

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



ORONO
PENOBSCOT COUNTY
KELLEY ROAD BRIDGE
OVER
INTERSTATE 95

FEDERAL PROJECT NO. 2234400
PROJECT LENGTH 0.082 mi.
BRIDGE NO. 5905

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

Kelley Road Current (2020) AADT.....	4640
Kelley Road Future (2040) AADT.....	5100
I 95 Northbound Current (2020) AADT.....	10140
I 95 Southbound Current (2020) AADT.....	11120
DHV - % of AADT.....	10%
Design Hour Volume.....	510
Heavy Trucks (% of AADT).....	10%
Heavy Trucks (% of DHV).....	8%
Directional Distribution (% of DHV).....	56%
18 kip Equivalent P 2.0.....	232
18 kip Equivalent P 2.5.....	221
Design Speed (mph).....	45

MATERIALS

Concrete:	
Curbs.....	Class "LP"
Concrete Slope Pavement.....	Class "F"
All Other.....	Class "A"

Reinforcing Steel:	
Plain Reinforcing Steel.....	ASTM A 615, Grade 60
Stainless Steel.....	ASTM A 955, Grade 75

BASIC DESIGN STRESSES

Concrete:	
Concrete Class "LP".....	f'c = 5000 psi
Concrete Class "F".....	f'c = 3000 psi
Concrete Class "A".....	f'c = 4000 psi

Reinforcing Steel:	
Plain Reinforcing Steel.....	f y = 60,000 psi
Stainless Steel.....	f y = 75,000 psi

LIST OF DRAWINGS

Title Sheet.....	1
Estimated Quantities.....	2
General Notes.....	3
General Plan & Profile.....	4
Typical Sections.....	5
Cross Sections.....	6-12
Detour Plan.....	13
Sign Summary.....	14
Abutment Modifications.....	15
Pier Repairs.....	16-18
Bearing Details.....	19-21
Structural Steel Details.....	22
Superstructure Plan.....	23
Superstructure Reinforcing Plan.....	24
Miscellaneous Details.....	25
Steel Approach Railing 3-Bar.....	26
Snow Fence Details.....	27
Bridge Drain Details.....	28
Reinforcing Schedule.....	29

UTILITIES

Emera Maine
University Of Maine System
Maine Department Of Transportation
Consolidated Communications

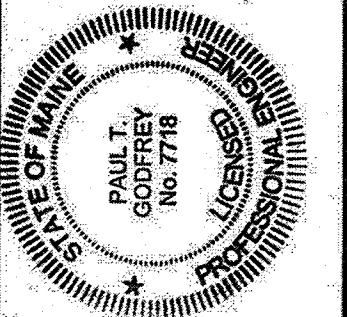
MAINTENANCE OF TRAFFIC

Bridge/road closure with off-site detour

PROJECT LOCATION:	Kelley Road over Interstate 95 Bridge Located at Exit 191 Lat./Long. 44°52'23.48" N 68°42'09.25" W
PROGRAM AREA:	Bridge
OUTLINE OF WORK:	Bridge Deck Replacement

HNTB

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	APPROVED	DATE
	COMMISSIONER: <i>[Signature]</i>	10/29/19
	CHIEF ENGINEER: <i>[Signature]</i>	10-25-19



SIGNATURE: <i>[Signature]</i>	DATE: 10-11-19
P.E. NUMBER: 7718	

PROJECT INFORMATION	PROGRAM	BRIDGE
PROJECT MANAGER	Mark Parlin	
DESIGNER	Lori Driscoll, P.E.	
CONSULTANT	HNTB	
PROJECT RESIDENT		
CONTRACTOR		
PROJECT COMPLETION DATE		

ORONO KELLEY ROAD BRIDGE	TITLE SHEET
-----------------------------	-------------

SHEET NUMBER
1
OF 29

Date: 10/10/2019

Username:

Division:

Filename: 001_TITLE.dgn

WIN 022344.00

2234400

Date:10/23/2019

Username:

Division:

Filename: 002_Estimated Quantities.dgn

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.10	Removing Existing Superstructure Property of Contractor (270 CY)	1	LS
202.12	Removing Existing Structural Concrete	1	CY
202.13	Remove Existing Railings Retained by Department	590	LF
202.202	Removing Pavement Surface	860	SY
203.20	Common Excavation	830	CY
304.10	Aggregate Subbase Course - Gravel	710	CY
403.2081	Hot Mix Asphalt - 12.5 mm Nominal Maximum Size (Polymer Modified)	265	Ton
403.213	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course)	110	Ton
403.2131	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (Base and Intermediate Base Course, Polymer Modified)	195	Ton
409.15	Bituminous Tack Coat, Applied	155	Gal
502.21	Structural Concrete, Abutments and Retaining Walls	5	CY
502.26	Structural Concrete Roadway and Sidewalk Slab on Steel Bridges (275 CY)	1	LS
502.49	Structural Concrete Curbs and Sidewalks (53 CY)	1	LS
502.565	Concrete Fill (Slope Pavement Repairs)	2	CY
502.77	FRP Bridge Drain - Type E	4	EA
503.12	Reinforcing Steel, Fabricated and Delivered	250	LB
503.13	Reinforcing Steel, Placing	375	LB
503.26	Stainless Steel Reinforcement, Fabricated and Delivered	850	LB
503.27	Stainless Steel Reinforcement, Placing	850	LB
505.08	Shear Connectors (5350 EA)	1	LS
507.0821	Steel Bridge Railing, 3 Bar (636 LF)	1	LS
508.14	High Performance Waterproofing Membrane (1070 SY)	1	LS
514.06	Curing Box for Concrete Cylinders	1	EA
515.21	Protective Coating for Concrete Surfaces (320 SY)	1	LS
518.50	Repair of Upward Facing Surfaces - to Reinforcing Steel < 8 inches	105	SF
518.60	Repair of Vertical Surfaces < 8 inches	305	SF
518.70	Repair of Overhead Surfaces < 8 inches	105	SF
520.21	Expansion Device - Gland Seal (74 LF)	2	EA
523.52	Bearing Installation	25	EA
523.5402	Laminated Elastic Bearings, Expansion	25	EA
524.301	Temporary Structural Support	1	LS
524.40	Protective Shield - Steel Girders (1273 SY)	1	LS
526.301	Temporary Concrete Barrier, Type I (40 LF)	1	LS
527.33	Truck Mounted Attenuator	2	EA
604.18	Adjust Catch Basin or Manhole to Grade	3	EA
606.1301	31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Single Faced)	150	LF
606.1304	31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Over 15' Radius)	110	LF
606.1721	Bridge Transition - Type I	3	EA
606.1721	Bridge Transition - Type I - Modified	1	EA
607.183	Chain Link Snow Fence 33" (192 LF)	1	LS
609.40	Reset Curb Type 5	140	LF
610.18	Stone Ditch Protection	12	CY
615.07	Loam	19	CY
618.14	Seeding Method Number 2	3	UNIT
619.12	Mulch	3	UNIT
619.14	Erosion Control Mix	10	CY
620.58	Erosion Control Geotextile	44	SY
627.733	4" White or Yellow Painted Pavement Marking Line	2050	LF
629.05	Hand Labor, Straight Time	10	HR
631.10	Air Compressor (including operator)	10	HR
631.11	Air Tool (including operator)	10	HR
631.12	All Purpose Excavator (including operator)	10	HR
631.172	Truck-large (including operator)	10	HR
631.21	Road Broom (including operators and hauler)	10	HR
639.18	Field Office, Type A	1	EA
652.30	Flashing Arrow	2	EA
652.312	Type III Barricades	5	EA
652.33	Drum	40	EA
652.34	Cone	40	EA
652.35	Construction Signs	740	SF
652.361	Maintenance of Traffic Control Devices (130 CD)	1	LS
652.38	Flaggers	250	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



STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

WIN 022344.00

BRIDGE NO. 5905
BRIDGE PLANS

KELLEY ROAD BRIDGE
INTERSTATE 95
ORONO PENOBSCOT COUNTY

ESTIMATED QUANTITIES

SHEET NUMBER
2
OF 29

DATE
10/19

BY
P. Bishop

PROJ. MANAGER
M. Parlin

DESIGN-DETAILED
B. Granger

CHECKED-REVIEWED
T. Poulin

DESIGN-DETAILED
-

DESIGN-DETAILED
-

REVISIONS 1
-

REVISIONS 2
-

REVISIONS 3
-

REVISIONS 4
-

FIELD CHANGES
-

SIGNATURE

P.E. NUMBER

DATE

GENERAL NOTES

1. The clearing limits will be established in the field by the Resident. Payment for clearing will be considered incidental to Contract Items.

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

3. Unless otherwise shown, place loam 2 inches deep on all new or reconstructed side slopes or as directed by the Resident.

4. Protective Coating for Concrete Surfaces shall be applied to the following areas and paid under 515.21:

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

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

6. 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.

7. 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.

8. The Contractor shall submit a Bridge Deck Removal 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 deck. No work related to the removal of the bridge deck shall be undertaken by the Contractor until MaineDOT has reviewed the Bridge Deck Removal 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 deck removal pay item.

9. Steel portions of the existing bridge shall be assumed to be coated with a lead based paint system unless Contractor testing proves otherwise. The Contractor is responsible for the containment, proper management and disposal of all lead-containment hazardous waste generated by their work. The Contractor is responsible for implementing appropriate OSHA mandated personal protection standards related to this process. Payment for this work will not be made separately, but will be considered incidental to related Contract Items.

10. The Contractor shall plan and conduct the work accordingly so that upon final completion of the project there is no drop-off from the edge of shoulder pavement. All remaining or disturbed material on slopes or in ditches on the project shall be capable of attaining a growth of grass that is acceptable according to Standard Specification 618.10. No separate payment will be made for this work.

11. At the connection of proposed and existing guardrail, a 9'-4.5' section of rail shall be used and the proposed guardrail height shall transition to meet the existing guardrail height over 25 feet. Payment shall be made under item 606.1301.

12. No existing drainage shall be abandoned, removed, or plugged without prior approval of the Resident.

13. 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 Specification Section 619, Mulch. Payment will be made under Item No. 619.14, Erosion Control Mix.

14. 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.

15. Where new pavement joins existing pavement, the existing pavement shall be saw cut along a smooth line to a neat, even, vertical joint, as directed by the Resident. Broken or raveled edges will not be permitted. All work necessary for the preparation of this joint will be considered incidental to the related Contract items.

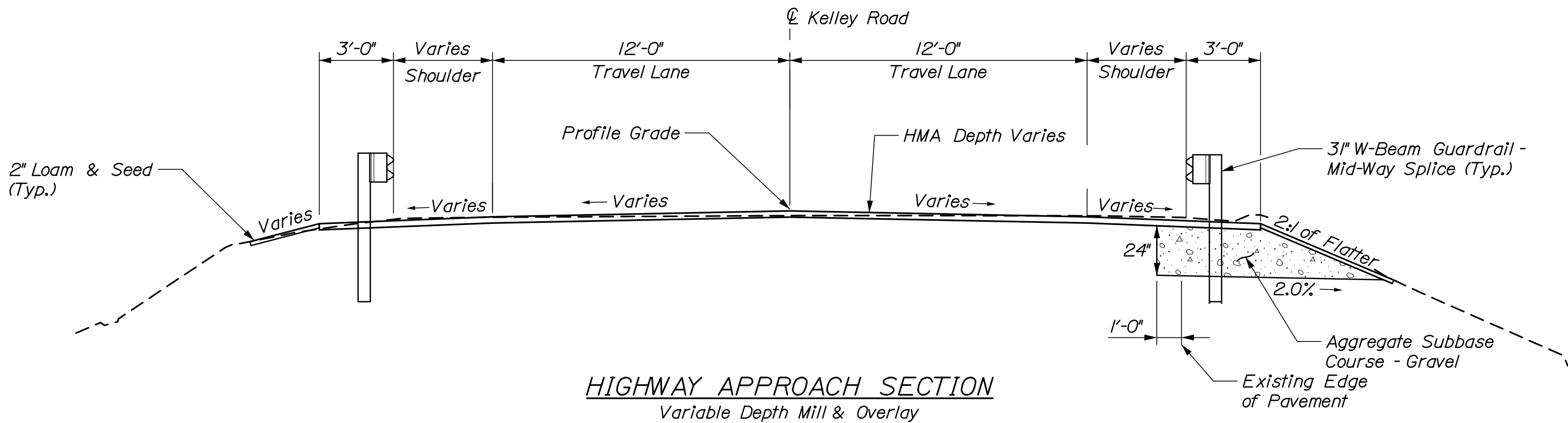
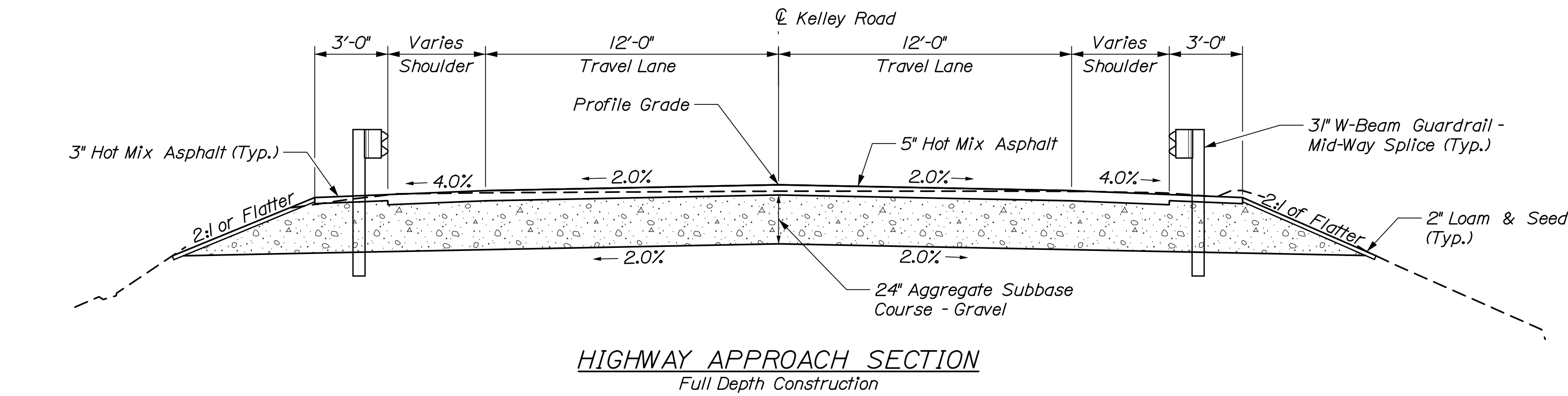
16. When removing existing bridge drains, the Contractor shall remove the support plate 2" from the girder web. Removal of bridge drains and drain supports, including the connection to the existing girders, are incidental to Item 202.10. Cut ends of existing drain support plates shall be coated with a cold galvanizing compound approved by the Resident. The work shall be incidental to Item 202.10.

17. The Contractor shall coordinate traffic control, paving operations, limits of work on Interstate 95 and the ramps with MaineDOT paving contract work that will be happening in the area concurrently. The contact for the I-95 project will be:

Shawn Smith
MaineDOT Project Manager
(207) 557-1663
shawn.smith@maine.gov

18. Remove and reset and remove and dispose of signs shall be performed in accordance with section 645 - Highway Signing and as directed by the Resident. Payment will be incidental to related contract items.

OF 29		3	SHEET NUMBER	KELLEY ROAD BRIDGE INTERSTATE 95 PENOBSCOT COUNTY		ORONO		GENERAL NOTES		STATE OF MAINE DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 5905	BRIDGE PLANS
				PROJ. MANAGER		BY		DATE					
				DESIGN-DETAILED		P. Bishop		10/19					
				CHECKED-REVIEWED		H. Walton		10/19		SIGNATURE			
				DESIGN-DETAILED		-		-					
				DESIGN-DETAILED		-		-					
				DESIGN-DETAILED		-		-		P.E. NUMBER			
				REVISIONS 1		-		-					
				REVISIONS 2		-		-					
				REVISIONS 3		-		-					
				REVISIONS 4		-		-		DATE			
				FIELD CHANGES		-		-					



NOTES:

1. The pavement, base and subbase depths as shown on the plans are intended to be nominal.

2. Crowns for both normal and superelevation sections for all courses of subbase and pavement shall be straight, unless otherwise noted on the plans.

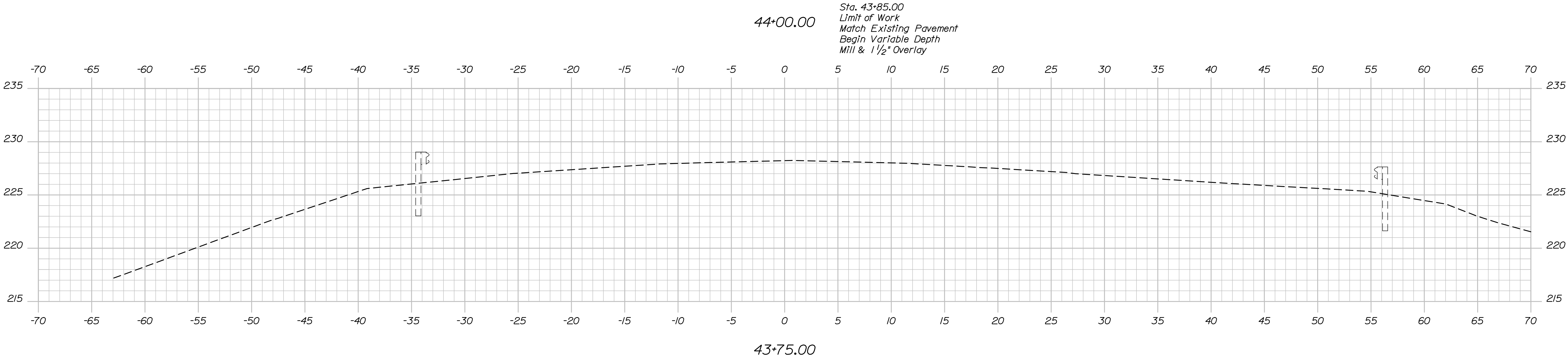
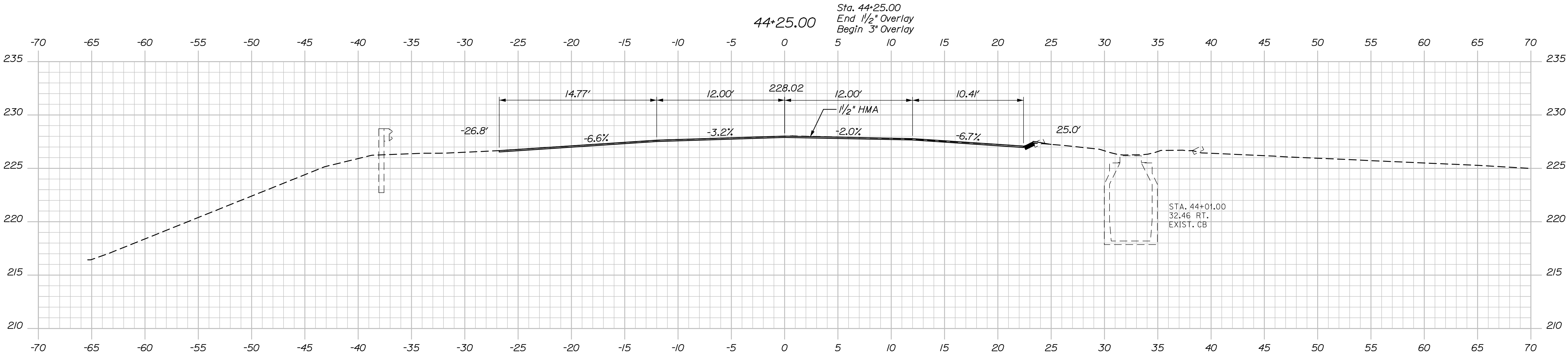
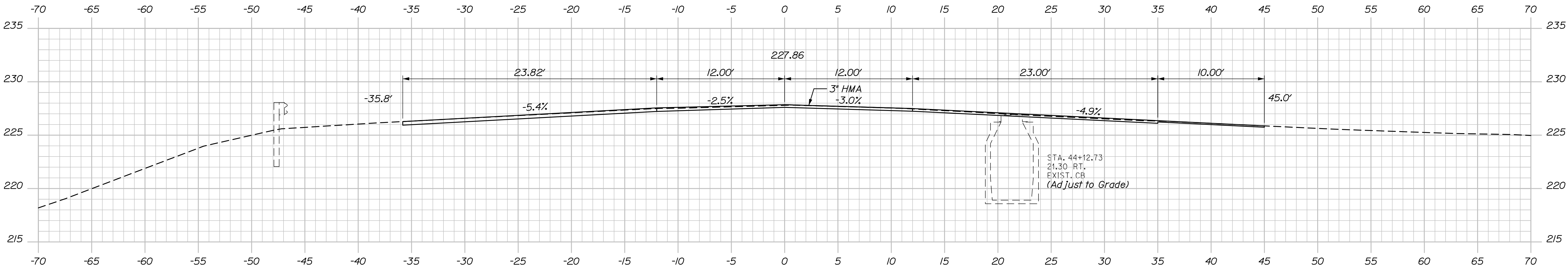
ORONO		KELLEY ROAD BRIDGE		PROJ. MANAGER		M. Perrin	BY	DATE	STATE OF MAINE
		INTERSTATE 95		DESIGN-DETAILED	C. Helmick	P. Bishop	10/19		
TYPICAL SECTIONS		PENOBSCOT COUNTY		CHECKED-REVIEWED	A. Sweet	L. Driscoll	10/19		DEPARTMENT OF TRANSPORTATION
				DESIGN2-DETAILED2	-	-	-	-	WIN 022344.00
				DESIGN3-DETAILED3	-	-	-	-	
				REVISIONS 1	-	-	-	-	
				REVISIONS 2	-	-	-	-	
				REVISIONS 3	-	-	-	-	
				REVISIONS 4	-	-	-	-	
				FIELD CHANGES	-	-	-	-	BRIDGE NO. 5905
									BRIDGE PLANS
SHEET NUMBER									
5									
OF 29									

Date:10/23/2019

Username:

Division:

Filename: xssect.dgn



PROJ. MANAGER	BY	DATE
M. Parlin	P. Bishop	10/19
C. Helmick	L. Driscoll	10/19
CHECKED-REVIEWED		SIGNATURE
DESIGNED-DETAILED		P.E. NUMBER
DESIGNED-DETAILED		DATE
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

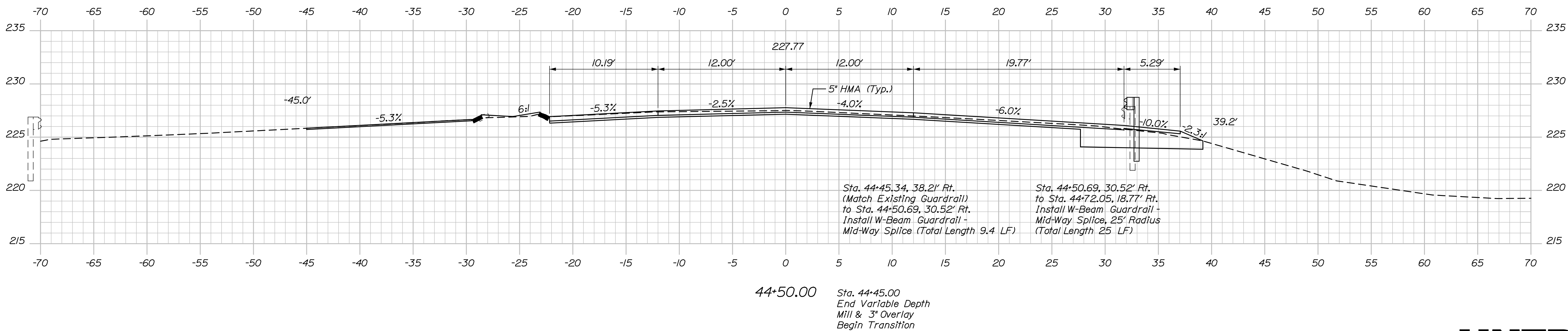
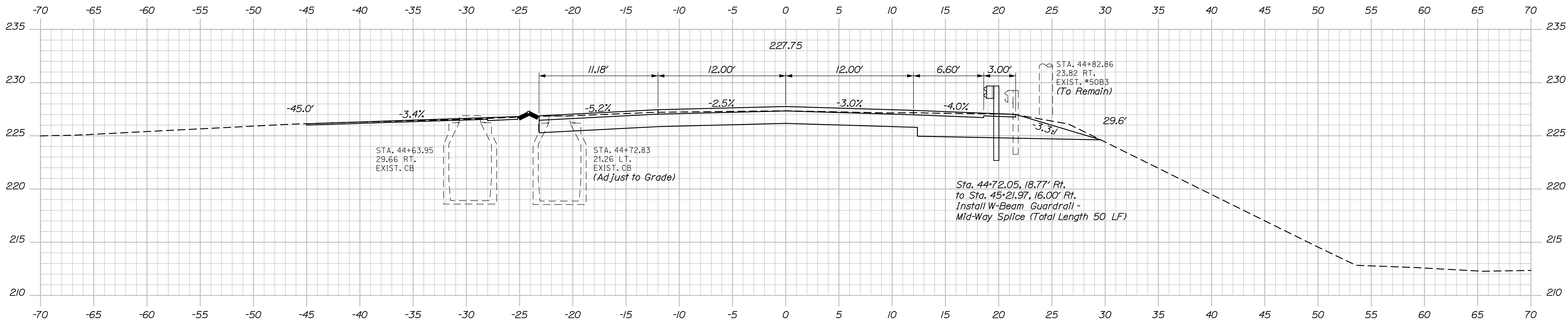
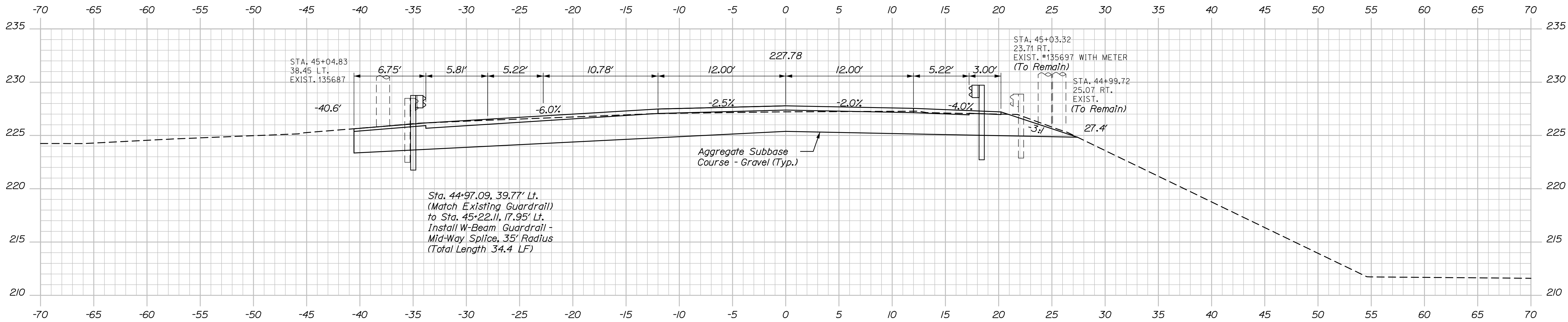


Date:10/23/2019

Username:

Division:

