STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	1	134

KANSAS TURNPIKE AUTHORITY
CONTRACT NO. 8082

Kansas Turnpike Authority

Contract No. 8082

Sedgwick County, Kansas

Bridge No. 43.930 Re-Deck & Widen

GRADING & SURFACING
BRIDGE REHABILITATION
SEEDING

SCALE 1" = 1 mile

INDEX OF SHEETS

10' Lt. Sta. 4715+27.54 REHABILITATE
KTA Bridge No. 43.930 SB
30.3'-50.1'-50.5'-29.9', Weathering Steel Beam
Composite, Continuous (WMCC)
40°36'39" Skew Lt., 42'-6" Roadway

Sta. 4712+30.00 BEGIN
KTA Proj. 8082

Sta. 4718+80.00 END
KTA Proj. 8082

10' Rt. Sta. 4715+66.11 REHABILITATE
KTA Bridge No. 43.930 NB
30.8'-51.3'-51.4'-30.4', Weathering Steel Beam
Composite, Continuous (WMCC)
41°46'12" Skew Lt., 42'-6" Roadway

DESIGN DESIGNATION

AADT (2022)	=	14,300
AADT (2042)	=	25,800
D	=	50%
T	=	26%
V	=	75 MPH
C of A	=	Full
Clear Zone	=	46'

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	
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	1172.18
RAILROADS		STREAM or CREEK	

50 1

NET LENGTH OF PROJECT	650.00	FT.	0.123 MILES
NET LENGTH OF BRIDGES	158.62	FT.	0.030 MILES
NET LENGTH OF ROAD	344.65	FT.	0.093 MILES

NOTE:
TRAFFIC TO BE CARRIED THROUGH PHASED CONSTRUCTION.

David E. Jacobson, P.E. 09/16/2024
Director of Engineering Date
Kansas Turnpike Authority

	BY	DATE
SURVEY		
CADD TECHNICIAN	CLEVENGER - GARVER	2024
DESIGNERS	BROUILLETTE - GARVER	2024
SQUAD	ALBRITTON/NIEBAUM - GARVER	2024

Plotted by : JEHarris 13-SEP-2024 15:28
File : 2302047rtl-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	29	134

SUMMARY OF QUANTITIES

	Item / Location	Class III Excavation	Concrete (Grade 4.0) (AE)(SA) (MPC)	Concrete (Grade 4.0) (AE)	Reinforcing Steel (Grade 60)	Reinforcing Steel (Grade 60) (Epoxy Coated)	Structural Steel (A709) (Grade 50W)	Structural Steel (M270) (Grade 50WT3)	Welded Stud Shear Connectors	Bearing (Steel Reinforced Elastomeric)	Piles (Steel) (HP12x53)	Piles (Steel) (HP14x102)	Test Piles (Special) (HP12x53)	Test Piles (Special) (HP14x102)	Cast Steel Pile Points	Bridge Deck Grooving	Abutment Strip Drain	Bridge Backwall Protection System	Flowable Fill (High Strength)	Drilling and Grouting	Slope Protection Removal and Replacement	Temporary Shoring	Environmental Protection	Falsework Inspection
		Cu. Yds.	Cu. Yds.	Cu. Yds.	Lbs.	Lbs.	Lbs.	Lbs.	Each	Each	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Each	Sq. Yds.	Sq. Yds.	Sq. Yds.	Cu. Yds.	Each	Sq. Yds.	Lump Sum	Lump Sum	Lump Sum
N.B. BRIDGE	Abutment No. 1	159.1	**	38.2	---	3,437*	---	---	---	---	106.0	---	---	---	2	---	50.5	55.7	88.8	---	31	---	---	---
	Pier No. 1	---	---	7.4	933	---	---	---	---	2	---	105.0	---	---	2	---	---	---	---	12	---	---	---	---
	Pier No. 2	17.3	---	13.7	1,294	---	---	---	---	2	---	52.0	---	59.0	2	---	---	---	---	20	---	---	---	---
	Pier No. 3	---	---	7.5	933	---	---	---	---	2	---	101.0	---	---	2	---	---	---	---	12	---	---	---	---
	Abutment No. 2	176.2	**	41.6	---	3,879*	---	---	---	---	48.0	---	58.0	---	2	---	55.1	63.2	97.1	---	30	---	---	---
	Substr. Total	349.0	---	108.4	2,227	7,316	---	---	---	6	154.0	258.0	58.0	59.0	10	---	105.6	118.9	185.9	44	61	---	---	---
	Superstr. Total	---	299.5	---	---	73,869	6,538	62,717	5,820	---	---	---	---	---	---	719.2	---	---	---	---	---	---	---	---
	Total	349	299.5	108.4	2,230	81,190	6,540	62,720	5,820	6	154 †	258 ††	58	59	10	719	106	119	185.9	44	61	Lump Sum	Lump Sum	Lump Sum
S.B. BRIDGE	Abutment No. 1	159.1	**	40.7	---	3,693*	---	---	---	---	52.0	---	62.0	---	2	---	49.0	60.7	88.5	---	26	---	---	---
	Pier No. 1	---	---	7.9	949	---	---	---	---	2	---	105.0	---	---	2	---	---	---	---	12	---	---	---	---
	Pier No. 2	17.3	---	14.1	1,310	---	---	---	---	2	---	51.0	---	64.0	2	---	---	---	---	20	---	---	---	---
	Pier No. 3	---	---	7.9	949	---	---	---	---	2	---	105.0	---	---	2	---	---	---	---	12	---	---	---	---
	Abutment No. 2	169.4	**	42.6	---	3,930*	---	---	---	---	102.0	---	---	---	2	---	53.0	59.5	96.3	---	32	---	---	---
	Substr. Total	345.8	---	113.2	2,259	7,623	---	---	---	6	154.0	261.0	62.0	64.0	10	---	102.0	120.2	184.8	44	58	---	---	---
	Superstr. Total	---	297.6	---	---	72,527	6,517	61,692	5,740	---	---	---	---	---	---	706.1	---	---	---	---	---	---	---	---
	Total	346	297.6	113.2	2,260	80,150	6,520	61,690	5,740	6	154 ◔	261 ◔◔	62	64	10	706	102	120	184.8	44	58	Lump Sum	Lump Sum	Lump Sum

* Reinforcing steel placed in the abutment above the construction joint is included in the superstructure total quantity.

** Quantities are included in the superstructure total quantity.

† This includes 2 @ 53′ and 1 @ 48′.

†† This includes 1 @ 54′, 2 @ 52′, 1 @ 51′ and 1 @ 49′.

◔ This includes 1 @ 52′ and 2 @ 51′.

◔◔ This includes 2 @ 54′ and 3 @ 51′.

INDEX OF BRIDGE DRAWINGS

Sheet No. N.B.	Sheet No. S.B.	Drawing Title
29		Bridge Quantities, Index & General Notes
30		General Notes
31		Construction Sequence Details
N.B.	S.B.	
32	59	Construction Layout
33	60	Engineering Geology
34	61	Foundation Layout
35-37	62-64	Abutment No. 1 Details
38-40	65-67	Abutment No. 2 Details
41	68	Abutment Strip Drain
42-43	69-70	Pier Details
44	71	Framing Plan
45	72	New Beam Details
46-47	73-74	Existing Beam Details
48-49	75-76	Steel Details
50	77	Steel Erection, Fit-Up and Bolting Procedure
51-52	78-79	Slab Details
53	80	Roadway Surface Elevations
54	81	Dead Load Deflections
55	82	32" Barrier Rail Details
56	83	51" Barrier Rail Details
57-58	84-85	Bill of Reinforcing Steel
		Standards
86		Bridge Excavation
87		Standard Pile Details
88		Supports and Spacers for Reinforcing Steel

TRAFFIC DATA
(Br. No. 43.930 NB & SB)

AADT (2022)	14,300
AADT (2042)	25,800
D	50%
T	26%

LFD RATING FACTORS

Location	Rating Level / Truck	Inventory	Operating
N.B. Bridge	HS-20 (36T)	2.31	3.86
	Type HET (110T)	X	2.01
S.B. Bridge	HS-20 (36T)	2.39	3.99
	Type HET (110T)	X	2.07
2002 LFD Rating, 17th Edition AASHTO			

LRFR RATING FACTORS

Location	Rating Level / Truck	Inventory	Operating
N.B. Bridge	HL-93 Loading	2.41	3.13
S.B. Bridge	HL-93 Loading	2.46	3.20
2018 Manual for Bridge Evaluation			

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO LRFD Bridge Design Specifications, 9th Edition (2020).

ORIGINAL DESIGN SPECIFICATIONS:
AASHO Specifications, 1953 Edition.

DESIGN LOADING:
HL-93

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

UNIT STRESSES:

Concrete (Grade 4.0)(AE)(SA)(MPC)	f'c	=	4 ksi
Concrete (Grade 4.0)(AE)	f'c	=	4 ksi
Reinforcing Steel (Grade 60)	fy	=	60 ksi
Structural Steel (A709 Gr. 50W)	Fy	=	50 ksi
Structural Steel (M270 Gr. 50WT3)	Fy	=	50 ksi
Steel Piles (Grade 50)	Fy	=	50 ksi
Existing Structural Steel (A373-54T)	fy	=	33 ksi
Existing Concrete	f'c	=	3 ksi
Existing Reinforcing Steel	fy	=	40 ksi
Existing Steel Pile	fy	=	33 ksi

LRFD DESIGN PILE LOAD:
Pile Loads are factored and are given in tons.

N.B. BRIDGE	Strength I	Service I	Phi
Abutments	50	36	0.65
Piers	143	96	0.65

S.B. BRIDGE	Strength I	Service I	Phi
Abutments	50	36	0.65
Piers	143	96	0.65

GENERAL NOTES

CONCRETE: Superstructure concrete is bid as Concrete (Grade 4.0)(AE)(SA)(MPC). Substructure concrete is bid as Concrete (Grade 4.0)(AE). Bevel all exposed edges of all concrete with a ¾" triangular molding, except as otherwise noted on the plans.

REINFORCING STEEL: All reinforcing steel dimensions are to the centerline of bars unless otherwise noted. All reinforcing steel shall conform to the requirements of ASTM A615, Grade 60.

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

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.

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

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY
Br. No. 43.930

BRIDGE QUANTITIES, INDEX & GENERAL NOTES

SHEET NO. OF		SCALE		APP'D	
DESIGNED		DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.		DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
File: KTA44-01-Quantities.dgn
Plot Date: 12-SEP-2024 21:34
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	30	134

GENERAL NOTES (CONT.)

EXISTING STRUCTURE: Plans of the existing structure are on file and available for inspection by qualified bidders at the KTA.

EXISTING DIMENSION VERIFICATION: Dimensions of the existing structure are based on old plans. Verify, by field measurement, the as-built dimensions of the existing structure and submit such verification in writing to the Engineer. The verification will include sketches, drawings, photographs and descriptions that will be incorporated in the new construction.

REMOVAL OF EXISTING STRUCTURE: The roadway bid item "Removal of Existing Structure", Lump Sum, includes the removal of the concrete deck, barriers, and abutments as shown on the plans.

Clearly mark the location of the existing beam top flanges on top of the existing deck concrete. Mark the entire length of all beams before sawing or removing any concrete. Concrete sawing shall be limited to a maximum depth of 3 inches directly above any beam and within 3 inches of either edge of a beam top flange. Do not use drop-type pavement breakers. Do not use a hoe ram directly above any beam or within 1'-0" of either edge of a beam top flange. Use a jackhammer no heavier than 15 lb. to remove concrete above and within 1'-0" of either side of a beam top flange.

Damage to the existing structural steel caused by procedures not conforming to the above requirements shall be repaired as directed by the Engineer at the Contractor's expense (no cost to the KTA). Any costs incurred for testing or Engineering evaluations will be included in the Contractor's expense for repair.

All materials removed from the existing structure shall become the property of the Contractor and removed from the site.

DEMOLITION PLANS: This is a Category C Demolition. Submit detailed Demolition Plans to the KTA at least 4 weeks before the beginning of 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.

BROKEN CONCRETE: Waste the broken concrete from the existing bridge on sites provided by the Contractor and approved by the Engineer. Protruding reinforcing in the broken concrete shall be cut off and removed. This work shall not be paid for directly but shall be subsidiary to other bid items of the contract.

ENVIRONMENTAL PROTECTION: After concrete deck removal, the Contractor will test the remaining paint on the top flange for lead content. If necessary, use environmental protection procedures as shown in the KDOT Specifications. If required, the Environmental Protection Structure Classification is Class B.

TEMPORARY CONSTRUCTION LOADS: The Contractor will not stock pile construction materials, debris/rubble or place equipment weighing more than 20 tons or greater than bridge posted load limits on the bridge without prior written approval by the KTA Engineer. For bridges with highway traffic on or under the bridge the Contractor will provide plans showing the location, quantity and weight of the proposed materials, debris or equipment weighing more than 20 tons or greater than the posted load limits. These plans will bear the Seal of the Contractor's Engineer before approval is granted. The Contractor's Engineer will use AASHTO Specifications for limitations on structural capacities, as the structure is found in the field.

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.

BACKFILL COMPACTION: Compact backfill at the abutments.

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

SLOPE PROTECTION REMOVAL AND REPLACEMENT: This item shall consist of the removal and replacement of existing Slope Protection necessary to complete abutment construction. Furnishing all concrete, reinforcing steel and expansion joint filler material are subsidiary to the bid item, "Slope Protection Removal and Replacement". Replace Slope Protection to the existing limits and thicknesses or as directed by the Engineer.

PILING: Drive all piling to bear in the Wellington Shale formation. Driving shall stop when in the opinion of the Engineer additional driving may damage the piling. Drive all piling to the Pile Driving Formula Load of 50 tons at the abutments and 143 tons at the piers.

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 tip elevation, the Engineer may request that the Pile Driving Analyzer (PDA) equipment be used.

TEST PILE SPECIAL: Drive test pile special at the locations directed by the Engineer/Geologist or as shown on the plans. Use Pile Driving Analyzer (PDA) equipment and methods compliant with KDOT Specifications. The test piling shall remain in place as permanent piling. Drive the test pile special piling to the resistance value of the Strength I load divided by Phi shown on the plans.

PILING SPLICE LOCATION: Integral pile splice locations and weld testing criteria for the abutments will follow the "Standard Pile Details" Sheet (BRI10).

CAST STEEL PILE POINTS: Pile points are required for all piles and shall be a one-piece unit of cast steel. Weld the cast steel pile point to the pile as specified by the manufacturer. See KDOT Specifications for pile point requirements.

TEMPORARY SHORING: The bid item "Temporary Shoring" includes all labor and material necessary to furnish shoring at the abutments for the temporary bracing of the embankment during excavation and supporting of the beam ends at the abutments during work on the bridge. The shoring at the beam ends shall provide means of raising or lowering the beams to provide the required elevations. Stability of the bottom flange against twisting at the shoring location shall be provided by the Contractor. 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.

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

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 Specifications 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.

DRILLING AND GROUTING: This item shall consist of grouting reinforcing steel, anchor bolts, tie bars, or dowel bars into the existing concrete, where required by the Engineer, with an epoxy grout. Follow KDOT Specifications 842 and any associated Special Provisions. Follow the manufacturer's directions for mixing, application and curing. The tools, materials, labor and incidentals necessary to complete the work shall be paid for per each by the bid item "Drilling and Grouting".

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.

BRIDGE DECK GROOVING: After the bridge deck has cured, transversely groove the deck in accordance with KDOT Specifications. All grooving shall be perpendicular to the centerline of the bridge.

ANCHOR BOLTS: Anchor bolts will adhere to KDOT Standard Specification Section 1600 (Grade 55) with the following exception: the threads may be rolled or cut.

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.

STRUCTURAL STEEL: The rolled beams and splice plates shall meet AASHTO M270 Gr. 50WT3 requirements. All other structural steel shall meet ASTM A709 Gr. 50W, unless noted otherwise. Shop and Field Splices shall be made only where shown on the Contract Plans as a "splice" or as an "optional splice". Elimination of any "splice" may be requested.

FABRICATION OF FIELD SPLICES: Prepare joints for the field splices in accordance with KDOT Specifications. Use Type "B" shop laydown.

WELDING: Material, Fabrication and Construction shall conform to KDOT Specifications. On the shop drawings, show a code or symbol in the tail of the weld symbol that refers to an approved, pre-qualified weld procedure.

WELDED STUD SHEAR CONNECTORS: Weld Shear Stud Connectors with automatically timed stud welding equipment connected to a suitable power source. All stud welding shall conform to KDOT Specifications. Length of the Shear Stud Connectors to be attached to the existing beams in the field is based on theoretical fillet thickness. Revise the length of those Shear Stud Connectors as required to meet embedment requirements shown in the plans following calculation of actual fillet thickness.

BOLTS: All bolts, nuts and hardened flat washers shall conform to the heavy hex structural requirements of ASTM F3125 Grade A325, Type 3, and KDOT Specifications unless otherwise noted. Direct Tension Indicators (DTIs) are to comply with the requirements of the latest edition of ASTM F959. No allowance will be made for high strength bolts used for permanent or temporary connections. This work is subsidiary to the bid item, "Structural Steel". The number of bolts is shown for the convenience of the Contractor.

BOLTED CONNECTIONS: Beam Connections: Use $\frac{7}{8}$ inch diameter heavy hex structural bolts for the main member connections. Use $\frac{15}{16}$ inch diameter bolt holes. Do not ream during field erection. Accurately align all connections by driving $\frac{15}{16}$ inch diameter drift pins in all corners and in $\frac{1}{4}$ of the remaining holes in each plate. See KDOT Specifications.

Diaphragm Connections: Use $\frac{7}{8}$ inch diameter heavy hex structural bolts for the secondary member connections. Use $\frac{15}{16}$ inch diameter bolt holes. Oversized or slotted holes, as specified in the KDOT Specifications, may be used in only one of the two members connected and must be shown in the approved shop drawings. Oversized or slotted holes may require additional standard hardened washers or plate washers. Report to the Engineer prior to any required field reaming that will remove more than $\frac{1}{4}$ inch of material from one ply of the connected parts. Field drill holes in bolted bent plate (existing beam) for connection to new steel diaphragm.

Use Direct Tension Indicators (DTIs) on all high strength bolts. Place the DTI under the bolt head and turn the nut to tighten. This method is preferred whenever possible. Face the protrusions on the DTI to the underside of the bolt head. Place a hardened flat washer under the nut. See KDOT Specifications.

ERECTION PLANS: This is a Category B Structure. Submit detailed Erection Plans to the KTA at least 4 weeks before beginning the erection process. Portions of the submitted details shall bear the seal of a licensed Professional Engineer. Identify, on the Erection Plans, the Erection Supervisor required by KDOT Specifications. No structural erection work will begin without approved erection plans.

ERECTION ELEVATION CHECKS: Record existing top of beam elevations at ℄ bearing prior to demolishing abutments. After the abutment and pier concrete has cured and before setting any structural steel, present verification to the Engineer that the elevations at the bearings match plan elevation ($\pm\frac{1}{4}$").

FILLETS: After the existing concrete deck has been removed and new beams placed, profile each beam. Construct the finished deck to plan grade by varying the depth of the fillet over the beam to provide for concrete dead load deflection. Correct any variation between the actual profile and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the beams so that the finished floor is constructed to the theoretical grade. The minimum depth of the deck over the beam shall be $8\frac{1}{2}$ inches.

The theoretical amount of concrete required for the fillets is 5.6 C.Y. for the NB Bridge and 7.6 C.Y. for the SB Bridge. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

PAINTING OF EXISTING STRUCTURAL STEEL: Repaint the following existing structural steel in conformance with KDOT Specifications for "Repainting Steel Bridges - Change Paint System": top of girder top flanges, all surfaces of abutment diaphragms, and girder ends that will be embedded in new concrete.

Blast clean the tops of the top flanges to SSPC-SP6 Specifications (latest Revision) before the studs are applied. After the studs are applied, blast clean the tops of the top flanges and the studs to SSPC-SP6 Specifications and paint with an approved organic zinc primer to a minimum dry film thickness of 3 mils.

Existing structural steel embedded in new concrete shall be blast cleaned to SSPC-SP6 Specifications and painted with an approved organic zinc primer to a minimum dry film thickness of 3 mils.

Prepare and paint any areas of existing paint that are damaged during construction, including the pier piles and areas of the existing beams where new stiffeners are welded to the existing beams. The new paint system shall be an approved organic zinc primer with a waterborne acrylic finish coat. The finish coat will be Kansas Green. The color will match Federal Standard #24097.

All painting of the existing structural steel shall not be paid for directly but shall be subsidiary to other bid items.

PAINTING OF NEW WEATHERING STEEL: Blast clean all surfaces of all weathering steel, including all contact surfaces of bolted connections, to meet SSPC-SP6 Specifications (latest Revision). Blast clean to meet SSPC-SP10 Specifications and prime coat the embedded portion of the beams, including the abutment diaphragms; the top flanges, including the shear studs; and the top flange splice plates. The shop and field coats shall conform to an inorganic zinc primer with a waterborne acrylic finish coat. The finish coat will be Kansas Brown. The color will match Federal Standard #20045.

PAINTING OF STEEL PILING: All exposed portions of new pier piling shall be painted with an approved organic zinc primer and a waterborne acrylic finish coat. The finish coat will be Kansas Green. The color will match Federal Standard #24097.

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)(MPC)". Approval of the Contractor's alternate sequence is required prior to placement of concrete in the deck.

Place and hand vibrate all concrete for the abutments above the existing footings to the bottom of the deck elevation just prior to the normal paving train operations. Do this work in a manner to avoid cold joints in either the slab or in the abutment.

CONCRETE PLACING: At the Contractor's option, the finishing machine may be set normal to the centerline of the structure; however, the concrete must be placed along the skew. This requires placing concrete ahead of the finishing machine; consequently, a set retarder may be advisable. Note both requirements on any alternate placing sequence.

CONSTRUCTION LOADS: Limited traffic is permitted on the new deck during the curing period. Keep any exposed deck wet during the curing period. See KDOT Specifications Section 710 tables 710-I and 710-2 for additional information.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

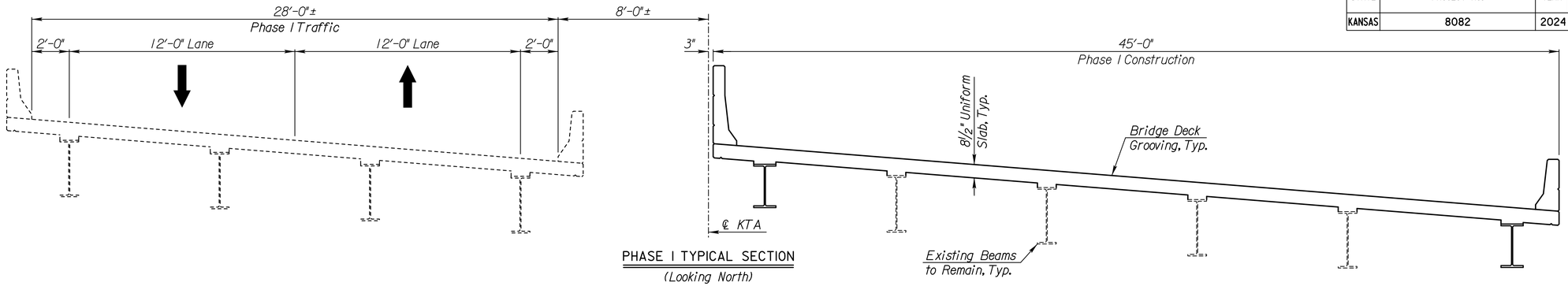
Br. No. 43.930

GENERAL NOTES

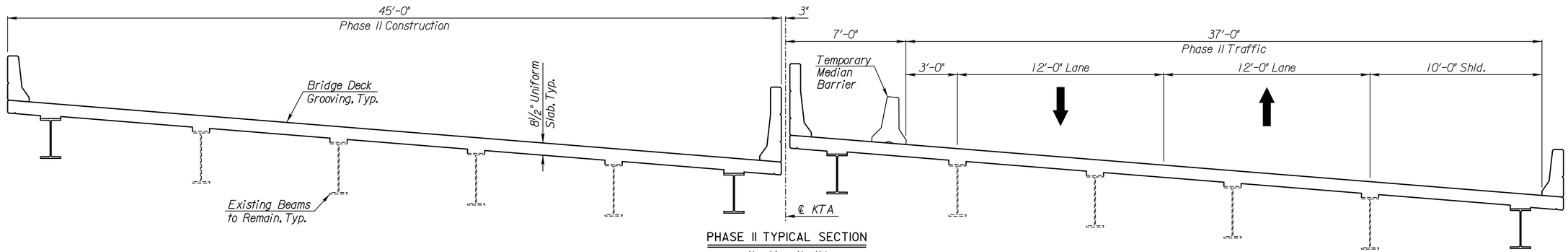
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-02-GenNotes.dgn
Plot Date: 12-SEP-2024 2h35

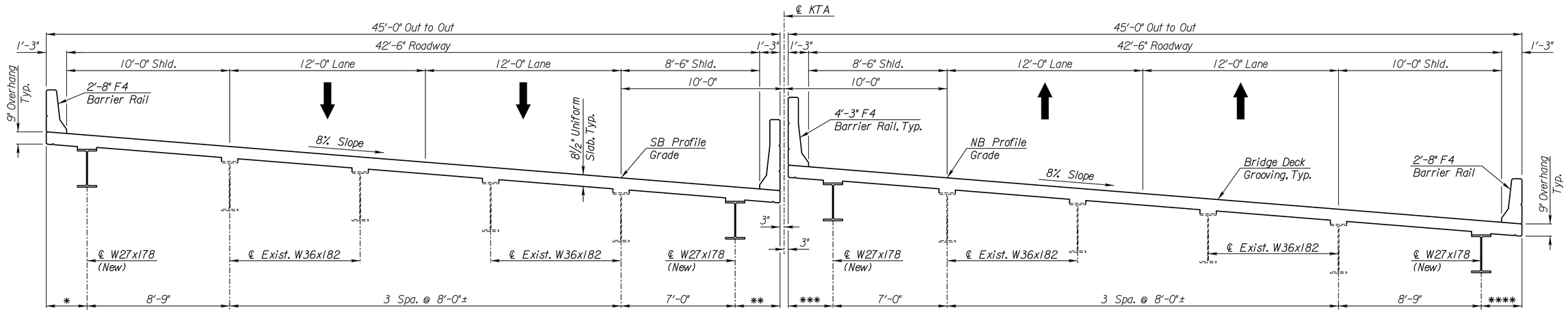
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	31	134



PHASE I TYPICAL SECTION
(Looking North)



PHASE II TYPICAL SECTION
(Looking North)



FINISHED TYPICAL SECTION
(Looking North)

SUGGESTED CONSTRUCTION SEQUENCE NOTES:

PHASE I CONSTRUCTION:

1. *Switch traffic to southbound bridge. (The remaining steps in Phase I are for construction of the northbound bridge.)*
2. *Remove the existing slab and barriers.*
3. *Install shoring for beams at abutments. Survey top of beam elevations.*
4. *Remove existing abutment concrete.*
5. *Construct new abutment footings and widen piers.*
6. *Place new steel beams. Install shear connectors on top flanges.*
7. *Remove showing for beams at abutments.*
8. *Place new slab, integral abutment diaphragms, and barriers.*
9. *Construct remaining components necessary to open bridge to interim traffic configuration during winter shutdown.*

PHASE II CONSTRUCTION:

10. *Place temporary median barrier on northbound bridge.*
11. *Switch traffic to northbound bridge.*
12. *Repeat steps 2-8 for southbound bridge construction.*
13. *Construct remaining components necessary to open bridge to final traffic configuration.*

*	*Varies from 1'-2 7/8" to 3'-8 3/4"*
**	*Varies from 1'-6 1/4" to 3'-11 3/8"*
***	*Varies from 1'-4 7/8" to 4'-0"*
****	*Varies from 1'-3" to 3'-11 1/8"*

NO.	DATE	REVISIONS	BY	APP'D
4				
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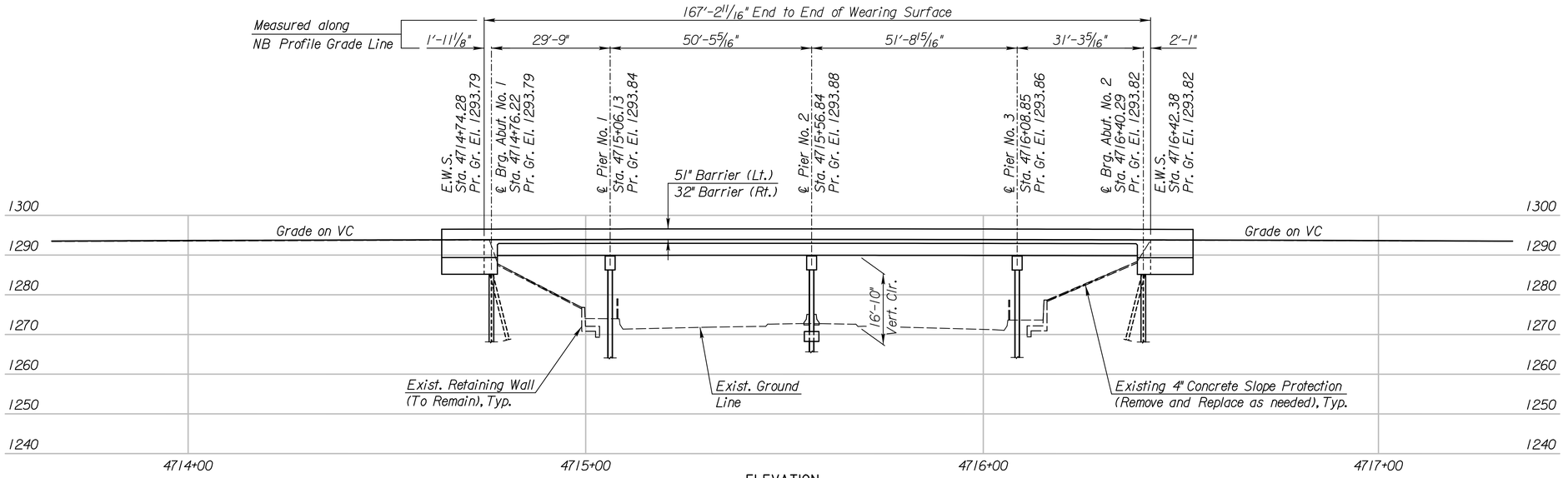
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930

BRIDGE SEQUENCE OF CONSTRUCTION

SHEET NO. OF	SCALE	APP'D
DESIGNED	DETAILED JTK	QUANTITIES CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK. CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-03-TypSec.dgn
Plot Date: 12-SEP-2024 2h35

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	32	134

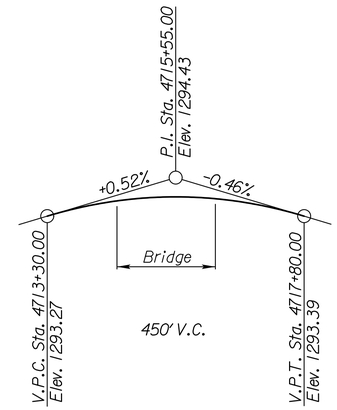


B.M. #1 - Garver Disc
154.36' Lt of ℄ Sta 4699+50.00 Elev. 1270.32

B.M. #2 - Garver Disc (Base)
361.89' Lt. of ℄ Sta 4726+07.89 Elev. 1289.60

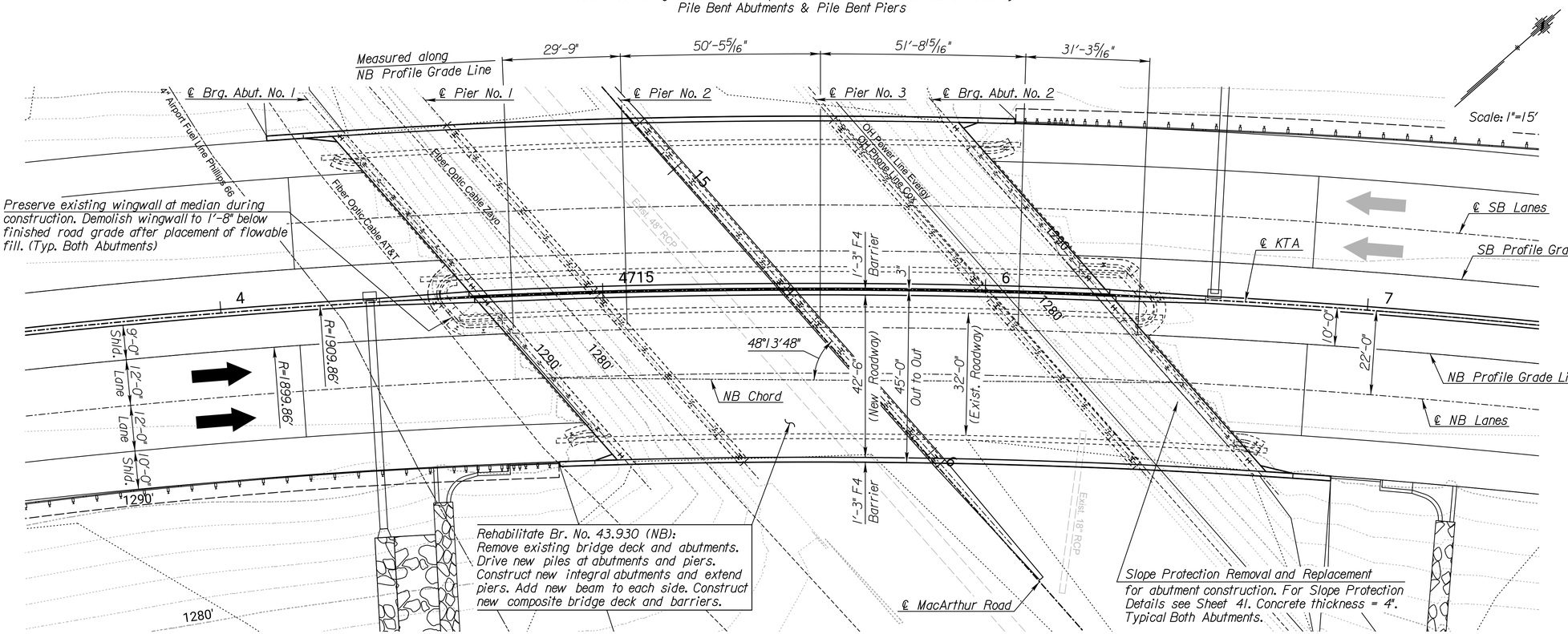
ELEVATION

30.8'-51.3'-51.4'-30.4' Spans, Skew 41°46'12" Lt.
Existing: Steel Beam, Continuous (SBMC), 28'-0" Roadway
Rehabilitate: Steel Beam Composite, Continuous (SMCC)
Widen: Weathering Steel Beam Composite, Continuous (WMCC), 42'-6" Roadway
Pile Bent Abutments & Pile Bent Piers



PROPOSED PROFILE GRADE

Profile Grade is located 10' left and right of ℄ KTA.



PLAN

℄ KTA CURVE DATA

PI Sta. (Bk) = 4718+18.54
PI Sta. (Ahd) =
Δ = 48°01'30" (Rt)
D = 03°00'00"
R = 1909.86'
T = 850.82'
L = 1600.83'
E = 180.95'

Notes:
All piers and abutments are parallel.
Stations and Profile Grade Elevations are given at the intersections of ℄ piers and abutments with the Profile Grade Line.
See Foundation Layout on Sheet No. 34 for span lengths measured along the chord.

The elevations shown are referenced to the NAVD88 Vertical Datum.

NO.	DATE	REVISIONS	BY	APP'D
4				
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2				
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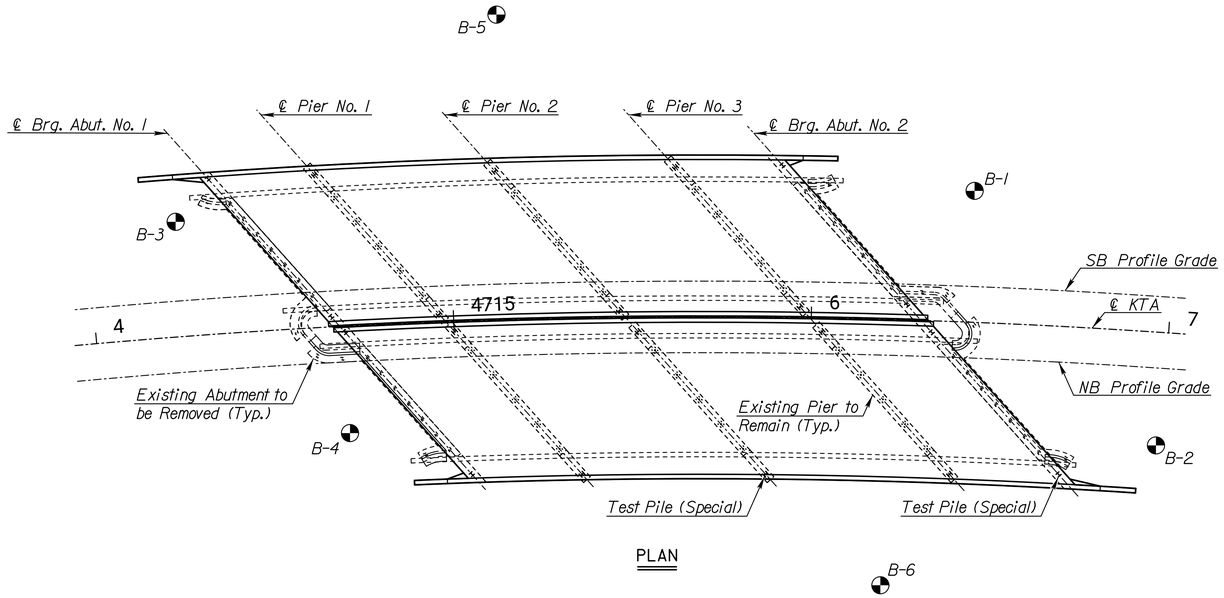
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

NORTHBOUND CONSTRUCTION LAYOUT

SHEET NO. OF	SCALE		APP'D	
DESIGNED	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-04-ConLgNB.dgn
Plot Date: 12-SEP-2024 21:36

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	33	134



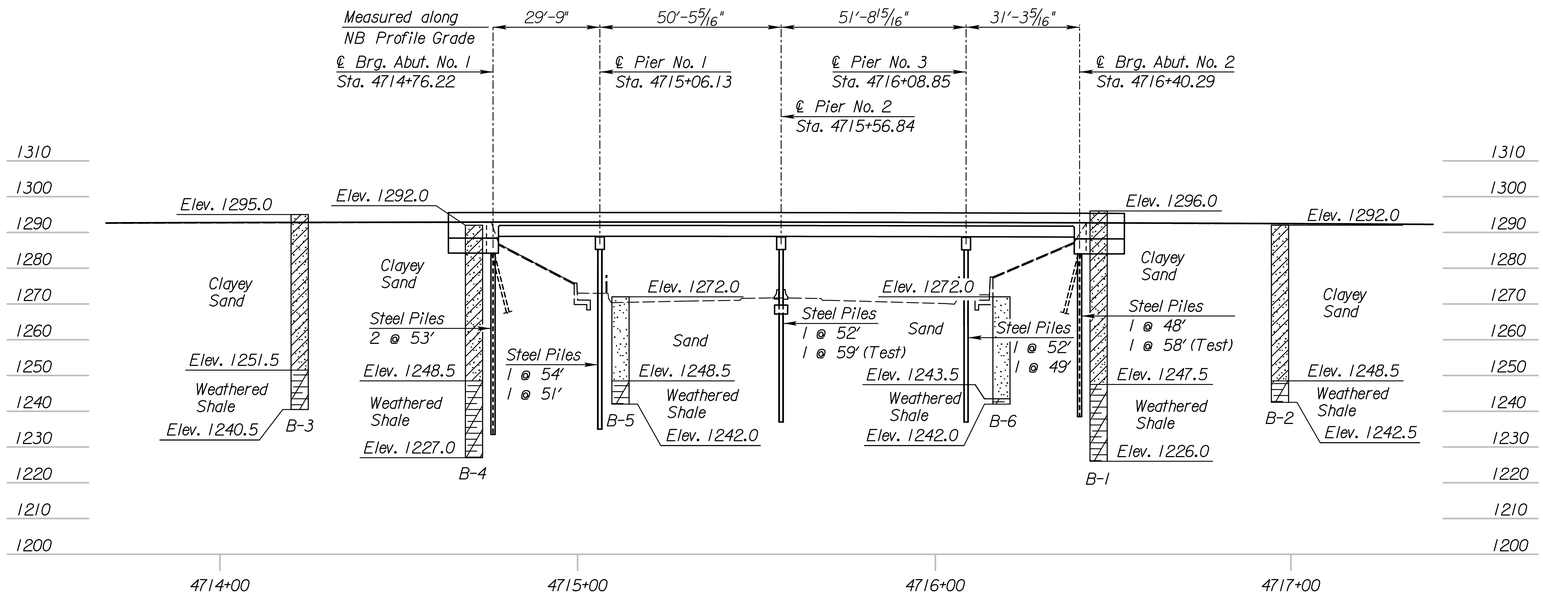
PLAN

PILING:
HP12x53 Piles shall be used at the abutments. HP14x102 Piles shall be used at the piers. All new piles shall use case steel pile points. All steel piles will be Grade 50.

Drive all piling to penetrate the mantle and achieve bearing in the weathered shale. Once sufficient resistance and penetration into competent bedrock material are achieved, driving must cease to avoid damage to the pile. Final pile tip elevations should be determined in the field using resistance calculations.

TEST PILE (SPECIAL):
One Test Pile (Special) shall be driven at Pier No. 2 and Abutment No. 2 as shown. Test piles shall be driven prior to production piles and furnished 10 feet longer than estimated tip elevations of the production piles shown in the plans. Test piles shall remain in place and be used as production piles. All restrikes should be performed a minimum of 24 hours after the initial advancement of the pile has ceased.

PILE DRIVING ANALYZER (PDA):
All PDA testing for this project shall be performed by an independent testing firm to be hired by the Contractor. PDA testing shall be performed on each Test Pile (Special) to confirm nominal compressive resistance and develop driving criteria for production piles.



GEOLOGIC PROFILE

LEGEND

Clayey Sand

Weathered Shale

Sand

Notes:

For Pile Locations and Top of Pile Elevations, see Foundation Layout on Sheet No. 34.

Boring information shown on these plans are taken from notes obtained in the field and represent the best information available. Copies of the Geotechnical Exploration Report (May, 2024) are available for inspection by qualified bidders at the Kansas Turnpike Authority office in Wichita, Kansas.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

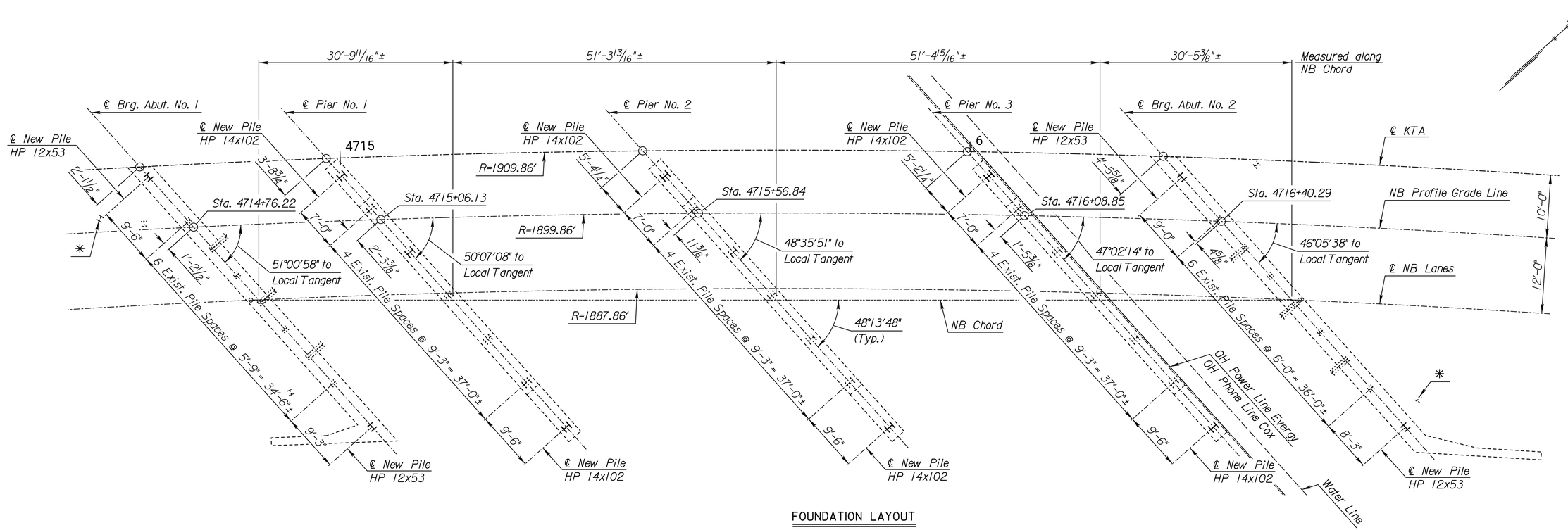
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

ENGINEERING GEOLOGY

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-05-Geology.dgn
Plot Date: 12-SEP-2024 21:37

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	34	134



FOUNDATION LAYOUT

(Br. No. 43.930 NB)

* Existing abutment wing piles that are not used in the new construction shall be removed to the bottom of the existing abutment wing footing. (Typ.)

THEORETICAL LOCATION OF NEW PILES

Location	℄ KTA Stationing	Offset from ℄ KTA	Top of Pile Elevation
Abut. No. 1 Median New Pile	4714+69.48	1.66' Rt.	1284.95
Abut. No. 1 Exterior New Pile	4715+03.60	42.87' Rt.	1284.95
Pier No. 1 Median New Pile	4715+00.17	2.87' Rt.	1287.72
Pier No. 1 Exterior New Pile	4715+35.15	43.72' Rt.	1285.00
Pier No. 2 Median New Pile	4715+51.57	4.03' Rt.	1287.74
Pier No. 2 Exterior New Pile	4715+87.67	43.92' Rt.	1284.92
Pier No. 3 Median New Pile	4716+03.08	3.81' Rt.	1287.77
Pier No. 3 Exterior New Pile	4716+40.26	42.72' Rt.	1284.93
Abut. No. 2 Median New Pile	4716+33.77	3.23' Rt.	1284.87
Abut. No. 2 Exterior New Pile	4716+71.39	41.36' Rt.	1284.87

Plotted By: JEHarris | Plot Location:
File: KTA44-06-Foundation.dgn
Plot Date: 12-SEP-2024 21:37

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
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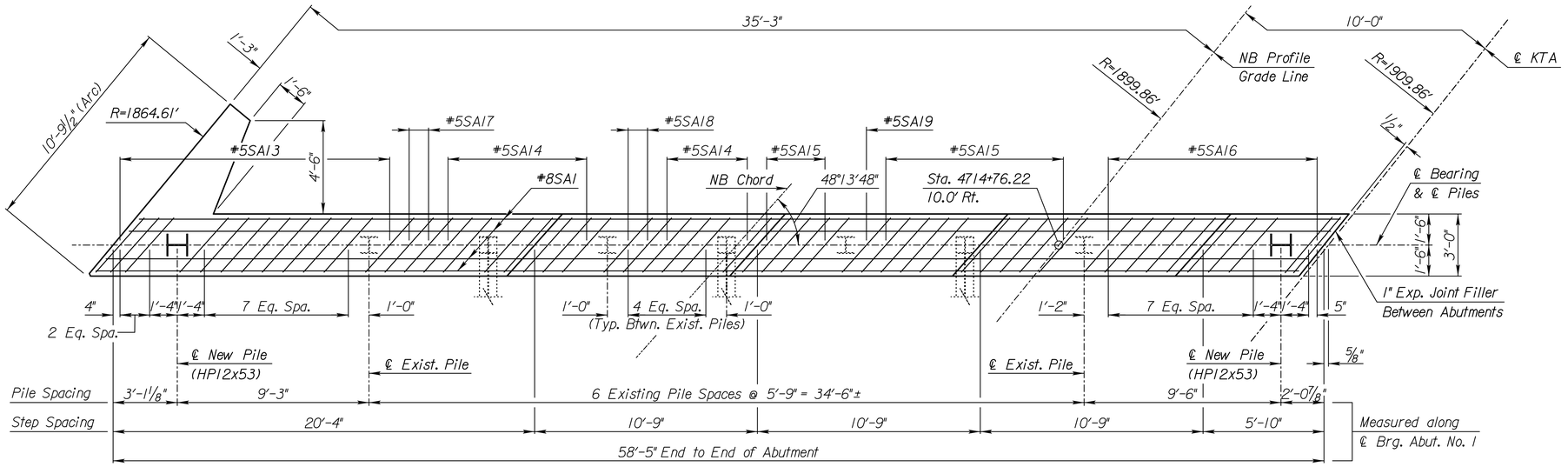
KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 NB

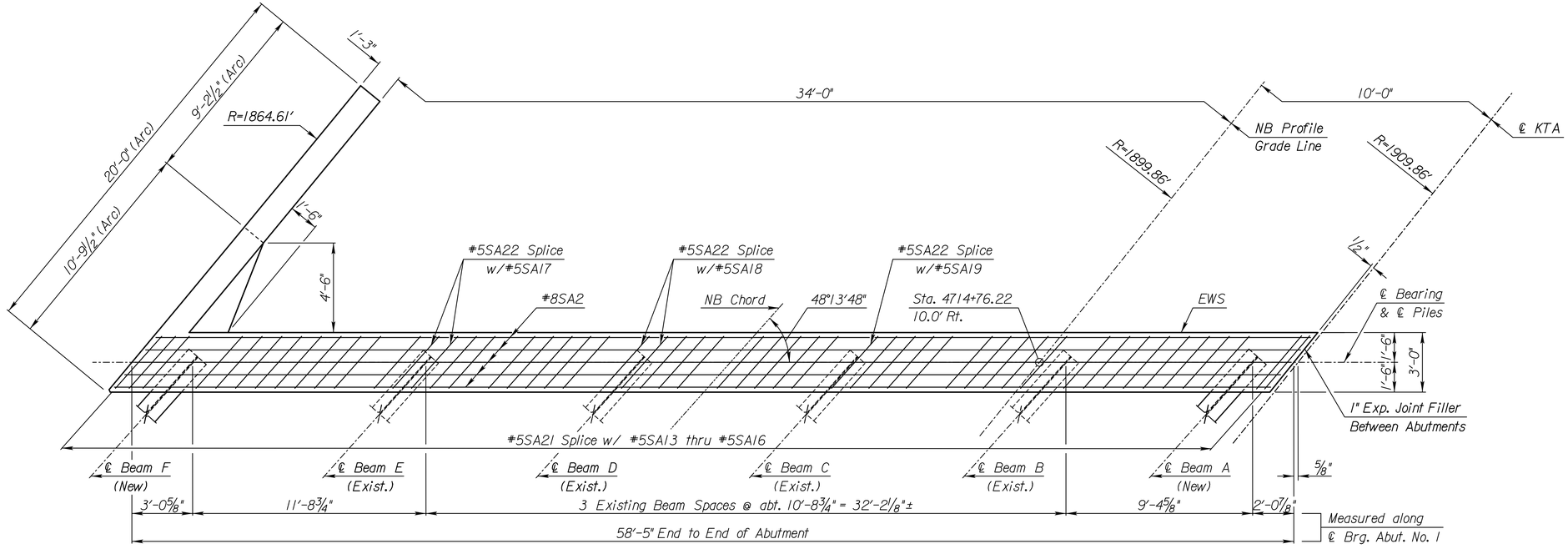
FOUNDATION LAYOUT

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	35	134



ABUTMENT PLAN BELOW BEAM SEAT



ABUTMENT PLAN ABOVE BEAM SEAT

Notes:

Stirrup spacing is measured along ℄ Bearing. Place stirrups parallel to ℄ Beams.

