

	BY	DATE
SURVEY	BARTLETT & WEST - SHANKS	2015
CADD TECHNICIAN	HDR - HORNER	2023
DESIGNERS	HDR - BUTTENOB (ROAD), KOSMICKI (BRIDGE)	2023
SQUAD	BASS (ROAD), PETERSON (BRIDGE)	2023

Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central01\2293301\KA571401rft-05.dgn

INDEX OF SHEETS

1	Title Sheet
2	Signature Seal Sheet
3 - 4	Typical Sections
5	Foundation Treatment & Compaction of Earthwork
6	Salvaged Topsoil
7	General Note
8 - 15	Plans & Profiles
16	Intersection Details
17 - 25	Pavement Details
26	Slope Protection
27 - 34	Inlet and Manhole Details
35	Storm Sewer Profiles
36	Schedule of Inlets and Manholes
37	Underdrains
38 - 49	Guardrail
50	Integral Sidewalk and Retaining Wall
51 - 57	End Sections
58	Pipe Culvert Summary
59 - 72	Bridge No. 35-56-128.97 (171)
73 - 86	Bridge No. 35-56-128.98 (170)
87	Bridge Excavation
88	Standard Pile Details
89	Supports and Spacers for Reinforcing Steel
90	Bridge Berm and Slope Protection
91 - 93	Fencing Plans and Fencing Details
94	Summary of Quantity Sheet
95	Project Surfacing
96 - 104	Temporary Erosion and Pollution Control
105	Seeding
106 - 123	Signing and Pavement Marking
124 - 128	Construction Sequence
129 - 173	Traffic Control
174 - 178	Concrete Safety Barrier (Temporary)
179 - 200	Cross Sections

I-35  
DESIGN DESIGNATION

AADT(2024)	24,000
AADT(2044)	33,000
DHV	9%
D	55%
T	20.5%
V	70 mph
C of A	FULL
Clear Zone	34 Ft.

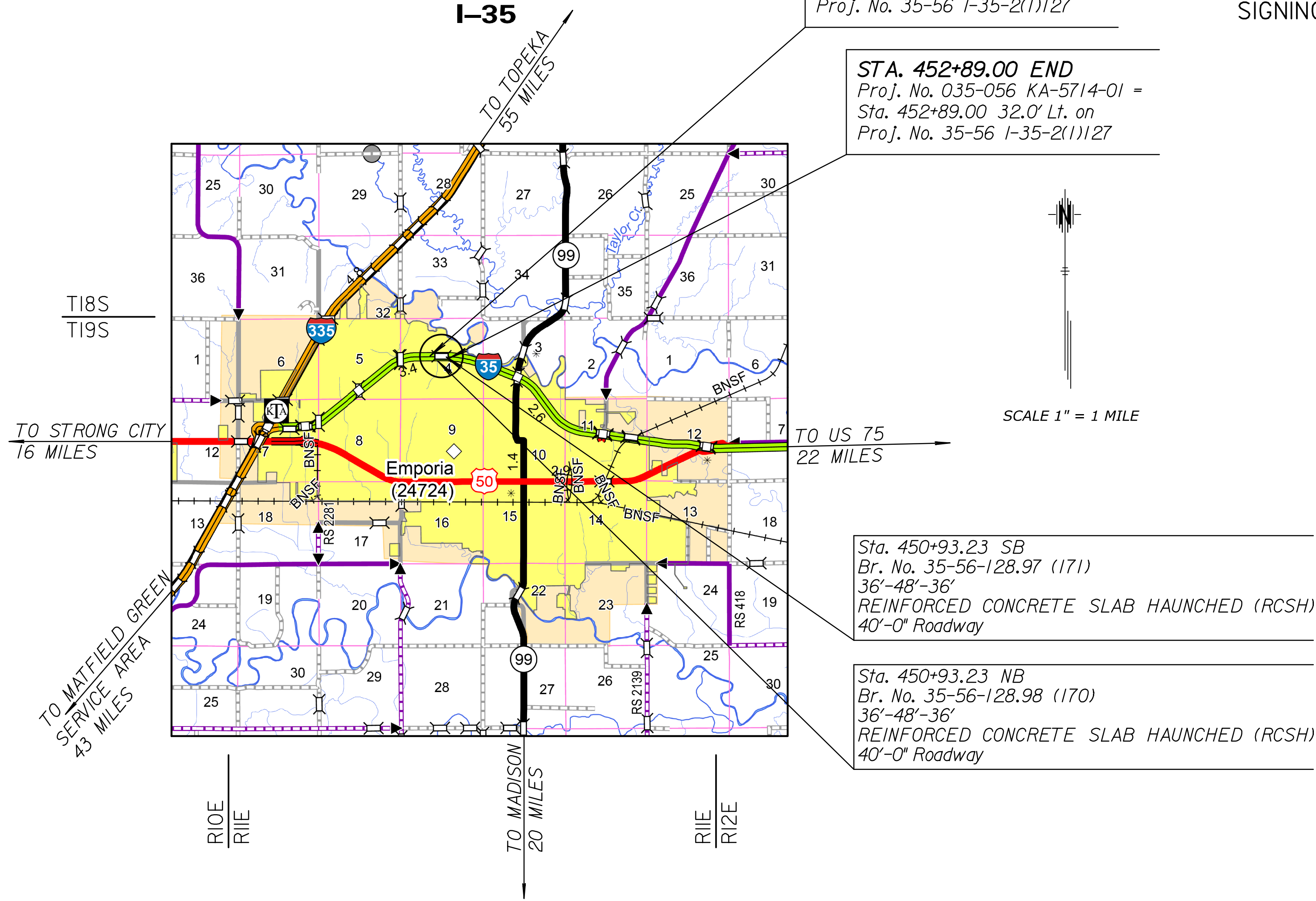
LINCOLN STREET  
DESIGN DESIGNATION

AADT(2024)	-
AADT(2044)	-
DHV	-
D	-
T	-
V	35 mph
C of A	N/A
Clear Zone	7 Ft.

CONVENTIONAL SIGNS

COUNTY LINE .....	=====	CENTER LINE OF PROJECT .....	50 1
CITY LIMITS .....	=====	TERRACE .....	=====
STATE OR NATIONAL LINE .....	=====	CULVERTS .....	=====
TOWNSHIP, SECTION or GRANT LINE .....	=====	DROP INLET & STORM SEWER .....	=====
PROPERTY LINE .....	=====	ACCESS CONTROL .....	=====
HIGHWAY FENCE .....	=====	POWER POLE .....	=====
EXISTING FENCE .....	=====	TELEPHONE POLE .....	=====
GUARDRAIL .....	=====	MARSH .....	=====
CONSTRUCTION LIMITS .....	=====	HEDGE .....	=====
RIGHT OF WAY LINE .....	=====	TREES .....	=====
TRAVELED WAY .....	=====	PROFILE ELEVATION .....	=====
RAILROADS .....	=====	STREAM or CREEK .....	=====

STATE OF KANSAS  
DEPARTMENT OF TRANSPORTATION  
PLAN AND PROFILE OF PROPOSED  
STATE HIGHWAY  
FEDERAL AID PROJECT  
LYON COUNTY



STA. 448+22.00 BEGIN  
Proj. No. 035-056 KA-5714-01 =  
Sta. 448+22.00 32.0' Lt. on  
Proj. No. 35-56 I-35-2(1)127

STA. 452+89.00 END  
Proj. No. 035-056 KA-5714-01 =  
Sta. 452+89.00 32.0' Lt. on  
Proj. No. 35-56 I-35-2(1)127

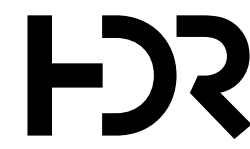
Sta. 450+93.23 SB  
Br. No. 35-56-128.97 (171)  
36'-48'-36'  
REINFORCED CONCRETE SLAB HAUNCHED (RCSH)  
40'-0" Roadway

Sta. 450+93.23 NB  
Br. No. 35-56-128.98 (170)  
36'-48'-36'  
REINFORCED CONCRETE SLAB HAUNCHED (RCSH)  
40'-0" Roadway

KDOT PROJECT NO. 035-056 KA-5714-01  
FEDERAL AID PROJECT NO. BRF-A57(40I)

GRADING AND SURFACING (CONCRETE PAVEMENT)  
BRIDGES  
FENCING  
SEEDING  
SIGNING AND PAVEMENT MARKING

NOTE:  
TRAFFIC SHALL BE CARRIED THROUGH  
PHASED CONSTRUCTION ON TEMPORARY  
CROSSOVERS. SEE SH. NO. 124 - 128  
FOR CONSTRUCTION SEQUENCE  
DETAILS.



PLANS PREPARED AND SUBMITTED BY  
HDR ENGINEERING, INC.

Approved	Nov 08, 2023
Date	
State Transportation Engineer	
By:	Chief, Bureau of Road Design
KANSAS DEPARTMENT OF TRANSPORTATION	



Plotted By: user  
File: c:\working\central\0\43357667\kds7140\lbr71-01.dgn  
Plot Date: 11-07-23

SUMMARY OF QUANTITIES															
Item  Location	Excavation Class III	Concrete		Reinforcing Steel (Grade 60) (Epoxy Coated)	*Piles (Steel) (HPI2x53)	Pre-Drilled Pile Holes	Drilled Shaft (48") (Cased)	Sonic Test (Drilled Shaft) (Set Price) Each	Core Hole (Investigative)	Bridge Backwall Prot. System Sq. Yds.	Abutment Strip Drain Sq. Yds.	Slope Protection (Aggregate) Cu. Yds.	Bridge Deck Grooving Sq. Yds.	Temporary Shoring Lump Sum	Falsework Inspection Lump Sum
	Cu. Yds.	(Grade 4.0) (AE) (SA) Cu. Yds.	(Grade 4.0) (AE) Cu. Yds.	Lbs.	Lin. Ft.	Lin. Ft.	Lin. Ft.		Lin. Ft.						
Abutment No. 1	64	**	-	**	110	80	-	-	-	25	21	157	-	-	-
Pier No. 1	5	**	9.2	1790	-	-	52	-	24	-	-	-	-	-	-
Pier No. 2	5	**	9.0	1770	-	-	53	-	24	-	-	-	-	-	-
Abutment No. 2	64	**	-	**	100	75	-	-	-	25	21	150	-	-	-
Substr. Total	138	-	18.2	3560	210	155	105	-	48	50	42	307	-	-	-
Superstr. Total	-	376.9	-	98660	-	-	-	-	-	-	-	-	490	-	-
Total	138	376.9	18.2	102220	† 210	155	105	1	48	50	42	307	490	Lump Sum	Lump Sum

\*\* Quantities are included in the Superstr. Total Quantity.

† Summary of Piling  
Abutment No. 1 5 @ 22 ft.  
Abutment No. 2 5 @ 20 ft.

\* NOTE: Only steel pile HPI2x53 shall be used on this project

CONTRACTOR CONSTRUCTION STAKING: Contractor Construction Staking for clear span bridges requires two independent surveys. See KDOT Specifications.

EXISTING STRUCTURE: Plans of the existing structure are on file and available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison St., Topeka, KS.

EMBANKMENT: Complete the embankment at the abutments as shown on the Bridge Excavation sheet prior to driving the abutment piling or commencing with the abutment footing excavation.

BRIDGE EXCAVATION: All excavation shall be Class III. See the Bridge Excavation sheet for the limits of pay excavation.

TEMPORARY SHORING: The bid item "Temporary Shoring" includes all labor and material necessary to furnish shoring at the location shown on the plans for the temporary bracing of the embankment during excavation. Maintain the temporary shoring until the Engineer authorizes its removal. The temporary shoring plans are to be designed and sealed by a registered Professional Engineer. Submit design calculations and shoring plans to the Field Engineer for review 6 weeks before work is scheduled to begin. Work shall not begin until the Engineer grants approval. Note that due to the large exposure height and shallow depth to rock, specialized shoring will be required. See the KDOT geotechnical report. The Temporary Shoring Investigation Memo (Dated January 2023) is available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

BACKFILL COMPACTION: Compact backfill at the abutments and piers.

PILING: Piles shall be pre-drilled and then driven to the required elevation within the Friedrich Shale of the Root Formation. Once the required resistance and penetration in firm shale of the Friedrich Shale Member of the Root Formation is achieved, driving should cease to avoid damage to the pile. Final pile tip elevations should be determined in the field based on observed blow counts and bearing formula calculations. Drive all piling to the Pile Driving Formula Load of:

Abutment No. 1 60 Tons  
Abutment No. 2 60 Tons

As a minimum drive each pile to the load and penetration, but in no case shall the pile be driven to more than 110% of Pile Driving Formula Driving Load. At any location where problems are experienced, pile damage is suspected, or the Pile Driving Formula Load occurs significantly above the design pile tip elevation, the Engineer may request that the Pile Driving Analyzer (PDA) equipment be used.

PRE-DILLING: All steel piles in Abutment No. 1, & Abutment No. 2 shall be pre-drilled to these elevations:

Abutment No. 1 - Elev. 1124.3  
Abutment No. 2 - Elev. 1123.8

Piles shall be set and driven to the computed bearing value shown. After driving, the holes shall be backfilled according to KDOT Specifications Section 704. Casing is not required.

COLUMN CONSTRUCTION: Cure the drilled shaft footing as required by the KDOT Specifications before beginning the column construction (placing resteel or formwork). Do not place cast in place shear bolts, coil inserts or other devices used as falsework support in the column without the approval of the Engineer. Do not remove the column formwork without the approval of the Engineer. Curing shall continue after the formwork is removed as required by the KDOT Specifications.

GEOTECHNICAL REPORT: The geotechnical report (Dated January 2023) includes soil parameters for retaining wall (sheet pile) design. The report recommends a traffic surcharge of 250 lb/ft<sup>2</sup>. The geotechnical information shown on the plans is the best information available. The report is available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

ABUTMENT STRIP DRAIN: See the General Notes on the "Abutment Strip Drain" sheet.

BRIDGE BACKWALL PROTECTION SYSTEM: See the General Notes on the "Abutment Strip Drain" sheet.

REMOVAL OF EXISTING STRUCTURE: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. Remove this material from the site.

SLOPE PROTECTION (Aggregate): Place Slope Protection (Aggregate)(12") to the limits and thicknesses shown on the plans or as directed by the Engineer. Use (Aggregate)(12") D<sub>50</sub> = 4" as described in Division 1100 placed to the limits shown in the plans.

DRIP LINE PROTECTION: Place a 10 foot wide mat of geotextile under the rock embankment on the berm and berm slopes and centered on the drip lines of the slab.

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SA). Substructure concrete is bid as Concrete (Grade 4.0)(AE). The Contractor may use Concrete (Grade 4.0) in the footings. Bevel all exposed edges of all concrete with a 3/4" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or AASHTO M 32, and are included in the bid item "Reinforcing Steel (Gr. 60) (Epoxy Coated)".

Where non-coated bars come in contact with epoxy coated bars, they need not be coated.

PILING SPLICE LOCATION: Integral pile splice locations and weld testing criteria for, Abutments No. 1 & 2 will follow the "Standard Pile Details" Sheet (BR110).

DESIGN SPECIFICATIONS: Superstructure (Reinforced Concrete Haunch Slab Design): AASHTO Specifications, 2007 Edition and latest Interim Specifications. Load and Resistance Factor Design.

Substructure: AASHTO Specifications, 2020 (9th) Edition and latest Interim Specifications. Load and Resistance Factor Design.

DESIGN LOADING: HL-93

Design Dead Load includes an allowance of 15 psf for a future wearing surface.

UNIT STRESSES:

Concrete (Grade 4.0) f'c = 4.0 ksi  
Concrete (Grade 4.0)(AE) f'c = 4.0 ksi  
Concrete (Grade 4.0)(AE)(SA) f'c = 4.0 ksi  
Reinforcing Steel (Grade 60) fy = 60 ksi  
Steel Pile fy = 50 ksi

LRFD DESIGN PILE LOAD:  
Design Loading (Tons/Pile) Strength I Service I Phi  
Abutment No. 1 60 42 0.50  
Abutment No. 2 60 42 0.50

LRFD DESIGN DRILLED SHAFT LOAD:  
Design Loading (Tons/Shaft) Strength I Service I End Bearing Phi Side Friction Phi  
Pier No. 1 317 216 0.45 0.50  
Pier No. 2 317 216 0.45 0.50

TRAFFIC DATA	
AADT (2024)	13,200
AADT (2044)	18,150
DHV	9%
T	20.5%

Note: Traffic Data provided SB Bridge only.

LFD & LRFR RATING FACTORS		
Rating Level	Inventory	Operating
Truck		
HS-20 (36T)	1.66	2.77
Type HET (110T)		1.31
2002 LFD Rating, 17th Edition AASHTO		
HL-93 Loading	1.63	2.12
2020 Manual for Bridge Evaluation		

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	59	200

INDEX TO BRIDGE DRAWINGS	
SHEET NO.	DRAWING TITLE
59	General Notes and Quantities
60	General Notes
61	Contour Map
62	Construction Layout
63	Engineering Geology
64	Abutment Details
65	Abutment Strip Drain
66	Pier Details
67	Superstructure Details
68	Superstructure Details
69	Slab Elevations
70	Corral Rail Details (1 of 2)
71	Corral Rail Details (2 of 2)
72	Bill of Reinforcing Steel and Bending Diagrams
STANDARDS	
87	Bridge Excavation (LRFD)
88	Standard Pile Details
89	Supports and Spacers for Reinforcing Steel
90	Bridge Berm and Slope Protection

#### DESIGN DATA

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
GENERAL NOTES AND QUANTITIES				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01			Lyon Co.	
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASF	DETAILED	JAH	QUANTITIES
DESIGN CK.	TK	DETAIL CK.	ASF	QUAN. CK.
			TKI	CADD
			ASF	CADD CK.
			JAH	TK

Plotted By: user

File: c:\pwworking\ventral\0\43357667\k6571401bbr171-02.dgn

Plot Date: 11-07-23

GENERAL NOTES

DRILLED SHAFTS:Construct the drilled shafts using the cased method. A permanent casing is required. All excavation, concrete, reinforcing steel, pipes for Sonic Testing, casing, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by KDOT Specifications shall be included in the bid item "Drilled Shaft (48") (Cased)". Use Grade 4.0 Concrete in the drilled shaft. In no instance shall the bottom of the drilled shaft be placed higher than the elevation shown unless otherwise directed by the KDOT Geologist.

Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause caving and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock a maximum of 1.0 feet, less if possible, to reduce the risk that overburden, and groundwater does not enter the rock socket. A wet pour may be anticipated if groundwter is not sufficiently sealed off or if there is water flowing into the excavation.

Drill an Investigative Core Hole at the location(s) shown on the plans. See KDOT Specifications.

If the location of the top of the shaft is such that the casing cannot be overtopped to remove concrete impurities, provide extra casing length to over-pour the concrete in the shaft and chip back to the plan elevation of the top of the shaft.

If permanent casing to be corrugated metal pipe (CMP) then it will be galvanized.

Note that the drilled shafts have end bearing components. It is important that the bottom socket be clean and relatively flat. Allow no loose material within the footing when the drilled shaft is ready to pour.

Shales of the Root Shale Formation and the Stotler Formation could degrade rapidly in the presence of air and water. Place the reinforcing steel and concrete no more than eight (8) hours from completion of the excavation of the shaft to minimize exposure time of the shale to air and groundwater.

SONIC TESTING:Equip all drilled shafts with piping to allow sonic testing to be done. Install pipes at locations shown on the plans. All wet pours will be tested. Also, the Engineer has the option to require sonic, non-destructive, integrity testing at any location of concern. Sonic testing shall be paid for at the unit price set for "Sonic Test" (Drilled Shaft) (Set Price). If the sonic testing indicates defective concrete in the shaft, the Engineer will measure the first sonic test for payment, and the Contractor is responsible for subsequent sonic testing of that shaft. Report test results directly to KDOT's Chief Geologist. No work will be done above the top of drilled shaft without the approval of the Chief Geologist.

CONSTRUCTION LOADS:Limited traffic is permitted on the new sub-deck, one course deck or any concrete overlay during the curing period, keep any exposed deck wet during the curing period. See KDOT Specifications Section 710, Tables 710-1 & 710-2 for additional information.

CONSTRUCTION SEQUENCING:For construction sequencing and phasing information see Roadway Plans.

PERMANENT CASING:See KDOT Specifications.

FALSEWORK PLANS: A licensed Professional Engineer shall design the falsework details. Details shall bear the seal of a licensed Professional Engineer. Submit electronic plans conforming to Section 105 of the Standard Specification with details in compliance with KDOT Specifications to the Field Engineer for review.

FALSEWORK INSPECTION:This project has falsework plan requirements which are considered "Category I" by KDOT specifications. The falsework designer of record will conduct an inspection of the as-built falsework. The bid item, "Falsework Inspection" is full compensation for all materials, labor and equipment. See KDOT Specifications.

FALSEWORK PLANS AND SHOP DRAWINGS:Use the U.S. Customary system of units on falsework plans and shop drawing details.

FALSEWORK:Leave the falsework in place for the entire unit until 15 days after the concrete pour for the unit or longer as directed by the Engineer.

CAMBER:Provide camber as shown on the Camber Diagram unless the Contractor uses either long span steel beam falsework (concrete dead load deflection greater than 1/4") or timber falsework with greater than 12'-0" clear span. If either case exists, submit falsework plans that show the additional required camber.

PIER BEAM CONSTRUCTION:Cure the columns as required by the KDOT Specifications before beginning the pier beam construction (placing resteel or formwork). Do not drill and grout bolts or other devices into the columns used for falsework support unless approved by the Engineer. Cure the column as required by the KDOT Specifications before beginning to place the superstructure concrete.

CONCRETE PLACING SEQUENCE:The sequence of placing concrete in the slab and curbs shall be as shown, or the Contractor may submit an alternate placing sequence for review. Submit the alternate placing sequence to the Engineer at the Preconstruction Conference. Include the proposed rate of concrete placement in C.Y./h, the plant capacity, placement direction, construction joint location, a description of the equipment used in placing the concrete, proposed admixtures, and the quantity of concrete in each placing segment. Any additional cost for the Contractor's alternate plan of placing concrete, including admixtures, shall be at the Contractor's expense and shall be considered subsidiary to the bid item, "Concrete (Grade 4.0)(AE)(SA)". Approval of the Contractor's alternate sequence is required prior to placement of concrete in the deck.

SLAB ELEVATIONS: The Contractor shall record elevation readings on the "Slab Elevations" sheet in the table at locations designated by a "(2)" and submit the sheet to the Engineer.

CORRAL RAIL:Build the corral rail after the falsework is struck.

TEMPERATURE: The design temperature for all dimensions is 60°F.

QUANTITIES: Items not listed separately in the Summary of Quantities are subsidiary to other items in the proposal.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

CONSTRUCTION JOINTS: The construction joints shown are optional with the Contractor. If used, place the construction joints only at locations shown or at locations approved by the Engineer.

BRIDGE DECK GROOVING:After the bridge deck has cured, transversely groove the deck in accordance with KDOT Specifications. For phased construction groove each completed phase before opening to traffic. Align the grooves from each adjacent phase across the bridge deck without jogs or discontinuities. For skewed bridges all grooving will be perpendicular to the centerline of the bridge.

DEMOLITION PLANS: This is a Category C Demolition. Submit detailed Demolition Plans to the State of Bridge Office (or Bureau of Local Projects) at least 4 weeks before beginning the demolition process. Portions of the submitted details shall bear the seal of a Licensed Professional Engineer. Identify, on the plans, the Demolition Supervisor meeting the requirements of the KDOT Specifications. The Demolition Supervisor will attend the required pre-demolition meeting before these operations begin, as described in KDOT Specifications. No demolition work will begin without approved Demolition Plans.

ASBESTOS INFORMATION: Samples of this structure were tested to determine the amount of Asbestos Containing Materials (ACM) present in the components. The results are listed below:

Concrete (Abutment, Deck)	0%
Date of Report	12/07/2021

For any result above greater than 1%, abatement shall be performed according to KDOT Specifications. Results less than 1% require no abatement.

DECK PROTECTIVE SYSTEM:Epoxy coat all reinforcing steel in the deck, slab, abutments, pier beams, columns and rails.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	60	200

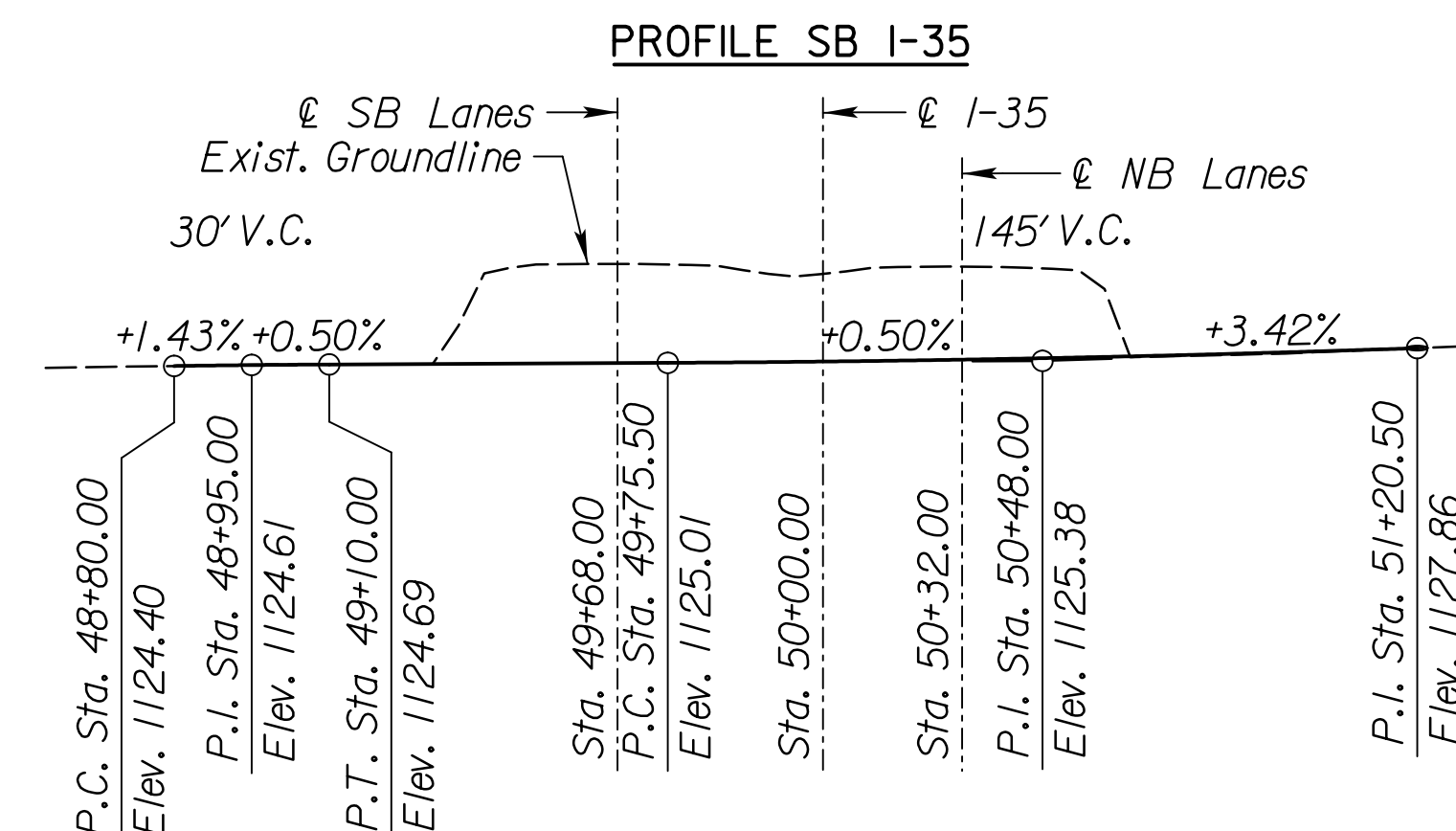
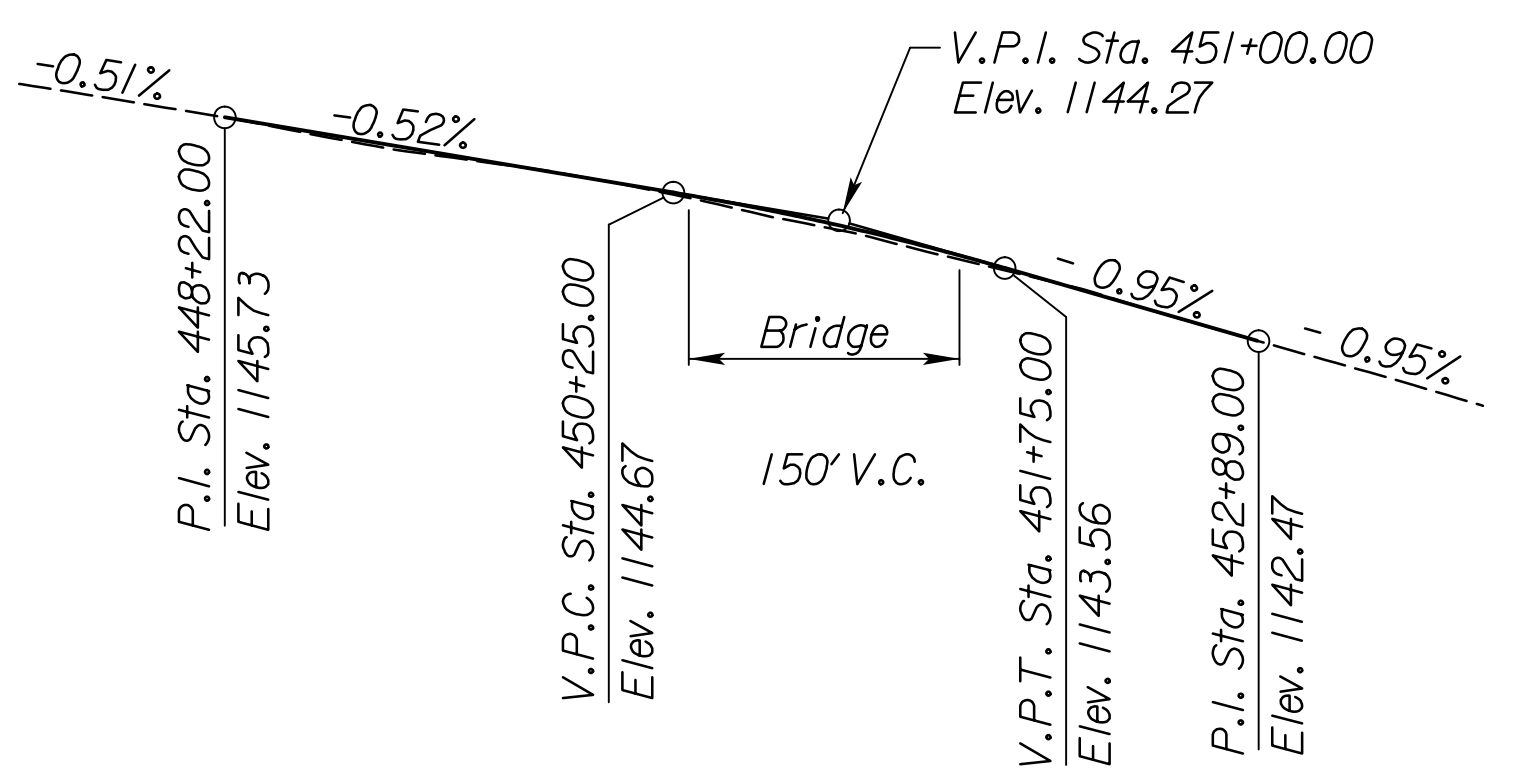
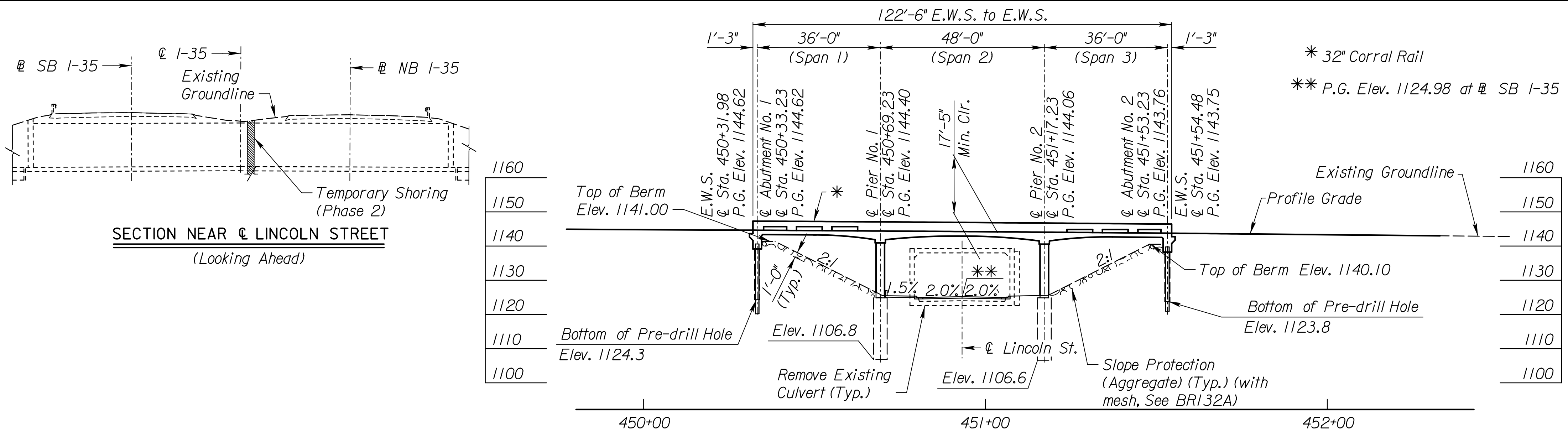
3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
GENERAL NOTES				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASFI	DETAILED	JAH	QUANTITIES
DESIGN CK.	TKI	DETAIL CK.	ASFI	QUAN. CK.
			TKI	CADD CK.





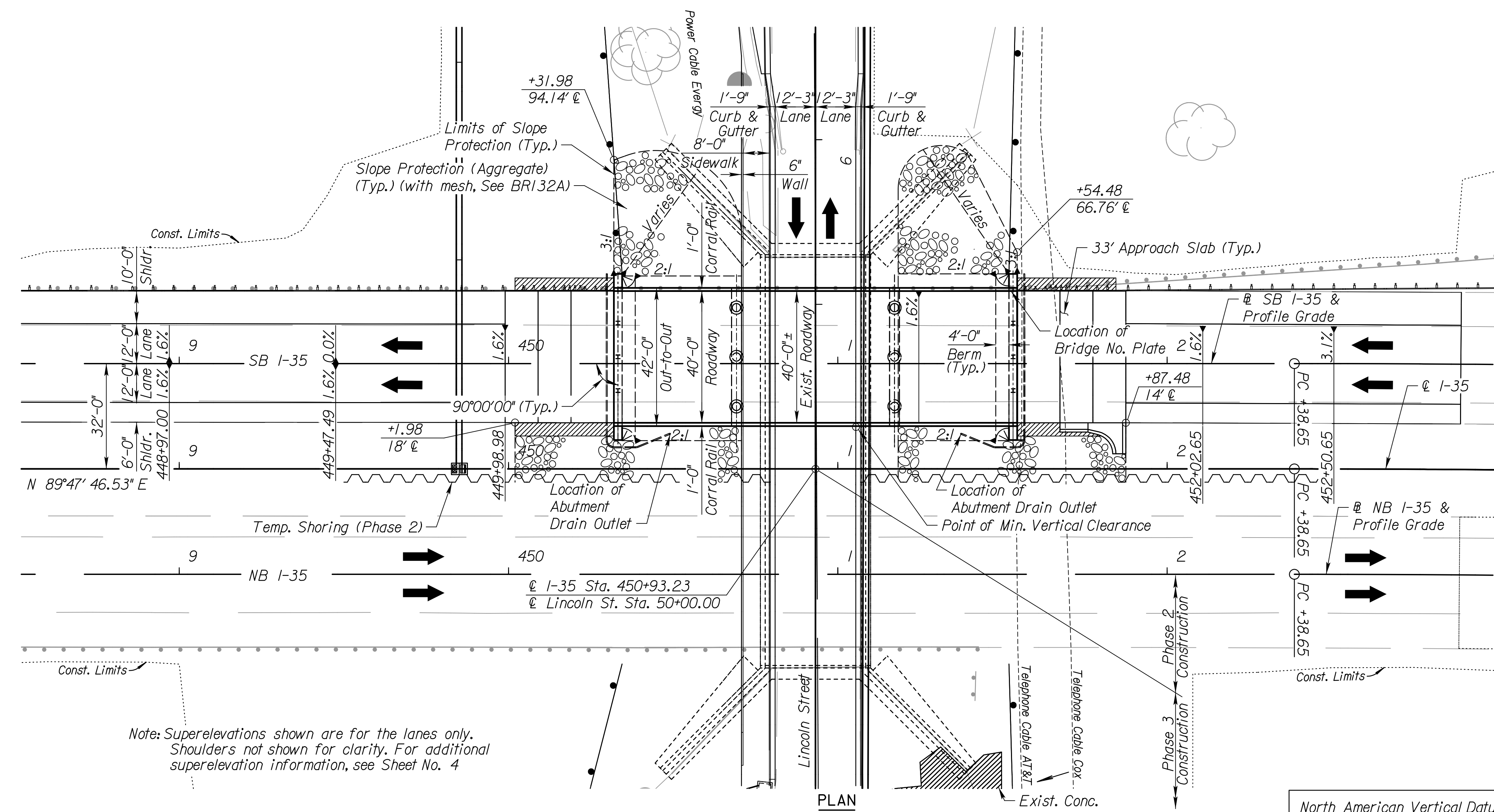
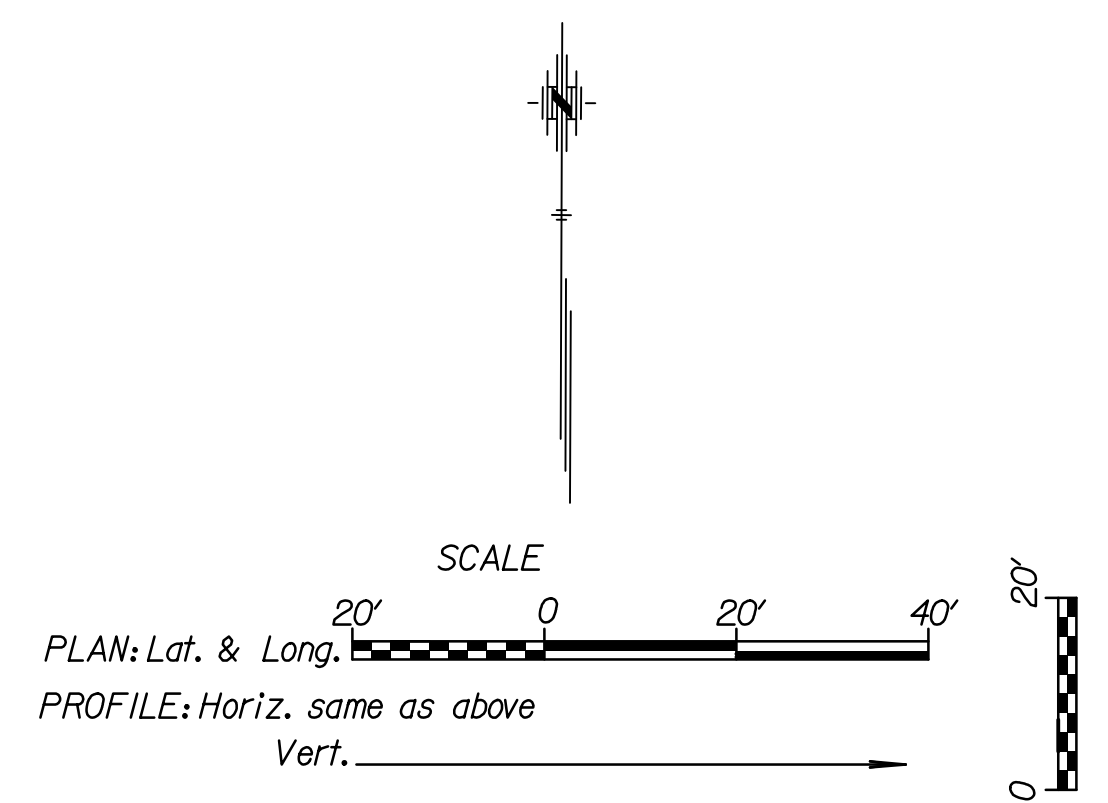


STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	62	200



EXPANSION JOINT WIDTH DETAILS (W 2)						
Temperature (F°)	40°	50°	60°	70°	80°	90°
Formed Concrete Opening Size	3"	2 7/8"	2 7/8"	2 7/8"	2 3/4"	2 3/4"

Temperature (F°) Average Ambient Temperature over previous 24 hours.

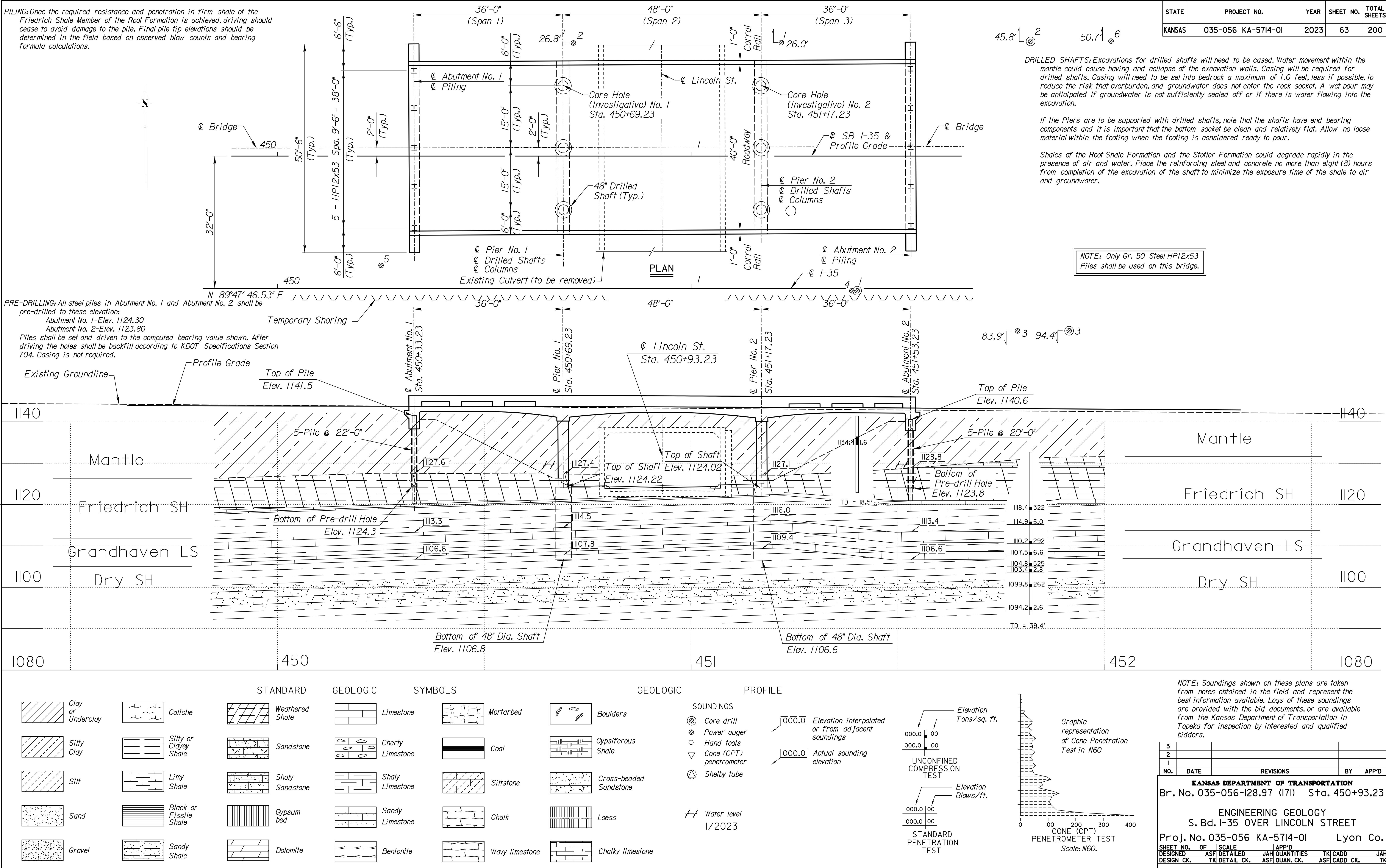


North American Vertical Datum = NAVD88 (GEOID 18)  
Project Coord. x 0.99990237 (C.A.F) = NAD83 (2011)  
Kansas South State Plane

BM12 - Set Mag Nail & KDOT Washer Top E. End of Median Inlet 0.2' Rt. Sta. 448+26.83 Elev. 1143.65  
BM13 - Set Mag Nail & KDOT Washer Top of Median Drain 0.4' Rt. Sta. 453+90.33 Elev. 1139.24  
BM20 - Set Mag Nail & KDOT Washer NW Corner of Gutter Inlet Sta. 450+76.75 Elev. 1127.04  
BM21 - Set Mag Nail & KDOT Washer SW Corner Conc. Pad of Util. Junction Box Sta. 451+52.40 Elev. 1129.51

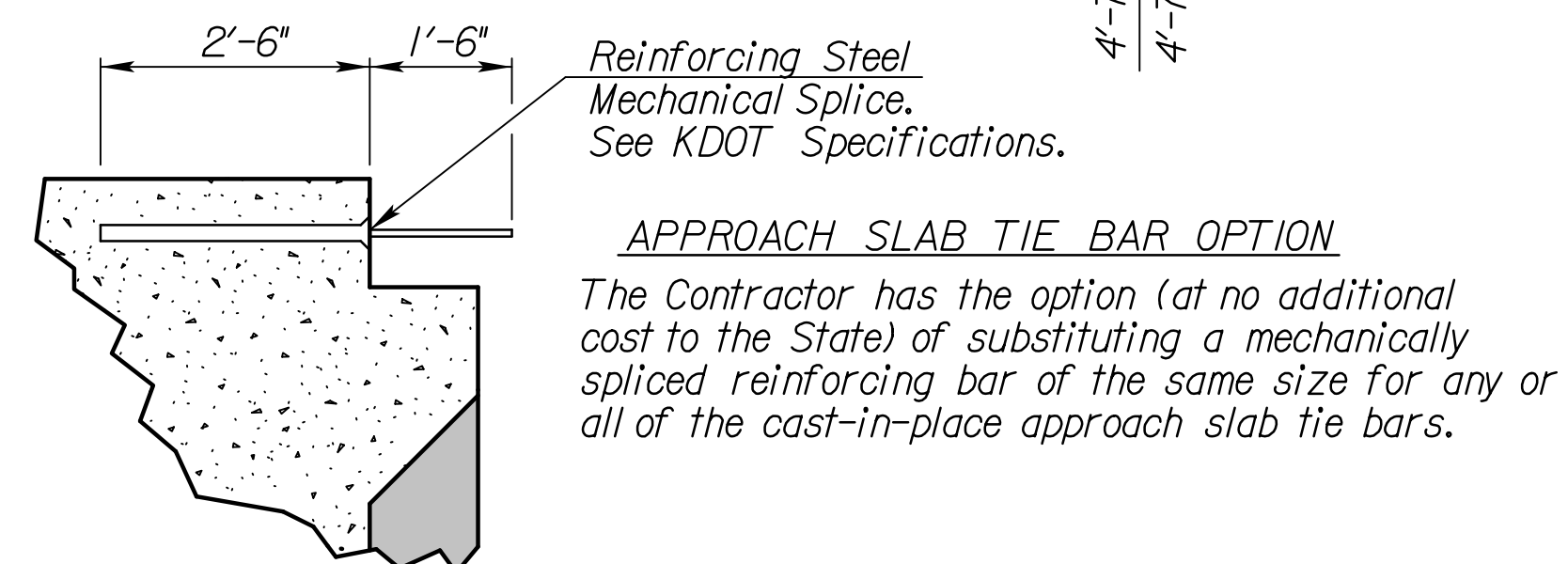
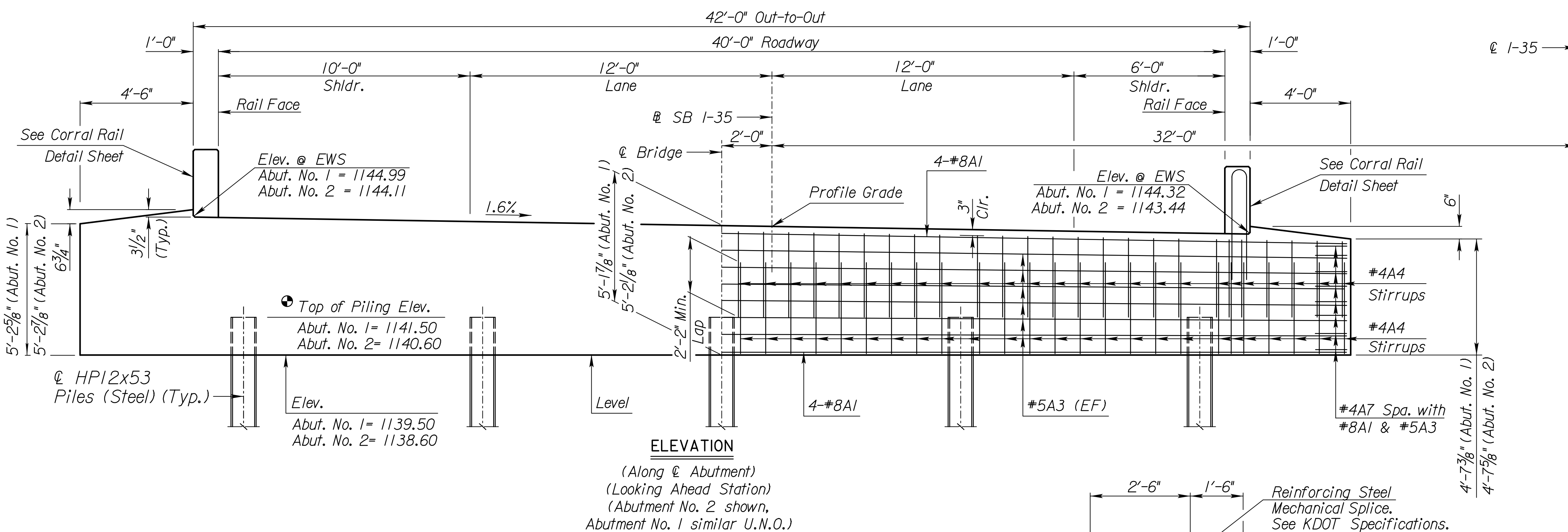
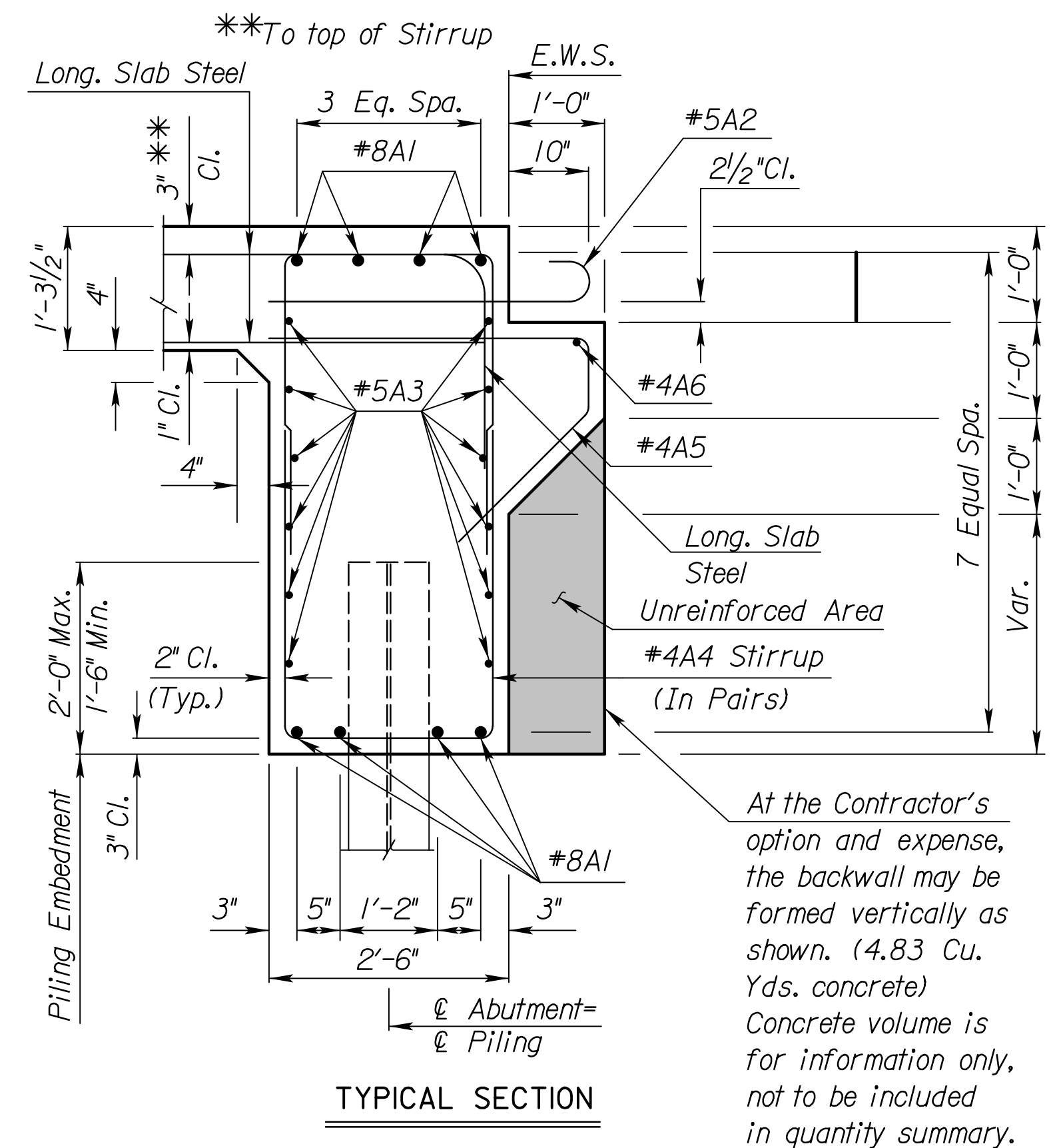
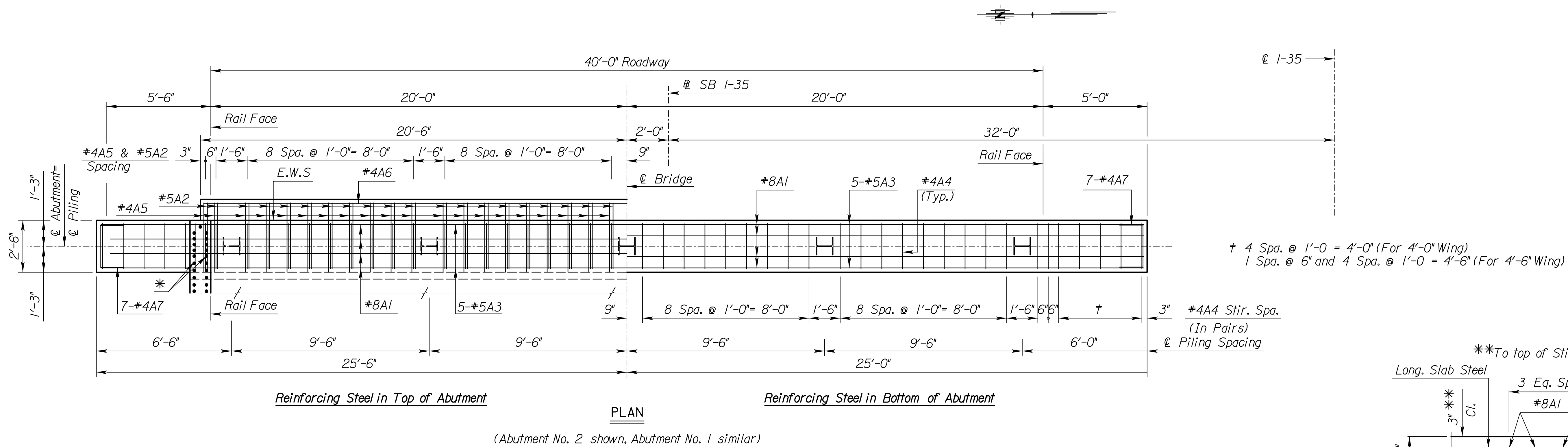
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
CONSTRUCTION LAYOUT				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASFI	DETAILED	JAH	QUANTITIES
DESIGN CK.	TKI	DETAIL CK.	ASFI	QUAN. CK.







STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	64	200



3					
2					
1					
NO.	DATE	REVISIONS			BY APP'D
<p align="center"><b>KANSAS DEPARTMENT OF TRANSPORTATION</b></p> <p>Br. No. 035-056-I28.97 (I7I) Sta. 450+93.23</p> <p align="center"><b>ABUTMENT DETAILS</b></p> <p align="center">S. Bd. I-35 OVER LINCOLN STREET</p> <p>Proj. No. 035-056 KA-5714-01 Lyon Co.</p>					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TK CADD
DESIGN CK.	TK	DETAIL CK.	ASF	QUAN. CK.	CADD CK.
					JAH TK



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	65	200

GENERAL NOTES

ABUTMENT STRIP DRAIN: The Bridge Contractor shall excavate to the limits shown on the Bridge Excavation sheet, grade the bottom of the backfill area, place the strip drain, and place the perforated pipe, the outlet pipe, the CMP, and the backfill.

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protection System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments and wings to the limits shown on the details. Prior to backfilling, repair any damage done to the system at no charge to the state.

Place perforated pipe next to the strip drain. Use non-perforated pipe outside the limits of the strip drain. Enclose the perforated pipe with the extension of the filter fabric.

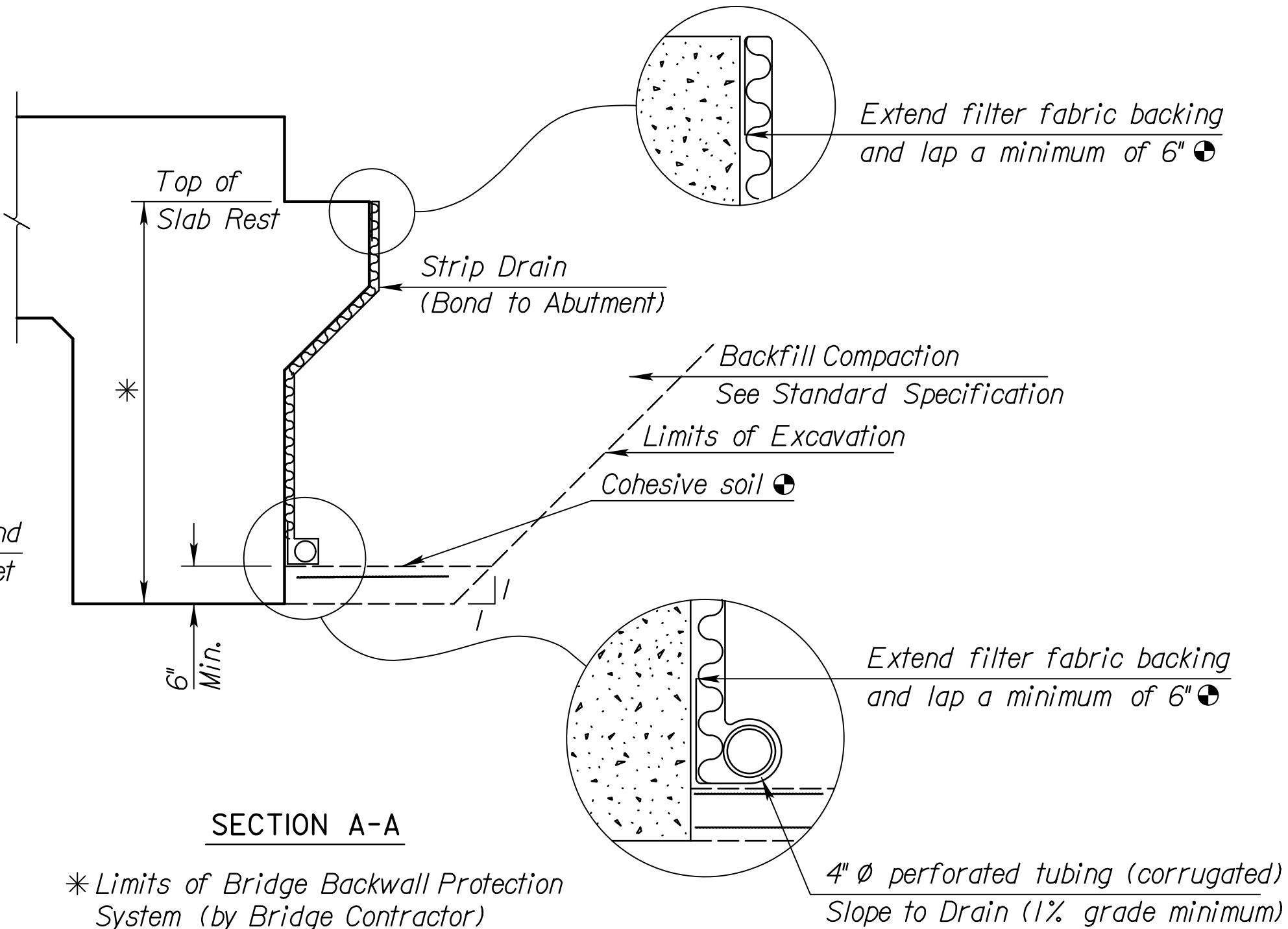
Compact the abutment backfill. See the KDOT Specifications.

Perforated pipe and non-perforated outlet pipe shall be corrugated polyethylene tubing conforming to the KDOT Specifications.

Fit the CMP end section with a 1/4" galvanized mesh screen to prevent the entrance of rodents. Seal the joint between the outlet pipe and the end section with a joint sealer.

Place the outlet pipe on the downstream side of structures over streams and as shown or noted on other crossings (See the "Construction Layout" sheet).

COHESIVE SOILS: Grade the bottom surface of the excavated area to drain as shown. Backfill this area with a cohesive type of soil. The soil will have a Unified Soil Classification of CL, CH, ML or MH according to ASTM D2487 Classification System with a minimum plasticity index of 13. Compact the material to Type A, MR-90 specifications. If the plasticity index cannot be met, add and mix Bentonite to the soil prior to placement and compaction so that the PI ≥ 13.



SECTION A-A

\* Limits of Bridge Backwall Protection System (by Bridge Contractor)

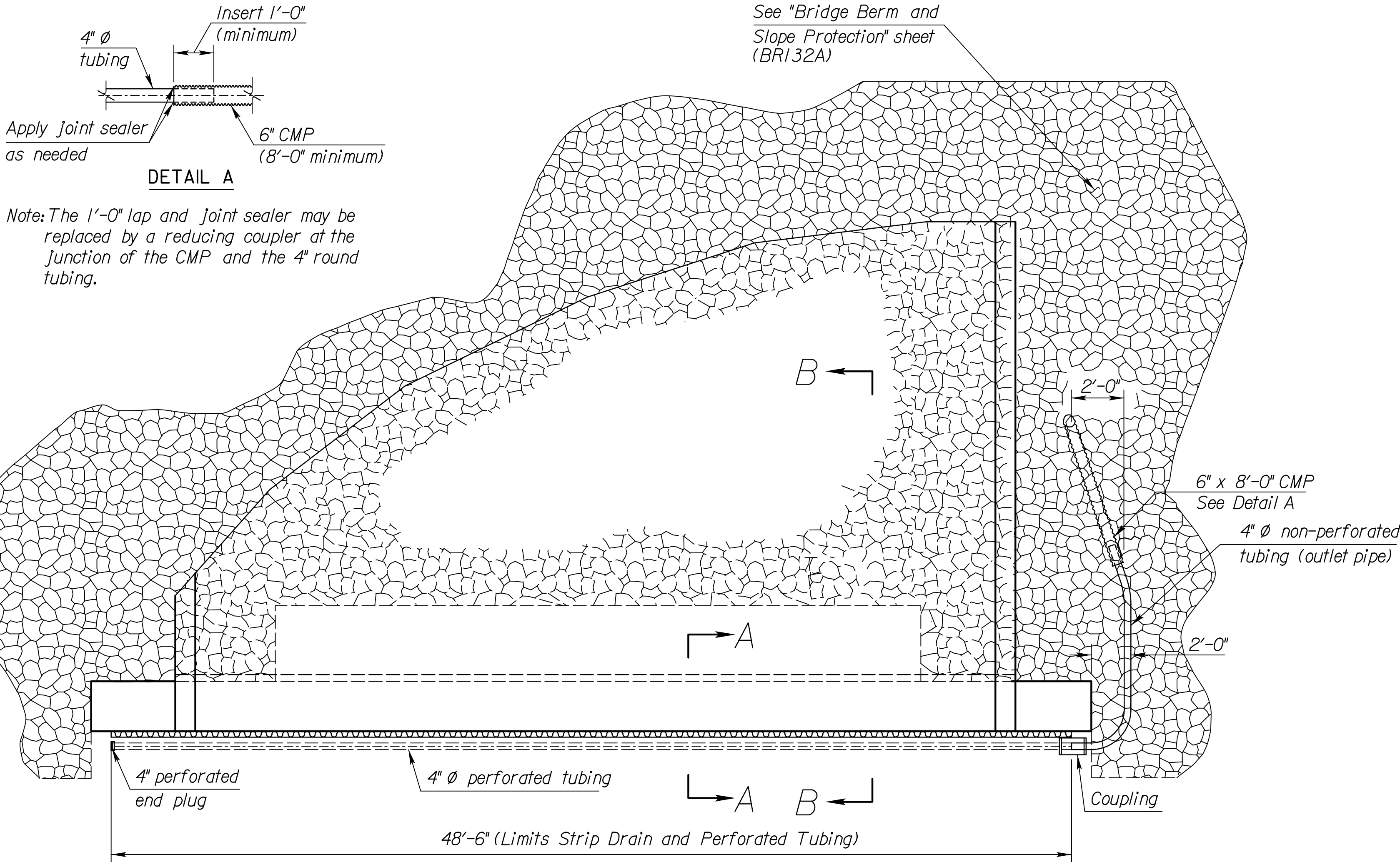
Subsidiary to the Abutment Strip Drain

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Strip Drain	42 Sq. Yds.
Bridge Backwall Protection System	50 Sq. Yds.
Items subsidiary to Strip Drain	
4" Ø Perforated Pipe	97 Lin. Ft.
4" Ø Outlet Pipe	20 Lin. Ft.
6" Ø CMP	16 Lin. Ft.
Items subsidiary to Slope Protection	
Geotextile Fabric	193 Sq. Yds.

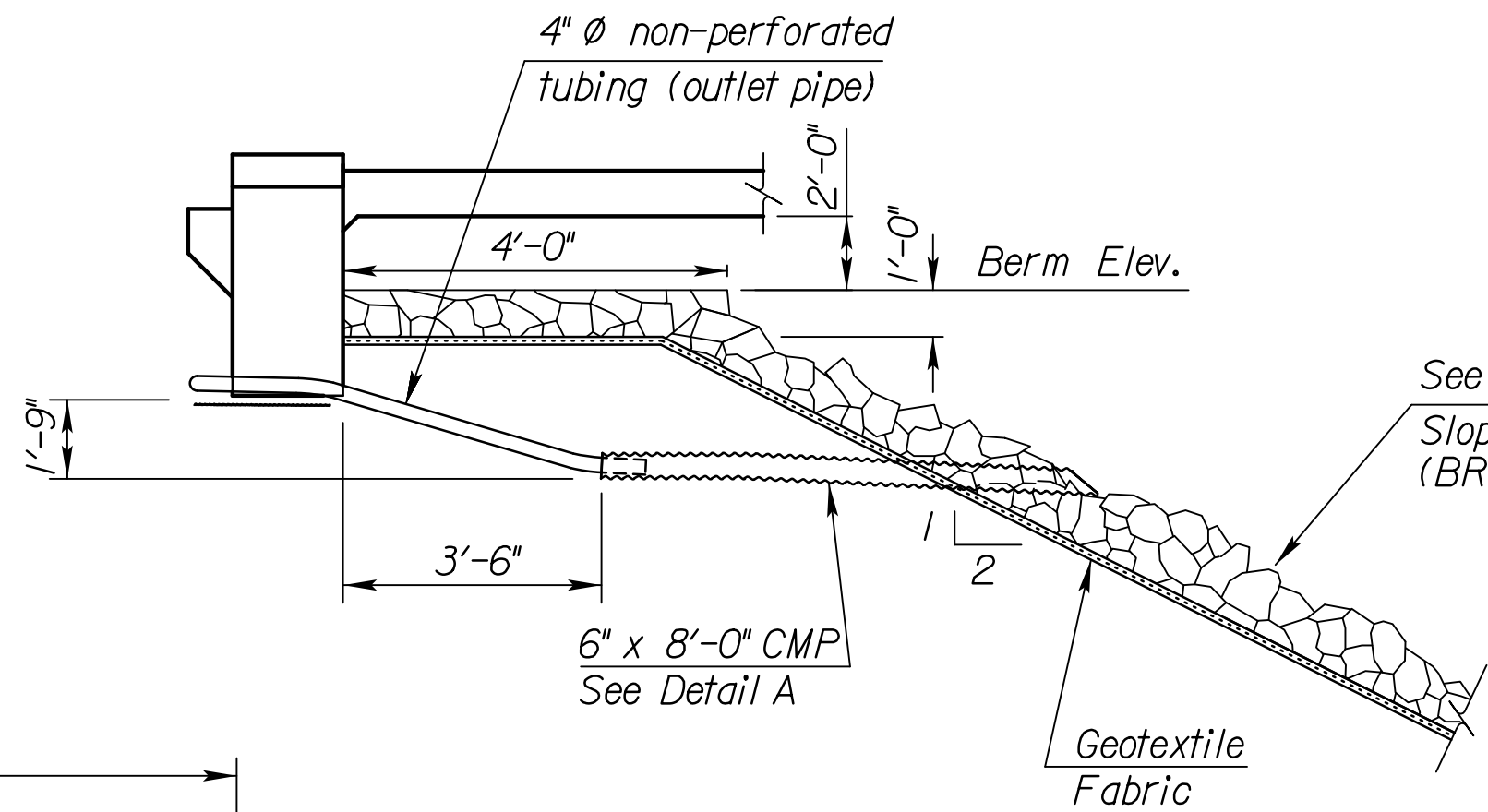
3					
2					
1					
NO.	DATE	REVISIONS	BY	APP'D	
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-128.97 (171) Sta. 450+93.23					
ABUTMENT STRIP DRAIN					
S. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5714-01 Lyon Co.					
SHEET NO. OF	SCALE	APP'D			
DESIGNED	ASF DETAILED	JAH QUANTITIES	TKI CADD	JAH	
DESIGN CK.	TKI DETAIL CK.	ASF QUAN. CK.	ASF CADD CK.	TKI	

KDOT Graphics Certified 08-23-2023

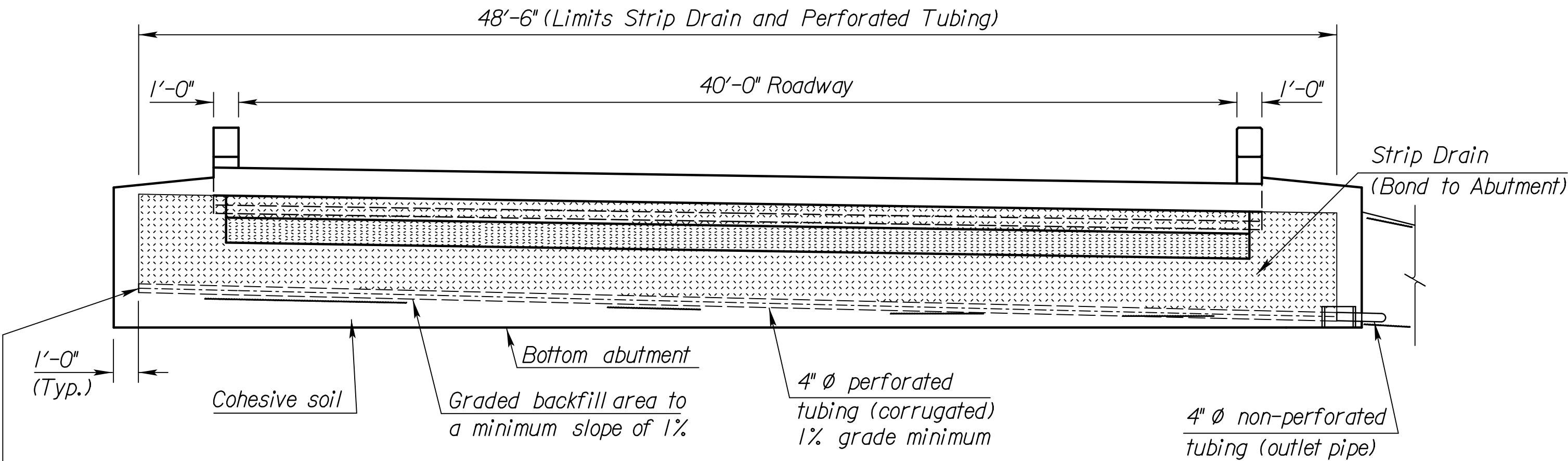
Sheet No. 65



PLAN



SECTION B-B

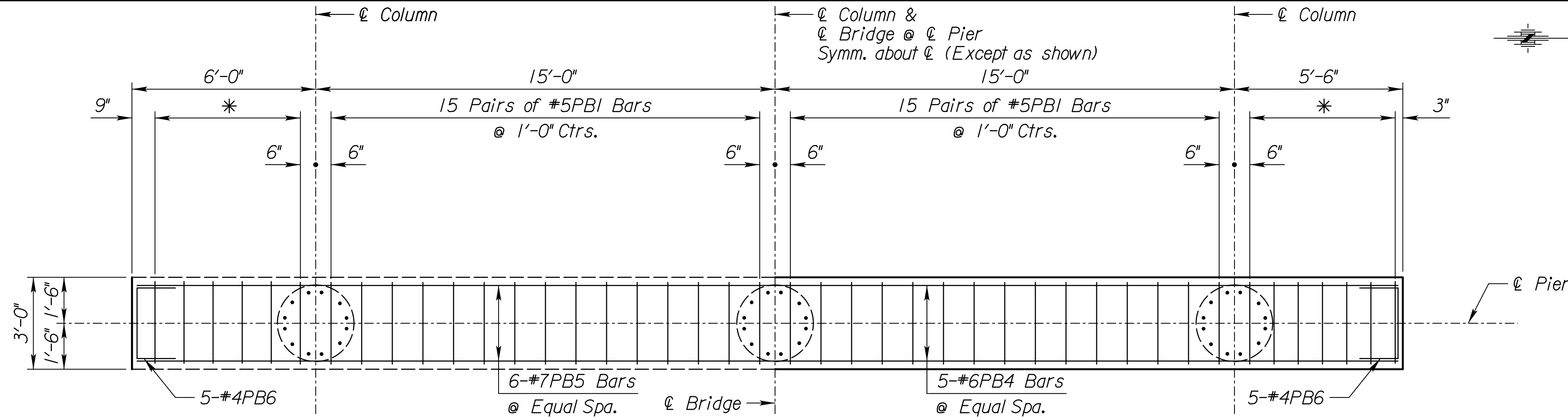


ELEVATION

Plotted By: user  
File: c:\pwworking\ventral0\43357667\401bbr171-07.dgn  
Plot Date: 11-07-23



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	66	200



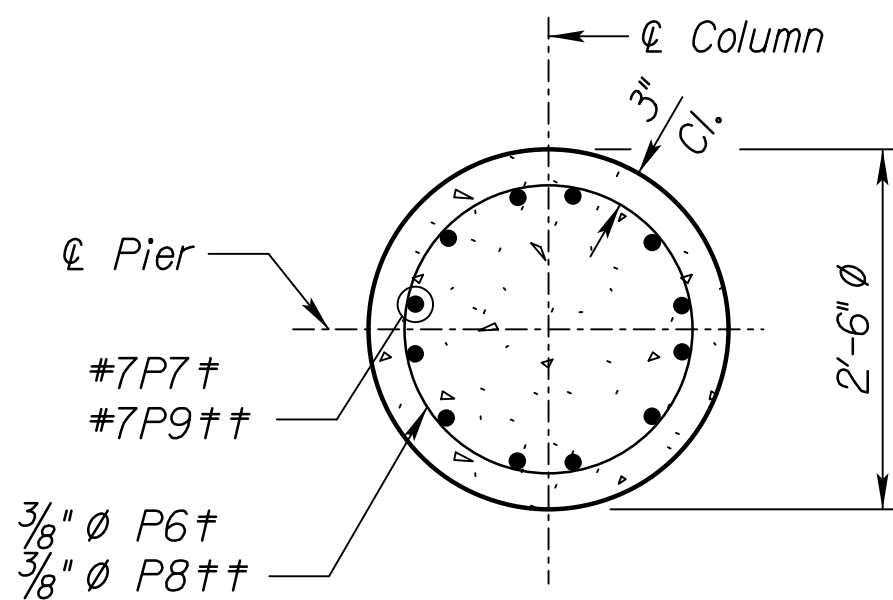
REINFORCING STEEL IN TOP OF PIER BEAM

REINFORCING STEEL IN BOTTOM OF PIER BEAM

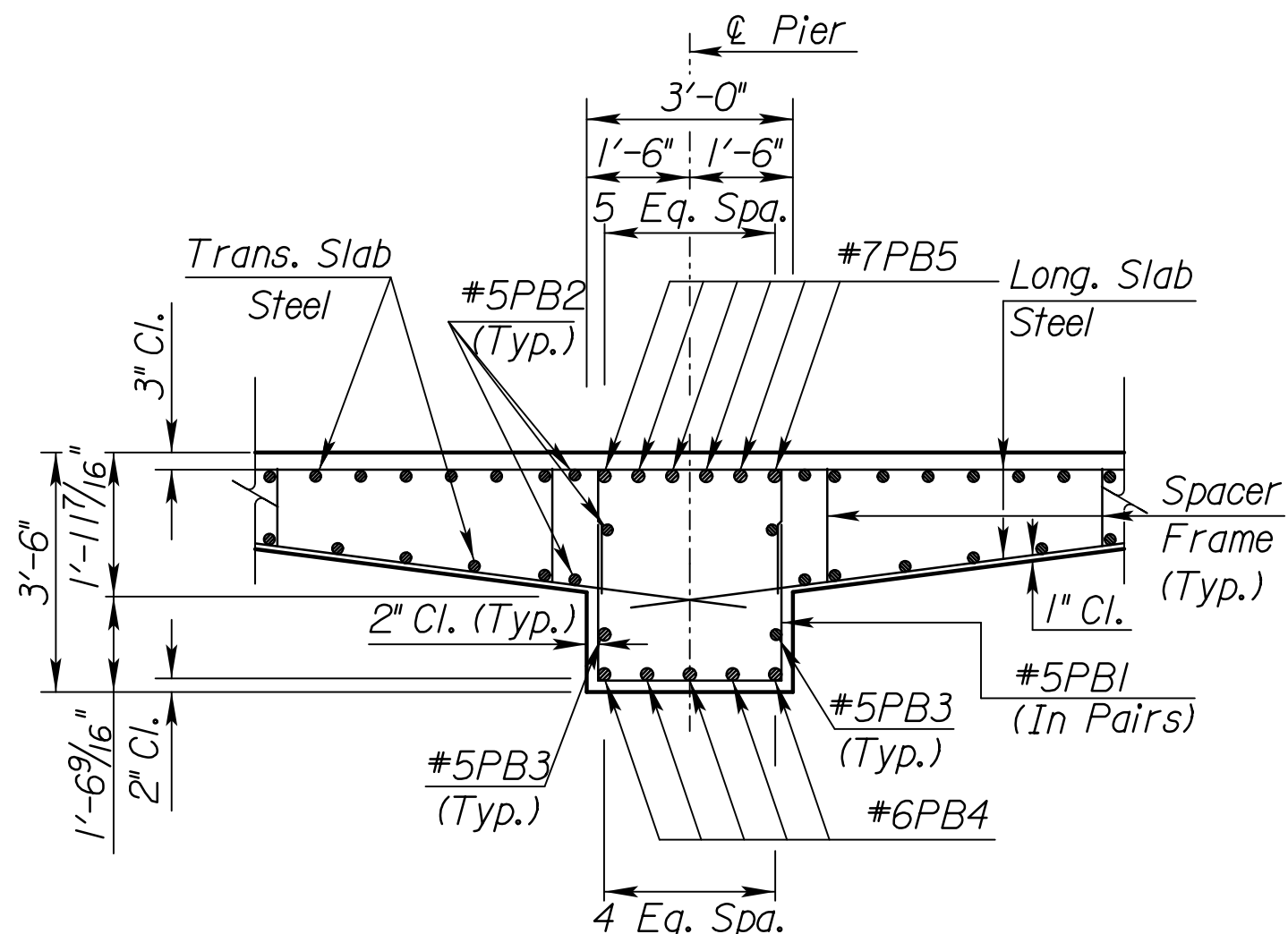
PLAN  
(Pier No. 1 shown, Pier No. 2 similar)

\* 6 Pairs of #5PBI Bars @ 1'-0" Max Ctrs.

† - Pier No. 1  
†† - Pier No. 2  
EF = Each Face



SECTION B-B



SECTION A-A

Notes:  
Pier Beam Reinforcement shall be epoxy coated and is included in the Superstructure Quantities.

Column Reinforcement shall be epoxy coated and is included in the Substructure Quantities.

Concrete and reinforcement in the drilled shaft shall not be paid for directly, but shall be included in the bid item "Drilled Shaft (48") (Cased)".

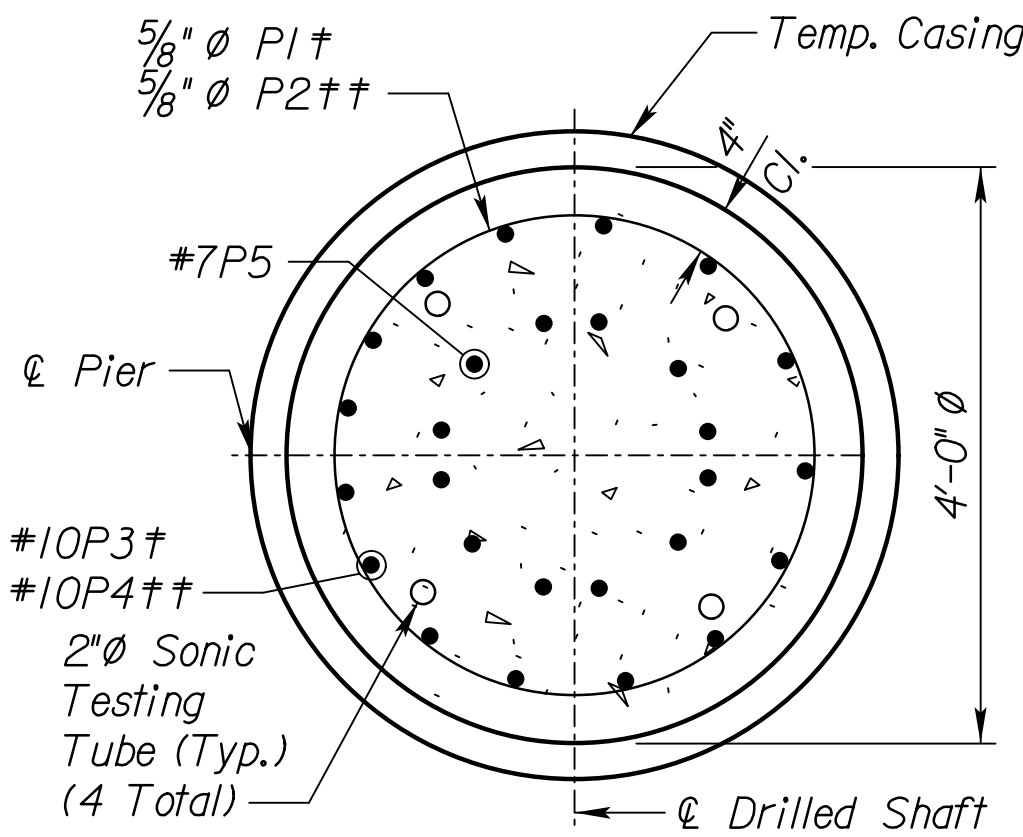
Reinforcing Steel in the drilled shaft shall be uncoated.

Construct the drilled shafts using the cased method. A permanent casing is required.

### DRILLED SHAFT SUMMARY

Design Loads		
Pier No.	Maximum Drilled Shaft Load: Tons	Allowable Load Tons
1	316	557
2	316	557

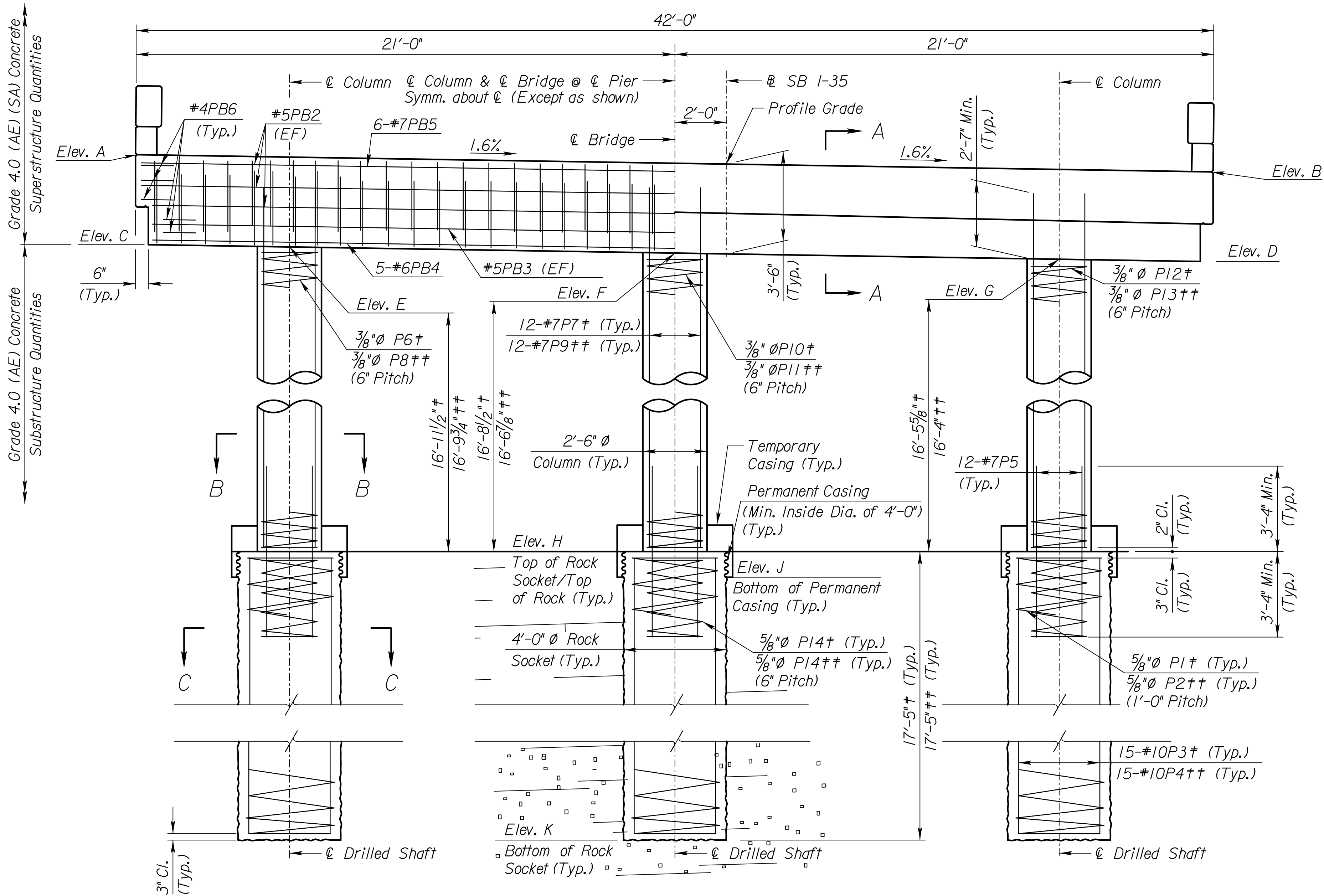
Drilled Shaft Note:  
Maximum Drilled Shaft Load is based on Strength I Loads-no Impact.



