

KCT Railroad M.P. 4.360 (5) Max. Top of Rail within bridge limits:
Div.: Kansas KCT RR Future Track = 846.18
Line Segment 1001 KCT RR Track No. ML2 = 846.18
Sub Div.: KCT Railroad KCT RR Track No. ML3 = 846.16
(DOT Crossing 979178F) KCT RR Track No. ML4 = 846.23
KCT RR Track No. 109 = 845.54

@ C of Proposed I-70:
Lat.: 39.092706
Long.: -94.5432025
"Timetable East" is
heading east.
"Timetable West" is
heading west into
Union Station.

Beg. Sta. 443+40.89
Pr. Gr. Elev. 873.53
Fill Face
End Bent No. 1

(6) Future WB I-70
widening project has not
yet been designed.
Conceptual suggestions
for future widening of
the substructure are shown
for information only.
Future WB I-70 widening
project will be required
to meet the Guidelines for
Railroad Grade Separation
Projects including the
minimum vertical clear
over the KCT railroad and
placement of substructure
and foundation elements.

MoDOT Lighting
Guardrail
Bridge
Approach
Slab (Major)

13°20'52"
(Typ. U.N.O.)
C I-70 &
Profile Grade Line

Exist. Bridge
A0304
Proposed Drainage
Exist. Bridge
A0303

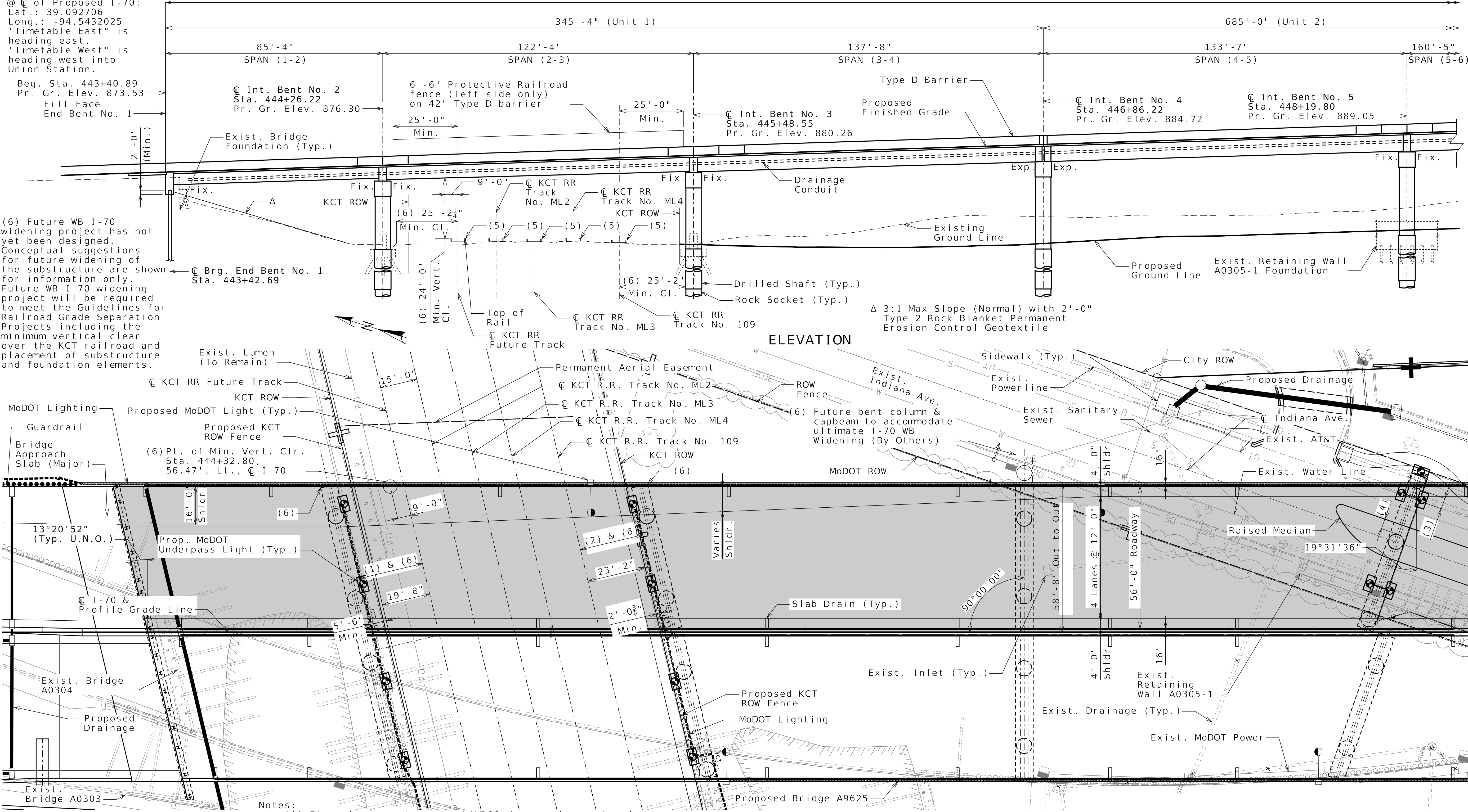
Minimum Horizontal Clearance:
(1) 25'-2 1/4"
(2) 25'-2"
(3) 4'-3 3/8"
(4) 4'-0" (Typ. along raised median)

Detailed FEB 2025
Checked MAR 2025

Notes:
All Elevations are based on NAVD88 datum unless otherwise noted.
All dimensions are horizontal.
All dimensions in elevation view relative to KCT RR are measured
normal to C tracks.
Bents 1 thru 3 are parallel.
Bent 4 is normal to C I-70.
Existing Bridges A0303, A0304 and A0305 and existing retaining walls to be
removed in accordance with Sec. 216. Existing structures & foundations shown
may not represent what is left in place after removal.
For elevations of drilled shafts and rock sockets, see Sheets No.
B09-12 thru B09-30.
For boring locations, see Sheet No. B09-06.
See Civil Package 3: USPS Facility for Indiana Ave. typical section details.
See Civil Package 6: I-70 Mainline for 18th St. typical section and underpass
lighting details.
Note: This drawing is not to scale. Follow dimensions.

(85.3'-122.3'-137.7') Prestressed Concrete NU Girder Spans (Unit 1)
(133.6'-160.4'-144.0'-131.0'-116.0') Prestressed Concrete NU Girder Spans (Unit 2)

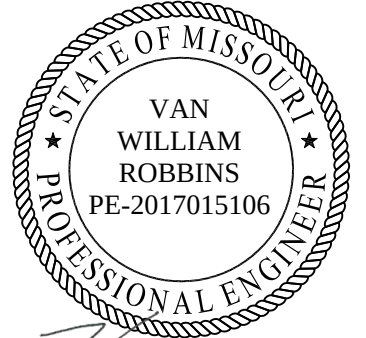
1030'-4" (Measured along C I-70)



PLAN

GENERAL PLAN AND ELEVATION

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



Van W. Robbins
06-03-25

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO
DISTRICT SHEET NO.
BR B09-02

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	06/02/25

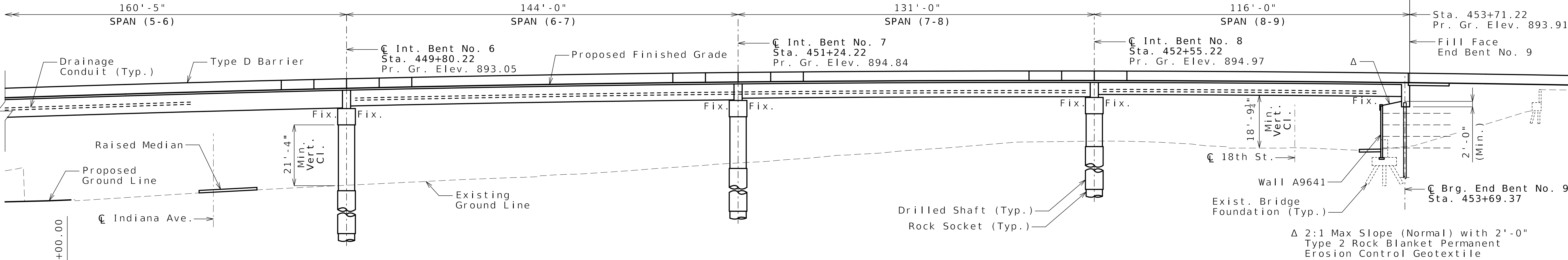
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION
MoDOT
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

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

(83.3'-122.3'-137.7') Prestressed Concrete NU Girder Spans (Unit 1)
(133.6'-160.4'-144.0'-131.0'-116.0') Prestressed Concrete NU Girder Spans (Unit 2)

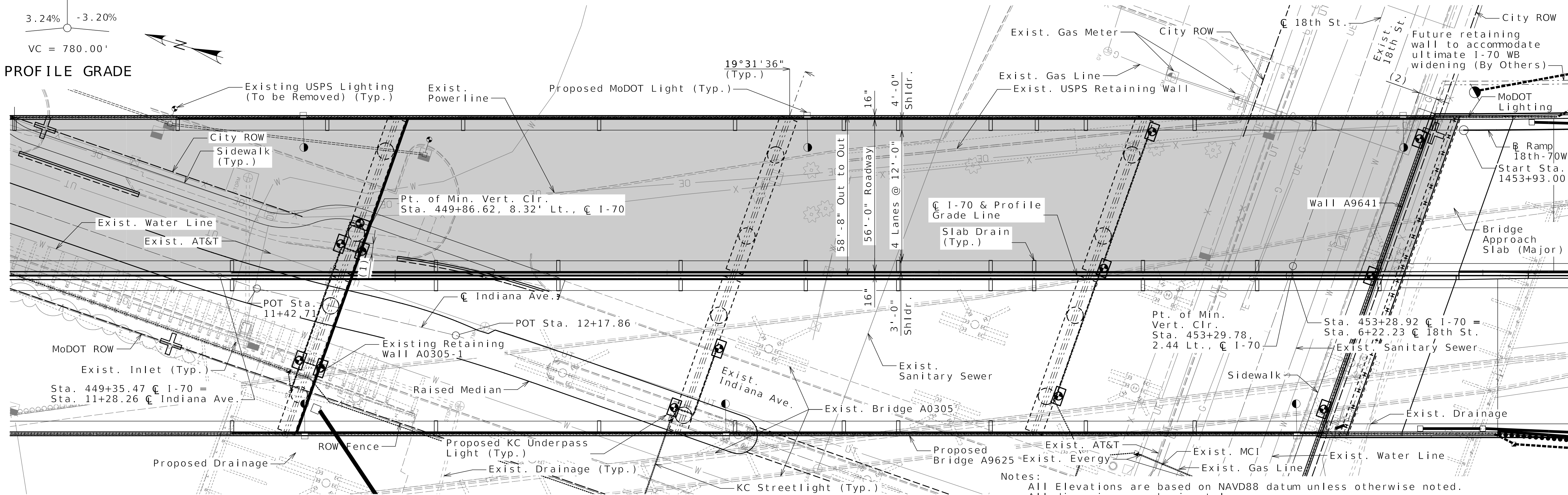
1030'-4" (Measured along $\mathcal{C}$ I-70)

685'-0" (Unit 2)



ELEVATION

PROFILE GRADE



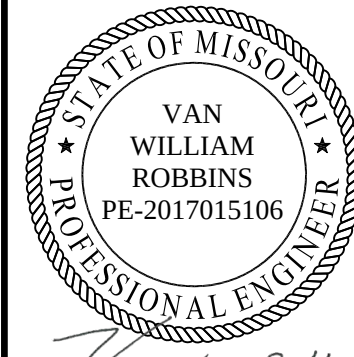
Minimum Horizontal Clearance
to edge of existing lane:
(1) 4'-1 $\frac{1}{8}$ "
(2) 6'-8 $\frac{1}{2}$ "

PLAN

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
All Elevations are based on NAVD88 datum unless otherwise noted.
All dimensions are horizontal.
Bents 5 thru 9 are parallel.
Existing Bridge A0303, A0304 and A0305 existing retaining walls to be removed in accordance with Sec. 216. Existing structures & foundations shown may not represent what is left in place after removal.
For elevations of drilled shafts and rock sockets, see Sheets No. B09-12 thru B09-30.
For boring locations, see Sheet No. B09-06.
See Civil Package 3: USPS Facility for Indiana Ave. typical section details.
See Civil Package 6: I-70 Mainline for 18th St. typical section and underpass lighting details.

GENERAL PLAN AND ELEVATION



Van W. Robbins
06-03-25

DATE PREPARED
06/02/2025

ROUTE
I-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-03

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB

General Note:
For additional bridge details not shown, see A9626 (I-70 WB Over KCT, Indiana,& 18th) Superstructure Package.

Design Specifications:
2020 AASHTO LRFD Bridge Design Specifications (9th Ed.) and 2023 AASHTO Guide Specifications for LRFD Seismic Bridge Design (3rd Edition)
Seismic Design Category = A (Nonseismic)
Design earthquake response spectral acceleration coefficient at 1.0 second period, $S_{D1}\leq 0.15$
Acceleration Coefficient (effective peak ground acceleration coefficient), $A_s = N/A$

Design Loading:
Vehicular = HL-93
Future Wearing Surface = 35 lb/sf
Earth - 120 lb/cf
Equivalent Fluid Pressure - 45 lb/cf
Superstructure: Simply-Supported, non-composite for dead load. Continuous composite for live load.

Neoprene Pads:
Neoprene Bearing Pads shall be 60 durometer and shall be in accordance with Sec 716 except as noted in the plans. See Sheet No. B0936 for Bent No. 4 Type N PTFE Bearing.

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.

All reinforcing in End Bents No. 1 and 9 and Intermediate Bents No. 4 thru 6shall be epoxy coated. Reinforcing in the rock sockets and drilled shaft shall be uncoated. Reinforcing steel in locations not noted shall be uncoated.

Concrete Protective Coatings:
Protective coating for concrete bents and piers (Epoxy) shall be applied as shown on the bridge plans and in accordance with Sec 711. See Sheet No. B09-20.

Concrete and masonry protective coating shall be applied to concrete columns and end bent wingwall exposed areas accordance with Sec 711.

Sacrificial graffiti protective coating shall be applied to concrete columns and end bent wingwall exposed areas in accordance with Sec 711.

Miscellaneous:
Outline of old work is indicated by light dashed lines. Heavy lines indicate new work U.N.O.

Structural steel for the girder chairs shall be coated with not less than 2 mils of inorganic zinc primer. Scratched or damaged surfaces are to be touched up in the field before concrete is poured. In lieu of coating, the girder chairs may be galvanized in accordance with ASTM A123.

Abbreviations:
E.F. denotes Each Face
N.F. denotes Near Face
F.F. denotes Far face
U.N.O. denotes Unless Noted Otherwise

Design Unit Stresses:
Class B Concrete (End Bents below Const. Jt.) f'c = 3,000 psi
Class B-1 Concrete (Intermediate Bents except Drilled Shafts and Rock Sockets) f'c = 4,000 psi
Class B-2 Concrete (Drilled Shafts and Rock Sockets) f'c = 4,000 psi
Class B-2 Concrete (End Bents above construction joint) f'c = 4,000 psi
Reinforcing Steel (ASTM A615 Grade 60) (Everywhere U.N.O) fy = 60,000 psi
Reinforcing Steel (ASTM A615 Grade 75) (Vertical Column, Drilled Shaft, and Rock Socket bars) fy = 75,000 psi
Structural HP Steel Pile (ASTM A709 Grade 50) fy = 50,000 psi

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Not to Scale

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Foundation Data												
Type	Design Data		Bent Number									
			1	2	3	4	5	6	7	8	9	
Load Bearing Pile	Pile Type and Size		HP 12x74	---	---	---	---	---	---	---	HP 12x74	
	Number		ea	9	---	---	---	---	---	---	10	
	Approximate Length Per Each		ft	110	---	---	---	---	---	---	55	
	Pile Point Reinforcement		ea	All	---	---	---	---	---	---	All	
	Min. Galvanized Penetration (Elev.)		ft	830	---	---	---	---	---	---	849	
	Minimum Tip Penetration (Elev.)		ft	---	---	---	---	---	---	---	854	
	Criteria for Min. Tip Penetration			---	---	---	---	---	---	---	Min. Embed.	
	Pile Driving Verification Method			DF	---	---	---	---	---	---	DF	
Resistance Factor			0.40	---	---	---	---	---	---	0.40		
Minimum Nominal Axial Compressive Resistance		kip	680	---	---	---	---	---	---	---	670	
Rock Socket	Number		ea	---	2	2	2	3	2	2	---	
	Layer 1	Foundation Material		---	L IMESTONE	L IMESTONE	L IMESTONE	L IMESTONE	L IMESTONE	SHALE	L IMESTONE	---
		Elevation Range	ft	---	757-741	760-741	774-770	780-769	801-789	808-802	833-830	---
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---								
	Layer 2	Foundation Material		---	SHALE	SHALE	SHALE	SHALE	SHALE	L IMESTONE	SHALE	---
		Elevation Range	ft	---	741-737	741-737	770-762	769-761	789-786	802-792	830-802	---
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	32.7	32.7	32.7	32.7	32.7	26.6	32.7	---
	Layer 3	Foundation Material		---								
		Elevation Range	ft	---	---	---	L IMESTONE	L IMESTONE	L IMESTONE	SHALE	L IMESTONE	---
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	---	---						
	Layer 4	Foundation Material		---	---	---	L IMESTONE	L IMESTONE	L IMESTONE	SHALE	L IMESTONE	---
		Elevation Range	ft	---	---	---	762-747	762-747	786-773	792-789	802-797	---
		Minimum Nominal Axial Compressive Resistance (Side Resistance)	ksf	---	---	---	32.7	32.7	32.7	28.9	32.7	---
	Layer 5	Foundation Material		---	---	---	---	---	---	L IMESTONE	---	---
		Elevation Range	ft	---	---	---	---	---	---	789-772	---	---
Minimum Nominal Axial Compressive Resistance (Side Resistance)		ksf	---	---	---	---	---	---	32.7	---	---	
Minimum Nominal Axial Compressive Resistance (Tip Resistance)		ksf	---	400	400	400	400	400	368	400	---	

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-04 of B09-58

GENERAL NOTES

Load Bearing Piles:
Minimum Nominal Axial Compressive Resistance = Maximum Factored Loads/Resistance Factor
HP piles are anticipated to be driven to refusal on rock. Review all borings for depth of rock and restrict driving as appropriate to comply with hard rock driving criteria in accordance with Sec 702. When pile refusal on rock occurs, as approved by the engineer, the minimum nominal axial compressive resistance is verified and no additional pile driving verification method is required. If refusal on rock is not found to be in line with information presented in boring logs and geotechnical report, dynamic testing (DT) shall be utilized to confirm pile capacity for 418 and 413 kips for End Bents 1 and 9, respectively, which correponds with a 0.65 resistance factor.
All piles shall be galvanized down to the minimum galvanized penetration (elevation).
Pile point reinforcement need not be galvanized. Shop drawings will not be required for pile point reinforcement.
If Optional pipe pile spacers are used, set at least 5 ft below bottom of MSE Wall leveling pad.
The contractor shall make every effort to achieve the minimum galvanized penetration (elevation) shown on the plans for all piles. Deviations in penetration less than 5 feet of minimum will be considered acceptable provided the contractor makes the necessary corrections to ensure the minimum penetration is achieved on subsequent piles.
DF = FHWA-modified Gates Dynamic Pile Formula

Rock Socket (Drilled Shafts):
Minimum Nominal Axial Compressive Resistance (Side Resistance + Tip Resistance) = Maximum Factored Loads/Resistance Factors.

Thickness of permanent steel casing shall be ½" minimum in accordance with Project AAS. Thicker casing may be required for installation and construction purposes.

Sonic logging testing shall be performed on all drilled shafts and rock sockets.
Drilled shafts shall be constructed in accordance with project Drilled Shaft AAS.

STATE OF MISSOURI
PROFESSIONAL ENGINEER
VAN WILLIAM ROBBINS
PE-2017015106
06-03-25

DATE PREPARED
06/02/2025

ROUTE	STATE
I - 70	MO
DISTRICT	SHEET NO.
BR	B09-04

COUNTY
JACKSON

JOB NO.
J4 I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

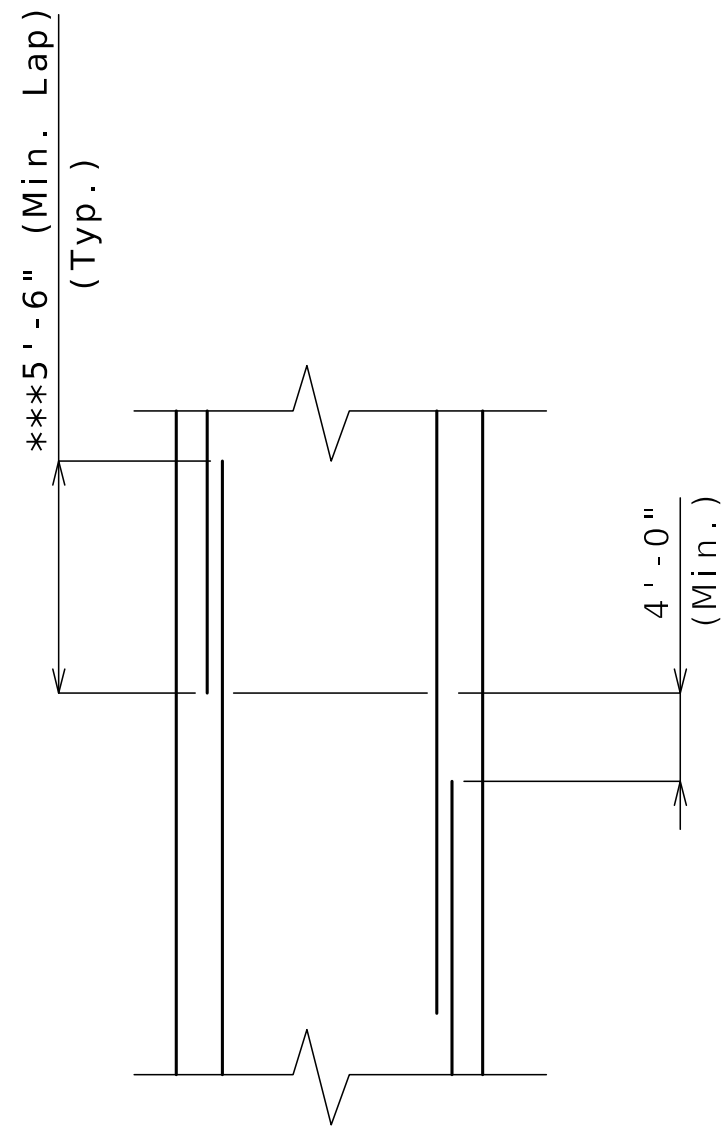
DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

CLARKSON RADMACHER JOINT VENTURE

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

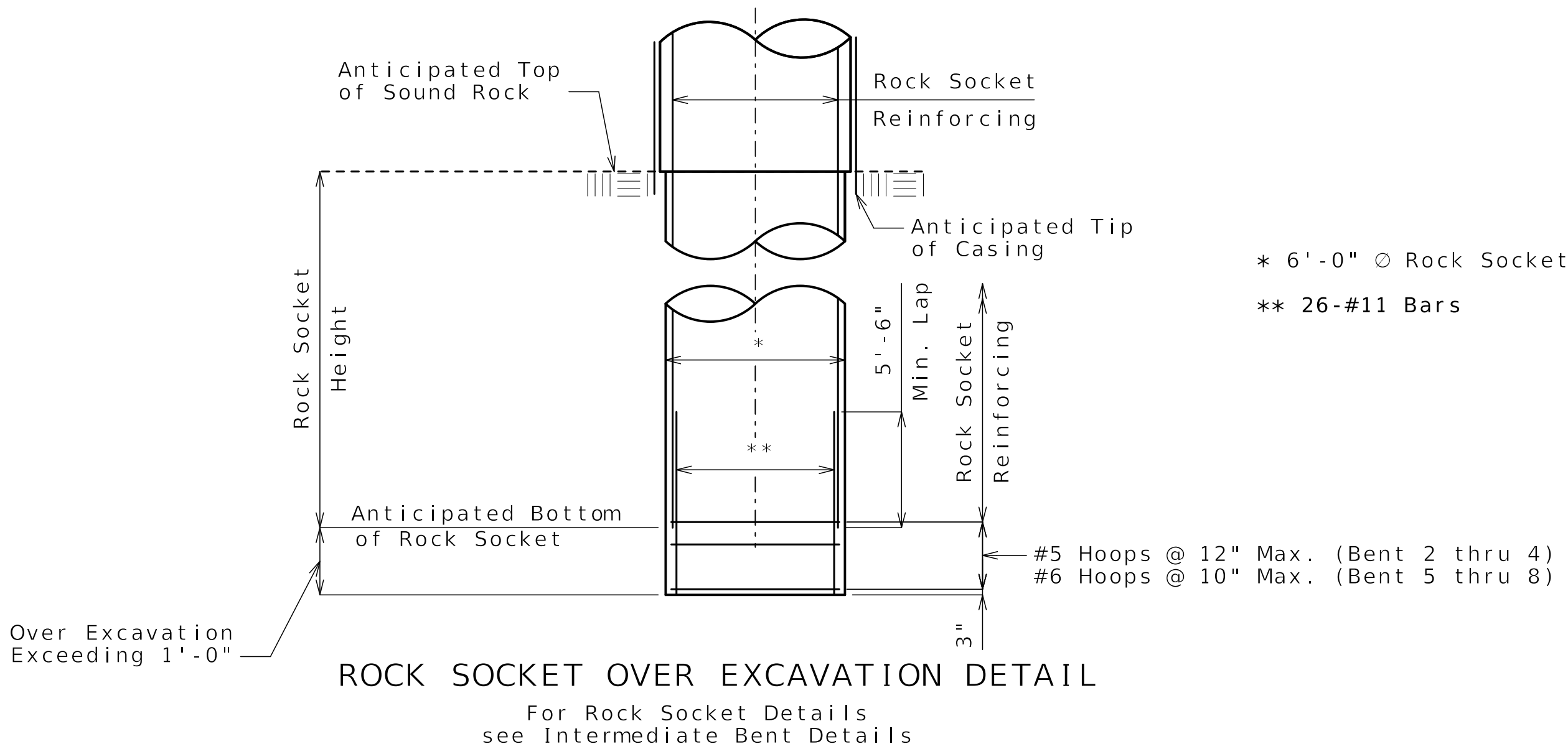


OPTIONAL DRILLED SHAFT SPLICE DETAIL

*** Splice shall be staggered between adjacent bars. Vertical distance between adjacent bar splices shall be maintained as shown. Mechanical bar splice may be used in lieu of lap splice. Maintain stagger and vertical spacing between adjacent bar splices. Mechanical bar splices shall be in accordance with Sec 706. To maintain position of vertical #11 bars, shift minimum number of hoop bars vertically beyond end of mechanical bar splice and bundle with adjacent hoop bars if necessary.

CONSTRUCTION NOTES:

- Any shoring system that impact the Railroad operations and/or support railroad embankment shall be designed and constructed per the Railroad temporary Shoring requirements.
- Drilled shafts shall be temporarily or permanently cased if excavation falls within the Zone A requirements for temporary shoring.
- All demolition within the Railroad right-of-way and/or demolition that may impact the Railroad Tracks or operations shall comply within the Railroad demolition requirements.
- Erection over the Railroad right-of-way shall be designed to cause no interruption to all Railroad operations.
- The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.
- The proposed grade separation project shall not change the quality and/or characteristics of the flow in the Railroad ditches and/or drainage structures.
- The contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad prior to beginning any grading on the project site.
- For Railroad coordination please refer to the Railroad's Coordination Requirements as part of the Specifications or Special Provisions of the project.
- Temporary Construction Clearances, including falsework clearances, shall comply with Figure 1.
- All permanent clearances shall be verified before project closeout.



No construction activities or other obstructions may be placed within these limits

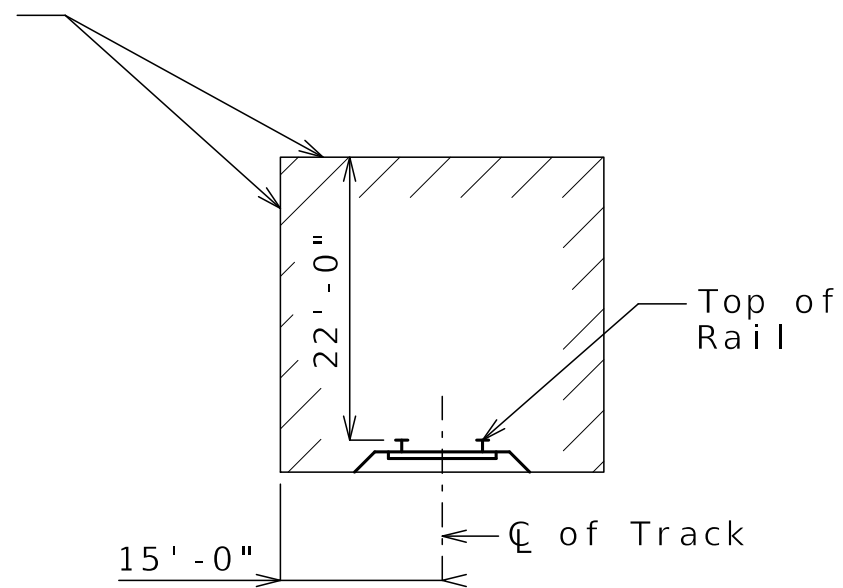
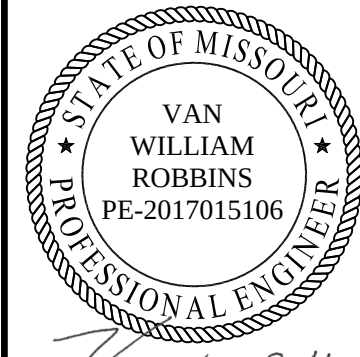


FIGURE 1 - MINIMUM CONSTRUCTION CLEARANCES
(Normal to railroad)

Note:
A flagman is required when any work is performed within 25 feet of track centerline or crane boom has potential to foul track. If the Railroad provides flagging or other services, the Contractor shall not be relieved of any responsibilities or liabilities as set forth in any document authorizing the work. No work is allowed within 50 feet of track centerline when a train passes the work site, and all personnel must clear the area within 25 feet of track centerline and secure all equipment when trains are present.

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

GENERAL NOTES



Van W. Robbins
06-03-25

DATE PREPARED
06/02/2025

ROUTE
I-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-05

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

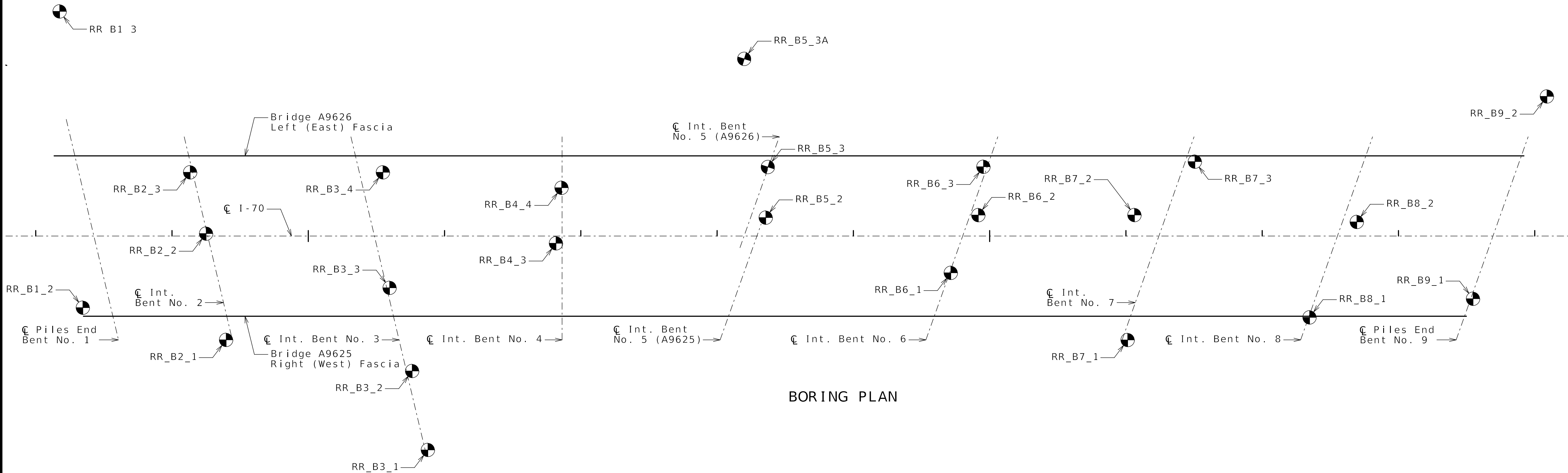
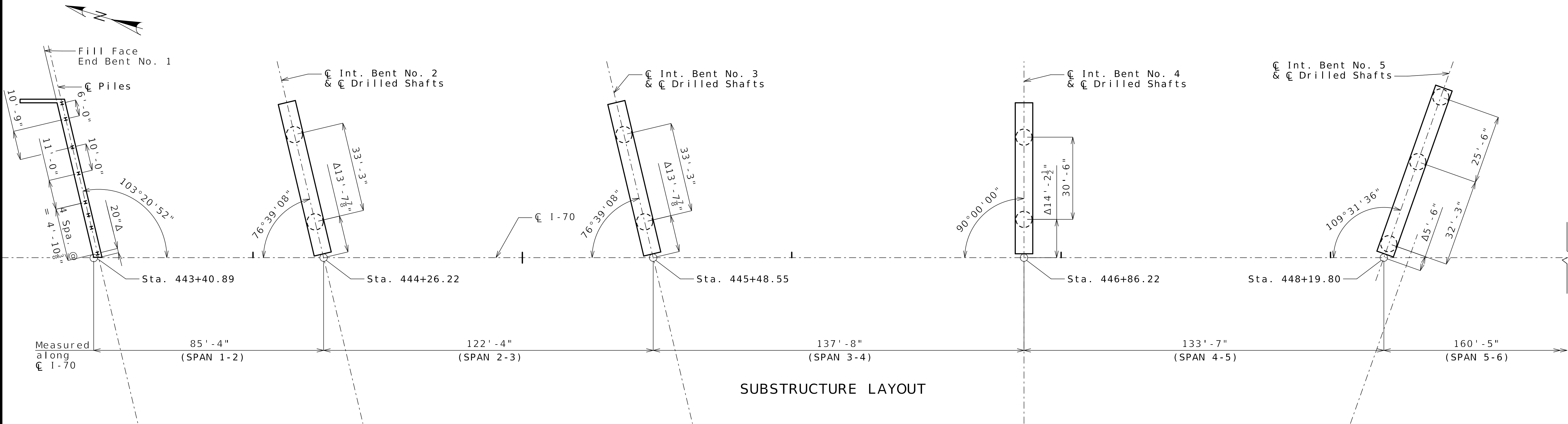
715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB



⊗ Indicates location of borings.

Notice and Disclaimer Regarding Boring Log Data
The locations of all subsurface borings performed by the design-build team for this structure are shown on the plan sheets for this structure. The logs for all locations indicated are provided on Sheets No. B09-39 thru B09-58. Laboratory test results, rock core photographs and other information obtained at these borings are available in the corresponding Foundation Recommendations Memo prepared by HNTB. By the nature of the exploration process, the information gathered at the borings represents only a small fraction of the total volume of material at the Site. Interpolation between data samples may not be indicative of the nature and extent of the variations that actually exist between sampling locations.

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Not to Scale
Revision: 0.0
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Note:
All dimensions are horizontal.
All Stations are along I-70.
Δ Measured to C I-70.
For Boring Logs shown in plan view but not included with this bridge plan set, see Geotechnical Report and I-70 EB over KCT, Indiana & 18th Bridge (A9625) plans.

SUBSTRUCTURE LAYOUT

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-06 of B09-58



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE STATE
I-70 MO

DISTRICT SHEET NO.
BR B09-06

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

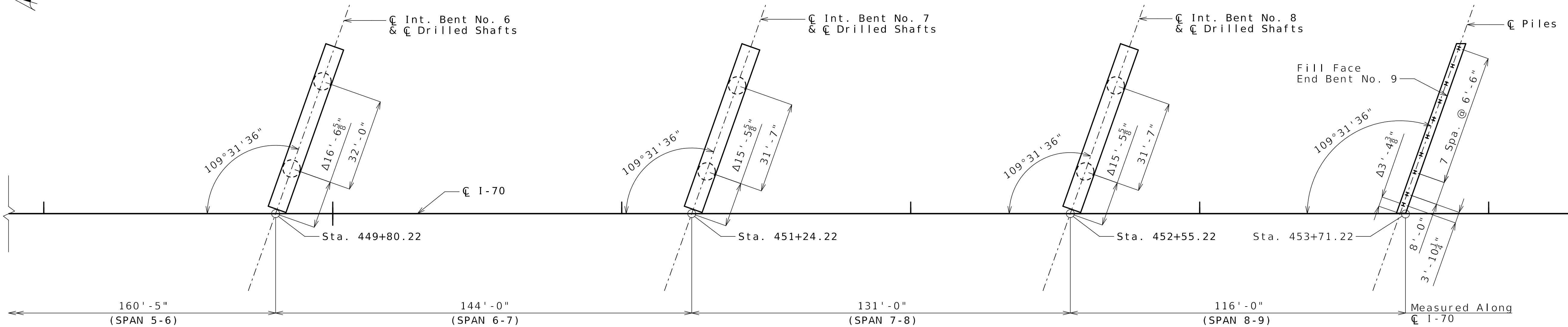
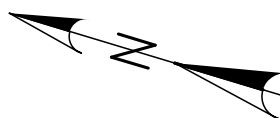
PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	06/02/25

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

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



SUBSTRUCTURE LAYOUT

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Note:
All dimensions are horizontal.
All Stations are along I-70.
Δ Measured to CL I-70.

SUBSTRUCTURE LAYOUT

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-07 of B09-58



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE 1-70
DISTRICT BR
STATE MO
SHEET NO. B09-07

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9626

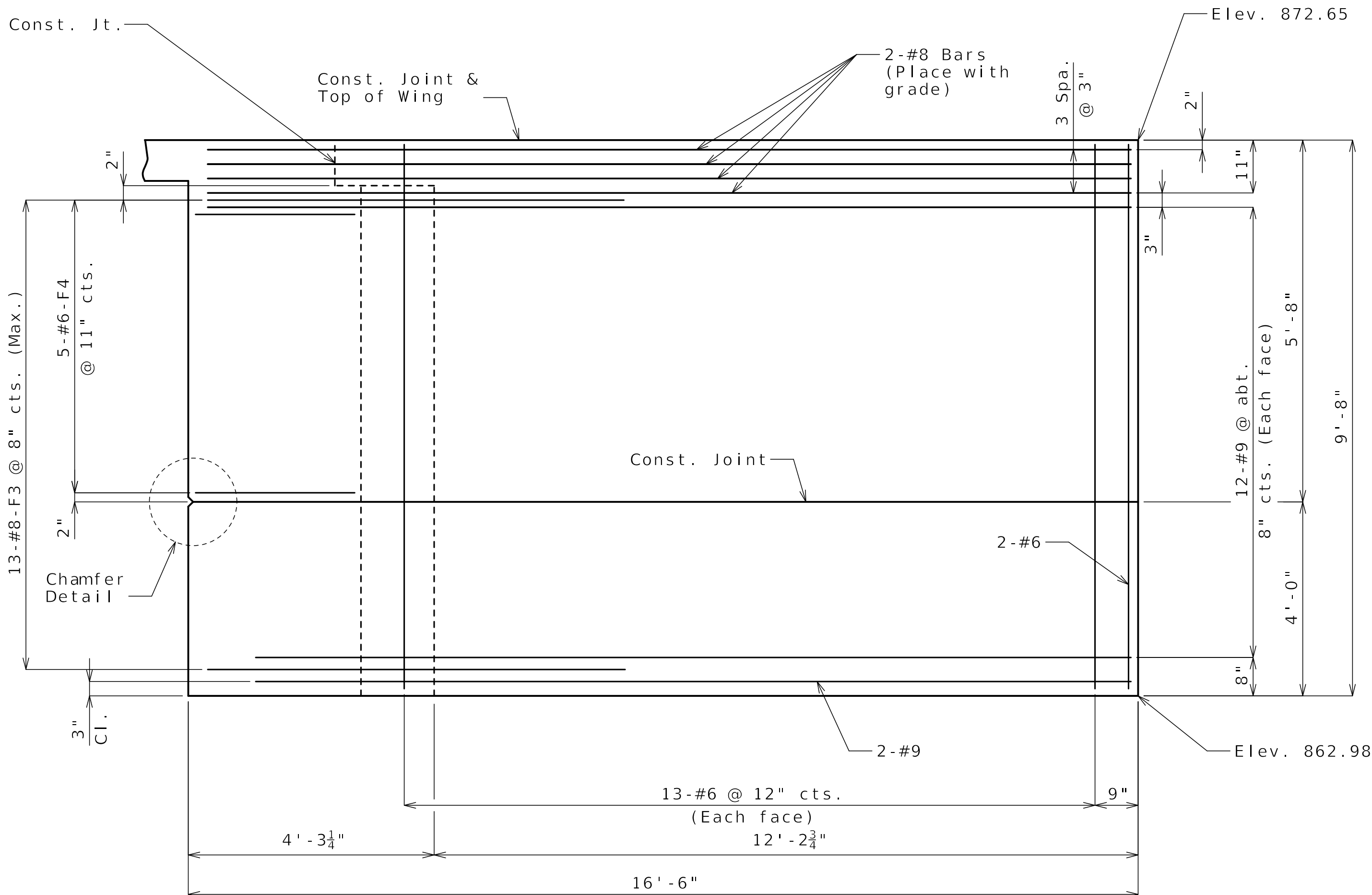
DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

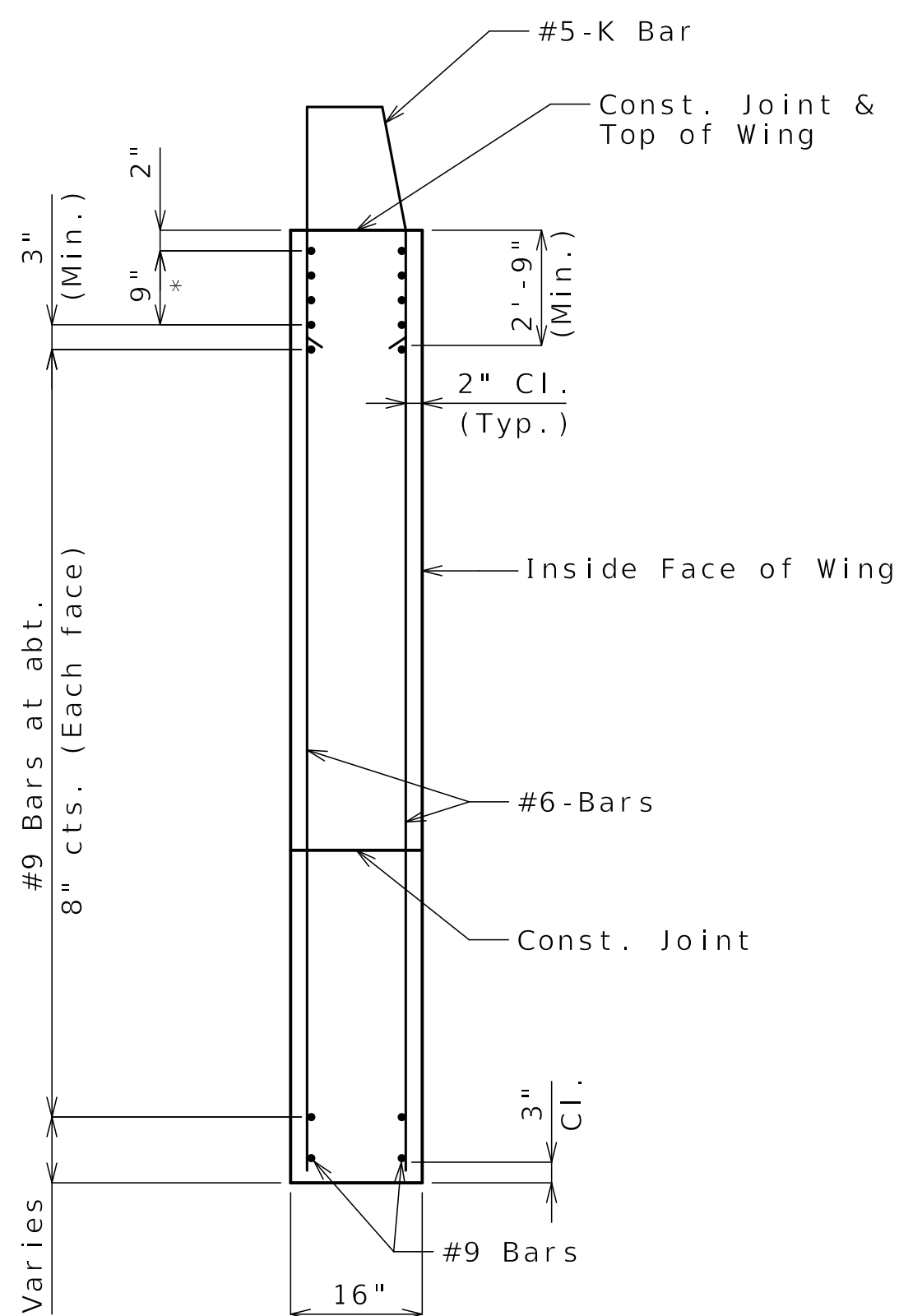
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

