06/17/2025

MEMORANDUM TO: JASON VAN NICE, P.E., CHIEF
BUREAU OF CONSTRUCTION AND MATERIALS

We are handing you final plans for the project noted below for the July 2026 letting.

Shane Albritton/Steven Cross
Design Squad

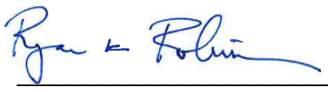
059-050 KA-3901-01 BRF-A390(101)	Labette	0.61 Miles
Project Number	County	Length

REMARKS:

The scope of improvements includes grading, surfacing, approach roadway, bridge, pavement markings, signing and seeding.

This project involves the replacement of Bridge #15 (UP Railroad) located 1.1 Miles North of US400/Main Street.

APPROVED:


For Steven Cross

STEVEN CROSS, P.E.
PMC COORDINATING ENGINEER

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	1	151

STATE OF KANSAS

DEPARTMENT OF TRANSPORTATION

KDOT PROJECT NO. 059-050 KA-3901-01
FEDERAL AID PROJECT NO. BRF-A390(101)

PLAN AND PROFILE OF PROPOSED

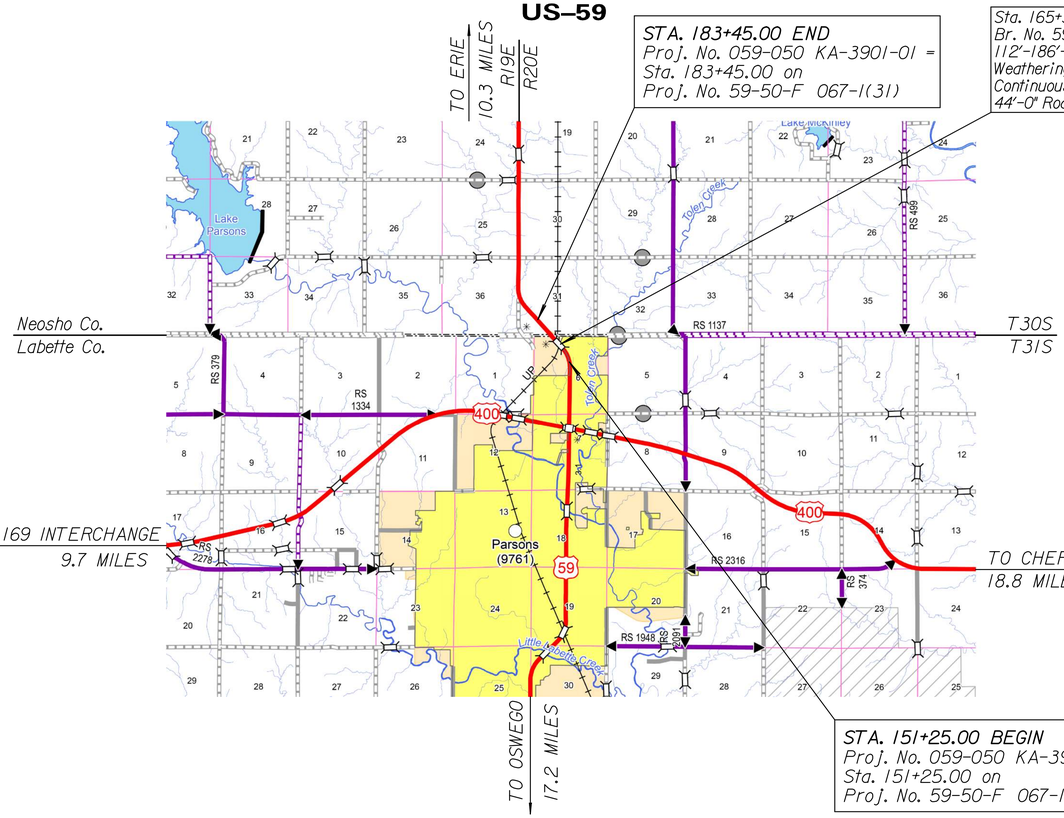
STATE HIGHWAY

FEDERAL AID PROJECT
LABETTE COUNTY
US-59

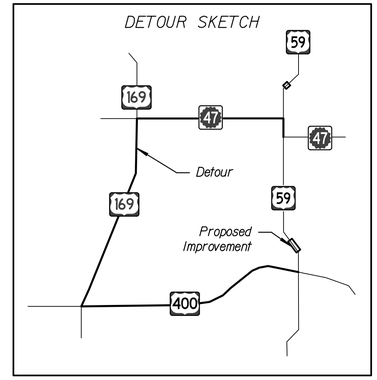
GRADING AND SURFACING (ASPHALT)
BRIDGE
SEEDING
SIGNING AND PAVEMENT MARKING

INDEX OF SHEETS

1	Title Sheet
2	Signature Seal Sheet
3	Typical Sections
4	Foundation Treatment and Compaction of Earthwork
5	Salvaged Topsoil
6 - 13	Plan and Profile
14	R/W Survey Monument
15	Intersection Details
16 - 18	Approach Slab Details
19 - 26	Guardrail Details
27 - 33	Pipe Culvert Details
34 - 67	Br. No. 59-50-35.29 (097)
68	Summary of Quantities
69	Project Surfacing
70 - 79	Temporary Erosion and Pollution Control
80	Seeding
81 - 98	Signing Plans Details
99 - 101	Pavement Marking Plans and Details
102	Construction Sequencing
103 - 109	Detour Plans
110 - 116	Traffic Control
117 - 151	Cross Sections



SCALE 1" = 1 MILE



US-59
DESIGN DESIGNATION

AADT(2023)	4500
AADT(2043)	6000
DHV	10%
D	55%
T	13.5%
V	65 mph
C of A	PARTIAL
Clear Zone	34 Ft.

CONVENTIONAL SIGNS

COUNTY LINE		CENTER LINE OF PROJECT	50 1
