

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



LAGRANGE PENOBSCOT COUNTY B & A OVERHEAD BRIDGE OVER RECREATIONAL TRAIL BENNOCH ROAD PROJECT NO. BH-1823(700)X PROJECT LENGTH 0.18 mi. BRIDGE NO. 3867

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SPECIFICATIONS

DESIGN: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications 2010 and interim specifications through 2010.

TRAFFIC DATA

Current (2012) AADT	1890
Future (2032) AADT	2270
DHV - % of AADT	10%
Design Hour Volume	227
Heavy Trucks (% of AADT)	15%
Heavy Trucks (% of DHV)	15%
Directional Distribution (% of DHV)	65%
18 Kip Equivalent P 2.0	286
18 Kip Equivalent P 2.5	273
Design Speed	50 mph

DESIGN LOADING

LIVE LOAD: HL - 93 Modified for Strength I (Truck only increased 25%)

MATERIALS

CONCRETE:

Arch Tube Concrete	See Special Provision
All Other	Class A

REINFORCING STEEL:

ASTM A615 / A615M Grade 60

EPOXY COATED REINF. STEEL:

ASTM A615 / A615M Grade 60

WELDED WIRE FABRIC:

ASTM A185

BASIC DESIGN STRESSES

CONCRETE:

Arch Tube Concrete	f _c = 6,000 psi
All Other	f _c = 4,350 psi

REINFORCING STEEL:

f _y = 60,000 psi

EPOXY COATED REINFORCING STEEL:

f _y = 60,000 psi

WELDED WIRE FABRIC:

f _y = 65,000 psi

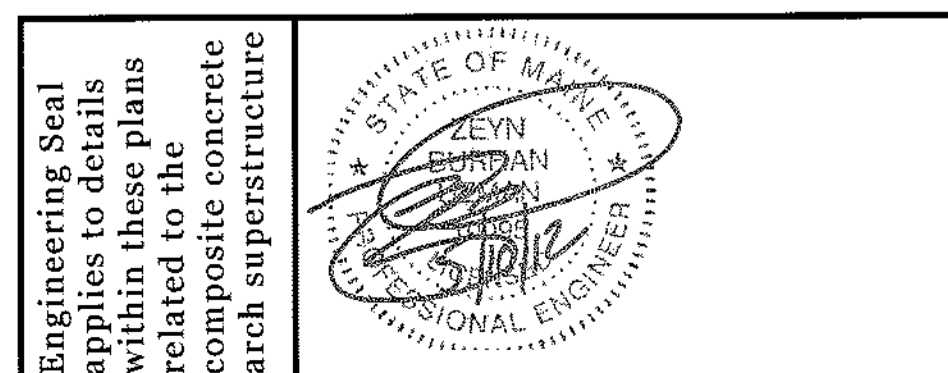
UTILITIES

AT&T
Bangor-Hydro
Fairpoint Communications

MAINTENANCE OF TRAFFIC

Phased construction with alternating one-way traffic and temporary, actuated traffic signal.

PROJECT LOCATION:	Overhead Bridge (#3867) Route 16 over B & A Railroad (abandoned) located 1.5 miles north of the town line.
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge replacement, stage construction using Bridge in a Backpack™



STATE OF MAINE DEPARTMENT OF TRANSPORTATION APPROVED: <i>[Signature]</i> COMMISSIONER: <i>[Signature]</i> CHIEF ENGINEER: <i>[Signature]</i> DATE: 5/11/12	STATE OF MAINE DEPARTMENT OF TRANSPORTATION PROJECT INFORMATION BRIDGE: C. TAYLOR PROJECT MANAGER: C. TAYLOR DESIGNER: C. TAYLOR CONSULTANT: TYLIN INTERNATIONAL PROJECT RESIDENT CONTRACTOR: TYLIN INTERNATIONAL DATE: 5/10/12 PROJECT COMPLETION DATE:
WIN 18237.00 LAGRANGE B & A OVERHEAD BRIDGE TITLE SHEET	BH-1823(700)X SHEET NUMBER 1 OF 31

Date: 5/9/2012

Username: skeller

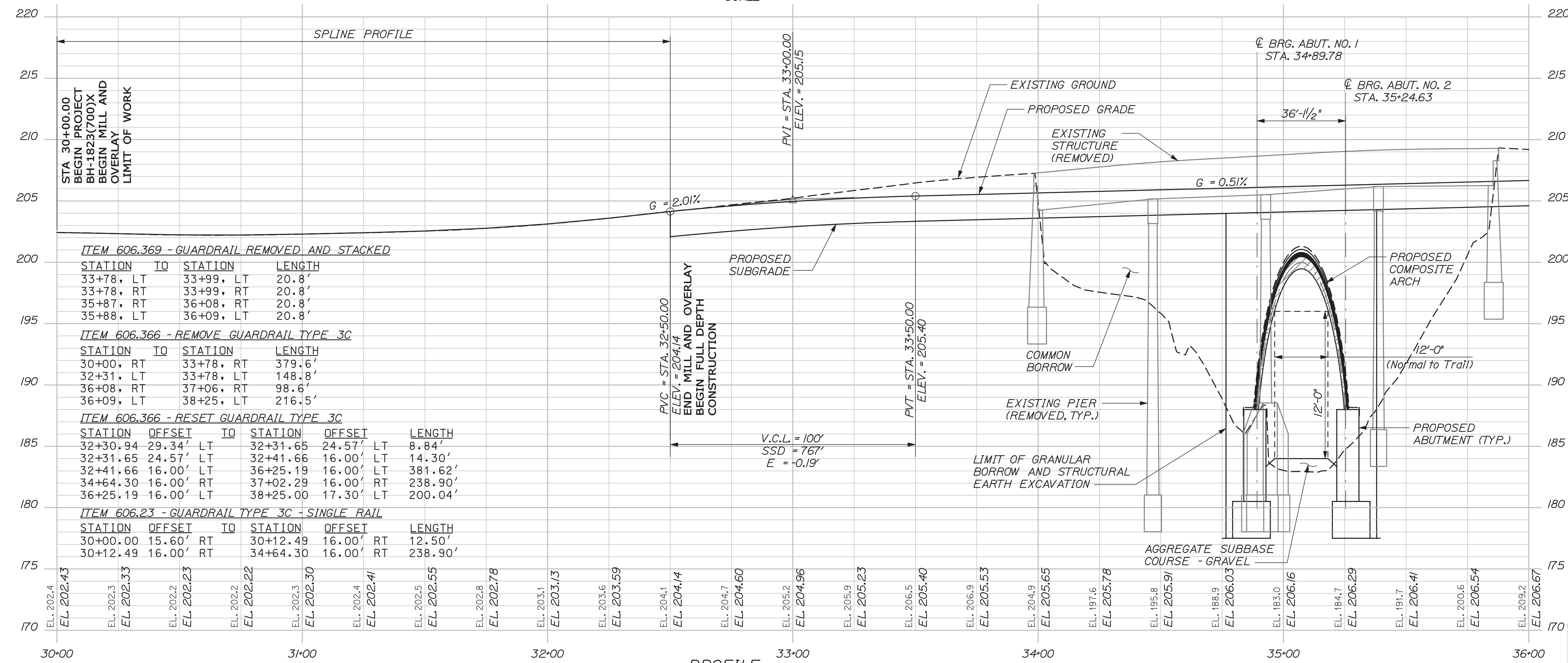
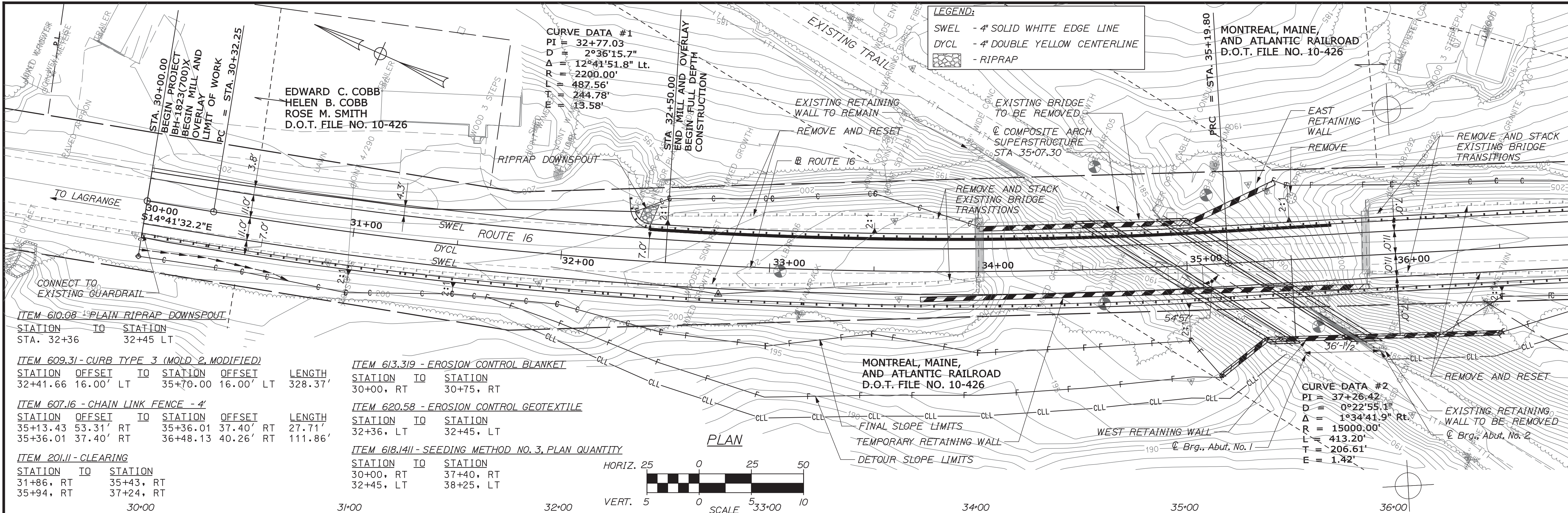
Division: HIGHWAY

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Date: 5/9/2012

Username: skeller

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PROFILE

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 BH-1823(700)X
 WIN
 BRIDGE NO. 3867
 18237.00
 BRIDGE PLANS

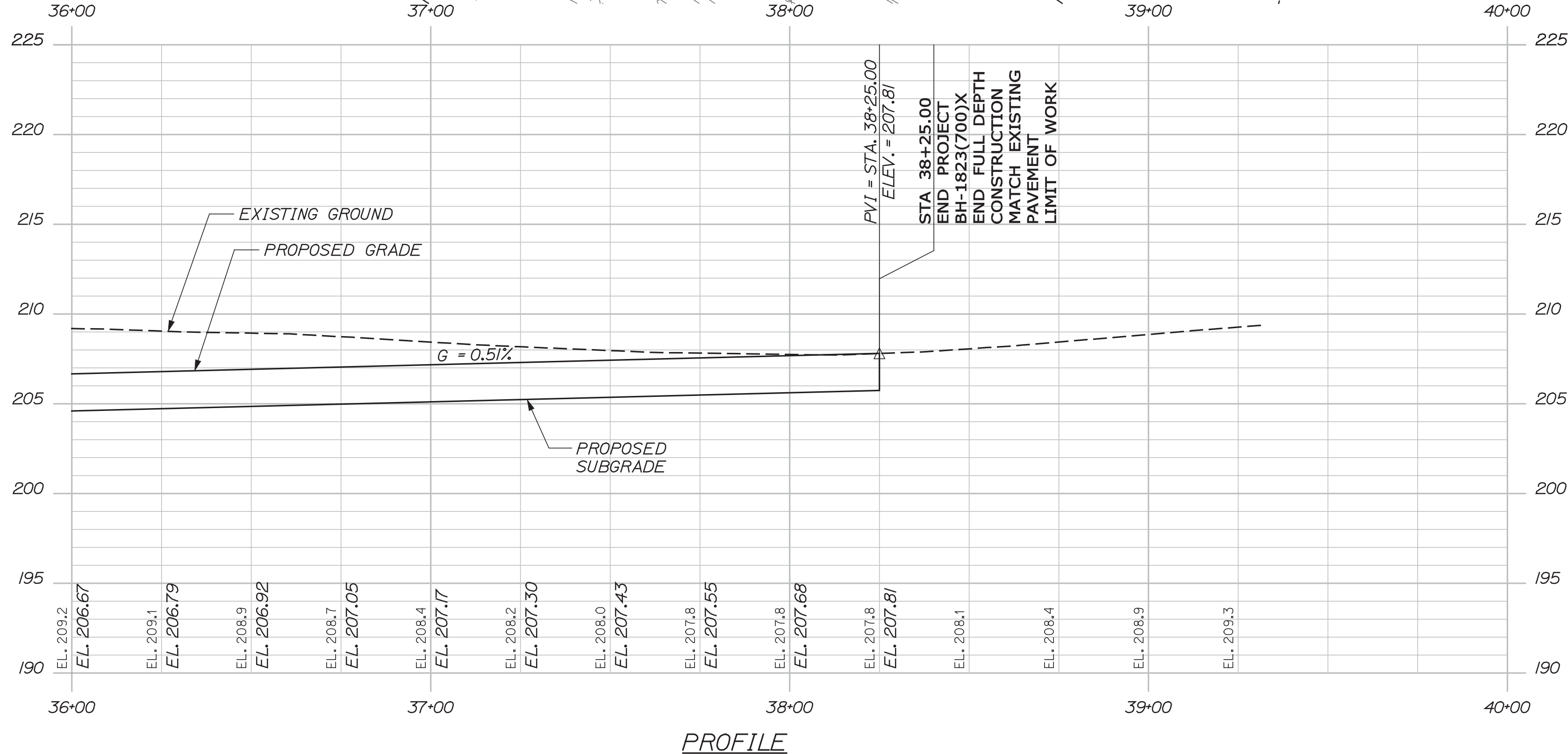
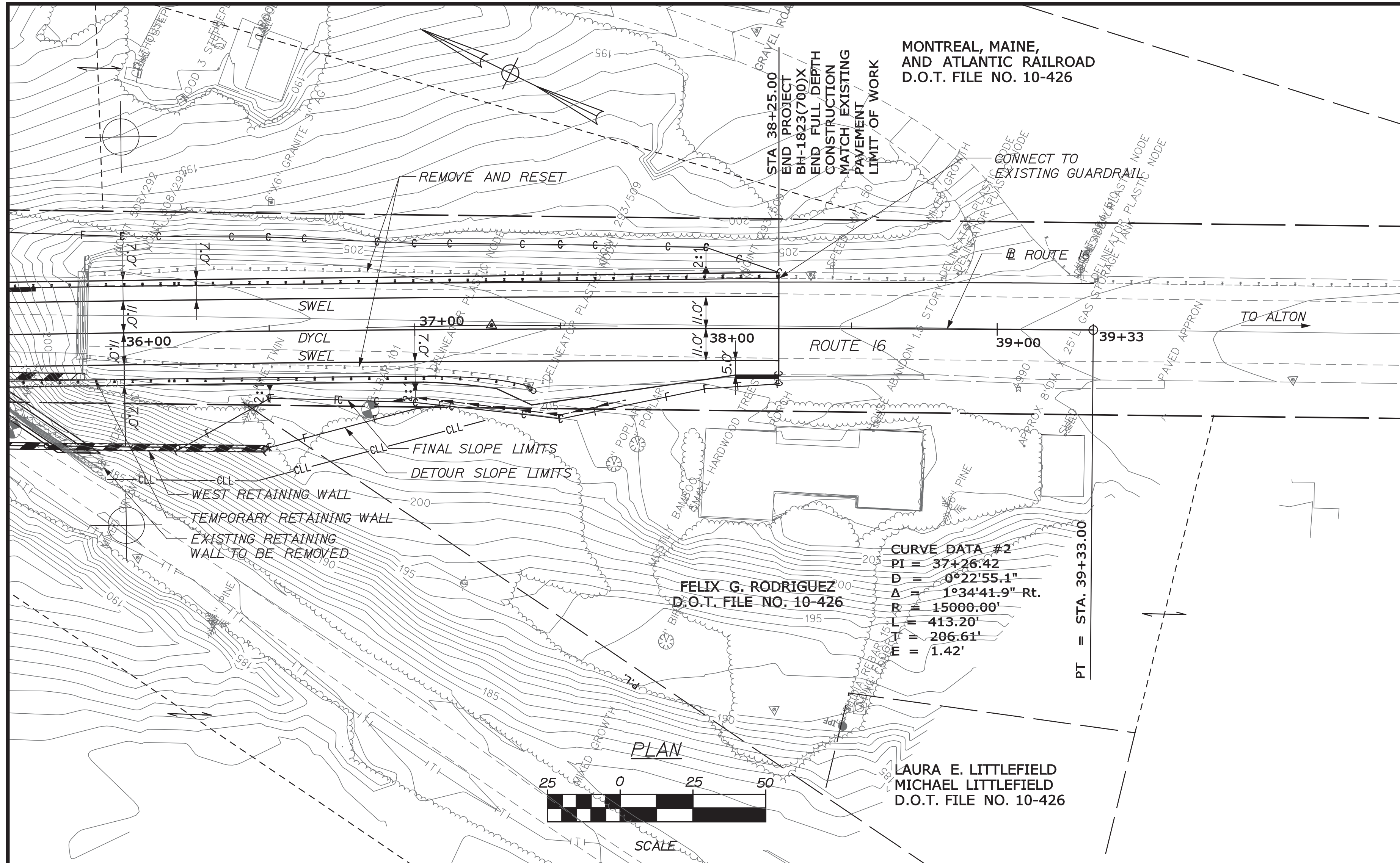
DATE	SIGNATURE	P.E. NUMBER	DATE
3/2012			
3/2012			

PROJ. MANAGER	BY	DATE
C. TAYLOR	DEB	3/2012
DESIGN-DETAILED	JRH	3/2012
CHECKED-REVIEWED	JRH	3/2012
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATE ROUTE 16
 OVER RECREATIONAL TRAIL
 PENOBSCOT COUNTY
 LAGRANGE
 PLAN AND PROFILE

SHEET NUMBER
 3
 OF 31

TYLIN INTERNATIONAL



ITEM 609.31 - CURB TYPE 3 (MOLD 3)
 STATION 38+10.13 OFFSET 16.00' RT. TO STATION 38+25.00 OFFSET 16.00' RT. LENGTH 14.86'

ITEM 606.791 - REMOVE AND RESET 350 FLARED TERMINAL
 STATION 37+02.89 OFFSET 16.00' RT.

ITEM 618.1401 - SEEDING METHOD NO. 2, PLAN QUANTITIES
 STATION 37+40. RT TO STATION 38+25. RT

ITEM 613.319 - EROSION CONTROL BLANKET
 STATION 36+92. RT TO STATION 37+73. RT

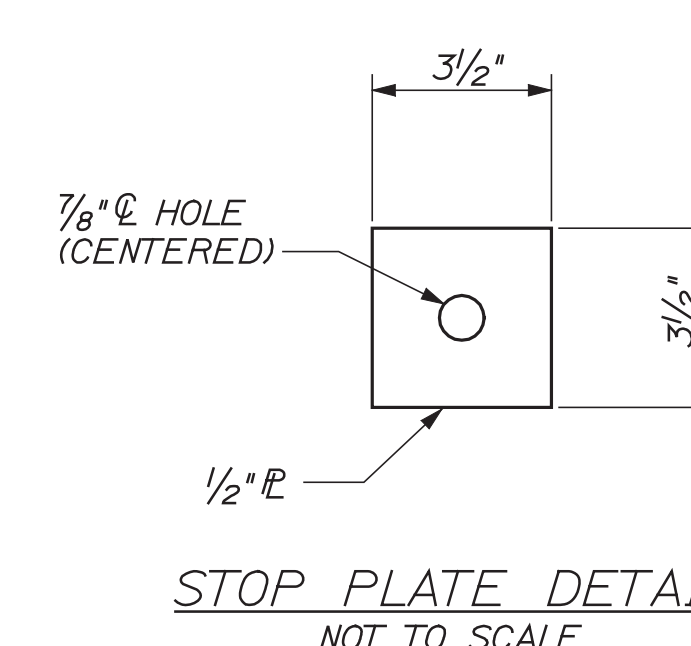
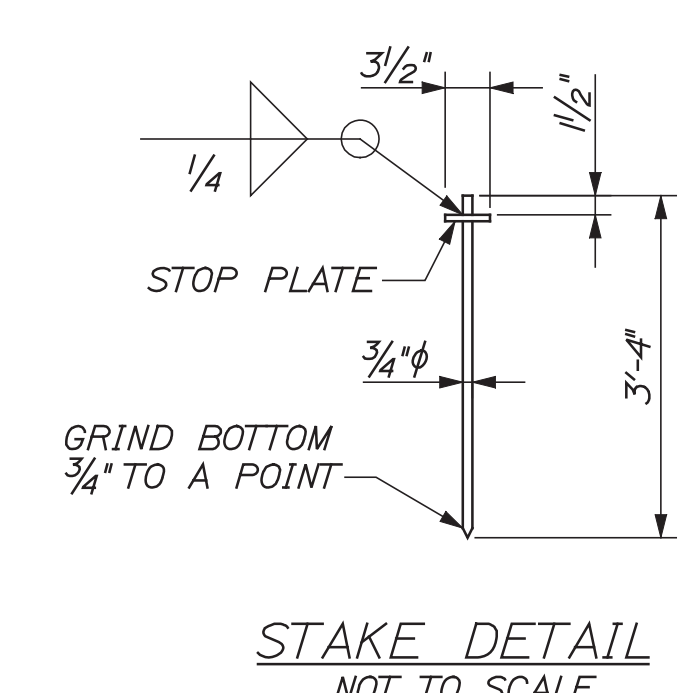
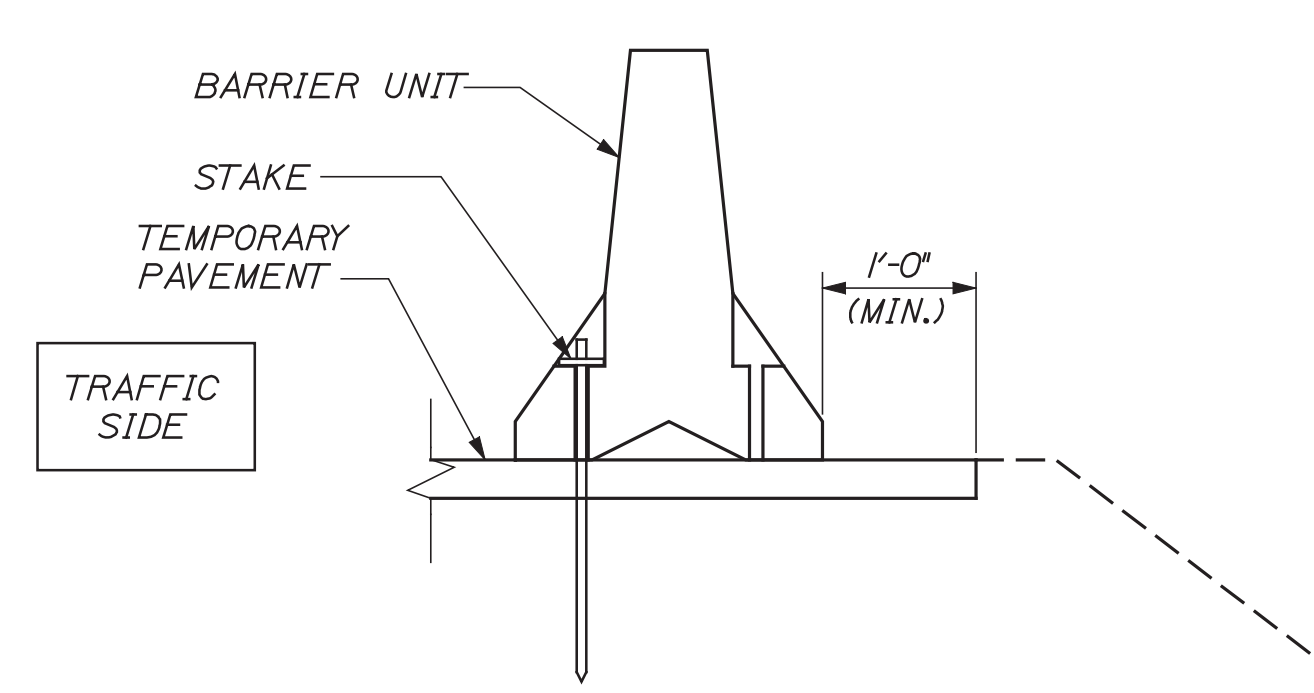
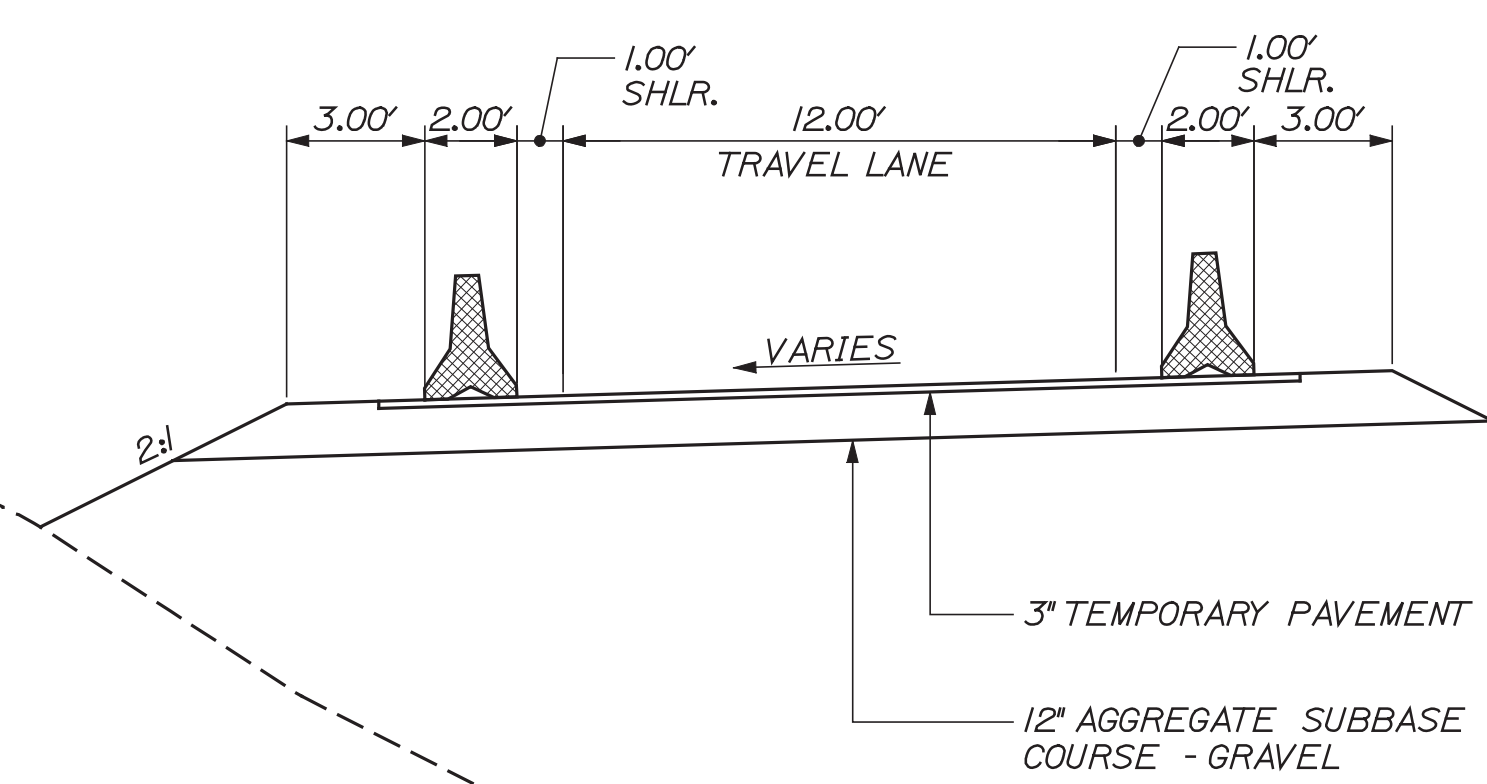
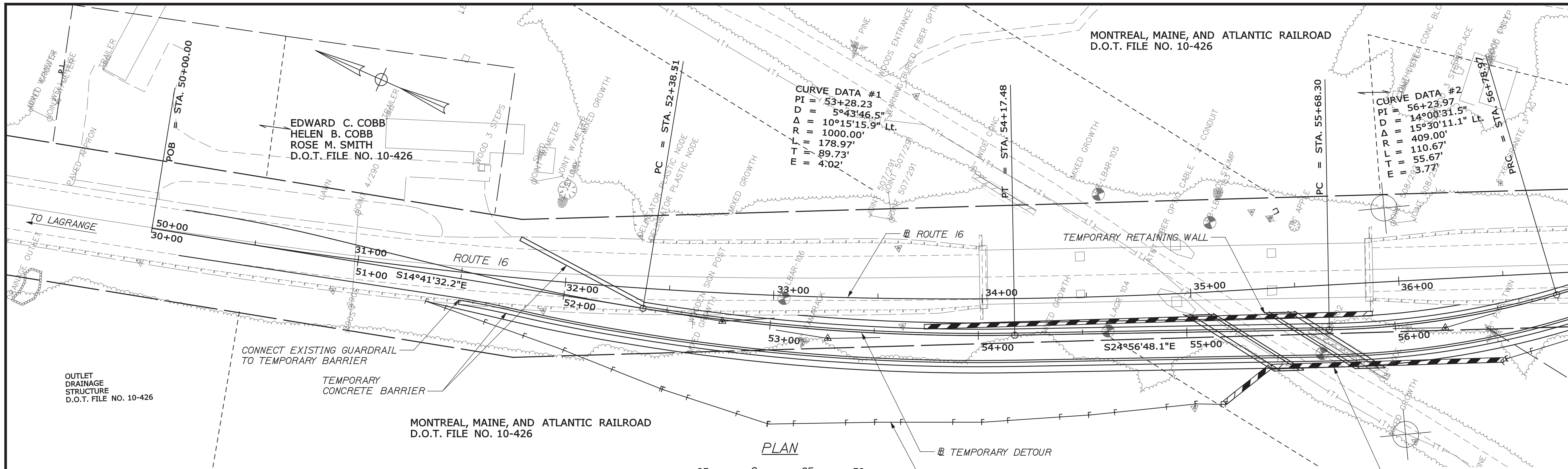
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE PLANS	
LAGRANGE		PENOBSCOT COUNTY		WIN	
STATE ROUTE 16		OVER RECREATIONAL TRAIL		18237.00	
LAGRANGE		PENOBSCOT COUNTY		BRIDGE NO. 3867	
PLAN AND PROFILE		BH-1823(700)X		DATE	
SHEET NUMBER		SIGNATURE		DATE	
4		P.E. NUMBER		DATE	
OF 31		REVISIONS 1		DATE	
TYLIN INTERNATIONAL		REVISIONS 2		DATE	
		REVISIONS 3		DATE	
		REVISIONS 4		DATE	
		FIELD CHANGES		DATE	

