

# STATE OF MAINE DEPARTMENT OF TRANSPORTATION



## WEST GARDINER KENNEBEC COUNTY GOSLINE BRIDGE OVER COLD STREAM HIGH STREET FEDERAL AID PROJECT NO. 2309000 PROJECT LENGTH 0.076 mi. BRIDGE NO. 2321

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### SPECIFICATIONS

Design: Load and Resistance Factor Design per AASHTO LRFD Bridge Design Specifications, Ninth Edition 2020.

### DESIGN LOADING

Live Load ..... HL - 93 Modified for Strength I

### TRAFFIC DATA

Current (2020) AADT	2530
Future (2040) AADT	2780
DHV - % of AADT	12
Design Hour Volume	334
Heavy Trucks (% of AADT)	6
Heavy Trucks (% of DHV)	3
Directional Distribution (% of DHV)	63
18 kip Equivalent P 2.0	71
18 kip Equivalent P 2.5	68
Design Speed (mph)	45

### HYDROLOGIC DATA

Drainage Area	3.70 sq mi
Design Discharge (Q50)	356.4 cfs
Check Discharge (Q100)	417.4 cfs
Headwater Elevation (Q1.1)	162.0 ft
Headwater Elevation (Q25)	164.4 ft
Headwater Elevation (Q50)	164.8 ft
Headwater Elevation (Q100)	165.2 ft
Discharge Velocity (Q1.1)	2.4 fps
Discharge Velocity (Q50)	6.4 fps
Discharge Velocity (Q100)	7.0 fps

### UTILITIES

Central Maine Power Company  
Consolidated Communications

Charter Communications, Inc.  
Town of West Gardiner

### MAINTENANCE OF TRAFFIC

Bridge will be closed during construction with traffic detour on state and state-aid roads.

<b>PROJECT LOCATION</b>	Gosline Bridge over Cold Stream. Located 0.063 miles east of Cold Creek Drive. Lat./Long. 44°13'34.36" N 69°50'44.00" W
<b>PROGRAM AREA</b>	Highway Bridges - Traditional
<b>OUTLINE OF WORK</b>	Bridge Culvert Replacement.

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STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
APPROVED: [Signature]  
DATE: 12-20-21  
COMMISSIONER: [Signature]  
CHIEF ENGINEER: [Signature]

STATE OF MAINE  
Kendra C.P. Nash  
19874  
PROFESSIONAL ENGINEER  
SIGNATURE: [Signature]  
P.E. NUMBER: 15874  
DATE: 12/13/2021

PROJECT INFORMATION
PROGRAM: BRIDGE PROGRAM
PROJECT MANAGER: DEVAN LAYTON
DESIGNER: KENDRA NASH
CONSULTANT:
PROJECT RESIDENT:
CONTRACTOR:
PROJECT COMPLETION DATE:

2309000  
WIN 023090.00  
WEST GARDINER  
GOSLINE BRIDGE  
TITLE SHEET

SHEET NUMBER  
**1**  
OF 17

Date: 12/31/2021  
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Division: BRIDGE  
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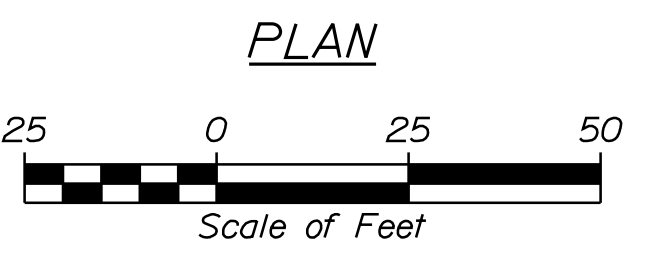
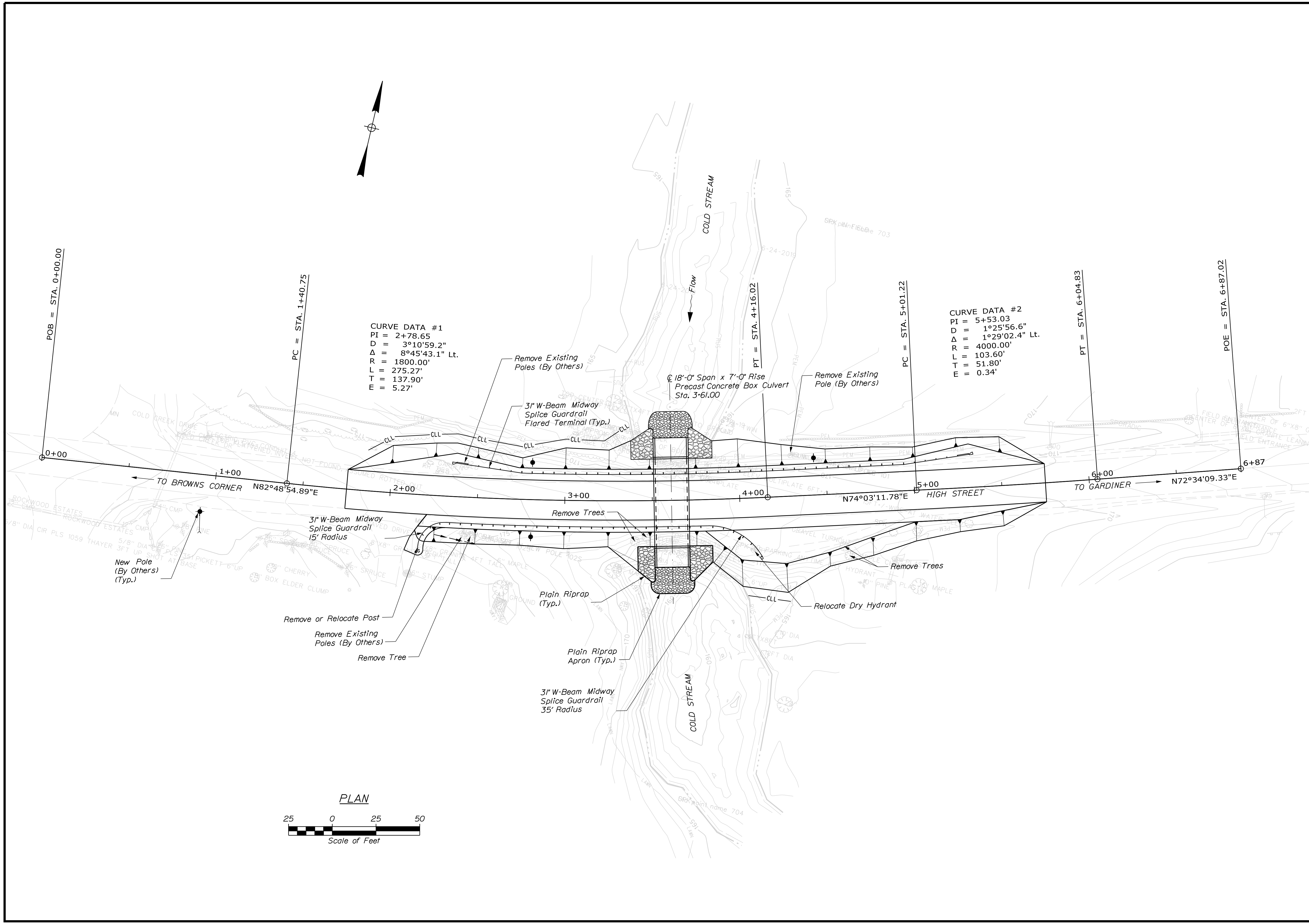
ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.202	REMOVING PAVEMENT SURFACE	430	SY
203.20	COMMON EXCAVATION	860	CY
203.2318	DISPOSAL OF SPECIAL WASTE	456	T
203.24	COMMON BORROW	160	CY
203.25	GRANULAR BORROW	180	CY
203.55	CULVERT BEDDING STONE	150	CY
206.061	STRUCTURAL EARTH EXCAVATION, DRAINAGE AND MINOR STRUCTURES BELOW GRADE	10	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	870	CY
403.208	HOT MIX ASPHALT - 12.5 MM	131	T
403.213	HOT MIX ASPHALT - 12.5 MM (BASE AND INTERMEDIATE COURSE)	159	T
409.15	BITUMINOUS TACK COAT - APPLIED	60	G
508.13	SHEET WATERPROOFING MEMBRANE (128 SY)	1	LS
511.07	COFFERDAM: UPSTREAM	1	LS
511.07	COFFERDAM: DOWNSTREAM	1	LS
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (40 SY)	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE I (60 LF)	1	LS
534.71	PRECAST CONCRETE BOX CULVERT (115 CY)	1	LS
606.1301	3" W-BEAM GUARDRAIL, MID-WAY SPLICE-SINGLE FACED	370	LF
606.1303	3" W-BEAM GUARDRAIL, MID-WAY SPLICE-15' RADIUS & LESS	25	LF
606.1304	3" W-BEAM GUARDRAIL, MID-WAY SPLICE-OVER 15' RADIUS	37.5	LF
606.1305	3" W-BEAM GUARDRAIL, MID-WAY SPLICE FLARED TERMINAL	2	EA
606.265	TERM END - SINGLE RAIL- GALVANIZED STEEL	2	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	8	EA
610.08	PLAIN RIPRAP	160	CY
610.18	STONE DITCH PROTECTION	10	CY
613.319	EROSION CONTROL BLANKET	112	SY
615.07	LOAM	56	CY
618.14	SEEDING METHOD NUMBER 2	10	UN
619.12	MULCH	10	UN
619.14	EROSION CONTROL MIX	112	CY
620.54	STABILIZATION/REINFORCEMENT GEOTEXTILE	420	SY
620.58	EROSION CONTROL GEOTEXTILE	188	SY
620.65	REINFORCEMENT GEOGRID	180	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1,200	LF
629.05	HAND LABOR, STRAIGHT TIME	40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	40	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	20	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	20	EA
652.34	CONE	40	EA
652.35	CONSTRUCTION SIGNS	400	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (60 CD)	1	LS
652.38	FLAGGER	100	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	2	EA
656.75	TEMPORARY SOIL EROSION & WATER POLLUTION CONTROL	1	LS
659.10	MOBILIZATION	1	LS
834.322	DRY HYDRANT - INSTALL ONLY	1	LS

