

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 950
Future (2038) AADT 1140
DHV - % of AADT 14
Design Hour Volume 160
Heavy Trucks (% of AADT) 9
Heavy Trucks (% of DHV) 3
Directional Distribution (% of DHV) 65
18 kip Equivalent P 2.0 45
18 kip Equivalent P 2.5 43

HYDROLOGIC DATA

Drainage Area 15.9 sq mi
Design Discharge (Q50) 1229.1 cfs
Check Discharge (Q100) 1419.3 cfs
Headwater Elevation (Q1.1) 380.4 ft
Headwater Elevation (Q25) 384.2 ft
Headwater Elevation (Q50) 384.2 ft
Headwater Elevation (Q100) 384.4 ft
Discharge Velocity (Q1.1) 3.1 fps
Discharge Velocity (Q25) 8.8 fps
Discharge Velocity (Q50) 8.6 fps
Discharge Velocity (Q100) 8.5 fps

MATERIALS

Concrete:
Precast Class "P"
All Other Class "A"
Reinforcing Steel ASTM A 615/A 615M, Grade 60
Welded Wire Reinforcement ASTM A185/A185 M or ASTM A497/A497M

BASIC DESIGN STRESSES

Concrete f 'c = 4000 psi
Precast Concrete f 'c = 5000 psi
Reinforcing Steel f y = 60,000 psi
Welded Wire Reinforcement f y = 65,000 psi

LIST OF DRAWINGS

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FRYEBURG
OXFORD COUNTY
KIMBALL BROOK BRIDGE
OVER
KIMBALL BROOK
STATE ROUTE 113
NORTH FRYEBURG ROAD
FEDERAL AID PROJECT NO. STP-2169(100)
PROJECT LENGTH 0.014 mi.
BRIDGE NO. 5573

UTILITIES

Spectrum Cable
Fairpoint Communications
Central Maine Power Company

MAINTENANCE OF TRAFFIC

The bridge will be closed during construction with traffic detoured onto local roads.

PROJECT LOCATION	In Fryeburg, on State Route 113 (North Fryeburg Road), 0.9 miles south of the Stow town line. Lat./Long. 44°07'16.8" N 70°58'40.7" W
PROGRAM AREA	Highway Bridges - Traditional
OUTLINE OF WORK	Bridge Culvert Replacement

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER: *[Signature]*

DATE: 12/1/18

CHIEF ENGINEER: *[Signature]*

12-17-18

PROJECT INFORMATION

PROGRAM

PROJECT MANAGER

DESIGNER

CONSULTANT

PROJECT RESIDENT

CONTRACTOR

BRIDGE PROGRAM

JOEL KITREDE

KENDRA WASH

N/A

SIGNATURE

P.E. NUMBER

DATE

[Signature]

13553

12-14-18

PROFESSIONAL ENGINEER

GARRETT A. GUSTAFSON

13553

WIN021691.00

STP-2169(100)

FRYEBURG
KIMBALL BROOK BRIDGE

TITLE SHEET

SHEET NUMBER
1
OF 13

Date:12/14/2018

Username: Mark.Poulin

Division: BRIDGE

Filename: \\00\BRIDGE\MSTAN\001_ Title.dgn

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GENERAL CONSTRUCTION NOTES

1. During construction, the road will be closed to traffic for a time period specified in the Special Provisions.

2. For easements, construction limits and right of way lines, refer to Right of Way Map.

3. 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.

4. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

5. Do not excavate for Aggregate Subbase Course where existing material suitable as determined by the Resident.

6. 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 layer of new subbase 6 inches or less thick will be made under appropriate equipment rental items.

7. All embankment material, except as otherwise shown, placed below EL. 384.2 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.

8. Place riprap on sideslopes up to 2 feet from the edge of shoulder pavement.

9. Place loam 2 inches deep on all new or reconstructed sideslopes or directed by the Resident.

10. Erosion Control Mix may be substituted in those areas normally receiving loam and seed as directed by the Resident. Placement shall be accordance with Standard Specifications Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

II. 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.

12. An NCHRP350 or MASH compliant guardrail end treatment shall be installed concurrently with the placement of each section of beam guardrail.

13. *Extended-use Erosion Control Blanket 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.*

14. Project information referred to below may be accessed at the following
MaineDOT web address: <http://www.maine.gov/mdot/contractors/>.

15. 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.

16. 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.

17. The project geotechnical report titled: Preliminary Design Report, Soils, Report No. 17-0683, dated January 2, 2018 may be accessed at the MaineDOT web address.

18. Geotechnical information furnished or referred to in this plan set is for the use of the Bidders 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 Bidders' 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.

19. 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:

a. If a Lump Sum pay item is eliminated, the requirements of Standard Specifications Section 109.2, Elimination of Items, will take precedence.

b. If other Contract Documents specifically allow a change in payment for a Lump Sum pay item, those requirements will be followed.

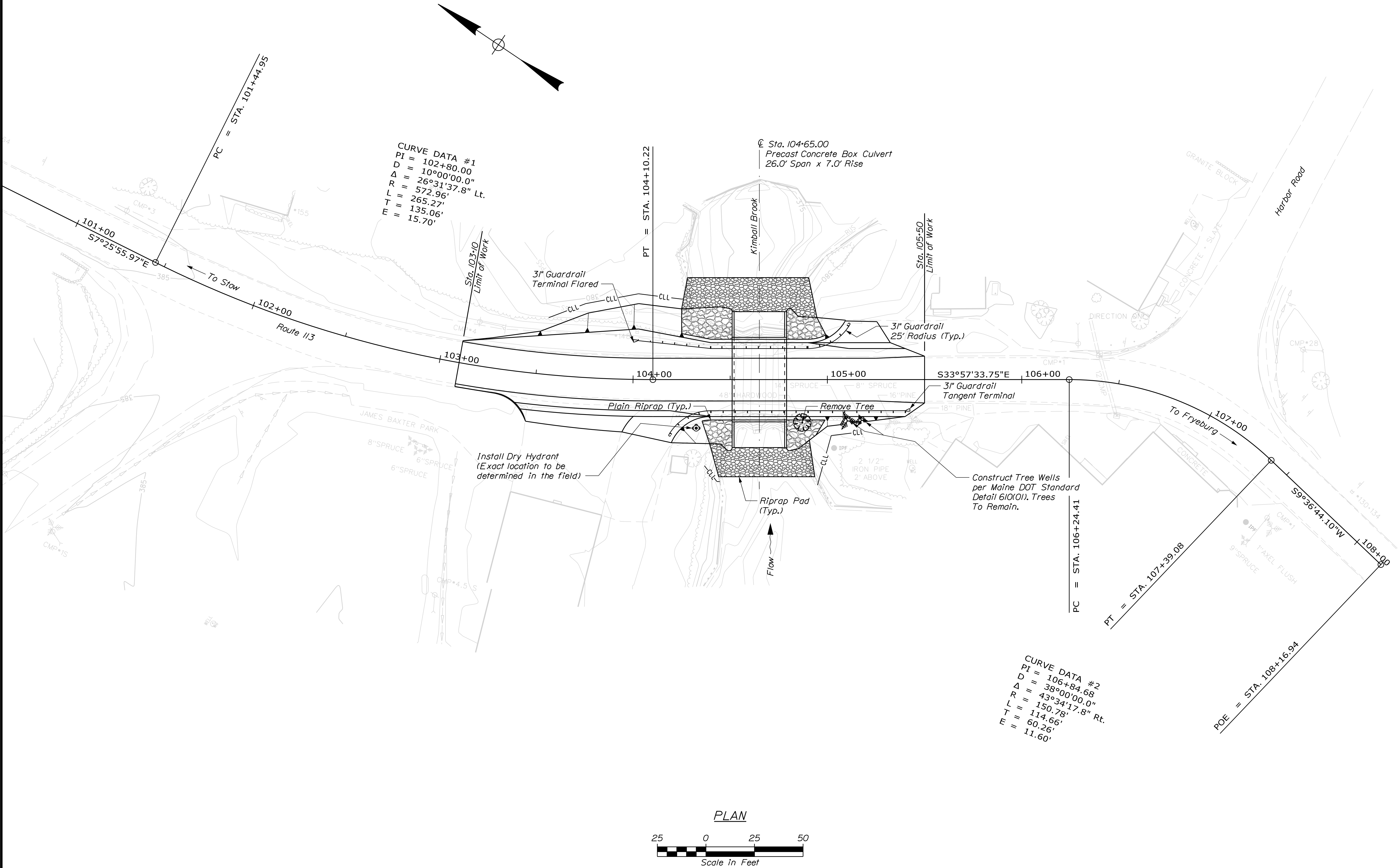
c. If a design change results in changes to estimated quantities for Lump Sum pay items, price adjustments will be made in accordance with Standard Specifications Section 109.7, Equitable Adjustments to Compensation.

