



Andy Beshear  
GOVERNOR

## TRANSPORTATION CABINET

200 Mero Street  
Frankfort, Kentucky 40601

Jim Gray  
SECRETARY

October 14, 2024

CALL NO. 100  
CONTRACT ID NO. 245366  
ADDENDUM # 2

Subject: Harlan County, STP BRZ 9030 (484)  
Letting October 24, 2024

- (1) Revised - Omit Proposal Page 29 of 185
- (2) Added - Special Note - Pages 32A-32E of 185
- (3) Revised - Proposal Bid Items - Pages 184-185 of 185
- (4) Revised - Plan Sheets R1, R5, R7, S1, S4 and S13

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in black ink that reads "Rachel Mills".

Rachel Mills, P.E.  
Director  
Division of Construction Procurement

RM:mr  
Enclosures

# SPECIAL NOTE FOR NON-DESTRUCTIVE TESTING OF DRILLED SHAFTS

## 1.0 DESCRIPTION

Crosshole Sonic Logging (CSL) is a nondestructive method to test the integrity of drilled shafts. The Contractor will be responsible for supplying all equipment and materials necessary to perform this testing, and obtaining the services of a CSL Testing Firm using personnel experienced with CSL testing and approved by the Engineer to perform the testing.

- 1.1 The CSL tests must either be performed by or under the supervision of a responsible licensed professional engineer with:
- a minimum of three (3) years experience performing CSL tests, and
  - experience performing CSL tests on a minimum of three (3) past projects with a scope and complexity similar to this project including a minimum of 60 drilled shafts in the past three (3) years.

If the responsible professional engineer does not perform the testing, then the responsible field technician who does perform the testing must meet the same experience requirements.

- 1.2 Preliminary Submittal - At least 21 calendar days before beginning drilled shaft construction, submit a technical proposal prepared by the CSL Testing Firm that documents the personnel's experience and addresses the testing procedures. Experience documentation should include resumes, references, certifications, project lists, experience descriptions and details, etc. Within 10 working days, the Engineer will review the proposal and report to the Contractor whether the CSL Testing Firm and personnel are approved and the proposal is acceptable.

- 1.3 The Contractor will be responsible for providing:
- a. access tubes which will be used for CSL testing of the drilled shafts;
  - b. watertight shoes, watertight caps, and non-shrink grout;
  - c. suitable working space and access to every shaft;
  - d. a reliable 600 watt (minimum) generator; and
  - e. any other equipment or materials necessary to accomplish the testing.

Table 1 - Minimum Number of Access Tubes and CSL Logs			
Shaft Diameter (inches)	Number of Tubes	Diagonal Logs	Perimeter Logs
30 to 36	3	NA	3
42 to 54	4	2	4
60 to 78	6	3	6
84 to 96	8	4	8

## 2.0 MATERIALS

- 2.1 Supply the number of access tubes shown in the plans or in Table 1. Provide access tubes meeting the requirements below. The Engineer will accept access tubes based on visual inspection and certification that the steel pipe meets the requirements below:
  - a. 2.0 inch ID schedule 40 steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S;
  - b. contains round, regular internal diameters free of defects or obstructions, including any at pipe joints;
  - c. capable of permitting the free, unobstructed passage of source and receiver probes; and
  - d. watertight and free from corrosion with clean internal and external faces to ensure passage of the probes and a good bond between the concrete and the tubes.
- 2.2 Provide watertight shoes on the bottom and removable watertight caps on the top of the tubes.
- 2.3 Provide non-shrink grout to fill the access tubes and any cored holes at the completion of the CSL tests. Use grout conforming to Section 601.03.03 of the Standard Specifications.

## 3.0 CONSTRUCTION

- 3.1 Access Tube Installation
  - a. Install access tubes equally spaced around the perimeter of each of the drilled shafts.
  - b. Securely attach the tubes to the longitudinal reinforcement. Wire-tie the tubes a minimum of every 3 feet so they will stay in position during placement of rebar and concrete. Place the tubes so they will be parallel with each other and as near to vertical as possible in the finished shaft. Even moderate bending of the tubes will result in large regional variations in the data.
  - c. Place the tubes from 6 inches above the shaft tip to at least 3 feet above the top of shaft and at least 2 feet above ground level or top of casing. Under no circumstances may the tubes be allowed to come to rest on the bottom of the excavation.
  - d. Ensure that any joints in the tubes are watertight.
  - e. During placement of the reinforcement cage, exercise care so that the tubes will not be damaged to the extent that would prevent test probes from passing through them.
  - f. After placing the reinforcing cage and before beginning concrete placement, fill the tubes with clean potable water and cap or seal the tube tops to keep debris out of the tubes. Replace the watertight caps immediately after filling the tubes with water.
  - g. Before placing concrete, investigate at least one tube per shaft to make sure that there are no bends, crimps, obstructions or other impediments to the free passage of the testing probes.
  - h. During removal of the caps from the tubes, exercise care so as not to apply excess torque, hammering, or other stresses which could break the bond between the tubes and concrete.

- i. After concrete placement and before the beginning of CSL testing, inspect the access tubes and report any access tubes that the test probes cannot pass through to the Engineer. The Engineer will make an evaluation to determine if the CSL testing can be successfully performed without the tube(s); the Engineer may require the contractor to, at its own expense, replace one or more tubes with 2-inch diameter holes cored through the concrete for the entire length of the shaft, excluding the bottom 6 inches. Unless directed otherwise by the Engineer, locate core holes approximately 6 inches inside the reinforcement such that it does not damage the reinforcement. For each core hole drilled, record a log with descriptions of inclusions and voids in the cored holes and submit a copy of the log to the Engineer. Preserve the cores, identify as to location and make available for inspection by the Engineer.
- 3.2 Grouting - After completion of the CSL testing and evaluation of results, and only after being directed to do so by the Engineer, remove the water from the access tubes and any cored holes, completely fill the tubes and holes with approved grout. After grouting, cut the tubes flush with the tops of the drilled shafts.

#### **4.0 TESTING AND REPORTING**

The Engineer may elect to reduce the amount of testing and will pay only for the authorized quantities.

- 4.1 Testing
  - a. Perform CSL testing according to ASTM D6760, "Integrity Testing of Concrete Deep Foundations by Ultrasonic Crosshole Testing".
  - b. Provide access to the top of the shaft for testing personnel and equipment.
  - c. Perform CSL testing in accordance with generally accepted CSL Testing methods.
  - d. Obtain the minimum number of CSL logs shown in Table 1 unless otherwise directed by the Engineer.
  - e. Perform CSL testing on all completed shafts designated for testing by the Engineer, after the shaft concrete has cured at least 48 hours. Additional curing time may be necessary, depending on the concrete admixtures that are used.
- 4.2 Test Reports - Submit a test report prepared by the CSL Testing Firm and signed by the responsible professional engineer which, as a minimum, contains:
  - a. Pier No., Plan Shaft No., Station, Offset, and Top of Shaft Elevation;
  - b. Schematic showing a plan view of the access tube locations;
  - c. CSL logs presented for each tube pair tested with any defect zones indicated on the logs and discussed in the report as appropriate;
  - d. Analyses of initial pulse arrival time versus depth or velocity versus depth if requested by the Engineer; and
  - e. Analyses of pulse energy/amplitude versus depth.
- 4.3 Independent Comparison Tests - Consultants acting on behalf of the Department may perform independent comparison tests on the shafts tested by the Contractor's CSL Testing Firm.

## 5.0 EVALUATION OF TEST RESULTS

- 5.1 Allow direct communication between the CSL Testing Firm and the Department.
- 5.2 The Engineer will evaluate the CSL test results in the test report to determine whether or not the drilled shaft integrity is acceptable. Within 5 working days after receiving a test report, the Engineer will report to the Contractor whether the construction is acceptable or additional analyses are needed.
- 5.3 The Engineer will not require the Contractor to wait for CSL testing and evaluation to continue drilled shaft construction. However, if the CSL tests indicate that the integrity of any drilled shaft is questionable, the Engineer may direct the Contractor to suspend drilled shaft operations until the problem is resolved.
- 5.4 Continue with construction of the structure above the drilled shafts only after receiving written approval to do so, based on evaluation of the CSL test results.
- 5.5 If the CSL records are complex or inconclusive, the Engineer may require additional testing (such as Angled CSL, Crosshole Tomography, Singlehole Sonic Logging, or Sonic Echo/Impulse Response, etc.) or concrete cores to sample the concrete in question to verify shaft conditions. If core samples are needed, obtain cores with a minimum diameter of 2 inches, unless directed otherwise by the Engineer. Unless directed otherwise by the Engineer, locate core holes approximately 6 inches inside the reinforcement such that they do not damage the reinforcement. For each core hole drilled, record a log with descriptions of inclusions and voids in the cored holes and submit a copy of the log to the Engineer. Place the cores in crates properly marked showing the shaft depth at each interval of core recovery. Transport the cores and logs to the Geotechnical Branch in Frankfort for inspection and testing. Grout the core holes in accordance with Section 3.2 above.
- 5.6 If the additional testing or evaluation of cores indicate that concrete for any drilled shaft on which additional testing or coring was required is acceptable, the Department will pay for the additional testing and concrete coring and grouting on a cost plus basis. If the additional testing or evaluations of cores indicate that the concrete for any drilled shaft concrete is unacceptable, the additional testing and concrete coring and grouting will be at the expense of the Contractor.
- 5.7 If defects are found, the original structural designer will perform structural analyses, at the expense of the Contractor, based on the design criteria established for the structure to assess the effects of the defects on the structural performance of the drilled shaft. If the results of the analyses indicate that there is conclusive evidence that the defects will result in inadequate or unsafe performance under the design loads, as defined by the design criteria for the structure, the Engineer will reject the shaft.
- 5.8 If any shaft is rejected, provide a plan for remedial action to the Engineer for approval. Any modifications to the foundation shafts and/or other substructure elements caused by the remedial action will require calculations and working drawings by the original structural designer, at the expense of the Contractor. Begin remediation operations only after receiving approval from the Engineer for the proposed remediation. All remedial action will be at no cost to the Department and with no extension of contract time.

**6.0 METHOD OF MEASUREMENT**

The Department will pay for the authorized and accepted quantities of “CSL Testing” at the contract unit price per each shaft tested. This will constitute full compensation for all costs associated with travel and providing access for testing personnel and equipment, performing the CSL Testing in a single shaft, and reporting the results to the Engineer.

All costs for access tubes including but not limited to providing and installing access tubing and providing and placing grout in access tubes are incidental to the drilled shafts.

The Department will pay for additional testing and concrete coring required to investigate shafts with complex or inconclusive CSL records if evaluation of the additional testing or cores indicates that concrete for that drilled shaft is acceptable. This will be paid as cost plus and will constitute full compensation for all costs and delays associated with performing additional tests, obtaining and delivering concrete cores to the Geotechnical Branch, and grouting core holes.

**7.0 PAYMENT**

The Department will pay for the completed and accepted quantities under the following:

<u>Code</u>	<u>Pay Item</u>	<u>Pay Unit</u>
21321NC	CSL Testing (4 tubes)	Each

The Department will consider payment as full compensation for all work required under this Special Note.