GENERAL CONSTRUCTION NOTES

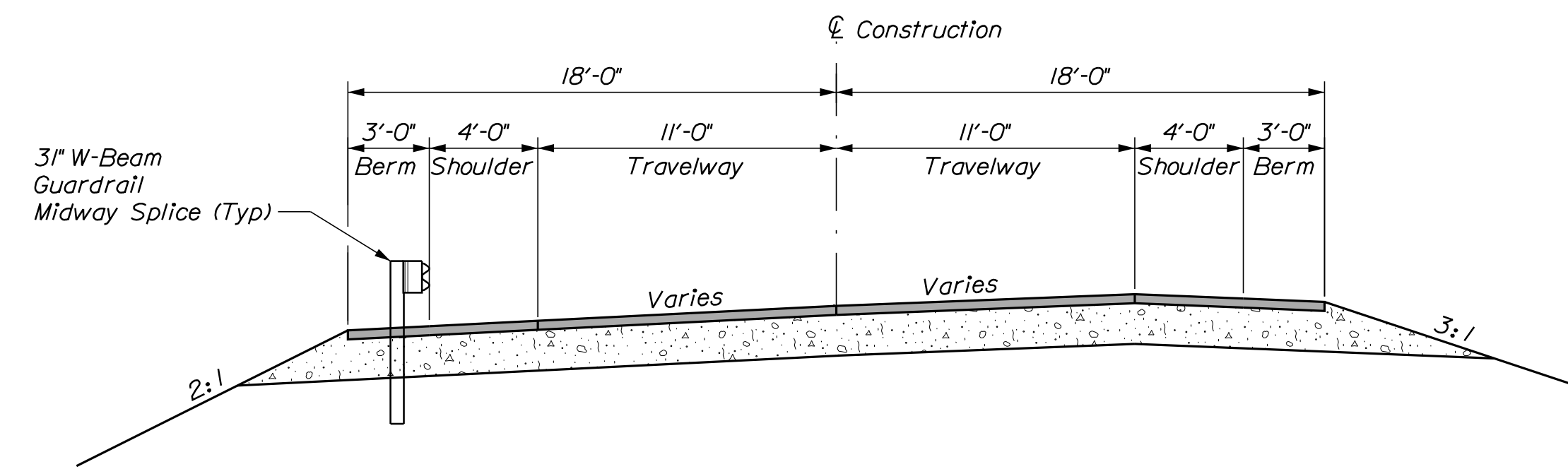
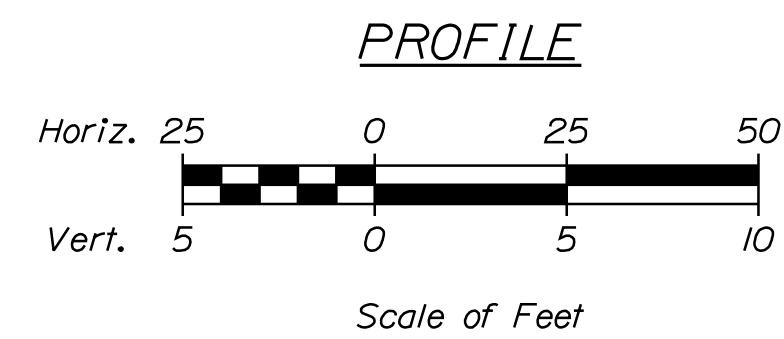
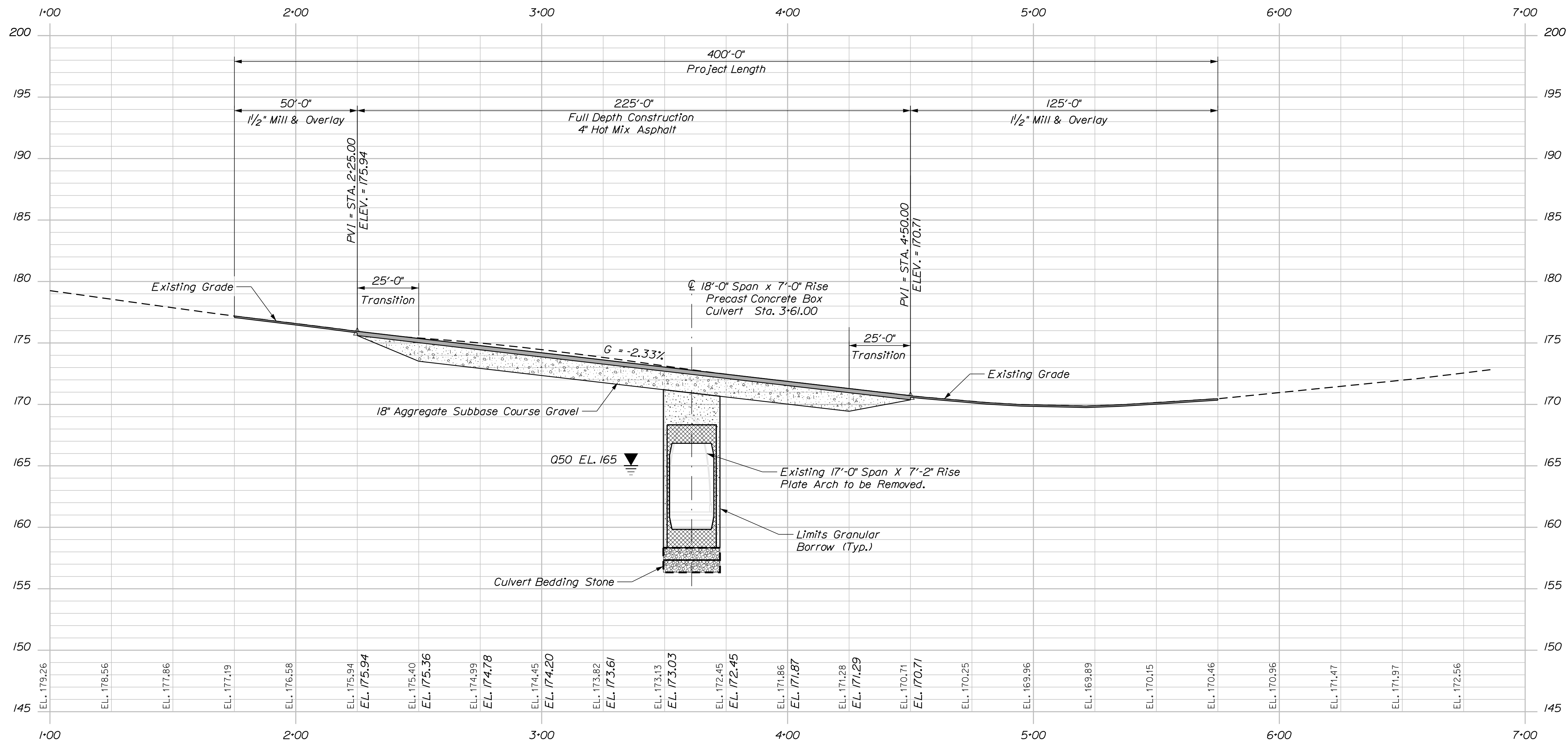
- During construction, the road will be closed to traffic for a time period specified in the Special Provisions.
- For easements, construction limits and right of way lines, refer to Right of Way Map.
- The clearing limits as shown on the plans are approximate. The exact limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract items.
- All utility facilities shall be adjusted by the respective utilities unless otherwise noted.
- Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
- In areas where the Resident directs the Contractor not to excavate to the subgrade line shown on the plans, payment for removing existing pavement, grubbing, shaping, ditching, and compacting the existing subbase and layers of new subbase 6 inches or less thick will be made under appropriate equipment rental items.
- All embankment material, except as otherwise shown, placed below EL 164.8 shall be Granular Borrow meeting the requirements of Standard Specifications Subsection 703.19, Material for Underwater Backfill.
- Place riprap on sideslopes up to EL 170.
- Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking. Payment for hand raking will be considered incidental to Item No. 304.10, Aggregate Subbase Course - Gravel.
- Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.
- Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be in accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.
- Place a 24-in. wide strip of Temporary Erosion Control Blanket on the sideslopes along the top of the riprap and behind the culvert walls.
- An NCHRP350 or MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.
- Extended-use Erosion Control Blanket, seeded gutters, riprap downspouts, and other gutters lined with Stone Ditch Protection shall be constructed after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion. Payment will be made under the appropriate Contract items.
- Protective Coating for Concrete Surfaces shall be applied to the following areas:
  - On all concrete headwalls and concrete wall surfaces that are exposed and to limit lines, one foot beyond intersections of concrete surfaces with the ground.
- Project information referred to below may be accessed at the following MaineDOT web address: <http://www.maine.gov/mdot/contractors/>.
- The Existing Bridge plans may be accessed at the MaineDOT web address. The plans are reproductions of the original drawings as prepared for the construction of the Bridge. It is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the Bridge during its life span.