SECTION C-C

### TABLE OF ELEVATIONS AT PIER

Location	Pier No. 1	Pier No. 2
A	1144.77	1144.43
B	1144.10	1143.75
C	1141.26	1140.92
D	1140.61	1140.26
E	1141.17	1140.83
F	1140.93	1140.59
G	1140.69	1140.35
H	1124.22	1124.02
J	1123.55	1123.52
K	1106.80	1106.60



### ELEVATION

(Looking Aheadstation)

Note:  
For type of Sonic Testing Tubes, see KDOT Specifications and the Special Provisions. Sonic Testing Tubes shall be spaced equally and extend 1'-0" above top of shaft.

DRILLED SHAFT BACKFILL: Backfill the annular space between the temporary casing and the permanent casing with grout/flowable fill as defined in the KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
PIER DETAILS				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO. OF	SCALE	APP'D		
DESIGNED	ASFI DETAILED	JAH QUANTITIES	TKI CADD	JAH
DESIGN CK.	TKI DETAIL CK.	ASFI QUAN. CK.	ASFI CADD CK.	TKI

KDOT Graphics Certified 11-06-2023

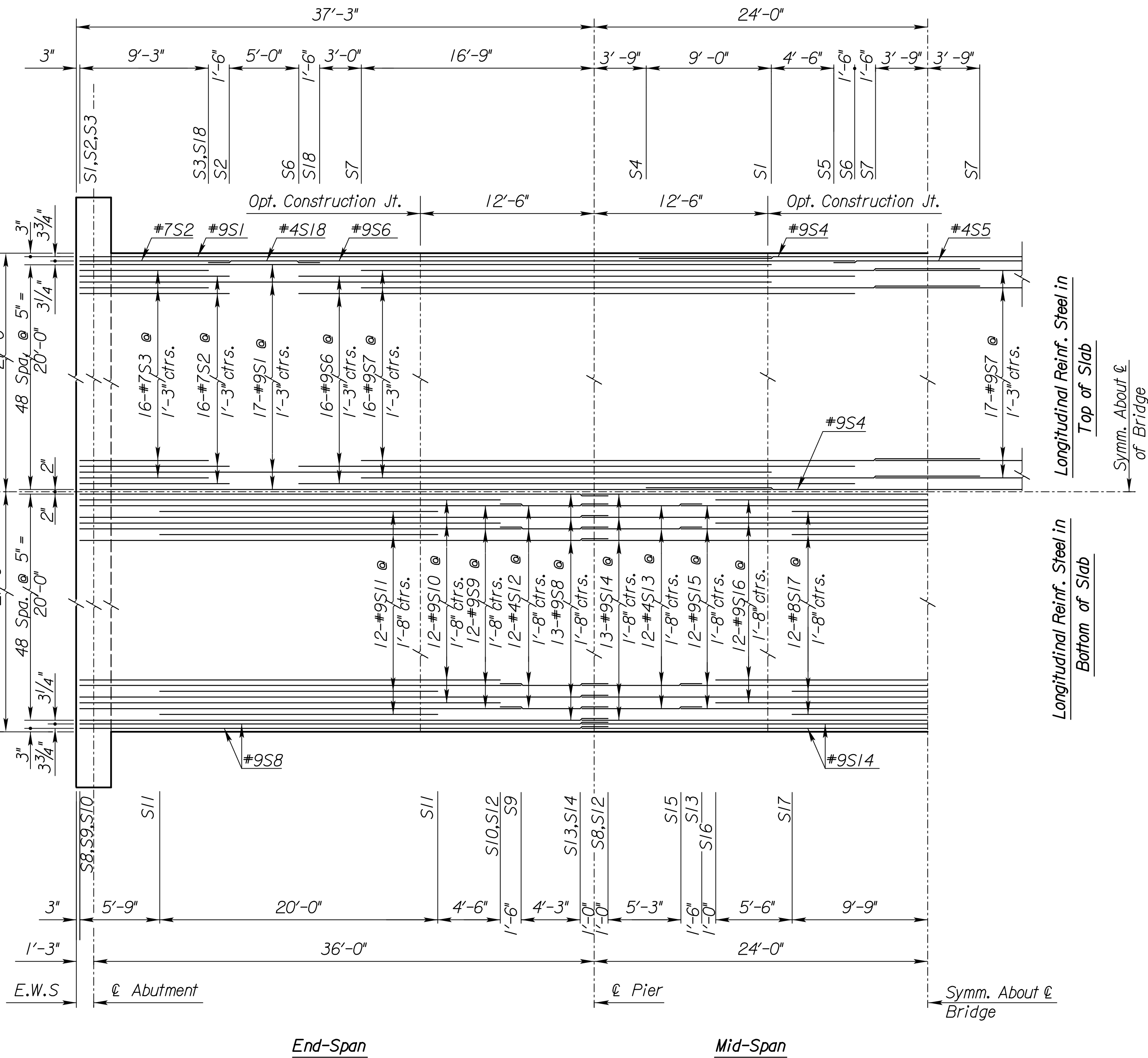
Sheet No. 66

LFD & LRFR RATING FACTOR		2 1/2'		3'	
Truck	Or.	Inv.	Oper.	Inv.	Oper.
HS-20	1.39	2.66	1.66	2.17	1.31
LFD					
LRFR	HL-93	1.43	1.85	1.63	2.12

LRFDbr59as.dgn	Plot 2
Roadway Width = 40' 0.5"	Longest Span Length = 48'
Skew and Direction = 0	Total No. of Spans = 3
Loading = HL-93	Railing Type = Corral

Plotted By: user	Plot Location:
File: c:\pwworking\central0\43357667\4057140\lbr171-09.dgn	
Plot Date: 11-07-23	

Note:  
See longitudinal section for  
transverse reinforcing steel.



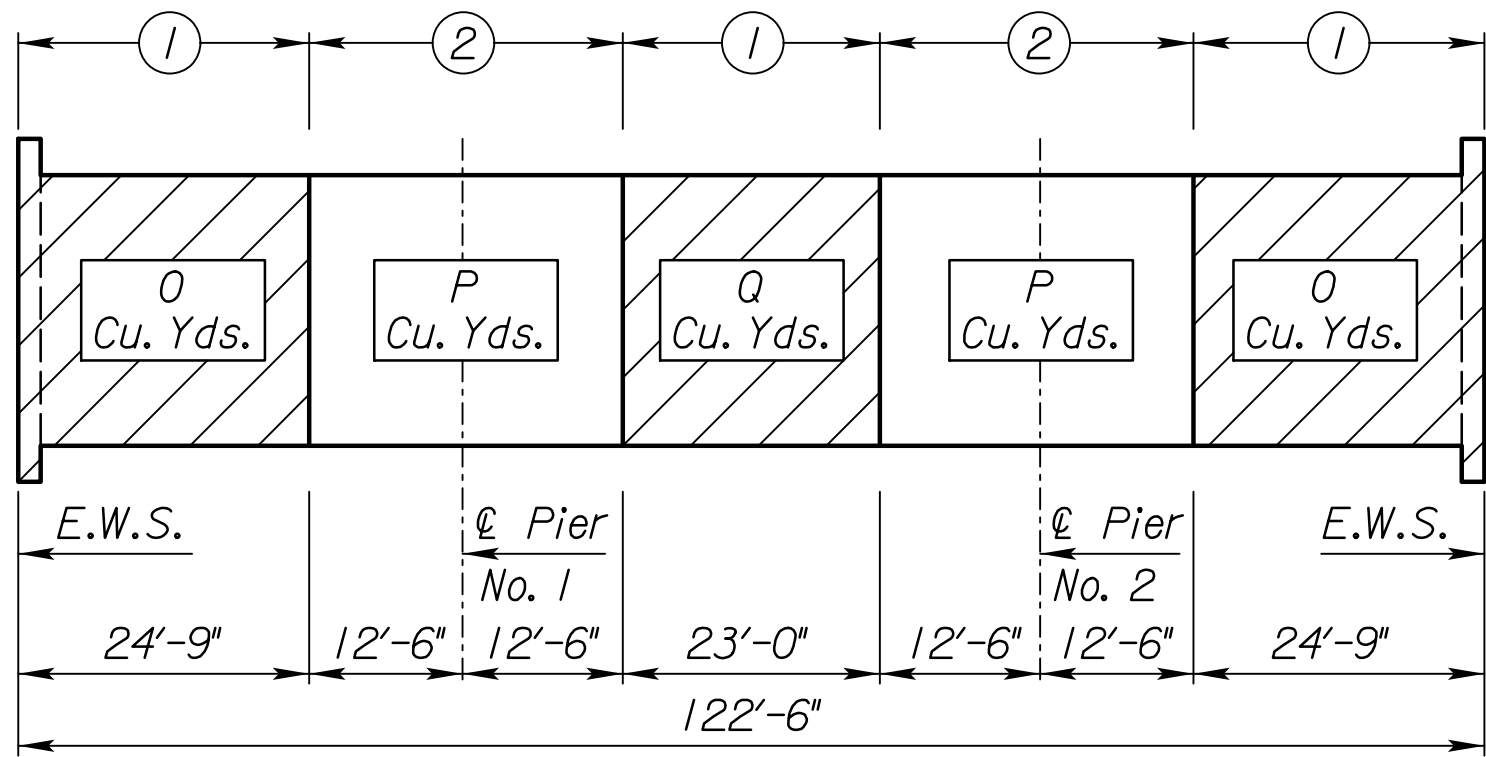
HALF PLAN

Note: 1.0 & 4.0 pts. are taken at  $\ell$  of abutments  
2.0 & 3.0 pts. are taken at  $\ell$  of piers

Top of Form Elevation at 10th Points, (ft.)															
1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
1143.35	1143.34	1143.34	1143.33	1143.30	1143.23	1143.13	1142.99	1142.81	1142.61	1142.38	1142.62	1142.82	1142.95	1143.02	1143.03
2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	
1142.95	1142.81	1142.61	1142.35	1142.04	1142.22	1142.37	1142.49	1142.58	1142.63	1142.65	1142.62	1142.58	1142.54	1142.49	

Note: Elevations are taken at Profile Grade. Note: The change in elevation from Profile Grade to the Edge of Slab is -0.304' short side  
+0.368' long side

PLACING SEQUENCE	
	Clear Cover
Location	3"
End Pour (O)	72.7
Pier Pour (P)	73.0
Mid Pour (Q)	48.3



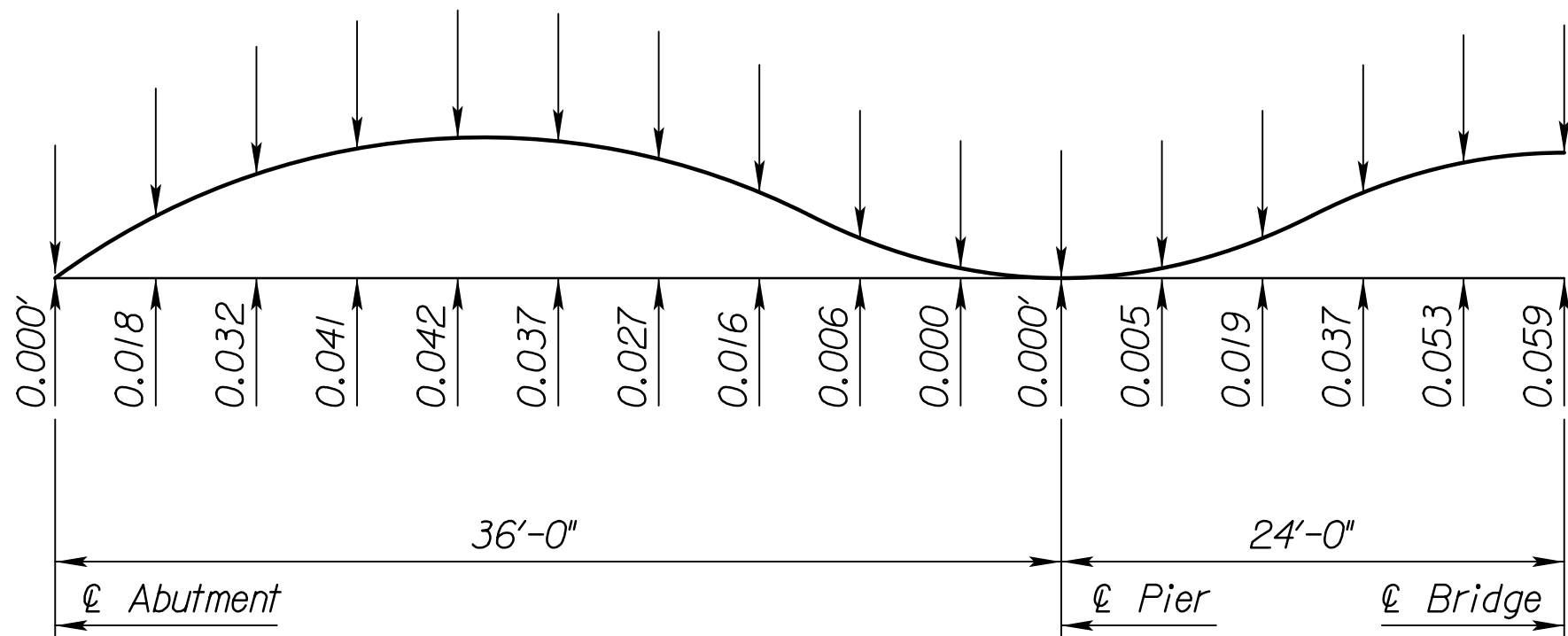
CONCRETE PLACING SEQUENCE DIAGRAM

CONCRETE PLACING SEQUENCE

When long span steel beams having a concrete dead load deflection greater than 1/4" are used or when timber falsework with greater than 12'-0" clear span is used, follow the placing sequence shown. Segmental, combined or continuous pours are allowed, but stop a discontinuous pour at a construction joint short of a pier.

When timber falsework with 12'-0" or less clear span is used, the Contractor, subject to the approval of the Engineer, may use a continuous pour or may discontinue the pour at any construction joint shown.

The Contractor may place the corral rail continuously from one end of the bridge to the other.



DEAD LOAD CAMBER DIAGRAM AT TENTH POINTS

Long Term Deflections = Initial Deflections x 3.5  
(Initial Deflections Based on  $E_c = 3.644 \times 10^6$  p.s.i.)  
(camber values in feet)

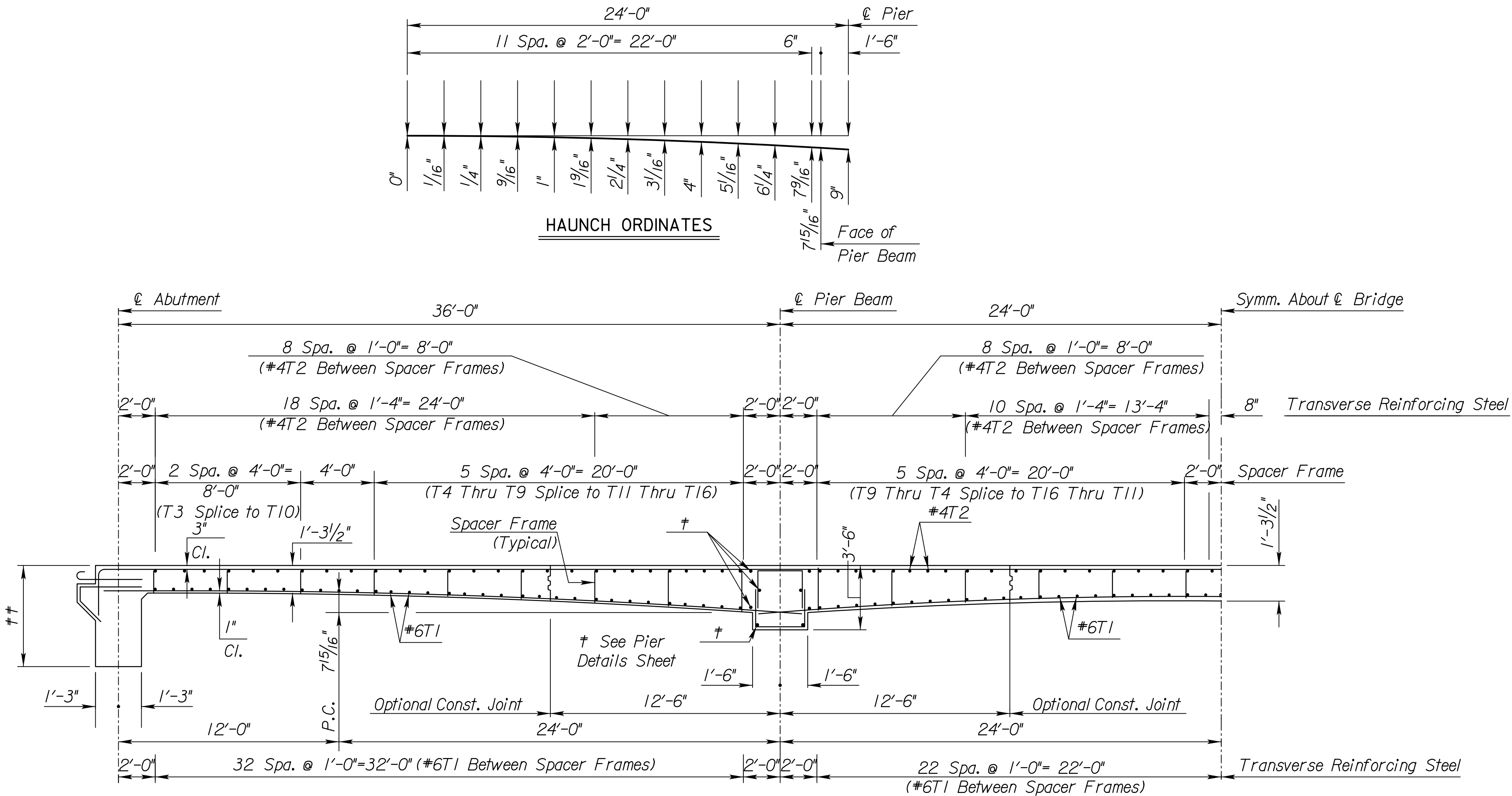
4					
3					
2					
1					
NO.	DATE	REVISIONS			BY APP'D
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-I28.97 (I7I) Sta. 450+93.23					
SUPERSTRUCTURE DETAILS					
S. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5714-01 Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TKI
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.	ASF
				CADD CK.	TKI



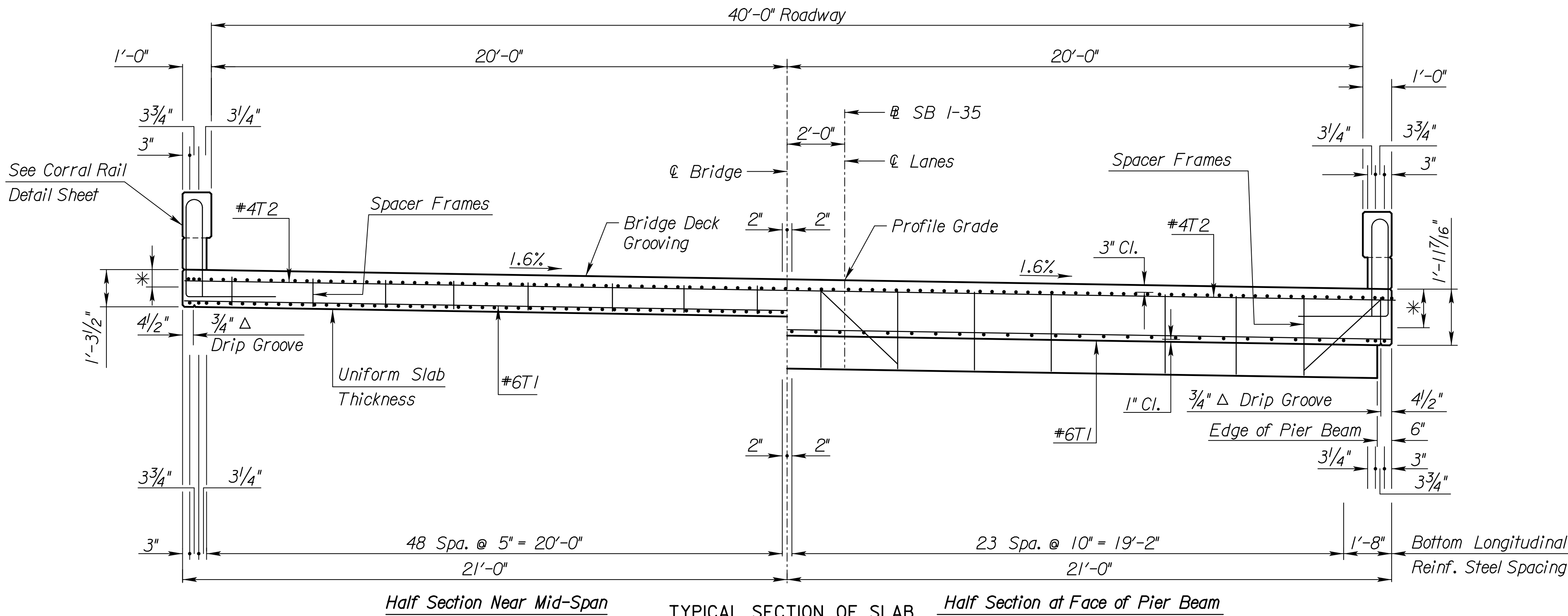
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	68	200

11710br519as.dgn	Plot 3
Roadway Width = 40'-0.5"	Longest Span Length = 48'
Skew and Direction = 0	Total No. of Spans = 3
Loading = HL-93	Railing Type = Corral

## 5'-17/8" (Abutment No. 1)  
5'-2/8" (Abutment No. 2)  
@ CL of Bridge



HALF LONGITUDINAL SECTION ALONG CL BRIDGE



\* See Corral Rail Detail Sheet

4					
3					
2					
1					
NO.	DATE	REVISIONS	BY	APP'D	
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-128.97 (171) Sta. 450+93.23					
SUPERSTRUCTURE DETAILS					
S. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5714-01 Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TKI
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.	ASF

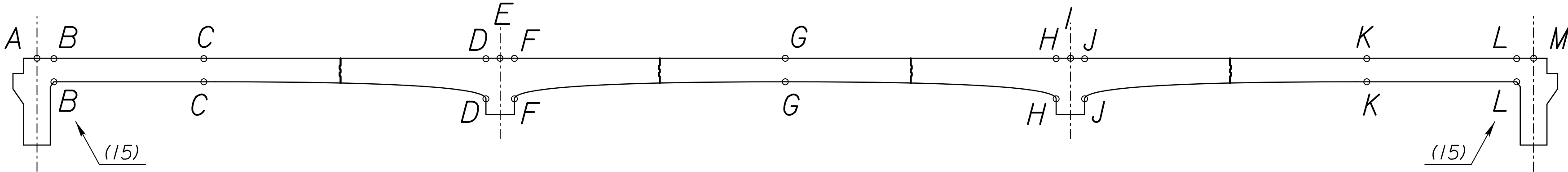
Plotted By: user  
File: c:\pwworking\ventral0\43357667\4057140\br71-1.dgn  
Plot Date: 11-07-23

				SLAB ELEVATIONS											
				Formwork				Screed			Thickness			Deck Profile	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Survey	Station	† Location	Transverse Location	Estimated Falsework Crush	Target Elevation TOF	Actual Elevation TOF	TOF Variance (QA/QC)	Target Screed El. = TOC El.	Actual Bottom of Screed Elevation Prior to Pour	Screed Variance (QA/QC)	Plan Deck Thickness	Measured Deck Thickness	Deck Thickness Variance (QA/QC)	Plan TOC El.	Actual TOC El. Optional Survey
	(1)(16)	(13)	(13)	(inch) (1)(4)	(1)(6)	(2)	(± inch) (2)(5)	(1)(6)	(2)	(± inch) (2)(7)	(inch) (1)	(inch) (2)(8)	(± inch) (2)(9)	(1)	Date: (3)
A	450+33.23	℄ Brg. of Abut. #1	Left Fascia					1144.98						1144.98	
			Profile Gr.					1144.62						1144.62	
			Right Fascia					1144.31						1144.31	
B	450+34.48	Interior Face of Abut. #1	Left Fascia		1143.69						15½"			1144.98	
			Profile Gr.		1143.32						15½"			1144.61	
			Right Fascia		1143.01						15½"			1144.31	
C	450+47.63	4/10 Point from Abut. #1	Left Fascia	¼"	1143.67			1144.97			15⅞"			1144.90	
			Profile Gr.	¼"	1143.30			1144.60			15⅞"			1144.53	
			Right Fascia	¼"	1142.99			1144.29			15⅞"			1144.23	
D	450+67.73	Span #1 Face of Pier Beam	Left Fascia	¼"	1142.85						23⅞"			1144.78	
			Profile Gr.	¼"	1142.48						23⅞"			1144.41	
			Right Fascia	¼"	1142.18						23⅞"			1144.11	
E	450+69.23	℄ Brg. of Pier #1	Left Fascia					1144.77						1144.77	
			Profile Gr.					1144.40						1144.40	
			Right Fascia					1144.10						1144.10	
F	450+70.73	Span #2 Face of Pier Beam	Left Fascia	¼"	1142.83						23⅞"			1144.76	
			Profile Gr.	¼"	1142.46						23⅞"			1144.39	
			Right Fascia	¼"	1142.16						23⅞"			1144.09	
G	450+93.23	Midpoint of Span #2	Left Fascia	¼"	1143.39			1144.69			15½"			1144.61	
			Profile Gr.	¼"	1143.03			1144.32			15½"			1144.24	
			Right Fascia	¼"	1142.72			1144.01			15½"			1144.93	
H	451+15.73	Span #2 Face of Pier Beam	Left Fascia	¼"	1142.51						23⅞"			1144.44	
			Profile Gr.	¼"	1142.14						23⅞"			1144.07	
			Right Fascia	¼"	1141.83						23⅞"			1143.77	
I	451+17.23	℄ Brg. of Pier #2	Left Fascia					1144.43						1144.43	
			Profile Gr.					1144.06						1144.06	
			Right Fascia					1143.75						1143.75	
J	451+18.73	Span #3 Face of Pier Beam	Left Fascia	¼"	1142.48						23⅞"			1144.41	
			Profile Gr.	¼"	1142.11						23⅞"			1144.05	
			Right Fascia	¼"	1141.81						23⅞"			1143.75	
K	451+38.83	4/10 Point from Abut. #2	Left Fascia	¼"	1143.01			1144.31			15⅞"			1144.25	
			Profile Gr.	¼"	1142.65			1143.95			15⅞"			1143.88	
			Right Fascia	¼"	1142.34			1143.64			15⅞"			1143.58	
L	451+51.98	Interior Face of Abut. #2	Left Fascia		1142.84						15½"			1144.14	
			Profile Gr.		1142.48						15½"			1143.77	
			Right Fascia		1142.17						15½"			1143.46	
M	451+53.23	℄ Brg. of Abut. #2	Left Fascia					1144.13						1144.13	
			Profile Gr.					1143.76						1143.76	
			Right Fascia					1143.45						1143.45	

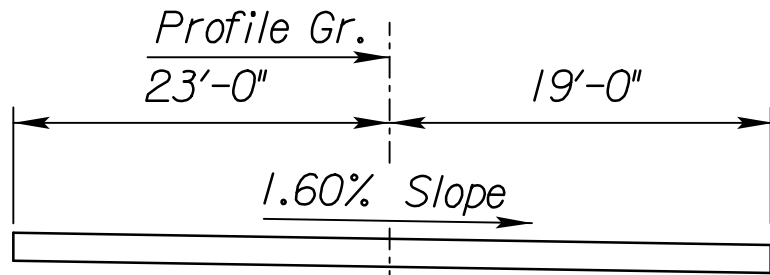
† Stationing shown increasing

NOTE: The Contractor will submit a completed copy of this table to the Field Engineer to be inserted into the As-Builts plan set.

\* It is assumed that piling have been driven to design bearing and checked by ENR formula (QA/QC). No allowance for pile settlement is included in crush.



ELEVATION OF SLAB



Left Side Right Side

TYPICAL SECTION  
(Looking Up-Station)

Legend  
TOF = Top of Formwork  
TOC = Top of Concete  
QA = Quality Assurance  
QC = Quality Control

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	69	200

Pour Dates (2)	
	Deck
	Left Rail (13)
	Right Rail(13)

Survey Data (1)(11)	
Bench Mark No.	Elevation
12	1143.65
13	1139.24
20	1127.04
21	1129.51

Crown Grade Profile(1)(12)	
451+00.00	VPI Station
1144.27	VPI Elevation
-0.52%	G1 %
-0.95%	G2 %
150.00	L in Stations

Slab Thickness (1)		Span Data (1)	
15½"	Uniform Depth (inch)	HL-93	Design Loading
715⅞"	Haunch Depth @ Face of PB (inch)	36	Span #1 (ft)
		48	Span #2 (ft)
1⅞"	Haunch Depth @ 0.4 Point (inch)	3	Clear Cover (inch)

Roadway Data (1)(10)(13)	
42	Deck Width (ft) (14)
+1.6%	% Slope Left (±)
-1.6%	% Slope Right (±)
00:00:00	Skew (dd:mm:ss)

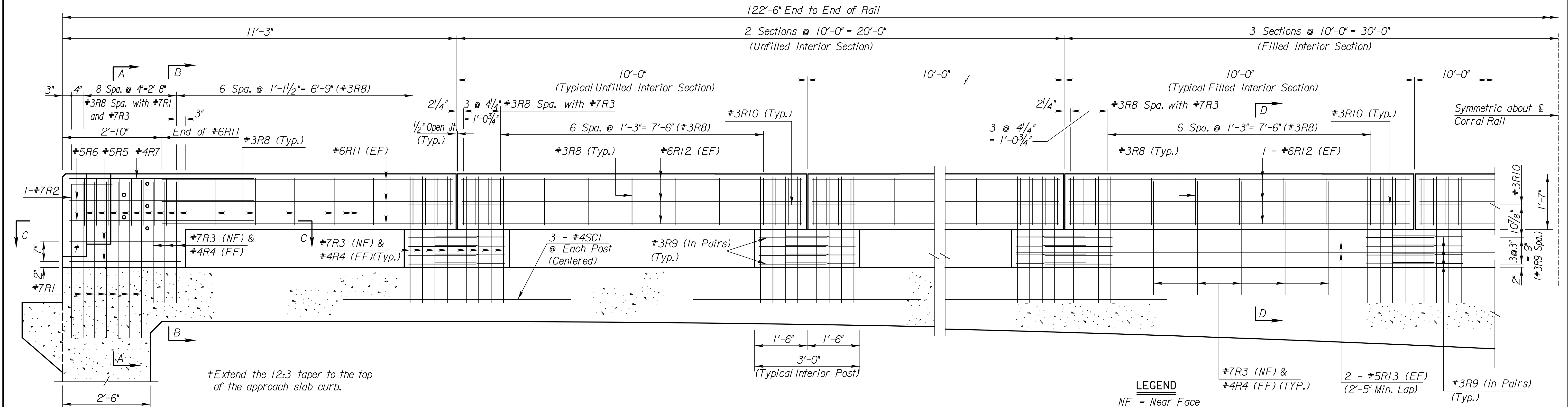
Camber (1)(17)	
0.042	Span #1 0.4 Point (ft)
0.059	Span #2 Midspan (ft)

- (1) By the Design Engineer  
(2) By the Contractor  
(3) By Request  
\*(4) Estimated crush for typical falsework. Revise estimate if/when more accurate information becomes available.  
(5) (col 7 - col 6)x12  
(6) Crush (Take Up) and camber must be included  
(7) (col 10 - col 9)x12  
(8) (col 10 - col 7)x12  
(9) (col 13 - col 12)  
(10) If transition falls on the bridge, then enter "Varies" for the % Slope  
(11) From "Construction Layout" sheet  
(12) If bridge is not on the vertical curve, enter Abutment #1 ℄ bearing elevation from the "Construction Layout" sheet. Represent a change in grade with G1 only.  
(13) Looking Up-Station  
(14) Out-to-Out  
(15) Ignore Fillet  
(16) Non-skewed bridges only require ℄ stations.  
(17) Ignore theoretical camber at face of pier beams.

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
SLAB ELEVATIONS				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASF	DETAILED	JAH	QUANTITIES
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.
			TKI	CADD
			ASF	CADD CK.



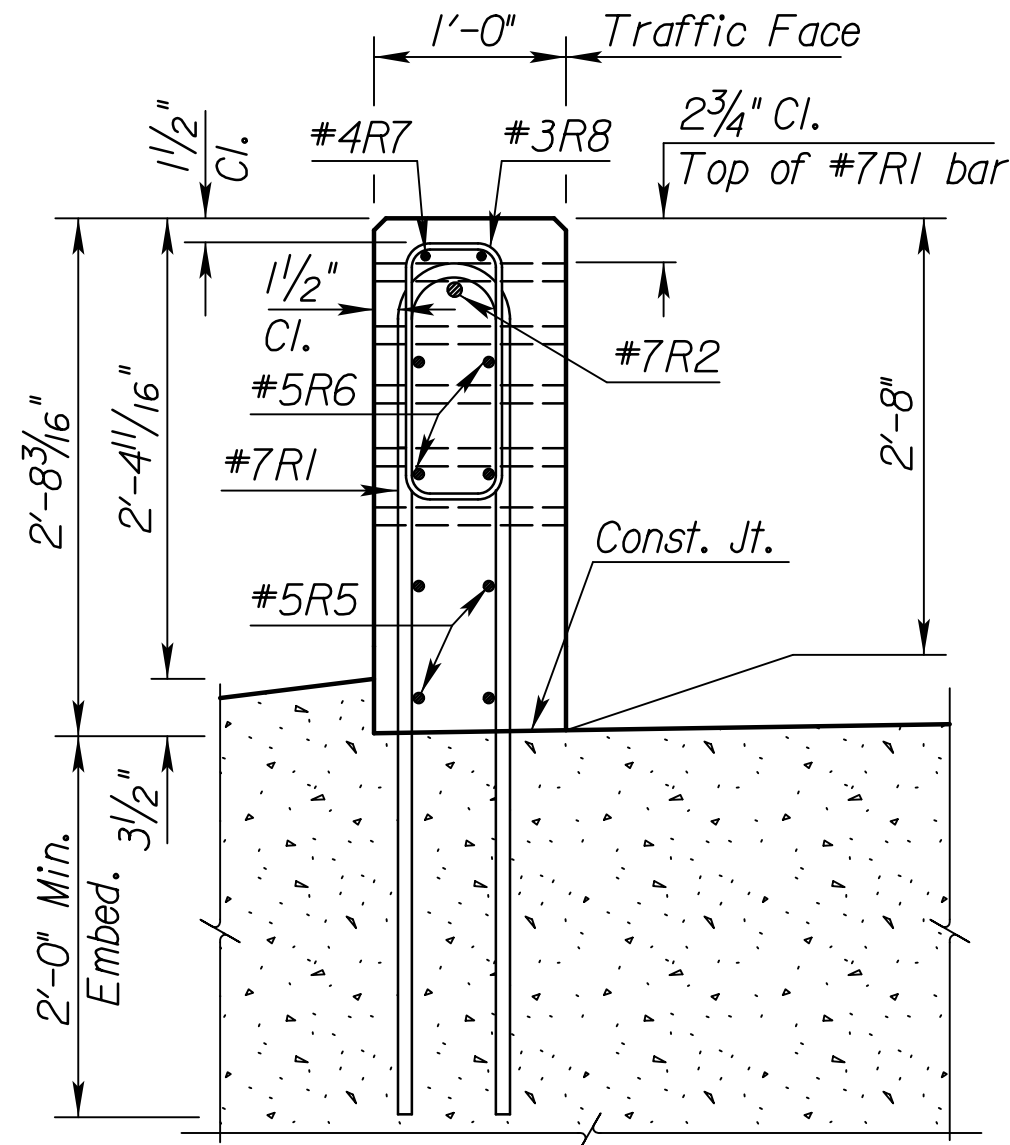
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	70	200



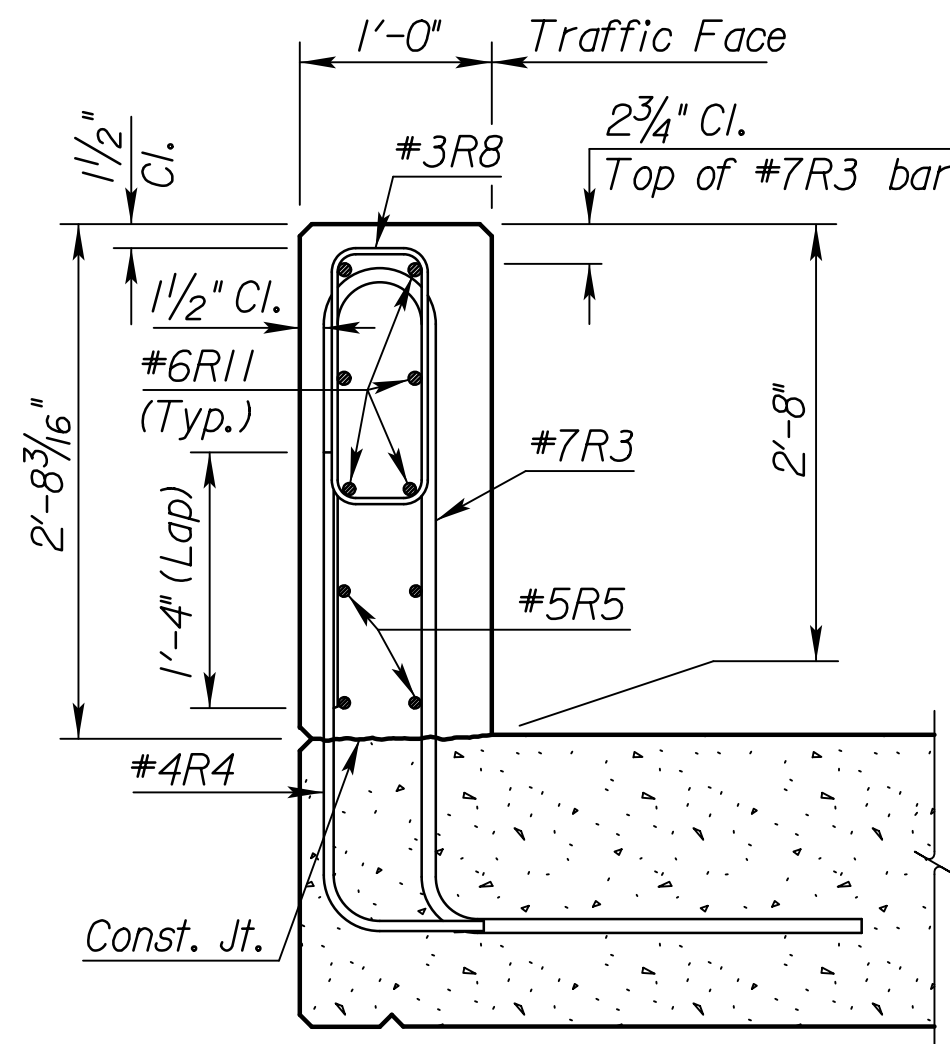
**PARTIAL ELEVATION**  
(Along Traffic Face)

**LEGEND**

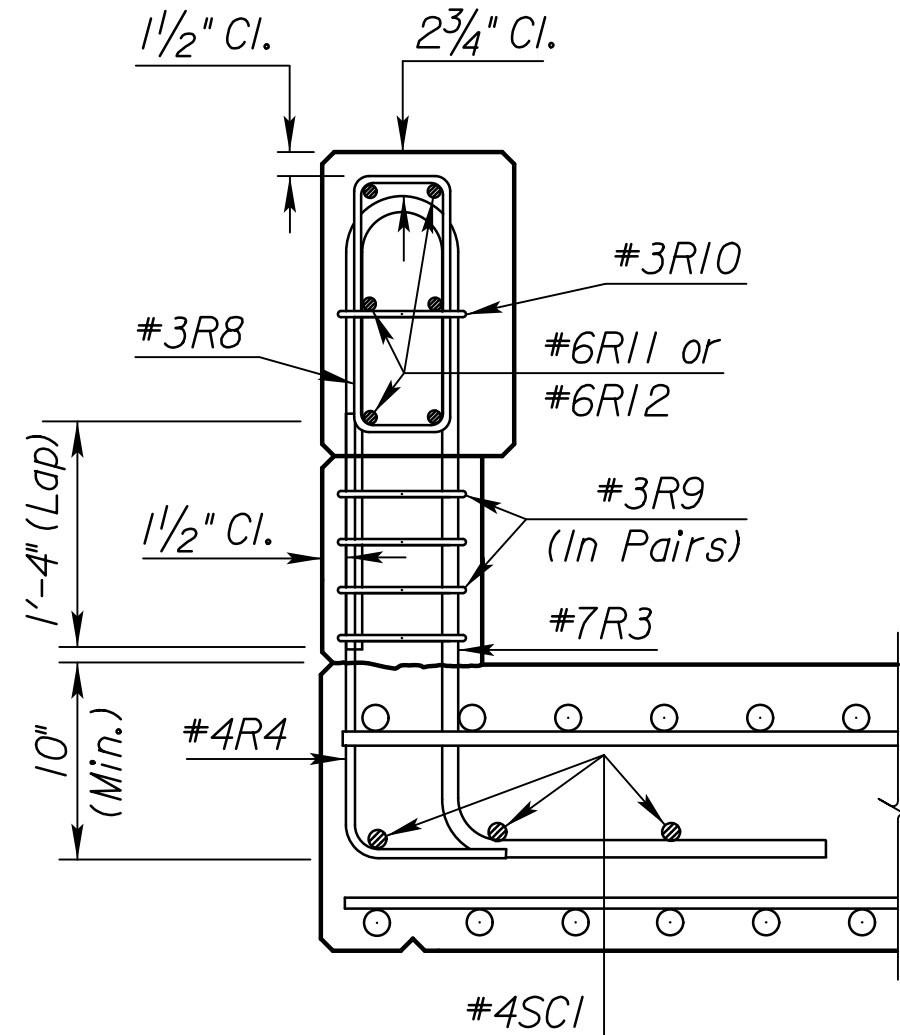
NF = Near Face  
FF = Far Face  
EF = Each Face



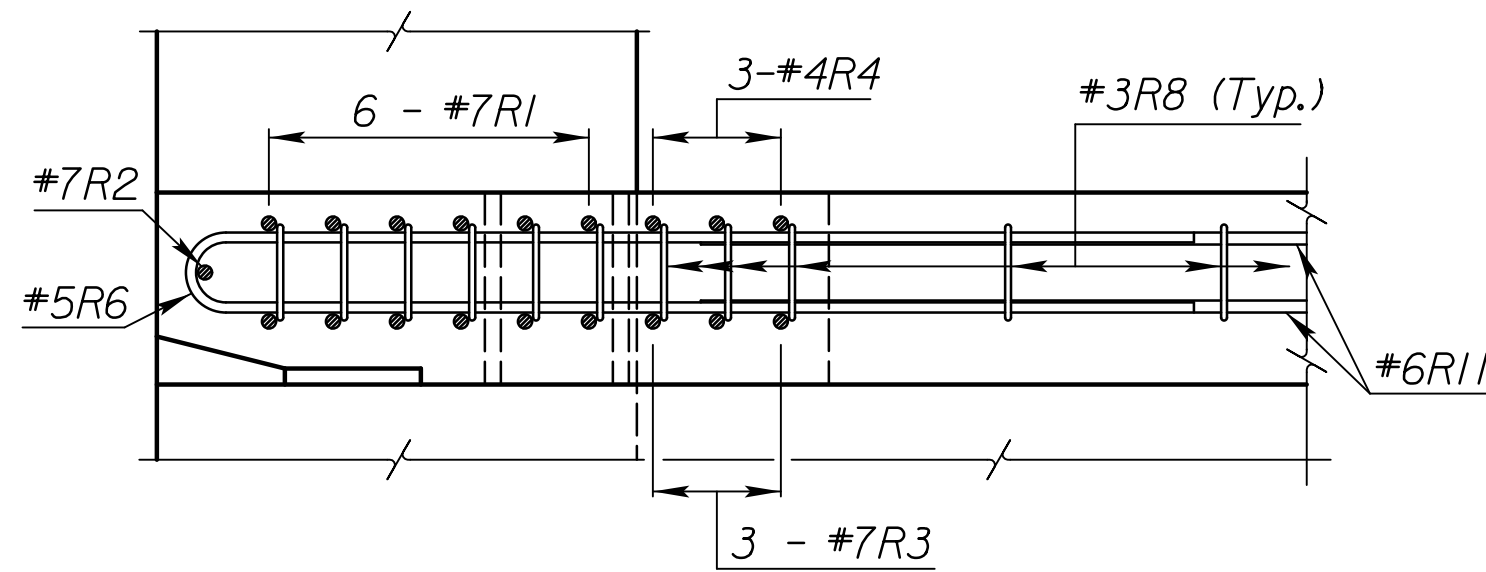
**SECTION A-A**



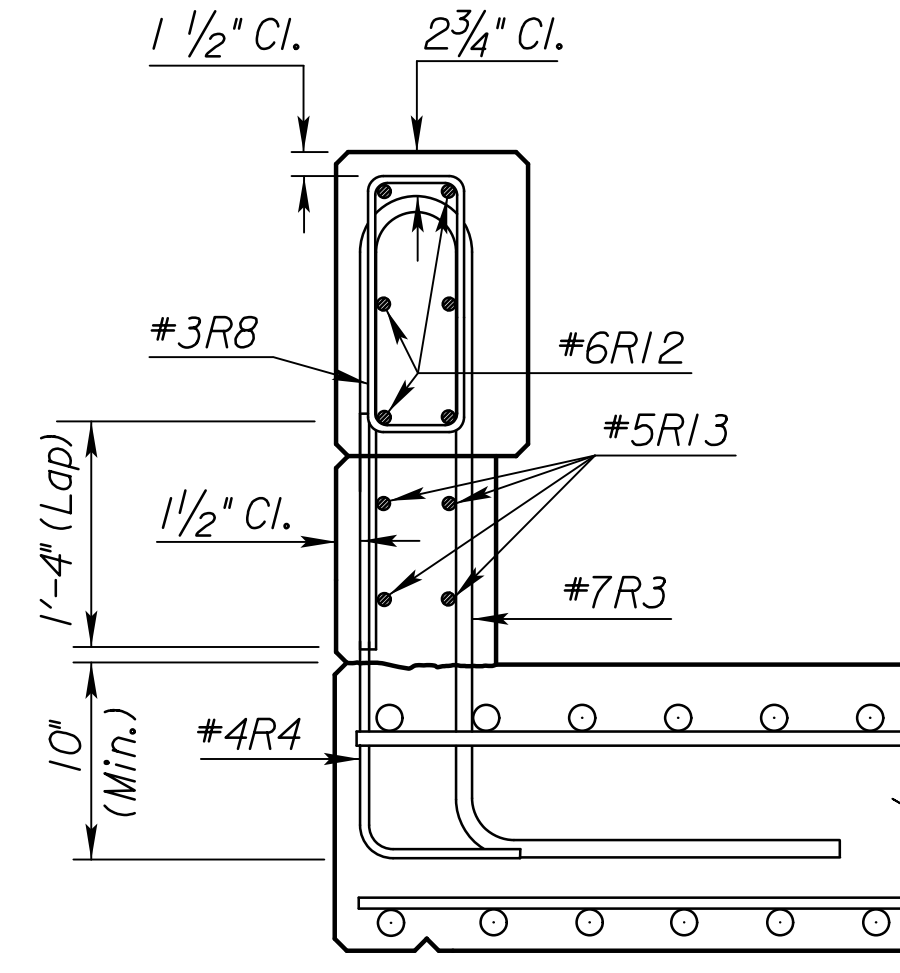
**SECTION B-B**



**SECTION THRU POST**



**SECTION C-C**



**SECTION D-D**

Notes:  
The corral rail shall be built vertical.  
For additional Corral Rail Details see Sheet No. 71

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.97 (171) Sta. 450+93.23				
CORRAL RAIL DETAILS (1 OF 2)				
S. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASF	DETAILED	JAH	QUANTITIES
DESIGN CK.	TKI	DETAIL CK.	ASF	CADD CK.

KDOT Graphics Certified 06-28-2023

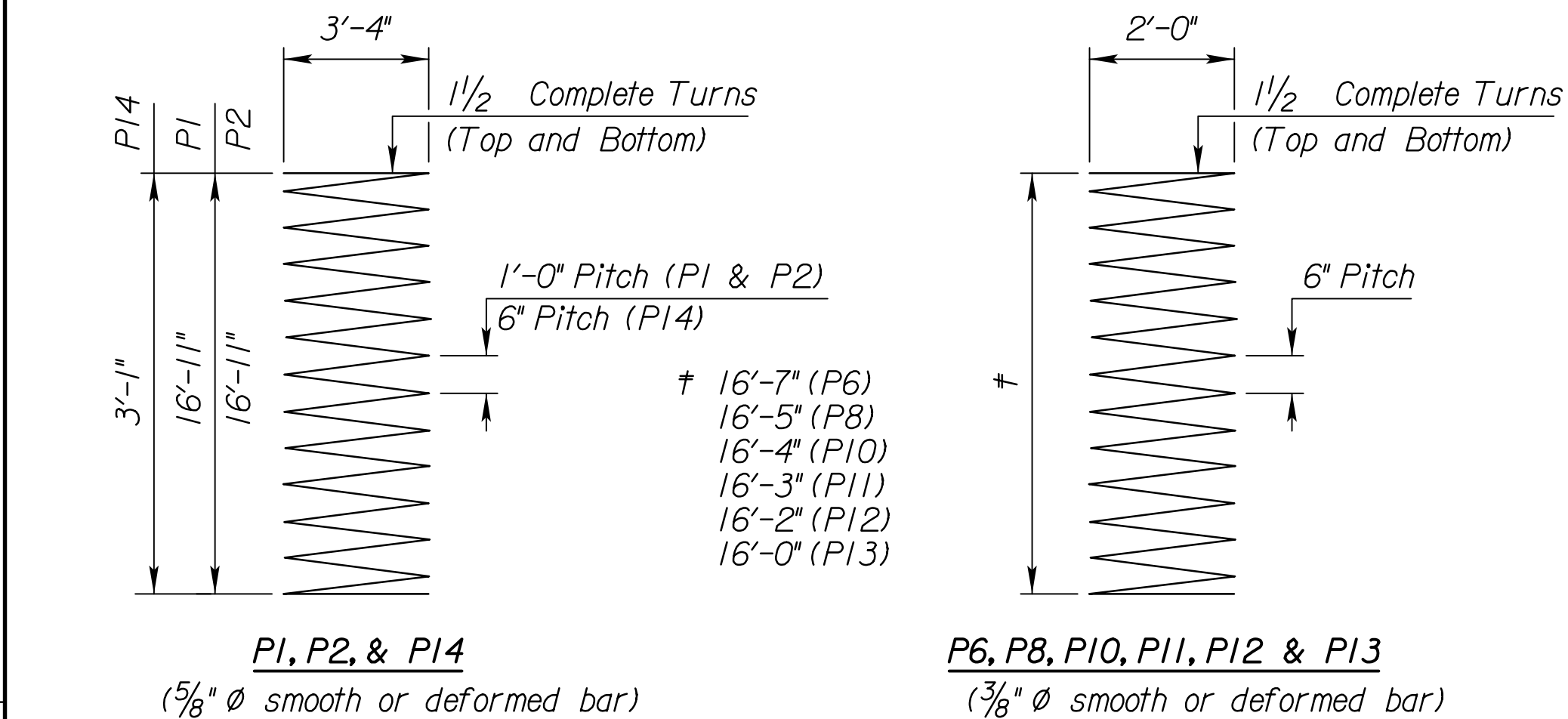
Sheet No. 70

Plotted By: user  
File: c:\pwork\central\01\43357667\k0571401\br71-12.dgn  
Plot Date: 11-07-23

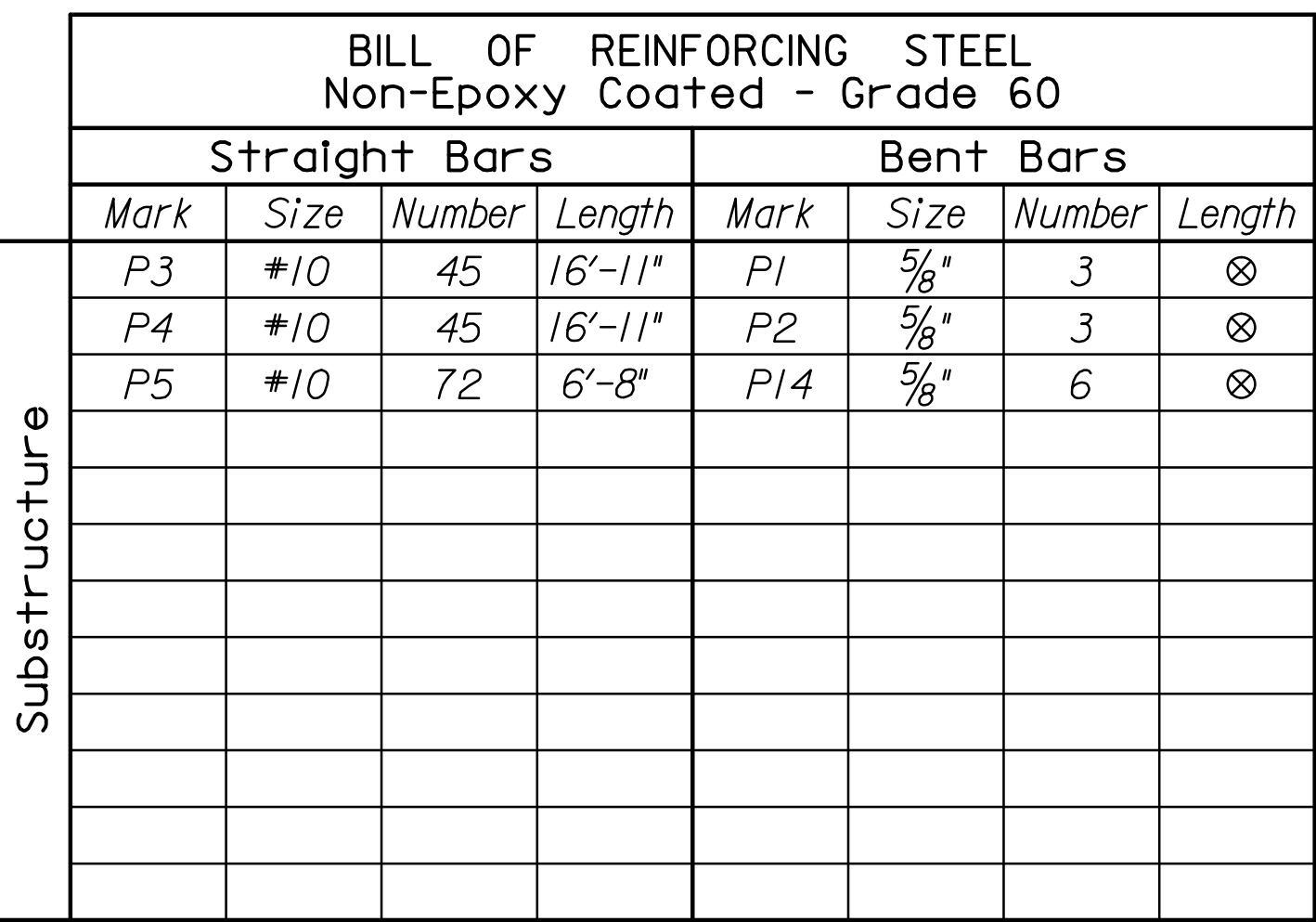




Plotted By: user	Plot Location:
File: c:\pwworking\central0\id3357667\kad571401\br171-14.dgn	
Plot: D:\p... 11.07.03	



<p><i>Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.</i></p> <p><i>Spiral Spacer Bars:</i></p> <ol style="list-style-type: none"> <li><i>1) Are included in the weight of reinforcing steel.</i></li> <li><i>2) Minimum section modulus = 0.30 in<sup>3</sup>.</i></li> <li><i>3) 4 required per spiral.</i></li> </ol>	<p><i>Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.</i></p> <p><i>Spiral Spacer Bars:</i></p> <ol style="list-style-type: none"> <li><i>1) Are included in the weight of reinforcing steel.</i></li> <li><i>2) Minimum section modulus = 0.008 in<sup>3</sup>.</i></li> <li><i>3) 4 required per spiral.</i></li> </ol>
--	---



		BILL OF REINFORCING STEEL Epoxy Coated - Grade 60							
		Straight Bars				Bent Bars			
		Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure	Abutment - Deck - Rail	S4	#9	4	40'-6"	S1	#9	72	52'-3"
		S6	#9	68	40'-0"				
		S7	#9	64	44'-6"	R1	#7	24	9'-3"
		S8	#9	60	38'-0"	R2	#7	4	5'-7"
		S9	#9	48	31'-9"	R3	#7	218	7'-9"
		S10	#9	48	30'-3"	S2	#7	68	13'-3"
		S11	#9	48	20'-0"	S3	#7	64	11'-9"
		S14	#9	30	50'-0"				
		S15	#9	24	35'-6"	A2	#5	80	3'-11"
		S16	#9	24	30'-6"	R5	#5	8	6'-6"
						R6	#5	8	10'-8"
		A1	#8	16	50'-2"				
		S17	#8	24	19'-6"	A4	#4	202	9'-4"
						A5	#4	80	6'-2"
		R11	#6	24	8'-3"	A7	#4	32	4'-9"
		R12	#6	120	9'-8"	R4	#4	218	3'-2"
		T1	#6	81	41'-8"	R7	#4	4	10'-8"
		A3	#5	24	50'-2"	R8	#3	332	4'-4"
		R13	#5	16	17'-7"	R9	#3	176	4'-6"
						R10	#3	44	4'-6"
		A6	#4	2	40'-8"				
		S5	#4	2	13'-6"	T3-T16			⊗
		S12	#4	48	7'-9"				
		S13	#4	48	8'-9"				
		S18	#4	4	8'-0"				
		SC1	#4	66	6'-6"				
		T2	#4	62	41'-8"				
Substructure	Pier Beam	PB5	#7	12	41'-8"	PB1	#5	168	8'-0"
		PB4	#6	10	40'-8"	PB6	#4	20	6'-6"
		PB2	#5	12	41'-8"				
		PB3	#5	4	40'-8"				
Substructure		P7	#7	36	19'-5"	P6	3/8"	1	⊗
		P9	#7	36	19'-3"	P8	3/8"	1	⊗
						P10	3/8"	1	⊗
						P11	3/8"	1	⊗
						P12	3/8"	1	⊗
						P13	3/8"	1	⊗

⊗ See Bending Diagram

3					
2					
1					
NO.	DATE	REVISIONS		BY	APP'D
<b>KANSAS DEPARTMENT OF TRANSPORTATION</b>					
Br. No. 035-056-128.97 (171) S.ta. 450+93.23					
BILL OF REINFORCING STEEL AND BENDING DIAGRAM					
S. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5714-01				Lyon Co.	
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TK
DESIGN CK.	TK	DETAIL CK.	ASF	QUAN. CK.	ASF
				CA DD	CK
				CK	CK

Plotted By: user  
File: c:\working\central\01\43357666\Kas71401\br170-01.dgn  
Plot Date: 11-07-23

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	73	200

SUMMARY OF QUANTITIES															
Item  Location	Excavation	Concrete		Reinforcing Steel	* Piles	Pre-Drilled	Drilled	Sonic Test	Core Hole	Bridge	Abutment	Slope	Bridge	Temporary	Falsework
	Class III	(Grade 4.0)	(Grade 4.0)	(Grade 60)	(Steel)	Pile Holes	Shaft (48")	(Drilled Shaft)	(Investigative)	Backwall	Strip	Protection	Deck	Shoring	Inspection
	Cu. Yds.	(AE) (SA) Cu. Yds.	(AE) Cu. Yds.	(Epoxy Coated) Lbs.	(HPI2x53) Lin. Ft.	Lin. Ft.	(Cased) Lin. Ft.	(Set Price) Each	Lin. Ft.	Prot. System Sq. Yds.	Drain Sq. Yds.	(Aggregate) Cu. Yds.	Grooving Sq. Yds.	Lump Sum	Lump Sum
Abutment No. 1	64	**	-	**	105	75	-	-	-	25	21	152	-	-	-
Pier No. 1	5	**	9.0	1750	-	-	52	-	24	-	-	-	-	-	-
Pier No. 2	5	**	8.8	1730	-	-	53	-	24	-	-	-	-	-	-
Abutment No. 2	64	**	-	**	100	75	-	-	-	25	21	240	-	-	-
Substr. Total	138	-	17.8	3480	205	150	105	-	48	50	42	392	-	-	-
Superstr. Total	-	376.9	-	98730	-	-	-	-	-	-	-	-	490	-	-
Total	138	376.9	17.8	102210	* 205	150	105	1	48	50	42	392	490	Lump Sum	Lump Sum

\*\* Quantities are included in the Superstr. Total Quantity.

\* Summary of Piling  
Abutment No. 1 5 @ 21 ft.  
Abutment No. 2 5 @ 20 ft.

\* NOTE: Only steel pile HPI2x53 shall be used on this project

CONTRACTOR CONSTRUCTION STAKING: Contractor Construction Staking for clear span bridges requires two independent surveys. See KDOT Specifications.

EXISTING STRUCTURE: Plans of the existing structure are on file and available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison St., Topeka, KS.

EMBANKMENT: Complete the embankment at the abutments as shown on the Bridge Excavation sheet prior to driving the abutment piling or commencing with the abutment footing excavation.

BRIDGE EXCAVATION: All excavation shall be Class III. See the Bridge Excavation sheet for limits of pay excavation.

TEMPORARY SHORING: The bid item "Temporary Shoring" includes all labor and material necessary to furnish shoring at the location shown on the plans for the temporary bracing of the embankment during excavation. Maintain the temporary shoring until the Engineer authorizes its removal. The temporary shoring plans are to be designed and sealed by a registered Professional Engineer. Submit design calculations and shoring plans to the Field Engineer for review 6 weeks before work is scheduled to begin. Work shall not begin until the Engineer grants approval. Note that due to the large exposure height and shallow depth to rock, specialized shoring will be required. See the KDOT geotechnical report. The Temporary Shoring Investigation Memo (Dated January 2023) is available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

BACKFILL COMPACTION: Compact backfill at the abutments and piers.

PILING: Piles shall be pre-drilled and then driven to the required elevation within the Friedrich Shale of the Root Formation. Once the required resistance and penetration in firm shale of the Friedrich Shale Member of the Root Formation is achieved, driving should cease to avoid damage to the pile. Final pile tip elevations should be determined in the field based on observed blow counts and bearing formula calculations. Drive all piling to the Pile Driving Formula Load of:

Abutment No. 1 60 Tons  
Abutment No. 2 60 Tons

As a minimum drive each pile to the load and penetration, but in no case shall the pile be driven to more than 110% of Pile Driving Formula Driving Load. At any location where problems are experienced, pile damage is suspected, or the Pile Driving Formula Load occurs significantly above the design pile tip elevation, the Engineer may request that the Pile Driving Analyzer (PDA) equipment be used.

PRE-DILLING: All steel piles in Abutment No. 1, & Abutment No. 2 shall be pre-drilled to these elevations:

Abutment No. 1 - Elev. 1124.3  
Abutment No. 2 - Elev. 1123.8

Piles shall be set and driven to the computed bearing value shown. After driving, the holes shall be backfilled according to KDOT Specifications Section 704. Casing is not required.

COLUMN CONSTRUCTION: Cure the drilled shaft footing as required by the KDOT Specifications before beginning the column construction (placing resteel or formwork). Do not place cast in place shear bolts, coil inserts or other devices used as falsework support in the column without the approval of the Engineer. Do not remove the column formwork without the approval of the Engineer. Curing shall continue after the formwork is removed as required by the KDOT Specifications.

GEOTECHNICAL REPORT: The geotechnical report (Dated January 2023) includes soil parameters for retaining wall (sheet pile) design. The report recommends a traffic surcharge of 250 lb/ft<sup>2</sup>. The geotechnical information shown on the plans is the best information available. The report is available for inspection by qualified bidders at the State Bridge Office, KDOT, Eisenhower State Office Building, 700 SW Harrison, Topeka, KS.

ABUTMENT STRIP DRAIN: See the General Notes on the "Abutment Strip Drain" sheet.

BRIDGE BACKWALL PROTECTION SYSTEM: See the General Notes on the "Abutment Strip Drain" sheet.

REMOVAL OF EXISTING STRUCTURE: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. Remove this material from the site.

SLOPE PROTECTION (Aggregate): Place Slope Protection (Aggregate)(12") to the limits and thicknesses shown on the plans or as directed by the Engineer. Use (Aggregate)(12") D<sub>50</sub> = 4" as described in Division 1100 placed to the limits shown in the plans.

DRIP LINE PROTECTION: Place a 10 foot wide mat of geotextile under the rock embankment on the berm and berm slopes and centered on the drip lines of the slab.

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SA). Substructure concrete is bid as Concrete (Grade 4.0)(AE). The Contractor may use Concrete (Grade 4.0) in the footings. Bevel all exposed edges of all concrete with a 3/4" triangular molding, except as otherwise noted on the plans. Construction joints are optional with the Contractor, but if used, place only at locations shown, or at locations approved by the Engineer.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel, except the spiral bars, shall conform to the requirements of ASTM A615, Grade 60. Spiral bars may meet the requirements of either ASTM A615 (Gr. 40 or 60) or AASHTO M 32, and are included in the bid item "Reinforcing Steel (Gr. 60) (Epoxy Coated)".

Where non-coated bars come in contact with epoxy coated bars, they need not be coated.

PILING SPLICE LOCATION: Integral pile splice locations and weld testing criteria for, Abutments No. 1 & 2 will follow the "Standard Pile Details" Sheet (BR110).

#### DESIGN DATA

DESIGN SPECIFICATIONS:  
Superstructure (Reinforced Concrete Haunch Slab Design):  
AASHTO Specifications, 2007 Edition and latest Interim Specifications. Load and Resistance Factor Design.

Substructure:  
AASHTO Specifications, 2020 (9th) Edition and latest Interim Specifications. Load and Resistance Factor Design.

DESIGN LOADING:  
HL-93

Design Dead Load includes an allowance of 15 psf for a future wearing surface.

UNIT STRESSES:

Concrete (Grade 4.0)	f'c = 4.0 ksi
Concrete (Grade 4.0)(AE)	f'c = 4.0 ksi
Concrete (Grade 4.0)(AE)(SA)	f'c = 4.0 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Steel Pile	fy = 50 ksi

LRFD DESIGN PILE LOAD:				
Design Loading (Tons/Pile)	Strength I	Service I	Phi	
Abutment No. 1	60	42	0.50	
Abutment No. 2	60	42	0.50	

LRFD DESIGN DRILLED SHAFT LOAD:					
Design Loading (Tons/Shaft)	Strength I	Service I	End Bearing Phi	Side Friction Phi	
Pier No. 1	317	216	0.45	0.50	
Pier No. 2	317	216	0.45	0.50	

INDEX TO BRIDGE DRAWINGS	
SHEET NO.	DRAWING TITLE
73	General Notes and Quantities
74	General Notes
75	Contour Map
76	Construction Layout
77	Engineering Geology
78	Abutment Details
79	Abutment Strip Drain
80	Pier Details
81	Superstructure Details
82	Superstructure Details
83	Slab Elevations
84	Corral Rail Details (1 of 2)
85	Corral Rail Details (2 of 2)
86	Bill of Reinforcing Steel and Bending Diagrams
STANDARDS	
87	Bridge Excavation (LRFD)
88	Standard Pile Details
89	Supports and Spacers for Reinforcing Steel
90	Bridge Berm and Slope Protection

TRAFFIC DATA	
AADT (2024)	13,200
AADT (2044)	18,150
DHV	9%
T	20.5%

Note: Traffic Data provided NB Bridge only.

LFD & LRFR RATING FACTORS		
Rating Level	Inventory	Operating
Truck		
HS-20 (36T)	1.66	2.77
Type HET (110T)		1.31
2002 LFD Rating, 17th Edition AASHTO		
HL-93 Loading	1.63	2.12
2020 Manual for Bridge Evaluation		

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (170) Sta. 450+93.23				
GENERAL NOTES AND QUANTITIES				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5174-01			Lyon Co.	
SHEET NO. OF	SCALE	APP'D		
DESIGNED	ASF DETAILED	JAH QUANTITIES	TKI CADD	JAH
DESIGN CK.	TKI DETAIL CK.	ASF QUAN. CK.	ASF CADD CK.	TKI

KDOT Graphics Certified 11-06-2023

Sheet No. 73



Plotted By: user  
File: c:\pwworking\ventral0\vd3357666\vd57140\lbr170-02.dgn  
Plot Date: 11-07-23

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	74	200

GENERAL NOTES

DRILLED SHAFTS:Construct the drilled shafts using the cased method. A permanent casing is required. All excavation, concrete, reinforcing steel, pipes for Sonic Testing, casing, labor, and incidentals necessary to complete the shaft as shown on the details and as directed by KDOT Specifications shall be included in the bid item "Drilled Shaft (48") (Cased)". Use Grade 4.0 Concrete in the drilled shaft. In no instance shall the bottom of the drilled shaft be placed higher than the elevation shown unless otherwise directed by the KDOT Geologist.

Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause caving and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock a maximum of 1.0 feet, less if possible, to reduce the risk that overburden, and groundwater does not enter the rock socket. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing into the excavation.

Drill an Investigative Core Hole at the location(s) shown on the plans. See KDOT Specifications.

If the location of the top of the shaft is such that the casing cannot be overtopped to remove concrete impurities, provide extra casing length to over-pour the concrete in the shaft and chip back to the plan elevation of the top of the shaft.

If permanent casing to be corrugated metal pipe (CMP) then it will be galvanized.

Note that the drilled shafts have end bearing components. It is important that the bottom socket be clean and relatively flat. Allow no loose material within the footing when the drilled shaft is ready to pour.

Shales of the Root Shale Formation and the Stotler Formation could degrade rapidly in the presence of air and water. Place the reinforcing steel and concrete no more than eight (8) hours from completion of the excavation of the shaft to minimize exposure time of the shale to air and groundwater.

SONIC TESTING:Equip all drilled shafts with piping to allow sonic testing to be done. Install pipes at locations shown on the plans. All wet pours will be tested. Also, the Engineer has the option to require sonic, non-destructive, integrity testing at any location of concern. Sonic testing shall be paid for at the unit price set for "Sonic Test" (Drilled Shaft) (Set Price). If the sonic testing indicates defective concrete in the shaft, the Engineer will measure the first sonic test for payment, and the Contractor is responsible for subsequent sonic testing of that shaft. Report test results directly to KDOT's Chief Geologist. No work will be done above the top of drilled shaft without the approval of the Chief Geologist.

CONSTRUCTION LOADS:Limited traffic is permitted on the new sub-deck, one course deck or any concrete overlay during the curing period, keep any exposed deck wet during the curing period. See KDOT Specifications Section 710, Tables 710-1 & 710-2 for additional information.

CONSTRUCTION SEQUENCING:For construction sequencing and phasing information see Roadway Plans.

PERMANENT CASING:See KDOT Specifications.

FALSEWORK PLANS: A licensed Professional Engineer shall design the falsework details. Details shall bear the seal of a licensed Professional Engineer. Submit electronic plans conforming to Section 105 of the Standard Specification with details in compliance with KDOT Specifications to the Field Engineer for review.

FALSEWORK INSPECTION:This project has falsework plan requirements which are considered "Category I" by KDOT specifications. The falsework designer of record will conduct an inspection of the as-built falsework. The bid item, "Falsework Inspection" is full compensation for all materials, labor and equipment. See KDOT Specifications.

FALSEWORK PLANS AND SHOP DRAWINGS:Use the U.S. Customary system of units on falsework plans and shop drawing details.

FALSEWORK:Leave the falsework in place for the entire unit until 15 days after the concrete pour for the unit or longer as directed by the Engineer.

CAMBER:Provide camber as shown on the Camber Diagram unless the Contractor uses either long span steel beam falsework (concrete dead load deflection greater than 1/4") or timber falsework with greater than 12'-0" clear span. If either case exists, submit falsework plans that show the additional required camber.

PIER BEAM CONSTRUCTION:Cure the columns as required by the KDOT Specifications before beginning the pier beam construction (placing resteel or formwork). Do not drill and grout bolts or other devices into the columns used for falsework support unless approved by the Engineer. Cure the column as required by the KDOT Specifications before beginning to place the superstructure concrete.

CONCRETE PLACING SEQUENCE:The sequence of placing concrete in the slab and curbs shall be as shown, or the Contractor may submit an alternate placing sequence for review. Submit the alternate placing sequence to the Engineer at the Preconstruction Conference. Include the proposed rate of concrete placement in C.Y./h, the plant capacity, placement direction, construction joint location, a description of the equipment used in placing the concrete, proposed admixtures, and the quantity of concrete in each placing segment. Any additional cost for the Contractor's alternate plan of placing concrete, including admixtures, shall be at the Contractor's expense and shall be considered subsidiary to the bid item, "Concrete (Grade 4.0)(AE)(SA)". Approval of the Contractor's alternate sequence is required prior to placement of concrete in the deck.

SLAB ELEVATIONS:The Contractor shall record elevation readings on the "Slab Elevations" sheet in the table at locations designated by a "(2)" and submit the sheet to the Engineer.

CORRAL RAIL:Build the corral rail after the falsework is struck.

TEMPERATURE:The design temperature for all dimensions is 60°F.

QUANTITIES: Items not listed separately in the Summary of Quantities are subsidiary to other items in the proposal.

DIMENSIONS: All dimensions shown on the design plans are horizontal dimensions unless otherwise noted. Make necessary allowances for roadway grade and cross slope.

CONSTRUCTION JOINTS:The construction joints shown are optional with the Contractor. If used, place the construction joints only at locations shown or at locations approved by the Engineer.

BRIDGE DECK GROOVING:After the bridge deck has cured, transversely groove the deck in accordance with KDOT Specifications. For phased construction groove each completed phase before opening to traffic. Align the grooves from each adjacent phase across the bridge deck without jogs or discontinuities. For skewed bridges all grooving will be perpendicular to the centerline of the bridge.

DEMOLITION PLANS: This is a Category C Demolition. Submit detailed Demolition Plans to the State of Bridge Office (or Bureau of Local Projects) at least 4 weeks before beginning the demolition process. Portions of the submitted details shall bear the seal of a Licensed Professional Engineer. Identify, on the plans, the Demolition Supervisor meeting the requirements of the KDOT Specifications. The Demolition Supervisor will attend the required pre-demolition meeting before these operations begin, as described in KDOT Specifications. No demolition work will begin without approved Demolition Plans.

ASBESTOS INFORMATION: Samples of this structure were tested to determine the amount of Asbestos Containing Materials (ACM) present in the components. The results are listed below:

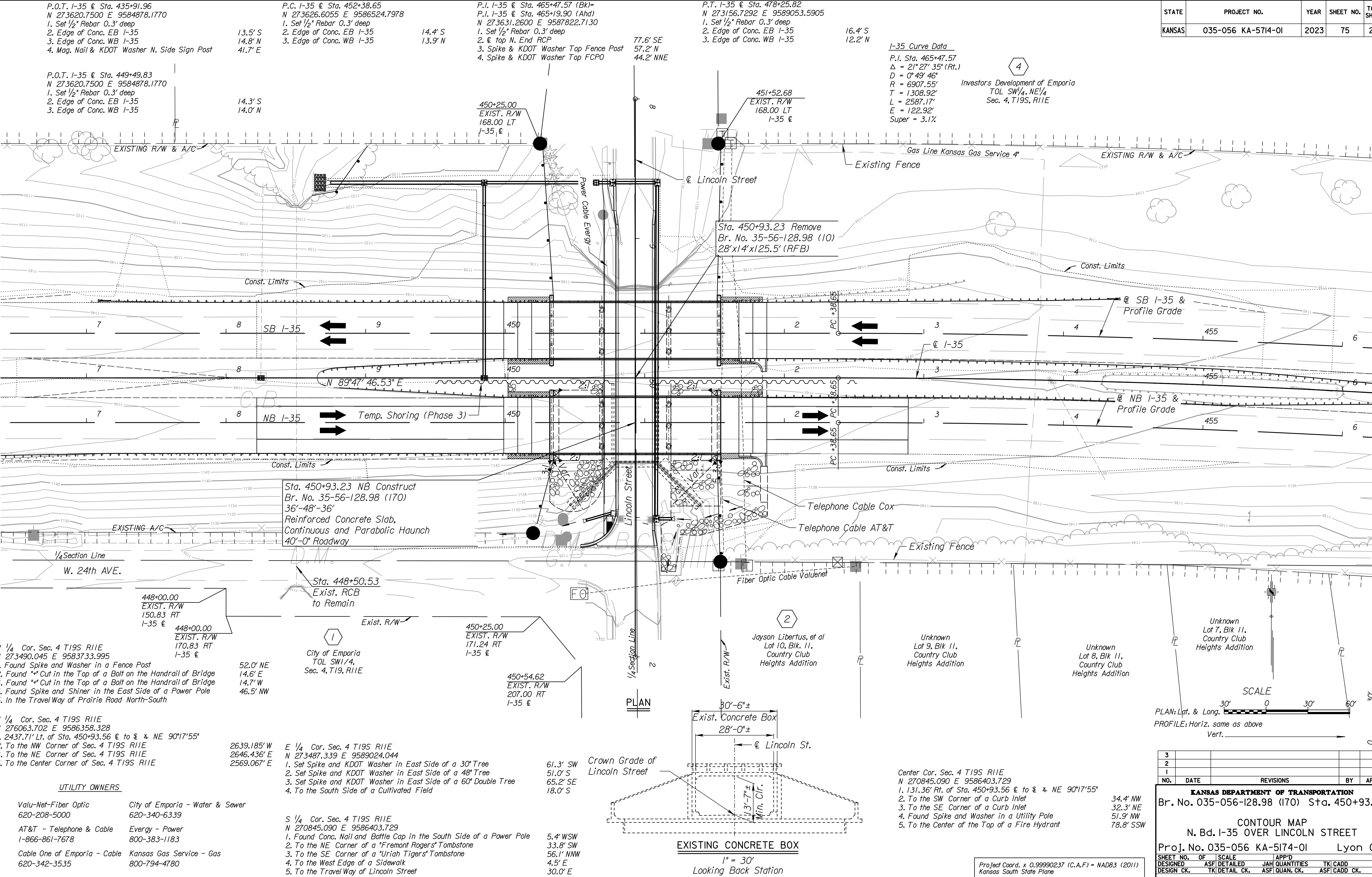
Concrete (Abutment, Deck)	0%
Date of Report	12/07/2021

For any result above greater than 1%, abatement shall be performed according to KDOT Specifications. Results less than 1% require no abatement.

DECK PROTECTIVE SYSTEM:Epoxy coat all reinforcing steel in the deck, slab, abutments, pier beams, columns and rails.