**PROPOSAL BID ITEMS**

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Report Date 10/14/24

**Section: 0001 - PAVING**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0010	00001		DGA BASE	225.90	TON		\$	
0020	00100		ASPHALT SEAL AGGREGATE	3.70	TON		\$	
0030	00103		ASPHALT SEAL COAT	.40	TON		\$	
0040	00190		LEVELING & WEDGING PG64-22 (REVISED 10-14-24)	5.00	TON		\$	
0050	00212		CL2 ASPH BASE 1.00D PG64-22	213.50	TON		\$	
0060	00301		CL2 ASPH SURF 0.38D PG64-22 (REVISED 10-14-24)	59.00	TON		\$	
0070	02677		ASPHALT PAVE MILLING & TEXTURING	14.30	TON		\$	
0080	24970EC		ASPHALT MATERIAL FOR TACK NON- TRACKING	.58	TON		\$	

**Section: 0002 - ROADWAY**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0090	01987		DELINEATOR FOR GUARDRAIL BI DIRECTIONAL WHITE	8.00	EACH		\$	
0100	02200		ROADWAY EXCAVATION	140.00	CUYD		\$	
0110	02351		GUARDRAIL-STEEL W BEAM-S FACE	115.00	LF		\$	
0120	02355		GUARDRAIL-STEEL W BEAM-S FACE A	107.50	LF		\$	
0130	02360		GUARDRAIL TERMINAL SECTION NO 1	4.00	EACH		\$	
0140	02429		RIGHT-OF-WAY MONUMENT TYPE 1	6.00	EACH		\$	
0150	02432		WITNESS POST	3.00	EACH		\$	
0160	02545		CLEARING AND GRUBBING REQ. CLEARING AND GRUBBING	1.00	LS		\$	
0170	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0180	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0190	02726		STAKING	1.00	LS		\$	
0200	02731		REMOVE STRUCTURE	1.00	LS		\$	
0210	20550ND		SAWCUT PAVEMENT	75.00	LF		\$	
0220	21415ND		EROSION CONTROL	1.00	LS		\$	

**Section: 0003 - BRIDGE - 048B00138N**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0230	03299		ARMORED EDGE FOR CONCRETE	41.40	LF		\$	
0235	02231		STRUCTURE GRANULAR BACKFILL (ADDED 10-14-24)	192.30	CUYD		\$	
0240	08003		FOUNDATION PREPARATION	1.00	LS		\$	
0250	08019		CYCLOPEAN STONE RIP RAP	771.30	TON		\$	
0260	08033		TEST PILES	77.00	LF		\$	
0270	08046		PILES-STEEL HP12X53	268.00	LF		\$	
0280	08094		PILE POINTS-12 IN	10.00	EACH		\$	
0290	08100		CONCRETE-CLASS A	138.80	CUYD		\$	
0300	08104		CONCRETE-CLASS AA	78.60	CUYD		\$	
0310	08150		STEEL REINFORCEMENT	10,454.00	LB		\$	

**PROPOSAL BID ITEMS**

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Report Date 10/14/24

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0320	08151		STEEL REINFORCEMENT-EPOXY COATED (REVISED 10-14-24)	20,704.00	LB		\$	
0330	08663		PRECAST PC BOX BEAM CB21-48	547.10	LF		\$	
0340	08666		PRECAST PC BOX BEAM CB42-48	479.60	LF		\$	
0350	20637ED		DRILLED SHAFT-ROCK 48 IN	40.00	LF		\$	
0360	20745ED		ROCK SOUNDINGS	27.80	LF		\$	
0370	20746ED		ROCK CORINGS	106.80	LF		\$	
0375	21321NC		CSL TESTING (4 TUBES) (ADDED 10-14-24)	4.00	EACH		\$	
0380	22417EN		DRILLED SHAFT-54 IN-COMMON	34.00	LF		\$	
0390	23378EC		CONCRETE SEALING	8,715.40	SQFT		\$	
0400	23539EC		BRIDGE RAIL	411.00	LF		\$	
0405	26233EC		MOBILIZATION FOR CONCRETE SURF TREATMENT (ADDED 10-14-24)	1.00	LS		\$	

**Section: 0004 - DEMOBILIZATION & MOBILIZATION**

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRIC	FP	AMOUNT
0410	02569		DEMOBILIZATION	1.00	LS		\$	



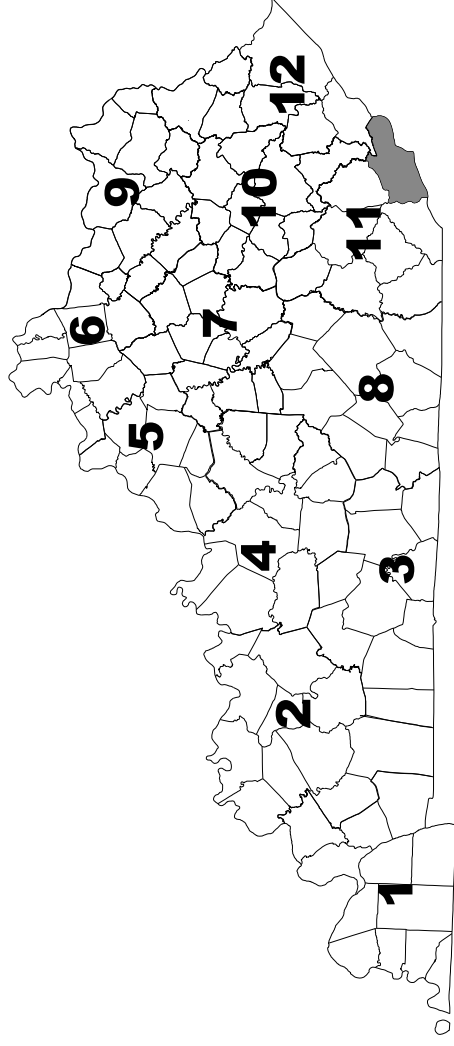
# COMMONWEALTH OF KENTUCKY DEPARTMENT OF HIGHWAYS



## PLANS OF PROPOSED PROJECT HARLAN COUNTY



KY-72 OVER POOR FORK CUMBERLAND RIVER  
STA. 10+70 TO 15+45



THE CONTROL OF ACCESS ON THIS PROJECT SHALL BE BY PERMIT

THIS PROJECT IS OFF THE NH SYSTEM



BEGIN CONST.  
STA. 10+70

STA. 13+35 CONST. 205.5'  
3 - SPAN (54', 96', 54')  
CB21 (SPANS 1&3) AND CB42 (SPAN 2)  
BEAM BRIDGE @ 15° LT SKEW

END CONST.  
STA. 15+45

### LAYOUT MAP

REV. NO.	SHEETS REVISED	DATE

#### TABLE OF REVISIONS

#### DESIGN CRITERIA

CLASS OF HIGHWAY	MINOR COLLECTOR
TYPE OF TERRAIN	ROLLING
DESIGN SPEED	N/A
REQUIRED NP5D	N/A
REQUIRED PSD	N/A
LEVEL OF SERVICE	N/A
ADT PRESENT ( )	2634
ADT FUTURE ( )	N/A
DHV	N/A
D %	N/A
T %	N/A

#### GEOGRAPHIC COORDINATES

LATITUDE 36 DEGREES 51 MINUTES 35 SECONDS NORTH  
LONGITUDE 83 DEGREES 19 MINUTES 32 SECONDS WEST

#### DESIGNED

% RESTRICTED SD N/A  
LEVEL OF SERVICE N/A  
MAX. DISTANCE W/O PASSING N/A

#### INDEX OF SHEETS

- R1 LAYOUT SHEET
- R2 TYP. SECTIONS
- R3 ROW, COORD., CONTROL, GENERAL NOTES
- R4 LEGEND
- R5 PLAN
- R6 PROFILE
- R7 ENVIRONMENTALLY CLEARED AREA
- R8 ODDS RAIL TRANSITION DETAIL
- R9 CROSS SECTIONS
- R10 GENERAL NOTES
- R11 LAYOUT
- R12 FOUNDATION LAYOUT
- R13 DRILLED SHAFT DETAILS
- R14 END BENT #1 DETAILS
- R15 PIER #1 DETAILS
- R16 PIER #2 DETAILS
- R17 END BENT #2 DETAILS
- R18 END BENT #3 DETAILS
- R19 CONSTRUCTION ELEVATIONS
- R20 BRIDGE RAIL

#### STANDARD DRAWINGS

RBR-001-012	TYPICAL GUARDRAIL INSTALLATIONS
RBI-002-007	TYPICAL GUARDRAIL INSTALLATIONS
RBI-004-006	INSTALLATION OF GUARDRAIL END TREATMENT TYPE 1
RBR-001-013	STEEL BEAM GUARDRAIL ("W" BEAM)
RBR-005-011	GUARDRAIL COMPONENTS
RBR-010-006	GUARDRAIL TERMINAL SECTIONS
RBR-015-006	STEEL GUARDRAIL POSTS
RBR-020-007	GUARDRAIL END TREATMENT TYPE 1
RBR-055-001	DELINEATORS FOR GUARDRAIL
RGX-001-006	MISCELLANEOUS STANDARDS
RGX-005-006	RIGHT-OF-WAY MONUMENTS
RGX-100-007	TREATMENT OF EMBANKMENTS AT END-BENTS
RGX-105-009	TREATMENT OF EMBANKMENTS AT END-BENTS - DETAILS

#### STANDARD DRAWINGS (CONTD.)

RGX-200-001	ONE POINT PROCTER FAMILY OF CURVES
BBP-003-02	ELASTOMERIC BEARING PADS FOR BOX BEAMS
BDP-001-06	BOX BEAM GENERAL NOTES AND REFERENCES
BDP-002-03	BOX BEAM BEARING DETAILS
BDP-003-03	BOX BEAM MISCELLANEOUS DETAILS
BDP-004-04	BOX BEAM TENSION ROD DETAILS
BDP-008-04	BOX BEAM B21 & CB21 DETAILS
BDP-012-04	BOX BEAM CB42 DETAILS
BGX-006-10	STENCILS FOR STRUCTURE
BGX-022	JOINT WATERPROOFING
BJE-001-14	ARMORED EDGES
BPS-003-09	HP12X53 STEEL PILE

#### ACTIVE SEPIAS

SEPIA 017	PAVEMENT STRIPING DETAILS FOR TWO LANE TWO WAY ROADWAYS
069 - EMBANKMENT AT BRIDGE END BENT STRUCTURES	SPECIAL PROVISIONS

#### SPECIAL NOTES

CONCRETE SEALING
TRAFFIC CONTROL ON BRIDGE REPAIR CONTRACTS
SEASONAL TREE CLEARING RESTRICTIONS
ADDITIONAL ENVIRONMENTAL COMMITMENTS
COMPLETION DATE AND LIQUIDATED DAMAGES ON BRIDGE REPAIR CONTRACTS
STRUCTURES WITH OVER THE SIDE DRAINAGE AND BRIDGE RAIL
DRILLED SHAFTS
TRUSS SCREEDS ON CONCRETE OVERLAYS
WORK NEAR RAILROAD
NON-DESTRUCTIVE TESTING OF DRILLED SHAFTS

#### SPECIFICATIONS

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION,  
CURRENT EDITION  
CURRENT EDITION AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS  
WITH CURRENT INTERIMS

PROJECT NUMBER:

EXISTING BRIDGE ID #: 048B00138N

DRAWING NO: 28791

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
PROJECT MANAGER  
PLAN APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
STATE HIGHWAY ENGINEER