20. The Contractor shall maintain the excavation so that the box culvert is constructed in-the-dry. The excavation will be completed beneath the groundwater table. Water should be controlled by pumping.

21. Protective Coating for Concrete Surfaces shall be applied to the following areas:

Concrete headwalls, including to one foot inside the box;
Exposed tops of vertical walls and to one foot below the ground on
the back side;
Exposed faces of vertical walls to one foot inside the box.

OF 13	SHEET NUMBER	2	KIMBALL BROOK BRIDGE KIMBALL BROOK FRYEBURG OXFORD COUNTY	PROJ. MANAGER	J. Kirtledge	BY	DATE
				DESIGN-DETAILED	K. Nosh	D. Dornen	DEC. 2018
				CHECKED-REVIEWED			
				DESIGN2-DETAILED2			
				DESIGN3-DETAILED3			
				REVISIONS 1			
				REVISIONS 2			
				REVISIONS 3			
				REVISIONS 4			
				FIELD CHANGES			
ESTIMATED QUANTITIES & GENERAL CONSTRUCTION NOTES				SIGNATURE			
				P.E. NUMBER			
				DATE			
				BRIDGE NO. 5573			
				WIN			
				021691.00			
				BRIDGE PLANS			

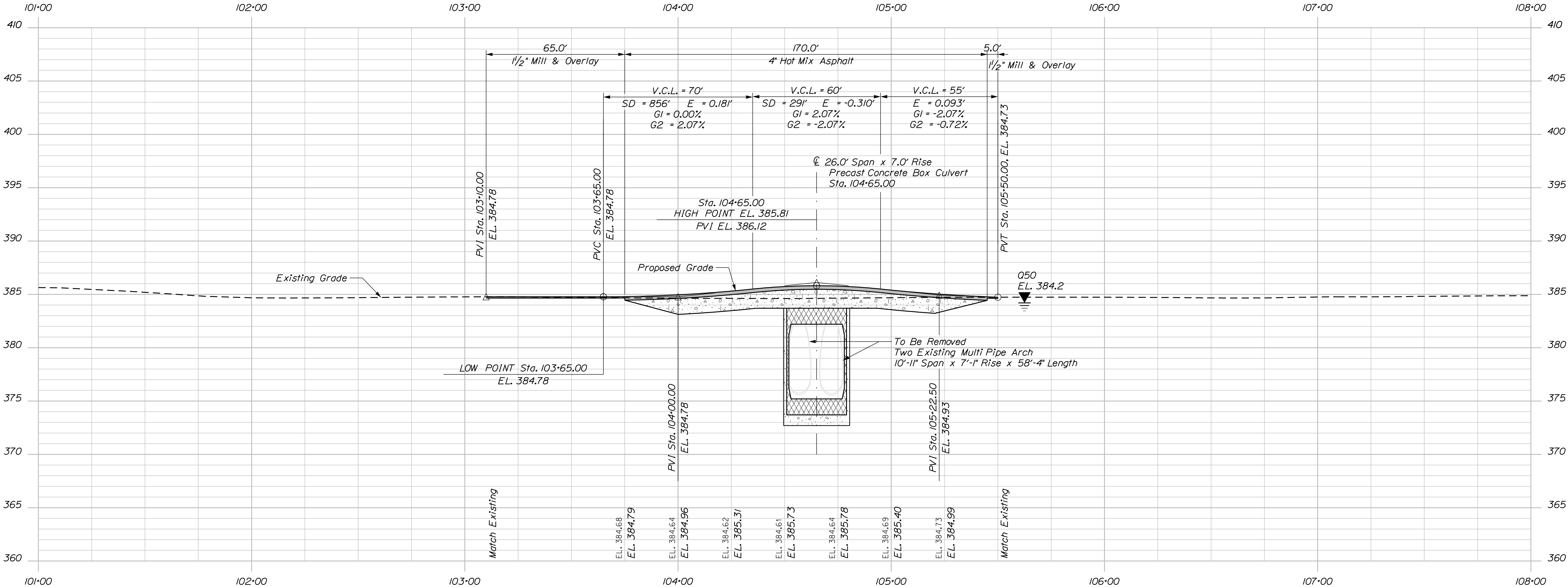


PLAN

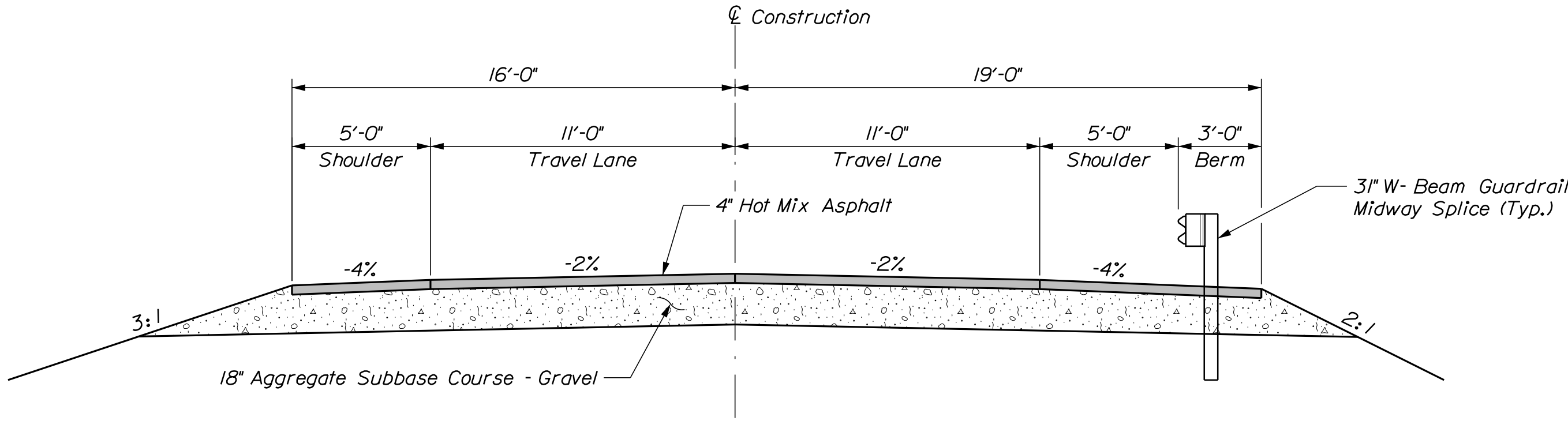


PROJ. MANAGER	J. Kittredge	BY	D. Dornen	DATE	DEC. 2018
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REVISIONS 1				DATE	
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REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

KIMBALL BROOK BRIDGE KIMBALL BROOK FRYEBURG	OXFORD COUNTY GENERAL PLAN
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PROFILE



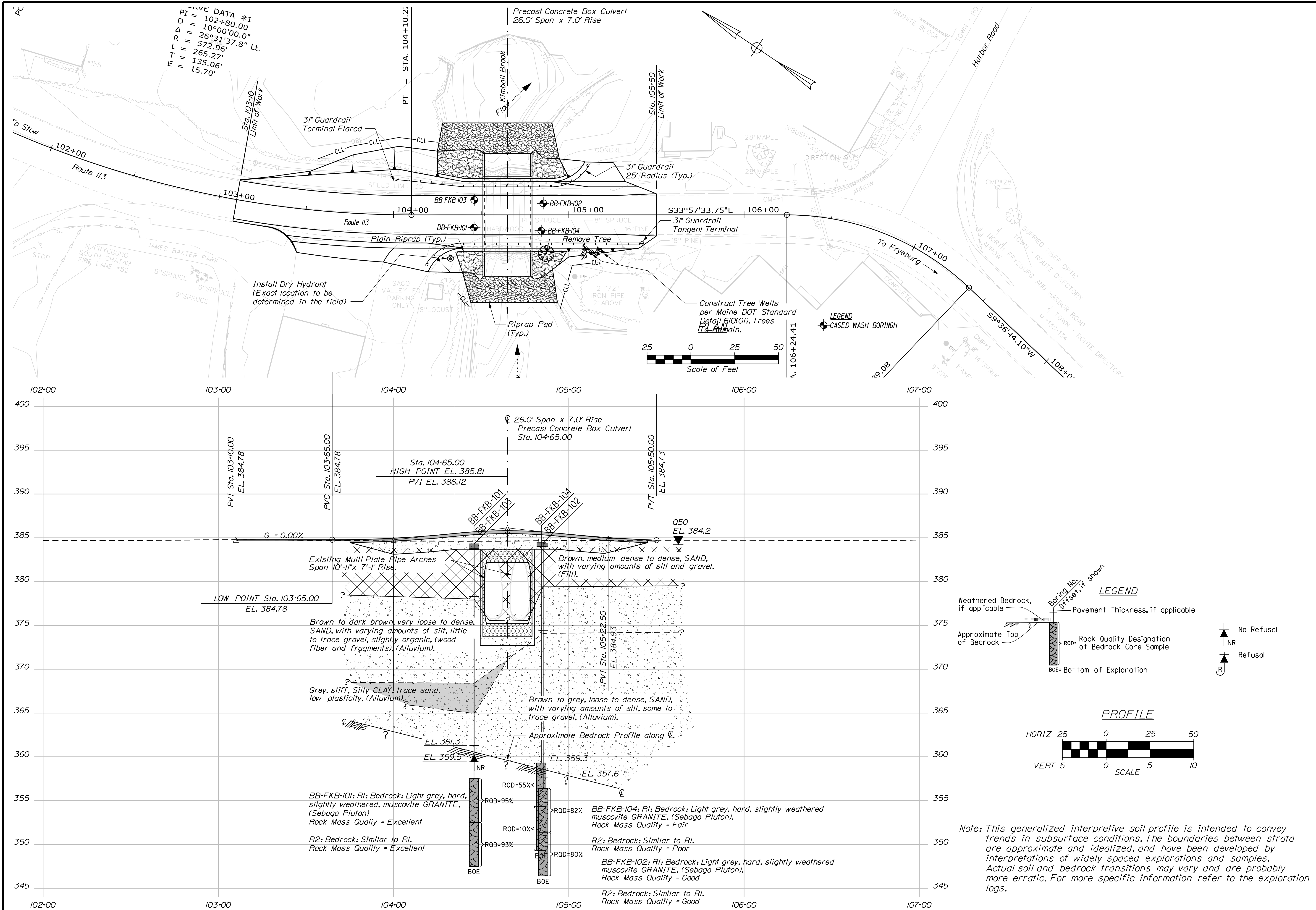
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STATE OF MAINE	
DEPARTMENT OF TRANSPORTATION	
STP-2169(100)	
BRIDGE NO. 5573	WIN 021691.00
BRIDGE PLANS	

PROJ. MANAGER	J. Kittredge	BY	D. Dornen	DATE	DEC. 2018
CHECKED-REVIEWED	K. Nash			SIGNATURE	
DESIGN-DETAILED				P.E. NUMBER	
REVISIONS 1				DATE	
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REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