For Wingwall Details, see Sheet No. 37.

See Sheet No. 41 for additional abutment drainage details and limits of Bridge Backwall Protection System.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
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KANSAS TURNPIKE AUTHORITY

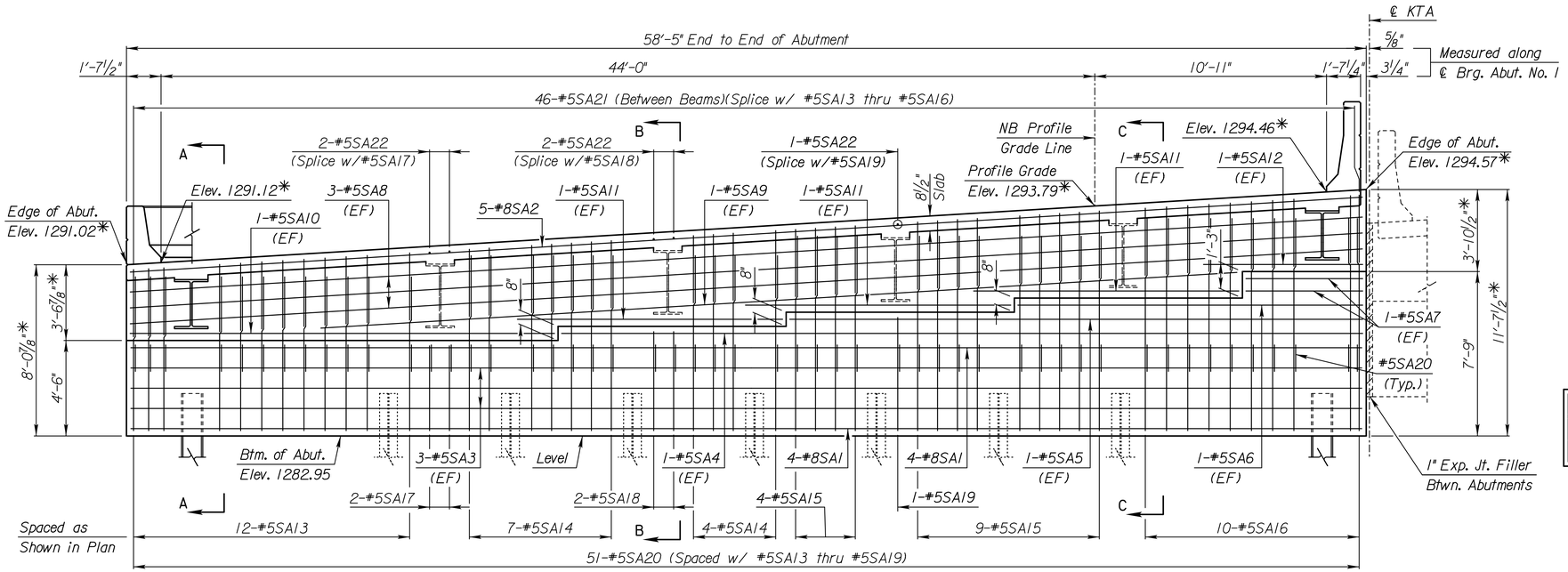
Br. No. 43.930 NB

ABUTMENT NO. 1 DETAILS

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	DPW	DETAILED	JTK	QUANTITIES		CADD	
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.		CADD CK.	

Plotted By: JEHarris | Plot Location:
File: KTA44-07-Abutment1.dgn
Plot Date: 12-SEP-2024 21:37

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	36	134



ABUTMENT ELEVATION
(Looking at Front Face)

* *At ℄ Bearing*

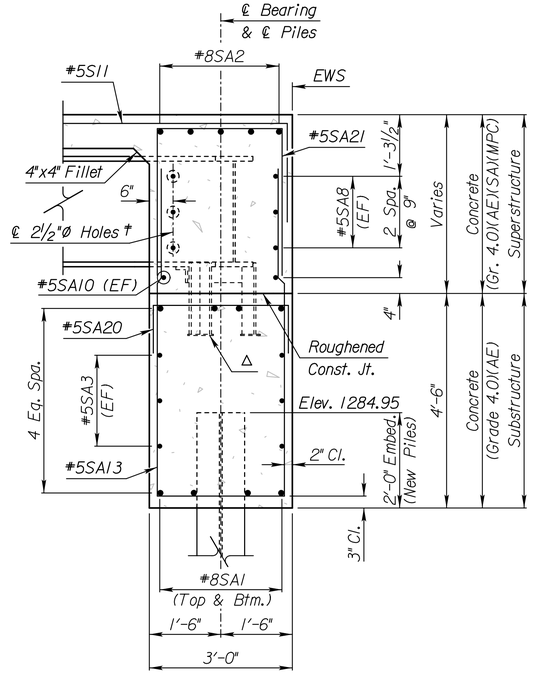
** *The beam support elevations for the existing beams are theoretical. The Contractor shall record the elevation of the bottom of the existing beams at ℄ bearing prior to removal of the abutment. That information shall be given to the Engineer. Those elevations will be used to adjust the beam support elevations as needed.*

Provide 1'-6" Min. Embedment of Existing Piles. Notify the Engineer if this cannot be achieved.

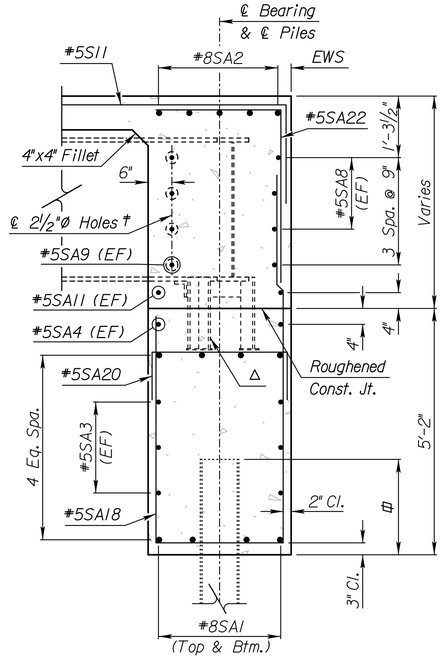
† *Field drill 2½" diameter holes in the web of existing and proposed beams. The location of the holes shall be confirmed in the field to match spacing of the #5SA8 & #5SA9 bars. This work shall be subsidiary to the bid item "Reinforcing Steel (Gr. 60)(Epoxy Coated)".*

△ *Beam Support placed perpendicular to ℄ Beams.*

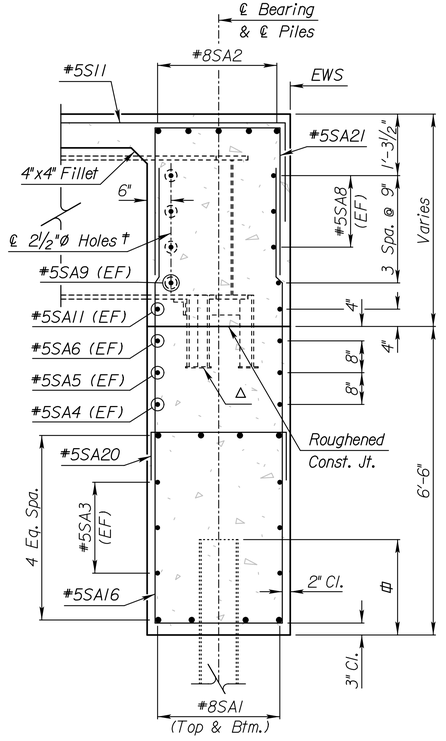
TABLE OF BEAM SUPPORT ELEVATIONS **						
Beam	A	B	C	D	E	F
Elevation	1291.25	1289.95	1289.29	1288.69	1288.05	1288.01



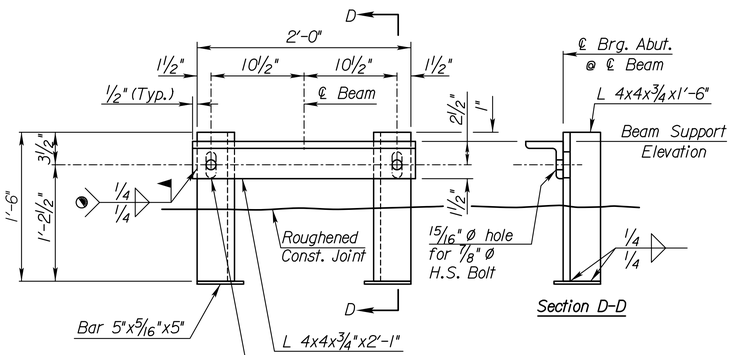
SECTION A-A



SECTION B-B



SECTION C-C



◔ *After verifying Beam Support Elevations, the angles shall be welded as shown prior to placement of deck concrete.*

ABUTMENT BEAM SUPPORTS
(6 Required per Abutment)

Note:
Abutment Beam Supports shall be A709 Grade 36 or ASTM A36, but shall be paid for as ASTM A709 - Gr. 50W Structural Steel. (Unpainted)

Note:
EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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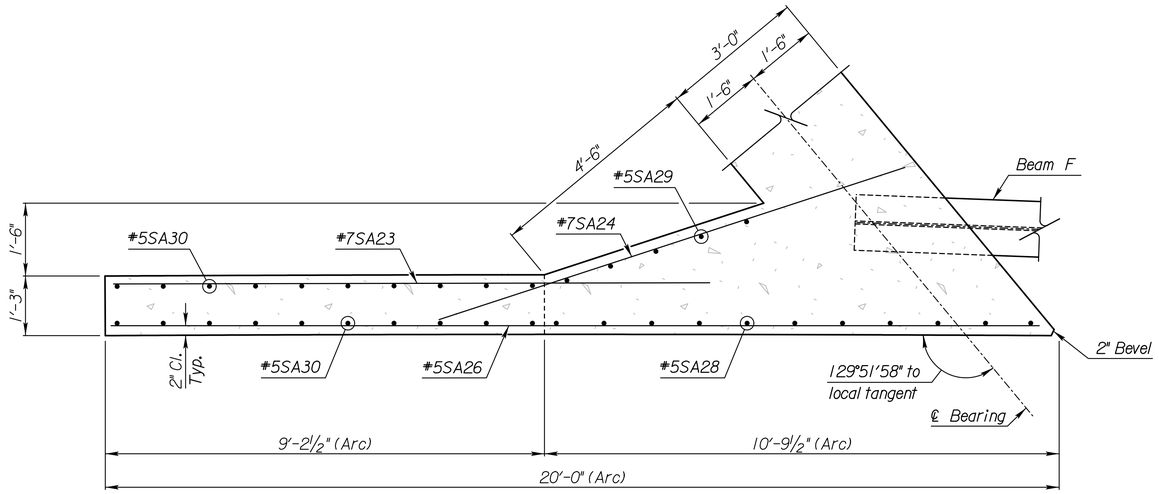
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

ABUTMENT NO. 1 DETAILS

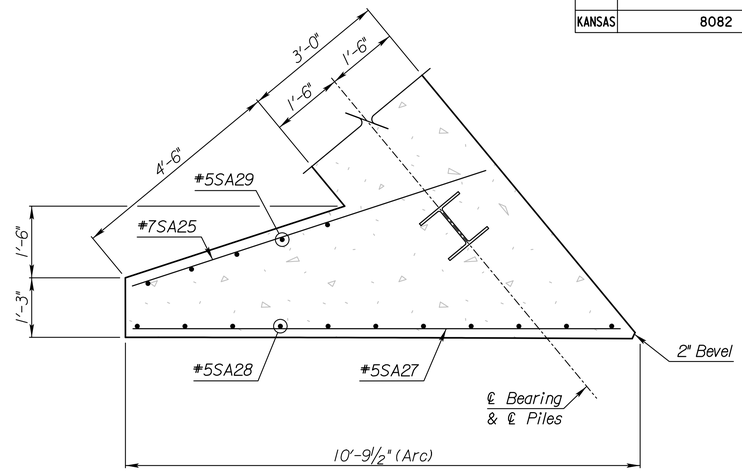
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-08-Abutment1.dgn
Plot Date: 12-SEP-2024 21:37

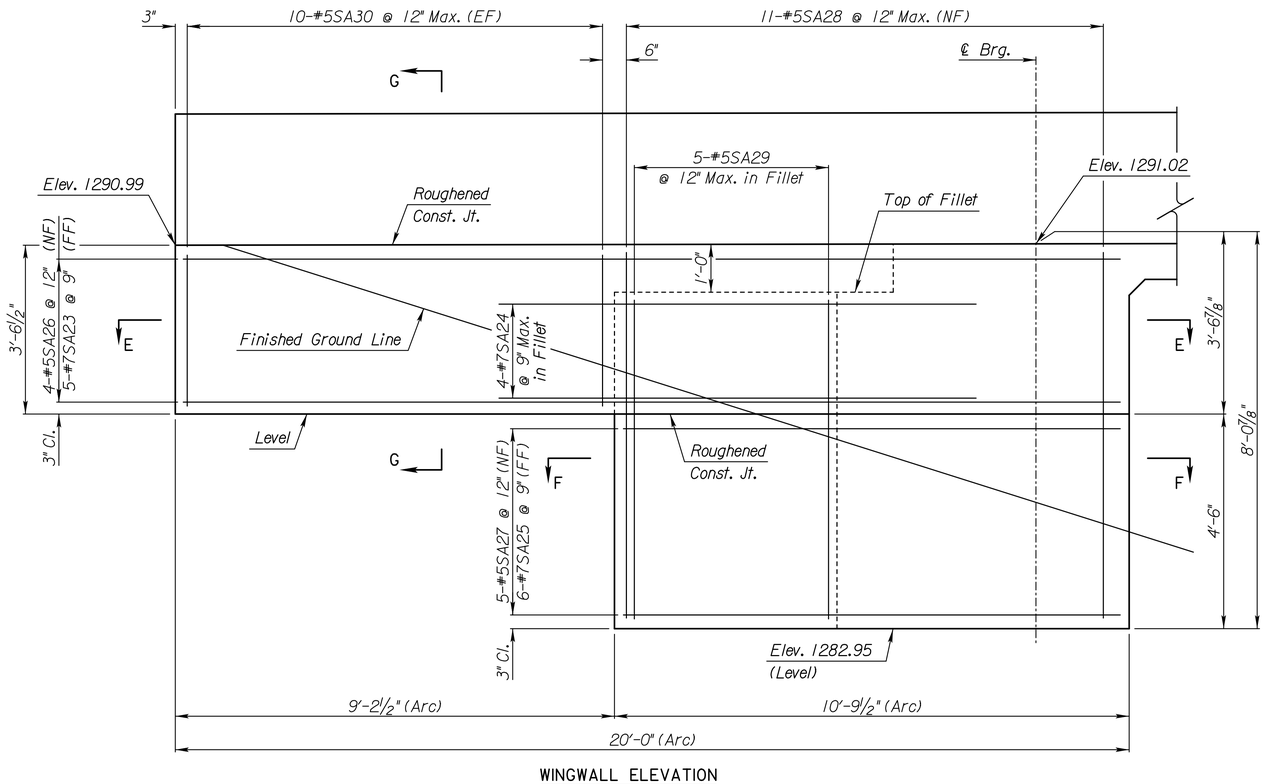
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	37	134



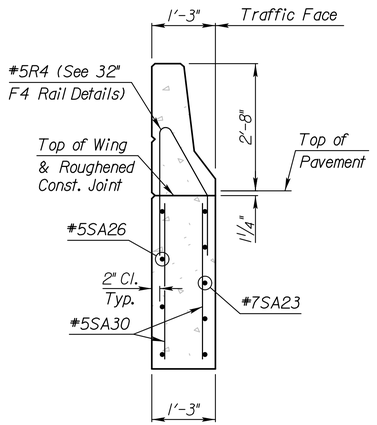
SECTION E-E



SECTION F-F



WINGWALL ELEVATION



SECTION G-G

Notes:
For Barrier Rail Details, see Sheet No. 55.
EF denotes each face
NF denotes near face
FF denotes far face

NO.	DATE	REVISIONS	BY	APP'D
4				
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2				
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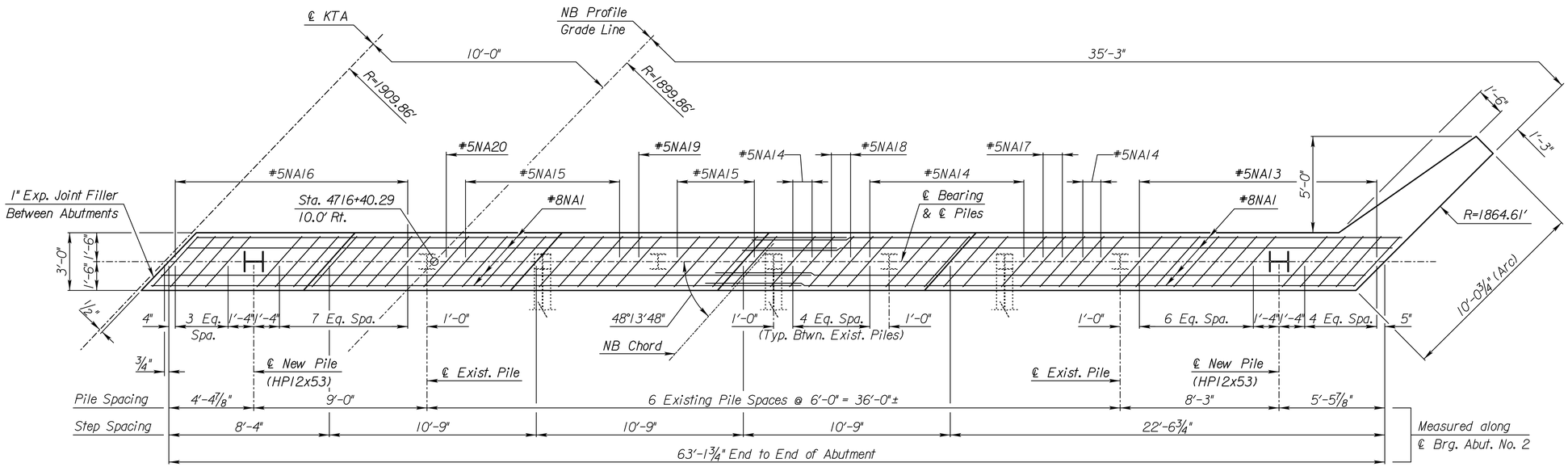
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

ABUTMENT NO. 1 DETAILS

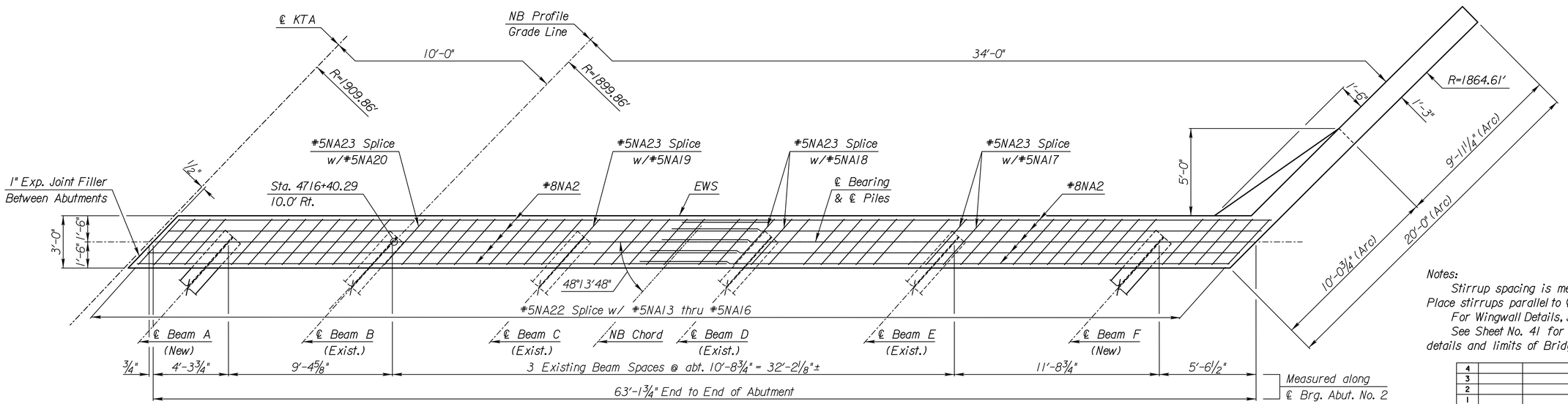
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	DPW	DETAILED	JTK	QUANTITIES		CADD	
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.		CADD CK.	

Plotted By: dEHarris | Plot Location:
File: KTA44-09-Abutment1.dgn
Plot Date: 12-SEP-2024 21:37

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	38	134



ABUTMENT PLAN BELOW BEAM SEAT



ABUTMENT PLAN ABOVE BEAM SEAT

Notes:
Stirrup spacing is measured along ℄ Bearing.
Place stirrups parallel to ℄ Beams.
For Wingwall Details, see Sheet No. 40.
See Sheet No. 41 for additional abutment drainage details and limits of Bridge Backwall Protection System.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

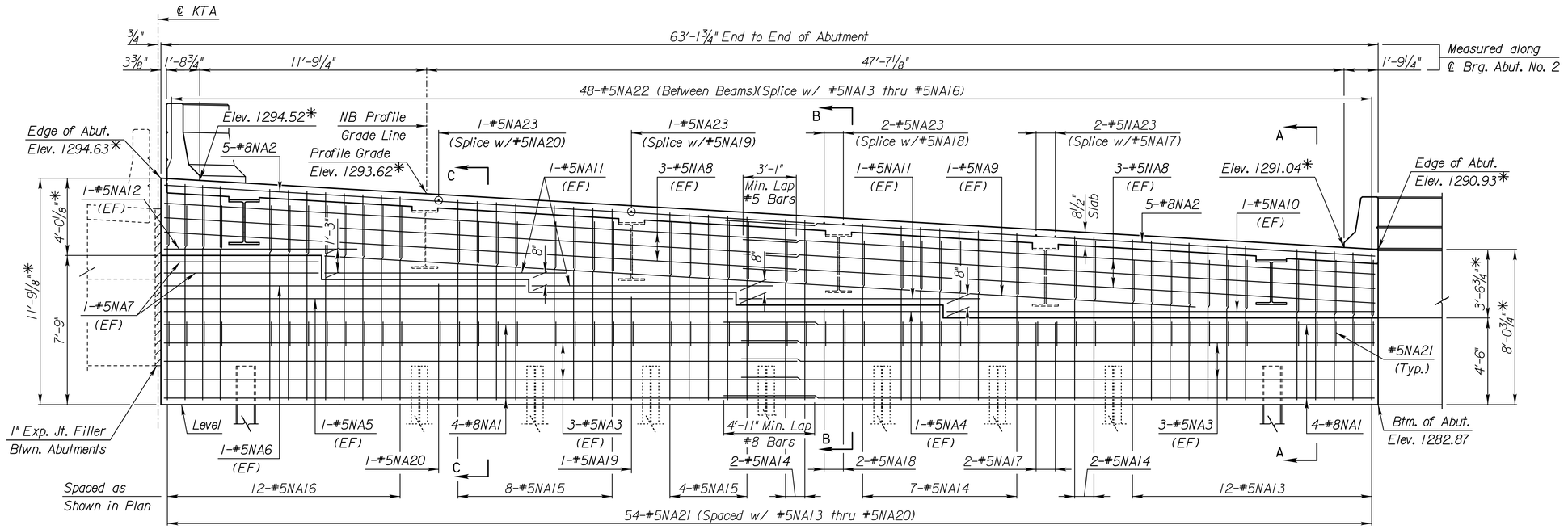
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

ABUTMENT NO. 2 DETAILS

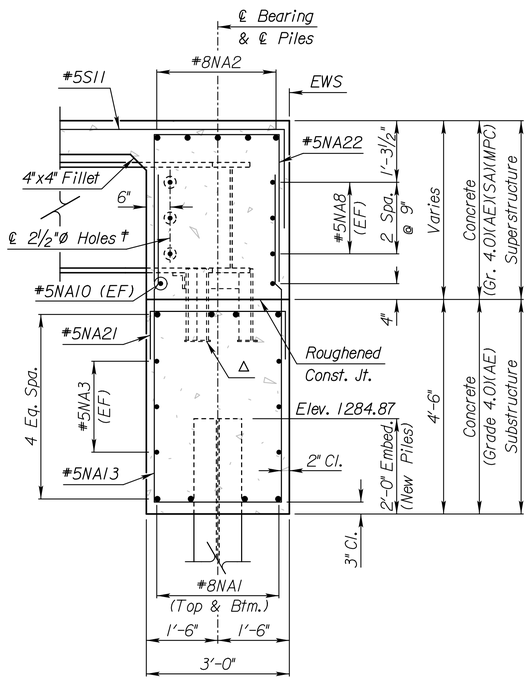
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
File: KTA44-10-Abutment2.dgn
Plot Date: 12-SEP-2024 21:38
Plot Location:

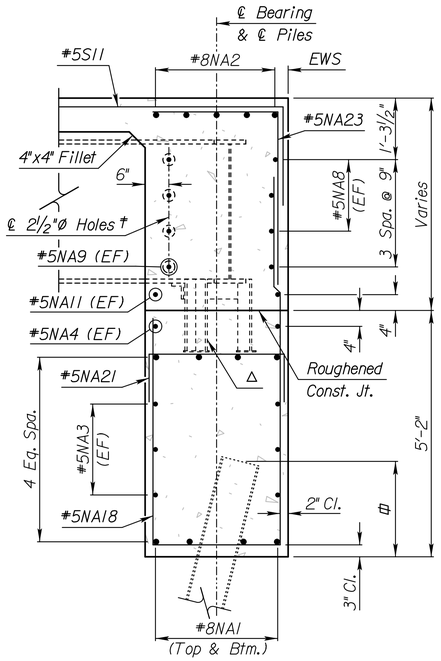
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	39	134



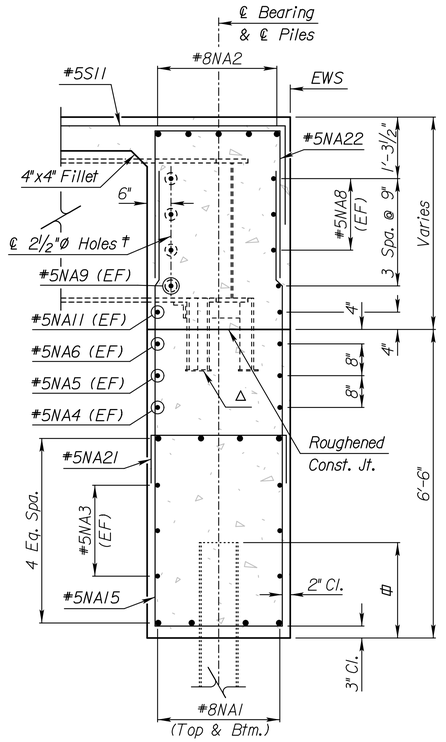
ABUTMENT ELEVATION
(Looking at Front Face)



SECTION A-A



SECTION B-B



SECTION C-C

TABLE OF BEAM SUPPORT ELEVATIONS**

Beam	A	B	C	D	E	F
Elevation	1291.19	1289.95	1289.32	1288.69	1287.99	1288.07

* At ℄ Bearing

** The beam support elevations for the existing beams are theoretical. The Contractor shall record the elevation of the bottom of the existing beams at ℄ bearing prior to removal of the abutment. That information shall be given to the Engineer. Those elevations will be used to adjust the beam support elevations as needed.

Φ Provide 1'-6" Min. Embedment of Existing Piles. Notify the Engineer if this cannot be achieved.

† Field drill 2 1/2" diameter holes in the web of existing and proposed beams. The location of the holes shall be confirmed in the field to match spacing of the #5NA8 & #5NA9 bars. This work shall be subsidiary to the bid item "Reinforcing Steel (Gr. 60)(Epoxy Coated)".

△ Beam Support placed perpendicular to ℄ Beams.

Notes:
For details of Abutment Beam Supports, see Sheet No. 36.
EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

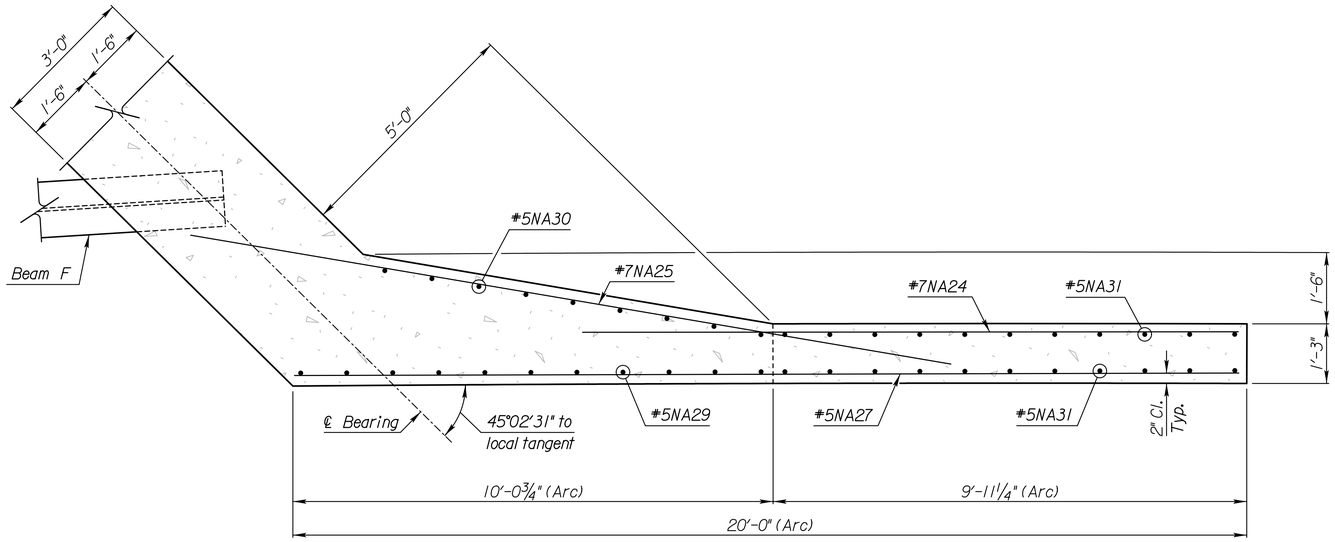
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

ABUTMENT NO. 2 DETAILS

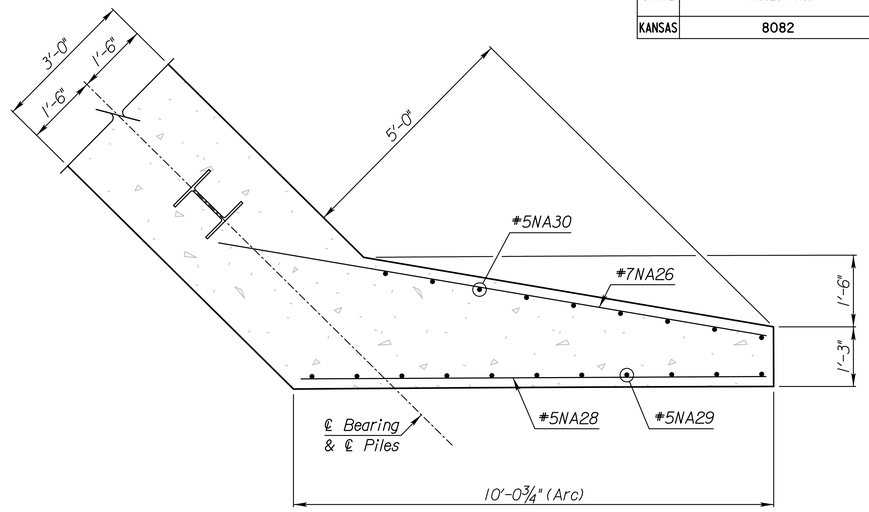
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-11-Abutment2.dgn
Plot Date: 12-SEP-2024 21:38

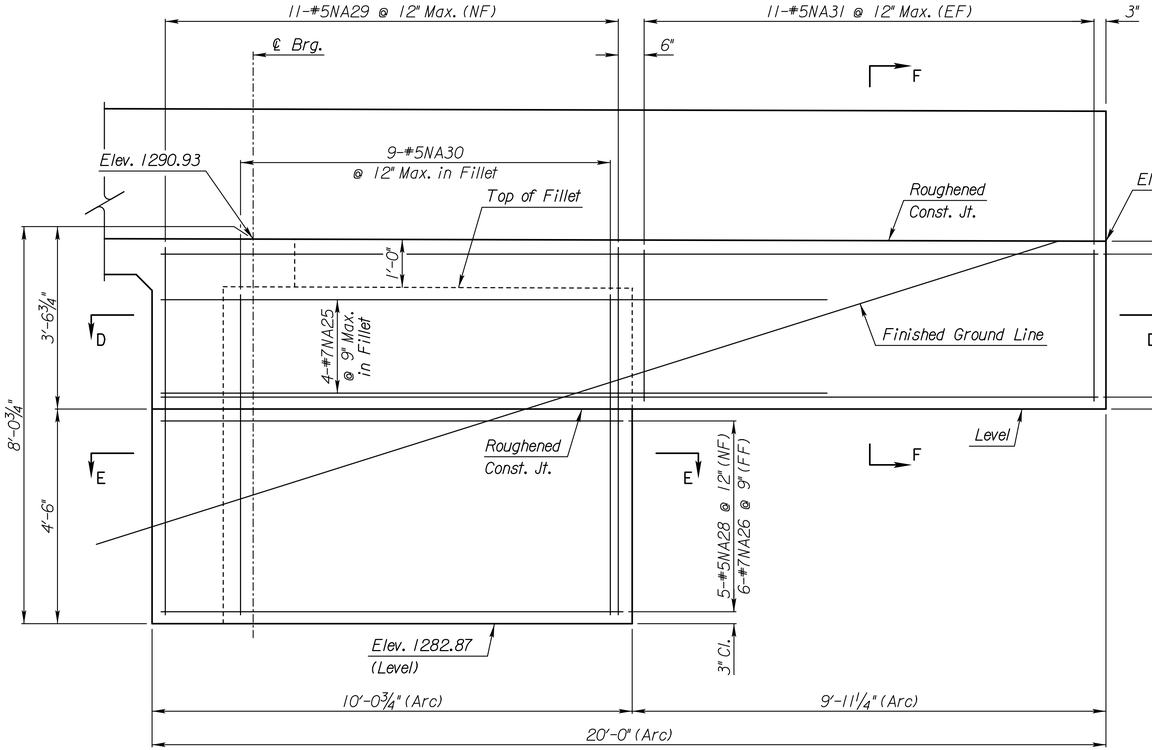
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	40	134



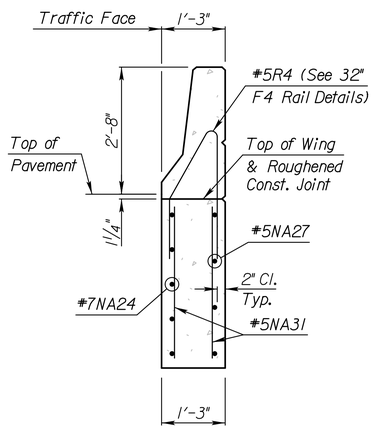
SECTION D-D



SECTION E-E



WINGWALL ELEVATION



SECTION F-F

Notes:
- For Barrier Rail Details, see Sheet No. 55.
- EF denotes each face
- NF denotes near face
- FF denotes far face

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

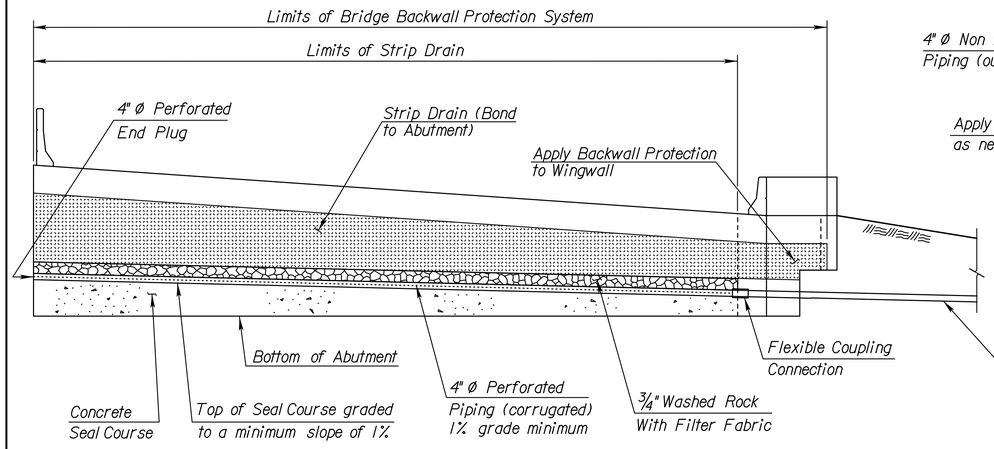
Br. No. 43.930 NB

ABUTMENT NO. 2 DETAILS

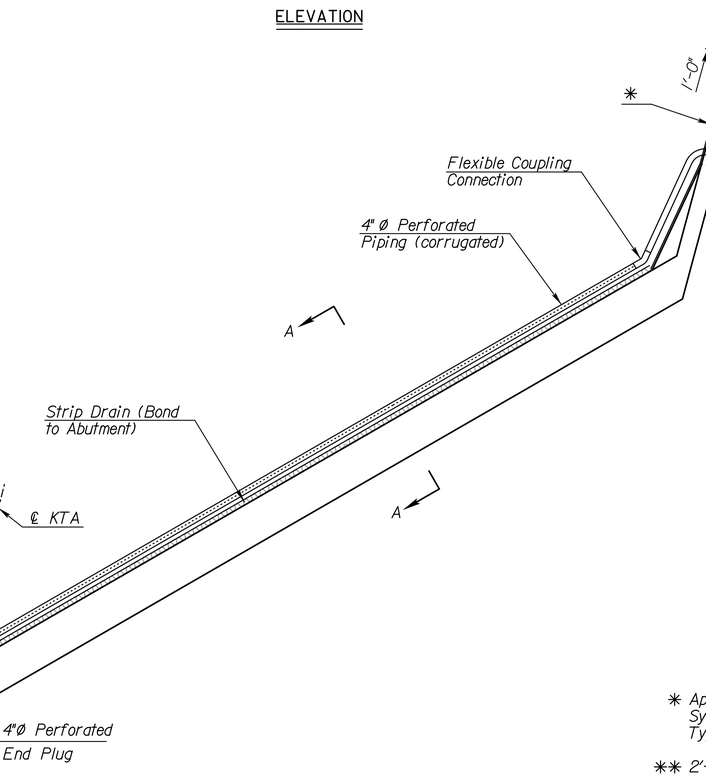
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-12-Abutment2.dgn
Plot Date: 12-SEP-2024 21:38

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	41	134

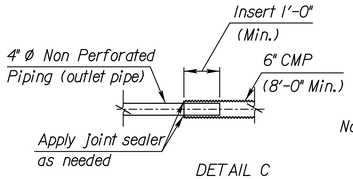


ELEVATION



PLAN

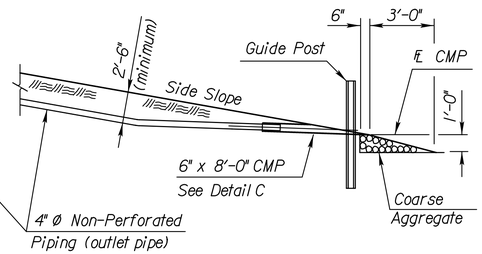
(Abutment No. 2 Shown, Abutment No. 1 Similiar)

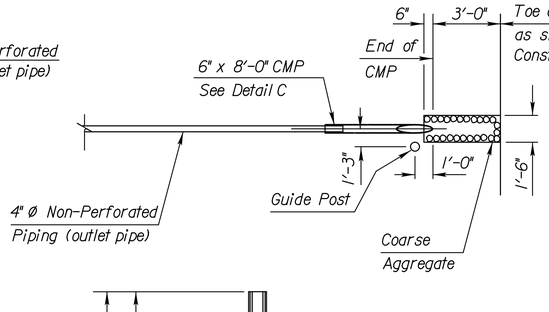


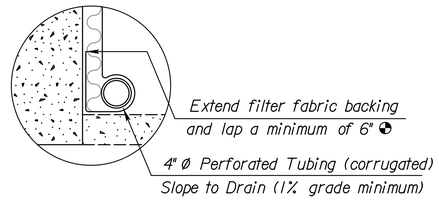
DETAIL C

Note: Place the CMP flowline 1'-0" above ditch flowline, toe of sideslope, or as shown on the "Construction Layout" sheet.

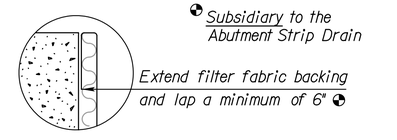
Note: The 1'-0" lap and joint sealer may be replaced by a reducing coupler at the junction of the CMP and the 4" round tubing.







DETAIL B



DETAIL A

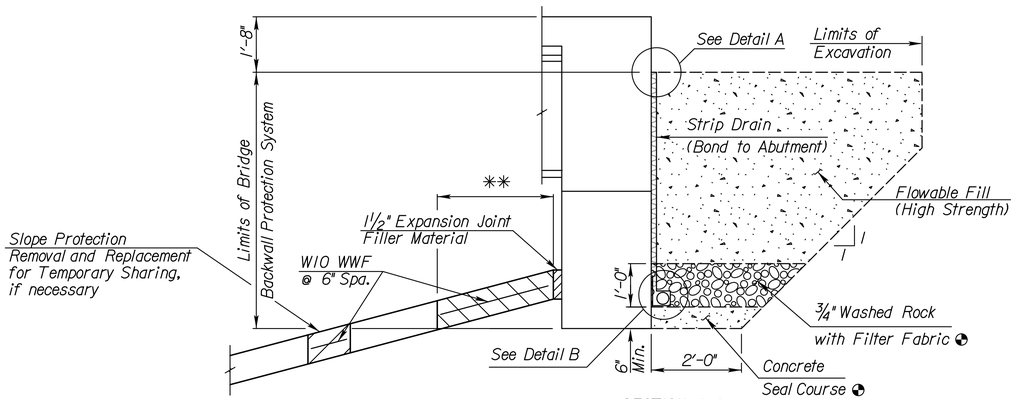
Metal Guide Post Option
7'-0" at 3.0 lbs/ft. flanged channel
† Nominal dimension.

GUIDE POST

* Apply Bridge Backwall Protection System to inside face of wingwall. Typical both Abutments.

** 2'-0"± Slope Protection Removal and Replacement for abutment Bridge Excavation and Slab Drainage System Pipe

Metal Guide Posts: Posts shall conform to the KDOT Specifications. Posts shall have a galvanized or baked enamel coating. Apply one coat of International Orange paint to the top 12" of the posts.



SECTION A-A

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. Guide post are subsidiary to this bid item.

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protective 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 KTA.

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 ¼" 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 coarse aggregate at the outlet end as shown.

Place a Concrete Seal Course at the bottom of the excavated area. Slope the top of the seal course to drain. The seal course may be Concrete (Grade 3.0) or Flowable Fill.

Encase entire volume of ¾" washed rock with filter fabric. Lap filter fabric entire top width of washed rock.

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Strip Drain	106 Sq. Yds.
Bridge Backwall Protection System	119 Sq. Yds.
Flowable Fill (High Strength)	186 Cu. Yds.
Items subsidiary to Strip Drain	
4" Ø Perforated Pipe	115 Lin. Ft.
4" Ø Outlet Pipe	80 Lin. Ft.
6" Ø CMP	16 Lin. Ft.
Guide Post	2 Each
3/4" Washed Rock	14 Cu. Yds.
Filter Fabric	281 Sq. Yds.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY
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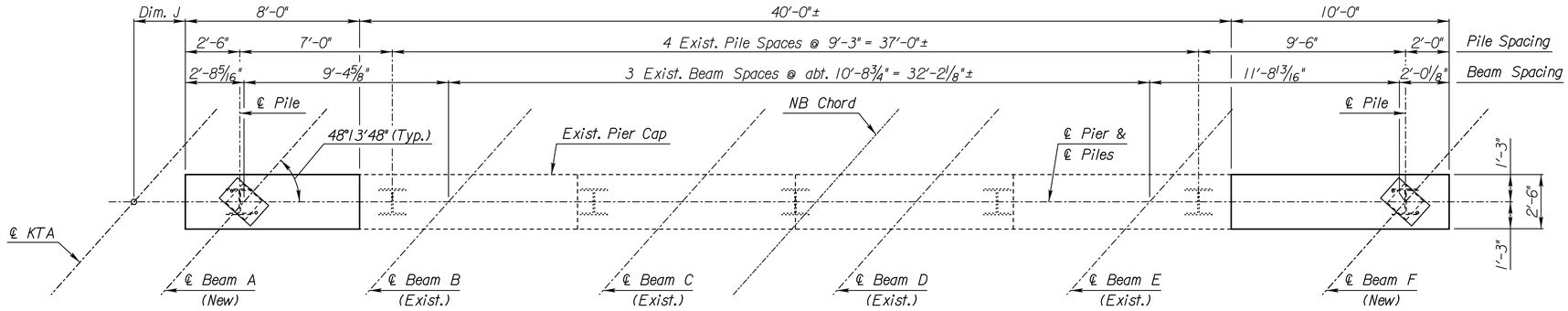
ABUTMENT STRIP DRAIN

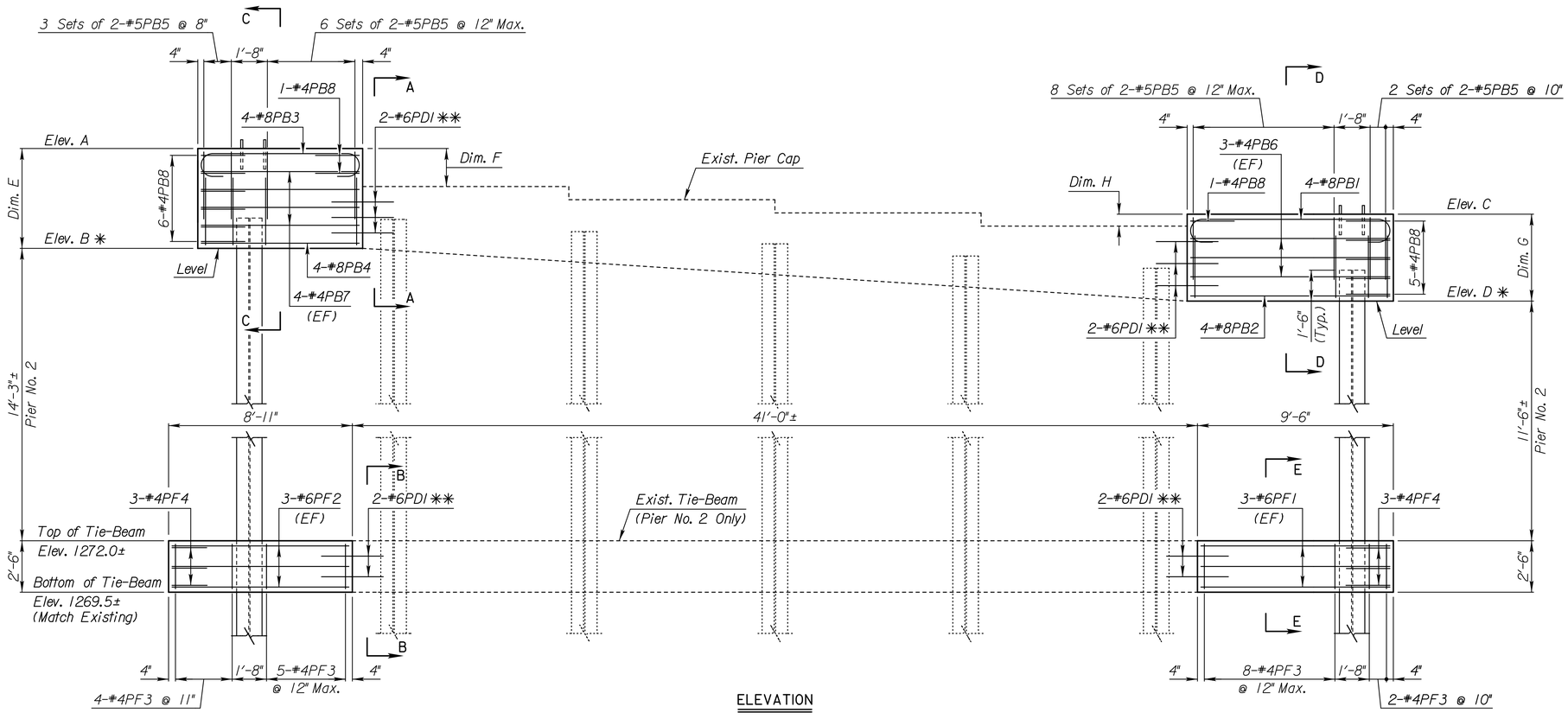
SHEET NO. OF	SCALE	APP'D
DESIGNED	DETAILED JTK	QUANTITIES CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK. CADD CK.

