

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 (2015) AADT 1720
Future (2038) AADT 2060
DHV - % of AADT 12
Design Hour Volume 247
Heavy Trucks (% of AADT) 13
Heavy Trucks (% of DHV) 13
Directional Distribution (% of DHV) 56
18 kip Equivalent P 2.0 233
18 kip Equivalent P 2.5 222
Design Speed (mph) 25

HYDROLOGIC DATA

Drainage Area 64.5 sq mi
Design Discharge (Q50) 1890 cfs
Check Discharge (Q100) 2129 cfs
Headwater Elevation (Q50) 410.42 ft
Headwater Elevation (Q100) 410.88 ft
Discharge Velocity (Q50) 15.59 fps
Discharge Velocity (Q100) 16.32 fps
Headwater Elevation (Q1.1) 408.96 ft
Discharge Velocity (Q1.1) 4.12 fps
Headwater Elevation (Q25) 409.99 ft

MATERIALS

Concrete:
Curbs & Transition Barriers Class "LP"
Precast NEXT Beams Class "P"
All Other Class "A"
Reinforcing:
Plain ASTM A 615/A 615M, Grade 60
Stainless ASTM A 955, Grade 75
Glass Fiber Reinforced Polymer (GFRP) CSA S807-10, ACI 440.1R-15
Prestressing Strands AASHTO M203 (ASTM A 416),
Grade 270, Low Relaxation

BASIC DESIGN STRESSES

Concrete, Class "A" f 'c = 4,000 psi
Concrete, Class "LP" f 'c = 5,000 psi
Concrete, Class "P" f 'c = 8,000 psi
..... f 'ci = 6,400 psi
ASTM A 615/A 615M f y = 60,000 psi
AASHTO M203 F μ = 270,000 psi
ASTM A955 f y = 75,000 psi
GFRP:
#5 & #6 Bars F μ = 95,000 psi
Minimum Elastic Modulus 5,700,000 psi
ASTM F1554 f y = 55,000 psi

HODGDON
AROOSTOOK COUNTY
HODGDON MILLS BRIDGE
OVER
SOUTH BRANCH
MEDUXNEKEAG RIVER
HODGDON MILLS ROAD
PROJECT NO. STP-2263(800)
PROJECT LENGTH 0.076 mi.
BRIDGE NO. 3103

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UTILITIES

Consolidated Communications Pioneer Broadband
Fairpoint Communications Houlton Water Company
Town of Hodgdon

MAINTENANCE OF TRAFFIC

Maintain one 18'-0" wide lane of alternating traffic on a temporary
detour bridge using temporary traffic signals.

PROJECT LOCATION:	On Hodgdon Mills Road, between the Towns of Hodgdon and Hodgdon Mills, over South Branch Meduxnekeag River Lat./Long. 46°03'14.3"N 67°52'06.7"W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge Replacement with 340 feet of approach work



WIN 022638.00

STP-2263(800)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED

COMMISSIONER:
CHIEF ENGINEER:

DATE
11-16-18
11-15-18

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROFESSIONAL ENGINEER
Steven M. Hodgdon
11206
September 23, 2018

SIGNATURE
11206
P.E. NUMBER
September 23, 2018
DATE

PROJECT INFORMATION
PROGRAM
PROJECT MANAGER
DESIGNER
CONSULTANT
PROJECT RESIDENT
CONTRACTOR
PROJECT COMPLETION DATE

Bridge Program
Michael H. Wight
Steven Hodgdon
Hoyle, Tanner & Assoc., Inc.
PROJECT RESIDENT
CONTRACTOR
PROJECT COMPLETION DATE

HODGDON
HODGDON MILLS BRIDGE
TITLE SHEET

SHEET NUMBER
1
OF 22

ESTIMATED QUANTITIES				
ITEM NO.	DESCRIPTION		QUANTITY	UNIT
202.19	REMOVING EXISTING BRIDGE	(335 CY)	1	LS
202.202	REMOVING PAVEMENT SURFACE		290	SY
203.20	COMMON EXCAVATION		790	CY
203.24	COMMON BORROW		10	CY
203.25	GRANULAR BORROW		390	CY
206.082	STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES, PLAN QUANTITY		1000	CY
206.092	STRUCTURAL ROCK EXCAVATION - MAJOR STRUCTURES		60	CY
304.10	AGGREGATE SUBBASE COURSE - GRAVEL		828	CY
403.208	HOT MIX ASPHALT, 12.5 MM NOMINAL MAXIMUM SIZE		99	T
403.209	HOT MIX ASPHALT, 9.5 MM NOMINAL MAXIMUM SIZE (SIDEWALKS, DRIVES, ISLANDS & INCIDENTALS)		22	T
403.211	HOT MIX ASPHALT, 9.5 MM NOMINAL MAXIMUM SIZE (SHIMMING)		10	T
403.213	HOT MIX ASPHALT, 12.5 MM NOMINAL MAXIMUM SIZE (BASE AND INTERMEDIATE BASE COURSE)		170	T
409.15	BITUMINOUS TACK COAT, APPLIED		78	G
461.131	TEMPORARY PAVEMENT		110	T
502.219	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	(207 CY)	1	LS
502.22	STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS (PLACED UNDER WATER)		280	CY
502.261	STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLAB ON CONCRETE BRIDGES	(84 CY)	1	LS
502.291	SAW CUT GROOVING	(1711 SF)	1	LS
502.31	STRUCTURAL CONCRETE APPROACH SLAB	(23 CY)	1	LS
502.49	STRUCTURAL CONCRETE CURBS AND SIDEWALKS	(10 CY)	1	LS
503.12	REINFORCING STEEL, FABRICATED AND DELIVERED		24600	LB
503.13	REINFORCING STEEL, PLACING		24600	LB
503.26	STAINLESS STEEL REINFORCEMENT, FABRICATED AND DELIVERED		6300	LB
503.27	STAINLESS STEEL REINFORCEMENT, PLACING		6300	LB
507.0821	STEEL BRIDGE RAILING, 3 BAR	(208 LF)	1	LS
510.10	SPECIAL DETOUR, 18 FOOT ROADWAY WIDTH VEHICULAR AND PEDESTRIAN TRAFFIC NOT SEPARATED		1	LS
511.07	COFFERDAM, ABUTMENT NO.1		1	LS
511.07	COFFERDAM, ABUTMENT NO.2		1	LS
512.081	FRENCH DRAINS	(116 LF)	1	LS
513.22	CRUSHED STONE SLOPE PROTECTION		26	SY
514.06	CURING BOX FOR CONCRETE CYLINDERS		1	EA
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	(330 SY)	1	LS
526.301	TEMPORARY CONCRETE BARRIER, TYPE 1	(400 LF)	1	LS
526.34	PERMANENT CONCRETE TRANSITION BARRIER		4	EA
527.34	WORK ZONE CRASH CUSHIONS		4	UN
530.30	GLASS FIBER REINFORCED POLYMER, FABRICATED & DELIVERED		14820	LF
530.31	GLASS FIBER REINFORCED POLYMER, PLACING		14820	LF
535.622	PRESTRESSED STRUCTURAL CONCRETE NEXT BEAM	(61 CY)	1	LS

ESTIMATED QUANTITIES				
ITEM NO.	DESCRIPTION		QUANTITY	UNIT
603.17	18 INCH CULVERT PIPE OPTION 1		37	LF
606.1722	BRIDGE TRANSITION - TYPE 11		2	EA
606.1722	BRIDGE TRANSITION - TYPE 11 - MODIFIED		2	EA
606.231	GUARDRAIL TYPE 3C - 15 FT RADIUS AND LESS		32	LF
606.232	GUARDRAIL TYPE 3C - OVER 15 FT RADIUS		25	LF
606.259	ANCHORAGE ASSEMBLY		3	EA
606.265	TERMINAL END-SINGLE RAIL - GALVANIZED STEEL		3	EA
606.353	REFLECTORIZED FLEXIBLE GUARDRAIL MARKER		8	EA
606.78	LOW VOLUME GUARDRAIL END - TYPE 3		1	EA
610.08	PLAIN RIPRAP		120	CY
610.16	HEAVY RIPRAP		140	CY
610.18	STONE DITCH PROTECTION		17	CY
615.07	LOAM		4	CY
618.14	SEEDING METHOD NUMBER 2		1	UN
619.12	MULCH		1	UN
619.14	EROSION CONTROL MIX		8	CY
620.58	EROSION CONTROL GEOTEXTILE		410	SY
627.733	4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE		1350	LF
627.77	REMOVING EXISTING PAVEMENT MARKING		200	SF
627.78	TEMPORARY 4" PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW		800	LF
629.05	HAND LABOR, STRAIGHT TIME		40	HR
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)		20	HR
631.14	GRADER (INCLUDING OPERATOR)		20	HR
631.15	ROLLER, EARTH AND BASE COURSE (INCLUDING OPERATOR)		20	HR
631.172	TRUCK - LARGE (INCLUDING OPERATOR)		20	HR
637.071	DUST CONTROL		1	LS
639.19	FIELD OFFICE, TYPE B		1	EA
643.72	TEMPORARY TRAFFIC SIGNAL, HODGDON MILLS ROAD		1	LS
652.312	TYPE III BARRICADES		6	EA
652.33	DRUM		50	EA
652.34	CONE		50	EA
652.35	CONSTRUCTION SIGNS		270	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	(240 CD)	1	LS
652.38	FLAGGERS		400	HR
656.75	TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL		1	LS
659.10	MOBILIZATION		1	LS

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

STP-2263(800)

WIN

022638.00

BRIDGE NO. 3103

BRIDGE PLANS

HODGDON MILLS BRIDGE

SOUTH BRANCH MEDUXNEKEAG RIVER

HODGDON

AROOSTOOK COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER

2

OF 22

GENERAL CONSTRUCTION NOTES

1. For easements, construction limits and right of way lines, refer to Right of Way Map.
2. 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.
3. All utility facilities shall be adjusted by the respective utilities unless otherwise noted.
4. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Resident.
5. 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.
6. For speed limits under 50 MPH: Temporary pavement ramps shall have a taper length of 4 feet per inch of transition depth.
7. Place loam 2 inches deep on all new or reconstructed sideslopes or as directed by the Resident.
8. 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.
9. 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.

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

- All exposed surfaces of concrete curbs,
- Fascias down to the drip notch,
- All exposed surfaces of Concrete Transition Barriers,
- Concrete wearing surfaces,
- Top of wingwalls and to one foot below the top of wingwalls on the back side.

11. Project information referred to below (notes 12 thru 14) may be accessed at the following MaineDOT web address:
<http://www.maine.gov/mdot/contractors/>.

12. 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.

13. 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.

14. The project geotechnical report titled: Geotechnical Design Report for the Replacement of Hodgdon Mills Bridge, Hodgdon Mills Road over S. Br. Meduxnekeag River, Hodgdon, Maine, Soils Report 2018-32, September 7, 2018, may be accessed at the MaineDOT web address.

15. 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.

16. 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 and Time.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2263(800)

WIN
022638.00

BRIDGE NO. 3103
BRIDGE PLANS

Hoyle, Tanner & Associates, Inc.

150 Dow Street Manchester, NH 03101
(603) 655-5550 | www.hoyletanner.com

PROJ. MANAGER	M. Wright	BY	DATE
DESIGN-DETAILED	S. Hodgdon	P. Duffin	Apr. 2018
CHECKED-REVIEWED	G. Krauss	S. Hodgdon	Aug. 2018
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

SOUTH BRANCH MEDUXNEKEAG RIVER
HODGDON

HODGDON MILLS BRIDGE

AROOSTOOK COUNTY

GENERAL NOTES

SHEET NUMBER

3

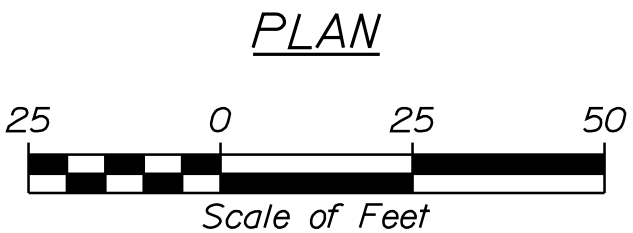
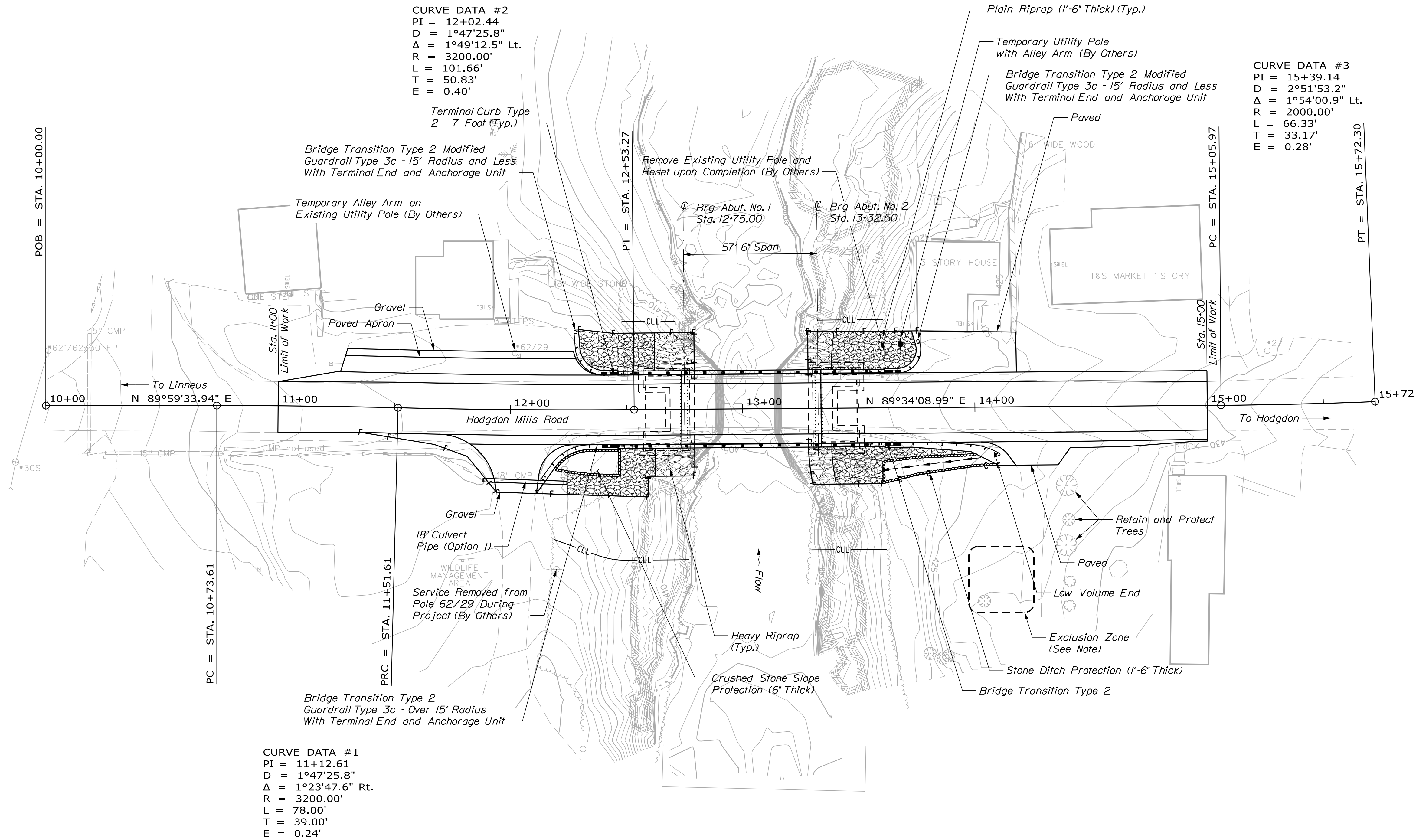
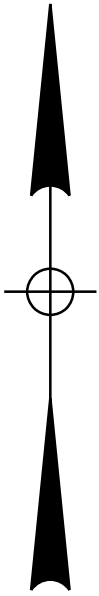
OF 22

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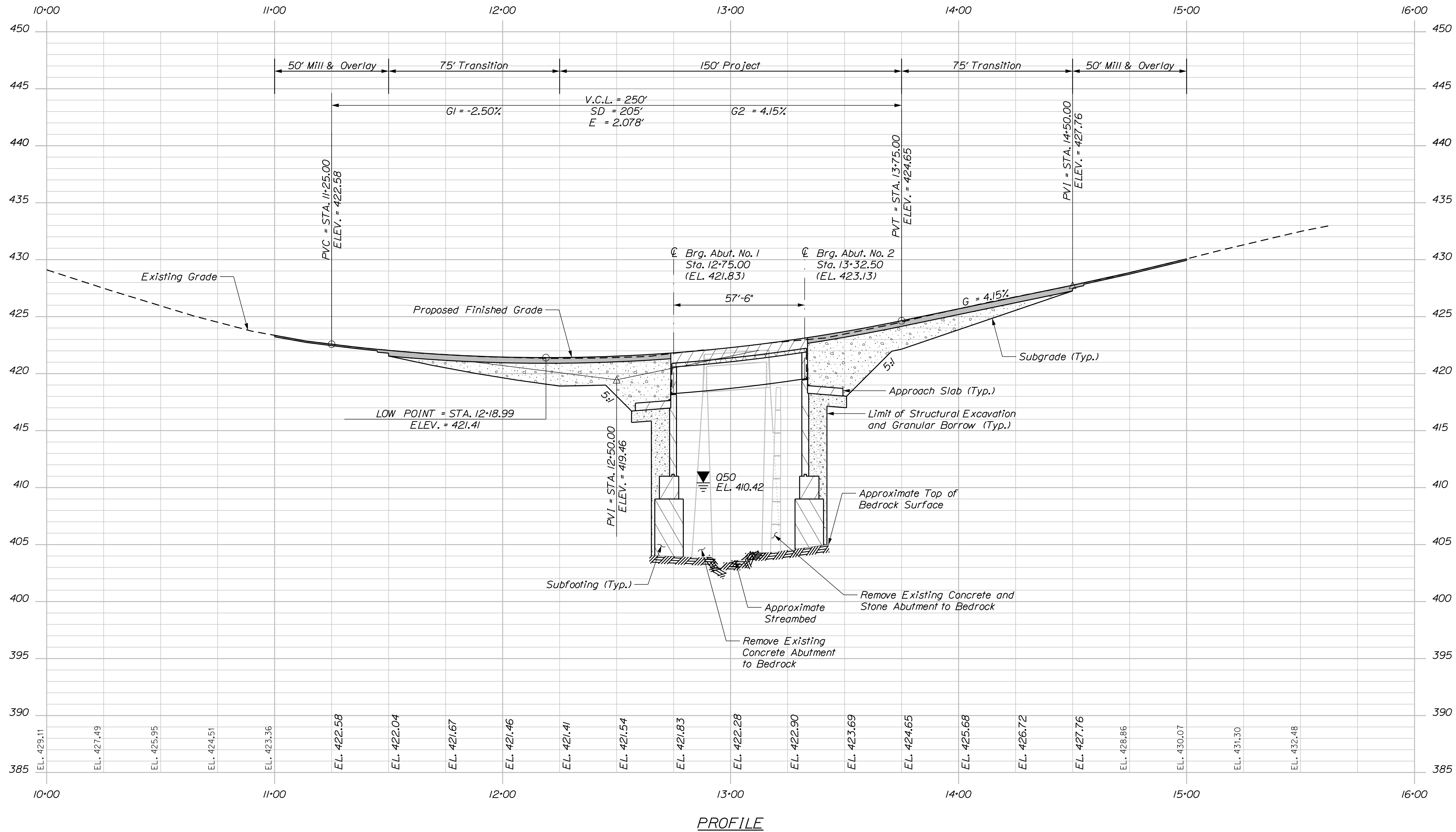
Date:10/29/2018