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

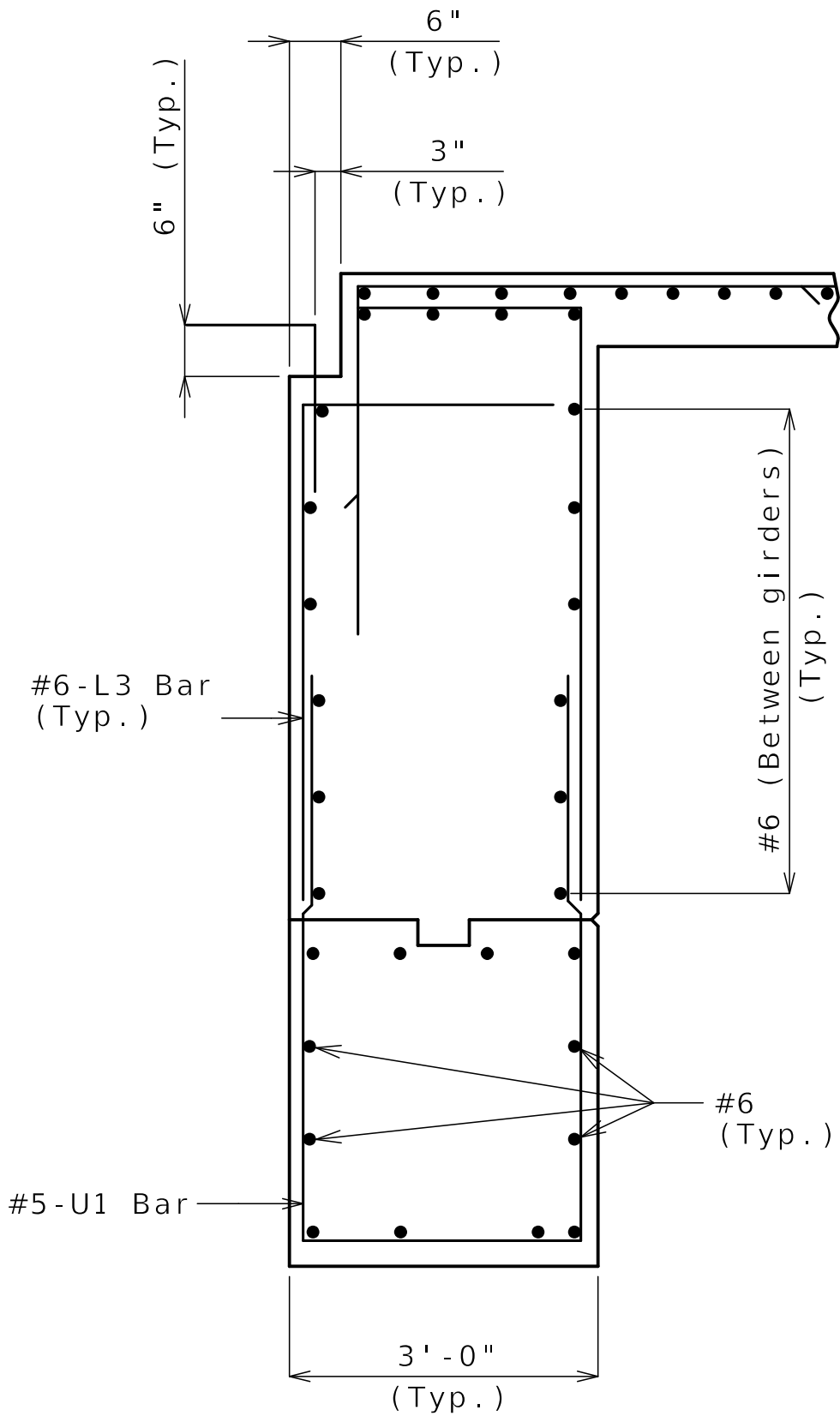


ELEVATION E-E

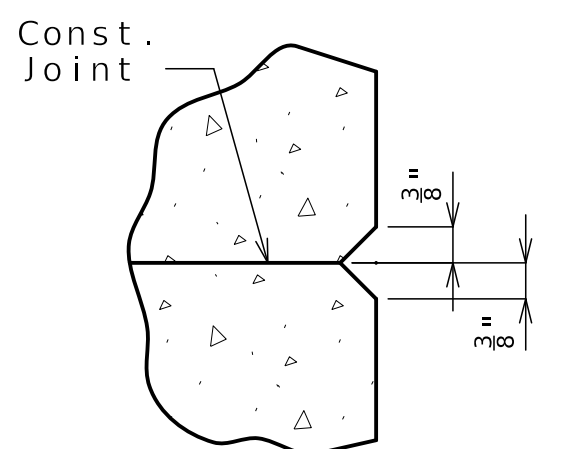


TYPICAL SECTION THRU WING

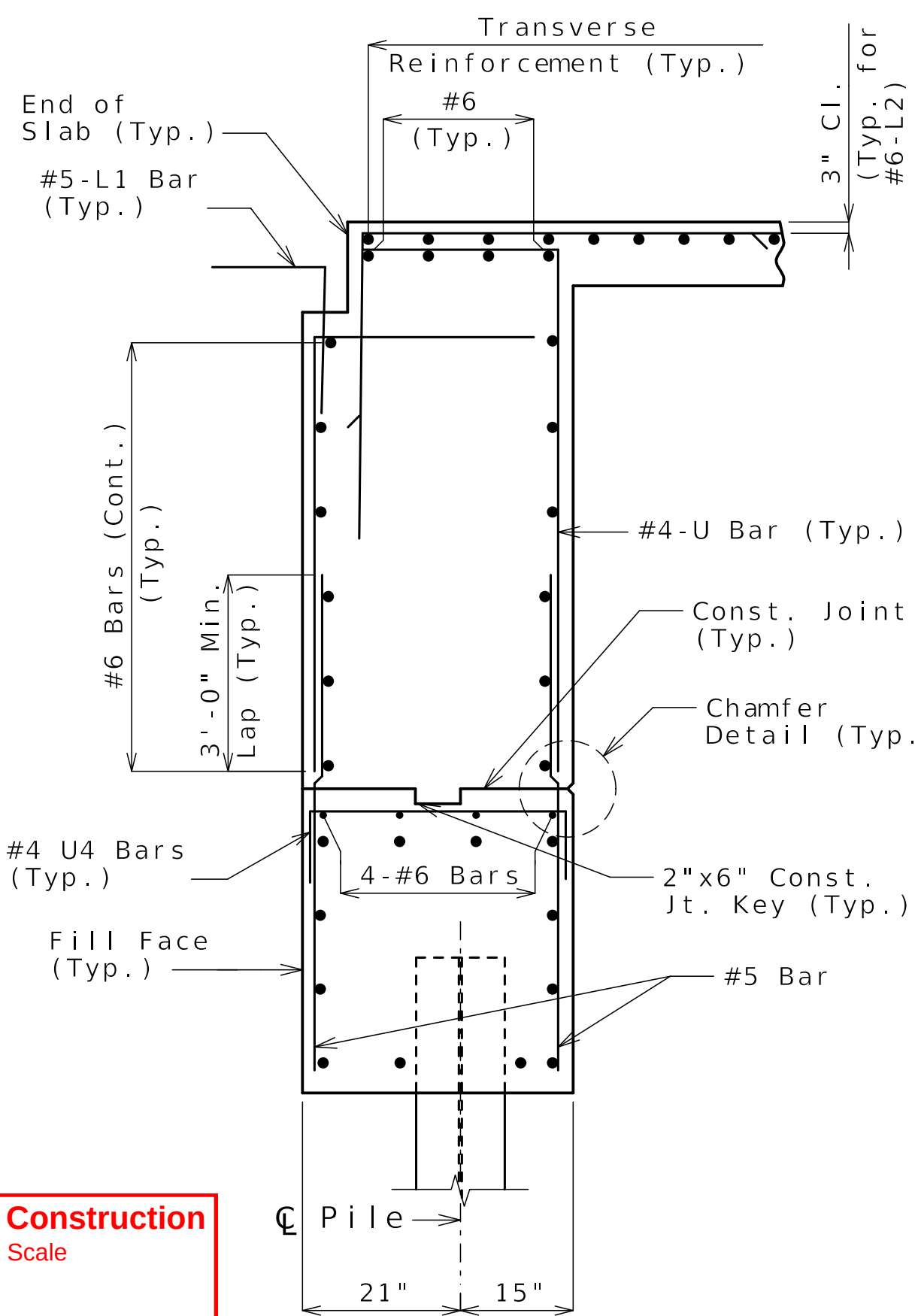
*#8 Bars at 3" cts. (Each face) (Place with grade)
See Elevation E-E for number of bars



SECTION C-C



CHAMFER DETAIL

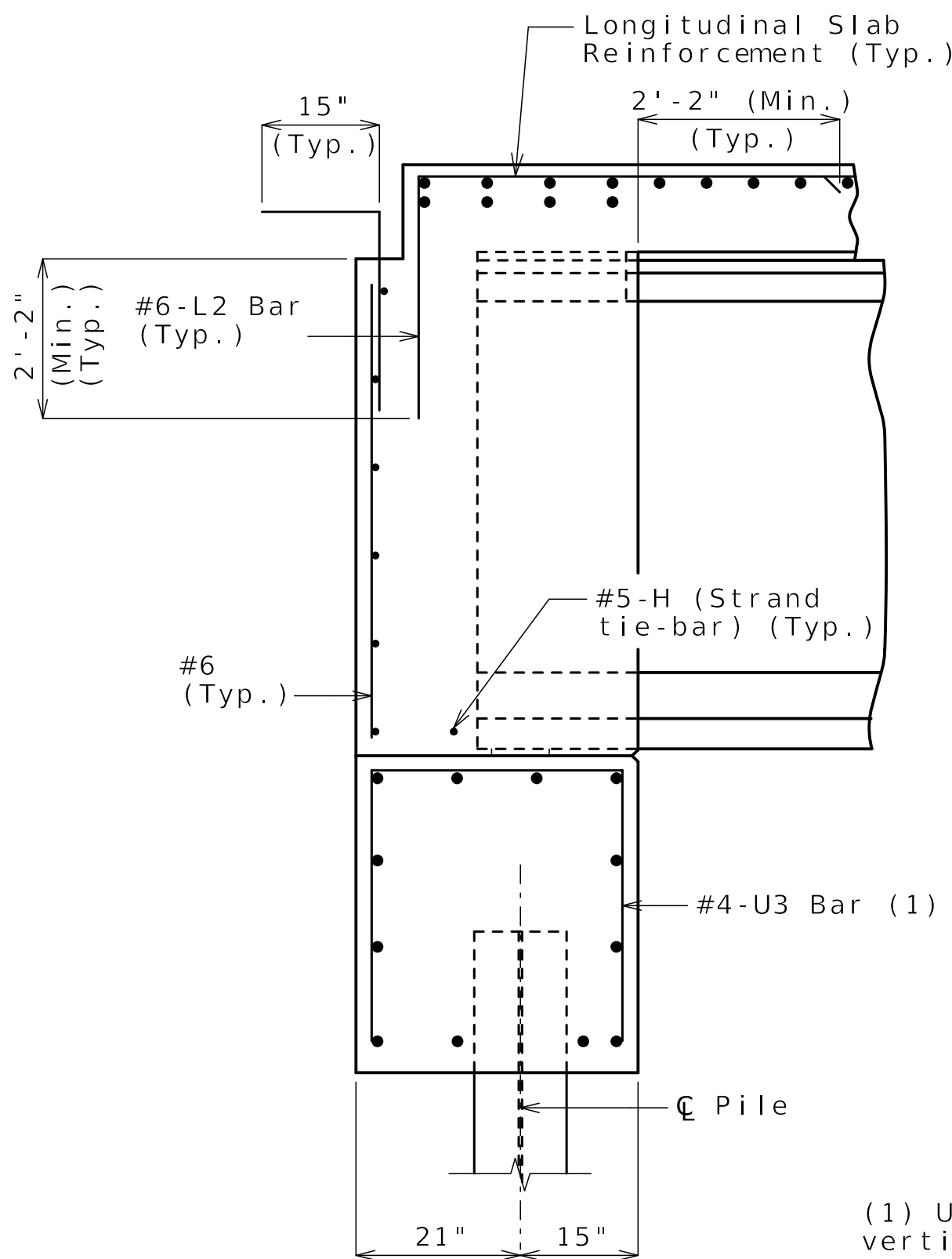


SECTION D-D

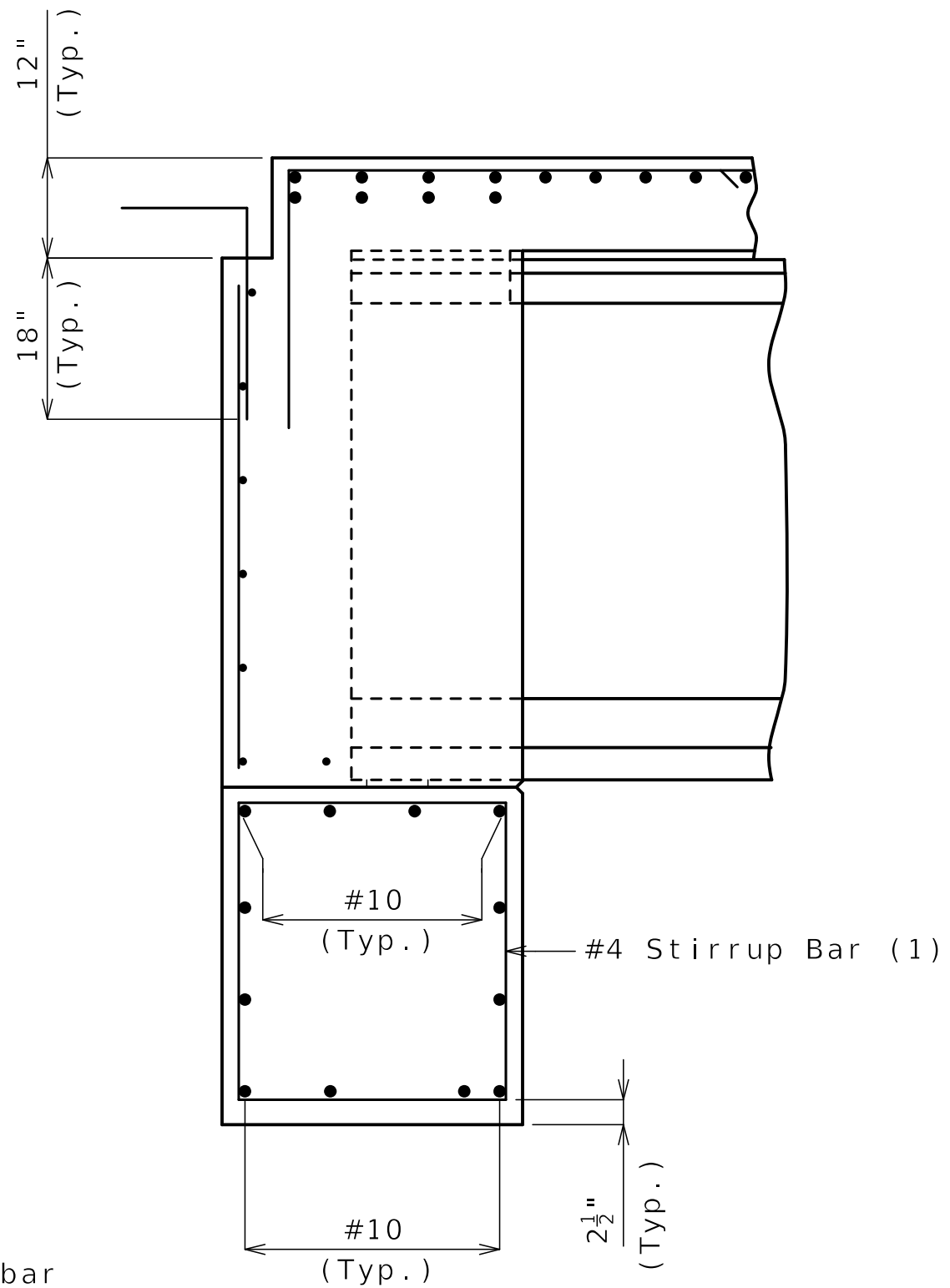
Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

General Notes:
Work this sheet with Sheet No. B09-XX.
For location of Sections A-A, B-B, C-C and D-D, and Elevation E-E, see Sheet No. B09-XX.
For reinforcement of the Type D Barrier, see Sheet No. B09-XX.

DETAILS OF END BENT NO. 1



SECTION A-A



SECTION B-B

(1) U3 & #4 Stirrup bar vertical leg = 3'-8"

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

Sheet No. B09-10 of B09-58



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-10

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

CERTIFICATE OF AUTHORITY

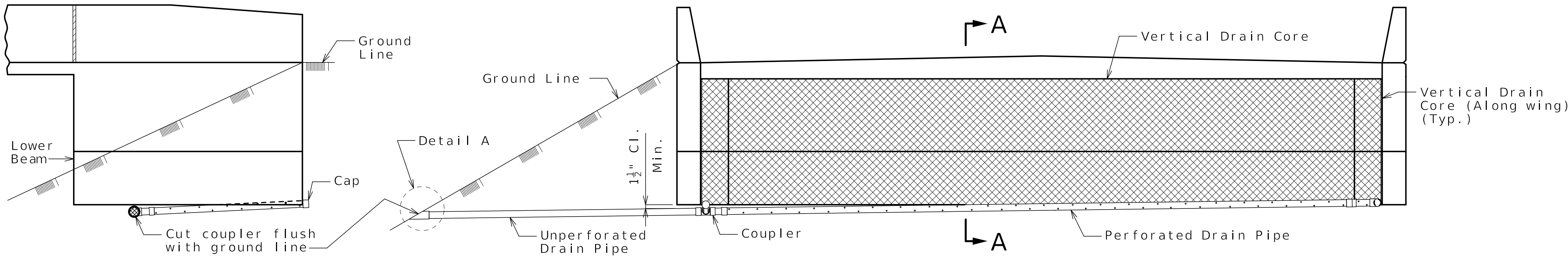
NO. 001270

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE

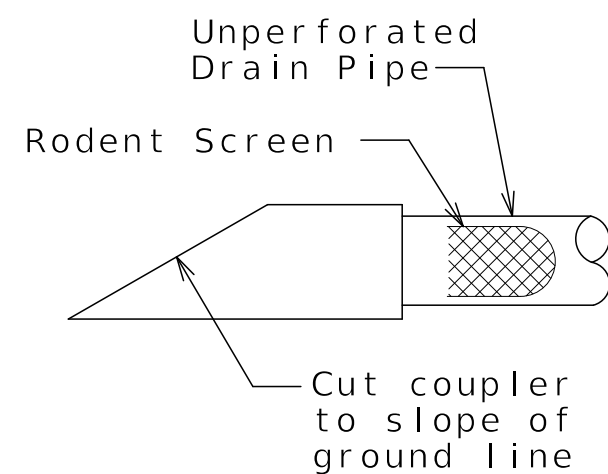
KANSAS CITY, MO 64105-1310

HNTB

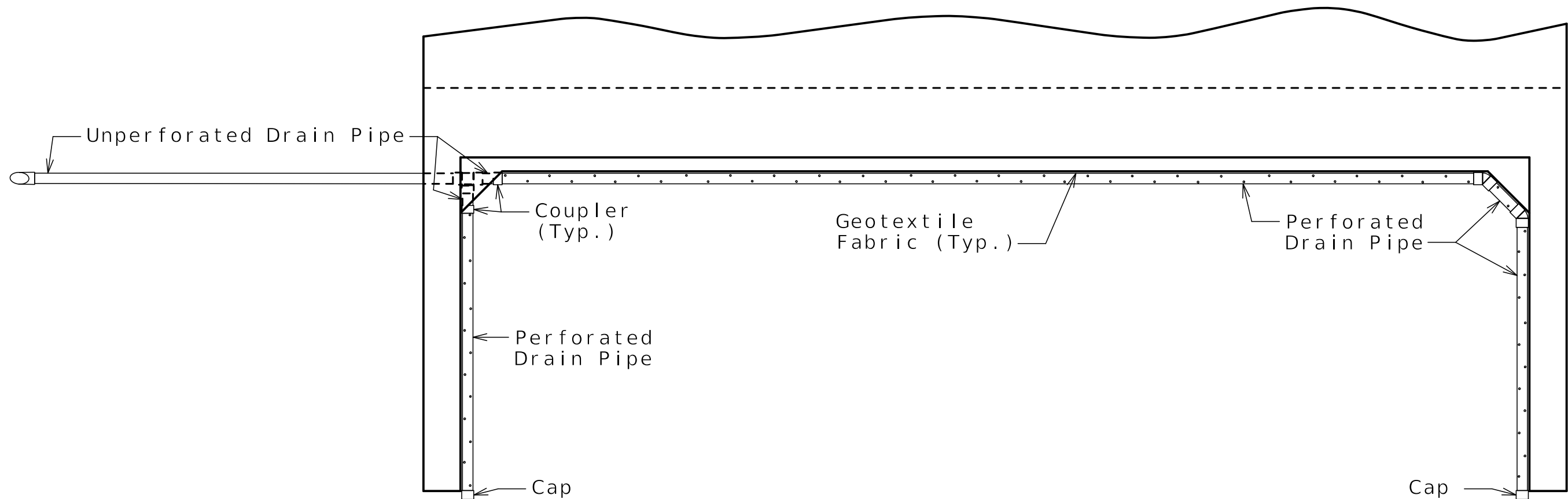


ELEVATION OF WING

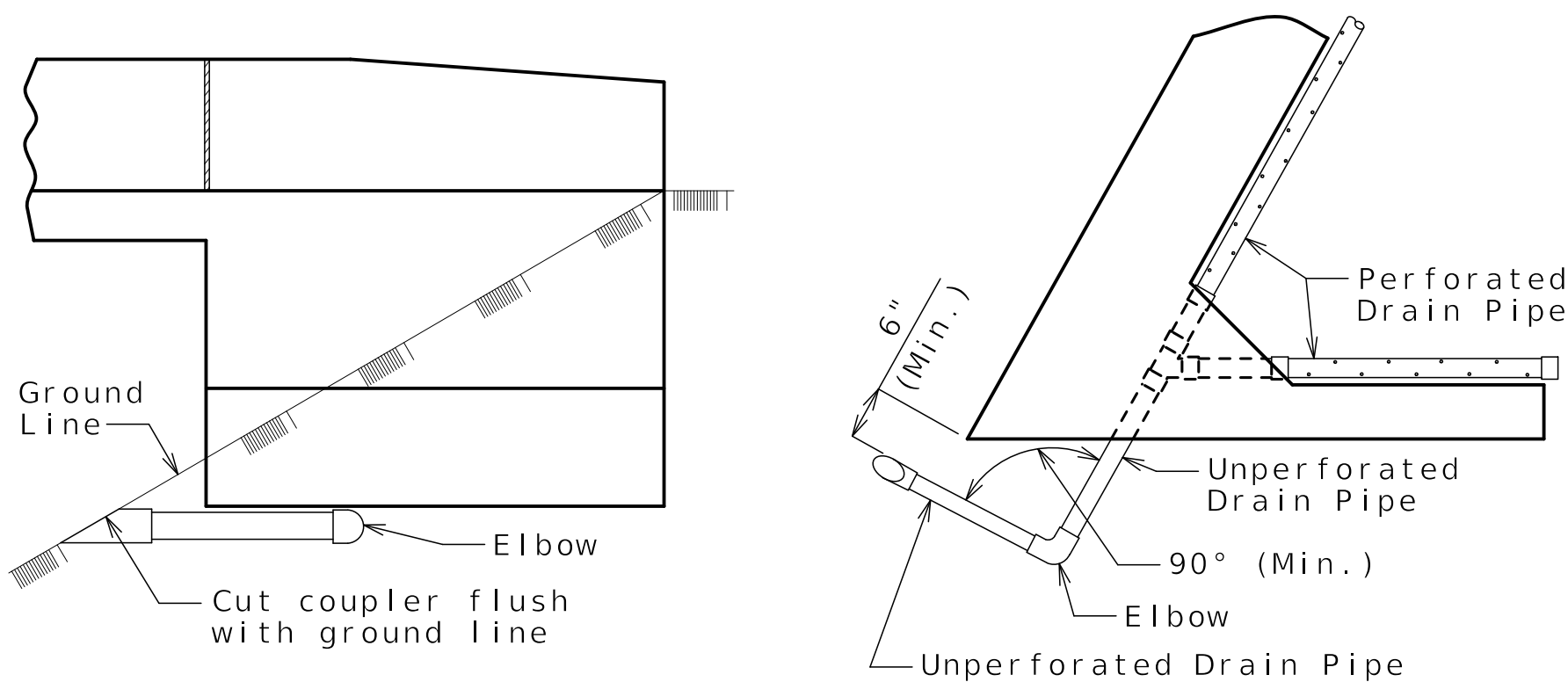
ELEVATION OF END BENT



DETAIL A



PLAN OF END BENT

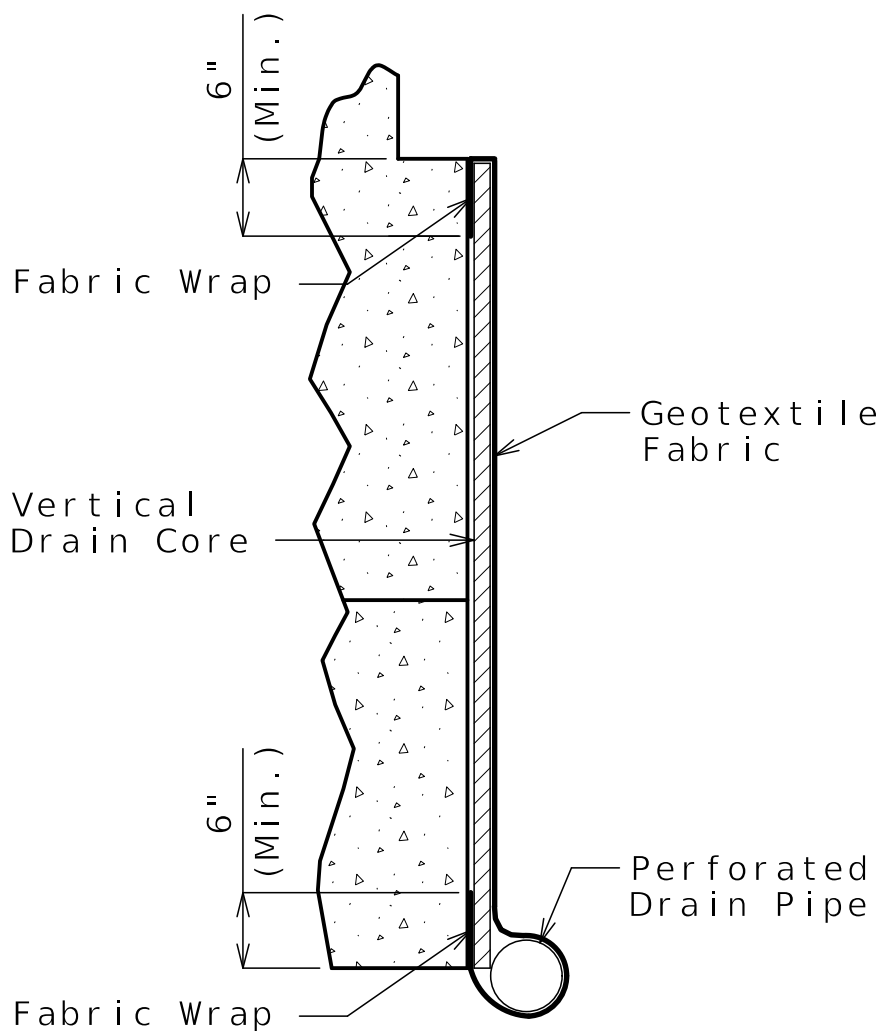


ELEVATION OF WING

PART PLAN

OPTIONAL TURNED DRAIN

(Use only when straight drain is not practical.)



PART SECTION A-A
(Section thru wing similar)

General Notes:

Details shown are illustrative and not necessarily representative of one or both end bents on this bridge. Construction phasing and bridge geometry will require utilizing a combination of the details shown to construct a vertical drain system that maintains positive flow out and away from the end bents.

Square end bent shown, skewed end bent similar.

All drain pipe shall be sloped 1 to 2 percent.

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

Drain pipe shall be placed at fill face of end bent and inside face of wings. The pipe shall slope to lowest grade of ground line, also missing the lower beam of end bent by a minimum of 1 1/2 inches.

Perforated pipe shall be placed at fill face side and inside face of wings at the bottom of end bent and plain pipe shall be used where the vertical drain ends to the exit at ground line.

At End Bent No. 9, if free draining granular fill material is used behind end bent and wingwalls, and if water can freely gravity drain to lower select granular backfill for structural system of MSE wall, then drain pipes are not required an internal drainage system of MSE wall can be used to collect water from Vertical Strip Drain.

VERTICAL DRAIN AT END BENTS

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



Gina D. Horner

06/03/25

DATE PREPARED

06/02/2025

ROUTE STATE

I - 70 MO

DISTRICT SHEET NO.

BR B09-11

COUNTY

JACKSON

JOB NO.

J4I1486D

CONTRACT ID.

240807-C01

PROJECT NO.

BRIDGE NO.

A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

CLARKSON RADMACHER JOINT VENTURE

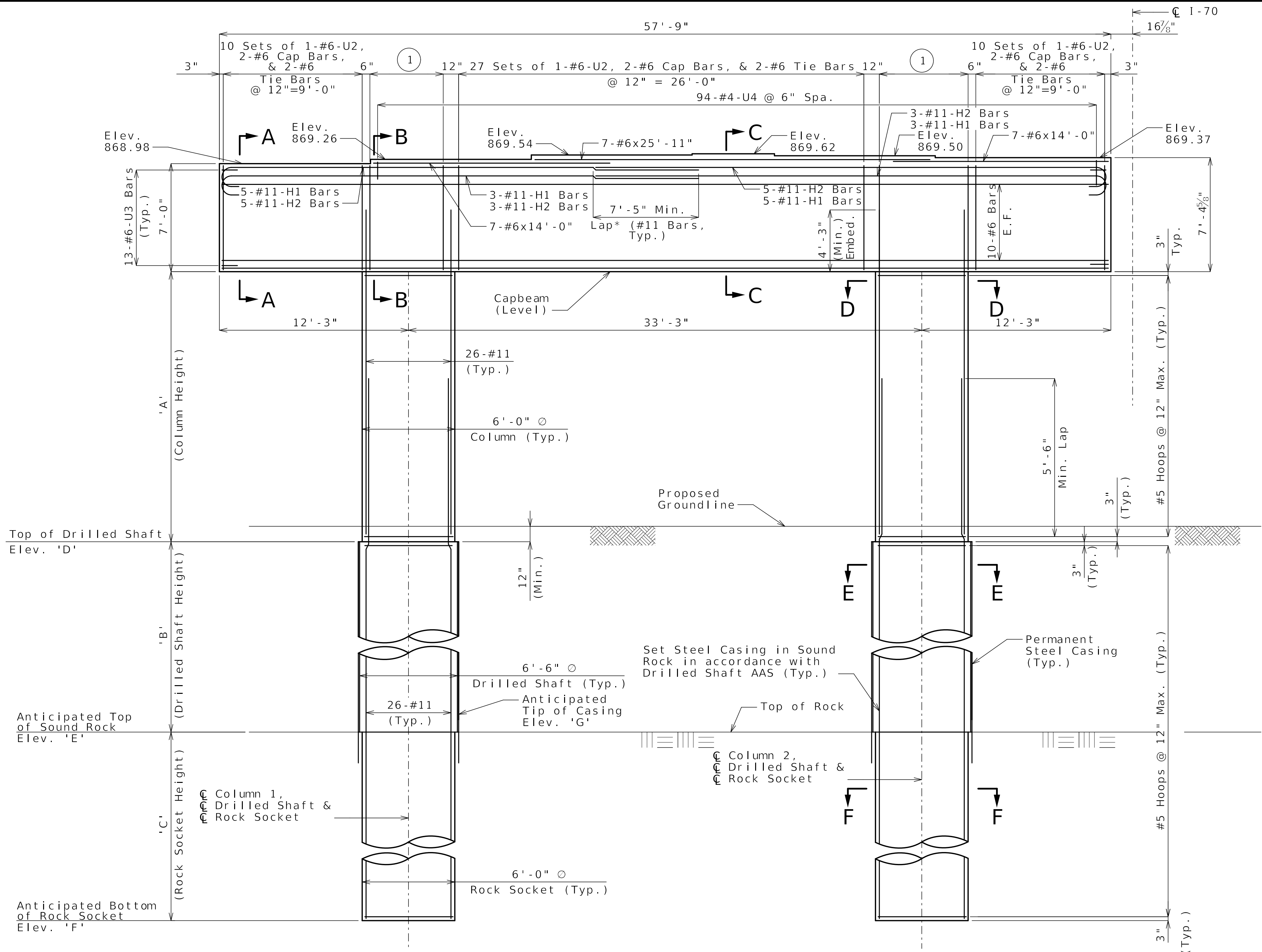
715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB



ELEVATION
(Girder chairs and beam keys not shown for clarity)

Table of Variables							
Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	18' 11 3/4"	86'-0"	14'-0"	843.0	757.0	743.0	755.0
2	18' 11 3/4"	86'-0"	14'-0"	843.0	757.0	743.0	755.0

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-13 and B09-14.
For location of drilled shafts, see Sheet No. B09-06.
For Sections A-A thru F-F, see Sheet No. B09-14.
For Optional Drilled Shaft Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

DETAILS OF INTERMEDIATE BENT NO. 2

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



6/3/2025

DATE PREPARED
06/02/2025

ROUTE 1-70 STATE MO

DISTRICT BR SHEET NO. B09-12

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9626

DESCRIPTION	
REV 0 - RFC SUBMITTAL	
DATE	
06/02/25	

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

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

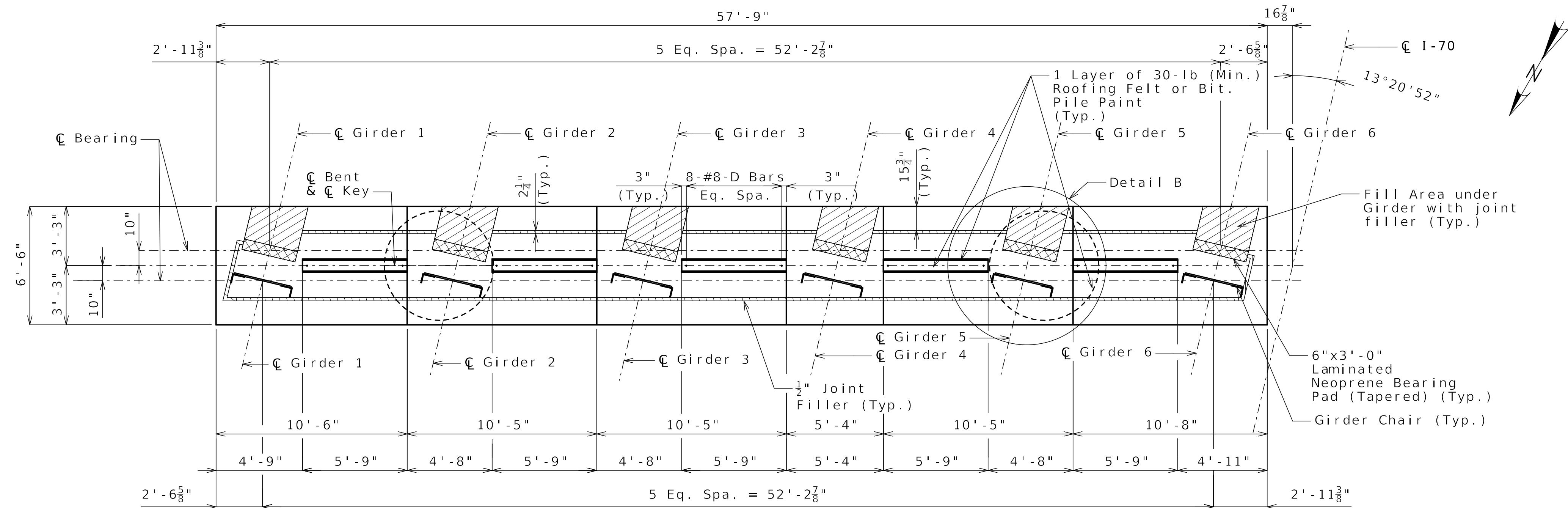
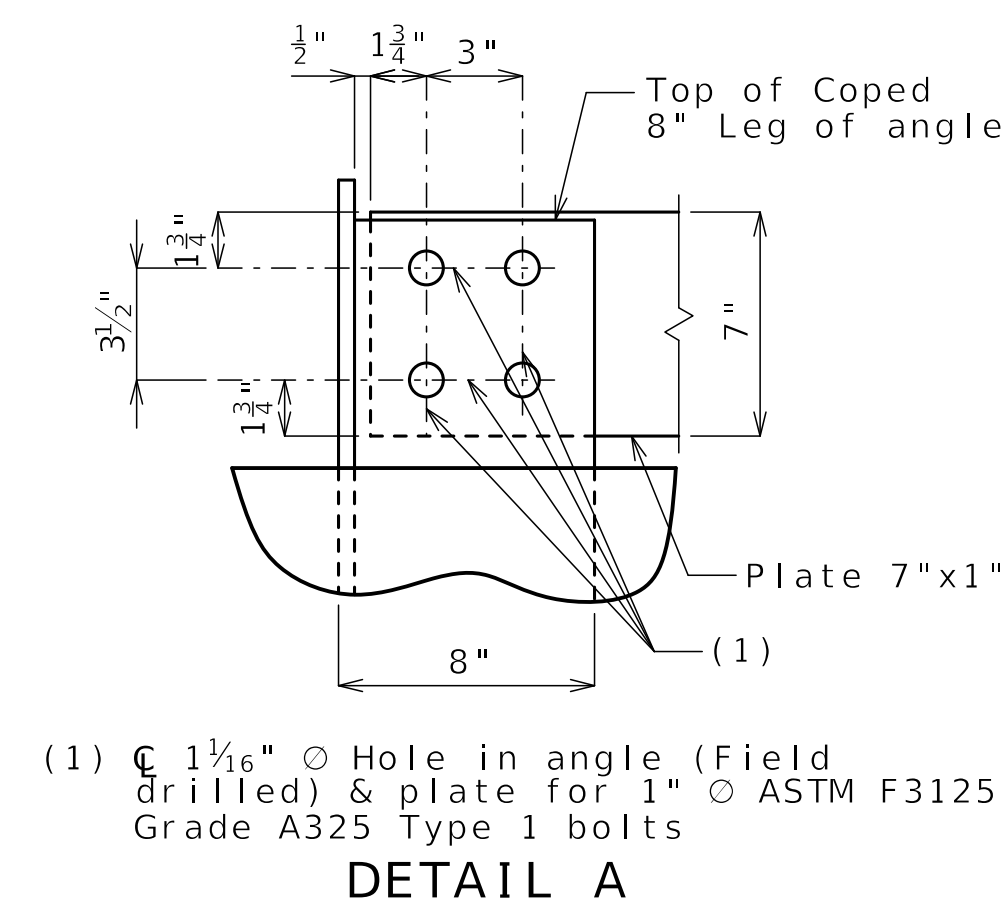
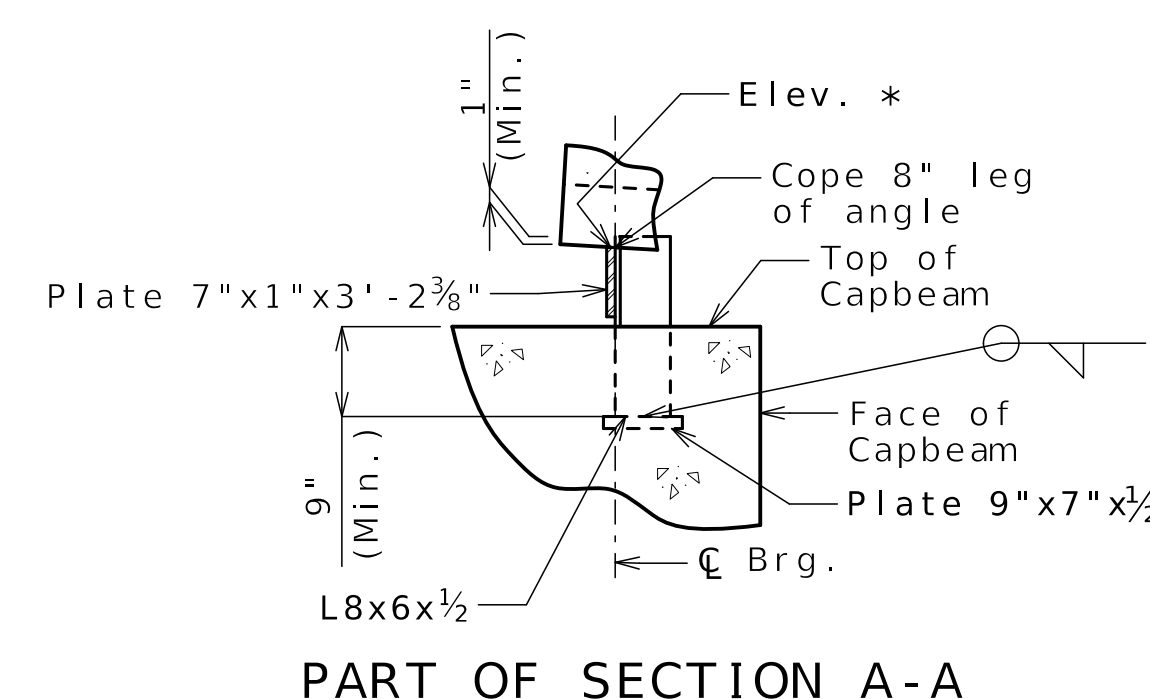
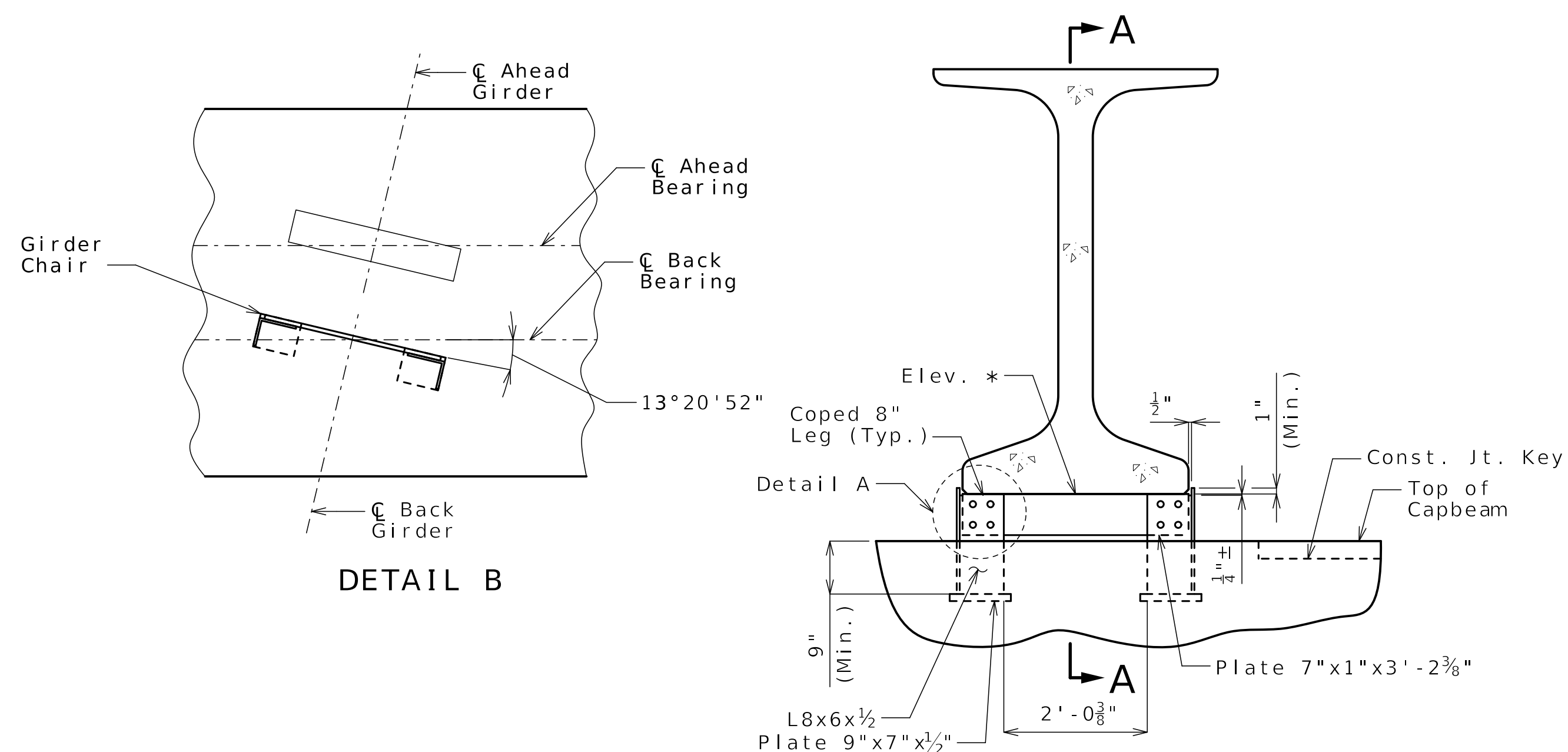
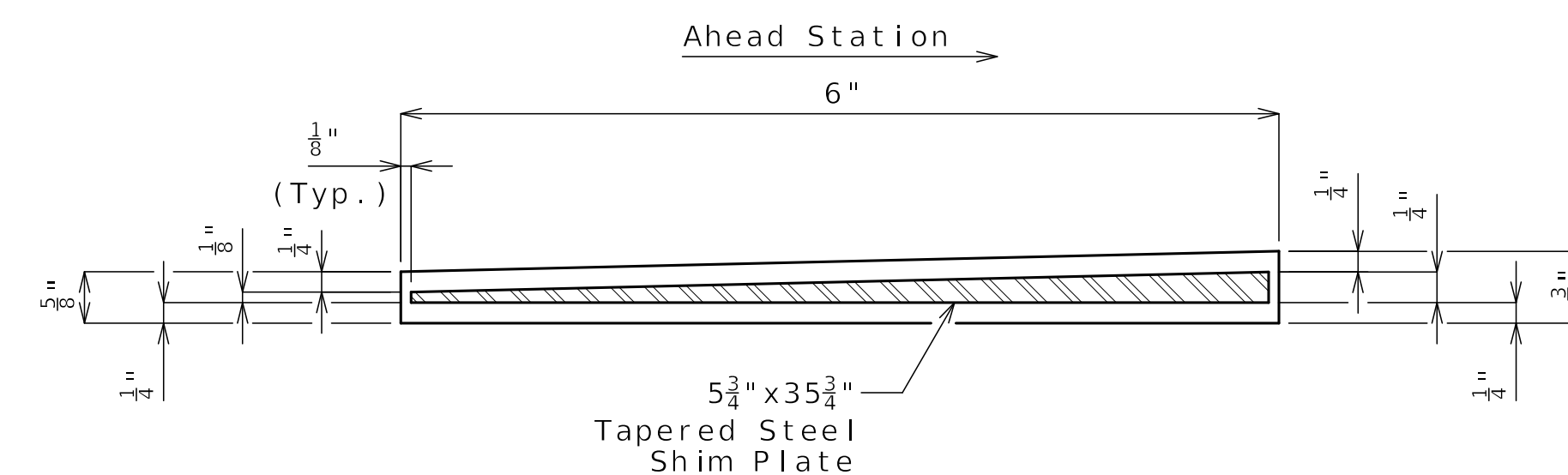


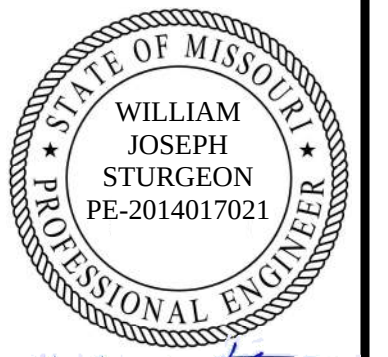
Table of Variables						
Girder	1	2	3	4	5	6
Elev. *	869.72	870.00	870.28	870.36	870.24	870.11



Notes:

Work this sheet with Sheets No. B09-12 and B09-14
Steel for chairs shall be ASTM A709 Grade 36 for
angles and ASTM A572 Grade 50 for plates.
Girders are parallel to C 1-70.
For additional joint filler layout details, see
concrete diaphragm details sheet in A9626 (1-70 WB Over
KCT, Indiana & 18th) Superstructure Package.
For steps 2 inches or more, use $2\frac{1}{4} \times \frac{1}{2}$ inch joint
filler up vertical face.

DETAILS OF INTERMEDIATE BENT NO. 2



6/3/2025

DATE PREPARED

6/02/2025

ROUTE	STATE
70	MS

70	MO
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TRICT	SHEET NO
00	000 1

BR	B09 - 1
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COUNTY
LACKSON

JACKSON

JOB NO.
141148CD

411486D

CONTRACT ID.
40807 C01

40807 - C01

PROJECT NO.

BRIDGE NO.