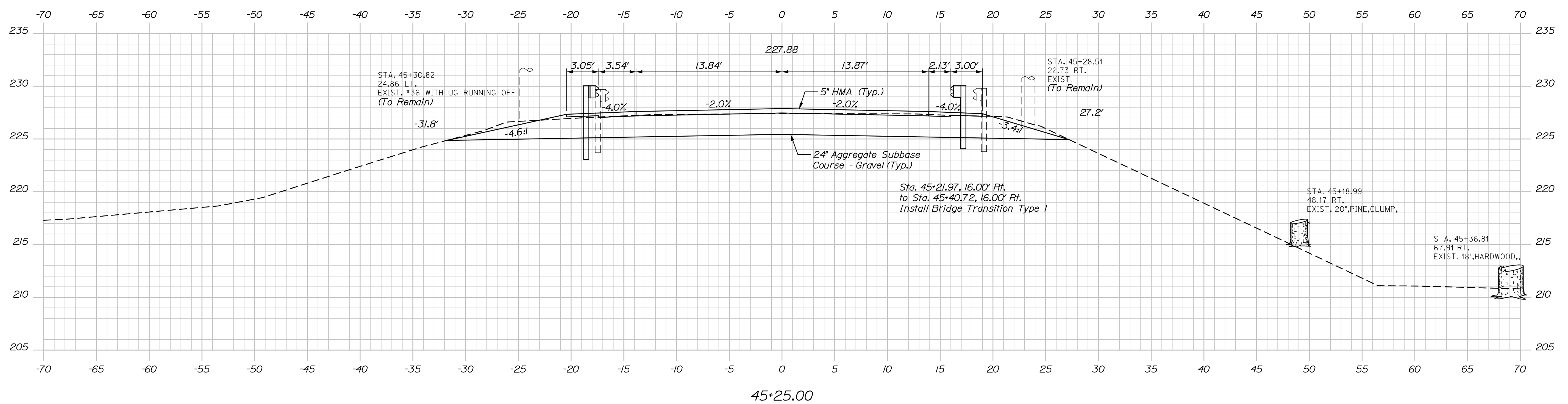
Filename: xsect.dgn



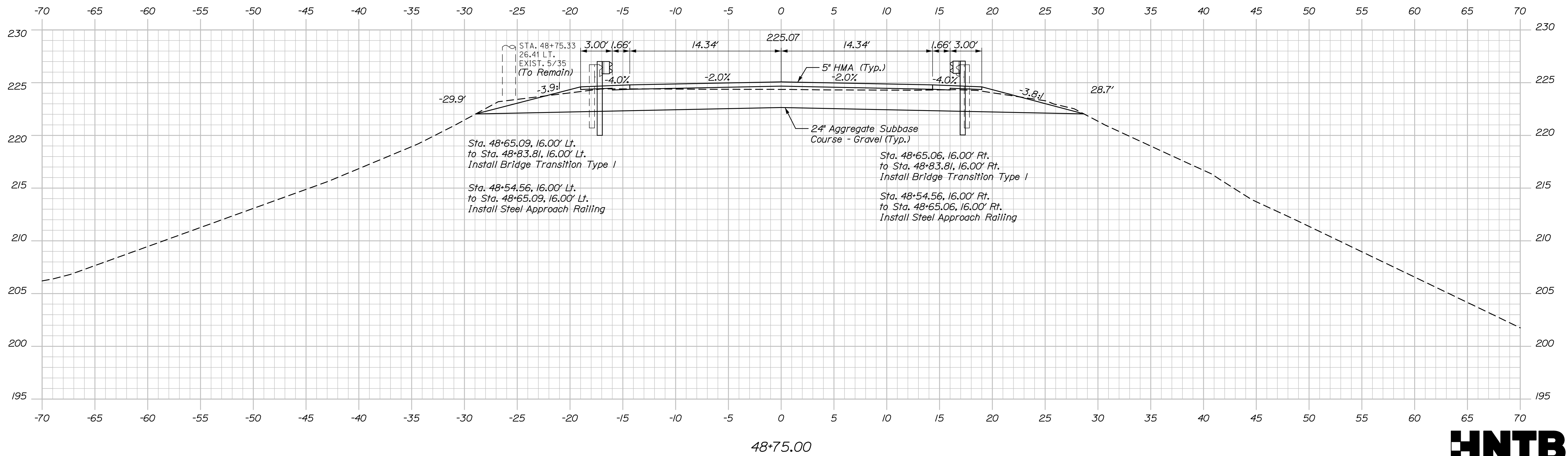
HNTB

PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
DESIGNED-DETAILED CHECKED-REVIEWED DESIGNED-DETAILED DESIGNED-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	M. Parlin C. Helmick P. Bishop L. Driscoll - - - - -	10/19 10/19 10/19 10/19 - - - - -	 	 	

Filename: xsect.dgn



Filename: xsect.dgn



HNTB

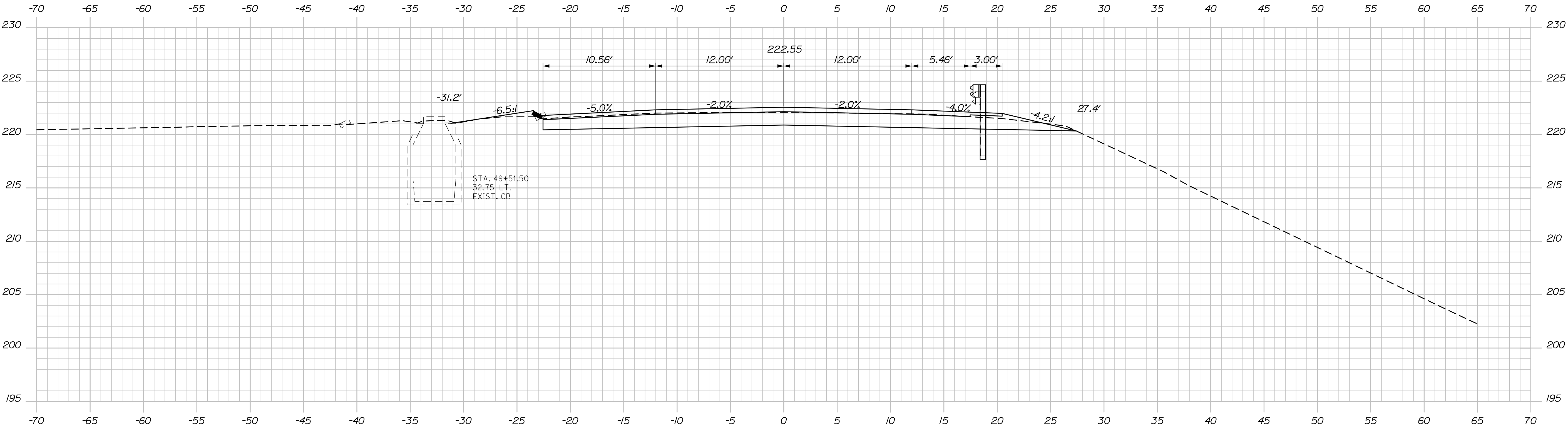
Sta. 48+75.00 to Sta. 49+00.00

Date:10/23/2019

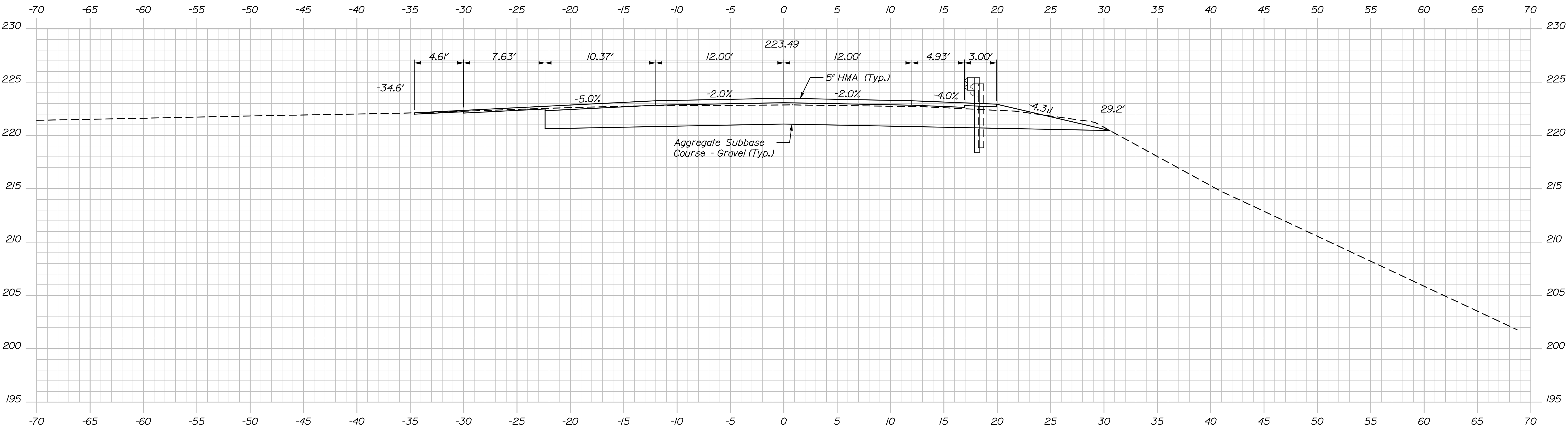
Username:

Division:

Filename: xssect.dgn



49+50.00



49+25.00

Sta. 49+30.00
End Project
Begin Transition

HNTB

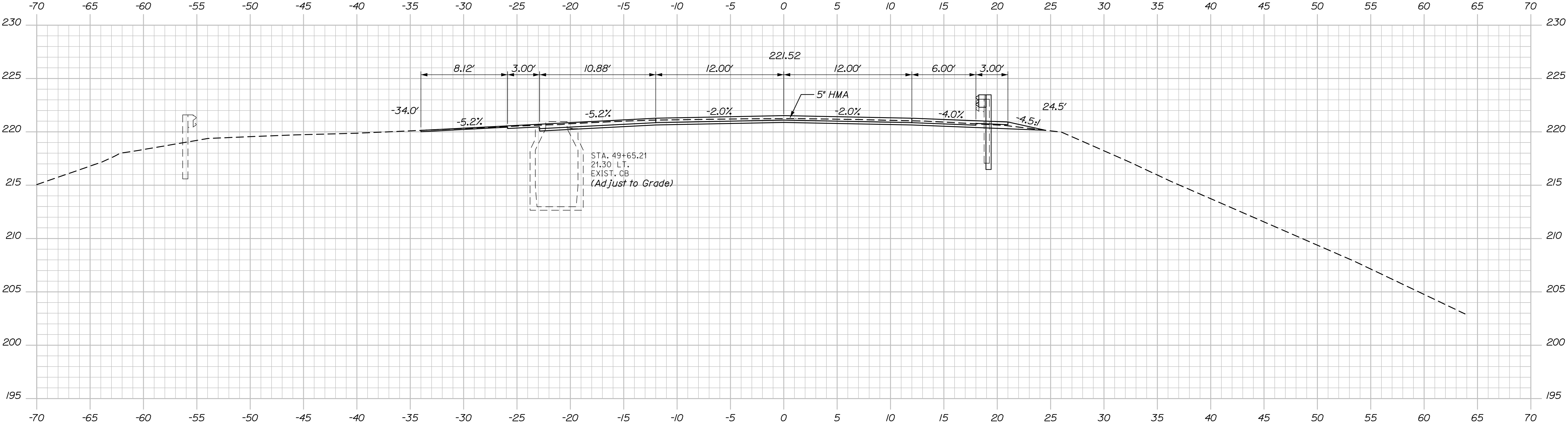
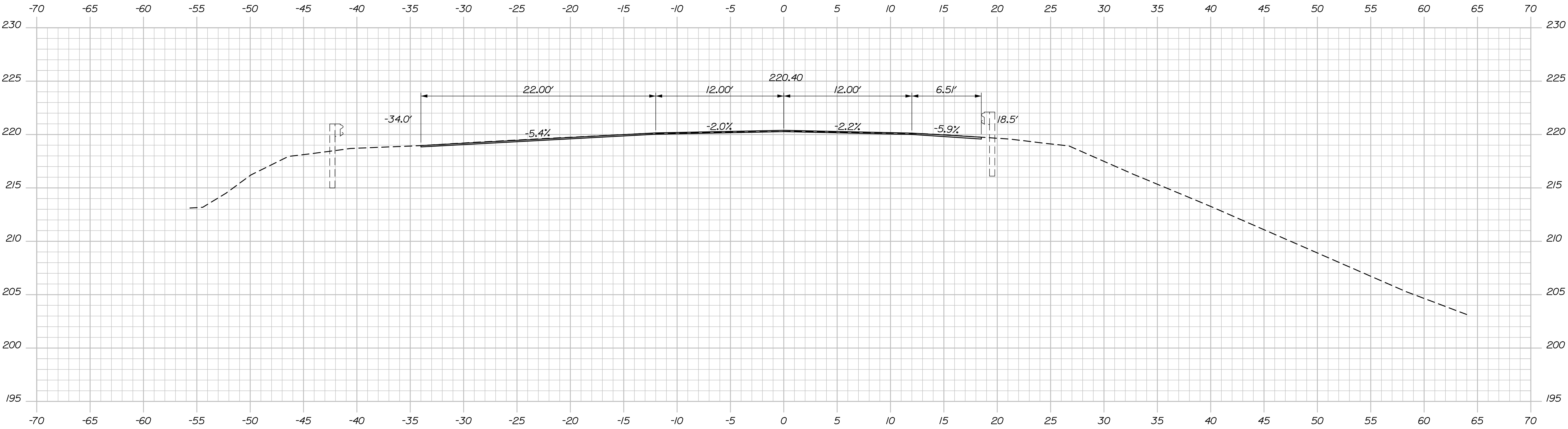
PROJ. MANAGER	BY	DATE
DESIGN-DETAILED CHECKED-REVIEWED DESIGN-DETAILED DESIGN-DETAILED REVISIONS 1 REVISIONS 2 REVISIONS 3 REVISIONS 4 FIELD CHANGES	M. Parlin P. Bishop L. Driscoll - - - - - -	10/19 10/19 - - - - - - -
SIGNATURE		
P.E. NUMBER		
DATE		

Date:10/23/2019

Username:

Division:

Filename: xssect.dgn



PROJ. MANAGER	BY	DATE
DESIGN-DETAILED C. Helmick	P. Bishop	10/19
CHECKED-REVIEWED A. Sweet	L. Driscoll	10/19
DESIGN-DETAILED -	-	-
DESIGN-DETAILED -	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-

SIGNATURE

P.E. NUMBER

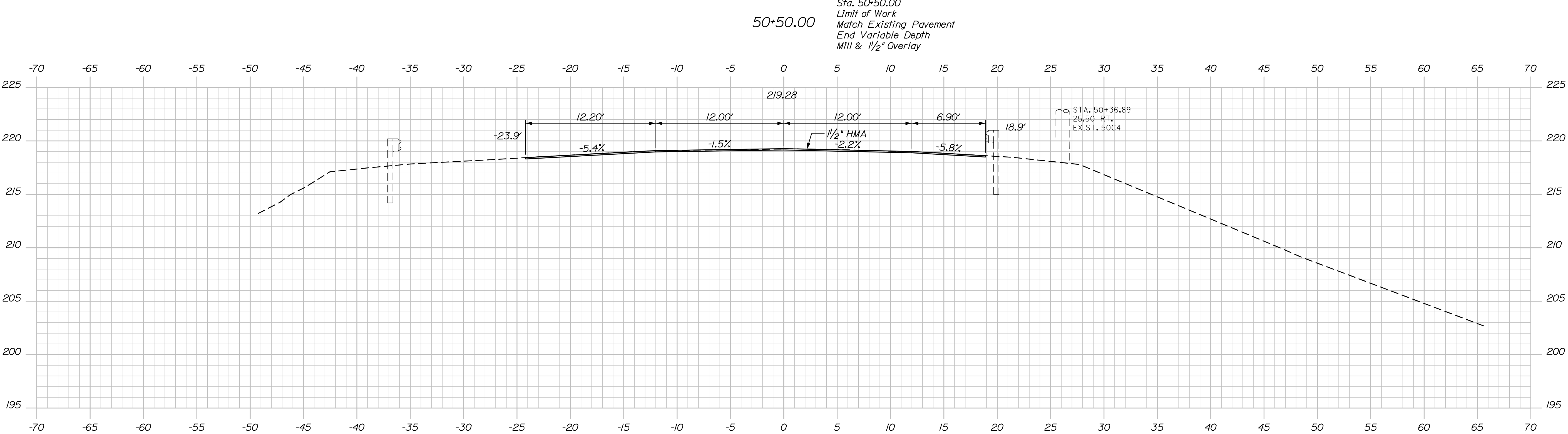
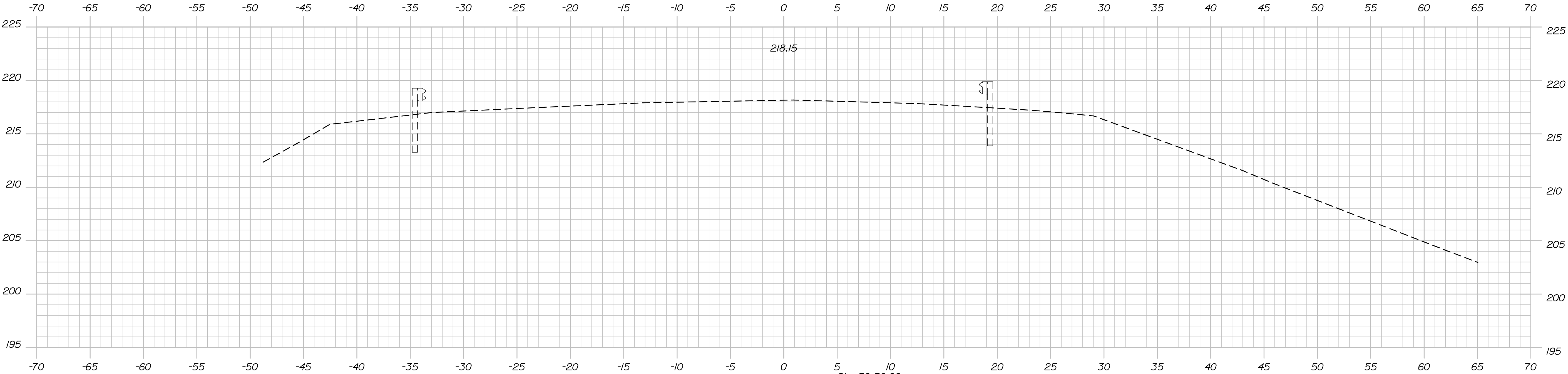
DATE

Date:10/23/2019

Username:

Division:

Filename: xssect.dgn



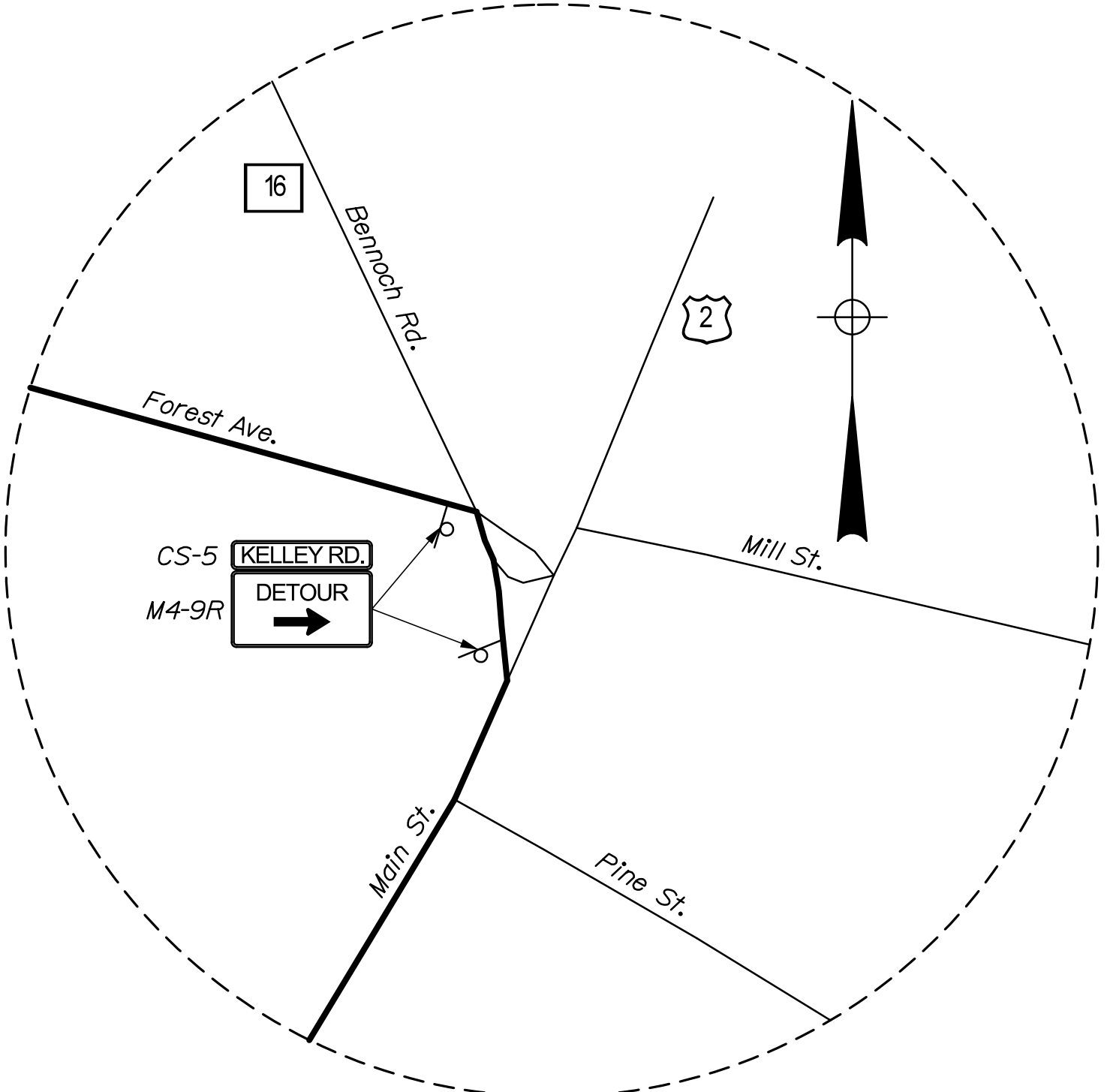
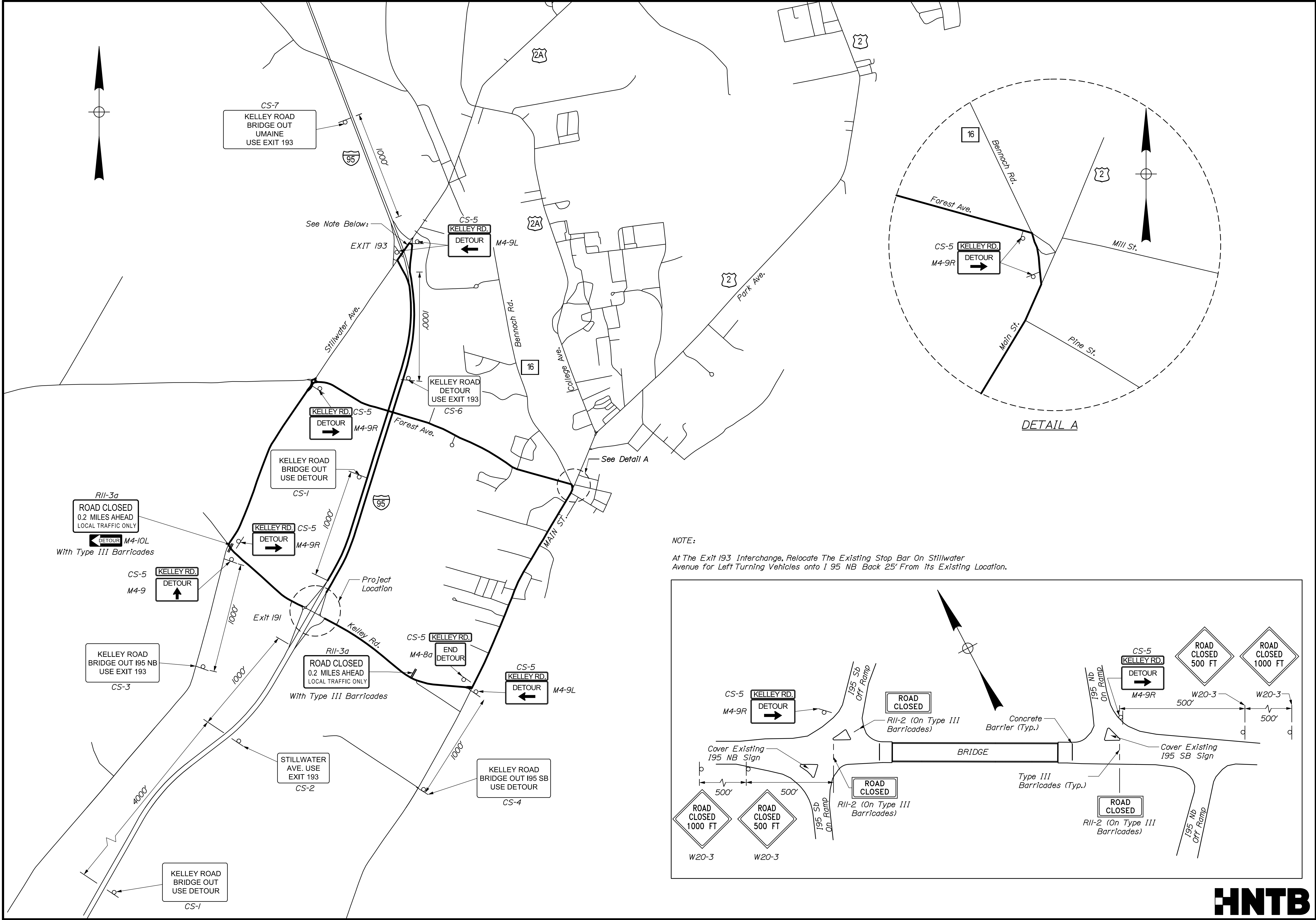
PROJ. MANAGER	BY	DATE
M. Parlin	P. Bishop	10/19
C. Helmick	L. Driscoll	10/19
CHECKED-REVIEWED		SIGNATURE
DESIGN-DETAILED		P.E. NUMBER
DESIGN-REVIEWED		DATE
DESIGN-DETAILED		
REVISIONS 1		
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

Date:10/23/2019

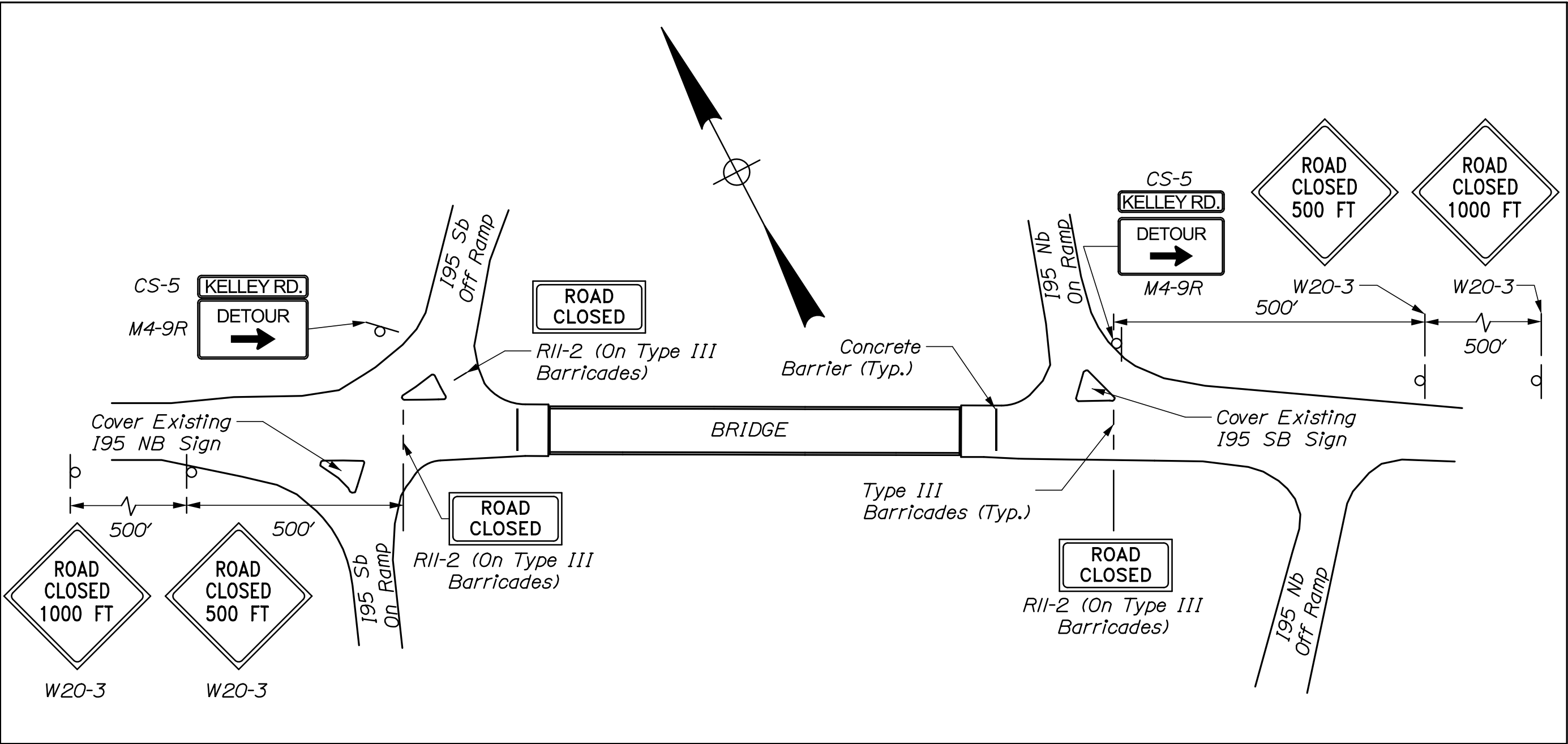
Username:

Division:

Filename: 013_Detour Plan.dgn



NOTE:
At The Exit 193 Interchange, Relocate The Existing Stop Bar On Stillwater Avenue for Left Turning Vehicles onto I 95 NB Back 25' From Its Existing Location.