- 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.
- The Project Geotechnical Report titled: Geotechnical Design Report for the replacement of Gosline Bridge, High Street over Cold Stream West Gardiner Maine, Soils Report 2021-40, dated October 21, 2021 may be accessed at the Maine DOT web address.
- Geotechnical information furnished or referred to in this plan set is for the use of the Bidder's and the Contractor. No assurance is given that the information or interpretations will be representative of actual subsurface conditions at the construction site. MaineDOT will not be responsible for the Bidder's or Contractor's interpretations of, or conclusions drawn from, the geotechnical information. The boring logs contained in the plan set present factual and interpretive subsurface information collected at discrete locations. Data provided may not be representative of the subsurface conditions between the boring locations.
- The Contractor shall maintain the excavation so that the box culvert and crushed stone mat are constructed in-the-dry. Groundwater should be controlled by pumping from sumps or other dewatering systems selected by the contractor. Cofferdams may be required to divert flow away from the excavation during construction. Where excavation sides are cut back, excavation slope geometries be in accordance with OSHA regulations, or flatter.
- The native soil subgrade shall be excavated using a smooth-edged bucket and to avoid disturbance of the subgrade. The contractor shall not operate heavy equipment over the excavated subgrade to minimize subgrade disturbance. Vibration-induced disturbances shall be limited. If the subgrade is disturbed or weakened, the Contractor shall over excavate the disturbed material and replace with compacted Granular Borrow to the subgrade level at the contractor's expense. All organics, wood and timber encountered at the bearing elevation shall be removed and replaced with compacted Granular Borrow Material for Underwater Backfill.
- Stabilization/reinforcement geotextile shall be hand-deployed onto the prepared soil subgrade prior to installing the geogrid-reinforced crushed stone mat. Adjoining sections of the stabilization geotextile shall be overlapped by a minimum of 1 foot. The crushed stone shall be placed in maximum 8-inch thick lifts and each lift compacted with at least 4 passes of a walk-behind plate compactor.
- Quantities included for pay items measured and paid for by Lump Sum are estimated quantities and are provided by MaineDOT for informational purposes only. Lump Sum pay items will be paid for at the Contract Bid amount, with no addition or reduction in payment to the Contractor if the actual final quantities are different from the MaineDOT provided estimated quantities, except as follows:
  - If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.
  - If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.
  - If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation and Time.
- Existing signs within the Project Limits shall be removed and reset as directed by the Resident. Payment for removal and reinstallation of existing signs will be considered incidental to the Contract. No separate payment will be made.

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		2309000		WIN		023090.00		BRIDGE NO. 2321		BRIDGE PLANS			
GOSLINE BRIDGE				COLD STREAM				KENNEBEC COUNTY				ESTIMATED QUANTITIES & GEN. CONSTRUCTION NOTES			
WEST GARDINER		Kennebec County		DESIGN-DETAILED		K. BRUNELLE		DEC 2021		CHECKED-REVIEWED		D. EATON		DEC 2021	
DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED		DESIGN-DETAILED	
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4		REVISIONS 5		REVISIONS 6		REVISIONS 7		REVISIONS 8	
FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES		FIELD CHANGES	
SHEET NUMBER												2			
												OF 17			



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		PROJECT NUMBER <b>2309000</b>
GOSLINE BRIDGE COLD STREAM WEST GARDINER KENNEBEC COUNTY		BRIDGE NO. 2321 WIN 023090.00
GENERAL PLAN		BRIDGE PLANS
PROJ. MANAGER DEVAN EATON	BY K. BRUNELLE (DEC 2021)	DATE DEC 2021
DESIGN-DETAILED	K. BRUNELLE	SIGNATURE
CHECKED-REVIEWED	D. EATON	P.E. NUMBER
DESIGN-DETAILED		DATE
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		
SHEET NUMBER		
<b>3</b>		
OF 17		



**TYPICAL APPROACH SECTION**  
 4" Hot Mix Asphalt  
 18" Aggregate Subbase Course Gravel

STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 2309000  
 WIN  
 023090.00  
 BRIDGE NO. 2321  
 BRIDGE PLANS

SIGNATURE  
 P.E. NUMBER  
 DATE

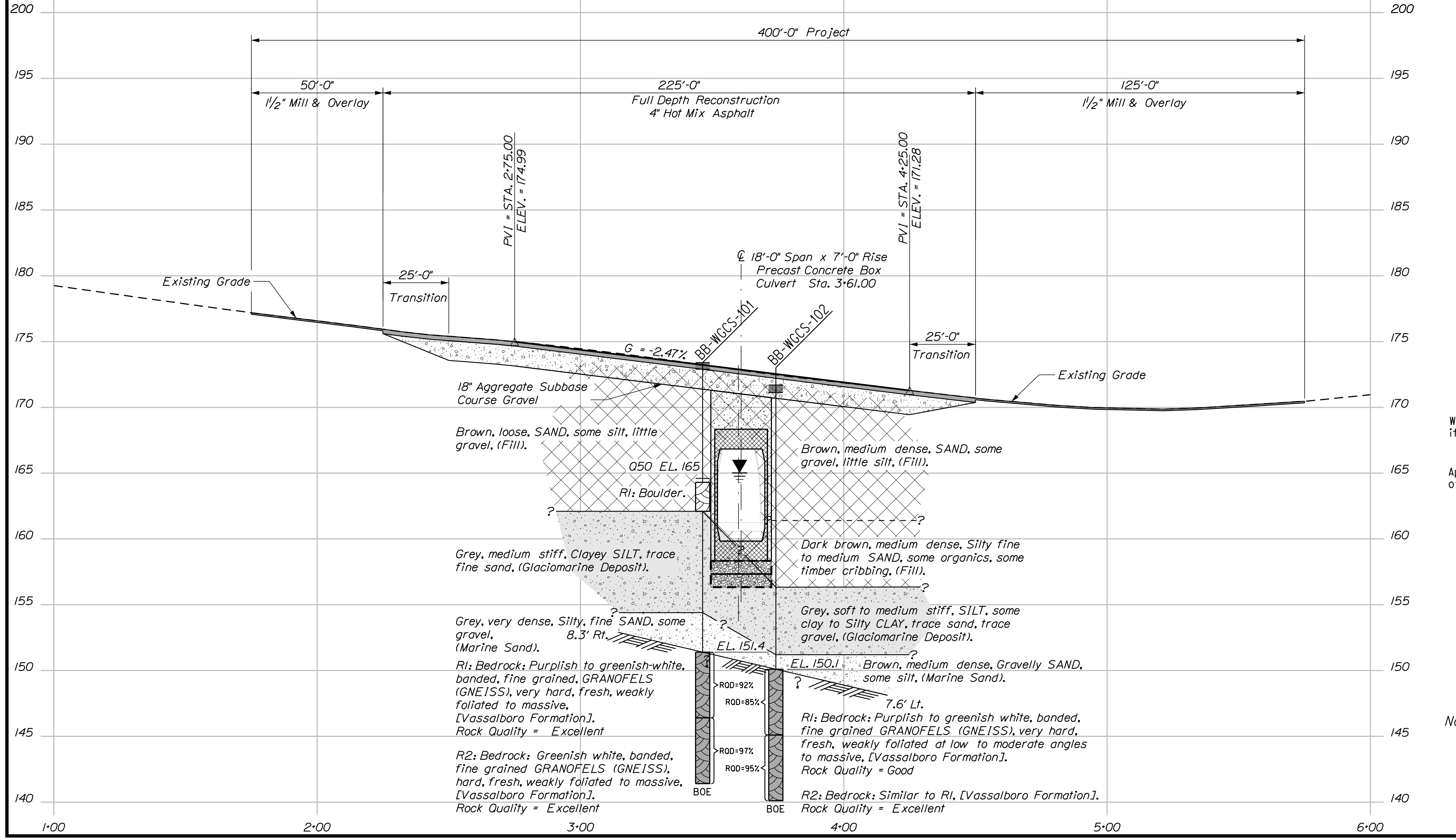
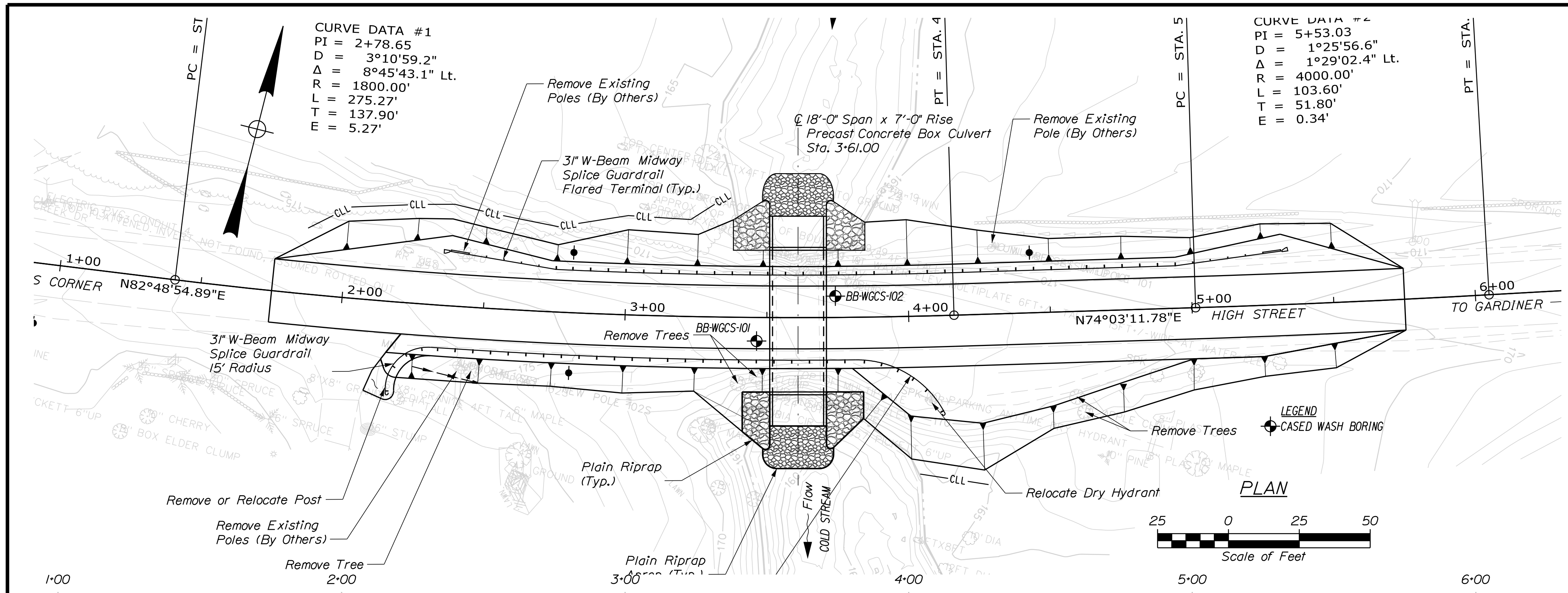
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. MASH	J. BRUNELLE	DEC. 2021
CHECKED-REVIEWED	D. EATON	M. CRITCHLOW	DEC. 2021
DESIGN-DETAILED			
REVISIONS	1		
REVISIONS	2		
REVISIONS	3		
REVISIONS	4		
FIELD CHANGES			