FOR BRIDGE SHEETS S1-S16

LETTING DATE:  
10-24-2024

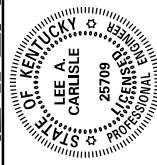
ITEM NO.  
11-10196.00

COUNTY OF  
HARLAN

SHEET NO.  
R1



FOR ROADWAY SHEETS



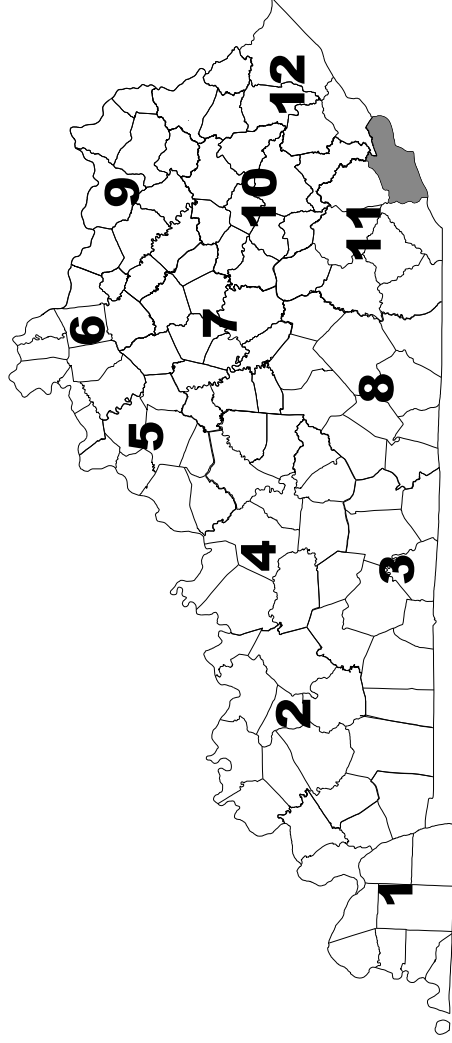
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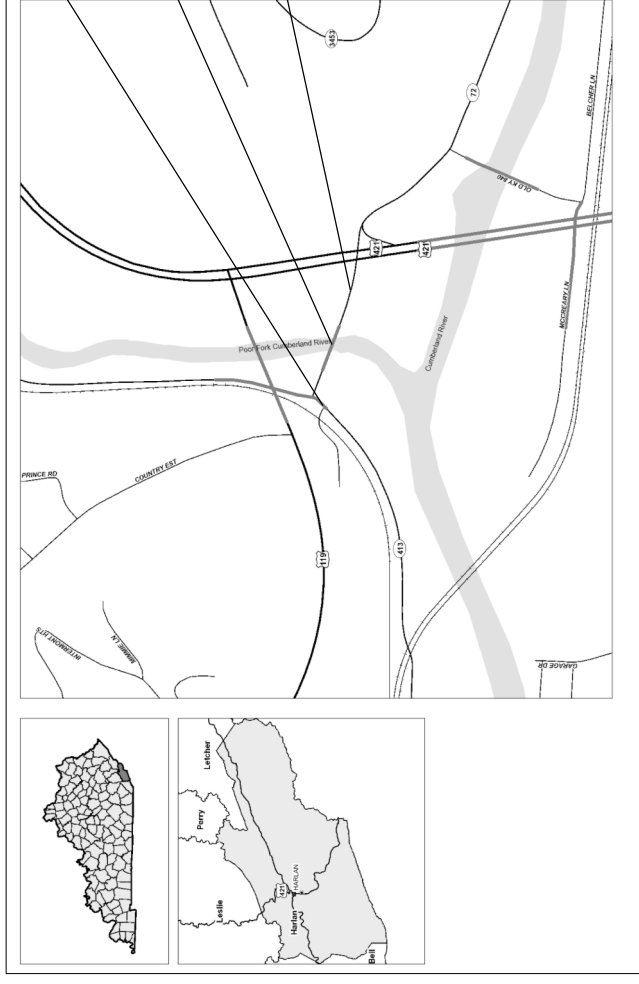


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- S5-S8 PIER #1 DETAILS
- S7-S8 PIER #2 DETAILS
- S9-S10 END BENT #2 DETAILS
- S11-S12 CONSTRUCTION ELEVATIONS
- S14-S15 BRIDGE RAIL
- S16

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WITH CURRENT INTERIMS

PROJECT NUMBER:

EXISTING BRIDGE ID #: 048B00138N

DRAWING NO: 28791

RECOMMENDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

PROJECT MANAGER: \_\_\_\_\_ DATE: \_\_\_\_\_

PLAN APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

STATE HIGHWAY ENGINEER: \_\_\_\_\_ DATE: \_\_\_\_\_



FOR ROADWAY SHEETS



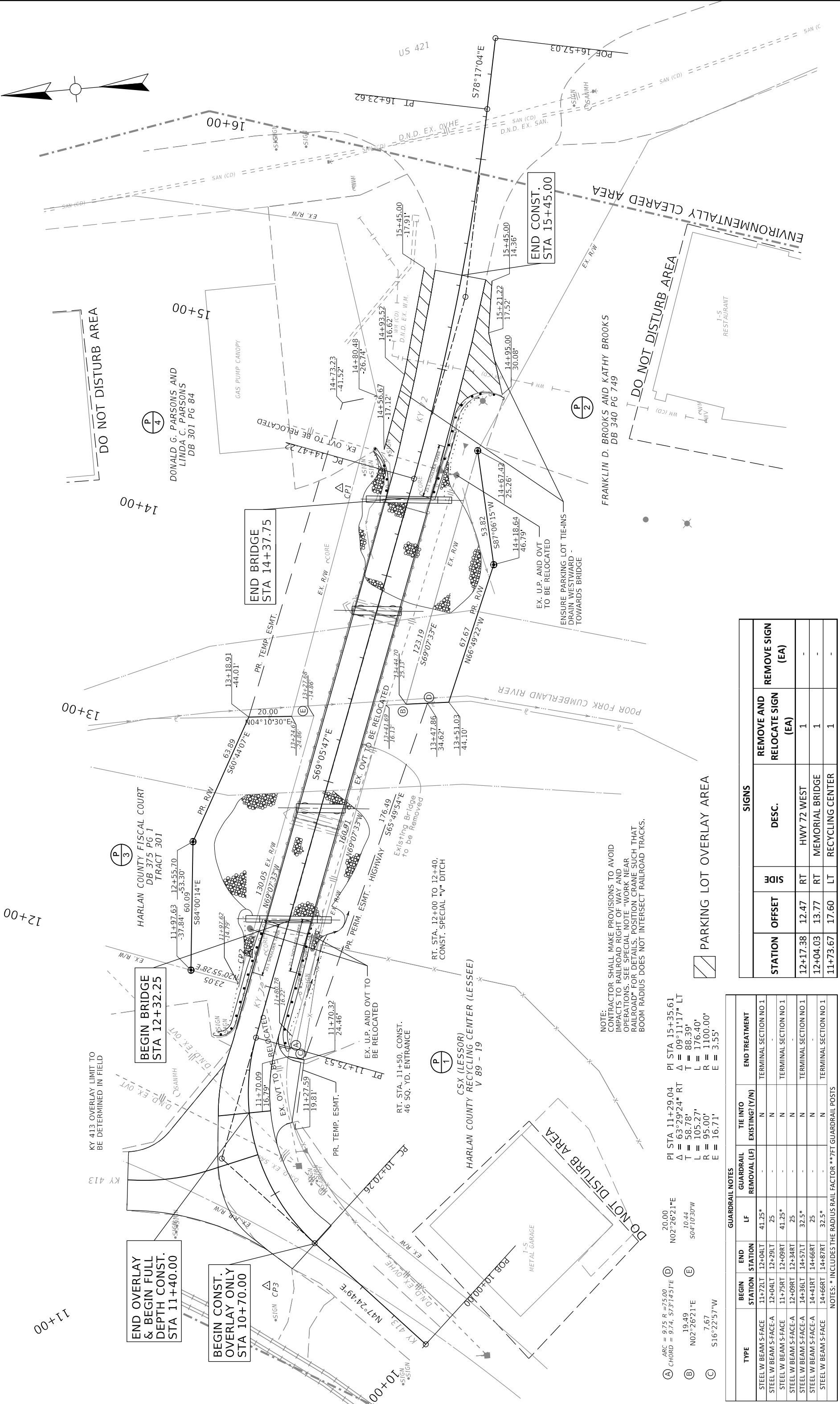
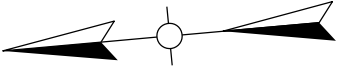
FOR BRIDGE SHEETS S1-S16

DATE: 10-24-2024

ITEM NO. 11-10196.00

COUNTY OF HARLAN

SHEET NO. R1



KY 413 OVERLAY LIMIT TO BE DETERMINED IN FIELD

END OVERLAY & BEGIN FULL DEPTH CONST. STA 11+40.00

BEGIN CONST. OVERLAY ONLY STA 10+70.00

BEGIN BRIDGE STA 12+32.25

END BRIDGE STA 14+37.75

END CONST. STA 15+45.00

- Ⓐ ARC = 9.75 R = 75.00 CHORD = 9.74, 573°14'51"E
- Ⓑ 19.49 N02°26'21"E
- Ⓒ 7.67 S16°22'57"W
- Ⓓ 20.00 N02°26'21"E
- Ⓔ 10.44 S04°10'30"W
- Ⓘ PI STA 11+29.04 Δ = 63°29'24" RT T = 58.78' L = 105.27' R = 95.00' E = 16.71'
- Ⓩ PI STA 15+35.61 Δ = 09°11'17" LT T = 88.39' L = 176.40' R = 1100.00' E = 3.55'

NOTE: CONTRACTOR SHALL MAKE PROVISIONS TO AVOID IMPACTS TO RAILROAD RIGHT OF WAY AND OPERATIONS. SEE SPECIAL NOTE "WORK NEAR RAILROAD" FOR DETAILS. POSITION CRANE SUCH THAT BOOM RADIUS DOES NOT INTERSECT RAILROAD TRACKS.

