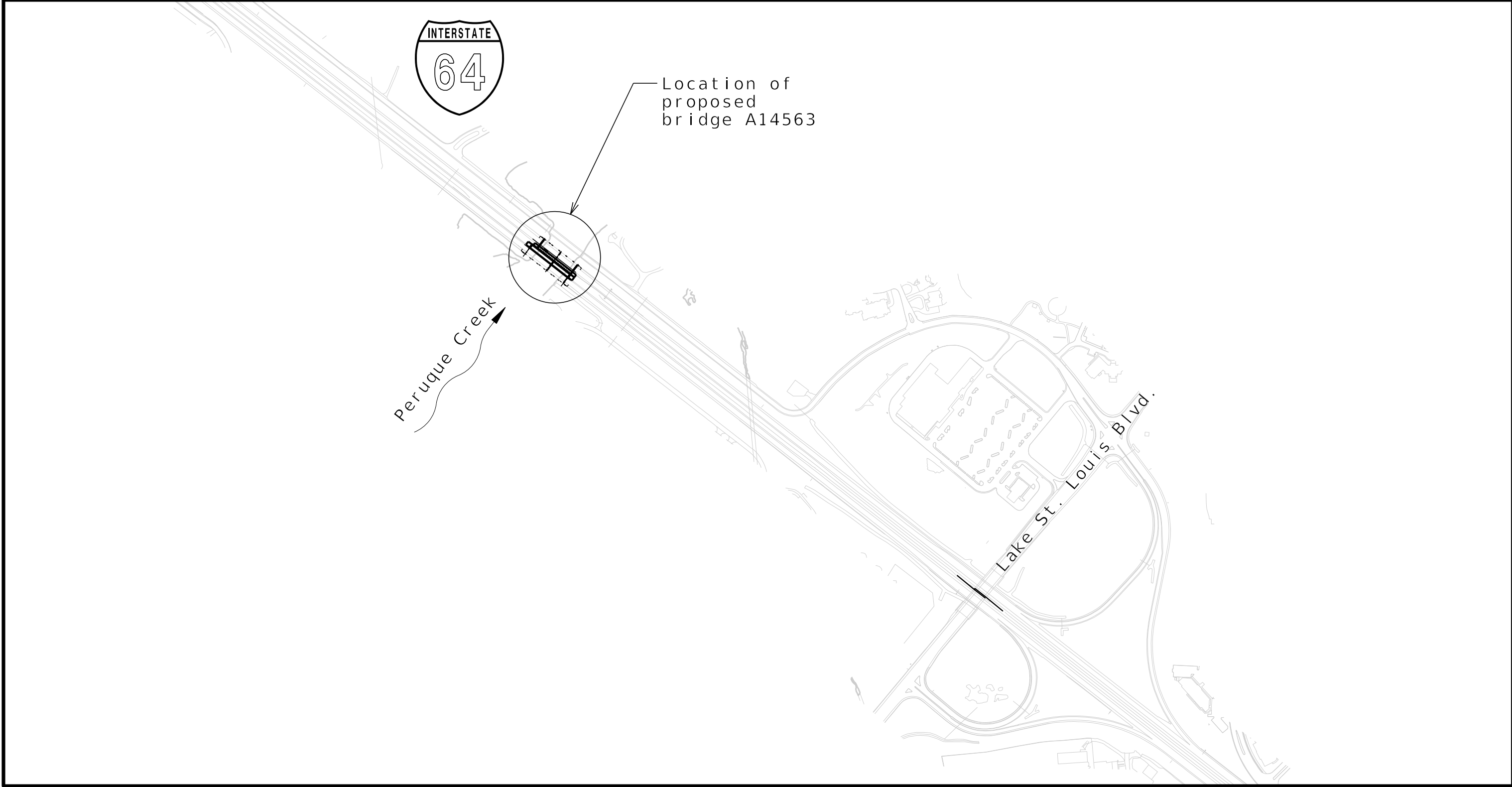
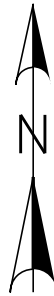


U.I.P. REHABILITATE & WIDEN EXISTING (109.75' - 109.75') CONTINUOUS COMPOSITE PLATE GIRDER SPANS



LOCATION MAP



INDEX OF DRAWINGS

- 2 TITLE SHEET AND INDEX OF DRAWINGS
3 GENERAL PLAN AND ELEVATION
4 GENERAL NOTES
5 REMOVAL DETAILS END BENT NO. 1
6 REMOVAL DETAILS END BENT NO. 1
7 REMOVAL DETAILS END BENT NO. 1
8 REMOVAL DETAILS END BENT NO. 1
9 DETAILS OF END BENT NO. 1
10 DETAILS OF END BENT NO. 1
11 VERTICAL DRAIN AT END BENTS
12 REMOVAL DETAILS END BENT NO. 3
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14 REMOVAL DETAILS END BENT NO. 3
15 REMOVAL DETAILS END BENT NO. 3
16 DETAILS OF END BENT NO. 3
17 DETAILS OF END BENT NO. 3
18 FIXED BEARING DETAILS - INT. BENT NO. 2
19 STEEL PLATE GIRDER DETAILS
20 STEEL PLATE GIRDER DETAILS
21 STEEL PLATE GIRDER DETAILS
22 STEEL DIAPHRAGMS
23 SLAB DRAINS
24 PLAN OF SLAB SHOWING REINFORCEMENT
25 SLAB DETAILS
26 BARRIER DEMOLITION AND REPLACEMENT AT END
27 BENTS NO. 1 & 3
28 TYPE D BARRIER
29 BRIDGE APPROACH SLAB (MAJOR)
30 BAR BENDING DIAGRAMS
31 BILL OF REINFORCING STEEL (1 OF 1)

DATE PREPARED	
5/6/2025	
ROUTE	STATE
I - 64	MO
DISTRICT	SHEET NO.
BR	1
COUNTY	
ST. CHARLES	
JOB NO.	
J613033	
CONTRACT ID.	

PROJECT NO.

BRIDGE NO.
A14563

[illegible]MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

HNTB
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

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PHONE 573-634-3181
CERTIFICATE OF AUTHORITY NO. 000167 - ENGINEERING
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Designed APR 2025
Detailed APR 2025
Checked APR 2025

Note: This drawing is not to scale. Follow dimensions.

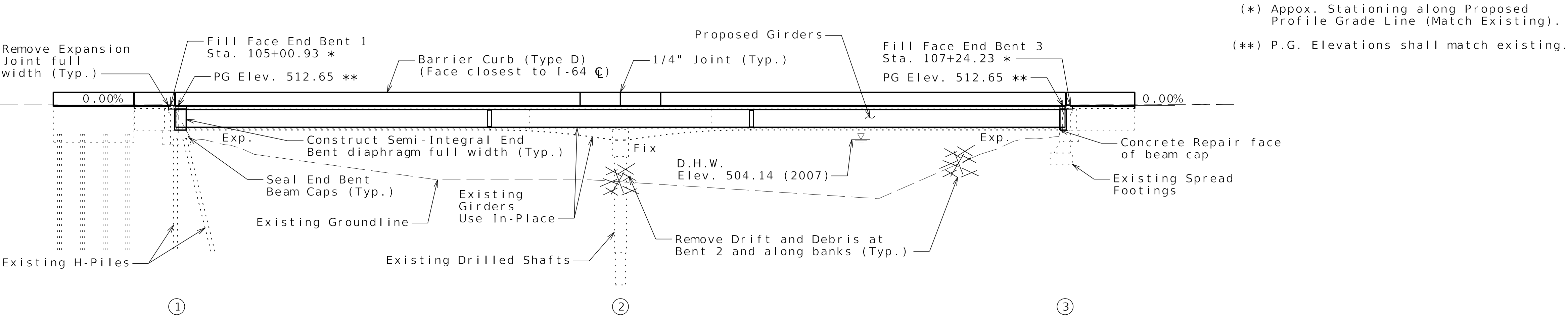
Sheet 1 of 29

BRIDGE: ROUTE I-64 WB OVER PERUQUE CREEK

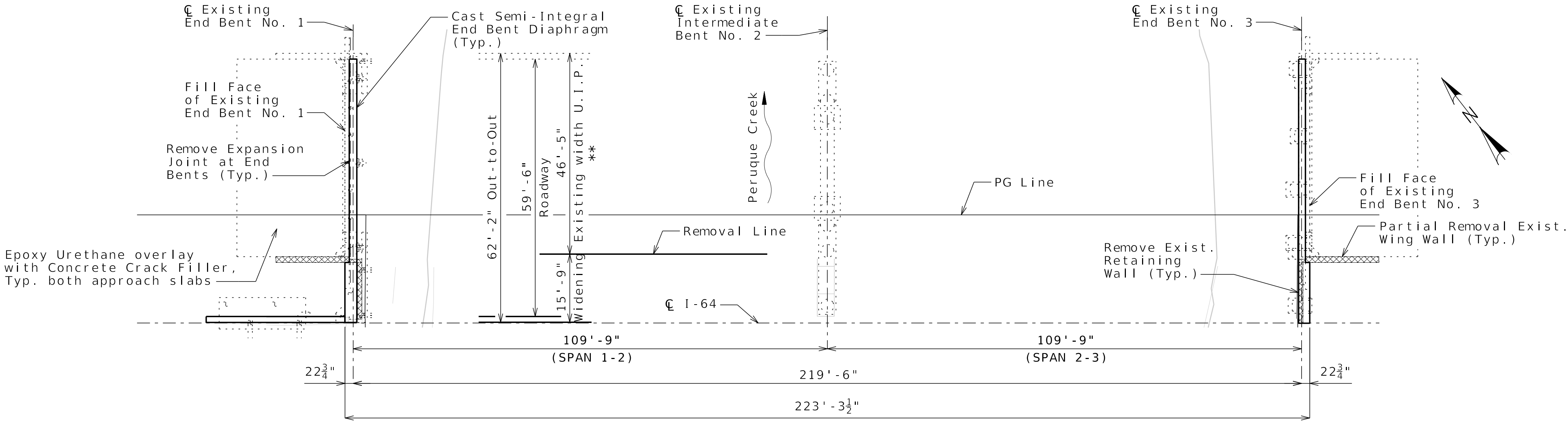
ROUTE 1-64 FROM ROUTE 1-70 TO WELDON SPRINGS
ABOUT 2.0 MILES SOUTHEAST OF ROUTE 1-70

BEGINNING STATION 105+00.94 +/- MATCH EXISTING

U.I.P. REHABILITATE & WIDEN EXISTING (109.75' - 109.75') - CONTINUOUS COMPOSITE PLATE GIRDER SPANS



GENERAL ELEVATION



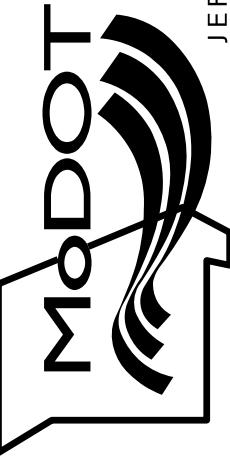
PLAN
Bridge A67542 not shown for clarity

** For use of remaining existing deck width U.I.P. and temporary traffic barrier placement, see phasing in Maintenance of Traffic Plans.

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION
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105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



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PHONE 572-630-3181
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General Notes:

Design Specifications:

2020 AASHTO LRFD Bridge Design Specifications (9th Ed.)
Seismic Performance Category A

Design Loading:

Vehicular = HS20 Modified & Military 24,000 lb Tandem Axle (1983) (Existing)
HL-93 (New Construction)
Future Wearing Surface = 35 lb/sf
Earth = 120 lb/cf
Equivalent Fluid Pressure = 45 lb/cf
Superstructure: Continuous Non-Composite for Dead Load. Continuous Composite for live load.

Design Unit Stresses:

Class B-1 Concrete (Barrier) f'c = 4,000 psi
Class B-2 Concrete (Superstructure) f'c = 4,000 psi
Reinforcing Steel (ASTM A706 Grade 60) fy = 60,000 psi
Structural Steel (ASTM A709 Grade 50) fy = 50,000 psi

Neoprene Pads:

Neoprene bearing pads shall be 60 durometer and shall be in accordance with Sec 716.

Fabricated Steel Connections:

Field connections shall be made with ¾" diameter high strength bolts and 13/16" diameter holes, except as noted.

Joint Filler:

All joint filler shall be in accordance with Sec 1057 for preformed sponge rubber expansion and partition joint filler, except as noted.

Reinforcing Steel:

Minimum clearance to reinforcing steel shall be 1 1/2", unless otherwise shown.

MBS Refers to mechanical bar splices. Mechanical bar splices shall be in accordance with Sec 706 or 710

All new structural elements will contain epoxy coated reinforcing.

Structural Steel Protective Coatings:

Protective Coating: System G in accordance with Sec 1081.

Prime Coat: Use Organic Zinc Primer Per AAS #14

Field Coat: the color of the finish field coat shall be Gray (Federal Standard #26373).

At the option of the contractor, the intermediate and field finish coats may be applied in the shop. The contractor shall exercise extreme care during all phases of loading, hauling, handling, erection, and pouring of the slab to minimize damage and shall be fully responsible for all repairs and cleaning of the coating systems as required by the engineer.

Traffic Handling:

For traffic phasing during construction, see Maintenance of Traffic Plans.

General Notes (cont.):

Bridge Deck:

Method of forming the slab shall be as shown on the plans and in accordance with Sec 703. All hardware for forming the slab to be left in place as a permanent part of the structure shall be coated in accordance with ASTM A123 or ASTM B633 with a thickness class SC4 and a finish type I, II, or III.

Slab shall be cast-in-place with a stay-in-place corrugated steel forms. Precast prestressed panels will not be permitted.

Corrugated steel forms, supports, closure elements and accessories shall be in accordance with grade requirements and coating designation G165 of ASTM A653. Complete Shop drawings of the permanent steel deck forms shall be required in accordance with Sec 1080.

Corrugations of stay-in-place forms shall be filled with an expanded polystyrene material. The polystyrene material shall be placed in the forms with an adhesive in accordance with the manufacturer's recommendations.

Form sheets shall not rest directly on the top of girder flanges. Sheets shall be securely fastened to form supports with a minimum bearing length of one inch on each end. Form supports shall be placed in direct contact with the flange. Drilling holes in the girder flanges will not be permitted. All steel fabrication and construction shall be in accordance with Sec 1080 and 712. Certified field welders will not be required for welding of the form supports.

The design of stay-in-place corrugated steel forms is per manufacturer which shall be in accordance with Sec 703 for falsework and forms. Maximum actual weight of corrugated steel forms allowed shall be 4 psf assumed for girder loading.

Miscellaneous:

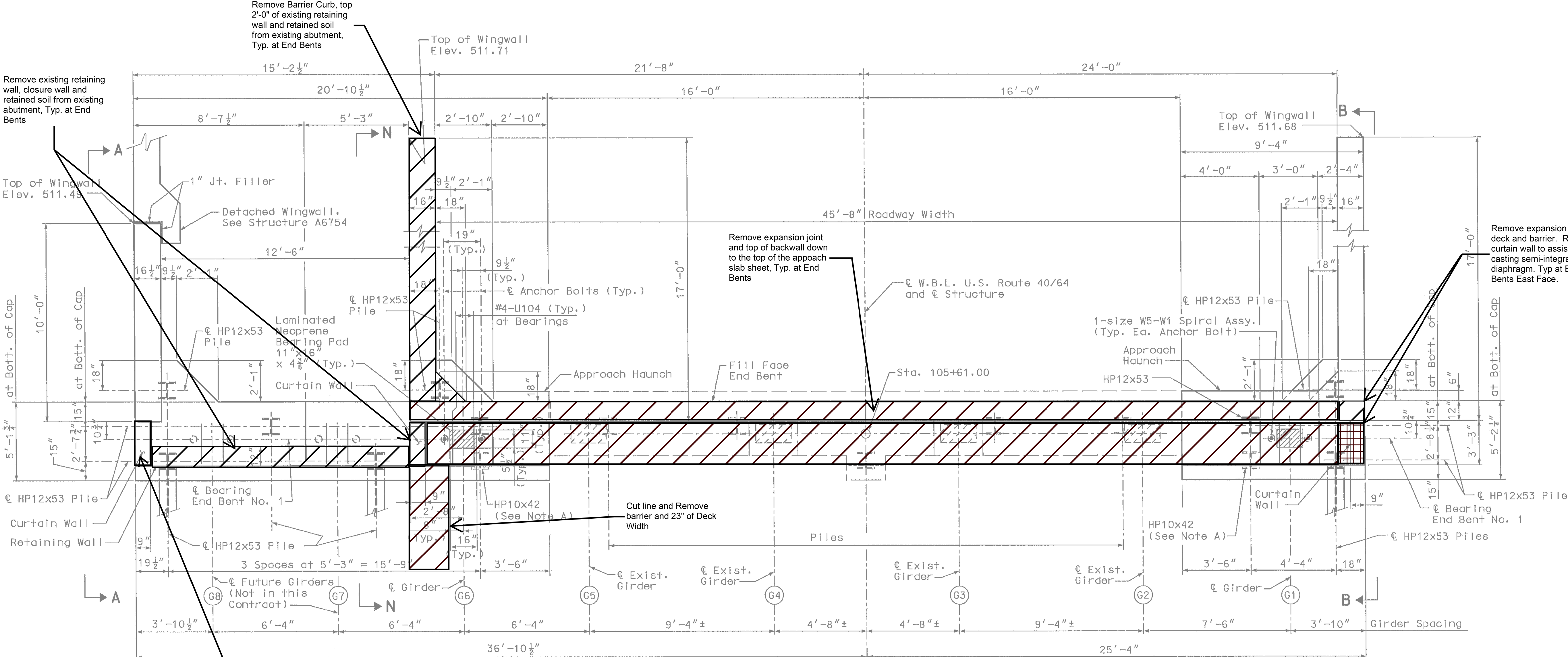
High strength bolts, nuts and washers will be sampled for quality assurance as specified in Sec 106.

Roadway surfacing adjacent to bridge ends shall match new bridge wearing surface (roadway item).

Outline of existing work is indicated by light dashed lines. Heavy lines indicate new work.

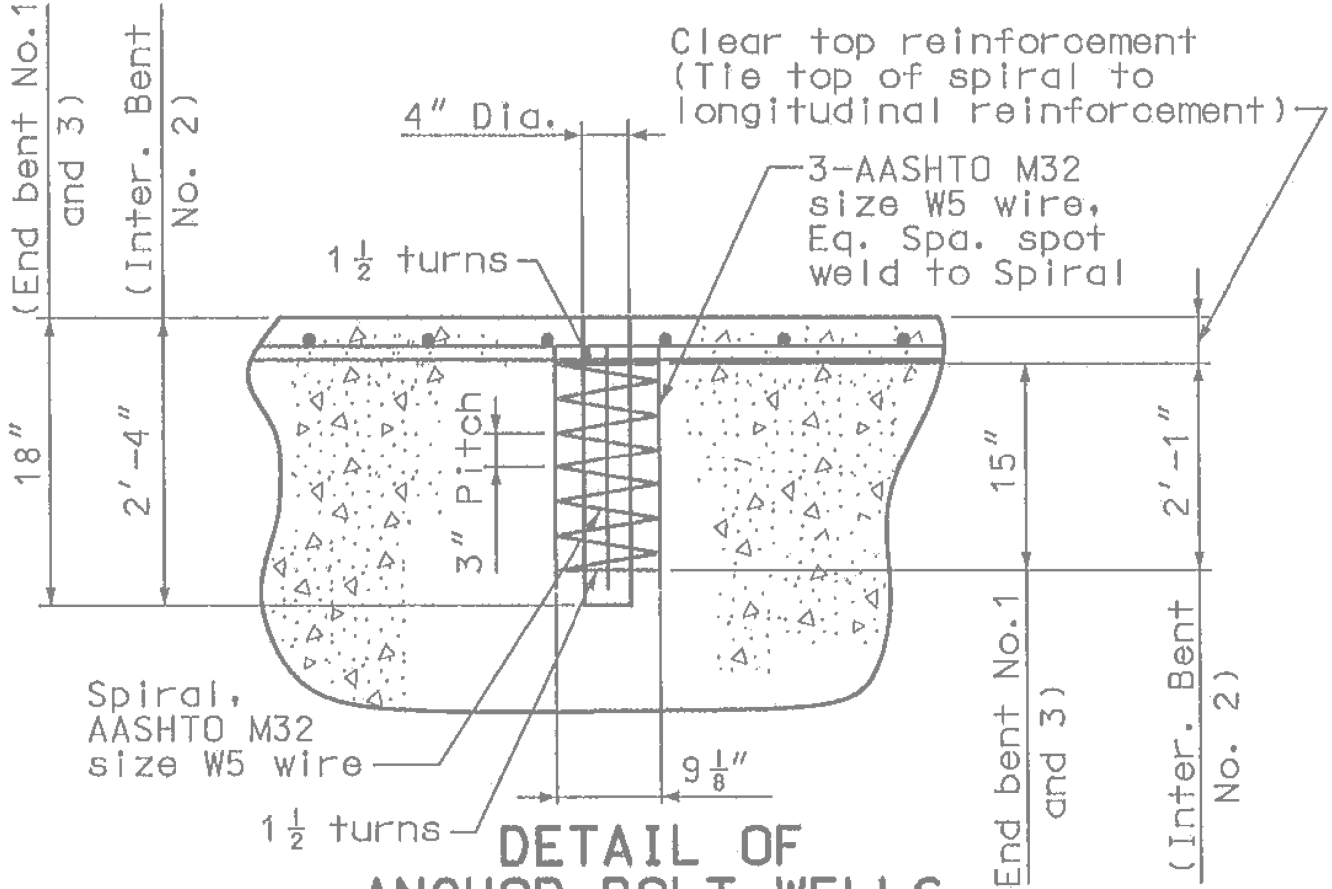
Contractor shall verify all dimensions in field before ordering materials and finalizing shop drawings.

Bars bonded in existing concrete not removed shall be cleanly stripped and embedded into new concrete where possible. If length is available, existing bars shall extend into new concrete at least 40 diameters for plain bars and 30 diameters, for deformed bars unless otherwise noted.



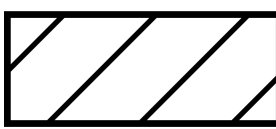
PLAN

Note A: Existing HP10x42 Piles at these locations shall be cut off 5'-0" below the bottom of the cap to allow for placement of new HP12x53.



DETAIL OF ANCHOR BOLT WELLS

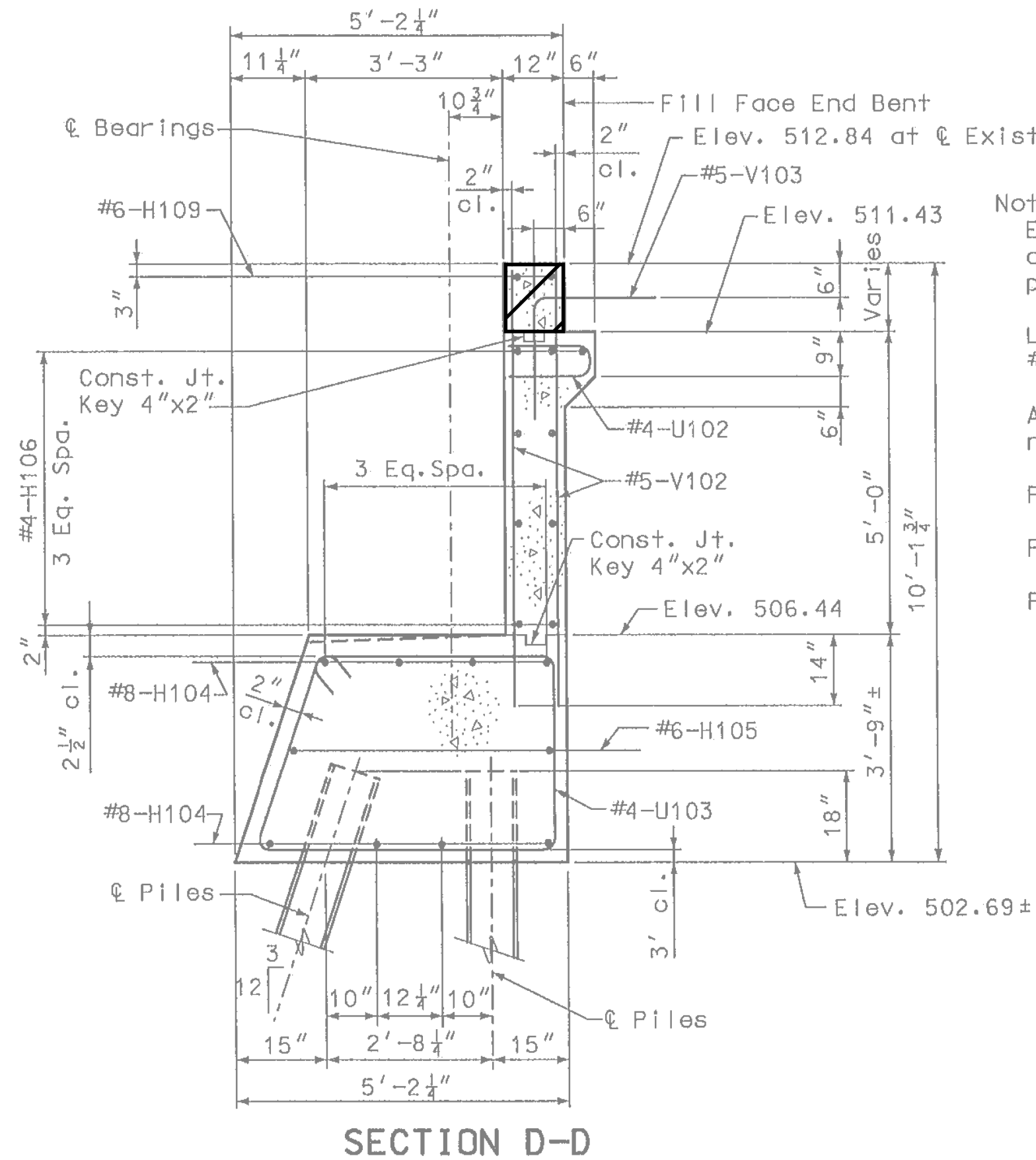
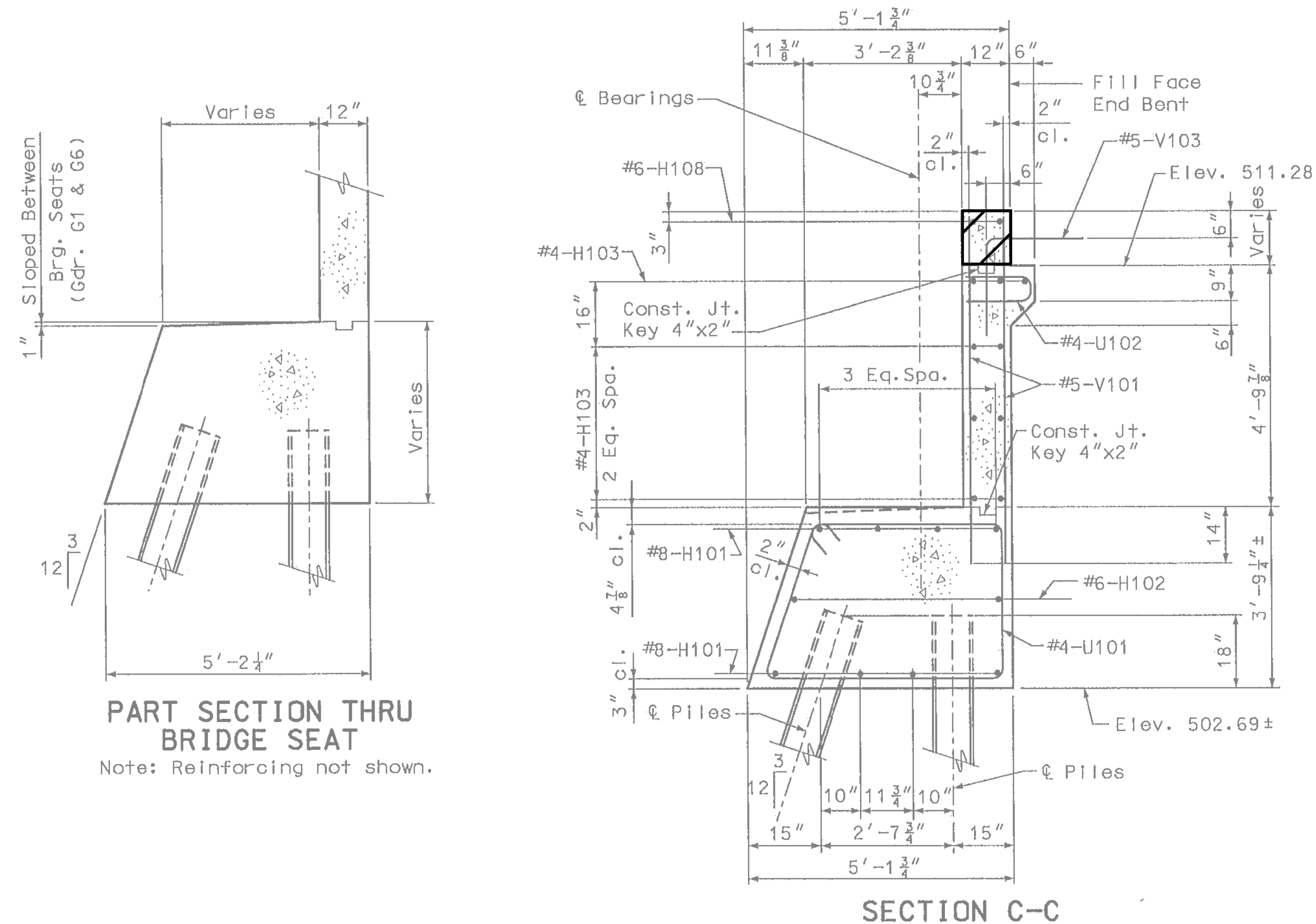
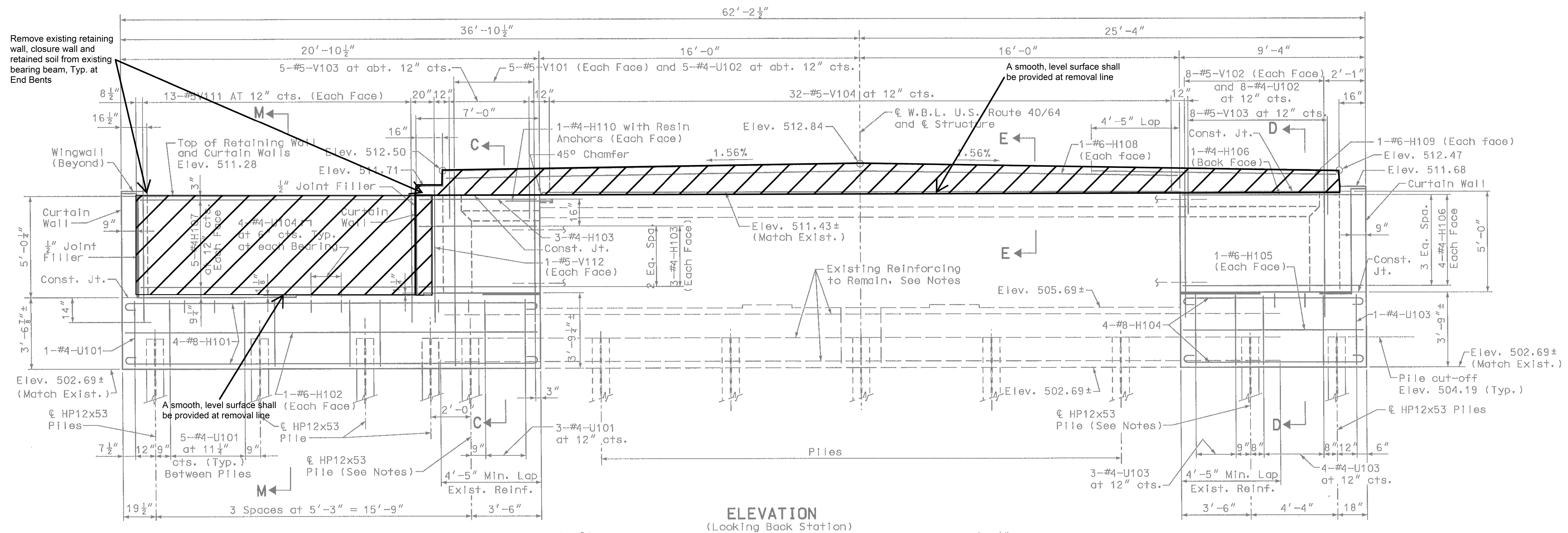
Note: Anchor bolt wells required for new bearings only. Spiral reinforcement required for new and future bearings.



Indicates Removal or partial removal

- Notes:
- The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.
 - Cost of furnishing and installing the resin anchor system complete-in-place will be considered completely covered by the contract unit price for "Class B Concrete (Substr.)", Cu.Yd.
 - Seal backwall, top of beam cap and front face of beam cap with Protective Coating (Urethane) (Typ.).
 - The 1/2" diameter resin anchor system shall have a minimum ultimate pullout strength of 9,800 lbs. in concrete with f'c = 3,000 psi.
 - For Elevations A-A and B-B see Sheet No. 8.
 - For Elevation N-N see Sheet No. 9.

DATE PREPARED 5/6/2025	
ROUTE 1-64	STATE MO
DISTRICT BR	SHEET NO. 4
COUNTY ST. CHARLES	
JOB NO. J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14563	
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
715 KIRK DRIVE KANSAS CITY, MO 64105-1310 KANSAS CITY, MO 64105-1310 PHONE 874-3331 FAX 874-3331 WWW.BARTLETTWEST.COM	



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DATE PREPARED	
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ROUTE	STATE
I - 64	MO
DISTRICT	SHEET NO.
BR	5
COUNTY	
ST. CHARLES	
JOB NO.	
J613033	
CONTRACT ID.	

PROJECT NO.
BRIDGE NO. A14563

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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

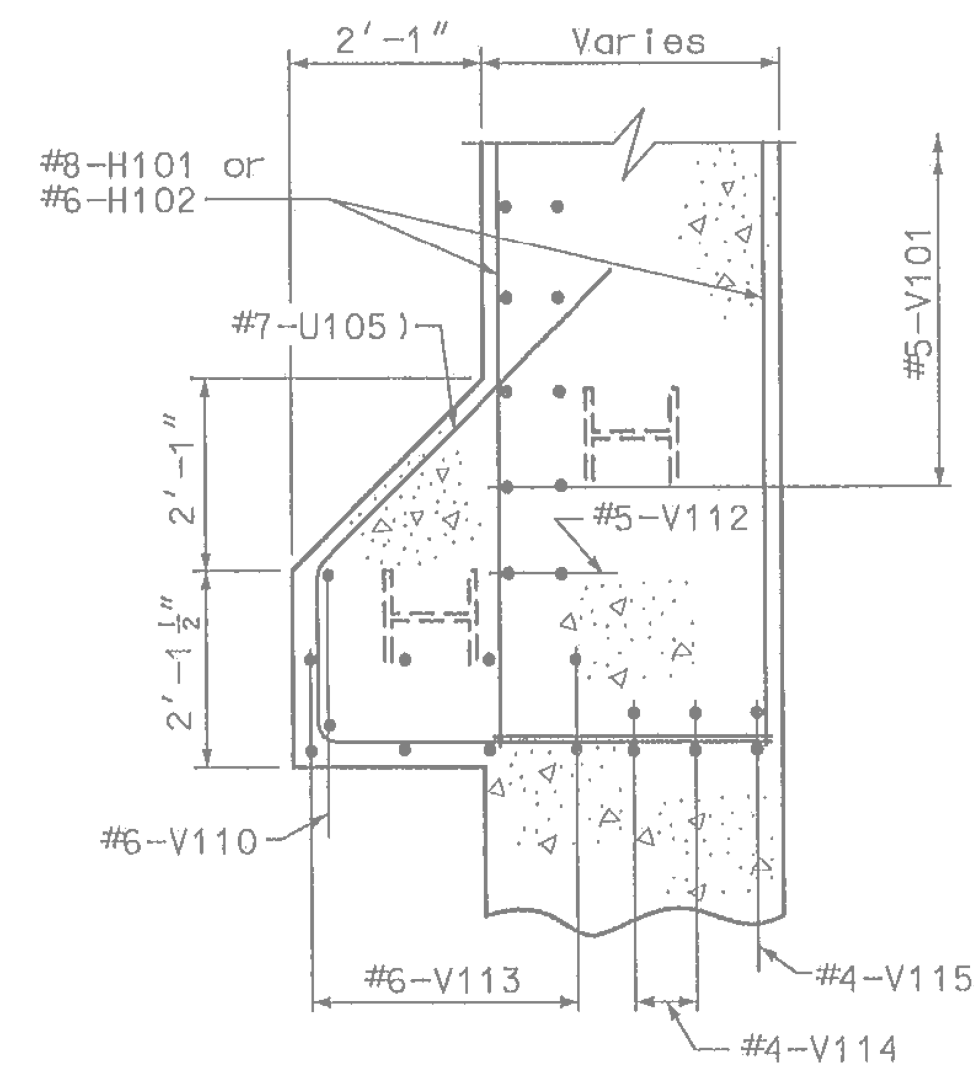
The logo for the Missouri Department of Transportation (MoDOT) features the word "MoDOT" in a bold, sans-serif font. Below the text is a stylized graphic of a road or highway with three curved lines representing lanes, leading towards the right.

105 WEST CAPITAL
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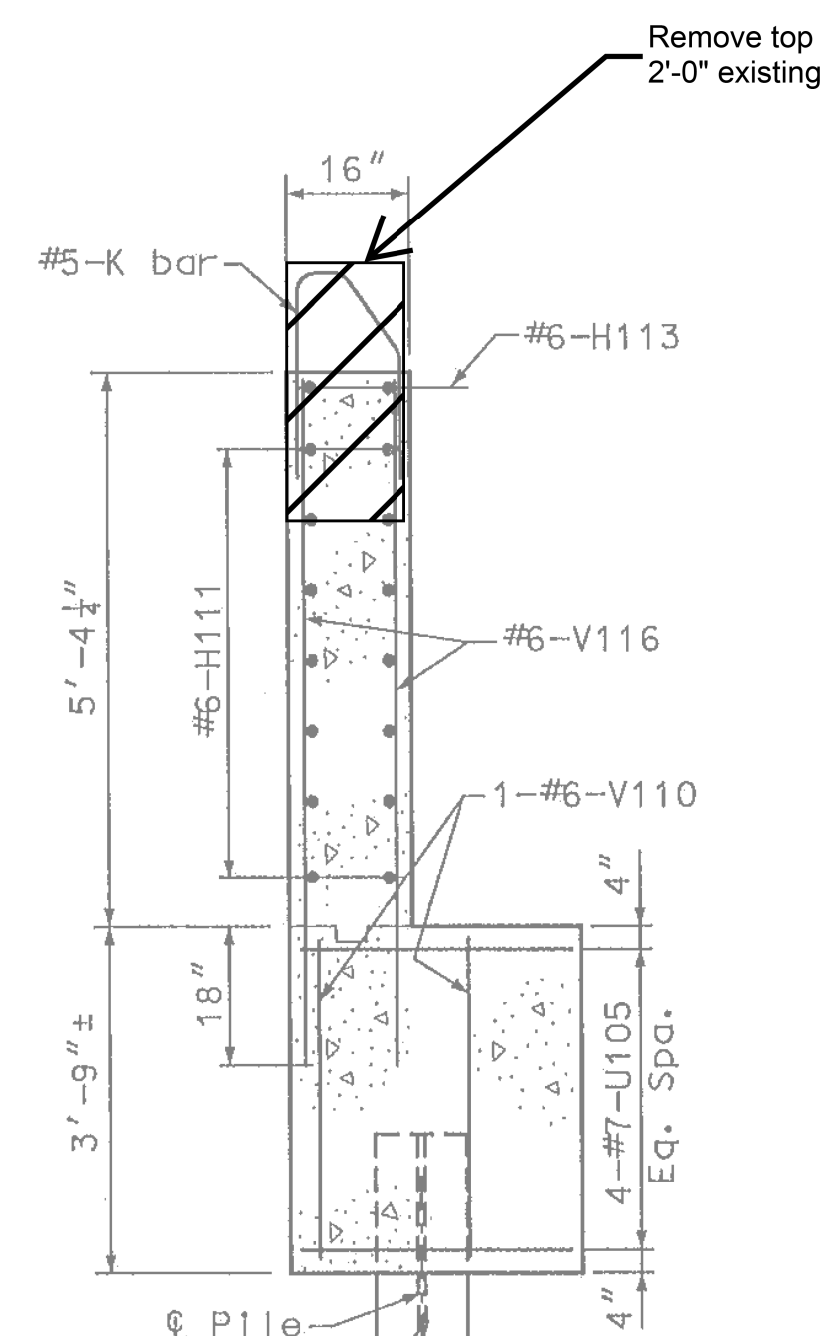
	715 XIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 000270	 IMPROVE 70 ALLIANCE
Bartlett & West 601 MONROE ST., SUITE 201 • JEFFERSON CITY, MO 65101 PHONE 572-634-1181 CERTIFICATE OF AUTHORITY NO. 000507 • ENGINEERING WWW.BARTLETTWEST.COM		



Note A: Place 2-layers of polyethylene sheeting prior to backfilling. Cost of sheeting, in place, shall be included in the contract unit price for "Class B Concrete (Substr.)", Cu Yard.

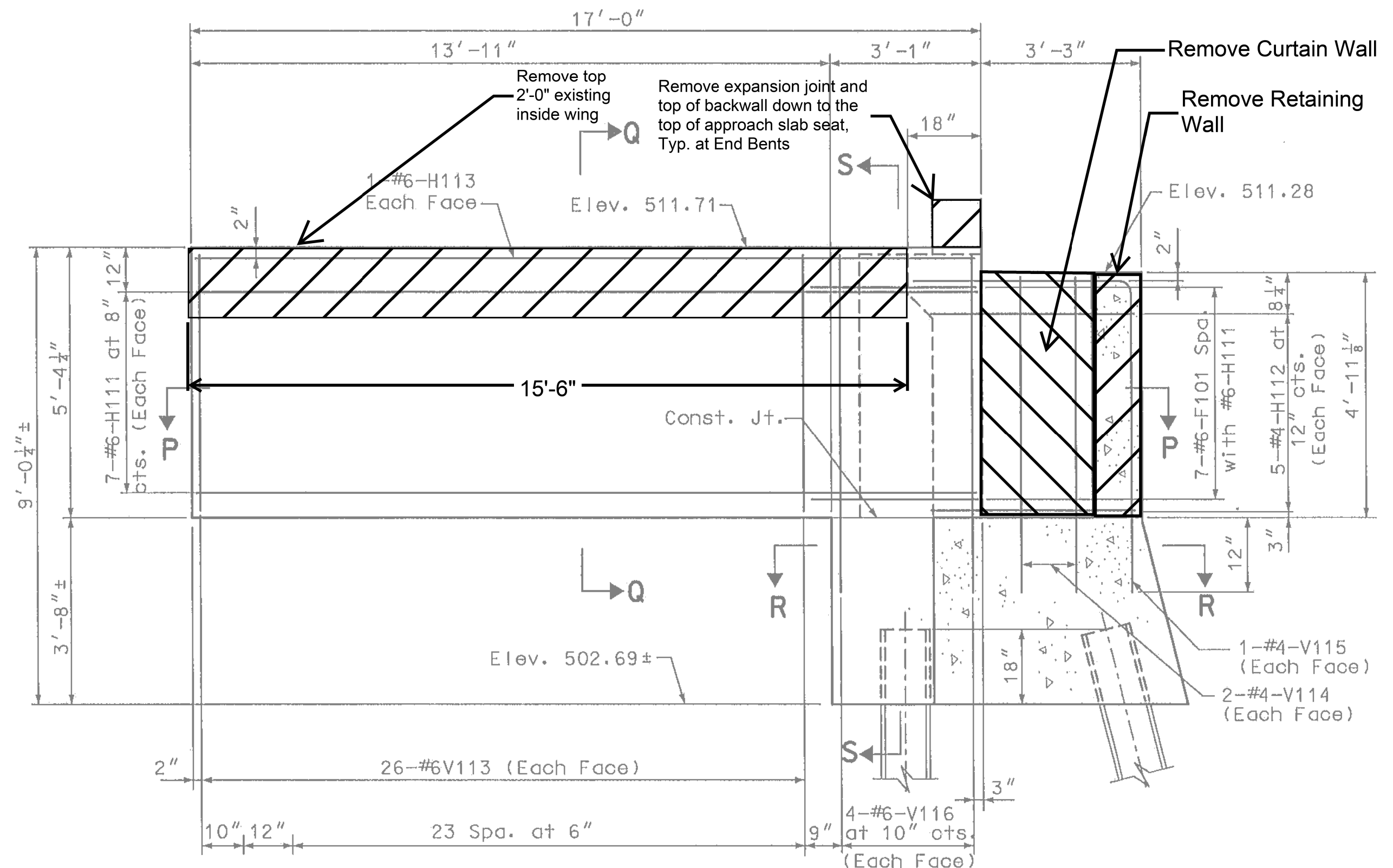


SECTION R-R



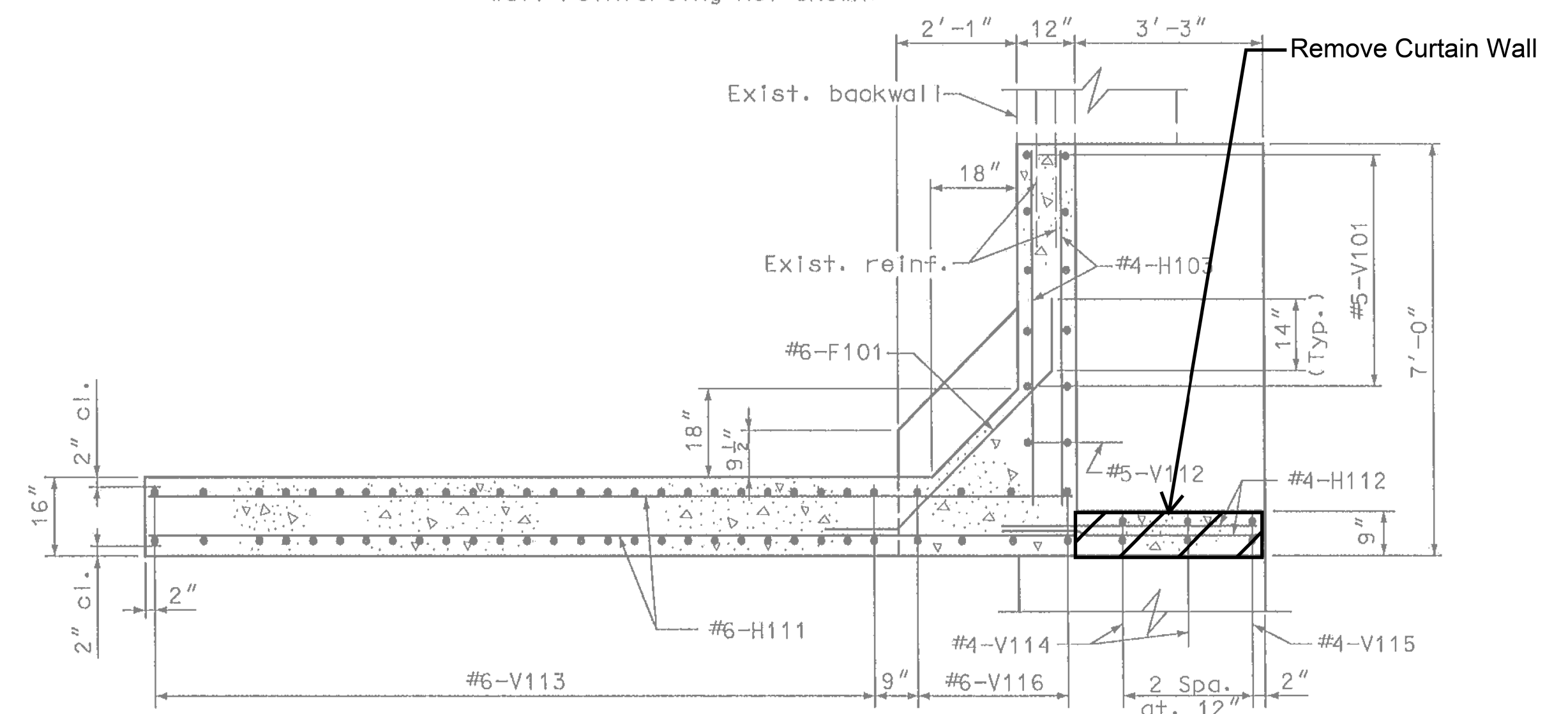
SECTION S-S

DETAILS OF END BENT NO. 1



ELEVATION N-N

Note: Beam cap and retaining wall reinforcing not shown.