Division: BRIDGE

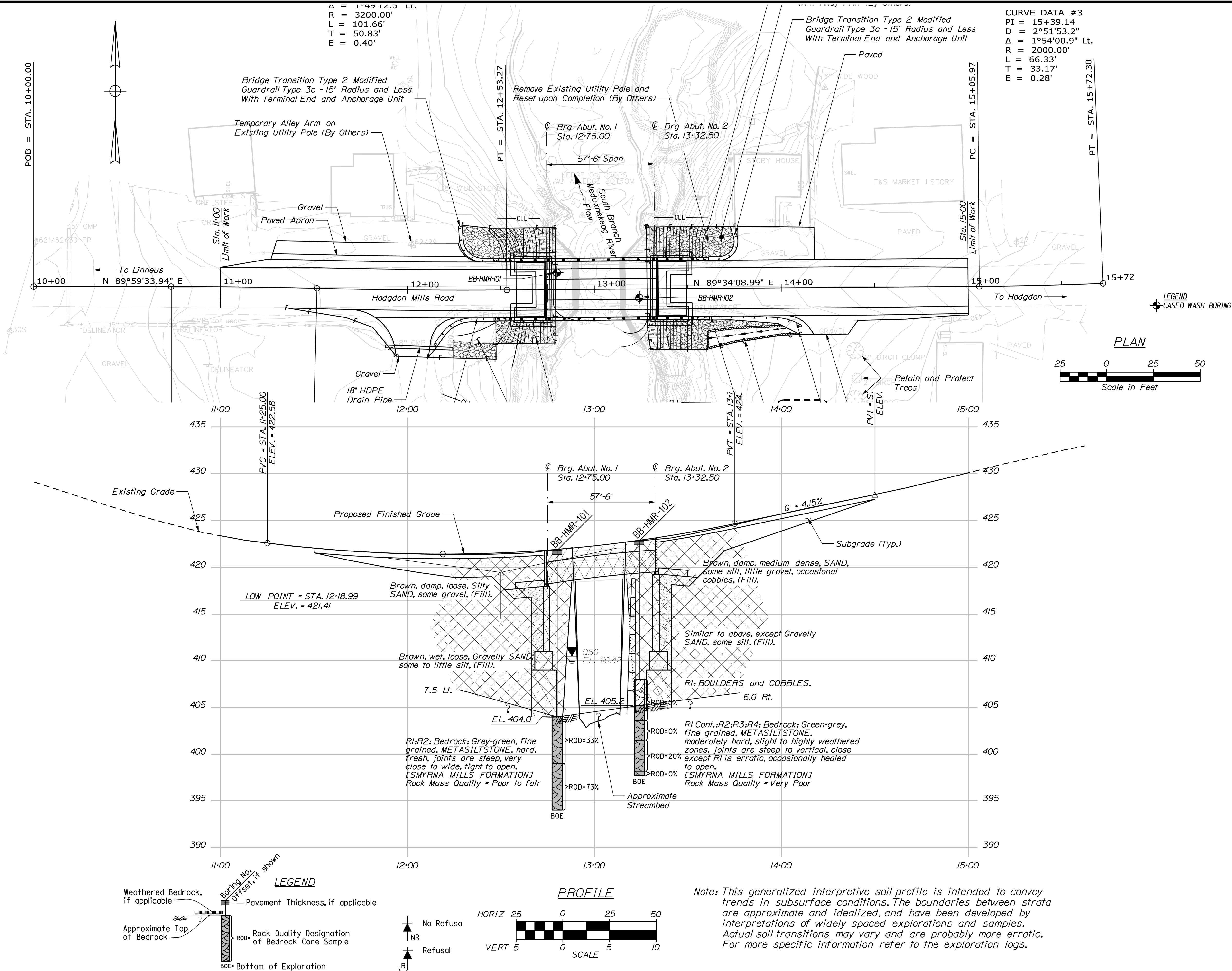
Filename: ...



STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2263(800)	Hoyle, Tanner & Associates, Inc. 150 Dow Street, Manchester, NH 03101 (603) 555-5551 www.htai.com	PROJ. MANAGER	M. Wright	BY	P. Duffin	DATE	Apr. 2018	
		CHECKED/REVIEWED	S. Hodgdon	DESIGNED	O. Krauss	DATE	Aug. 2018	
HODGDON MILLS BRIDGE SOUTH BRANCH MEDUXNEKEAG RIVER HODGDON AROOSTOOK COUNTY GENERAL PLAN		DESIGNS DETAILLED						
		REVISIONS 1						
		REVISIONS 2						
		REVISIONS 3						
SHEET NUMBER		4						
BRIDGE NO. 3103		022638.00						
BRIDGE PLANS								



PROJ. MANAGER	M. Wright	BY	DATE
DESIGN-DETAILED	S. Hodgdon	P. Dustin	Apr. 2018
CHECKED-REVIEWED	G. Krauss	S. Hodgdon	Aug. 2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			



PROJ. MANAGER	BY	DATE	SIGNATURE
DESIGN-DETAILED	J. SHAW	SEP 2018	
CHECKED-REVIEWED	T. WHITE	SEP 2018	
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

HODGDON MILLS BRIDGE
SOUTH BRANCH MEDUXNEKEAG RIVER
HODGDON AROOSTOOK COUNTY
BORING LOCATION PLAN &
INTERPRETIVE SUBSURFACE PROFILE

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 transitions may vary and are probably more erratic. For more specific information refer to the exploration logs.

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Hodgdon Mills Bridge carries
Hodgdon Mills Rd over S. Branch
Location: Hodgdon, Maine

Boring No.: BB-HMR-101

WIN: 22638.00

Driller: MaineDOT

Operator: Doggett/Austin

Logged By: B. Wilder

Date Start/Finish: 5/11/2016: 11:30-15:00

Boring Location: 12+80.1, 9.1 ft L+

Elevation (ft.): 421.8

Datum: NAVD88

Rig Type: CME 45C

Drilling Method: Cased Wash Boring

Casing ID/OD: NW-3"

Auger ID/OD: 5" Solid Stem

Sampler: Standard Split Spoon

Hammer Wt./Fall: 140w/30"

Core Barrel: ND-2"

Water Level#: None Observed

Hammer Efficiency Factor: 0.908

Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions:
D = Split Spoon Sample
MD = Unsuccessful Split Spoon Sample Attempt
U = Thin Wall Tube Sample
MU = Unsuccessful Thin Wall Tube Sample Attempt
V = Field Vane Shear Test
MW = Unsuccessful Field Vane Shear Test Attempt

R = Rock Core Sample
SSA = Solid Stem Auger
HSA = Hollow Stem Auger
RC = Roller Cone
WDR = Weight of Rods, Hammer
PP = Pocket Penetrometer
WDR/C = Weight of Rods or Casing
WLP = Weight of One Person

S_u = Peak/Retained Field Vane Undrained Shear Strength (psf)
S_{ul} = Lab Vane Undrained Shear Strength (psf)
q_u = Unconfined Compressive Strength (ksf)
N = uncorrected = Raw Field SPT N-value
N_{eq} = SPT N-uncorrected Corrected for Hammer Efficiency
N_{eq} = Hammer Efficiency Factor/60%N-uncorrected

T_v = Pocket Torvane Shear Strength (psf)
W = Water Content, percent
LL = Liquid Limit
PL = Plastic Limit
PI = Plasticity Index
G = Grain Size Analysis
C = Consolidation Test

Depth (ft.)	Sample Information										Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows /6 in. Shear Strength (psf) or ROD (%)	N-uncorrected	N _{eq}	Casing Blows	Elevation (ft.)	WDR	WDR/C			
0								SSA	421.4		5" HMA.	0.4	
5	10	24/8	5.00 - 7.00	3/2/3/4	5	8	6				Brown, damp, loose, Silty SAND, some gravel. (Fill).		
10											NW Casing sunk to 12.5 ft bgs while washing ahead.		
	20	24/4	12.50 - 14.50	1/1/1/1	2	3	WOC/4				Brown, wet, very loose, Gravelly SAND, some silt.		
15	30	24/10	15.00 - 17.00	2/2/2/8	4	6	4				Brown, wet, loose, Gravelly SAND, little silt.	GH270701 A-1-m, SM-SM WC=6.5%	
	R1	60/60	17.80 - 22.80	ROD = 33%			080 ND-2			404.0	080 blows for 0.8 ft.	17.8	
20											Top of Bedrock at Elev. 404.0 ft. R1:Bedrock: Grey-green, fine grained, METASILTSTONE, moderately hard, fresh, irregular breaks, joints are undulating to rough, steep to moderately dipping, very close to wide, tight to open. [SMYRNA MILLS FORMATION] Rock Mass Quality = Poor. No Core Times taken. 100% Recovery		
	R2	60/60	22.80 - 27.80	ROD = 73%							R2:Bedrock: Similar to above except joints are very close to moderately close. No Core Times taken. Rock Mass Quality = Fair. 100% Recovery	22.9"-23.4" q _p = 9.5 ksf	
25													
30													
35													
40													
45													
50													

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-HMR-101

Maine Department of Transportation

Soil/Rock Exploration Log

US CUSTOMARY UNITS

Project: Hodgdon Mills Bridge carries
Hodgdon Mills Rd over S. Branch
Location: Hodgdon, Maine

Boring No.: BB-HMR-102

WIN: 22638.00

Driller: MaineDOT

Operator: Doggett/Austin

Logged By: B. Wilder

Date Start/Finish: 5/11/2016: 08:00-11:00

Boring Location: 13+24.1, 4.7 ft R+

Elevation (ft.): 422.8

Datum: NAVD88

Rig Type: CME 45C

Drilling Method: Cased Wash Boring

Casing ID/OD: NW-3"

Auger ID/OD: 5" Solid Stem

Sampler: Standard Split Spoon

Hammer Wt./Fall: 140w/30"

Core Barrel: ND-2"

Water Level#: None Observed

Hammer Efficiency Factor: 0.908

Hammer Type: Automatic ☒ Hydraulic ☐ Rope & Cathead ☐

Definitions:
D = Split Spoon Sample
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C = Consolidation Test

Depth (ft.)	Sample Information										Graphic Log	Visual Description and Remarks	Laboratory Testing Results/ AASHTO and Unified Class
	Sample No.	Pen./Rec. (in.)	Sample Depth (ft.)	Blows /6 in. Shear Strength (psf) or ROD (%)	N-uncorrected	N _{eq}	Casing Blows	Elevation (ft.)	WDR	WDR/C			
0								SSA	422.4		5" HMA.	0.4	
5	20	24/8	5.00 - 7.00	11/13/4/6	17	26					Brown, moist, medium dense, Gravelly SAND, some silt.		
10	30	24/4	10.00 - 12.00	9/9/1/3	16	24	3				Similar to above.		
15	R1	52.8/45	14.80 - 19.20	ROD = 0%			0168 ND-2				0168 blows for 0.8 ft. R1:BOULDER and COBBLES. R1:Core Times (min:sec) 14.8-15.8 ft (2:12) 15.8-16.8 ft (1:04) 16.8-17.8 ft (1:16)	GH270702 A-1-b, SM WC=6.5%	
20	R2	25.2/ 25.2	19.20 - 21.30	ROD = 0%						405.2	Top of Bedrock at Elev. 405.2 ft. R1:Bedrock: Grey-green, fine grained, METASILTSTONE, moderately hard, highly weathered zones, joints are steep, eratic, open, frequent iron staining. [SMYRNA MILLS FORMATION] Rock Mass Quality = Very Poor. R1:Core Times Cont. 17.8-18.8 ft (2:30) 18.8-19.2 ft (2:40) Core Blocked 85% Recovery	17.6	
	R3	39.6/ 39.6	21.30 - 24.60	ROD = 20%							R2:Bedrock: Grey-green, fine grained, METASILTSTONE, moderately hard, slight hydrothermal weathering, joints are steep to vertical, close, occasionally healed to open. Rock Mass Quality = Very Poor. R2:Core Times (min:sec) 19.2-20.2 ft (1:57) 20.2-21.2 ft (2:34) 21.2-21.3 ft (2:00) Core Blocked 100% Recovery		
25	R4	6/6	24.60 - 25.10	ROD = 0%						397.7	R3:Bedrock: Similar to R2. Rock Mass Quality = Very Poor. R3:Core Times (min:sec) 21.3-22.3 ft (1:40) 22.3-23.3 ft (2:52) 23.3-24.3 ft (2:44) 24.3-24.6 ft (2:00) Core Blocked 100% Recovery		
30											R4:Bedrock: Similar to R2. Rock Mass Quality = Very Poor. R4:Core Times (min:sec) 24.6-25.1 ft (3:00) Core Blocked 100% Recovery		
35											Bottom of Exploration at 25.1 feet below ground surface. Boulder movement caused misalignment of casing, Drill hole abandoned.		
40													
45													
50													

Remarks:

Stratification lines represent approximate boundaries between soil types; transitions may be gradual.
* Water level readings have been made at times and under conditions stated. Groundwater fluctuations may occur due to conditions other than those present at the time measurements were made.

Page 1 of 1

Boring No.: BB-HMR-102

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2263(800)

WIN
022638.00

BRIDGE NO. 3103
BRIDGE PLANS

HODGDON MILLS BRIDGE
SOUTH BRANCH MEDUXNEKEAG RIVER
HODGDON

AROOSTOOK COUNTY

BORING LOGS

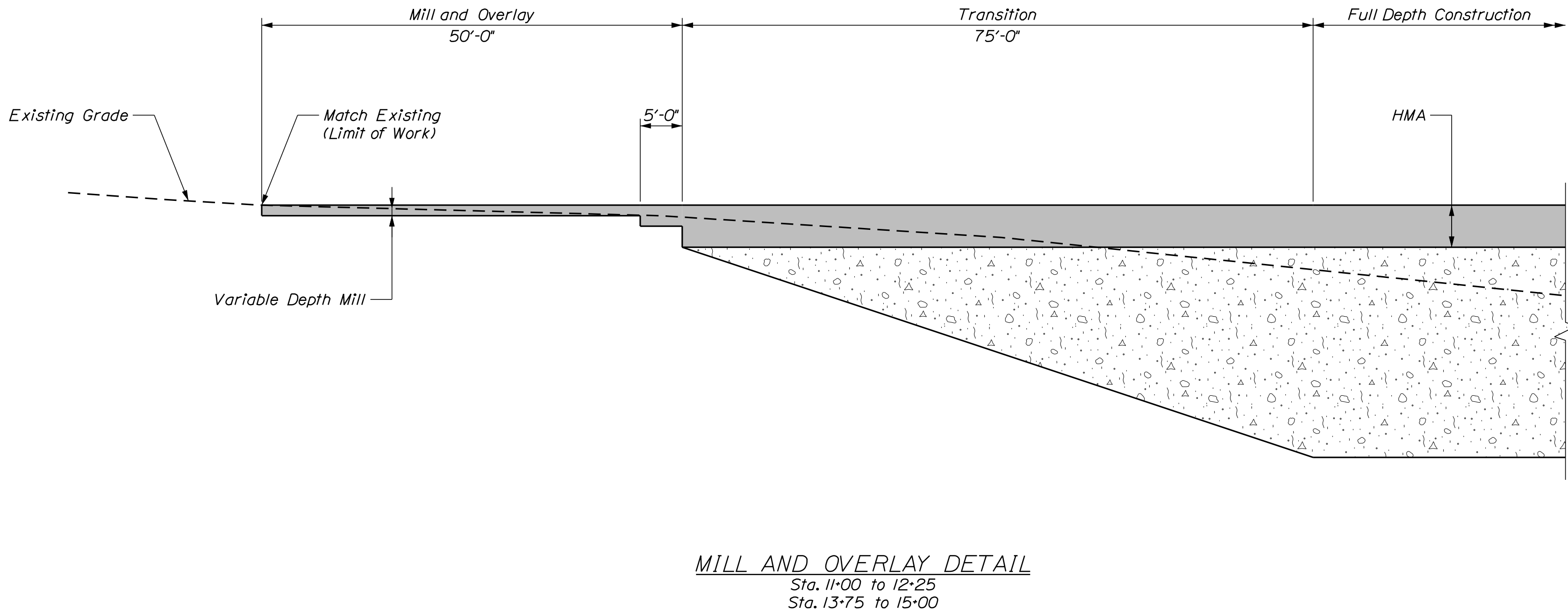
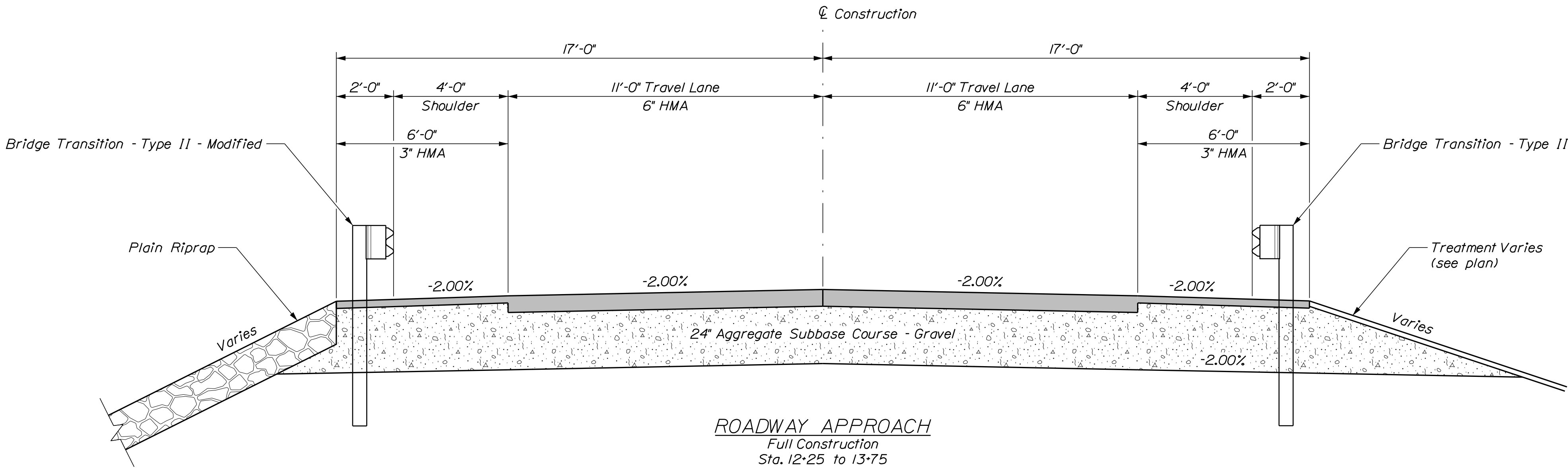
SHEET NUMBER
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OF 22

Date:10/29/2018

Username:

Division: BRIDGE

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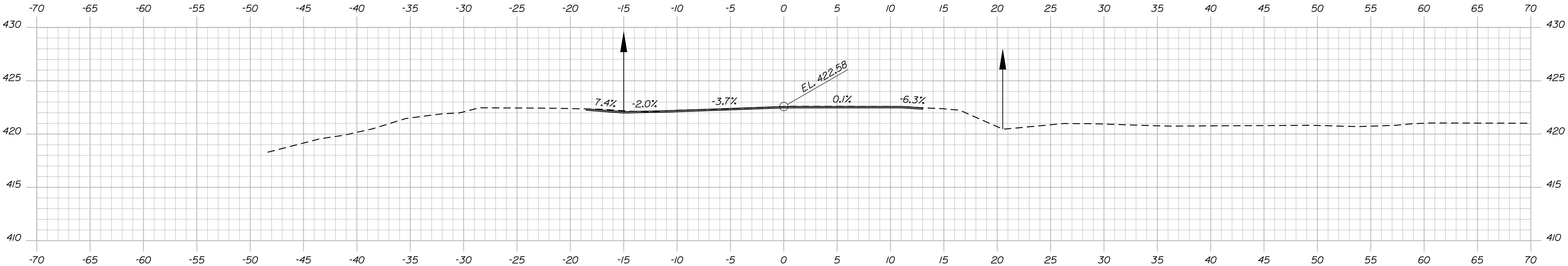
STATE OF MAINE DEPARTMENT OF TRANSPORTATION STP-2263(800)	BRIDGE PLANS			
	BRIDGE NO. 3103 022638.00			
	WIN			
HODGDON MILLS BRIDGE SOUTH BRANCH MEDUXNEKEAG RIVER HODGDON AROOSTOOK COUNTY APPROACH SECTIONS AND DETAILS	PROJ. MANAGER	M. Wright	BY	DATE
	DESIGN-DETAILED	S. Hodgdon	P. Duffin	Apr. 2018
	CHECKED-REVIEWED	O. Krauss	S. Hodgdon	Aug. 2018
	DESIGNS-DETAILED			
	REVISIONS 1			
SHEET NUMBER 08 OF 22	REVISIONS 2			
	REVISIONS 3			
	REVISIONS 4			
	FIELD CHANGES			