KIMBALL BROOK BRIDGE	
KIMBALL BROOK	
OXFORD COUNTY	
FRYEBURG	
PROFILE & APPROACH DESIGN SECTION	

SHEET NUMBER
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OF 13

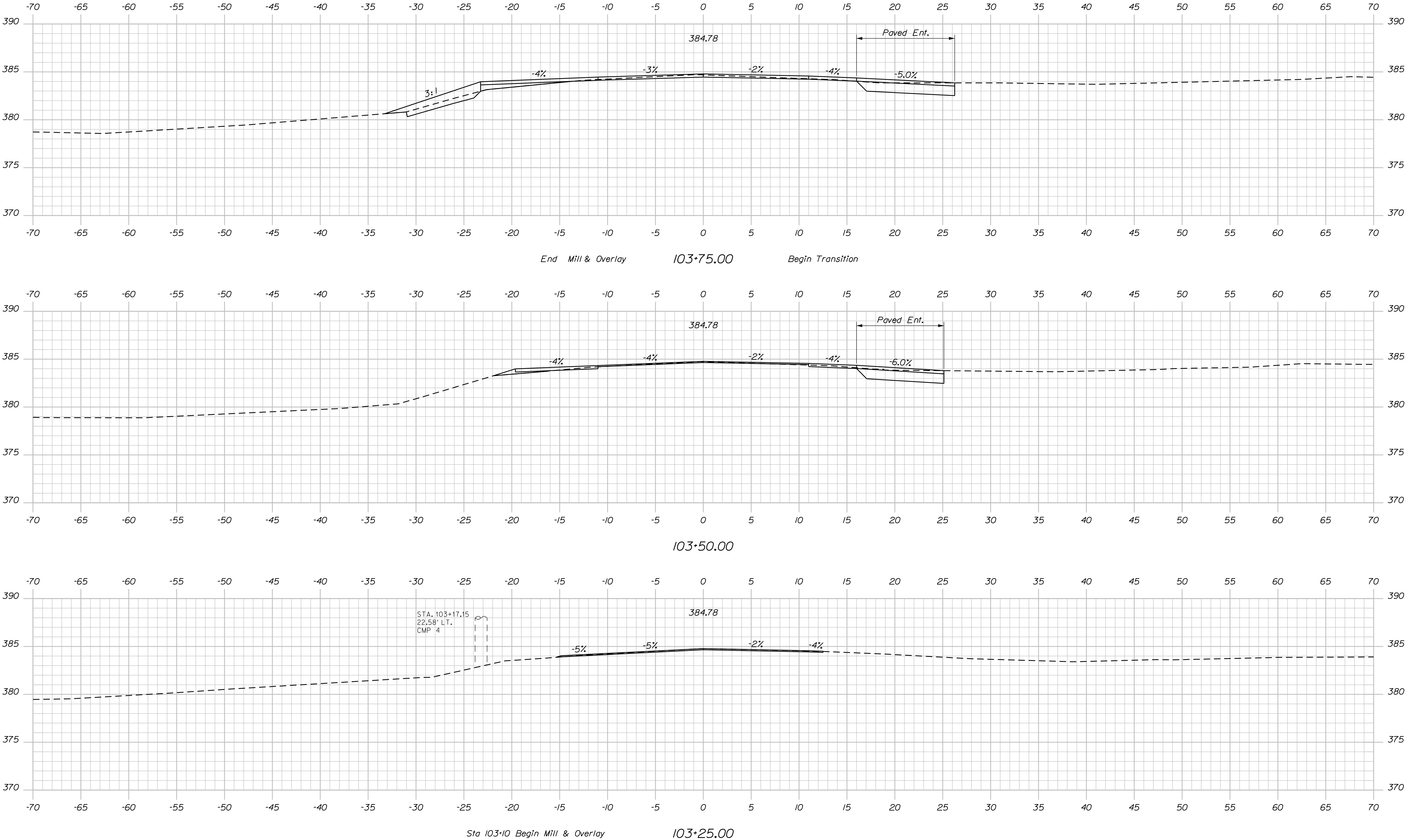


Date:12/14/2018

Username: Mark Poulin

Division: BRIDGE

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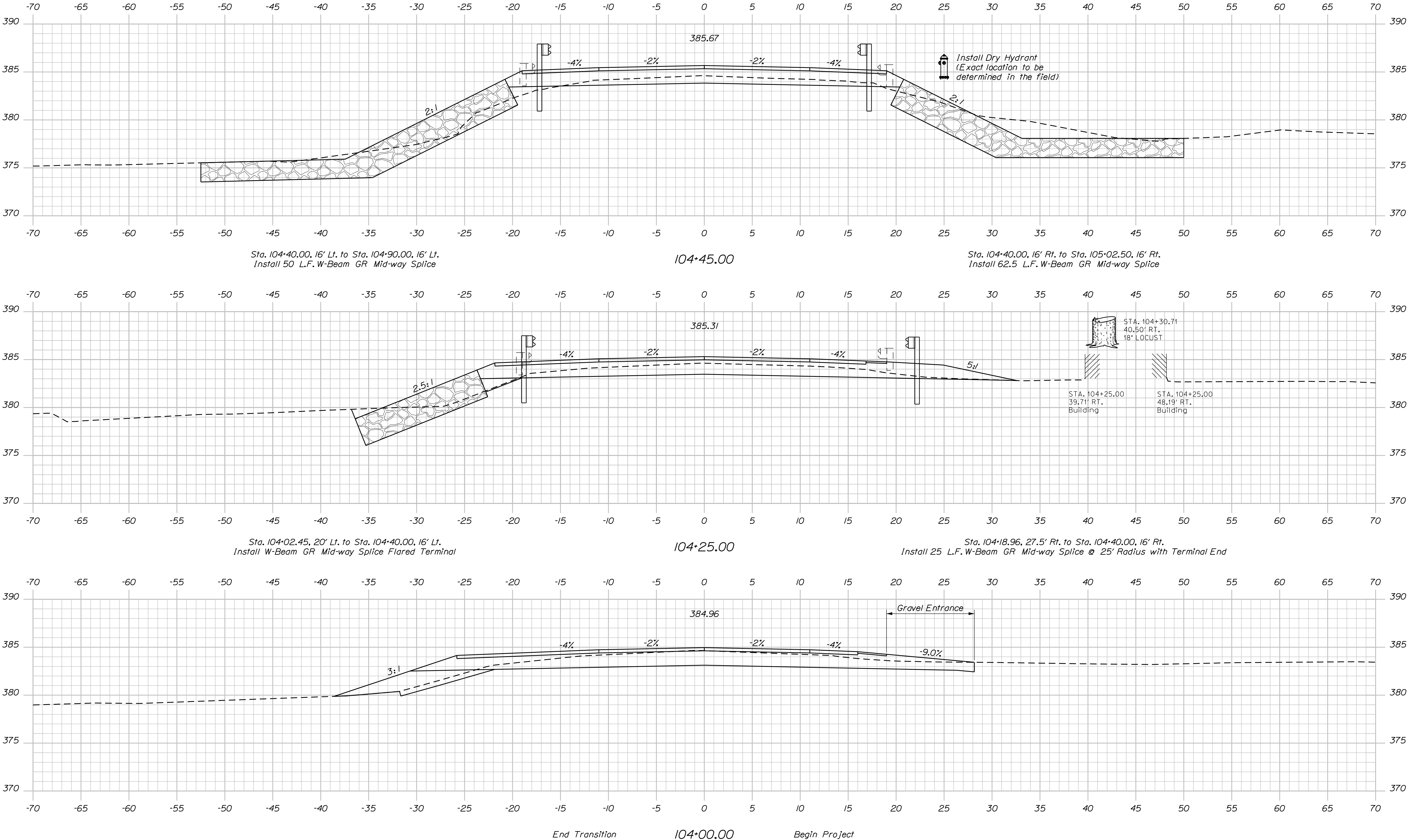
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	WIN		BRIDGE NO. 5573
KIMBALL BROOK BRIDGE KIMBALL BROOK OXFORD COUNTY FRYEBURG			
CROSS SECTIONS			
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OF 13			