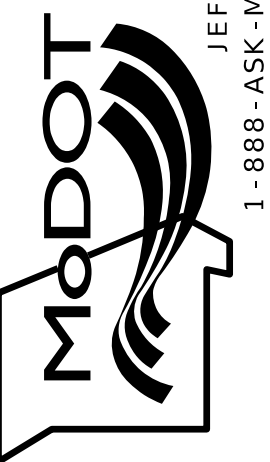


SECTION P-P

 Indicates Removal or partial removal

DATE PREPARED	
5/6/2025	
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I - 64	MO
DISTRICT	SHEET NO.
BR	7
COUNTY	
ST. CHARLES	
JOB NO.	
J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A14563	
DESCRIPTION	
DATE	

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

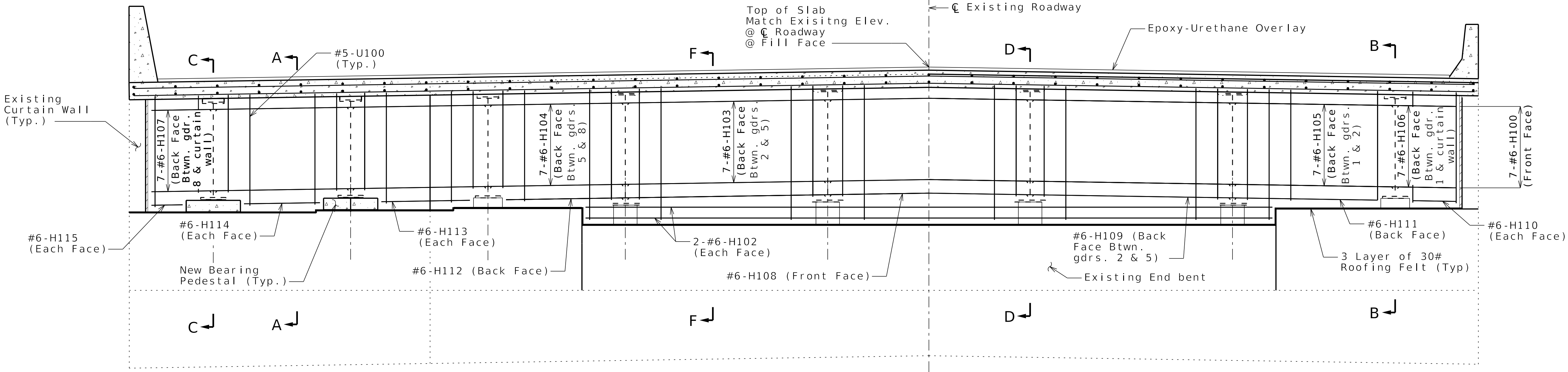


103 WEST CAPITOL
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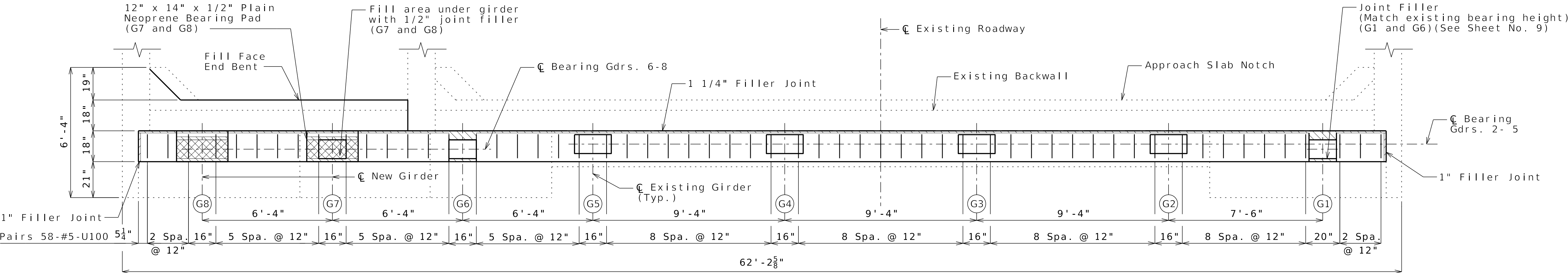
HNTB
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CERTIFICATE OF AUTHORITY
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ELEVATION OF END BENT NO. 1

Existing bearing and diaphragms
not shown for clarity (U.I.P.).
Piles and Columns not shown for clarity.



PART PLAN

Horizontal dimensions
measured along $\bar{C}$ bearing.

Notes:
For Sections A-A, B-B, C-C, D-D, and F-F see Sheet No. 9.
For details of End Bent 1 not shown, see Sheet No. 9.

DATE PREPARED	
5/6/2025	
ROUTE	STATE
1-64	MO
DISTRICT	SHEET NO.
BR	8
COUNTY	
ST. CHARLES	
JOB NO.	
J613033	
CONTRACT ID.	

PROJECT NO.	
BRIDGE NO.	
A14563	

DESCRIPTION	DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

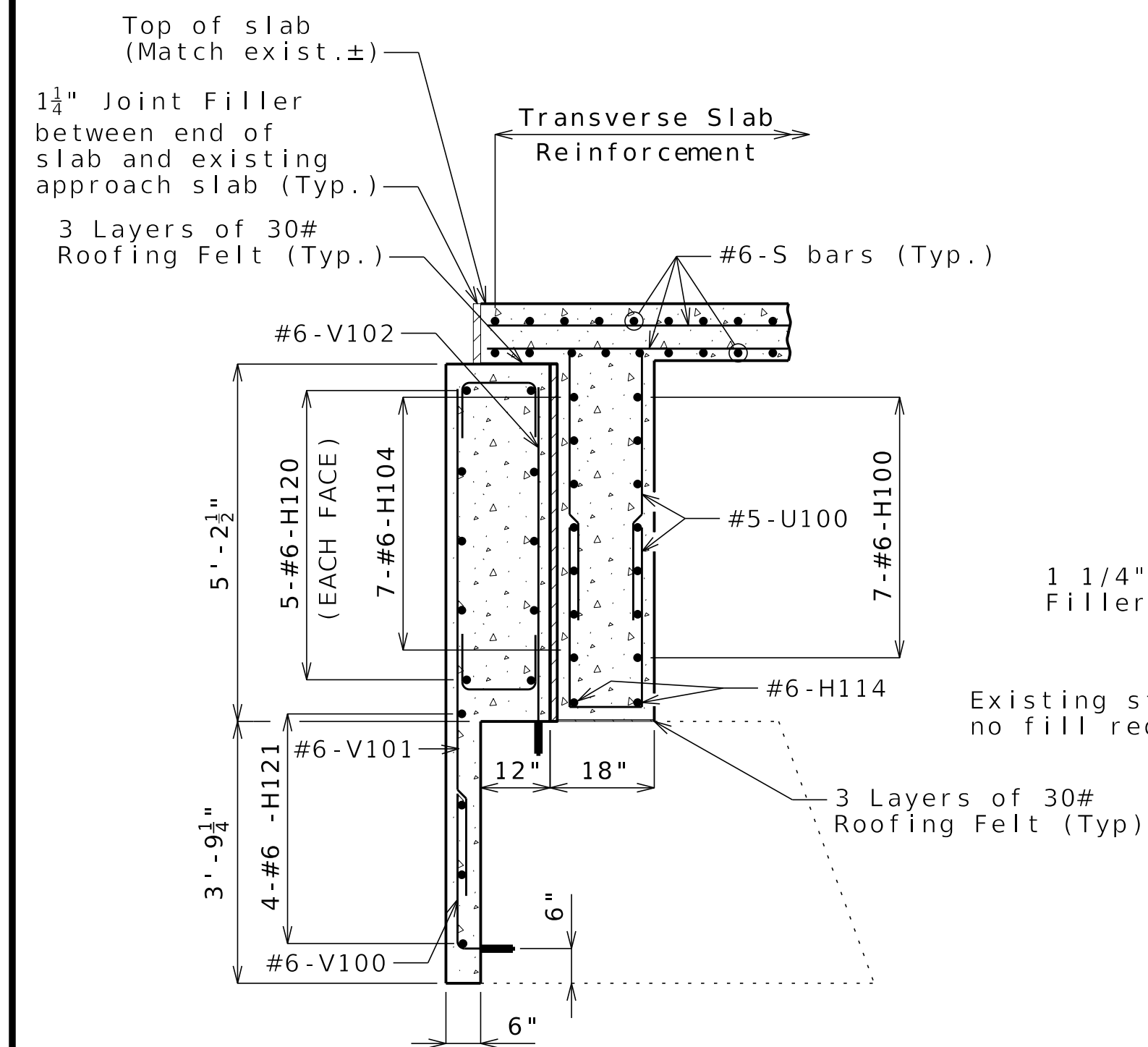
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
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MoDOT

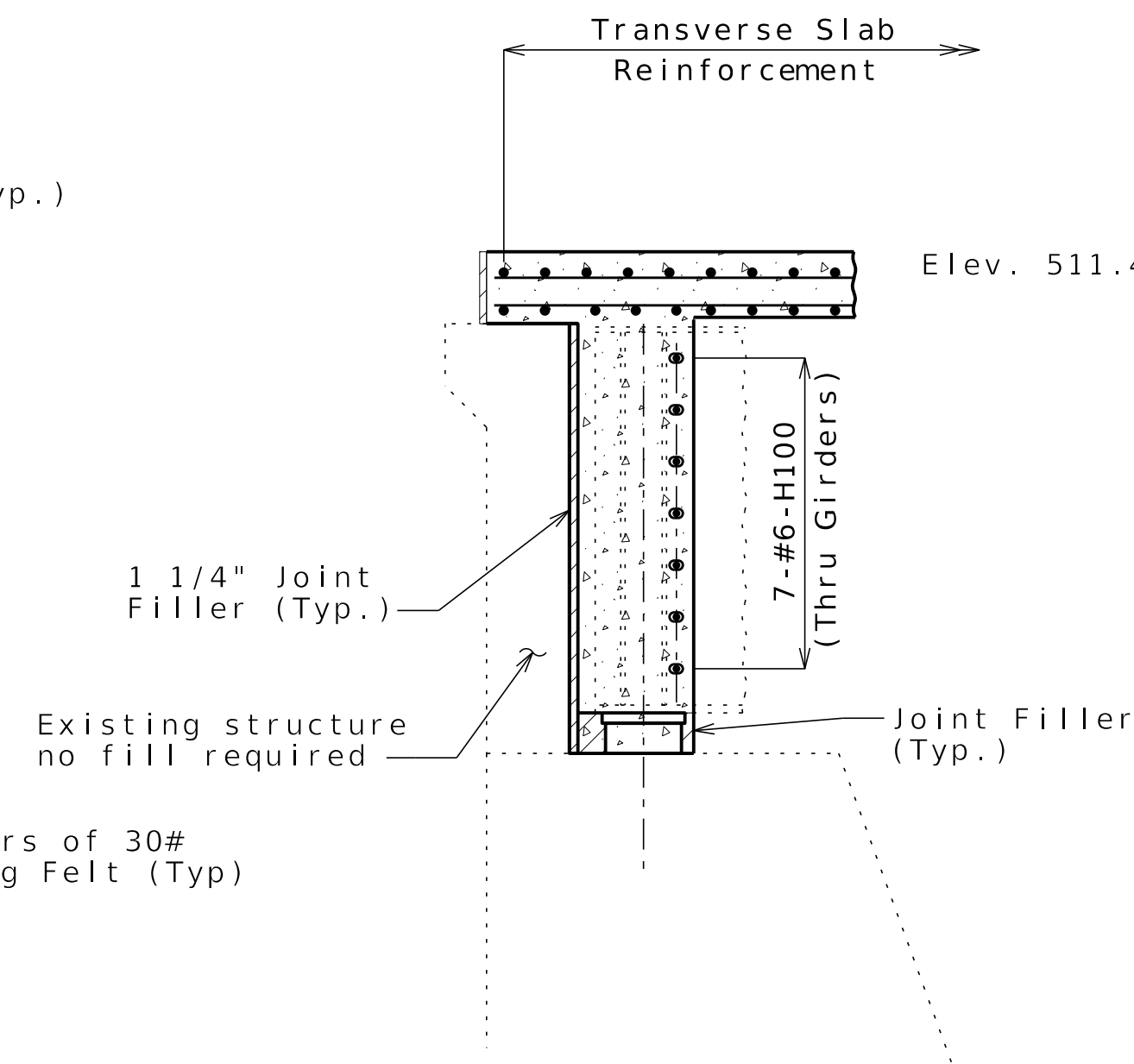


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715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

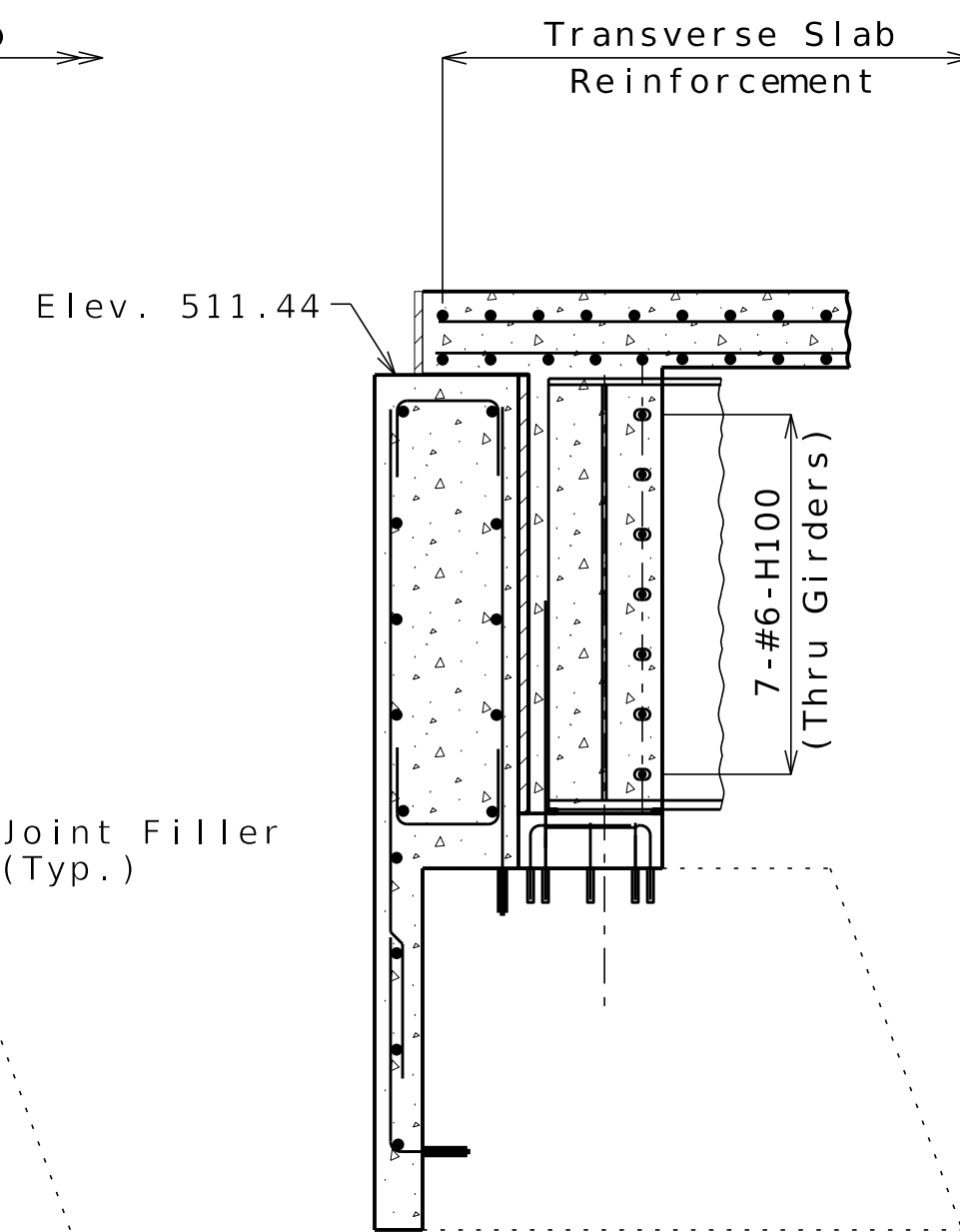
Bartlett & West
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PHONE 872-633-3181
CERTIFICATE OF AUTHORITY
NO. 001270



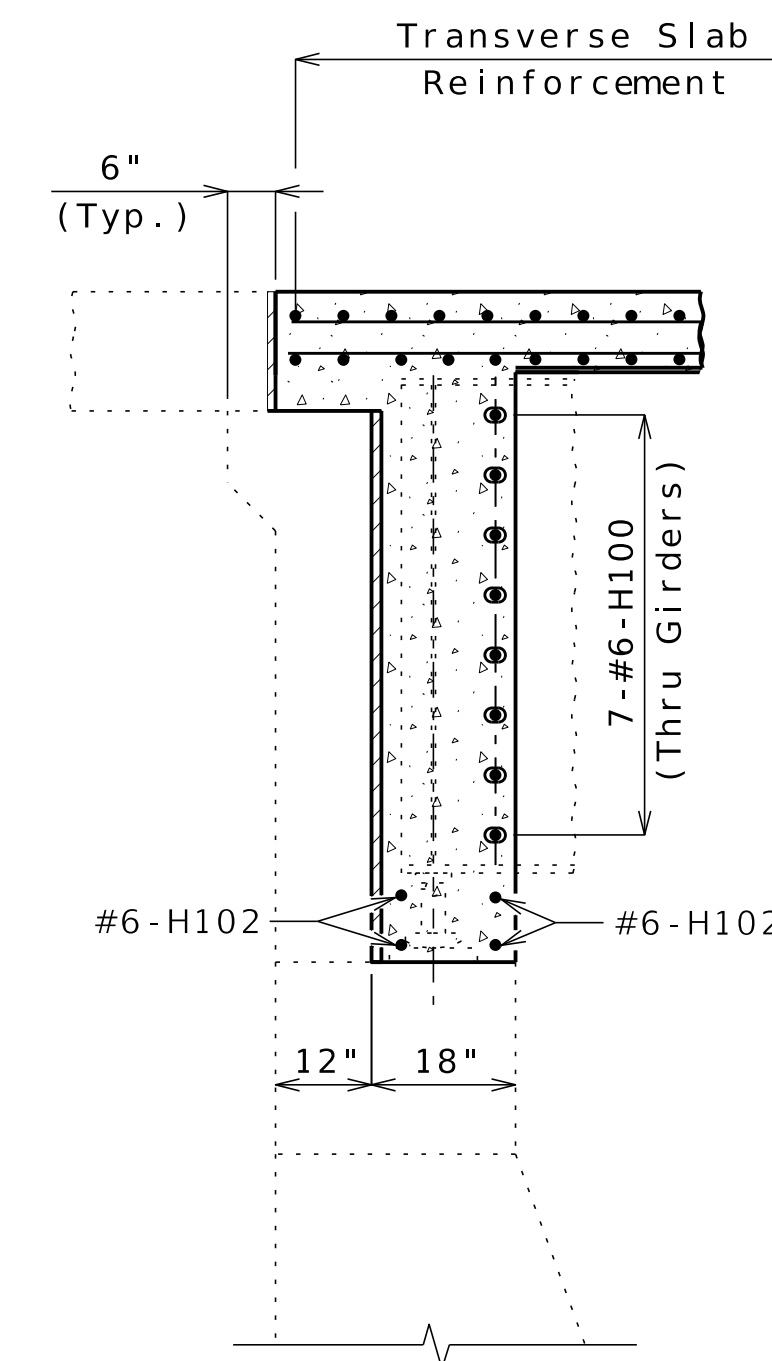
SECTION A-A



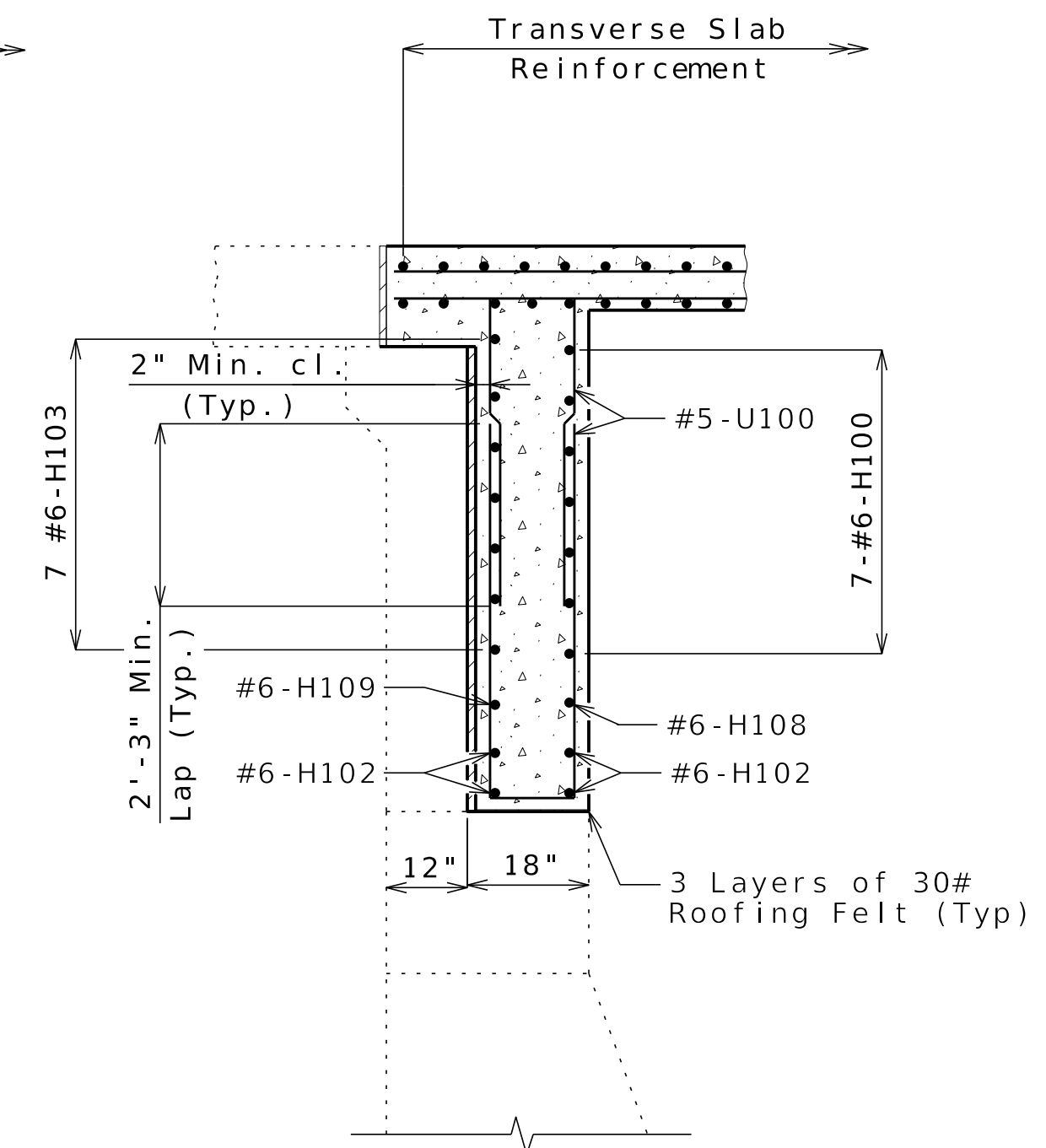
SECTION B-B



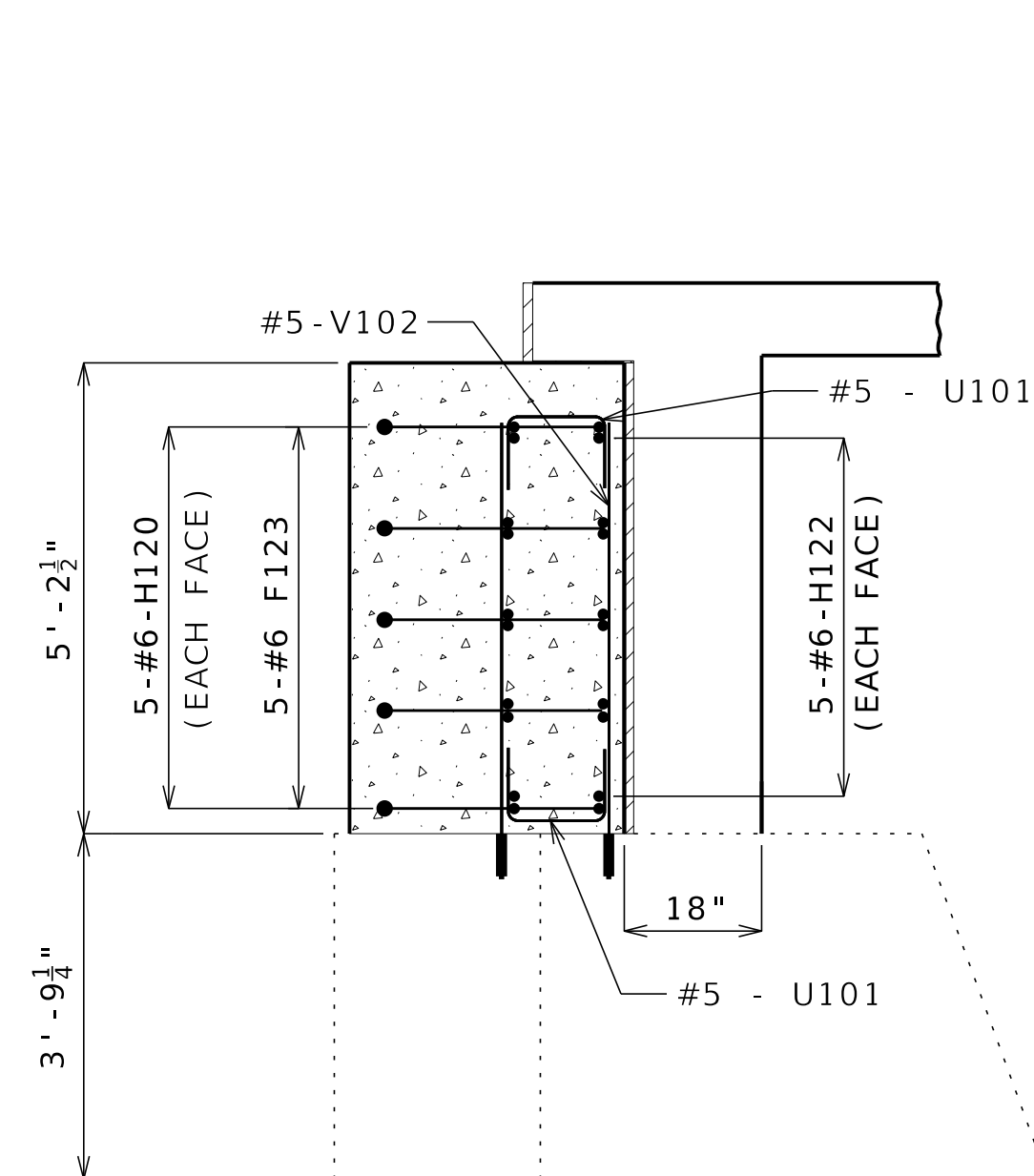
SECTION C-C



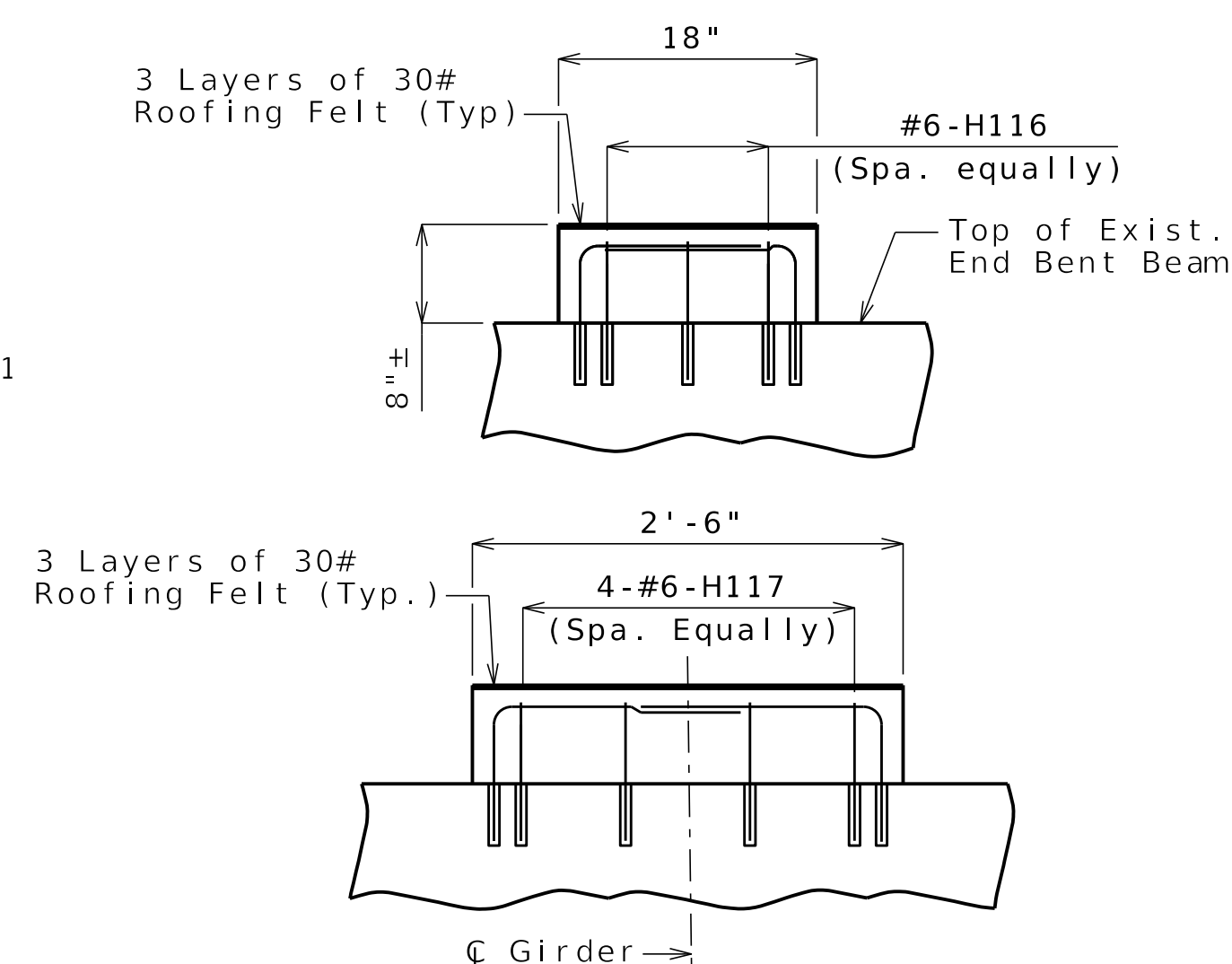
SECTION D-D



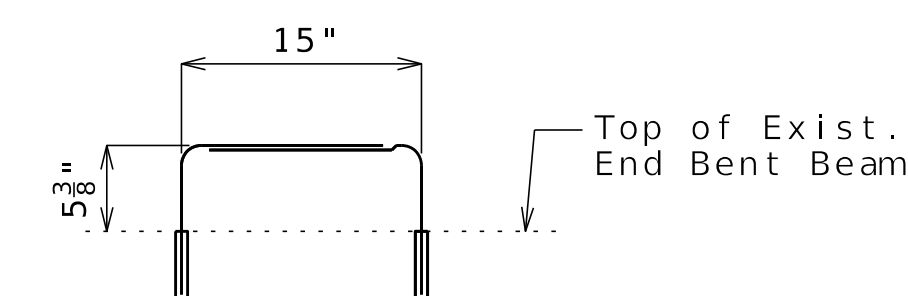
SECTION F - F



SECTION G-G
diaphragm reinforcing not
shown for clarity

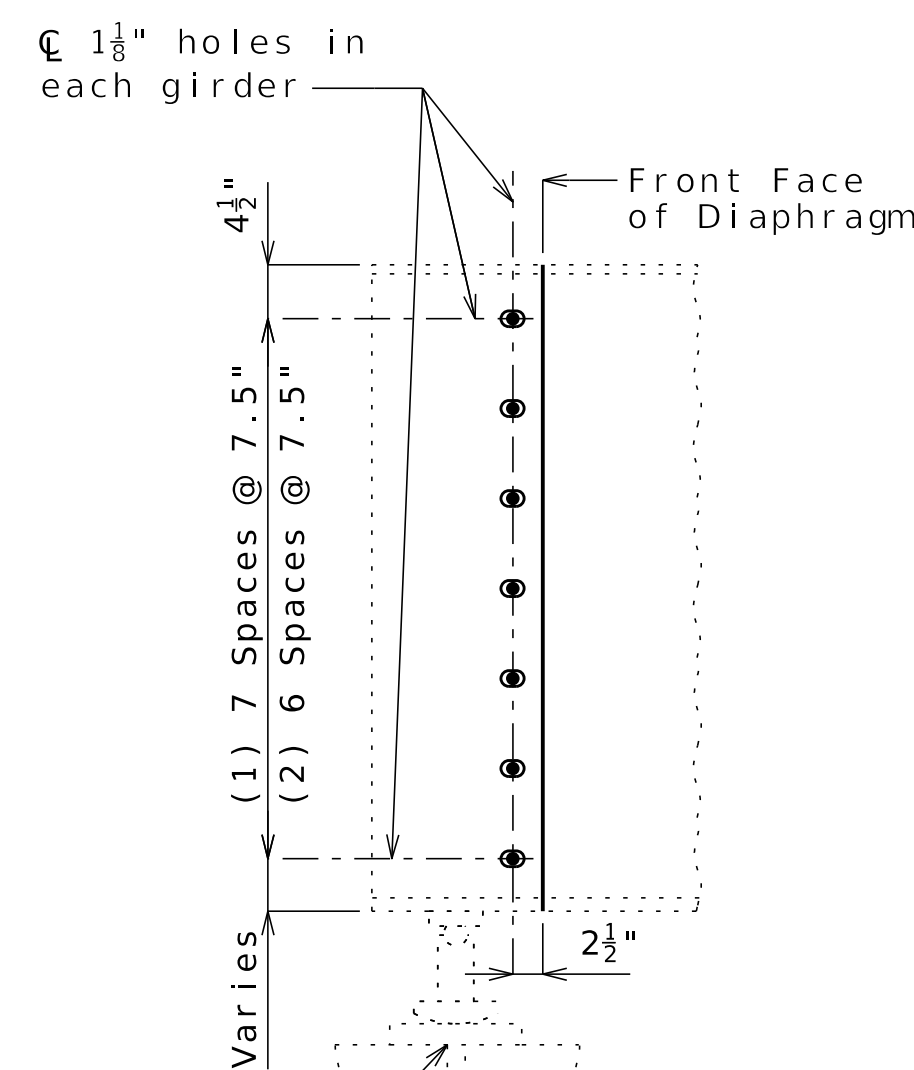


ELEVATION OF BEAM PEDESTAL

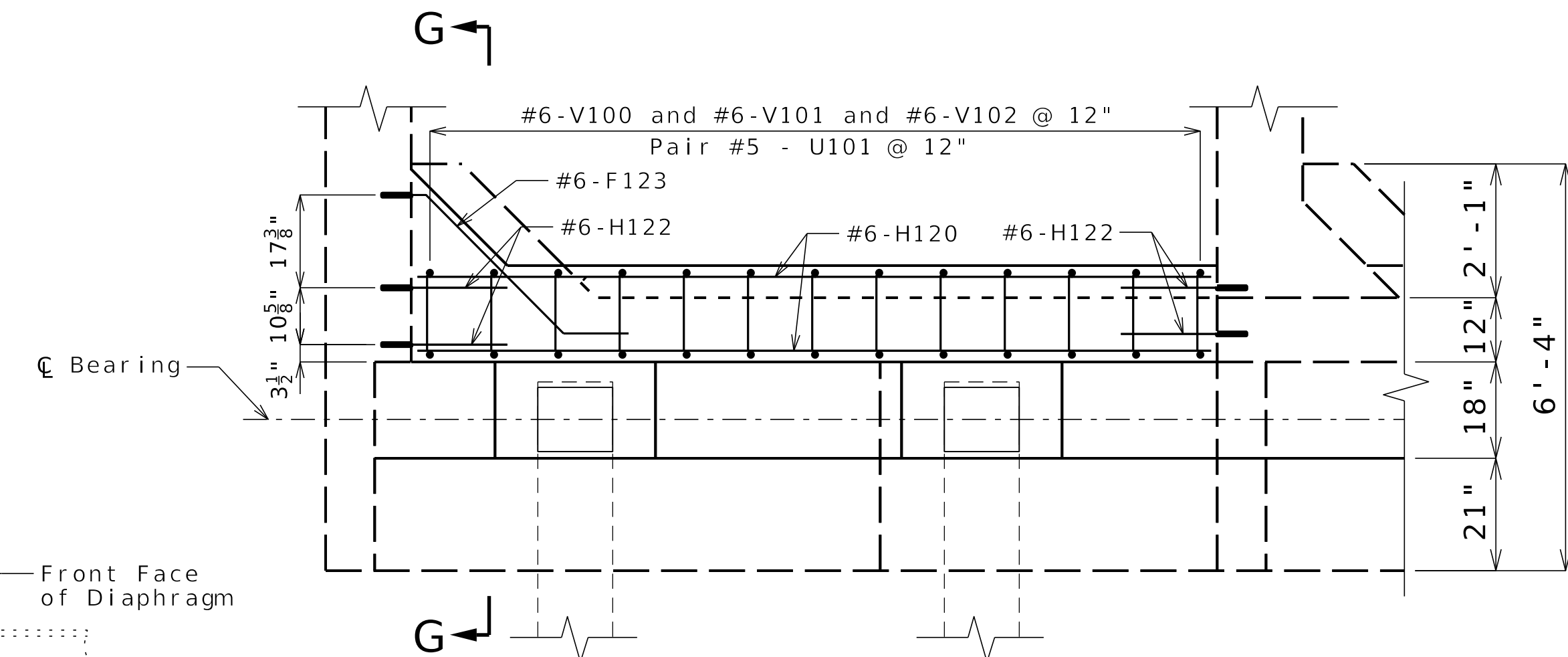


DETAILS OF PEDESTAL REINFORCEMENT

Cut existing anchor bolt
flush with top of existing
end bent beam. Place 3
layers of 30# roofing felt
beneath existing lead plate



DETAILS OF WEB HOLES & BEARING ASSEMBLY



PART PLAN BACKWALL

Notes:

For Girders 2 through 5 the exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for girders shall extend a minimum of one foot outside the face of the girder encasement.

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

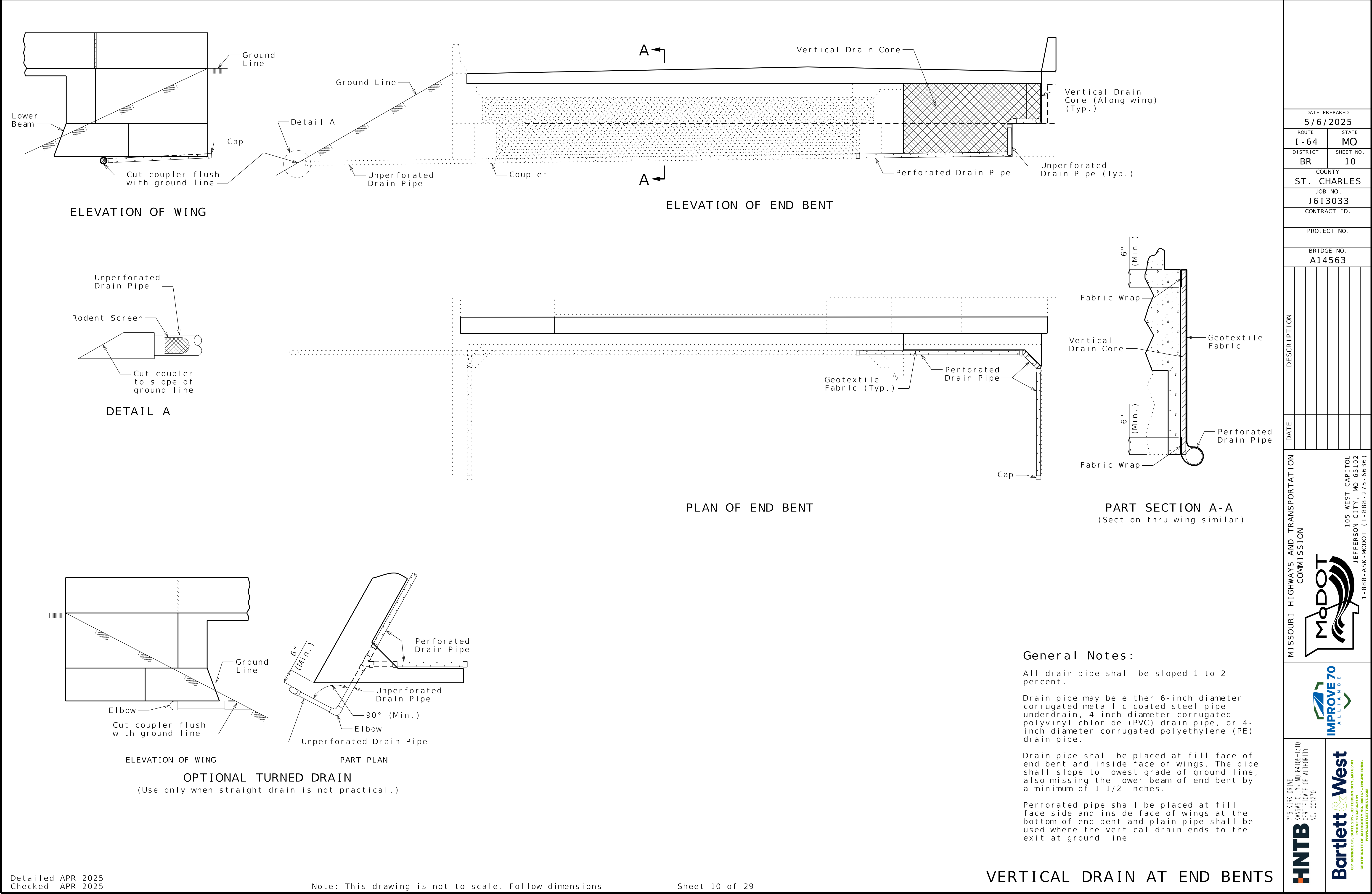
The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

Embedment for drilled and grouted bars into existing concrete is calculated at 9 times the bar diameter. Contractor shall adjust bar length to account for embedment changes per manufacturer's recommendations.

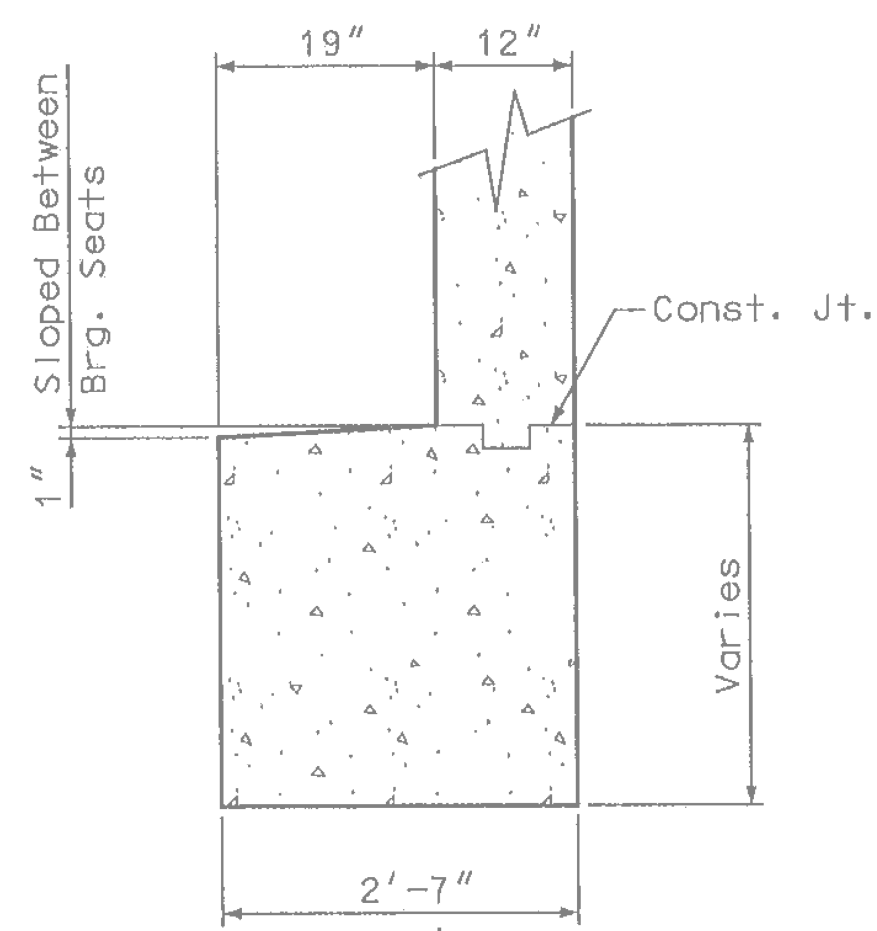
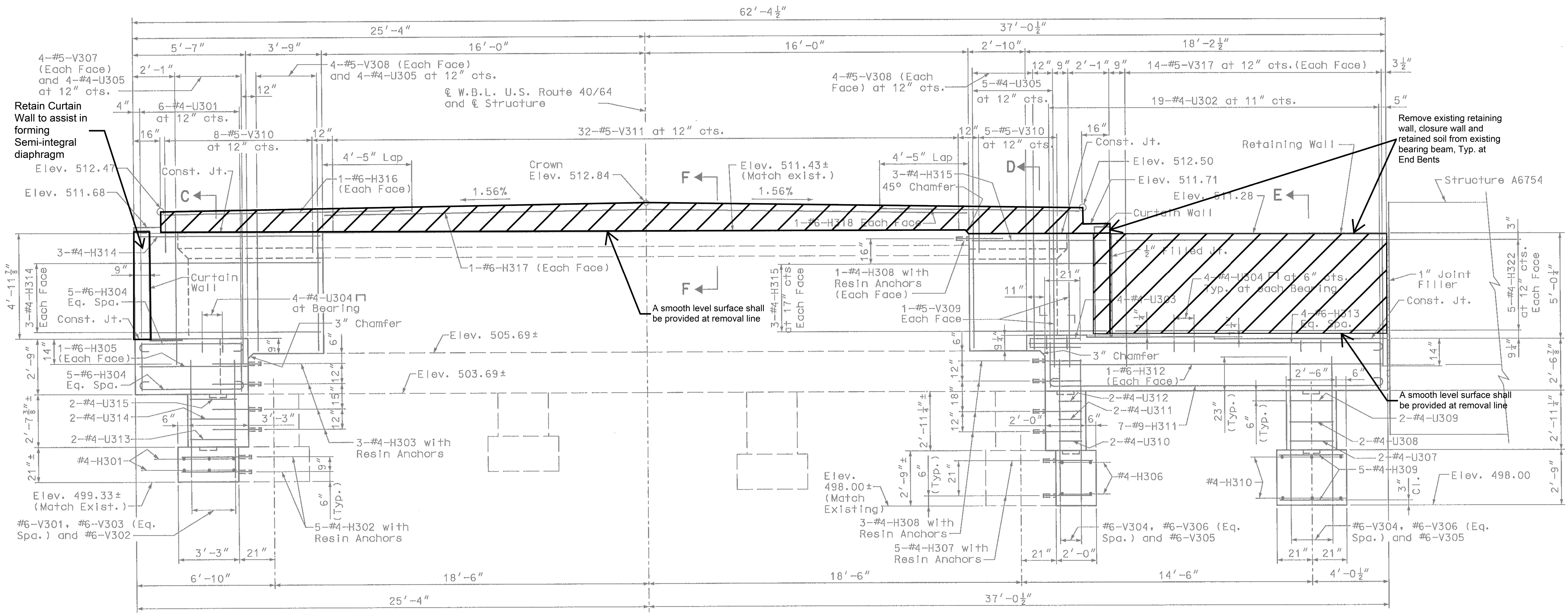
(1) For existing girders, holes to be field drilled. Spacing applies to girders at girder lines G2 through G5.

