

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



HODGDON AROOSTOOK COUNTY MADUSKEAG BRIDGE OVER MADUSKEAG STREAM U.S. ROUTE 1 FEDERAL AID PROJECT NO. 2362500 PROJECT LENGTH 0.085 mi. BRIDGE NO. 2492

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	2220
Future (2038) AADT	2440
DHV - % of AADT	11
Design Hour Volume	268
Heavy Trucks (% of AADT)	19
Heavy Trucks (% of DHV)	19
Directional Distribution (% of DHV)	66
18 kip Equivalent P 2.0	417
18 kip Equivalent P 2.5	397
Design Speed (mph)	35

HYDROLOGIC DATA

Drainage Area	3.03 sq mi
Design Discharge (Q50)	264.9 cfs
Check Discharge (Q100)	310.1 cfs
Headwater Elevation (Q1.1)	475.3 ft
Headwater Elevation (Q25)	477.7 ft
Headwater Elevation (Q50)	478.0 ft
Headwater Elevation (Q100)	478.5 ft
Discharge Velocity (Q1.1)	3.55 fps
Discharge Velocity (Q50)	6.96 fps
Discharge Velocity (Q100)	7.45 fps

MATERIALS

Concrete:	
Precast	Class "P"
All Other	Class "A"
Reinforcing Steel	ASTM A615/A615M, Grade 60
Welded Wire Reinforcement	ASTM A1064/ A1064M

BASIC DESIGN STRESSES

Precast Concrete	f 'c = 5,000 psi
Reinforcing Steel	F y = 60,000 psi
Welded Wire Reinforcement	F y = 65,000 psi

LIST OF DRAWINGS

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Highway Approach Cross - Sections	7-15
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Right of Way Map	17

UTILITIES

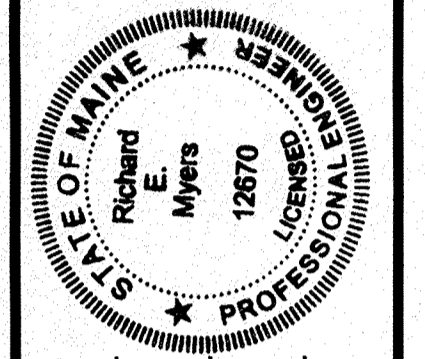
Consolidated Communications
Houlton Water Company
Maine Fiber Company (now First Light)
Pioneer Wireless, Inc.
Charter Communications

MAINTENANCE OF TRAFFIC

Maintain one lane of alternating one - way traffic using a Special Detour with traffic signals.

<u>PROJECT LOCATION</u>	Located one mile south of the Hodgdon Mills Road. Lat./Long. 46° 02' 48.3" N 67° 51' 20.3" W
<u>PROGRAM AREA</u>	Highway Bridges - Minor Spans
<u>OUTLINE OF WORK</u>	Replacement of the Maduskeag Bridge # 2492 in Hodgdon which carries US 1 over Maduskeag Stream.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
APPROVED: *[Signature]*
COMMISSIONER: *[Signature]*
DATE: 12-9-2020
CHIEF ENGINEER: *[Signature]*



[Signature]
SIGNATURE
/s/ R. E. Myers
12.6.20
P.E. NUMBER
12870
DATE
October 2, 2020

PROGRAM	BRIDGE
PROJECT MANAGER	J. STETSON
DESIGNER	R. MYERS
CONSULTANT	
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

WIN 023625.00

2362500

**HODGDON
MADUSKEAG BRIDGE**

TITLE SHEET

SHEET NUMBER

1

 OF 17

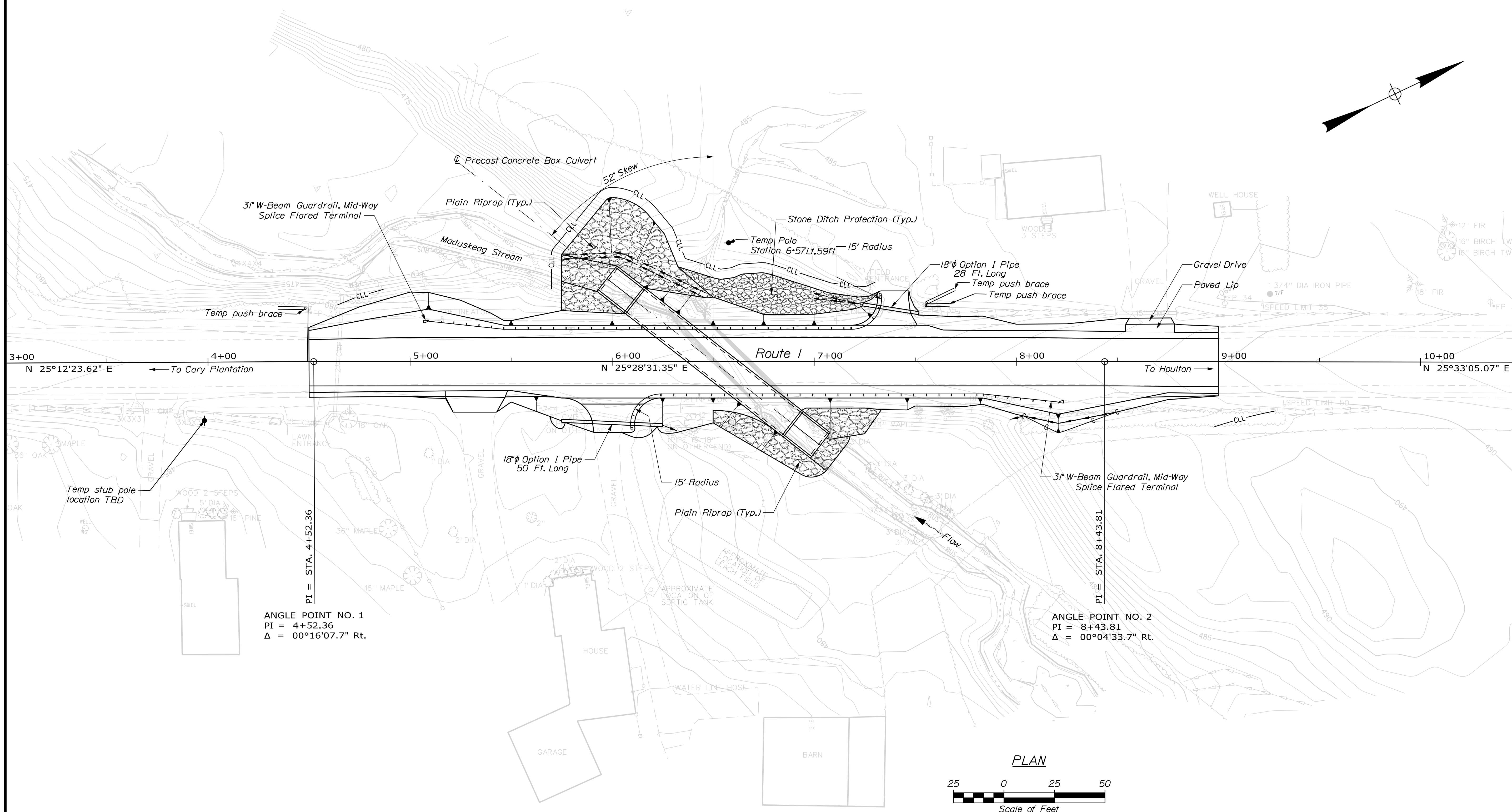
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 Division: BRIDGE
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Date: 11/2/2020

Username: David Shaw

Division: BRIDGE

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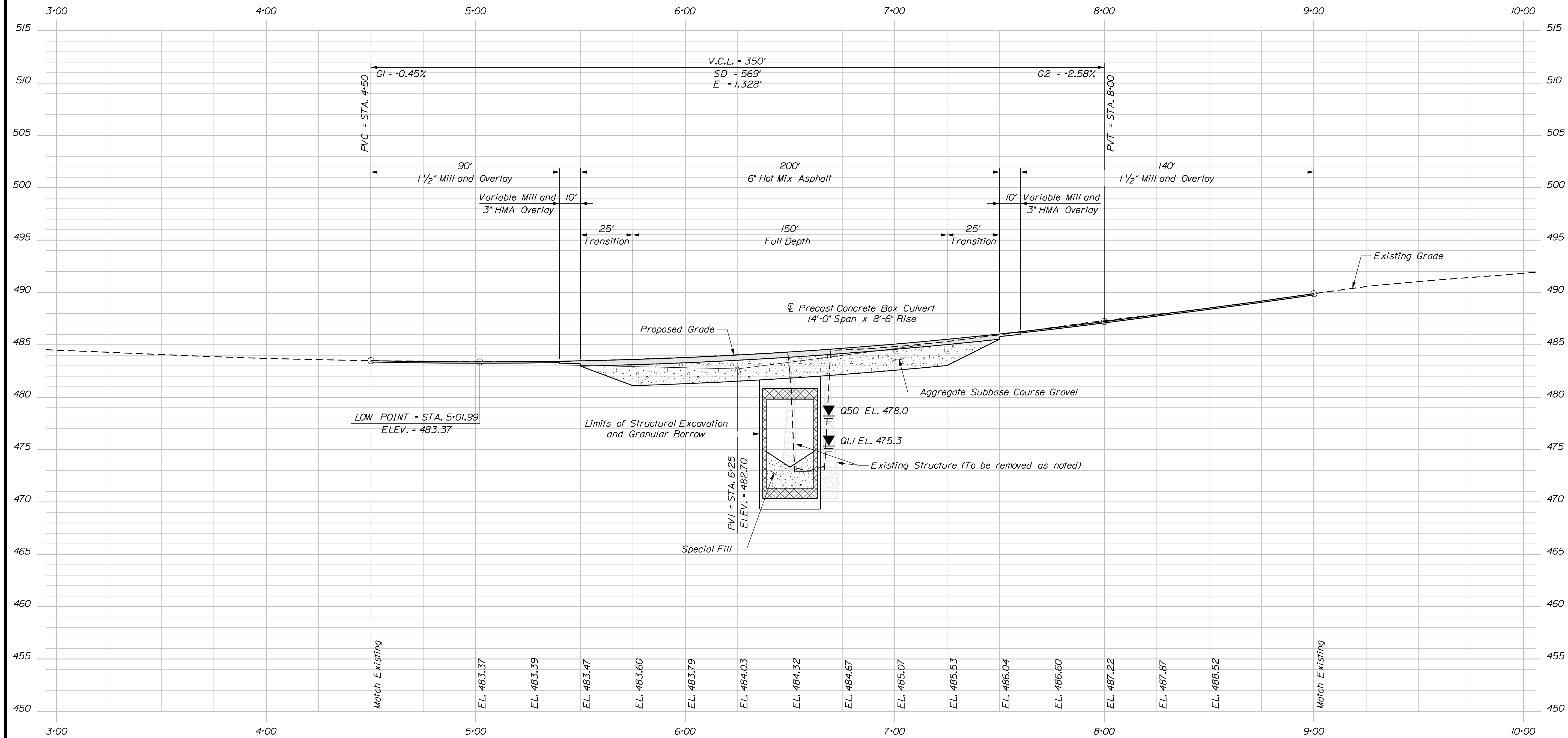