Date:10/29/2018

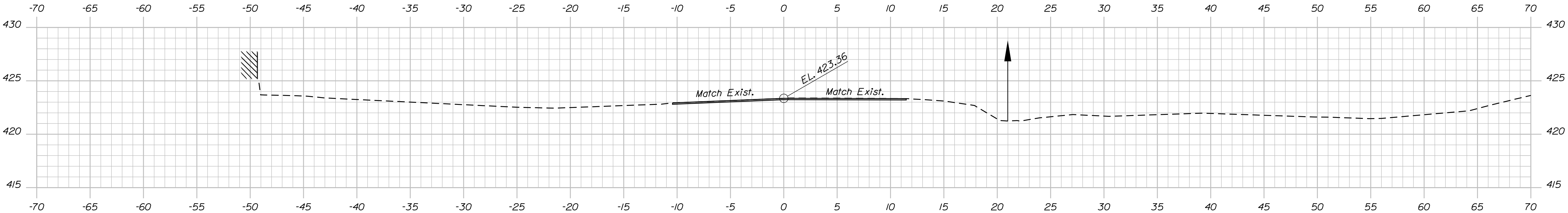
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Division: BRIDGE

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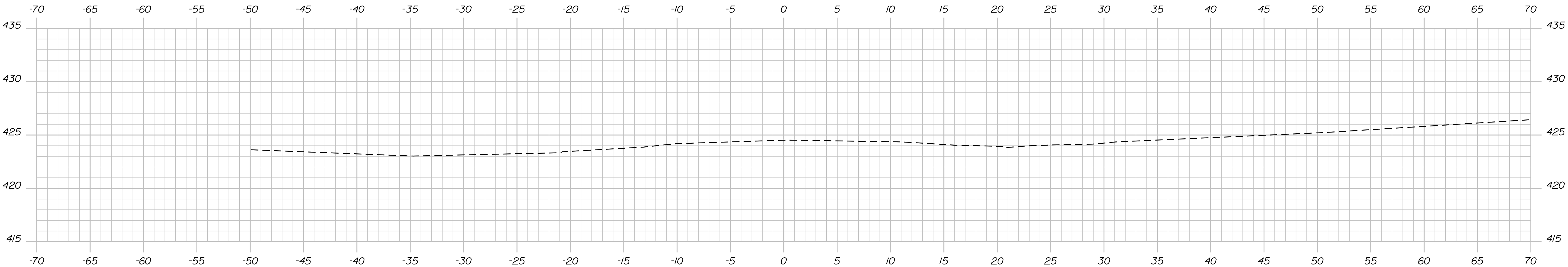


11+25.00



11+00.00

Match Existing
Begin Mill and Overlay



10+75.00

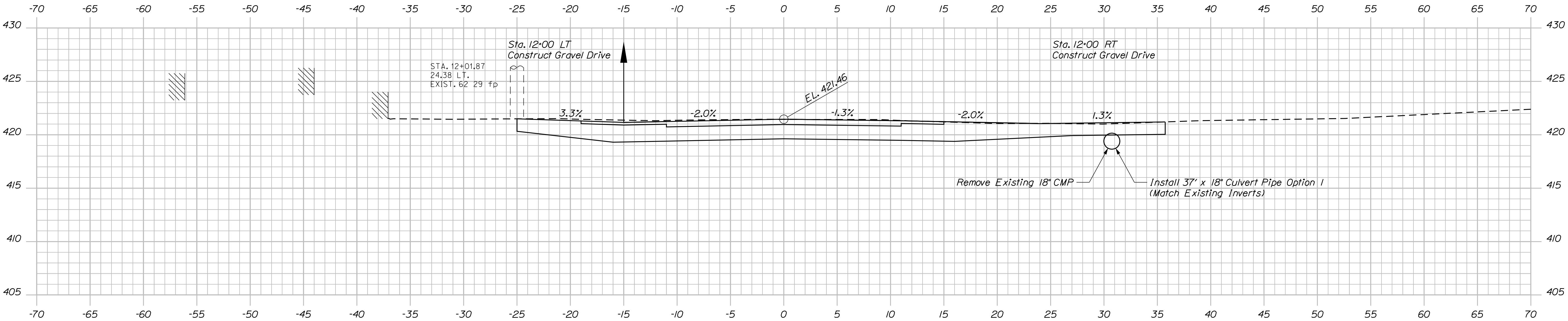
PROJ. MANAGER	M. Wright	BY	DATE
DESIGN-DETAILED	S. Hodgdon	P. Dustin	Apr. 2018
CHECKED-REVIEWED	O. Krauss	S. Hodgdon	Aug. 2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date:10/29/2018

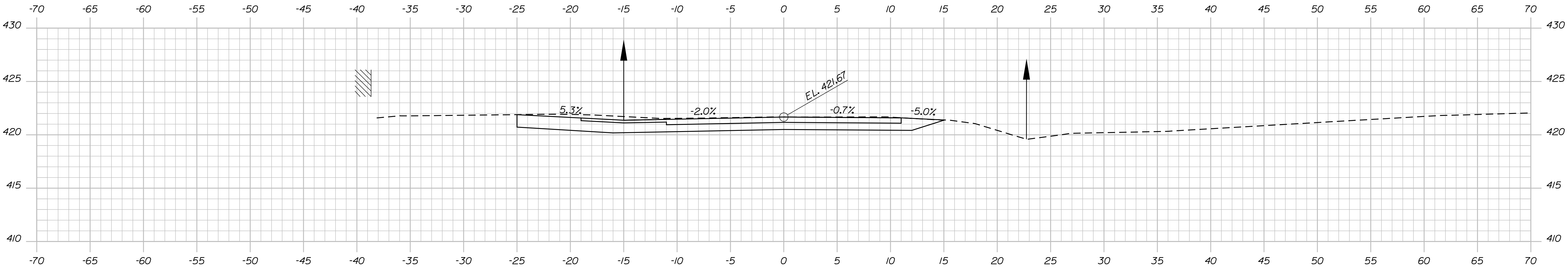
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Division: BRIDGE

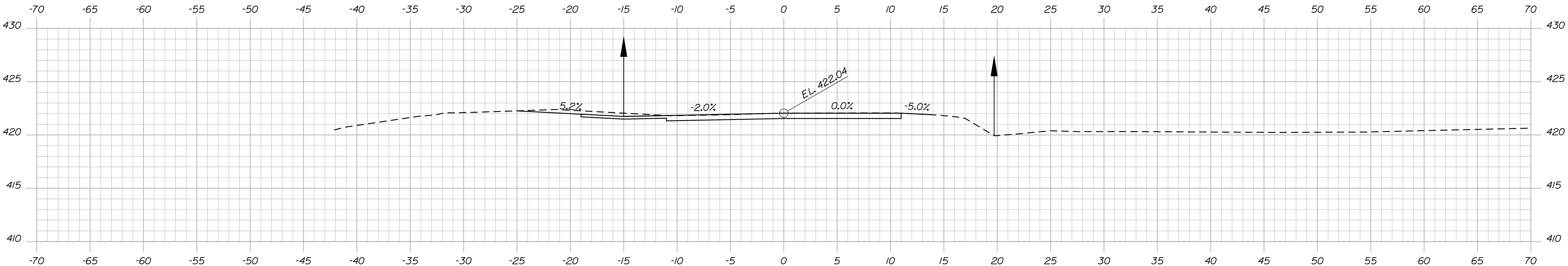
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12+00.00



11+75.00



11+50.00

End Mill and Overlay
Begin Transition

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2263(800)

BRIDGE NO. 3103022638.00WINBRIDGE PLANS

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150 Dow Street, Manchester, NH 03101
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PROJ. MANAGER	M. Wright	BY	P. Duffin	DATE	Apr. 2018
CHECKED	S. Hodgdon	REVIEWED	O. Krauss	DATE	Aug. 2018
DESIGN DETAIL		DESIGN DETAIL			
REVISIONS	1				
REVISIONS	2				
REVISIONS	3				
REVISIONS	4				
FIELD CHANGES					

HODGDON MILLS BRIDGE
SOUTH BRANCH MEDUXNEKEAG RIVER
HODGDON AROOSTOOK COUNTY

CROSS SECTIONS

SHEET NUMBER

10

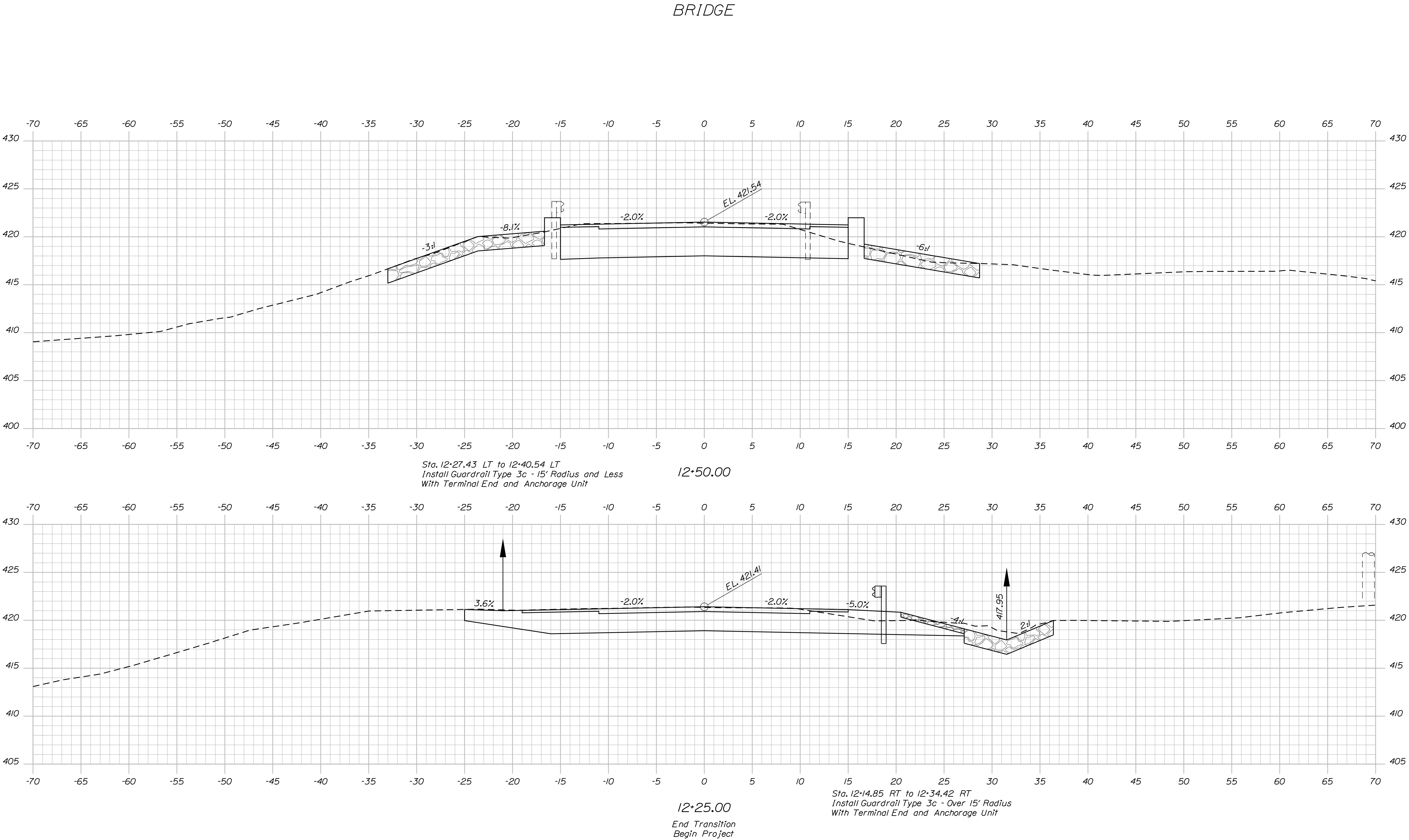
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Date:10/29/2018

Username:

Division: BRIDGE

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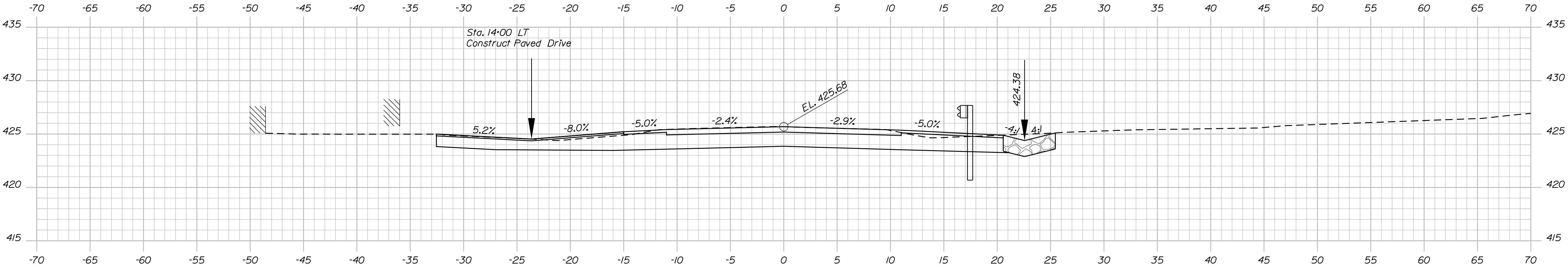
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CHECKED-REVIEWED	S. Hodgdon	P. Duffin	Apr. 2018
DESIGN-DETAILED	O. Krauss	S. Hodgdon	Aug. 2018
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REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date:10/29/2018

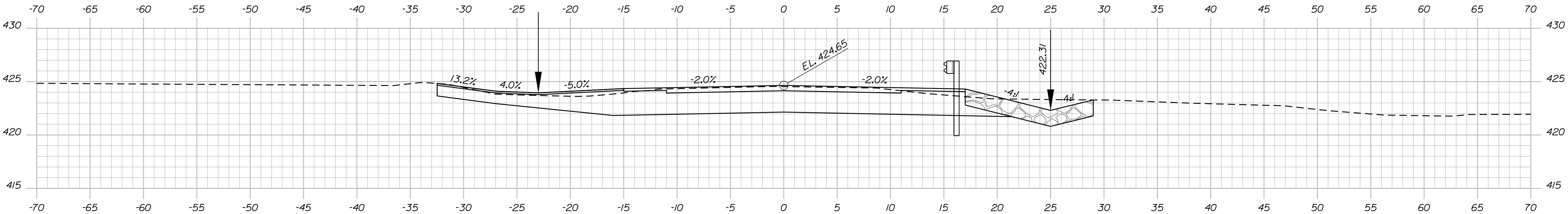
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Division: BRIDGE

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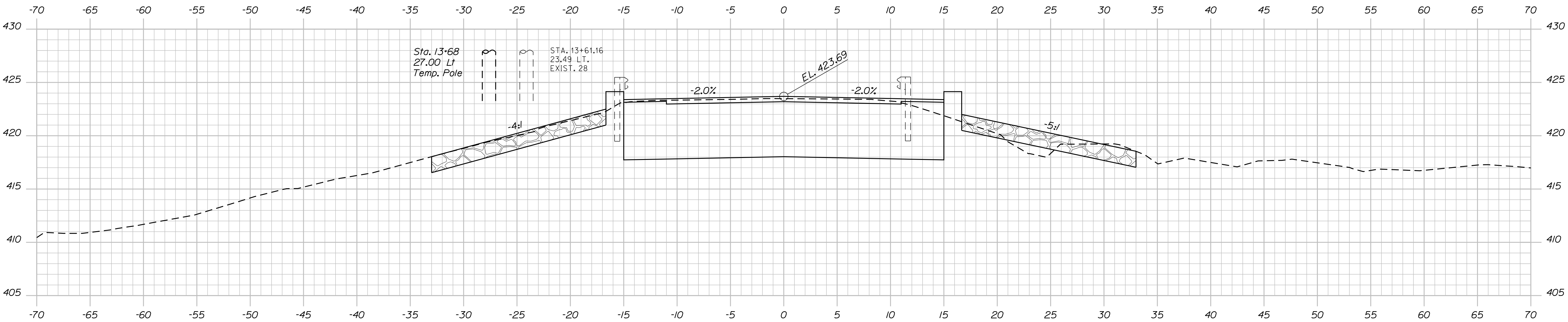
14+00.00



13+75.00

End Project
Begin Transition

Sta. 13+73.15 RT to 14+09.52 RT
Install Low Volume End Unit



13+50.00

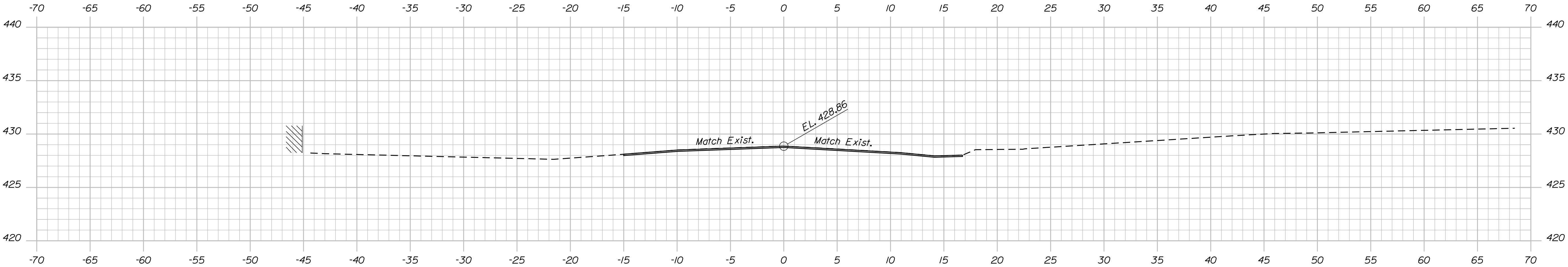
PROJ. MANAGER	M. Wright	BY	DATE
CHECKED-DETAILED	S. Hodgdon	P. Duffin	Apr. 2018
DESIGNED-DETAILED	O. Krauss	S. Hodgdon	Aug. 2018
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date:10/29/2018

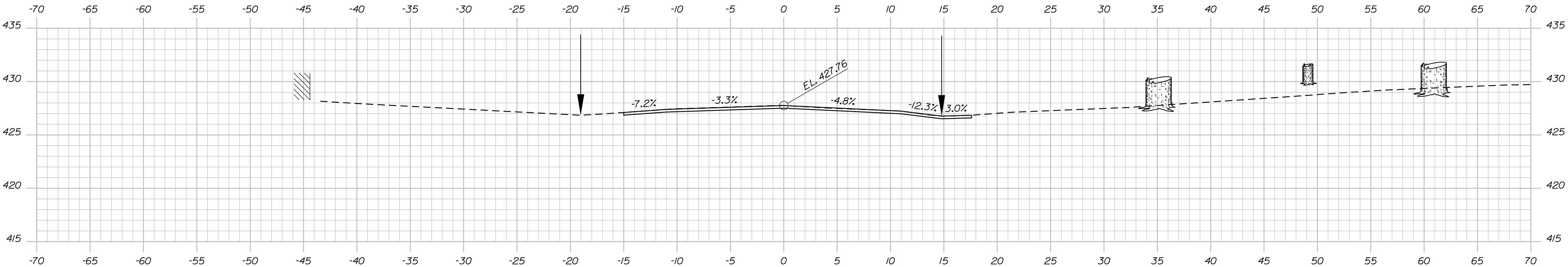
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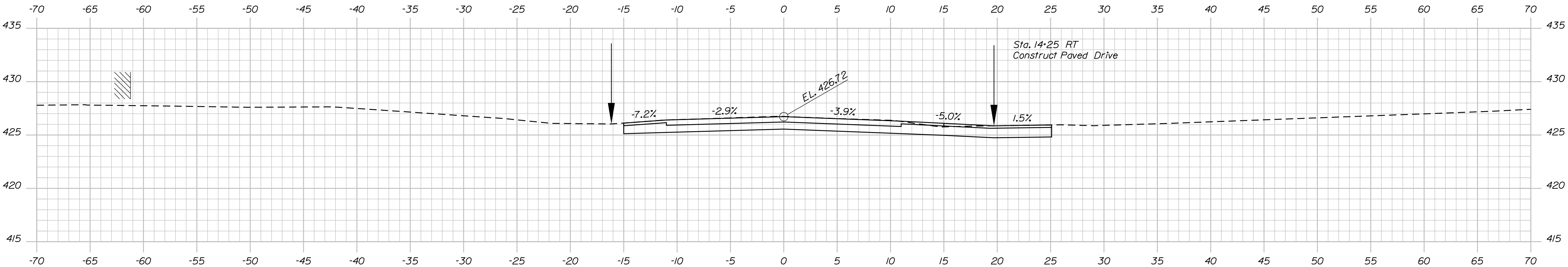