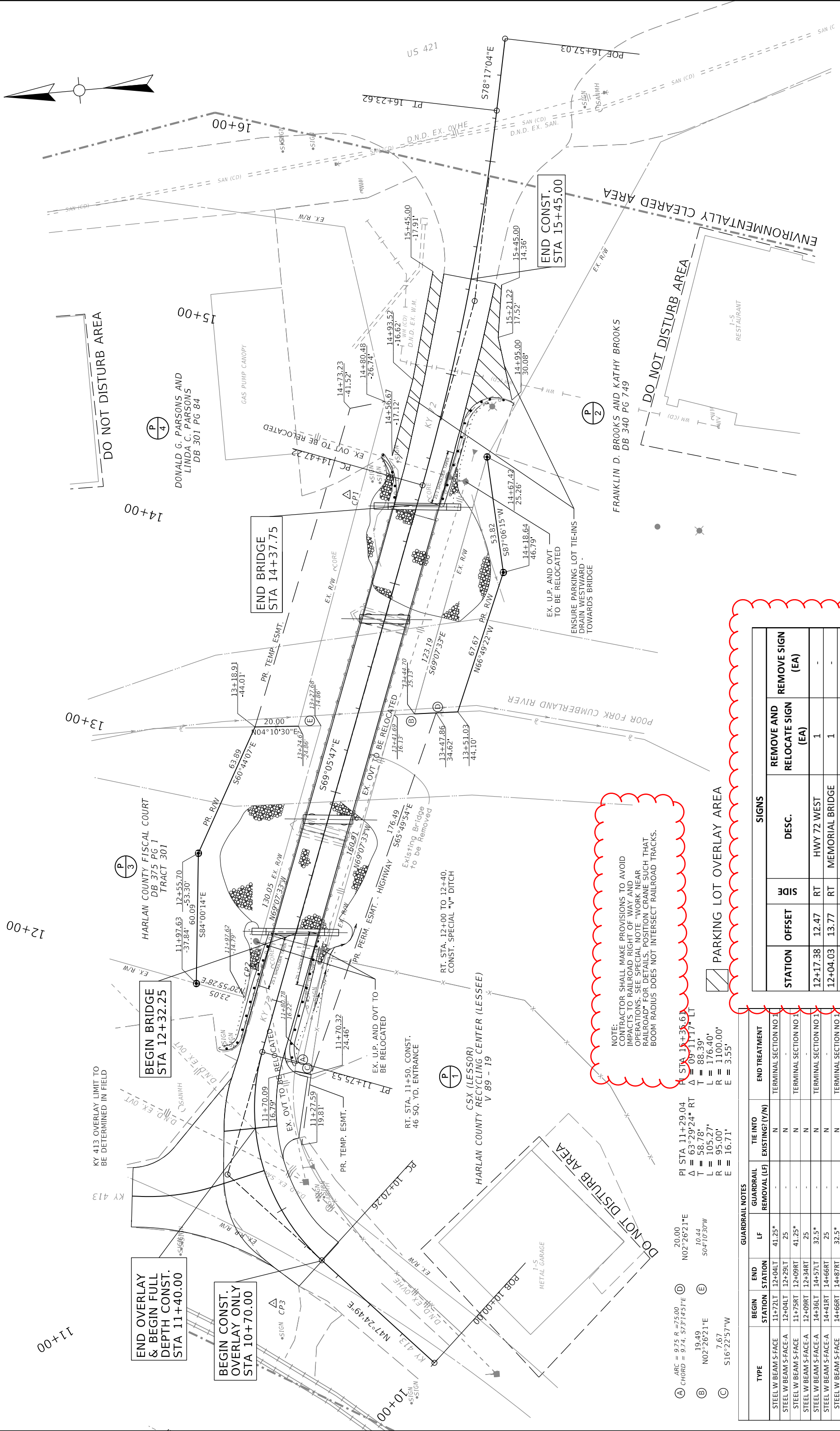
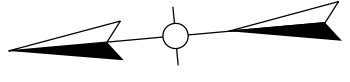
PARKING LOT OVERLAY AREA

GUARDRAIL NOTES				
TYPE	BEGIN STATION	END STATION	TIE INTO EXISTING? (Y/N)	END TREATMENT
STEEL W BEAM S-FACE	11+72LT	12+04LT	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	12+04LT	12+29LT	N	-
STEEL W BEAM S-FACE	11+75RT	12+09RT	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	12+09RT	12+34RT	N	-
STEEL W BEAM S-FACE-A	14+36LT	14+57LT	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	14+41RT	14+66RT	N	-
STEEL W BEAM S-FACE	14+66RT	14+87RT	N	TERMINAL SECTION NO 1

NOTES: \* INCLUDES THE RADIUS RAIL FACTOR \*\* 7FT GUARDRAIL POSTS

SIGNS					
STATION	OFFSET	SR	DESC.	REMOVE AND RELOCATE SIGN (EA)	REMOVE SIGN (EA)
12+17.38	12.47	RT	HWY 72 WEST	1	-
12+04.03	13.77	RT	MEMORIAL BRIDGE	1	-
11+73.67	17.60	LT	RECYCLING CENTER	1	-





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BEGIN CONST. OVERLAY ONLY STA 10+70.00

END BRIDGE STA 14+37.75

END CONST. STA 15+45.00

BEGIN BRIDGE STA 12+32.25

NOTE: CONTRACTOR SHALL MAKE PROVISIONS TO AVOID IMPACTS TO RAILROAD RIGHT OF WAY AND OPERATIONS. SEE SPECIAL NOTE "WORK NEAR RAILROAD" FOR DETAILS. POSITION CRANE SUCH THAT BOOM RADIUS DOES NOT INTERSECT RAILROAD TRACKS.

PARKING LOT OVERLAY AREA

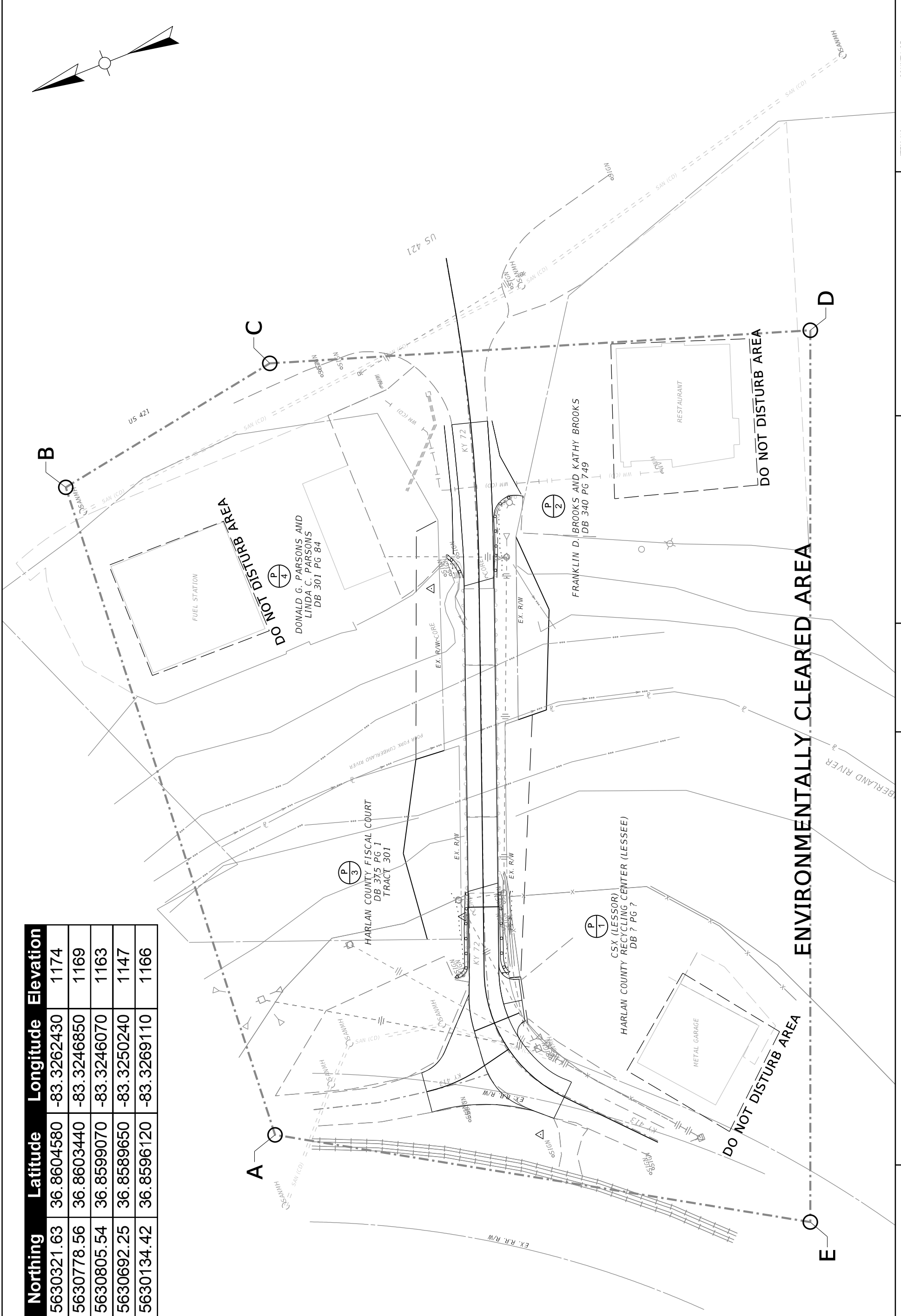
- (A) ARC = 9.75 R = 75.00 CHORD = 9.74 S73°14'51"E
- (B) 19.49 N02°26'21"E
- (C) 7.67 S16°22'57"W
- (D) 20.00 N02°26'21"E
- (E) 10.44 S04°10'30"W

GUARDRAIL NOTES		GUARDRAIL REMOVAL (LF)	TIE INTO EXISTING? (Y/N)	END TREATMENT
STEEL W BEAM S-FACE	11+72LT	41.25*	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	12+04LT	25	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	11+75RT	41.25*	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	12+09RT	25	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	14+36LT	32.5*	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE-A	14+41RT	25	N	TERMINAL SECTION NO 1
STEEL W BEAM S-FACE	14+66RT	32.5*	N	TERMINAL SECTION NO 1

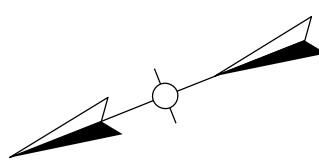
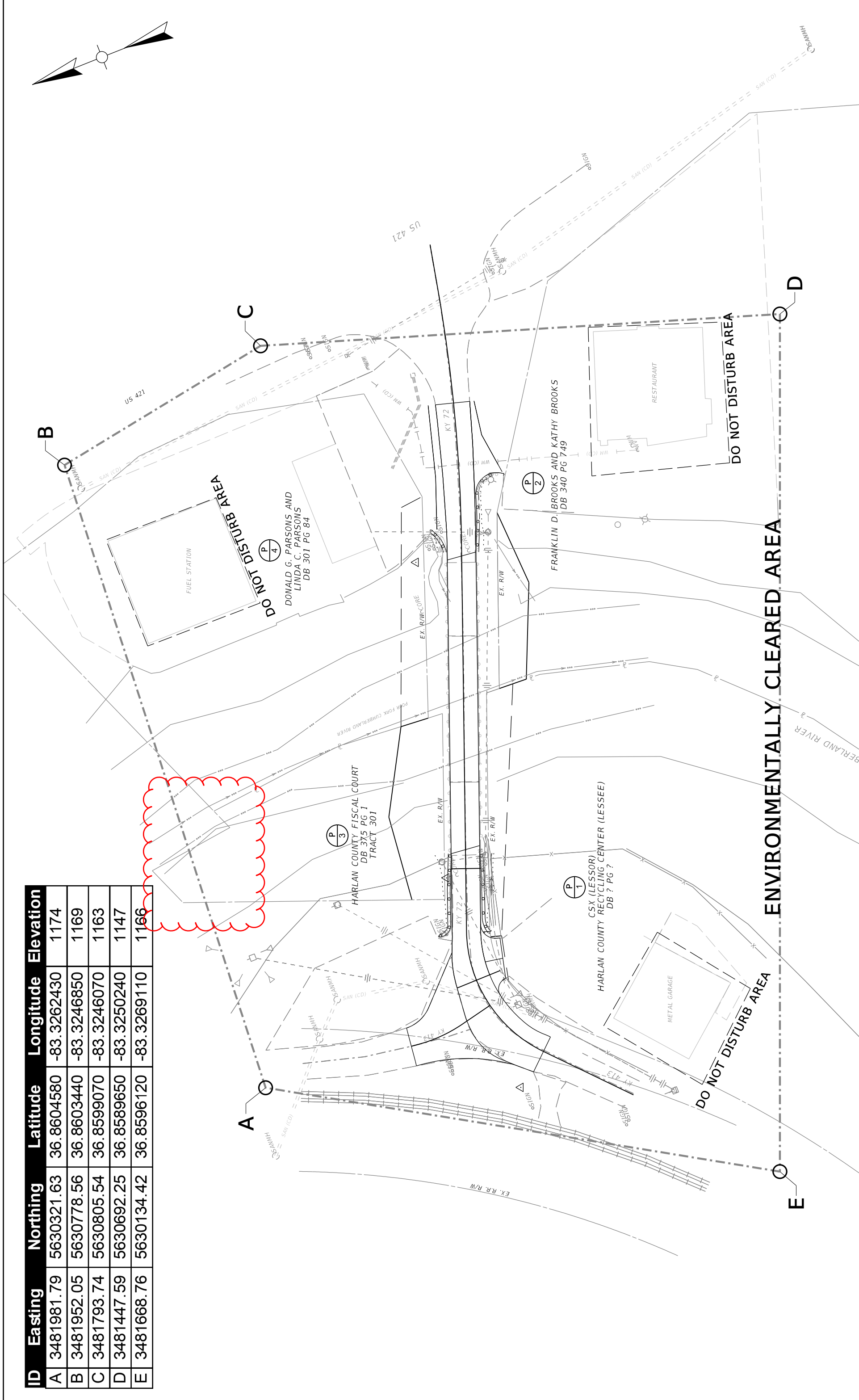
NOTES: \* INCLUDES THE RADIUS RAIL FACTOR \*\* 7FT GUARDRAIL POSTS