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION Br. No. 035-056-128.98 (170) Sta. 450+93.23  GENERAL NOTES N. Bd. I-35 OVER LINCOLN STREET Proj. No. 035-056 KA-5174-01 Lyon Co. SHEET NO. OF SCALE APP'D DESIGNED ASF DETAILED JAH QUANTITIES TKI CADD JAH DESIGN CK. TKI DETAIL CK. ASF QUAN. CK. ASF CADD CK. TKI				

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	75	200



P.O.T. I-35 @ Sta. 435+91.96  
N 273620.7500 E 9584878.1770  
1. Set 1/2" Rebar 0.3' deep  
2. Edge of Conc. EB I-35  
3. Edge of Conc. WB I-35  
4. Mag. Nail & KDOT Washer N. Side Sign Post

P.C. I-35 @ Sta. 452+38.65  
N 273626.6055 E 9586524.7978  
1. Set 1/2" Rebar 0.3' deep  
2. Edge of Conc. EB I-35  
3. Edge of Conc. WB I-35

P.I. I-35 @ Sta. 465+47.57 (Bk)=  
P.I. I-35 @ Sta. 465+19.90 (Ahd)  
N 273631.2600 E 9587822.7130  
1. Set 1/2" Rebar 0.3' deep  
2. @ Top N. End RCP  
3. Spike & KDOT Washer Top Fence Post  
4. Spike & KDOT Washer Top FCP0

P.T. I-35 @ Sta. 478+25.82  
N 273156.7292 E 9589053.5905  
1. Set 1/2" Rebar 0.3' deep  
2. Edge of Conc. EB I-35  
3. Edge of Conc. WB I-35

I-35 Curve Data  
P.I. Sta. 465+47.57  
Δ = 21° 27' 35" (Rt.)  
D = 0° 49' 46"  
R = 6907.55'  
T = 1308.92'  
L = 2587.17'  
E = 122.92'  
Super = 3.1%

UTILITY OWNERS  
Valu-Net-Fiber Optic City of Emporia - Water & Sewer  
620-208-5000 620-340-6339  
AT&T - Telephone & Cable Every - Power  
1-866-861-7678 800-383-1183  
Cable One of Emporia - Cable Kansas Gas Service - Gas  
620-342-3535 800-794-4780

S 1/4 Cor. Sec. 4 T19S R11E  
N 270845.090 E 9586403.729  
1. Found Conc. Nail and Bottle Cap in the South Side of a Power Pole  
2. To the NE Corner of a "Fremont Rogers" Tombstone  
3. To the SE Corner of a "Uriah Tigers" Tombstone  
4. To the West Edge of a Sidewalk  
5. To the Travel Way of Lincoln Street

61.3' SW  
51.0' S  
65.2' SE  
18.0' S  
4.4' WSW  
33.8' SW  
56.1' NNW  
4.5' E  
30.0' E

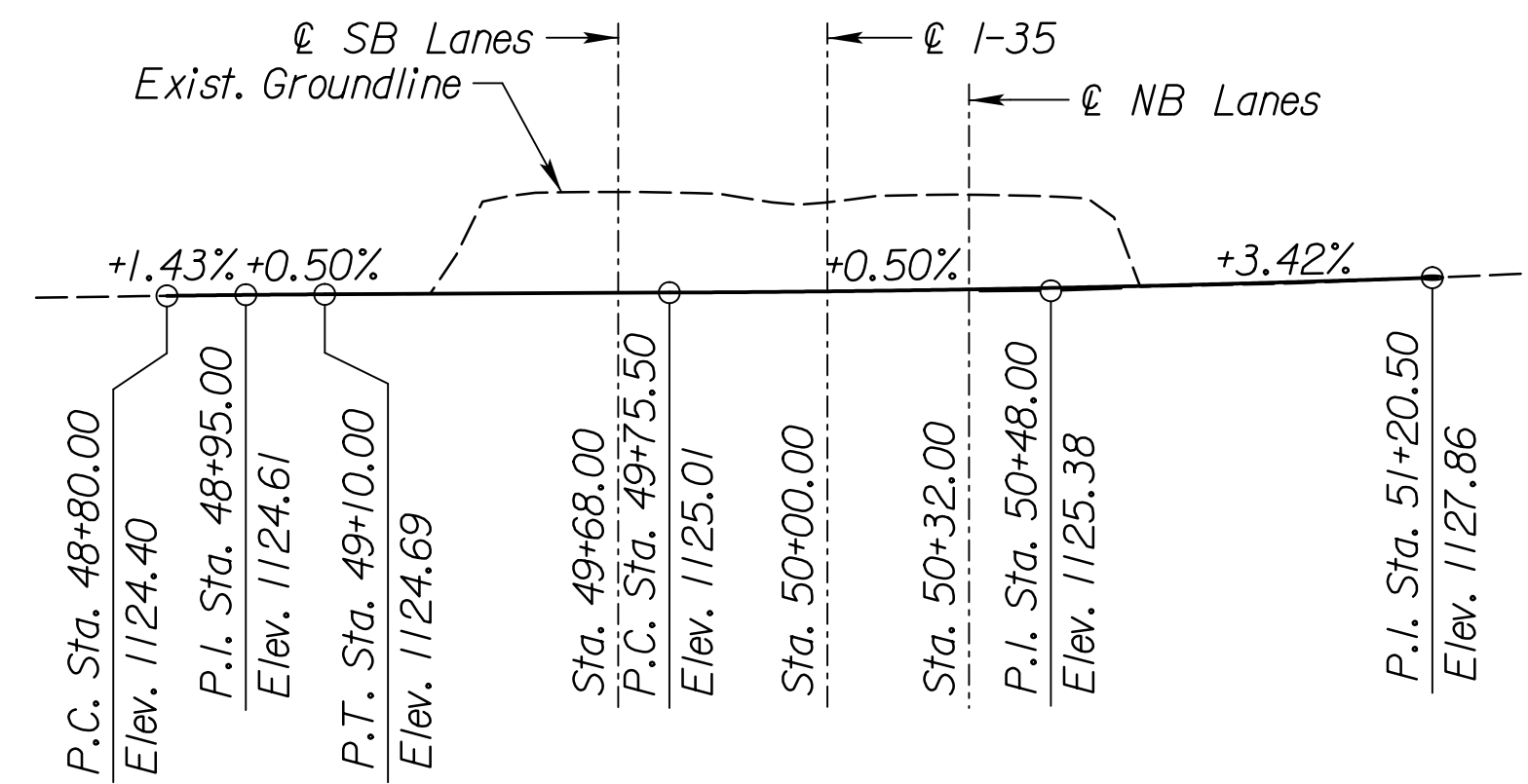
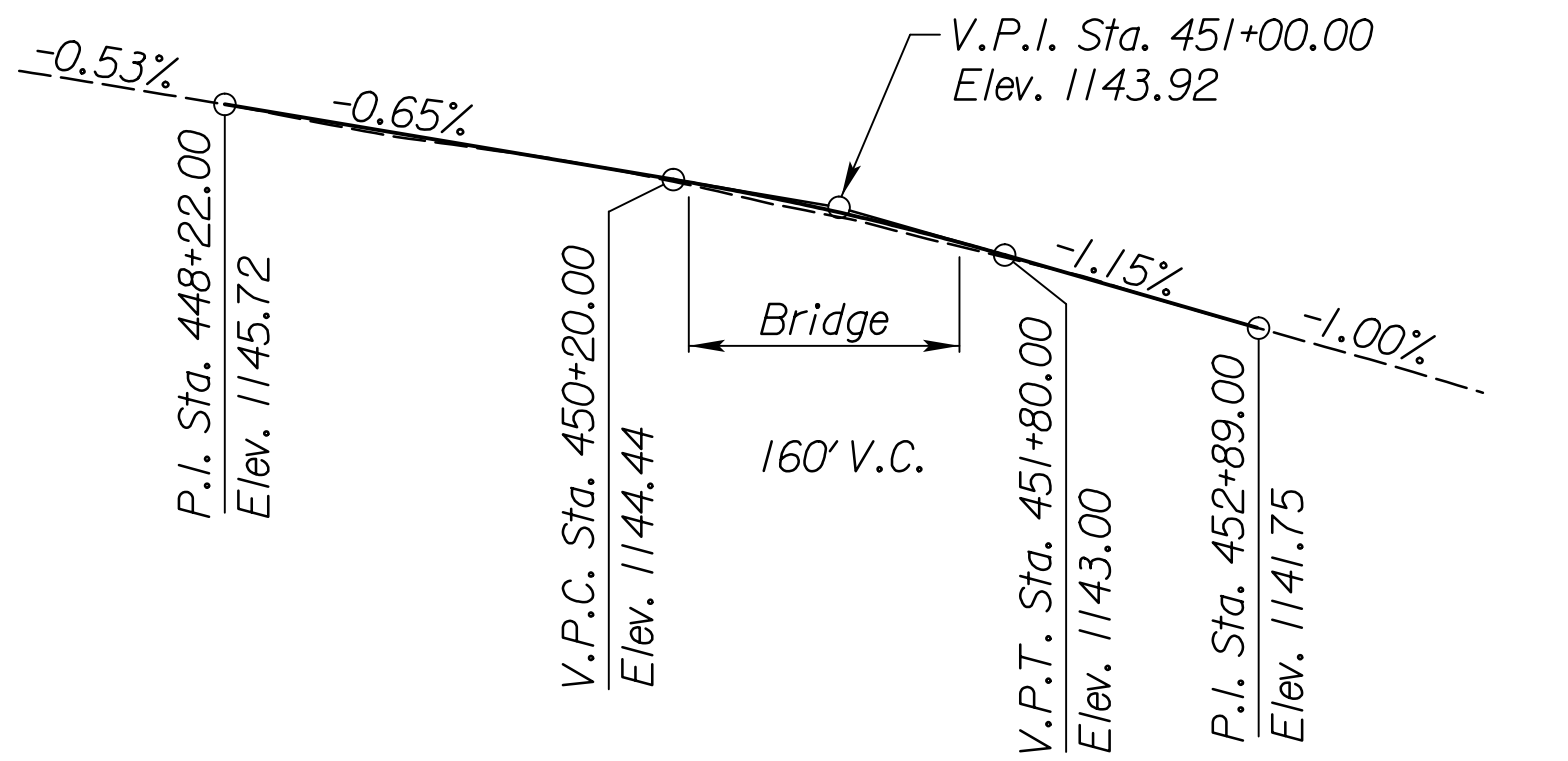
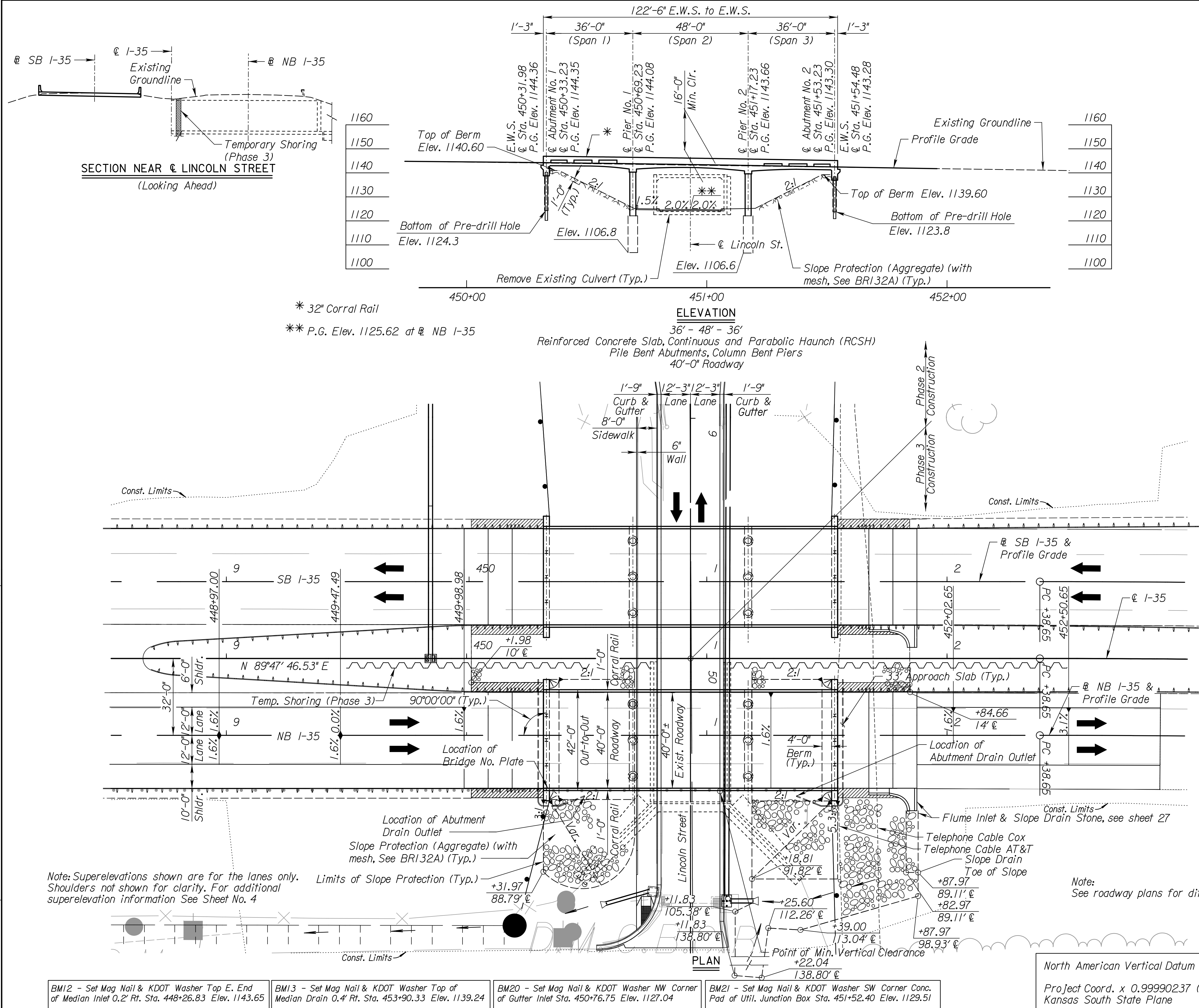
Center Cor. Sec. 4 T19S R11E  
N 270845.090 E 9586403.729  
1. 131.36' Rt. of Sta. 450+93.56 @ to & NE 90°17'55"  
2. To the SW Corner of a Curb Inlet  
3. To the SE Corner of a Curb Inlet  
4. Found Spike and Washer in a Utility Pole  
5. To the Center of the Top of a Fire Hydrant

34.4' NW  
32.3' NE  
51.9' NW  
78.8' SSW

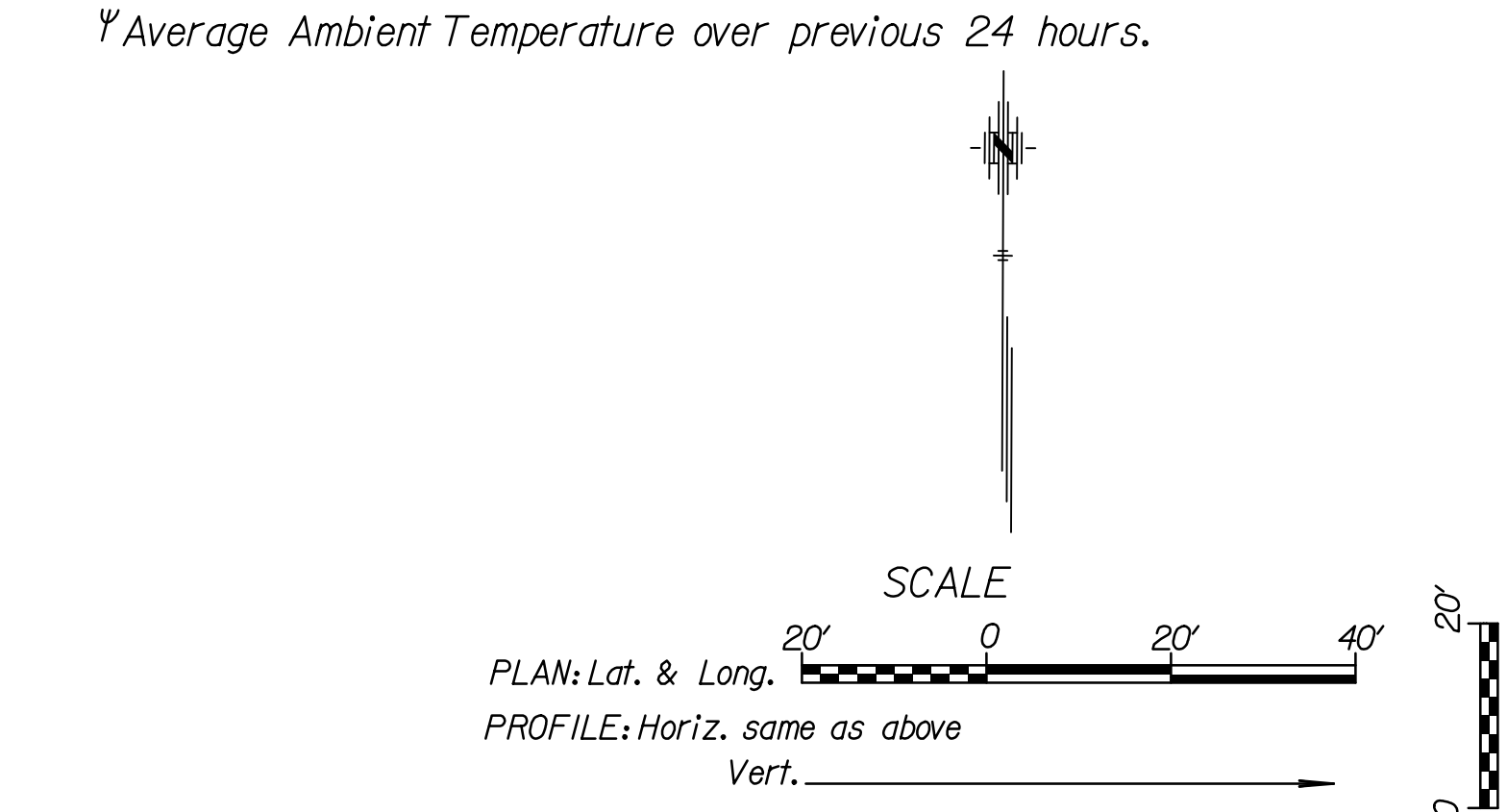
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (170) Sta. 450+93.23				
CONTOUR MAP				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5714-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	CK.	ASFI DETAIL CK.	JAH QUANTITIES	TKI CADD
DESIGN CK.		ASFI QUAN. CK.	ASFI CADD CK.	TKI



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	76	200

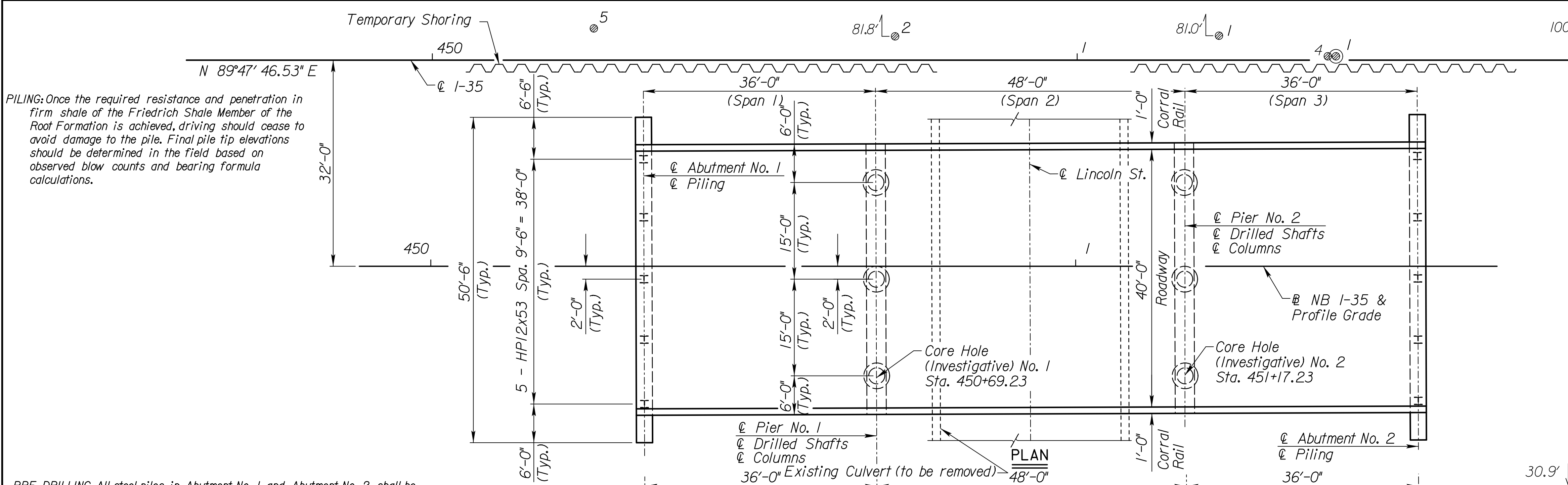


EXPANSION JOINT WIDTH DETAILS (W2)						
Temperature (F°)	40°	50°	60°	70°	80°	90°
Formed Concrete Opening Size	3"	2 7/8"	2 7/8"	2 7/8"	2 3/4"	2 3/4"



NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (170) Sta. 450+93.23				
CONSTRUCTION LAYOUT				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5174-01 Lyon Co.				
SHEET NO. OF	SCALE	APP'D		
DESIGNED	ASF DETAIL CK.	JAH QUANTITIES	TKI CADD	JAH
DESIGN CK.	TKI DETAIL CK.	ASF QUAN. CK.	ASF CADD CK.	TKI

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	77	200



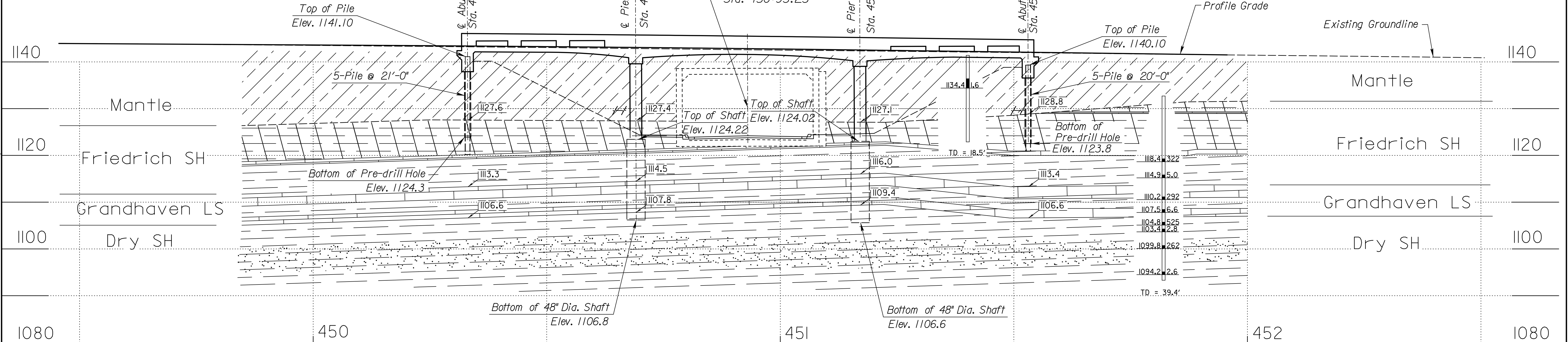
DRILLED SHAFTS: Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause having and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock a maximum of 1.0 feet, less if possible, to reduce the risk that overburden, and groundwater does not enter the rock socket. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing into the excavation.

If the Piers are to be supported with drilled shafts, note that the shafts have end bearing components and it is important that the bottom socket be clean and relatively flat. Allow no loose material within the footing when the footing is considered ready to pour.

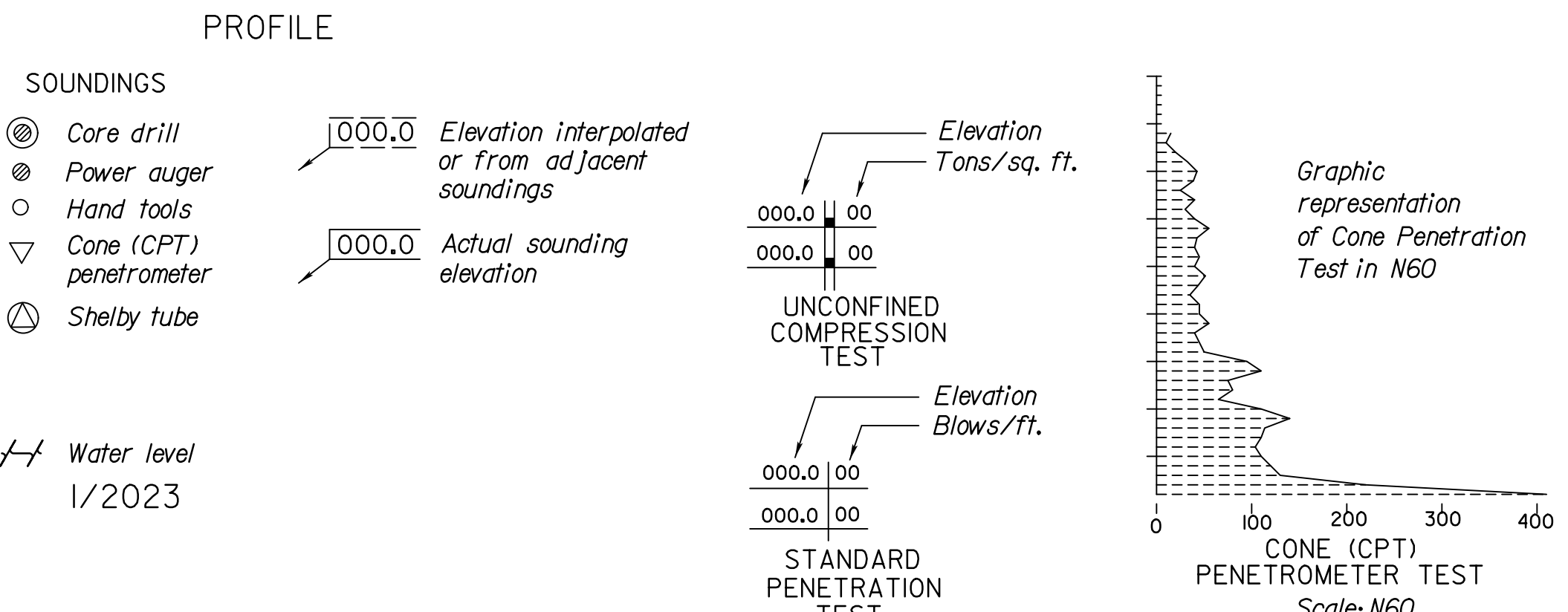
Shales of the Root Shale Formation and the Stotter Formation could degrade rapidly in the presence of air and water. Place the reinforcing steel and concrete no more than eight (8) hours from completion of the excavation of the shaft to minimize the exposure time of the shale to air and groundwater.

NOTE: Only Gr. 50 Steel HPI2x53 Piles shall be used on this bridge.

PRE-DRILLING: All steel piles in Abutment No. 1 and Abutment No. 2 shall be pre-drilled to these elevation:  
Abutment No. 1-Elev. 1124.30  
Abutment No. 2-Elev. 1123.80  
Piles shall be set and driven to the computed bearing value shown. After driving the holes shall be backfill according to KDOT Specifications Section 704. Casing is not required.



STANDARD	GEOLOGIC	SYMBOLS	GEOLOGIC	PROFILE
Clay or Underclay	Caliche	Weathered Shale	Limestone	Mortarbed
Silty Clay	Silty or Clayey Shale	Sandstone	Cherty Limestone	Coal
Silt	Limy Shale	Shaly Sandstone	Shaly Limestone	Siltstone
Sand	Black or Fissile Shale	Gypsum bed	Sandy Limestone	Chalk
Gravel	Sandy Shale	Dolomite	Bentonite	Wavy limestone
			Loess	Chalky limestone



NOTE: Soundings shown on these plans are taken from notes obtained in the field and represent the best information available. Logs of these soundings are provided with the bid documents, or are available from the Kansas Department of Transportation in Topeka for inspection by interested and qualified bidders.

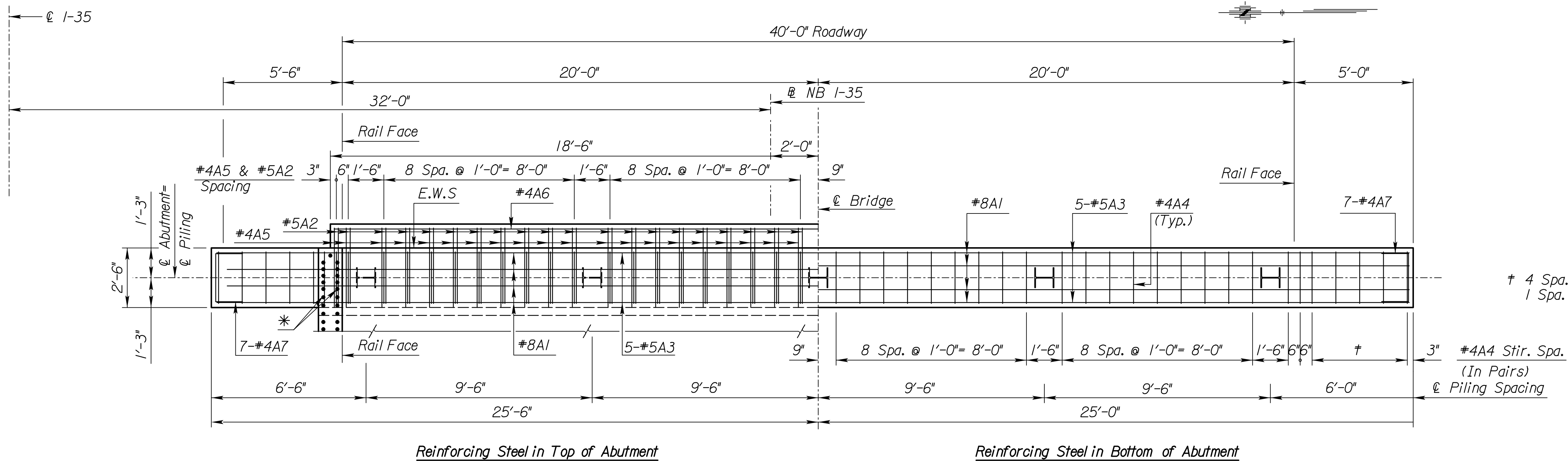
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION  
Br. No. 035-056-128.98 (170) Sta. 450+93.23  
ENGINEERING GEOLOGY  
N. Bd. I-35 OVER LINCOLN STREET  
Proj. No. 035-056 KA-5714-01 Lyon Co.  
SHEET NO. OF SCALE APP'D  
DESIGNED BY: GEOLOGY DRAWN BY:  
DESIGN CK. DETAIL CK. GEOLOGY LOCATION:



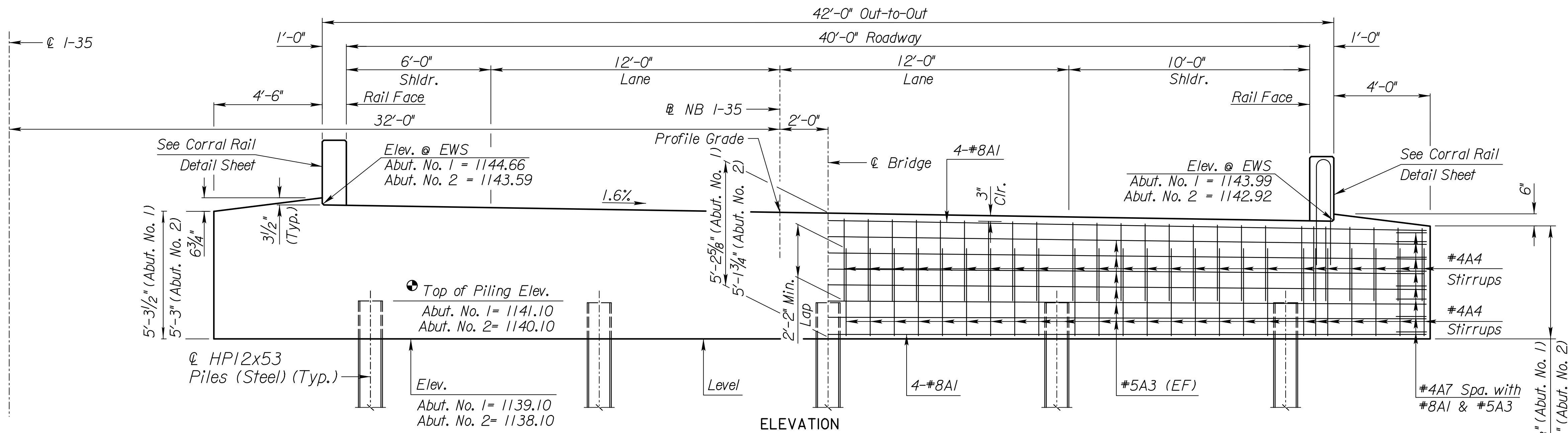
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	78	200

Offset Centerline = YES
hsidb-lrfdn-5030s.dgn
LRFD
Roadway Width = 40'-0" O.S.
Skew and Direction = 0
Number of Piles = 5

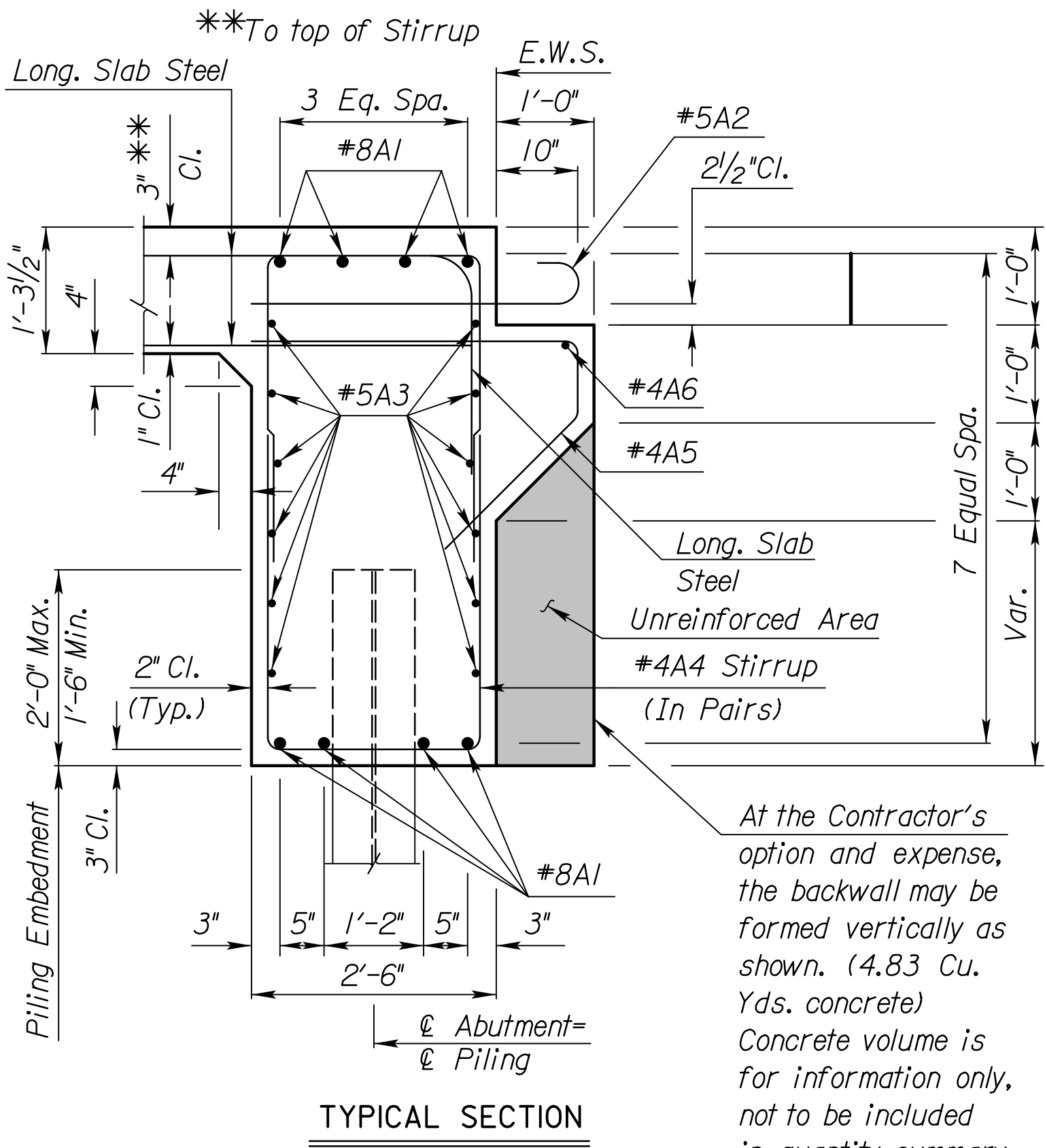


\* 4 Spa. @ 1'-0" = 4'-0" (For 4'-0" Wing)  
1 Spa. @ 6" and 4 Spa. @ 1'-0" = 4'-6" (For 4'-6" Wing)

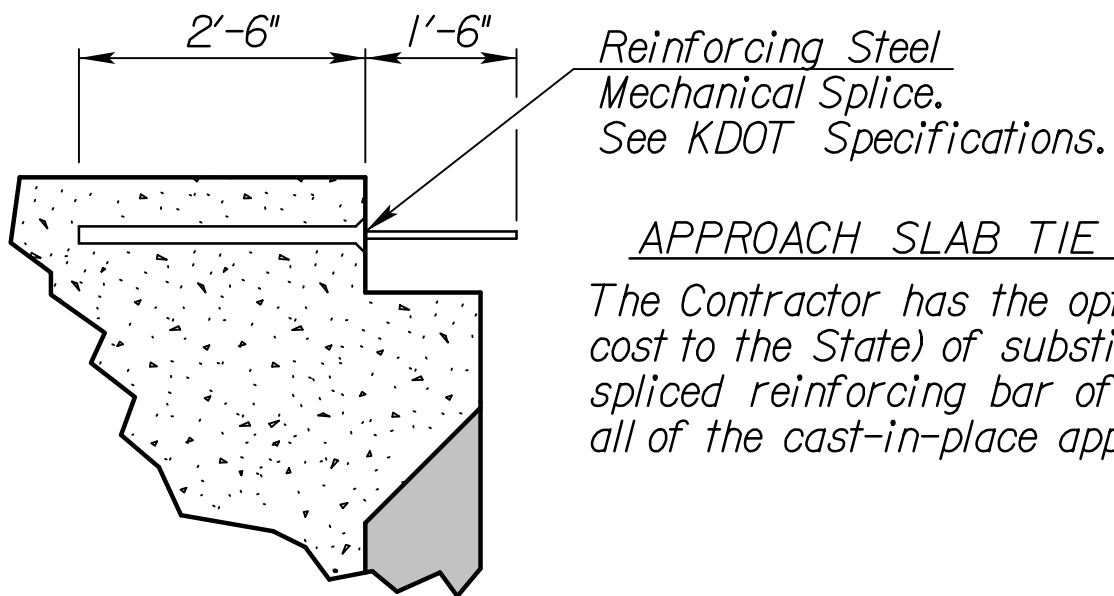
PLAN  
(Abutment No. 2 shown, Abutment No. 1 similar)



ELEVATION  
(Along  $\ell$  Abutment)  
(Looking Ahead Station)  
(Abutment No. 2 shown,  
Abutment No. 1 similar U.N.O.)



\*Adjust stirrup to avoid conflict with rail bars.



APPROACH SLAB TIE BAR OPTION

The Contractor has the option (at no additional cost to the State) of substituting a mechanically spliced reinforcing bar of the same size for any or all of the cast-in-place approach slab tie bars.

Legend

EF = Each Face  
U.N.O. = Unless Noted  
Otherwise

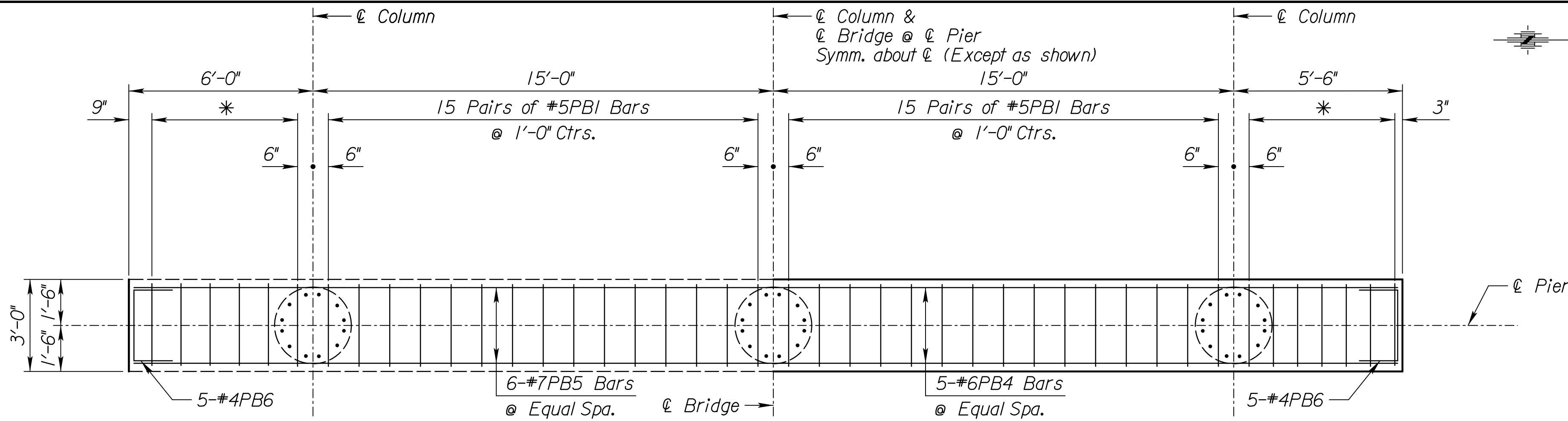
Note: Top of piling elevations are based on 2'-0" maximum embedment.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (I70) Sta. 450+93.23				
ABUTMENT DETAILS				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5174-01 Lyon Co.				
SHEET NO. OF	SCALE	APP'D		
DESIGNED	ASF/DETAILED	JAH/QUANTITIES	TKI/CADD	JAH/
DESIGN CK.	TKI/DETAIL CK.	ASF/QUAN. CK.	ASF/CADD CK.	TKI/





STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	80	200



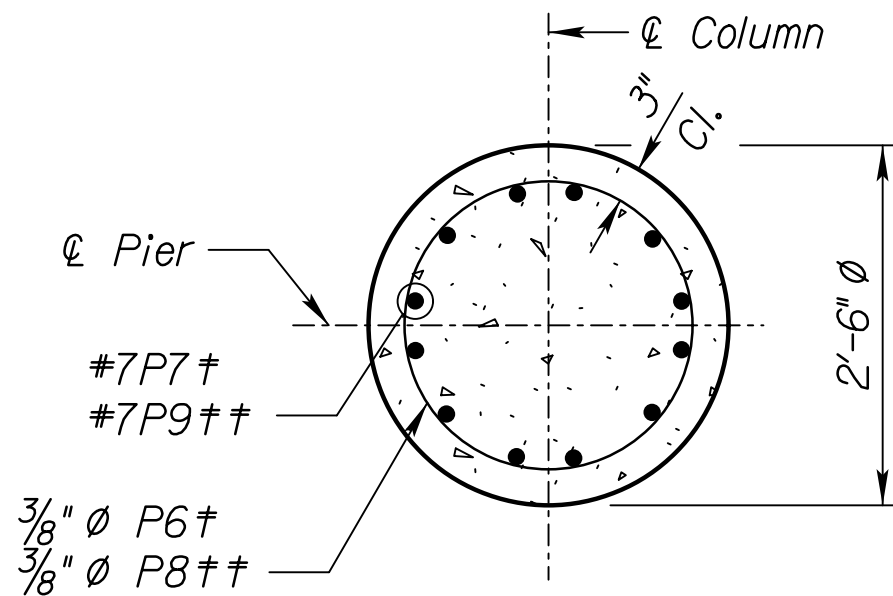
REINFORCING STEEL IN TOP OF PIER BEAM

REINFORCING STEEL IN BOTTOM OF PIER BEAM

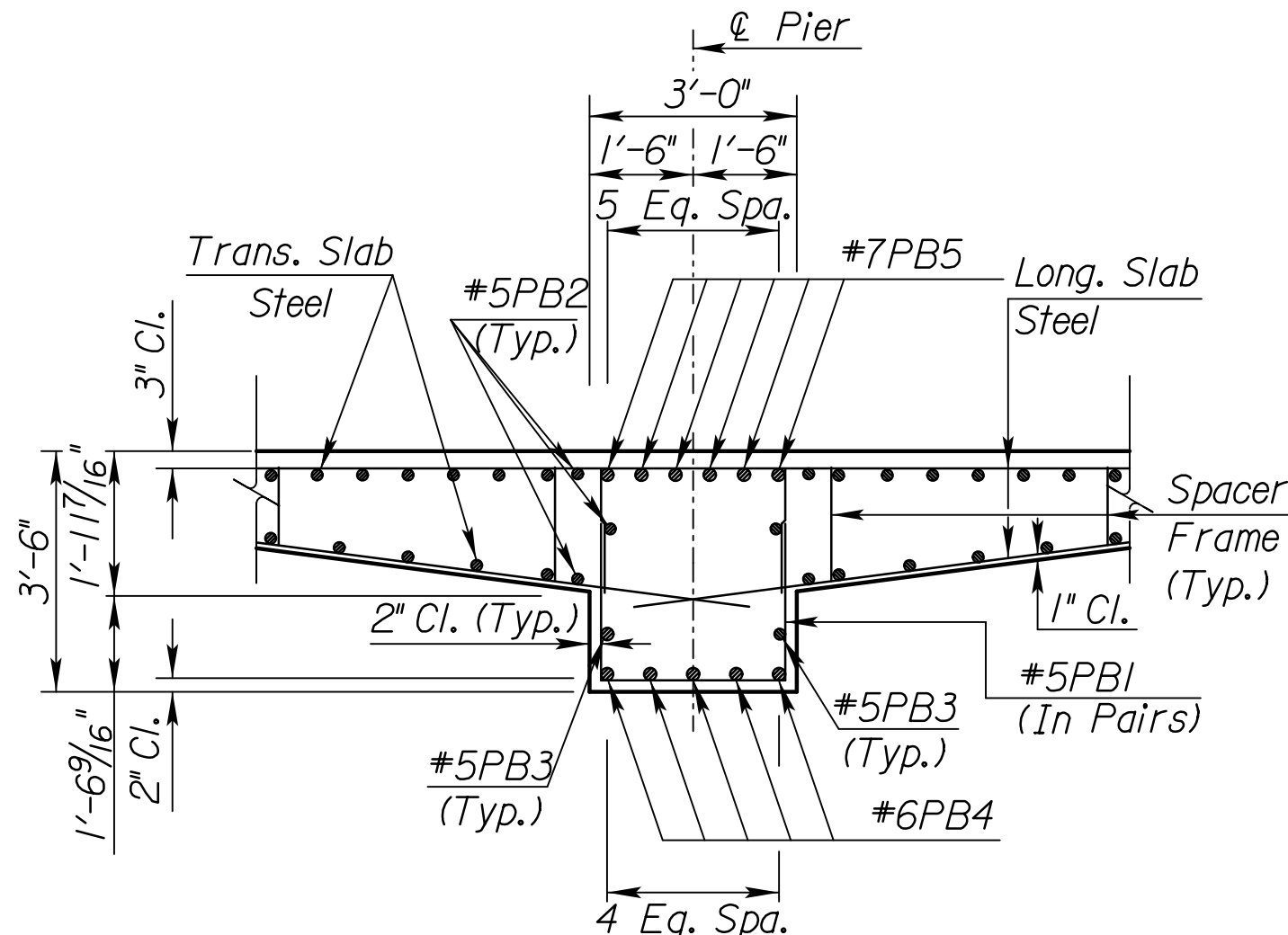
PLAN  
(Pier No. 1 shown, Pier No. 2 similar)

\* 6 Pairs of #5PBI  
Bars @ 1'-0" Max Ctrs.

† - Pier No. 1  
†† - Pier No. 2  
EF = Each Face



SECTION B-B



SECTION A-A

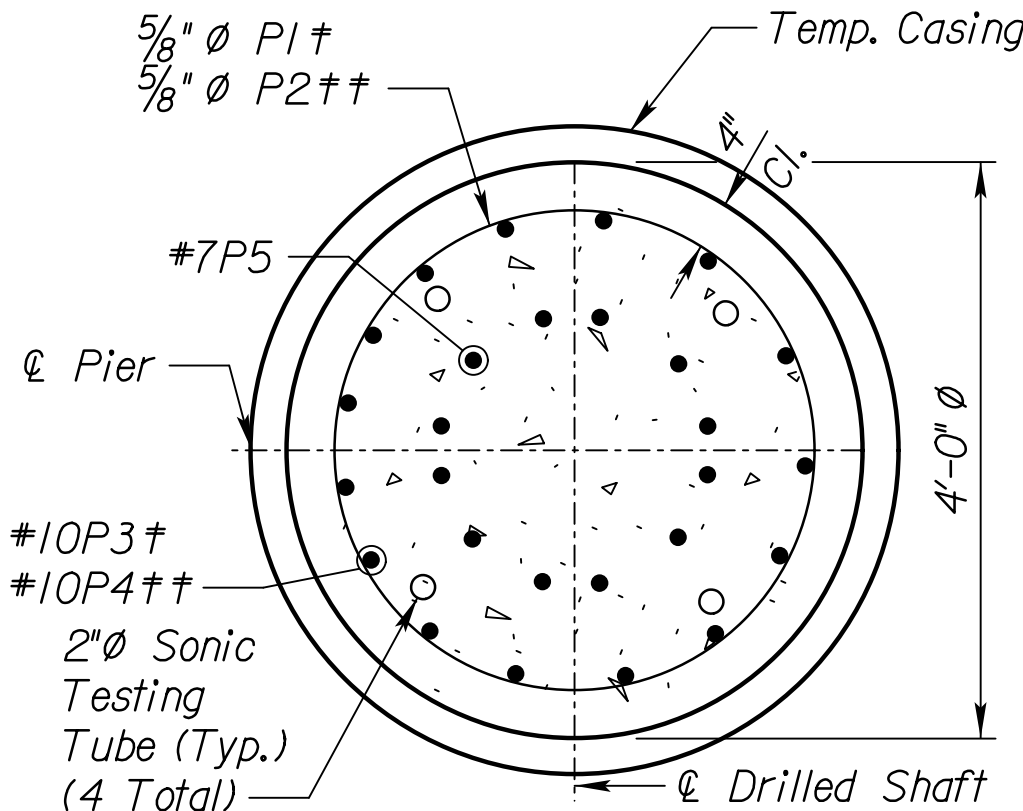
Notes:  
Pier Beam Reinforcement shall be epoxy coated and is included in the Superstructure Quantities.

Column Reinforcement shall be epoxy coated and is included in the Substructure Quantities.

Concrete and reinforcement in the drilled shaft shall not be paid for directly, but shall be included in the bid item "Drilled Shaft (48") (Cased)".

Reinforcing Steel in the drilled shaft shall be uncoated.

Construct the drilled shafts using the cased method. A permanent casing is required.



SECTION C-C

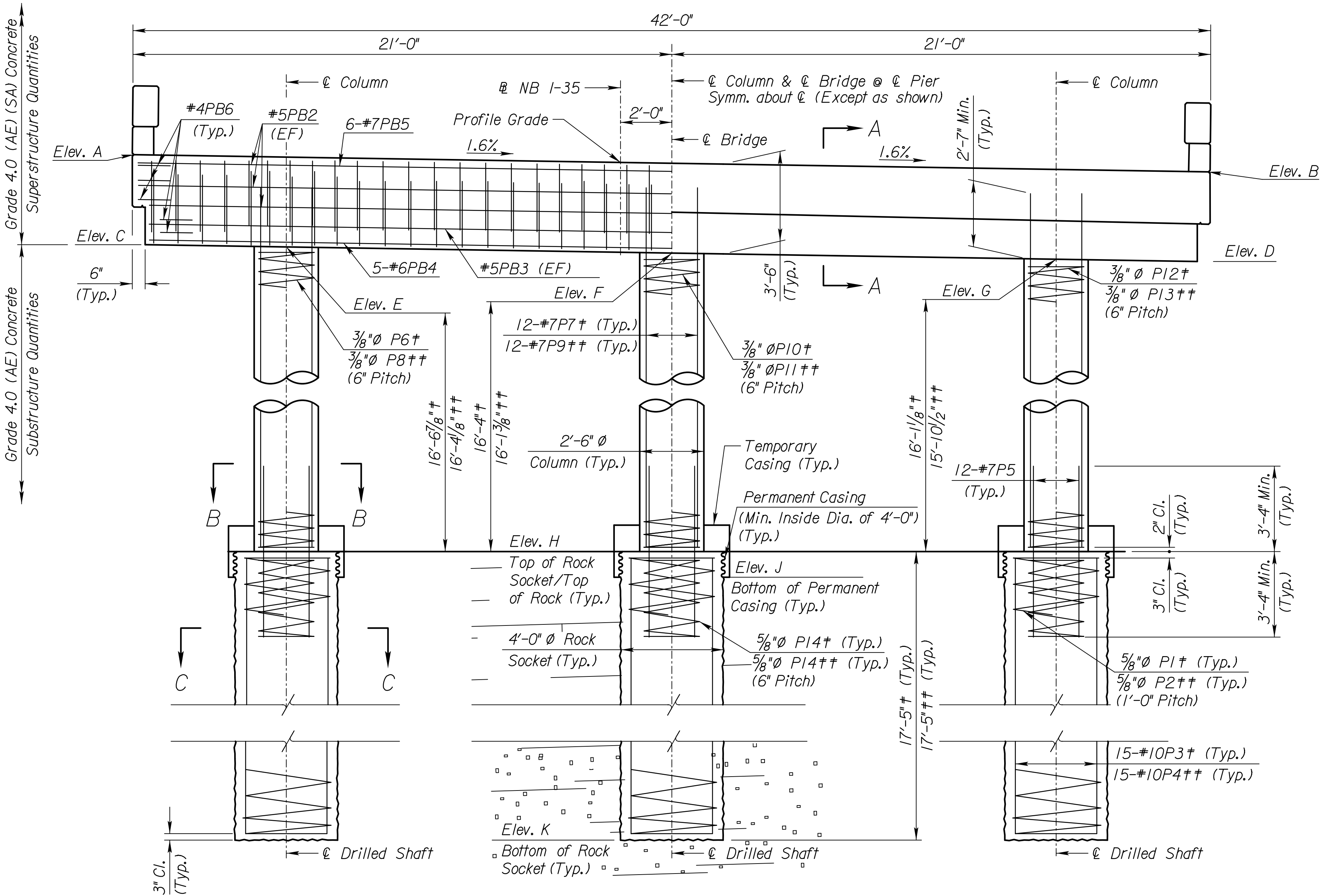
### DRILLED SHAFT SUMMARY

Design Loads		
Pier No.	Maximum Drilled Shaft Load: Tons	Allowable Load Tons
1	316	557
2	316	557

Drilled Shaft Note:  
Maximum Drilled Shaft Load is based on Strength I Loads-no Impact.

### TABLE OF ELEVATIONS AT PIER

Location	Pier No. 1	Pier No. 2
A	1144.39	1143.96
B	1143.71	1143.29
C	1140.88	1140.46
D	1140.22	1139.80
E	1140.79	1140.37
F	1140.55	1140.13
G	1140.31	1139.89
H	1124.22	1124.02
J	1123.55	1123.52
K	1106.80	1106.60



### ELEVATION

(Looking Aheadstation)

Note:  
For type of Sonic Testing Tubes, see KDOT Specifications and the Special Provisions. Sonic Testing Tubes shall be spaced equally and extend 1'-0" above top of shaft.

DRILLED SHAFT BACKFILL: Backfill the annular space between the temporary casing and the permanent casing with grout/flowable fill as defined in the KDOT Specifications.

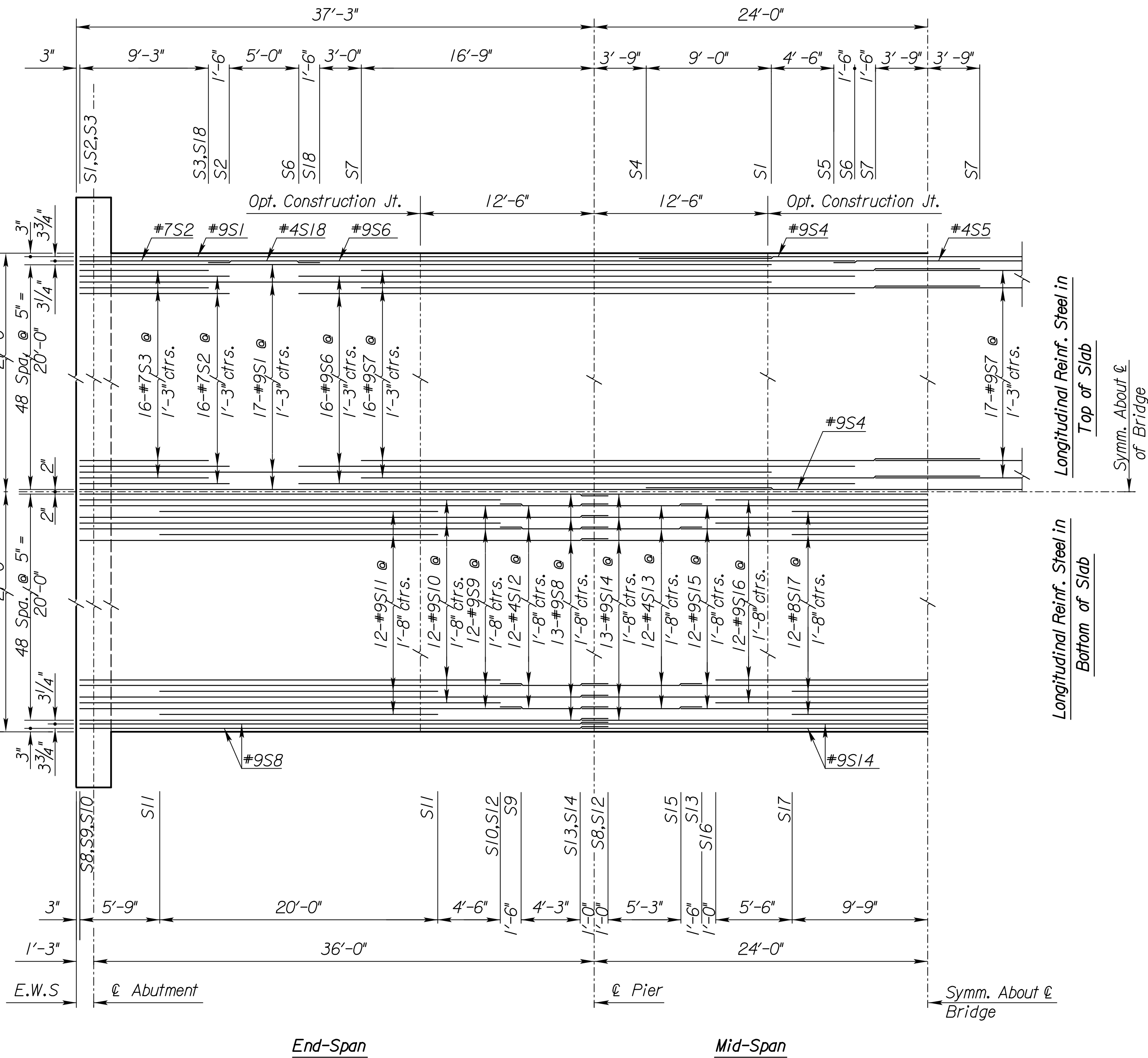
NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (170) Sta. 450+93.23				
PIER DETAILS				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5174-01 Lyon Co.				
SHEET NO. OF	SCALE	APP'D		
DESIGNED	ASFI DETAILED	JAH QUANTITIES	TKI CADD	JAH
DESIGN CK.	TKI DETAIL CK.	ASFI QUAN. CK.	ASFI CADD CK.	TKI

LFD & LRFR RATING FACTOR				3'		
Truck	CLC	Ln.	Oper.	Ln.	Oper.	Oper.
HS-20	1.39	2.66	1.66	2.17	1.31	2.12
LFD						
LRFR	HL-93	1.43	1.85	1.63		

lrf0br59qs.dgn	Plot 2
Roadway Width = 40' 0.5"	Longest Span Length = 48'
Skew and Direction = 0	Total No. of Spans = 3
Loading = HL-93	Rolling Type = Corral

Plotted By: user	Plot Location:
File: c:\pwworking\central0\N43357666\Kas7140\lbr170-10.dgn	
Plot Date: 11-07-23	

Note:  
See longitudinal section for  
transverse reinforcing steel.



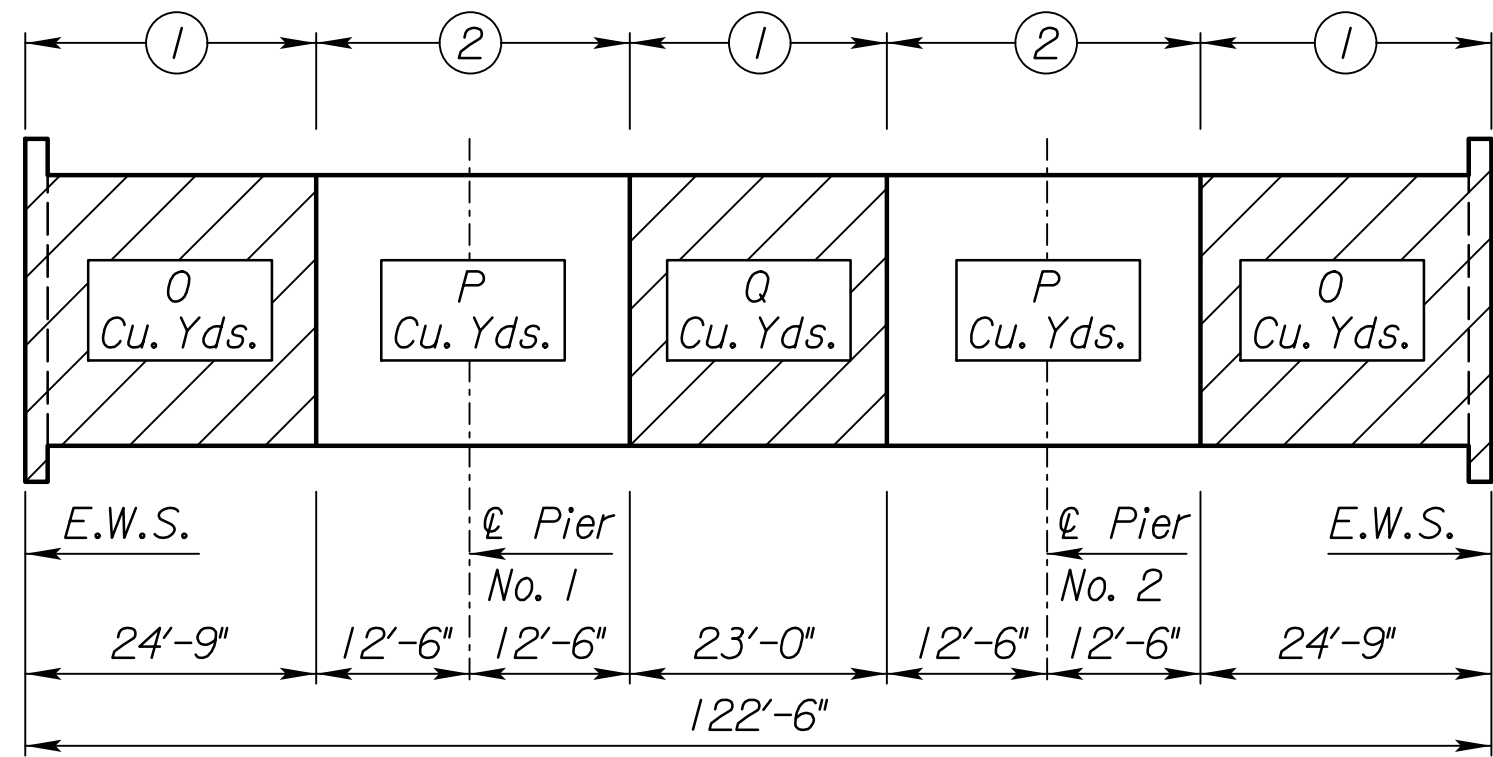
HALF PLAN

Note: 1.0 & 4.0 pts. are taken at  $\mathcal{C}$  of abutments at theoretical Top of Form  
2.0 & 3.0 pts. are taken at  $\mathcal{C}$  of piers at theoretical Top of Form

Top of Form Elevation at 10th Points, (ft.)															
1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
1143.08	1143.07	1143.06	1143.04	1143.01	1142.94	1142.83	1142.68	1142.51	1142.30	1142.06	1142.30	1142.48	1142.61	1142.67	1142.67
2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	
1142.59	1142.44	1142.23	1141.96	1141.64	1141.81	1141.96	1142.07	1142.16	1142.20	1142.21	1142.18	1142.13	1142.08	1142.03	

Note: Elevations are taken at Profile Grade.  
Note: The change in elevation from Profile Grade to the Edge of Slab is +0.304' short side  
-0.368' long side

PLACING SEQUENCE	
	Clear Cover
Location	3"
End Pour (O)	72.7
Pier Pour (P)	73.0
Mid Pour (Q)	48.3



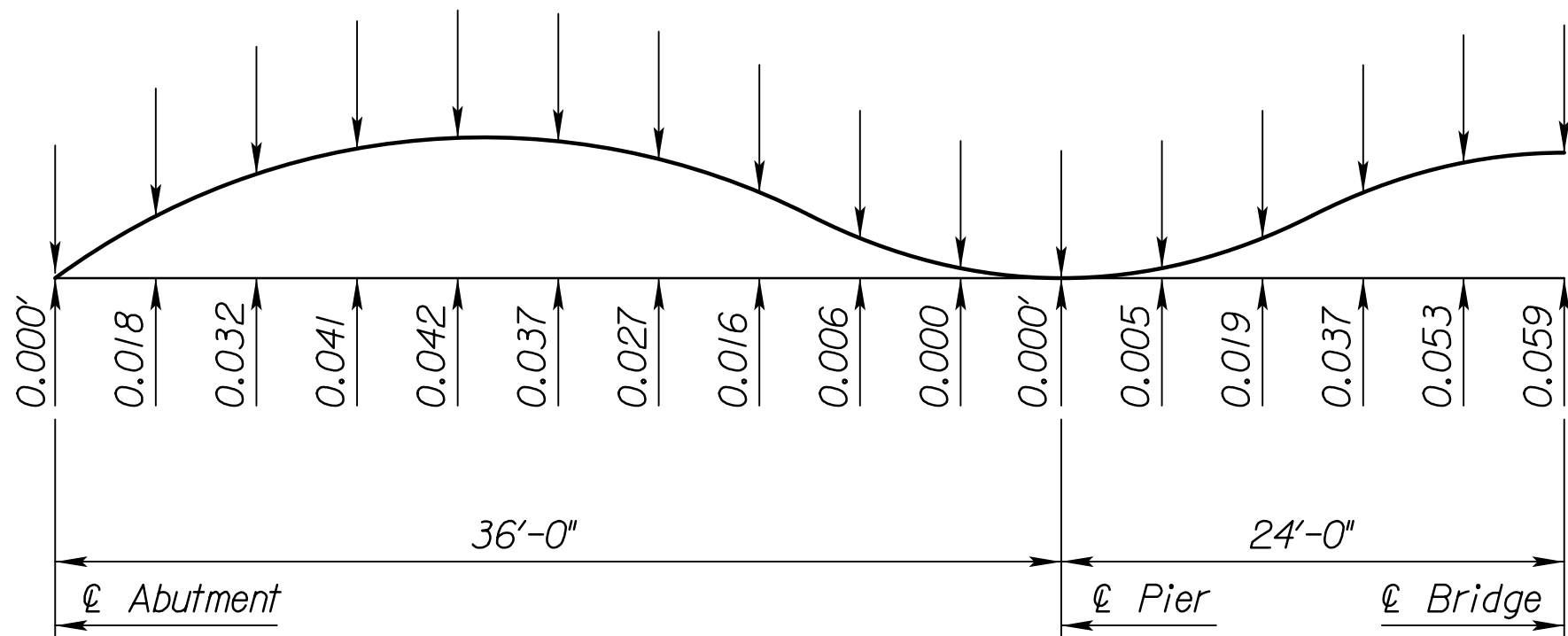
CONCRETE PLACING SEQUENCE DIAGRAM

CONCRETE PLACING SEQUENCE

When long span steel beams having a concrete dead load deflection greater than  $\frac{1}{4}$ " are used or when timber falsework with greater than 12'-0" clear span is used, follow the placing sequence shown. Segmental, combined or continuous pours are allowed, but stop a discontinuous pour at a construction joint short of a pier.

When timber falsework with 12'-0" or less clear span is used, the Contractor, subject to the approval of the Engineer, may use a continuous pour or may discontinue the pour at any construction joint shown.

The Contractor may place the corral rail continuously from one end of the bridge to the other.



DEAD LOAD CAMBER DIAGRAM AT TENTH POINTS

Long Term Deflections = Initial Deflections x 3.5  
(Initial Deflections Based on  $E_c = 3.644 \times 10^6$  p.s.i.)  
(camber values in feet)

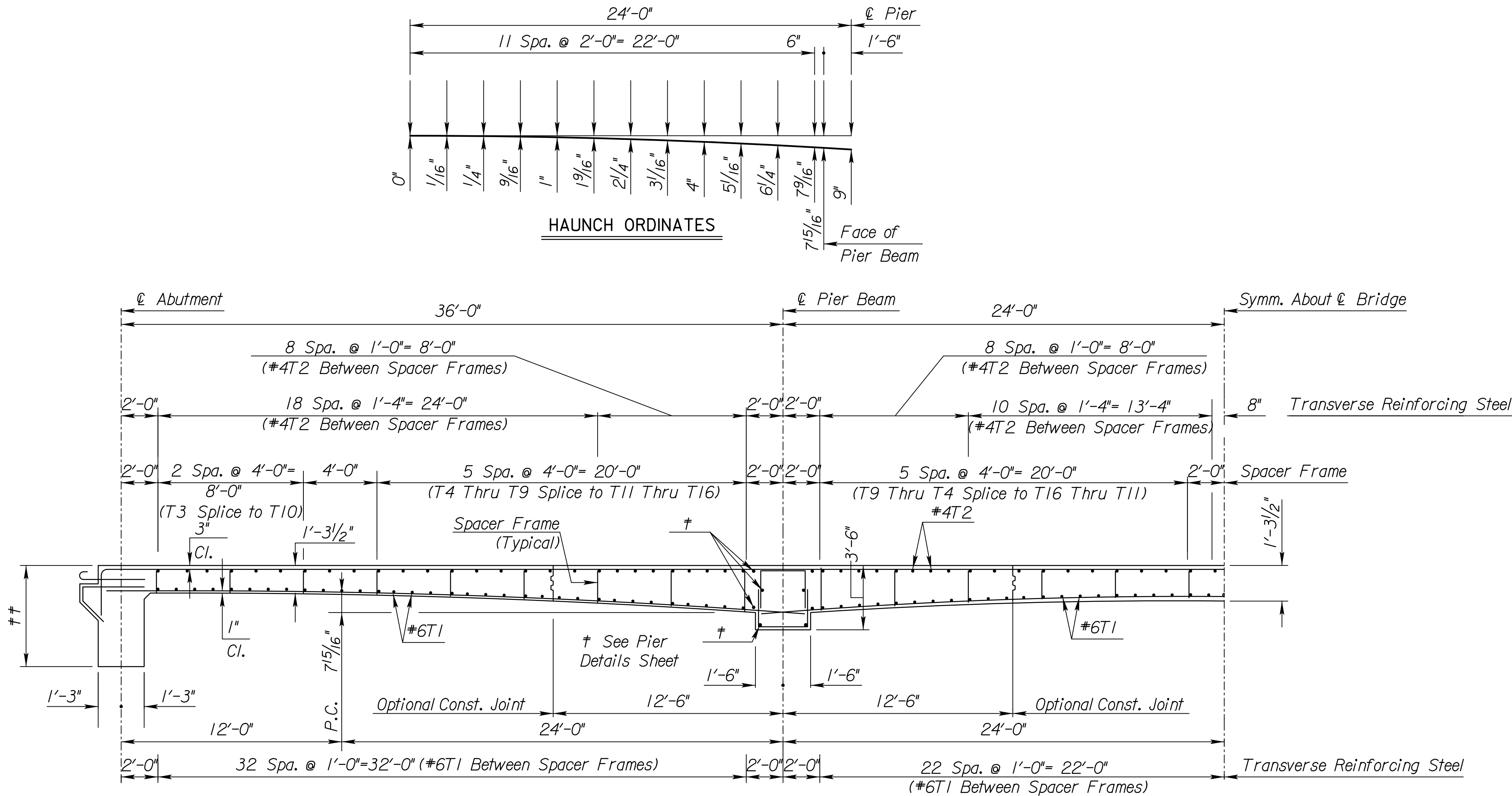
4					
3					
2					
1					
NO.	DATE	REVISIONS	BY	APP'D	
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-128.98 (170) Sta. 450+93.23					
SUPERSTRUCTURE DETAILS					
N. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5174-01 Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASFI	DETAILED	JAH	QUANTITIES	TKI
DESIGN CK.	TKI	DETAIL CK.	ASFI	QUAN. CK.	ASFI



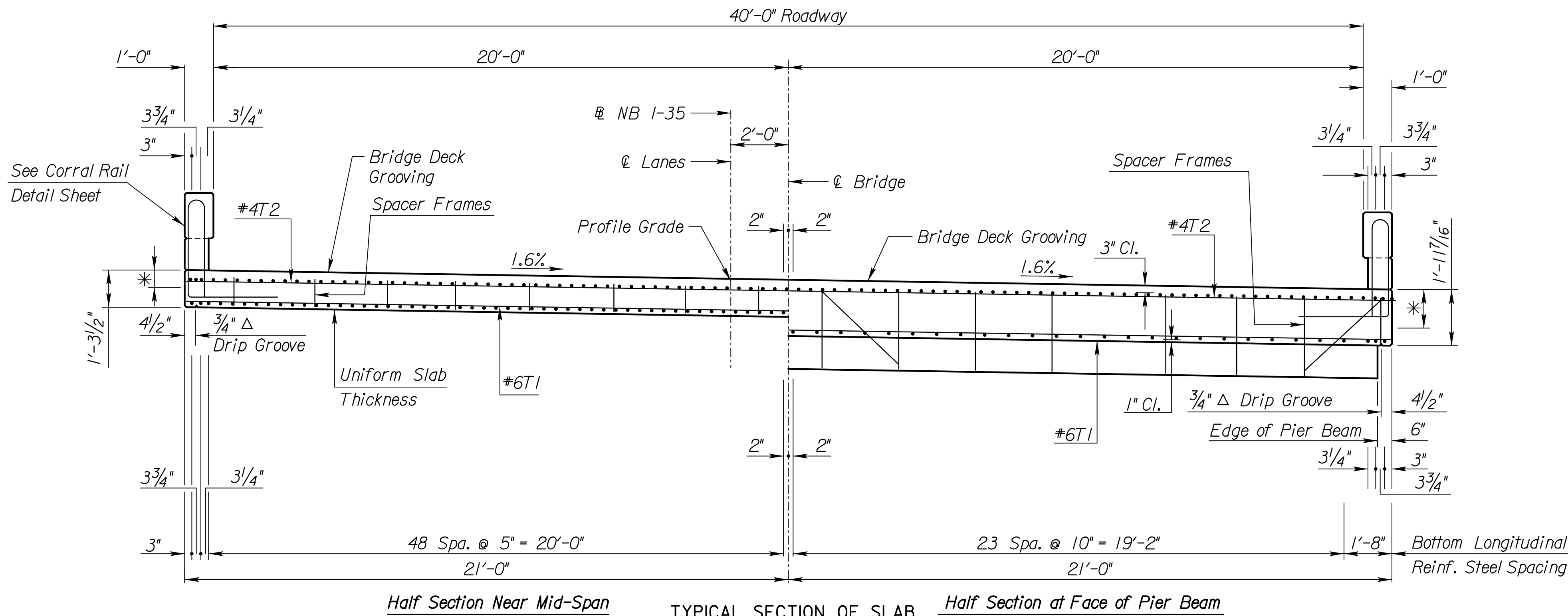
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	82	200

1170-01-11.dgn	Plot 3
Roadway Width = 40'-0"	Longest Span Length = 48'
Skew and Direction = 0	Total No. of Spans = 3
Loading = HL-93	Railing Type = Corral

## 5'-2<sup>5</sup>/<sub>8</sub>" (Abutment No. 1)  
5'-1<sup>3</sup>/<sub>4</sub>" (Abutment No. 2)  
@ C of Bridge



HALF LONGITUDINAL SECTION ALONG C BRIDGE



\* See Corral Rail Detail Sheet

4					
3					
2					
1					
NO.	DATE	REVISIONS	BY	APP'D	
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-128.98 (170) Sta. 450+93.23					
SUPERSTRUCTURE DETAILS					
N. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5174-01 Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TKI
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.	ASF

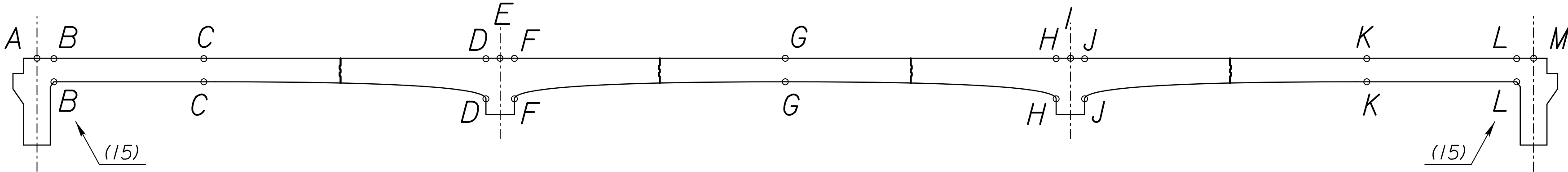
Plotted By: user  
File: c:\pwworking\ventral0\43357666\457140\br170-12.dgn  
Plot Date: 11-07-23

				SLAB ELEVATIONS											
				Formwork				Screed			Thickness			Deck Profile	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Survey	Station	‡ Location	Transverse Location	Estimated Falsework Crush	Target Elevation TOF	Actual Elevation TOF	TOF Variance (QA/QC)	Target Screed El. = TOC El.	Actual Bottom of Screed Elevation Prior to Pour	Screed Variance (QA/QC)	Plan Deck Thickness	Measured Deck Thickness	Deck Thickness Variance (QA/QC)	Plan TOC El.	Actual TOC El. Optional Survey
	(1)(16)	(13)	(13)	(inch) (1)(4)	(1)(6)	(2)	(± inch) (2)(5)	(1)(6)	(2)	(± inch) (2)(7)	(inch) (1)	(inch) (2)(8)	(± inch) (2)(9)	(1)	Date: (3)
A	450+33.23	℄ Brg. of Abut. #1	Left Fascia					1144.66						1144.66	
			Profile Gr.					1144.35						1144.35	
			Right Fascia					1143.98						1143.98	
B	450+34.48	Interior Face of Abut. #1	Left Fascia		1143.35						15½"			1144.65	
			Profile Gr.		1143.05						15½"			1144.34	
			Right Fascia		1142.68						15½"			1143.97	
C	450+47.63	4/10 Point from Abut. #1	Left Fascia	¼"	1143.32			1144.62			15⅞"			1144.55	
			Profile Gr.	¼"	1143.01			1144.31			15⅞"			1144.25	
			Right Fascia	¼"	1142.64			1143.94			15⅞"			1143.88	
D	450+67.73	Span #1 Face of Pier Beam	Left Fascia	¼"	1142.47						23⅞"			1144.40	
			Profile Gr.	¼"	1142.16						23⅞"			1144.09	
			Right Fascia	¼"	1142.79						23⅞"			1143.73	
E	450+69.23	℄ Brg. of Pier #1	Left Fascia					1144.39						1144.39	
			Profile Gr.					1144.08						1144.08	
			Right Fascia					1143.71						1143.71	
F	450+70.73	Span #2 Face of Pier Beam	Left Fascia	¼"	1142.44						23⅞"			1144.37	
			Profile Gr.	¼"	1142.14						23⅞"			1144.07	
			Right Fascia	¼"	1141.77						23⅞"			1143.70	
G	450+93.23	Midpoint of Span #2	Left Fascia	¼"	1142.97			1144.26			15½"			1144.18	
			Profile Gr.	¼"	1142.67			1143.96			15½"			1143.88	
			Right Fascia	¼"	1142.30			1143.59			15½"			1143.51	
H	451+15.73	Span #2 Face of Pier Beam	Left Fascia	¼"	1142.05						23⅞"			1143.98	
			Profile Gr.	¼"	1141.74						23⅞"			1143.67	
			Right Fascia	¼"	1141.37						23⅞"			1143.31	
I	451+17.23	℄ Brg. of Pier #2	Left Fascia					1143.96						1143.96	
			Profile Gr.					1143.66						1143.66	
			Right Fascia					1143.29						1143.29	
J	451+18.73	Span #3 Face of Pier Beam	Left Fascia	¼"	1142.02						23⅞"			1143.95	
			Profile Gr.	¼"	1141.71						23⅞"			1143.65	
			Right Fascia	¼"	1141.35						23⅞"			1143.28	
K	451+38.83	4/10 Point from Abut. #2	Left Fascia	¼"	1142.51			1143.81			15⅞"			1143.75	
			Profile Gr.	¼"	1142.21			1143.51			15⅞"			1143.45	
			Right Fascia	¼"	1141.84			1143.14			15⅞"			1143.08	
L	451+51.98	Interior Face of Abut. #2	Left Fascia		1142.32						15½"			1143.61	
			Profile Gr.		1142.02						15½"			1143.31	
			Right Fascia		1141.65						15½"			1142.94	
M	451+53.23	℄ Brg. of Abut. #2	Left Fascia					1143.60						1143.60	
			Profile Gr.					1143.30						1143.30	
			Right Fascia					1142.93						1142.93	

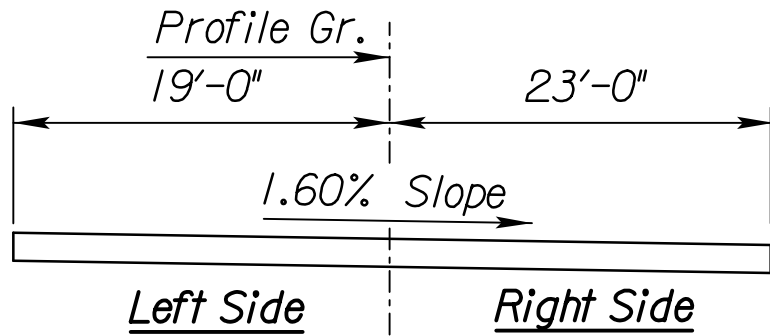
‡ Stationing shown increasing

NOTE: The Contractor will submit a completed copy of this table to the Field Engineer to be inserted into the As-Built's plan set.

\* It is assumed that piling have been driven to design bearing and checked by ENR formula (QA/QC). No allowance for pile settlement is included in crush.



ELEVATION OF SLAB



TYPICAL SECTION  
(Looking Up-Station)

Legend  
TOF = Top of Formwork  
TOC = Top of Concete  
QA = Quality Assurance  
QC = Quality Control

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	83	200

Pour Dates (2)	
	Deck
	Left Rail (13)
	Right Rail(13)

Survey Data (1)(11)	
Bench Mark No.	Elevation
12	1143.65
13	1139.24
20	1127.04
21	1129.51

Crown Grade Profile(1)(12)	
451+00.00	VPI Station
1143.92	VPI Elevation
-0.65%	G1 %
-1.15%	G2 %
160.00	L in Stations

Slab Thickness (1)		Span Data (1)	
15½"	Uniform Depth (inch)	HL-93	Design Loading
715/16"	Haunch Depth @ Face of PB (inch)	36	Span #1 (ft)
		48	Span #2 (ft)
1/16"	Haunch Depth @ 0.4 Point (inch)	3	Clear Cover (inch)

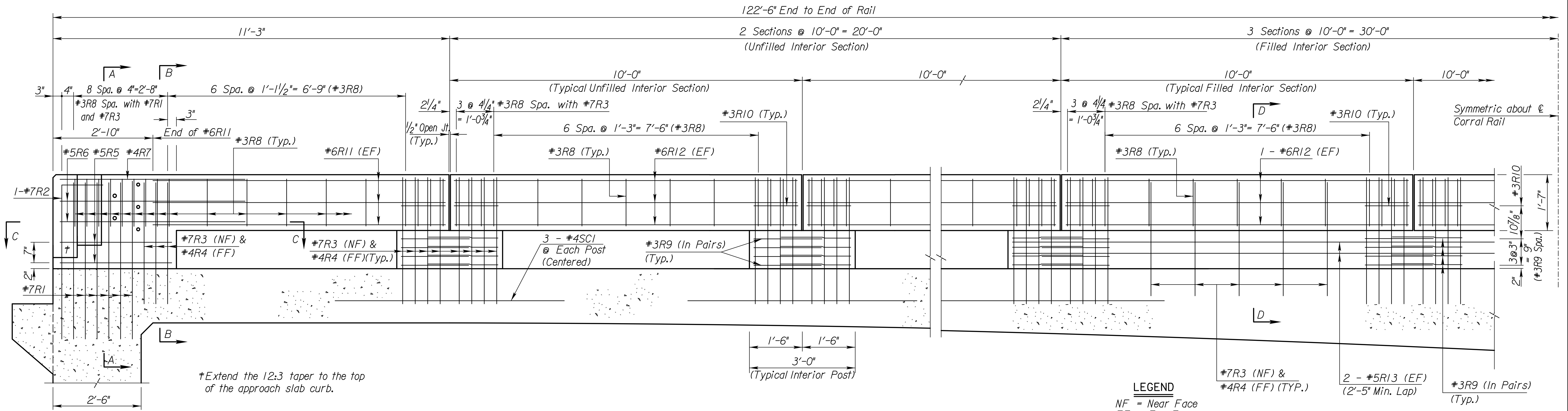
Roadway Data (1)(10)(13)	
42	Deck Width (ft) (14)
+1.6%	% Slope Left (±)
-1.6%	% Slope Right (±)
00:00:00	Skew (dd:mm:ss)

Camber (1)(17)	
0.042	Span #1 0.4 Point (ft)
0.059	Span #2 Midspan (ft)

- (1) By the Design Engineer  
(2) By the Contractor  
(3) By Request  
\*(4) Estimated crush for typical falsework. Revise estimate if/when more accurate information becomes available.  
(5) (col 7 - col 6)x12  
(6) Crush (Take Up) and camber must be included  
(7) (col 10 - col 9)x12  
(8) (col 10 - col 7)x12  
(9) (col 13 - col 12)  
(10) If transition falls on the bridge, then enter "Varies" for the % Slope  
(11) From "Construction Layout" sheet  
(12) If bridge is not on the vertical curve, enter Abutment #1 ℄ bearing elevation from the "Construction Layout" sheet. Represent a change in grade with G1 only.  
(13) Looking Up-Station  
(14) Out-to-Out  
(15) Ignore Fillet  
(16) Non-skewed bridges only require ℄ stations.  
(17) Ignore theoretical camber at face of pier beams.

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION				
Br. No. 035-056-128.98 (170) Sta. 450+93.23				
SLAB ELEVATIONS				
N. Bd. I-35 OVER LINCOLN STREET				
Proj. No. 035-056 KA-5174-01 Lyon Co.				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASF	DETAILED	JAH	QUANTITIES
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.
			TKI	CADD
			ASF	CADD CK.