(2) For existing girders, holes to be field drilled. Spacing applies to girder at girder lines G1 and G6.

For web holes at end bents on Girder 7 and 8, see Sheet No. 18.



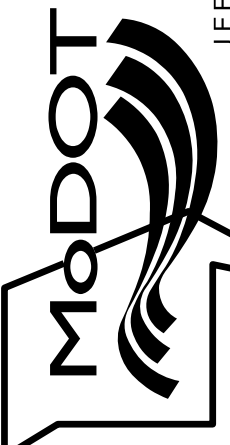
DATE PREPARED 5/6/2025	
ROUTE 1-64	STATE MO
DISTRICT BR	SHEET NO. 10
COUNTY ST. CHARLES	
JOB NO. J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14563	
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270	
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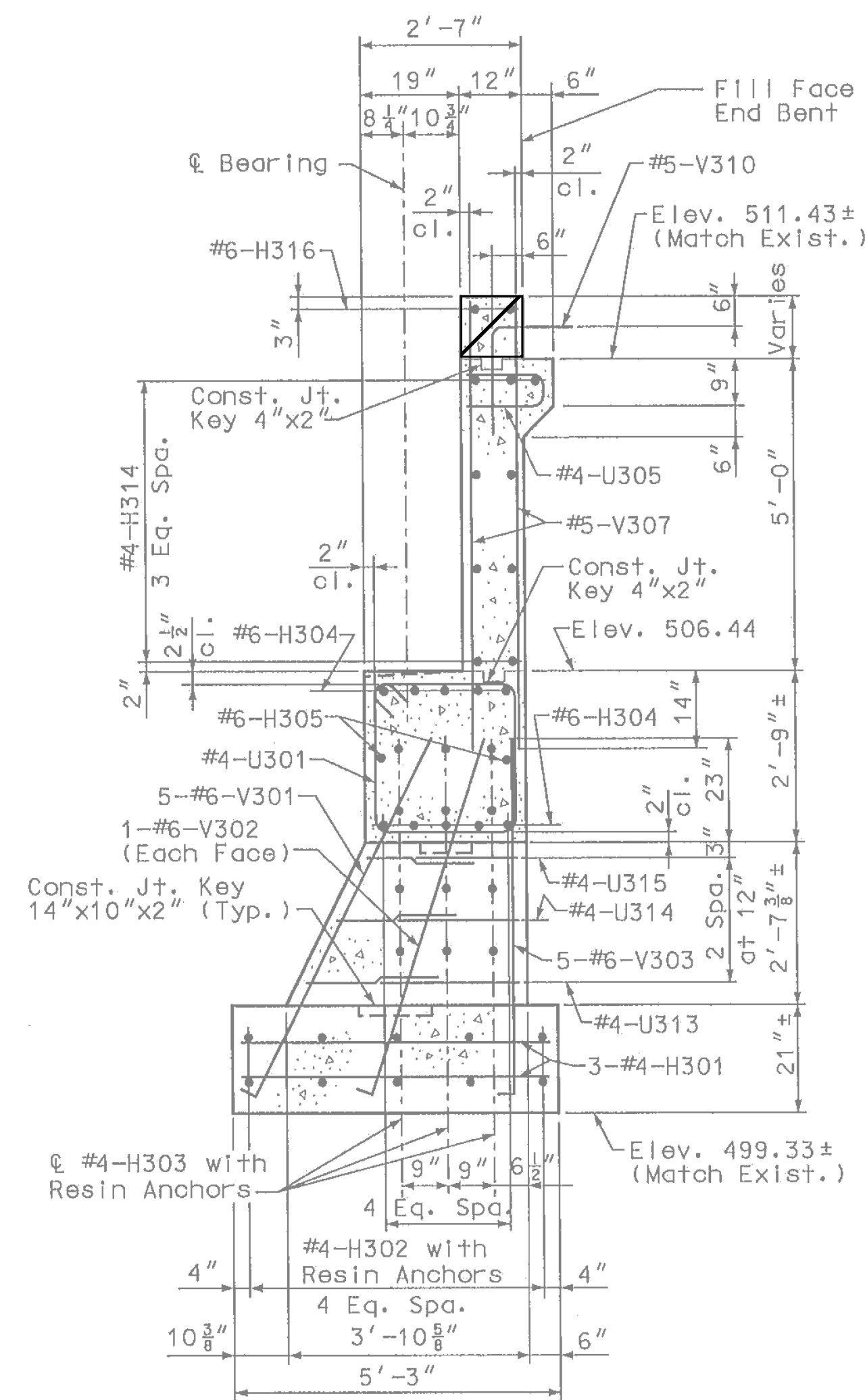


ELEVATION

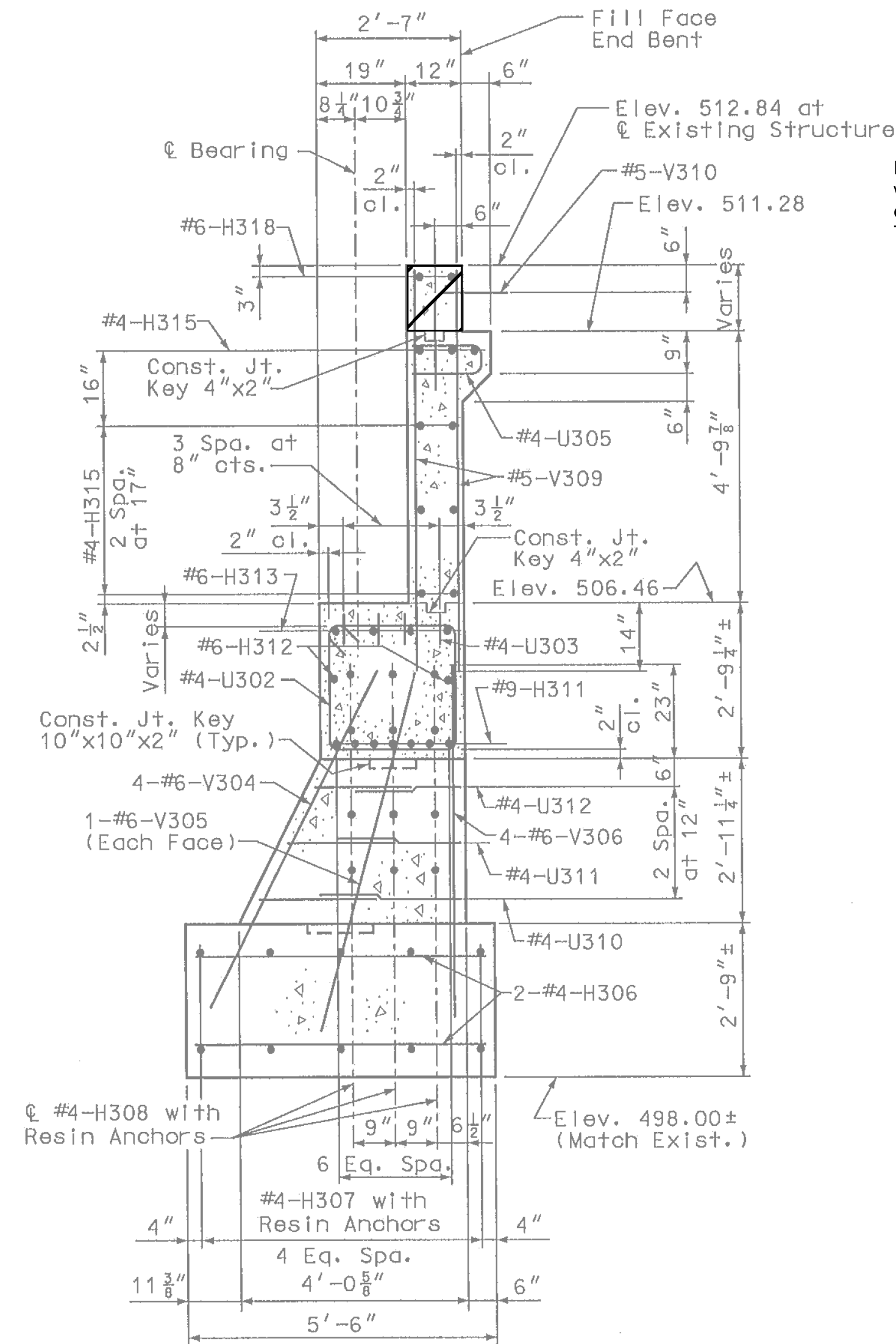
 Indicates Removal or partial removal

- Notes:
- Lap existing #4 bars a minimum of 2'-3", Lap existing #5 bars a minimum of 2'-7".
 - All existing concrete edges that will be incorporated into new concrete shall be chamfered a minimum of 1" unless otherwise noted.
 - For details not shown, see Sheet Nos. 12,14 and 15.
 - For Sections C-C thru F-F, see Sheet No. 14.

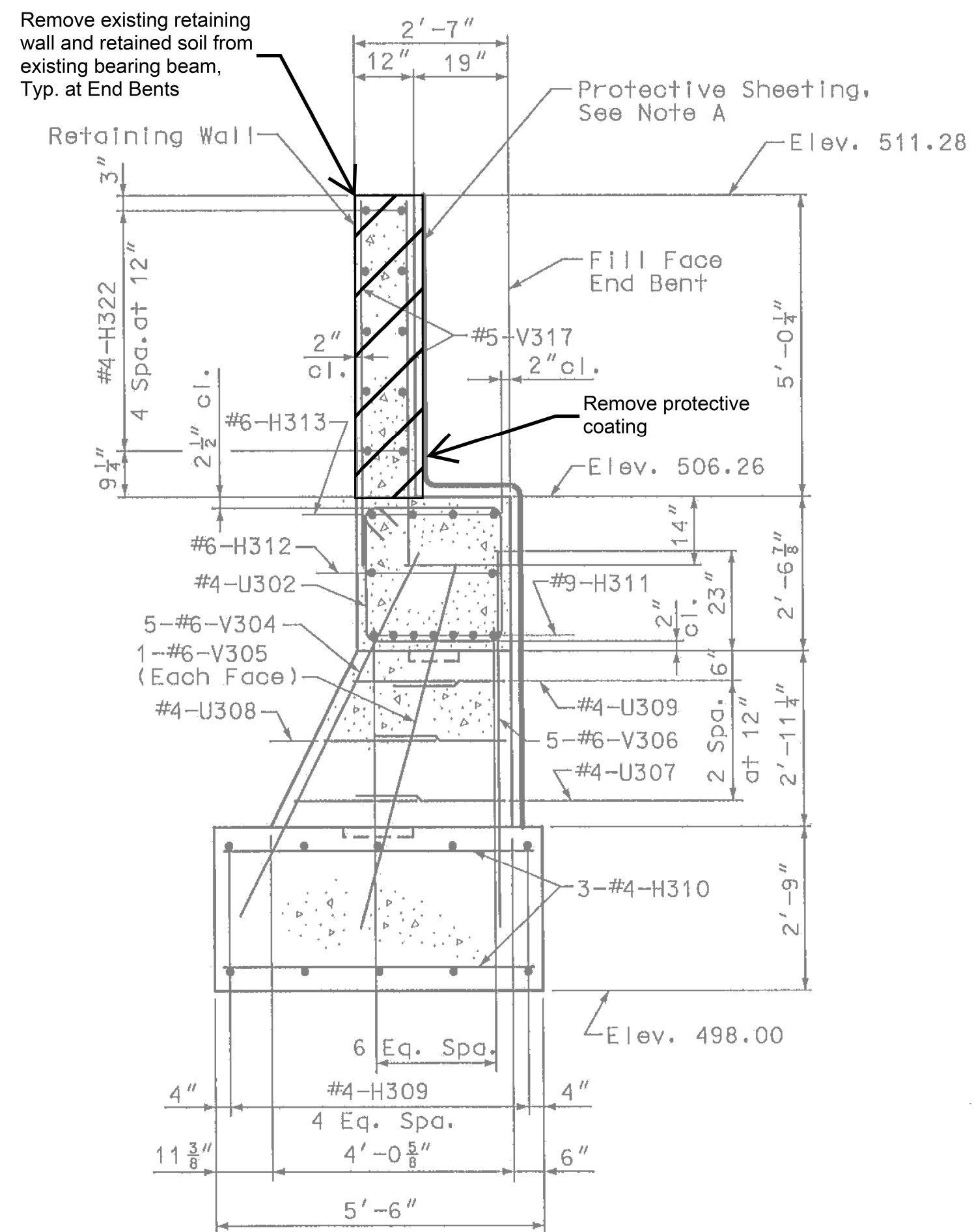
DATE PREPARED 5/6/2025	
ROUTE 1-64	STATE MO
DISTRICT BR	SHEET NO. 12
COUNTY ST. CHARLES	
JOB NO. J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14563	
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)
	
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SECTION C-C

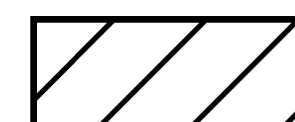


SECTION D-D

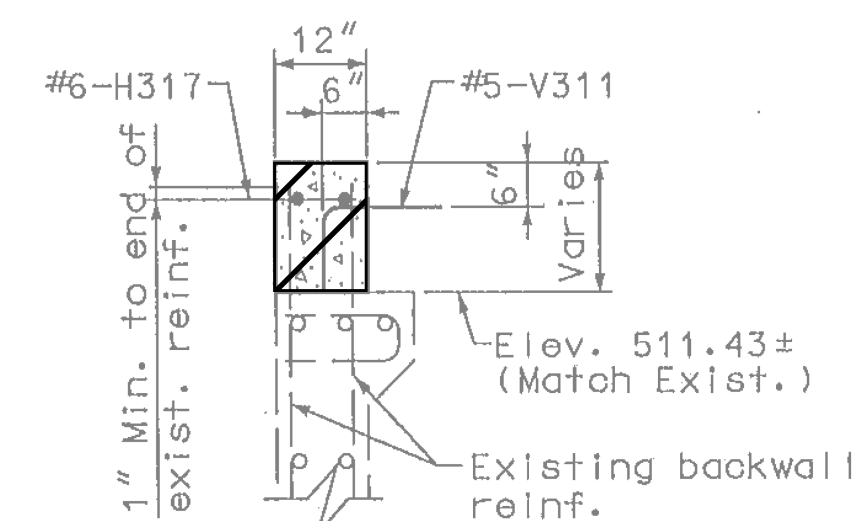


SECTION E-E

Note A: Place 2-layers of polyethylene sheeting prior to backfilling. Cost of sheeting, in place, shall be included in the contract unit price for "Class B Concrete (Substr.)", Cu Yard.



Indicates Removal or partial removal



SECTION F-F

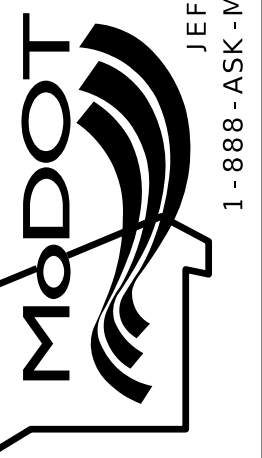
Note:
For locations of details shown,
see Sheet No.13.

DATE PREPARED	
5/6/2025	
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I - 64	MO
DISTRICT	SHEET NO.
BR	13
COUNTY	
ST. CHARLES	
JOB NO.	
J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO.	
A14563	

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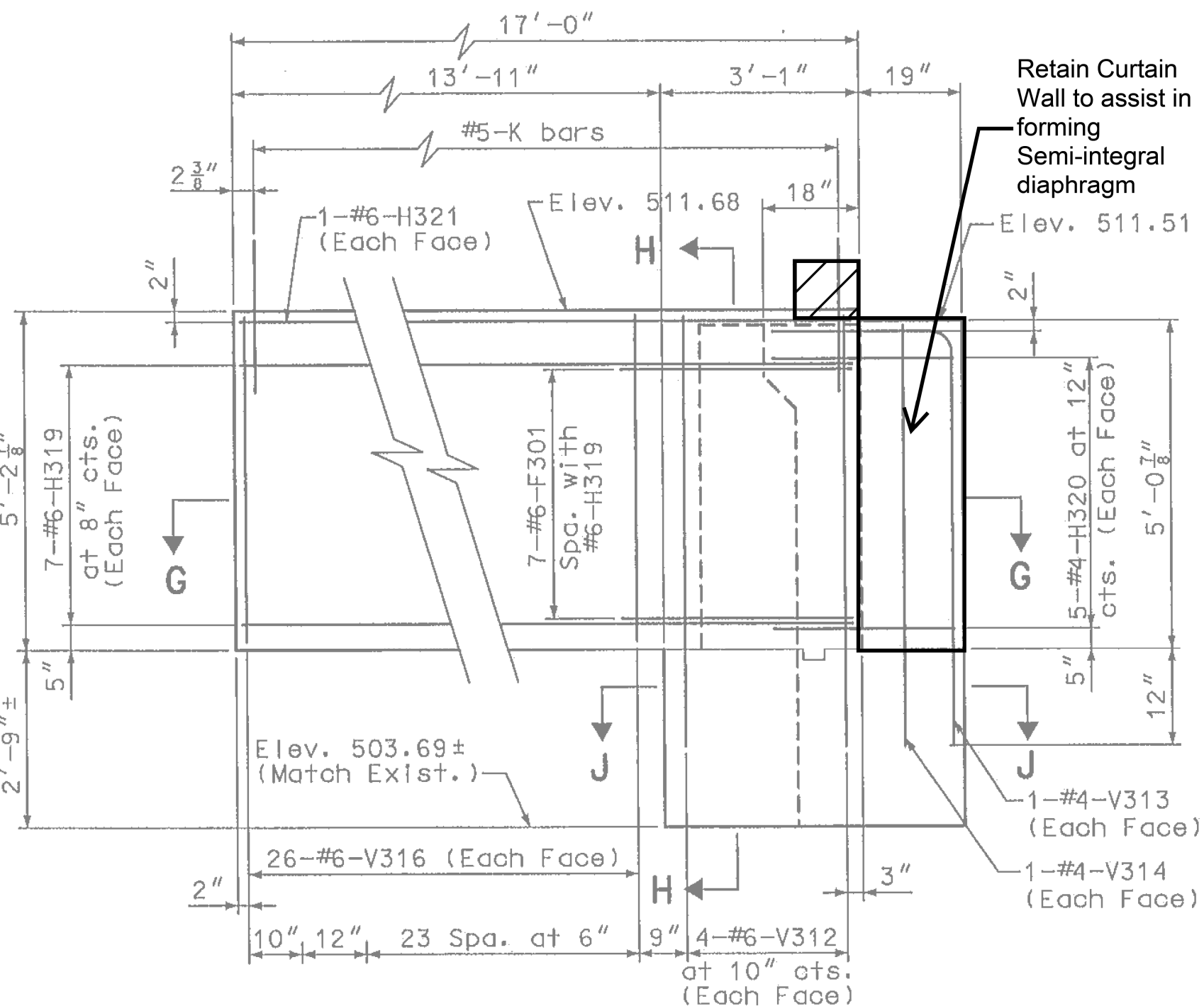
MISSOURI HIGHWAYS AND TRANSPORTATION
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105 WEST CAPITOL
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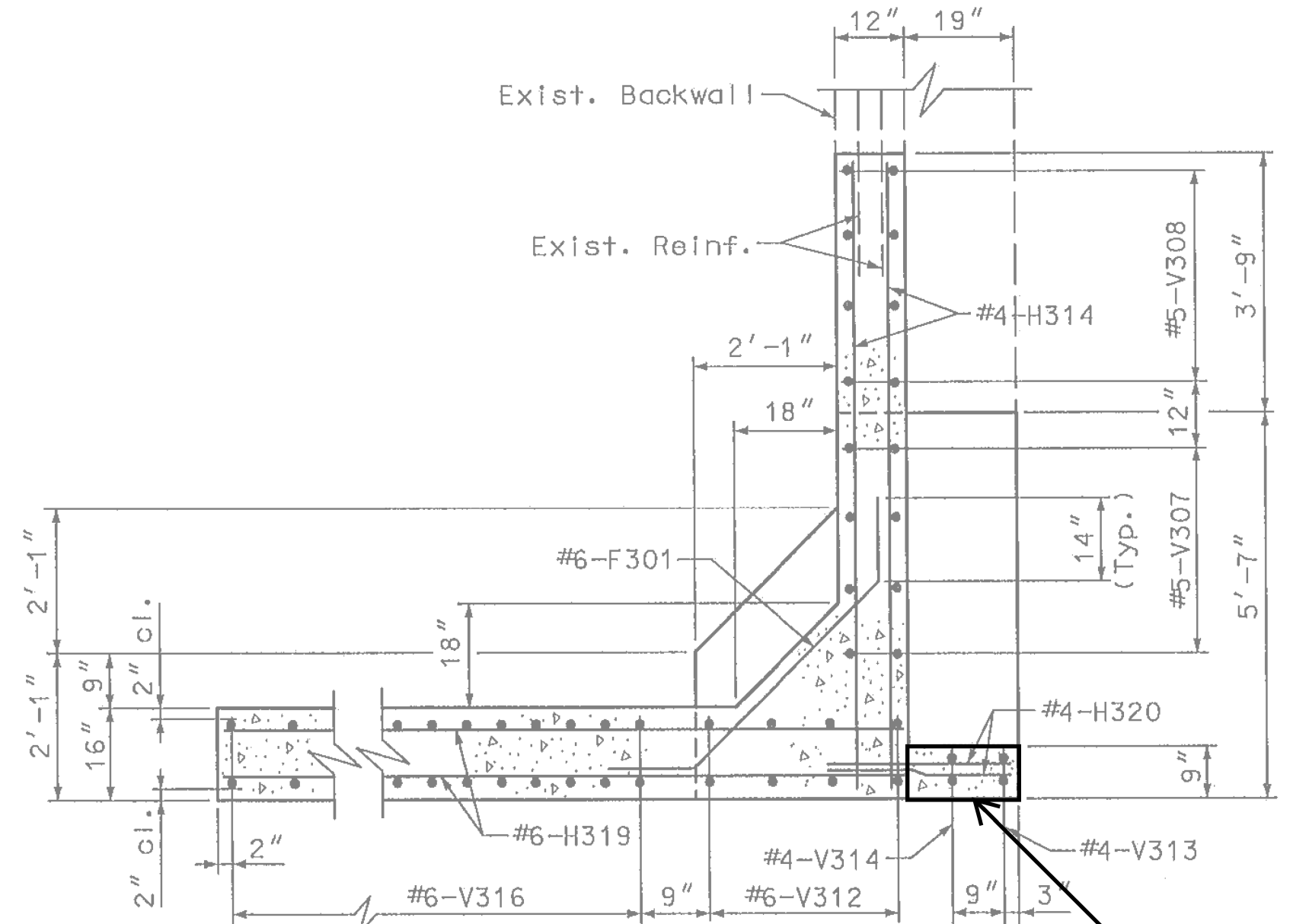
HNTB 715 KIRK DRIVE
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CERTIFICATE OF AUTHORITY
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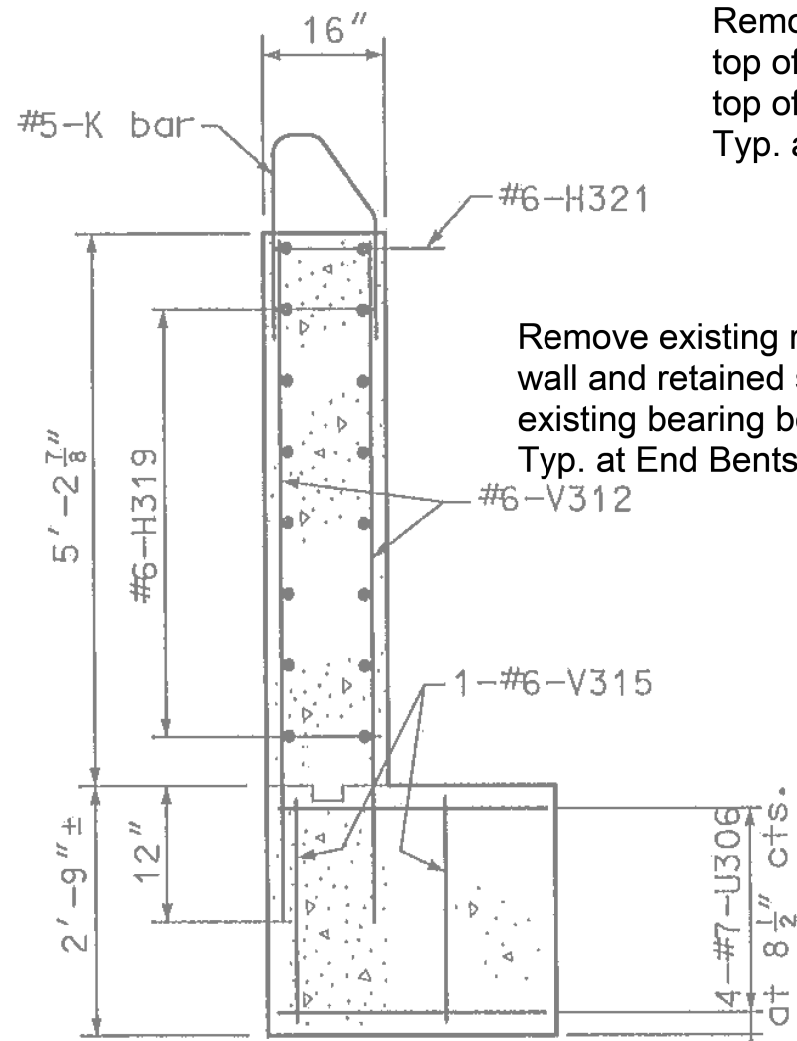


ELEVATION A-A

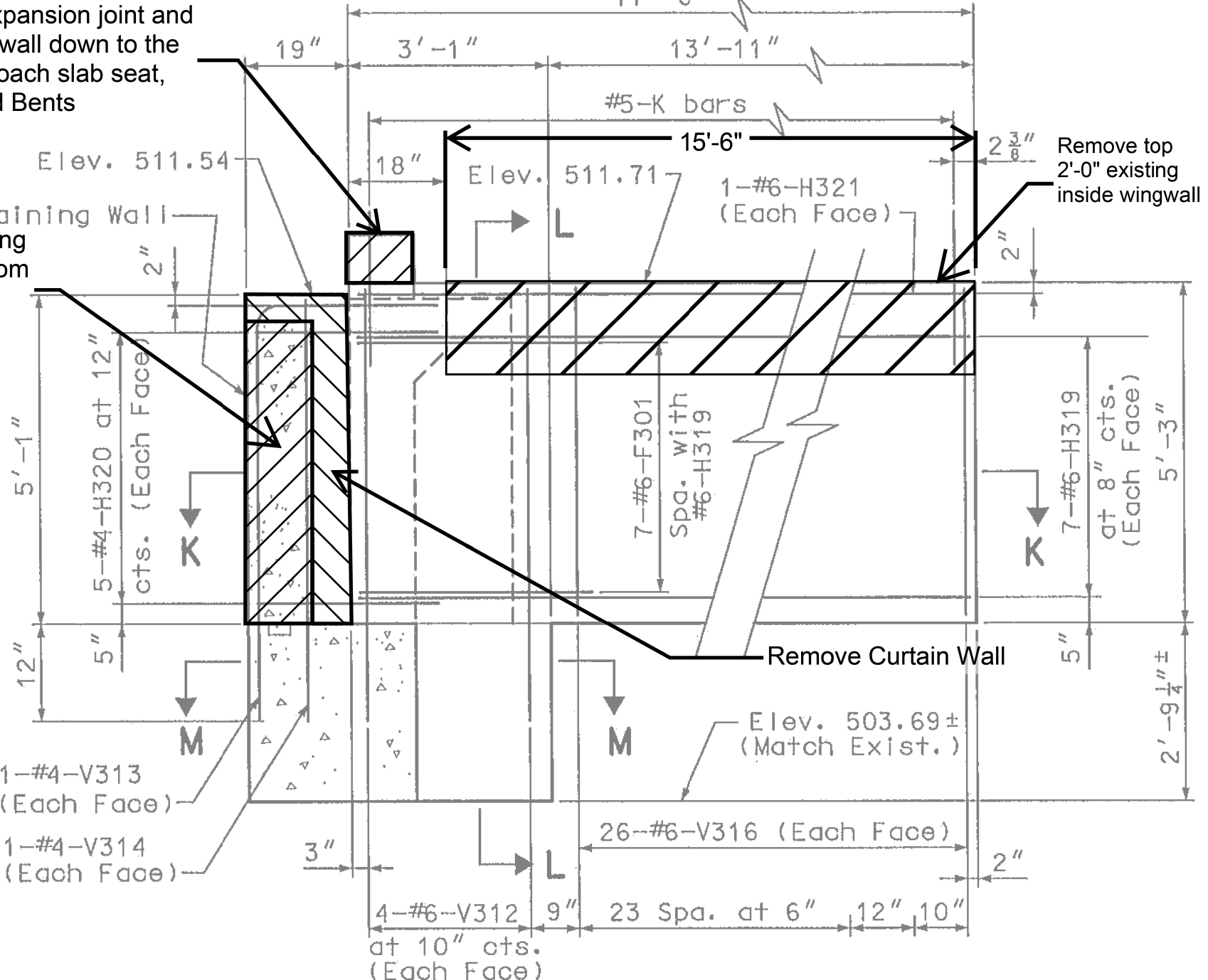
Note: For Safety Barrier Curb, see Sheet No. 31.



SECTION G-G

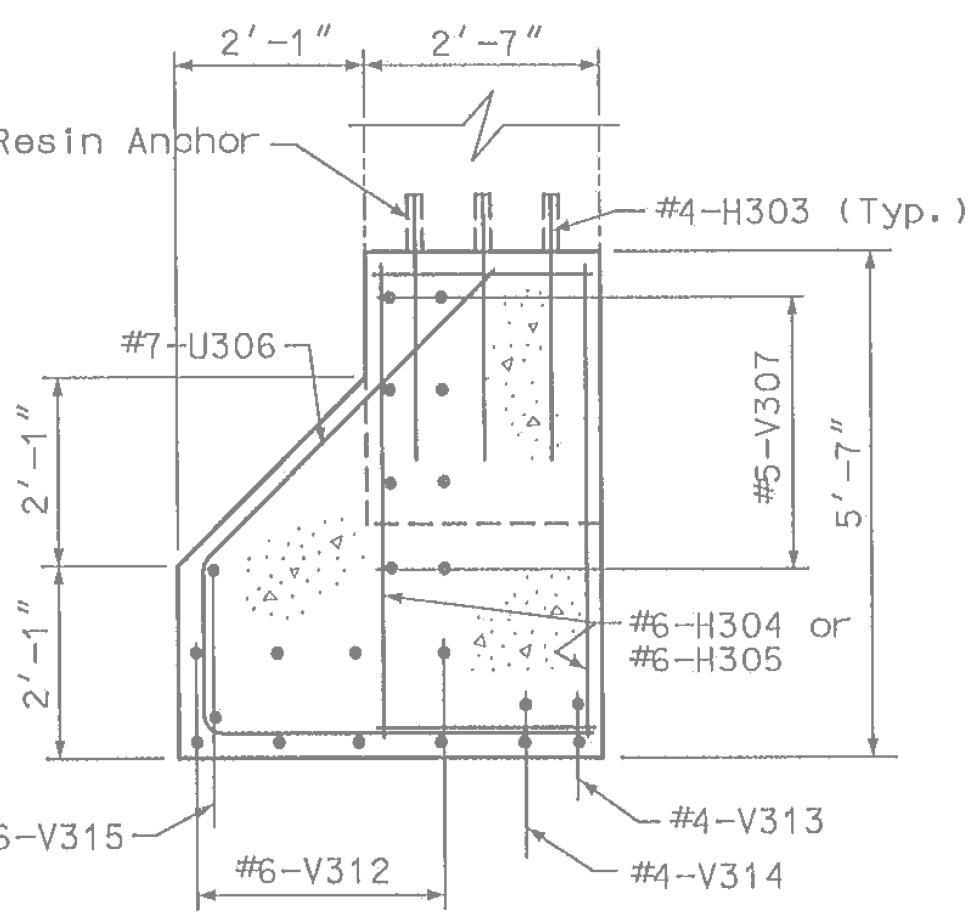


SECTION H-H

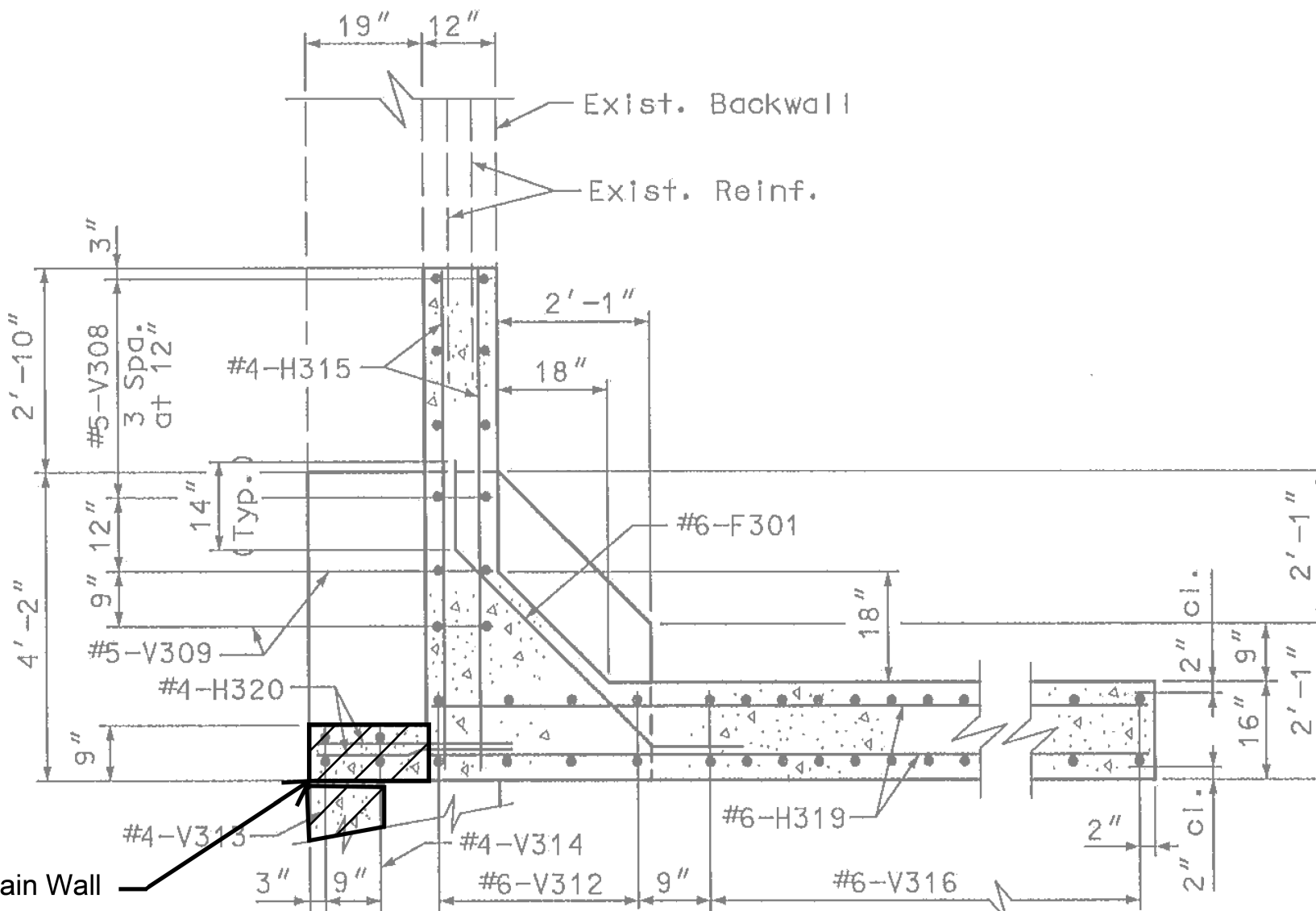


ELEVATION B-B

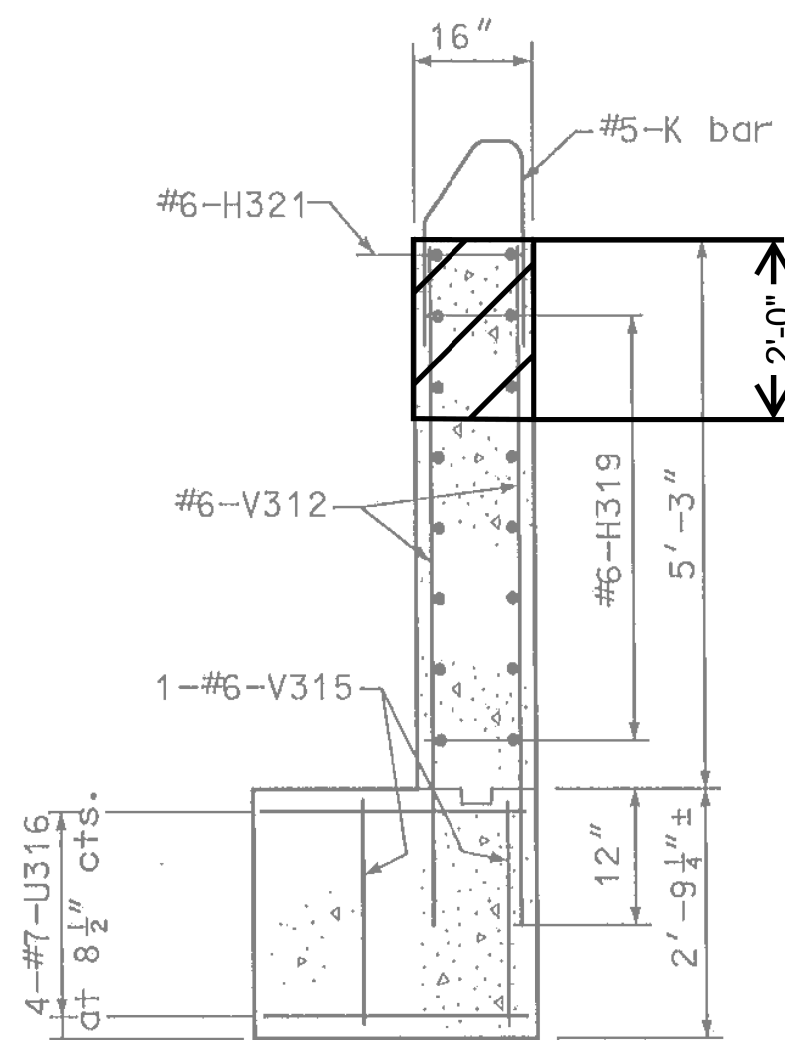
Note: Retaining wall reinforcing not shown.
For Safety Barrier Curb, see Sheet No. 31.



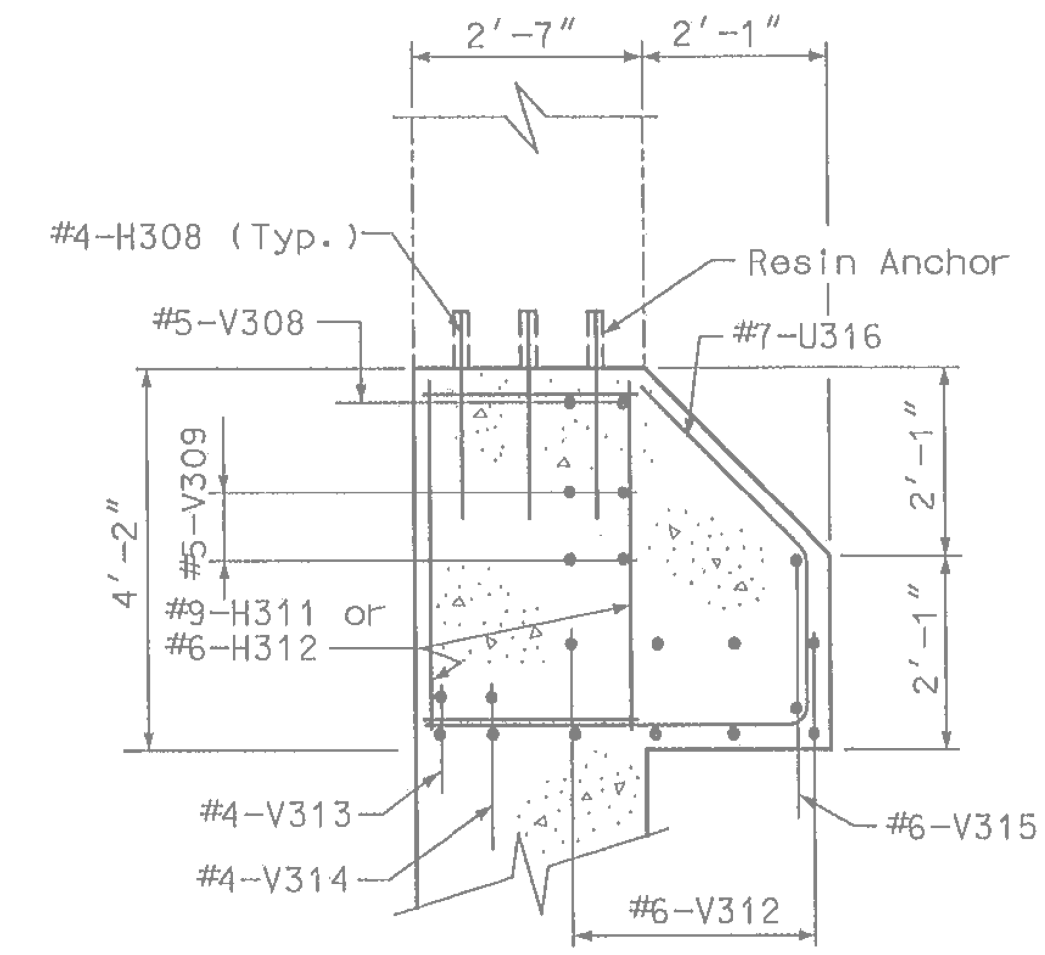
SECTION J-J



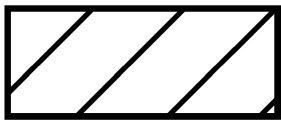
SECTION K-K



SECTION L-L



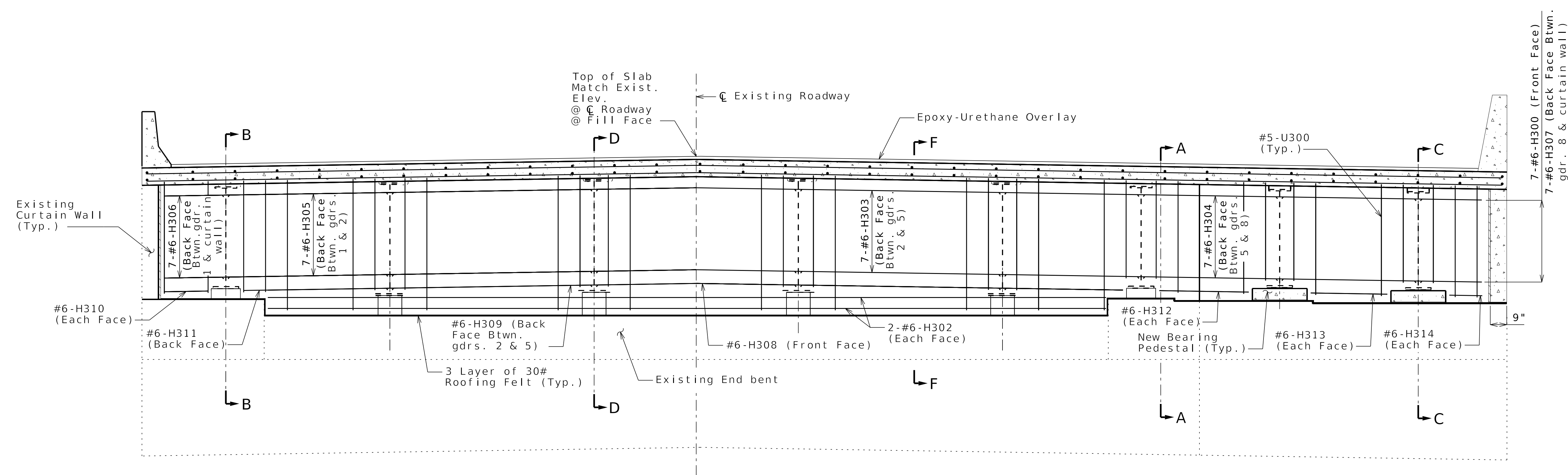
SECTION M-M



Indicates Removal or partial removal

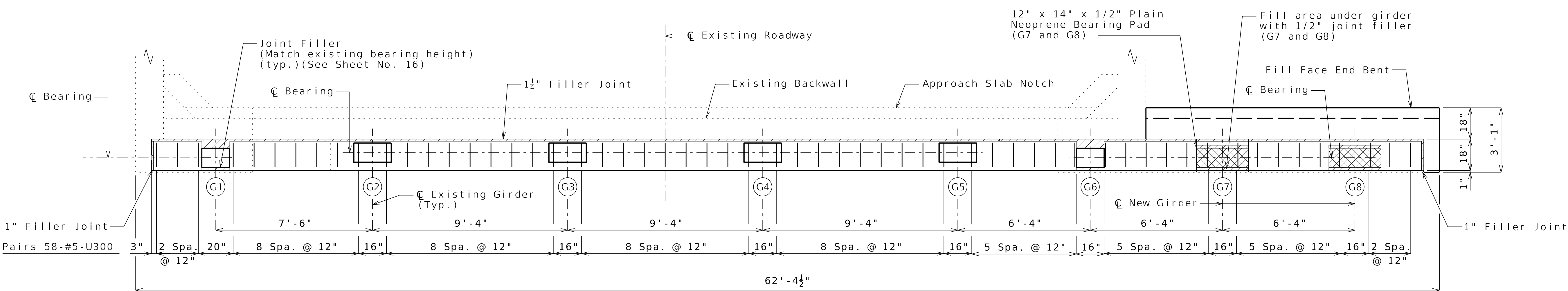
Note:
For location of Elevations A-A and B-B, see Sheet No.12.