Plotted By: JMBell | Plot Location:
File: KTA44-13-AbutmentDrain.dgn
Plot Date: 13-SEP-2024 12:55

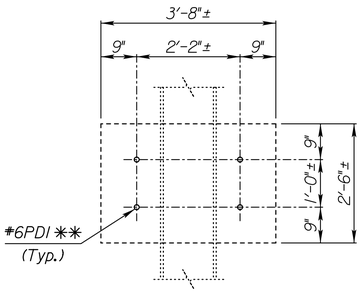
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	42	134



PLAN

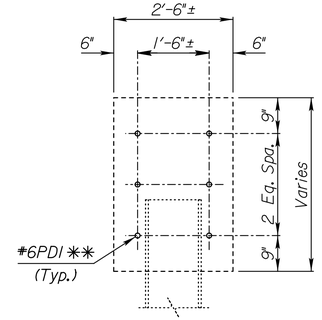


ELEVATION



SECTION B-B

(Pier No. 2 Only)



SECTION A-A

PIER TABLE OF VARIABLES									
Location	Elevations				Dimensions (±)				
	Elev. A	Elev. B *	Elev. C	Elev. D *	Dim. E	Dim. F	Dim. G	Dim. H	Dim. J
Pier No. 1	1290.96	1286.22	1287.74	1283.50	4'-8 1/8"	1'-10 7/8"	4'-2 7/8"	7 1/4"	1'-11 3/8"
Pier No. 2	1290.91	1286.24	1287.73	1283.42	4'-8"	1'-10"	4'-3 3/4"	7 1/8"	2'-10 1/4"
Pier No. 3	1290.92	1286.27	1287.78	1283.43	4'-7 3/4"	1'-10 1/8"	4'-4 1/4"	7 5/8"	2'-8 1/4"

Notes:
EF denotes each face.
For Framing Plan see Sheet 44.
For Section C-C thru E-E and Bearing Details, see Sheet 43.
Place reinforcing bars below the bearing devices to clear the anchor bolts.

* Match existing bottom of pier cap elevation.

** Drill and Grout #6PDI Dowel Bars into Existing Pier Concrete, 1'-6" Embedment Length

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

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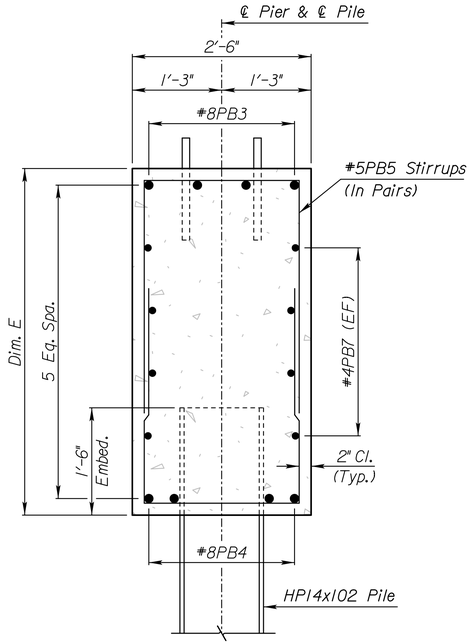
PIER DETAILS

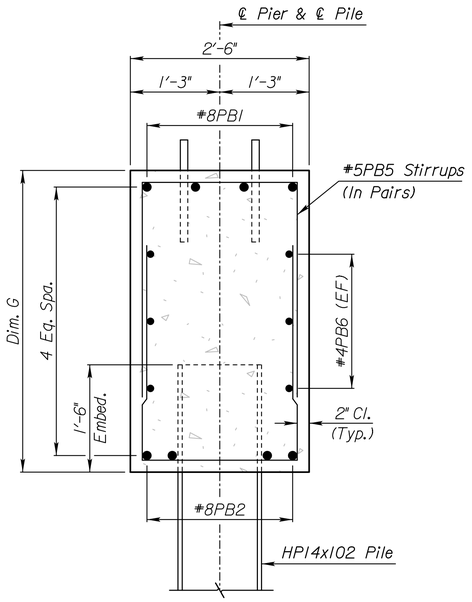
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SG	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-14-Pier.dgn
Plot Date: 12-SEP-2024 2h39

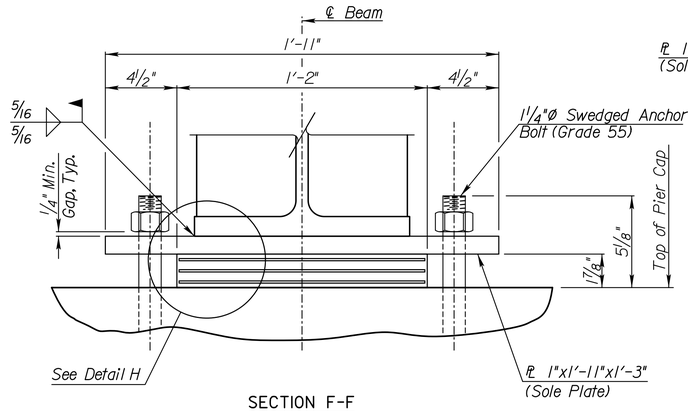
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	43	134



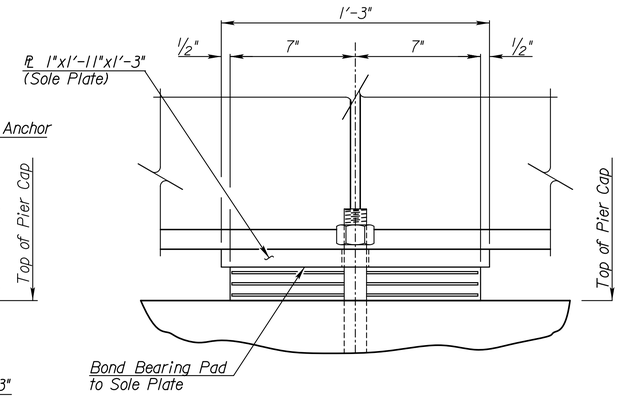
SECTION C-C



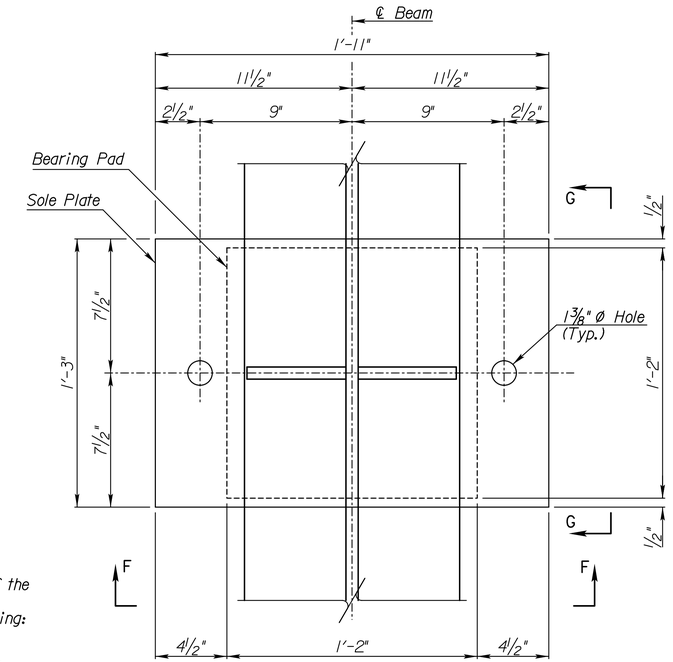
SECTION D-D



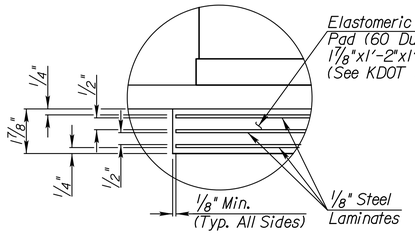
SECTION F-F



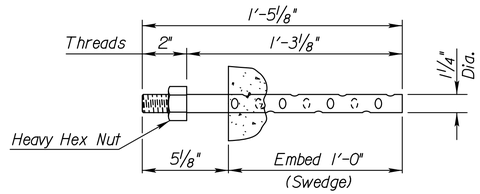
SECTION G-G



PLAN

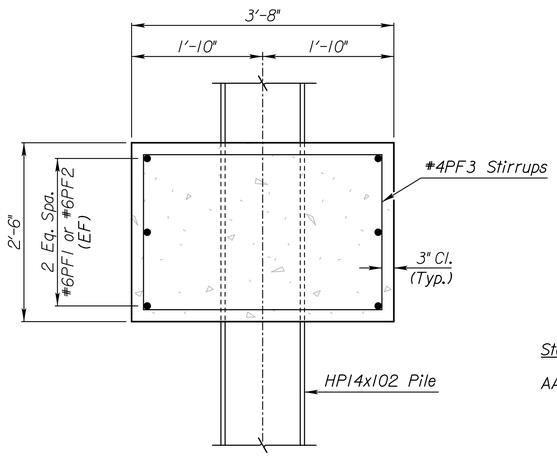


DETAIL H



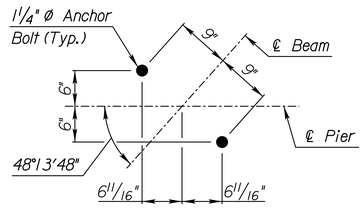
SWEDGE ANCHOR BOLT

(12 Required)



SECTION E-E

(Pier No. 2 Only)



TYPICAL ANCHOR BOLT LAYOUT

Steel Reinforced Elastomeric Bearing Device Notes:

Bearings were designed using the provisions of Method A of the AASHTO Specifications.

Bearing devices shall be fabricated with an elastomer satisfying:

- *Shore A Durometer Hardness of 60*
- *Low Temperature Grade 3 requirements.*
- *Type A certification for elastomeric bearing device acceptance is required.*

Include design method and all material properties on shop drawings.

The elastomeric bearing shall be factory bonded to the steel sole plate by a vulcanization process by the bearing device fabricator.

Sole Plates shall conform to the requirements of ASTM A709 (Grade 50W).

Anchor bolts shall adhere to KDOT Standard Specification Division 1600 (Grade 55) with the following exception: the threads may be rolled or cut.

The sole plate, swedge anchor bolts, and nuts are subsidiary to the bid item "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

ELASTOMERIC BEARING DEVICE DETAILS AT PIERS

(6 Required)

Notes:

For location of Sections C-C thru E-E and variable dimension data see Sheet No. 42.

(EF) denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
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KANSAS TURNPIKE AUTHORITY

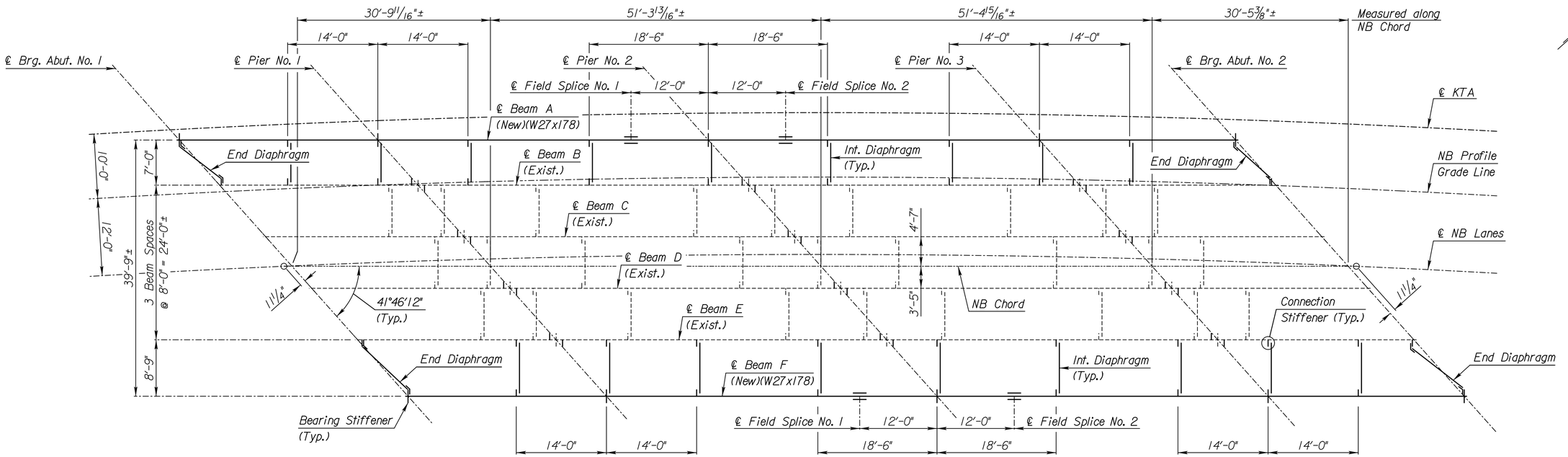
Br. No. 43.930 NB

PIER DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SG	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-15-Pier.dgn
Plot Date: 12-SEP-2024 2h39

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	44	134



FRAMING PLAN

(Br. No. 43.930 NB)

All beams (new and existing) are set parallel to the chord line established with the original bridge plans, defined as a chord thru the intersection of ℄ NB Lanes and front face of the original abutment.

STRUCTURAL STEEL SUMMARY

Item / Location	AASHTO M270 Gr. 50WT3 (Lbs.)	ASTM A709 Gr. 50W (Lbs.)
Rolled Beam (W27x178)	58,734	---
Splice Plates	2,627	---
Bearing Stiffeners	1,356	---
Connection Stiffeners	---	714
Intermediate Diaphragms	---	3,474
End Diaphragms	---	1,168
Abutment Beam Supports	---	1,182
Total	62,717	6,538

BEAM NOTES

Unless otherwise noted, all longitudinal dimensions are measured horizontally along beam centerlines. Length of new beams shall be corrected as required for grade. All dimensions of the existing structure are to be field verified by the Contractor prior to fabrication of beams.

Place bearing stiffeners vertical. Place connection stiffeners normal to the beam flanges.

Place bearing stiffeners and connection stiffeners perpendicular to the web.

Field weld connection stiffeners to exterior face of existing exterior beams at the locations shown.

Install new end diaphragms at all abutment locations. Install new intermediate diaphragms as shown.

Field weld new bearing stiffeners on both sides of all existing beams at Piers No. 1, 2, & 3.

Prime and paint areas where existing coating is removed when new bearing stiffeners and connection stiffeners are welded to existing beams.

For details and locations of new bearing stiffeners on existing beams, see Sheet Nos. 46 & 47.

For Diaphragm Details, see Sheet No. 48.

For new Field Splice Details, see Sheet No. 49.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

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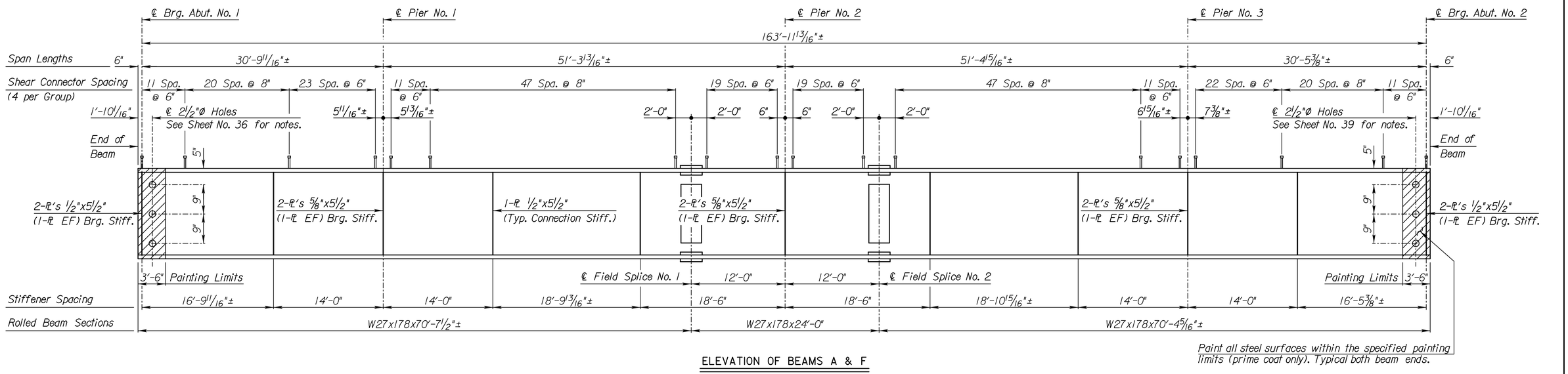
FRAMING PLAN

SHEET NO. OF		SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

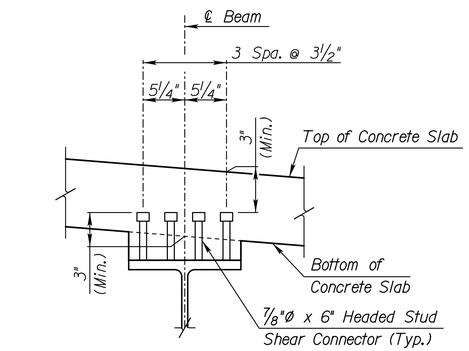
Plotted By: JEHarris | Plot Location:
File: KTA44-16-Framing.dgn
Plot Date: 12-SEP-2024 21:39

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	45	134



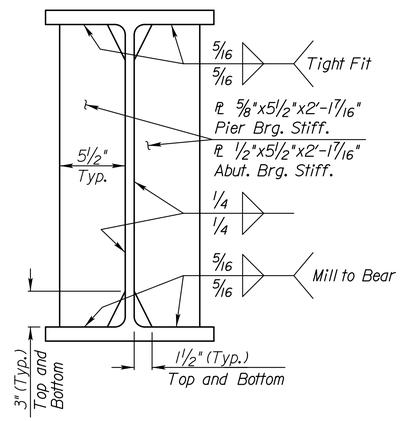
Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.

ELEVATION OF BEAMS A & F



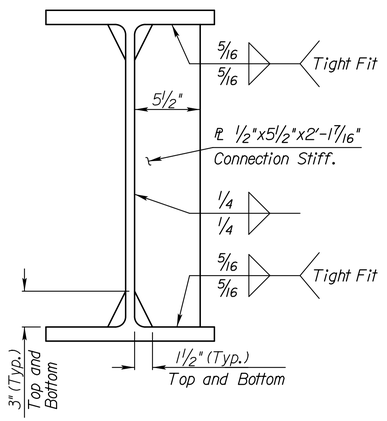
WELDED STUD SHEAR CONNECTOR DETAIL

FOR NEW BEAMS



BEARING STIFFENER DETAIL

FOR NEW BEAMS



CONNECTION STIFFENER DETAIL

FOR NEW BEAMS

Notes:

Connection stiffeners are located on the side of the web indicated on the Framing Plan. For Beam Notes and Framing Plan, see Sheet No. 44.

For Field Splice Details, see Sheet No. 49. Field splices shall be made only where shown on the Contract Plans as a "splice". Elimination of any "splice" may be requested.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of new weathering steel.

EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

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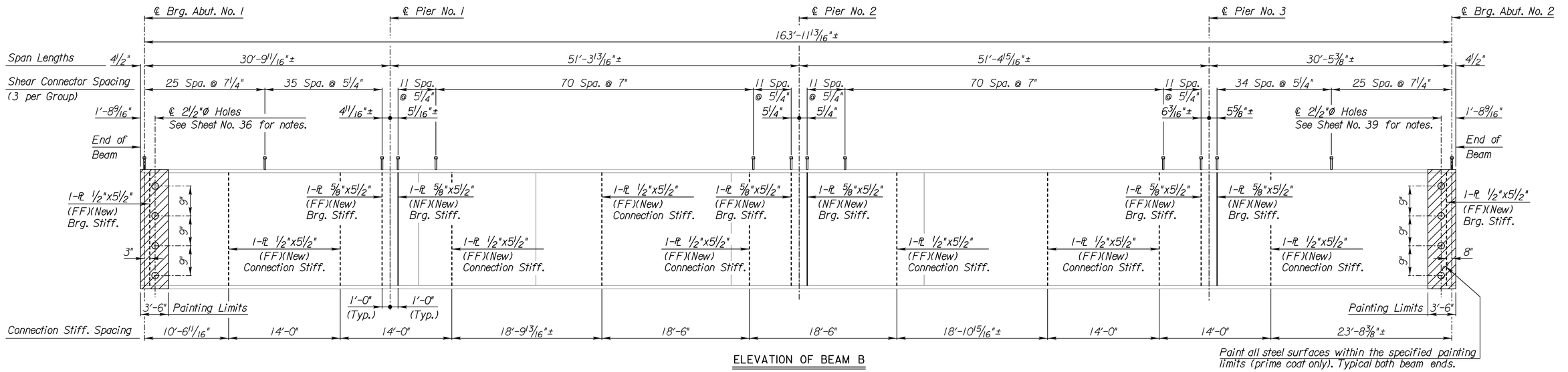
NEW BEAM DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

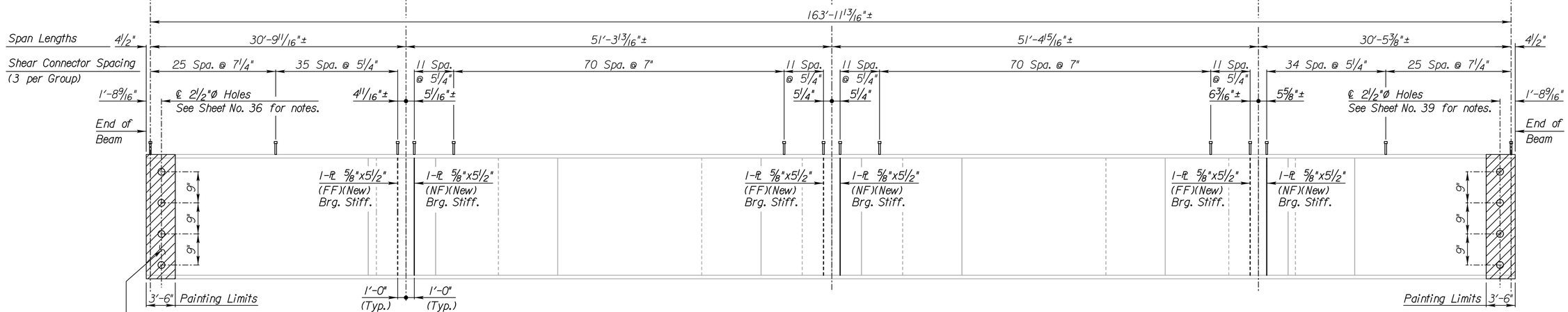
Plotted By: JEHarris | Plot Location:
File: KTA44-17-Beam.dgn
Plot Date: 12-SEP-2024 21:39

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	46	134



ELEVATION OF BEAM B

Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.



Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.

ELEVATION OF BEAMS C & D

Notes:

For Beam Notes and Framing Plan, see Sheet No. 44.

See Sheet No. 47 for welded stud shear connector detail for existing beams, bearing stiffener details, and connection stiffener details.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of existing structural steel.

NF denotes near face.

FF denotes far face.

NO.	DATE	REVISIONS	BY	APP'D
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KANSAS TURNPIKE AUTHORITY

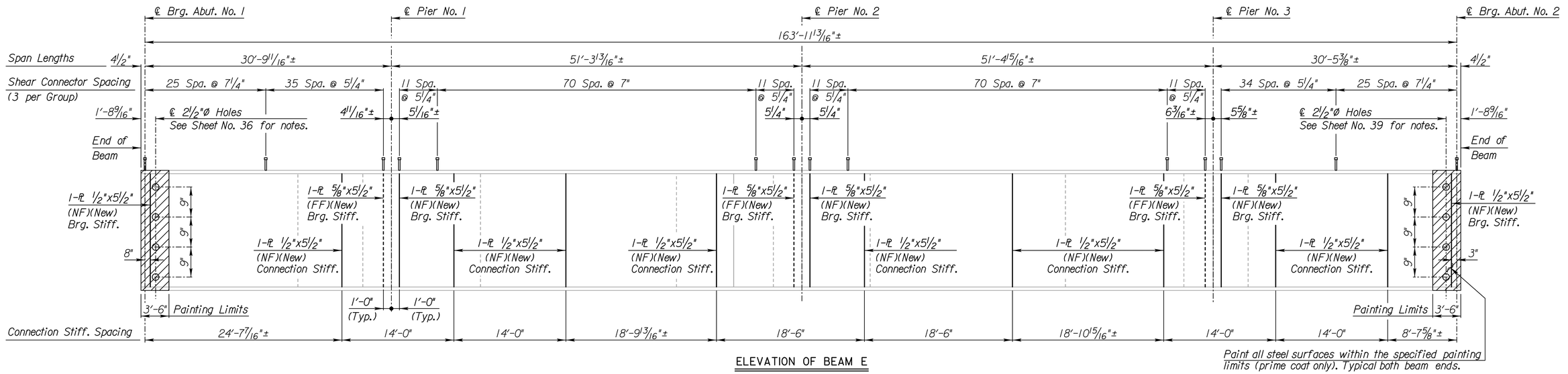
Br. No. 43.930 NB

EXISTING BEAM DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

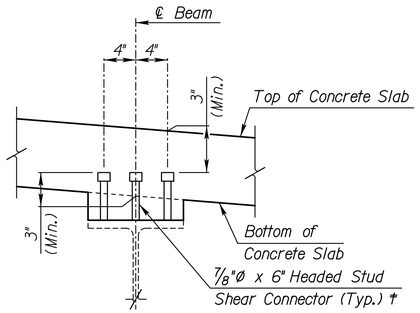
Plotted By: JEllarris | Plot Location:
File: KTA44-18-Beam.dgn
Plot Date: 12-SEP-2024 21:39

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	47	134



ELEVATION OF BEAM E

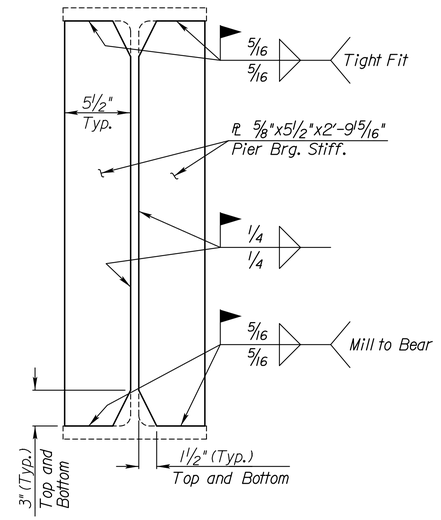
Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.



WELDED STUD SHEAR CONNECTOR DETAIL

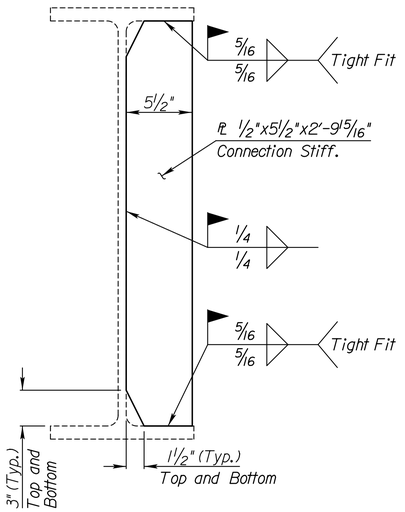
FOR EXISTING BEAMS

† Anticipated lengths of the headed stud shear connectors are given in these plans based on the best available information. The Contractor shall determine the required length of the studs in the field after the thickness of the slab fillets above the existing beams have been determined. The length of the studs shall be such that the minimum embedment and clearance, as shown, are satisfied. Different stud lengths may be required for the different beams and/or in different regions of the beams. All studs shall be 7/8" Ø.



NEW BEARING STIFFENER DETAIL

FOR EXISTING BEAMS



NEW CONNECTION STIFFENER DETAIL

FOR EXISTING BEAMS

Notes:

For Beam Notes and Framing Plan, see Sheet No. 44.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of existing structural steel.

NF denotes near face.

FF denotes far face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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1				

KANSAS TURNPIKE AUTHORITY

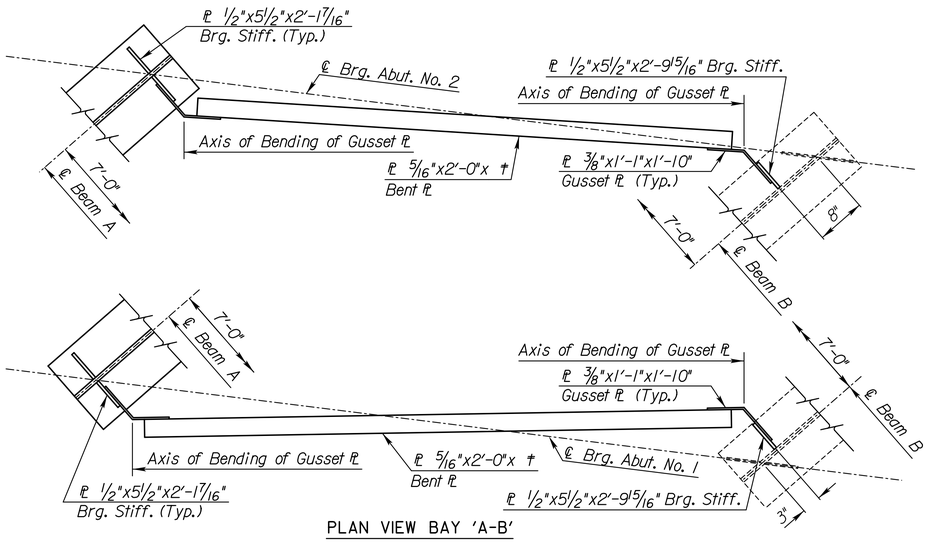
Br. No. 43.930 NB

EXISTING BEAM DETAILS

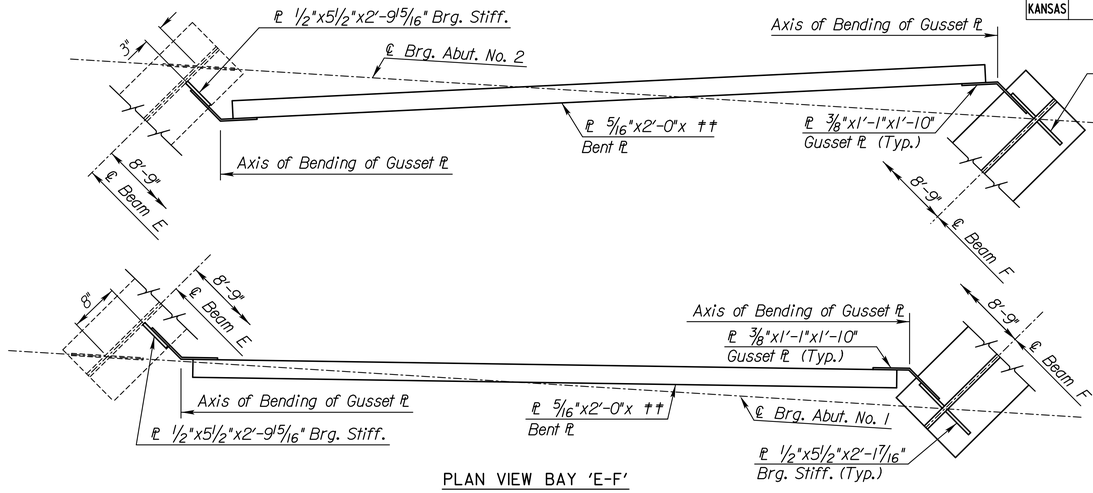
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	JWM	DETAILED	JTK	QUANTITIES		CADD	
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.		CADD CK.	

Plotted By: JEHarris | Plot Location:
File: KTA44-19-Beam.dgn
Plot Date: 12-SEP-2024 21:40

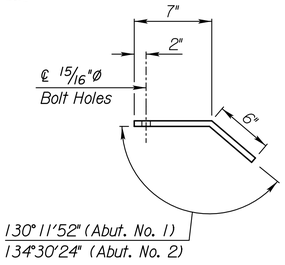
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	48	134



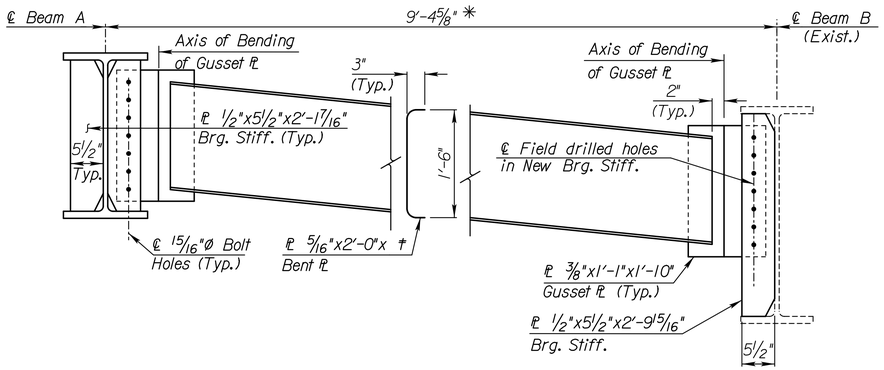
PLAN VIEW BAY 'A-B'



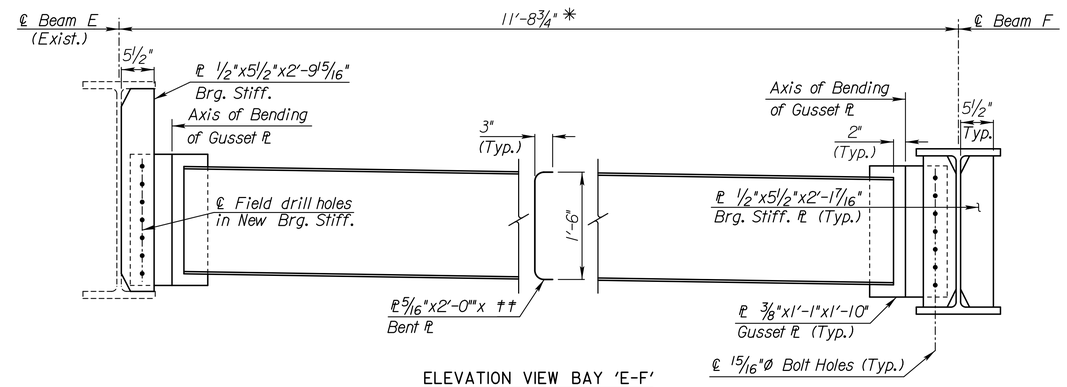
PLAN VIEW BAY 'E-F'



BENDING DETAIL OF GUSSET PLATE FOR BAY 'A-B'



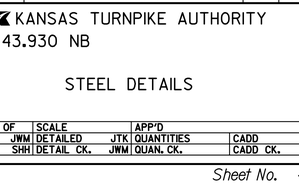
ELEVATION VIEW BAY 'A-B'



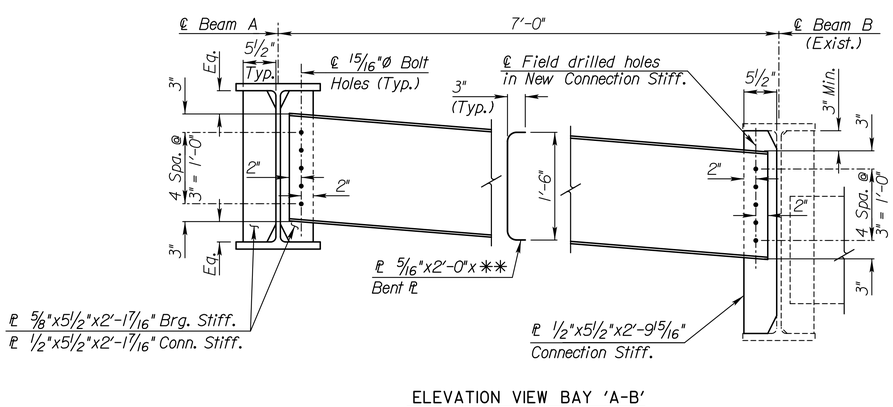
ELEVATION VIEW BAY 'E-F'

NEW END DIAPHRAGMS

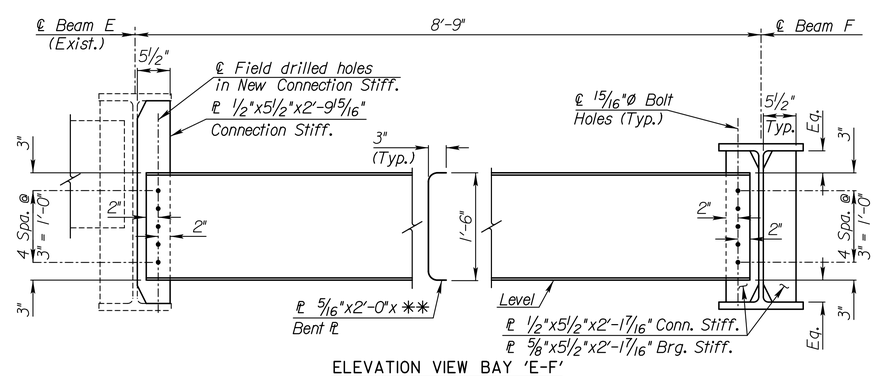
(Looking in the Direction of Increase Stationing)



BENDING DETAIL OF GUSSET PLATE FOR BAY 'E-F'



ELEVATION VIEW BAY 'A-B'



ELEVATION VIEW BAY 'E-F'

NEW INTERMEDIATE DIAPHRAGMS

(Looking in the Direction of Increase Stationing)

✳ Measured along ℄ Brg. Abut. (Horizontal)

✳✳ 6'-8 1/4" (Bay A-B) (Horizontal)
8'-5 1/4" (Bay E-F)

† 8'-2 5/8" (Abut. No. 1) (Horizontal)
7'-6 1/2" (Abut. No. 2) (Horizontal)

†† 9'-10 7/8" (Abut. No. 1) (Horizontal)
10'-6 7/8" (Abut. No. 2) (Horizontal)

Notes:

All structural steel for diaphragms shall conform to the requirements of ASTM A709 (Grade 50W).

All bolts shall be 7/8" Ø high-strength steel bolts, ASTM F3125 (Grade A325) (Type 3).

See Gusset Plate Details on Sheet No. 49.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

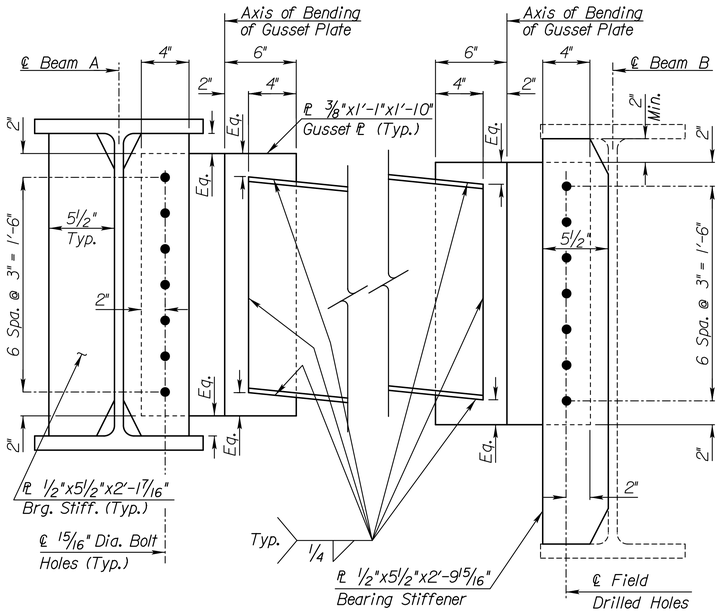
Br. No. 43.930 NB

STEEL DETAILS

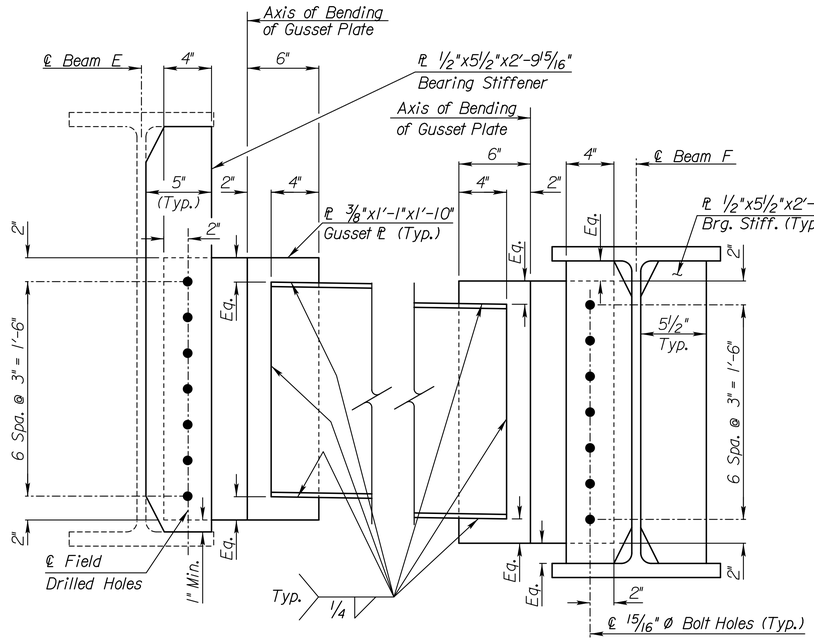
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

Plotted By: dEharris | Plot Location:
File: KTA44-20-SteelDetailsI.dgn
Plot Date: 12-SEP-2024 21:40

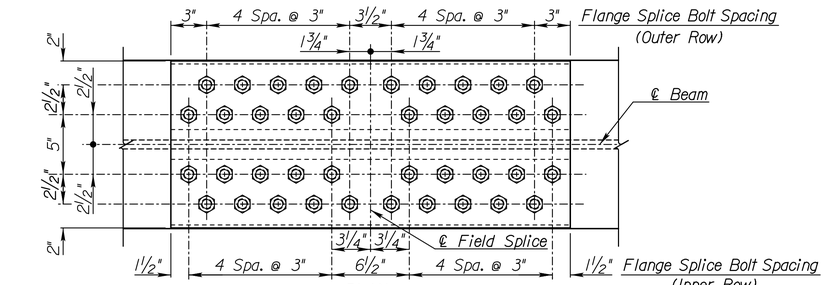
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	49	134



TYPICAL GUSSET PLATE DETAIL FOR BAY 'A-B'

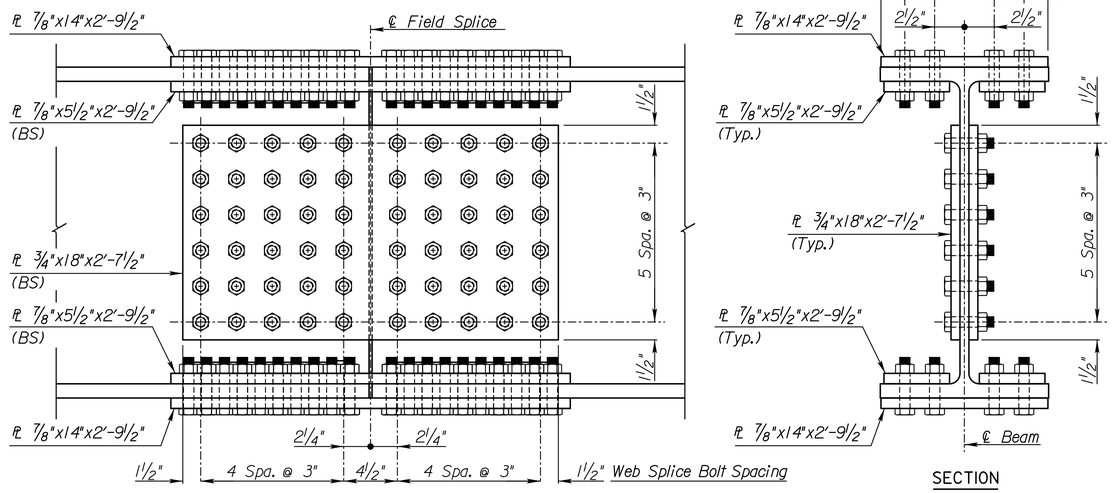


TYPICAL GUSSET PLATE DETAIL FOR BAY 'E-F'



PLAN

(Showing Top & Bott. Flange Plates)

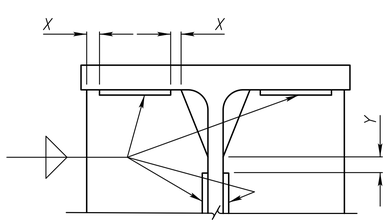


ELEVATION

SECTION

FIELD SPLICE DETAILS

Note:
BS denotes both sides.



TYPICAL WELD LIMIT DETAIL

X = 1/4" ± 1/8"
Y = 1/2" ± 1/4"

Notes:
Fasteners for field splices shall be 7/8" Ø high-strength steel bolts, ASTM F3125 (Grade A325) (Type 3).
All flange and web splice plates shall be AASHTO M270 (Grade 50WT3) Structural Steel.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

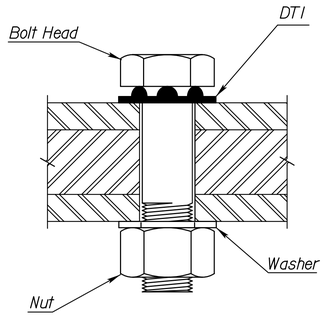
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

STEEL DETAILS

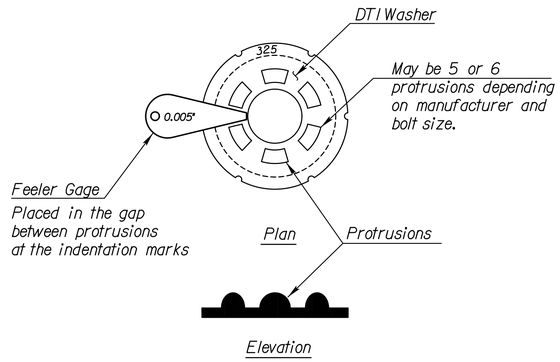
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

Plotted By: tEHarris | Plot Location:
File: KTA44-21-SteelDetails2.dgn
Plot Date: 12-SEP-2024 21:40

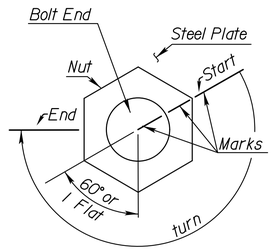
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	50	134



TYPICAL BOLT AND
DIRECT TENSION INDICATOR (DTI)

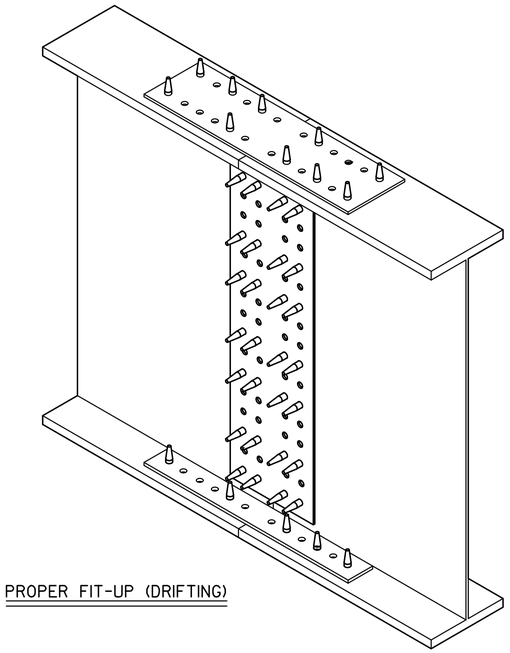


TYPICAL DIRECT TENSION INDICATOR (DTI)



REQUIRED MARKING DETAIL

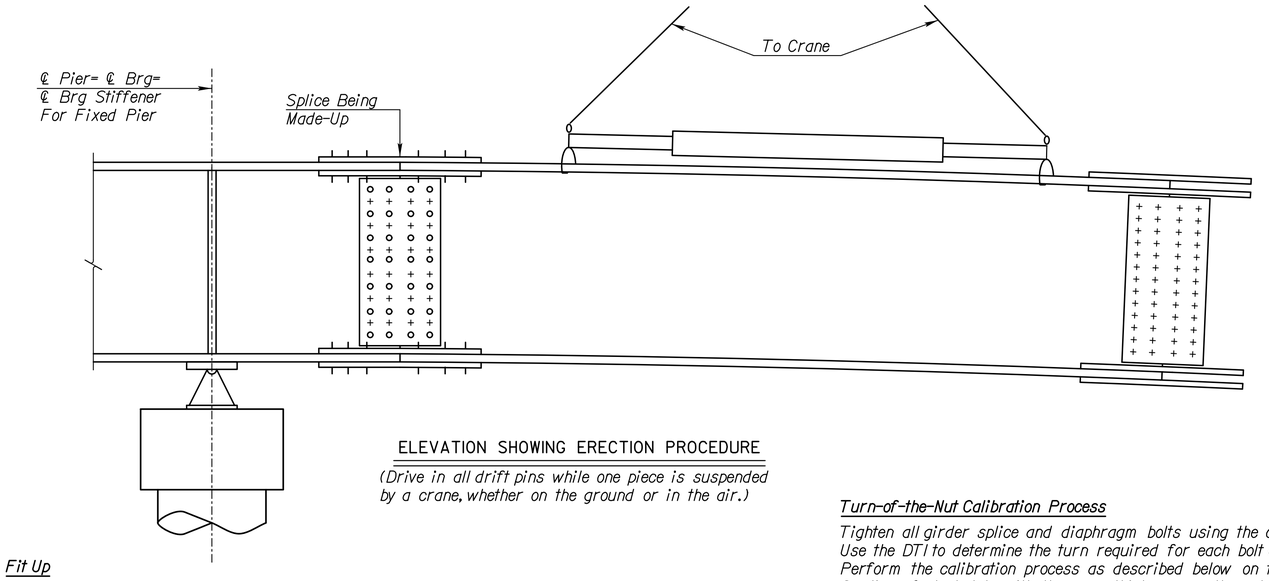
(shows calibrated turn = 3½ flats from snug tight condition). Example only, calibrated turn may be more or less than shown.