HNTB

SHEET NUMBER				STATE OF MAINE				
13				DEPARTMENT OF TRANSPORTATION				
				WIN 022344.00				
BRIDGE NO. 5905				BRIDGE PLANS				
OF 29								
KELLEY ROAD BRIDGE INTERSTATE 95 ORONO				PROJ. MANAGER		M. Perrin	BY	DATE
				DESIGN-DETAILED		C. Helmick	P. Bishop	10/19
PENOBSCOT COUNTY				CHECKED-REVISED		A. Sweet	L. Driscoll	10/19
				DESIGN2-DETAILED2		-	-	-
DETOUR PLAN				DESIGN3-DETAILED3		-	-	-
				REVISIONS 1		-	-	-
				REVISIONS 2		-	-	-
				REVISIONS 3		-	-	-
				REVISIONS 4		-	-	-
				FIELD CHANGES		-	-	-

IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR		BORDER RADIUS	AREA IN SQUARE FEET	NOTES
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK- GROUND	LEGEND BORDER			
CS-1	78"	48"	KELLEY ROAD BRIDGE OUT USE DETOUR	8"D 8"D 8"D	6" 6"		2	ORANGE	BLACK	1.5"	26.00 (52.00)	
CS-2	66"	48"	STILLWATER AVE. USE EXIT 193	8"D 8"D 8"D	6" 6"		1	ORANGE	BLACK	1.5"	22.00 (22.00)	
CS-3	48"	30"	KELLEY ROAD BRIDGE OUT 195 NB USE EXIT 193	4"C 4"C 4"C	3" 3"		1	ORANGE	BLACK	1.5"	10.00 (10.00)	
CS-4	48"	30"	KELLEY ROAD BRIDGE OUT 195 SB USE DETOUR	4"C 4"C 4"C	3" 3"		1	ORANGE	BLACK	1.5"	10.00 (10.00)	
CS-5	30"	12"	KELLEY RD.	4"C			11	ORANGE	BLACK	1.5"	2.5 (27.5)	
CS-6	78"	48"	KELLEY ROAD DETOUR USE EXIT 193	8"D 8"D 8"D	6" 6"		1	ORANGE	BLACK	1.5"	26.00 (26.00)	
CS-7	78"	60"	KELLEY ROAD BRIDGE OUT UMAINE USE EXIT 193	8"D 8"D 8"D 8"D	6" 6" 6"		1	ORANGE	BLACK	1.5"	32.50 (32.50)	
R11-2	48"	30"	ROAD CLOSED	TEXT DIMENSIONS SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2000			3	SHALL CONFORM TO "STANDARD HIGHWAY SIGNS" - 2000			10.00 (30.00)	
R11-3a (0,2) (0,3)	60"	30"	ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY				1 1				12.50 (12.50) (12.50)	
M4-8a	24"	18"	END DETOUR				1				3.00 (3.00)	
M4-9	30"	24"	DETOUR ↑				1				5.00 (5.00)	
M4-9L	30"	24"	DETOUR ←				3				5.00 (15.00)	
M4-9R	30"	24"	DETOUR →				6				5.00 (30.00)	
M4-10L	48"	18"	← DETOUR				1				6.00 (6.00)	
W20-3 (500 FT) (1000 FT)	48"	48"	ROAD CLOSED XXXX				2 2				16.00 (32.00) 16.00 (32.00)	

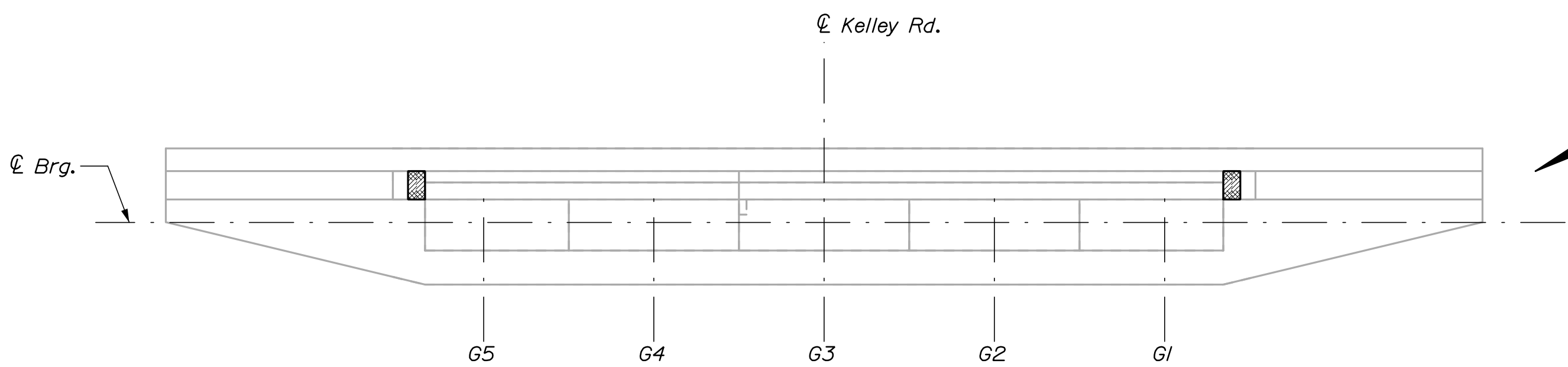
Note:
1. Sign summary includes detour signs only.

Date:10/23/2019

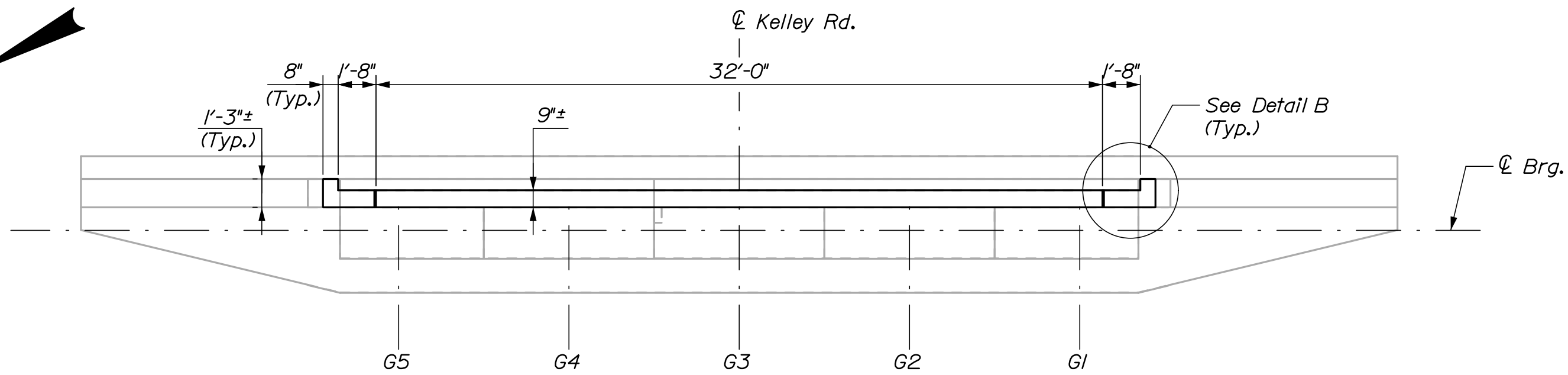
Username:

Division:

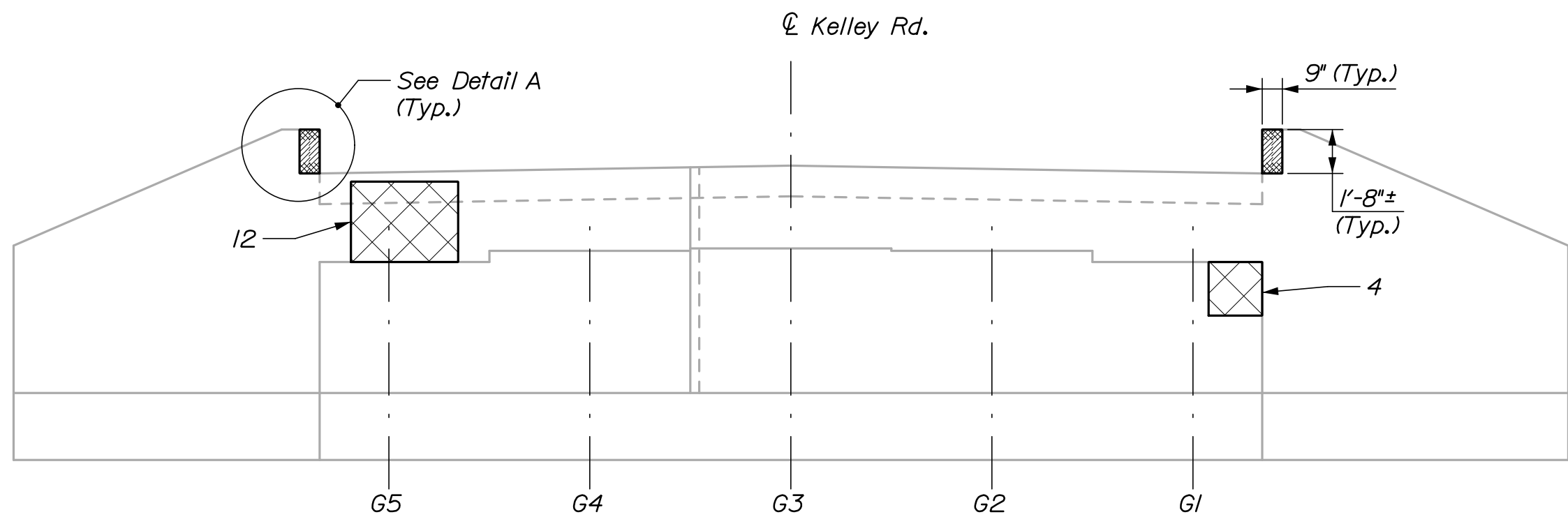
Filename: 015_Abutment Modifications.dgn



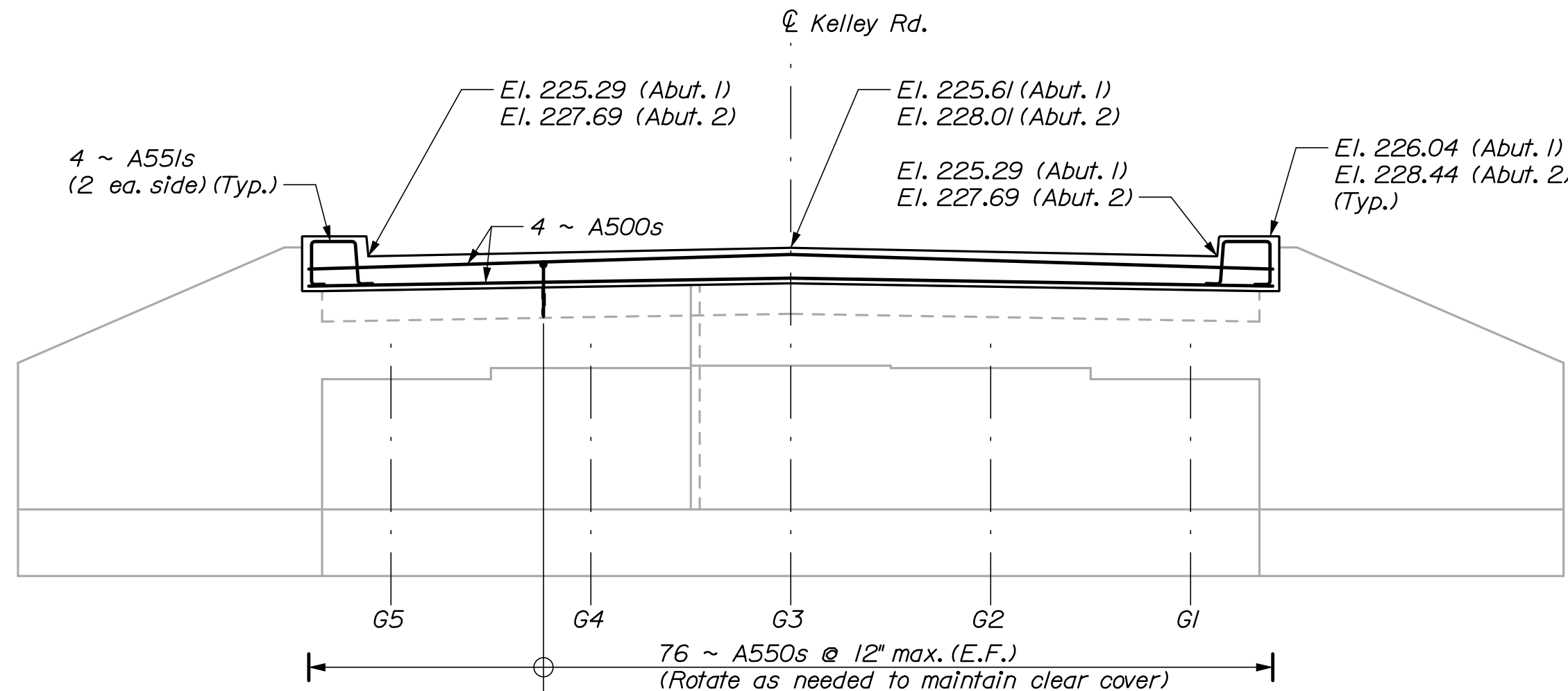
ABUTMENT 1 (EASTERLY ABUTMENT) DEMOLITION PLAN
(Abutment 2 Similar)



ABUTMENT 1 (EASTERLY ABUTMENT) CONSTRUCTION PLAN
(Abutment 2 Similar)



ABUTMENT 1 (EASTERLY ABUTMENT) DEMOLITION ELEVATION
(Abutment 2 Similar)
(Repairs Apply To Abutment 1 Only, No Anticipated Repairs For Abutment 2)



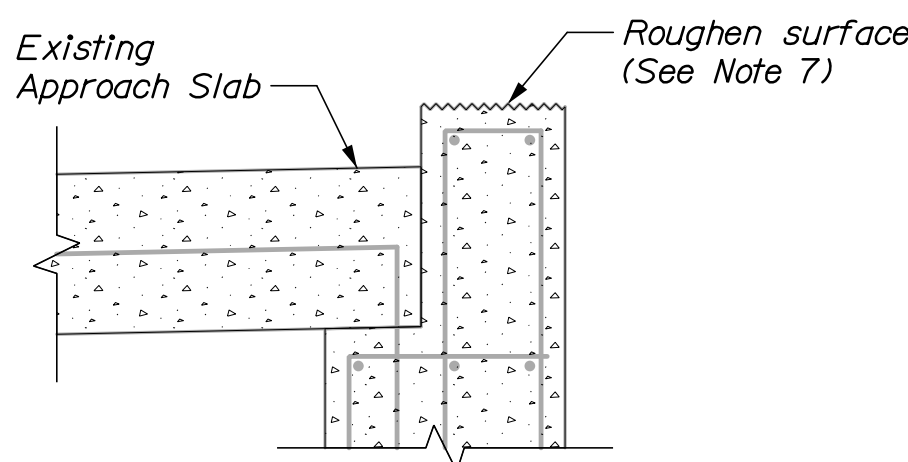
ABUTMENT 1 (EASTERLY ABUTMENT) CONSTRUCTION ELEVATION
(Abutment 2 Similar)

LEGEND

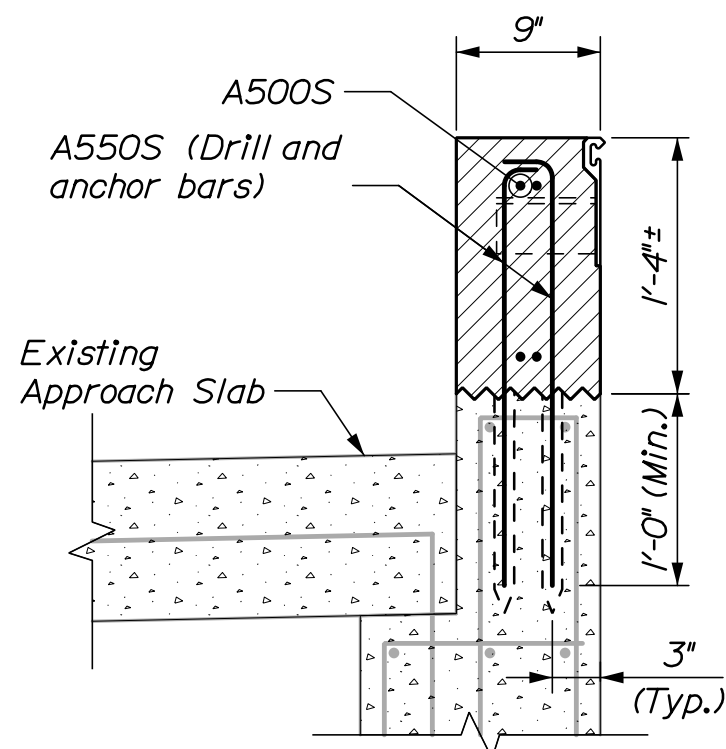
Concrete Repair Area (SF)

ESTIMATED CONCRETE REPAIR QUANTITIES	
Repair of Vertical Surfaces < 8 inches (Item 518.60)	21 SF*

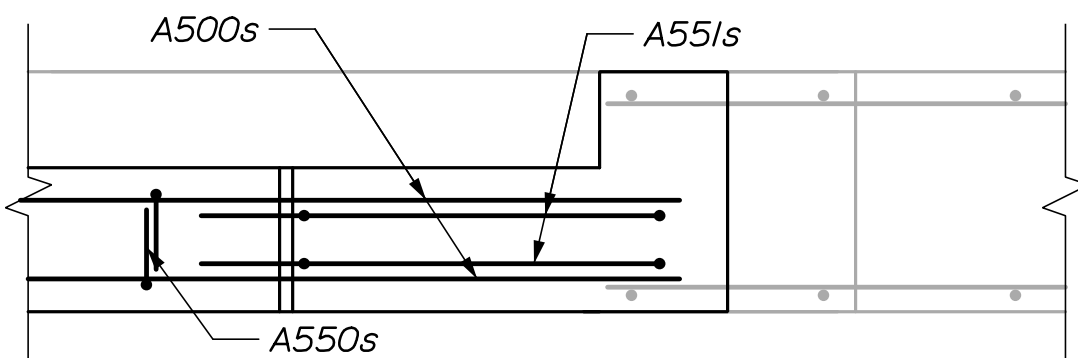
* Includes 5 SF additional repair quantity as a contingency



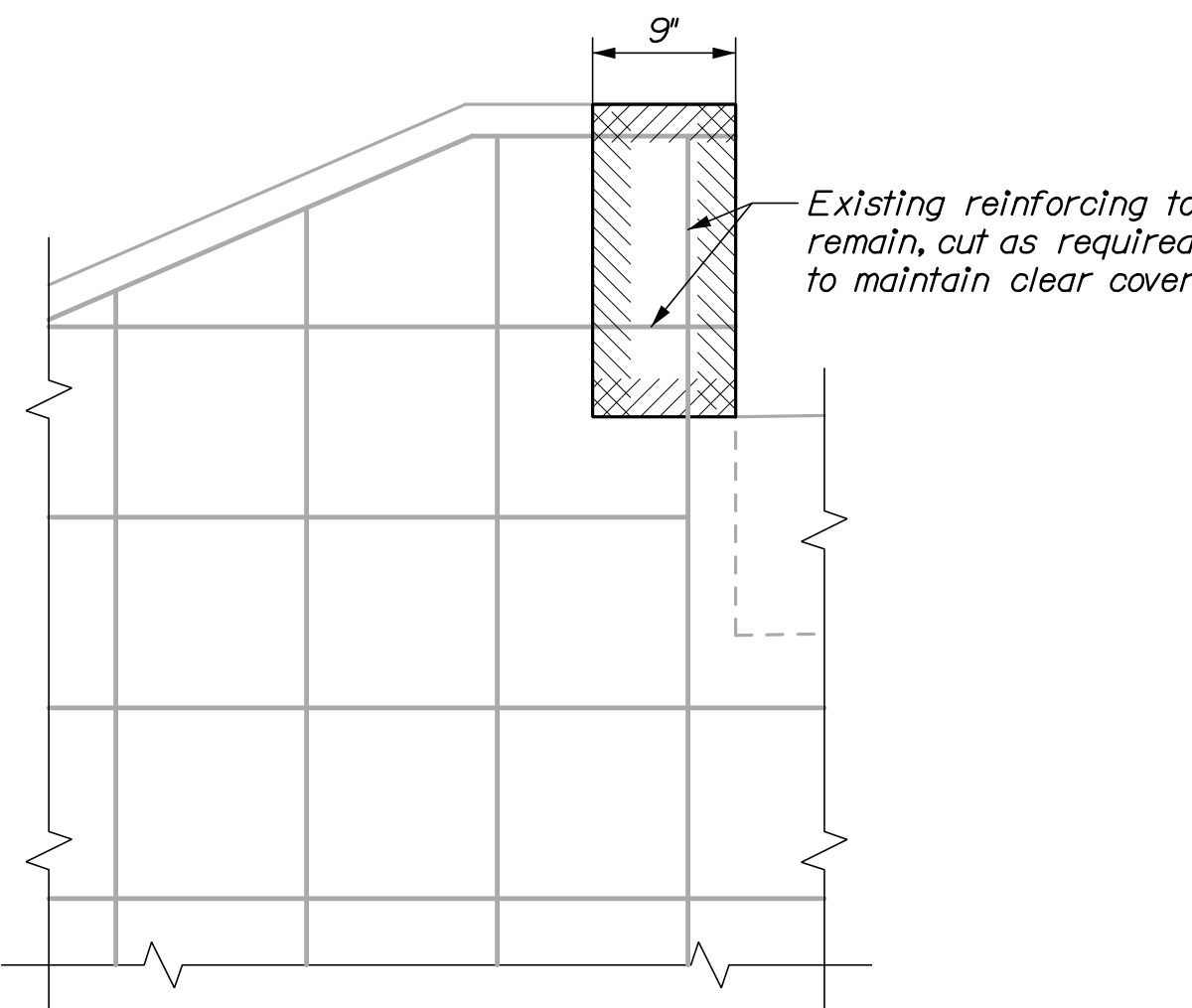
ABUTMENT 1 DEMOLITION SECTION
(ABUTMENT 2 SIMILAR)



ABUTMENT 1 CONSTRUCTION SECTION
(ABUTMENT 2 SIMILAR)



DETAIL B



DETAIL A

ABUTMENT AND WINGWALL MODIFICATION NOTES:

1. The Contractor shall use care not to damage the existing reinforcing steel which is to remain. Any damaged reinforcing steel shall be replaced as directed by the Resident at no expense to the Department.
2. The Contractor shall locate by non-destructive methods, reinforcing steel in existing concrete before drilling and grouting new reinforcing steel and anchor rods to avoid conflicts. All costs associated with this work shall be incidental to related contract items.
3. Reinforcing steel shall have 2 inches cover unless otherwise noted.
4. Existing concrete at abutments and wingwalls to be removed as shown on the plans shall be sawcut 1 inch deep prior to removing existing concrete. All costs associated with this work shall be incidental to related contract items.
5. Where drilling and anchoring of reinforcement is specified, the Contractor shall use a material listed on the Maine Department of Transportation Qualified Products List of Concrete Adhesive Anchor Systems. The depth of embedment shall be sufficient to develop 125% of the yield strength of the bar per the manufacturer's recommendations or 12 inches, whichever is greater. Proposed anchoring material and embedment depth shall be submitted for approval. No separate payment will be made for drilling and anchoring of reinforcing steel, but shall be incidental to the related Contract pay item.
6. All dimensions based on or related to the existing bridge shall be verified in the field by the Contractor.
7. Prior to abutment construction, the existing backwall shall be cleaned so that it is free of debris and roughened 1/2". Payment for cleaning and roughening will be considered incidental to Item 502.21 "Structural Concrete, Abutments and Retaining Walls".

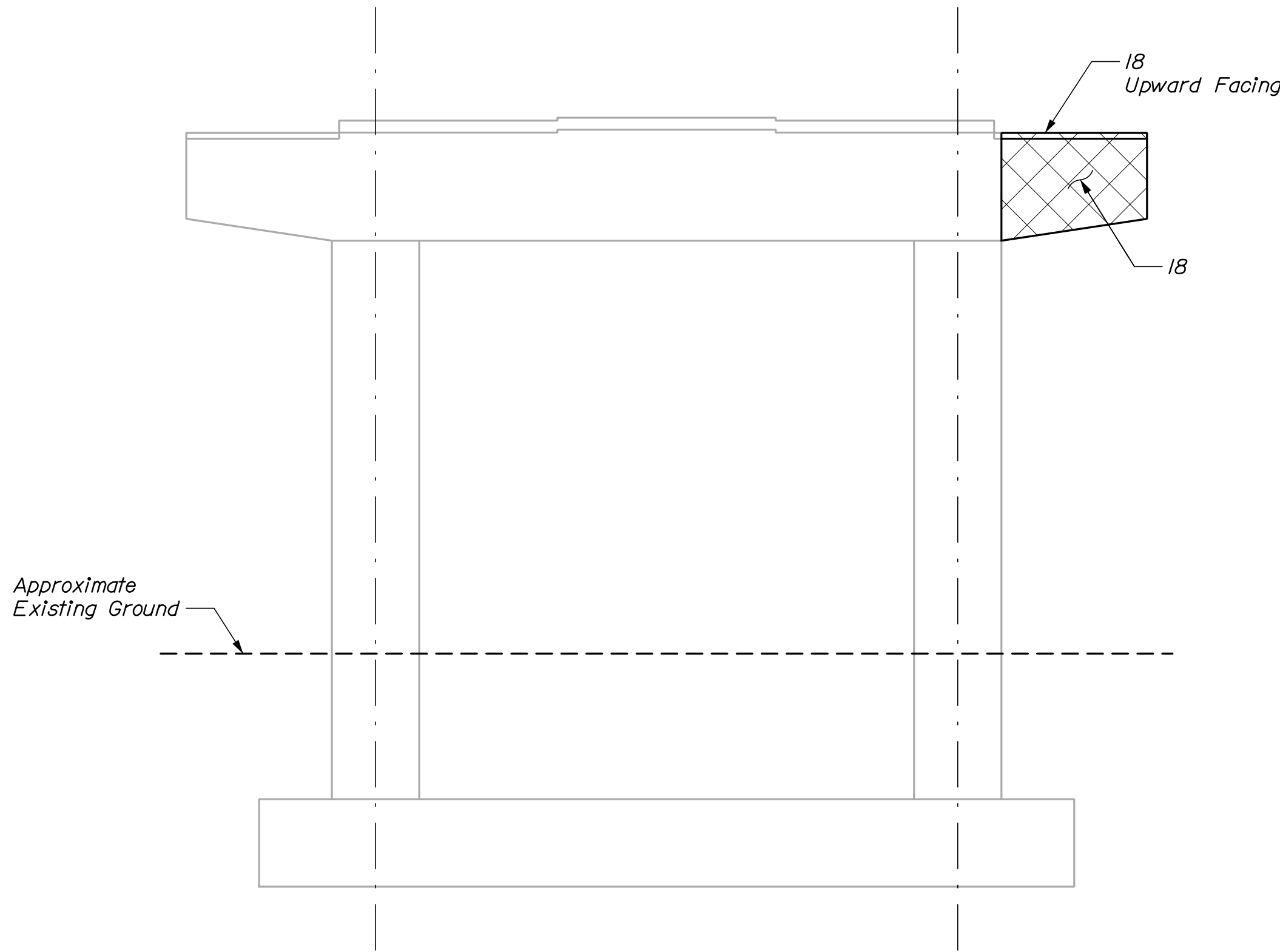
PROJ. MANAGER	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
M. Parlin	P. Bishop	10/19			
T. Poulis	L. Driscoll	10/19			
B. Greter					