DATE PREPARED 5/6/2025	
ROUTE 1-64	STATE MO
DISTRICT BR	SHEET NO. 14
COUNTY ST. CHARLES	
JOB NO. J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14563	
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	
105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
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ELEVATION OF END BENT NO. 3

Existing bearing and diaphragms not shown for clarity (U.I.P.).
Piles and Columns not shown for clarity.



PART PLAN

Horizontal dimensions measured along C bearing.

Notes:
For Sections A-A, B-B, C-C, D-D, and F-F see Sheet No. 16.
For details of End Bent 3 not shown, see Sheet No. 16.

DATE PREPARED	
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1-64	MO
DISTRICT	SHEET NO.
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ST. CHARLES

JOB NO.
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CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14563

DESCRIPTION	DATE

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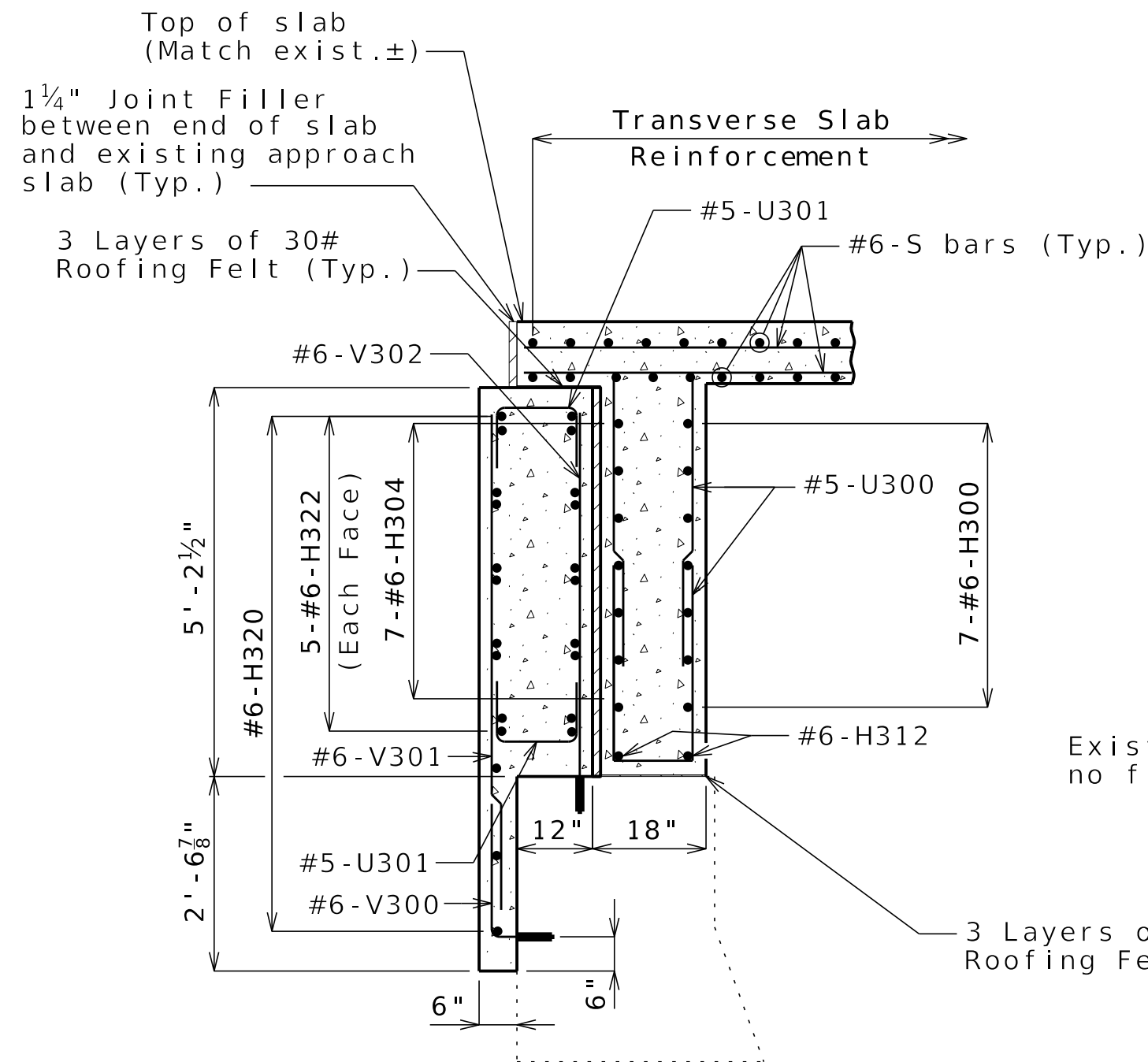
105 WEST CAPITOL
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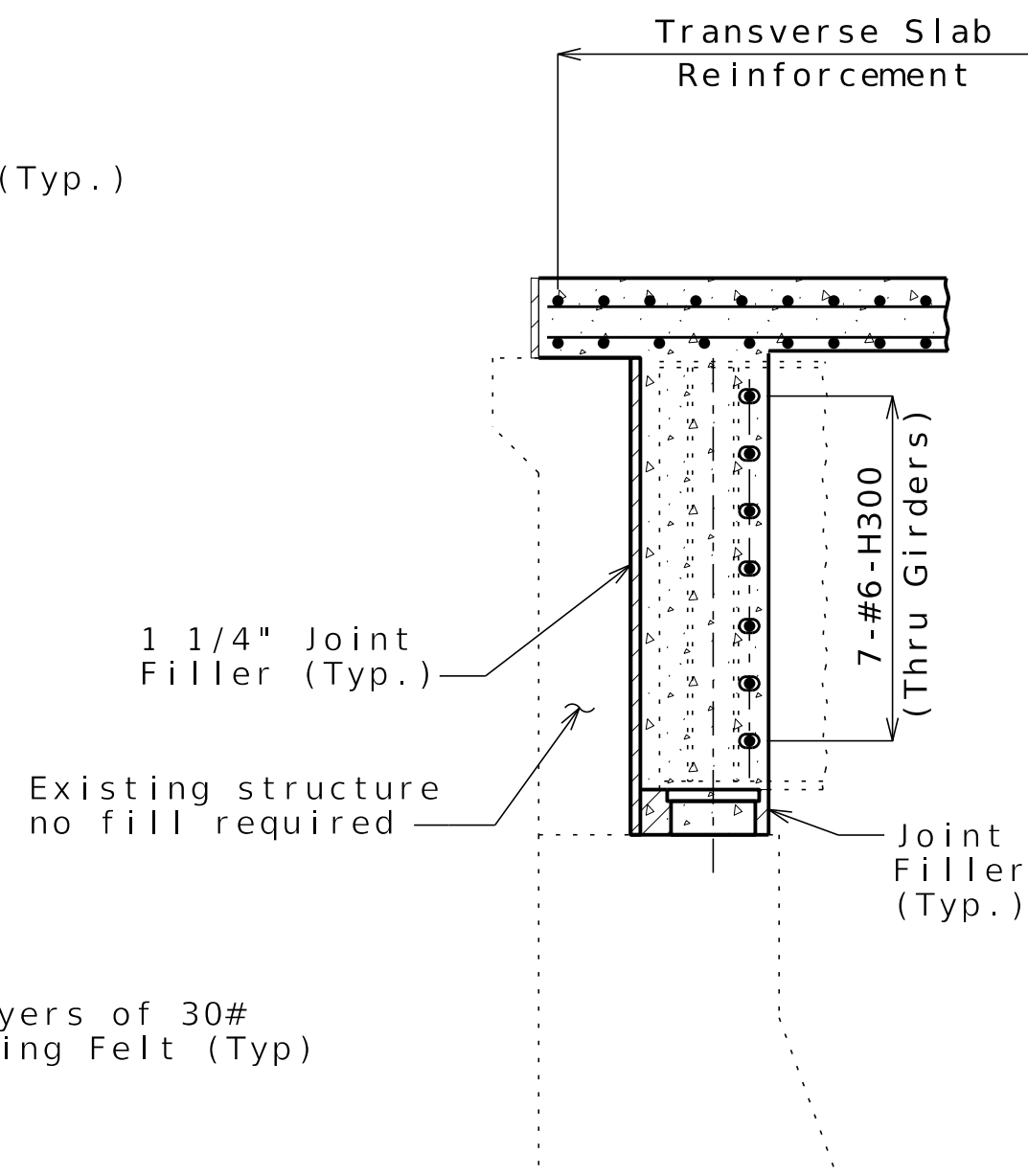
IMPROVE 70
ALLIANCE

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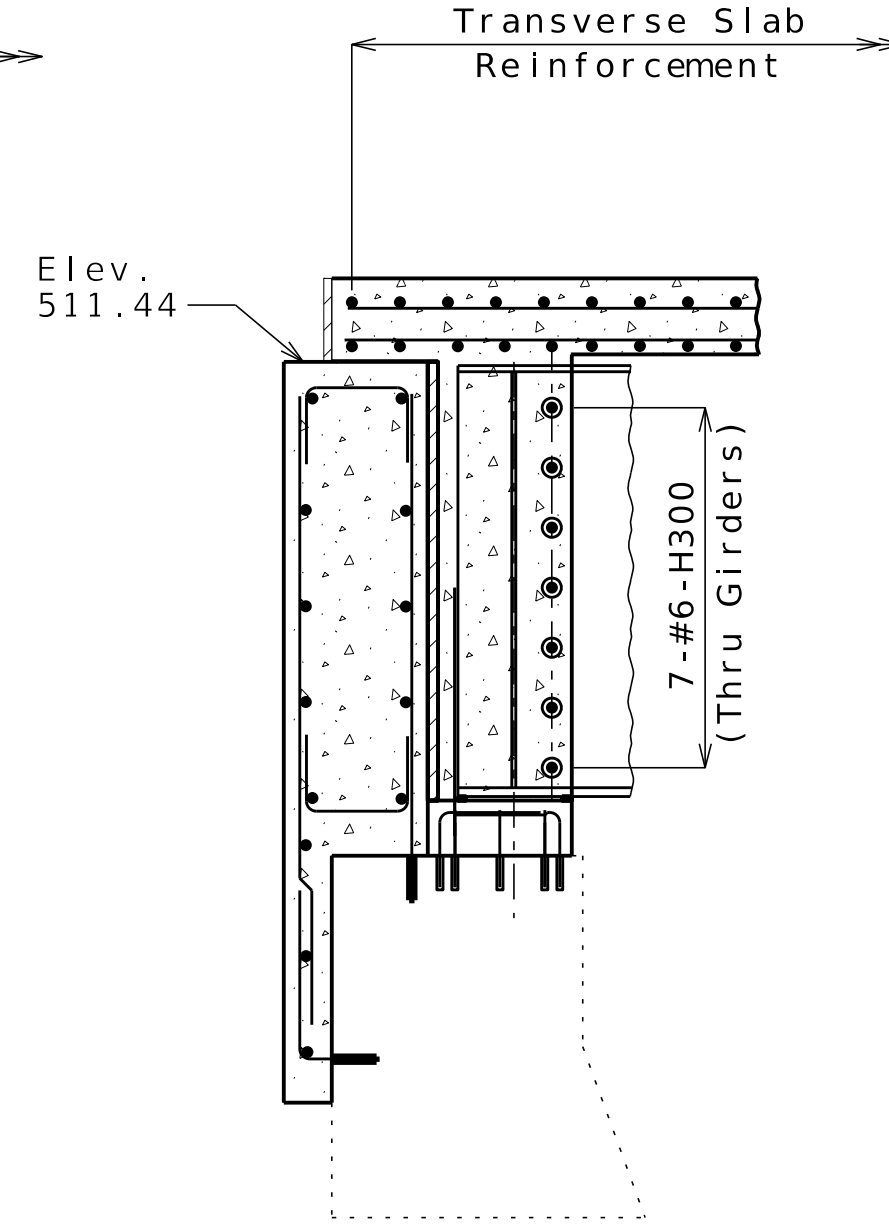
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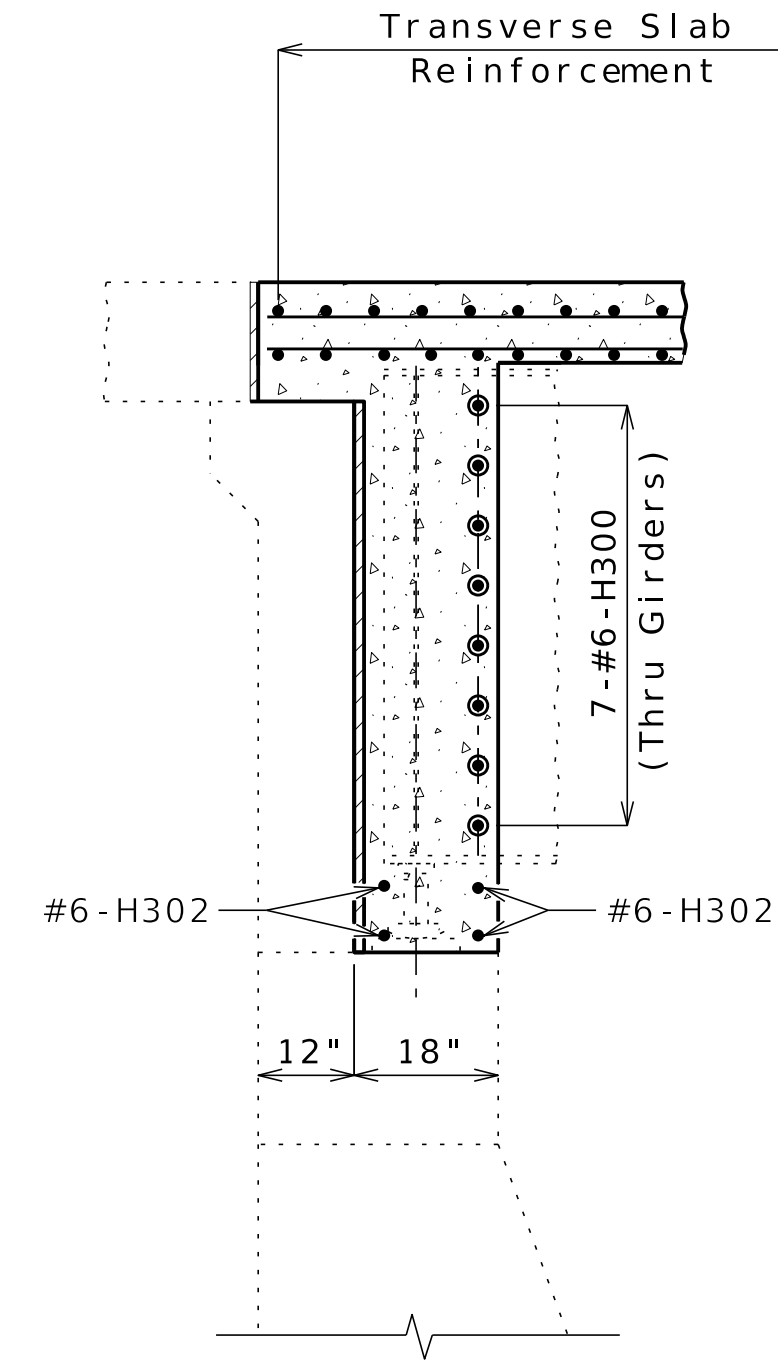
SECTION A-A



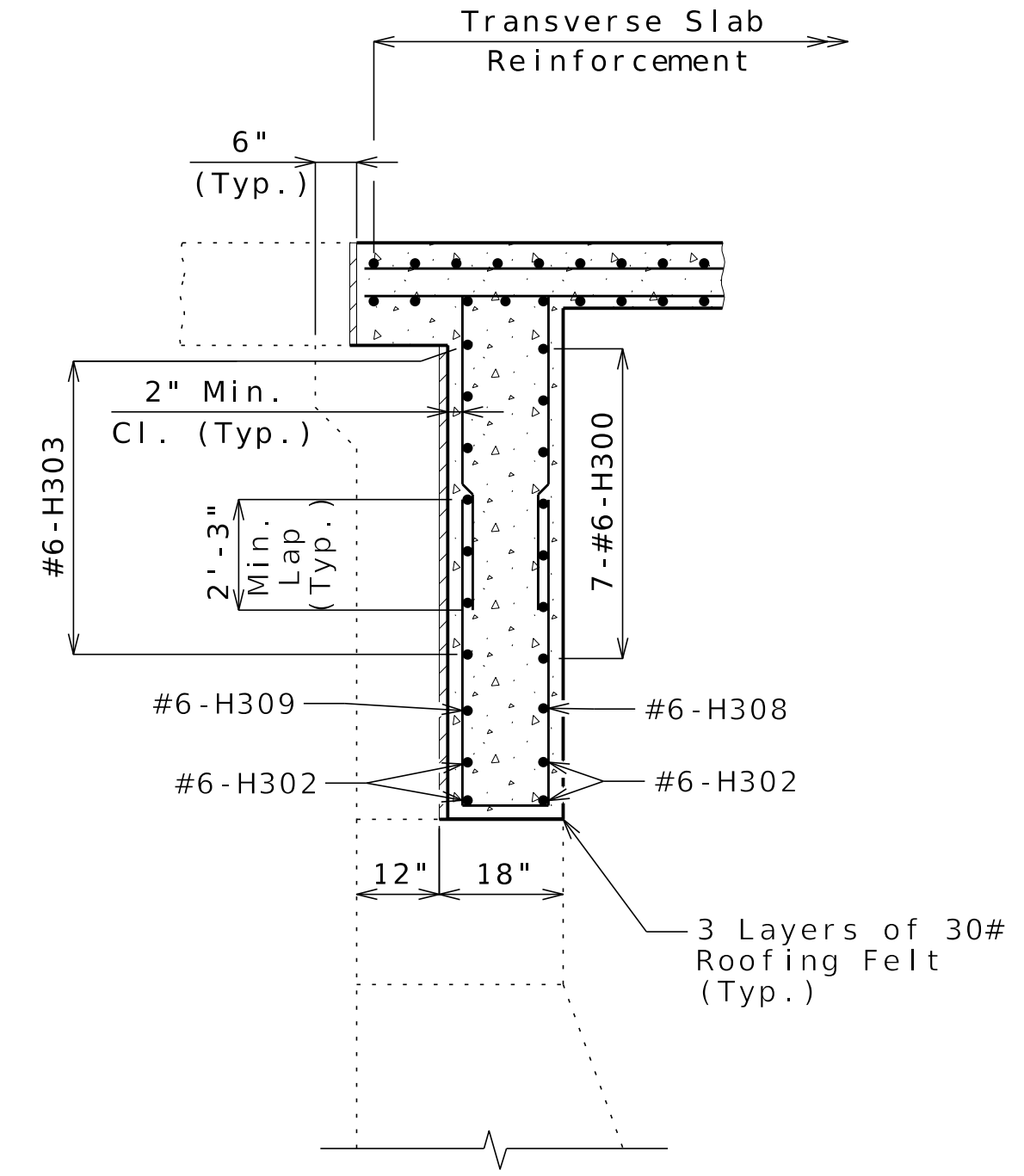
SECTION B-B



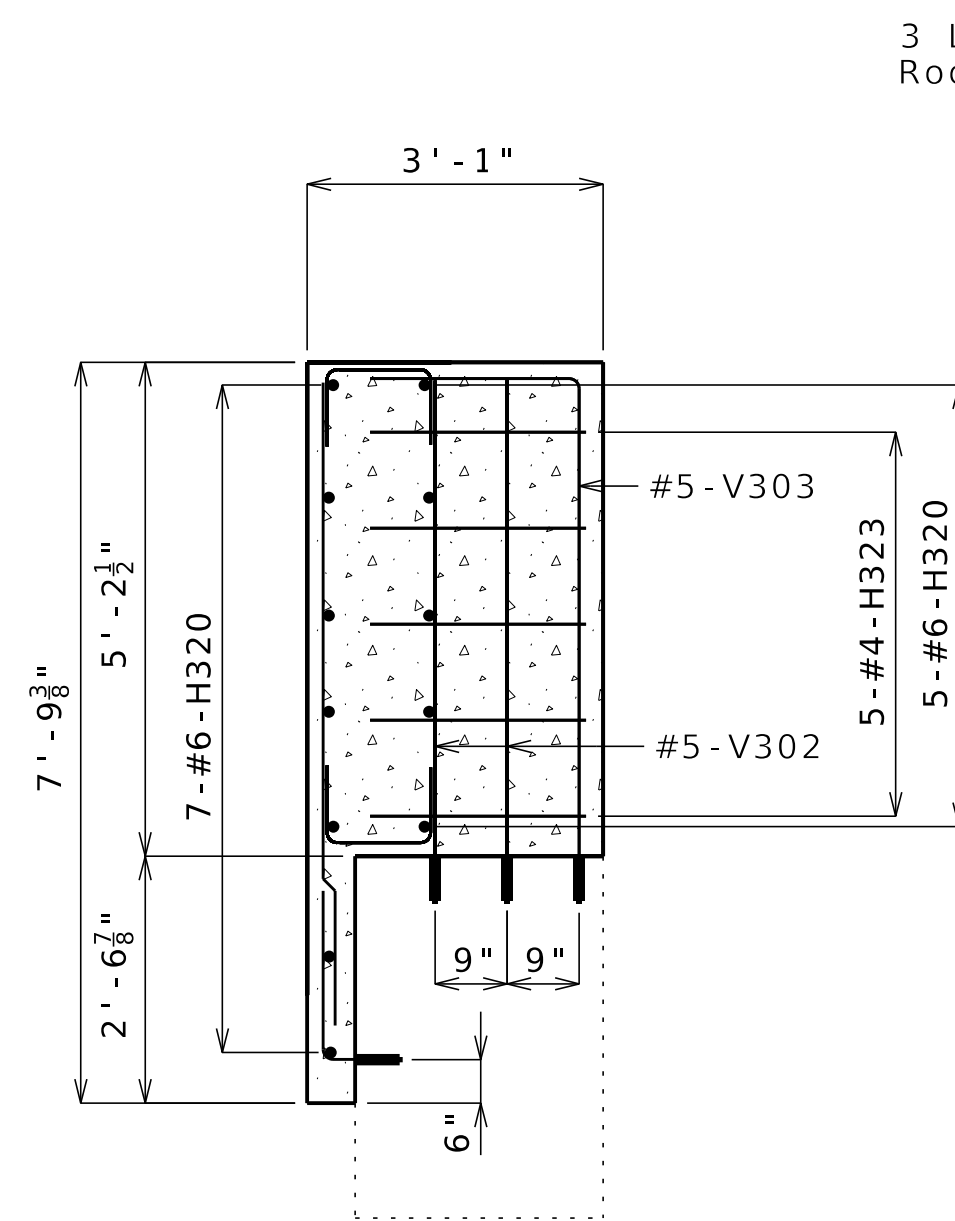
SECTION C-C



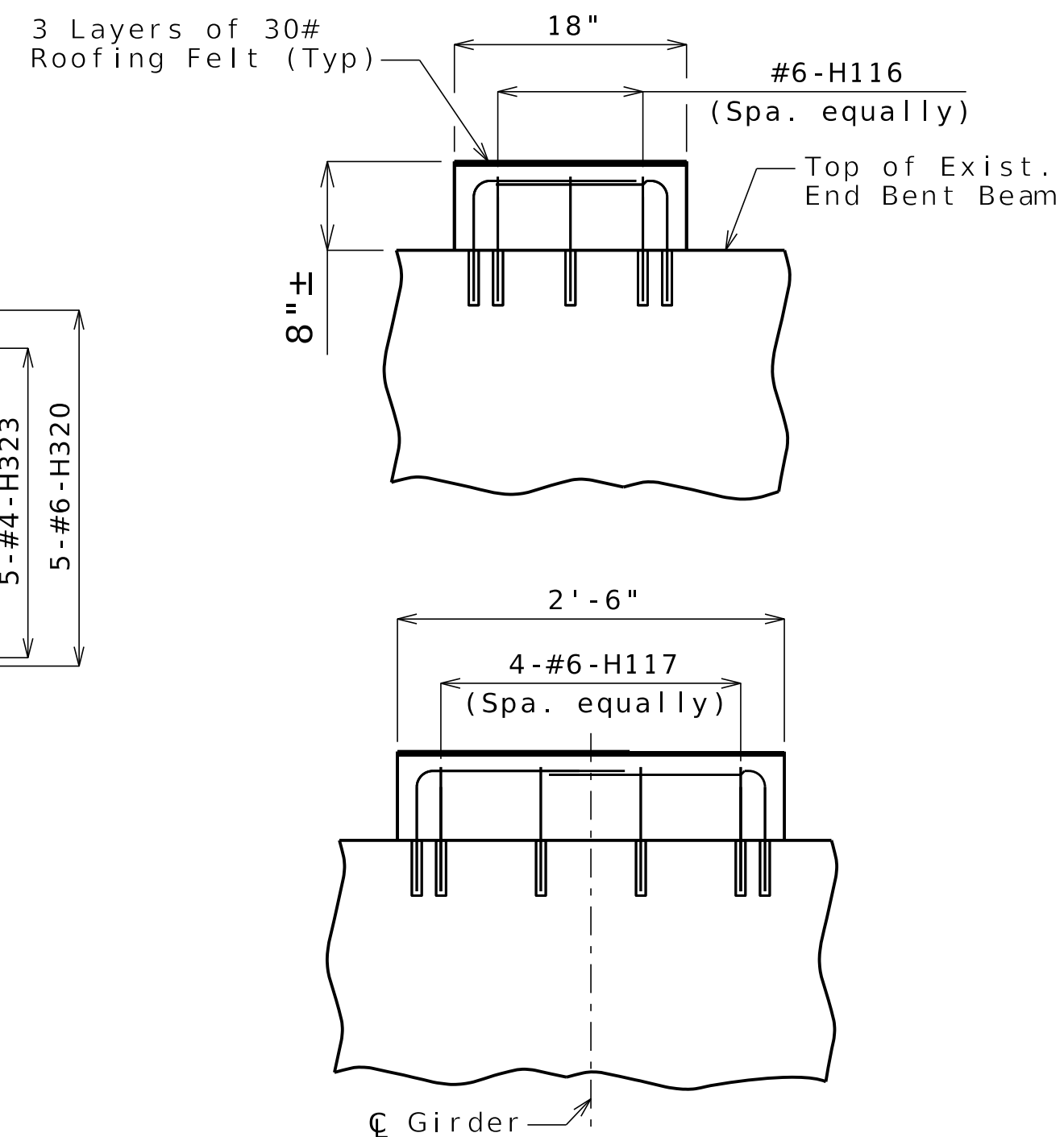
SECTION D-D



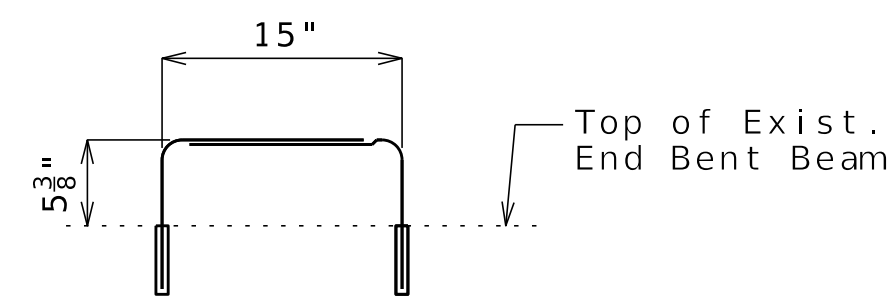
SECTION F - F



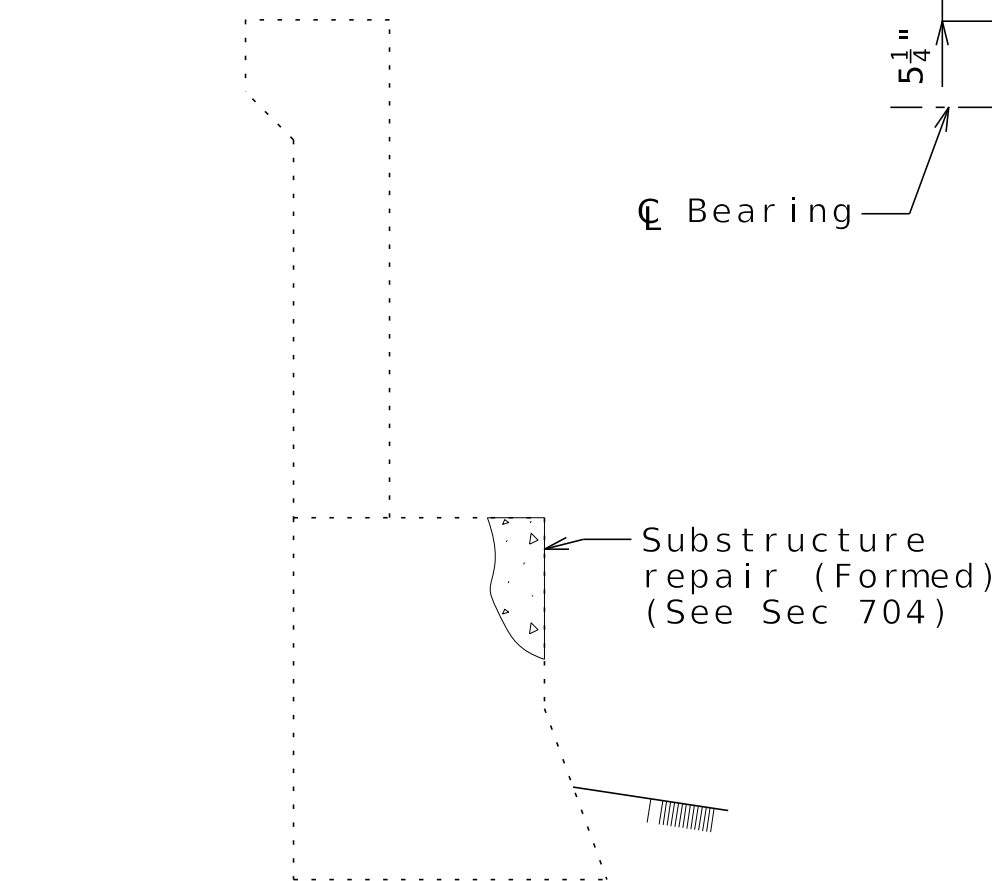
SECTION G-G



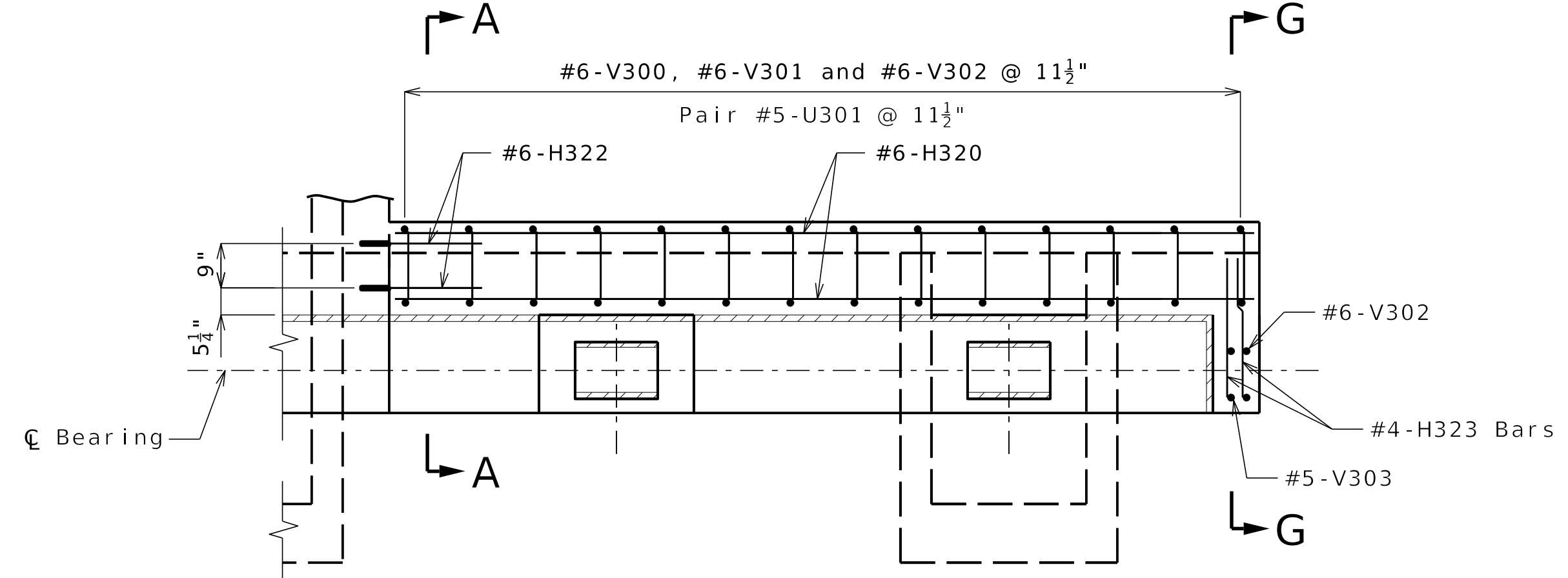
ELEVATION OF BEAM PEDESTAL



DETAILS OF PEDESTAL REINFORCEMENT



SECTION SHOWING REPAIRS
TO EXISTING CAP BEAM



PART PLAN BACKWALL

Note:

For Girders 2 through 5 the exposed and accessible surfaces of the existing structural steel and bearings that will be encased in concrete shall be cleaned with a minimum of SSPC-SP-3 surface preparation and coated with a minimum of one coat of gray epoxy-mastic primer (non-aluminum) in accordance with Sec 1081 to produce a dry film thickness of not less than 3 mils before concrete is poured. The surface preparation and coating for girders shall extend a minimum of one foot outside the face of the girder encasement.

The contractor shall use one of the qualified resin anchor systems in accordance with Sec 1039.

The minimum embedment depth in concrete with $f'c = 4,000$ psi for the resin anchor systems shall be that required to meet the minimum ultimate pullout strength in accordance with Sec 1039 but shall not be less than 5".

For Details of Web Holes & Bearing Assembly, see Sheet No. 9.

Embedment for drilled and grouted bars into existing concrete is calculated at 9 times the bar diameter. Contractor shall adjust bar length to account for embedment changes per manufacturer's recommendations.

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ST. CHARLES
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PROJECT NO.

BRIDGE NO.
A14563

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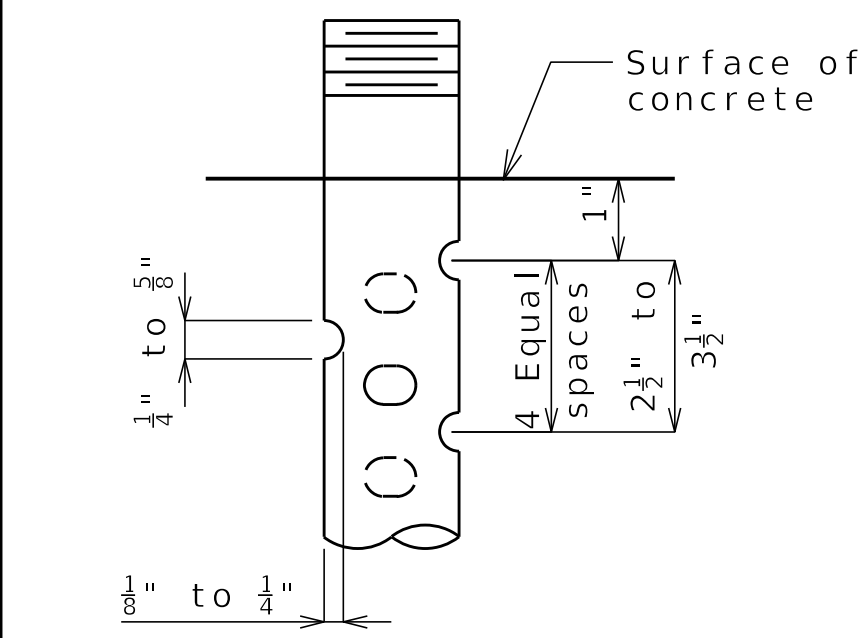
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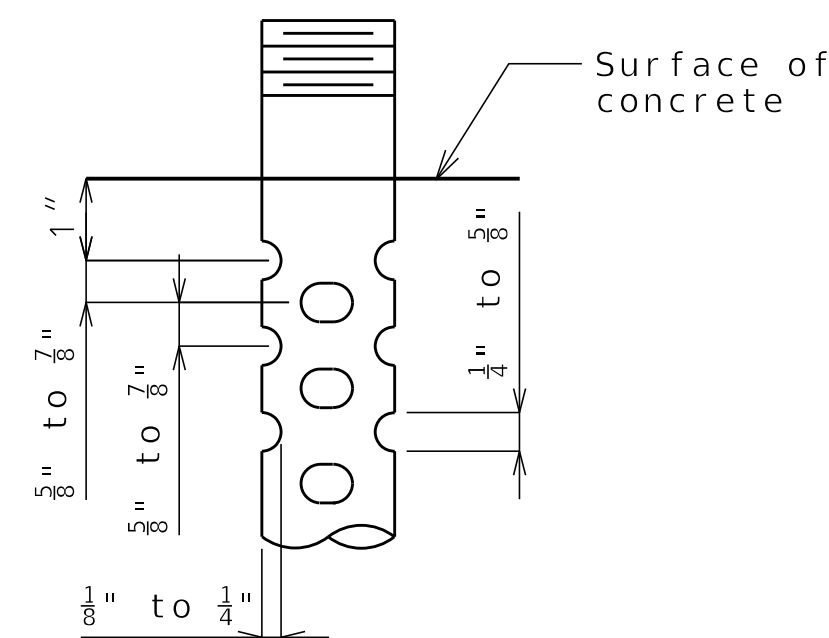


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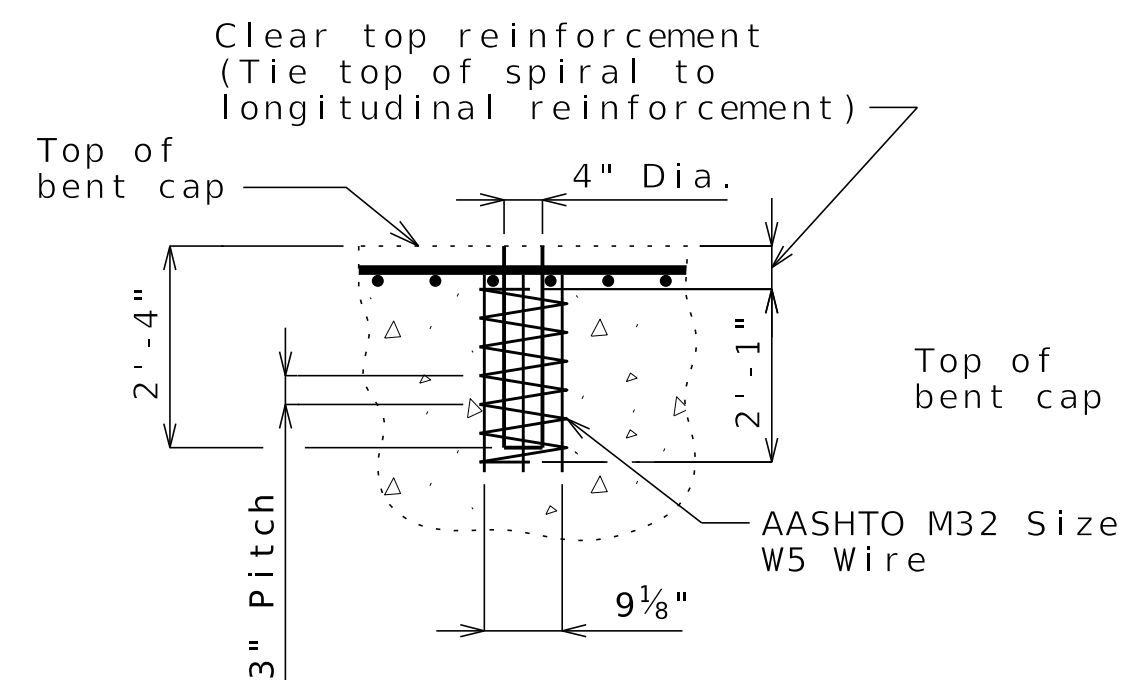
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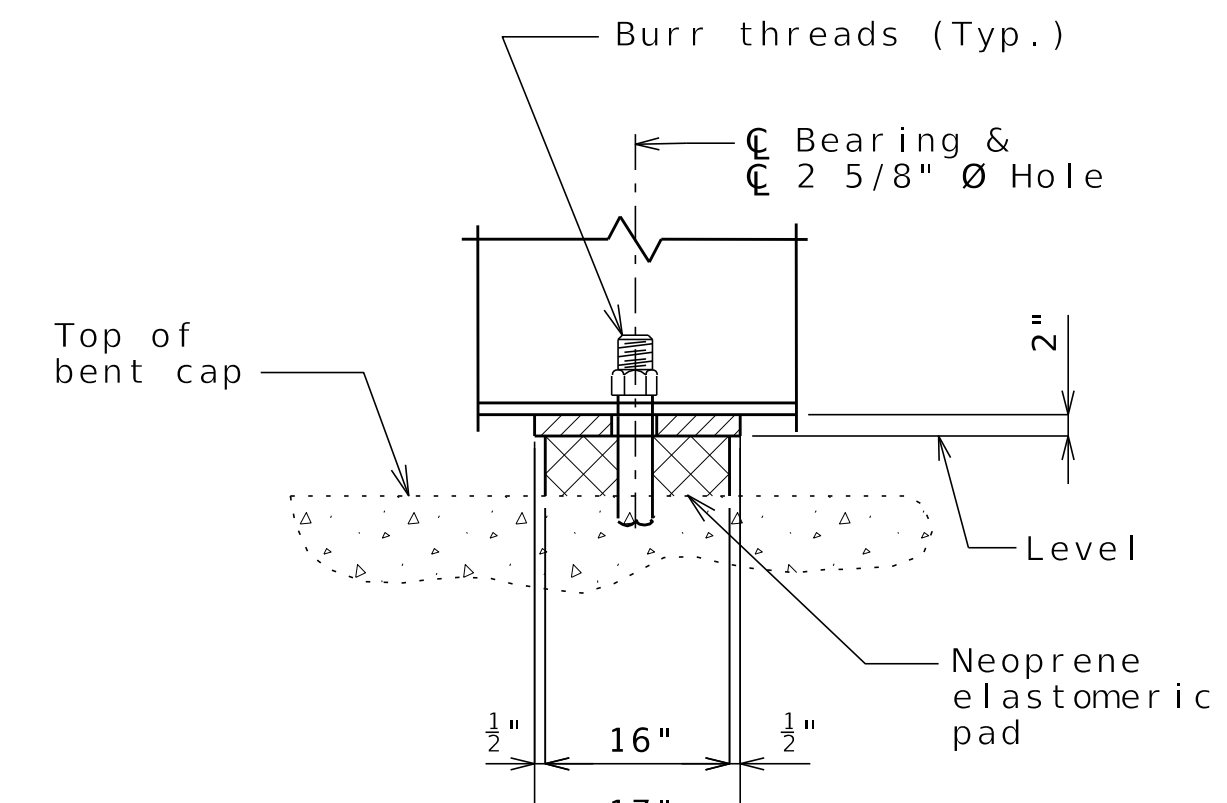
DETAIL FOR 3/4"Ø THRU
2 1/2"Ø ANCHOR BOLTS