CITY LIMITS		TERRACE	
STATE OR NATIONAL LINE		CULVERTS	
TOWNSHIP, SECTION or GRANT LINE		DROP INLET & STORM SEWER	
PROPERTY LINE	℄	ACCESS CONTROL	
HIGHWAY FENCE		POWER POLE	
EXISTING FENCE		TELEPHONE POLE	
GUARDRAIL		MARSH	
CONSTRUCTION LIMITS		HEDGE	
RIGHT OF WAY LINE		TREES	
TRAVELED WAY		PROFILE ELEVATION	1172.8
RAILROADS		STREAM or CREEK	

GROSS LENGTH OF PROJECT	3,220.0	FT. (Includes Equations)	
EXCEPTIONS			
NET LENGTH OF PROJECT	3,220.0	FT.	0.610 MILES
NET LENGTH OF BRIDGES	413.5	FT.	0.078 MILES
NET LENGTH OF ROAD	2806.5	FT.	0.532 MILES

HDR

PLANS PREPARED AND SUBMITTED BY
HDR ENGINEERING, INC.

NOTE:
TRAFFIC TO BE CARRIED AROUND CONSTRUCTION ON A STATE ROUTE DETOUR AS SHOWN ON THE DETOUR SKETCH. THE DETOUR SHALL BE ON US-400, US-169, K-47, AND US-59.

Approved: Jun 17, 2025
Date

State Transportation Engineer

By:
Director, Division of Program & Project Management

KANSAS DEPARTMENT OF TRANSPORTATION

	BY	DATE
SURVEY	BARTLETT & WEST - SHANKS	2015
CADD TECHNICIAN	HDR - B.HORNER	2022
DESIGNERS	HDR - B.BEAMER (ROAD), D.BARRETT (BRIDGE)	2022
SQUAD	GARVER (PMC) - F.BLAKEMORE, S.ALBRITTON	2022

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rft-01.dgn

KDOT Graphics Certified 06-17-2024

Sh. No. 1

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	2	151

 Name: Braden R. Beamer Co. Name: HDR Engineering Plan Section: 1-33, 68-151	 Name: Darin L. Splittgerber Co. Name: HDR Engineering Plan Section: 34-67						

NO.	DATE	REVISIONS	BY	APP'D
01	01-24-18	Initial Release	A.L.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

Signature Seal Sheet

RD048

FHWA APPROVAL		APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

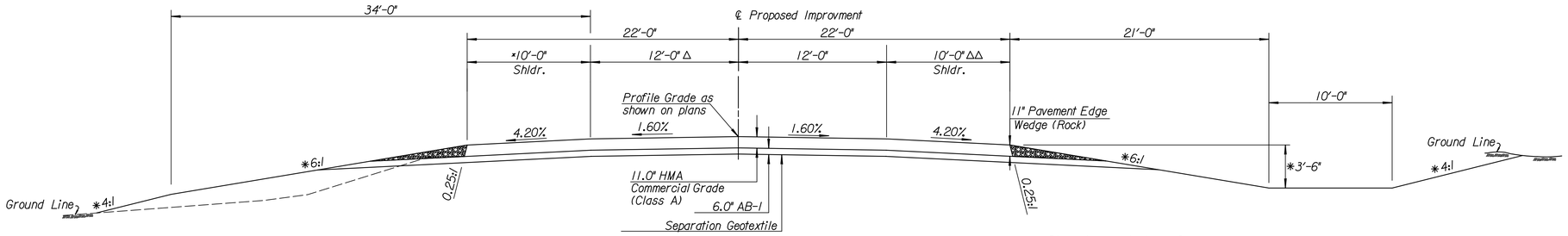
KDOT Graphics Certified 04-18-2022

Sh. No. 2

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-10-25
File : c:\pwworking\central01\d2186061\KA390101rss048-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	3	151