14+75.00



14+50.00

End Transition
Begin Mill and Overlay



14+25.00

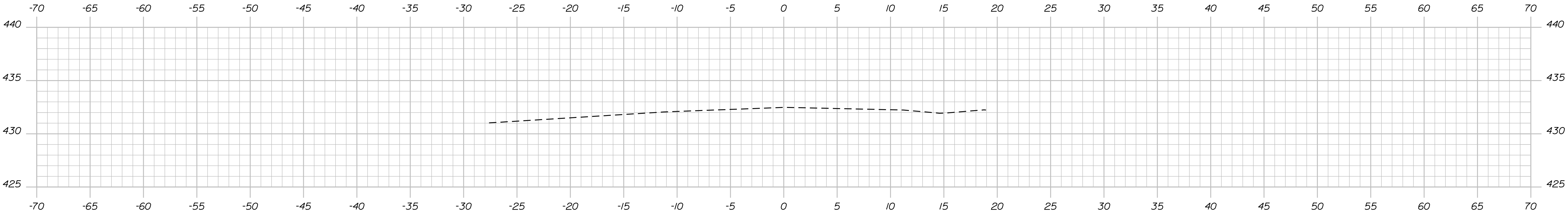
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FIELD CHANGES			

Date:10/29/2018

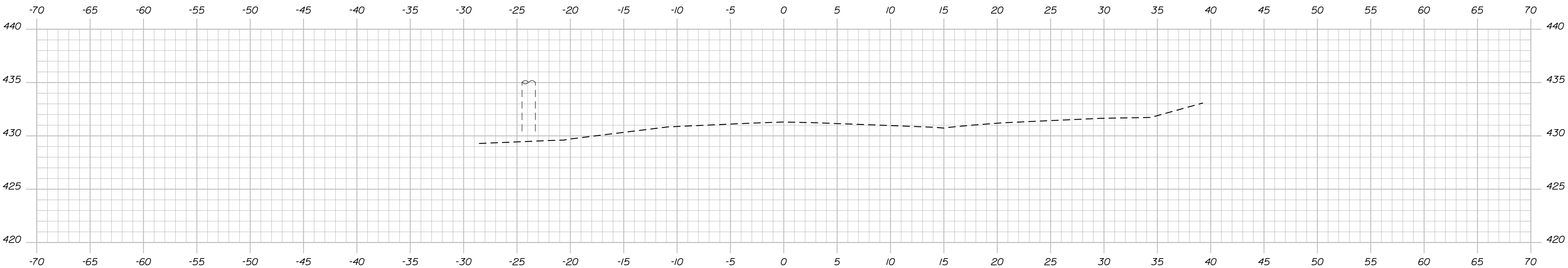
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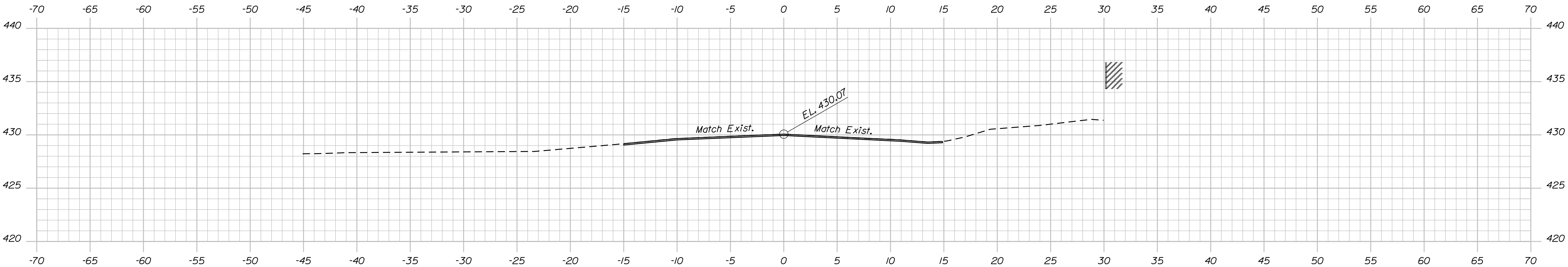
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15+50.00



15+25.00



15+00.00

End Mill and Overlay
Match Existing

STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
	STP-2263(800)	
	WIN	022638.00
BRIDGE NO. 3103		BRIDGE PLANS

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PROJ. MANAGER	M. Wright	BY	DATE
CHECKED-REVIEWED	S. Hodgdon	P. Duffin	Apr. 2018
DESIGN-DETAILED	O. Krauss	S. Hodgdon	Aug. 2018
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REVISIONS 1			
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FIELD CHANGES			

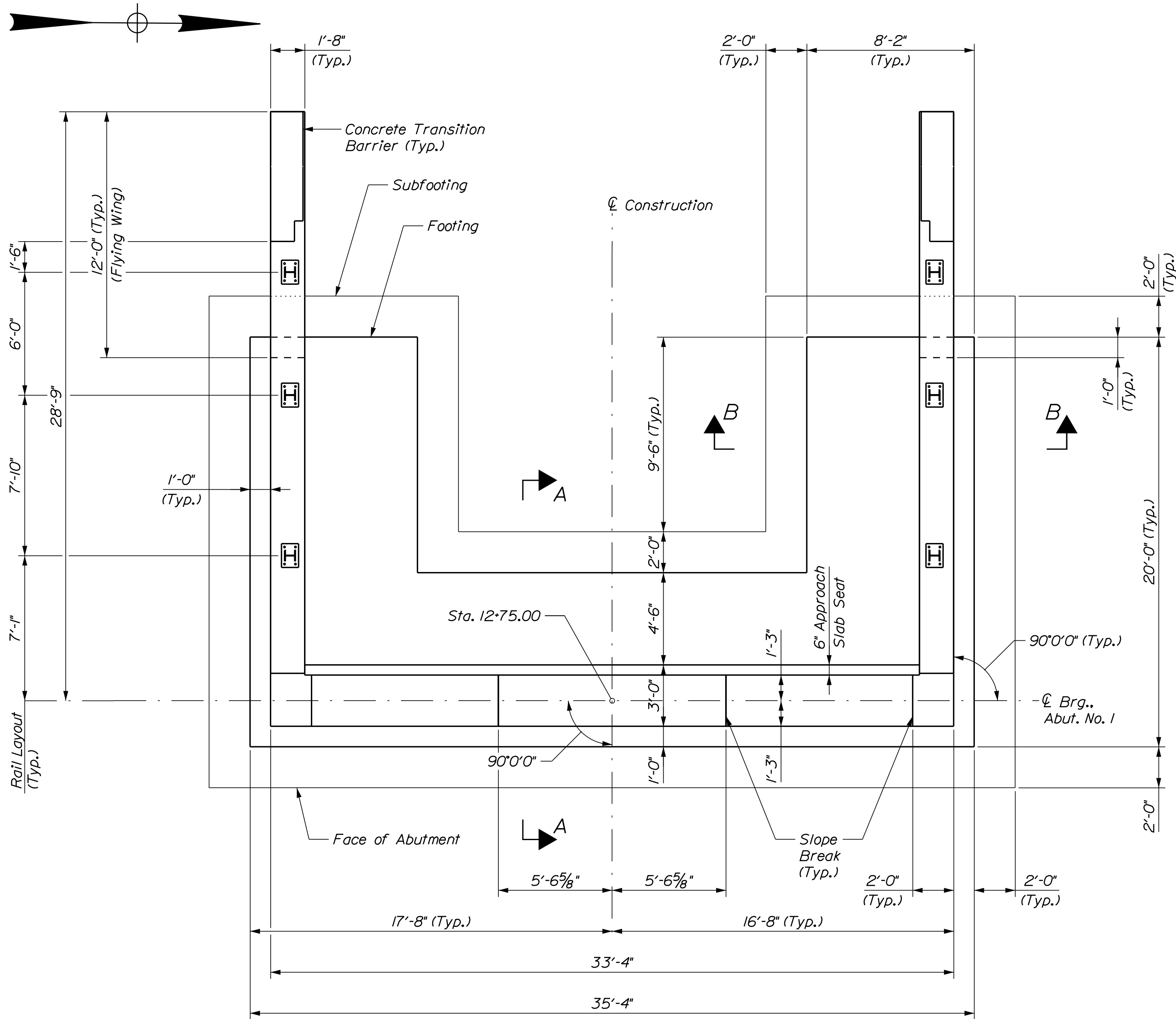
HODGDON MILLS BRIDGE

SOUTH BRANCH MEDUXNEKEAG RIVER

HODGDON AROOSTOOK COUNTY

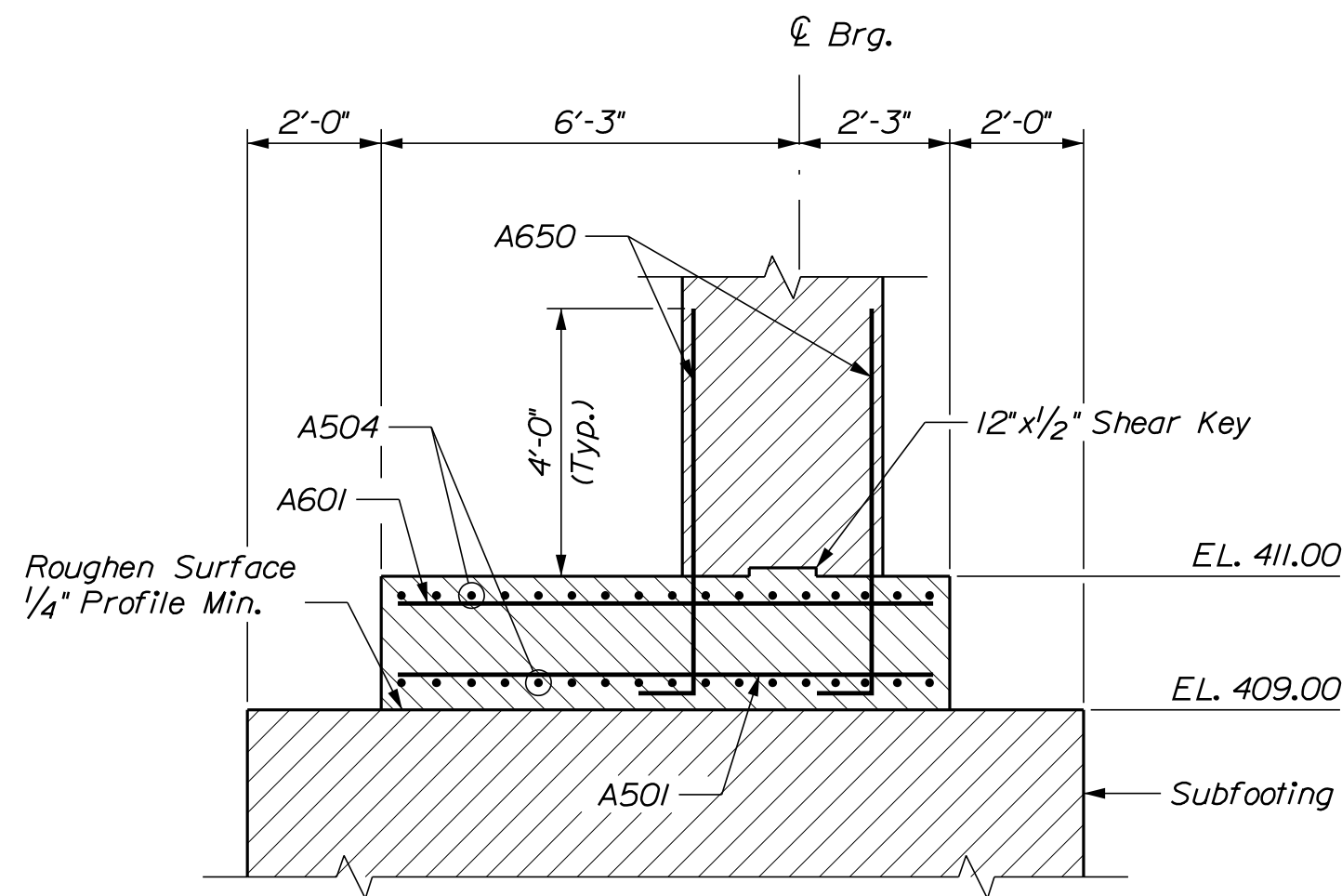
CROSS SECTIONS

SHEET NUMBER
14
OF 22

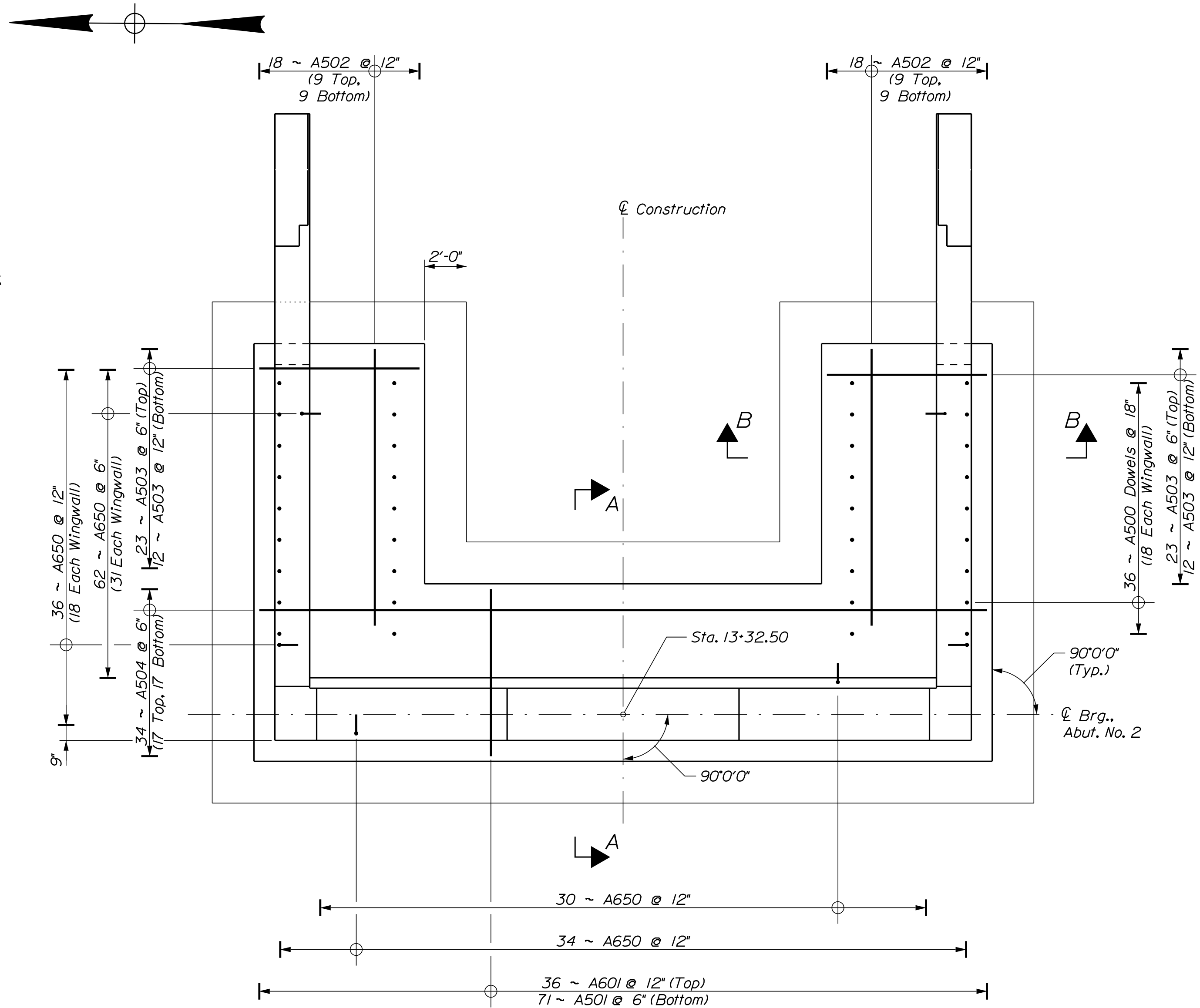


ABUTMENT NO. 1 PLAN

(See Abut. No. 2 for Footing Reinforcement)
(Curb Batter not Shown for Clarity)

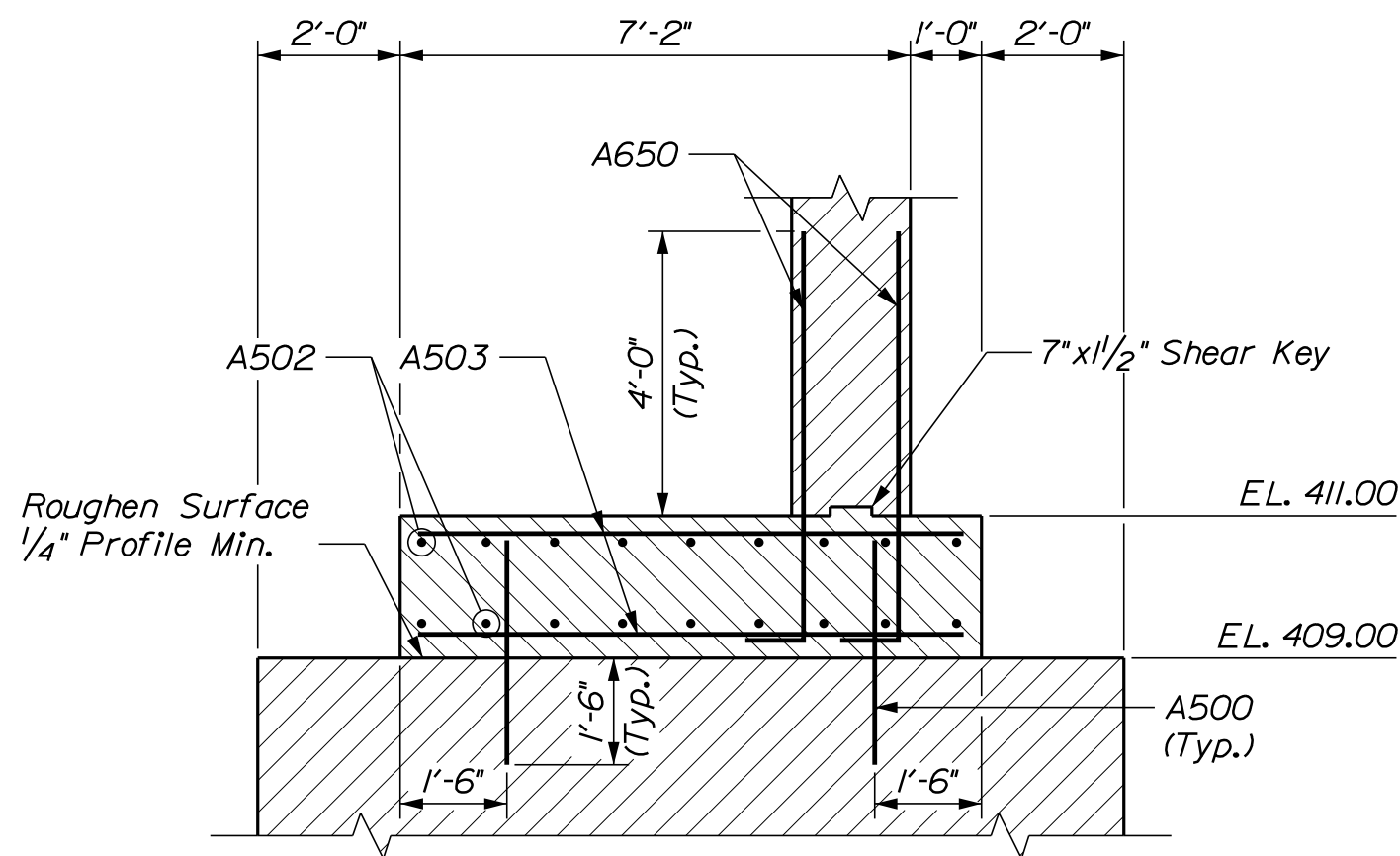


SECTION A-A



ABUTMENT NO. 2 PLAN

(See Abut. No. 1 for Dimensions)



