

**CITY OF JOPLIN  
ADDENDUM NUMBER 2**

Issued to all Bid Document Holders of Record.

Date: 1/10/2020

Project Name: **City of Joplin Trail and Pedestrian Bridge STP-3201(705)**

This addendum forms a part of the contract described above. The original Contract Documents and any prior addenda remain in full force and effect as modified by the following that shall take precedence over any contrary provisions in the prior documents.

- 1) **REVISED BID DATE:** The bid date is hereby revised to **Thursday, January 23, 2020 at 10:00 AM** in the 4<sup>th</sup> Floor Conference Room.
- 2) **REVISED COMPLETION DATE:** The completion date for the project is hereby changed from June 29, 2020 to **July 31, 2020**. The revised completion date of July 31, 2020 will be reflected in the agreement provided to the successful bidder upon award.
- 3) **REVISED PLAN SHEETS:** Plan Sheets CV-01, QTY-01, S-01, S-03, S-04, S-05, S-06, S-08, and S-10 have been revised &/or added, and are included with this addendum.
- 4) **REVISED BID FORM:** The project bid form has been revised and is included with this addendum. This revised bid form includes additional line items and shall be utilized by contractors when bidding the project.
- 5) **CLARIFICATION ITEMS:**
  1. The asphalt pavement for the trail shall be constructed with Bituminous Pavement Mixture BP-2 for the full 3" depth. The bid form has been revised to reflect this change. The price for the BP-2 asphalt shall include the application of a prime coat on the aggregate base, per City of Joplin Standard Specifications.
  2. The bid form includes two new bid items for the Removal and Backfill of Unsuitable Material, to be performed in accordance with City of Joplin Standard Specifications, if encountered.
  3. Multiple bridge plan sheets have been revised to include the addition of a modified concrete corral rail with pipe rails. The location of the stone veneer columns at the corners of the bridge has been revised as well.

***Each bidder shall acknowledge receipt of this addendum by affixing his signature below by noting this addendum on his bid form, and by attaching this addendum to his bid.***

**ACKNOWLEDGEMENT**

The undersigned acknowledges receipt of this addendum and the Bid submitted in accordance with information, instructions and stipulations set forth herein.

Bidder: \_\_\_\_\_

Signed By: \_\_\_\_\_

Date: \_\_\_\_\_



CONTRACTOR NAME: \_\_\_\_\_

ADDRESS LINE 1: \_\_\_\_\_

ADDRESS LINE 2: \_\_\_\_\_

PHONE NUMBER: \_\_\_\_\_

EMAIL: \_\_\_\_\_

City of Joplin, MO

DATE: \_\_\_\_\_

STP-3201(705)

**ITEMIZED BID FORM**

LINE	ITEM	DESCRIPTION	UNITS	QUANTITY	UNIT PRICE	AMOUNT
<b>TRAIL ITEMS</b>						
1	618	MOBILIZATION	L.S.	1	_____	\$ -
2	201	CLEARING AND GRUBBING	L.S.	1	_____	\$ -
3	203	EXCAVATION FOR ROADWAY - UNCLASSIFIED	C.Y.	295	_____	\$ -
4	203	EMBANKMENT IN PLACE W/ COMPACTION	C.Y.	367	_____	\$ -
5	310	TYPE 1 AGGREGATE FOR BASE (4 IN. THICK)	S.Y.	2,388	_____	\$ -
6	401	BITUMINOUS PAVEMENT MIXTURE (BP-2)	TON	313	_____	\$ -
7	608	CONCRETE CURB RAMP	S.Y.	33.0	_____	\$ -
8	608	TRUNCATED DOMES	S.F.	39	_____	\$ -
9	608	4" PVC SLEEVES (15' IN LENGTH)	L.F.	60	_____	\$ -
10		CONCRETE FLUME	S.Y.	5	_____	\$ -
11	310	TYPE 1 AGGREGATE AT CONCRETE FLUME	S.Y.	148	_____	\$ -
12	805	SEEDING	AC.	0.22	_____	\$ -
13	806	SILT FENCE	L.F.	182	_____	\$ -
14	806	SILT DITCH CHECK	EA.	8	_____	\$ -
15		REMOVAL OF UNSUITABLE MATERIAL	C.Y.	50	_____	\$ -
16		BACKFILL OF UNSUITABLE MATERIAL	C.Y.	50	_____	\$ -
<b>TRAIL ITEMS SUBTOTAL</b>						<b>\$ -</b>
<b>BRIDGE ITEMS</b>						
17	206	UNCLASSIFIED EXCAVATION (STRUCTURE)	C.Y.	76	_____	\$ -
18	611	TYPE 2 ROCK BLANKET	C.Y.	160	_____	\$ -
19	702	STRUCTURAL STEEL PILES (10 IN.)	L.F.	69	_____	\$ -
20	702	PILE POINT REINFORCEMENT	EA.	6	_____	\$ -
21	702	PRE-BORE FOR PILING	L.F.	60	_____	\$ -
22	703	CLASS B1 CONCRETE	C.Y.	29.0	_____	\$ -
23	706	REINFORCING STEEL	LBS.	4,742	_____	\$ -
24	705	24 IN., PRECAST CONCRETE SLAB BEAM	L.F.	360	_____	\$ -
25	716	PLAIN NEOPRENE BEARING PAD	L.F.	40	_____	\$ -
26	705	STONE VENEER COLUMN	EA	4	_____	\$ -
27	703	RAIL	L.F.	172	_____	\$ -
<b>BRIDGE ITEMS SUBTOTAL</b>						<b>\$ -</b>
<b>TOTAL CONTRACT</b>						<b>\$ -</b>



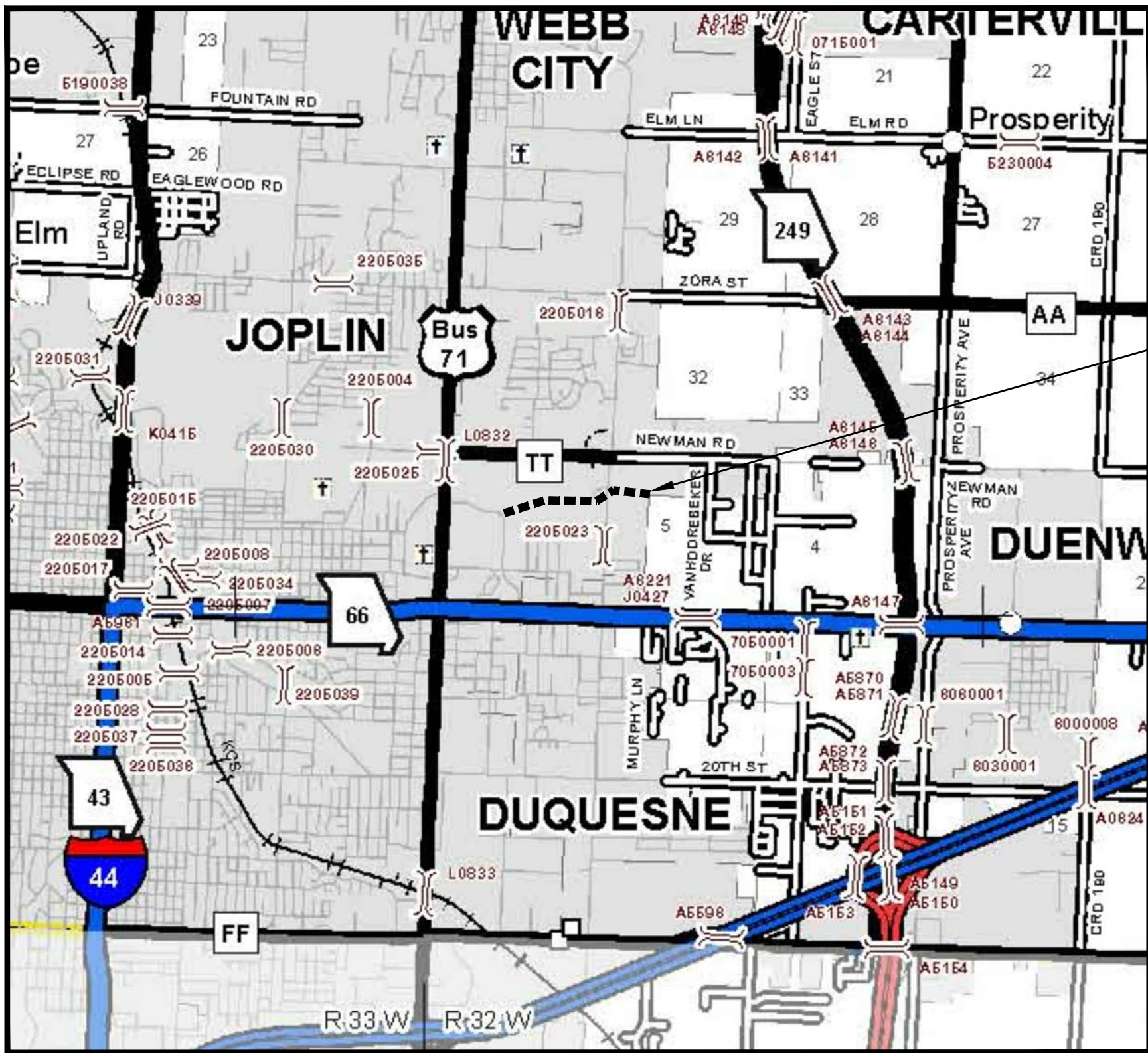
GENERAL NOTES

1. THE CONTRACTOR SHALL FOLLOW THE JOB SPECIAL PROVISIONS FOR THIS PROJECT. FOR ITEMS NOT DIRECTLY COVERED IN THE JOB SPECIAL PROVISIONS THE CONTRACTOR SHALL FOLLOW THE SPECIFICATIONS AS STATED IN THE "MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION "2016" EDITION, AND CURRENT SUPPLEMENTAL SPECIFICATION REVISIONS.
2. CONTRACTOR SHALL FIELD VERIFY ALL HORIZONTAL AND VERTICAL LINES AND GRADES OF EXISTING UTILITIES PRIOR TO THE CONSTRUCTION OF IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONAL IMMEDIATELY UPON DISCOVERY OF A DISCREPANCY BETWEEN THE CONSTRUCTION DRAWINGS AND ACTUAL FIELD CONDITIONS.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ANY UNDERGROUND UTILITIES OR OTHER OBSTRUCTIONS AND TO BE LIABLE FOR DAMAGE AND CONSEQUENT REPAIR TO SUCH IN THE COURSE OF HIS OPERATIONS.
4. THE CONTRACTOR SHALL LOCATE SAW CUT LINES WHERE NECESSARY TO PERFORM THE DEMOLITION AND CONSTRUCTION REQUIRED. ALL JOINTS WHERE NEW CONSTRUCTION MATCHES EXISTING SHALL BE SAW CUT TO NEAT LINES.
5. THE CONTRACTOR WILL KEEP THE CONSTRUCTION SITE NEAT AND ORDERLY AT ALL TIMES WHILE CONSTRUCTION IS TAKING PLACE. THE PROPER AMOUNT OF INSPECTION SHALL BE CALLED FOR AT THEIR PROPER TIMES, OR ANY AND ALL WORK MAY BE REJECTED. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY, AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE DESIGN PROFESSIONAL OR OWNER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE, IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES, IN OR NEAR THE CONSTRUCTION SITE.
6. ALL AREAS DISTURBED BY CONSTRUCTION, AND NOT INDICATED TO RECEIVE ANY OTHER FORM OF SURFACE TREATMENT, SHALL BE DRESSED AND SEEDED TO LAWN CONDITIONS.
7. NO TREE TRIMMING TO BE DONE WITHOUT WRITTEN PERMISSION FROM THE CITY OR MSSU.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PUBLIC STREETS IN THE VICINITY OF THE JOB SITE CLEAN AND FREE OF ROCKS, SOIL, AND DEBRIS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES DURING THE ENTIRE CONSTRUCTION PERIOD. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
10. THE CONTRACTOR TO RETAIN FLOATABLE WIND BLOWN MATERIALS ON SITE BY STORING ALL TRASH AND BUILDING MATERIAL WASTE IN ENCLOSURES UNTIL PROPER DISPOSAL AT AN OFFSITE FACILITY. CONTRACTOR TO CHECK ADJACENT AREAS DAILY AND PICK UP CONSTRUCTION WASTE MATERIALS AND DEBRIS THAT HAVE BLOWN OR WASHED OFF-SITE
11. TRAIL CROSS SLOPES SHALL BE 1/2% MINIMUM, 1% TYPICAL, AND 2% MAXIMUM WHEN MEASURED WITH A 2" DIGITAL LEVEL.