Date: 5/9/2012

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Division: HIGHWAY

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- NOTES:**
1. TEMPORARY BARRIER SHALL BE STAKED ALONG THE RETAINING WALLS AND ALONG FILL SLOPES IF LESS THAN 3 FEET TO TOP OF BERM OR AS DIRECTED BY THE RESIDENT.
 2. STAKES SHALL BE PROVIDED ON TRAFFIC SIDE ONLY.
 3. PROVIDE STEEL FOR STAKE ASSEMBLIES IN ACCORDANCE WITH ASTM A 709 GRADE 50. ALL WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE (STEEL ANSI/AWS D1.1 (CURRENT EDITION). WELD METAL SHALL BE E60XX OR E70XX. NONDESTRUCTIVE TESTING OF THE WELDS IS NOT REQUIRED.
 4. INSTALL FIVE (5) STAKES ON THE TRAFFIC SIDE OF THE BARRIER UNITS AS SHOWN. INSTALL STAKES SO THAT THE STOP PLATE IS SNUG AGAINST THE BOTTOM OF THE ANCHOR BLOCKOUT.
 5. PAYMENT FOR TEMPORARY TRAFFIC BARRIER SHALL BE INCLUDED IN ITEM 510.10 - SPECIAL DETOUR.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
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REVISIONS 4					
FIELD CHANGES					

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
SPECIAL DETOUR PLAN

SHEET NUMBER
5
OF 31

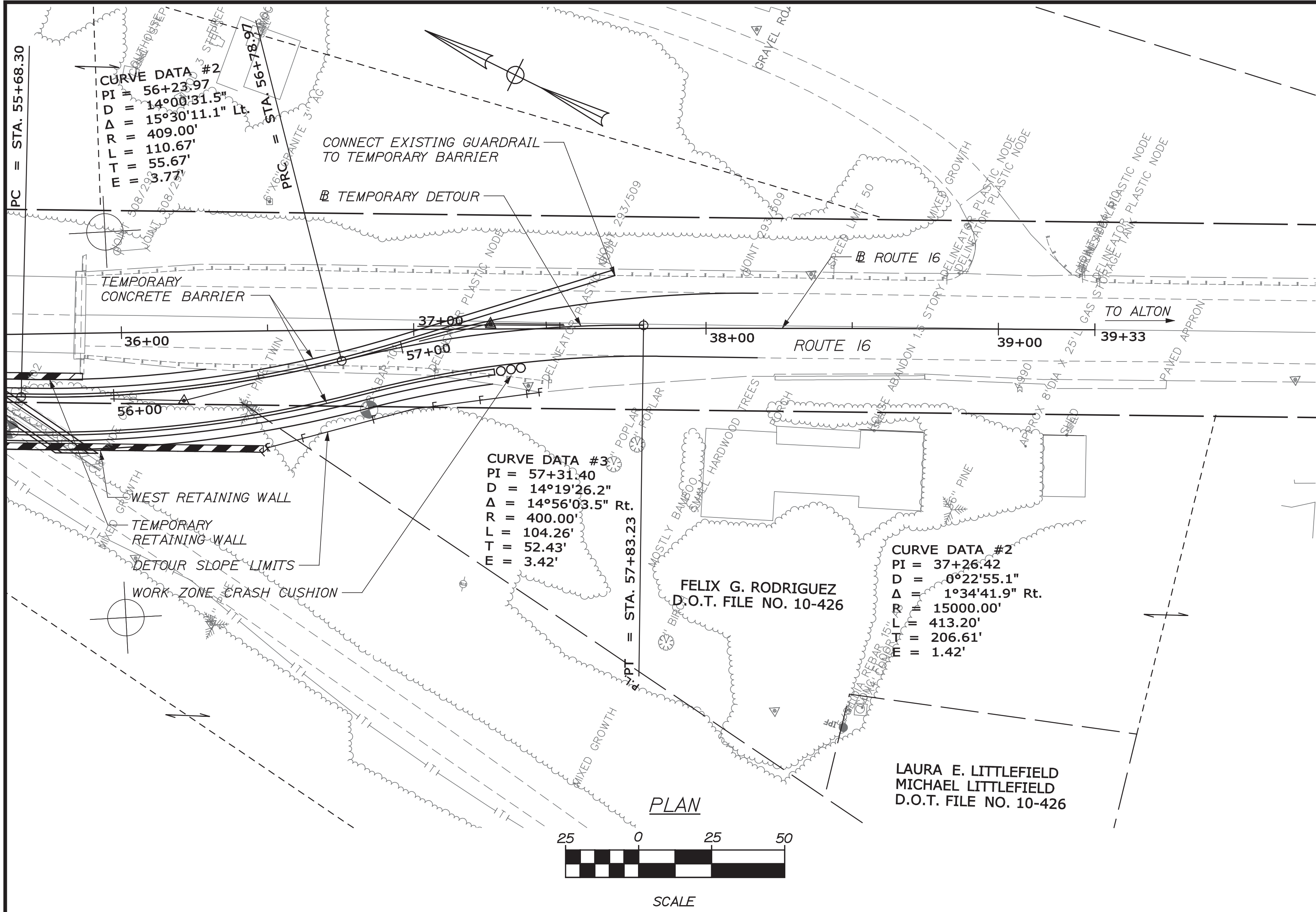
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Date: 5/9/2012

Username: skeller

Division: HIGHWAY

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ANTICIPATED CONSTRUCTION SEQUENCE

PHASE 1:

- MAINTAIN 2-WAY TRAFFIC ON EXISTING BRIDGE.
- PLACE OVERHEAD UTILITIES ON TEMPORARY "ALLEY ARMS" OR NEW UTILITY POLES TO PROVIDE CLEARANCE FOR BRIDGE DEMOLITION, PER SPECIAL PROVISION 104.
- COORDINATE WITH AT&T TO SHIFT FIBER OPTIC LINE OUTSIDE FOOTPRINT OF PROPOSED FOOTING, PER SPECIAL PROVISION 104.
- CONSTRUCT FIRST PHASE OF PROPOSED BRIDGE, WESTERN WINGWALL, AND TEMPORARY RETAINING WALL.

PHASE 2:

- SET UP TEMPORARY TRAFFIC SIGNALS AND ESTABLISH ALTERNATING I-WAY TRAFFIC ON THE EASTERN SIDE OF THE EXISTING BRIDGE.
- COMPLETE APPROACH WORK TO TIE IN THE DETOUR.

PHASE 3:

- MAINTAIN TEMPORARY TRAFFIC SIGNALS AND SHIFT ALTERNATING I-WAY TRAFFIC TO THE COMPLETED DETOUR ON THE COMPLETED PORTION OF THE NEW BRIDGE.
- REMOVE THE EXISTING BRIDGE.
- COMPLETE CONSTRUCTION OF THE PROPOSED BRIDGE, EASTERN RETAINING WALL, EASTERN GUARDRAIL AND APPROACH WORK.

PHASE 4:

- SHIFT TRAFFIC TO THE NEW BRIDGE.
- INSTALL WESTERN GUARDRAIL.
- REMOVE TEMPORARY FILL ALONG WESTERN EMBANKMENTS.
- REPLACE OVERHEAD UTILITIES TO ORIGINAL LOCATIONS, IF NECESSARY PER SPECIAL PROVISION 104.
- REMOVE PAVEMENT MILLINGS FROM DETOUR OVER STRUCTURE, LOAM AND SEED.

CONSTRUCTION STAGING NOTES:

1. THE SUGGESTED SEQUENCE OF CONSTRUCTION DETAILED HEREIN IS PROVIDED AS A GENERAL GUIDE ONLY. THESE PLANS DO NOT ANTICIPATE ALL POSSIBLE CONTRACTOR ACTIVITIES.
2. TEMPORARY LANE WIDTHS SHALL BE A MINIMUM OF 12 FEET UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN (TCP) IN ACCORDANCE WITH STANDARD SPECIFICATION 652.
4. ALL TRAFFIC CONTROL ELEMENTS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" LATEST EDITION AND THE STANDARD DETAILS.
5. CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES TO ELIMINATE, OR MINIMIZE, DISRUPTIONS TO SERVICES.
6. ALL PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS IN EACH PHASE OF CONSTRUCTION SHALL BE COMPLETELY REMOVED. REMOVAL OF EXISTING PERMANENT MARKINGS WILL BE PAID FOR UNDER ITEM 627.77.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
WIN
BRIDGE NO. 3867
BRIDGE PLANS

PROJ. MANAGER	DATE	BY	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	3/2012	JRH			
DESIGN-DETAILED	3/2012	DEB			
CHECKED-REVIEWED		DEB			
DESIGN2-DETAILED2					
DESIGN3-DETAILED3					
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FIELD CHANGES					

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
SPECIAL DETOUR PLAN

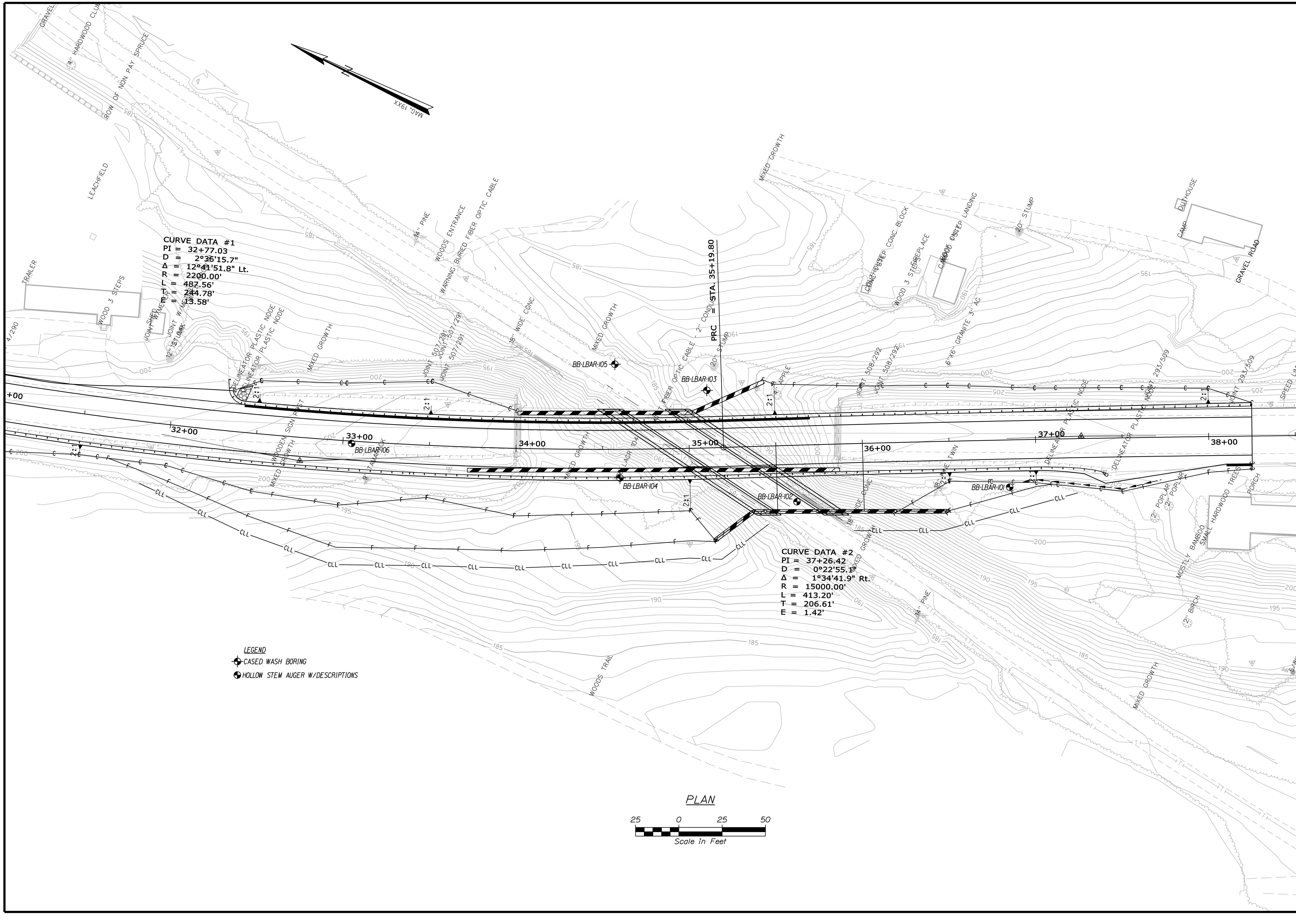
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OF 31

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STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BH-1823(700)X	
B&A OVERHEAD BRIDGE ROUTE 16 OVER FORMER B&A RAILROAD LAGRANGE		PENOBSCOT COUNTY	
BORING LOCATION PLAN		BRIDGE NO. 3887 WIN 18237.00 BRIDGE PLANS	
SHEET NUMBER		DATE	
7		SIGNATURE	
OF 31		P.E. NUMBER	
BY		DATE	
M.MOREAU		FEB 2012	
DESIGN DETAILED		CHECKED-REVIEWED	
DESIGNS DET AILED		DESIGNS DET AILED	
REVISIONS 1		REVISIONS 2	
REVISIONS 3		REVISIONS 4	
FIELD CHANGES		FIELD CHANGES	

Maine Department of Transportation Boring No.: BB-LBAR-106 18237.00. Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine. Includes header information, logs, and laboratory testing results.

Maine Department of Transportation Boring No.: BB-LBAR-105 18237.00. Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine. Includes header information, logs, and laboratory testing results.

Maine Department of Transportation Boring No.: BB-LBAR-104 18237.00. Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine. Includes header information, logs, and laboratory testing results.

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Maine Department of Transportation Boring No.: BB-LBAR-104 18237.00. Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine. Includes header information, logs, and laboratory testing results.

Maine Department of Transportation Boring No.: BB-LBAR-104 18237.00. Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine. Includes header information, logs, and laboratory testing results.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1823(700)X BRIDGE NO. 3867 WIN 18237.00. B&A OVERHEAD BRIDGE ROUTE 16 OVER FORMER B&A RAILROAD LAGRANGE PENOBSCOT COUNTY. Includes signature, date, and sheet number information.

Maine Department of Transportation Soil/Book Exploration Log US CUSTOMARY UNITS				Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine				Boring No.: BB-LBAR-103 WIN: 18237.00										
Drillert	Maine Test Boring	Elevation (ft.)	190.1	Operator	Parter/Neason	Station	NAV88	Sampler	Standard Split Spoon	Auger ID/OD	4" Solid Stem	Operator	Parter/Neason	Station	NAV88			
Logged By	E. Giguere/M. Moraw	Rig Type	Mobile S-53	Logged By	E. Giguere/M. Moraw	Rig Type	Mobile S-53	Home	11"/10"	140R/20"	Core Barrel	NO-2"	Date Start/Finish	1/5-6-9-10/2012	Drilling Method	Cased Wash Boring	Water Level*	37.0 ft bgs 1/9/2012
Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead	Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead							
0	24/24	0.00 - 2.00	10/4/4/5	8	8	8	5A	189.85	3" TOPSOIL							0.25		
Brown, damp, loose, fine to medium SAND, trace coarse sand and silt. (Glacial Stream Deposit).																		
5	24/18	5.00 - 7.00	2/3/5/5	8	8	17		181.10	Similar to above.									
10	24/12	10.00 - 12.00	6/8/8/12	16	16	8			Brown, moist, medium dense, fine to medium SAND, trace fine gravel, trace to little silt. (Glacial Stream Deposit).									
15	24/15	15.00 - 17.00	4/8/8/9	16	16	20			Similar to above.							06244758 A-2-U, SP WC=1.9%		
20	24/12	20.00 - 22.00	5/6/7/14	13	13	21			Similar to above.							06244760 A-2-U, SM WC=9.1%		
25	15/4/2	25.00 - 26.30	8/10/50/3.6"	---	---	19			Cable from 26.3-26.8 ft bgs. Roller Cased ahead to 30.0 ft bgs.									
30	24/15	30.00 - 32.00	7/8/8/11	16	16	31			Brown, wet, medium dense, fine to medium SAND, trace silt. (Glacial Stream Deposit).							06244761 A-2-U, SM WC=4.1%		
35	24/13	35.00 - 37.00	4/8/10/10	19	19	41			Similar to above.									
40	24/12	40.00 - 42.00	8/9/12/14	21	21	48			Brown, wet, medium dense to dense, fine to coarse SAND, trace gravel, little silt. (Glacial Stream Deposit).							06244762 A-2-U, SM WC=2.5%		
45	100	45.00 - 47.00	12/13/18/23	31	31	89			Similar to above.									
50	110	50.00 - 52.00	16/21/11/13	32	32	91			Brown-grey, wet, dense, GRAVEL, some fine to coarse sand, trace silt. (fill).							06244763 A-1-U, GM WC=5.8%		
55	120	55.00 - 57.00	8/14/17/26	31	31	97			Similar to above.									
60	130	60.00 - 62.00	24/48/40/29	88	88	13			Brown-grey, wet, very dense, GRAVEL, little fine to coarse sand, trace silt and cobbles. (fill).									
65	140	65.00 - 67.00	27/22/30/21	52	52	27			Grey, wet, very dense, GRAVEL, little fine to coarse sand, trace silt, cobbles. (Glacial Stream Deposit).									
70	150	70.00 - 72.00	17/26/15/23	41	41	23			Grey-brown, wet, dense, fine to medium SAND, trace silt. (Glacial Stream Deposit).									
Bottom of Exploration at 28.8 feet below ground surface.																		
* 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.																		

Maine Department of Transportation Soil/Book Exploration Log US CUSTOMARY UNITS				Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine				Boring No.: BB-LBAR-103 WIN: 18237.00										
Drillert	Maine Test Boring	Elevation (ft.)	190.1	Operator	Parter/Neason	Station	NAV88	Sampler	Standard Split Spoon	Auger ID/OD	4" Solid Stem	Operator	Parter/Neason	Station	NAV88			
Logged By	E. Giguere/M. Moraw	Rig Type	Mobile S-53	Logged By	E. Giguere/M. Moraw	Rig Type	Mobile S-53	Home	11"/10"	140R/20"	Core Barrel	NO-2"	Date Start/Finish	1/5-6-9-10/2012	Drilling Method	Cased Wash Boring	Water Level*	37.0 ft bgs 1/9/2012
Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead	Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead							
5	20/12	5.00 - 7.00	14/19/42/50/1.2"	61	61	20			Similar to above, but coarser.									
10	24/8	10.00 - 12.00	21/22/18/18	40	40	39			Brown-grey, wet, dense to very dense, GRAVEL, some fine to coarse sand, trace silt and cobbles. (Glacial Stream Deposit).									
15	4/0	15.00 - 15.33	50 (4.0")	---	---	63			Drill attitude indicates similar to above. Washed ahead from 85.0-90.0 ft bgs.									
20	6/3.6	20.00 - 25.00	75 (6.0")	---	---	137			Similar to above.									
25	24/15	25.00 - 27.00	26/38/58/42	36	36	69			Brown-grey, wet, very dense, gravelly fine to coarse sand, trace silt and cobbles. (Glacial Stream Deposit).									
30	60/60	30.00 - 105.00	R00 = 47%			102			R158 blow for 0.7 ft. Roller Cased ahead from 98.7-100.0 ft bgs.									
35	60/60	35.00 - 110.00	R00 = 33%			102			Top of Bedrock at Elev. 90.3 ft. R1 and R2 Bedrock: Grey-tan, fine grained, metamorphic SLATE and METASILTSTONE, completely bedded and folded, soft, slightly weathered, with very close to close, open joints. The bedrock contains fractures that are oriented from horizontal to near vertical. With some slickensides evident, numerous calcite seams and veins, no infilling or iron-staining. (Massive Formation).									
40	60/60	40.00 - 110.00	R00 = 33%			102			R1 Core Times (min:sec) 100.0-101.0 ft (4:00) 101.0-102.0 ft (4:00) 102.0-103.0 ft (2:30) 103.0-104.0 ft (3:00) 104.0-105.0 ft (3:00) 100% Recovery									
45	60/60	45.00 - 110.00	R00 = 33%			102			R2 Core Times (min:sec) 105.0-106.0 ft (3:00) 106.0-107.0 ft (4:00) 107.0-108.0 ft (3:30) 108.0-109.0 ft (4:30) 109.0-110.0 ft (4:30) 100% Recovery									
50	110	50.00 - 52.00				96.10			Bottom of Exploration at 110.00 feet below ground surface.									
55	115	55.00 - 57.00				80.10			Bottom of Exploration at 110.00 feet below ground surface.									
60	120	60.00 - 62.00							Bottom of Exploration at 110.00 feet below ground surface.									
65	125	65.00 - 67.00							Bottom of Exploration at 110.00 feet below ground surface.									
70	130	70.00 - 72.00							Bottom of Exploration at 110.00 feet below ground surface.									
* 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.																		

Maine Department of Transportation Soil/Book Exploration Log US CUSTOMARY UNITS				Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine				Boring No.: BB-LBAR-102 WIN: 18237.00										
Drillert	Maine Test Boring	Elevation (ft.)	182.9	Operator	Parter/Neason	Station	NAV88	Sampler	Standard Split Spoon	Auger ID/OD	2.5"/6"	Operator	Parter/Neason	Station	NAV88			
Logged By	E. Giguere	Rig Type	Mobile S-53	Logged By	E. Giguere	Rig Type	Mobile S-53	Home	11"/10"	140R/20"	Core Barrel	N/A	Date Start/Finish	1/11/2012-1/12/2012	Drilling Method	Hollow Stem Auger	Water Level*	18.9 ft bgs
Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead	Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead							
10	24/18	2.00 - 4.00	27/33/27/33	60	60	60			Brown, damp, very dense, GRAVEL, some fine to coarse sand, trace silt and cobbles. (Glacial Stream Deposit).							06244753 A-1-U, GM WC=1.5%		
15	24/12	5.00 - 7.00	22/22/23/45	45	45	45			Brown, damp, dense, fine to coarse sandy GRAVEL, trace silt, cobbles. (Glacial Stream Deposit).							06244754 A-1-U, GM WC=1.5%		
20	24/16	20.00 - 22.00	4/5/5/4	10	10	10			Small Boulder from 7.08-7.67 ft bgs.									
25	24/16	25.00 - 27.00	7/10/8/9	16	16	16			Brown, damp, loose to dense, fine to medium SAND, trace coarse sand and silt. (Glacial Stream Deposit).									
30	24/9	30.00 - 32.00	4/4/5/9	9	9	9			Running sand at 30.0 ft bgs, used head of water to keep it out when pulling rods up and down.									
35	24/8	40.00 - 42.00	7/7/6/4	15	15	13			Similar to above.									
40	24/6	45.00 - 47.00	9/8/7/7	16	16	16			Brown-grey, medium dense, fine to coarse SAND, little fine gravel, trace silt. (Glacial Stream Deposit).							06244757 A-2-U, SP WC=19.3%		
45	24/6	45.00 - 47.00	9/8/7/7	16	16	16			Similar to above.									
50	110	50.00 - 52.00	4/9/10/15	19	19	19			Bottom of Exploration at 52.00 feet below ground surface.									
55	115	55.00 - 57.00							Bottom of Exploration at 52.00 feet below ground surface.									
60	120	60.00 - 62.00							Bottom of Exploration at 52.00 feet below ground surface.									
65	125	65.00 - 67.00							Bottom of Exploration at 52.00 feet below ground surface.									
70	130	70.00 - 72.00							Bottom of Exploration at 52.00 feet below ground surface.									
* 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.																		

