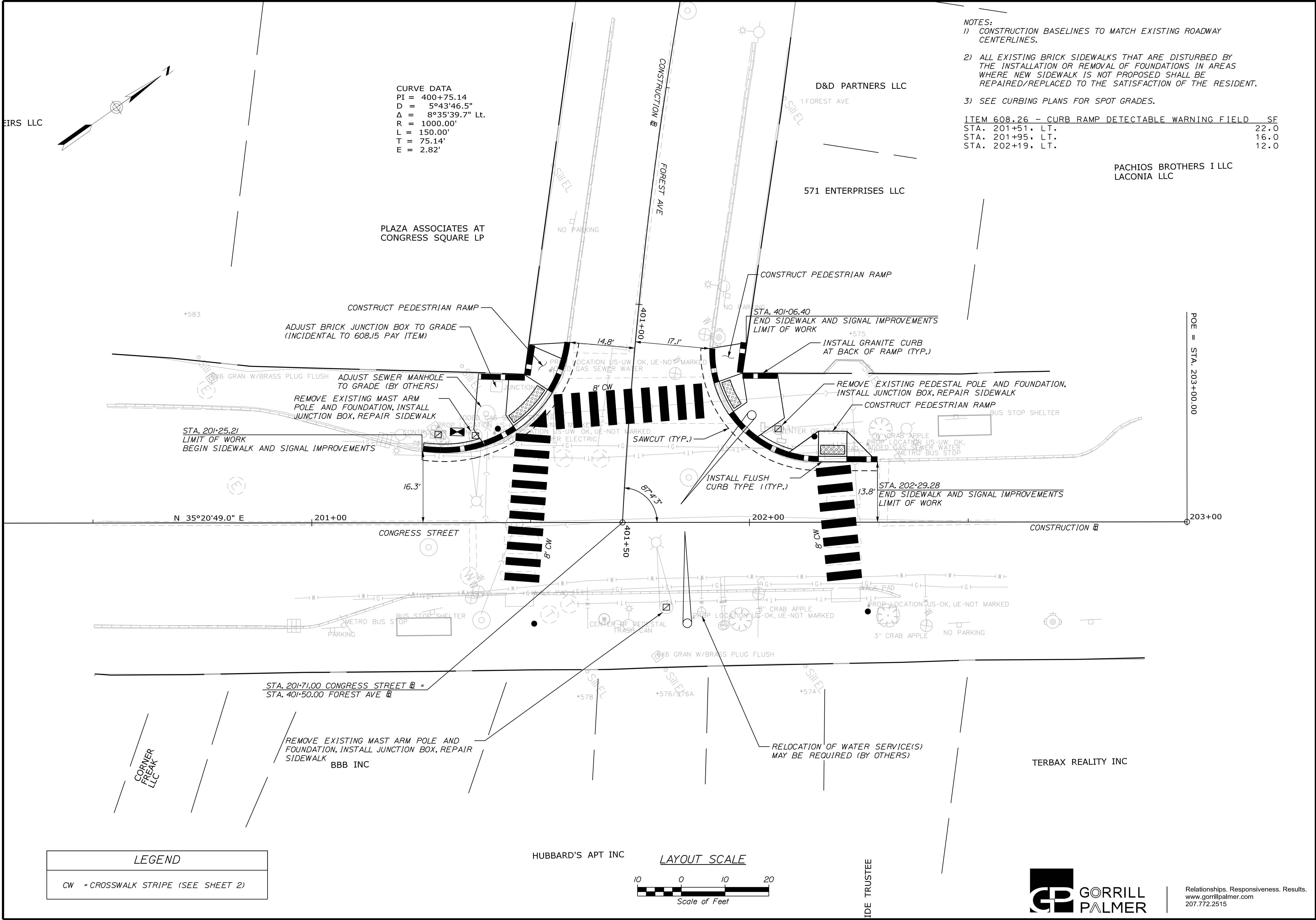


Date: 2/6/2019

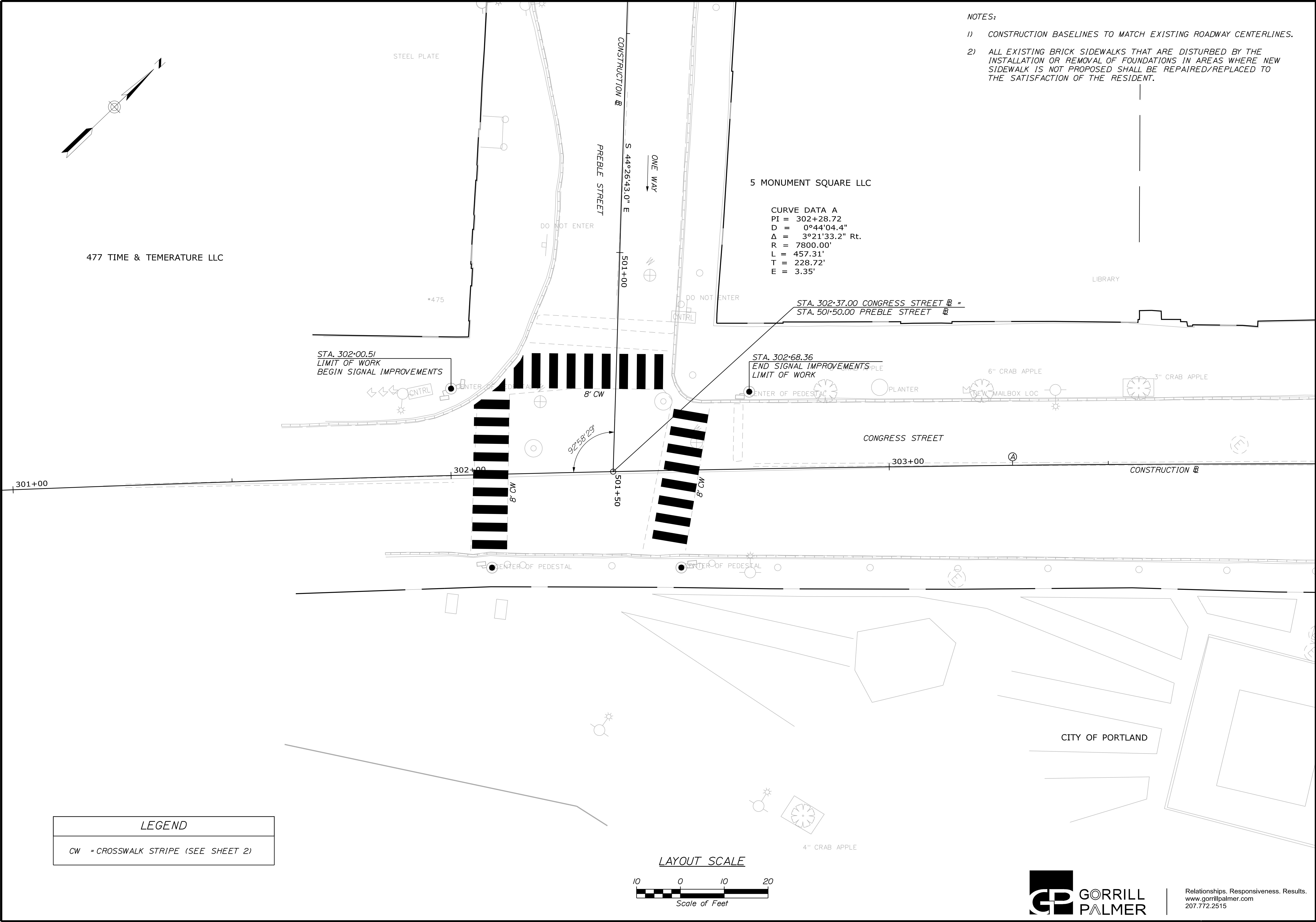
Username: Mike.Cundiff

Division: HIGHWAY

Filename: ...\\000\\Highway\\009_Plan2.dgn



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2213200		WIN		22132.00		HIGHWAY PLANS	
PROJECT MANAGER		DESIGNED		CHECKED		DESIGNED		CHECKED		DESIGNED	
L. HAMILTON		T. LANDRY		T. WARREN		D. ETINGER		SIGNATURE		P.E. NUMBER	
DATE		02/19		02/19		02/19		DATE		DATE	
SHEET NUMBER		9		OF 19		TERBAX REALITY INC		HUBBARD'S APT INC		CORNER BREAK LLC	



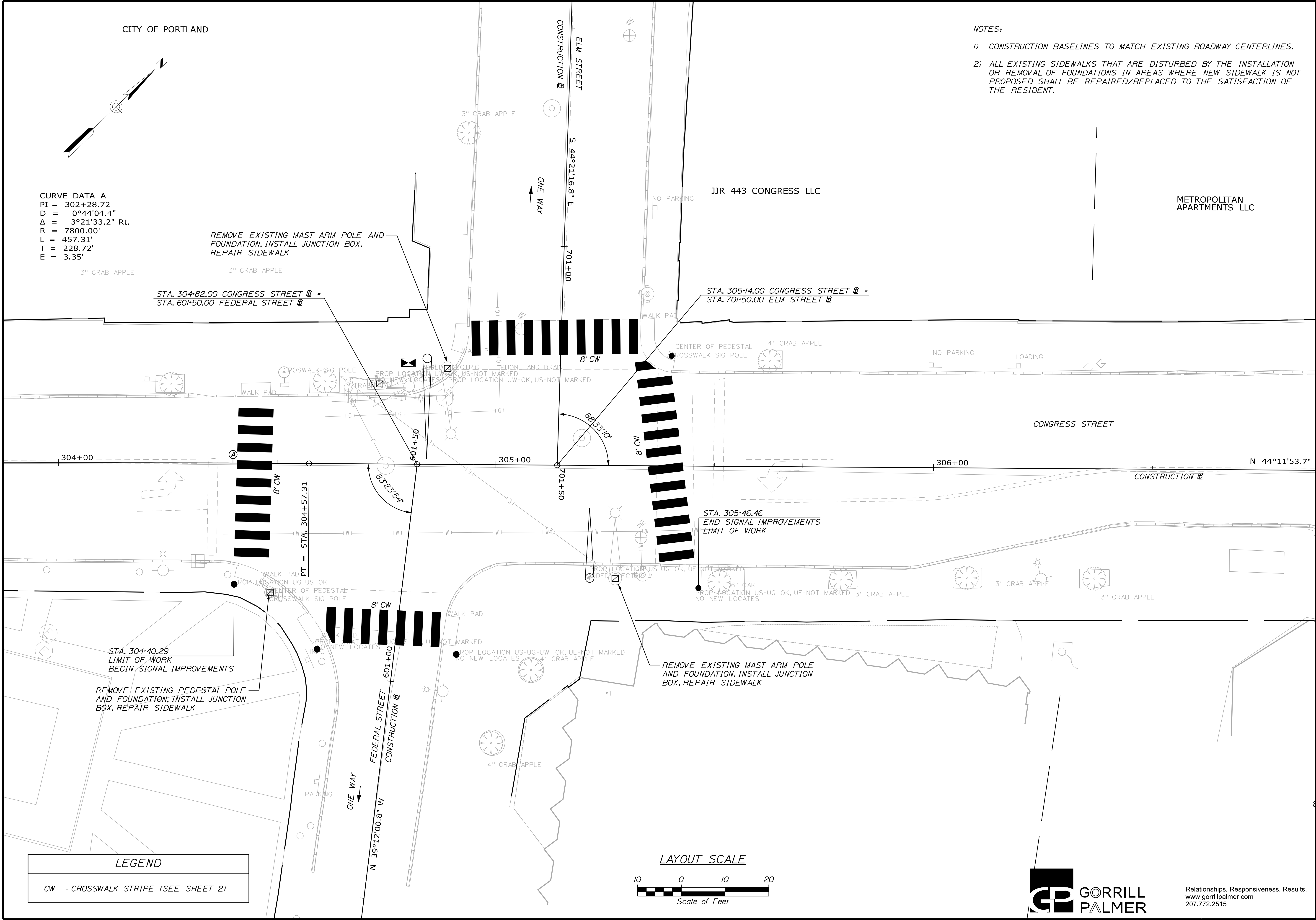
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2213200		WIN 22132.00		HIGHWAY PLANS	
PORTLAND - CONGRESS STREET SIGNAL IMPROVEMENTS		GENERAL PLANS		SHEET NUMBER 10 OF 19			
PROJ. MANAGER	L. HAMILTON	BY	T. WARREN	DATE	02/19	SIGNATURE	
CHECKED-REVIEWED	T. LANDRY	D. E. TINGER				P.E. NUMBER	
DESIGNS-DETAILED						DATE	
REVISIONS 1							
REVISIONS 2							
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							