CONSTRUCTION PLANS  
CITY OF JOPLIN TRAIL & PEDESTRIAN BRIDGE  
STP 3201(705)

SHEET LIST TABLE

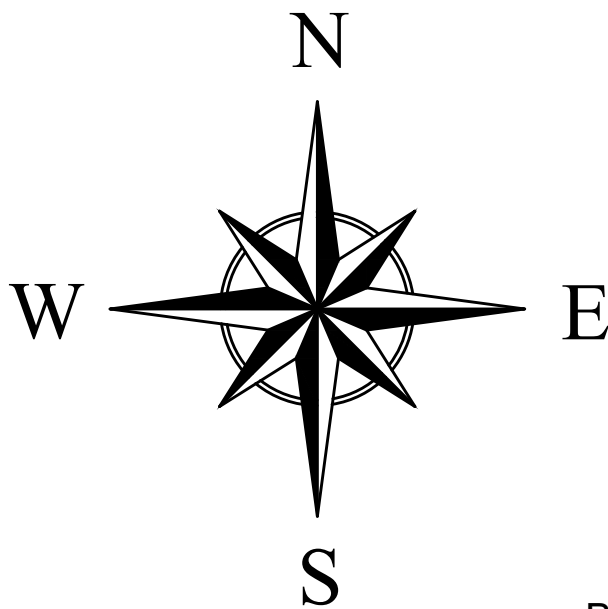
SHEET NUMBER	SHEET TITLE
CV-01	COVER SHEET
QTY-01	QUANTITIES
TC-01	TRAFFIC CONTROL
GR-01 - GR-02	GRADING, EROSION CONTROL PLAN & DETAILS
RW1	RIGHT-OF-WAY PLAN
C-01 - C-04	TRAIL PLAN AND PROFILE
CS-01 - CS-04	CROSS SECTIONS
DE-01	CONSTRUCTION DETAILS
S-01	BRIDGE PLAN & ELEVATION DETAILS
S-02	SOIL DATA
S-03 - S04	BRIDGE END BENT DETAILS
S-05	BRIDGE INTERMEDIATE BENT DETAILS
S-06 - S08	BRIDGE SLAB BEAM DETAILS
S-09	BRIDGE BILL OF REINFORCING
S-10	RAIL DETAILS



MSSU TRAIL  
PROJECT LOCATION

JASPER COUNTY

SHOWING LOCATION OF COUNTY  
NOT TO SCALE



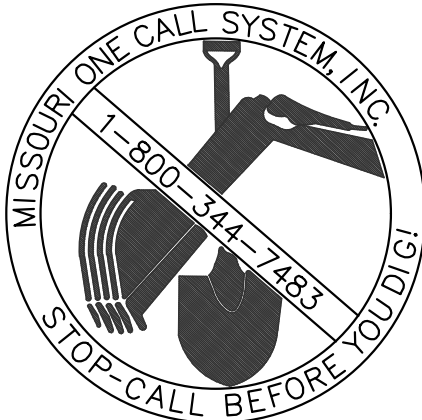
GENERAL LOCATION MAP  
JOPLIN, MISSOURI  
SECTION 6, TOWNSHIP 27 NORTH, RANGE 32 WEST

LEGEND

	= IRON PIN SET (TYPICAL) GREAT RIVER 2001011476		= EXISTING SIGN
	= EXISTING IRON PIN FOUND, AS NOTED		= EXISTING WATER METER
	= EXISTING RIGHT-OF-WAY		= EXISTING WATER VALVE
	= EXISTING CONTOUR MAJOR		= EXISTING FIRE HYDRANT
	= EXISTING CONTOUR MINOR		= EXISTING SEWER LINE
	= EXISTING TREE, SIZE AS NOTED		= EXISTING FENCE LINE
	= EXISTING BUSH, SIZE AS NOTED		= EXISTING CHAIN-LINK FENCE LINE
	= EXISTING TELEPHONE RISER		= EXISTING WOOD FENCE LINE
	= EXISTING LIGHT POLE		= EXISTING ELECTRIC LINE
	= EXISTING POWER POLE		= EXISTING UNDERGROUND ELECTRIC
	= EXISTING ELECTRIC RISER		= EXISTING TELEPHONE LINE
	= EXISTING SEWER MANHOLE		= EXISTING UNDERGROUND TELEPHONE LINE
	= EXISTING GAS VALVE		= EXISTING GAS LINE
	= EXISTING GAS METER		= EXISTING WATER LINE
	= EXISTING MAIL BOX		= EXISTING GAS & WATER LINE

UTILITY DISCLAIMER

THE UNDERGROUND UTILITIES DEPICTED ON THIS SURVEY, ARE THOSE DISCOVERED BY FIELD INSPECTION, OR LOCATED BY UTILITY COMPANY REPRESENTATIVES, AND MAY NOT BE ALL THE UTILITIES ON OR NEAR THE PROPERTY. AFTER USING REASONABLE CARE IN THE LOCATION OF THOSE UTILITIES SHOWN, WE REFRAIN FROM WARRANTING EITHER THE LOCATION OF, OR COMPLETENESS OF, THOSE UTILITIES SHOWN, AS BEING ALL UTILITIES POSSIBLY AFFECTING THE SUBJECT PROPERTY.



BENCHMARK DATA

BM1 - TOP OF CURB AT THE NORTHWEST CORNER OF PARKING LOT, LOCATED ON THE NORTH SIDE OF THE EXISTING MOVIE THEATER

ELEVATION=986.00'

BM2 - TOP OF CURB AT THE NORTHEAST CORNER OF PARKING LOT, LOCATED ON THE NORTH SIDE OF THE EXISTING MOVIE THEATER

ELEVATION=973.38'

(VERTICAL DATUM : NAVD88)

Point Table				
Point #	Northing	Easting	Elevation	Description
1	337496.4190	2799432.2867	983.91	CP 1 BASE
2	337497.6125	2799637.9931	985.78	CP 2 MAG NAIL
162	337521.9125	2798322.1059	979.01	CP 162 60D
1000	337484.6358	2799419.5681	983.66	CP 1000 60D

SUBMITTED AND RECOMMENDED

CITY OF JOPLIN

DATE

CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)

JOPLIN, MISSOURI

COVER SHEET

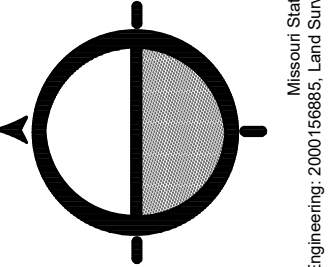
DATE: 04.24.2019

JOB NUMBER: 13-3249

SHEET  
CV-01

Date	01/07/20
Revision/Issue	
ADDENDUM #2	
No.	1

JERANY L. JACKSON  
MOW LA-000175



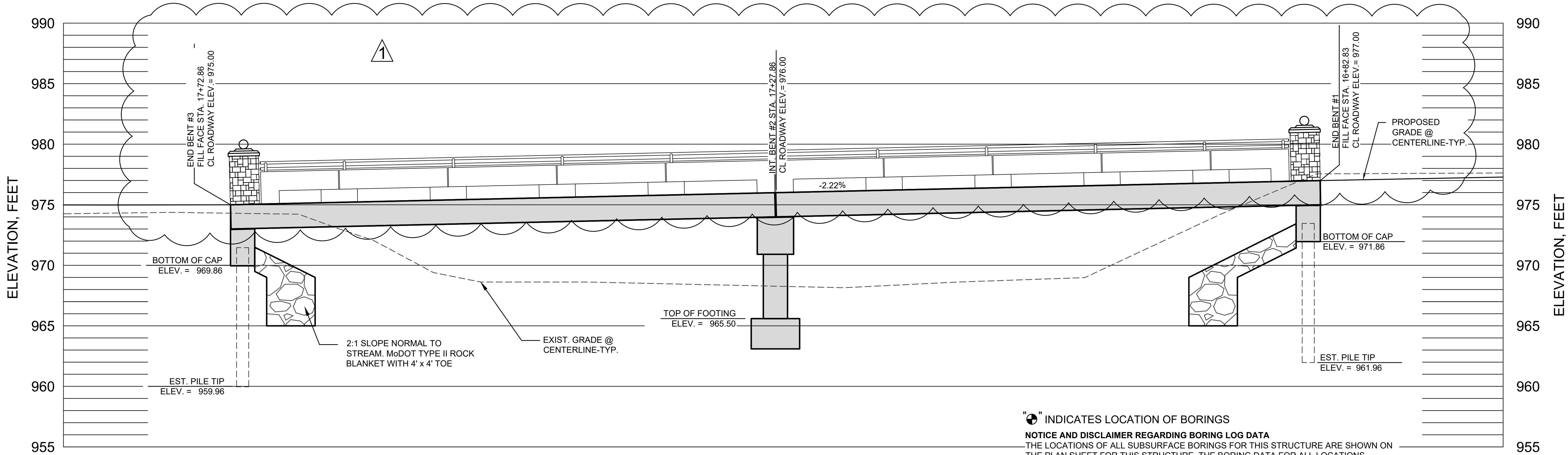
Missouri State Registration of Professional Engineer  
Engineering: 2400118488, Land Surveying: 2001011476, Landscape Architecture: 2001013873







SLAB BEAM BRIDGE  
2 SPAN ARRANGEMENT 45'-0" - 45'-0"



GENERAL ELEVATION

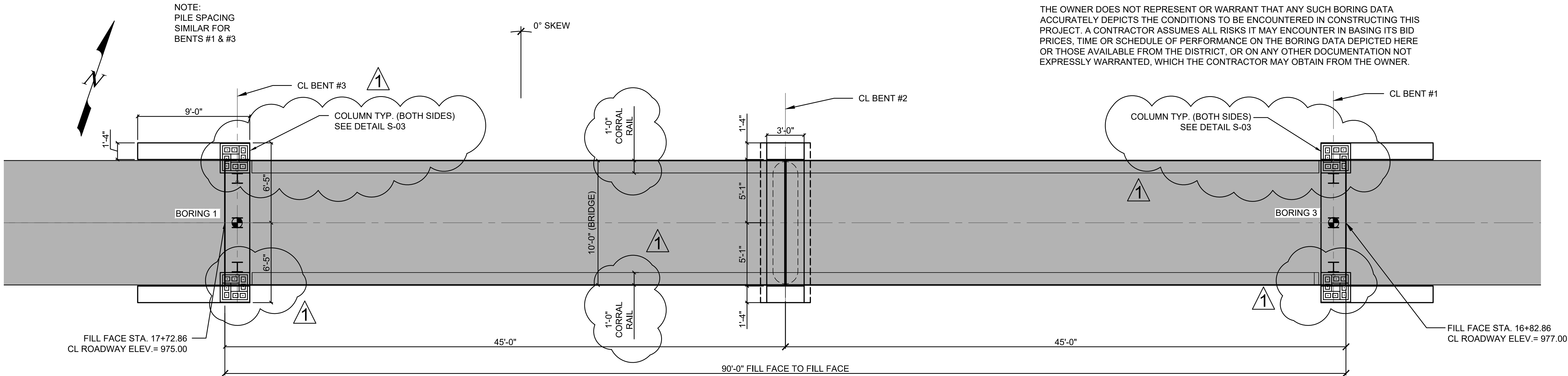
ALONG CENTERLINE OF ROADWAY  
1"=50' HOR. 1"=10' VERT.

"B" INDICATES LOCATION OF BORINGS

NOTICE AND DISCLAIMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE PLAN SHEET FOR THIS STRUCTURE. THE BORING DATA FOR ALL LOCATIONS INDICATED, AS WELL AS ANY OTHER BORING LOG OR OTHER FACTUAL RECORDS OF SUBSURFACE DATA AND INVESTIGATION PERFORMED FOR THE DESIGN OF THE PROJECT, ARE SHOWN ON THE BORING DATA SHEET OR WILL BE AVAILABLE FROM THE PROJECT CONTACT UPON WRITTEN REQUEST. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN IS GIVEN TO THE SUBSURFACE DATA AVAILABLE FROM THE OWNER OR ELSEWHERE.

THE OWNER DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR THOSE AVAILABLE FROM THE DISTRICT, OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE OWNER.



