

STATE OF MAINE DEPARTMENT OF TRANSPORTATION



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

HYDROLOGIC DATA

Drainage Area 162.8 sq mi
 Design Discharge (Q50) 4444.7 cfs
 Check Discharge (Q100) 4976.2 cfs
 Headwater Elevation (Q1.1) 133.6 ft
 Headwater Elevation (Q25) 140.4 ft
 Headwater Elevation (Q50) 141.4 ft
 Headwater Elevation (Q100) 142.4 ft
 Discharge Velocity (Q1.1) 2.1 fps
 Discharge Velocity (Q50) 4.1 fps
 Discharge Velocity (Q100) 4.3 fps

MATERIALS

Concrete:
 Curbs Class "LP"
 All Other Class "A"

Reinforcing Steel
 Plain Reinforcing Steel ASTM A 615/A 615M, Grade 60
 Low-Carbon Chromium Steel ASTM A1035, Type CS, Grade 100
 Glass Fiber Reinforced Polymer (GFRP) ASTM D7957

Structural Steel:
 All Material (Except as Noted) ASTM A 709, Grade 50 (Galv. or Metalized)
 High Strength Bolts ASTM F 3125, Grade A 325, Type 1 (Galvanized)

Steel H-Piles ASTM A572, Grade 50

BASIC DESIGN STRESSES

Concrete:
 Class "LP" $f'c = 5000$ psi
 Class "A" $f'c = 4000$ psi

Reinforcing Steel:
 Plain Reinforcing Steel $f_y = 60,000$ psi
 Low-Carbon Chromium Steel $f_y = 100,000$ psi
 Glass Fiber Reinforced Polymer (GFRP)
 #5 $F_{f\mu} = 100,000$ psi
 #6 $F_{f\mu} = 100,000$ psi
 #7 $F_{f\mu} = 95,000$ psi
 Minimum Elastic Modulus $E_f = 6,150,000$ psi
 Minimum Nominal Design Tensile Strain $\epsilon_{fu} = 1.226\%$

Structural Steel:
 ASTM A 709, Grade 50 $F_y = 50,000$ psi
 ASTM F3125, Grade A325, Type 1 $F_{\mu} = 120,000$ psi

Steel H-Piles $F_y = 50,000$ psi

LITCHFIELD-WEST GARDINER KENNEBEC COUNTY BABCOCK BRIDGE OVER COBBOSSECONTEE STREAM ROUTE 126 & 9 (LEWISTION RD.) FEDERAL AID PROJECT NO. 2309401 PROJECT LENGTH 0.081 mi. BRIDGE NO. 2029

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UTILITIES

Central Maine Power
 Consolidated Communications

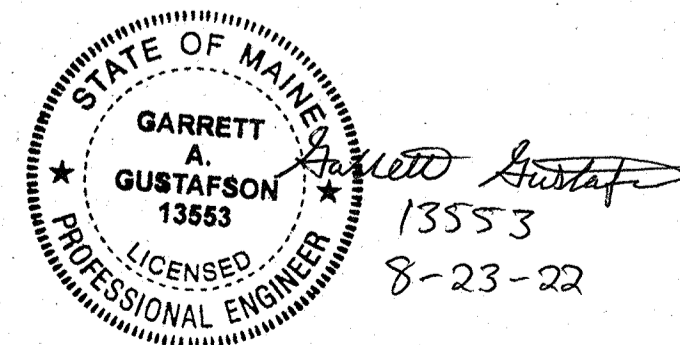
TRAFFIC DATA

Current (2019) AADT	1990
Future (2039) AADT	2190
DHV - % of AADT	11
Design Hour Volume	241
Heavy Trucks (% of AADT)	9
Heavy Trucks (% of DHV)	7
Directional Distribution (% of DHV)	54
18 kip Equivalent P 2.0	50
18 kip Equivalent P 2.5	48
Design Speed (mph)	50

MAINTENANCE OF TRAFFIC

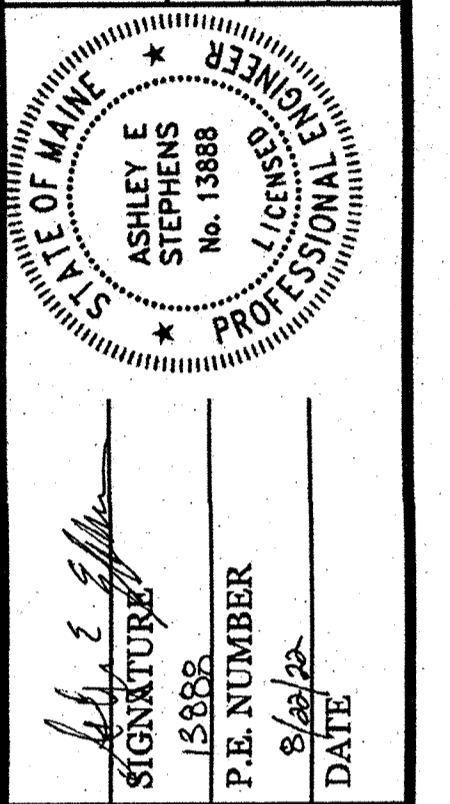
Bridge will be closed during construction with traffic detoured.

PROJECT LOCATION	On Route 9/126 over Cobbosseecontee Stream. Located on the Litchfield-West Gardiner Town Line. Lat./Long. 44°12'11.0" N 69°53'57.0" W
PROGRAM AREA	Highway Bridges - Traditional
OUTLINE OF WORK	Bridge Replacement



NOTE: MaineDOT is responsible for sheets 1 through 19, Sheets 31 & 32 and for bridge geometry.

STATE OF MAINE	DEPARTMENT OF TRANSPORTATION	DATE	8-31-22
APPROVED		COMMISSIONER	[Signature]
		CHIEF ENGINEER	[Signature]



PROJECT INFORMATION	BRIDGE PROGRAM	DEVAN EATON	KENDRA WASH	INTB			
PROGRAM	PROJECT MANAGER	DESIGNER	CONSULTANT	PROJECT RESIDENT	CONTRACTOR	PROJECT COMPLETION DATE	

02309401	WIN 023094.01
LITCHFIELD-WEST GARDINER BABCOCK BRIDGE	TITLE SHEET

SHEET NUMBER	1
OF 32	

Username: Jeremiah.Brunelle Date:8/22/2022
 Division: BRIDGE
 Filename: \\00\BRIDGE\MSTA\001_Title.dgn

Date: 8/23/2022

Username: Jeremiah.Brunelle

Division: BRIDGE

Filename: ... \BRIDGE\WSTAN002_Estimate.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
201.23	REMOVING SINGLE TREE TOP ONLY	2	EA
201.24	REMOVING STUMP	2	EA
202.19	REMOVING EXISTING BRIDGE (Concrete 700 CY)	1	LS
202.202	REMOVING PAVEMENT SURFACE	300	SY
203.20	COMMON EXCAVATION	940	CY
203.2318	DISPOSAL OF SPECIAL WASTE	800	T
203.24	COMMON BORROW	350	CY
203.25	GRANULAR BORROW	240	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	240	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	1,080	CY
403.208	HOT MIX ASPHALT 12.5 MM HMA SURFACE	163	T
403.209	HOT MIX ASPHALT 9.5 MM. SIDEWALKS, DRIVES, ISLANDS & INCIDENTALS	30	T
403.213	HOT MIX ASPHALT 12.5 MM BASE	244	T
409.15	BITUMINOUS TACK COAT - APPLIED	76	G
501.231	DYNAMIC LOADING TEST	2	EA
501.54	STEEL H-BEAM PILES 117 LB/FT. DELIVERED	450	LF
501.541	STEEL H-BEAM PILES 117 LB/FT. IN PLACE	400	LF
501.90	PILE TIPS	10	EA
501.91	PILE SPLICES	5	EA
501.92	PILE DRIVING EQUIPMENT MOBILIZATION	1	LS
502.219	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS (102 CY)	1	LS
502.26	STRUCTURAL CONCRETE ROADWAY & SIDEWALK SLAB ON STEEL BRIDGES (88 CY)	1	LS
502.291	SAW CUT GROOVING - LONGITUDINAL (303 SY)	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLABS (23 CY)	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS (8 CY)	1	LS
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED	23621	LB
503.13	REINFORCING STEEL, PLACING	23621	LB
503.19	LOW-CARBON CHROMIUM REINFORCEMENT, FABRICATED AND DELIVERED	10700	LB
503.20	LOW-CARBON CHROMIUM REINFORCEMENT, PLACING	10700	LB
504.702	STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED (101,000 LBS)	1	LS
504.71	STRUCTURAL STEEL ERECTION (101,000 LBS)	1	LS
505.08	SHEAR CONNECTORS (1010 EA)	1	LS
506.9104	THERMAL SPRAY COATING - SHOP APPLIED (101,000 LBS)	1	LS
507.0821	STEEL BRIDGE RAILING, 3 BAR (182 LF)	1	LS
507.0822	STEEL APPROACH RAILING, 3-BAR	4	EA
511.07	COFFERDAM, ABUTMENT NO. 1	1	LS
511.07	COFFERDAM, ABUTMENT NO. 2	1	LS
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES (430 SY)	1	LS
526.301	TEMPORARY CONCRETE BARRIER TYPE 1 (60 LF)	1	LS
530.30	GFRP, REINFORCEMENT BARS, FAB & DEL	22095	LF
530.31	GFRP, REINFORCEMENT BARS, PLACING	22095	LF
606.1301	3I INCH W-BM GR, MID-WAY SPLICE-SGL FACED	360	LF
606.1303	3I INCH W-BM GR, MID-WAY SPLICE-15' RADIUS AND LESS	25	LF
606.1305	3I INCH W-BM GR, MID-WAY SPLICE FLARED TERMINAL	2	EA
606.1721	BRIDGE TRANSITION - TYPE 1	4	EA
606.265	TERMINAL END - SINGLE RAIL - GALVANIZED STEEL	1	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	6	EA
610.08	PLAIN RIPRAP	1250	CY
610.18	STONE DITCH PROTECTION	2	CY
613.319	EROSION CONTROL BLANKET	90	SY
615.07	LOAM	50	CY
618.14	SEEDING METHOD NUMBER 2	8	UN
619.12	MULCH	8	UN
619.14	EROSION CONTROL MIX	100	CY
620.58	EROSION CONTROL GEOTEXTILE	1,550	SY
620.66	DRAINAGE GEOCOMPOSITE	60	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	1800	LF
629.05	HAND LABOR, STRAIGHT TIME	50	HR
631.10	AIR COMPRESSOR (INCLUDING OPERATOR)	10	HR
631.11	AIR TOOL (INCLUDING OPERATOR)	10	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	25	HR
631.14	GRADER (INCLUDING OPERATOR)	25	HR
631.15	ROLLER, EARTH AND BASE (INCLUDING OPERATOR)	25	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	25	HR
639.19	FIELD OFFICE TYPE B	1	EA
652.312	TYPE III BARRICADE	4	EA
652.33	DRUM	25	EA
652.34	CONE	25	EA
652.35	CONSTRUCTION SIGNS	400	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES (180 CD)	1	LS
652.38	FLAGGERS	25	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	2	EA
656.75	TEMPORARY SOIL EROSION AND 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 141.4 shall be Granular Borrow meeting the requirements of Subsection 703.19, Material for Underwater Backfill.
- 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 wingwalls.
- Guardrail posts as shown in the Standard Details shall be modified from the indicated length of 7 feet to a length of 8 feet with an embedment of 5'-4". Payment will be considered incidental to the guardrail pay items.
- An NCHRP350 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:

All exposed surfaces of concrete curbs and sidewalks, Fascias down to the drip notch, Concrete wearing surfaces, Top of abutment backwalls and to one foot below the top of backwalls on the back side, Wingwalls top face and roadway face to one foot below roadway grade.

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

16. 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.

17. 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.

18. The project geotechnical report titled: Geotechnical Design Report, Litchfield-West Gardiner, Babcock Bridge Replacement, MaineDOT WIN 023094.01 dated March 2022 may be accessed at the MaineDOT web address.

19. 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.

20. 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.

21. The Contractor shall submit a Bridge Demolition Plan to the Resident at least 10 business days prior to the start of demolition work. The Plan shall outline the methods and equipment to be used to remove and dispose of all materials included in the existing bridge. No work related to the removal of the bridge shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Demolition Plan for appropriateness and completeness. Payment for all work necessary for developing, submitting and finalizing the Demolition Plan will be considered incidental to the bridge removal pay item.

22. Connection between proposed and existing guardrail shall be incidental to related contract items.

23. Unless noted otherwise, 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
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

SIGNATURE
P.E. NUMBER
DATE

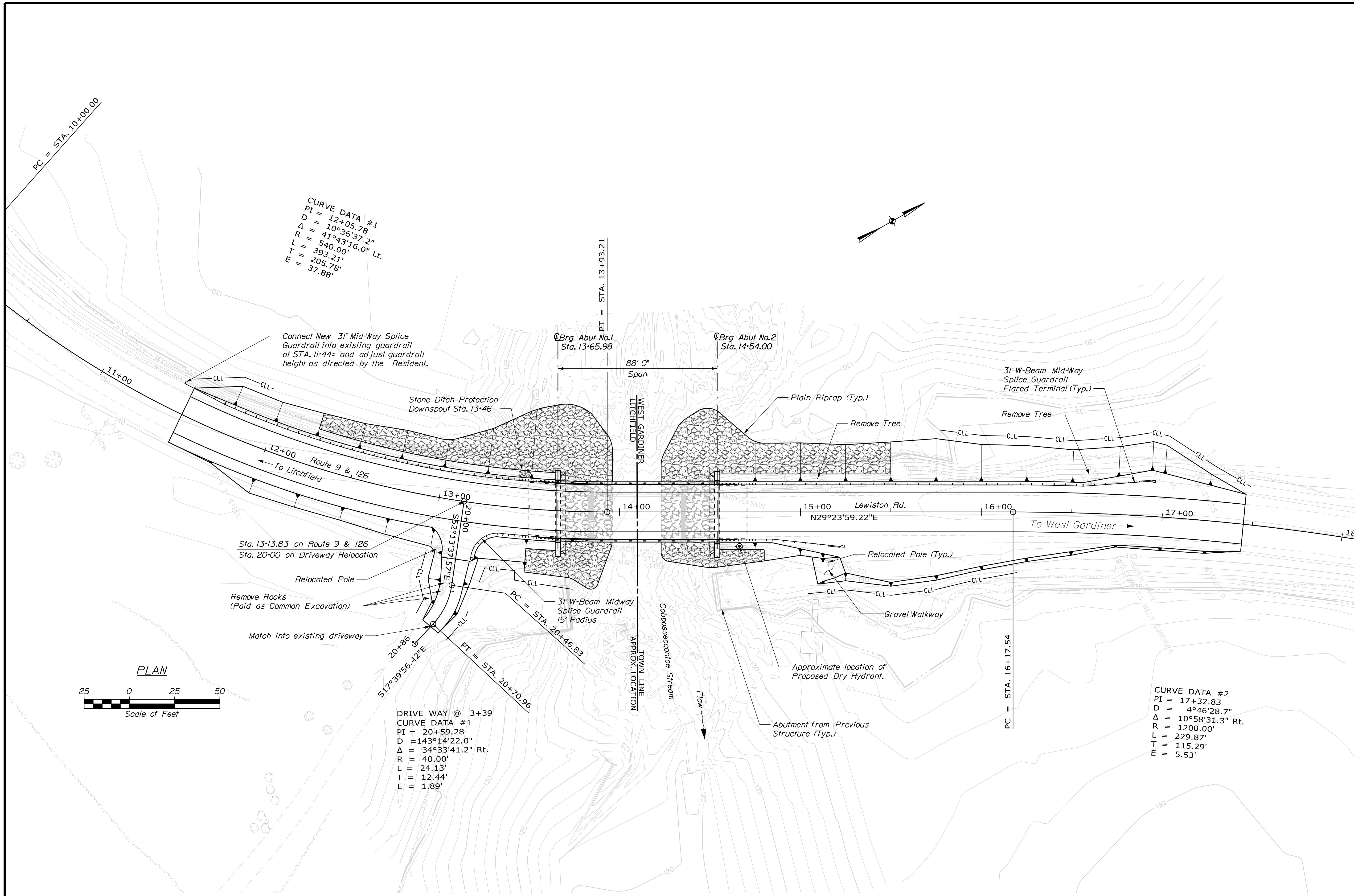
DATE
BY
DEVAN EATON
N. BAERT
J. BRUNELLE
B. GRENIER
A. STEPHENS

BABCOCK BRIDGE
COBBOSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
ESTIMATED QUANTITIES AND
GENERAL CONSTRUCTION NOTES

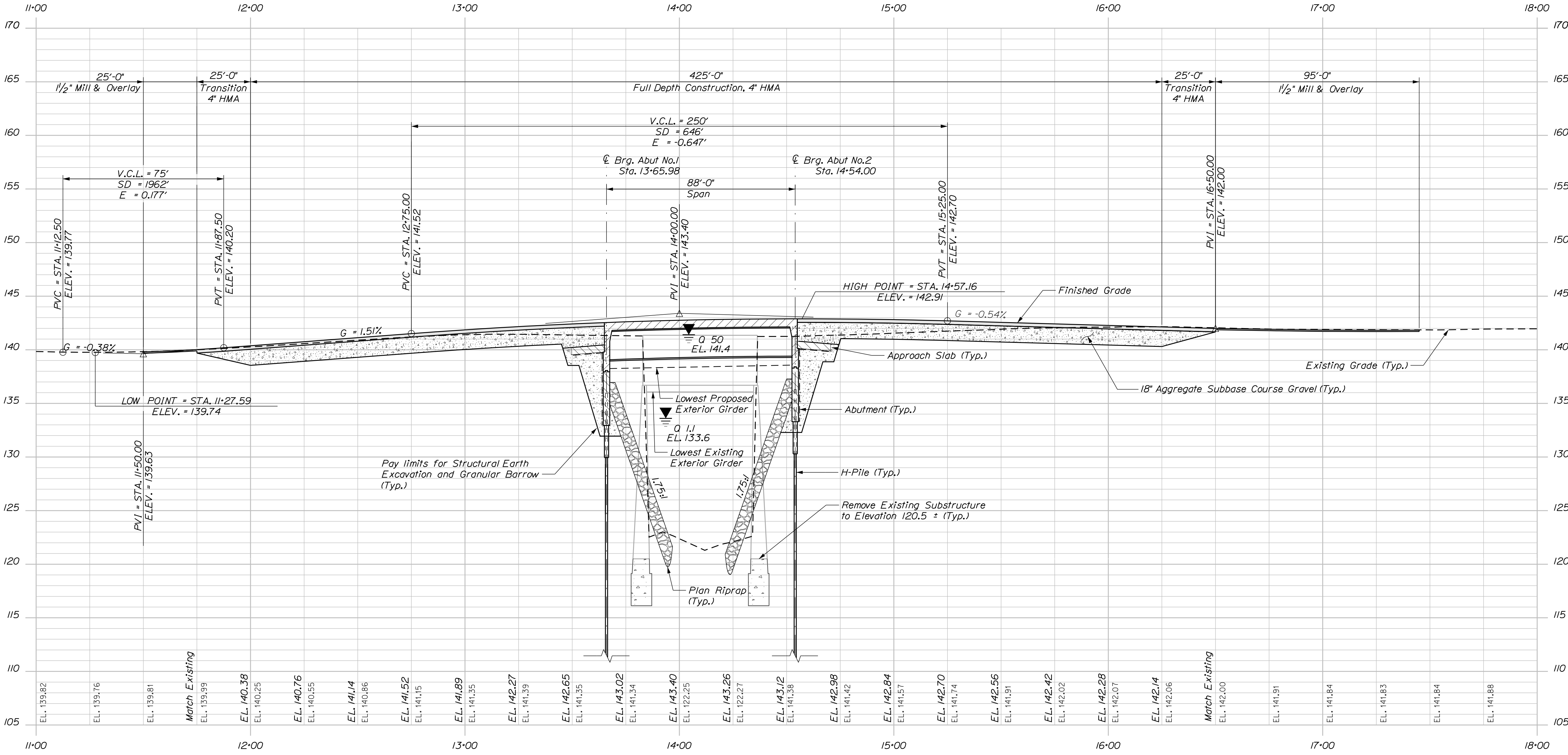
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2

