

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Eighth Edition 2017.

DESIGN LOADING

Live Load HL - 93 Modified for Strength I

TRAFFIC DATA

Current (2018) AADT	1,740
Future (2038) AADT	1,910
DHV - % of AADT	11%
Design Hour Volume	210
Heavy Trucks (% of AADT)	15%
Heavy Trucks (% of DHV)	9%
Directional Distribution (% of DHV)	51%
18 kip Equivalent P 2.0	230
18 kip Equivalent P 2.5	219
Design Speed (mph)	30

HYDROLOGIC DATA

Drainage Area	11 sq mi
Design Discharge (Q50)	1028 cfs
Check Discharge (Q100)	1205 cfs
Headwater Elevation (Q1.1)	457.65 ft
Headwater Elevation (Q25)	461.18 ft
Headwater Elevation (Q50)	461.77 ft
Headwater Elevation (Q100)	462.46 ft
Discharge Velocity (Q1.1)	6.1 fps
Discharge Velocity (Q50)	11.9 fps
Discharge Velocity (Q100)	12.32 fps

MATERIALS

Concrete:	
Precast	Class "P"
All Other	Class "A"
Reinforcing Steel	ASTM A 615/A 615M, Grade 60
Welded Wire Reinforcement	ASTM A 815/A 815M or ASTM A 497/A 497M

BASIC DESIGN STRESSES

Concrete	f 'c = 4,000 psi Min.
Precast Concrete	f 'c = 5,000 psi Min.
Reinforcing Steel	f y = 60,000 psi

GRAND ISLE
AROOSTOOK COUNTY
SOUCY BRIDGE
OVER
THIBODEAU BROOK
US ROUTE 1 (MAIN STREET)
FEDERAL AID PROJECT NO. NHPP-2188(400)
PROJECT LENGTH 0.047 mi.
BRIDGE NO. 2781

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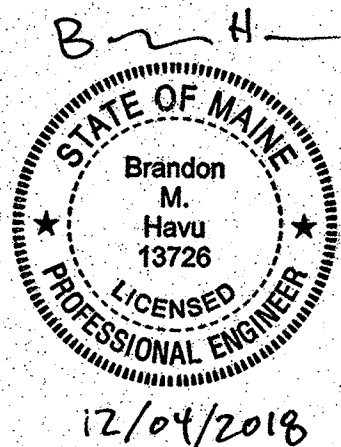
UTILITIES

Emera Maine
Charter Communications
Fairpoint Communications
Grand Isle Water and Sewer
Maine Fiber

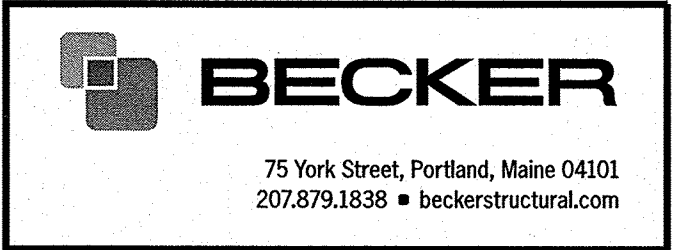
MAINTENANCE OF TRAFFIC

Maintain one-way alternating traffic using traffic signals.

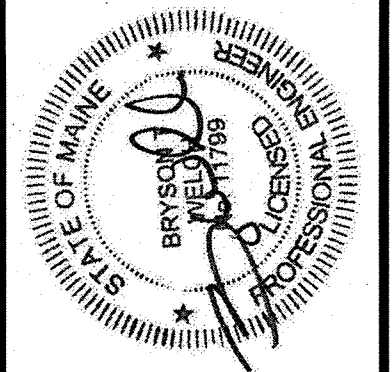
PROJECT LOCATION	On US Route 1 (Main St.) 0.18 Miles North of Corbin Road 47° 18' 51.03" N, 68° 09' 39.46" W
PROGRAM AREA	Bridge
OUTLINE OF WORK	Bridge Culvert Replacement



Gorrill-Palmer Consulting Engineers, Inc.
Responsible for Roadway/Approach Plans



STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
	<i>[Signature]</i>	12/13/18
	COMMISSIONER:	CHIEF ENGINEER:
	<i>[Signature]</i>	<i>[Signature]</i>



SIGNATURE	P.E. NUMBER	DATE
<i>[Signature]</i>	11799	12/04/2018

PROJECT INFORMATION	BRIDGE	MICHAEL WIGHT	JACK BURGESS	BECKER STRUCTURAL	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE
PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE	

GRAND ISLE SOUCY BRIDGE	TITLE SHEET
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SHEET NUMBER	1
OF 23	

Date:12/4/2018

Username: common

Division: BRIDGE

Filename: \\00\BRIDGE\MSTA\001_Title.dgn

WIN 021884.00

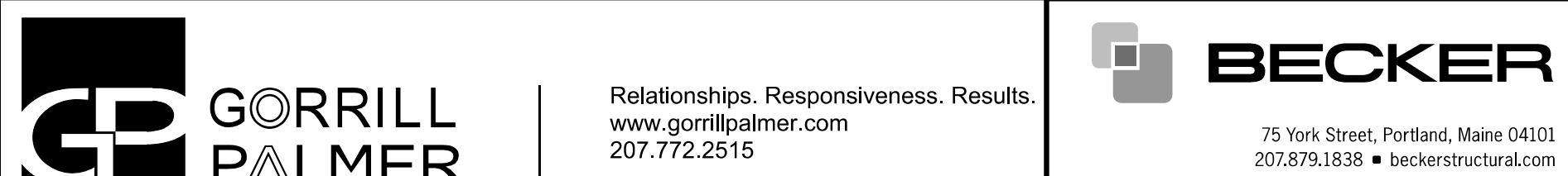
NHPP-2188(400)

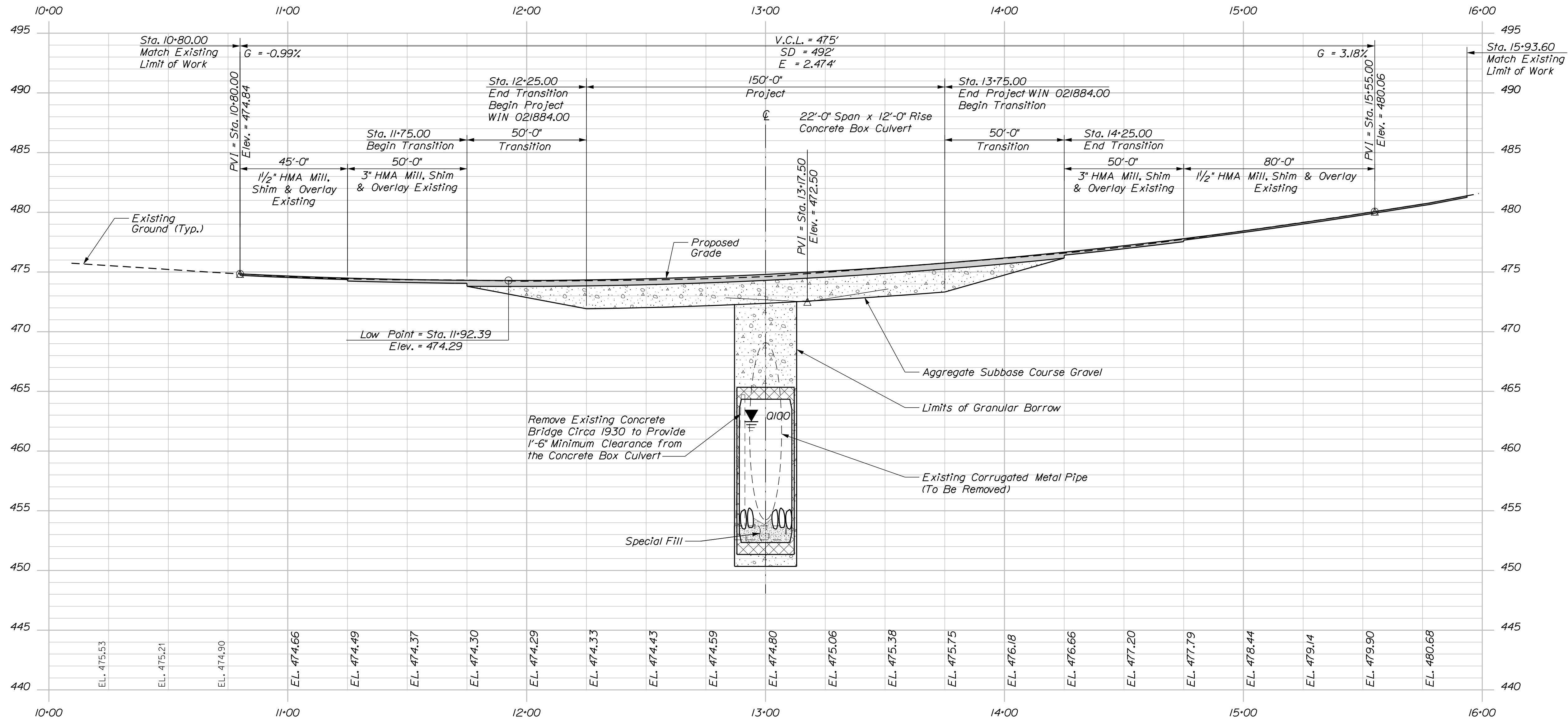
GENERAL CONSTRUCTION NOTES

19. The hydrologic report of the bridge site may be accessed at the MaineDOT web address. The hydrologic report is based on MaineDOT's interpretation of the information obtained for the subject site. No assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

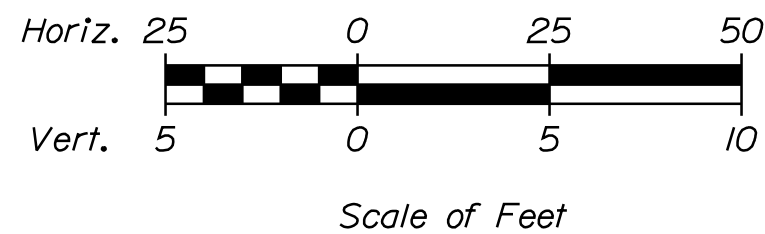
31. The temporary entrance at Sta. 13+92.00 Rt. shall be constructed of 2 inch Hot Mix Asphalt and 12 inches Aggregate Subbase Course Gravel. Payment for construction of the temporary entrance shall be made under applicable pay items, in the same manner as a permanent paved entrance. Unless otherwise directed by the Resident, the temporary entrance shall be fully removed and the existing conditions fully restored upon completion of construction efforts. Payment for removal of temporary entrance shall be made under Item 203.20 - Common Excavation. Payment for restoration of existing conditions shall be made under appropriate Sections 615, 618, 619, or 631 pay items at the discretion of the Resident. Contractor shall coordinate work with the Resident accordingly.