OPTIONAL DETAIL FOR 1 3/8"Ø
THRU 2 1/2"Ø ANCHOR BOLTS

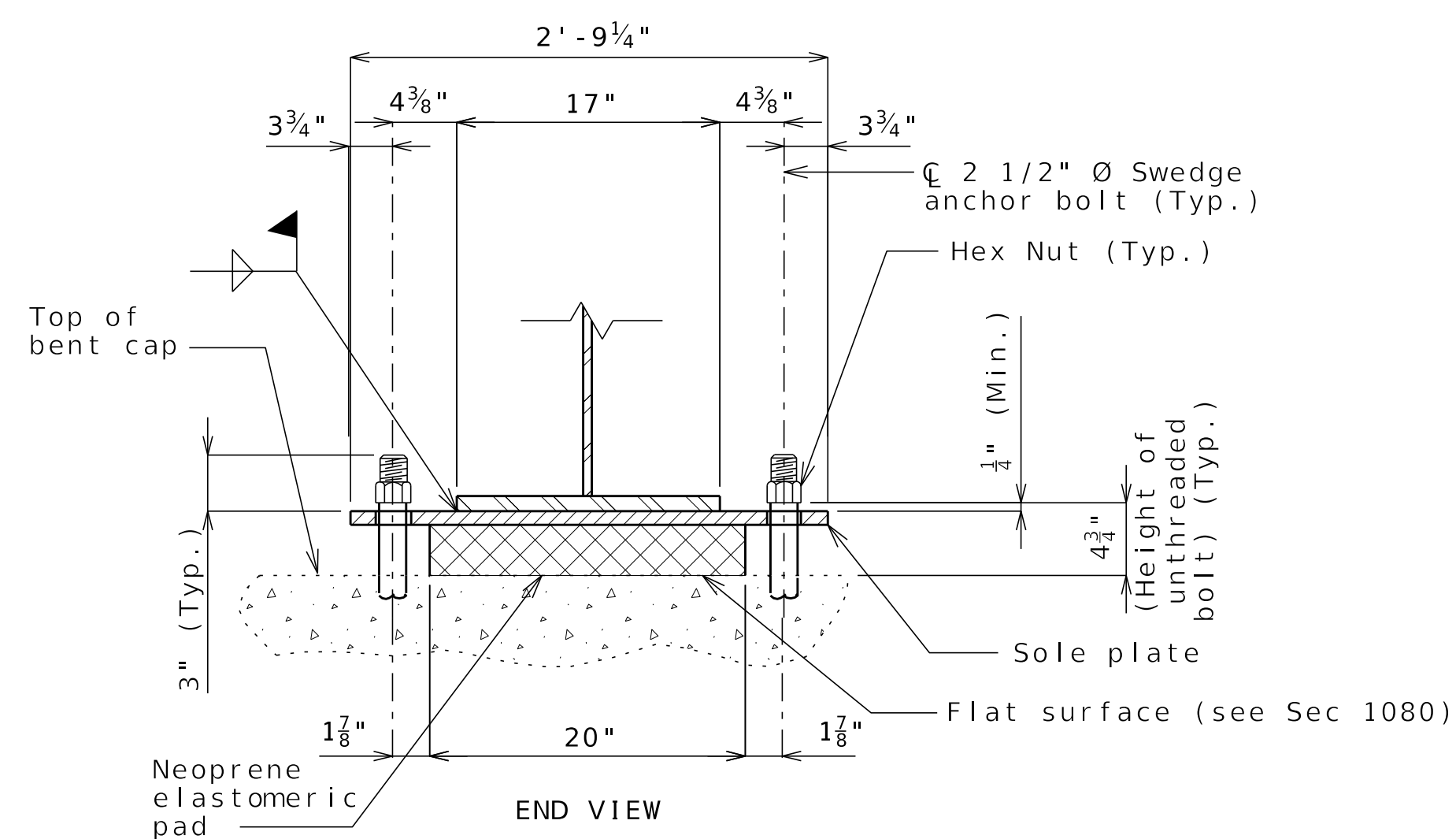


DETAIL OF EXISTING ANCHOR BOLT WELLS

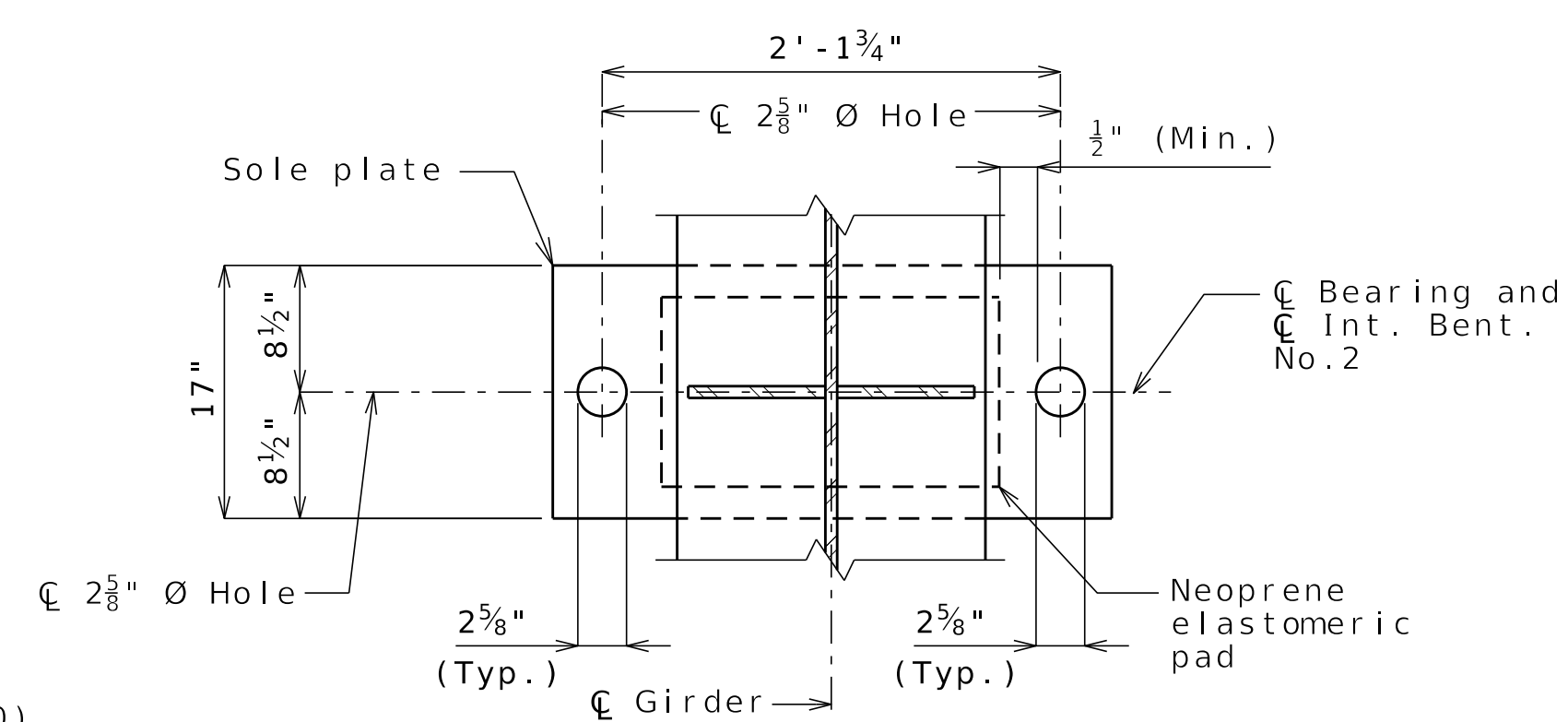


SIDE VIEW

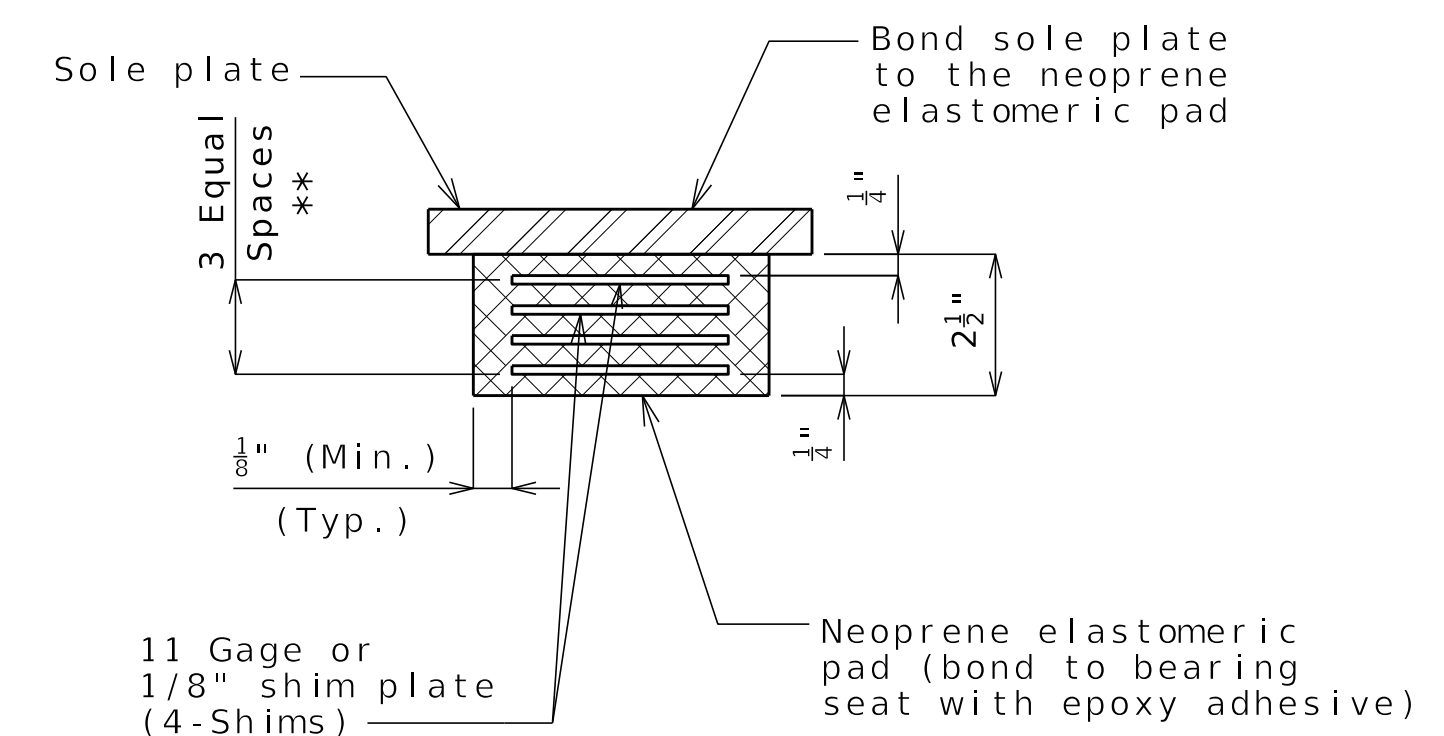
SWEDGE ANCHOR BOLT DETAILS



END VIEW



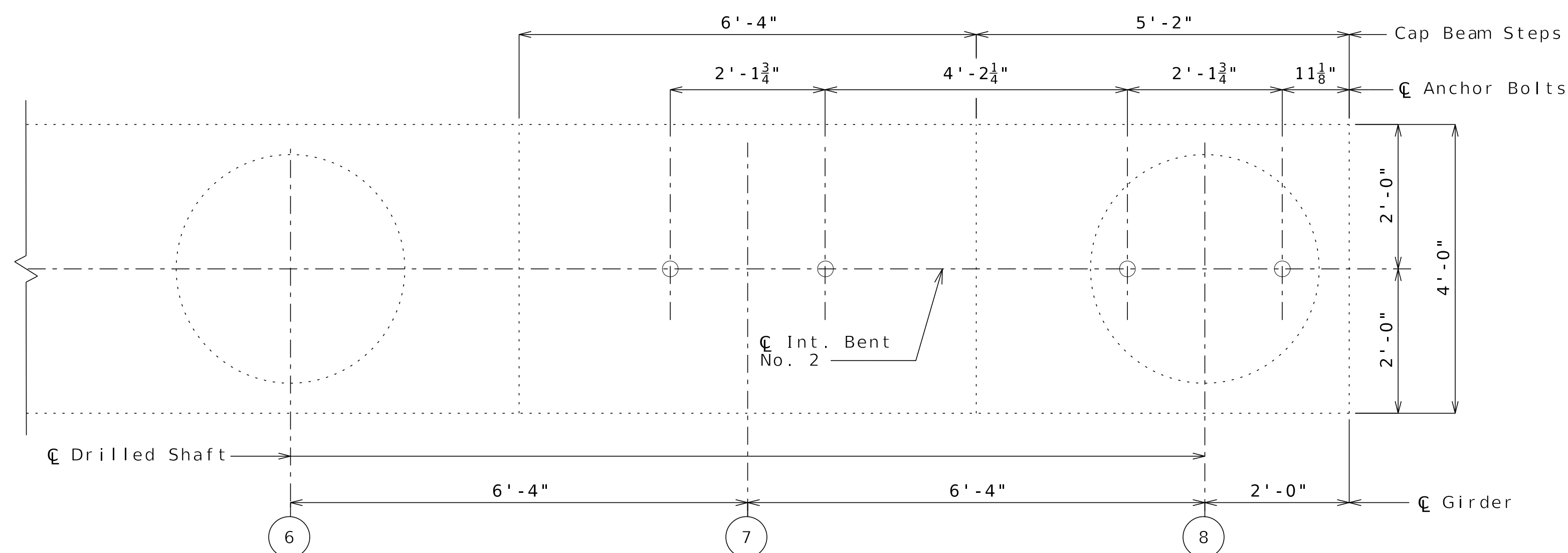
PART PLAN



** Layers of 1/2" elastomeric alternating with 11 gage or 1/8" steel shim plate

NEOPRENE ELASTOMERIC PAD

The required shim plate shall be placed between layers of elastomer and molded together to form an integral unit.



CAP BEAM PLAN SHOWING ANCHOR BOLT LOCATION

GENERAL NOTES:

2 Fixed Bearings Required.

Anchor bolts shall be 2 1/2"Ø ASTM F1554 Grade 55 swedged bolts and shall extend 25" into the concrete with ASTM A563 Grade A Heavy Hex nuts. Actual manufacturer's certified mill test reports (chemical and mechanical) shall be provided. Swedging shall be 1" less than extension into the concrete.

Anchor bolts and heavy hex nuts shall be coated with a minimum of two coats of organic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with Sec 1081.

Neoprene Elastomeric Pads shall be 60 Durometer.

Structural steel for sole plate shall be ASTM A709 Grade 50 and shall be coated with a minimum of two coats of organic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum.

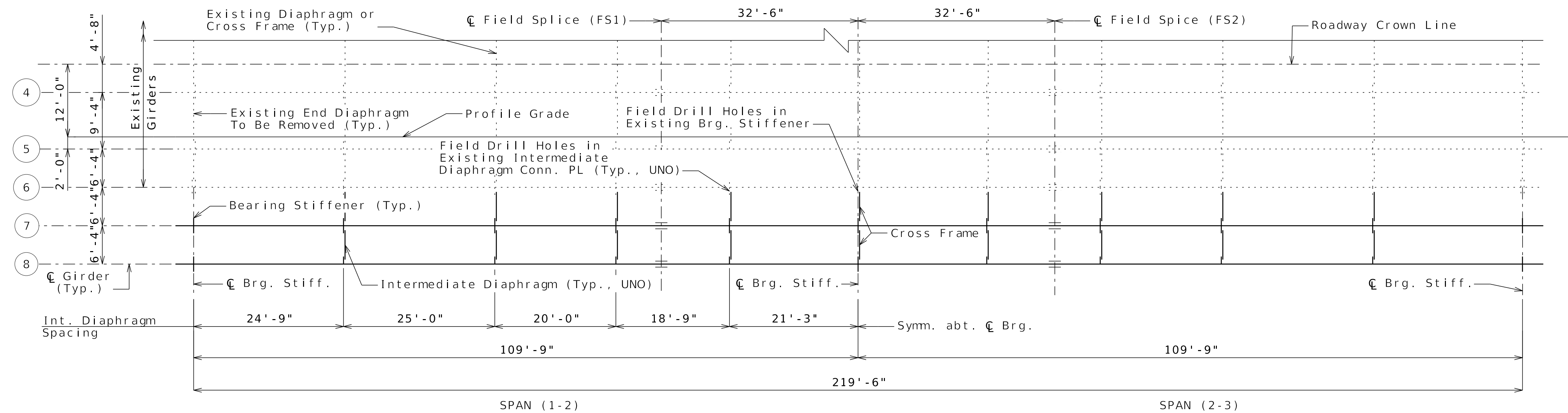
Laminated Neoprene Bearing Pad Assembly shall be in accordance with Sec 716.

Contractor shall verify elevations in field. Any change to bearing height shall be subject to the approval of the engineer.

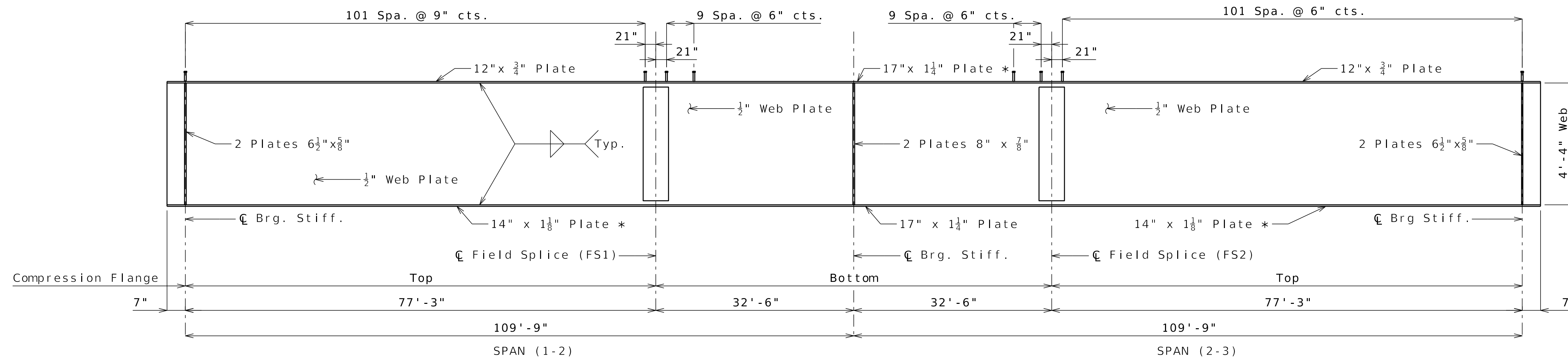
Anchor bolt well spirals are already in place. Contractor shall field drill 4" diameter anchor bolt wells.

FIXED BEARING DETAILS - INT. BENT NO. 2

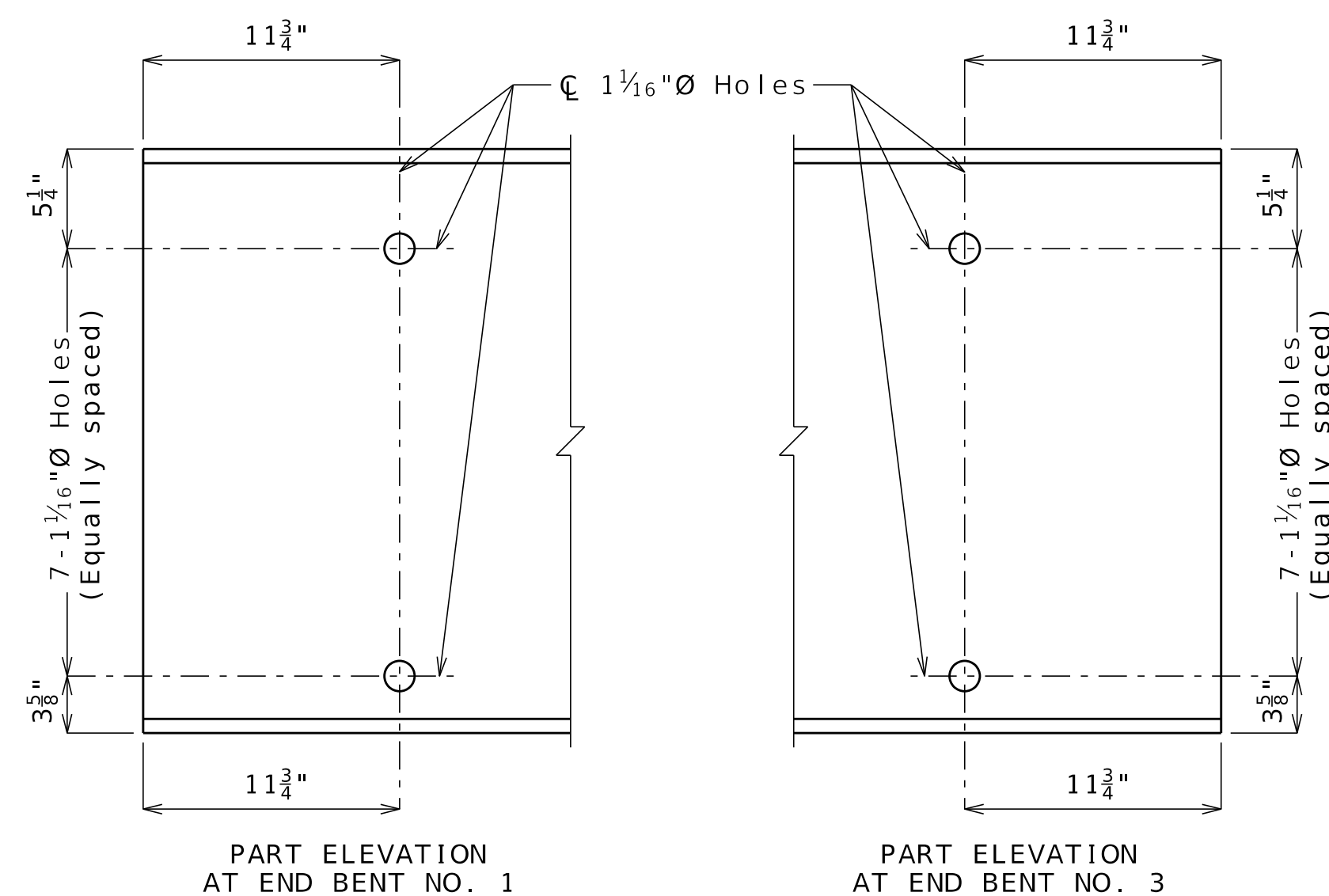
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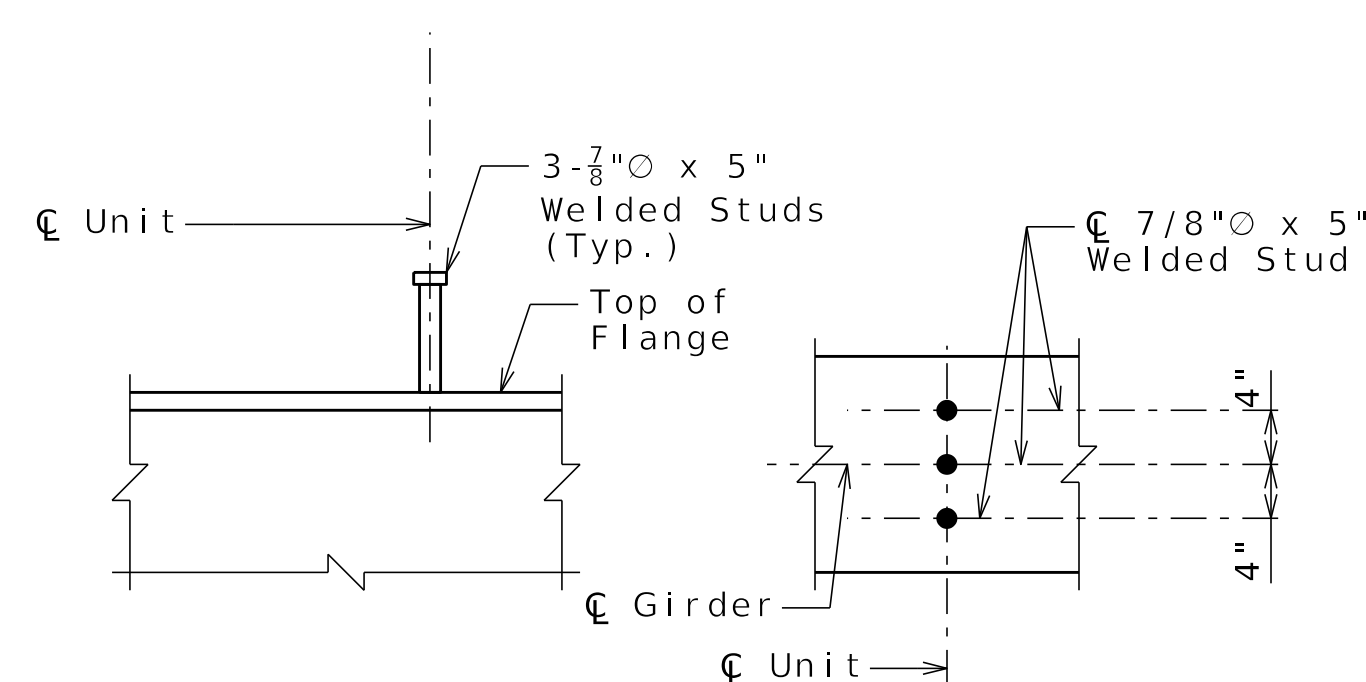
PLAN OF STRUCTURAL STEEL
Longitudinal dimensions are horizontal.



ELEVATION OF GIRDER

PART ELEVATION
AT END BENT NO. 1

DETAIL OF WEB HOLES AT END BENTS



ELEVATION PLAN OF SHEAR CONNECTORS

DETAILS OF SHEAR CONNECTOR UNITS
(3 STUDS PER UNIT)

Notes:

* Indicates flange plate subject to notch toughness requirements.
All web plates shall be subject to notch toughness requirements.

Weight of 1,320 pounds of shear connectors is included in the weight of Fabricated Structural Low Alloy Steel (Plate Girder) A709, Grade 50.

Shear connectors shall be in accordance with Sec 712, 1037 & 1080.

Plate girders shall be fabricated in accordance with the camber diagram shown on Sheet No. 19.

For details of bolted field splices and Part Longitudinal Section, see Sheet No. 20.

For details of intermediate diaphragms, cross frames, stiffeners and connection plates, see Sheet No. 21.

For location of slab drain attachment holes, see Sheet No. 22.

Girder flanges and web plates shall be ASTM A709, Grade 50. All other structural steel components shall be ASTM A709, Grade 36 unless noted otherwise.

Longitudinal dimensions are horizontal from ζ bearing to ζ bearing.

Contractor shall verify as-built dimensions of the existing structure prior to fabrication of structural members to be attached to the existing structure.

For Existing End Diaphragm Removal details, see Sheet No. 20.

UNO denotes Unless Noted Otherwise.

[illegible]

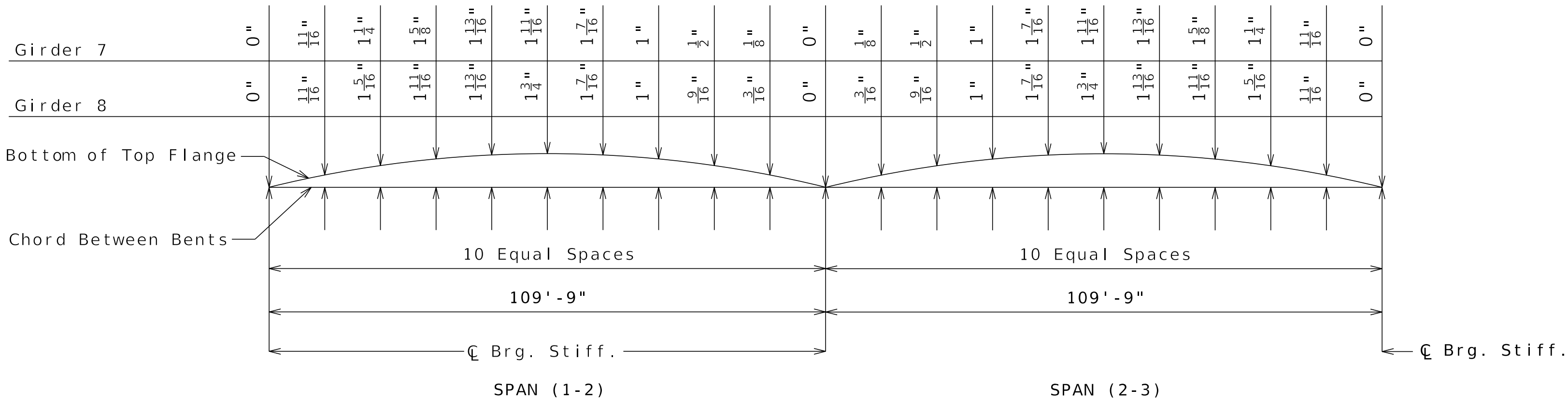


PLATE GIRDER CAMBER DIAGRAM

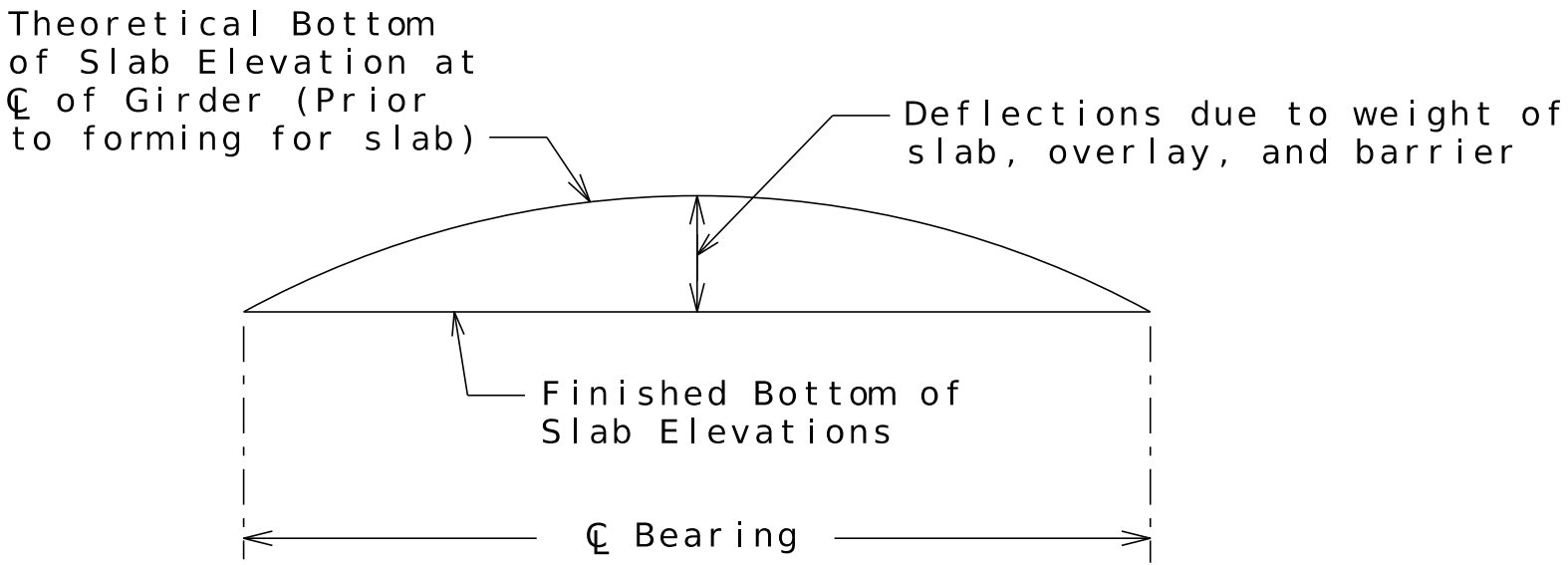
Camber includes allowance for dead load deflection due to concrete slab (including deck forms), barrier, and structural steel.

Due to straight grade on bridge, total dead load deflection = camber.

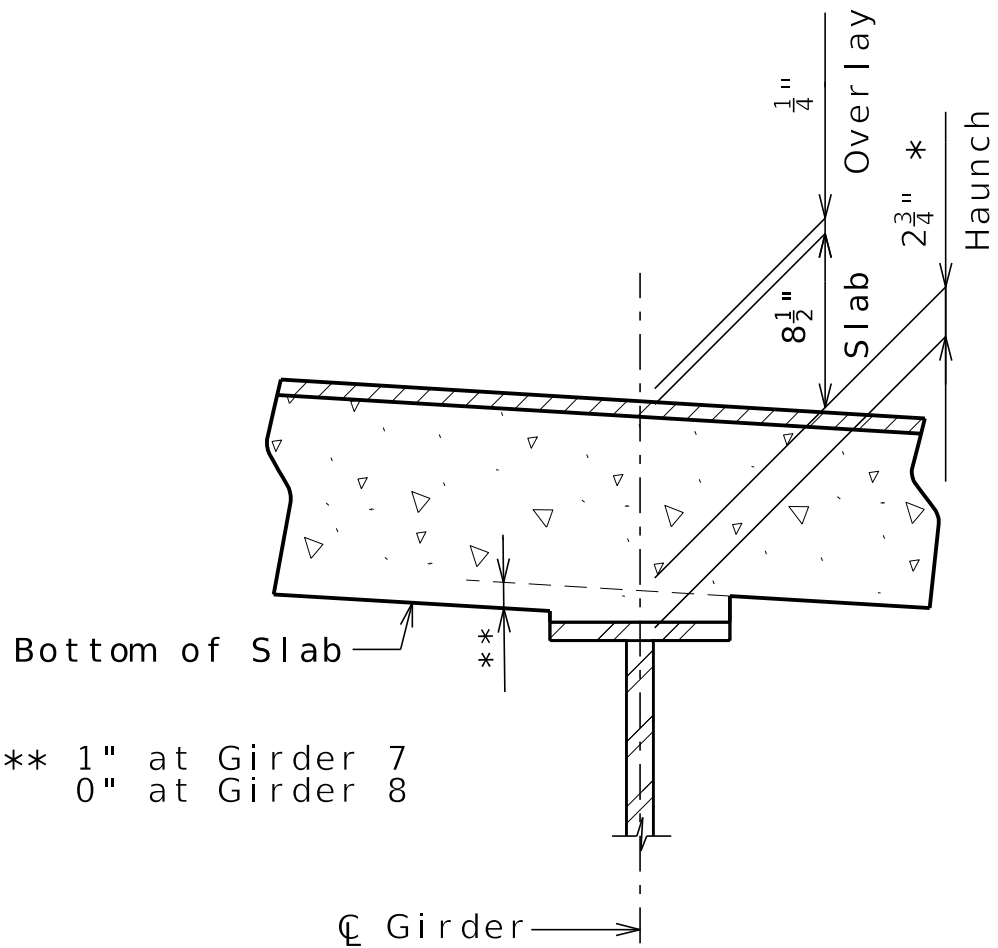
20% of dead load deflection is due to the weight of structural steel.

Theoretical Bottom of Slab Elevations at Centerline of Girder (Prior to forming for slab) (Estimated at 90 days)											
Girder Number	Span (1-2) (109'-9" C Brg. - C Brg.)										
	C Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	C Brg.
7	511.71	511.76	511.79	511.82	511.83	511.82	511.81	511.78	511.74	511.72	511.71
8	511.61	511.66	511.70	511.73	511.74	511.73	511.71	511.68	511.65	511.63	511.61
Girder Number	Span (2-3) (109'-9" C Brg. - C Brg.)										
	C Brg.	.10	.20	.30	.40	.50	.60	.70	.80	.90	C Brg.
7	511.71	511.72	511.74	511.78	511.81	511.82	511.83	511.82	511.79	511.76	511.71
8	511.61	511.63	511.65	511.68	511.71	511.73	511.74	511.73	511.70	511.66	511.61

Elevations are based on a constant slab thickness of 8 1/2" and overlay thickness of 1/4" and include allowance for theoretical dead load deflections due to weight of slab (including deck forms), overlay, and barrier.



TYPICAL SLAB ELEVATIONS DIAGRAM



THEORETICAL SLAB HAUNCH

* Dimension (bottom of slab to top of web) may vary if girder camber after erection differs from plan camber by more than the % of Dead Load Deflection due to weight of structural steel.

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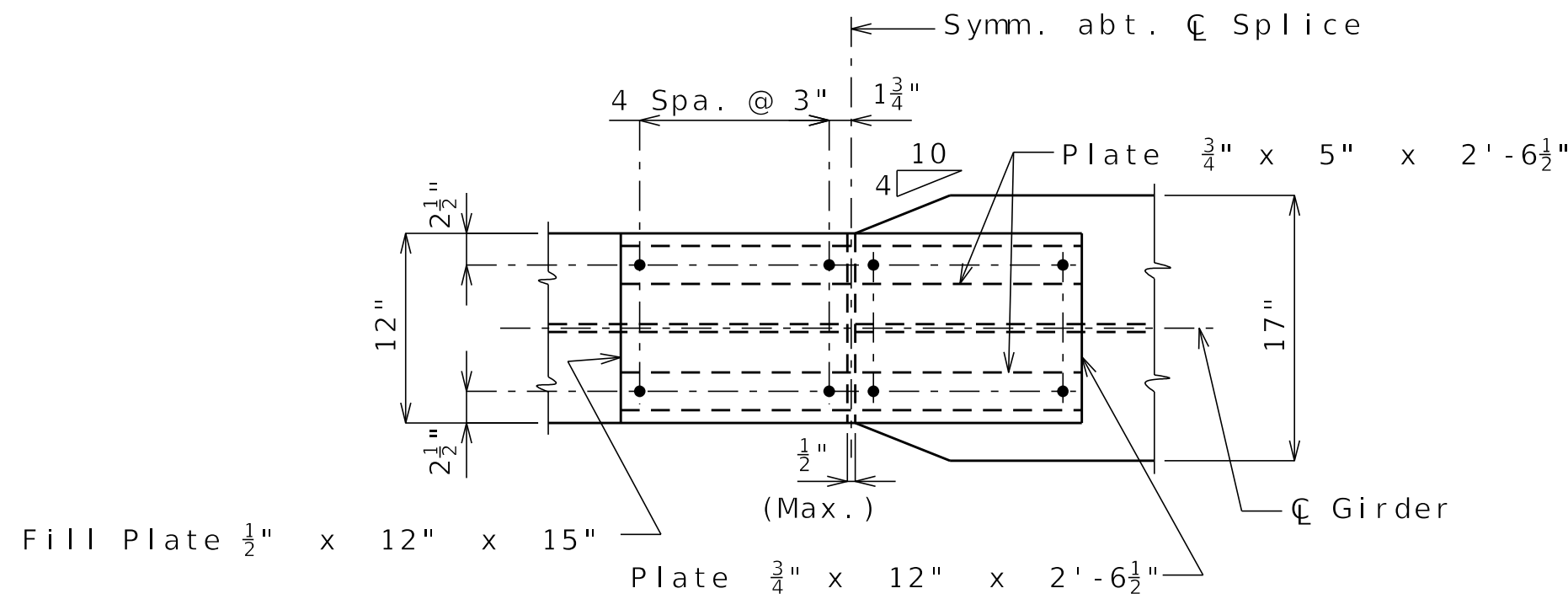
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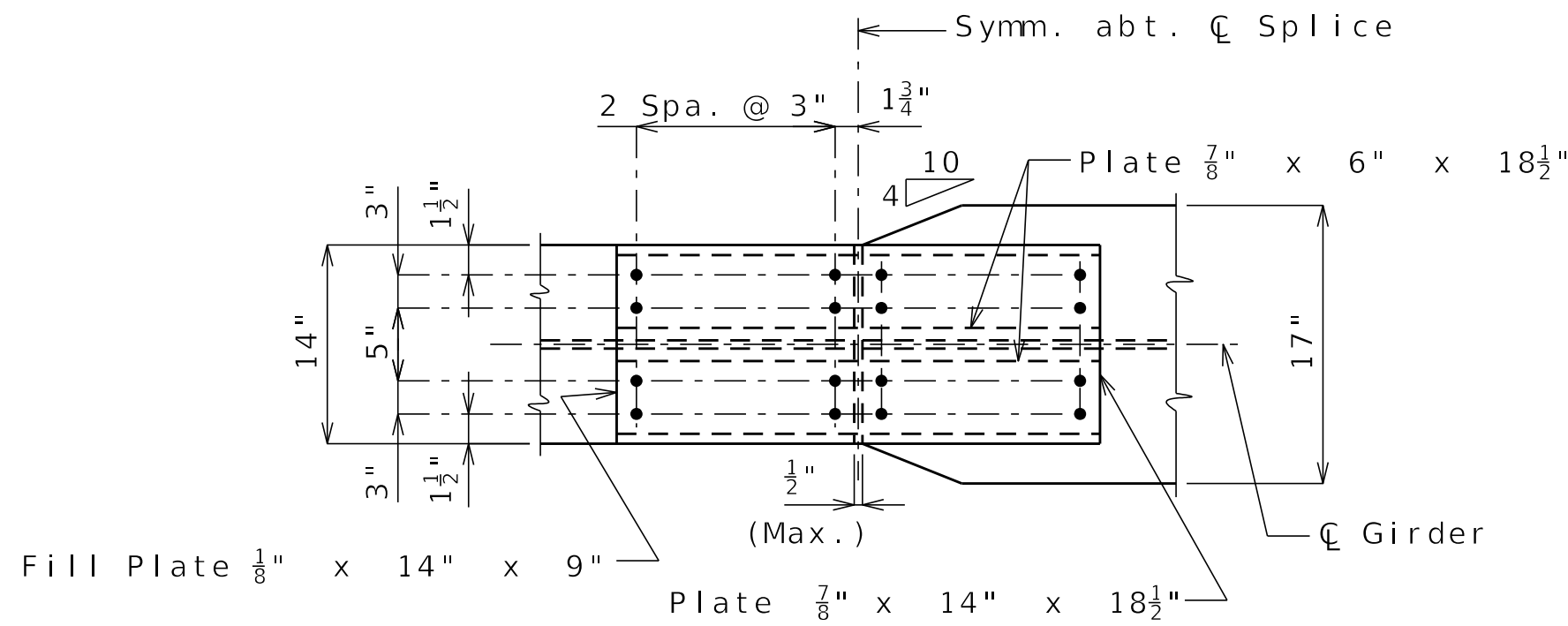
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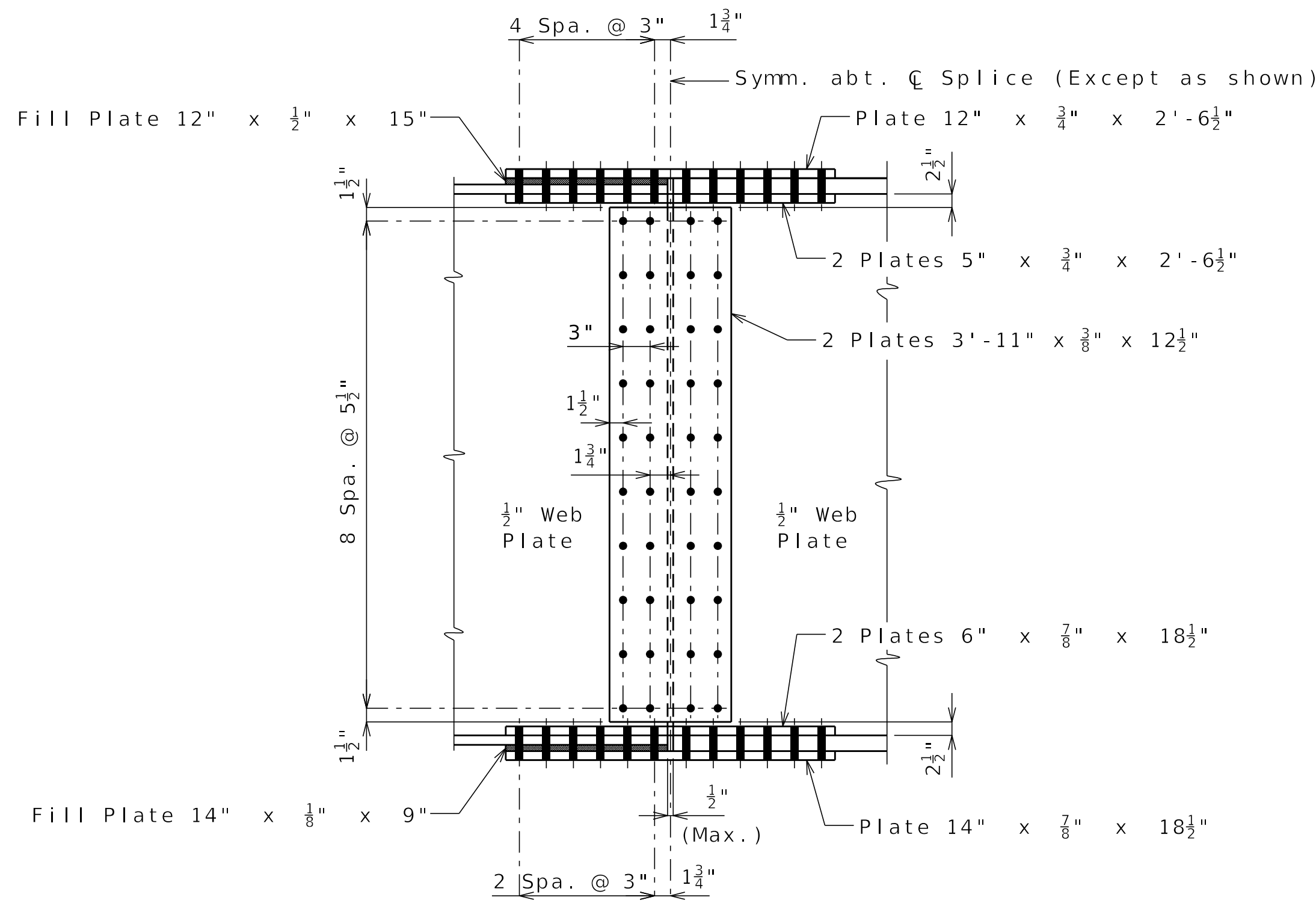
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PLAN OF TOP FLANGE



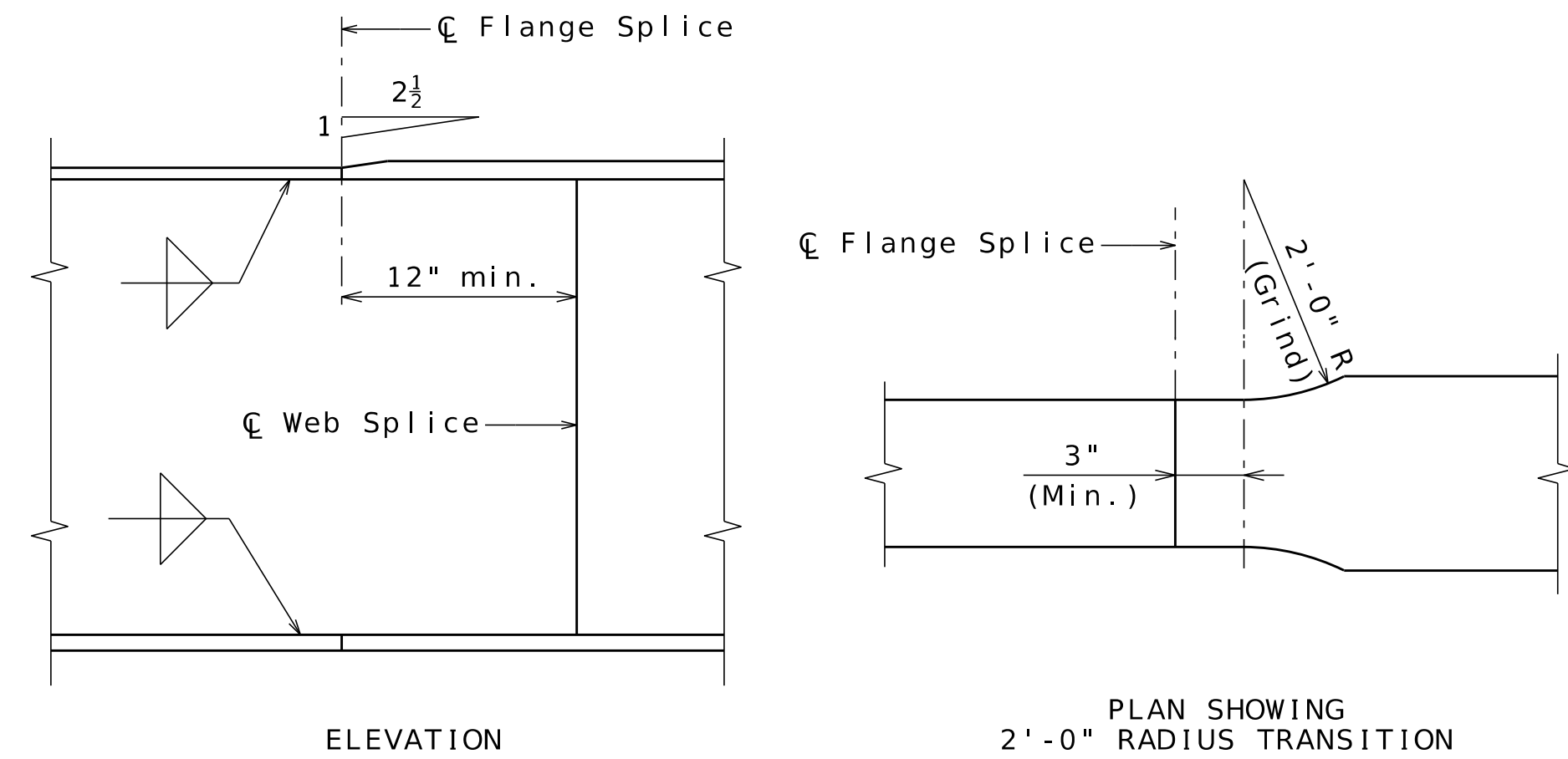
PLAN OF BOTTOM FLANGE



DETAIL OF BOLTED FIELD SPLICE

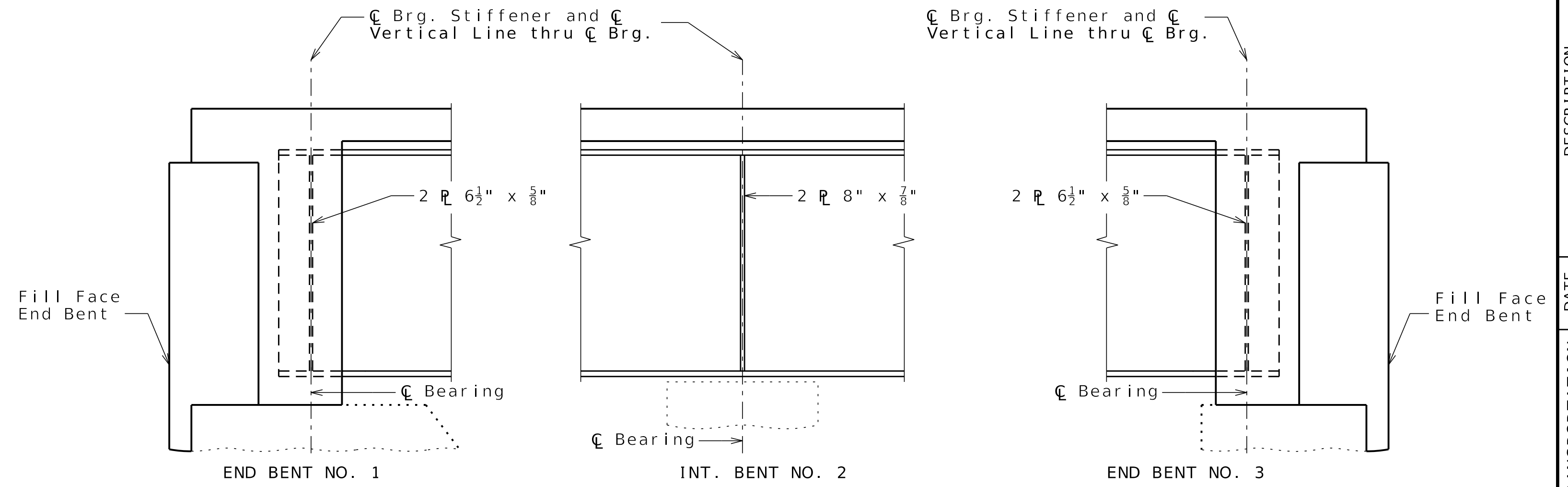
Bolts shall be 7/8-inch diameter ASTM F3125 Grade A325 Type 1 in 15/16-inch diameter holes.