PROPER FIT-UP (DRIFTING)

Drift Pin Diameter = Hole Diameter
Hole Ø = 15/16" for girder splice
Hole Ø = 15/16" for X-frame or diaphragm connection.

DRIFT PIN



ELEVATION SHOWING ERECTION PROCEDURE

(Drive in all drift pins while one piece is suspended by a crane, whether on the ground or in the air.)

Fit Up

During the fit up, install drift pins in all corner bolt holes, plus 25 percent of the bolt holes (as a min.), evenly distributed throughout the splice. Fill at least 25 percent of the bolt holes with high strength bolts. Fully tighten these bolts by the calibrated turn-of-the-nut method before removing any drift pins or moving the members. These bolts may be either erection bolts or production bolts. Erection bolts are used during fit up, to compress the plies of the splice to achieve a snug condition. Erection bolts are the property of the Contractor and do not remain in the bridge permanently. Erection bolts must be A325, and can be reused. Erection bolts are required when the abutting plates are of different thickness and no fill plate is provided. This situation usually results in a slight bending of the splice plates. If erection bolts are not used, the DTI's may fully compress before the plates are in firm contact. This would be cause for rejecting the splice. Clearly mark the erection bolts so that they are not left in the splice.

Erection

Two independent crews will survey the bearing seat elevations. The Engineer will verify that the results of those surveys show that the bearing seat elevations are within ± ¼ inch of the plan elevations before erection begins. Use the blocking diagram, as shown on the shop drawings, when erecting the beams/girders on the ground. Do not lift the assembled pieces into position until at least 25 percent of the holes are filled with fully tightened bolts. Locate the centerline of the bearing stiffener with the centerline of bearing device. Secure the beams/girders to the top of the pier cap prior to placement of the bearing device anchor bolts.

Turn-of-the-Nut Calibration Process

Tighten all girder splice and diaphragm bolts using the calibrated turn-of-the-nut method. Use the DTI to determine the turn required for each bolt diameter & length. Perform the calibration process as described below on the actual beam splice or using 3 plies of steel plate with the same thickness as the actual splice.

1. Bring at least 25 percent of the bolts in the splice to a "snug-tight-condition". "Snug tight condition" is defined as (with all plies in firm contact) "the full effort of a man on a spud wrench". Usually a smaller impact gun (½" drive) is used to snug the splice and a larger impact gun (1" drive) is used for final tightening. This is preferred over the use of a spud wrench. Production bolting and calibration must use the same tools and lubricating procedures. If an impact wrench is used to "iron the plates" and snug the bolts for calibration, then an impact wrench must be used during the snugging process during production bolting.

2. See "Required Marking Detail" (choose a bolt at the center of the splice and recheck snug on adjacent bolts)
- *a. Mark the outside of the socket at one of the corners.*
- *b. Mark the bolt, plate, and nut at a corner with a start line.*
- *c. Align the mark on the socket with the start mark on the bolt end.*
- *d. While holding a backup wrench on the head of the bolt, turn the nut ½ turn (3 flats).*
- *e. Record the number of refusals.*
- *f. If all of the gaps refuse, go to another bolt and turn the nut 2 flats (1/3 turn).*
- *g. If there are fewer than 3 refusals turn the nut an additional ¼ of a flat (15 degrees).*
- *h. Repeat step g, turning the nut 1/3 of a flat or less each time, until all of the gaps refuse the feeler gage. Record the amount required to cause all of the gaps to refuse the feeler gage. This is the target rotation.*

3. Repeat this process for each bolt diameter and length.

Production Bolt Tightening

1. Install bolts and tighten to "snug tight" in a pattern, starting at the center of the splice and working toward the edge. On large girders this may have to be done twice, as the center bolts will become loose as plates are "Ironed out". This step is important because typically, any variation in results during production bolting is the result of a change in the materials, lubricant or equipment used to take the bolts to a "snug tight" condition during the calibration process.

2. Mark all of the bolts, nuts and the plate as shown in the marking detail. Mark the socket with a start and stop point. The stop point corresponds to the target rotation determined earlier.

3. Align the start mark on the socket with the line on the plate. While the bolt is being backed up, turn the nut until the stop mark on the socket lines up with the start mark on the plate.

4. Repeat with all bolts of the same length in the splice.

Acceptance and Rejection of Bolts

1. The Engineer will check all bolts with a feeler gage.

2. All nuts must be turned at least the target rotation beyond "snug tight".

3. All DTI's must have at least 3 refusals of the 0.005" gage.

4. If all gaps refuse the 0.005" gage, and the nut, plate and bolt are not marked, reject the bolt.

5. If all gaps refuse the 0.005" gage, and the turned element has not been rotated more than 45° beyond the calibrated turn, accept the bolt.

6. If all gaps refuse the 0.005" gage, and the turned element has been rotated more than 45° beyond the calibrated turn, reject the bolt.

For additional information see the structural steel section of the Bridge Construction Manual.

Suggested Impact wrench models:
CP 611
IR 2940
Cleco WS2110
ATP 1011/1040
Norbar PT1500

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1	04/25/05	Current Release	RAM	KFH

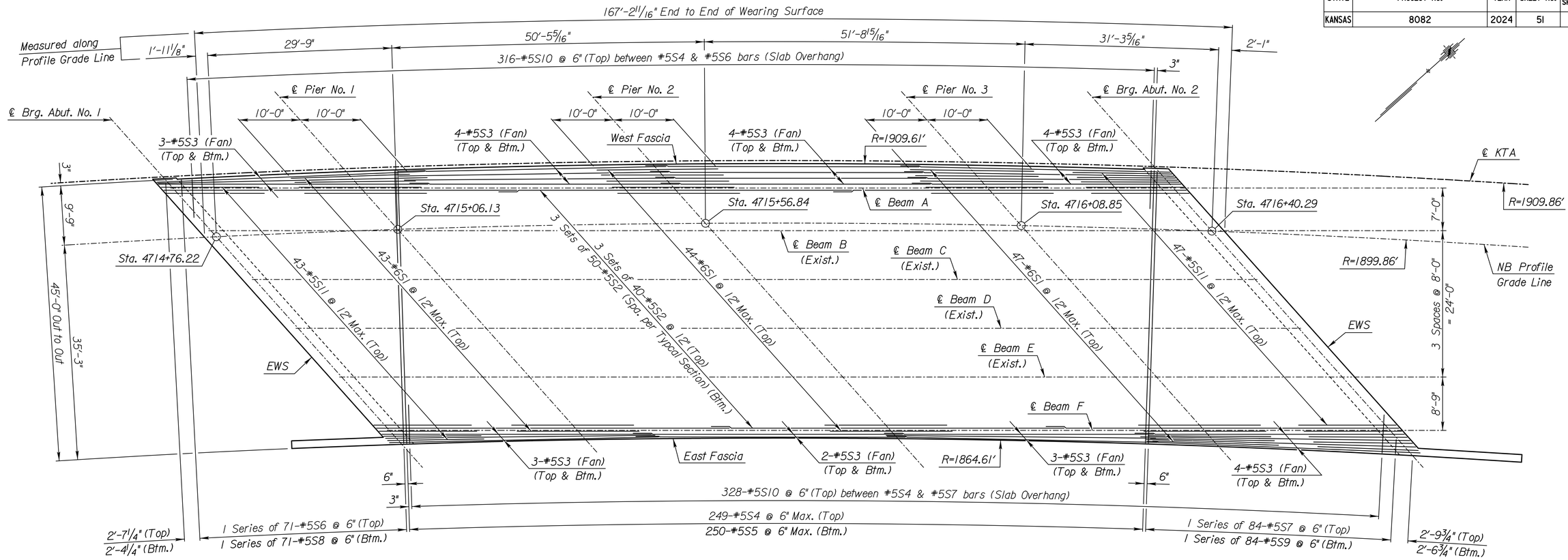
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

STEEL ERECTION, FIT-UP AND BOLTING PROCEDURE

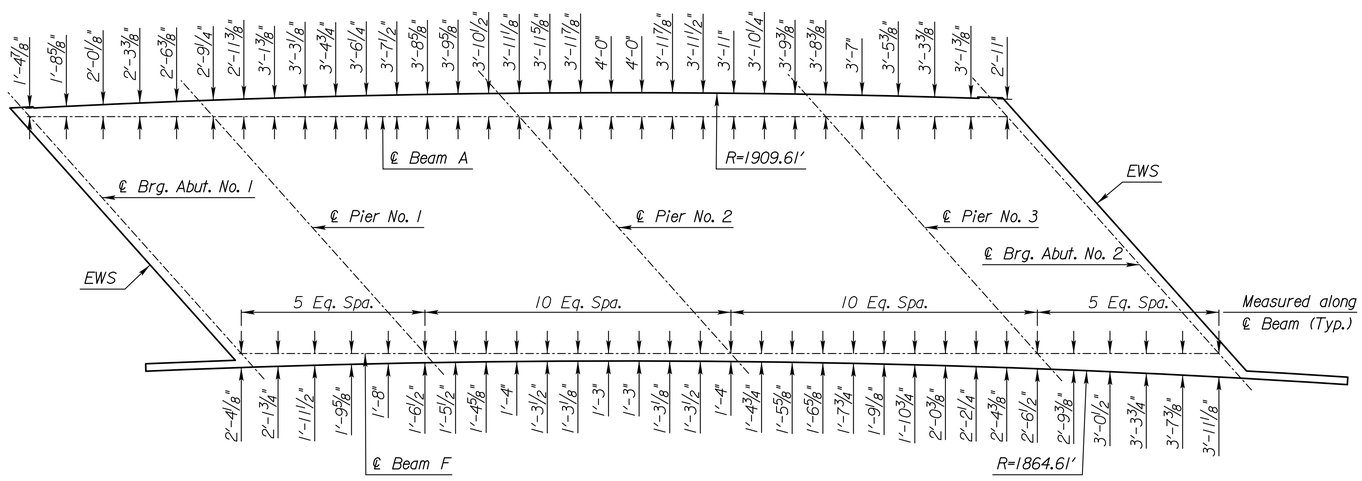
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-22-SteelFitup.dgn
Plot Date: 12-SEP-2024 21:40

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	51	134



SLAB PLAN



OFFSETS TO SLAB FASCIAS

Notes:

Min. Lap is 2'-5" for #5 bars.

Place transverse bars radially. Transverse bar spacings are measured along the West Fascia.

Stagger top and bottom transverse bar placement.

Forms for the slab and barrier rails shall be supported by the beams.

For Typical Section and Concrete Placing Sequence see Sheet No. 52.

For Barrier Rail Details see Sheet No's. 55 & 56.

For Roadway Surface Elevations see Sheet No. 53.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

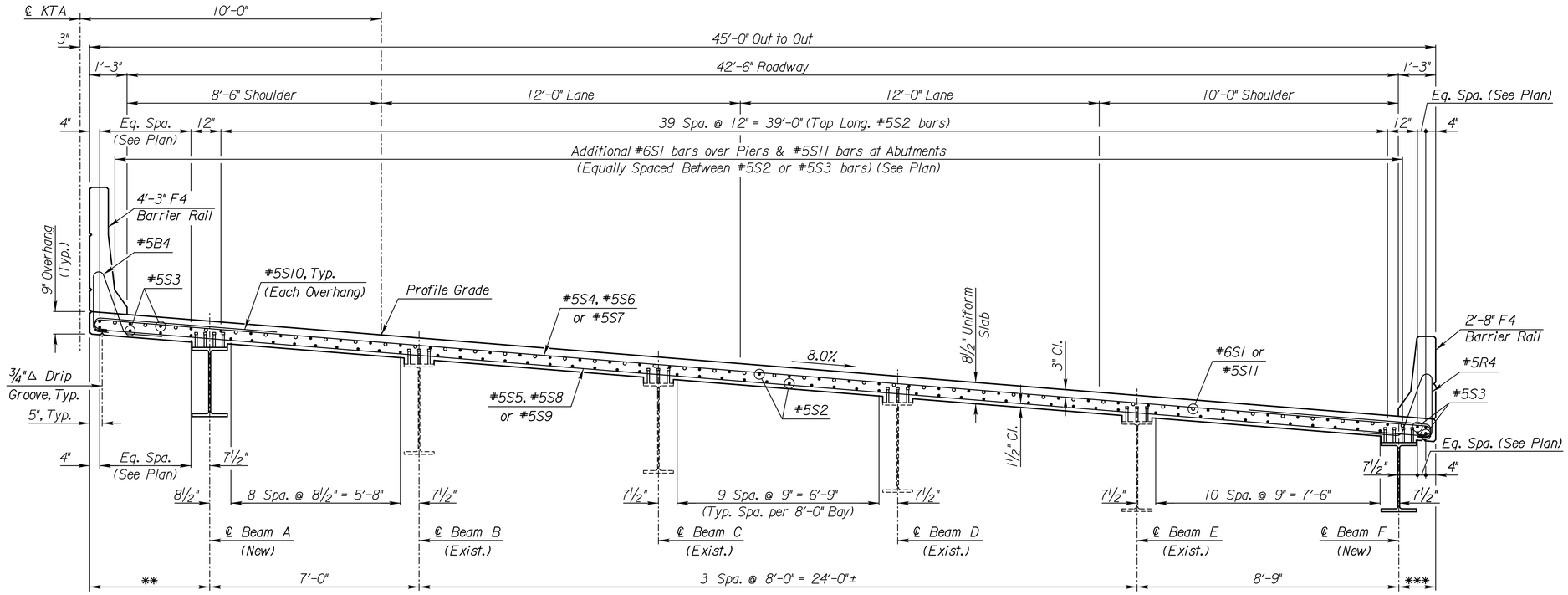
KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 NB

SLAB PLAN

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

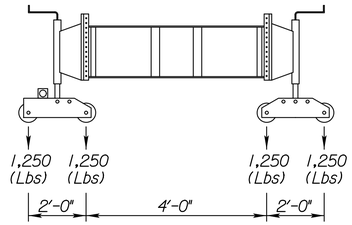
Plotted By: JEHarris | Plot Location:
File: KTA44-23-Slabl.dgn
Plot Date: 12-SEP-2024 21:40



TYPICAL SECTION

(Looking Upstation)

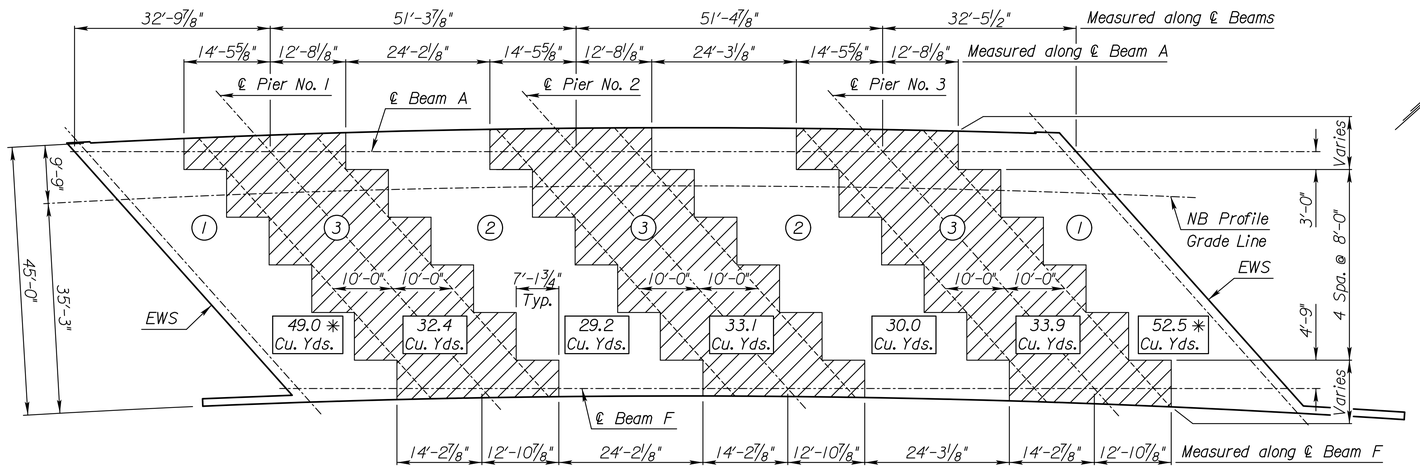
** Varies from 1'-4⅞" to 4'-0"
*** Varies from 1'-3" to 3'-11⅛"



ASSUMED FINISHING MACHINE VALUES LOADING DIAGRAM

Note: Rotation (maximum = 1°) in the exterior girder was calculated assuming screed wheel loads as shown and placed 3" beyond the outside of the deck. The maximum overhang bracket spacing was assumed at 4 ft. The actual screed loadings or bracket spacing will be reflected in the design calculations for a torsional analysis of the exterior girder and bracing. The design calculations shall bear the seal of a licensed Professional Engineer. Submit according to KDOT Specifications Section 700 for falsework and formwork.

Note: Provide temporary bracing at the top and bottom flanges of the exterior beams during paving operations for the deck. Place the bracing at three equal spaces between permanent diaphragms. The top flange bracing members shall be a ½" Ø steel rod or greater (Min. Fy = 36 ksi). The bottom flange bracing members shall be a 4" x 4" timber post or greater. The temporary bracing and labor for installation is subsidiary to the bid item "Concrete (Grade 4.0)(AE)(SA)(MPC)". Details of proposed bracing shall be submitted with falsework plans.



CONCRETE PLACING SEQUENCE

Notes:

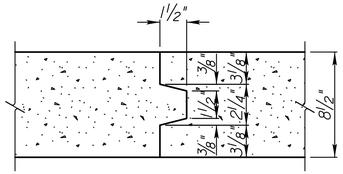
(1) Circled numbers indicate placing sequence. Segmental, combined or continuous pours are allowed by an approved alternate placing sequence. Any discontinuous pour must stop at a construction joint short of a pier. See General Notes, Sheet No. 30, for "Concrete Placing Sequence" note.

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

Place and hand vibrate all concrete for the abutment diaphragms to the bottom of the deck elevation just prior to the normal paving train operation. Do this work in a manner to avoid cold joints in either the slab or in the abutment diaphragm.

49.0 Boxed numbers indicate the quantity of Concrete (Grade 4.0)(AE)(SA)(MPC) required to pour the slab, including fillets and abutment diaphragms (for information only).

** The quantity includes the superstructure portion of the abutment.*



SLAB CONSTRUCTION JOINT

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	52	134

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 NB

SLAB DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-24-Slab2.dgn
Plot Date: 12-SEP-2024 21:41

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	53	134

TOP OF SLAB ELEVATIONS

	Tenth Point		Fascia (West)	Beam A	Beam B	Beam C	Beam D	Beam E	Beam F	Fascia (East)
℄ Brg. Abut. No. 1	1.0	Station	4714+68.34	4714+69.47	4714+75.38	4714+82.19	4714+89.05	4714+95.98	4715+03.63	4715+05.63
		Elevation	1294.56	1294.45	1293.87	1293.22	1292.57	1291.92	1291.21	1291.02
SPAN ONE	1.1	Station	4714+71.31	4714+72.55	4714+78.47	4714+85.29	4714+92.17	4714+99.11	4715+06.78	4715+08.71
		Elevation	1294.56	1294.44	1293.87	1293.21	1292.56	1291.91	1291.20	1291.02
	1.2	Station	4714+74.27	4714+75.63	4714+81.56	4714+88.40	4714+95.29	4715+02.25	4715+09.93	4715+11.80
		Elevation	1294.57	1294.43	1293.86	1293.21	1292.56	1291.91	1291.20	1291.03
	1.3	Station	4714+77.24	4714+78.71	4714+84.66	4714+91.51	4714+98.41	4715+05.38	4715+13.08	4715+14.89
		Elevation	1294.57	1294.43	1293.86	1293.20	1292.55	1291.90	1291.19	1291.03
	1.4	Station	4714+80.20	4714+81.79	4714+87.75	4714+94.61	4715+01.54	4715+08.52	4715+16.23	4715+17.98
		Elevation	1294.58	1294.42	1293.85	1293.20	1292.55	1291.90	1291.19	1291.04
	1.5	Station	4714+83.17	4714+84.88	4714+90.84	4714+97.72	4715+04.66	4715+11.65	4715+19.38	4715+21.06
		Elevation	1294.58	1294.42	1293.85	1293.19	1292.54	1291.90	1291.19	1291.04
	1.6	Station	4714+86.13	4714+87.96	4714+93.94	4715+00.83	4715+07.78	4715+14.79	4715+22.53	4715+24.15
		Elevation	1294.59	1294.41	1293.84	1293.19	1292.54	1291.89	1291.18	1291.04
	1.7	Station	4714+89.10	4714+91.04	4714+97.03	4715+03.94	4715+10.90	4715+17.93	4715+25.68	4715+27.24
		Elevation	1294.60	1294.41	1293.84	1293.19	1292.54	1291.89	1291.18	1291.04
	1.8	Station	4714+92.06	4714+94.12	4715+00.13	4715+07.05	4715+14.02	4715+21.06	4715+28.83	4715+30.32
		Elevation	1294.60	1294.40	1293.83	1293.18	1292.53	1291.89	1291.18	1291.05
	1.9	Station	4714+95.03	4714+97.21	4715+03.22	4715+10.15	4715+17.15	4715+24.20	4715+31.99	4715+33.41
		Elevation	1294.60	1294.40	1293.83	1293.18	1292.53	1291.88	1291.18	1291.05
℄ Pier No. 1	2.0	Station	4714+97.99	4715+00.29	4715+06.32	4715+13.26	4715+20.27	4715+27.34	4715+35.14	4715+36.50
		Elevation	1294.61	1294.39	1293.82	1293.17	1292.53	1291.88	1291.17	1291.05
SPAN TWO	2.1	Station	4715+03.02	4715+05.43	4715+11.48	4715+18.44	4715+25.47	4715+32.56	4715+40.39	4715+41.74
		Elevation	1294.62	1294.38	1293.82	1293.17	1292.52	1291.88	1291.17	1291.05
	2.2	Station	4715+08.05	4715+10.56	4715+16.63	4715+23.62	4715+30.68	4715+37.79	4715+45.64	4715+46.98
		Elevation	1294.62	1294.38	1293.81	1293.16	1292.52	1291.87	1291.17	1291.06
	2.3	Station	4715+13.07	4715+15.70	4715+21.79	4715+28.81	4715+35.88	4715+43.02	4715+50.89	4715+52.22
		Elevation	1294.63	1294.37	1293.81	1293.16	1292.51	1291.87	1291.17	1291.06
	2.4	Station	4715+18.10	4715+20.84	4715+26.95	4715+33.99	4715+41.09	4715+48.24	4715+56.15	4715+57.46
		Elevation	1294.64	1294.37	1293.80	1293.15	1292.51	1291.87	1291.16	1291.06
	2.5	Station	4715+23.12	4715+25.98	4715+32.11	4715+39.17	4715+46.29	4715+53.47	4715+61.40	4715+62.70
		Elevation	1294.64	1294.36	1293.80	1293.15	1292.51	1291.86	1291.16	1291.06
	2.6	Station	4715+28.15	4715+31.12	4715+37.27	4715+44.35	4715+51.50	4715+58.70	4715+66.65	4715+67.94
		Elevation	1294.65	1294.36	1293.79	1293.15	1292.51	1291.86	1291.16	1291.06
	2.7	Station	4715+33.18	4715+36.27	4715+42.43	4715+49.54	4715+56.70	4715+63.93	4715+71.90	4715+73.19
		Elevation	1294.65	1294.35	1293.79	1293.15	1292.50	1291.86	1291.16	1291.06
	2.8	Station	4715+38.20	4715+41.41	4715+47.59	4715+54.72	4715+61.91	4715+69.16	4715+77.16	4715+78.43
		Elevation	1294.65	1294.35	1293.79	1293.14	1292.50	1291.86	1291.16	1291.06
	2.9	Station	4715+43.23	4715+46.55	4715+52.76	4715+59.90	4715+67.11	4715+74.39	4715+82.41	4715+83.67
		Elevation	1294.66	1294.35	1293.78	1293.14	1292.50	1291.86	1291.16	1291.06
℄ Pier No. 2	3.0	Station	4715+48.25	4715+51.69	4715+57.92	4715+65.09	4715+72.32	4715+79.61	4715+87.66	4715+88.91
		Elevation	1294.66	1294.35	1293.78	1293.14	1292.50	1291.86	1291.16	1291.06

TOP OF SLAB ELEVATIONS

	Tenth Point		Fascia (West)	Beam A	Beam B	Beam C	Beam D	Beam E	Beam F	Fascia (East)
℄ Pier No. 2	3.0	Station	4715+48.25	4715+51.69	4715+57.92	4715+65.09	4715+72.32	4715+79.61	4715+87.66	4715+88.91
		Elevation	1294.66	1294.35	1293.78	1293.14	1292.50	1291.86	1291.16	1291.06
SPAN THREE	3.1	Station	4715+53.41	4715+56.85	4715+63.09	4715+70.28	4715+77.54	4715+84.85	4715+92.92	4715+94.29
		Elevation	1294.66	1294.34	1293.78	1293.14	1292.50	1291.86	1291.17	1291.05
	3.2	Station	4715+58.56	4715+62.00	4715+68.26	4715+75.48	4715+82.75	4715+90.09	4715+98.18	4715+99.68
		Elevation	1294.66	1294.34	1293.78	1293.14	1292.50	1291.86	1291.17	1291.05
	3.3	Station	4715+63.72	4715+67.15	4715+73.43	4715+80.67	4715+87.97	4715+95.32	4716+03.45	4716+05.06
		Elevation	1294.66	1294.34	1293.78	1293.14	1292.50	1291.87	1291.17	1291.05
	3.4	Station	4715+68.87	4715+72.30	4715+78.60	4715+85.86	4715+93.18	4716+00.56	4716+08.71	4716+10.45
		Elevation	1294.66	1294.34	1293.78	1293.14	1292.51	1291.87	1291.17	1291.04
	3.5	Station	4715+74.02	4715+77.45	4715+83.77	4715+91.05	4715+98.39	4716+05.80	4716+13.96	4716+15.83
		Elevation	1294.66	1294.34	1293.78	1293.15	1292.51	1291.87	1291.18	1291.04
	3.6	Station	4715+79.18	4715+82.61	4715+88.95	4715+96.25	4716+03.61	4716+11.03	4716+19.22	4716+21.22
		Elevation	1294.66	1294.34	1293.78	1293.15	1292.51	1291.88	1291.18	1291.03
	3.7	Station	4715+84.33	4715+87.76	4715+94.12	4716+01.44	4716+08.82	4716+16.27	4716+24.48	4716+26.60
		Elevation	1294.66	1294.34	1293.79	1293.15	1292.52	1291.88	1291.19	1291.02
	3.8	Station	4715+89.48	4715+92.91	4715+99.29	4716+06.63	4716+14.03	4716+21.50	4716+29.74	4716+31.99
		Elevation	1294.66	1294.35	1293.79	1293.15	1292.52	1291.89	1291.19	1291.02
	3.9	Station	4715+94.64	4715+98.06	4716+04.46	4716+11.82	4716+19.25	4716+26.73	4716+35.00	4716+37.37
		Elevation	1294.65	1294.35	1293.79	1293.16	1292.52	1291.89	1291.20	1291.01
℄ Pier No. 3	4.0	Station	4715+99.79	4716+03.21	4716+09.63	4716+17.01	4716+24.46	4716+31.97	4716+40.25	4716+42.76
		Elevation	1294.65	1294.35	1293.80	1293.16	1292.53	1291.90	1291.21	1291.00
SPAN FOUR	4.1	Station	4716+02.90	4716+06.26	4716+12.69	4716+20.08	4716+27.54	4716+35.07	4716+43.36	4716+46.02
		Elevation	1294.65	1294.35	1293.80	1293.17	1292.53	1291.90	1291.21	1290.99
	4.2	Station	4716+06.02	4716+09.31	4716+15.75	4716+23.16	4716+30.63	4716+38.16	4716+46.47	4716+49.28
		Elevation	1294.65	1294.36	1293.80	1293.17	1292.54	1291.90	1291.22	1290.99
	4.3	Station	4716+09.13	4716+12.36	4716+18.81	4716+26.23	4716+33.72	4716+41.26	4716+49.59	4716+52.54
		Elevation	1294.64	1294.36	1293.80	1293.17	1292.54	1291.91	1291.22	1290.98
	4.4	Station	4716+12.25	4716+15.41	4716+21.87	4716+29.30	4716+36.80	4716+44.36	4716+52.70	4716+55.80
		Elevation	1294.64	1294.36	1293.81	1293.17	1292.54	1291.91	1291.23	1290.98
	4.5	Station	4716+15.36	4716+18.46	4716+24.93	4716+32.38	4716+39.89	4716+47.46	4716+55.81	4716+59.06
		Elevation	1294.64	1294.36	1293.81	1293.18	1292.55	1291.92	1291.23	1290.97
	4.6	Station	4716+18.47	4716+21.51	4716+27.99	4716+35.45	4716+42.97	4716+50.55	4716+58.92	4716+62.32
		Elevation	1294.63	1294.37	1293.81	1293.18	1292.55	1291.92	1291.24	1290.96
	4.7	Station	4716+21.59	4716+24.56	4716+31.05	4716+38.52	4716+46.05	4716+53.65	4716+62.03	4716+65.58
		Elevation	1294.63	1294.37	1293.82	1293.19	1292.56	1291.93	1291.24	1290.96
	4.8	Station	4716+24.70	4716+27.61	4716+34.11	4716+41.59	4716+49.14	4716+56.75	4716+65.14	4716+68.84
		Elevation	1294.63	1294.37	1293.82	1293.19	1292.56	1291.93	1291.25	1290.95
	4.9	Station	4716+27.81	4716+30.66	4716+37.17	4716+44.66	4716+52.22	4716+59.84	4716+68.25	4716+72.10
		Elevation	1294.62	1294.38	1293.82	1293.19	1292.57	1291.94	1291.25	1290.94
℄ Brg. Abut. No. 2	5.0	Station	4716+30.93	4716+33.71	4716+40.23	4716+47.74	4716+55.30	4716+62.94	4716+71.35	4716+75.35
		Elevation	1294.62	1294.38	1293.83	1293.20	1292.57	1291.94	1291.26	1290.93

Plotted By: JEHarris | Plot Location:
File: KTA44-25-SlabElevations.dgn
Plot Date: 12-SEP-2024 21:41

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

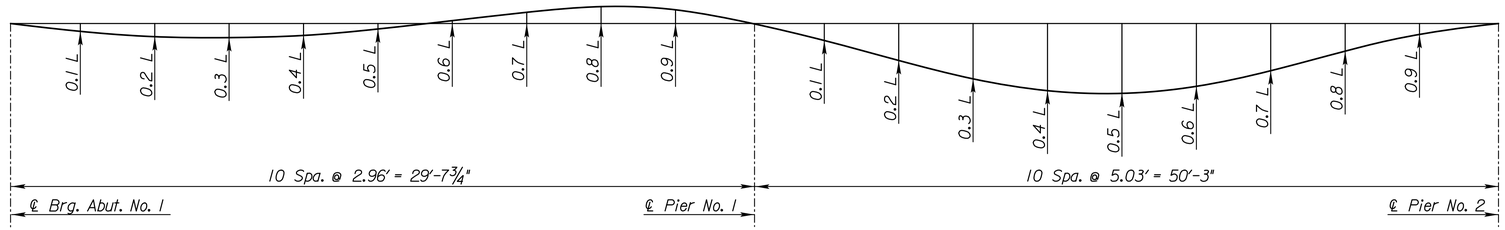
Br. No. 43.930 NB

ROADWAY SURFACE ELEVATIONS

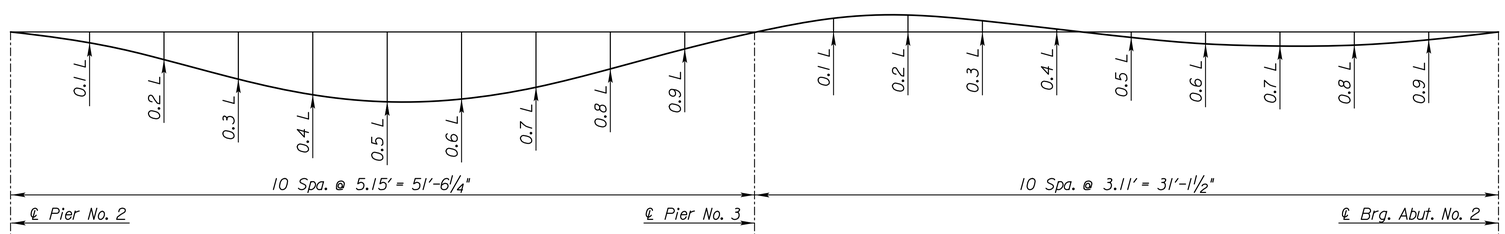
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	54	134

DEAD LOAD DEFLECTIONS																				
Beam	℄ Brg. Abut. No. 1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 2
A	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.001	0.001	0.001	0.000	-0.004	-0.009	-0.014	-0.017	-0.017	-0.016	-0.012	-0.007	-0.002	0.000
B	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.001	0.001	0.000	-0.002	-0.006	-0.009	-0.011	-0.011	-0.010	-0.007	-0.004	-0.001	0.000
C	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.001	0.001	0.000	-0.002	-0.006	-0.009	-0.011	-0.011	-0.010	-0.008	-0.004	-0.001	0.000
D	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.001	0.001	0.000	-0.002	-0.006	-0.009	-0.011	-0.011	-0.010	-0.008	-0.004	-0.001	0.000
E	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.001	0.001	0.000	-0.003	-0.006	-0.009	-0.011	-0.012	-0.010	-0.008	-0.005	-0.002	0.000
F	0.000	-0.001	-0.001	-0.002	-0.002	-0.002	-0.001	0.000	0.000	0.001	0.000	-0.003	-0.007	-0.011	-0.014	-0.014	-0.013	-0.010	-0.005	-0.002	0.000



DEAD LOAD DEFLECTIONS																				
Beam	℄ Pier No. 2	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 3	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Abut. No. 2
A	0.000	-0.002	-0.007	-0.013	-0.017	-0.019	-0.018	-0.015	-0.010	-0.004	0.000	0.001	0.001	0.001	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
B	0.000	-0.001	-0.004	-0.008	-0.010	-0.011	-0.011	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
C	0.000	-0.001	-0.004	-0.008	-0.010	-0.012	-0.011	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
D	0.000	-0.001	-0.004	-0.008	-0.010	-0.011	-0.011	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
E	0.000	-0.002	-0.005	-0.008	-0.011	-0.012	-0.012	-0.010	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
F	0.000	-0.002	-0.007	-0.011	-0.014	-0.016	-0.015	-0.012	-0.008	-0.003	0.000	0.001	0.000	0.000	-0.001	-0.002	-0.002	-0.002	-0.002	-0.001	0.000



BEAM DEAD LOAD DEFLECTION DIAGRAM

Ordinates are in feet and are at tenth points of spans, measured along ℄ Beams.

DEFLECTION NOTES:

Do not camber the new steel beams. Any natural mill camber that the beams have retained shall be placed up.

Dead Load Deflection ordinates shown represent the amount of deflection due to the slab pour and barrier rails.

Provide for beam deflections by adding concrete dead load deflections to plan grade. Increase or decrease the depth of concrete fillets over the beams, based on field surveys, to obtain the required roadway surface elevations.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
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KANSAS TURNPIKE AUTHORITY

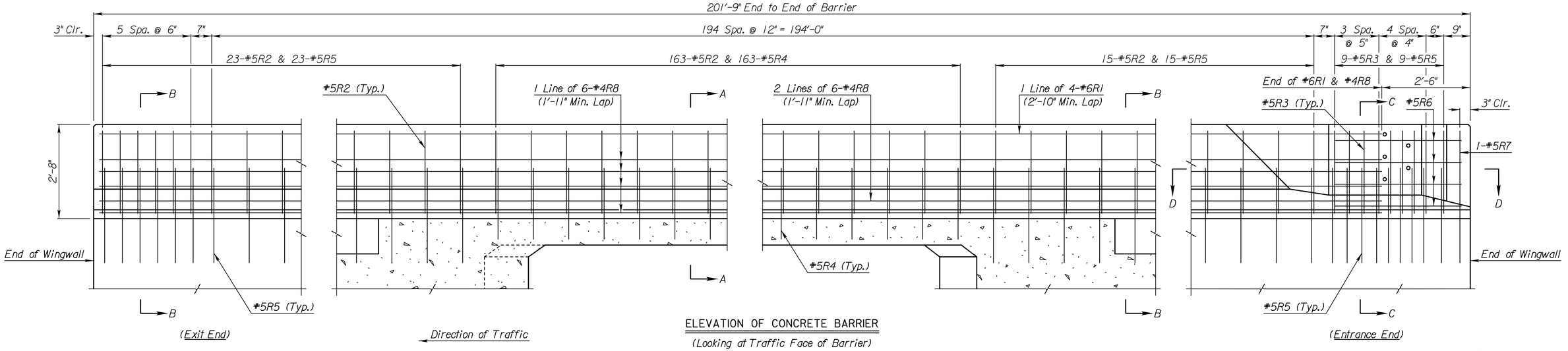
Br. No. 43.930 NB

DEAD LOAD DEFLECTIONS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

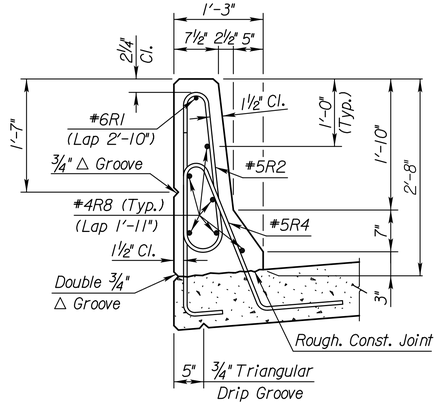
Plotted By: JEHarris | Plot Location:
File: KTA44-26-Deflections.dgn
Plot Date: 12-SEP-2024 21:41

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	55	134

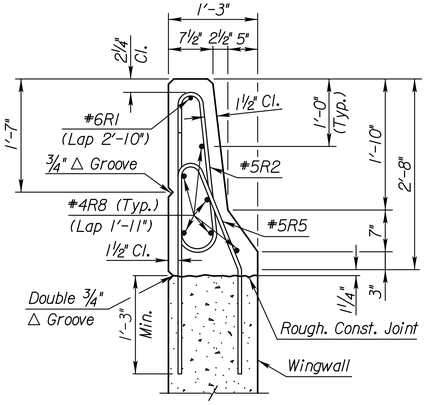


ELEVATION OF CONCRETE BARRIER

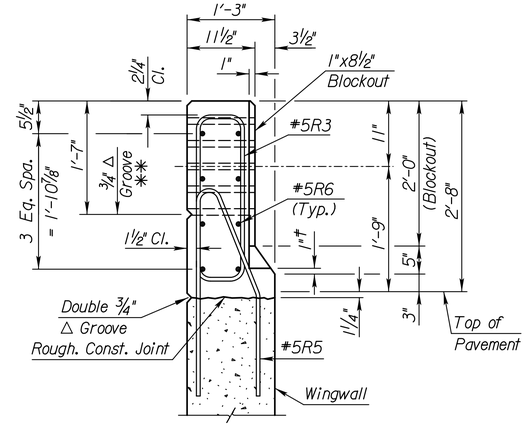
(Looking at Traffic Face of Barrier)



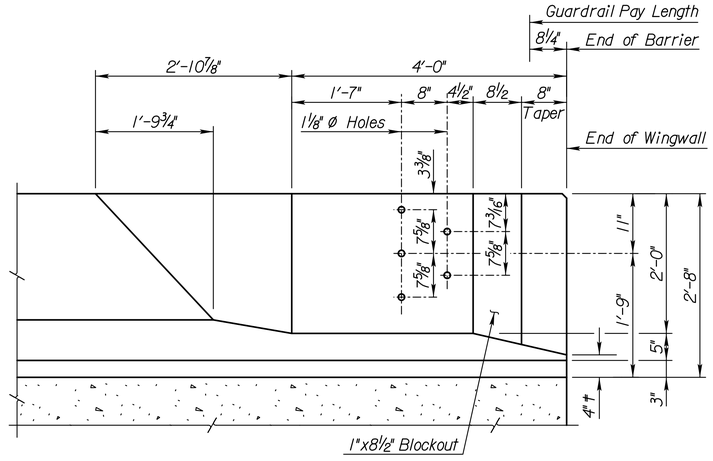
SECTION A-A



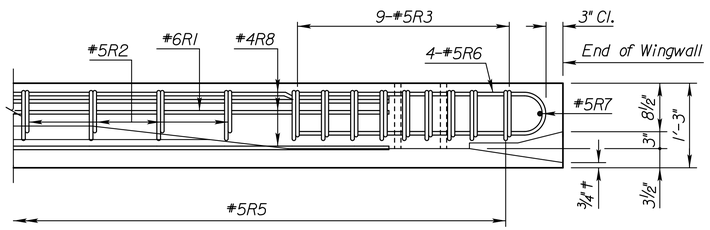
SECTION B-B



SECTION C-C

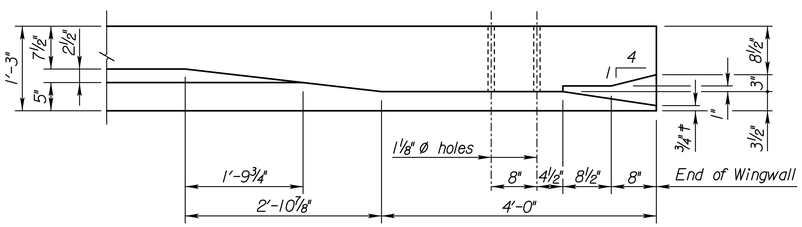


ELEVATION OF BARRIER ENTRANCE END



SECTION D-D

Direction of traffic



PLAN OF BARRIER ENTRANCE END

Notes:

For Vertical Grooves at Piers, see Sheet No. 56.