GOSLINE BRIDGE  
 COLD STREAM  
 WEST GARDNER KENNEBEC COUNTY  
**PROFILE & TYPICAL APPROACH SECTION**

SHEET NUMBER

4

OF 17

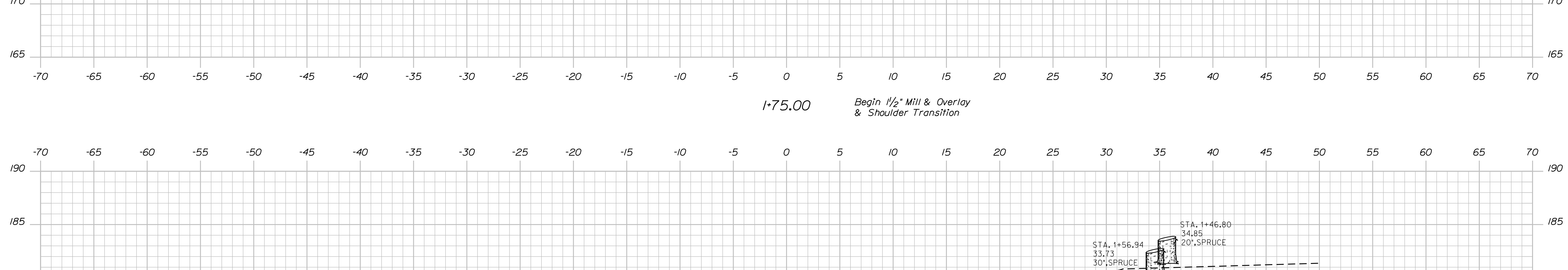
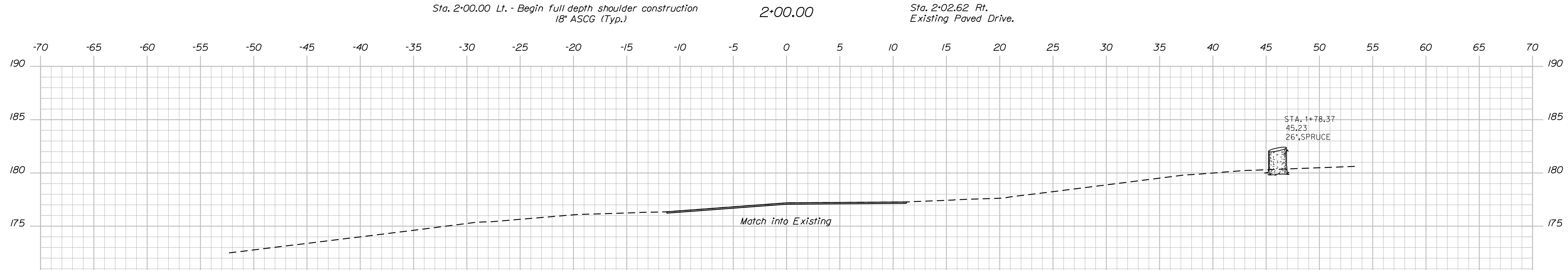
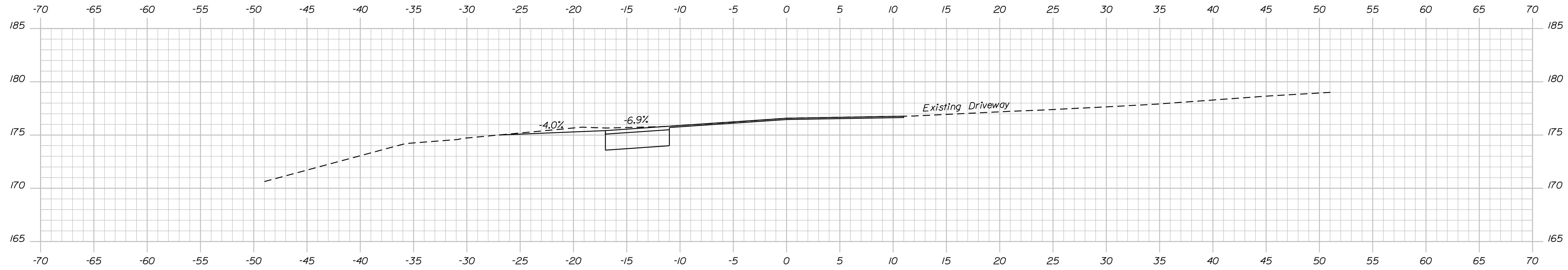


Note: This generalized interpretive soil profile is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized, and have been developed by interpretations of widely spaced explorations and samples. Actual soil and bedrock transitions may vary and are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

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		BRIDGE PLANS	
		2309000		WIN	
		23090.00		BRIDGE NO. 2321	
GOSLINE BRIDGE		KENNEBEC COUNTY		SHEET NUMBER	
COLD STREAM		WEST GARDNER		5	
BORING LOCATION PLAN & INTERPRETIVE SUBSURFACE PROFILE				OF 17	
PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER
CHECKED/REVIEWED			NOV. 2021		
DESIGNED/DETAILED		J. MANAHAN			
DESIGNED/DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					



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 Division: BRIDGE  
 Username: Jeremiah.Brunelle  
 Date: 12/14/2021



STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
 2309000  
 WIN  
 023090.00  
 BRIDGE NO. 2321  
 BRIDGE PLANS

DESIGNER: J. BRUNELLE  
 CHECKED: K. MASH  
 DESIGN REVIEWED: D. EATON  
 DESIGN DETAILED: J. BRUNELLE  
 REVISIONS: 1, 2, 3, 4  
 FIELD CHANGES

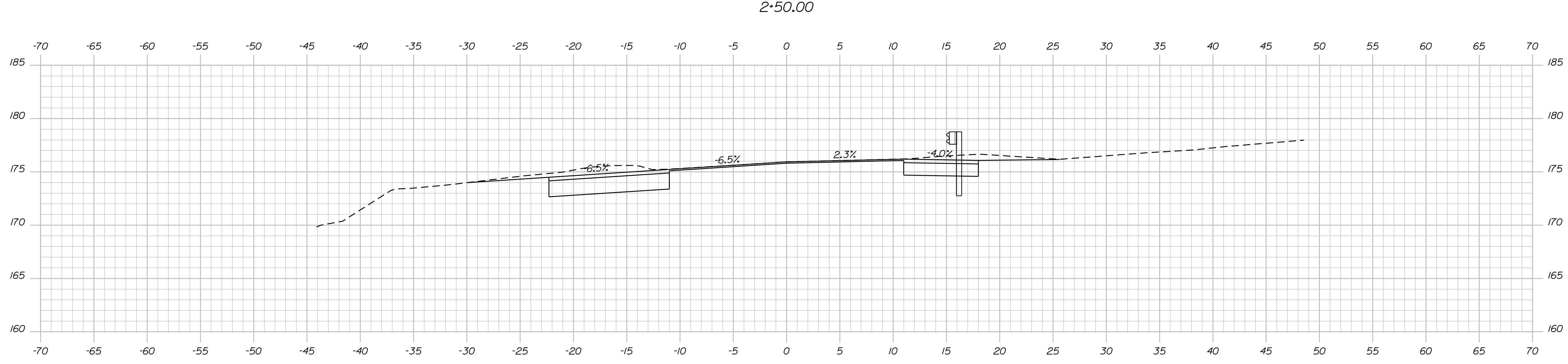
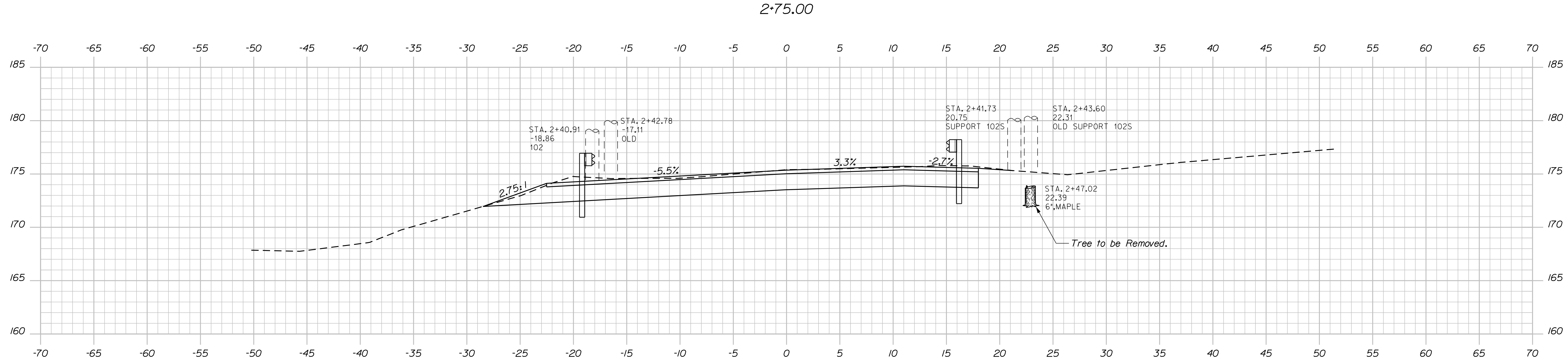
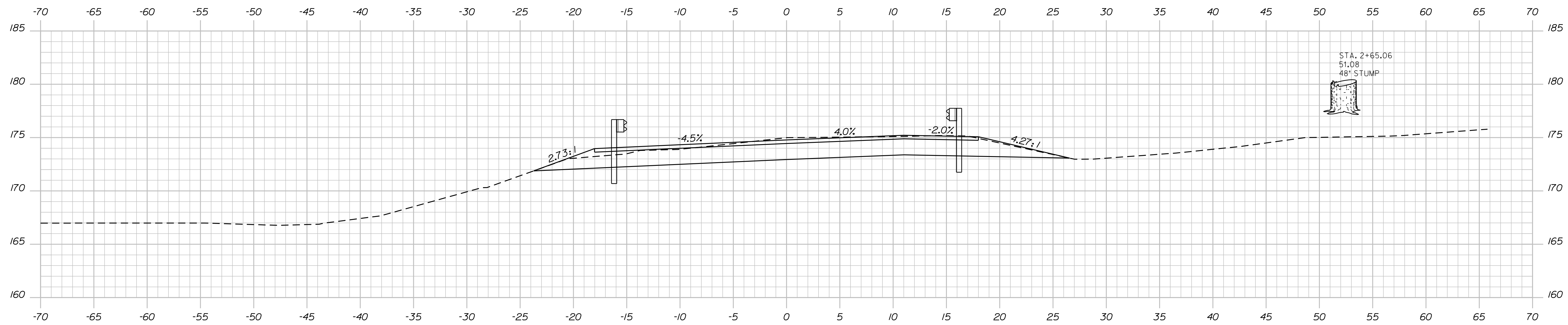
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PROJ. MANAGER: DEVAN EATON  
 BY: J. BRUNELLE  
 DATE: DEC 2021