Maine Department of Transportation Soil/Book Exploration Log US CUSTOMARY UNITS				Project: B&A Overhead Bridge #3867 carries Route 16 over Former B&A Railroad Location: Lagrange, Maine				Boring No.: BB-LBAR-101 WIN: 18237.00										
Drillert	Maine Test Boring	Elevation (ft.)	204.5	Operator	Parter/Neason	Station	NAV88	Sampler	Standard Split Spoon	Auger ID/OD	2.5"/6"	Operator	Parter/Neason	Station	NAV88			
Logged By	E. Giguere	Rig Type	Mobile S-53	Logged By	E. Giguere	Rig Type	Mobile S-53	Home	11"/10"	140R/20"	Core Barrel	N/A	Date Start/Finish	1/11/2012-1/12/2012	Drilling Method	Hollow Stem Auger	Water Level*	None Observed
Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead	Home	Efficiency Factor: 0.6	Home	Type: Automatic	Hydraulic	Rope & Cathead							
10	24/8	0.00 - 2.00	4/5/9/12	14	14	14			3" TOPSOIL							0.25		
Brown, damp, medium dense, fine to medium SAND, trace coarse sand and silt. (Glacial Stream Deposit).																		
5	24/15	5.00 - 7.00	6/6/5/16	11	11	11			Similar to above.									
10	24/12	10.00 - 12.00	12/13/15/17	28	28	28			Brown, damp, medium dense to dense, fine to coarse sandy GRAVEL, trace silt, with cobbles. (Glacial Stream Deposit).									
15	24/3	15.00 - 17.00	14/16/21/16	37	37	37			Similar to above.									
20	24/10	20.00 - 22.00	20/27/20/41	47	47	47			Similar to above.							06244752 A-1-U, GM WC=0.6%		
Bottom of Exploration at 22.00 feet below ground surface.																		
* 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.																		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X

B&A OVERHEAD BRIDGE
ROUTE 16 OVER FORMER B&A RAILROAD
LAGRANGE
PENOBSCOT COUNTY

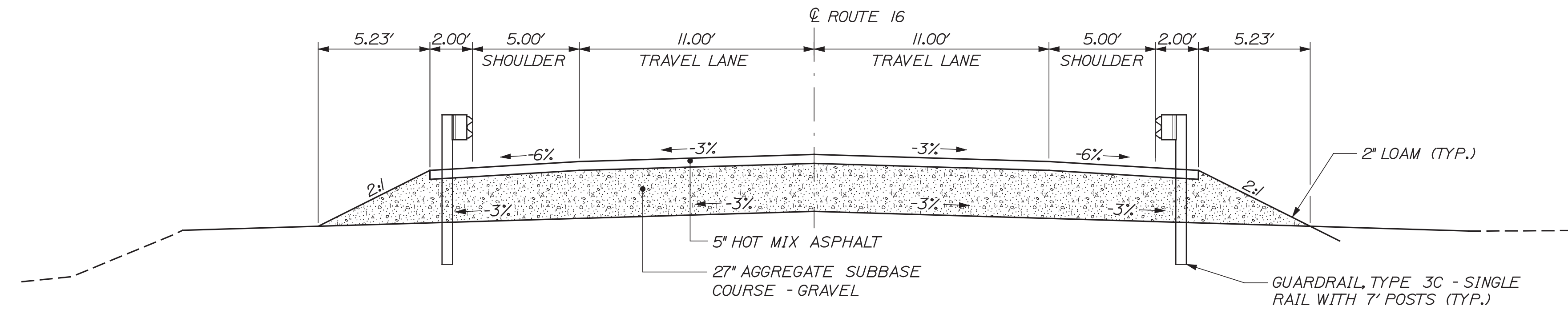
BORING LOGS

SHEET NUMBER
10
OF 31

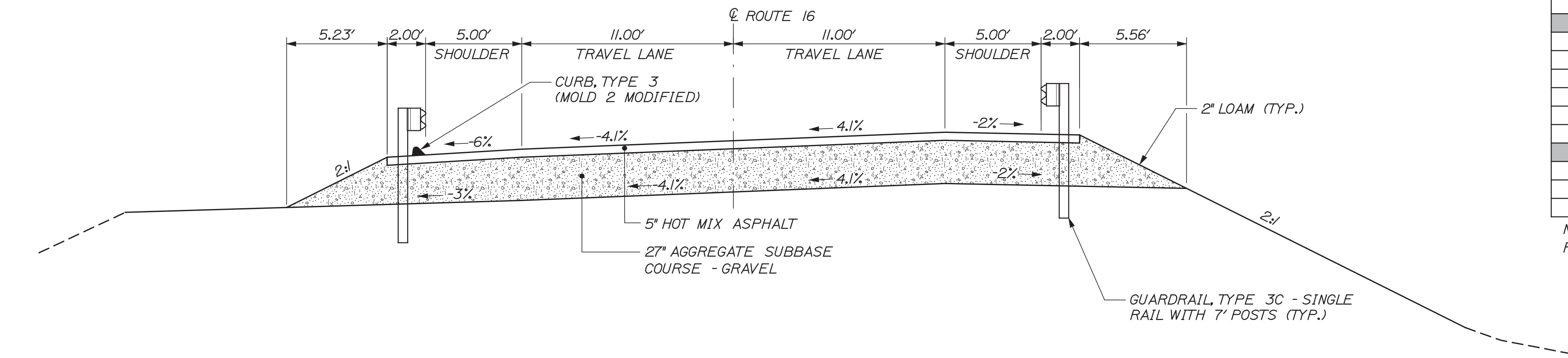
PROJ. MANAGER	DATE	BY
DESIGN-DETAILED	FEB 2012	T. WHITE
CHECKED-REVIEWED		
DESIGN-DETAILED		
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE
P.E. NUMBER
DATE

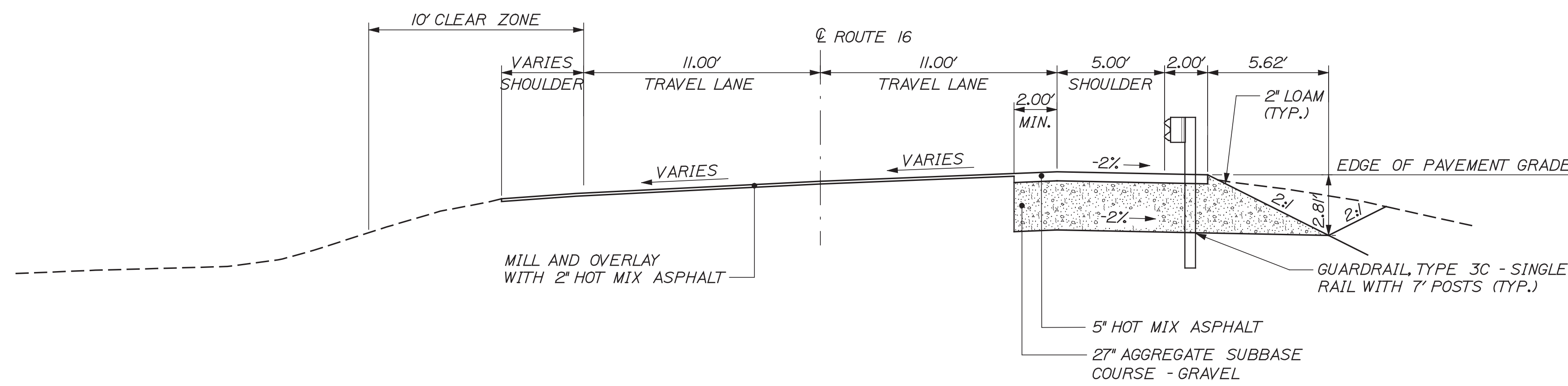
WIN 18237.00
BRIDGE NO. 3867
BRIDGE PLANS



FULL CONSTRUCTION
 NORMAL
 STA 36+50 TO STA 38+25



FULL CONSTRUCTION
 SUPERELEVATED
 STA 32+50 TO STA 36+50



WIDENING/OVERLAY
 SUPERELEVATED
 STA 30+00 TO STA 32+50

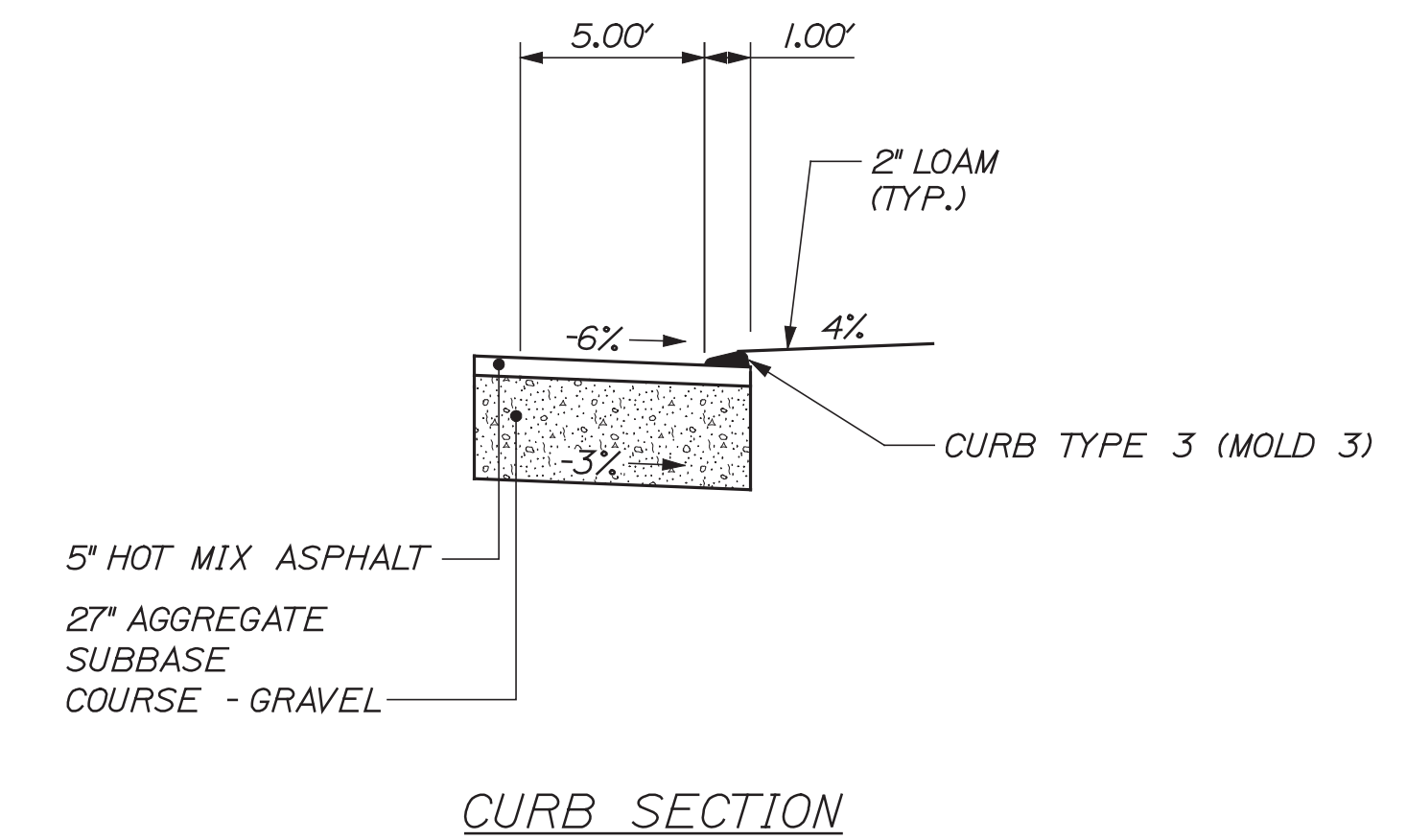
NOTES:

1. THE PAVEMENT, BASE, AND SUBBASE DEPTHS AS SHOWN ON THE PLANS ARE INTENDED TO BE NOMINAL.
2. WHEN THE SUPERELEVATION EXCEEDS THE SLOPE OF THE LOW SIDE SHOULDER, THE LOW SIDE SHOULDER SHALL HAVE THE SAME SLOPE AS THE TRAVEL LANE.
3. CROWNS FOR BOTH NORMAL AND SUPERELEVATED SECTIONS FOR ALL COURSES OF SUBBASE AND PAVEMENT SHALL BE STRAIGHT.
4. THE ALGEBRAIC DIFFERENCE BETWEEN THE SHOULDER AND TRAVEL LANE CROSS SLOPES 'ROLLOVER' SHALL NOT EXCEED 8%.
5. THE STATIONING SHOWN UNDER EACH TYPICAL IS APPROXIMATE.

SUPERELEVATION TABLE

LT SHOULDER	LT TRAVEL LANE	STATION	RT TRAVEL LANE	RT SHOULDER
		START		
-2.8%	-3.7%	30+00	2.5%	-2.0%
-7.1%	-5.0%	30+50	4.1%	-2.0%
-7.6%	-5.3%	31+00	4.7%	-2.0%
-7.5%	-5.5%	31+50	5.0%	-2.0%
-3.4%	-5.1%	32+00	5.1%	-2.0%
-6.0%	-4.1%	32+50	4.1%	-2.0%
		TO		
-6.0%	-4.1%	34+50	4.1%	-2.0%
-6.0%	-3.0%	34+80.99	3.0%	-3.2%
-6.0%	-3.0%	35+00	2.3%	-4.0%
-6.0%	-3.0%	35+50	0.6%	-6.0%
-6.0%	-3.0%	36+00	-1.2%	-6.0%
-6.0%	-3.0%	36+50	-3.0%	-6.0%
		TO		
-6.0%	-3.0%	38+00	-3.0%	-6.0%
-6.0%	-3.1%	38+25	-1.5%	-6.0%
		END		

NOTE:
 FROM STA. 30+00 TO STA. 32+50 MILL AND OVERLAY EXISTING PAVEMENT.



CURB SECTION

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 BH-1823(700)X
 BRIDGE NO. 3867
 WIN
 18237.00
 BRIDGE PLANS

STATE ROUTE 16
 OVER RECREATIONAL TRAIL
 PENOBSCOT COUNTY
 LAGRANGE
 TYPICAL SECTIONS

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	3/2012	DEB	3/2012			
DESIGN-DETAILED		JRH				
CHECKED-REVIEWED		JRH				
DESIGN2-DETAILED2						
DESIGN3-DETAILED3						
REVISIONS 1						
REVISIONS 2						
REVISIONS 3						
REVISIONS 4						
FIELD CHANGES						

SHEET NUMBER
11
 OF 31

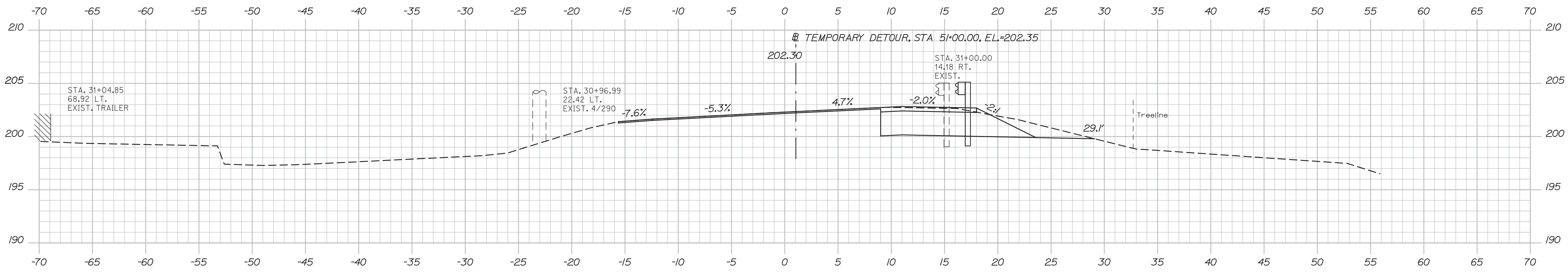
TYLIN INTERNATIONAL

Date: 5/9/2012

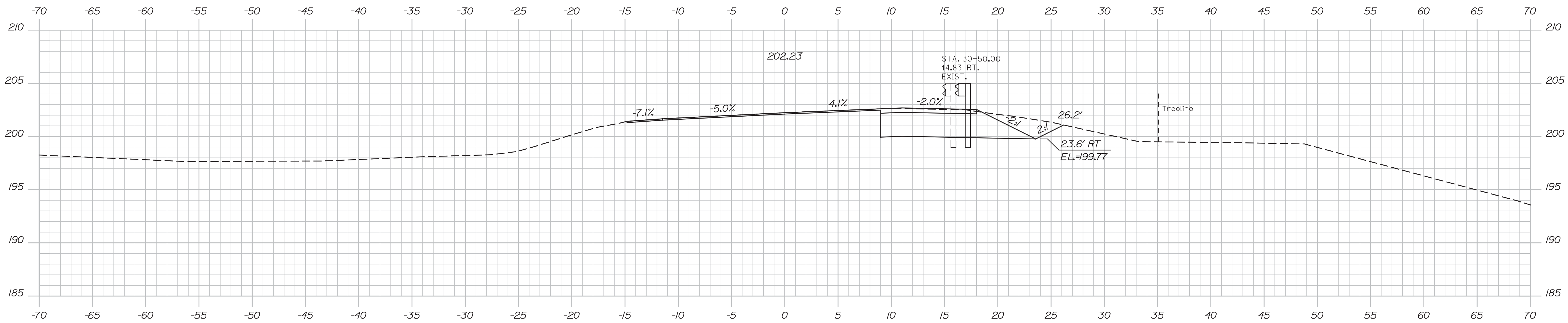
Username: skeller

Division: HIGHWAY

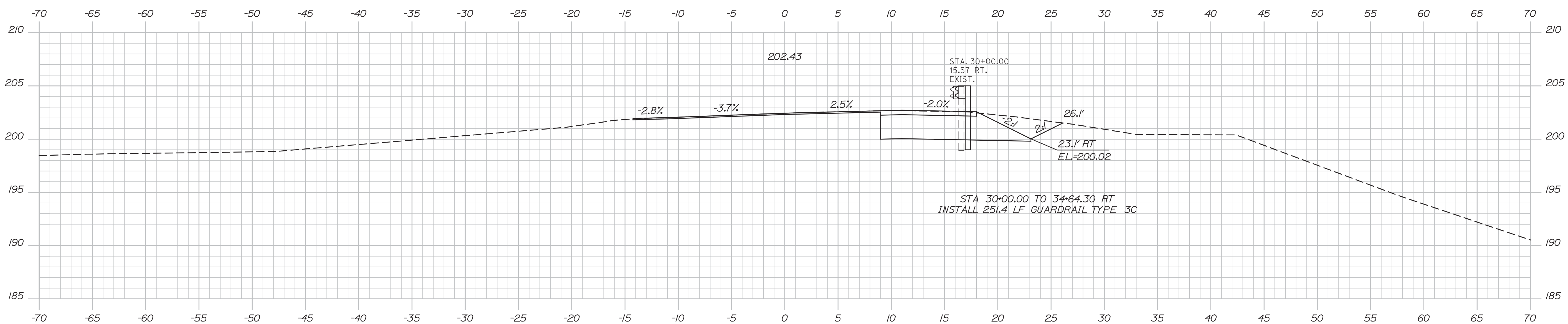
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31+00.00



30+50.00



30+00.00

BEGIN PROJECT BH-1823(700)X
BEGIN MILL AND OVERLAY
LIMIT OF WORK



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	C. TAYLOR
DESIGN-DETAILED	JRH
CHECKED-REVIEWER	JRH
DESIGN-DETAILED2	
DESIGN-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	
DATE	3/72
BY	DWB
DATE	3/72
SIGNATURE	
P.E. NUMBER	
DATE	

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
CROSS SECTIONS

SHEET NUMBER

12

OF 31

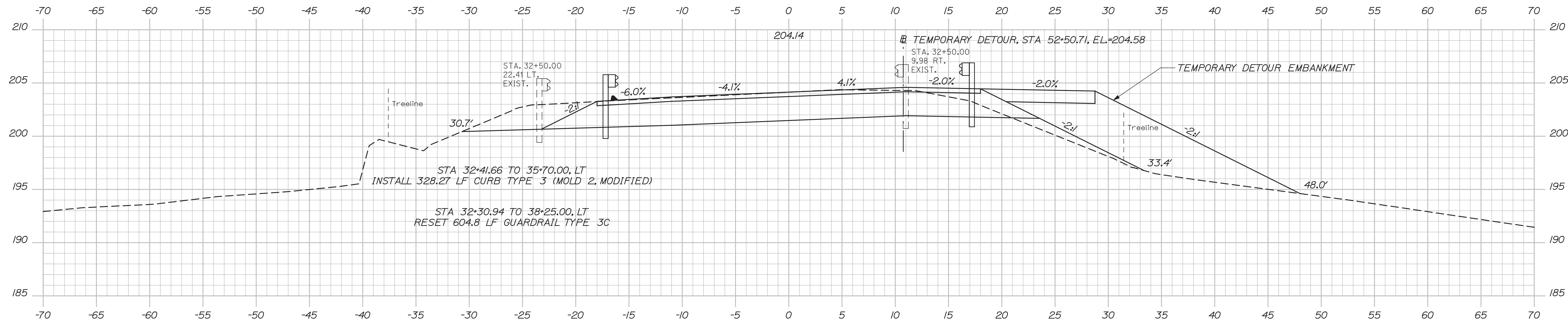
Sta. 30+00.00 to Sta. 31+00.00

Date: 5/9/2012

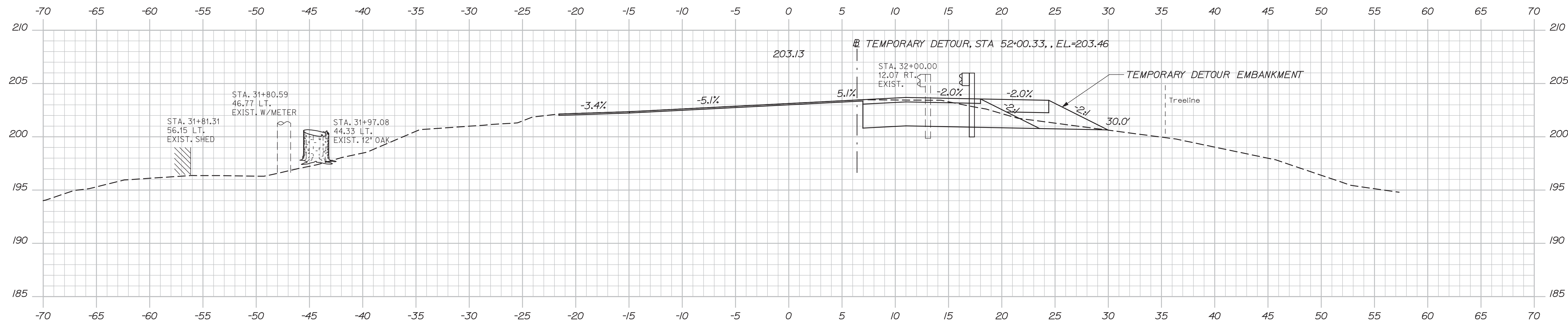
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Division: HIGHWAY

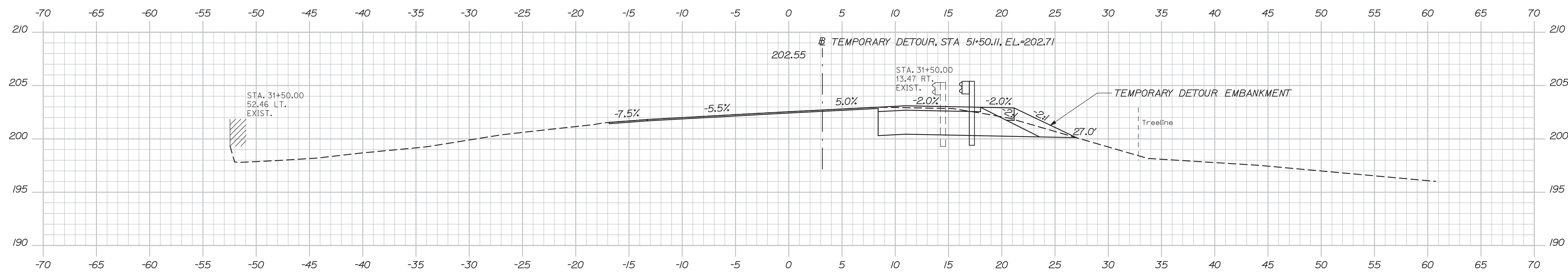
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32+50.00
 END MILL AND OVERLAY
 BEGIN FULL DEPTH CONSTRUCTION



32+00.00



31+50.00

TYLIN INTERNATIONAL

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 BH-1823(700)X
 WIN
 BRIDGE NO. 3867
 BRIDGE PLANS

PROJ. MANAGER	C. TAYLOR
DESIGN-DETAILED	JRH
CHECKED-REVIEWED	DWB
DESIGN2-DETAILED2	JRH
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	
DATE	3/72
SIGNATURE	
P.E. NUMBER	
DATE	

STATE ROUTE 16 OVER RECREATIONAL TRAIL LAGRANGE	PENOBSCOT COUNTY
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CROSS SECTIONS

SHEET NUMBER

13

OF 31

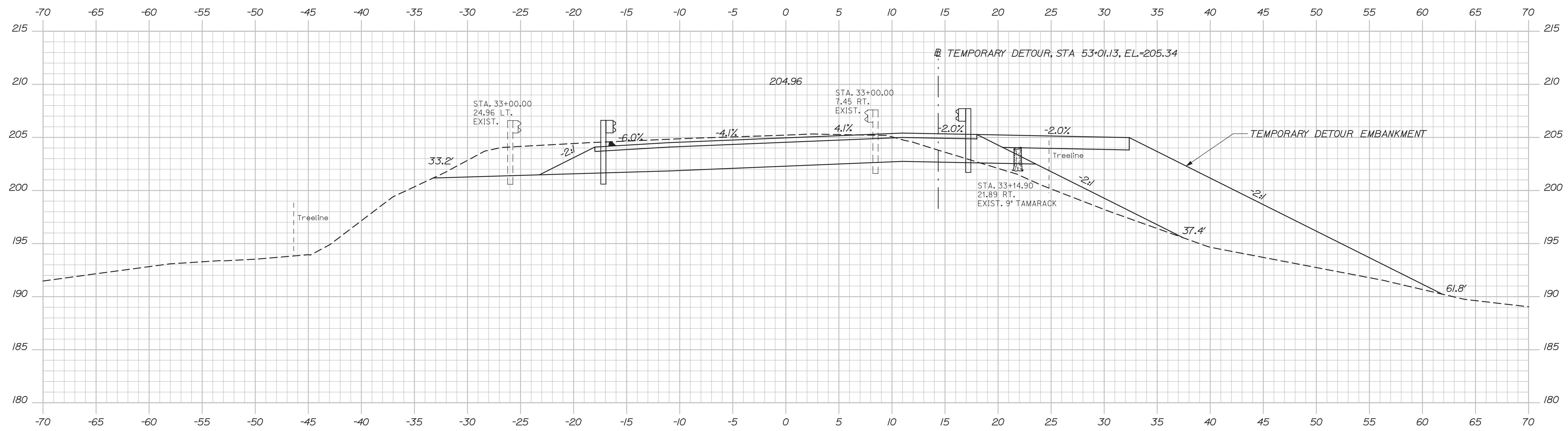
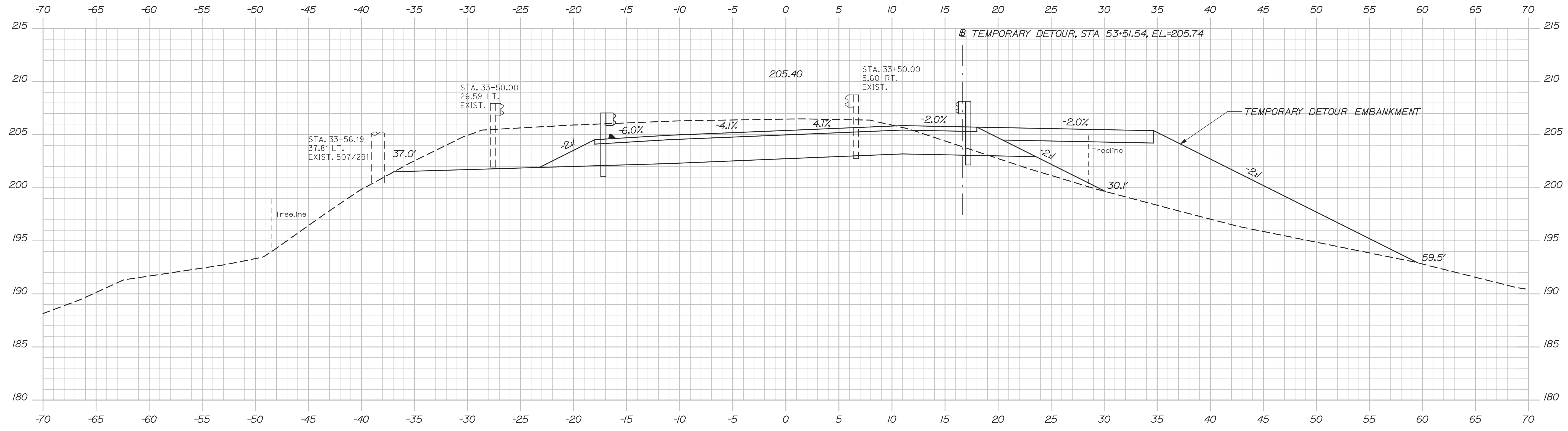
Sta. 31+50.00 to Sta. 32+50.00

Date: 5/9/2012

Username: skeller

Division: HIGHWAY

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER
DESIGN-DETAILED
CHECKED-REVIEWER
DESIGN2-DETAILED2
DESIGN3-DETAILED3
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