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		23625.00	
BRIDGE NO. 2492		WIN 023625.00	
MADUSKEAG BRIDGE MADUSKEAG STREAM HODGDON		AROSTOOK COUNTY	
GENERAL PLAN		SHEET NUMBER 3 OF 17	
PROJ. MANAGER	J. STEINSON	BY	D. SHAW
DESIGN-DETAILED	R. MYERS	DATE	DEC 2019
CHECKED-REVIEWED	J. MANAHAN	DATE	JAN 2020
DESIGN-DETAILED	T. WHITE	SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date: 11/2/2020

Username: David Shaw

Filename: ... \00\BRIDGE\MSTA\004_Profile.dgn Division: BRIDGE



PROFILE

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		23625.00
HODGDON MADUSKEAG BRIDGE MADUSKEAG STREAM AROOSTOOK COUNTY		BRIDGE NO. 2492 WIN 023625.00
SHEET NUMBER		BRIDGE PLANS
4		
OF 17		

PROJ. MANAGER	BY	DATE
J. STETSON	D. SHAW	JAN 2020
R. MYERS	T. WHITE	JAN 2020

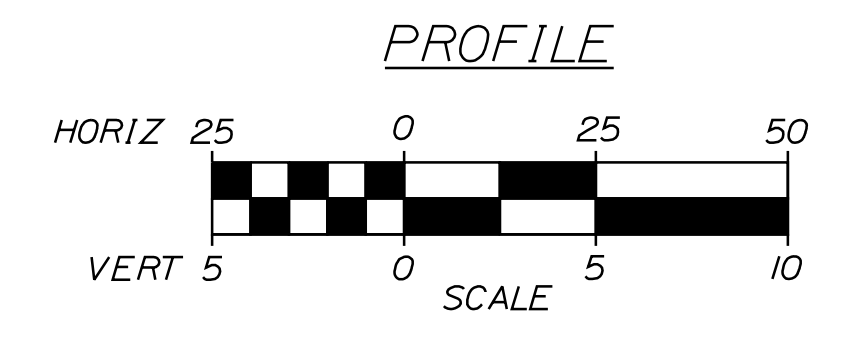
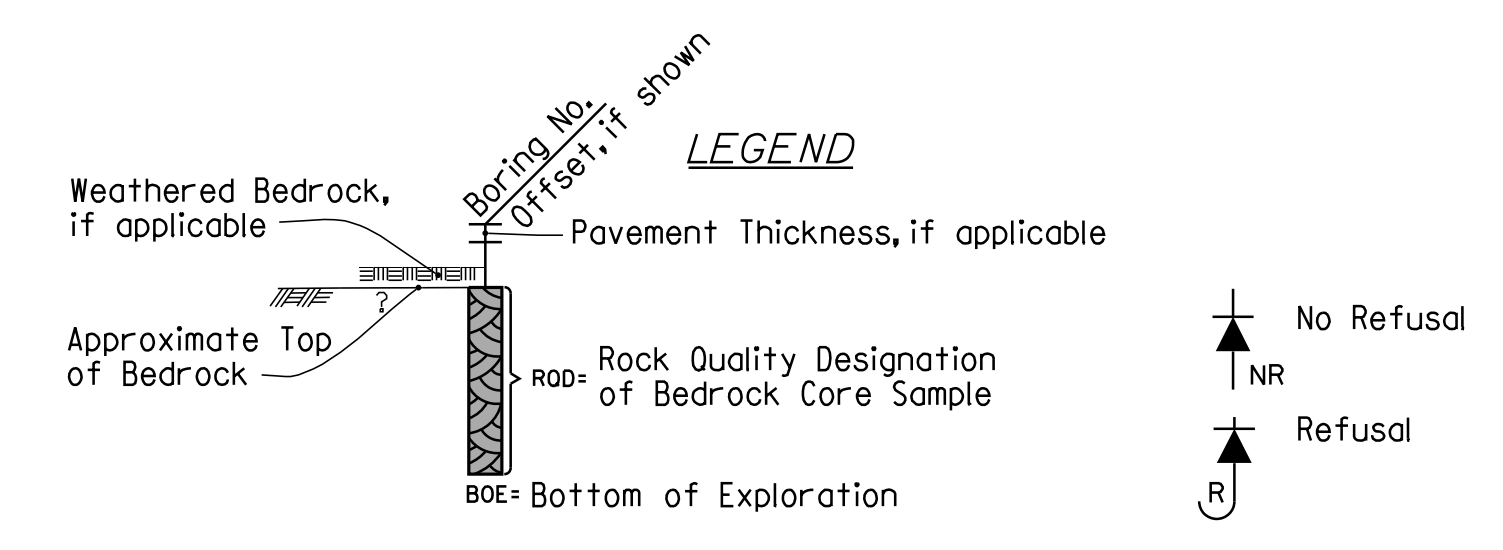
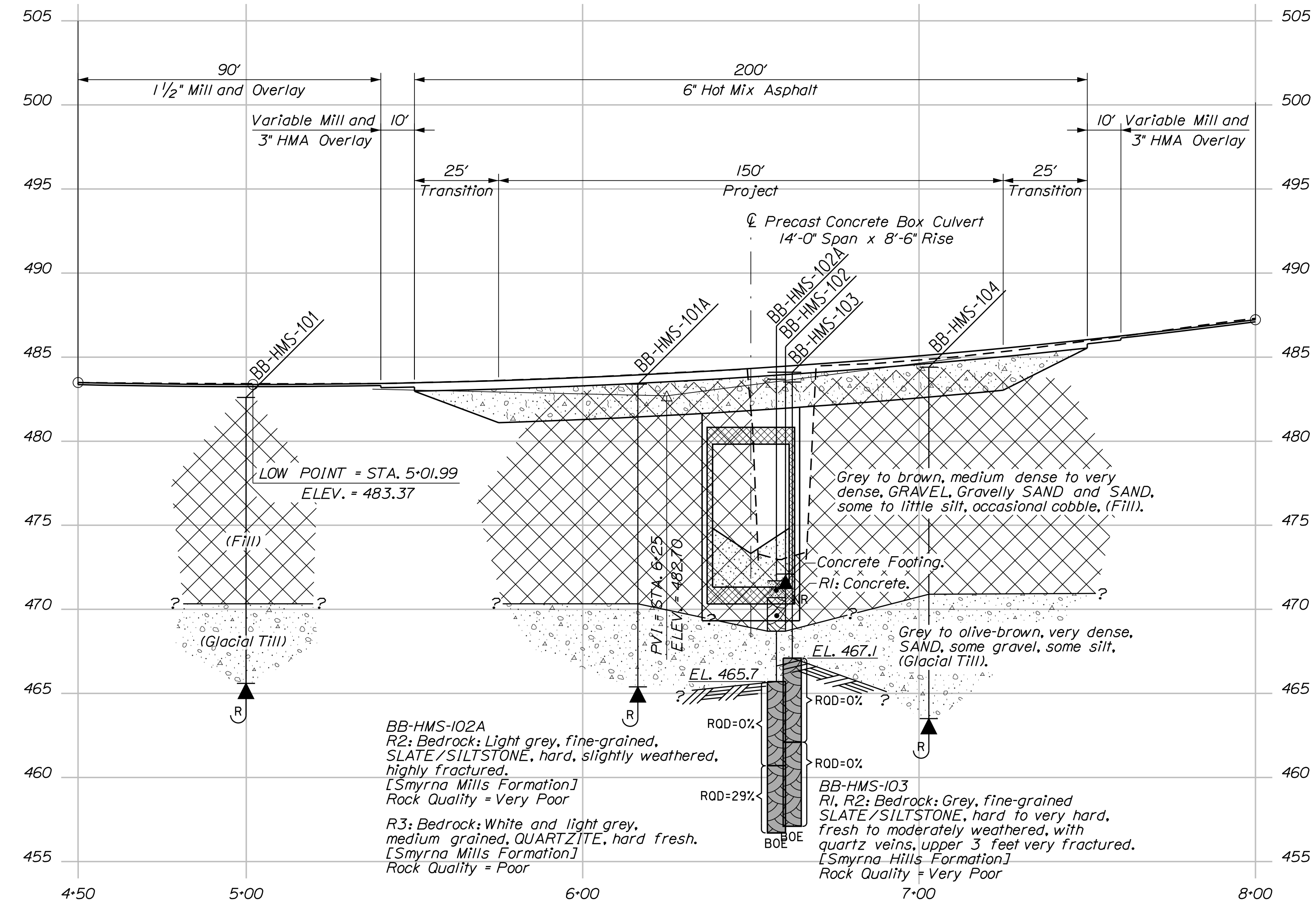
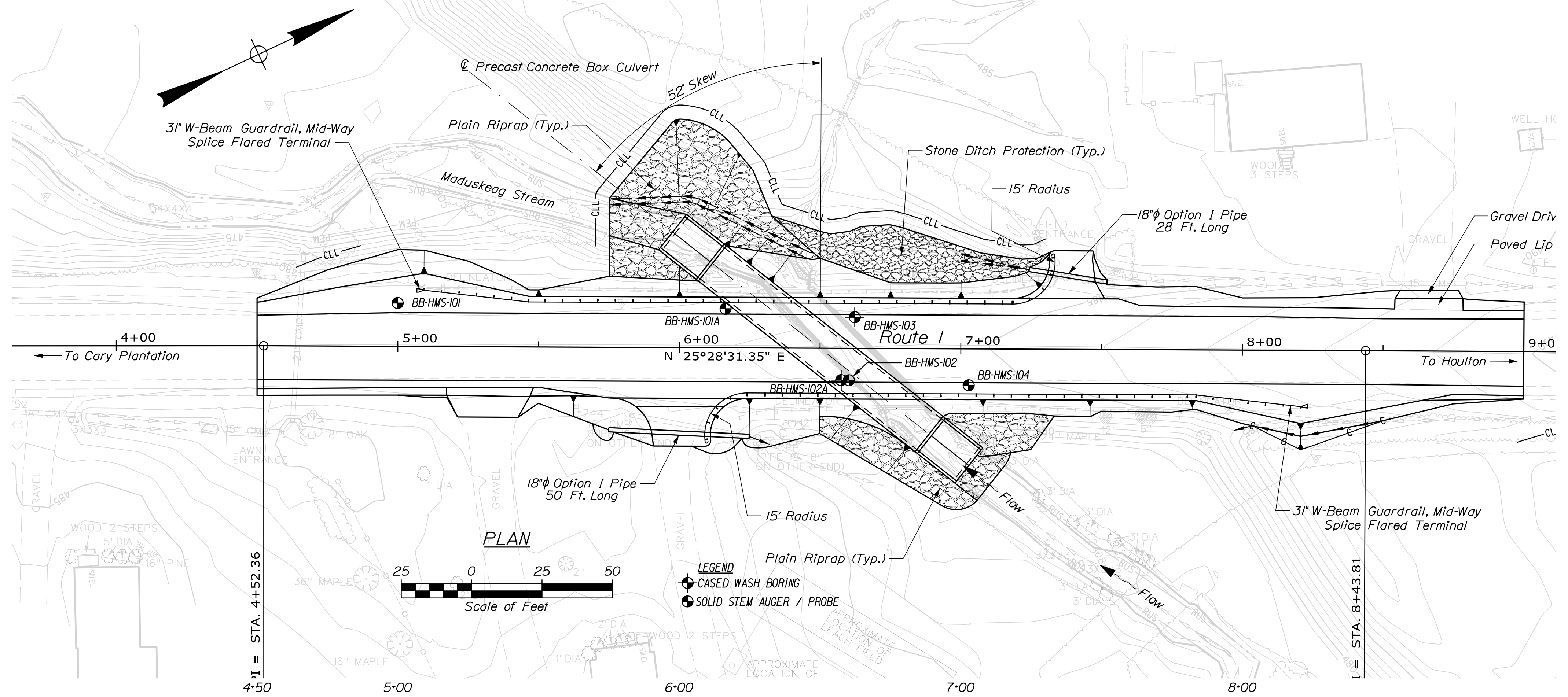
DESIGN/REVIEWED	SIGNATURE
J. MANAHAN	