GOSLINE BRIDGE  
 COLD STREAM  
 WEST GARDNER KENNEBEC COUNTY  
 CROSS SECTIONS

SHEET NUMBER  
 2  
 OF 17

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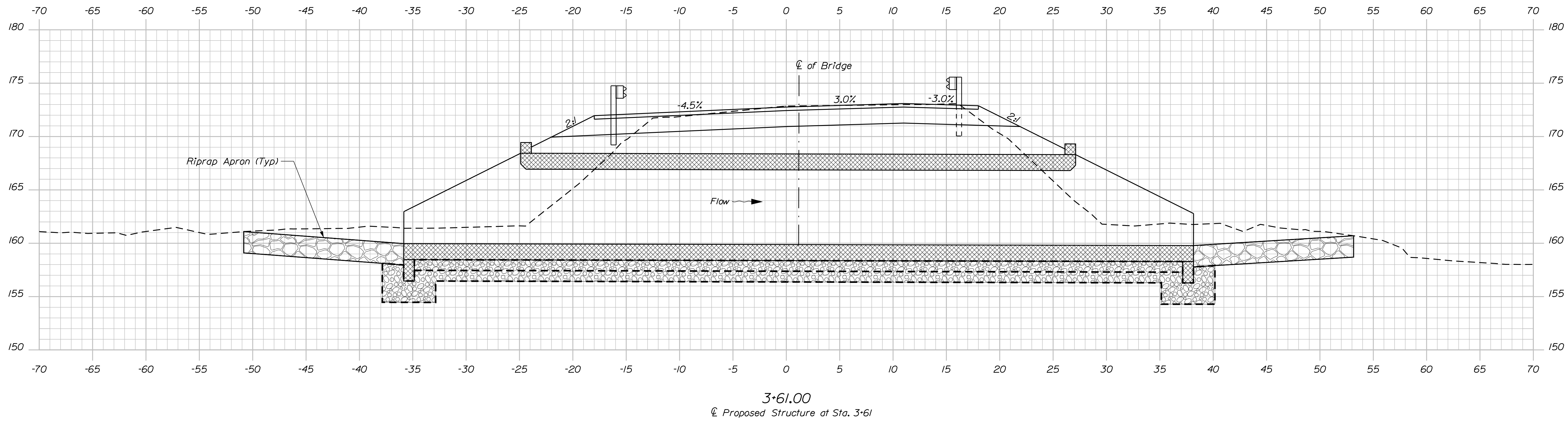
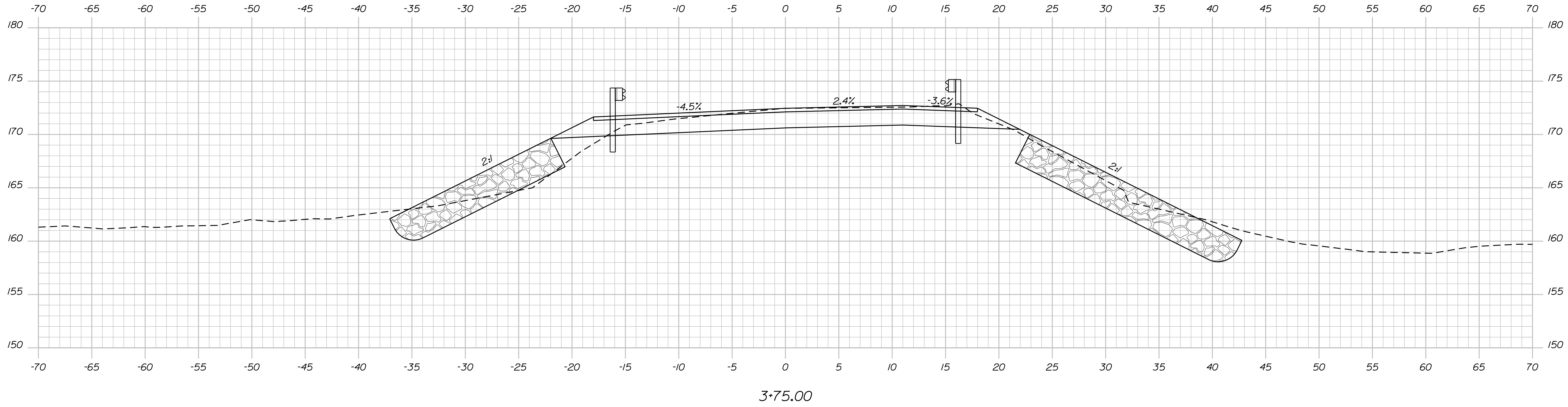


STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2309000
WEST GARDNER KENNEBEC COUNTY		WIN 023090.00
GOSLINE BRIDGE COLD STREAM		BRIDGE NO. 2321
CROSS SECTIONS		BRIDGE PLANS
PROJ. MANAGER DEVAN EATON	BY J. BRUNELLE	DATE DEC 2021
DESIGN/DETAILED K. MASH	CHECKED/REVIEWED D. EATON	DESIGNED/DETAILED M. CRITCHLOW
REVISIONS 1	REVISIONS 2	REVISIONS 3
REVISIONS 4	REVISIONS 5	REVISIONS 6
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OF 17		P.E. NUMBER DATE



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 Date: 12/14/2021

Division: BRIDGE



STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
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 BRIDGE NO. 2321  
 BRIDGE PLANS

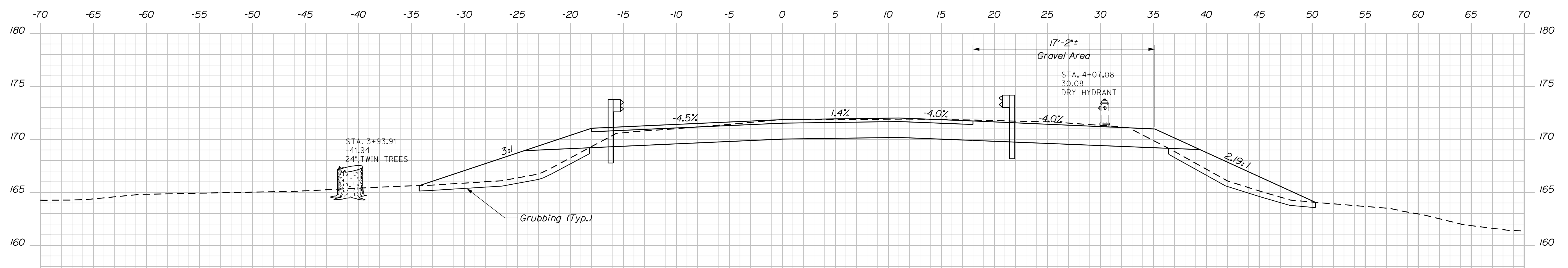
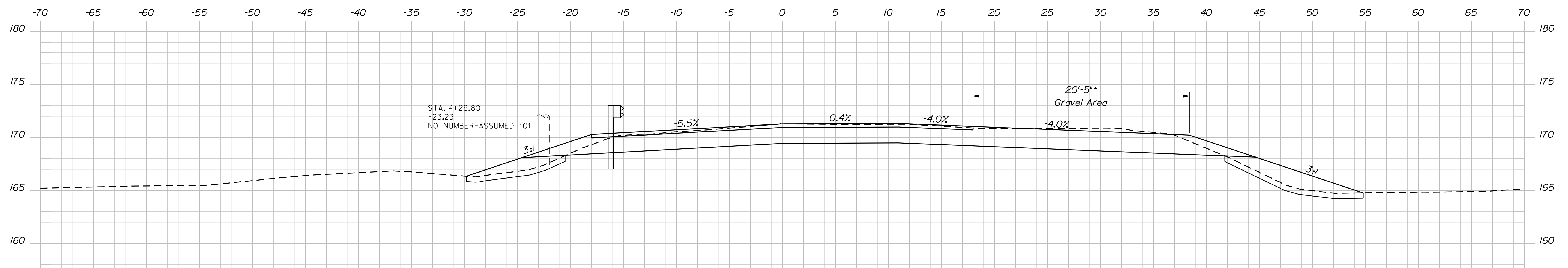
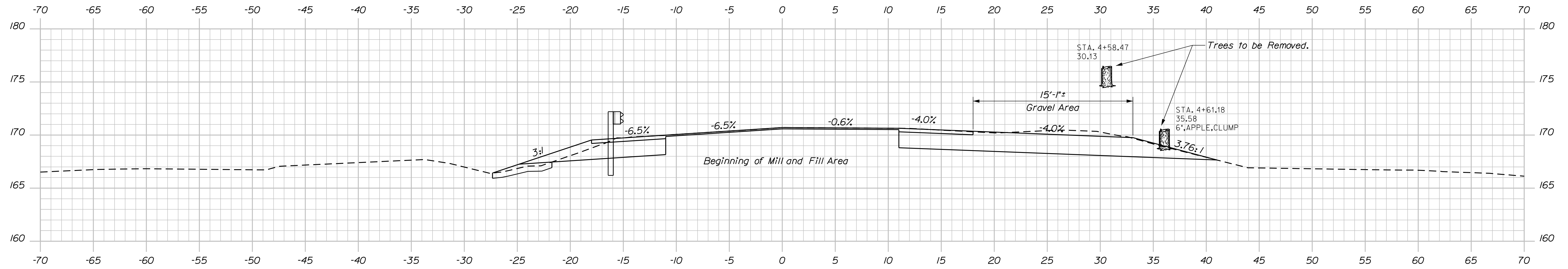
DESIGNER: J. BRUNELLE  
 CHECKED: D. EATON  
 DATE: DEC 2021  
 SIGNATURE: \_\_\_\_\_  
 P.E. NUMBER: \_\_\_\_\_  
 DATE: \_\_\_\_\_

PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. KASH	J. BRUNELLE	DEC 2021
CHECKED-REVIEWED	D. EATON	M. CRITCHLOW	DEC 2021
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GOSLINE BRIDGE  
 COLD STREAM  
 WEST GARDNER  
 KENNEBEC COUNTY  
 CROSS SECTIONS

SHEET NUMBER  
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 OF 17

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 Division: BRIDGE  
 Username: Jeremiah.Brunelle  
 Date: 12/14/2021



STATE OF MAINE  
 DEPARTMENT OF TRANSPORTATION  
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 BRIDGE PLANS

DESIGNED	BY	DATE
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REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

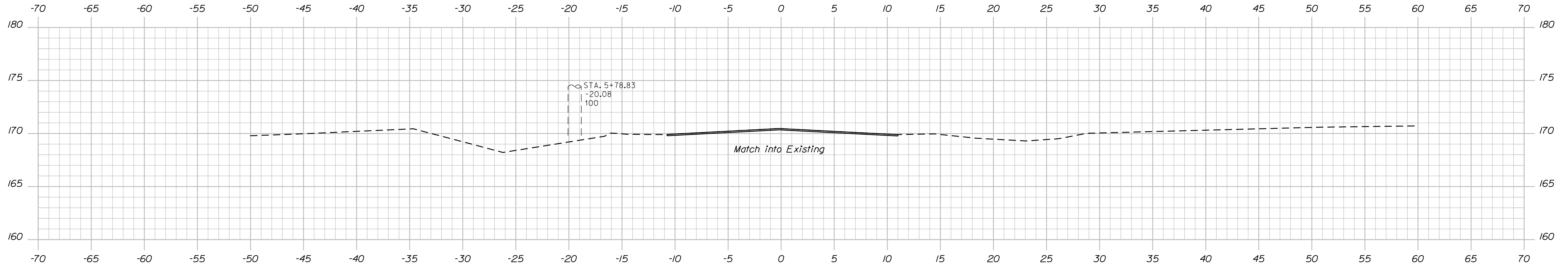
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PROJ. MANAGER  
 DESIGN-DETAILED  
 CHECKED-REVIEWED  
 DESIGNED-DETAILED  
 REVISIONS 1  
 REVISIONS 2  
 REVISIONS 3  
 REVISIONS 4  
 FIELD CHANGES

GOSLINE BRIDGE  
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 CROSS SECTIONS

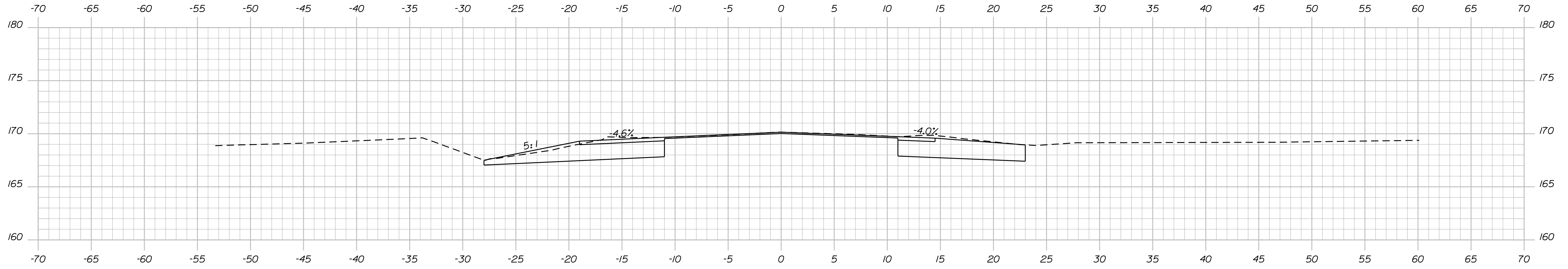
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5+75.00

End 1/2" Mill & Overlay  
& Shoulder Transition



5+50.00

STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION

2309000

WIN

023090.00

BRIDGE NO. 2321

BRIDGE PLANS

SIGNATURE

P.E. NUMBER

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PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. MASH	J. BRUNELLE	DEC. 2021
CHECKED-REVIEWED	D. EATON	M. CRITCHLOW	DEC. 2021
DESIGN-DETAILED			
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REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

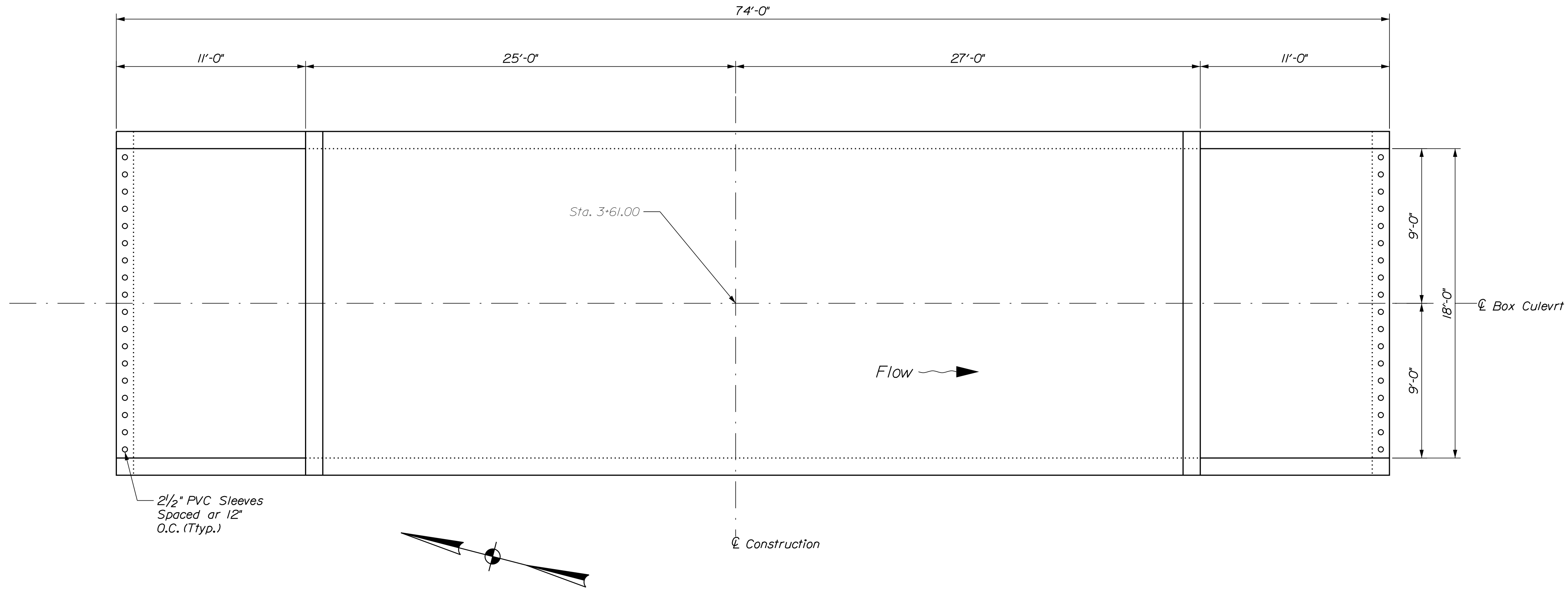
GOSLINE BRIDGE  
COLD STREAM  
KENNEBEC COUNTY

CROSS SECTIONS

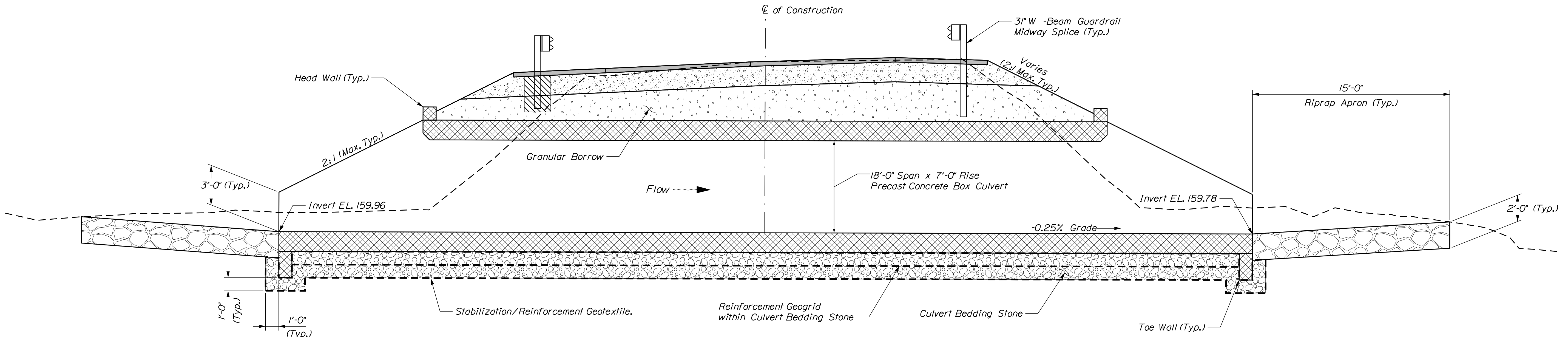
SHEET NUMBER

13

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PRECAST CONCRETE BOX CULVERT PLAN