PLAN VIEW

SCALE: 1"=50'

PILE AND FOOTING DATA

BENT NO.		1	2	3
LOAD BEARING PILE	PILE TYPE AND SIZE	HP10x42		HP10x42
	NUMBER	3		3
	APPROXIMATE LENGTH PER EACH	FT 11.5		11.5
	PILE DRIVING VERIFICATION METHOD	DF		DF
	MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE	KIP 211		211
	HAMMER ENERGY REQUIRED	FT-LB 6,790		6,790
SPREAD FOOTINGS	PRE-BORE LENGTH PER EACH	FT 10		10
	FOUNDATION MATERIAL		ROCK	
	DESIGN BEARING (K/SQ. FT.)		15	

MANUFACTURED PILE POINT REINFORCEMENT & BITUMINOUS COATING SHALL BE USED ON ALL PILES IN THIS STRUCTURE.

MINIMUM ENERGY REQUIRED OF HAMMER IS BASED ON PLAN LENGTH AND MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE.

DF = FHWA-MODIFIED GATES DYNAMIC FORMULA

MINIMUM NOMINAL AXIAL COMPRESSIVE RESISTANCE = MAXIMUM FACTORED LOADS/0.4

HYDRAULIC SUMMARY DATA TABLE

DESIGN FLOOD DATA	
DRAINAGE AREA	22 SQ. MI.
DESIGN FREQUENCY	5 YR
DESIGN DISCHARGE	2287 CFS
DESIGN HIGH WATER ELEVATION AT STRUCTURE	975.61 FEET
100 YEAR DISCHARGE	7770 CFS
100 YEAR HIGH WATER ELEVATION AT STRUCTURE	979.15 FEET
100 YEAR BACKWATER	0.6 FEET
APPROACH ROADWAY OVERTOPPING FREQUENCY	5 YR.

CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)

JOPLIN, MISSOURI

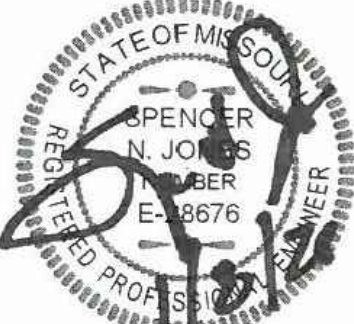
BRIDGE PLAN & ELEVATION  
DETAILS

DATE: 04.24.2019

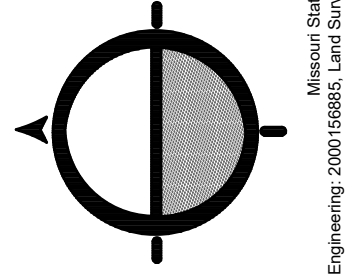
JOB NUMBER: 13-3249

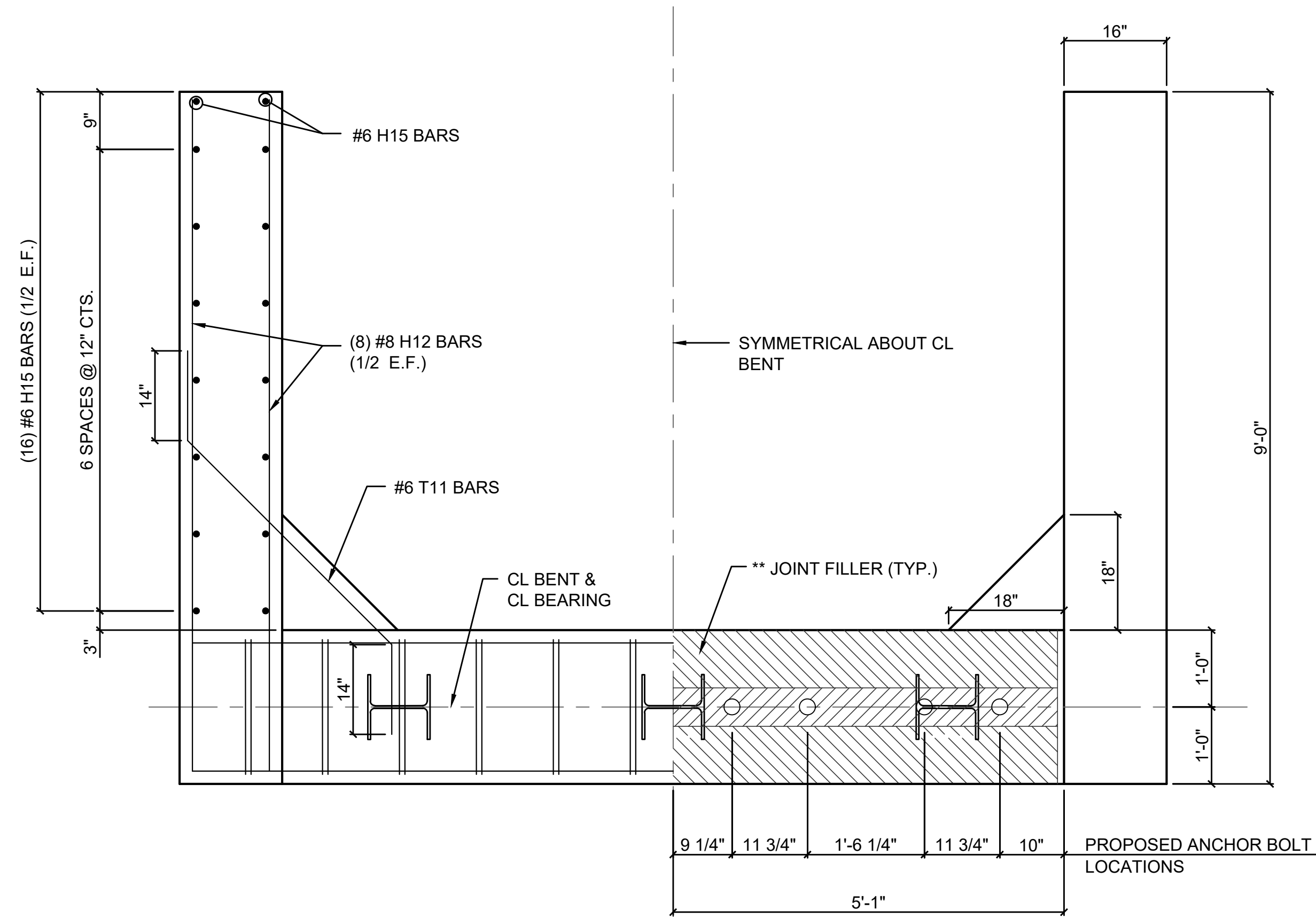
SHEET  
S-01

Date	01/08/20
Revision/Issue	
ADDENDUM #2	
No.	1 2 3 4 5

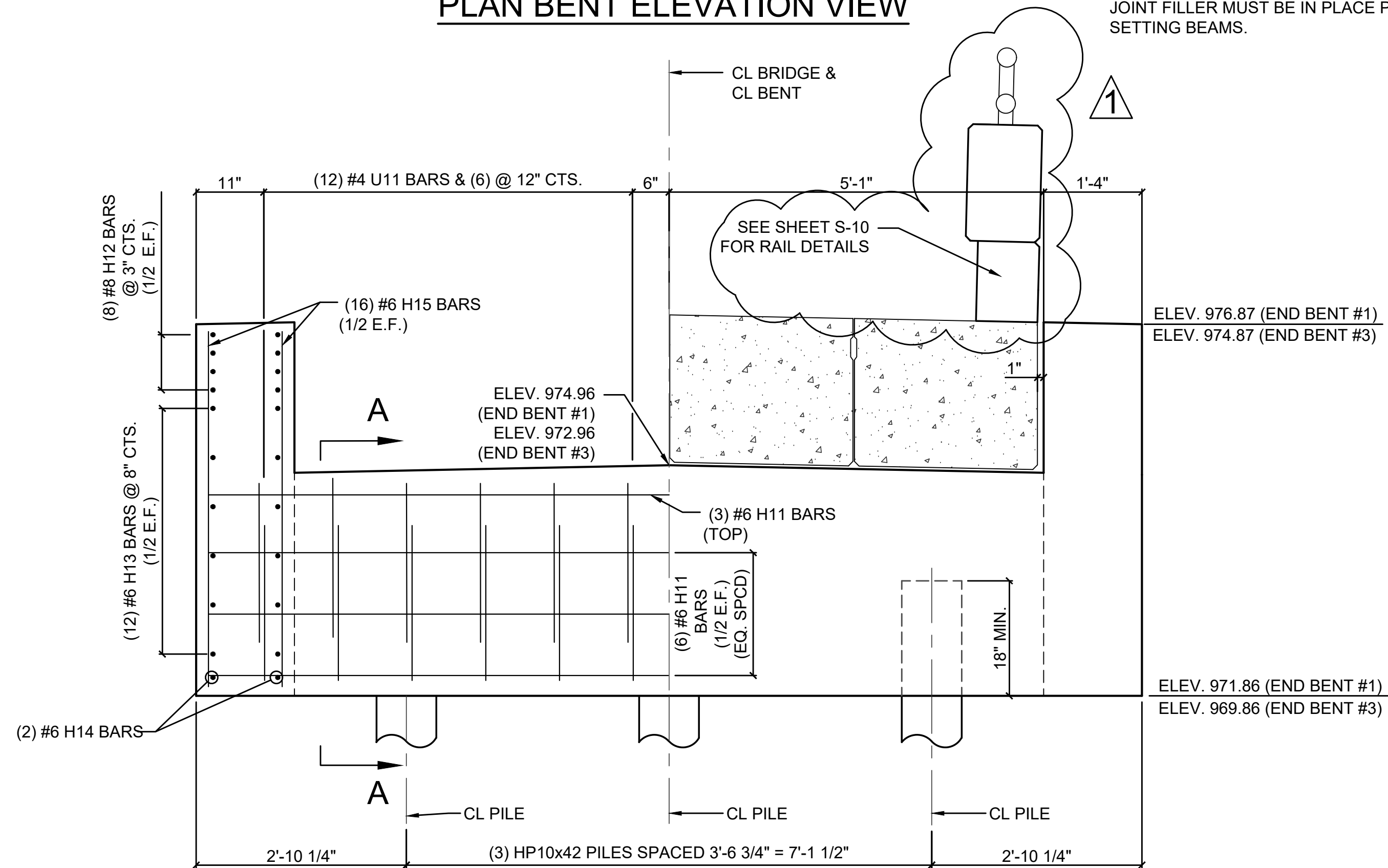


SPENCER N. JONES - ENGINEER  
MO# PE-28676

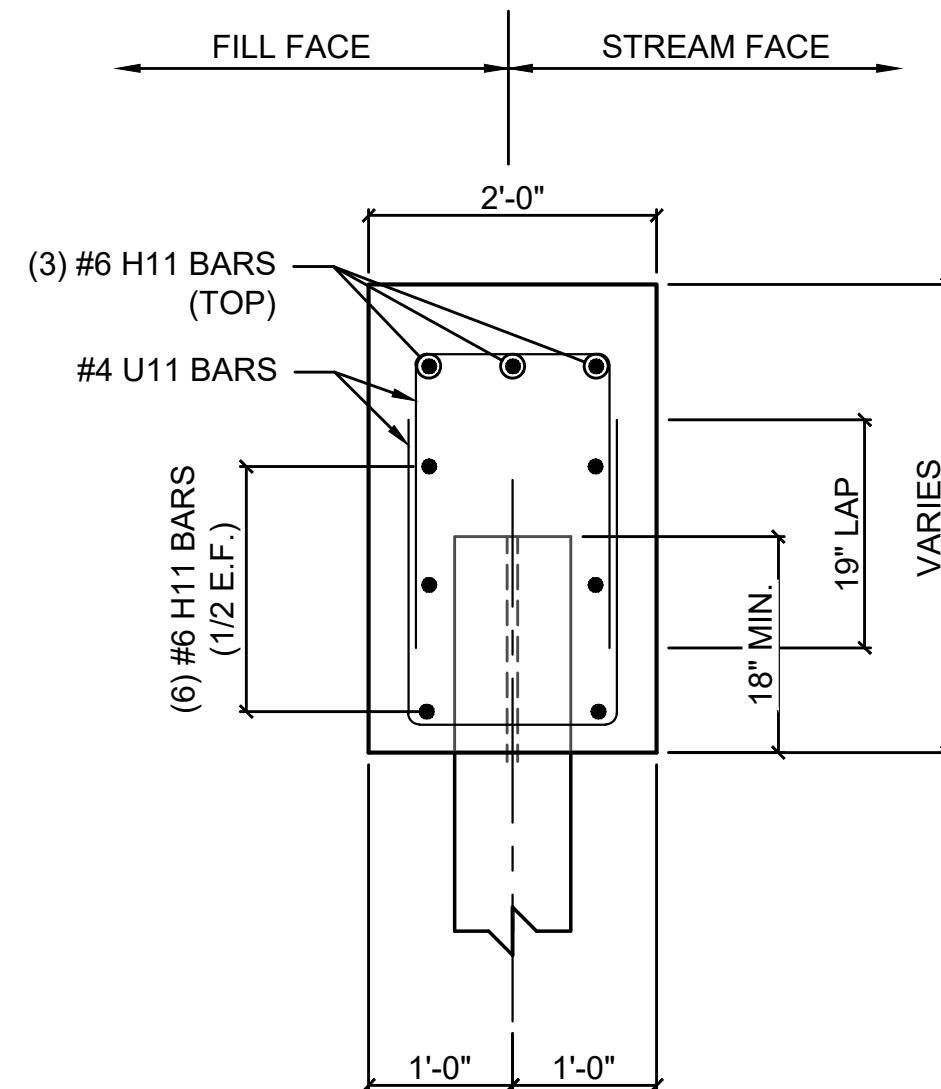




PLAN BENT ELEVATION VIEW



END BENT ELEVATION VIEW  
(ELEVATIONS @ FILL FACE)



SECTION A-A

NOTES:

SECTIONS A-A IS TAKEN NORMAL TO CENTERLINE OF BENT.