** Eliminate the ¾" Triangular Groove if it conflicts with the 1⅛" Ø hole.

† Adjust #5R7 bars slightly to clear 1⅛" Ø holes, if necessary.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

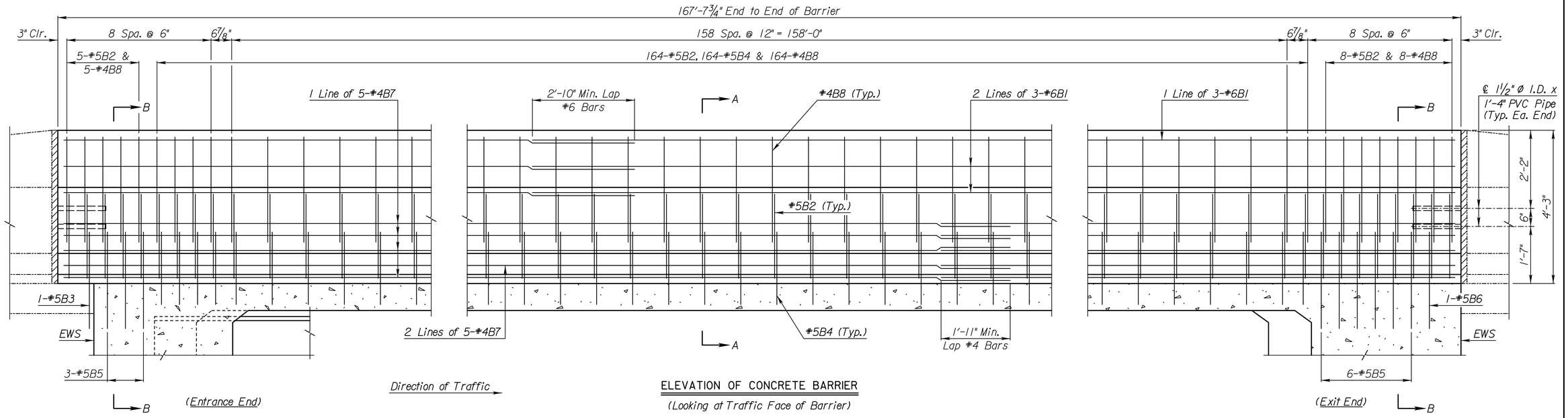
Br. No. 43.930 NB

32" F4 BARRIER RAIL DETAILS

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

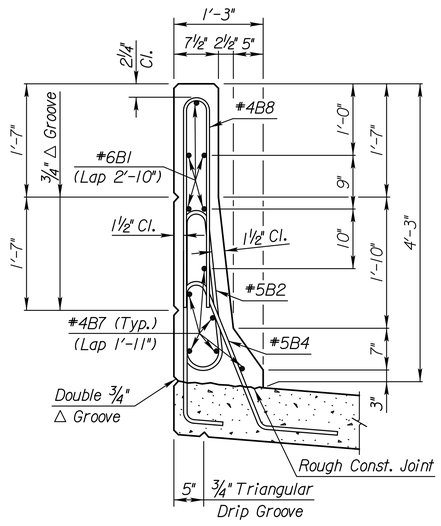
Plotted By: JEHarris
Plot Location:
File: KTA44-27-Barrier1.dgn
Plot Date: 12-SEP-2024 21:41

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	56	134

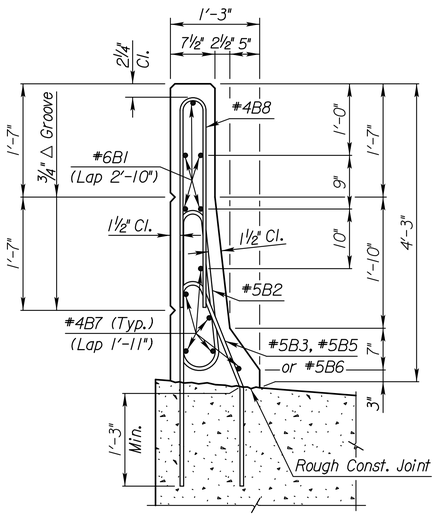


ELEVATION OF CONCRETE BARRIER

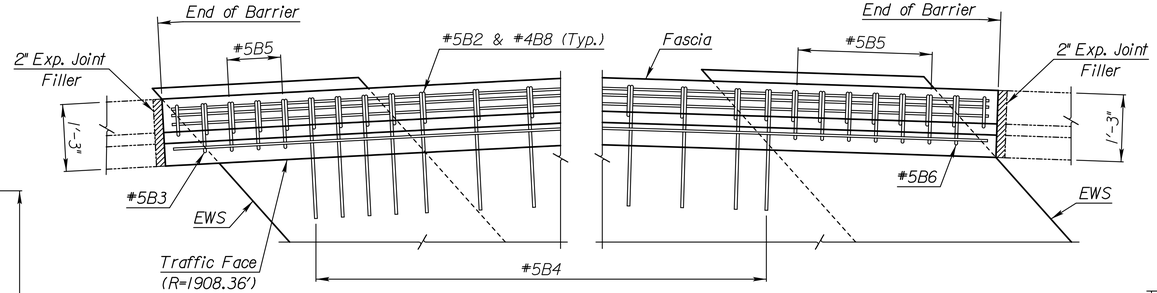
(Looking at Traffic Face of Barrier)



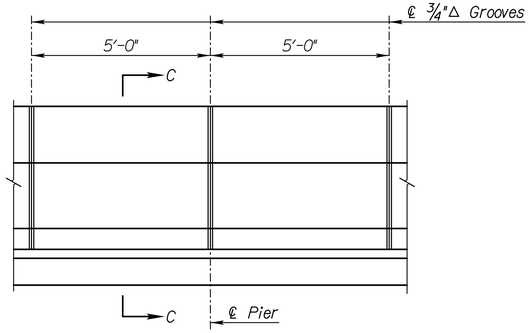
SECTION A-A



SECTION B-B



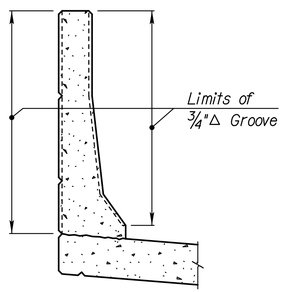
END PLAN



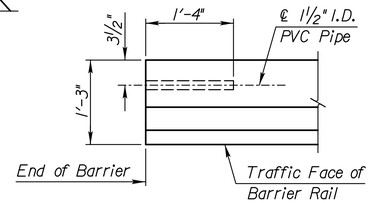
VERTICAL GROOVES AT PIERS

(Looking at Traffic Face)

(51" Barrier Shown, 32" Barrier Similar)



SECTION C-C



PARTIAL PLAN OF BARRIER END

(Showing details for PVC insert)

(Typical Both Ends of Barrier Rail)

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 NB

51" F4 BARRIER RAIL DETAILS

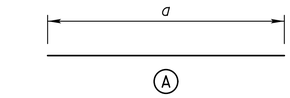
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-28-Barrier2.dgn
Plot Date: 12-SEP-2024 21:41

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	57	134

BILL OF REINFORCING STEEL
GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
ABUTMENT NO. 1 (EPOXY COATED)	SA1	A	8	8	57'-11"	57'-11"					
	SA25	A	7	6	7'-9"	7'-9"					
	SA3	A	5	6	57'-11"	57'-11"					
	SA4	A	5	2	37'-9"	37'-9"					
	SA5	A	5	2	27'-0"	27'-0"					
	SA6	A	5	2	16'-3"	16'-3"					
	SA7	A	5	4	5'-6"	5'-6"					
	SA13	C	5	12	18'-4"	3'-6"	7'-5"	7'-5"			
	SA14	C	5	11	20'-4"	3'-6"	8'-5"	8'-5"			
	SA15	C	5	13	22'-2"	3'-6"	9'-4"	9'-4"			
	SA16	C	5	10	23'-10"	3'-6"	10'-2"	10'-2"			
	SA17	C	5	2	14'-4"	3'-6"	6'-10"	4'-0"			
	SA18	C	5	2	15'-8"	3'-6"	7'-6"	4'-8"			
	SA19	C	5	1	17'-0"	3'-6"	8'-2"	5'-4"			
	SA20	C	5	51	5'-2"	3'-6"	10"	10"			
	SA27	A	5	5	10'-2"	10'-2"					
	SA28	A	5	11	7'-8"	7'-8"					
	SA29	A	5	5	6'-8"	6'-8"					
ABUTMENT NO. 2 (EPOXY COATED)	NA1	A	8	16	33'-9"	33'-9"					
	NA26	A	7	6	11'-6"	11'-6"					
	NA3	A	5	12	32'-10"	32'-10"					
	NA4	A	5	2	40'-3"	40'-3"					
	NA5	A	5	2	29'-6"	29'-6"					
	NA6	A	5	2	18'-9"	18'-9"					
	NA7	A	5	4	8'-0"	8'-0"					
	NA13	C	5	12	18'-4"	3'-6"	7'-5"	7'-5"			
	NA14	C	5	11	20'-4"	3'-6"	8'-5"	8'-5"			
	NA15	C	5	13	22'-4"	3'-6"	9'-5"	9'-5"			
	NA16	C	5	12	24'-0"	3'-6"	10'-3"	10'-3"			
	NA17	C	5	2	14'-6"	3'-6"	7'-0"	4'-0"			
	NA18	C	5	2	15'-9"	3'-6"	7'-1"	4'-8"			
	NA19	C	5	1	17'-0"	3'-6"	8'-2"	5'-4"			
	NA20	C	5	1	19'-3"	3'-6"	8'-9"	6'-0"			
	NA21	C	5	54	5'-2"	3'-6"	10"	10"			
	NA28	A	5	5	9'-9"	9'-9"					
	NA29	A	5	11	7'-8"	7'-8"					
	NA30	A	5	9	6'-8"	6'-8"					



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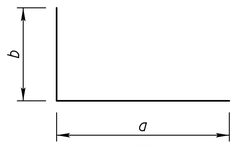

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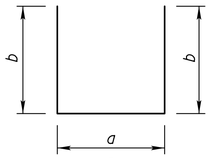

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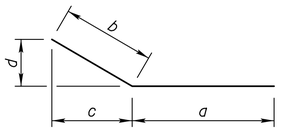

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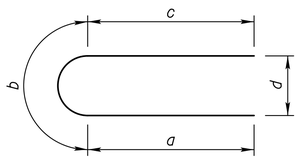

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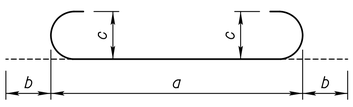

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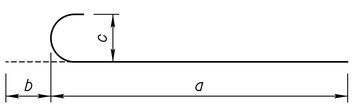

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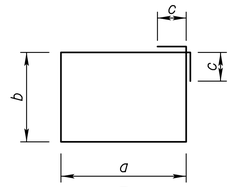

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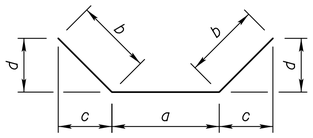

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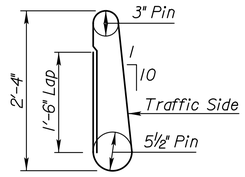

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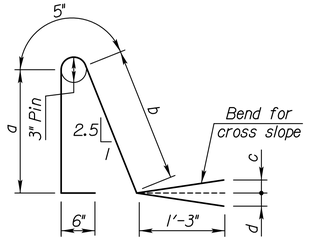

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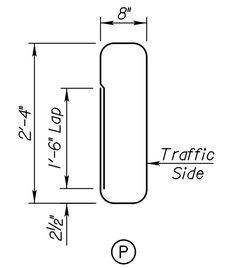
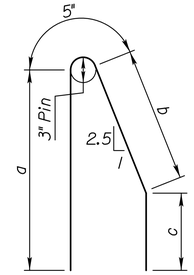


(P)

BENDING DIAGRAMS



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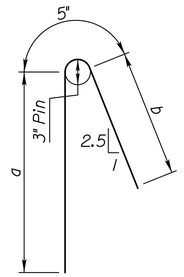

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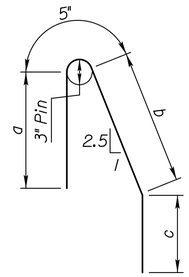

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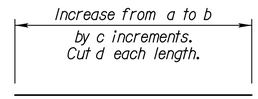

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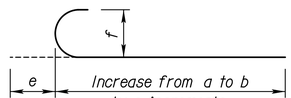


(Z)

Notes:

(A) *denotes bending mark.*

Dimensions are out to out, unless noted otherwise.

No allowance for bend curvature is to be made except for standard hook and radii in excess of same.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

BILL OF REINFORCING STEEL

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-29-Barlist1.dgn
Plot Date: 12-SEP-2024 21:42

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	58	134

BILL OF REINFORCING STEEL
GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
PIER NO. 1 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	12	3'-0"	3'-0"					
	PB5	C	5	38	8'-8"	2'-2"	3'-3"	3'-3"			
	PB6	A	4	6	9'-8"	9'-8"					
	PB7	A	4	8	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			
PIER NO. 2 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	20	3'-0"	3'-0"					
	PF1	A	6	6	9'-2"	9'-2"					
	PF2	A	6	6	8'-7"	8'-7"					
	PB5	C	5	38	8'-8"	2'-2"	3'-3"	3'-3"			
	PB6	A	4	6	9'-8"	9'-8"					
	PB7	A	4	8	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			
	PF3	H	4	19	11'-1"	3'-2"	2'-0"	4 1/2"			
	PF4	C	4	6	5'-7"	3'-1"	1'-3"	1'-3"			
PIER NO. 3 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	12	3'-0"	3'-0"					
	PB5	C	5	38	8'-8"	2'-2"	3'-3"	3'-3"			
	PB6	A	4	6	9'-8"	9'-8"					
	PB7	A	4	8	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			

BILL OF REINFORCING STEEL
GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
SUPERSTRUCTURE (EPOXY COATED)	SA2	A	8	5	58'-0"	58'-0"					
	NA2	A	8	10	33'-9"	33'-9"					
	SA23	A	7	5	12'-6"	12'-6"					
	SA24	A	7	4	10'-6"	10'-6"					
	NA24	A	7	5	13'-9"	13'-9"					
	NA25	A	7	4	16'-2"	16'-2"					
	B1	A	6	15	57'-10"	57'-10"					
	R1	A	6	4	51'-11"	51'-11"					
	S1	A	6	134	20'-0"	20'-0"					
	B2	M	5	177	6'-6"	6'-6"					
	B3	R	5	1	4'-3"	2'-7"	1'-3"				
	B4	N	5	164	5'-11"	1'-9"	2'-0"	--	1 1/4"		
	B5	Q	5	9	5'-9"	2'-7"	1'-6"	1'-3"			
	B6	S	5	1	4'-3"	1'-1"	1'-6"	1'-3"			
	R2	M	5	201	6'-6"						
	R3	P	5	9	7'-6"						
	R4	N	5	163	5'-11"	1'-9"	2'-0"	1 1/4"	--		
	R5	Q	5	47	5'-11"	2'-8"	1'-6"	1'-4"			
	R6	E	5	4	7'-5"	3'-3 3/4"	9 1/2"	3'-3 3/4"	6 1/2"		
	R7	A	5	1	3'-10"	3'-10"					
	S2	A	5	270	57'-6"	57'-6"					
	S3	A	5	54	43'-9"	43'-9"					
	S4	F	5	249	45'-10"	44'-8"	7"	5"			
	S5	A	5	250	44'-8"	44'-8"					
	S6	Z	5	71	VARIES	2'-8"	44'-8"	7 3/16"	1	7"	5"
	S7	Z	5	84	VARIES	2'-4"	44'-6"	6 1/8"	1	7"	5"
	S8	T	5	71	VARIES	2'-6"	44'-6"	7 3/16"	1		
	S9	T	5	84	VARIES	2'-1"	44'-3"	6 1/8"	1		
	S10	D	5	644	6'-10"	6'-3"	7"	5"			
	S11	B	5	90	18'-0"	16'-0"	2'-0"				
	SA8	A	5	6	58'-0"	58'-0"					
	SA9	A	5	2	43'-3"	43'-3"					
	SA10	A	5	2	20'-0"	20'-0"					
	SA11	A	5	6	12'-6"	12'-6"					
	SA12	A	5	2	7'-6"	7'-6"					
	SA21	C	5	46	9'-10"	3'-6"	3'-2"	3'-2"			
	SA22	B	5	5	7'-4"	3'-6"	3'-10"				
	SA26	A	5	4	19'-5"	19'-5"					
	SA30	A	5	20	3'-2"	3'-2"					
	NA8	A	5	12	32'-10"	32'-10"					
	NA9	A	5	2	45'-3"	45'-3"					
	NA10	A	5	2	22'-2"	22'-2"					
	NA11	A	5	6	12'-6"	12'-6"					
	NA12	A	5	2	10'-0"	10'-0"					
	NA22	C	5	48	9'-10"	3'-6"	3'-2"	3'-2"			
	NA23	B	5	6	7'-4"	3'-6"	3'-10"				
	NA27	A	5	4	19'-9"	19'-9"					
	NA31	A	5	22	3'-2"	3'-2"					
	B7	A	4	30	35'-1"	35'-1"					
	B8	E	4	177	6'-1"	2'-9"	7"	2'-9"	4 1/2"		
	R8	A	4	36	34'-10"	34'-10"					

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

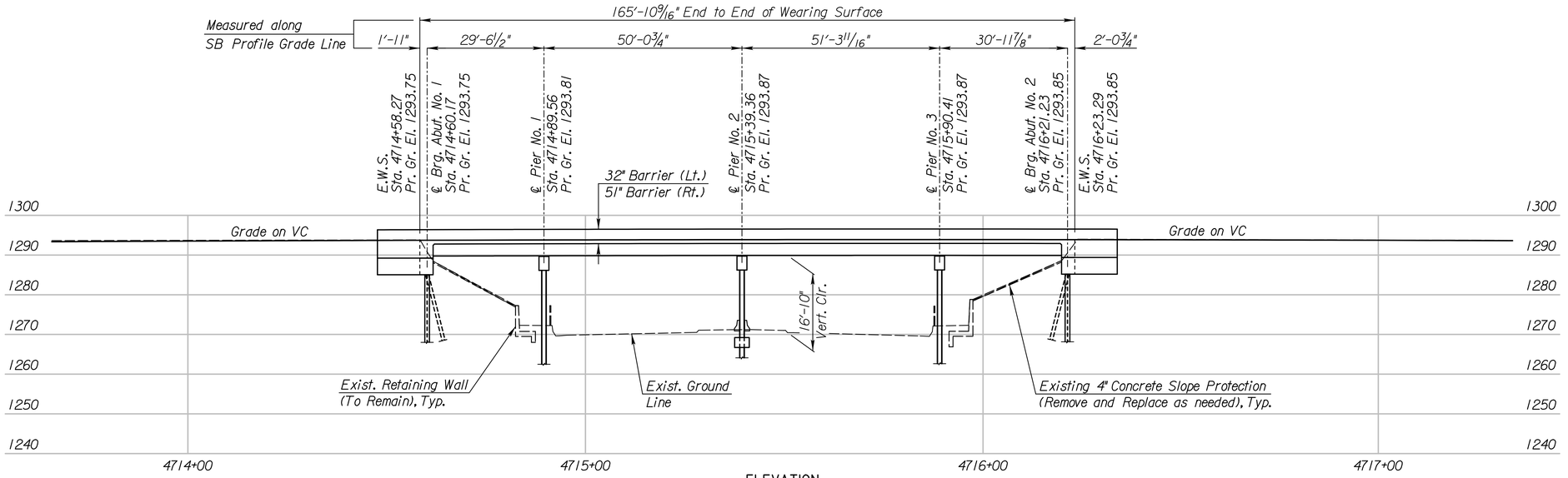
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 NB

BILL OF REINFORCING STEEL

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEtlarris | Plot Location:
File: KTA44-30-Barlist2.dgn
Plot Date: 12-SEP-2024 21:42

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	59	134

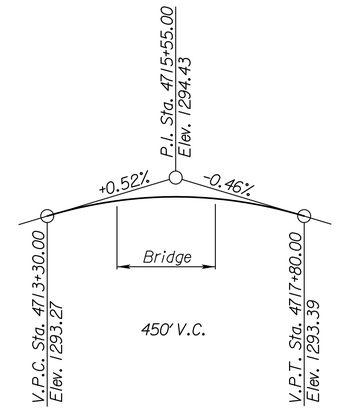


B.M. #1 - Garver Disc
154.36' Lt of ℄ Sta 4699+50.00 Elev. 1270.32

B.M. #2 - Garver Disc (Base)
361.89' Lt. of ℄ Sta 4726+07.89 Elev. 1289.60

ELEVATION

30.3'-50.4'-50.5'-29.9' Spans, Skew 40°36'39" Lt.
Existing: Steel Beam, Continuous (SBMC), 28'-0" Roadway
Rehabilitate: Steel Beam Composite, Continuous (SMCC)
Widen: Weathering Steel Beam Composite, Continuous (WMCC), 42'-6" Roadway
Pile Bent Abutments & Pile Bent Piers

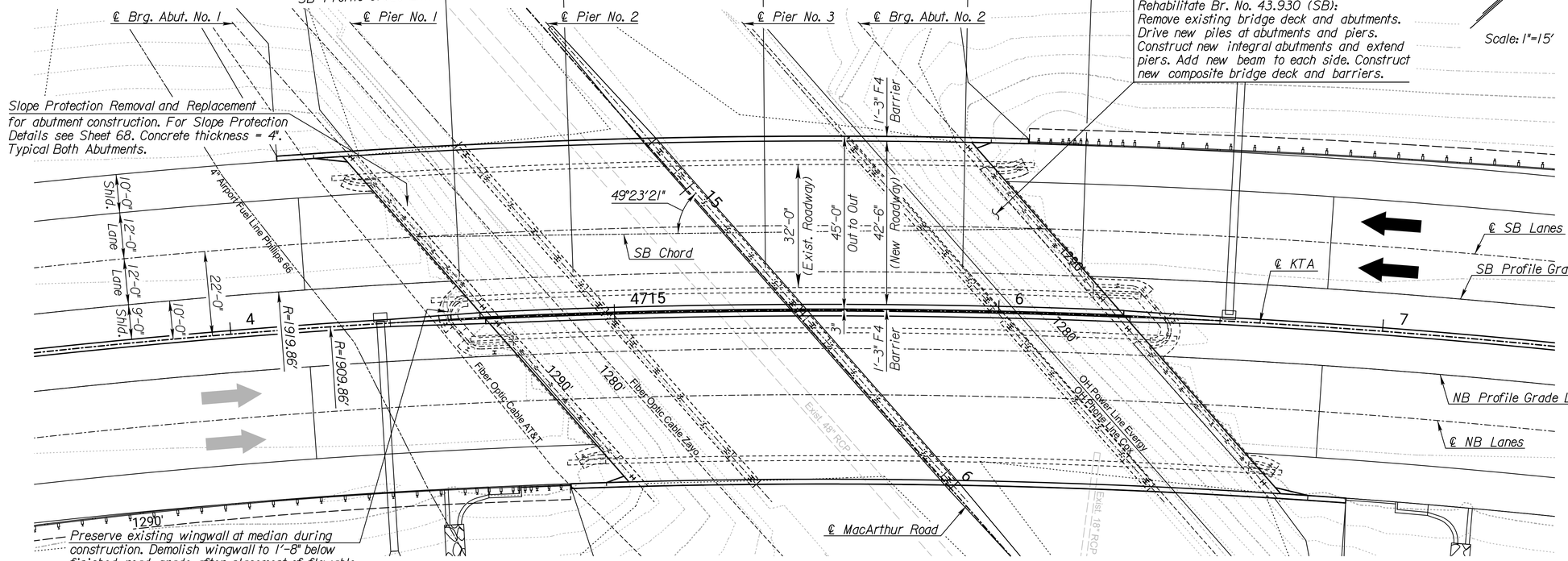


PROPOSED PROFILE GRADE

Profile Grade is located
10' left and right of ℄ KTA.

℄ KTA CURVE DATA

PI Sta. (Bk) = 4718+18.54
PI Sta. (Ahd) =
Δ = 48°01'30" (Rt)
D = 03°00'00"
R = 1909.86'
T = 850.82'
L = 1600.83'
E = 180.95'



PLAN

Notes:
All piers and abutments are parallel.
Stations and Profile Grade Elevations are given at the intersections of ℄ piers and abutments with the Profile Grade Line.
See Foundation Layout on Sheet No. 61 for span lengths measured along the chord.

The elevations shown are referenced to the NAVD88 Vertical Datum.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

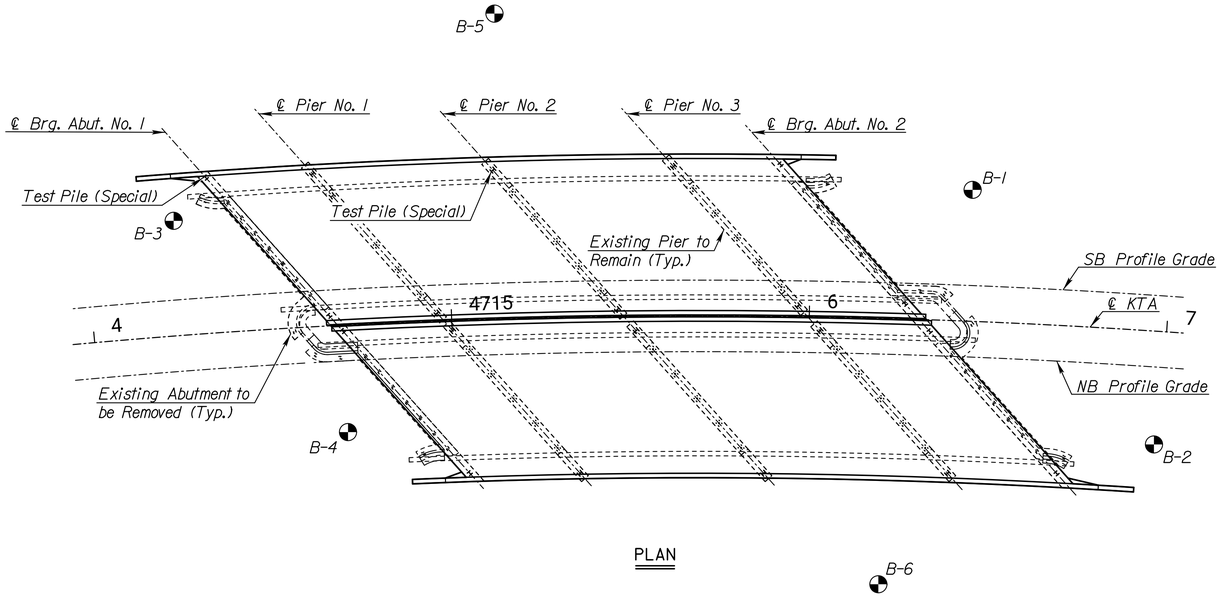
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

SOUTHBOUND CONSTRUCTION LAYOUT

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-34-ConLgSB.dgn
Plot Date: 12-SEP-2024 21:43

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	60	134



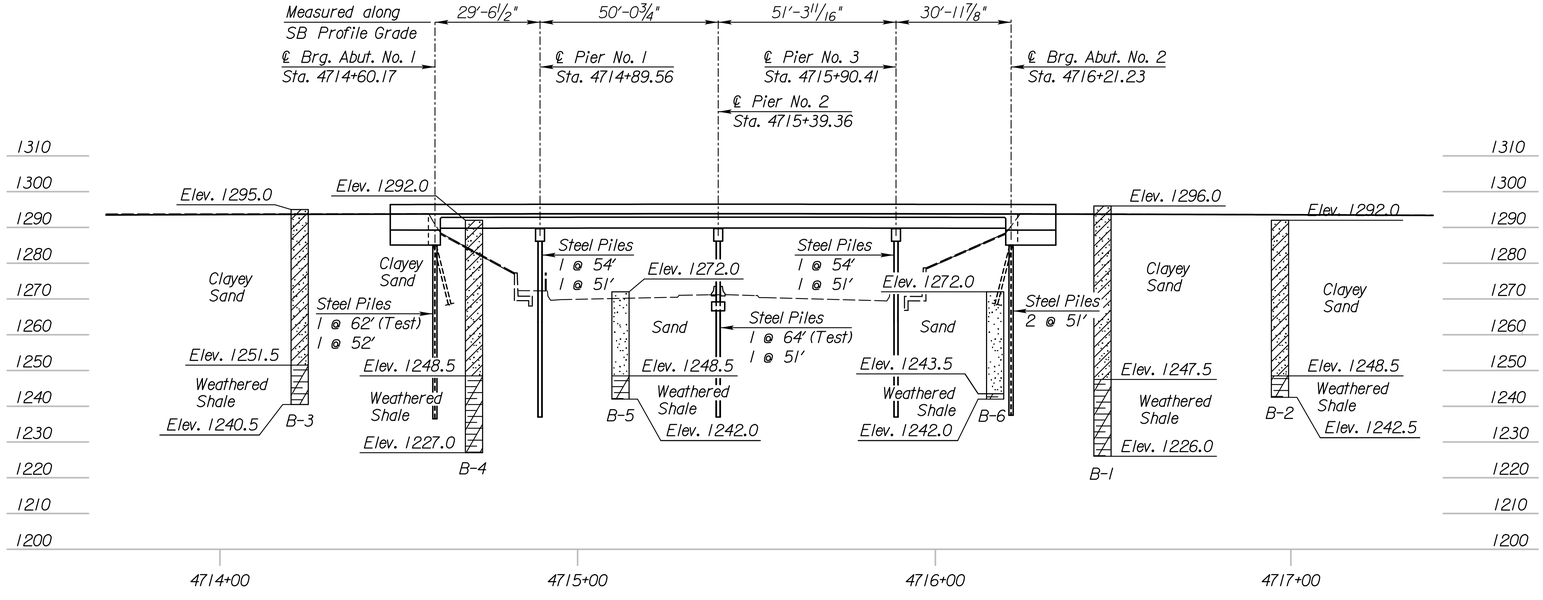
PLAN

PILING:
HP12x53 Piles shall be used at the abutments. HP14x102 Piles shall be used at the piers. All new piles shall use case steel pile points. All steel piles will be Grade 50.

Drive all piling to penetrate the mantle and achieve bearing in the weathered shale. Once sufficient resistance and penetration into competent bedrock material are achieved, driving must cease to avoid damage to the pile. Final pile tip elevations should be determined in the field using resistance calculations.

TEST PILE (SPECIAL):
One Test Pile (Special) shall be driven at Abutment No. 1 and Pier No. 2 as shown. Test piles shall be driven prior to production piles and furnished 10 feet longer than estimated tip elevations of the production piles shown in the plans. Test piles shall remain in place and be used as production piles. All restrikes should be performed a minimum of 24 hours after the initial advancement of the pile has ceased.

PILE DRIVING ANALYZER (PDA):
All PDA testing for this project shall be performed by an independent testing firm to be hired by the Contractor. PDA testing shall be performed on each Test Pile (Special) to confirm nominal compressive resistance and develop driving criteria for production piles.



GEOLOGIC PROFILE

LEGEND

Clayey Sand

Weathered Shale

Sand

Notes:

For Pile Locations and Top of Pile Elevations, see Foundation Layout on Sheet No. 61.

Boring information shown on these plans are taken from notes obtained in the field and represent the best information available. Copies of the Geotechnical Exploration Report (May, 2024) are available for inspection by qualified bidders at the Kansas Turnpike Authority office in Wichita, Kansas.

NO.	DATE	REVISIONS	BY	APP'D
4				
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2				
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KANSAS TURNPIKE AUTHORITY

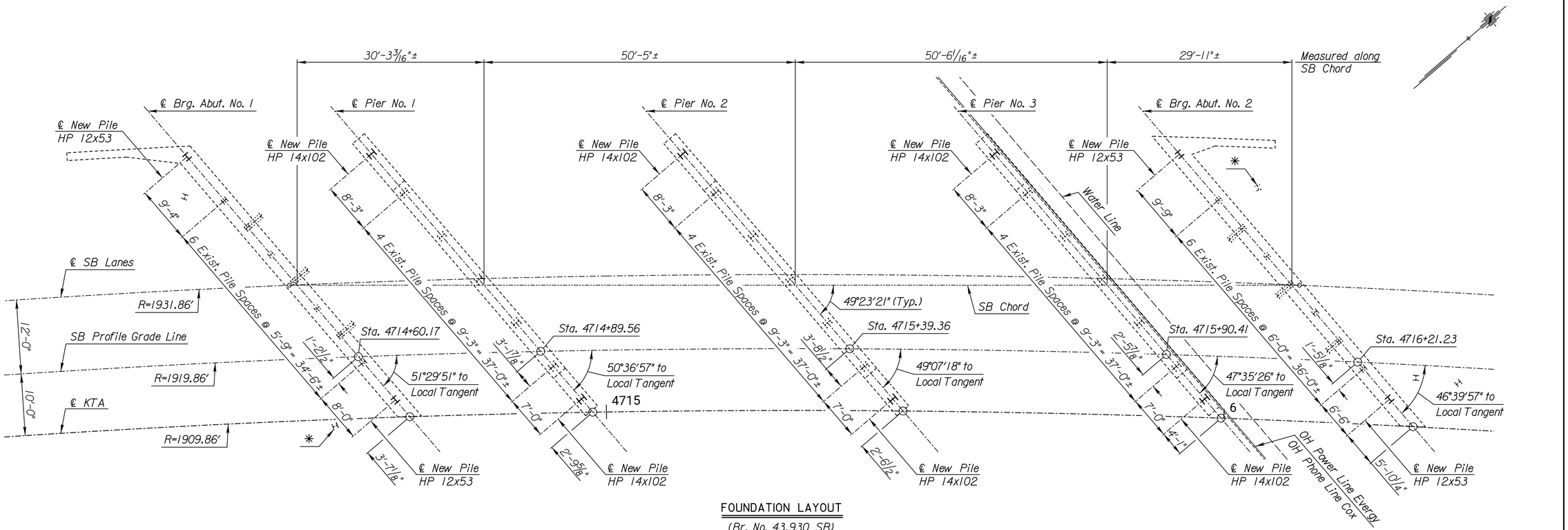
Br. No. 43.930 SB

ENGINEERING GEOLOGY

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
Plot Location:
File: KTA44-35-Geology.dgn
Plot Date: 12-SEP-2024 21:44

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	61	134



FOUNDATION LAYOUT

(Br. No. 43.930 SB)

* *Existing abutment wing piles that are not used in the new construction shall be removed to the bottom of the existing abutment wing footing. (Typ.)*

THEORETICAL LOCATION OF NEW PILES

Location	℄ KTA Stationing	Offset from ℄ KTA	Top of Pile Elevation
Abut. No. 1 Median New Pile	4714+65.90	2.80' Lt.	1286.80
Abut. No. 1 Exterior New Pile	4714+34.23	43.54' Lt.	1286.80
Pier No. 1 Median New Pile	4714+96.00	2.16' Lt.	1286.72
Pier No. 1 Exterior New Pile	4714+63.44	42.72' Lt.	1289.52
Pier No. 2 Median New Pile	4715+46.36	1.92' Lt.	1286.74
Pier No. 2 Exterior New Pile	4715+12.75	41.60' Lt.	1289.57
Pier No. 3 Median New Pile	4715+96.80	3.00' Lt.	1286.85
Pier No. 3 Exterior New Pile	4715+62.18	41.78' Lt.	1289.55
Abut. No. 2 Median New Pile	4716+26.66	4.25' Lt.	1286.89
Abut. No. 2 Exterior New Pile	4715+91.47	42.48' Lt.	1286.89

NO.	DATE	REVISIONS	BY	APP'D
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KANSAS TURNPIKE AUTHORITY

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FOUNDATION LAYOUT

SHEET NO. OF		SCALE		APP'D	
DESIGNED		DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.		DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
File: KTA44-36-Foundation.dgn
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Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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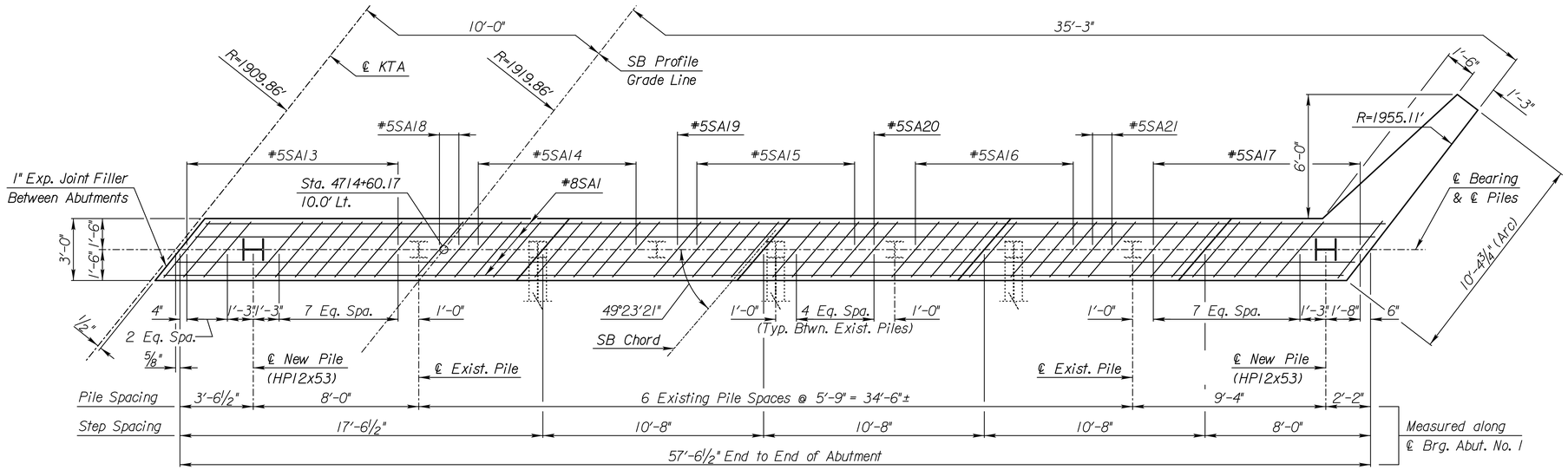
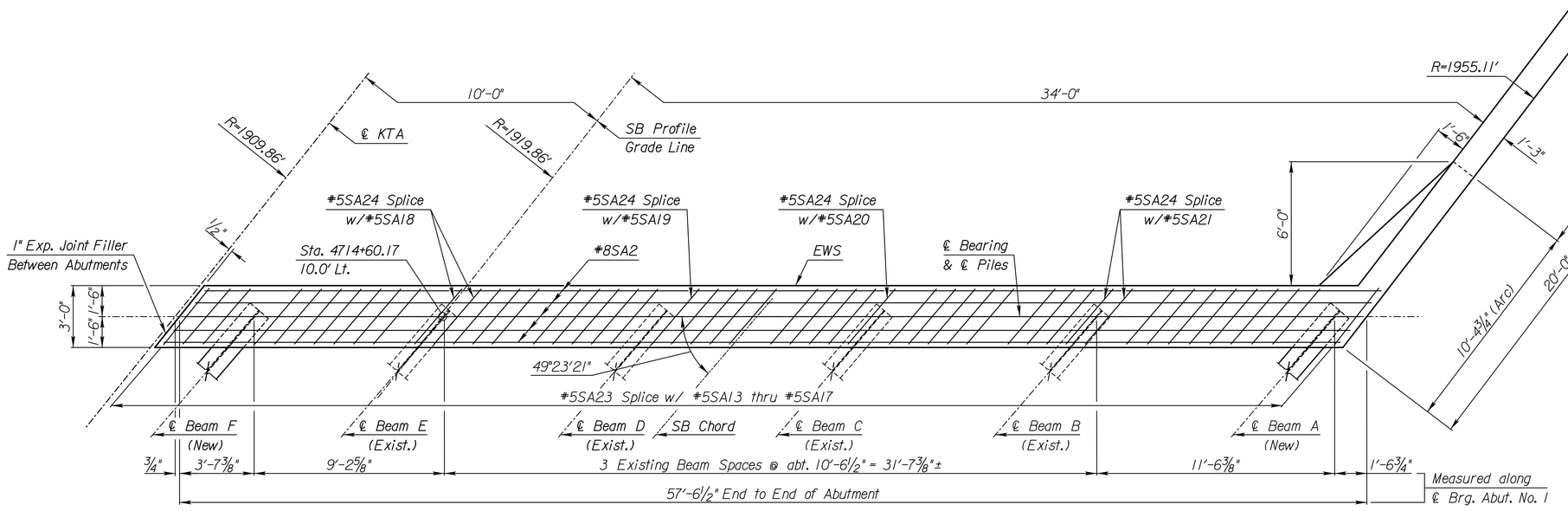


ABUTMENT PLAN BELOW BEAM SEAT



ABUTMENT PLAN ABOVE BEAM SEAT

Notes:

Stirrup spacing is measured along ℄ Bearing. Place stirrups parallel to ℄ Beams.

For Wingwall Details, see Sheet No. 64.

See Sheet No. 68 for additional abutment drainage details and limits of Bridge Backwall Protection System.

NO.	DATE	REVISIONS	BY	APP'D
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KANSAS TURNPIKE AUTHORITY

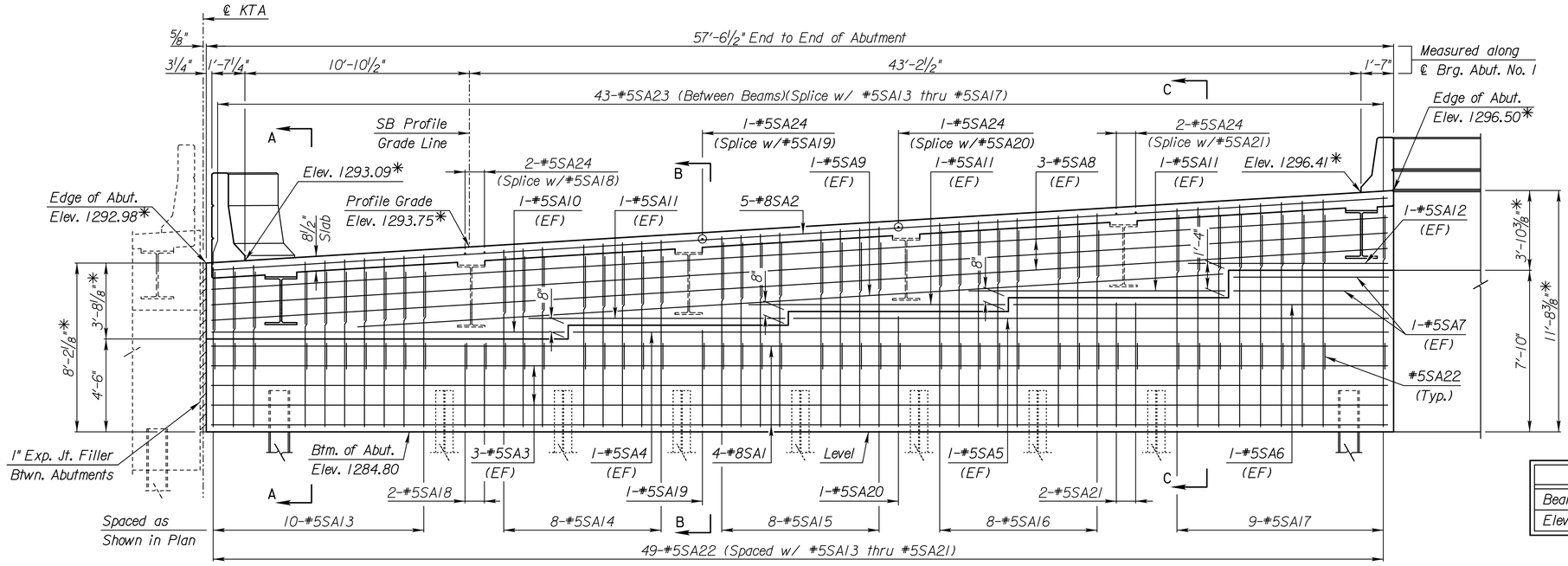
Br. No. 43.930 SB

ABUTMENT NO. 1 DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
File: KTA44-37-Abutment1.dgn
Plot Date: 12-SEP-2024 21:44
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	63	134



ABUTMENT ELEVATION
(Looking at Front Face)

* *At ℄ Bearing*

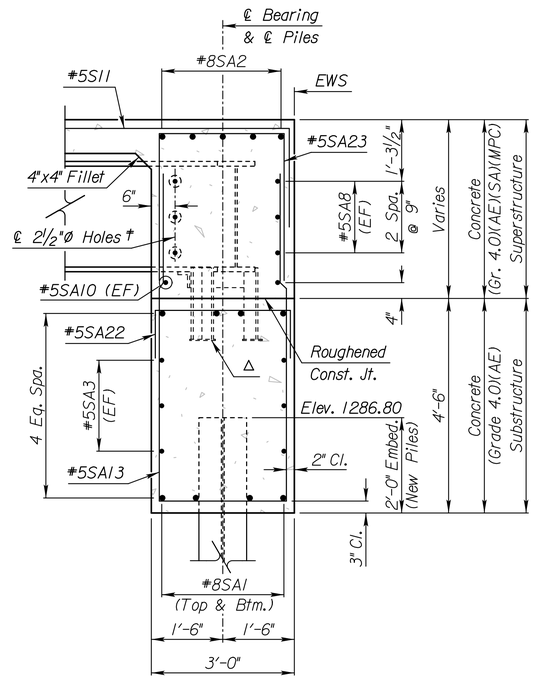
** *The beam support elevations for the existing beams are theoretical. The Contractor shall record the elevation of the bottom of the existing beams at ℄ bearing prior to removal of the abutment. That information shall be given to the Engineer. Those elevations will be used to adjust the beam support elevations as needed.*

℔ *Provide 1'-6" Min. Embedment of Existing Piles. Notify the Engineer if this cannot be achieved.*

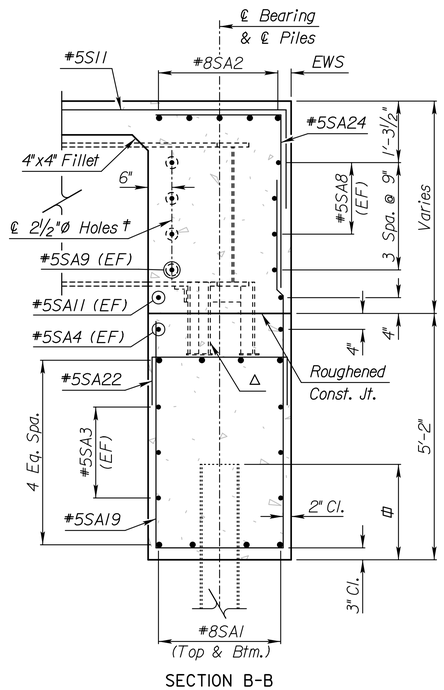
† *Field drill 2½" diameter holes in the web of existing and proposed beams. The location of the holes shall be confirmed in the field to match spacing of the #5SA8 & #5SA9 bars. This work shall be subsidiary to the bid item "Reinforcing Steel (Gr. 60)(Epoxy Coated)".*

△ *Beam Support placed perpendicular to ℄ Beams.*

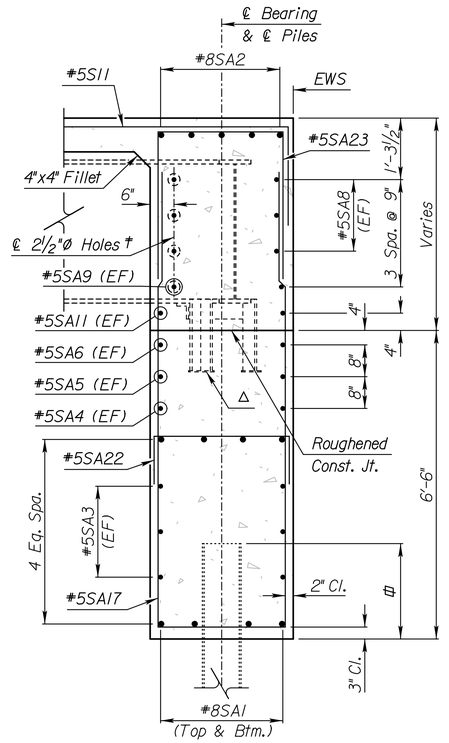
TABLE OF BEAM SUPPORT ELEVATIONS**						
Beam	A	B	C	D	E	F
Elevation	1293.21	1291.83	1291.14	1290.49	1289.88	1290.00



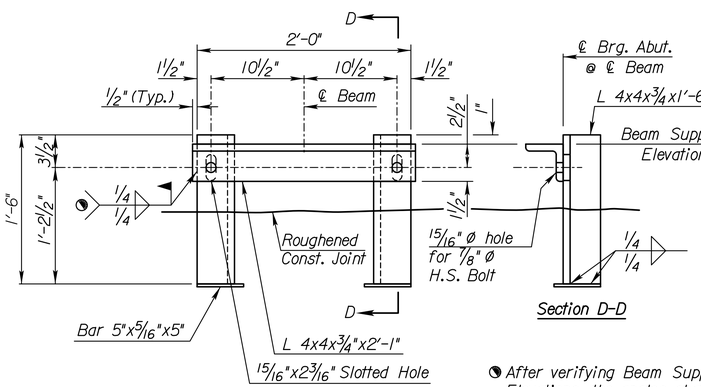
SECTION A-A



SECTION B-B



SECTION C-C



Section D-D

Front Elevation

◔ *After verifying Beam Support Elevations, the angles shall be welded as shown prior to placement of deck concrete.*

ABUTMENT BEAM SUPPORTS
(6 Required per Abutment)

Note:
Abutment Beam Supports shall be A709 Grade 36 or ASTM A36, but shall be paid for as ASTM A709 - Gr. 50W Structural Steel. (Unpainted)

Note:
EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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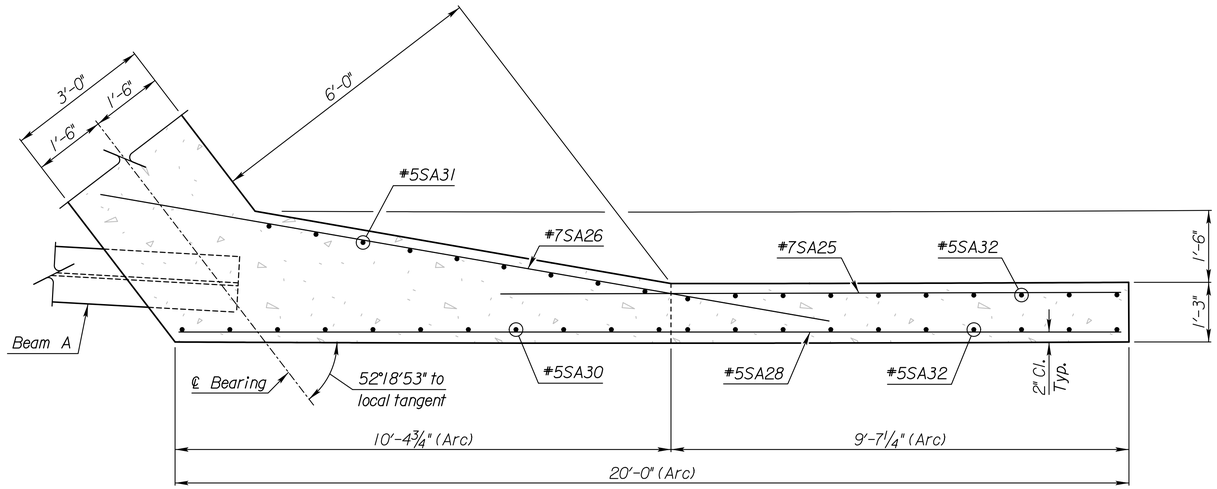
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

ABUTMENT NO. 1 DETAILS

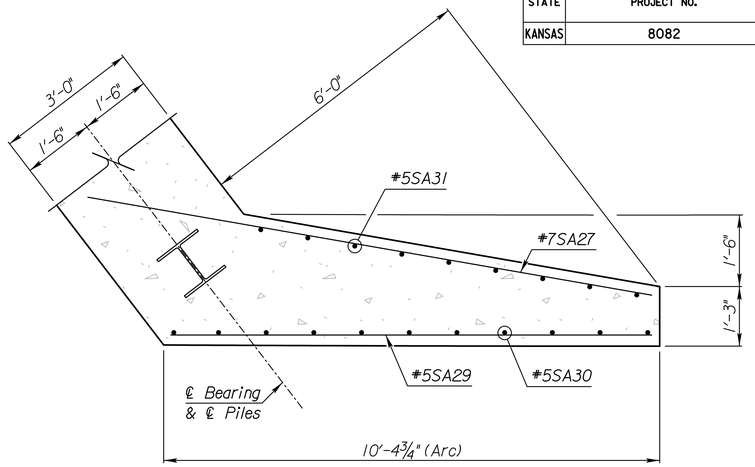
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-38-Abutment1.dgn
Plot Date: 12-SEP-2024 21:44