Date:2/6/2019

Username: Mike.Cundiff

Division: HIGHWAY

Filename: ... \00\Highway\011_Plan4.dgn



CURVE DATA A
PI = 302+28.72
D = 0°44'04.4"
Δ = 3°21'33.2" Rt.
R = 7800.00'
L = 457.31'
T = 228.72'
E = 3.35'

REMOVE EXISTING MAST ARM POLE AND
FOUNDATION, INSTALL JUNCTION BOX,
REPAIR SIDEWALK

STA. 304+82.00 CONGRESS STREET ▮ =
STA. 601+50.00 FEDERAL STREET ▮

JJR 443 CONGRESS LLC

METROPOLITAN
APARTMENTS LLC

STA. 305+14.00 CONGRESS STREET ▮ =
STA. 701+50.00 ELM STREET ▮

STA. 305+46.46
END SIGNAL IMPROVEMENTS
LIMIT OF WORK

STA. 304+40.29
LIMIT OF WORK
BEGIN SIGNAL IMPROVEMENTS

REMOVE EXISTING PEDESTAL POLE
AND FOUNDATION, INSTALL JUNCTION
BOX, REPAIR SIDEWALK

REMOVE EXISTING MAST ARM POLE
AND FOUNDATION, INSTALL JUNCTION
BOX, REPAIR SIDEWALK

NOTES:

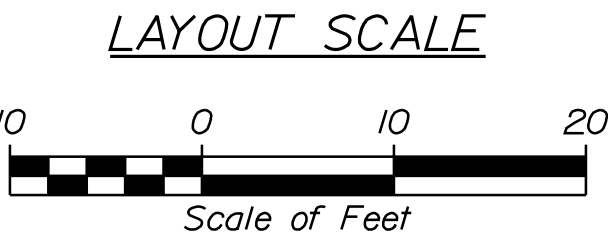
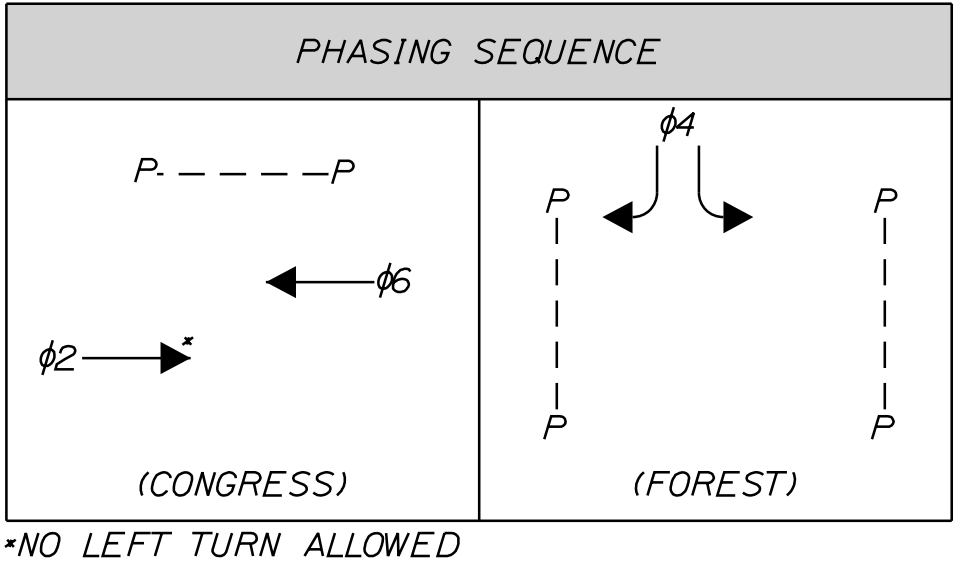
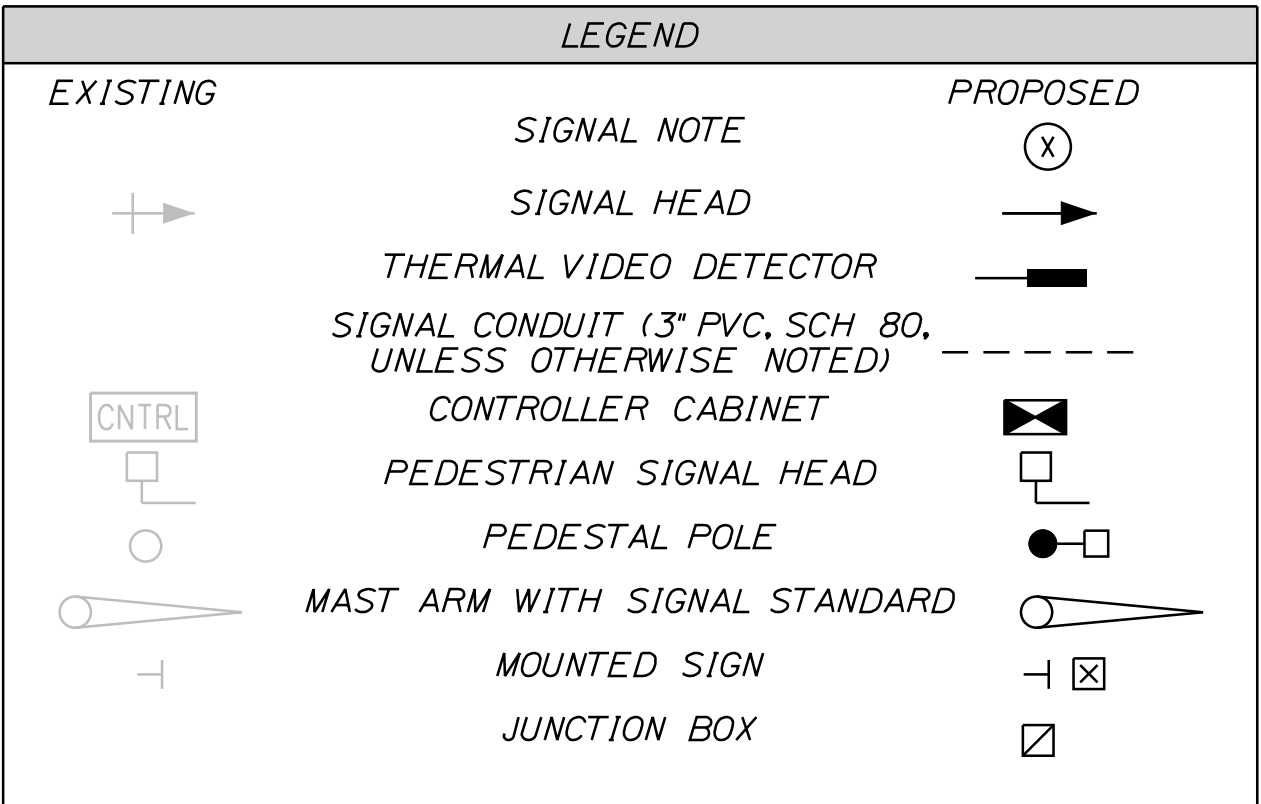
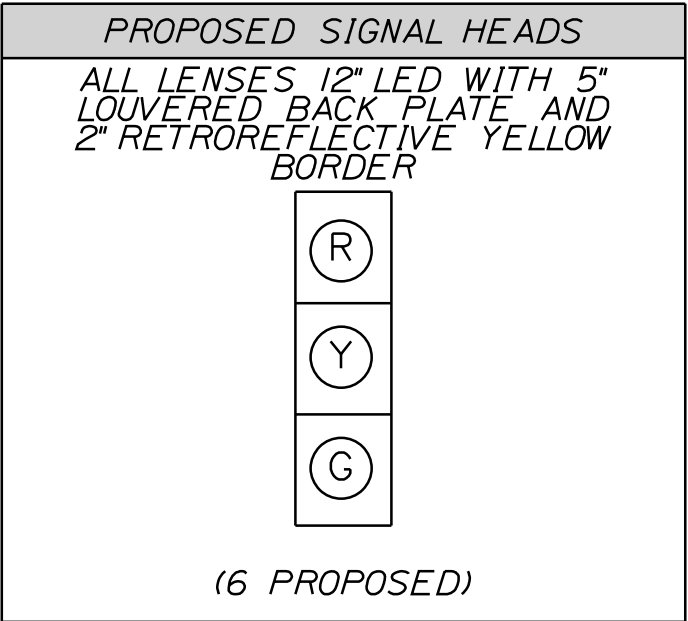
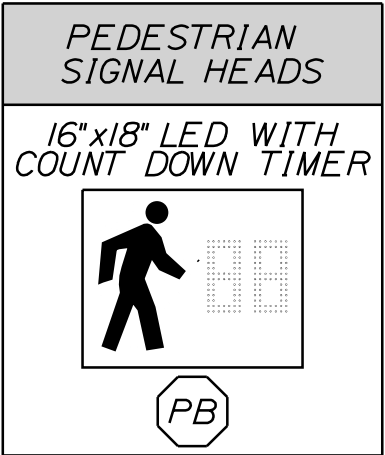
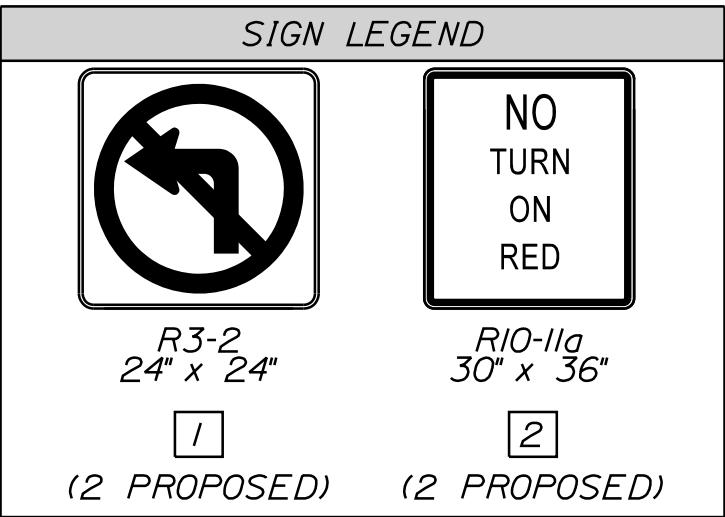
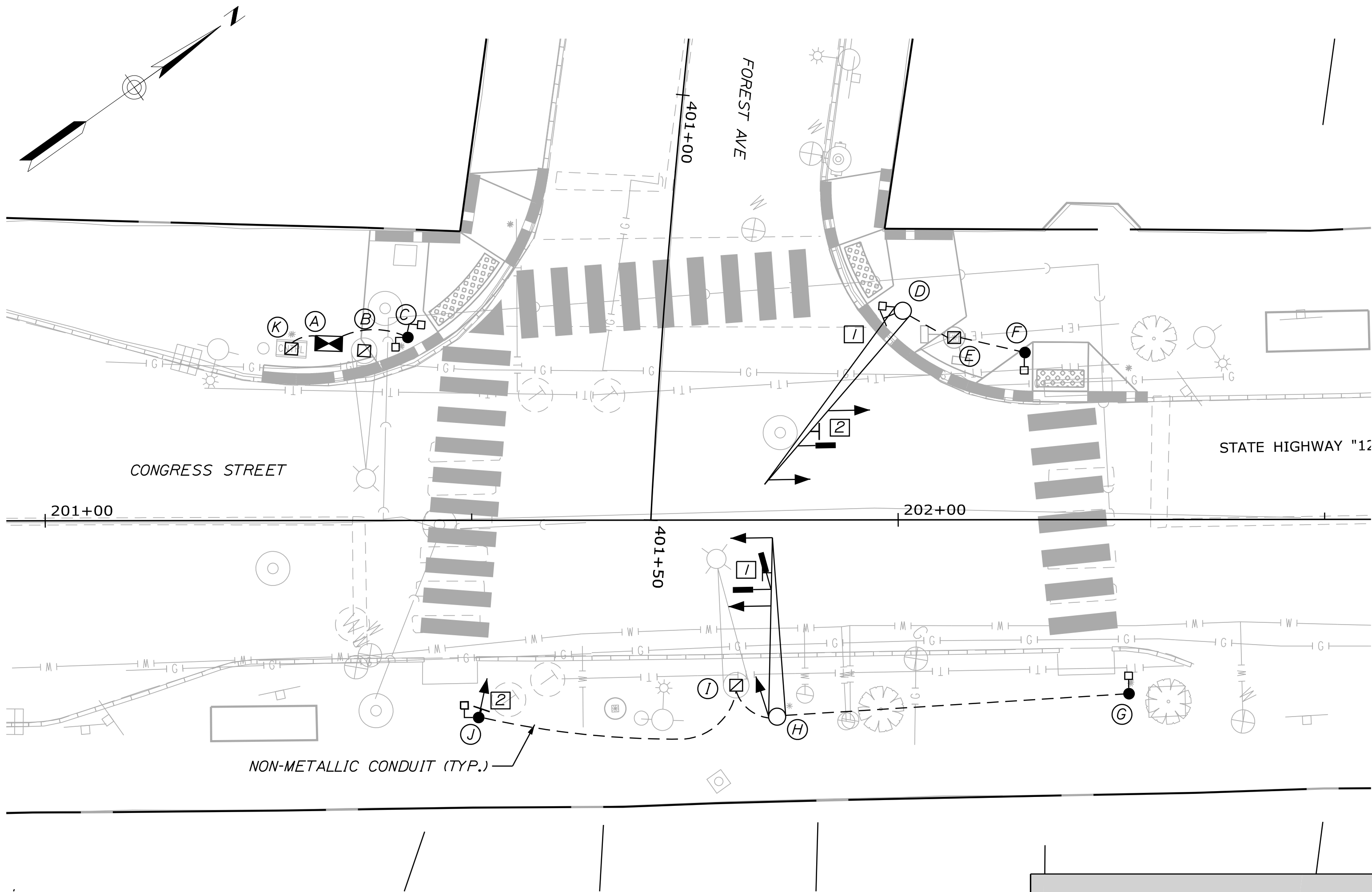
- 1) CONSTRUCTION BASELINES TO MATCH EXISTING ROADWAY CENTERLINES.
2) ALL EXISTING SIDEWALKS THAT ARE DISTURBED BY THE INSTALLATION
OR REMOVAL OF FOUNDATIONS IN AREAS WHERE NEW SIDEWALK IS NOT
PROPOSED SHALL BE REPAIRED/REPLACED TO THE SATISFACTION OF
THE RESIDENT.