SEE BRIDGE BILL OF REINFORCING STEEL SHEET FOR BAR DETAILS.

ALL U-BARS AND V-BAR PAIRS IN END BENT ARE TO BE PLACED PARALLEL TO CL OF TRAIL.

FOR LOCATION OF ANCHOR BOLTS AND DETAILS, SEE BRIDGE SLAB BEAM DETAILS SHEETS.

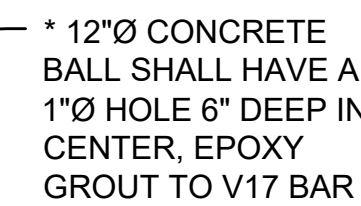
LABELS FOR REINFORCING STEEL ARE SHOWN FOR BENT #1. BENT #3 IS IDENTICAL EXCEPT FOR THE FIRST NUMBER OF THE BAR LABEL.

EXAMPLE: #6 V11 BARS = BENT #1  
#6 V31 BARS = BENT #3

E.F. EACH FACE

Date		01/08/20	
Revision/Issue		ADDENUM #2	
No.	A	B	C
<b>SPENCER N. JONES - ENGINEER</b> MO# PE-28676			
2808 S. INGRAM MILL, SPRINGFIELD, MO 65804 PHONE: (417) 886-7777 FAX: (417) 886-7791 www.gre-engineering.com			
Missouri State Department of Transportation Engineering 200010400, Land Surveying 200101420, Landscape Architecture 2001013873			
CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)		JOPLIN, MISSOURI	
BRIDGE END BENT DETAILS		-	
DATE: 04.24.2019		JOB NUMBER: 13-3249	
SHEET S-03			