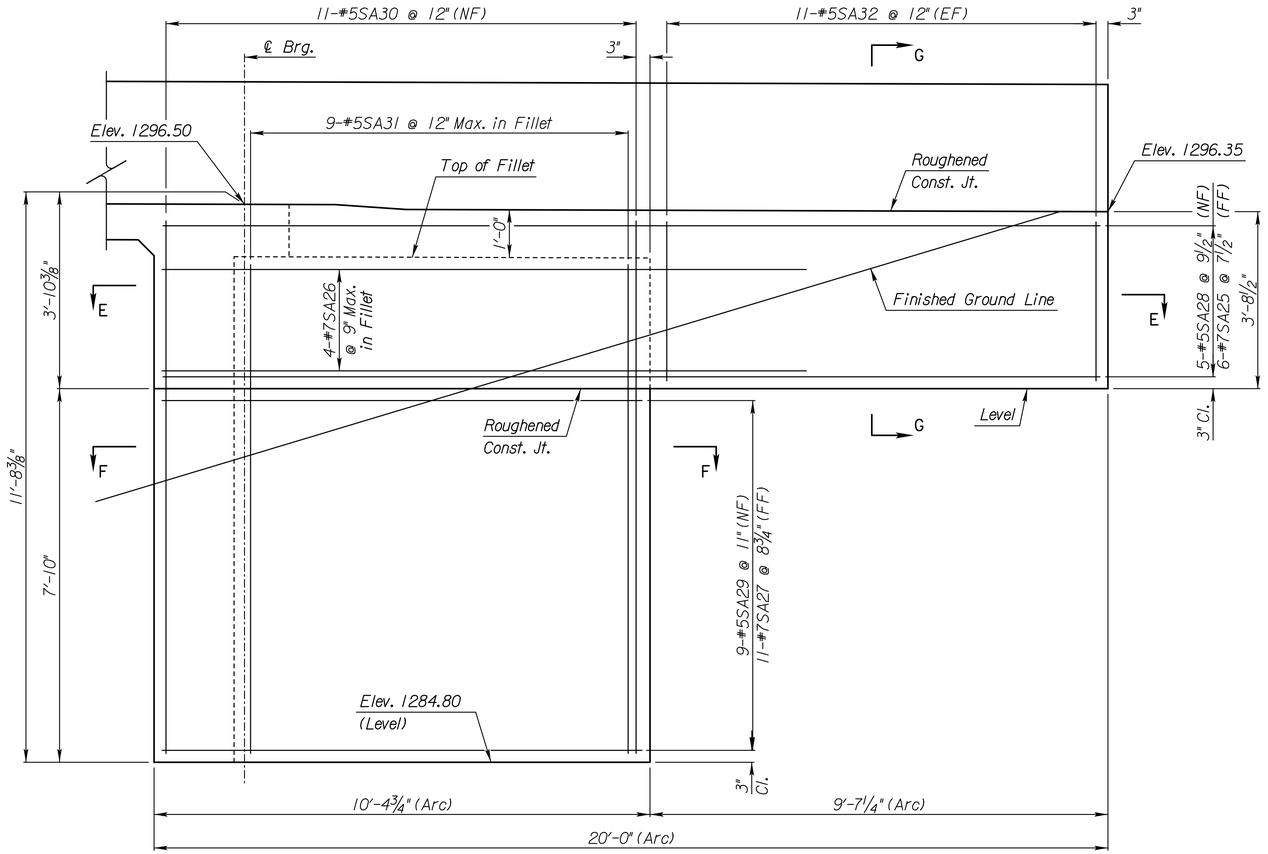
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	64	134



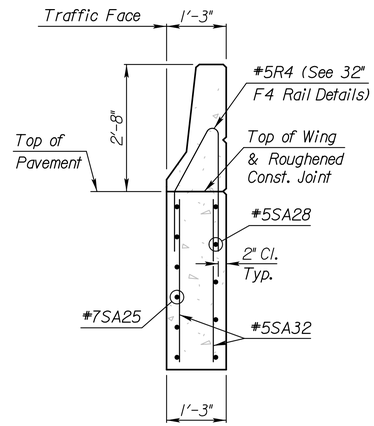
SECTION E-E



SECTION F-F



WINGWALL ELEVATION



SECTION G-G

Notes:

For Barrier Rail Details, see Sheet No. 82.
EF denotes each face
NF denotes near face
FF denotes far face

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 SB

ABUTMENT NO. 1 DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-39-Abutment1.dgn
Plot Date: 12-SEP-2024 2:44

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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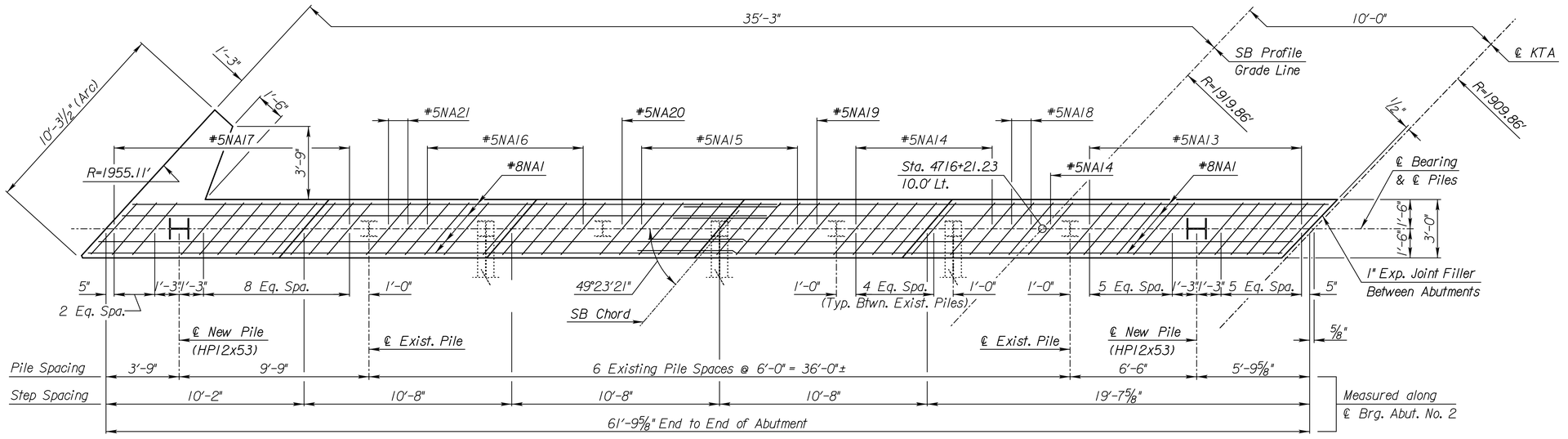
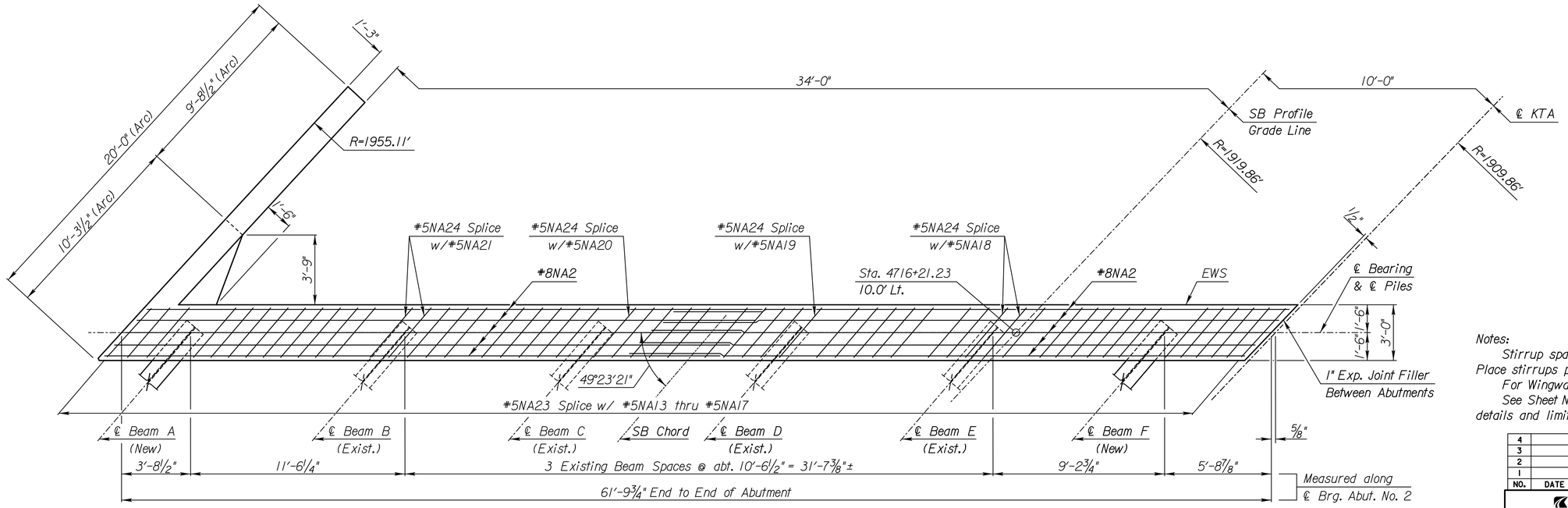


ABUTMENT PLAN BELOW BEAM SEAT



ABUTMENT PLAN ABOVE BEAM SEAT

Notes:

Stirrup spacing is measured along ℄ Bearing. Place stirrups parallel to ℄ Beams.

For Wingwall Details, see Sheet No. 67.

See Sheet No. 68 for additional abutment drainage details and limits of Bridge Backwall Protection System.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

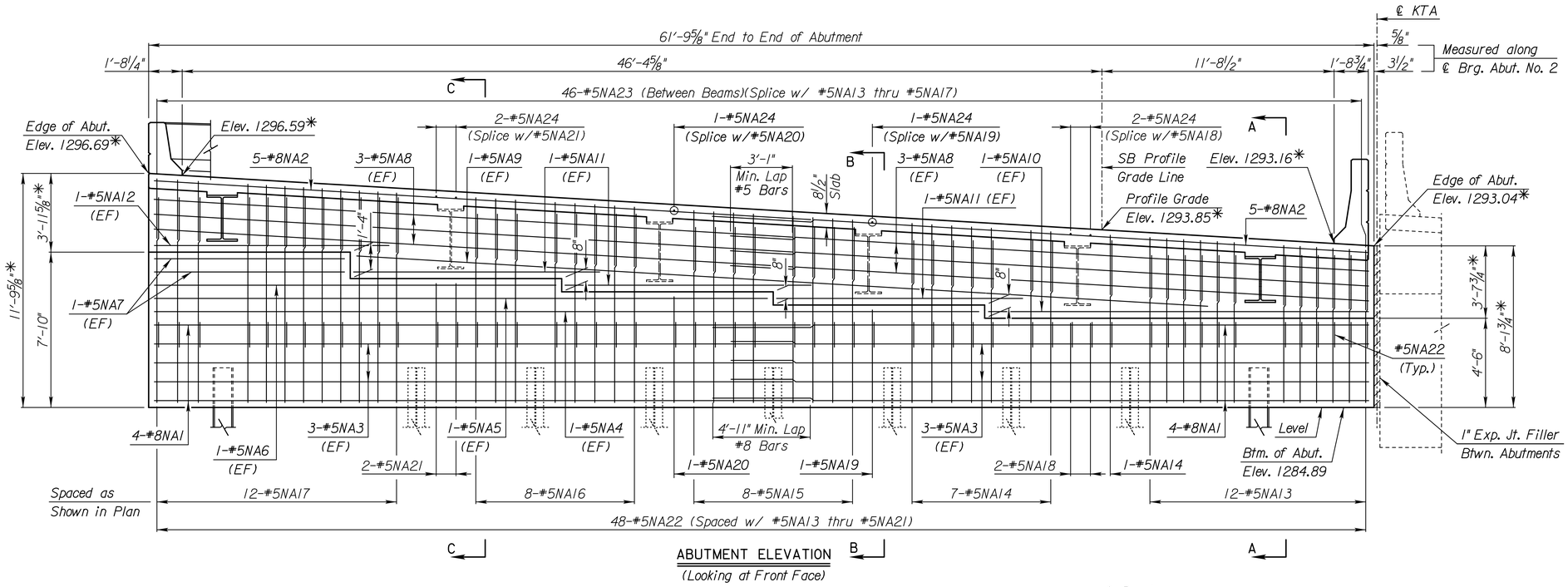
Br. No. 43.930 SB

ABUTMENT NO. 2 DETAILS

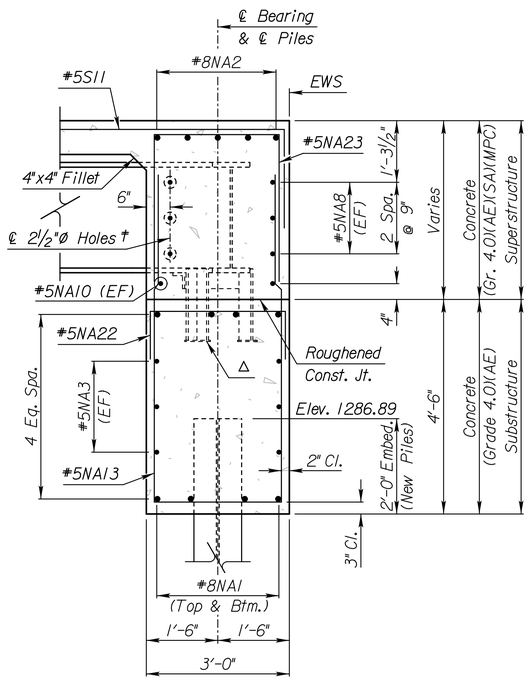
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	DPW	DETAILED	JTK	QUANTITIES		CADD	
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.		CADD CK.	

Plotted By: JEHarris | Plot Location:
File: KTA44-40-Abutment2.dgn
Plot Date: 12-SEP-2024 21:45

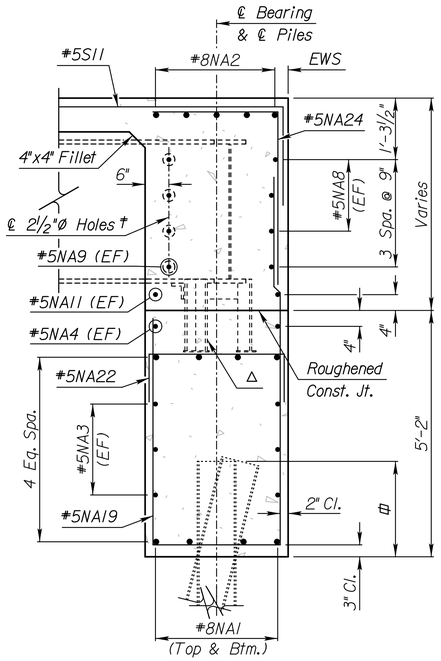
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	66	134



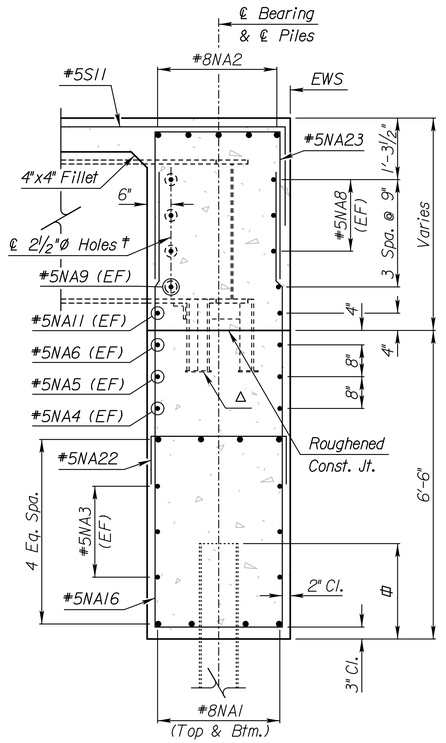
ABUTMENT ELEVATION
(Looking at Front Face)



SECTION A-A



SECTION B-B



SECTION C-C

TABLE OF BEAM SUPPORT ELEVATIONS**

Beam	A	B	C	D	E	F
Elevation	1293.28	1291.89	1291.24	1290.63	1290.03	1290.19

* At ℄ Bearing

** The beam support elevations for the existing beams are theoretical. The Contractor shall record the elevation of the bottom of the existing beams at ℄ bearing prior to removal of the abutment. That information shall be given to the Engineer. Those elevations will be used to adjust the beam support elevations as needed.

Ф Provide 1'-6" Min. Embedment of Existing Piles. Notify the Engineer if this cannot be achieved.

† Field drill 2½" diameter holes in the web of existing and proposed beams. The location of the holes shall be confirmed in the field to match spacing of the #5NA8 & #5NA9 bars. This work shall be subsidiary to the bid item "Reinforcing Steel (Gr. 60)(Epoxy Coated)".

△ Beam Support placed perpendicular to ℄ Beams.

Notes:
For details of Abutment Beam Supports, see Sheet No. 63.
EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

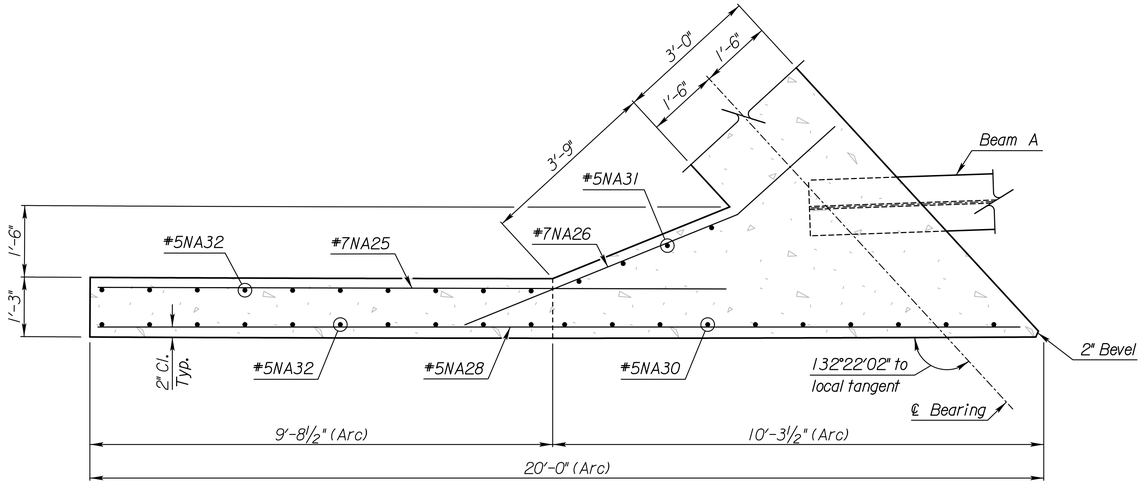
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

ABUTMENT NO. 2 DETAILS

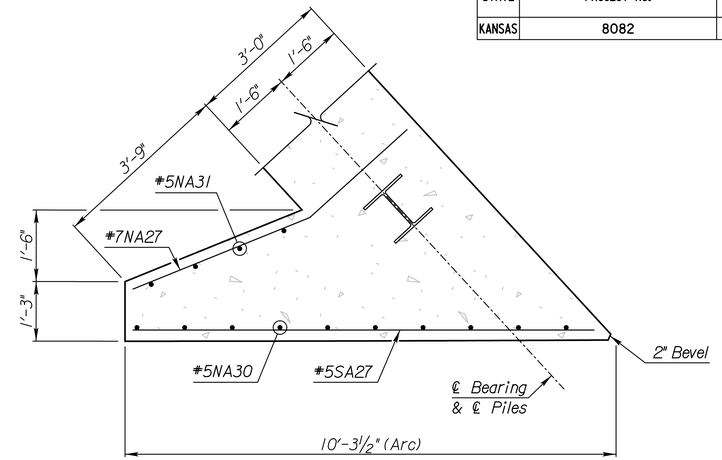
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-41-Abutment2.dgn
Plot Date: 12-SEP-2024 21:45

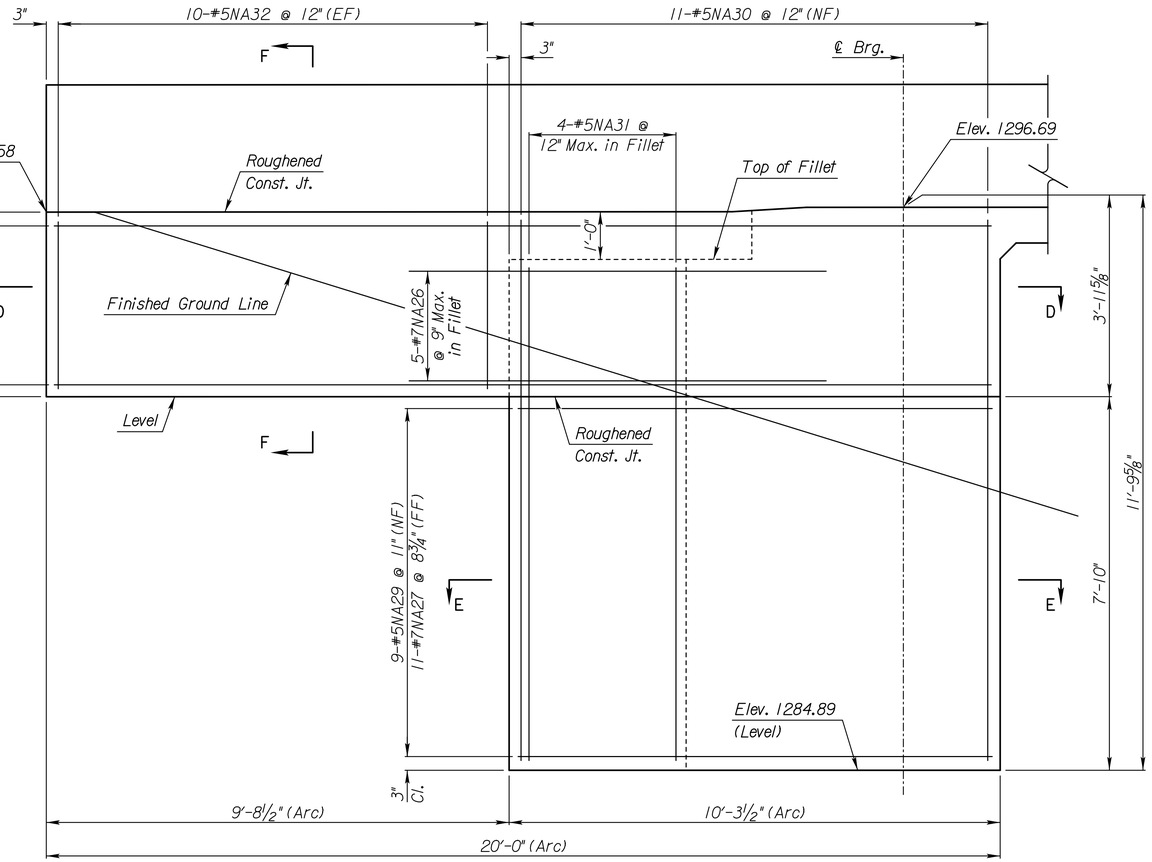
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	67	134



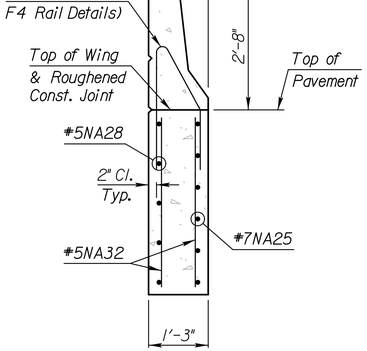
SECTION D-D



SECTION F-F



WINGWALL ELEVATION



SECTION F-F

Notes:
For Barrier Rail Details, see Sheet No. 82.
EF denotes each face
NF denotes near face
FF denotes far face

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
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KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

ABUTMENT NO. 2 DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-42-Abutment2.dgn
Plot Date: 12-SEP-2024 21:45

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
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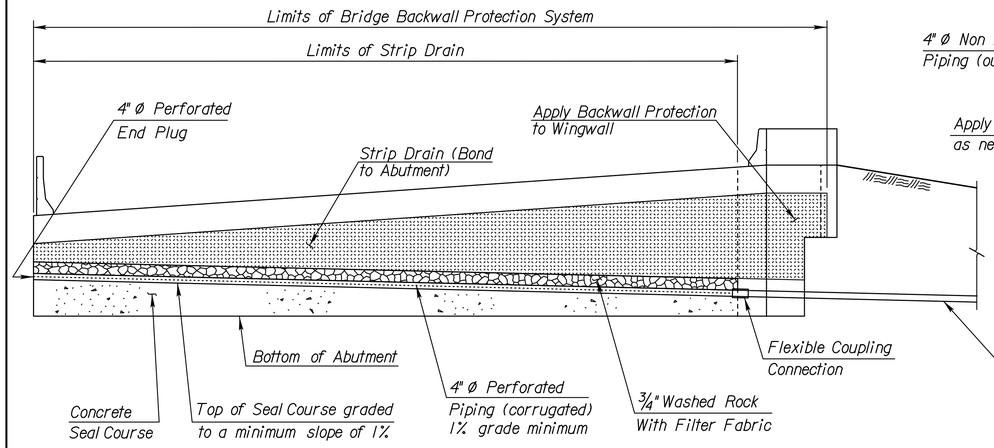
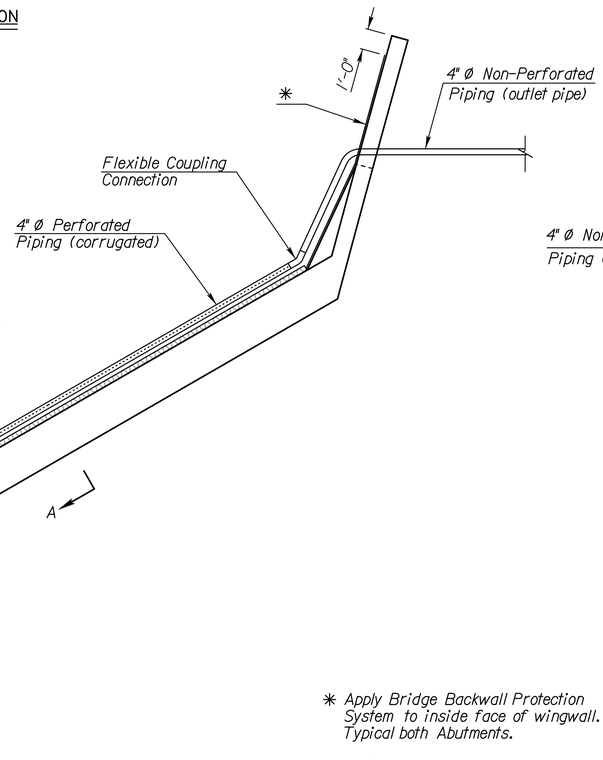
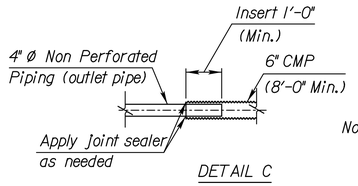


ELEVATION



PLAN

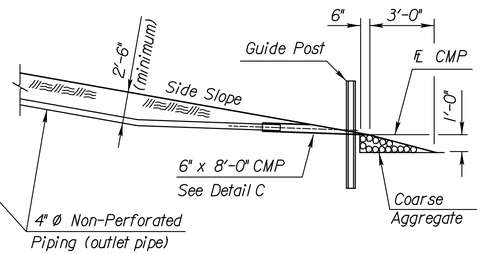
(Abutment No. 1 Shown, Abutment No. 2 Similiar)

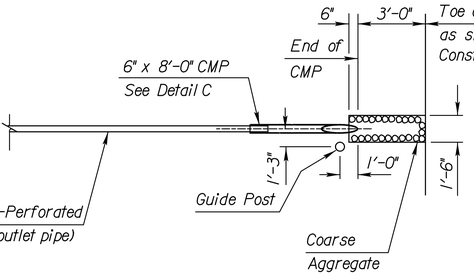


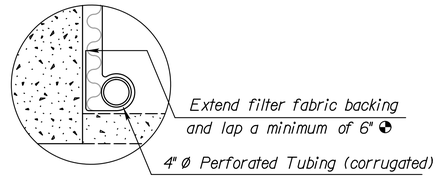
DETAIL C

Note: Place the CMP flowline 1'-0" above ditch flowline, toe of sideslope, or as shown on the "Construction Layout" sheet.

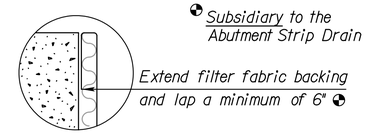
Note: The 1'-0" lap and joint sealer may be replaced by a reducing coupler at the junction of the CMP and the 4" round tubing.



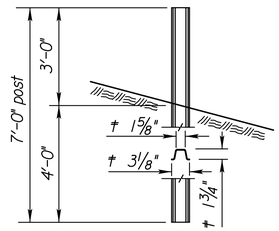




DETAIL B

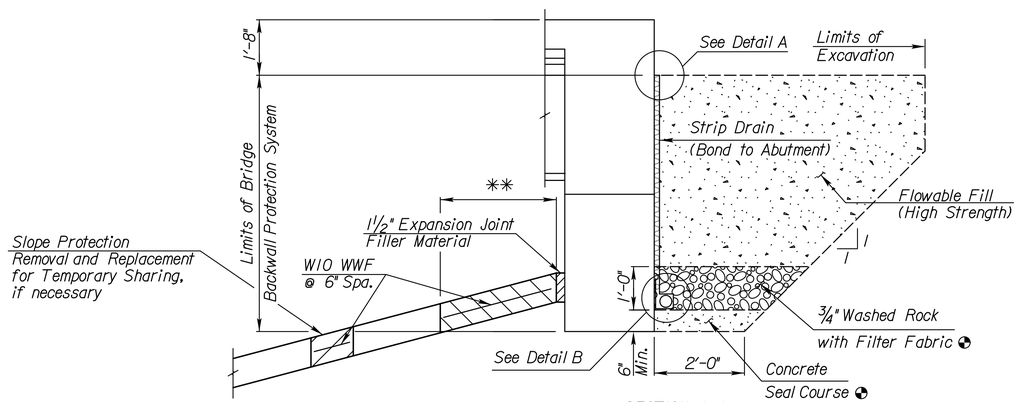


DETAIL A



Metal Guide Post Option
7'-0" at 3.0 lbs/ft.
flanged channel
† Nominal dimension.

GUIDE POST



SECTION A-A

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. Guide post are subsidiary to this bid item.

BRIDGE BACKWALL PROTECTION SYSTEM: Apply a Bridge Backwall Protective 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 KTA.

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 ¼" 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 coarse aggregate at the outlet end as shown.

Place a Concrete Seal Course at the bottom of the excavated area. Slope the top of the seal course to drain. The seal course may be Concrete (Grade 3.0) or Flowable Fill.

Encase entire volume of ¾" washed rock with filter fabric. Lap filter fabric entire top width of washed rock.

* Apply Bridge Backwall Protection System to inside face of wingwall. Typical both Abutments.

** 2'-0"± Slope Protection Removal and Replacement for abutment Bridge Excavation and Slab Drainage System Pipe

Metal Guide Posts: Posts shall conform to the KDOT Specifications. Posts shall have a galvanized or baked enamel coating. Apply one coat of International Orange paint to the top 12" of the posts.

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Strip Drain	102 Sq. Yds.
Bridge Backwall Protection System	120 Sq. Yds.
Flowable Fill (High Strength)	185 Cu. Yds.
Items subsidiary to Strip Drain	
4" Ø Perforated Pipe	113 Lin. Ft.
4" Ø Outlet Pipe	100 Lin. Ft.
6" Ø CMP	16 Lin. Ft.
Guide Post	2 Each
3/4" Washed Rock	14 Cu. Yds.
Filter Fabric	274 Sq. Yds.

NO.	DATE	REVISIONS	BY	APP'D
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KANSAS TURNPIKE AUTHORITY

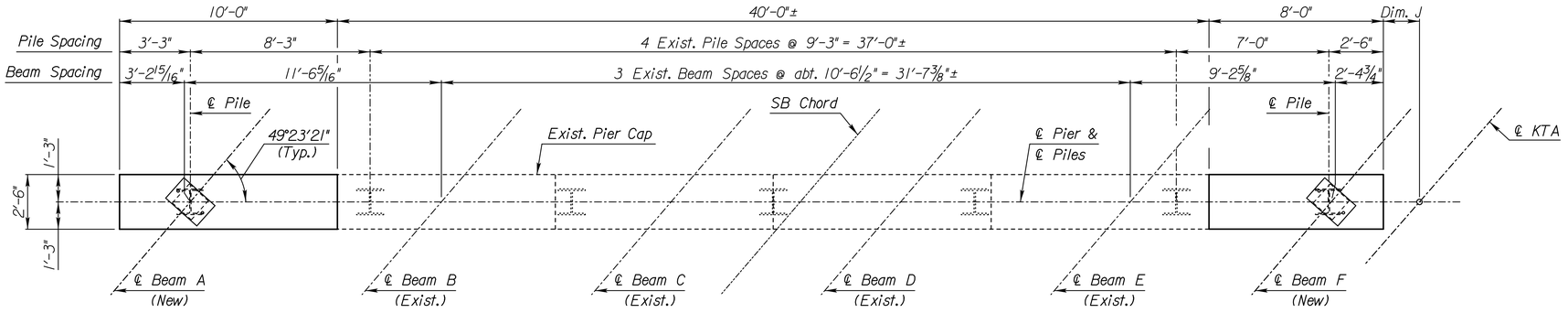
Br. No. 43.930 SB

ABUTMENT STRIP DRAIN

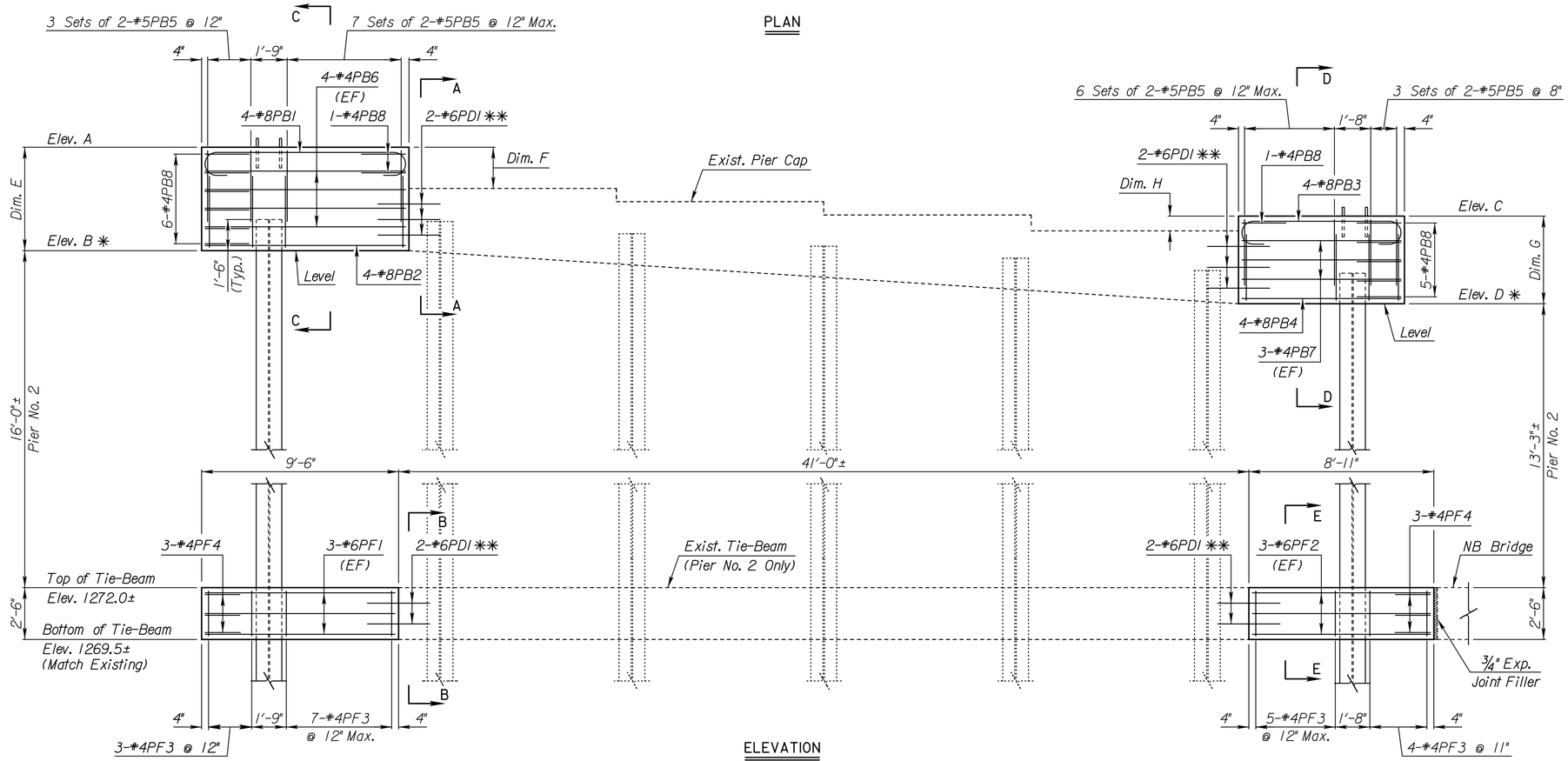
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JMBell | Plot Location:
File: KTA44-43-AbutmentDrain.dgn
Plot Date: 13-SEP-2024 12:56

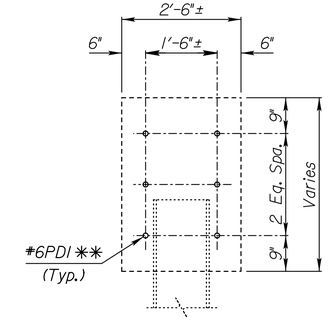
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	69	134



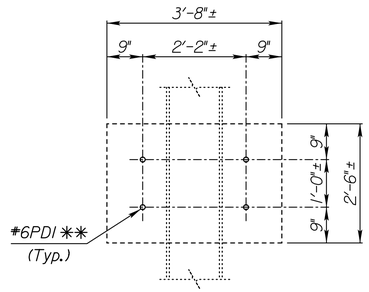
PLAN



ELEVATION



SECTION A-A



SECTION B-B
(Pier No. 2 Only)

PIER TABLE OF VARIABLES									
Location	Elevations				Dimensions (±)				
	Elev. A	Elev. B*	Elev. C	Elev. D*	Dim. E	Dim. F	Dim. G	Dim. H	Dim. J
Pier No. 1	1292.95	1288.02	1289.76	1285.22	4'-11 1/8"	2'-0 5/8"	4'-6 1/2"	9 1/8"	3 5/8"
Pier No. 2	1292.94	1288.06	1289.79	1285.24	4'-10 1/2"	2'-1 3/4"	4'-6 5/8"	10 3/4"	1/2"
Pier No. 3	1292.99	1288.05	1289.87	1285.35	4'-11 1/4"	2'-1"	4'-6 1/4"	10 1/8"	1'-7"

Notes:
EF denotes each face.
For Framing Plan see Sheet 71.
For Section C-C thru E-E and Bearing Details, see Sheet 70.
Place reinforcing bars below the bearing devices to clear the anchor bolts.

* Match existing bottom of pier cap elevation.

** Drill and Grout #6PDI Dowel Bars into Existing Pier Concrete, 1'-6" Embedment Length

NO.	DATE	REVISIONS	BY	APP'D
4				
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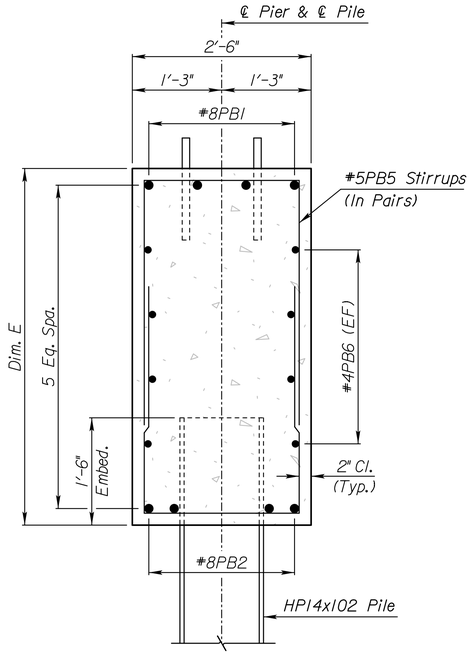
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

PIER DETAILS

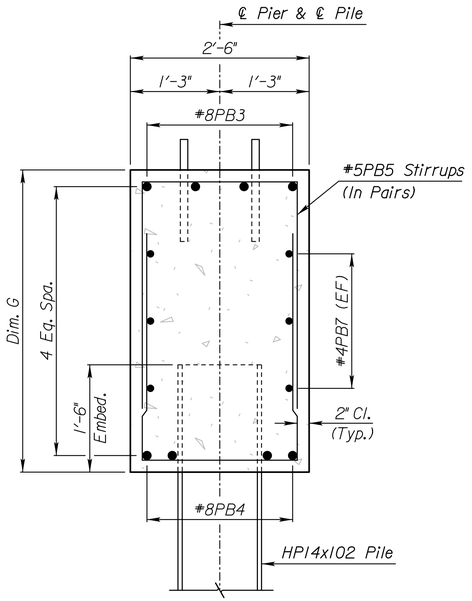
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SG	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-44-Pier.dgn
Plot Date: 12-SEP-2024 21:45

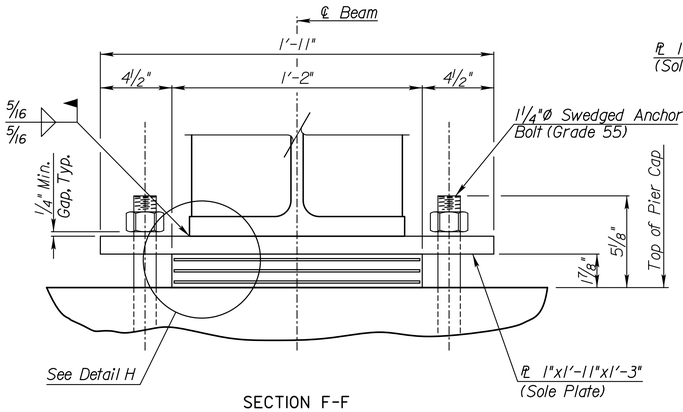
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	70	134



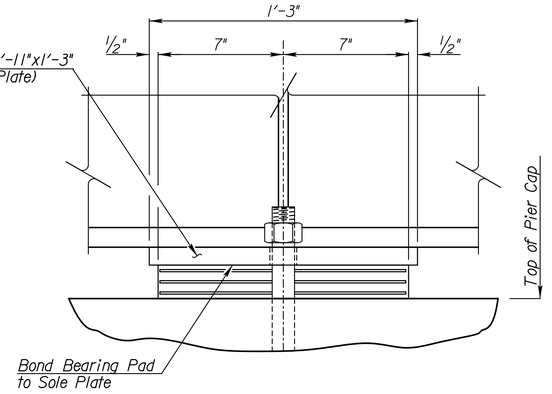
SECTION C-C



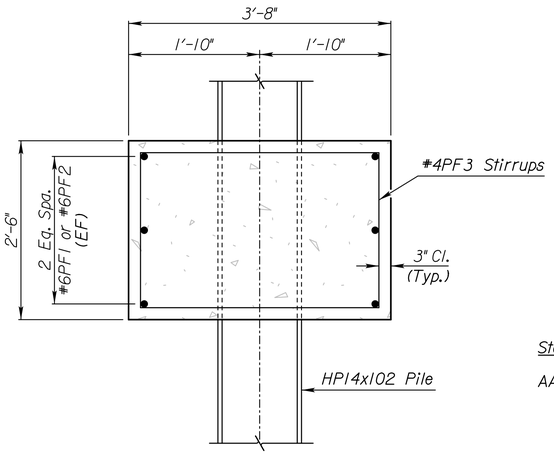
SECTION D-D



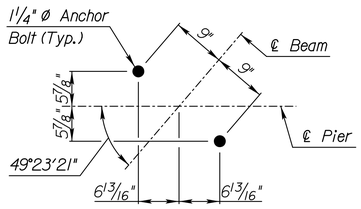
SECTION F-F



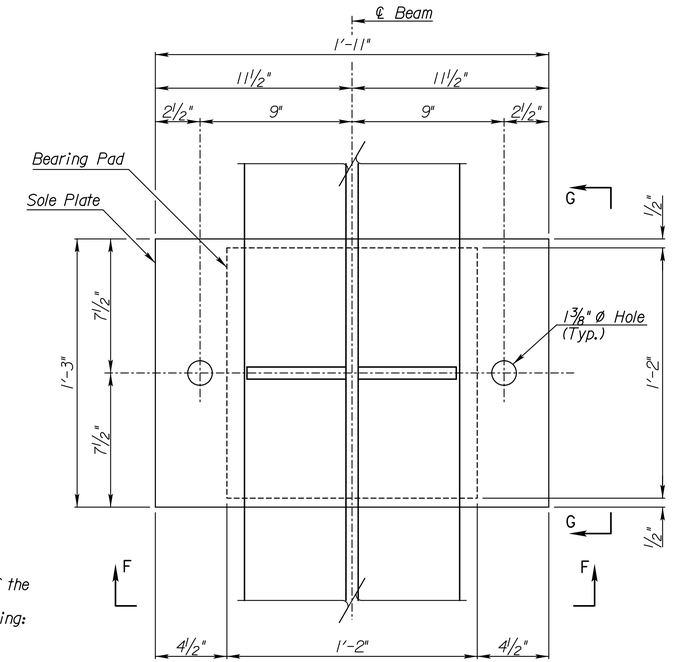
SECTION G-G



SECTION E-E
(Pier No. 2 Only)

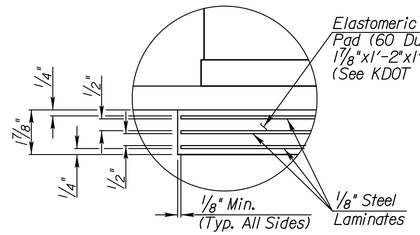


TYPICAL ANCHOR BOLT LAYOUT

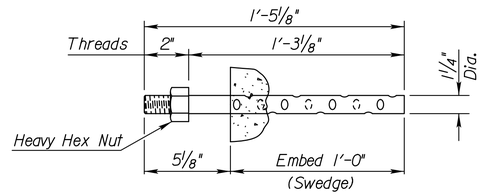


PLAN

ELASTOMERIC BEARING DEVICE DETAILS AT PIERS
(6 Required)



DETAIL H



SWEDGE ANCHOR BOLT
(12 Required)

Steel Reinforced Elastomeric Bearing Device Notes:

Bearings were designed using the provisions of Method A of the AASHTO Specifications.

Bearing devices shall be fabricated with an elastomer satisfying:
- *Shore A Durometer Hardness of 60*
- *Low Temperature Grade 3 requirements.*
- *Type A certification for elastomeric bearing device acceptance is required.*

Include design method and all material properties on shop drawings.

The elastomeric bearing shall be factory bonded to the steel sole plate by a vulcanization process by the bearing device fabricator.

Sole Plates shall conform to the requirements of ASTM A709 (Grade 50W).

Anchor bolts shall adhere to KDOT Standard Specification Division 1600 (Grade 55) with the following exception: the threads may be rolled or cut.

The sole plate, swedge anchor bolts, and nuts are subsidiary to the bid item "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

Notes:

For location of Sections C-C thru E-E and variable dimension data see Sheet No. 69.

(EF) denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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1				

KANSAS TURNPIKE AUTHORITY

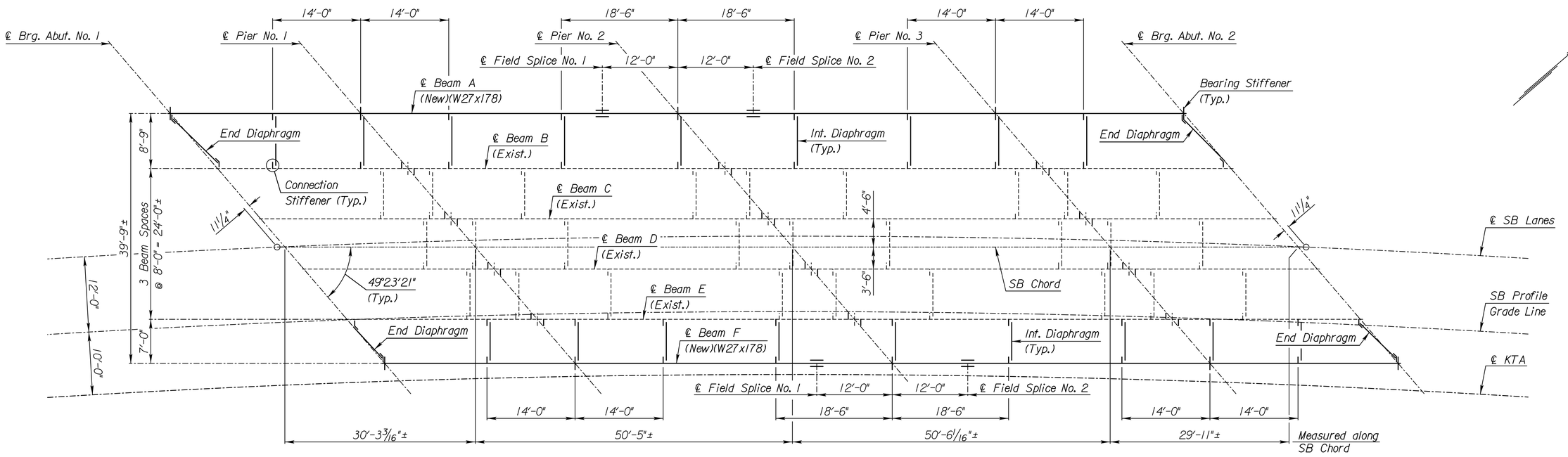
Br. No. 43.930 SB

PIER DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SG	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-45-Pier.dgn
Plot Date: 12-SEP-2024 2h46

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	71	134



FRAMING PLAN

(Br. No. 43.930 SB)

All beams (new and existing) are set parallel to the chord line established with the original bridge plans, defined as a chord thru the intersection of ℄ SB Lanes and front face of the original abutment.

STRUCTURAL STEEL SUMMARY

Item / Location	AASHTO M270 Gr. 50WT3 (Lbs.)	ASTM A709 Gr. 50W (Lbs.)
Rolled Beam (W27x178)	57,709	---
Splice Plates	2,627	---
Bearing Stiffeners	1,356	---
Connection Stiffeners	---	714
Intermediate Diaphragms	---	3,474
End Diaphragms	---	1,147
Abutment Beam Supports	---	1,182
Total	61,692	6,517

BEAM NOTES

Unless otherwise noted, all longitudinal dimensions are measured horizontally along beam centerlines. Length of new beams shall be corrected as required for grade. All dimensions of the existing structure are to be field verified by the Contractor prior to fabrication of beams.

Place bearing stiffeners vertical. Place connection stiffeners normal to the beam flanges.

