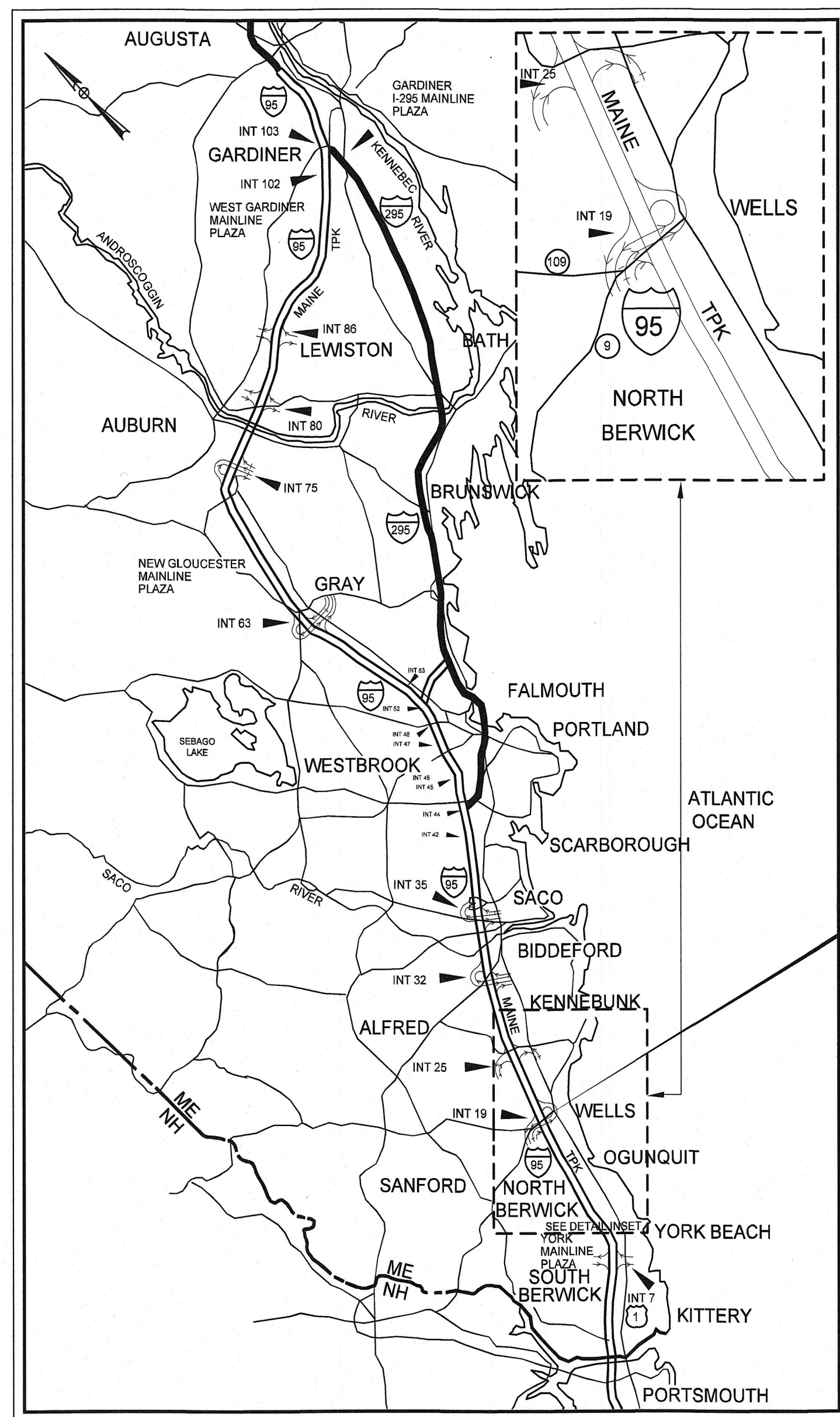


Date: 4/2/2019

Username:

Division: HIGHWAY

Filename: \\00\HIGHWAY\MSTA\001_TITL.E.dgn



LOCATION MAP



THE GOLD STAR
MEMORIAL HIGHWAY

MAINE TURNPIKE AUTHORITY

DANIEL E. WATHEN, CHAIR
 ROBERT D. STONE, VICE CHAIR
 MICHAEL J. CIANCHETTE, MEMBER
 JOHN E. DORITY, MEMBER
 ANN R. ROBINSON, MEMBER
 THOMAS J. ZUKE, MEMBER
 BRUCE A. VAN NOTE, MEMBER EX-OFFICIO

S. PETER MILLS, EXECUTIVE DIRECTOR

CONTRACT 2019.07
 ROUTE 109 / EXIT 19 IMPROVEMENTS

CONTRACT 2019.07 ROUTE 109 / EXIT 19 IMPROVEMENTS VOLUME II

INDEX OF SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES AND GENERAL NOTES
3-4	MAINTENANCE OF TRAFFIC PLANS
5	MAINTENANCE OF TRAFFIC SIGN SUMMARY
6-7	PLANS
8	FOUNDATION AND BORING PLAN
9	SIGN STRUCTURE CROSS SECTION
10	SIGN DETAILS/SUMMARY
11	SIGNAL PLAN
12	LIMIT OF DISTURBANCE PLAN

CONTRACT 2019.07

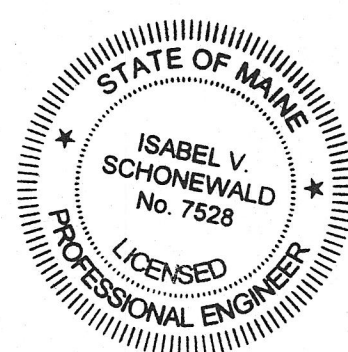
APPROVED: MAINE TURNPIKE AUTHORITY

Peter S. Merfeld
 PETER S. MERFELD, P.E.
 CHIEF OPERATIONS OFFICER

4/3/19
 DATE

Stephen R. Tartre
 STEPHEN R. TARTRE, P.E.
 DIRECTOR OF ENGINEERING AND BUILDING MAINTENANCE

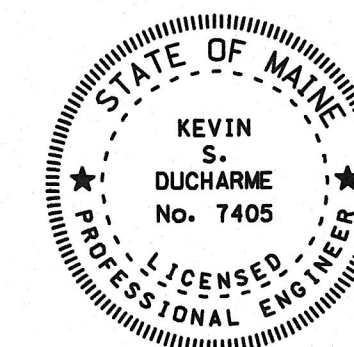
4/3/19
 DATE



SCHONEWALD
 ENGINEERING
 ASSOCIATES, INC.

Isabel V. Schonewald
 ISABEL V. SCHONEWALD, P.E.
 SCHONEWALD ENGINEERING ASSOCIATES, INC.
 PRESIDENT AND CHIEF ENGINEER - SHEET 8

4/4/19
 DATE



TYLIN INTERNATIONAL

Kevin S. Ducharme
 KEVIN S. DUCHARME, P.E.
 T.Y.LIN INTERNATIONAL
 PROJECT MANAGER - SHEETS 1-7, 9-12

4/2/2019
 DATE

Date: 4/3/2019

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
526.301	TEMPORARY CONCRETE BARRIER, TYPE 1	LS	1
527.342	WORK ZONE CRASH CUSHIONS - TL-2	UN	1
607.44	SAFETY FENCE	LF	80
615.07	LOAM	CY	0.5
618.14	SEEDING METHOD NUMBER 2	UN	0.02
619.1202	TEMPORARY MULCH	LS	1
626.32	24" FOUNDATION	EA	2
627.712	WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	LF	135
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	SF	95
627.78	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	LF	135
629.05	HAND LABOR - STRAIGHT TIME	HR	5
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	HR	5
631.172	TRUCK, LARGE (INCLUDING OPERATOR)	HR	5
631.36	FOREMAN	HR	5
643.71	TRAFFIC SIGNAL MODIFICATION: EXIT 19 AND ROUTE 109/SANFORD RD INTERSECTION	LS	1
643.83	VIDEO DETECTION SYSTEM	LS	1
643.97	WOOD POLES WITH GUYS AND SPAN WIRES	EA	1
645.103	DEMOUNT GUIDE SIGN	EA	1
645.106	DEMOUNT REGULATORY, WARNING, CONFIRMATION, AND ROUTE MARKER ASSEMBLY SIGN	EA	2
645.15	CANTILEVER GUIDE SIGN: (STA. 10+62.00)	LS	1
645.251	ROADWAY GUIDE SIGNS, TYPE 1	SF	150
645.289	STEEL H-BEAM POLES	LB	720
645.292	REGULATORY, WARNING, CONFIRMATION, AND ROUTE MARKER ASSEMBLY SIGNS TYPE 11	SF	47
652.33	DRUM	EA	90
652.34	CONE	EA	30
652.35	CONSTRUCTION SIGNS	SF	240
652.631	MAINTENANCE OF TRAFFIC CONTROL DEVICES	LS	1
652.38	FLAGGERS	HR	140
656.632	30 INCH TEMPORARY SILT FENCE	LF	260
659.10	MOBILIZATION	LS	1

GENERAL

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS LATEST REVISION AND THE MAINE DEPARTMENT OF TRANSPORTATION'S STANDARD DETAILS HIGHWAYS & BRIDGES LATEST REVISION UNLESS OTHERWISE NOTED OR INCLUDED IN THESE PLANS.
- NO SEPARATE PAYMENT FOR SUPERINTENDENT OR FOREMAN WILL BE MADE FOR THE SUPERVISION OF EQUIPMENT BEING PAID FOR UNDER THE EQUIPMENT RENTAL ITEMS.
- "UNDETERMINED LOCATIONS" SHALL BE DETERMINED BY THE RESIDENT.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN ACCESS TO ALL DRIVEWAYS AND SIDE ROADS DURING CONSTRUCTION UNLESS OTHERWISE NOTED ON THE PLANS.
- THE CONTRACTOR SHALL SUBMIT THEIR PROPOSED STAGING AREA(S) TO THE RESIDENT FOR APPROVAL PRIOR TO STARTING WORK.
- RIGHT OF WAY AND PROPERTY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY.
- GEOTECHNICAL INFORMATION FURNISHED OR REFERRED TO IN THE PLAN SET IS FOR BIDDER'S AND CONTRACTOR'S USE. NO ASSURANCE IS GIVEN THAT THE INFORMATION OR INTERPRETATIONS WILL BE REPRESENTATIVE OF ACTUAL SUBSURFACE CONDITIONS AT THE TIME OF CONSTRUCTION. THE AUTHORITY SHALL NOT BE RESPONSIBLE FOR THE BIDDER'S AND CONTRACTOR'S INTERPRETATIONS OF, OR CONCLUSIONS DRAWN FROM THE GEOTECHNICAL INFORMATION. THE BORING LOGS CONTAINED IN THE PLAN SET PRESENT FACTUAL AND INTERPRETIVE SUBSURFACE INFORMATION COLLECTED AT DISCRETE LOCATIONS. DATA PROVIDED MAY NOT BE REPRESENTATIVE OF THE SUBSURFACE CONDITIONS BETWEEN BORING LOCATIONS.
- WHERE SIGNS REQUIRE A SIX (6) INCH PANEL, THE 6-INCH PANEL SHALL BE ATTACHED AT THE BOTTOM ON THE SIGN, EXCEPT WHERE NOTED.
- THE CONTRACTOR SHALL STAKE OUT THE LOCATIONS OF ALL SIGNS TO BE INSTALLED ON NEW SUPPORTS FOR REVIEW AND APPROVAL BY THE RESIDENT PRIOR TO ORDERING AND FABRICATING SUPPORTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING THEIR OWN ACTUAL ELEVATION AND CROSS-SECTION INVESTIGATIONS FOR SIGNS PROPOSED FOR NEW SUPPORTS.
- EXISTING SIGNS SHALL BE MAINTAINED UNTIL THE NEW SIGNS ARE INSTALLED. WHEN NEW SIGNS ARE INSTALLED IN FRONT OF EXISTING SIGNS, THE CONTRACTOR SHOULD INSTALL THE SUPPORTS AND THE SIGN ON THE SAME DAY. ALTERNATIVELY, THE CONTRACTOR MAY ELECT TO INSTALL THE SUPPORTS IN ADVANCE OF INSTALLING THE SIGN; HOWEVER, THE CONTRACTOR SHALL NOT LEAVE POSTS INSTALLED FOR MORE THAN ONE WEEK PRIOR TO INSTALLING THE NEW SIGN.
- ALL EXCAVATION IS INCIDENTAL TO THE APPLICABLE ITEMS.

SIGNING

- 24" FOUNDATION SHALL BE COMPLETED IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION'S 2002 STANDARD DETAILS.

UTILITY

- THE UTILITIES INVOLVED IN THIS CONTRACT ARE AS FOLLOWS:
 CENTRAL MAINE POWER CO.
 CONSOLIDATED COMMUNICATIONS
 CHARTER COMMUNICATIONS (SPECTRUM)
 UNITIL
 WELLS SANITARY DISTRICT
 MAINE TURNPIKE AUTHORITY
- ALL UTILITY FACILITIES SHALL BE ADJUSTED BY THE RESPECTIVE UTILITIES UNLESS OTHERWISE NOTED.
- EXISTING UTILITIES ON THESE PLANS WERE COMPILED FROM FIELD SURVEY AND VARIOUS OTHER SOURCES. LOCATIONS ARE 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. NO WORK SHALL BE STARTED UNTIL THE OWNERS OF THE VARIOUS UTILITIES ARE NOTIFIED BY THE CONTRACTOR OF THE PROPOSED CONSTRUCTION. THE CONTRACTOR IS ALSO REQUIRED TO CALL DIG SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO THE START OF THE WORK.