SIGNS					
STATION	OFFSET	SR	DESC.	REMOVE AND RELOCATE SIGN (EA)	REMOVE SIGN (EA)
12+17.38	12.47	RT	HWY 72 WEST	1	-
12+04.03	13.77	RT	MEMORIAL BRIDGE	1	-
11+73.67	17.60	LT	RECYCLING CENTER	1	-

ID	Easting	Northing	Latitude	Longitude	Elevation
A	3481981.79	5630321.63	36.8604580	-83.3262430	1174
B	3481952.05	5630778.56	36.8603440	-83.3246850	1169
C	3481793.74	5630805.54	36.8599070	-83.3246070	1163
D	3481447.59	5630692.25	36.8589650	-83.3250240	1147
E	3481668.76	5630134.42	36.8596120	-83.3269110	1166



ID	Easting	Northing	Latitude	Longitude	Elevation
A	3481981.79	5630321.63	36.8604580	-83.3262430	1174
B	3481952.05	5630778.56	36.8603440	-83.3246850	1169
C	3481793.74	5630805.54	36.8599070	-83.3246070	1163
D	3481447.59	5630692.25	36.8589650	-83.3250240	1147
E	3481668.76	5630134.42	36.8596120	-83.3269110	1166





**SPECIFICATIONS:** References to the Specifications are to the current edition of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction including any current supplemental Specifications. All references to the AASHTO Specifications are to the current edition of the AASHTO LRFD Bridge Design Specifications.

**DESIGN LOAD:** This bridge is designed for KYHL-93 live load, (i.e. 1.25xAASHTO HL93 live load). This bridge is designed for a future wearing surface of 15 psf.

**MATERIALS DESIGN SPECIFICATIONS:**

For Class "A" Reinforced Concrete       $f_c = 3500$  psi  
For Class "AA" Reinforced Concrete     $f_c = 4000$  psi  
For Steel Reinforcement                  $f_y = 60000$  psi  
For Steel Piles                                 $f_y = 50000$  psi

**PREFORMED CORK EXPANSION JOINT MATERIAL:** Preformed Cork Expansion Joint Material shall conform to subsection 807.04.02 (Type II) of the Kentucky Department of Highways Standard Specifications. Cost of preformed cork is to be included in the unit bid price for prestressed beams.

**CONCRETE:** Class "AA" Concrete is to be used throughout the superstructure and in the portions of the substructure above the tops of caps. Class "A" concrete is to be used in the substructure below the caps. Prestressed beam concrete shall be in accordance with the plans and specifications.

**REINFORCEMENT:** Dimensions shown from the face of concrete to bars are to center of bars unless otherwise shown. Clear distance to face of concrete is 2" unless otherwise noted. Spacing of bars is from center to center of bars. Any reinforcing bars designated by suffix "e" in the plans shall be epoxy coated in accordance with section 811.10 of the Standard Specifications. Any reinforcing bars designated by suffix "s" in a Bill of Reinforcement shall be considered a stirrup for purposes of bend diameters.

**CONSTRUCTION IDENTIFICATION:** Apply stencils for structures in accordance with Standard Drawing BGX-006, c.e. The Contractor shall furnish all plans, equipment, and labor necessary to do the work for which no direct payment will be made.

**BEVELED EDGES:** All exposed edges shall be beveled  $\frac{3}{4}$ " unless otherwise shown.

**SLOPE PROTECTION:** Slope Protection at abutments shall be dry cyclopean stone riprap in accordance with the plans and specifications. Geotextile Fabric. Class 1 shall be placed between the embankment and the slope protection in accordance with Standard Specifications 214 and 843. Payment for Geotextile Fabric. Class 1, shall be considered incidental to the unit price bid for Dry Cyclopean Stone Riprap.

**COMPLETION OF THE STRUCTURE:** The Contractor is required to complete the structure in accordance with the plans and specifications. Material, labor, or construction operations not otherwise specified, are to be included in the bid item most appropriate to the work involved and otherwise considered incidental to the Contract. This may include cofferdams, shoring, excavations, backfilling, removal of all or parts of existing structures, phase construction, incidental materials, labor, or anything else required to complete the structure.

**SHOP DRAWINGS:** The fabricator shall submit all required shop plans, by email to SHOP\_048800138N@docs.e-builder.net, for review. These submissions shall depict the shop plans in .PDF format, as either 11"x17" or 22"x36" sheets. When any changes to the design plans are proposed, the shop drawings shall identify the proposed changes with revision clouds and notes. Designers will make review comments on these electronic submissions as needed and, if required, shall return them to the fabricator for corrections and resubmittal. Upon acceptable reconciliation of all comments, files shall be sent to the Bridge Program GEC Shop Plan Coordinator for distribution. Only plans submitted directly to the Shop Plan Coordinator will be distributed. Additionally, only plans electronically stamped "Distributed by The Bridge Program GEC Team" are to be used for fabrication.

The Contractor should allow for a minimum of two weeks for the review of prestressed beams shop drawings in accordance with Specification Section 105.02. Structural steel review cycle durations will be in accordance with Specification Section 607.03.01

**UTILITIES:** Before beginning work, locate all existing utilities. Consider location of utilities shown on the drawings to be approximate and for informational purposes only. The Department does not warrant the locations and assumes no responsibility for the accuracy or completeness. The Contractor must make his own determination. Except as shown on the Plans, work around and do not disturb existing utilities.

**VERIFYING FIELD CONDITIONS:** The contractor shall field verify all dimensions before ordering material. New material that is unsuitable because of variations in the existing structure shall be replaced at the contractor's expense.

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**SUPERSTRUCTURE SLAB:** The superstructure slab shall be poured continuously from end to end of slab before the concrete is allowed to set. The Contractor may change the pouring sequence with the written approval of the Engineer.

**SLAB THICKNESS:** The slab thickness shown in the proposed typical section is taken at mid-span. Due to beam camber and in order to achieve the design profile, the slab will be approximately 1" thicker at the supports. No additional payment will be made for any additional slab concrete due to beam camber in excess of the Designer's assumption. No additional concrete above plan quantity should be placed without the approval of the Engineer. If applicable, guardrail inserts are to be placed in such a way that accommodates tolerances for guardrail height.

**MASTIC TAPE:** Apply mastic tape at bridge ends in accordance with Standard Drawing BGX-022, c.e. The Contractor shall furnish all plans, equipment, and labor necessary to do the work for which no direct payment will be made.

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**ARMORED EDGE:** Fabricate armored edge to match cross slope and parabolic crown at each end of bridge.

**ELASTOMERIC BEARING PADS:** Elastomeric Bearing Pads shall conform to the AASHTO LRFD Bridge Construction Specifications, Section 18.

Bearings shall be Low Temperature Grade 3 with a durometer hardness of 50 and shall be subjected to the load testing requirements corresponding to Design Method A. The cost of bearing pads is to be included in the unit price per linear foot for the Precast Beams.

**FOUNDATION PREPARATION:** Foundation excavations should be properly braced/shored to provide adequate safety to persons working in or around excavations. Bracing should be performed in accordance with applicable federal, state, and local guidelines.

Temporary shoring, sheeting, cofferdams, and/or dewatering methods may be required to facilitate foundation construction. It should be anticipated that groundwater will be encountered at foundation locations within the flood plain.

Temporary shoring, bracing, sheeting, cofferdams, and dewatering shall be included in the Lump Sum Bid for Foundation Preparation.

**SPIRAL COLUMN TIES:** Splices for spirals where desired by the contractor shall be made with a minimum of one and one-half turns of spiral. No additional payment will be made for these splices, and the cost will be considered incidental to the cost of the developed length of spiral shown on the plans. Spiral reinforcement shall meet the requirements of sub-section 811.02.01 of the specifications.

Dimension "A" shown in the bill of reinforcement for spirals is the distance from top of drilled shaft to bottom layer of reinforcement in the pier cap. The number of turns shown is the length divided by pitch, plus 3 turns (total number of closed coils) expressed to the nearest whole number. One and one-half closed coils shall be provided at the ends of each spiral unit. 4 channel, tee, or angle spacers, weighing approximately 0.8 lbs. per linear foot of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. Weight of spacers and spiral reinforcement is included in the estimate of quantities for each pier.

**STRUCTURE GRANULAR BACKFILL:** Materials for Structure Granular Backfill shall be in accordance with Section 805 of the Specifications. See Special Provision 69 for Embankment at Bridge End Bent Structures.

**CONCRETE SEALER:** Apply concrete sealer in accordance with the Special Note for Concrete Sealing.

**PIILING:** Piling shall be driven to practical refusal as defined on the pile record sheet. Test piles shall be driven where designated on the plans to determine the length of pile required. All test piles shall be accurately located so that they may be used in the finished structure.

**PILE POINTS:** Provide pile points for all end bearing piles. Pile points shall be in accordance with Section 604 of the Specifications and of the type shown on the pile record sheet.

**BEFORE YOU DIG:** The Contractor shall be responsible for all requirements and conformation with the Underground Facility Damage Prevention Act of 1994. The Contractor will be responsible for locating any utilities on this project. All underground utilities shall be located prior to construction. Any utilities disturbed or damaged as a result of the Contractor's operations will be repaired to the satisfaction of the utility owner at the Contractor's expense. The Contractor is advised to call (800) 752-6007 a minimum of two working days prior to excavation for information on the location of some, but not necessarily all underground utilities.