PORTLAND - CONGRESS STREET			PROJ. MANAGER	L. HAMILTON	BY	DATE
SIGNAL IMPROVEMENTS			DESIGN-DETAILED	T. LANDRY	T. WARREN	02/19
			CHECKED-REVIEWED	D. LETTINGER		02/19
			DESIGN2-DETAILED2			
			DESIGN3-DETAILED3			
			REVISIONS 1			
GENERAL PLANS			REVISIONS 2			P.E. NUMBER
			REVISIONS 3			
			REVISIONS 4			
			FIELD CHANGES			DATE
STATE OF MAINE						
DEPARTMENT OF TRANSPORTATION						
2213200						
WIN						
22132.00						
HIGHWAY PLANS						



A scale bar labeled "Scale of Feet" with markings at 10, 0, 10, and 20. The segment from 0 to 10 is divided into five equal parts, with alternating black and white squares.

SHEET NUMBER 12 OF 19	PORTLAND - CONGRESS STREET SIGNAL IMPROVEMENTS				PROJ. MANAGER L. HAMILTON	BY T. WARREN	DATE 02/19	STATE OF MAINE DEPARTMENT OF TRANSPORTATION 2213200
	GENERAL PLANS				DESIGN-DETAILED T. LANDRY	CHECKED-REVIEWED D. ETINGER	02/19 SIGNATURE	
					DESIGNS-DETAILED DESIGNS-DETAILED2			
					DESIGNS-DETAILED3 REVISIONS 1			P.E. NUMBER
					REVISIONS 2			
					REVISIONS 3			
					REVISIONS 4			
					FIELD CHANGES			DATE WIN 22132.00
								HIGHWAY PLANS



SIGNAL TIMING SCHEDULE - FREE PLAN								
	1	2	3	4	5	6	7	8
MINIMUM INITIAL		5		5		5		
VEHICLE EXTENSION		3		3		3		
MAX I*		21		19		21		
MAX II**		28		12		28		
YELLOW		3		3		3		
ALL RED (SEE LPI NOTE)		2.5		2		2.5		
WALK / DON'T WALK		5		5		5		
PEDESTRIAN CLEARANCE		12		9		12		
FLASH		R		R		R		
PHASE RECALL		SOFT				SOFT		
MEMORY								
DETECTOR		PR		PR		PR		

MAX I = 6:00-9:00 AM (WEEKDAYS)
MAX II = ALL OTHER TIMES

NOTES:

1) LPI (LEADING PEDESTRIAN INTERVAL)=
φ2, φ4, φ6 SHALL HAVE A 5 SECOND
LPI WHEN PEDESTRIAN BUTTON
IS ACTUATED FOR THAT RELATED
CROSSING.

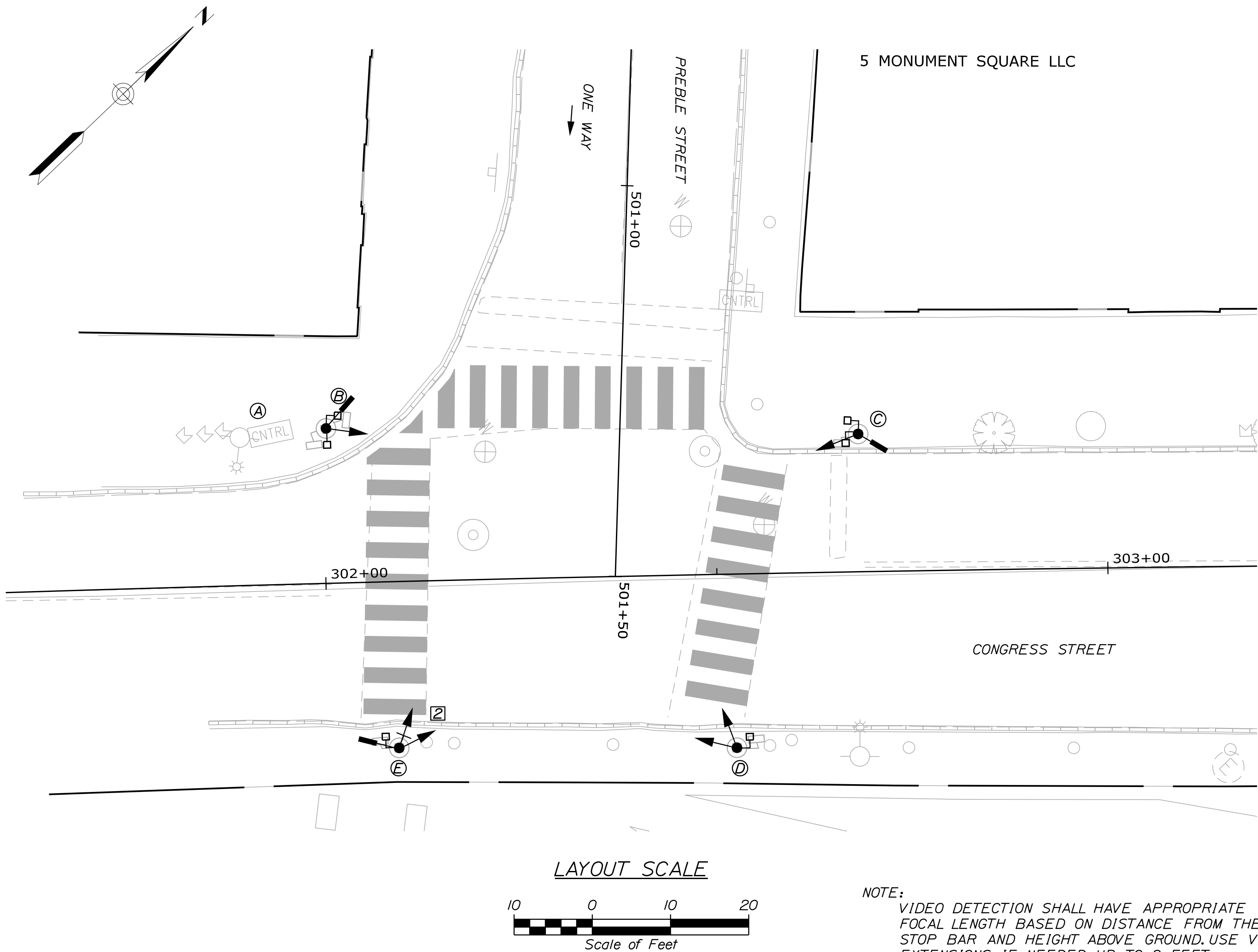
EQUIPMENT SCHEDULE			
DESIGNATION	ITEM	DESCRIPTION	LOCATION *
A	NEW CONTROLLER AND CABINET	INSTALL NEW ATC CONTROLLER AND CONTROLLER CABINET ON NEW FOUNDATION.	STA. 201+33.26, 20.75' LT.
B	EXISTING MAST ARM WITH POLE AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 201+37.42, 19.91' LT.
C	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEADS, SIGNS AND PUSH BUTTONS ON NEW FOUNDATION.	STA. 201+42.54, 21.46' LT.
D	MAST POLE W/ 26' MAST ARM AND FOUNDATION	VIDEO DETECTION, OVERHEAD SIGNS, SIGNAL HEADS, PEDESTRIAN COUNTDOWN HEAD, PUSH BUTTON AND SIGN ON NEW FOUNDATION (DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034).	STA. 202+00.57, 24.52' LT.
E	EXISTING PEDESTAL POLE	REMOVE EXISTING PEDESTAL POLE AND FOUNDATION, INSTALL JUNCTION BOX.	STA. 202+06.59, 21.37' LT.
F	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 202+14.89, 19.61' LT.
G	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 202+27.04, 20.41' RT.
H	MAST POLE W/ 21' MAST ARM AND FOUNDATION	VIDEO DETECTION, OVERHEAD SIGN, SIGNAL HEADS ON NEW FOUNDATION (DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034).	STA. 201+85.79, 23.06' RT.
I	EXISTING MAST ARM WITH POLE AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 201+80.99, 19.37' RT.
J	PEDESTAL/SIGNAL POLE	INSTALL NEW 12' PEDESTAL POLE, SIGNAL HEAD, VEHICLE SIGN, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON EXISTING FOUNDATION.**	STA. 201+50.80, 23.12' RT. ±
K	EXISTING CONTROLLER CABINET AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 201+28.89, 20.15' LT.

* STATION AND OFFSET INFORMATION IS APPROXIMATE, EQUIPMENT TO BE ADJUSTED AS NEEDED BY RESIDENT, MAINE DOT, OR CITY.

** EXISTING FOUNDATIONS, AS NOTED, TO BE EVALUATED IN THE FIELD PRIOR TO BIDDING OR ORDERING OF MATERIALS. IF FOUNDATIONS ARE NOT COMPATIBLE WITH THE NEW PEDESTAL POLES, THE EXISTING FOUNDATION SHALL BE REMOVED AND A NEW FOUNDATION INSTALLED. THIS DOES NOT APPLY TO THE MAST ARM FOUNDATIONS WHICH WILL BE REPLACED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034. MODIFYING EXISTING FOUNDATIONS IS CONSIDERED INCIDENTAL TO PAY ITEM 643.80 COORDINATE WORK WITH RESIDENT.