A9626

[illegible]

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

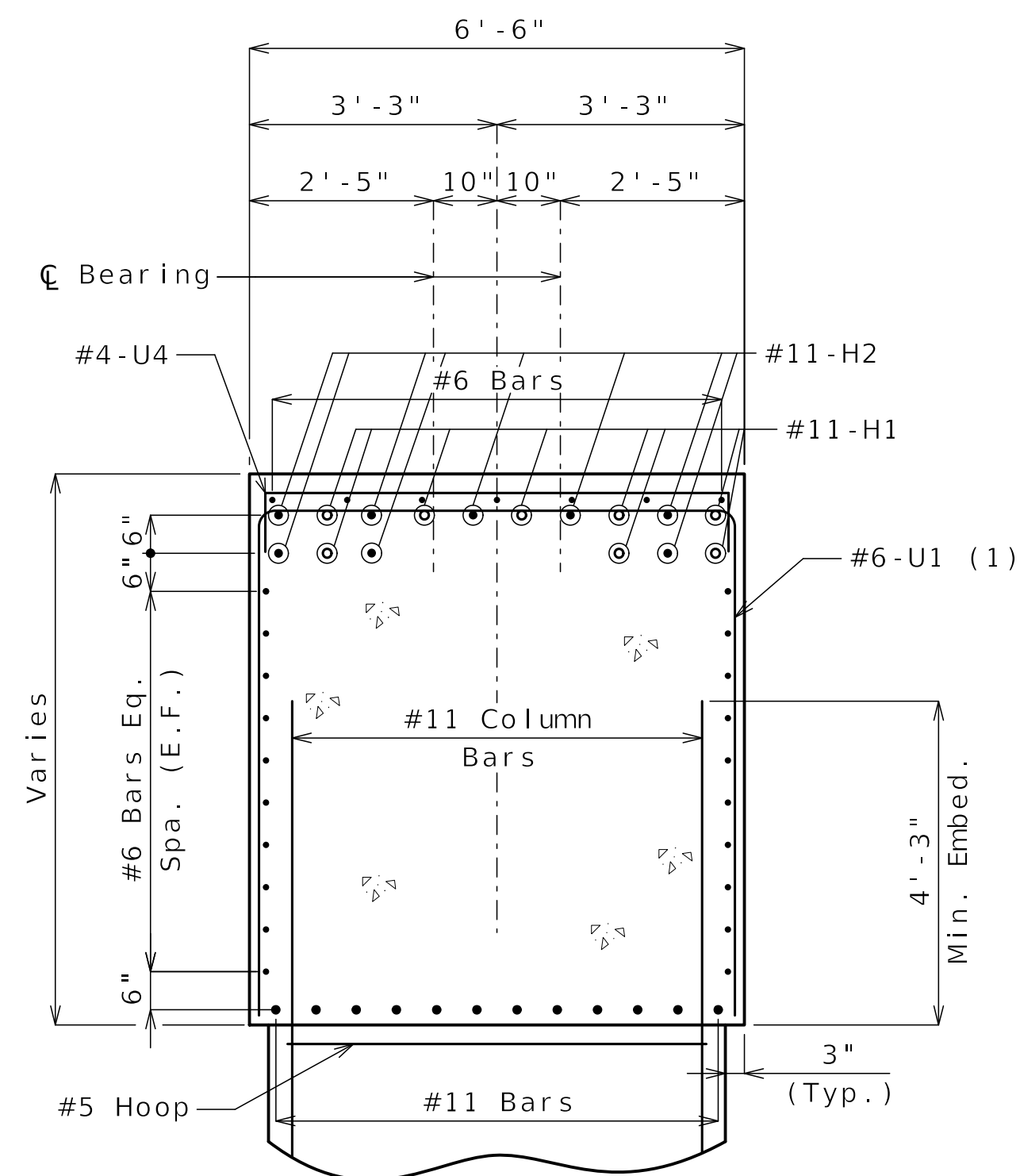
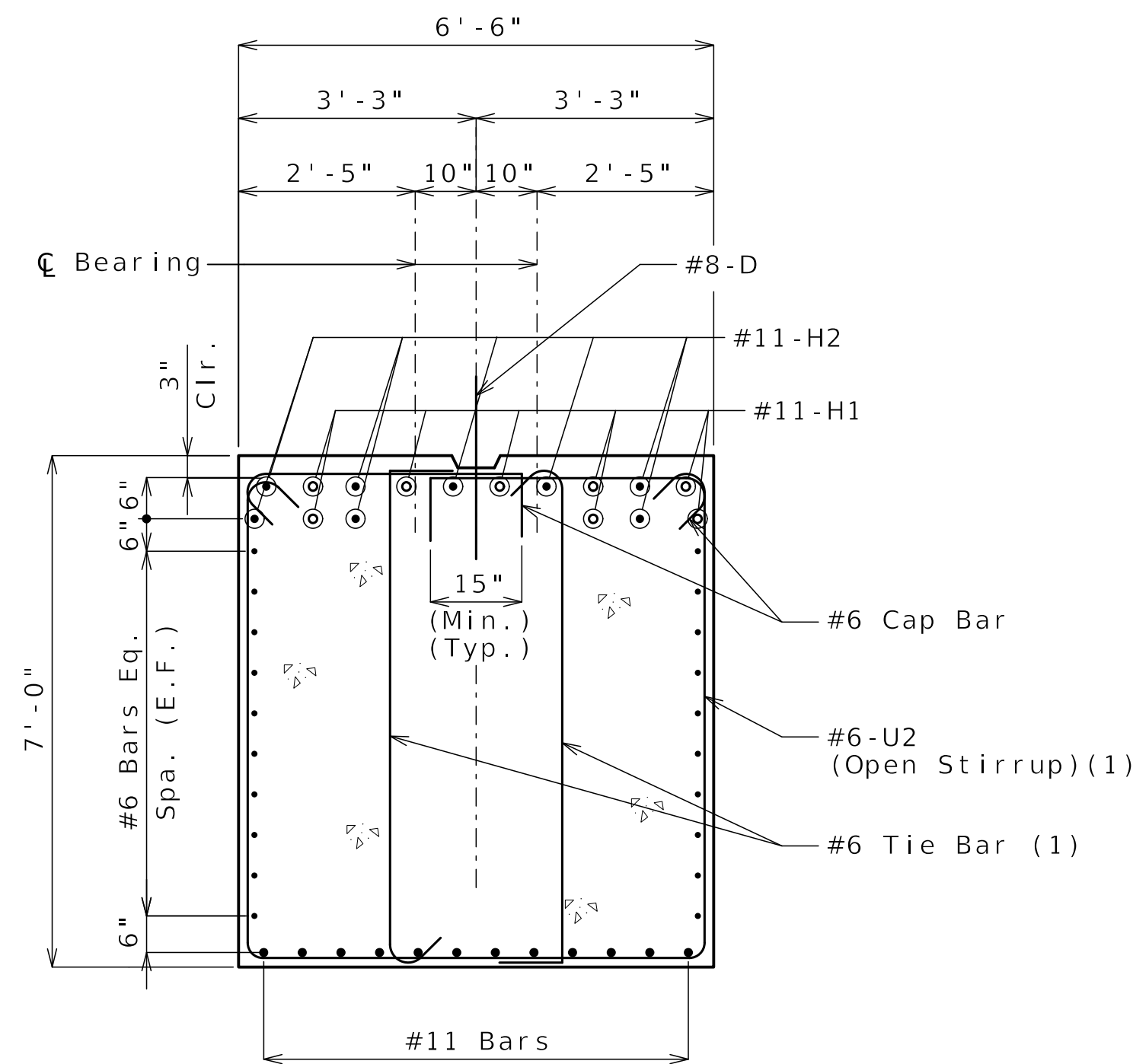
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275.6636)

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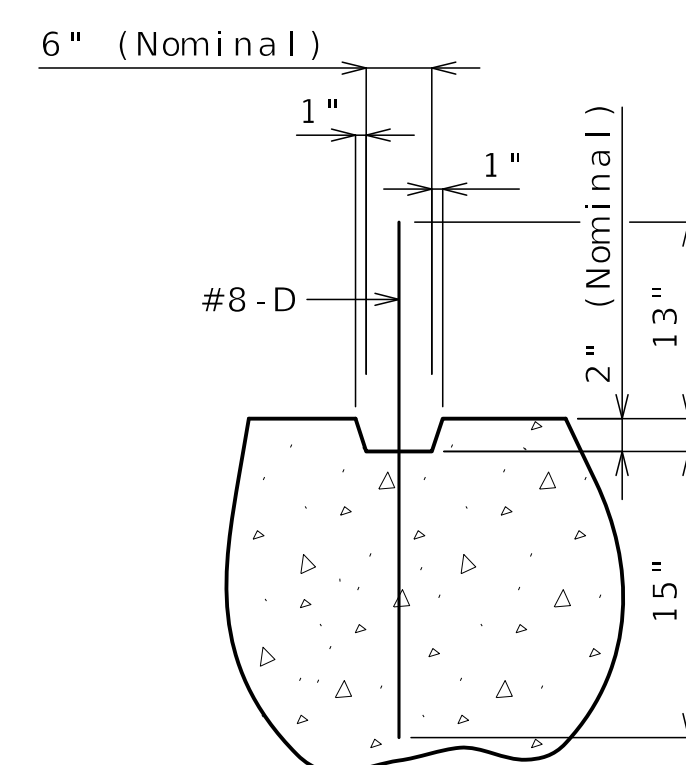
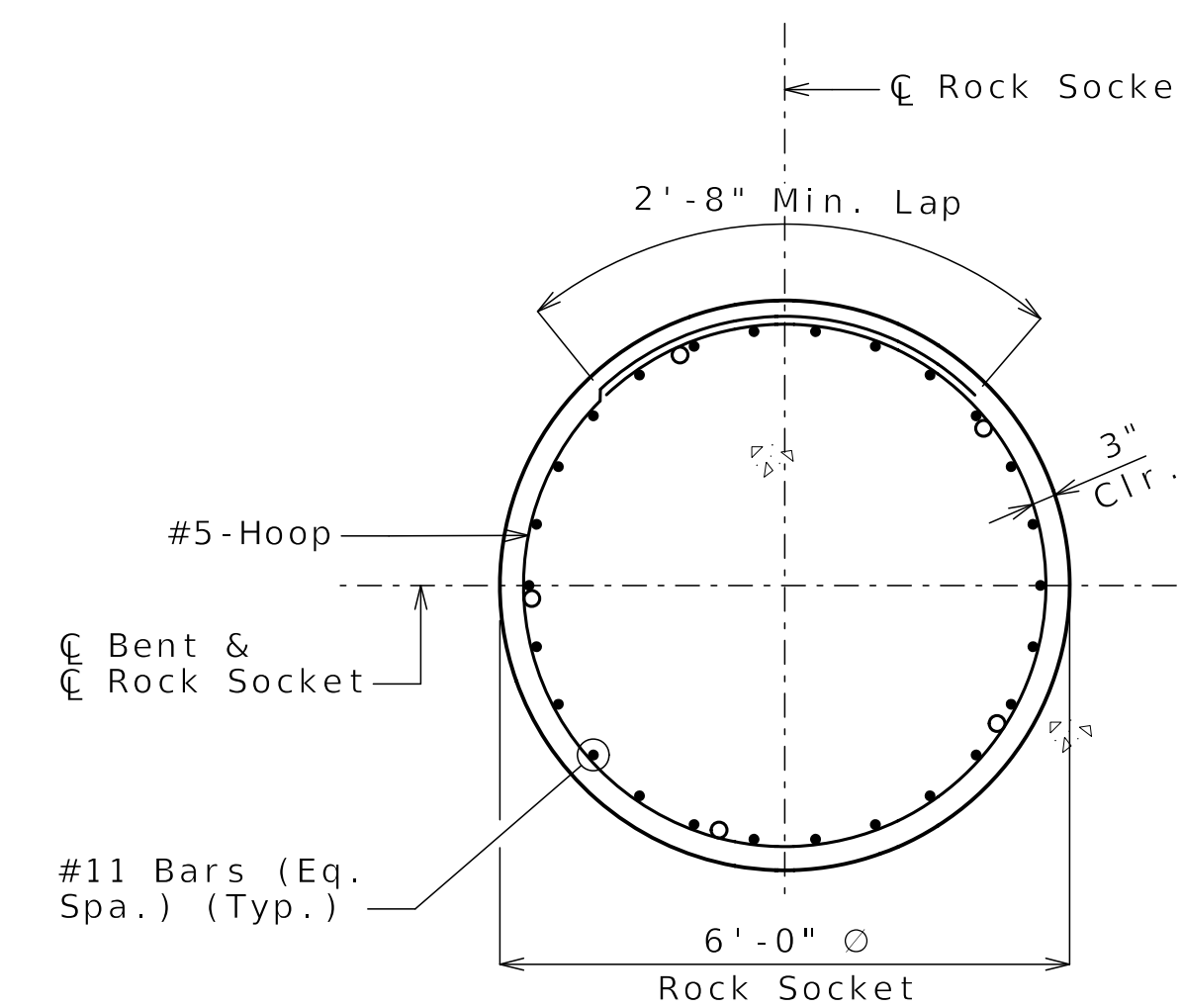
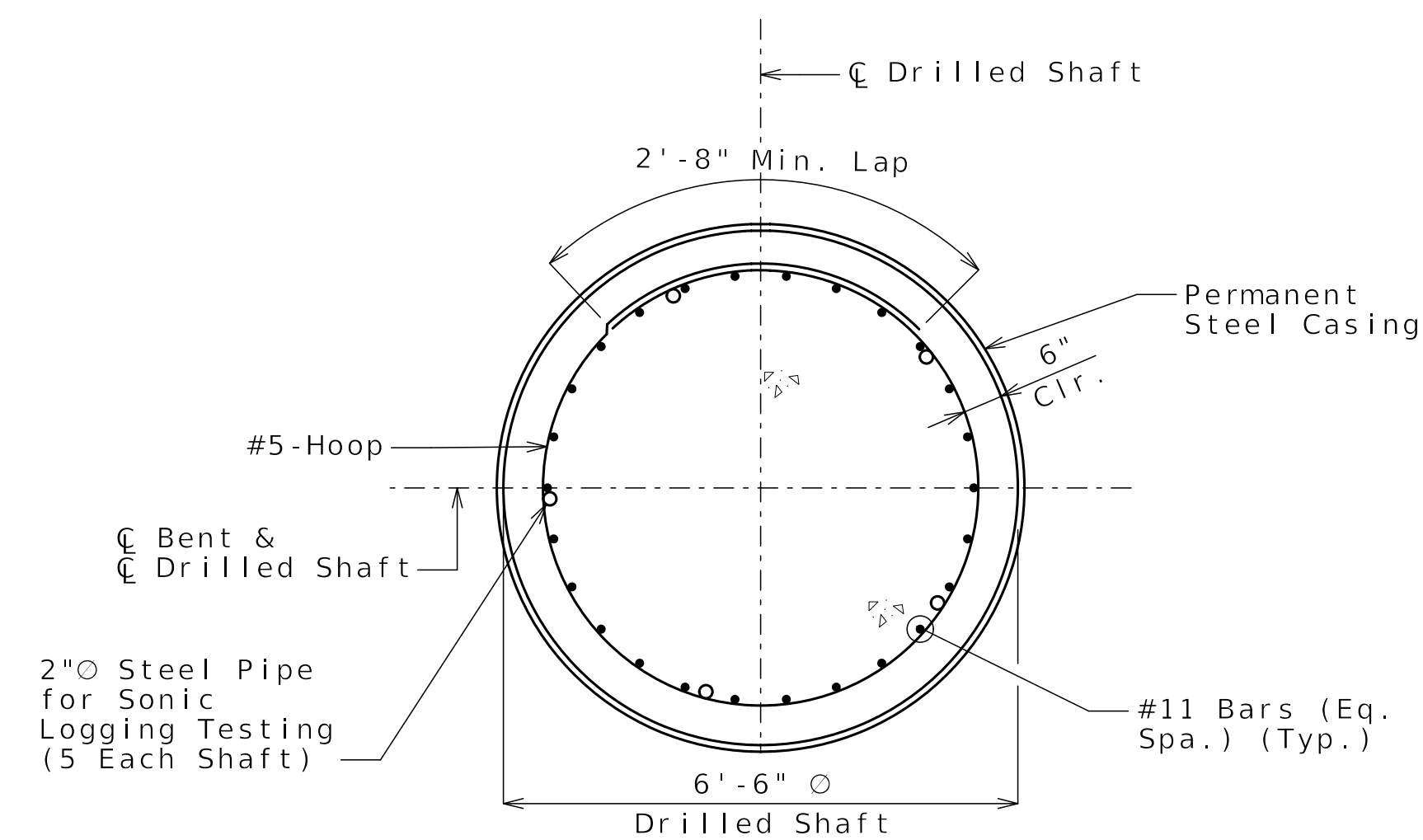
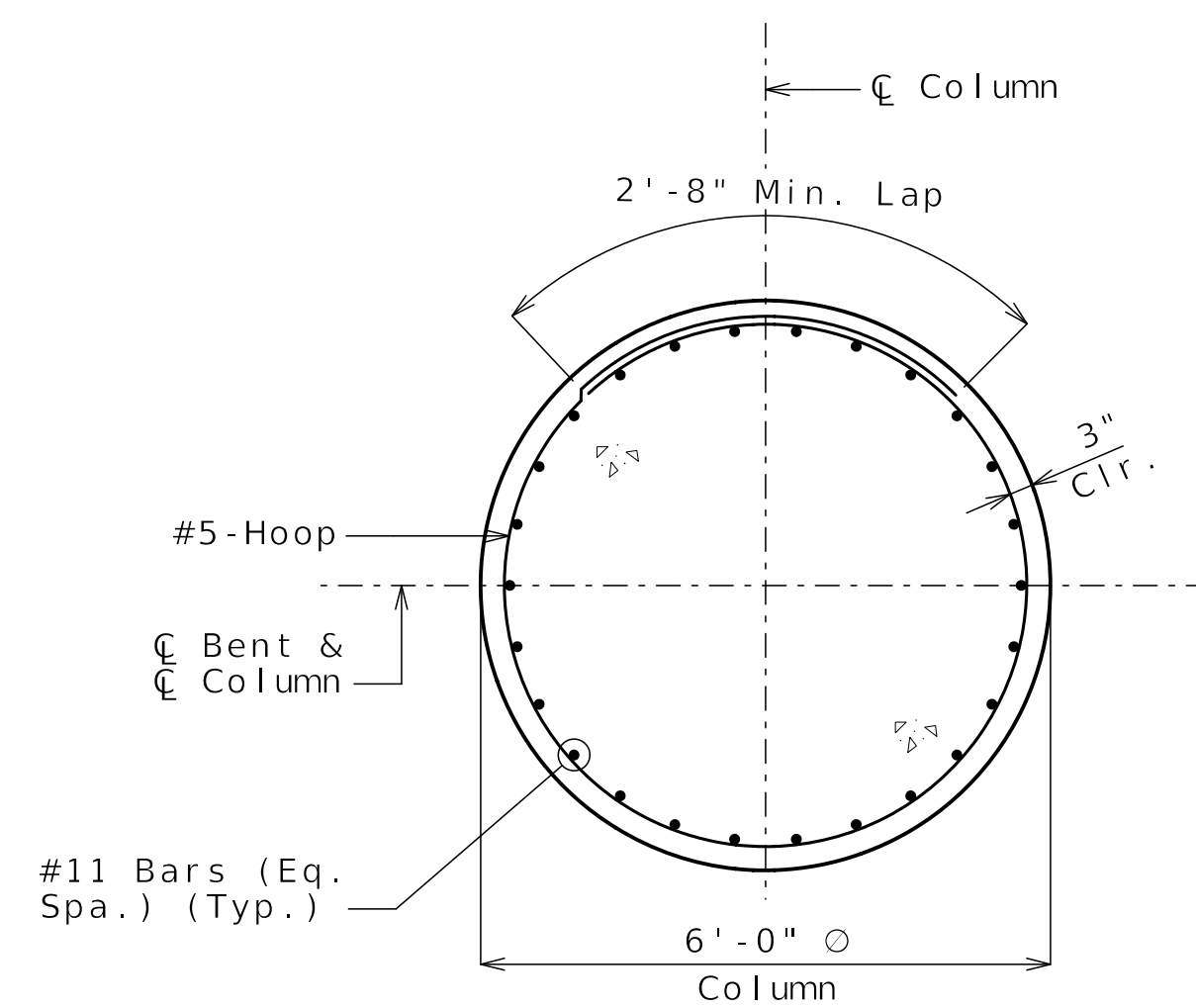
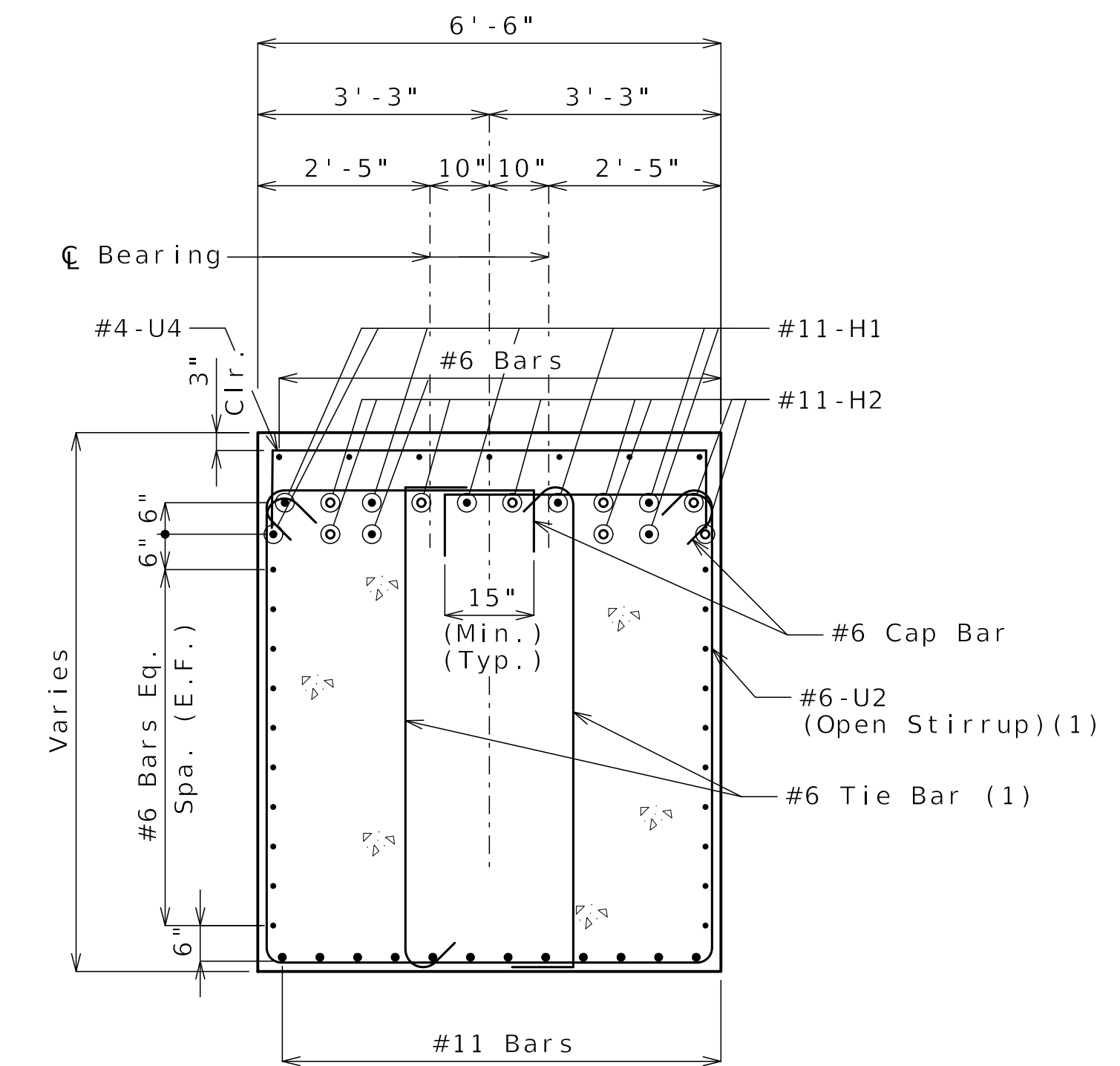


KANSAS CITY, MO 64105-1310
 CERTIFICATE OF AUTHORITY
 NO. 001270





(1) U1, U2 and #6 Tie Bar Vertical Leg = 6' - 7 $\frac{1}{2}$ "



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

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

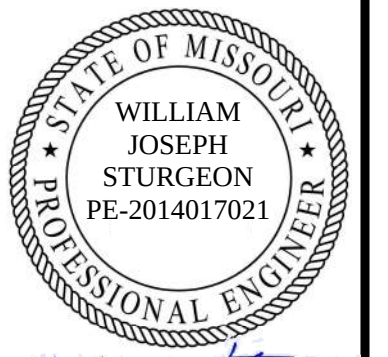
Notes:

Work this sheet with Sheets No. B09-12 and B09-13.

Hoop splices shall be staggered around the drilled shaft and rock socket at 90 degree intervals.

Shift #11-H1 and #11-H2 bars to provide clear girder chairs. Maintain a minimum spacing of 5 $\frac{1}{2}$ " and a maximum of 12" between adjacent bars.

DETAILS OF INTERMEDIATE BENT NO. 2



6/3/2025

DATE PREPARED

06/02/2025

ROUTE	STATE
I 70	MO

1 - 70	MO
DISTRICT	SHEET NO.

DISTRICT	SHEET
RR	R09-

DIR	BOB
COUNTY	

JACKSON

JOB NO. 1151005

J411486D

CONTRACT ID.
340807-C01

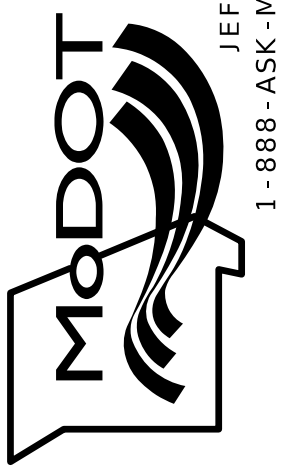
PROJECT NO.

BRIDGE NO.

A9626

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DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

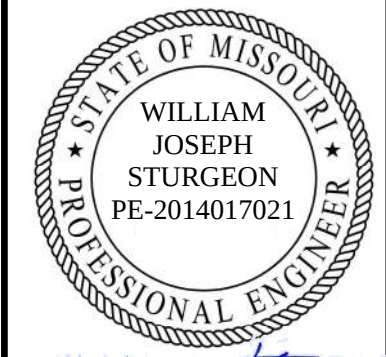
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

**CLARKSON
RADMACHER**
JOINT VENTURE

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





6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70
DISTRICT
BR
COUNTY
JACKSON
JOB NO.
J4I1486D
CONTRACT ID.
240807-C01
PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION
REV 0 - RFC SUBMITTAL

DATE
06/02/25

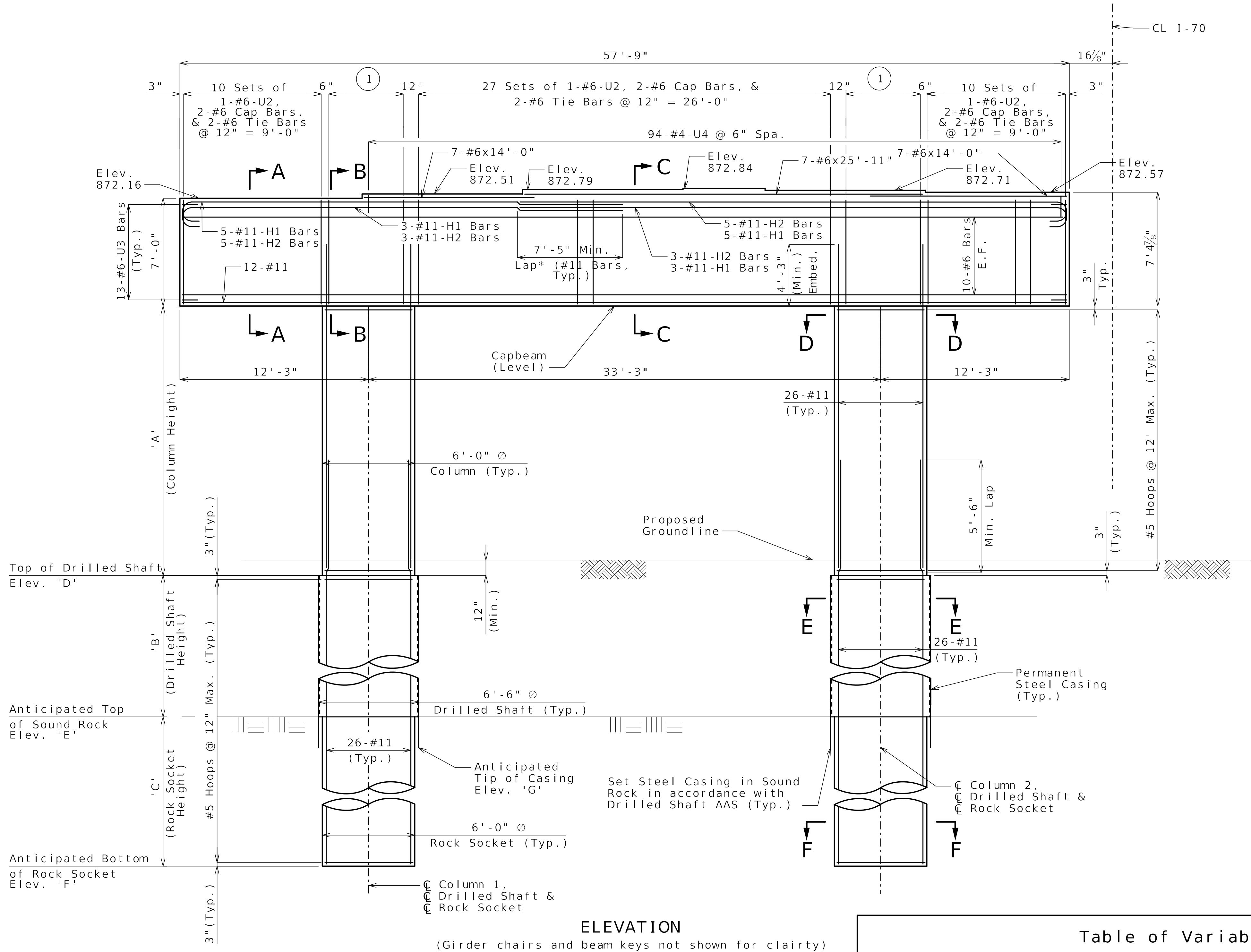
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

CLARKSON RADMACHER JOINT VENTURE

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

HNTB



ELEVATION
(Girder chairs and beam keys not shown for clarity)

Table of Variables							
Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	23'-1 ⁷ / ₈ "	82'-0"	14'-0"	842.0	760.0	746.0	758.0
2	22'-1 ⁷ / ₈ "	83'-0"	14'-0"	843.0	760.0	746.0	758.0

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-16 and B09-17.
For location of drilled shafts, see Sheet No. B09-06.
For Sections A-A thru F-F, see Sheet No. B09-17.
For Optional Drilled Shaft Splice Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

DETAILS OF INTERMEDIATE BENT NO. 3

#11-H1 & #11-H2 BAR
21'-6" (H1)
43'-5" (H2)

① 6-#6-U1 @ Eq. Spa.= 5'-1¹/₂"

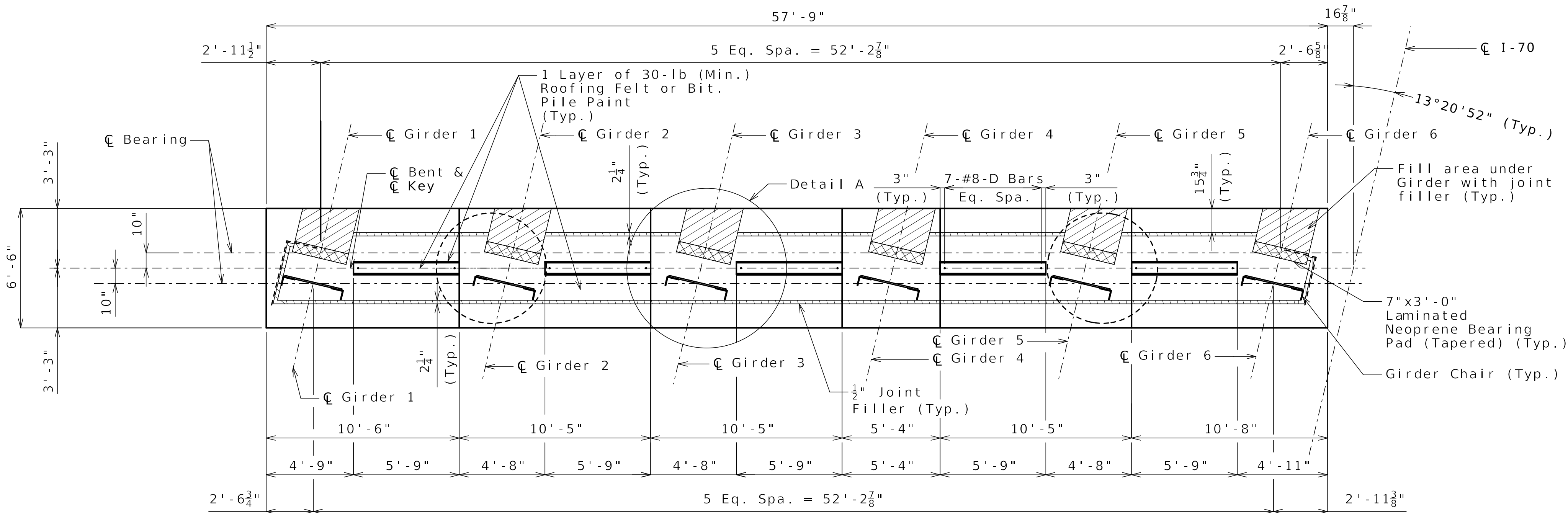
#6-U3 BAR
6'-1"
12"
#4-U4 BAR
6'-3"
15"

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Detailed FEB 2025
Checked MAR 2025

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

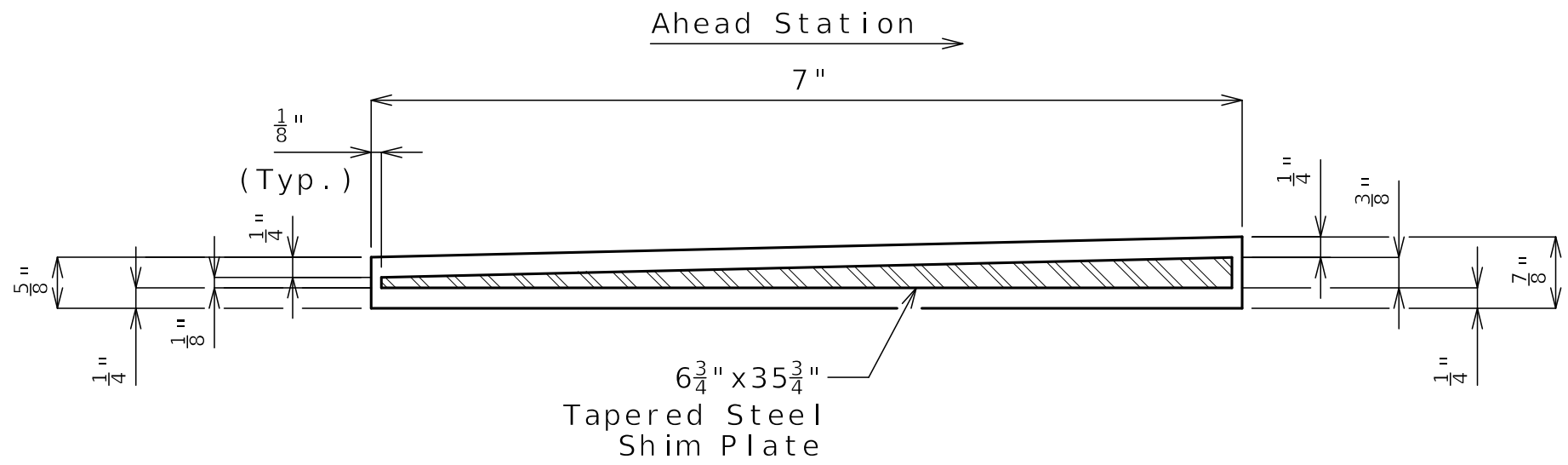
Sheet No. B09-15 of B09-58



PLAN OF CAPBEAM

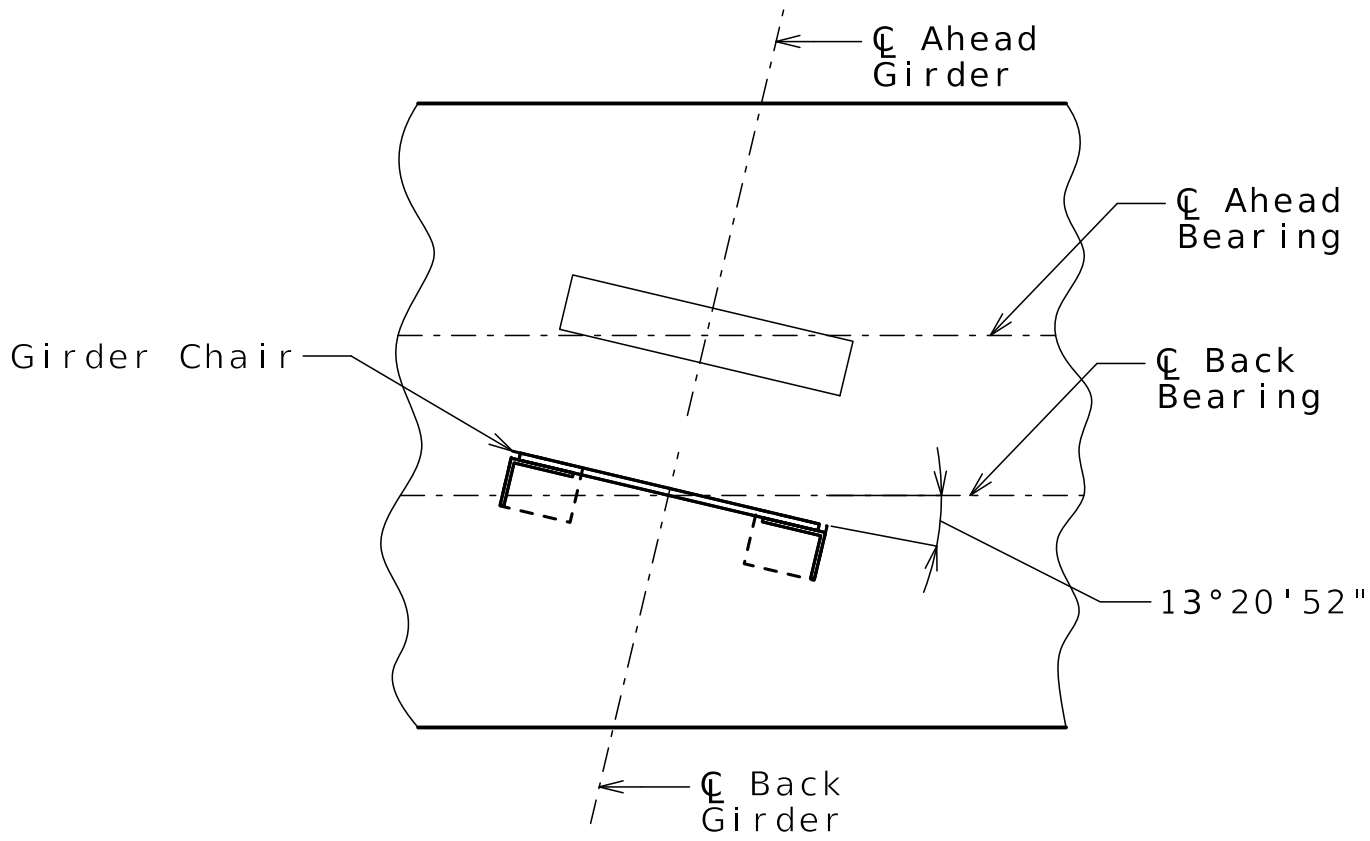
Table of Variables						
Girder	1	2	3	4	5	6
Elev. *	872.90	873.18	873.47	873.54	873.42	873.29

* See Girder Chair Elevation on Sheet No. B09-13 for elevation definition and additional girder chair details. Use orientation or vertical angle legs shown in Detail A on this sheet.



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD (TAPERED)

6 Required per Bent



DETAIL A

Notes:
Work this sheet with Sheets No. B09-15 and B09-17.
Steel for chairs shall be ASTM A709 Grade 36 for angles and ASTM A572 Grade 50 for plates.
Girders are parallel to C I-70.
For additional joint filler layout details, see concrete diaphragm details sheet in A9626 (I-70 WB Over KCT, Indiana & 18th) Superstructure Package.
For steps 2 inches or more, use 2 1/4" x 1/2" inch joint filler up vertical face.

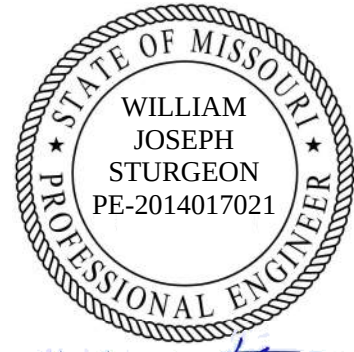
DETAILS OF INTERMEDIATE BENT NO. 3

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-16 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-16

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

CERTIFICATE OF AUTHORITY
NO. 001270

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

HNTB



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-18

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

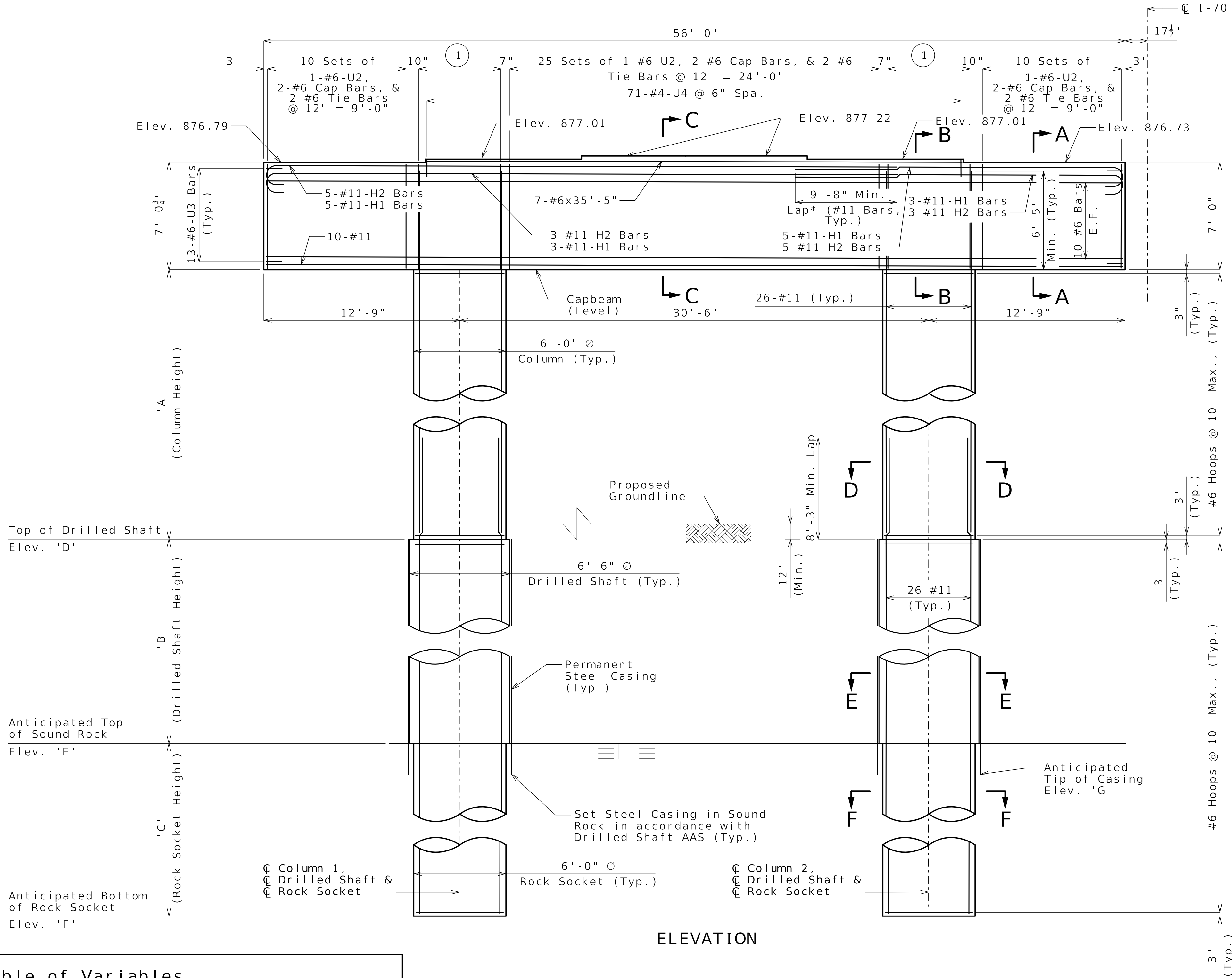
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

CLARKSON
RADMACHER
JOINT VENTURE

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

HNTB



ELEVATION

Table of Variables

Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	30'-8 ³ / ₄ "	65'-0"	15'-0"	839.0	774.0	759.0	772.0
2	28'-8 ³ / ₄ "	67'-0"	15'-0"	841.0	774.0	759.0	772.0

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

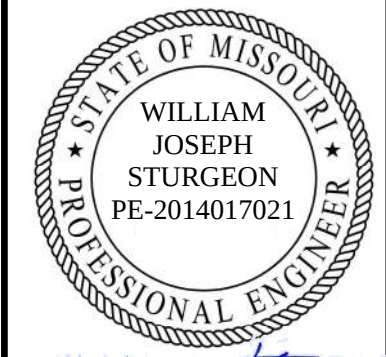
Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-19 and B09-20.
For location of drilled shafts, see Sheet No. B09-06.
For Sections A-A thru F-F, see Sheet No. B09-20.
Top of cap between bearing seat pedestals is sloped down by 1" from $\bar{C}$ Bent to edge of cap. Top of cap elevation is at $\bar{C}$ Bent.
For Optional Drilled Shaft Splice Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

DETAILS OF INTERMEDIATE BENT NO. 4

#11-H1 & #11-H2 BAR
Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-18 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-19

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION
REV 0 - RFC SUBMITTAL
DATE
06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

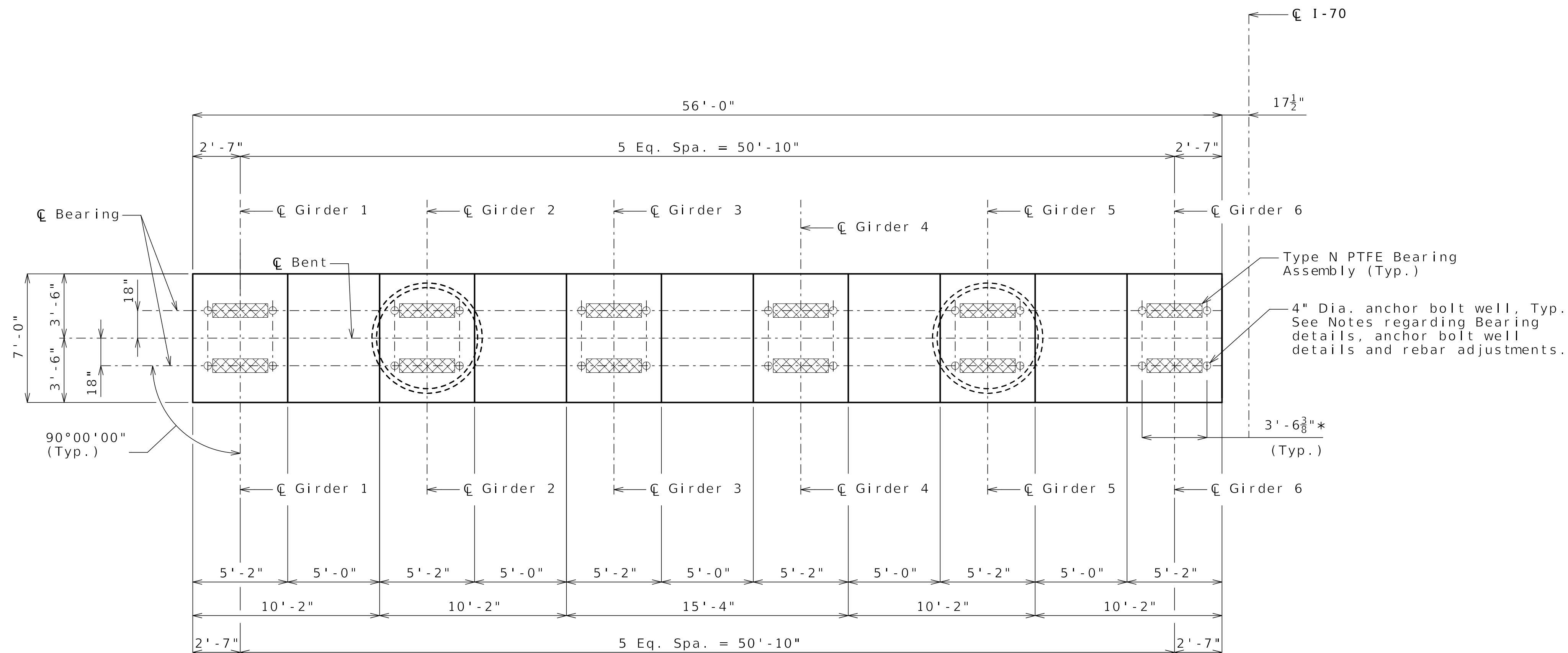
MoDOT

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

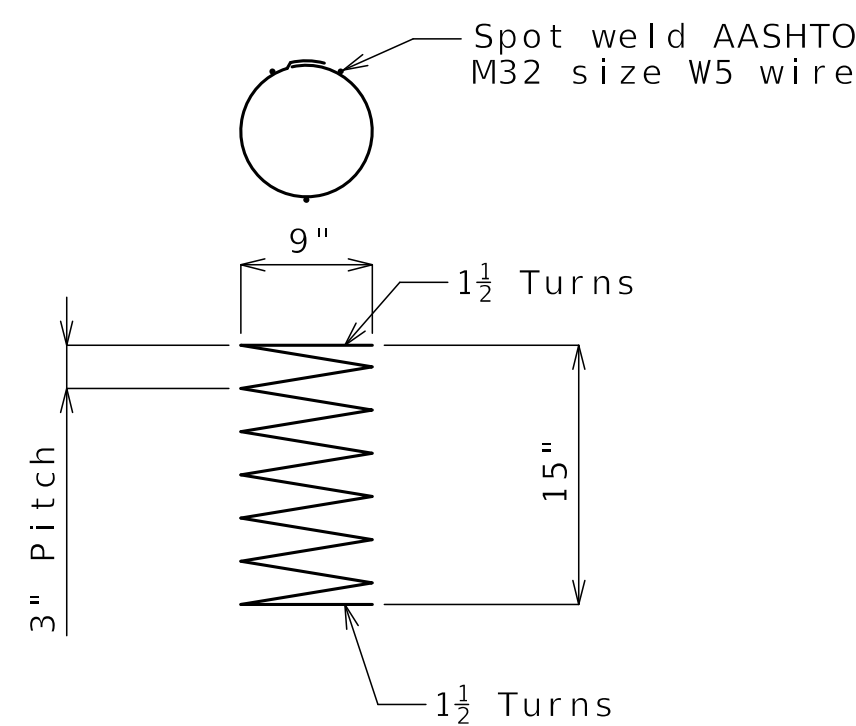
CLARKSON RADMACHER JOINT VENTURE

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

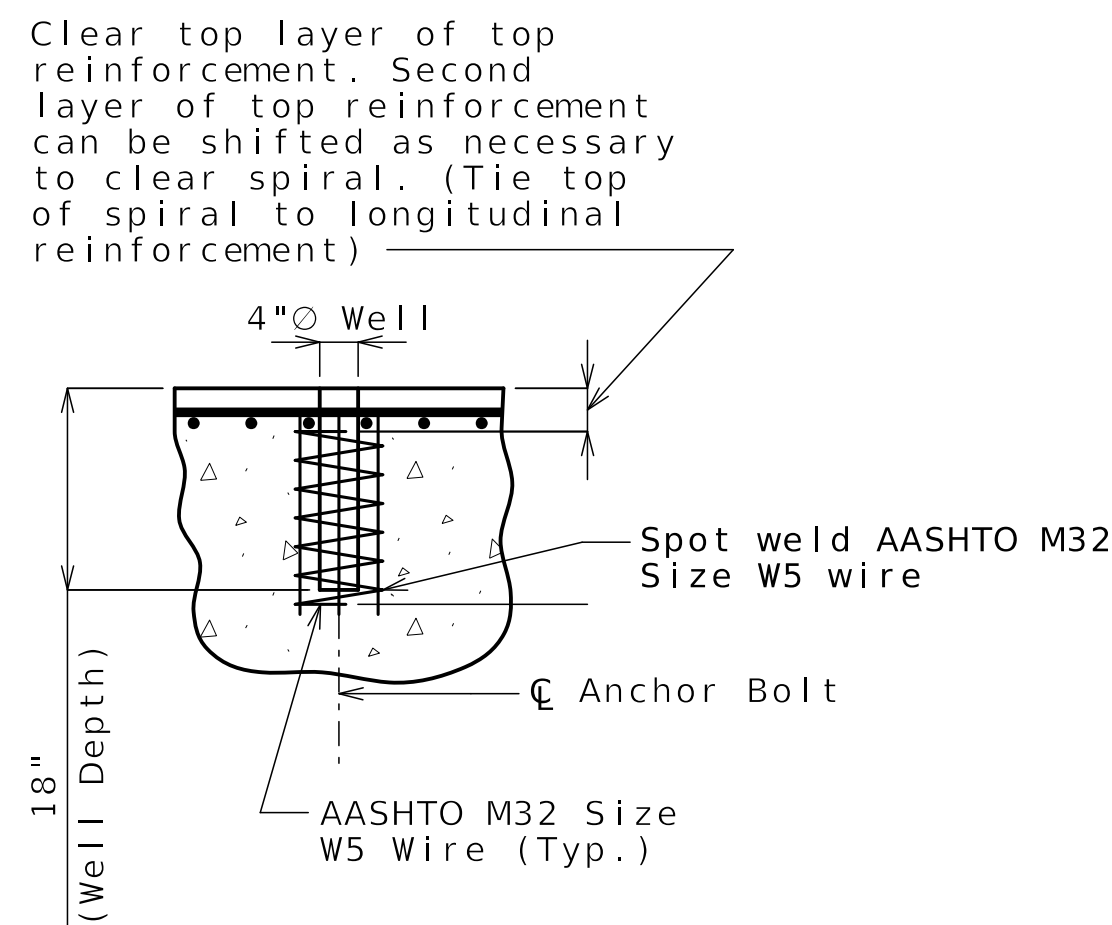
HNTB



PLAN OF CAPBEAM



DETAIL OF
SIZE W5 WIRE



DETAIL OF ANCHOR BOLT WELLS

Released For Construction
Not to Scale

Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
Work this sheet with Sheets No. B09-18 and B09-20.
For Details of Type N PTFE Bearings, see Sheet B09-36.
Anchor Bolt wells shall not be formed with galvanized corrugated steel pipe.
* Bearing pads and Anchor bolts are placed perpendicular to C Girder.
Reinforcing steel shall be shifted to clear anchor bolt wells by at least $\frac{1}{2}$ inch.
Girders are parallel to C I-70.