**DRIP STRIP:** When metal bridge railing is proposed without a curb, install drip strips in accordance with the Special Note for Structures with over the Side Drainage and Bridge Rail.



COMMONWEALTH OF KENTUCKY  
DEPARTMENT OF HIGHWAYS  
TEAM KENTUCKY  
TRANSPORTATION

OpenRoads Designer v10.16.2.267

USER: sbmontgomery

DATE PLOTTED: 8/1/2024

REVISION	DATE



PREPARED BY  
DATE: 9/14/2023  
DESIGNED BY: Shane Montgomery  
DETAILED BY: Greg Crank

CHECKED BY  
Lee Carlisle  
Lee Carlisle

GENERAL NOTES  
CROSSING  
POOR FORK CUMBERLAND RIVER

ROUTE  
KY 72

ITEM NO.  
11-10196  
SHEET NO.  
S1

COUNTY OF  
HARLAN  
DRAWING NUMBER  
28791

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**SLAB THICKNESS:** The slab thickness shown in the proposed typical section is taken at mid-span. Due to beam camber and in order to achieve the design profile, the slab will be approximately 1" thicker at the supports. No additional payment will be made for any additional slab concrete due to beam camber in excess of the Designer's assumption. No additional concrete above plan quantity should be placed without the approval of the Engineer. If applicable, guardrail inserts are to be placed in such a way that accommodates tolerances for guardrail height.

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**ELASTOMERIC BEARING PADS:** Elastomeric Bearing Pads shall conform to the AASHTO LRFD Bridge

Construction Specifications Section 10. Beings shall be Low Temperature Grade 3 with a durometer hardness of 50 and shall be subjected to the load testing requirements corresponding to Design Method A. The cost of bearing pads is to be included in the unit price per linear foot for the Precast Beams.

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**SPIRAL CONNECTIONS:** Splices for spirals where desired by the contractor shall be made with a minimum of one and one-half turns of spiral. No additional payment will be made for these splices, and the cost will be considered incidental to the cost of the developed length of spiral shown on the plans. Spiral reinforcement shall meet the requirements of sub-section 811.02.01 of the specifications.

Dimension "A" shown in the bill of reinforcement for spirals is the distance from top of drilled shaft to bottom layer of reinforcement in the pier cap. The number of turns shown is the length divided by pitch, plus 3 turns (total number of closed coils) expressed to the nearest whole number. One and one-half closed coils shall be provided at the ends of each spiral unit. 4 channel, tee, or angle spacers, weighing approximately 0.8 lbs. per linear foot of spacer, shall be provided for each spiral unit. They shall be equally spaced along the periphery of the coil. Weight of spacers and spiral reinforcement is included in the estimate of quantities for each pier.

**STRUCTURE GRANULAR BACKFILL:** Materials for Structure Granular Backfill shall be in accordance with Section 805 of the Specifications. See Special Provision 69 for Embankment at Bridge End Bent Structures.

**CONCRETE SEALERS:** Apply concrete sealer in accordance with the Special Note for Concrete Sealing.

**PIILING:** Piling shall be driven to practical refusal as defined on the pile record sheet. Test piles shall be driven where designated on the plans to determine the length of pile required. All test piles shall be accurately located so that they may be used in the finished structure.

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COMMONWEALTH OF KENTUCKY  
DEPARTMENT OF HIGHWAYS  
TEAM KENTUCKY

REVISION

DATE

PREPARED BY



DATE: 9/14/2023

DESIGNED BY: Shane Montgomery

CHECKED BY

Lee Carlisle

DETAILED BY: Greg Crank

Lee Carlisle

GENERAL NOTES

CROSSING

POOR FORK CUMBERLAND RIVER

ROUTE

KY 72

ITEM NO.

11-10196

COUNTY OF

HARLAN

SHEET NO.

S1

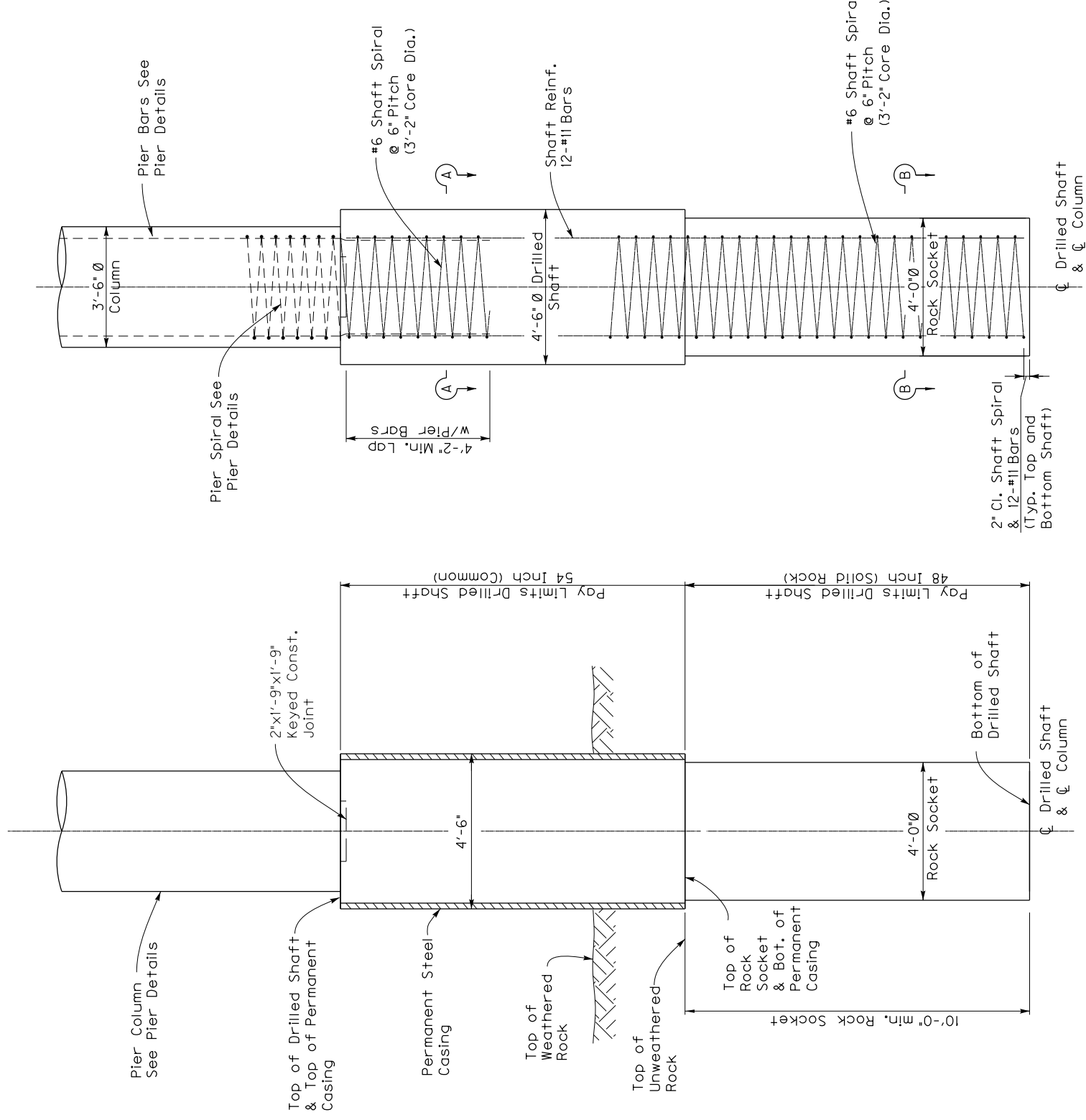
DRAWING NUMBER

28791



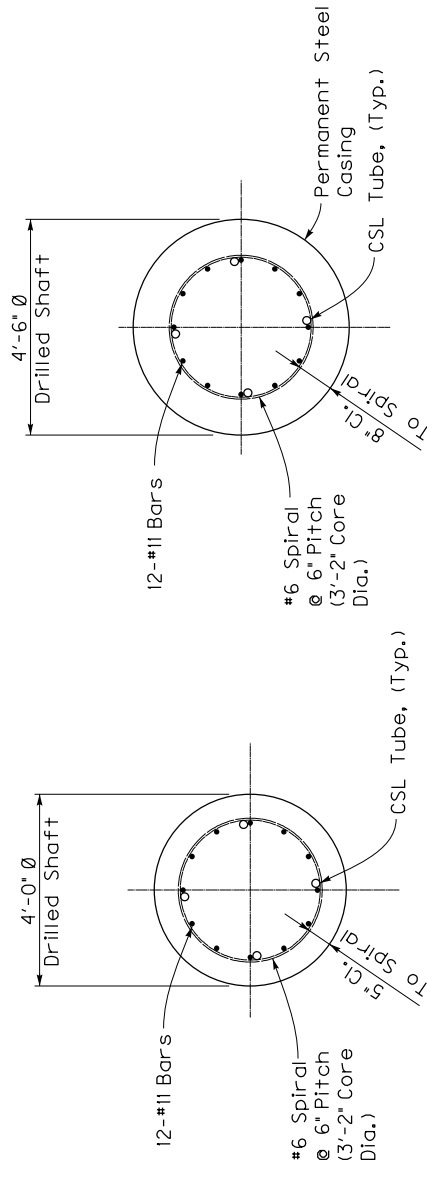
## DRILLED SHAFT NOTES

1. Solid rock excavation will be required for the installation of the drilled shaft foundations.
2. Drilled shafts shall be constructed in accordance with the Special Note for Drilled Shafts, current edition. Include all costs (materials, labor, and equipment) associated with the drilled shafts in the unit price bid for Drilled Shaft, Common or Solid Rock, as applicable. Materials shall include spiral and longitudinal reinforcement, reinforcement splices and mechanical couplers, concrete, and temporary or permanent casing as needed.
3. Permanent casing is required from the top of shaft to the top of unweathered bedrock. Use an uncased rock socket that is 6 inches smaller than the inside of the permanent casing. Permanent Casing is incidental to the unit bid price for "Drilled Shaft - 54-inch (Common)" or "Drilled Shaft - 48-inch (Solid Rock)" as applicable.
4. The Contractor shall be responsible for providing subsurface exploration drilling during construction to finalize the drilled shaft tip elevations. Additional drilling will be required at each drilled shaft location in accordance with the Special Note for Drilled Shafts, current edition. For estimating the amount of Rock Coring at this location, we recommend that the subsurface exploration extend a minimum depth of three (3) shaft diameters, but not less than 10 feet, below the bottom of the anticipated tip elevation of each drilled shaft. Note that the depth of the rock cores may need to be extended if poor quality rock or coal seams are encountered within two shaft diameters of the anticipated tip elevation.
5. Elevations for the Bottom of Drilled Shaft-Common, Bottom of Permanent Casing, Top of Drilled Shaft-Solid Rock and Bottom of Drilled Shaft-Solid Rock will be determined by the Division of Structural Design, Geotechnical Branch, based on the results of the Rock Sounding and Rock Coring. Quantities for the Drilled Shafts shown on the title sheet are estimates and actual installed and paid quantities will be determined after the Rock Sounding and Rock Coring is complete in accordance with the Special Note for Drilled Shafts, current edition.
6. Integrity testing of drilled shafts is required. See the Special Note for Non-Destructive Testing of Drilled Shafts.