Date:12/14/2018

Username: Mark Poulin

Division: BRIDGE

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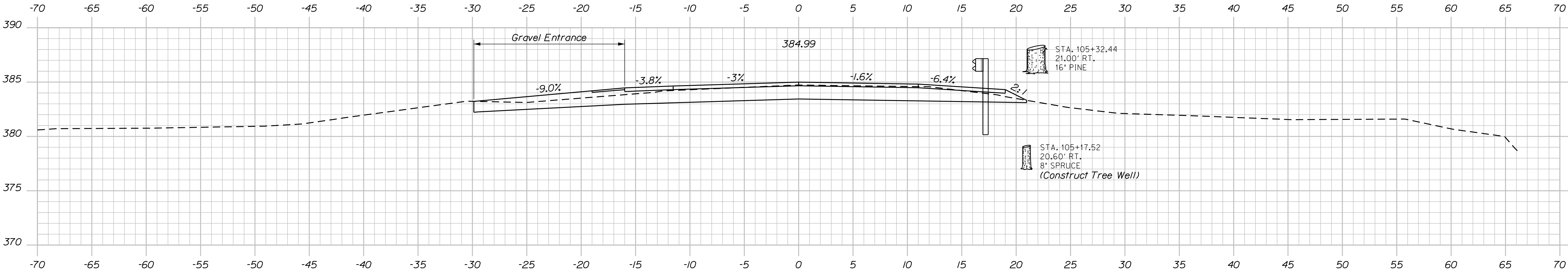
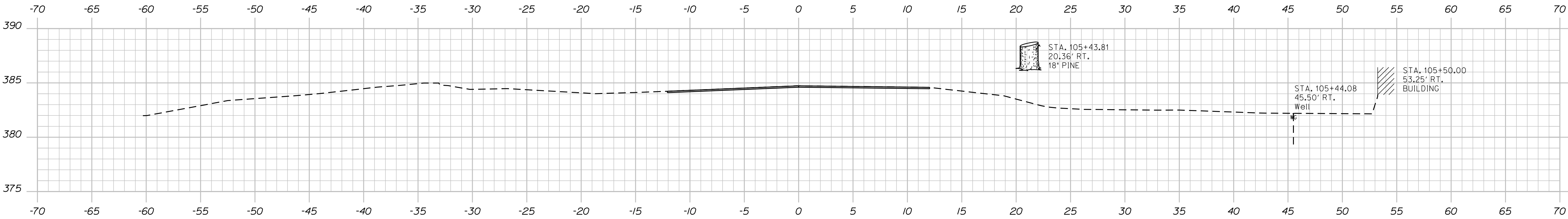
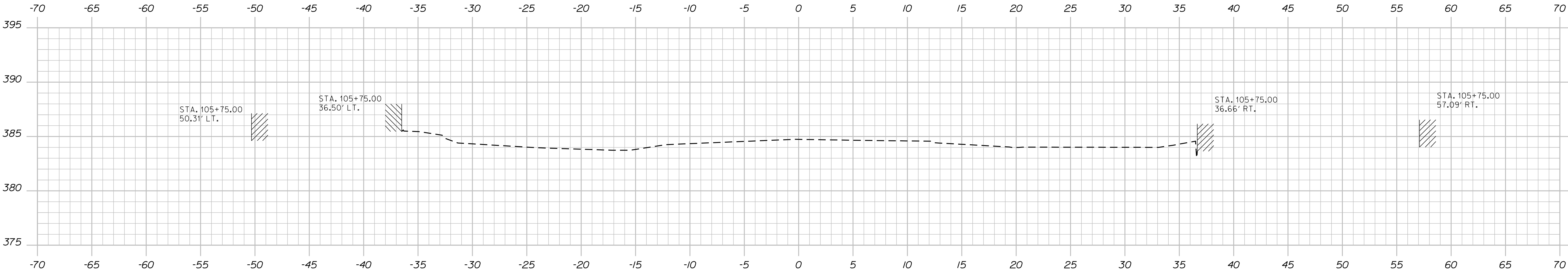
PROJ. MANAGER	CHECKED	DESIGNED	DATE	BY
J. Kirtledge	K. Nash		DEC. 2018	D. Dornen
DESIGN-REVIEWED	DESIGN-REVIEWED	SIGNATURE		
DESIGN-DETAILED	DESIGN-DETAILED	P.E. NUMBER		
REVISIONS 1	REVISIONS 2	DATE		
REVISIONS 3	REVISIONS 4			
FIELD CHANGES				