PRECAST CONCRETE BOX CULVERT (LONGITUDINAL)

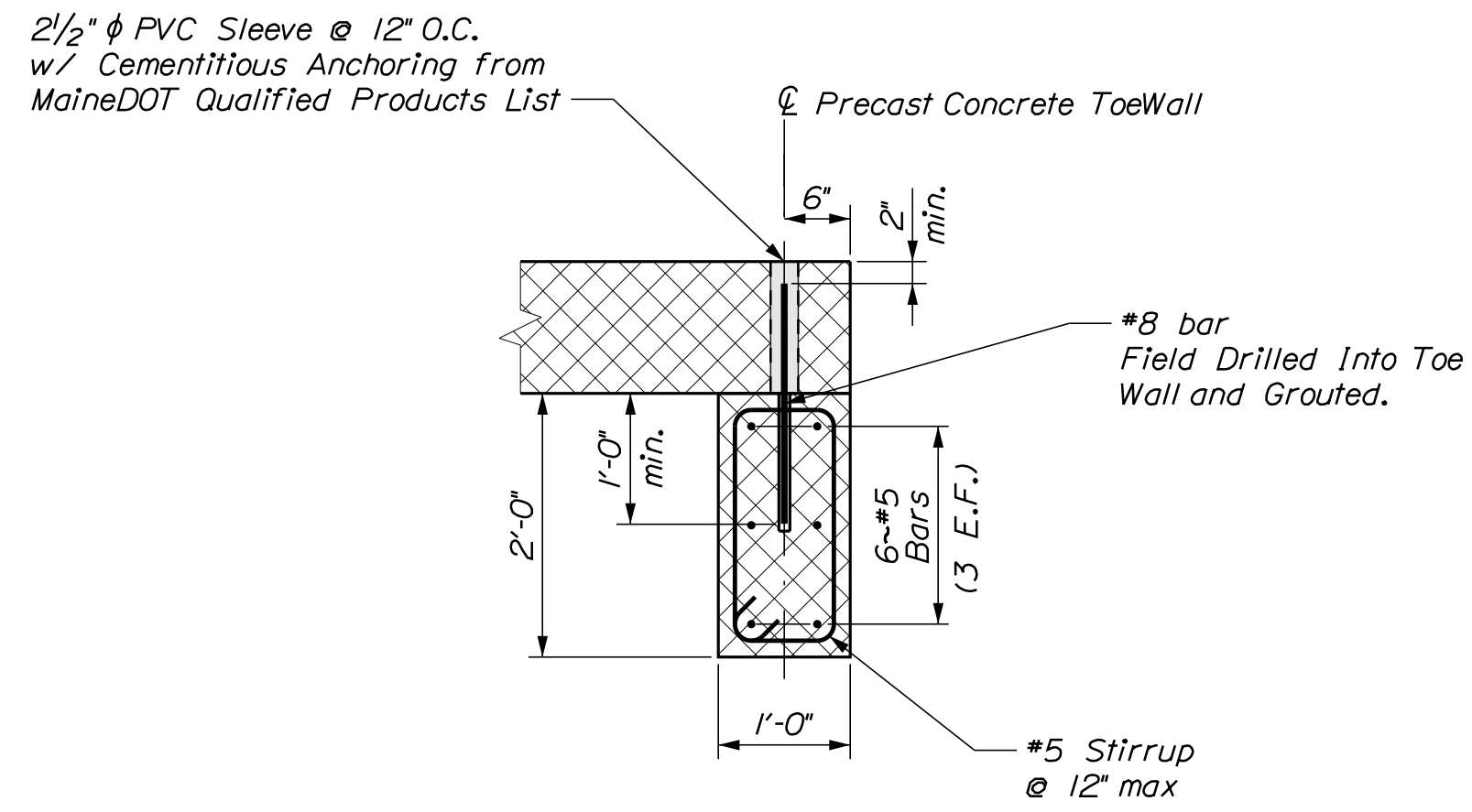
STATE OF MAINE  
DEPARTMENT OF TRANSPORTATION  
2309000  
WIN  
023090.00  
BRIDGE NO. 2321  
BRIDGE PLANS

DESIGNED BY: J. BRUNELLE  
CHECKED BY: D. EATON  
DESIGNED DATE: DEC 2021  
CHECKED DATE: DEC 2021  
SIGNATURE: \_\_\_\_\_  
P.E. NUMBER: \_\_\_\_\_  
DATE: \_\_\_\_\_

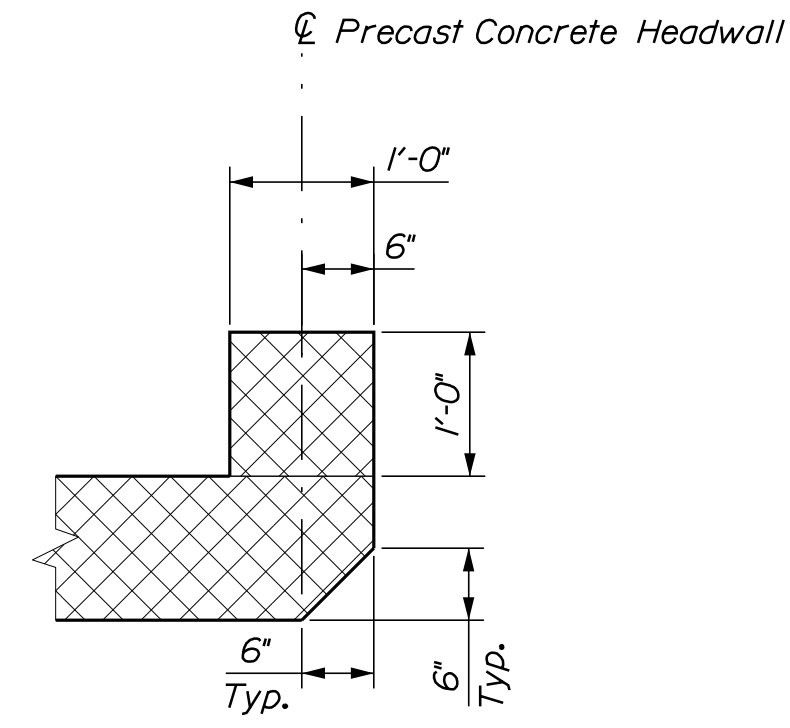
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. KASH	J. BRUNELLE	DEC 2021
CHECKED-REVIEWED	D. EATON	M. CRITCHLOW	DEC 2021
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