SECTION B-B

SEAL COFFERDAM NOTES

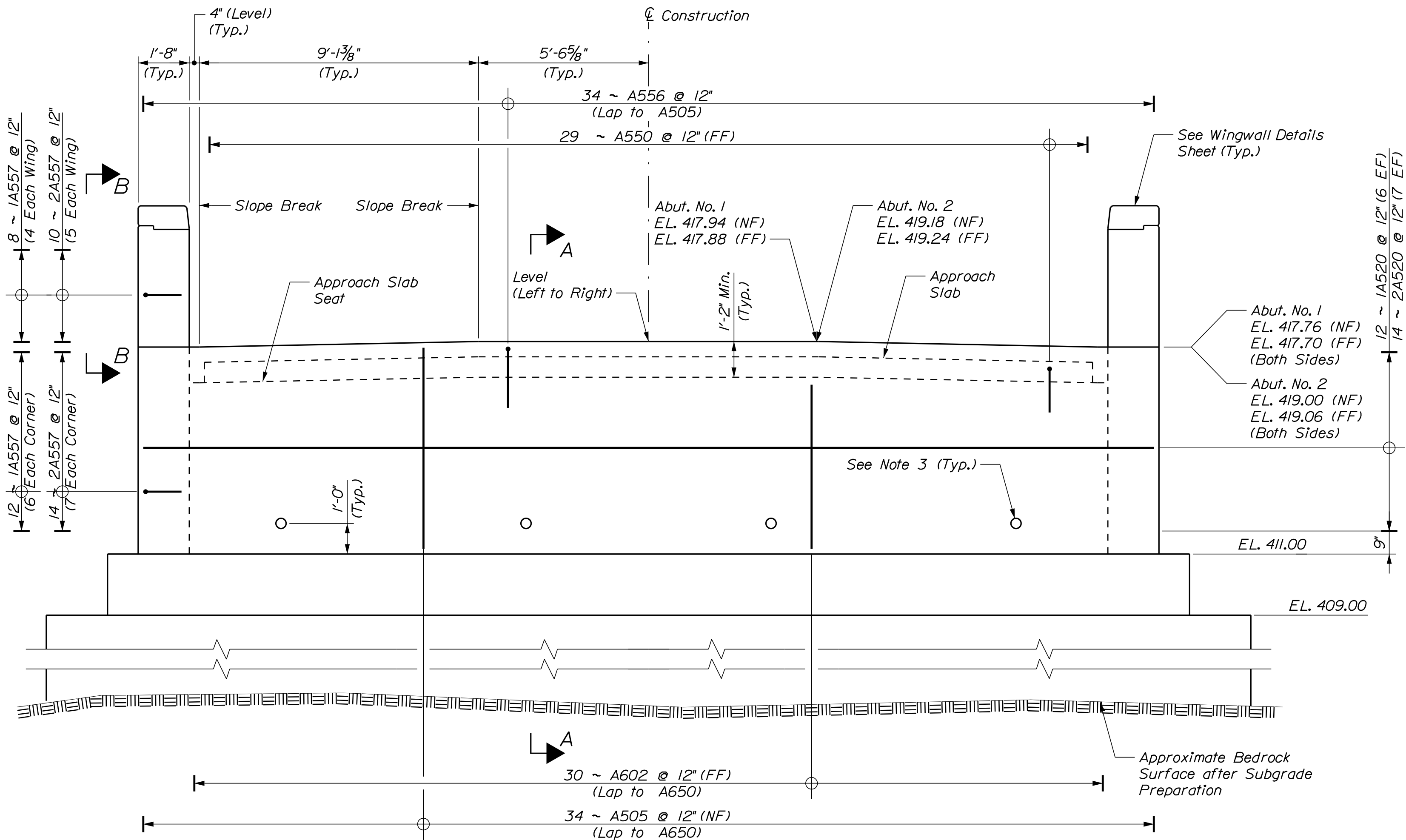
1. When sheet piling is used for cofferdams, appropriate rolled corners shall be used, and the inside face of the sheet piling shall be at or outside of the subfooting concrete dimensions shown.
2. The subfooting concrete placement dimensions shown represent the minimum size necessary to meet design requirements and are not based on the use of any particular sheet pile section.
3. The horizontal pay limit for subfooting concrete will be to the dimensions shown on the plans. No additional payment will be made for concrete placed outside these limits.
4. The method of placing dowels in the subfooting concrete shall be approved by the Resident. Anchoring material, if applicable, shall be one of the products listed on the Qualified Products List of Grout Materials.
5. Seal concrete shall be placed on bedrock cleaned of weathered rock, loose fractured bedrock, boulders, and soil. Where the bedrock slope exceeds 4H:1V, the bedrock surface shall be benched in level steps or made completely level.
6. Seal/subfooting concrete shall be Class A.
7. The concrete subfooting shall have a smooth, regular vertical surface. Cofferdams with an irregular inside surface, such as sand bags, shall have formwork for the surrounding concrete installed inside the cofferdam. Formwork required will not be paid for separately, but will be considered incidental to the appropriate Pay Item.

Date:11/9/2018

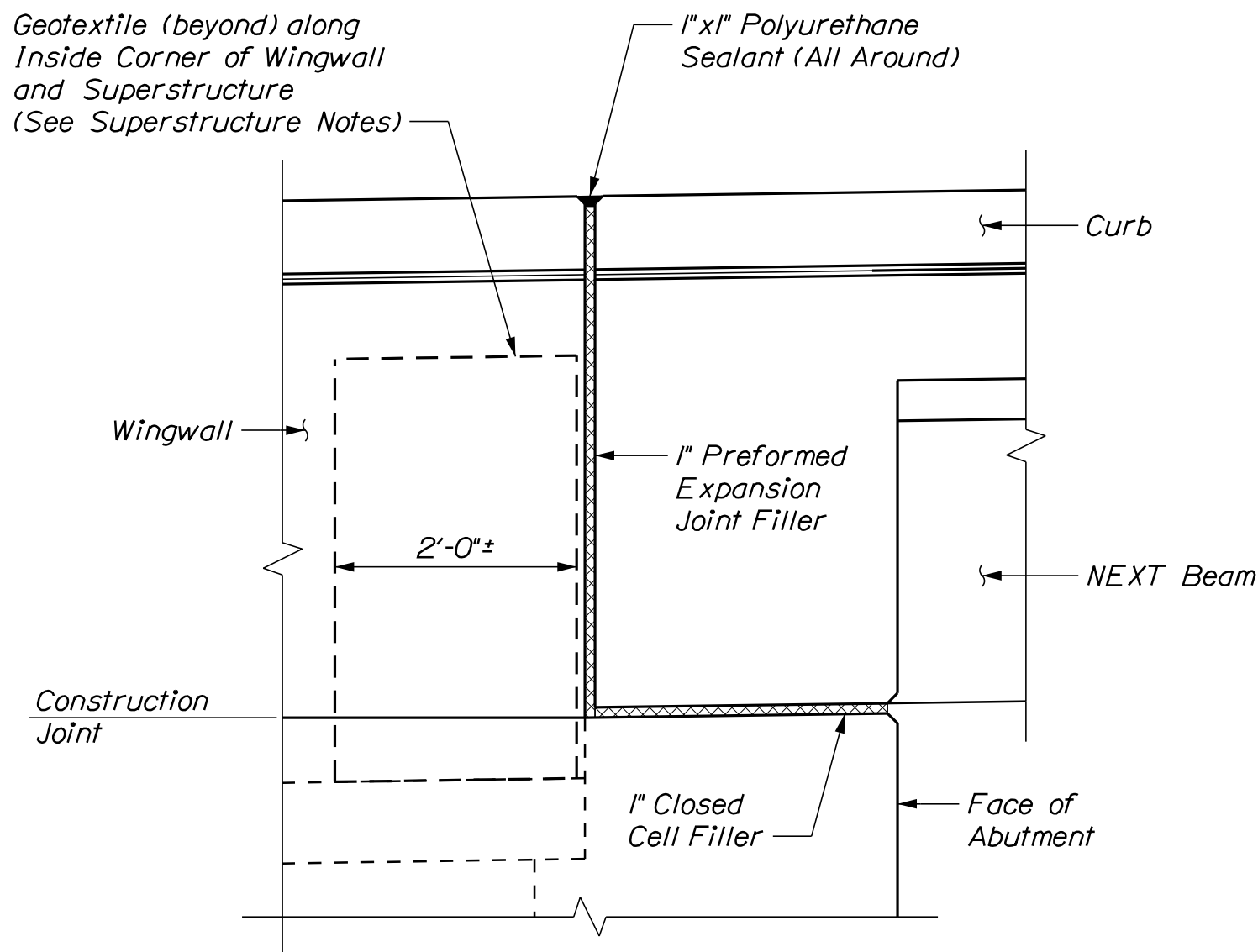
Username:

Division: BRIDGE

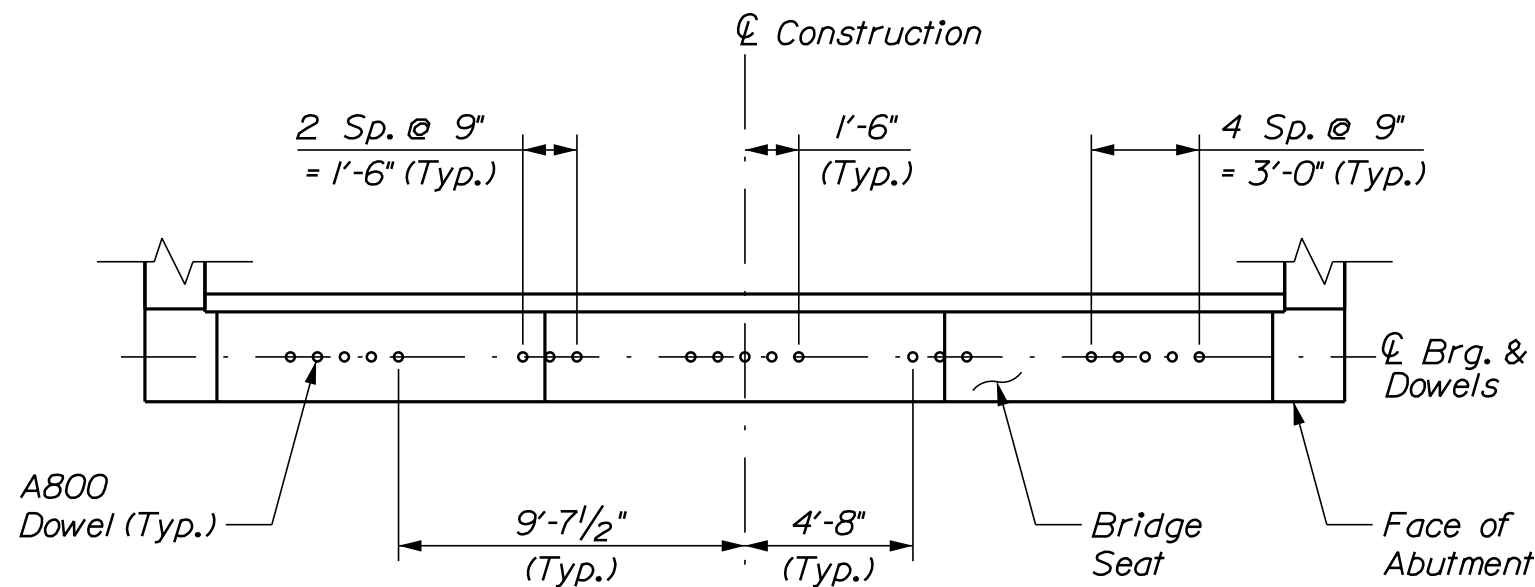
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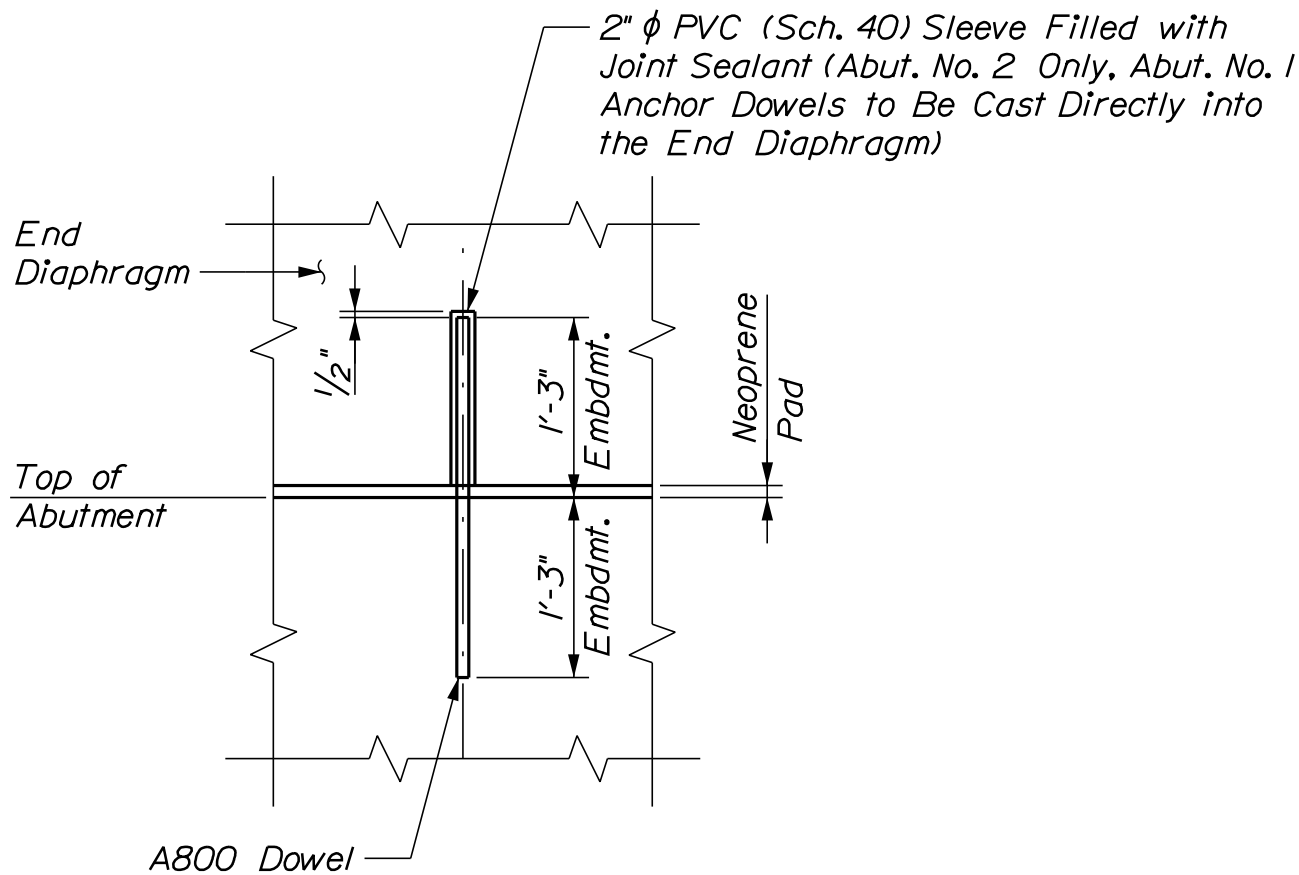
ABUTMENT ELEVATION
(Abut. No. 1 Shown, unless Noted)
(A800 Dowels not Shown)



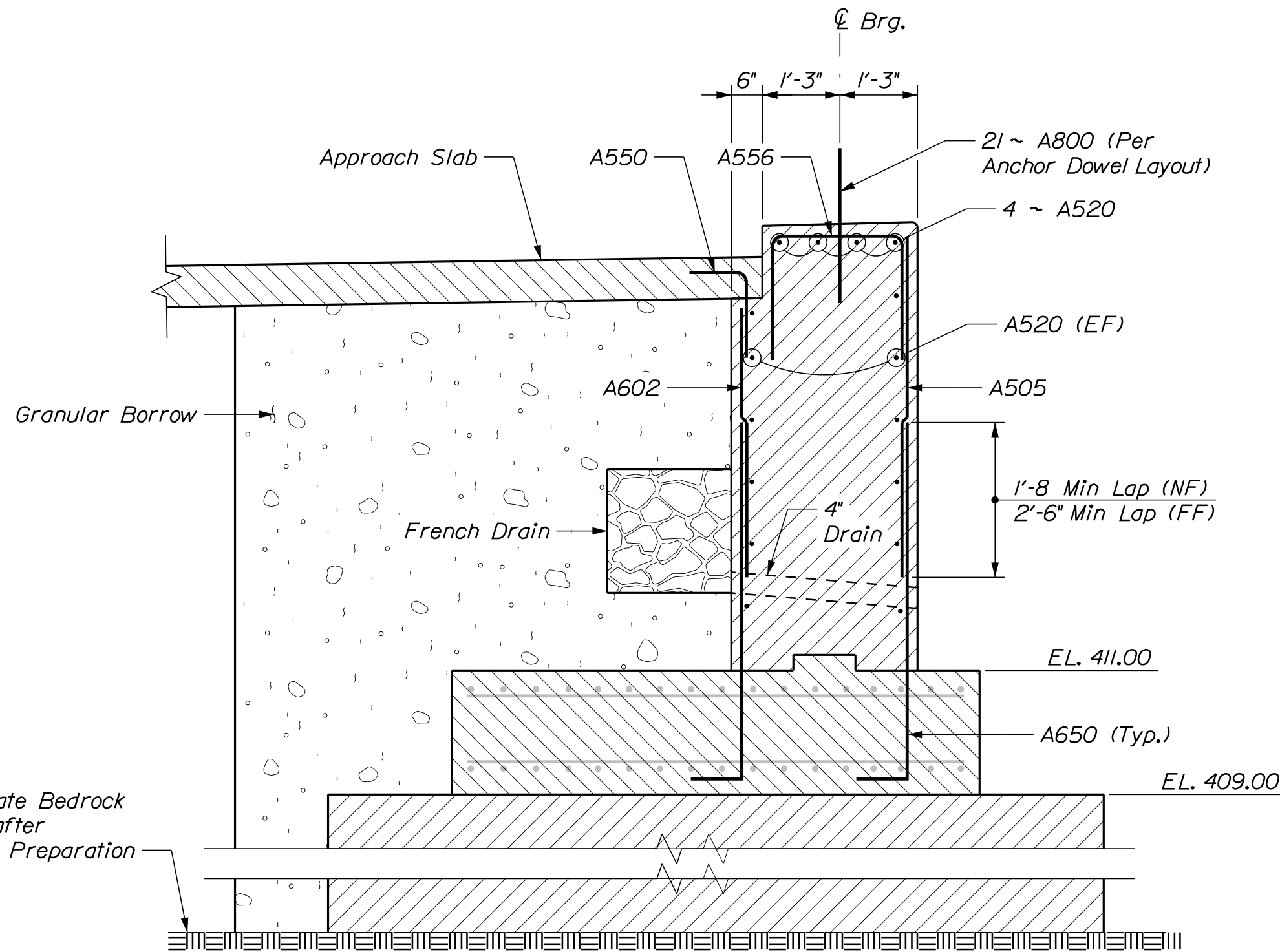
VIEW B-B



ANCHOR DOWEL LAYOUT
(21 per Abutment)



ANCHOR DOWEL DETAIL



SECTION A-A
(Abutment No. 1 Shown)

ABUTMENT NOTES

1. The maximum factored applied footing pressure is 12 ksf (Strength Limit State).
2. Reinforcing steel shall have a minimum concrete cover of 2 inches in the walls and 3 inches in the footings unless otherwise noted.
3. Place 4-in. diameter drains in the breastwall and wingwalls at 10-ft maximum spacing. The exact location will be determined by the Resident.
4. Place the parapet portions of the wingwalls after erection of the precast beams to ensure an accurate match with the superstructure.
5. The Contractor shall install Transition Barrier vertical closed stirrups, as shown in Standard Details Section 526, prior to the placement of the curb concrete.
6. Cover joints where waterstops are not required in accordance with Standard Details Section 502.
7. Construct French Drains behind the abutments and wingwalls in accordance with Standard Specifications Section 512, French Drains.
8. Abutments, wingwalls and their footings shall be backfilled with Granular Borrow. Pay limits will be the structural excavation limits in cut areas and a vertical plane located 10 feet behind the walls in fill areas.