Contact surfaces shall be in accordance with Sec 1081 for surface preparation.



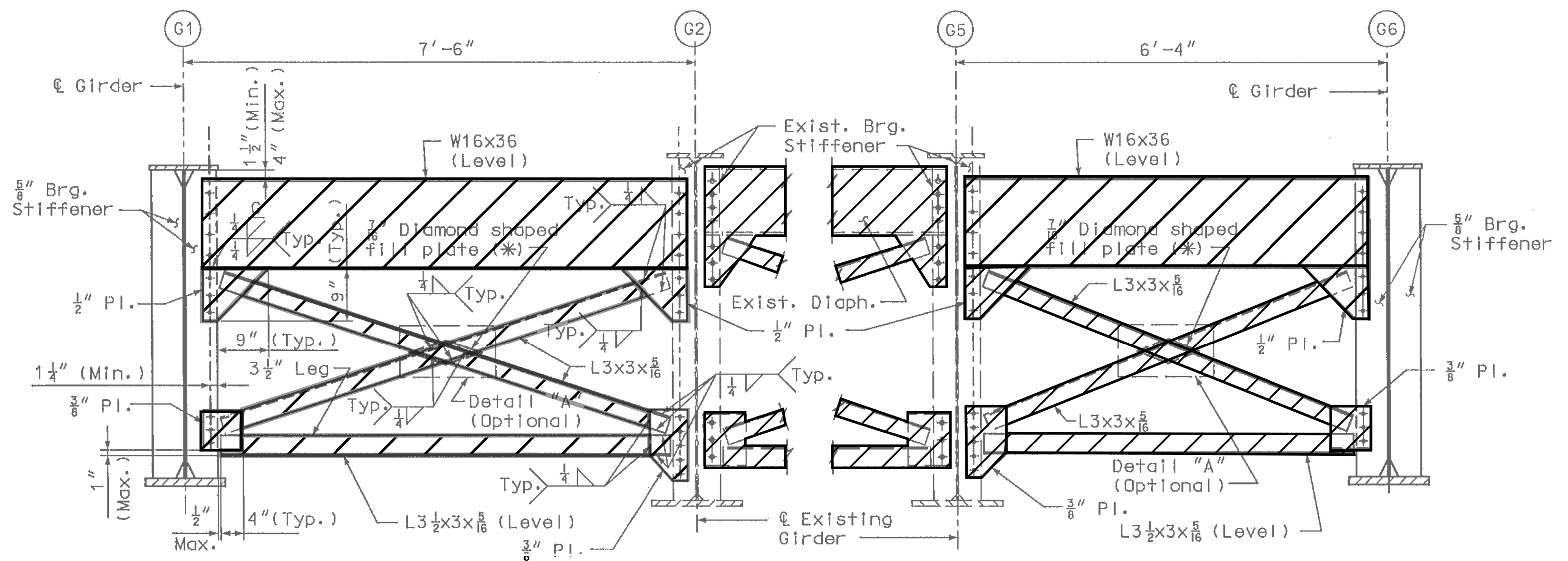
WELDED SHOP WEB AND FLANGE SPLICE

Welded shop web and flange splices may be permitted when detailed on the shop drawings and approved by the engineer.



PART LONGITUDINAL SECTION

Girders 7 & 8



END DIAPHRAGM REMOVAL DETAIL

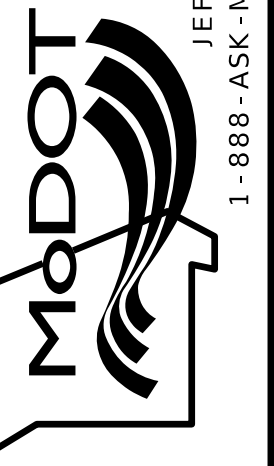
(Remove all End Diaphragms from End Bents 1 and 3 before casting semi integral concrete diaphragm)

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PROJECT NO.

BRIDGE NO.
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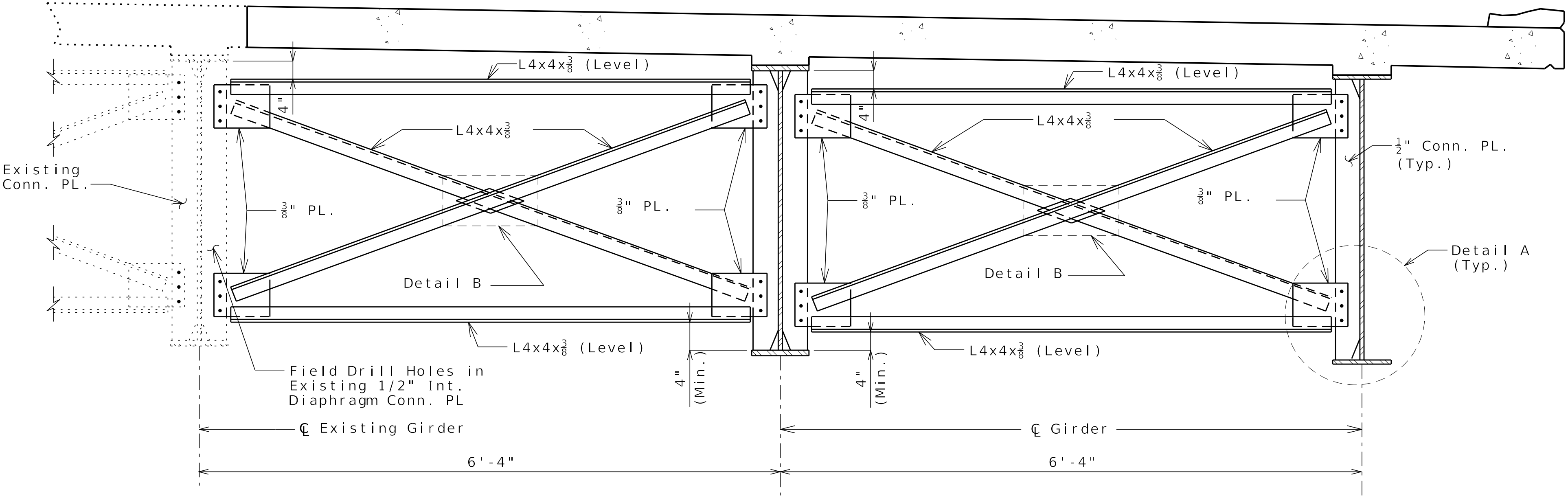


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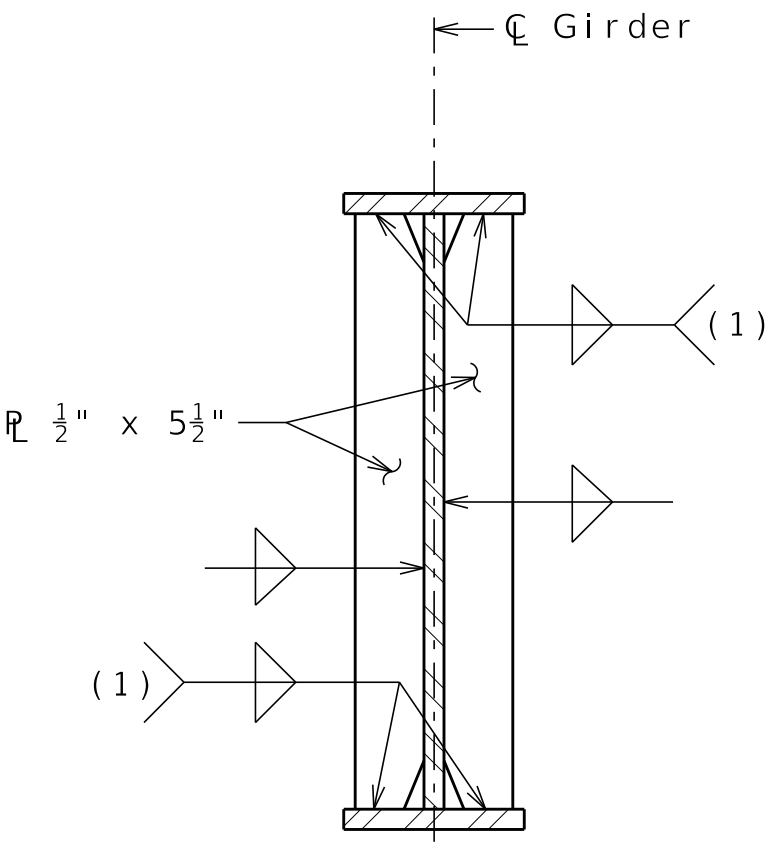


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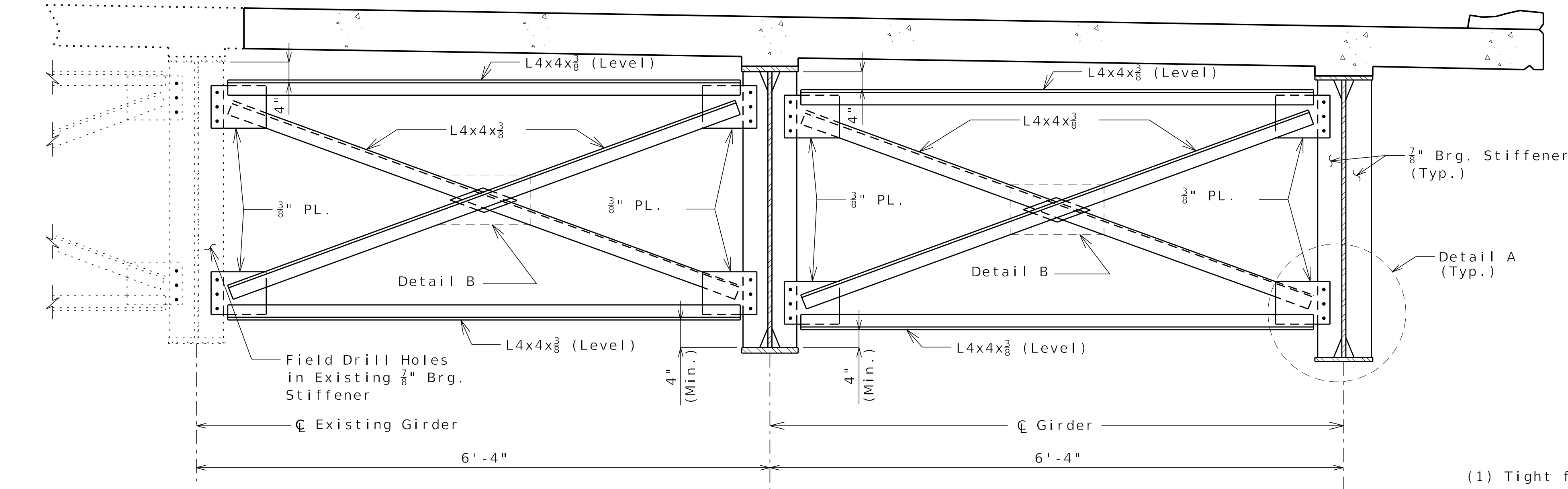
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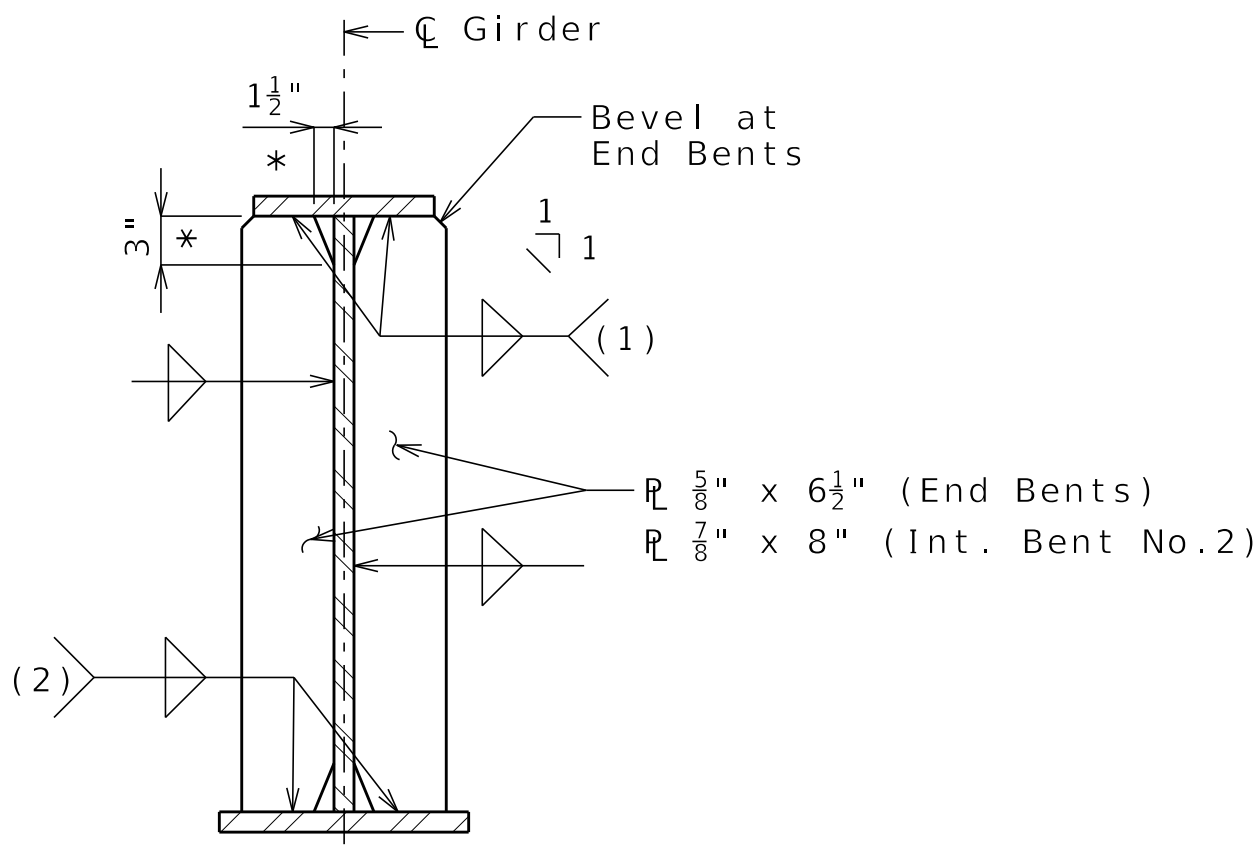
INTERMEDIATE DIAPHRAGM



INTERMEDIATE DIAPHRAGM
CONNECTION PLATE



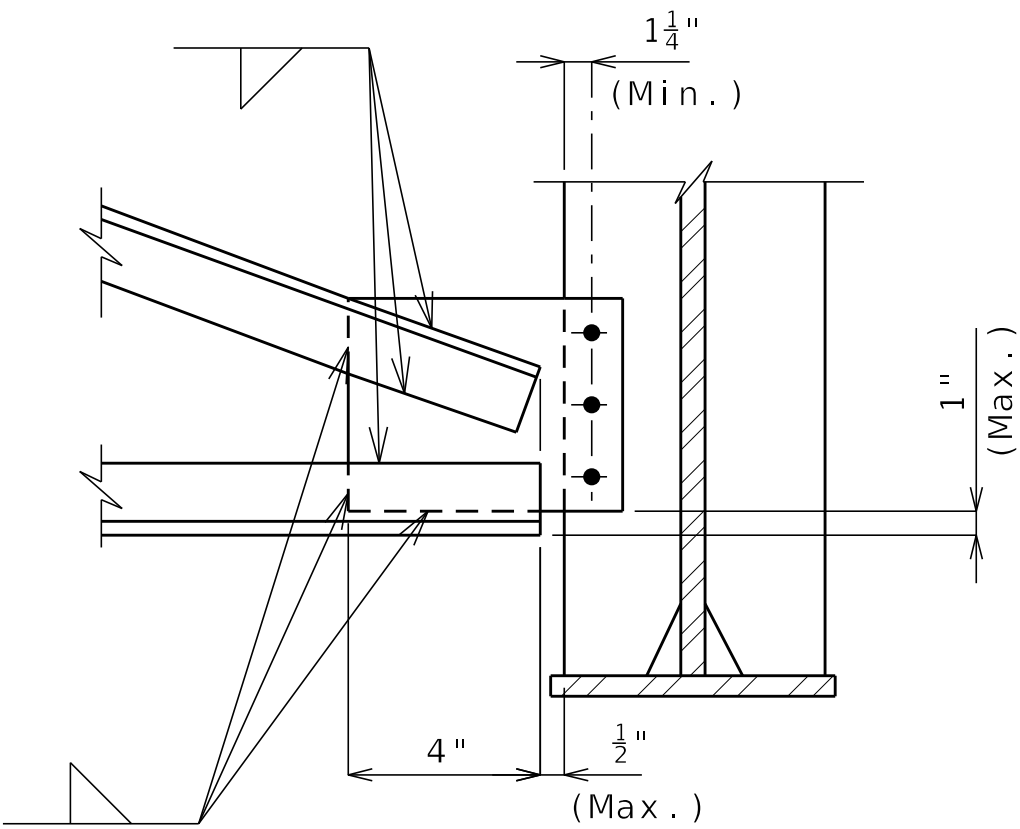
CROSS FRAME AT INTER. BENT NO. 2



BEARING STIFFENER

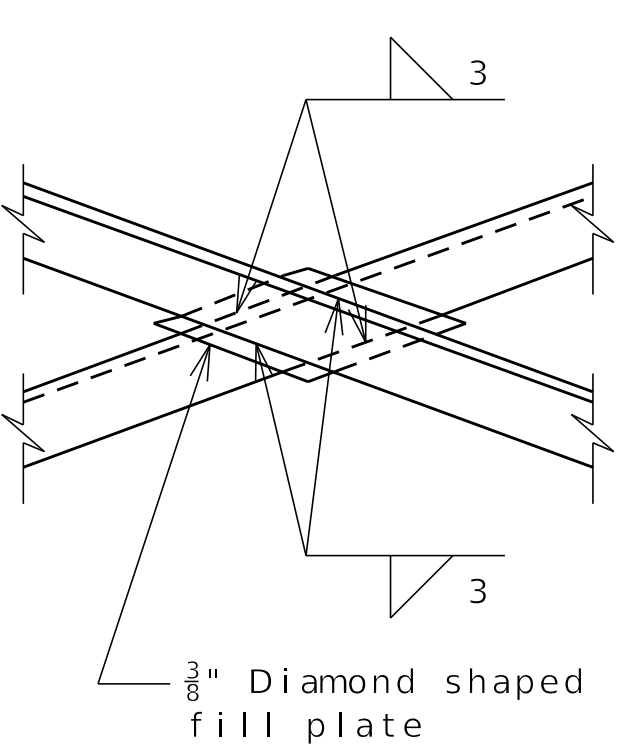
WELDING DETAILS

- (1) Tight fit
(2) Grind or mill to bear.
(3) Weld to compression flange as located on Elevation of Girder.
* Typical for all intermediate stiffeners. Intermediate diaphragm connection plates and bearing stiffeners.

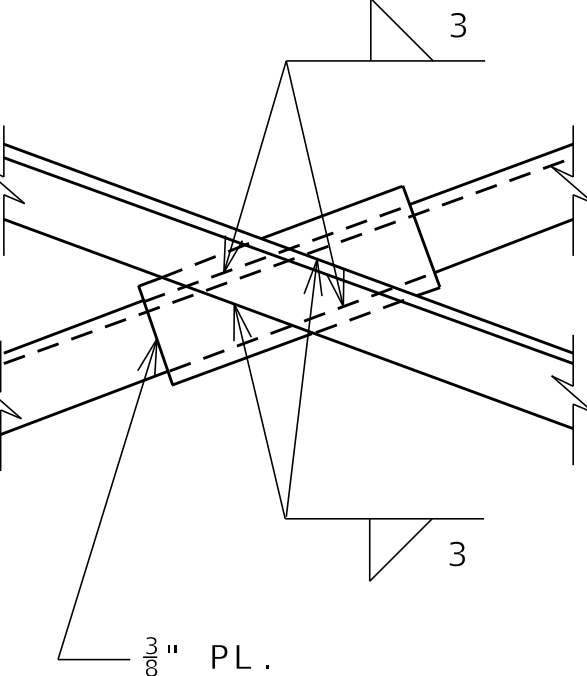


DETAIL A

(Bottom flange shown,
top flange similar.)



DETAIL B



OPTIONAL
DETAIL B

Notes:
Bolts on new intermediate diaphragms or cross frames that connect new girders to existing girders shall be installed snug tight, then tightened after slab pour is complete.
Bolts shall be 3/4 inch O high strength ASTM F3125 Grade A325 Type 1 in 13/16 inch O holes.

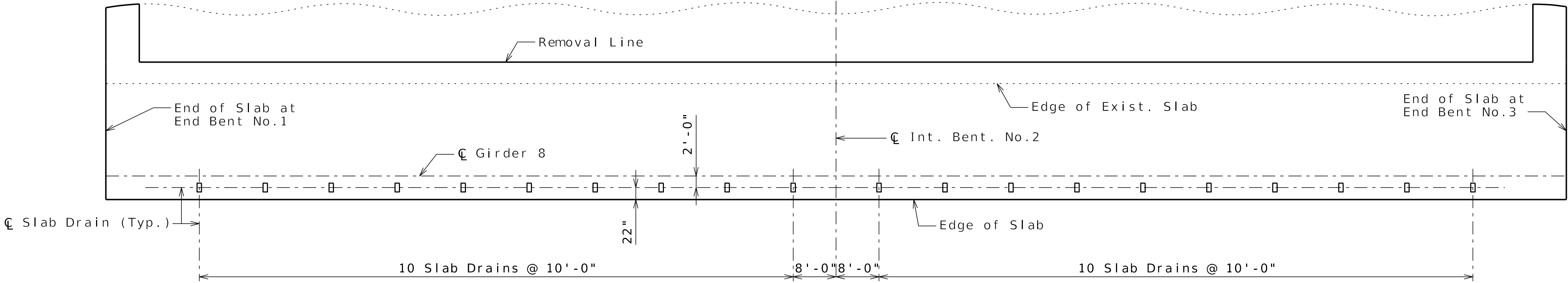
STEEL DIAPHRAGMS

Detailed APR 2025
Checked APR 2025

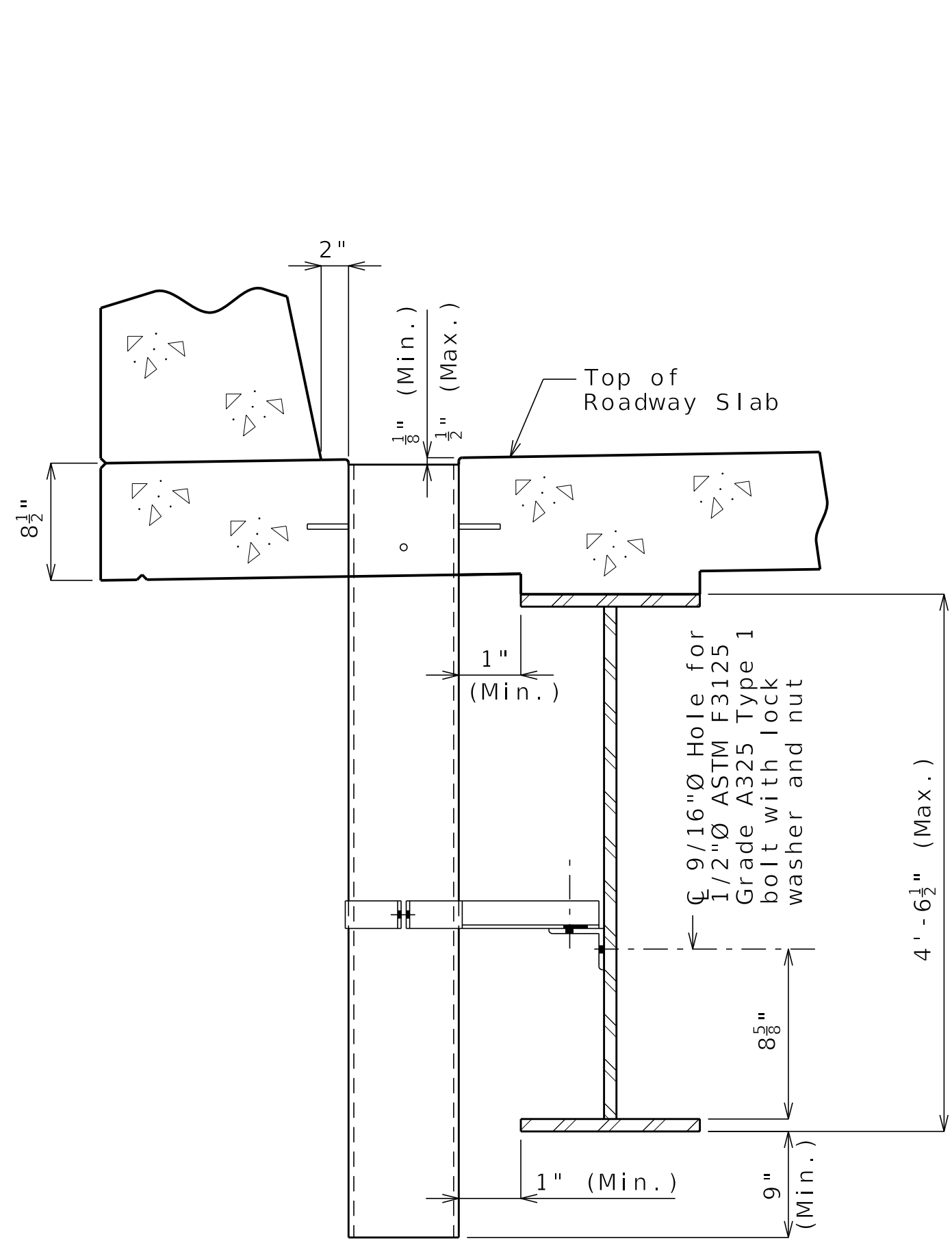
Note: This drawing is not to scale. Follow dimensions.

Sheet 21 of 29

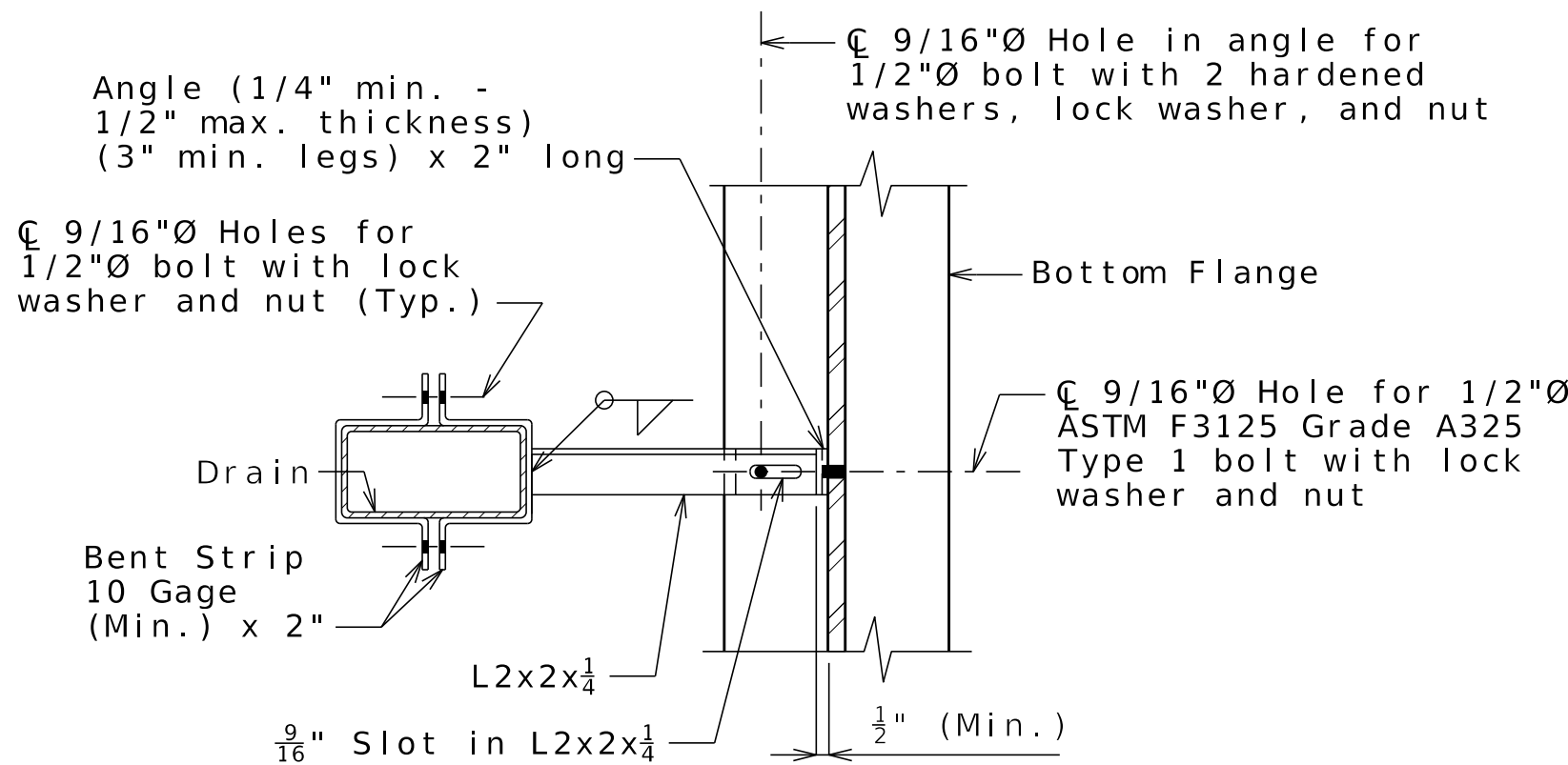
DATE PREPARED 5/6/2025	
ROUTE 1-64	STATE MO
DISTRICT BR	SHEET NO. 21
COUNTY ST. CHARLES	
JOB NO. J613033	
CONTRACT ID.	
PROJECT NO.	
BRIDGE NO. A14563	
DESCRIPTION	
DATE	
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)
HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 PHONE 874-3331 FAX 874-3331 CERTIFICATE OF AUTHORITY NO. 001270	Bartlett & West 601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101 PHONE 574-3331 FAX 574-3331 ENGINEERING WWW.BARTLETTWEST.COM



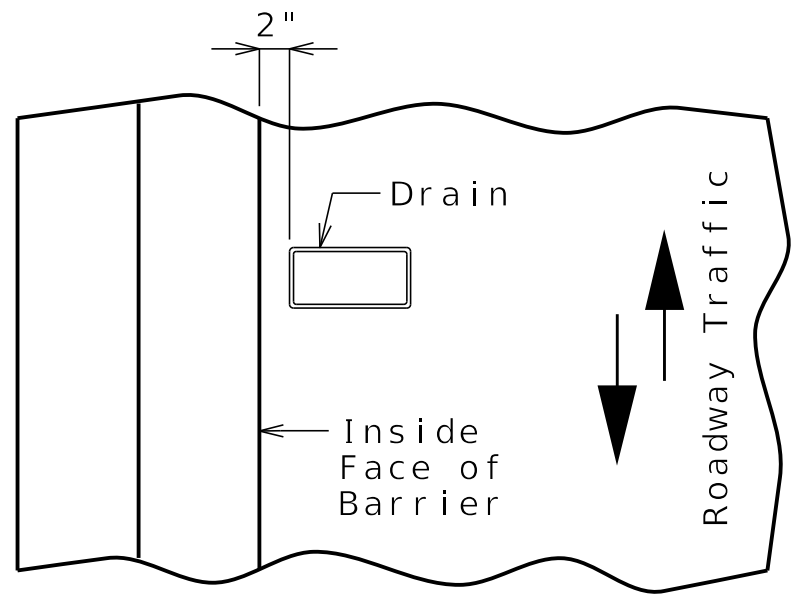
PLAN OF SLAB SHOWING SLAB DRAIN LOCATIONS



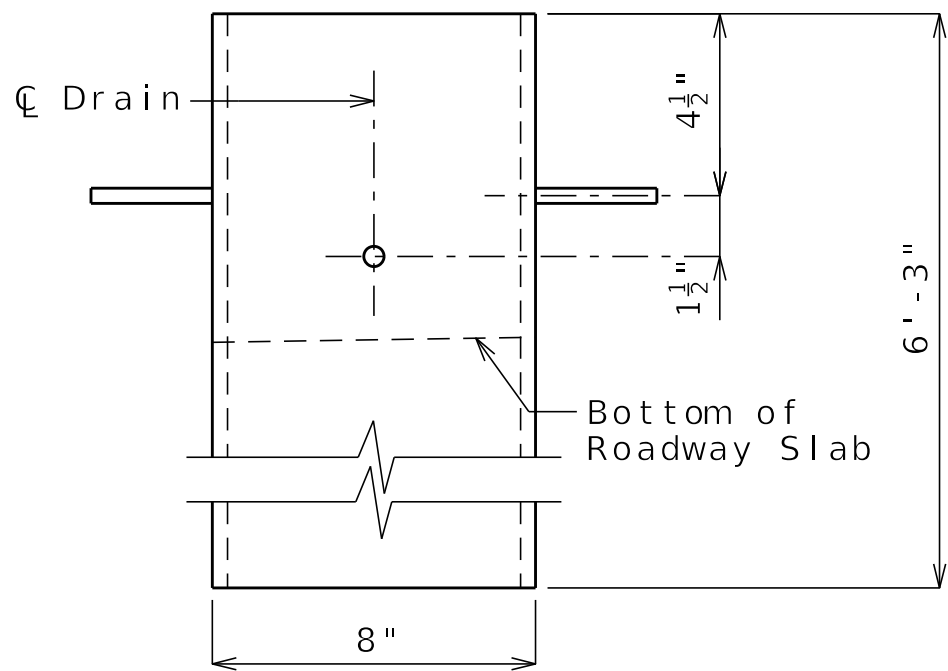
PART SECTION NEAR DRAIN



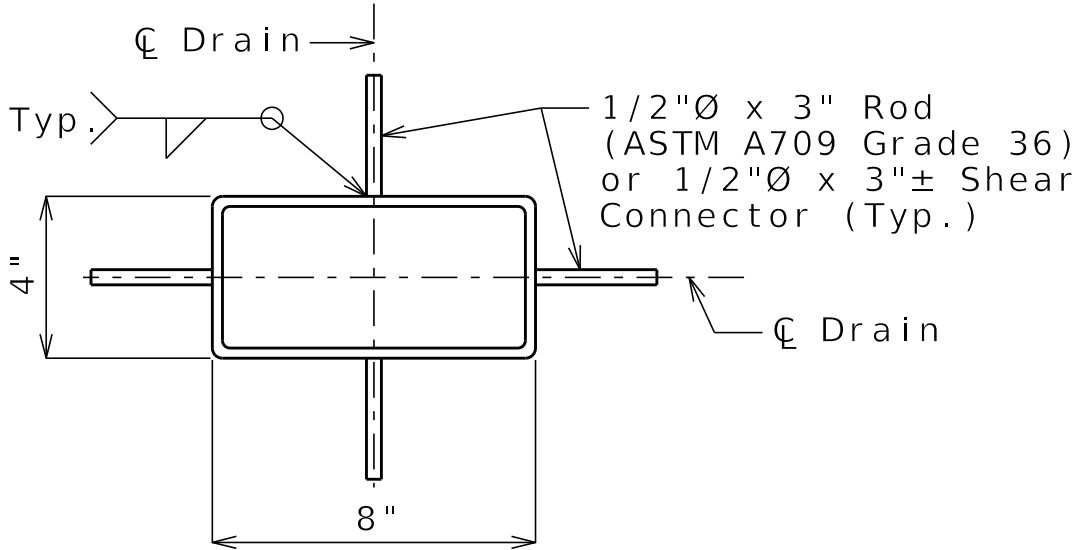
PART SECTION SHOWING BRACKET ASSEMBLY



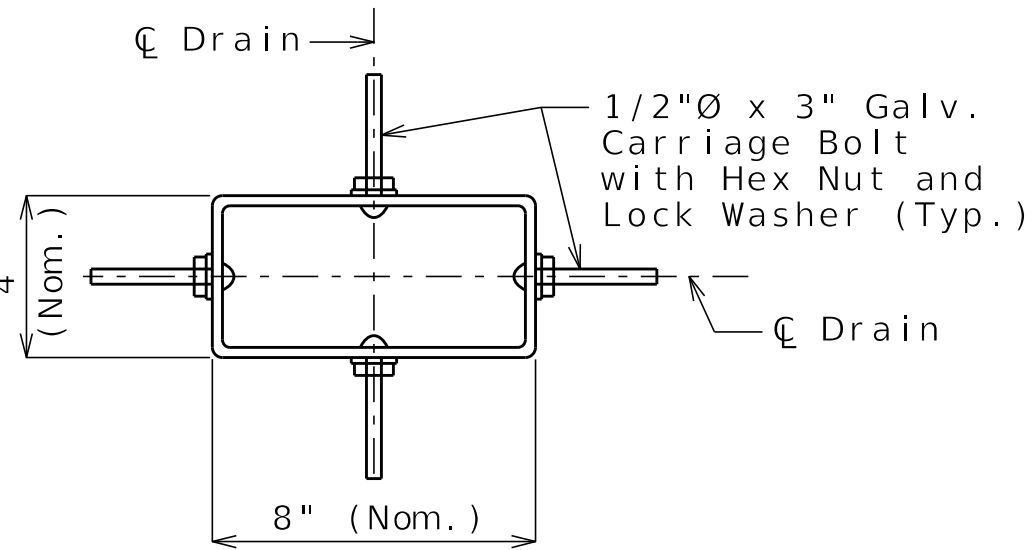
PART PLAN OF SLAB AT DRAIN



ELEVATION OF DRAIN



PLAN OF STEEL DRAIN OPTION



PLAN OF FRP DRAIN OPTION

General Notes:

Contractor shall have the option to construct either steel or FRP slab drains. All drains shall be of same type.

Contractor shall clean out existing slab drains left in place.

Slab drain bracket assembly shall be ASTM A709 Grade 36 steel.

Locate drains in slab by dimensions shown in Part Section Near Drain.

Reinforcing steel shall be shifted to clear drains.

The bracket assembly shall be galvanized in accordance with ASTM A123.

All bolts, hardened washers, lock washers and nuts shall be galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

All 1/2-inch diameter bolts shall be ASTM A307, except as shown.

Shop drawings will not be required for the slab drains and the bracket assembly.

The bolt hole for the bracket assembly attachment shall be located on the plate girder shop drawings.

Notes for Steel Drain:

Slab drains may be fabricated of either 1/4-inch welded sheets of ASTM A709 Grade 36 steel or from 1/4-inch structural steel tubing ASTM A500 or A501.

Outside dimensions of drains are 8" x 4".

The drains shall be galvanized in accordance with ASTM A123.

Notes for FRP Drain:

Drains shall be machine filament-wound thermosetting resin tubing meeting the requirements of ASTM D2996 with the following exceptions:

Shape of drains shall be rectangular with outside nominal dimensions of 8" x 4".

Minimum reinforced wall thickness shall be 1/4 inch.

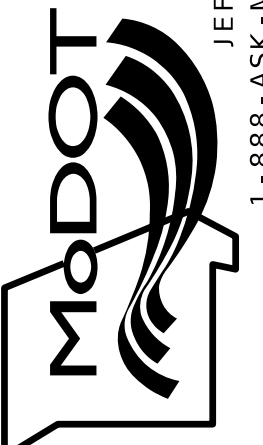
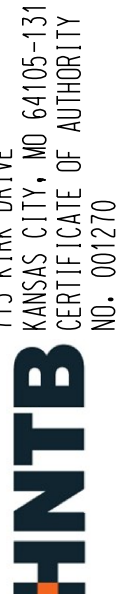
The resin used shall be ultraviolet (UV) resistant and/or have UV inhibitors mixed throughout. Drains may have an exterior coating for additional UV resistance.

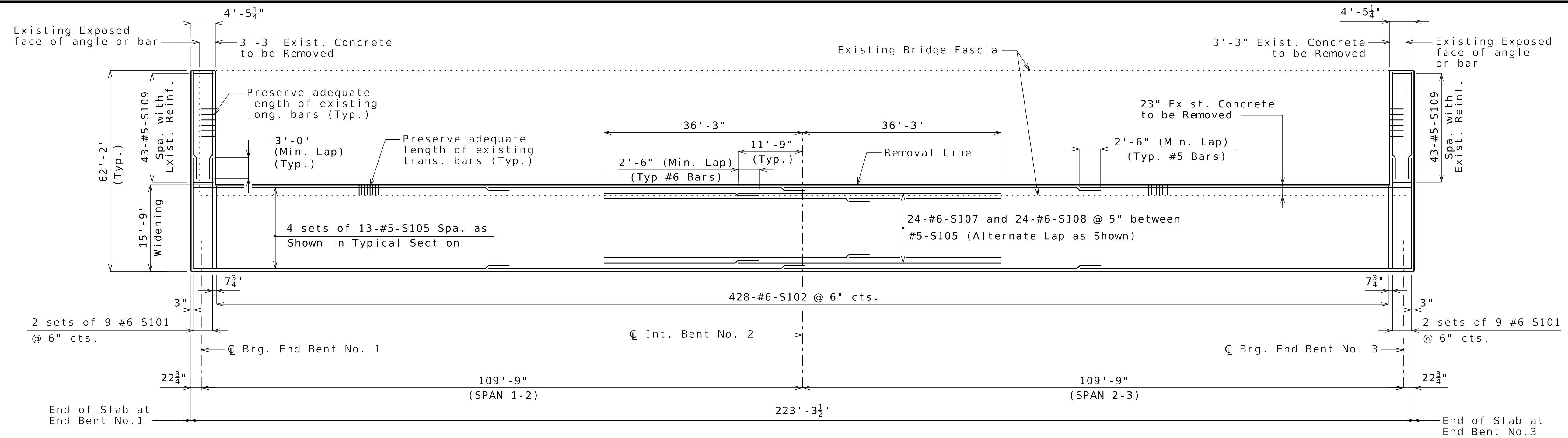
The color of the slab drain shall be gray (Federal Standard #26373). The color shall be uniform throughout the resin and any coating used.

The combination of materials used in the manufacture of the drains shall be tested for UV resistance in accordance with ASTM D4329 Cycle A. The representative material shall withstand at least 500 hours of testing with only minor discoloration and without any physical deterioration. The contractor shall furnish the results of the required ultraviolet testing prior to acceptance of the slab drains.

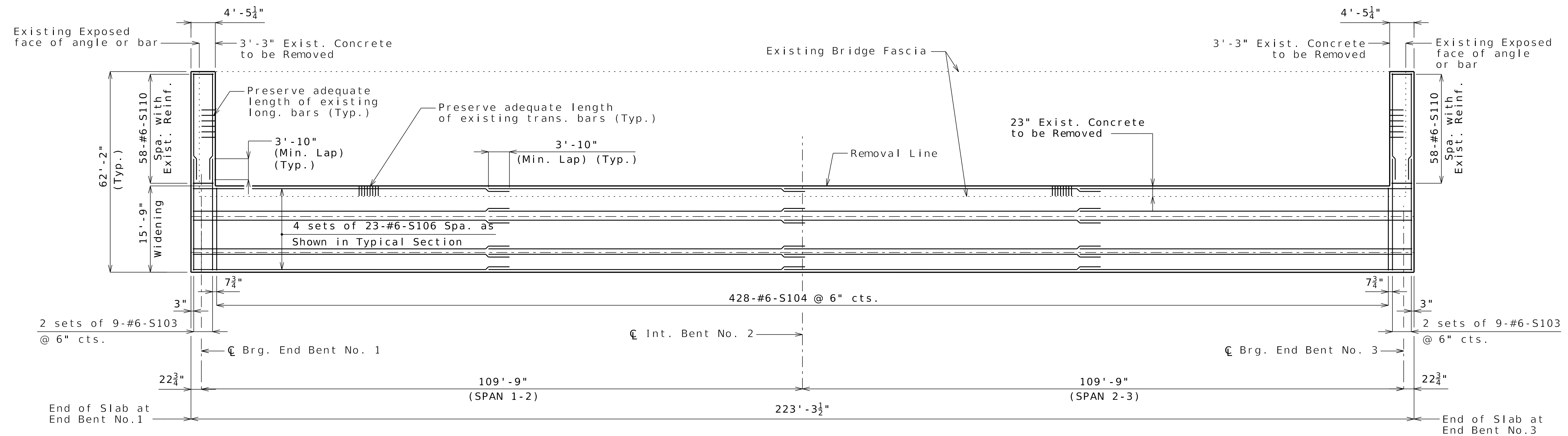
At the contractor's option, drains may be field cut. The method of cutting FRP slab drain shall be as recommended by the manufacturer to ensure a smooth, chip free cut.

SLAB DRAINS

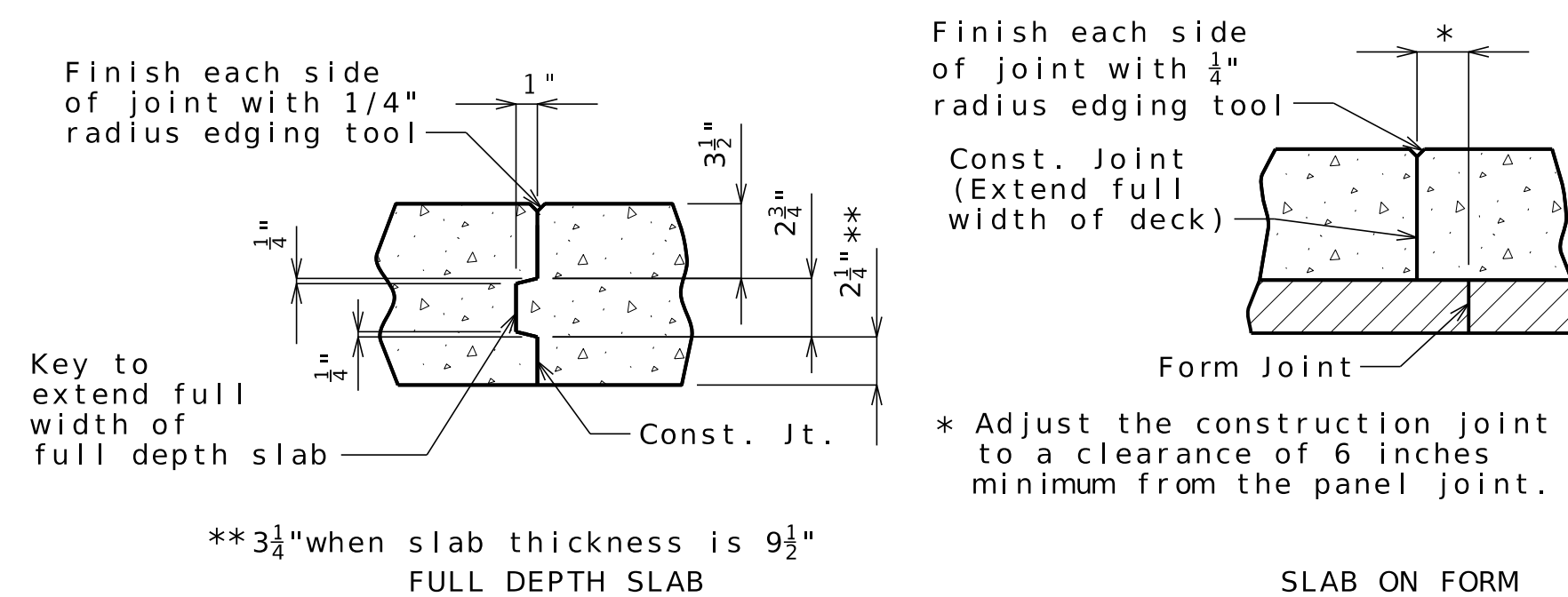
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PROJECT NO.	
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TOP REINFORCING PLAN



BOTTOM REINFORCING PLAN



SLAB CONSTRUCTION JOINT

Notes:

Longitudinal slab dimensions are measured horizontally.