EARTHWORK

- ALL WASTE MATERIAL SHALL BE DISPOSED OF OFF THE PROJECT IN ACCORDANCE WITH CHAPTER 404, DEPARTMENT OF ENVIRONMENTAL PROTECTION SOLID WASTE MANAGEMENT RULES.
- EXCAVATIONS ACCOMPLISHED AS PART OF THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH OSHA SUBPART P OF 29 CFR PART 1926.650-652 (CONSTRUCTION STANDARDS FOR EXCAVATION).

EROSION CONTROL

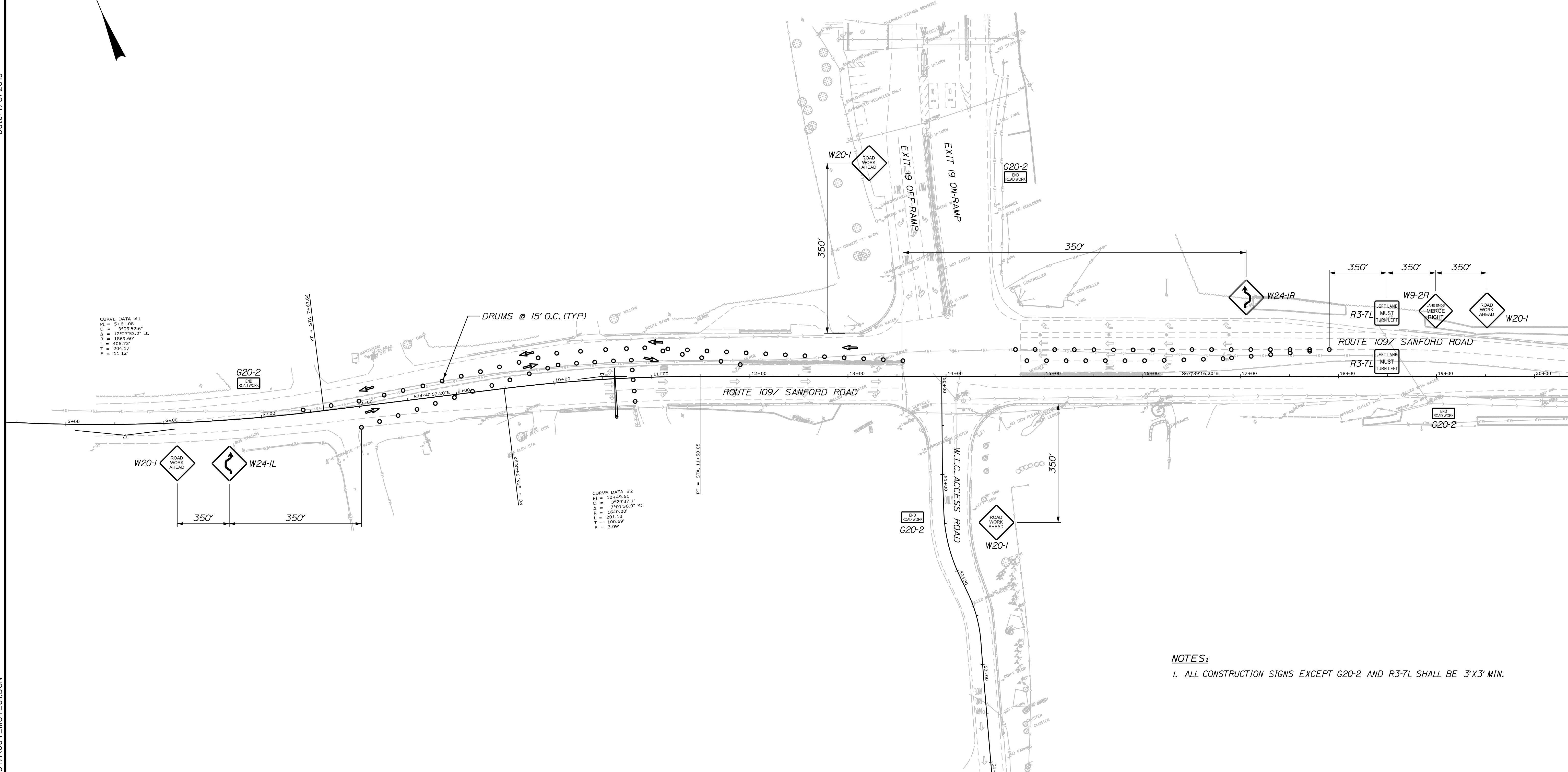
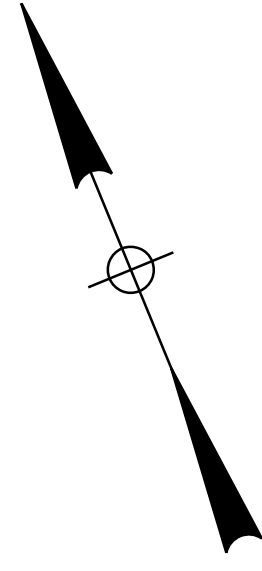
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MAINE DEPARTMENT OF TRANSPORTATION'S BEST MANAGEMENT PRACTICES FOR EROSION CONTROL & SEDIMENT CONTROL LATEST EDITION UNLESS OTHERWISE NOTED OR INCLUDED IN THESE PLANS.
- THE ANTICIPATED EROSION CONTROL DEVICES ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROPOSE ACTUAL TYPE AND LOCATION OF DEVICES FOR APPROVAL BY THE RESIDENT. ADDITIONAL MEASURES MAY BE PROPOSED BY THE CONTRACTOR DUE TO SITE OR WEATHER CONDITIONS. THE RESIDENT MAY DIRECT THE CONTRACTOR TO IMPLEMENT ADDITIONAL MEASURES. ANY ADDITIONAL MEASURES APPROVED BY THE RESIDENT WILL BE MEASURED FOR PAYMENT.
- FOUR (4) INCHES OF LOAM HAS BEEN ESTIMATED FOR ALL DISTURBED SLOPE AREAS UNLESS OTHERWISE SPECIFIED ON THE PLANS. ACTUAL PLACEMENT OF THE LOAM SHALL BE AS DESIGNATED BY THE RESIDENT.
- ALL SLOPES SHALL BE SEEDED WITH SEEDING METHOD NUMBER 2.
- MULCH SHALL BE APPLIED IN AREAS SEEDED.

Filename: ... \MSTA 002_Civil_GNotes.dgn

Scale: NOT TO SCALE		Designed by: TYLIN INTERNATIONAL		T.Y. Lin International 12 Northbrook Drive Building A, Suite One Falmouth, Maine 04105 TEL: (207) 781-4721 FAX: (207) 781-4753		 THE GOLD STAR MEMORIAL HIGHWAY		ROUTE 109 IMPROVEMENTS ESTIMATED QUANTITIES & GENERAL NOTES	
No.	Revision	By	Date	CONSULTANT PROJECT MANAGER: Kevin Ducharme				SHEET NUMBER:	
				Designed	TWA	3/2019	Checked	KSD	3/2019
				Drawn	TWA	3/2019	In Charge of	KSD	3/2019
						MTA PROJECT MANAGER: Ralph C. Norwood, IV		CONTRACT: 2019.07	
								2 OF 12	

Date: 4/3/2019

Filename: ...:\00\HIGHWAY\MSTA\004_MOT_01.DGN



NOTES:
 1. ALL CONSTRUCTION SIGNS EXCEPT G20-2 AND R3-7L SHALL BE 3'X3' MIN.

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date
Designed	MJD	10/2018	Checked	KSD 3/2019
Drawn	MJD	10/2018	In Charge of	KSD 3/2019

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 FAX: (207) 781-4753

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

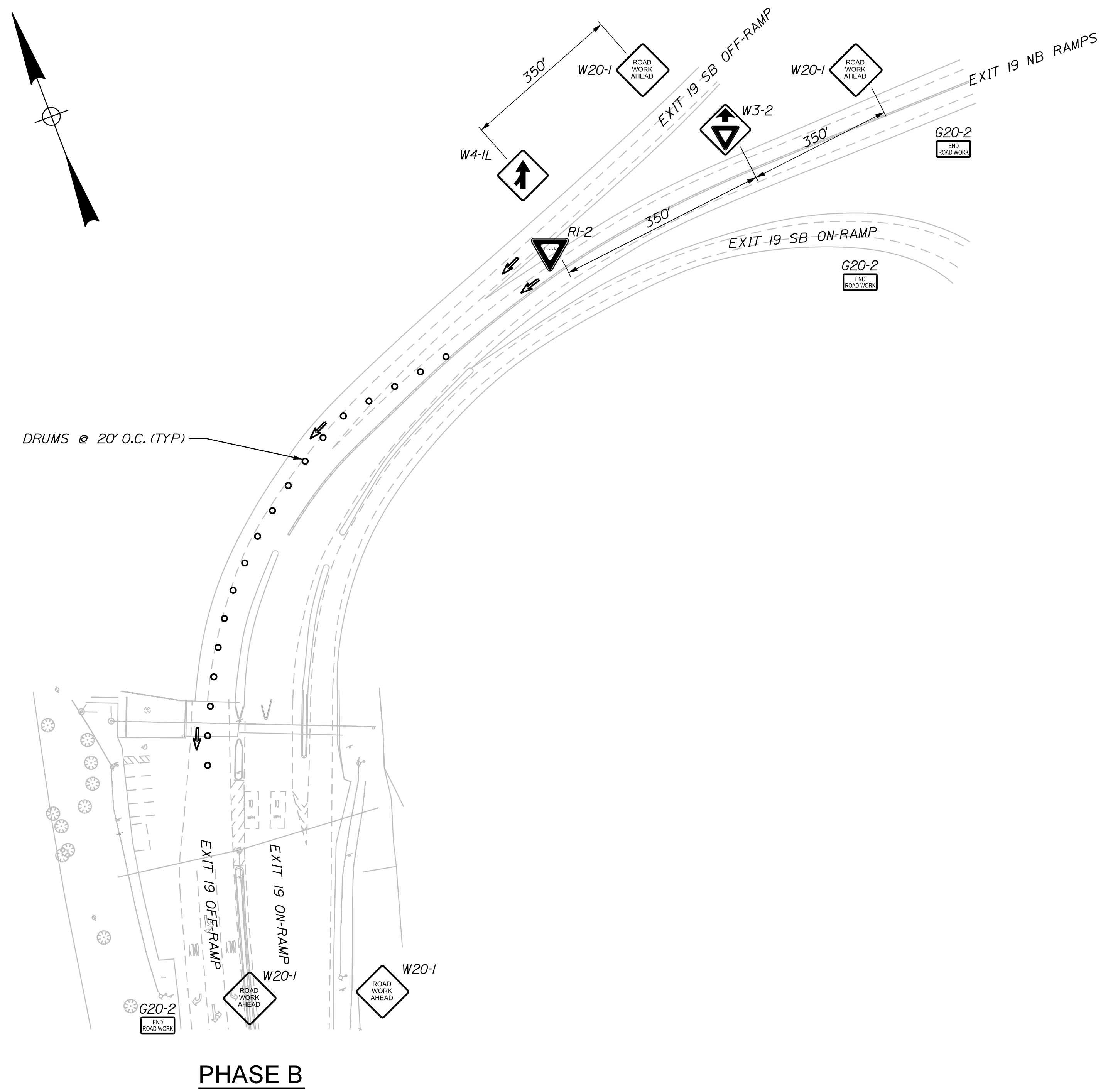
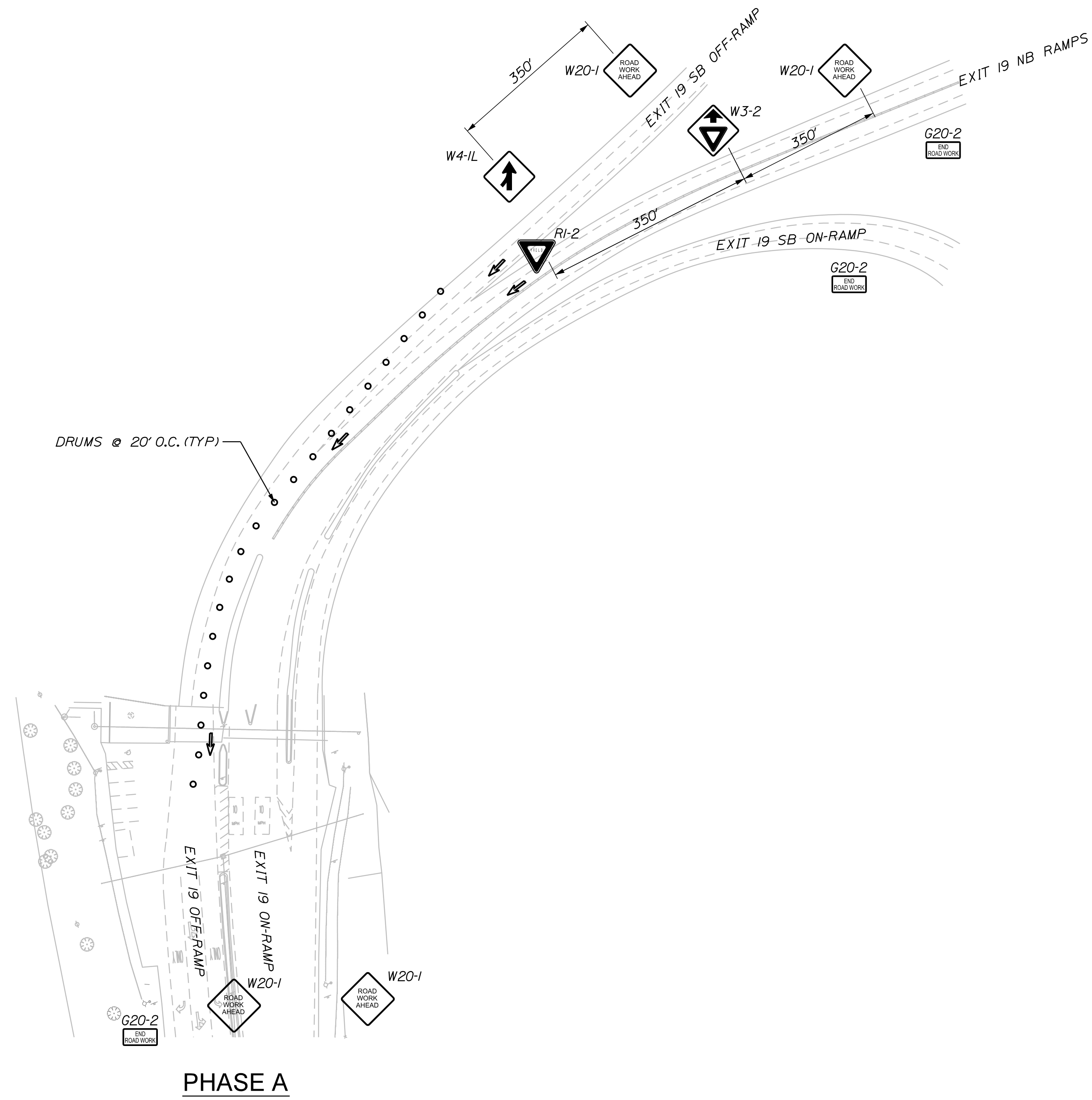
ROUTE 109 IMPROVEMENTS
 MAINTENANCE OF TRAFFIC PLAN
 ROUTE 109 GUIDE SIGN INSTALLATION

SHEET NUMBER:
 CONTRACT: 2019.07

3 OF 12

Date: 4/3/2019

Filename: ...:\00\HIGHWAY\MSTA\006_MOT_03.dgn



NOTES:
 1. ALL CONSTRUCTION SIGNS EXCEPT G20-2 SHALL BE 4'X4' MIN.