2 OF 23





PROFILE

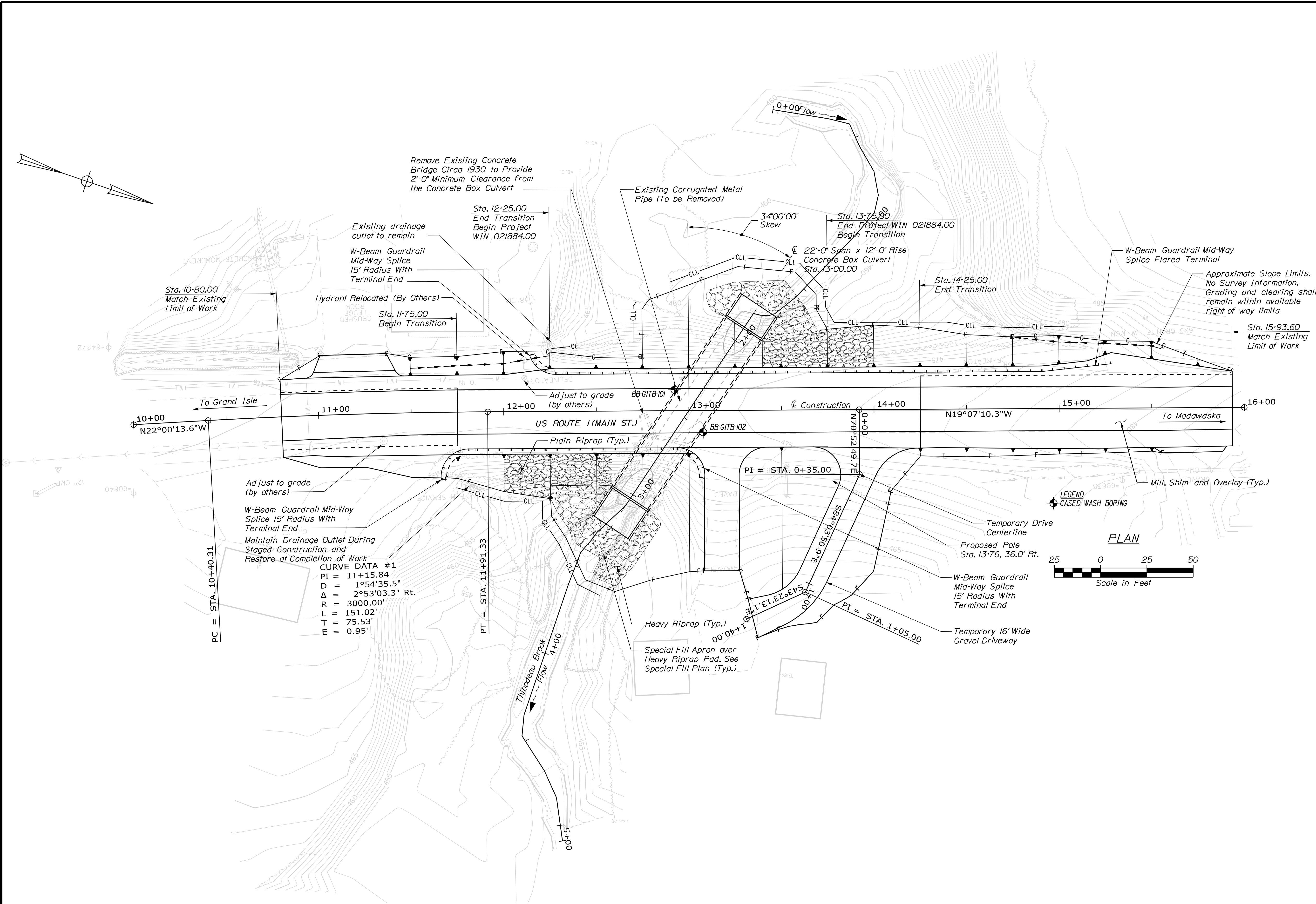


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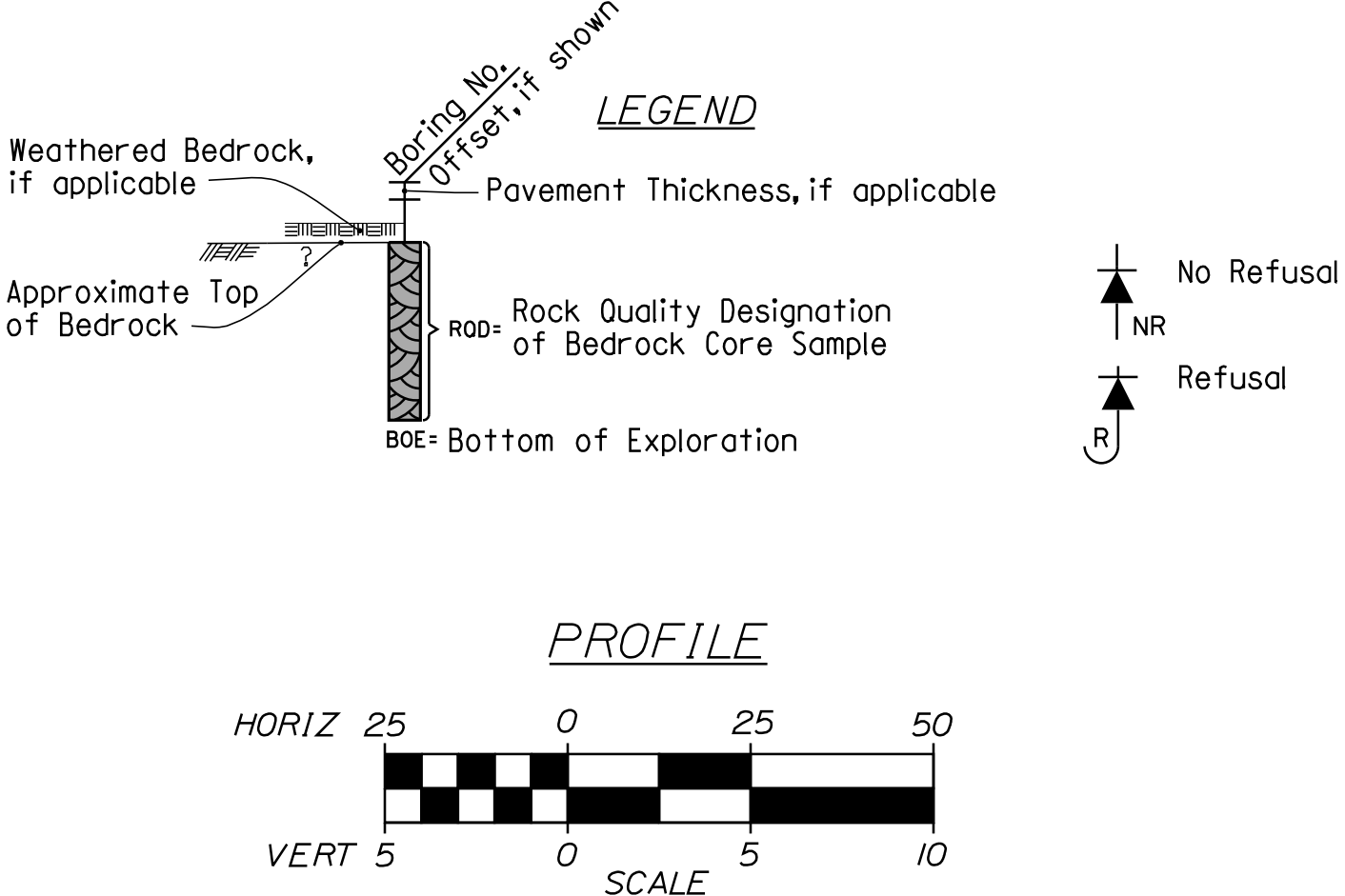
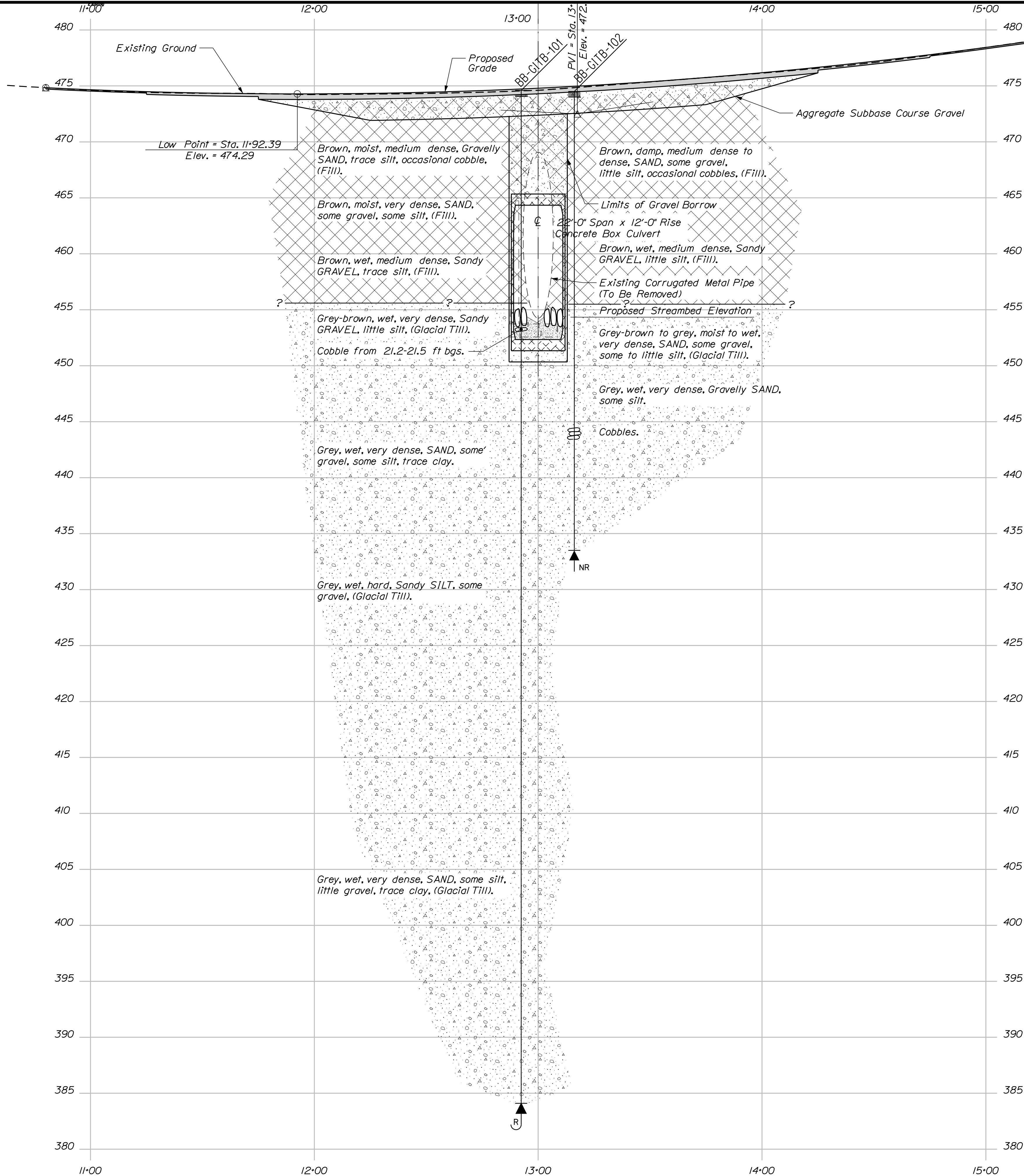


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PROJ. MANAGER	M. WIGHT	BY	DATE	SIGNATURE
CHECKED-DETAILED	B. WELCH	D. BURGESS	11/19/18	
DESIGNED-DETAILED	B. WELCH	J. BURGESS	11/19/18	
REVISIONS 1				
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REVISIONS 4				
FIELD CHANGES				