DATE
3/7/2
3/7/2

BY
DWB
DWB

C. TAYLOR
JRH
JRH

SIGNATURE
P.E. NUMBER
DATE

STATE ROUTE 16
OVER RECREATIONAL TRAIL
LAGRANGE
PENOBSCOT COUNTY

CROSS SECTIONS

SHEET NUMBER

14

OF 31

TYLIN INTERNATIONAL

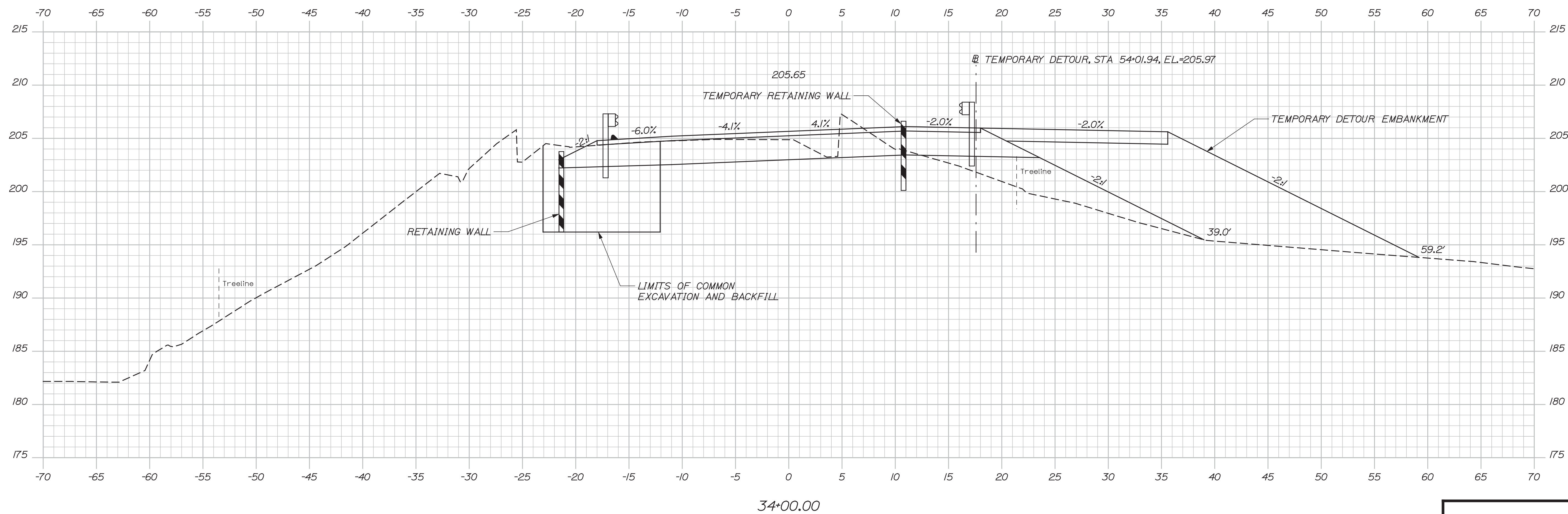
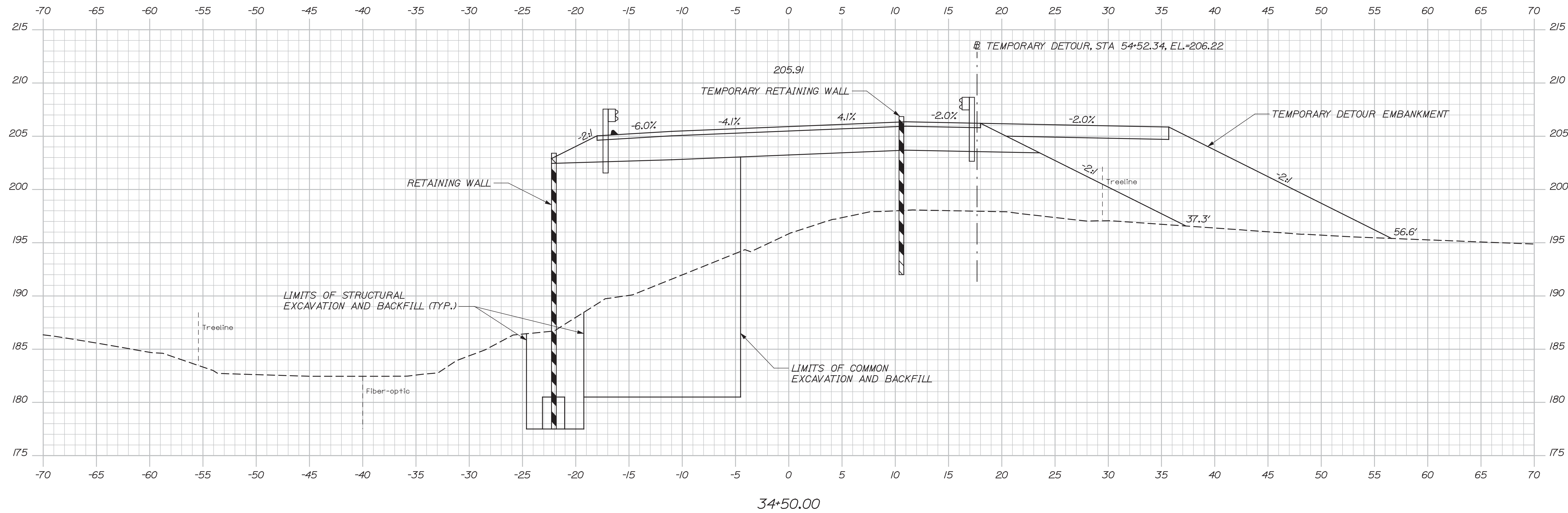
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Date: 5/9/2012

Username: skeller

Division: HIGHWAY

Filename: ...\\00\HIGHWAY\MSTA\Xsect.dgn



TYLIN INTERNATIONAL

STATE OF MAINE		STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION	
BH-1823(700)X		BH-1823(700)X	
BRIDGE NO. 3867		BRIDGE NO. 3867	
WIN		WIN	
18237.00		18237.00	
BRIDGE PLANS		BRIDGE PLANS	
DATE	SIGNATURE	P.E. NUMBER	DATE
3/7/12			
BY			
DWB			
DWB			
PROJ. MANAGER	C. TAYLOR		
DESIGN-DETAILED	JRH		
CHECKED-REVIEWED	JRH		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
STATE ROUTE 16			
OVER RECREATIONAL TRAIL			
PENOBSCOT COUNTY			
LAGRANGE			
CROSS SECTIONS			
SHEET NUMBER			
15			
OF 31			

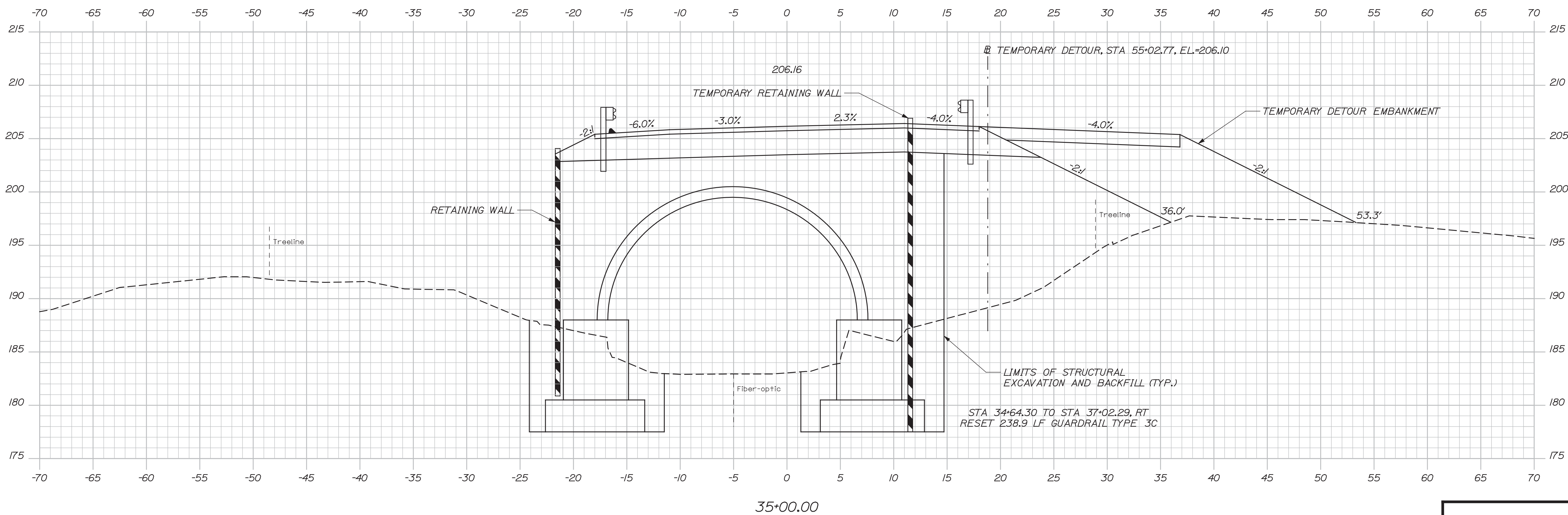
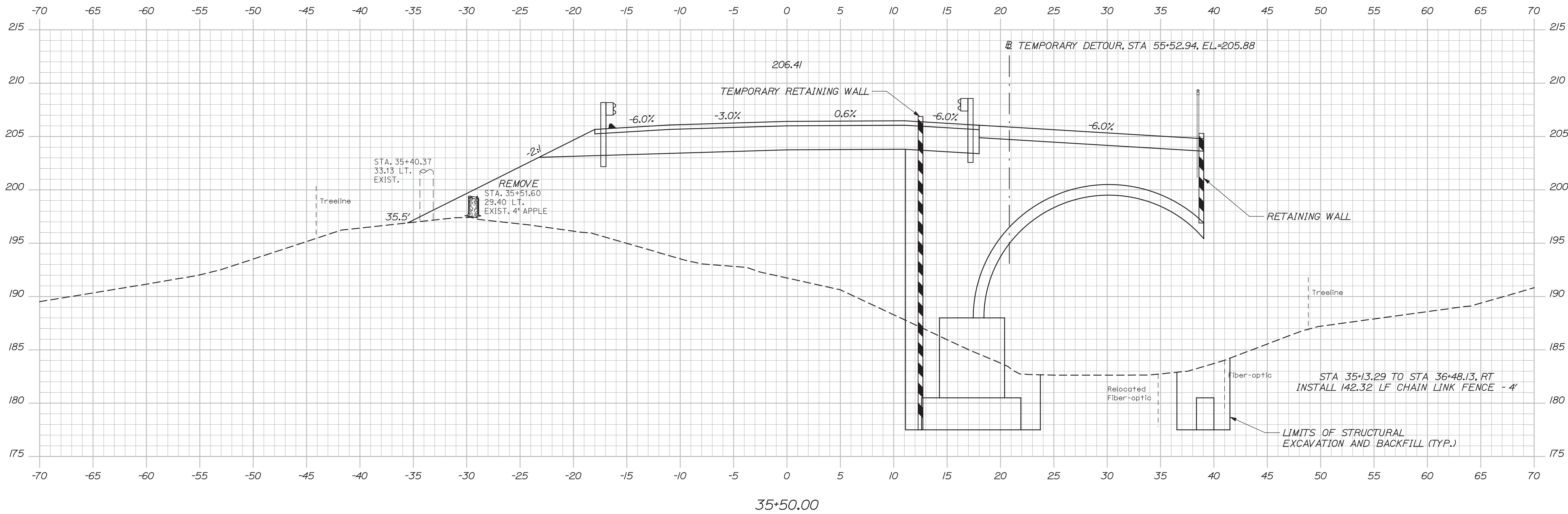
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Date: 5/9/2012

Username: skeller

Division: HIGHWAY

Filename: ...\\00\HIGHWAY\MSTA\Xsect.dgn



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
WIN
BRIDGE NO. 3867
18237.00
BRIDGE PLANS

SIGNATURE
P.E. NUMBER
DATE

DATE	BY	PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWER	DESIGN2-DETAILED2	DESIGN3-DETAILED3	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
3/12	DWB	C. TAYLOR	JRH	JRH							
3/12	DWB										

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
CROSS SECTIONS

SHEET NUMBER
16
OF 31

TYLIN INTERNATIONAL

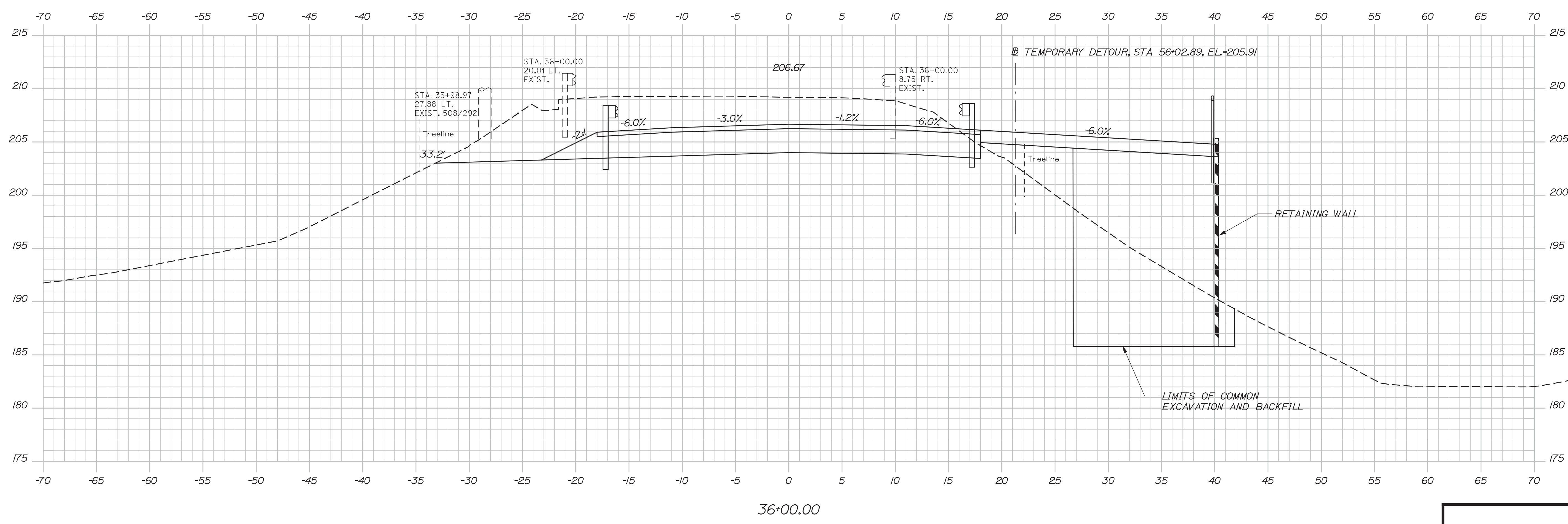
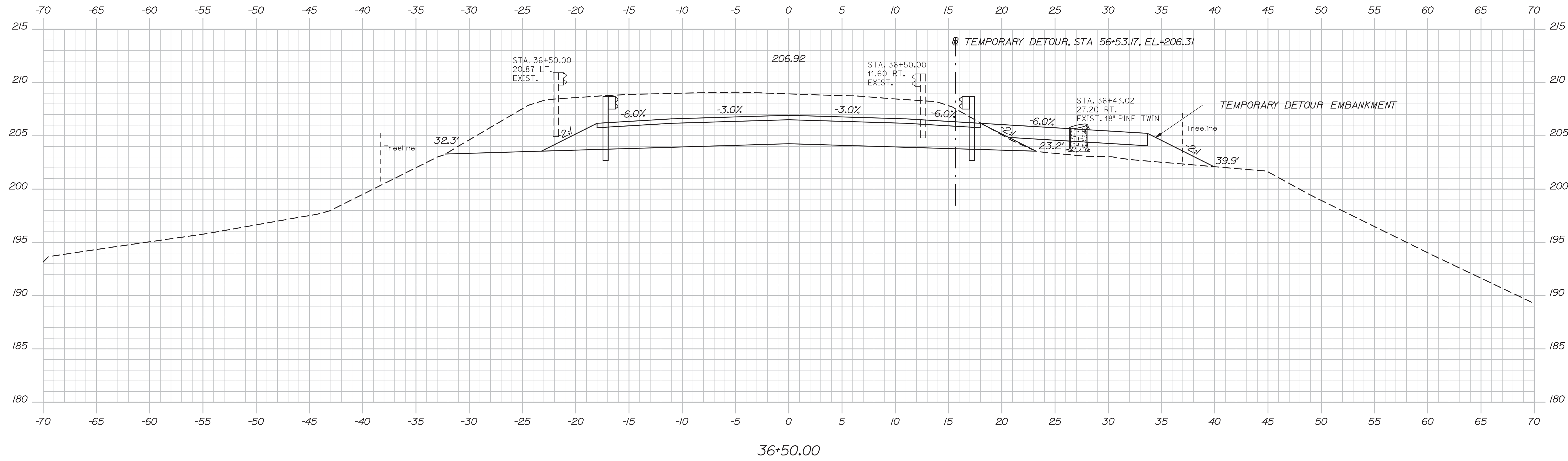
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Date: 5/9/2012

Username: skeller

Division: HIGHWAY

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STATE OF MAINE		STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION		DEPARTMENT OF TRANSPORTATION	
BH-1823(700)X		BH-1823(700)X	
BRIDGE NO. 3867		BRIDGE NO. 3867	
WIN		WIN	
18237.00		18237.00	
BRIDGE PLANS		BRIDGE PLANS	
DATE	3/7/12	SIGNATURE	
BY	DWB	P.E. NUMBER	
PROJ. MANAGER	C. TAYLOR	DATE	
DESIGN-DETAILED	JRH		
CHECKED-REVIEWER	JRH		
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
STATE ROUTE 16		PENOBSCOT COUNTY	
OVER RECREATIONAL TRAIL		LAGRANGE	
CROSS SECTIONS		CROSS SECTIONS	
SHEET NUMBER		SHEET NUMBER	
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OF 31		OF 31	

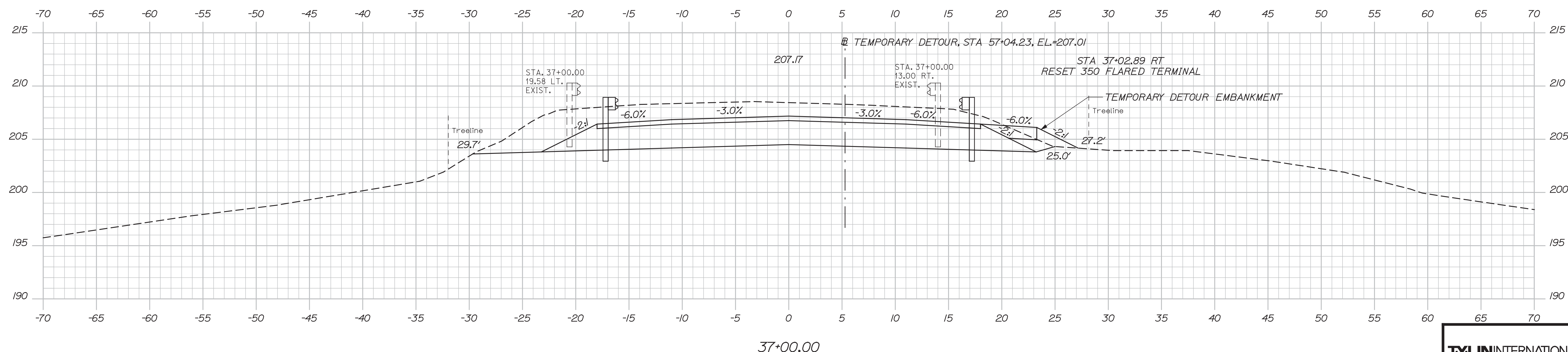
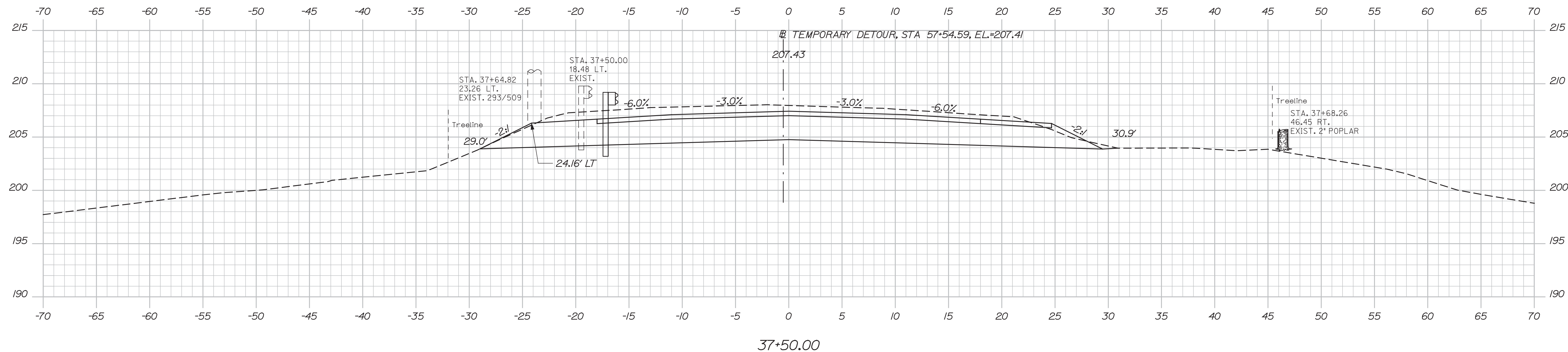
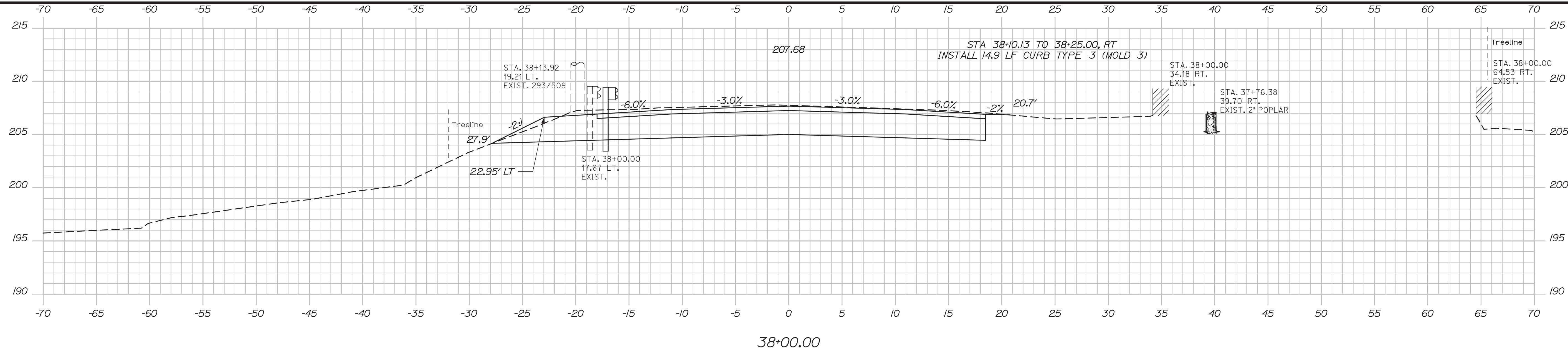
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Date: 5/9/2012

Username: skeller

Division: HIGHWAY

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TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	C. TAYLOR
DESIGN-DETAILED	JRH
CHECKED-REVIEWER	JRH
DESIGN2-DETAILED2	
DESIGN3-DETAILED3	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	
DATE	3/72
BY	DWB
SIGNATURE	
P.E. NUMBER	
DATE	

STATE ROUTE 16 OVER RECREATIONAL TRAIL LAGRANGE PENOBSCOT COUNTY

CROSS SECTIONS

SHEET NUMBER
18
OF 31

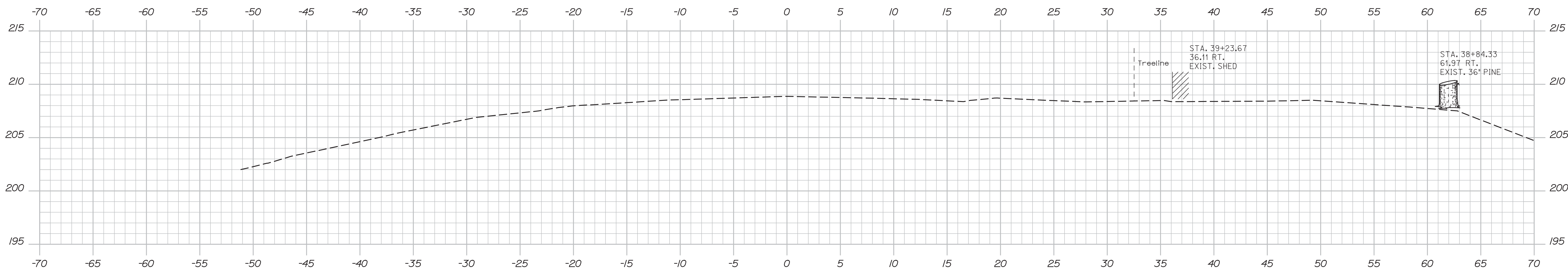
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Date: 5/9/2012

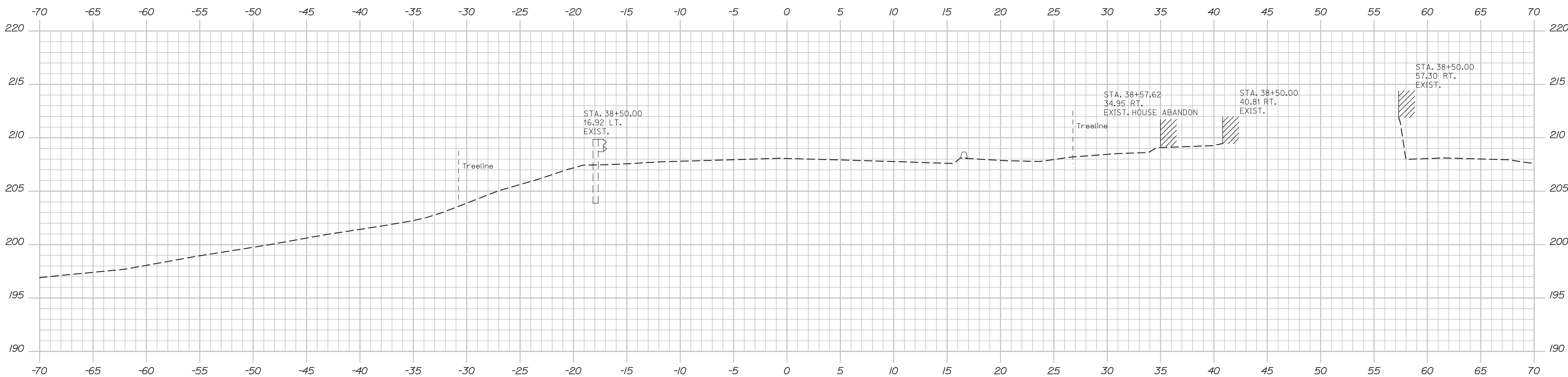
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Division: HIGHWAY

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39+00.00



38+50.00

STA 38+25.00
 END PROJECT BH-1823(700)X
 END FULL DEPTH CONSTRUCTION
 MATCH EXISTING PAVEMENT
 LIMIT OF WORK

TYLIN INTERNATIONAL

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 BH-1823(700)X
 BRIDGE NO. 3867 WIN
 18237.00 BRIDGE PLANS

SIGNATURE
 P.E. NUMBER
 DATE

PROJ. MANAGER	DATE	BY
C. TAYLOR	3/12	DWB
DESIGN-DETAILED	3/12	DWB
CHECKED-REVIEWED		
DESIGN-DETAILED2		
DESIGN-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