GOSLINE BRIDGE  
COLD STREAM  
WEST GARDINER  
KENNEBEC COUNTY  
BOX CULVERT DETAILS 1

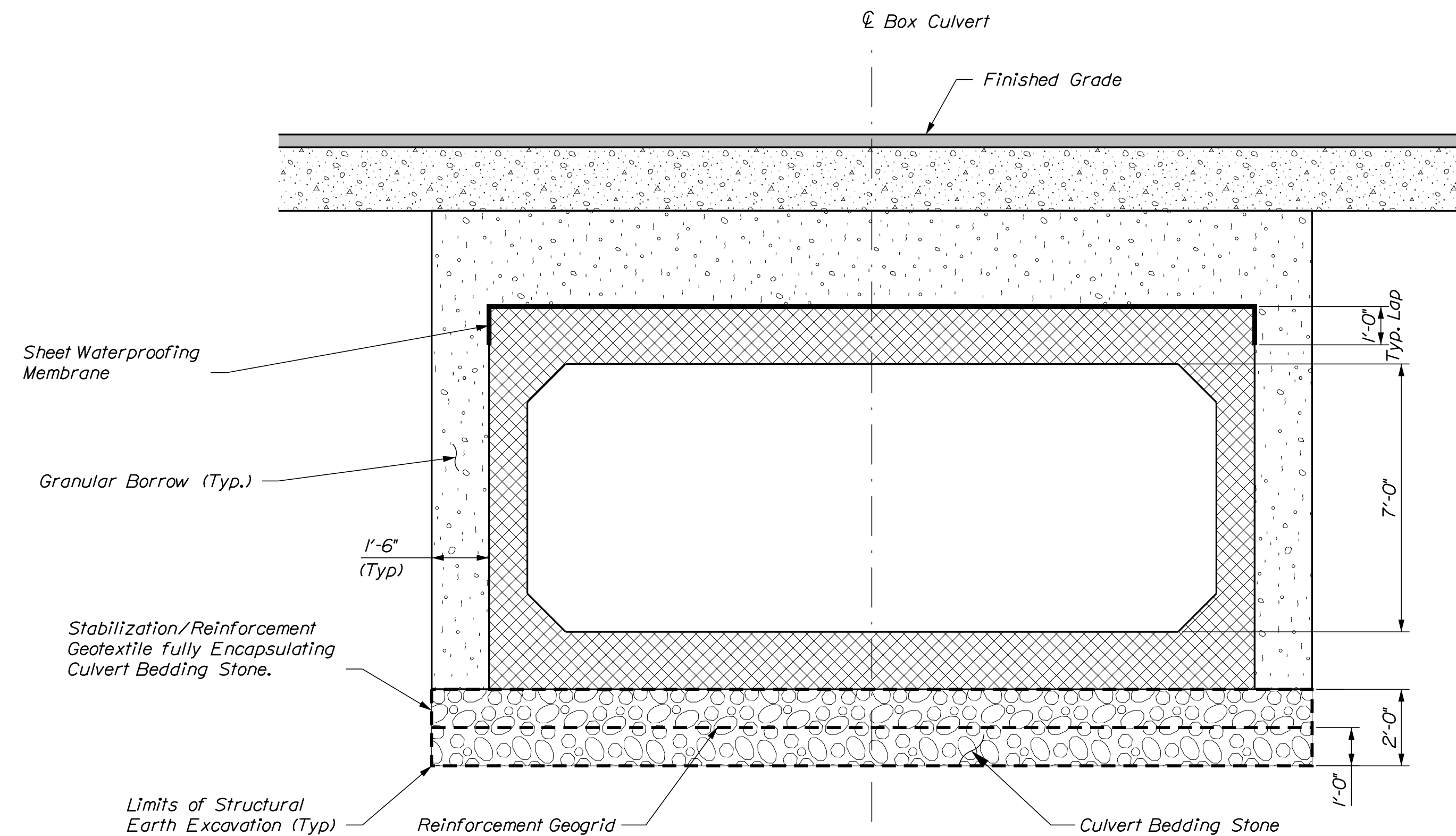
SHEET NUMBER  
14  
OF 17



PRECAST CONCRETE TOEWALL DETAIL



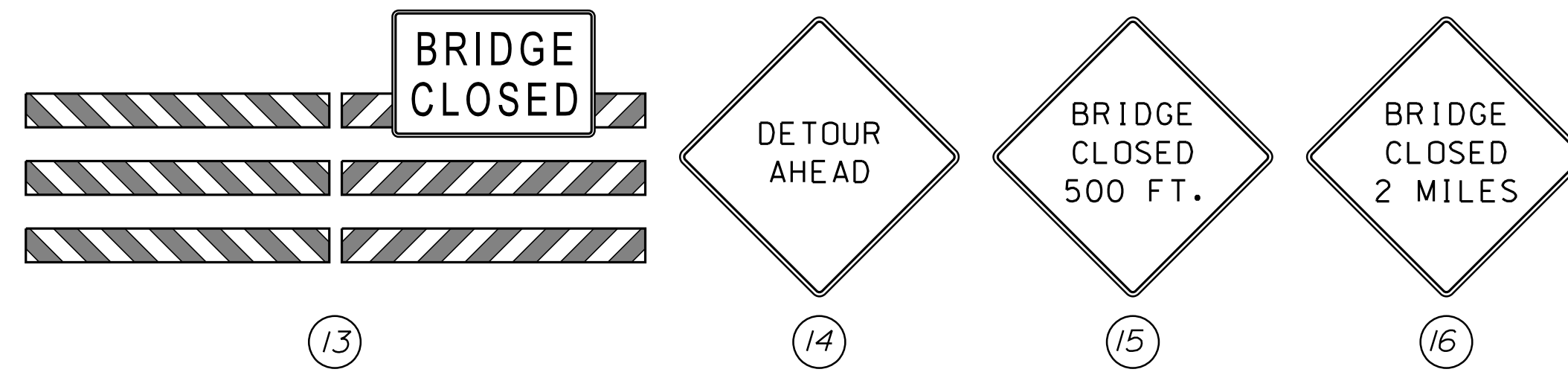
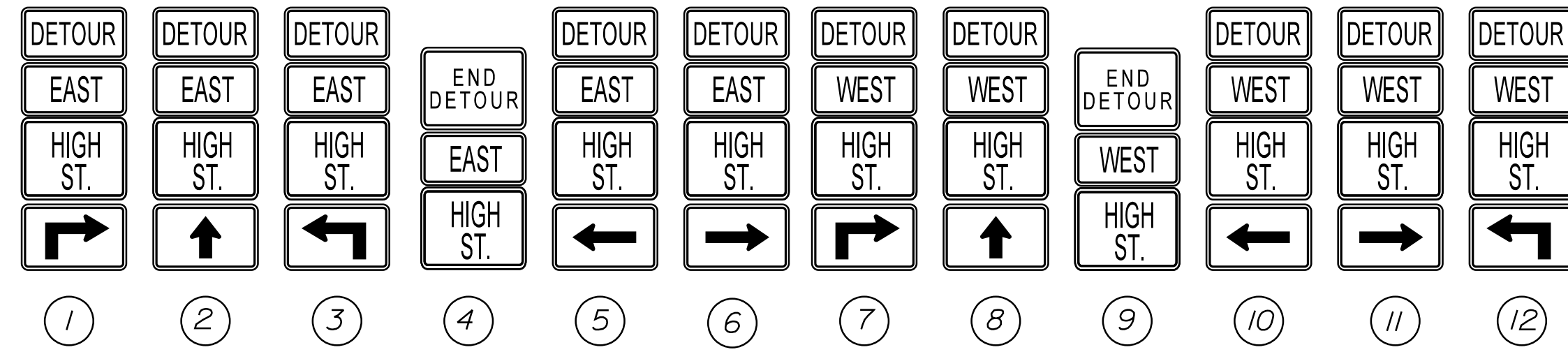
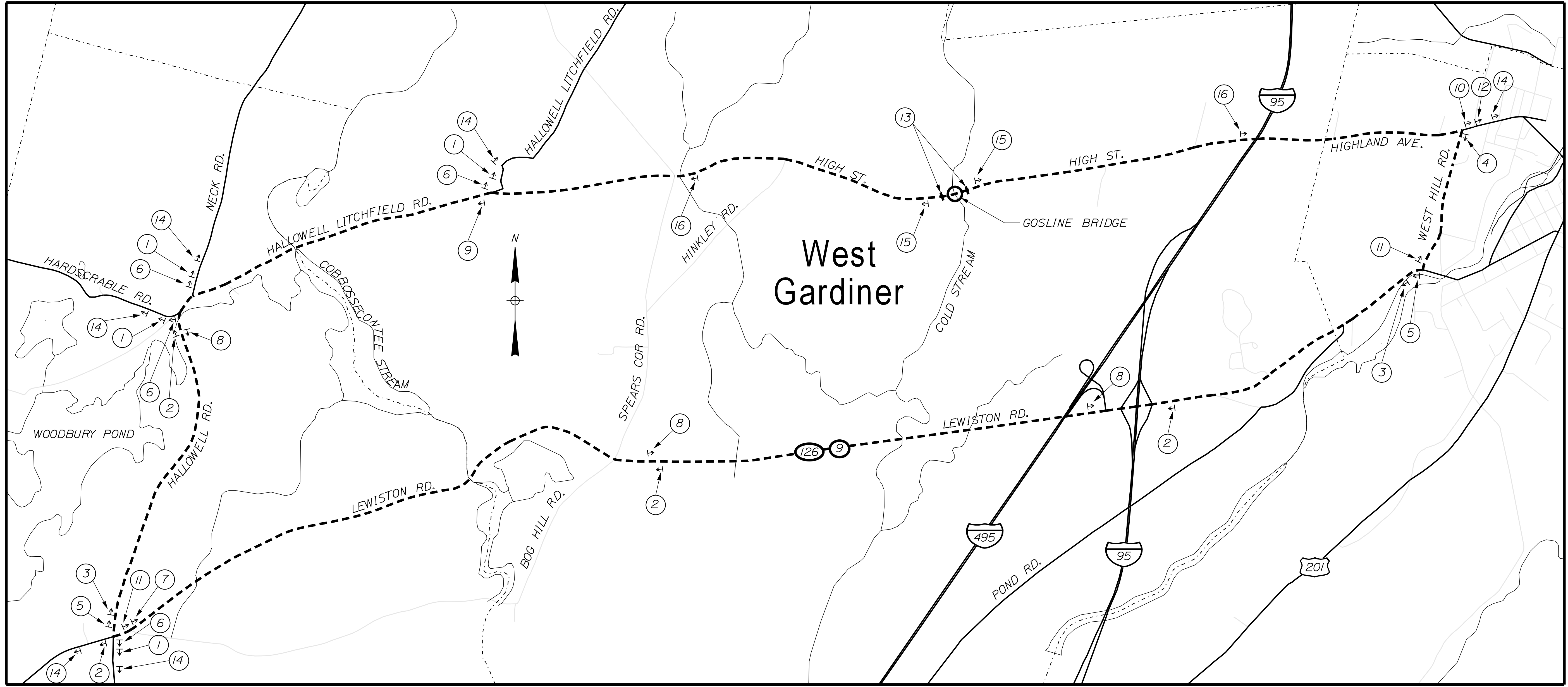
PRECAST CONCRETE HEADWALL DETAIL



**PRECAST CONCRETE BOX CULVERT NOTES**

1. Concrete Headwalls and Toewalls will be paid for under item No. 534.71 Precast Concrete Box Culvert.
2. The precast units shall be designed to carry construction loadings with a minimum fill cover of 18" over the top of the units.
3. The construction, handling, and assembly of the precast units shall be in accordance with Standard Specification Section 534, Precast Structural Concrete, and with the manufacturer's specifications as applicable.
4. Install sheet waterproofing membrane over the top and to 12 inches down the exterior sides of the precast units.

PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. KIMASH	J. BRUNELLE	DEC 2021
CHECKED-REVIEWED	D. EATON	M. CRITCHLOW	DEC 2021
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION	
2309000		WIN 023090.00	
HIERARCHY PLANS		BRIDGE NO. 2321	
GOSLINE BRIDGE		KENNEBEC COUNTY	
COLD STREAM		WEST GARDINER	
DETOUR MAP		SHEET NUMBER	
16		OF 17	
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN DETAILED	K. KINASH	I. BRUNELLE	DEC 2021
CHECKED/REVIEWED	D. EATON	M. CRITCHLOW	DEC 2021
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SIGNATURE		P.E. NUMBER	
DATE		DATE	