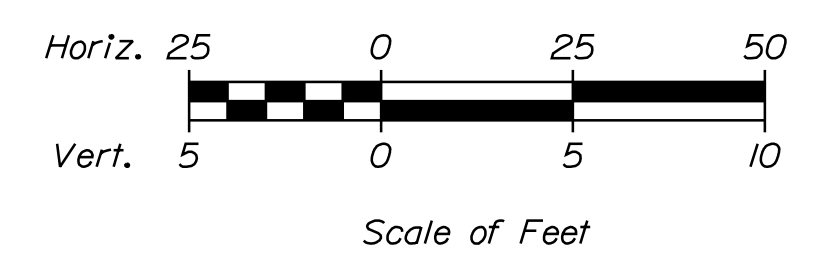
OF 32



STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		02309401	
PROJECT: BABCOCK BRIDGE		LOCATION: COBBOSCONTEE STREAM		COUNTY: KENNEBEC COUNTY	
PROJ. MANAGER: DEVAN EATON		BY: J. BRUNELLE		SIGNATURE:	
DESIGN DETAILED: K. NASH		CHECKED/REVIEWED: M. POLLIN		DATE: 8/22	
DESIGNS DETAILED:		DESIGNS DETAILED:		P.E. NUMBER:	
REVISIONS 1:		REVISIONS 2:		DATE:	
REVISIONS 3:		REVISIONS 4:		BRIDGE NO. 2029	
FIELD CHANGES:		WIN		023094.01	
SHEET NUMBER		3		BRIDGE PLANS	



PROFILE



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		02309401	
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY		BRIDGE NO. 2029	
BABCOCK BRIDGE COBOSSECONTEE STREAM		BRIDGE PLANS	
PROFILE		WIN 023094.01	
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED-REVIEWED	HNTB	M. POLLIN	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		DATE	
4		P.E. NUMBER	
OF 32		SIGNATURE	

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Babcock Bridge #2023 carries Route 126 over Cobosseecontee Location: Litchfield-West Gardiner, Maine		Boring No.: BB-LCS-101 WIN: 23094.00	
Drifters: McHardy	Elevation (ft.): 141.0	Auger ID/DB: 5" Solid Stem			
Operator: Doggett/Nilles	Datum: NAVD83	Sampler: Standard Split Spoon			
Logged By: B. Wilber	Rig Type: CMC 45C	Home #, #/ft.: 140W/30"			
Date Start/Finish: 10/24/2019	Drilling Method: Cased Wash Boring	Core Barrel: ND-2"			
Boring Location: 13462.9, 5.2 ft Lt.	Casing ID/DB: HW-4"/NW-3"	Water Level#: 9.5 ft bgs.			
Hammer Efficiency Factor: 0.886 Home Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> Definitions: F = Rock Core Sample, SA = Solid Stem Auger, S _u = Undrained Shear Strength (psf), P = Pocket Torque Shear Strength (psf), W = Water Content, percent, U = Unsuccessful Split Spoon Sample Attempt, RC = Roller Core, S _u = Undrained Shear Strength (psf), K = Water Content, percent, M = Moisture Tube Sample, MC = Moisture Core, N = Plastic Limit, P _u = Plasticity Index, W _u = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole, Home, Home Efficiency Factor = Rig Specific Annual Calibration Value, P _u = Plasticity Index, F = Field Torque Shear Test, W = Pocket Penetration, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, M = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, P = Consolidation Test					
Soil Information		Soil Description and Remarks		Laboratory Testing Results (ASTM) and Unified Class	
Depth (ft.)	Sample No., Date, Time, Depth, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist	Visual Description and Remarks	Laboratory Testing Results (ASTM) and Unified Class		
0		6" HMA.	0-5		
5	10 24/16 5:00 - 7:00 3/5/13/11 18 27	Brown, damp, medium dense, fine to coarse SAND, little gravel, some silt. (F111).	GW33736 A-4, SU WC=9.31		
10	20 24/9 10:00 - 12:00 4/5/10/9 15 22 34	Brown, wet, medium dense, fine to coarse SAND, little gravel, trace silt. (F111).			
15	30 24/12 15:00 - 17:00 15/18/13/6 31 46 31	Grey, wet, dense, fine to coarse SAND, some rock fragments, trace silt. (Rack F111).			
20	40 24/14 20:00 - 22:00 13/13/6/7 19 28 28	Grey, wet, medium dense, gravelly, fine to coarse SAND, some silt. (G1acial T111).	GW33736 A-4, SU WC=9.71		
25	50 24/14 25:00 - 27:00 12/9/10/12 19 28 23	Grey, wet, medium dense, fine to coarse SAND, little silt, little gravel. (G1acial T111).			
30	60 24/4 30:00 - 32:00 16/13/16/22 29 43 32	Grey, wet, dense, silty fine SAND, little rock fragments. (G1acial T111).			
35	70 24/15 35:00 - 37:00 15/20/20/26 40 59 37	Dark grey, wet, very dense, gravelly fine to medium SAND, little silt. (G1acial T111), trace fragments from cobble.	GW33736 A-4, SU WC=9.21		
40	R1 60/60 40:20 - 45:20 RWD = 100%	0126 blow for 0.9 ft. Top of Bedrock at Elev. 102.1 ft. Roller Corer ahead to 40.2 ft bgs.			
45	R2 60/60 45:20 - 50:20 RWD = 100%	R1: Bedrock: Black and white, medium to coarse-grained, flecked with SEMITE, very hard, fresh, massive. (Litchfield Pluton) Rock Quality = Excellent R1: Core Times (min:sec) 40.2-41.2 ft (1322) 41.2-42.2 ft (1313) 42.2-43.2 ft (1344) 43.2-44.2 ft (1332) 44.2-45.2 ft (1400) 100% Recovery R2: Bedrock: Similar to R1. (Litchfield Pluton) Rock Quality = Excellent R2: Core Times (min:sec) 45.2-46.2 ft (1211) 46.2-47.2 ft (1210) 47.2-48.2 ft (1210) 48.2-49.2 ft (1233) 49.2-50.2 ft (1225) 100% Recovery			
50		Bottom of Exploration at 50.2 feet below ground surface.			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Babcock Bridge #2023 carries Route 126 over Cobosseecontee Location: Litchfield-West Gardiner, Maine		Boring No.: BB-LCS-102 WIN: 23094.00	
Drifters: McHardy	Elevation (ft.): 141.6	Auger ID/DB: 5" Solid Stem			
Operator: Doggett/Nilles	Datum: NAVD83	Sampler: Standard Split Spoon			
Logged By: B. Wilber	Rig Type: CMC 45C	Home #, #/ft.: 140W/30"			
Date Start/Finish: 10/23/2019	Drilling Method: Cased Wash Boring	Core Barrel: N/A			
Boring Location: 14455.1, 11.7 ft Rt.	Casing ID/DB: HW-4"/NW-3"	Water Level#: 8.0 ft bgs.			
Hammer Efficiency Factor: 0.886 Home Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> Definitions: F = Rock Core Sample, SA = Solid Stem Auger, S _u = Undrained Shear Strength (psf), P = Pocket Torque Shear Strength (psf), W = Water Content, percent, U = Unsuccessful Split Spoon Sample Attempt, RC = Roller Core, S _u = Undrained Shear Strength (psf), K = Water Content, percent, M = Moisture Tube Sample, MC = Moisture Core, N = Plastic Limit, P _u = Plasticity Index, W _u = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole, Home, Home Efficiency Factor = Rig Specific Annual Calibration Value, P _u = Plasticity Index, F = Field Torque Shear Test, W = Pocket Penetration, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, M = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, P = Consolidation Test					
Soil Information		Soil Description and Remarks		Laboratory Testing Results (ASTM) and Unified Class	
Depth (ft.)	Sample No., Date, Time, Depth, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist	Visual Description and Remarks	Laboratory Testing Results (ASTM) and Unified Class		
0		5.5" HMA.	0-5		
5	10 24/13 5:00 - 7:00 2/2/7/9 9 13	Brown, damp, medium dense, gravelly, fine to coarse SAND, little silt. (F111).	GW33737 A-4, SU WC=7.55		
10	20 24/5 10:00 - 12:00 7/18/14/12 32 47 36	Grey, wet, very dense, COBBLES and GRAVEL (Rack F111).	DROVE		
15	30 24/4 15:00 - 17:00 4/11/3/3 14 21 59	Similar to above, except medium dense. (Rack F111).			
20	MD 24/0 19:00 - 21:00 9/19/10/9 29 43 48	Similar to above in wash water, dense. (Rack F111).			
25	40 24/0 24:00 - 26:00 5/2/2/3 4 6 48	Cobbles from 24.0-25.5 ft bgs.	GW33739 A-4, CL WC=5.04 PL=41 Flint		
30	MD 18/0 30:00 - 31:30 5/14/35 69 102 31	Set in NW Casing at 30.0 ft bgs.			
35	50 24/16 34:00 - 36:00 13/12/18/18 30 44 110	Grey, wet, dense, silty fine to coarse SAND, little gravel, occasional cobble. (G1acial T111).	GW33731 A-4, SU WC=10.76		
40		Roller Corer ahead to 38.4 ft bgs. Cobble from 36.7-37.5 ft bgs. 0126 blow for 0.4 ft. Bottom of Exploration at 38.4 feet below ground surface. Broke NW Casing at 38.4 ft bgs.			

Maine Department of Transportation Soil/Rock Exploration Log US CUSTOMARY UNITS		Project: Babcock Bridge #2023 carries Route 126 over Cobosseecontee Location: Litchfield-West Gardiner, Maine		Boring No.: BB-LCS-102A WIN: 23094.00	
Drifters: McHardy	Elevation (ft.): 141.6	Auger ID/DB: 5" Solid Stem			
Operator: Doggett/Nilles	Datum: NAVD83	Sampler: Standard Split Spoon			
Logged By: B. Wilber	Rig Type: CMC 45C	Home #, #/ft.: 140W/30"			
Date Start/Finish: 10/22/24/2019	Drilling Method: Cased Wash Boring	Core Barrel: ND-2"			
Boring Location: 14456.8, 10.7 ft Rt.	Casing ID/DB: HW-4"/NW-3"	Water Level#: 12.0 ft bgs.			
Hammer Efficiency Factor: 0.886 Home Type: Automatic <input checked="" type="checkbox"/> Hydraulic <input type="checkbox"/> Rope & Cathead <input type="checkbox"/> Definitions: F = Rock Core Sample, SA = Solid Stem Auger, S _u = Undrained Shear Strength (psf), P = Pocket Torque Shear Strength (psf), W = Water Content, percent, U = Unsuccessful Split Spoon Sample Attempt, RC = Roller Core, S _u = Undrained Shear Strength (psf), K = Water Content, percent, M = Moisture Tube Sample, MC = Moisture Core, N = Plastic Limit, P _u = Plasticity Index, W _u = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole, Home, Home Efficiency Factor = Rig Specific Annual Calibration Value, P _u = Plasticity Index, F = Field Torque Shear Test, W = Pocket Penetration, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, M = Unsuccessful Thin Wall Tube Sample Attempt, W _u = Weight of Hole or Casing, N _u = Not Reported/Corrected for Home Efficiency, C = Grain Size Analysis, P = Consolidation Test					
Soil Information		Soil Description and Remarks		Laboratory Testing Results (ASTM) and Unified Class	
Depth (ft.)	Sample No., Date, Time, Depth, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist, Blows (16 in. SPT), SPT (15 in. SPT), RWD (15 in. SPT), Neutron, Moist	Visual Description and Remarks	Laboratory Testing Results (ASTM) and Unified Class		
0		No soil samples retrieved. See BB-LCS-102 for material descriptions.			
5		Drove NW Casing to 34.0 ft bgs.			
10					
15					
20					
25					
30					
35					
40	10 12/6 35:00 - 40:00 15/60	Grey, wet, very dense, GRAVEL and COBBLES.	102.6		
45	20 24/16 45:00 - 47:00 35/32/22/21 54 80	Grey, wet, very dense, gravelly fine to coarse SAND, trace silt. (G1acial T111).	48.0		
50	R1 50.4/ 50.4 48:00 - 52:00 RWD = 62%	Roller Corer ahead to 48.0 ft bgs. Bedrock at Elev. 93.6 ft. R1: Bedrock: Black and white, medium to coarse-grained, flecked with SEMITE, hard, fresh, massive. (Litchfield Pluton) Rock Quality = Fair R1: Core Times (min:sec) 48.0-49.0 ft (1177) 49.0-50.0 ft (1129) 50.0-51.0 ft (1155) 51.0-52.0 ft (1144) 52.0-53.2 ft (1100) Core Blocked 100% Recovery	93.6		
55	R2 60/60 53:20 - 57:20 RWD = 100%	R2: Bedrock: Similar to R1. (Litchfield Pluton) Rock Quality = Excellent R2: Core Times (min:sec) 53.2-54.2 ft (1157) 54.2-55.2 ft (1151) 55.2-56.2 ft (1159) 56.2-57.2 ft (1205) 100% Recovery	84.4		
60		Bottom of Exploration at 57.2 feet below ground surface.	67.3		

**STATE OF MAINE
DEPARTMENT OF TRANSPORTATION**

02309401

WIN 023094.01

BRIDGE NO. 2029

BRIDGE PLANS

**BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY**

BORING LOGS

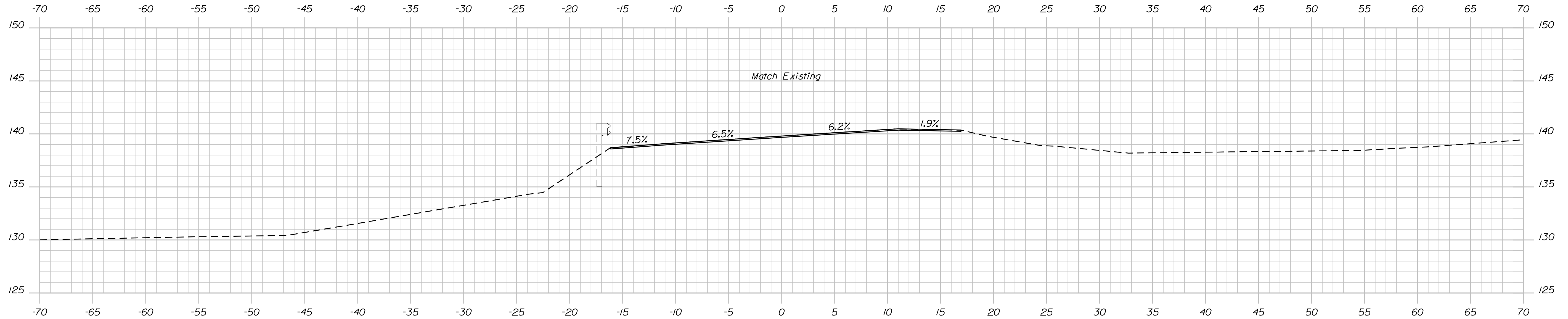
PROJ. MANAGER	DEVAN EATON	BY	DATE
CHECKED-DETAILED	K. NASH	J. BRUNELLE	10/21
DESIGNS-DETAILED	J. MANAHAN	T. WHITE	FEB 2022
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

DESIGNER'S SIGNATURE: _____
P.E. NUMBER: _____
DATE: _____

SHEET NUMBER **7**

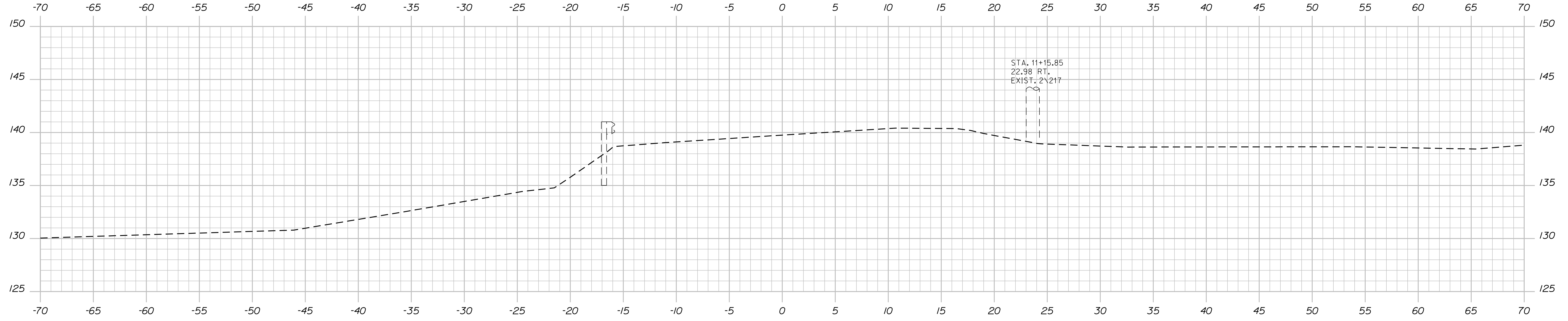
OF 32

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 Division: BRIDGE
 Username: Jeremiah.Brunelle
 Date: 8/23/2022

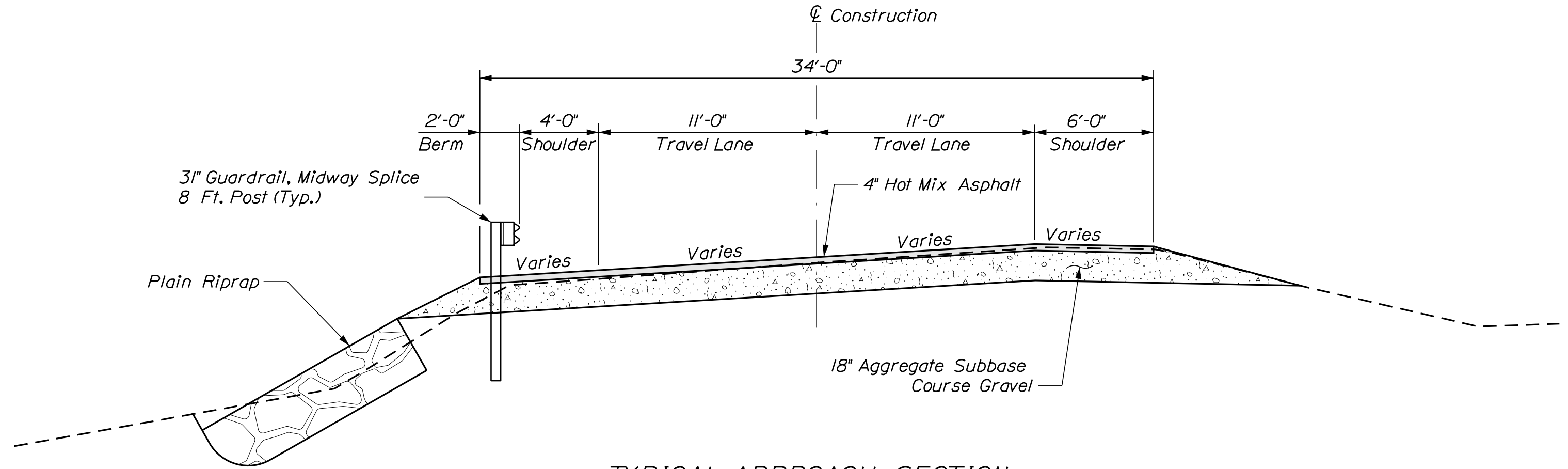


Sta. 11+44±, 16 Ft. Lt. to Sta. 11+69.7±, 15 Ft. Lt. Connect 25 L.F. of New 31" W-Beam Mid-Way Splice Guardrail into Existing Guardrail and adjust height or as Directed by Resident.