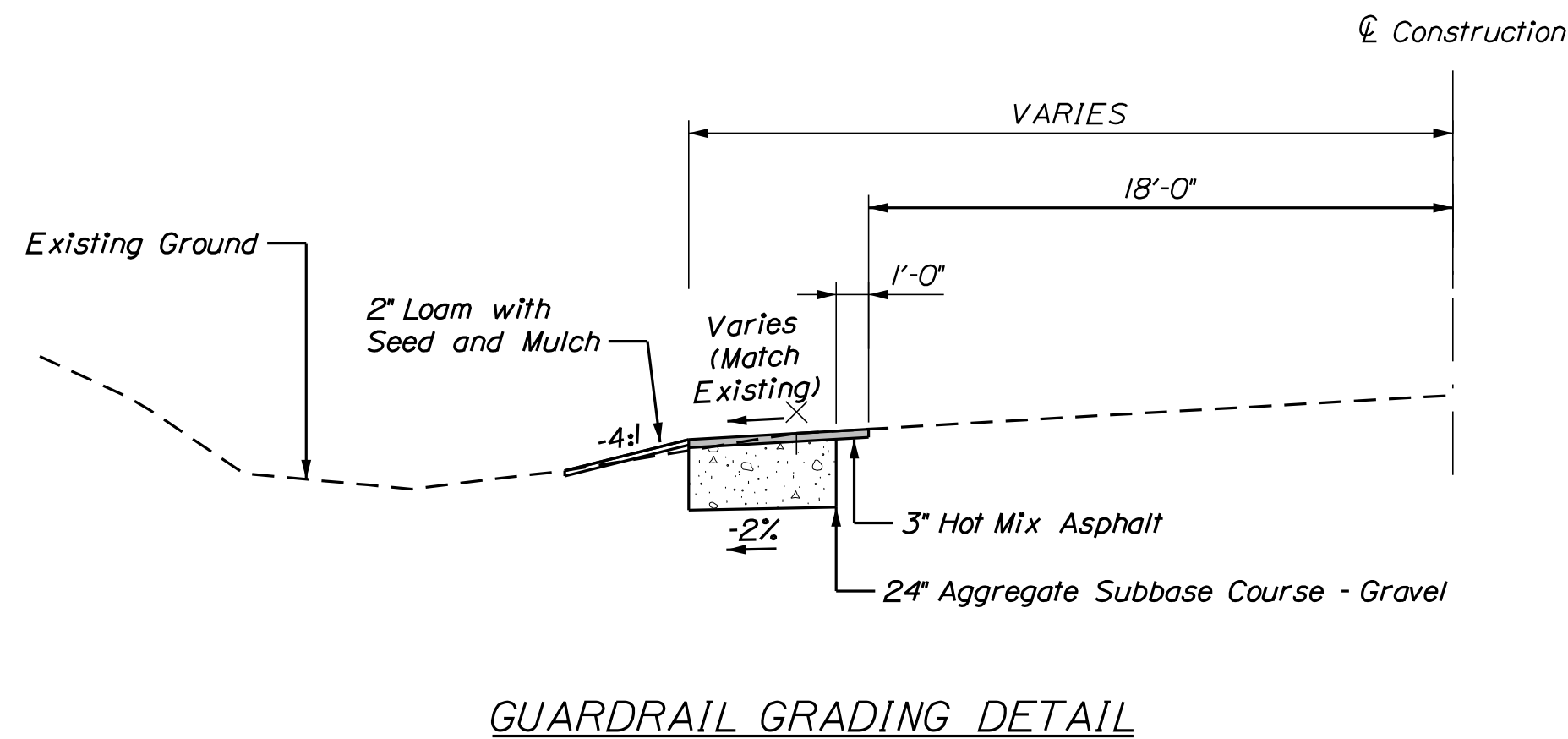
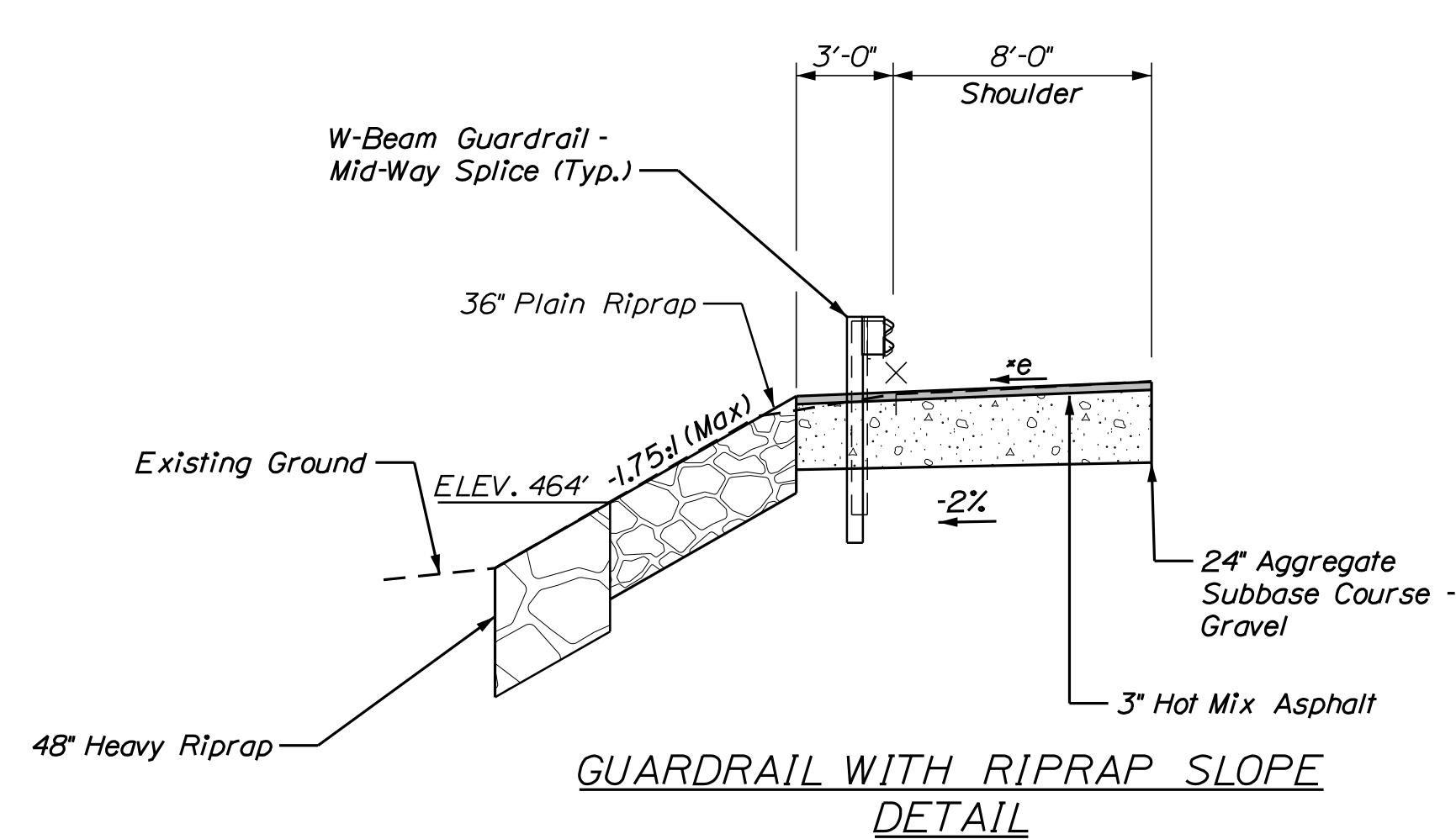
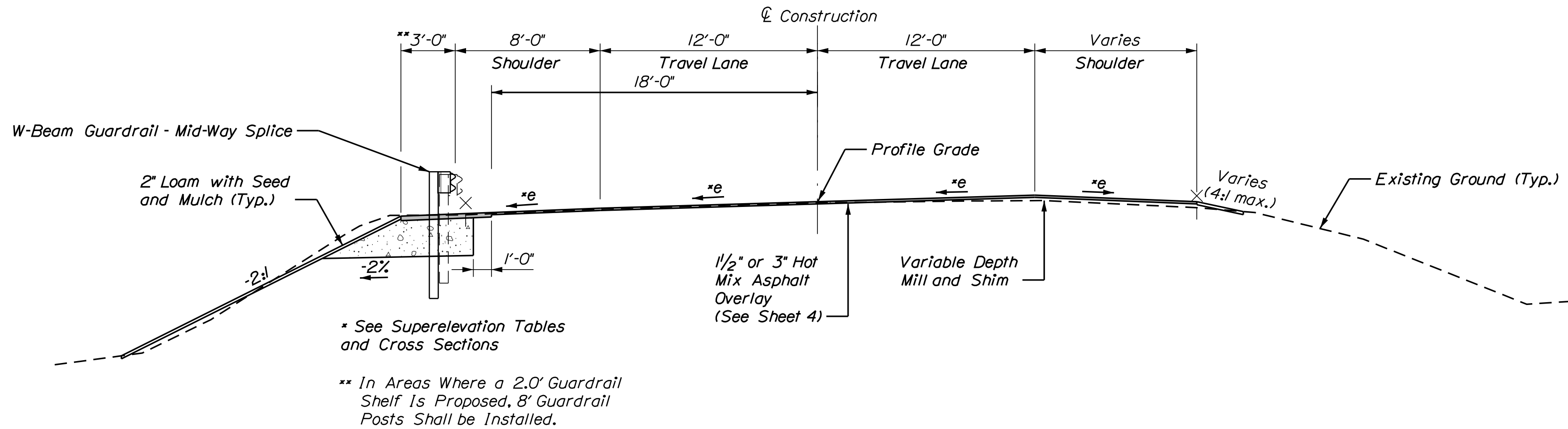
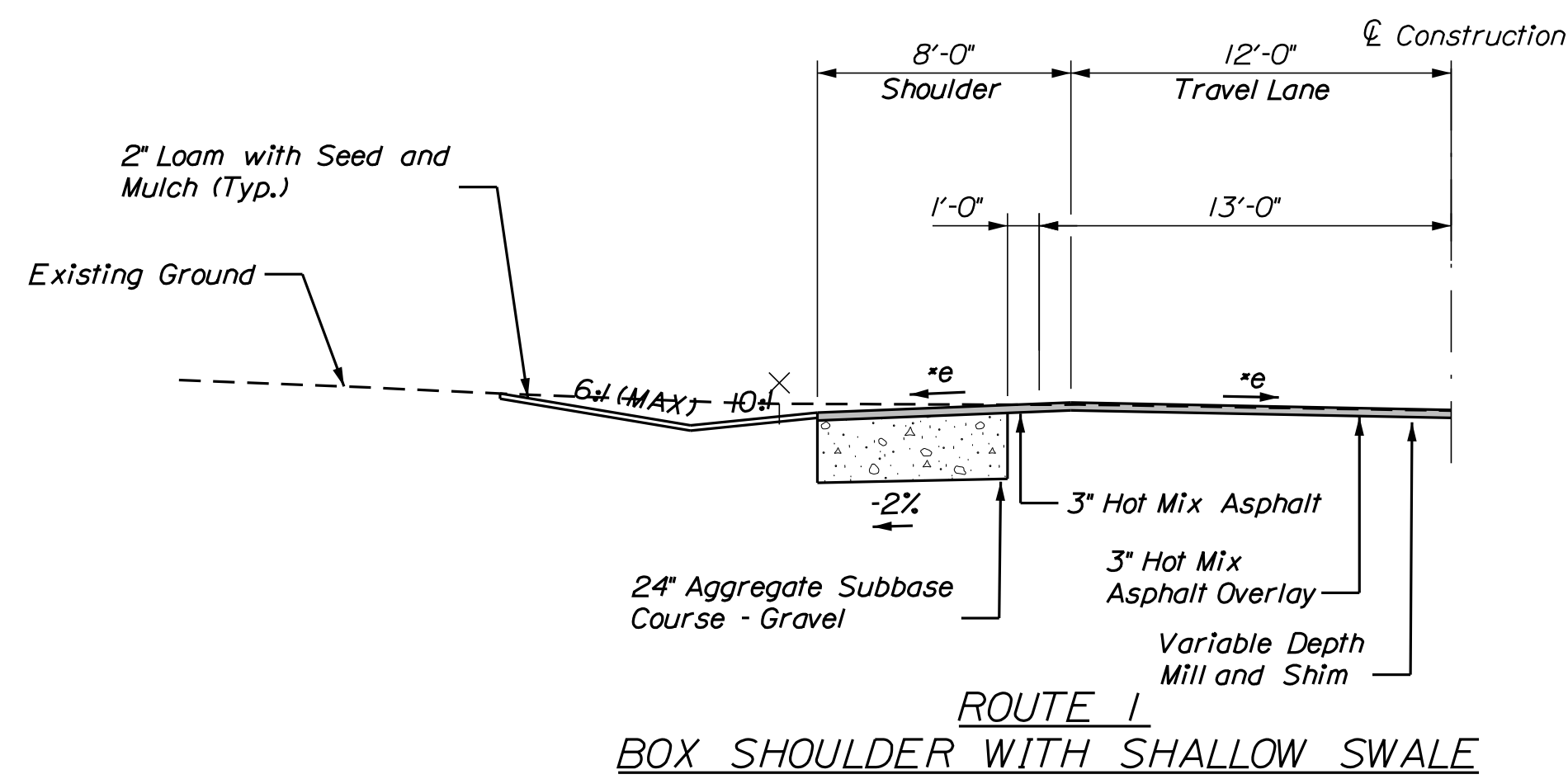
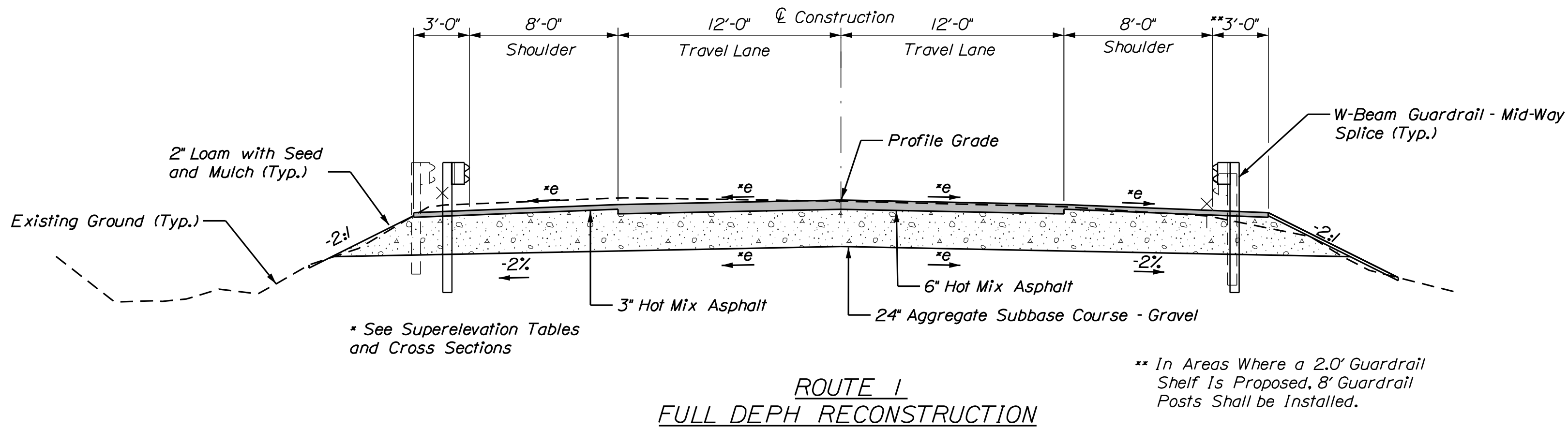
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
GRAND ISLE		AROOSTOOK COUNTY	
SOUCY BRIDGE		BORING LOCATION PLAN	
THIBODEAU BROOK		SHEET NUMBER	
NHP-2188(400)		5	
WIN		OF 23	
BRIDGE NO. 2781		BRIDGE PLANS	
21884.00			
PROJ. MANAGER	BY	DATE	SIGNATURE
CHECKED/REVIEWED	T. WHITE	MAY 2018	
DESIGN/DETAILS			P.E. NUMBER
REVISIONS 1			DATE
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REVISIONS 4			
FIELD CHANGES			



Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
NHP-2188(400)		BRIDGE NO. 2781	
WIN		21884.00	
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OF 23			

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SUPERELEVATION TABLE (e)				
LEFT SHOULDER	LEFT TRAVELWAY	STATION	RIGHT TRAVELWAY	RIGHT SHOULDER
-2.2%	1.9%	10+80	-3.0%	-5.0%
-3.0%	2.0%	11+00	-2.5%	-4.5%
-4.0%	2.0%	11+25	-2.0%	-4.0%
-4.0%	2.0%	11+50	-2.0%	-4.0%
-4.0%	2.0%	11+75	-2.0%	-4.0%
-4.0%	1.5%	12+00	-1.5%	-4.0%
-4.0%	1.0%	12+25	-1.0%	-4.0%
-4.0%	0.5%	12+50	-0.5%	-4.0%
-4.0%	0.0%	12+75	0.0%	-4.0%
-4.0%	-0.5%	13+00	0.5%	-4.0%
-4.0%	-1.0%	13+25	1.0%	-4.0%
-4.0%	-1.5%	13+50	1.5%	-4.0%
-4.0%	-2.0%	13+75	2.0%	-4.0%
-4.0%	-2.5%	14+00	2.5%	-4.0%
-4.0%	-3.0%	14+25	3.0%	-4.0%
-4.0%	-3.5%	14+50	3.5%	-3.0%
-4.0%	-4.0%	14+75	4.0%	-2.0%
-4.5%	-4.5%	15+00	4.5%	-2.0%
-5.0%	-5.0%	15+25	4.5%	-2.9%
-5.9%	-5.7%	15+50	4.6%	-3.8%
-5.9%	-5.7%	15+55	4.6%	-3.8%

- NOTES:
- The pavement, base and subbase depths as shown are intended to be nominal.
 - When superelevation exceeds the slope of the low side shoulder, the low side shoulder shall have the same slope as the travelway.
 - Crowns for both normal and superelevation sections for all courses of subbase and pavement shall be straight.
 - Where guardrail shelf is less than 3', 8' posts shall be installed.
 - Embankment grading presented on cross sections represents final finished grade elevations (top of loam to be placed).