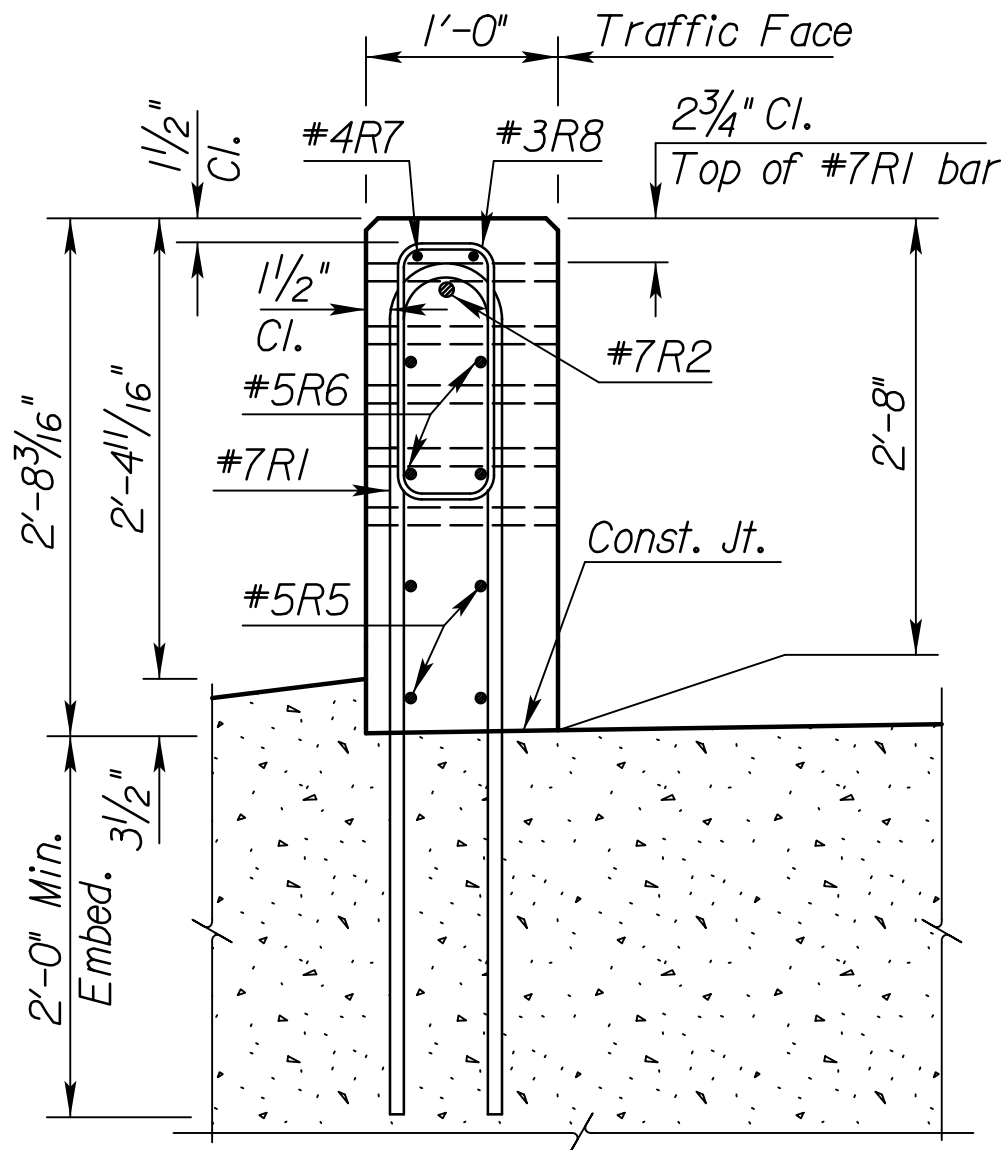




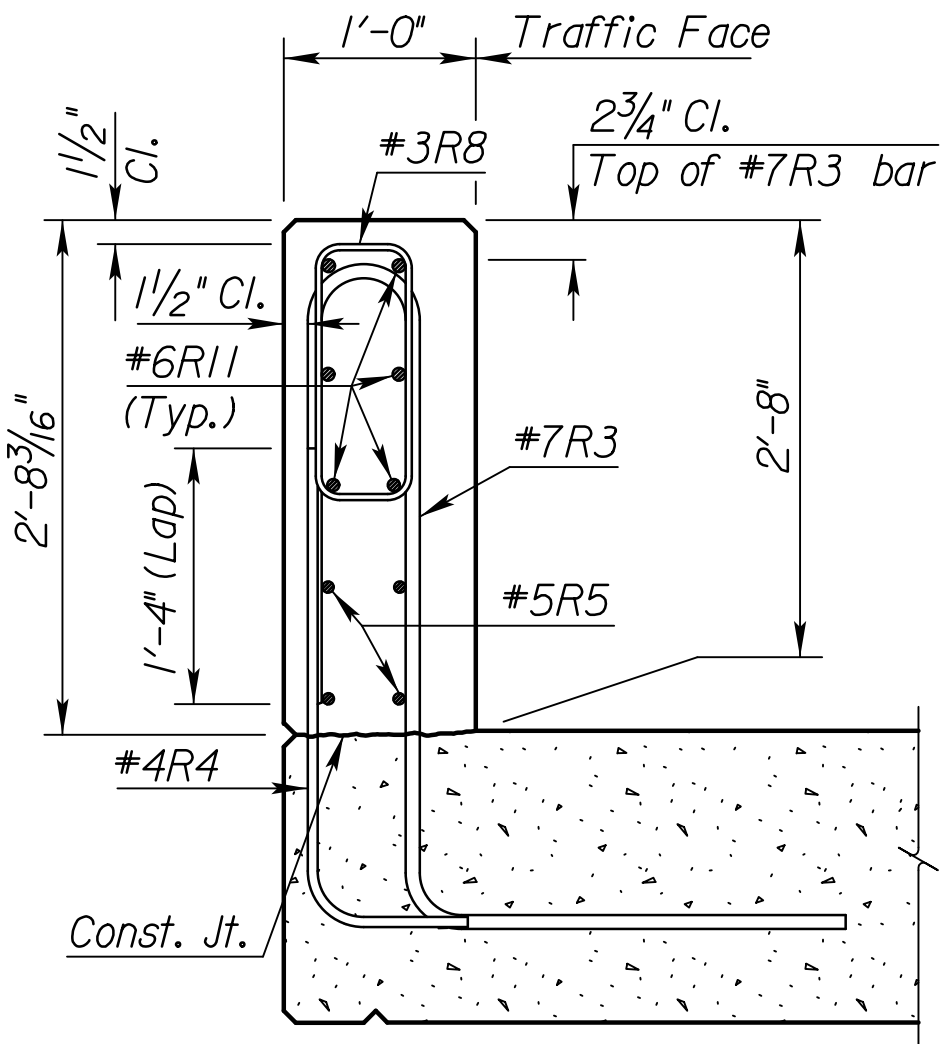
PARTIAL ELEVATION  
(Along Traffic Face)

LEGEND

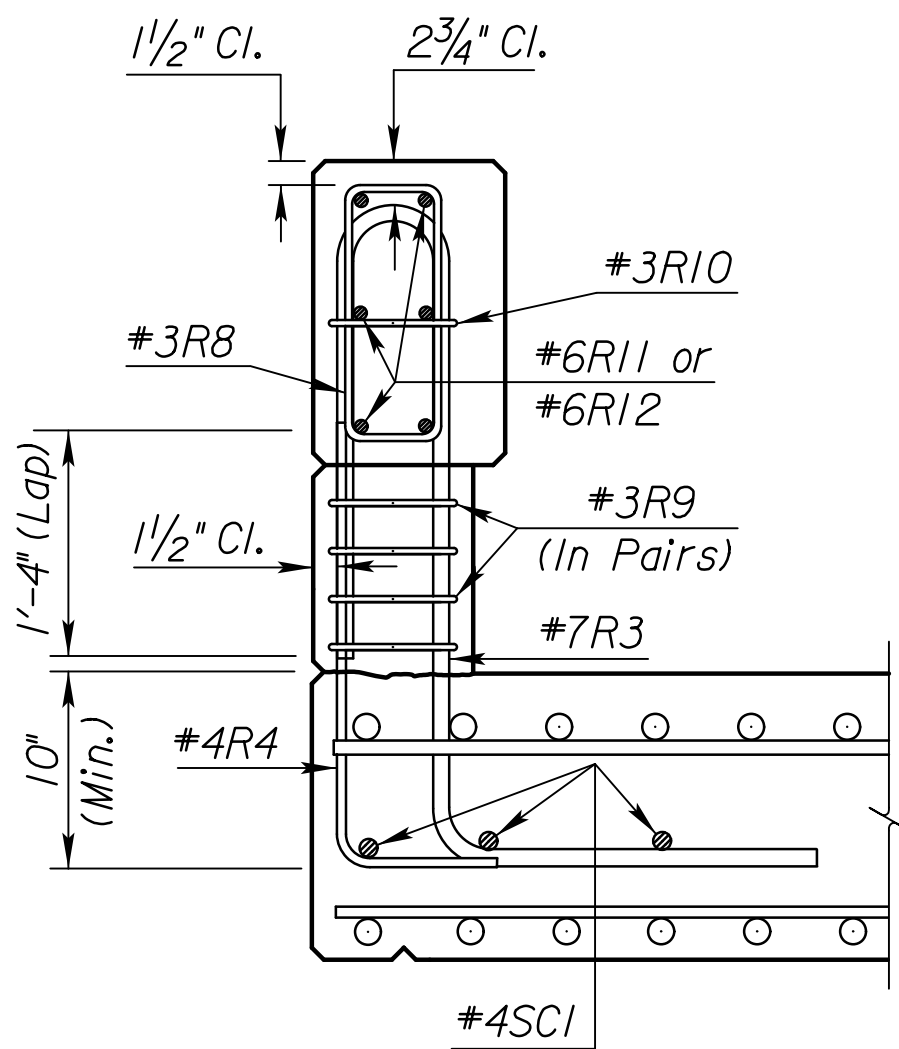
NF = Near Face  
FF = Far Face  
EF = Each Face



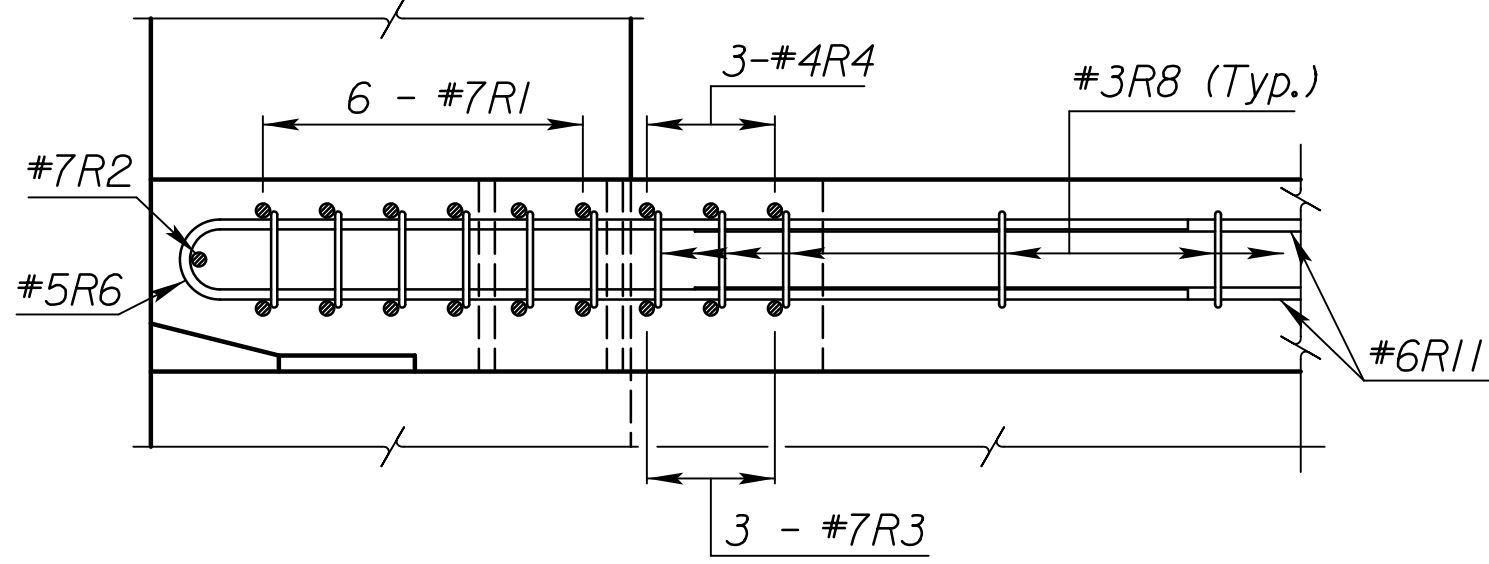
SECTION A-A



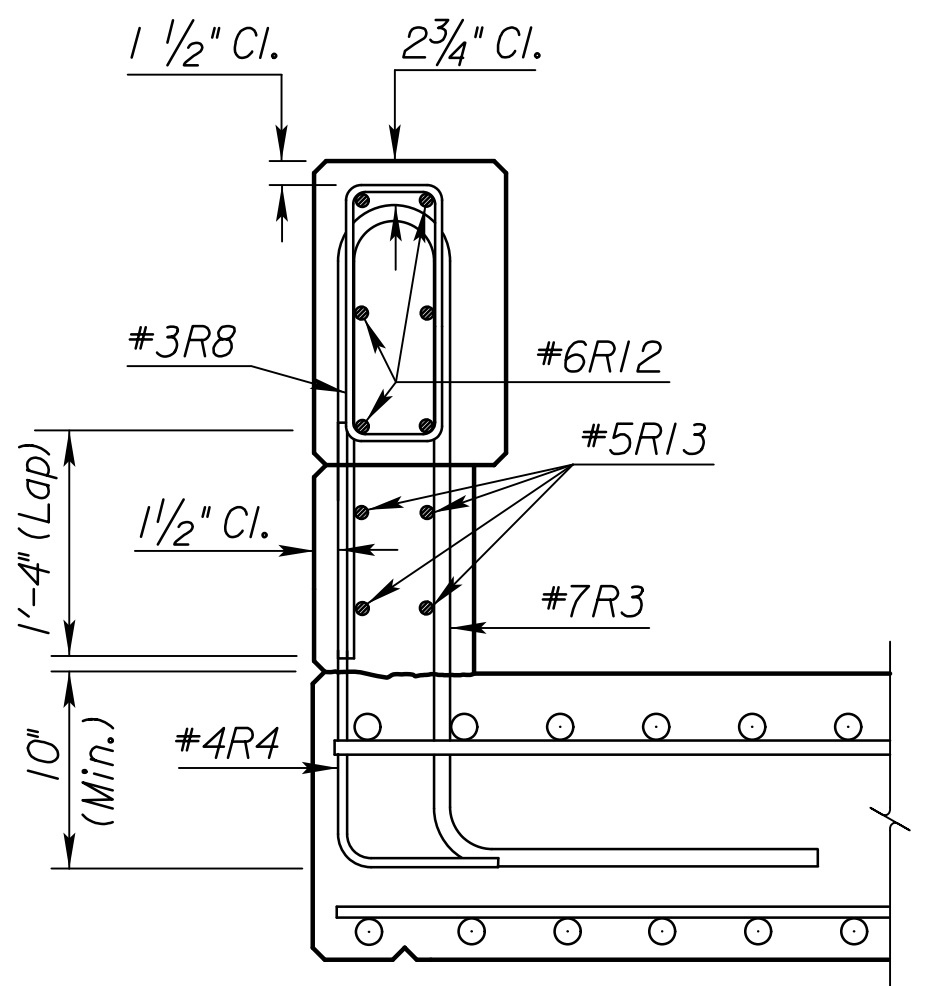
SECTION B-B



SECTION THRU POST



SECTION C-C

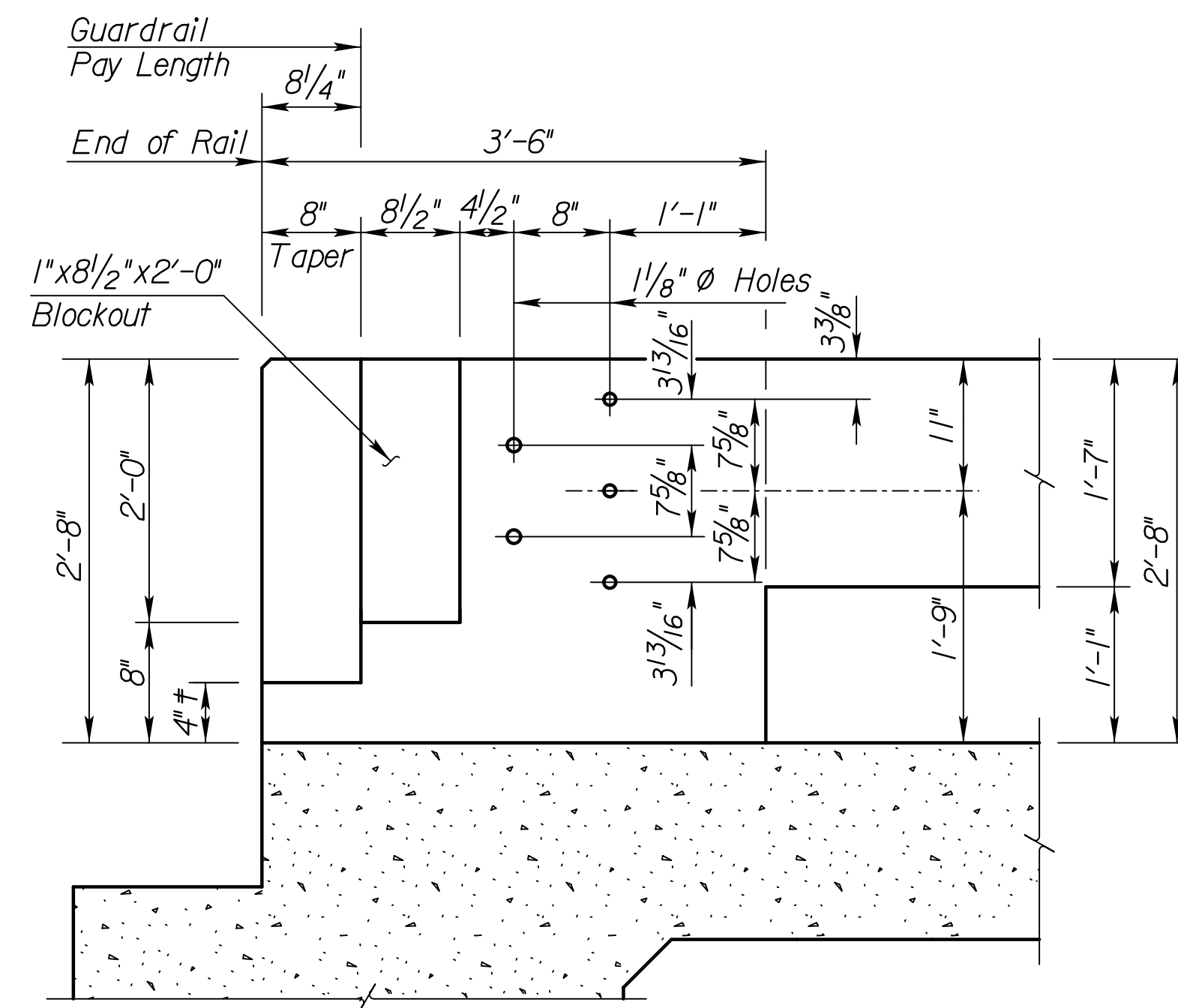


SECTION D-D

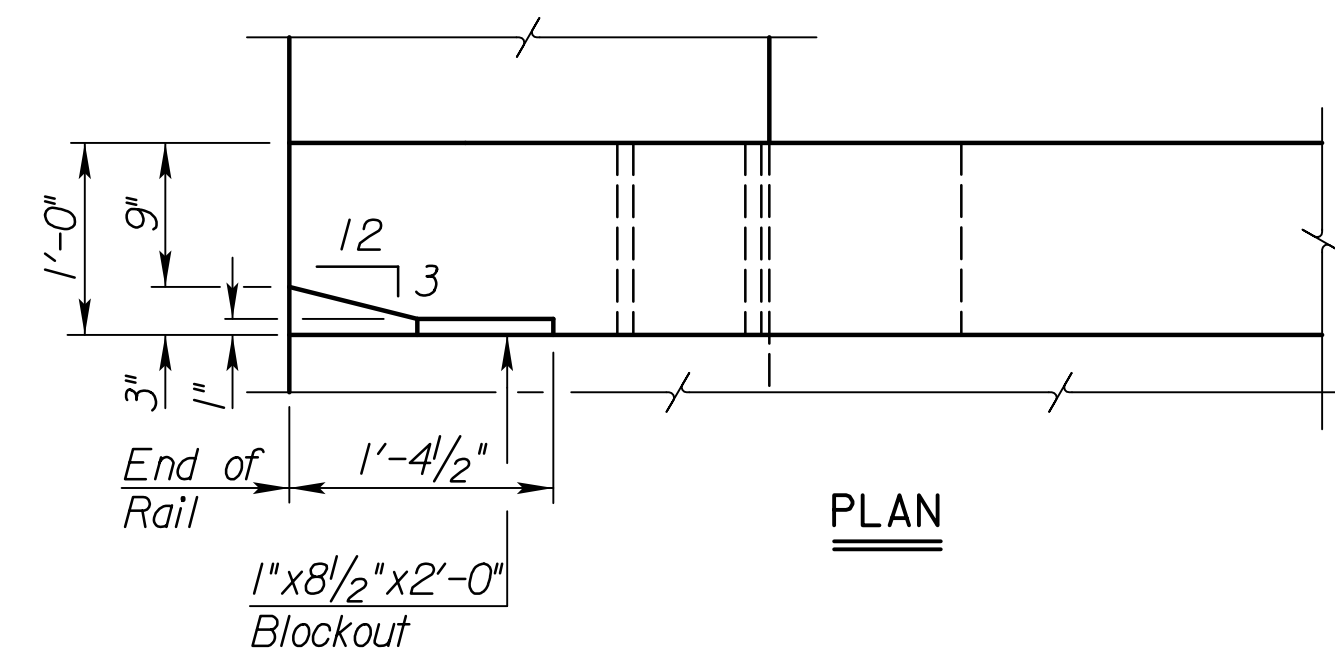
Notes:  
The corral rail shall be built vertical.  
For additional Corral Rail Details see Sheet No. 85

3					
2					
1					
NO.	DATE	REVISIONS	BY	APP'D	
KANSAS DEPARTMENT OF TRANSPORTATION					
Br. No. 035-056-128.98 (170) Sta. 450+93.23					
CORRAL RAIL DETAILS (1 OF 2)					
N. Bd. I-35 OVER LINCOLN STREET					
Proj. No. 035-056 KA-5174-01 Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TKI
DESIGN CK.	TKI	DETAIL CK.	ASF	QUAN. CK.	ASF

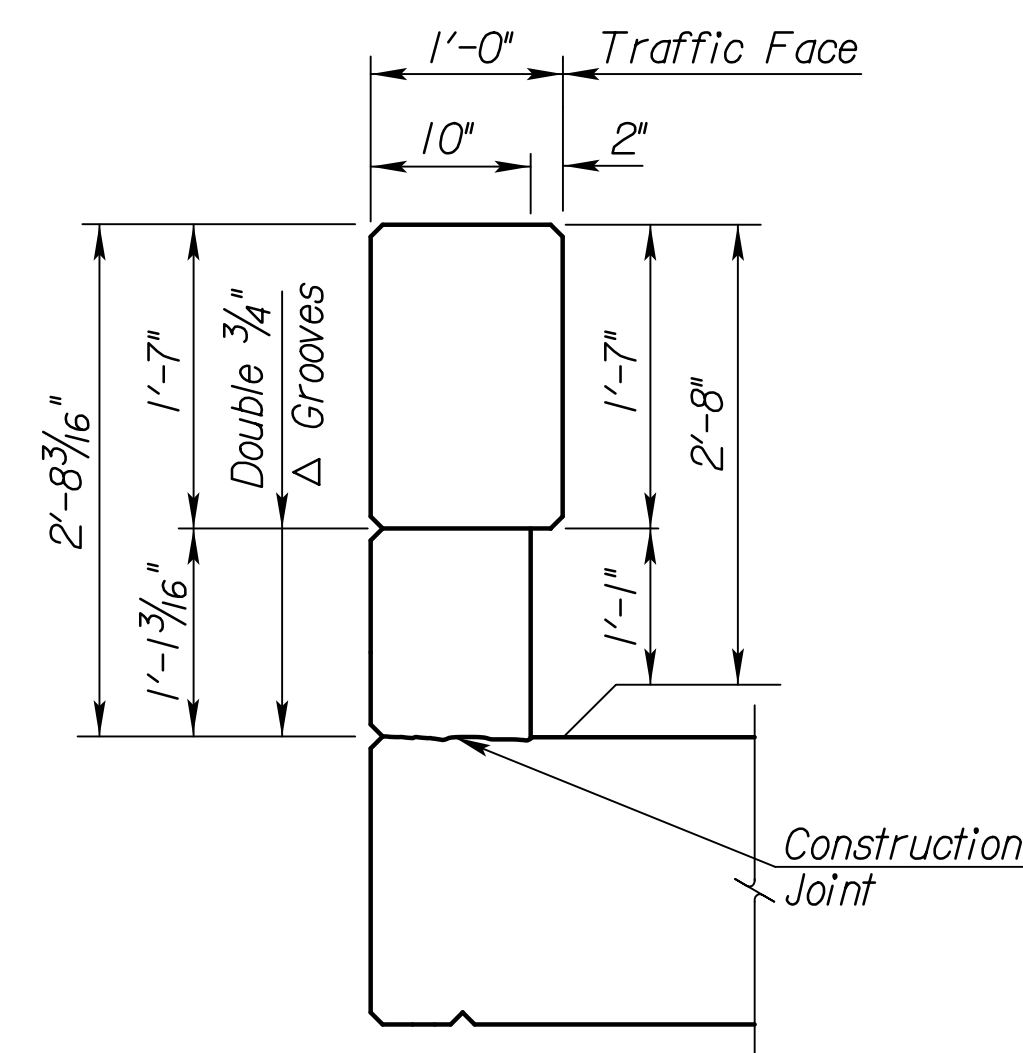
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	85	200



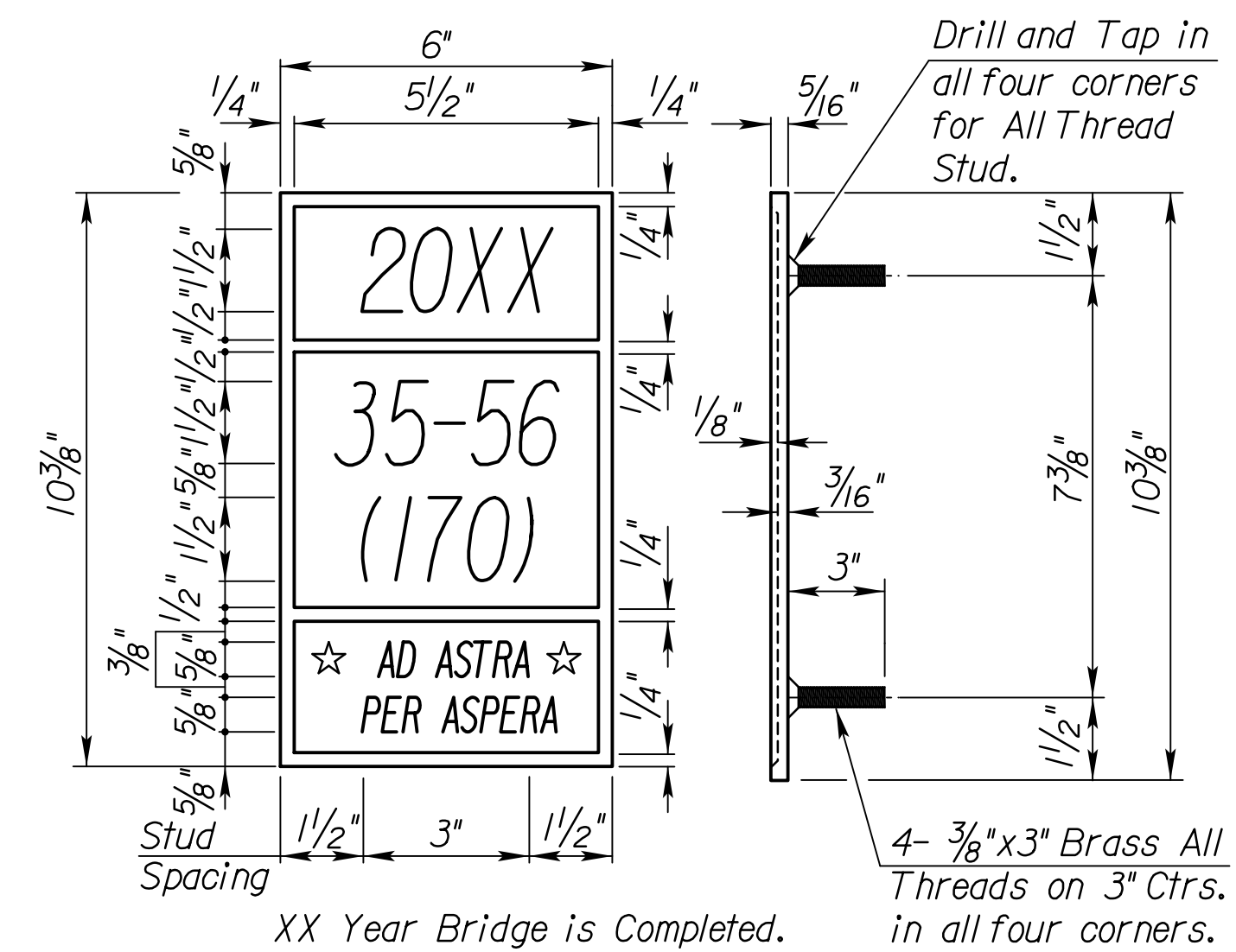
ELEVATION  
(Dimensions at traffic face of rail.)



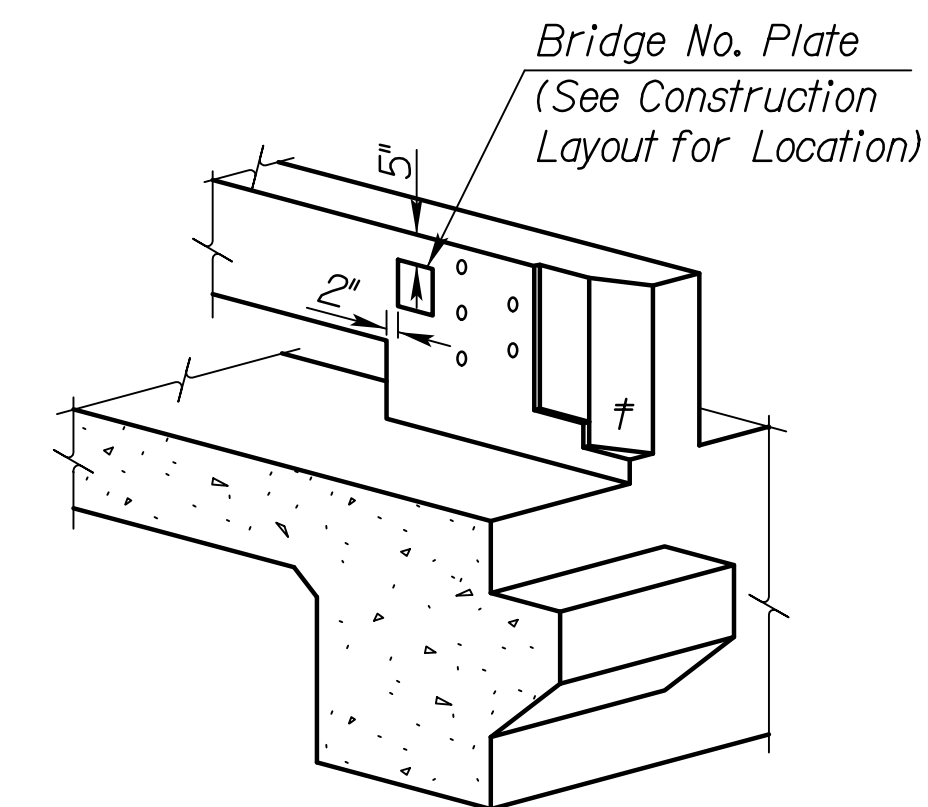
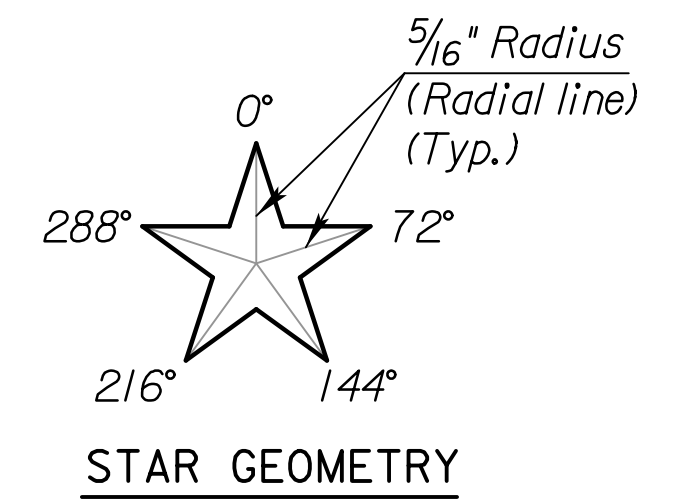
### PLAN



TYPICAL INTERIOR POST



BRIDGE NUMBER PLATE  
( 1 Required )  
( See Construction Layout for Location )



BRIDGE NUMBER PLATE PLACEMENT DETAIL

†Extend the 12:3 taper to the top of the approach slab curb.

3					
2					
1					
NO.	DATE	REVISIONS		BY	APP'D
<b>KANSAS DEPARTMENT OF TRANSPORTATION</b> Br. No. 035-056-I28.98 (170) Sta. 450+93.23 CORRAL RAIL DETAILS (2 OF 2) N. Bd. I-35 OVER LINCOLN STREET Proj. No. 035-056 KA-5174-01      Lyon Co.					
SHEET NO.	OF	SCALE	APP'D		
DESIGNED	ASF	DETAILED	JAH	QUANTITIES	TK/ CADD
DESIGN CK.	TK	DETAIL CK.	ASF	QUAN. CK.	ASF/ CADD CK.      JAH

KDOT Graphics Certified 06-28-2023 *Sheet No. 85*

*Note: For additional Corral Rail Details see Sheet No. 84*

Sheet No. 85

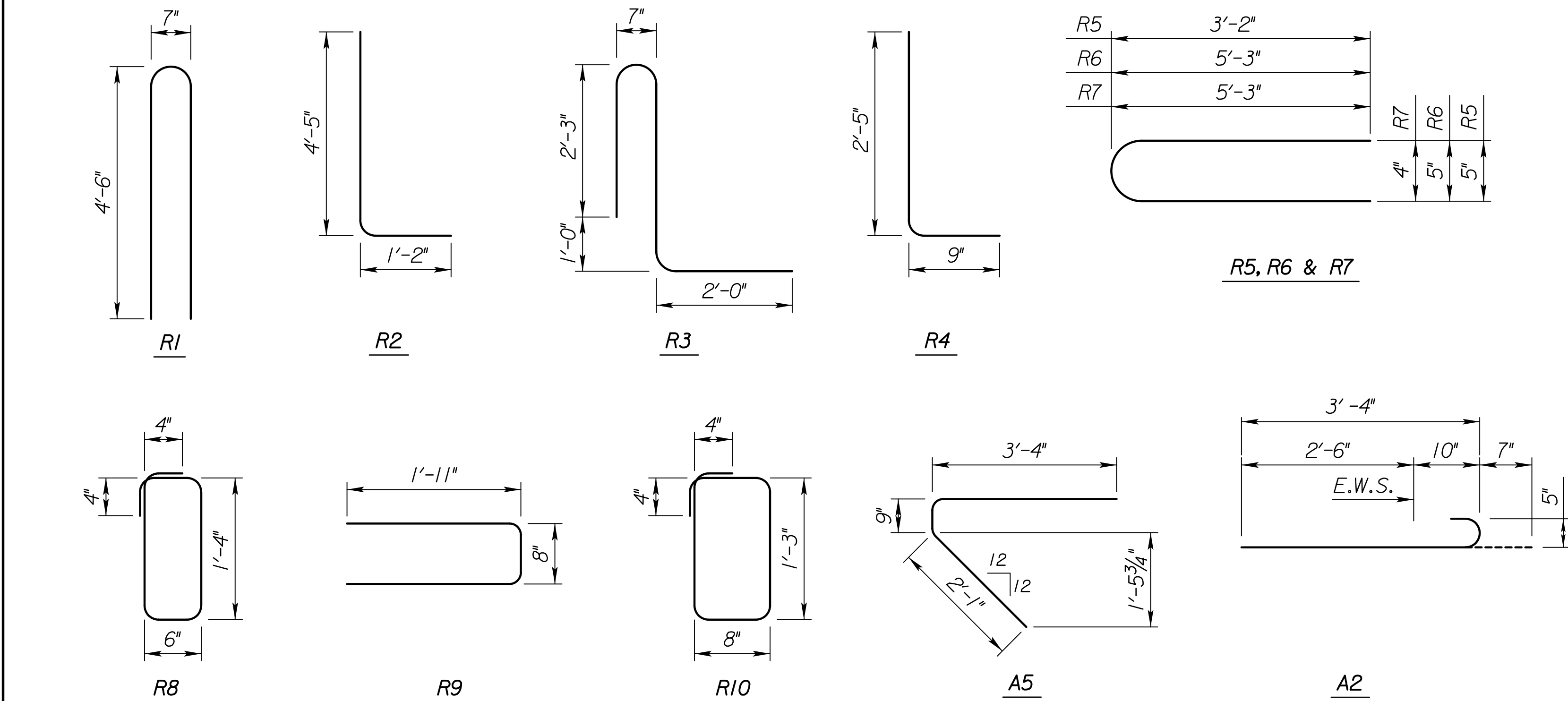
Plotted By: user	Plot Location:
File: c:\pwworking\central01\d3357666\ca57140\lbr170-14.dgn	
Plot Date: 11-07-23	



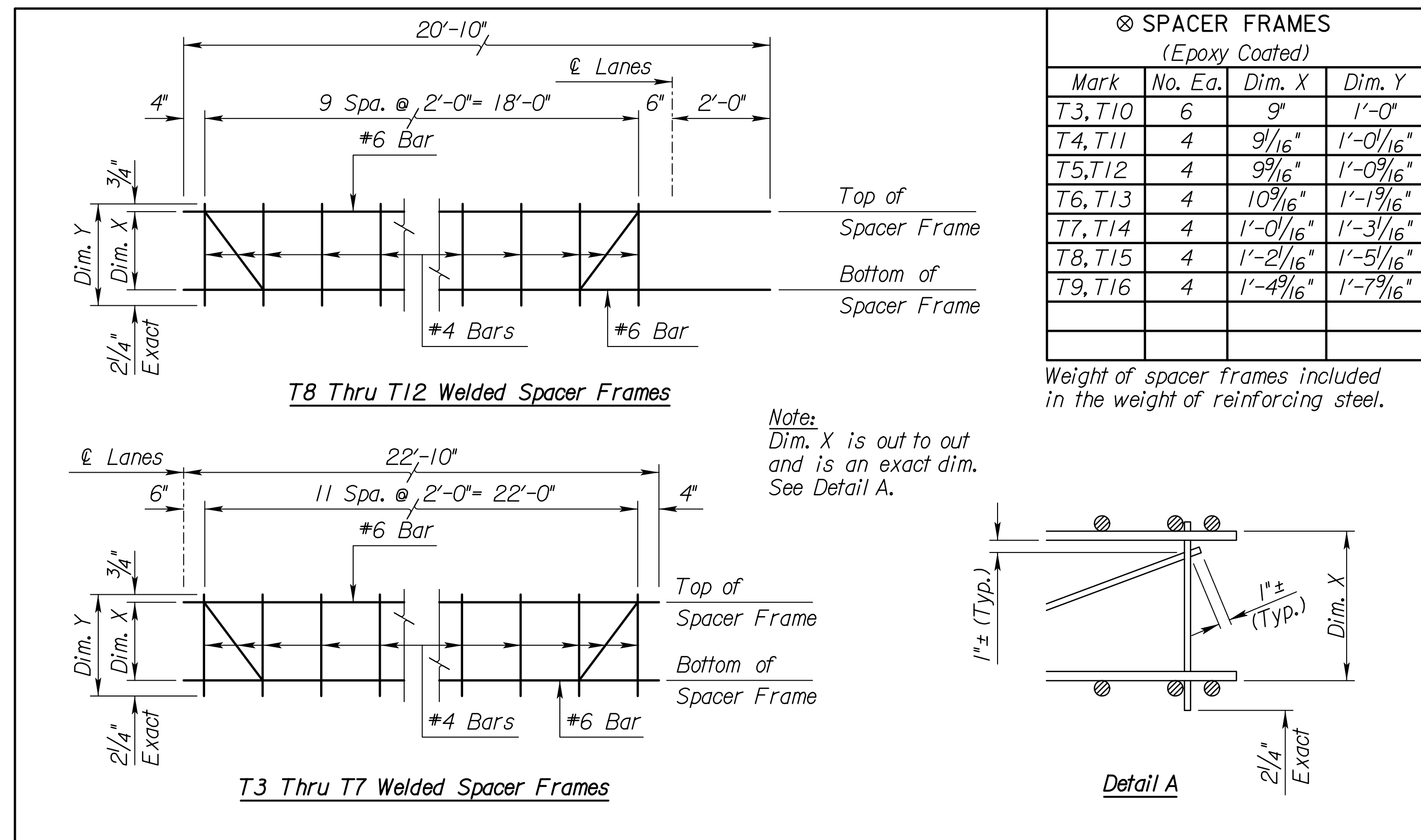
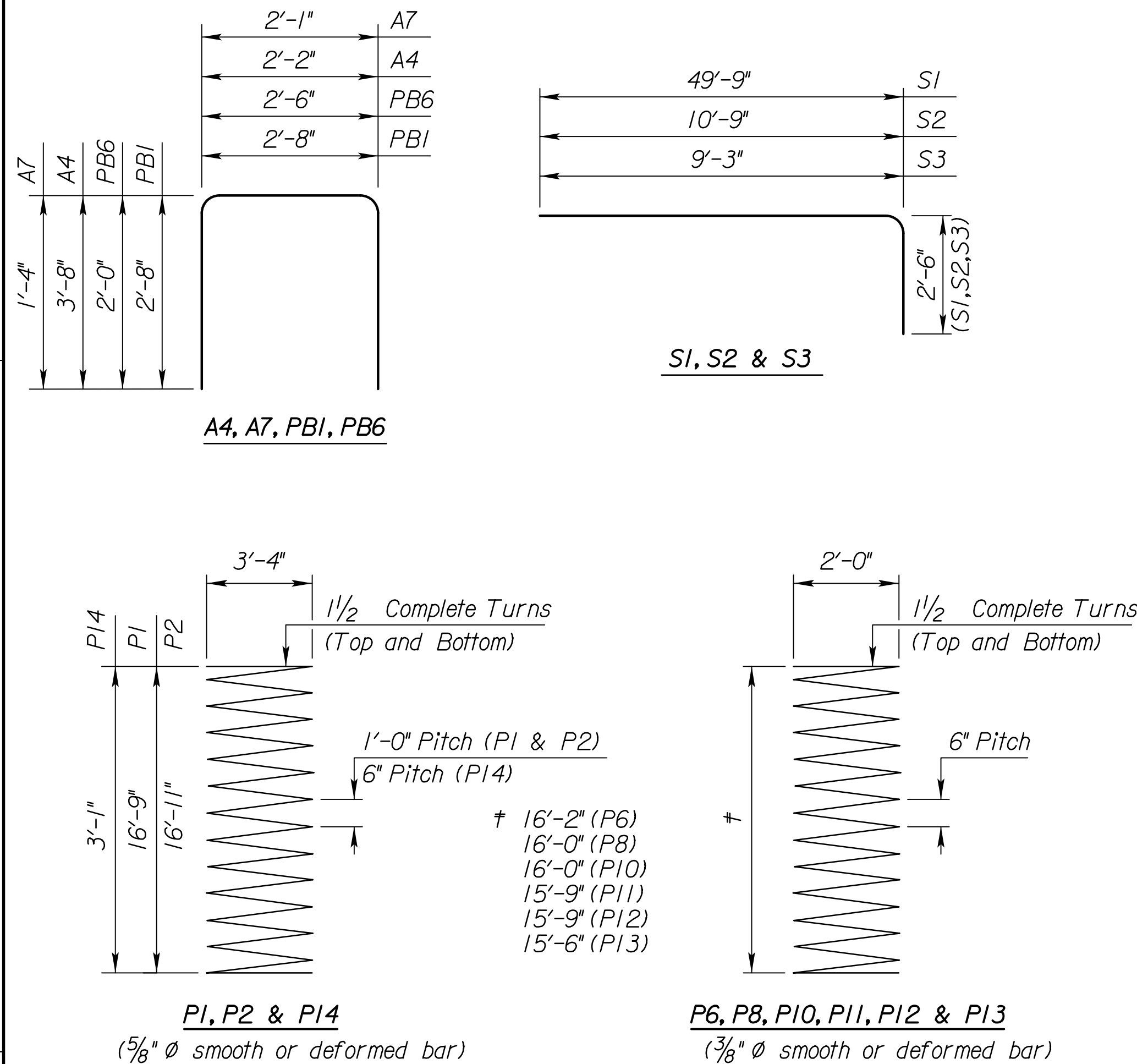
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	86	200

<i>Irfd\br5\9os.dgn</i>		<i>Plot 4</i>
Rowway Width = 40'	O.S.	Longest Span Length = 48'
Skew and Direction = 0	Total No. of Spans = 3	
Loading = HL-93	Railing Type = Corral	

Plotted By: user	Plot Location:
File: c:\pwworking\central\id3357666\ka57140\br170-15.dgn	
Plot: D:\p-45-11-07-02	

[illegible]

⊗ See Bending Diagram  
Note: P1, P2, P3, P4, P5 and P14 bars are all considered part of the drilled shafts.



## BENDING DIAGRAMS

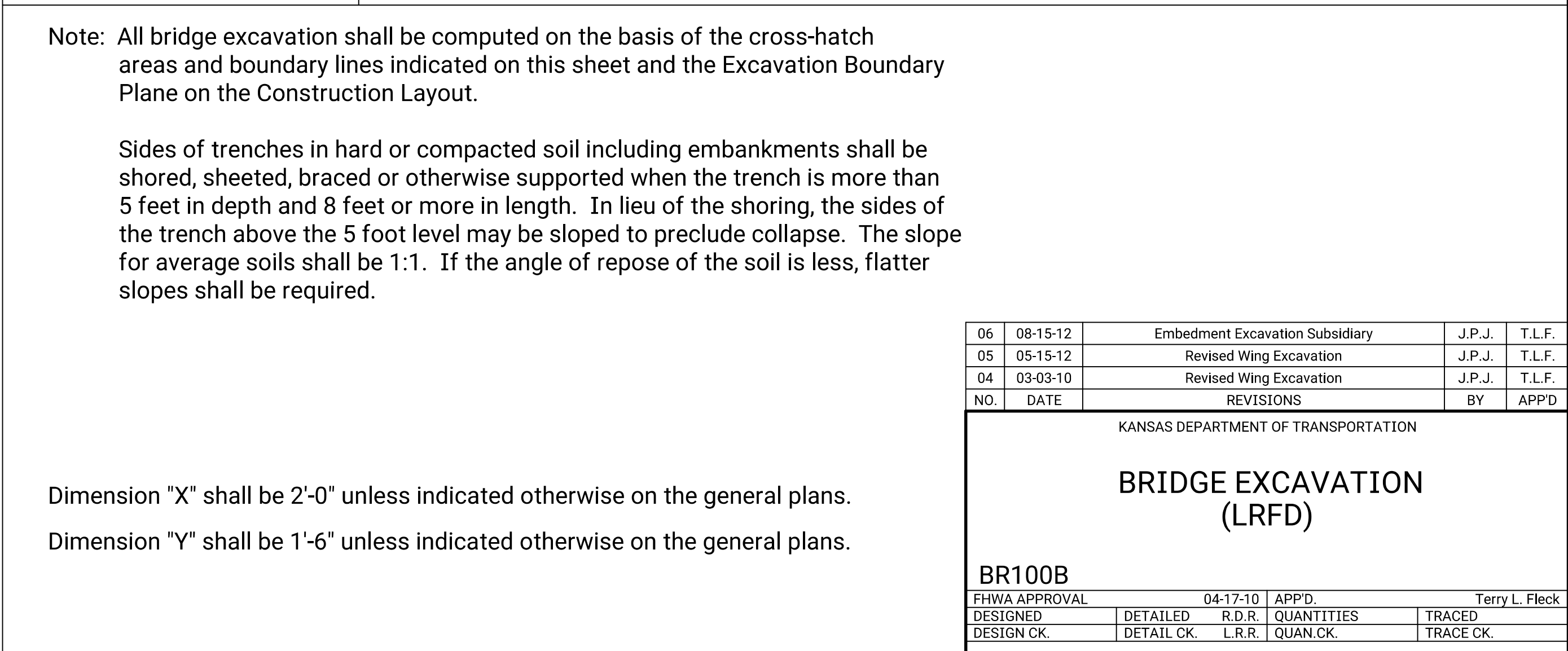
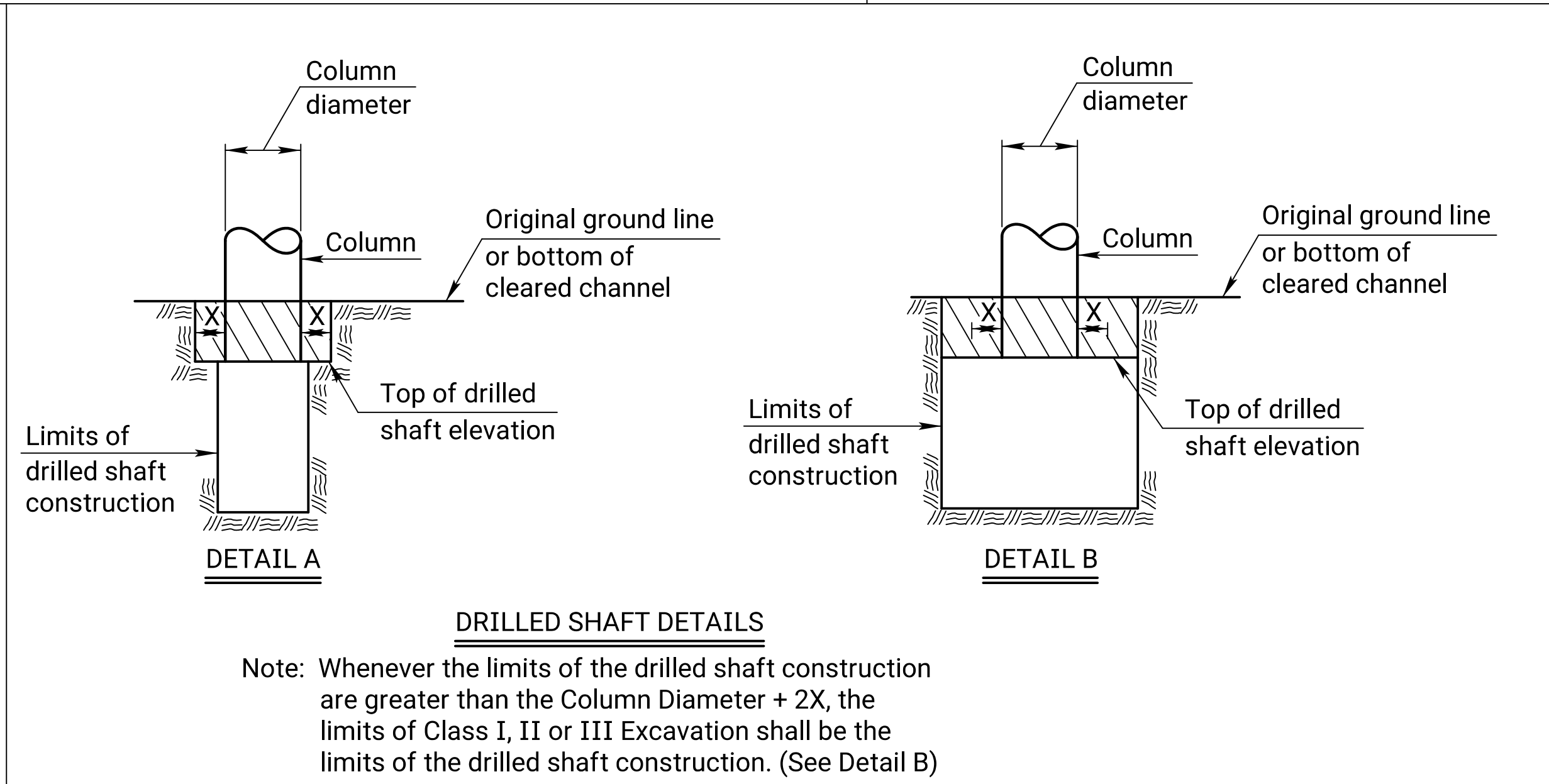
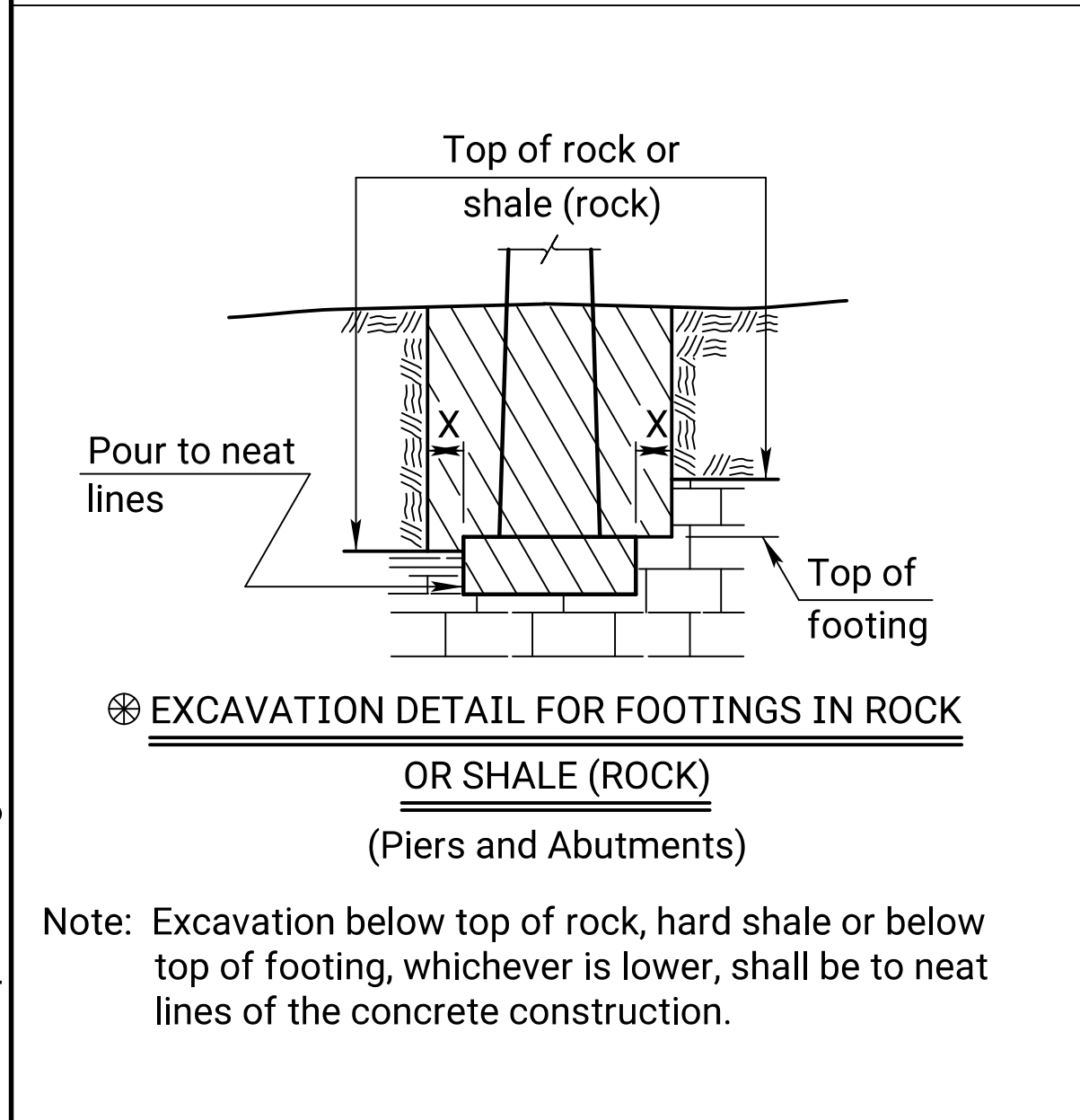
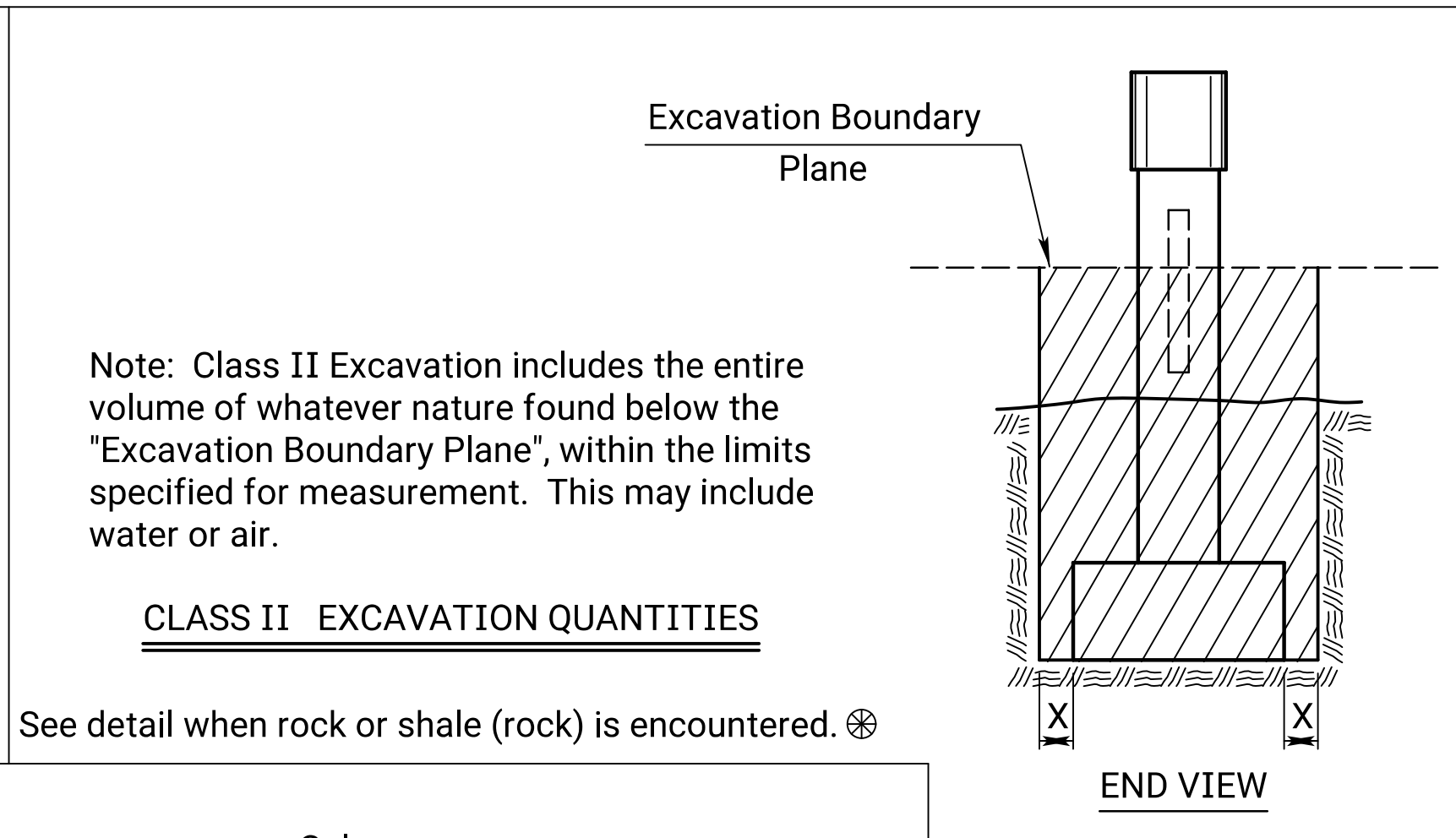
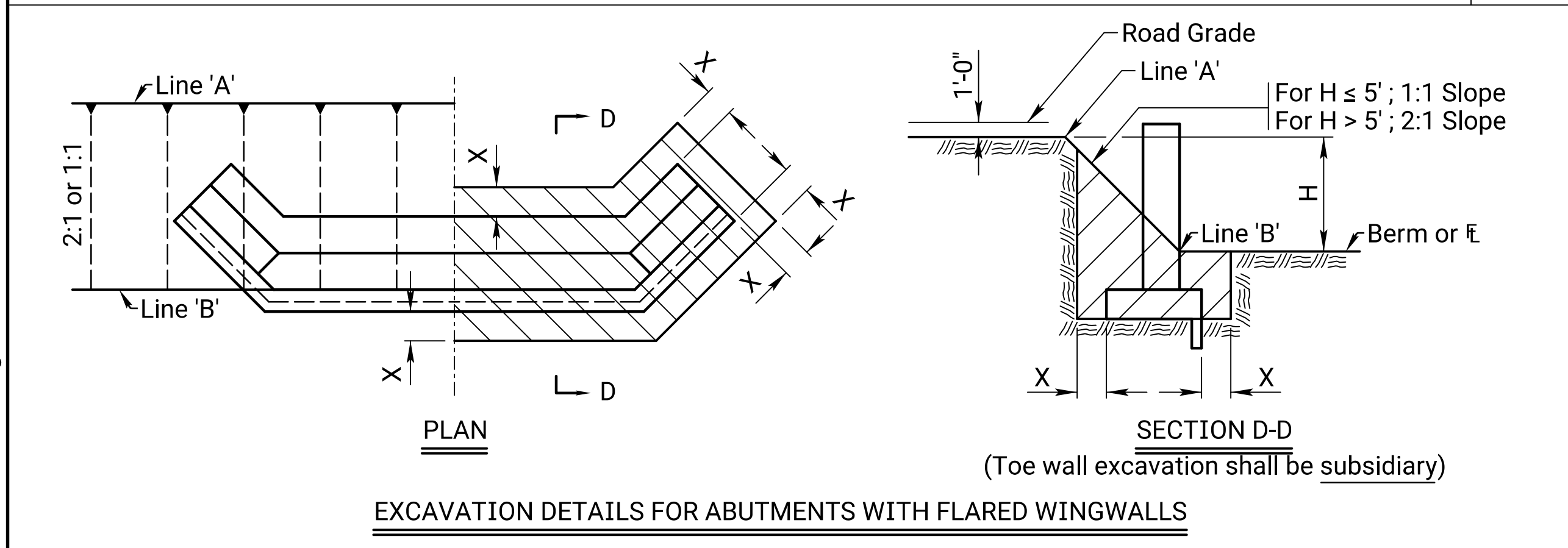
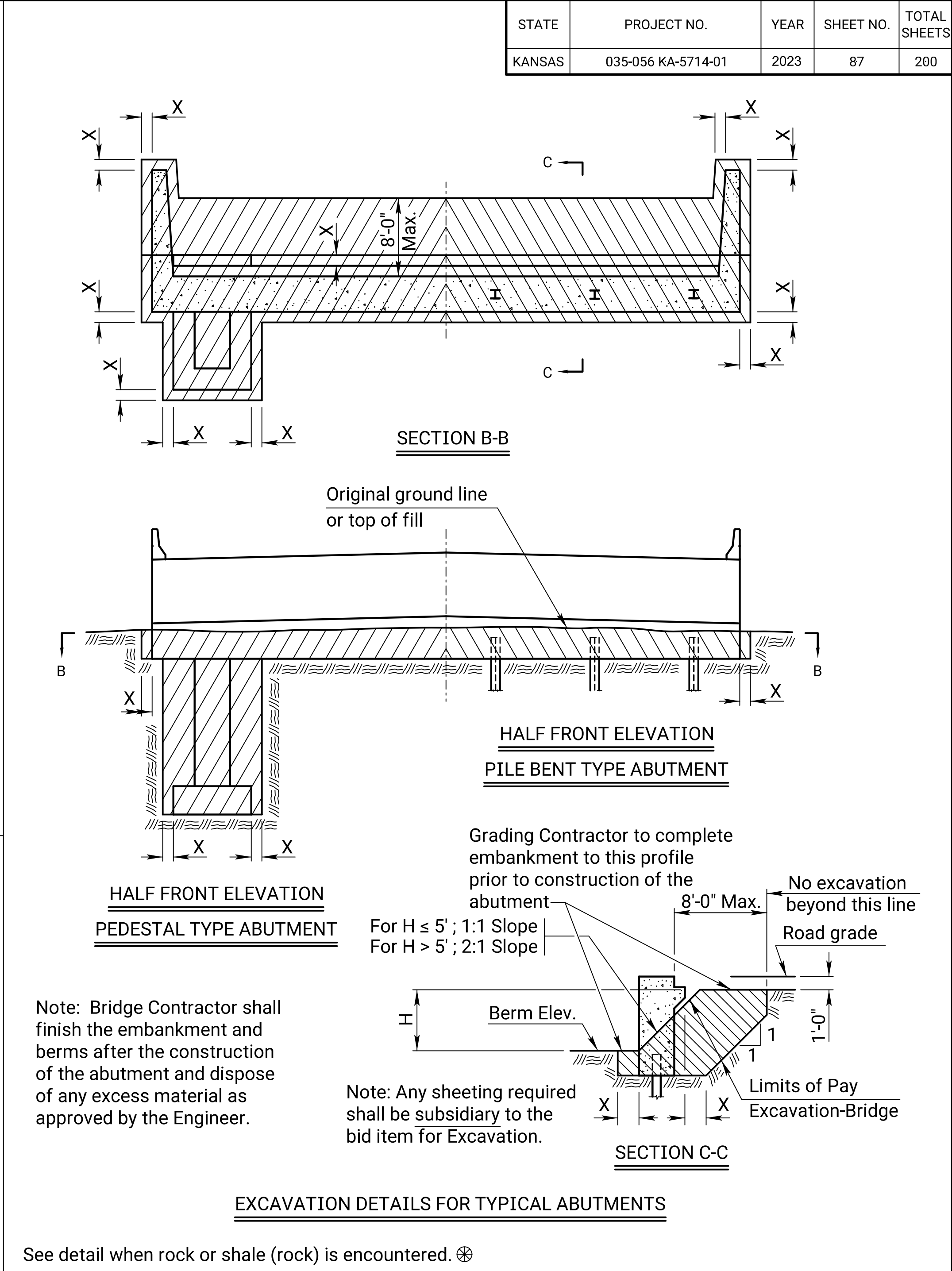
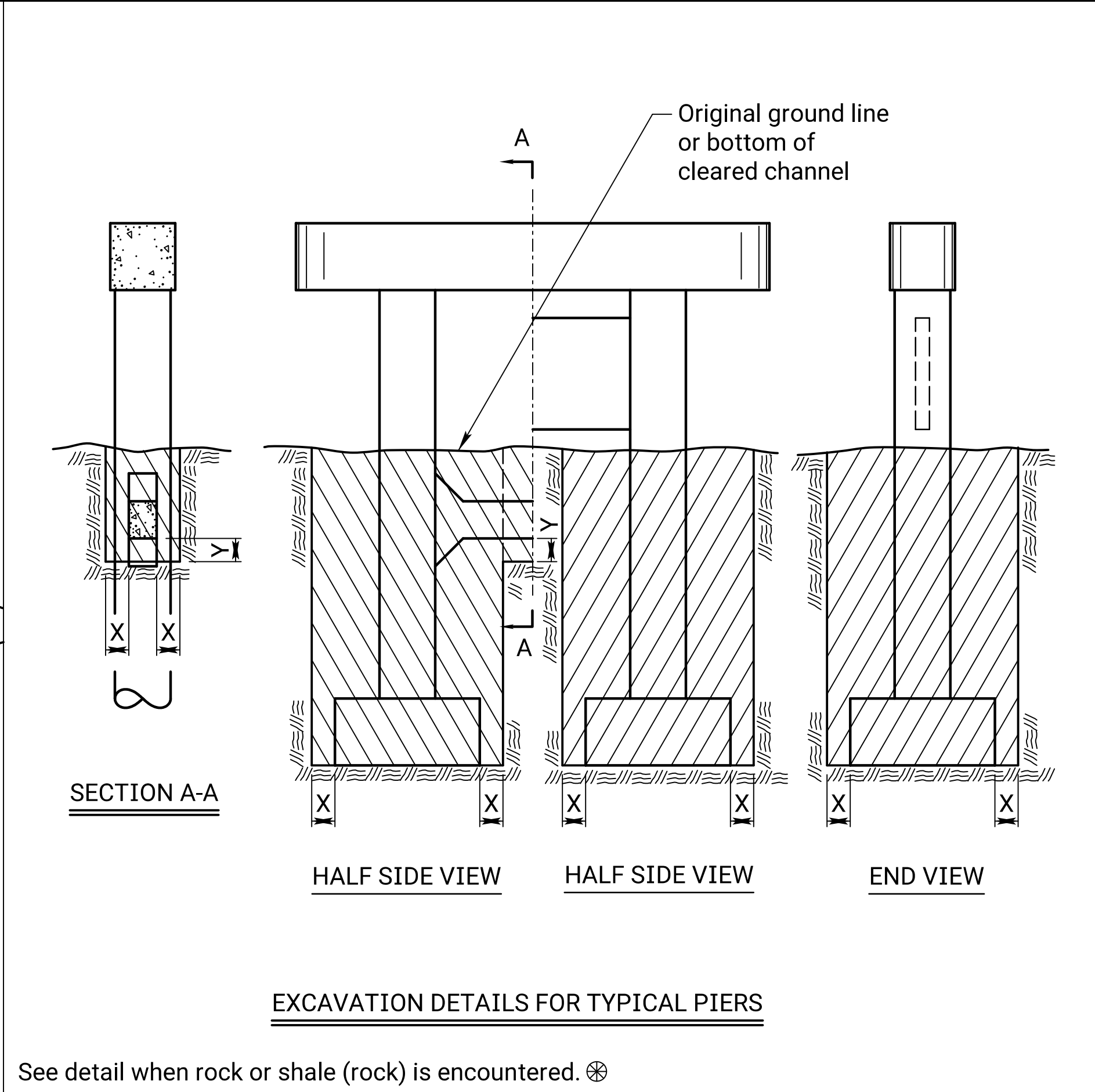
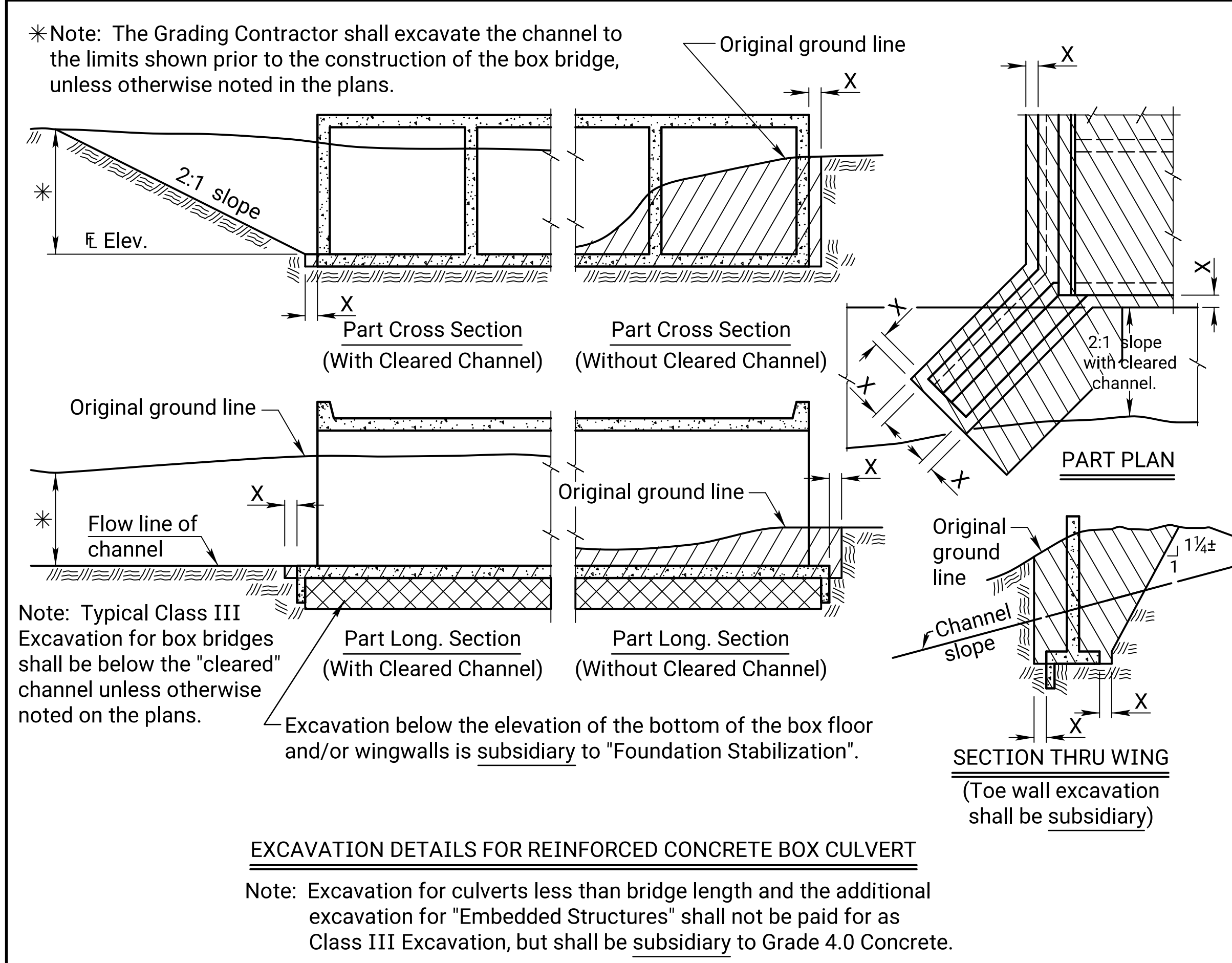
(All dimensions are out to out of bars.)

		BILL OF REINFORCING STEEL Epoxy Coated - Grade 60							
		Straight Bars				Bent Bars			
		Mark	Size	Number	Length	Mark	Size	Number	Length
Superstructure	Abutment - Deck - Rail	S4	#9	4	40'-6"	S1	#9	72	52'-3"
		S6	#9	68	40'-0"				
		S7	#9	64	44'-6"	R1	#7	24	9'-3"
		S8	#9	60	38'-0"	R2	#7	4	5'-7"
		S9	#9	48	31'-9"	R3	#7	218	7'-9"
		S10	#9	48	30'-3"	S2	#7	68	13'-3"
		S11	#9	48	20'-0"	S3	#7	64	11'-9"
		S14	#9	30	50'-0"				
		S15	#9	24	35'-6"	A2	#5	80	3'-11"
		S16	#9	24	30'-6"	R5	#5	8	6'-6"
						R6	#5	8	10'-8"
		A1	#8	16	50'-2"				
		S17	#8	24	19'-6"	A4	#4	202	9'-4"
						A5	#4	80	6'-2"
		R11	#6	24	8'-3"	A7	#4	32	4'-9"
		R12	#6	120	9'-8"	R4	#4	218	3'-2"
		T1	#6	81	41'-8"	R7	#4	4	10'-8"
		A3	#5	24	50'-2"	R8	#3	332	4'-4"
		R13	#5	16	17'-7"	R9	#3	176	4'-6"
						R10	#3	44	4'-6"
		A6	#4	2	40'-8"				
		S5	#4	2	13'-6"	T3-T16			⊗
		S12	#4	48	7'-9"				
	S13	#4	48	8'-9"					
	S18	#4	4	8'-0"					
	SC1	#4	66	6'-6"					
	T2	#4	62	41'-8"					
Substructure	P7	#7	36	19'-0"	P6	3/8"	1	⊗	
	P9	#7	36	18'-10"	P8	3/8"	1	⊗	
					P10	3/8"	1	⊗	
					P11	3/8"	1	⊗	
					P12	3/8"	1	⊗	
					P13	3/8"	1	⊗	

⊗ See Bending Diagram

3				
2				
1				
NO.	DATE	REVISIONS	BY	APP'D
<p align="center"><b>KANSAS DEPARTMENT OF TRANSPORTATION</b></p> <p>Br. No. 035-056-I28.98 (I70) S+a. 450+93.23</p> <p align="center"><b>BILL OF REINFORCING STEEL AND BENDING DIAGRAM</b></p> <p align="center"><b>N. Bd. I-35 OVER LINCOLN STREET</b></p> <p>Proj. No. 035-056 KA-5174-01      Lyon Co.</p>				
SHEET NO.	OF	SCALE	APP'D	
DESIGNED	ASF	DETAILED	JAH	QUANTITIES
DESIGN CK.	TK	DETAIL CK.	ASF	QUAN. CK.
			TK	CADD
			ASF	CADD CK.
			TK	

Drawn By : user  
Plotted : 11-07-23  
File : c:\pwworking\central01\vd3545288\DO NOT USE-ka571401bss170&171-15.dgn







STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	89	200

GENERAL NOTES

Reference is made to the latest edition of the CRSI "Manual of Standard Practice" for recommended industry practices concerning reinforcing steel.

Use only the following types of bar supports:

- 1) Wire Bar Supports:
- a) Epoxy coated reinforcing: Class 1 Protection  
b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection
- 2) Plastic Bar Supports
- 3) Supplementary bars

When securing epoxy coated reinforcement, use tie wires or metal clips that are epoxy or plastic coated.

Do not weld reinforcing steel to bar supports or to other reinforcing steel. Shop weld spacer frames for haunched slabs.

Tie bars at all intersections around the perimeter of each mat and at not less than 2'-0" centers or at every intersection, whichever is greater.

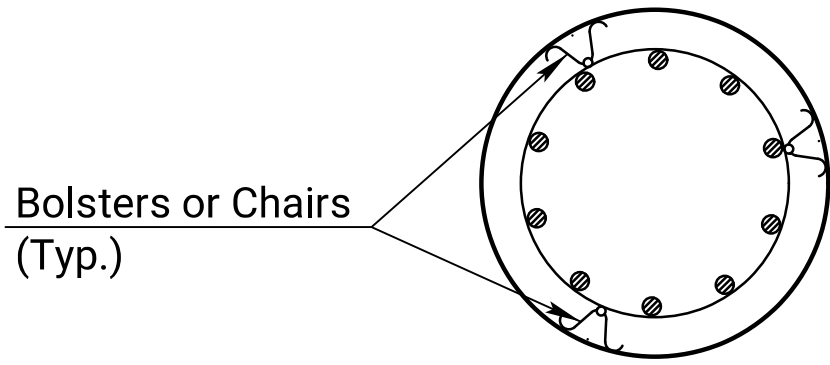
Where more than one length of bar support is required, lap the end legs so they are locked or tied together.

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within ¼" of that indicated on the plans.

Spacings shown are maximums. Use sufficient supports, as determined by the Engineer, to retain the reinforcing steel in position.

Construct any platforms, required for the support of workers and/or equipment during concrete placement, directly on the forms and not on the reinforcing steel.

Designs and arrangements of Supports or Spacers other than as shown on this sheet, may be used with the permission of the Engineer.



SECTION A-A

05	11-10-10	Column Bar Supports Required	J.P.J.	T.L.F.
04	12-01-05	Drilled Shaft Spiral Steel Placement	J.P.J.	K.F.H.
03	08-21-00	Added Pre-Cast Panel Detail	R.A.M.	K.F.H.
NO.	DATE	REVISIONS	BY	APPD

KANSAS DEPARTMENT OF TRANSPORTATION

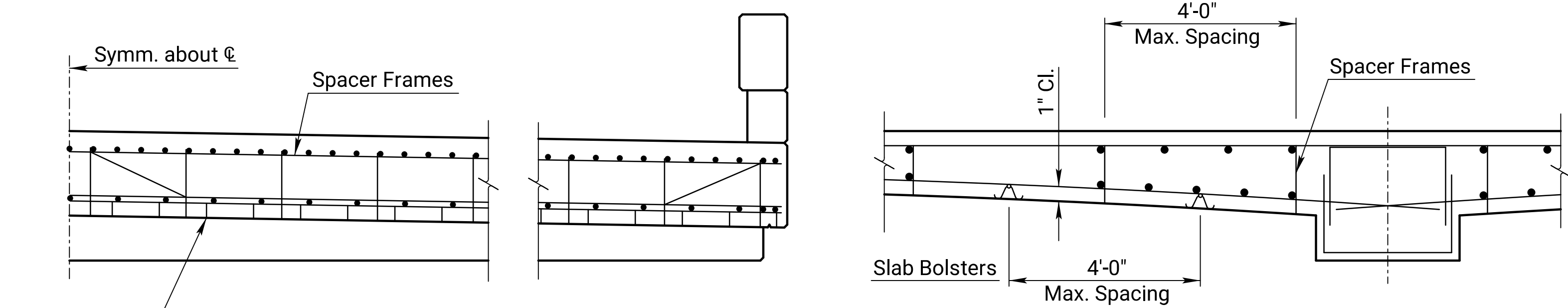
SUPPORTS AND SPACERS FOR REINFORCING STEEL

BR120

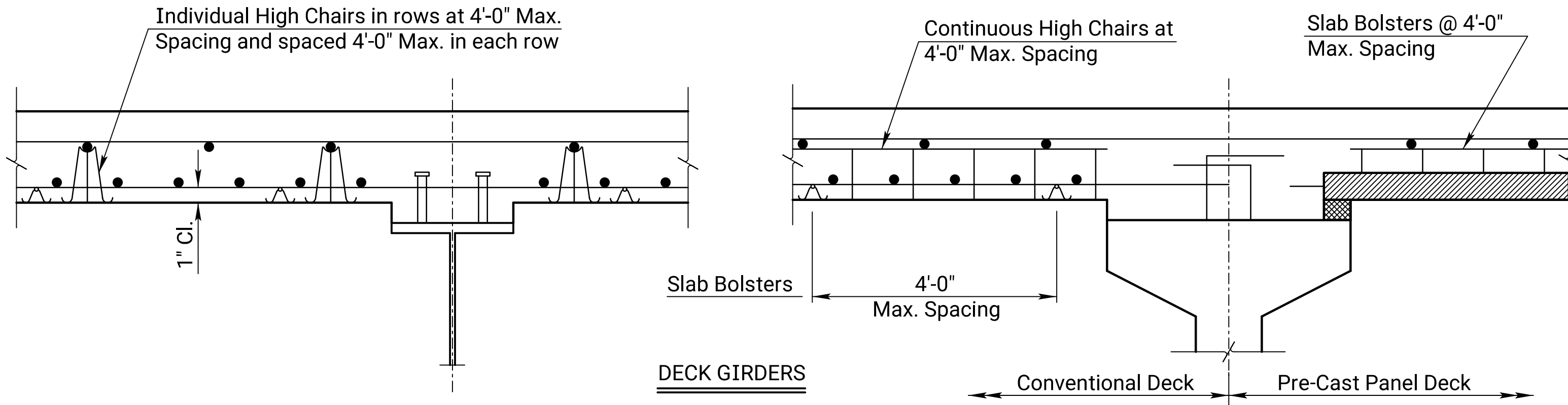
DESIGNED	R.A.M.	DETAILED	R.A.A.	QUANTITIES	TRACED	R.A.A.
DESIGN CK.	L.R.R.	DETAIL CK.	R.A.M.	QUAN.CK.	TRACE CK.	R.A.M.

KDOT Graphics Certified 06-20-2022

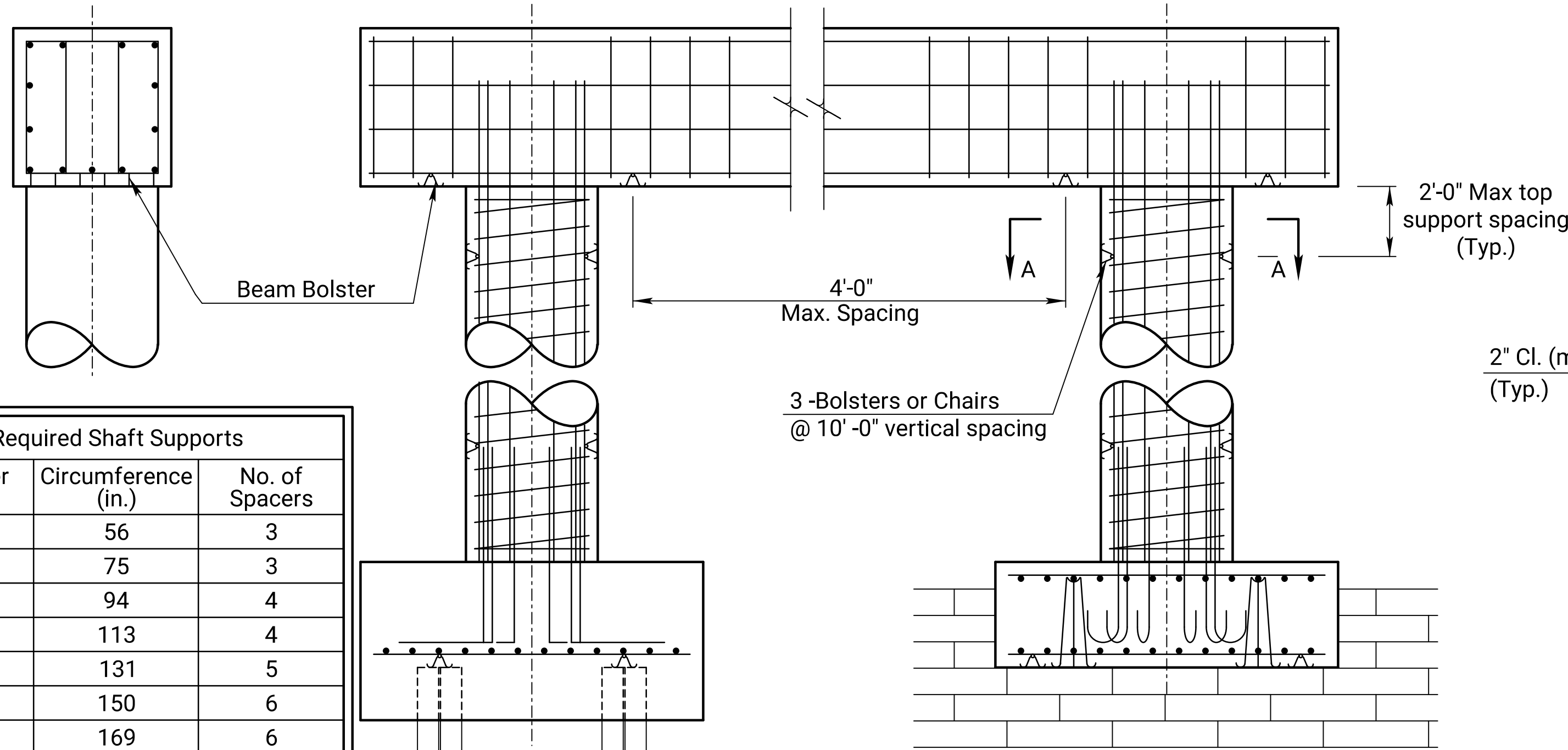
Sh. No. 89



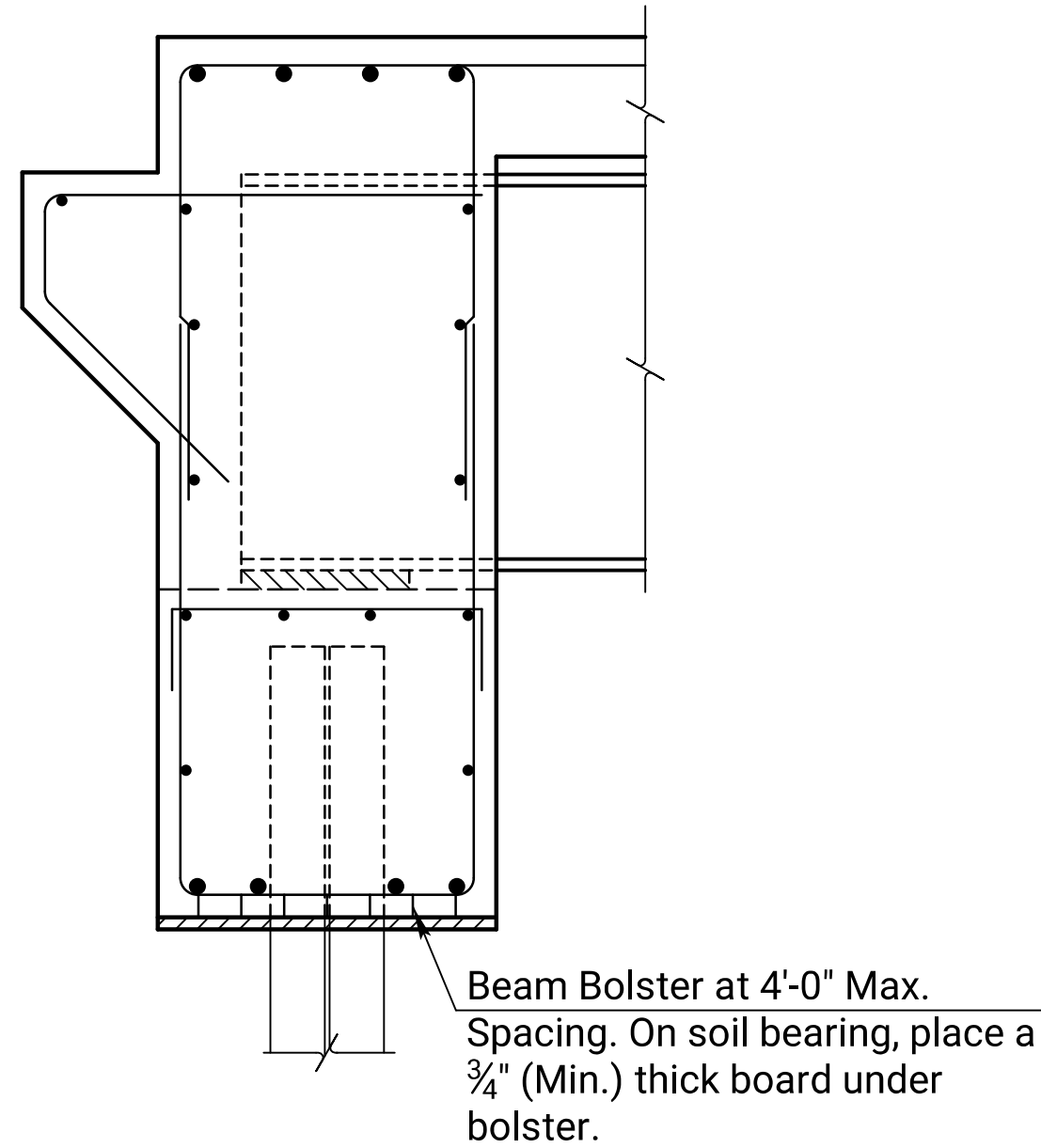
CONTINUOUS HAUNCHED SLAB



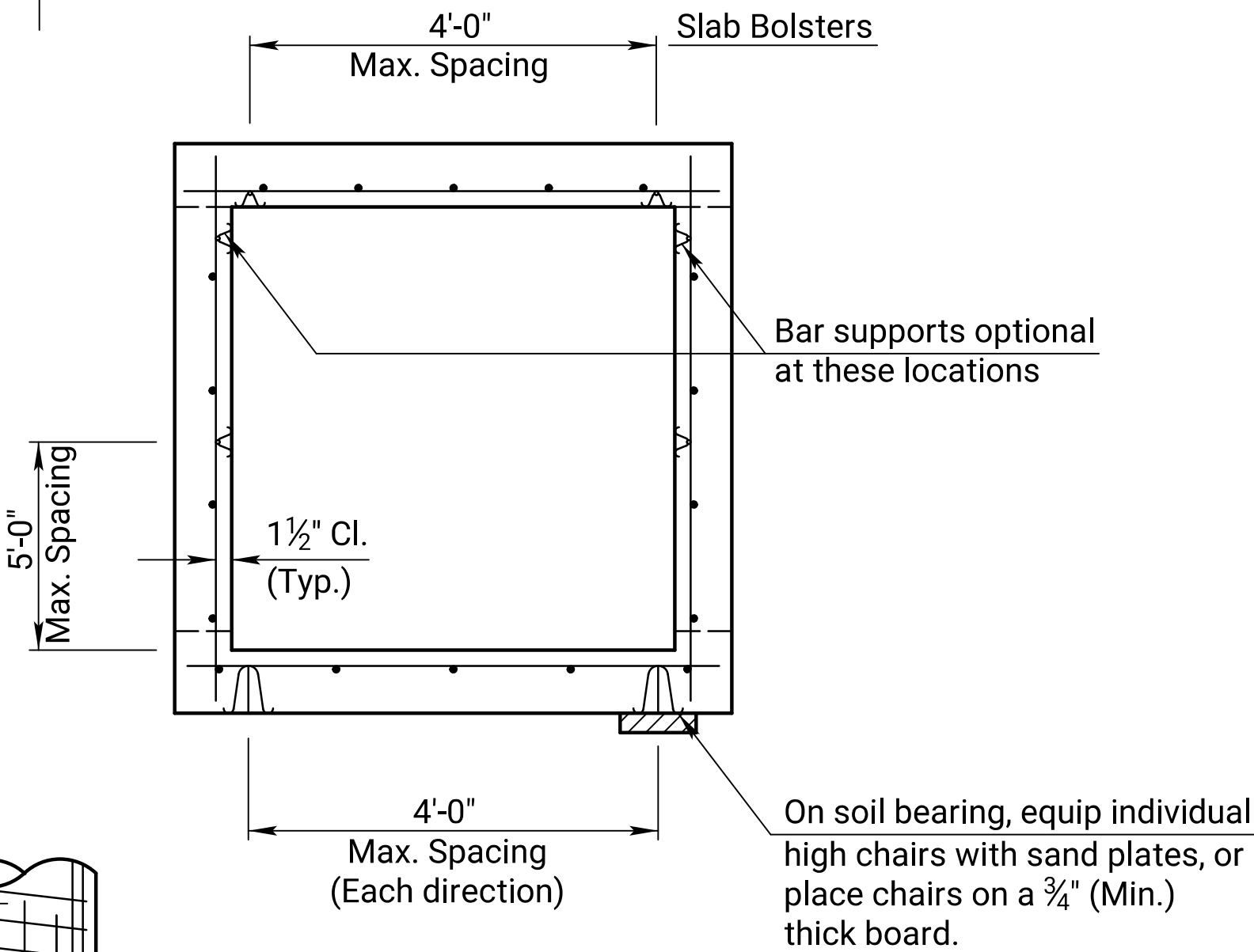
DECK GIRDERS



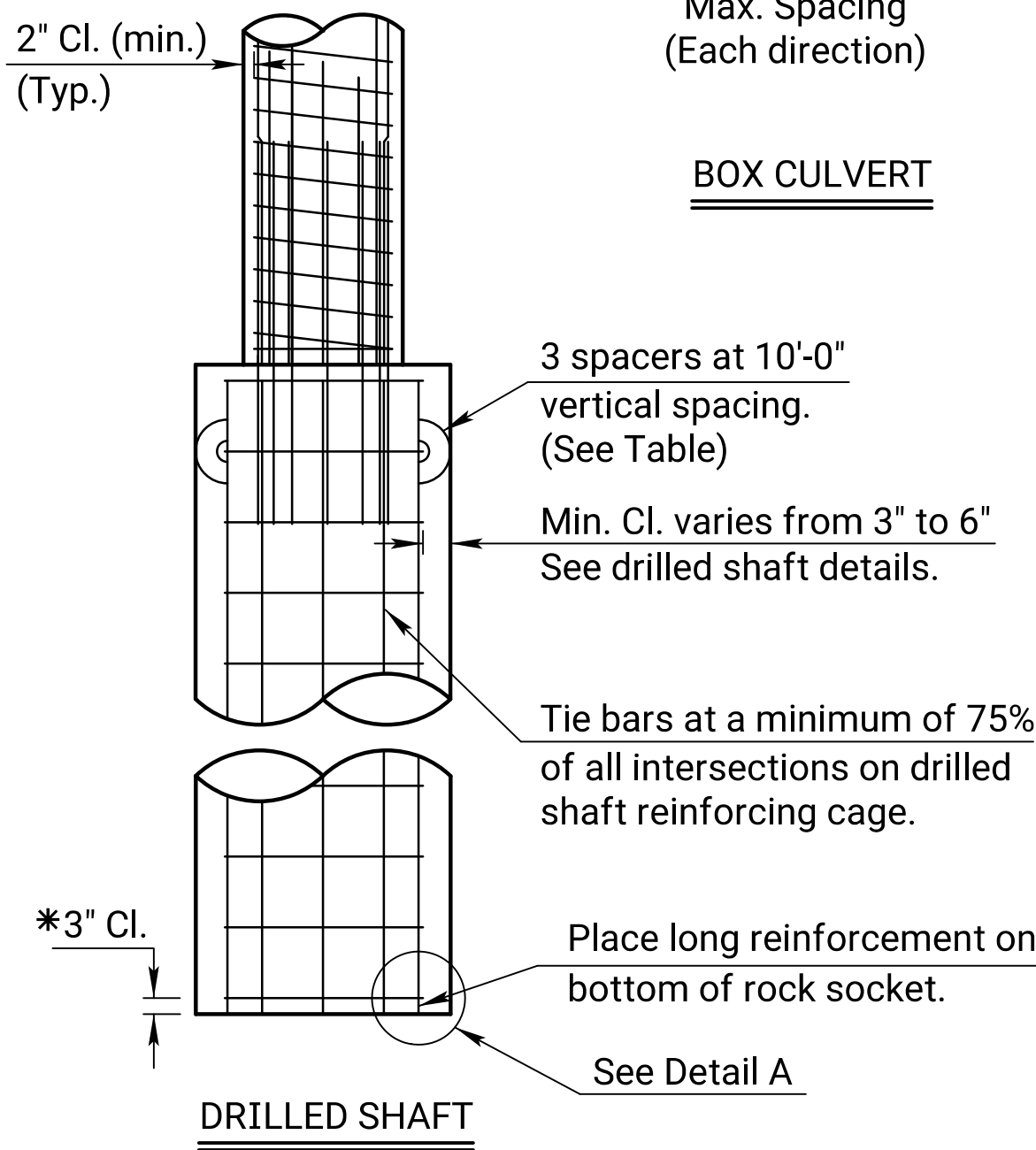
PIER



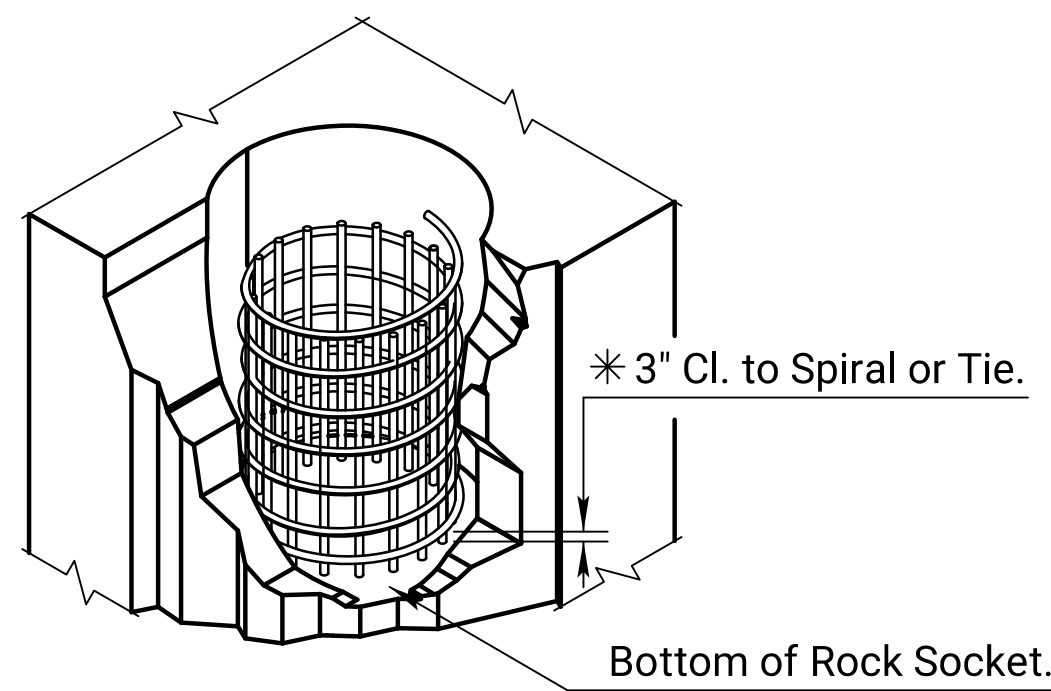
ABUTMENT



BOX CULVERT



DRILLED SHAFT



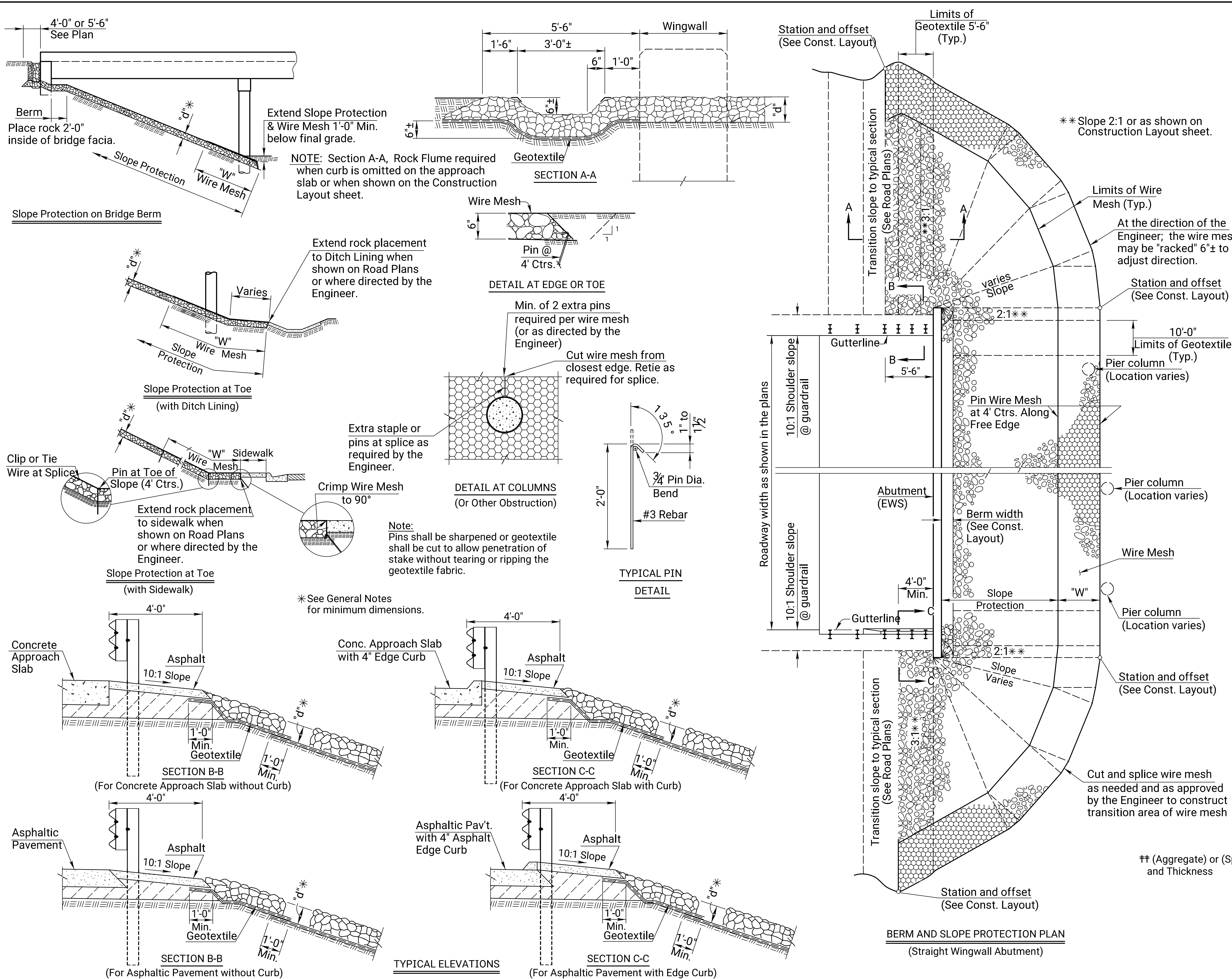
DETAIL A

\* Note: Longitudinal reinforcing steel is placed on the bottom of the rock socket. Maintain 3" clearance from the bottom of rock socket to the first spiral or tie bar.