11+50.00
 Begin Mill & 1/2" Overlay
 Sta. 11+50 to Sta. 11+75



11+25.00



TYPICAL APPROACH SECTION

STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 02309401
 WIN
 023094.01
 BRIDGE NO. 2029
 BRIDGE PLANS

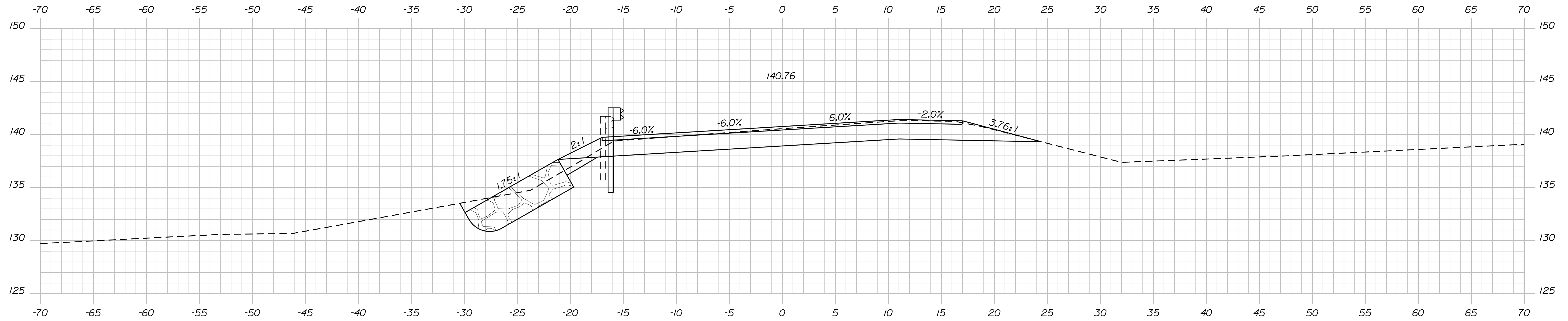
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED/REVIEWED	HNTB	M. POLLIN	
DESIGNS DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SIGNATURE	P.E. NUMBER	DATE

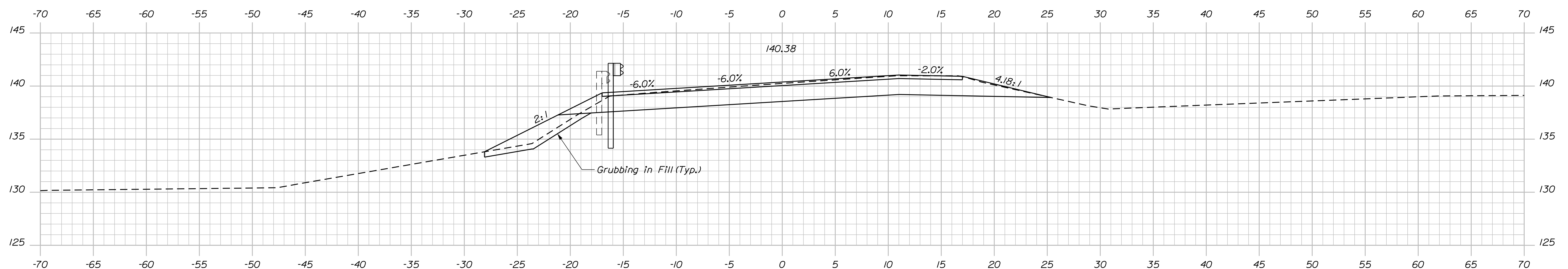
BABCOCK BRIDGE
 COBOSSECONTEE STREAM
 LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
 CROSS SECTIONS

SHEET NUMBER
 8
 OF 32

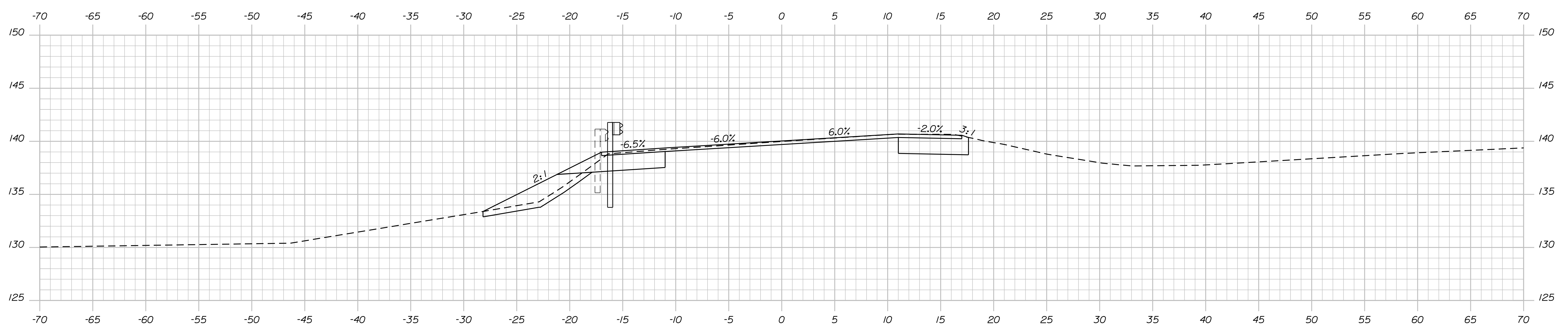
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 Division: BRIDGE
 Username: Jeremiah.Brunelle
 Date: 8/23/2022



12+25.00



12+00.00
 Begin Full Depth Construction



Sta. 11+69.7±, 15 Ft. Lt. to Sta. 13+33.8±, 15 Ft. Lt. Install
 159.375 L.F. of 31' W-Beam Mid-Way Splice Guardrail

11+75.00
 Begin Transition to Full Depth Construction

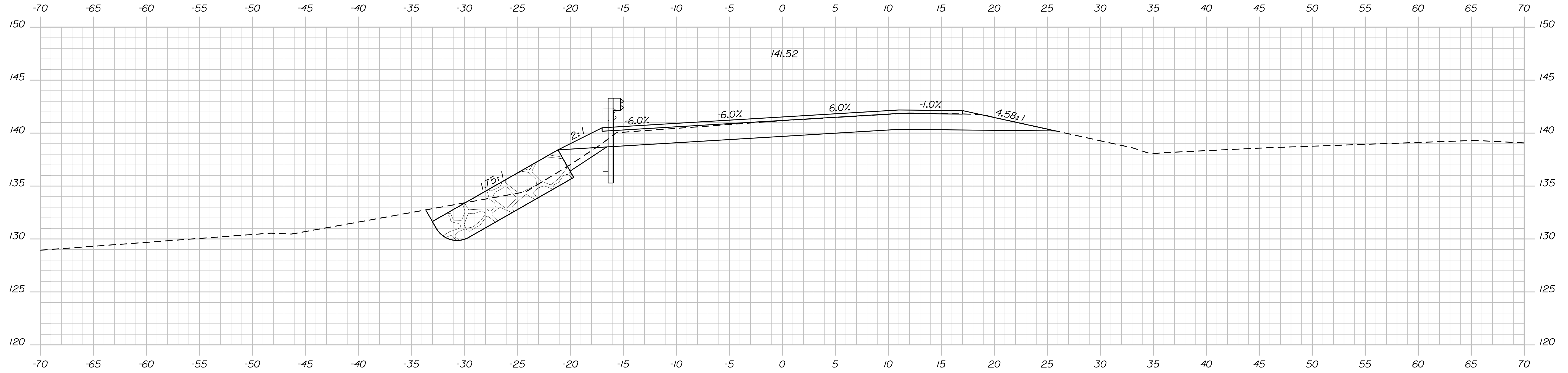
STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 02309401
 WIN
 023094.01
 BRIDGE NO. 2029
 BRIDGE PLANS

PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN/DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED/REVIEWED	G.A.C.	M. POLLIN	
DESIGN/DETAILED			SIGNATURE
REVISIONS 1			P.E. NUMBER
REVISIONS 2			DATE
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

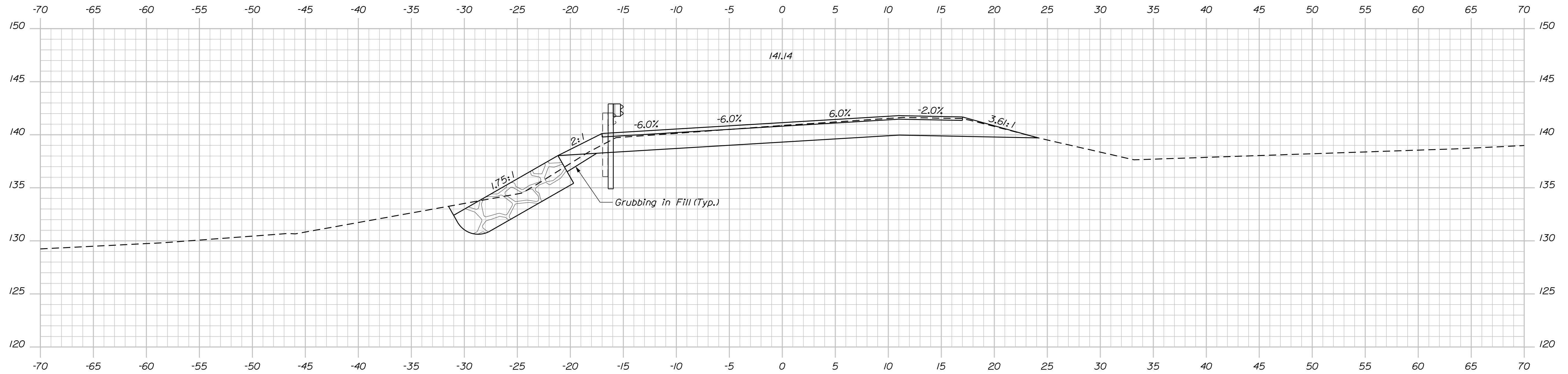
BABCOCK BRIDGE
 COBOSSECONTEE STREAM
 LITCHFIELD-WEST GARDINER KENNEBEC COUNTY

CROSS SECTIONS

SHEET NUMBER
 9
 OF 32



12+75.00



12+50.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

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

BY
J. BRUNELLE
M. POLLIN

DATE
8/22

SIGNATURE
P.E. NUMBER
DATE

DEVAN EATON
K. NASH
G.A.C.

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
CROSS SECTIONS

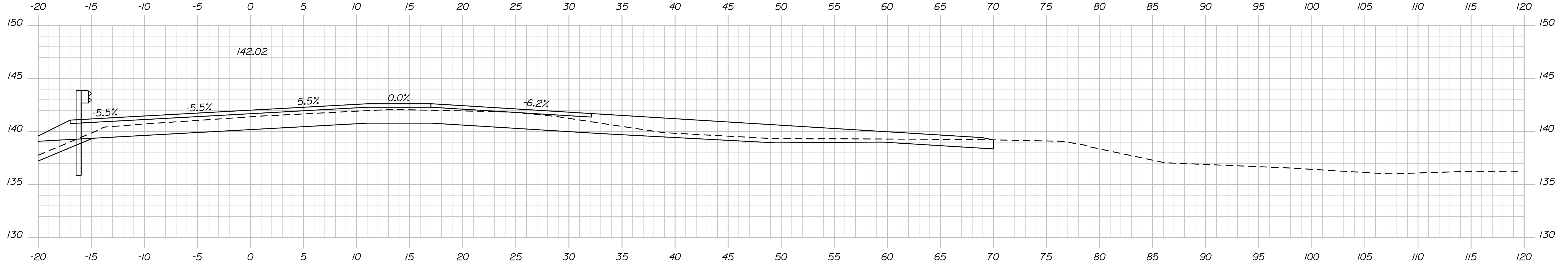
SHEET NUMBER
10
OF 32

Date: 8/23/2022

Username: Jeremiah Brunelle

Division: BRIDGE

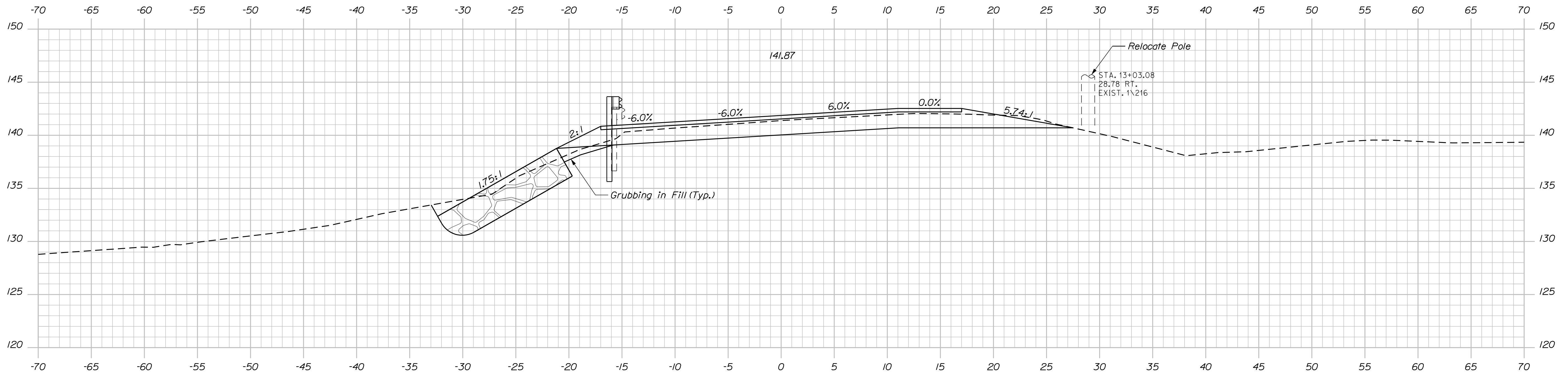
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13+14.00

Driveway Relocation

(See Profile - Driveway at Sta. 13+14 Sheet for more Information)



13+00.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

02309401

WIN

BRIDGE NO. 2029

023094.01

BRIDGE PLANS

SIGNATURE

DATE

BY

DEVAN EATON

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

DATE

BY

DEVAN EATON

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY

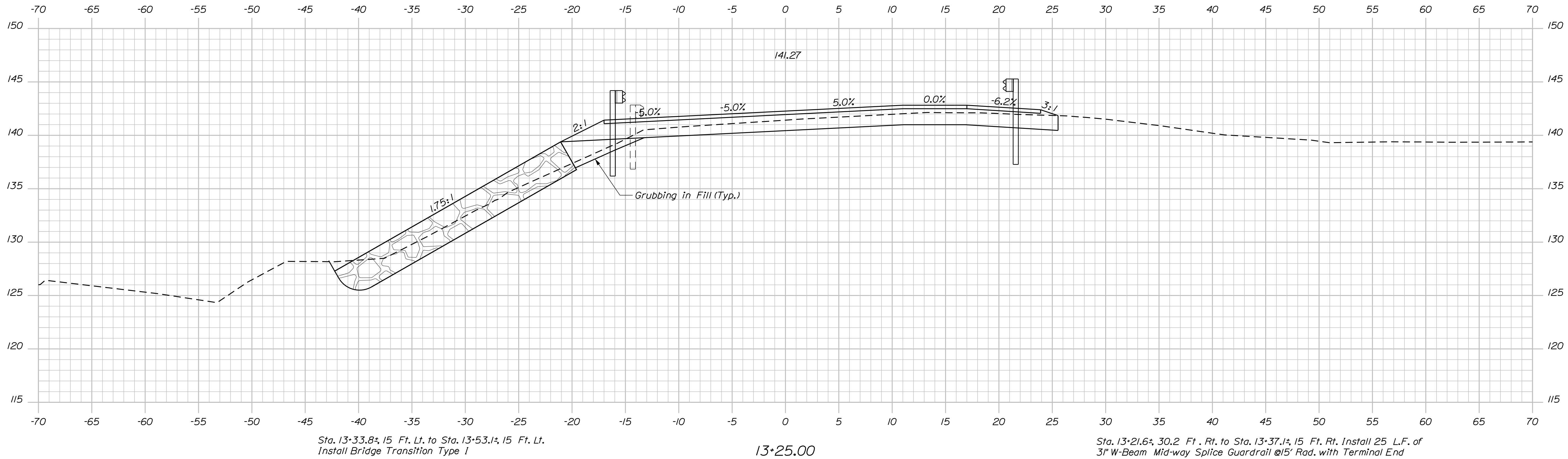
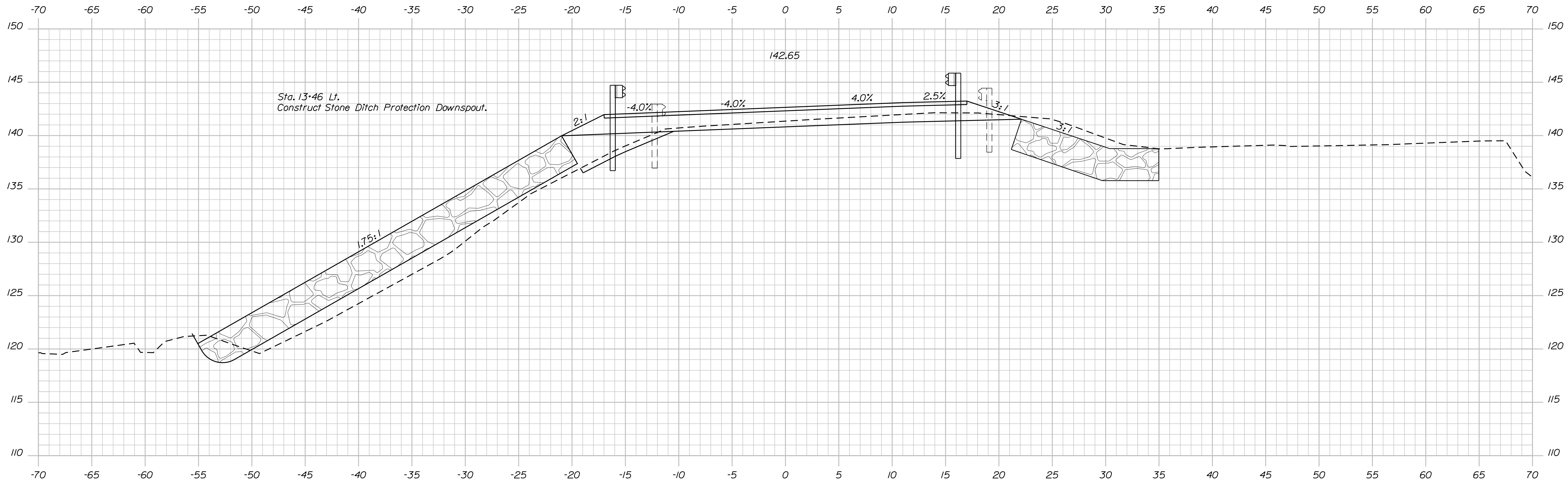
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SHEET NUMBER

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OF 32

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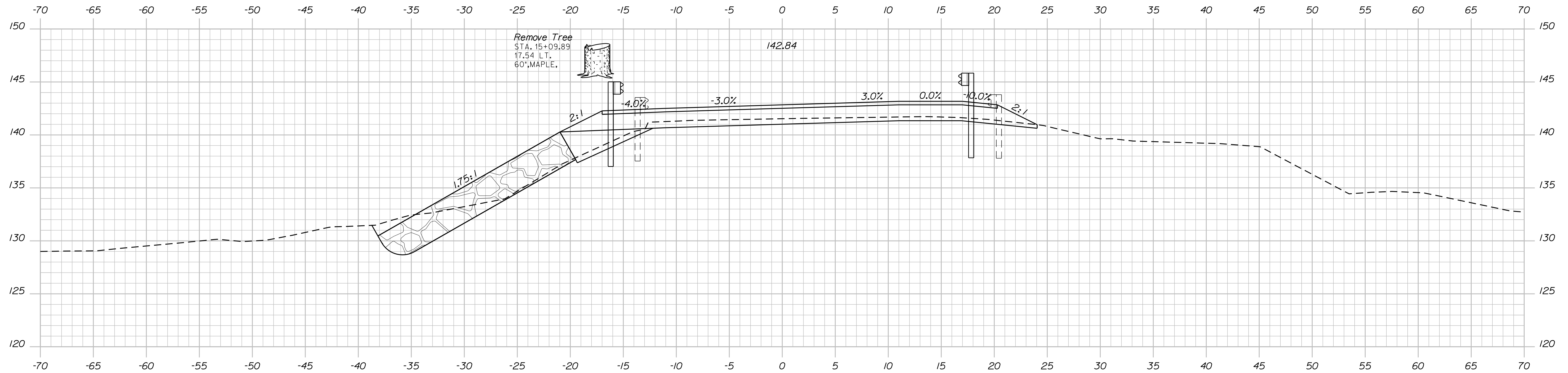


STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED-REVIEWED	G.A.C.	M. POLLIN	
DESIGNS-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
CROSS SECTIONS

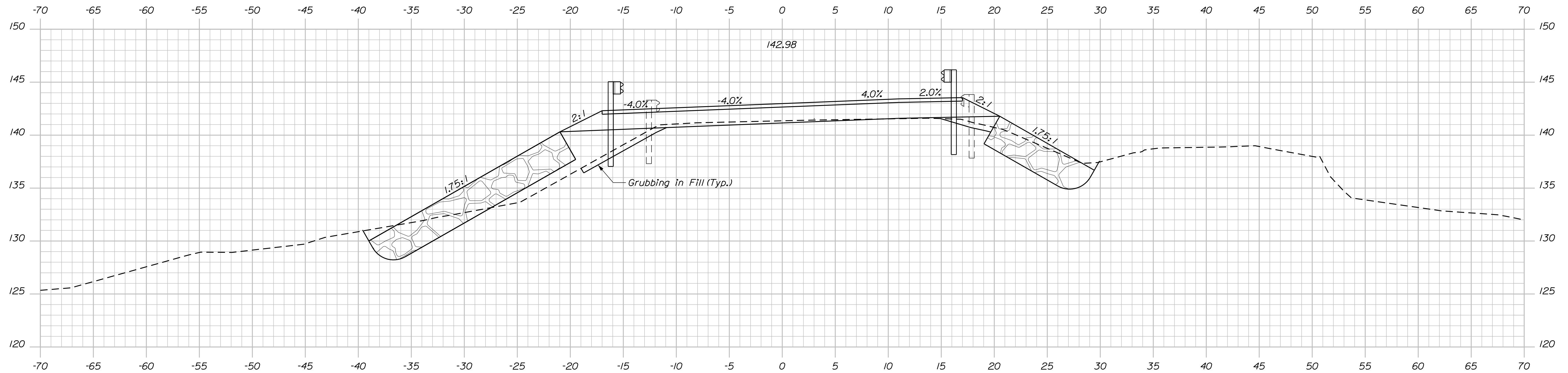
SHEET NUMBER
12
OF 32



Sta. 14+84.5±, 15 Ft. Lt. to Sta. 16+55.9±, 15 Ft. Lt. Install
171.875 L.F. of 3" W-Beam Mid-Way Splice Guardrail

15+00.00

Sta. 14+84.5±, 15 Ft. Rt. to Sta. 15+21.75±, 19 Ft. Rt. Install
3" W-Beam Mid-Way Splice Guardrail Flared Terminal



Bridge to Sta. 14+65.7±, Lt Install
Steel Approach Railing 3-Bar

14+75.00

Bridge to Sta. 14+65.7±, Rt Install
Steel Approach Railing 3-Bar

Sta. 14+65.7±, 15 Ft. Lt. to Sta. 14+84.5±, 15 Ft. Lt.
Install Bridge Transition Type 1

Sta. 14+65.7±, 15 Ft. Rt. to Sta. 14+84.5±, 15 Ft. Rt.
Install Bridge Transition Type 1

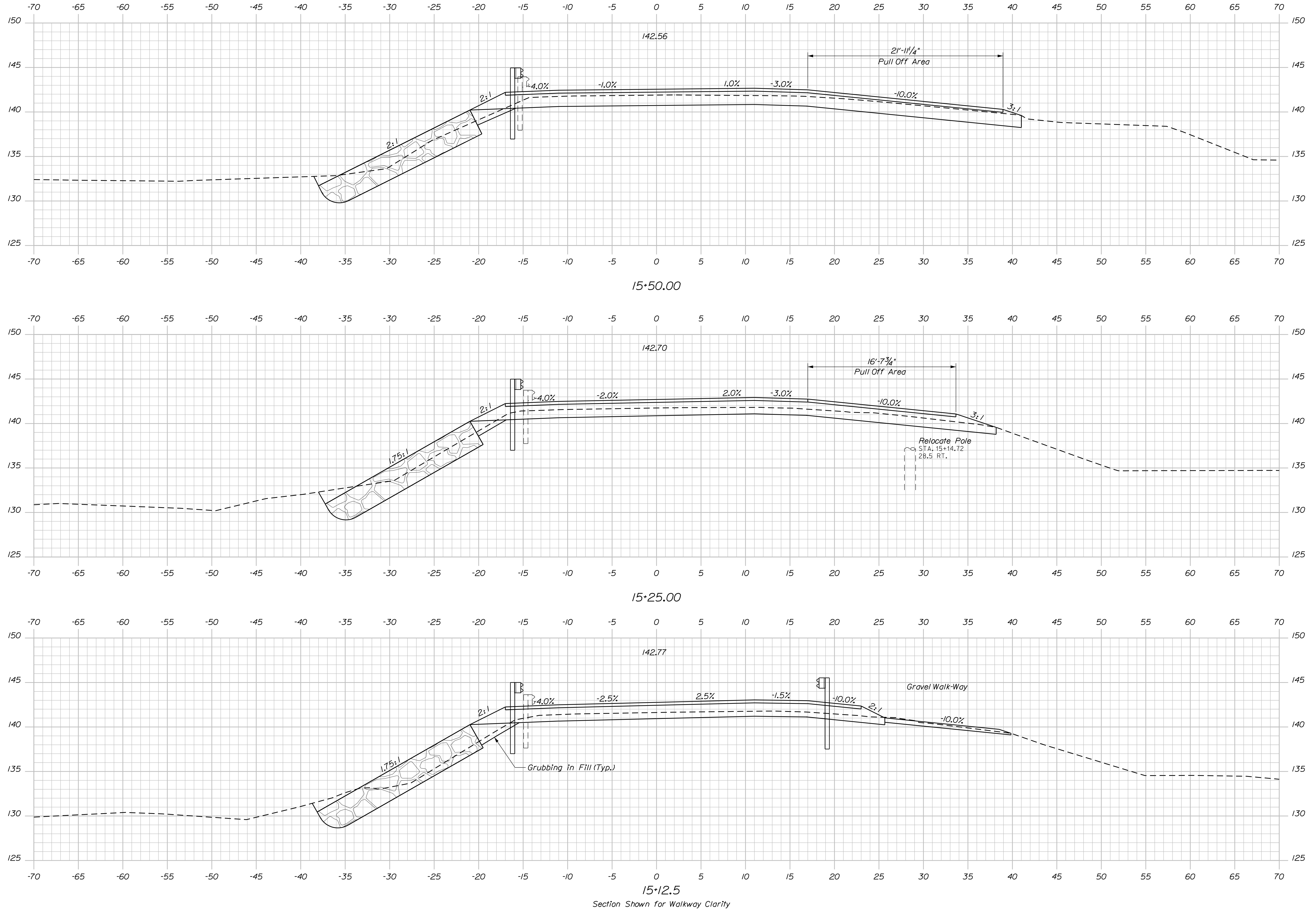
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

DATE	8/22
BY	J. BRUNELLE
DESIGN DETAILED	K. NASH
CHECKED/REVIEWED	G.A.C.
DESIGNED/DETAILED	
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

SIGNATURE	
P.E. NUMBER	
DATE	

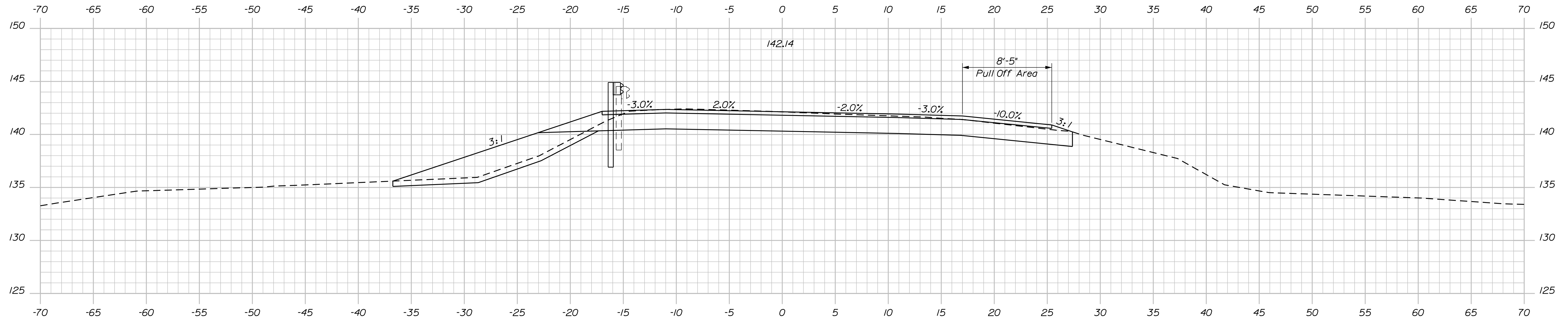
BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
CROSS SECTIONS

SHEET NUMBER
13
OF 32

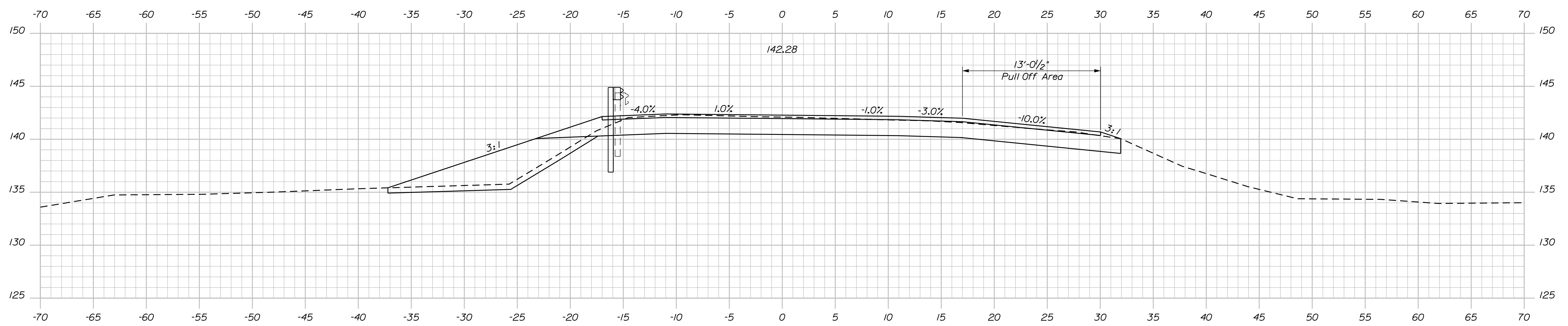


Section Shown for Walkway Clarity

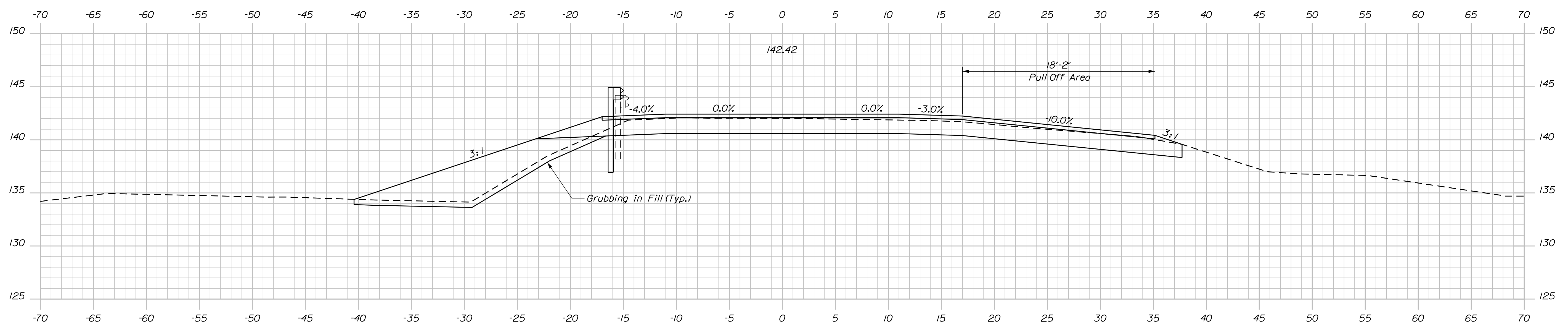
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		02309401	WIN 023094.01	BRIDGE NO. 2029 BRIDGE PLANS
	SIGNATURE	P.E. NUMBER	DATE	
	BY J. BRUNELLE M. POLLIN			
	DESIGN-REVIEWED K. NASH G.A.C.			
	DESIGN-DETAILED			
	DESIGN-DETAILED			
	REVISIONS 1			
	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			
BABCOCK BRIDGE COBBOSECONTEE STREAM LITCHFIELD- WEST GARDINER KENNEBEC COUNTY		CROSS SECTIONS		
SHEET NUMBER				
14				
OF 32				



16+25.00
Begin Transition From Full Depth



16+00.00



15+75.00

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED-REVIEWED	G.A.C.	M. POLLIN	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

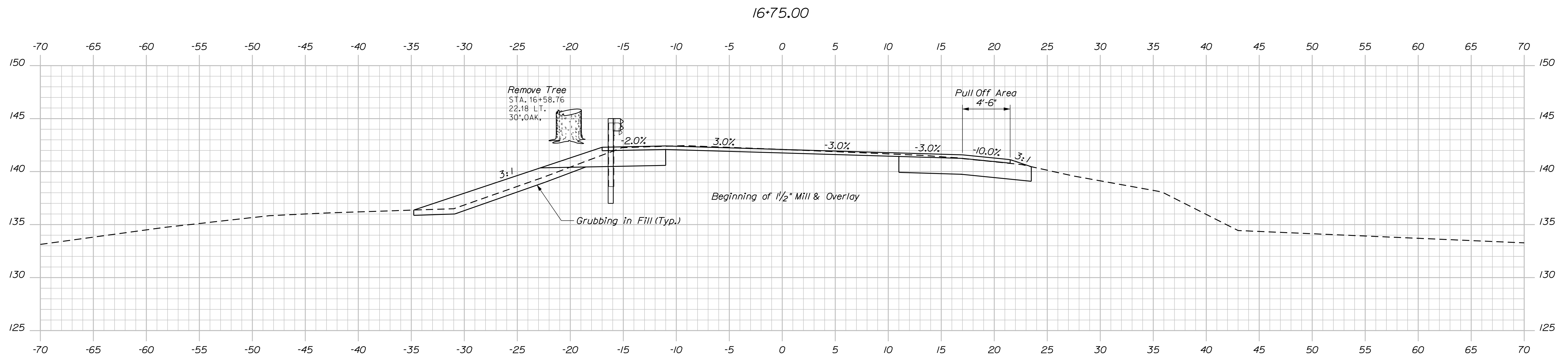
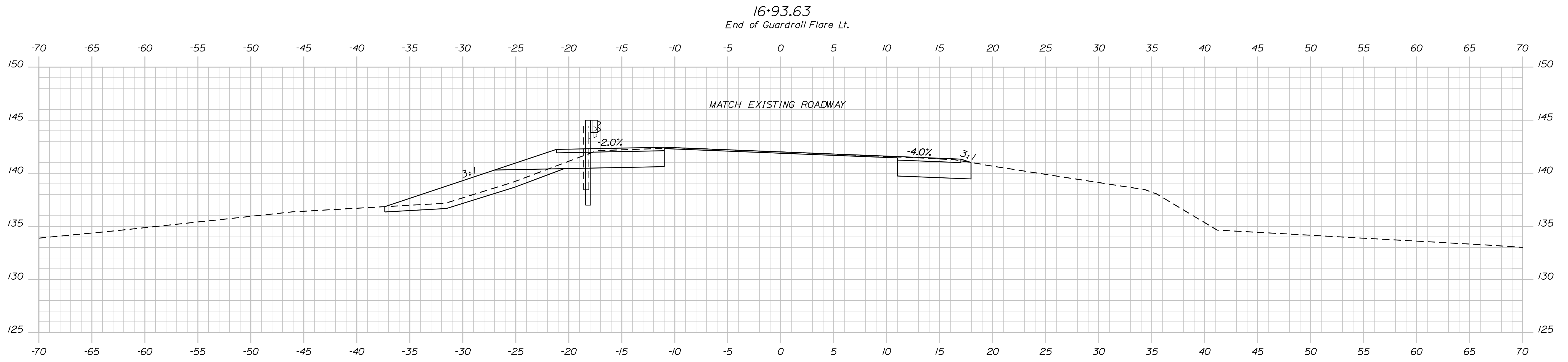
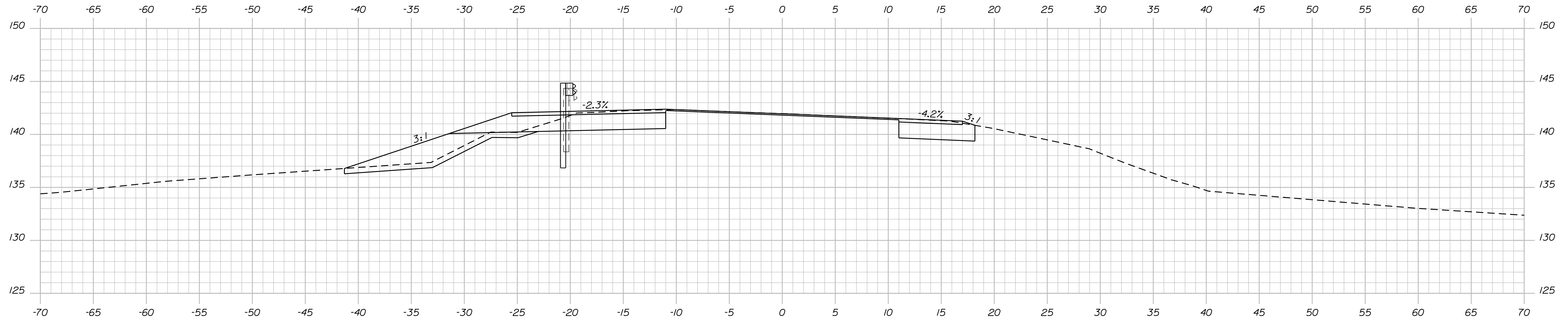
SIGNATURE	P.E. NUMBER	DATE

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER
KENNEBEC COUNTY
CROSS SECTIONS

SHEET NUMBER
15
OF 32

Filename: ... \MST\016_XSECT_16+50_009.dgn
 Username: Jeremiah.Brunelle
 Date: 8/23/2022

Division: BRIDGE



Sta. 16+55.9±, 15 Ft. Lt. to Sta. 16+92.5±, 19.4 Ft. Lt. Install
 3" W-Beam Mid-Way Splice Guardrail Flared Terminal