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
NHP-2188(400)

BRIDGE NO. 2781
WIN
021884.00
BRIDGE PLANS

PROJ. MANAGER
M. WIGHT

CHECKED
D. BURGESS

DESIGNED
J. BURGESS

DATE
11/16/18

SIGNATURE

P.E. NUMBER

DATE

SOUCY BRIDGE
THIBODEAU BROOK
GRAND ISLE
AROOSTOOK COUNTY

TYPICAL SECTIONS

SHEET NUMBER

8

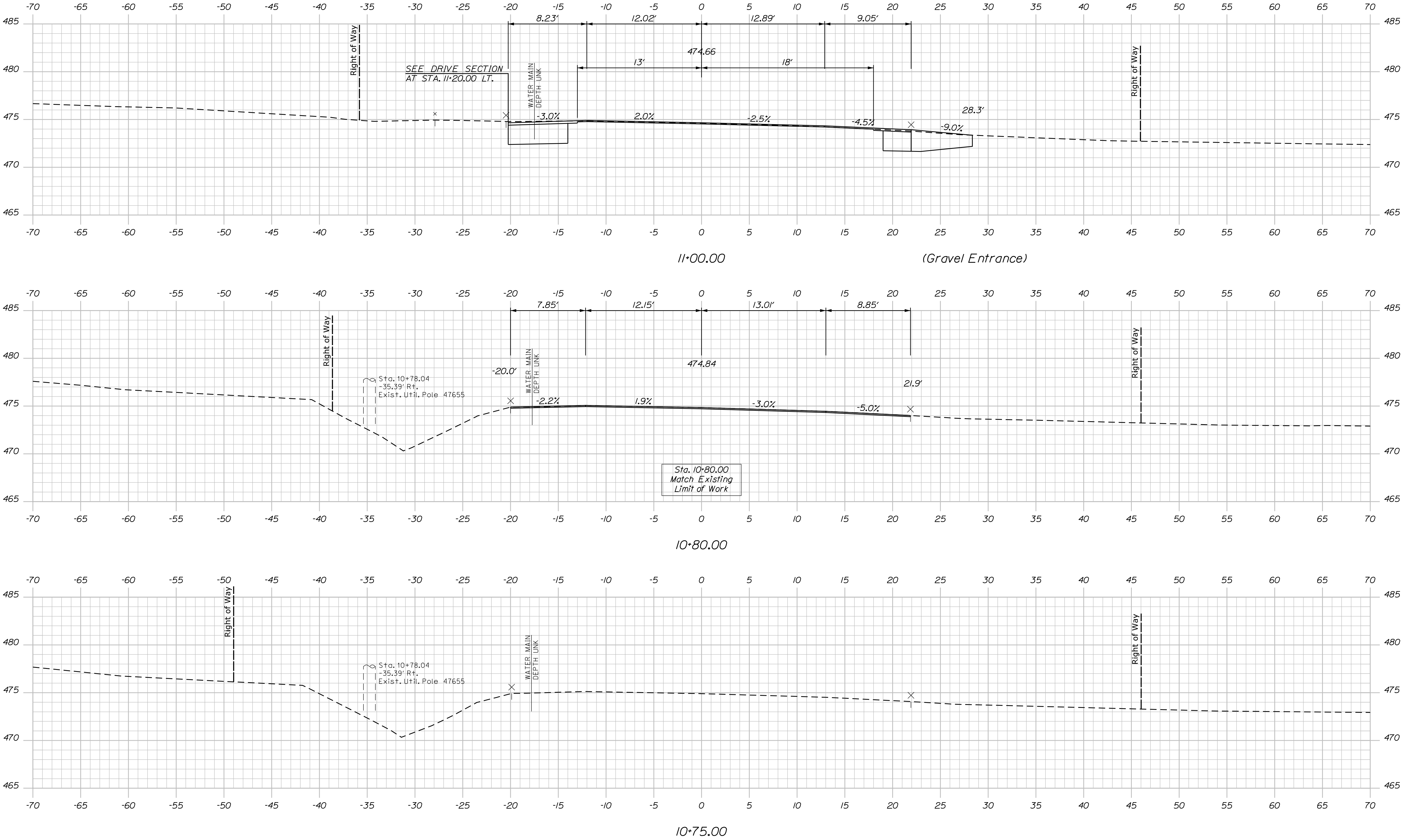
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Date:11/16/2018

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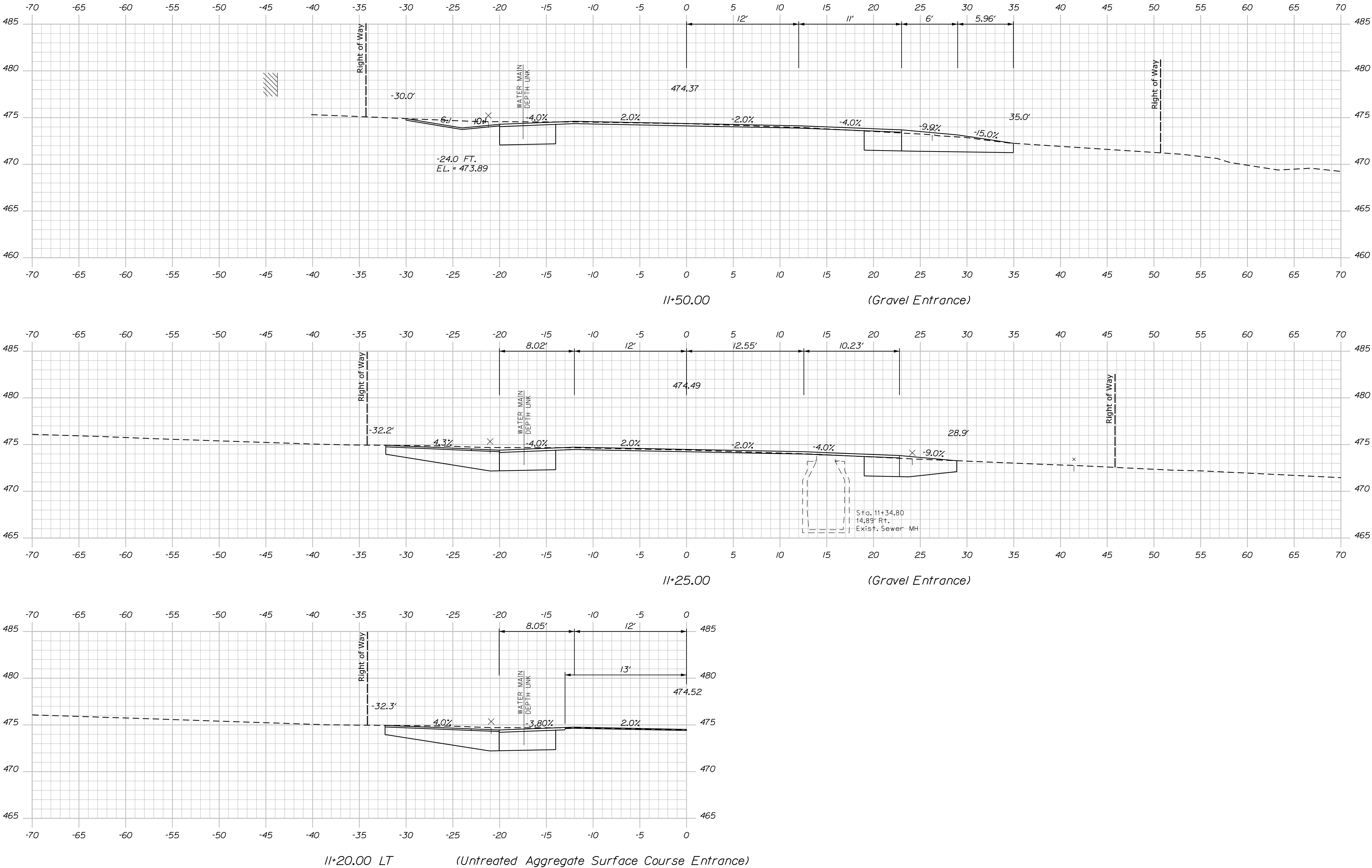
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SHEET NUMBER 9 OF 23		CROSS SECTIONS	