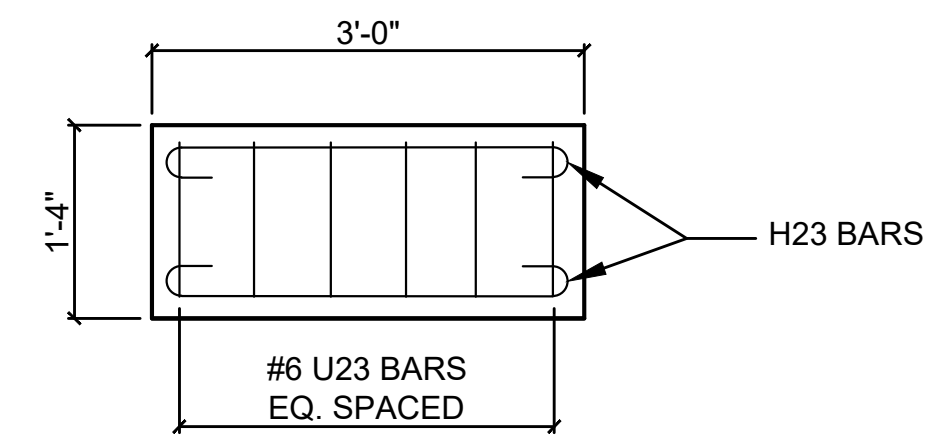
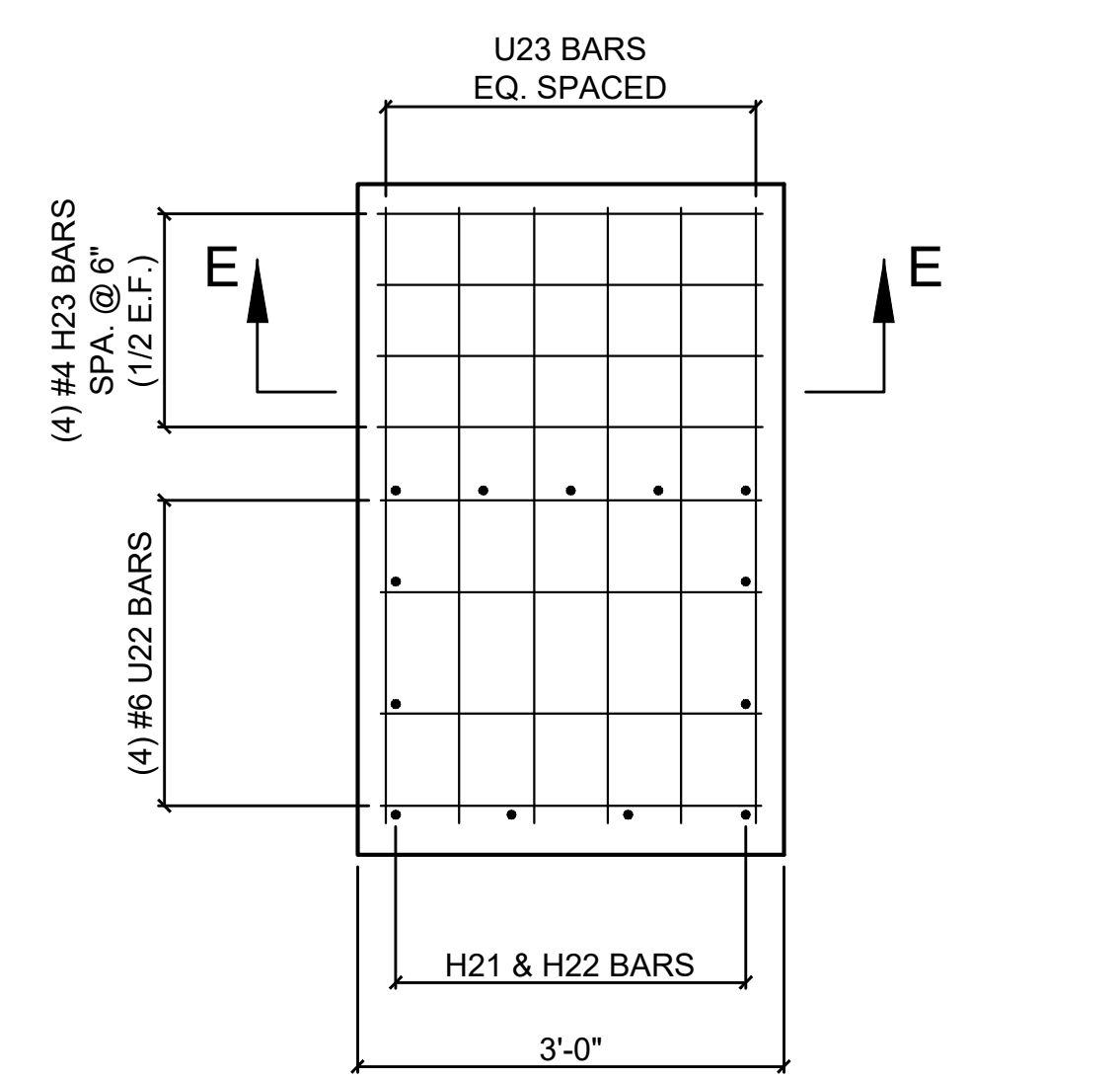
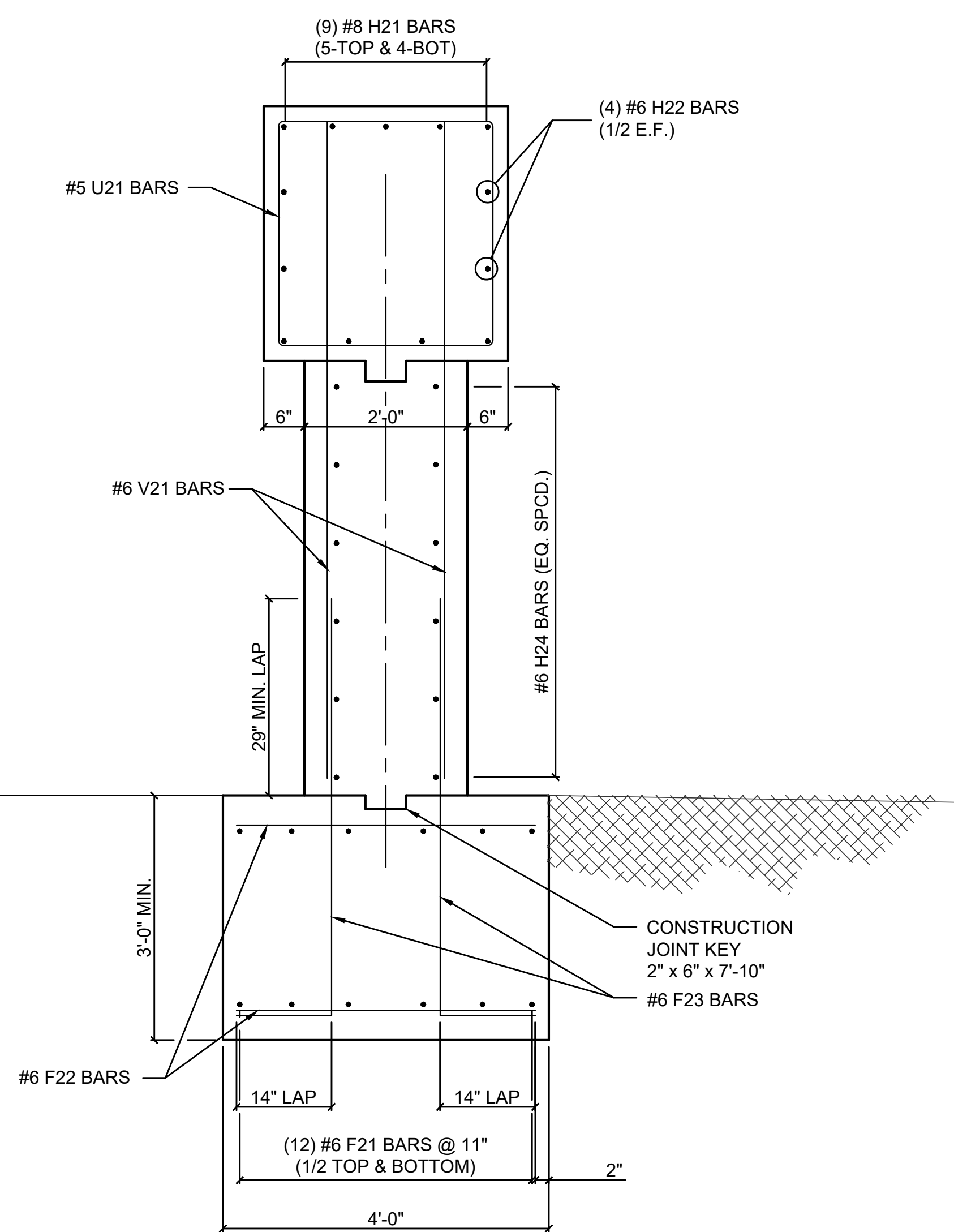
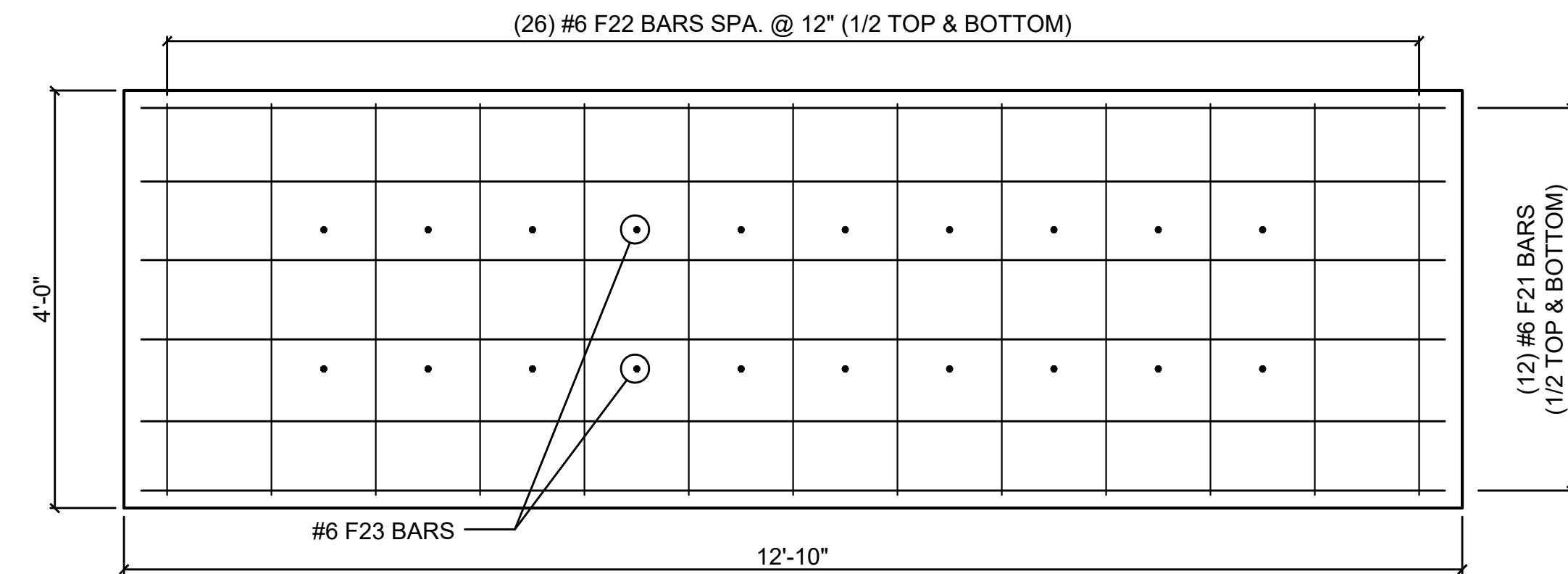
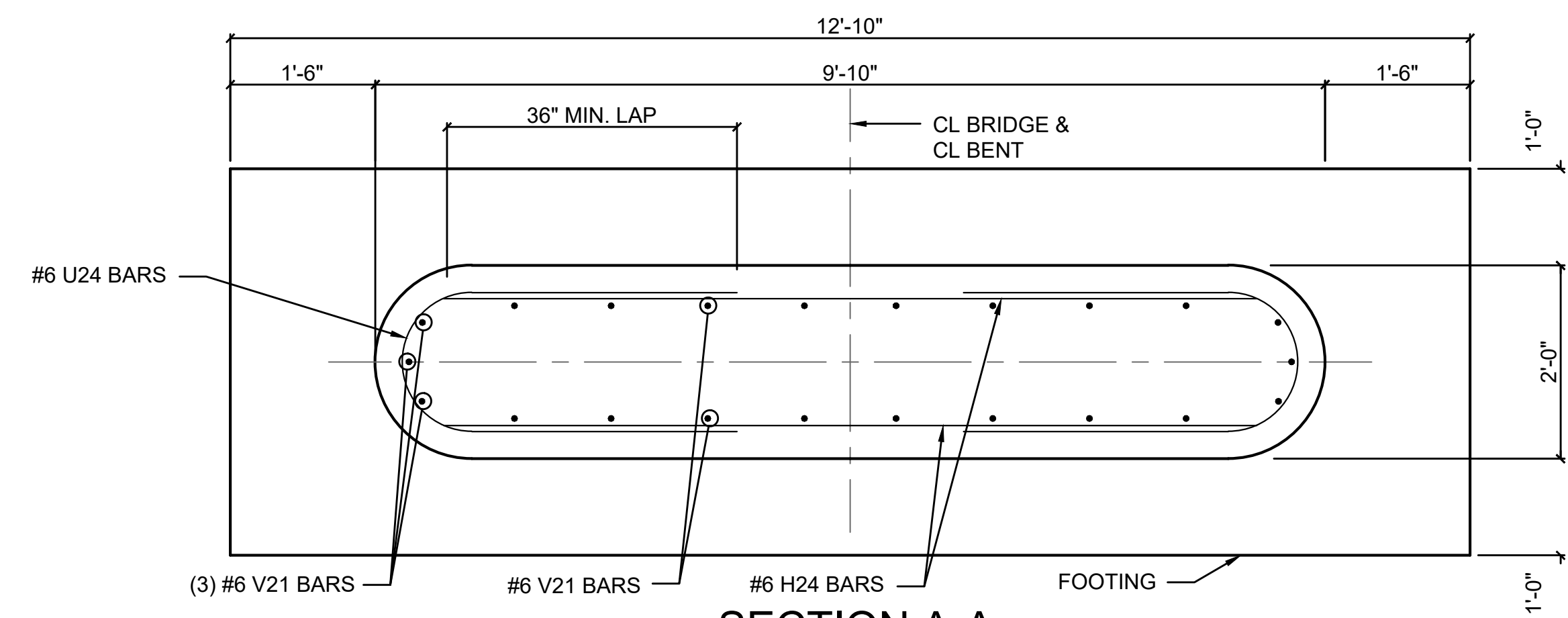
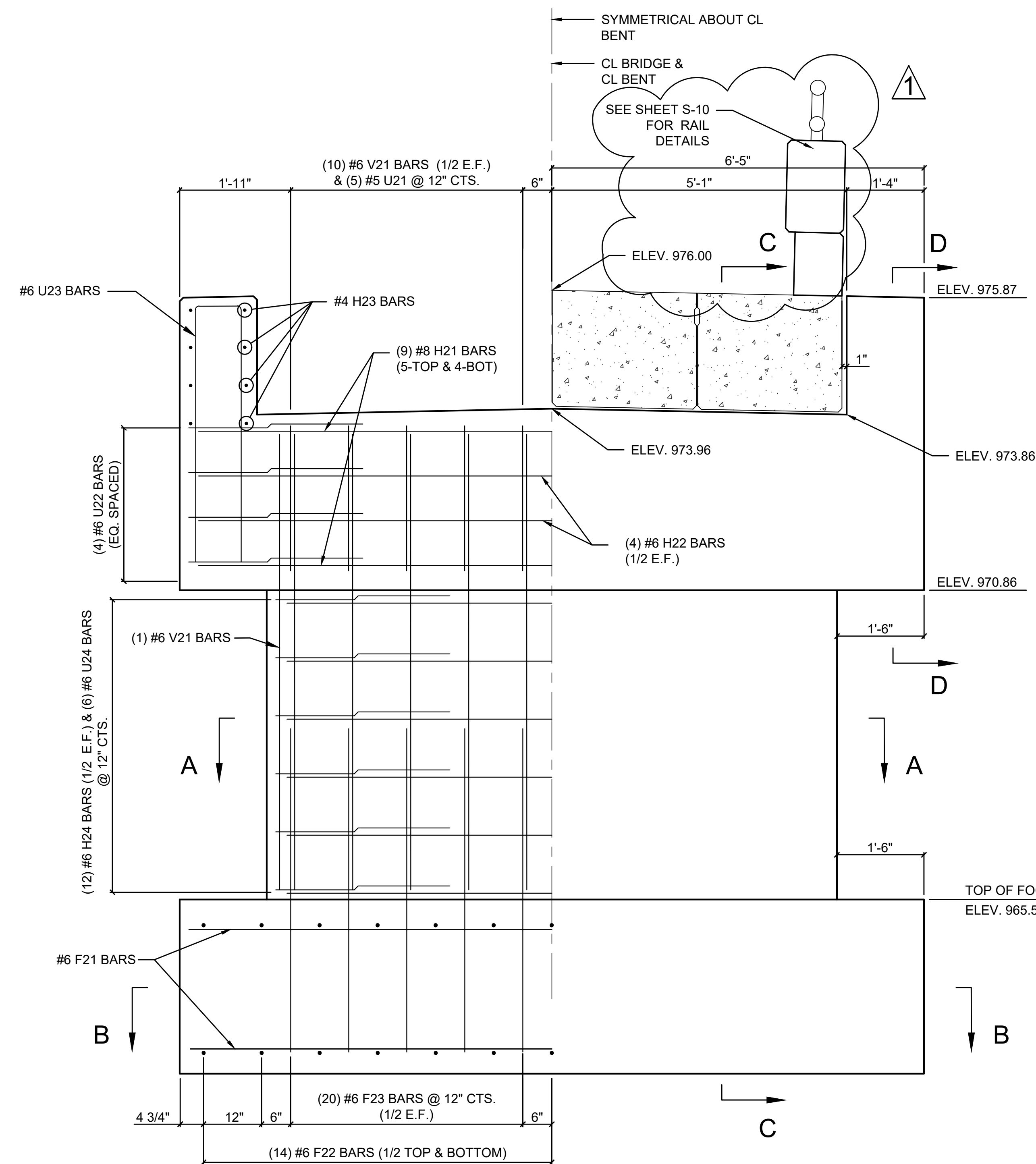
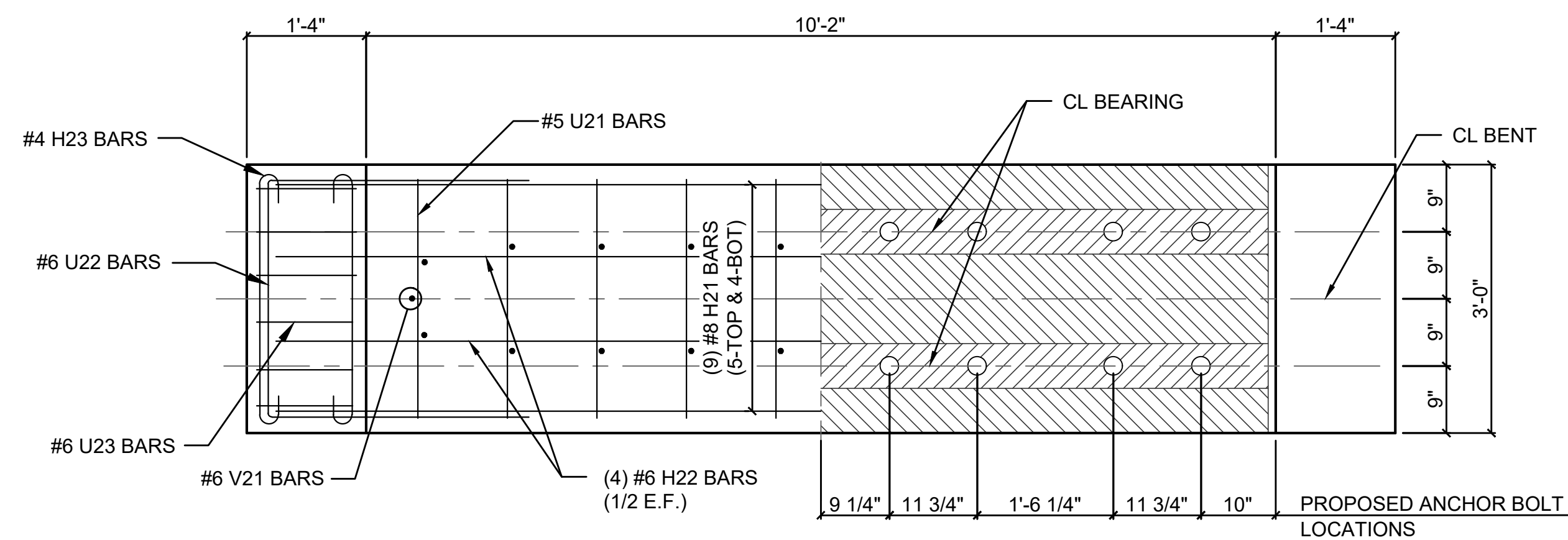


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1. CONSTRUCT WITH TYPE S MORTAR ALL JOINTS.
2. ADJUSTABLE TAB TYPE MASONRY TIES MINIMUM 3 PER COURSE OFFSET PLACEMENT.
3. TOOL ALL JOINTS CONCAVE
4. ENGINEERED STONE VENEER.