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date
Designed	MJD	10/2018	Checked	KSD 3/2019
Drawn	MJD	10/2018	In Charge of	KSD 3/2019

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 FAX: (207) 781-4753

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS
 MAINTENANCE OF TRAFFIC PLAN
 EXIT 19 OFF RAMP SIGN INSTALLATION

SHEET NUMBER:
 CONTRACT: 2019.07

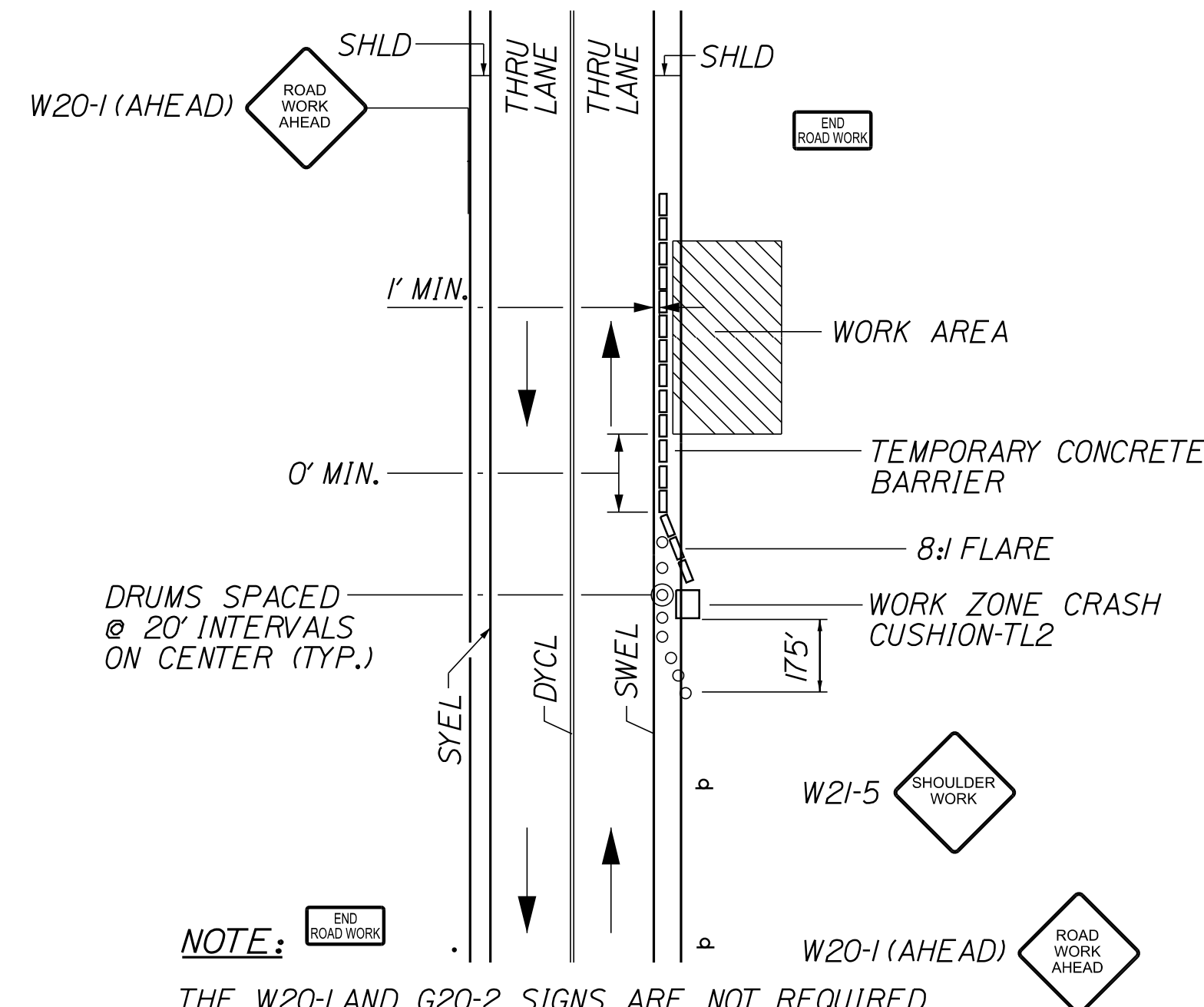
4 OF 12

Date: 4/3/2019

Filename: ... \MSTA 007_MOT_Sign_Summary.dgn

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET	NOTES
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER			
G20-2	48"	24" 18"	END ROAD WORK	TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2009			3 4	ORANGE	BLACK		8.00 (24) 4.50 (18)	
R1-2	48"	48"	YIELD				1	RED	WHITE		6.93 (6.93)	
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				2	ORANGE	BLACK		6.25 (12.5)	
W3-2	48"	48"					1	ORANGE	BLACK		16.00 (16)	
W4-1L (LEFT)	48"	48"					1	ORANGE	BLACK		16.00 (16)	
W9-2R	36"	36"	LANE ENDS MERGE RIGHT				1	ORANGE	BLACK		9.00 (9)	
W20-1 (AHEAD)	48" 36"	48" 36"	ROAD WORK AHEAD				4 4	ORANGE	BLACK		16.00 (64) 9.00 (36)	
W21-5	36"	36"	SHOULDER WORK				1	ORANGE	BLACK		9.00 (9)	

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET	NOTES
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND BORDER			
W24-1L	36"	36"		TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2009			1	ORANGE	BLACK		9.00 (9)	
W24-1R	36"	36"					1	ORANGE	BLACK		9.00 (9)	



NOTE: THE W20-1 AND G20-2 SIGNS ARE NOT REQUIRED IF THE SHOULDER CLOSURE IS WITHIN A PREVIOUSLY ESTABLISHED WORK ZONE.

SHOULDER CLOSURE

GENERAL MAINTENANCE OF TRAFFIC NOTES:

- ALL PAVEMENT STRIPING & SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", U.S.D.O.T., F.H.W.A., LATEST EDITION. NOTE THERE IS A 2009 EDITION OF MUTCD.
- THESE PLANS SHOW THE GENERAL CONDITION FOR TRAFFIC CONTROL DURING CONSTRUCTION. SLIGHT MODIFICATIONS IN CONSTRUCTION PROCEDURE MAY OCCUR AND MAY REQUIRE SOME MINOR ADJUSTMENTS TO BE MADE IN THE FIELD. ALL PROCEDURES MUST BE APPROVED BY THE RESIDENT.
- THE CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS IN ACCORDANCE WITH THE SPECIFICATIONS AND MUTCD. PAYMENT SHALL BE MADE UNDER ITEM 627.77 - REMOVING PAVEMENT MARKINGS.
- YIELD SIGN SHALL BE A MINIMUM OF 5' ABOVE THE PAVEMENT.
- EXPOSED BARRIER ENDS SHALL BE PROTECTED BY A WORK ZONE CRASH CUSHION. PAYMENT WILL BE UNDER ITEM 527.342 - WORK ZONE CRASH CUSHION - TL-2.
- DO NOT DAMAGE PAVEMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO THE EXISTING PAVEMENT SURFACE AS A RESULT OF CONSTRUCTION.

ABBREVIATIONS FOR ALL M.O.T. PLANS:

- BWLL = BROKEN WHITE LANE LINE
- SWEL = SOLID WHITE EDGE LINE
- SYEL = SOLID YELLOW EDGE LINE
- DYCL = DOUBLE YELLOW CENTER LINE
- TBWLL = TEMPORARY BROKEN WHITE LANE LINE
- TSWEL = TEMPORARY SOLID WHITE EDGE LINE
- TSYEL = TEMPORARY SOLID YELLOW EDGE LINE

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date		By	Date
Designed	TWA	3/2019	Checked	KSD	3/2019
Drawn	TWA	3/2019	In Charge of	KSD	3/2019

T.Y. Lin International
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 FAX: (207) 781-4753

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

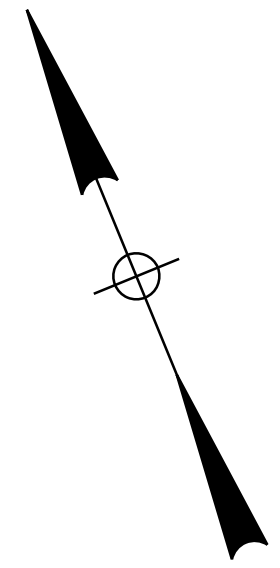
ROUTE 109 IMPROVEMENTS
 MAINTENANCE OF TRAFFIC
 SIGN SUMMARY

SHEET NUMBER:
 CONTRACT: 2019.07

9 OF 12

Date: 4/3/2019

Filename: ... \008_HDPlan&Signing&Striping_Plan_01.DGN

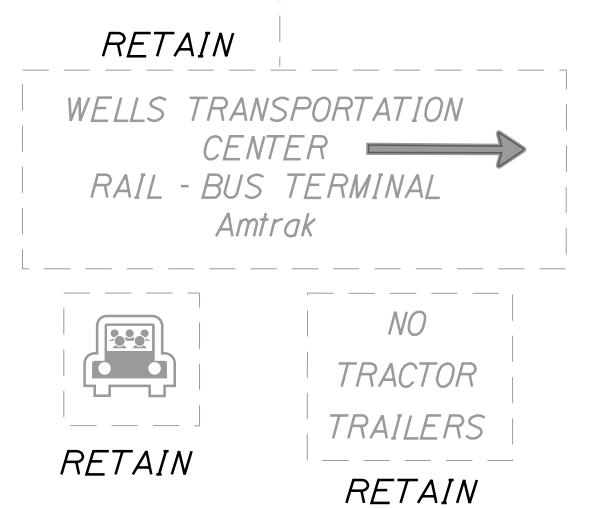
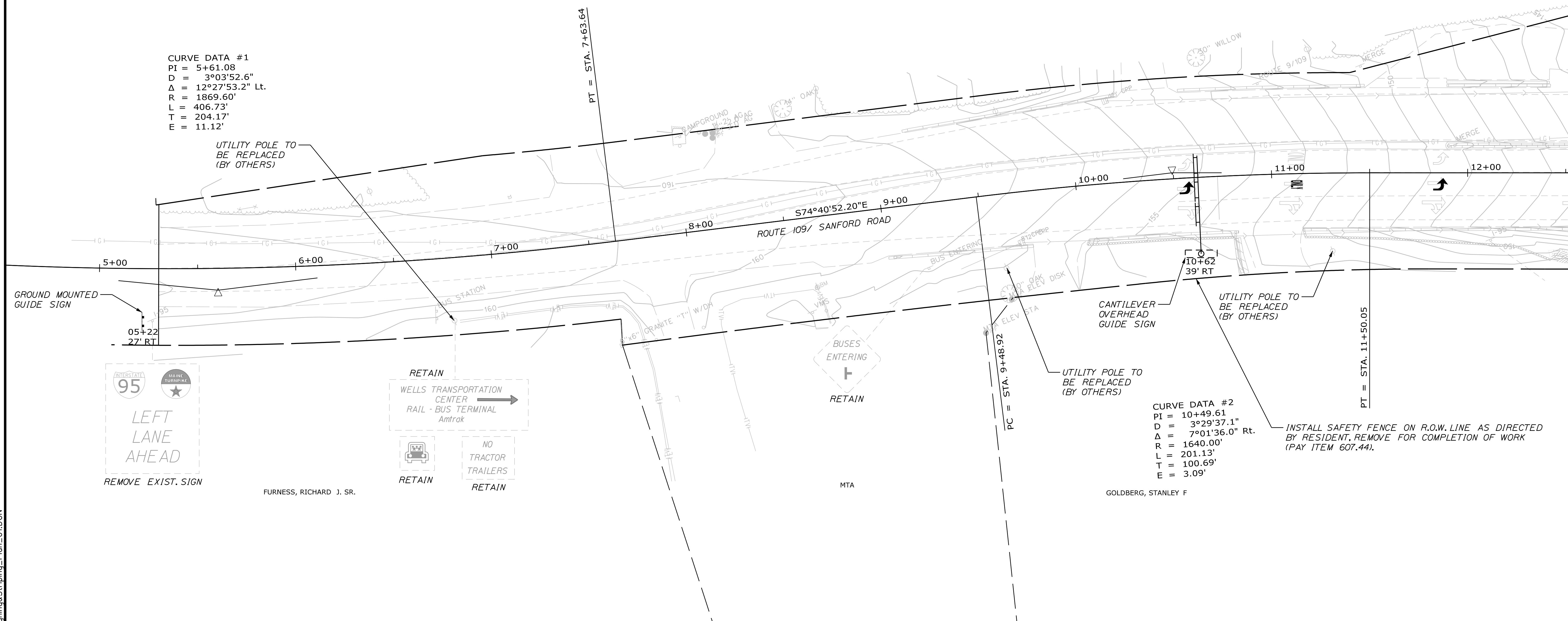


LEGEND

- PAINTED WHITE LEFT ARROW
- PAINTED WHITE "ONLY" SYMBOL

CURVE DATA #1
 PI = 5+61.08
 D = 3°03'52.6"
 Δ = 12°27'53.2" Lt.
 R = 1869.60'
 L = 406.73'
 T = 204.17'
 E = 11.12'

UTILITY POLE TO BE REPLACED (BY OTHERS)



CURVE DATA #2
 PI = 10+49.61
 D = 3°29'37.1"
 Δ = 7°01'36.0" Rt.
 R = 1640.00'
 L = 201.13'
 T = 100.69'
 E = 3.09'

INSTALL SAFETY FENCE ON R.O.W. LINE AS DIRECTED BY RESIDENT, REMOVE FOR COMPLETION OF WORK (PAY ITEM 607.44).