Date:12/14/2018

Username: Mark Poulin

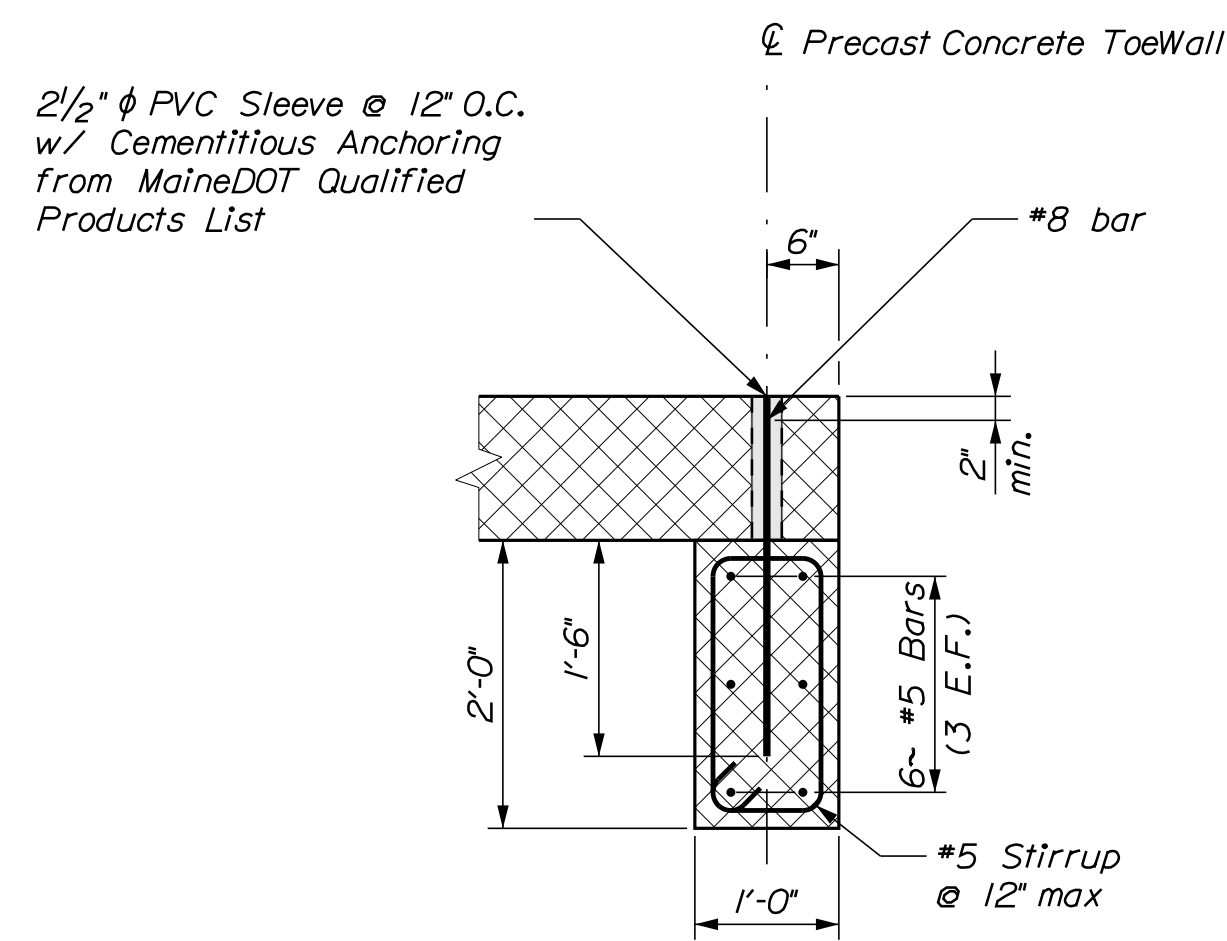
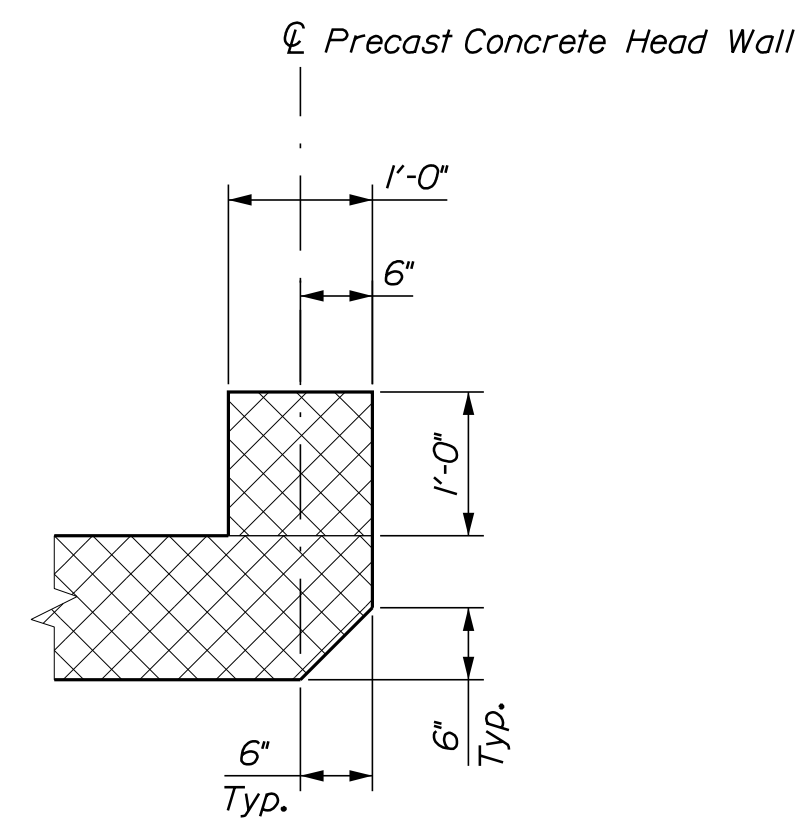
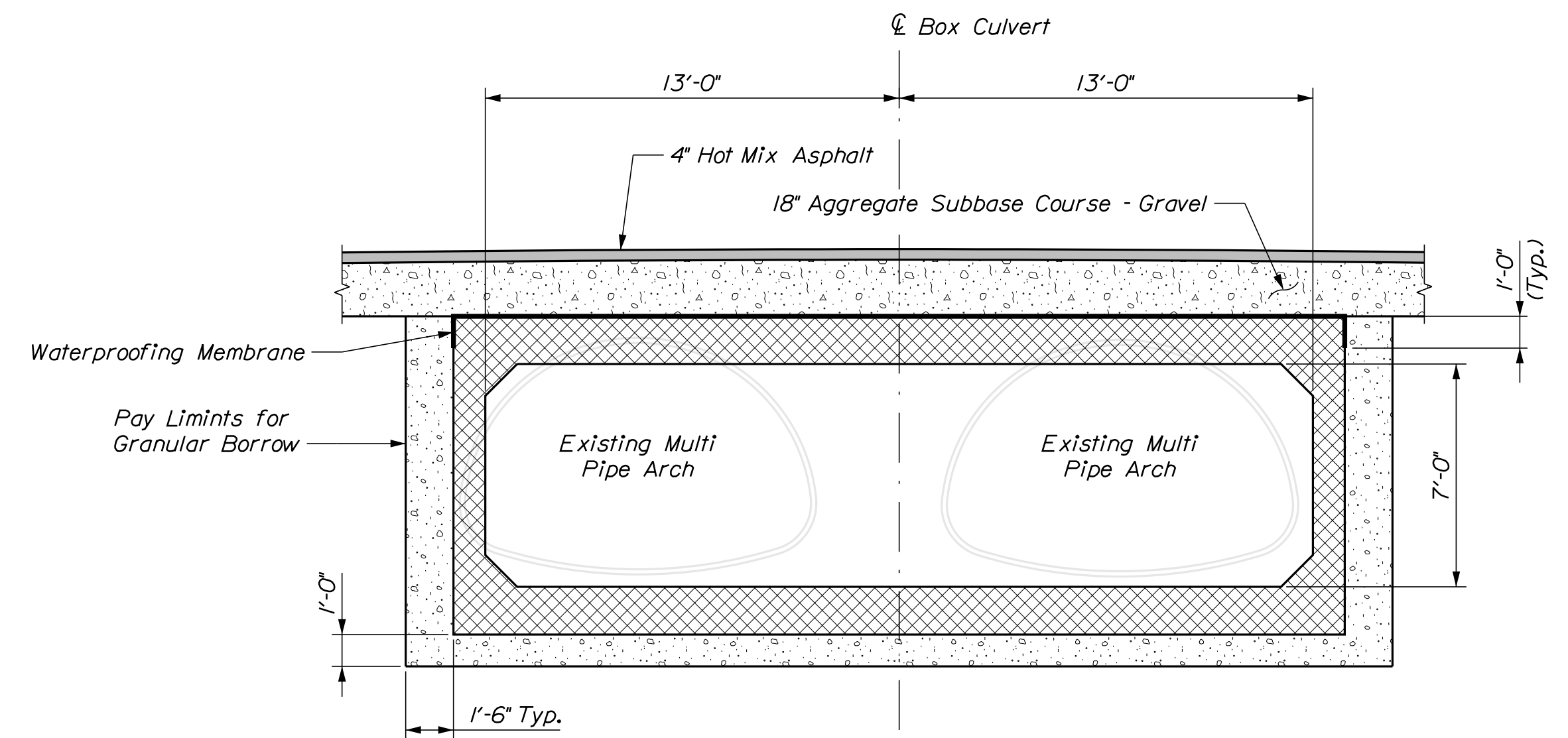
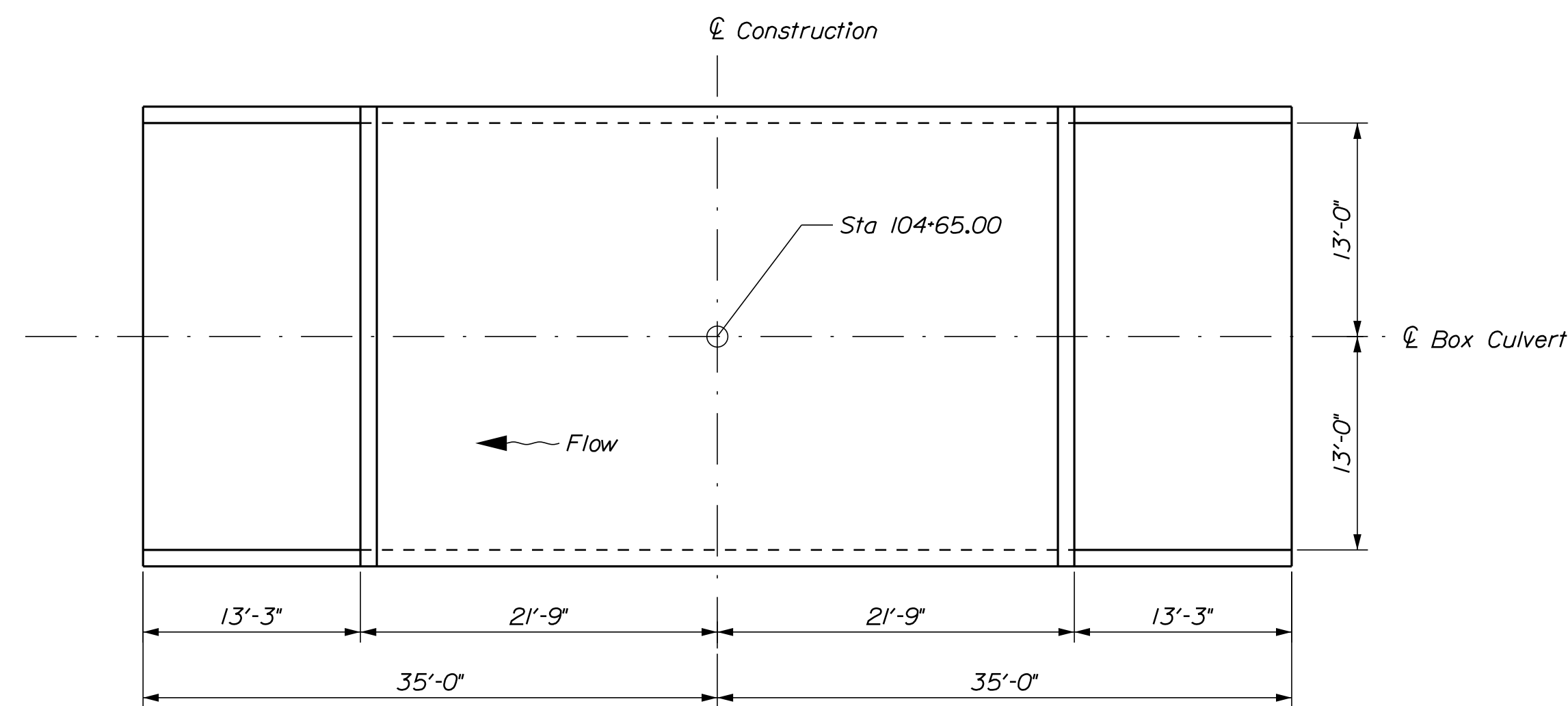
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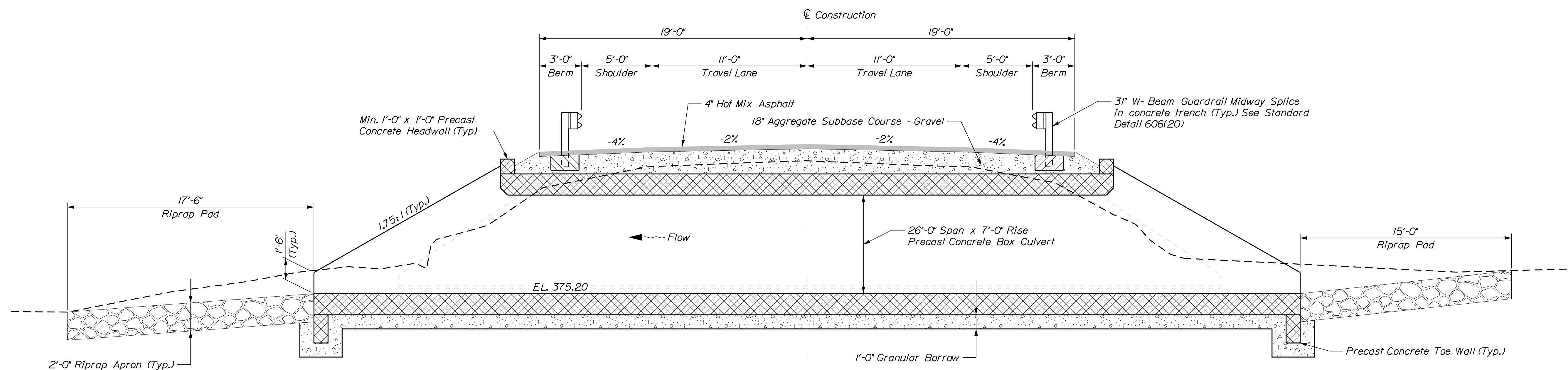
PROJ. MANAGER	CHECKED-REVIEWED	DESIGNED-DETAILED	DESIGNED-DETAILED	DESIGNED-DETAILED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
J. Kirtledge	K. Nish								
BY	DATE	SIGNATURE	P.E. NUMBER	DATE					
D. Dornen	DEC. 2018								