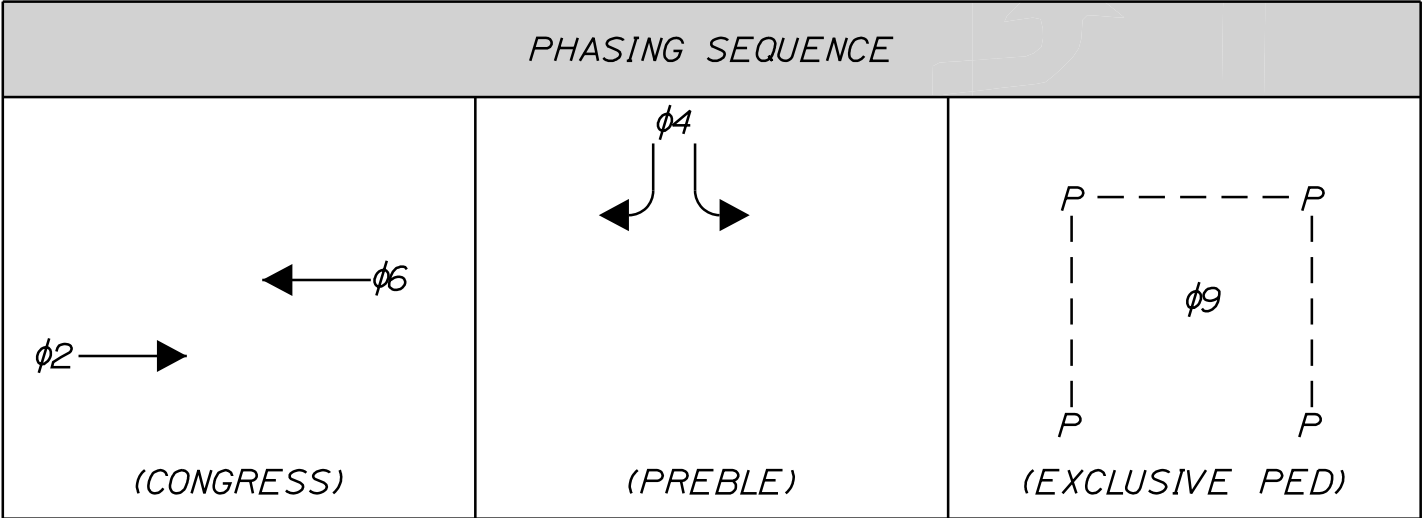
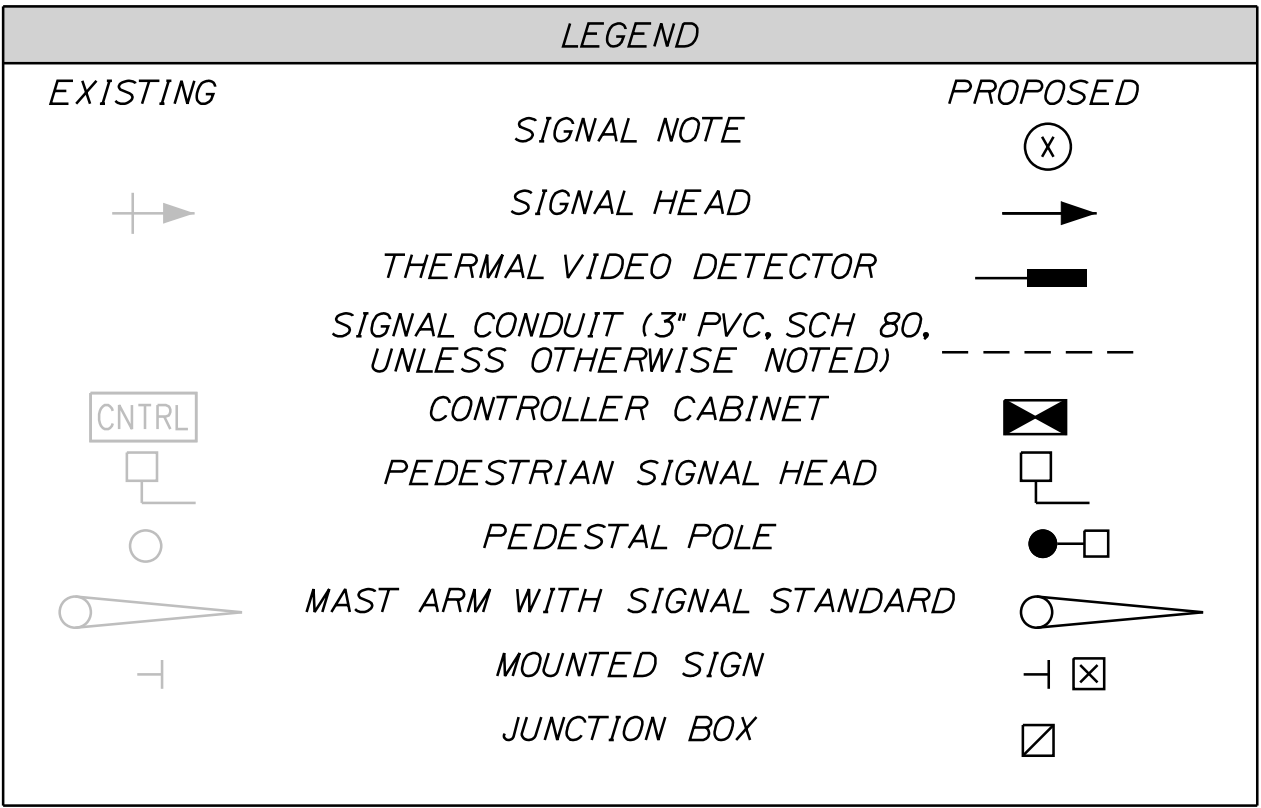
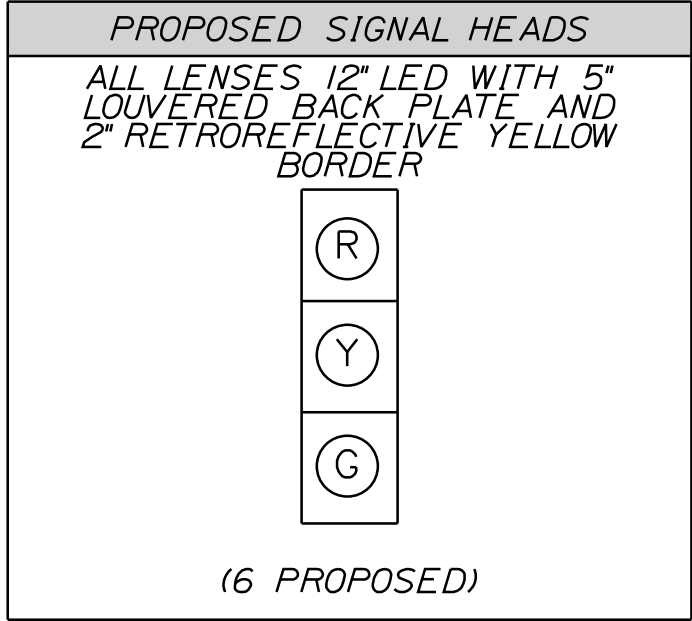
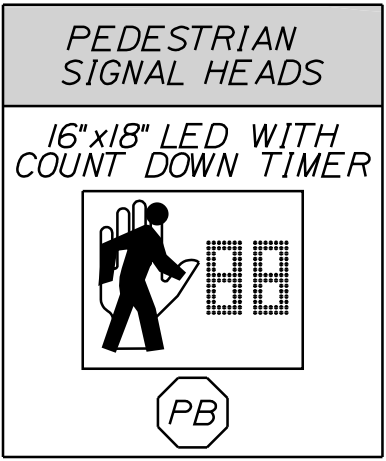
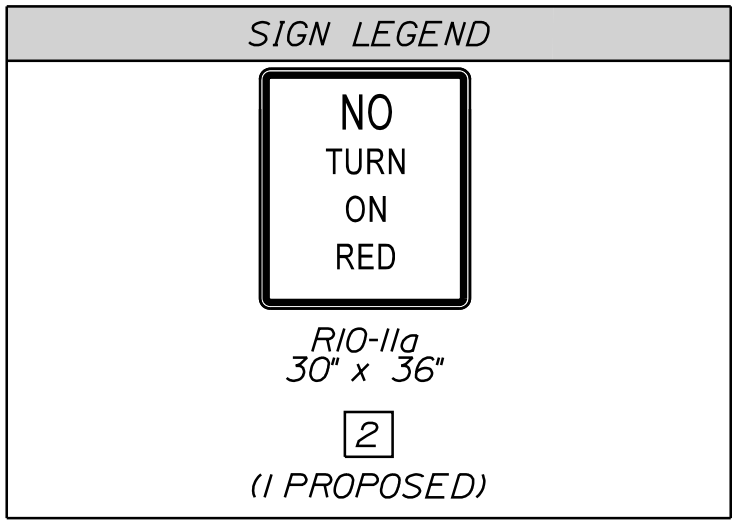
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SIGNAL TIMING SCHEDULE - FREE PLAN									
MINIMUM INITIAL	1	2	3	4	5	6	7	8	9
VEHICLE EXTENSION		5		5		5			
MAX I*		3		3		3			
MAX II**		17		14		17			
MAX I**		21		10		21			
YELLOW		3		3		3			
ALL RED		2		2		2			
WALK / DON'T WALK									5
PEDESTRIAN CLEARANCE									14
FLASH		R		R		R			
PHASE RECALL		SOFT				SOFT			
MEMORY									
DETECTOR		PR		PR		PR			

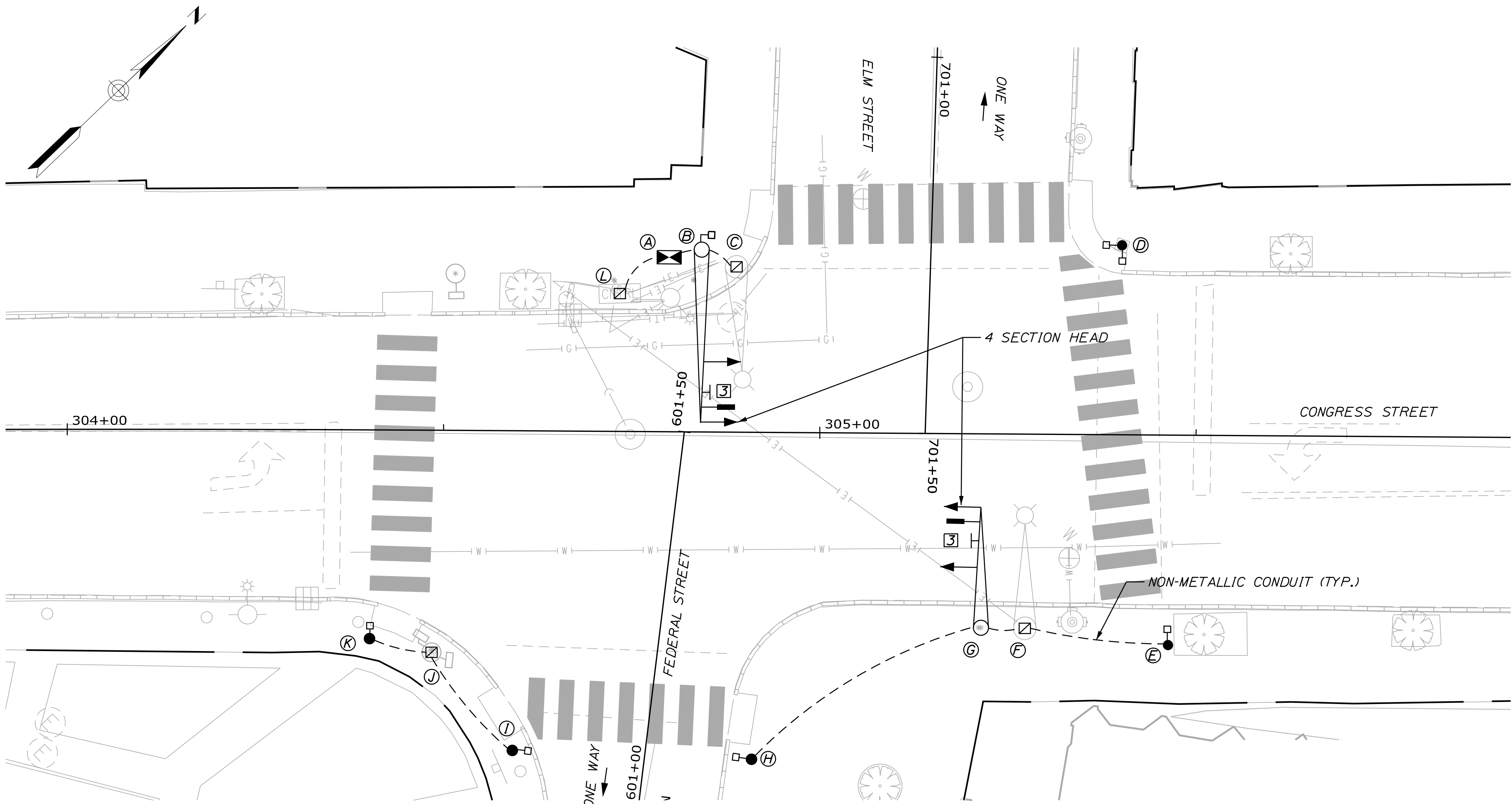
MAX I = 6:00-9:00 AM (WEEKDAYS)
MAX II = ALL OTHER TIMES