Scale: 1" = 25'

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date	
Designed	TAE	6/2018	Checked	KSD	3/2019
Drawn	TWA	3/2019	In Charge of	KSD	3/2019

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THE GOLD STAR MEMORIAL HIGHWAY

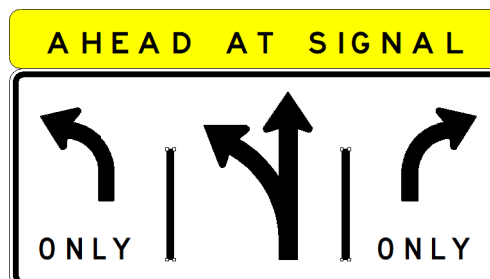
MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS

PLANS

SHEET NUMBER: 6 OF 12

CONTRACT: 2019.07



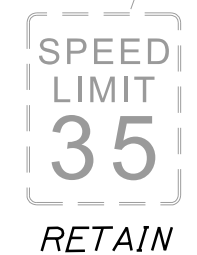
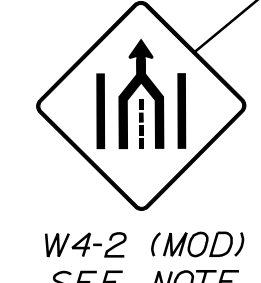
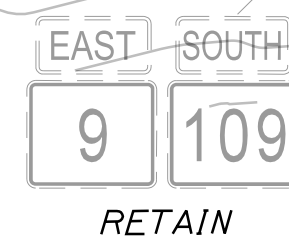
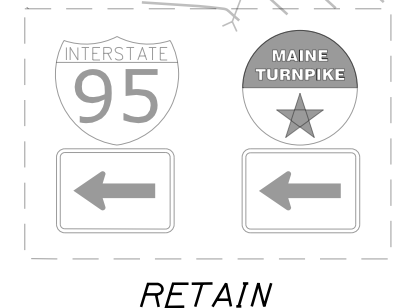
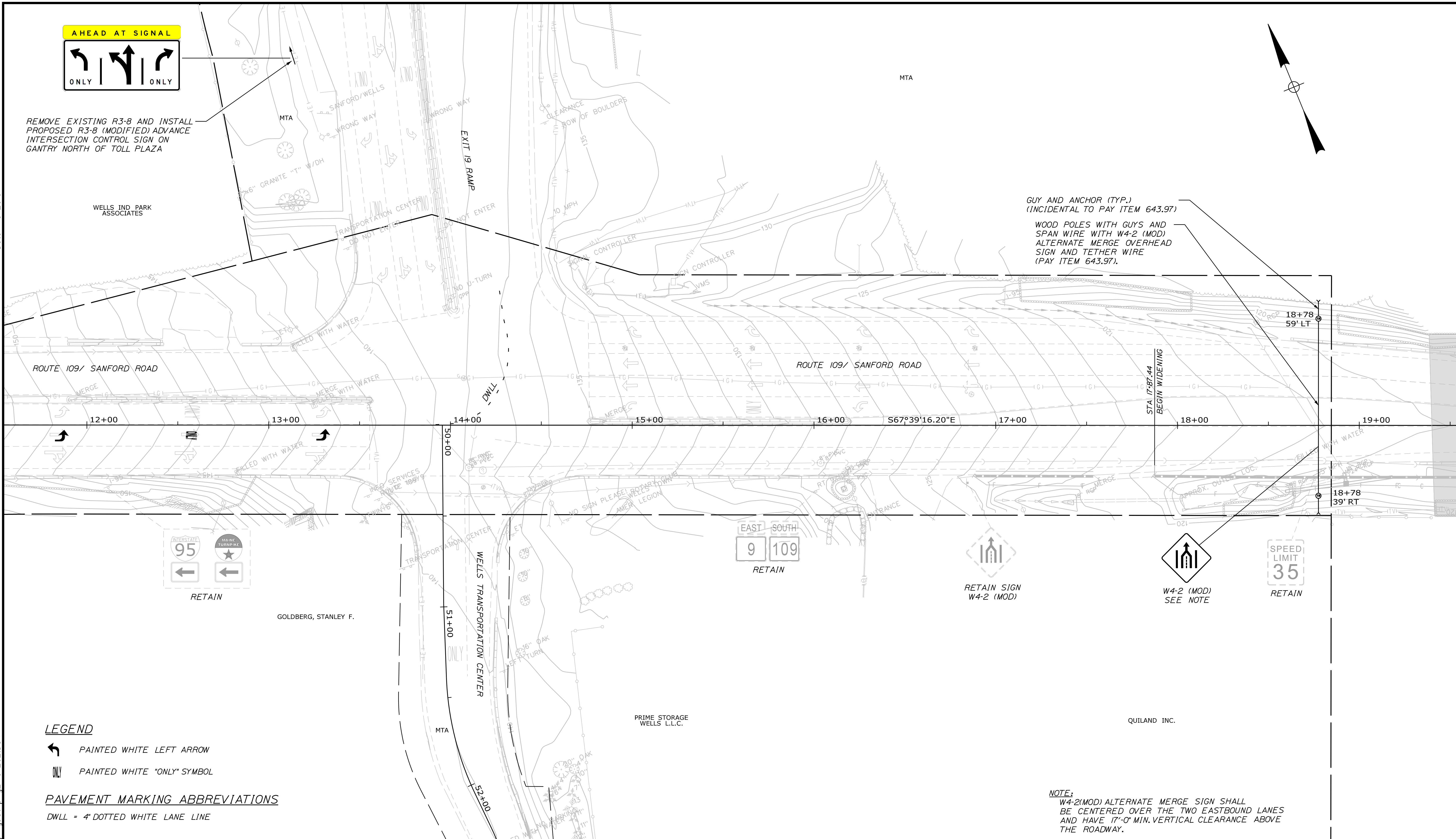
REMOVE EXISTING R3-8 AND INSTALL PROPOSED R3-8 (MODIFIED) ADVANCE INTERSECTION CONTROL SIGN ON GANTRY NORTH OF TOLL PLAZA

WELLS IND PARK ASSOCIATES

GUY AND ANCHOR (TYP.) (INCIDENTAL TO PAY ITEM 643.97)

WOOD POLES WITH GUYS AND SPAN WIRE WITH W4-2 (MOD) ALTERNATE MERGE OVERHEAD SIGN AND TETHER WIRE (PAY ITEM 643.97).

Date: 4/3/2019



LEGEND

- PAINTED WHITE LEFT ARROW
- PAINTED WHITE "ONLY" SYMBOL

PAVEMENT MARKING ABBREVIATIONS

DWLL = 4" DOTTED WHITE LANE LINE

NOTE:
W4-2(MOD) ALTERNATE MERGE SIGN SHALL BE CENTERED OVER THE TWO EASTBOUND LANES AND HAVE 17'-0" MIN. VERTICAL CLEARANCE ABOVE THE ROADWAY.

Scale: 1" = 25'

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date
Designed	TAE	6/2018	Checked	KSD 3/2019
Drawn	TWA	3/2019	In Charge of	KSD 3/2019

T.Y. Lin International
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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS

PLANS

SHEET NUMBER: 7 OF 12

CONTRACT: 2019.07

Filename: ... \009_HDP\Plan&Signing&Striping_Plan_02.DGN

Date: 4/3/2019

		PROJECT: OHSS on Route 109 (Sanford Road) MeTPK Wells Interchange (Exit 19) LOCATION: Wells, Maine		Boring No.: HB-WELLS-101 Proj. No.: 18-015																																																														
Driller: New England Boring Contractors	Elevation (ft.): 154 ft (est'd)	Core Barrel: NQ2																																																																
Operator: Schaefer/Titus	Datum: NAVD88	Sampler: standard split-spoon																																																																
Logged By: Schonewald	Rig Type: Mobile Drill B-53 (truck #B-24)	Hammer Wt/Fall: 140 lbs / 30 inches																																																																
Date Start/Finish: 10/2/18 0955-1225	Drilling Method: cased wash boring	Hammer Type: auto hammer																																																																
Boring Location: Station 10+70, 24 R RT	Casing ID/OD: SSA to 5 ft	Water Level: none observed																																																																
IN-SITU SAMPLING AND TESTING: D = Split Spoon Sample ND = Unsuccessful Split Spoon Sample attempt U = Thin Wall Tube Sample MU = Unsuccessful Thin Wall Tube Sample attempt V = Vane Shear Test MV = Unsuccessful Vane Shear Test attempt		ADDITIONAL DEFINITIONS: N = non-connected Nc = N value corrected for hammer efficiency Su = In situ Field Vane Shear Strength (psf) RQD = Rock Quality Designation (%)		LABORATORY TEST RESULTS: AASHTO / USCS soil classifications 4000 = percent fines WC = water content (%) CONSOL = 1-D consolidation test UU = Unconsolidated undrained triaxial test LI = Liquid Limit (%) PI = Plasticity Index RC = roller cone/OPENLOG/SH/STRAUTIC push UOI = peak compressive strength of rock																																																														
<table border="1"> <thead> <tr> <th rowspan="2">Depth (ft.)</th> <th colspan="5">Sample Information</th> <th rowspan="2">Visual Description and Remarks</th> <th rowspan="2">Lab. Testing Results</th> </tr> <tr> <th>Sample No.</th> <th>Pen. Rec. (in.)</th> <th>Sample Depth (ft.)</th> <th>Blow (ft) (in.)</th> <th>Blow (ft) (in.)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1.0 ft HMA</td> <td></td> </tr> <tr> <td>10</td> <td>2414</td> <td>1.0 - 3.0</td> <td>23-25/22-14</td> <td>47</td> <td>73</td> <td>1D: Brown, dry to damp, dense, Gravelly fine to coarse SAND, little silt with chunks of weathered asphalt to 2.5 ft. FILL.</td> <td></td> </tr> <tr> <td>20</td> <td>2413</td> <td>5.0 - 7.0</td> <td>9-10/10-11</td> <td>20</td> <td>31</td> <td>2D: Brown, damp, m. dense, fine to coarse Sandy GRAVEL, trace to little silt.</td> <td></td> </tr> <tr> <td>8.0</td> <td>2404</td> <td>8.2 - 12.7</td> <td>RQD: 47%</td> <td></td> <td></td> <td>7.1 ft. Casing fetches up; roller cone ahead. 8.0 ft. Casing refusal; roller cone to refusal at 8.2 ft. R1: Hard, typically fresh, aphanitic to fine grained, dark grey HORNFELS with occasional quartz inclusions. Close, typically low angle, sometimes blocky breaks; undulating, rough, typically discolored, and open with occasional mud infilling. Highly broken and fractured at 9.7 to 10.5, 11.3 to 11.6, and 11.8 to 12.5 ft. 1.50/ 2.30/ 2.50/ 4.00/ -- min.sec/ft</td> <td></td> </tr> <tr> <td>12.7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>VERY POOR ROCK QUALITY</td> <td></td> </tr> <tr> <td>141.3</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Bottom of Exploration at 12.7 feet below ground surface.</td> <td></td> </tr> </tbody> </table>						Depth (ft.)	Sample Information					Visual Description and Remarks	Lab. Testing Results	Sample No.	Pen. Rec. (in.)	Sample Depth (ft.)	Blow (ft) (in.)	Blow (ft) (in.)	0						1.0 ft HMA		10	2414	1.0 - 3.0	23-25/22-14	47	73	1D: Brown, dry to damp, dense, Gravelly fine to coarse SAND, little silt with chunks of weathered asphalt to 2.5 ft. FILL.		20	2413	5.0 - 7.0	9-10/10-11	20	31	2D: Brown, damp, m. dense, fine to coarse Sandy GRAVEL, trace to little silt.		8.0	2404	8.2 - 12.7	RQD: 47%			7.1 ft. Casing fetches up; roller cone ahead. 8.0 ft. Casing refusal; roller cone to refusal at 8.2 ft. R1: Hard, typically fresh, aphanitic to fine grained, dark grey HORNFELS with occasional quartz inclusions. Close, typically low angle, sometimes blocky breaks; undulating, rough, typically discolored, and open with occasional mud infilling. Highly broken and fractured at 9.7 to 10.5, 11.3 to 11.6, and 11.8 to 12.5 ft. 1.50/ 2.30/ 2.50/ 4.00/ -- min.sec/ft		12.7						VERY POOR ROCK QUALITY		141.3						Bottom of Exploration at 12.7 feet below ground surface.	
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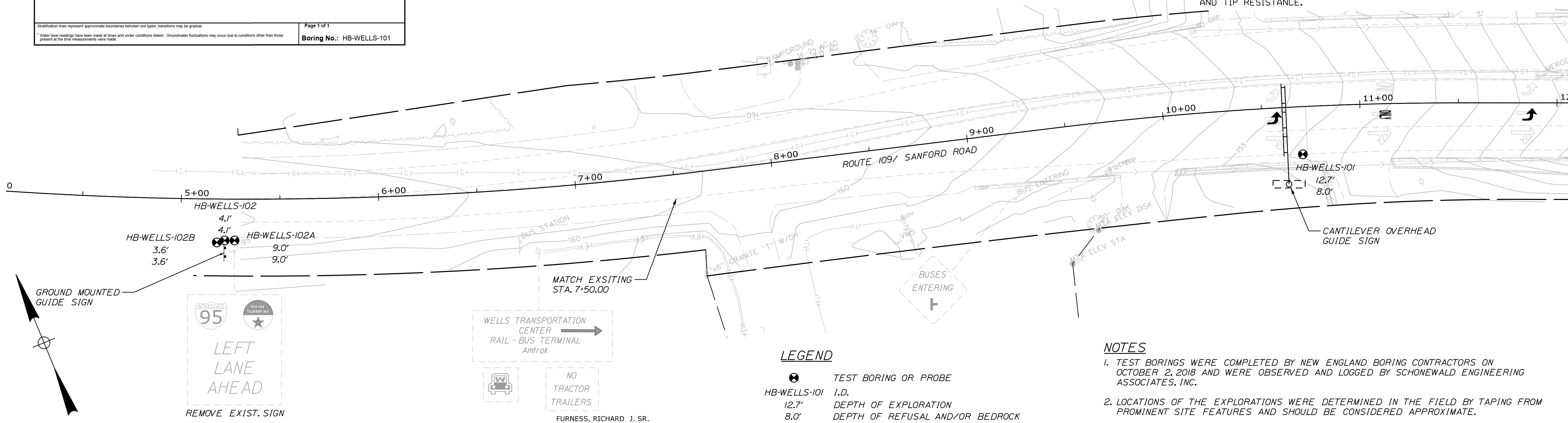
**SUMMARY OF SUBSURFACE PROBE INFORMATION
GROUND MOUNTED GUIDE SIGN SUPPORTS
ROUTE 109 (SANFORD RD) AT MeTPK EXIT 19 - WELLS
WELLS, MAINE**