For Section Thru Slab and Slab Pouring Sequence, see
Sheet No. 24.

For Details and Reinforcement of Safety Barrier Curb
not shown, see Sheets No. 25 and 26.

For Theoretical Slab Haunch Detail, see Sheet No. 19.

For Theoretical Bottom of Slab Elevations, see Sheet No. 19.

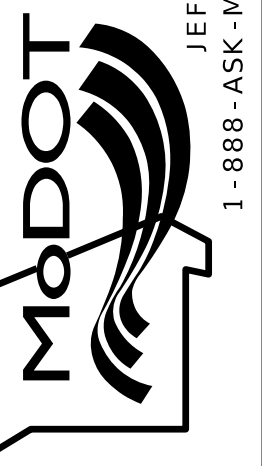
For details and locations of Slab Drains, see Sheet No. 22.

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I - 64	MO
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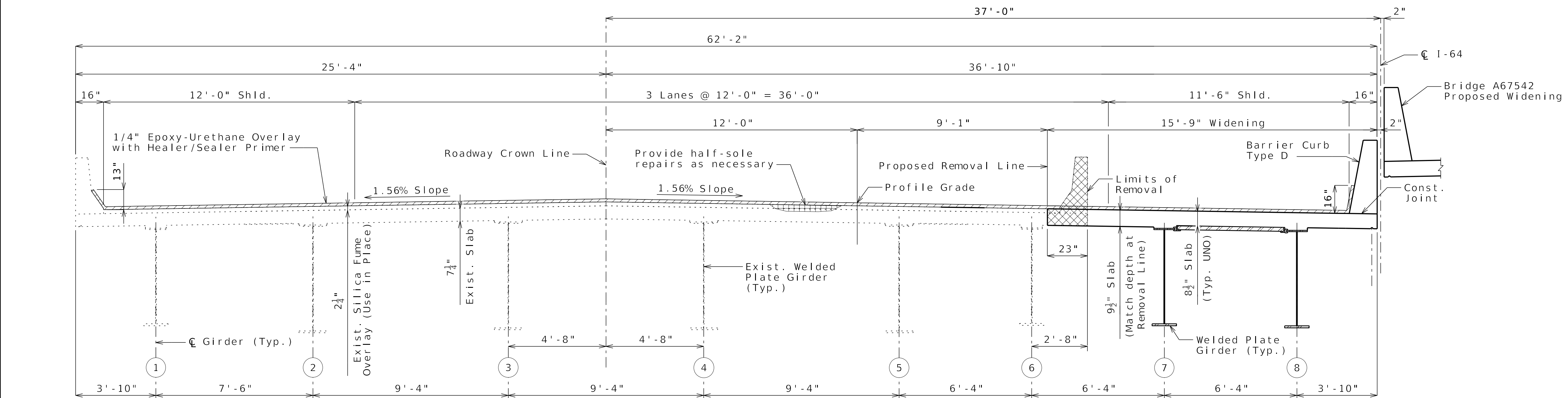


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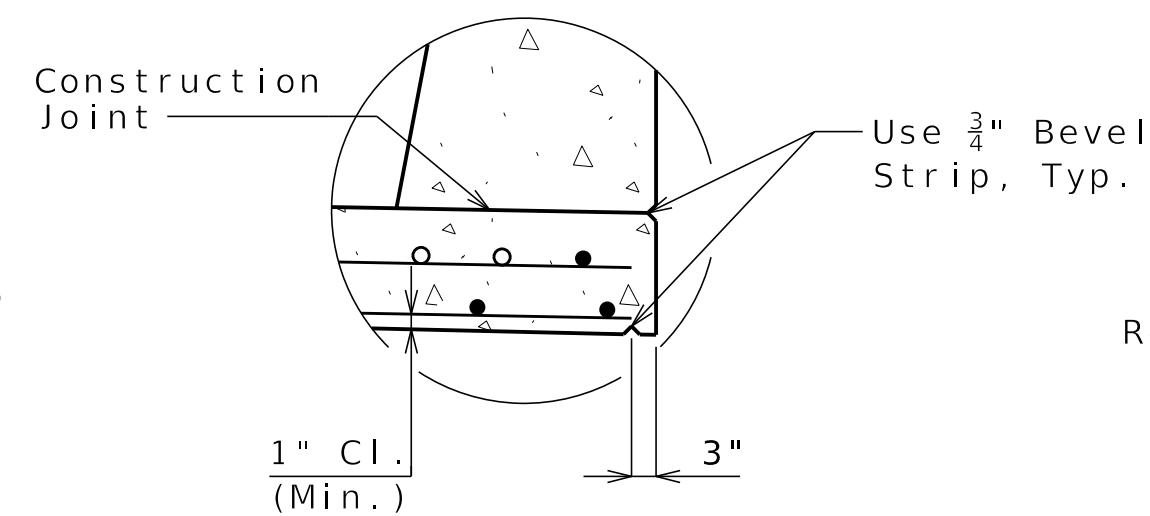
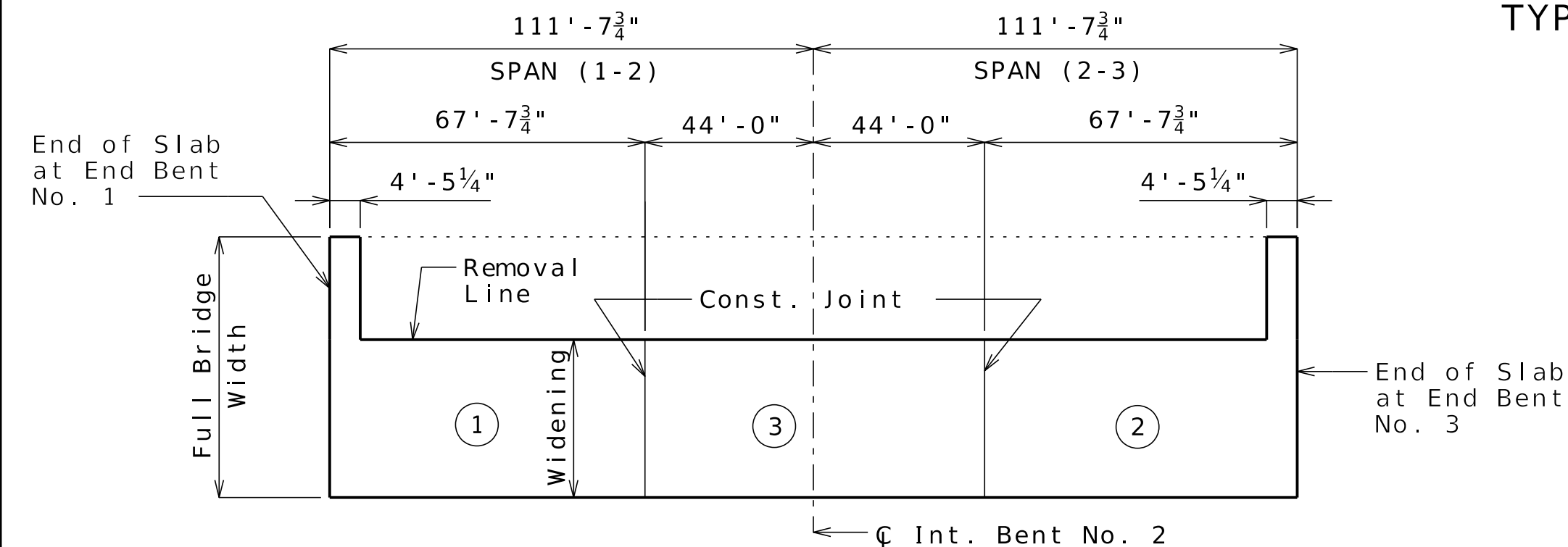
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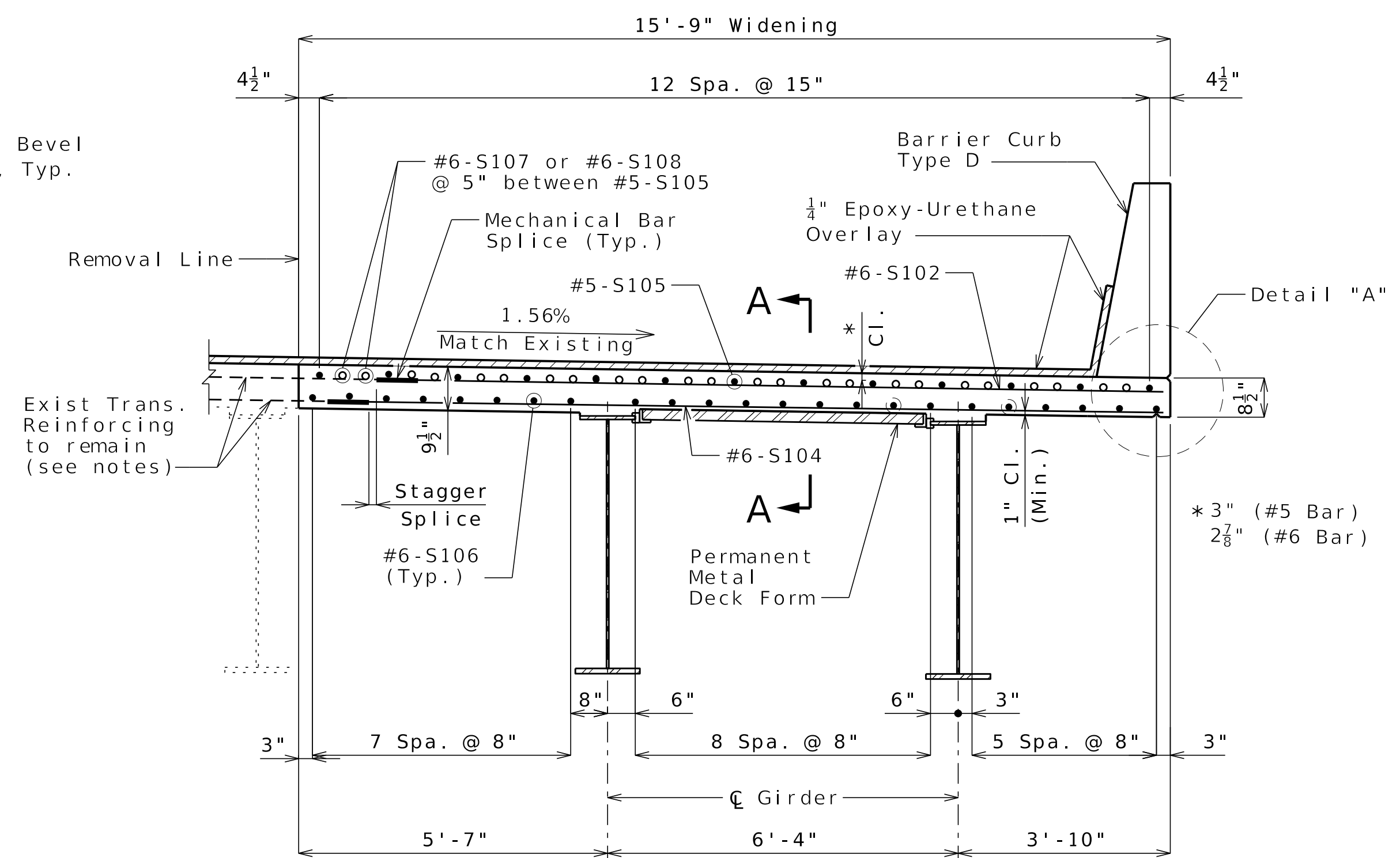


TYPICAL SECTION THRU SLAB



DETAIL "A"

Notes: Contractor may shift
bars as necessary to tie
in barrier bars.



WIDENING SECTION THRU SLAB
SECTION NEAR INTERMEDIATE BENT

Notes:

Safety Barrier Curb reinforcement not shown for clarity.

For Plan of Slab Showing Reinforcement, Slab Construction Joint, and additional notes, see Sheet No. 23.

For metal deck form notes, see General Notes.

Adequate length of existing transverse reinforcement shall be retained for mechanical bar splices. All concrete and pack rust to be removed prior to splicing to new reinforcement.

Mechanical bar splices shall be in accordance with Sec 710. Estimated 957 splices required.

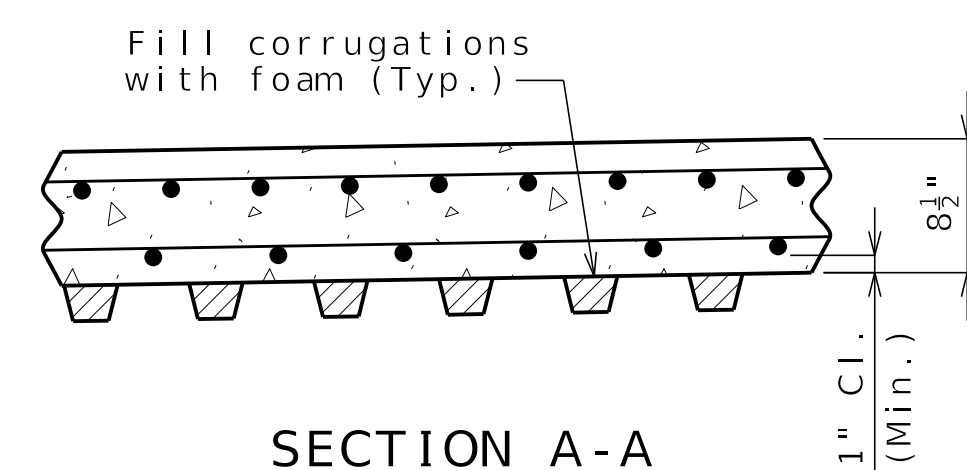
UNO denotes Unless Noted Otherwise.

	Sequence of Pours			Min. Rate of Pour Cu. Yds./Hr.	
	Direction			With Retarder	No Retarder
Basic Sequence	1	2	3	25	25
	Either Direction				
Alternate pours to the basic skip sequence are subject to the approval of the engineer in accordance with Sec 703.					
Alternate A Pours	1		3 + 2	39	65
	End to 3		1 to End		
Alternate B Pours	1 + 3 + 2			39	65
	End to End				

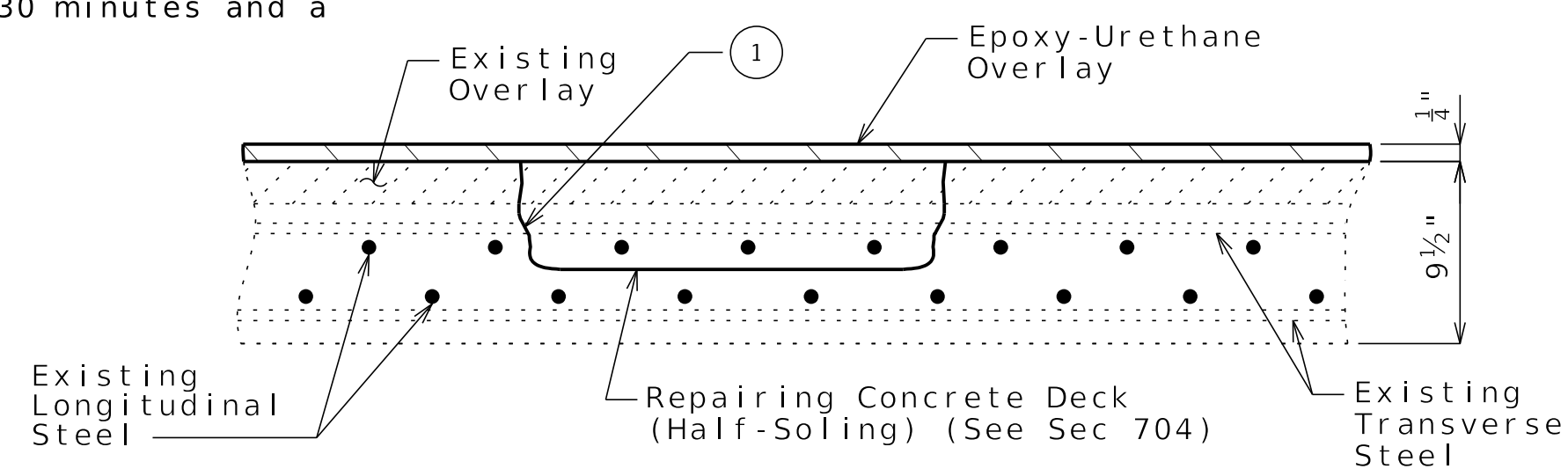
The contracotr shall furnish an approved retarder to retard the set of the concrete to 2.5 hours, and shall pour and satisfactorily finish the slab pours at the rate given.

The concrete diaphragm at End Bent No. 1 shall be poured a minimum of 30 minutes and a maximum of 2 hours before the slab is poured.

SLAB POURING SEQUENCE

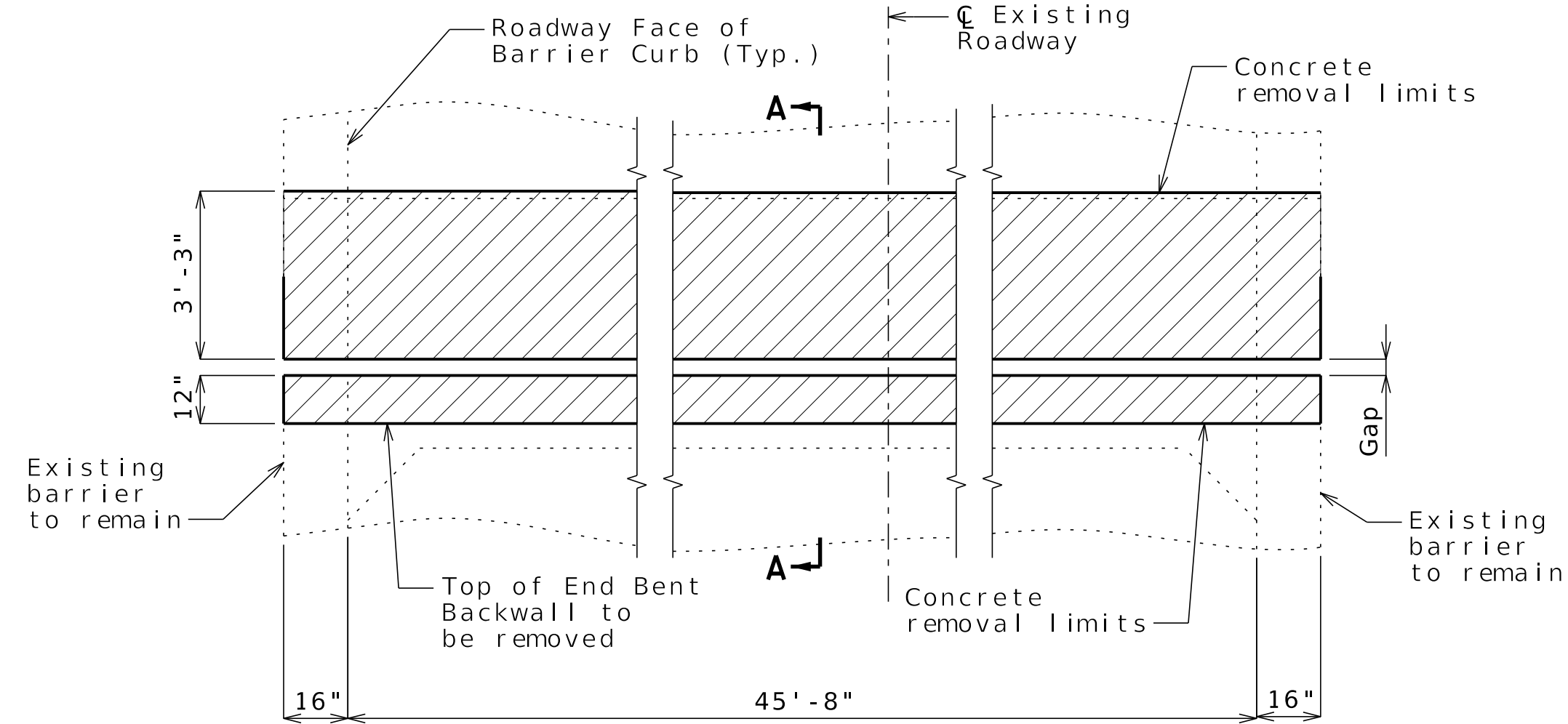


SECTION A-A

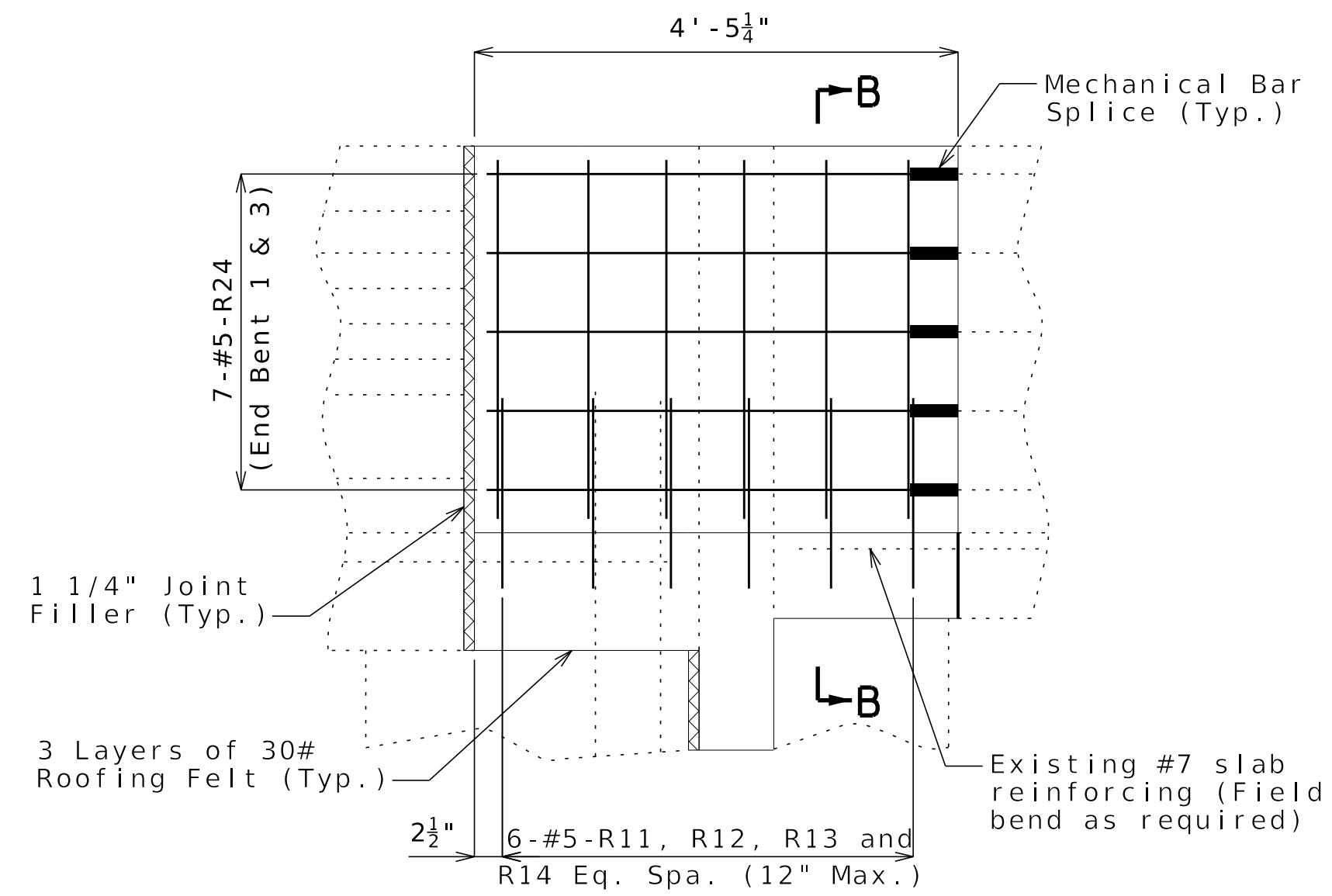


HALF-SOLED REPAIR

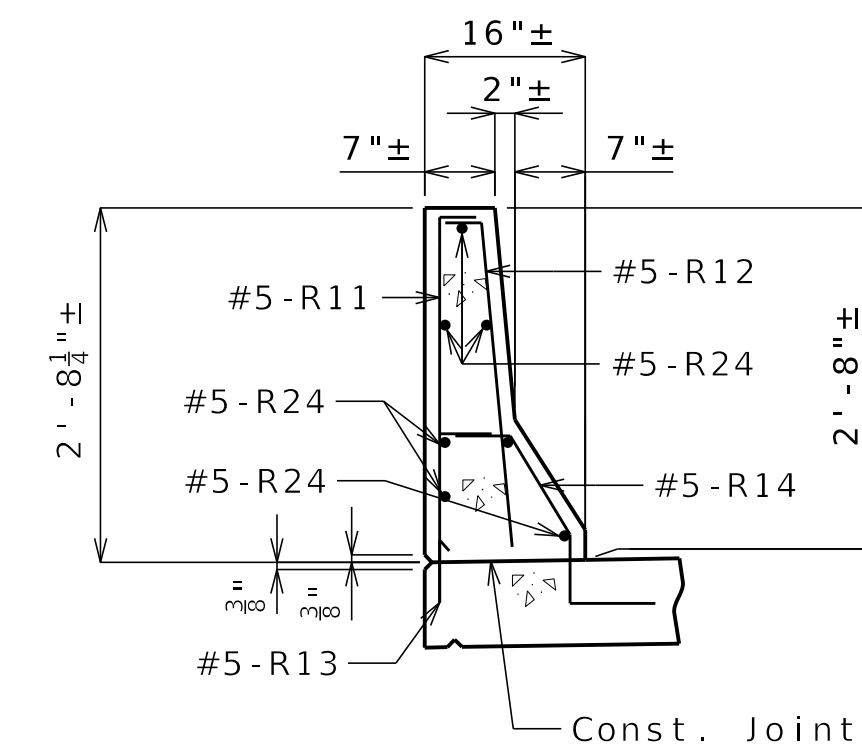
① One inch verticla side shall be established outside the deteriorated area. See Sec 704.



REMOVAL PLAN AT END BENT NO. 1
End Bent No. 3 Similar and Opposite Hand



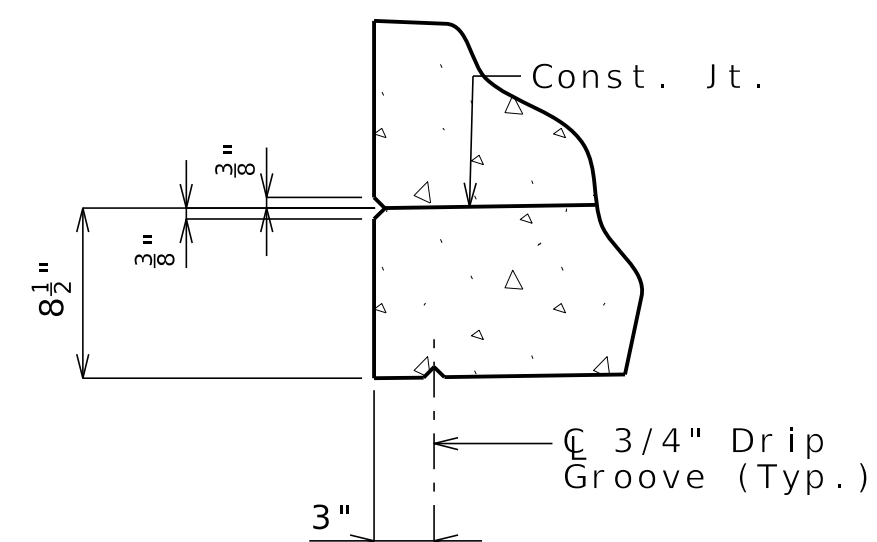
PART ELEVATION OF BARRIER
Slab bars not shown for clarity



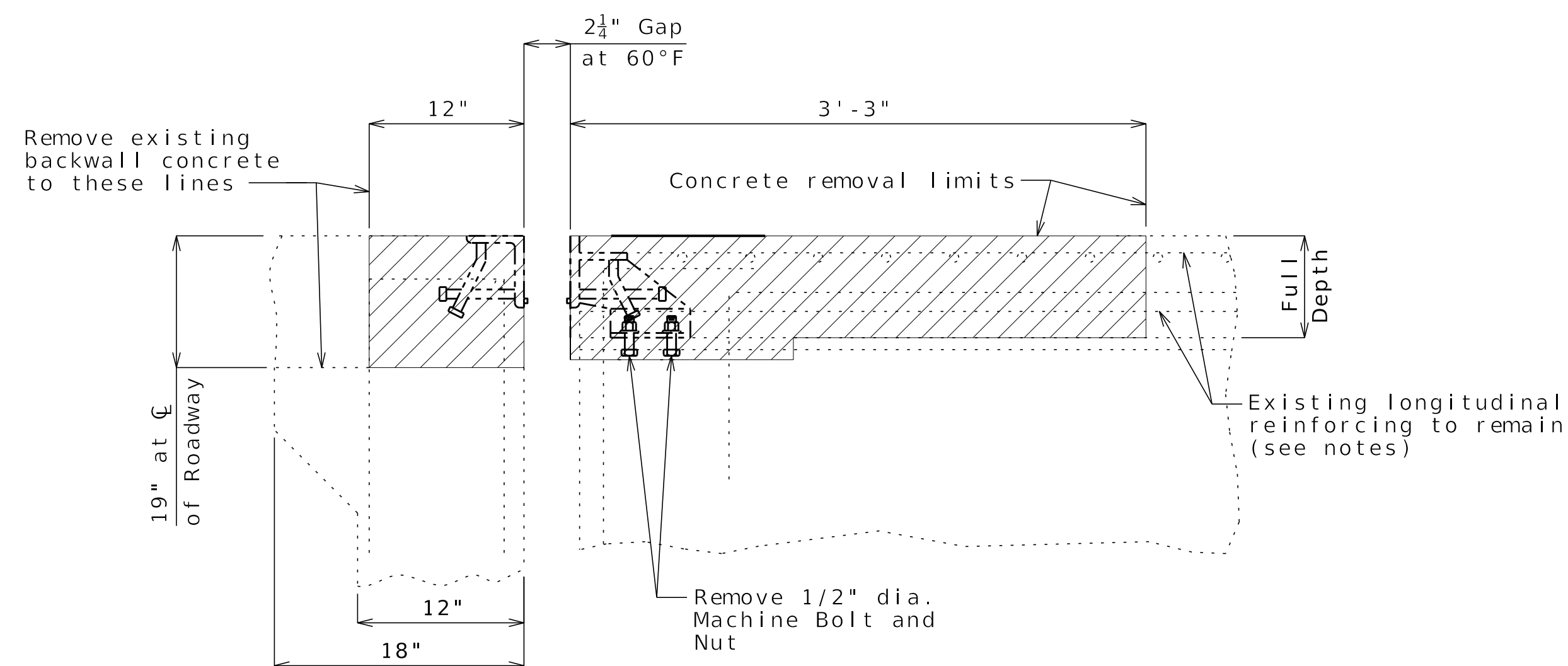
SECTION B - B

The cross-sectional area above the slab is 2.27 square feet.

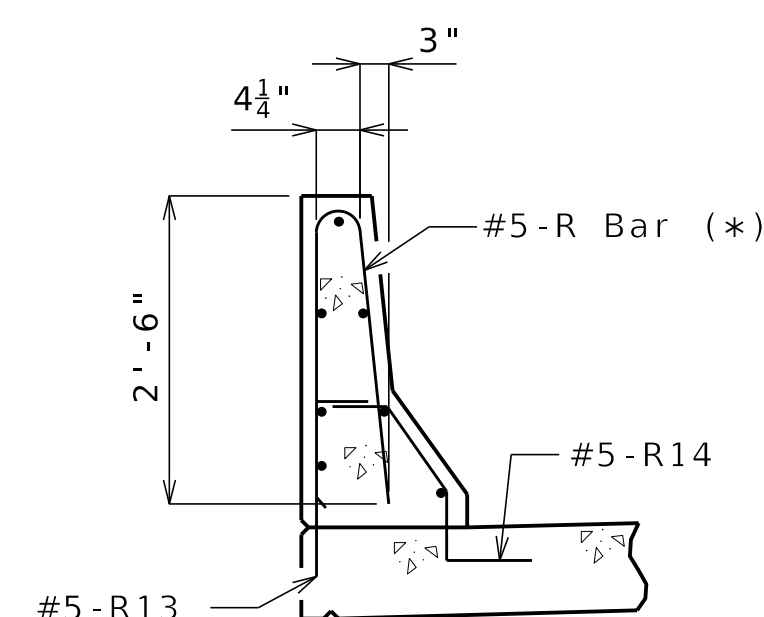
At the contractors option the R11 and R12 Bars can be substituted for a single bar. See this sheet for details.



DRIP GROOVE DETAIL



SECTION A-A



R-BAR PERMISSIBLE
ALTERNATE SHAPE

(*) The R11 and R12 bar combination may be furnished as one bar, as shown, at the contractor's option. (All dimensions are out to out.)

Notes:

Remove concrete in accordance with Sec 216.

Removal shall include removal of the existing expansion joint armor and anchorage as detailed.

Concrete removal to provide 1" minimum clearance beneath exposed reinforcing to remain. Removal Depth may be increased as needed to accommodate new anchorage requirements for the replacement joint as per the manufacturer's recommendations.

Any existing concrete traffic delineators on the barrier curb removed during the joint replacement process shall be replaced with like and kind.

Barrier curb to be built parallel to grade with barrier curb joints on superstructure. Barrier Curb on end bent shall be built normal to grade.

All exposed edges of barrier curb (Type B) shall match existing barrier curb edges.

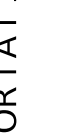
Any damage to the Existing Reinforcing Epoxy Coating shall be repaired according to Sec 710.

Concrete work shall be in accordance with Sec 704.

Adequate length of existing longitudinal reinforcement shall be retained for mechanical bar splices. All concrete and pack rust to be removed prior to splicing to new reinforcement.

Mechanical bar splices shall be in accordance with Sec 710.
Estimated 7 splices required (per location).

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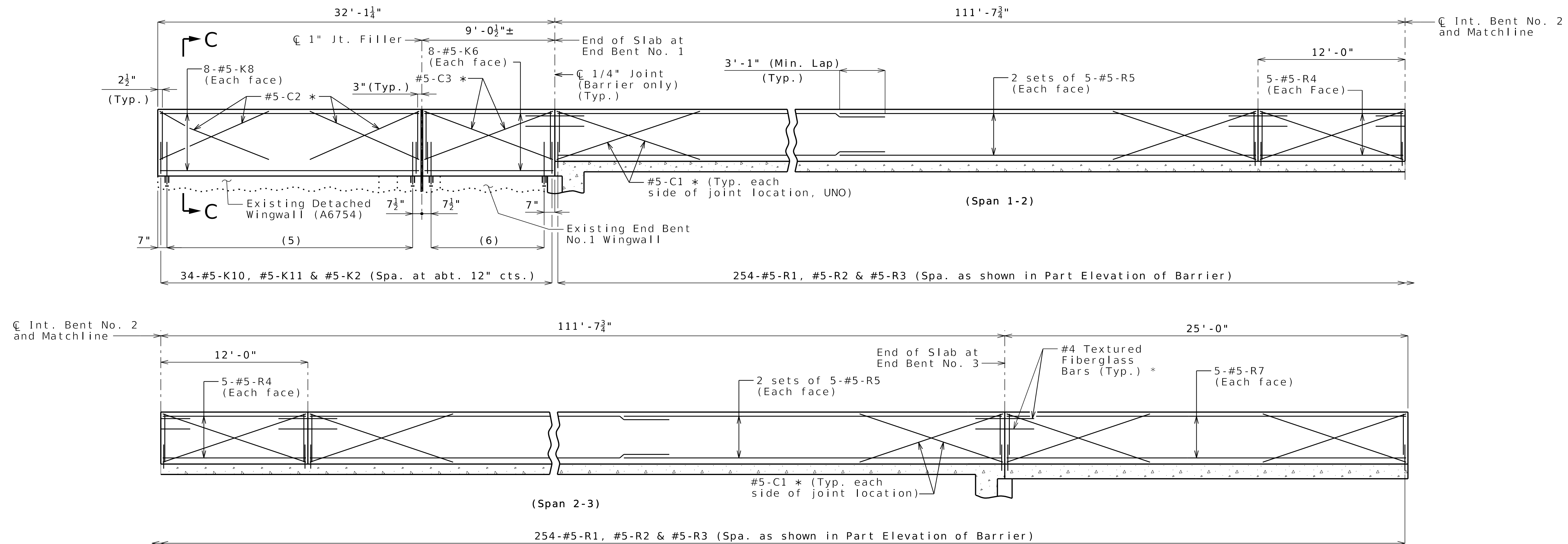
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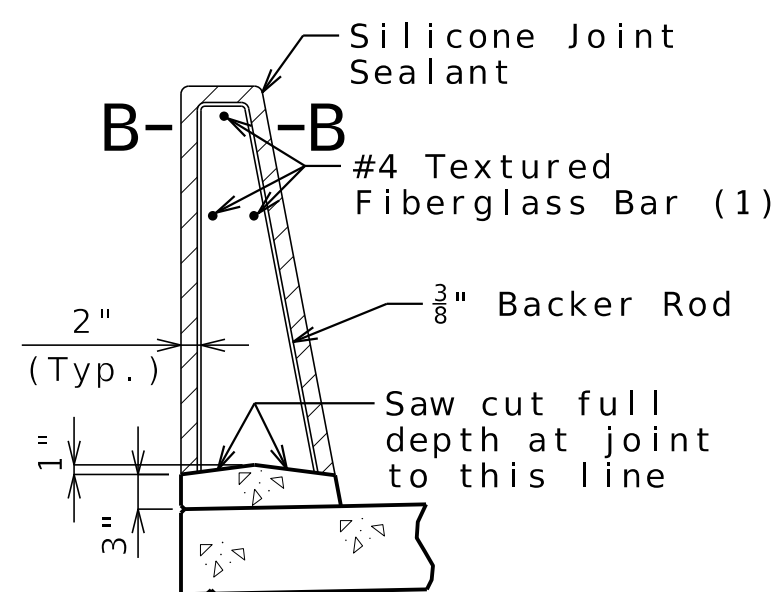
HNTB 715 KIRK DRIVE
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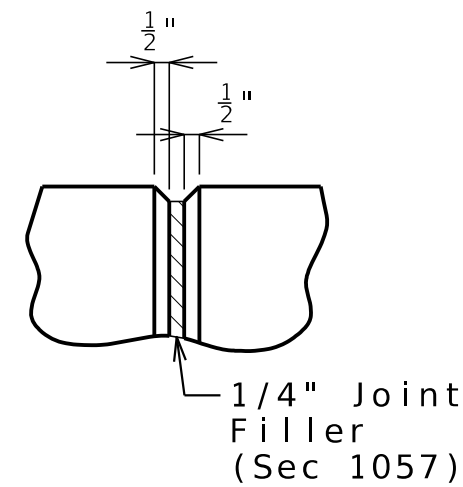


ELEVATION OF RIGHT BARRIER

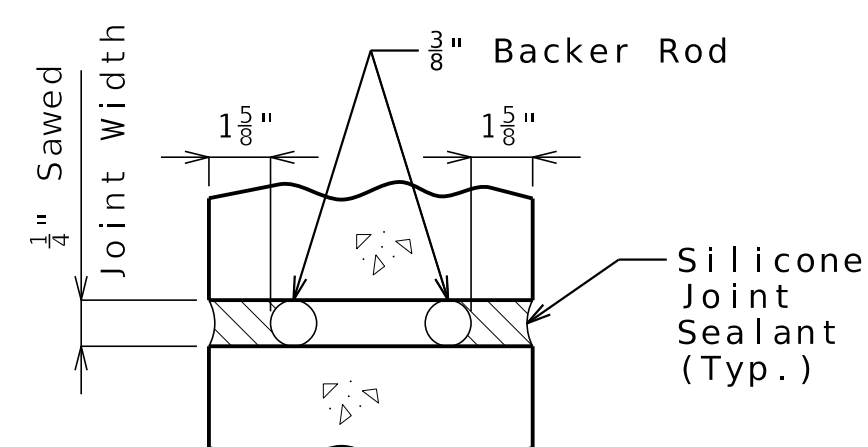
Longitudinal dimensions are horizontal.



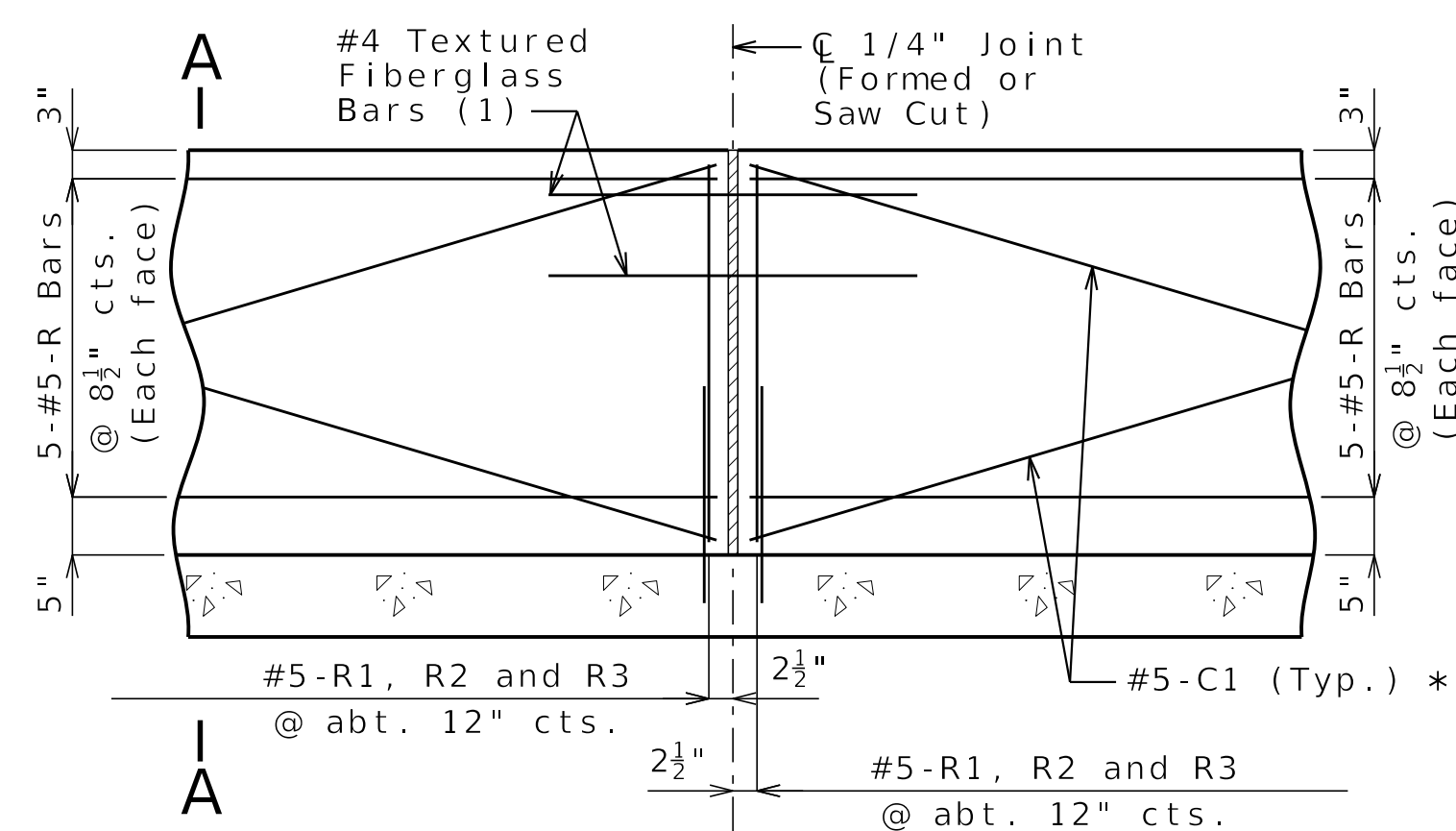
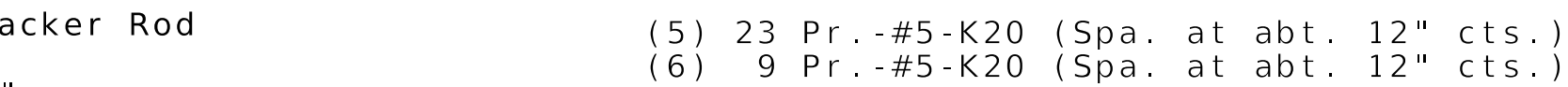
SECTION THRU
SAW CUT JOINT



PART ELEVATION
AT FORMED JOINT

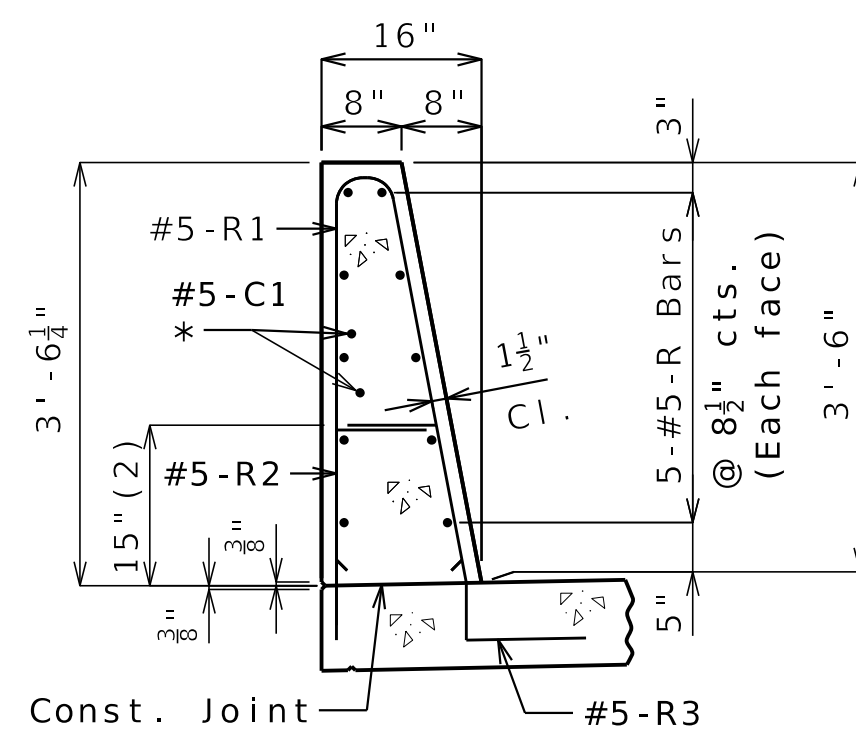


SECTION B-B



PART ELEVATION OF BARRIER

(1) Four feet long, centered on joint,
slip-formed option only

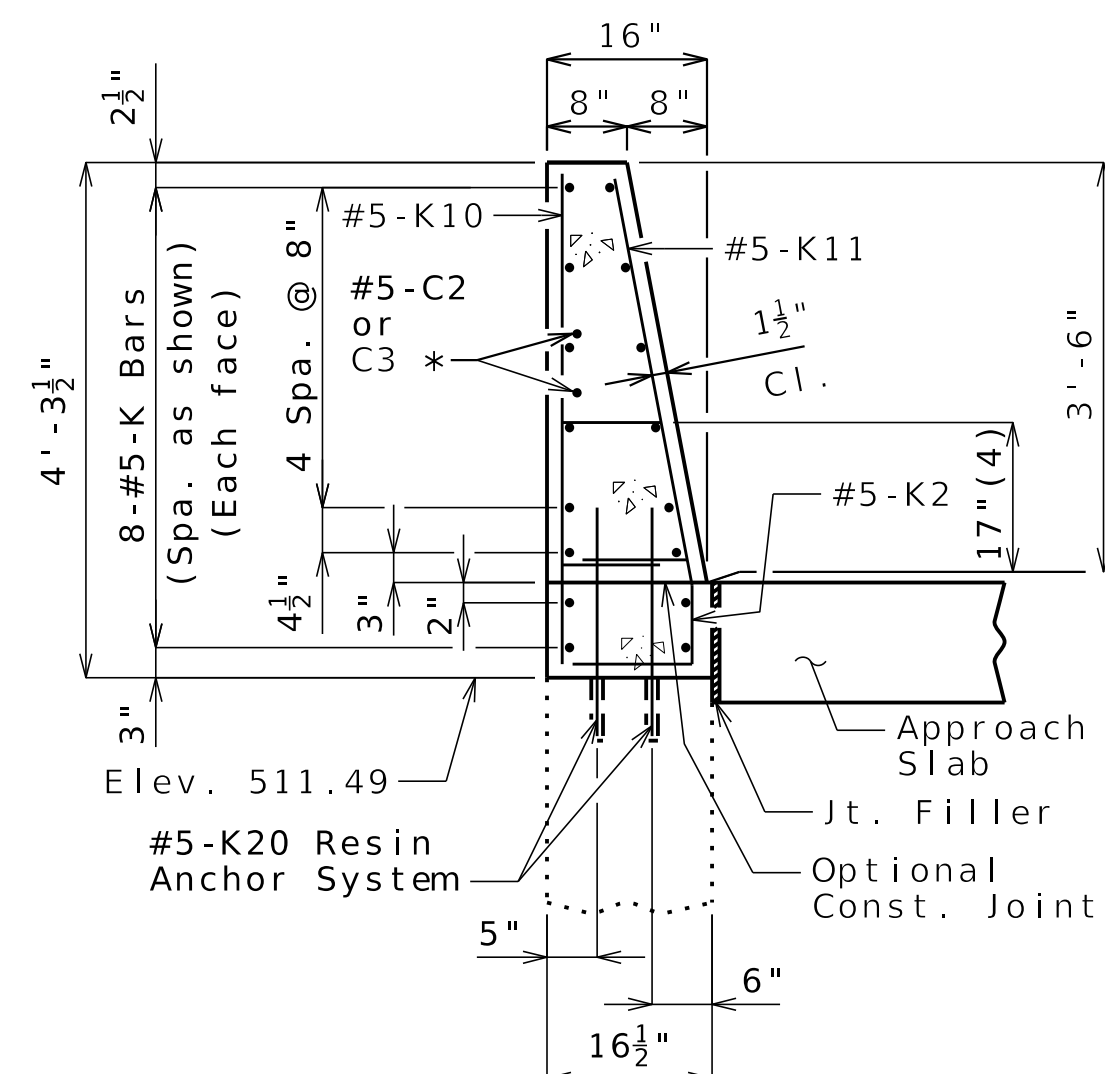


SECTION A-A

Use a minimum lap of 3'-1" for
#5 horizontal barrier bars.