Required Shaft Supports		
Diameter (in.)	Circumference (in.)	No. of Spacers
18	56	3
24	75	3
30	94	4
36	113	4
42	131	5
48	150	6
54	169	6
60	188	7
66	207	7
72	226	8
78	244	9
84	263	9
90	282	10
96	301	11
102	320	11
108	339	12



Drawn By : user  
File : c:\pwworking\central01\345288\DO NOT USE-ka571401\bs170&171-18.dgn  
Plotted : 11-07-23



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	90	200

GENERAL NOTES

- Limits of slope protection are shown on the Construction Layout sheet. Limits may be adjusted as needed at the direction of the Engineer to match ground elevations found at the site.
- Gradation and aggregate for the Slope Protection (Aggregate) shall meet the requirements of stone for Aggregate Ditch Lining and have a  $D_{50}$  of 4 inches unless otherwise noted on the Plans.
- Wire mesh shall be PVC coated and have a nominal mesh opening of  $2\frac{1}{2} \times 3\frac{1}{4}$ ". Wire mesh shall be furnished full width up to widths of 12.0 feet ("W" = 12.0 ft.). When widths greater than 12.0 feet are specified on the plans, the furnished width shall be as recommended by the manufacturer but not less than 6.0 feet. All splices shall be made with PVC coated lacing wire, PVC coated wire ties, or stainless steel fastener clips. The longitudinal edges of the wire mesh shall be securely selvaged to prevent ravelling of the mesh. Wire mesh and tie wires shall meet the material requirements for Gabions in the KDOT Specifications. Wire mesh shall not be used unless noted in the Plans and shown in the Table of Quantities. When wire mesh is specified, the bid item shall be "Slope Protection (Special)" and wire mesh shall be subsidiary.
- Excavation and grading for placement of slope protection and all work and material to install geotextile fabric shall be subsidiary to slope protection.
- Slope protection shall be underlain with geotextile fabric with limits shown. Fabric damaged or displaced during construction shall be replaced at no cost to KDOT. Fabric shall be installed and secured as recommended by the fabric manufacturer. One (1) copy of the fabric manufacturer's installation procedure shall be submitted to the Engineer. The installation procedure shall show details of the splices, overlaps, and pin layout. Minimum overlap of geotextile shall be 1 ft. Fabric shall be anchored along edges and splices at a maximum of 3 foot centers with staples or pins (w/washers). Interior area of fabric shall be pinned or stapled as recommended by the manufacturer but not more than 5 foot centers. Pins or staples shall be a minimum of 12 inches in length. Geotextile fabric shall meet the requirements of KDOT Specifications.
- Unless noted otherwise on the Construction Layout, "d" shall be a minimum of 6 in., "W" shall be 12.0 ft.
- The Contractor shall place the rock from the bottom to the top of the slope. Place the rock in a manner which produces a reasonably well graded mass of rock without segregation of the material sizes. Placement, measurement, and payment shall conform to KDOT Specifications for Slope Protection.

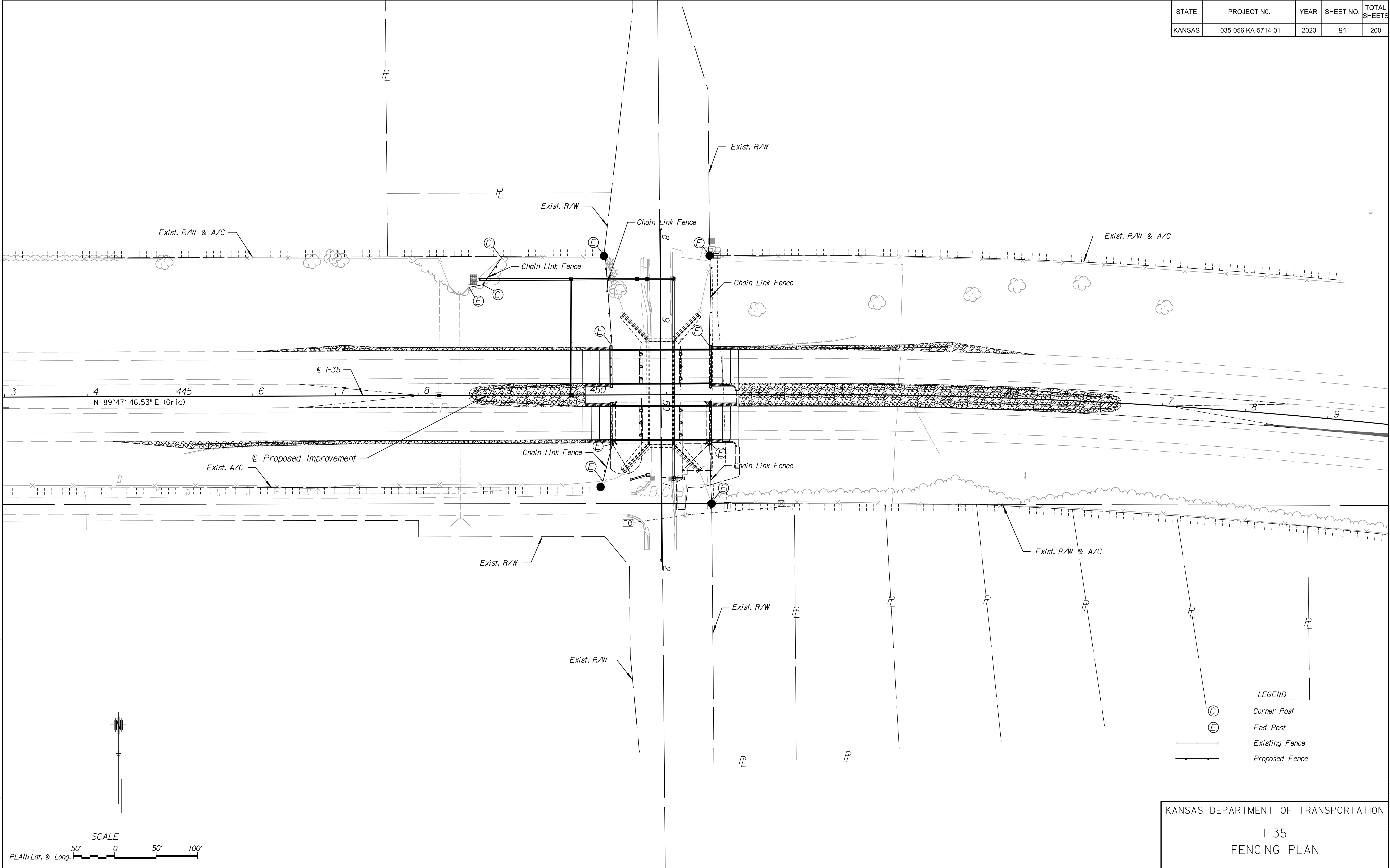
QUANTITIES			
† For Information Only			
Bridge Number	Slope Protection (††) Cu. Yds.	#Geotextile Sq. Yds.	#Wire Mesh Sq. Yds.
171	303	193	317

03	12-10-10	Clarified Geotextile	J.P.J.	T.L.F.
02	07-14-04	Changed to guard "rail"	R.A.M.	K.F.H.
01	05-15-02	Clarified Bid Items	R.A.M.	K.F.H.
NO.	DATE	REVISIONS	BY	APPD

KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE BERM AND SLOPE PROTECTION			
STRAIGHT WINGWALL ABUTMENT			
BR132A			
FWHA APPROVAL	06-04-02	APPD.	Kenneth F. Hurst
DESIGNED	R.R.R.	DETAILED	P.G.F.
DESIGN CK.	DETAIL CK.	R.R.R.	QUAN. CK.
QUANTITIES	TRACED	P.G.F.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	91	200



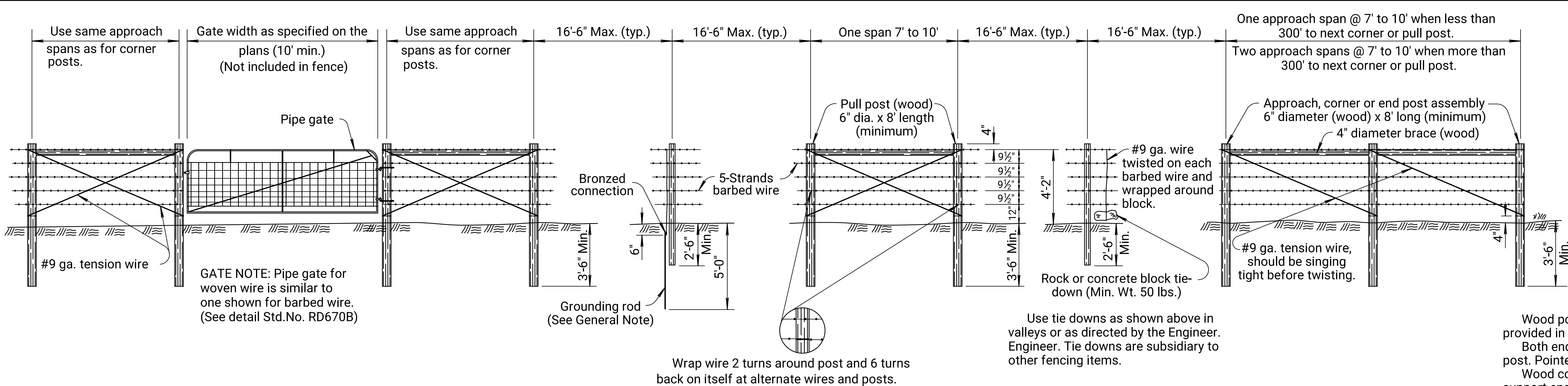
Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central01\d2293301\KA571401rfc-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

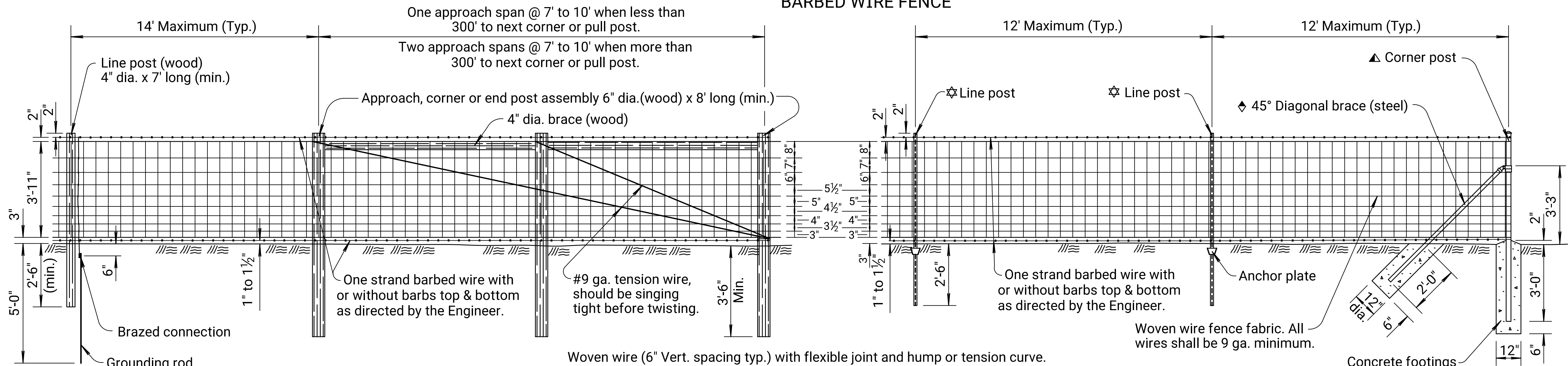
I-35  
FENCING PLAN



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	92	200



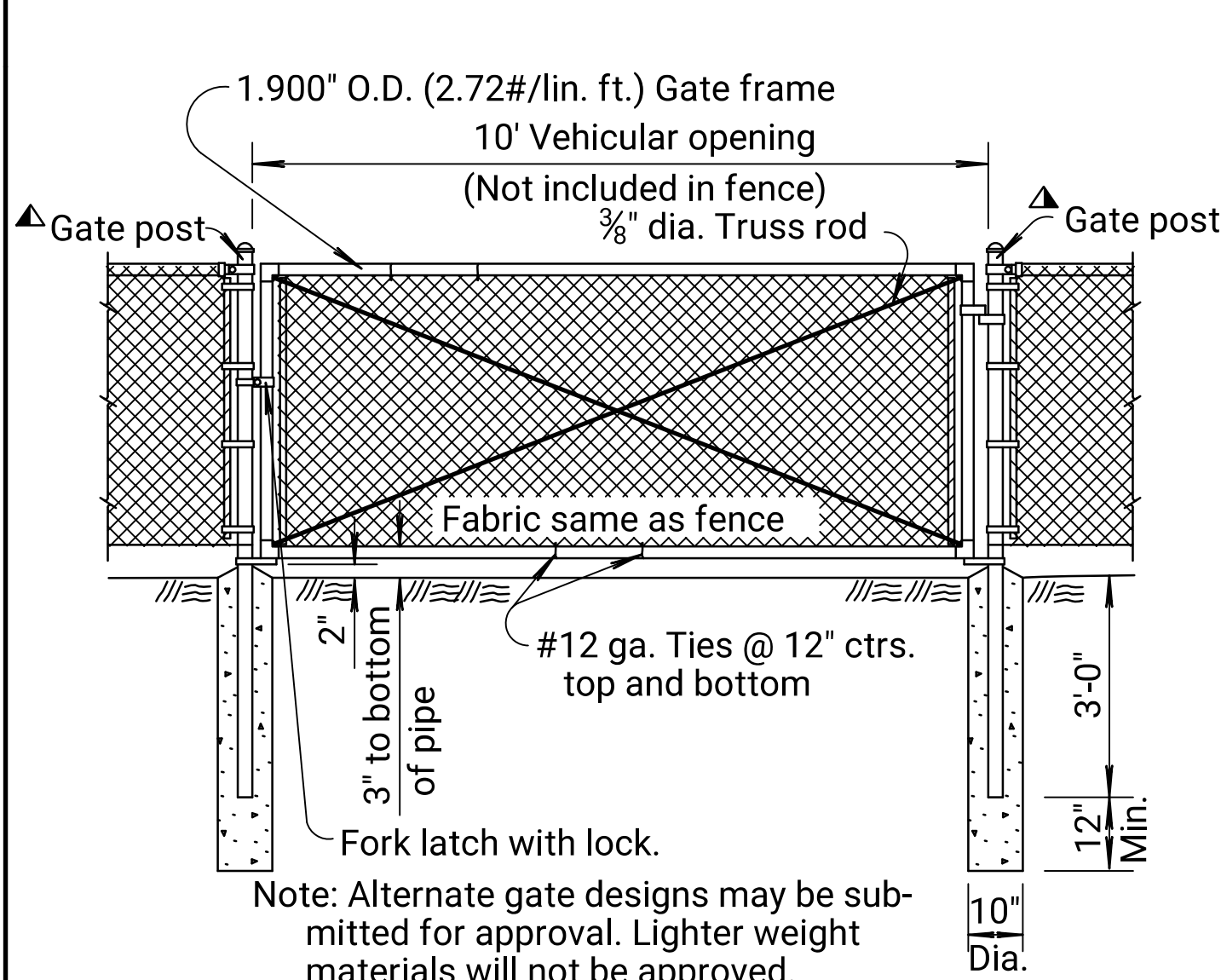
### BARBED WIRE FENCE



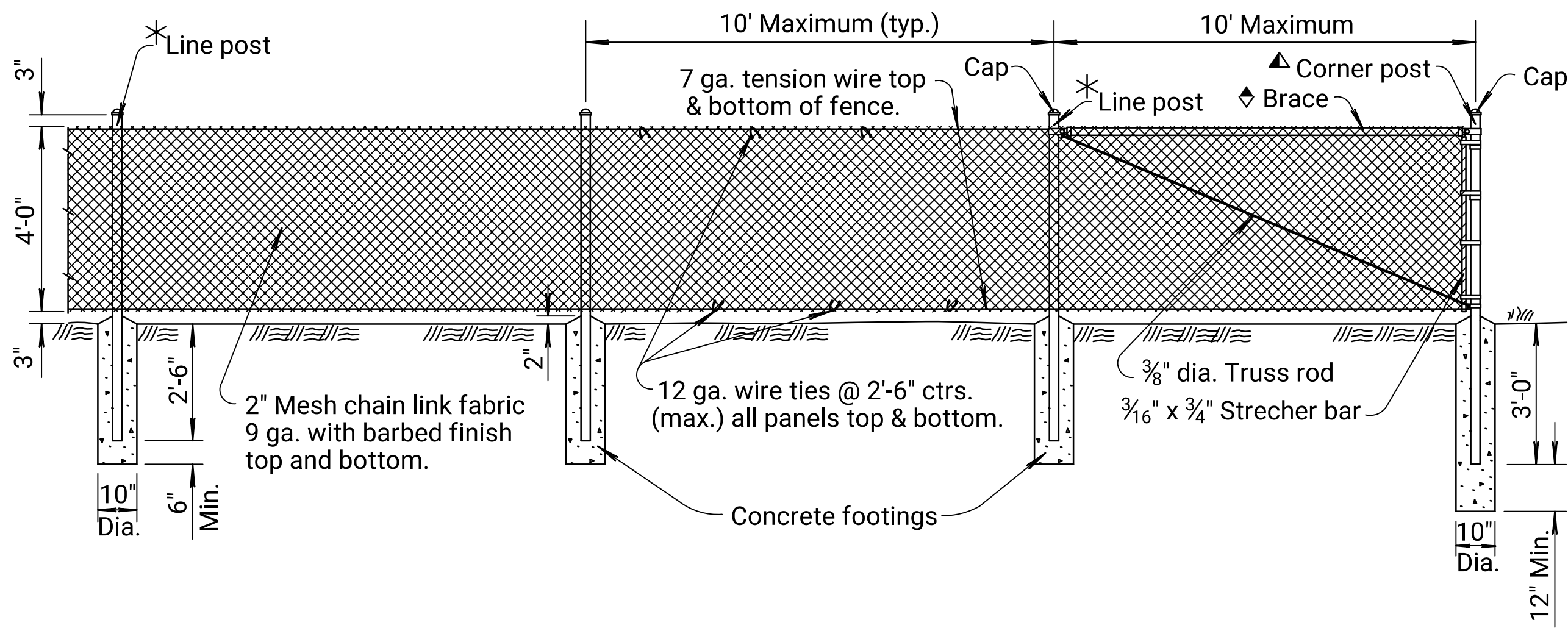
### WOVEN WIRE TYPE A FENCE

Pull post assembly for woven wire with wood posts is similar to barbed wire pull post assembly detail.

### WOVEN WIRE TYPE B FENCE



### DETAIL of GATE, HINGE & SPECIFICATIONS



### CHAIN LINK FENCE

- (STEEL)
- ★ Steel line post 7'-0" length  
Studded T (1.33#/lin. ft.)  
U (1.33#/lin. ft.)  
H (2.27#/lin. ft.)
  - ◆ Brace  
1.660" O.D., 0.111" Th. (1.84#/lin. ft.) pipe (Group 1C) or  
1.660" O.D., 0.140" Th. (2.27#/lin. ft.) pipe (Group 1A) or  
1½"x1¼" Brace rail (See Alt. Details)
  - ★ Line post 7'-0" length.  
2.375" O.D., 0.154" Th. (3.65#/lin. ft.) pipe (Group 1A) or  
2.375" O.D., 0.130" Th. (3.12#/lin. ft.) pipe (Group 1C) or  
1½"x1½" C Post (2.283/lin. ft.)
  - ▲ End, corner, gate, or pull post 7'-6" length.  
(A120) 2.875" O.D., 0.203" Th. (5.79#/lin. ft.) pipe (Group 1A)  
or 2.875" O.D., 0.160" Th. (4.64#/lin. ft.) pipe (Group 1C)

### GENERAL NOTE

Wood posts and braces shall be given a preservative treatment as provided in the KDOT Standard Specifications.

Both ends of all wood posts shall be cut normal to the axis of the post. Pointed posts will not be permitted.

Wood corner, end, pull and approach posts shall be notched to support ends of wood braces. Wood braces shall be toenailed to the posts with 2-10d nails in each end of the brace.

When wood posts are used, both ends of all tension wires shall be wrapped around the posts twice and stapled in place.

When wood posts are used the fence shall be grounded by a ⅝" diameter galvanized or copper coated rod five feet long, driven vertically until the top is six inches below the ground surface. A #6 solid copper conductor shall be securely fastened to each element of the fence by use of clamps or other suitable device. Grounding rod shall be installed at intervals of 175' maximum.

In lieu of using the galvanized or copper coated rod as described above the contractor may, at his option, use a steel line post at intervals not to exceed each eighth post.

The galvanized or copper coated rod shall be used where power lines pass over the fence.

All steel posts, braces, fittings, and gate frames shall be galvanized and/or coated in accordance with the Standard Specifications.

Steel posts shall be provided with fasteners prevent slippage of the wire strands.

Outside diameters shown for tubular steel posts, bracing and gate frames are nominal. Weight tolerances shall be as shown in the KDOT Standard Specifications.

Posts may be set by driving or digging. If by digging, the posts shall be set in the center of the hole and the soil tamped securely on all sides.

Pull post assembly shall be used at sharp breaks in vertical grade or at approximately 330' centers (Woven & Chain link) or 1320' centers (Barbed wire) on straight runs or as directed by the Engineer.

Concrete used in fence installation shall conform to the requirements of the KDOT Standard Specifications.

Woven wire, chain link fabric, barbed wire and tension wire shall be either zinc coated (galvanized) or aluminum coated.

Minimum strength of barbed wire and tension wire shall be as provided in the KDOT Standard Specifications.

Use #9 gauge galvanized staples 1½" to 1¾" long, or #9 gauge galvanized Ring-shank staples 1½" to 1¾" long.

Alternate gate designs may be submitted for approval. Lighter weight materials will not be approved.

Padlocks for gates shall be furnished by the State.

No Wood Posts are allowed for new or reconstruction fence installations on the State Highway System. Shop drawings for steel gate post assembly designs are to be submitted to the State Road Office, Bureau of Design for approval prior to construction

09	11-30-09	Rev. post listing, wood po. restrict.	S.W.K.	J.O.B.
08	11-08-05	Revised brace dimension	S.W.K.	J.O.B.
07	11-02-04	Added assembly to end post label	S.W.K.	J.O.B.
NO.	DATE	REVISIONS	BY	APPD
KANSAS DEPARTMENT OF TRANSPORTATION				
HIGHWAY FENCE BARBED, WOVEN, & CHAIN LINK				
RD670A				
FHWA APPROVAL		12-16-09	APPD.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	QUAN. CK.	TRACE CK.	
KDOT Graphics Certified 05-16-2022 Sh. No. 92				





Drawn By : user  
Plotted : 11-07-23  
File : c:\pwworking\centra101\d2293301\KA571401\rs050-01.dgn

FENCING					
STATION to STATION	SIDE	CHAIN LINK FENCE LENGTH (FT.)	POSTS (EA)		REMARKS
			CORNER	END	
STA 448+61.91 TO STA 449+01.31	LT	56.3	2	1	I-35
STA 48+33.45 TO STA 51+03.92	RT	154.1		4	Lincoln St.
STA 48+34.28 TO STA 51+30.87	LT	178.2		4	Lincoln St., Avoid Ex. Telecom Util.
TOTALS		388.6	2	9	

CONCRETE FLUME			
ALIGNMENT	STATION	SIDE	QUANTITY (EACH)
I-35	451+67.48	RT	1
I-35	451+67.48	LT	1
TOTAL			2

SIDEWALK					
ALIGNMENT	STATION to STATION	SIDE	WIDTH (FT)	SIDEWALK CONSTRUCTION (4") (AE)(SQ YD)	SIDEWALK RAMP (SQ YD)
Lincoln St.	48+57.50 to 48+80.00	RT	6	11.4	
Lincoln St.	50+90.00 to 51+03.12	RT	8.5	9.4	7.0
TOTAL				20.8	7.0

INTEGRAL SIDEWALK AND RETAINING WALL			
ALIGNMENT	STATION to STATION	CONCRETE (GRADE 4.0)(AE) (CU. YD.)	STEEL (GRADE 60) (LB.)
LINCOLN	48+80.00 to 50+90.00	24.7	1750
TOTAL		24.7	1750

GUARDRAIL, REMOVAL OF STEEL PLATE			
ALIGNMENT	STATION to STATION	SIDE	LENGTH (LIN. FT.)
I-35	445+17.16 to 451+42.78	RT	626.37
I-35	447+03.32 to 453+28.55	LT	626.93
I-35	454+27.76 to 456+00.98	CL	357.29
TOTAL			1610.59

SLOPE DRAIN (STONE)						
ALIGNMENT	STATION	SIDE	QUANTITY (LIN. FT.)	DEPTH (LIN. FT.)	WIDTH (LIN. FT.)	VOLUME (CU. YD.)
I-35	451+67.48	RT	25.0	1.5	5.0	6.9
TOTAL			25.0			

GUARDRAIL, STEEL PLATE (TEMPORARY)						
ALIGNMENT	STATION to STATION	SIDE	END TERMINAL (MGS-MSKT) (Alt. 1) (EACH)	END TERMINAL (MGS-SOFTSTOP) (Alt. 2) (EACH)	FLARE RATE	LENGTH (LIN. FT.)
NB I-35	451+42.78 to 454+16.15	RT	1	1	0	225.00
TOTALS			1	1		225.00

TEMPORARY DRAINAGE STRUCTURES						
STATION	SIDE	SIZE	TYPE	LENGTH (LIN. FT.)	LENGTH (LIN. FT.)	REMARKS
439+00.00	CL	18"	CRP (ACSP)	80		Place in Phase 1, Remove in Phase 5
439+80.00	CL	18"	Slotted Drain		155	Place in Phase 1, Remove in Phase 5
441+35.00	CL	18"	CRP (ACSP)	65		Place in Phase 1, Remove in Phase 5
TOTAL				145	155	

CONCRETE PAVEMENT QUANTITIES									
ALIGNMENT	STATION to STATION	LENGTH (FT)	CONCRETE PAVEMENT(12" UNIFORM) (NRDJ) (SQ YD)	CONCRETE PAVEMENT(12" VARIABLE) (PL) (SQ YD)	AGGREGATE BASE (AB-3)(6") (SQ YD)	CEMENT TREATED BASE (ALT. 1) (SQ YD)	ASPHALT TREATED BASE (ALT. 2) (SQ YD)	PAVEMENT EDGE WEDGE (ROCK) (TONS) ●#	REMARKS
I-35	448+22.00 to 449+99.10	177.1	472.3	314.8	865.8	865.8	865.8	210.5	NB
I-35	448+22.00 to 449+99.10	177.1	472.3	314.8	865.8	865.8	865.8		SB
I-35	451+87.59 to 452+89.00	101.4	270.4	180.3	495.7	495.7	495.7	423.3	NB
I-35	451+87.59 to 452+89.00	101.4	270.4	180.3	495.7	495.7	495.7		SB
TOTAL			1485.4	990.2	2723.0	2723.0	2723.0	633.8	

● Computed at the rate of 156 pcf      # Pavement Edge Wedge Quantity shown are for Guardrail Pads. See Sh. 38- 41

APPROACH SLAB PAVEMENT QUANTITIES									
ALIGNMENT	STATION to STATION	WIDTH (FT)	LENGTH (FT)	CONCRETE PAVEMENT(12" UNIFORM)(AE) (BR APP) (SQ YD)	BRIDGE APPROACH SLAB FOOTING (CU. YD.)	AGGREGATE BASE (AB-3)(6") (SQ YD)	CEMENT TREATED BASE (ALT. 1) (SQ YD)	ASPHALT TREATED BASE (ALT. 2) (SQ YD)	REMARKS
I-35	449+99.10 to 450+32.10	*40/41	33	148.1	23.7	162.8	162.8	162.8	NB
I-35	449+99.10 to 450+32.10	*40/41	33	148.1	23.7	162.8	162.8	162.8	SB
I-35	451+54.59 to 451+87.59	*40/41	33	148.1	23.7	162.8	162.8	162.8	NB
I-35	451+54.59 to 451+87.59	*40/41	33	148.1	23.7	162.8	162.8	162.8	SB
* Note: 40' Width for 20'; 41' width for 13'			TOTAL	592.4	94.8	651.2	651.2	651.2	

EARTHWORK																	
PHASE	ALIGNMENT	STATION to STATION	EXCAVATION				COMPACTION			NOT SUBGRADED THROUGH CUTS				✱ EMBANKMENT (CU.YDS.)		▲PLACE. SELECT	
			COMMON		PAVEMENT REMOVAL		CONTR. FURN. CU.YDS.	TYPE AA MR-5-5 CU.YDS.	TYPE AA MR-0-5 CU.YDS.	TYPE A MR-5-5 CU.YDS.	COMM. CU.YDS.	TYPE AA MR-0-5 CU.YDS.	TYPE AA MR-5-5 CU.YDS.	TYPE A MR-5-5 CU.YDS.	INITIAL CONSOL.	SETTLE- MENT	SOIL CU.YDS.
			CU.YDS.	VMF	CU.YDS.	VMF											
1	Crossovers 1 & 2	11+50.00 to 16+00.00	241	0.81					39	447			447				
1	Crossover 4	11+00.00 to 19+00.00	161	0.81					110	357			357				
2	I-35 (SB)	445+50.00 to 456+50.00	4357	0.81	279	1.00			82	972	706		266				
3	Crossover 3	11+00.00 to 18+50.00	174	0.81					84	354			354				
3	Crossover 4 (Removal)	11+00.00 to 19+00.00	110	0.81	221	1.00	88		161								
4	I-35 (NB)	444+00.00 to 455+50.00	2218	0.81	279	1.00			257	1011	732		279				
5	Crossovers 1 & 2 (Removal)	11+50.00 to 16+00.00	39	0.81	366	1.00	258		241								
5	Crossover 3 (Removal)	11+00.00 to 18+50.00	84	0.81	149	1.00	131		174								
5	Lincoln St.	48+62.12 to 51+50.00	194	0.81	246	1.00			116	442		383	59				
		TOTALS	7578		1540		477		1264	3583	1438	383	1762				

● To be wasted

\* Subsidiary (see General Note).

▲ See General note.

● Capping of Ex. Edge Drains and installation of outlet pipes paid for as 4" Pipe Underdrains.

RECAPITULATION OF BRIDGE QUANTITIES		
BRIDGE NUMBER	STATION	SEE SHEET NO.
Br. No. 35-56-128.98 (170)	450+93.23	See Sh. No. 73
Br. No. 35-56-128.97 (171)	450+93.23	See Sh. No. 59

REMOVAL OF EXISTING STRUCTURES      *				
ALIGNMENT	STATION to STATION	SIDE	STRUCTURE	COMMENTS
I-35	450+93.23	CL	Br. No. 35-56-128.98 (010)	
I-35	448+61.51 to 449+01.19	LT	52.62' Fence	
I-35	439+00.00	CL	18" CRP (ACSP)	
I-35	439+80.00	CL	18" Slotted Drain	
I-35	441+35.00	CL	18" CRP (ACSP)	
Lincoln St.	48+33.45 to 49+04.28	RT	74.54' Fence	
Lincoln St.	48+34.28 to 49+02.31	LT	66.98' Fence	
Lincoln St.	50+79.54 to 51+04.28	RT	29.26' Fence	
Lincoln St.	50+84.46 to 51+39.78	LT	66.98' Fence	
Lincoln St.	51+00.97	LT	Curb Inlet, 15" RCP	
Lincoln St.	51+00.97	RT	Curb Inlet	

\* For Information Only. The listing shown may not be complete. Payment for structures or obstructions not listed but whose removal is required by the construction as determined by the Engineer, shall not be paid for directly but shall be included in the bid item "Removal of Existing Structures."

◆ For Information Only

SLOPE PROTECTION (AGGREGATE)(D50=6")								
ALIGNMENT	STATION to STATION	SIDE	LENGTH (FT.)	T (FT.)	W (FT.)	D50=6" QUANTITY (CU. YD.)	10" BEDDING FOR SLOPE PROTECTION (CU. YD.)	GEOTEXTILE FABRIC (SQ. YD.)
Lincoln St.	48+54.00 to 48+66.00	RT	8	2	12	7	9	32
TOTAL						7	9	32

COMBINED CURB & GUTTER				
ALIGNMENT	STATION to STATION	SIDE	TYPE III (AE)(SPECIAL) (FT.)	COMMENTS
Lincoln St.	48+57.50 to 51+20.18	LT	252.9	
Lincoln St.	48+57.50 to 51+21.51	RT	268.6	
TOTAL			521.5	

SALVAGED TOPSOIL				
ALIGNMENT	STATION to STATION	SIDE	AREA (SQ. YD.)	REMARKS
I-35	STA 438+25.12 to STA 443+13.37	MED	1118.4	
I-35	STA 445+53.00 to STA 450+76.48	LT	970.9	
I-35	STA 445+79.93 to STA 450+76.48	MED	747.6	
I-35	STA 444+27.00 to STA 450+76.48	RT	1553.5	
I-35	STA 451+10.00 to STA 455+91.13	LT	1093.0	
I-35	STA 451+10.00 to STA 456+07.89	MED	434.8	
I-35	STA 451+10.00 to STA 455+27.93	RT	558.3	
I-35	STA 444+27.00 to STA 450+76.48	MED	1768.6	
TOTALS			8245.1	

MOWING			
ALIGNMENT	STATION TO STATION	SIDE	MILES
I-35	Sta. 448+22.00 - Sta. 452+89.00	LT	0.1
I-35	Sta. 448+22.00 - Sta. 452+89.00	RT	0.1
I-35	Sta. 448+22.00 - Sta. 452+89.00	MED	0.1
TOTAL			0.3

UNDERDRAIN PIPE (4") ●					
ALIGNMENT	STATION	OUTLET SIDE	LENGTH (FT.)	GUIDE POSTS	REMARKS
I-35	448+22.00	RT	55.0	1	
I-35	448+22.00	LT	55.0	1	
I-35	452+89.00	RT	1.0		Cap Existing
I-35	452+89.00	LT	1.0		Cap Existing
TOTAL			112.0	2	

● Federally Non-Participating  
FOR INLETS, MANHOLES, AND STORM SEWER QUANTITIES, SEE SH. NO.36  
FOR SURFACING QUANTITIES, SEE SH. NO. 95  
FOR TEMPORARY EROSION CONTROL QUANTITIES, SEE SH. NO. 96  
FOR SEEDING QUANTITIES, SEE SH. NO. 105  
FOR SIGNING QUANTITIES, SEE SH. NO.111 - 114  
FOR PAVEMENT MARKING QUANTITIES, SEE SH. NO. 123  
FOR TRAFFIC CONTROL QUANTITIES, SEE SH. NO. 173  
FOR TEMPORARY CONCRETE SAFETY BARRIER AND TEMPORARY IMPACT ATTENUATOR QUANTITIES, SEE SH. NO. 174

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	94	200

RECAPITULATION OF ROAD QUANTITIES		
ITEM	QUANTITY	UNIT
Contractor Construction Staking	Lump Sum	L.S.
Field Office and Laboratory (Type A)	1	Each
Foundation Stabilization (Set Price)	1	Cu. Yd.
Mobilization	Lump Sum	L.S.
Mobilization (DBE)	Lump Sum	L.S.
Removal of Existing Structures	Lump Sum	L.S.
Maintenance and Restoration of Haul Roads (Set Price)	Lump Sum	L.S.
Towing (Courtesy)(Set Price)	1	Each
Concrete for Seal Course (Set Price)	1	Cu. Yd.
Clearing and Grubbing	Lump Sum	L.S.
Curing Environment	Lump Sum	L.S.
Common Excavation (Urb)	11161	Cu. Yd.
Common Excavation (Contractor Furnished)	477	Cu. Yd.
Rock Excavation	1540	Cu. Yd.
Water (Grading)(Set Price)	1	MGal
Salvaged Topsoil	8245	Sq. Yd.
Compaction of Earthwork (Type A)(MR-5-5)	3026	Cu. Yd.
Compaction of Earthwork (Type AA)(MR-0-5)	1438	Cu. Yd.
Compaction of Earthwork (Type AA)(MR-5-5)	383	Cu. Yd.
Concrete (Grade 4.0)(AE)	24.7	Cu. Yd.
Reinforcing Steel (Grade 60)(Epoxy Coated)	1750	Lbs.
Cross Road Pipe (18")(ACSP)	145	Lin. Ft.
End Section (15")	1	Each
End Section (18")	1	Each
End Section (24")	1	Each
Guardrail, Steel Plate (MGS)	2169.50	Lin. Ft.
Guardrail, Steel Plate (Temporary)	225.00	Lin. Ft.
Guardrail End Terminal (MGS-MSKT) Alt. 1	4	Each
Guardrail End Terminal (MGS-SOFTSTOP) Alt. 2	4	Each
Guardrail End Terminal (Bullnose)	2	Each
Guardrail, Removal of Steel Plate	1610.50	Lin. Ft.
Inlet (Manhole)(Special)	1	Each
Inlet (Type I Ditch)	1	Each
Inlet (Type II Ditch)	1	Each
Inlet (Type 22 Curb)	3	Each
Inlet (Type 22 Curb)(Radius)	1	Each
Manhole (Reinforced Concrete)	1	Each
Curb and Gutter, Combined (AE)(Special)	522	Lin. Ft.
Slotted Drain (18")	155	Lin. Ft.
Slope Protection (Aggregate)	7	Cu. Yd.
Bedding for Slope Protection	9	Cu. Yd.
Geotextile Fabric	32	Sq. Yd.
Slope Drain (Stone)	25	Lin. Ft.
Flume Inlet (Concrete)	2	Each
Storm Sewer (15")	19	Lin. Ft.
Storm Sewer (18")	507	Lin. Ft.
Storm Sewer (24")	109	Lin. Ft.
Sidewalk Construction (4")(AE)	21	Sq. Yd.
Sidewalk Ramp	7	Sq. Yd.
Temporary Surfacing Material (HMA) (Set Price)	1	Ton
4" Pipe Underdrains (Type GK)	112	Lin. Ft.
Guideposts	2	Each
Impact Attenuator (TL-3)(Temporary)	4	Each
Replacement Modules (Impact Attenuator)	10	Each
Concrete Safety Barrier (Type F3)(Temporary)	2250	Lin. Ft.
Mowing	0.3	PMPS
Concrete Pavement (12" Uniform)(AE)(NRDJ)	1485	Sq. Yd.
Concrete Pavement (12" Variable)(AE)(Plain)	990	Sq. Yd.
Concrete Pavement (12" Uniform)(AE)(Br App)	592	Sq. Yd.
Bridge Approach Slab Footings	94.8	Cu. Yd.
Pavement Edge Wedge (Rock)	634	Ton
Water (Earthwork Compaction) (Set Price)	1	MGal
Aggregate Base (AB-3)(6")	3374	Sq. Yd.
Water (Aggregate Base) (Set Price)	1	MGal
Cement Treated Base (Alt. 1)	3374	Sq. Yd.
Asphalt Treated Base (Alt. 2)	3374	Sq. Yd.
Fence (Chain Link)(4'-0")	389	Lin. Ft.
Posts (Corner) (Chain Link)	2	Each
Posts (End) (Chain Link)	9	Each

On surfacing projects, the 6" of Compaction Type AA, shown for the center portion on the roadbed, is for the purpose of restoring the original Compaction Type AA which may have been lost since grading operations. The exact locations of this Compaction Type AA, which will be required, is to be determined by the Engineer at the time of construction. This work shall be paid under the bid item "Compaction of Earthwork (Type AA)(MR-5-5)".

The \_\_\_\_\_ material used to backfill over the structure shall be paid for at the prices shown in the contract.

—All side roads and house entrances shall be surfaced with \_\_\_\_\_ to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with \_\_\_\_\_ at least to the \_\_\_\_\_

—Surfacing material (SA—) shall be used for surfacing house entrances and side roads (—C.Y./SQ. YD.) beyond the limits of the asphalt surface to the limits of construction as determined by the Engineer.

On projects which specify both asphalt base and surface course materials, side roads, house entrances and mailbox turnouts may be surfaced with both materials at the contractors option, with the approval of the Engineer.

The base course shall be constructed to the plan thickness as shown.

A tack coat of SS-1HP shall be provided between each lift of all base courses and surface courses and under the first lift of base or surface courses when they are placed on an existing asphalt, brick, or concrete surface, when so ordered by the Engineer and at the rate designated by him. Quantities are included for these tacks calculated at the rate of 0.06 gal./sq. yd.



The work of cutting the subgrade and disposing of excess excavated material shall be subsidiary to other items in the contract.

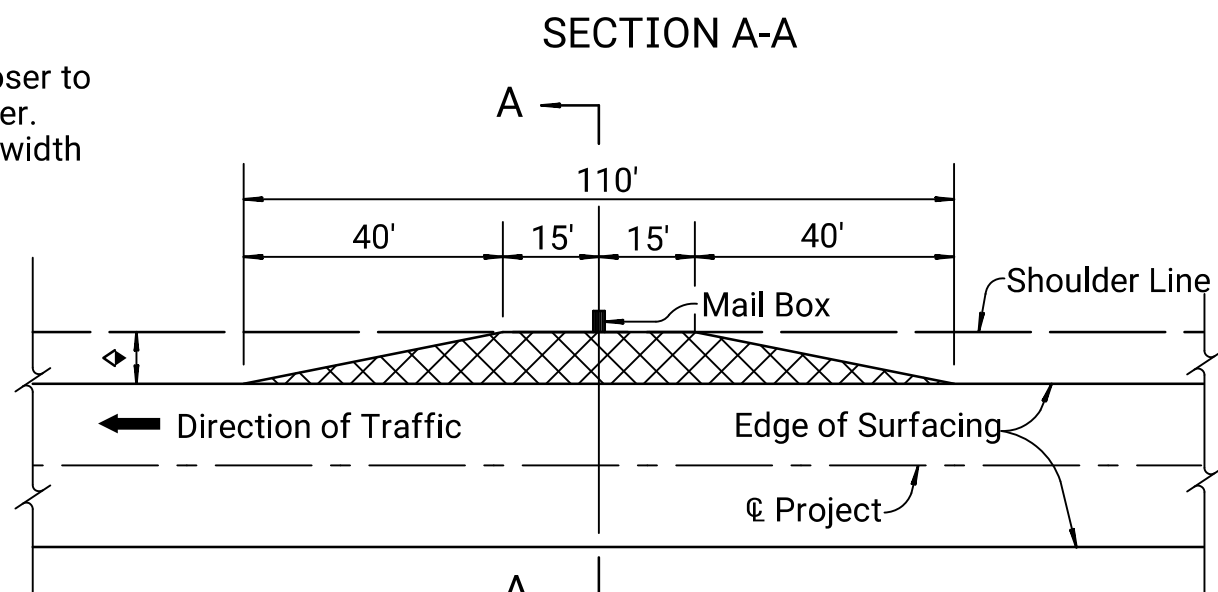
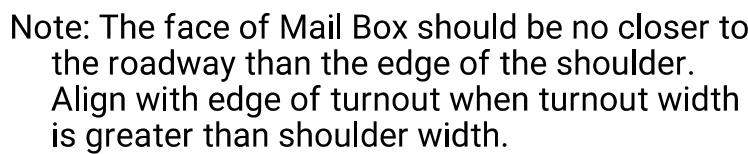
D	L	D	L	D	L	D	L	D	L	D	L
1"	25'	3"	75'	5"	125'	7"	175'	9"	225'	11"	275'
2"	50'	4"	100'	6"	150'	8"	200'	10"	250'	12"	300'

[illegible]

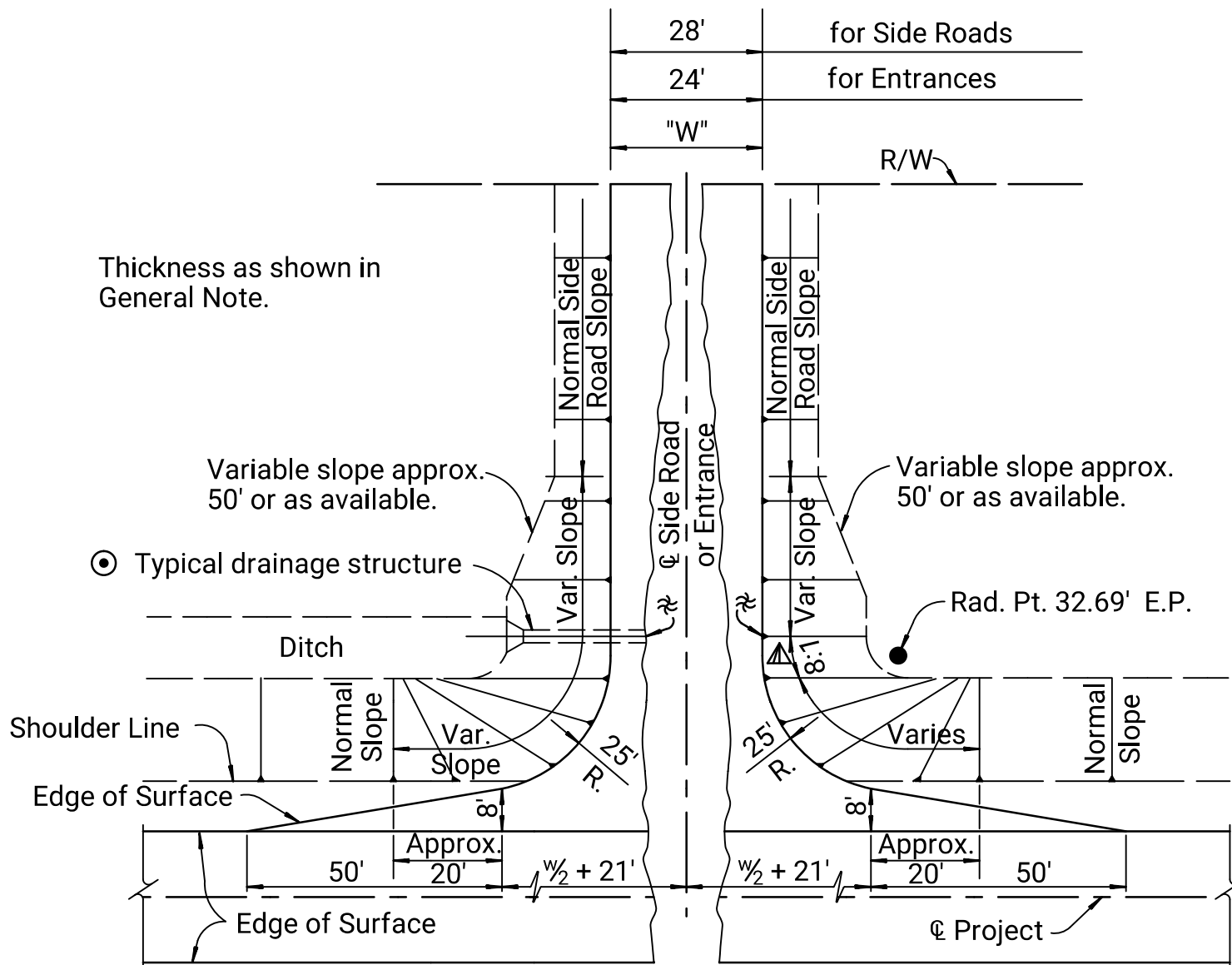
\* Includes Guardrail Pad

[illegible]

† Computed at the rate of 145 pcf

[illegible]

### DETAIL FOR SURFACING OF MAIL BOX TURNOUTS



WITH DRAINAGE STRUCTURE                      MOUND ENTRANCE OR SIDE ROAD

## DETAIL FOR SURFACING OF SIDE ROADS & HOUSE ENTRANCES

**▲ 8:1 Slope at the appropriate clear zone shall apply to all mound entrances and mound side roads to 10' fill height. Normal Slope (but not steeper than 6:1) for over 10' fill height.**

- ⦿ Normal Slope (but not steeper than 6:1) at approximate  $\mathbb{C}$  Structure or appropriate clear zone width.

≈ On side roads and entrances which slope toward the highway, a low point approx. 6" deep shall be constructed to divert surface drainage into the highway ditch, unless otherwise shown on the plans.

12	1-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
11	8-30-06	Changed tack type/rate	S.W.K.	J.O.B.
10	3-24-05	Revised compaction, tack type/rate	S.W.K.	J.O.B.
9	6-12-02	Added low point off shoulder.	S.W.K.	J.O.B.
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

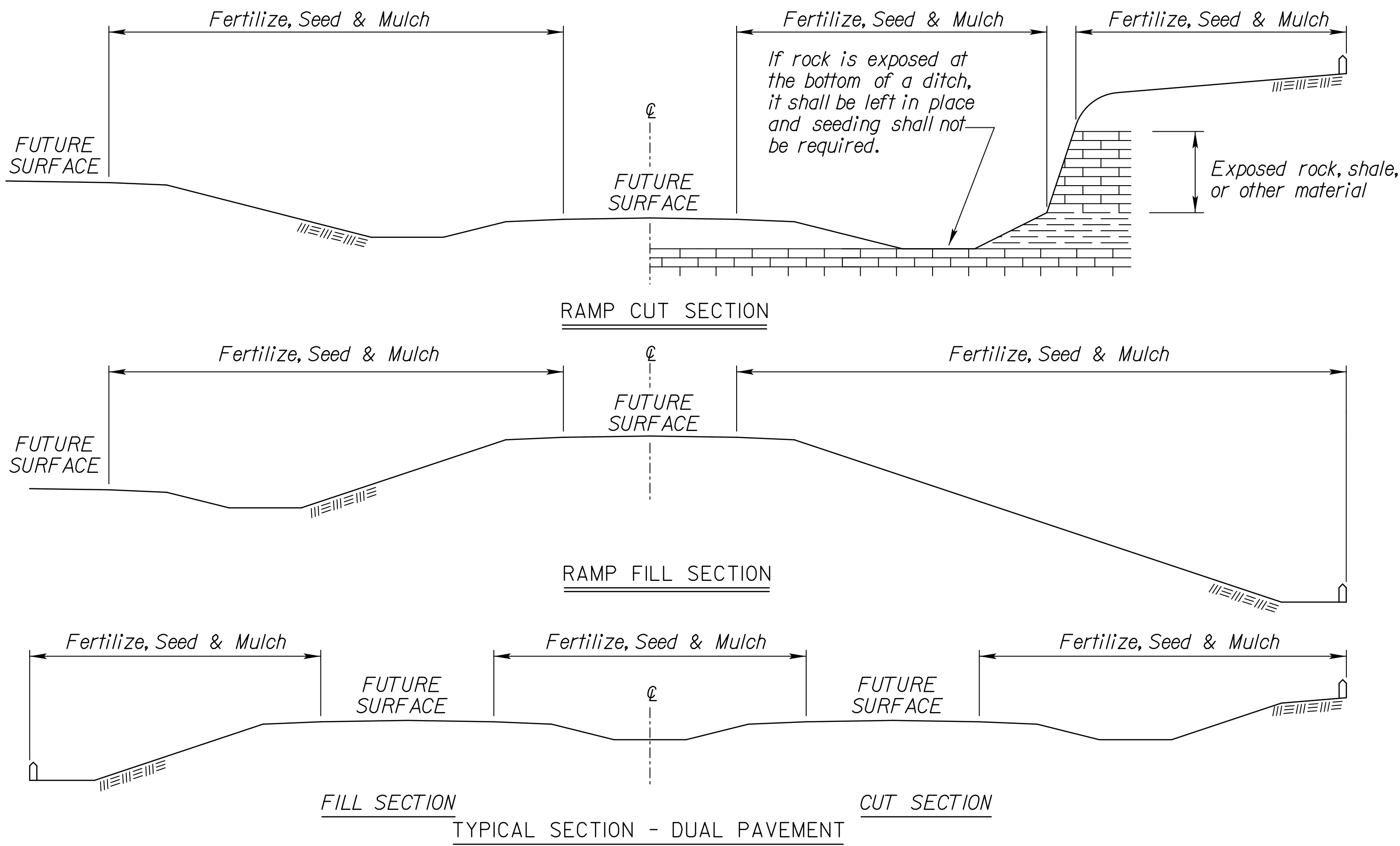
## SUMMARY OF QUANTITIES (Surfacing)

~~RD051~~

FHWA APPROVAL 9-06-06		APP'D. James O. Brewer	
DESIGNED	DETAILED	QUANTITIES	TRACED Bowser
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. Hecht



Drawn By : user  
Plotted : 11-07-23  
File : c:\pwworking\central01\2293301\KA571401\ec852a-01.dgn



FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O listed in Summary of Quantities will be acceptable.

- \* - N = Nitrogen Rate of Application
- \*\* - P<sub>2</sub>O<sub>5</sub> = Phosphorous Rate of Application
- \*\*\* - K<sub>2</sub>O = Potassium Rate of Application

The Contractor will be required to finish areas of excavation, borrow and embankment in accordance with the specifications. Areas that require installation or construction of temporary water pollution control items will be finished in reasonable close conformity to the alignment, grade and cross section shown on the plans or as established by the Engineer.

CLT = Construction Limit Tract. This area is defined by the entire disturbed area of the project that requires seeding and erosion control measures to be placed. Any impervious areas (i.e. pavement, gravel, riprap, etc.) shall not be included in this measurement.

Slope = Defined by the area of the project that requires Class 1 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

Channel = Defined by the area of the project that requires Class 2 erosion control material to be placed. This area shall be seeded using the Soil Erosion Mix prior to placement of the material. Drilling seed is preferred, however, broadcasting is acceptable if drilling is not possible.

GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded, and mulched. Soil preparation shall conform to the Standard Specifications.

Temporary seeding shall be done during any time of the year that the soil can be cultivated. After the temporary seeding has been completed on the entire project, permanent seeding shall be done during the normal seeding season.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching materials is generally as follows:

$$1\frac{3}{4} - 2\frac{1}{4} \text{ Tons per Acre} = 1\frac{1}{2}" \text{ loose depth spread uniformly over acre.}$$

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards. Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	96	200

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES						
P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
150	150	2.45	1.57	Temporary Fertilizer (15-30-15)	603.50	LB
20		2.45		Temporary Seed (Canada Wildrye)	49.08	LB
45		2.45		Temporary Seed (Grain Oats)	110.43	LB
45		2.45		Temporary Seed (Sterile Wheatgrass)	110.43	LB
	109.9		1.57	Soil Erosion Mix	172.48	LB
				Erosion Control (Class 1, Type C)	7597	SQ YD
				Erosion Control (Class 2, Type E)		SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)		CU YD
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain		LF
				Temporary Stream Crossing		EACH
				Biodegradable Log (9")		LF
				Biodegradable Log (12")		LF
				Biodegradable Log (20")		LF
				Filter Sock (12")		LF
				Filter Sock (18")		LF
				Geotextile (Erosion Control)		SQ YD
				Silt Fence		LF
				SWPPP Design †	1	LS
				SWPPP Inspection †	81	EACH
				Water Pollution Control Manager †	81	EACH
900 lbs / acre		2.45		Mulch Tacking Slurry	2208.52	LB
2 tons / acre		2.45		Mulching	7.36	TON
				Water (Erosion Control) (Set Price)	1	MGAL

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. See Permanent Seeding Summary of Seeding Quantities sheet LA850 for further details.

Geotextile (Erosion Control) shall be removed prior to placement of permanent slope protection.

Regreen and Quick Guard are the approved sterile wheatgrass products.

† If the total disturbed area of the project, not just the seeding area, is 1 acre or more, then these bid items must be included.

\*\*\*\* List size of material.

The amount of mulch and mulch tacking slurry in the bid quantities is estimated. (Acres of Seeding X 1.5 X 2 Tons/Acre). The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

Quantities for all erosion control items are estimated to give full flexibility for compliance with the NPDES permit. Final quantities will be determined in the field.

SOIL EROSION MIX		
PLS RATE	NAME	QTY (lb)
0.5	Blue Grama (Lovington)	0.78
4.5	Buffalograss (Treated)	7.06
45	Perennial Ryegrass	70.62
2.6	Prairie Junegrass	4.08
6.3	Side Oats Grama (El Reno)	9.89
45	Tall Fescue (Endophyte Free)	70.62
6	Western Wheat (Barton)	9.42
109.9	Total (lb)	172.48

The Soil Erosion Mix is to be placed under the Class 1 and/or Class 2 erosion control material.

The Soil Erosion Mix consists of the Shoulder Area of the Permanent Seed Mix used on the project.

3	08/03/20	Added Note	MRD	ML
2	12/01/17	Revised Standard	MRD	SHS
1	06/01/17	Revised Standard	MRD	SHS
NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

LA852A		1/26/2018		APP'D	Scott H. Shields
DESIGNED	MRD	DETAILED	MRD	QUANTITIES	CADD
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN. CK.	CADD CK.

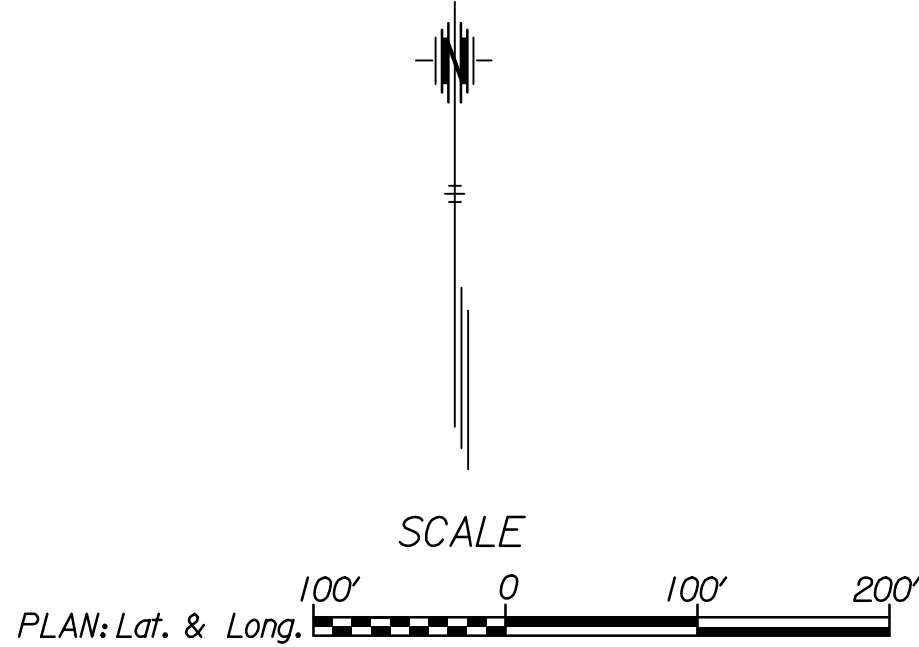
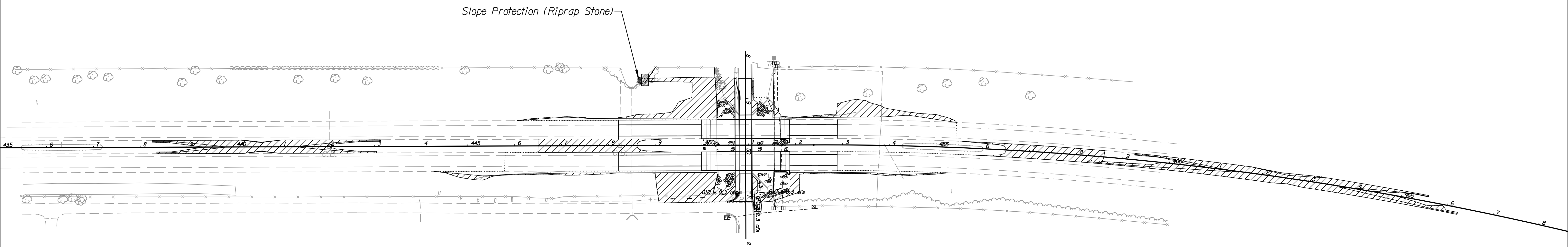


STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	98	200

LEGEND:

Erosion Control Mat - Class 1 Type C

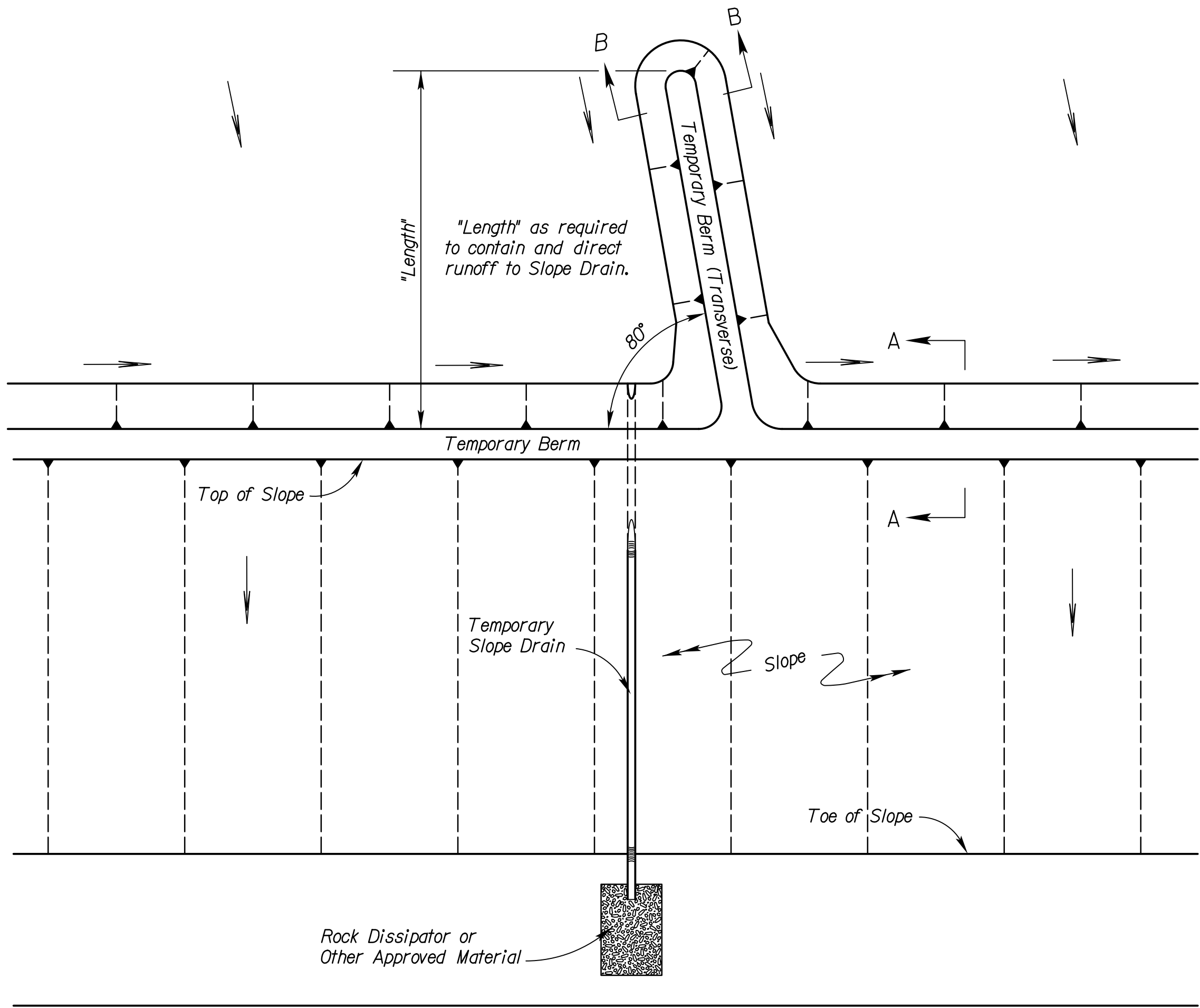
Erosion Control Mat - Class 2



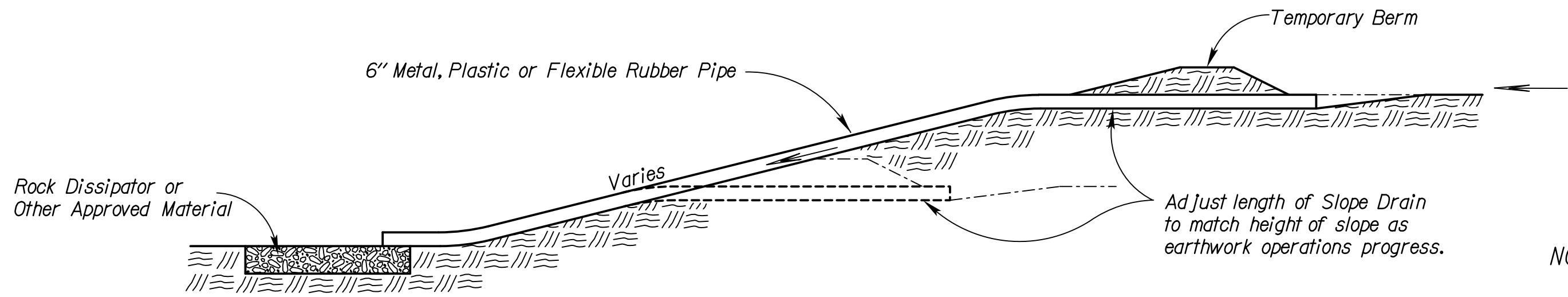
KANSAS DEPARTMENT OF TRANSPORTATION  
I-35 PROPOSED FINAL  
EROSION CONTROL PLAN  
STA. 435+00 TO STA. 468+00



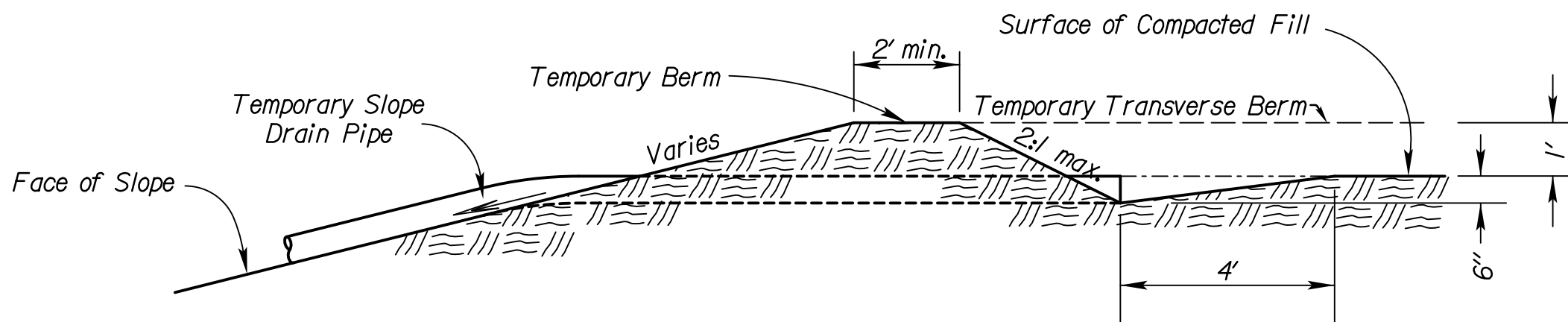
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	99	200



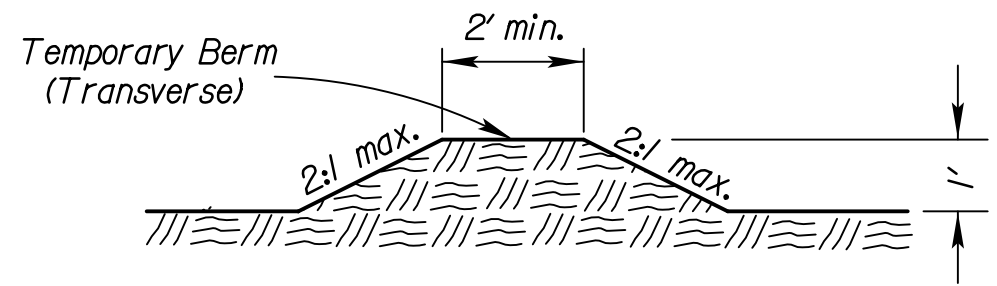
TYPICAL PLAN VIEW OF  
TEMPORARY BERM AND  
TEMPORARY SLOPE DRAIN  
NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN  
NO SCALE

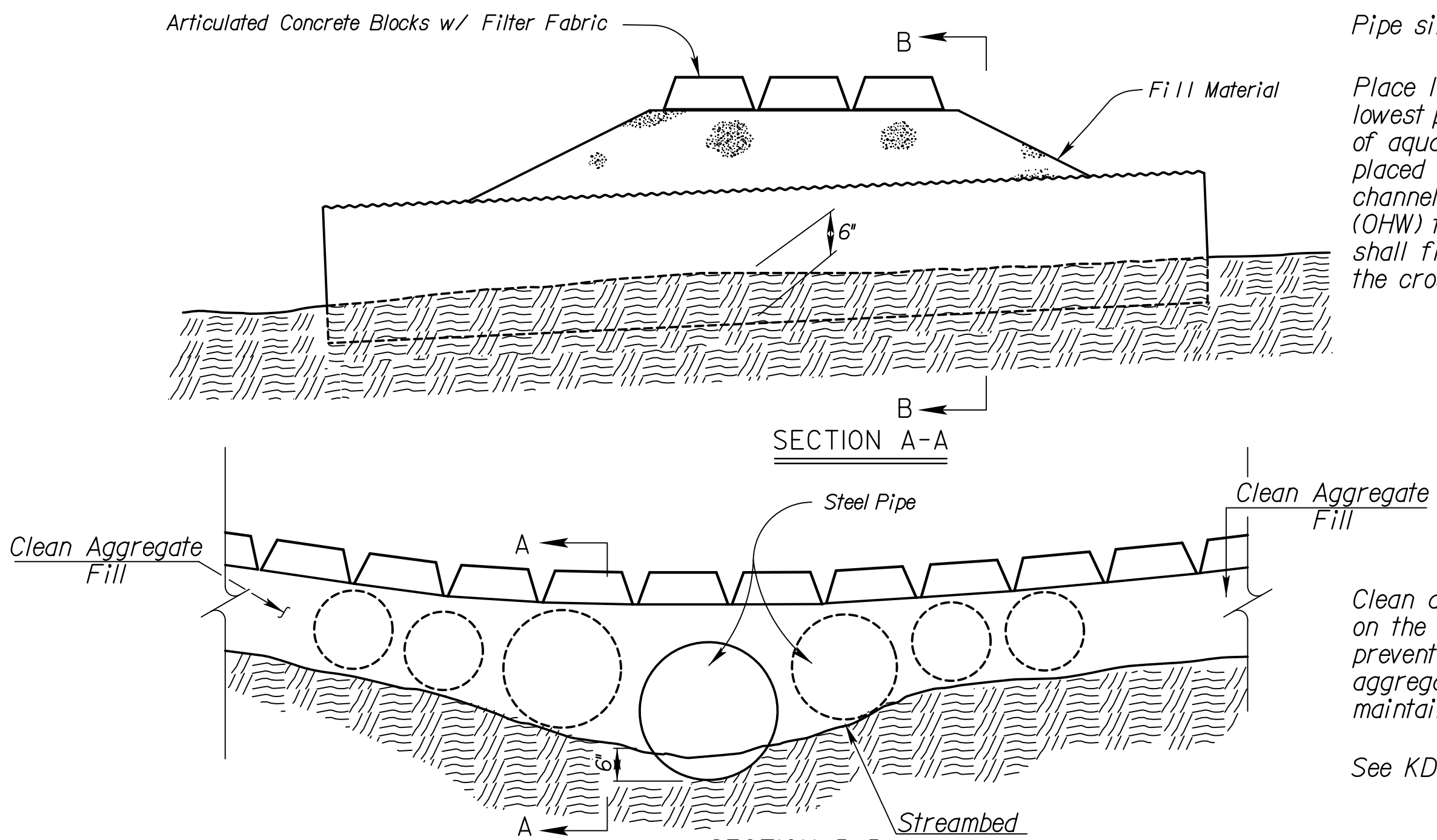


SECTION A-A  
NO SCALE



SECTION B-B  
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM  
NO SCALE



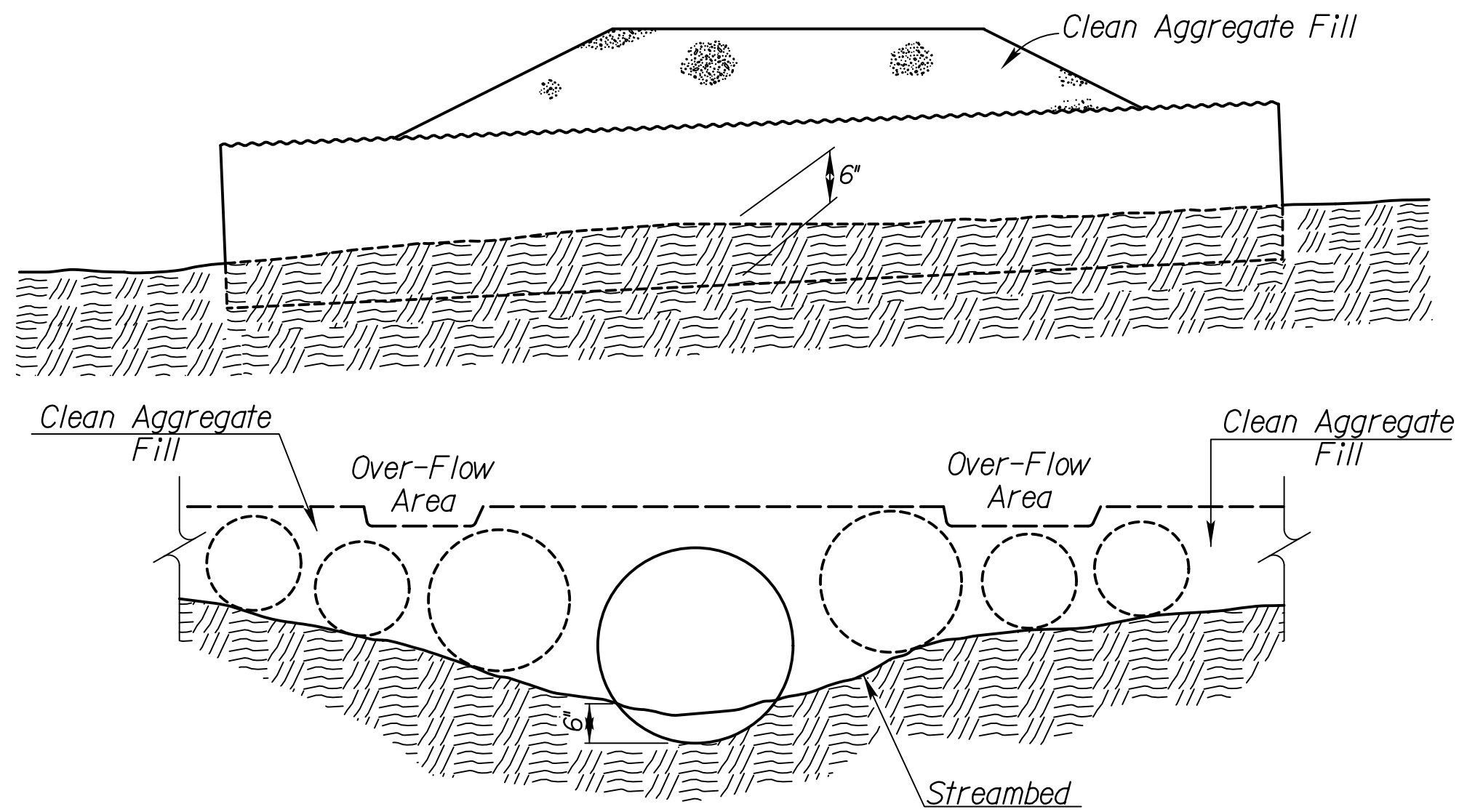
TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)  
NO SCALE

Pipe size may vary.

Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

See KDOT Specifications for more information.



SECTION B-B  
TEMPORARY STREAM CROSSING (AGGREGATE)  
NO SCALE

Pipe size may vary.

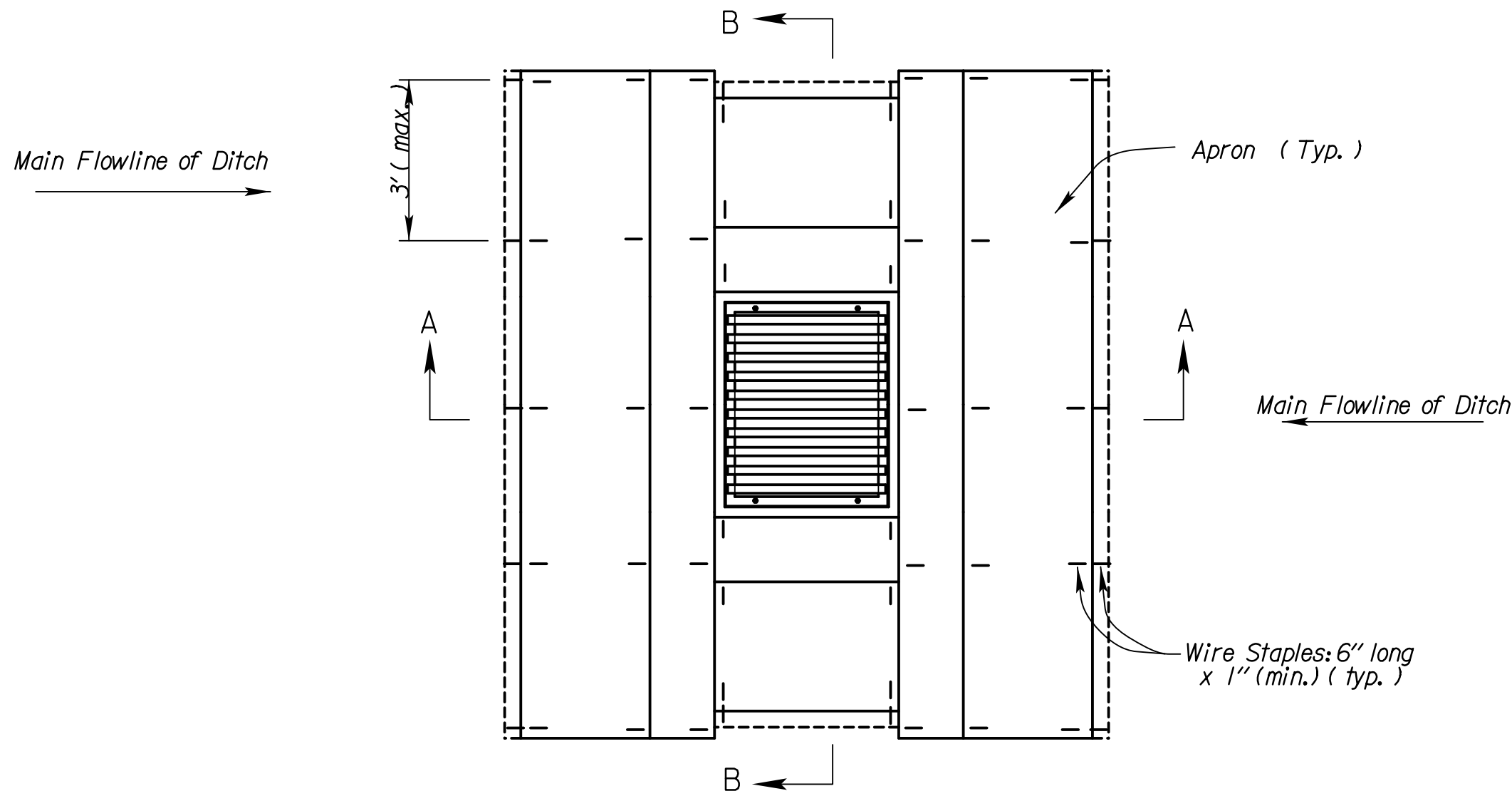
Place 1 pipe buried 6" into stream bottom, in the lowest point of the channel to allow the passage of aquatic organisms, with additional pipes placed along the remainder of the stream channel bottom such that ordinary high water (OHW) flows designated in the Contract Documents shall flow through the pipes without overtopping the crossing.