KEY

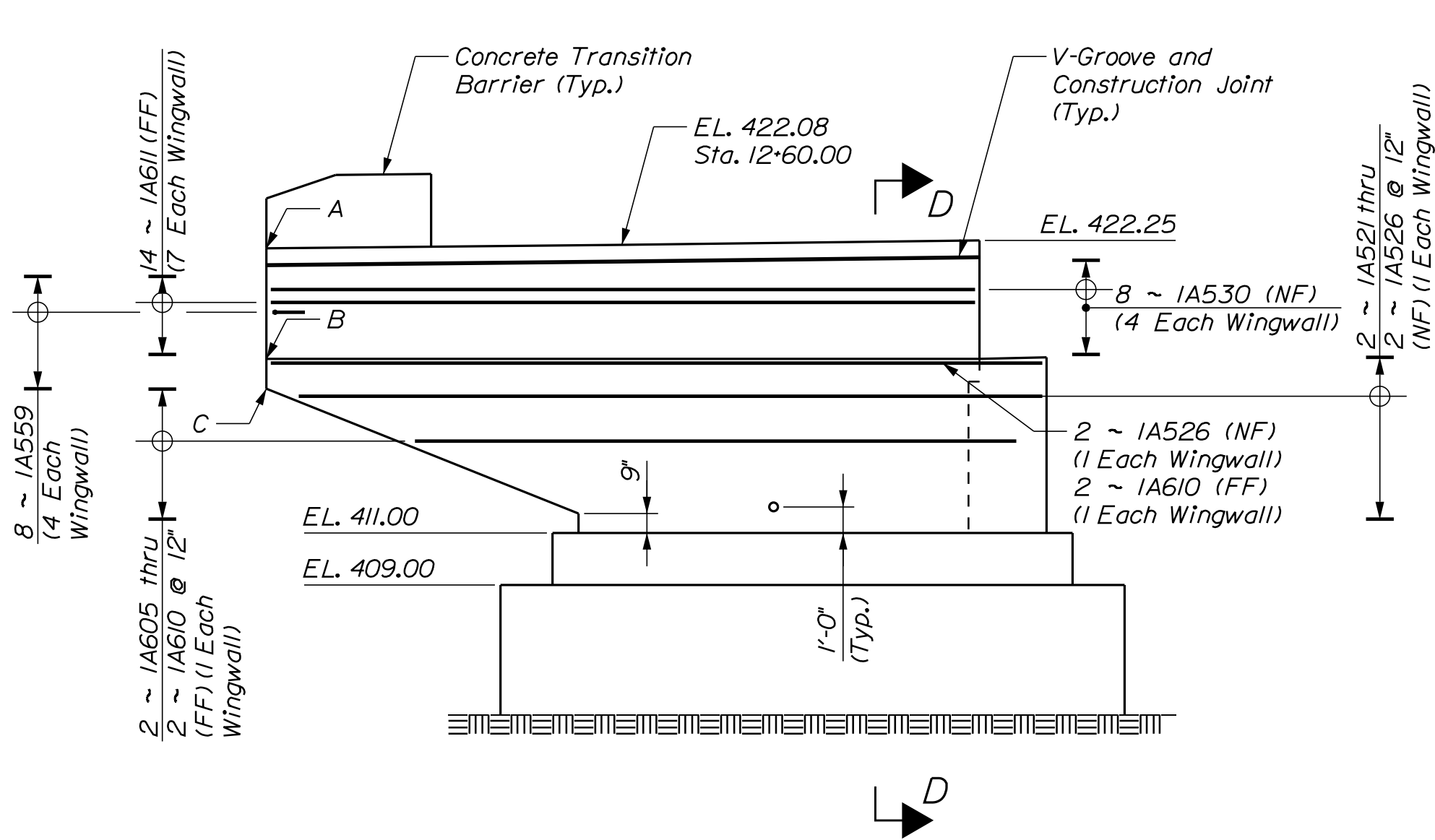
NF = Near Face
FF = Far Face

Date:10/29/2018

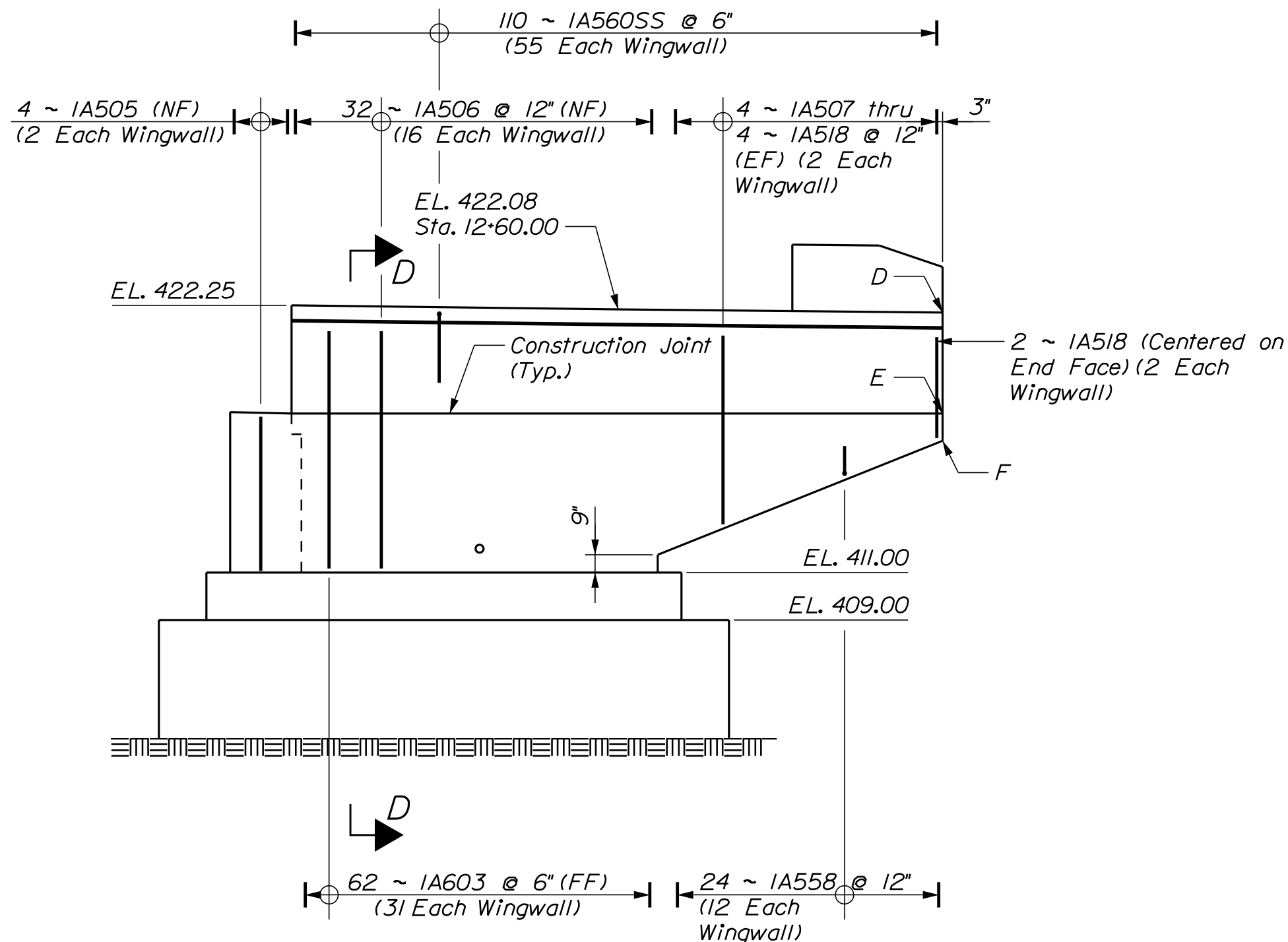
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Division: BRIDGE

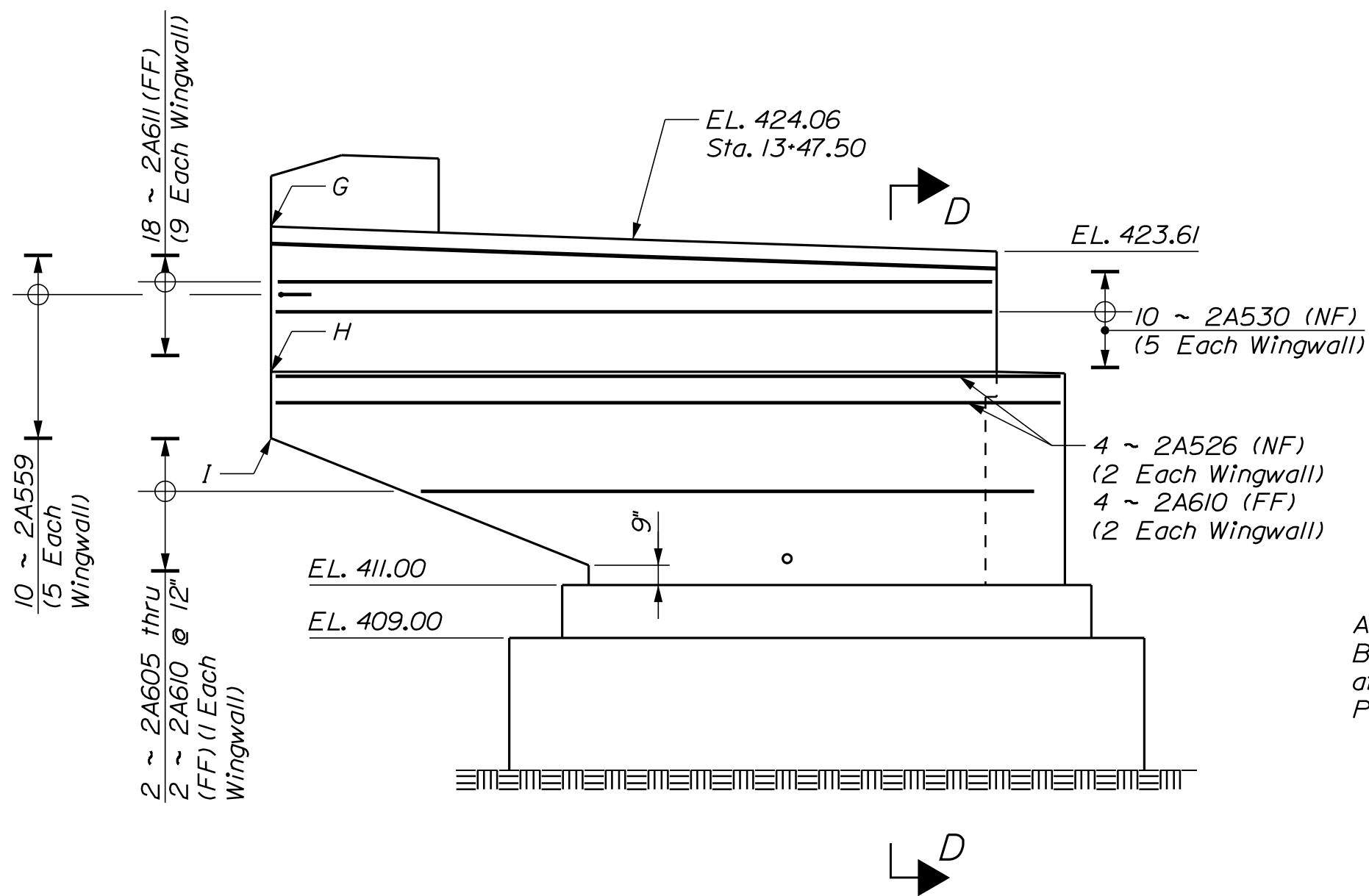
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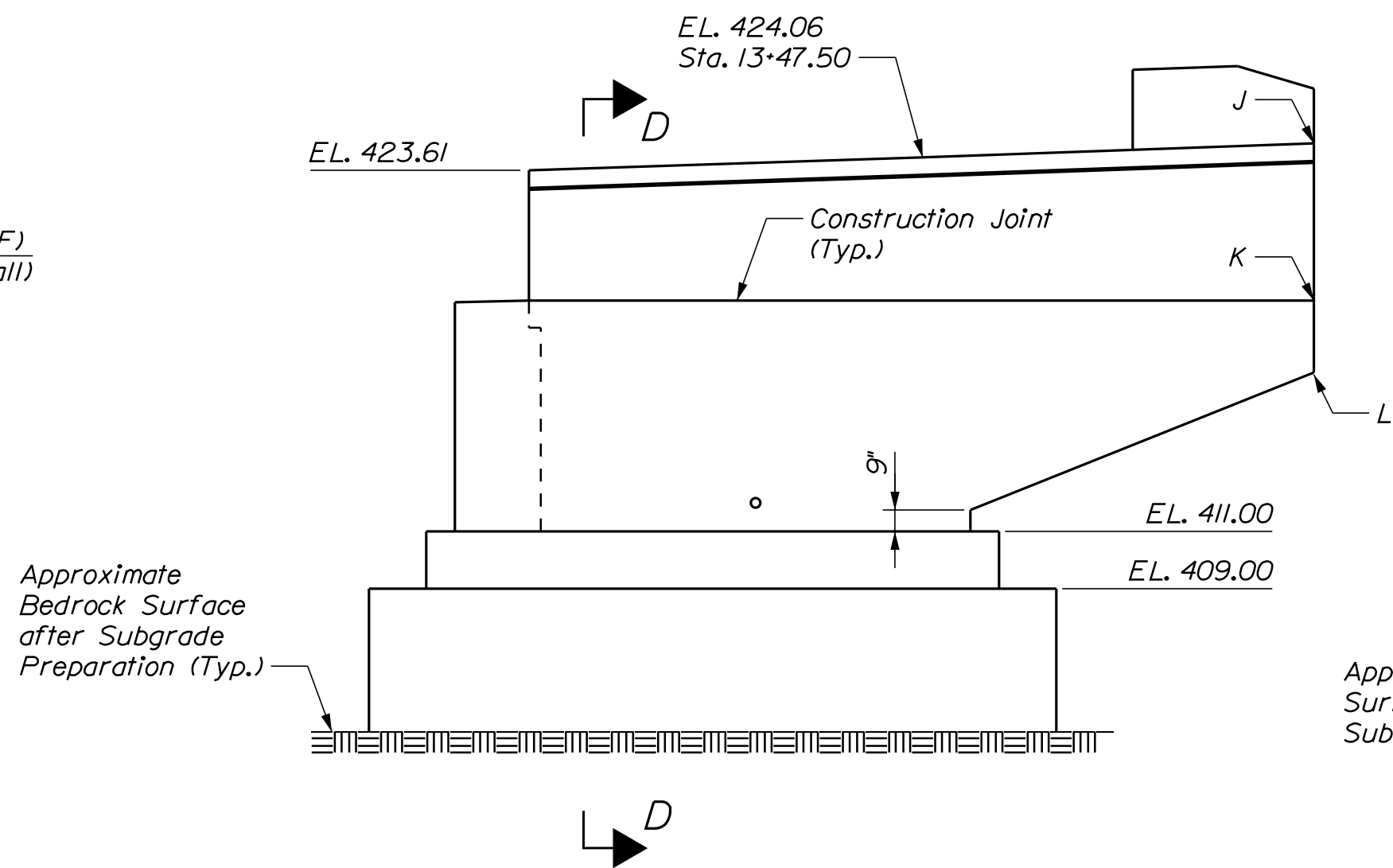
ABUTMENT NO. 1
SW WINGWALL ELEVATION



ABUTMENT NO. 1
NW WINGWALL ELEVATION



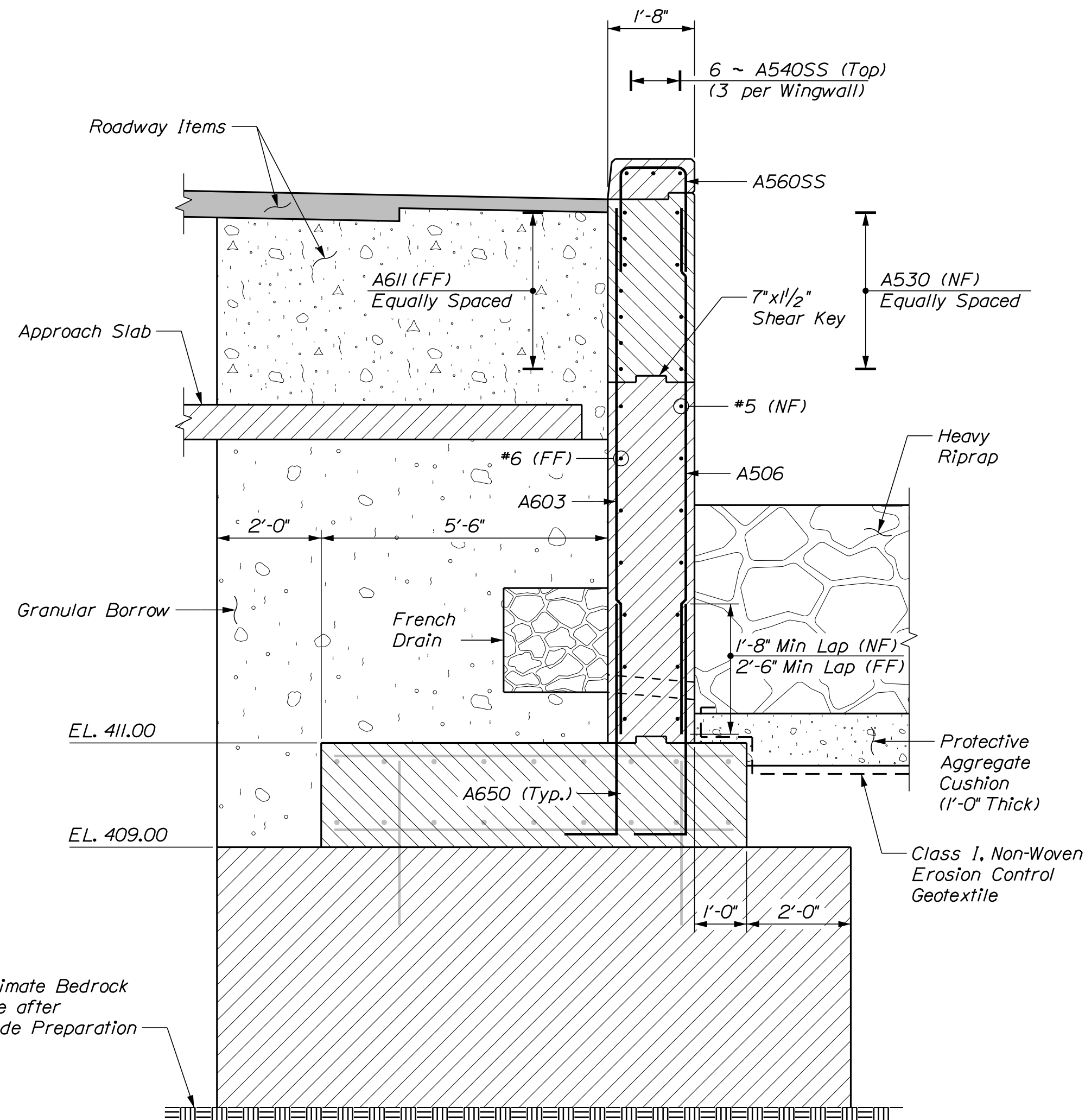
ABUTMENT NO. 2
NE WINGWALL ELEVATION
(Reinforcing Similar to Abut. No. 1, Except as Noted)



ABUTMENT NO. 2
SE WINGWALL ELEVATION
(Reinforcing Similar to Abut. No. 1)

END OF WINGWALL
ELEVATIONS TABLE

Abutment No. 1	Point	Elevation	Abutment No. 2	Point	Elevation
	SW Wingwall			SW Wingwall	
	A	421.95		G	424.55
	B	417.70		H	419.06
	C	416.55		I	416.55
	NW Wingwall			NW Wingwall	
	D	421.95		J	424.55
	E	417.70		K	419.06
F	416.55	L	416.55		



SECTION D-D

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-2263(800)