Date:10/23/2019

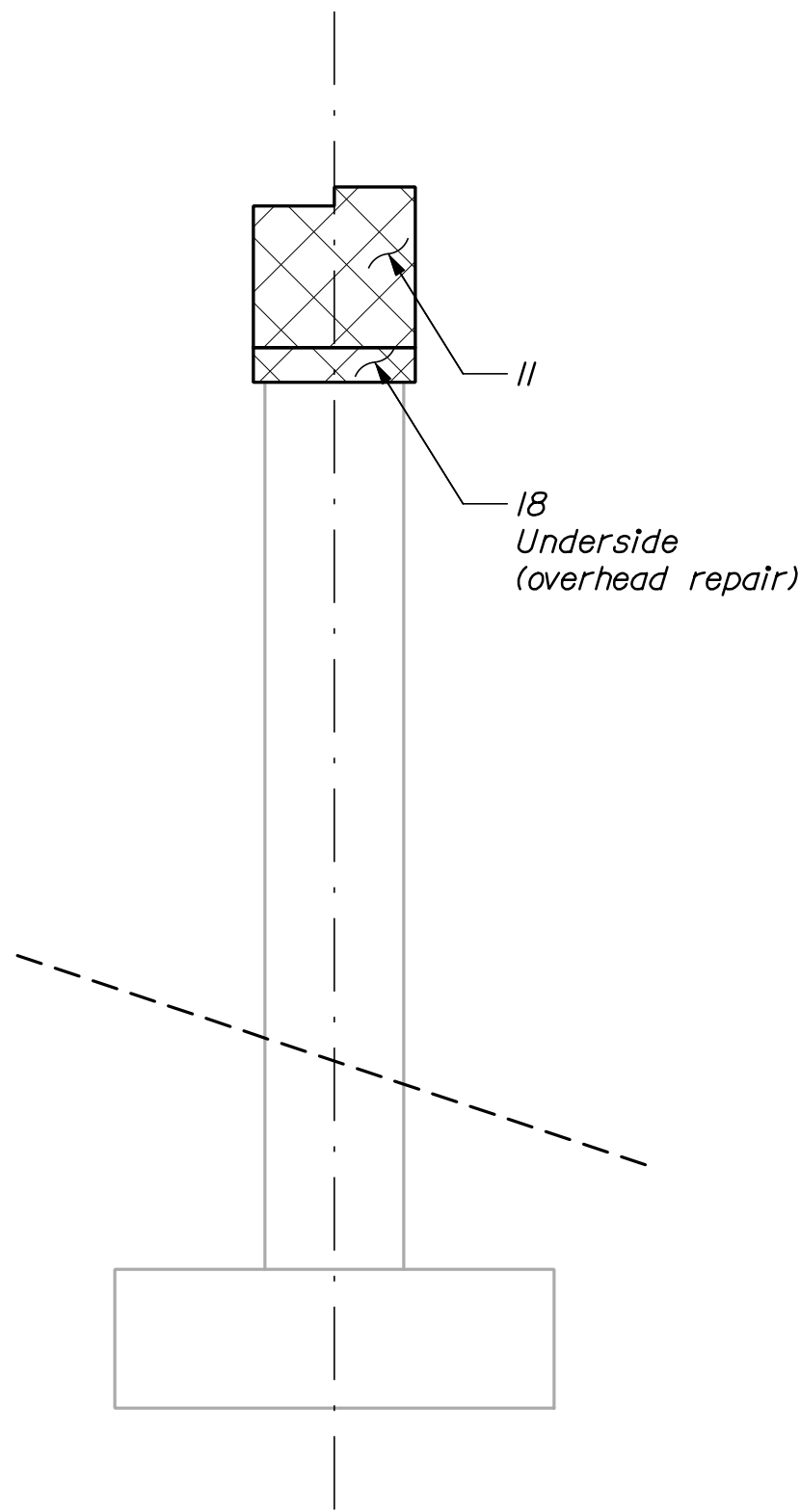
Username:

Division:

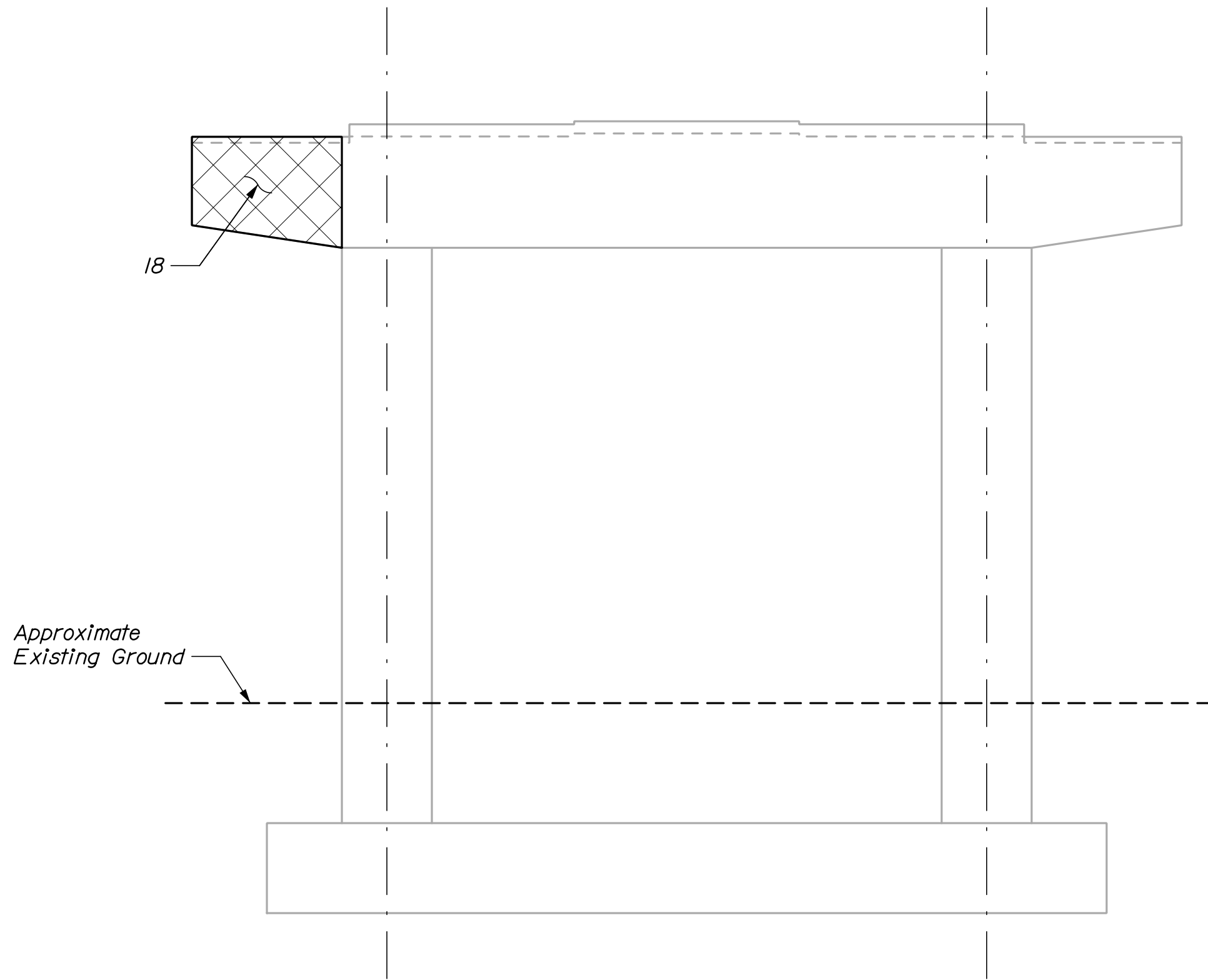
Filename: 016_Pier 1 Modifications.dgn



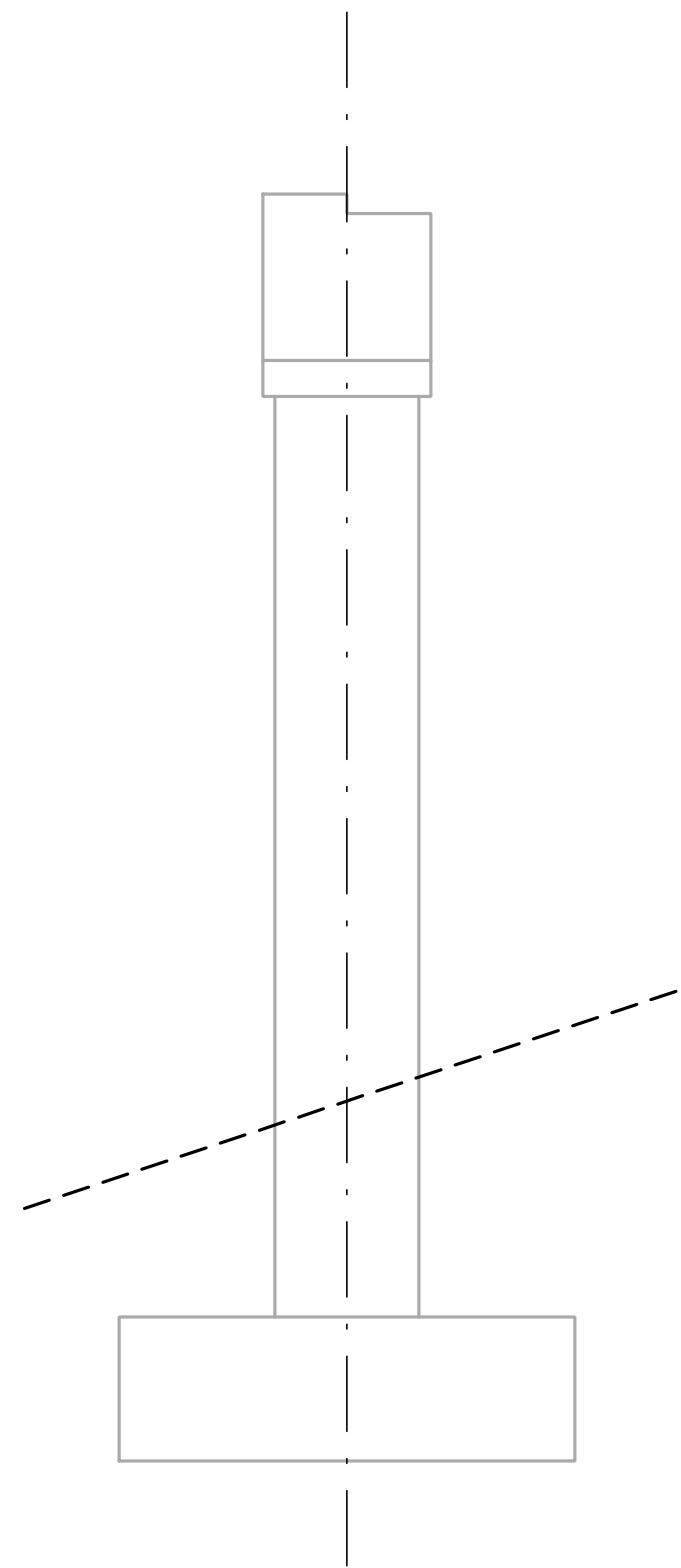
PIER 1 ELEVATION - WEST FACE



PIER 1 ELEVATION - SOUTH FACE



PIER 1 ELEVATION - EAST FACE

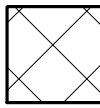


PIER 1 ELEVATION - NORTH FACE

CONCRETE REPAIR NOTES:

1. The quantities of pier and abutment repairs noted on these drawings are based on a visual inspection. If differences are experienced, the Resident shall be notified and quantities shall be adjusted accordingly. For approximate locations of repair, see Sheets 15-18. Actual repair areas will be determined and agreed on by the Contractor and the Resident during construction.
2. No repairs are anticipated for pier 2. The Contractor and Resident shall verify that no work is required.
3. The Department must approve changes in quantity beyond what is shown or assumed.
4. All broken or corroded reinforcing bars shall be supplemented in accordance with Standard Specification Section 518.04. Supplemental reinforcing shall maintain a clear cover of 2" minimum. Payment for supplemental bars shall be included in Items 503.12 and 503.13.
5. Pier cap overhang repairs shall be completed before opening the bridge to traffic.

LEGEND

 Concrete Repair Area (SF)

PIER 1 - ESTIMATED CONCRETE REPAIR QUANTITIES	
Repair of Upward Facing Surfaces- to Reinforcing Steel < 8 inches (Item 518.50)	23 SF*
Repair Vertical Surfaces < 8 inches (Item 518.60)	52 SF*
Repair of Overhead Surfaces < 8 inches (Item 518.70)	23 SF*
Reinforcing Steel (Items 503.12 and 503.13)	50 LB**

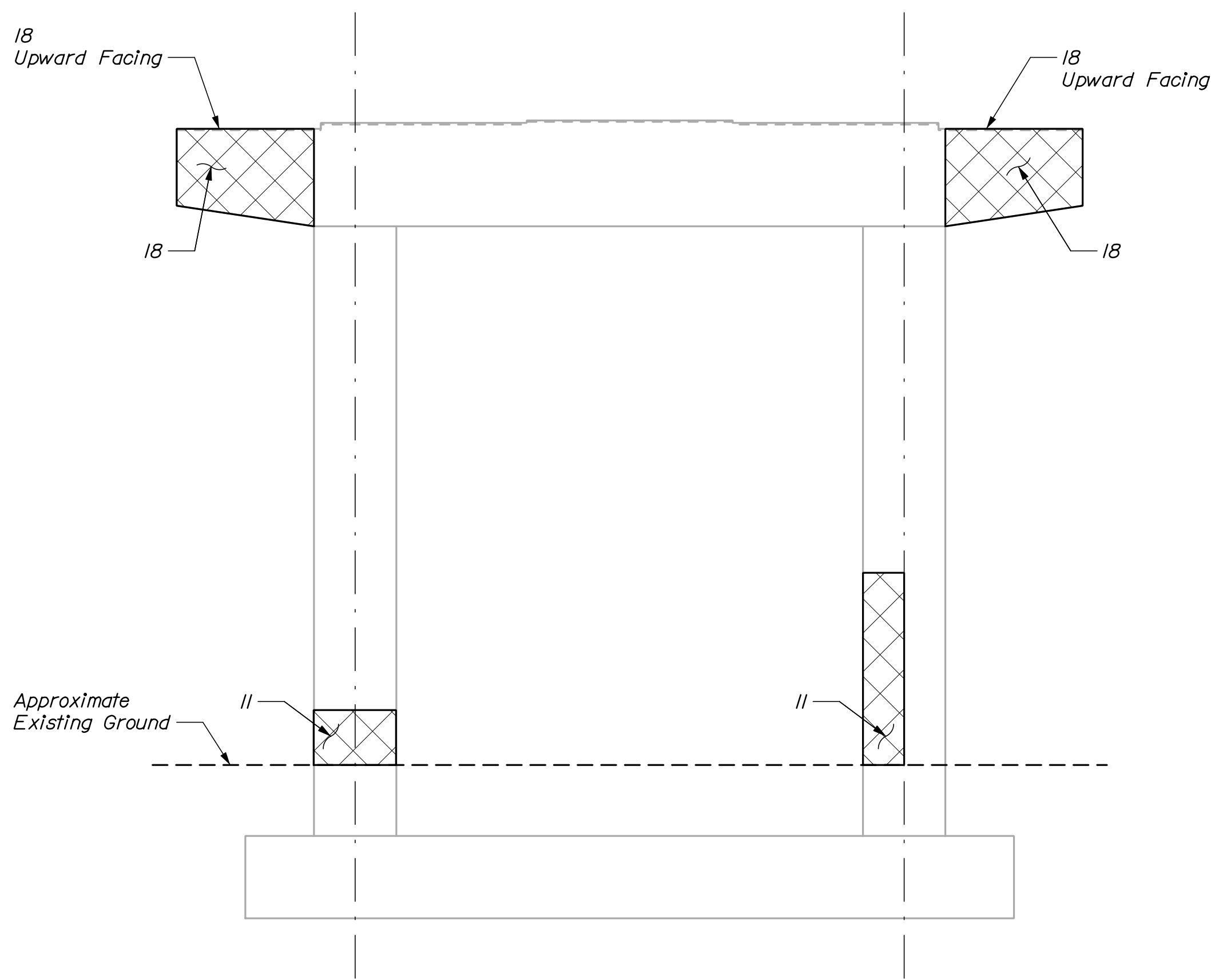
* Includes 5 SF additional quantity as a contingency
 ** Contingency quantity for potential supplemental bars

Date:10/23/2019

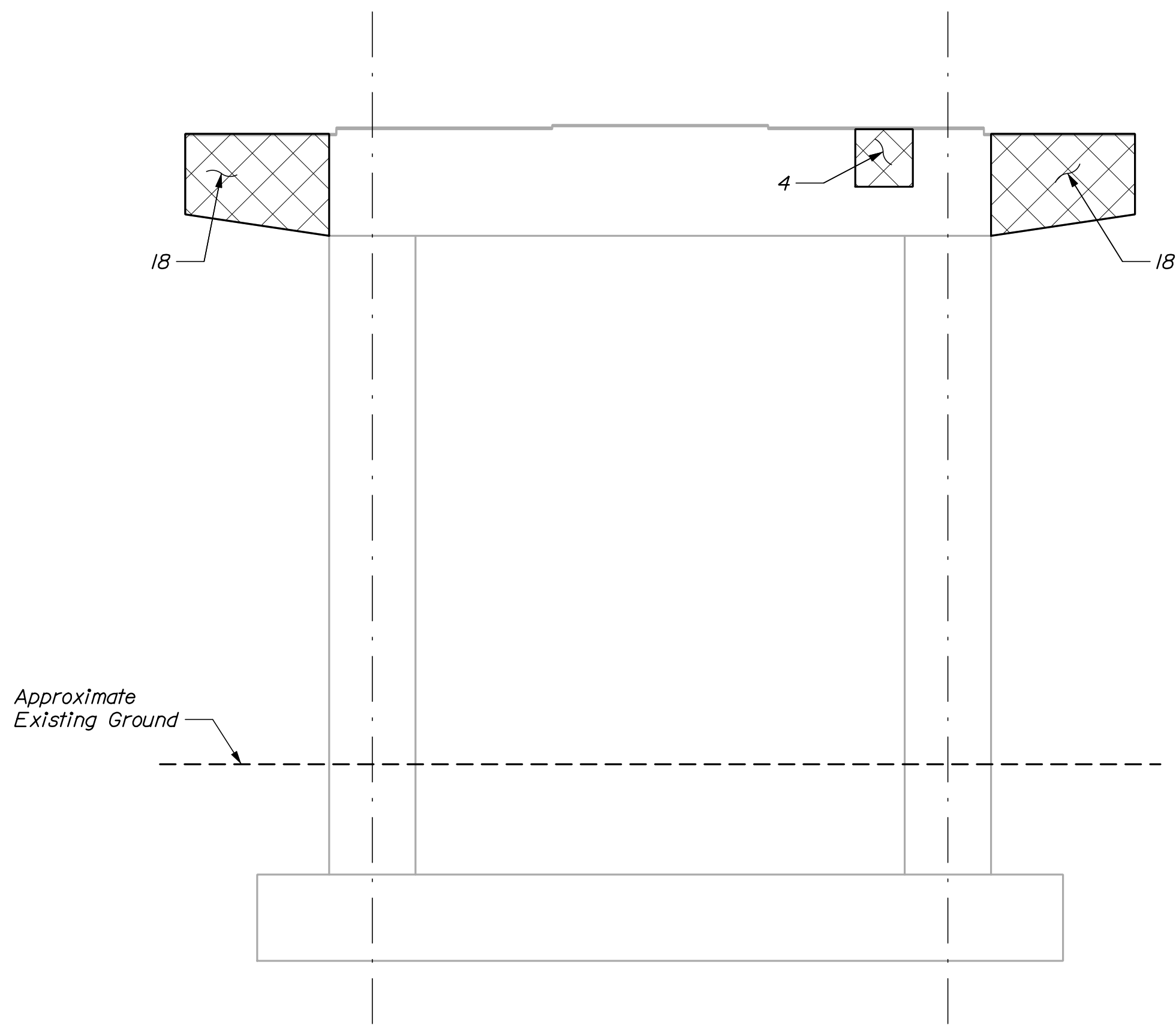
Username:

Division:

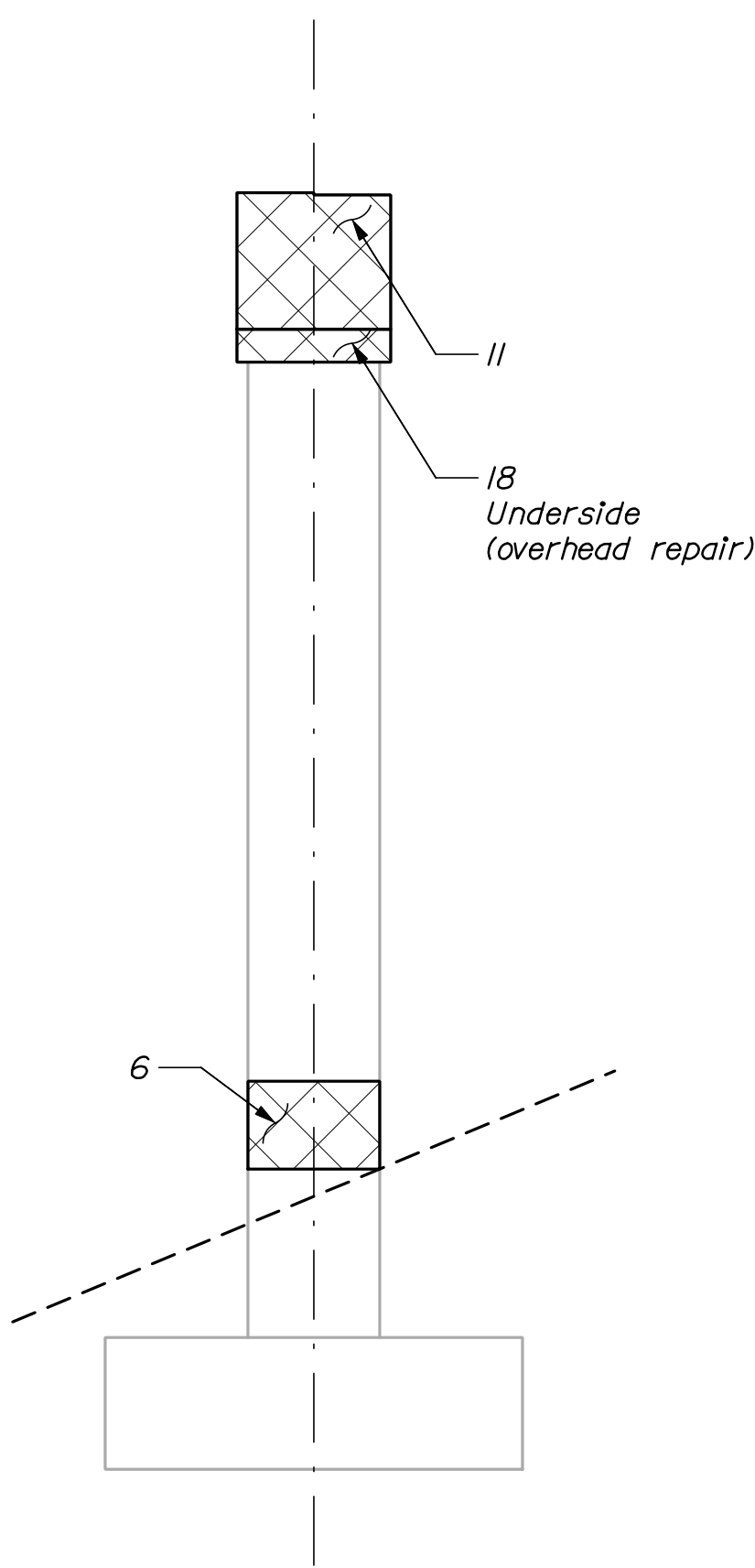
Filename: 017_Pier 3 Modifications.dgn



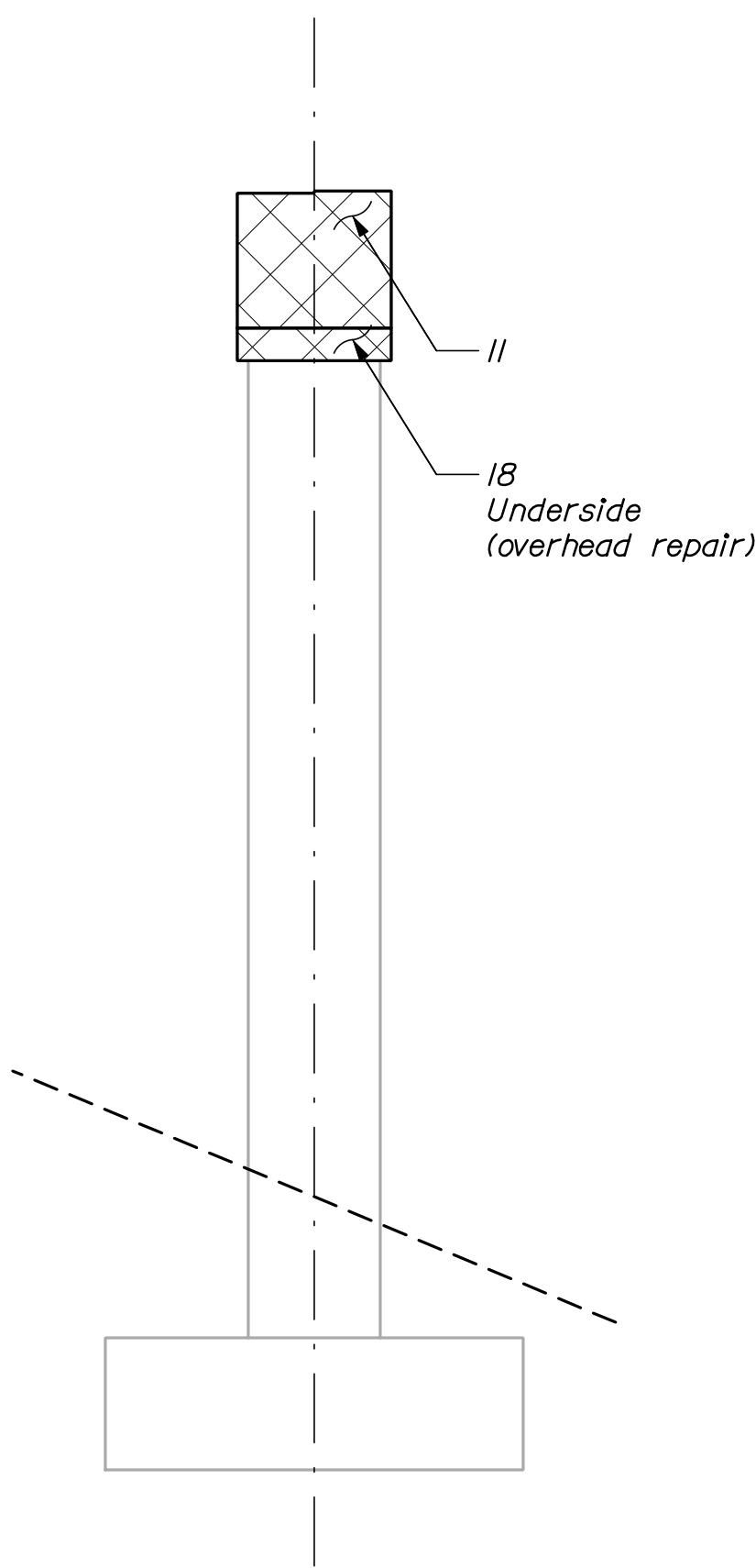
PIER 3 ELEVATION - WEST FACE



PIER 3 ELEVATION - EAST FACE

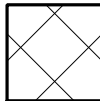


PIER 3 ELEVATION - SOUTH FACE



PIER 3 ELEVATION - NORTH FACE

LEGEND

 Concrete Repair Area (SF)

PIER 3 - ESTIMATED CONCRETE REPAIR QUANTITIES	
Repair of Upward Facing Surfaces- to Reinforcing Steel < 8 inches (Item 518.50)	41 SF*
Repair Vertical Surfaces < 8 inches (Item 518.60)	131 SF*
Repair of Overhead Surfaces < 8 inches (Item 518.70)	41 SF*
Reinforcing Steel (Items 503.12 and 503.13)	100 LB**