EXPLORATION NUMBER	EXPLORATION TYPE	APPROXIMATE LOCATION STATION	OFFSET	PREDOMINANT SOIL TYPE	BOTTOM DEPTH (ft. BGS) (1)	BOTTOM CONDITION	GROUNDWATER (ft. BGS)
HB-WELLS-102	probe	5+22	21' RT	sand and gravel fill	4.1	auger refusal	none observed
HB-WELLS-102A	probe	5+27	21' RT	sand and gravel fill	9.0	auger refusal	none observed
HB-WELLS-102B	probe	5+18	22' RT	sand and gravel fill	3.6	auger refusal	none observed

NOTE: (1) BGS = BELOW GROUND SURFACE

CANTILEVER OVERHEAD SIGN FOUNDATION NOTES

- THE CONCRETE FOUNDATION FOR THE CANTILEVER OVERHEAD SIGN SHALL BE IN ACCORDANCE WITH MAINE DOT SPECIFICATION 626.034 AS REVISED BY SPECIAL PROVISION 645.
- IF A SINGLE DRILLED SHAFT FOUNDATION IS PROPOSED, SIZING OF THE DRILLED SHAFT FOUNDATION SHALL BE BASED ON STANDARD DETAILS 626(03) AND 626(04) WITH CHARTS P32-1 THROUGH 3 (SOILS WITH PHI = 32 DEG.) USING ACTUAL LOADS (BENDING MOMENT AND TORSION) THAT WILL BE IMPARTED TO THE FOUNDATION ELEMENT BY THE SIGN SUPERSTRUCTURE.
- IF ROCK IS ENCOUNTERED ABOVE THE REQUIRED BOTTOM OF THE DRILLED SHAFT, THE CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC DETAIL FOR DOWELING THE DRILLED SHAFT TO THE ROCK THAT IS SUFFICIENT TO RESIST THE ACTUAL BENDING MOMENT AND TORSION. THE DOWELING DESIGN SHALL BE PREPARED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MAINE. DOWELING TO ROCK WILL BE INCIDENTAL TO THE SIGN COST.
- IF AN ALTERNATE FOUNDATION SYSTEM IS PROPOSED, IT SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MAINE IN ACCORDANCE WITH MAINE DOT SPECIFICATION 626.034 AS REVISED BY SPECIAL PROVISION 645 AND WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:
 - SHALLOW SPREAD FOOTINGS SHALL BEAR ON A 1-FOOT THICK LAYER OF COMPACTED BEDDING MATERIAL CONFORMING TO MAINE DOT STANDARD SPECIFICATION 703.19 GRANULAR BORROW MATERIAL FOR UNDERWATER BACKFILL THAT IS PLACED ON PREPARED SUBGRADE. THE BOTTOM OF THE FOOTINGS SHALL BE FOUNDED AT LEAST 5 FEET BELOW THE LOWEST SURROUNDING FINAL GRADE FOR FROST PROTECTION. REGARDLESS OF THE CALCULATED FACTORED BEARING PRESSURES, THE FOOTINGS SHALL NOT BE LESS THAN 4 FEET SQUARE. THE DESIGNER SHALL SELECT APPROPRIATE RESISTANCE FACTORS, AS WELL AS SITE-SPECIFIC VALUES FOR BEARING CAPACITY, MODULUS OF SUBGRADE REACTION, AND INTERFACE FRICTION ANGLE. USE OF PRESUMPTIVE BEARING CAPACITIES SHALL NOT BE ALLOWED. SURFACE WATER AND GROUNDWATER SHALL BE CONTROLLED TO ALLOW CONSTRUCTION OF SHALLOW SPREAD FOOTING IN THE DRY. FILL MATERIAL SHOULD BE PLACED IN LOOSE LIFTS NOT TO EXCEED 12 INCHES AND COMPACTED TO 95 PERCENT OF THE MATERIAL'S MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180.
 - IF A PAIR OF DRILLED SHAFTS IS PROPOSED TO SUPPORT THE OVERHEAD SIGN, THE DESIGNER SHALL EVALUATE THE REACTIONS AT THE TOP OF EACH DRILLED SHAFT THAT ARE IMPARTED BY THE ACTUAL LOADS (AXIAL, BENDING MOMENT, AND TORSION) BY USE OF VETTED GROUP DRILLED SHAFT SOFTWARE, SUCH AS GROUP OR FB MULTIPLIER. THE DESIGNER SHALL SELECT APPROPRIATE RESISTANCE FACTORS, AS WELL AS SITE-SPECIFIC VALUES FOR GROUNDWATER DEPTH, AND NOMINAL UNIT SIDE RESISTANCE AND TIP RESISTANCE.



LEGEND

- TEST BORING OR PROBE
- HB-WELLS-101 I.D.
- 12.7' DEPTH OF EXPLORATION
- 8.0' DEPTH OF REFUSAL AND/OR BEDROCK

NOTES

- TEST BORINGS WERE COMPLETED BY NEW ENGLAND BORING CONTRACTORS ON OCTOBER 2, 2018 AND WERE OBSERVED AND LOGGED BY SCHONEWALD ENGINEERING ASSOCIATES, INC.
- LOCATIONS OF THE EXPLORATIONS WERE DETERMINED IN THE FIELD BY TAPING FROM PROMINENT SITE FEATURES AND SHOULD BE CONSIDERED APPROXIMATE.

Filename: ... \01_GEOPLAN & BORING LOG_Plan_01.DGN

Scale: 1" = 25'

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL
IN ASSOCIATION WITH

CONSULTANT PROJECT MANAGER: Kevin Ducharme

By	Date	By	Date
Designed	KSD 10/2018	Checked	IVS 3/2019
Drawn	MJD 10/2018	In Charge of	KSD 3/2019

T.Y. Lin International
12 Northbrook Drive
Building A, Suite One
Falmouth, Maine 04105
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FAX: (207) 781-4753

**THE GOLD STAR
MEMORIAL HIGHWAY**

MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS

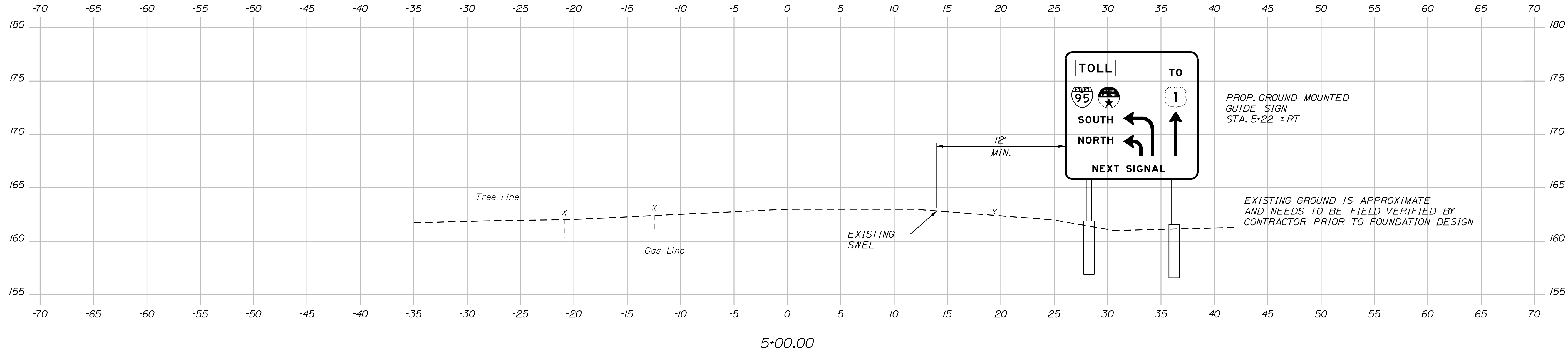
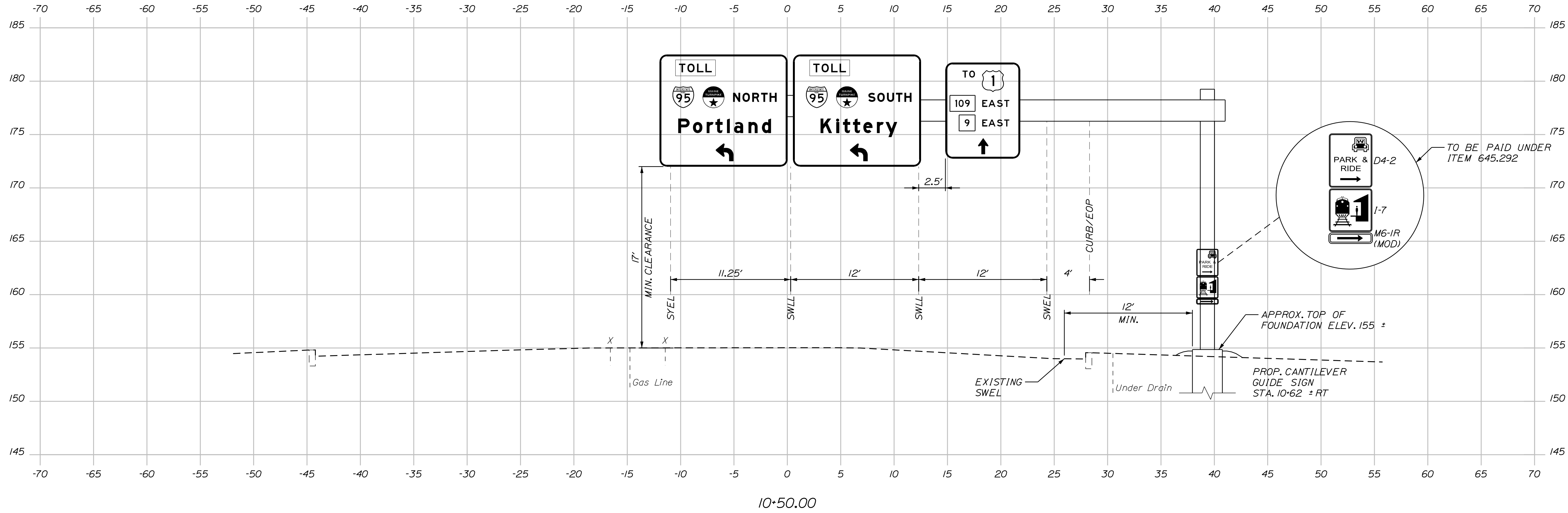
GUIDE SIGN FOUNDATIONS WITH BORING
LOCATION PLAN AND SUBSURFACE DATA

SHEET NUMBER:
CONTRACT: 2019.07

8 OF 12

Date: 4/3/2019

Filename: ...XXX_Sign_Structure_Cross_Section_01.dgn



Scale: 1" = 5'

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date	
Designed	TAE	3/2019	Checked	KSD	3/2019
Drawn	TWA	3/2019	In Charge of	KSD	3/2019

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THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