## DRILLED SHAFT DETAIL

## DRILLED SHAFT REINFORCEMENT DETAIL



### SECTION A-A

### SECTION B-B

(Rock Socket)



COMMONWEALTH OF KENTUCKY  
DEPARTMENT OF HIGHWAYS

REVISION	DATE



PREPARED BY  
DATE: 9/14/2023  
DESIGNED BY: Shane Montgomery  
CHECKED BY: Lee Carlisle  
DETAILS BY: Greg Crank  
Shane Montgomery

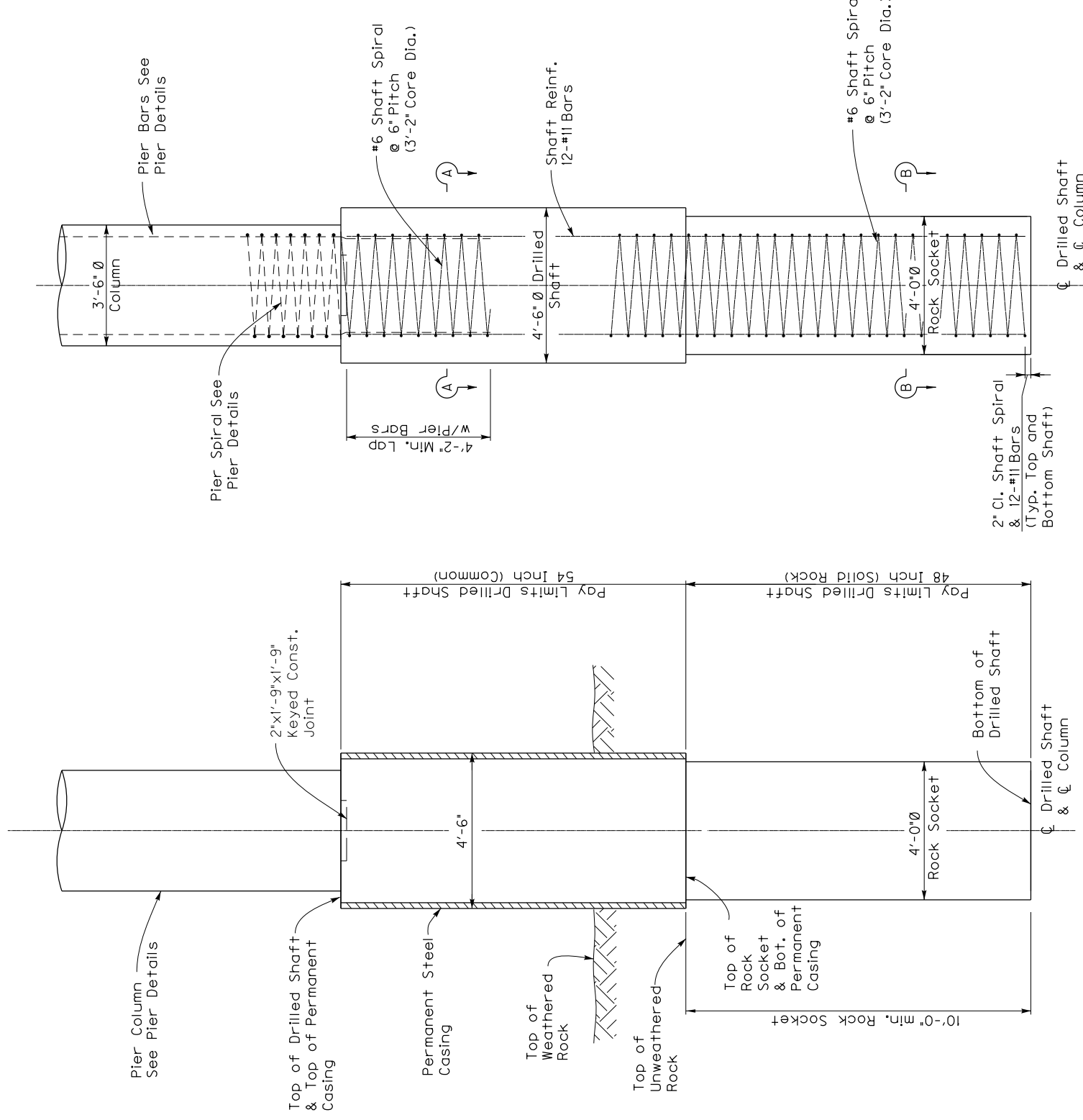
DRILLED SHAFT DETAILS  
CROSSING  
POOR FORK CUMBERLAND RIVER

ROUTE  
KY 72

ITEM NO.  
11-10196  
DRAWING NUMBER  
HARLAN  
COUNTY OF  
SHEET NO.  
54  
DRAWING NUMBER  
28791

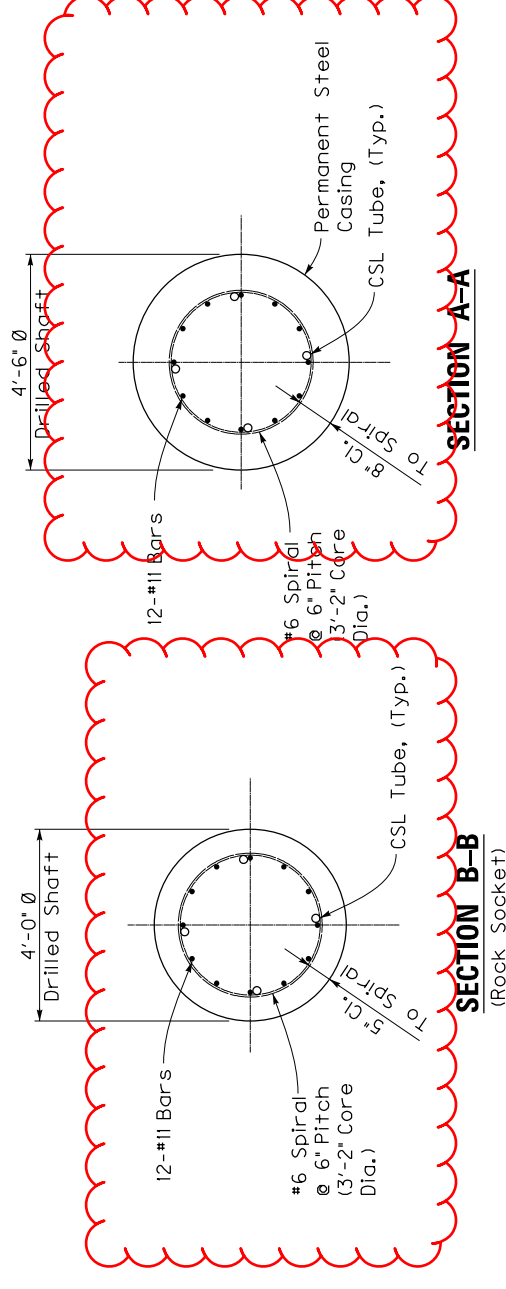
## DRILLED SHAFT NOTES

1. Solid rock excavation will be required for the installation of the drilled shaft foundations.
2. Drilled shafts shall be constructed in accordance with the Special Note for Drilled Shafts, current edition. Include all costs (materials, labor, and equipment) associated with the drilled shafts in the unit price bid for Drilled Shaft, Common or Solid Rock, as applicable. Materials shall include spiral and longitudinal reinforcement, reinforcement splices and mechanical couplers, concrete, and temporary or permanent casing as needed.
3. Permanent casing is required from the top of shaft to the top of unweathered bedrock. Use an uncased rock socket that is 6 inches smaller than the inside of the permanent casing. Permanent Casing is incidental to the unit bid price for "Drilled Shaft - 54-inch (Common)" or "Drilled Shaft - 48-inch (Solid Rock)" as applicable.
4. The Contractor shall be responsible for providing subsurface exploration drilling during construction to finalize the drilled shaft tip elevations. Additional drilling will be required at each drilled shaft location in accordance with the Special Note for Drilled Shafts, current edition. For estimating the amount of Rock Coring at this location, we recommend that the subsurface exploration extend a minimum depth of three (3) shaft diameters, but not less than 10 feet, below the bottom of the anticipated tip elevation of each drilled shaft. Note that the depth of the rock cores may need to be extended if poor quality rock or coal seams are encountered within two shaft diameters of the anticipated tip elevation.
5. Elevations for the Bottom of Drilled Shaft-Common, Bottom of Permanent Casing, Top of Drilled Shaft-Solid Rock and Bottom of Drilled Shaft-Solid Rock will be determined by the Division of Structural Design, Geotechnical Branch, based on the results of the Rock Sounding and Rock Coring. Quantities for the Drilled Shafts shown on the title sheet are estimates and actual installed and paid quantities will be determined after the Rock Sounding and Rock Coring is complete in accordance with the Special Note for Drilled Shafts, current edition.
6. Integrity testing of drilled shafts is required. See the Special Note for Non-Destructive Testing of Drilled Shafts.



## DRILLED SHAFT DETAIL

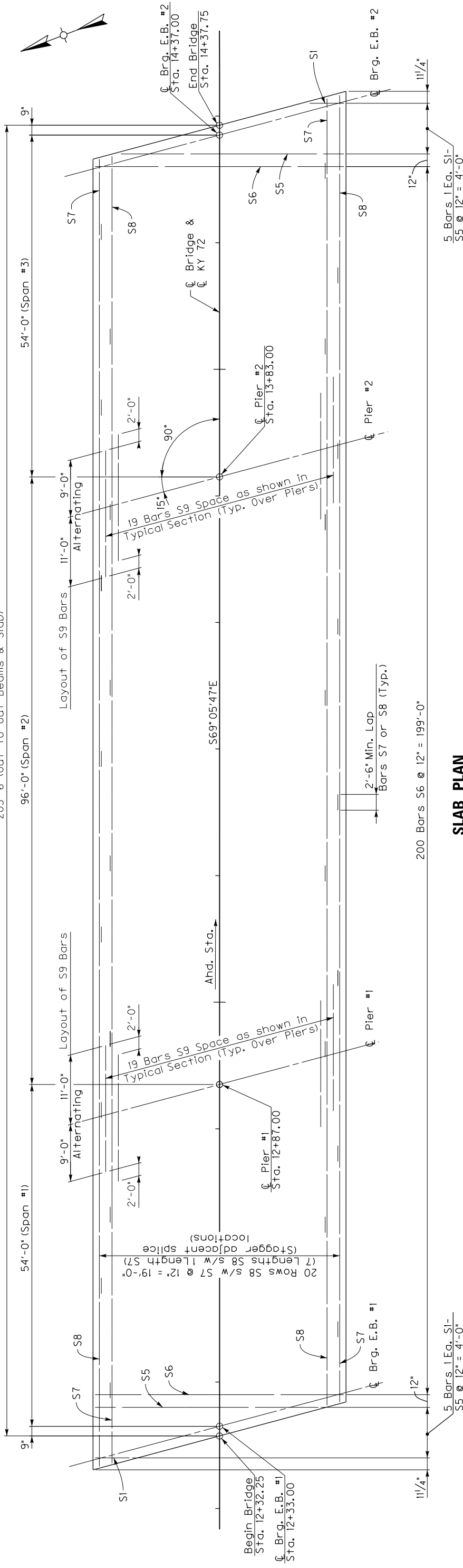
## DRILLED SHAFT REINFORCEMENT DETAIL



205'-6" (Out to Out Beams & Slab)