STATE ROUTE 16
 OVER RECREATIONAL TRAIL
 PENOBSCOT COUNTY
 LAGRANGE
 CROSS SECTIONS

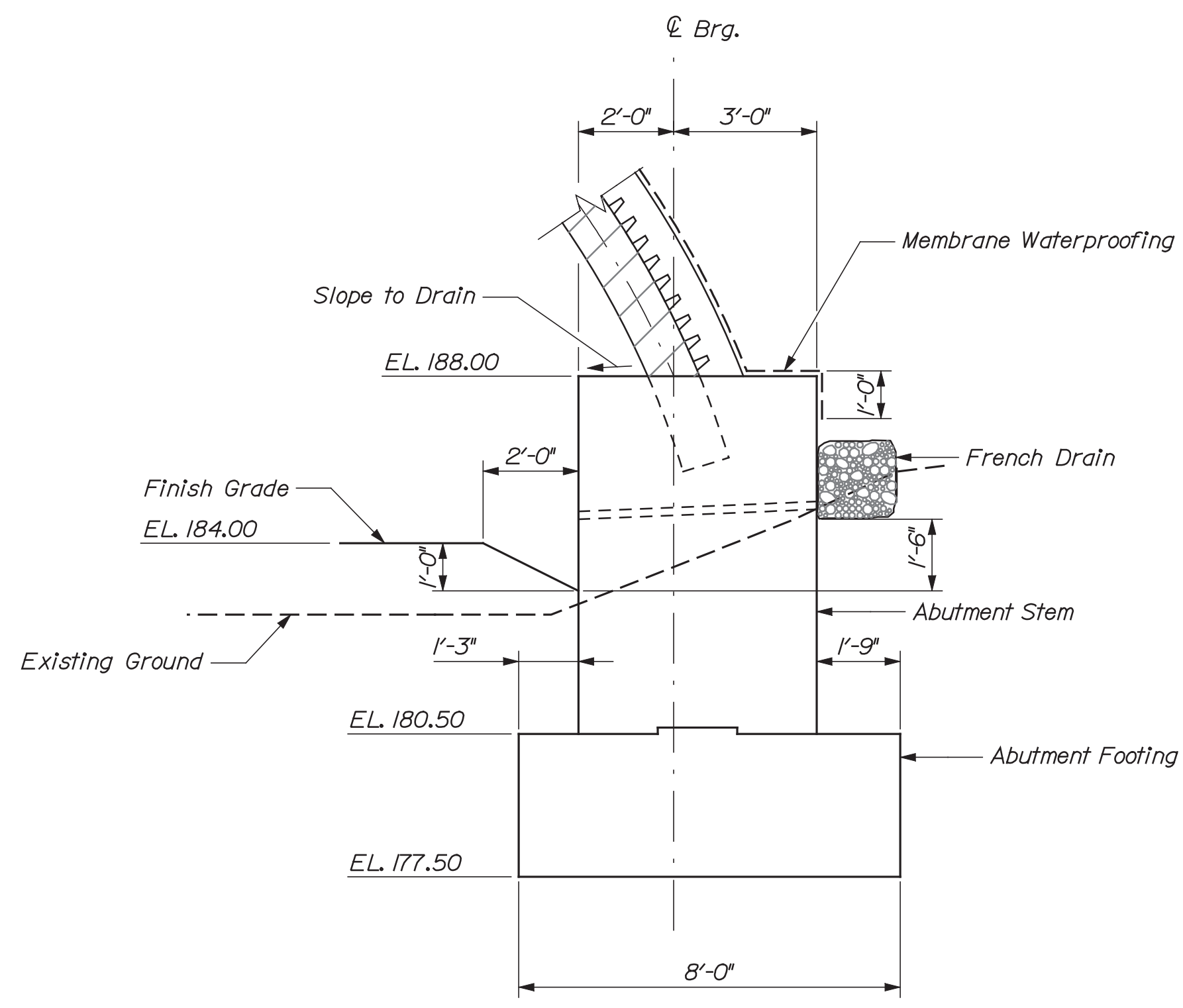
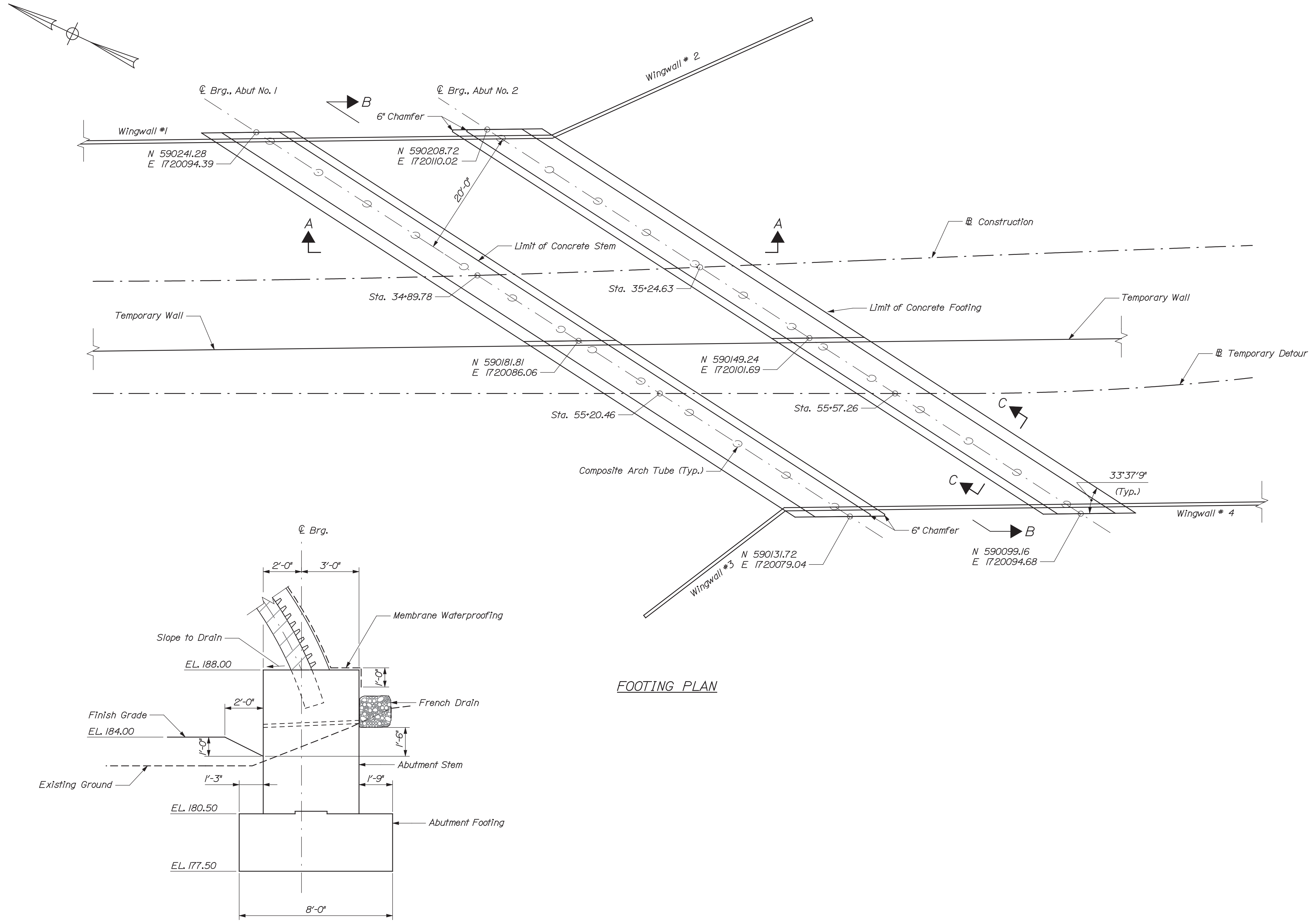
SHEET NUMBER

19

OF 31

Sta. 38+50.00 to Sta. 39+00.00

Filename: ...msta\020_Footing Plan.DGN Division: HIGHWAY Username: skeller Date: 5/9/2012



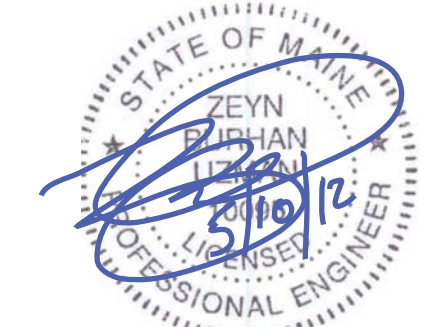
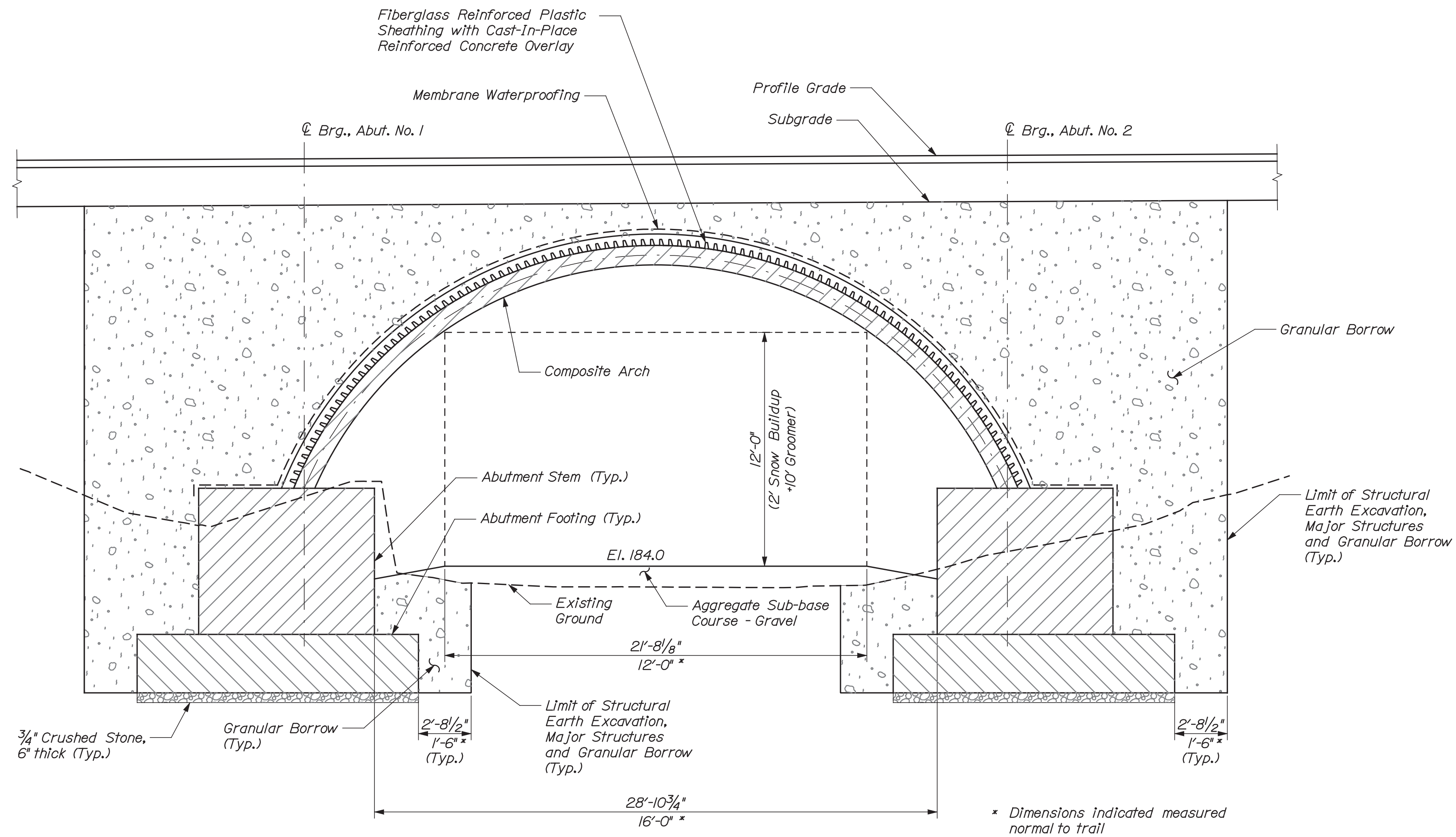
FOOTING PLAN

SECTION C-C



TYLIN INTERNATIONAL

STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1823(700)X		BRIDGE NO. 3867 WIN 18237.00	
STATE ROUTE 16 OVER RECREATIONAL TRAIL PENOBSCOT COUNTY LAGRANGE		FOOTING PLAN	
SHEET NUMBER		20	
OF 31			
PROJ. MANAGER C. TAYLOR	BY S. MORGAN C. TAYLOR	DATE 4/23/11 4/26/11	SIGNATURE
DESIGN-DETAILED S. KELLER	CHECKED-REVIEWED C. TAYLOR		P.E. NUMBER
DESIGN2-DETAILED2			DATE
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867 WIN 18237.00
BRIDGE PLANS

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	S. MORGAN	4/23/12			
DESIGN-DETAILED	I. S. KELLER	4/23/12			
CHECKED-REVIEWED	C. TAYLOR	4/26/12			
DESIGN2-DETAILED2					
DESIGN3-DETAILED3					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
LONGITUDINAL SECTION

SHEET NUMBER

21

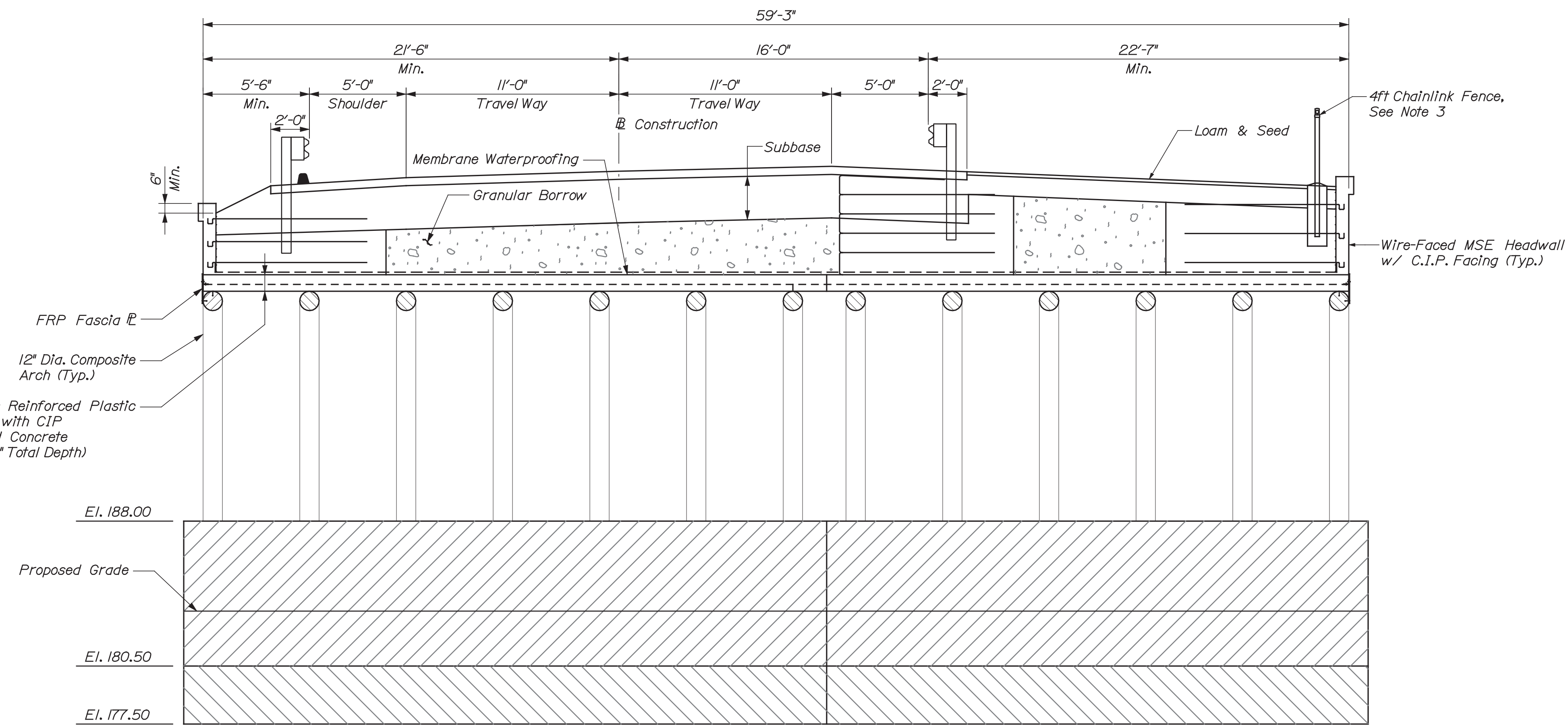
OF 31

Date: 5/9/2012

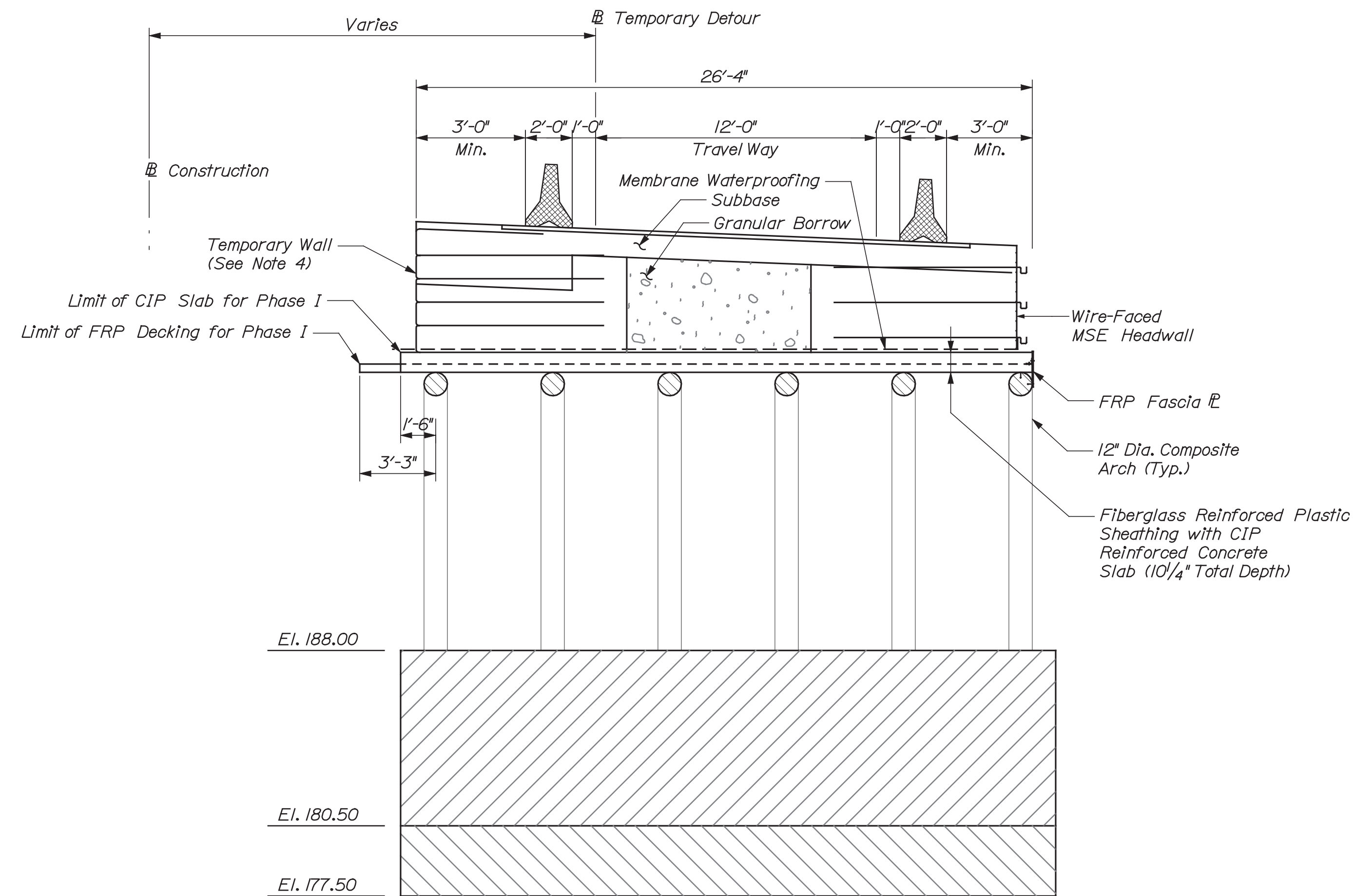
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Division: HIGHWAY

Filename: ...msta\022_Transverse Section.dgn



TRANSVERSE SECTION B-B - FINAL BUILD
(Skewed along Tops of Arches)



TRANSVERSE SECTION B-B - PHASE I
(Skewed along Tops of Arches)

NOTES:

1. For detour roadway elements, see Sheet 5.
2. For final roadway elements, see Sheet 10.
3. At Contractor's option, chainlink fence may be mounted on Wall coping.
4. For Temporary Wall Notes, see Sheet 29.



TYLINTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	S. MORGAN	4/3/12			
DESIGN-DETAILED	S. KELLER	4/7/12			
CHECKED-REVIEWED	C. TAYLOR	4/7/12			
DESIGN2-DETAILED2					
DESIGN3-DETAILED3					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
TRANSVERSE SECTIONS

SHEET NUMBER

22

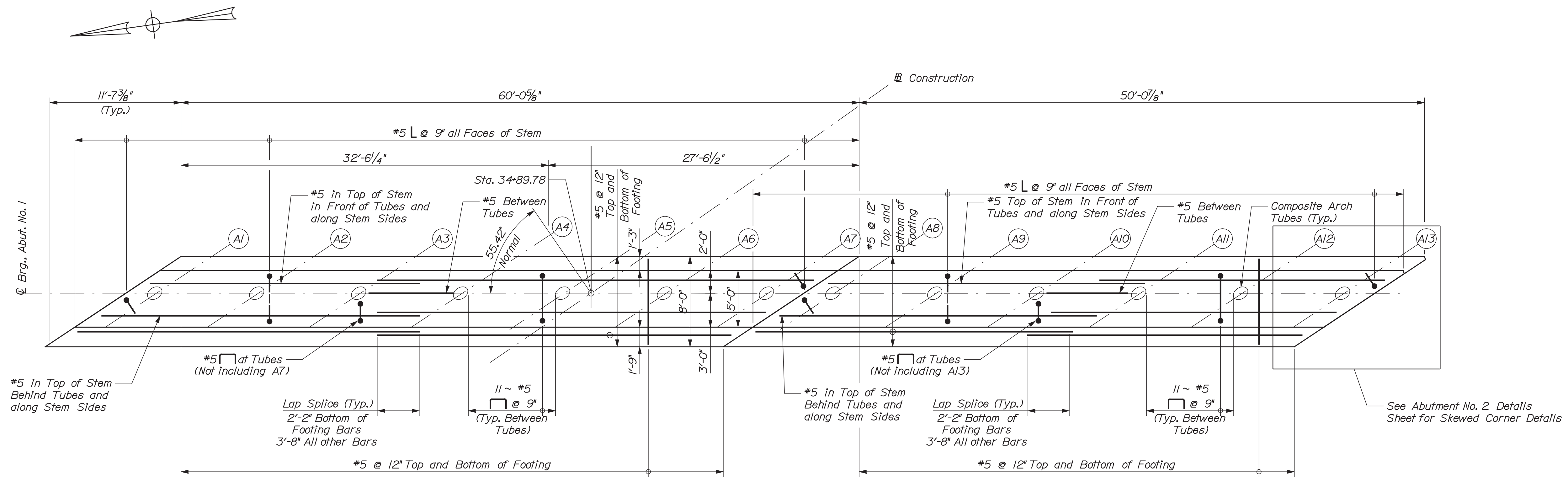
OF 31

Date: 5/9/2012

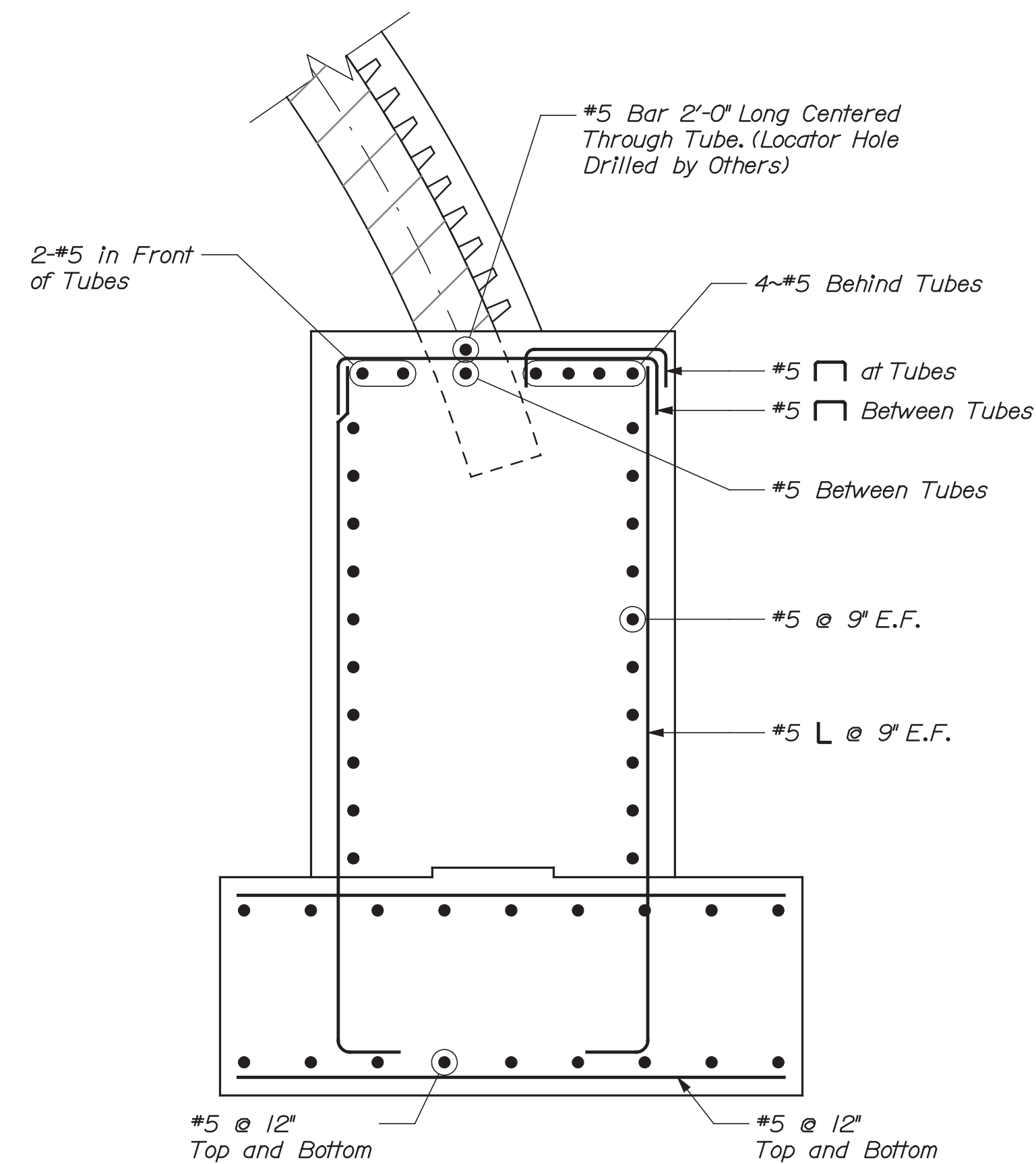
Username: skeller

Division: HIGHWAY

Filename: ...00\bridge\msta\023_Abut 1.dgn



ABUTMENT PLAN



ABUTMENT SECTION

ABUTMENT NOTES:

1. The maximum factored applied footing pressure is 9.21 ksf under the Strength I load combination at Abutments 1 and 2.
2. Reinforcing Steel shall have 3" cover in the Walls and in the Footings unless otherwise noted.
3. Cover Joints in accordance with Standard Detail 502(0) where Waterstops are not required.
4. Structural Earth Excavation, Abutment and Retaining Walls, required more than 12 Inches below the bottom of the structure, will be paid for in accordance with Standard Specification Section 206, Structural Excavation.
5. Concrete Abutments shall be backfilled with Granular Borrow. Pay limits will be the Structural Excavation Limits.
6. Where the limits of Structural Excavation and Granular Backfill for the Abutments overlap with the MSE Walls, the limits of the MSE Wall will supersede the Structural Excavation and Granular Backfill for the Abutment limits.
7. Place 4" diameter Drains in Abutment Stems at 10' maximum spacing. Exact location to be determined by the Resident.
8. Construct French Drains behind the Abutments in accordance with Standard Specification Section 512, French Drains.
9. See Standard Detail 502(0) for concrete joints.



TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	BY	DATE
C. TAYLOR	S. MORGAN	4/23/12
DESIGN-DETAILED	S. KELLER	4/23/12
CHECKED-REVIEWED	C. TAYLOR	4/26/12
DESIGN-DETAILED2		
DESIGN-DETAILED3		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE	P.E. NUMBER	DATE

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
ABUTMENT No. 1 DETAILS

SHEET NUMBER

23

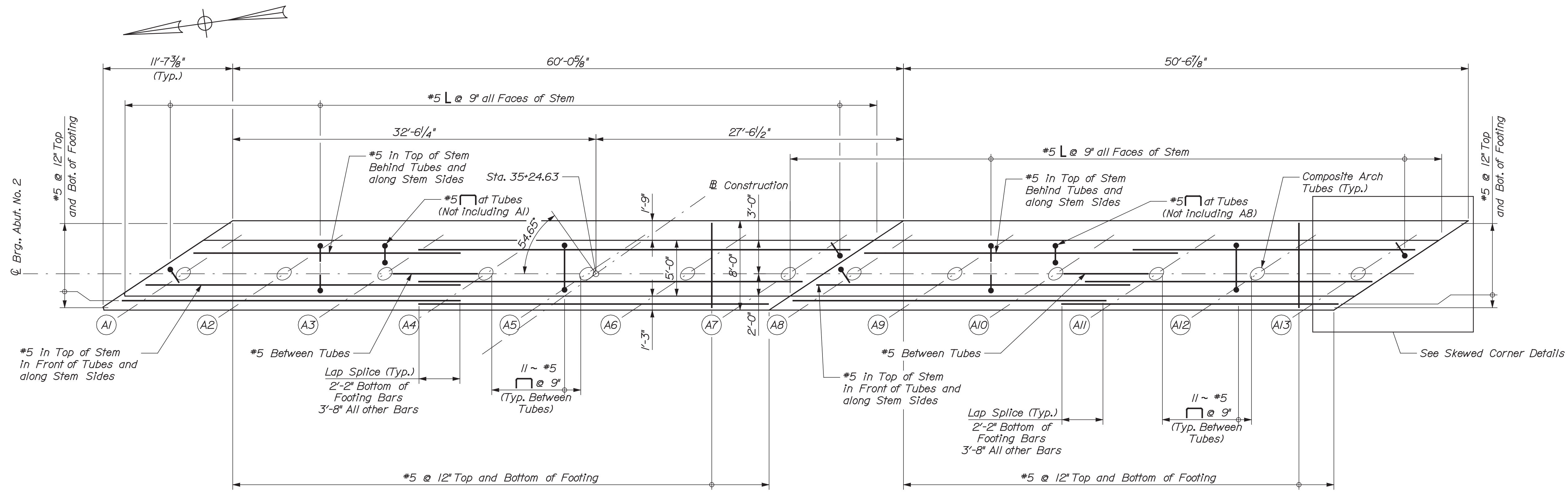
OF 31

Date: 5/9/2012

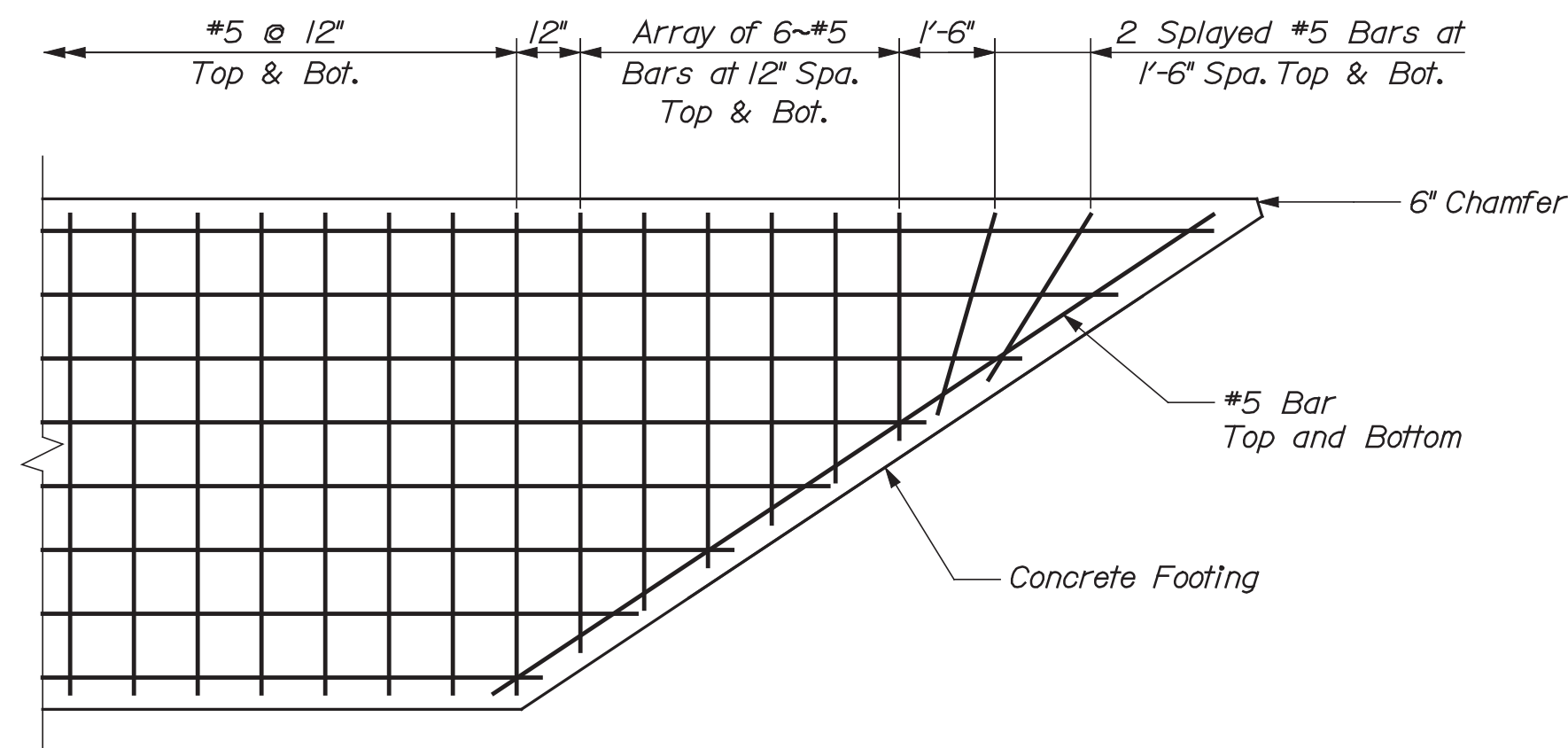
Username: skeller

Division: HIGHWAY

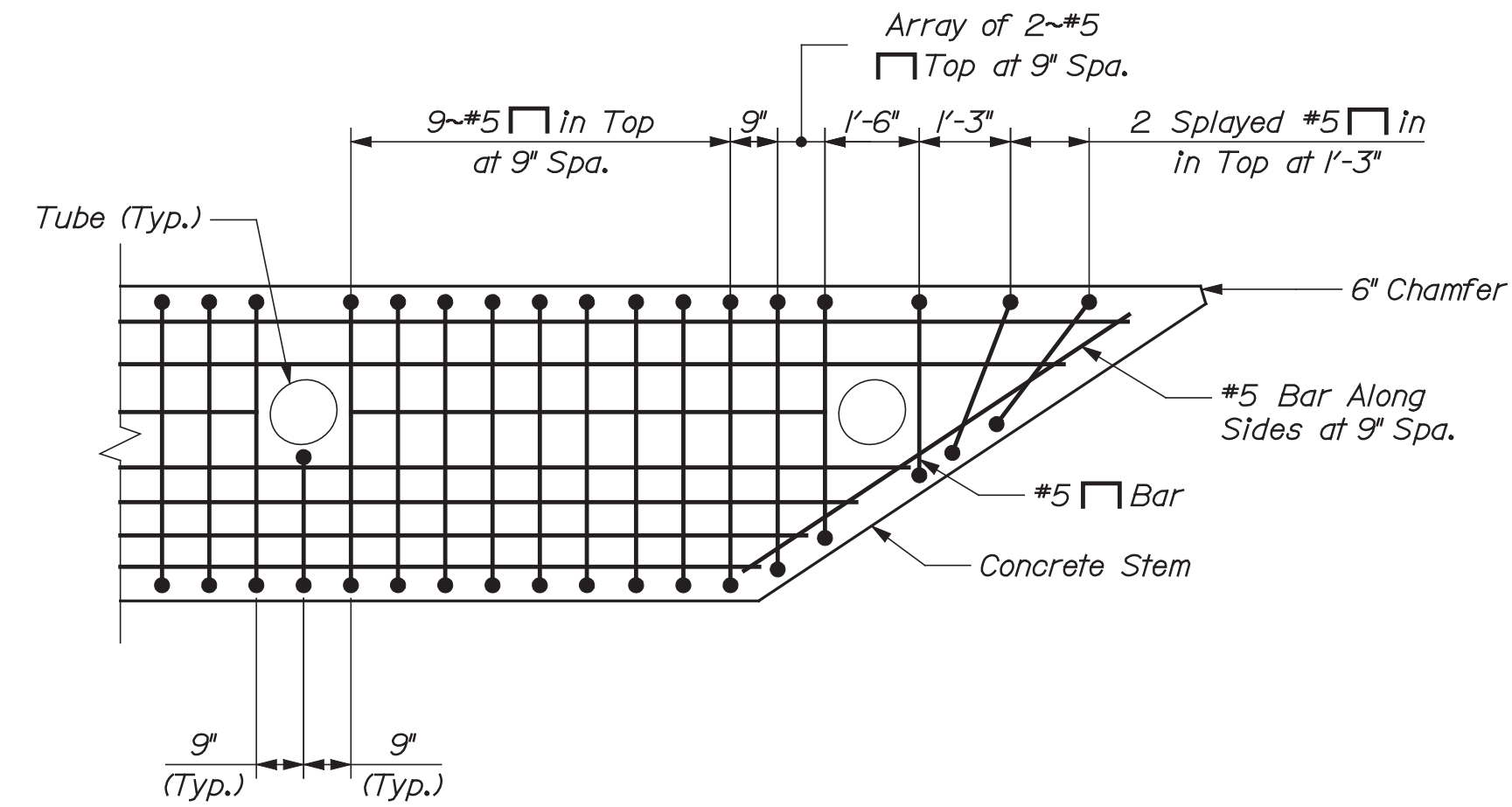
Filename: ...00\bridge\msta\024_Abut 2.dgn



ABUTMENT PLAN



SKEWED CORNER DETAIL - FOOTING
(Abutment 1 Shown, Abutment 2 Similar)



SKEWED CORNER DETAIL - STEM
(Abutment 1 Shown, Abutment 2 Similar)



TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

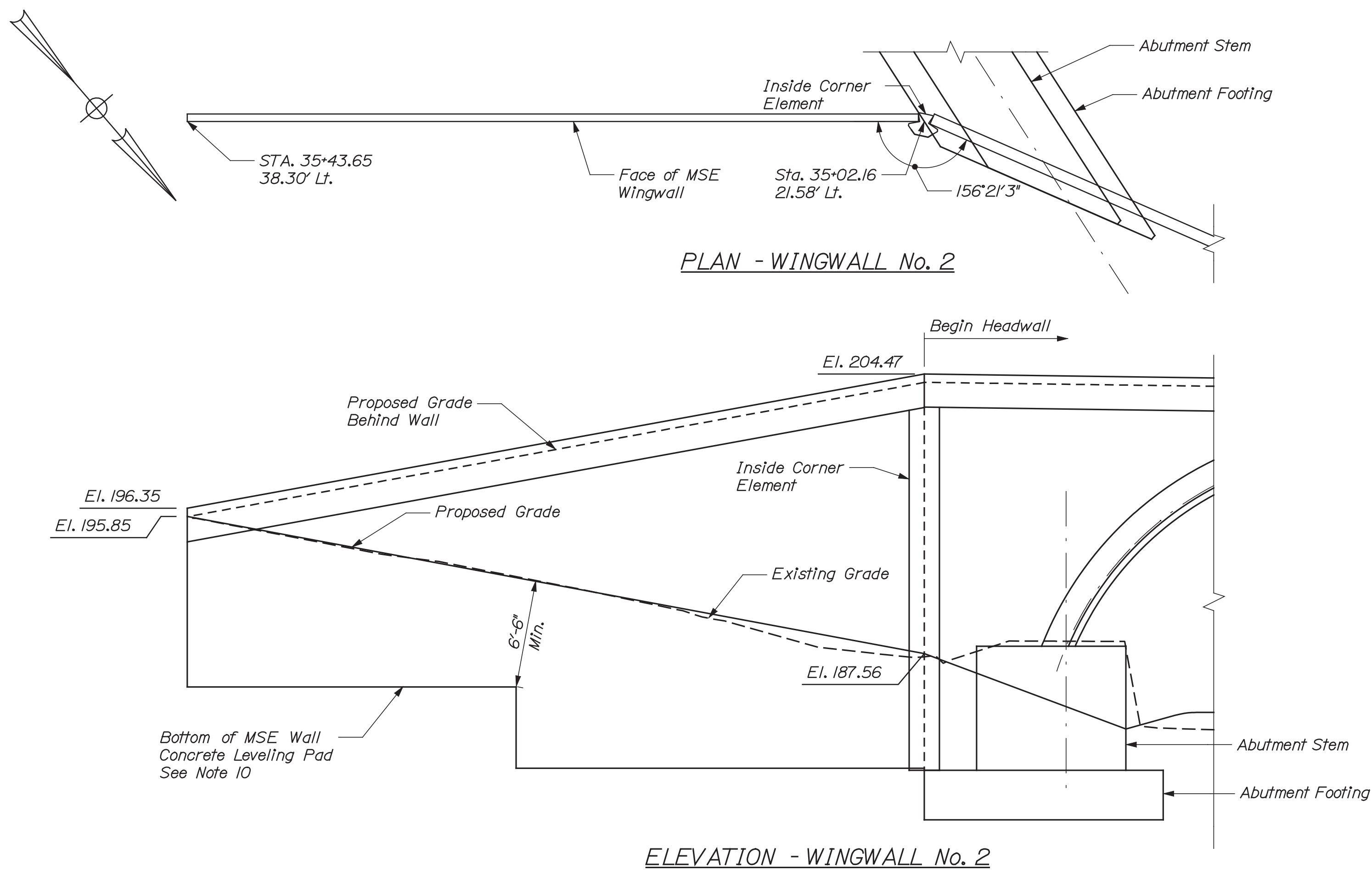
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C. TAYLOR	S. MORGAN	4/23/12			
DESIGN-DETAILED	S. KELLER	4/23/12			
CHECKED-REVIEWED	C. TAYLOR	4/26/12			
DESIGN2-DETAILED2					
DESIGN3-DETAILED3					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
ABUTMENT No. 2 DETAILS

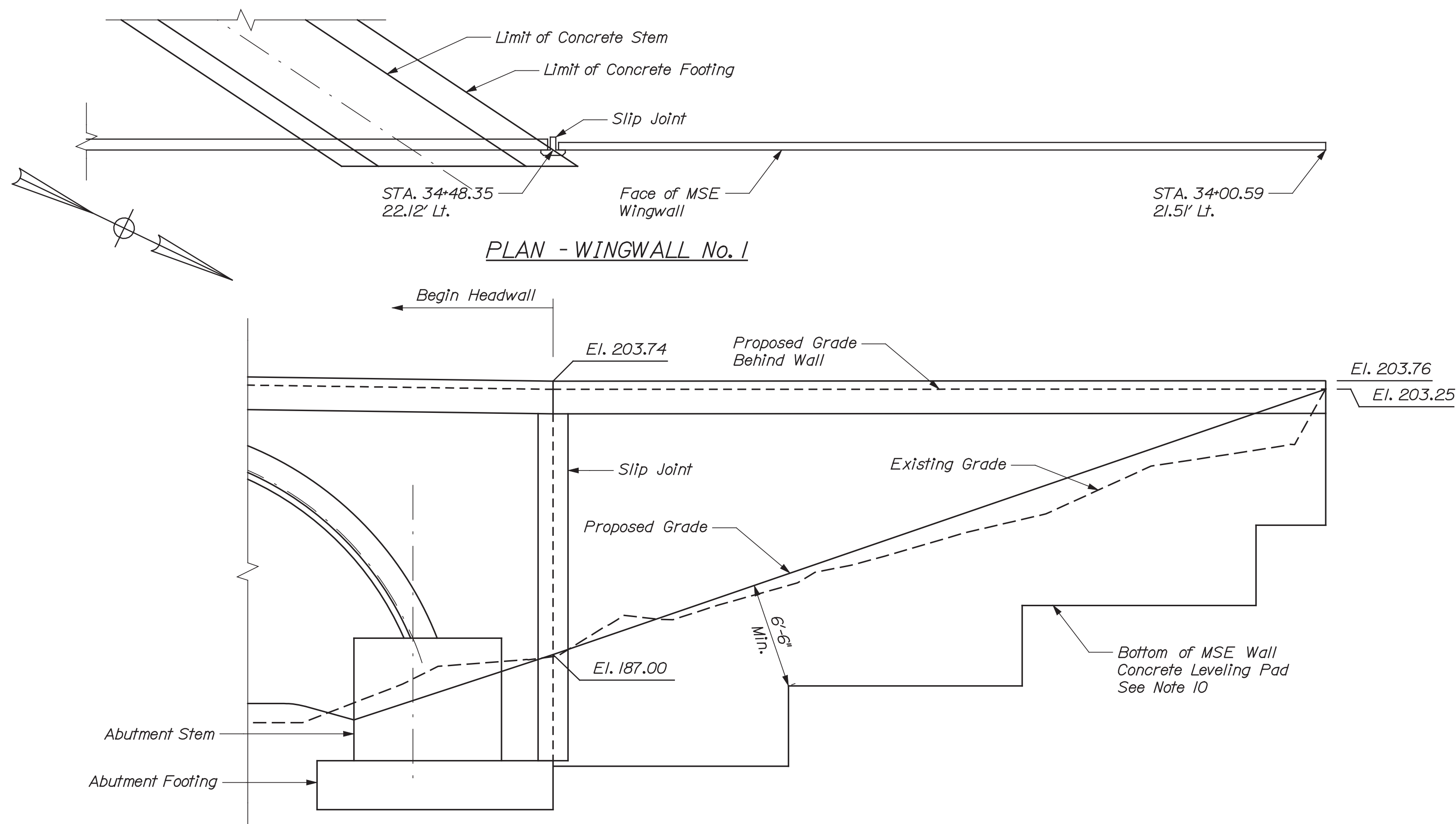
SHEET NUMBER

24

OF 31



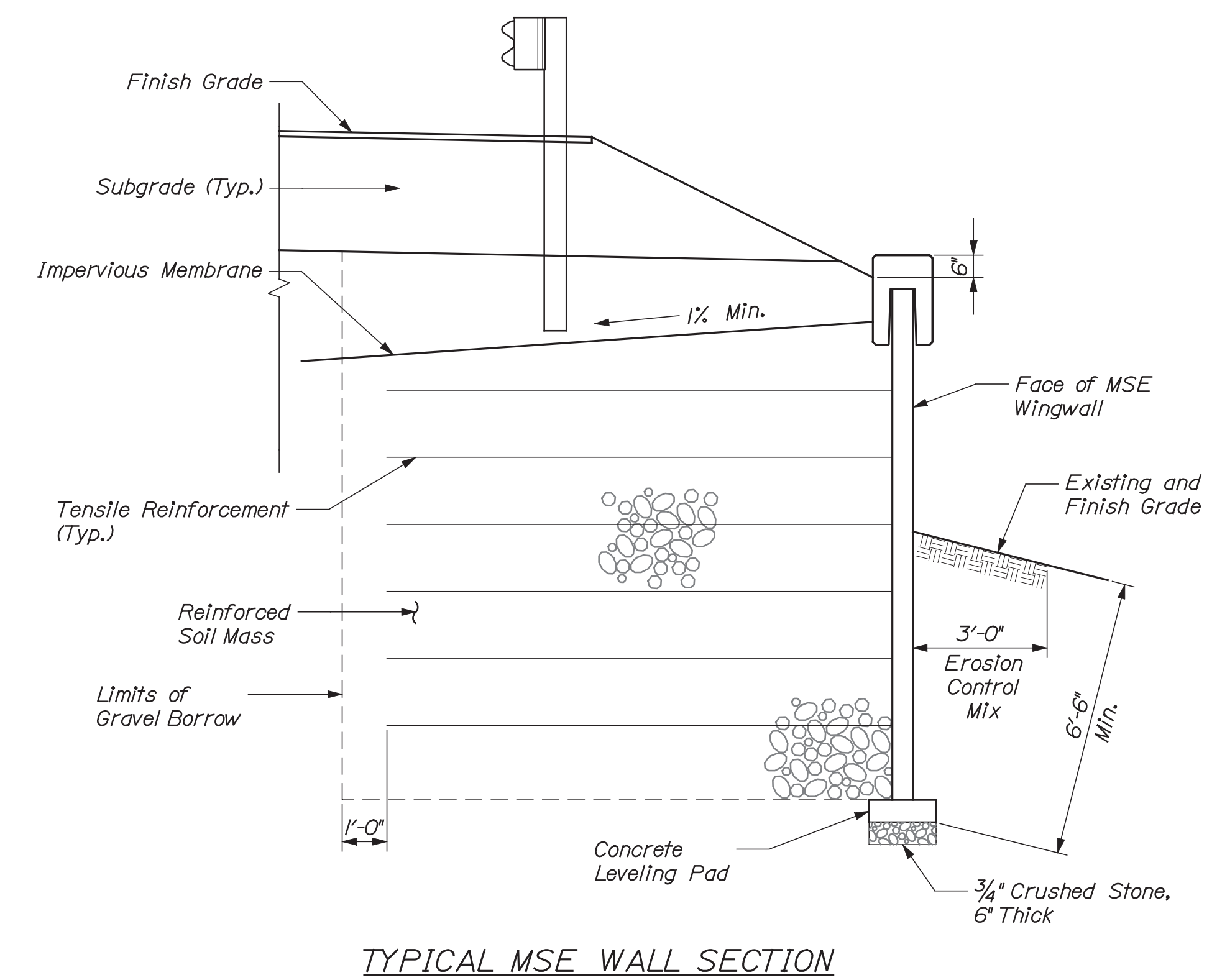
ELEVATION - WINGWALL No. 2



ELEVATION - WINGWALL No. 1

MSE WALL NOTES:

- The Contractor shall provide a Mechanically Stabilized Earth (MSE) retaining wall in accordance with Standard Specification Section 636 modified in accordance with Special Provision 636. The MSE retaining wall shall be designed in accordance with Section 11.10 of the AASHTO LRFD Bridge Design Specifications and the wall manufacturer's recommendations. All design computations and shop drawings shall be stamped by a Professional Engineer registered in the State of Maine and shall be submitted to the Engineer for review. Plan Details are shown for estimating purposes only.
- MSE retaining wall shall be designed to resist traffic barrier loads as specified in AASHTO LRFD Bridge Design Specifications Article 11.10.10.2 "Traffic Loads and Barriers". The design shall consider loading from the guardrail and the specific requirements for "Flexible Post and Beam Barrier" rail system behind the wall including the provisions of Article 11.10.10.4 "Obstructions in the Reinforced Soil Zone".
- The bearing resistance for the reinforced soil volumes and leveling pads on native soils at this site will be evaluated at the Strength Limit State using factored loads and a factored bearing resistance in accordance with the Project Geotechnical Report corresponding to the actual MSE wall base width. A factored bearing resistance of 6 ksf shall be used when analyzing the Service Limit State.
- Topsoil, granular fill, and organic soils shall be removed entirely from the approach embankment area behind the MSE wall and within the reinforced soil zone as directed by the resident. Material removed below the bottom of the MSE wall gravel borrow fill pay limit shall be replaced with granular borrow meeting the requirements of subsection 703.19, material for under water backfill. Excavation required within the pay limits of the MSE retaining walls, including extra excavation due to unsuitable foundation material, shall be paid under Item 203.20 - Common Excavation. Payment for placement of granular borrow below the bottom pay limit of the MSE wall gravel borrow fill shall be incidental to Item 636.40.
- Provide impervious waterproofing membrane over the reinforced zone in accordance with Special Provision 636. Impervious membrane and accessories shall be incidental to pay item 636.40.
- Payment for 3/4" Crushed Stone and Concrete Leveling Pad shall be incidental to Item 636.40, MSE Retaining Wall.
- Place Erosion Control Mix over bench area adjacent to MSE wall fascias as shown. Payment for Erosion Control Mix shall be incidental to Item 636.40.
- Payment for concrete coping shall be incidental to Item 636.40, MSE Retaining Wall.
- MSE wall straps shall be oriented to avoid interference with the guardrail post driving operation.
- Contractor shall select acutal leveling pad step locations, providing a minimum of 6'-6" embedment to the bottom of the leveling pad.



TYPICAL MSE WALL SECTION



TYLIN INTERNATIONAL

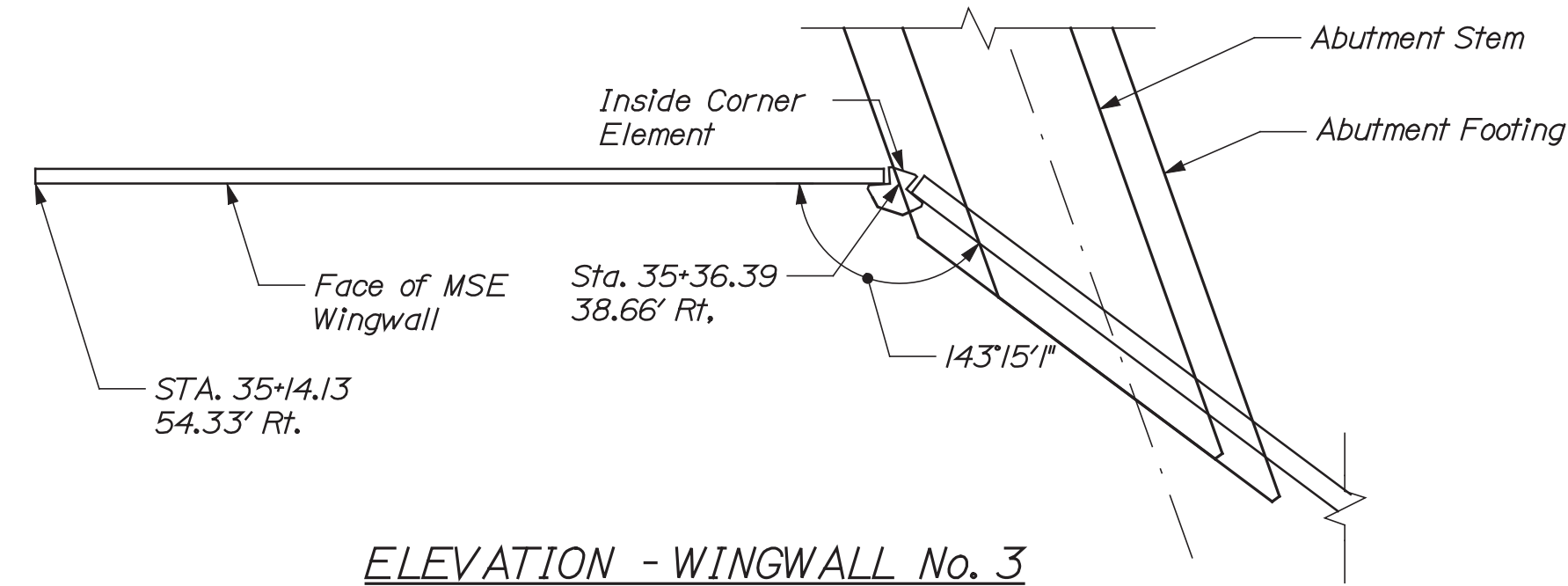
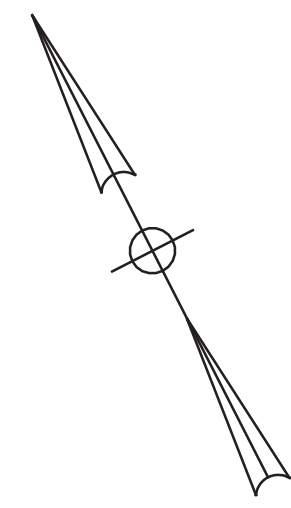
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BH-1823(700)X		BRIDGE NO. 3867		BRIDGE PLANS	
PROJ. MANAGER	C. TAYLOR	DESIGN-DETAILED	S. KELLER	4/23/12	SIGNATURE	P.E. NUMBER	DATE		
CHECKED-REVIEWED	C. TAYLOR	DESIGN2-DETAILED2	C. TAYLOR	4/26/12					
DESIGN3-DETAILED3		REVISIONS 1							
		REVISIONS 2							
		REVISIONS 3							
		REVISIONS 4							
		FIELD CHANGES							
STATE ROUTE 16		OVER RECREATIONAL TRAIL		PENOBSCOT COUNTY		LAGRANGE		WINGWALLS No. 1 & No. 2	
SHEET NUMBER		25		OF 31					