REVISIONS	P.E. NUMBER	DATE
1		
2		
3		
4		

Date: 11/2/2020

Username: David.Shaw

Filename: ... \GEO\TECH\STA\005_BLP\BSP1.dgn Division: BRIDGE



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
23625.00
WIN
23625.00
BRIDGE NO. 2492
BRIDGE PLANS

PROJ. MANAGER	M. WIGHT	BY	DATE
DESIGN-DETAILED	J. MANAHAN	T. WHITE	JUN 2020
CHECKED-REVIEWED			
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MADUSKEAG BRIDGE
MADUSKEAG STREAM
HODGDON AROOSTOOK COUNTY
BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE

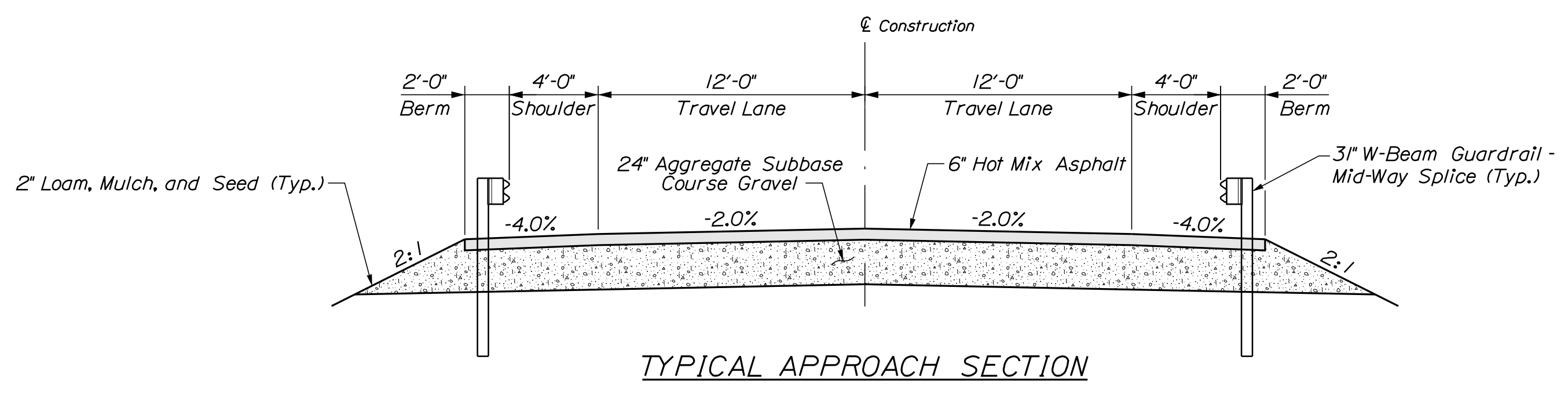
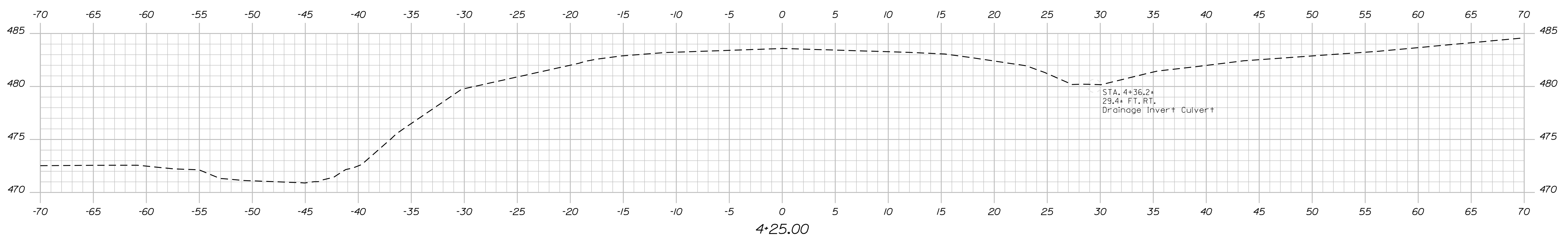
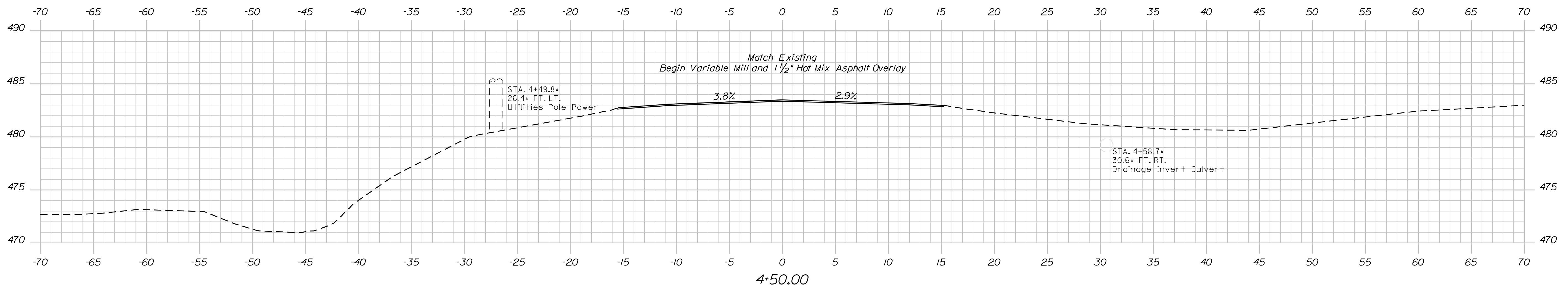
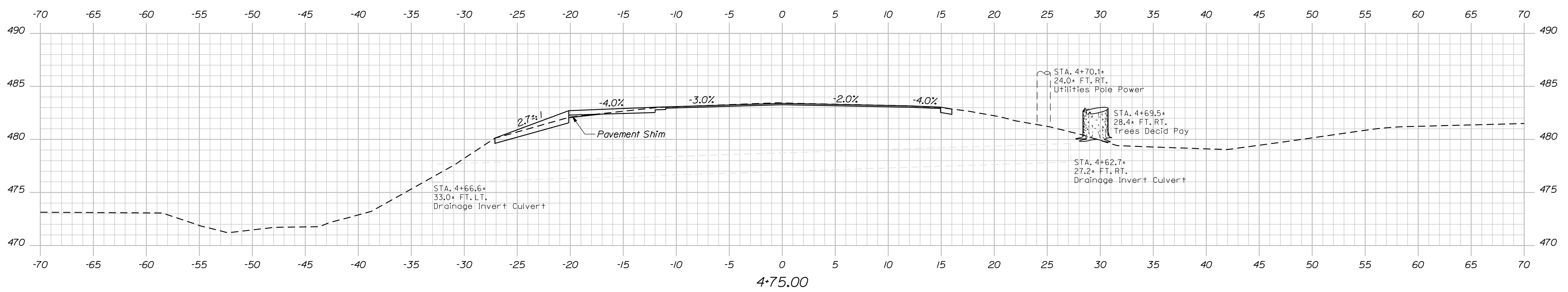
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OF 17

Date: 11/2/2020

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Division: BRIDGE

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
23625.00
WIN
023625.00
BRIDGE NO. 2492
BRIDGE PLANS

PROJ. MANAGER: J. STETSON
DESIGN-DETAILED: R. MYERS
CHECKED-REVIEWED: D. SHAW
DESIGN-DETAILED: J. MANAHAN
T. WHITE
SIGNATURE: _____
P.E. NUMBER: _____
DATE: JAN 2020

REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

MADUSKEAG BRIDGE
MADUSKEAG STREAM
AROOSTOOK COUNTY
HODGDON
CROSS SECTIONS

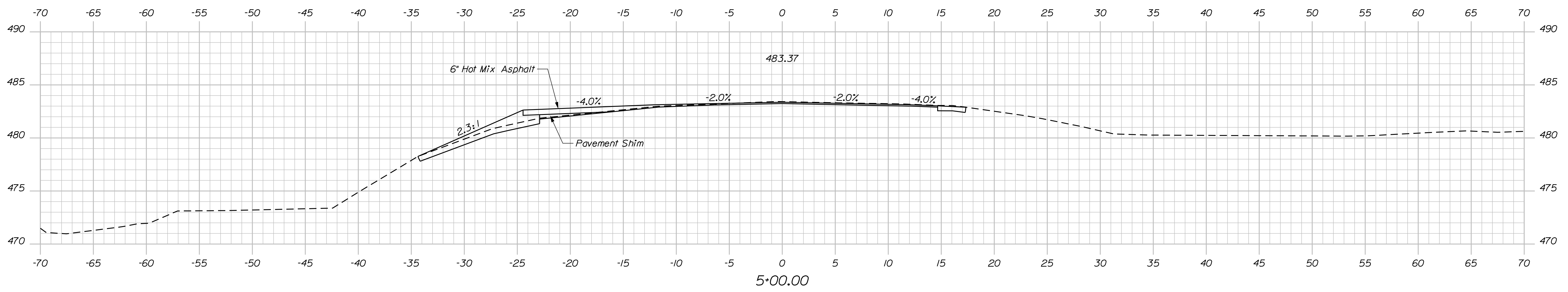
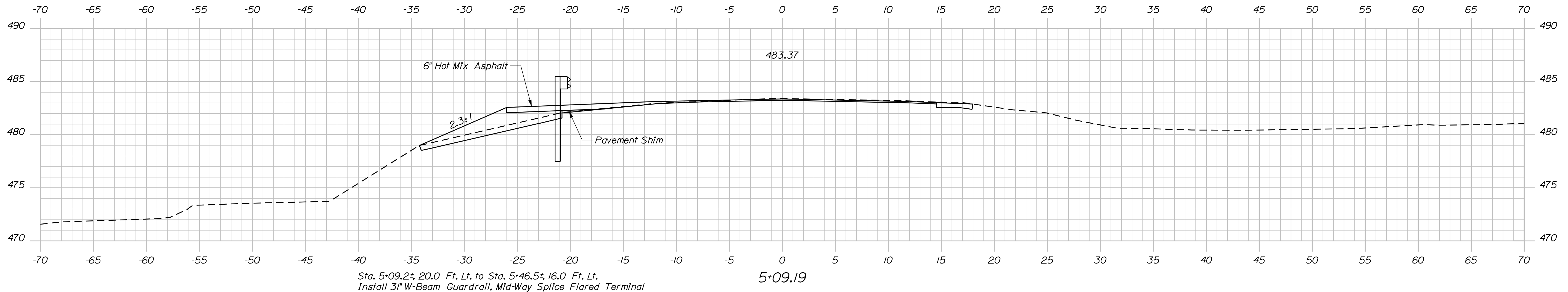
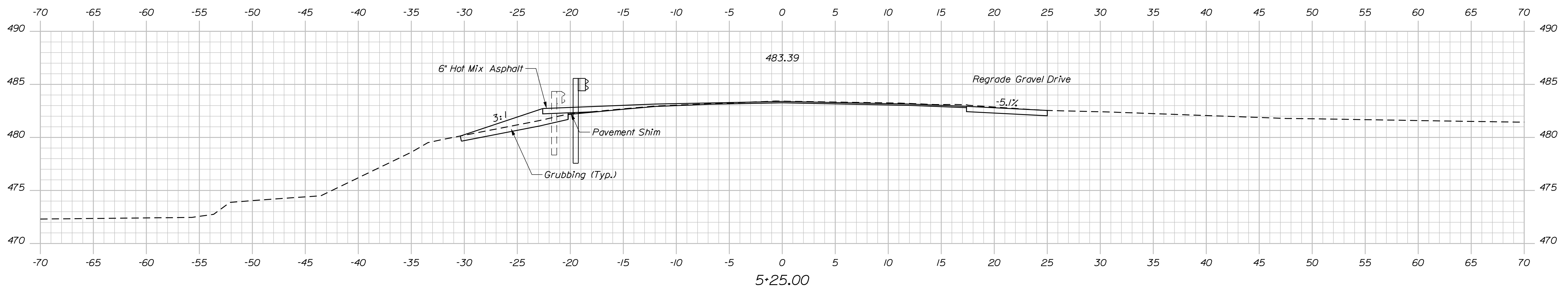
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Date: 11/2/2020

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Division: BRIDGE

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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

23625.00

WIN 023625.00

BRIDGE NO. 2492

BRIDGE PLANS

PROJ. MANAGER	J. STETSON	DATE	
DESIGN-DETAILED	R. MYERS	BY	D. SHAW
CHECKED-REVIEWED	J. MANAHAN	DESIGN-REVIEWED	T. WHITE
DESIGN-DETAILED		DATE	JAN 2020
REVISIONS 1		SIGNATURE	
REVISIONS 2		P.E. NUMBER	
REVISIONS 3		DATE	
REVISIONS 4			
FIELD CHANGES			

MADUSKEAG BRIDGE
MADUSKEAG STREAM
AROOSTOOK COUNTY

HODGDON

CROSS SECTIONS

SHEET NUMBER

8

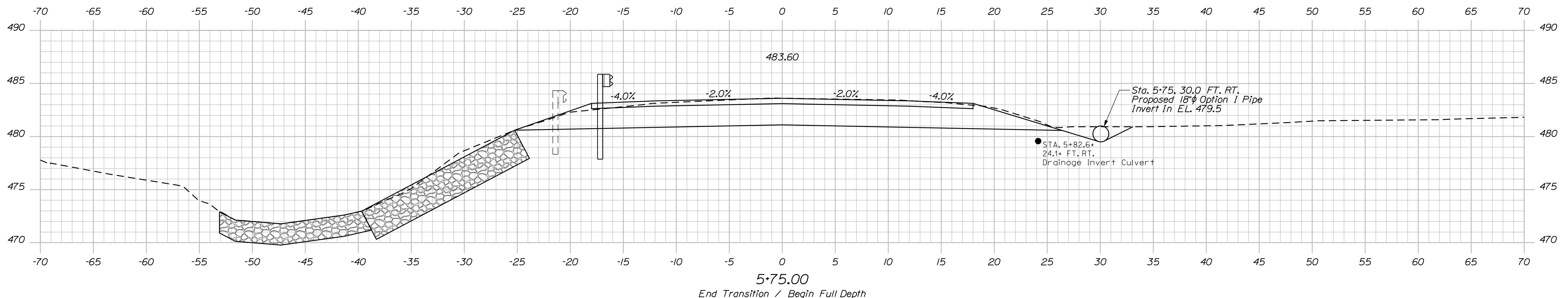
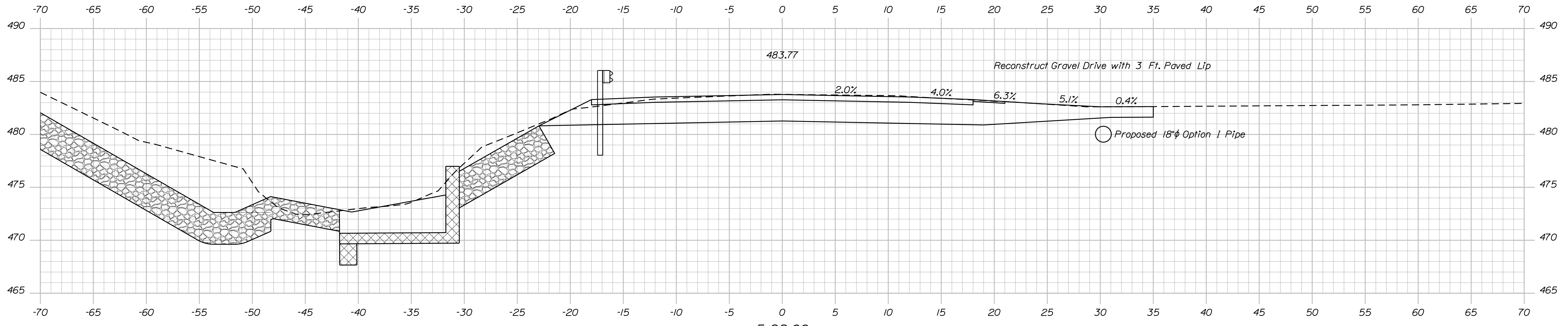
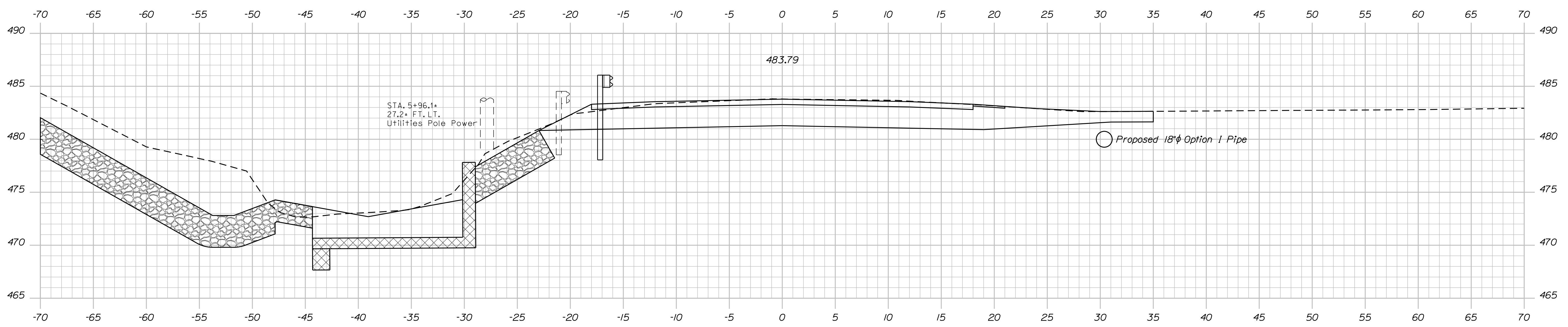
OF 17