* Includes 5 SF additional quantity as a contingency

** Contingency quantity for potential supplemental bars

STATE OF MAINE

DEPARTMENT OF TRANSPORTATION

WIN 022344.00

BRIDGE NO. 5905

BRIDGE PLANS

KELLEY ROAD BRIDGE

INTERSTATE 95

PENOBSCOT COUNTY

ORONO

PIER 3 REPAIRS

PROJ. MANAGER

DESIGN-DETAILED

CHECKED-REVIEWED

DESIGN-DETAILED

DESIGN-DETAILED

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

M. Parlin

B. Greiner

N. Willey

-

-

-

-

-

-

BY

DATE

P. Bishop

10/19

L. Driscoll

10/19

-

-

-

-

-

-

-

-

SIGNATURE

P.E. NUMBER

DATE

SHEET NUMBER

17

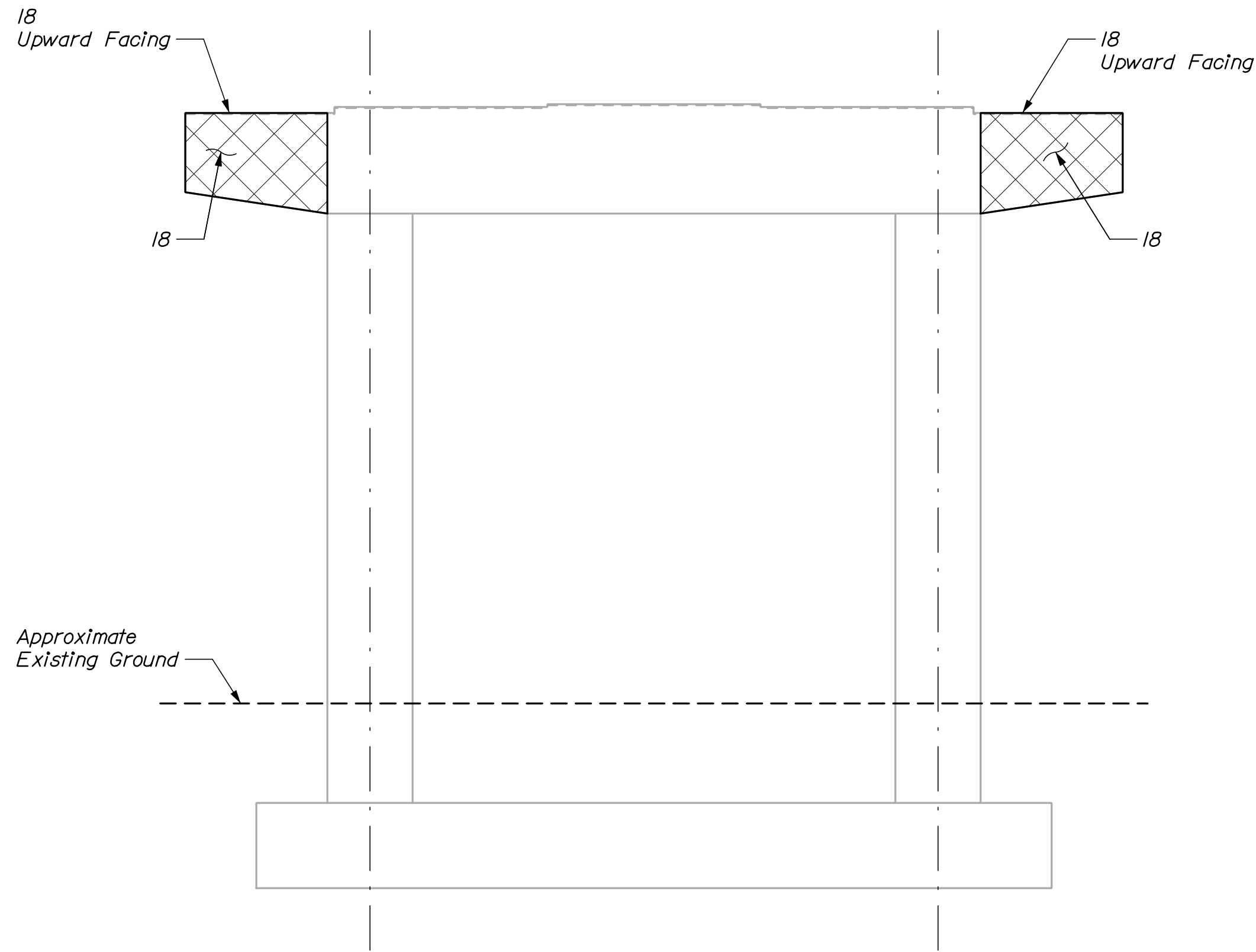
OF 29

Date:10/23/2019

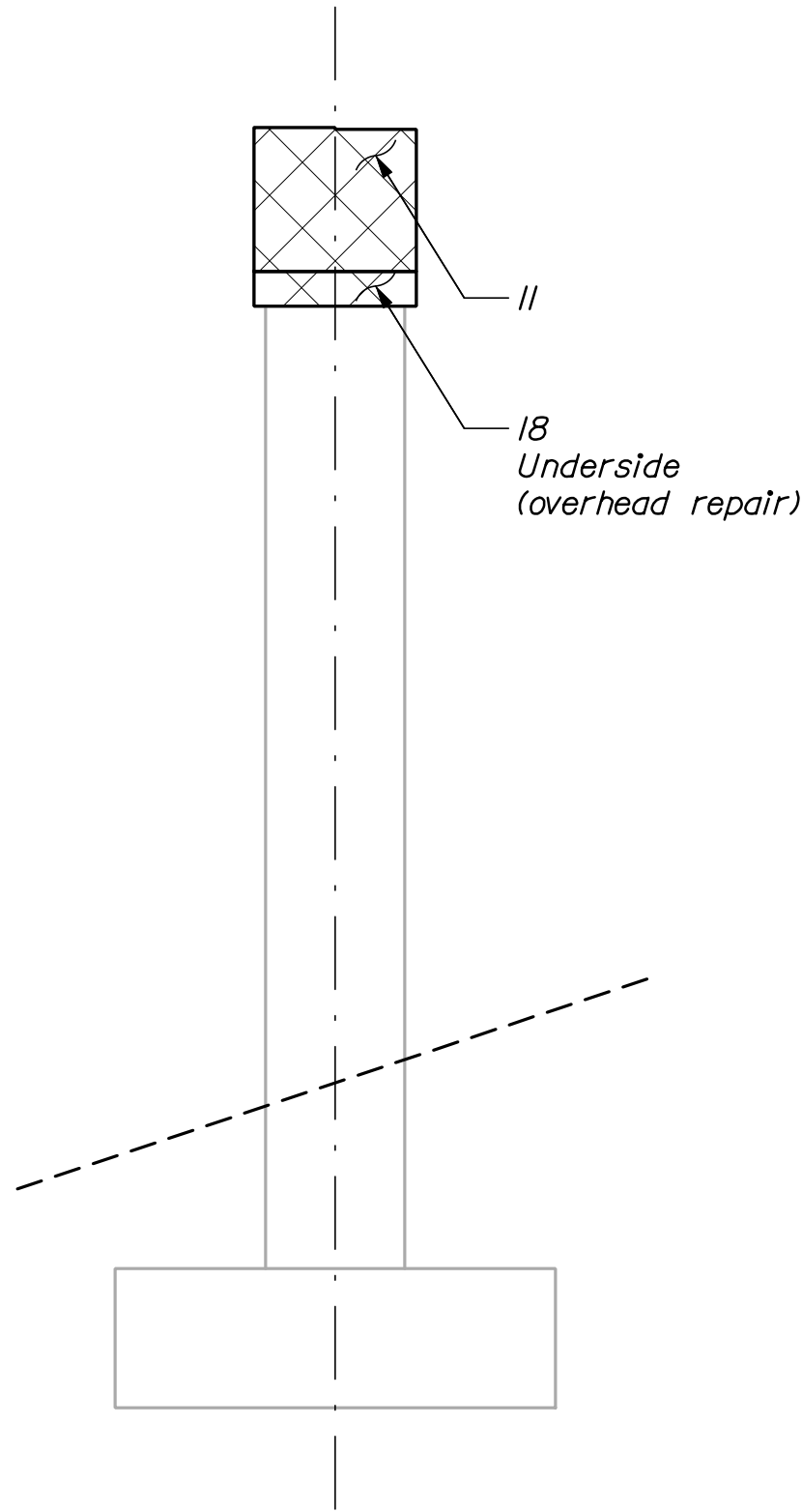
Username:

Division:

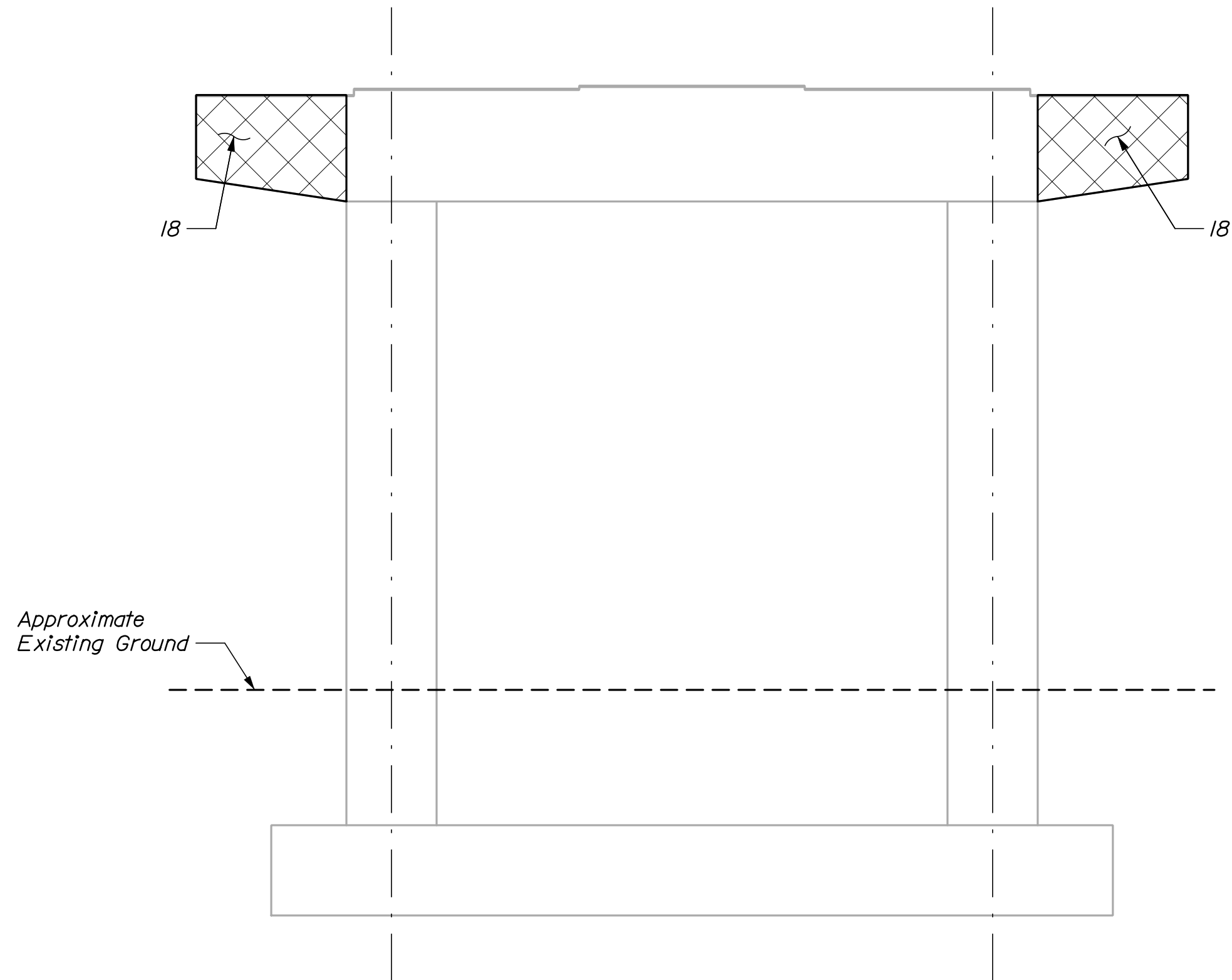
Filename: 018_Pier 4 Modifications.dgn



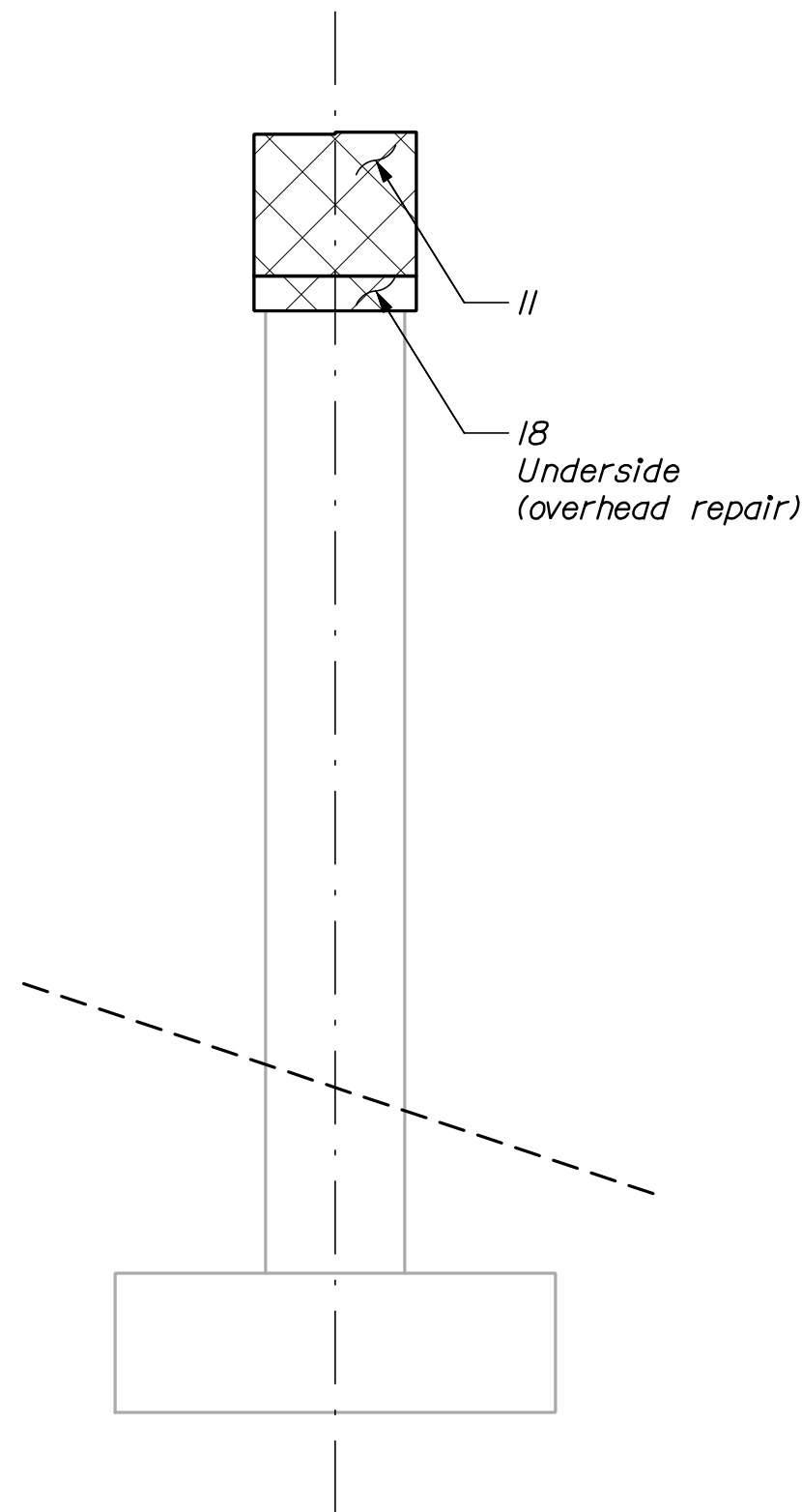
PIER 4 ELEVATION - WEST FACE



PIER 4 ELEVATION - SOUTH FACE

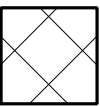


PIER 4 ELEVATION - EAST FACE



PIER 4 ELEVATION - NORTH FACE

LEGEND

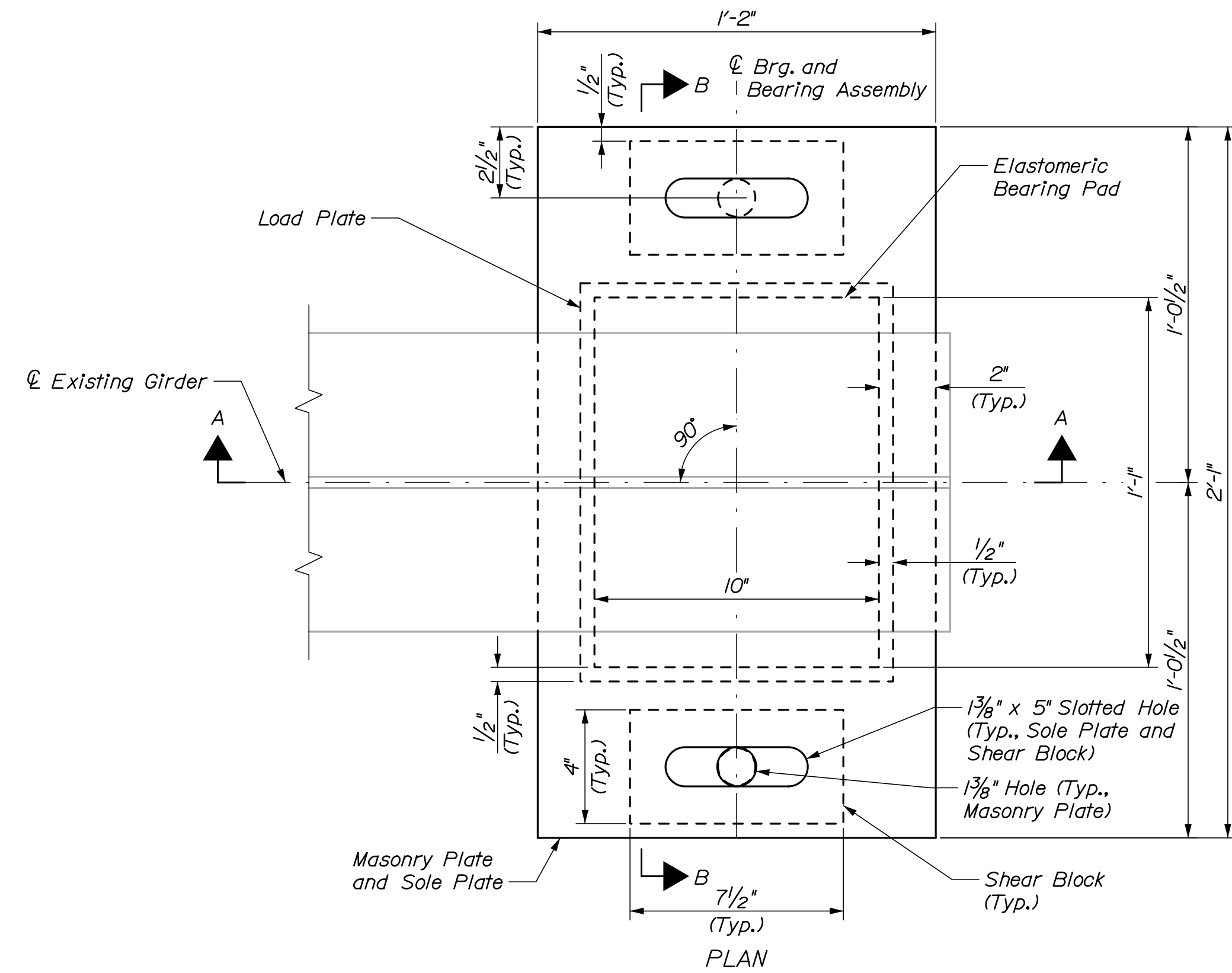
 Concrete Repair Area (SF)

PIER 4 - ESTIMATED CONCRETE REPAIR QUANTITIES	
Repair of Upward Facing Surfaces to Reinforcing Steel < 8 inches (Item 518.50)	41 SF*
Repair Vertical Surfaces < 8 inches (Item 518.60)	99 SF*
Repair of Overhead Surfaces < 8 inches (Item 518.70)	41 SF*
Reinforcing Steel (Items 503.12 and 503.13)	100 LB**

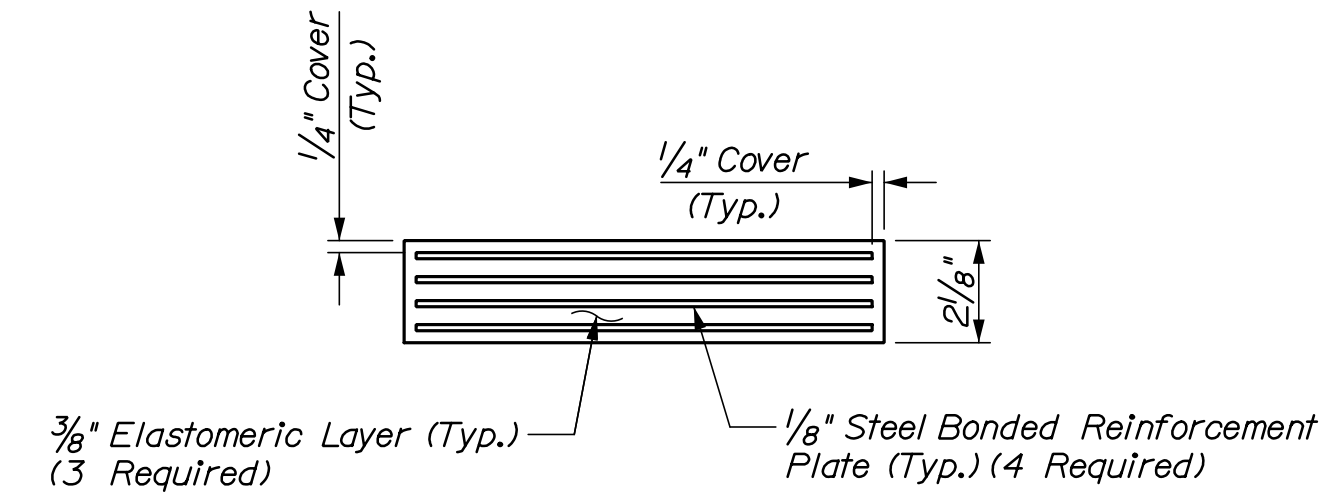
* Includes 5 SF additional quantity as a contingency
** Contingency quantity for potential supplemental bars

Filename: 019_Bearing Details I.dgn

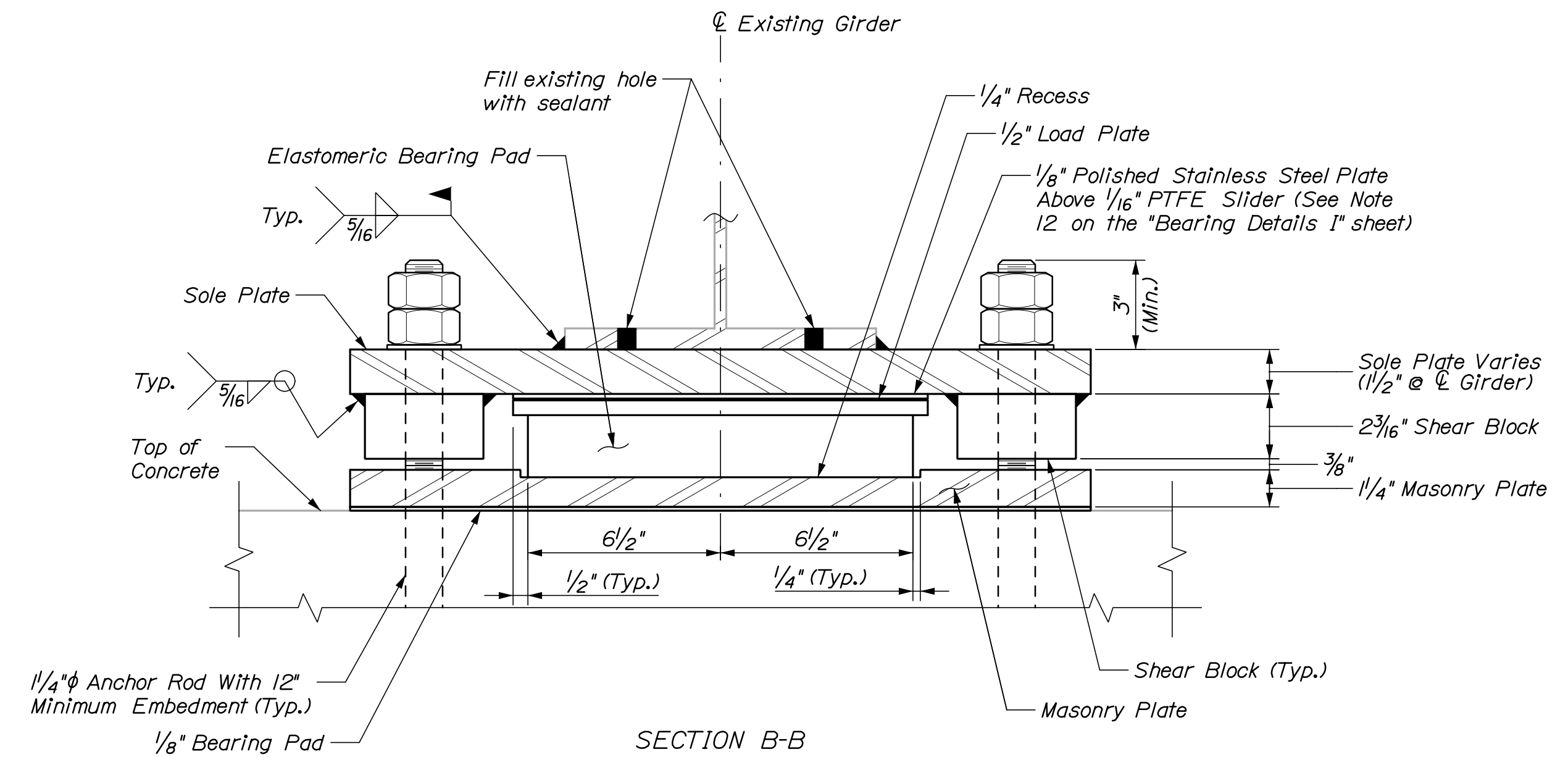
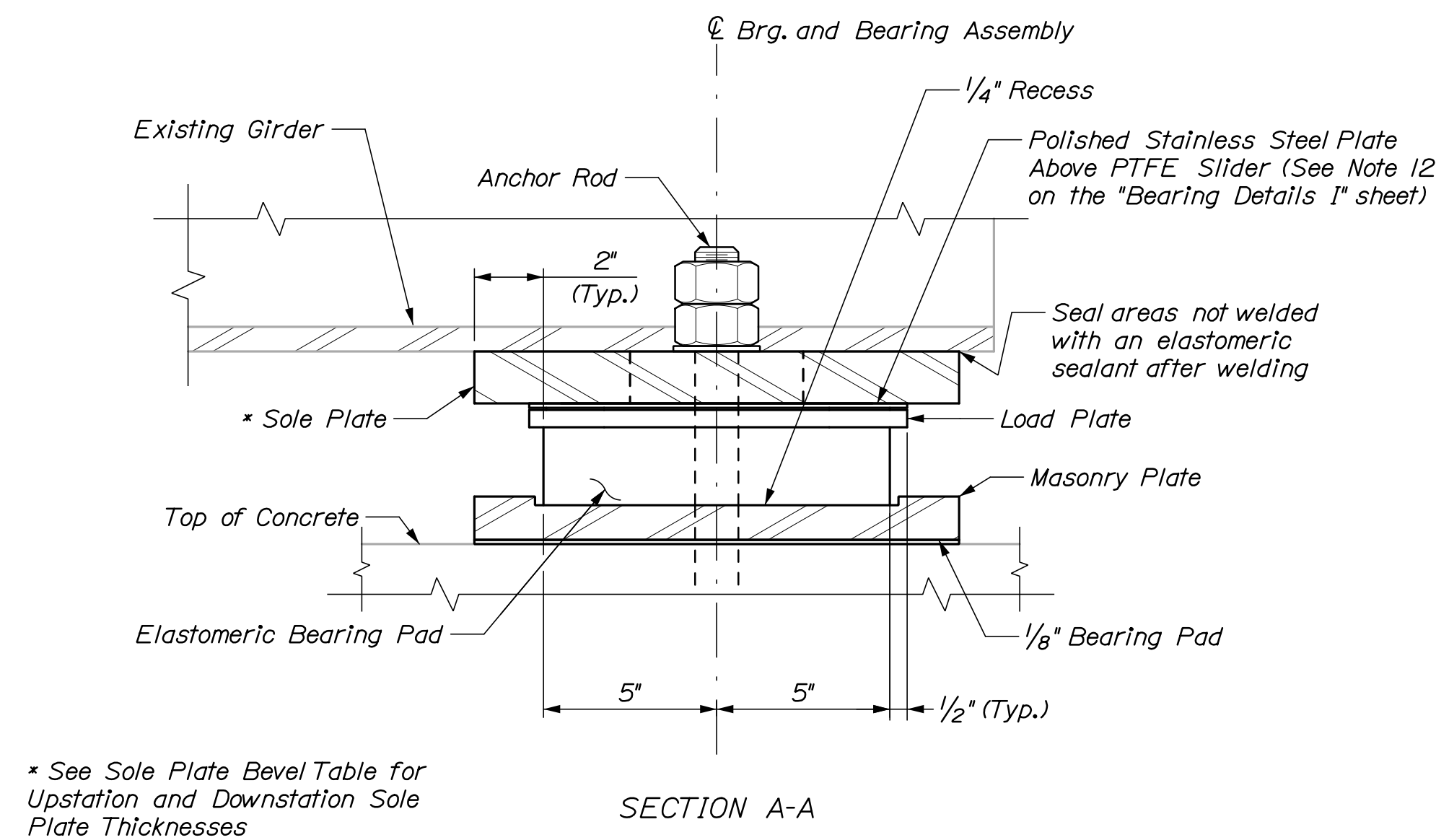
16. The "Bearing Design Load" for each bearing as noted in the table below is the total load for the Service I load combination, without impact.