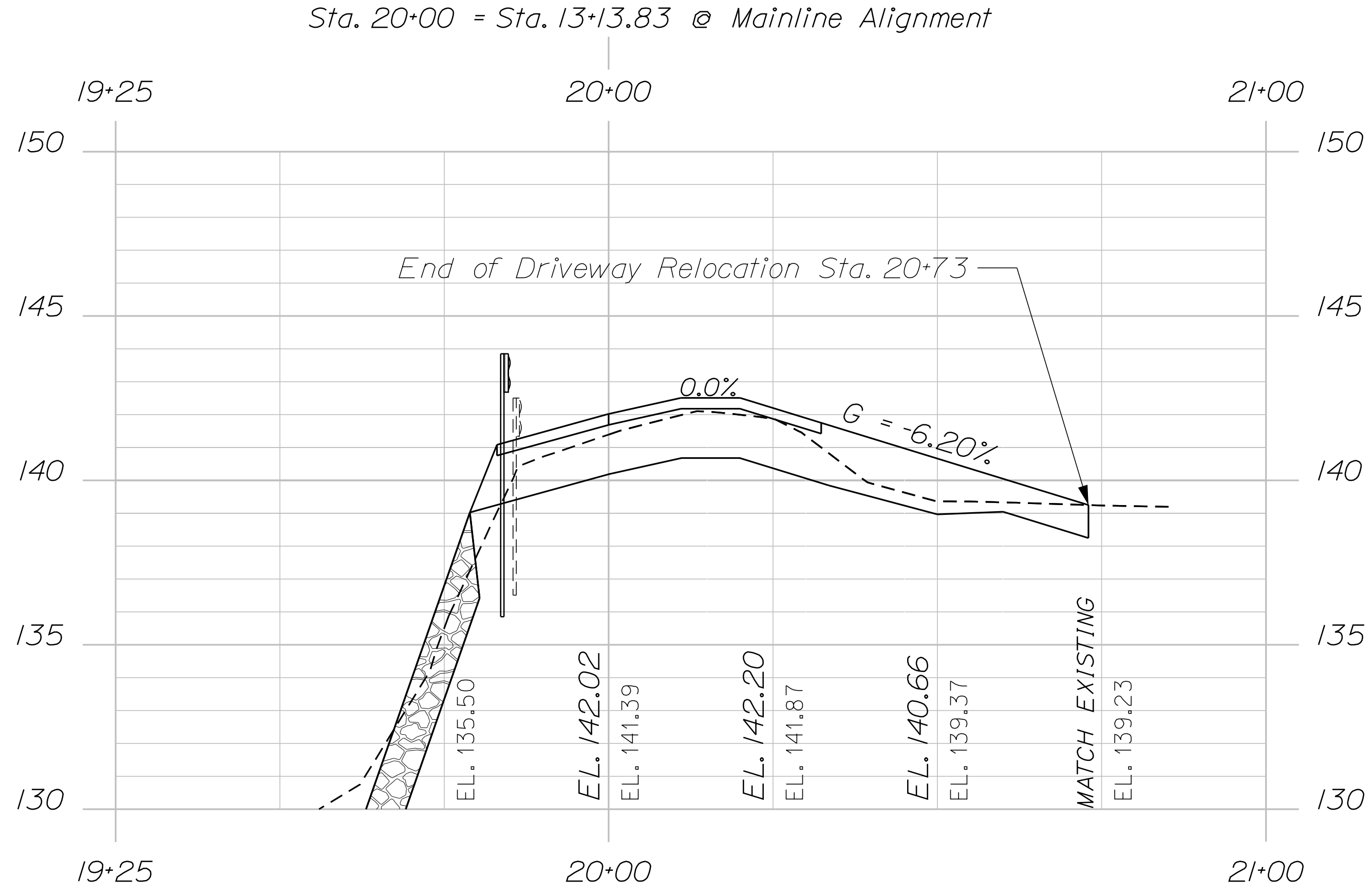
STATE OF MAINE
 DEPARTMENT OF TRANSPORTATION
 02309401
 WIN
 023094.01
 BRIDGE NO. 2029
 BRIDGE PLANS

PROJ. MANAGER	DEVAN EATON	DATE
DESIGN DETAILED	K. NASH	8/22
CHECKED-REVIEWED	J. BRUNELLE	
DESIGN DETAILED	M. POLLIN	
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

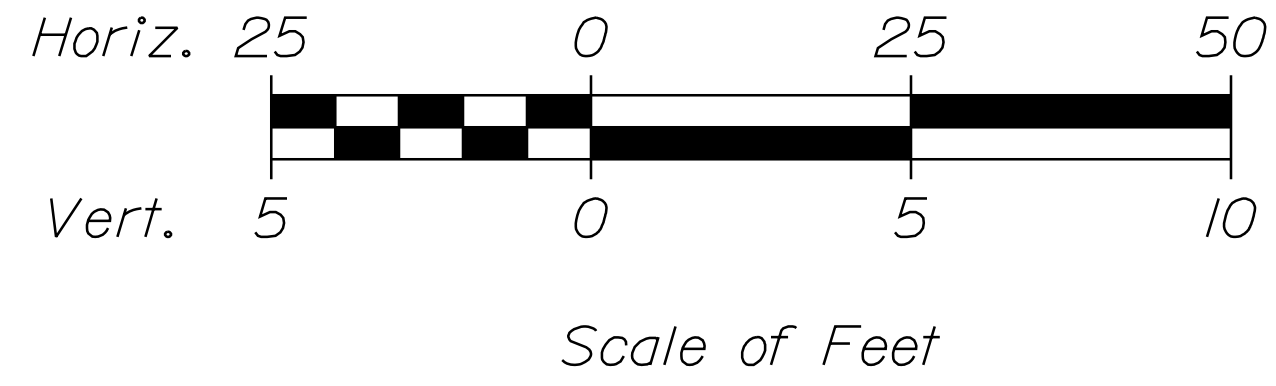
SIGNATURE	P.E. NUMBER	DATE

BABCOCK BRIDGE
 COBOSSECONTEE STREAM
 LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
 CROSS SECTIONS

SHEET NUMBER
16
 OF 32



PROFILE - DRIVEWAY



SHEET NUMBER

18

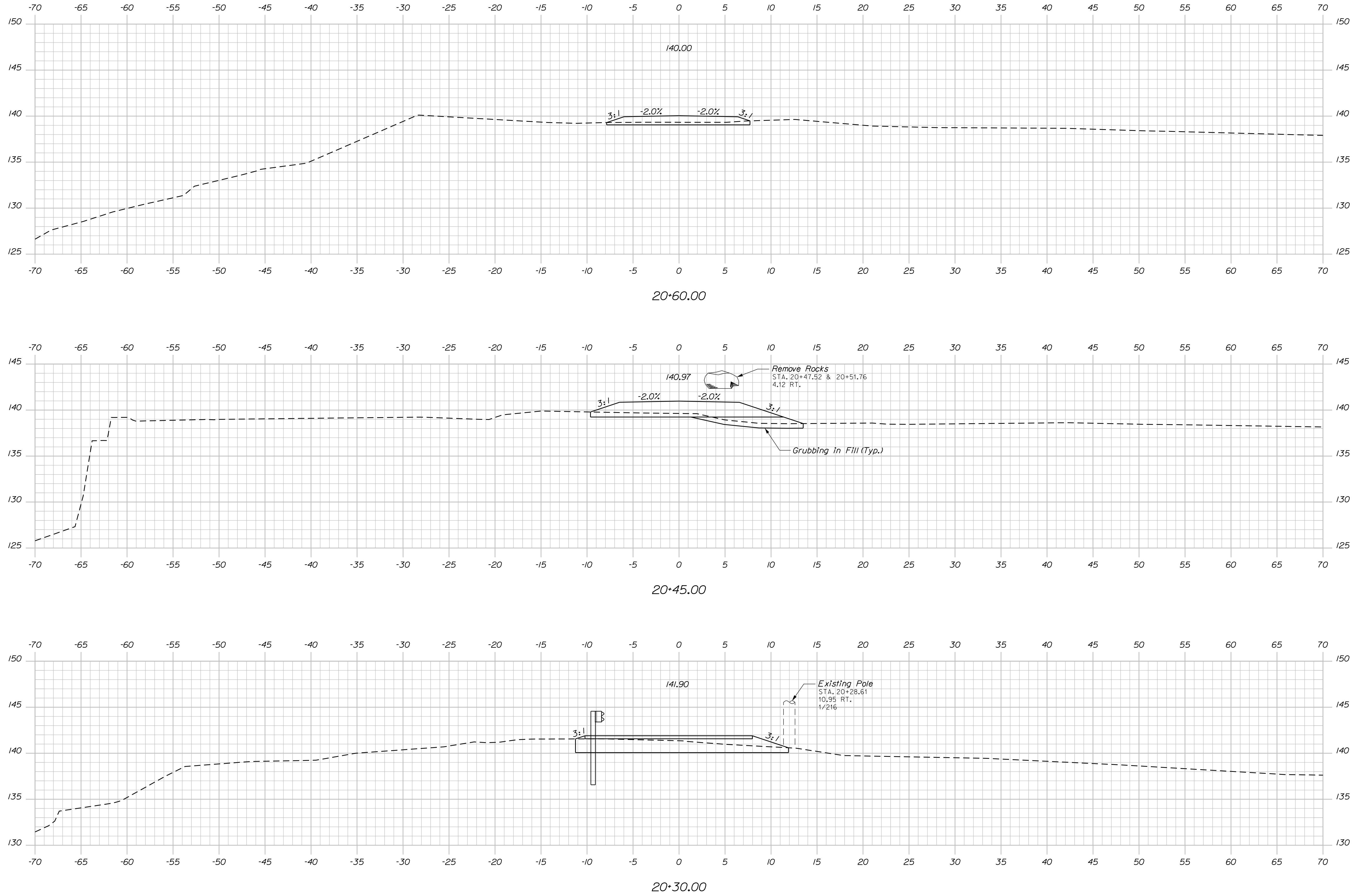
OF 32

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
PROFILE - DRIVEWAY at STA. 13+14

DESIGN-DETAILED	K. NASH	BY	DEVAN EATON	DATE	
CHECKED-REVIEWED	J. BRUNELLE				8/22
DESIGN-DETAILED	G.A.C.				
DESIGN-DETAILED					
REVISIONS 1					
REVISIONS 2					
REVISIONS 3					
REVISIONS 4					
FIELD CHANGES					

SIGNATURE
P.E. NUMBER
DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
BRIDGE NO. 2029 WIN **023094.01** BRIDGE PLANS



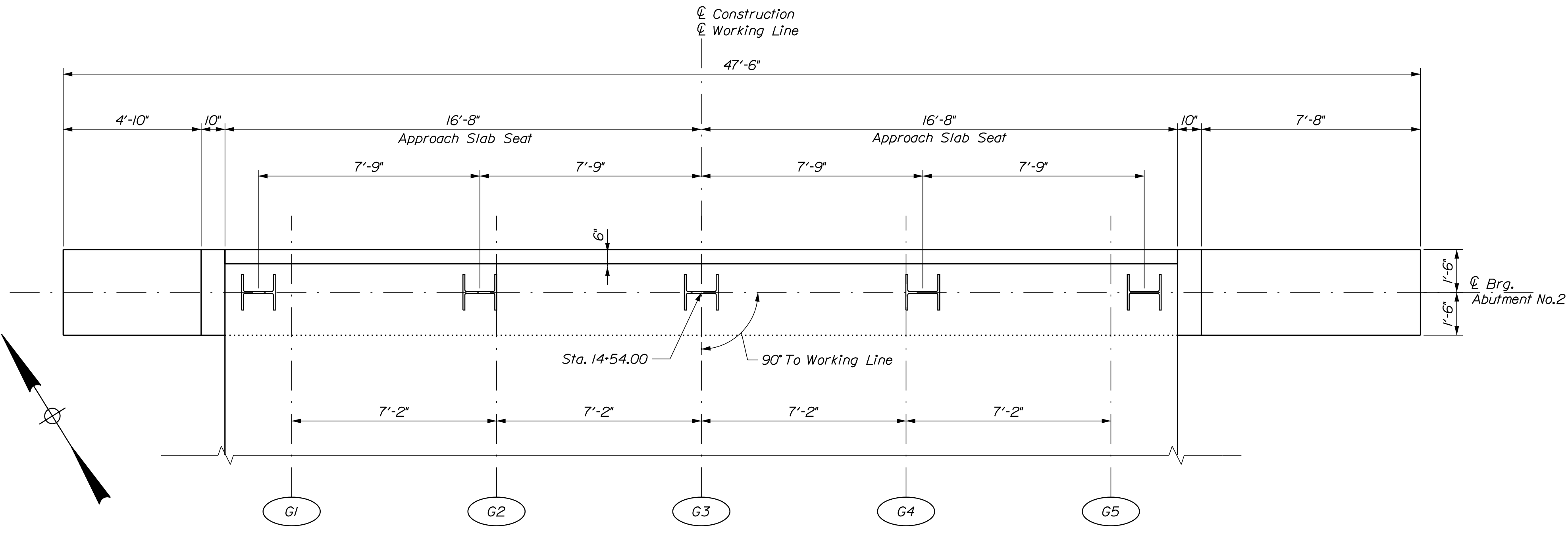
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029
BRIDGE PLANS

DESIGNED BY	DATE
CHECKED BY	DATE
DESIGNED BY	DATE
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

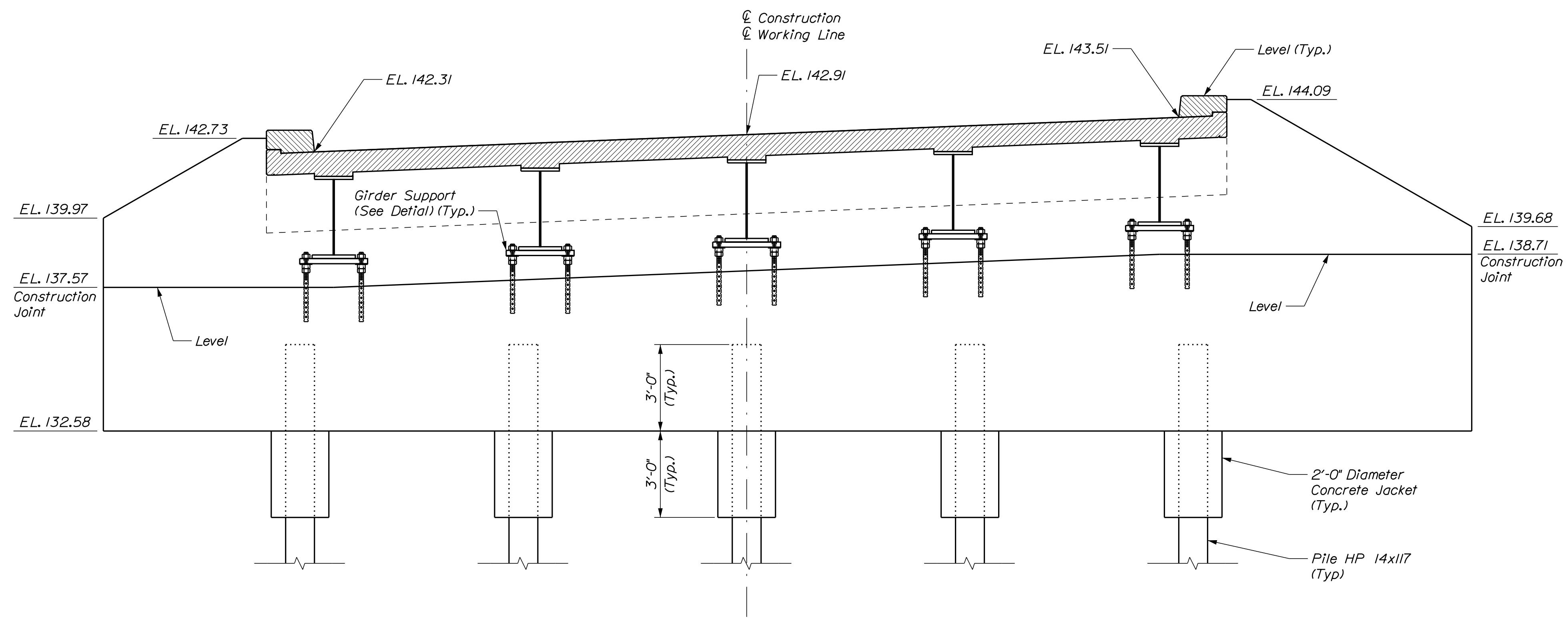
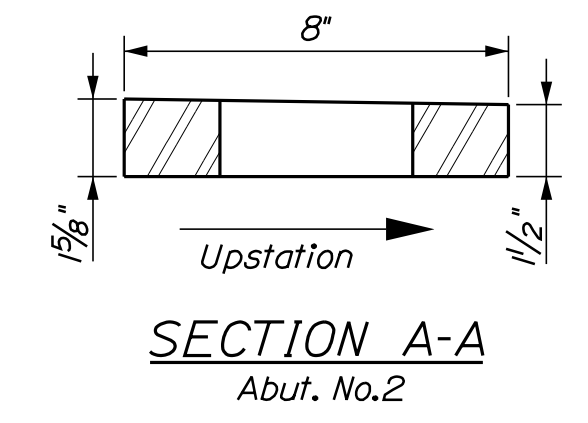
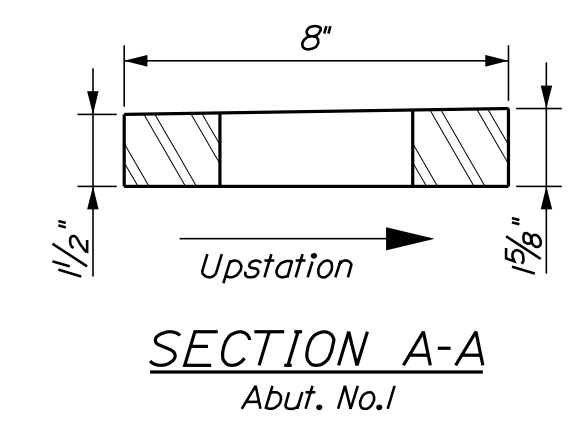
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN DETAILED	K. NASH	J. BRUNELLE	8/22
CHECKED-REVIEWED	G.A.C.	M. POLLIN	
DESIGN DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD - WEST GARDINER
KENNEBEC COUNTY
DRIVEWAY - CROSS SECTIONS