Y-YELLOW R-RED PR-PRESENCE

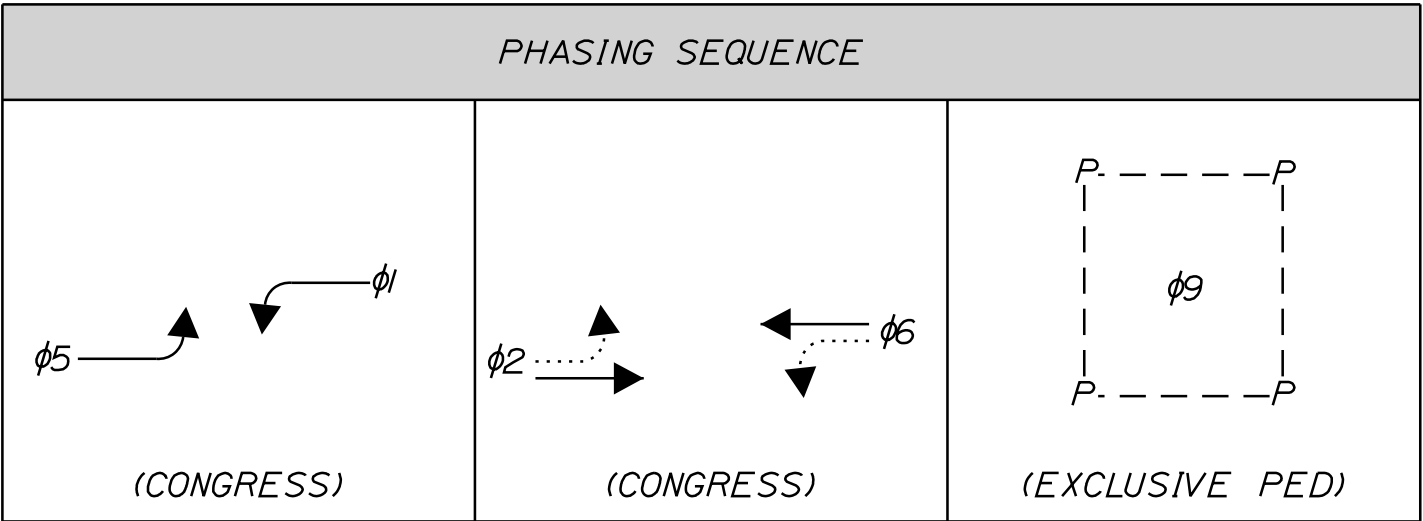


EQUIPMENT SCHEDULE			
DESIGNATION	ITEM	DESCRIPTION	LOCATION *
A	EXISTING CONTROLLER CABINET	ADD VIDEO MONITOR TO SEE VIDEO DETECTION.	STA. 301+93.42, 19.35' LT.
B	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE. INSTALL NEW 12' PEDESTAL POLE, VIDEO DETECTION, SIGNAL HEAD, PEDESTRIAN COUNTDOWN HEADS, SIGNS, AND PUSH BUTTONS ON EXISTING FOUNDATION. **	STA. 302+00.51, 19.81' LT.
C	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE. INSTALL NEW 12' PEDESTAL POLE, VIDEO DETECTION, SIGNAL HEAD, PEDESTRIAN COUNTDOWN HEADS, SIGNS AND PUSH BUTTONS ON EXISTING FOUNDATION. **	STA. 302+68.36, 17.62' LT.
D	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE. INSTALL NEW 12' PEDESTAL POLE, SIGNAL HEADS, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON EXISTING FOUNDATION. **	STA. 302+52.13, 22.21' RT.
E	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE. INSTALL NEW 12' PEDESTAL POLE, VIDEO DETECTION, SIGNAL HEADS, VEHICLE SIGN, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON EXISTING FOUNDATION. **	STA. 302+08.83, 21.26' RT.

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- ** EXISTING FOUNDATIONS, AS NOTED, TO BE EVALUATED IN THE FIELD PRIOR TO BIDDING OR ORDERING OF MATERIALS. IF FOUNDATIONS ARE NOT COMPATIBLE WITH THE NEW PEDESTAL POLES, THE EXISTING FOUNDATION SHALL BE REMOVED AND A NEW FOUNDATION INSTALLED. THIS DOES NOT APPLY TO THE MAST ARM FOUNDATIONS WHICH WILL BE REPLACED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034. MODIFYING EXISTING FOUNDATIONS IS CONSIDERED INCIDENTAL TO PAY ITEM 643.80 COORDINATE WORK WITH RESIDENT.



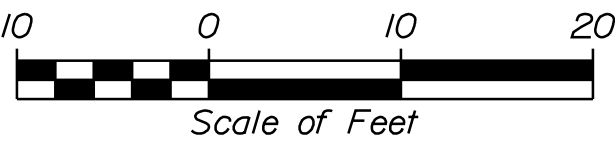
LEGEND		
EXISTING		PROPOSED
	SIGNAL NOTE	
	SIGNAL HEAD	
	THERMAL VIDEO DETECTOR	
	SIGNAL CONDUIT (3" PVC, SCH. 80, UNLESS OTHERWISE NOTED)	
	CONTROLLER CABINET	
	PEDESTRIAN SIGNAL HEAD	
	PEDESTAL POLE	
	MAST ARM WITH SIGNAL STANDARD	
	MOUNTED SIGN	
	JUNCTION BOX	



PROPOSED SIGNAL HEADS
 ALL LENSES 12" LED WITH 5" LOUVERED BACK PLATE AND 2" RETROREFLECTIVE YELLOW BORDER

PEDESTRIAN SIGNAL HEADS
 16"x18" LED WITH COUNT DOWN TIMER

SIGN LEGEND



SIGNAL TIMING SCHEDULE - FREE PLAN									
	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	4	5			5	5			
VEHICLE EXTENSION	3	3			3	3			
MAX I*	10	34			10	34			
MAX II**	10	64			10	64			
YELLOW	3	3			3	3			
ALL RED	3	2			3	2			
WALK / DON'T WALK									5
PEDESTRIAN CLEARANCE									16
FLASH	R	R			R	R			
PHASE RECALL		SOFT				SOFT			
MEMORY									
DETECTOR	PR	PR			PR	PR			