DETAILS OF INTERMEDIATE BENT NO. 4

(1) Slope $\frac{1}{8}$ " per foot for drainage.

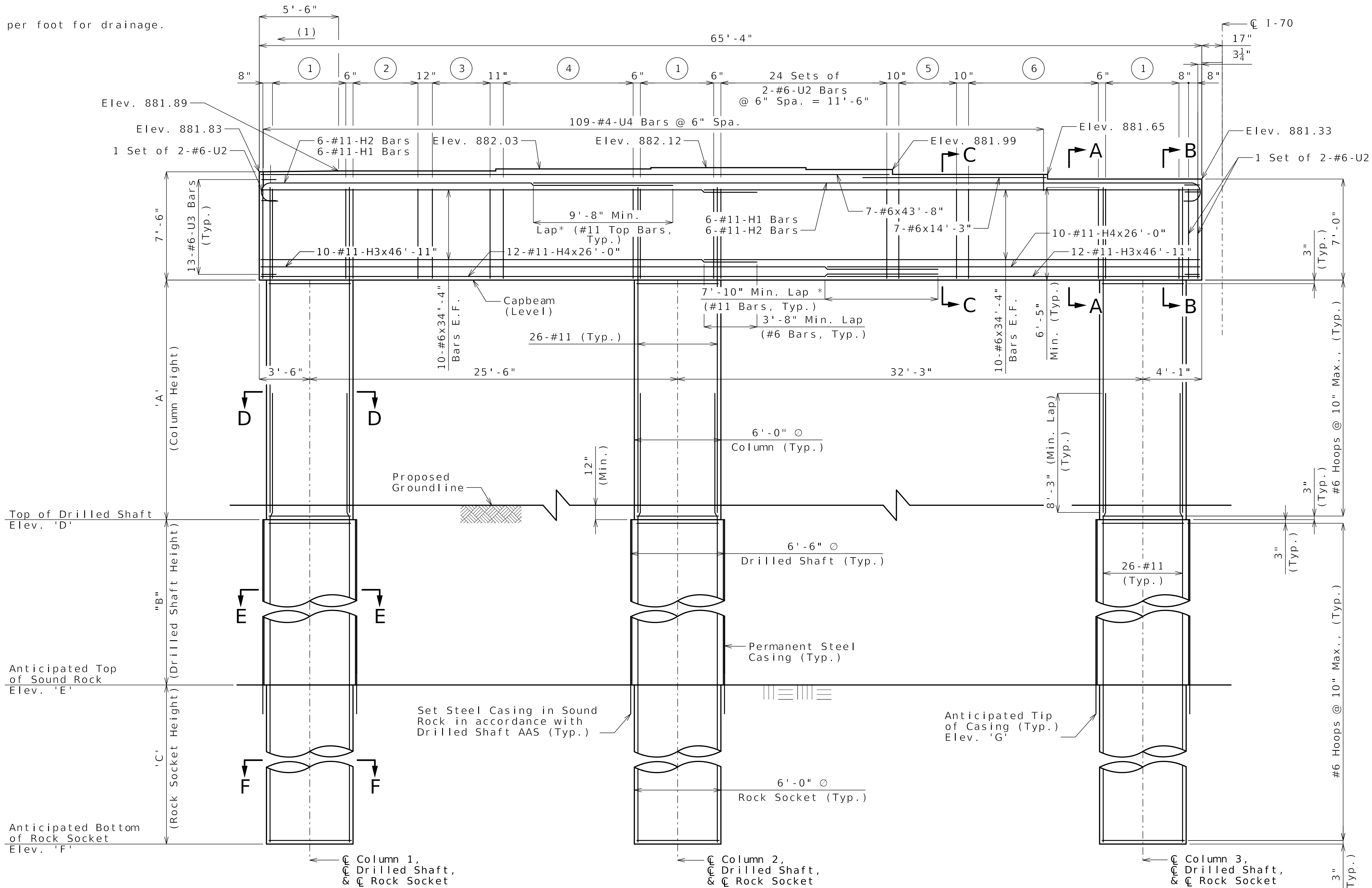
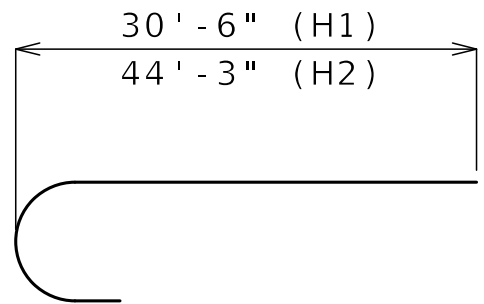


Table of Variables

Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	28'-4"	66'-0"	20'-0"	846.0	780.0	760.0	778.0
2	28'-4"	66'-0"	20'-0"	846.0	780.0	760.0	778.0
3	27'-4"	67'-0"	20'-0"	847.0	780.0	760.0	778.0

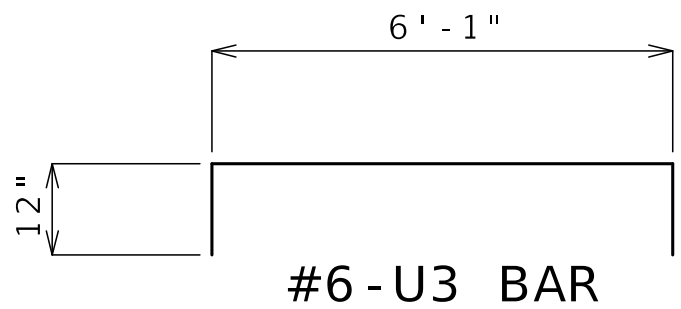


#11-H1 & #11-H2 BAR

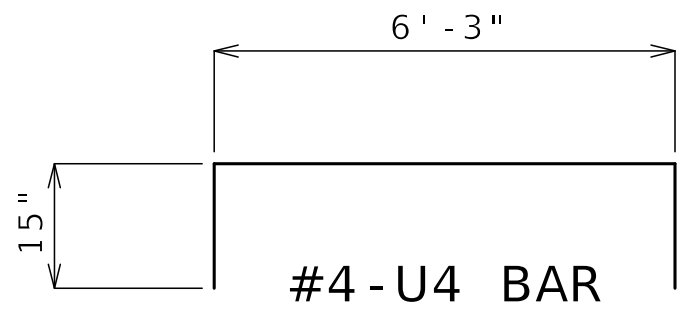
Detailed FEB 2025
Checked MAR 2025

- 5 Sets of 1-#6-U1 & 2-#6 Hook Bars @ Eq. Spa. = 5'-1"
- 10 Sets of 2-#6-U2 @ 6" = 4'-6"
- 5 Sets of 2-#6-U2 @ 12" = 4'-0"
- 19 Sets of 2-#6-U2 @ 6" = 9'-0"

ELEVATION
(Beam keys not shown for clarity)



#6-U3 BAR



#4-U4 BAR

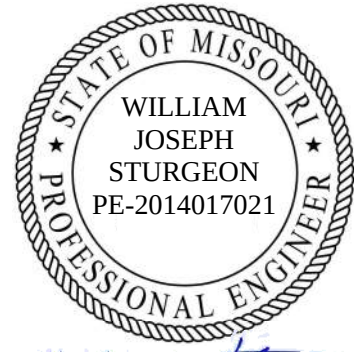
- 5 Sets of 2-#6-U2 @ 12" = 4'-0"
- 19 Sets of 2-#6-U2 @ 6" = 9'-0"

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-22 and B09-23.
For location of drilled shafts, see Sheet No. B09-06.
For Sections A-A thru F-F, see Sheet No. B09-23.
For Optional Drilled Shaft Splice Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

DETAILS OF INTERMEDIATE BENT NO. 5

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

Sheet No. B09-21 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-21

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

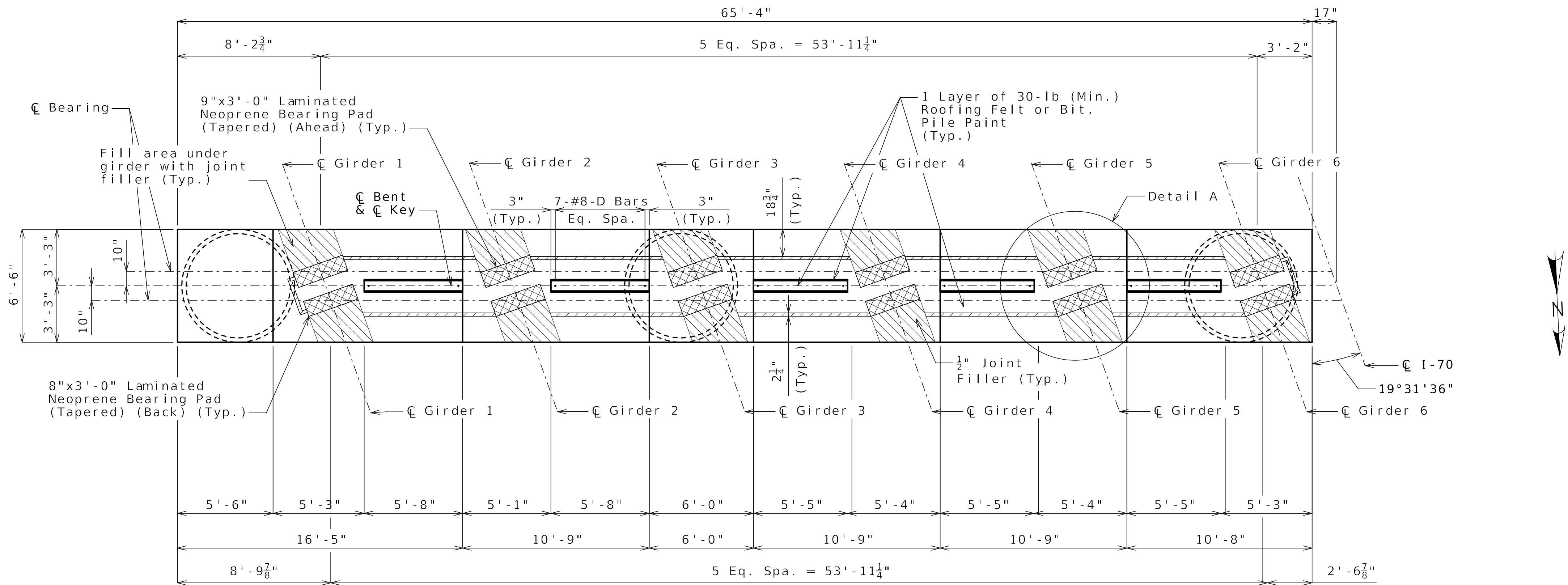
105 WEST CAPITOL
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

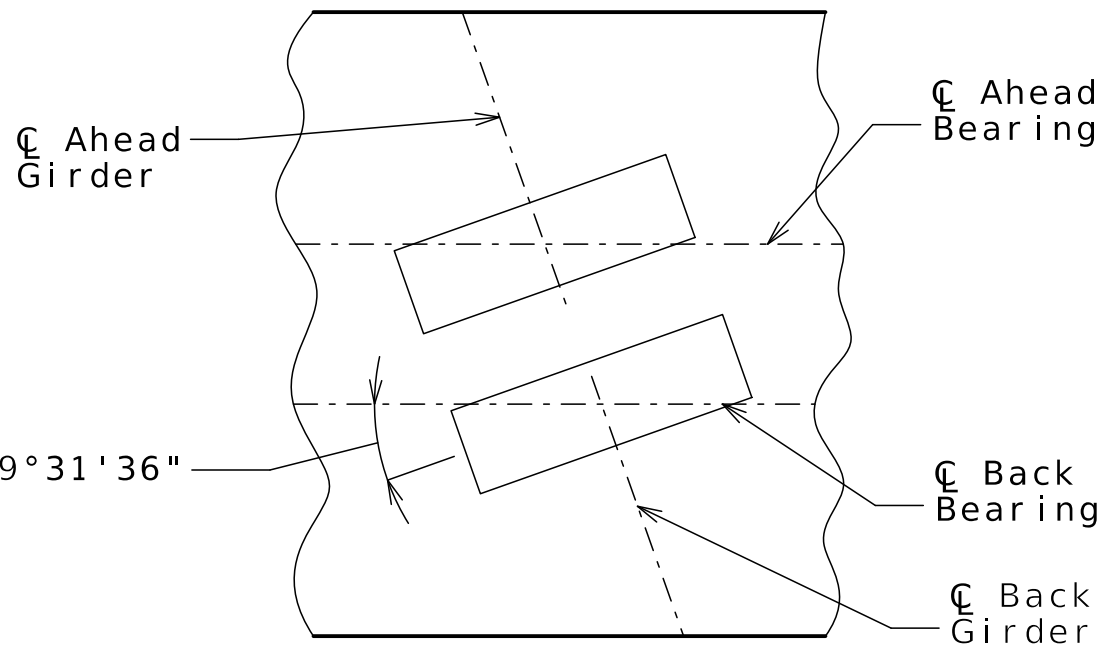
CERTIFICATE OF AUTHORITY
NO. 001270

CLARKSON RADMACHER JOINT VENTURE

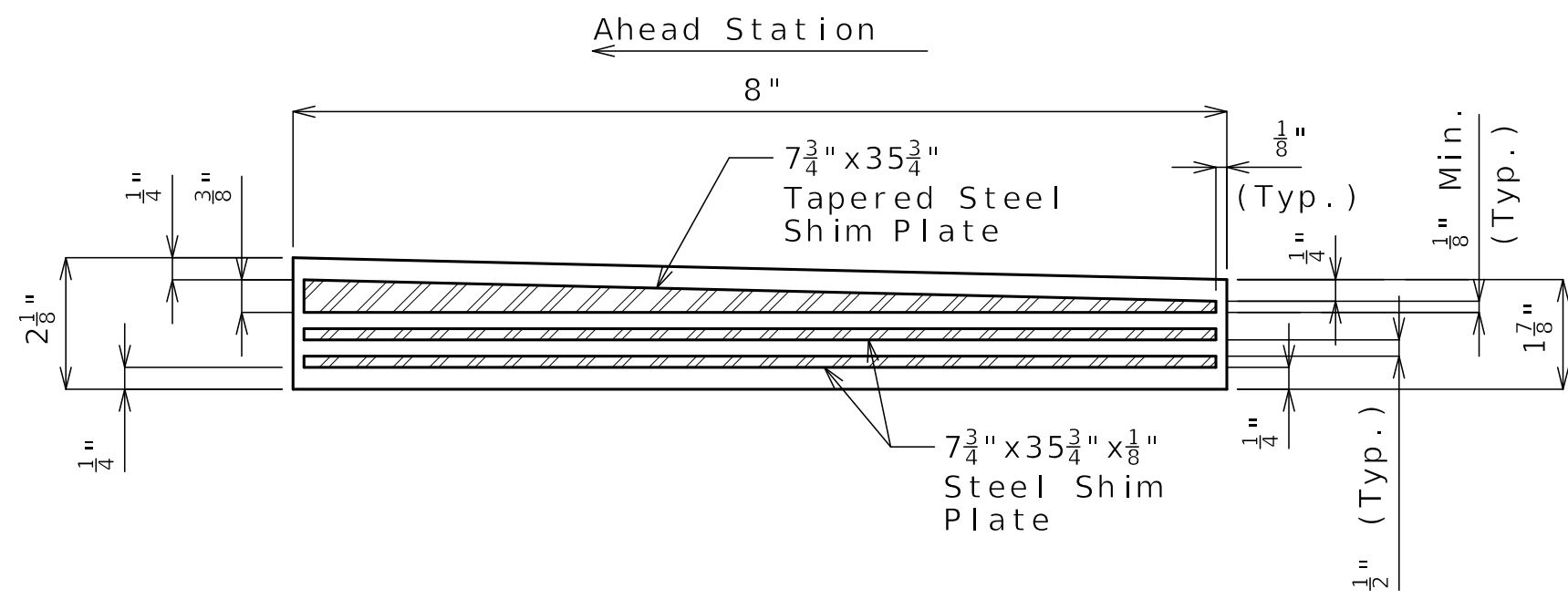
HNTB



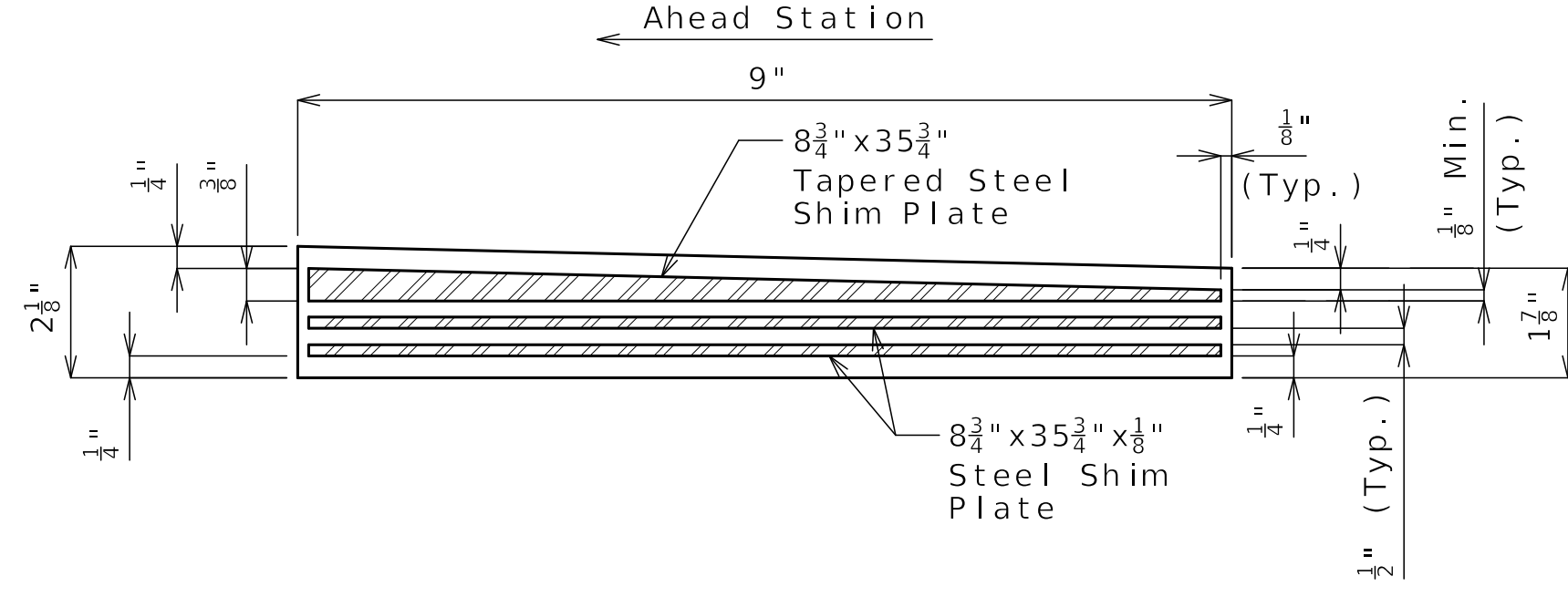
PLAN OF CAPBEAM



DETAIL A



TYPICAL SECTION THRU LAMINATED NEOPRENE BACK BEARING PAD (TAPERED)
6 Required per Bent

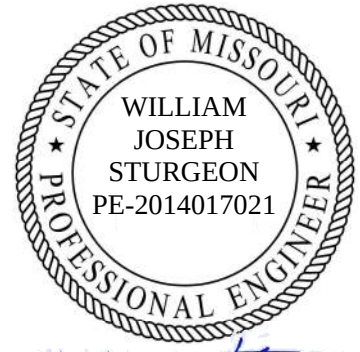


TYPICAL SECTION THRU LAMINATED NEOPRENE AHEAD BEARING PAD (TAPERED)
6 Required per Bent

Notes:
Work this sheet with Sheets No. B09-21 and B09-23.
Girders are parallel to C I-70.
For additional joint filler layout details, see concrete diaphragm details sheet in A9626 (I-70 WB Over KCT, Indiana & 18th) Superstructure Package.
For steps 2 inches or more, use 2 1/4" x 1/2" inch joint filler up vertical face.

DETAILS OF INTERMEDIATE BENT NO. 5

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-22

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

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06/02/25

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06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

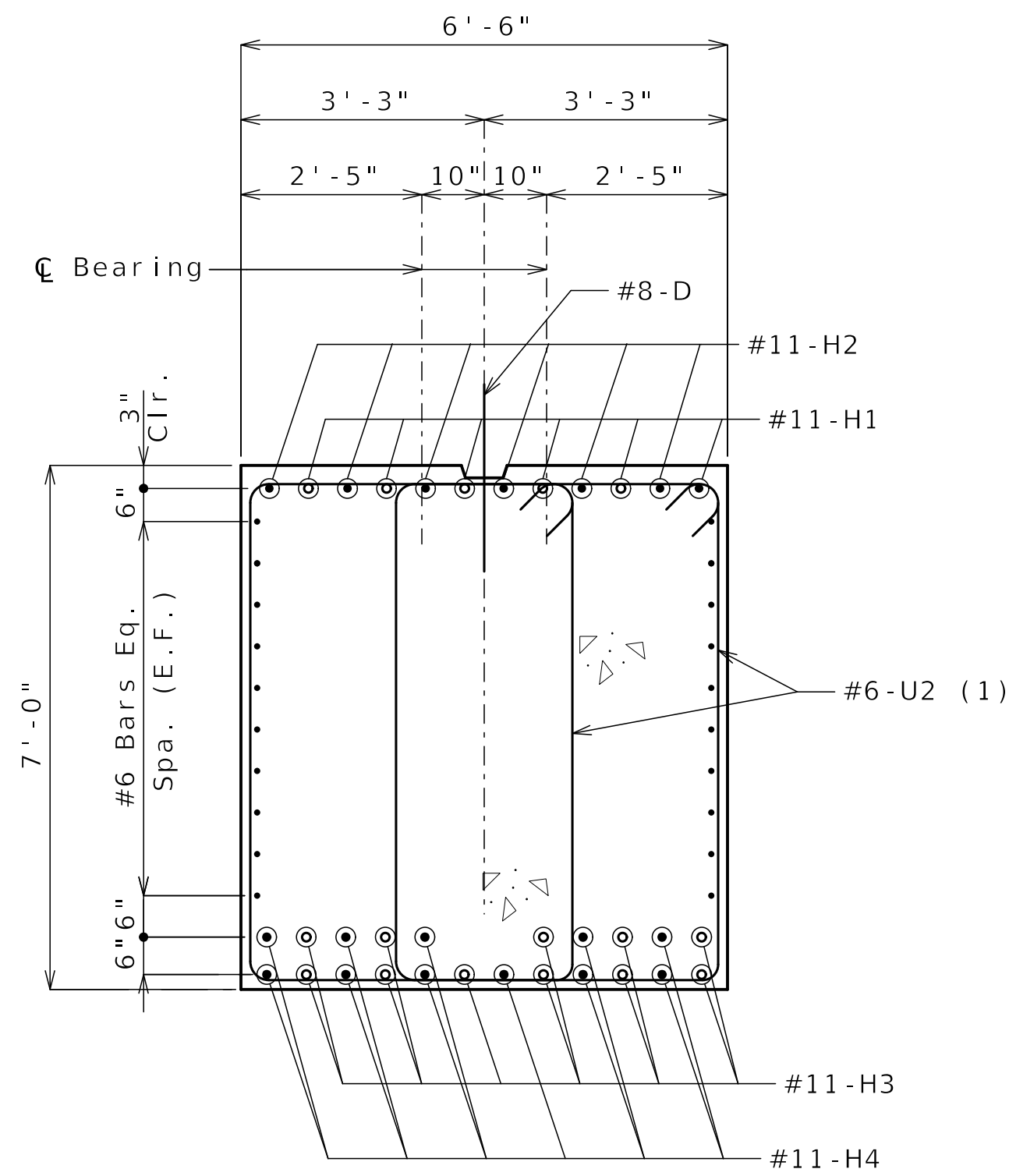
06/02/25

DATE

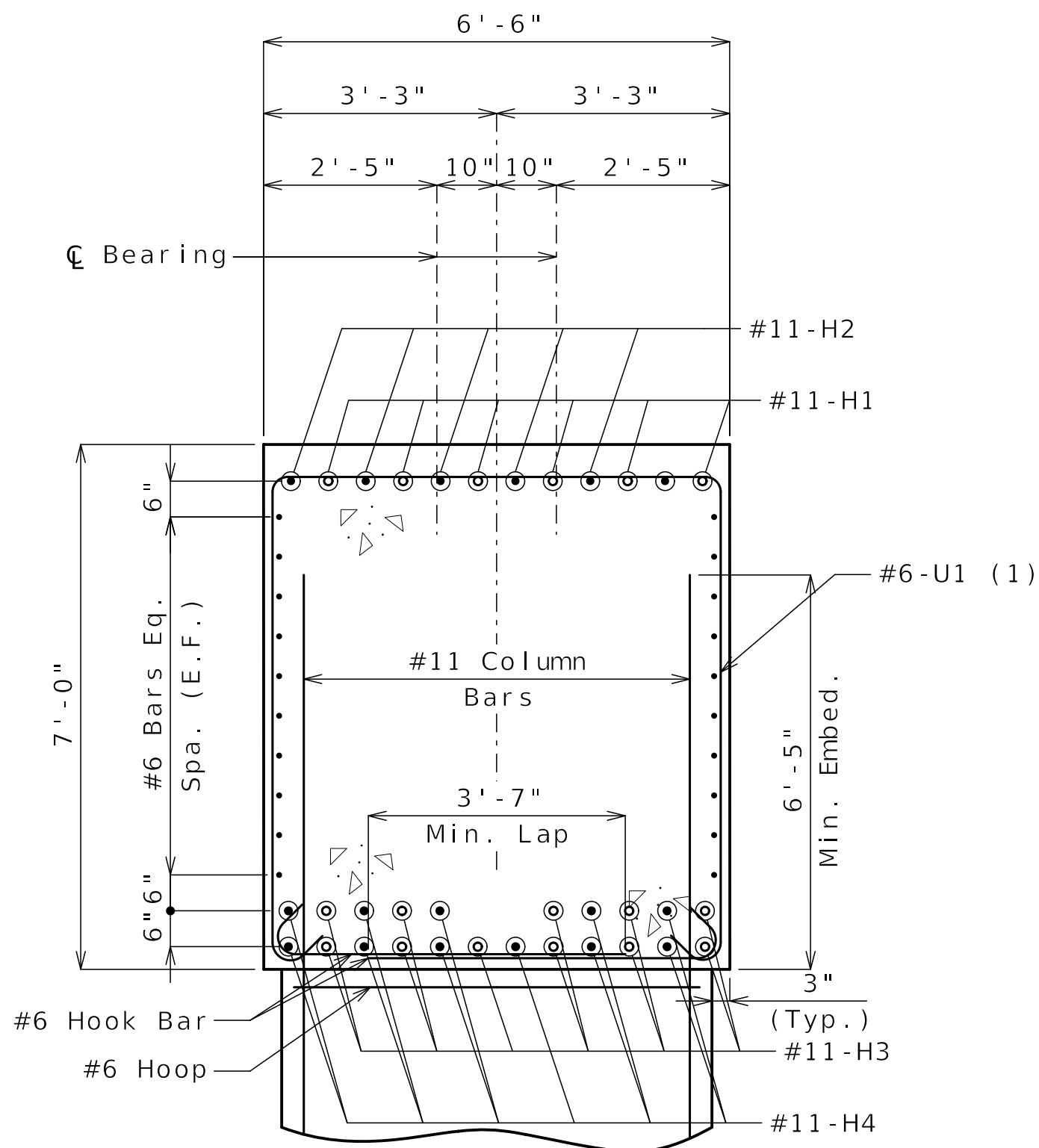
06/02/25

DATE

06/02/25

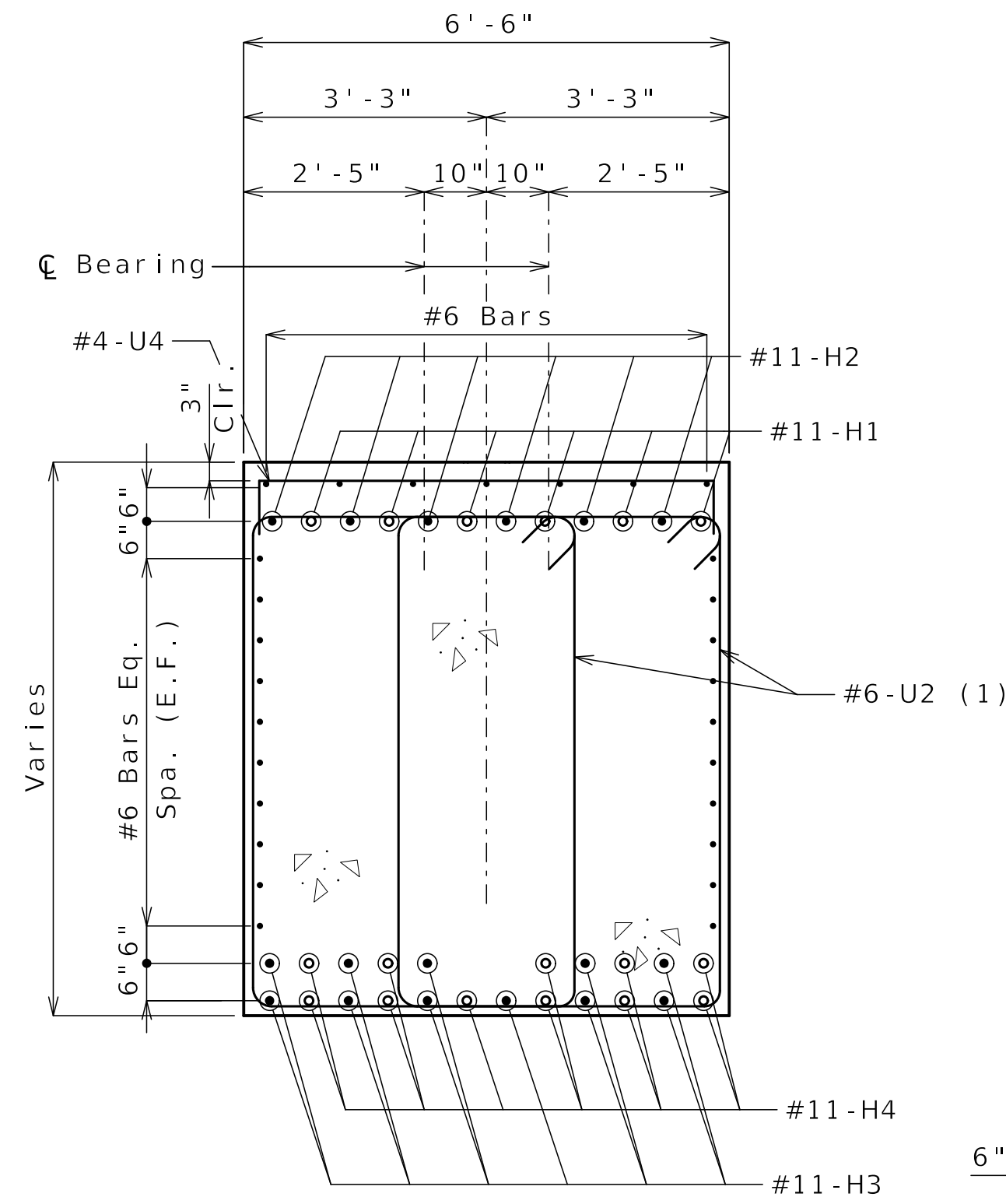


SECTION A-A

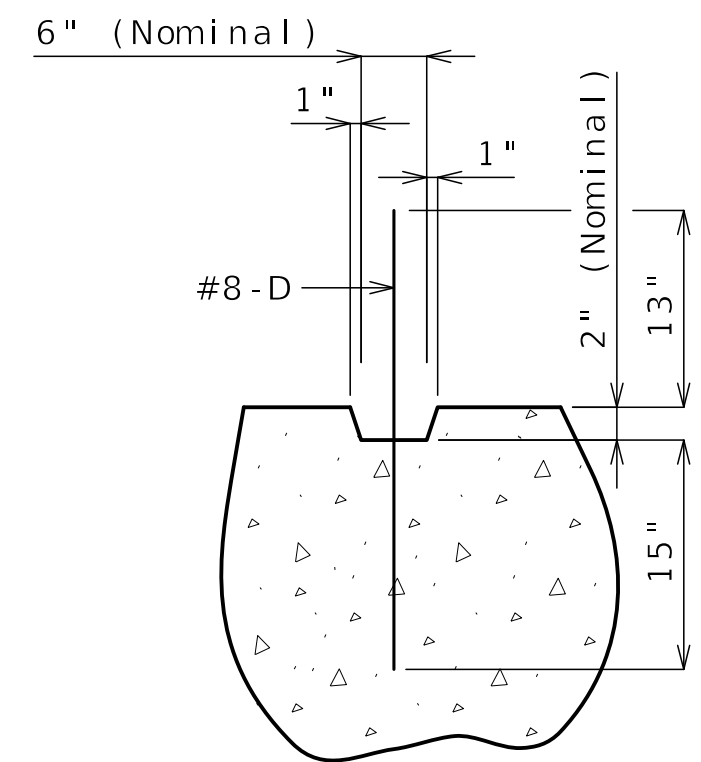


SECTION B-B

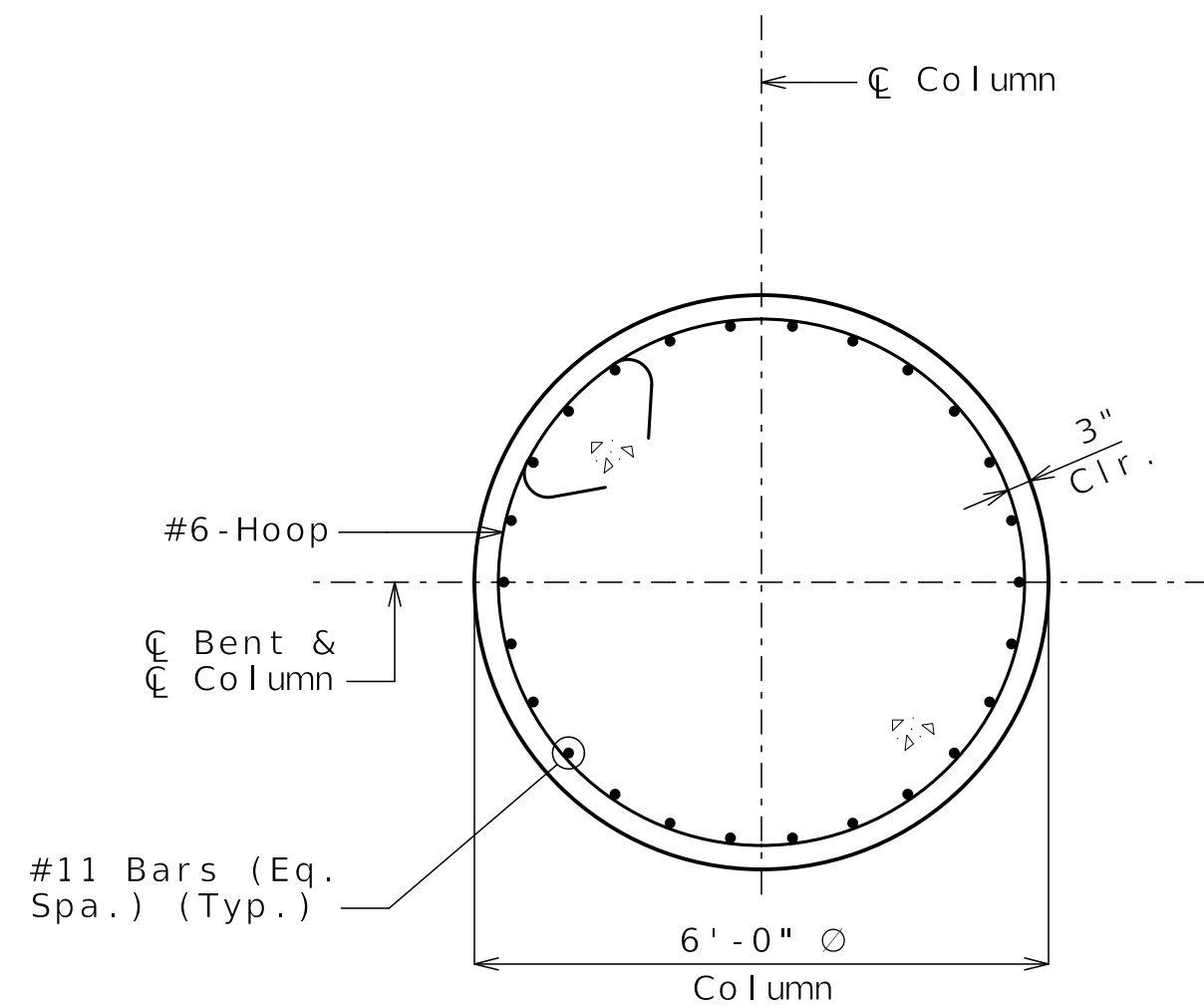
(1) U1 and U2 Vertical Leg = 6'-7½"



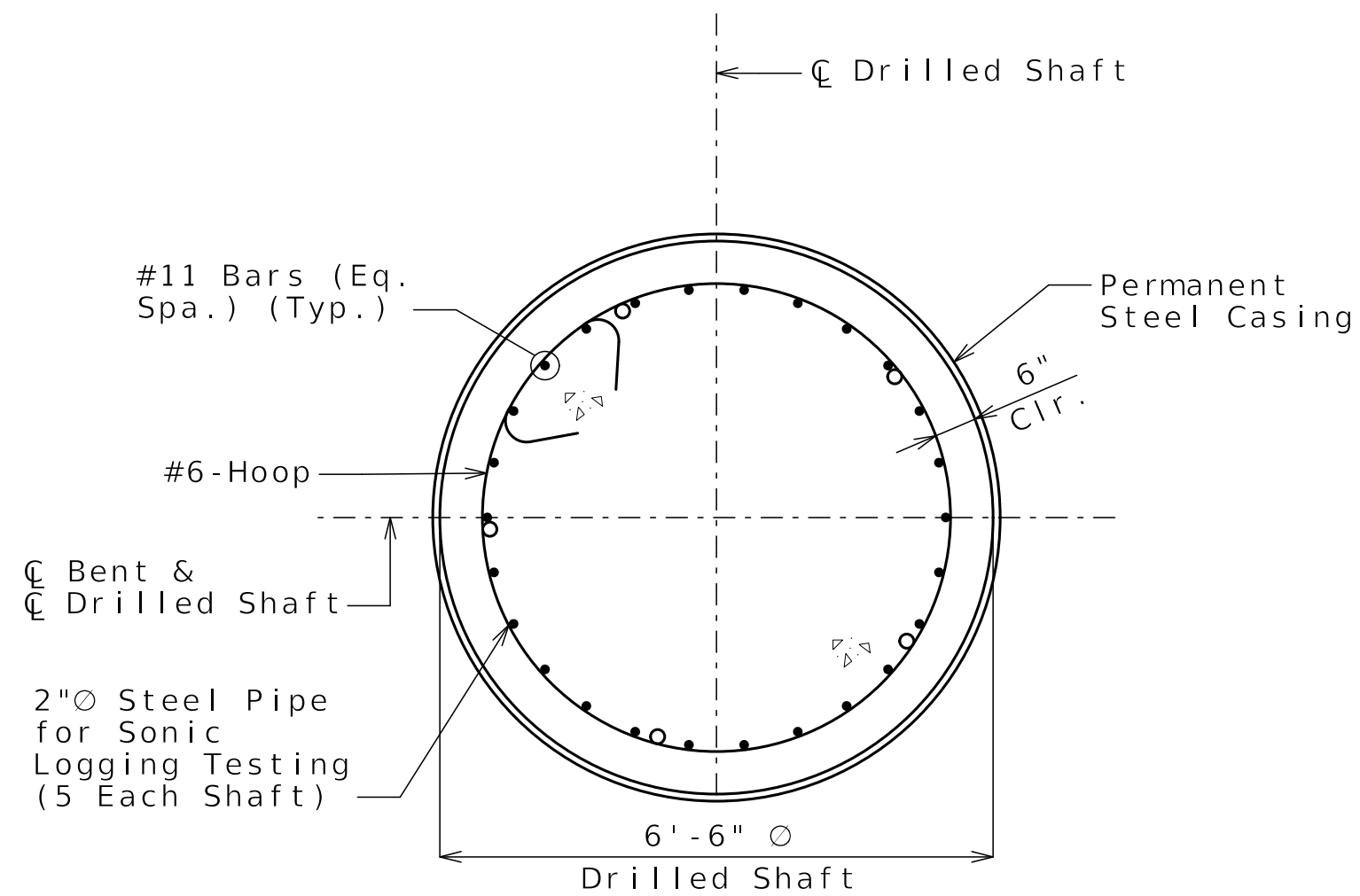
SECTION C-C



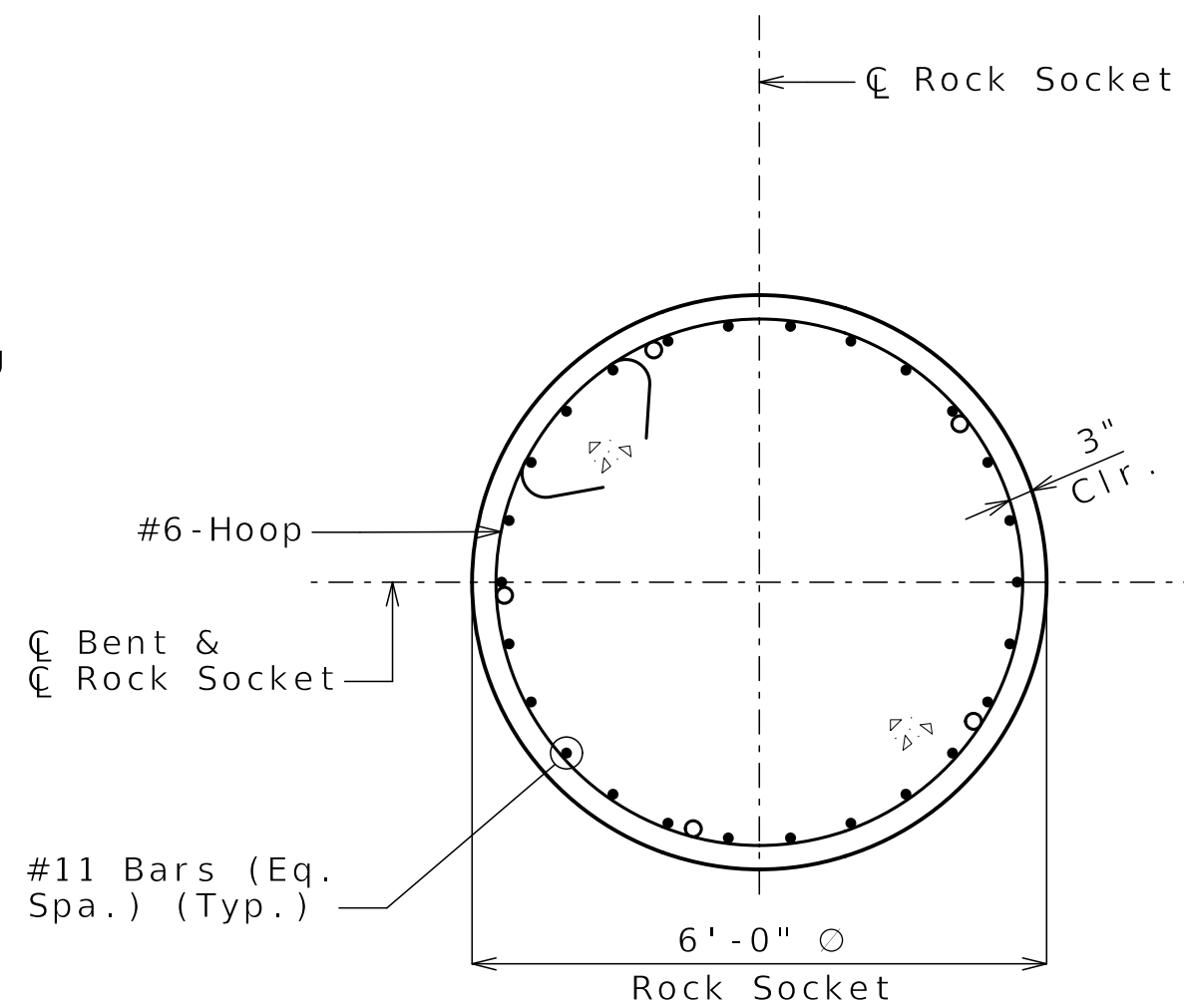
SECTION THRU KEY



SECTION D-D



SECTION E-E

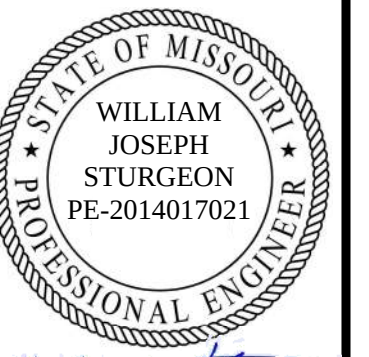


SECTION F-F

Notes:
Work this sheet with Sheets No. B09-21 and B09-22.
Hoop splices shall be staggered around the drilled shaft and rock socket at 180 degree intervals.

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

DETAILS OF INTERMEDIATE BENT NO. 5



6/3/2025

DATE PREPARED 06/02/2025	
ROUTE 1-70	STATE MO
DISTRICT BR	SHEET NO. B09-23
COUNTY JACKSON	
JOB NO. J4I1486D	
CONTRACT ID. 240807-C01	
PROJECT NO.	