KIMBALL BROOK BRIDGE KIMBALL BROOK FRYEBURG OXFORD COUNTY	CROSS SECTIONS
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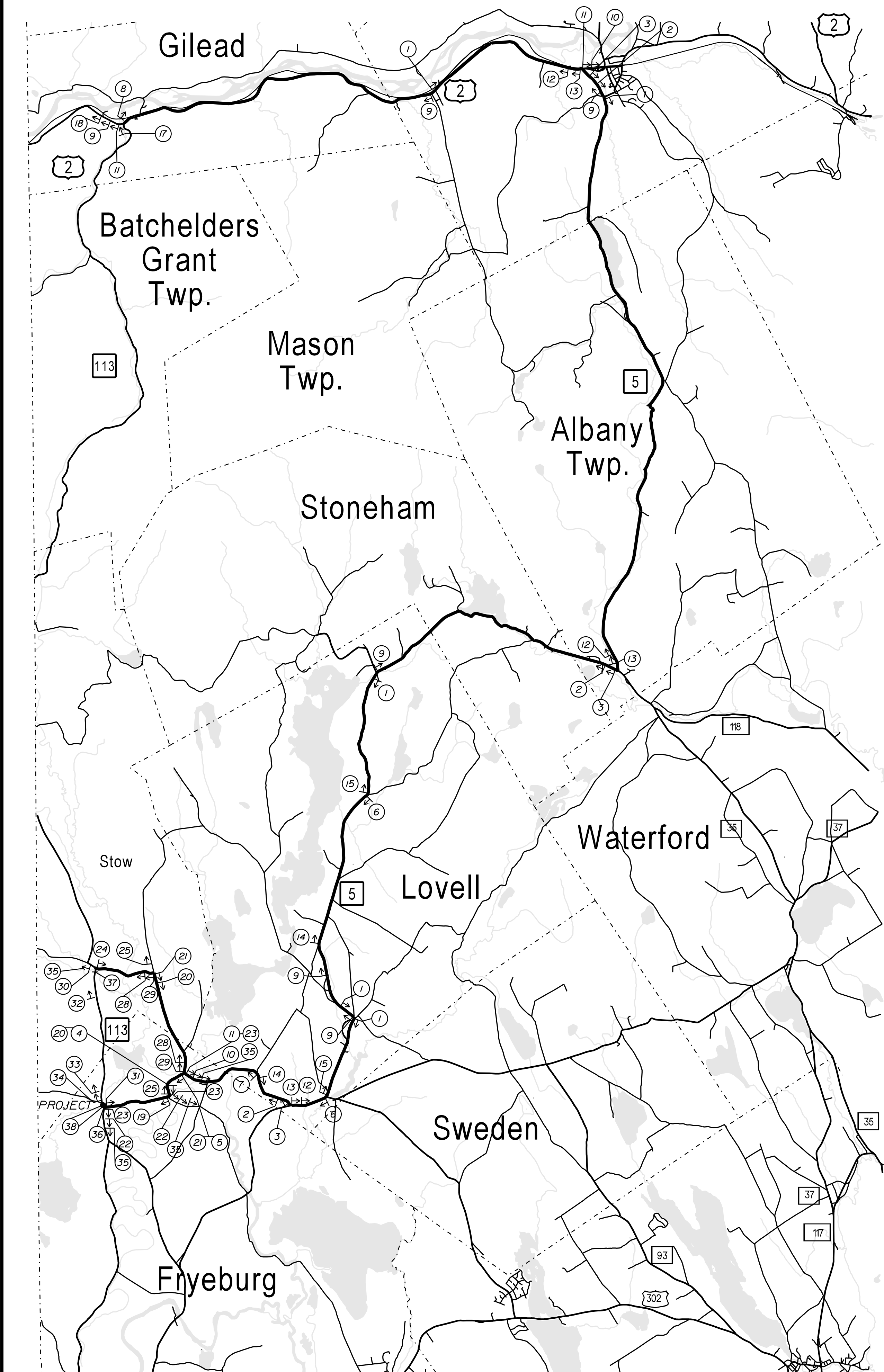