SOLE PLATE BEVEL TABLE			
LOCATION	DOWNSTATION THICKNESS	CENTER LINE THICKNESS	UPSTATION THICKNESS
Abutment 1	1 1/16"	1 1/2"	1 9/16"
Pier 1A	1 5/8"	1 1/2"	1 3/8"
Pier 1B	1 5/8"	1 1/2"	1 3/8"
Pier 2B	1 9/16"	1 1/2"	1 1/16"
Abutment 2	1 7/16"	1 1/2"	1 3/16"



ELASTOMERIC BEARING PAD



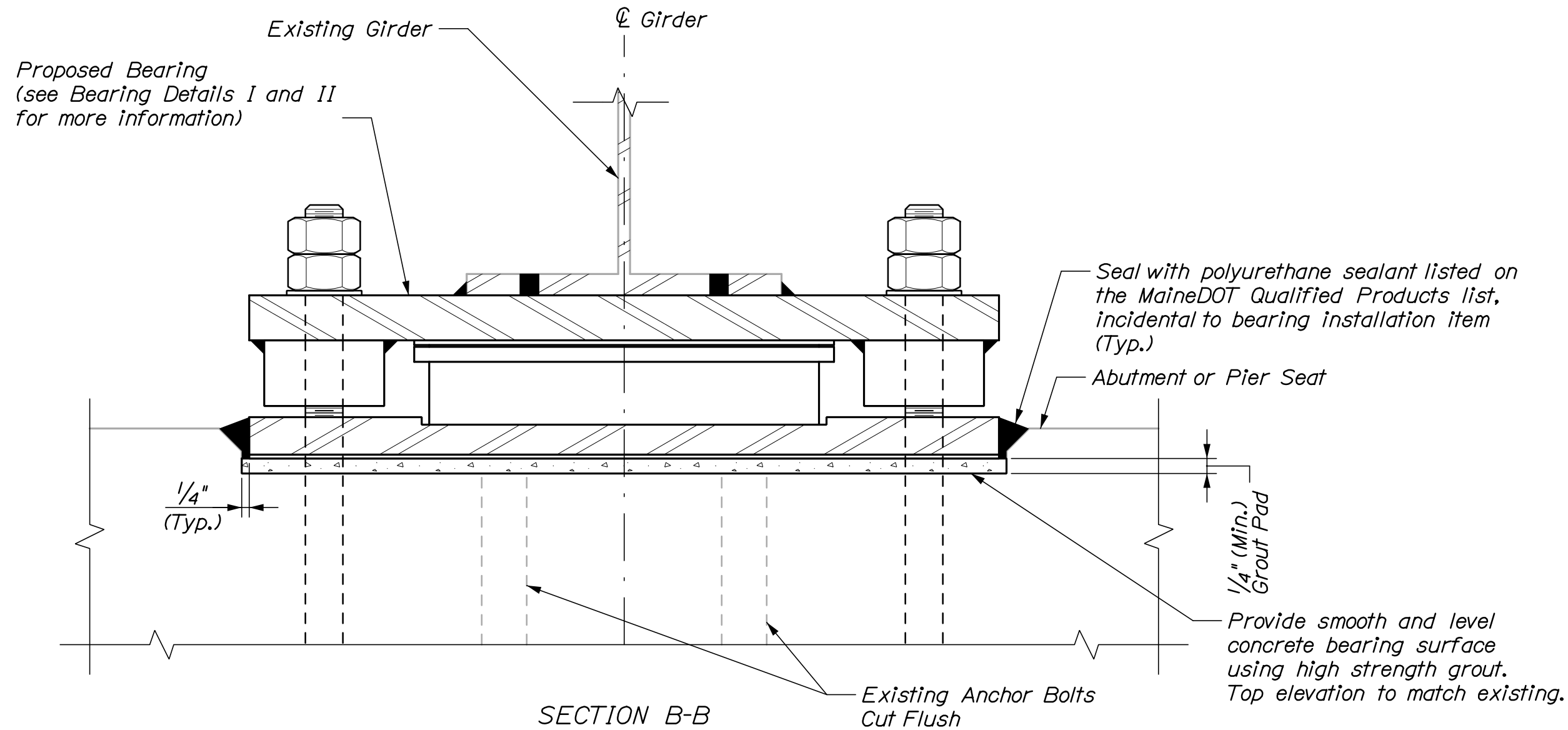
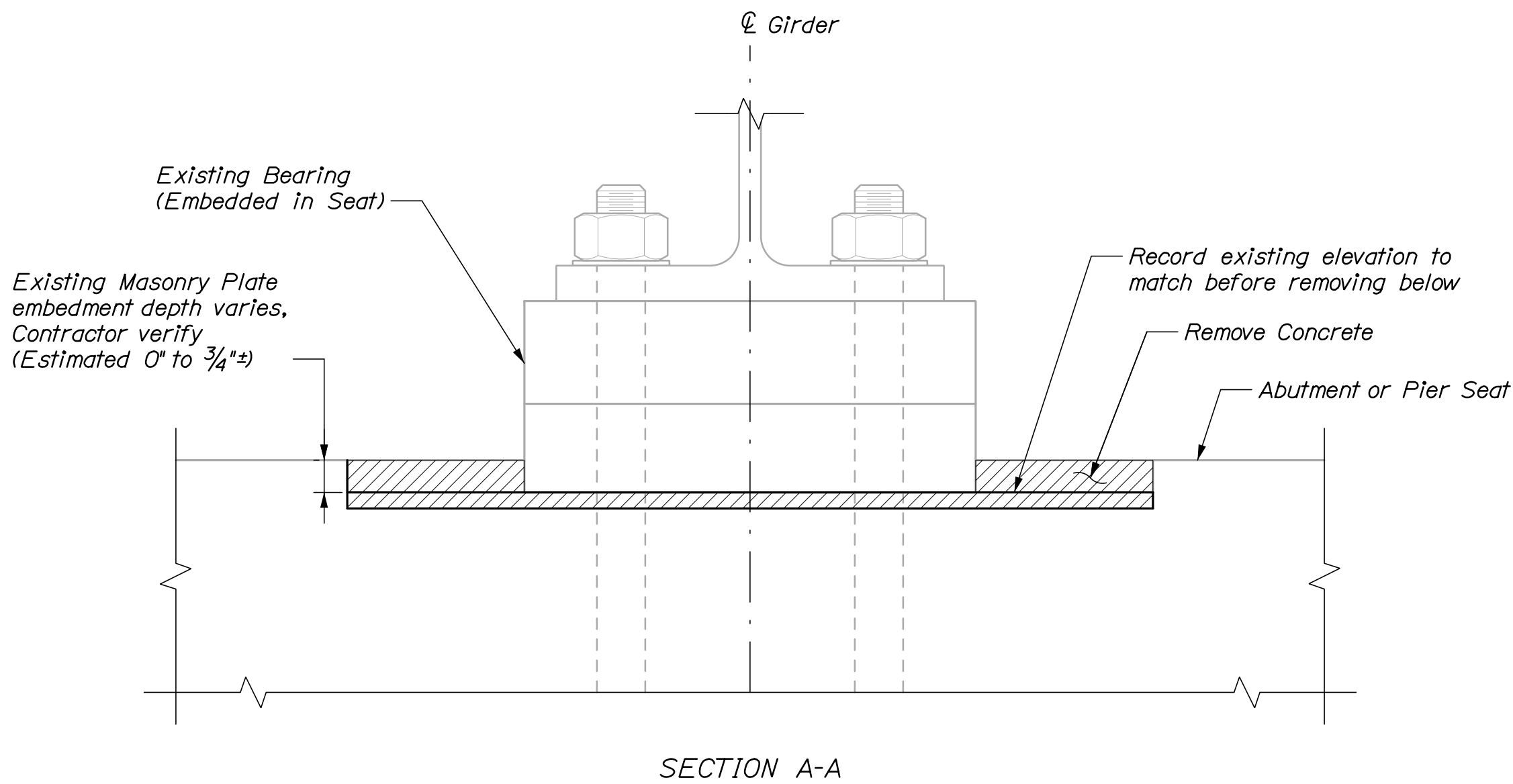
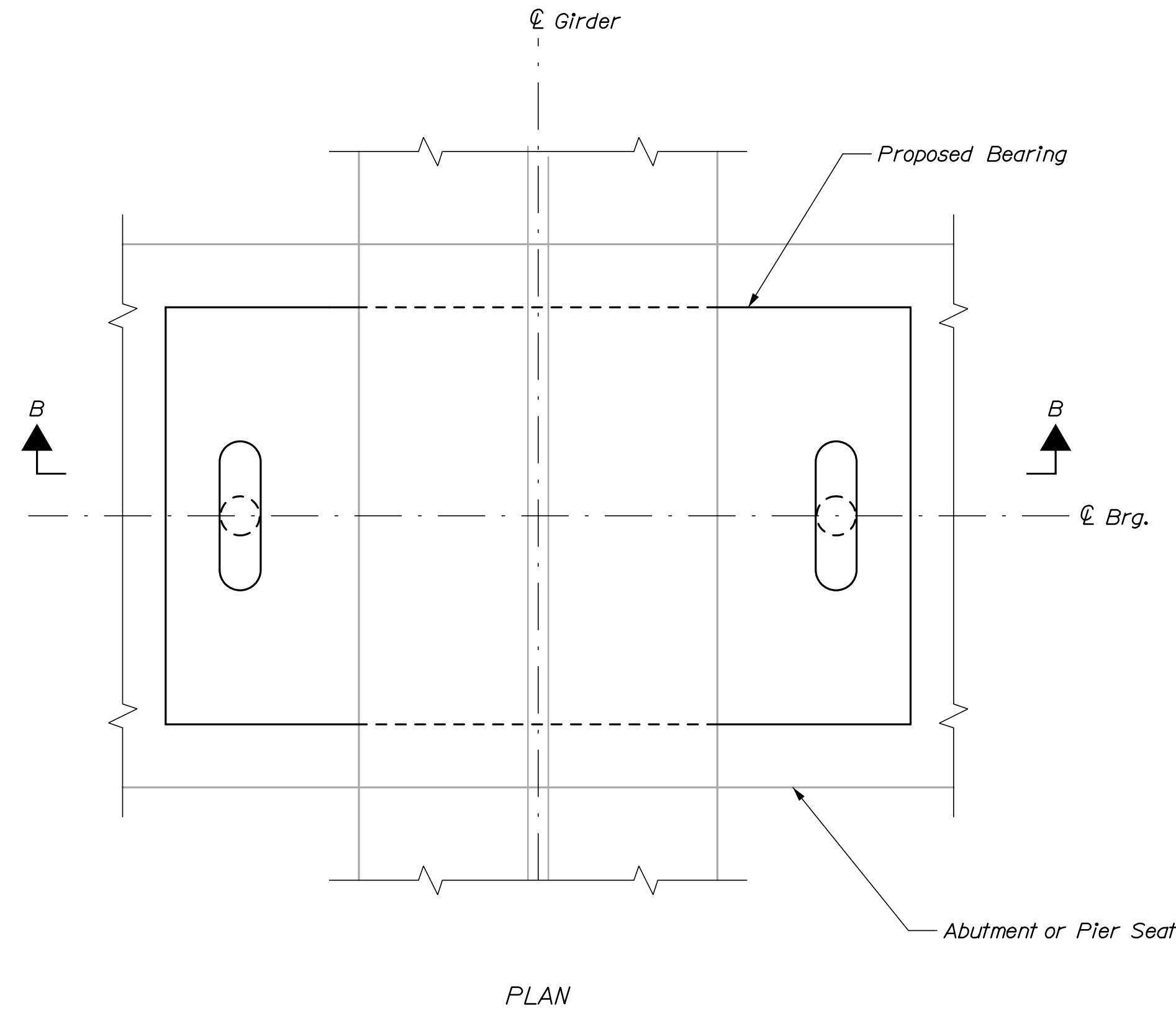
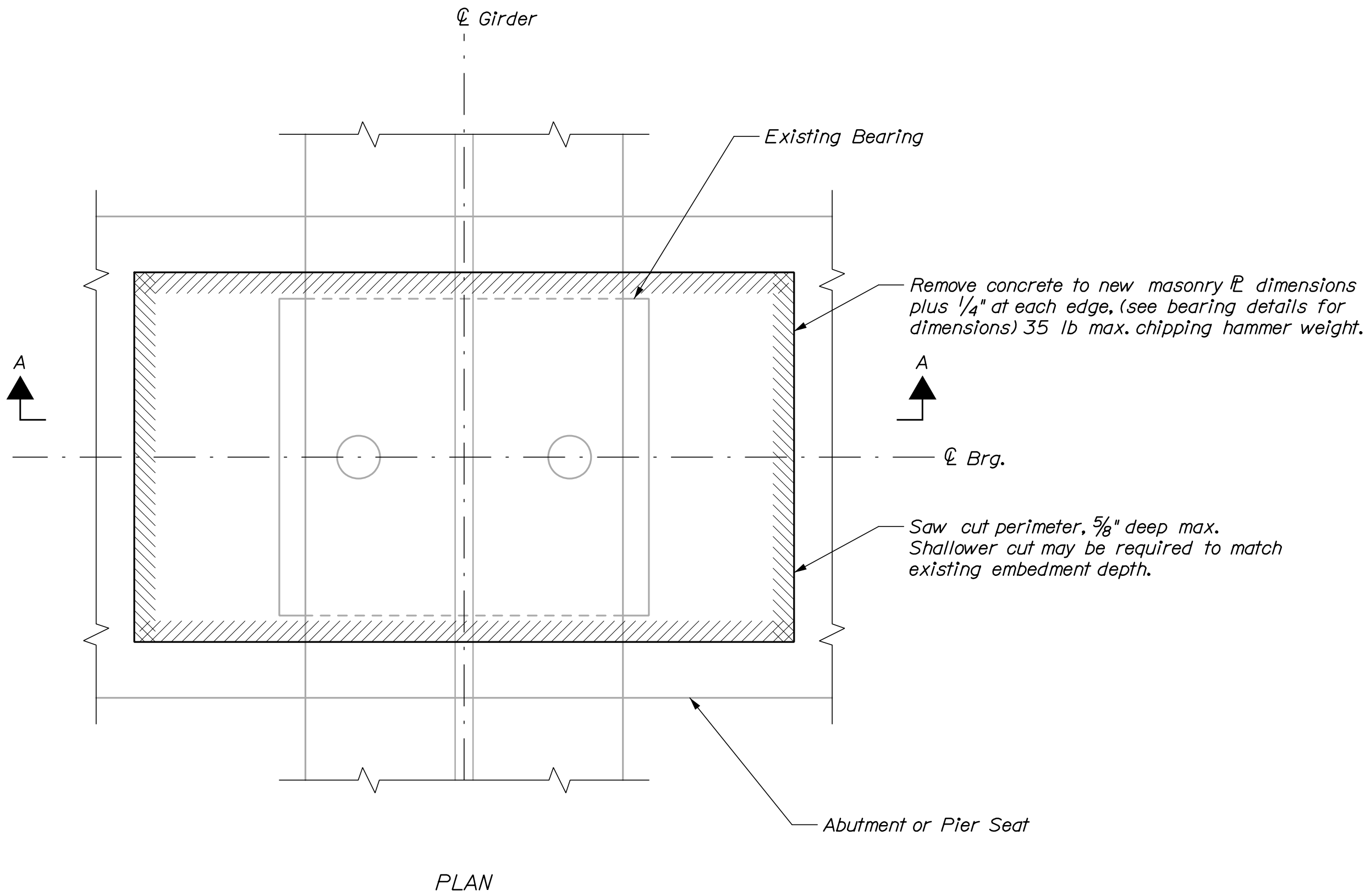
EXPANSION BEARING ASSEMBLY - ABUTMENT 2, PIER 2B & PIER 1B
(15 REQUIRED)

Date:10/23/2019

Username:

Division:

Filename: 021_Bearing Details_III.dgn



RECESSED BEARING DEMO DETAIL

RECESSED BEARING CONSTRUCTION DETAIL

RECESSED BEARING NOTES

1. Some of the existing bearing masonry plates are embedded into the abutment and pier seats to differing unknown depths. The existing bottom of masonry plate elevation shall be maintained. Maintaining the existing bottom of masonry plate elevation at each bearing location will allow for adequate clearance for the proposed bearings and allow for the girders to maintain their existing cross slope and diaphragm alignment.
2. The Contractor shall identify all locations that have embedded masonry plates.
3. Before the existing bearing is removed, the Contractor shall record the bottom of masonry plate elevation. The elevation shall be maintained underneath the proposed bearing.

4. A high strength self leveling grout shall be used to ensure full bearing underneath the proposed masonry plate.
5. All work required to prepare concrete bearing surfaces, as detailed on the sheet, shall be incidental to 523.52, Bearing Installation.
6. See Bearing Details I and II for more information regarding proposed bearing dimensions.

7. Any concrete demolition done outside the limits shown shall be filled with high strength leveling grout and leveled with the top of abutment or pier seat and pitched away from the proposed bearing.

8. Bearing anchor rod embedment lengths shall be considered from bottom of the high strength leveling grout.
9. If any rebar is damaged during demolition, it shall be replaced as directed by the Resident at no expense to the Department.

HNTB

STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		WIN 022344.00		BRIDGE NO. 5905		BRIDGE PLANS	
KELLEY ROAD BRIDGE		INTERSTATE 95		PENOBSCOT COUNTY		ORONO		BEARING DETAILS III	
SHEET NUMBER		21		OF 29					
PROJ. MANAGER		BY		DATE		SIGNATURE		P.E. NUMBER	
DESIGN-DETAILED		P. Bishop		10/19					
CHECKED-REVIEWED		L. Driscoll		10/19					
DESIGN-DETAILED									
REVISIONS 1									
REVISIONS 2									
REVISIONS 3									
REVISIONS 4									
FIELD CHANGES									

Date:10/23/2019

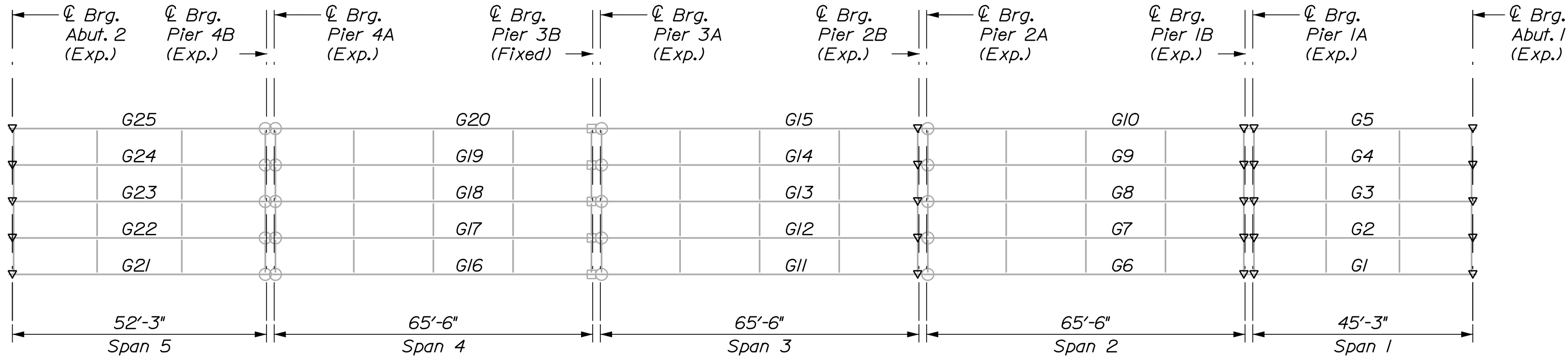
Username:

Division:

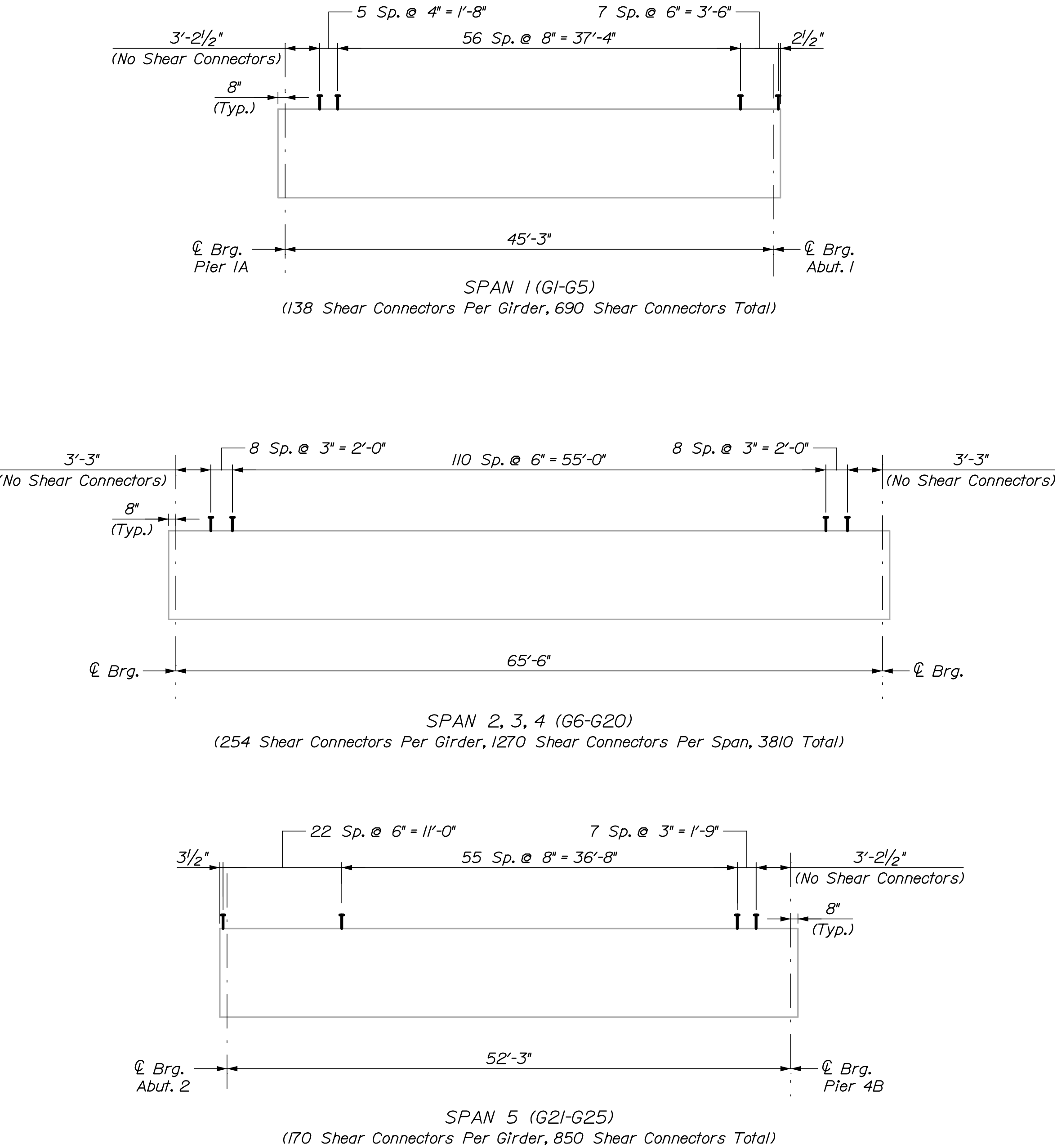
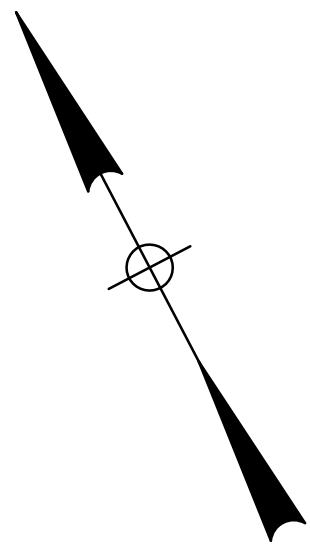
Filename: 022_Shear Connector Layout.dgn

LEGEND

- ▽ - Replace existing bearing with expansion bearing assembly
□ - Existing fixed bearing to remain
○ - Existing expansion bearing to remain



KEY PLAN



SHEAR CONNECTOR LAYOUT

N.T.S.

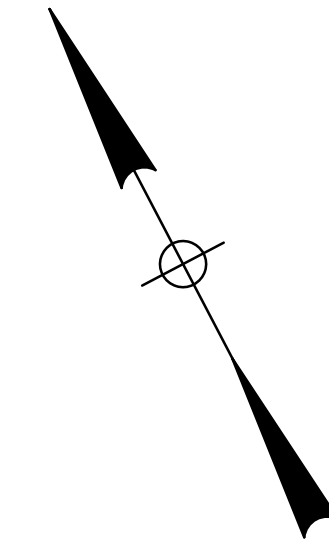
Bottom of Slab Elevation Table

Girder Number	℄ Brg. Abut. 1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Pier 1A
G1	224.41	224.53	224.64	224.75	224.86	224.96	225.05	225.15	225.23	225.32	225.40
G2	224.56	224.68	224.80	224.91	225.02	225.12	225.21	225.30	225.39	225.47	225.55
G3	224.71	224.83	224.95	225.06	225.17	225.27	225.36	225.45	225.54	225.62	225.70
G4	224.56	224.68	224.80	224.91	225.02	225.12	225.21	225.30	225.39	225.47	225.55
G5	224.41	224.53	224.64	224.75	224.86	224.96	225.05	225.15	225.23	225.32	225.40
	℄ Brg. Pier 1B	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Pier 2A
G6	225.43	225.57	225.72	225.85	225.97	226.07	226.17	226.25	226.32	226.39	226.44
G7	225.58	225.73	225.87	226.00	226.12	226.23	226.33	226.41	226.48	226.54	226.59
G8	225.73	225.88	226.02	226.15	226.27	226.38	226.48	226.56	226.63	226.69	226.74
G9	225.58	225.73	225.87	226.00	226.12	226.23	226.33	226.41	226.48	226.54	226.59
G10	225.43	225.57	225.72	225.85	225.97	226.07	226.17	226.25	226.32	226.39	226.44
	℄ Brg. Pier 2B	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Pier 3A
G11	226.46	226.56	226.65	226.73	226.80	226.86	226.91	226.94	226.97	226.98	226.99
G12	226.61	226.71	226.81	226.89	226.96	227.02	227.07	227.10	227.12	227.13	227.14
G13	226.76	226.86	226.96	227.04	227.11	227.17	227.22	227.25	227.27	227.28	227.29
G14	226.61	226.71	226.81	226.89	226.96	227.02	227.07	227.10	227.12	227.13	227.14
G15	226.46	226.56	226.65	226.73	226.80	226.86	226.91	226.94	226.97	226.98	226.99
	℄ Brg. Pier 3B	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Pier 4A
G16	226.99	227.04	227.09	227.12	227.14	227.15	227.15	227.14	227.11	227.08	227.03
G17	227.14	227.20	227.24	227.28	227.30	227.31	227.31	227.29	227.27	227.23	227.18
G18	227.29	227.35	227.39	227.43	227.45	227.46	227.46	227.44	227.42	227.38	227.33
G19	227.14	227.20	227.24	227.28	227.30	227.31	227.31	227.29	227.27	227.23	227.18
G20	226.99	227.04	227.09	227.12	227.14	227.15	227.15	227.14	227.11	227.08	227.03
	℄ Brg. Pier 4B	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Abut. 2
G21	227.03	227.02	227.01	227.00	226.98	226.95	226.93	226.89	226.86	226.82	226.78
G22	227.18	227.17	227.17	227.15	227.13	227.11	227.08	227.05	227.01	226.97	226.93
G23	227.33	227.32	227.32	227.30	227.28	227.26	227.23	227.20	227.16	227.12	227.08
G24	227.18	227.17	227.17	227.15	227.13	227.11	227.08	227.05	227.01	226.97	226.93
G25	227.03	227.02	227.01	227.00	226.98	226.95	226.93	226.89	226.86	226.82	226.78

NOTES:

- Prior to installing the proposed shear connectors, the Contractor shall clean the top flange so that it is free of debris, rust, scale, oil, and other contaminants that would adversely affect the welding operation. Payment for cleaning the top flange for installation of proposed shear connectors shall be incidental to Item 505.08, Shear Connectors. If lead paint is encountered while cleaning top flanges, the Contractor is responsible for the containment, proper management and disposal of all lead-contaminated hazardous waste. See note 10 on the general notes sheet for more information.
- The proposed shear connectors shall be 7/8" diameter. Shear connectors shall penetrate above the bottom of slab a minimum of 2" and maintain a clear cover of 2" to the top of the slab.
- Span locations provided are based on the centerline of bearing to centerline of bearing length "L" for each girder.
- Existing shear connectors shall be removed such that they project 1 inch maximum above the top of the existing top flange unless they conflict with the installation of the new shear connectors or any other work, they shall be removed completely and ground flush with the top flange. All costs associated with this work shall be incidental to related contract items.
- Shear connectors shall be installed per Standard Detail 505(01).