Clean aggregate fill will extend a minimum of 50' on the entrance and exit side of the crossing to prevent tracking. The aggregate shall be clean aggregate and a minimum of 6" thick and will be maintained through the use of the crossing.

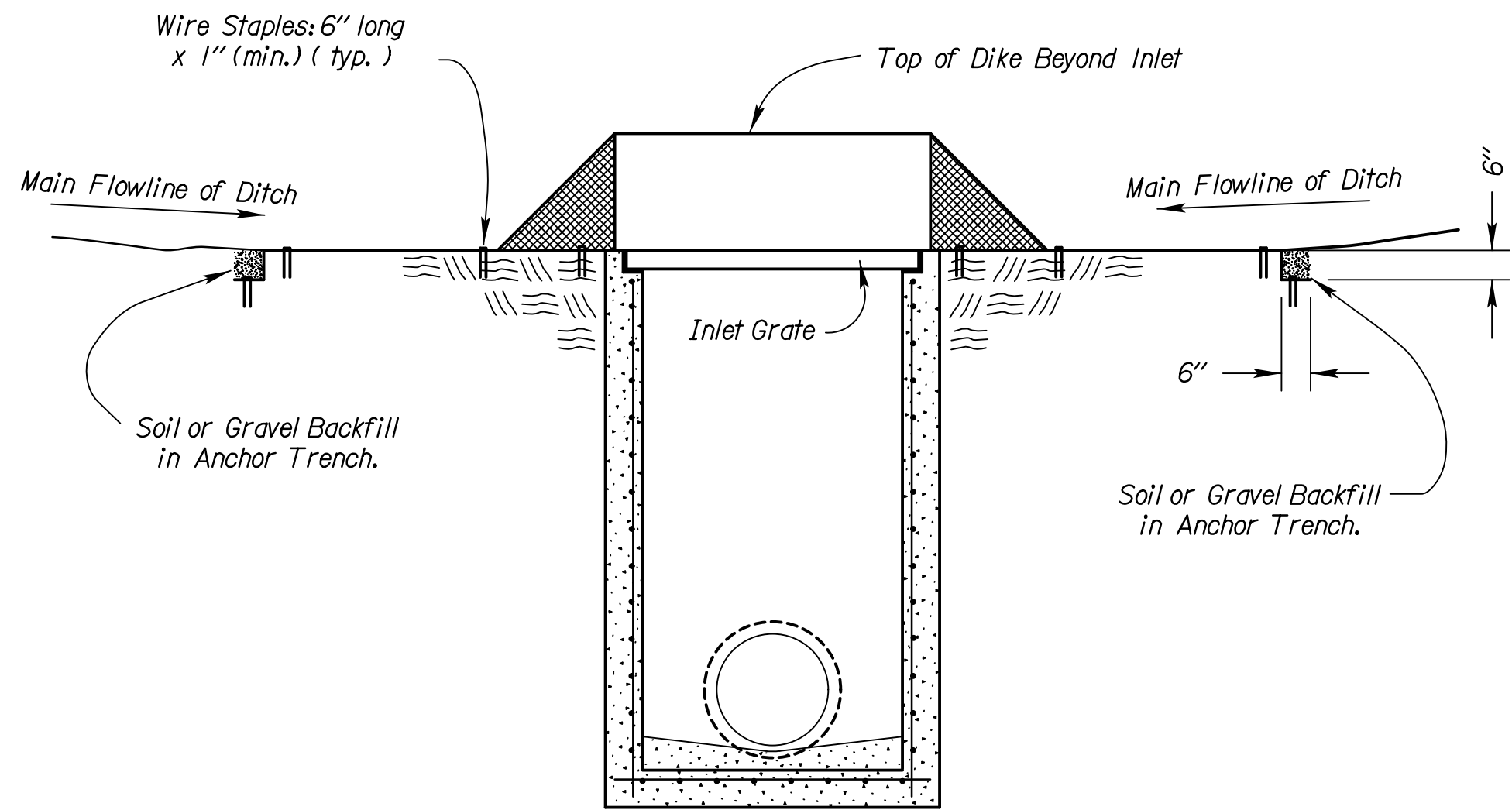
See KDOT Specifications for more information.

NO.	DATE	REVISIONS	BY	APP'D
3	1/21/22	Temp Stream Crossing - Clean Aggregate Fill Note Added	MRD	ML
2	8/24/21	Temp Stream Crossing - Clean Aggregate Fill Note Added	MRD	ML
1	6/11/13	Revised Standard	MRM	SHS
KANSAS DEPARTMENT OF TRANSPORTATION TEMPORARY EROSION AND POLLUTION CONTROL TEMPORARY SLOPE DRAIN TEMPORARY STREAM CROSSING (AGGREGATE) TEMP. STREAM CROSS. (ARTC. CONC. BLOCKS) LA852B				
DESIGNED	ML	DETAILED	I/21/2022	APP'D
DESIGN CK.	ML	DETAIL CK.	QUANTITIES	CADD
			QUAN. CK.	CADD CK.

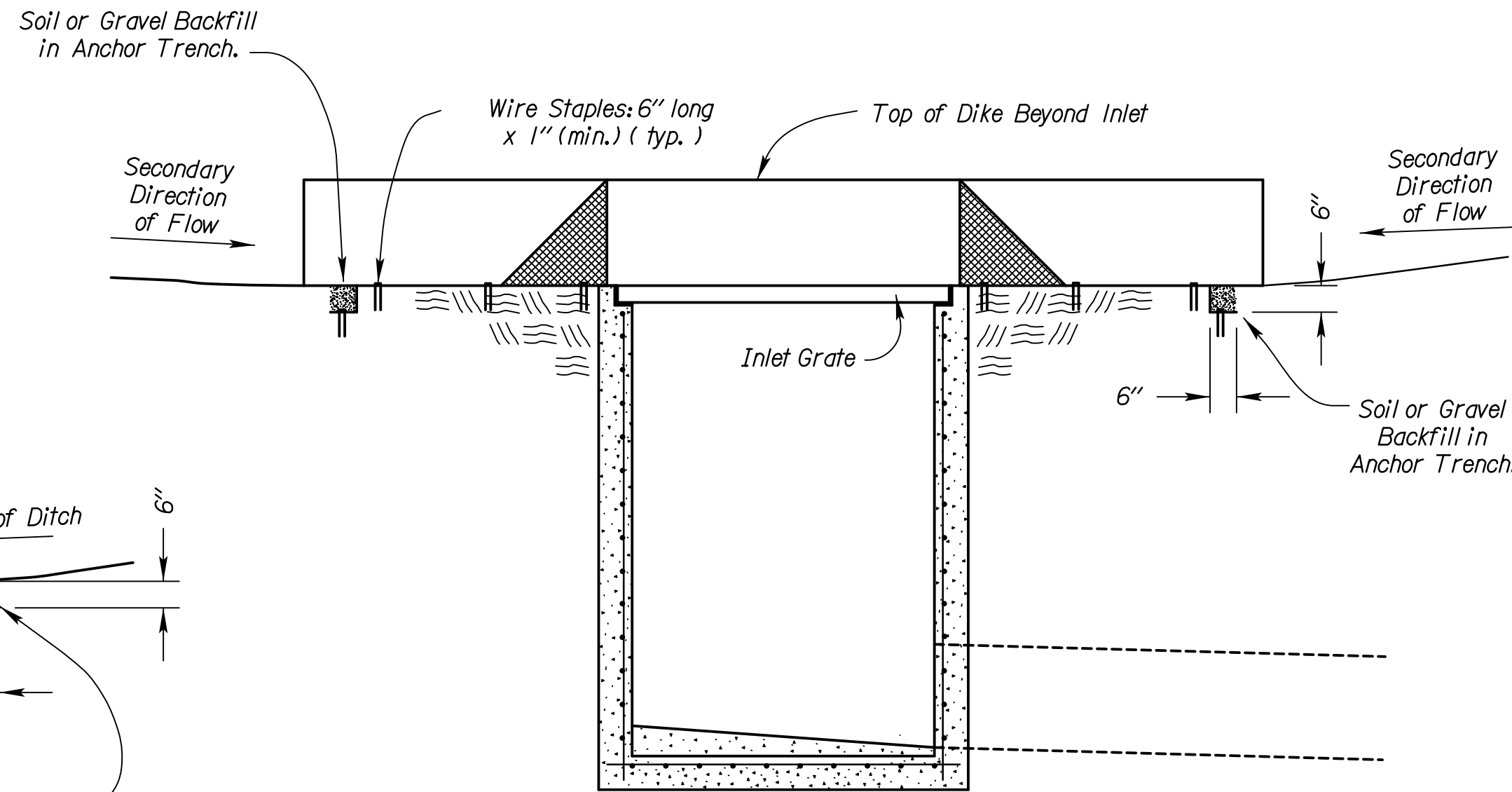
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	100	200



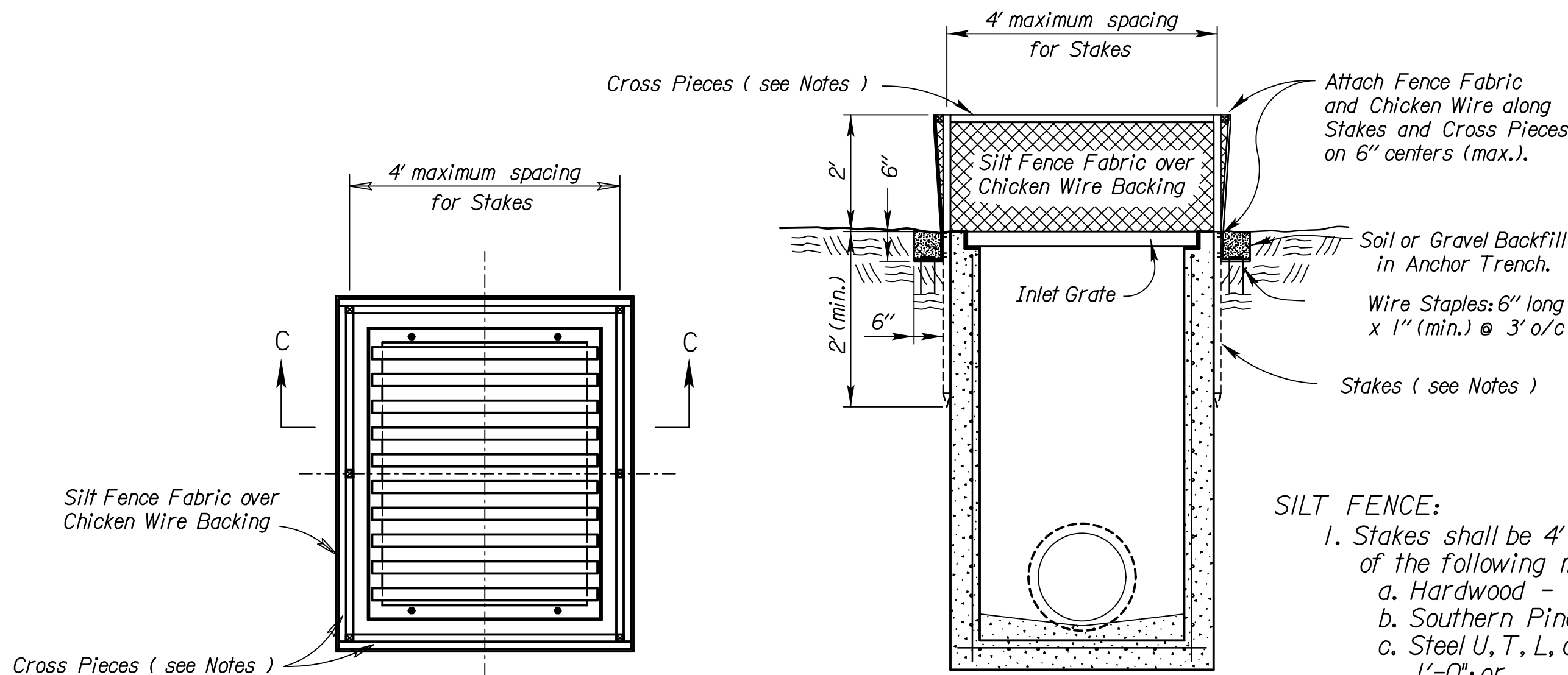
PLAN  
TEMPORARY INLET SEDIMENT BARRIER  
(TRIANGULAR SILT DIKE METHOD)  
NO SCALE



SECTION A - A



SECTION B - B

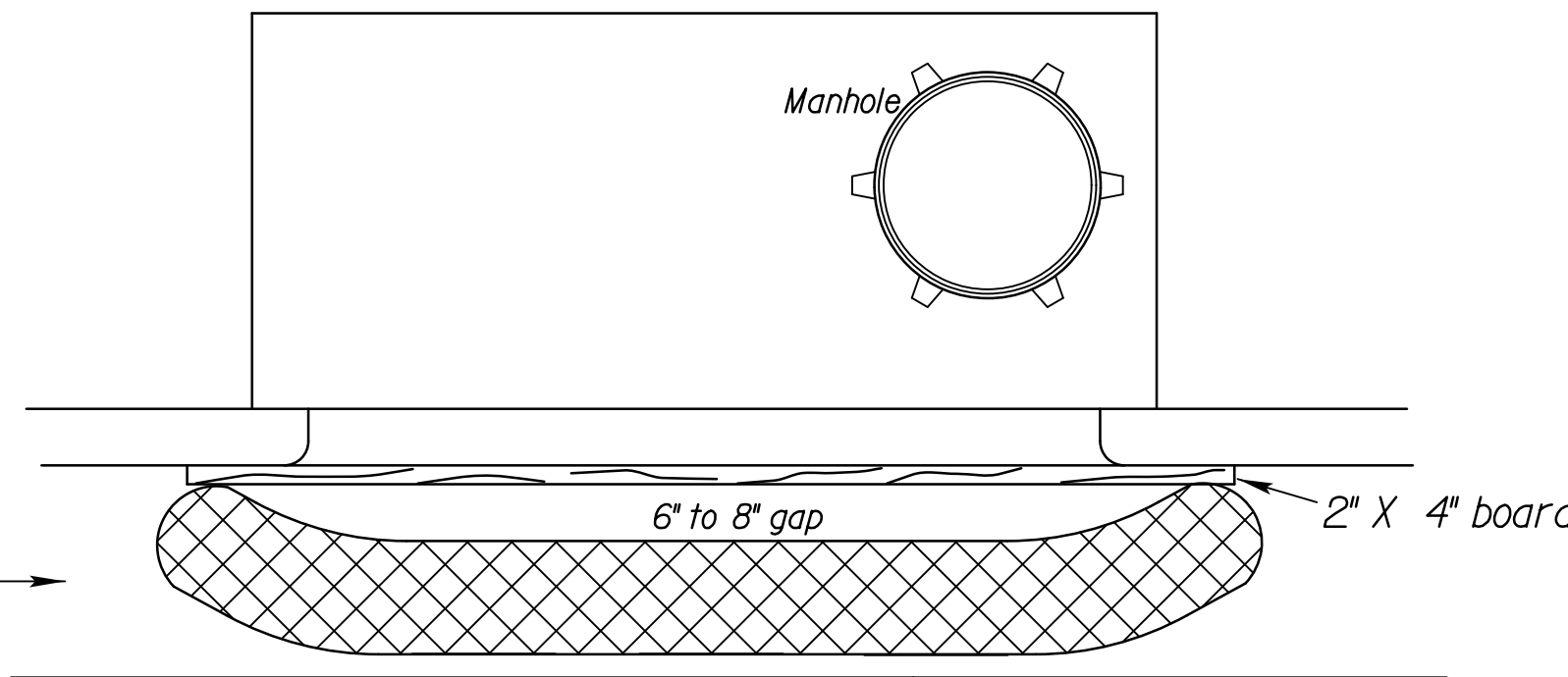
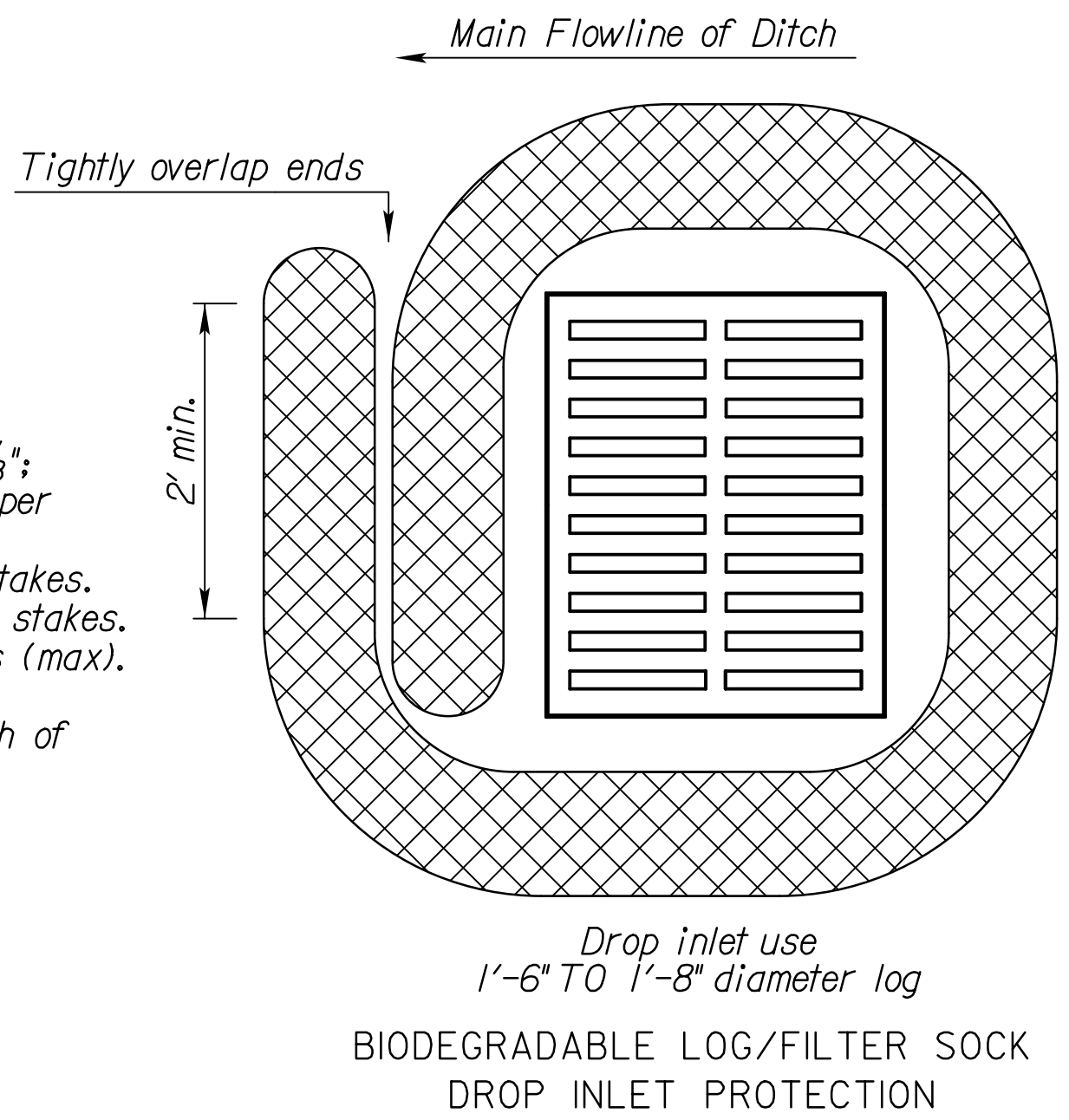


PLAN  
TEMPORARY INLET SEDIMENT BARRIER  
(SILT FENCE METHOD)  
NO SCALE

- SILT FENCE:**
1. Stakes shall be 4' (min.) long and of one of the following materials:
    - a. Hardwood - 1 3/16" x 1 3/16";
    - b. Southern Pine (No. 2) - 2 5/8" x 2 5/8";
    - c. Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
    - d. Synthetic - same strength as wood stakes.
  2. Cross pieces shall be of same material as stakes.
  3. Attach fence fabric securely on 6" centers (max).
  4. Use of high flow material is acceptable.
  5. Refer to plan sheets to estimate the length of silt fence required.

Bags = synthetic net (3mm mesh) or burlap bags

Rock = approximately 1" to 2" diameter



CURB INLET PROTECTION

1. If multiple gravel bags are required, place them in such a way that no gaps are evident.
2. Height of bags (8" minimum diameter) must not be above top of curb.
3. Alternative products may be used other than gravel bags such as the "Gutter Buddy". Products must be approved by the Engineer.
4. Curb inlet protection will be measured and paid for as Filter Sock.

Note: 25% of log shall be keyed into ground during installation.  
Stake every 4'

Material Requirements	
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.	
No compost or fines.	
No hay or straw.	
Do not use material which prohibits water infiltration.	
Log Mesh: Use mesh with 1/4" openings or larger. Mesh must allow water infiltration but also hold fill material in place.	

NO.	DATE	REVISIONS	BY	APP'D
3	9/26/19	Changed Direction of Main Flowline of Ditch Arrow	MRD	SHS
2	3/10/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS

KANSAS DEPARTMENT OF TRANSPORTATION				
TEMPORARY EROSION AND POLLUTION CONTROL				
TEMP. INLET SEDIMENT BARRIER (SILT FENCE)				
TEMP. INLET SEDIMENT BARRIER (T.S.D.)				
CURB INLET PROTECTION				
DROP INLET PROTECTION				
LA852C				
FHWA APPROVAL		3/10/2015	APP'D	Scott H. Shields
DESIGNED	RA	DETAILED	RA	QUANTITIES
DESIGN CK.	SHS	DETAIL CK.	SHS	QUAN. CK.

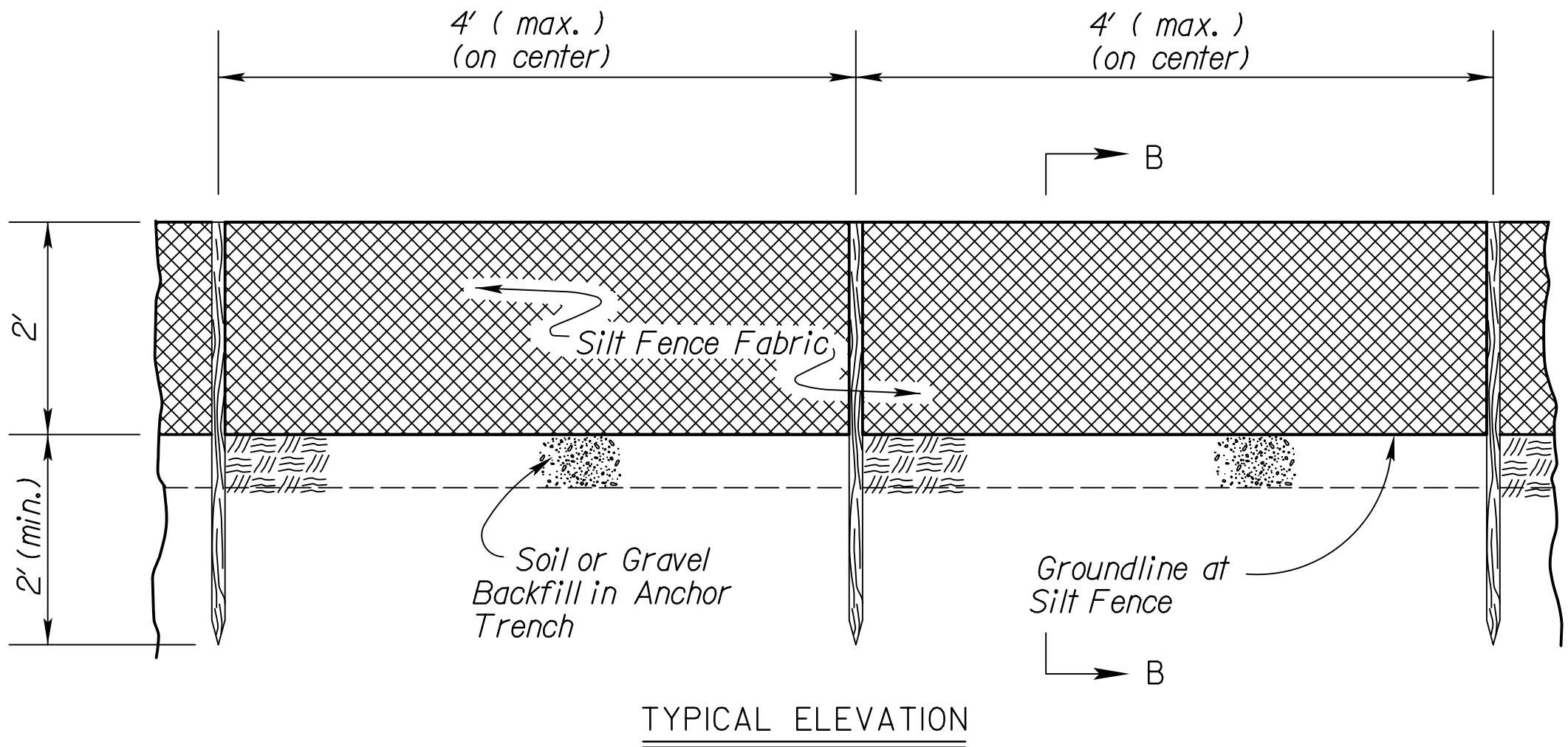
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	101	200

INSTALLATION NOTES

- SILT FENCE:
- Stakes shall be 4' (min.) long and of one of the following materials:
    - Hardwood - 1 3/16" x 1 3/16";
    - Southern Pine (No. 2) - 2 5/8" x 2 5/8";
    - Steel U, T, L, or C Section - .95 lbs. per 1'-0"; or
    - Synthetic - same strength as wood stakes.
  - Attach fence fabric with 3 zip ties within the top 8" of the fence  
Alternate attachment methods may be approved by the Engineer on a performance basis.
  - Use of high flow material is acceptable.
  - Refer to plan sheets to estimate the length of silt fence required.

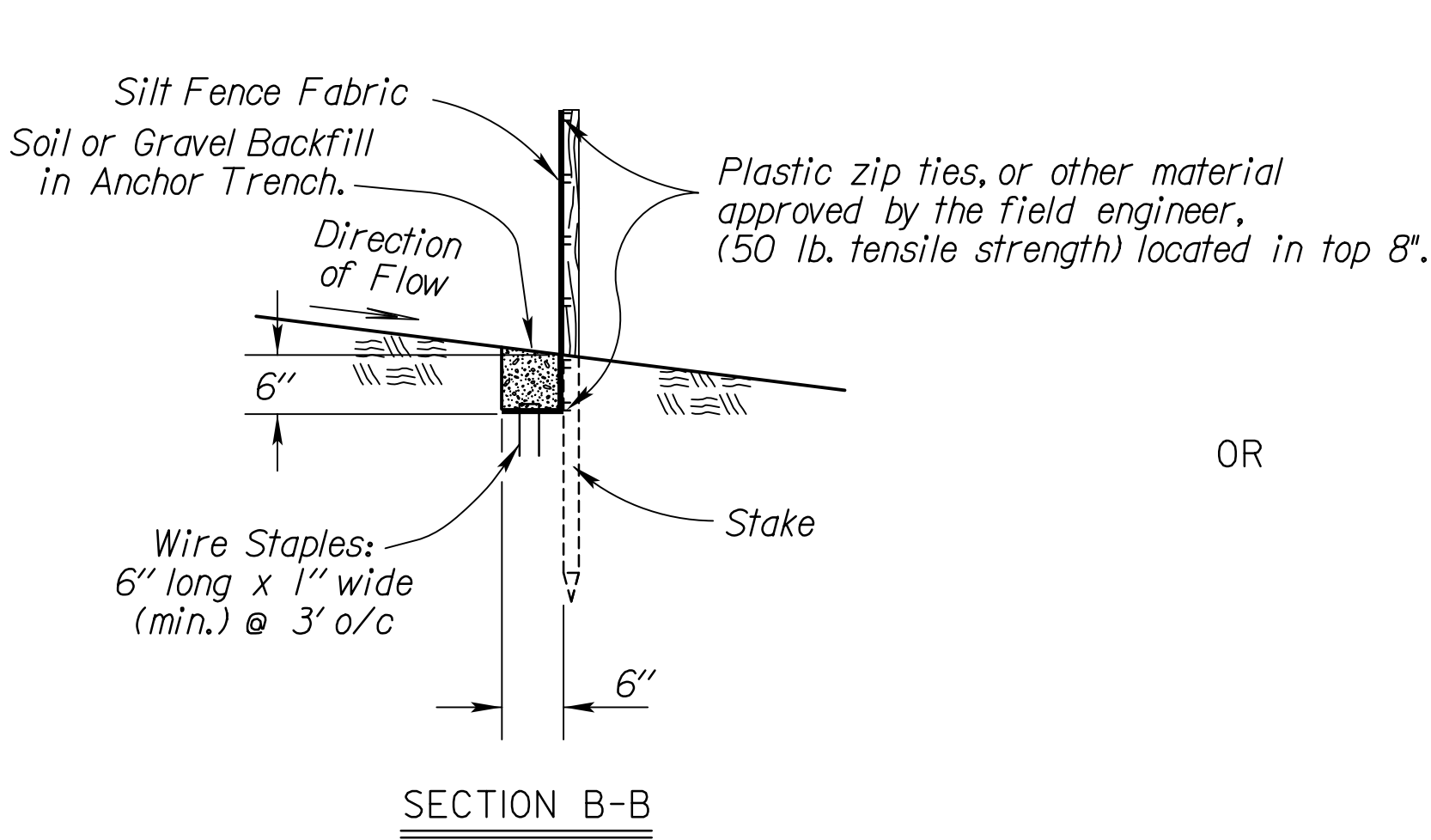
BIODEGRADABLE LOG OR FILTER SOCK

- Place biodegradable logs or filter sock tightly together minimum overlap of 18".
- Wood stakes shall be 2" x 2" (nom.).
- Refer to plan sheets to estimate length of biodegradable log and filter sock required.
- Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.
- Length of stakes should be 2 times the height of the log at a minimum with minimum ground embedment equal to the height of the log / sock.



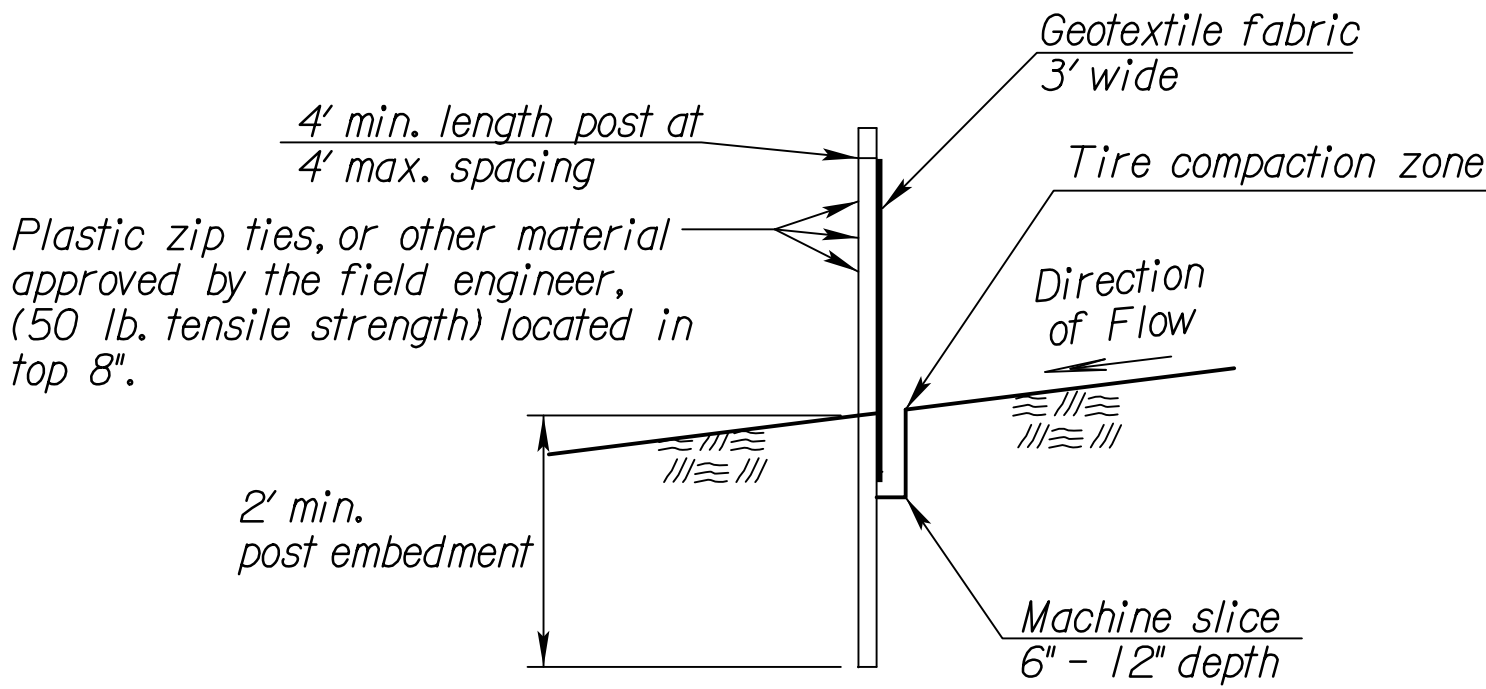
TYPICAL ELEVATION

SILT FENCE BARRIER  
NO SCALE



SECTION B-B

OR



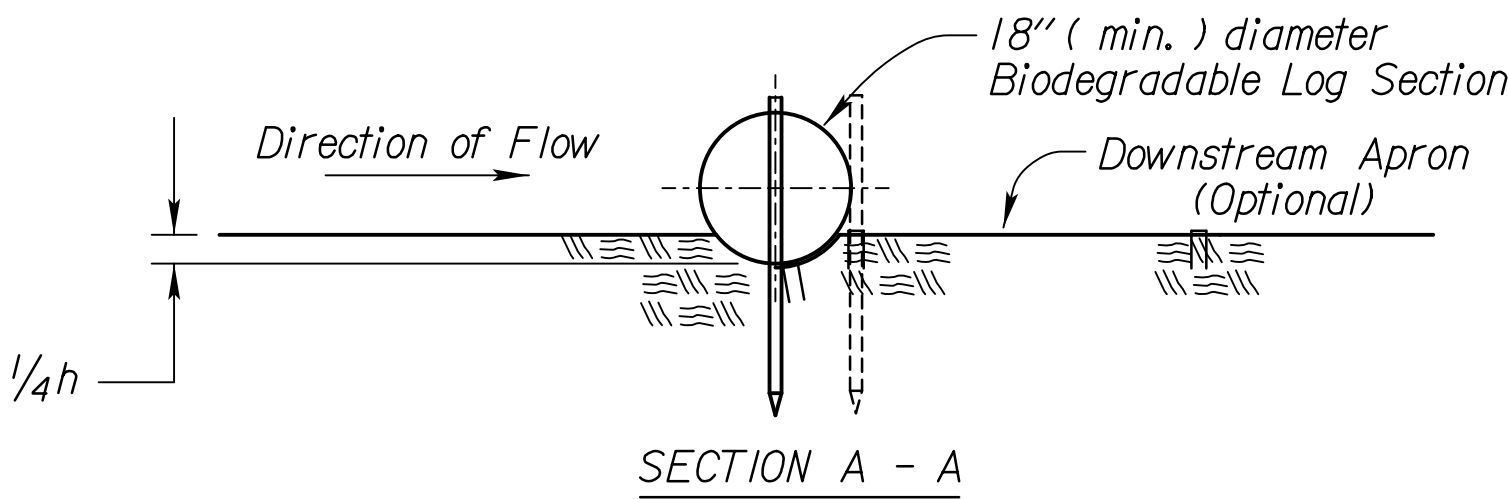
SECTION B-B

Biodegradable Log or Filter Sock Slope Interruptions

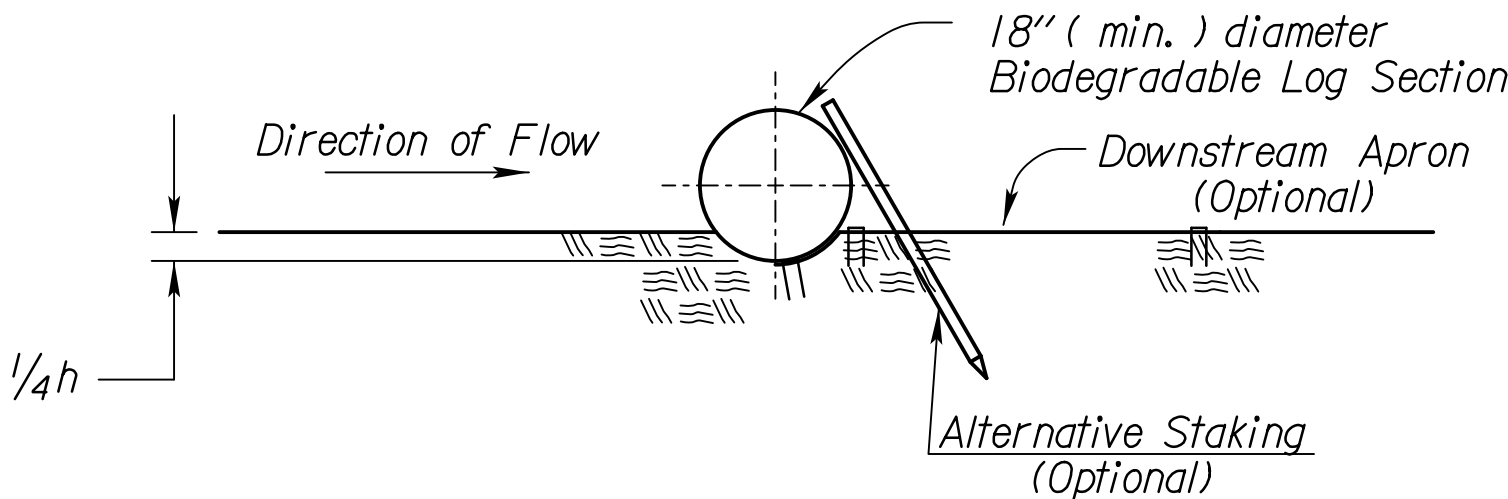
		PRODUCT		
		9" Sediment Log or 8" Filter Sock (ft)	12" Sediment Log or 12" Filter Sock (ft)	20" Sediment Log or 18" Filter Sock (ft)
Slope Gradient	≤4H:1V	40	60	80
	3H:1V	30	45	60

BIODEGRADABLE LOG MATERIAL		
	LOW FLOW	HIGH FLOW
9"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
12"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber
18"-20"	Straw/Compost	Excelsior / Wood Chips / Coconut Fiber

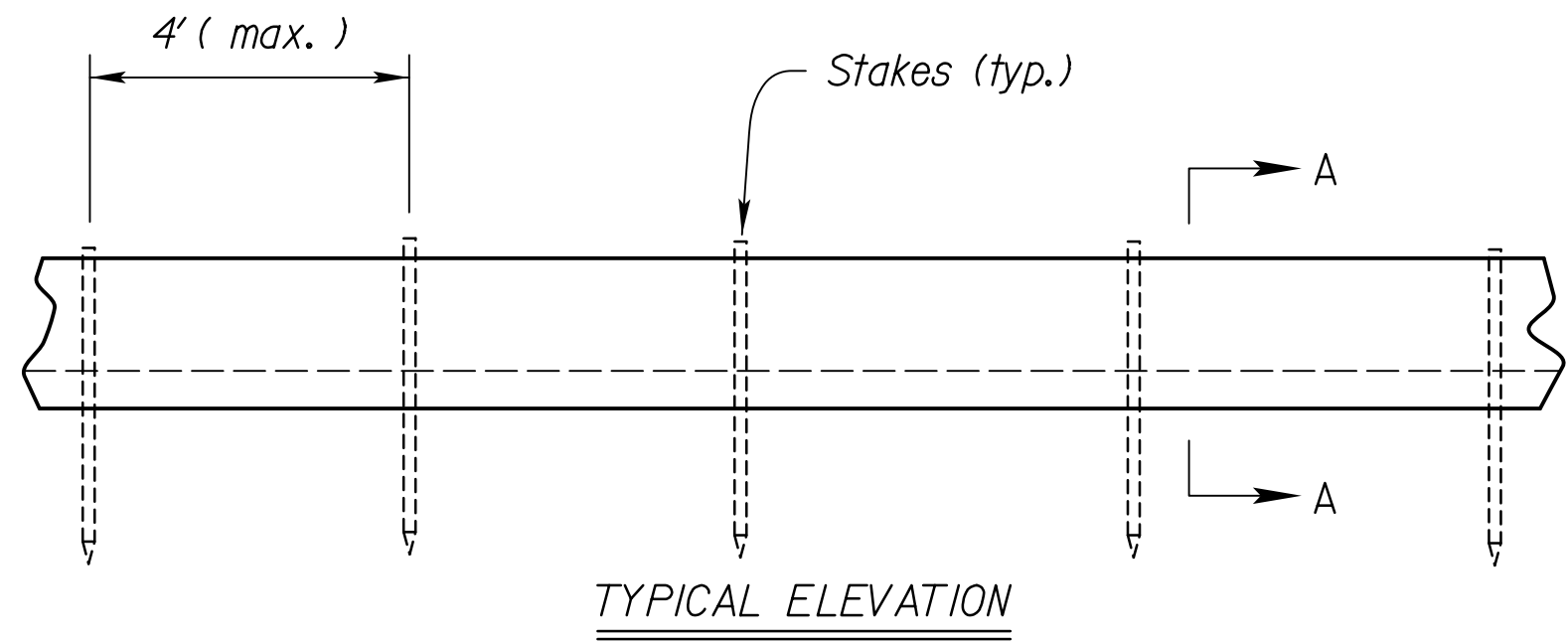
Deviations should be approved by the Field Engineer.



SECTION A - A



ALT. DETAIL  
OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS  
OR Filter Sock

GENERAL NOTES

- Slope interruptions shall be placed along contour lines, with a short section turned upgrade at each end of the barrier.
- The maximum length of the slope interruptions shall not exceed 250 feet, and the barrier ends need to be staggered.
- Interruptions damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired immediately by Contractor at no additional cost to KDOT.
- Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

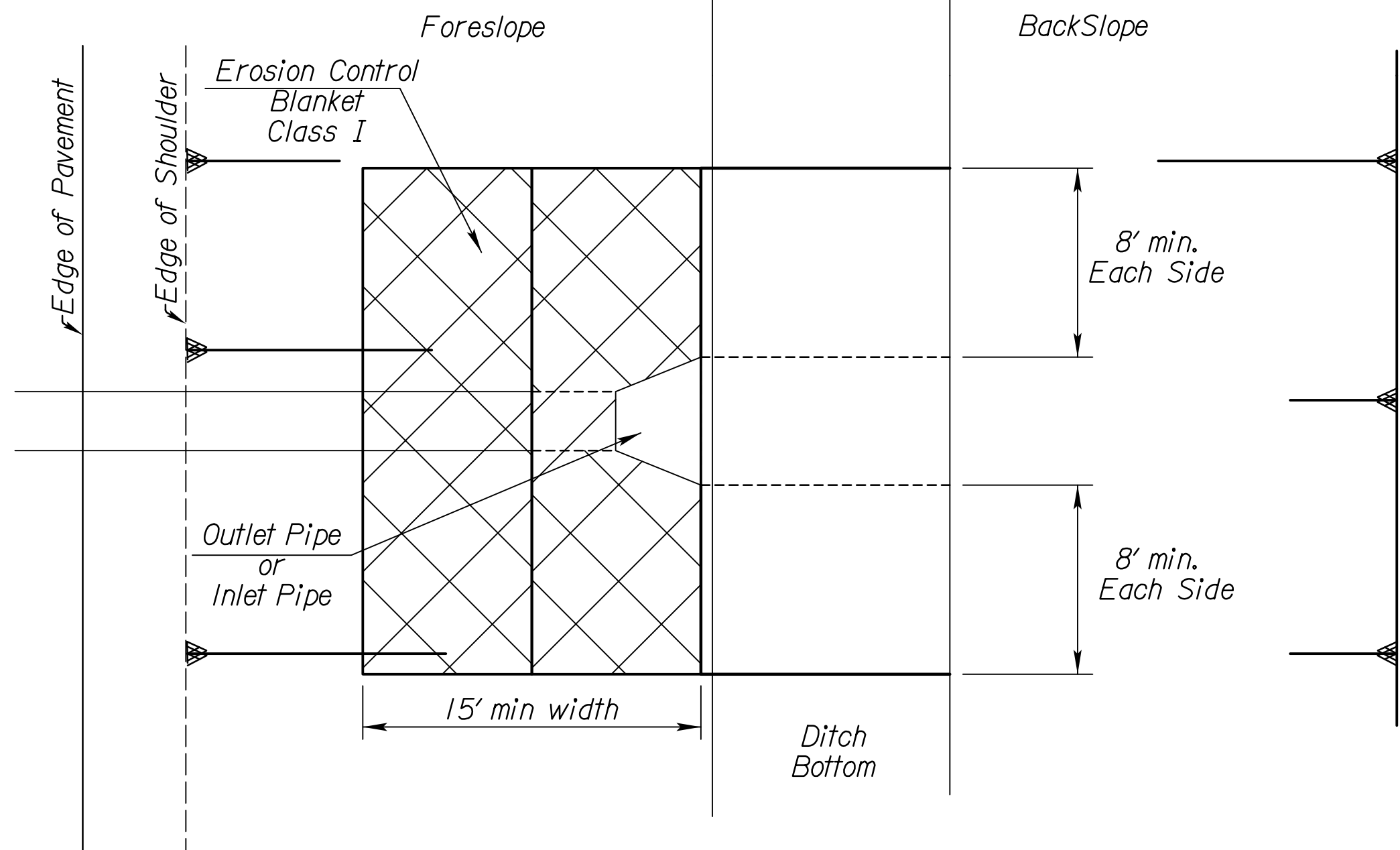
3	6/28/16	Revised Standard	RA	SHS
2	3/01/15	Revised Standard	RA	SHS
1	6/01/13	Revised Standard	MRM	SHS
NO.	DATE	REVISIONS	BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION TEMPORARY EROSION AND POLLUTION CONTROL SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE LA852D				
FHWA APPROVAL		9/14/2016	APP'D	Scott H. Shields
DESIGNED	SHS	DETAILED	RA	QUANTITIES
DESIGN CK.	SHS	DETAIL CK.	QUAN. CK.	CADD CK.



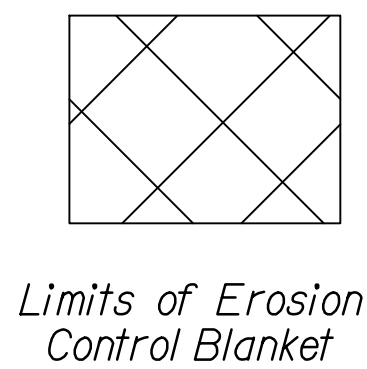
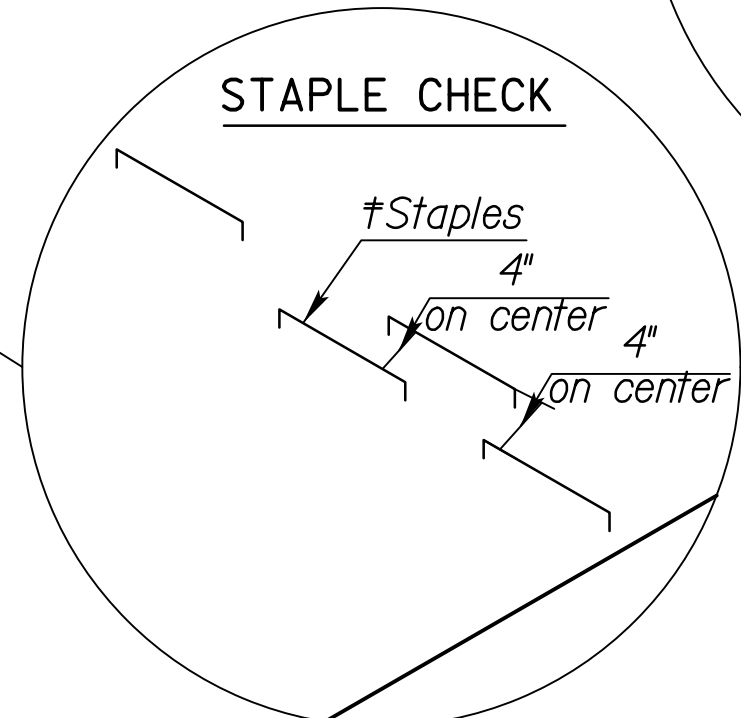
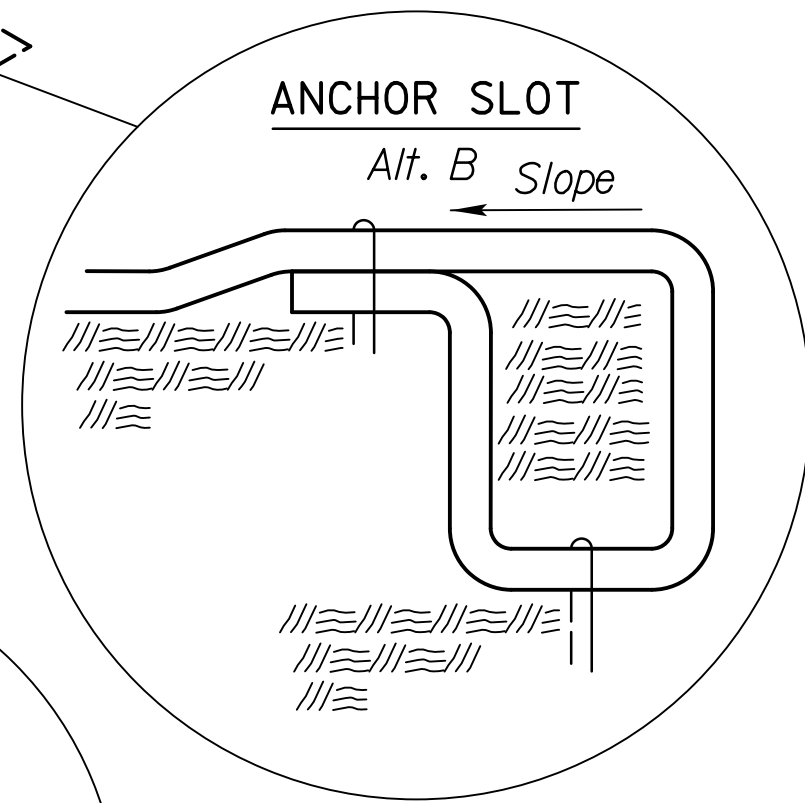
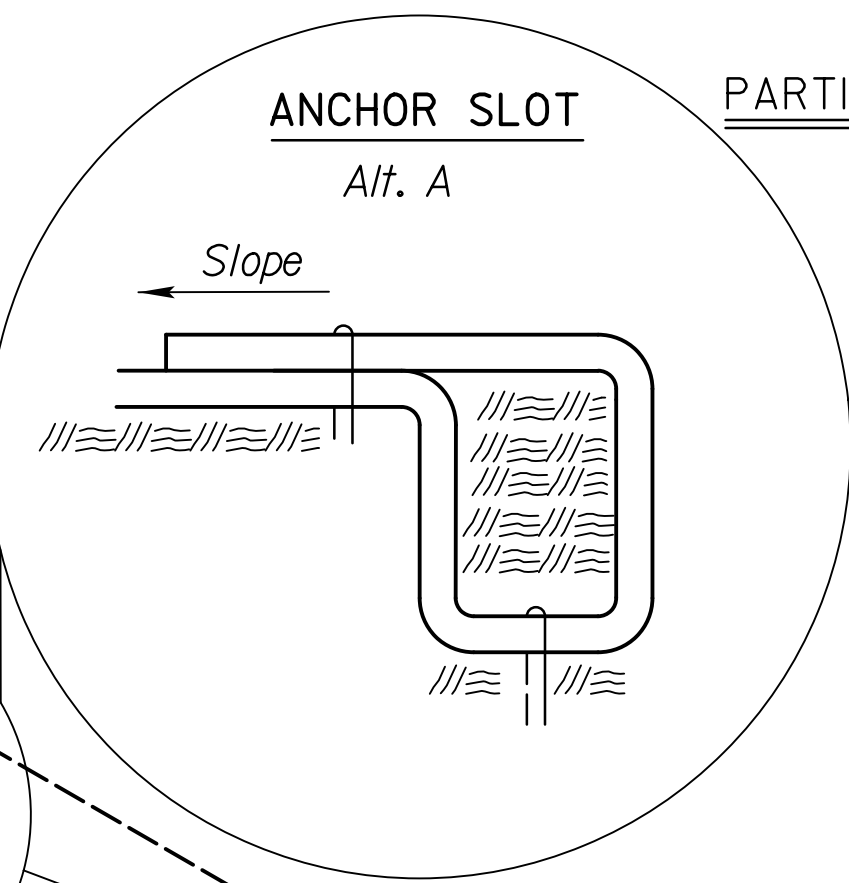
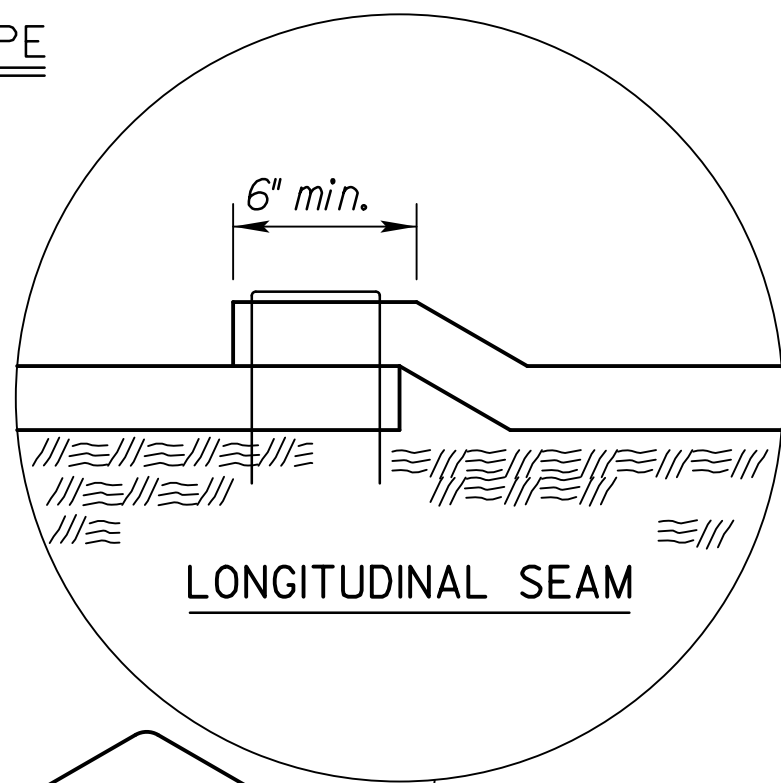
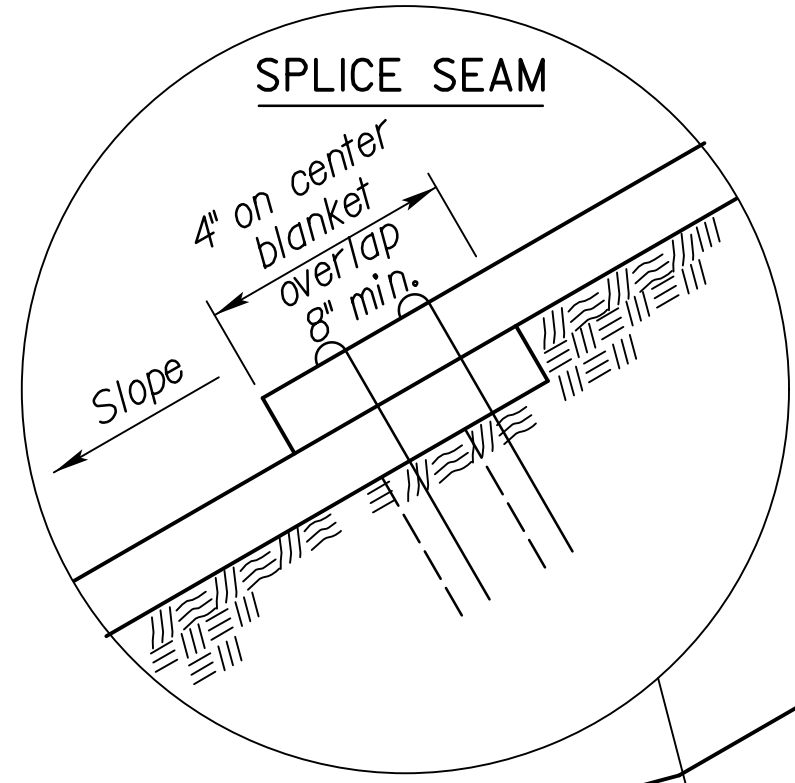




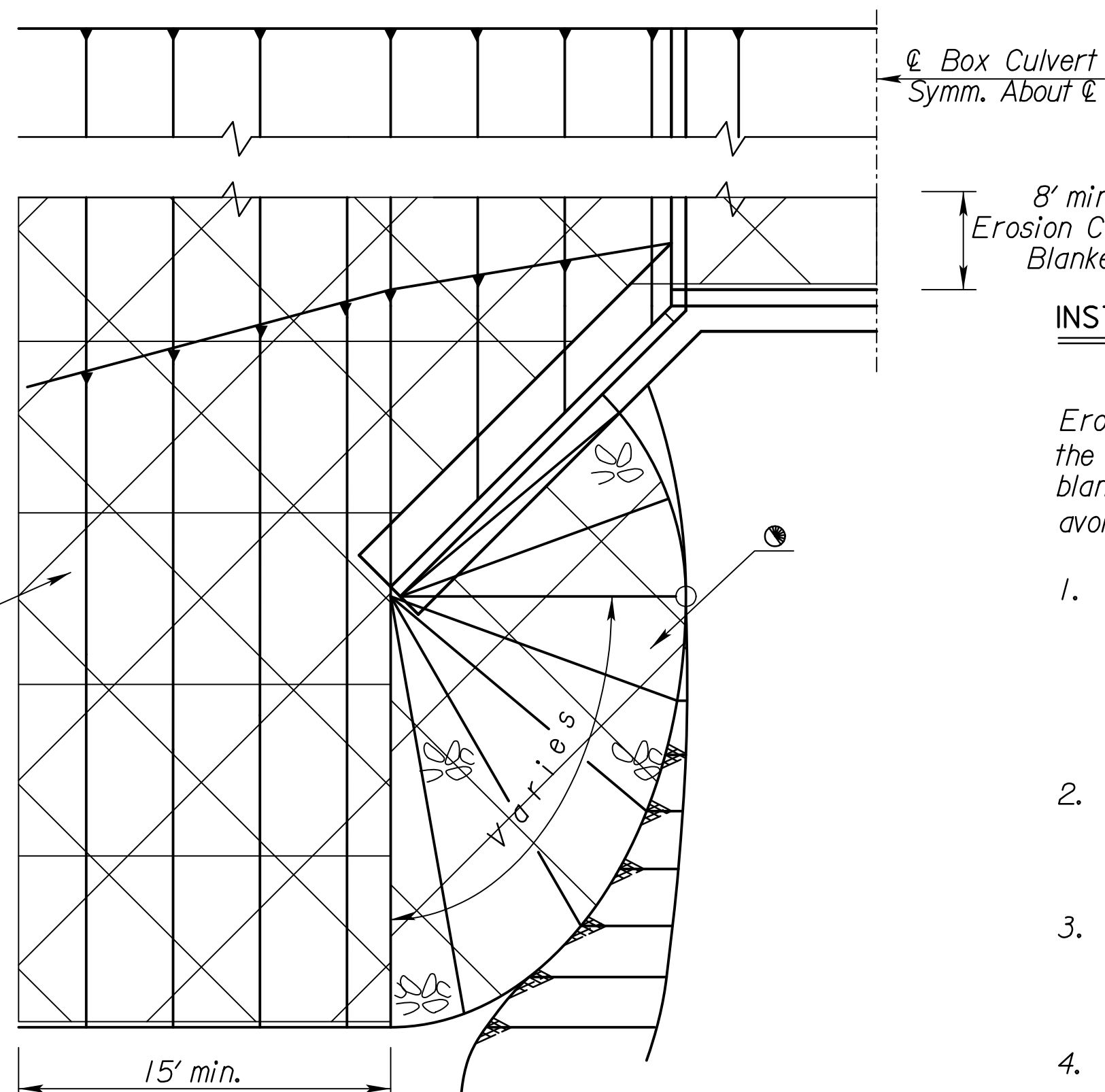
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	104	200



PARTIAL PLAN PIPE



Limits of Erosion Control Blanket



PARTIAL PLAN BOX CULVERT

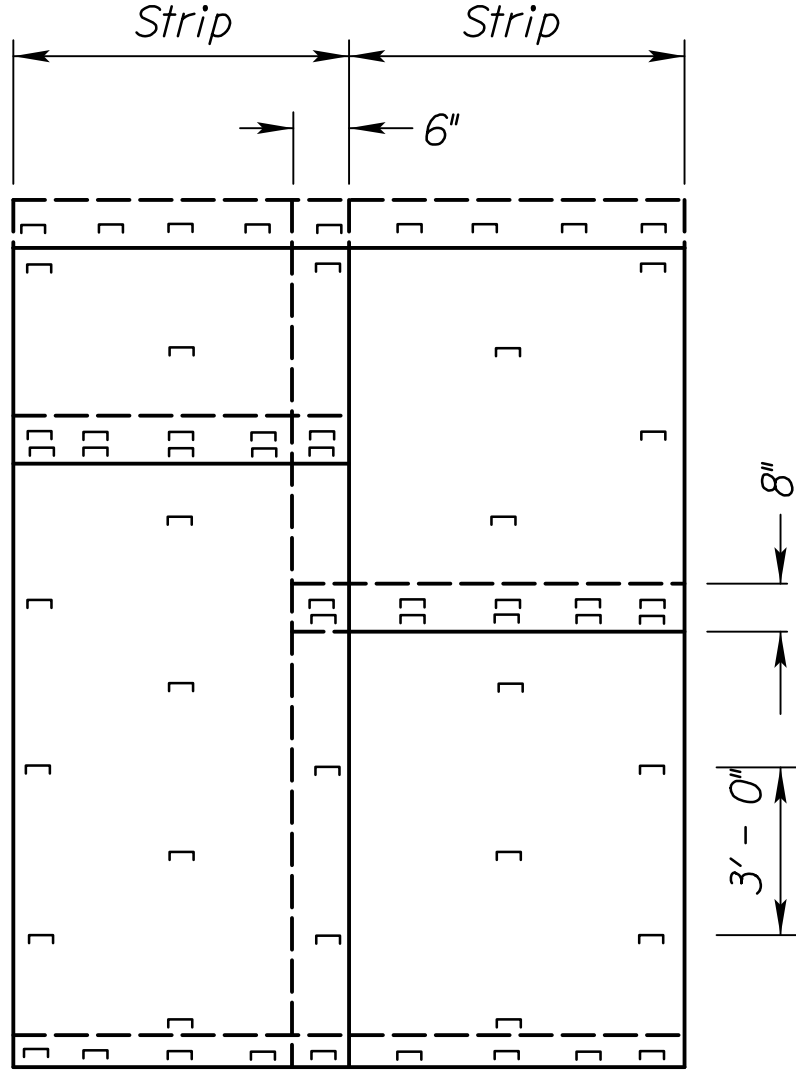
● Erosion Control Class I may be omitted if the area is immediately covered by permanent slope protection (where directed by the plans).

### INSTALLATION DETAILS FOR EROSION CONTROL CLASS I

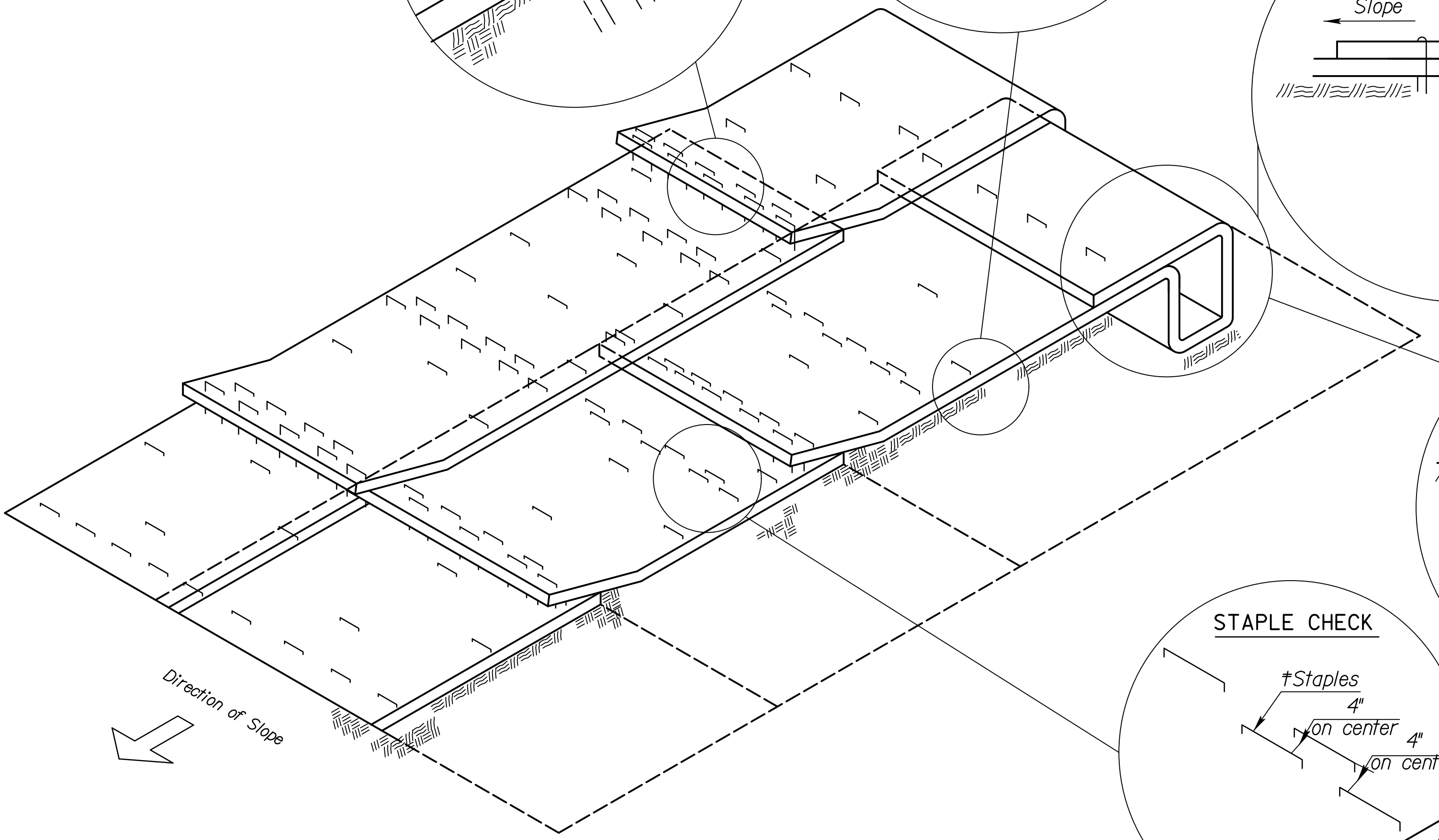
Erosion Control Blankets shall be laid loosely in the direction of the slope, beginning at the bottom of the slope. In order for blanket to be in contact with the soil, lay blanket loosely, avoiding stretching.

- ANCHOR SLOTS:** The top of the blanket should be "slotted in" at the top of the slope and anchored in place with anchors 6 inches apart. The slots should be 6 inches wide x 6 inches deep with the blanket anchored in the bottom of the slot, then backfilled, tamped and seeded.
- LONGITUDINAL SEAMS:** The edges of the blanket should overlap each other a minimum of 6 inches, with anchors catching the edges of both blankets.
- SPLICE SEAM:** When splices are necessary, overlap a minimum of 8 inches in direction of water flow. Stagger splice seams.
- TERMINAL FOLD:** The bottom edge of the blanket shall be turned under a minimum of 4 inches, then anchored in place with anchors 9 inches apart.
- TYPICAL ANCHORS:** Anchor design shall be as recommended by the manufacturer.
- STAPLE CHECK:** Establish Staples in 2 rows 4" on center apart. Staple Checks - shall be 30' apart.

**NOTE:**  
Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.  
Single post ring and shank staple is acceptable.



PLAN VIEW - ANCHORING DIAGRAM



ISOMETRIC VIEW

NO.	DATE	REVISIONS	BY	APP'D
4	3/01/15	Revised Standard	RAA	SHS
3	2/23/15	Revised Standard	RAA	SHS
2	9/15/14	Revised Standard	MRM	SHS
1	9/10/07	Revised Standard	MRM	SHS

DESIGNED	RAA	DETAILED	RAA	QUANTITIES	CADD	RAA
DESIGN CK.		DETAIL CK.		QUAN. CK.	CADD CK.	RAA

**KANSAS DEPARTMENT OF TRANSPORTATION**

**INSTALLATION DETAIL**  
**EROSION CONTROL CLASS I**  
**SLOPE PROTECTION**

**LA855**

FWHA APPROVAL 3/10/2015 APP'D Scott H. Shields  
DESIGNED RAA DETAILED RAA QUANTITIES CADD CADD RAA  
DESIGN CK. DETAIL CK. QUAN. CK. CADD CK. RAA



Drawn By : user  
Plotted : 11-07-23  
File : c:\pwworking\central01\kd2293301\KA571401\ec850-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	105	200

## GRASS & WILDFLOWER SEEDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES & WILDFLOWERS
February 15 thru April 20 August 15 thru September 30	November 15 thru June 1
SPECIES	SPECIES
Bluegrasses	Bermuda Grass
Brome Grasses	Big Bluestem
Canada Wildrye	Blue Grama
Fescues	Buffalo Grass
Prairie Junegrass	Indiangrass
Ryegrasses	Little Bluestem
Sterile Wheatgrass	Sand Bluestem
Tall Dropseed	Sand Dropseed
Western Wheatgrass	Sand Lovegrass
	Side Oats Grama
	Switchgrass
	Wildflower Mixes
When the area to be seeded is 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season.	
When the area to be seeded is less than 1 acre, seed the area any time of the year.	

## GENERAL NOTES

The entire disturbed area, excepting the paved or surfaced areas, steep rocky slopes and areas of undisturbed native sod or other desirable vegetation shall be fertilized (limed when required), seeded and mulched. Soil preparation shall conform to the Standard Specifications except as noted below.

All borrow areas shown on the plans are to be fertilized, seeded, and mulched. However, operation in borrow areas where crops are growing may be omitted when requested by the owner.

If temporary cover has provided stable slopes with no erosion, seed the permanent grasses into the existing cover. If there has been erosion that requires repair prior to seeding, then it may be necessary to regrade the area, resulting in bare ground.

FERTILIZER: A ratio and application rate that equals or exceeds the required minimum rate per acre of  $N, P_2O_5, K_2O$  listed in Summary of Seeding Quantities will be acceptable.

MULCHING: Mulch shall be spread uniformly over all disturbed areas and punched in the soil, unless otherwise noted on the plans. The rate of application per acre, thickness in place, for the mulching material is generally as follows:

$1\frac{3}{4}$  -  $2\frac{1}{4}$  Tons per Acre -  $1\frac{1}{2}$ " loose depth spread uniformly over acre.

Agricultural products, such as native prairie hay, used for mulching and erosion control practices, excluding wood based mulch, shall meet the North American Weed Free Forage Standards.

Other vegetative mulches are acceptable only with the Engineer's concurrence.

The above rate is a guide. It will be at the discretion of the Engineer to determine what rate is sufficient for adequate protection of newly seeded areas.

## SODDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES
March 1 thru April 15 September 1 thru November 15	May 15 thru September 1
SPECIES	SPECIES
Bluegrass Sod	Buffalo Grass Sod
Fescue Sod	
If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.	

## SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE				ACRES				BID ITEM	QUANTITY	UNIT
SHLDR	OTHER			SHLDR	OTHER					
								This project is entirely blanketed and seeded with the Soil Erosion Mix to be used as Permanent Seeding. See LA852A for further information.		
								Mulching *		

SHLDR = Seeded with the Shoulder Mix. Typically 15 feet for 2-lane roads and 30 feet for 4-lane roads. Includes outside roadsides, turfed portions of shoulders, and turfed portion of the median.

OTHER = Seeded with the "Other" Mix. Designated as all other turf areas, except the Shoulder. Usually includes a Native Wildflower Mix.

NOTE: Projects less than 1 acre shall be bid as "Seeding" by the lump sum. All disturbed areas shall be seeded, fertilized and mulched at the listed rate per acre. The acres are estimated.

Refer to the Standard Specifications, Division 900, Section 904 'Seeding', and Section 907 'Sodding', for the seeding and sodding seasons.

\* See LA852A for mulching quantity. The quantity of mulch is estimated (Acres of Seeding X 1.5 X 2 Tons/Acre). The total mulch required shall be determined in the field. The bid item for mulching shall be paid for according to the Standard Specifications.

2	11/25/20	Updated Seeding / Sodding Periods Chart	MRD	ML
1	08/03/20	Revised Standard	MRD	SHS
NO.	DATE	REVISIONS	BY	APP'D

## KANSAS DEPARTMENT OF TRANSPORTATION

## PERMANENT SEEDING SUMMARY OF SEEDING QUANTITIES

LA850

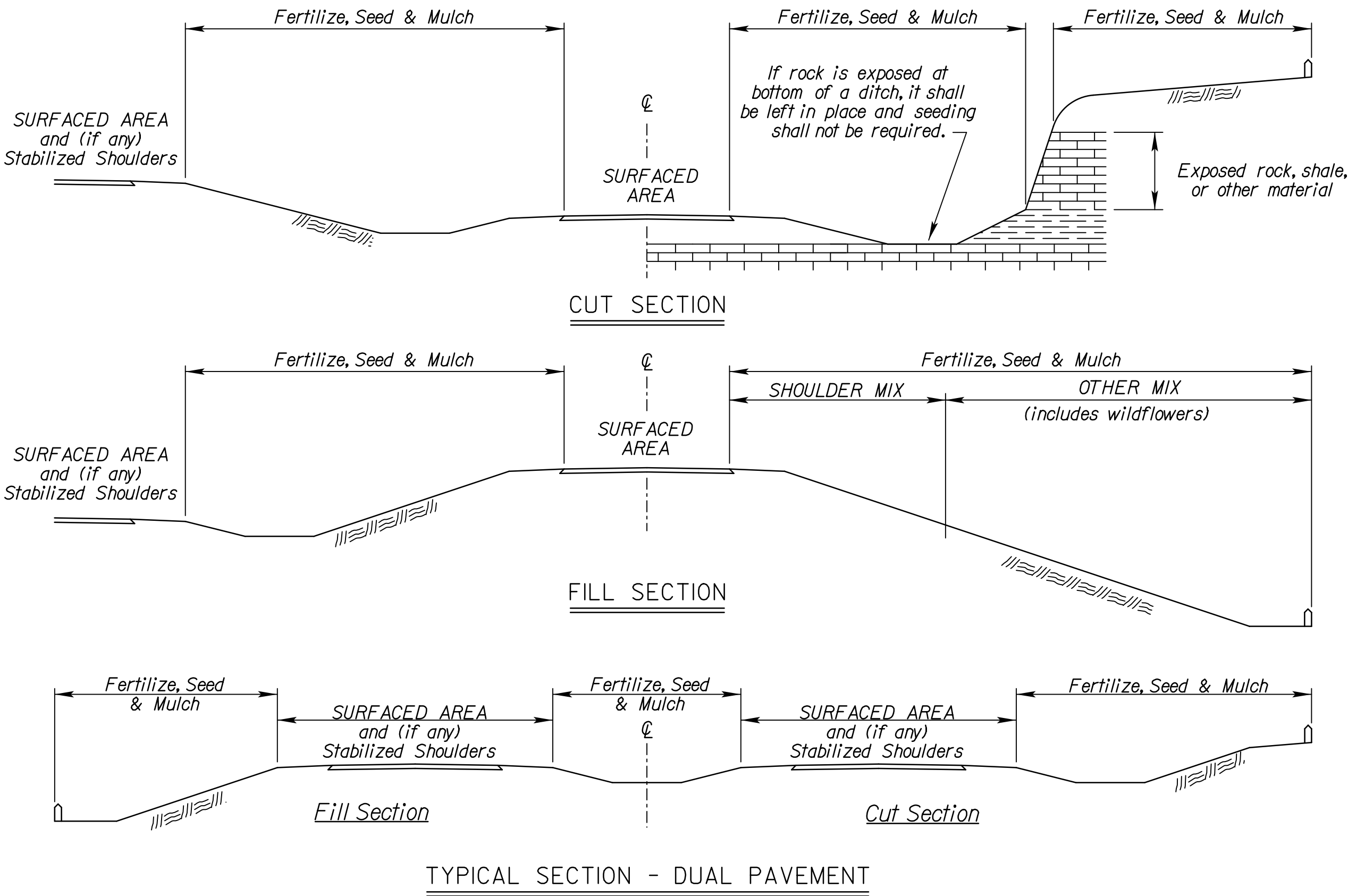
FHWA APPROVAL		05/06/2019		APP'D		Mervin Lare	
DESIGNED	MRD	DETAILED	MRD	QUANTITIES	CADD	DESIGNED	MRD
DESIGN CK.		DETAIL CK.		QUAN. CK.	CADD CK.		

NATIVE WILDFLOWER MIX 1		
PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	
0.3	Common Milkweed	
0.3	Black Eyed Susan	
0.5	Blanket Flower	
0.5	False Sunflower	
0.5	Lance-Leaf Coreopsis	
0.2	Maximilian Sunflower	
0.1	New England Aster	
0.2	Pinnate Prairie Coneflower	
0.2	Plains Coreopsis	
0.3	Purple Coneflower	
0.3	Upright Prairie Coneflower	
0.3	Dames Rocket	
0.3	Lemon Mint	
0.2	Pitcher Sage	
0.2	Wild Bergamot	
1.0	Illinois Bundleflower	
0.2	Common Evening Primrose	
0.1	Hoary Verbena	
0.8	Purple Prairie Clover	
0.3	Roundhead Lespedeza	
3.0	Showy Partridge Pea	
0.2	White Prairie Clover	
10.3	Total (lb)	

NATIVE WILDFLOWER MIX 2		
PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	
0.3	Black Eyed Susan	
0.5	Black Sampson Coneflower	
1.0	Blanket Flower	
0.2	Maximilian Sunflower	
0.2	Plains Coreopsis	
0.2	Upright Prairie Coneflower	
0.2	Western Yarrow	
0.3	Lemon Mint	
0.4	Pitcher Sage	
1.5	Illinois Bundleflower	
0.2	Common Evening Primrose	
1.0	Blue Wild Indigo	
0.4	Leadplant	
0.4	Purple Prairie Clover	
0.3	White Prairie Clover	
7.4	Total (lb)	

Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed  $\frac{1}{8}$ " -  $\frac{1}{4}$ ". Place the wildflower seed in a separate seed box and drill (cover) seed  $\frac{1}{16}$ " maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.

OPTION: Broadcast Tall Drop Seed on the soil surface.





Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central\01\2293301\KA571401\pss402-01.dgn


STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	106	200

SYMBOL KEY


- 


REMOVE SIGN
- 


REMOVE POST
- 


REMOVE FOOTING
- 


REMOVE SIGN & POST
- 

REMOVE POST & FOOTING
- 


REMOVE SIGN, POST, & FOOTING
- 


MOUNT ON WOOD POST IN CONCRETE FOOTING
- 


MOUNT ON WOOD POST IN SOIL
- 


MOUNT ON STEEL BEAM BREAKAWAY POST
- 


MOUNT ON STEEL U-POST
- 


MOUNT ON PSST POST
- 


MOUNT ON EXISTING POST
- 


MOUNT ON VERTICAL SUPPORT
- 


SHOULDER MOUNTED INSTALLATION
- 


OFFSET MOUNTED INSTALLATION
- 


EXISTING SIGN
- 


EXISTING SIGN TO BE OVERLAID
- 


SIGN IS NOT PART OF PROJECT
- 

TYPE 'A' DELINEATOR (RIGID)
- 


TYPE 'A' DELINEATOR (RIGID) (BK-BK)
- 


TYPE 'B' DELINEATOR (RIGID)
- 

TYPE 'A' DELINEATOR (FLEXIBLE)
- 

TYPE 'A' DELINEATOR (FLEXIBLE) (BK-BK)
- 

TYPE 'B' DELINEATOR (FLEXIBLE)
- 

TYPE 2 OBJECT MARKER
- 

TYPE 3 OBJECT MARKER
- 

TYPE 3 OBJECT MARKER (BK-BK)

GENERAL NOTES

In order to expedite the completion of the project for traffic service, the signing and delineator work shall be sequenced with any other contract work such that the phases of construction may proceed and be completed at the same time.

New signs erected on the project which are in conflict with existing signing are to be completely covered until the existing signs are removed or the new signing is applicable. The existing signs that are being replaced, removed, or do not follow the current MUTCD signing standards are to be removed when the project is completed or as determined by the Engineer.

The Contractor shall exercise caution at all times when installing sign supports in and around areas where utilities exist, either underground or overhead, and will be held responsible for any damage incurred to the system. The installation of sign supports shall include the excavation, drilling, or driving the support footing and the erection of the sign support. The contractor shall exercise caution when working around any existing signs that are to remain and will be held responsible for any damage to the signs, supports, or footings. The Contractor shall exercise care when working around shrubbery while removing or installing signs or sign supports.

An existing sign post installation shall be plumb and the compaction of the backfill soil shall comply with the specifications after the removal and resetting of a sign, the removal and replacement of a sign, or the installation of a new sign.

The Contractor shall provide mounting bolts that are of a length that does not extend more than a nominal 1 inch beyond the sign post. The Contractor shall not make any field modifications to the mounting bolt prior to or after the sign is installed.

Specific service (LOGO) signs that are to be removed shall have the business logo plaques removed and transported to location determined by KDOT, at which time the plaques become the property of KDOT. The Contractor will be assessed a replacement cost for any damage to a business logo plaque prior to the plaque becoming the property of KDOT.

The materials and fabrication for signing and delineation work shall conform to the Standard Specifications for State Road and Bridge Construction (2015 edition) and Special Provisions.