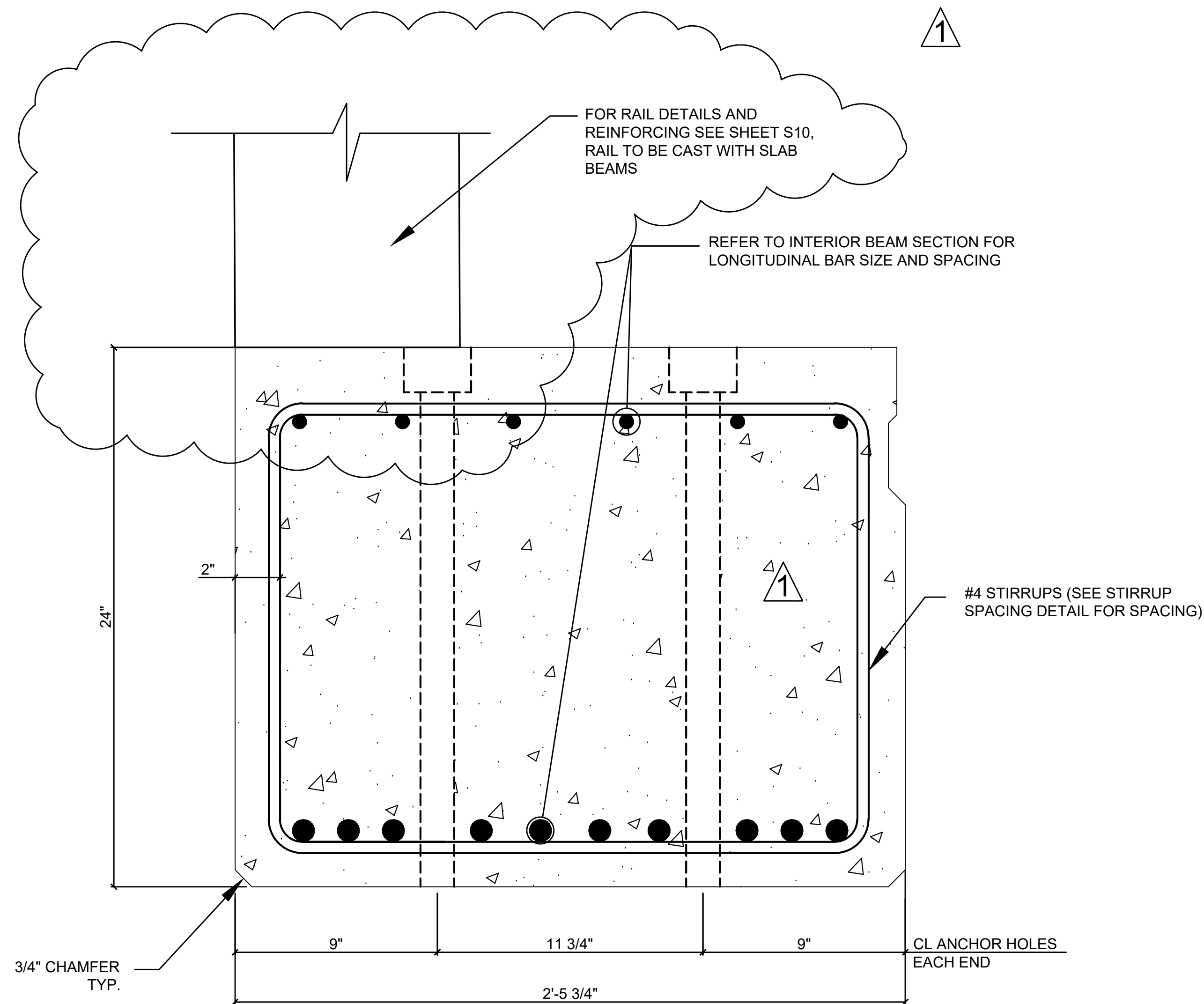
CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705) JOPLIN, MISSOURI		 <p><b>GRE</b> <b>GREAT RIVER</b> <b>ENGINEERING</b></p> <p>2826 S. INGRAM MILL, SPRINGFIELD, MO 65804 PHONE (417) 886-7771 FAX (417) 886-7591 www.gre-engineering.com</p> <p><small>Missouri State Certificate of Architectural Registration Engineering: 2000104845, Land Surveying: 20001014270, Landscape Architecture: 20070713673</small></p>	
DATE: 04.24.2019		Revision/Issue	
JOB NUMBER: 13-3249		ADDENDUM #2	
SHEET		No.	Date
S-04		1	01/08/20
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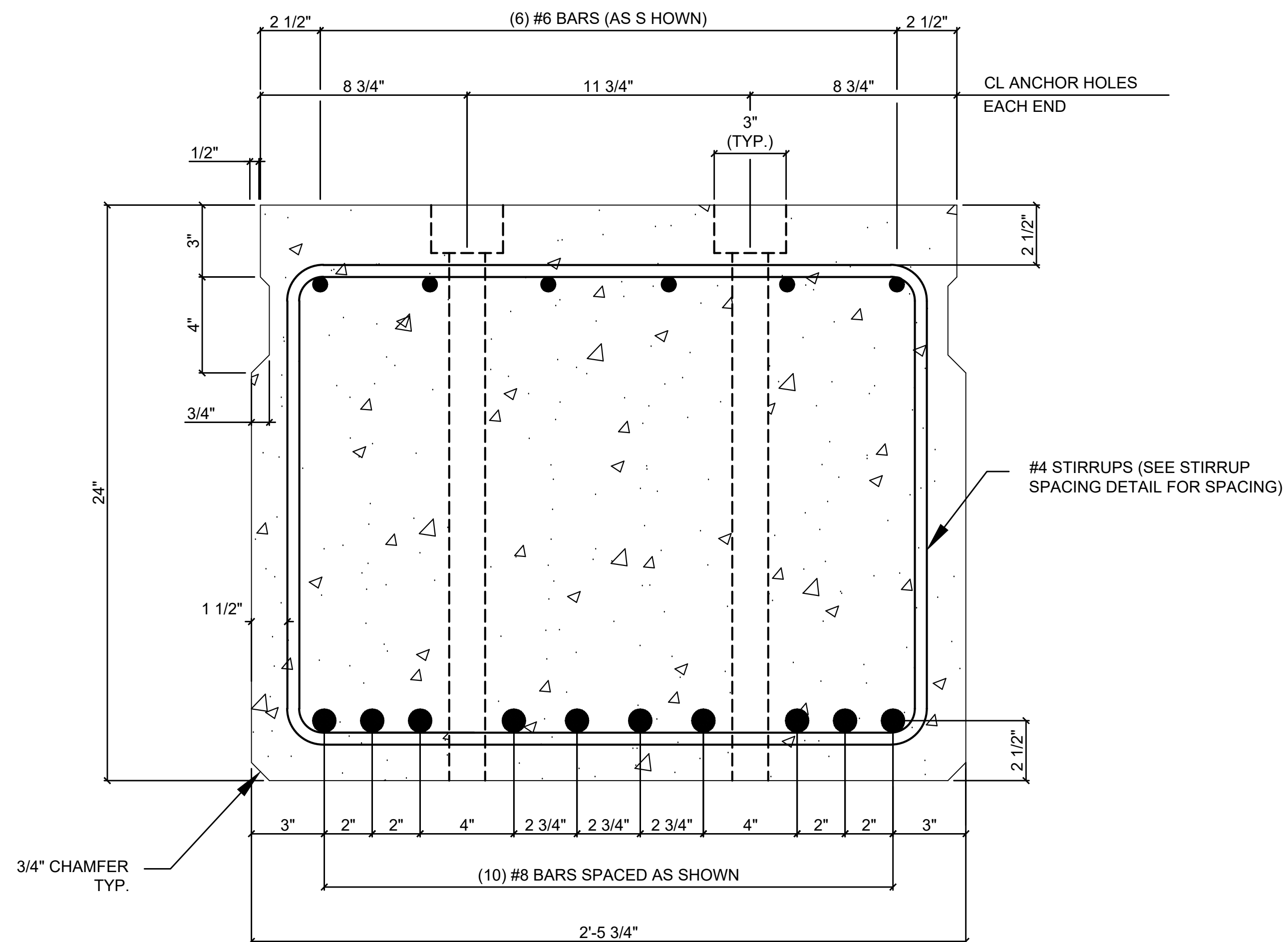
CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)		DATE: 04.24.2019	
JOPLIN, MISSOURI		JOB NUMBER: 13-3249	
BRIDGE INTERMEDIATE BENT DETAILS		SHEET S-05	



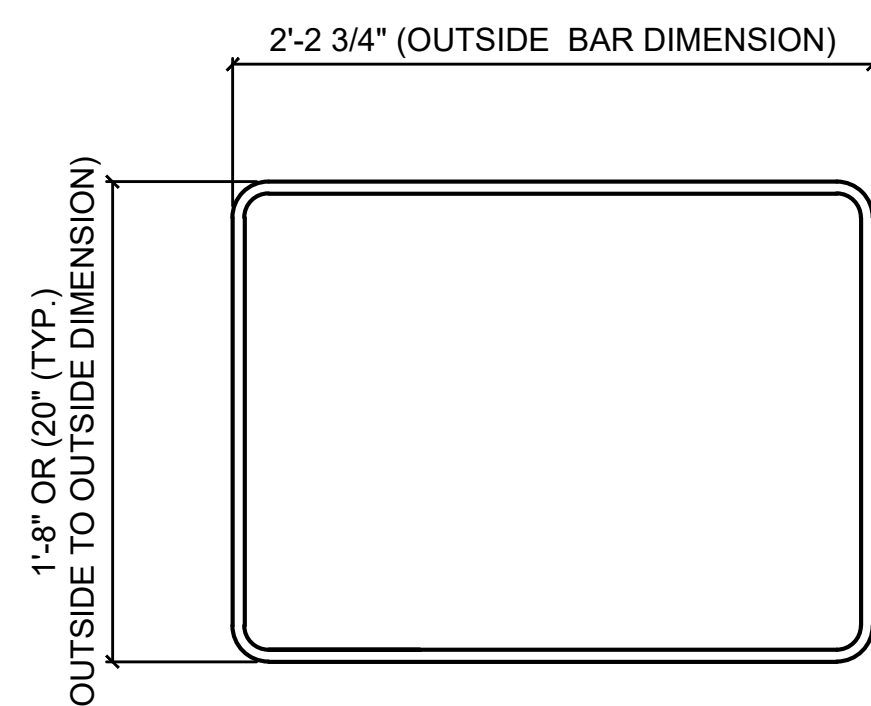




**SECTION A-A**  
TYPICAL CROSS SECTION OF EXTERIOR BEAMS WITH CURB





**SECTION B-B**  
TYPICAL CROSS SECTION OF INTERIOR BEAMS

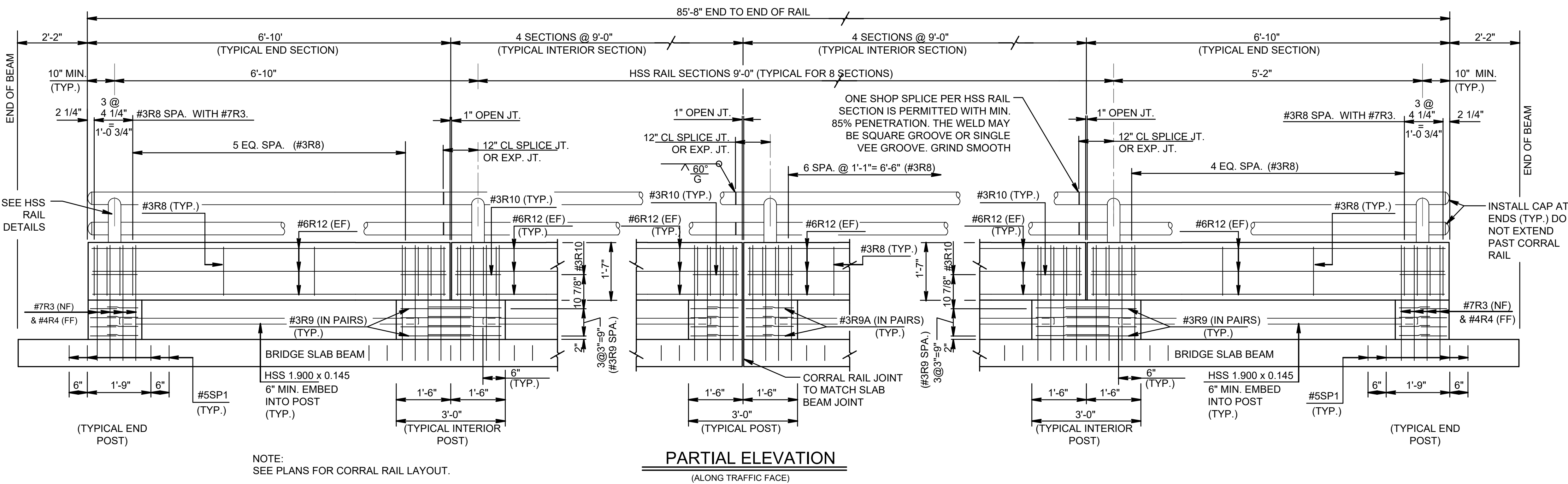


**"TRADITIONAL" STIRRUP DETAIL**

NOTE: THIS DRAWING NOT TO SCALE. FOLLOW DIMENSIONS.

CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)		DATE: 04.24.2019																																					
JOPLIN, MISSOURI		JOB NUMBER: 13-3249																																					
BRIDGE SLAB BEAM		SHEET																																					
DETAILS		S-08																																					
																																							
<p>GRE GREAT RIVER ENGINEERING 2808 S. INGRAM MILL, SPRINGFIELD, MO 65804 PHONE: (417) 686-7771 FAX: (417) 686-7291 www.greinfo.com</p>		<p>SPENCER N. JONES - ENGINEER MO# PE-28676</p>																																					
<p>Missouri State Certificate of Professional Engineer Engineering: 2000154865; Land Surveying: 2001031476; Landscape Architecture: 2007033673</p>		<table><thead><tr><th>No.</th><th>ADDENDUM #2</th><th>Revision/Issue</th><th>Date</th></tr></thead><tbody><tr><td>△</td><td></td><td></td><td>01/08/20</td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr><tr><td>△</td><td></td><td></td><td></td></tr></tbody></table>		No.	ADDENDUM #2	Revision/Issue	Date	△			01/08/20	△				△				△				△				△				△				△			
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## CONSTRUCTION NOTES

### DESIGN UNIT STRESSES

CONCRETE MODOT B1  $f'_c = 4,000$  psi  
 REINFORCING STEEL  $f_y = 60,000$  psi  
 STEEL  $f_y = 36,000$  psi

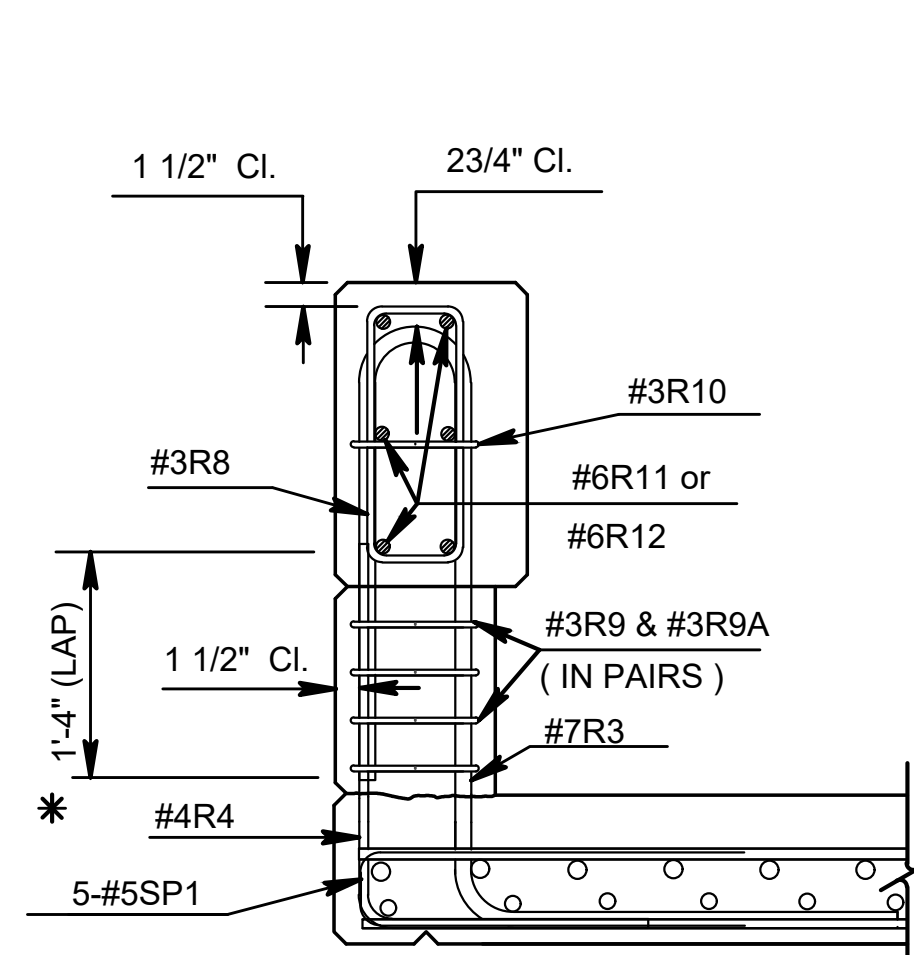
HSS RAIL POSTS AND OPENING END FACES MUST BE PERPENDICULAR TO TOP OF ADJACENT CONCRETE PARAPET GRADE. USE EPOXY MORTAR UNDER HSS RAIL POST BASE PLATES IF GAPS LARGER THAN 1/16" EXIST.

ROUND OR CHAMFER EXPOSED EDGES OF HSS RAIL AND HSS RAIL POSTS TO APPROXIMATELY 1/16" BY GRINDING.

GALVANIZE ALL METAL COMPONENTS OF STEEL RAIL SYSTEM. SLEEVE MEMBERS AND ANCHOR BOLTS MUST RECEIVE GALVANIZATION PRIOR TO INSTALLATION.

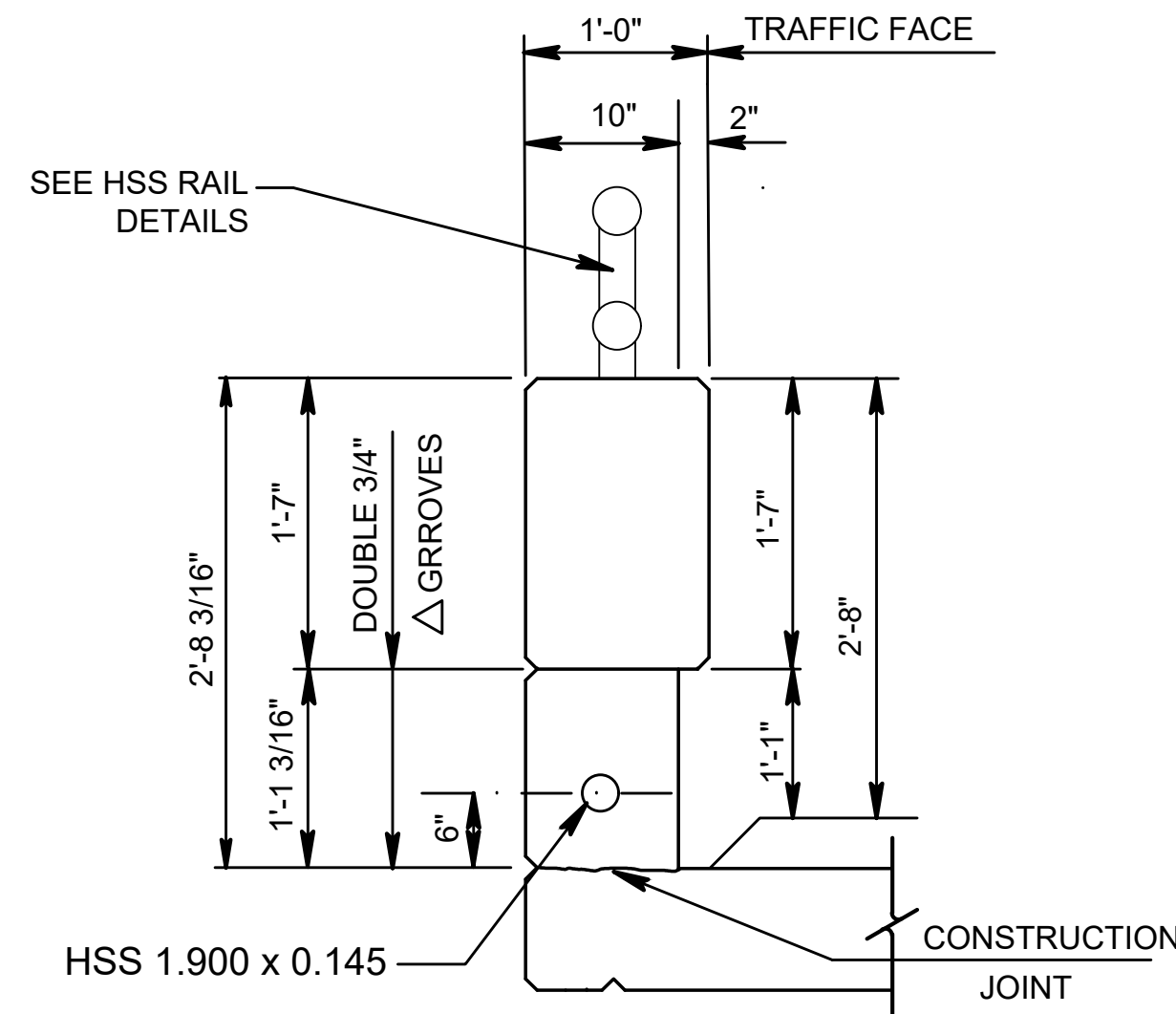
ANCHOR BOLTS MUST BE 5/8" DIA ASTM A307 GR A FULLY THREADED RODS WITH ONE HEX NUT AND ONE HARDENED STEEL WASHER (ASTM F436) EACH. NUTS MUST CONFORM TO ASTM A563 REQUIREMENTS. EMBED FULLY THREADED RODS INTO PARAPET WALL WITH ANCHOR ADHESIVE. MINIMUM ADHESIVE ANCHOR EMBEDMENT DEPTH IS 3". ANCHOR ADHESIVE CHOSEN MUST BE ABLE TO ACHIEVE A NOMINAL BOND STRENGTH IN TENSION OF A SINGLE ANCHOR, NA, OF 5 KIPS (EDGE DISTANCE MUST BE ACCOUNTED FOR).

OPTIONAL CAST-IN-PLACE ANCHOR BOLTS MUST BE 5/8" DIA ASTM A307 GR A BOLTS (OR THREADED RODS WITH ONE TACK WELDED HEX NUT EACH) WITH ONE HEX NUT AND ONE HARDENED STEEL WASHER (ASTM F436) AT EACH BOLT. NUTS MUST CONFORM TO ASTM A563 REQUIREMENTS.



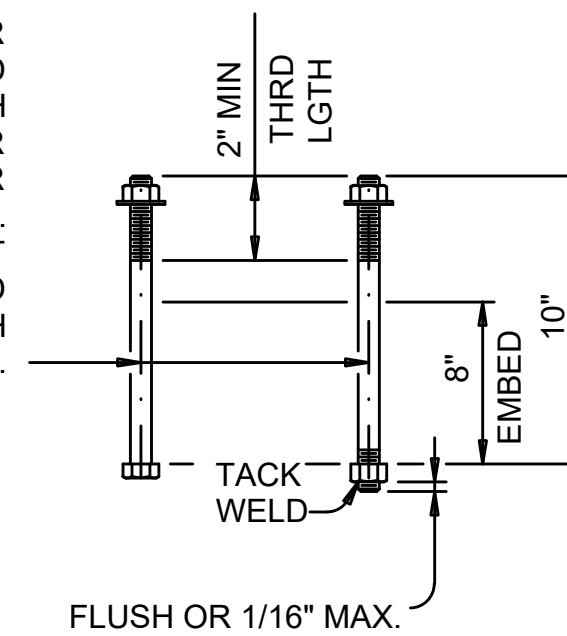
### SECTION THRU POST

\* NOTE: THE HOOK MAY BE CANTED TO PROVIDE CLEARANCE AND/OR FIT BETWEEN REINFORCING.