Place bearing stiffeners and connection stiffeners perpendicular to the web.

Field weld connection stiffeners to exterior face of existing exterior beams at the locations shown.

Install new end diaphragms at all abutment locations. Install new intermediate diaphragms as shown.

Field weld new bearing stiffeners on both sides of all existing beams at Piers No. 1, 2, & 3.

Prime and paint areas where existing coating is removed when new bearing stiffeners and connection stiffeners are welded to existing beams.

For details and locations of new bearing stiffeners on existing beams, see Sheet Nos. 73 & 74.

For Diaphragm Details, see Sheet No. 75.

For new Field Splice Details, see Sheet No. 76.

Plotted By: JEHarris | Plot Location:
File: KTA44-46-Framing.dgn
Plot Date: 12-SEP-2024 21:46

NO.	DATE	REVISIONS	BY	APP'D
4				
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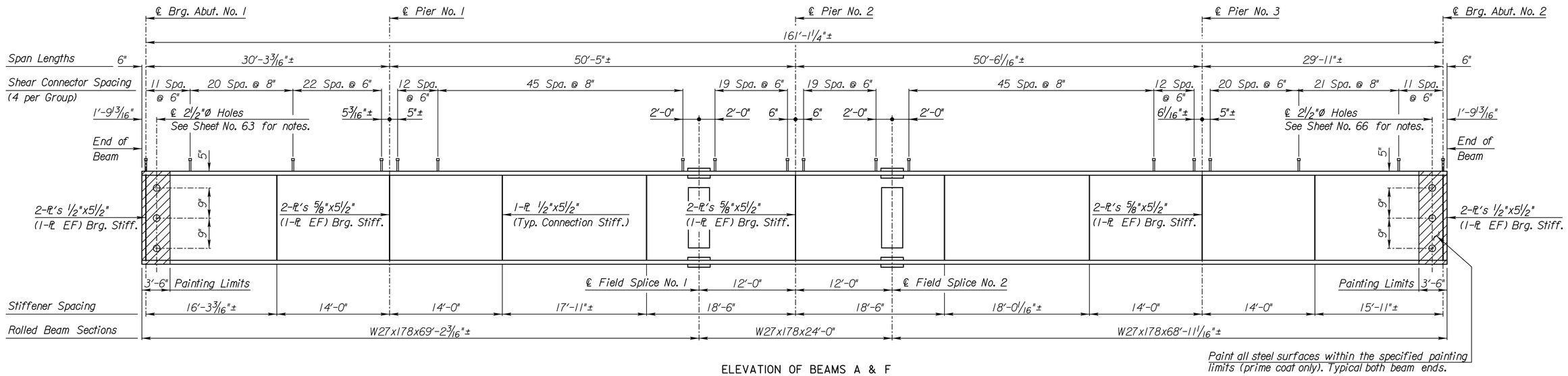
KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

FRAMING PLAN

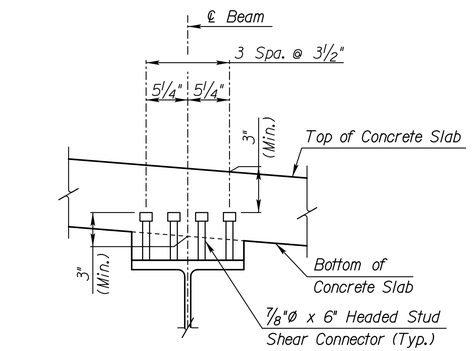
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	72	134



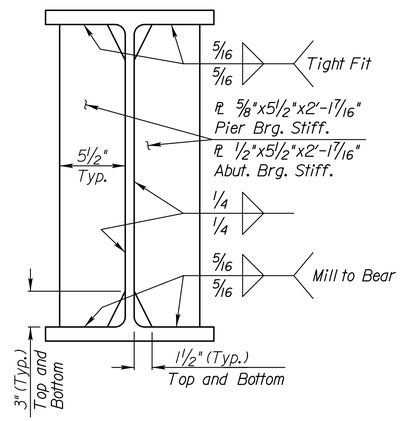
Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.

ELEVATION OF BEAMS A & F



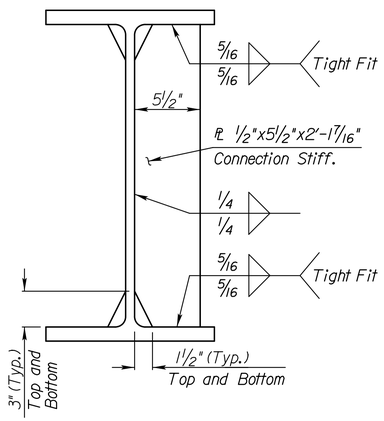
WELDED STUD SHEAR CONNECTOR DETAIL

FOR NEW BEAMS



BEARING STIFFENER DETAIL

FOR NEW BEAMS



CONNECTION STIFFENER DETAIL

FOR NEW BEAMS

Notes:

Connection stiffeners are located on the side of the web indicated on the Framing Plan. For Beam Notes and Framing Plan, see Sheet No. 71.

For Field Splice Details, see Sheet No. 76.

Field splices shall be made only where shown on the Contract Plans as a "splice". Elimination of any "splice" may be requested.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of new weathering steel.

EF denotes each face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

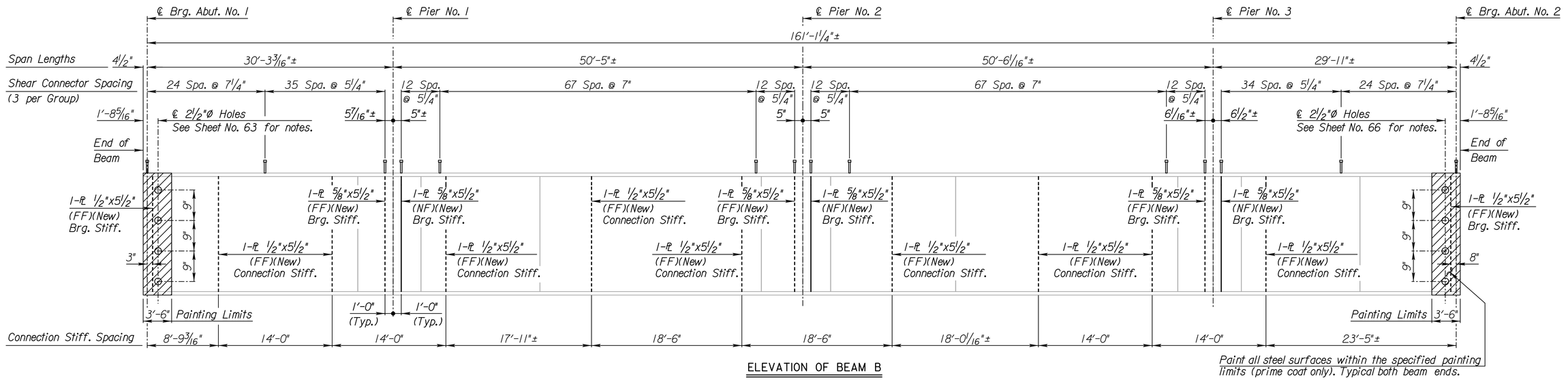
Br. No. 43.930 SB

NEW BEAM DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SRH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

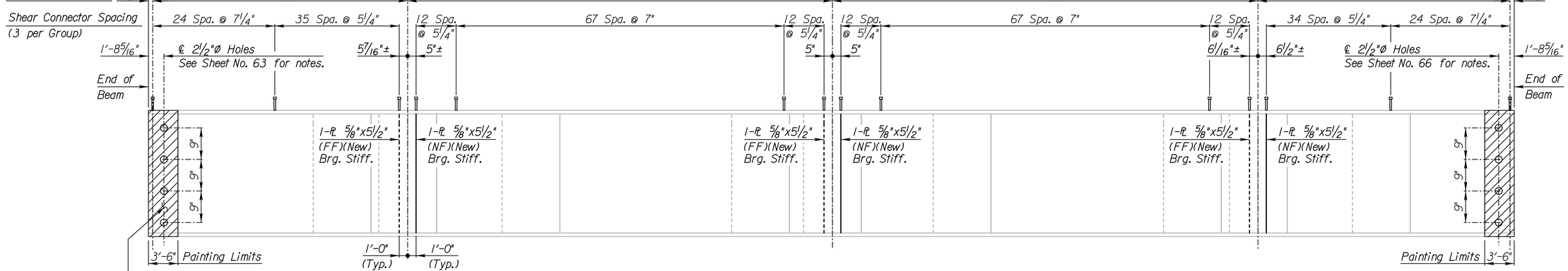
Plotted By: JEHarris | Plot Location:
File: KTA44-47-Beam.dgn
Plot Date: 12-SEP-2024 21:46

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	73	134



ELEVATION OF BEAM B

Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.



ELEVATION OF BEAMS C & D

Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.

Notes:

For Beam Notes and Framing Plan, see Sheet No. 71.

See Sheet No. 74 for welded stud shear connector detail for existing beams, bearing stiffener details, and connection stiffener details.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of existing structural steel.

NF denotes near face.

FF denotes far face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

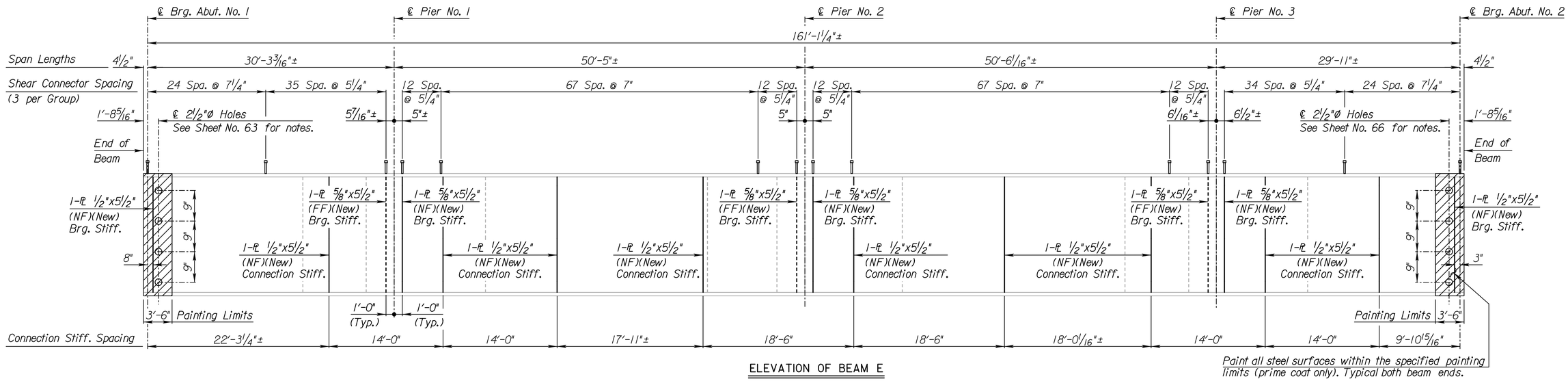
Br. No. 43.930 SB

EXISTING BEAM DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

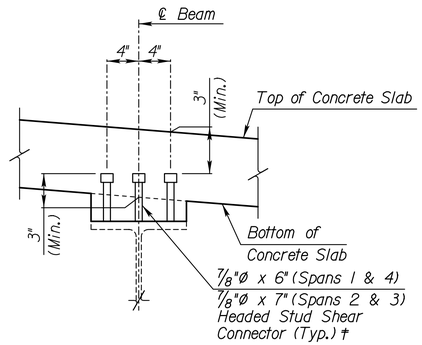
Plotted By: JEtiarris
File: KTA44-48-Beam.dgn
Plot Location:
Plot Date: 12-SEP-2024 21:46

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	74	134



ELEVATION OF BEAM E

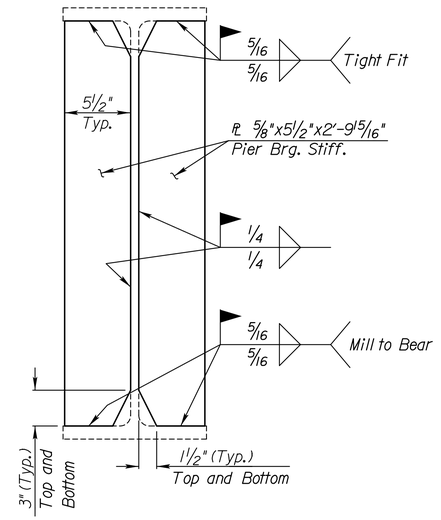
Paint all steel surfaces within the specified painting limits (prime coat only). Typical both beam ends.



WELDED STUD SHEAR CONNECTOR DETAIL

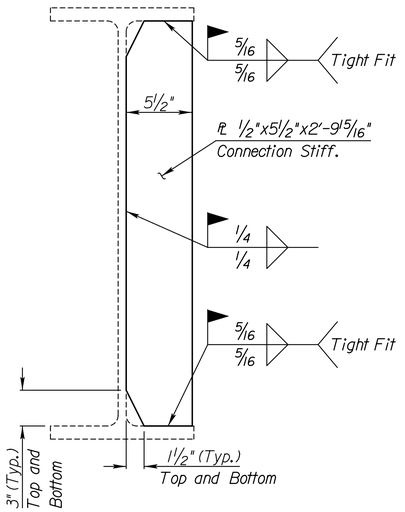
FOR EXISTING BEAMS

† Anticipated lengths of the headed stud shear connectors are given in these plans based on the best available information. The Contractor shall determine the required length of the studs in the field after the thickness of the slab fillets above the existing beams have been determined. The length of the studs shall be such that the minimum embedment and clearance, as shown, are satisfied. Different stud lengths may be required for the different beams and/or in different regions of the beams. All studs shall be ⅞" Ø.



NEW BEARING STIFFENER DETAIL

FOR EXISTING BEAMS



NEW CONNECTION STIFFENER DETAIL

FOR EXISTING BEAMS

Notes:

For Beam Notes and Framing Plan, see Sheet No. 71.

See General Notes on Sheet No. 30 for structural steel requirements and for painting requirements of existing structural steel.

NF denotes near face.

FF denotes far face.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

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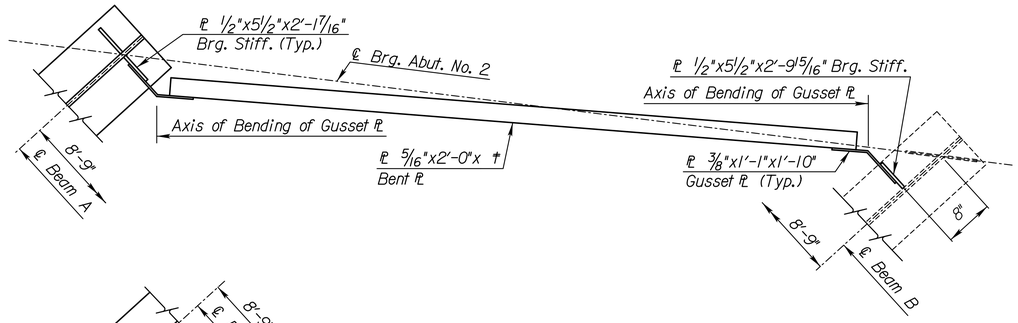
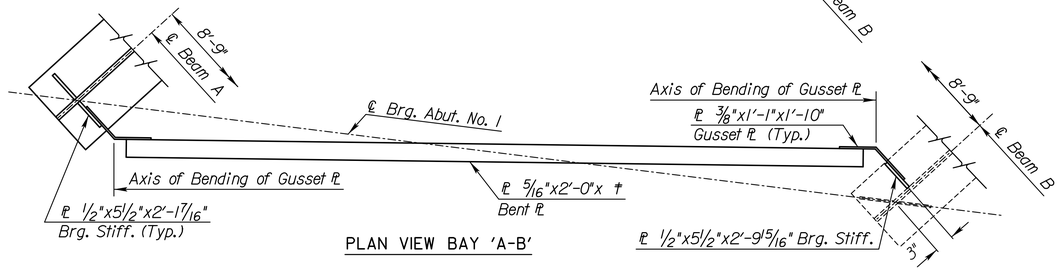
EXISTING BEAM DETAILS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

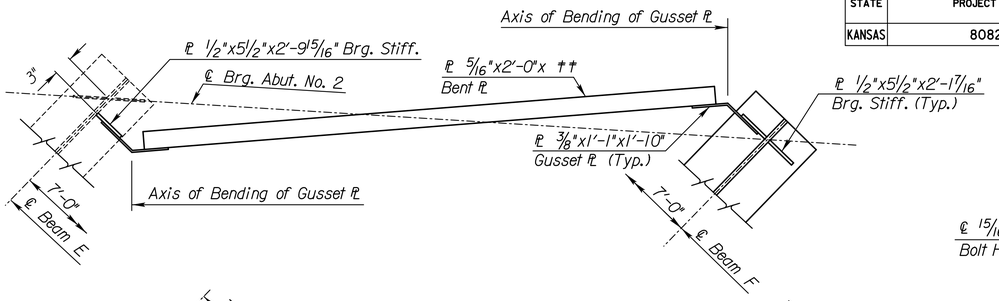
Plotted By: JEHarris | Plot Location:
File: KTA44-49-Beam.dgn
Plot Date: 12-SEP-2024 21:46

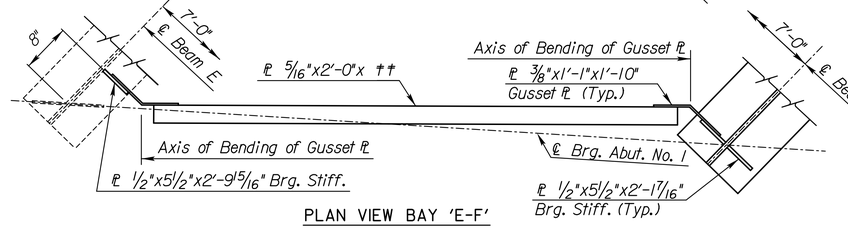
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	75	134



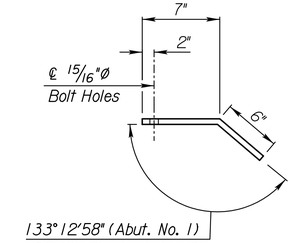


PLAN VIEW BAY 'A-B'

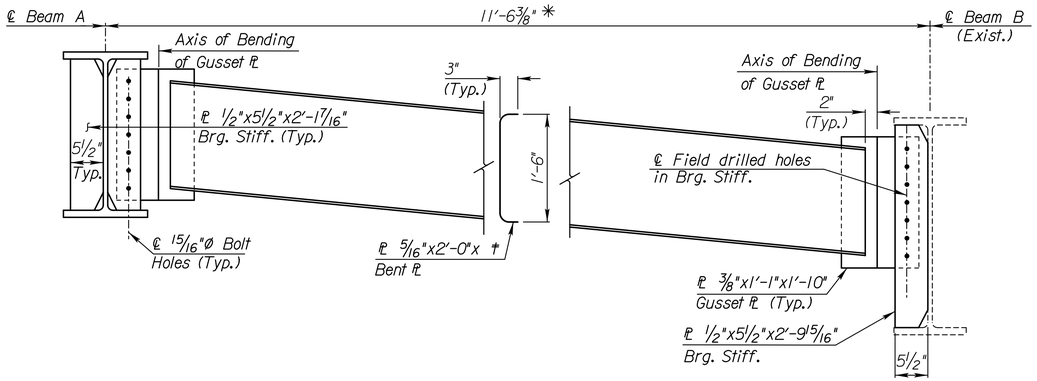




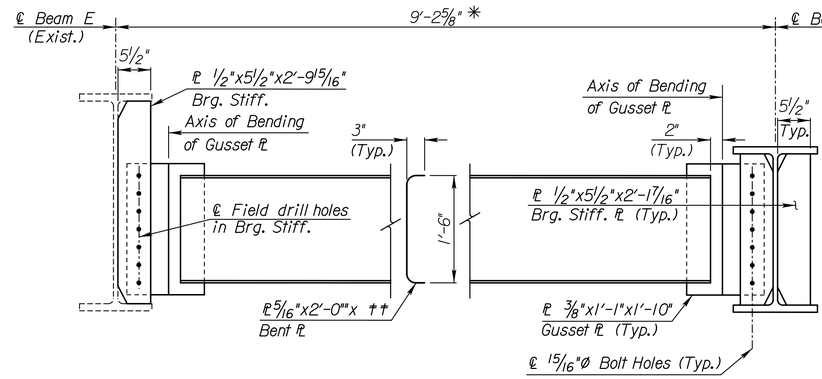
PLAN VIEW BAY 'E-F'



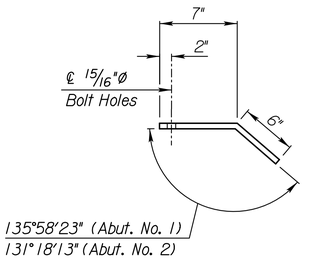
BENDING DETAIL OF GUSSET PLATE FOR BAY 'A-B'



ELEVATION VIEW BAY 'A-B'



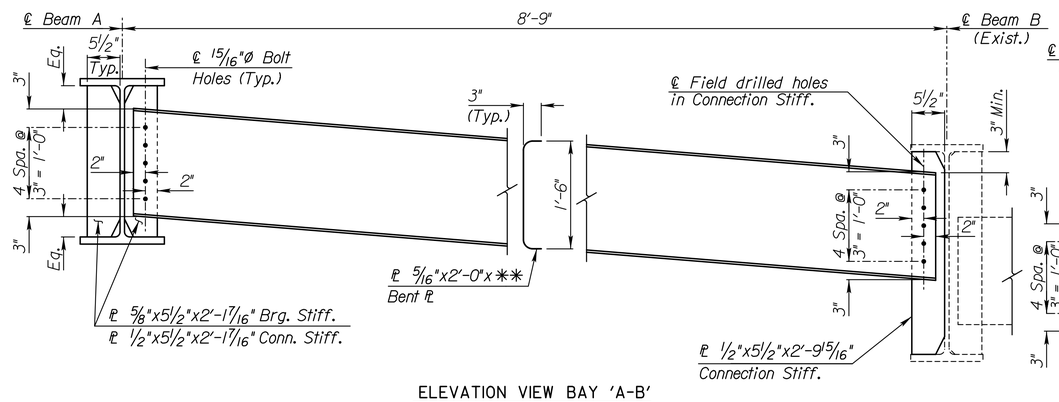
ELEVATION VIEW BAY 'E-F'



BENDING DETAIL OF GUSSET PLATE FOR BAY 'E-F'

NEW END DIAPHRAGMS

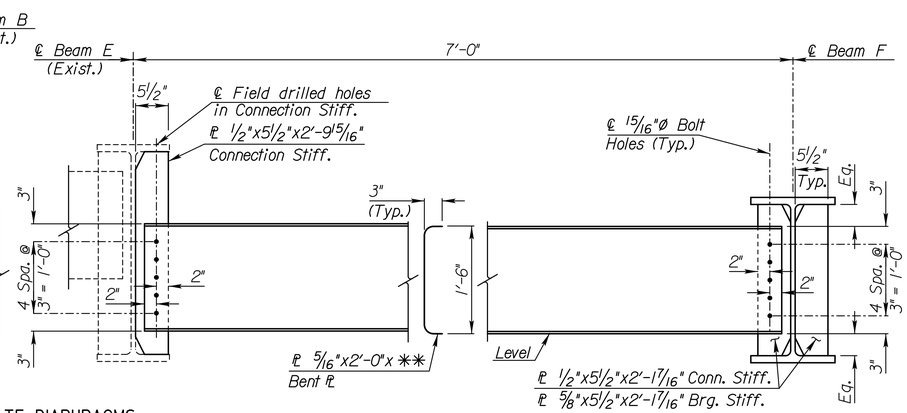
(Looking in the Direction of Increase Stationing)



ELEVATION VIEW BAY 'A-B'

NEW INTERMEDIATE DIAPHRAGMS

(Looking in the Direction of Increase Stationing)



ELEVATION VIEW BAY 'E-F'

* Measured along ℄ Brg. Abut. (Horizontal)

✱✱ 8'-5 1/4" (Bay A-B) (Horizontal)
6'-8 1/4" (Bay E-F)

† 10'-3 7/8" (Abut. No. 1) (Horizontal)
9'-8" (Abut. No. 2) (Horizontal)

†† 7'-4 5/8" (Abut. No. 1) (Horizontal)
8'-0 3/8" (Abut. No. 2) (Horizontal)

Notes:

All structural steel for diaphragms shall conform to the requirements of ASTM A709 (Grade 50W).

All bolts shall be 7/8" Ø high-strength steel bolts, ASTM F3125 (Grade A325) (Type 3).

See Gusset Plate Details on Sheet No. 76.

NO.	DATE	REVISIONS	BY	APP'D
4				
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KANSAS TURNPIKE AUTHORITY

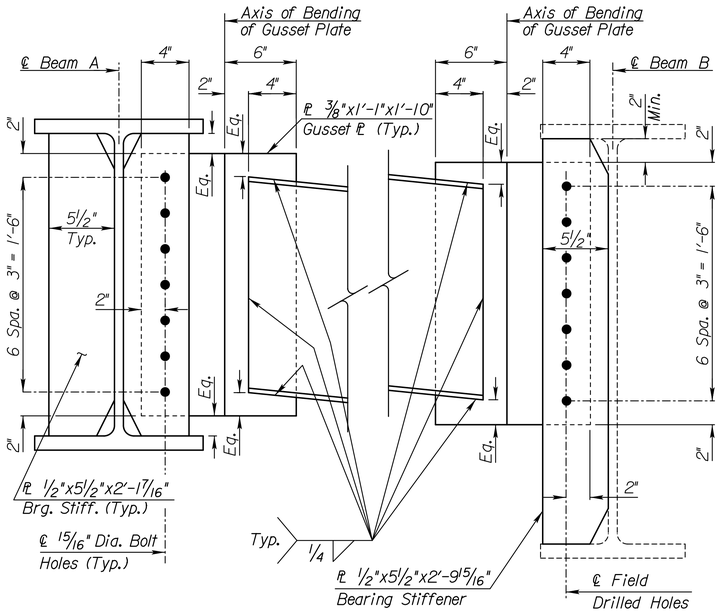
Br. No. 43.930 SB

STEEL DETAILS

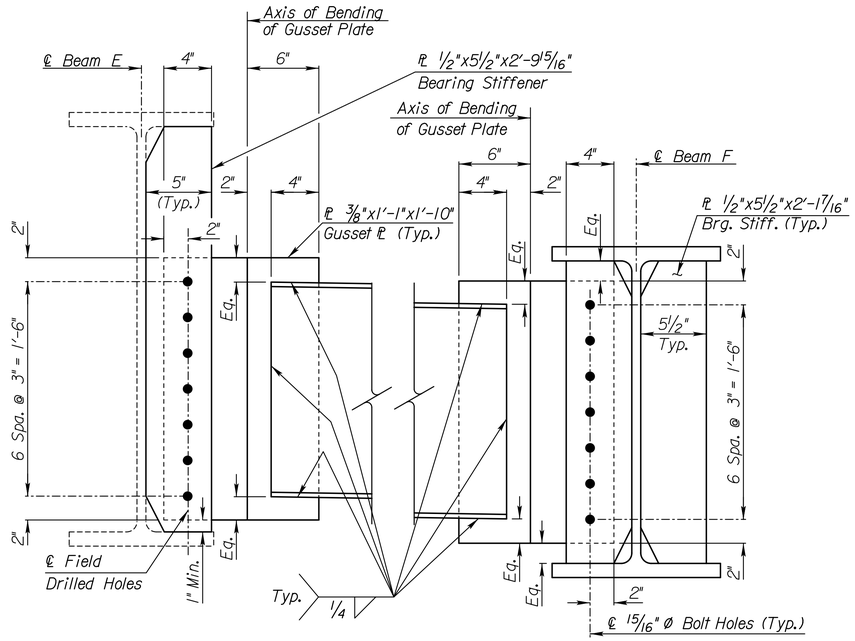
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-50-SteelDetails1.dgn
Plot Date: 12-SEP-2024 21:47

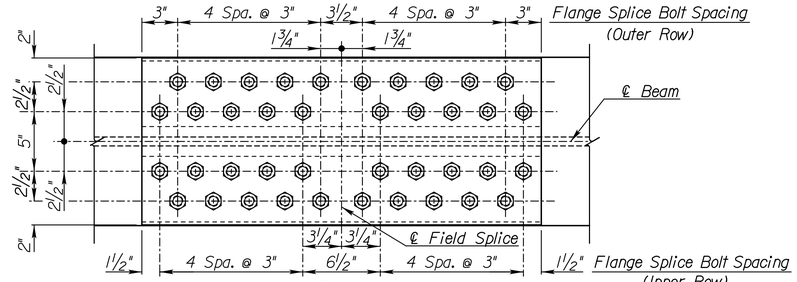
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	76	134



TYPICAL GUSSET PLATE DETAIL FOR BAY 'A-B'

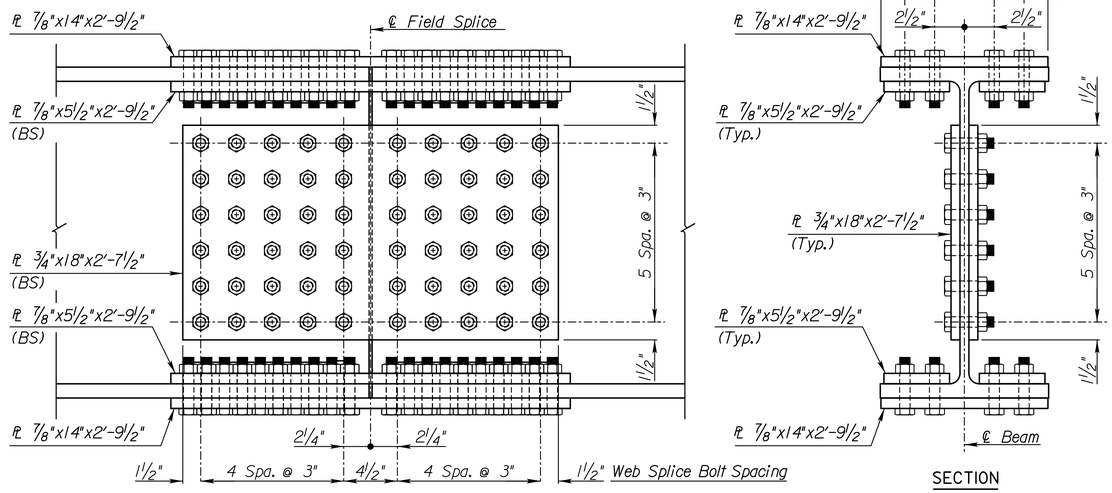


TYPICAL GUSSET PLATE DETAIL FOR BAY 'E-F'



PLAN

(Showing Top & Bott. Flange Plates)

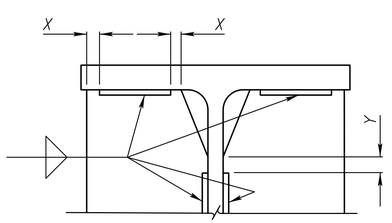


ELEVATION

SECTION

Note:
BS denotes both sides.

FIELD SPLICE DETAILS



TYPICAL WELD LIMIT DETAIL

$X = 1/4" \pm 1/8"$

$Y = 1/2" \pm 1/4"$

Notes:
Fasteners for field splices shall be 7/8" Ø high-strength steel bolts, ASTM F3125 (Grade A325) (Type 3).
All flange and web splice plates shall be AASHTO M270 (Grade 50WT3) Structural Steel.

NO.	DATE	REVISIONS	BY	APP'D
4				
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2				
1				

KANSAS TURNPIKE AUTHORITY

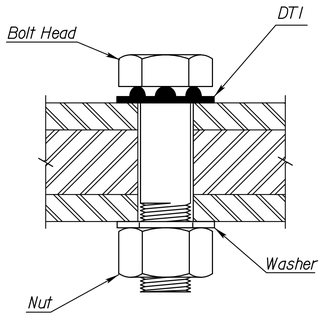
Br. No. 43.930 SB

STEEL DETAILS

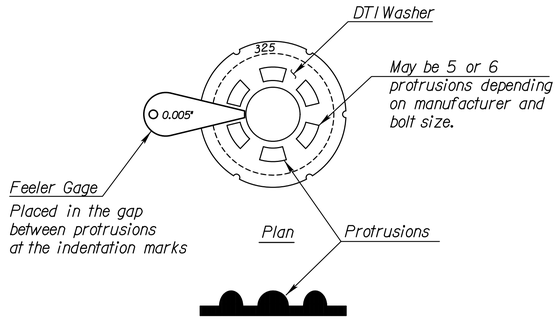
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-51-SteelDetails2.dgn
Plot Date: 12-SEP-2024 21:47

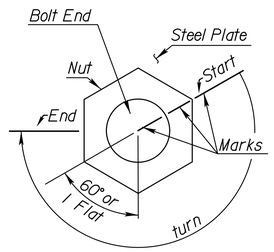
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	77	134



TYPICAL BOLT AND
DIRECT TENSION INDICATOR (DTI)

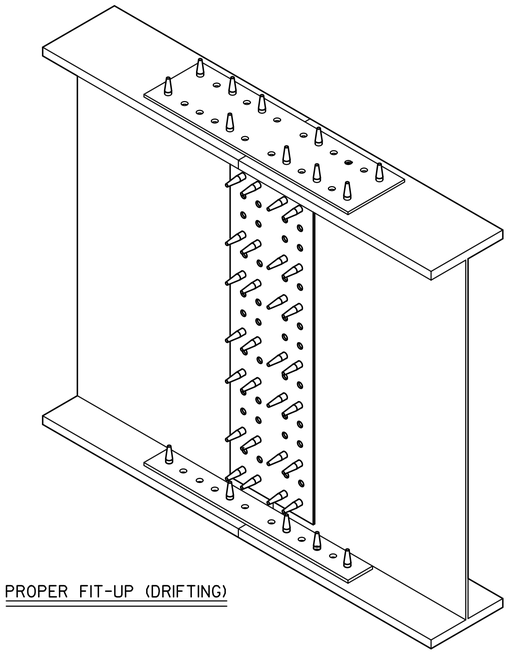


TYPICAL DIRECT TENSION INDICATOR (DTI)



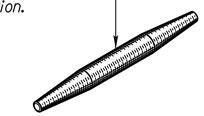
REQUIRED MARKING DETAIL

(shows calibrated turn = 3½ flats from snug tight condition). Example only, calibrated turn may be more or less than shown.

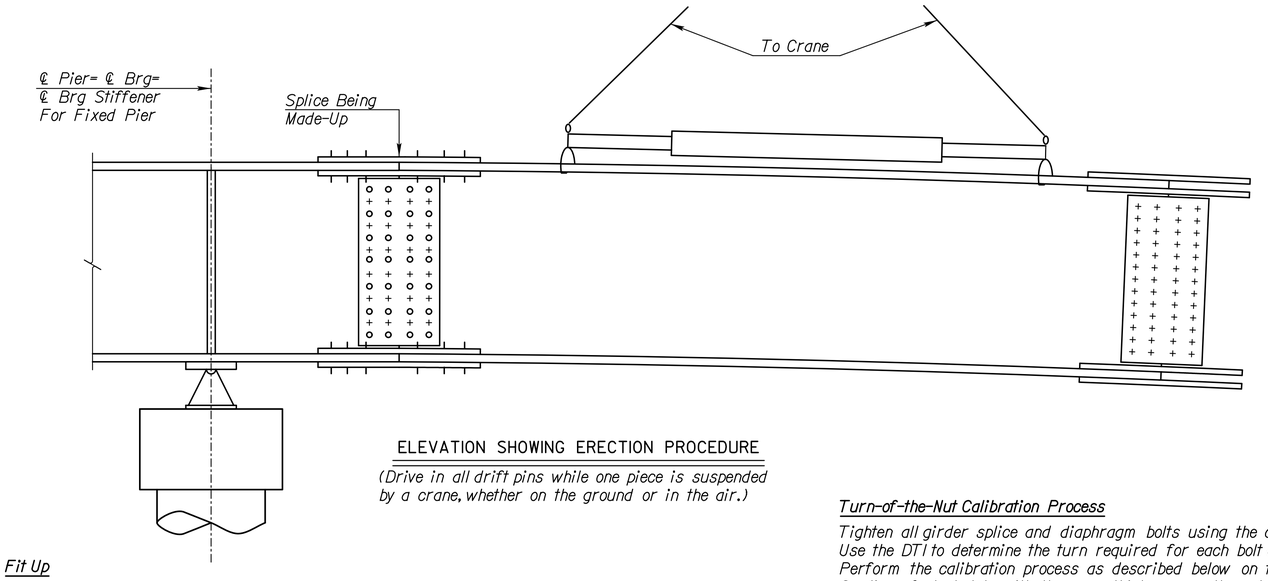


PROPER FIT-UP (DRIFTING)

Drift Pin Diameter = Hole Diameter
Hole Ø = 15/16" for girder splice
Hole Ø = 15/16" for X-frame or diaphragm connection.



DRIFT PIN



ELEVATION SHOWING ERECTION PROCEDURE

(Drive in all drift pins while one piece is suspended by a crane, whether on the ground or in the air.)

Fit Up

During the fit up, install drift pins in all corner bolt holes, plus 25 percent of the bolt holes (as a min.), evenly distributed throughout the splice. Fill at least 25 percent of the bolt holes with high strength bolts. Fully tighten these bolts by the calibrated turn-of-the-nut method before removing any drift pins or moving the members. These bolts may be either erection bolts or production bolts. Erection bolts are used during fit up, to compress the plies of the splice to achieve a snug condition. Erection bolts are the property of the Contractor and do not remain in the bridge permanently. Erection bolts must be A325, and can be reused. Erection bolts are required when the abutting plates are of different thickness and no fill plate is provided. This situation usually results in a slight bending of the splice plates. If erection bolts are not used, the DTI's may fully compress before the plates are in firm contact. This would be cause for rejecting the splice. Clearly mark the erection bolts so that they are not left in the splice.

Erection

Two independent crews will survey the bearing seat elevations. The Engineer will verify that the results of those surveys show that the bearing seat elevations are within ± ¼ inch of the plan elevations before erection begins. Use the blocking diagram, as shown on the shop drawings, when erecting the beams/girders on the ground. Do not lift the assembled pieces into position until at least 25 percent of the holes are filled with fully tightened bolts. Locate the centerline of the bearing stiffener with the centerline of bearing device. Secure the beams/girders to the top of the pier cap prior to placement of the bearing device anchor bolts.

Turn-of-the-Nut Calibration Process

Tighten all girder splice and diaphragm bolts using the calibrated turn-of-the-nut method. Use the DTI to determine the turn required for each bolt diameter & length. Perform the calibration process as described below on the actual beam splice or using 3 plies of steel plate with the same thickness as the actual splice.

1. Bring at least 25 percent of the bolts in the splice to a "snug-tight-condition". "Snug tight condition" is defined as (with all plies in firm contact) "the full effort of a man on a spud wrench". Usually a smaller impact gun (½" drive) is used to snug the splice and a larger impact gun (1" drive) is used for final tightening. This is preferred over the use of a spud wrench. Production bolting and calibration must use the same tools and lubricating procedures. If an impact wrench is used to "iron the plates" and snug the bolts for calibration, then an impact wrench must be used during the snugging process during production bolting.

2. See "Required Marking Detail" (choose a bolt at the center of the splice and recheck snug on adjacent bolts)
- *a. Mark the outside of the socket at one of the corners.*
- *b. Mark the bolt, plate, and nut at a corner with a start line.*
- *c. Align the mark on the socket with the start mark on the bolt end.*
- *d. While holding a backup wrench on the head of the bolt, turn the nut ½ turn (3 flats).*
- *e. Record the number of refusals.*
- *f. If all of the gaps refuse, go to another bolt and turn the nut 2 flats (1/3 turn).*
- *g. If there are fewer than 3 refusals turn the nut an additional ¼ of a flat (15 degrees).*
- *h. Repeat step g, turning the nut 1/3 of a flat or less each time, until all of the gaps refuse the feeler gage. Record the amount required to cause all of the gaps to refuse the feeler gage. This is the target rotation.*

3. Repeat this process for each bolt diameter and length.

Production Bolt Tightening

1. Install bolts and tighten to "snug tight" in a pattern, starting at the center of the splice and working toward the edge. On large girders this may have to be done twice, as the center bolts will become loose as plates are "ironed out". This step is important because typically, any variation in results during production bolting is the result of a change in the materials, lubricant or equipment used to take the bolts to a "snug tight" condition during the calibration process.

2. Mark all of the bolts, nuts and the plate as shown in the marking detail. Mark the socket with a start and stop point. The stop point corresponds to the target rotation determined earlier.

3. Align the start mark on the socket with the line on the plate. While the bolt is being backed up, turn the nut until the stop mark on the socket lines up with the start mark on the plate.

4. Repeat with all bolts of the same length in the splice.

Acceptance and Rejection of Bolts

1. The Engineer will check all bolts with a feeler gage.

2. All nuts must be turned at least the target rotation beyond "snug tight".

3. All DTI's must have at least 3 refusals of the 0.005" gage.

4. If all gaps refuse the 0.005" gage, and the nut, plate and bolt are not marked, reject the bolt.

5. If all gaps refuse the 0.005" gage, and the turned element has not been rotated more than 45° beyond the calibrated turn, accept the bolt.

6. If all gaps refuse the 0.005" gage, and the turned element has been rotated more than 45° beyond the calibrated turn, reject the bolt.

For additional information see the structural steel section of the Bridge Construction Manual.

Suggested Impact wrench models:
CP 611
IR 2940
Cleco WS2110
ATP 1011/1040
Norbar PT1500

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4				
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1	04/25/05	Current Release	RAM	KFH

KANSAS TURNPIKE AUTHORITY
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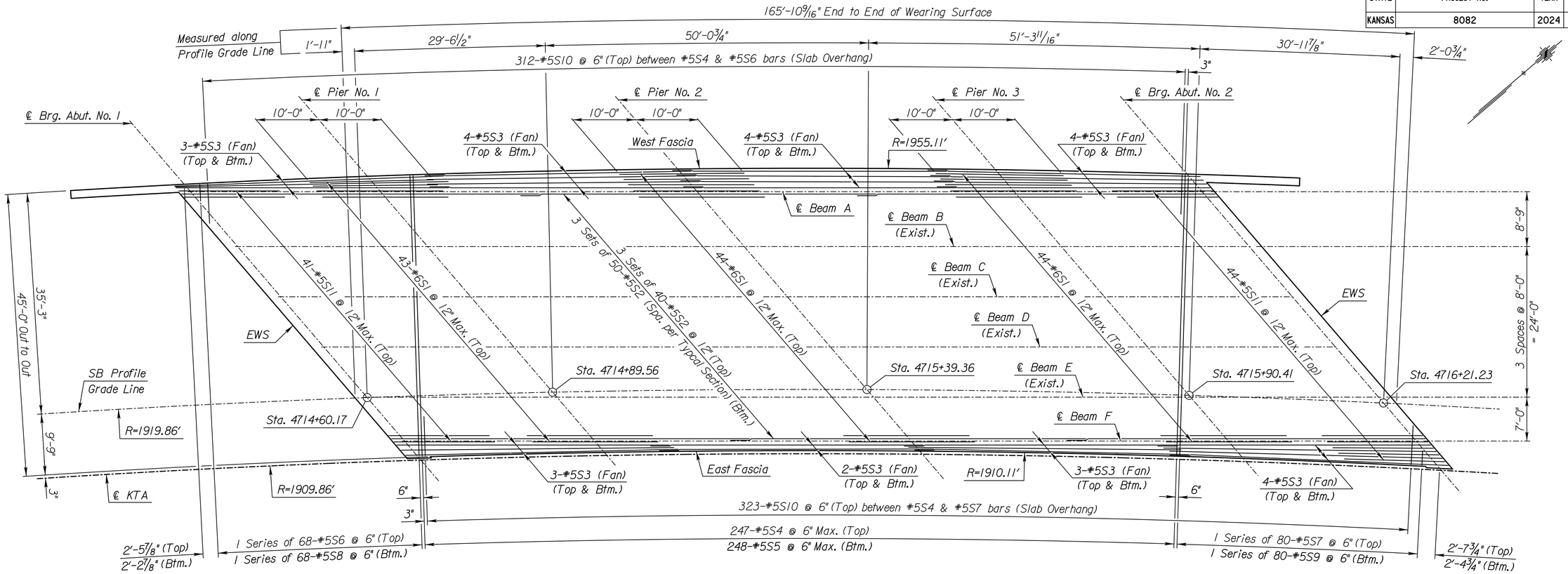
STEEL ERECTION, FIT-UP AND BOLTING PROCEDURE

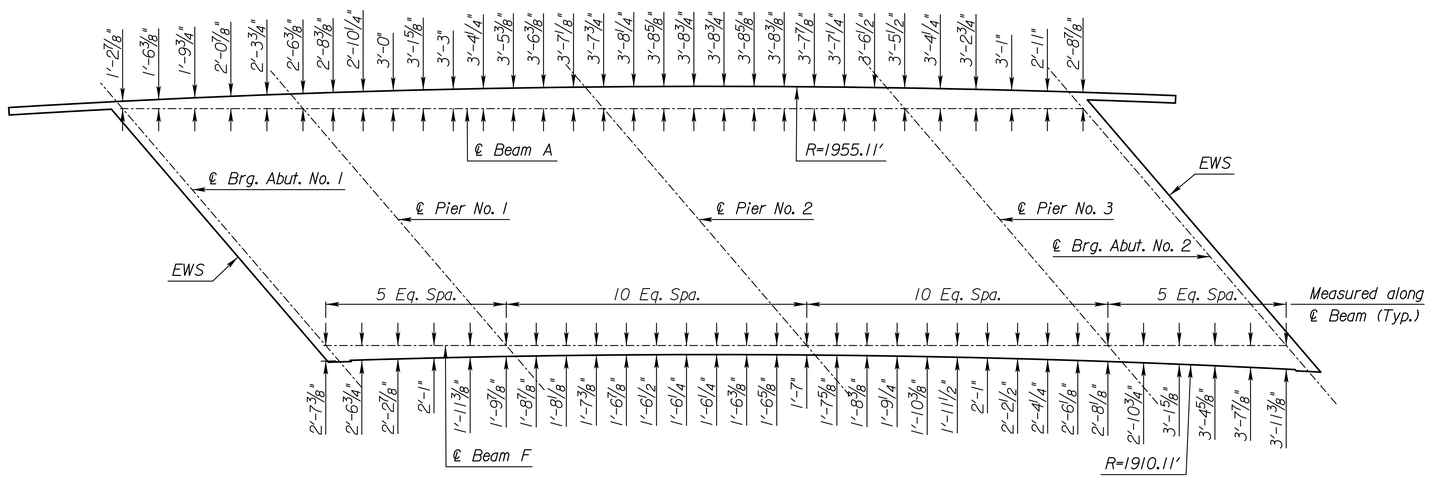
SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	QUAN. CK.	CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-52-SteelFitup.dgn
Plot Date: 12-SEP-2024 21:47

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	78	134



SLAB PLAN



OFFSETS TO SLAB FASCIAS

Notes:

Min. Lap is 2'-5" for #5 bars.

Place transverse bars radially. Transverse bar spacings are measured along the West Fascia.

Stagger top and bottom transverse bar placement.

Forms for the slab and barrier rails shall be supported by the beams.

For Typical Section and Concrete Placing Sequence see Sheet No. 79.

For Barrier Rail Details see Sheet No's. 82 & 83.

For Roadway Surface Elevations see Sheet No. 80.