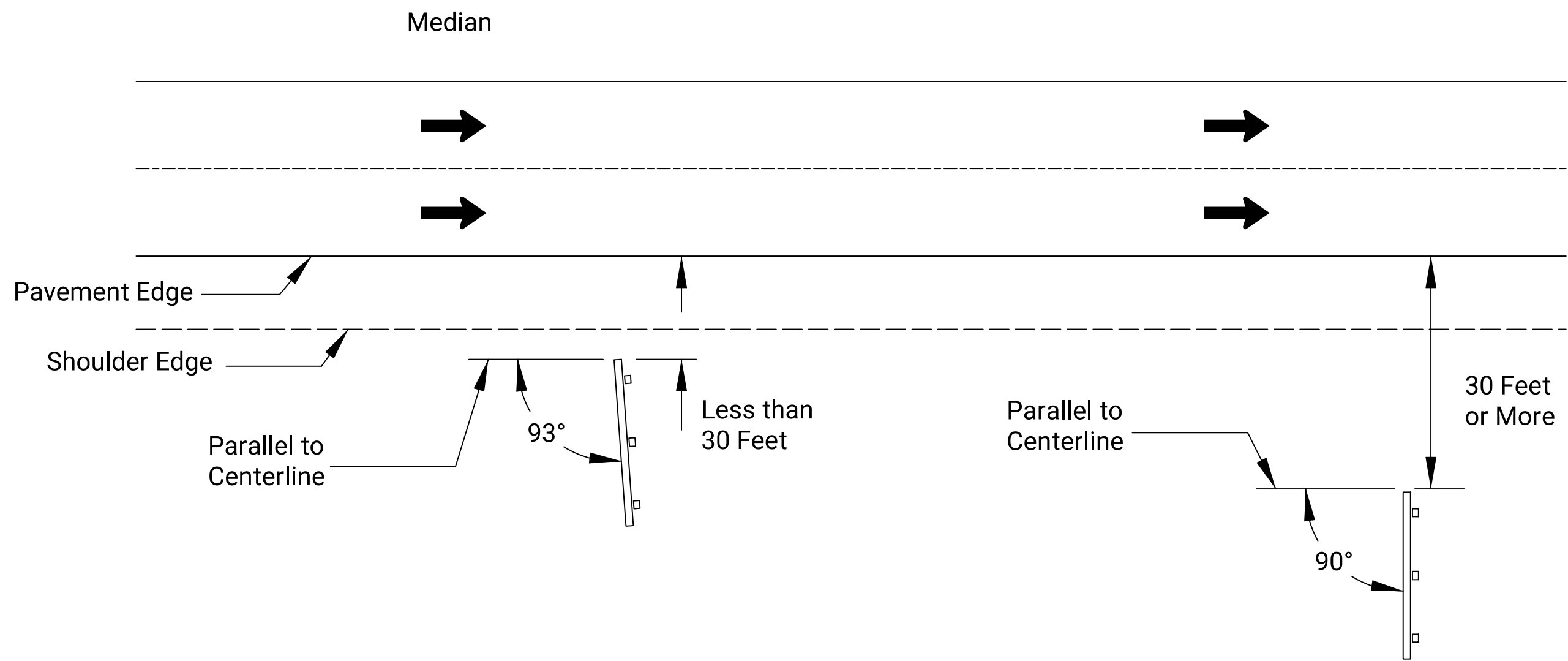
INDEX OF SHEETS

- SIGNING INDEX, SYMBOLS, & GENERAL NOTES
- POST SPACING & SIGN ANGLE DETAILS
- HEIGHT & LATERAL DISTANCE FOR ERECTION
- POSITIONING, DESIGN, & MOUNTING OF DELINEATORS
- POSITIONING, DESIGN, & MOUNTING FOR OBJECT MARKERS (TYPE 2 & 3)
- PLAN SHEETS (INSTALLATIONS)
- PLAN SHEETS (REMOVALS)
- QUANTITIES SHEETS (INSTALLATIONS)
- QUANTITIES SHEET (DELINEATORS & OBJECT MARKERS)
- SUMMARY SHEET (INSTALLATIONS & REMOVALS)
- RECAPITULATION SHEET
- STANDARD STRUCTURAL SIGN SUPPORTS (WOOD & STEEL POSTS)
- MOUNTING OF REINFORCED PANEL SIGNS ON I-BEAM POSTS
- DETAILS FOR FLAT SHEET SIGN BLANKS
- DETAILED SIGN SPECIFICATIONS

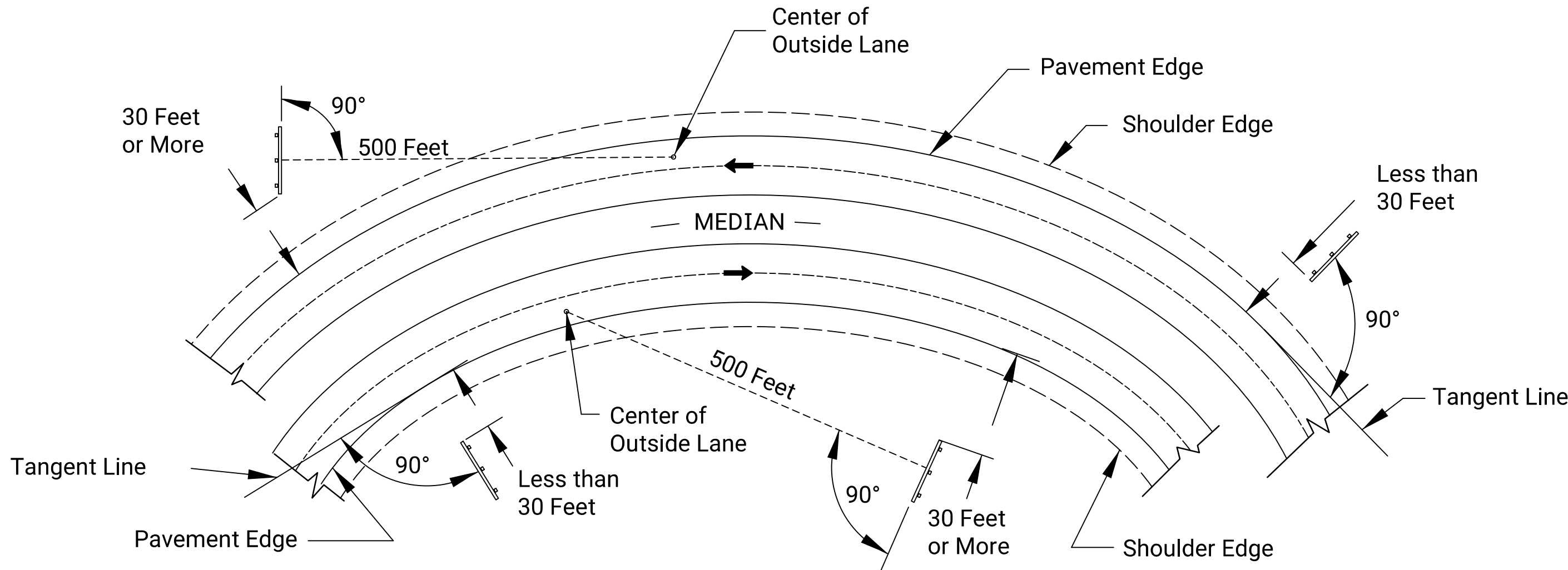
2	10/01/19	Changed symbols, notes, & index			D.D.G. E.W.N.
1	7/23/10	Changed General Notes and Spec Book Date			D.D.G. D.B.
NO.	DATE	REVISIONS			BY APP'D
<div><div><div><div>KANSAS DEPARTMENT OF TRANSPORTATION</div><div>SIGNING SYMBOL KEY</div><div>GENERAL NOTES</div><div>AND INDEX</div></div></div><div>TE402</div><div>7/1/03</div></div>					
FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central\01\d2293301\KA571401pss404-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	107	200

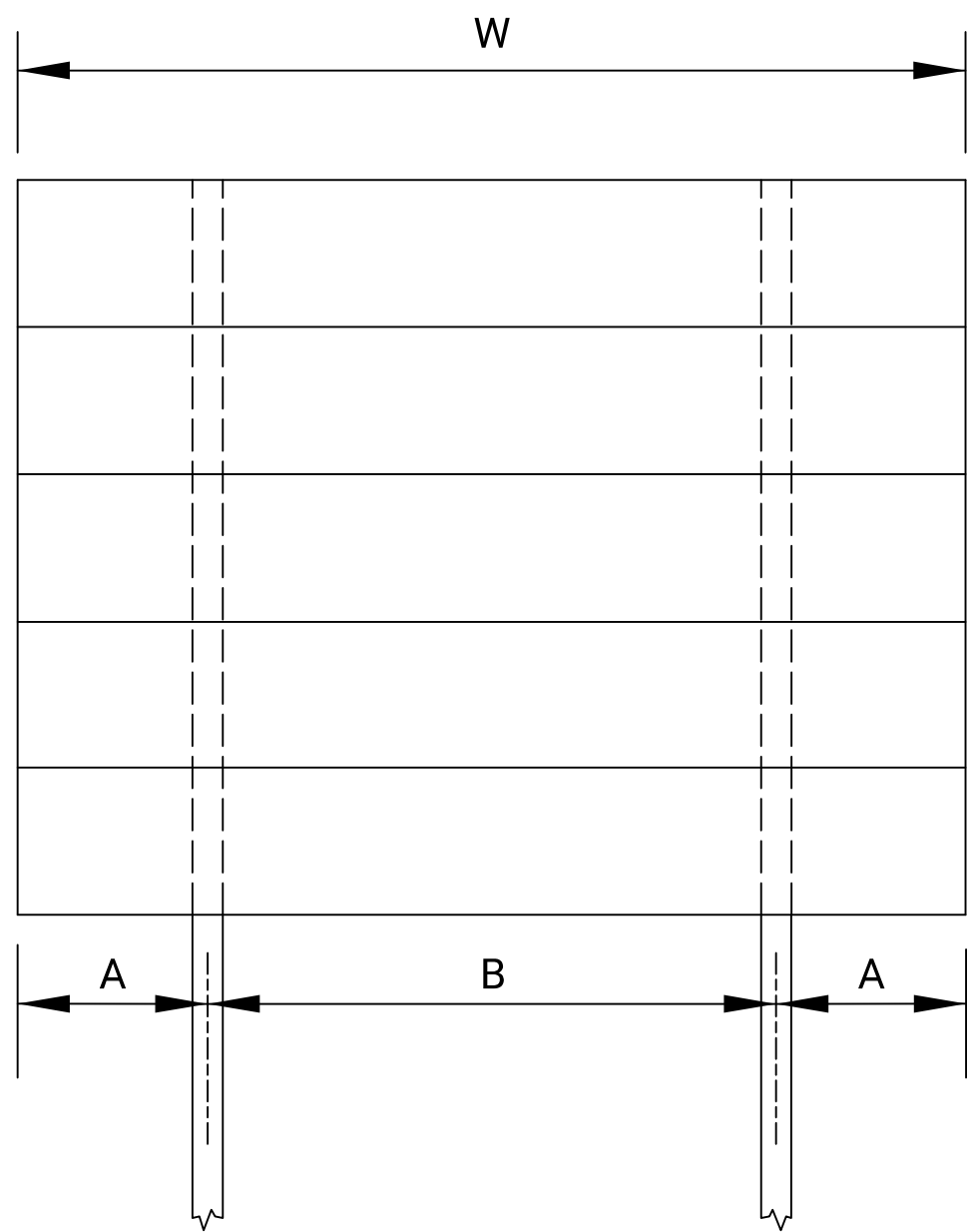


ANGLE OF SIGNS ERECTED ON STRAIGHT ROADWAY



ANGLE OF SIGNS ERECTED ON CURVED ROADWAY

GENERAL NOTE:  
Gore and median signs shall normally be erected such that the sign face is truly vertical and rotated 93 degrees away from the center of the lane which the sign serves. All angles are measured to the face of the sign.



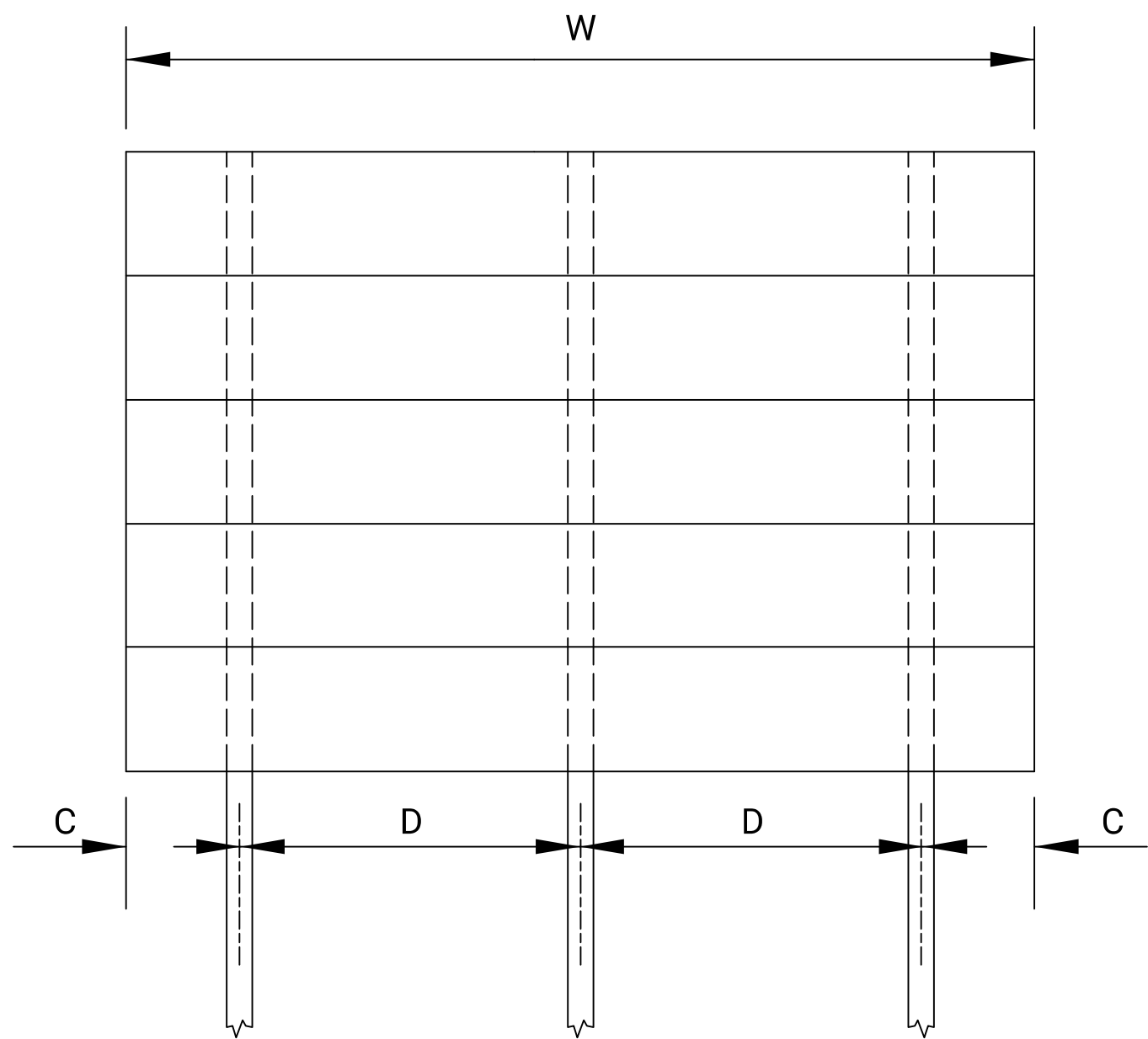
TWO POST SPACING

Wood Post		
A	B	W
6" (Min.)	$\frac{3}{8}$ W (Min.)	NA

Steel Beam Post (Width less than or equal to 13'-0")		
A	B	W
12" (Min.)	8'	10'-0" (Min.)

Steel Beam Post (Width greater than 13'-0")		
A	B	W
32" (Min.)	8' (Min.)	13'-6" (Min.)

Spacing Pattern: A+B+A  
W= Sign Width  
A=  $\frac{1}{5}$  W  
B=  $\frac{3}{8}$  W



THREE POST SPACING

Wood Post		
C	D	W
6" (Min.)	4' (Min.)	9'-0" (Min.)

Steel Beam Post (Width less than or equal to 21'-0")		
C	D	W
12" (Min.)	8'	18'-0" (Min.)

Steel Beam Post (Width greater than 21'-0")		
C	D	W
32" (Min.)	8' (Min.)	21'-6" (Min.)

Spacing Pattern: C+D+D+C  
W= Sign Width  
C=  $\frac{1}{5}$  W  
D=  $\frac{3}{8}$  W

NOTE: All spacing dimensions are measured to the centerline of the posts.

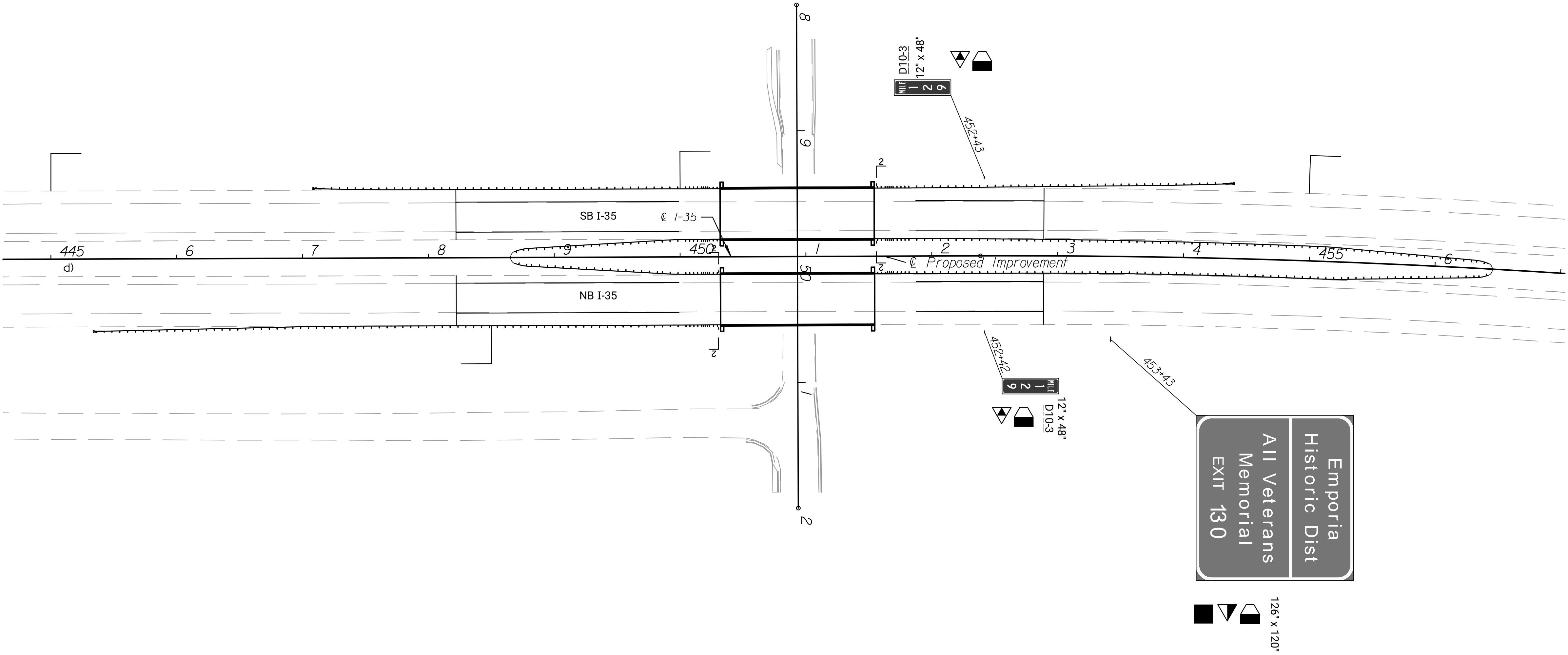
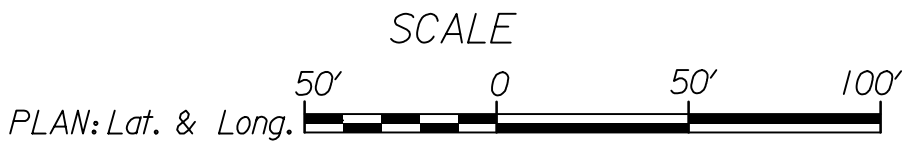
POST SPACING FOR REINFORCED PANEL SIGNS

NO.	DATE	REVISIONS	BY	APPD
1	10/01/19	Changed the post spacing tables and notes	D.D.G.	E.W.N.
KANSAS DEPARTMENT OF TRANSPORTATION				
POST SPACING FOR REINFORCED PANEL SIGNS AND ANGLE OF SIGNS				
TE404				
7/1/03				
FHWA APPROVAL				
DESIGNED				
DESIGN CK.				
10/01/2019				
APPD				
Steven A. Buckley				
D.D.G.				
QUANTITIES				
TRACED				
D.D.G.				
QUAN. CK.				
TRACE CK.				

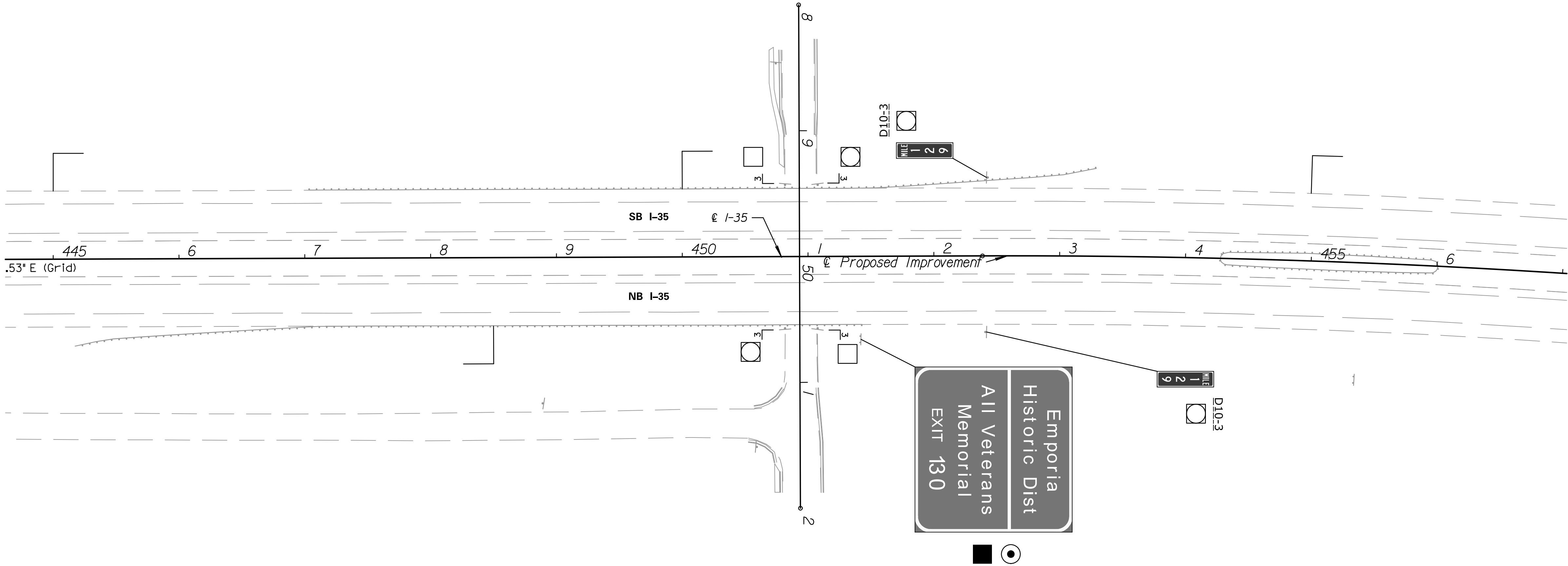
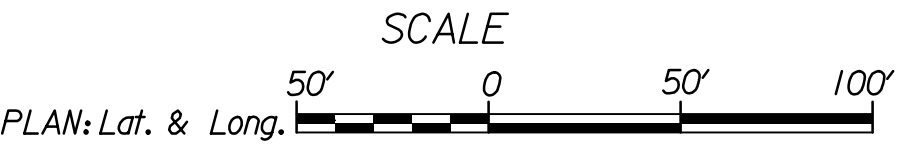




STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	109	200



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	110	200



KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING REMOVAL PLAN





Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central01\d2293301\KA571401pss439-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	112	200

SUMMARY OF QUANTITIES

SIGNS		
TYPE	NUMBER	SQUARE FEET
FLAT SHEET	2	8
REINFORCED PANEL		
OVERLAY		

DELINEATORS				
TYPE	FLEXIBLE DELINEATOR		RIGID DELINEATOR	
	TYPE I ANCHOR	TYPE III ANCHOR	"U" POST	BRACKET MOUNT
TYPE 'A' WHITE			4	
TYPE 'A' YELLOW				
TYPE 'B' WHITE				
TYPE 'B' YELLOW				
TYPE 'A' WHITE (BACK TO BACK)				
TYPE 'A' YELLOW (BACK TO BACK)				

OBJECT MARKERS			
TYPE			NUMBER
TYPE 2 ("U" POST)			4
TYPE 3 ("U" POST)			
INFORMATION ONLY	OM3-L		
	OM3-R		
	OM3-C		
TYPE 3 ("U" POST) (BACK TO BACK)			

NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)																
LENGTH OF POST OR BEAM	4" x 6" POST			312.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
2.1' - 4'																
4.1' - 6'																
6.1' - 8'																
8.1' - 10'					2											
10.1' - 12'																
12.1' - 14'																
14.1' - 16'																
16.1' - 18'																
18.1' - 20'																
20.1' - 22'																
22.1' - 24'																
24.1' - 26'								2	2							
26.1' - 28'																
28.1' - 30'																
30.1' - 32'																

POSTS AND ALUMINUM BEAMS																
	4" x 6" POST			312.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
NUMBER					2			2	2							
FEET					19			51	51							

POST FOOTINGS AND BRACKETS											
	CONCRETE FOOTING (DIA.)					PERFORATED SQUARE STEEL					
	WOOD	A36 STEEL		A572 STEEL (ALT)		TUBE FOOTING				BRACKET	
		18"	24"	30"	24"						
NUMBER		2		2							
FEET		16		16							

BASE PLATES AND STUB POSTS						
	W6x9		W10x12		W10x22	
	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)
BREAKAWAY BASES						
BASE PLATE (TOP)			2	2		
STUB POST WITH BASE PLATE			2	2		
NON-BREAKAWAY BASES						
BASE PLATE						

REMOVALS	
TYPE	NUMBER
SIGNS	6
POSTS	6
FOOTINGS	2
SIGN STRUCTURES	

SIGN STRUCTURES				
TYPE	NEW	MODIFIED	REMOVE AND RESET	RESET
OVERHEAD STRUCTURE				
CANTILEVER STRUCTURE				
BUTTERFLY STRUCTURE				
BRIDGE MOUNT ATTACHMENT				
MAST ARM SIGN SUPPORT				
SINGLE TAPERED TUBE SIGN SUPPORT				

2	10/01/19	Revised Tables		D.D.G.	E.W.N.
1	7/23/10	Revised Tables		D.D.G.	D.B.
NO.	DATE	REVISIONS		BY	APP'D
KANSAS DEPARTMENT OF TRANSPORTATION SUMMARY OF QUANTITIES FOR INSTALLATIONS AND REMOVALS					
TE439			7/1/03		
FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

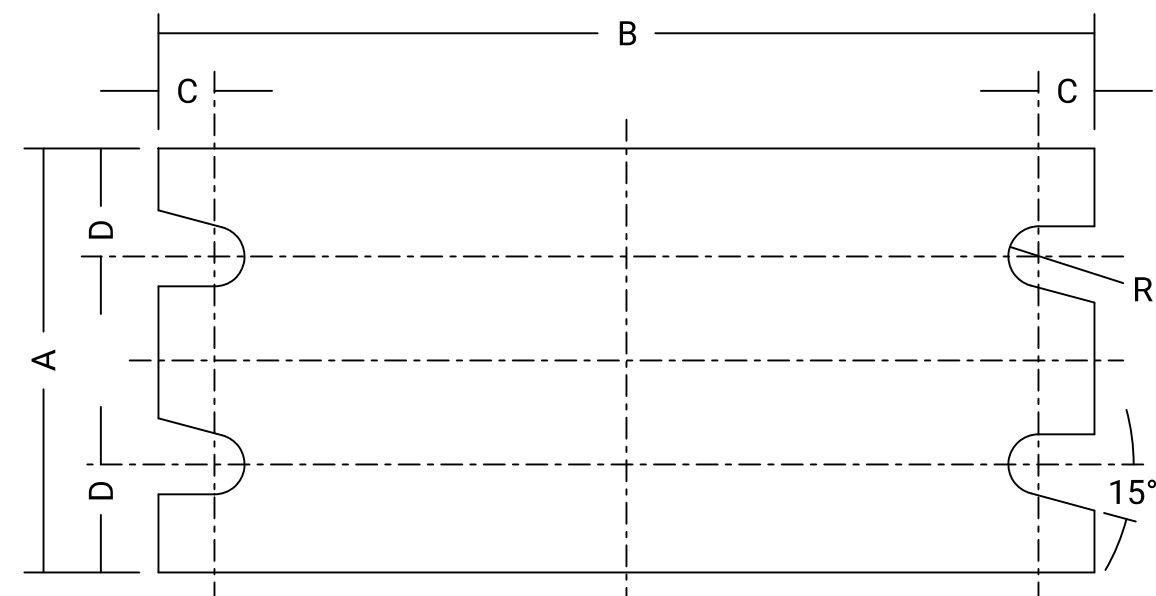




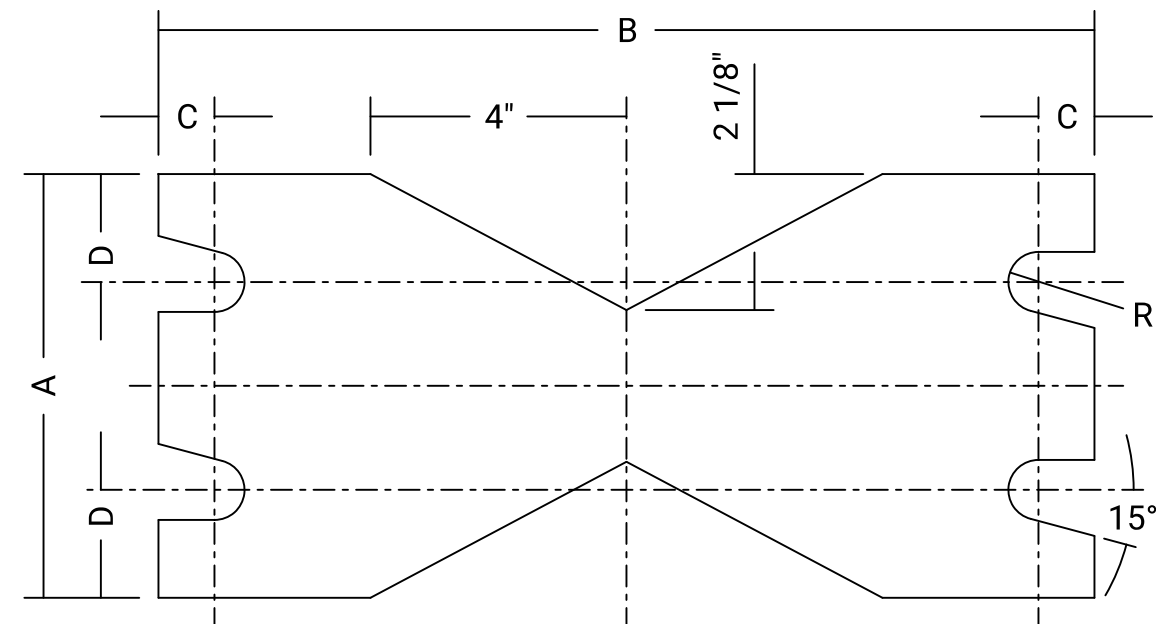


Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central01\d2293301\KA571401pss463-01.dgn

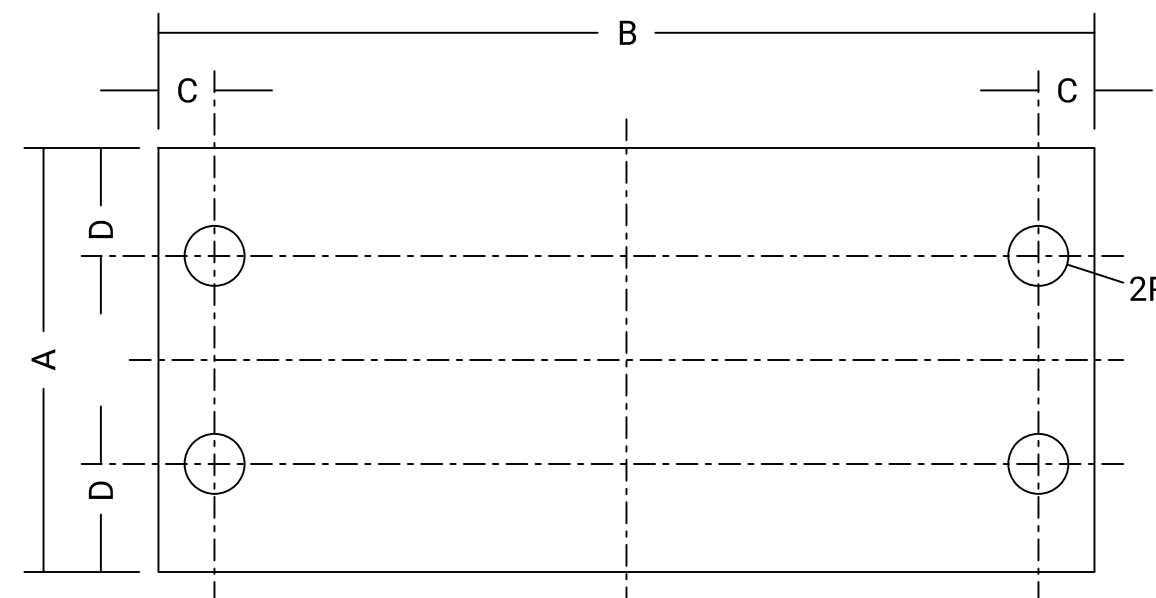
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	115	200



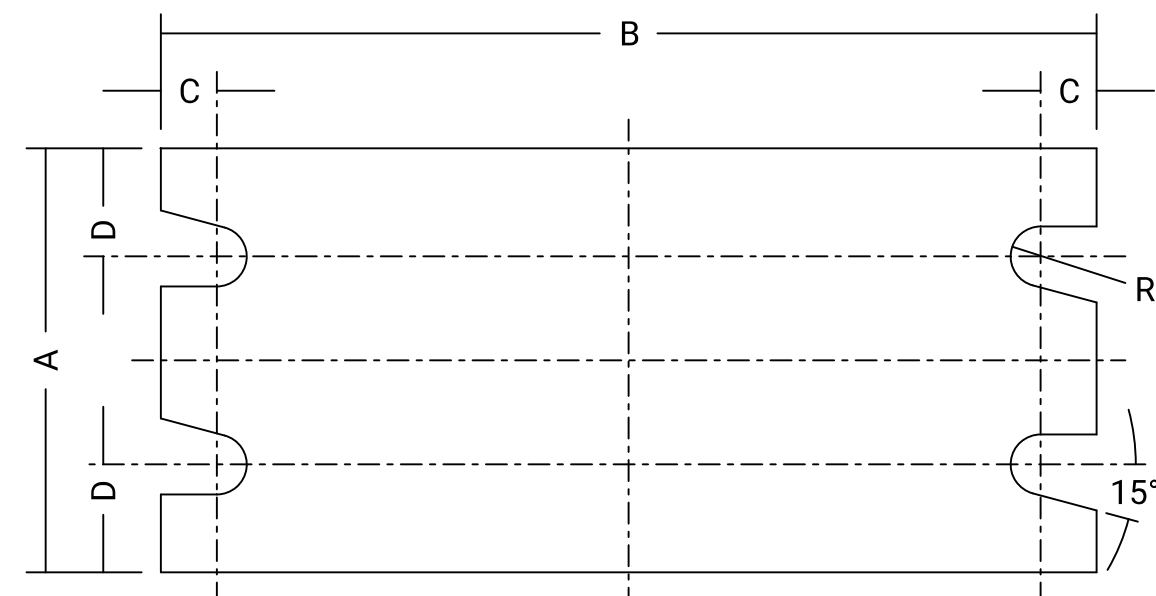
W6 X 9 and W10 X 12 POSTS



W10 X 22 POSTS  
SIGN POST BASE PLATE



BOLT RETAINER PLATE

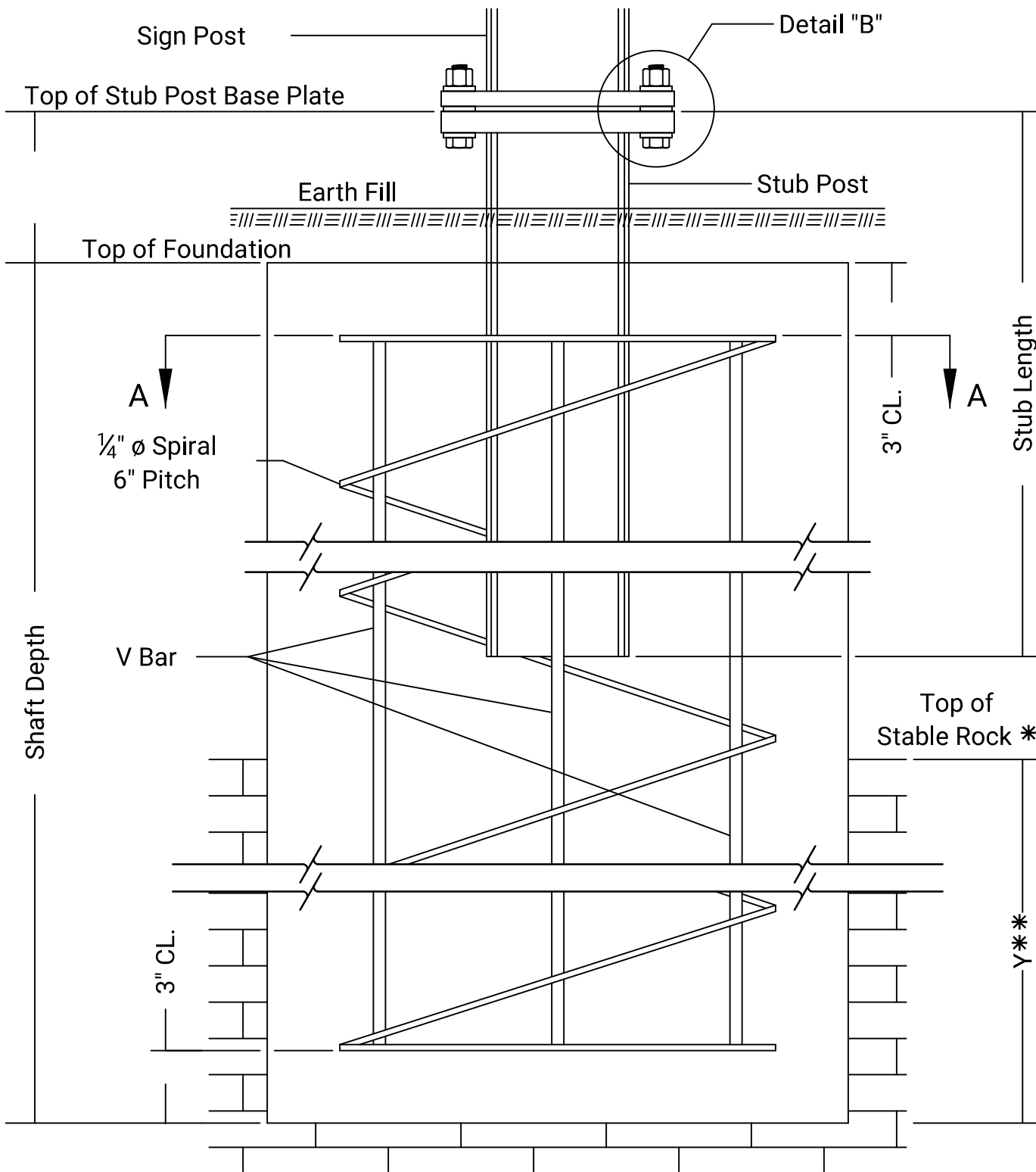


STUB POST BASE PLATE

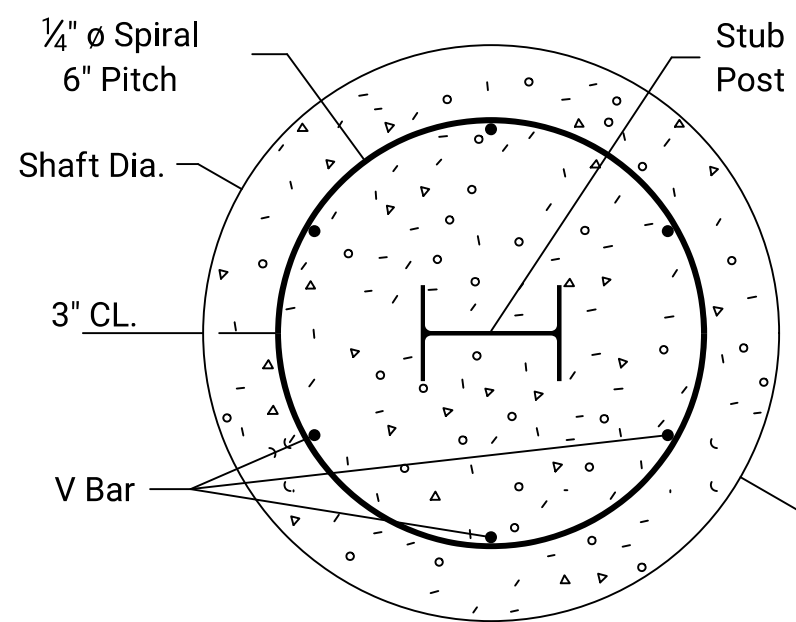
NOTE:  
The plates shown are for right shoulder or gore installations. The plate slot bevls are to be reversed for left shoulder installations. The sign post and stub post are to be centered on base plates.

BASE CONNECTION DATA TABLE										
POST SIZE	BOLT SIZE	TORQUE (IN. LBS.)	WS	T1	T2	A	B	C	D	R
W6 X 9	5/8" X 3"	345	1/4"	7/8"	5/8"	4 3/8"	9 3/8"	3/4"	1 1/16"	1 1/32"
W10 X 12	5/8" X 3 1/4"	345	1/4"	1"	3/4"	4 3/8"	13 3/8"	3/4"	1 1/16"	1 1/32"
W10 X 22	7/8" X 4"	640	3/8"	1 3/8"	1"	6 3/8"	14 3/8"	7/8"	1 1/16"	1 5/32"

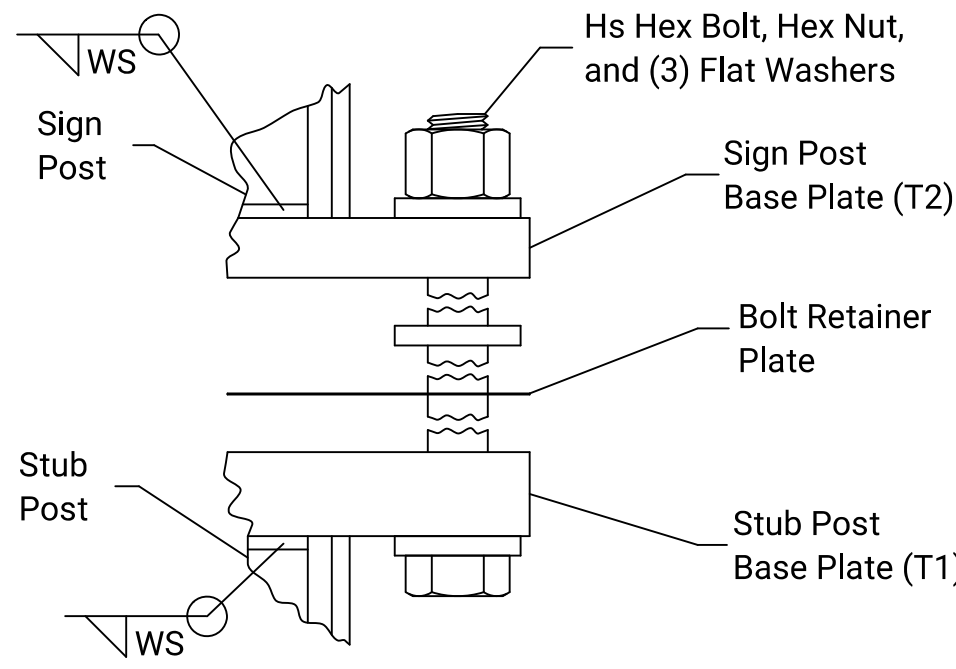
T1: Stub Post Base Plate Thickness  
T2: Sign Post Base Plate Thickness



SIDE ELEVATION



SECTION A-A



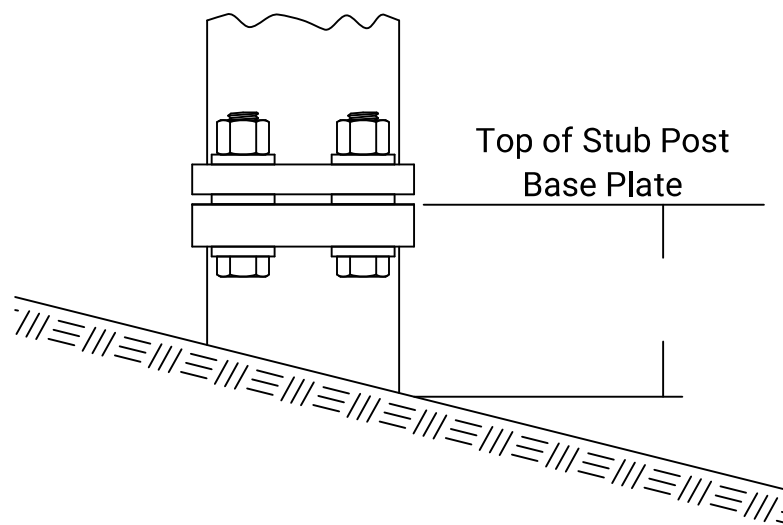
DETAIL "B"

GENERAL NOTES

All structural steel shall conform to ASTM A36 or A572 Grade 50. Alternates using ASTM A588 or A242 Grade 50 or other approved steels may be substituted for ASTM A572 steel. All structural steel shall be galvanized in accordance with ASTM A123 after fabrication. All high strength bolts, nuts, and washers shall conform to ASTM A325 and shall be coated in accordance with the coating specifications. The bolt retainer plate is to be 30 gauge sheet steel and galvanized in accordance with ASTM 123 after fabrication. If galvanized sheet steel is used, no other galvanization is required. Commercial grade concrete may be substituted for sign support footings.

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION

1. Assemble sign post base plate to stub post base plate with bolts, nuts, washers, and bolt retainer plate. Washers are to be installed on top of the sign post base plate, bottom of the stub post base plate, and between the sign post base plate and bolt retainer plate for each bolt.
2. Plumb post by varying thickness of washers between sign post base plate and bolt retainer plate.  
NOTE: no washers or shims are to be placed between the bolt retainer plate and stub post base plate.
3. Tighten all bolts the maximum possible with a 12 to 15 inch wrench to bed washers and shims and to clean bolt threads. Loosen each bolt in turn and retighten in a systematic order to the prescribed torque (see table). Do not over tighten.
4. Burr threads at junction with nut using a center punch to prevent nut loosening.



FRONT ELEVATION

NOTE TO THE ENGINEER:  
The intent of the "AASHTO Roadside Design Guide" and these plans is to have a 4" or less projection above the finished ground line after impact.

All dimensions are in inches, unless otherwise noted.

1	10/01/19	Removed 53x5.7 post and revised notes		D.D.G.	E.W.N.
NO.	DATE	REVISIONS		BY	APPD
KANSAS DEPARTMENT OF TRANSPORTATION DETAILS FOR STEEL BEAM BREAKAWAY POSTS SHEET 1 OF 2					
TE463					
7/1/03					
FHWA APPROVAL		10/01/2019	APPD	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK	D.D.G.	QUAN. CK.	TRACE CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	116	200

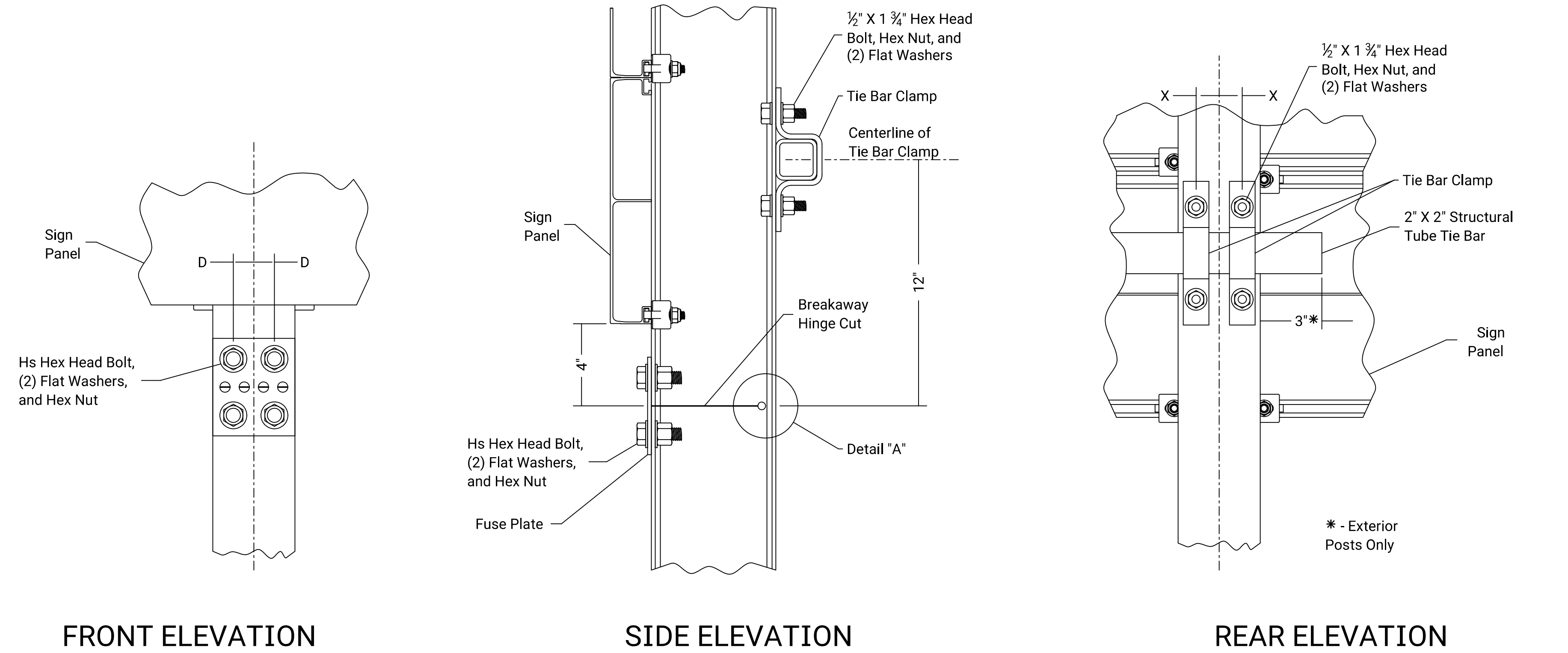
GENERAL NOTES

Fuse plate steel shall conform to ASTM A36 (no substitutes will be allowed). All other structural steel shall conform to ASTM A36 or A572 Grade 345. Alternates using ASTM A588 or A242 Grade 345 or other approved steels may be substituted for ASTM 572 steel. All structural steel shall be galvanized in accordance with ASTM A123 after fabrication.

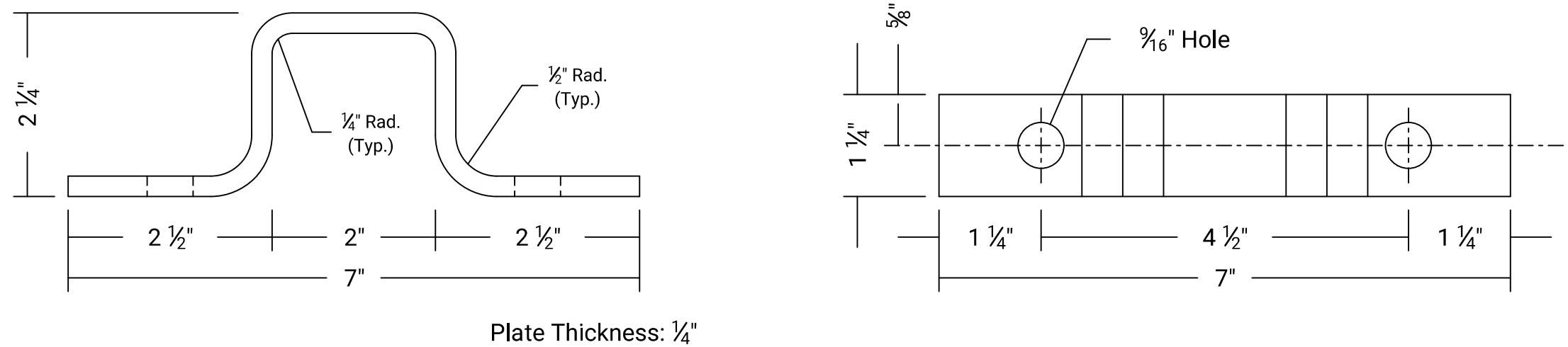
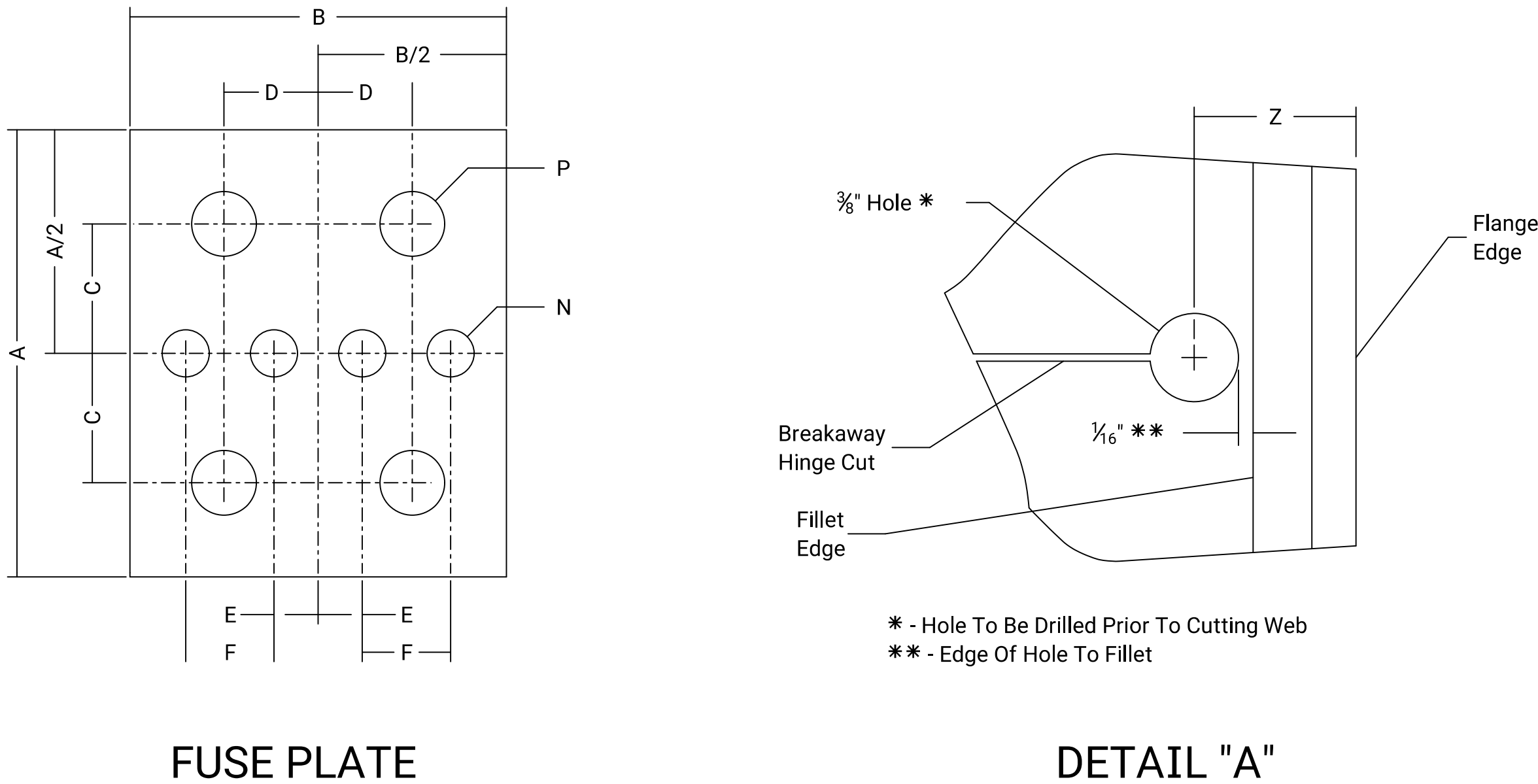
All high strength bolts, nuts, and washers shall conform to ASTM A325 and shall be coated in accordance with the coating specifications.

The fuse plate shall be centered on the saw cut and the steel post.

It is permissible to close the ends of the structural tubing tie bar with a steel plate.



BREAKAWAY HINGE AND STRUCTURAL TUBE TIE BAR INSTALLATION



FUSE DATA TABLE												
POST SIZE	BOLT SIZE	A	B	C	D	E	F	N	P	T3	X	Z
W 6 X 9	5/8" X 1 3/4"	4 3/4"	4"	1 3/8"	1"	1 5/32"	1 5/16"	1/2"	1 1/16"	3/16"	1 1/8"	1 3/16"
W 10 X 12	3/4" X 2"	4 3/4"	4"	1 3/8"	1"	1 5/32"	1 5/16"	1 5/32"	1 3/16"	1/4"	1 1/8"	7/8"
W 10 X 22	1" X 2 1/2"	6"	5 3/4"	1 1/2"	1 3/8"	1 1/16"	1 3/8"	2 1/32"	1 1/16"	5/16"	1 3/8"	1"

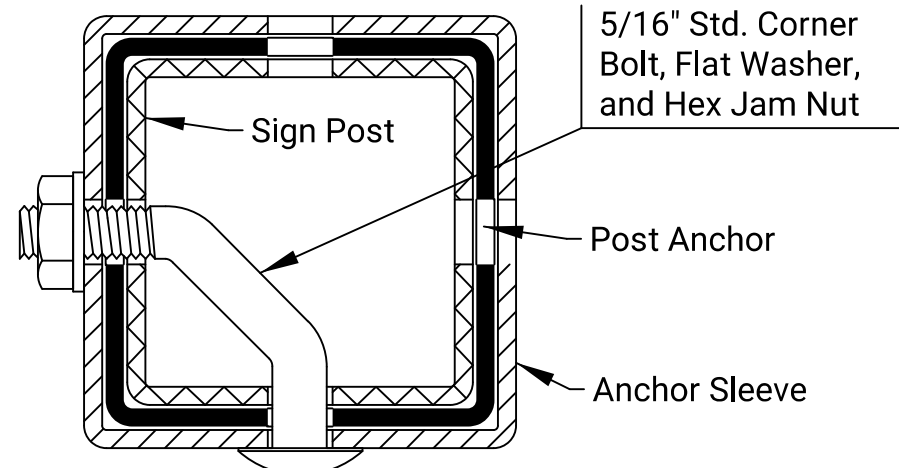
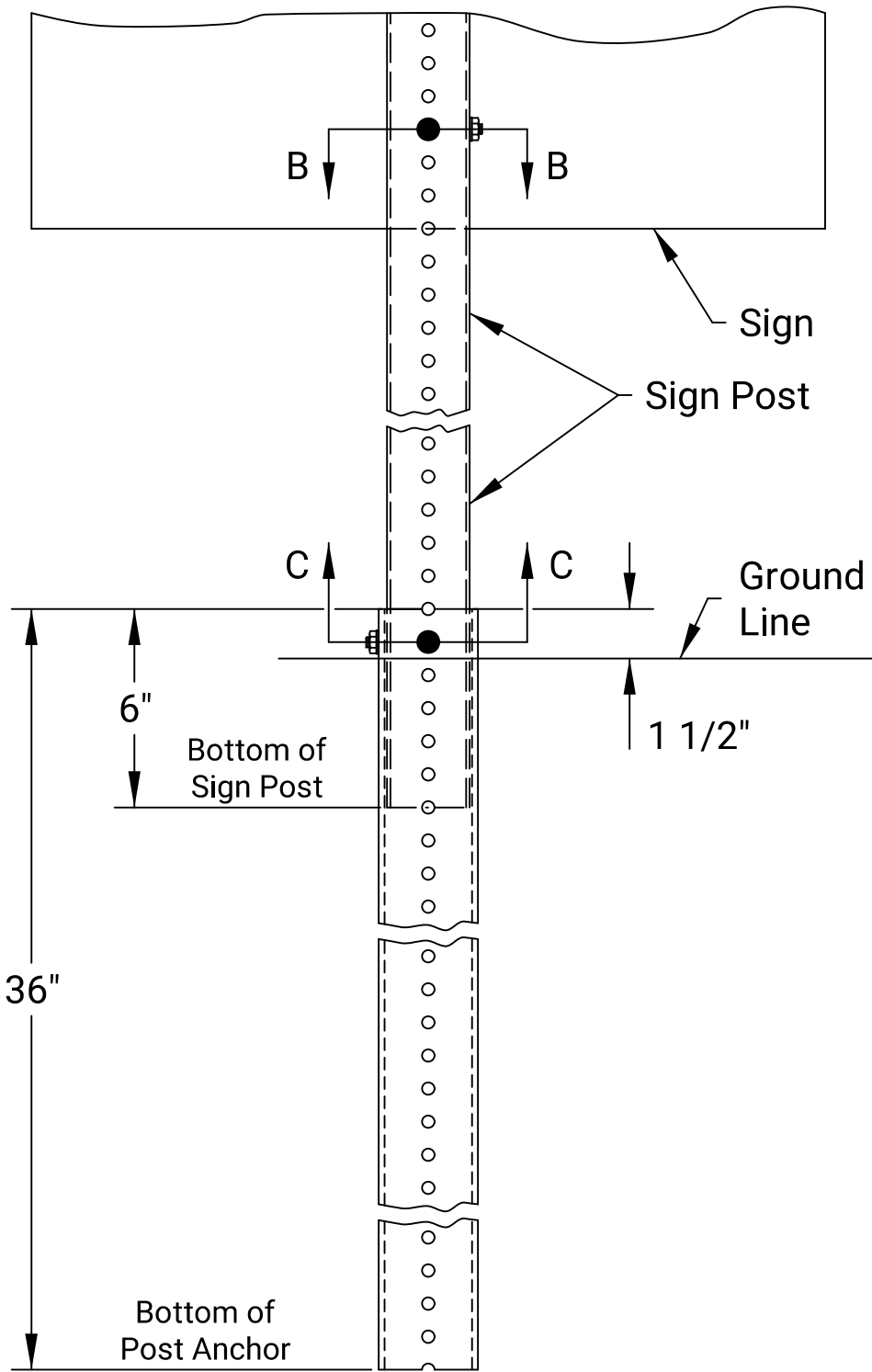
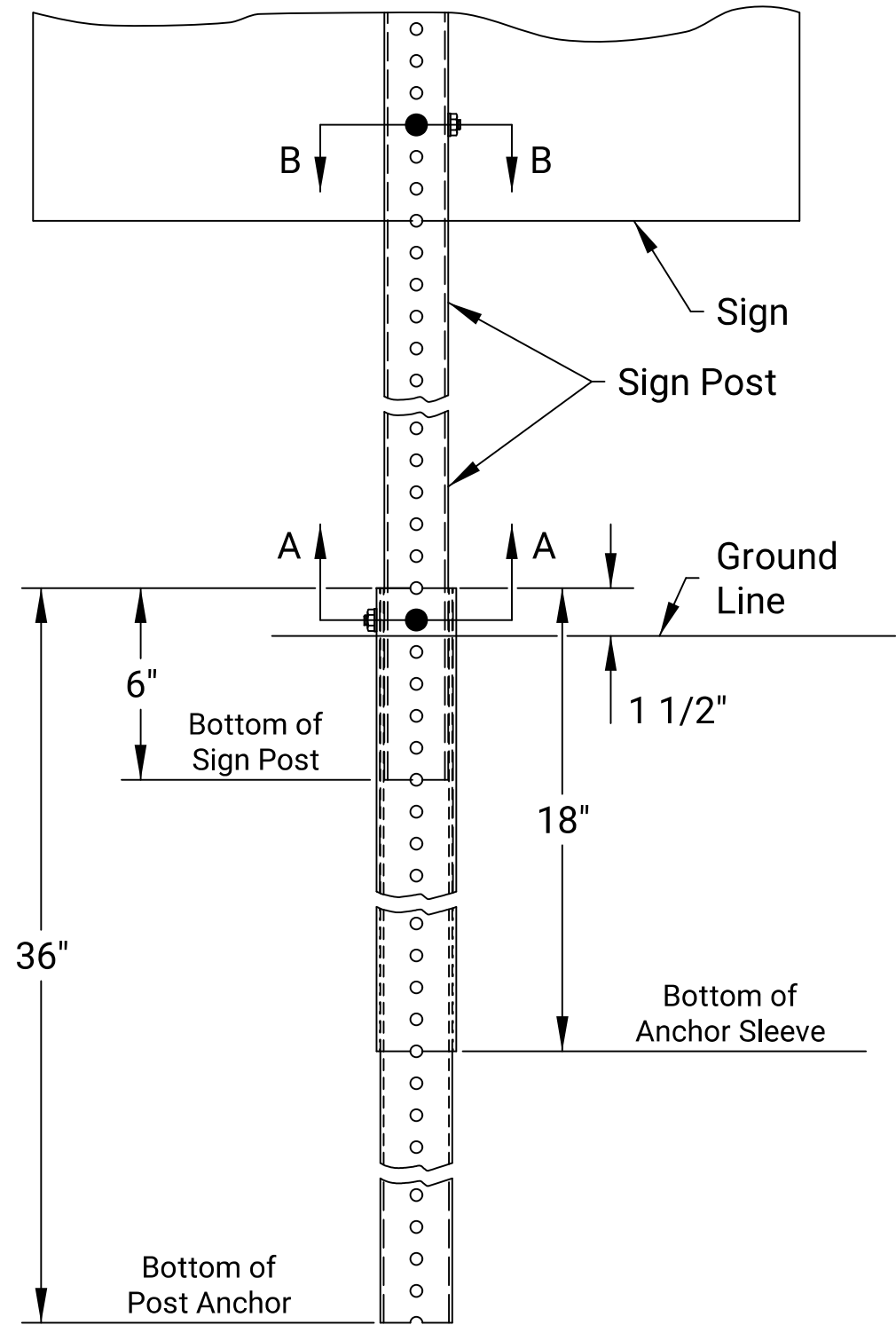
Dimensions "N" And "P" are Hole Diameters.  
Dimension "T3" is the Fuse Plate Thickness.  
Dimension "Z" is to the Center of the Hole.

All dimensions are in inches, unless otherwise noted.

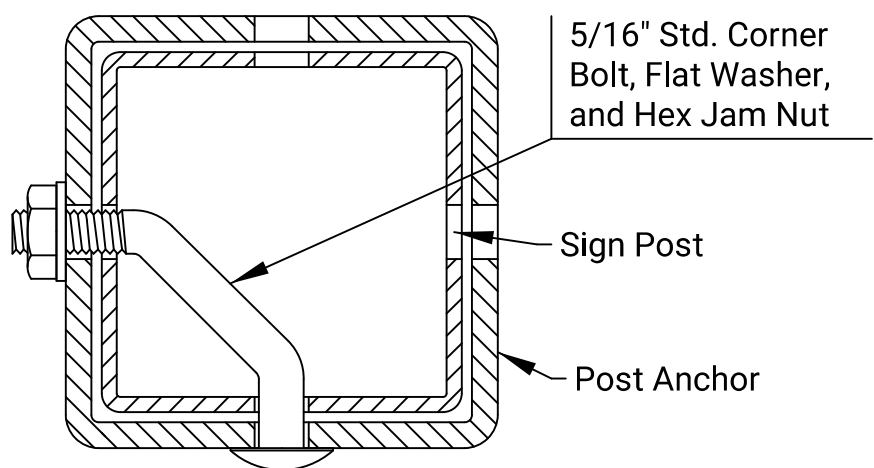
KANSAS DEPARTMENT OF TRANSPORTATION									
DETAILS FOR									
STEEL BEAM BREAKAWAY POSTS									
SHEET 2 OF 2									
TE464		7/1/03							
FHWA APPROVAL		10/01/2019		APPD		Steven A. Buckley			
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED				
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.				



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	117	200



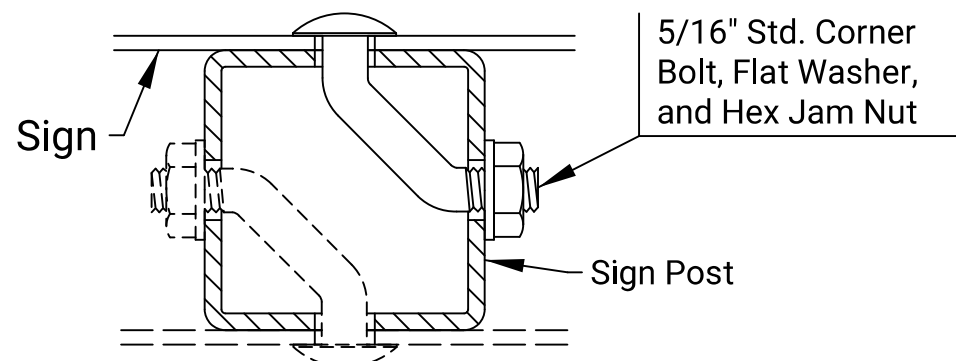
SECTION A-A



SECTION C-C

1 3/4", 2", OR 2 1/4" PSST SIGN POST

2 1/2" PSST SIGN POST



SECTION B-B

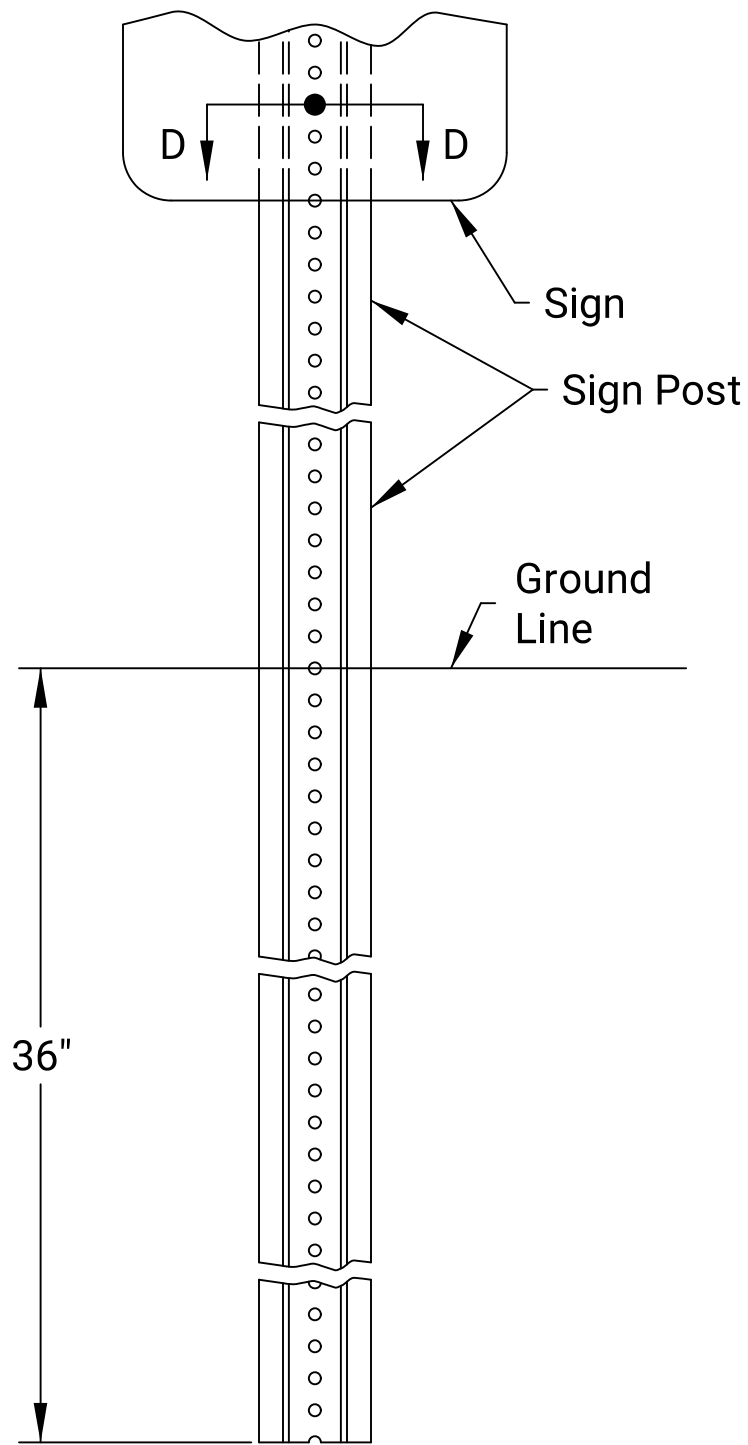
MATERIALS TABLE FOR SIGN POST AND FOOTING		
SIGN POST 12 GA. OR 14 GA.	FOOTING	
	POST ANCHOR	ANCHOR SLEEVE
1 3/4" X 1 3/4"	2" X 2" X 12 GA.	2 1/4" X 2 1/4" X 12 GA.
2" X 2"	2 1/4" X 2 1/4" X 12 GA.	2 1/2" X 2 1/2" X 12 GA.
2 1/4" X 2 1/4"	2 1/2" X 2 1/2" X 12 GA.	3" X 3" X 7 GA.
2 1/2" X 2 1/2"	3" X 3" X 7 GA.	Not Required

NOTE: 14 ga. posts must meet a certified minimum yield strength of 60,000 p.s.i.

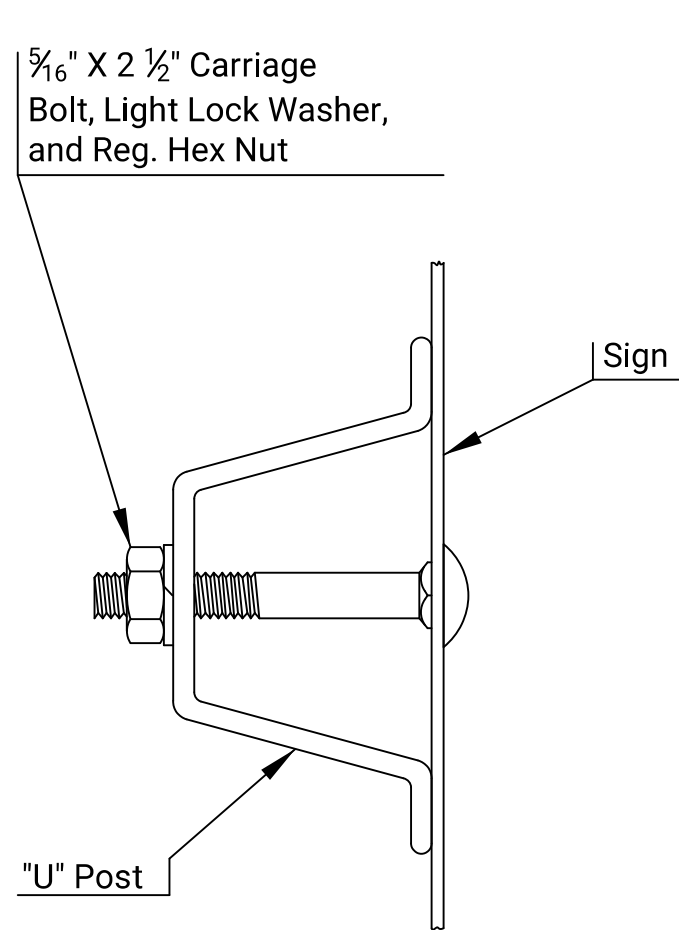
### INSTALLATION PROCEDURES

1. Plumb and drive post anchor into the ground 18", if anchor sleeve is required, or to the specified height above the ground line.
2. Install anchor sleeve (if required) on the post anchor and align the first holes above the ground line. Plumb and drive post anchor with anchor sleeve into the ground to the specified height above the ground line.
3. Install sign post into the post anchor.

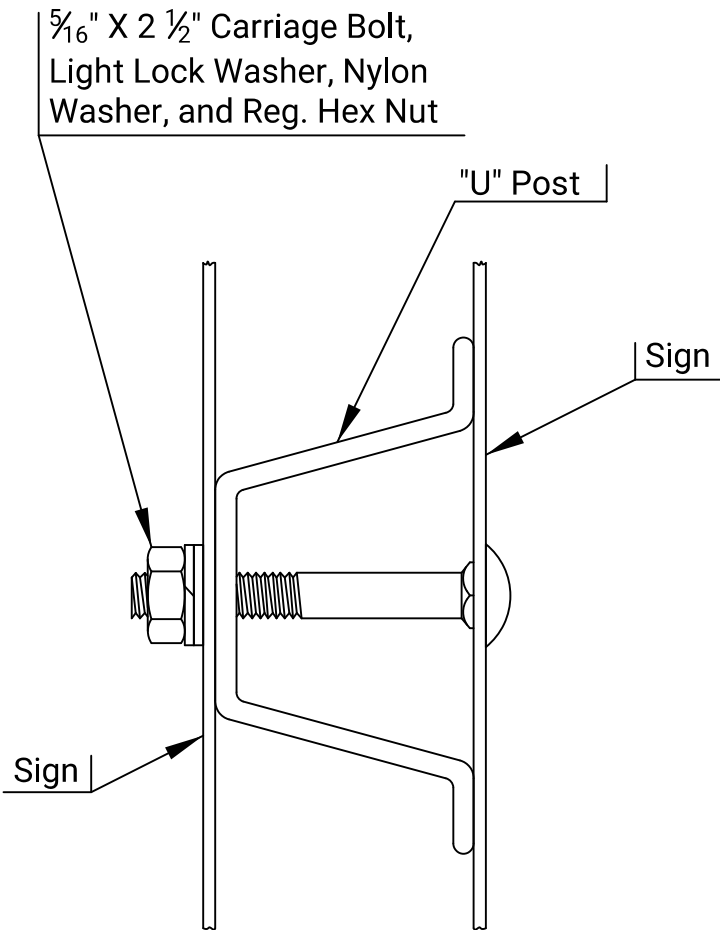
### PERFORATED SQUARE STEEL TUBE POST (PSST)



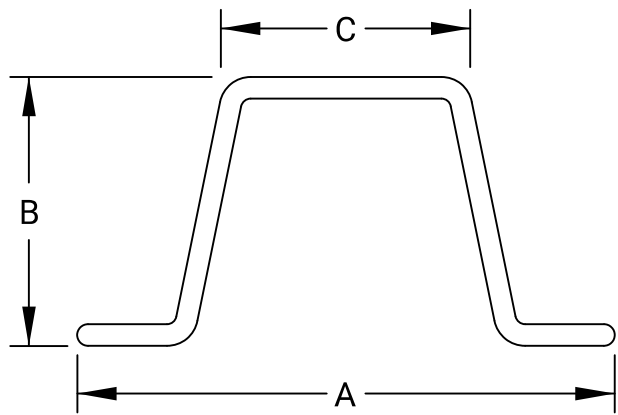
TYPICAL



SECTION D-D  
(TYPICAL)



SECTION D-D  
(BACK TO BACK)



DIM.	2 LBS/FT	3 LBS/FT
A	3 1/8 "	3 1/2 "
B	1 17/32 "	1 3/4 "
C	1 1/4 "	1 5/8 "

(Dimensions are nominal)

"U" POST

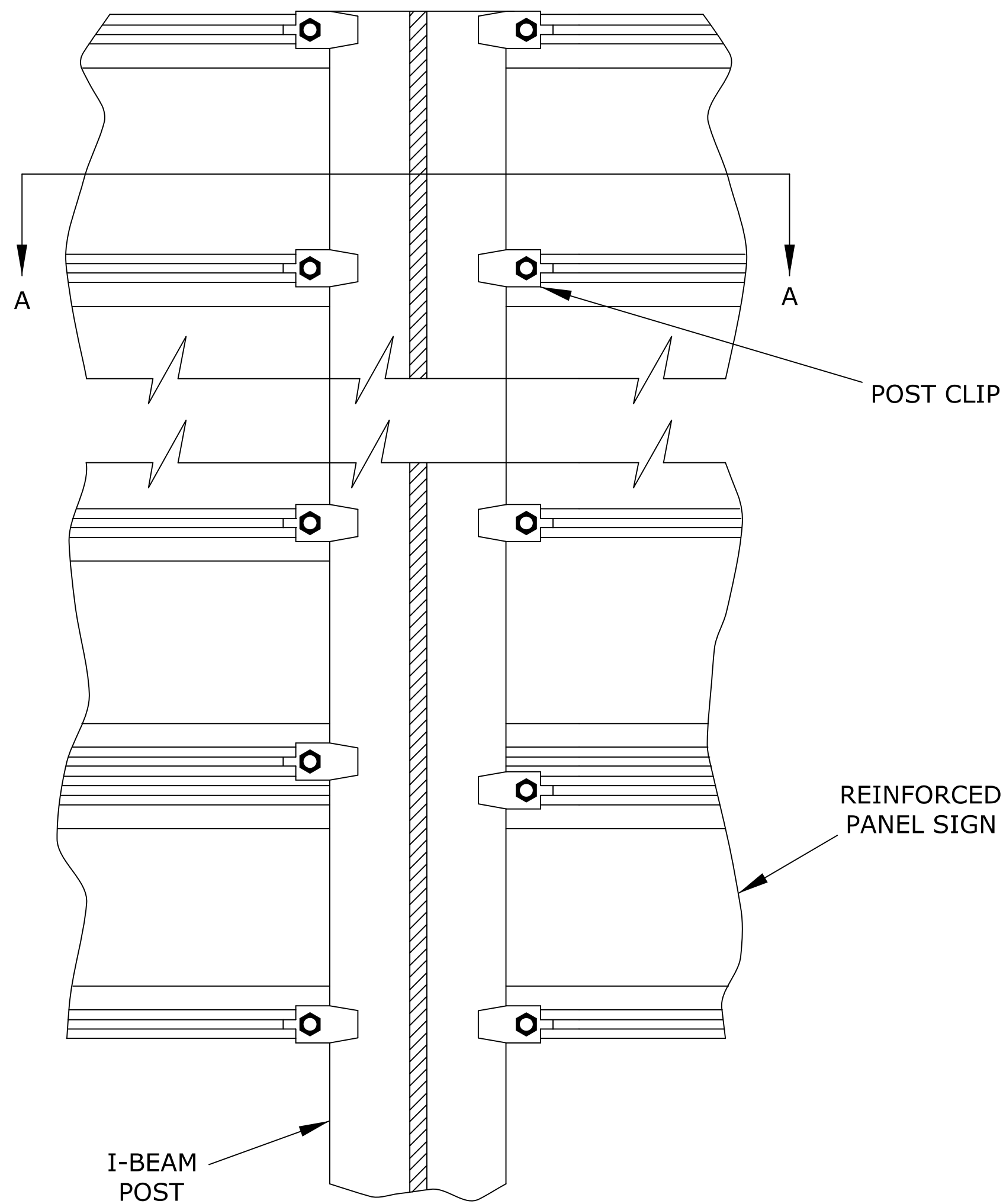
### STEEL "U" POST

NO.	DATE	REVISIONS				BY	APPD
KANSAS DEPARTMENT OF TRANSPORTATION DETAILS FOR PERFORATED SQUARE STEEL TUBE POSTS (PSST) AND STEEL "U" POSTS							
TE466		10/01/2019		APPD	Eric W.Nichol		10/01/2019
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES	TRACED		
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN. CK.	TRACE CK.		