BRIDGE NO.
A9626

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

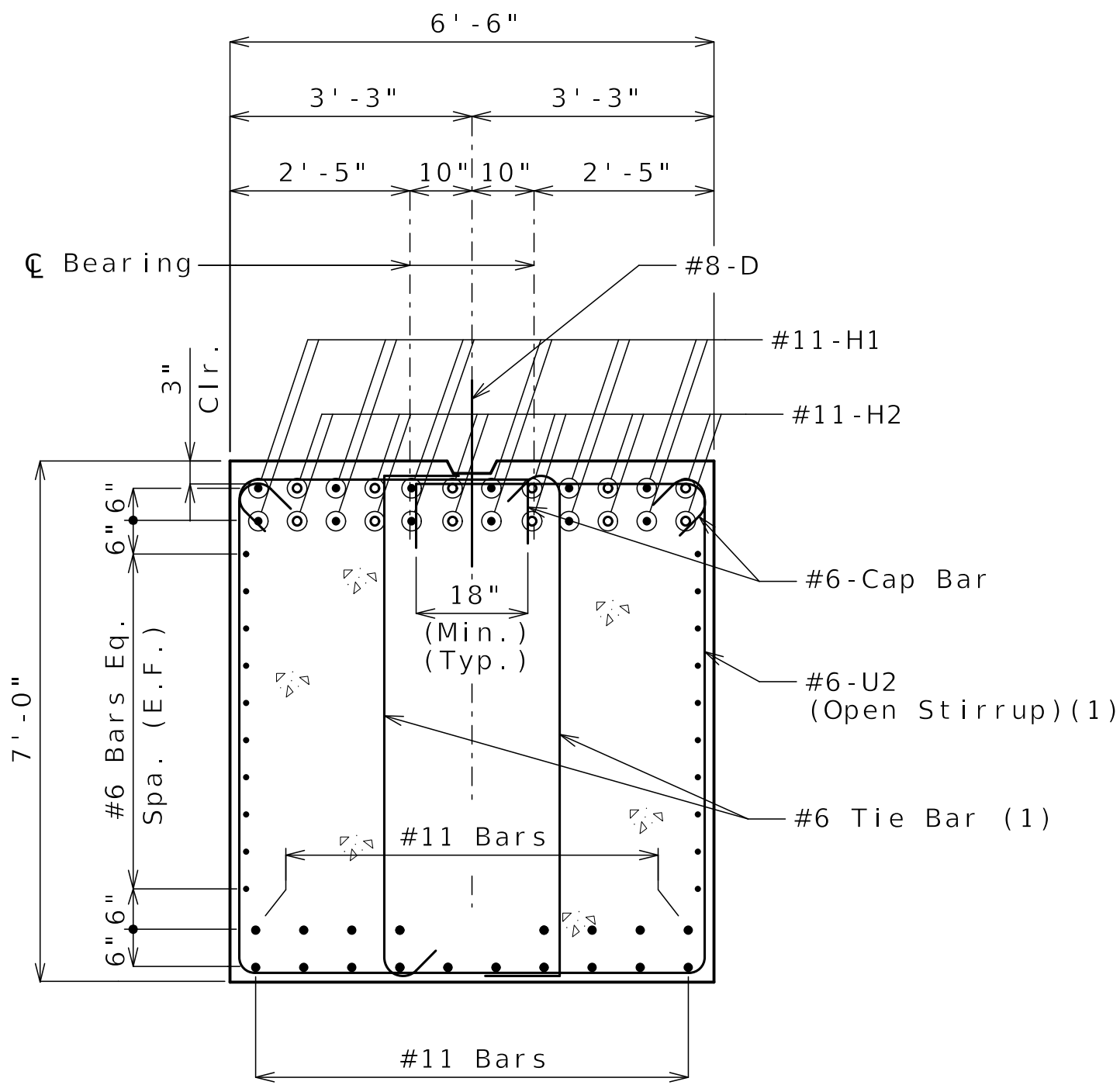
MoDOT

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

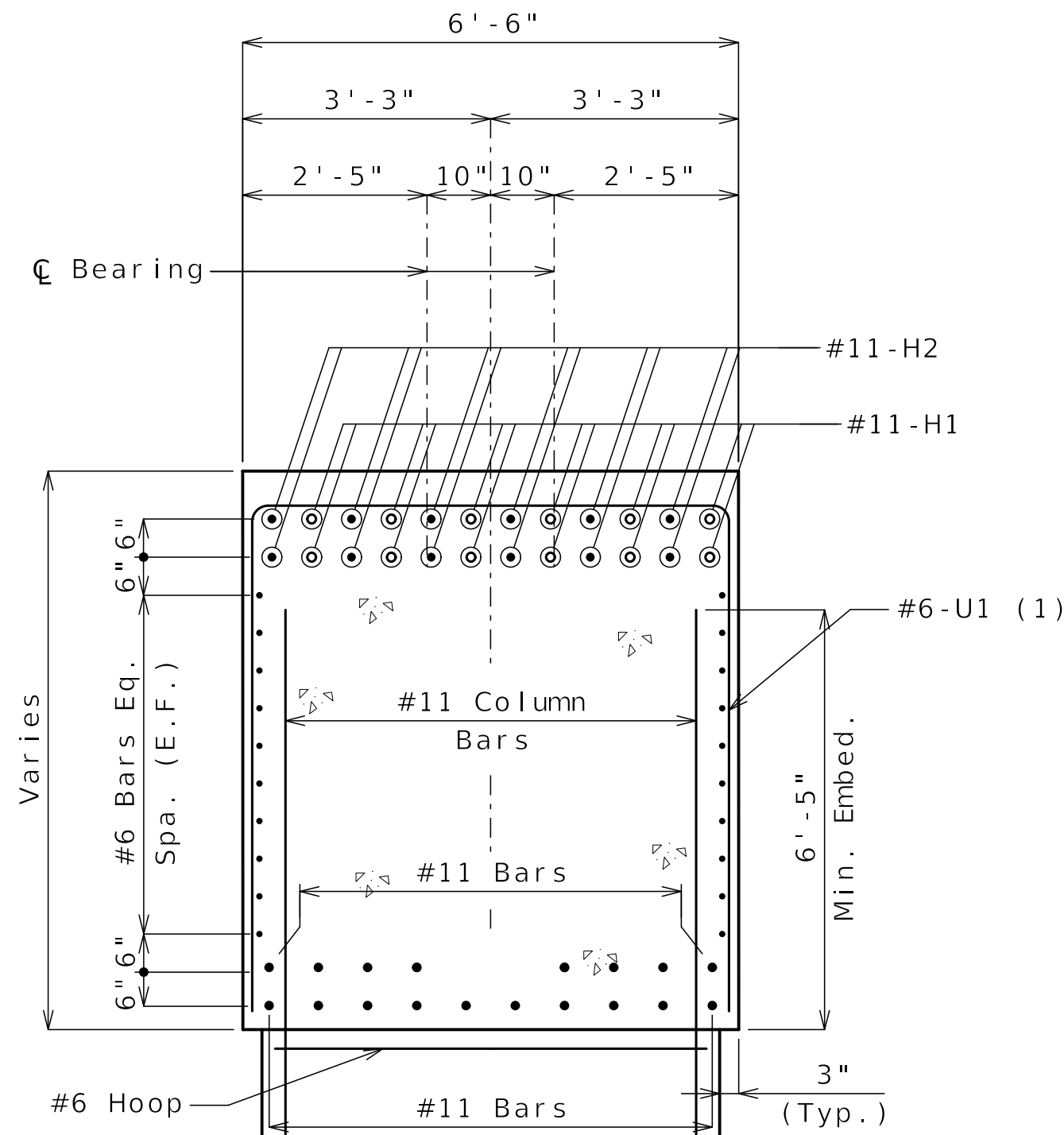
CLARKSON RADMACHER JOINT VENTURE

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

HNTB

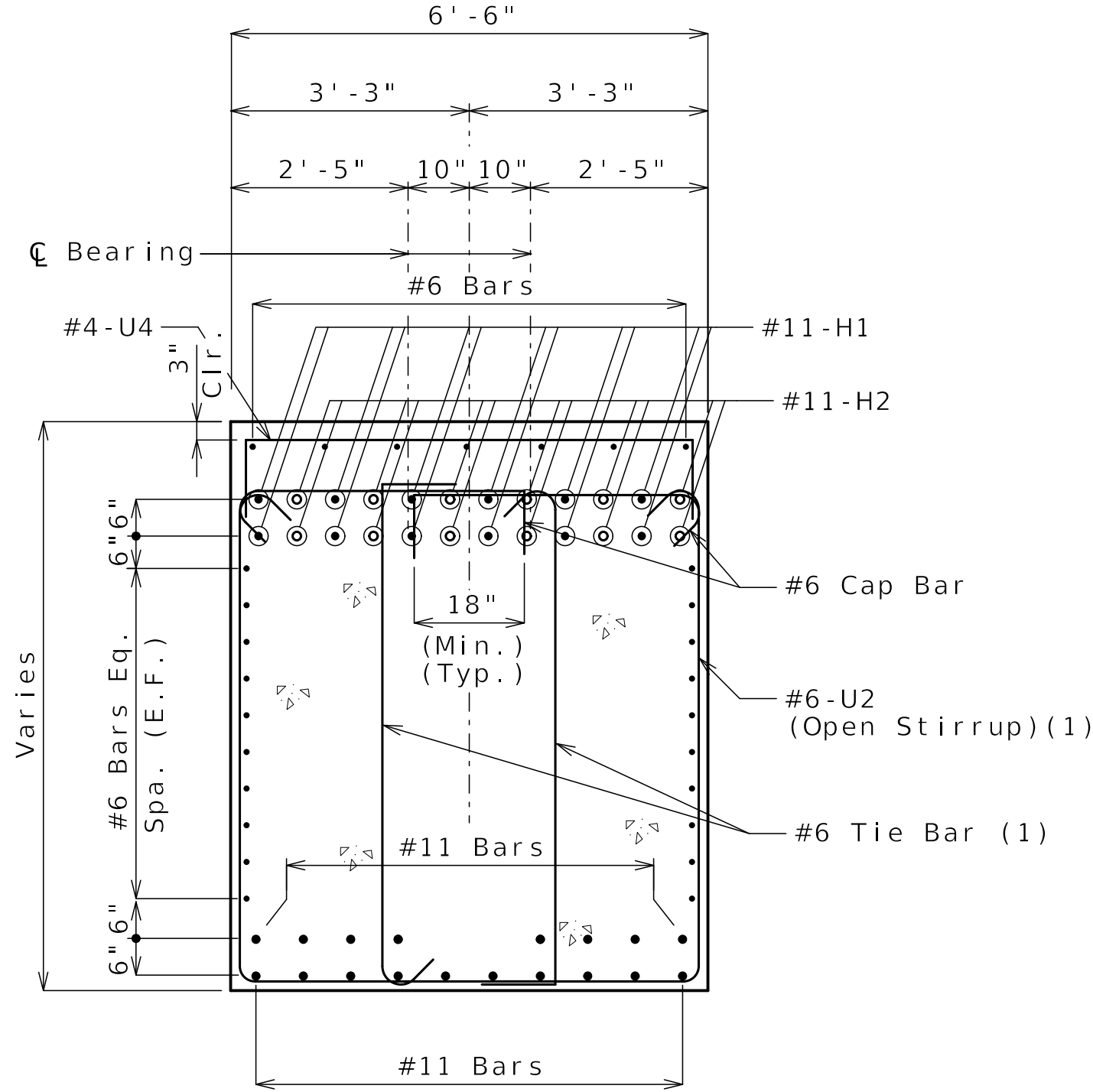


SECTION A-A

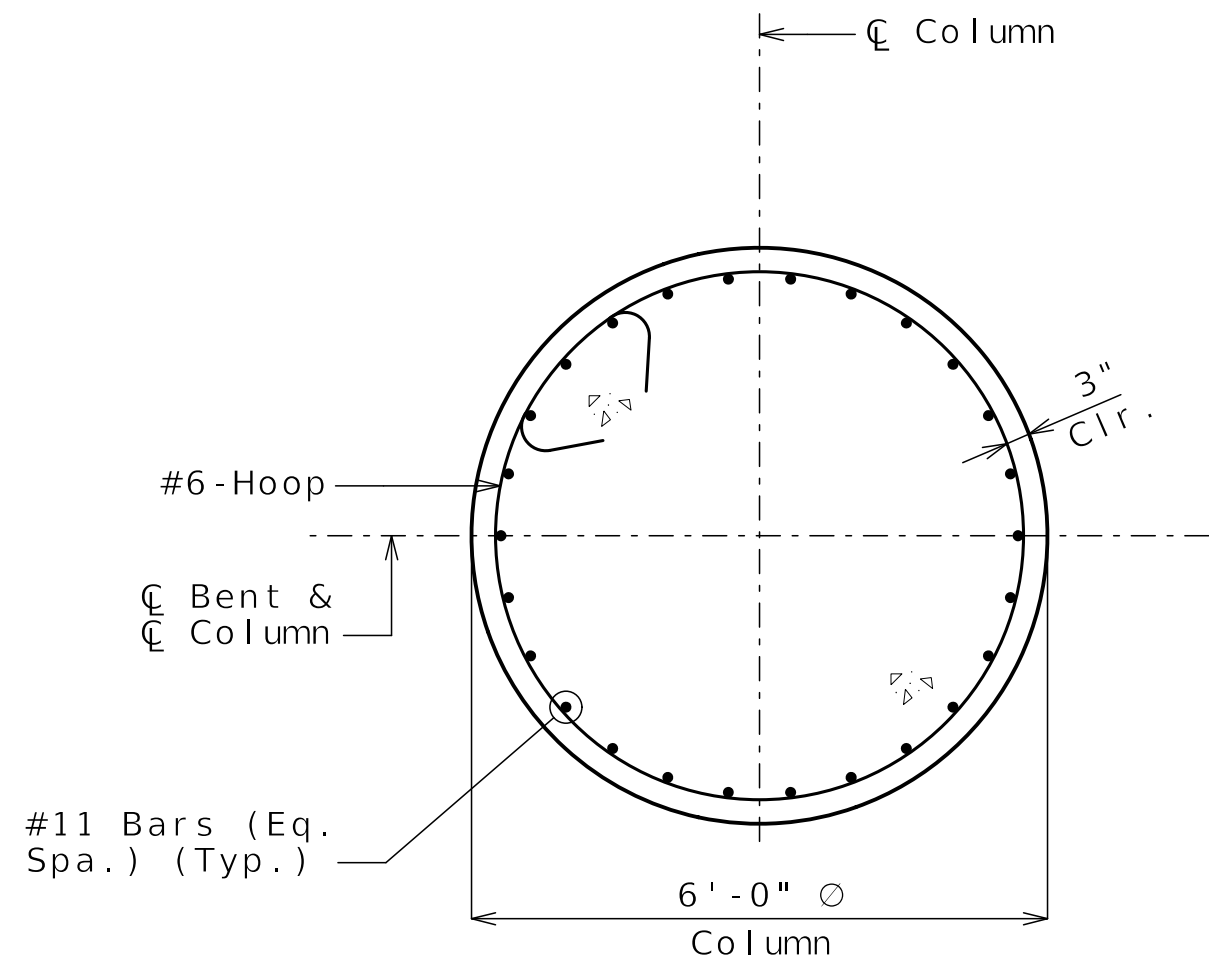


SECTION B-B

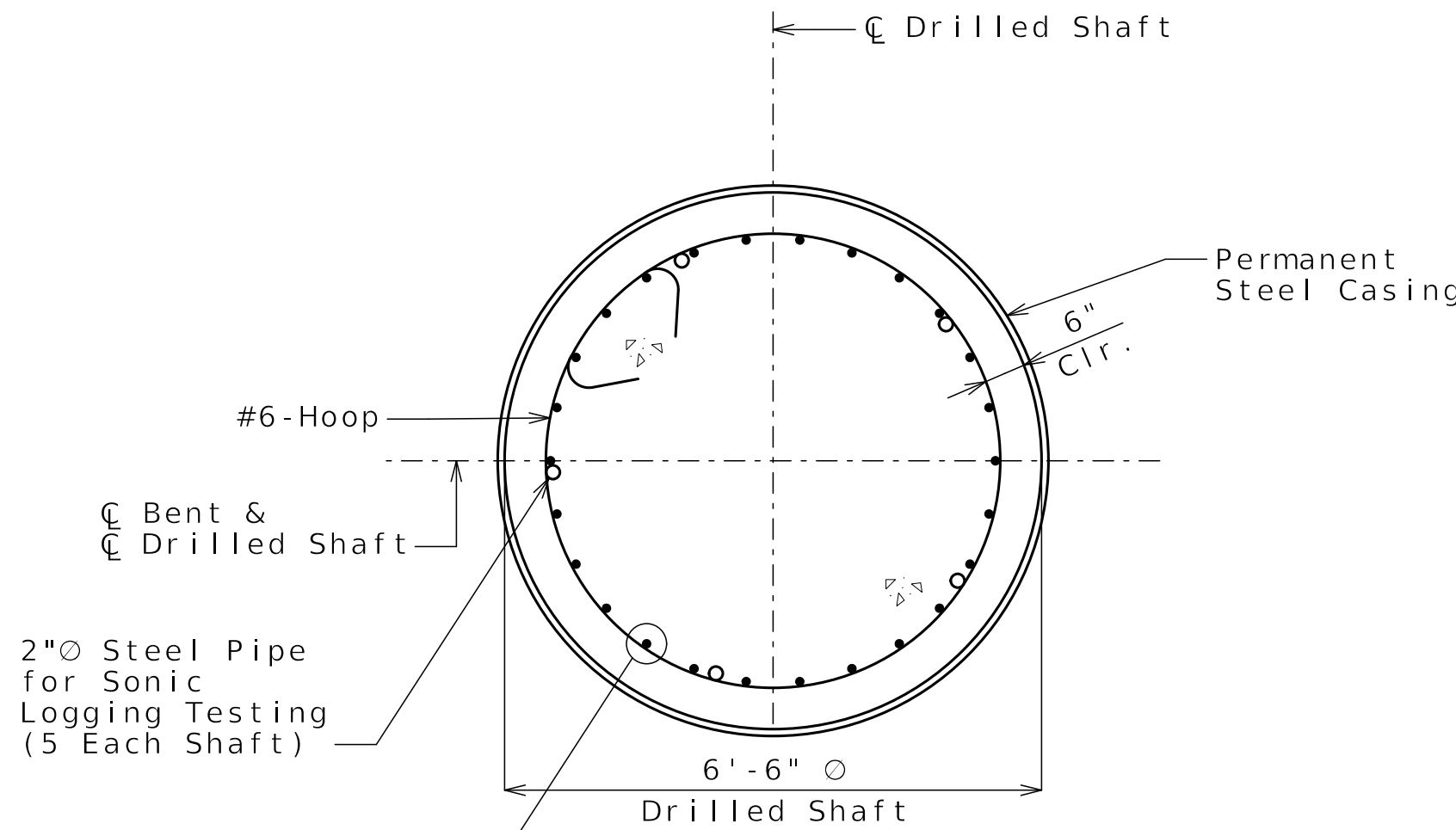
(1) U1, U2 and #6 Tie Bar Vertical Leg = 6'-7½"



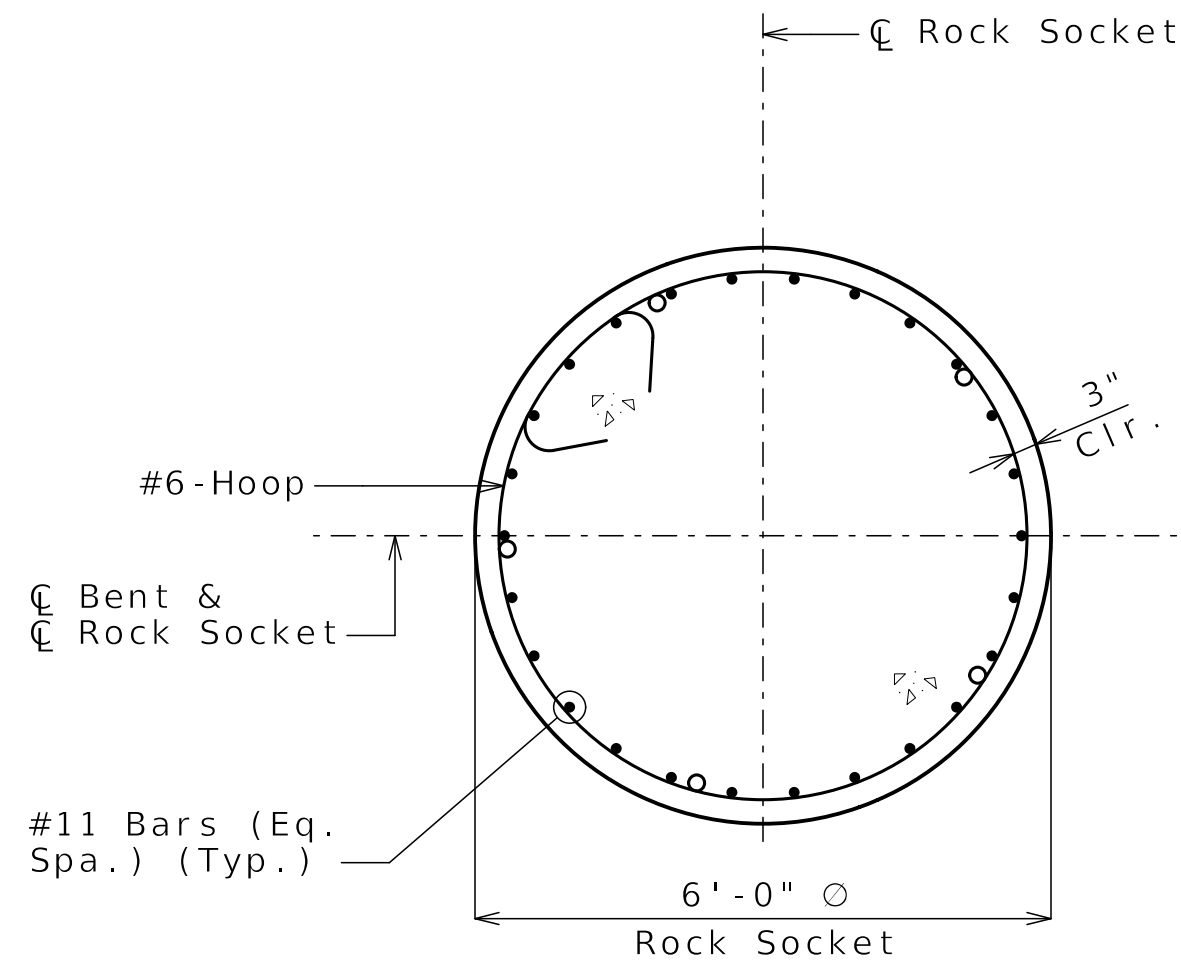
SECTION C-C



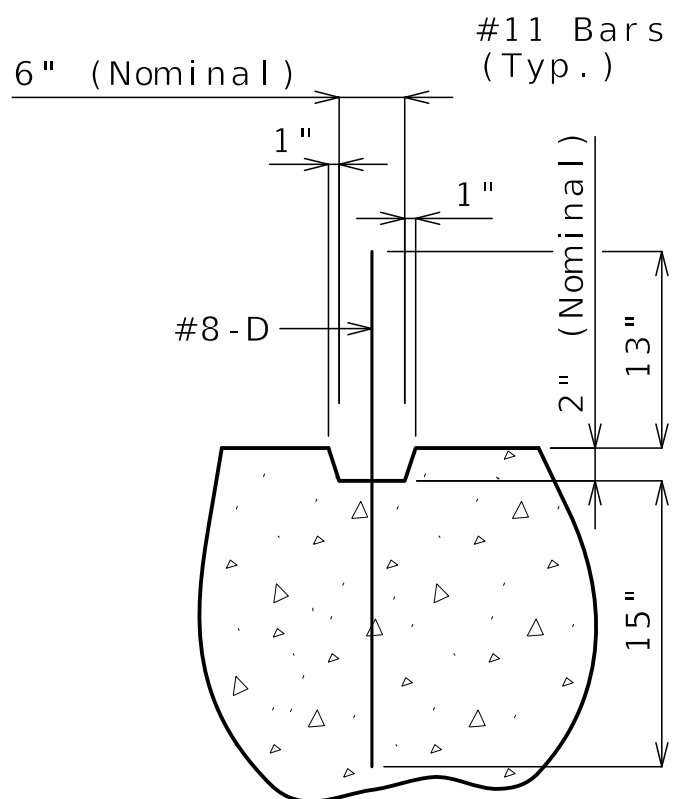
SECTION D-D



SECTION E-E



SECTION F-F



SECTION THRU KEY

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

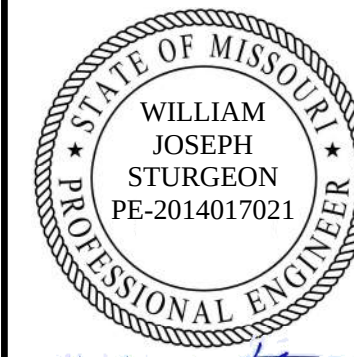
Notes:
Work this sheet with Sheets No. B09-24 and B09-25.
Hoop splices shall be staggered around the drilled shaft and rock socket at 180 degree intervals.
Shift #11-H1 and #11-H2 bars to provide clearance for girder chairs. Maintain a minimum spacing of 5 1/2" and a maximum spacing of 12" between adjacent bars.

DETAILS OF INTERMEDIATE BENT NO. 6

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-26 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

DISTRICT
BR

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

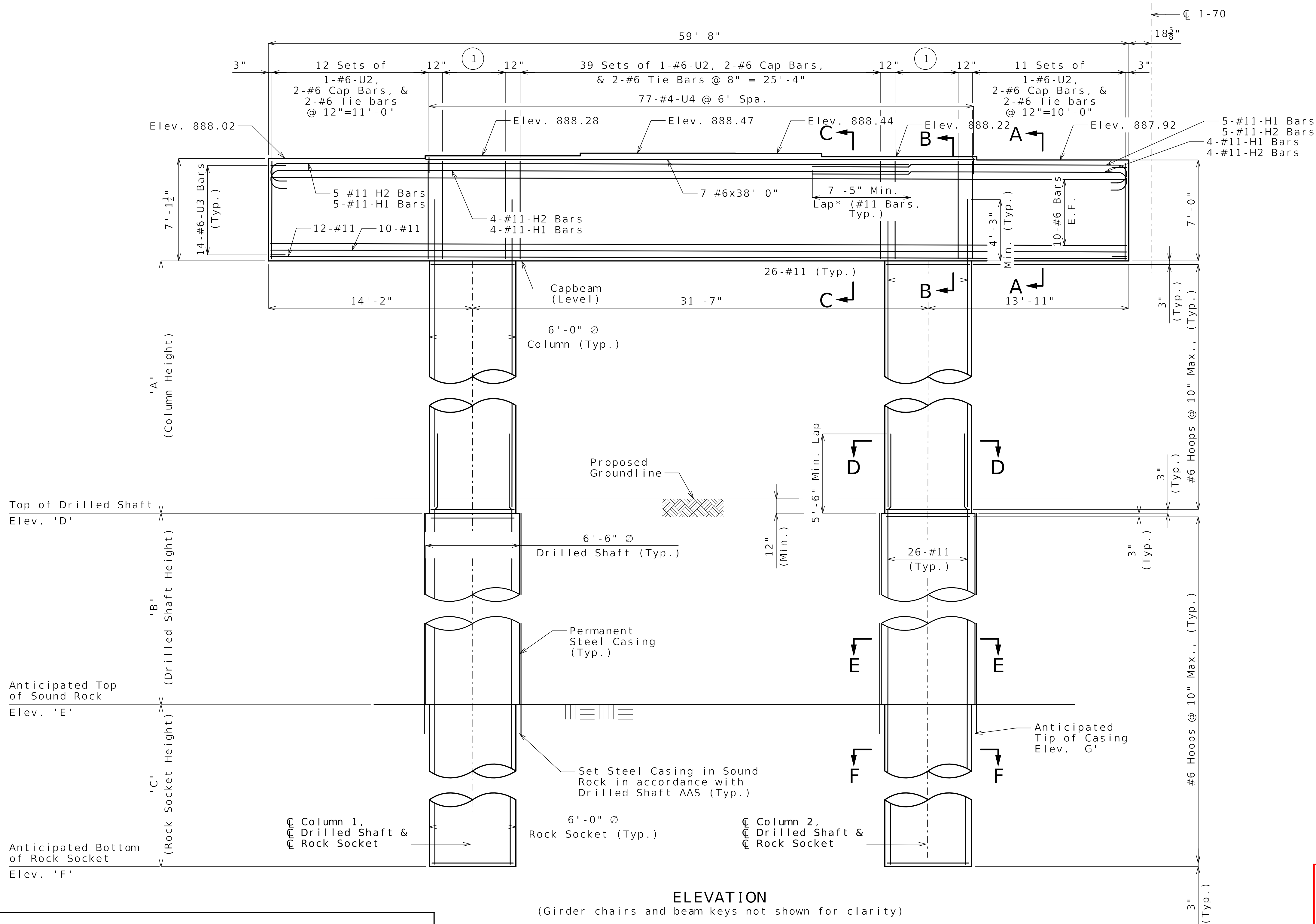
CERTIFICATE OF AUTHORITY

NO. 001270

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

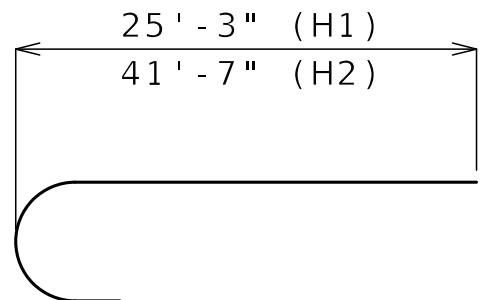
HNTB



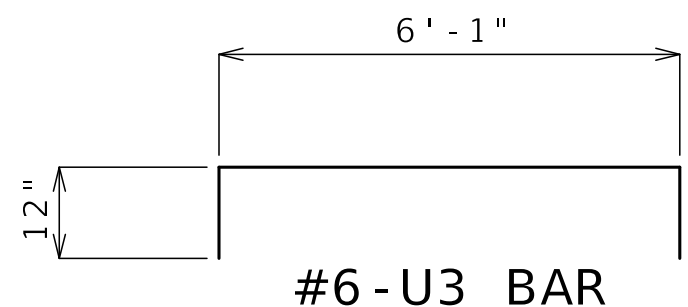
ELEVATION
(Girder chairs and beam keys not shown for clarity)

Table of Variables

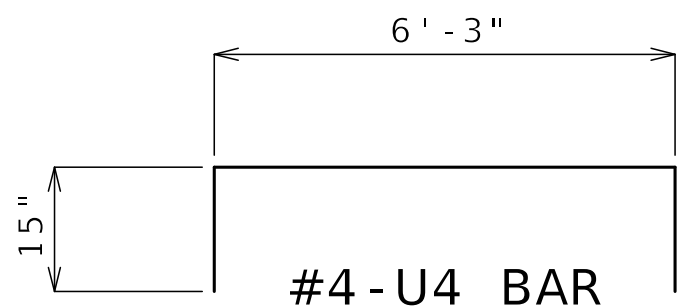
Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	19'-11"	53'-0"	21'-0"	861.0	808.0	787.0	806.0
2	16'-11"	56'-0"	21'-0"	864.0	808.0	787.0	806.0



#11-H1 & #11-H2 BAR



#6-U3 BAR



#4-U4 BAR

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-28 and B09-29.
For location of drilled shafts, see Sheet No. B09-07.
For Sections A-A thru F-F, see Sheet No. B09-29.
For Optional Drilled Shaft Splice Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

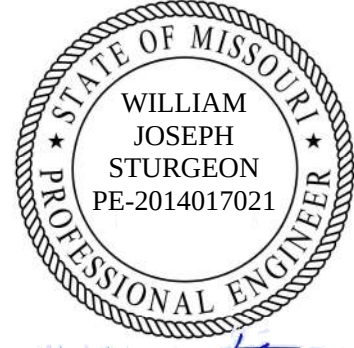
DETAILS OF INTERMEDIATE BENT NO. 7

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-27 of B09-58

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



6/3/2025

DATE PREPARED

06/02/2025

ROUTE 1-70 STATE MO

DISTRICT BR SHEET NO. B09-27

COUNTY JACKSON

JOB NO. J411486D

CONTRACT ID. 240807-C01

PROJECT NO.

BRIDGE NO. A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL JEFFERSON CITY, MO 65102

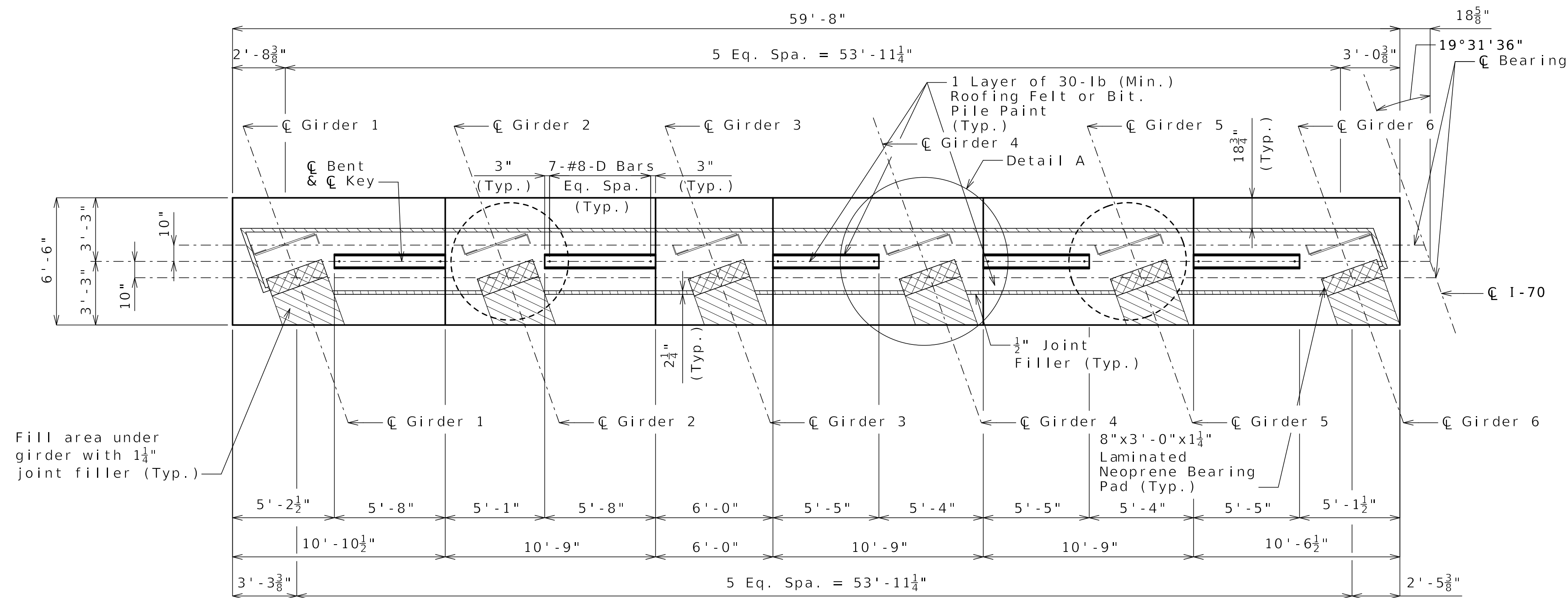
1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY NO. 001270

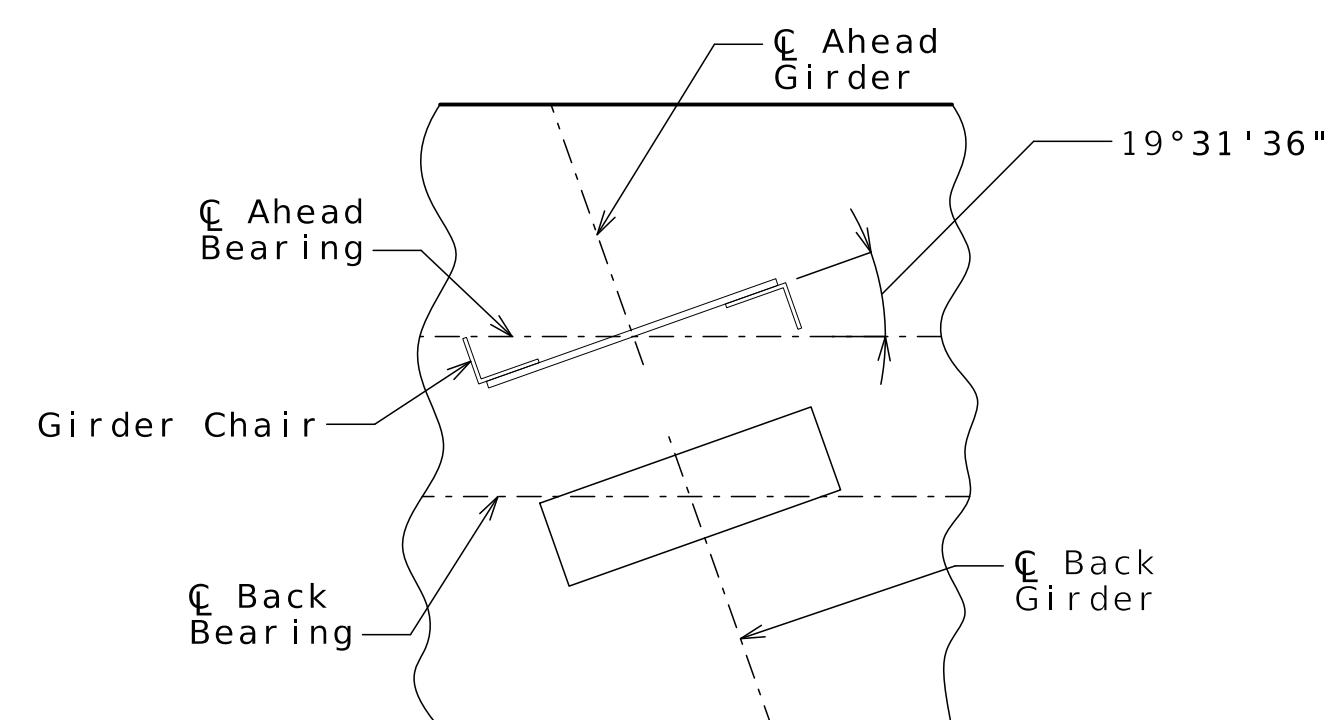
HNTB



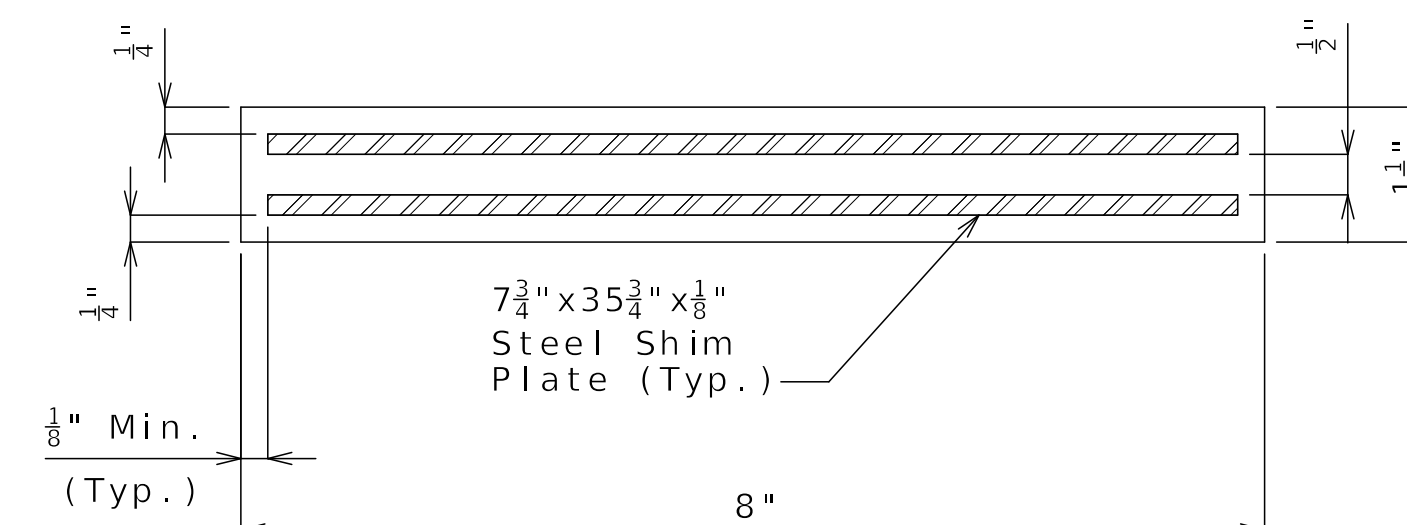
PLAN OF CAPBEAM

Table of Variables						
Girder	1	2	3	4	5	6
Elev. *	888.76	889.01	889.19	889.17	888.95	888.66

* See Girder Chair Elevation on Sheet No. B09-13 for elevation definition and additional girder chair details. Use orientation of vertical angle legs shown in Detail A on this sheet.



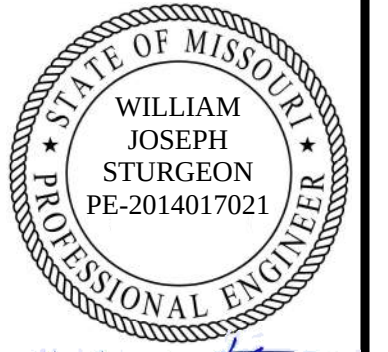
DETAIL A



TYPICAL SECTION THRU
LAMINATED NEOPRENE BEARING PAD
6 Required per Bent

Notes:
 Work this sheet with Sheets No. B09-27
 and B09-29.
 Steel for chairs shall be ASTM A709 Grade 36 for
 angles and ASTM A572 Grade 50 for Plates.
 Girders are parallel to C 1-70.
 For additional joint filler layout details, see
 concrete diaphragm details sheet in A9626 (I-70
 WB Over KCT, Indiana & 18th) Superstructure
 Package.
 For steps 2 inches or more, use $2\frac{1}{4}" \times \frac{1}{2}"$ inch joint
 filler up vertical face.

DETAILS OF INTERMEDIATE BENT NO. 7



6/3/2025

6/3/2025

DATE PREPARED

06 / 02 / 2025

ROUTE	STATE
1-70	MO

I - 70	MO
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DISTRICT	SHEET NO
DD	DDO 2

BR	B09-2
COUNTY	

COUNTY
LACKSON

JACKSON

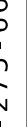
LOB NO

1411486D

CONTRACT ID.

240807-C01

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 MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL
 JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275.6636)



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

1-888-ASK-MOD1 (1-888-275-6636)



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



Detailed FEB 2025
Checked MAR 2025

Checked MAR 2025

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

Sheet No. B09-28 of B09-58

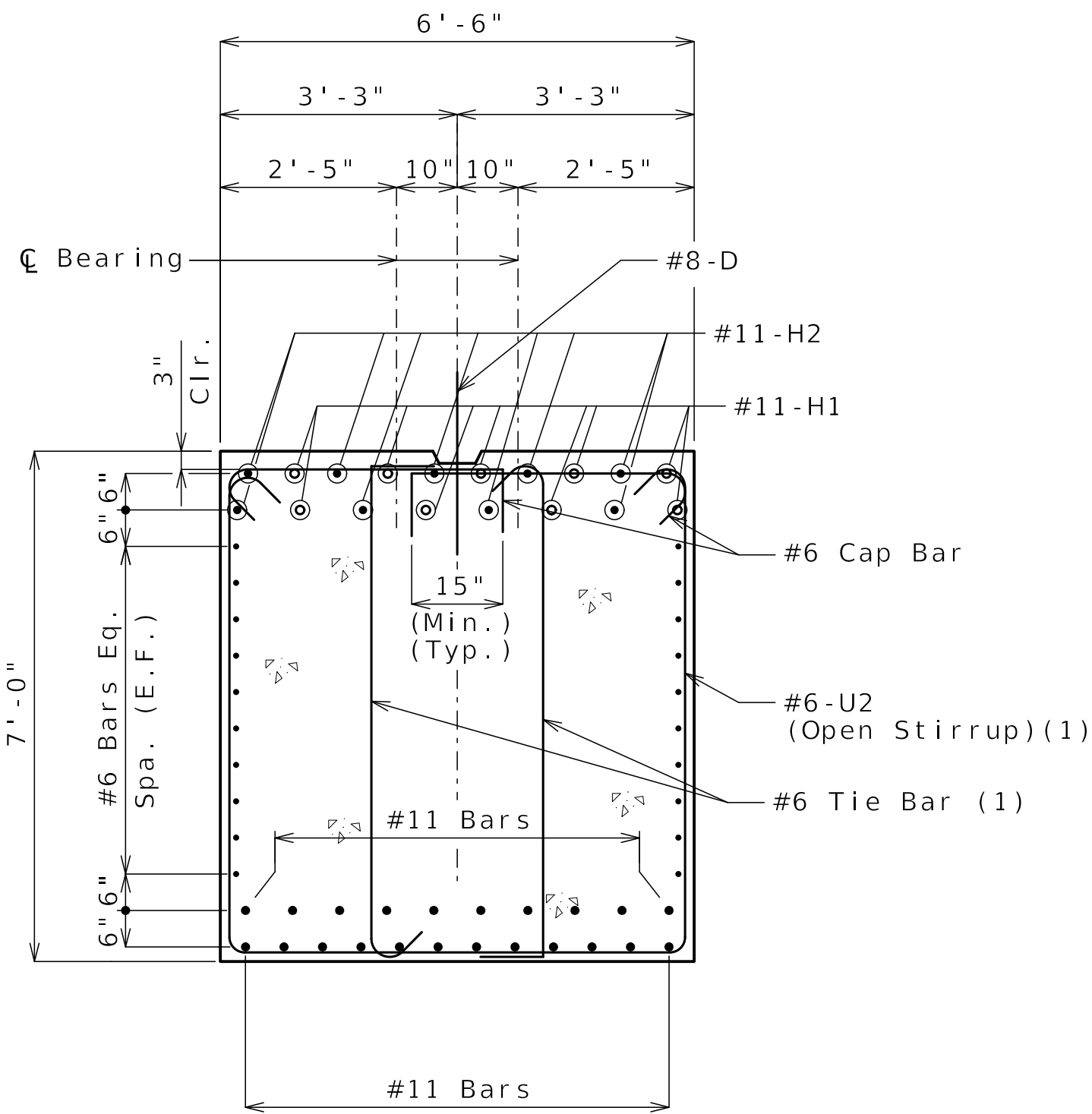
Released For Construction
Not to Scale

Revision: 0.0

Revision: 0.0
Date: 06/10/2025

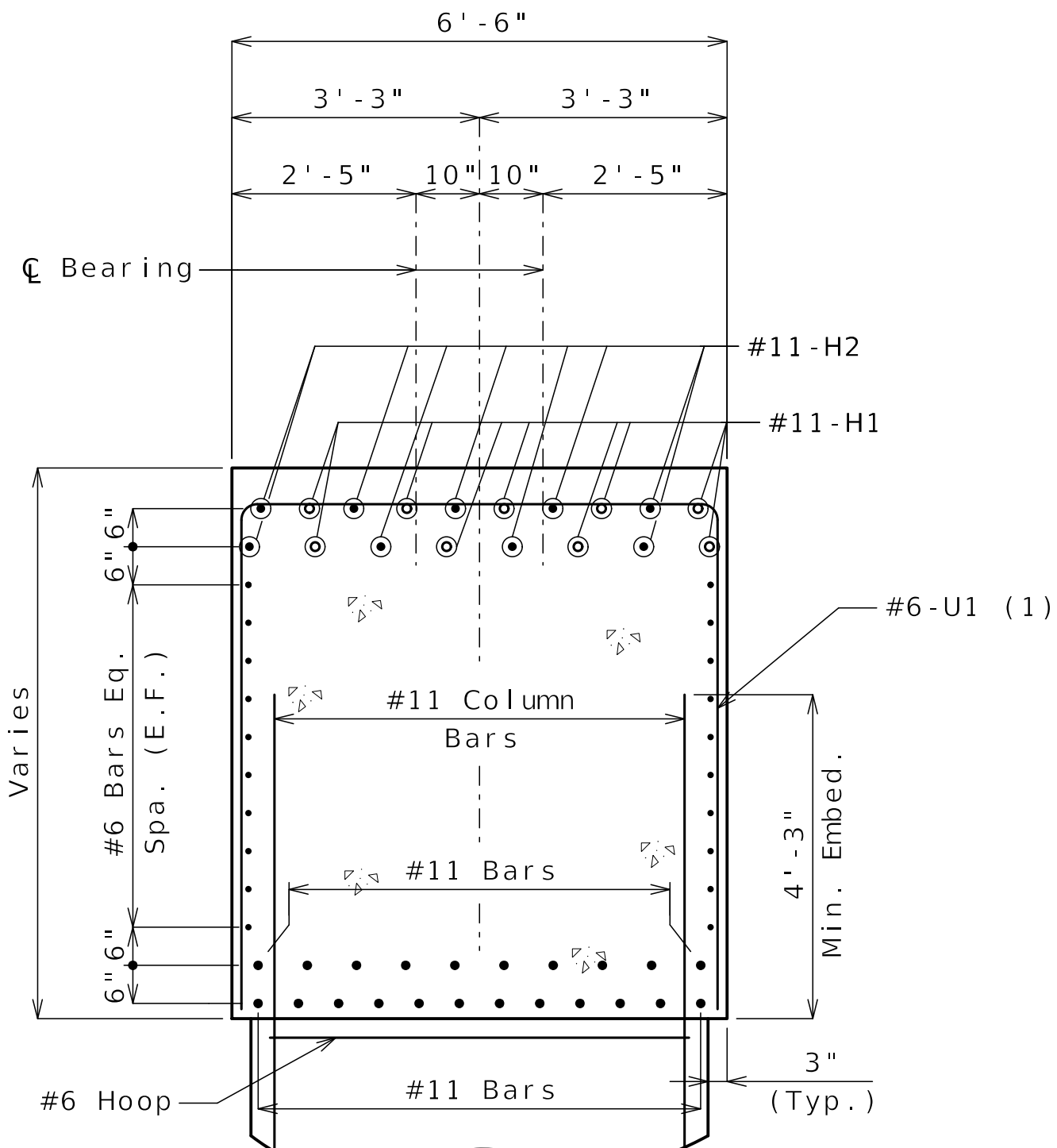
Date: 06/10/2025

Package: BRD-09-WBKCTRR-Substructure

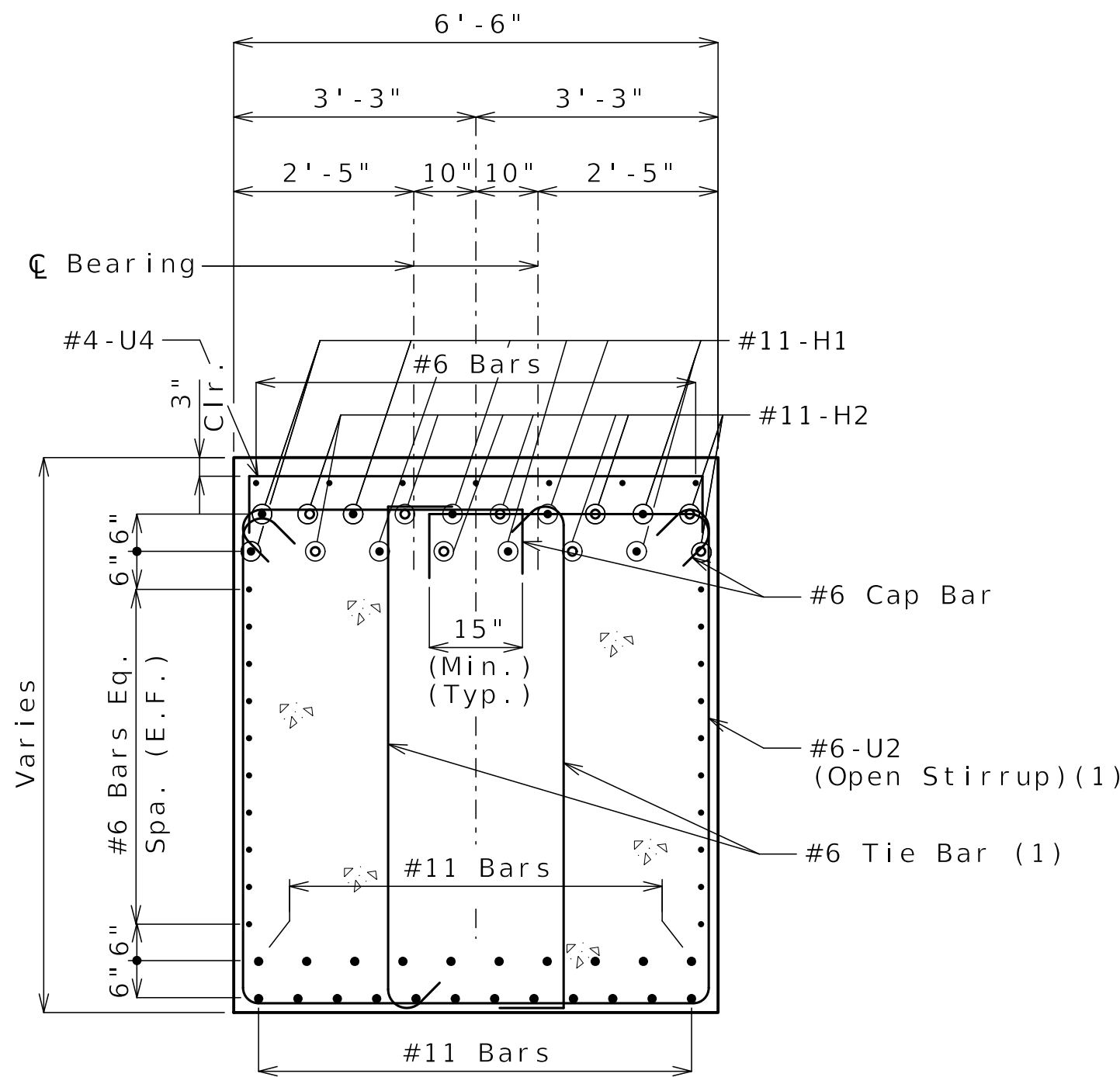


SECTION A-A

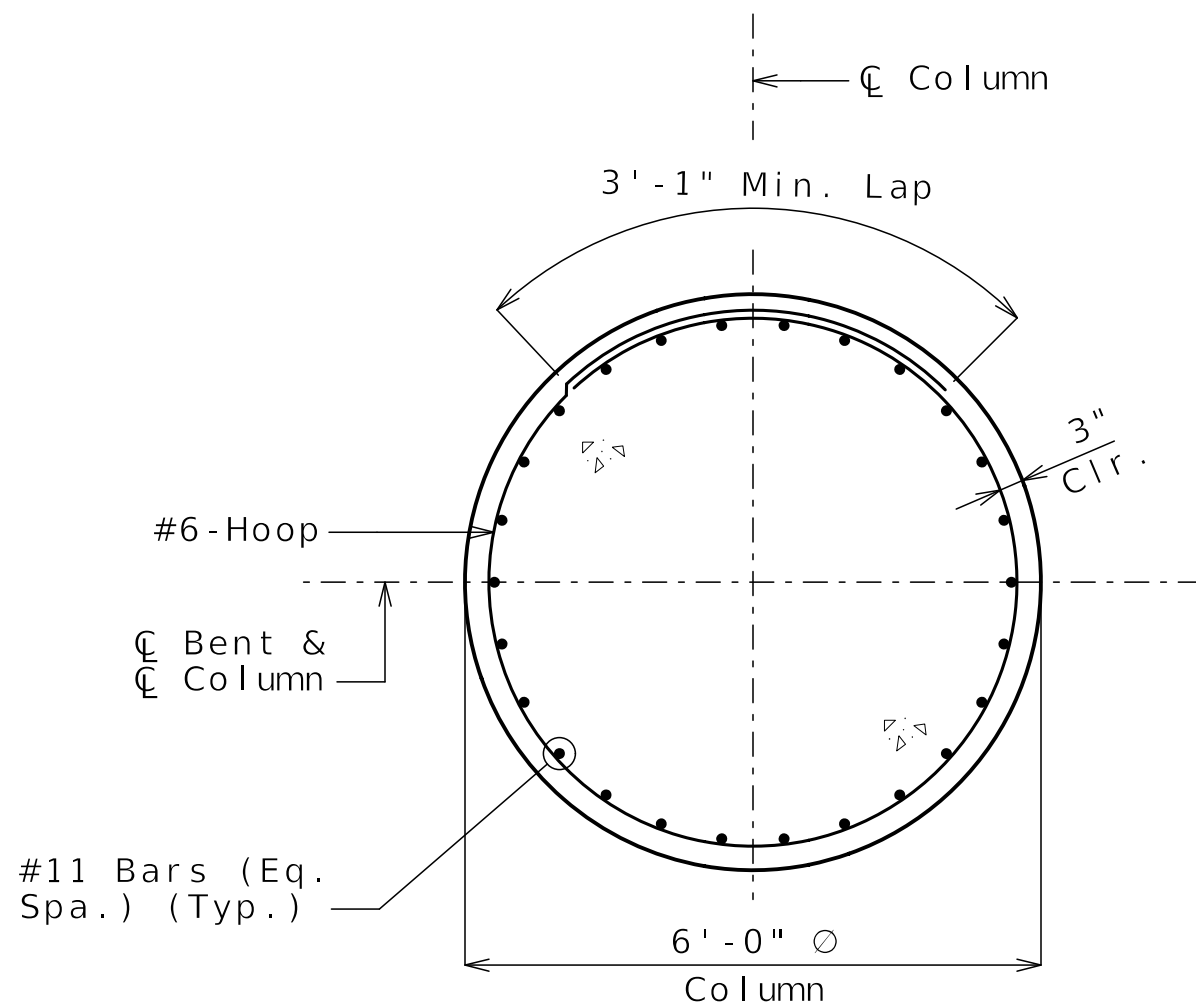
(1) U1, U2 and #6 Tie Bar vertical Leg = 6'-7 1/2"