Date: 5/9/2012

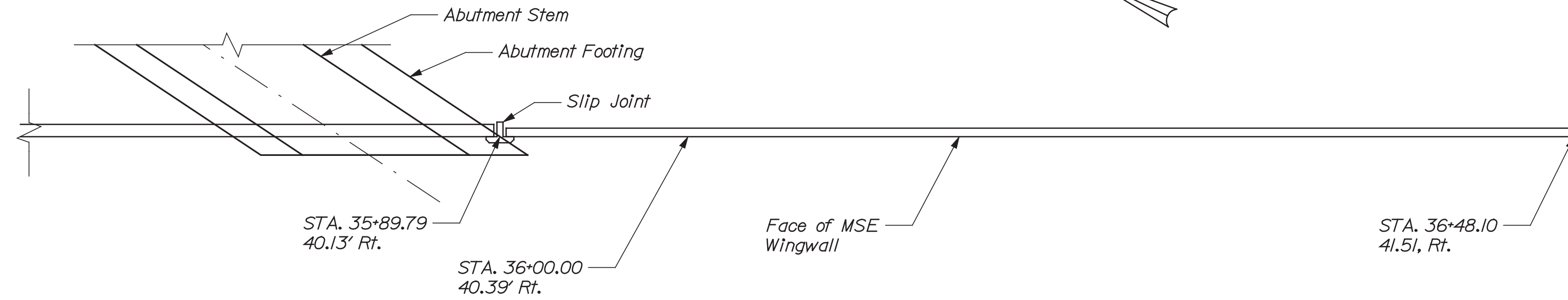
Username: skeller

Division: HIGHWAY

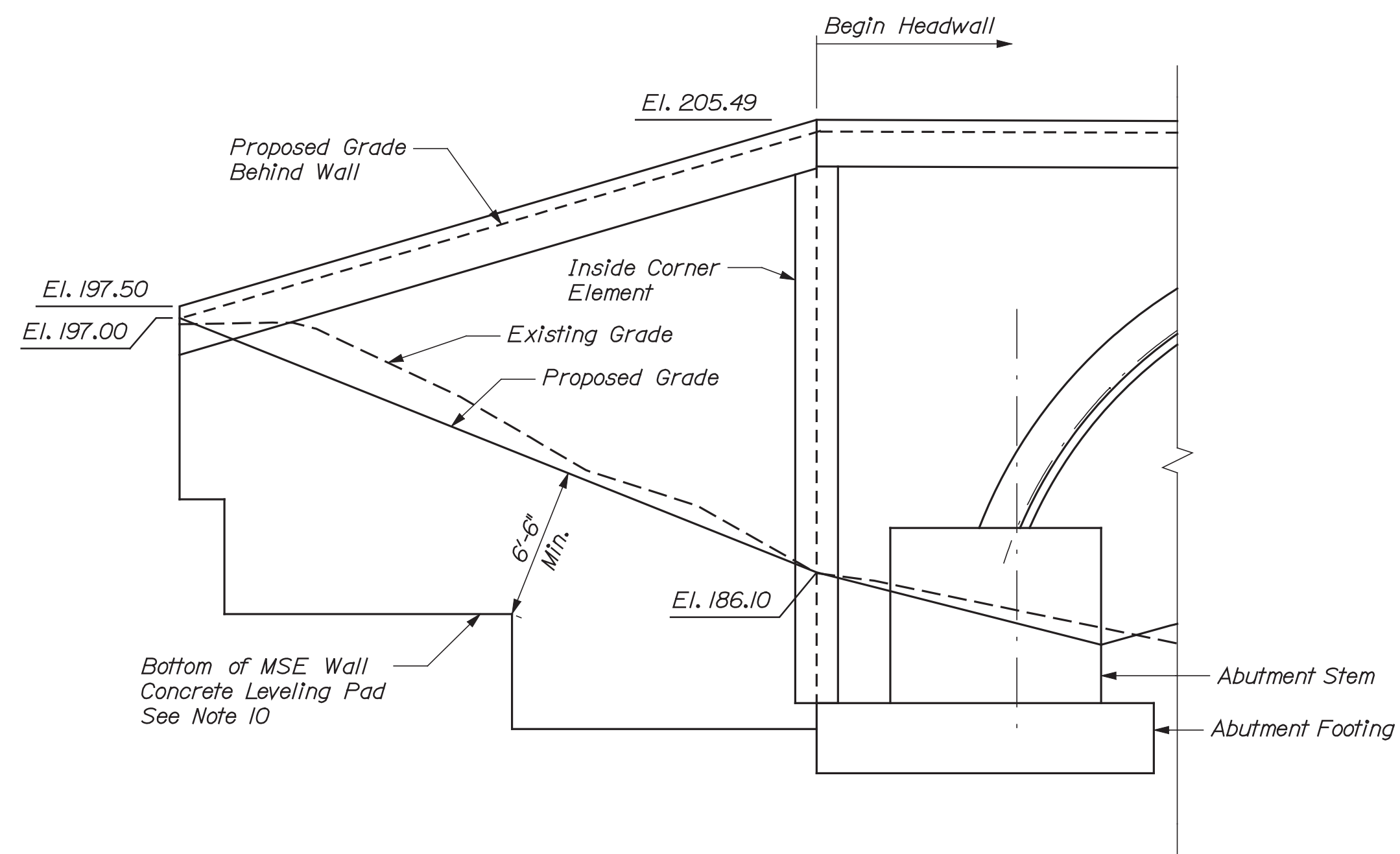
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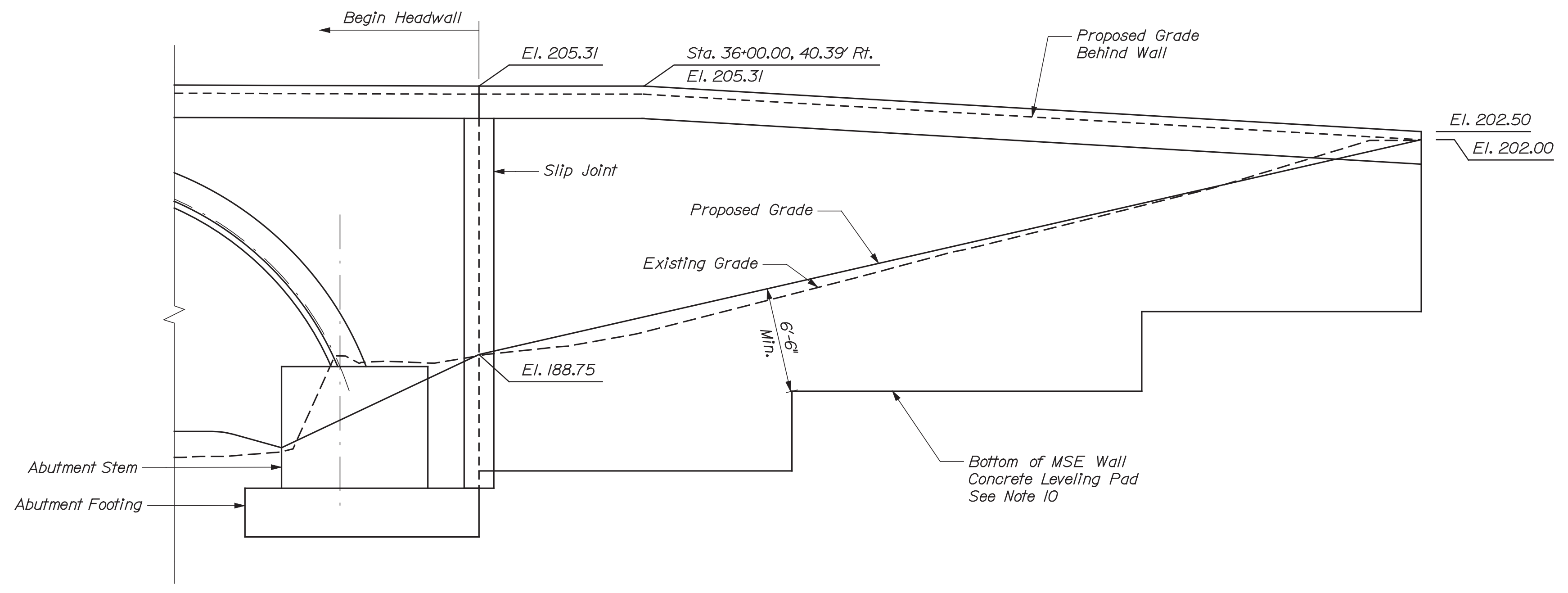
ELEVATION - WINGWALL No. 3



ELEVATION - WINGWALL No. 4



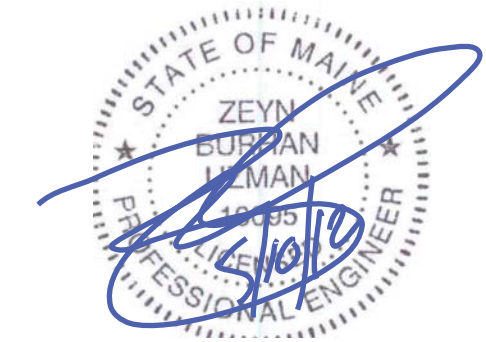
ELEVATION - WINGWALL No. 3



ELEVATION - WINGWALL No. 4

NOTE:

1. See "Wingwalls No. 1 & No. 2" sheet for MSE Wall Notes and Typical MSE Wall Section Drawing.



TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867 WIN 18237.00
BRIDGE PLANS

PROJ. MANAGER	CHECKED	DESIGN	DATE	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	S. KELLER	S. MORGAN	4/23/12			
	C. TAYLOR	C. TAYLOR	4/26/12			

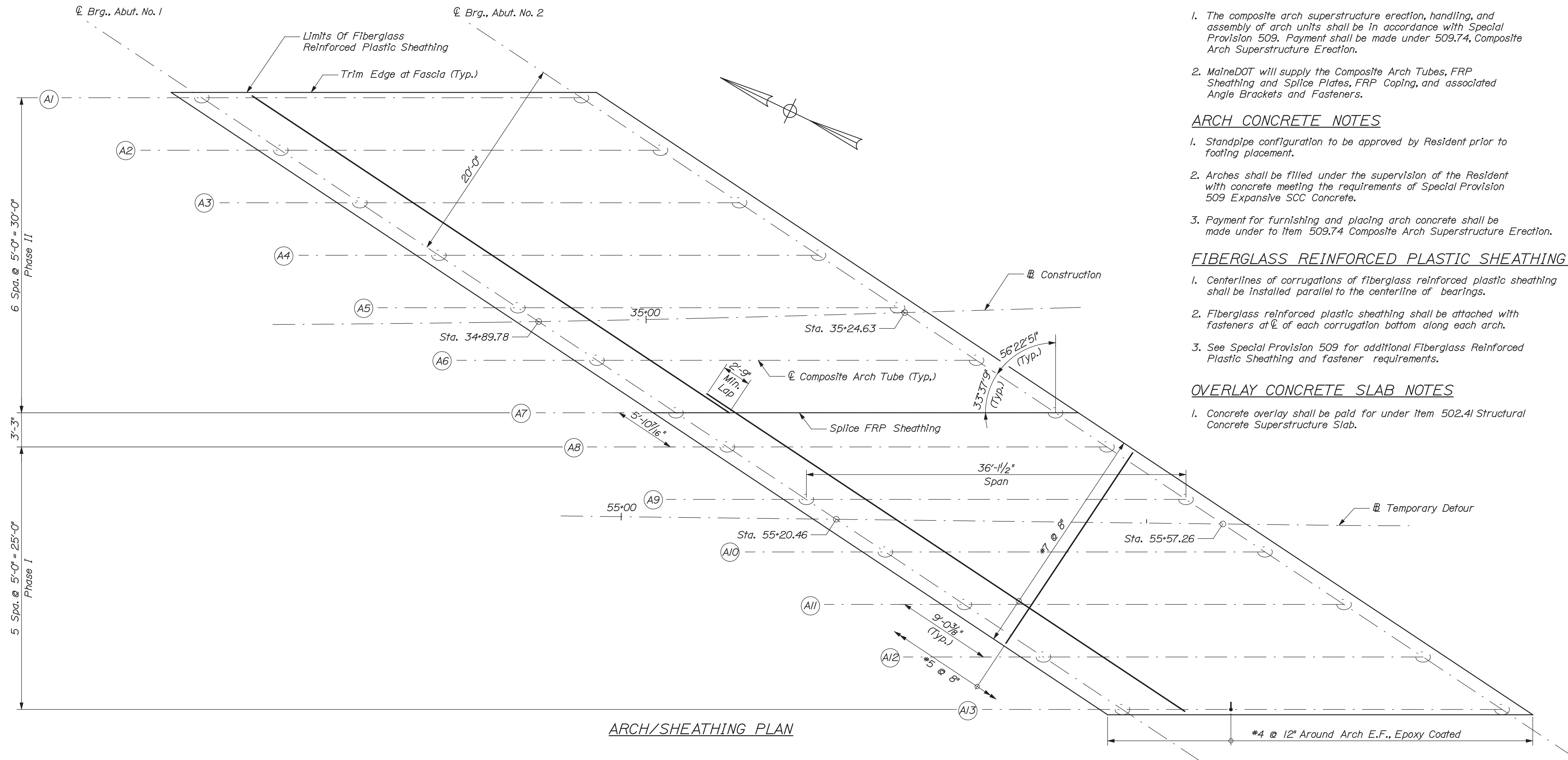
STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
WINGWALLS No. 3 & No. 4

SHEET NUMBER

26

OF 31

Filename: ...00\bridge\msta\027_Arch.dgn Division: HIGHWAY Date: 5/9/2012 Username: skeller



ARCH/SHEATHING PLAN

COMPOSITE ARCH TUBE NOTES

1. The composite arch superstructure erection, handling, and assembly of arch units shall be in accordance with Special Provision 509. Payment shall be made under 509.74, Composite Arch Superstructure Erection.
2. MaineDOT will supply the Composite Arch Tubes, FRP Sheathing and Splice Plates, FRP Coping, and associated Angle Brackets and Fasteners.

ARCH CONCRETE NOTES

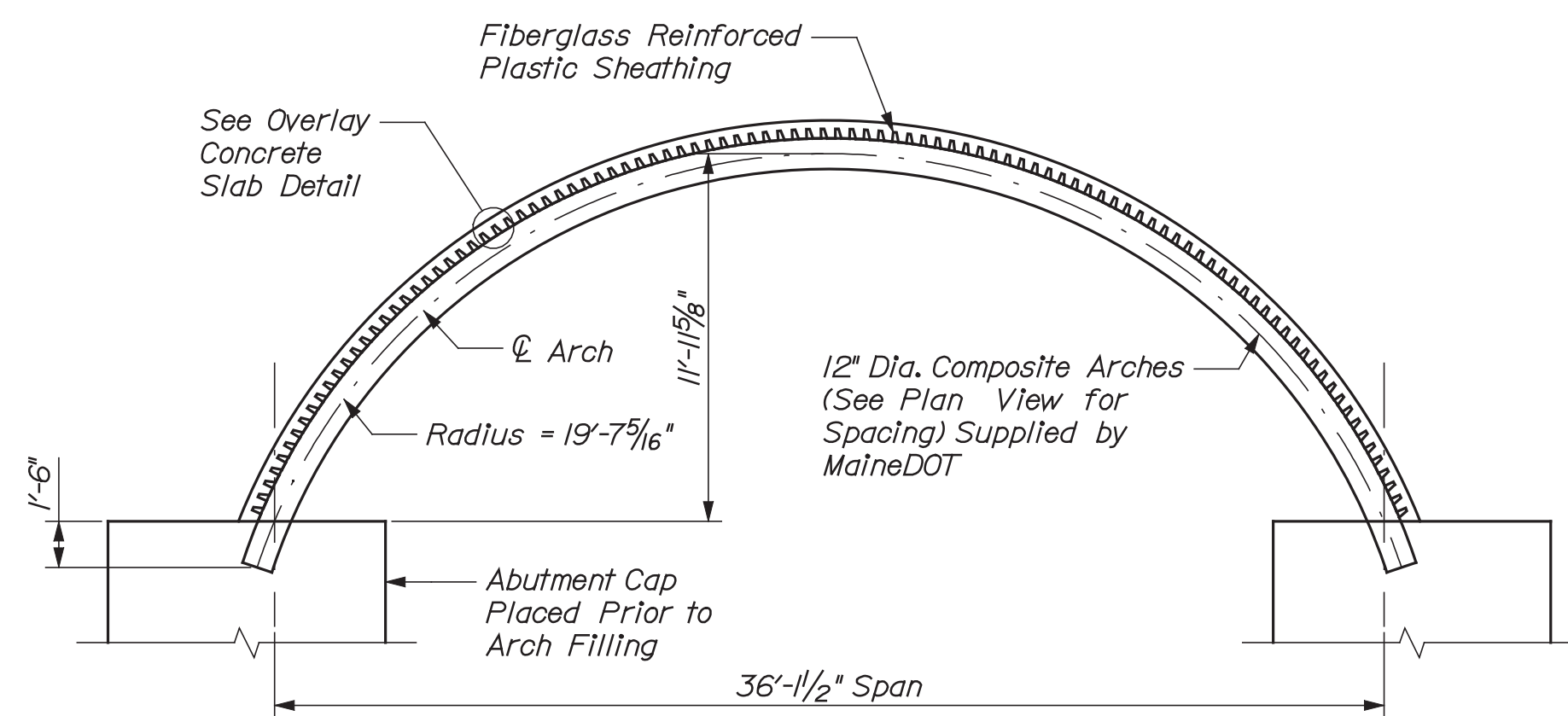
1. Standpipe configuration to be approved by Resident prior to footing placement.
2. Arches shall be filled under the supervision of the Resident with concrete meeting the requirements of Special Provision 509 Expansive SCC Concrete.
3. Payment for furnishing and placing arch concrete shall be made under to item 509.74 Composite Arch Superstructure Erection.

FIBERGLASS REINFORCED PLASTIC SHEATHING NOTES

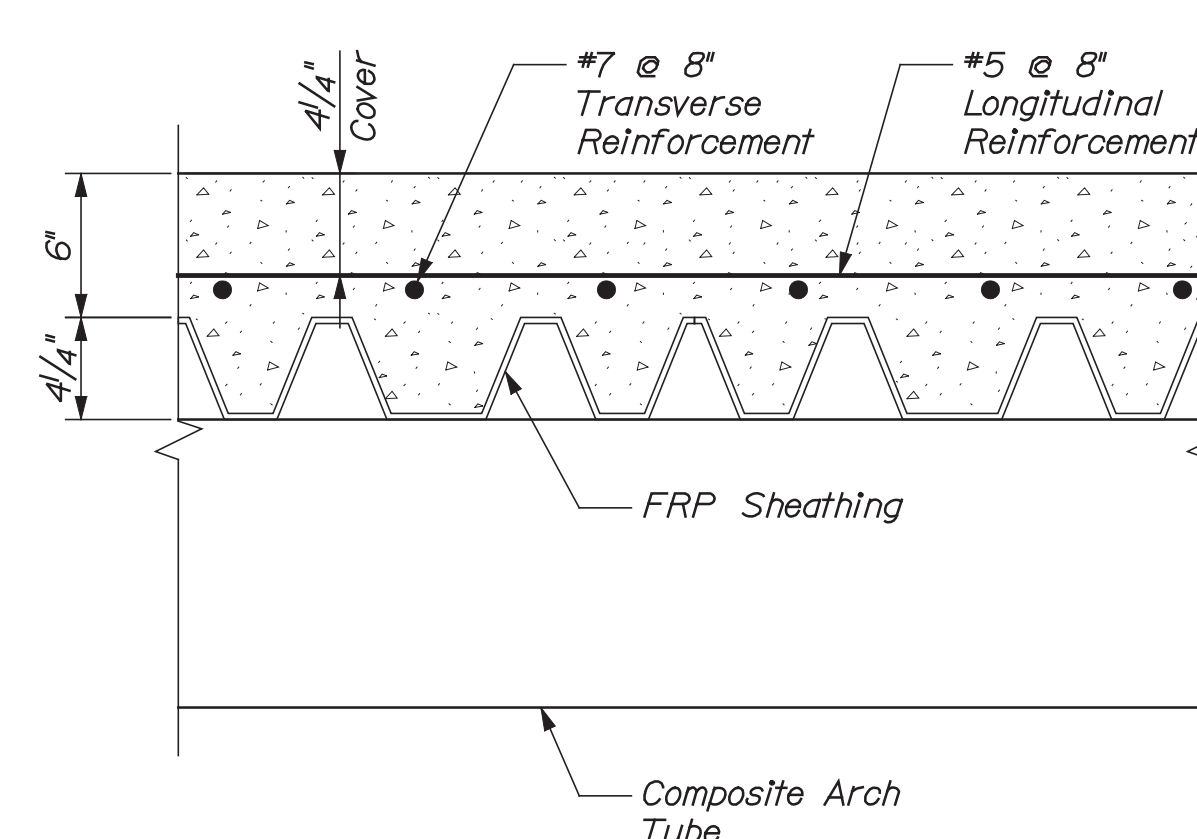
1. Centerlines of corrugations of fiberglass reinforced plastic sheathing shall be installed parallel to the centerline of bearings.
2. Fiberglass reinforced plastic sheathing shall be attached with fasteners at ϕ of each corrugation bottom along each arch.
3. See Special Provision 509 for additional Fiberglass Reinforced Plastic Sheathing and fastener requirements.

OVERLAY CONCRETE SLAB NOTES

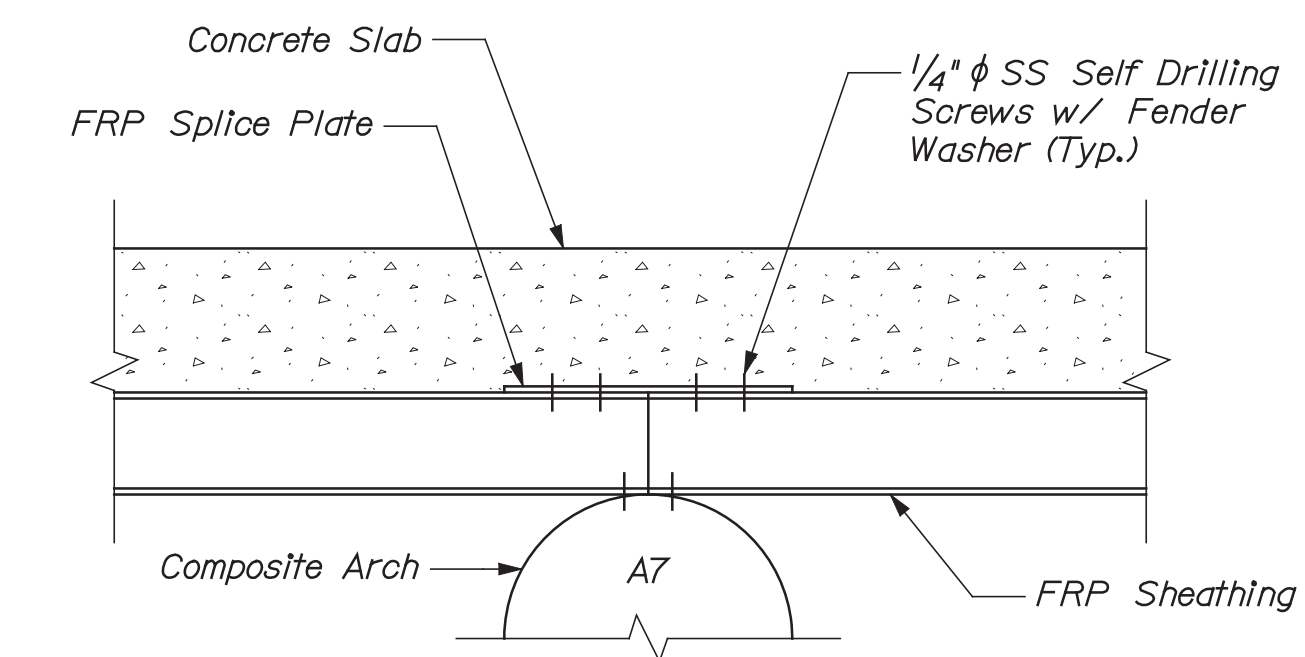
1. Concrete overlay shall be paid for under item 502.41 Structural Concrete Superstructure Slab.



ARCH ELEVATION



OVERLAY CONCRETE SLAB DETAIL



SHEATHING SPLICE DETAIL



TYLIN INTERNATIONAL

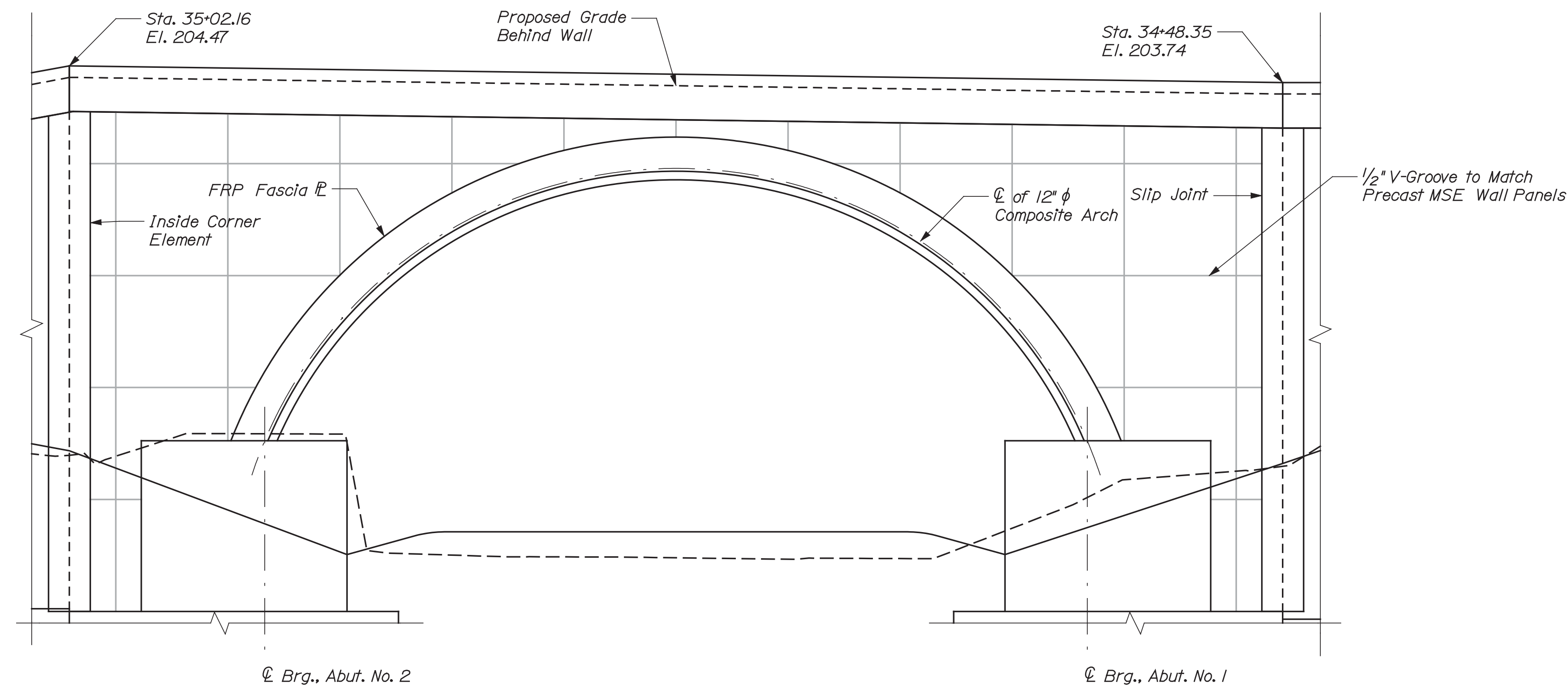
STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1823(700)X		BRIDGE NO. 3867 WIN 18237.00	
PROJ. MANAGER C. TAYLOR	BY S. MORGAN C. TAYLOR	DATE 4/23/12 4/26/12	SIGNATURE
DESIGN-DETAILED S. KELLER	CHECKED-REVIEWED C. TAYLOR		P.E. NUMBER
DESIGN2-DETAILED2			DATE
DESIGN3-DETAILED3			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
STATE ROUTE 16 OVER RECREATIONAL TRAIL PENOBSCOT COUNTY LAGRANGE		COMPOSITE ARCH DETAILS	
SHEET NUMBER		27	
		OF 31	