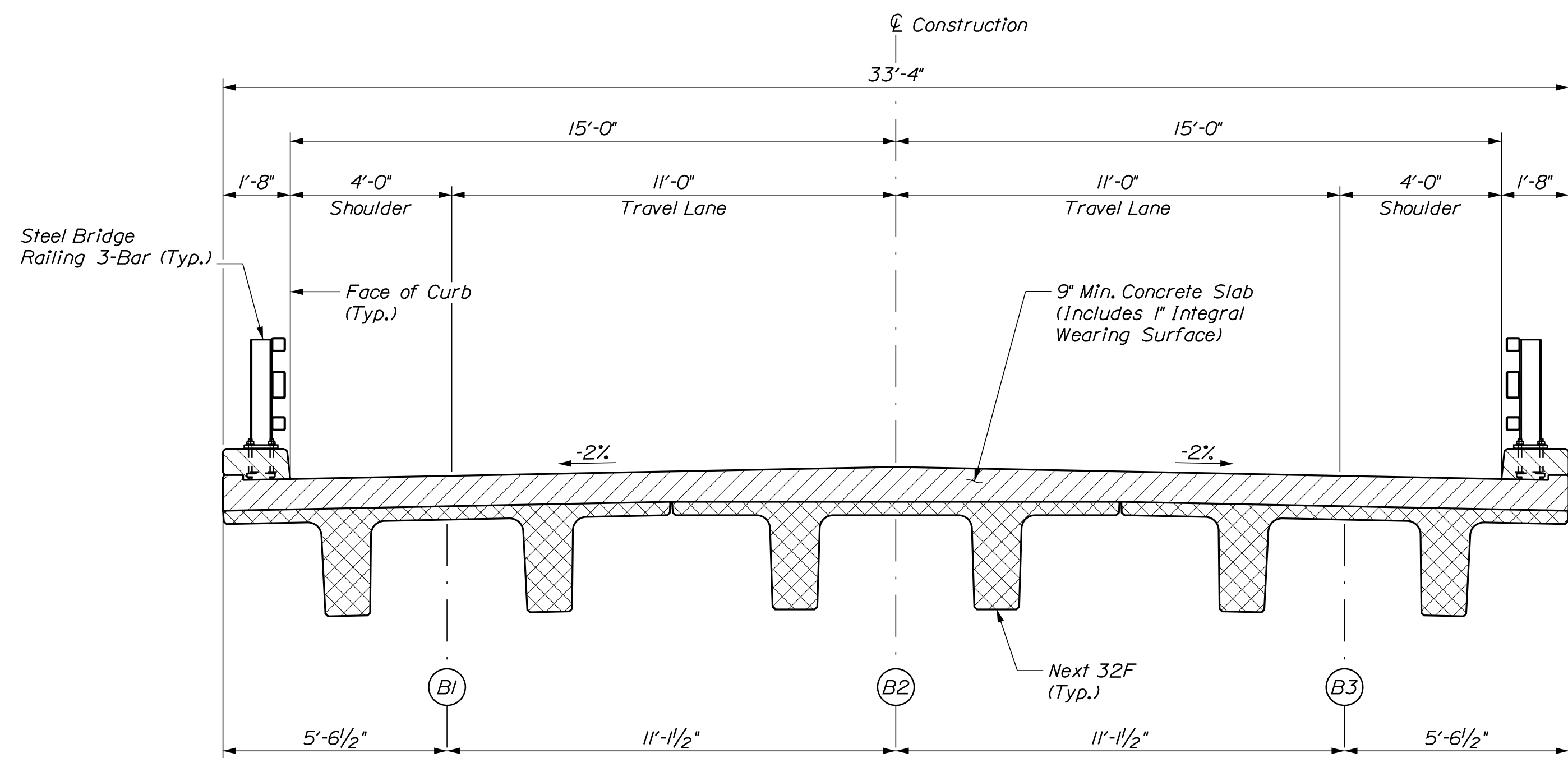
BRIDGE NO. 3103
WIN
022638.00
BRIDGE PLANS

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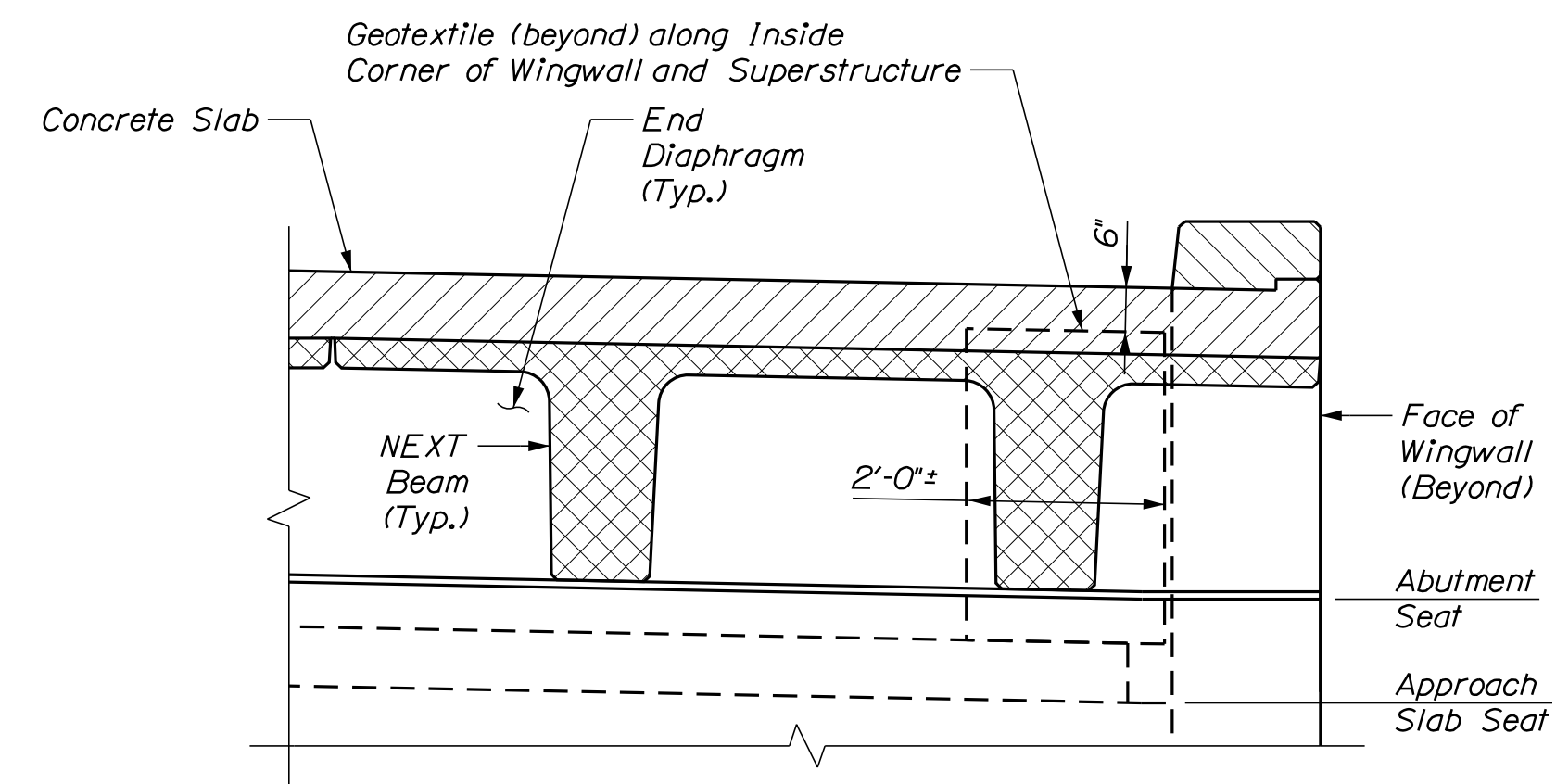
DESIGN-DETAILED: S. Hodgdon
CHECKED-REVIEWED: P. Dustin
DESIGN-DETAILED: S. Hodgdon
DESIGN-DETAILED: S. Hodgdon
REVISIONS 1
REVISIONS 2
REVISIONS 3
REVISIONS 4
FIELD CHANGES

HODGDON MILLS BRIDGE
SOUTH BRANCH MEDUXNEKEAG RIVER
HODGDON AROOSTOOK COUNTY
WINGWALL DETAILS

SHEET NUMBER
17
OF 22



SECTION A-A



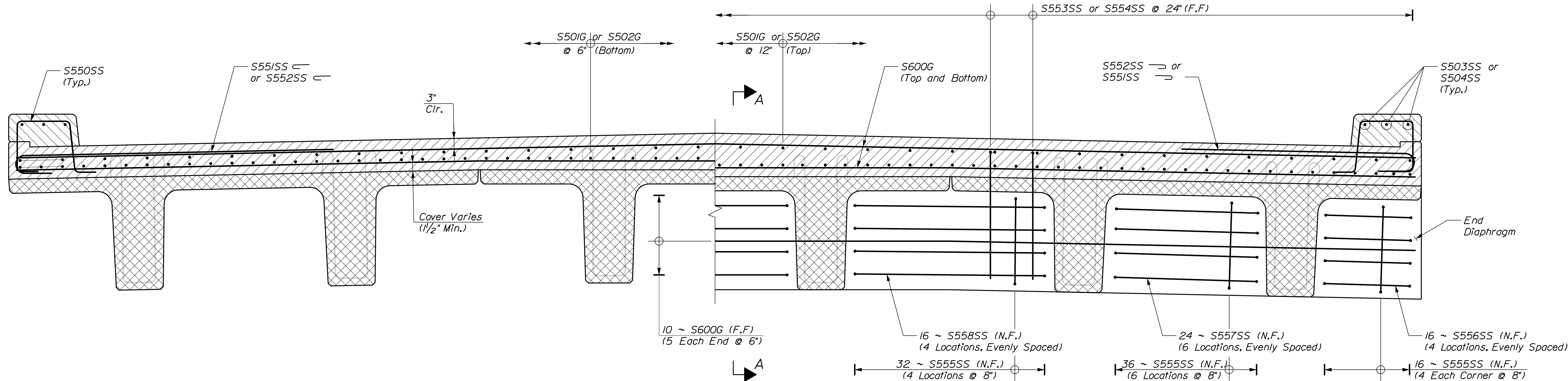
VIEW B-B

Date:11/9/2018

Username:

Division: BRIDGE

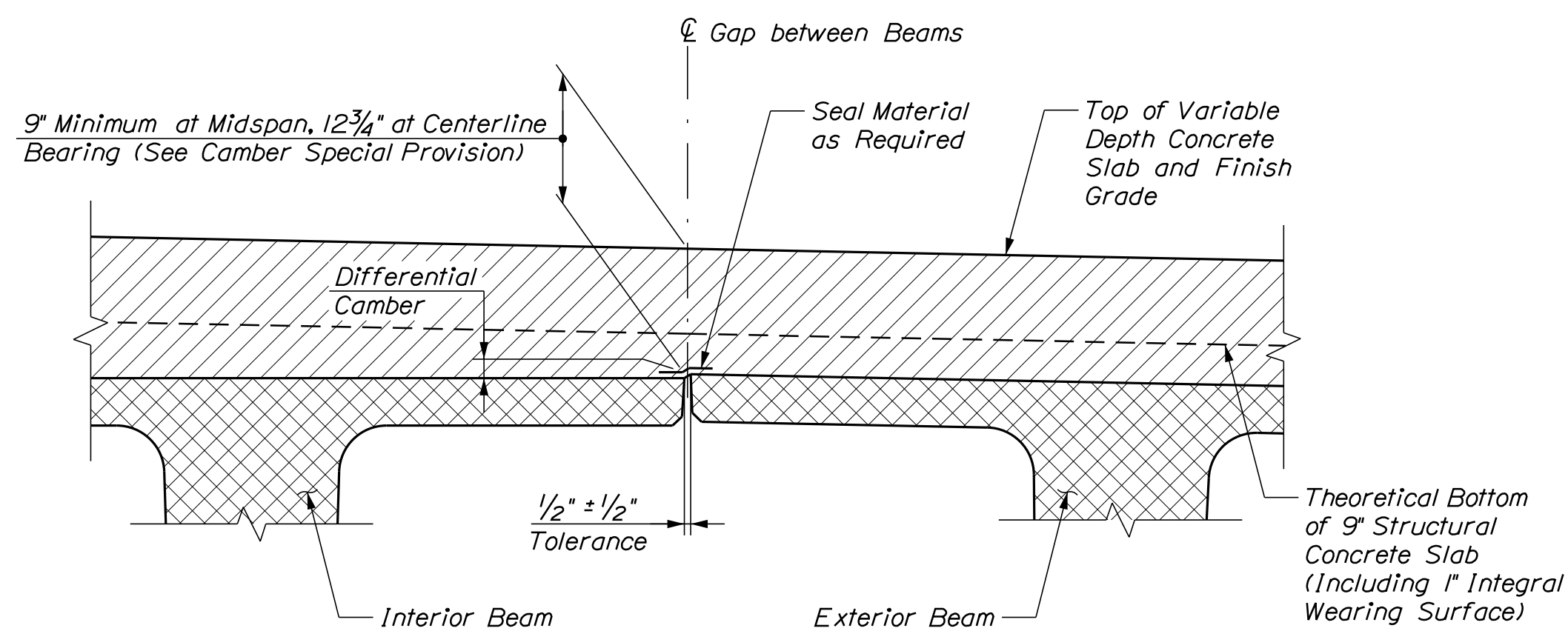
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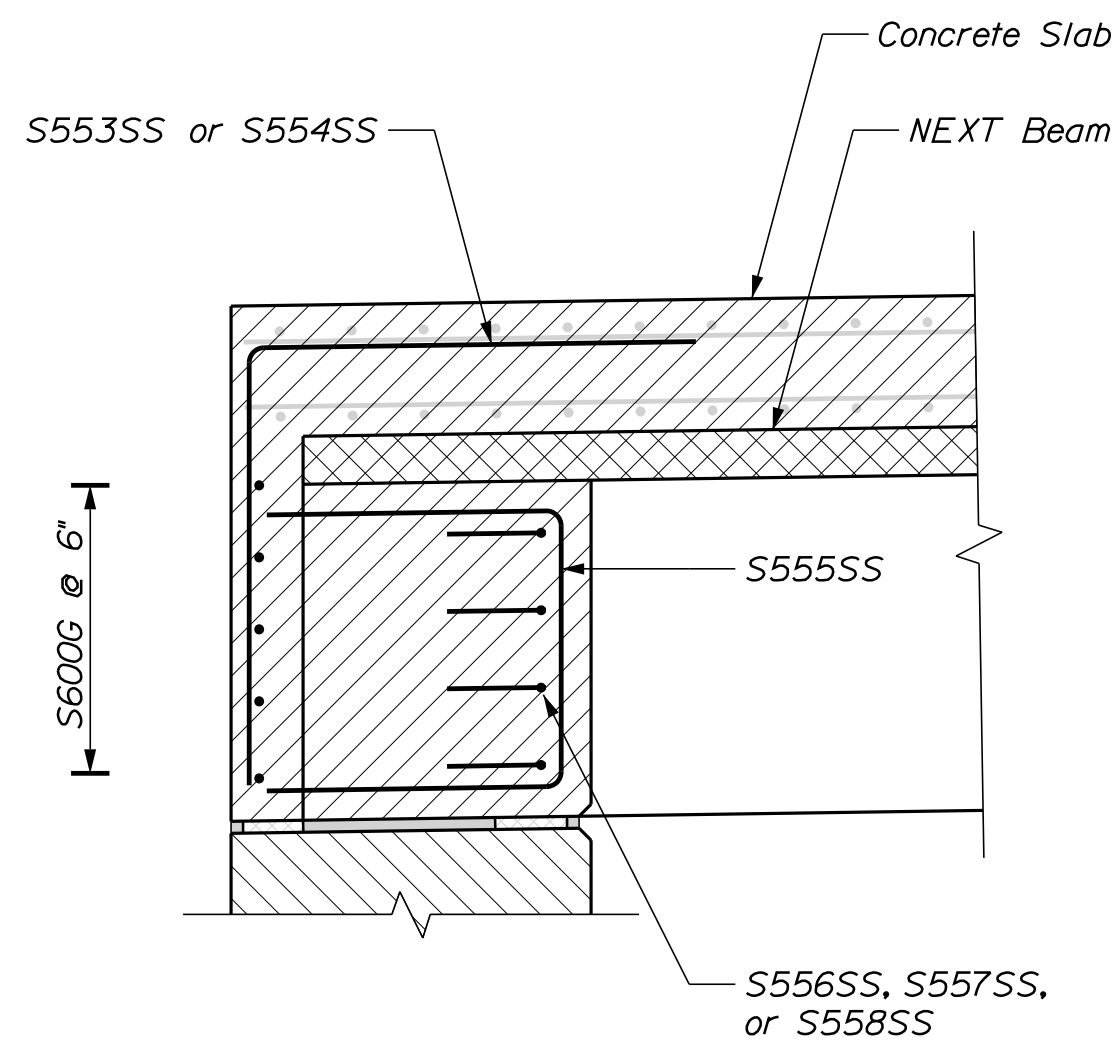
ALONG SPAN

AT ENDS

TYPICAL REINFORCING SECTION



BLOCKING AND GAP FORM DETAIL



SECTION A-A

ELASTOMERIC BEARING PAD NOTES

1. Neoprene pads shall be either polychloroprene or natural polyisoprene with a shear modulus of 0.160 ksi and shall conform to the requirements of Section 18.2 of the LRFD Bridge Construction Specifications, 4th Edition. Neoprene pads will not be paid for directly but will be considered incidental to related contract items.

2. Neoprene Pad seams perpendicular to the centerline of bearing will be allowed, provided that the seams are located approximately half way between NEXT Beam stems.

SUPERSTRUCTURE NOTES

1. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.

2. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.

3. The superstructure slab and end diaphragm concrete for each span shall be placed continuously and shall be kept plastic until the entire placement has been made.

4. Deck thickness and curb stirrups shall be adjusted in accordance with Special Provision 535, Superstructure, Camber.

5. Payment for End Diaphragm Concrete shall be paid under Item 502.261, Structural Concrete Roadway and Sidewalk Slabs on Concrete Bridges.

6. Payment for Sheet Waterproofing Membrane and Mortared Chamfer will not be made directly and shall be considered incidental to related Contract items. Alternate methods of sealing the gap between both flanges may be submitted to the Resident for approval.

7. Bars TB651 and TB652 detailed in Standard Detail 526 (37) shall be reduced in height by 3-inches to account for a curb height of 9". The corrected dimensions are provided on the Reinforcing Schedule sheet.

8. Payment for Polyurethane Sealant, 1" Closed Cell Filler and 1/2" Preformed Expansion Joint Filler will not be made for directly but incidental to related Contract Items.

9. Payment for geotextile between the wingwalls and superstructure will not be made directly but incidental to related Contract Items.

10. Shortened anchor rods for the steel bridge rail posts is required to provide additional clearance between the top of deck and bottom of anchor rod.