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Division: BRIDGE

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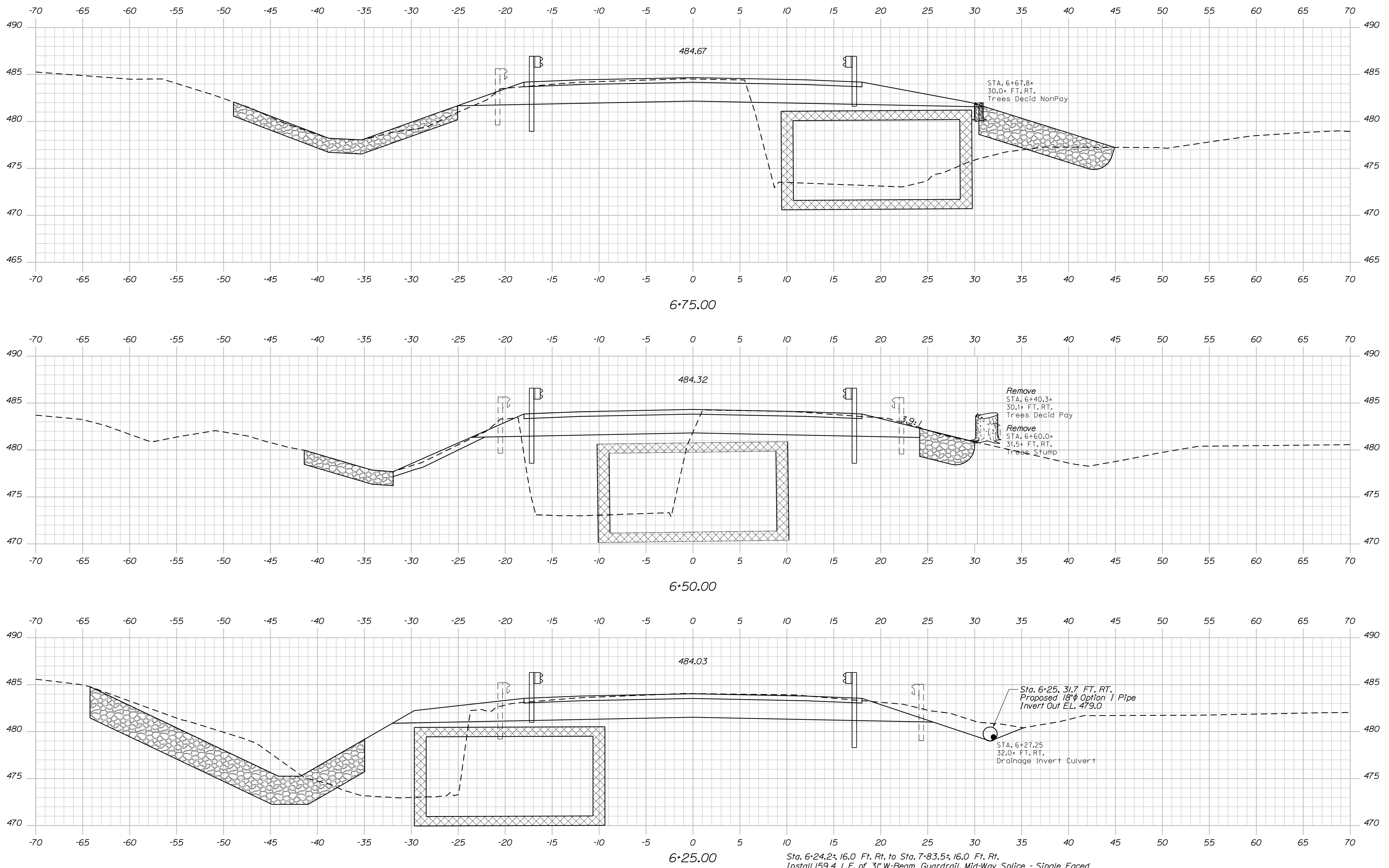
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PROJ. MANAGER	J. STETSON	DESIGN-DETAILED	R. MYERS	CHECKED-REVIEWED	D. SHAW	DESIGN-DETAILED	J. MANAHAN	DESIGN-DETAILED	T. WHITE	REVISIONS 1		REVISIONS 2	
DATE		BY		DATE		SIGNATURE		P.E. NUMBER		DATE		REVISIONS 3	
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Date: 11/2/2020

Username: David.Shaw

Division: BRIDGE

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HODGDON		AROOSTOOK COUNTY		BRIDGE NO. 2492	
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OF 17		BRIDGE PLANS		023625.00	

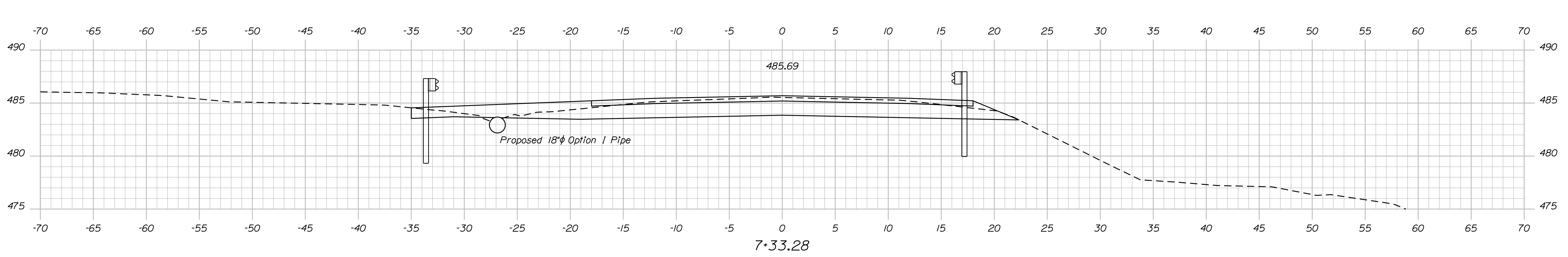
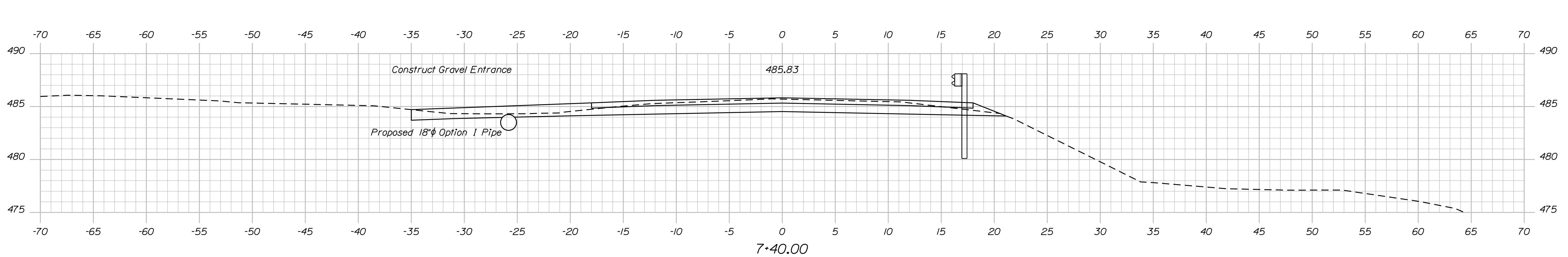
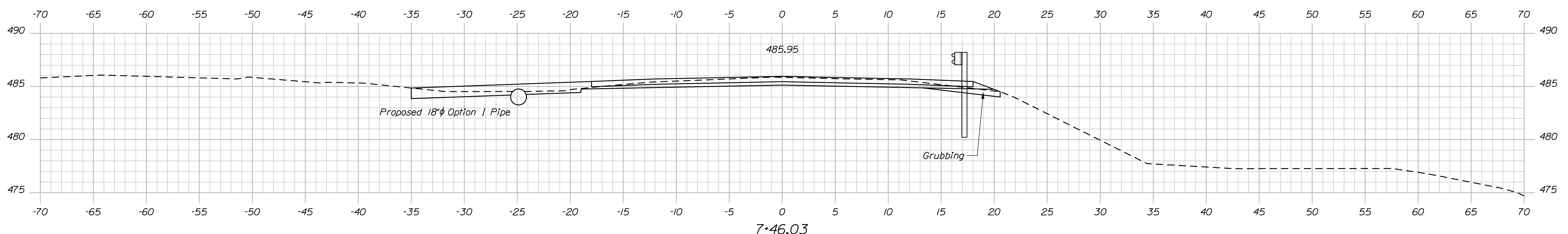
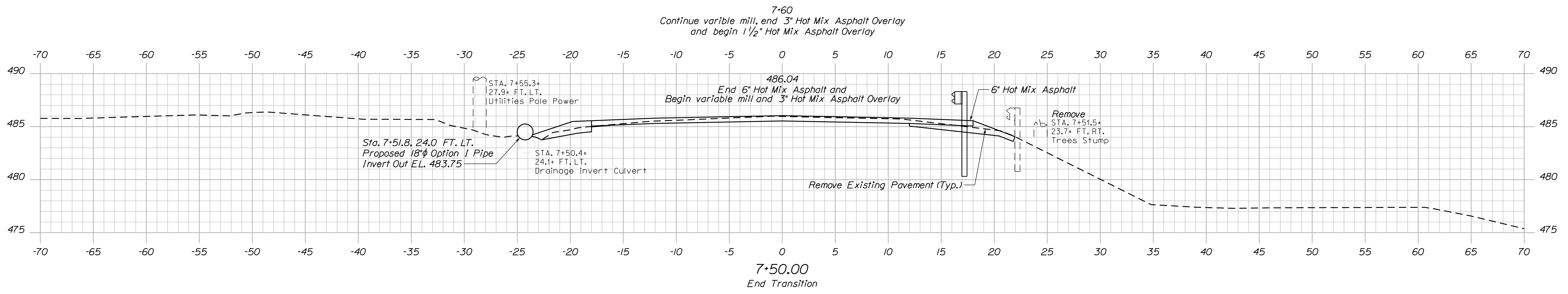
PROJ. MANAGER	DATE	BY	DATE
J. STETSON		D. SHAW	
CHECKED/REVIEWED		R. MYERS	
DESIGNED/DETAILED		J. MANAHAN	
DESIGNED/DETAILED		T. WHITE	
REVISIONS 1		SIGNATURE	
REVISIONS 2		P.E. NUMBER	
REVISIONS 3		DATE	
REVISIONS 4			
FIELD CHANGES			