Date:11/16/2018

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Division: HIGHWAY

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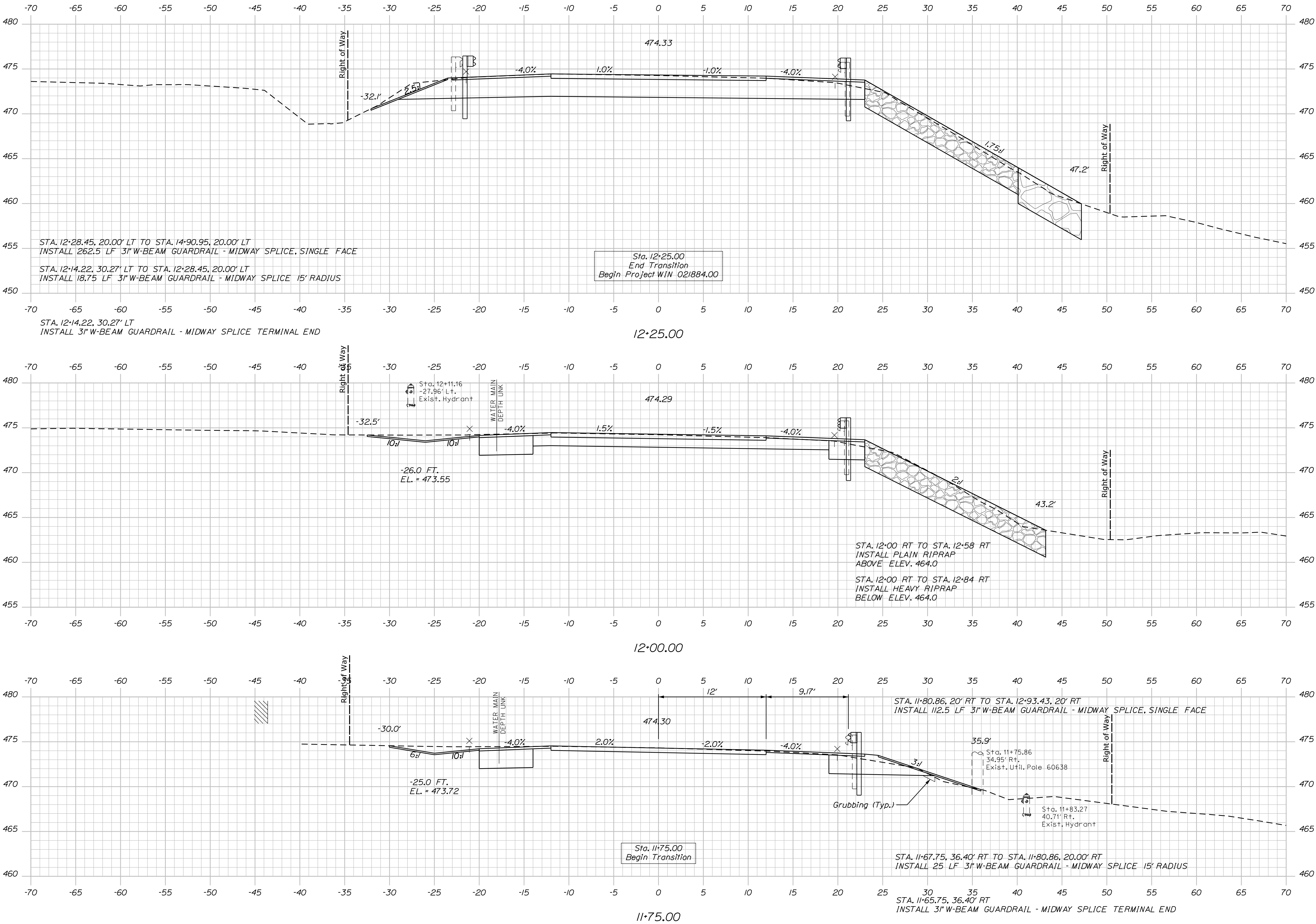
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PROJ. MANAGER		BY		DATE		SIGNATURE		P.E. NUMBER		DATE			
DESIGN-DETAILED		M. WIGHT		11/19/18									
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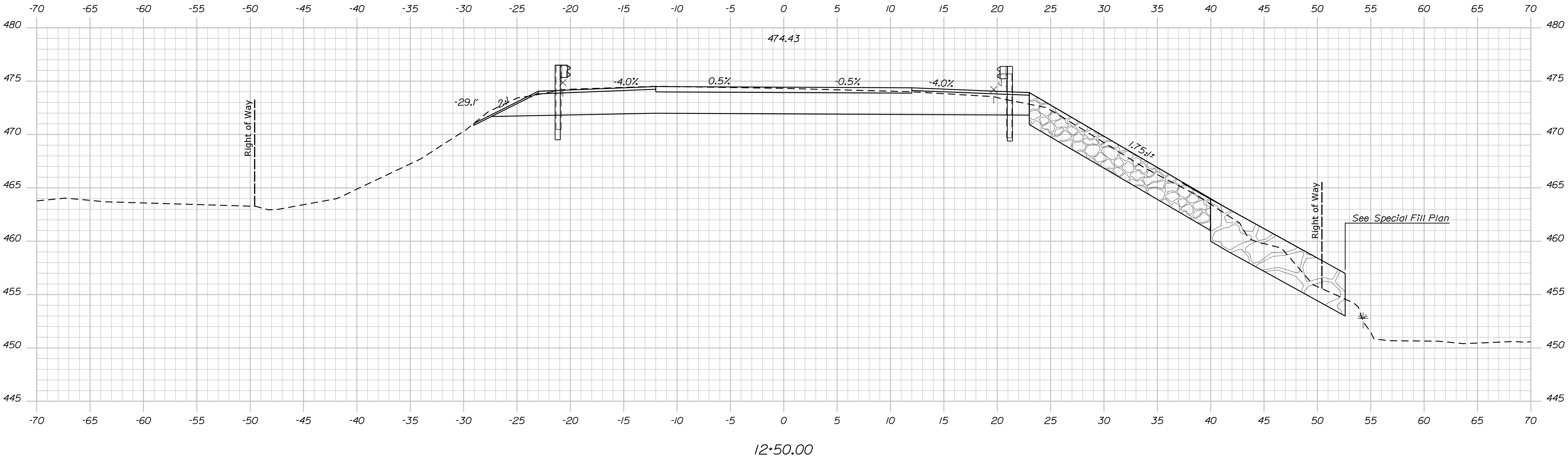
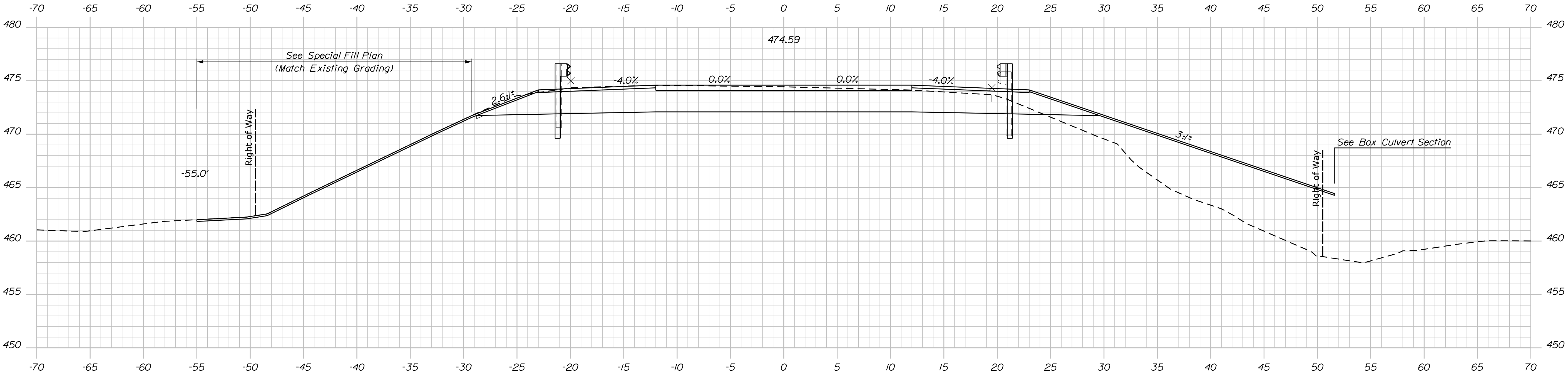
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ARROOSTOOK COUNTY
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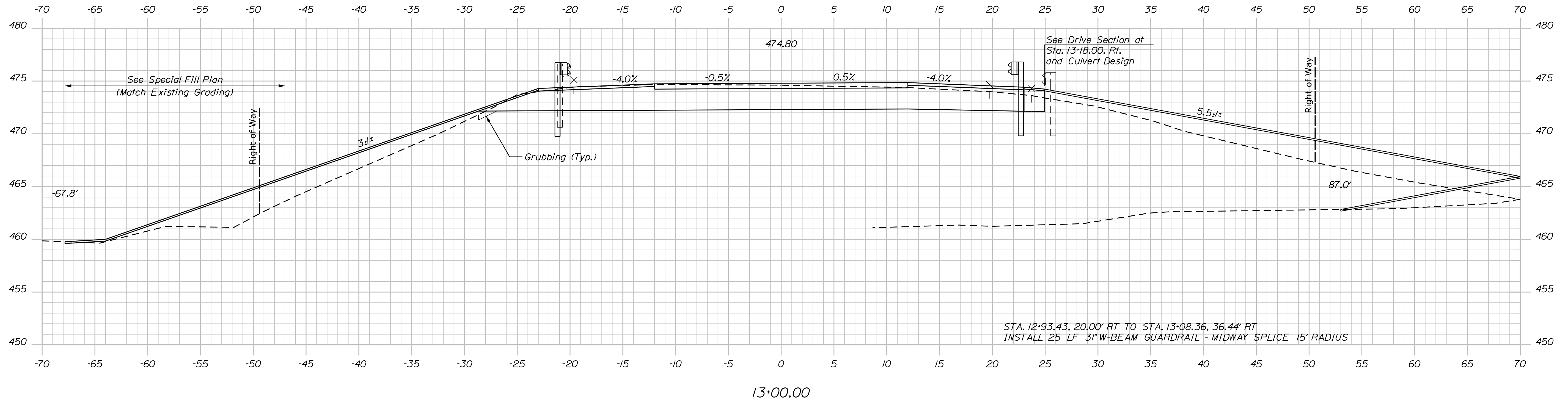
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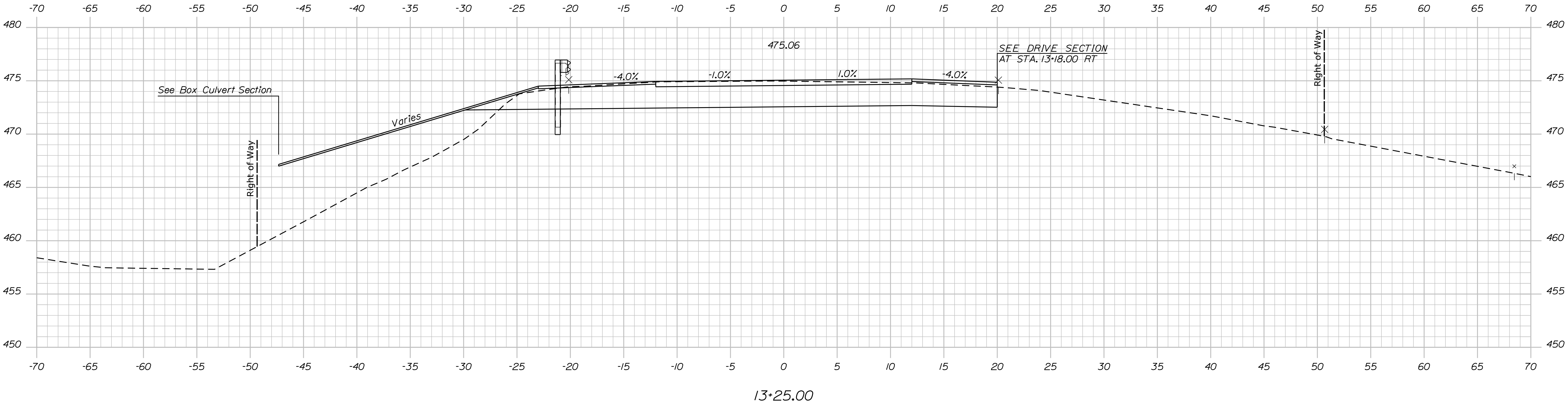
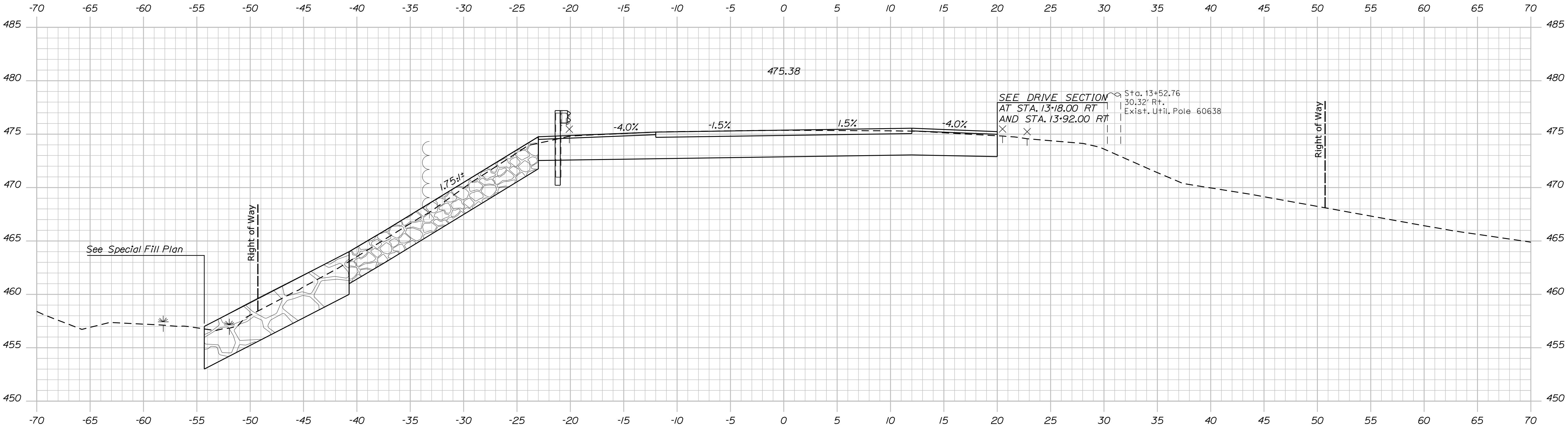
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FIELD CHANGES			

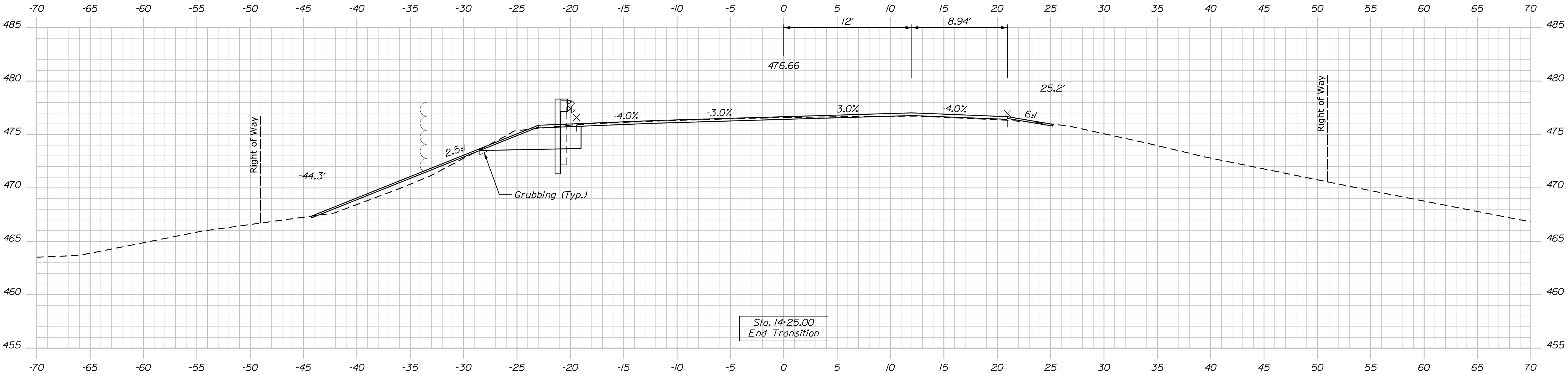
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CROSS SECTIONS

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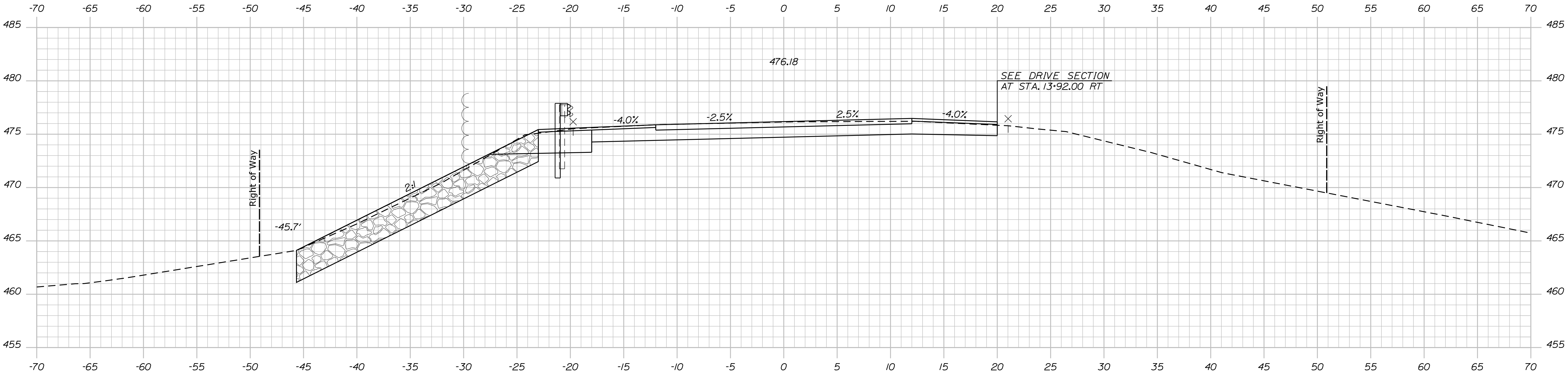
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14+25.00