PRECAST CONCRETE BOX CULVERT NOTES

- 1. The construction, handling, and assembly of the precast units shall be in accordance with Special Provisions Section 534, Precast Structural Concrete, and with the manufacturer's specifications as applicable.*
- 2. Install standard membrane waterproofing over the top and to 12 inches down the exterior sides of the precast units.*
- 3. Concrete headwalls and toe-walls will be paid for under Item No. 534.71, Precast Concrete Box Culvert.*
- 4. The precast units shall be designed to carry construction loadings with a minimum fill cover of 18 inches over the top of the units.*



DESIGN-DETAILED	K. Nash	D. Dornan	DEC. 2018
CHECKED/REVIEWED			SIGNATURE
DESIGN-DETAILS			
DESIGN-DETAILS			P.E. NUMBER
DESIGN-DETAILS			
REVISIONS 1			DATE
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



DETOUR NOTES

1. All modifications to traffic control devices shall be in accordance with the Manual on Uniform Traffic Control Devices.
2. Any and all changes and adjustments to traffic control devices shall be included in the Traffic Control Plan submitted, designed and stamped by a Professional Engineer licensed in the State of Maine, and shall be approved by the Resident prior to implementation.
3. Cover all conflicting route signs.
4. Install 30 feet of Temporary Concrete Barrier at each end of the project (60 feet total). Payment will be made under Item No. 526.30I, Temporary Concrete Barrier.

DETOUR SIGNS

TRUCK
DETOUR

NORTH

113

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1

TRUCK
DETOUR

NORTH

113

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2

TRUCK
DETOUR

NORTH

113

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3

TRUCK
DETOUR

NORTH

113

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4

TRUCK
DETOUR

NORTH

113

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5

TRUCK
DETOUR

NORTH

113

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6

TRUCK
DETOUR

NORTH

113

↗

7

END
TRUCK
DETOUR

NORTH

113

8

TRUCK
DETOUR

SOUTH

113

↑

9

TRUCK
DETOUR

SOUTH

113

↶

10

TRUCK
DETOUR

SOUTH

113

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11

TRUCK
DETOUR

SOUTH

113

↷

12

TRUCK
DETOUR

SOUTH

113

→

13

TRUCK
DETOUR

SOUTH

113

↶

14

TRUCK
DETOUR

SOUTH

113

↗

15

END
TRUCK
DETOUR

SOUTH

113

16

113

BRIDGE CLOSED

21.0 MILES SOUTH

LOCAL TRAFFIC ONLY

17

TRUCK
DETOUR AHEAD

18

DETOUR

NORTH

113

↑

19

DETOUR

NORTH

113

↶

20

DETOUR

NORTH

113

↷

21

DETOUR

NORTH

113

↷

22

DETOUR

NORTH

113

→

23

END
DETOUR

NORTH

113

24

DETOUR

SOUTH

113

↑

25

DETOUR

SOUTH

113

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26

DETOUR

SOUTH

113

↷

27

DETOUR

SOUTH

113

↷

28

DETOUR

SOUTH

113

↗

29

END
DETOUR

SOUTH

113

30

BRIDGE CLOSED

100 FEET AHEAD

LOCAL TRAFFIC ONLY

DETOUR

36

BRIDGE CLOSED

2.6 MILES AHEAD

LOCAL TRAFFIC ONLY

DETOUR

37

BRIDGE
CLOSED

38

BRIDGE
CLOSED
2 MILES

32

ROAD
CLOSED
1000 FT.

33

ROAD
CLOSED
500 FT.

34

DETOUR
AHEAD

35

KIMBALL BROOK BRIDGE KIMBALL BROOK FRYEBURG				OXFORD COUNTY				STATE OF MAINE DEPARTMENT OF TRANSPORTATION			
DETOUR PLAN				PROJ. MANAGER				J. Kirtledge			
				DESIGN-DETAILED				K. Nash			
				CHECKED-REVIEWED				D. Dornen			
				DATE				DEC. 2018			
				SIGNATURE							
				DESIGN2-DETAILED2							
				DESIGN3-DETAILED3							
				REVISIONS 1				P.E. NUMBER			
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