Y=YELLOW R=RED PR=PRESENCE

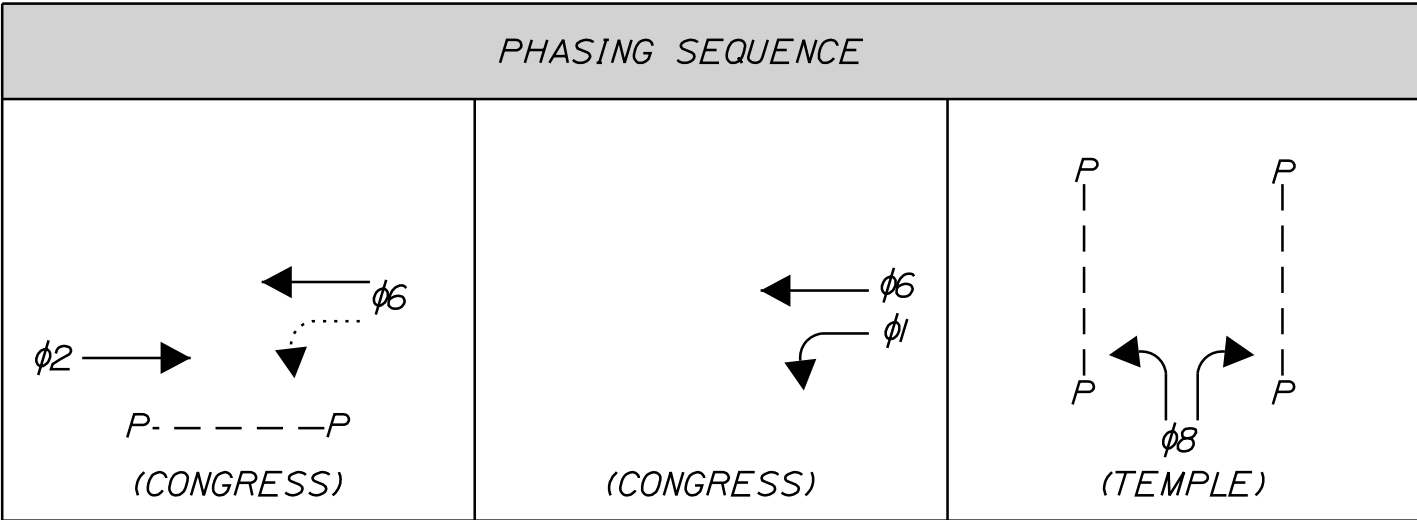
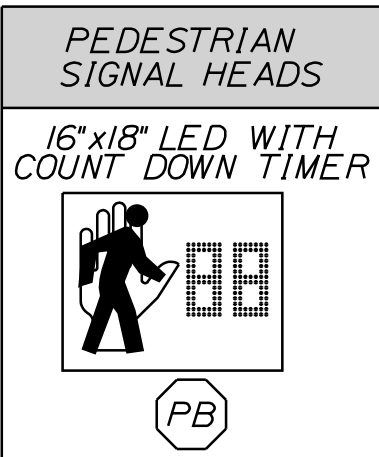
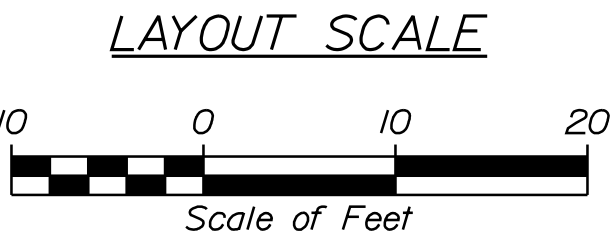
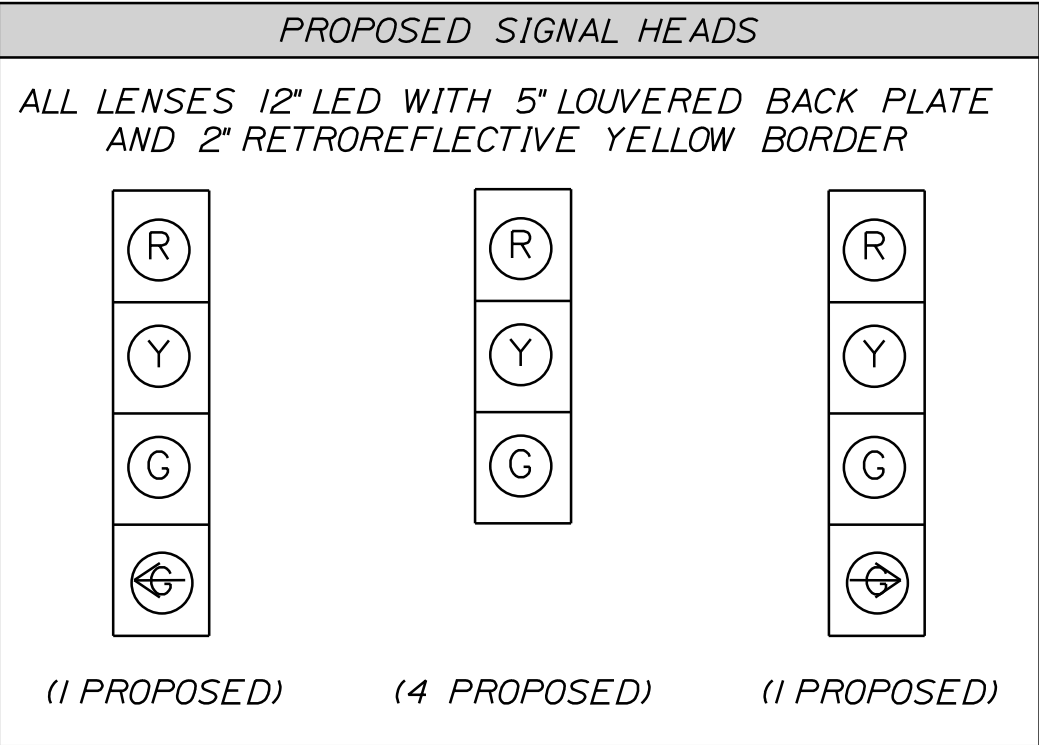
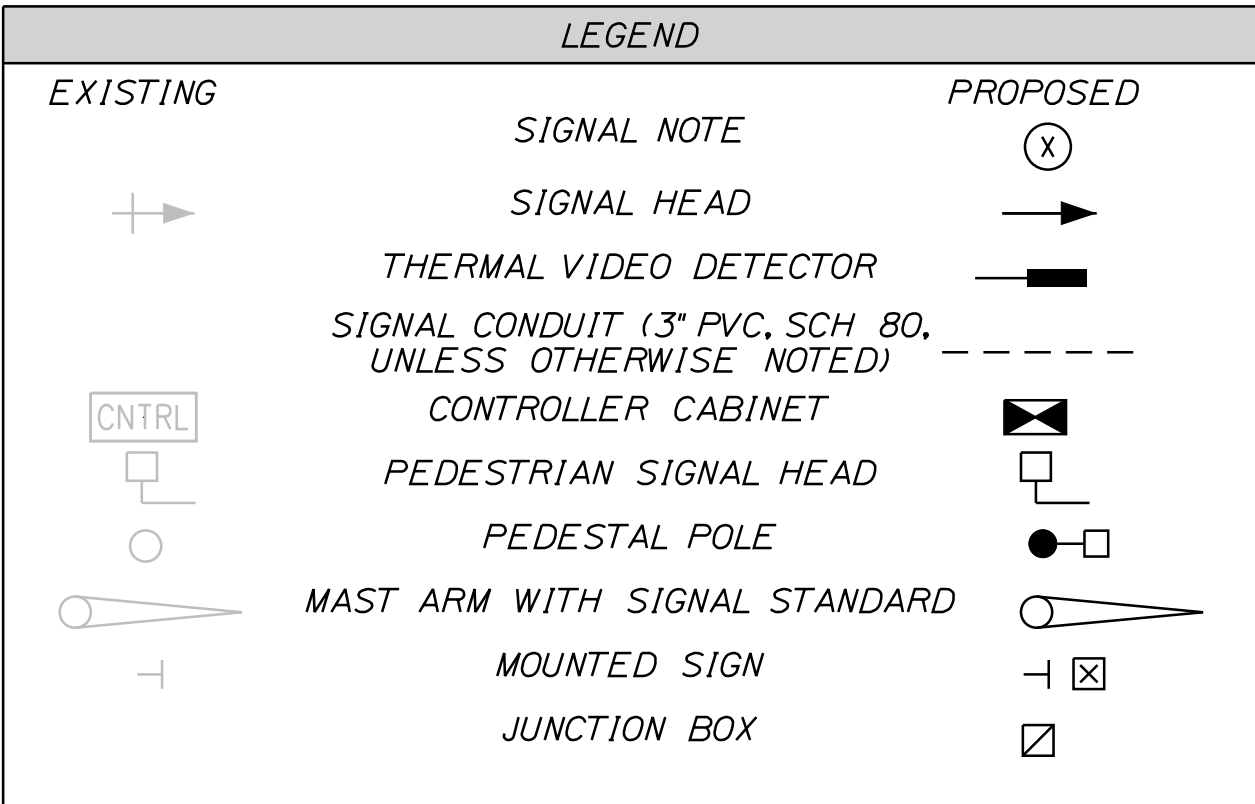
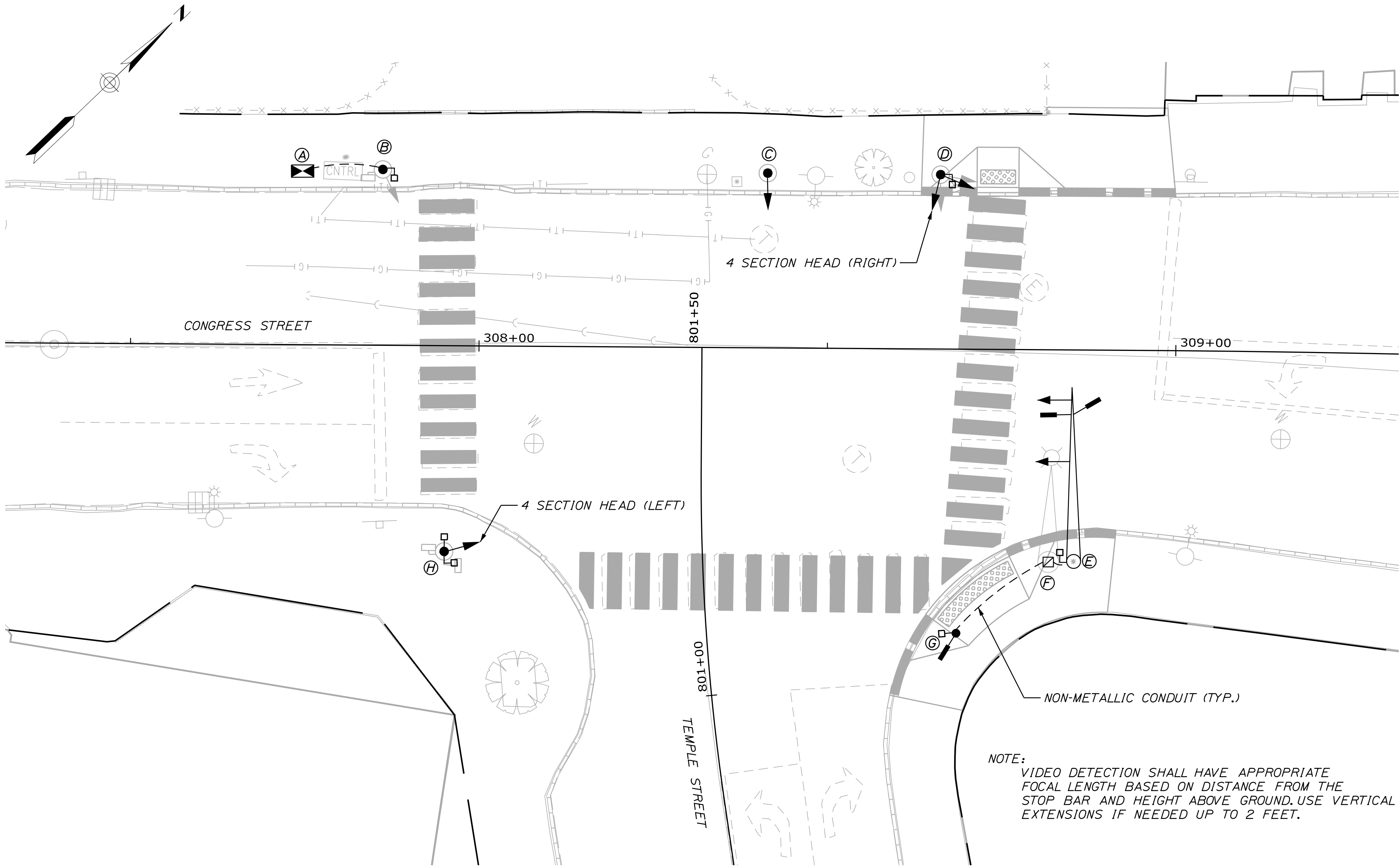
MAX I = 6:00-9:00 AM (WEEKDAYS)
MAX II = ALL OTHER TIMES

EQUIPMENT SCHEDULE			
DESIGNATION	ITEM	DESCRIPTION	LOCATION *
A	NEW CONTROLLER CABINET	INSTALL NEW ATC CONTROLLER AND CABINET ON NEW FOUNDATION.	STA. 304+79.83, 23.17' LT.
B	MAST POLE W/ 23' MAST ARM AND FOUNDATION	VIDEO DETECTION, SIGNAL HEADS, OVERHEAD SIGN, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION (DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034).	STA. 304+84.14, 24.22' LT.
C	EXISTING MAST ARM WITH POLE AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 304+88.79, 21.97' LT.
D	PEDESTAL POLE	REMOVE EXISTING PEDESTAL POLE, INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEADS, SIGNS AND PUSH BUTTONS ON EXISTING FOUNDATION.**	STA. 305+40.00, 25.17' LT.
E	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 305+46.46, 27.88' RT.
F	EXISTING MAST ARM WITH POLE AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 305+27.42, 25.79' RT.
G	MAST POLE W/ 16' MAST ARM AND FOUNDATION	VIDEO DETECTION, SIGNAL HEADS AND OVERHEAD SIGN ON NEW FOUNDATION (DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034).	STA. 305+21.59, 25.75' RT.
H	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 601+07.93, 14.15' RT.
I	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 601+05.22, 17.54' LT.
J	EXISTING PEDESTAL POLE	REMOVE EXISTING PEDESTAL POLE AND FOUNDATION, INSTALL JUNCTION BOX.	STA. 304+48.57, 29.50' RT.
K	PEDESTAL POLE	INSTALL NEW 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 304+40.29, 27.72' RT.
L	EXISTING CONTROLLER CABINET AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 304+73.30, 18.31' LT.

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** EXISTING FOUNDATIONS, AS NOTED, TO BE EVALUATED IN THE FIELD PRIOR TO BIDDING OR ORDERING OF MATERIALS. IF FOUNDATIONS ARE NOT COMPATIBLE WITH THE NEW PEDESTAL POLES, THE EXISTING FOUNDATION SHALL BE REMOVED AND A NEW FOUNDATION INSTALLED. THIS DOES NOT APPLY TO THE MAST ARM FOUNDATIONS WHICH WILL BE REPLACED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034. MODIFYING EXISTING FOUNDATIONS IS CONSIDERED INCIDENTAL TO PAY ITEM 643.80 COORDINATE WORK WITH RESIDENT.