PROJ. MANAGER	DATE	BY	DATE	SIGNATURE	P.E. NUMBER	DATE
M. Parlin	10/19	P. Bishop	10/19			
L. Genter	10/19	L. Driscoll	10/19			
T. Poulin	-	-	-			
-	-	-	-			
-	-	-	-			
-	-	-	-			
-	-	-	-			
-	-	-	-			
-	-	-	-			



SUPERSTRUCTURE PLAN



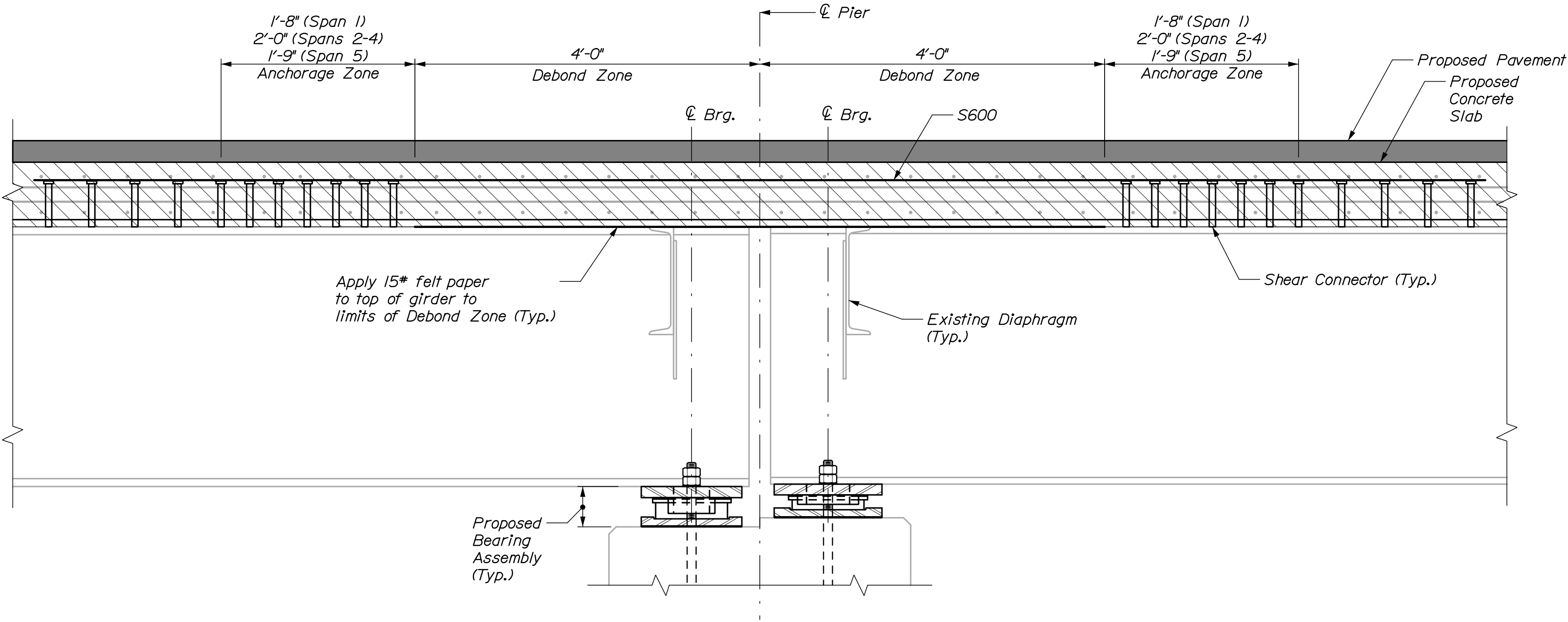
1. Form a one inch V-groove on the fascias at the horizontal joint between the curb and slab.
2. Unless the superstructure slab concrete is placed in one continuous operation, the initial placement shall start at a simply supported end of the deck slab and shall terminate at the completion of a positive moment section. Successive placements shall proceed from the end of the previous placement, terminate at the completion of a positive moment section, and include two or more spans. Concrete in a placement shall be kept plastic one complete span behind the span being placed. A minimum of 5 days shall elapse between successive partial placements. The superstructure slab concrete placement sequence shall be approved by the Resident.
3. Payment for reinforcing steel fabricated, delivered, and placed in the cast-in-place portion of the structural concrete slab will be considered incidental to the appropriate Standard Specifications Section 502 pay item.
4. Due to narrow flange width, precast deck panels shall not be used in place of the full depth cast-in-place deck slab.
5. See "Snow Fence Details" Sheet for additional snow fence details.
6. Reinforcing steel shall have a minimum concrete cover of 2 inches unless otherwise noted.
7. Adjust reinforcing steel to fit around the bridge drains and shear studs in a manner approved by the Resident. Transverse reinforcing shall not be cut.
8. The seals to be furnished shall have a minimum movement rating of:
Abutment 1 = $1\frac{1}{2}"$
Abutment 2 = $2\frac{3}{8}"$
9. Bearings shall be installed before the placement of the proposed bridge deck.

Date:10/23/2019

Username:

Division:

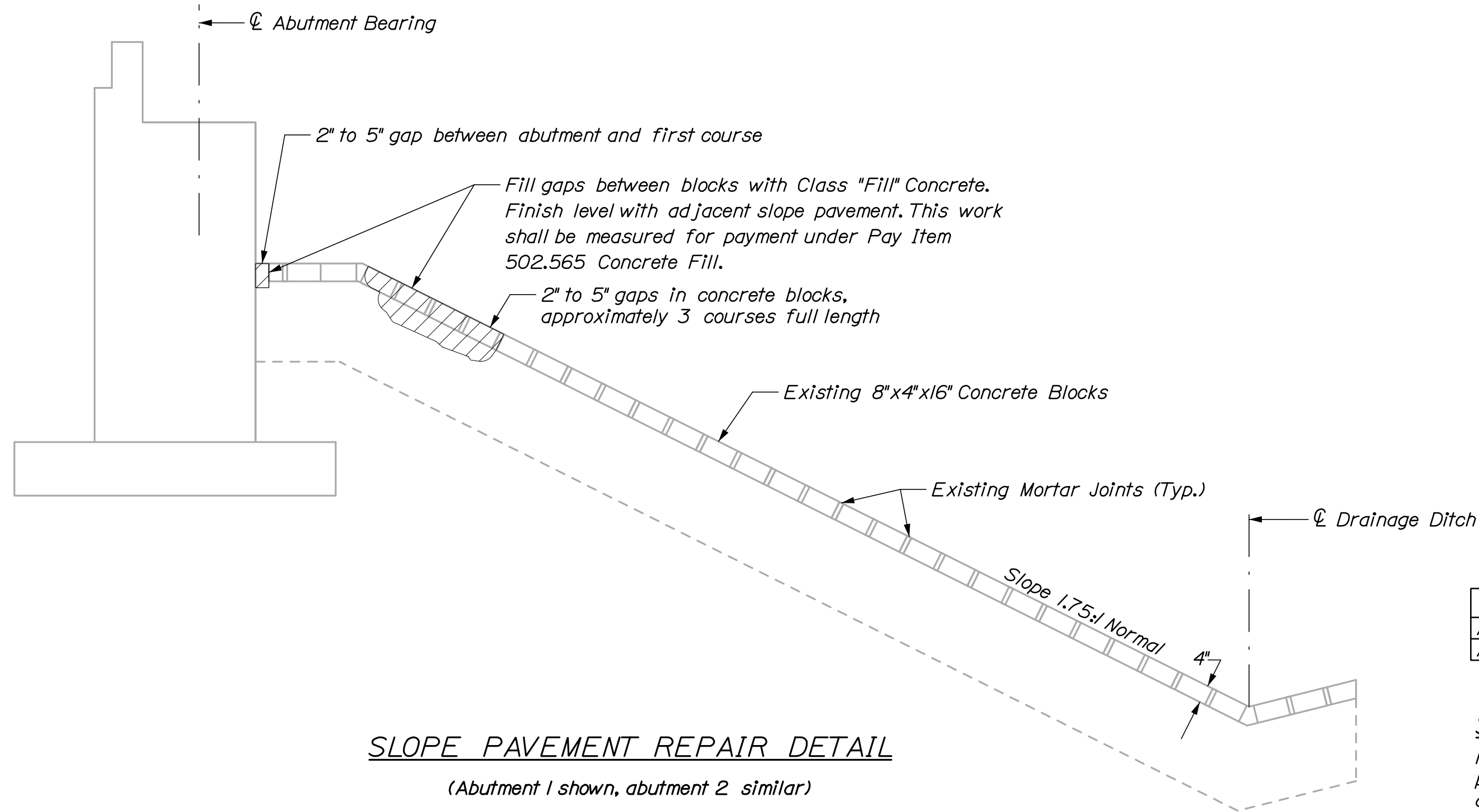
Filename: 025_Miscellaneous Details.dgn



LINK SLAB AT EACH PIER
(Pier 1 shown, others similar)

LINK SLAB NOTE:

1. Felt paper required in debonded zone is incidental to related Contract Pay Items.

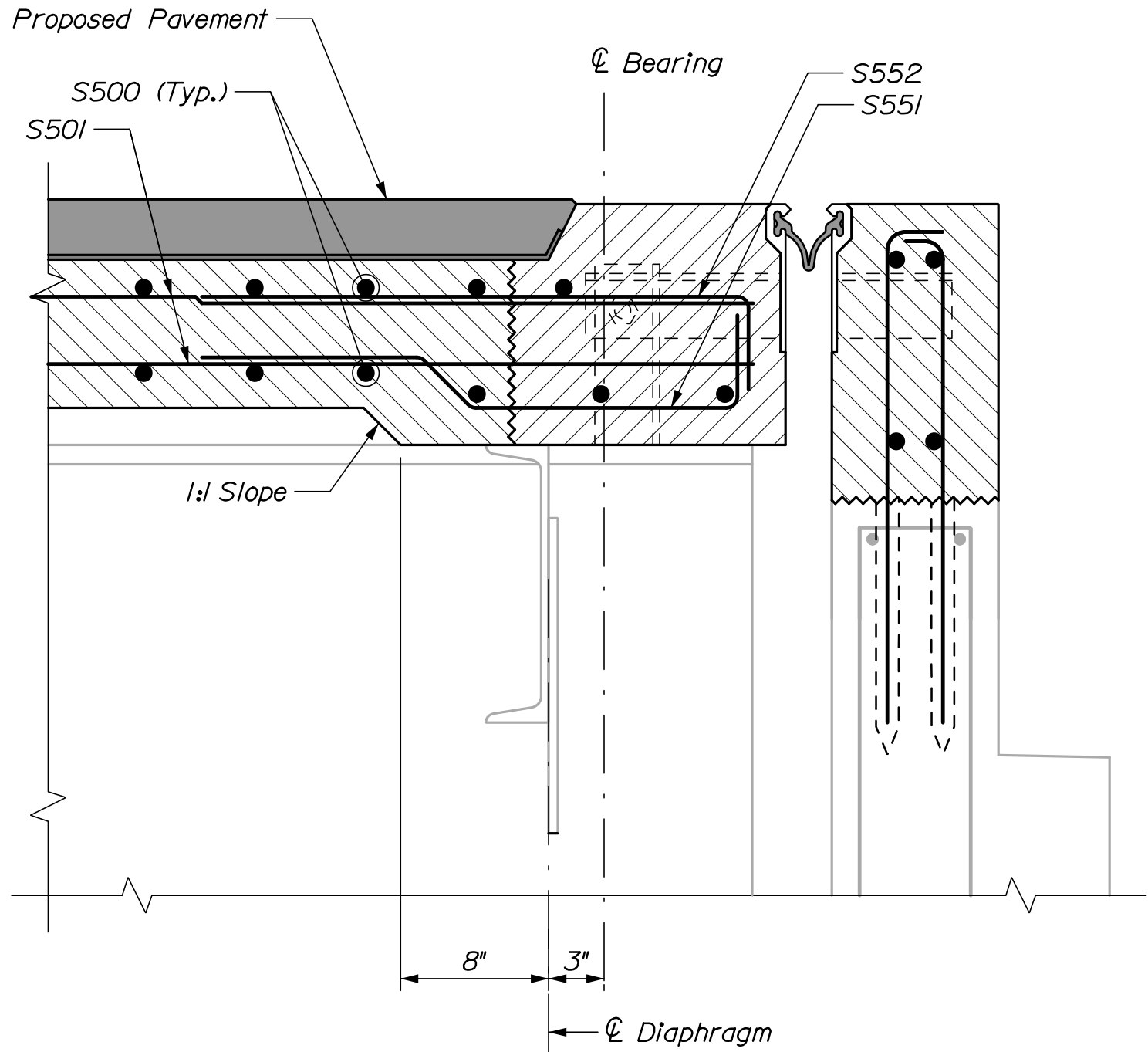


SLOPE PAVEMENT REPAIR DETAIL
(Abutment 1 shown, abutment 2 similar)

Estimated Concrete Fill Quantities				
Abut. 1	502.565 Concrete Fill	1	1	CY
Abut. 2	502.565 Concrete Fill	1	1	CY

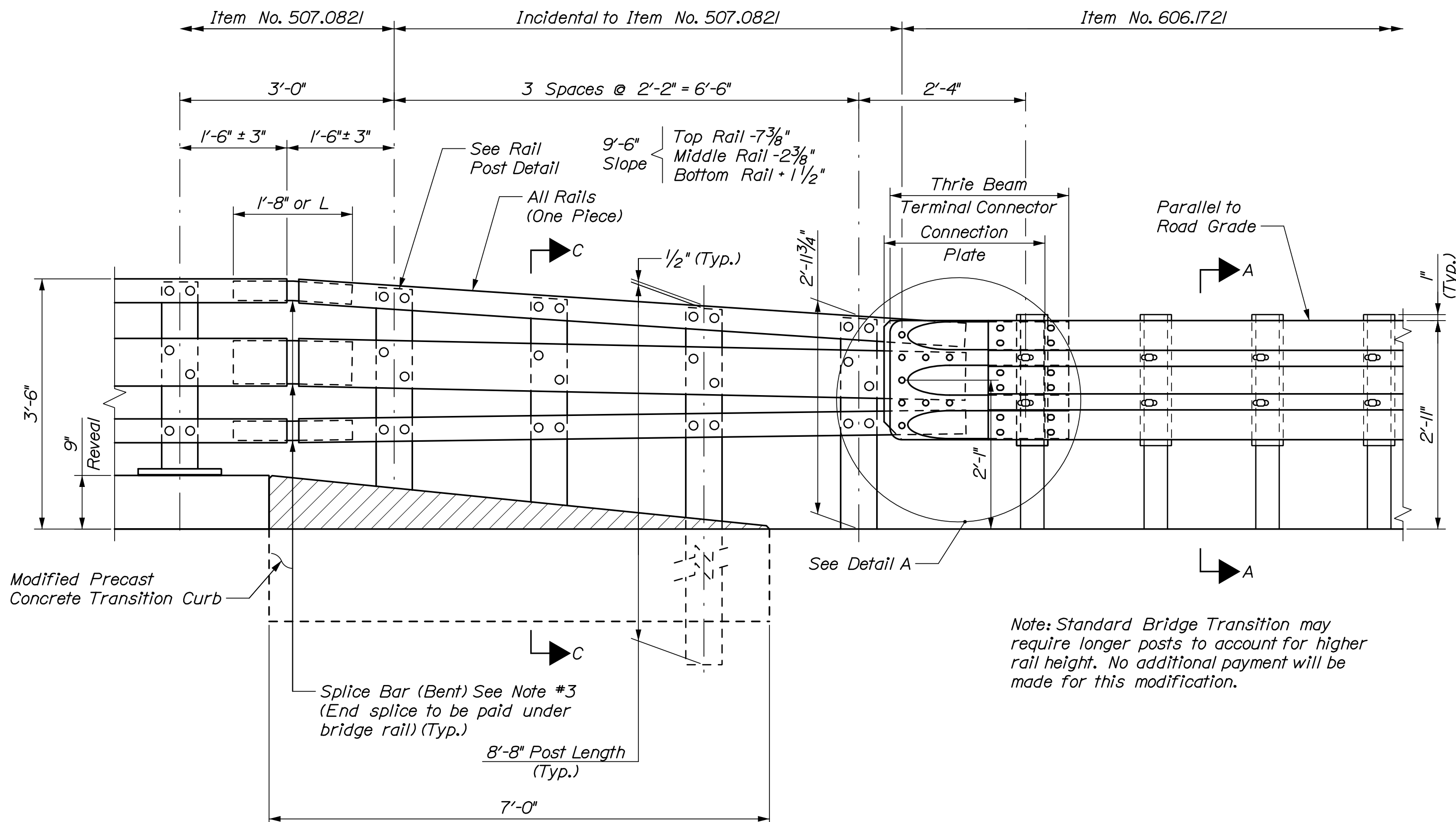
SLOPE PAVEMENT NOTE:

1. Fill all gaps between concrete blocks greater the 2" wide. The quantities of slope pavement repairs noted on these drawings are based on a visual inspection. If differences are experienced, the Resident shall be notified and quantities shall be adjusted accordingly.

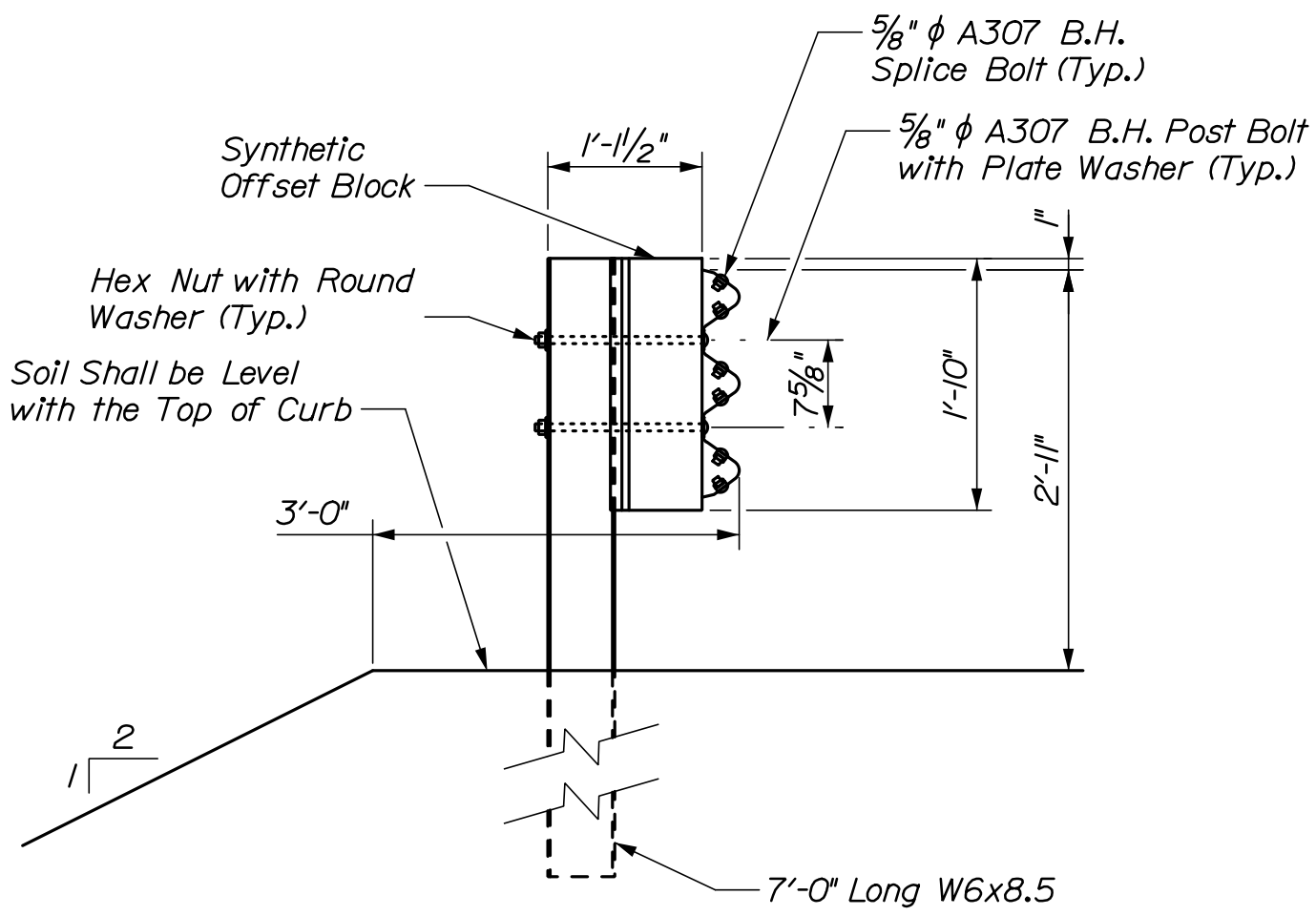


THICKENED END SLAB DETAIL

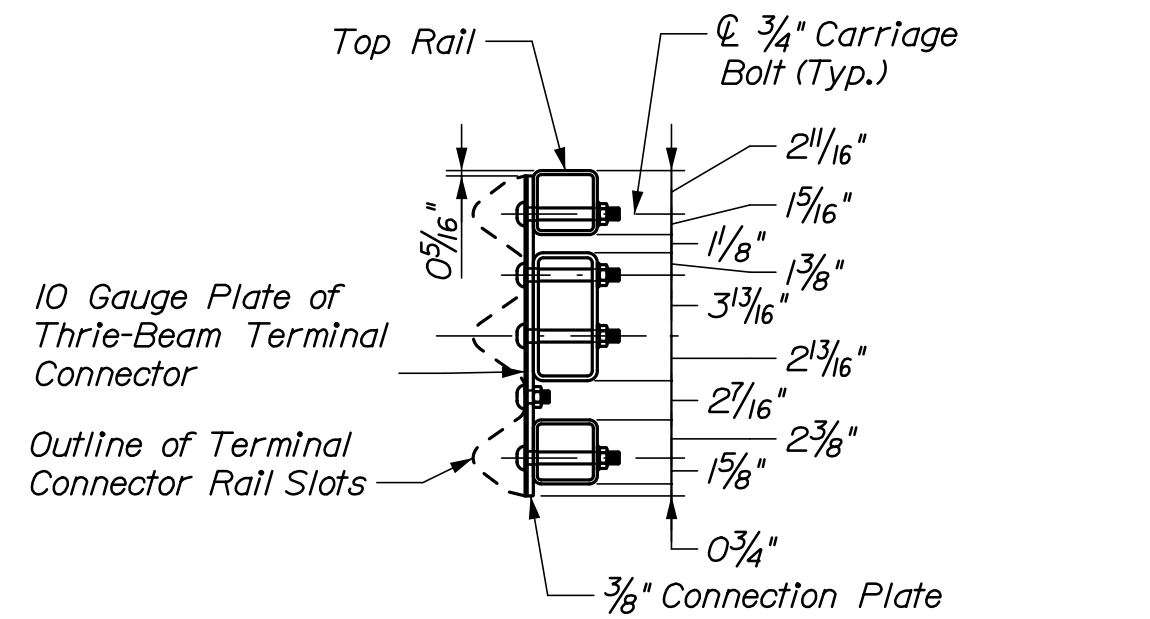
PROJ. MANAGER	BY	DATE
DESIGN-DETAILED: M. Parlin	P. Bishop	10/19
CHECKED-REVIEWED: H. Walton	L. Driscoll	10/19
DESIGN-DETAILED: -	-	-
DESIGN-DETAILED: -	-	-
REVISIONS 1	-	-
REVISIONS 2	-	-
REVISIONS 3	-	-
REVISIONS 4	-	-
FIELD CHANGES	-	-



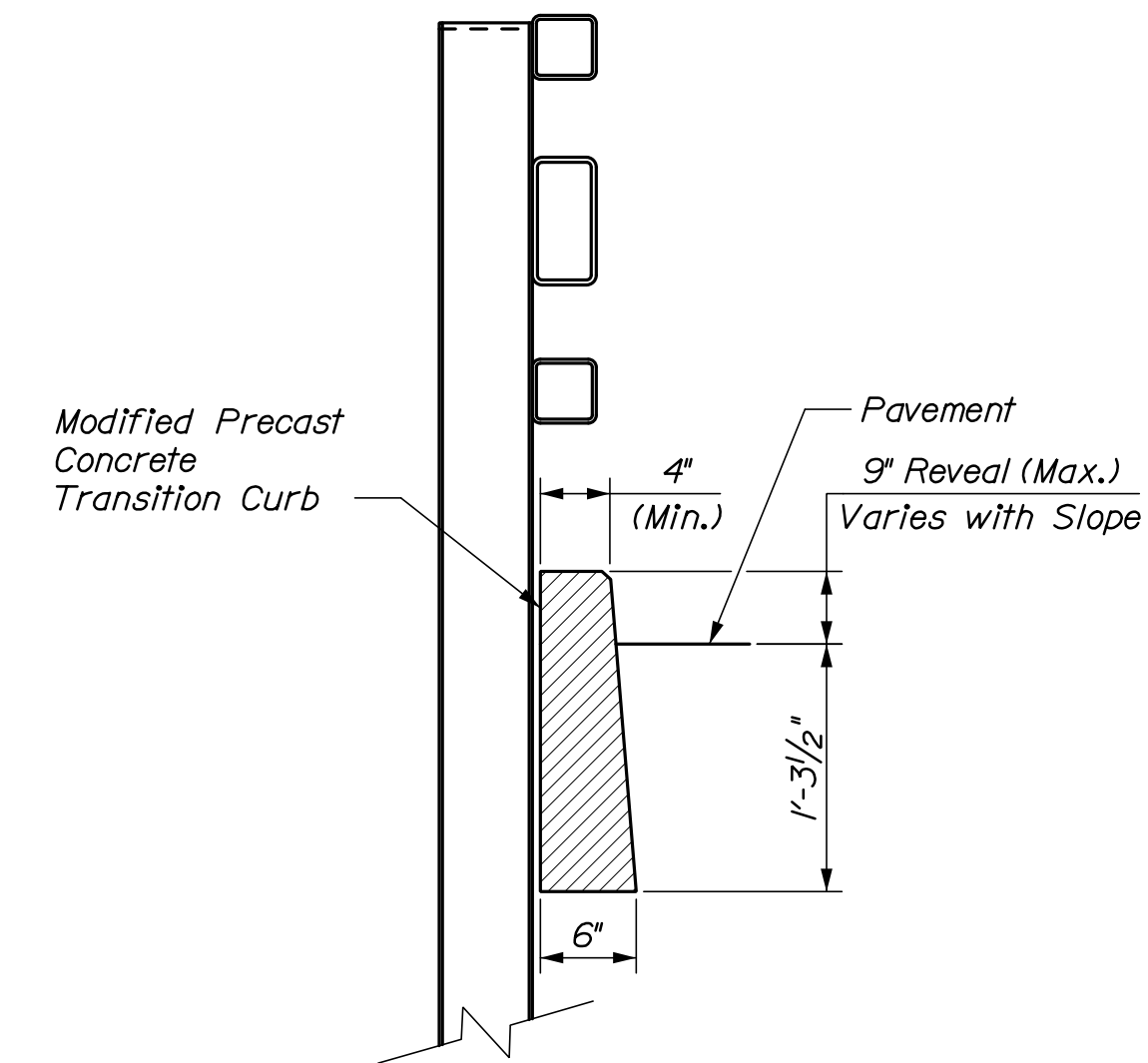
ELEVATION - STEEL APPROACH RAILING, 3 BAR