Date: 11/2/2020

Username: David.Shaw

Division: BRIDGE

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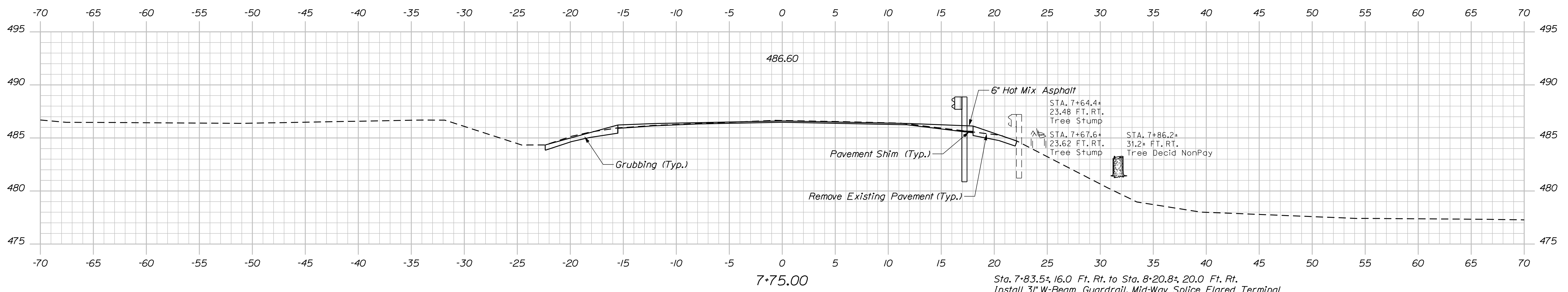
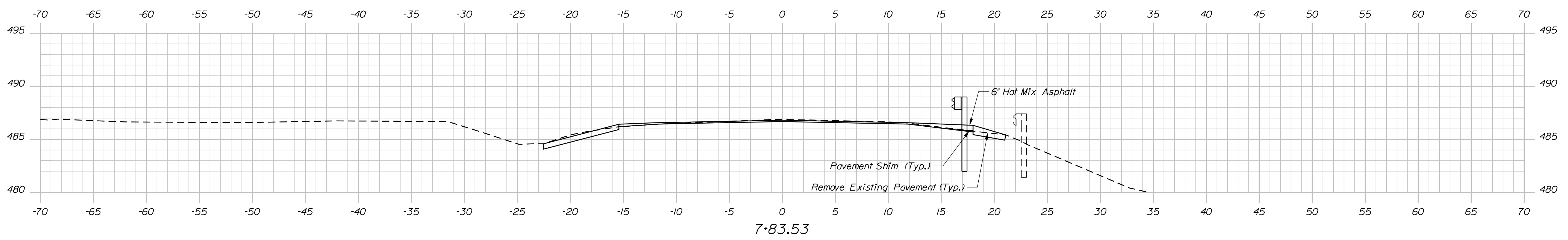
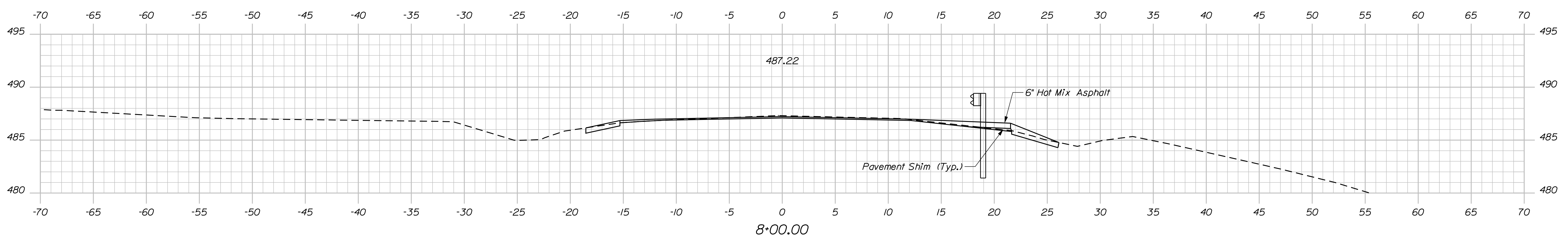
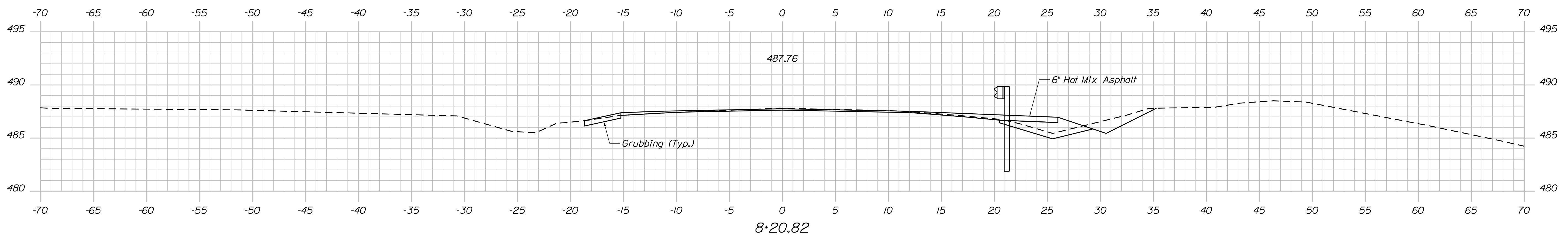
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		23625.00		WIN		023625.00		BRIDGE NO. 2492		BRIDGE PLANS	
MADUSKEAG BRIDGE		MADUSKEAG STREAM		AROOSTOOK COUNTY		HODGDON		CROSS SECTIONS		SHEET NUMBER		13	
OF 17		DATE		SIGNATURE		P.E. NUMBER		DATE		FIELD CHANGES		REVISIONS	
PROJ. MANAGER		BY		CHECKED		DESIGNED		REVISIONS 1		REVISIONS 2		REVISIONS 3	
J. STETSON		D. SHAW		R. MYERS		T. WHITE		JAN 2020					
DESIGN DETAILED		DATE		DESIGNED		SIGNATURE		P.E. NUMBER		DATE		REVISIONS 4	
R. MYERS		JAN 2020		T. WHITE									

Date: 11/2/2020

Username: David.Shaw

Division: BRIDGE

Filename: ... \014_XSECT_7+75-8+20.82.dgn



Sta. 7+83.5+ 16.0 Ft. Rt. to Sta. 8+20.8+ 20.0 Ft. Rt.
 Install 3" W-Beam Guardrail, Mid-Way Splice Flared Terminal

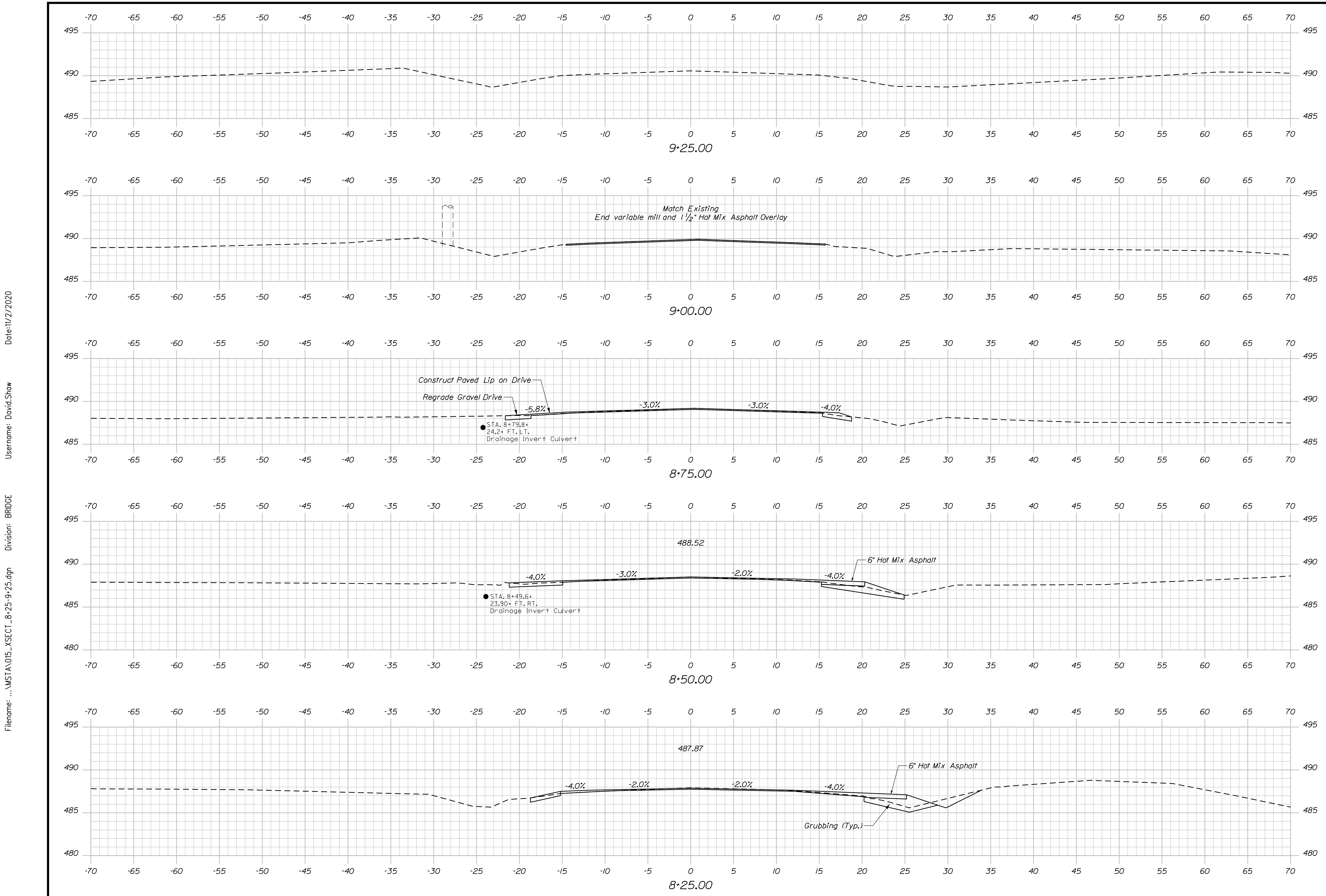
STATE OF MAINE DEPARTMENT OF TRANSPORTATION	23625.00	WIN	BRIDGE PLANS
		023625.00	

PROJ. MANAGER	J. STETSON	DATE	
DESIGN-DETAILED	R. MYERS	BY	D. SHAW
CHECKED-REVIEWED	J. MANAHAN	DATE	JAN 2020
DESIGN-DETAILED	T. WHITE	SIGNATURE	
REVISIONS 1		P.E. NUMBER	
REVISIONS 2		DATE	
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