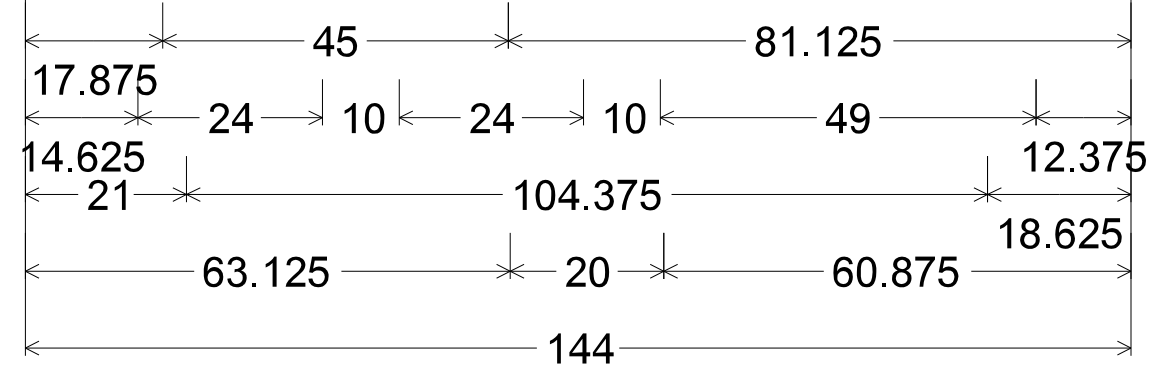
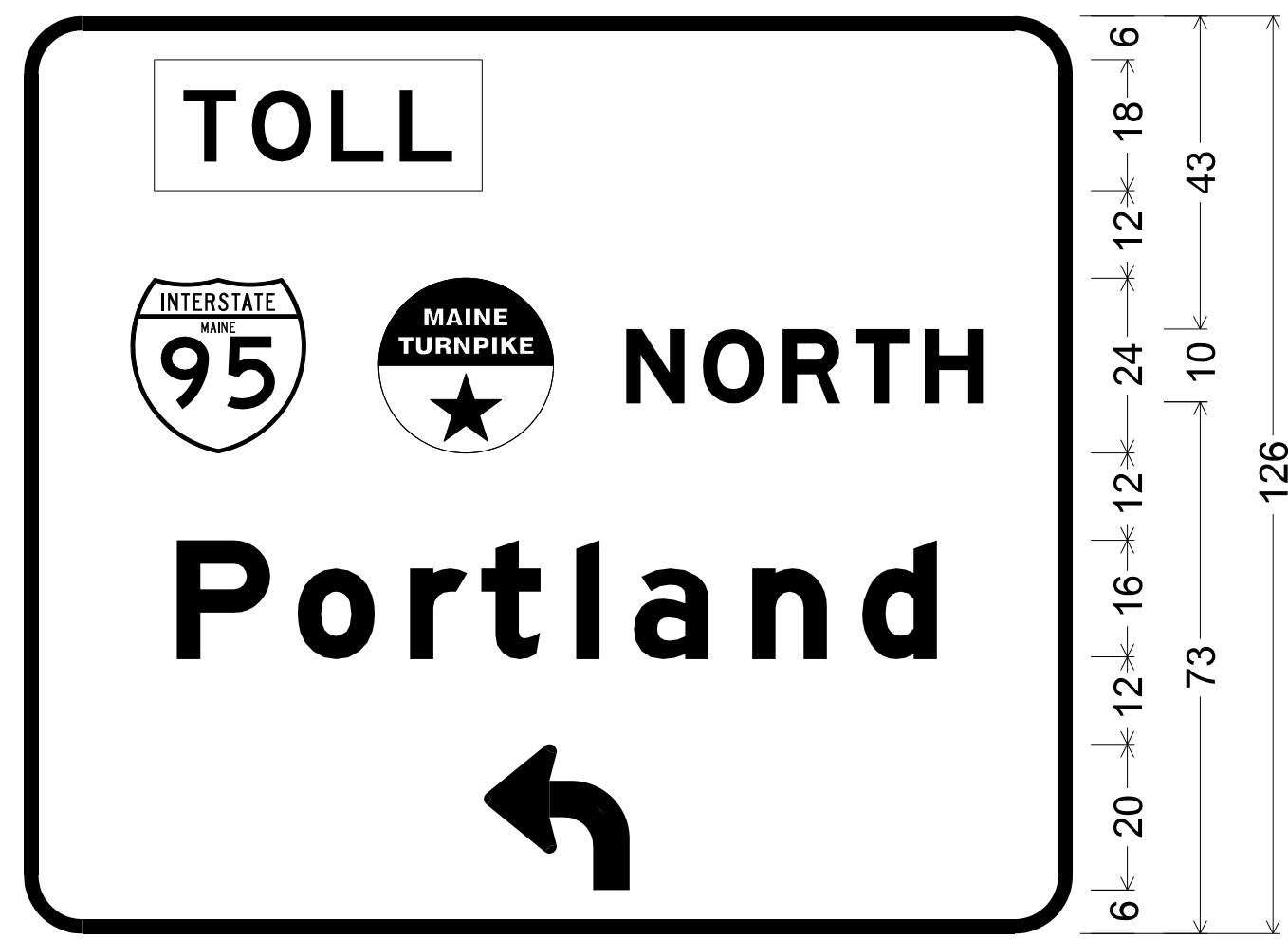
ROUTE 109 IMPROVEMENTS

SIGN STRUCTURE CROSS SECTION

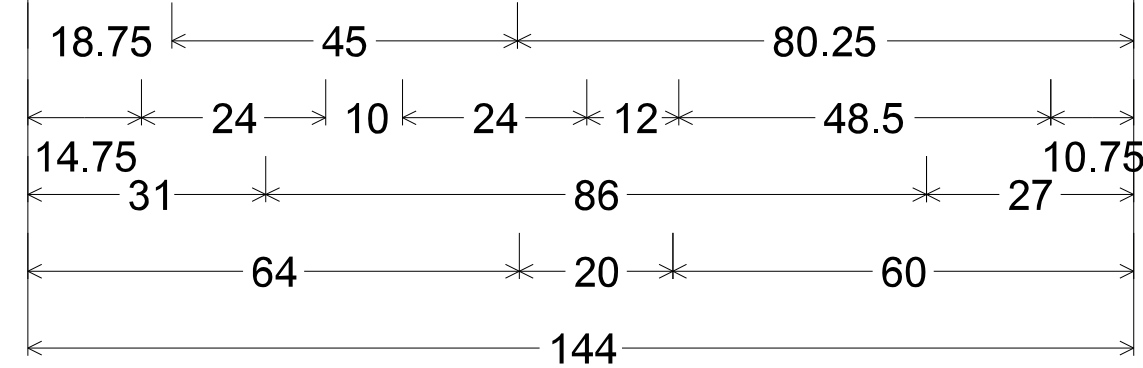
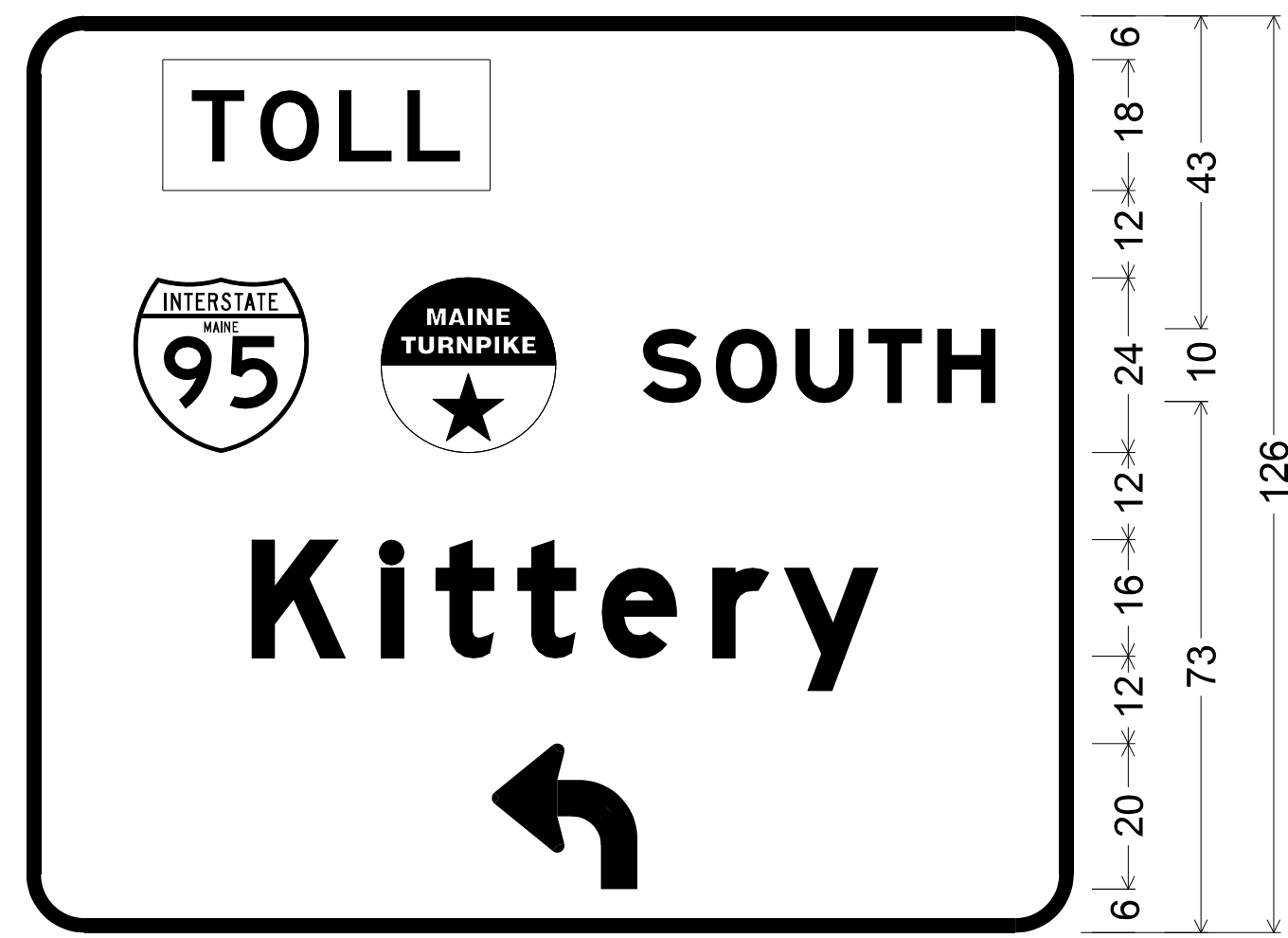
SHEET NUMBER: 9 OF 12

CONTRACT: 2019.07

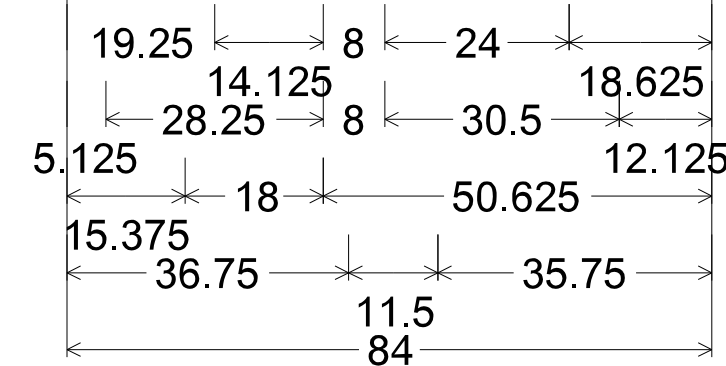
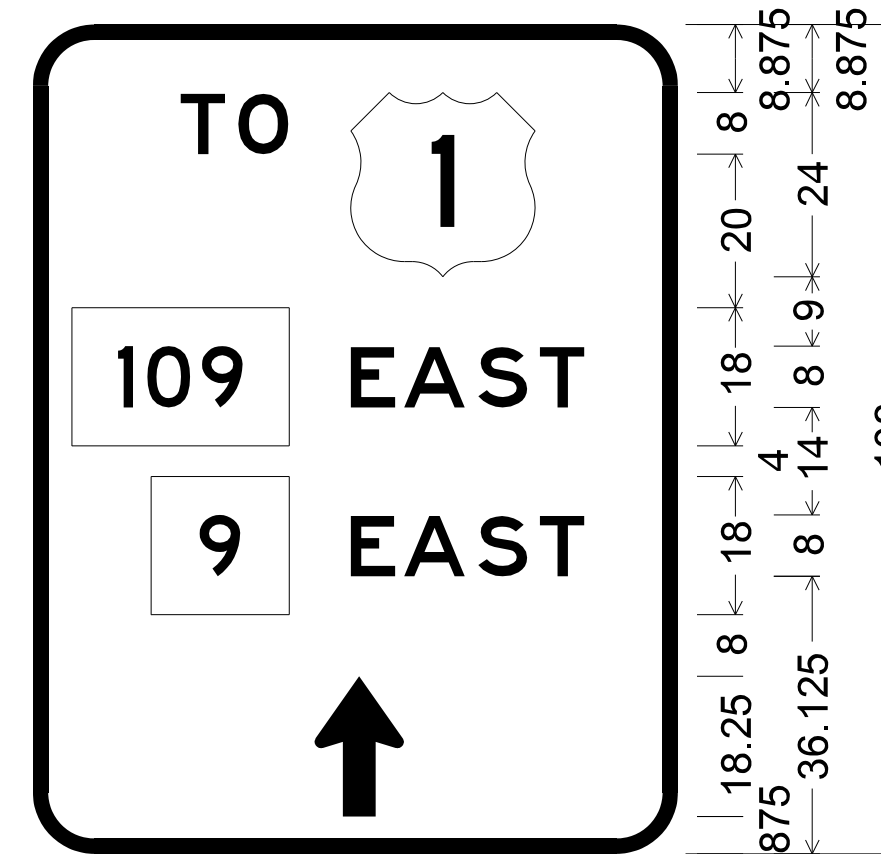
Date: 4/3/2019