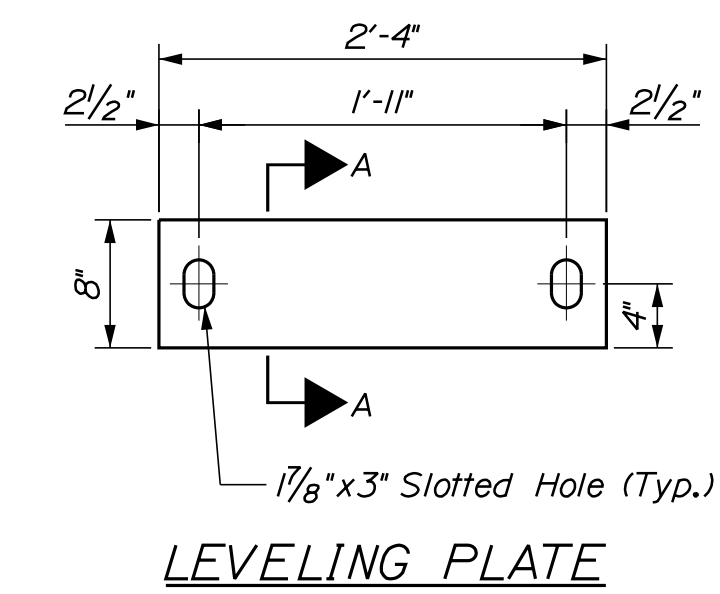
SHEET NUMBER
19
OF 32



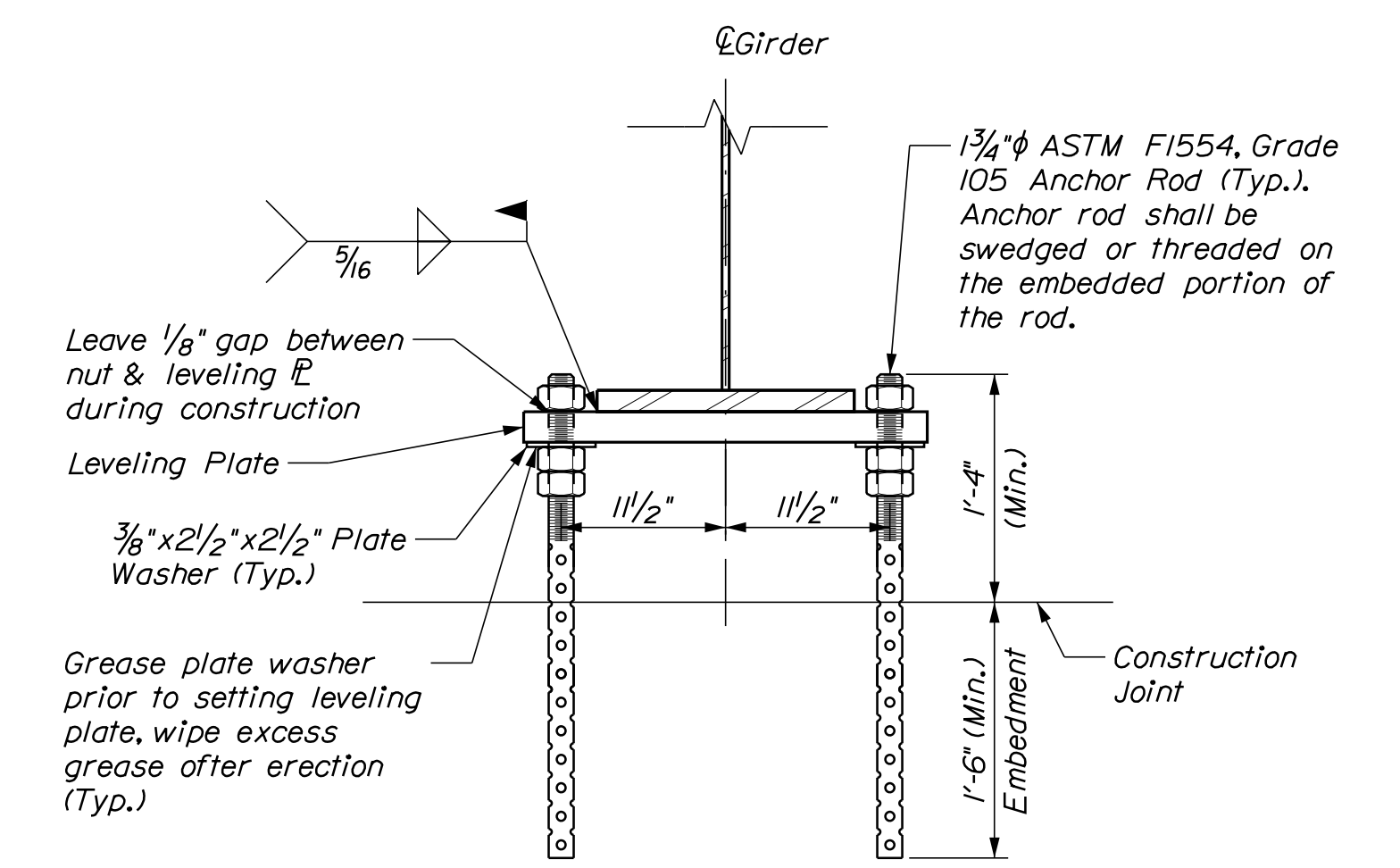
ABUTMENT No.2 PLAN



ABUTMENT No.2 ELEVATION



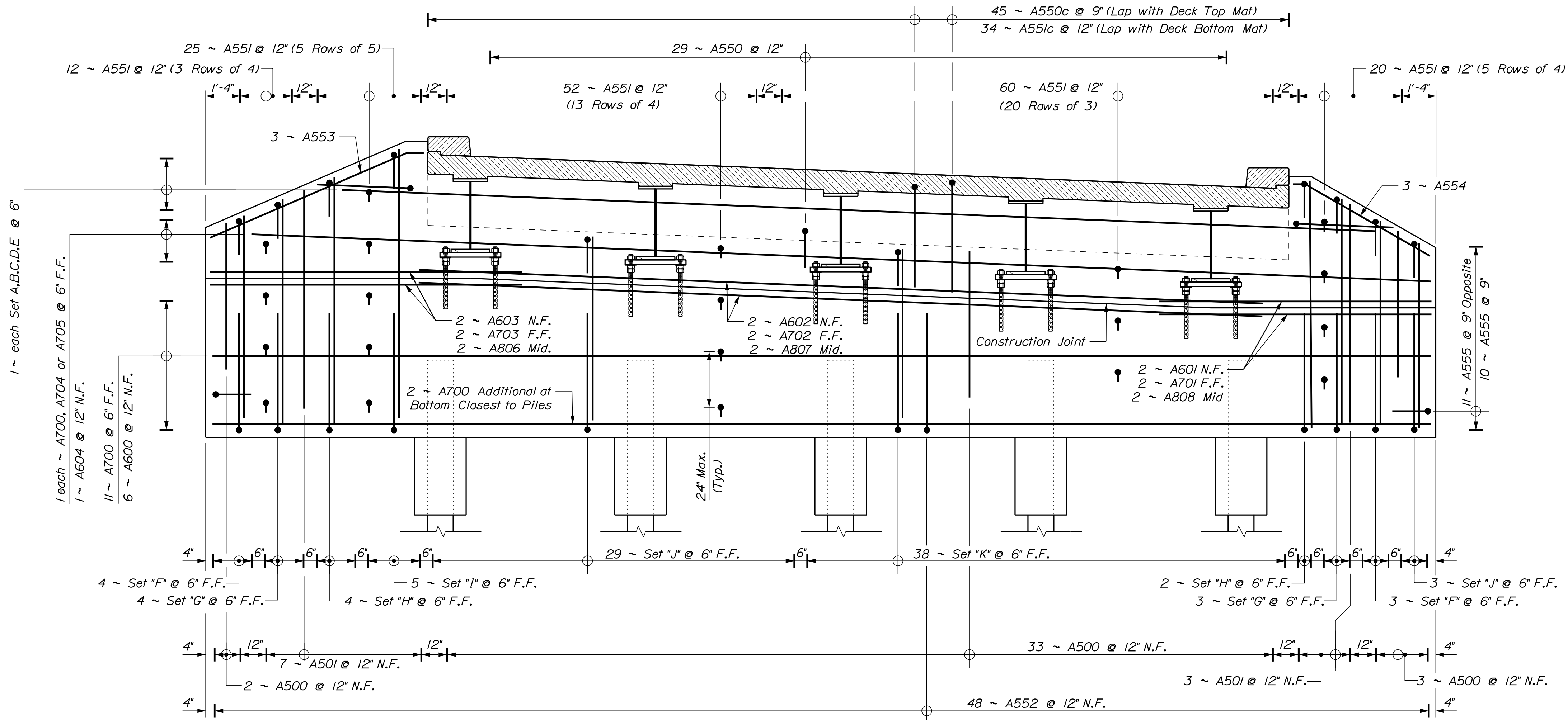
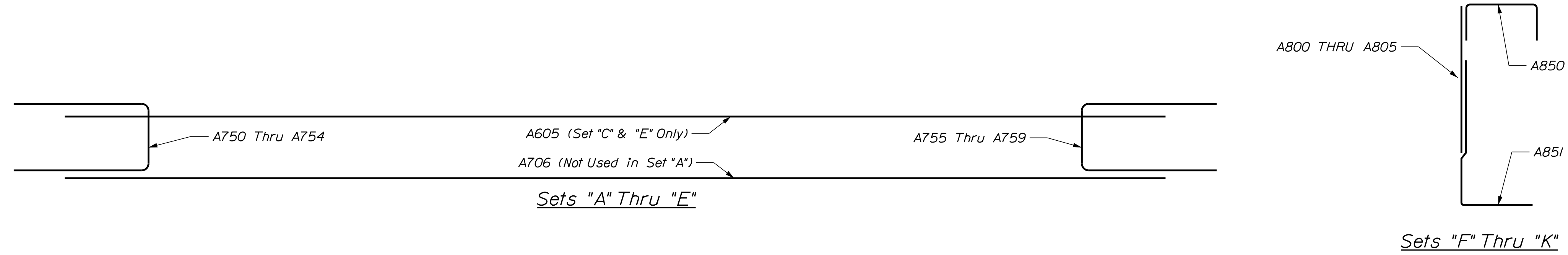
LEVELING PLATE



GIRDER SUPPORT DETAIL

ABUTMENT NO. 2 BOTTOM OF GIRDER ELEVATIONS	
Girder	Elevation
G1	138.57
G2	138.85
G3	139.14
G4	139.43
G5	139.71

STATE OF MAINE DEPARTMENT OF TRANSPORTATION 02309401	WIN 023094.01	BRIDGE NO. 2029 BRIDGE PLANS
PROJ. MANAGER DESIGN/DETAILED CHECKED/REVIEWED DESIGN/DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	DEVAN EATON N. BAERT J. BRUNELLE B. GRENIER J.A. STEPHENS	DATE 8/22
SIGNATURE	P.E. NUMBER	DATE
BABCOCK BRIDGE COBBOSECONTEE STREAM LITCHFIELD-W. GARDINER KENNEBEC COUNTY	ABUTMENT NO. 2	
SHEET NUMBER 21 OF 32		



REINFORCEMENT NOTES:

- | | | |
|---------|----------|----------|
| Set "A" | 1 ~ A750 | 1 ~ A850 |
| | 1 ~ A755 | 1 ~ A851 |
| Set "B" | 1 ~ A706 | 1 ~ A800 |
| | 1 ~ A751 | 1 ~ A850 |
| | 1 ~ A756 | 1 ~ A851 |
| Set "C" | 1 ~ A706 | 1 ~ A801 |
| | 1 ~ A752 | 1 ~ A850 |
| | 1 ~ A757 | 1 ~ A851 |
| | 1 ~ A605 | 1 ~ A802 |
| Set "D" | 1 ~ A706 | 1 ~ A850 |
| | 1 ~ A753 | 1 ~ A851 |
| | 1 ~ A758 | 1 ~ A803 |
| Set "E" | 1 ~ A706 | 1 ~ A850 |
| | 1 ~ A754 | 1 ~ A851 |
| | 1 ~ A759 | 1 ~ A804 |
| | 1 ~ A605 | 1 ~ A805 |
| Set "F" | 1 ~ A850 | |
| Set "G" | 1 ~ A850 | |
| Set "H" | 1 ~ A850 | |
| Set "I" | 1 ~ A850 | |
| Set "J" | 1 ~ A850 | |
| Set "K" | 1 ~ A850 | |

N.F. = Near Face
F.F. = Far Face
Mid = Middle Areas

ABUTMENT NO.1 REINFORCING

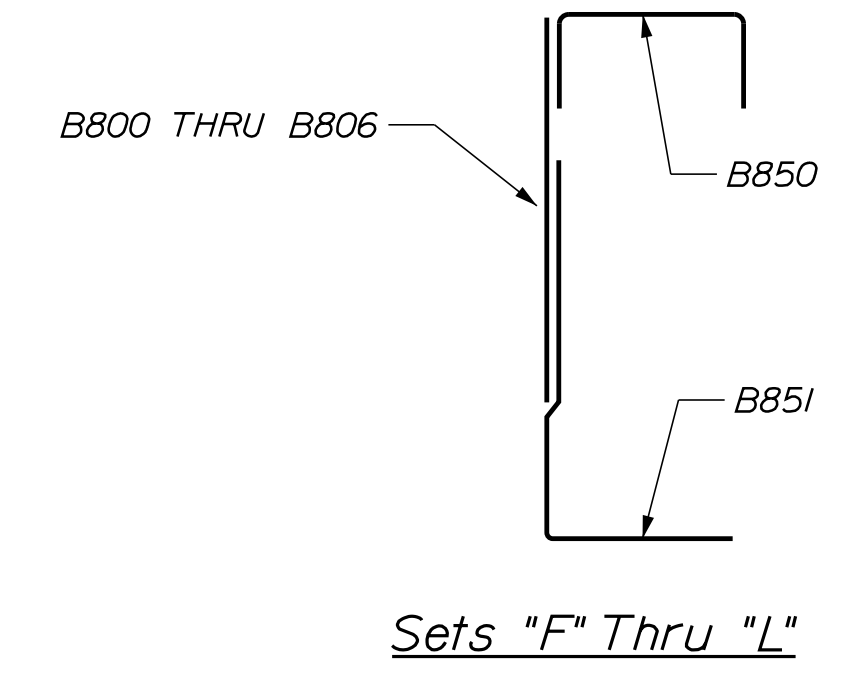
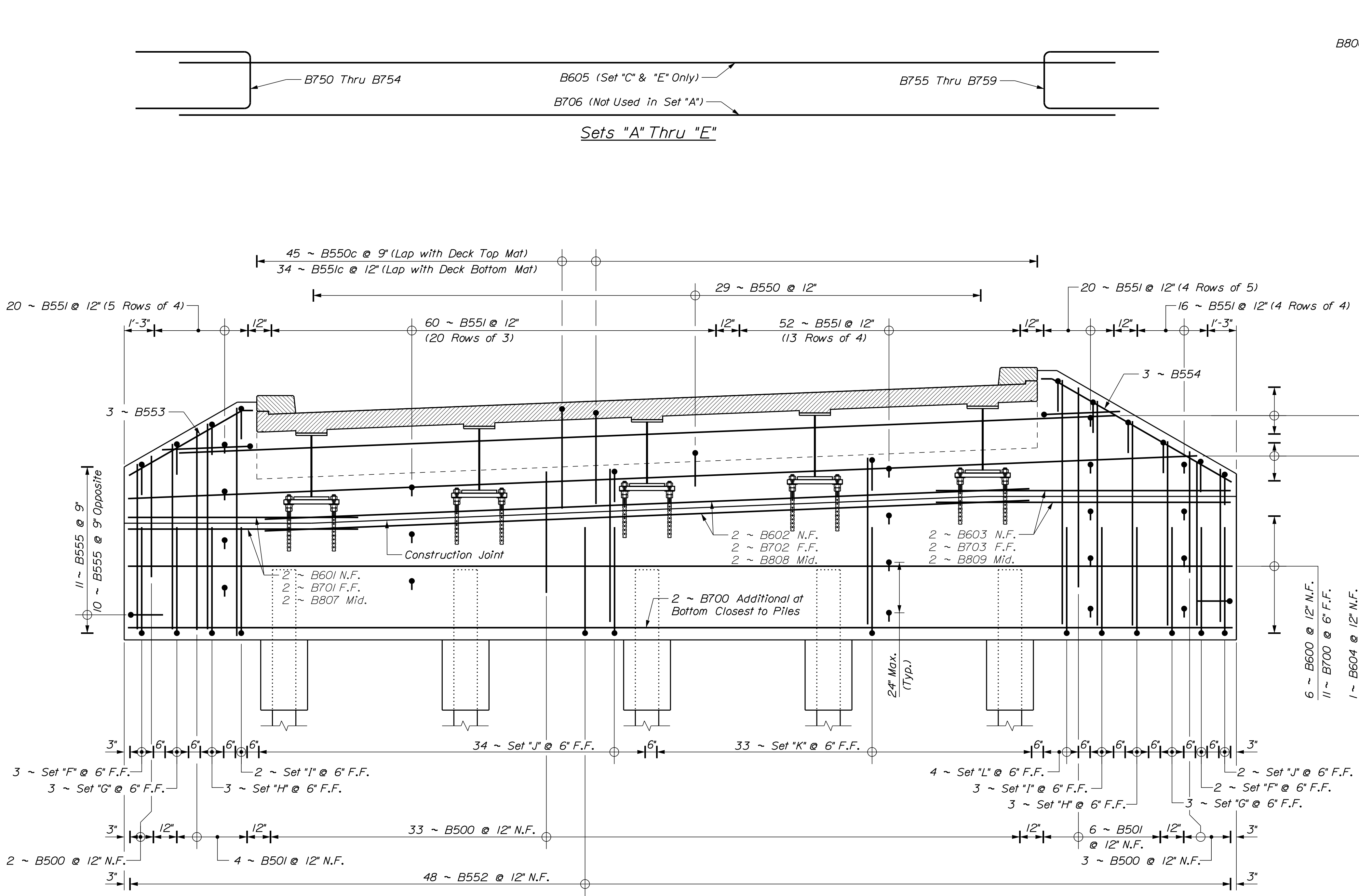
DESIGN-DETAILED	N. BALET	DATE	8/22
CHECKED-REVIEWED	B. GRENIER	SIGNATURE	
DESIGN-DETAILED	J. BRUNELLE	P.E. NUMBER	
REVISIONS 1		DATE	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

PROJ. MANAGER	DEVAN EATON
DESIGN-DETAILED	N. BALET
CHECKED-REVIEWED	B. GRENIER
DESIGN-DETAILED	J. BRUNELLE
REVISIONS 1	
REVISIONS 2	
REVISIONS 3	
REVISIONS 4	
FIELD CHANGES	

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-W. GARDINER
KENNEBEC COUNTY
ABUTMENT NO.1 REINFORCING

SHEET NUMBER

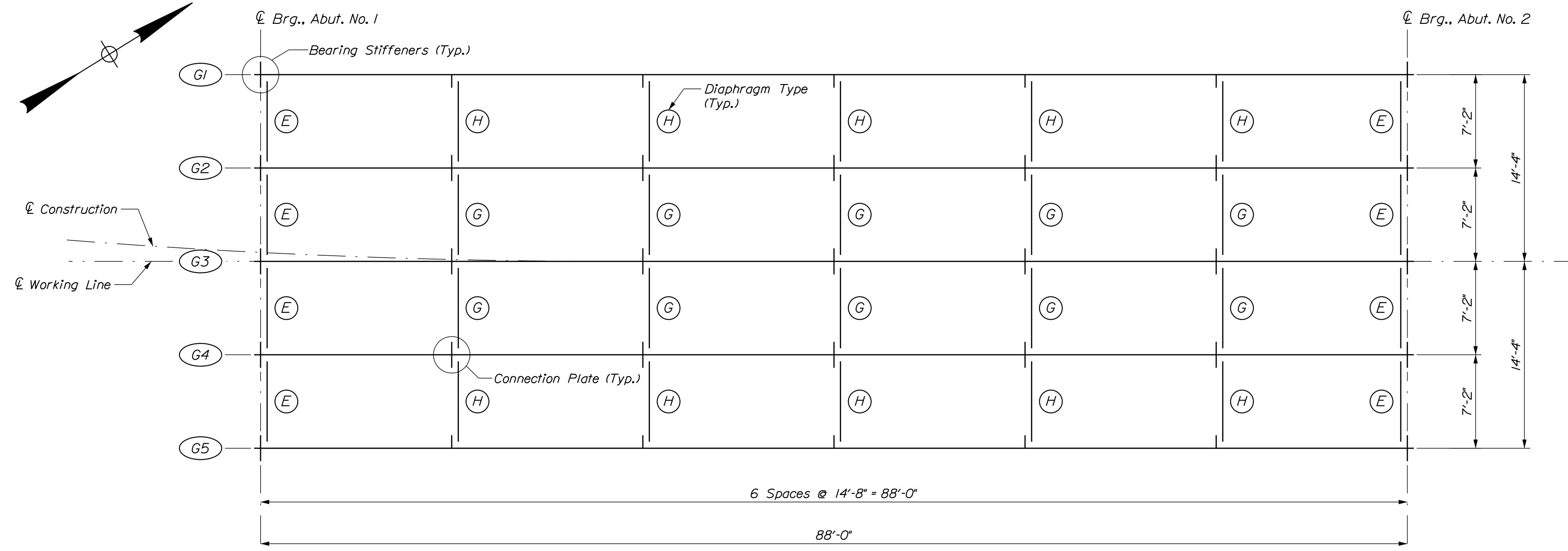
23



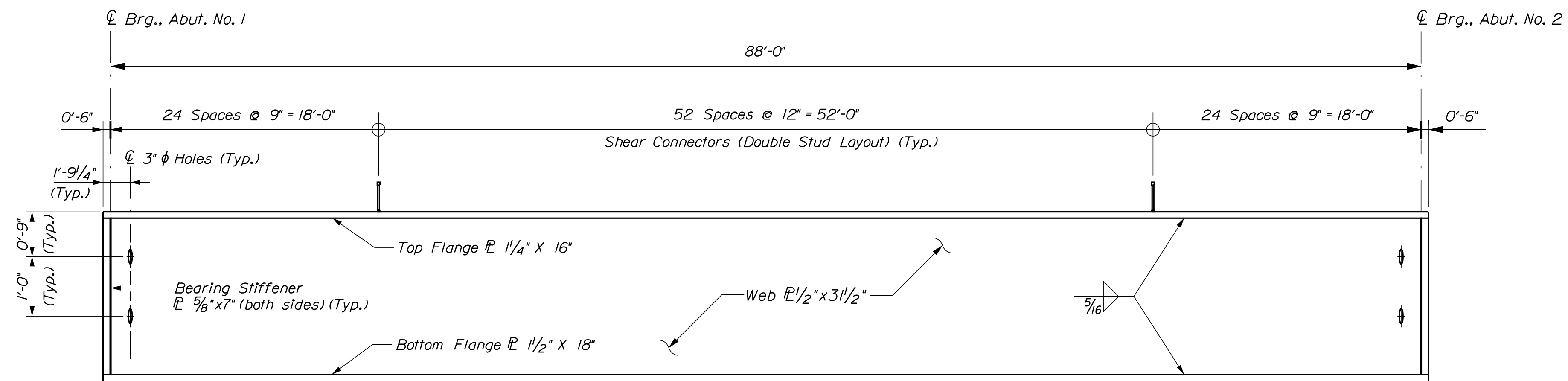
- REINFORCEMENT NOTES:**
- Set "A"
 - 1 ~ B750
 - 1 ~ B755
 - Set "B"
 - 1 ~ B706
 - 1 ~ B751
 - 1 ~ B756
 - Set "C"
 - 1 ~ B706
 - 1 ~ B752
 - 1 ~ B757
 - 1 ~ B605
 - Set "D"
 - 1 ~ B706
 - 1 ~ B753
 - 1 ~ B758
 - Set "E"
 - 1 ~ B706
 - 1 ~ B754
 - 1 ~ B759
 - 1 ~ B605
 - Set "F"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B800
 - Set "G"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B801
 - Set "H"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B802
 - Set "I"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B803
 - Set "J"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B804
 - Set "K"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B805
 - Set "L"
 - 1 ~ B850
 - 1 ~ B851
 - 1 ~ B805
- N.F. = Near Face
F.F. = Far Face
Mid = Middle Areas