MADUSKEAG BRIDGE	
MADUSKEAG STREAM	
AROOSTOOK COUNTY	
HODGDON	

CROSS SECTIONS

SHEET NUMBER	14
	OF 17



Date: 11/2/2020

Username: David.Shaw

Division: BRIDGE

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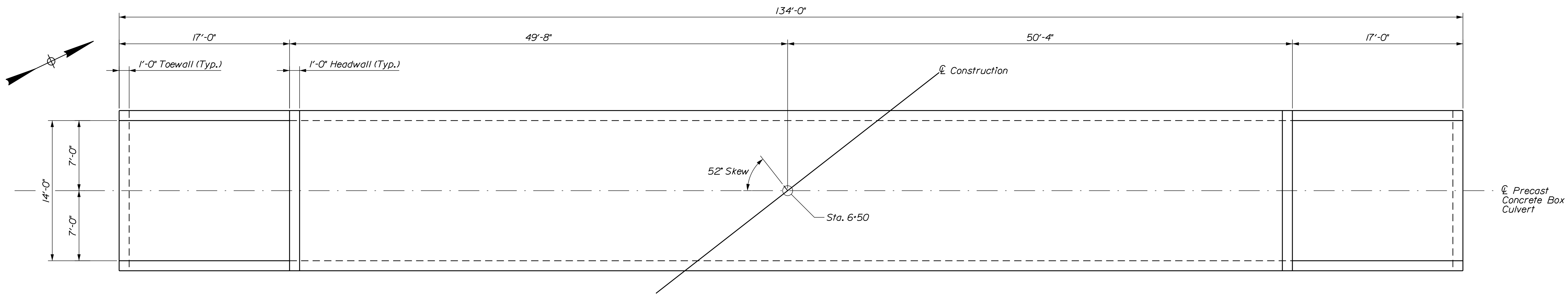
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MADUSKEAG BRIDGE MADUSKEAG STREAM HODGDON AROOSTOOK COUNTY		CROSS SECTIONS		
PROJ. MANAGER J. STETSON	BY D. SHAW	DATE JAN 2020	SIGNATURE	
DESIGN/DETAILED R. MYERS	CHECKED/REVIEWED J. MANAHAN	DATE	P.E. NUMBER	
DESIGN/DETAILED J. MANAHAN	REVISIONS 1		DATE	
REVISIONS 2	REVISIONS 3			
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SHEET NUMBER		15		
OF 17				

Date: 11/2/2020

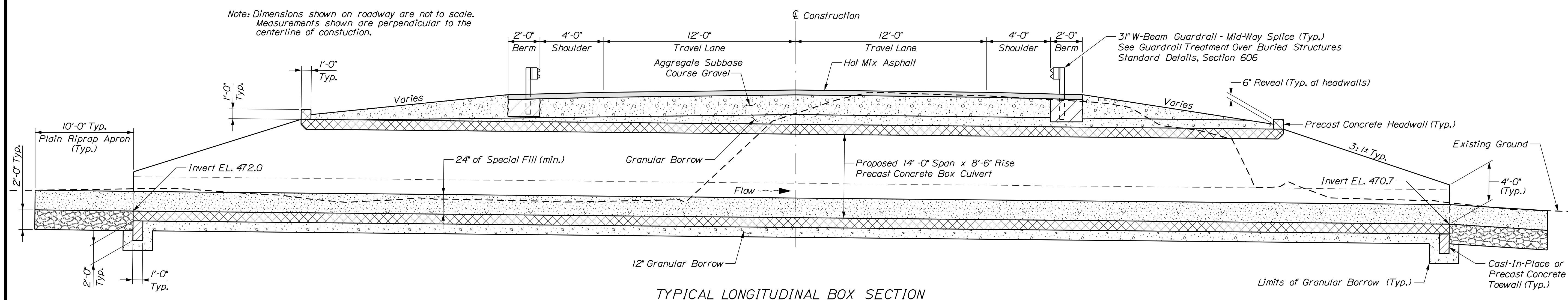
Username: David Shaw

Division: BRIDGE

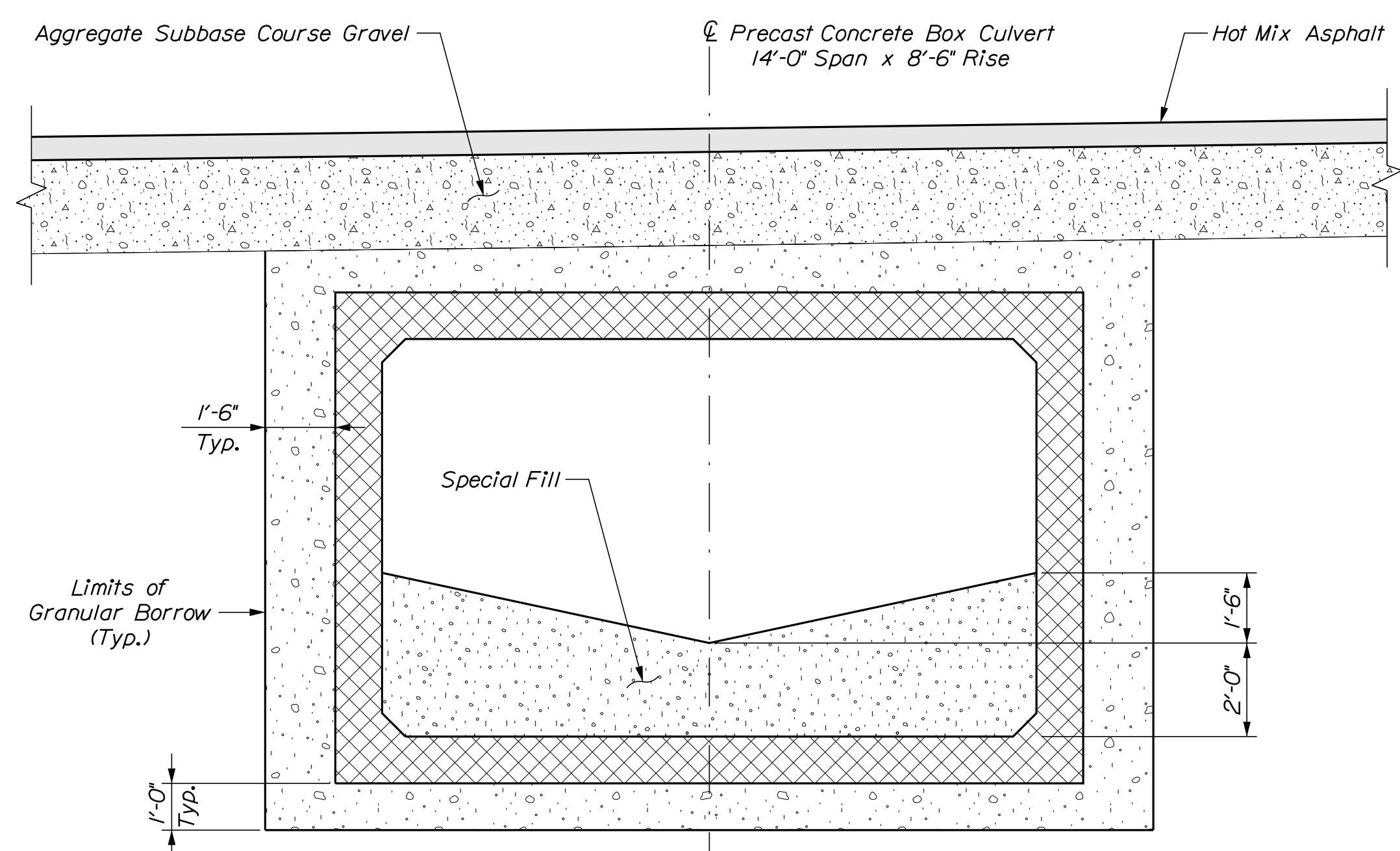
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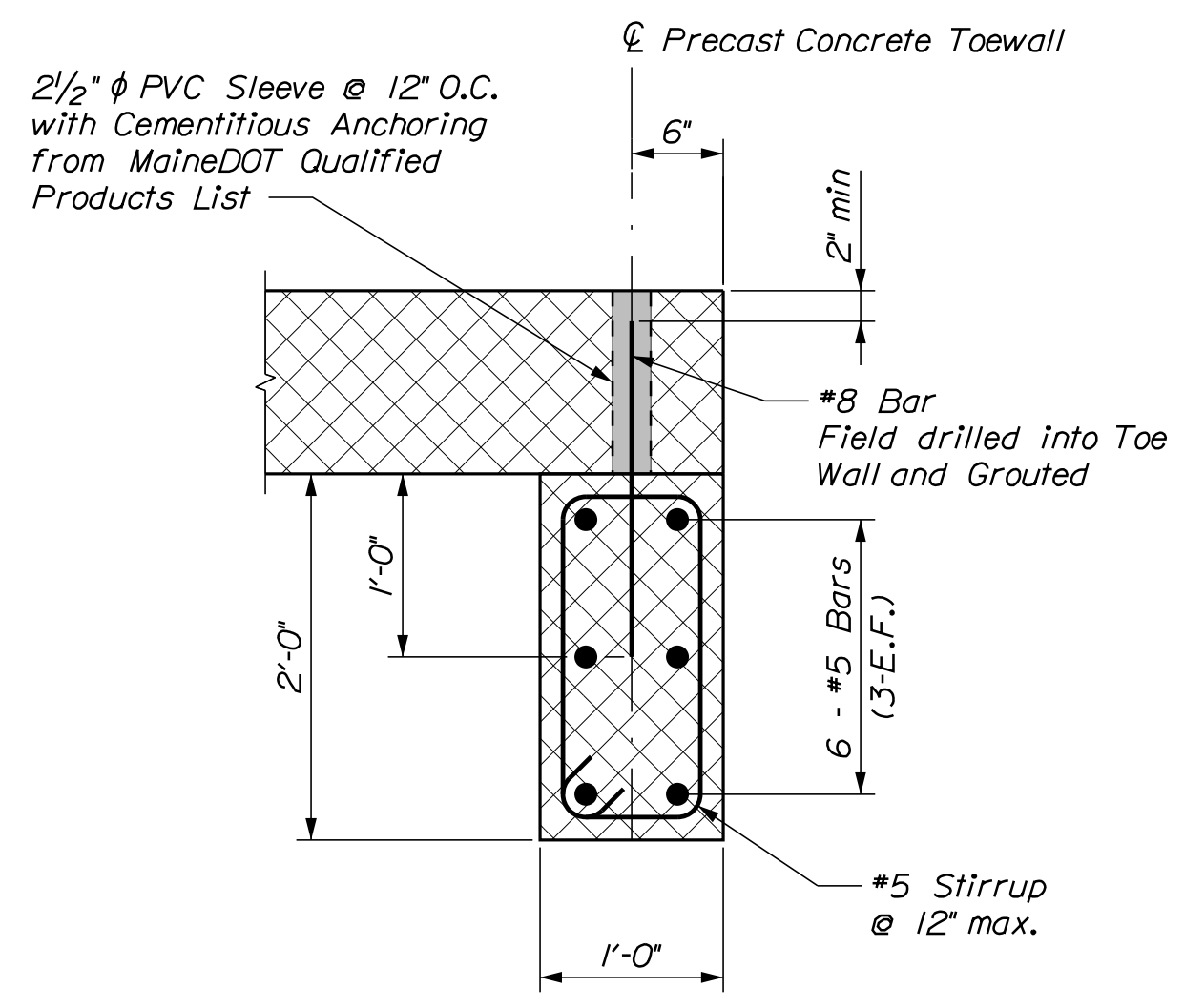
PRECAST CONCRETE BOX CULVERT PLAN