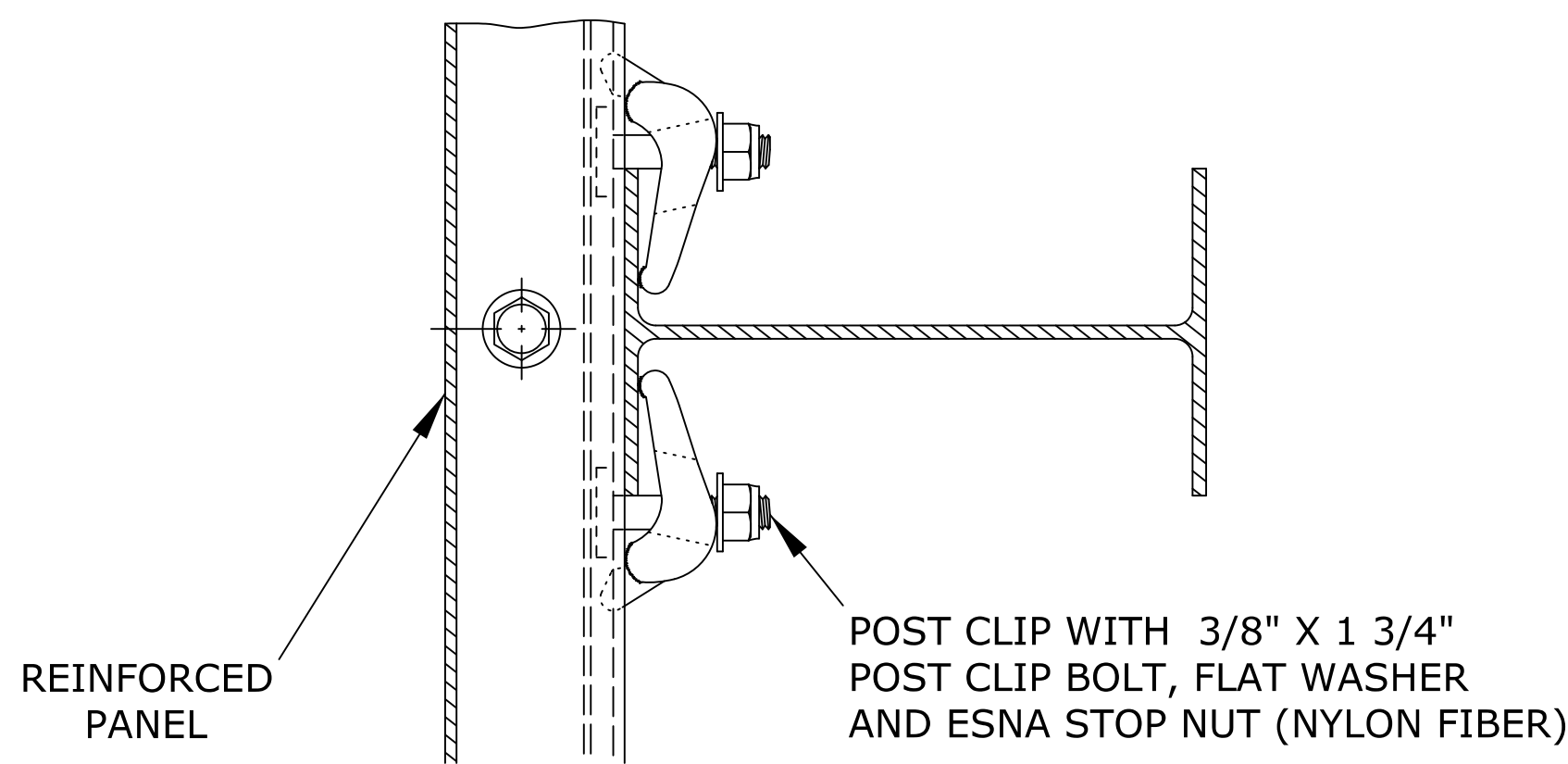
KDOT Graphics Certified 12-17-2019

Sh. No. 117

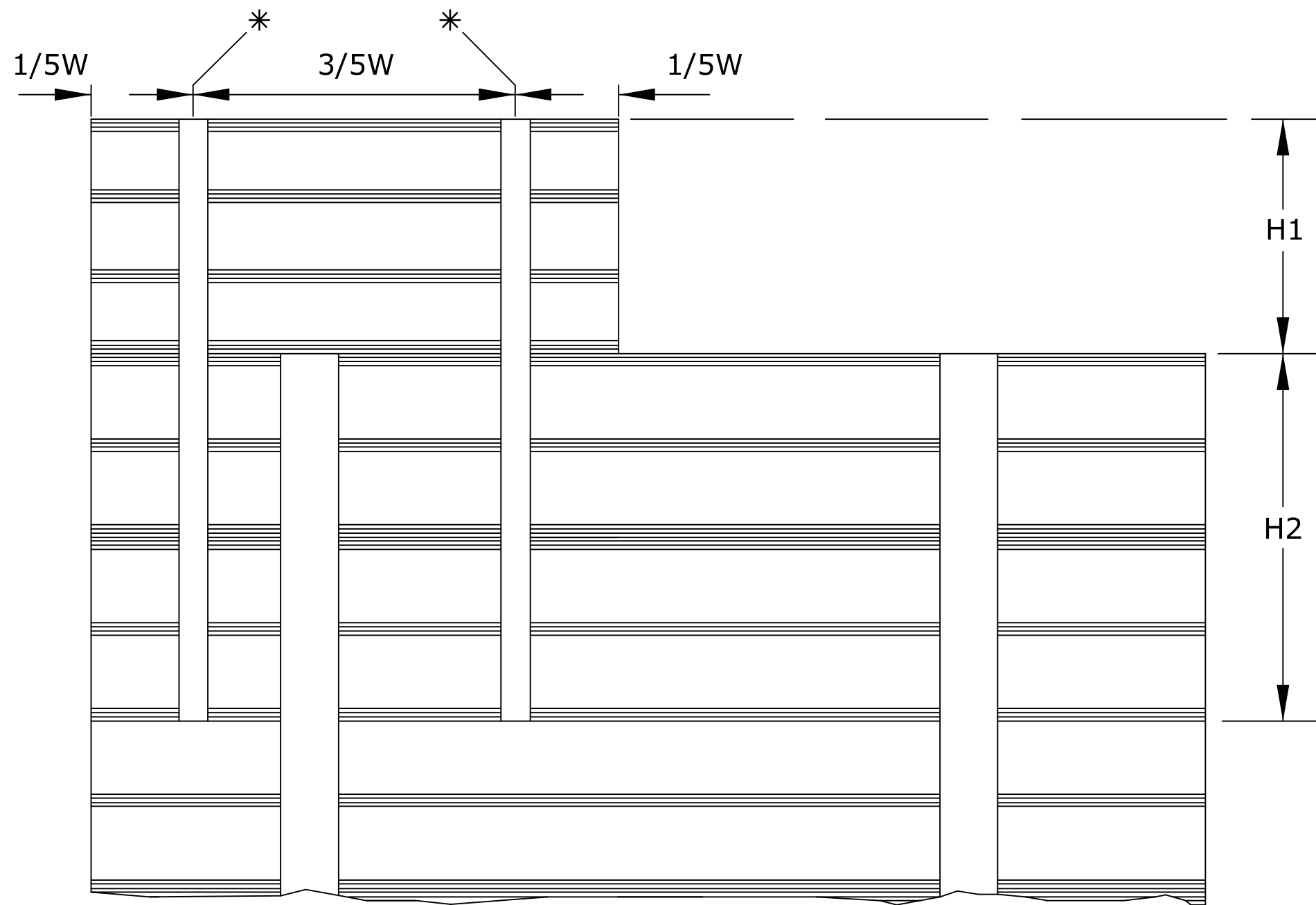
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	118	200



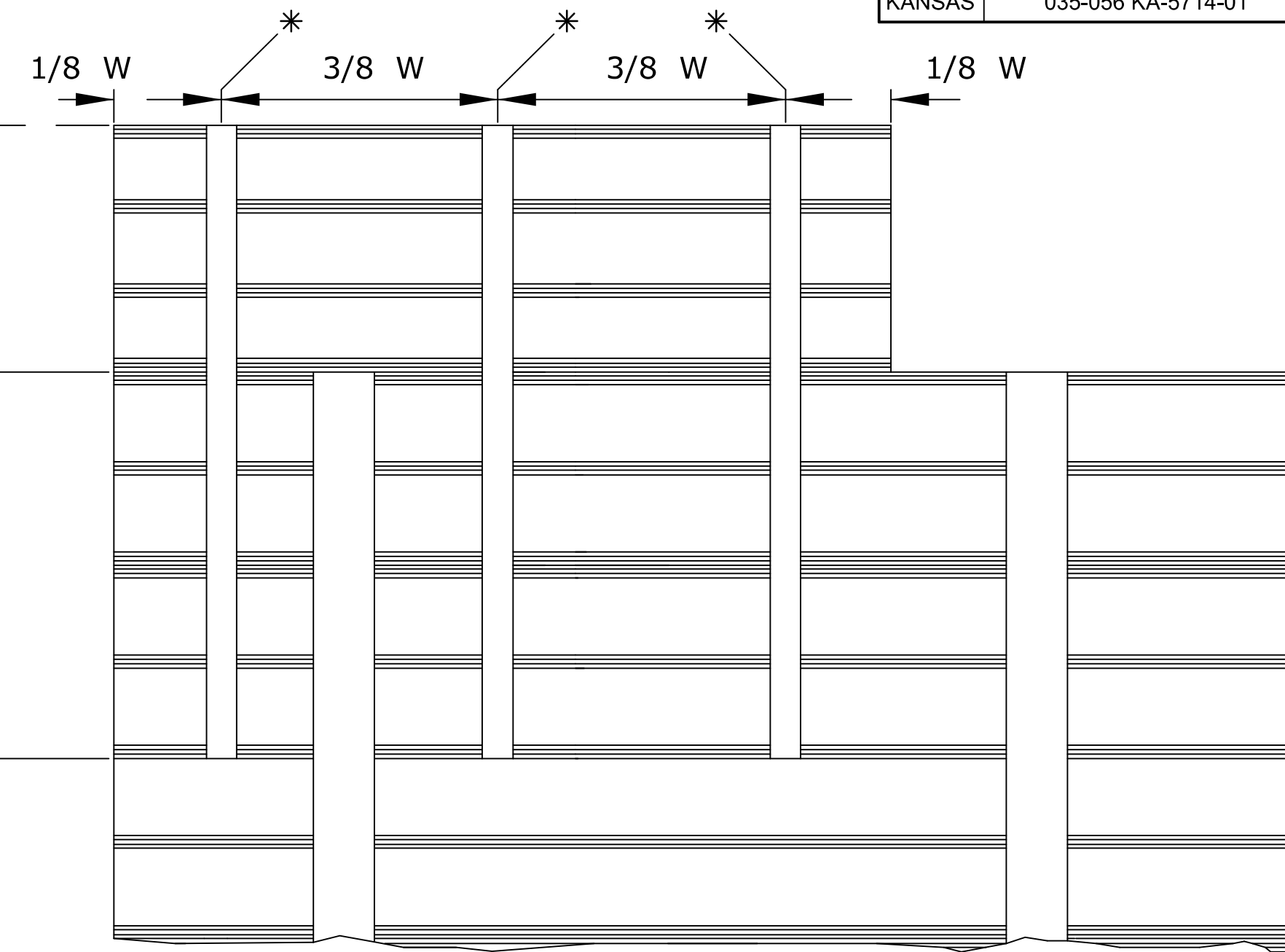
MOUNTING OF REINFORCED  
PANELS TO I-BEAM POST



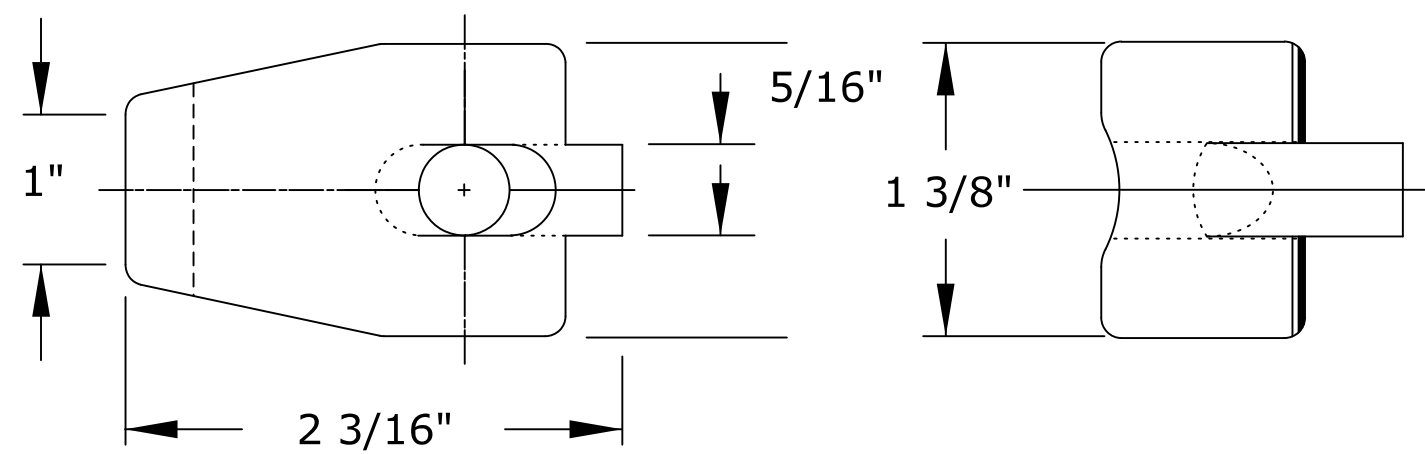
SECTION A-A



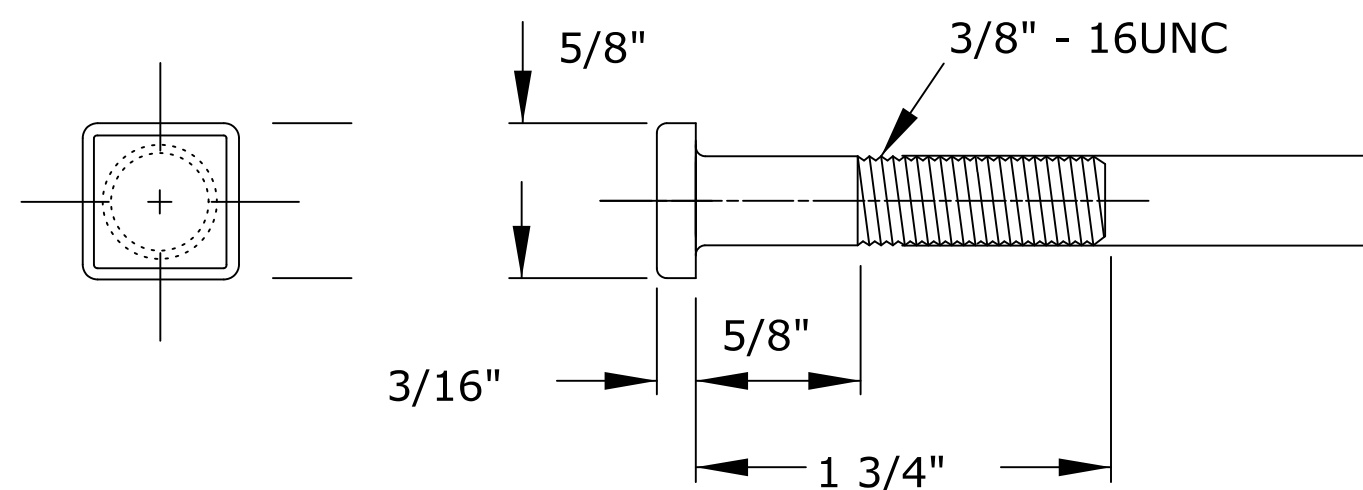
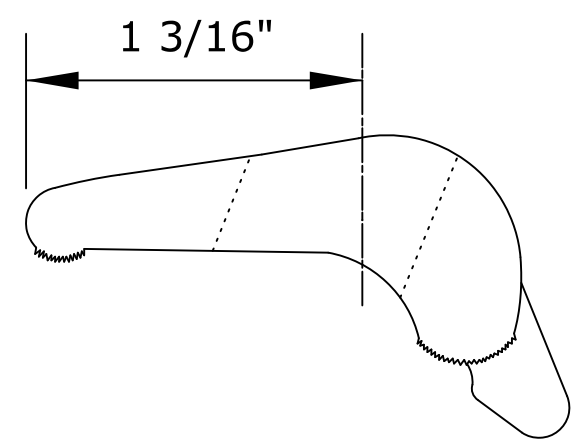
E1-5 MOUNTING FROM RIGHT EXIT  
(2 I-BEAMS)



E1-5 MOUNTING FROM RIGHT EXIT  
(3 I-BEAMS)



POST CLIP  
ALUMINUM

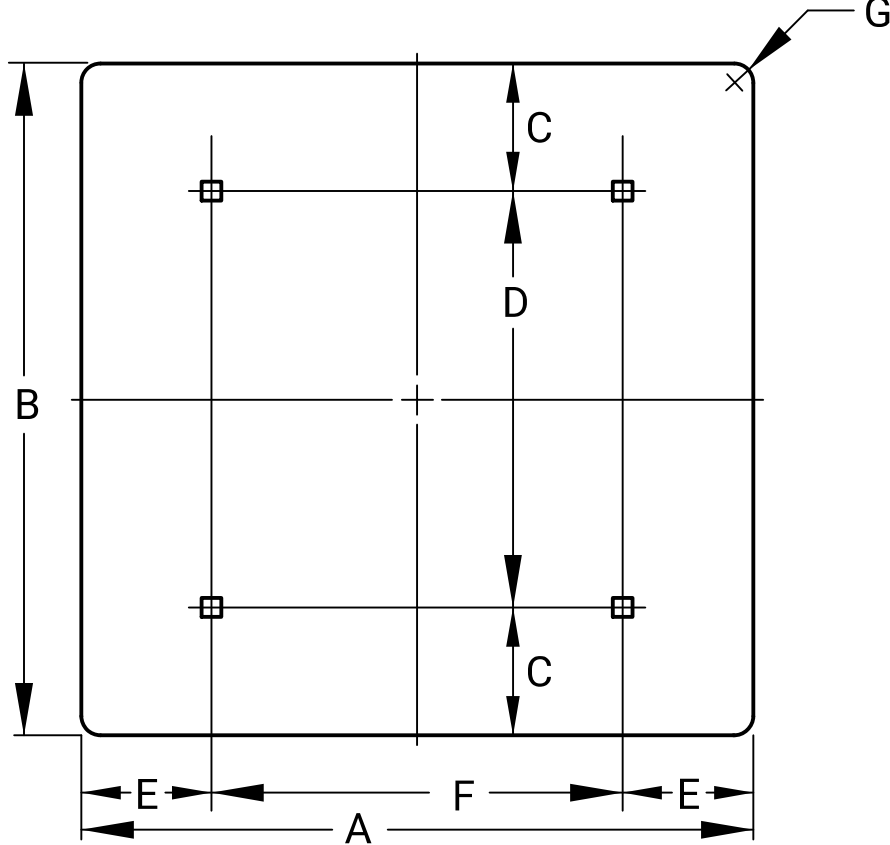
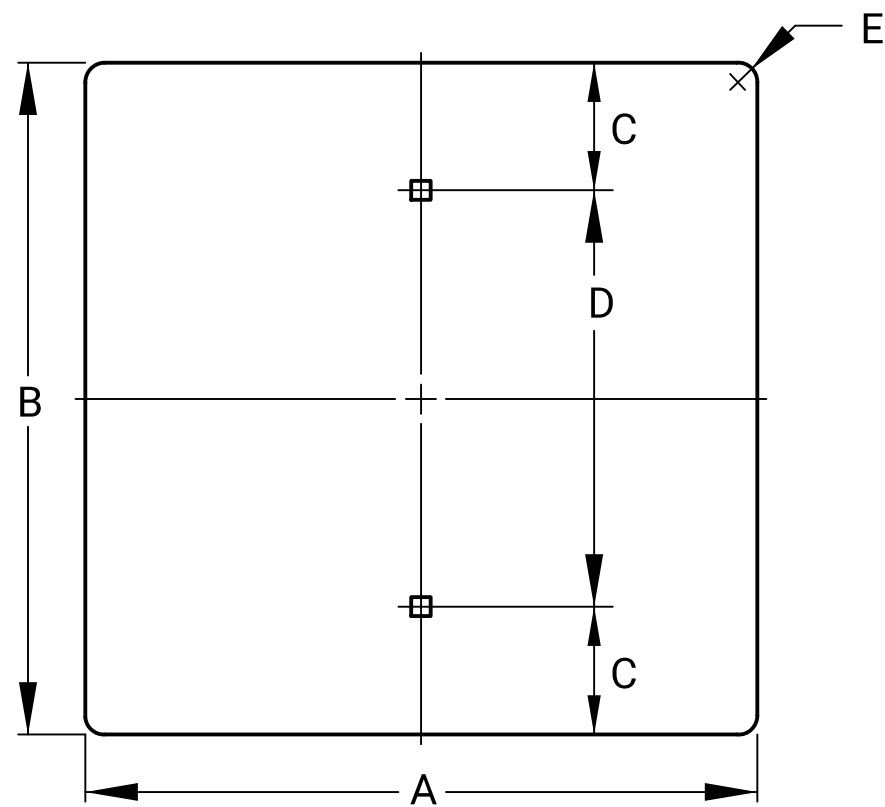


POST CLIP BOLT  
ALUMINUM

NOTES:  
\* - CENTERLINE OF ALUMINUM I-BEAM  
H1 - HEIGHT OF ADDED SIGN (E1-5)  
H2 - H1 + 12" OR TO THE BOTTOM OF THE NEXT STIFFENER  
THE E1-5 SIGN SHALL BE POSITIONED ABOVE THE GUIDE SIGN  
ACCORDING TO THE DIRECTION OF THE EXIT:  
RIGHT EXIT - RIGHT EDGE OF SIGN  
LEFT EXIT - LEFT EDGE OF SIGN  
TWO EXITS (ONE LEFT AND ONE RIGHT) - CENTER OF SIGN  
THE ALUMINUM I-BEAMS ARE TO BE MOUNTED AT THE SPACINGS  
SHOWN. IF THE I-BEAM SPACING CONFLICTS WITH THE SIGN  
POSTS, THEN THE I-BEAM IS TO BE MOVED TO THE SIDE OF THE  
SIGN POST THAT MORE CLOSELY FITS THE SPACINGS AND AS  
DETERMINED BY THE ENGINEER.  
THE POST CLIP BOLT MAY HAVE A RECTANGULAR HEAD, IF THE  
SMALLER DIMENSION IS EQUAL TO THE SQUARE HEAD DIMENSION.

ALL DIMENSIONS ARE IN INCHES.

NO.	DATE	REVISIONS	BY	APPD
KANSAS DEPARTMENT OF TRANSPORTATION DETAILS FOR MOUNTING REINFORCED PANEL SIGN ON I-BEAM POST				
TE490				
7/1/03				
FHWA APPROVAL 7/22/2003 APPD Steven A. Buckley				
DESIGNED	D.D.G.	DETAILED	B.A.H.	QUANTITIES
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.
				TRACED
				TRACE CK.



	SIGN SIZE	A	B	C	D	E	T	AREA
①	3 X 8	3	8	1	6	$\frac{3}{8}$	0.040	0.17
①	6 X 12	6	12	3	6	$\frac{3}{8}$	0.063	0.50
	12 X 6	12	6	$1\frac{1}{2}$	3	$\frac{3}{4}$	0.063	0.50
	12 X 9	12	9	$1\frac{1}{2}$	6	$1\frac{1}{2}$	0.063	0.75
	12 X 18	12	18	3	12	$1\frac{1}{2}$	0.063	1.50
	12 X 24	12	24	3	18	$1\frac{1}{2}$	0.080	2.00
	12 X 36	12	36	6	24	$1\frac{1}{2}$	0.080	3.00
	12 X 48	12	48	6	36	$1\frac{1}{2}$	0.080	4.00
	18 X 6	18	6	$1\frac{1}{2}$	3	$1\frac{1}{2}$	0.063	0.75
	18 X 18	18	18	3	12	$1\frac{1}{2}$	0.063	2.25
	18 X 30	18	24	3	24	$1\frac{1}{2}$	0.080	3.75
	18 X 36	18	24	6	24	$1\frac{1}{2}$	0.080	4.50
	18 X 42	18	24	6	30	$1\frac{1}{2}$	0.080	5.25
	18 X 48	18	24	6	36	$1\frac{1}{2}$	0.080	6.00
	21 X 15	21	15	$1\frac{1}{2}$	12	$1\frac{1}{2}$	0.080	2.19
	24 X 6	24	6	$1\frac{1}{2}$	3	$1\frac{1}{2}$	0.080	1.00
	24 X 12	24	12	3	6	$1\frac{1}{2}$	0.080	2.00
	24 X 18	24	18	3	12	$1\frac{1}{2}$	0.080	3.00
	24 X 24	24	24	3	18	$1\frac{1}{2}$	0.080	4.00
	24 X 30	24	30	3	24	$1\frac{1}{2}$	0.080	5.00
	24 X 36	24	36	6	24	$1\frac{1}{2}$	0.080	6.00
	30 X 12	30	12	3	6	$1\frac{7}{8}$	0.080	2.50
	30 X 15	30	15	$1\frac{1}{2}$	12	$1\frac{7}{8}$	0.080	3.13
	30 X 18	30	18	3	12	$1\frac{7}{8}$	0.080	3.75
	30 X 21	30	21	$1\frac{1}{2}$	18	$1\frac{1}{2}$	0.080	4.38
	30 X 24	30	24	3	18	$1\frac{7}{8}$	0.080	5.00
	30 X 30	30	30	3	24	$1\frac{7}{8}$	0.080	6.25
	30 X 36	30	36	6	24	$1\frac{7}{8}$	0.080	7.50
	36 X 12	36	12	3	6	$1\frac{1}{2}$	0.080	3.00
	36 X 18	36	18	3	12	$1\frac{1}{2}$	0.080	4.50
	36 X 24	36	24	3	18	$1\frac{1}{2}$	0.080	6.00
	36 X 30	36	30	3	24	$2\frac{1}{4}$	0.080	7.50
	36 X 36	36	36	6	24	$2\frac{1}{4}$	0.080	9.00
③	45 X 36	45	36	3	30	$2\frac{1}{4}$	0.100	11.25

	SIGN SIZE	A	B	C	D	E	F	G	T	AREA
	36 X 12	36	12	3	6	3	30	$1\frac{1}{2}$	0.080	3.00
	36 X 30	36	30	3	24	3	30	$2\frac{1}{4}$	0.080	7.50
	36 X 48	36	48	9	30	6	24	0	0.100	12.00
	36 X 60	36	60	12	36	6	24	0	0.100	15.00
②	36 X 72	36	72	6	60	6	24	0	0.100	18.00
	42 X 12	48	12	3	6	6	30	$1\frac{1}{2}$	0.080	3.50
	42 X 18	48	18	3	12	6	30	$1\frac{1}{2}$	0.080	5.25
	42 X 24	48	24	6	12	6	30	$1\frac{7}{8}$	0.080	7.00
	42 X 36	48	36	6	24	6	30	0	0.100	10.50
	48 X 12	48	12	3	6	9	30	$1\frac{1}{2}$	0.080	4.00
	48 X 18	48	18	3	12	9	30	$1\frac{1}{2}$	0.080	6.00
	48 X 24	48	24	6	12	9	30	$1\frac{7}{8}$	0.080	8.00
	48 X 30	48	30	6	18	9	30	0	0.100	10.00
	48 X 36	48	36	6	24	9	30	0	0.100	12.00
	48 X 42	48	42	6	30	9	30	0	0.100	14.00
	48 X 48	48	48	9	30	9	30	0	0.100	16.00
②	48 X 60	48	60	12	36	9	30	0	0.100	20.00
②	48 X 72	48	72	6	60	9	30	0	0.100	24.00
②	48 X 96	48	96	12	72	9	30	0	0.100	32.00
	60 X 12	60	12	3	6	12	36	0	0.100	5.00

	SIGN SIZE	A	B	C	D	E	F	G	T	AREA
	60 X 18	60	18	3	12	12	36	0	0.100	7.50
	60 X 24	60	24	6	12	12	36	0	0.100	10.00
	60 X 30	60	30	6	18	12	36	0	0.100	12.50
	60 X 36	60	36	6	24	12	36	0	0.100	15.00
	60 X 42	60	42	6	30	12	36	0	0.100	17.50
	60 X 48	60	48	9	30	12	36	0	0.100	20.00
	72 X 12	72	12	3	6	15	42	0	0.100	6.00
	72 X 18	72	18	3	12	15	42	0	0.100	9.00
	72 X 24	72	24	6	12	15	42	0	0.100	12.00
	72 X 30	72	30	6	18	15	36	0	0.100	15.00
	72 X 36	72	36	6	24	15	42	0	0.100	18.00
	72 X 42	72	42	6	30	15	42	0	0.100	21.00
	72 X 48	72	48	9	30	15	42	0	0.100	24.00
	84 X 12	84	18	3	6	18	48	0	0.100	7.00
	84 X 18	84	18	3	12	18	48	0	0.100	10.50
	84 X 24	84	24	6	12	18	48	0	0.100	14.00
	84 X 30	84	30	6	18	18	48	0	0.100	17.50
	84 X 36	84	36	6	24	18	48	0	0.100	21.00
	84 X 42	84	42	6	30	18	48	0	0.100	24.50
	84 X 48	84	48	9	30	18	48	0	0.100	28.00

- NOTE:
- All holes are  $\frac{3}{8}$ " square, unless otherwise noted.
- The dimension "T" is the thickness of the aluminum blank.
- ① Holes shall be  $\frac{5}{16}$ " diameter.
- ② Dimension "D" requires a center hole.
- ③ Additional hole 12" below top hole.

All dimensions are in inches.

1	10/01/19	Update sign blank details and dimensions	D.D.G.	E.W.N.	
NO.	DATE	REVISIONS	BY	APPD	
KANSAS DEPARTMENT OF TRANSPORTATION					
SIGN BLANK DETAILS FOR FLAT SHEET SIGNS					
TE506					
7/1/03					
FHWA APPROVAL					
10/01/2019					
APPD Steven A. Buckley					
DESIGNED					
D.D.G.   DETAILED					
A.A.D.   QUANTITIES					
TRACED					
DESIGN CK.					
S.A.B.   DETAIL CK.					
D.D.G.   QUAN. CK.					
TRACE CK.					



Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central\01\2293301\KA571401\pss590-01.dgn

DETAILED SPECIFICATIONS FOR FLAT SHEET SIGNS AND OVERLAY PANELS

All new flat sheet sign blanks shall be of the fabrication and thickness shown on the flat sheet blank detail sheets, unless other details are shown in the plans.

Flat sheet blanks shall be used for signs that are less than or equal to 7'-0" in length and/or less than or equal to 4'-0" in height, unless other details are shown in the plans. Flat sheet blanks shall also be used for signs that are 4'-0" in length and less than or equal to 8'-0" in height, unless other details are shown in the plans.

The design details for signs (color, letter height, and letter series) shall be as shown in the FHWA Standard Highway Signs and Markings book (2004 edition and supplements), unless other details are shown in the plans.

All sign faces shall be covered with Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The sheeting used for the direct applied legend and borders shall be Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The school warning signs, the "SCHOOL" portion of the S5-1 sign, S4-3p plaque, and any supplemental plaques used with these warning signs shall have a fluorescent yellow-green background, unless otherwise noted in the plans.

The type of adhesive used for retroreflective sheeting or lettering film shall be heat activated or pressure sensitive.

DETAILED SPECIFICATIONS FOR REINFORCED PANEL SIGNS

All new reinforced sign panels shall be of the fabrication and thickness shown on the reinforced panel detail sheets. If extrusheet fabricated sign panels are used, they shall be of the length, width and in the position shown. If extrusheet fabricated panel dimensions are not shown, a line of legend should be placed entirely on one panel. If extruded fabricated sign panels are used, either 1'-0" or 6" panels shall be used. The 6" panels shall be used only at the top or bottom of signs.

Reinforced panels shall be used for signs that are greater than 7'-0" in length or greater than 4'-0" in height, unless other details are shown in the plans.

All sign faces shall be covered with Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The sheeting used for the direct applied legend and borders shall be Type IV high intensity retroreflective sheeting, unless otherwise noted in the plans.

The type of adhesive used for retroreflective sheeting or lettering film shall be heat activated or pressure sensitive.

Letters and numbers on reinforced panel signs are modified Series "E" unless otherwise shown.

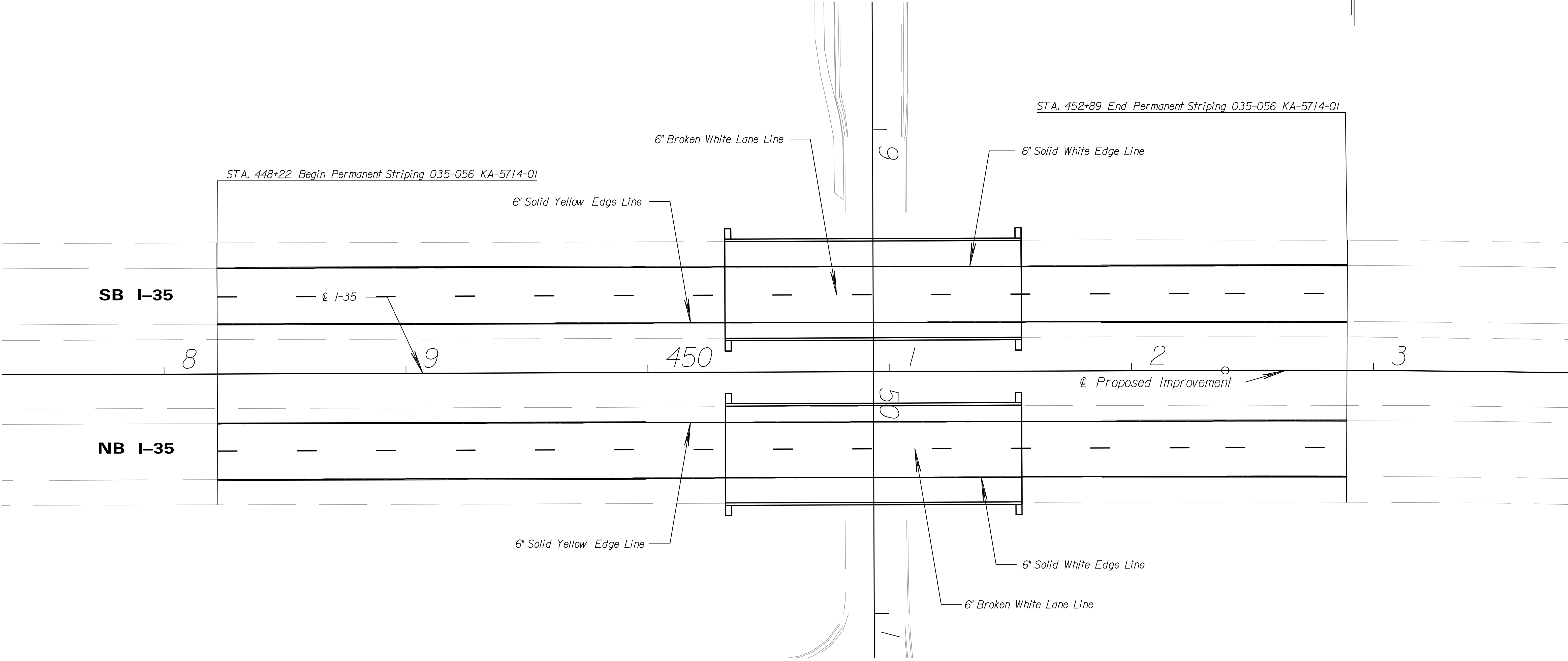
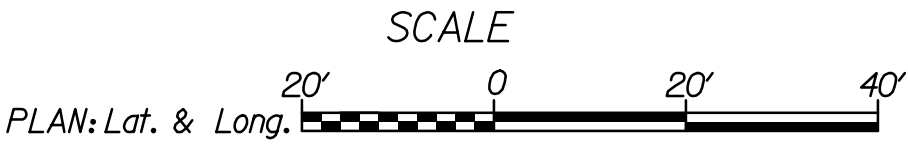
Spacing table dimensions are in inches.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	120	200

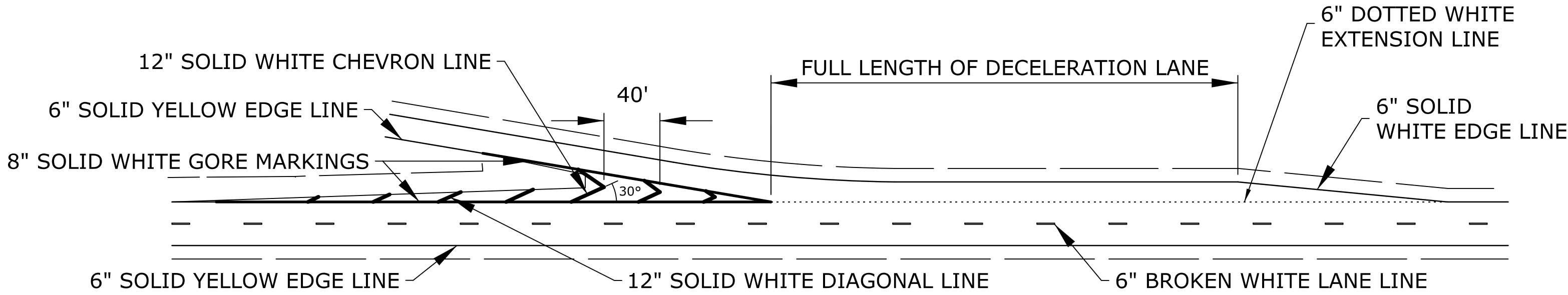
2	10/01/19	Changed notes	D.D.G.	E.W.N.	
1	7/23/10	Changed Notes and Sheeting Type	D.D.G.	D.B.	
NO.	DATE	REVISIONS	BY	APPD	
KANSAS DEPARTMENT OF TRANSPORTATION DETAILS SPECIFICATIONS FOR REINFORCED SIGN PANELS AND FLAT SHEET SIGNS					
TE590			7/01/03		
FHWA APPROVAL		10/01/2019	APPD	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

Note:  
Extend pavement marking to limits of temporary  
traffic control striping.  
SB Limits: 1200' before Sta. 448+22 and 3721' after Sta. 452+89  
NB Limits: 3532' before Sta. 448+22 and 1431' after Sta. 452+89

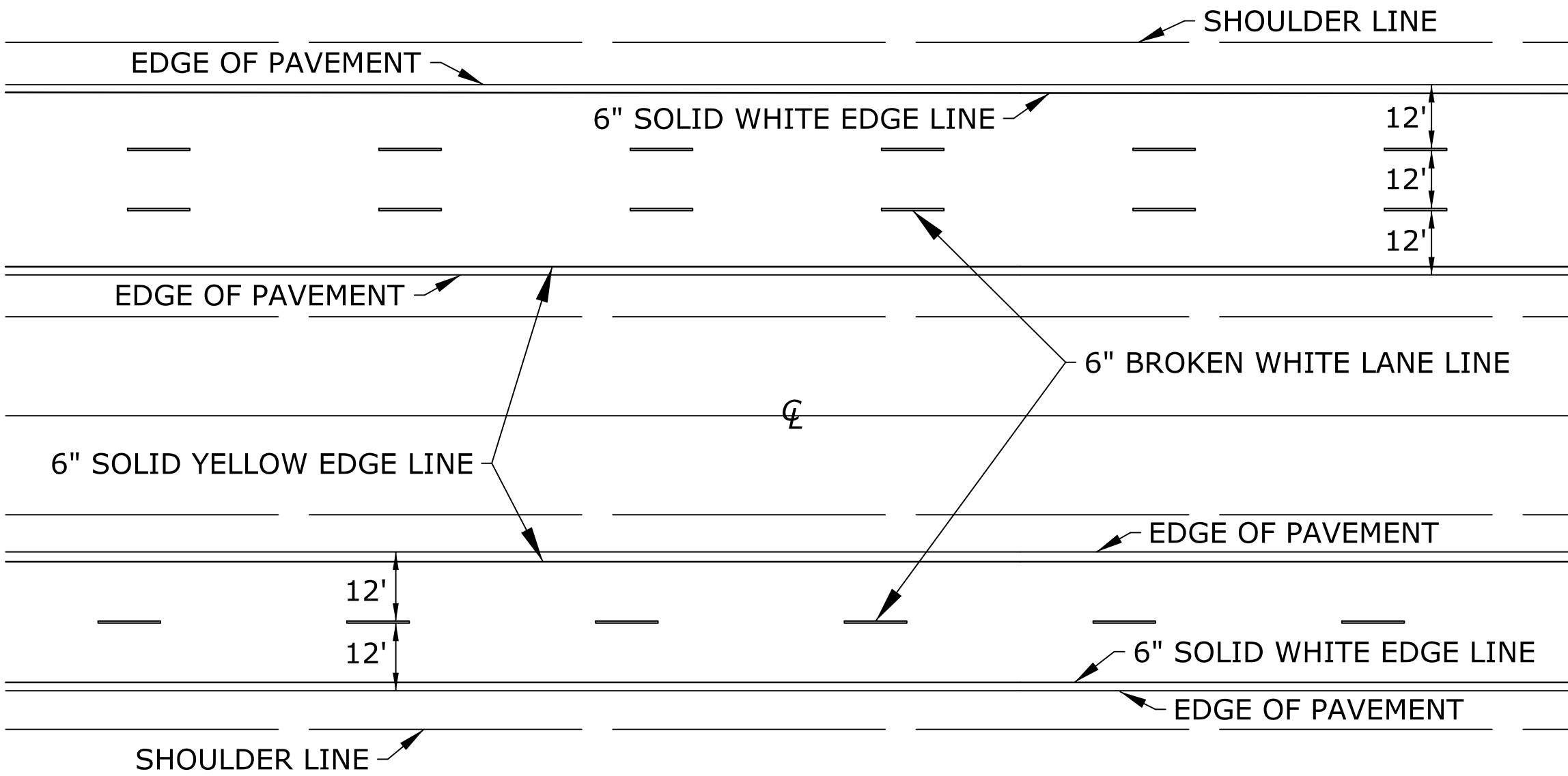
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	121	200



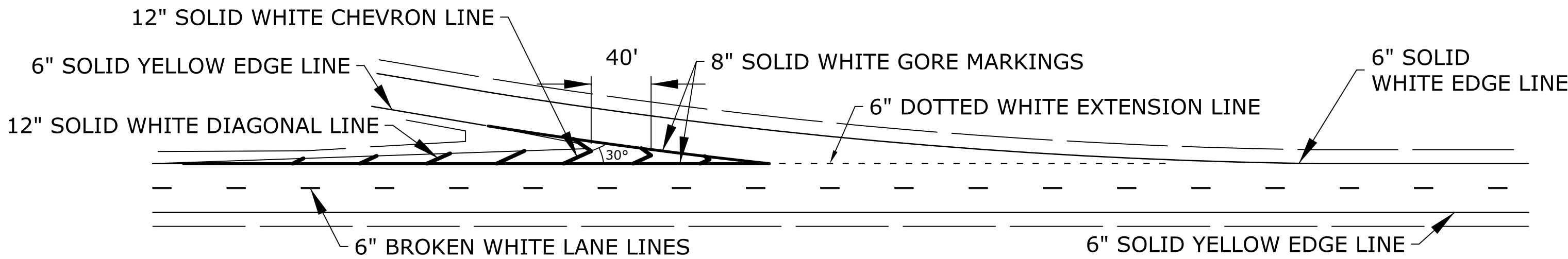
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	122	200



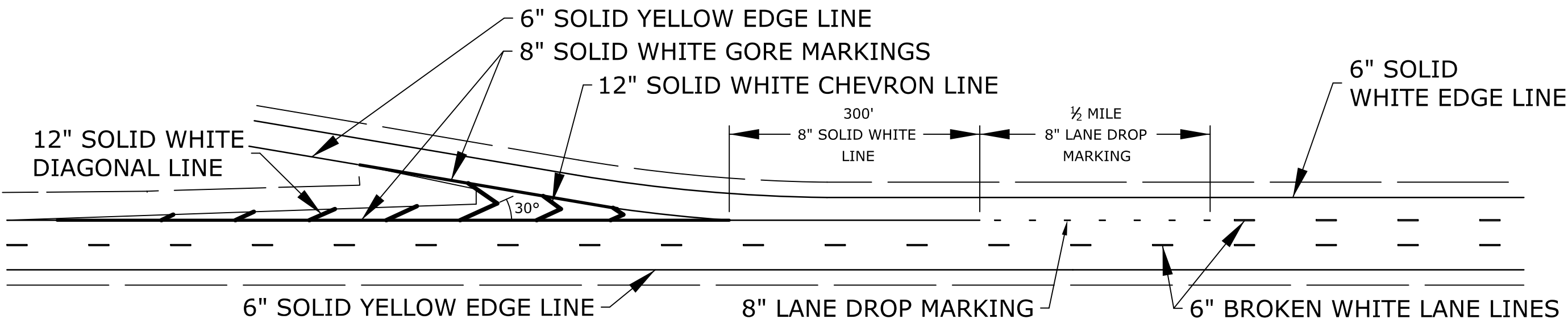
TYPICAL DECELERATION EXIT RAMP



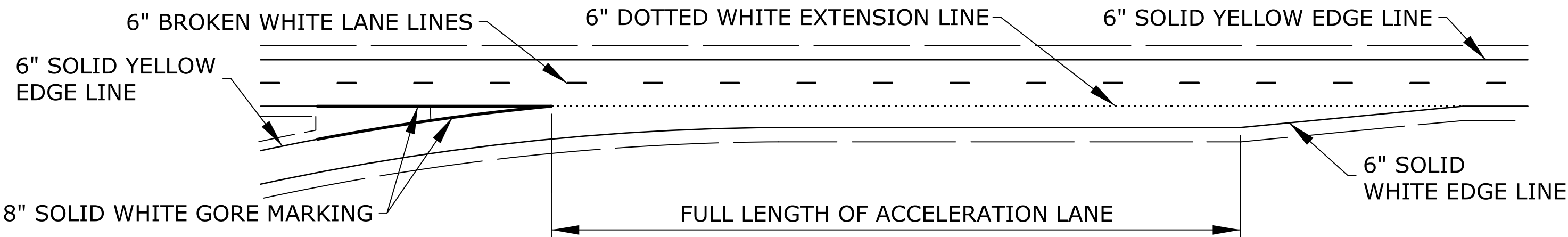
TYPICAL LANE LINE AND EDGE LINE MARKINGS  
FOR FOUR LANE AND SIX LANE DIVIDED HIGHWAYS



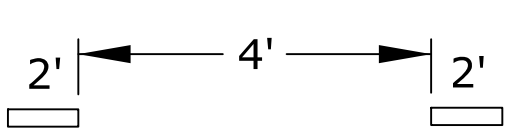
TYPICAL TAPERED EXIT RAMP



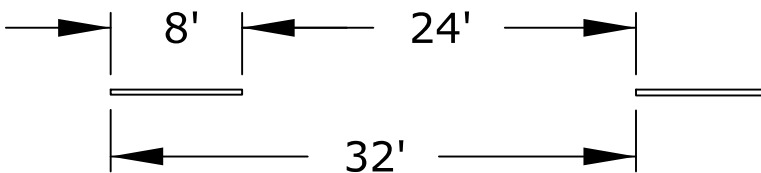
TYPICAL LANE DROP



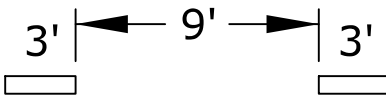
TYPICAL ACCELERATION RAMP



TYPICAL SPACING  
FOR DOTTED EXTENSION  
LINES, UNLESS OTHERWISE  
NOTED ON PLANS.



TYPICAL SPACING  
FOR BROKEN LINES  
UNLESS OTHERWISE  
NOTED ON PLANS.



TYPICAL SPACING  
FOR LANE DROP.  
UNLESS OTHERWISE  
NOTED ON PLANS.

NOTE:  
LONGITUDINAL PAVEMENT MARKING LINES SHALL BE OFFSET A MINIMUM OF 2" FROM LONGITUDINAL PAVEMENT JOINTS.

NOTE:  
AT RAMP TERMINALS WITH CROSS-ROADS, WRAP 6" EDGE LINES AROUND RADII.

NOTE:  
ON NON I, US, AND K ROUTES, 4" EDGE LINES MAY BE INSTALLED. 6" EDGE LINES ARE NOT REQUIRED ON NON I, US, AND K ROUTES.

NO.	DATE	REVISIONS	BY	APPD
2	5/25/12	Dotted Extension Lines and Lane Drop Lines	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION				
TYPICAL PAVEMENT MARKING DETAILS FOR MULTI-LANE DIVIDED ROADWAYS				
TE307				
FHWA APPROVAL		5/25/2012	APPD	Brian D. Gower
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	123	200

## SUMMARY OF PAVEMENT MARKINGS

[illegible]

## RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	13523	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")	10818	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL	14214	FT

## SUMMARY OF WORD & SYMBOL MARKINGS

[illegible]

NOTE: FOR SPECIFIC PAVEMENT MARKING DETAILS AND DIMENSIONS SEE PLAN SHEETS

NOTE: ALL TOTALS REFLECT ACTUAL QUANTITY OF PAVEMENT MARKING MATERIALS REQUIRED.

NOTE:  
WORDS & SYMBOLS SHALL CONFORM TO THE LATEST EDITION OF  
"STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT  
MARKINGS" PRINTED BY THE U.S. DEPARTMENT OF TRANSPORTATION,  
FEDERAL HIGHWAY ADMINISTRATION.

PRIOR TO COMMENCEMENT OF PAVEMENT MARKING WORK THE ENGINEER WILL ESTABLISH THE LIMITS FOR "NO PASSING" ZONES. THESE LIMITS SHALL BE USED FOR THE LOCATION OF "NO PASSING" LINES AND FOR THE COMPUTATION OF ACTUAL MARKING QUANTITIES FOR THIS LINE TYPE.

2	5/25/12	Added Line Types, Symbols, and Shields	B.A.H.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.
NO.	DATE	REVISIONS	BY	APP'D

# KANSAS DEPARTMENT OF TRANSPORTATION SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

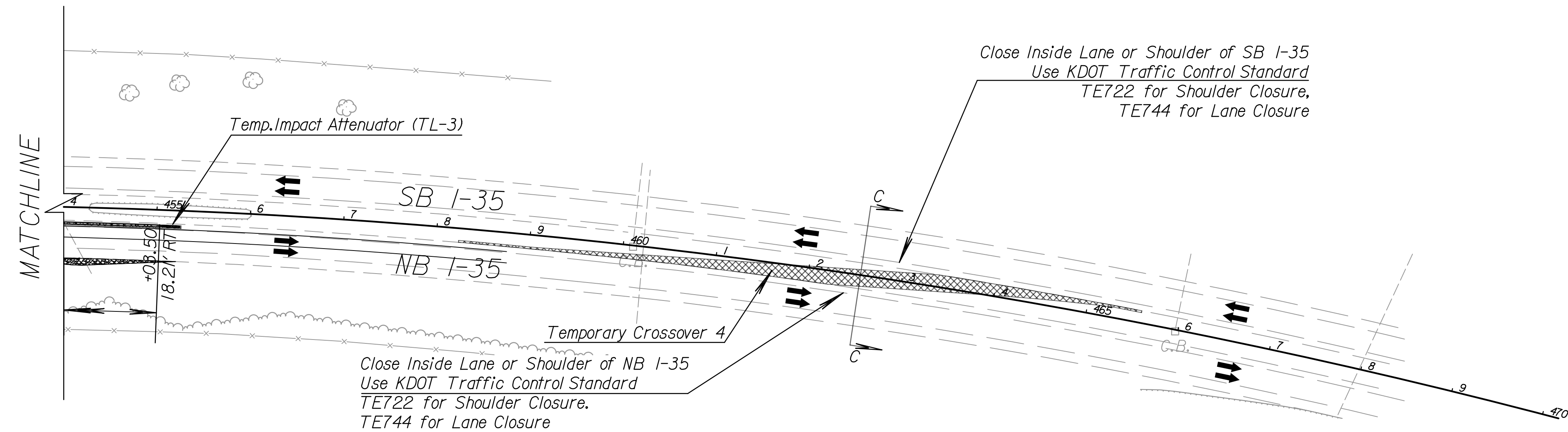
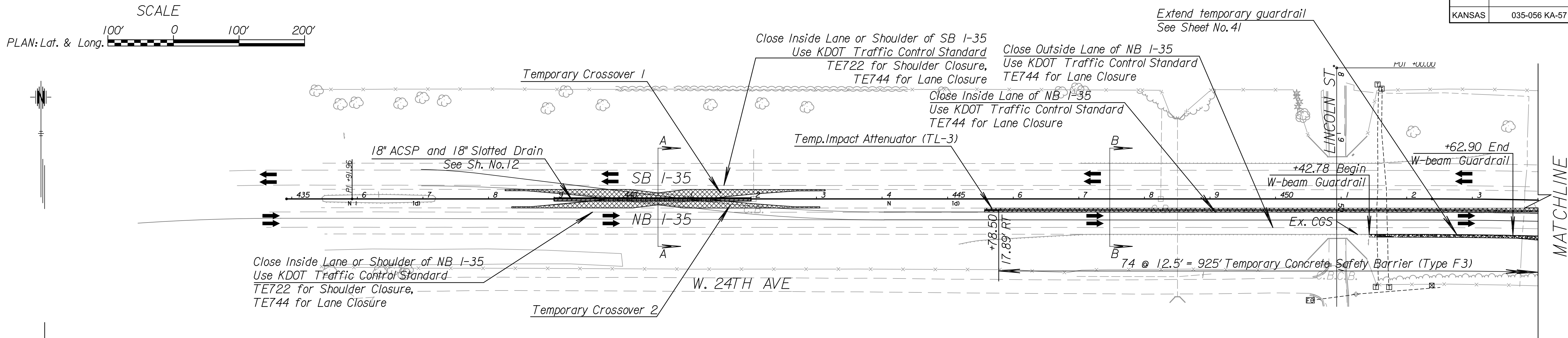
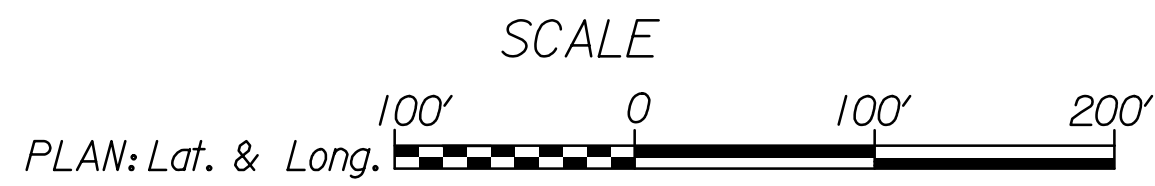
TE311

FHWA APPROVAL		5/25/2012		APP'D Brian D. Gower	
DESIGNED	J.F.F.	DETAILED	J.F.F.	QUANTITIES	TRACED
DESIGN CK.	B.D.G.	DETAIL CK.	B.D.G.	QUAN. CK.	TRACE CK.

KDOT Graphics Certified 07-17-2018

Sh. No. 123

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	124	200



LEGEND



CONSTRUCTION THIS PHASE

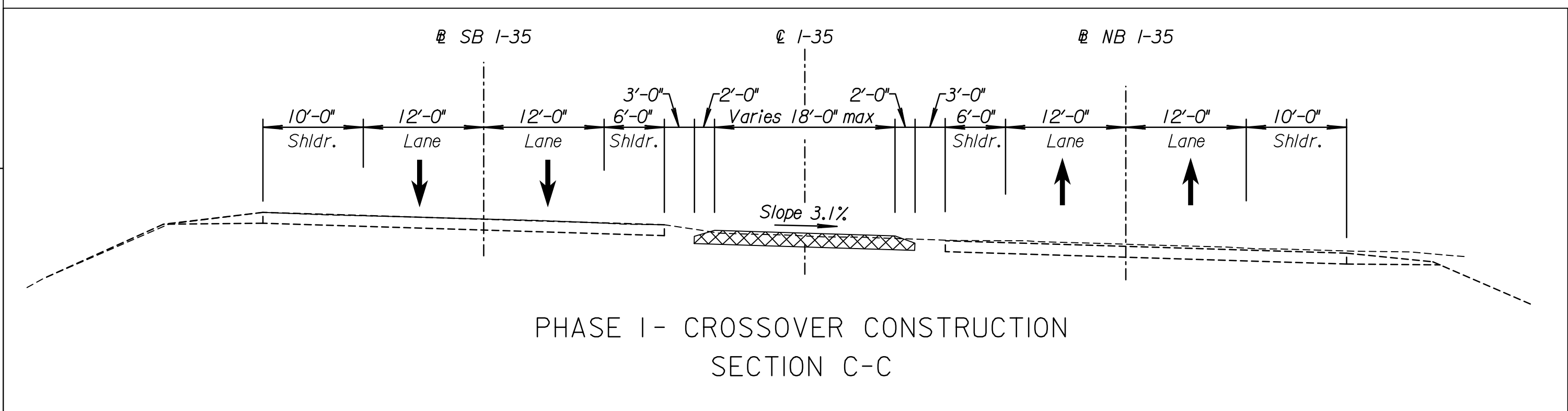
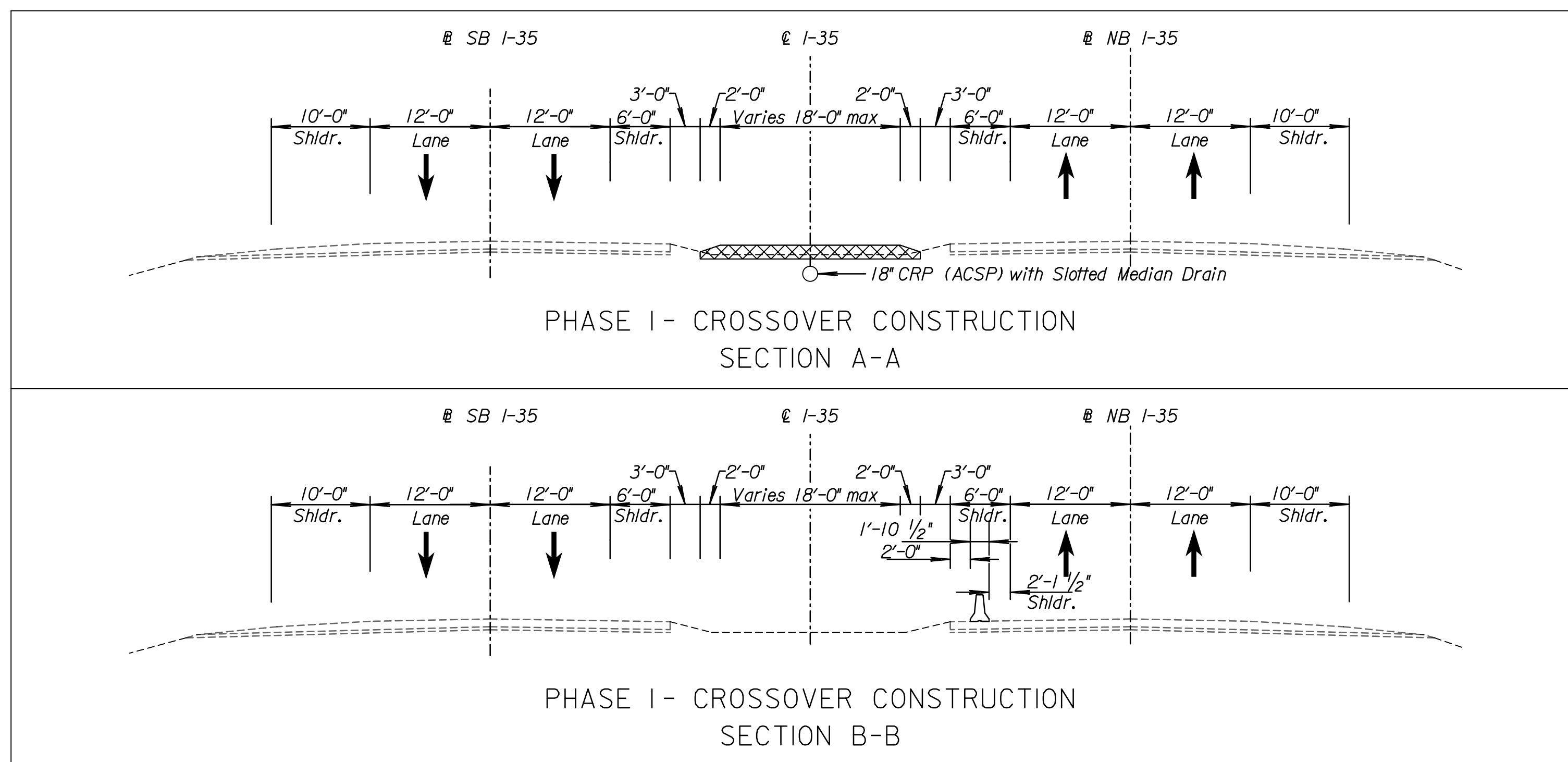
PHASE I

CONSTRUCTION

1. INSTALL 18" CRP AND SLOTTED DRAIN FOR CROSSOVERS 1 AND 2.
2. CONSTRUCT CROSSOVERS 1, 2, & 4.
3. INSTALL TEMPORARY BARRIER ON THE INSIDE SHOULDER OF NB TRAVELWAY.
4. EXTEND TEMPORARY GUARDRAIL ON THE OUTSIDE SHOULDER OF NB TRAVELWAY.

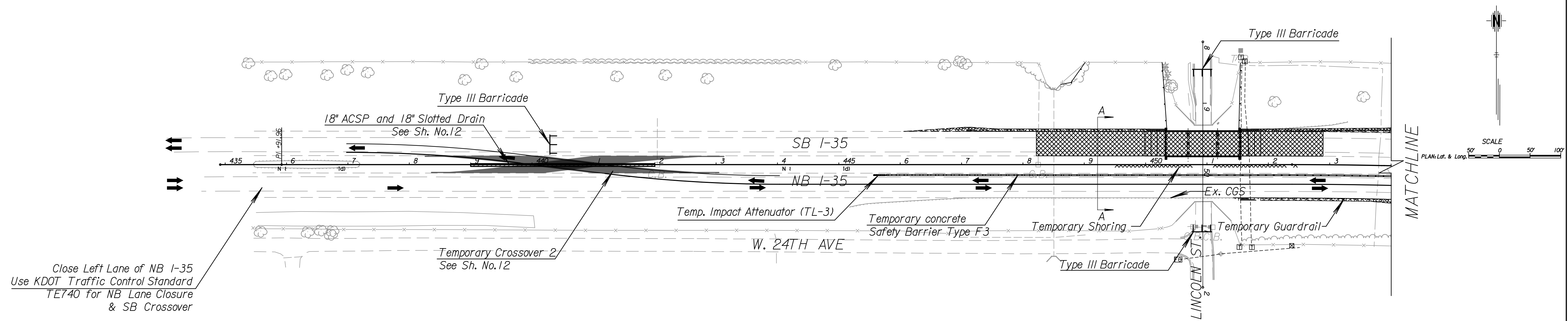
TRAFFIC

- 1-3. CLOSE INSIDE SB AND NB I-35 SHOULDERS AND LANES AS NECESSARY.
4. CLOSE OUTSIDE NB I-35 SHOULDER AND LANE AS NECESSARY.



KANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION SEQUENCING  
PHASE I

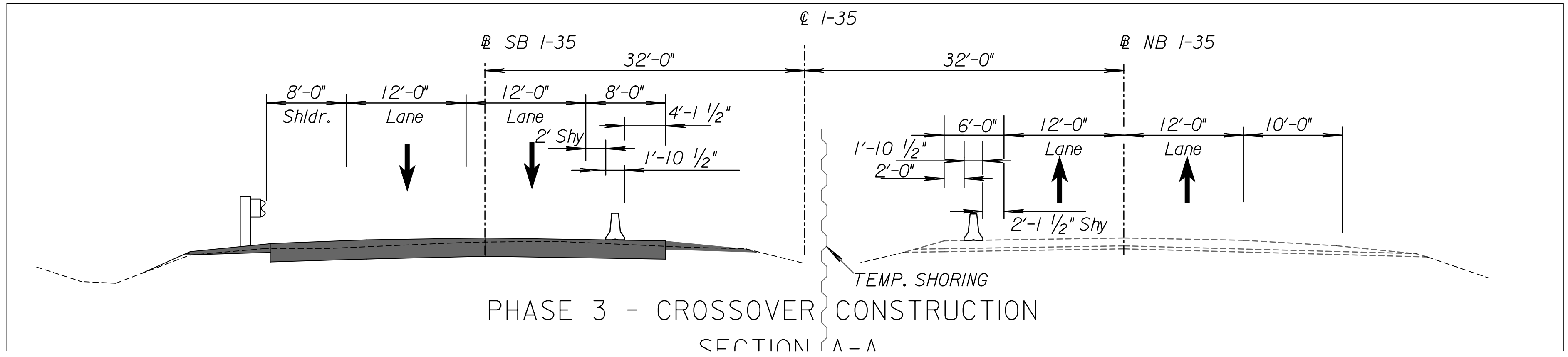
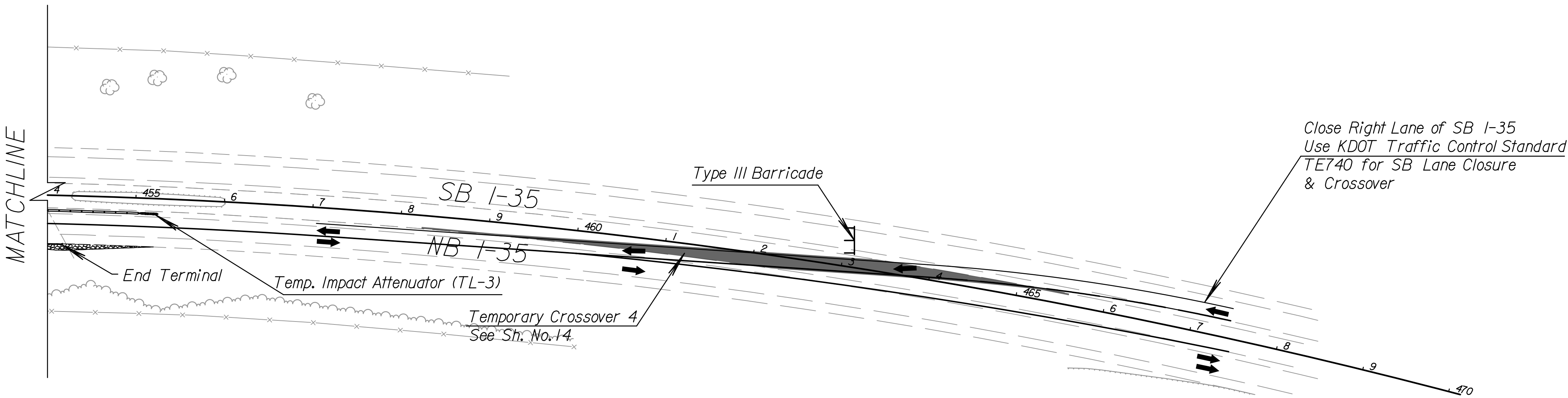
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	125	200



**PHASE 2**

- CONSTRUCTION**
1. INSTALL TEMP. SHORING AND REMOVE SB RCB.
  2. CONSTRUCT PROPOSED SB I-35 BRIDGE, APPROACH, PAVING, AND OUTSIDE GUARDRAILS ON SB BRIDGE.
  3. MEDIAN GRADING ON SB SIDE.

- TRAFFIC**
1. CLOSE LINCOLN ST. AND SIDEWALK NORTH OF I-35, SEE DETOUR SHEET.
  2. SHIFT SB I-35 TRAFFIC ONTO EXISTING NB I-35.



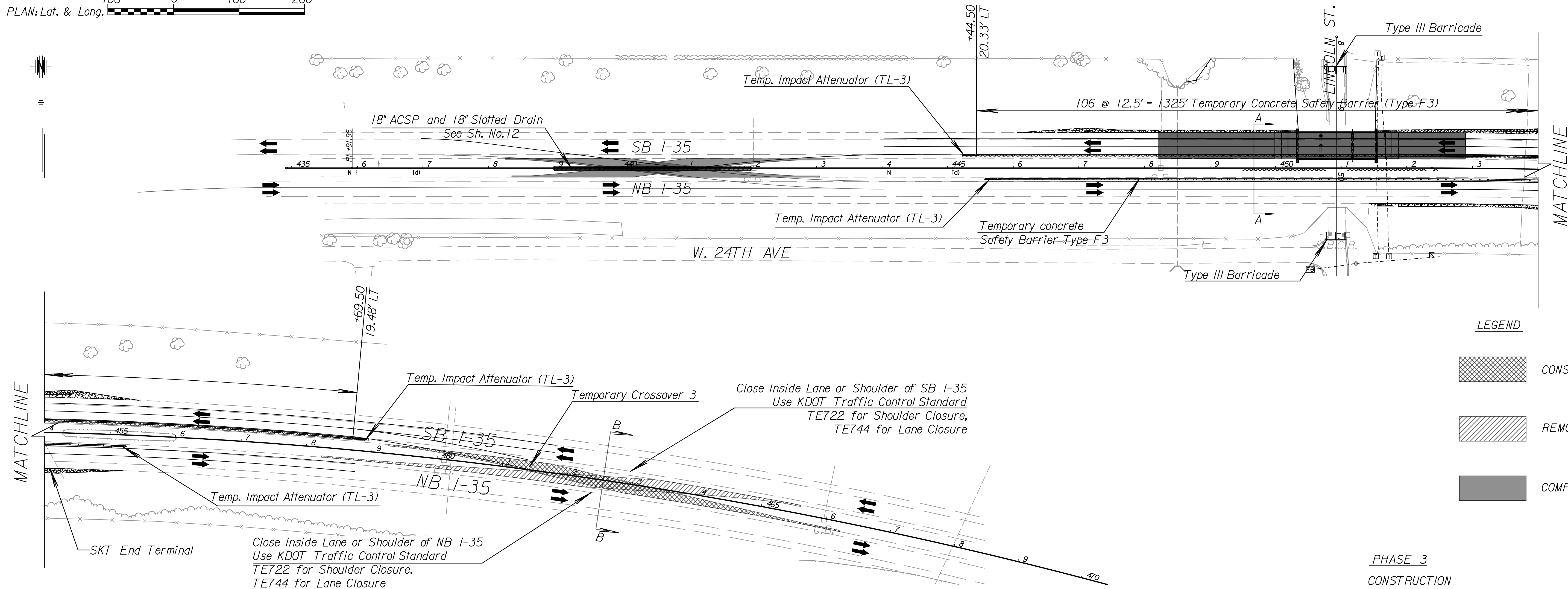
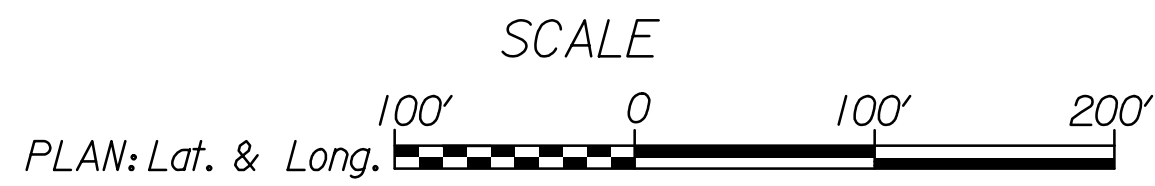
**LEGEND**

- CONSTRUCTION THIS PHASE
- COMPLETED CONSTRUCTION

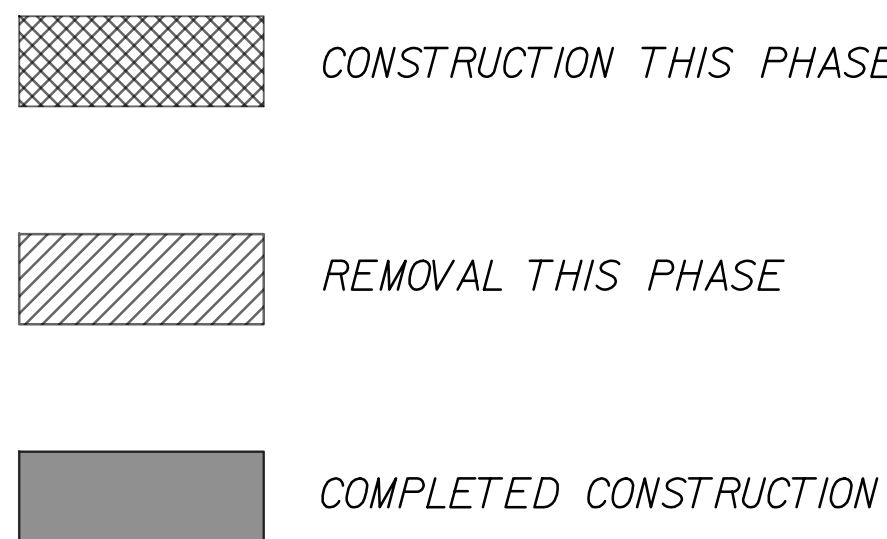
KANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION SEQUENCING  
PHASE 2



STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	126	200



LEGEND

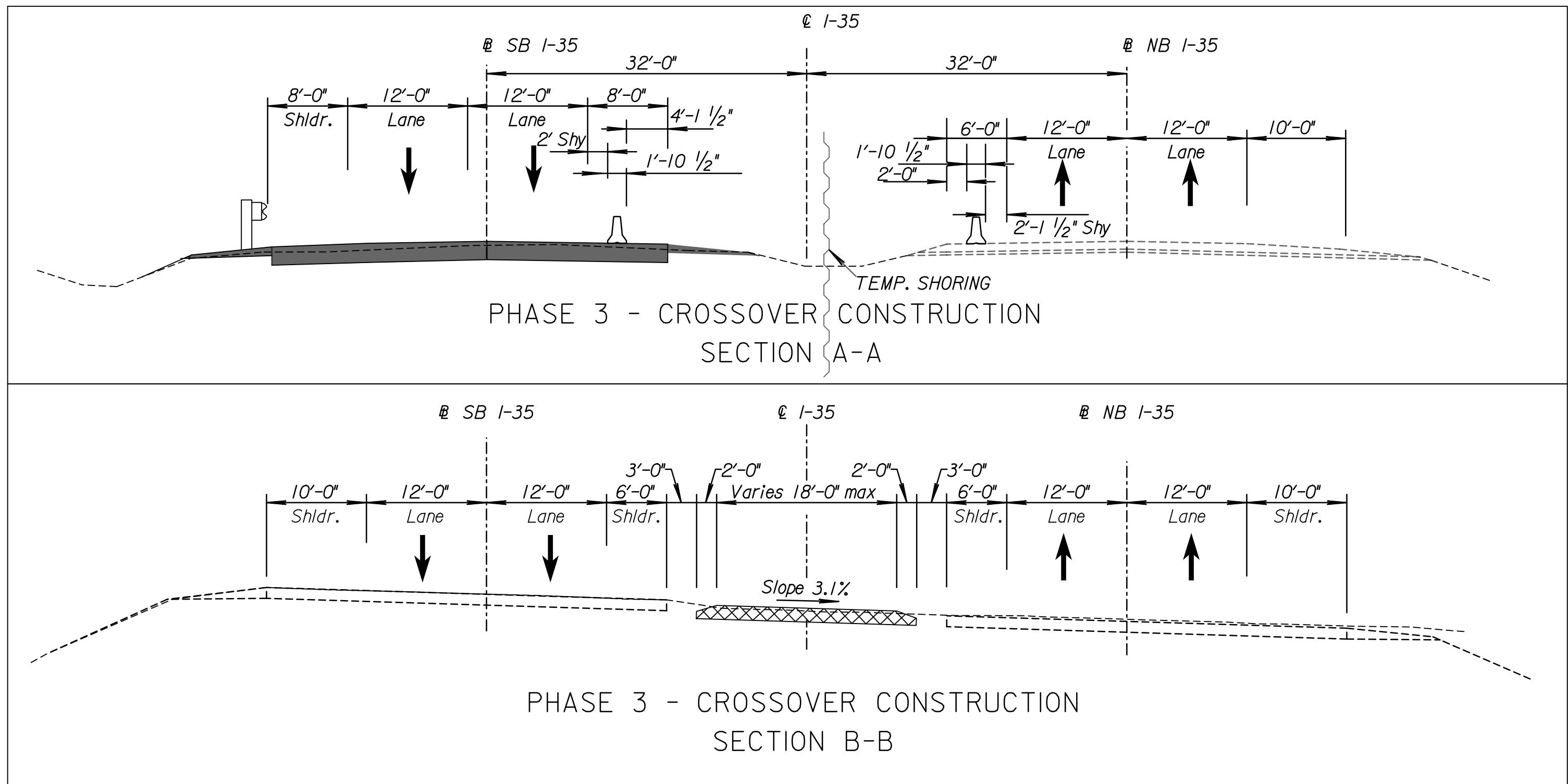


PHASE 3

- CONSTRUCTION
1. INSTALL TEMPORARY BARRIER ON THE INSIDE SHOULDER OF SB TRAVELWAY.
  2. ERADICATE CROSSOVER 4.
  3. CONSTRUCT CROSSOVER 3.

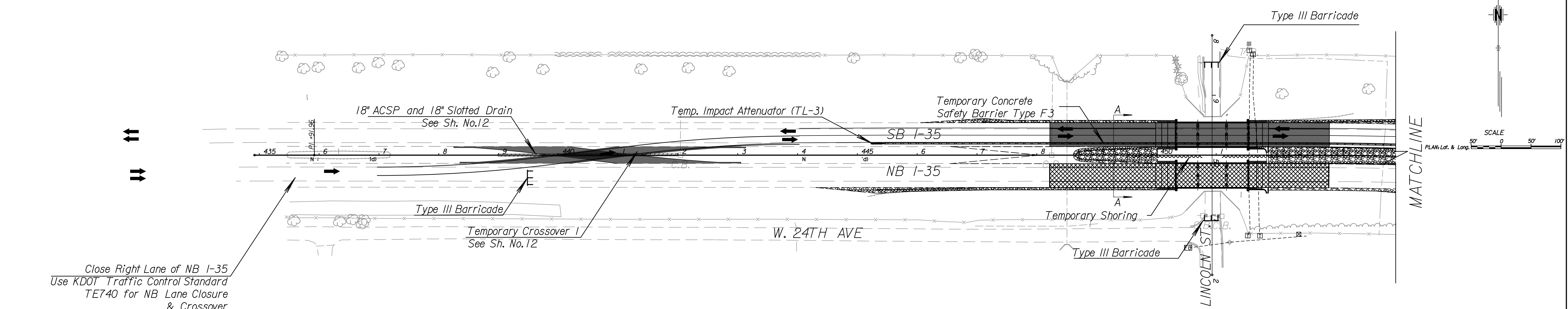
TRAFFIC

1. LINCOLN ST. REMAIN CLOSED.
2. SHIFT SB I-35 TRAFFIC BACK TO FINISHED SB BRIDGE/PAVEMENT.
3. CLOSE INSIDE SB AND NB I-35 SHOULDERS AND LANES AS NECESSARY.



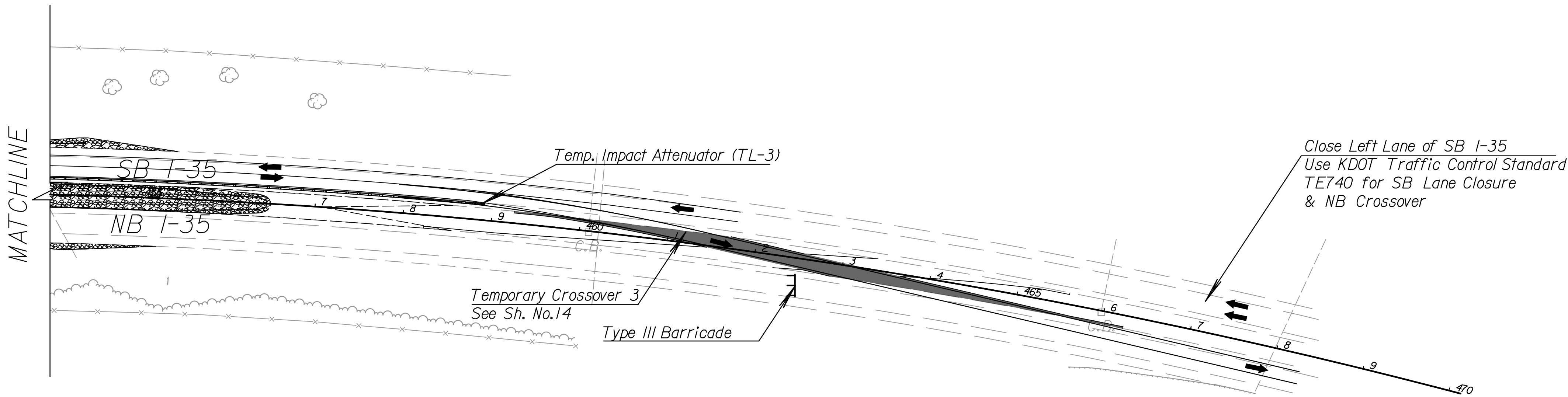
KANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION SEQUENCING  
PHASE 3

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	127	200



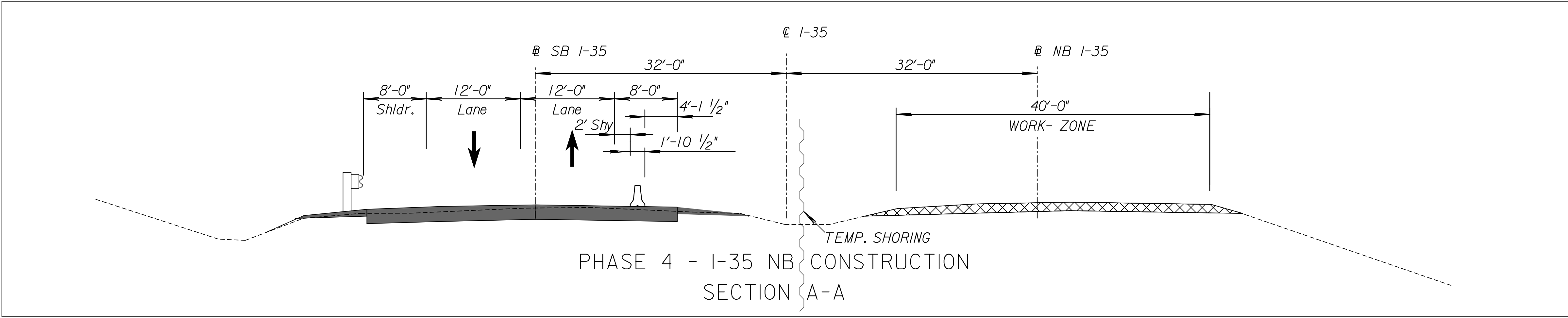
PHASE 4

- CONSTRUCTION
1. MOVE TRAFFIC CONTROL DEVICES AS REQUIRED FOR PHASE 4 CONSTRUCTION.
  2. REMOVE TEMPORARY BARRIER ON THE INSIDE SHOULDER OF NB TRAVELWAY.
  3. COMPLETE SHORING AND RCB REMOVAL.
  4. CONSTRUCT PROPOSED NB I-35 BRIDGE, APPROACH PAVING, AND OUTSIDE GUARDRAIL ON NB BRIDGE.
  5. MEDIAN GRADING ON NB SIDE.
  6. CONSTRUCT BULLNOSE GUARDRAIL ON BOTH ENDS OF BRIDGE.
  7. REMOVE TEMPORARY BARRIER ON THE INSIDE SHOULDER OF SB TRAVELWAY.
- TRAFFIC
1. LINCOLN ST. REMAIN CLOSED.
  2. SHIFT NB I-35 TRAFFIC ONTO CONSTRUCTED SB I-35.
  3. SHIFT NB TRAFFIC BACK TO FINISHED NB BRIDGE/PAVEMENT.



LEGEND

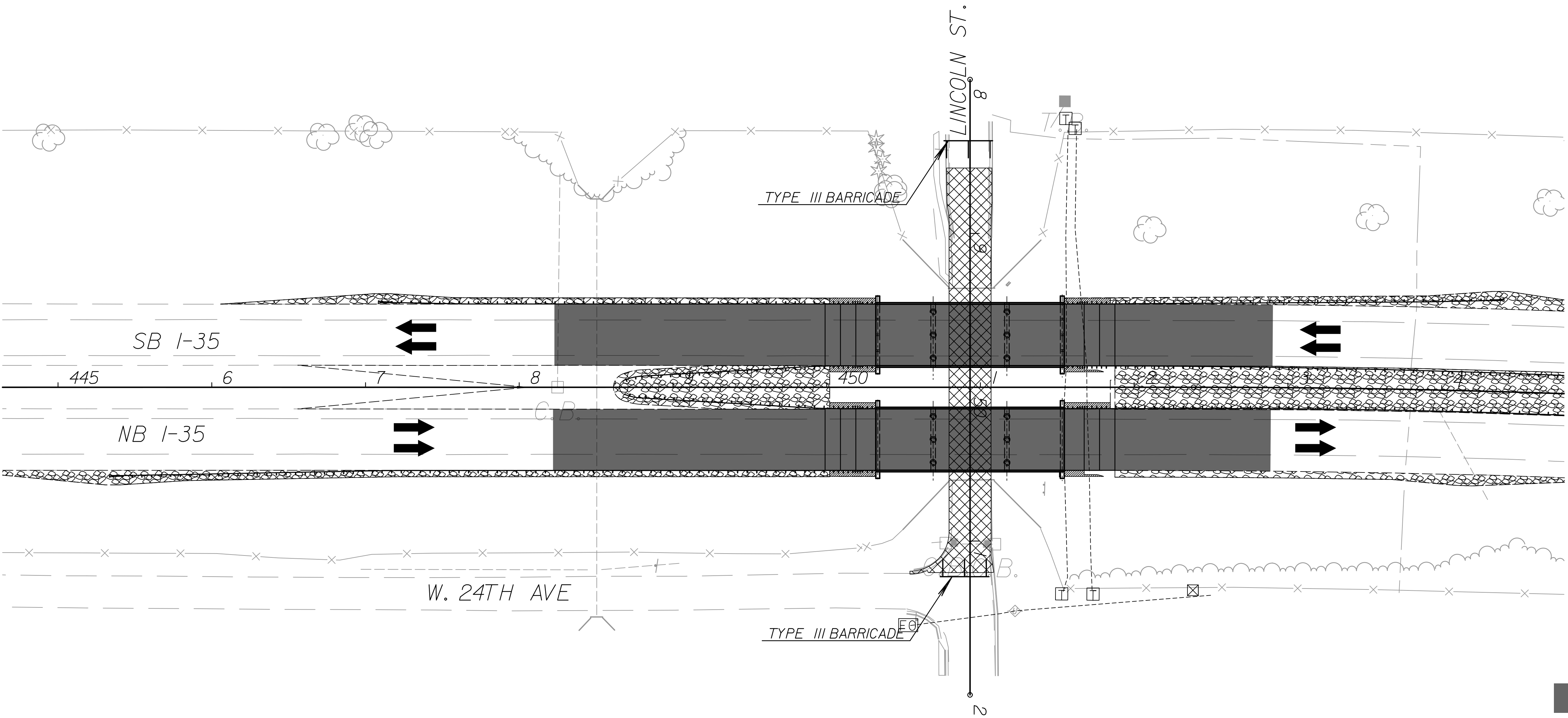
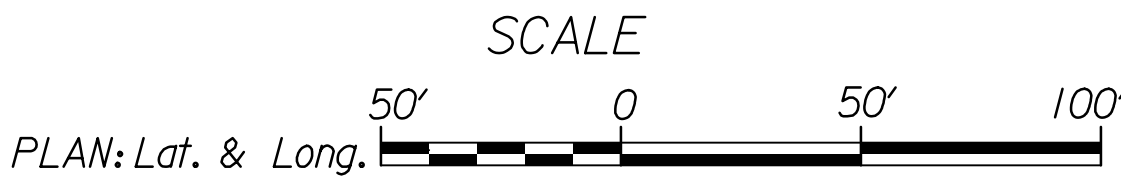
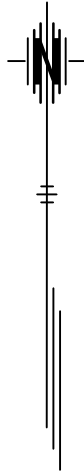
- COMPLETED CONSTRUCTION
- CONSTRUCTION THIS PHASE



PHASE 4 - I-35 NB CONSTRUCTION  
SECTION A-A

KANSAS DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION SEQUENCING  
PHASE 4

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	128	200



- PHASE 5
- CONSTRUCTION:**
1. CONSTRUCT LINCOLN ST. AT THIS PHASE.
  2. CONTRACTOR CAN CONSTRUCT PHASE 5 WITH PHASES 2-4 AS DIRECTED BY THE ENGINEER.
  3. REMOVE CROSSOVER PAVEMENT, TEMPORARY PIPES, AND BARRIER.
  4. FINAL STRIPING, SIGNING, SEEDING, GRADING.
- TRAFFIC:**
1. SEE LINCOLN ST. DETOUR SHEET FOR DETOUR LAYOUT.
  2. CLOSE INSIDE SB AND NB I-35 SHOULDER AND LANES AS NECESSARY.

LEGEND

COMPLETED CONSTRUCTION

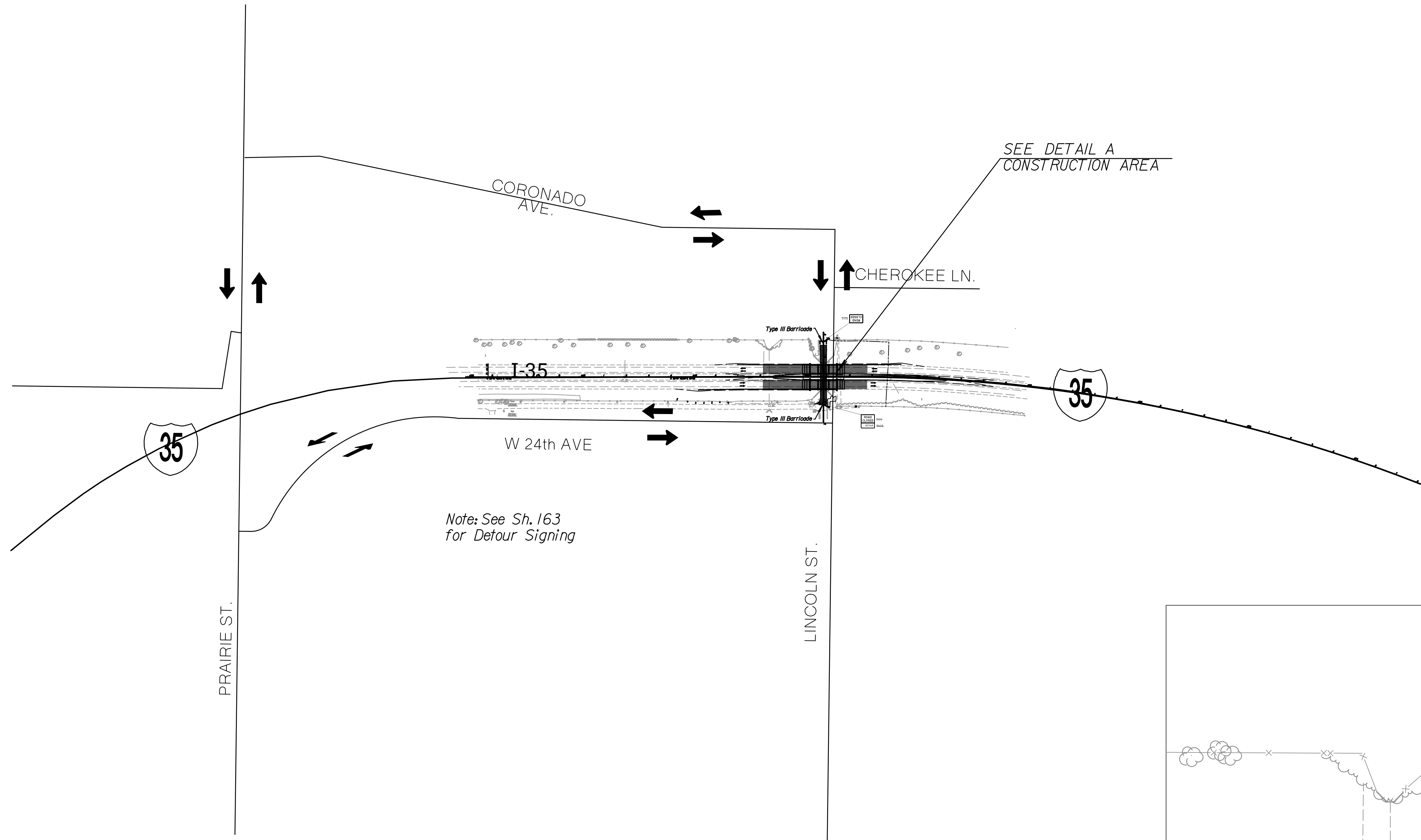
CONSTRUCTION THIS PHASE



DATE	2023
BY	
REFERENCES NOTED	NAIR
REFERENCES CHECKED	BUSTER

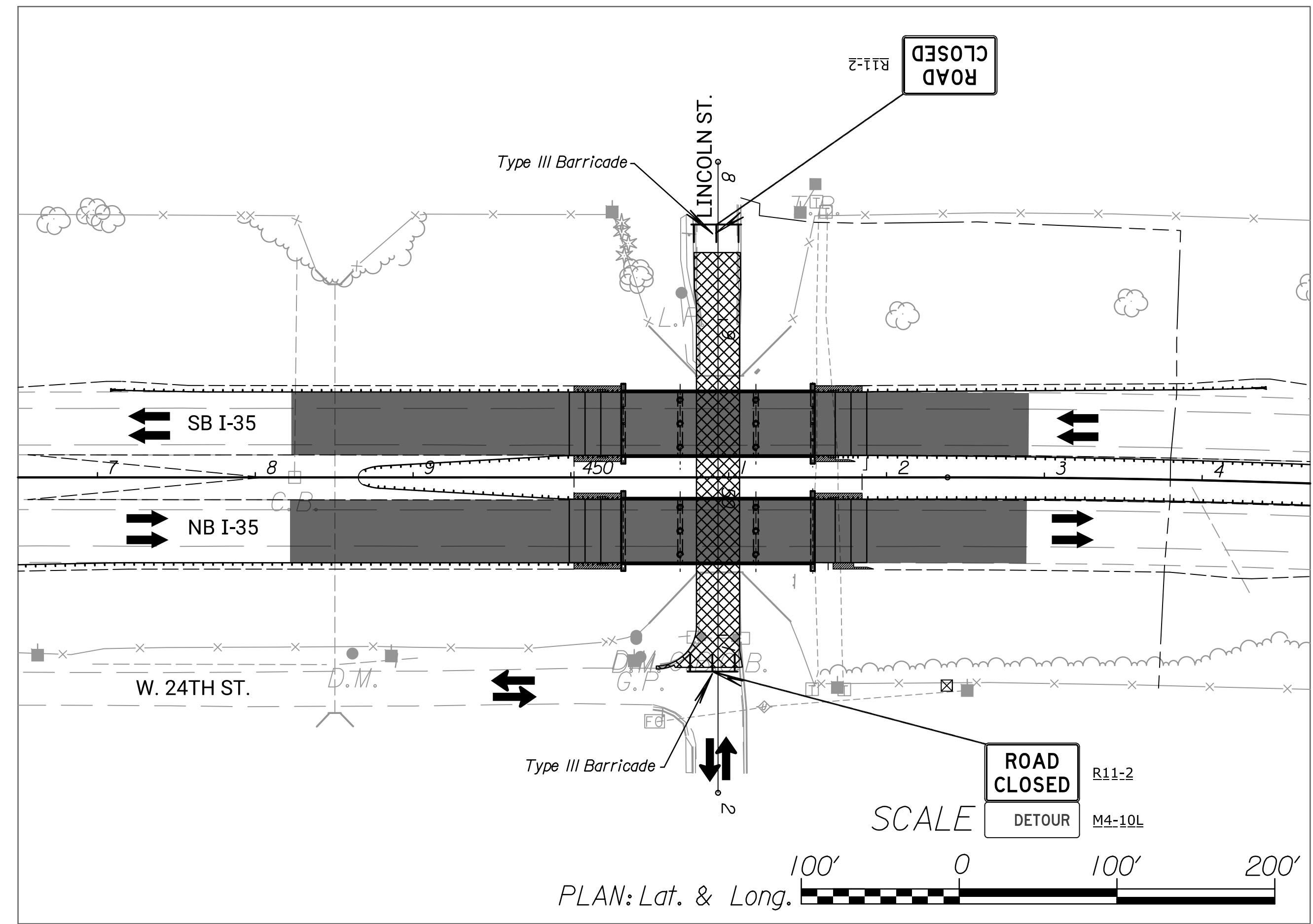
Drawn By : user  
Plotted : 11-06-23  
File : c:\pwworking\central01\d2293301\KA571401\cdt-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	035-056 KA-5714-01	2023	129	200



PLAN: Lat. & Long. 500' 0 500' 1000'

DETAIL A



PLAN: Lat. & Long. 100' 0 100' 200'

KANSAS DEPARTMENT OF TRANSPORTATION  
DETOUR PLAN  
LINCOLN ST. DETOUR