ABUTMENT NO.2 REINFORCING

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		02309401		BRIDGE NO. 2029		WIN		023094.01		BRIDGE PLANS	
BABCOCK BRIDGE		COBOSSECONTEE STREAM		KENNEBEC COUNTY		LITCHFIELD-W. GARDINER		ABUTMENT NO.2 REINFORCING		SHEET NUMBER		24	
PROJ. MANAGER	DEVAN EATON	BY	DATE	DESIGN-DETAILED	N. BAERT	CHECKED-REVIEWED	J. BRUNELLE	DESIGN-DETAILED	A. STEPHENS	SIGNATURE	P.E. NUMBER	DATE	FIELD CHANGES
REVISIONS 1		REVISIONS 2		REVISIONS 3		REVISIONS 4							



FRAMING PLAN



GIRDER ELEVATION
202 Shear Connectors per Girder, (1010 Studs Total)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
02309401
WIN
023094.01
BRIDGE NO. 2029

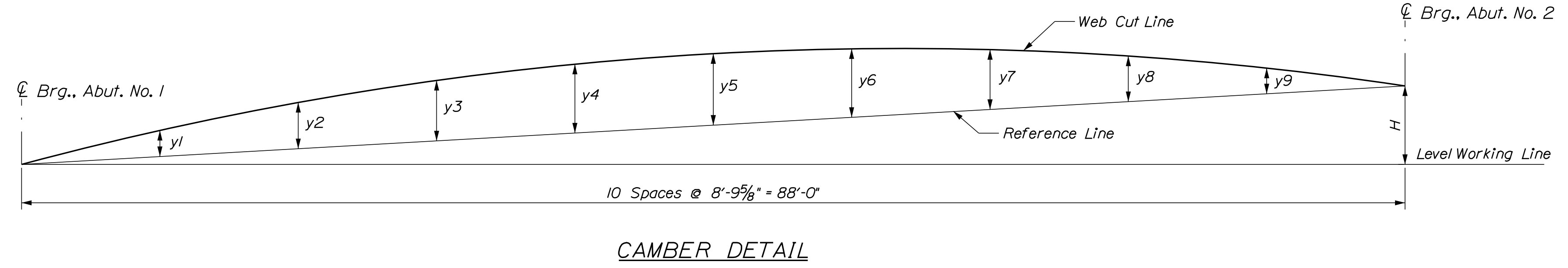
DESIGN: N. BAERT
CHECKED: J. BRUNELLE
DESIGNED: J. BRUNELLE
DATE: 8/22

BY: J. BRUNELLE
BY: J. STEPHENS

PROJ. MANAGER: DEVAN EATON
DESIGN-DETAILED: N. BAERT
CHECKED-REVIEWED: J. BRUNELLE
DESIGNED-DETAILED: J. BRUNELLE
REVISIONS: 1
REVISIONS: 2
REVISIONS: 3
REVISIONS: 4
FIELD CHANGES

SHEET NUMBER
26
OF 32

BABCOCK BRIDGE
COBOSSECONTEE STREAM
LITCHFIELD-WEST GARDINER KENNEBEC COUNTY
FRAMING PLAN AND
GIRDER DETAILS



CAMBER DETAIL

DEAD LOAD DEFLECTIONS (INCHES)												
GIRDER	DEAD LOAD COMPONENT	℄ Abut. No. 1	y1	y2	y3	y4	y5	y6	y7	y8	y9	℄ Abut. No. 2
G1	Steel Dead Load	0.00	-0.23	-0.44	-0.60	-0.71	-0.74	-0.71	-0.60	-0.44	-0.23	0.00
	Fluid Dead Load	0.00	-0.71	-1.35	-1.84	-2.16	-2.26	-2.15	-1.84	-1.34	-0.71	0.00
	Superimposed Dead Load	0.00	-0.06	-0.12	-0.16	-0.19	-0.20	-0.19	-0.16	-0.12	-0.06	0.00
G2	Steel Dead Load	0.00	-0.24	-0.45	-0.62	-0.73	-0.76	-0.73	-0.62	-0.45	-0.24	0.00
	Fluid Dead Load	0.00	-0.86	-1.62	-2.22	-2.60	-2.73	-2.60	-2.22	-1.62	-0.86	0.00
	Superimposed Dead Load	0.00	-0.06	-0.11	-0.15	-0.18	-0.19	-0.18	-0.15	-0.11	-0.06	0.00
G3	Steel Dead Load	0.00	-0.24	-0.45	-0.62	-0.73	-0.76	-0.73	-0.62	-0.45	-0.24	0.00
	Fluid Dead Load	0.00	-0.86	-1.62	-2.22	-2.60	-2.73	-2.60	-2.22	-1.62	-0.86	0.00
	Superimposed Dead Load	0.00	-0.06	-0.11	-0.15	-0.18	-0.19	-0.18	-0.15	-0.11	-0.06	0.00
G4	Steel Dead Load	0.00	-0.24	-0.45	-0.62	-0.73	-0.76	-0.73	-0.62	-0.45	-0.24	0.00
	Fluid Dead Load	0.00	-0.86	-1.62	-2.22	-2.60	-2.73	-2.60	-2.22	-1.62	-0.86	0.00
	Superimposed Dead Load	0.00	-0.06	-0.11	-0.15	-0.18	-0.19	-0.18	-0.15	-0.11	-0.06	0.00
G5	Steel Dead Load	0.00	-0.23	-0.44	-0.60	-0.71	-0.74	-0.71	-0.60	-0.44	-0.23	0.00
	Fluid Dead Load	0.00	-0.70	-1.33	-1.82	-2.14	-2.24	-2.14	-1.82	-1.33	-0.70	0.00
	Superimposed Dead Load	0.00	-0.06	-0.12	-0.16	-0.19	-0.20	-0.19	-0.16	-0.12	-0.06	0.00

TABLE OF CAMBER ORDINATES (INCHES)												
GIRDER	℄ Abut. No. 1	y1	y2	y3	y4	y5	y6	y7	y8	y9	℄ Abut. No. 2	H
G1	0.00	1.22	2.32	3.22	3.81	4.02	3.86	3.33	2.46	1.32	0.00	3.99
G2	0.00	1.36	2.59	3.58	4.24	4.48	4.30	3.70	2.74	1.47	0.00	3.95
G3	0.00	1.35	2.57	3.56	4.22	4.47	4.29	3.69	2.73	1.47	0.00	3.92
G4	0.00	1.35	2.56	3.54	4.21	4.45	4.28	3.69	2.72	1.46	0.00	3.90
G5	0.00	1.17	2.24	3.11	3.71	3.94	3.79	3.27	2.42	1.30	0.00	3.86

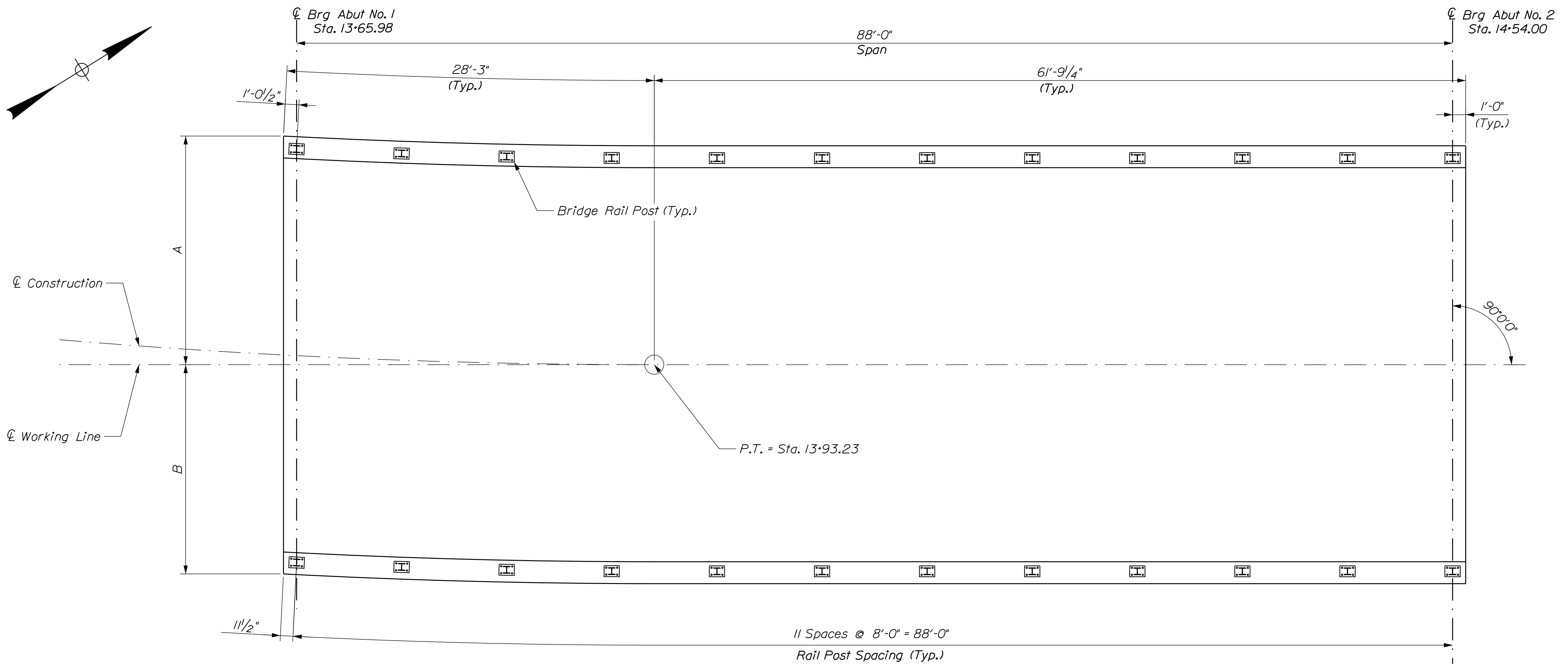
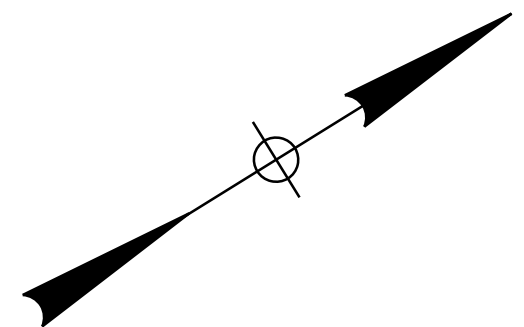
BOTTOM OF SLAB ELEVATIONS												
GIRDER	℄ Abut. No.	0.1 x L	0.2 x L	0.3 x L	0.4 x L	0.5 x L	0.6 x L	0.7 x L	0.8 x L	0.9 x L	℄ Abut. No. 2	
G1	141.25	141.37	141.48	141.57	141.64	141.69	141.72	141.71	141.69	141.64	141.59	
G2	141.54	141.67	141.79	141.89	141.97	142.02	142.04	142.03	142.00	141.94	141.87	
G3	141.83	141.96	142.07	142.18	142.25	142.30	142.33	142.32	142.28	142.23	142.16	
G4	142.12	142.25	142.36	142.46	142.54	142.59	142.61	142.60	142.57	142.52	142.45	
G5	142.41	142.52	142.63	142.72	142.79	142.84	142.86	142.86	142.83	142.79	142.73	

STRUCTURAL STEEL NOTES

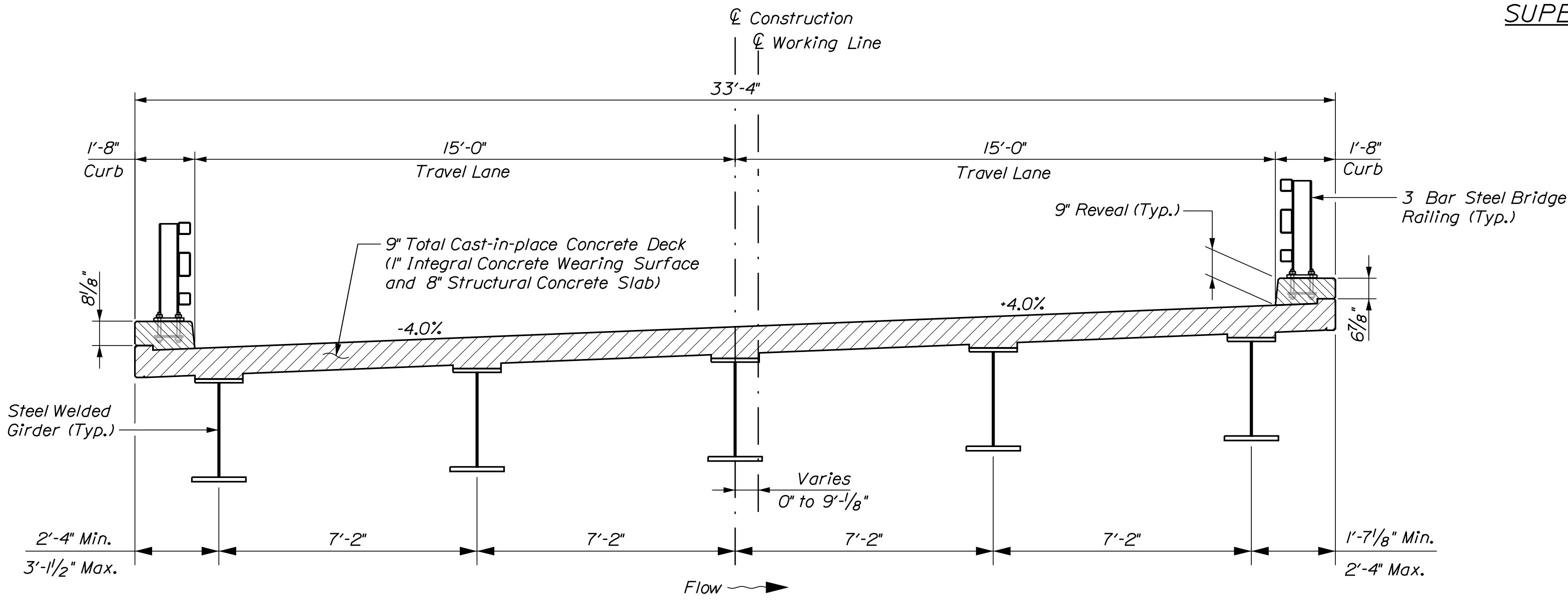
- Camber ordinates, as shown, are computed to compensate for all dead load deflections and for the curvature of the finished grade profile.
- No transverse butt weld splices will be allowed in the flange plates or web plates within 10 feet or 10 percent of the span length (whichever is greater) from the points of maximum negative moment or maximum positive moment. Butt weld splices in flanges shall be not less than one foot from transverse butt welds in the web plates and no transverse web or flange butt welds shall be located within one foot of other transverse welds (e.g. connection plates to web welds) on either flange or web. No transverse butt weld splices will be allowed in areas of stress reversal.
- Sections of flange plates or web plates between transverse shop splices or between a transverse shop splice and a field splice shall be not less than 20 feet in length unless otherwise shown on the plans.
- Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
- Cross frame or diaphragm connection plates may be either plumb or normal to the top flange.
- All connection plates and stiffeners shall be welded to the top and bottom flanges using 5/16" fillet welds.
- Structural steel including girders, stiffeners, connection plates, and cross frames shall be coated in accordance with Standard Specification 506, Shop Applied Protective Coating - Steel (Thermal Spray Coating). At the Contractor's option, Structural steel may be coated in accordance with either Standard Specification Section 506, Shop Applied Protective Coating - Steel (Hot-Dip Galvanizing). Payment for structural steel coatings will be made under Item No. 506.9015, Thermal Spray Coating - Shop Applied.
- All bolts, nuts, and washers shall be hot dip galvanized in accordance with ASTM A153.

PROJ. MANAGER	DEVAN EATON	DATE	8/22
DESIGN-DETAILED	N. BAERT	BY	J. BRUNELLE
CHECKED-REVIEWED	B. GRENIER	DATE	
DESIGN-DETAILED		DATE	
REVISIONS 1		DATE	
REVISIONS 2		DATE	
REVISIONS 3		DATE	
REVISIONS 4		DATE	
FIELD CHANGES		DATE	