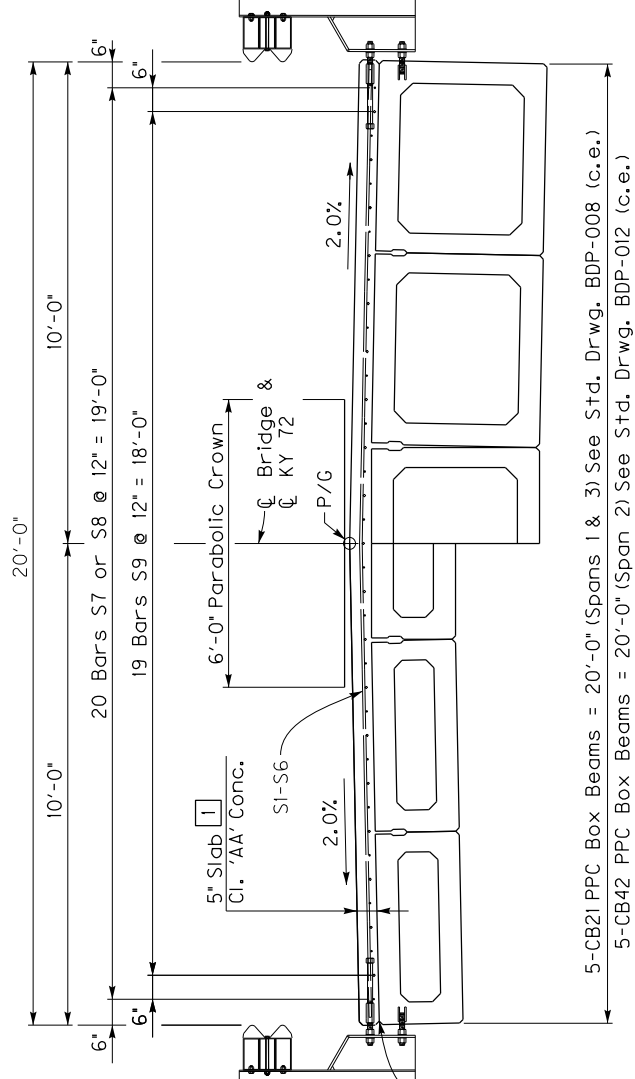
96'-0" (Span #2)

54'-0" (Span #3)



**SLAB PLAN**

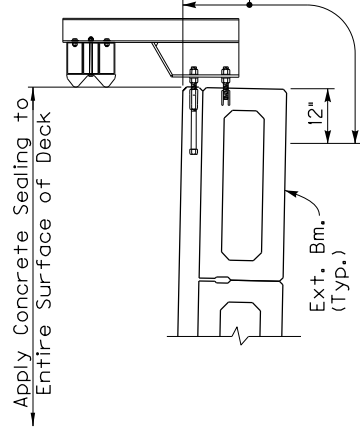
N. T. S.



**TYPICAL DECK SECTION**

MARK	TYPE	SIZE	NO.	LENGTH		LOCATION
				FT.	IN.	
S1e	Str	#5	2	2	8	SLAB
S2e	Str	#5	2	6	5	
S3e	Str	#5	2	10	2	
S4e	Str	#5	2	13	11	
S5e	Str	#5	2	17	8	
S6e	Str	#5	200	19	8	
S7e	Str	#5	20	12	8	
S8e	Str	#5	140	30	0	
S9e	Str	#5	38	20	0	SLAB

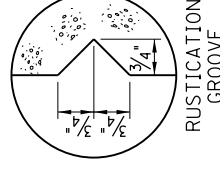
Note:  
 Use 2" min. clearance for all reinforcement unless noted otherwise.  
 All reinforcement designated with suffix "e" shall be epoxy coated.



**CONCRETE SEALING DETAIL**

Applied in the field. See General Notes.

Bridge Rail (Typ.), see Sheet S16.  
 Drip Strip not shown for clarity. See Special Note for Structures With Over the Side Drainage and Bridge Rail.



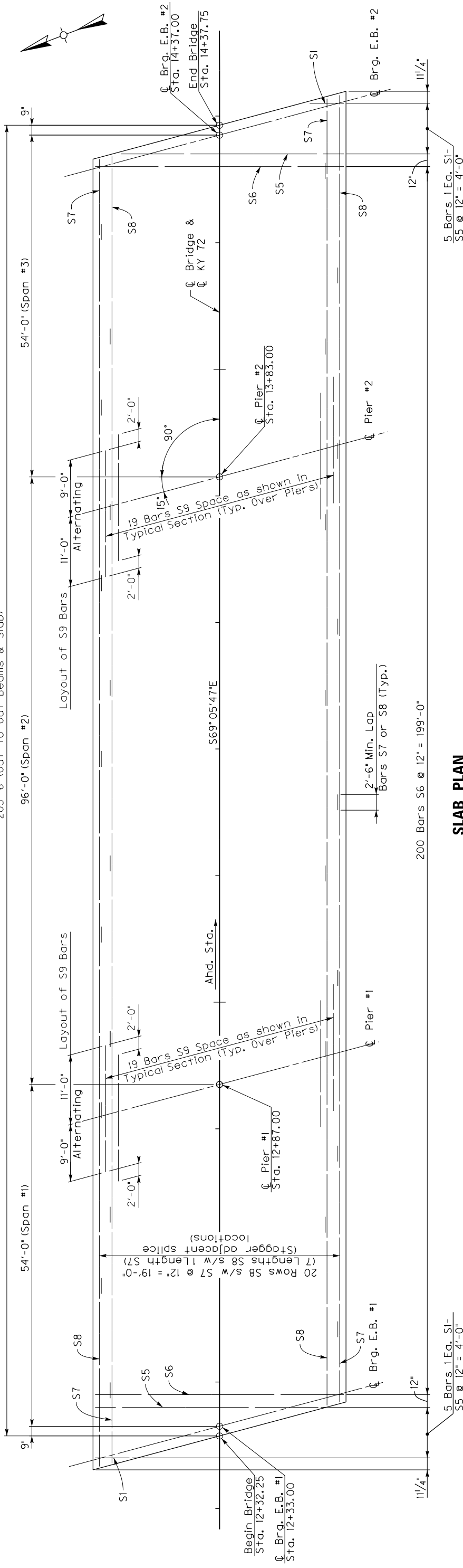
Note: Contrary to the standard drawings, the deck is to be continuous over the piers without joints. (Do not allow concrete between the ends of beams)

[1] Note: Contrary to the Standard Drawings (5" thickness), the construction elevations will cause the slab to be approximately 6" thick at each end of each span and go to approximately 5" thick at the center of the span 1 & 3, and ~ 5 1/4" at the center of span 2. This is how the quantity of class "AA" concrete was calculated. Any additional concrete required above the plan quantity, due to beam camber being different from the designer's assumptions, is the contractor's responsibility and at no cost to the department.

205'-6" (Out to Out Beams & Slab)

96'-0" (Span #2)

54'-0" (Span #3)



**SLAB PLAN**

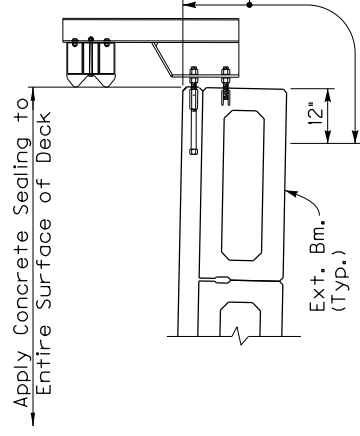
N. T. S.

200 Bars S6 @ 12" = 199'-0"

5 Bars I.Ea. S1-S5 @ 12" = 4'-0"

MARK	TYPE	SIZE	NO.	LENGTH		LOCATION
				FT.	IN.	
S1e	Str	#5	2	2	8	SLAB
S2e	Str	#5	2	6	5	
S3e	Str	#5	2	10	2	
S4e	Str	#5	2	13	11	
S5e	Str	#5	2	17	8	
S6e	Str	#5	200	19	8	
S7e	Str	#5	20	12	8	
S8e	Str	#5	140	30	0	
S9e	Str	#5	38	20	0	SLAB

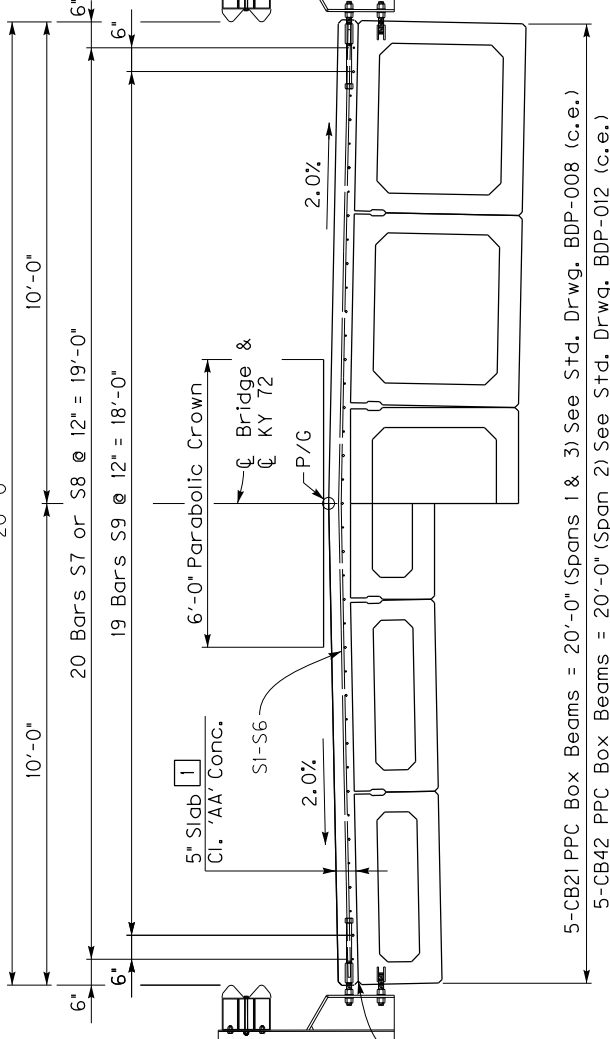
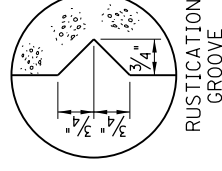
Note:  
 Use 2" min. clearance for all reinforcement unless noted otherwise.  
 All reinforcement designated with suffix "e" shall be epoxy coated.



**CONCRETE SEALING DETAIL**

Applied in the field. See General Notes.

Bridge Rail (Typ.), see Sheet S16.  
 Drip Strip not shown for clarity. See Special Note for Structures With Over the Side Drainage and Bridge Rail.



**TYPICAL DECK SECTION**

Note: Contrary to the standard drawings, the construction elevations will cause the slab to be approximately 6" thick at each end of each span and go to approximately 5" thick at the center of the span 1 & 3, and ~ 5 1/4" at the center of span 2. This is how the quantity of class "AA" concrete was calculated. Any additional concrete required above the plan quantity, due to beam camber being different from the designer's assumptions, is the contractor's responsibility and at no cost to the department.

Note: Contrary to the standard drawings, the deck is to be continuous over the piers without joints. (Do not allow concrete between the ends of beams)