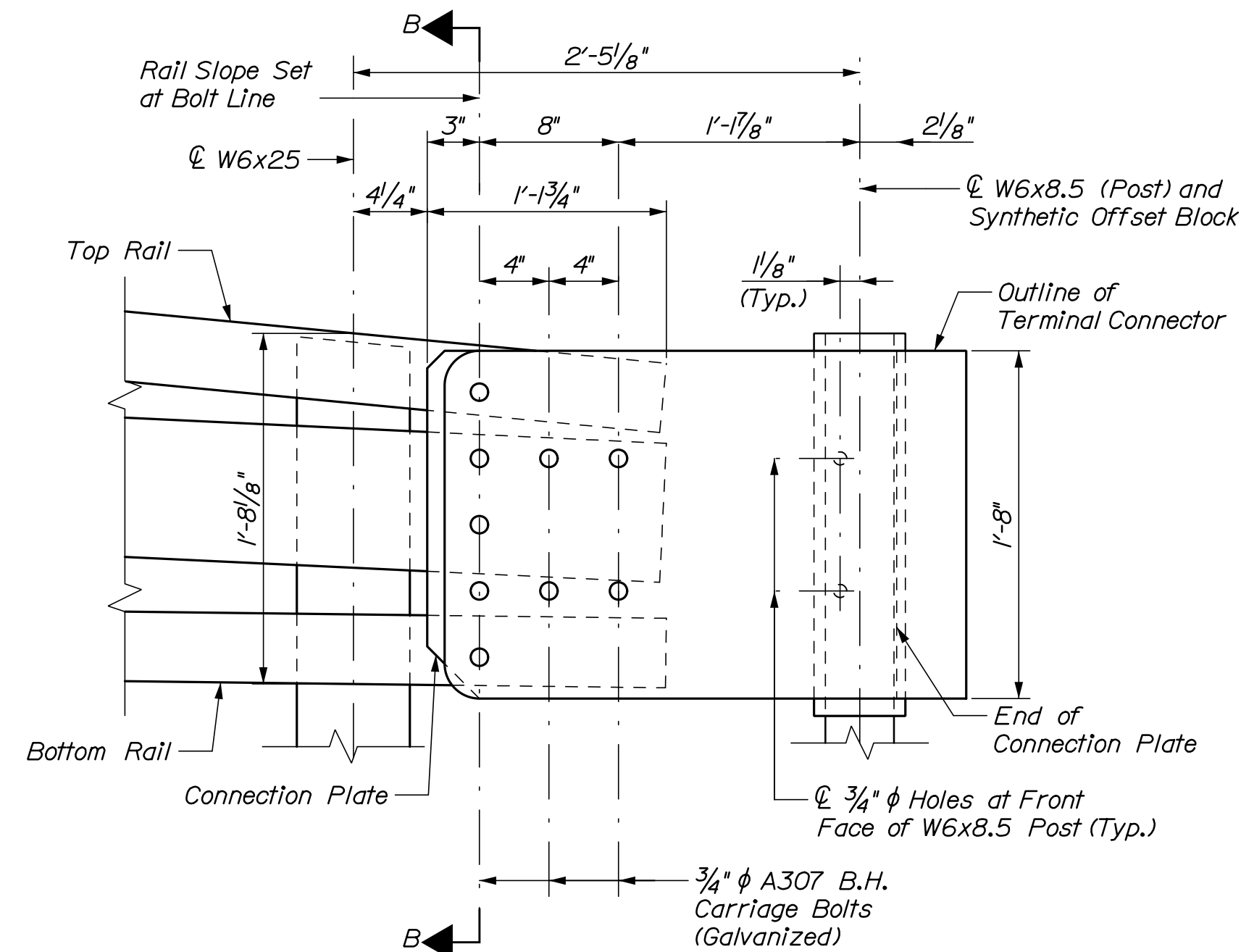
SECTION A-A (POST RAIL ASSEMBLY)



SECTION B-B (CONNECTION PLATE)

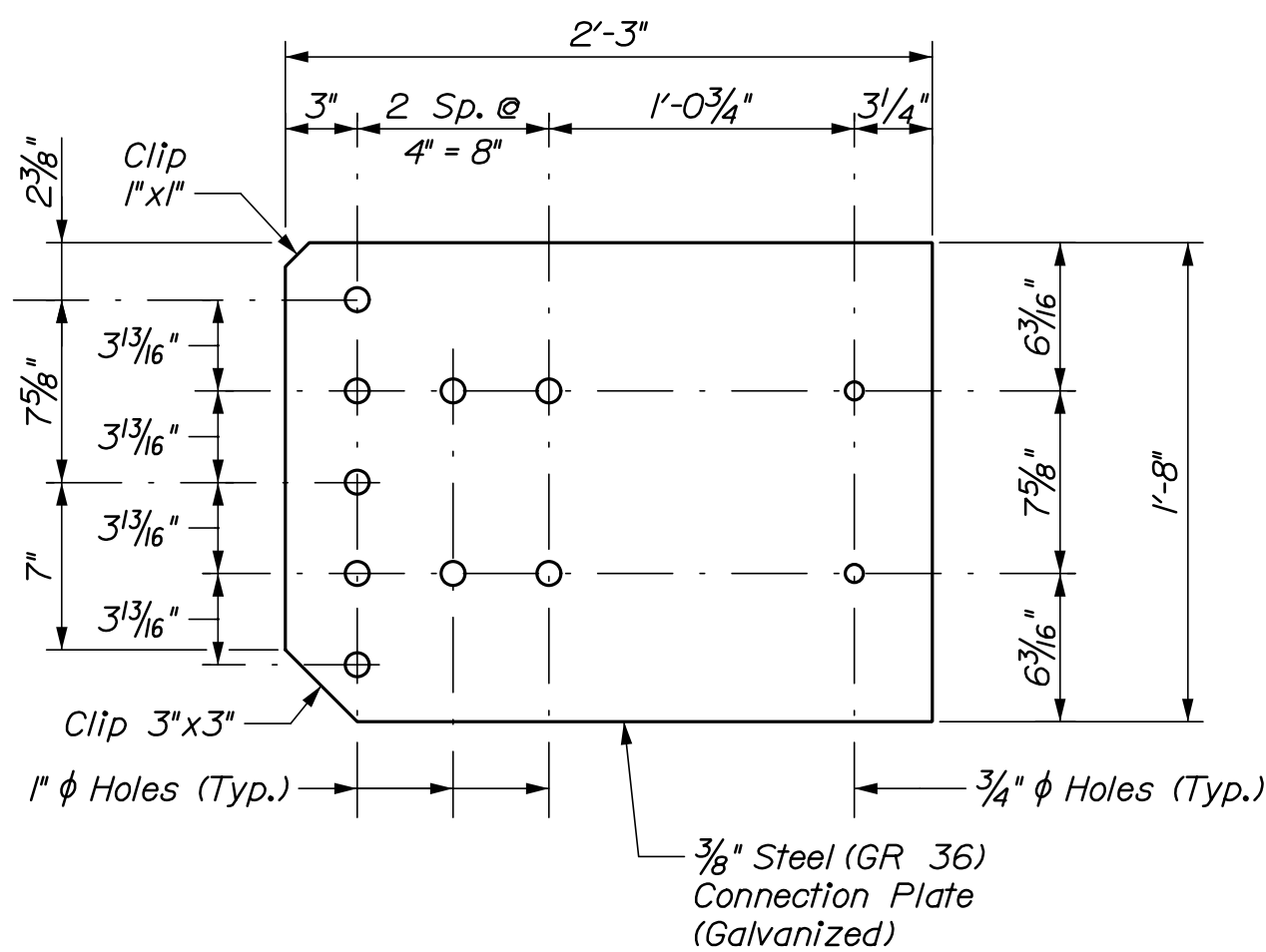


SECTION C-C (TRANSITION CURB)

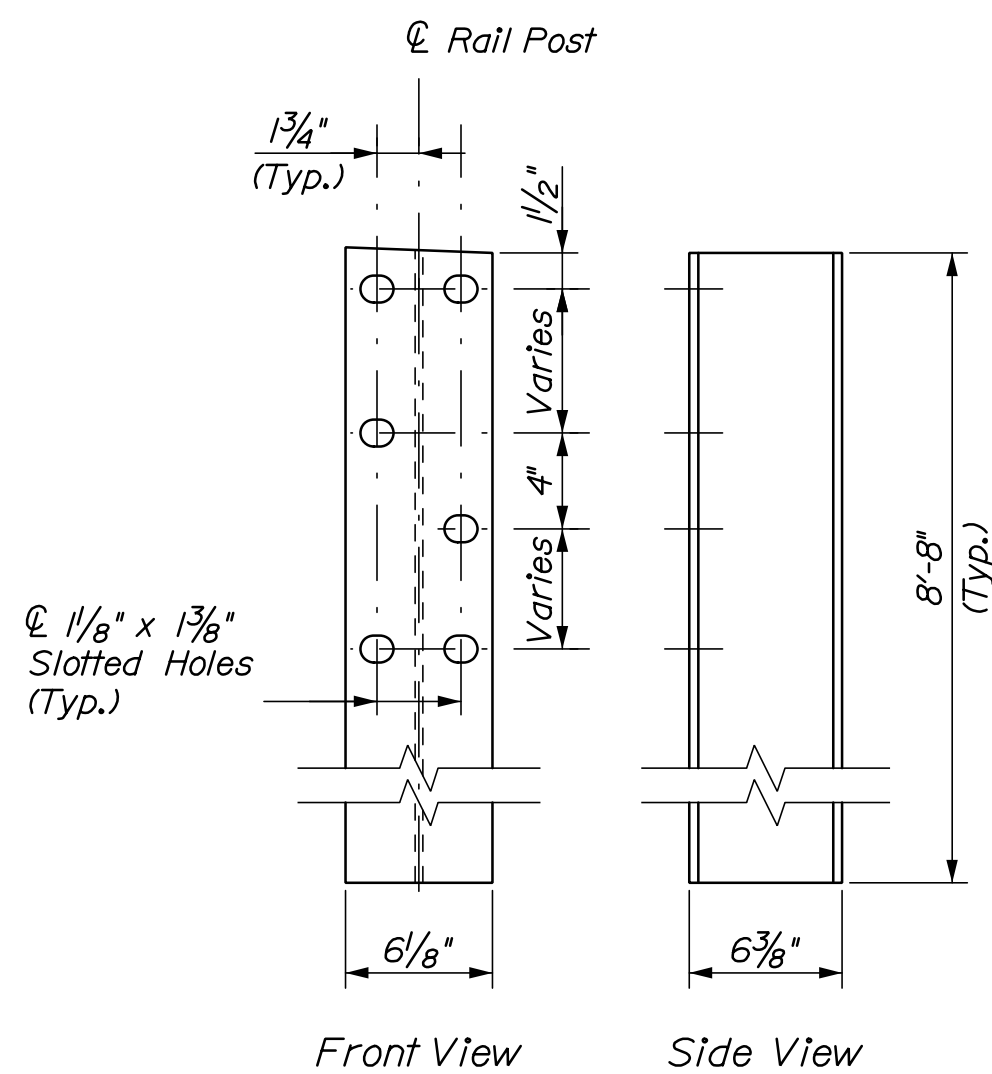


DETAIL A

(Overlapping of Double Nested Thrie-Beam not Shown for Clarity)



CONNECTION PLATE

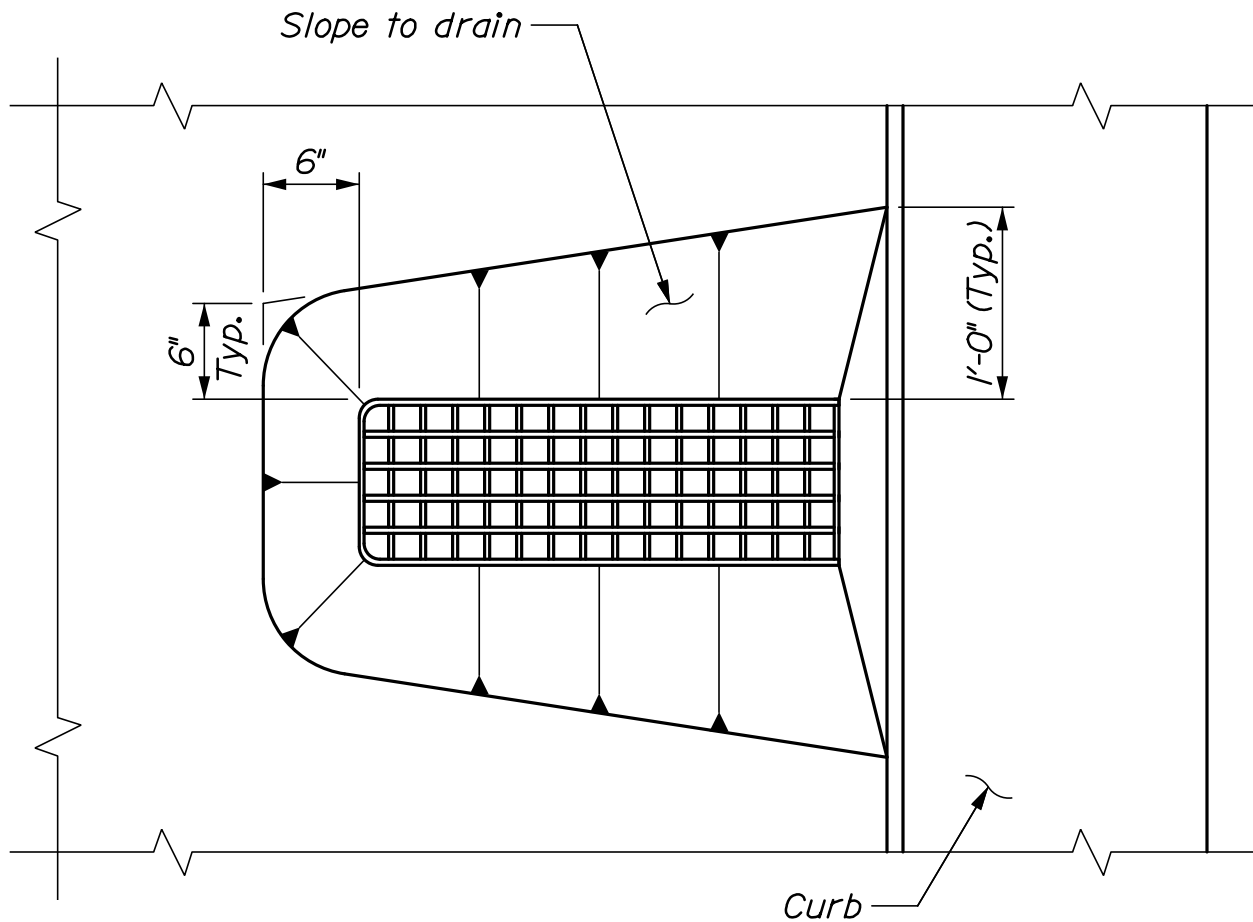
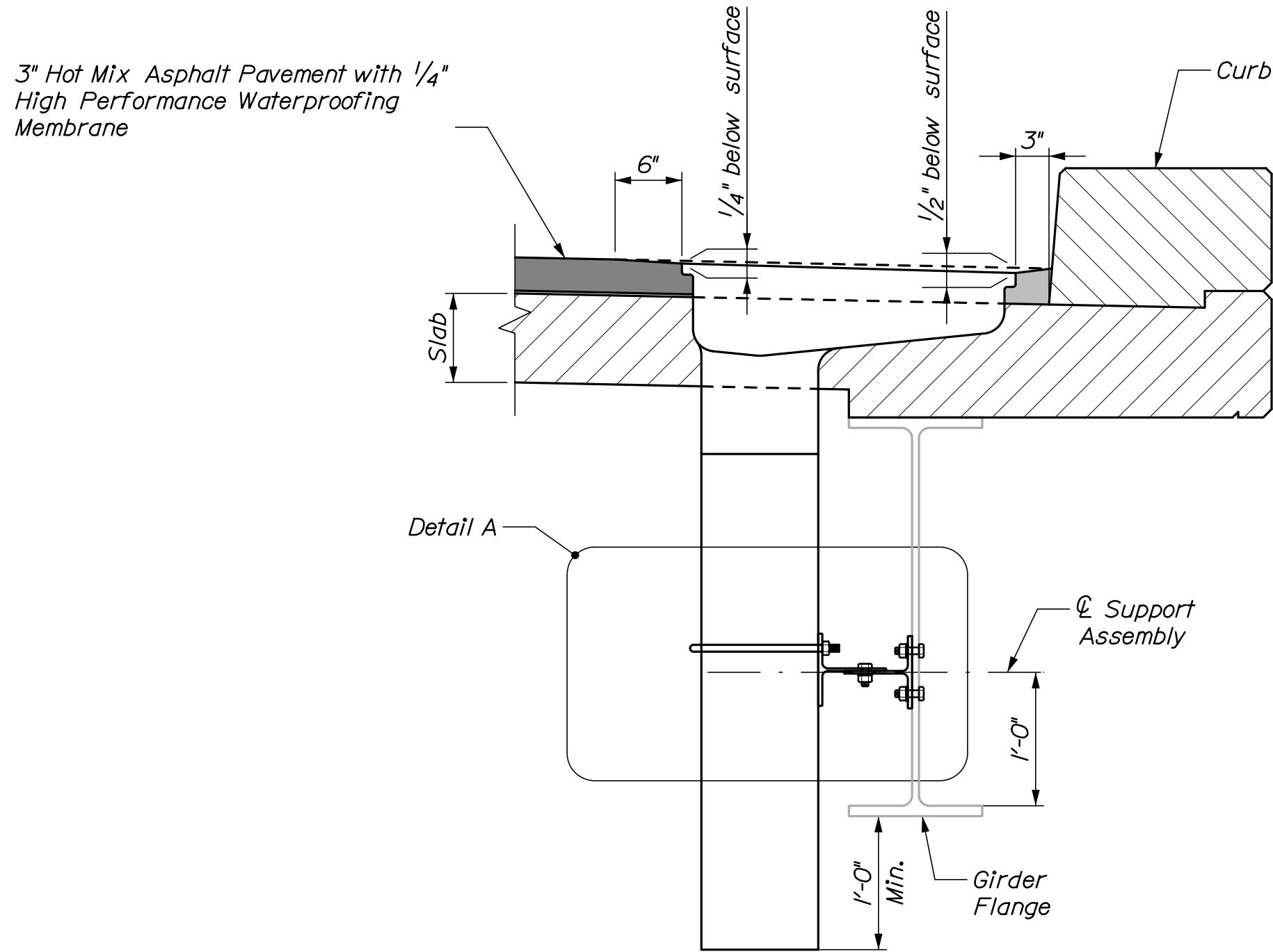


RAIL POST (W6x25)

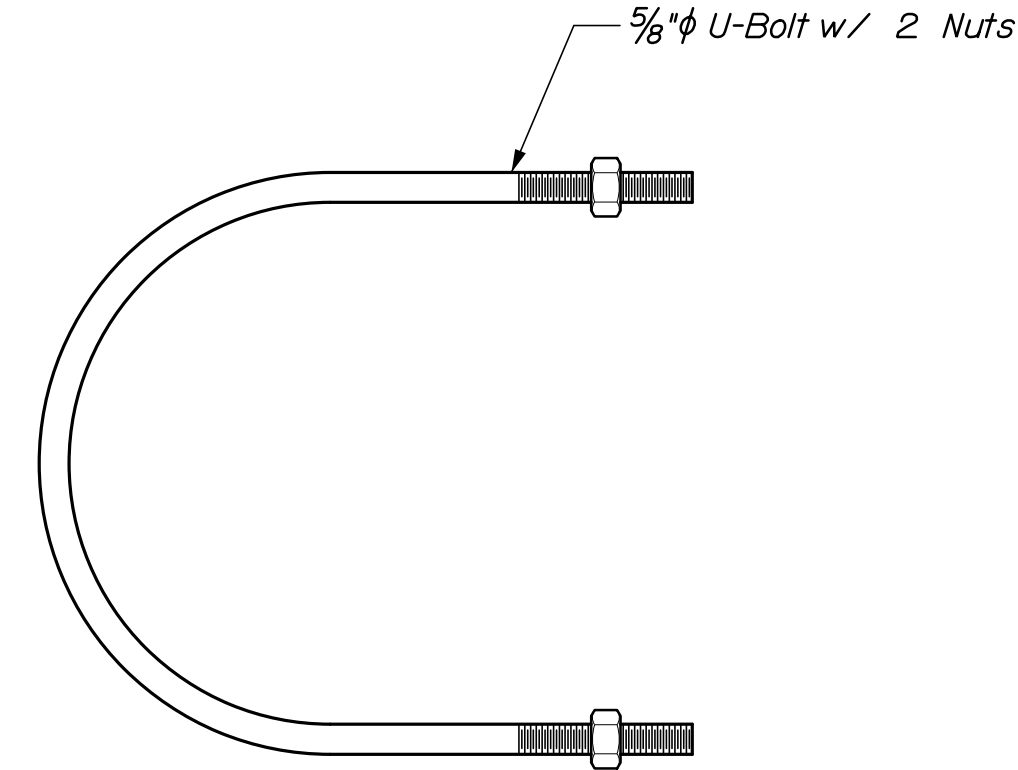
NOTES:

1. All bridge approach rail materials, dimensions and sizes shall be the same as those of the bridge rail, unless otherwise noted. See MaineDOT Standard Details Section 507 Bridge Rail for additional information.
2. Carriage bolts shall be ASTM A307, and nuts shall be ASTM A563 Grade A or better (galvanized).
3. Weld splice bar to fit bend. Use complete joint penetration butt weld (B-U2).
4. Modified Precast Concrete Transition Curb will not be paid for separately but shall be considered incidental to the transition item.

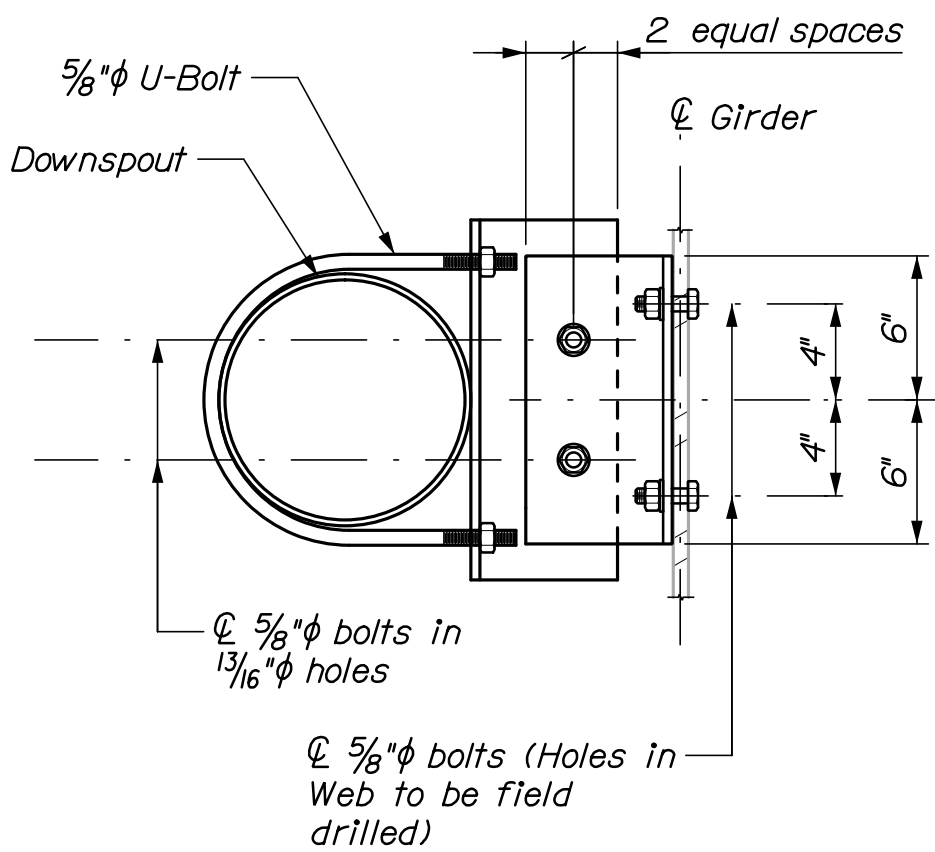
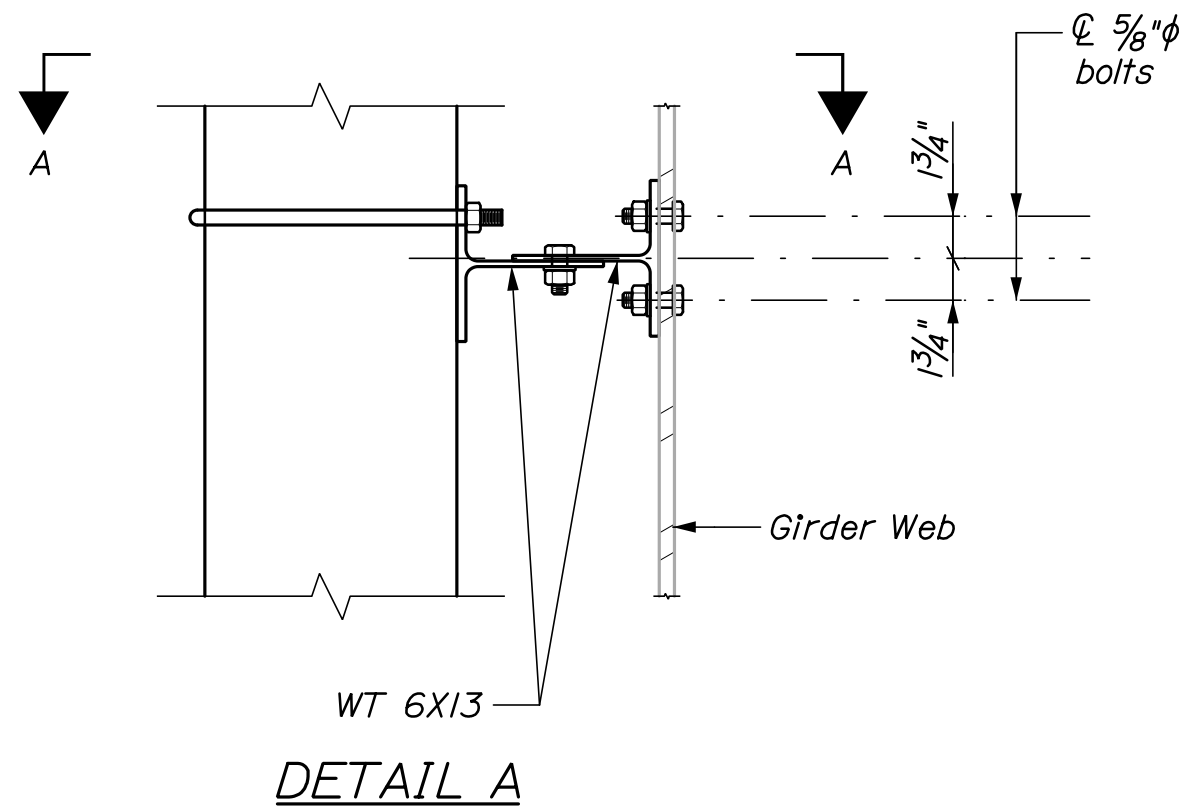
STATE OF MAINE		DEPARTMENT OF TRANSPORTATION		WIN 022344.00		BRIDGE NO. 5905	
KELLEY ROAD BRIDGE		INTERSTATE 95		PENOBSCOT COUNTY		STEEL APPROACH RAILING	
ORONO		PENOBSCOT COUNTY		STEEL APPROACH RAILING		3-BAR	
SHEET NUMBER		26		OF 29			
PROJ. MANAGER		BY		DATE			
DESIGNED-DETAILED		P. Parlin		10/19			
CHECKED-REVIEWED		P. Bishop		10/19			
DESIGNED-DETAILED		L. Driscoll					
DESIGNED-DETAILED							
REVISIONS 1							
REVISIONS 2							
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							



BRIDGE DRAIN PLAN



U-BOLT DETAIL



SECTION A-A

BRIDGE DRAIN NOTES

1. FRP Bridge Drains shall be designed and detailed based on the dimensions for the bridge drain details shown, and in accordance with Special Provisions Section 502, Fiber Reinforced Polymer Bridge Drains and Downspouts.
2. Shear connectors welded to the top flange of steel beams may require adjustment to clear the bridge drains. No extra payment will be made for needed adjustment to the studs.
3. Support Assembly components and hardware shall meet the grade and protective coating requirements identified on Standard Detail 502(24).

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	SIGNATURE		DATE
	WIN 022344.00		
	P.E. NUMBER		DATE
BRIDGE NO. 5905		FIELD CHANGES	
BRIDGE PLANS			

KELLEY ROAD BRIDGE INTERSTATE 95 ORONO PENOBSCOT COUNTY	PROJ. MANAGER	M. Parlin	BY	DATE
	DESIGN-DETAILED	T. Poulis	E. Beausoleil	10/19
	CHECKED-REVIEWED	B. Greter	L. Driscoll	10/19
	DESIGN-DETAILED	-	-	-
	DESIGN-DETAILED	-	-	-
BRIDGE DRAIN DETAILS	REVISIONS 1	-	-	-
	REVISIONS 2	-	-	-
	REVISIONS 3	-	-	-
	REVISIONS 4	-	-	-
SHEET NUMBER				
28				
OF 29				