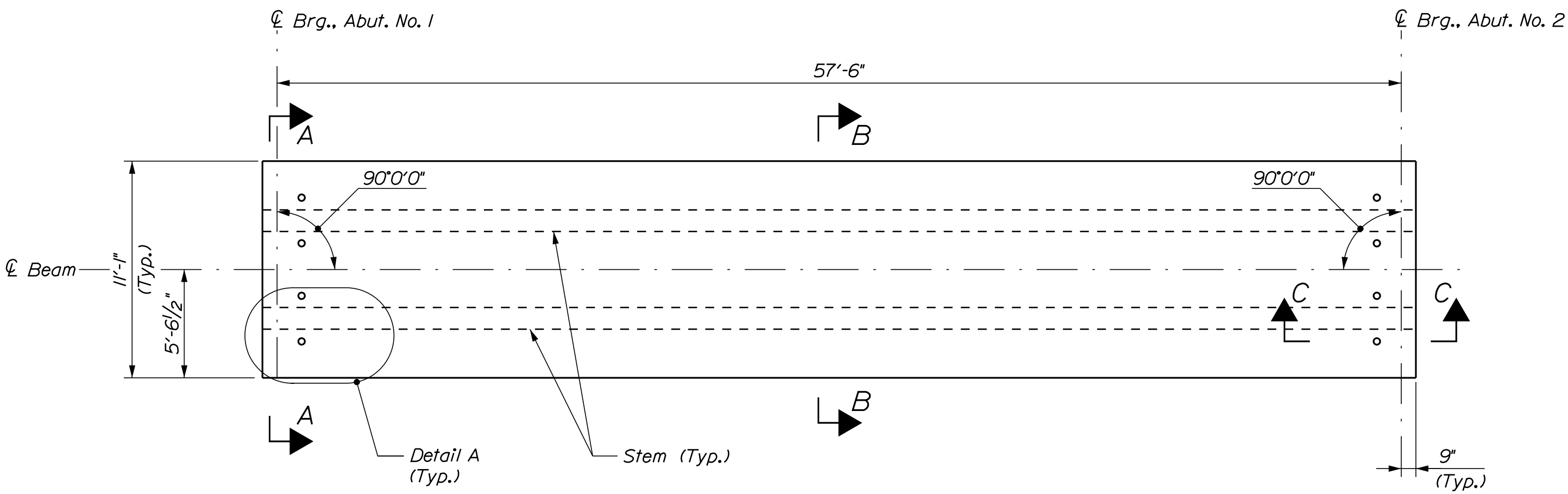
PROJ. MANAGER	M. Wright	BY	DATE
DESIGN-DETAILED	S. Hodgdon	P. Dustin	Apr. 2018
CHECKED-REVIEWED	G. Krauss	S. Hodgdon	Aug. 2018
DESIGN-DETAILED			
REVISIONS 1			
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

Date:11/9/2018

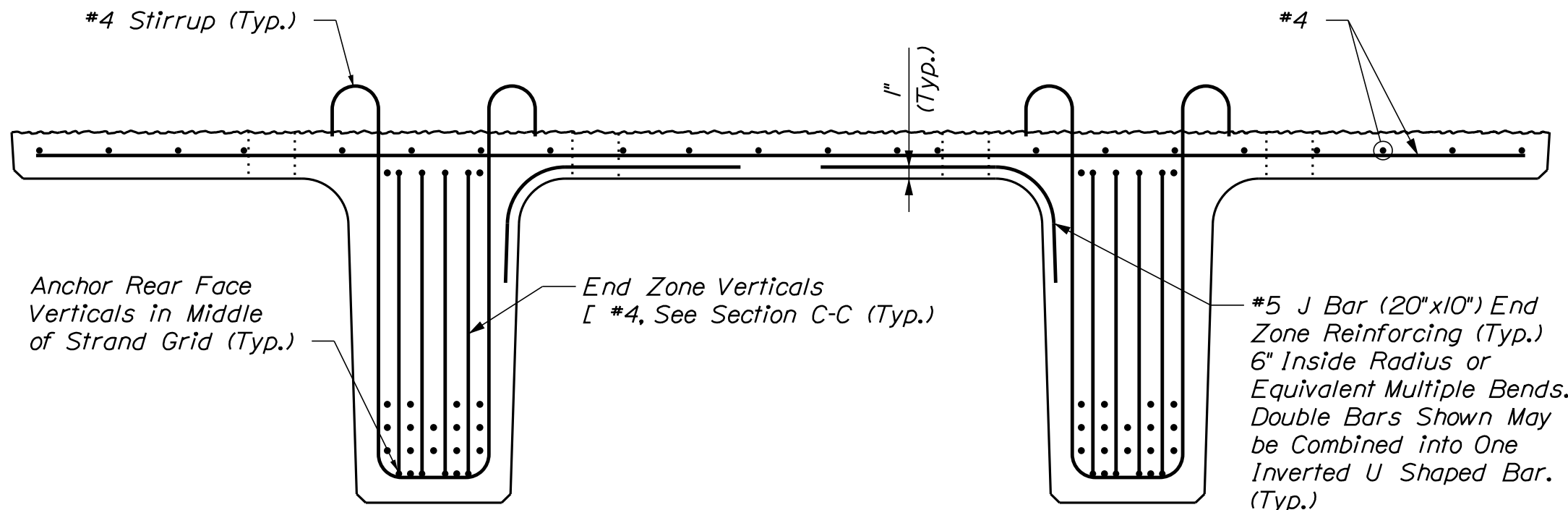
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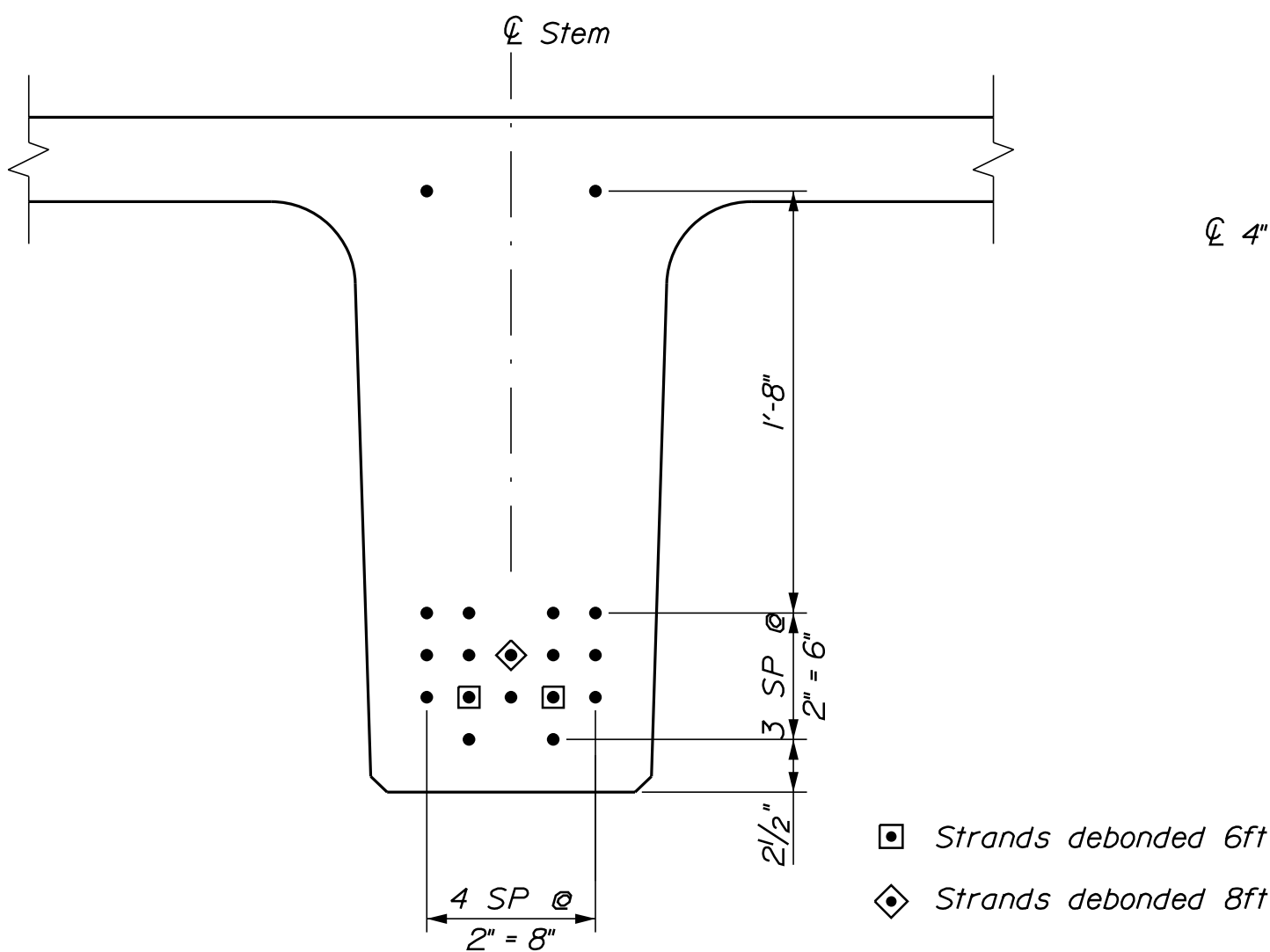
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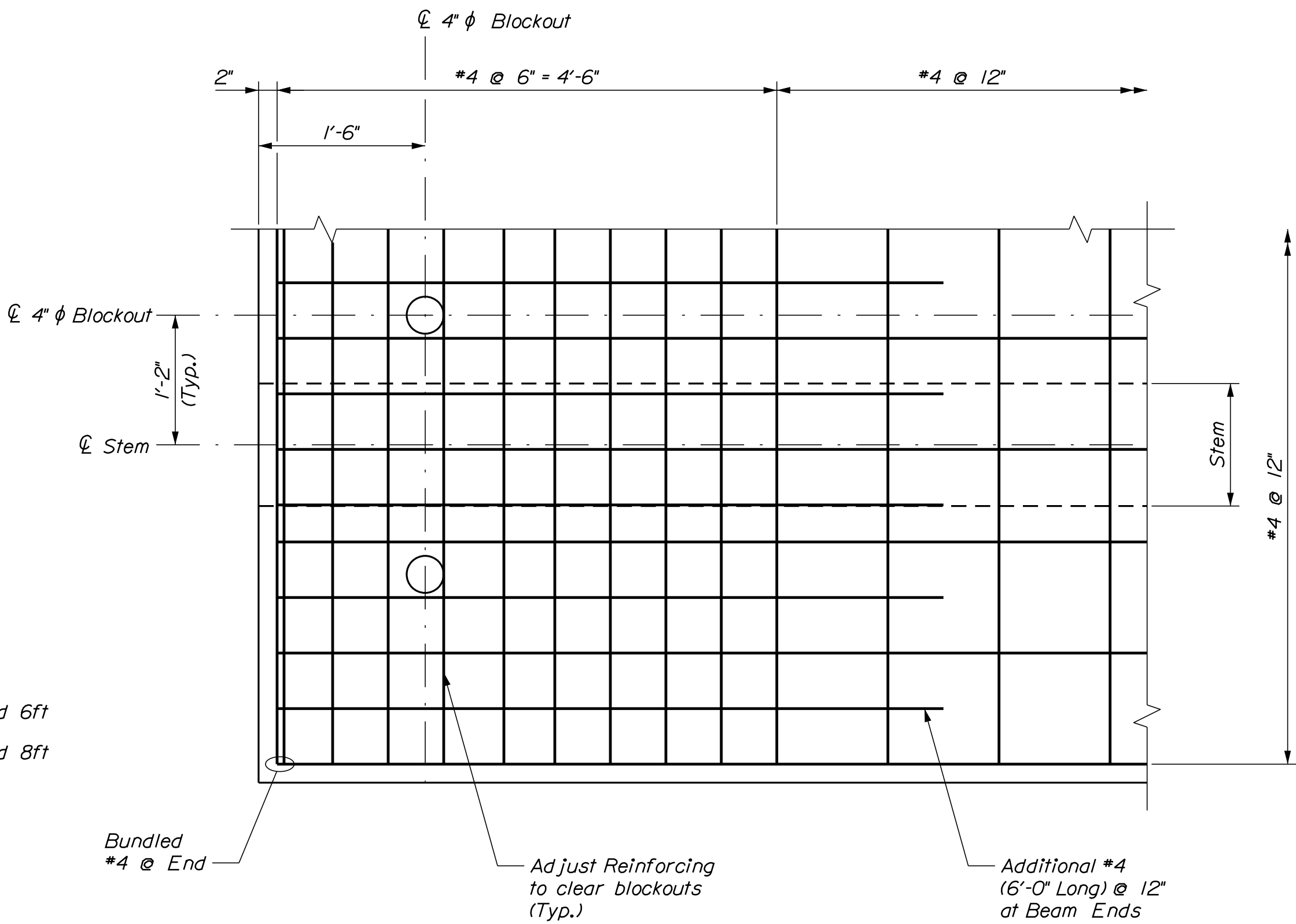
NEXT 32F PLAN



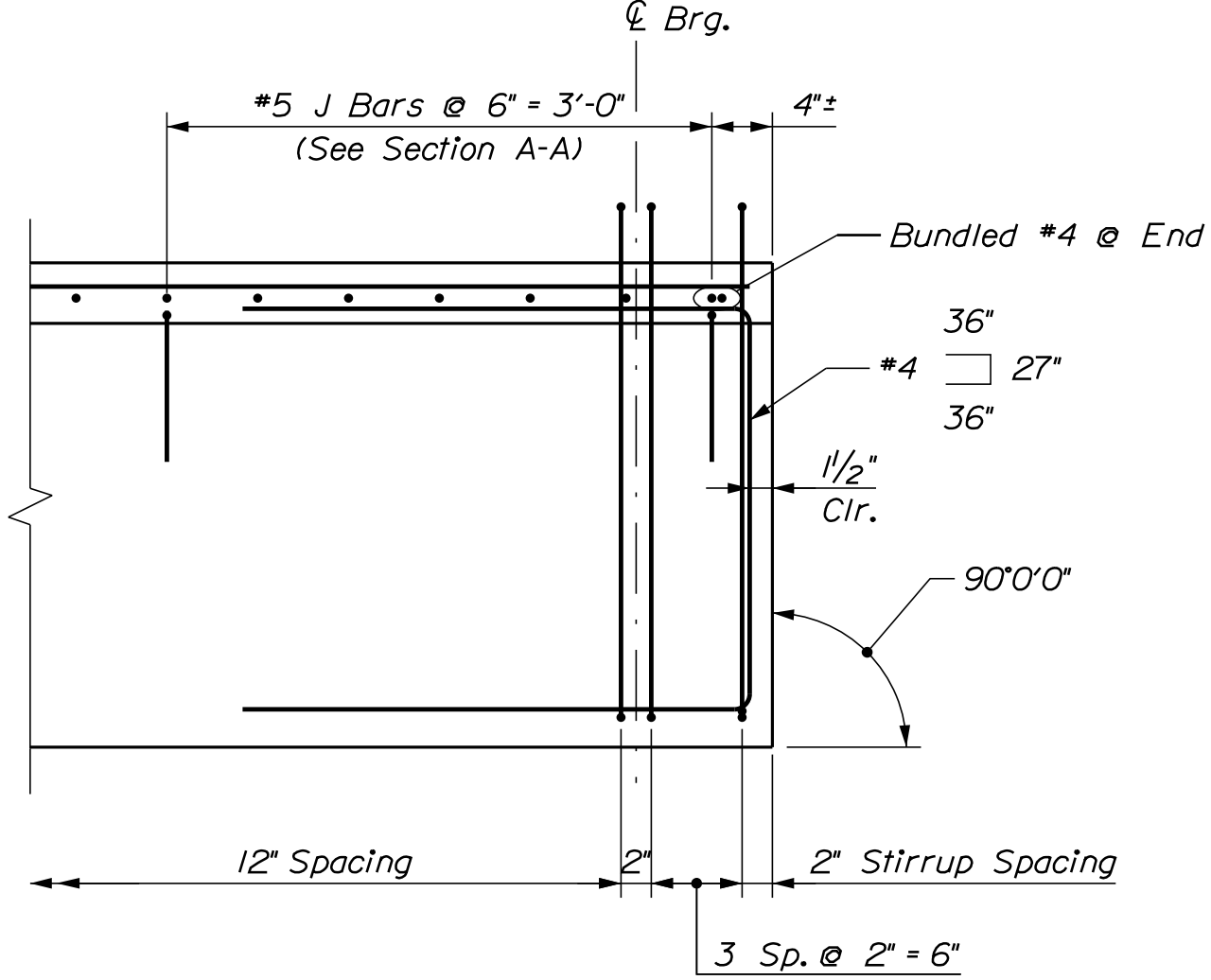
SECTION A-A



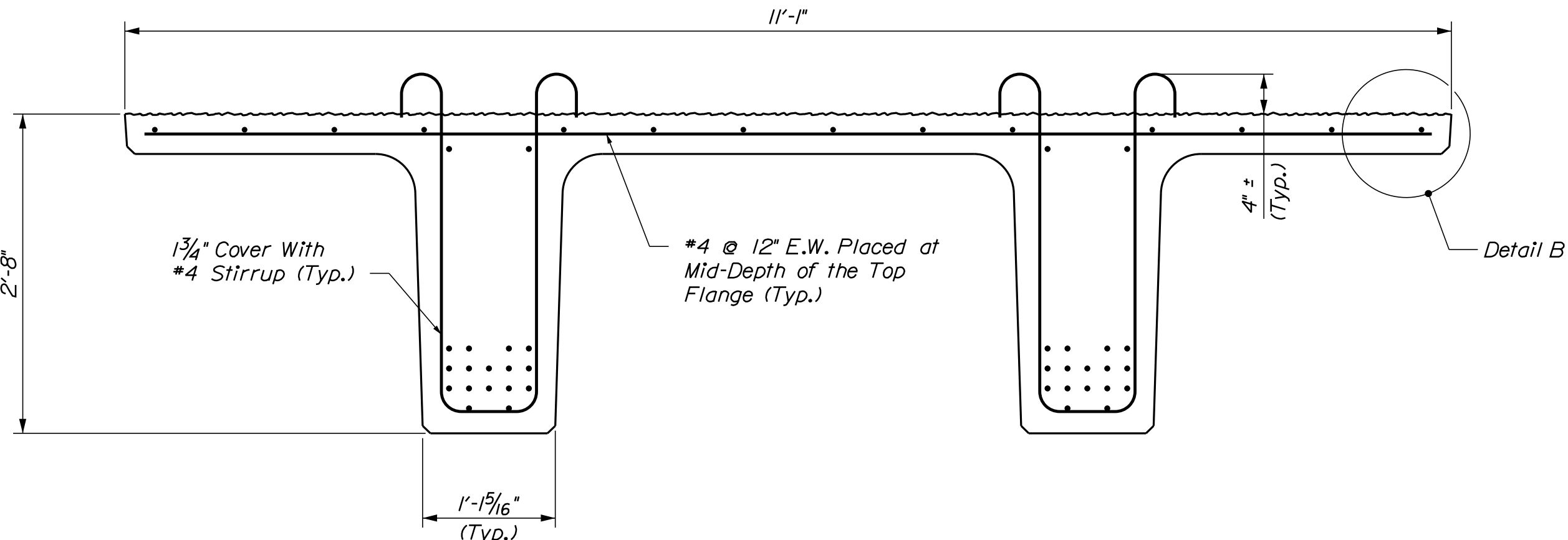
STRAND PATTERN
(36 Per Beam, 18 Per Stem)



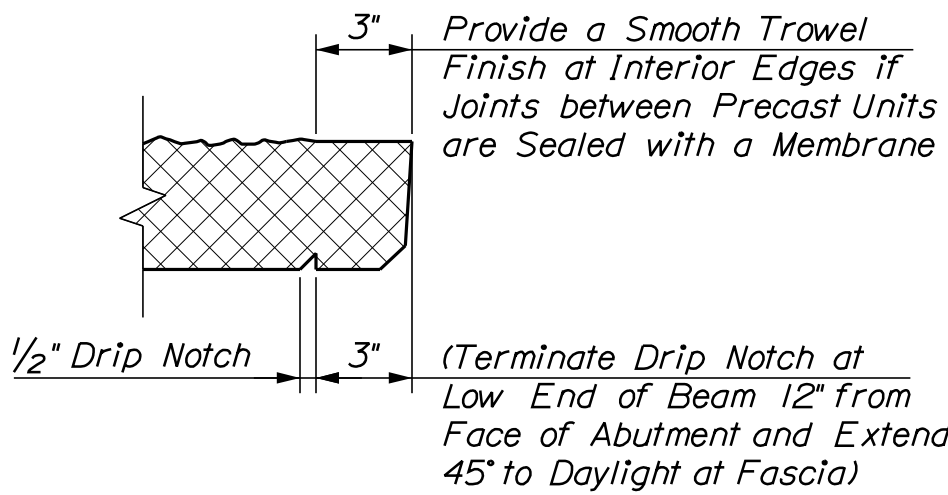
DETAIL A
(Stirrups Not Shown)



VIEW C-C



SECTION B-B



DETAIL B

PRECAST NEXT BEAM NOTES

1. NEXT F Beams are a non-proprietary shape developed by PCI Northeast (PCINE). Standardized properties and details may be found at <http://www.pcine.org>.
2. The estimated camber at release is 1.30 inches and 2.4 inches at erection. The estimated deflection from the cast-in-place slab is 0.5 inches at mid span. The estimated deflection from curbs and railings is 0.1 inches at mid span. The vertical curve ordinate for the sag profile is 1.3 inches.
3. Prestressing strands shall be 0.6-in. diameter. The tensioning force is 44 kips per prestressing strand.
4. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted. Stirrups shall be epoxy coated.
5. The top surface of the upper flange of the prestressed beams shall be raked to a surface roughness of $\pm 1/4$ inch, except at locations corresponding to the blocking points and along the edges if membrane is used to seal the joints between beams. At the blocking point locations a flattened area of sufficient size shall be finished to facilitate taking elevations for setting bottom of slab elevations.
6. The drilling of holes in the prestressed beams and the use of powder actuated tools on the beams will not be permitted.
7. Concrete retarding admixture shall be applied to the form surfaces of the NEXT beam stems that will come in contact with the cast-in-place concrete end diaphragms. All such surfaces shall be power washed with water prior to installation to provide a nominal 1/8-inch roughened surface with exposed aggregate. Alternate methods of achieving an equivalent roughened surface may be proposed. Payment for achieving the surface finish will be considered incidental to related contract items.
8. Lifting loops and temporary/storage/shipping dunnage shall be a maximum of 2 feet from each beam end.

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STP-2263(800)	BRIDGE NO. 3103	022638.00	WIN	BRIDGE PLANS																																																												
HOyle, Tanner & Associates, Inc. 150 Dow Street, Manchester, NH 03101 (603) 655-5550 www.hoyletanner.com																																																																	
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