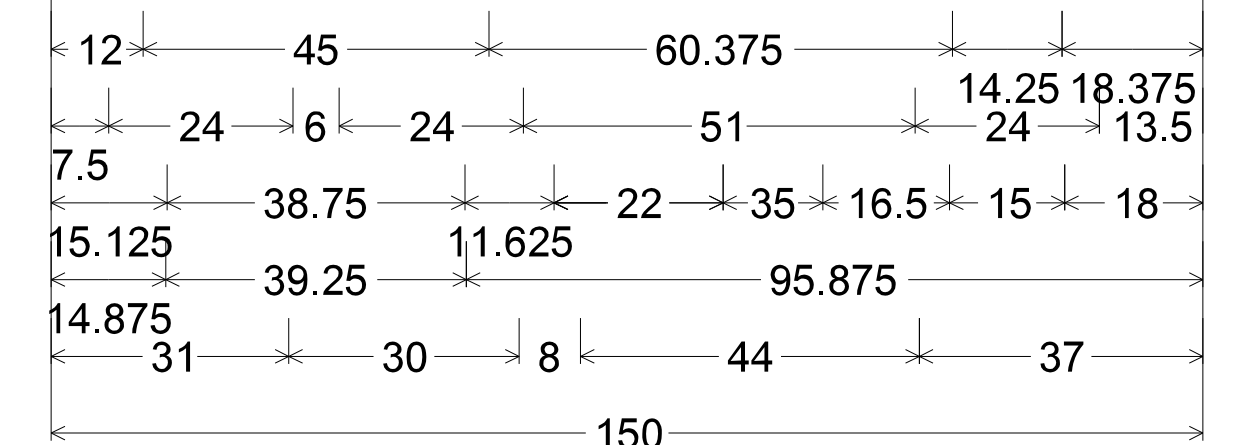
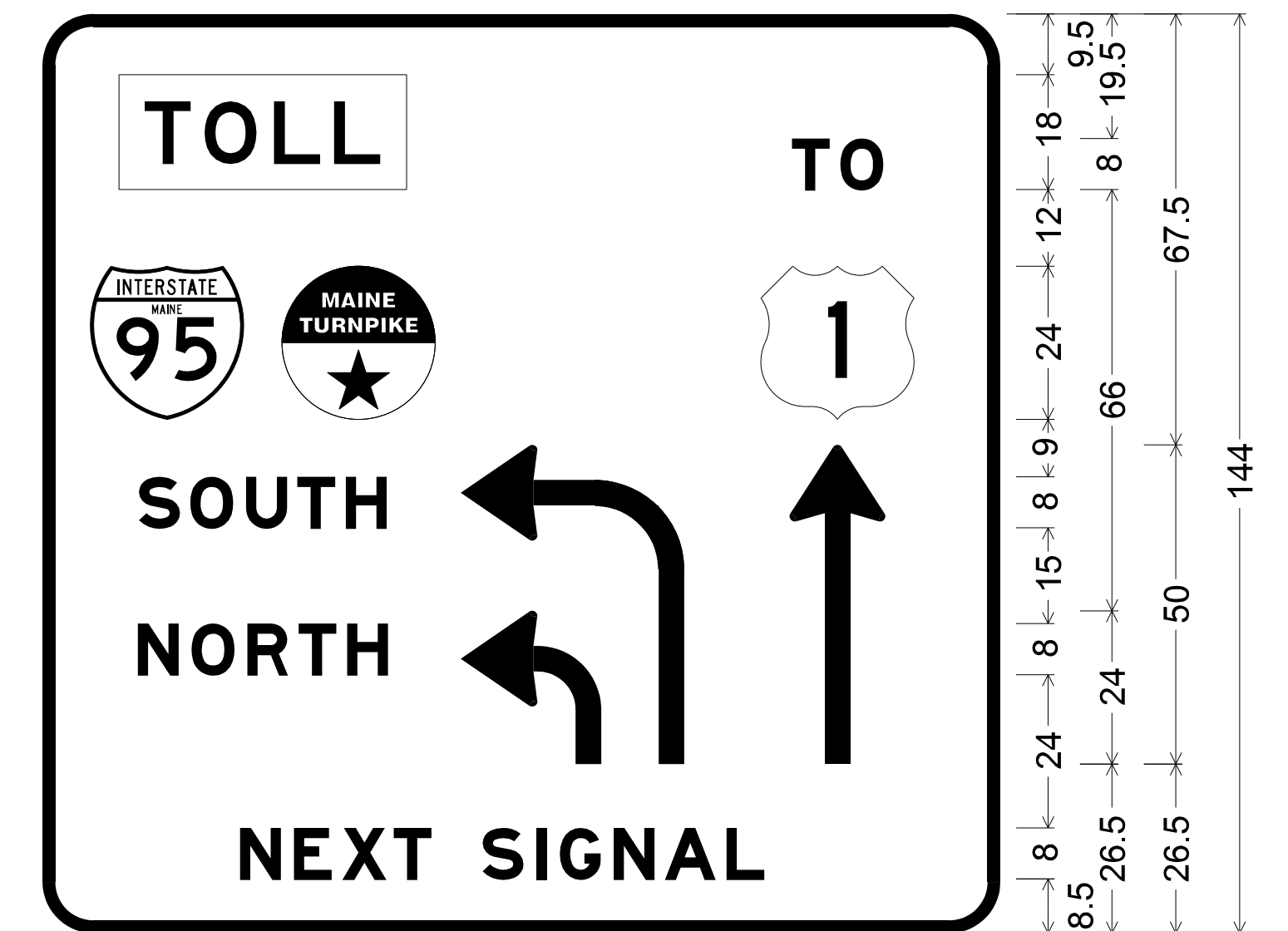
8.000" Radius, 2.000" Border, White on Green;
 Rectangle Fluorescent yellow;
 Rounded Rectangle 12.000" Radius;
 [NORTH] E Mod; [Portland] E Mod;
 90 Deg Advance Turn Arrow Custom 20.000" X 20.000";



8.000" Radius, 2.000" Border, White on Green;
 Rectangle Fluorescent yellow;
 Rounded Rectangle 12.000" Radius;
 [SOUTH] E Mod; [Kittery] E Mod;
 90 Deg Advance Turn Arrow Custom 20.000" X 20.000";



8.000" Radius, 2.000" Border, White on Green;
 [TO] E;
 Rounded Rectangle 0.000" Radius;
 [EAST] E;
 Rounded Rectangle 0.000" Radius;
 [EAST] E;



8.000" Radius, 2.000" Border, White on Green;
 Rectangle Fluorescent yellow;
 [TO] E Mod; Rounded Rectangle 12.000" Radius;
 [SOUTH] E Mod; [NORTH] E Mod; [] E Mod;
 90 Deg Advance Turn Arrow Custom 22.000" X 24.000";
 90 Deg Advance Turn Arrow Custom 35.000" X 50.000";
 Arrow Custom - 50.000" 90°; [NEXT SIGNAL] E Mod;

NOTES:

1. ALL PAVEMENT STRIPING & SIGNING SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", U.S.D.O.T., F.H.W.A., LATEST EDITION. NOTE THERE IS A 2009 EDITION OF MUTCD.
2. THE CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS THAT CONFLICT WITH PROPOSED PAVEMENT MARKINGS IN ACCORDANCE WITH THE SPECIFICATIONS AND MUTCD. PAYMENT SHALL BE MADE UNDER ITEM 627.77 - REMOVING PAVEMENT MARKINGS.

ABBREVIATIONS FOR ALL PLANS:

- BWLL = BROKEN WHITE LANE LINE
- SWEL = SOLID WHITE EDGE LINE
- SYEL = SOLID YELLOW EDGE LINE
- DYCL = DOUBLE YELLOW CENTER LINE
- DWLL = DOTTED WHITE LANE LINE

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)				NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET	NOTES
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND		LEGEND BORDER				
D4-2	24"	30"		TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2009				1	GREEN	WHITE		5.00 (5)	
I-7	24"	24"						1	GREEN	WHITE		4.00 (4)	
M6-1R (MOD)	24"	6"						1	GREEN	WHITE		1.00 (1)	
R3-5L	30"	36"						1	WHITE	BLACK		7.50 (7.5)	
R3-8a (MOD)	60"	48"						1	YELLOW WHITE	BLACK BLACK		20.00 (20)	
W4-2 (MOD)	36"	36"						1	YELLOW	BLACK		9.00 (9)	

Filename: ...XXX_Sign_Details_Sign_Summary.dgn

Scale: NOT TO SCALE

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date		By	Date
Designed	TWA	3/2019	Checked	KSD	3/2019
Drawn	TWA	3/2019	In Charge of	KSD	3/2019

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 FAX: (207) 781-4753

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS

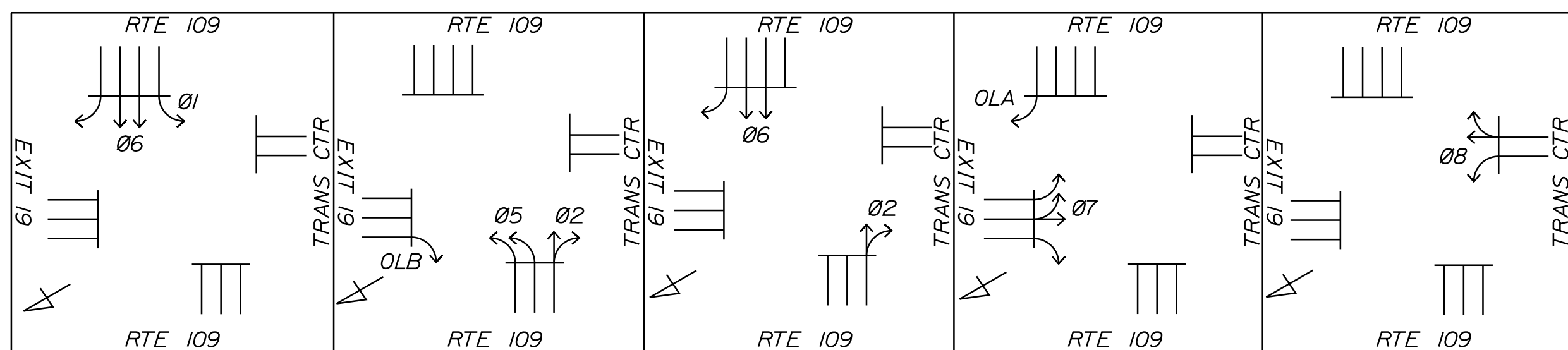
SIGN DETAILS / SIGN SUMMARY

SHEET NUMBER:

CONTRACT: 2019.07

10 OF 12

Date: 4/3/2019



PHASING DIAGRAM

LOCATION	TIME PERIOD								
	RT. 109 LT.	RT. 109	ROAD NAME	ROAD NAME	RT. 109 LT.	RT 109	EXIT 19	TRANS. CTR.	ROAD NAME
PHASE	1	2	3	4	5	6	7	8	9
MINIMUM INITIAL	5	10	-	-	5	10	5	5	-
PASSAGE TIME	3	3	-	-	3	3	3	3	-
MAXIMUM 1*	10	25	-	-	30	25	20	15	-
MAXIMUM 2*	10	25	-	-	25	25	30	15	-
YELLOW	4	4	-	-	4	4	4	4	-
ALL RED	2	2	-	-	2	2	2	2	-
PED. WALK	-	-	-	-	-	-	-	-	-
PED. CLEARANCE (FDW)	-	-	-	-	-	-	-	-	-
PED. CLEARANCE (DW)	-	-	-	-	-	-	-	-	-
RECALL	-	SOFT	-	-	-	SOFT	-	-	-
DETECTOR OPERATION	PR	PR	-	-	PR	PR	PR	PR	-
PREEMPTION PRIORITY**	3	4	-	-	4	3	6	5	-
FLASH	Y	Y	-	-	Y	Y	R	R	-
DUAL ENTRY	-	-	-	-	-	-	-	-	-

NOTES:
 S = SOFT RECALL PR = PRESENCE Y = YELLOW FDW = FLASHING DON'T WALK
 MAX = MAX RECALL MAX1 = FREE OPERATION R = RED DW = DON'T WALK
 C-MAX = COORDINATED MAX MAX2 = UNDER COORDINATION D = DARK
 0 = RECALL OFF

* MAX 1 IS FROM 6AM - 10AM, MAX 2 IS FOR ALL OTHER TIMES

** PHASE 1 IS ACTIVATED WHEN PREEMPTION CALL IS RECEIVED.

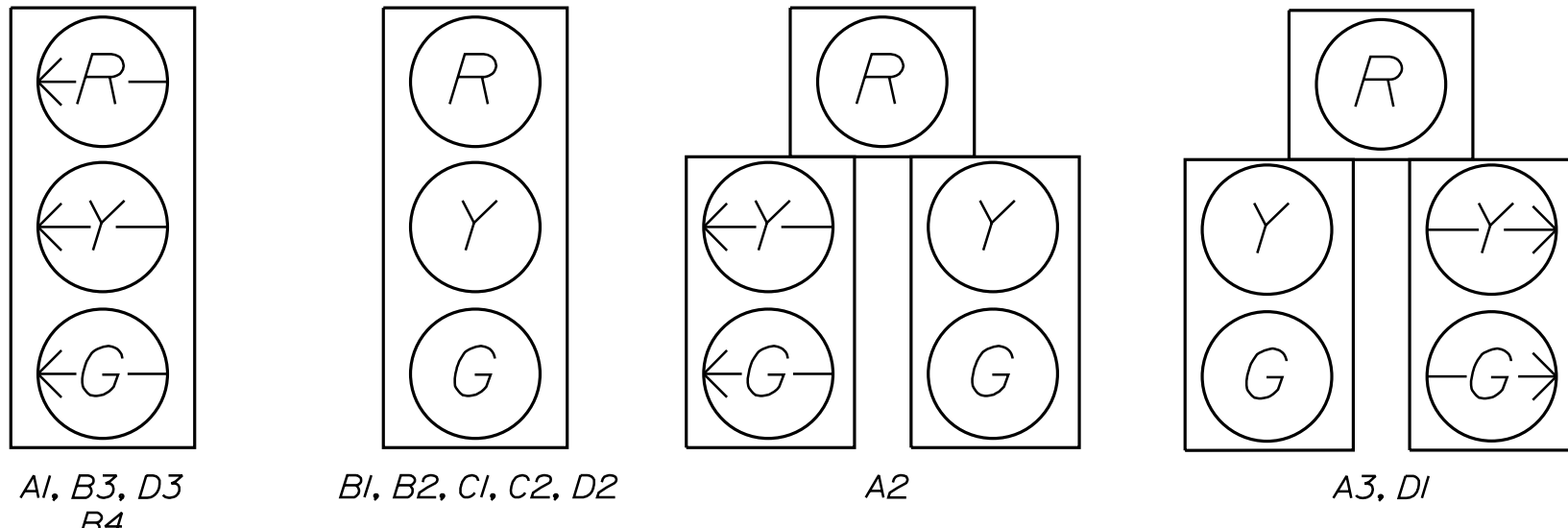
PHASES 1-5 SHALL NOT BE PERMITTED

GENERAL NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING SIGNS, PAYMENT WILL BE INCIDENTAL TO ITEM 643.80 - TRAFFIC SIGNAL MODIFICATIONS. ALL REMOVED EQUIPMENT IS THE PROPERTY OF THE MTA AND SHALL BE STACKED AT THE MTA SIGN SHOP AT MM 58.3.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION, DEPTH, AND MATERIAL OF ALL SUBSURFACE UTILITIES.
3. ALL TRAFFIC SIGNAL WORK SHALL BE COMPLETED IN A MANNER THAT WILL CAUSE A MINIMUM DISRUPTION TO TRAFFIC.
4. EXISTING POWER SUPPLY TO CONTROLLER CABINET SHALL BE REMOVED.