14+00.00

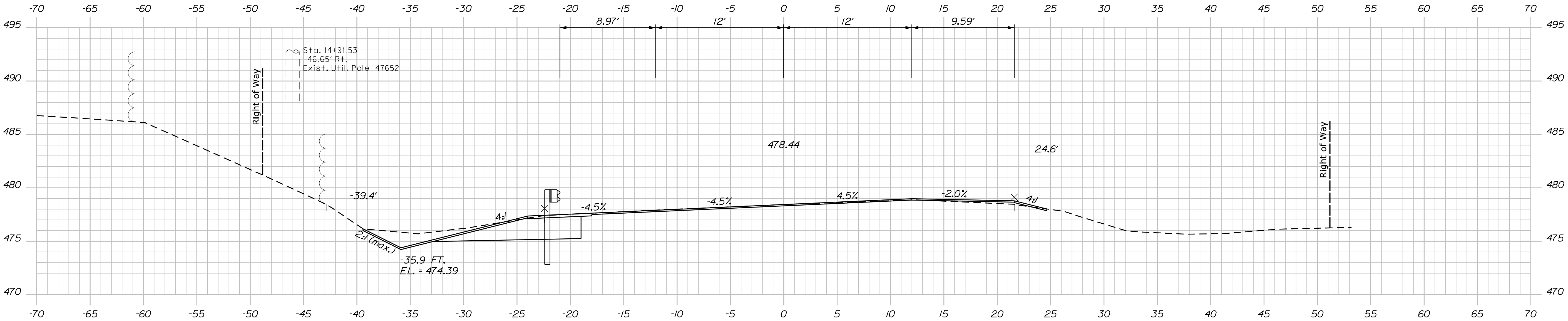
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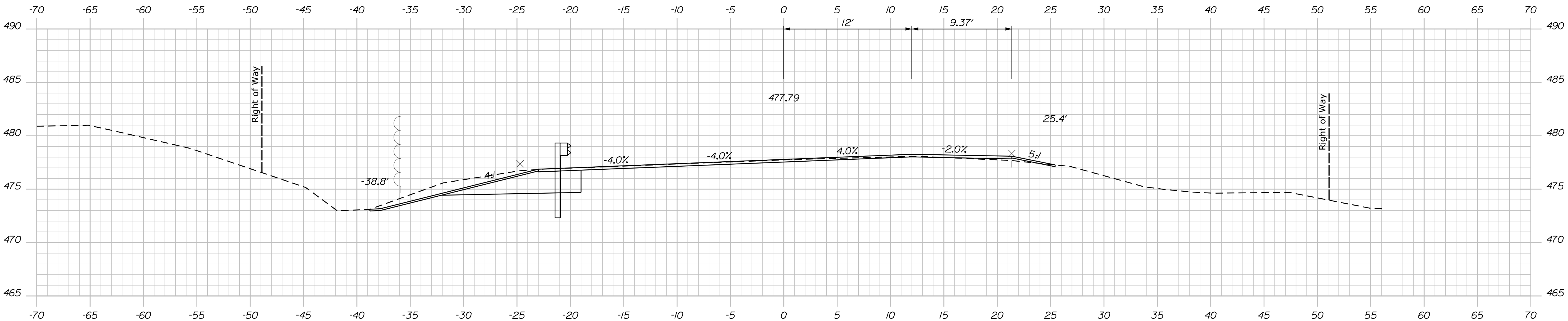
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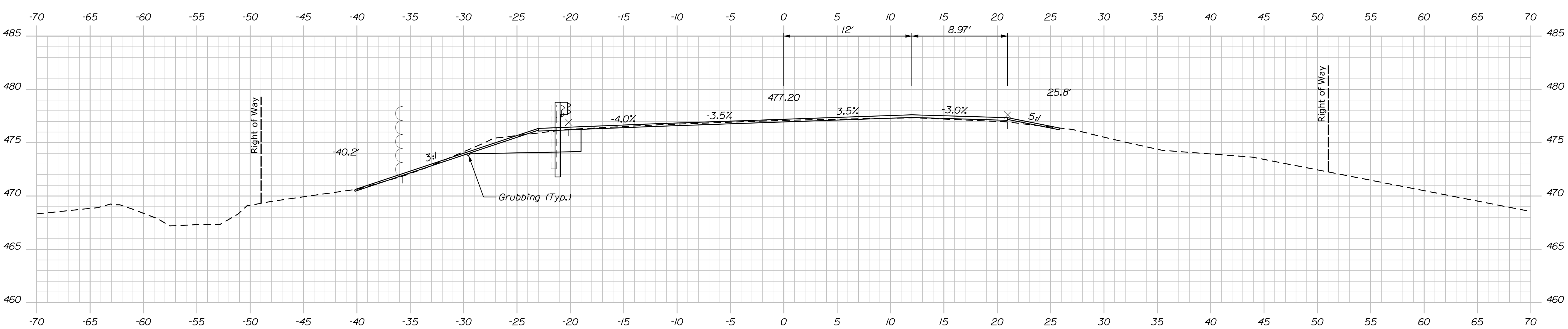


STA. 14+90.95, 20.00' LT TO STA. 15+28.24, 24.00' LT
INSTALL 3" W-BEAM GUARDRAIL - MIDWAY SPLICE FLARED TERMINAL

15+00.00



14+75.00



14+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
NHP-2188(400)

BRIDGE NO. 2781
WIN
021884.00
BRIDGE PLANS

PROJ. MANAGER	DESIGN-DETAILED	CHECKED-REVIEWED	BY	DATE	SIGNATURE
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REVISIONS 3	REVISIONS 3	REVISIONS 3			
REVISIONS 4	REVISIONS 4	REVISIONS 4			
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SOUCY BRIDGE
THIBODEAU BROOK
GRAND ISLE AROOSTOOK COUNTY

CROSS SECTIONS

SHEET NUMBER

17

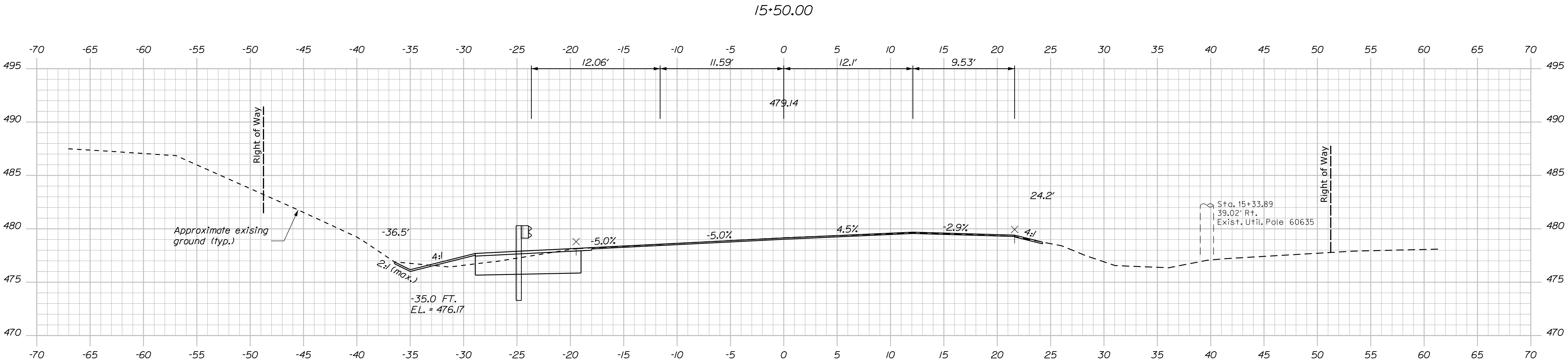
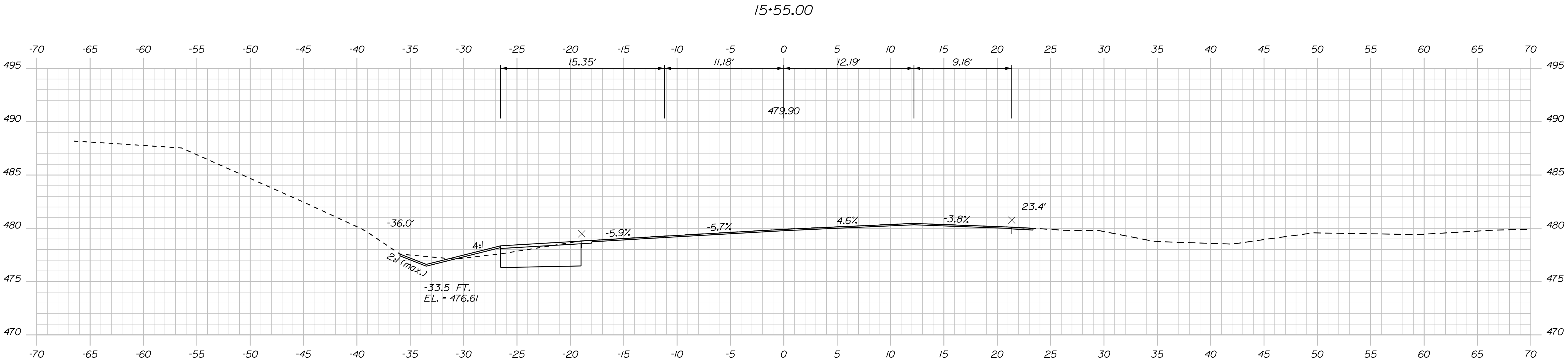
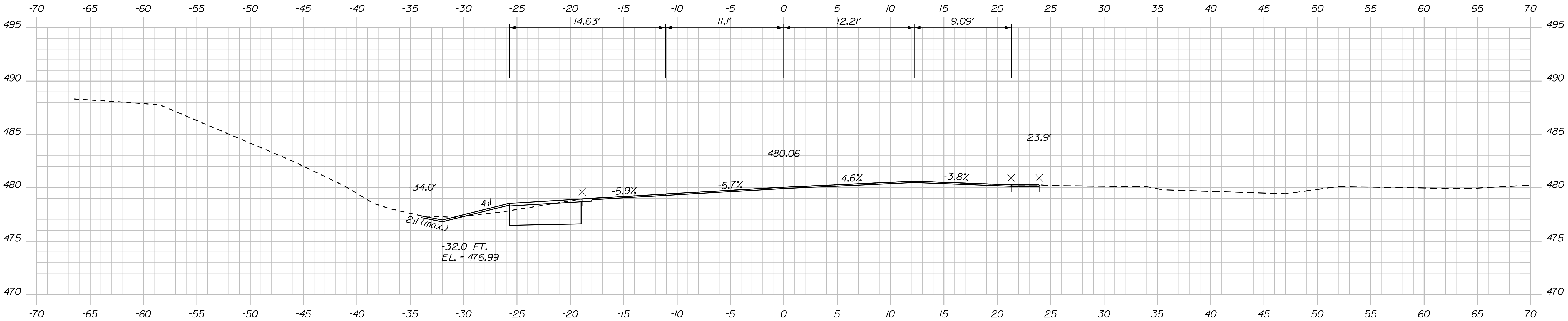
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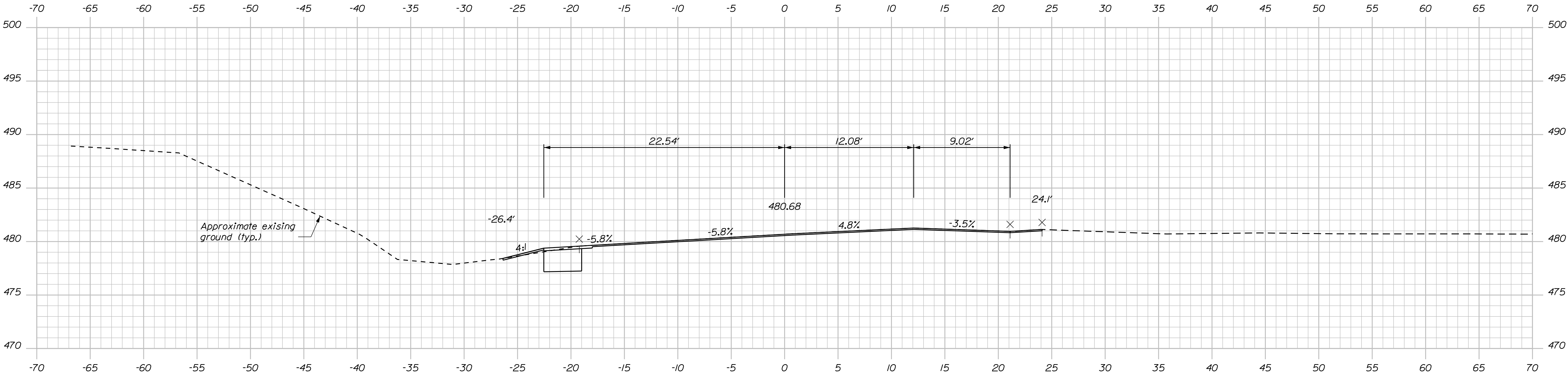
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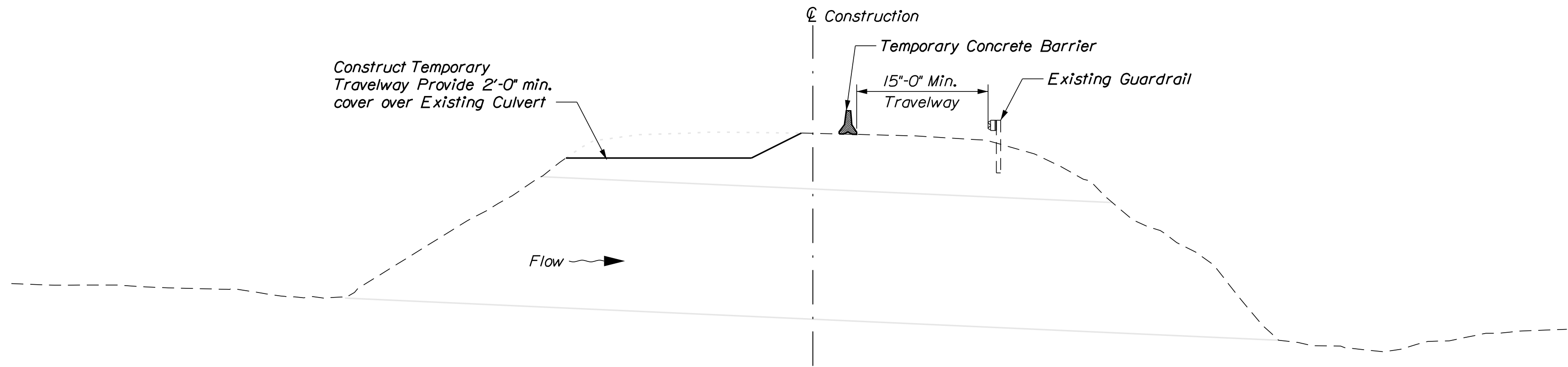
Sta. 15+93.60
Match Existing
Limit of Work