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
L. HAMILTON	I. WARREN	02/19			
DESIGN-DETAILED	R. DUNTON	02/19			
CHECKED-REVIEWED	D. ETINGER				
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					



SIGNAL TIMING SCHEDULE - FREE PLAN								
MINIMUM INITIAL	1	2	3	4	5	6	7	8
VEHICLE EXTENSION	5	5				5		5
MAX I*	3	3				3		3
MAX II**	10	29				44		15
MAX I1**	10	16				31		23
YELLOW	3	3				3		3
ALL RED (SEE LPI NOTE)	2.5	2				2.5		2
WALK / DON'T WALK		5						5
PEDESTRIAN CLEARANCE		16						15
FLASH	R	R				R		R
PHASE RECALL		SOFT				SOFT		
MEMORY								
DETECTOR	PR	PR				PR		PR

Y=YELLOW R=RED PR=PRESENCE

EQUIPMENT SCHEDULE			
DESIGNATION	ITEM	DESCRIPTION	LOCATION *
A	NEW CONTROLLER CABINET	REMOVE EXISTING CONTROLLER CABINET AND FOUNDATION, INSTALL NEW ATC CONTROLLER AND CONTROLLER CABINET ON NEW FOUNDATION.	STA. 307+74.51, 24.93' LT.
B	PEDESTAL POLE	REMOVE EXISTING PEDESTAL POLE, INSTALL 10' PEDESTAL POLE, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON EXISTING FOUNDATION.**	STA. 307+86.04, 25.24' LT.
C	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE, INSTALL 12' PEDESTAL POLE AND SIGNAL HEAD ON EXISTING FOUNDATION. **	STA. 308+41.28, 25.09' LT.
D	PEDESTAL/SIGNAL POLE	REMOVE EXISTING PEDESTAL POLE, INSTALL 12' PEDESTAL POLE, SIGNAL HEADS, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON EXISTING FOUNDATION. **	STA. 308+66.09, 25.04' LT.
E	MAST POLE W/ 25' MAST ARM AND FOUNDATION	VIDEO DETECTION, SIGNAL HEADS, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION (DESIGNED IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 626.034).	STA. 308+85.54, 30.36' RT.
F	EXISTING MAST ARM WITH POLE AND FOUNDATION	TO BE REMOVED, INSTALL JUNCTION BOX.	STA. 308+81.90, 30.47' RT.
G	PEDESTAL/SIGNAL POLE	INSTALL NEW 12' PEDESTAL POLE, VIDEO DETECTION, PEDESTRIAN COUNTDOWN HEAD, SIGN AND PUSH BUTTON ON NEW FOUNDATION.	STA. 308+68.73, 40.78' RT.
H	PEDESTAL/SIGNAL POLE	INSTALL NEW 12' PEDESTAL POLE, SIGNAL HEAD, PEDESTRIAN COUNTDOWN HEADS, SIGNS AND PUSH BUTTONS ON EXISTING FOUNDATION. **	STA. 307+95.20, 29.54' RT.

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NOTES:

- 1) LPI (LEADING PEDESTRIAN INTERVAL)=
ø2, ø6, ø8 SHALL HAVE A 5 SECOND
LPI WHEN PEDESTRIAN BUTTON
IS ACTUATED FOR THAT RELATED
CROSSING.

MAX I = 6:00-9:00 AM (WEEKDAYS)
MAX II = ALL OTHER TIMES

SIGNAL NOTES

1. ALL MATERIALS AND WORK SHALL CONFORM TO THE CITY OF PORTLAND AND MAINE DOT STANDARD SPECIFICATIONS AND BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", U.S.D.O.T., F.H.W.A., LATEST EDITION.
2. ALL SIGNAL AND SIGNAL RELATED EQUIPMENT SHALL MEET OR EXCEED THE CITY OF PORTLAND TRAFFIC SIGNAL STANDARDS.
3. IT IS THE INTENT OF THIS WORK TO HAVE A COMPLETE OPERATIONAL,TESTED AND ACCEPTED TRAFFIC SIGNAL UPON COMPLETION OF THIS CONTRACT.
4. TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER AND ORDER THAT WILL CAUSE THE MINIMUM DISRUPTION TO TRAFFIC.
5. THE RESIDENT,CITY AND MAINE DOT 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.
6. THE LOCATIONS OF MAST ARMS AND POLES INCLUDING THE MOUNTED TRAFFIC DEVICES AND SIGNS ARE APPROXIMATE.FINAL LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE RESIDENT,MAINE DOT OR CITY REPRESENTATIVE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY TRAFFIC SIGNALS AND ASSOCIATED WORK IF REQUIRED.CONTRACTOR SHALL REMOVE THE TEMPORARY TRAFFIC SIGNAL ONCE NEW SIGNAL IS OPERATIONAL.ALL COSTS ASSOCIATED WITH TEMPORARY SIGNALS SHALL BE INCIDENTAL TO THE 643 ITEMS.
8. THE PROPOSED TRAFFIC SIGNAL TIMING AND PHASING PLAN SHALL BE INPUT BY THE CONTRACTOR UNDER OBSERVATIONS BY THE RESIDENT OR MAINE DOT REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE TO THE RESIDENT.
9. CONTRACTOR IS RESPONSIBLE FOR FIELD ADJUSTING TIMING FOR EACH TIMING PLAN UNDER THE DIRECTION OF THE RESIDENT AND MAINE DOT REPRESENTATIVE.TIMING SHALL BE ADJUSTED WITHIN TWO WEEKS OF INTIAL START UP.
10. TWO COPIES OF AS-BUILT PLANS, SIGNAL TIMING, AND CONTROLLER MANUALS SHALL BE LEFT IN THE CONTROLLER CABINET.ONE ELECTRONIC COPY OF EACH SHALL BE PROVIDED TO THE CITY ENGINEER/PUBLIC WORKS DIRECTOR.
11. CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION BOXES PER MAINE DOT STANDARDS AT A MINIMUM.
12. THE CONTRACTOR SHALL PREPARE A MATERIAL SCHEDULE BASED UPON THEIR PLAN REVIEW.ALL SCHEDULES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING MATERIALS OR PERFORMING WORK.
13. UTILITIES THAT HAVE FACILITIES IN THE GENERAL PROJECT ARE LISTED IN SPECIAL PROVISION 104.
14. UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY AND THE CONTRACTOR IS RESPONSIBLE FOR FINDING EXACT LOCATIONS OF UTILITIES PRIOR TO CONSTRUCTION.CONTRACTOR SHALL CONTACT DIG SAFE AT 1-888-DIG-SAFE AND APPROPRIATE AUTHORITIES PRIOR TO ANY SUBSURFACE ACTIVITIES.
15. THE CONTRACTOR SHALL MEET ALL REQUIREMENTS OF THE UTILITY COMPANIES WHEN MODIFYING THE EXISTING SERVICE CONNECTIONS AND WHEN INSTALLING EQUIPMENT ON THEIR POLES OR NEAR THEIR WIRES.
16. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION AND/OR INSTALLATION OF POWER METERS IF REQUIRED AND ASSURING THE POWER METER LOCATION AND INSTALLATION CONFORMS TO THE LOCAL UTILITY REQUIREMENTS.THIS WORK WILL BE INCIDENTAL TO ITEM 643.80.
17. ALL CONDUIT CROSSING AREAS OF EXISTING PAVEMENT SHALL BE INSTALLED USING TRENCHLESS TECHNOLOGIES.
18. ALL NEW SIGNAL SECTIONS SHALL HAVE LED LENSES 12 INCHES IN DIAMETER,AND SHALL HAVE 5 INCH LOUVERED BACK PLATES WITH 2"YELLOW RETROREFLECTIVE STRIP AROUND BORDER OF BACK PLATES.
19. ALL SPLICES WILL BE MADE IN THE CABINETS OR POLES MEETING MAINE DOT SPECIFICATIONS.
20. THE CONTRACTOR SHALL PROVIDE MAST ARM DESIGN IN ACCORDANCE WITH SECTION 643.023.
21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL STRUCTURAL DESIGN OF THE SIGNAL SUPPORT STRUCTURES AND THE CONNECTION OF THE SUPPORT STRUCTURES TO THEIR FOUNDATIONS. ALL DESIGNS SHALL BE PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MAINE. DESIGN COMPUTATIONS, INCLUDING DESIGN LOADS (OVERTURNING MOMENT,TORSION,SHEAR FORCE, AND AXIAL LOAD) AT THE TOP OF THE FOUNDATIONS,AND SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY THE DEPARTMENT.NO MATERIALS SHALL BE ORDERED, FABRICATED,OR INSTALLED UNTIL THE DESIGN HAS BEEN APPROVED.

22. SIGNAL AND SIGN MAST ARM FOUNDATIONS SHALL CONSIST OF CAST-IN-PLACE REINFORCED CONCRETE DRILLED SHAFTS.ONE NEW DRILLED SHAFT PER MAST ARM AS SET FORTH IN STANDARD SPECIFICATIONS 643,645 AND 626.FOUNDATION SIZES SHALL BE DESIGNED BY THE CONTRACTOR BASED UPON THE ACTUAL COMPUTED BENDING MOMENT AND TORSION IN ACCORDANCE WITH STANDARD SPECIFICATIONS 643,645 AND 626. FOUNDATIONS SHALL BE DESIGNED IN ACCORDANCE WITH LRFD DESIGN METHODOLOGY. ACTUAL LRFD DESIGN LOADS AT THE TOP OF THE FOUNDATION THAT ARE PROVIDED BY THE CONTRACTOR AS PART OF THEIR STRUCTURAL SUBMITTAL WILL BE USED BY THE DEPARTMENT TO CHECK THE SPECIFIED SIZE OF THE DRILLED SHAFTS.DRILLED SHAFTS SHALL NOT BE PERMANENTLY CASED EXCEPT FOR THE TOP 3 FEET.CONCRETE SHALL BE CAST DIRECTLY AGAINST THE SURROUNDING SOIL.PRECAST FOUNDATIONS WILL NOT BE PERMITTED.
23. ANY DAMAGE TO SLOPES,SIDEWALKS OR PAVEMENT RESULTING FROM INSTALLATION OF MAST ARM POLES AND FOUNDATIONS SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE RESIDENT. COSTS OF REPAIRS SHALL BE INCIDENTAL TO PAYMENT UNDER SECTION 643.
24. PAYMENT FOR MAST ARM POLES AND FOUNDATIONS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS 643,645 AND 626 AND WILL BE FULL COMPENSATION FOR ALL LABOR,EQUIPMENT AND MATERIALS FOR THE ACCEPTED SIGNAL OR SIGN INSTALLATION INCLUDING BUT NOT LIMITED TO SIGNS,SIGNALS,SUPPORT STRUCTURES AND FOUNDATIONS. EXCAVATION,EXCAVATION STABILIZATION,BACKFILL,REPLACEMENT OF SUBBASE GRAVEL, REPLACEMENT OR REPAIR OF HIGHWAY PAVEMENT,SIDEWALK,SLOPE REGRADING,AND PLACEMENT OF LOAM,SEED AND MULCH ON DISTURBED SLOPES.PAYMENT FOR CONSTRUCTION TRAFFIC CONTROL WILL BE MADE UNDER APPLICABLE PAY ITEMS OF SECTION 652.
25. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY STREET/SIDEWALK OCCUPANCY OR OPENING PERMITS.
26. ALL SIGNAL HEADS AND SIGNS SHALL BE MOUNTED TO MAST ARMS WITH ASTROBRACKETS.
27. ALL CONFLICTING SIGNS AND PAVEMENT MARKINGS SHALL BE PERMANENTLY REMOVED.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING RED-LINE AS-BUILT DRAWINGS OF THE FINAL WORK TO THE RESIDENT.THOSE DRAWINGS SHALL BE A CLEAN SET OF PLANS SHOWING ALL CHANGES,MODIFICATIONS,AND ELEVATIONS TO THE BID PLANS.
29. COUNTDOWN PEDESTRIAN HEADS SHALL HAVE AUDIBLE/TACTILE FEATURES AND SHALL BE INCIDENTAL TO ITEM 643.80.