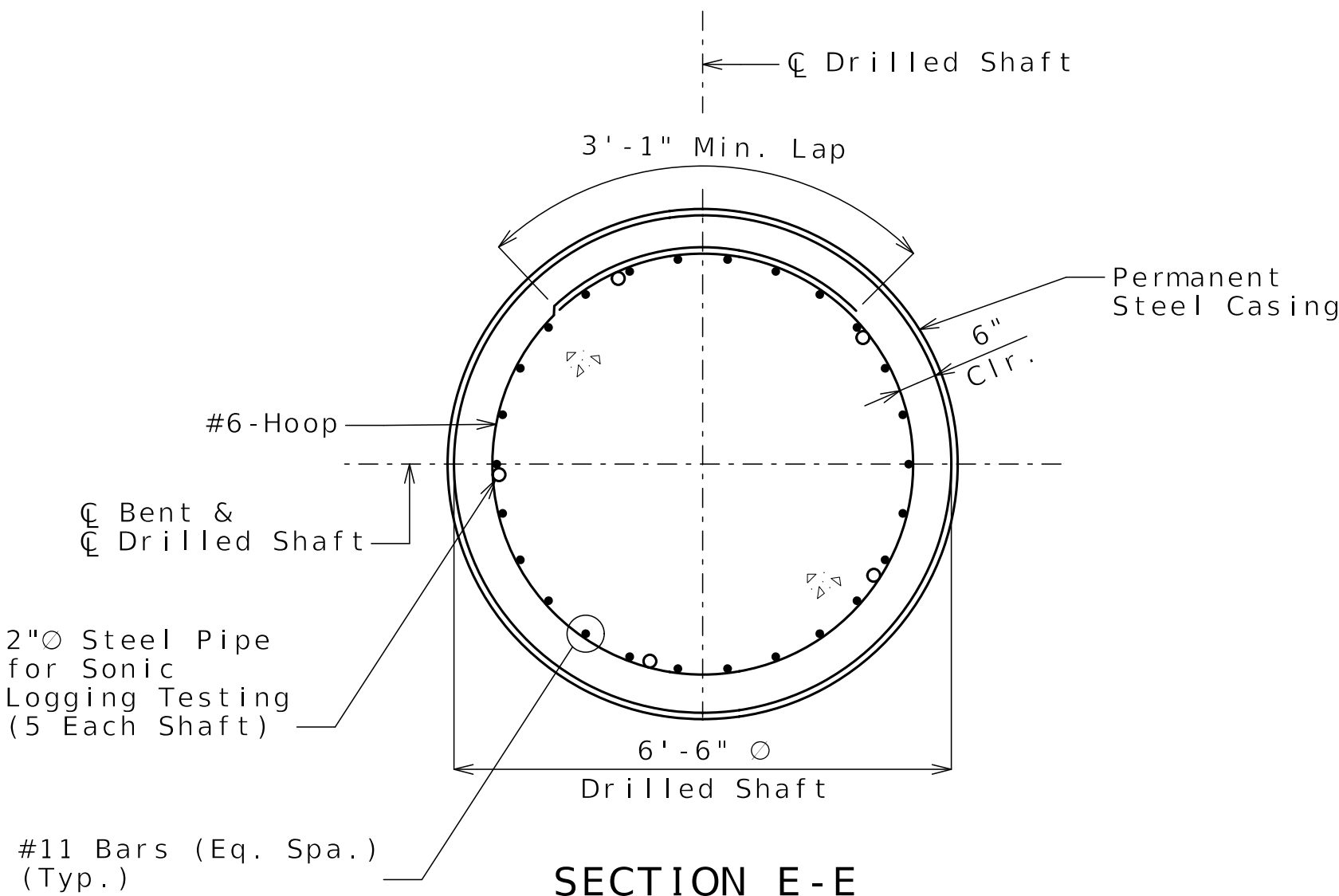
SECTION B-B



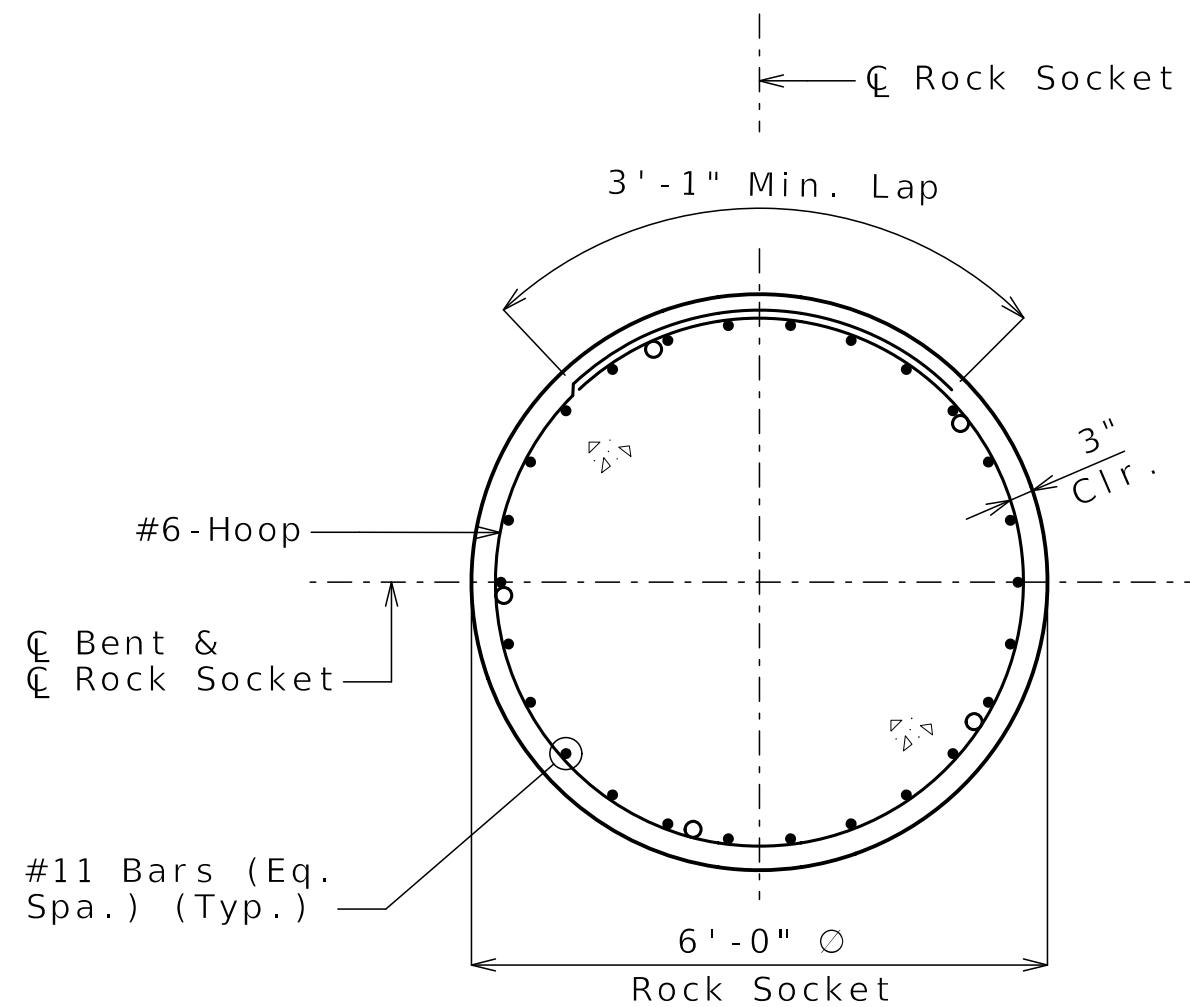
SECTION C-C



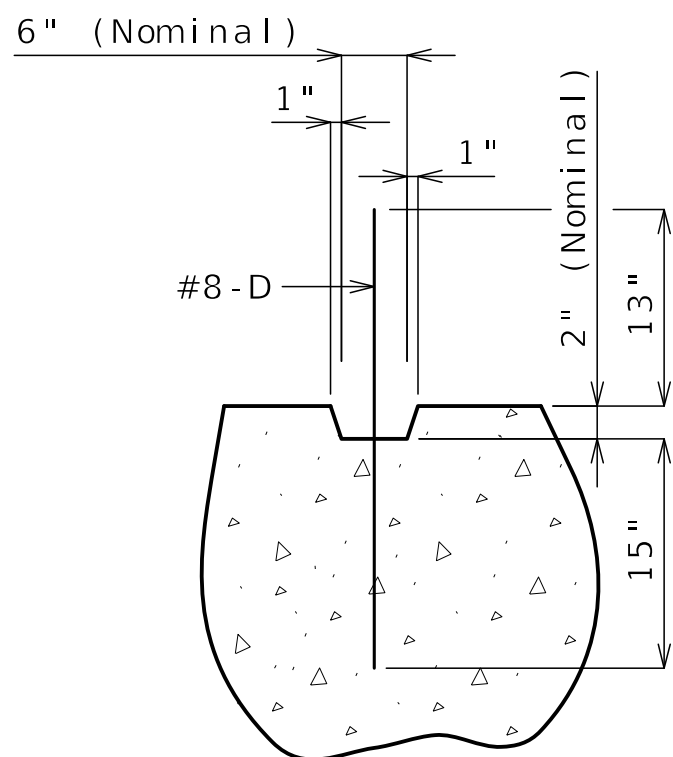
SECTION D-D



SECTION E-E



SECTION F-F

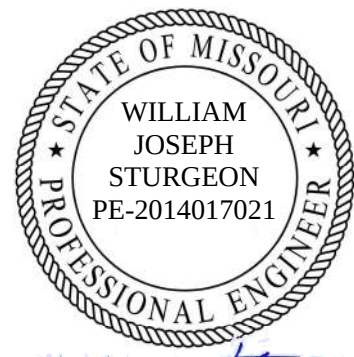


SECTION THRU KEY

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
Work this sheet with Sheets No. B09-27 and B09-28.
Hoop splices shall be staggered around the drilled shaft and rock socket at 90 degree intervals.
Shift #11-H1 and #11-H2 bars to provide clearance for girder chairs. Maintain a minimum spacing of 5 1/2" and a maximum spacing of 12" between adjacent bars.

DETAILS OF INTERMEDIATE BENT NO. 7



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-29

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION
REV 0 - RFC SUBMITTAL

DATE
06/02/25

DATE
06/02/25

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06/02/25

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06/02/25

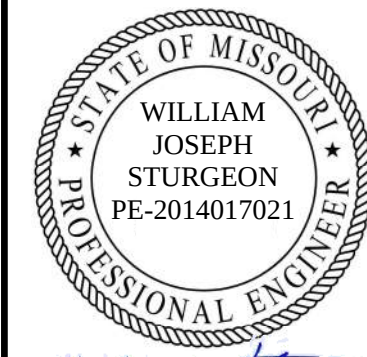
DATE
06/02/25

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06/02/25

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-30

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

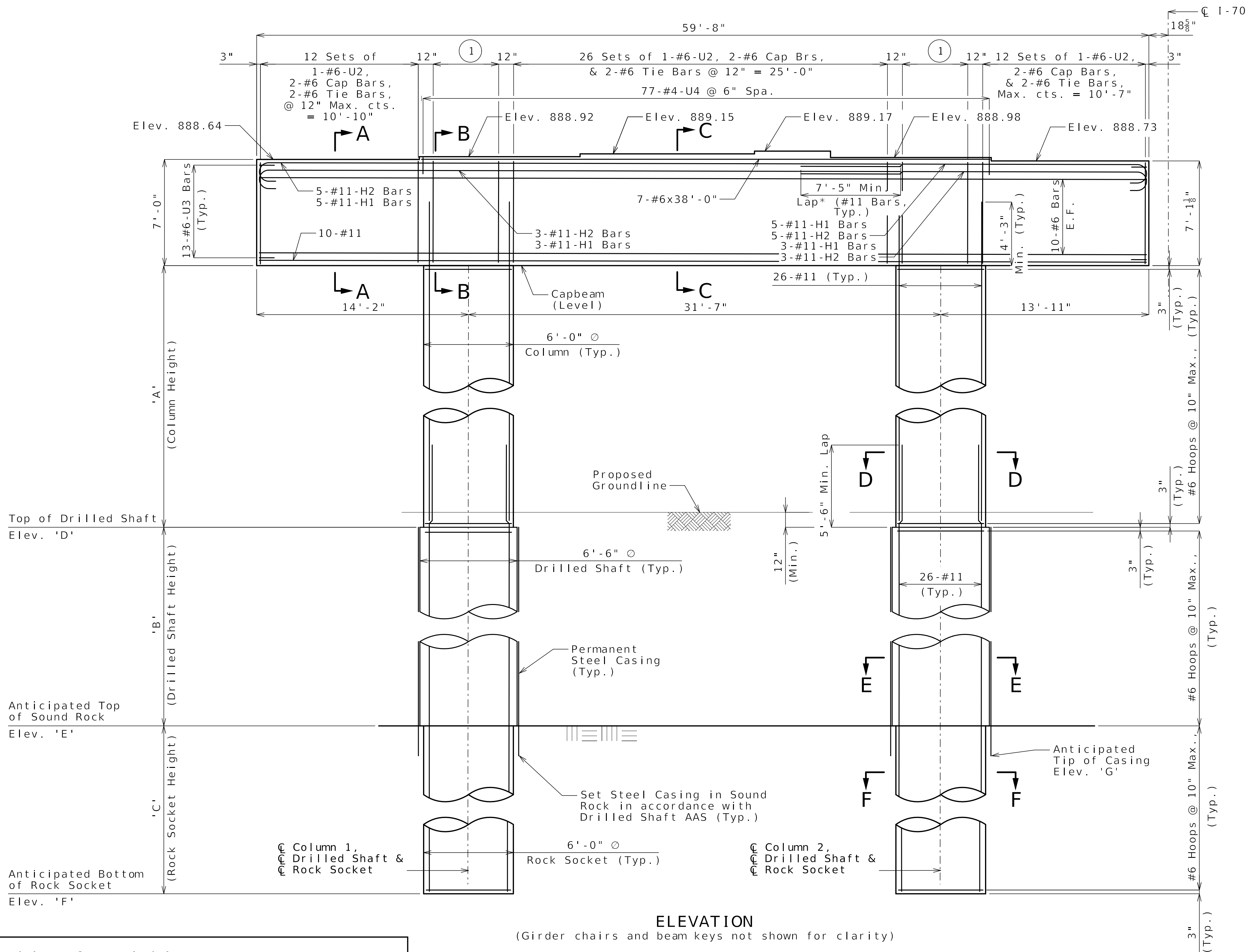
MoDOT

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE
KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY
NO. 001270

HNTB



ELEVATION
(Girder chairs and beam keys not shown for clarity)

Table of Variables

Column Number	"A"	"B"	"C"	"D"	"E"	"F"	"G"
1	11'-7 ⁵ / ₈ "	37'-0"	32'-0"	870.0	833.0	801.0	831.0
2	10'-7 ⁵ / ₈ "	38'-0"	32'-0"	871.0	833.0	801.0	831.0

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
* Alternate location of lap splices between adjacent bars about centerline of bent. Alternate lap splice location not shown.
Prior to placing concrete for columns, position of vertical reinforcement shall be verified so as to provide clearance for capbeam reinforcement as applicable.
Work this sheet with Sheets No. B09-31 and B09-32.
For location of drilled shafts, see Sheet No. B09-07.
For Sections A-A thru F-F, see Sheet No. B09-32.
For Optional Drilled Shaft Splice Detail and Rock Socket Over Excavation Detail, see Sheet No. B09-05.

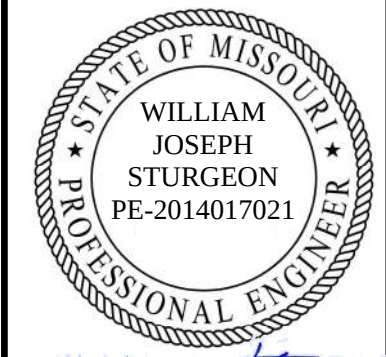
DETAILS OF INTERMEDIATE BENT NO. 8

#11-H1 & #11-H2 BAR

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-30 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-31

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

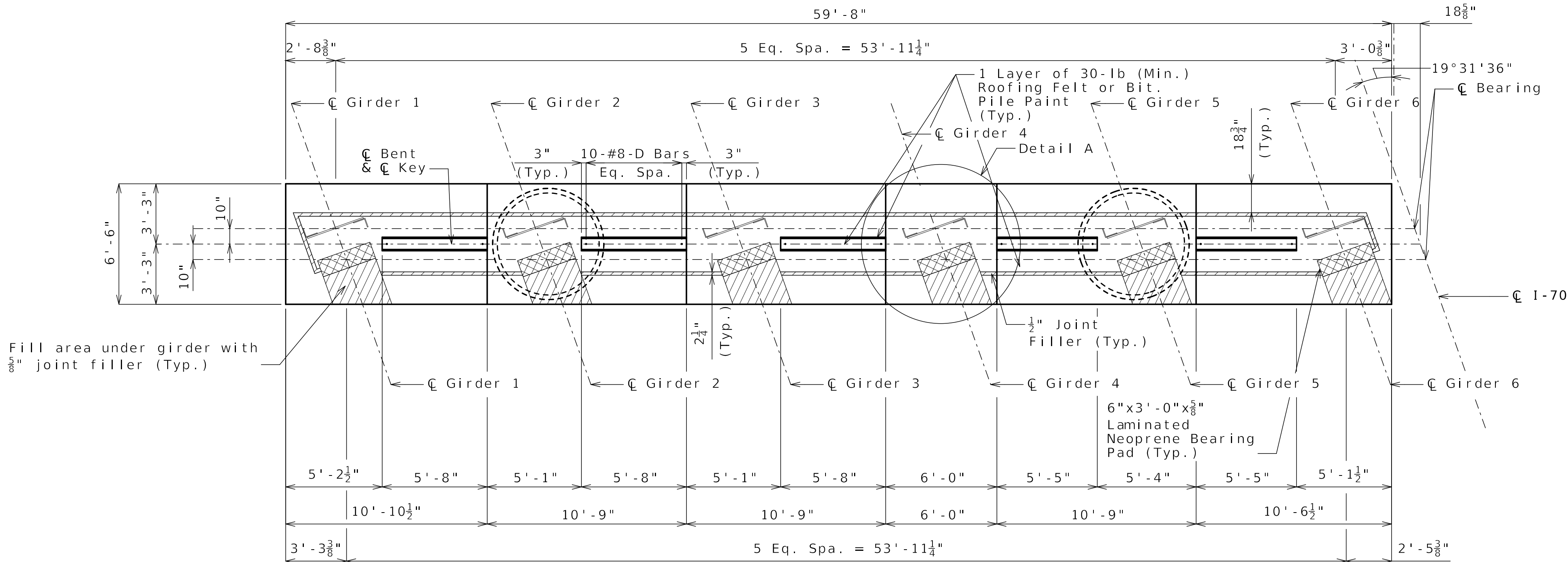
MoDOT

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

CLARKSON
RADMACHER
JOINT VENTURE

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

HNTB

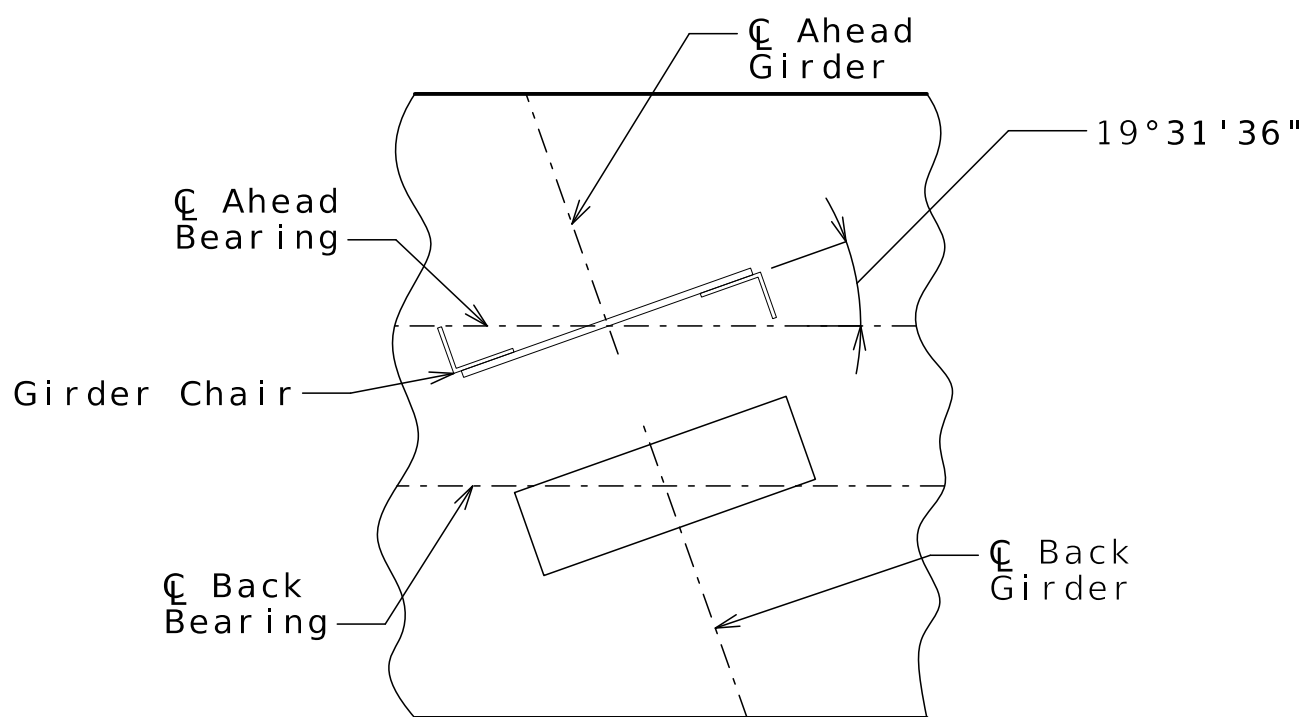


PLAN OF CAPBEAM

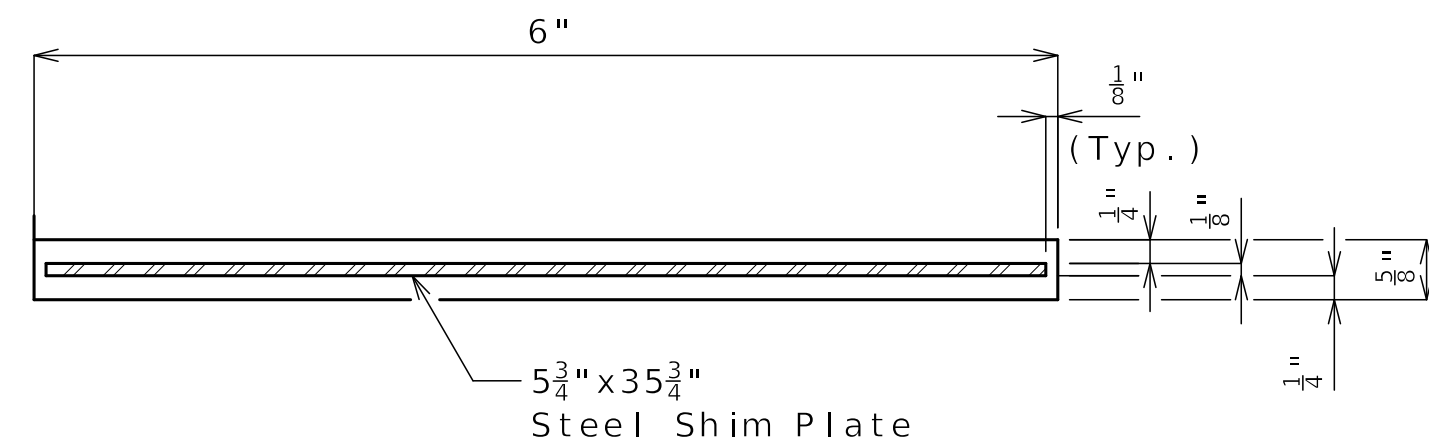
Table of Variables

Girder	1	2	3	4	5	6
Elev. *	889.49	889.71	889.94	889.96	889.77	889.58

* See Girder Chair Elevation on Sheet No. B09-13 for elevation definition and additional girder chair details. Use orientation of vertical angle legs shown in Detail A on this sheet.



DETAIL A



TYPICAL SECTION THRU LAMINATED NEOPRENE BEARING PAD

6 Required per Bent

Notes:
Work this sheet with Sheets No. B09-30 and B09-32.
Steel for chairs shall be ASTM A709 Grade 36 for angles and ASTM A572 Grade 50 for Plates.
Girders are parallel to C I-70 .
For additional joint filler layout details, see concrete diaphragm details sheet in A9626 (I-70 WB Over KCT, Indiana & 18th) Superstructure Package.
For steps 2 inches or more, use $2\frac{1}{4} \times \frac{1}{2}$ inch joint filler up vertical face.

DETAILS OF INTERMEDIATE BENT NO. 8

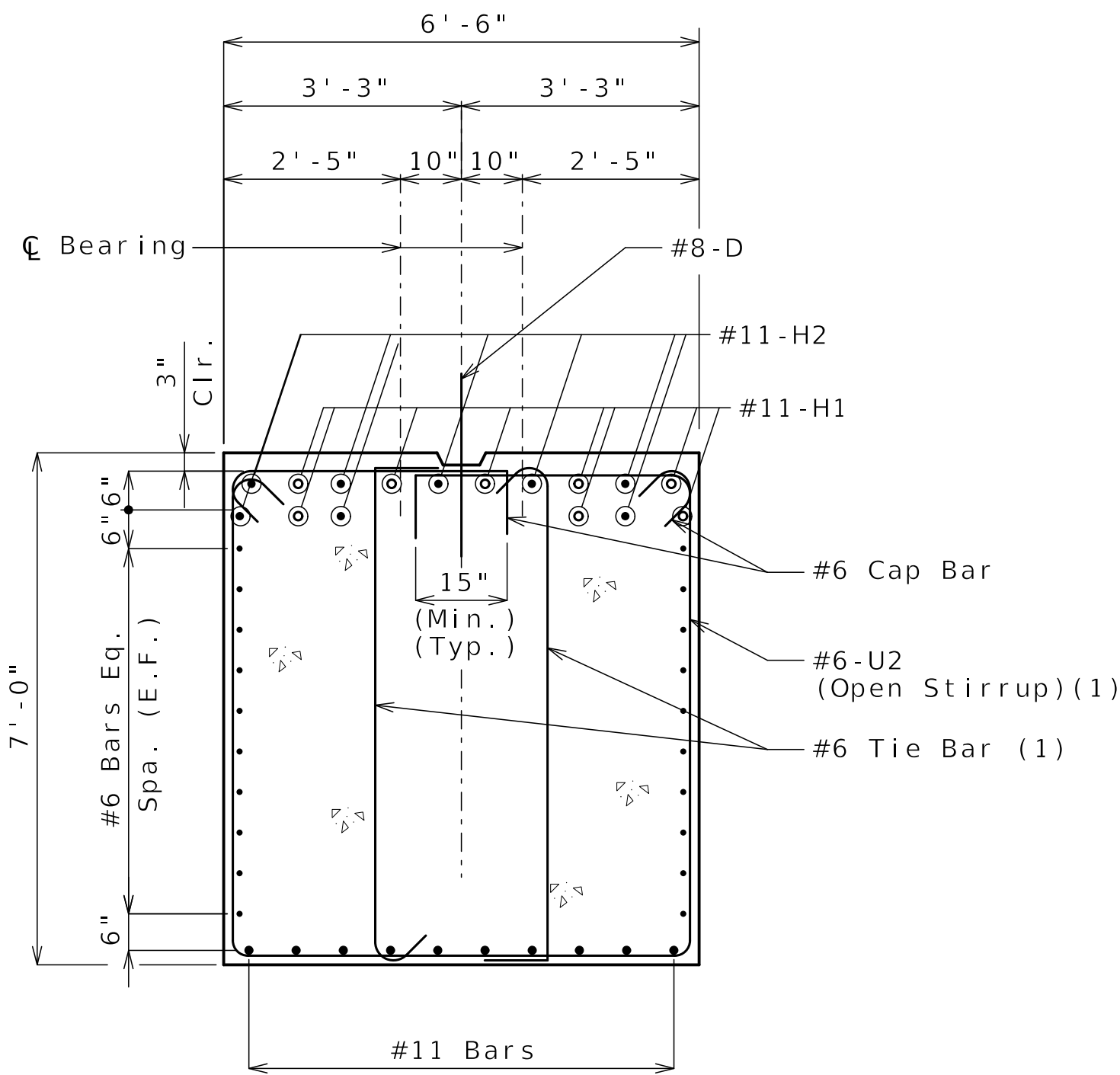
Released For Construction
Not to Scale

Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

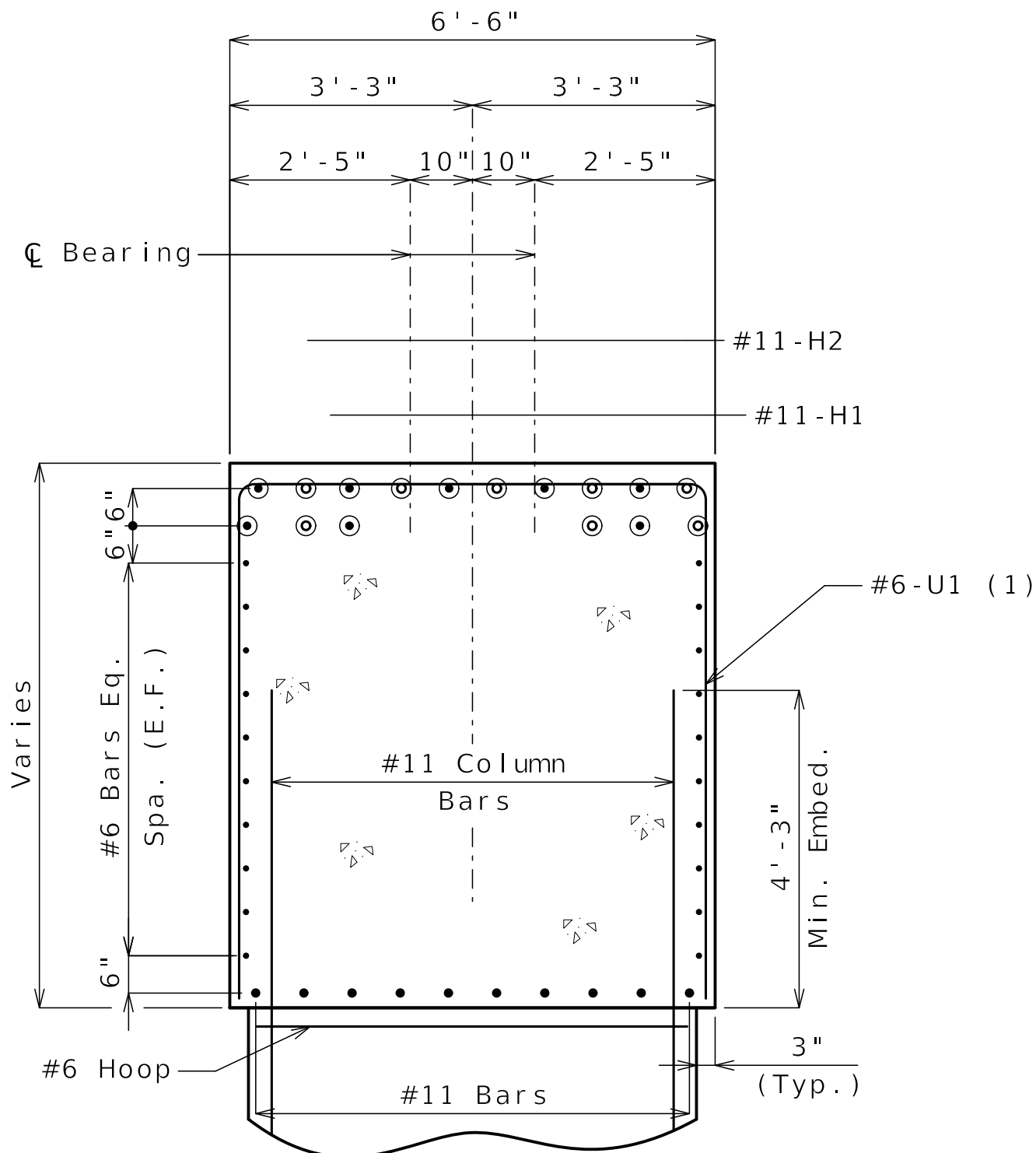
Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-31 of B09-58

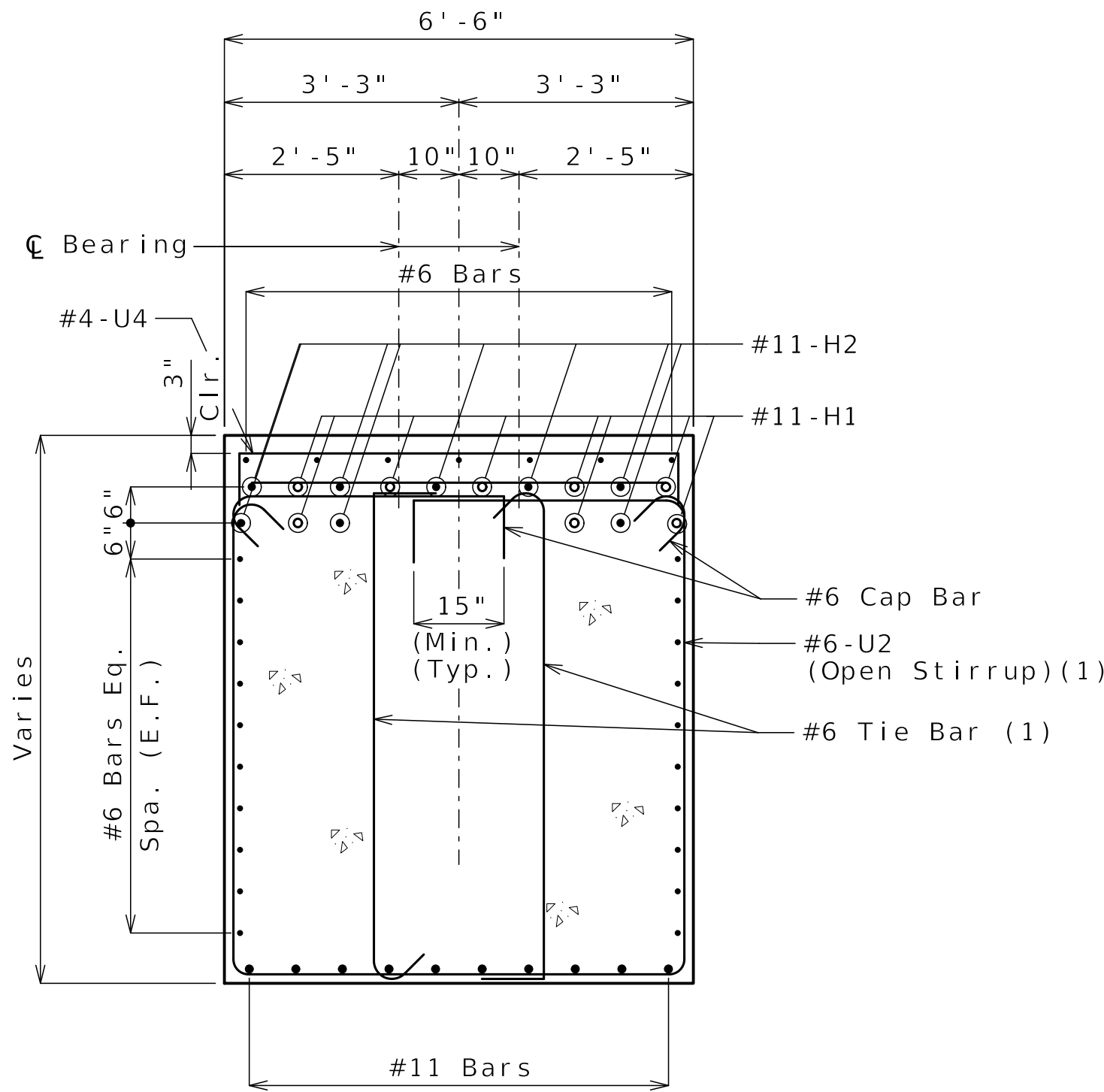


SECTION A-A

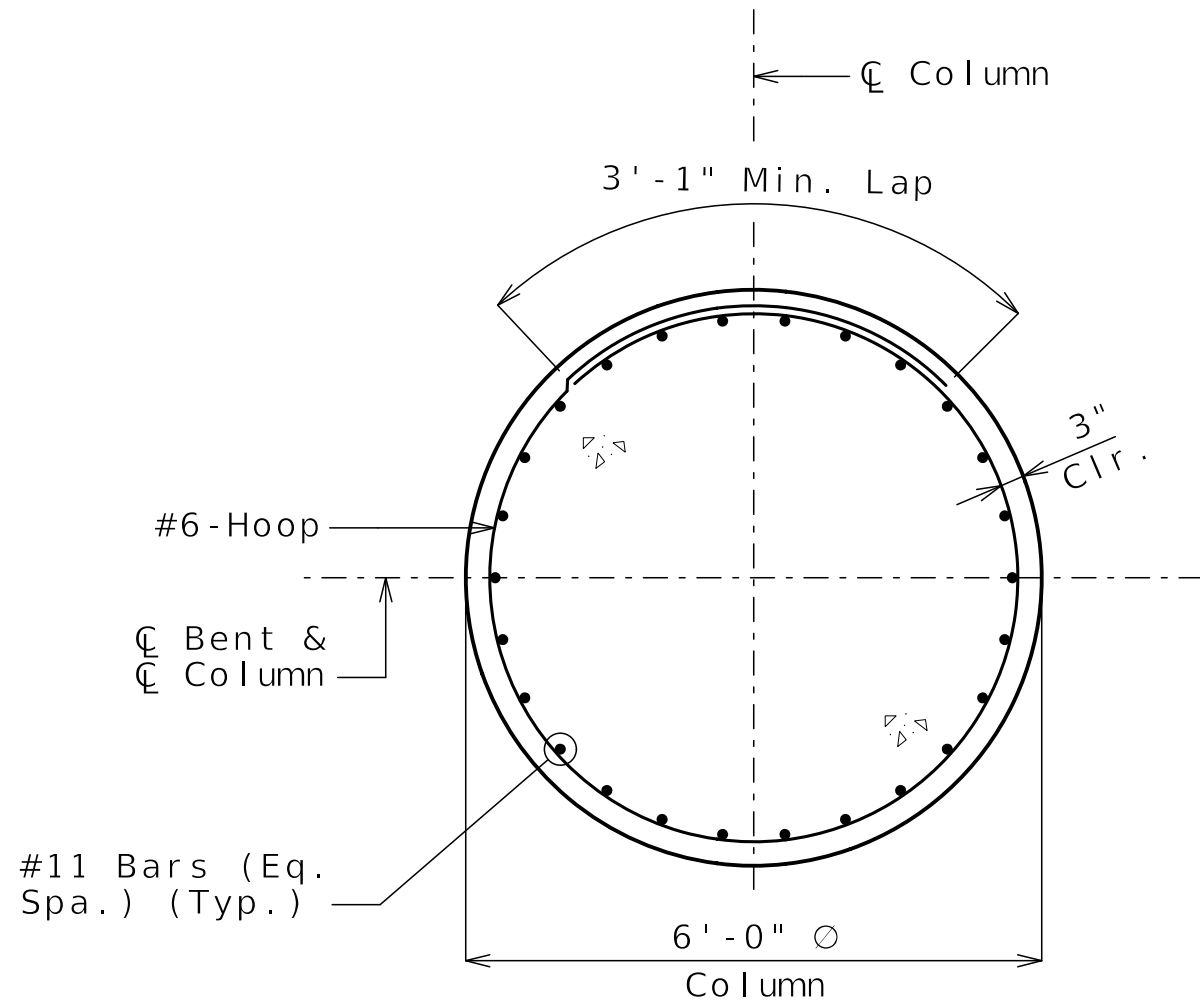


SECTION B-B

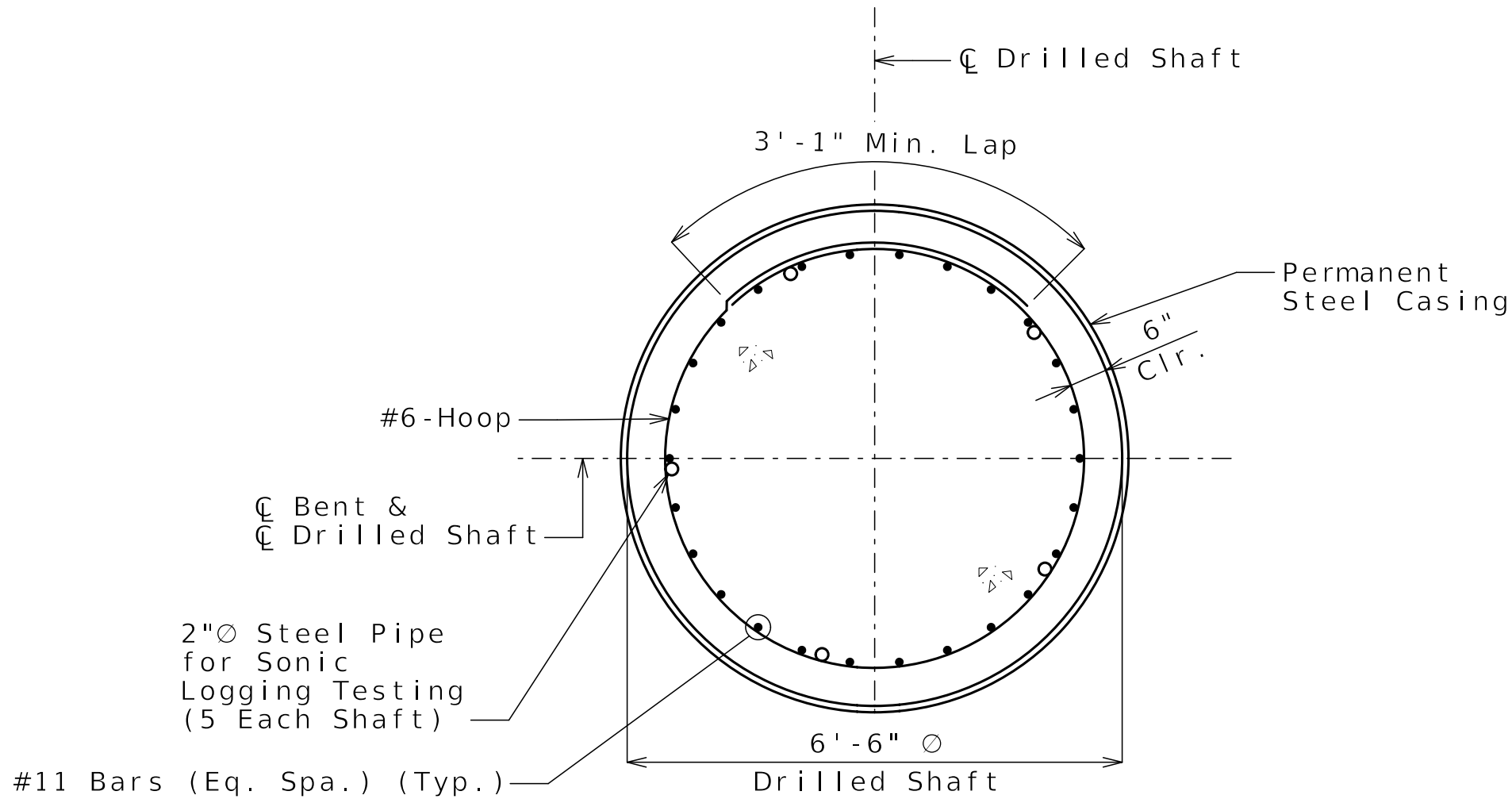
(1) U1, U2 and #6 Tie Bar Vertical Leg = 6'-7½"



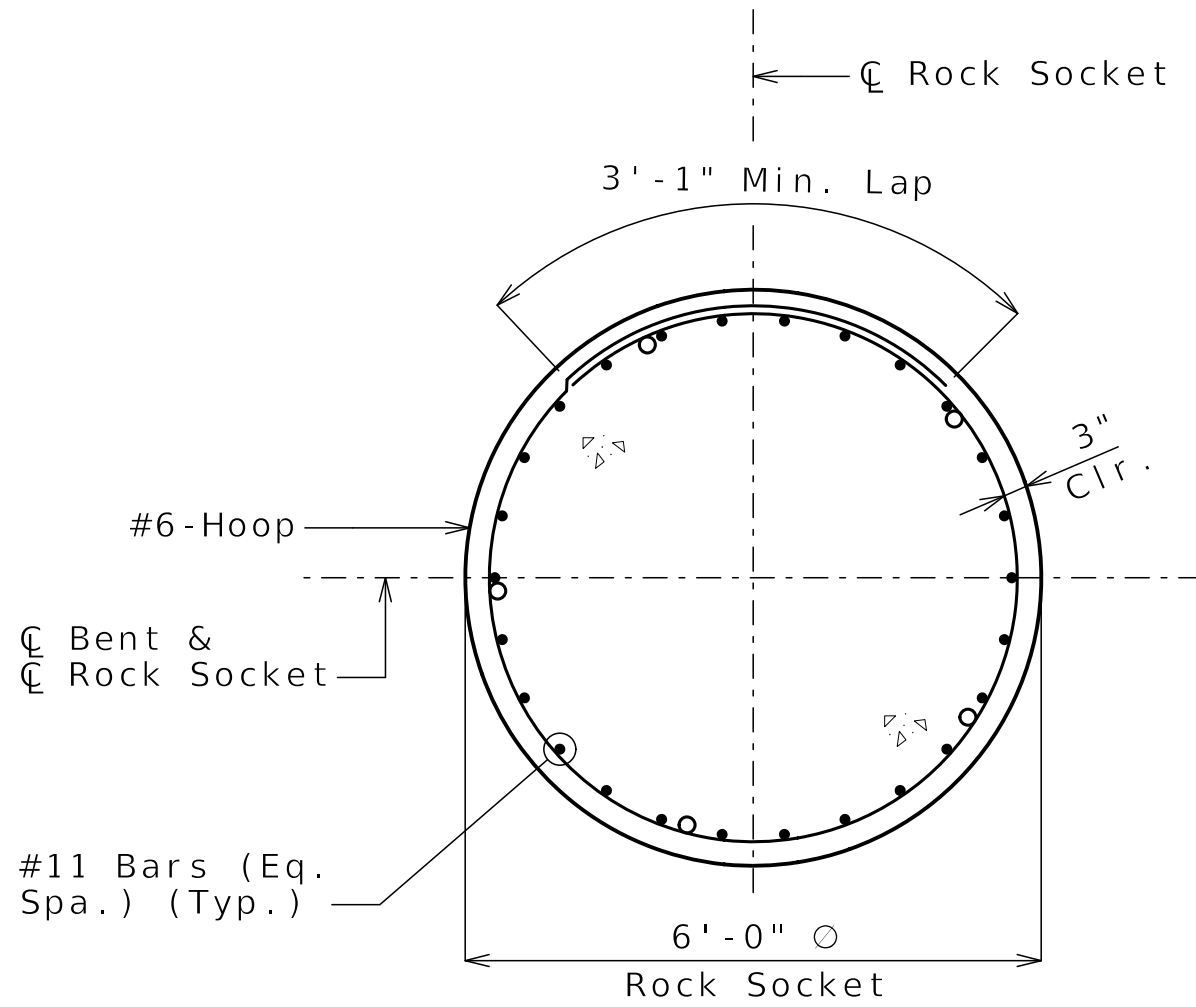
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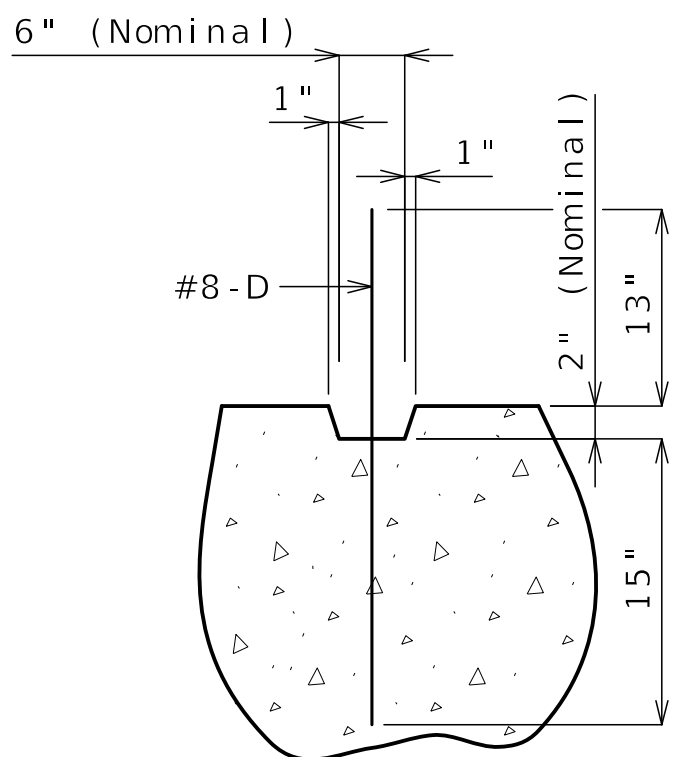
SECTION D-D



SECTION E-E



SECTION F-F



SECTION THRU KEY

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
Work this sheet with Sheets No. B09-30 and B09-31.
Hoop splices shall be staggered around the drilled shaft and rock socket at 90 degree intervals.
Shift #11-H1 and #11-H2 bars to provide clearance for girder chairs. Maintain a minimum spacing of 5 1/2" and a maximum spacing of 12" between adjacent bars.