STATE OF MAINE
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NHPP-2188(400)
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BRIDGE PLANS

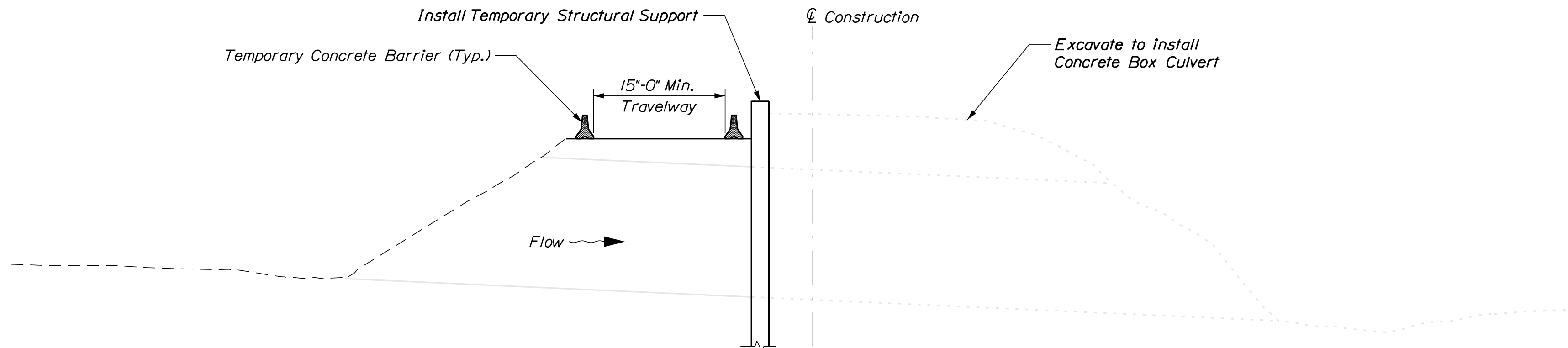
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SOUCY BRIDGE	AROOSTOOK COUNTY
THIBODEAU BROOK	
GRAND ISLE	
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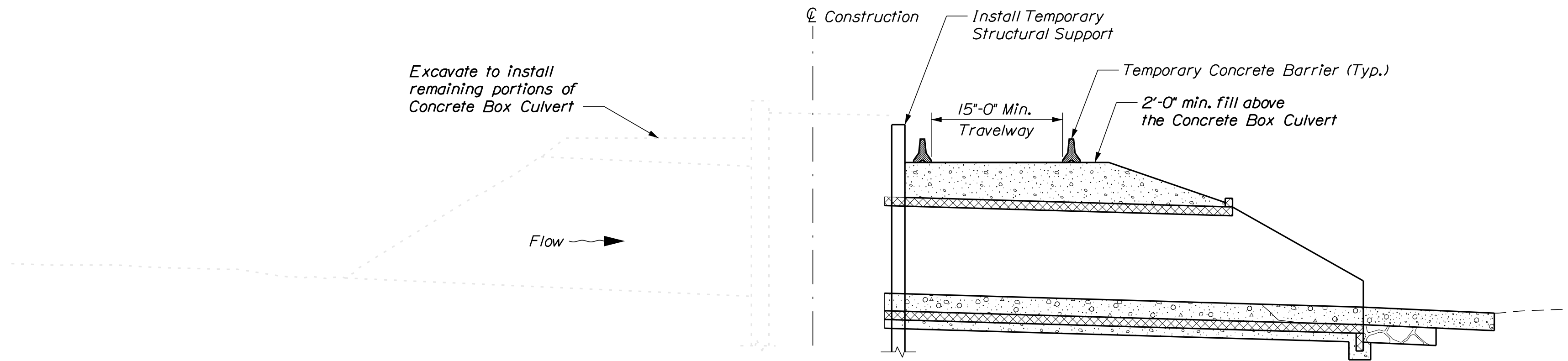
SHEET NUMBER
19
OF 23



STAGE NO. 1



STAGE NO. 2



STAGE NO. 3

STAGED CONSTRUCTION NOTES

Stage 1: Construct temporary travel lane on upstream side while maintaining one 15'-0" min. wide lane of alternating traffic using temporary traffic signals on downstream side.

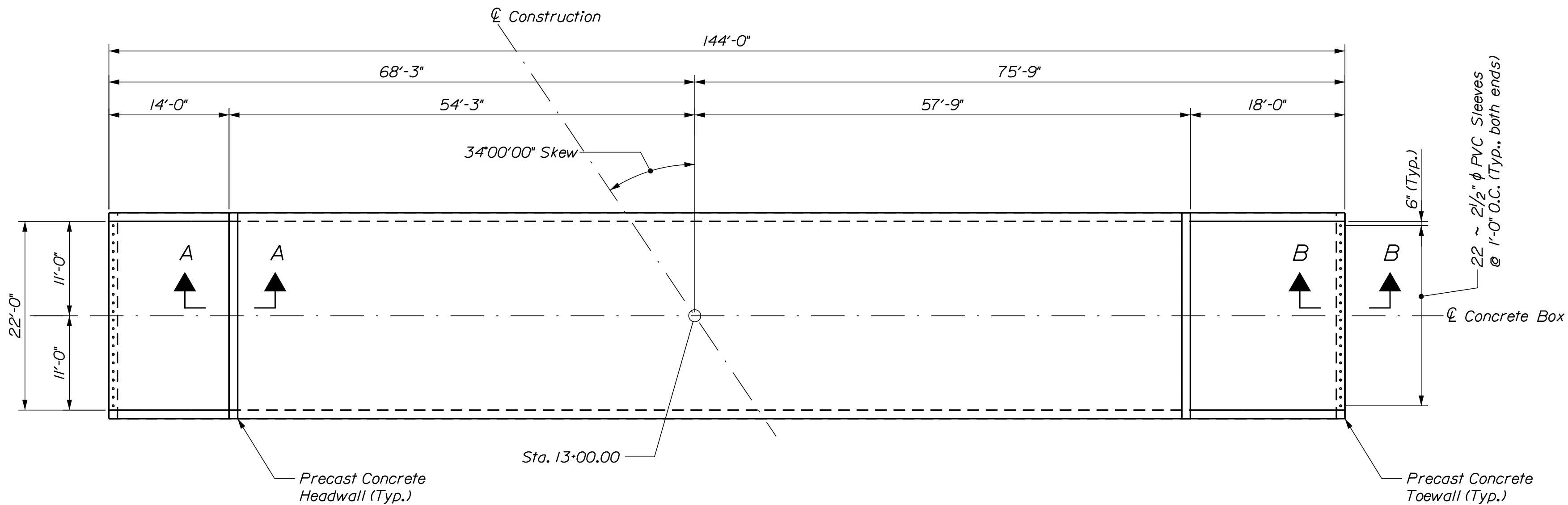
Stage 2: Install temporary structural support while maintaining one 15'-0" min. wide lane of alternating traffic using temporary traffic signals. Remove the downstream sections of the existing culvert and ground. Construct downstream portion of the concrete box.

Stage 3: Construct temporary traffic lane over the newly installed concrete box culvert on downstream side. Provide one 15'-0" min. wide lane of alternating traffic using temporary traffic signals. Remove the remaining upstream sections of existing culvert and construct upstream portion of concrete box. Construct roadway base, base layer of paving and guardrail on upstream side.

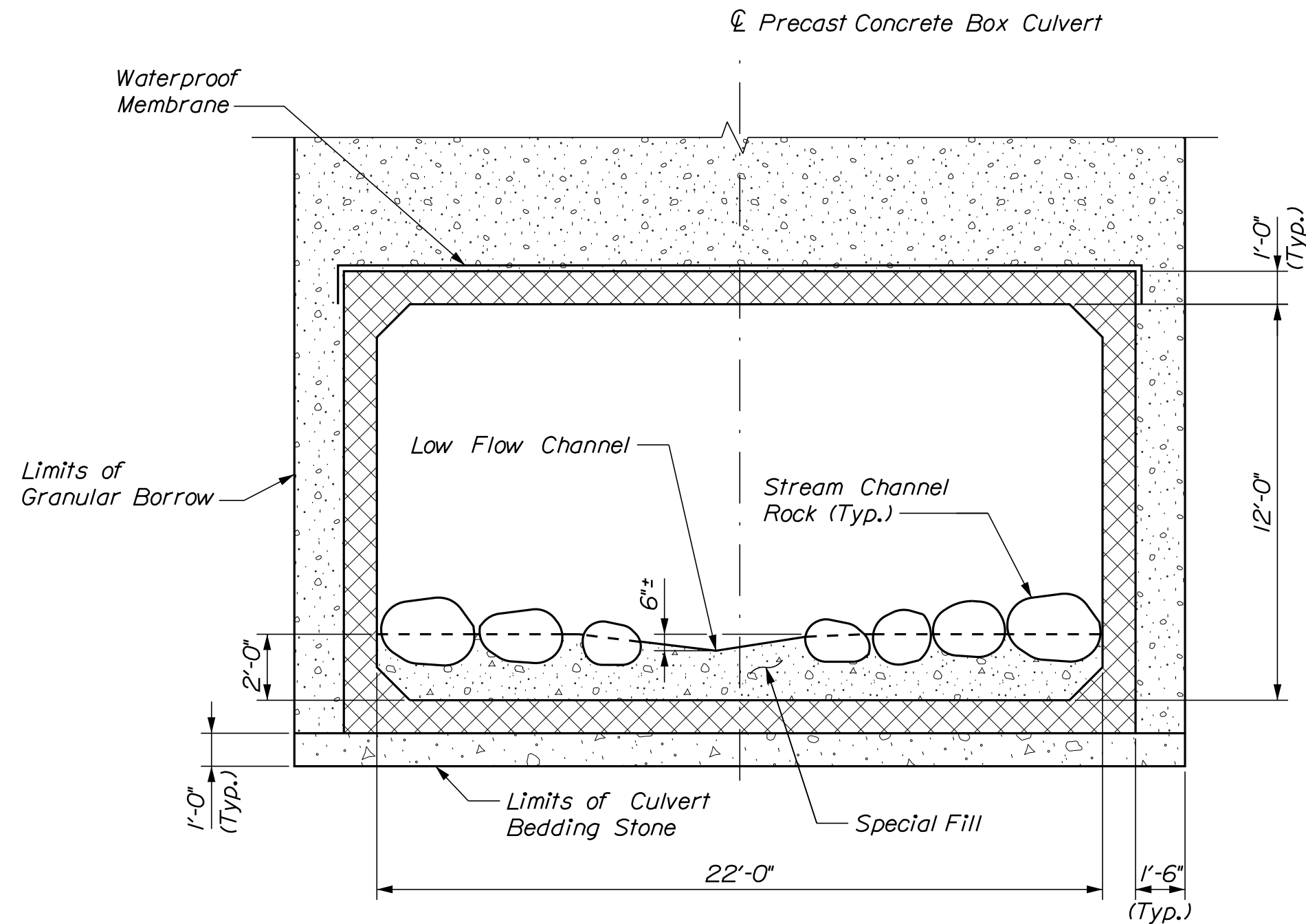
Stage 4: Maintain one 15'-0" min. wide lane of alternating traffic using temporary traffic signals over the newly installed concrete box culvert and roadway on upstream side. Complete roadway base, base layer of paving and guardrail on downstream side.