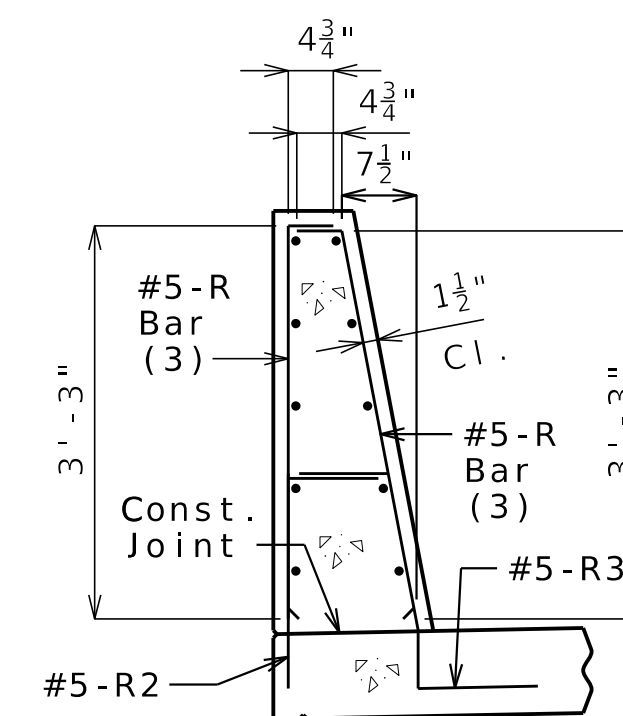
The cross-sectional area above the slab is 3.52 square feet.

(2) To top of bar



SECTION C-C

(4) To Top of bar



R-BAR PERMISSIBLE ALTERNATE SHAPE

(3) The R1 bar may be separated into two bars as shown, at the contractor's option, only when slip forming is not used. (All dimensions are out to out.)

General Notes:

* Slip-formed option only.

Conventional forming or slip forming may be used. Saw cut joints may be used with conventional forming.

Top of barrier shall be built parallel to grade and barrier joints normal to grade.

All exposed edges of barrier shall have either a 1/2-inch radius or a 3/8-inch bevel, unless otherwise noted.

Concrete in barrier shall be Class B-1.

Concrete traffic barrier delineators shall be placed on top of the barrier as shown on Missouri Standard Plan 617.10 and in accordance with Sec 617.

Joint sealant and backer rods shall be in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

For slip-formed option, both sides of barrier shall have a vertically broomed finish and the top shall have a transversely broomed finish.

UNO denotes Unless Noted Otherwise.

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I - 64	MO
DISTRICT	SHEET NO.
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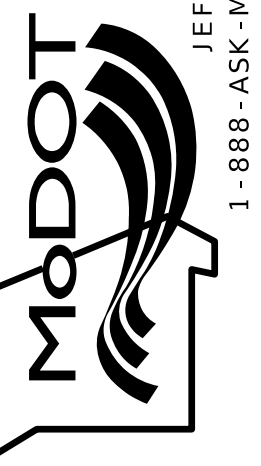
PROJECT NO.
BRIDGE NO. A14563

DATE	DESCRIPTION



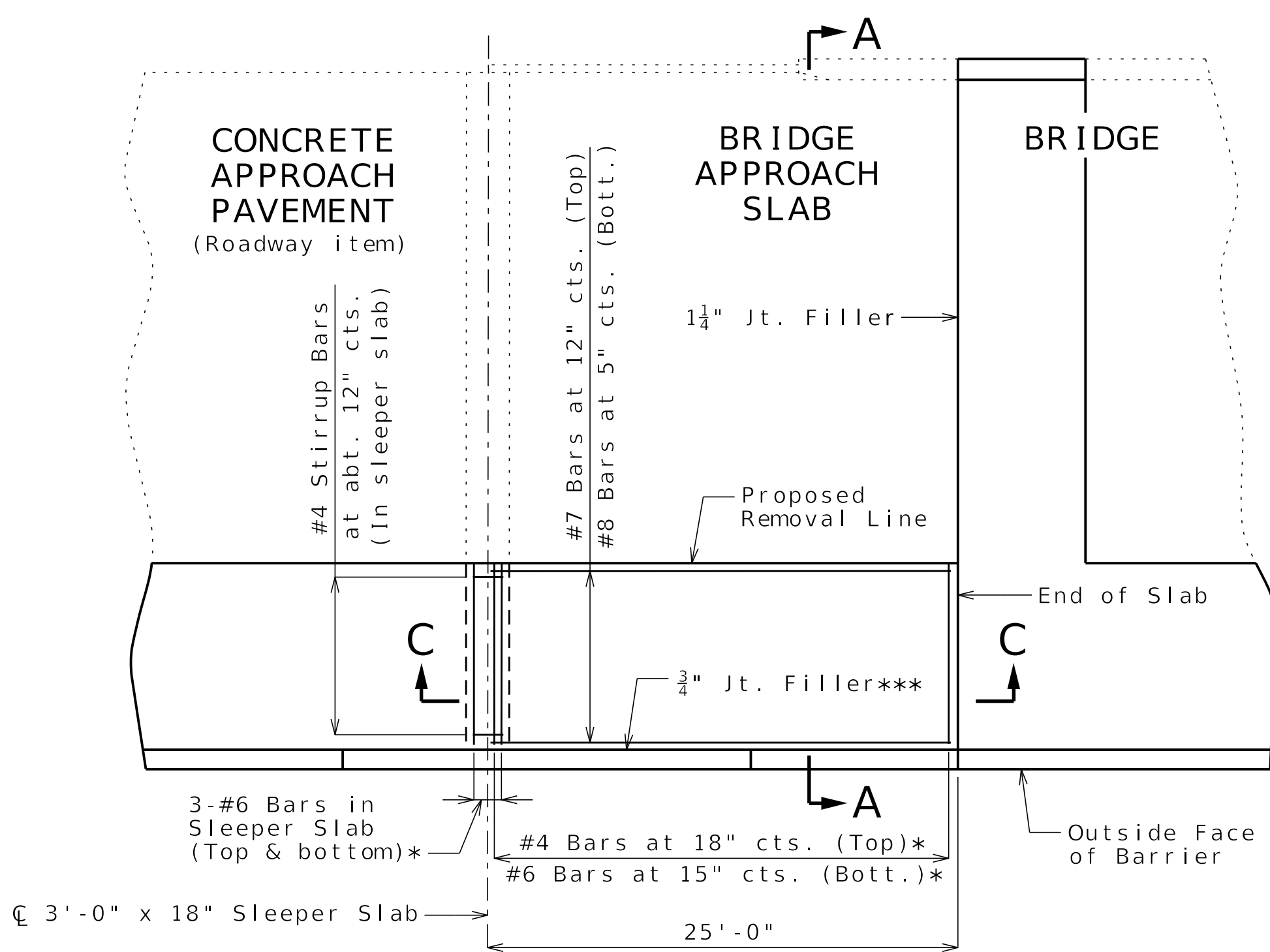
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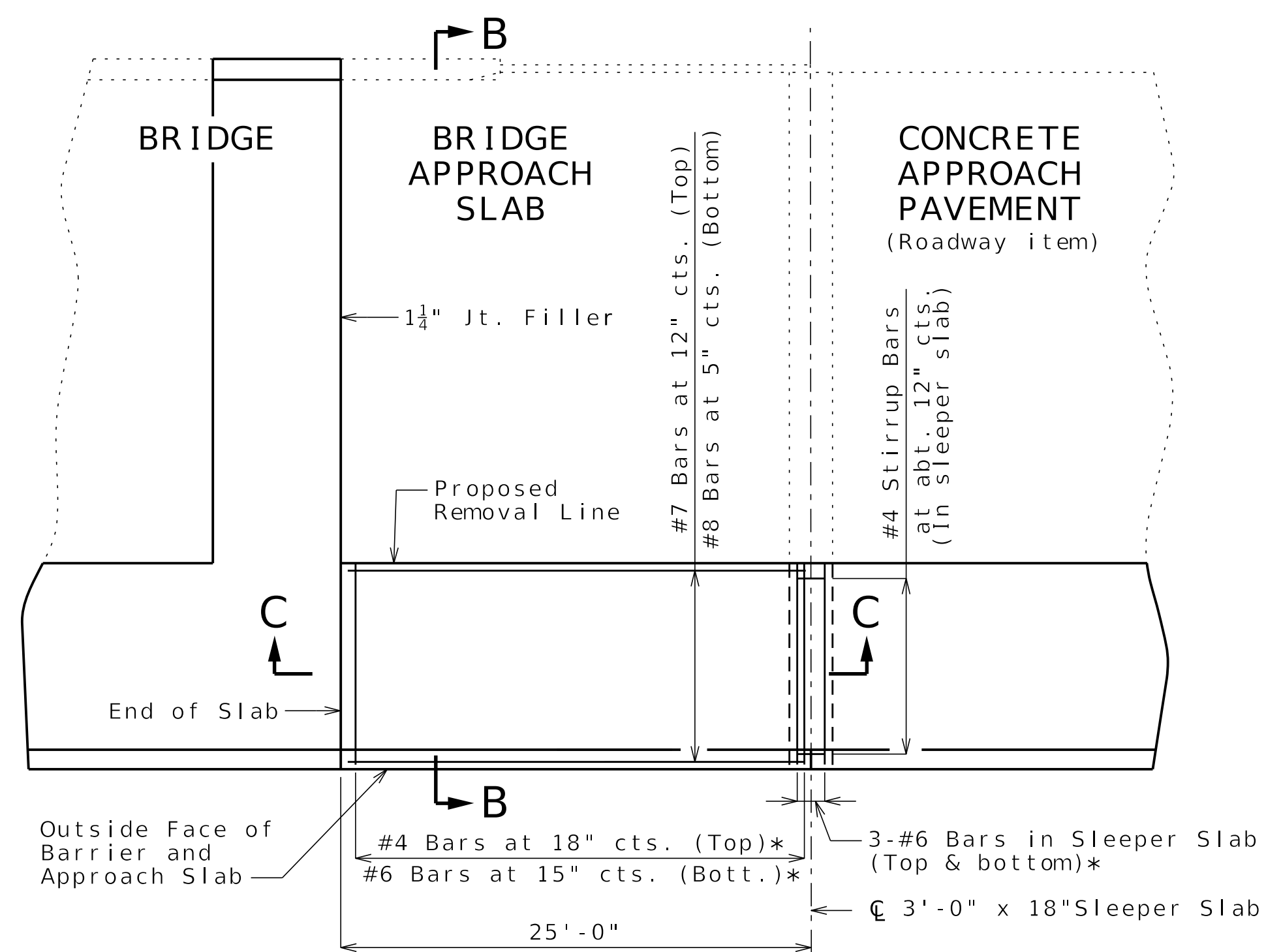


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PART PLAN SHOWING REINFORCEMENT AT END BENT NO. 1



PART PLAN SHOWING REINFORCEMENT AT END BENT NO. 3

General Notes:

All concrete for the bridge approach slab and sleeper slab shall be in accordance with Sec 503 ($f'c = 4,000$ psi).

The reinforcing steel in the bridge approach slab and the sleeper slab shall be epoxy coated Grade 60 with $f_y = 60,000$ psi.

Drain pipe may be either 6" diameter corrugated metallic-coated pipe underdrain, 4" diameter corrugated polyvinyl chloride (PVC) drain pipe, or 4" diameter corrugated polyethylene (PE) drain pipe.

Minimum clearance to reinforcing steel shall be 1 1/2",
unless otherwise shown.

The reinforcing steel in the bridge approach slab and the sleeper slab shall be continuous. The transverse reinforcing steel may be made continuous by providing a minimum lap splice of 29 inches for #5 bars and 44 inches for #6 bars, or by mechanical bar splice.

Mechanical bar splices shall be in accordance with Sec 710. Estimated 45 splices required (per approach slab).

All joint filler shall be in accordance with Sec 1057 for preformed fiber expansion joint filler except as noted.

The contractor shall pour and satisfactorily finish the bridge slab before placing the bridge approach slab.

Longitudinal construction joints in approach slab and sleeper slab shall be aligned with longitudinal construction joints in bridge slab.

For concrete approach pavement details, see roadway plans.

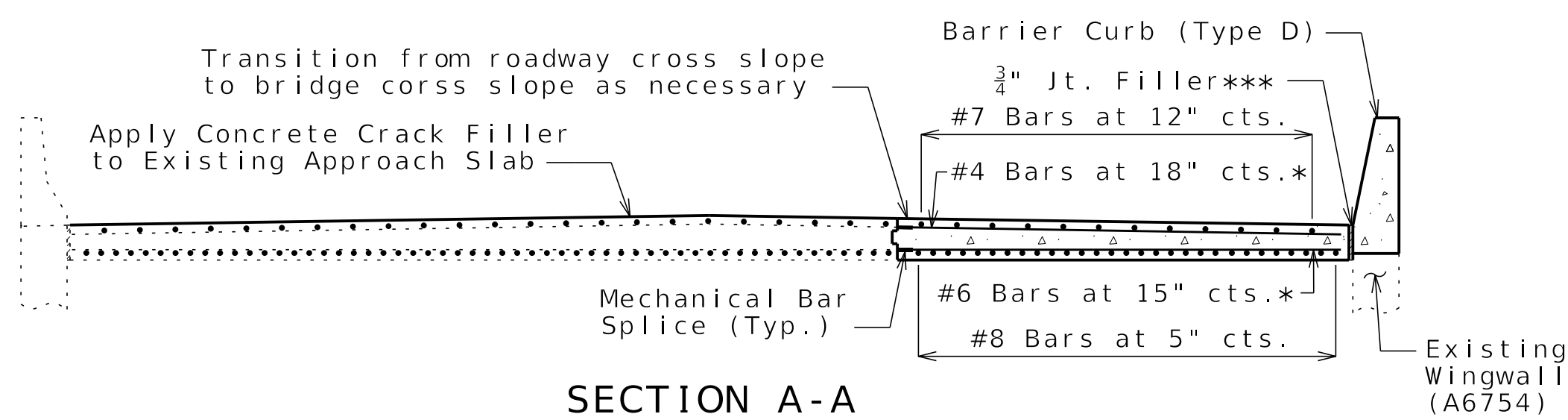
* Mechanical Bar Splice to existing reinforcing at proposed removal line.

**** Adequate length of existing reinforcement shall be retained for mechanical bar splices. All concrete and pack rust to be removed prior to splicing to new reinforcement.**

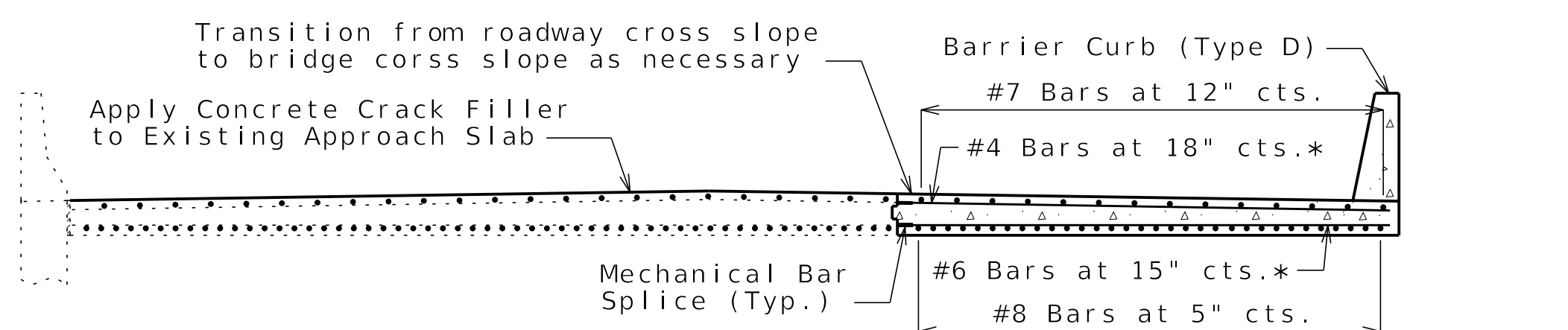
*** Seal joint between vertical face of approach slab and wing with sealant in accordance with Sec 717 for silicone joint sealant for saw cut and formed joints.

The open cell foam joint seal shall be installed according to the manufacturer's recommendations. The depth of the open cell foam joint shall not be less than the width of the seal.

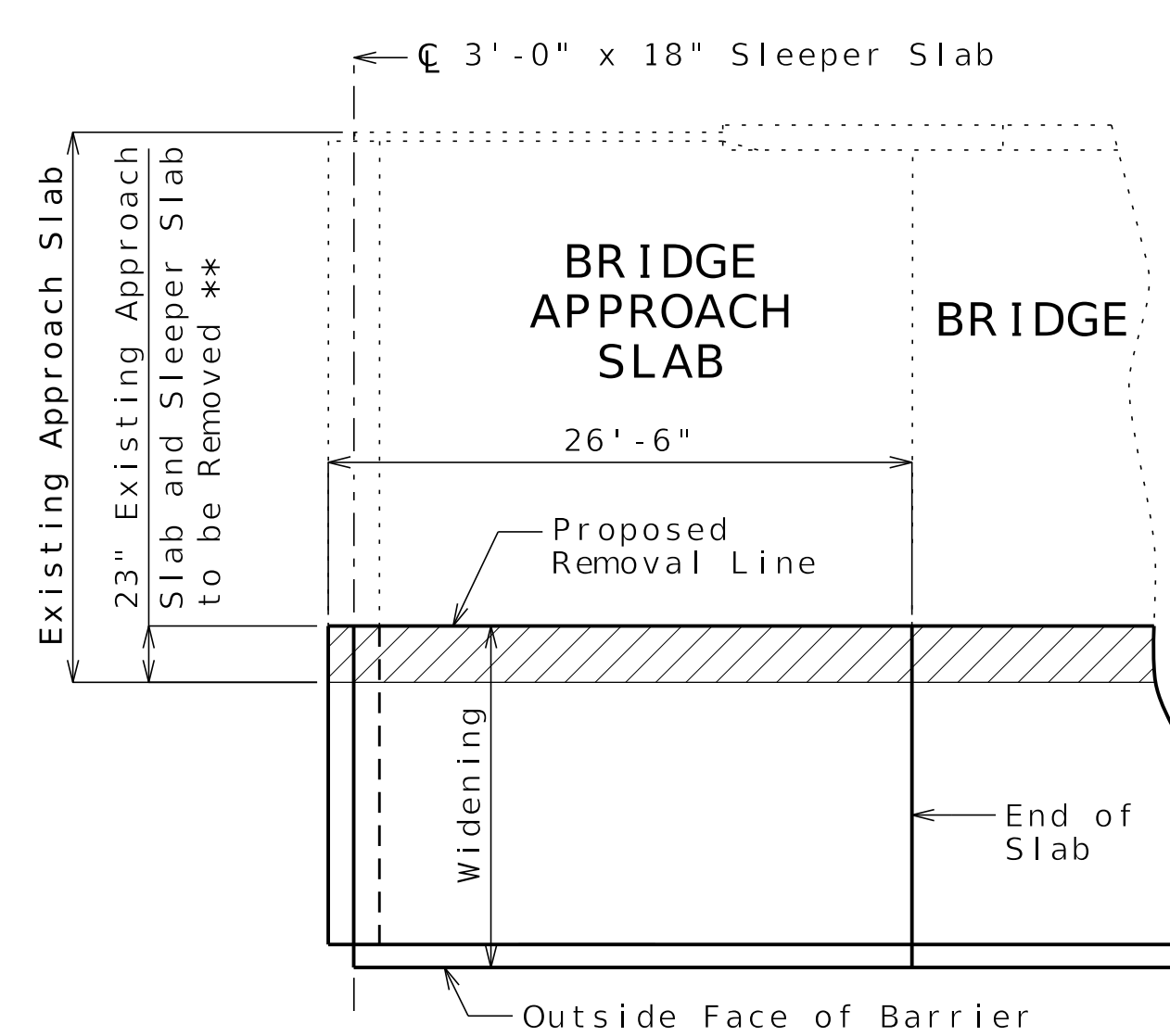
The installation temperature shall be taken as the actual air temperature averaged over the 24-hour period immediately preceding installation. Plan dimensions are based on installation at 60°F. The expansion gap shall be increased or decreased 1/8" for each 10°F fall or rise in temperature at the time of installation.



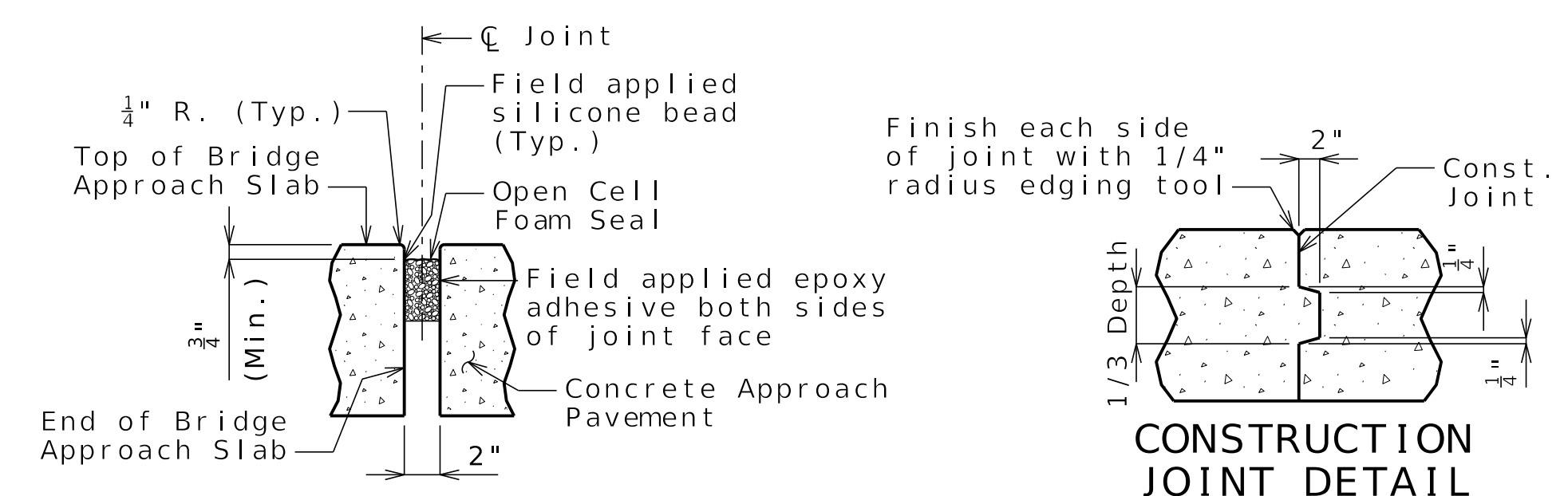
SECTION A-A



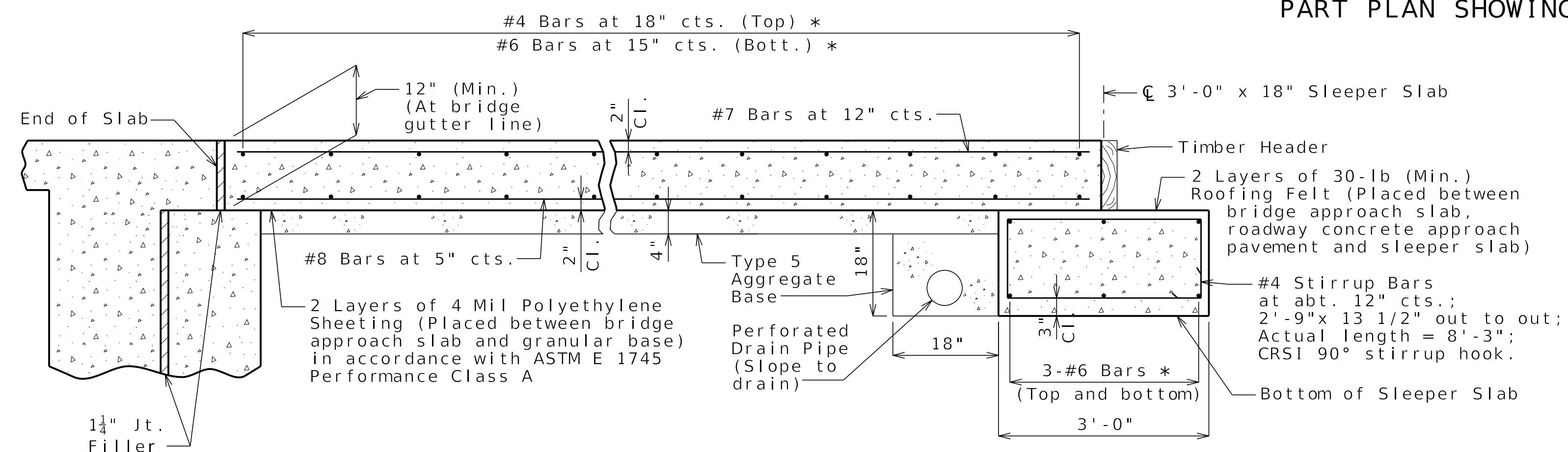
SECTION B-B



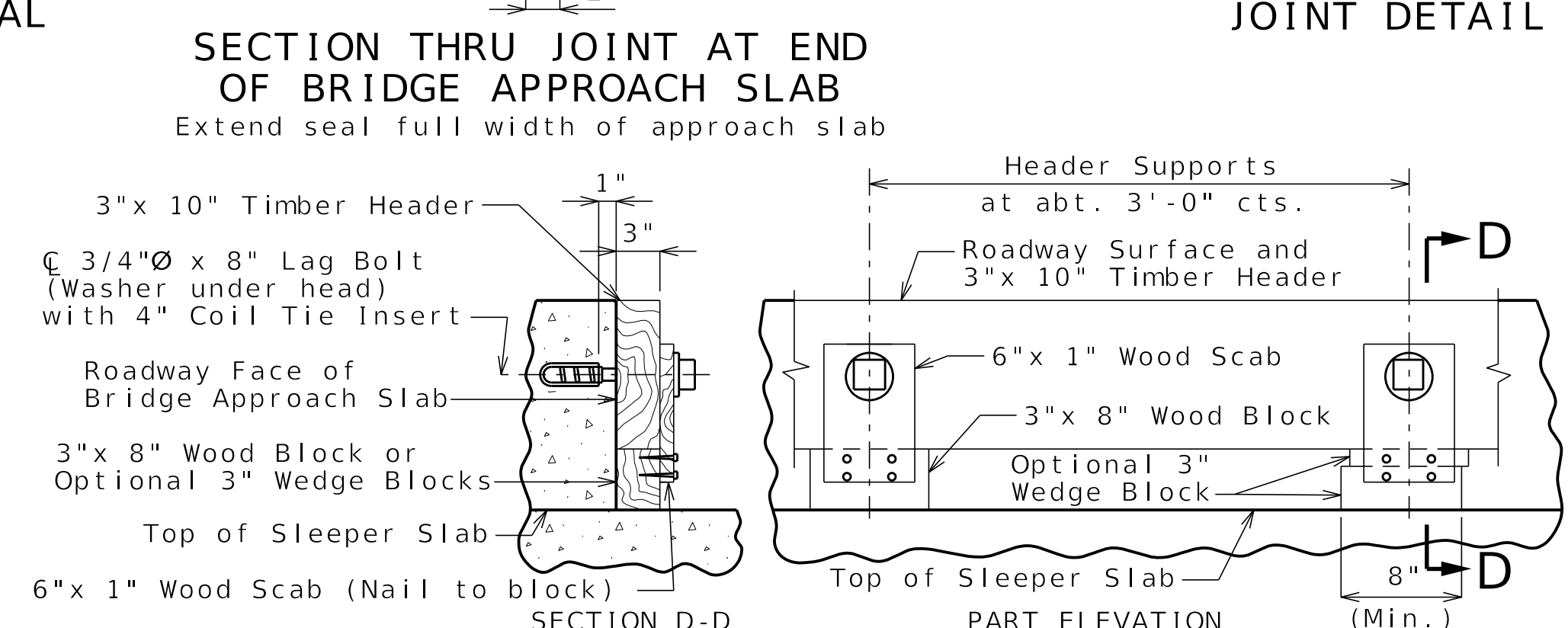
PART PLAN SHOWING REMOVAL



CONSTRUCTION JOINT DETAIL



SECTION C-C

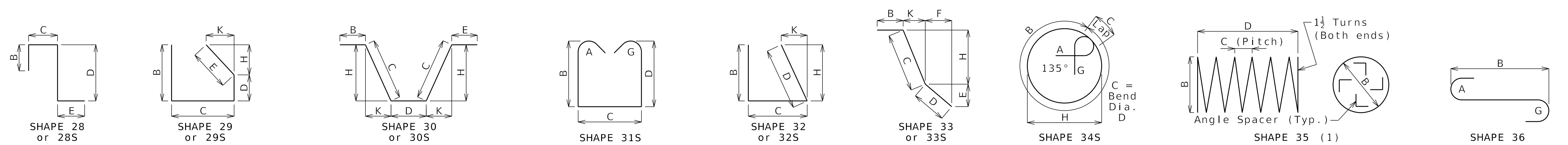
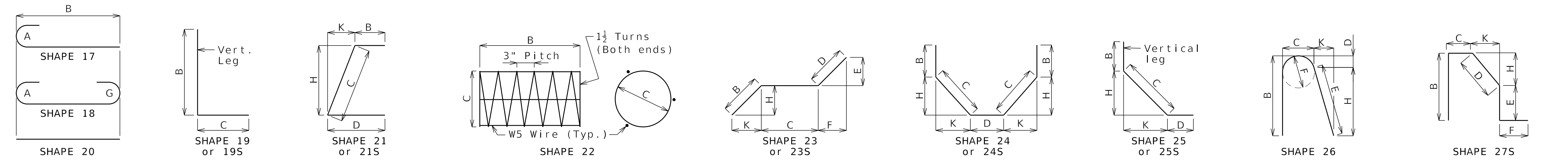
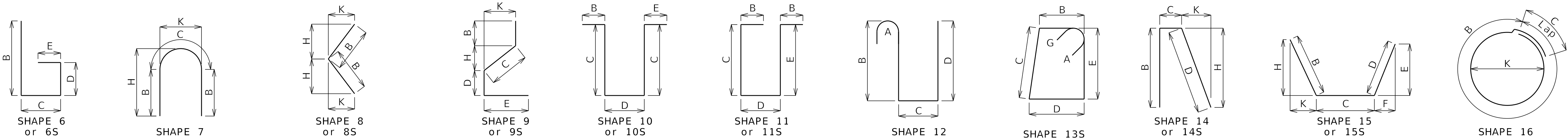


SECTION D-D PART ELEVATION
DETAILS OF TIMBER HEADER

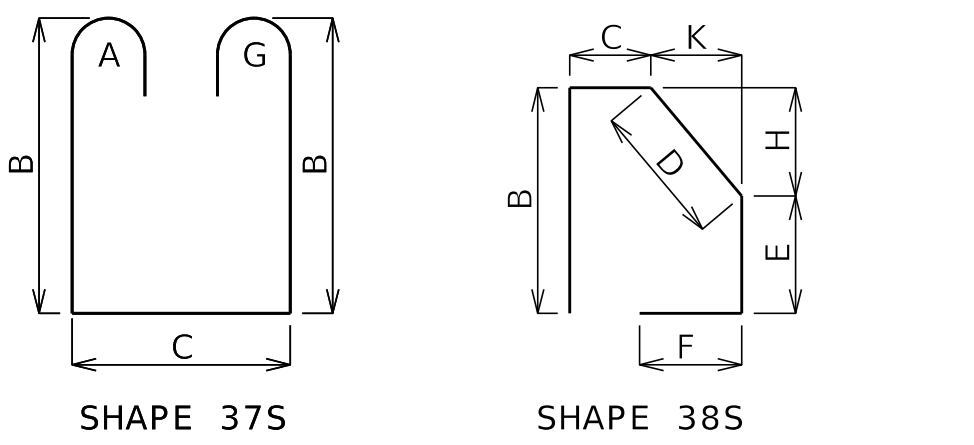
Remove timber header when concrete pavement is placed.

BRIDGE APPROACH SLAB (MAJOR)

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		105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
DATE PREPARED 5/6/2025		COUNTY ST. CHARLES	
ROUTE I - 64	STATE MO	JOB NO. J613033	
DISTRICT BR	SHEET NO. 27	CONTRACT ID.	
PROJECT NO.			
BRIDGE NO. A14563			
DESCRIPTION			
DATE			



Finished Bend Diameters D and Hook Dimensions						
Standard Pin Bend Shapes						
Size	Case	D	A or G		J	
			90°	180°	180°	
#4	1	3"	8"	6"	4"	
#5	1	3 3/4"	10"	7"	5"	
#6	1	4 1/2"	12"	8 1/4"	6"	
#7	2	5 1/4"	14"	9 3/4"	7"	
	3	7"	15"	11 1/2"	8 3/4"	
#8	2	6"	16"	11"	8"	
	3	8"	17"	13 1/4"	10"	
#9	1	9 1/2"	19 1/2"	15 1/2"	11 3/4"	
#10	1	10 3/4"	22"	17 1/2"	13 1/4"	
#11	1	12"	24 1/2"	19 1/2"	14 3/8"	
#14	1	18 1/4"	31 1/4"	27 1/2"	21 3/8"	
#18	1	24"	41 1/2"	36 1/4"	28 1/2"	
Stirrup Pin Bend Shapes (5)						
Size	Case	D	A or G		H	
			90°	135°	180°	180°
#4	2	2"	4 1/2"	4 1/2"	5"	2 7/8"
	3	3"	5"	5 1/4"	6"	3"
#5	2	2 1/2"	5 3/4"	5 3/4"	5 3/4"	3 3/4"
	3	3 3/4"	6 1/4"	6 1/4"	7"	3 5/8"
#6	1	4 1/2"	12"	7 3/4"	8 1/4"	4 5/8"
Applicable for all grades of steel.						
Case 1 applies to all reinforcement. Case 2 applies to all reinforcement except for galvanized bars. Case 3 applies to galvanized bars only.						



BENDING DIAGRAMS

All dimensions are out to out.

Shapes ending with an S shall be bent in accordance with stirrup pin bend shapes.

Unless otherwise noted, finished bending diameter D is the same for all bends of a shape.

(1) Shall be a deformed or plain spiral bar or wire.

Four angle or channel spacers are required for each column spiral. Spacers are to be placed on inside of spirals. Length and weight of column spirals do not include splices or spacers.

DATE PREPARED
5/6/2025

ROUTE
1-64

DISTRICT
BR

COUNTY
ST. CHARLES

JOB NO.
J613033

CONTRACT ID.

PROJECT NO.

BRIDGE NO.
A14563

DESCRIPTION

DATE

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

601 MONROE ST., SUITE 201 - JEFFERSON CITY, MO 65101
PHONE 872-630-3181
CERTIFICATE OF AUTHORITY
WWW.BARTLETTWEST.COM

Bill of Reinforcing Steel															
No. Req.	Size/ Mark	Location	Codes			Dimensions							Nom. Length	Actual Length	Weight
			C	SH	V	B ft in.	C ft in.	D ft in.	E ft in.	F ft in.	H ft in.	K ft in.			
		End Bent No. 1													
5	6 F123	Backwall *	E	23		8.00	3 1.00	12.25	8.63	8.63	5.63	5.63	4 9	4 8	35
14	6 H100	Diaphragm	E	20		31 7.50							31 8	31 8	666
4	6 H102	Diaphragm	E	20		31 8.00							31 8	31 8	190
21	6 H103	Diaphragm	E	20		9 0.00							9 0	9 0	284
21	6 H104	Diaphragm	E	20		6 0.00							6 0	6 0	189
8	6 H105	Diaphragm	E	20		7 3.00							7 3	7 3	87
7	6 H106	Diaphragm	E	20		2 8.00							2 8	2 8	28
7	6 H107	Diaphragm	E	20		2 9.00							2 9	2 9	29
2	6 H108	Diaphragm	E	20		21 7.50							21 8	21 8	65
3	6 H109	Diaphragm	E	20		6 0.00							6 0	6 0	27
2	6 H110	Diaphragm	E	20		2 0.00							2 0	2 0	6
1	6 H111	Diaphragm	E	20		6 6.00							6 6	6 6	10
1	6 H112	Diaphragm	E	20		5 4.00							5 4	5 4	8
2	6 H113	Diaphragm	E	20		4 1.00							4 1	4 1	12
2	6 H114	Diaphragm	E	20		3 6.00							3 6	3 6	11
2	6 H115	Diaphragm	E	20		17.00							1 5	1 5	4
12	6 H116	Pedestal *	E	19		18.00	12.00						2 6	2 4	42
16	6 H117	Pedestal *	E	19		12.00	12.00						2 0	1 10	44
10	6 H120	Backwall	E	20		12 4.38							12 4	12 4	185
4	6 H121	Backwall	E	20		9 8.75							9 9	9 9	59
20	6 H122	Backwall *	E	20		2 5.00							2 5	2 5	73
116	5 U100	Diaphragm	E	10S			13.13	4 1.63					6 4	6 1	736
26	5 U101	Backwall	E	10S			13.38	10.00					3 1	2 10	77
13	6 V100	Backwall *	E	19		2 3.00	9.63						3 1	2 11	57
13	6 V101	Backwall	E	20		8 1.25							8 1	8 1	158
13	6 V102	Backwall *	E	20		5 4.75							5 5	5 5	106
		End Bent No. 3													
12	6 H116	Pedestal *	E	19		18.00	12.00						2 6	2 4	42
16	6 H117	Pedestal *	E	19		12.00	12.00						2 0	1 10	44
14	6 H300	Diaphragm	E	20		31 8.50							31 9	31 9	668
4	6 H302	Diaphragm	E	20		38 1.00							38 1	38 1	229
21	6 H303	Diaphragm	E	20		9 0.00							9 0	9 0	284
21	6 H304	Diaphragm	E	20		6 0.00							6 0	6 0	189
7	6 H305	Diaphragm	E	20		7 3.00							7 3	7 3	76
7	6 H306	Diaphragm	E	20		2 8.00							2 8	2 8	28
7	6 H307	Diaphragm	E	20		2 10.00							2 10	2 10	30
1	6 H308	Diaphragm	E	20		21 7.63							21 8	21 8	33
3	6 H309	Diaphragm	E	20		9 0.00							9 0	9 0	41
2	6 H310	Diaphragm	E	20		2 0.00							2 0	2 0	6
1	6 H311	Diaphragm	E	20		6 6.00							6 6	6 6	10
2	6 H312	Diaphragm	E	20		4 1.00							4 1	4 1	12
2	6 H313	Diaphragm	E	20		3 6.00							3 6	3 6	11
2	6 H314	Diaphragm	E	20		19.50							1 8	1 8	5
12	6 H320	Backwall	E	20		13 6.00							13 6	13 6	243
10	6 H322	Backwall *	E	20		2 5.00							2 5	2 5	36
10	4 H323	Backwall	E	20		2 3.00							2 3	2 3	15
120	5 U300	Diaphragm	E	10S			13.13	4 1.63					6 4	6 1	761
30	5 U301	Backwall	E	10S			13.38	10.00					3 1	2 10	89
15	6 V300	Backwall *	E	19		2 3.00	9.63						3 1	2 11	66
15	6 V301	Backwall	E	20		6 10.50							6 11	6 11	156
17	5 V302	Backwall *	E	20		5 5.00							5 5	5 5	96
2	5 V303	Backwall *	E	19		5 5.00	2 2.00						7 7	7 5	15

Nominal lengths are based on out to out dimensions shown in bending diagrams and are listed to the nearest inch for fabricator's use. Actual lengths are measured along centerline bar to the nearest inch. Weights are based on actual lengths.

For bending diagrams, see Sheet No. 28.
Detailed APR 2025
Checked APR 2025

Codes: C = Required coatings, where E = Epoxy Coated and G = Galvanized.
SH = Required shape, see bending diagrams.
V = Sets of varied bars and number of bars of each length. Bar
dimensions vary in equal increments between dimensions shown on this
line and the following line and the actual length dimension shown on
this line and the following line vary by the specified increment.

All bars shall be Grade 60.

* Resin Anchor System

BILL OF REINFORCING STEEL (1 OF 1)

Bill of Reinforcing Steel																				
No. Req.	Size/ Mark	Location	Codes			Dimensions										Nom. Length		Actual Length		Weight
						B		C		D		E		F						
			C	SH	V	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	ft	in.	
		Slab																		
36	6	S101	E	20		32	6.00									32	6	32	6	1757
428	6	S102	E	20		15	7.00									15	7	15	7	10018
36	6	S103	E	20		32	11.00									32	11	32	11	1780
428	6	S104	E	20		15	7.00									15	7	15	7	10018
52	5	S105	E	20		57	9.00									57	9	57	9	3132
92	6	S106	E	20		58	9.00									58	9	58	9	8118
24	6	S107	E	20		48	0.00									48	0	48	0	1730
24	6	S108	E	20		28	4.00									28	4	28	4	1021
86	5	S109	E	20		4	3.00									4	3	4	3	381
116	6	S110	E	20		4	3.00									4	3	4	3	740
		Barrier																		
254	5	R1	E	26		3	3.00	5.50	2.25	3	1.38	5.50	3	0.75	6.75	6	10	6	9	1788
254	5	R2	E	19S			20.50	9.50								2	6	2	5	640
254	5	R3	E	27S				9.50	15.25		5.00	12.00		15.00	3.00	3	6	3	4	883
20	5	R4	E	20		11	9.00									11	9	11	9	245
40	5	R5	E	20		57	5.00									57	5	57	5	2395
10	5	R7	E	20		24	9.00									24	9	24	9	258
12	5	R11	E	19S		2	5.00	3.50								2	9	2	7	32
12	5	R12	E	15S		2	6.25	3.50					2	6.13	3.00	2	10	2	9	34
12	5	R13	E	19S			17.00	6.00								1	11	1	10	23
12	5	R14	E	27S				6.00	11.13	7.00	12.00		9.13	6.38		3	0	2	10	35
14	5	R24	E	20		4	3.00									4	3	4	3	62
34	5	K2	E	38S		2	1.00	9.25	14.50	10.75	10.00		14.25	2.75		5	10	5	6	195
16	5	K6	E	20		8	9.00									8	9	8	9	146
16	5	K8	E	20		22	9.00									22	9	22	9	380
34	5	K10	E	19S		3	3.00	10.00								4	1	4	0	142
34	5	K11	E	21S				3	3.00	10.00			3	2.25	7.75	4	1	3	11	139
64	5	K20	E	20		2	6.00									2	6	2	6	167
16	5	C1	E	20		12	0.00									12	0	12	0	200
4	5	C2	E	20		11	3.00									11	3	11	3	47
2	5	C3	E	20		8	9.00									8	9	8	9	18
		Totals																		
	5		E																	11344
	6		E																	35183
		TOTAL																		
		TOTAL	E																	46527
																		TOTAL		46527
		MBS Totals																		
36		#4 To #4																		
58		#4 To #5																		
42		#5 To #5																		
72		#5 To #6																		
954		#6 To #6																		
											</									

HNTB 715 KIRK DRIVE KANSAS CITY, MO 64105-1310 CERTIFICATE OF AUTHORITY NO. 001270		 IMPROVE 70 ALLIANCE	 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	DATE	DESCRIPTION
Bartlett & West 601 MONROE ST. SUITE 201 - JEFFERSON CITY, MO 65101 CERTIFICATE OF AUTHORITY NO. 00167 - ENGINEERING WWW.BARTLETTWEST.COM		 IMPROVE 70 ALLIANCE	 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION	DATE	DESCRIPTION