ADDITIONAL SIGNAL NOTES

1. ALL SIGNAL EQUIPMENT INCLUDING CONTROLLER CABINET,UPRIGHTS,AND MAST ARMS SHALL BE POWDER COAT BLACK IN COLOR.UPRIGHTS AND MAST ARMS SHALL BE GALVANIZED.
2. ALL SIGNAL HEADS SHALL BE HEAVY DUTY POLYCARBONATE.
3. VIDEO DETECTION SHALL BE FLIR TRAFISENSE (THERMO BASED SYSTEM).
4. ALL EXISTING SIGNAL EQUIPMENT THAT IS REMOVED SHALL BE RETURNED TO THE CITY.
5. THE NEW CONTROLLER CABINET SHALL BE EQUIPPED FOR A MINIMUM OF 16 PHASES.
6. CITY TO MAKE AND SUPPLY MAST ARM SUPPORTED STREET NAME SIGNS AND CONTRACTOR WILL ERECT.THIS ITEM SHALL BE INCIDENTAL TO 645 ITEMS.
7. PAYMENT FOR REMOVAL OF EXISTING SIGNS SHALL BE INCIDENTAL TO OTHER 645 ITEMS.
8. ALL NEW CONTROLLERS AND CABINETS SHALL BE TRANSIT SIGNAL PRIORITY (TSP)CAPABLE/READY AND AUTOMATIC VEHICLE LOCATION (AVL)CAPABLE.
9. CONTROLLER EQUIPMENT:
-CONTROLLER SHALL BE ATC TRAFFICWARE COMMANDER
-TRAFFIC CONTROL CABINETS SHALL BE NAZTEC MODEL P44 TS2 TYPE 1SERIES ONLY WITH 15" EXTENSION BASE ON FULL CONCRETE FOUNDATION.ALL CONDUIT INTO/OUT OF THE CABINET SHALL BE SEALED.
-MALFUNCTION MANAGEMENT UNITS SHALL BE ATC COMPATIBLE
10. SIGNAL EQUIPMENT:
-SIGNAL HOUSINGS SHALL BE MCCAIN MODEL MTSTA OR MTSTP SERIES ONLY
- LED MODULES FOR VEHICLE INDICATIONS SHALL BE GELCORE MODEL DR6 SERIES ONLY
- LED MODULES FOR PEDESTRIAN INDICATIONS SHALL BE GELCORE MODEL PS7 SERIES ONLY
- PEDESTRIAN PUSH BUTTON ASSEMBLIES SHALL BE POLARA IN3 NAVIGATOR-3 WIRE AUDIBLE-TACTILE PEDESTRIAN SIGNAL SYSTEM.
11. TRAFFIC STRUCTURES:
- MAST ARMS SHALL BE VALMONT SM16 OR CB16 SERIES ONLY (GALVANIZED AND POWDER COAT BLACK)
-ALL MAST POLES SHALL HAVE VALMONT ENDURO DECROTIVE BASES,HUNTINGTON STYLE,THAT MATCHES THE POLE IN COLOR.
- STRAIN POLES SHALL BE VALMONT SW56 SERIES ONLY.
- PEDESTAL POLES SHALL BE ONE PIECE WELDED CONFIGURATION.
12. PROPOSED SIGNS ON SIGNAL MAST ARMS AND POLES SHALL BE INCIDENTAL TO ITEM 643.80.
13. REMOVAL OF THE EXISTING SIGNAL SYSTEM SHALL BE INCIDENTAL TO PAY ITEM 643.80.
14. ALL INTERSECTIONS IN THIS PROJECT SHALL BE INTERCONNECTED VIA 12 STRAND FIBER.CONTRACTOR SHALL REUSE EXISTING SUBSURFACE CONDUIT CURRENTLY USED FOR COPPER IF STANDARDS ARE MET. COPPER WIRE SHALL BE REMOVED.IF STANDARDS CANNOT BE MAINTAINED,NEW CONDUIT SHALL BE INSTALLED.
15. REMOVE EXISTING PEDESTAL POLE FOUNDATIONS NOT BEING REUSED AND EXISTING MAST ARM FOUNDATIONS TO A MINIMUM OF TWO FEET BELOW GRADE.FILL IN HOLE,RESURFACE TO MATCH SURROUNDING AREA.PAYMENT INCIDENTAL TO ITEM 643.80.
16. REMOVE EXISTING CONTROLLER CABINET FOUNDATIONS THAT ARE NOT BEING REUSED,RESURFACE TO MATCH SURROUNDING AREA.PAYMENT INCIDENTAL TO 643.80

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HIGHWAY PLANS

PORTLAND - CONGRESS STREET
SIGNAL IMPROVEMENTS

SIGNAL NOTES

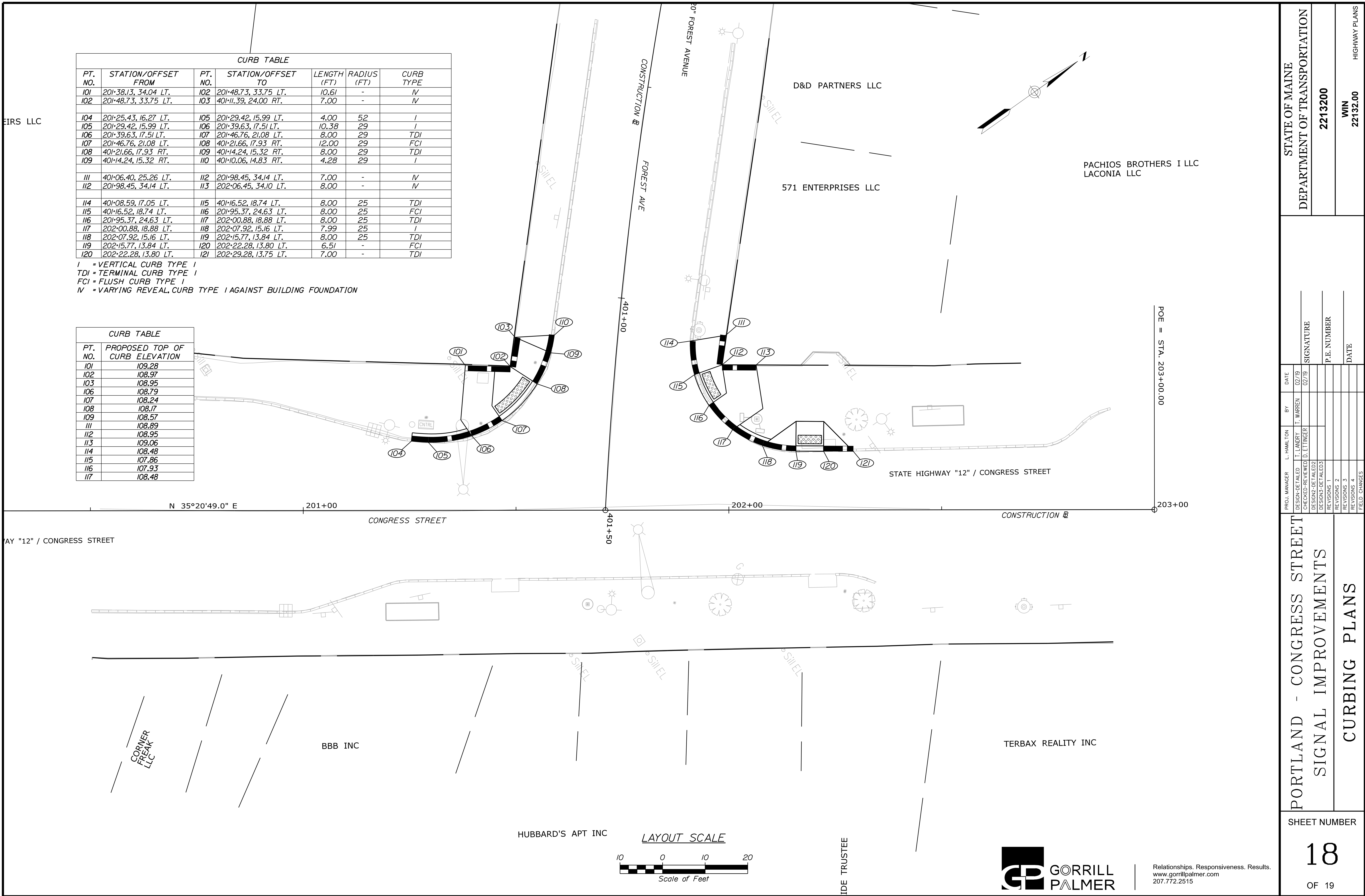
SHEET NUMBER

17

OF 19

CURB TABLE	
PT. NO.	PROPOSED TOP OF CURB ELEVATION
101	109.28
102	108.97
103	108.95
106	108.79
107	108.24
108	108.17
109	108.57
111	108.89
112	108.95
113	109.06
114	108.48
115	107.86
116	107.93
117	108.48

I = VERTICAL CURB TYPE I
 TDI = TERMINAL CURB TYPE I
 FCI = FLUSH CURB TYPE I
 IV = VARYING REVEAL CURB TYPE I AGAINST BUILDING FOUNDATION

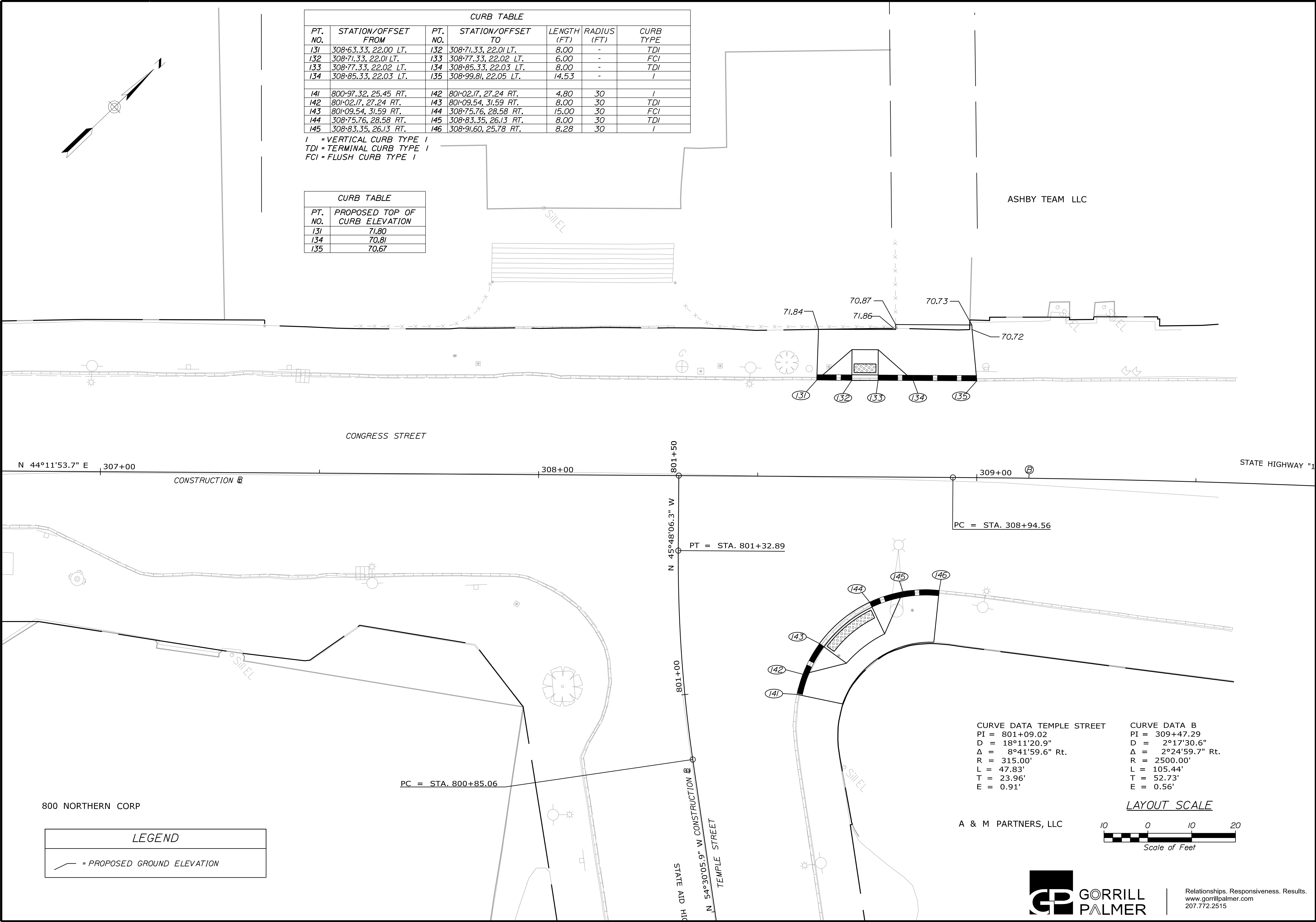


Date:2/6/2019

Username: Mike.Cundiff

Division: HIGHWAY

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HIGHWAY PLANS

PORTLAND - CONGRESS STREET
SIGNAL IMPROVEMENTS

CURBING PLANS

SHEET NUMBER

19

OF 19

PROJ. MANAGER	BY	DATE	SIGNATURE
L. HAMILTON	T. WARREN	02/18	
CHECKED-DETAILED	T. LANDRY	02/18	
DESIGNED-DETAILED	D. ETINGER		
DESIGNED-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

P.E. NUMBER

DATE