NO.	DATE	REVISIONS	BY	APP'D
4				
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1				

KANSAS TURNPIKE AUTHORITY

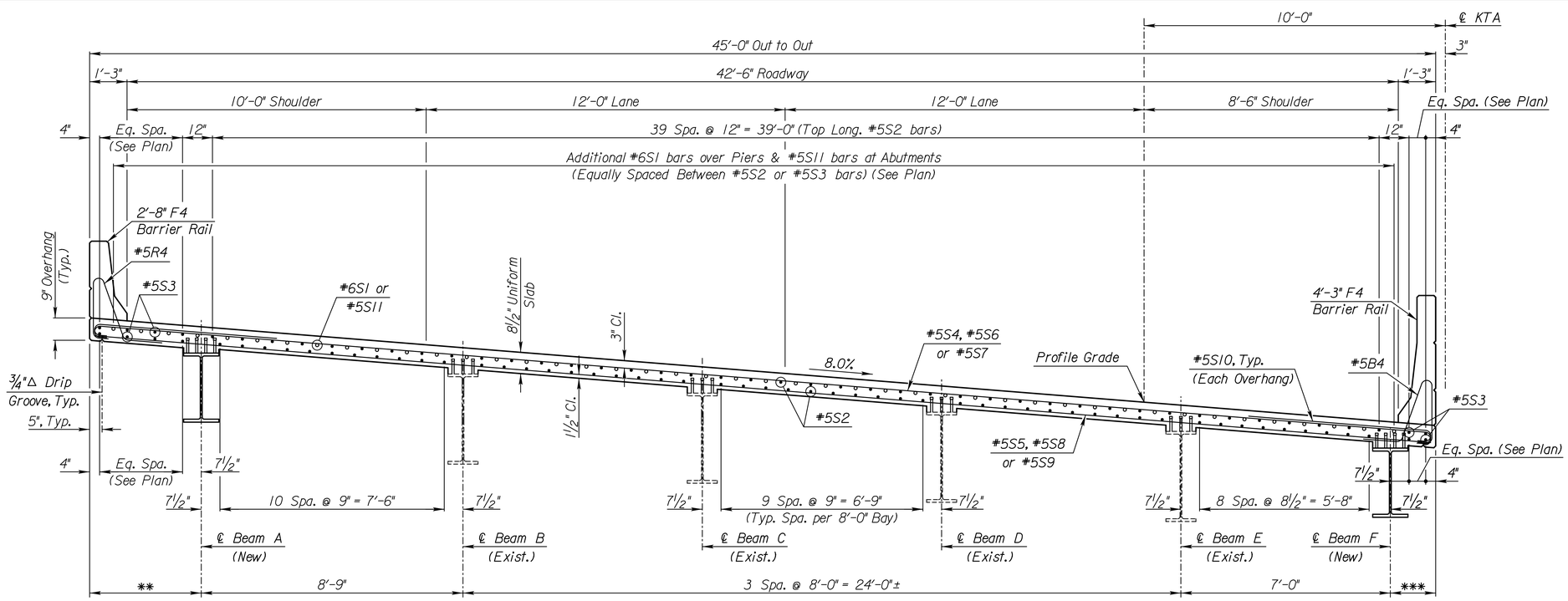
Br. No. 43.930 SB

SLAB PLAN

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	DPW	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

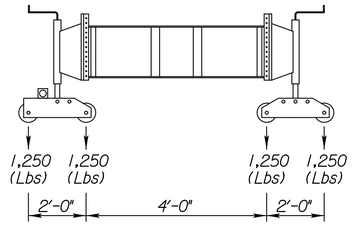
Plotted By: JEHarris
File: KTA44-53-Slabl.dgn
Plot Date: 12-SEP-2024 21:47
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	79	134



TYPICAL SECTION
(Looking Upstation)

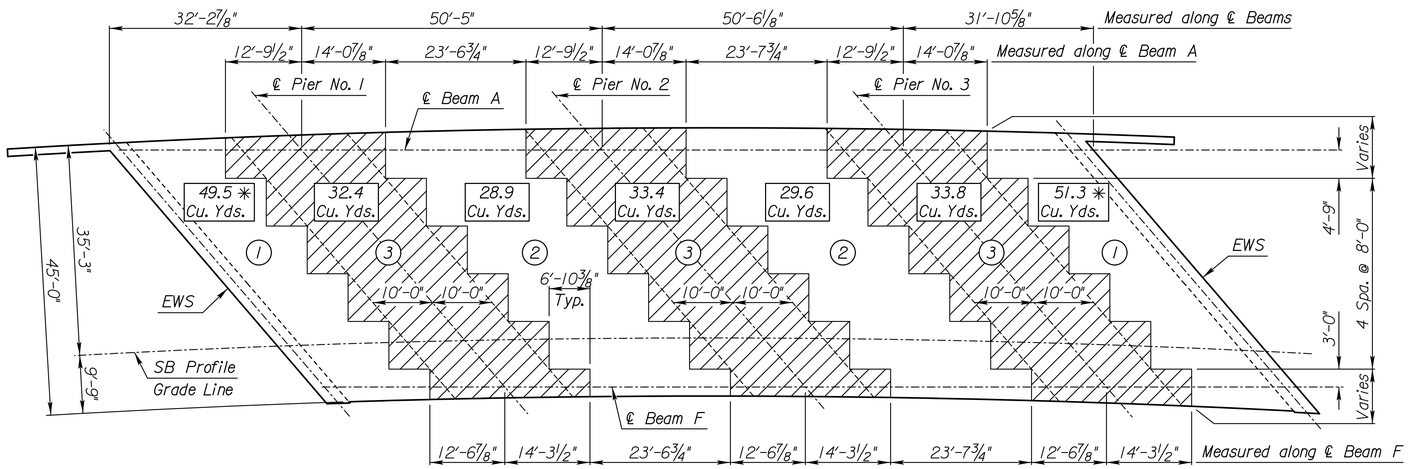
** Varies from 1'-2⅞" to 3'-8¾"
*** Varies from 1'-6¼" to 3'-11⅜"



ASSUMED FINISHING MACHINE VALUES LOADING DIAGRAM

Note: Rotation (maximum = 1°) in the exterior girder was calculated assuming screed wheel loads as shown and placed 3" beyond the outside of the deck. The maximum overhang bracket spacing was assumed at 4 ft. The actual screed loadings or bracket spacing will be reflected in the design calculations for a torsional analysis of the exterior girder and bracing. The design calculations shall bear the seal of a licensed Professional Engineer. Submit according to KDOT Specifications Section 700 for falsework and formwork.

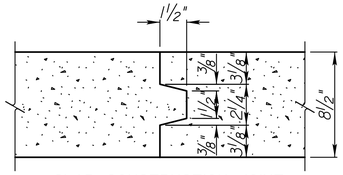
Note: Provide temporary bracing at the top and bottom flanges of the exterior beams during paving operations for the deck. Place the bracing at three equal spaces between permanent diaphragms. The top flange bracing members shall be a ½" Ø steel rod or greater (Min. Fy = 36 ksi). The bottom flange bracing members shall be a 4" x 4" timber post or greater. The temporary bracing and labor for installation is subsidiary to the bid item "Concrete (Grade 4.0)(AE)(SA)(MPC)". Details of proposed bracing shall be submitted with falsework plans.



CONCRETE PLACING SEQUENCE

Notes:
(1) Circled numbers indicate placing sequence. Segmental, combined or continuous pours are allowed by an approved alternate placing sequence. Any discontinuous pour must stop at a construction joint short of a pier. See General Notes, Sheet No. 30, for "Concrete Placing Sequence" note.
The Contractor may place the barrier rail continuously from one end of the bridge to the other.
Place and hand vibrate all concrete for the abutment diaphragms to the bottom of the deck elevation just prior to the normal paving train operation. Do this work in a manner to avoid cold joints in either the slab or in the abutment diaphragm.
49.5 Boxed numbers indicate the quantity of Concrete (Grade 4.0)(AE)(SA)(MPC) required to pour the slab, including fillets and abutment diaphragms (for information only).

** The quantity includes the superstructure portion of the abutment.*



SLAB CONSTRUCTION JOINT

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
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KANSAS TURNPIKE AUTHORITY
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SLAB DETAILS

SHEET NO. OF	SCALE	APP'D
DESIGNED DPW	DETAILED JTK	QUANTITIES CADD
DESIGN CK. JMB	DETAIL CK. JMB	QUAN. CK. CADD CK.

Plotted By: JEHarris | Plot Location:
File: KTA44-54-Slab2.dgn
Plot Date: 12-SEP-2024 21:47

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	80	134

TOP OF SLAB ELEVATIONS

	Tenth Point		Fascia (West)	Beam A	Beam B	Beam C	Beam D	Beam E	Beam F	Fascia (East)
℄ Brg. Abut. No. 1	1.0	Station	4714+32.93	4714+33.87	4714+40.79	4714+47.18	4714+53.62	4714+60.12	4714+65.85	4714+67.94
		Elevation	1296.50	1296.41	1295.70	1295.05	1294.40	1293.76	1293.20	1292.99
SPAN ONE	1.1	Station	4714+35.79	4714+36.82	4714+43.76	4714+50.16	4714+56.62	4714+63.13	4714+68.87	4714+70.91
		Elevation	1296.51	1296.40	1295.69	1295.05	1294.40	1293.76	1293.19	1293.00
	1.2	Station	4714+38.64	4714+39.78	4714+46.73	4714+53.14	4714+59.61	4714+66.14	4714+71.89	4714+73.87
		Elevation	1296.52	1296.40	1295.69	1295.05	1294.40	1293.76	1293.19	1293.00
	1.3	Station	4714+41.49	4714+42.73	4714+49.70	4714+56.13	4714+62.61	4714+69.15	4714+74.91	4714+76.83
		Elevation	1296.53	1296.40	1295.69	1295.04	1294.40	1293.75	1293.19	1293.01
	1.4	Station	4714+44.35	4714+45.69	4714+52.67	4714+59.11	4714+65.61	4714+72.16	4714+77.93	4714+79.80
		Elevation	1296.53	1296.39	1295.69	1295.04	1294.40	1293.75	1293.19	1293.02
	1.5	Station	4714+47.20	4714+48.65	4714+55.64	4714+62.09	4714+68.60	4714+75.17	4714+80.96	4714+82.76
		Elevation	1296.54	1296.39	1295.68	1295.04	1294.40	1293.75	1293.19	1293.02
	1.6	Station	4714+50.05	4714+51.60	4714+58.61	4714+65.08	4714+71.60	4714+78.18	4714+83.98	4714+85.72
		Elevation	1296.55	1296.39	1295.68	1295.04	1294.39	1293.75	1293.19	1293.03
	1.7	Station	4714+52.90	4714+54.56	4714+61.58	4714+68.06	4714+74.60	4714+81.19	4714+87.00	4714+88.69
		Elevation	1296.56	1296.39	1295.68	1295.04	1294.39	1293.75	1293.19	1293.03
	1.8	Station	4714+55.76	4714+57.52	4714+64.56	4714+71.05	4714+77.60	4714+84.20	4714+90.02	4714+91.65
		Elevation	1296.56	1296.38	1295.68	1295.03	1294.39	1293.75	1293.19	1293.04
	1.9	Station	4714+58.61	4714+60.48	4714+67.53	4714+74.03	4714+80.59	4714+87.21	4714+93.05	4714+94.62
		Elevation	1296.57	1296.38	1295.68	1295.03	1294.39	1293.75	1293.19	1293.04
℄ Pier No. 1	2.0	Station	4714+61.46	4714+63.43	4714+70.50	4714+77.02	4714+83.59	4714+90.22	4714+96.07	4714+97.58
		Elevation	1296.58	1296.38	1295.68	1295.03	1294.39	1293.75	1293.19	1293.05
SPAN TWO	2.1	Station	4714+66.29	4714+68.36	4714+75.45	4714+81.99	4714+88.59	4714+95.24	4715+01.10	4715+02.60
		Elevation	1296.59	1296.38	1295.67	1295.03	1294.39	1293.75	1293.19	1293.05
	2.2	Station	4714+71.12	4714+73.29	4714+80.41	4714+86.97	4714+93.58	4715+00.26	4715+06.14	4715+07.63
		Elevation	1296.60	1296.37	1295.67	1295.03	1294.39	1293.75	1293.19	1293.06
	2.3	Station	4714+75.95	4714+78.22	4714+85.36	4714+91.94	4714+98.58	4715+05.27	4715+11.18	4715+12.65
		Elevation	1296.61	1296.37	1295.67	1295.03	1294.39	1293.75	1293.19	1293.07
	2.4	Station	4714+80.78	4714+83.16	4714+90.31	4714+96.92	4715+03.58	4715+10.29	4715+16.21	4715+17.67
		Elevation	1296.62	1296.37	1295.67	1295.03	1294.39	1293.75	1293.20	1293.07
	2.5	Station	4714+85.61	4714+88.09	4714+95.27	4715+01.89	4715+08.57	4715+15.31	4715+21.25	4715+22.70
		Elevation	1296.63	1296.37	1295.67	1295.03	1294.39	1293.76	1293.20	1293.08
	2.6	Station	4714+90.44	4714+93.02	4715+00.22	4715+06.87	4715+13.57	4715+20.33	4715+26.29	4715+27.72
		Elevation	1296.64	1296.37	1295.67	1295.03	1294.40	1293.76	1293.20	1293.08
	2.7	Station	4714+95.27	4714+97.95	4715+05.18	4715+11.85	4715+18.57	4715+25.35	4715+31.32	4715+32.75
		Elevation	1296.64	1296.37	1295.67	1295.03	1294.40	1293.76	1293.21	1293.09
	2.8	Station	4715+00.10	4715+02.89	4715+10.14	4715+16.82	4715+23.57	4715+30.37	4715+36.36	4715+37.77
		Elevation	1296.65	1296.37	1295.67	1295.04	1294.40	1293.77	1293.21	1293.09
	2.9	Station	4715+04.93	4715+07.82	4715+15.09	4715+21.80	4715+28.56	4715+35.38	4715+41.40	4715+42.79
		Elevation	1296.66	1296.37	1295.68	1295.04	1294.40	1293.77	1293.22	1293.09
℄ Pier No. 2	3.0	Station	4715+09.76	4715+12.75	4715+20.05	4715+26.78	4715+33.56	4715+40.40	4715+46.44	4715+47.82
		Elevation	1296.66	1296.38	1295.68	1295.04	1294.41	1293.78	1293.22	1293.10

TOP OF SLAB ELEVATIONS

	Tenth Point		Fascia (West)	Beam A	Beam B	Beam C	Beam D	Beam E	Beam F	Fascia (East)
℄ Pier No. 2	3.0	Station	4715+09.76	4715+12.75	4715+20.05	4715+26.78	4715+33.56	4715+40.40	4715+46.44	4715+47.82
		Elevation	1296.66	1296.38	1295.68	1295.04	1294.41	1293.78	1293.22	1293.10
SPAN THREE	3.1	Station	4715+14.70	4715+17.70	4715+25.01	4715+31.76	4715+38.57	4715+45.43	4715+51.48	4715+52.97
		Elevation	1296.67	1296.38	1295.68	1295.05	1294.41	1293.78	1293.23	1293.10
	3.2	Station	4715+19.64	4715+22.64	4715+29.98	4715+36.75	4715+43.57	4715+50.46	4715+56.53	4715+58.12
		Elevation	1296.67	1296.38	1295.69	1295.05	1294.42	1293.79	1293.23	1293.10
	3.3	Station	4715+24.58	4715+27.58	4715+34.95	4715+41.74	4715+48.58	4715+55.48	4715+61.57	4715+63.27
		Elevation	1296.68	1296.38	1295.69	1295.06	1294.42	1293.79	1293.24	1293.10
	3.4	Station	4715+29.53	4715+32.53	4715+39.91	4715+46.72	4715+53.59	4715+60.51	4715+66.62	4715+68.42
		Elevation	1296.68	1296.39	1295.69	1295.06	1294.43	1293.80	1293.25	1293.10
	3.5	Station	4715+34.47	4715+37.47	4715+44.88	4715+51.71	4715+58.59	4715+65.54	4715+71.66	4715+73.57
		Elevation	1296.69	1296.39	1295.70	1295.07	1294.44	1293.81	1293.26	1293.10
	3.6	Station	4715+39.41	4715+42.41	4715+49.84	4715+56.69	4715+63.60	4715+70.56	4715+76.70	4715+78.72
		Elevation	1296.69	1296.40	1295.71	1295.07	1294.44	1293.82	1293.27	1293.10
	3.7	Station	4715+44.36	4715+47.35	4715+54.81	4715+61.68	4715+68.60	4715+75.59	4715+81.75	4715+83.88
		Elevation	1296.69	1296.40	1295.71	1295.08	1294.45	1293.82	1293.27	1293.10
	3.8	Station	4715+49.30	4715+52.30	4715+59.77	4715+66.66	4715+73.61	4715+80.61	4715+86.79	4715+89.03
		Elevation	1296.70	1296.41	1295.72	1295.09	1294.46	1293.83	1293.28	1293.09
	3.9	Station	4715+54.24	4715+57.24	4715+64.73	4715+71.65	4715+78.61	4715+85.64	4715+91.83	4715+94.18
		Elevation	1296.70	1296.42	1295.73	1295.10	1294.47	1293.84	1293.29	1293.09
℄ Pier No. 3	4.0	Station	4715+59.18	4715+62.18	4715+69.70	4715+76.63	4715+83.62	4715+90.66	4715+96.87	4715+99.33
		Elevation	1296.70	1296.42	1295.73	1295.11	1294.48	1293.85	1293.30	1293.09
SPAN FOUR	4.1	Station	4715+62.17	4715+65.11	4715+72.64	4715+79.58	4715+86.58	4715+93.63	4715+99.85	4716+02.44
		Elevation	1296.70	1296.43	1295.74	1295.11	1294.48	1293.86	1293.31	1293.09
	4.2	Station	4715+65.15	4715+68.04	4715+75.58	4715+82.53	4715+89.54	4715+96.61	4716+02.84	4716+05.55
		Elevation	1296.70	1296.43	1295.74	1295.12	1294.49	1293.86	1293.32	1293.08
	4.3	Station	4715+68.13	4715+70.96	4715+78.52	4715+85.48	4715+92.50	4715+99.58	4716+05.82	4716+08.67
		Elevation	1296.70	1296.44	1295.75	1295.12	1294.50	1293.87	1293.32	1293.08
	4.4	Station	4715+71.11	4715+73.89	4715+81.46	4715+88.43	4715+95.47	4716+02.56	4716+08.81	4716+11.78
		Elevation	1296.70	1296.44	1295.75	1295.13	1294.50	1293.88	1293.33	1293.08
	4.5	Station	4715+74.09	4715+76.81	4715+84.39	4715+91.38	4715+98.43	4716+05.53	4716+11.79	4716+14.89
		Elevation	1296.70	1296.45	1295.76	1295.13	1294.51	1293.88	1293.34	1293.08
	4.6	Station	4715+77.07	4715+79.74	4715+87.33	4715+94.33	4716+01.39	4716+08.50	4716+14.77	4716+18.00
		Elevation	1296.70	1296.45	1295.77	1295.14	1294.52	1293.89	1293.35	1293.07
	4.7	Station	4715+80.05	4715+82.67	4715+90.27	4715+97.28	4716+04.35	4716+11.47	4716+17.76	4716+21.11
		Elevation	1296.70	1296.46	1295.77	1295.15	1294.52	1293.90	1293.35	1293.07
	4.8	Station	4715+83.04	4715+85.59	4715+93.21	4716+00.23	4716+07.31	4716+14.45	4716+20.74	4716+24.23
		Elevation	1296.70	1296.46	1295.78	1295.15	1294.53	1293.91	1293.36	1293.07
	4.9	Station	4715+86.02	4715+88.52	4715+96.15	4716+03.18	4716+10.27	4716+17.42	4716+23.72	4716+27.34
		Elevation	1296.70	1296.47	1295.78	1295.16	1294.54	1293.91	1293.37	1293.06
℄ Brg. Abut. No. 2	5.0	Station	4715+89.00	4715+91.44	4715+99.08	4716+06.13	4716+13.23	4716+20.39	4716+26.70	4716+30.45
		Elevation	1296.69	1296.47	1295.79	1295.17	1294.54	1293.92	1293.38	1293.06

Plotted By: JEHarris | Plot Location:
File: KTA44-55-SlabElevations.dgn
Plot Date: 12-SEP-2024 21:48

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

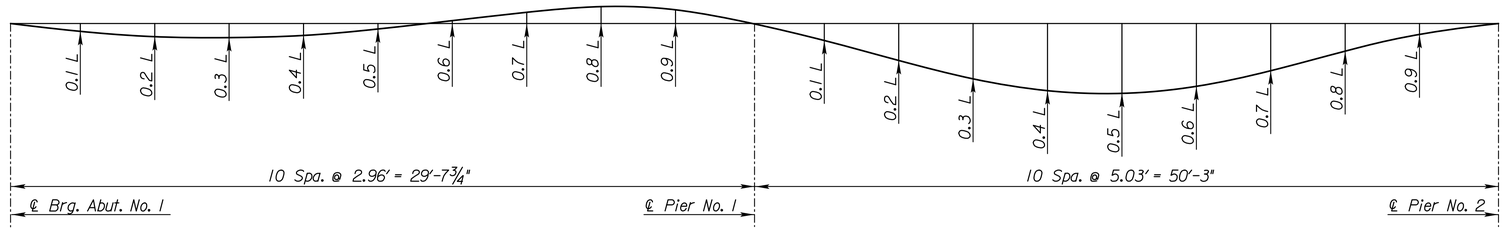
Br. No. 43.930 SB

ROADWAY SURFACE ELEVATIONS

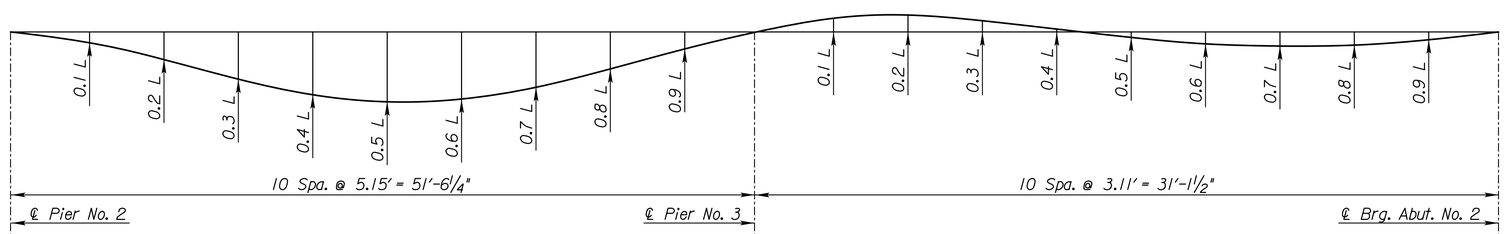
SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	JMB	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	81	134

DEAD LOAD DEFLECTIONS																				
Beam	℄ Brg. Abut. No. 1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 1	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 2
A	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.001	0.001	0.001	0.000	-0.004	-0.009	-0.013	-0.016	-0.017	-0.015	-0.012	-0.007	-0.002	0.000
B	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.001	0.001	0.000	-0.002	-0.006	-0.009	-0.011	-0.011	-0.010	-0.007	-0.004	-0.001	0.000
C	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.000	0.000	-0.002	-0.005	-0.008	-0.010	-0.011	-0.009	-0.007	-0.004	-0.001	0.000
D	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.001	0.000	-0.002	-0.005	-0.008	-0.010	-0.011	-0.009	-0.007	-0.004	-0.001	0.000
E	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000	0.000	0.000	0.001	0.000	-0.002	-0.005	-0.008	-0.010	-0.010	-0.009	-0.007	-0.004	-0.001	0.000
F	0.000	-0.001	-0.001	-0.002	-0.002	-0.001	-0.001	0.000	0.000	0.001	0.000	-0.003	-0.006	-0.010	-0.012	-0.013	-0.011	-0.008	-0.005	-0.001	0.000



DEAD LOAD DEFLECTIONS																				
Beam	℄ Pier No. 2	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Pier No. 3	0.1 L	0.2 L	0.3 L	0.4 L	0.5 L	0.6 L	0.7 L	0.8 L	0.9 L	℄ Brg. Abut. No. 2
A	0.000	-0.002	-0.007	-0.013	-0.017	-0.018	-0.018	-0.014	-0.009	-0.004	0.000	0.001	0.001	0.001	0.000	-0.001	-0.001	-0.001	-0.001	-0.001	0.000
B	0.000	-0.001	-0.004	-0.008	-0.010	-0.011	-0.011	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	0.000	0.000
C	0.000	-0.001	-0.004	-0.007	-0.010	-0.011	-0.010	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	0.000	0.000
D	0.000	-0.001	-0.004	-0.007	-0.010	-0.011	-0.010	-0.009	-0.006	-0.003	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	0.000	0.000
E	0.000	-0.001	-0.004	-0.007	-0.009	-0.010	-0.010	-0.008	-0.005	-0.002	0.000	0.001	0.001	0.000	0.000	-0.001	-0.001	-0.001	-0.001	0.000	0.000
F	0.000	-0.002	-0.006	-0.010	-0.013	-0.014	-0.013	-0.011	-0.007	-0.003	0.000	0.001	0.000	0.000	-0.001	-0.001	-0.002	-0.002	-0.001	-0.001	0.000



BEAM DEAD LOAD DEFLECTION DIAGRAM

Ordinates are in feet and are at tenth points of spans, measured along ℄ Beams.

DEFLECTION NOTES:

Do not camber the new steel beams. Any natural mill camber that the beams have retained shall be placed up.

Dead Load Deflection ordinates shown represent the amount of deflection due to the slab pour and barrier rails.

Provide for beam deflections by adding concrete dead load deflections to plan grade. Increase or decrease the depth of concrete fillets over the beams, based on field surveys, to obtain the required roadway surface elevations.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

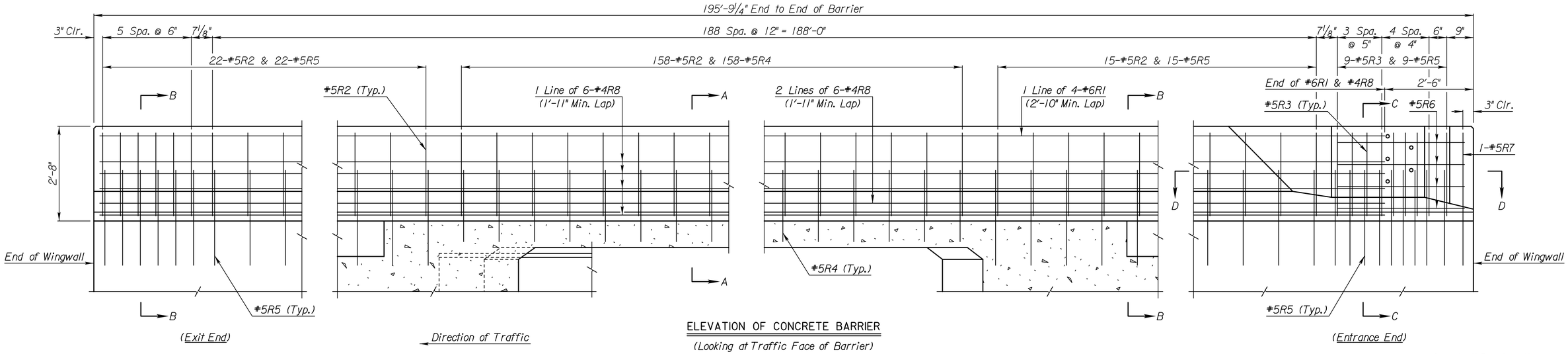
Br. No. 43.930 SB

DEAD LOAD DEFLECTIONS

SHEET NO.	OF	SCALE		APP'D	
DESIGNED	JWM	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	SHH	DETAIL CK.	JWM	QUAN. CK.	CADD CK.

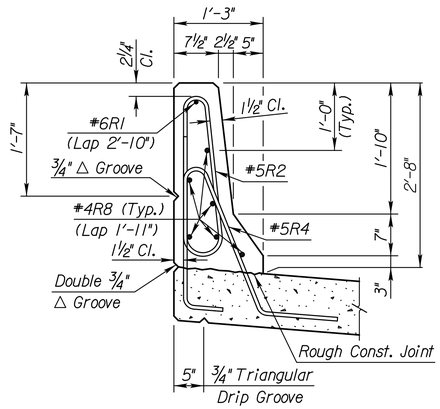
Plotted By: JEHarris | Plot Location:
File: KTA44-56-Deflections.dgn
Plot Date: 12-SEP-2024 21:48

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	82	134

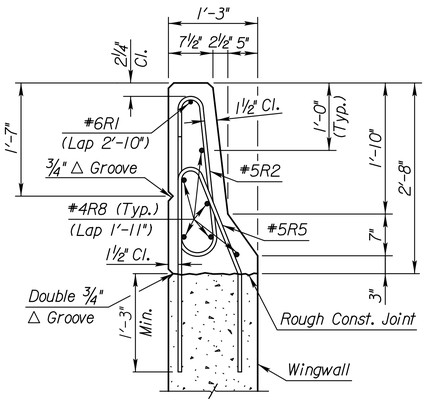


ELEVATION OF CONCRETE BARRIER

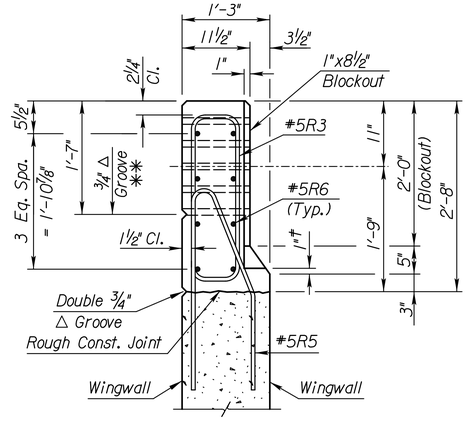
(Looking at Traffic Face of Barrier)



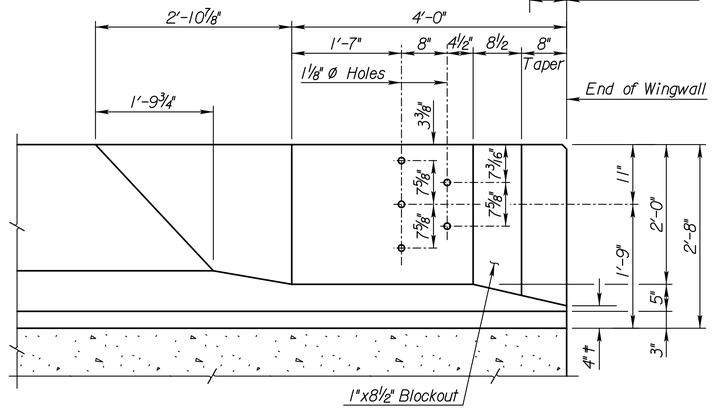
SECTION A-A



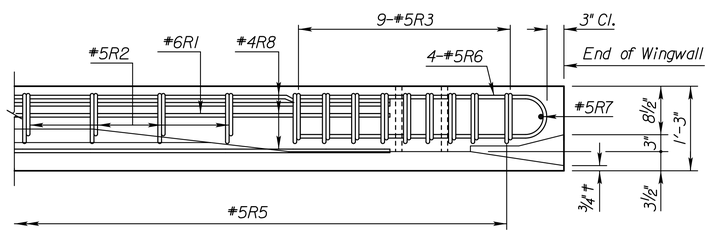
SECTION B-B



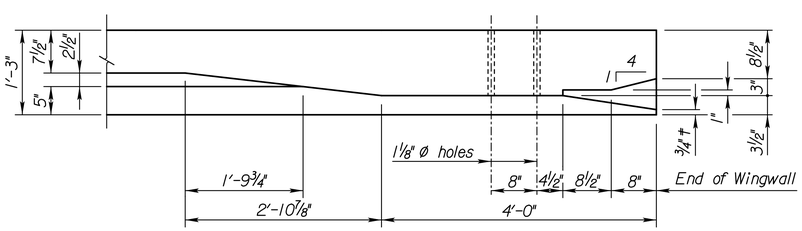
SECTION C-C



ELEVATION OF BARRIER ENTRANCE END



SECTION D-D



PLAN OF BARRIER ENTRANCE END

Direction of traffic

Notes:

For Vertical Grooves at Piers, see Sheet No. 83.

** Eliminate the ¾" Triangular Groove if it conflicts with the 1⅛" Ø hole.

† Adjust #5R7 bars slightly to clear 1⅛" Ø holes, if necessary.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

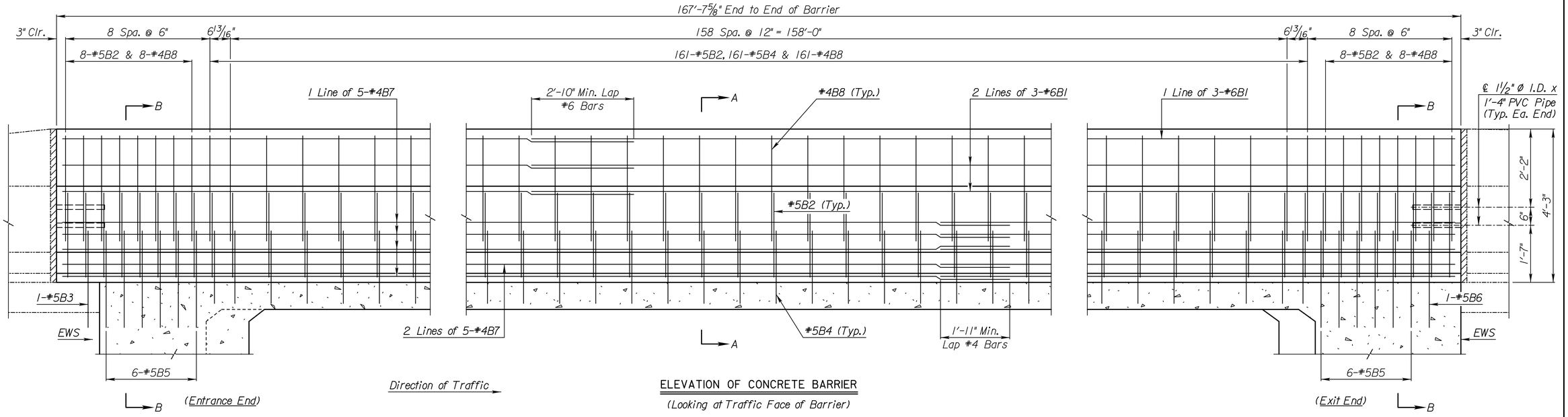
Br. No. 43.930 SB

32" F4 BARRIER RAIL DETAILS

SHEET NO. OF	SCALE		APP'D	
DESIGNED	DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK.	JMB	QUAN. CK.	CADD CK.

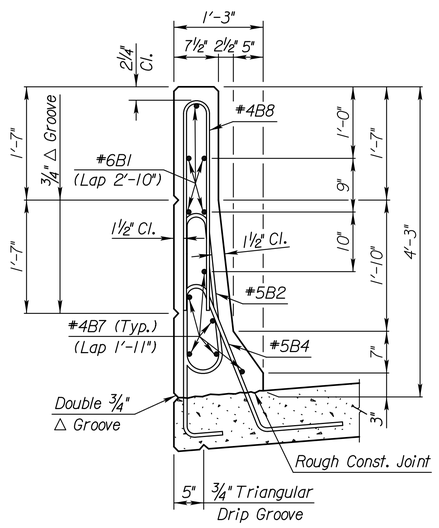
Plotted By: JEHarris | Plot Location:
File: KTA44-57-Barrier1.dgn
Plot Date: 12-SEP-2024 21:48

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	83	134

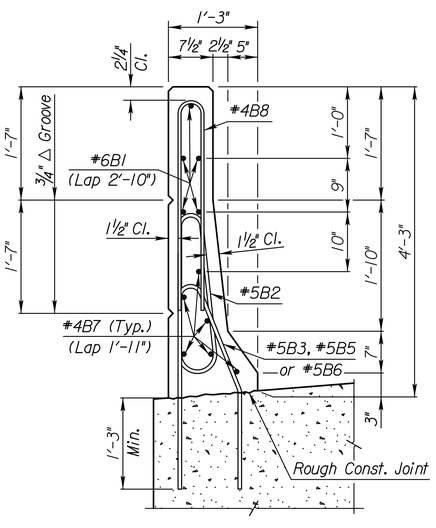


ELEVATION OF CONCRETE BARRIER

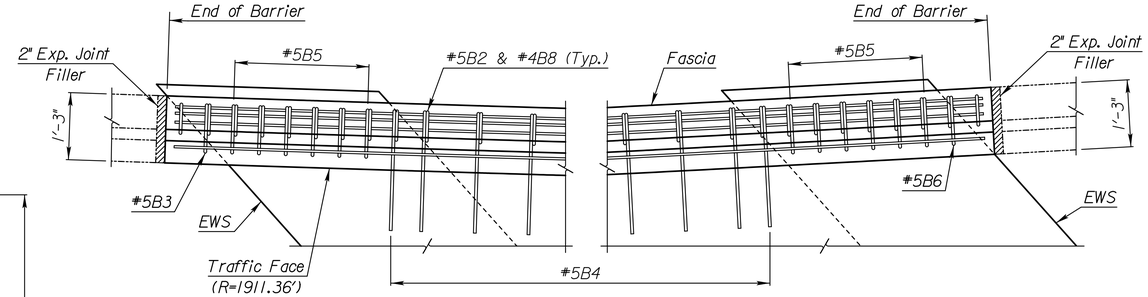
(Looking at Traffic Face of Barrier)



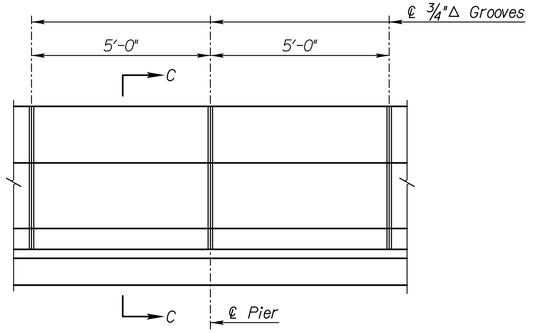
SECTION A-A



SECTION B-B



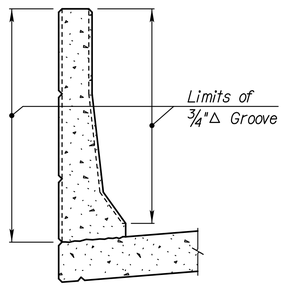
END PLAN



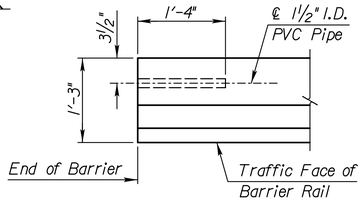
VERTICAL GROOVES AT PIERS

(Looking at Traffic Face)

(51" Barrier Shown, 32" Barrier Similar)



SECTION C-C



PARTIAL PLAN OF BARRIER END

(Showing details for PVC insert)

(Typical Both Ends of Barrier Rail)

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 SB

51" F4 BARRIER RAIL DETAILS

SHEET NO. OF		SCALE		APP'D	
DESIGNED		DETAILED	JTK	QUANTITIES	CADD
DESIGN CK.		DETAIL CK.	JMB	QUAN. CK.	CADD CK.

Plotted By: dEHarris | Plot Location:

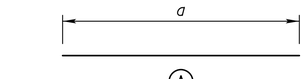
File: KTA44-58-Barrier2.dgn

Plot Date: 12-SEP-2024 21:48

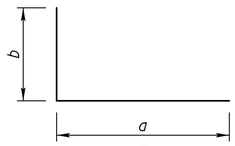
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	84	134

BILL OF REINFORCING STEEL
GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
ABUTMENT NO. 1 (EPOXY COATED)	SA1	A	8	8	57'-0"	57'-0"					
	SA27	A	7	11	11'-8"	11'-8"					
	SA3	A	5	6	57'-0"	57'-0"					
	SA4	A	5	2	39'-6"	39'-6"					
	SA5	A	5	2	28'-10"	28'-10"					
	SA6	A	5	2	18'-2"	18'-2"					
	SA7	A	5	4	7'-6"	7'-6"					
	SA13	C	5	10	18'-6"	3'-6"	7'-6"	7'-6"			
	SA14	C	5	8	20'-0"	3'-6"	8'-3"	8'-3"			
	SA15	C	5	8	21'-4"	3'-6"	8'-11"	8'-11"			
	SA16	C	5	8	22'-6"	3'-6"	9'-6"	9'-6"			
	SA17	C	5	9	24'-0"	3'-6"	10'-3"	10'-3"			
	SA18	C	5	2	14'-5"	3'-6"	6'-11"	4'-0"			
	SA19	C	5	1	15'-8"	3'-6"	7'-6"	4'-8"			
	SA20	C	5	1	16'-11"	3'-6"	8'-1"	5'-4"			
	SA21	C	5	2	18'-4"	3'-6"	8'-10"	6'-0"			
	SA22	C	5	49	5'-2"	3'-6"	10"	10"			
	SA29	A	5	9	9'-9"	9'-9"					
	SA30	A	5	11	11'-2"	11'-2"					
	SA31	A	5	9	10'-3"	10'-3"					
ABUTMENT NO. 2 (EPOXY COATED)	NA1	A	8	16	33'-1"	33'-1"					
	NA27	D	7	11	6'-9"	4'-0"	2'-9"	2'-7"	11 3/8"		
	NA3	A	5	12	32'-2"	32'-2"					
	NA4	A	5	2	41'-7"	41'-7"					
	NA5	A	5	2	30'-11"	30'-11"					
	NA6	A	5	2	20'-3"	20'-3"					
	NA7	A	5	4	9'-7"	9'-7"					
	NA13	C	5	12	18'-4"	3'-6"	7'-5"	7'-5"			
	NA14	C	5	8	19'-10"	3'-6"	8'-2"	8'-2"			
	NA15	C	5	8	21'-2"	3'-6"	8'-10"	8'-10"			
	NA16	C	5	8	22'-6"	3'-6"	9'-6"	9'-6"			
	NA17	C	5	12	24'-2"	3'-6"	10'-4"	10'-4"			
	NA18	C	5	2	14'-5"	3'-6"	6'-11"	4'-0"			
	NA19	C	5	1	15'-8"	3'-6"	7'-6"	4'-8"			
	NA20	C	5	1	16'-11"	3'-6"	8'-1"	5'-4"			
	NA21	C	5	2	18'-4"	3'-6"	8'-10"	6'-0"			
	NA22	C	5	54	5'-2"	3'-6"	10"	10"			
	NA29	A	5	9	9'-8"	9'-8"					
	NA30	A	5	11	11'-4"	11'-4"					
	NA31	A	5	4	10'-4"	10'-4"					



(A)



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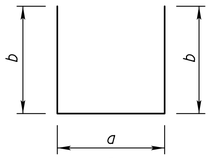

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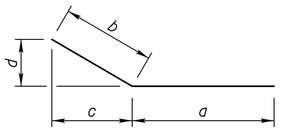

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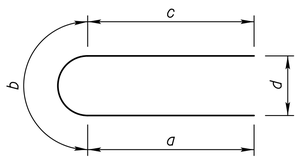
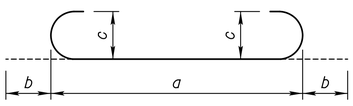
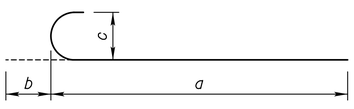


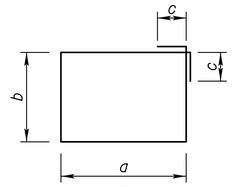
(E)



(F)



(G)



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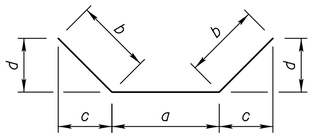
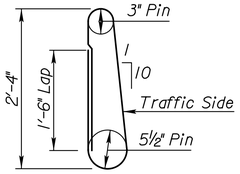
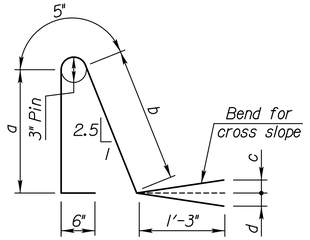


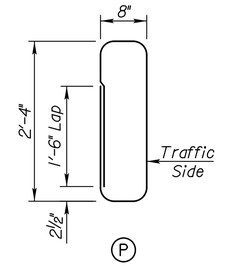
(L)



(M)

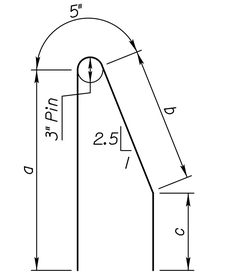


(N)

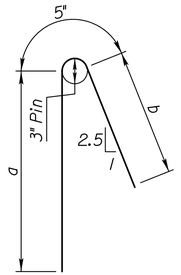


(P)

BENDING DIAGRAMS



(Q)



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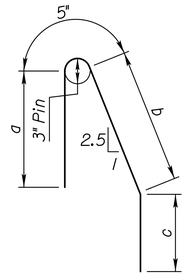
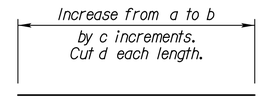
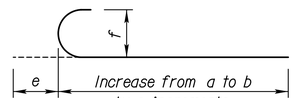


(S)



(T)



(Z)

Notes:

(A) denotes bending mark.

Dimensions are out to out, unless noted otherwise.

No allowance for bend curvature is to be made except for standard hook and radii in excess of same.

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY
Br. No. 43.930 SB

BILL OF REINFORCING STEEL

SHEET NO. OF	SCALE	APP'D	
DESIGNED	DETAILED JTK	QUANTITIES	CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK.	CADD CK.

Plotted By: JEHarris
File: KTA44-59-Barlist1.dgn
Plot Date: 12-SEP-2024 21:48
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	8082	2024	85	134

BILL OF REINFORCING STEEL GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
PIER NO. 1 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	12	3'-0"	3'-0"					
	PB5	C	5	38	9'-0"	2'-2"	3'-5"	3'-5"			
	PB6	A	4	8	9'-8"	9'-8"					
	PB7	A	4	6	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			
PIER NO. 2 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	20	3'-0"	3'-0"					
	PF1	A	6	6	9'-2"	9'-2"					
	PF2	A	6	6	8'-7"	8'-7"					
	PB5	C	5	38	9'-0"	2'-2"	3'-5"	3'-5"			
	PB6	A	4	8	9'-8"	9'-8"					
	PB7	A	4	6	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			
	PF3	H	4	19	11'-1"	3'-2"	2'-0"	4½"			
	PF4	C	4	6	5'-7"	3'-1"	1'-3"	1'-3"			
PIER NO. 3 (UNCOATED)	PB1	F	8	4	11'-6"	9'-8"	11"	11"			
	PB2	A	8	4	9'-8"	9'-8"					
	PB3	F	8	4	9'-6"	7'-8"	11"	11"			
	PB4	A	8	4	7'-8"	7'-8"					
	PD1	A	6	12	3'-0"	3'-0"					
	PB5	C	5	38	9'-0"	2'-2"	3'-5"	3'-5"			
	PB6	A	4	8	9'-8"	9'-8"					
	PB7	A	4	6	7'-8"	7'-8"					
	PB8	C	4	14	4'-6"	2'-0"	1'-3"	1'-3"			

BILL OF REINFORCING STEEL GRADE 60

	Design Mark	Bending Mark	Size	No.	Length	Dimension a	b	c	d	e	f
SUPERSTRUCTURE (EPOXY COATED)	SA2	A	8	5	57'-1"	57'-1"					
	NA2	A	8	10	33'-2"	33'-2"					
	SA25	A	7	6	13'-9"	13'-9"					
	SA26	A	7	4	16'-2"	16'-2"					
	NA25	A	7	6	13'-2"	13'-2"					
	NA26	D	7	5	8'-11"	6'-2"	2'-9"	2'-7"	11 3/8"		
	B1	A	6	15	57'-10"	57'-10"					
	R1	A	6	4	50'-5"	50'-5"					
	S1	A	6	131	20'-0"	20'-0"					
	B2	M	5	177	6'-6"	6'-6"					
	B3	R	5	1	4'-3"	2'-7"	1'-3"				
	B4	N	5	161	5'-11"	1'-9"	2'-0"	1¼"	--		
	B5	Q	5	12	5'-9"	2'-7"	1'-6"	1'-3"			
	B6	S	5	1	4'-3"	1'-1"	1'-6"	1'-3"			
	R2	M	5	195	6'-6"						
	R3	P	5	9	7'-6"						
	R4	N	5	157	5'-11"	1'-9"	2'-0"	--	1¼"		
	R5	Q	5	46	5'-9"	2'-7"	1'-6"	1'-3"			
	R6	E	5	4	7'-5"	3'-3¾"	9½"	3'-3¾"	6½"		
	R7	A	5	1	3'-10"	3'-10"					
	S2	A	5	270	56'-6"	56'-6"					
	S3	A	5	54	43'-0"	43'-0"					
	S4	F	5	247	45'-10"	44'-8"	7"	5"			
	S5	A	5	248	44'-8"	44'-8"					
	S6	Z	5	68	VARIES	2'-9"	44'-8"	7½"	1	7"	5"
	S7	Z	5	80	VARIES	2'-4"	44'-4"	6⅜"	1	7"	5"
	S8	T	5	68	VARIES	2'-5"	44'-4"	7½"	1		
	S9	T	5	80	VARIES	2'-0"	44'-0"	6⅜"	1		
	S10	D	5	635	6'-10"	6'-3"	7"	5"			
	S11	B	5	85	18'-0"	16'-0"	2'-0"				
	SA8	A	5	6	57'-1"	57'-1"					
	SA9	A	5	2	42'-0"	42'-0"					
	SA10	A	5	2	17'-1"	17'-1"					
	SA11	A	5	6	12'-5"	12'-5"					
	SA12	A	5	2	9'-8"	9'-8"					
	SA23	C	5	43	9'-6"	3'-6"	3'-0"	3'-0"			
	SA24	B	5	6	7'-4"	3'-6"	3'-10"				
	SA28	A	5	5	19'-9"	19'-9"					
	SA32	A	5	22	3'-4"	3'-4"					
	NA8	A	5	12	32'-3"	32'-3"					
	NA9	A	5	2	43'-0"	43'-0"					
	NA10	A	5	2	19'-2"	19'-2"					
	NA11	A	5	6	12'-5"	12'-5"					
	NA12	A	5	2	11'-10"	11'-10"					
	NA23	C	5	48	9'-6"	3'-6"	3'-0"	3'-0"			
	NA24	B	5	6	7'-4"	3'-6"	3'-10"				
	NA28	A	5	5	19'-4"	19'-4"					
	NA32	A	5	20	3'-6"	3'-6"					
	B7	A	4	30	35'-1"	35'-1"					
	B8	E	4	177	6'-1"	2'-9"	7"	2'-9"	4½"		
	R8	A	4	36	33'-10"	33'-10"					

NO.	DATE	REVISIONS	BY	APP'D
4				
3				
2				
1				

KANSAS TURNPIKE AUTHORITY

Br. No. 43.930 SB

BILL OF REINFORCING STEEL

SHEET NO. OF	SCALE	APP'D
DESIGNED	DETAILED JTK	QUANTITIES CADD
DESIGN CK.	DETAIL CK. JMB	QUAN. CK. CADD CK.

Plotted By: JEHarris | Plot Location:
File: K7A44-60-Barlist2.dgn
Plot Date: 12-SEP-2024 21:49