DETAILS OF INTERMEDIATE BENT NO. 8

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-32 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-32

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION
REV 0 - RFC SUBMITTAL

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

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06/02/25

DATE
06/02/25

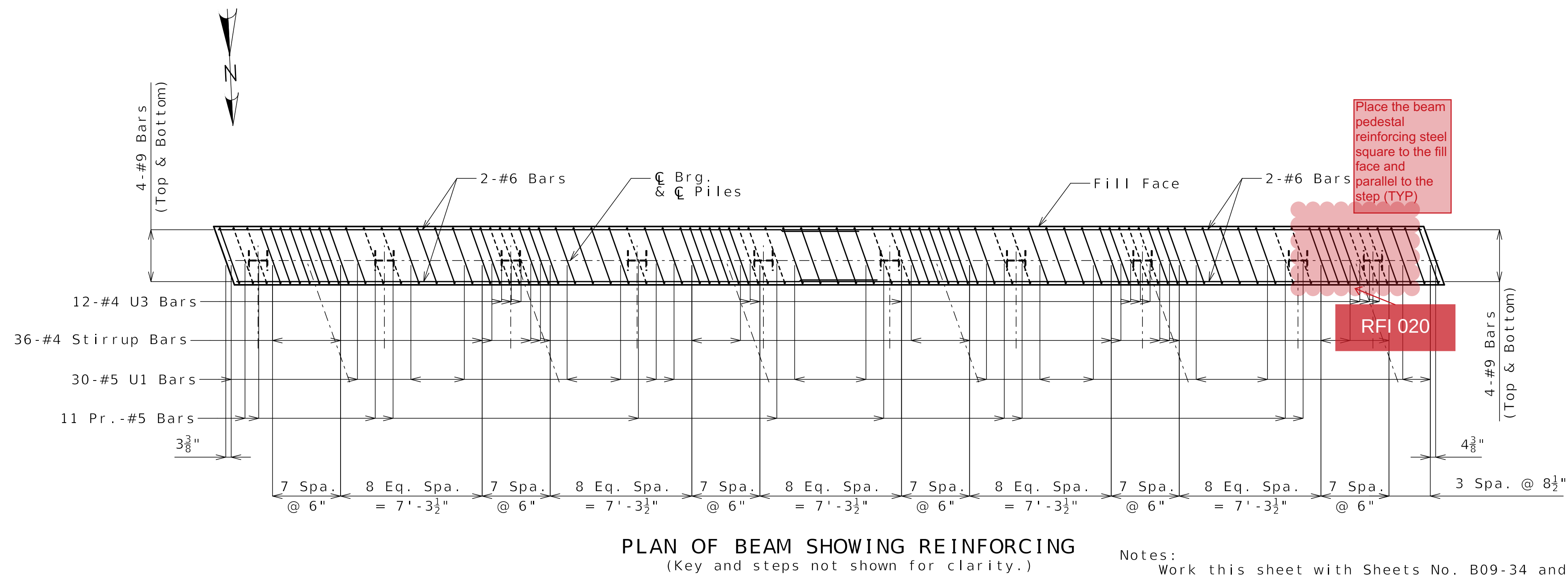
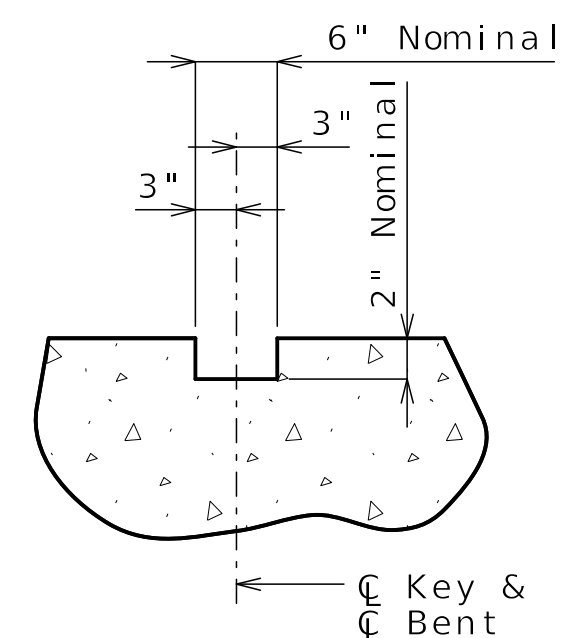
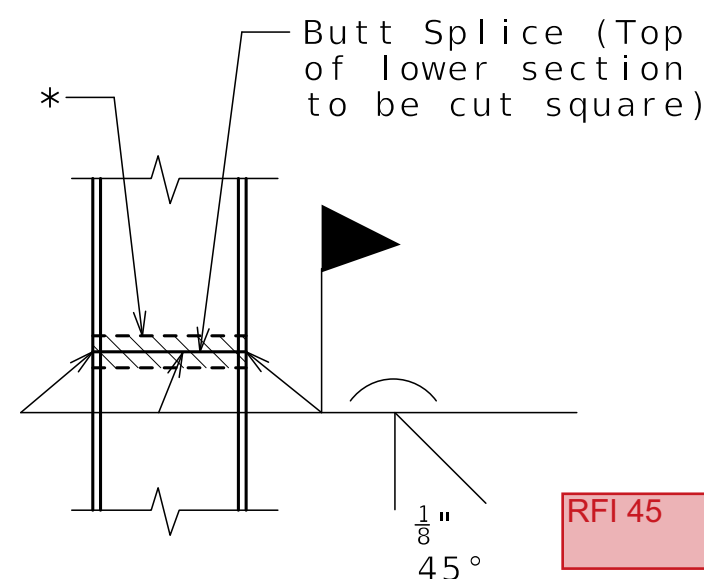
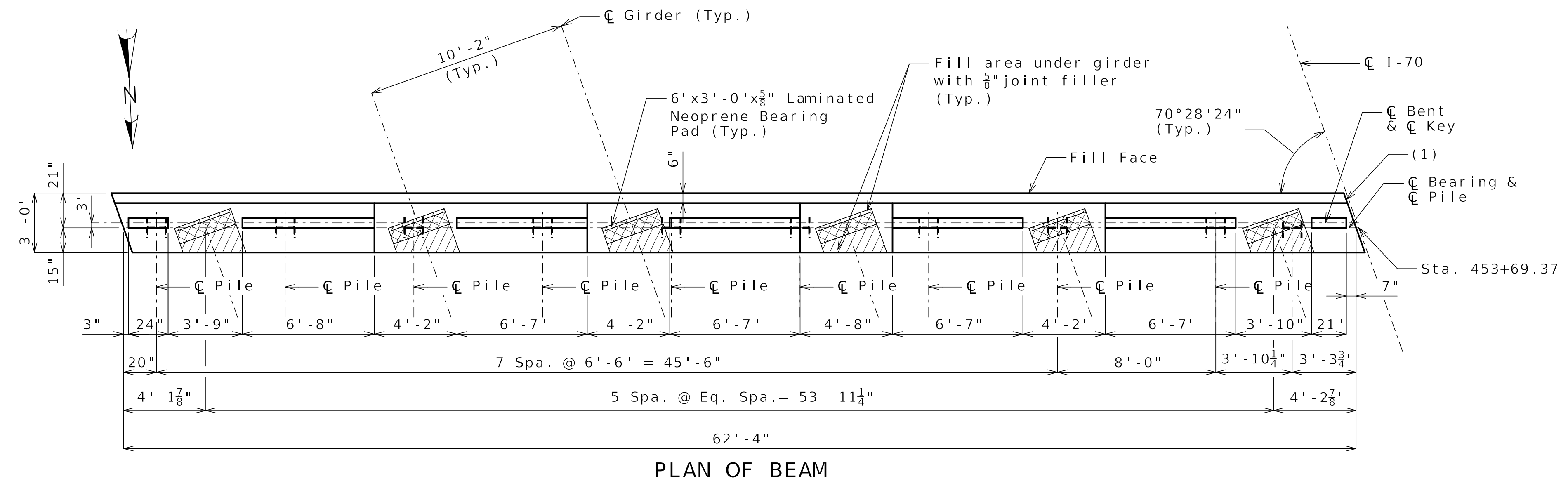
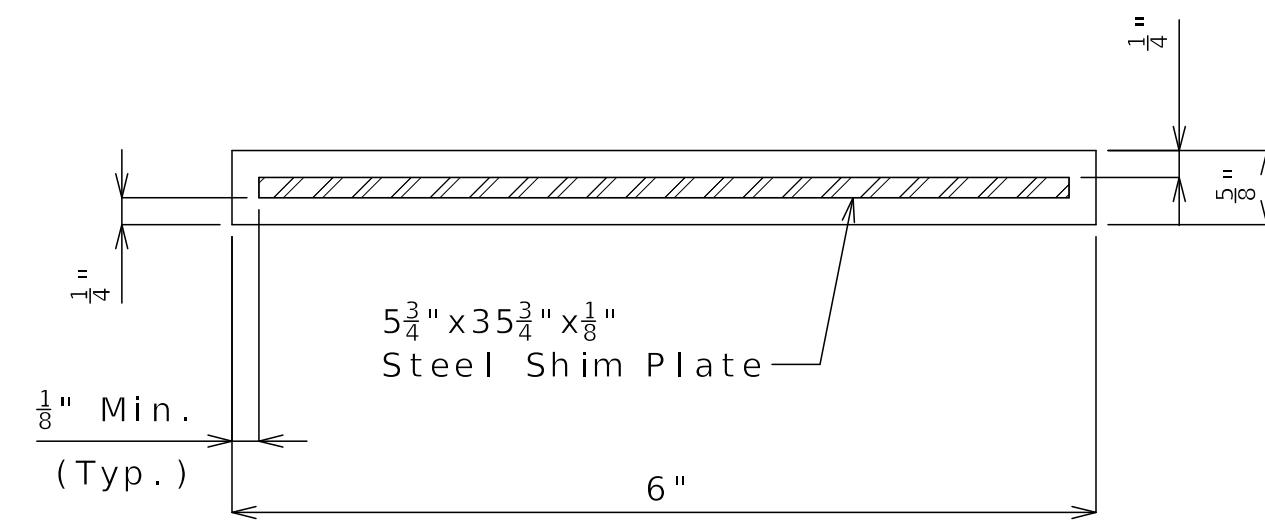
DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

DATE
06/02/25

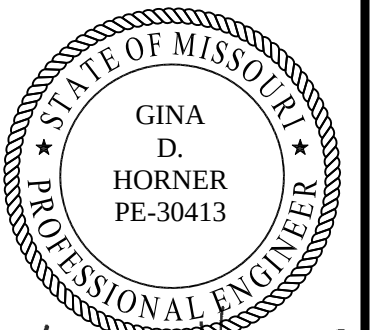
DATE
06/02/25



PLAN OF BEAM SHOWING REINFORCING
(Key and steps not shown for clarity.)

Notes:
 Work this sheet with Sheets No. B09-34 and B09-35.
 All U bars and pairs of vertical bars shall be placed along skew.
 Reinforcing steel shall be shifted to clear piles. U-bars shall clear piles by at least 1½".
 For details of bridge approach slab, see A9626 (I-70 WB Over KCT, Indiana, & 18th) Superstructure Package.
 Girders are parallel to C I-70.
 See notes on Sheet B09-08 for additional corrosion protection requirements.

DETAILS OF END BENT NO. 9



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE I - 70	STATE MO
-----------------	-------------

DISTRICT	SHEET NO.
BR	B09-33

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

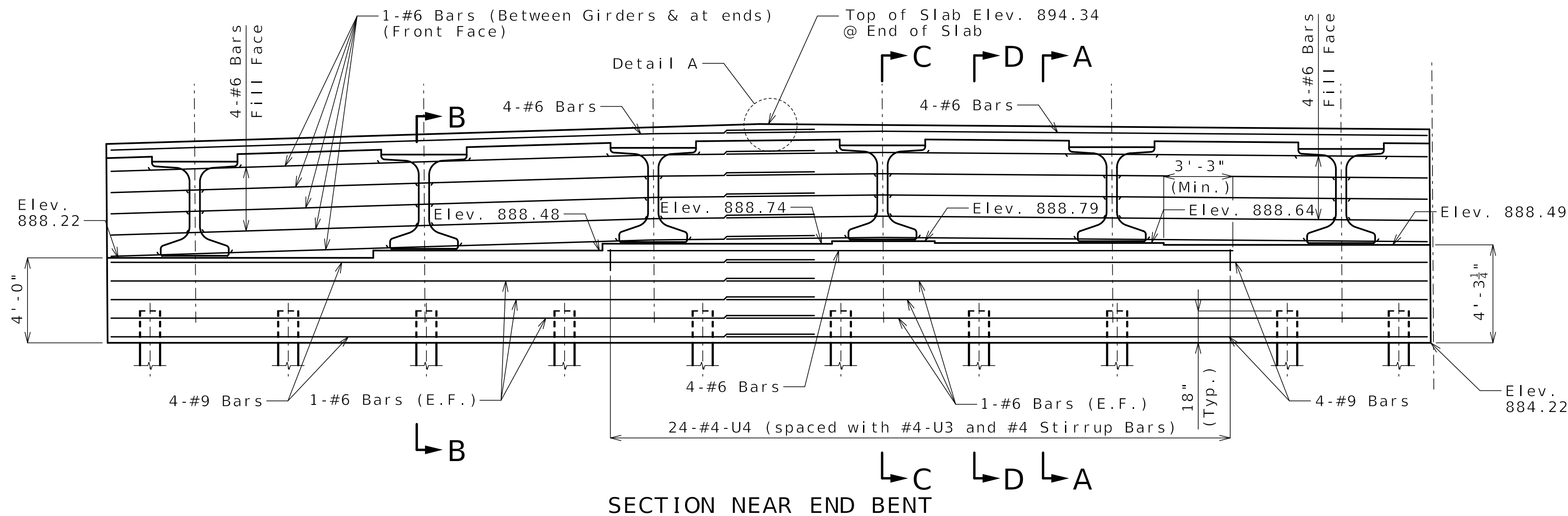
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06/02/25	REV 0 - RFC SUBMITTAL

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

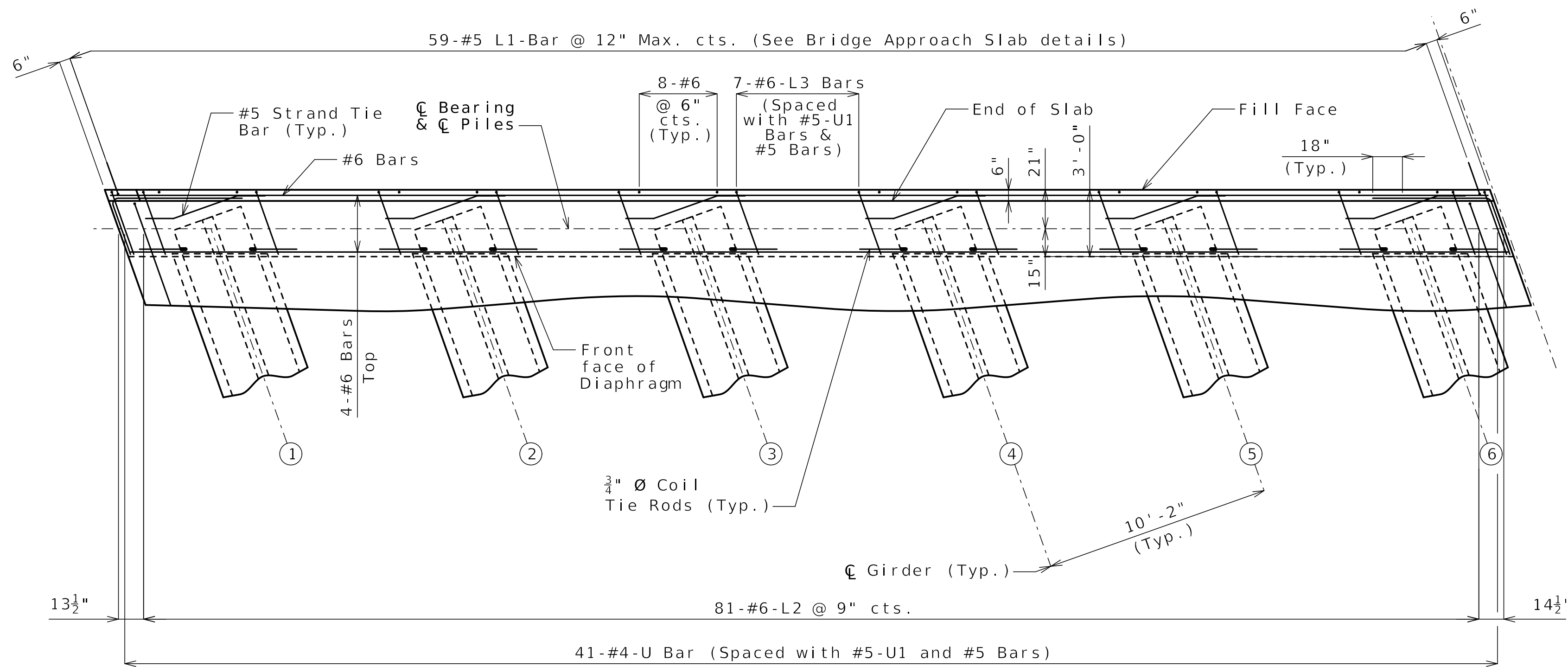
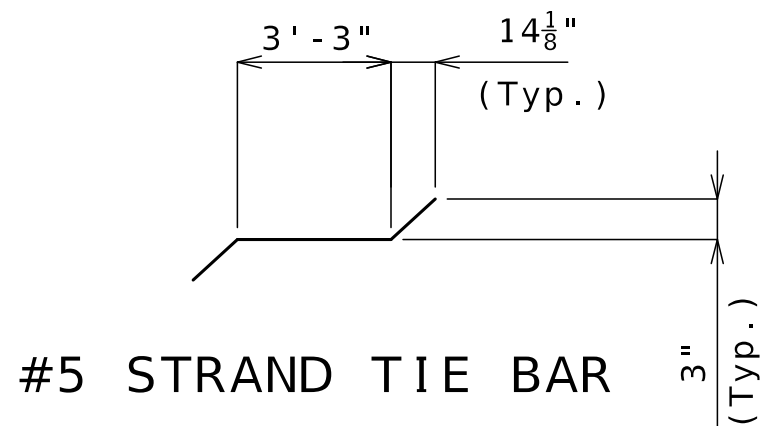
MoDOT

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

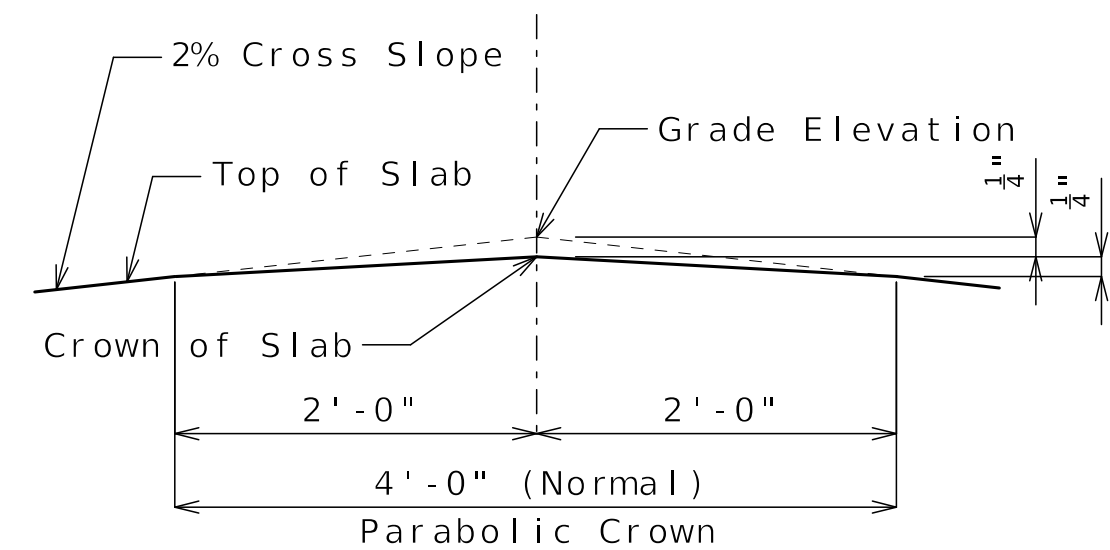
Clarkson
RADMACHER
JOINT VENTURE



Notes:
Lap Splice for #6 bars = 4'-3" (Min.)
Lap Splice for #9 bars = 6'-5" (Min.)



PART PLAN



DETAIL A

(Crown is located 29'-5 1/2" right of C I-70)

General Notes:
Work this sheet with Sheets No. B09-33 and B09-35.
For Sections A-A, B-B, C-C and D-D, see Sheet No. B09-35.
Strands at end of the girders shall be field bent or, if necessary, cut in field to maintain 1 1/2-inch minimum clearance to fill face of end bent.
The #6-F bars shall be bent in the field to clear girders.
For location of coil tie rods, see A9626 (I-70 WB Over KCT, Indiana, & 18th) Superstructure Package.

(X) Denotes girder number



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE
1-70

STATE
MO

DISTRICT
BR

SHEET NO.
B09-34

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

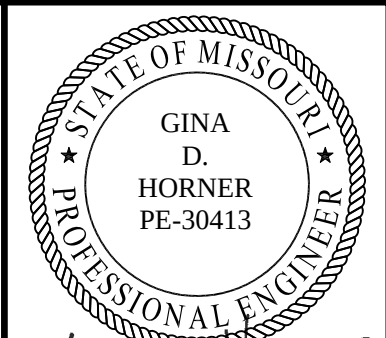
MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)



Gina D. Horner
06/03/25

DATE PREPARED
06/02/2025

ROUTE
1 - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 35

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION	DATE
REV 0 - RFC SUBMITTAL	06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

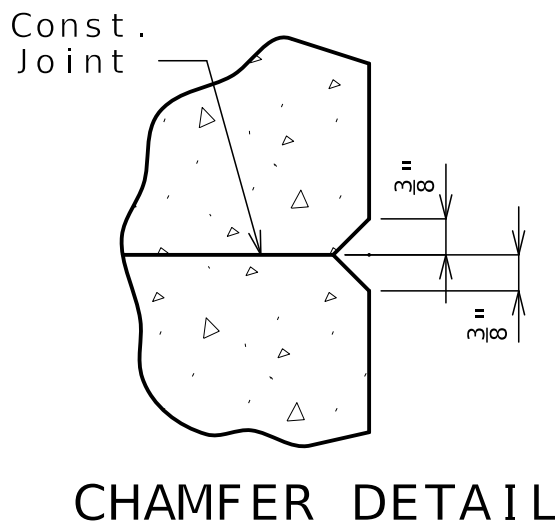
CLARKSON
RADMACHER
JOINT VENTURE

HNTB

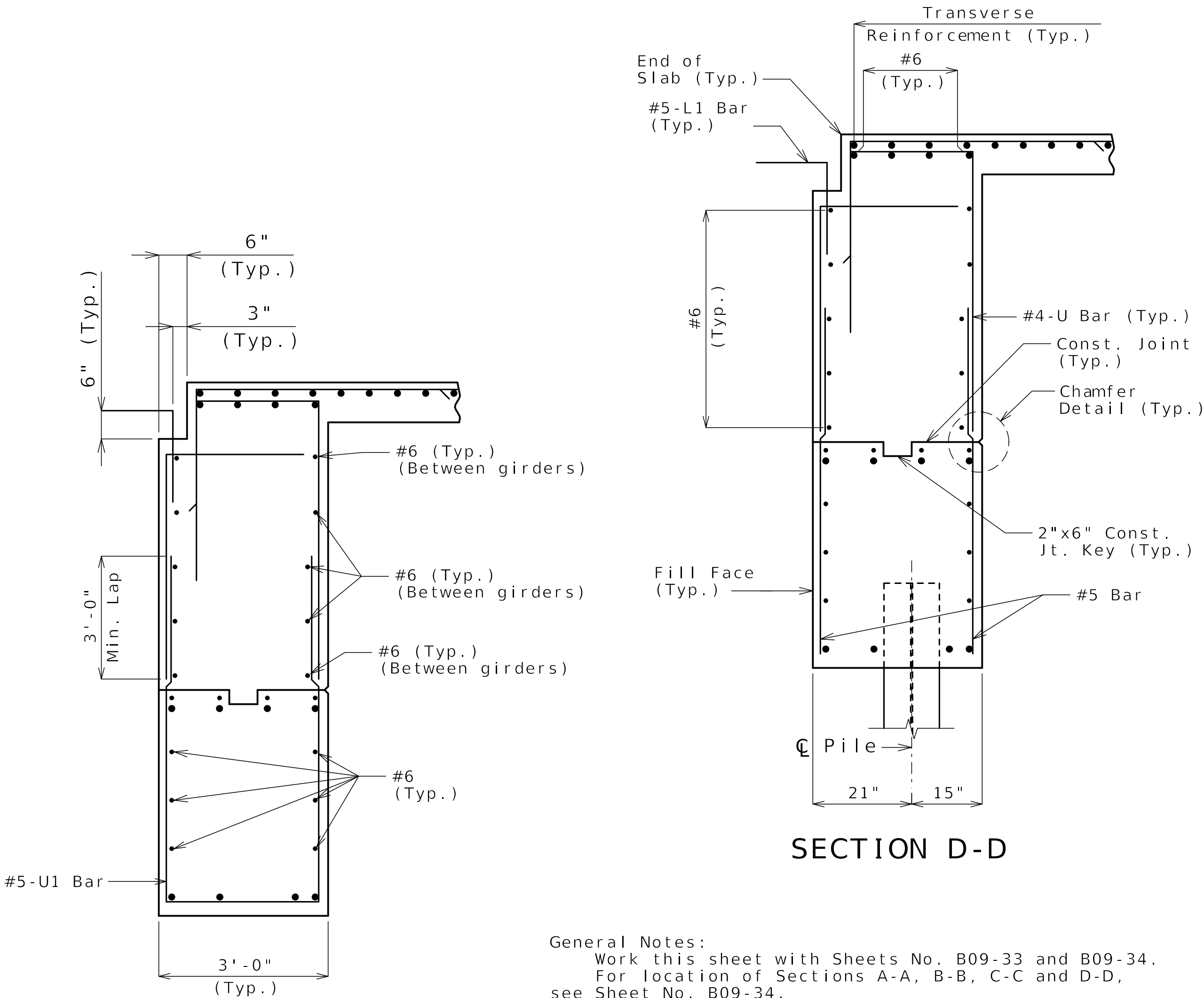
715 KIRK DRIVE
KANSAS CITY, MO 64105-1310
CERTIFICATE OF AUTHORITY
NO. 001270

MoDOT

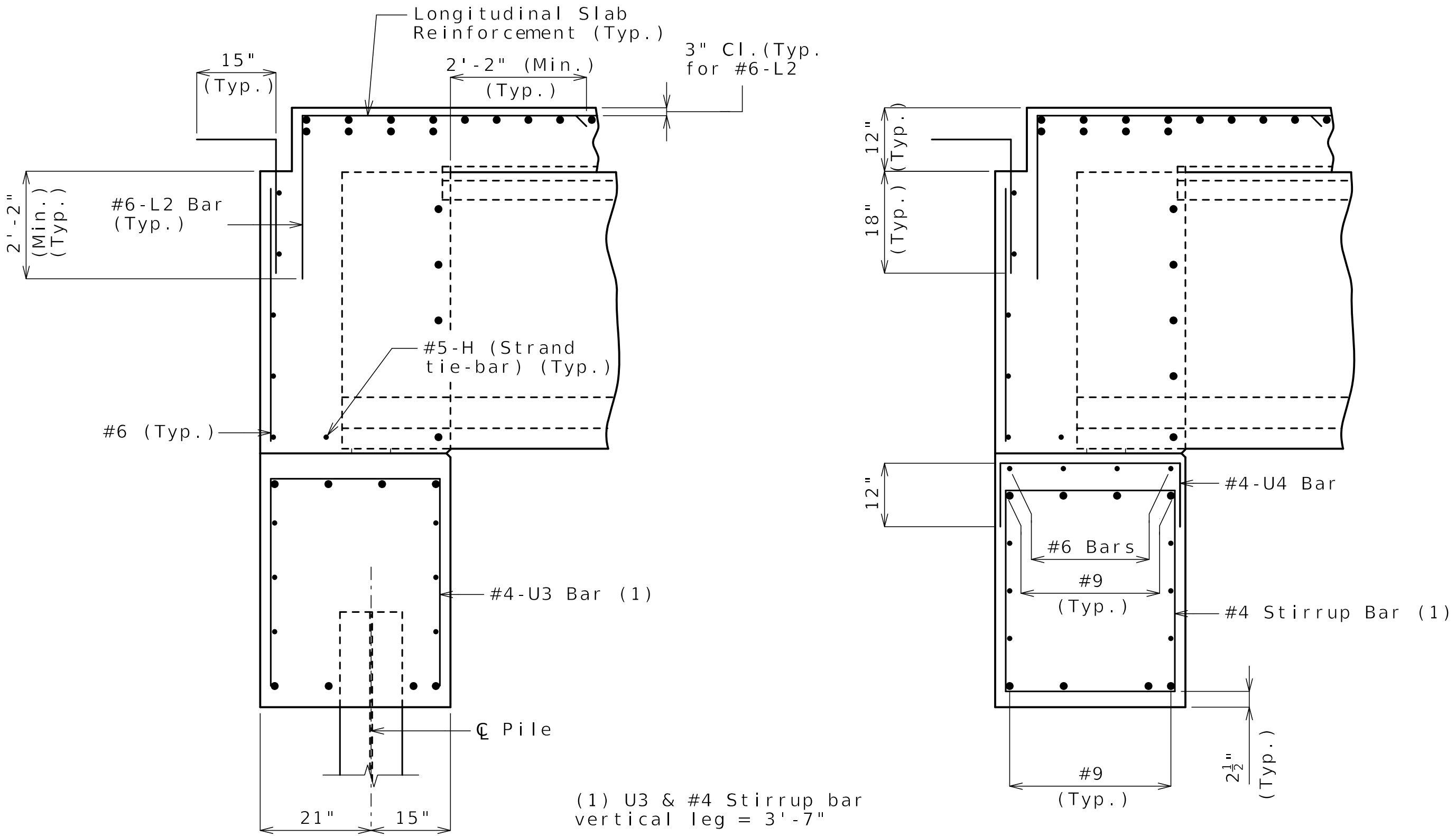
105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



General Notes:
Work this sheet with Sheets No. B09-33 and B09-34.
For location of Sections A-A, B-B, C-C and D-D, see Sheet No. B09-34.
For reinforcement of the Type D Barrier, see A9626 (I-70 WB Over KCT, Indiana, & 18th) Superstructure Package.



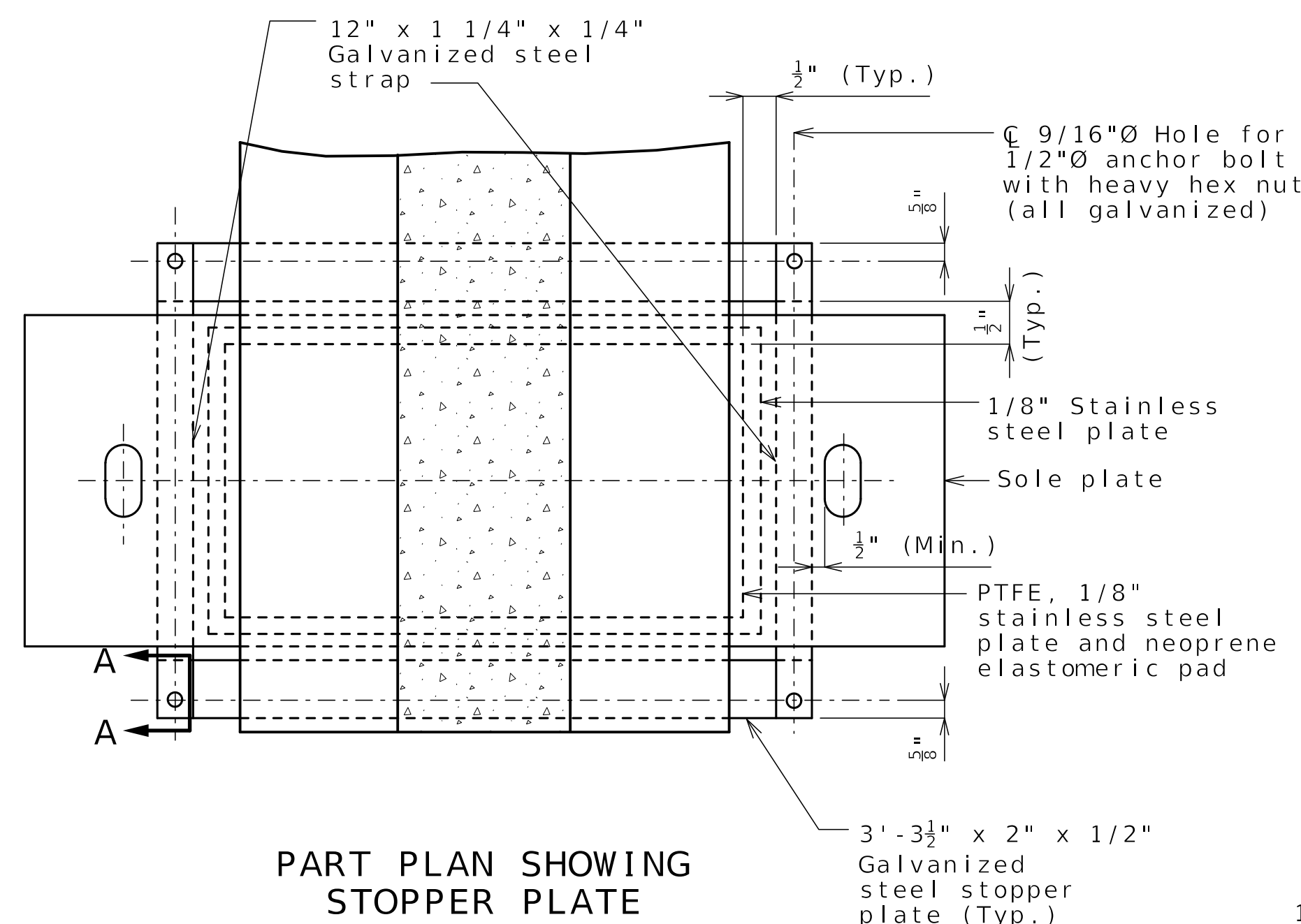
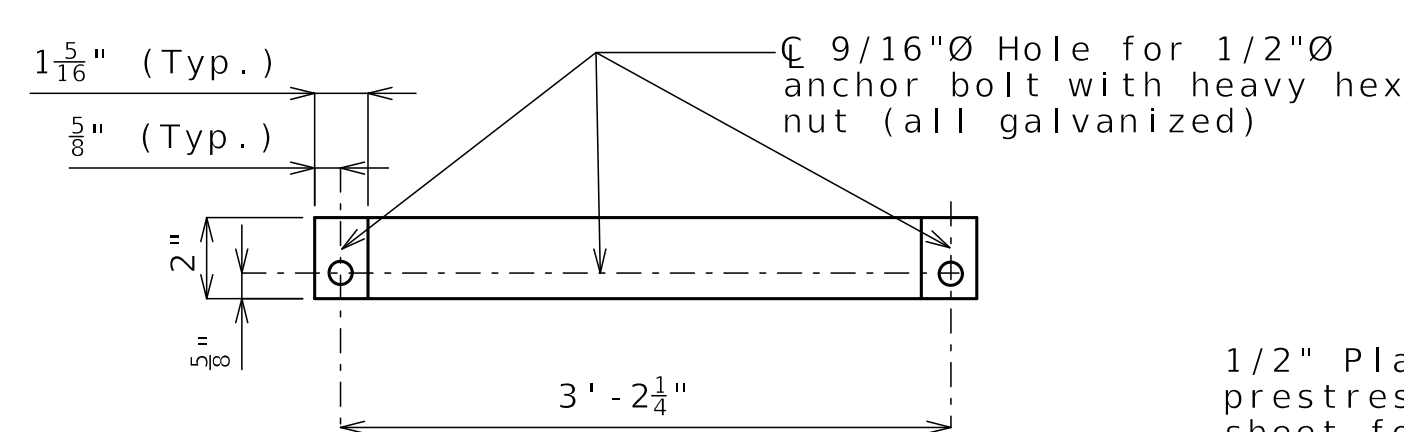
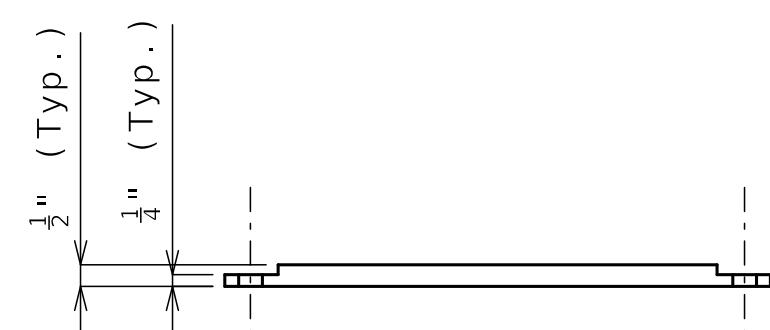
SECTION B-B