SIGNAL NOTES:

1. TRAFFIC SIGNAL EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE MTA SPECIAL PROVISIONS.
2. VEHICLE SIGNAL HEAD HOUSING SHALL BE A 12" ALUMINUM OR POLYCARBONATE HOUSING.
3. ALL SIGNAL HEADS SHALL BE 12" DIAMETER LED.
4. ALL SIGNAL HEADS SHALL HAVE 5" LOUVERED REFLECTORIZED BACKPLATES.
5. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
6. ALL SIGNAL HEADS SHALL BE NEW.

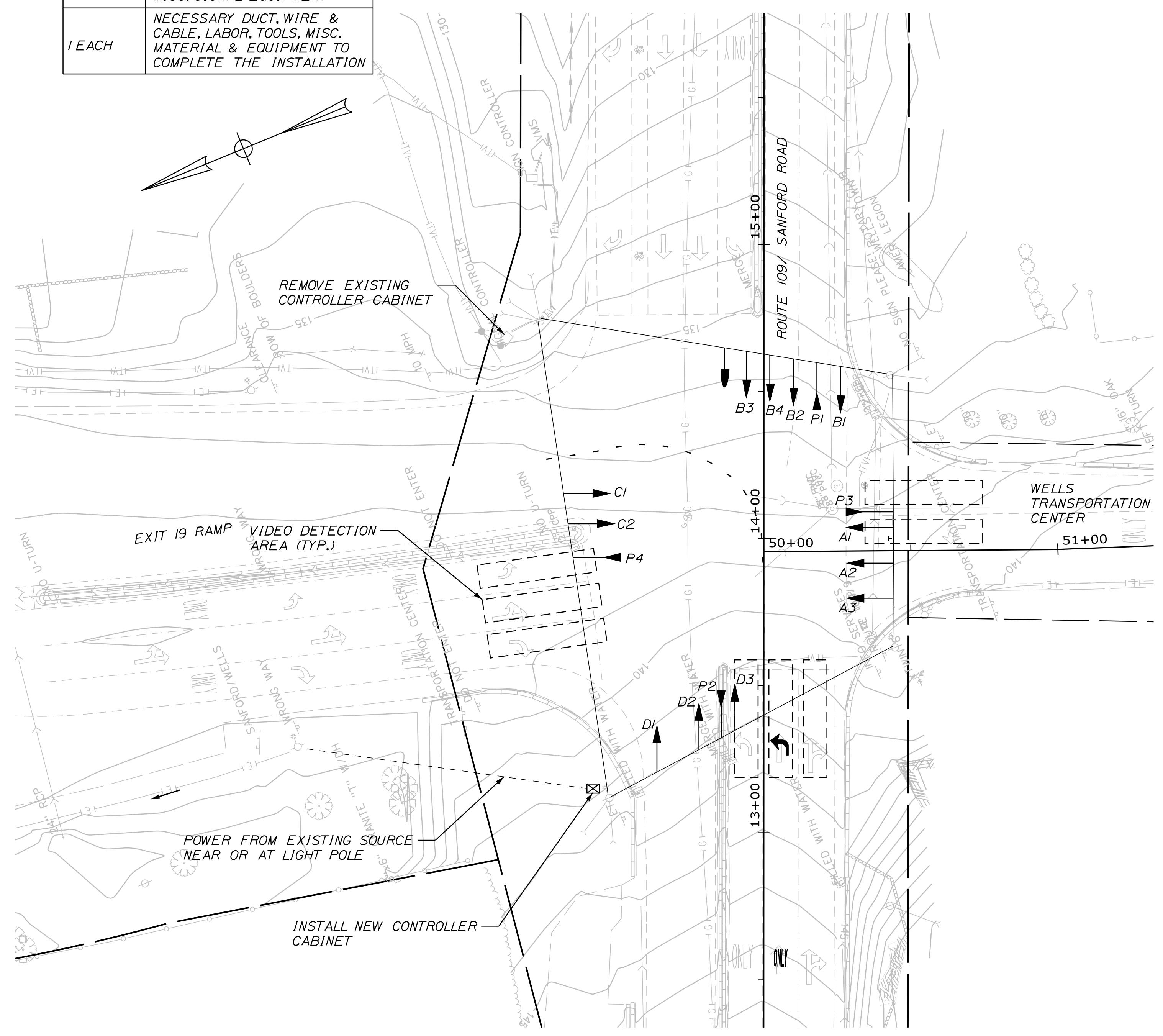
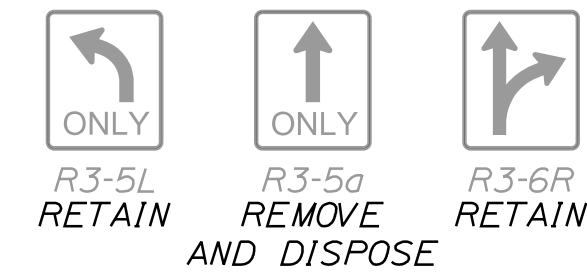


MAJOR ITEMS REQUIRED	
QUANTITY	ITEM
12	NEW SIGNAL HEAD
1 EACH	VIDEO DETECTION SYSTEM
1 EACH	REMOVE AND DISPOSE OVERHEAD SIGN
1 EACH	NEW OVERHEAD SIGN
1 EACH	NEW CONTROLLER CABINET
1 EACH	REMOVE AND DISPOSE OF MISC. SIGNAL EQUIPMENT
1 EACH	NECESSARY DUCT, WIRE & CABLE, LABOR, TOOLS, MISC. MATERIAL & EQUIPMENT TO COMPLETE THE INSTALLATION

ROUTE 109 EASTBOUND PROPOSED SPAN WIRE MOUNTED SIGNS



ROUTE 109 EASTBOUND EXISTING SPAN WIRE MOUNTED SIGNS



Filename: ... \MSTA\XXX_Signal_Plan.DGN

Scale: 1" = 25'

No.	Revision	By	Date

Designed by:

TYLIN INTERNATIONAL

CONSULTANT PROJECT MANAGER: Kevin Ducharme

	By	Date	By	Date	
Designed	TAE	3/2019	Checked	KSD	3/2019
Drawn	TWA	3/2019	In Charge of	KSD	3/2019

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: Ralph C. Norwood, IV

ROUTE 109 IMPROVEMENTS

SIGNAL PLAN

SHEET NUMBER:

CONTRACT: 2019.07

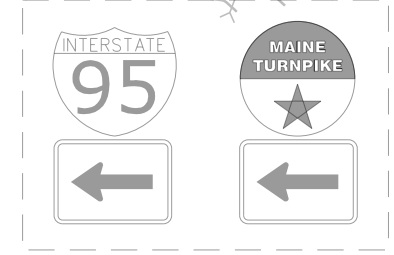
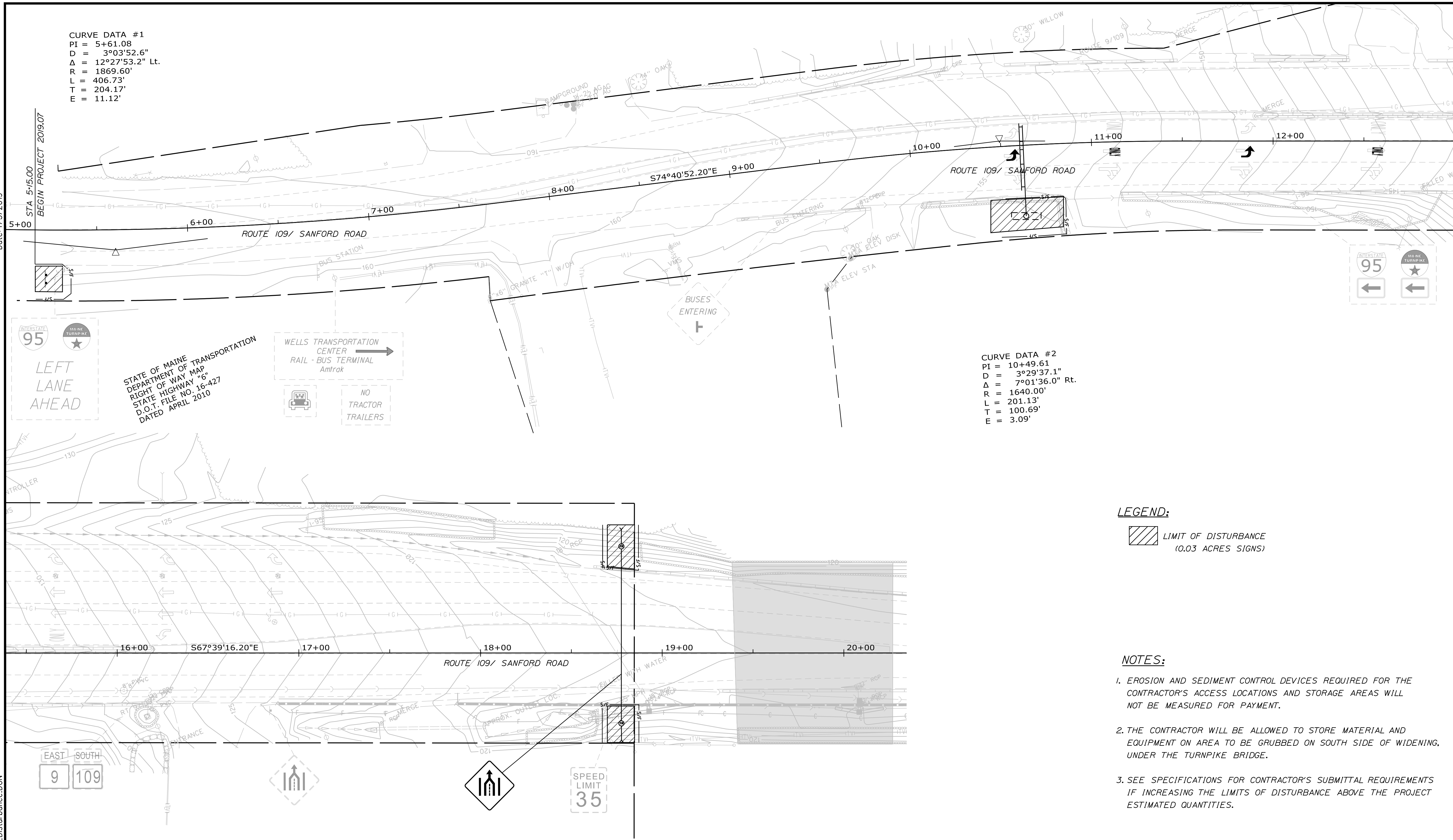
11 OF 12

CURVE DATA #1
 PI = 5+61.08
 D = 3°03'52.6"
 Δ = 12°27'53.2" Lt.
 R = 1869.60'
 L = 406.73'
 T = 204.17'
 E = 11.12'

CURVE DATA #2
 PI = 10+49.61
 D = 3°29'37.1"
 Δ = 7°01'36.0" Rt.
 R = 1640.00'
 L = 201.13'
 T = 100.69'
 E = 3.09'

Date: 4/3/2019

STA 5+15.00
 BEGIN PROJECT 2019.07



95
 LEFT LANE AHEAD

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY "6"
 D.O.T. FILE NO. 16-427
 DATED APRIL 2010

WELLS TRANSPORTATION CENTER
 RAIL - BUS TERMINAL
 Amtrak

NO TRACTOR TRAILERS

BUSES ENTERING

LEGEND:

LIMIT OF DISTURBANCE
 (0.03 ACRES SIGNS)

NOTES:

1. EROSION AND SEDIMENT CONTROL DEVICES REQUIRED FOR THE CONTRACTOR'S ACCESS LOCATIONS AND STORAGE AREAS WILL NOT BE MEASURED FOR PAYMENT.
2. THE CONTRACTOR WILL BE ALLOWED TO STORE MATERIAL AND EQUIPMENT ON AREA TO BE GRUBBED ON SOUTH SIDE OF WIDENING, UNDER THE TURNPIKE BRIDGE.
3. SEE SPECIFICATIONS FOR CONTRACTOR'S SUBMITTAL REQUIREMENTS IF INCREASING THE LIMITS OF DISTURBANCE ABOVE THE PROJECT ESTIMATED QUANTITIES.

Filename: ...XXX_Limits_of_Disturbance.DGN

Scale: 1" = 25'		Designed by: TYLIN INTERNATIONAL		T.Y. Lin International 12 Northbrook Drive Building A, Suite One Falmouth, Maine 04105 TEL: (207) 781-4721 FAX: (207) 781-4753		THE GOLD STAR MEMORIAL HIGHWAY		ROUTE 109 IMPROVEMENTS LIMIT OF DISTURBANCE PLAN																																					
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