Stage 5: Install final course of paving.

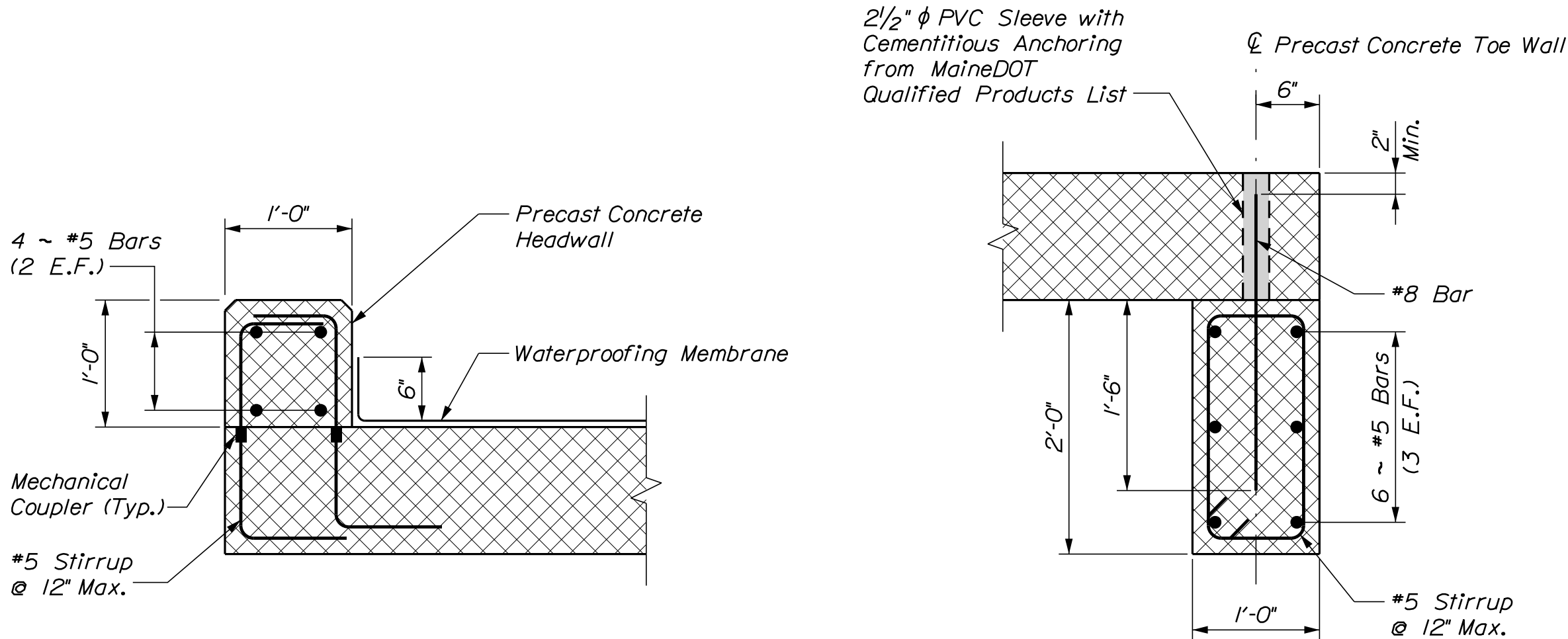
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BRIDGE PLANS			
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BY DATE D. BURGESS 6/29/18 J. BURGESS 6/29/18		SIGNATURE P.E. NUMBER DATE	



PRECAST CONCRETE BOX - PLAN
(22'-0" Span x 12'-0" Rise)



TYPICAL CONCRETE BOX SECTION

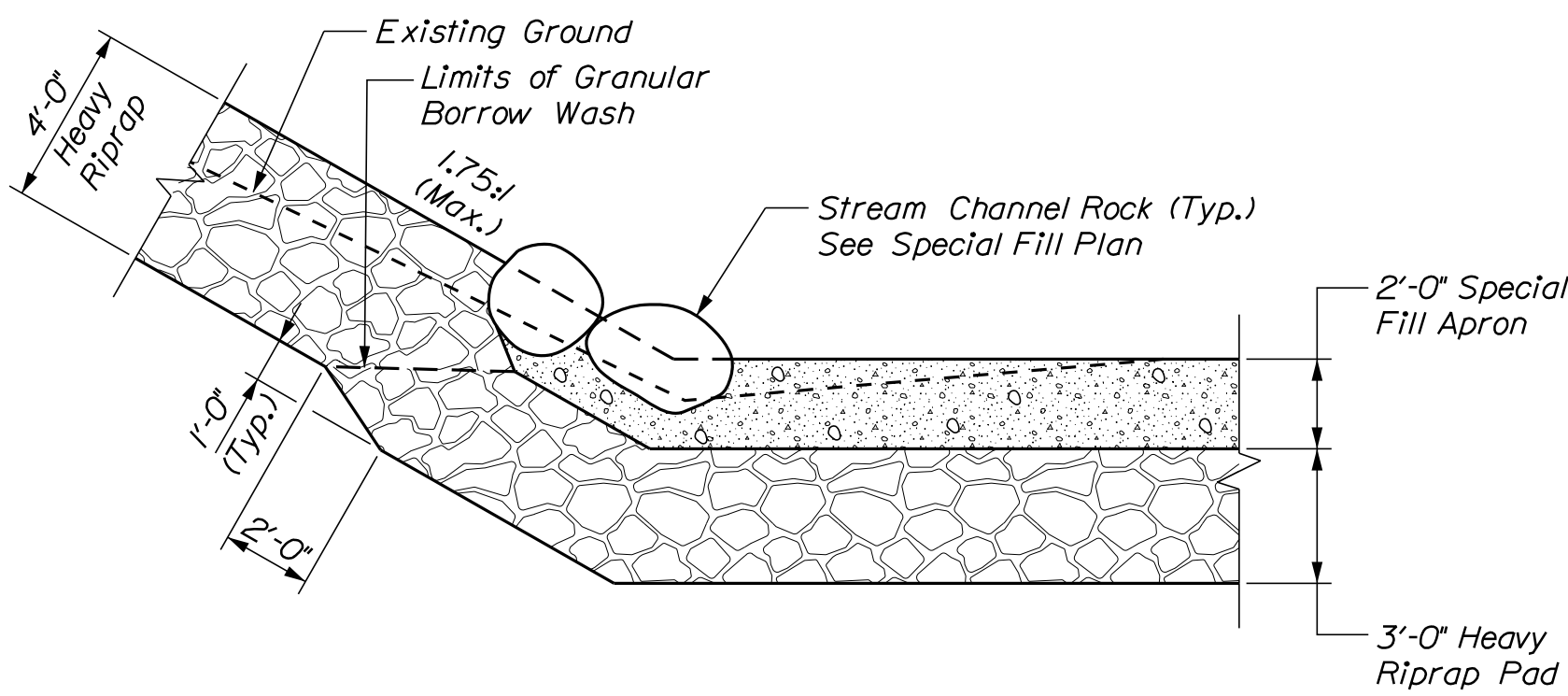


HEADWALL DETAIL
Section "A-A"

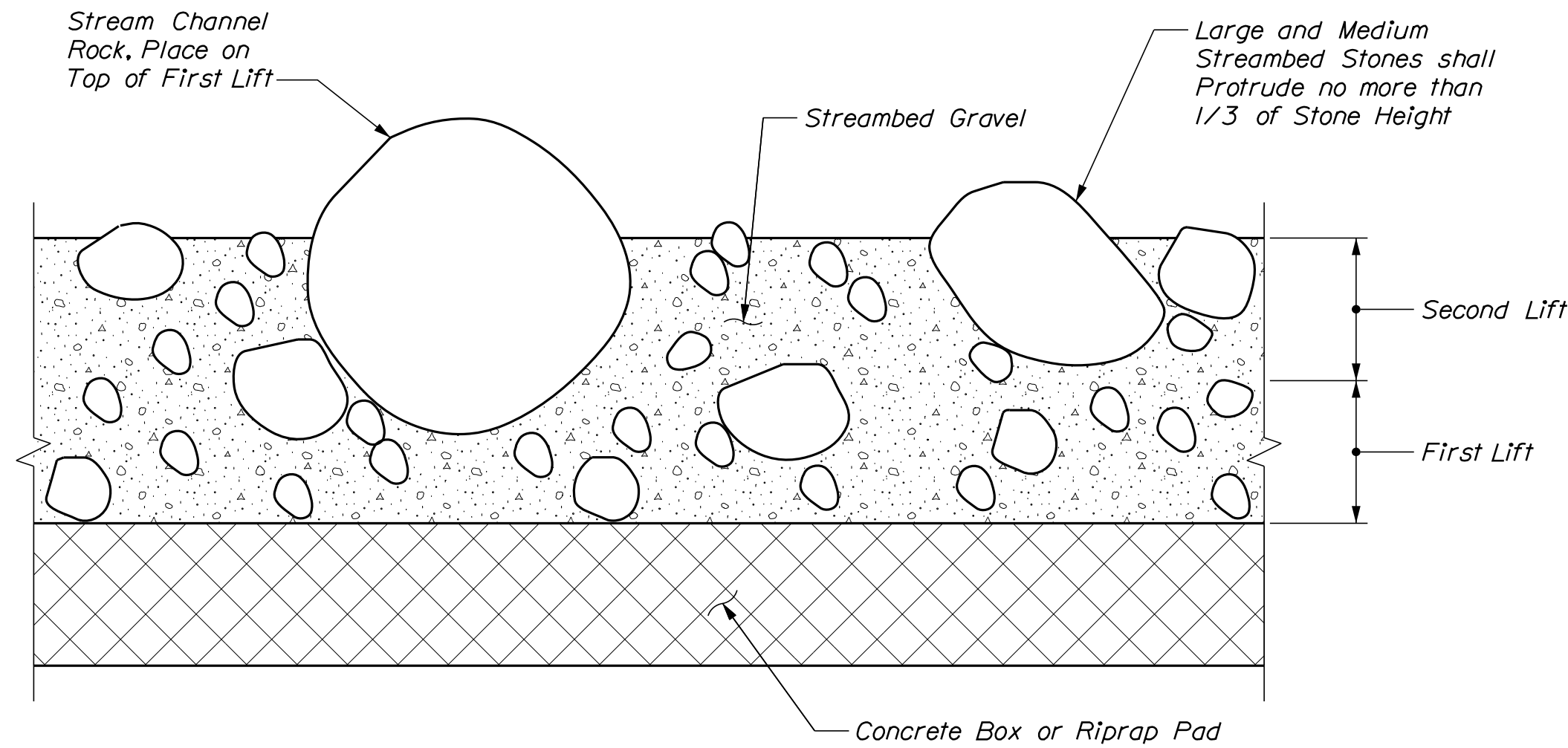
PRECAST CONCRETE TOE WALL DETAIL
Section "B-B"

PRECAST CONCRETE BOX NOTES

1. The precast units shall be designed to carry construction loadings with a minimum fill cover of 18 inches over the top of the units.
2. Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.
3. Construction, handling, and assembly of precast units shall be in accordance with Standard Specifications Section 534, Precast Structural Concrete, and with the manufacturer's specifications as applicable.

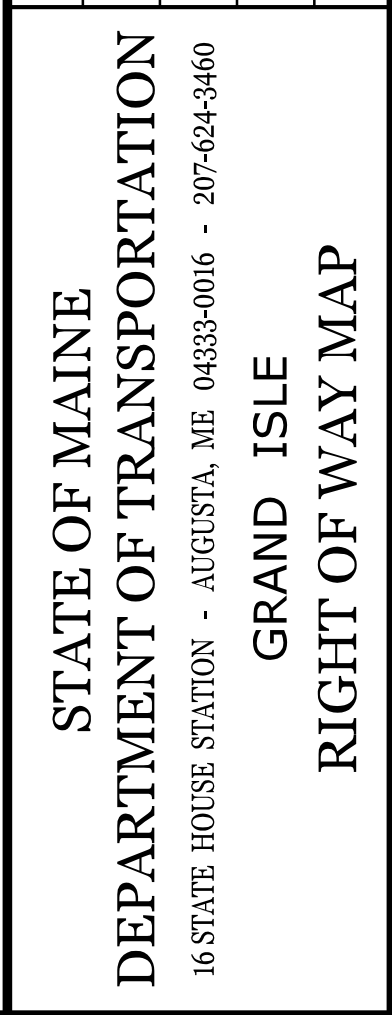


RIPRAP SPECIAL FILL TRANSITION DETAIL



SPECIAL FILL DETAIL

See Special Provision 203 and 610:
Special Fill and Stream Channel Rock for
Materials and Construction Requirements



REVISIONS				PLAN FILED IN PLAN BOOK PAGE COUNTY RECORD								DAVID BERNHARDT	STATE HIGHWAY "50" U.S. ROUTE 1 GRAND ISLE AROOSTOOK COUNTY FEDERAL AID PROJECT NO. NHPP-2188(400)			SHEET NUMBER							
NO.		DATE		DESCRIPTION		BY	NO.		GRANTOR		INSTRUMENT						DATE		BOOK		PAGE		