Date: 5/9/2012

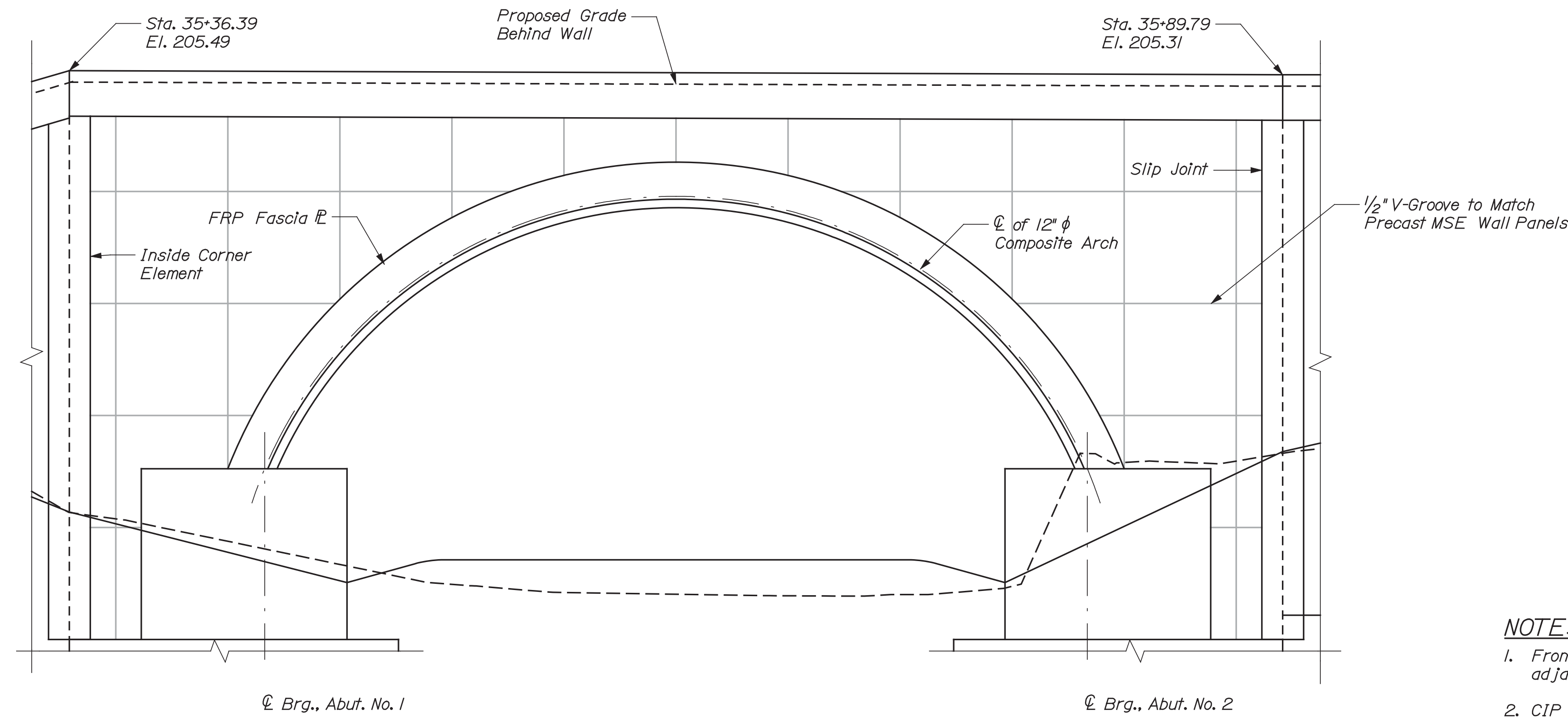
Username: skeller

Division: HIGHWAY

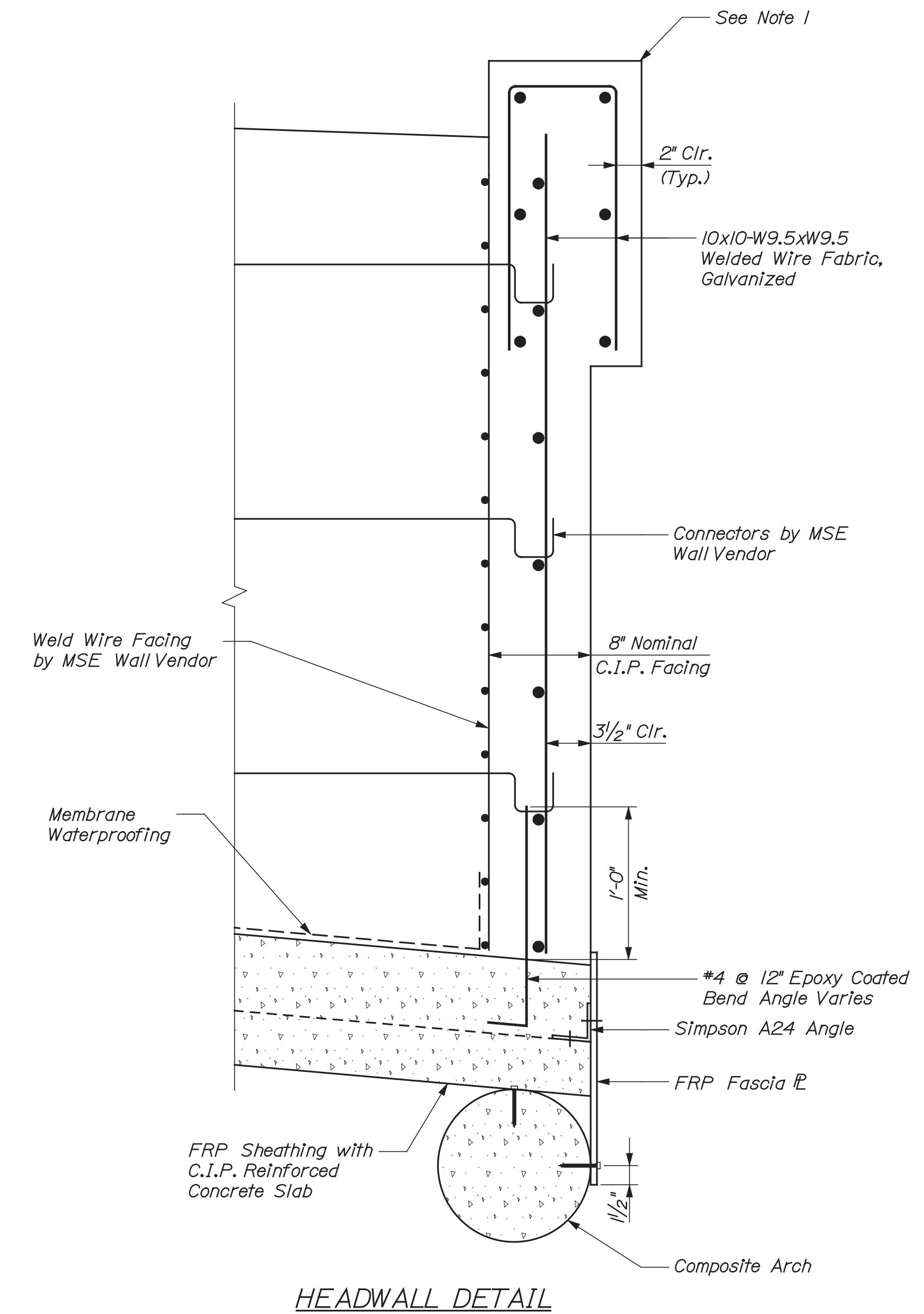
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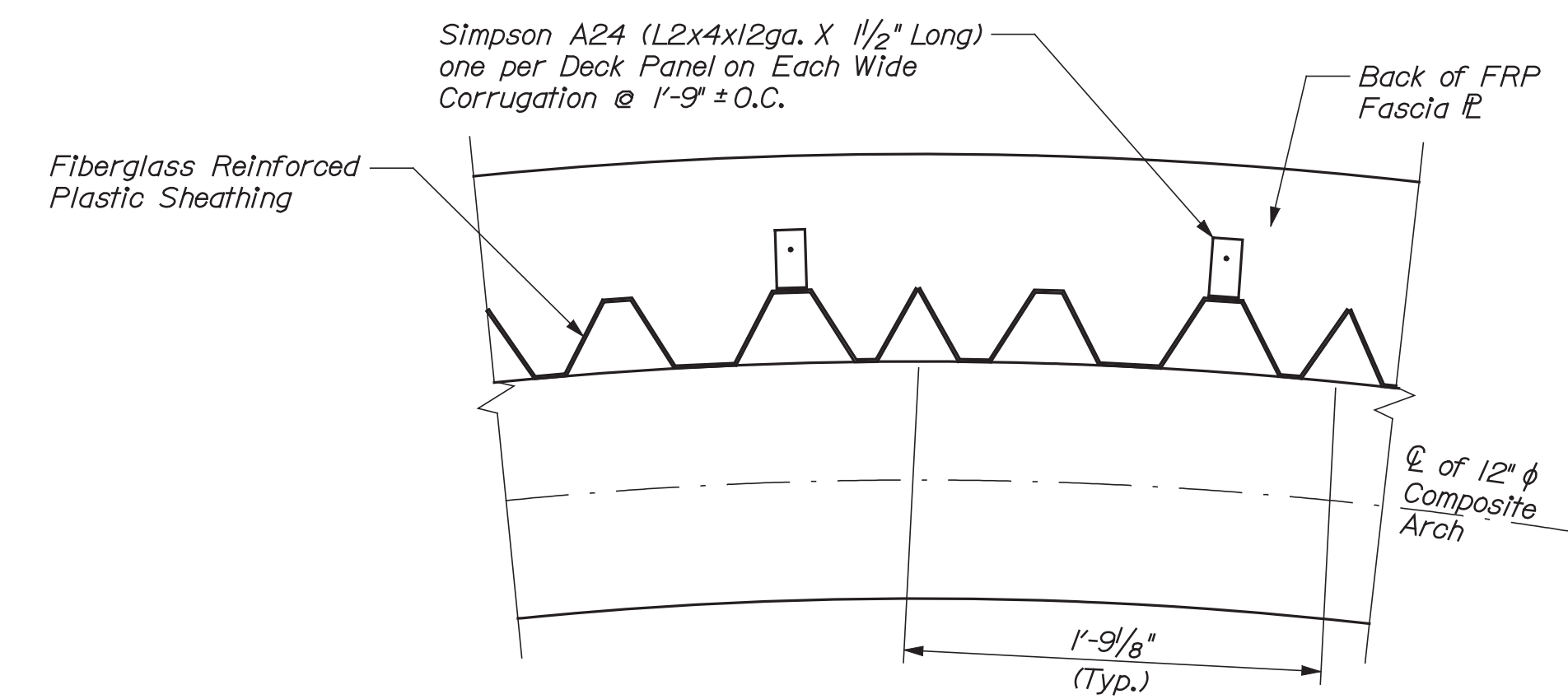
NORTH ELEVATION



SOUTH ELEVATION



HEADWALL DETAIL



SECTION A-A

NOTES:

1. Front face of CIP wall to match dimensions of adjacent precast coping.
2. CIP portion of headwalls shall be paid for under Items 502.21 and 503.16.
3. See "Wingwalls No. 1 & No. 2" sheet for MSE wall notes.



TYLIN INTERNATIONAL

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BH-1823(700)X
BRIDGE NO. 3867
WIN
18237.00
BRIDGE PLANS

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
C. TAYLOR	S. MORGAN	4/23/12			
DESIGN-DETAILED	S. KELLER	4/23/12			
CHECKED-REVIEWED	C. TAYLOR	4/26/12			
DESIGN2-DETAILED2					
DESIGN3-DETAILED3					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

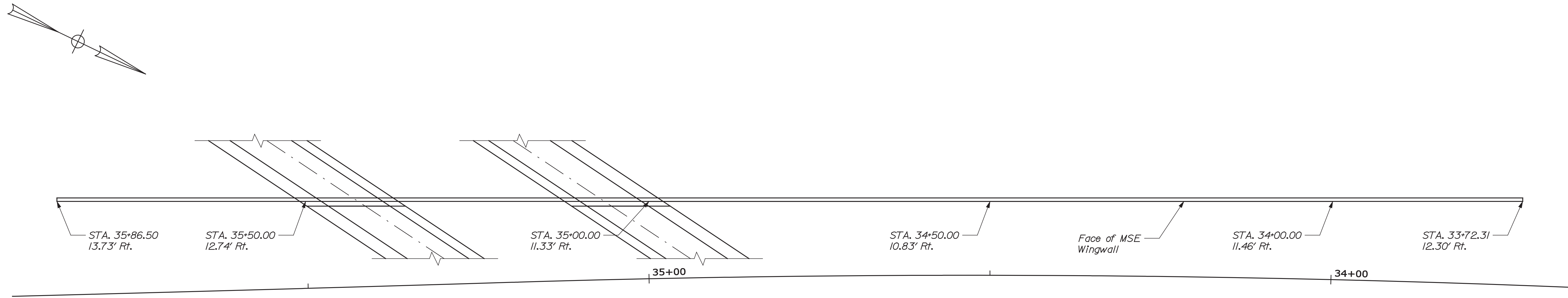
STATE ROUTE 16
OVER RECREATIONAL TRAIL
PENOBSCOT COUNTY
LAGRANGE
HEADWALL DETAILS

SHEET NUMBER

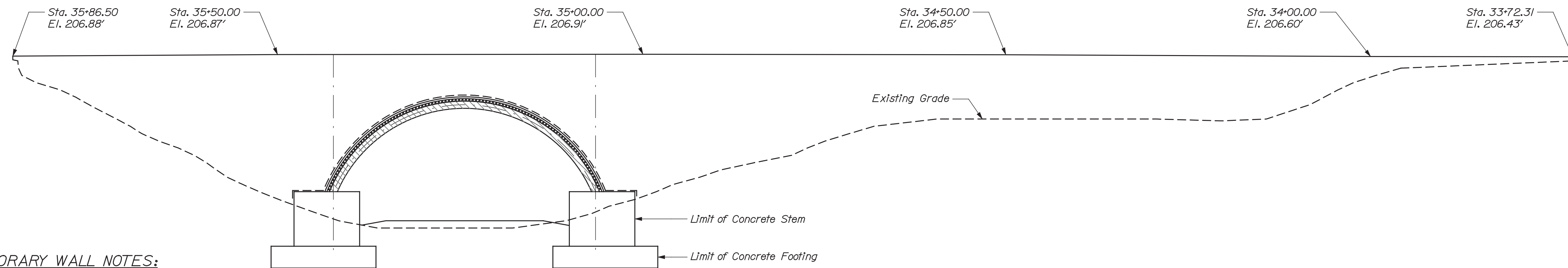
28

OF 31

Filename: ...:\bridge\vnsta\029_Temp_Wall.dgn Division: HIGHWAY Username: skeller Date:5/9/2012



PLAN - TEMPORARY WALL



ELEVATION - TEMPORARY WALL

TEMPORARY WALL NOTES:

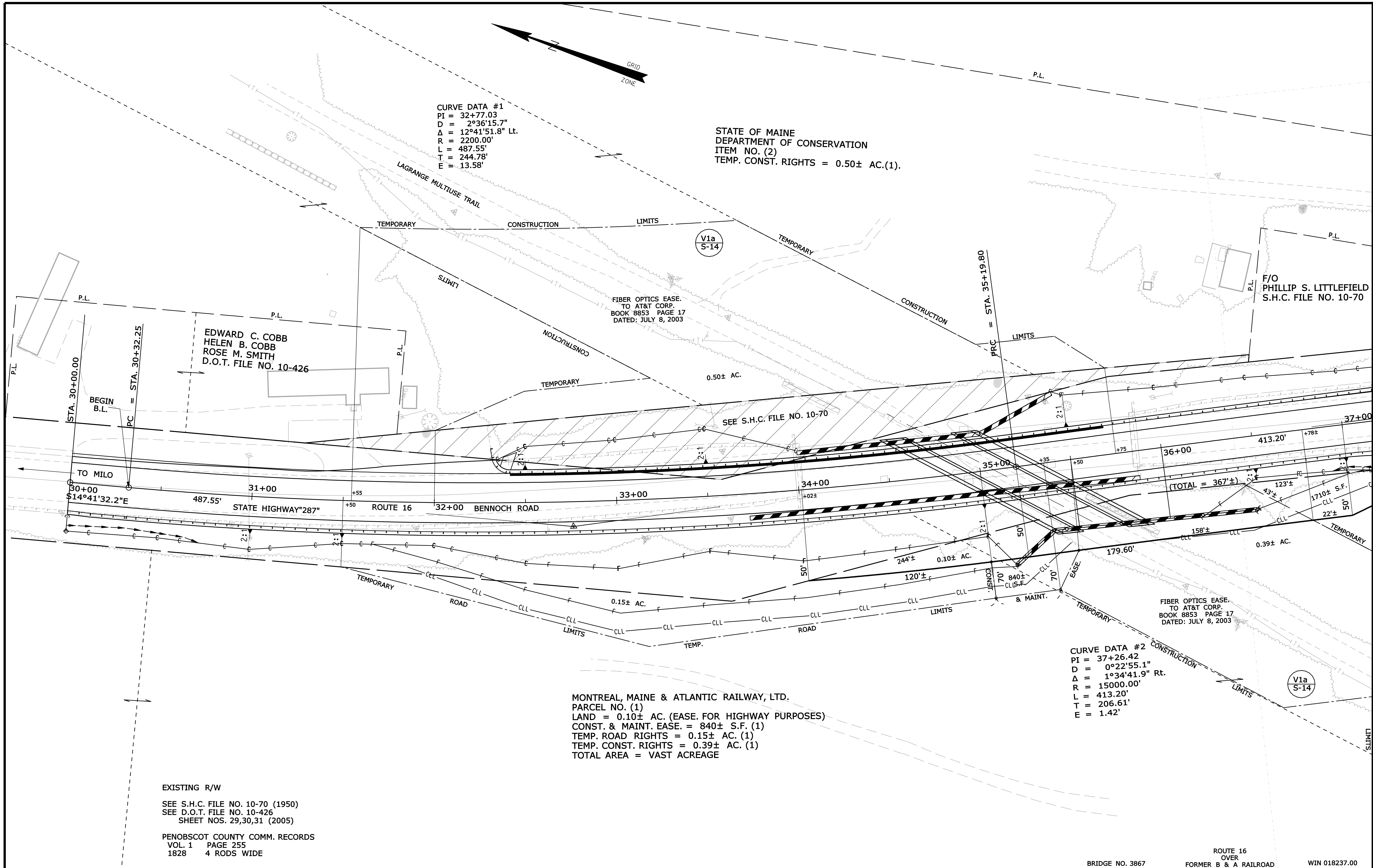
1. Temporary Wall shall be incidental to Item 510.10, Special Detour.
2. The Temporary Wall shown herein is fabric-faced MSE. The contractor may submit other systems for review and approval by the Resident. Alternate systems may not attach directly to the arches or concrete slab.
3. Backfill within the Temporary Wall and below the roadway subbase, shall be paid for under Item 203.25, Granular Borrow within the bridge limits shown on Sheet 21, Longitudinal Section. Backfill within the Temporary Wall and below the roadway subbase, shall be paid for under Item 203.20, Common Excavation beyond the bridge limits. Temporary Wall designer shall provide actual backfill material requirements.
4. Fabric faced MSE wall may be left in place. Rigid systems shall be removed to a minimum depth of 6.5' below the final roadway surface.
5. At least thirty days before temporary wall construction begins, the Contractor shall submit to the Department the temporary wall design calculations and plans for review and acceptance.
6. Backfill within the temporary wall shall meet the friction requirements of the temporary wall design and shall have a maximum particle size of 3 inches.
7. The contractor shall remove and replace the upper layers of the temporary wall fill with aggregate subbase coarse gravel at the time of highway construction, unless the gradation of the temporary wall fill meets or exceeds the aggregate subbase requirements.



TYLIN INTERNATIONAL

STATE OF MAINE DEPARTMENT OF TRANSPORTATION BH-1823(700)X		BRIDGE NO. 3867	WIN 18237.00	BRIDGE PLANS
PROJ. MANAGER C. TAYLOR	BY S. MORGAN C. TAYLOR	DATE 4/23/12 4/26/12	SIGNATURE	P.E. NUMBER DATE
DESIGN-DETAILED S. KELLER	CHECKED-REVIEWER C. TAYLOR	DESIGN-DETAILED2	REVISIONS 1	REVISIONS 2
		DESIGN-DETAILED3	REVISIONS 3	REVISIONS 4
			FIELD CHANGES	
STATE ROUTE 16 OVER RECREATIONAL TRAIL PENOBSCOT COUNTY LAGRANGE		TEMPORARY WALL DETAILS		
SHEET NUMBER		29		
		OF 31		

Filename: ... \00\ROW\MSTA001_RWPLAN1.dgn Division: BRIDGE Username: David.Shaw Date: 5/14/2012



CURVE DATA #1
 PI = 32+77.03
 D = 2°36'15.7"
 Δ = 12°41'51.8" Lt.
 R = 2200.00'
 L = 487.55'
 T = 244.78'
 E = 13.58'

STATE OF MAINE
 DEPARTMENT OF CONSERVATION
 ITEM NO. (2)
 TEMP. CONST. RIGHTS = 0.50± AC.(1).

EDWARD C. COBB
 HELEN B. COBB
 ROSE M. SMITH
 D.O.T. FILE NO. 10-426

FIBER OPTICS EASE.
 TO AT&T CORP.
 BOOK 8853 PAGE 17
 DATED: JULY 8, 2003

F/O
 PHILLIP S. LITTLEFIELD
 S.H.C. FILE NO. 10-70

MONTREAL, MAINE & ATLANTIC RAILWAY, LTD.
 PARCEL NO. (1)
 LAND = 0.10± AC. (EASE. FOR HIGHWAY PURPOSES)
 CONST. & MAINT. EASE. = 840± S.F. (1)
 TEMP. ROAD RIGHTS = 0.15± AC. (1)
 TEMP. CONST. RIGHTS = 0.39± AC. (1)
 TOTAL AREA = VAST ACREAGE

CURVE DATA #2
 PI = 37+26.42
 D = 0°22'55.1"
 Δ = 1°34'41.9" Rt.
 R = 15000.00'
 L = 413.20'
 T = 206.61'
 E = 1.42'

EXISTING R/W
 SEE S.H.C. FILE NO. 10-70 (1950)
 SEE D.O.T. FILE NO. 10-426
 SHEET NOS. 29,30,31 (2005)

PENOBSCOT COUNTY COMM. RECORDS
 VOL. 1 PAGE 255
 1828 4 RODS WIDE

BRIDGE NO. 3867 ROUTE 16 OVER FORMER B & A RAILROAD WIN 018237.00

SYMBOLS

•	PI or RIP (IRON PIPE OR PIN FOUND)	○	WELL
□	ST. (SEPTIC TANK)	---	GRADING LIMIT LINE
△	TRV (TRAVEL POINT)	---	CONSTRUCTION LIMIT LINE
---	WATER LINE	---	PROPERTY LINE
---	GAS LINE	---	PL
---	ELECTRIC LINE	---	LIMITS OF TROUGHT PORTION (LOWP.)
---	TELEPHONE LINE	---	EXISTING RIGHT OF WAY
---	SEWER LINE	---	NEW RIGHT OF WAY
---		---	NEW ROW WITHIN EXIST. ROW
---		---	CONTROL OF ACCESS

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W		
PROP. LINES		
AREAS		

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 16 STATE HOUSE STATION - AUGUSTA, ME 04333-0016
 LAGRANGE
 RIGHT OF WAY MAP

NO.	DATE	REVISIONS DESCRIPTION	BY	PLAN FILED IN PLAN BOOK						DAVID BERNHARDT COMMISSIONER
				NO.	GRANTOR	PAGE	COUNTY RECORD INSTRUMENT	DATE	BOOK	

KENNETH L. SWEENEY
 CHIEF ENGINEER
 DATE

STATE HIGHWAY "287"
 ROUTE 16 / BENNOCH ROAD
 LAGRANGE PENOBSCOT COUNTY
 STATE PROJECT NO. 18237.00
 MARCH 2012 RIGHT-OF-WAY MAP
 SCALE 1" = 25' SHEET 1 OF 2
 D.O.T. FILE NO. 10-475

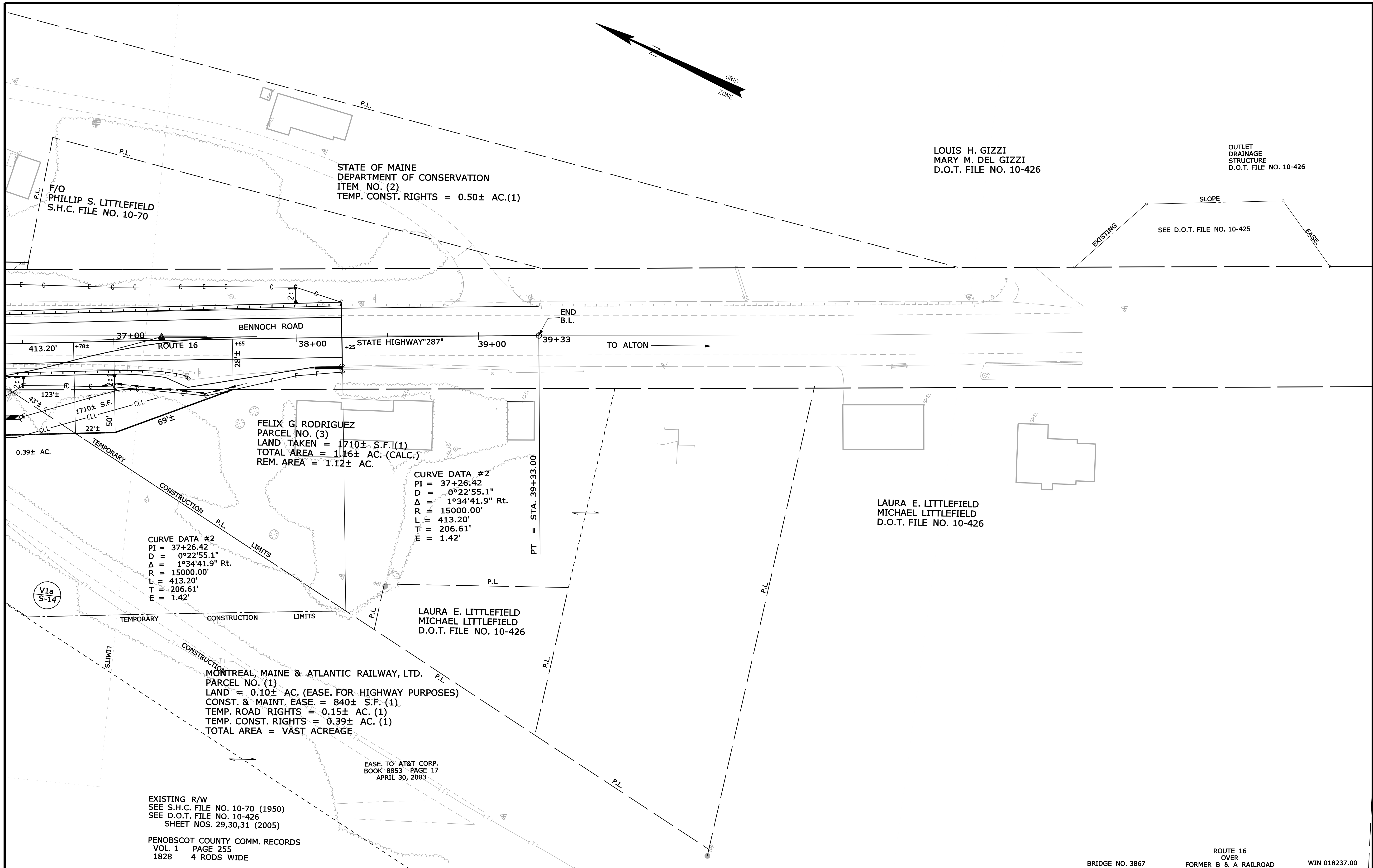
SHEET NUMBER
30
 OF 31

Date: 5/14/2012

Username: David Shaw

Division: BRIDGE

Filename: ... \00\ROW\MSTA002_RWPLAN2.dgn



LOUIS H. GIZZI
MARY M. DEL GIZZI
D.O.T. FILE NO. 10-426

OUTLET
DRAINAGE
STRUCTURE
D.O.T. FILE NO. 10-426

STATE OF MAINE
DEPARTMENT OF CONSERVATION
ITEM NO. (2)
TEMP. CONST. RIGHTS = 0.50± AC.(1)

F/O
PHILLIP S. LITTLEFIELD
S.H.C. FILE NO. 10-70

FELIX G. RODRIGUEZ
PARCEL NO. (3)
LAND TAKEN = 1710± S.F.(1)
TOTAL AREA = 1.16± AC. (CALC.)
REM. AREA = 1.12± AC.

CURVE DATA #2
PI = 37+26.42
D = 0°22'55.1"
Δ = 1°34'41.9" Rt.
R = 15000.00'
L = 413.20'
T = 206.61'
E = 1.42'

CURVE DATA #2
PI = 37+26.42
D = 0°22'55.1"
Δ = 1°34'41.9" Rt.
R = 15000.00'
L = 413.20'
T = 206.61'
E = 1.42'

LAURA E. LITTLEFIELD
MICHAEL LITTLEFIELD
D.O.T. FILE NO. 10-426

MONTREAL, MAINE & ATLANTIC RAILWAY, LTD.
PARCEL NO. (1)
LAND = 0.10± AC. (EASE FOR HIGHWAY PURPOSES)
CONST. & MAINT. EASE. = 840± S.F. (1)
TEMP. ROAD RIGHTS = 0.15± AC. (1)
TEMP. CONST. RIGHTS = 0.39± AC. (1)
TOTAL AREA = VAST ACREAGE

EASE TO AT&T CORP.
BOOK 8853 PAGE 17
APRIL 30, 2003

EXISTING R/W
SEE S.H.C. FILE NO. 10-70 (1950)
SEE D.O.T. FILE NO. 10-426
SHEET NOS. 29,30,31 (2005)

PENOBSCOT COUNTY COMM. RECORDS
VOL. 1 PAGE 255
1828 4 RODS WIDE

BRIDGE NO. 3867 ROUTE 16 OVER FORMER B & A RAILROAD WIN 018237.00

SYMBOLS

• IP or • PIP (IRON PIPE or PIN FOUND)	○ (WELL)
□ (SEPTIC TANK)	○ (LIMITS OF TROUGHT PORTION (L.O.W.P.))
□ (S.T. (TRAVERSE POINT))	— (NEW RIGHT OF WAY)
— (WATER LINE)	— (NEW ROW WITHIN EXIST. ROW)
— (GAS LINE)	— (CONTROL OF ACCESS)
— (ELECTRIC LINE)	
— (TELEPHONE LINE)	
— (SEWER LINE)	

ITEM	TECH	CHECKED
BASE MAP		
EXIST. R/W		
PROP. LINES		
AREAS		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION - AUGUSTA, ME. 04333-0016
LAGRANGE
RIGHT OF WAY MAP

REVISIONS			PLAN FILED IN PLAN BOOK						COUNTY RECORD							
NO.	DATE	DESCRIPTION	BY	NO.	GRANTOR	PAGE	INSTRUMENT	DATE	BOOK	PAGE	NO.	GRANTOR	INSTRUMENT	DATE	BOOK	PAGE

DAVID BERNHARDT
COMMISSIONER
KENNETH L. SWEENEY
CHIEF ENGINEER
DATE

STATE HIGHWAY "287"
ROUTE 16 / BENNOCH ROAD
LAGRANGE PENOBSCOT COUNTY
STATE PROJECT NO. 18237.00
MARCH 2012 RIGHT-OF-WAY MAP
SCALE 1" = 25' SHEET 2 OF 2
D.O.T. FILE NO. 10-475

SHEET NUMBER
31
OF 31