SECTION C-C

SECTION A-A

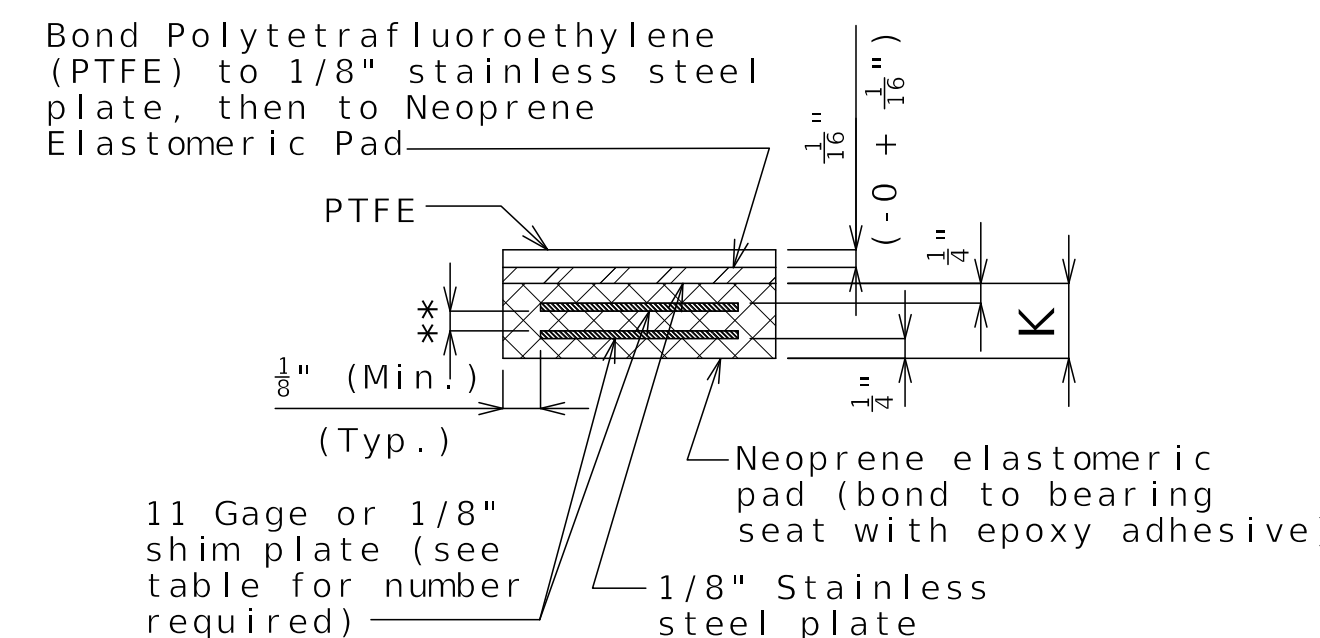
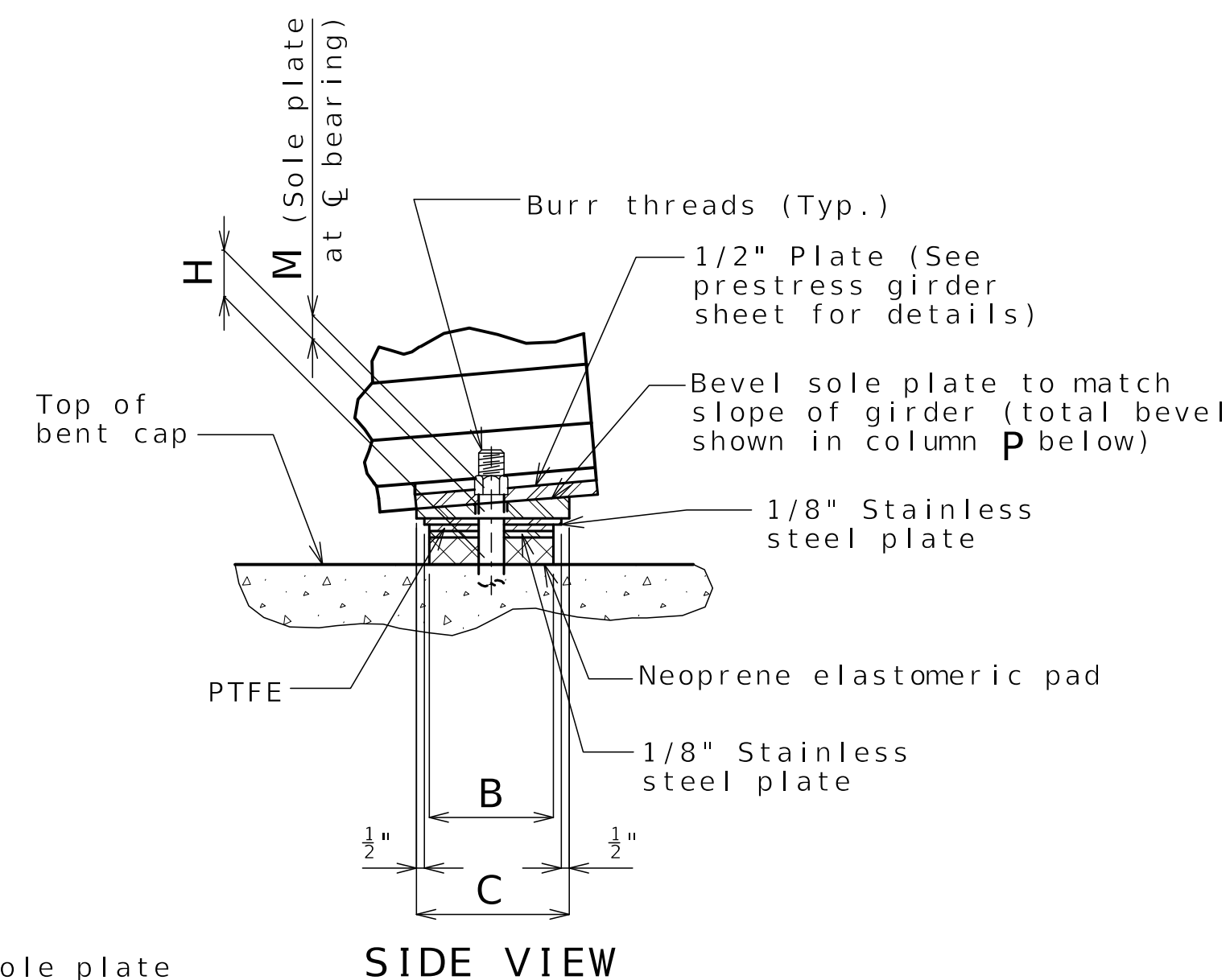
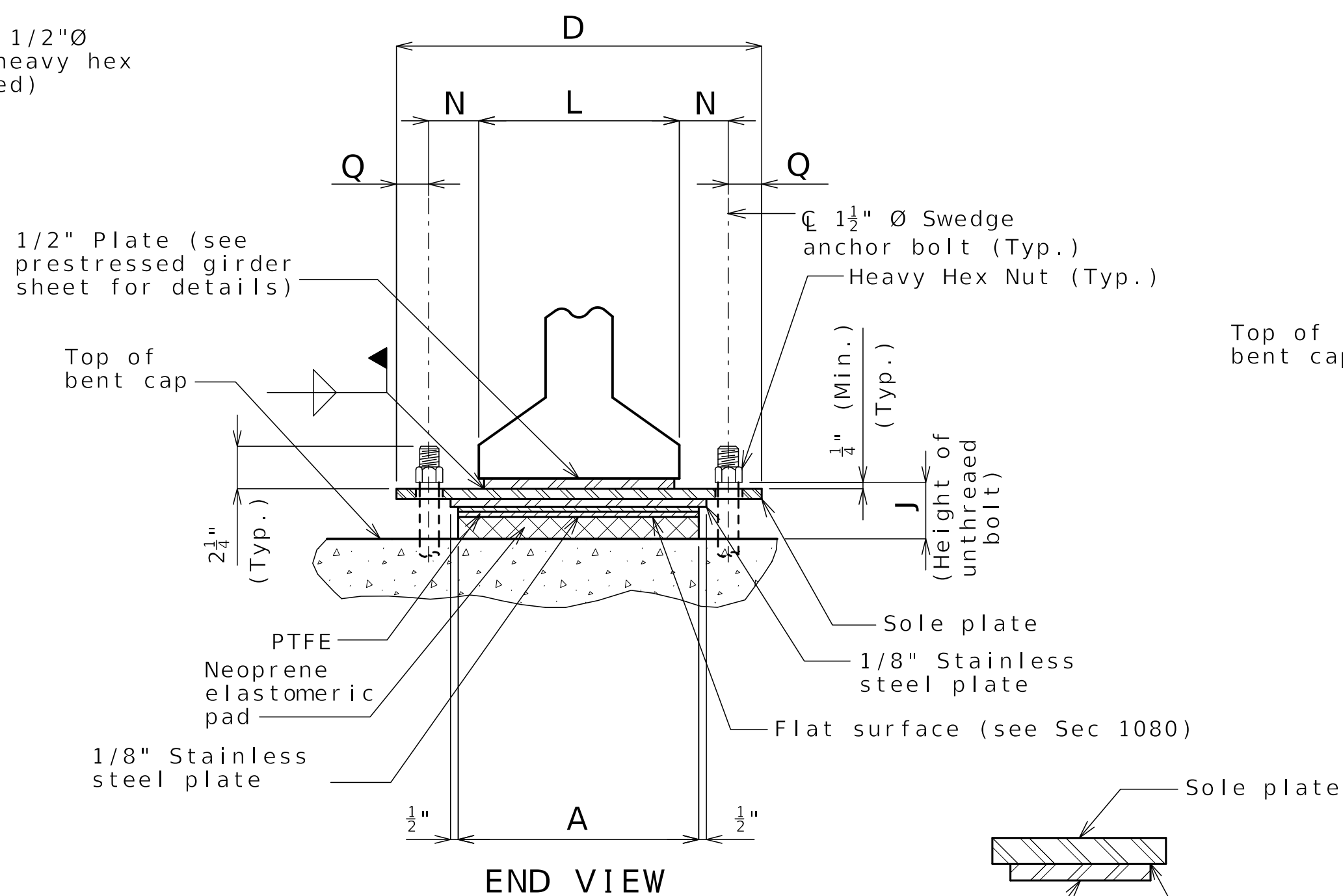
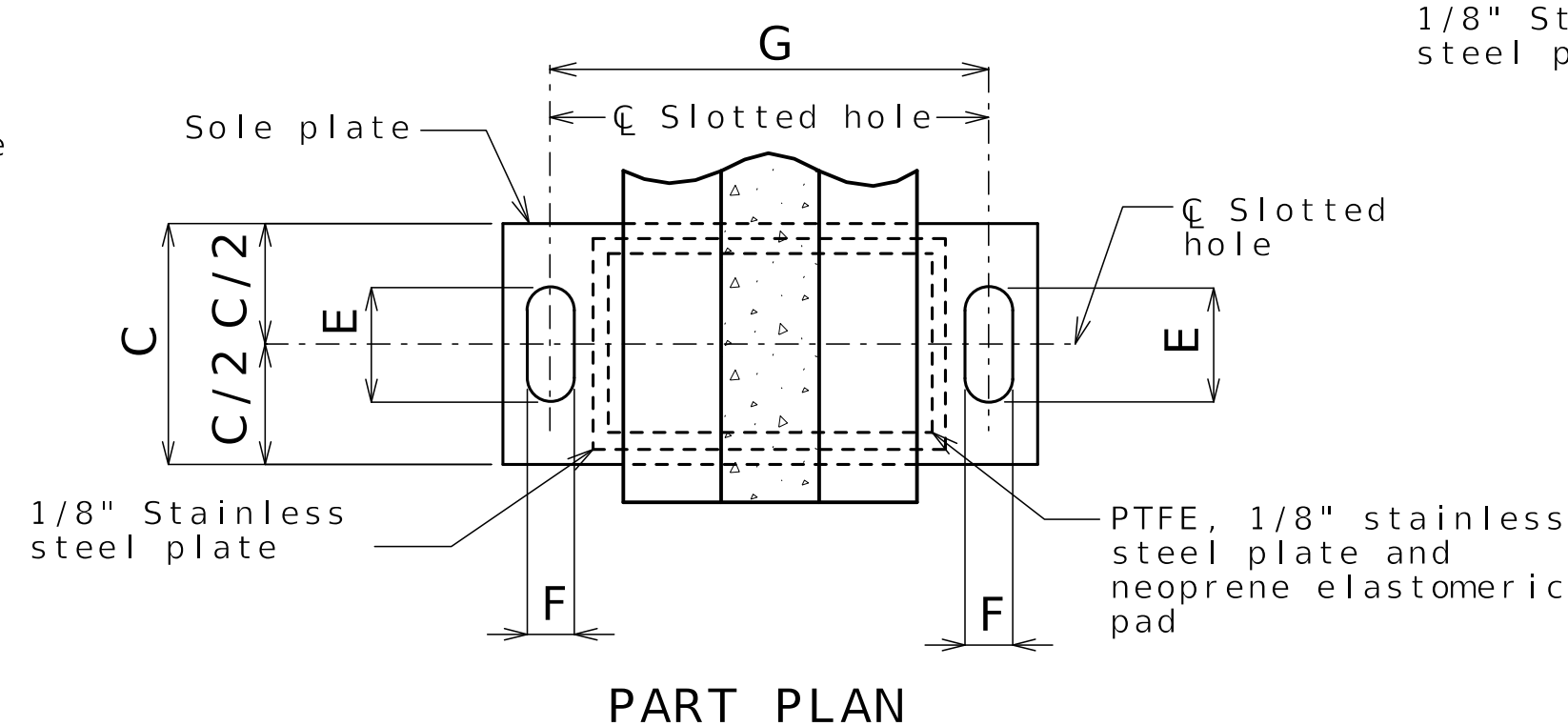
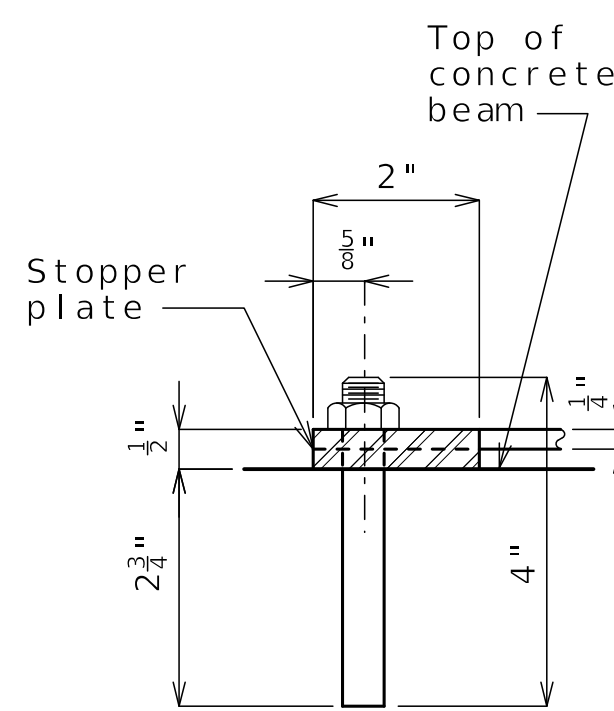
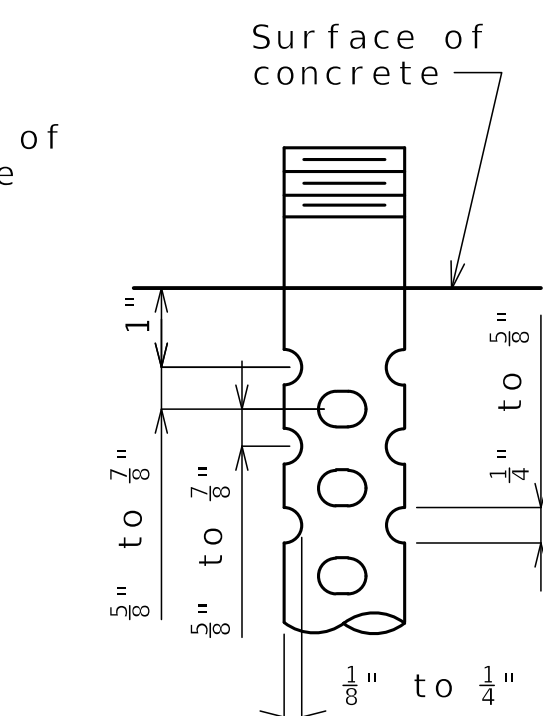
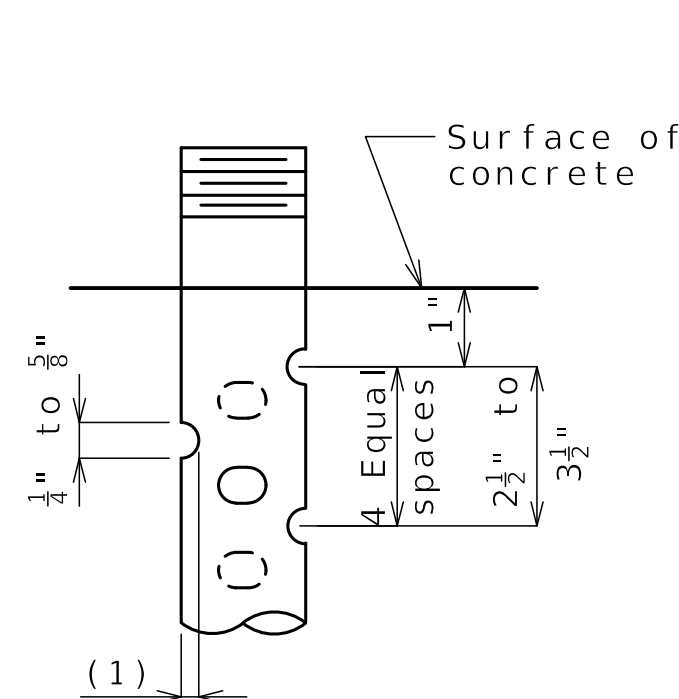
SECTION D-D

DETAILS OF END BENT NO. 9



Stopper plates and straps shall be provided to prevent loss of support due to creeping of PTFE bearings.

The bottom face of the 1/8" stainless steel plate that is welded to the sole plate shall be lubricated with a lubricant that is approved by the bearing manufacturer.



PTFE SLIDING BEARINGS																		
BENT NO.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	NUMBER OF SHIM PLATES *	NUMBER REQUIRED
4 Bk.	36"	7"	10½"	46⅞"	4¾"	1¾"	42⅜"	2⅜ ³ / ₁₆ "	31½ ⁵ / ₁₆ "	1⅞"	38⅜"	1½"	2"	⅝"	2¼"	⅛"	3	6
4 Ah.	36"	7"	12"	46⅞"	7¾"	1¾"	42⅜"	2⅜ ³ / ₁₆ "	31½ ⁵ / ₁₆ "	1⅞"	38⅜"	1½"	2"	⅝"	2¼"	⅝ ⁵ / ₁₆ "	3	6

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

TOTAL BEARINGS	12
----------------	----

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

GENERAL NOTES:

Design coefficient of friction equals 0.071.

Anchor bolts shall be 1½" Ø ASTM F1554 Grade 55 swedged bolts and shall extend 15" 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 bolt shall be at the centerline of slotted hole at 60°F. Bearing position shall be adjusted **R** for each 10° fall or rise in temperature at installation.

Anchor bolts and heavy hex nuts shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum, or galvanized in accordance with AASHTO M 232 (ASTM A153), Class C.

Neoprene Elastomeric Pads shall be 70 Durometer.

Structural steel for sole plate shall be ASTM A709 Grade 36 and shall be coated with a minimum of two coats of inorganic zinc primer to provide a total dry film thickness of 4 mils minimum, 6 mils maximum. The stainless steel plate shall be protected from any coating.

TYPE N PTFE BEARINGS

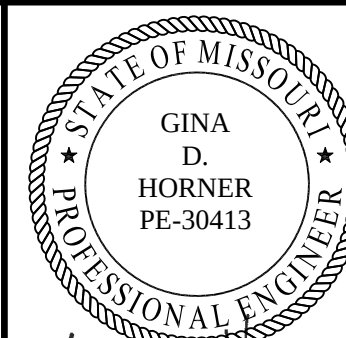
Type N PTFE Bearings shall be in accordance with Sec 716.

PTFE surface shall be fabricated as a single piece. Splicing will not be permitted.

The PTFE surface shall be flat.

Released For Construction
Not to Scale

Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure



Lina D. Horne

DATE PREPARED
06/02/2025

ROUTE	STATE
-------	-------

I - 70	MO
--------	----

DISTRICT	SHEET NO.
RD	RD 3

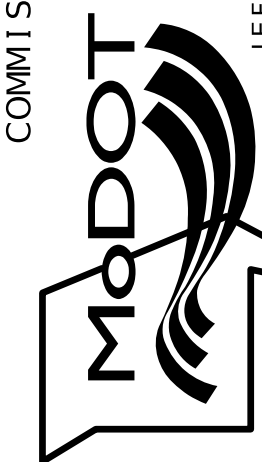
BR	B09-3
COUNTY	

JACKSON

JOB NO.

J4I1486D

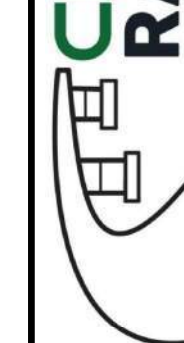
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06/02/25	REV 0 - RFC SUBMITTAL

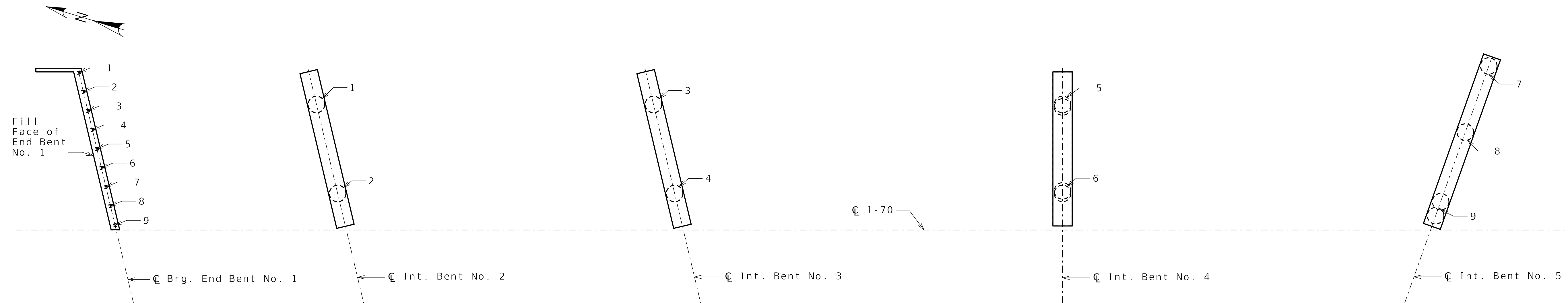
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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

**CLARKSON
RADMACHER**

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



[illegible]

Note:
Indicate in remarks column:
A. Pile type and grade.
B. Batter
C. Driven to practical refusal

As-Built Drilled Shaft Data				
Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Intermediate Bent No. 2
1				
2				
				Intermediate Bent No. 3
3				
4				
				Intermediate Bent No. 4
5				
6				
				Intermediate Bent No. 5
7				
8				
9				

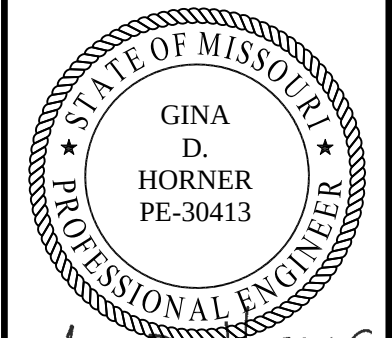
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Released For Construction
Not to Scale

Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

AS-BUILT PILE AND DRILLED SHAFT DATA



Hina D. Forner
06/03/25

DATE PREPARED
06/02/2025

ROUTE I - 70	STATE MO
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DISTRICT	SHEET NO.
BR	B09-37

COUNTY
JACKSON

J4I1486D

CONTRACT ID.
240807-C01

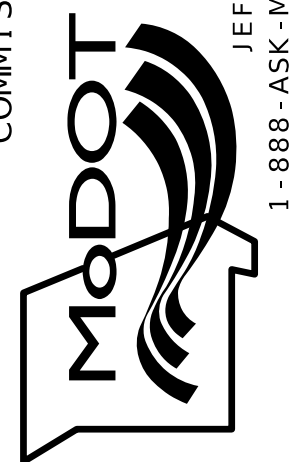
PROJECT NO.

BRIDGE NO.	A9626
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MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

 105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-273-6636)

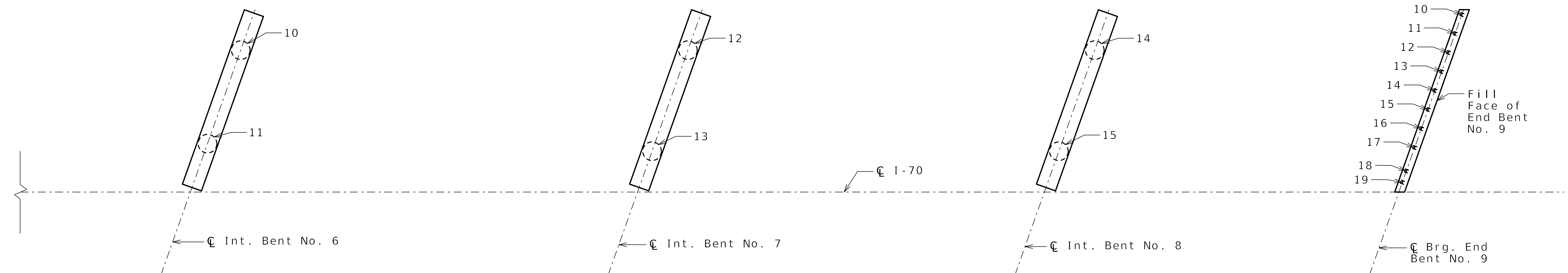
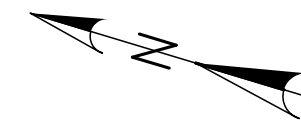


105 WEST CAPITOL
JEFFERSON CITY, MO 65102
1-888-ASK-MODOT (1-888-275-6636)



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



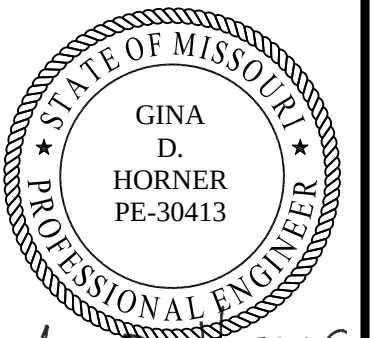
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Note:
Indicate in remarks column:
A. Pile type and grade.
B. Batter
C. Driven to practical refusal

As-Built Drilled Shaft Data				
Shaft No.	Top of Sound Rock (Elev.)	Tip of Casing (Elev.)	Bottom of Rock Socket (Elev.)	Remarks
				Intermediate Bent No. 6
10				
11				
				Intermediate Bent No. 7
12				
13				
				Intermediate Bent No. 8
14				
15				

Note:
This sheet to be completed by design-builder.

AS-BUILT PILE AND DRILLED SHAFT DATA



Gina D. Horner

06/03/25

DATE PREPARED

06/02/2025

ROUTE	STATE
I 70	MO

1 - 70	MO
DISTRICT	SHEET NO.

DISTRICT	SHEET NO.
BR	B09-38

COUNTY

JACKSON

JOB NO.
1411486D

CONTRACT ID.

240807 - C01

PROJECT NO.

BRIDGE NO.

BRIDGE NO.
A9626

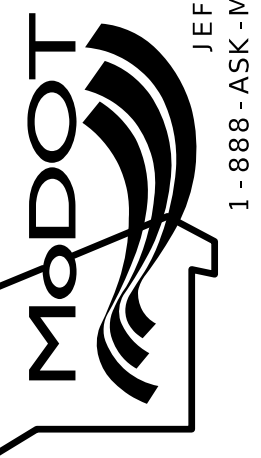
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DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

MoDOT
MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION

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



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



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





SOIL BORING NUMBER: RR_B1_3

Page 1 of 3

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1065733.5 / 2776875.7
DRILLING FIRM PPI
DRILLER David Allen
DATE STARTED 12/02/2024
LOGGED BY Pradip Adhikari
DATE COMPLETED 12/03/2024
SURFACE ELEVATION 830.2'
RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core
TOOLING 4-1/2" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab			
										During Drilling (ft):	19.5		Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)
										After Drilling (ft):	N/A				
										After __ Hours (ft):	N/A				
Visual Classification and Remarks															
										Brown and gray, very stiff, moist, LEAN TO FAT CLAY (CL-CH), trace fine sand					
3.5 ft		X	J-1	12	5-6-5 (11)	67		>4.5							
5															
8.5 ft		X	J-2	14	3-3-6 (9)	78		2.5							
10															
13.5 ft		X	J-3	18	4-4-7 (11)	100		4.25				51-19-32	20.9		
15															
18.5 ft		X	J-4	18	3-4-6 (10)	100		3.5							
20															
23.5 ft		X	J-5	18	3-4-7 (11)	100		4.5				47-21-26	21.0		
25															
28.5 ft		X	J-6	18	3-4-7 (11)	100		3.0							
30															
33.5 ft		X	J-7	18	4-5-9 (14)	100		4.5		33.5	796.7				
35										Brown and gray, very stiff, moist, FAT CLAY (CH)					
												58-24-34	23.4		



SOIL BORING NUMBER: RR_B2_3

Page 2 of 4

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1065607.8 / 2776790.4
DRILLING FIRM PPI
DRILLER David Allen
DATE STARTED 12/03/2024
LOGGED BY Pradip Adhikari
DATE COMPLETED 12/04/2024
SURFACE ELEVATION 844.0'
RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core
TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
38.5 ft			J-8	18	5-5-6 (11)	100		3.0								Brown and gray, firm, moist, FAT CLAY (CH)
40												51-19-32	24.0			- trace sand below 38.5'
43.5 ft			J-9	18	5-5-8 (13)	100		4.25								
45																
48.5 ft			J-10	18	5-7-8 (15)	100		4.5				55-28-27	23.6			- gray below 48.5'
50																
53.5 ft			J-11	18	4-5-7 (12)	100		4.5								
55																
58.5 ft			J-12	18	5-5-8 (13)	100		4.5				80-29-51	30.9			
60																
65																
68.5 ft			J-13	18	4-5-6 (11)	100		4.0		68.5	775.5	41-22-19	27.4			Brown and gray, firm, moist, LEAN CLAY (CL)
70																



SOIL BORING NUMBER: RR_B2_3

Page 3 of 4

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1065607.8 / 2776790.4
DRILLING FIRM PPI
DRILLER David Allen
DATE STARTED 12/03/2024
LOGGED BY Pradip Adhikari
DATE COMPLETED 12/04/2024
SURFACE ELEVATION 844.0'
RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core
TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
78.5 ft			J-14	18	4-5-7 (12)	100		2.5								Brown and gray, firm, moist, LEAN CLAY (CL)
80																
85																
87.5 ft																- SPT refusal at 87.5'
87.5			C-1	60		100	28			87.5	756.5					Limestone, thinly bedded, weathered, very fine grained, light gray, moderately hard
90																
92.5 ft			C-2	60		100	80									- slightly weathered, hard below 92.5'
95																
97.5 ft			C-3	60		100	75									
100																
102.5 ft			C-4	60		100	81			102.5	741.5					Shaley limestone, medium bedded, slightly weathered, dark gray, moderately hard
105												8.4	138.3	52		
107.5 ft			C-5	60		100	43									- light gray limestone between 106.5' to 107.5'
110										109.5	734.5					Shale, medium bedded, slightly weathered, gray, moderately hard
												12.7	121.9	8		

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 41

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25

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06/02/25

DATE

06/02/25

DATE

06/02/25

DATE

06/02/25



SOIL BORING NUMBER: RR_B2_3

Page 4 of 4

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1065607.8 / 2776790.4
DRILLING FIRM PPI
DRILLER David Allen
DATE STARTED 12/03/2024
LOGGED BY Pradip Adhikari
DATE COMPLETED 12/04/2024
SURFACE ELEVATION 844.0'
RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core
TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
112.5			C-6	60		100	55									Shale, medium bedded, slightly weathered, gray, moderately hard
115										114.5	729.5					Shaley limestone, medium bedded, slightly weathered, light gray, moderately hard
										117.5	726.5					Bottom of Boring at 117.5'
120										Boring backfilled with cuttings 12/4/2024						
125																
130																
135																
140																
145																



SOIL BORING NUMBER: RR_B3_4

Page 1 of 4

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1065472.7 / 2776830.8
DRILLING FIRM PPI
DRILLER Eric P.
DATE STARTED 12/18/2024
LOGGED BY Zachary Boyd
DATE COMPLETED 12/19/2024
SURFACE ELEVATION 846.6'
RIG TYPE CME-550X
METHOD Auger, Mud Rotary, NQ Core
TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
																FILL, dark brown, stiff to very stiff, moist, LEAN TO FAT CLAY (CL-CH), organics, some gravel, iron staining
3.5			J-1	10	4-5-7 (12)	56		3.0								- becomes reddish brown to gray at 3.5'
8.5			J-2	13	4-5-7 (12)	72		2.5								
13.5			U-1	24		100		2.5								
18.5			J-3	18	3-4-6 (10)	100		2.0								18.5 828.1 Reddish brown, stiff, moist, LEAN CLAY (CL), organics
23.5			J-4	18	x-2-2 (4)	100		0.5								- becomes soft at 23.5'
28.5			U-2	24		100		0.5								
33.5			J-5	18	4-6-8 (14)	100		2.0								- becomes stiff at 33.5'

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70
STATE
MO

DISTRICT
BR
SHEET NO.
B09 - 42

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION	REV	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
06/02/25																						

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

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

CLARKSON RADMACHER JOINT VENTURE

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



SOIL BORING NUMBER: RR_B3_4

Page 2 of 4

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065472.7 / 2776830.8
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 12/18/2024
LOGGED BY Zachary Boyd DATE COMPLETED 12/19/2024
SURFACE ELEVATION 846.6' RIG TYPE CME-550X
METHOD Auger, Mud Rotary, NQ Core TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
38.5 ft			J-6	18	5-7-9 (16)	100		2.5								Reddish brown, stiff, moist, LEAN CLAY (CL), organics
40																- becomes very stiff at 38.5'
43.5 ft			U-3	24		100		2.5				49-23-26	21.5	105.5	4.27	
45																
48.5 ft			J-7	18	7-10-11 (21)	100		>4.5								- with gravel at 49.3'
50																
53.5 ft			J-8	18	5-5-8 (13)	100		2.5								- becomes dark gray to reddish brown at 53.5'
55																
58.5 ft			U-4	24		100		3.0		58.5	788.1					Dark gray, stiff, moist, FAT CLAY (CH), some gravel
60												50-22-28	24.2	101.7	3.22	
65																
68.5 ft			J-9	18	4-5-6 (11)	100		2.0				61-31-30	34.6			
70																



SOIL BORING NUMBER: RR_B3_4

Page 3 of 4

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065472.7 / 2776830.8
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 12/18/2024
LOGGED BY Zachary Boyd DATE COMPLETED 12/19/2024
SURFACE ELEVATION 846.6' RIG TYPE CME-550X
METHOD Auger, Mud Rotary, NQ Core TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
78.5 ft			J-10	18	3-5-6 (11)	100		2.0								Dark gray, stiff, moist, FAT CLAY (CH), some gravel
80																
85																
86.5 ft			C-1	42		100	55									86.5 760.1
90			C-2	60		100	82									Limestone, weathered, light gray, moderately hard, vuggy, fractured
95			C-3	60		100	88									
96.2 ft																- 0.5" clay seam at 96.2'
100			C-4	60		100	95									
105			C-5	60		100	72									104.0 742.6
110			C-6	60		100	52									Shale, slightly weathered, dark gray, moderately hard, fossilization
																108.3 738.3
																Limestone, slightly weathered, light gray, moderately hard
																110.4 736.2
																Shale, weathered, dark gray, moderately hard, fossilization

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-43 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 43

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MoDOT

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB

DATE PREPARED
06/02/2025

DISTRICT	SHEET NO
BR	B09-4

JOB NO.
J4I1486D

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

**MISSOURI HIGHWAYS AND TRANSPORTATION
COMMISSION**

MoDOT

105 WEST CAPITOL
JEFFERSON CITY, MO 65102

ARKSON
ADMACHER
JOINT VENTURE

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



DATE PREPARED
06/02/2025

ROUTE	STATE
I - 70	MO

DISTRICT	SHEET NO.
BR	B09-47

COUNTY
JACKSON

J4I1486D

240807 - C01
PROJECT NO.

BRIDGE NO.

[illegible]

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

ARKSON
ADMACHER
JOINT VENTURE

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





SOIL BORING NUMBER: RR_B5_3

Page 2 of 2

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065203.0 / 2776916.6
DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 01/15/2025
LOGGED BY Trent Shepherd DATE COMPLETED 01/15/2025
SURFACE ELEVATION 847.3' RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
37.5		X	J-6	18	3-8-9 (15)	100		2.25								Brown, very stiff, moist, LEAN CLAY (CL)
40																39.0 808.3
																Bottom of Boring at 39'
45																Boring continued 1/22/2025 - see RR_B5_3A
50																
55																
60																
65																
70																



SOIL BORING NUMBER: RR_B5_3A

Page 1 of 3

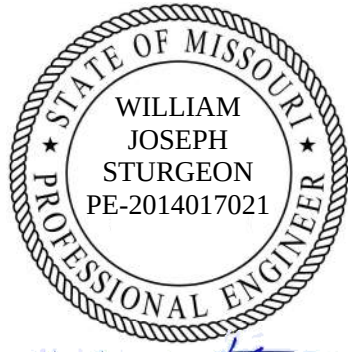
PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065242.5 / 2776987.5
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/22/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/22/2025
SURFACE ELEVATION 845.2' RIG TYPE CME-550X
METHOD Water Rotary, NQ Core TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
5																
10																
15																
20																
25																
30																
35																

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 48

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION	REV	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9
06/02/25	REV 0 - RFC SUBMITTAL																					

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

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

CLARKSON RADMACHER JOINT VENTURE

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

HNTB



SOIL BORING NUMBER: RR_B5_3A

Page 2 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065242.5 / 2776987.5
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/22/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/22/2025
SURFACE ELEVATION 845.2' RIG TYPE CME-550X
METHOD Water Rotary, NQ Core TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
40										39.0	806.2					Brown, very stiff, moist, LEAN CLAY (CL)
43.5	43.5 ft	J-7	18	5-8-10 (18)	100		3.5			- Swelling caused rotary bit to swell up at 43.5'						
48.5	48.5 ft	J-8	18	3-5-7 (12)	100		2.5			- becomes stiff at 48.5'						
53.5	53.5 ft	J-9	18	3-6-7 (13)	100		2.5			43-20-23	22.8					
58.5	58.5 ft	J-10	16	5-8-10 (18)	89		4.0									58.5 786.7 Reddish brown, very stiff, moist, LEAN CLAY (CL), iron staining
63	63 ft	C-1	25		100	48										63.0 782.2 Limestone, weathered, light gray, moderately hard, fractured, iron staining
65.1	65.1 ft	C-2	60		100	78						0.5	161.7	1251		- 4" clay seam at 64.1' - 2" clay seam at 65.6' - 5" clay seam at 67.6'
70.1	70.1 ft	C-3	60		100	92						1.7	152.4	592		- 1.5" shale seam at 73.4'



SOIL BORING NUMBER: RR_B5_3A

Page 3 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065242.5 / 2776987.5
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/22/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/22/2025
SURFACE ELEVATION 845.2' RIG TYPE CME-550X
METHOD Water Rotary, NQ Core TOOLING 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-Pi)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
75	75 ft	C-3	60		100	55										Shale, slightly weathered, dark gray, hard, some fossils
77.3		C-4	60		100					77.3	767.9	9.2	124.3	100		Shale, highly weathered, light gray, soft
80	80 ft	C-5	60		100	63										
85	85 ft	C-6	60		100	100				82.1	763.1	0.3	162.6	897		Limestone, weathered, light gray, moderately hard, vuggy
90	90 ft	C-7	60		100	85						0.2	158.7	1543		
95	95 ft									95.1	750.1	0.3	164.1	1835		Bottom of Boring at 95.1'
100										Boring backfilled with cuttings and patched with asphalt 1/22/2025						
105																
110																

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-49 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 49

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB



SOIL BORING NUMBER: RR_B6_2

Page 1 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065045.0 / 2776927.4
DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 01/16/2025
LOGGED BY Trent Shepherd DATE COMPLETED 01/16/2025
SURFACE ELEVATION 857.0' RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
																CONCRETE 0.3 856.8
																Reddish brown, stiff, moist to wet, FAT CLAY (CH)
3 ft		X	J-1	18	2-2-3 (5)	100		2.0					25.1			
5																
8 ft		X	J-2	18	2-3-4 (7)	100		1.0		8.0	849	49-22-27	23.8			Brown to gray, firm, moist to wet, LEAN CLAY (CL)
10																
13 ft		X	J-3	18	5-5-9 (14)	100		4.0		13.0	844					Brown to gray, very stiff, moist, LEAN CLAY (CL), with some silt
15																
18 ft		X	J-4	18	3-5-8 (13)	100		4.0				49-22-27	23.6			
20																
23 ft		X	J-5	18	4-7-10 (17)	100		4.0								- trace silt at 23'
25																
28 ft		X	J-6	18	3-6-10 (16)	100		4.0		28.0	829	52-30-22	21.5			Brown, very stiff, moist, LEAN TO FAT CLAY (CL-CH)
30																
33 ft		X	J-7	18	7-10-11 (21)	100		4.0								
35																



SOIL BORING NUMBER: RR_B6_2

Page 2 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065045.0 / 2776927.4
DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 01/16/2025
LOGGED BY Trent Shepherd DATE COMPLETED 01/16/2025
SURFACE ELEVATION 857.0' RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
38 ft		X	J-8	18	4-5-6 (11)	100		3.0								Brown, very stiff, moist, LEAN TO FAT CLAY (CL-CH) 38.0 819
40																Brown, very stiff, moist, FAT CLAY (CH)
42.5 ft		X	J-9	18	5-6-7 (13)	100		3.0								
45																
48 ft		X	J-10	18	3-3-6 (9)	100		1.0								- becomes firm at 48'
50																
53 ft		X	J-11	18	3-6-8 (14)	100		3.0								- becomes very stiff at 53'
55																
58 ft		X	J-12	13	21-5-50/3" (55/9")	87				58.0	799					Dark gray, soft, CLAYEY SHALE, highly weathered
59.3 ft			C-1	8		100	0			59.3	797.7					Limestone, weathered, light to dark gray, moderately hard
59.9 ft			C-2	60		100	73									
60																
65			C-3	60		100	88			64.9	792.1					Limestone, slightly weathered, light to dark gray, moderately hard, with some interbedded shale spaced 1' apart
67.5										67.5	789.5					Shale, slightly weathered, dark gray, soft to moderately hard
69.9			C-4	60		100	93			69.9	787.1					Limestone, fresh, light gray, hard
70																
74.9 ft										74.9	782.1					

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

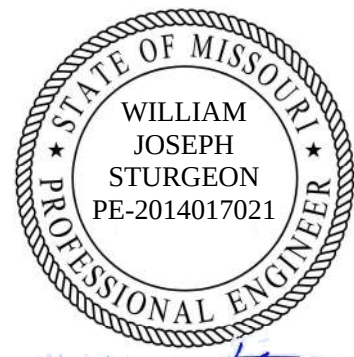
Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-50 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 50

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB



SOIL BORING NUMBER: RR_B6_2

Page 3 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065045.0 / 2776927.4
DRILLING FIRM PPI DRILLER Ray A. DATE STARTED 01/16/2025
LOGGED BY Trent Shepherd DATE COMPLETED 01/16/2025
SURFACE ELEVATION 857.0' RIG TYPE CME-55
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
	75 ft		C-5	60		100							3.7	146.3	461	Limestone, slightly weathered, light to dark gray, moderately hard, with trace interbedded shale
80	79.9 ft		C-6	60		100	97						0.4	157.4	946	
85	84.9 ft		C-7	53		100	91									85.5 771.5 Shale, fresh, dark gray, moderately hard
													7.3	138.2	173	88.0 769 Shale, weathered, dark gray, soft
90																89.3 767.7 Bottom of Boring at 89.3'
																Boring backfilled with cuttings 1/16/2025
95																
100																
105																
110																



SOIL BORING NUMBER: RR_B6_3

Page 1 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1065051.6 / 2776962.4
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/16/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/16/2025
SURFACE ELEVATION 856.3' RIG TYPE CME-550X
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
																CONCRETE 0.8 855.5 Reddish brown to gray, firm, moist, FAT CLAY (CH), some organics
5	3.5 ft		J-1	16	3-3-5 (8)	89		1.0					19.4			
10	8.5 ft		J-2	18	3-5-8 (13)	100		2.5				52-27-25	24.3			- stiff to very stiff at 8.5'
15	13.5 ft		J-3	18	6-8-11 (19)	100		3.5								13.5 842.8 Reddish brown, very stiff, LEAN CLAY with SILT (CL-ML), some organics
20	18.5 ft		J-4	18	4-5-8 (13)	100		3.0				48-28-20	22.3			
25	23.5 ft		J-5	18	4-6-10 (16)	100		3.5								
30	28.5 ft		J-6	18	4-5-8 (13)	100		3.25					20.7			
35	33.5 ft		J-7	18	3-3-5 (8)	100		2.0								33.5 822.8 Tan/gray/reddish brown, stiff, LEAN CLAY (CL), some organics

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKTRR-Substructure

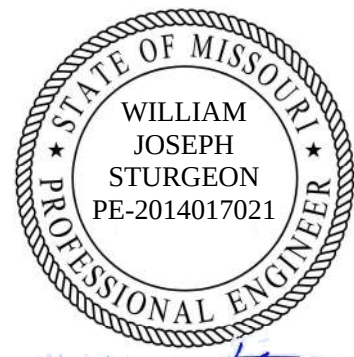
Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-51 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70

DISTRICT
BR

COUNTY
JACKSON

JOB NO.
J4I1486D

CONTRACT ID.
240807-C01

PROJECT NO.

BRIDGE NO.
A9626

DATE	DESCRIPTION
06/02/25	REV 0 - RFC SUBMITTAL

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



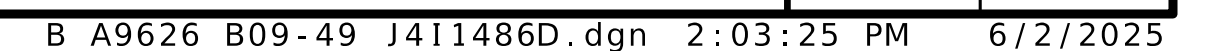
DATE PREPARED	
06/02/2025	
ROUTE	STATE
I - 70	MO
DISTRICT	SHEET NO.
BR	B09-52

BRIDGE NO.
A9626[illegible]

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

ARKSON
ADMACHER
JOINT VENTURE

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





SOIL BORING NUMBER: RR_B7_3

Page 2 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1064904.2 / 2777010.9
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/15/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/15/2025
SURFACE ELEVATION 861.7' RIG TYPE CME-550
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	ROD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Visual Classification and Remarks	Lab						
										During Drilling (ft):	N/A		Atterberg Limits (LL-PL-PI)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)			
38.5 ft																			
40		X	J-6	18	15-30-46 (76)	100		>4.5				Reddish brown, hard, moist, FAT CLAY with GRAVEL (CH), some organics							
												38.5 823.2				21.2			
												Dark gray to tan, hard, moist, fine grained, SHALY LEAN CLAY (CL)							
43.5 ft		X	J-7	10	29-50/4" (50/10")	100		>4.5				- becomes dark gray at 43.5'							
48.5 ft		X	J-8	4	WOH-50/4" (50/10")	40		>4.5				49.3 812.4							
49.3 ft		X	C-1	12		100	75					Limestone, weathered, light gray, moderately hard							
50.3 ft			C-2	60		100	90					50.8 810.9							
												Shale, highly weathered, dark gray, moderately hard				9.7	127.8	19	
55.3 ft												54.5 807.2							
			C-3	60		100	80					Limestone, weathered, light gray, moderately hard							
												56.3 805.4							
												Shale, highly weathered, gray, moderately hard				8.1	133.4	45	
60.3 ft			C-4	60		100	98					59.3 802.4							
												Limestone, slightly weathered, light gray, hard, some fossilization				1.0	148.0	661	
65.3 ft			C-5	60		100	98					- 6" very dark gray, white calcite veins at 65.3'							
												- 0.5" shale seam at 67.5'							
70.3 ft			C-6	60		100	70					70.3 791.4				0.2	164.7	1404	
												Shaley limestone, slightly weathered, fine grained, dark gray, hard							
												72.3 789.4				5.1	142.5	187	
												Limestone, slightly weathered, light gray, hard, calcium, some fossilization							
												75.0 786.7							



SOIL BORING NUMBER: RR_B7_3

Page 3 of 3

PROJECT Improve I 70 KC Design Build NORTHING/EASTING 1064904.2 / 2777010.9
DRILLING FIRM PPI DRILLER Eric P. DATE STARTED 01/15/2025
LOGGED BY Zachary Boyd DATE COMPLETED 01/15/2025
SURFACE ELEVATION 861.7' RIG TYPE CME-550
METHOD Auger, Mud Rotary, NQ Core TOOLING 4-1/4" Hollow Stem Auger, 3-3/4" Rotary Drill

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
75.3 ft			C-6	60		100	100									Limestone, slightly weathered, light gray, hard, calcium, some fossilization
			C-7	60		100	100									
80										80.3	781.4		0.6	168.4	543	
																Bottom of Boring at 80.3'
																Boring backfilled with cuttings and cement
85																
90																
95																
100																
105																
110																

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-55 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
1 - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 55

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

MoDOT

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1 - 888 - ASK-MODOT (1-888-275-6636)

CERTIFICATE OF AUTHORITY

NO. 001270

CLARKSON RADMACHER JOINT VENTURE

HNTB



SOIL BORING NUMBER: RR_B8_2

Page 1 of 3

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1064777.6 / 2777002.8
DRILLING FIRM PPI
DRILLER Josh Starkey
DATE STARTED 01/15/2025
LOGGED BY Cameron Dupont
DATE COMPLETED 01/16/2025
SURFACE ELEVATION 872.6'
RIG TYPE CME-55LC
METHOD Water Rotary, NQ Core
TOOLING 4-1/8" Tricone

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
										After Drilling (ft):	N/A					
										After __ Hours (ft):	N/A					



SOIL BORING NUMBER: RR_B8_2

Page 3 of 3

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1064777.6 / 2777002.8
DRILLING FIRM PPI
DRILLER Josh Starkey
DATE STARTED 01/15/2025
LOGGED BY Cameron Dupont
DATE COMPLETED 01/16/2025
SURFACE ELEVATION 872.6'
RIG TYPE CME-55LC
METHOD Water Rotary, NQ Core
TOOLING 4-1/8" Tricone

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
			C-9	60		100	80									
			C-10	60		100	95									
80	80.3 ft		C-11	57		95	91									
85																
85.3																Bottom of Boring at 85.3'
																Boring backfilled with cuttings 1/16/2025
90																
95																
100																
105																
110																



SOIL BORING NUMBER: RR_B9_2

Page 1 of 2

PROJECT Improve I 70 KC Design Build
NORTHING/EASTING 1064670.6 / 2777131.3
DRILLING FIRM PPI
DRILLER Ray A.
DATE STARTED 01/22/2025
LOGGED BY Trent Shepherd
DATE COMPLETED 01/22/2025
SURFACE ELEVATION 863.7'
RIG TYPE CME-55
METHOD Auger, NQ Core
TOOLING 4-1/2" Continuous Flight Auger

Depth (ft)	Depth of Sample	Sample Type	Sample ID	Recovery Length (in)	Blow Counts (N-Value)	% Recovery	RQD (%)	Pocket Pen (tsf)	Graphic Log	Groundwater Data		Lab				Visual Classification and Remarks
										During Drilling (ft):	N/A	Atterberg Limits (LL-PL-P)	Moisture Content (%)	Dry Density (PCF)	UCS (tsf)	
2.5			J-1	16	5-7-6 (13)	89		4.0								Brown, very stiff, dry, LEAN CLAY with SILT (CL-ML), with organics
5																
7.5			J-2	18	1-2-2 (4)	100		0.5								
8.0																Brown, soft, moist, LEAN CLAY (CL)
10																
12.5			U-1	24		100		1.5								- becomes stiff at 12.6'
15																
17.5			J-3	18	3-4-4 (8)	100		3.0								
20																Brown, very stiff, moist, LEAN CLAY (CL)
22.5			J-4	18	1-2-4 (6)	100		1.0								
25																Tan, firm to stiff, moist, FAT CLAY (CH), with iron, silty
27.5			J-5	18	27-11-23 (34)	100		>4.5								
28.2																
30			C-1	3		50	0									
30.3			C-2	60		100	100									
31																- becomes weathered at 31'
34.0																
35			C-3	60		100	40									
35.8																
																Shale, slightly weathered to weathered, dark gray, soft to moderately hard

Released For Construction
Not to Scale
Revision: 0.0
Date: 06/10/2025
Package: BRD-09-WBKCTRR-Substructure

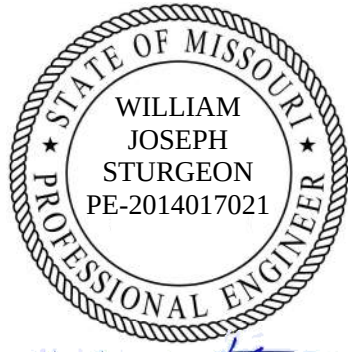
Notes:
For locations of borings, see Sheet No. B09-06 and Geotechnical Report.

BORING LOGS

Detailed FEB 2025
Checked MAR 2025

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

Sheet No. B09-57 of B09-58



6/3/2025

DATE PREPARED
06/02/2025

ROUTE
I - 70

STATE
MO

DISTRICT
BR

SHEET NO.
B09 - 57

COUNTY
JACKSON

JOB NO.
J411486D

CONTRACT ID.
240807 - C01

PROJECT NO.

BRIDGE NO.
A9626

DESCRIPTION

REV 0 - RFC SUBMITTAL

DATE

06/02/25

MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION

105 WEST CAPITOL

JEFFERSON CITY, MO 65102

1-888-ASK-MODOT (1-888-275-6636)

MODOT

CLARKSON RADMACHER JOINT VENTURE

715 KIRK DRIVE

KANSAS CITY, MO 64105-1310

CERTIFICATE OF AUTHORITY

NO. 001270

HNTB