SIGNATURE	
P.E. NUMBER	
DATE	



SUPERSTRUCTURE PLAN



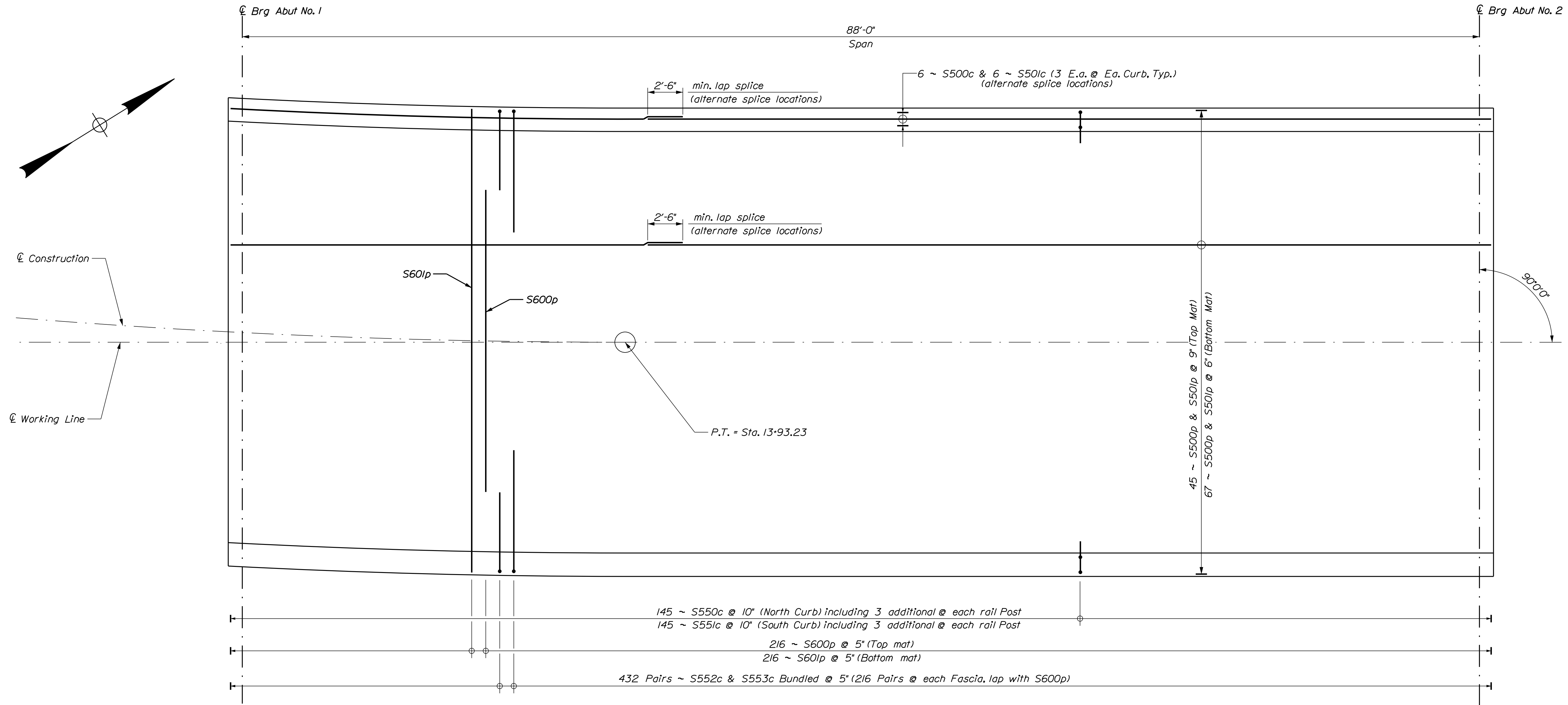
TRANSVERSE SECTION

SUPERSTRUCTURE NOTES

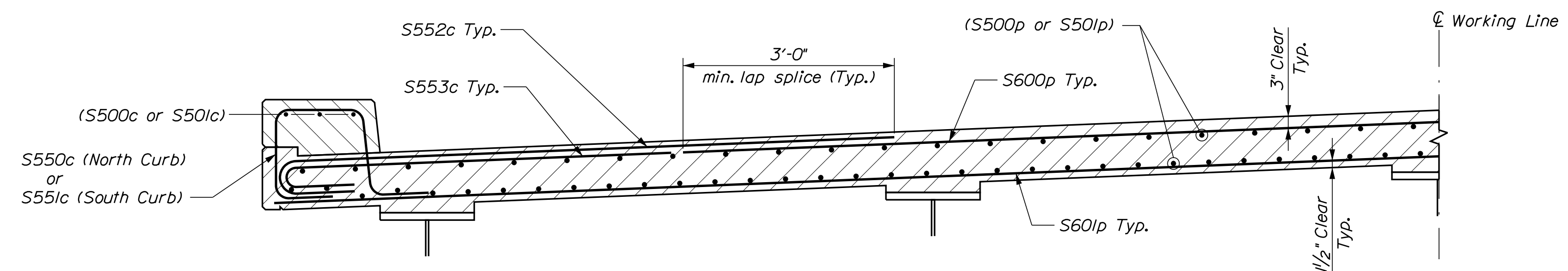
1. The theoretical blocking used for design of the structure is 3/4" inches at the centerline of bearing of the abutments. Refer to Standard Detail 502(03) for blocking details.
2. Reinforcing shall have a minimum concrete cover of 2 inches unless otherwise noted.
3. Form a one inch V-groove on the Fascia at the horizontal joint between the curb and slab.
4. The superstructure slab and upper portions of the abutments shall be placed in one continuous operation and shall be kept plastic until the entire placement has been made.
5. Bar supports for GFRP reinforcement shall be plastic, dielectric material, or other approved material. See Special Provision Subsection 530.06 for additional requirements.
6. The use of Precast Concrete Deck Panels will not be allowed on this project.

SLAB FASCIA OFFSETS							
	Beginning of Deck	+5'-0"	+10'-0"	+15'-0"	+20'-0"	+25'-0"	P.T.
	Sta. 13+64.48	Sta. 13+69.48	Sta. 13+74.48	Sta. 13+79.48	Sta. 13+84.48	Sta. 13+89.48	Sta. 13+93.23
Distance to P.T.	+28.24	+23.24	+18.24	+13.24	+8.24	+3.24	0
"A"	17'-4 7/8"	17'-2"	16'-11 7/8"	16'-9 7/8"	16'-8 3/4"	16'-8 1/8"	16'-8"
"B"	15'-11 1/8"	16'-2"	16'-4 1/4"	16'-6"	16'-7 1/4"	16'-7 7/8"	16'-8"

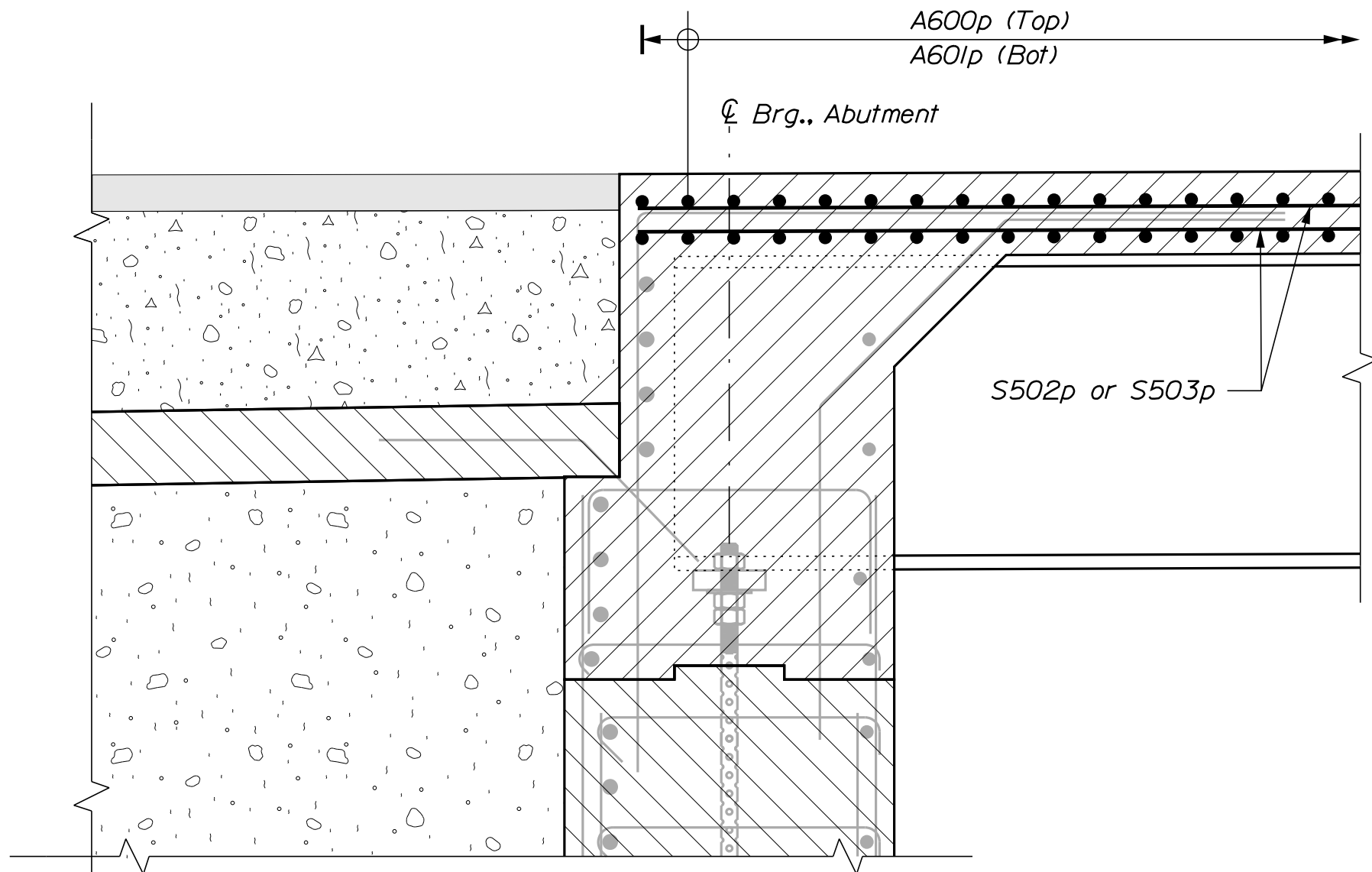
STATE OF MAINE DEPARTMENT OF TRANSPORTATION 02309401 WIN 023094.01 BRIDGE NO. 2029 BRIDGE PLANS
BABCOCK BRIDGE COBOSSECONTEE STREAM LITCHFIELD-W. GARDINER KENNEBEC COUNTY SUPERSTRUCTURE PLAN
SHEET NUMBER <h1 style="font-size: 2em;">28</h1> OF 32



SUPERSTRUCTURE REINFORCING PLAN



PARTIAL TRANSVERSE SECTION
North Portion (South Portion Similar)



PARTIAL LONGITUDINAL SECTION

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		02309401	WIN 023094.01	BRIDGE NO. 2029 BRIDGE PLANS
BABCOCK BRIDGE COBBOSECONTEE STREAM LITCHFIELD-WEST GARDINER KENNEBEC COUNTY		SUPERSTRUCTURE REINFORCING		
PROJ. MANAGER	DEVAN EATON	BY	DATE	
DESIGN-DETAILED	N. BAERT	J. BRUNELLE	8/22	SIGNATURE
CHECKED-REVIEWED	B. GRENIER	J.A. STEPHENS		P.E. NUMBER
DESIGN-DETAILED				DATE
REVISIONS 1				
REVISIONS 2				
REVISIONS 3				
REVISIONS 4				
FIELD CHANGES				
SHEET NUMBER				
29				
OF 32				

Username: Jeremiah.Brunelle Date: 8/23/2022

Division: BRIDGE

Filename: ... \MSTAO30_Rebar_Schedule.dgn

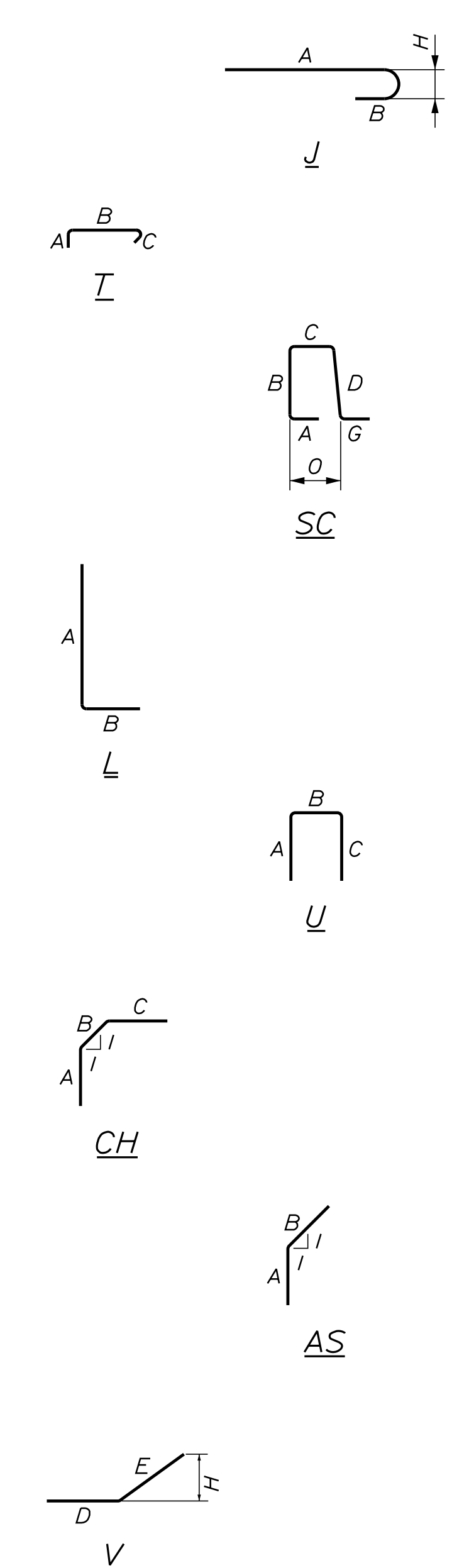
STRAIGHT BARS

BENT BARS

Table with columns: MARK, QTY., LENGTH, LOCATION. Contains bar details for Abutment No. 1, Abutment No. 2, Superstructure, and Approach Slab.

Table with columns: MARK, QTY., LENGTH, TYPE, A, B, C, D, E, F, G, H, O, R, LOCATION. Contains bar details for Abutment No. 1, Abutment No. 2, Superstructure, and Approach Slab.

TYPE - BENDING DIAGRAMS

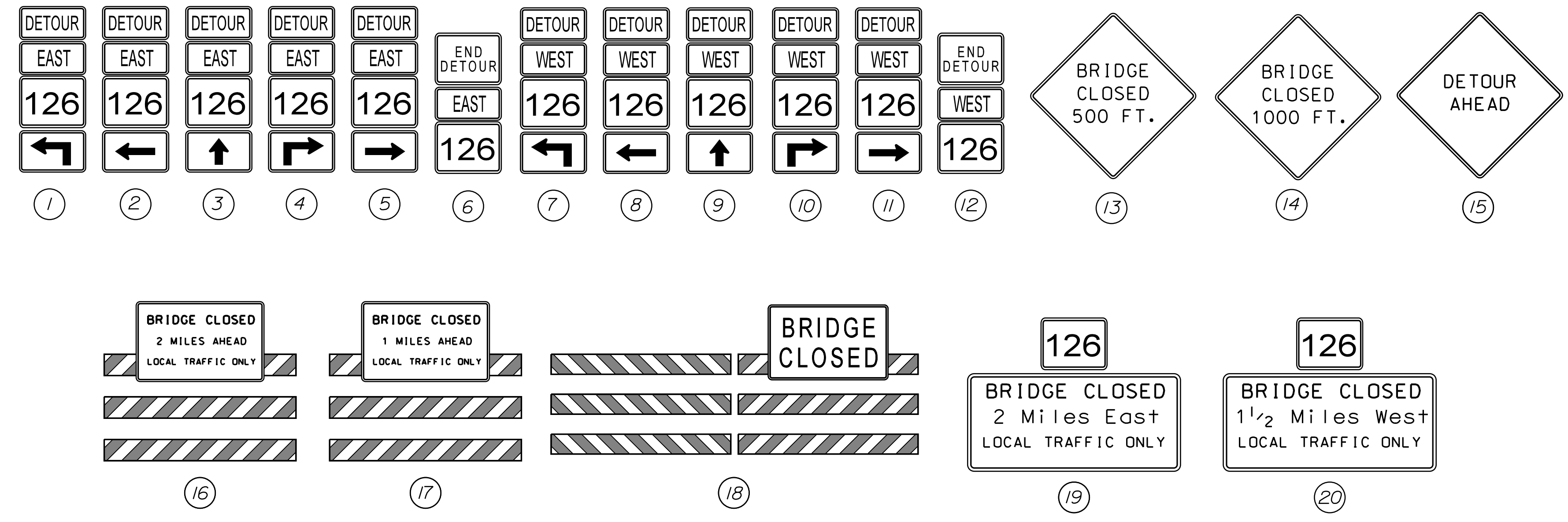
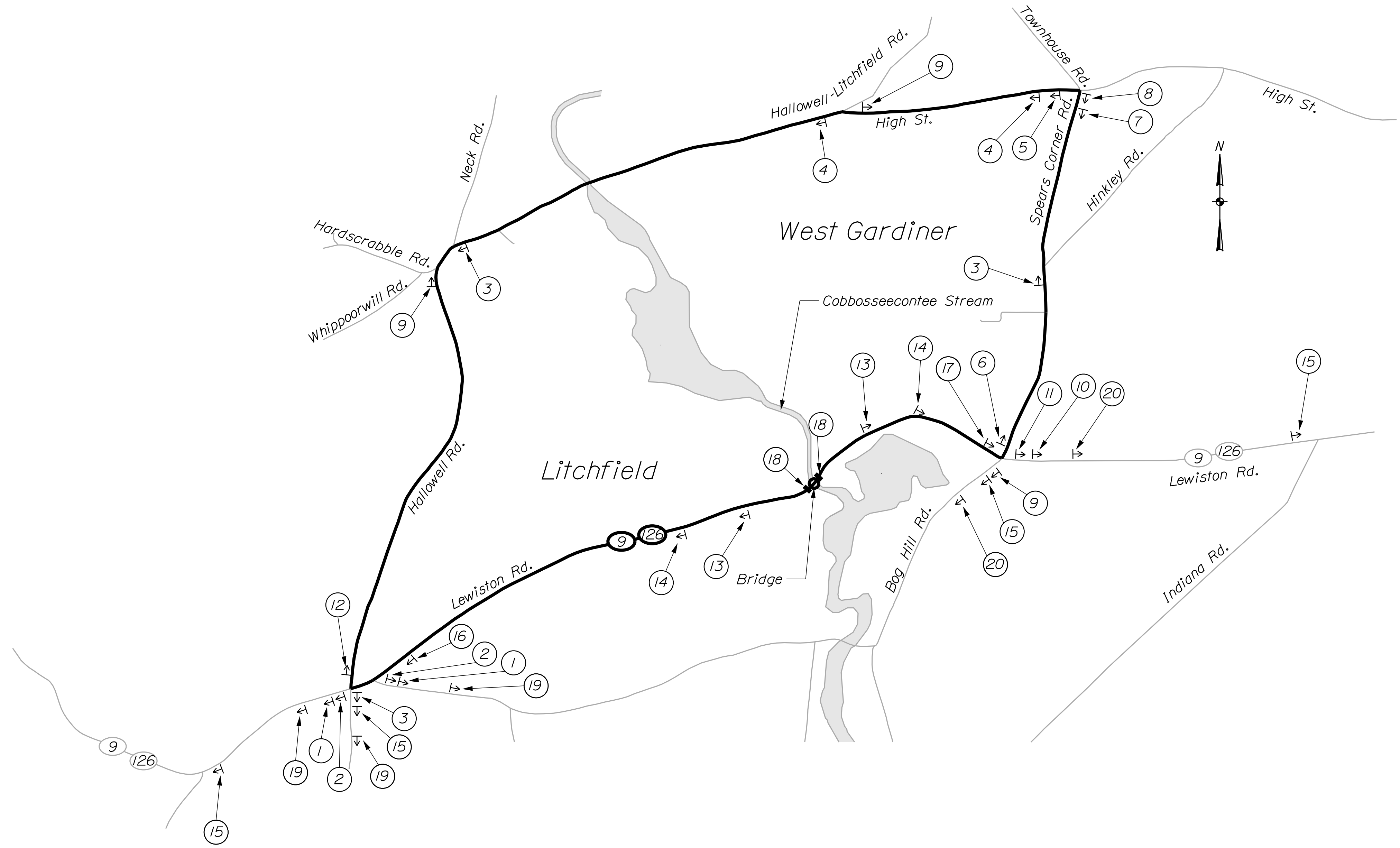


All dimensions are out-to-out of bar. Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 315 and ACI Standard 318. Plain Reinforcing Steel: ASTM A 615, Grade 60 Glass Fiber Reinforced Polymer: ASTM D7957 Low-Carbon Chromium Steel: ASTM A1035, Type CS, Grade 100

GENERAL NOTES

- 1. The first digit(s) following the letter(s) of the mark indicate the size of the bar. Mark "A502" = bar size #5 Mark "P805" = bar size #8 Mark "S650" = bar size #6 Mark "P1404" = bar size #14 2. The lower case letter following the bar number indicates the material of the bar. "A500b", b = (Black) Plain Steel "S500p", p = Glass Fiber Reinforced Polymer "P510c", c = Low-Carbon Chromium Steel

Project information including: STATE OF MAINE, DEPARTMENT OF TRANSPORTATION, 02309401, WIN 023094101, BRIDGE NO. 2029, BABCOCK BRIDGE, COBOSSECONTEE STREAM, KENNEBEC COUNTY, LITCHFIELD-W. GARDINER, REINFORCING STEEL SCHEDULE, SHEET NUMBER 30, OF 32.



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		02309401	
LITCHFIELD-W. GARDINER KENNEBEC COUNTY		WIN 023094.01	
BABCOCK BRIDGE COBOSSEECONTEE STREAM		BRIDGE NO. 2029	
DETOUR MAP		BRIDGE PLANS	
PROJ. MANAGER	DEVAN EATON	BY	DATE
DESIGN-DETAILED	J. BRUNELLE	J. BRUNELLE	8/22
CHECKED-REVIEWED	D. HANKS	M. POLLIN	
DESIGN-DETAILED			SIGNATURE
REVISIONS 1			P.E. NUMBER
REVISIONS 2			DATE
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			
SHEET NUMBER		31	
OF 32		NOT TO SCALE	