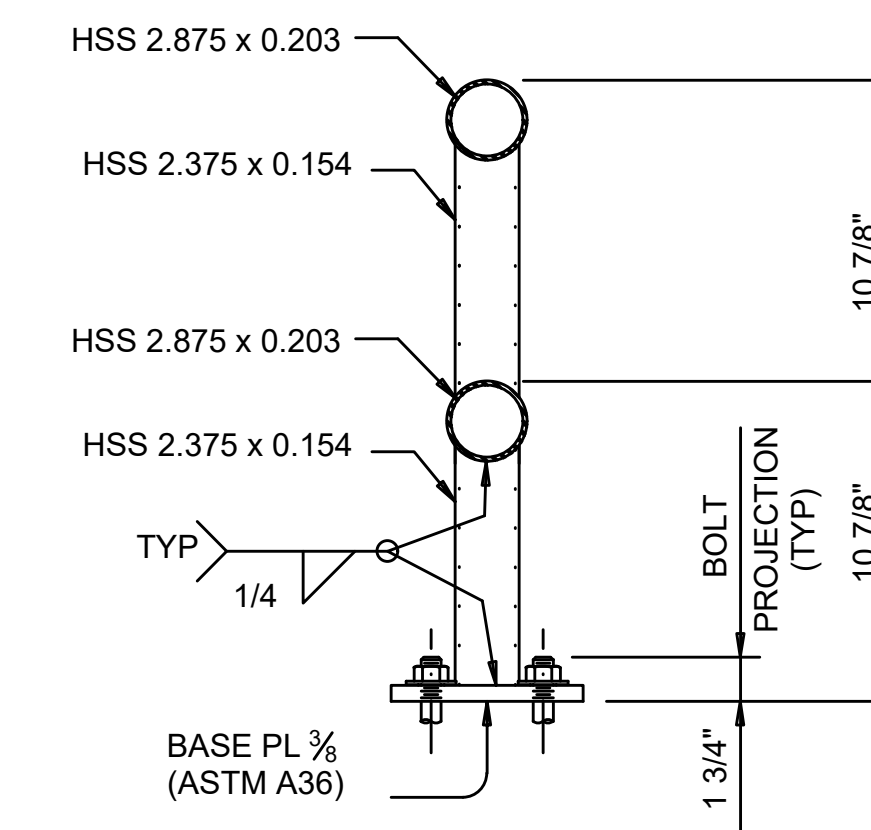


### TYPICAL INTERIOR POST

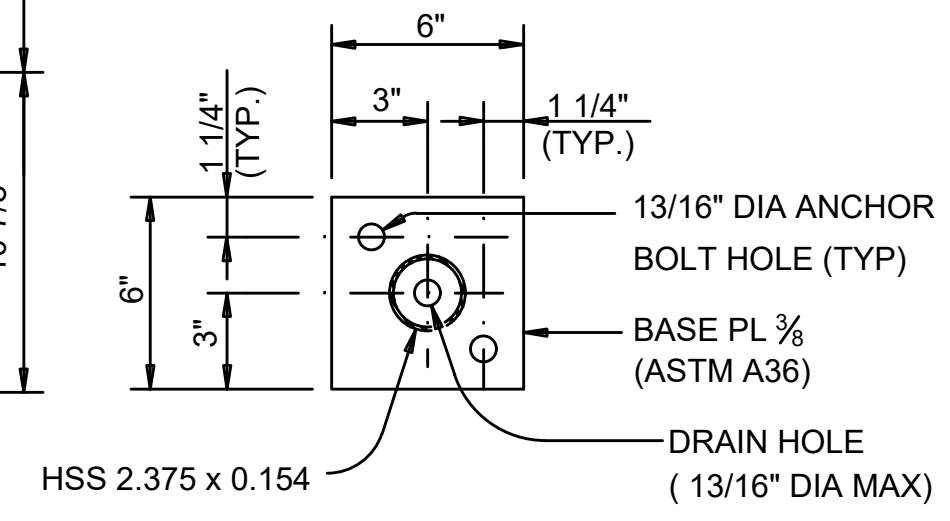
CL 5/8" DIA HEX HEAD ANCHOR BOLT OR THREADED ROD (ASTM A307 GR A) WITH ONE HARDENED STEEL WASHER (ASTM F436) PLACED UNDER EACH HEX NUT (ASTM A563). ONE ADDITIONAL HEX NUT MUST BE FURNISHED AND TACK WELDED FOR EACH THREADED ROD.



### CAST-IN-PLACE ANCHOR BOLT OPTIONS

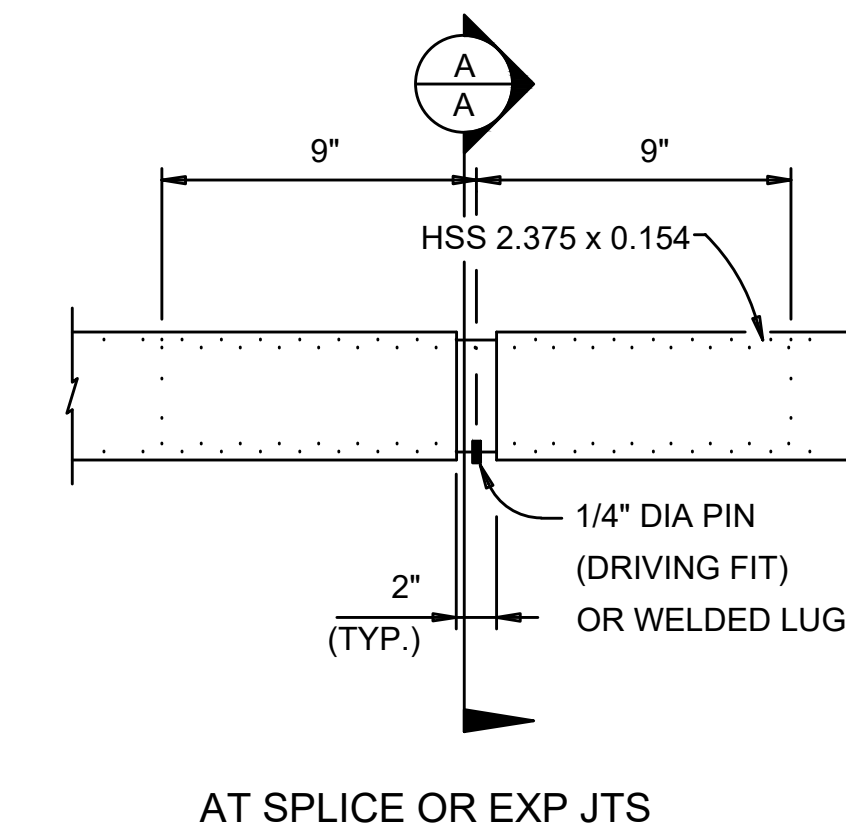


### TRANSVERSE SECTION

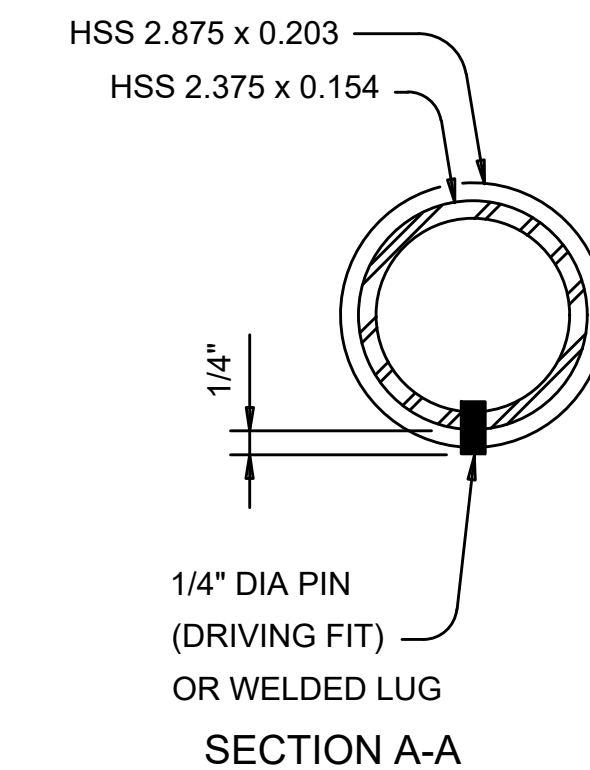


### POST BASE PLATE PLAN

### HSS RAIL DETAILS

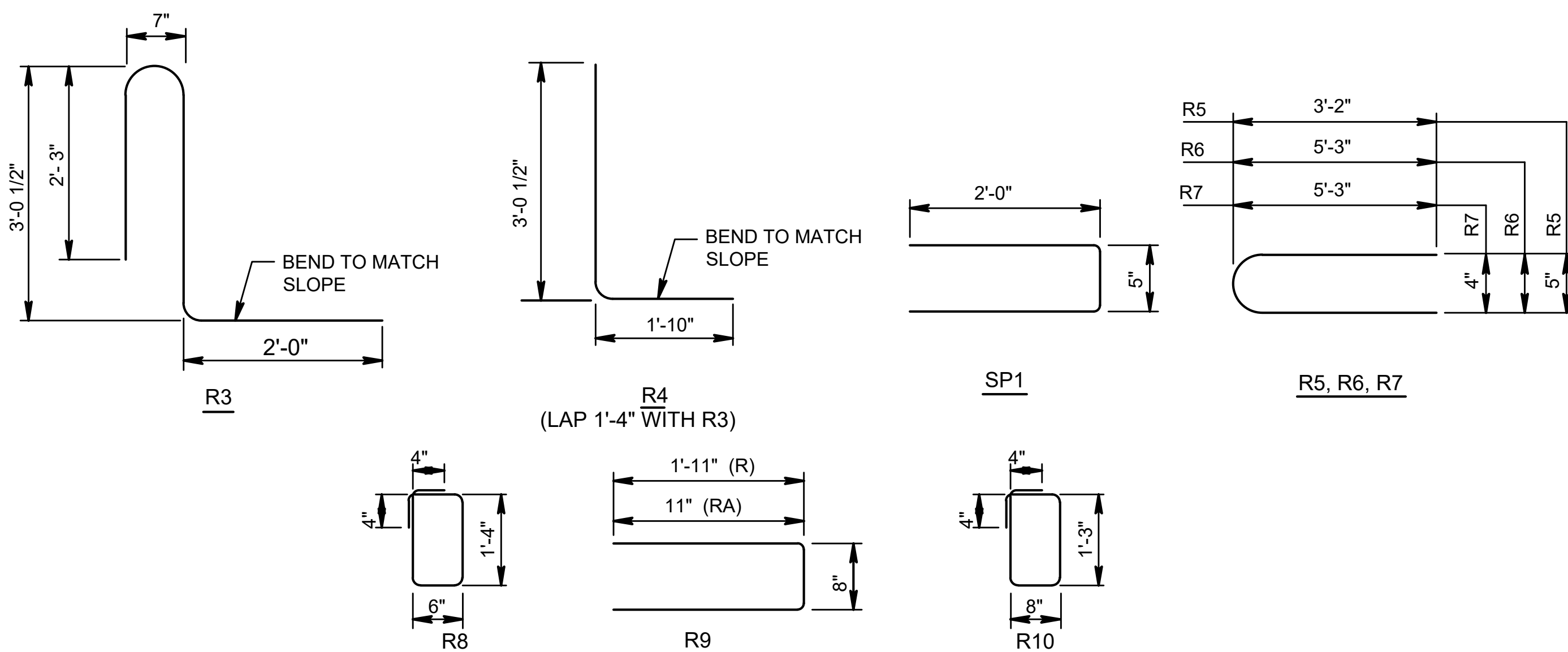


### AT SPLICE OR EXP JTS



### SECTION A-A

### PIPE SPLICE DETAILS



### BENDING DIAGRAMS

ALL DIMENSIONS ARE OUT TO OUT OF BARS.

Date	01/08/20
Revision/Issue	
ADDENDUM #2	
No.	
SPENCER N. JONES - ENGINEER MO# PE-28676	
SPENCER N. JONES - ENGINEER 2828 S. INGRAM MILL, SPRINGFIELD, MO 65804 PHONE: (417) 886-7711 FAX: (417) 886-7751 www.gr-engineering.com Missouri State Department of Transportation Engineering 200010000, Land Surveying 200010000, Landscape Architecture 200010000	
CITY OF JOPLIN - TRAIL & PEDESTRIAN BRIDGE STP 3201(705)	
JOPLIN, MISSOURI	
RAIL DETAILS	
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SHEET S-10	