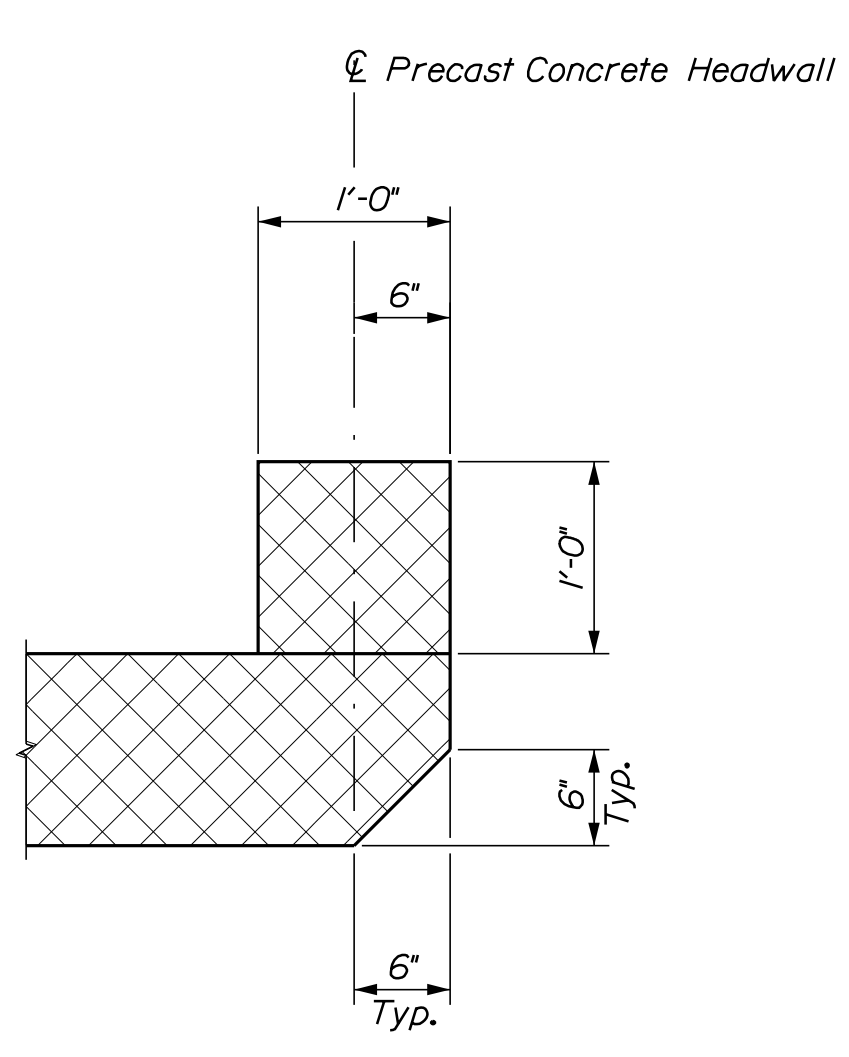
TYPICAL LONGITUDINAL BOX SECTION



TYPICAL BOX CULVERT TRANSVERSE SECTION



PRECAST CONCRETE TOEWALL DETAIL



PRECAST CONCRETE HEADWALL DETAIL

PRECAST CONCRETE BOX NOTES

- The precast units shall be designed to carry construction loadings with a minimum fill cover of 18 inches over the top of the units.
- Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		23625.00		WIN		023625.00		BRIDGE NO. 2492		BRIDGE PLANS	
MADUSKEAG BRIDGE		MADUSKEAG STREAM		AROOSTOOK COUNTY		HODGDON		PRECAST CONCRETE BOX CULVERT DETAILS		SHEET NUMBER		16	
PROJ. MANAGER	J. STETSON	CHECKED	R. MYERS	DESIGNED	J. MANAHAN	DATE	JAN 2020	SIGNATURE		P.E. NUMBER		DATE	
DESIGN DETAILED	D. SHAW	DESIGNED	T. WHITE	DATE	JAN 2020	REVISIONS	1						
DESIGN DETAILED		REVISIONS	2			REVISIONS	3						
DESIGN DETAILED		REVISIONS	4			FIELD CHANGES							

Town, County, State _____
 Approx. Property Lines _____
 Existing Right of Way _____
 Limits of Wrought Portion _____
 Control Of Access _____
 New Right of Way _____
 New Easement _____
 New Temporary Rights _____
 New R/W Within Existing R/W _____

New R/W Along Existing R/W _____
 Building _____
 Trees Conifer _____
 Tree Line _____
 Water Edge _____
 Ledge _____
 Fence _____
 Sign _____
 Clearing Limit Line _____
 Bush Line _____
 Rock/Boulder _____
 Barb Wire _____
 Well _____
 Flag Pole _____
 Stockade _____
 Mailbox _____

PLAN LEGEND

Existing Proposed

Sanitary Sewer _____
 Telephone Line _____
 Electric Line _____
 Water Line _____
 Underdrain Line _____
 Gas Line _____
 Guardrail _____
 Culvert _____

Traveled Way _____
 Ditch _____
 Catch Basin _____
 Manhole _____
 Sewer Manhole _____
 Utility Pole _____
 Fire Hydrant _____
 Curbing _____

Cut Line _____
 Stonewall _____
 Baseline _____
 Monument _____
 Iron Rod Found _____
 Replacement Pin Set _____

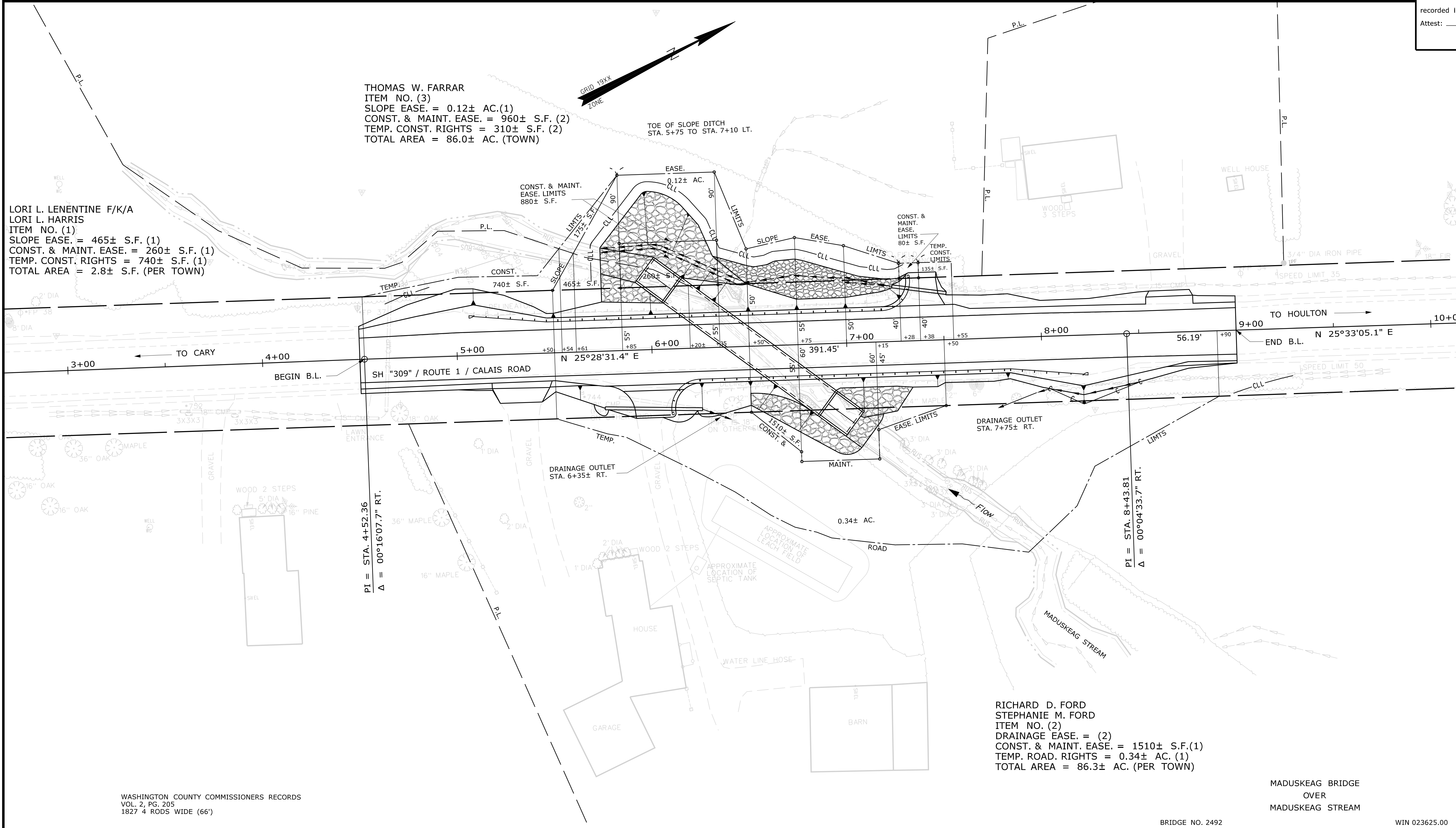
Fill Line _____
 Retaining Wall _____
 Traverse Point _____
 Pipe Found _____

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

Scale of Feet
 0 25 50 75 100

STATE OF MAINE
 REGISTRY OF DEEDS

COUNTY _____
 RECEIVED _____
 at _____ h _____ m _____ M and
 recorded in Plan Bk _____, Pg. _____
 Attest: _____
 REGISTER



ITEM	TECH	CHECKED
EXISTING CONDITION PLAN		
FINAL RIGHT OF WAY		
AREAS		

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

STATE HIGHWAY "309"
 U.S. ROUTE 1 / CALAIS ROAD
 HODGDON AROOSTOOK COUNTY
 FEDERAL AID PROJECT NO. 2362500

MADUSKEAG BRIDGE
 OVER
 MADUSKEAG STREAM

BRIDGE NO. 2492 WIN 023625.00

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

BRUCE A. VAN NOTE
 COMMISSIONER
 JOYCE NOEL TAYLOR
 CHIEF ENGINEER

DATE _____

OCTOBER 2020
 SCALE 1" = 25'

RIGHT-OF-WAY MAP
 SHEET 1 OF 1

D.O.T. FILE NO. 2-620

SHEET NUMBER
17
 OF 17

Date: 11/2/2020
 Username: David.Shaw
 Division: BRIDGE
 Filename: ...\\001\ROW\MSTA001_RWP\PLAN1.dgn