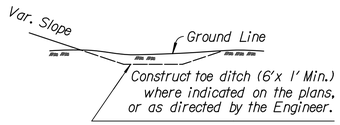
FILL SECTION

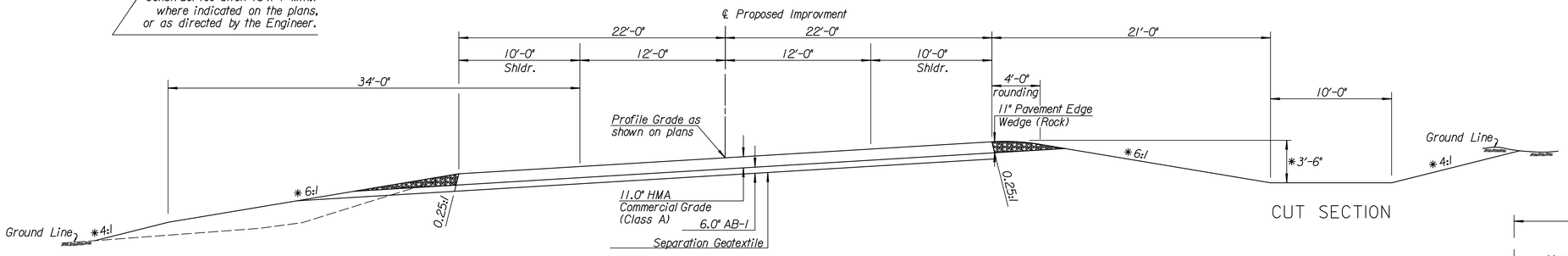
US-59 TYPICAL SECTION

STA. 163+19.00 TO STA. 163+26.27
STA. 167+39.73 TO STA. 183+45.00

* Dimensions and slopes for standard ditches and fills. See plans and cross-sections for variations

CUT SECTION



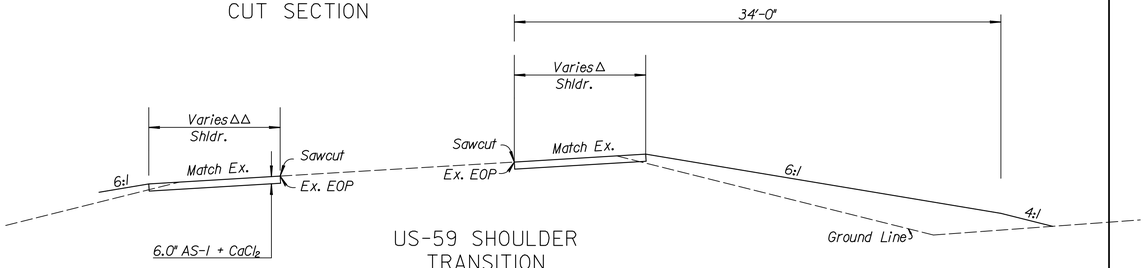


FILL SECTION

CUT SECTION

US-59 TYPICAL SECTION
SUPERELEVATED SECTION

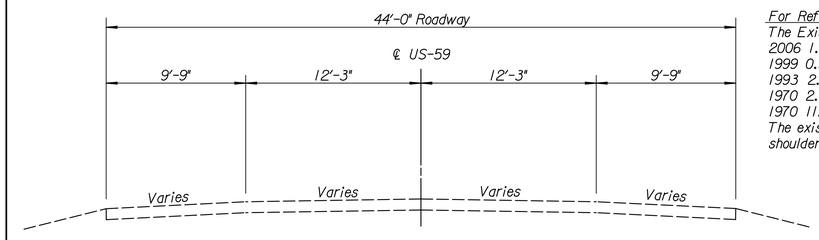
STA. 151+25.00 TO STA. 163+19.00
Δ VARIES FROM 16.53' SB AT STA. 151+25.00 TO 12.0' AT STA. 154+20.00
ΔΔ VARIES FROM 9.0' AT STA. 151+25.00 TO 10.0' AT STA. 151+65.00
* VARIES FROM 9.28' AT STA. 151+25.00 TO 10.0' AT STA. 151+45.00



US-59 SHOULDER TRANSITION TYPICAL SECTION

STA. 149+10.00 TO STA. 151+25.00
STA. 183+45.00 TO STA. 185+00.00

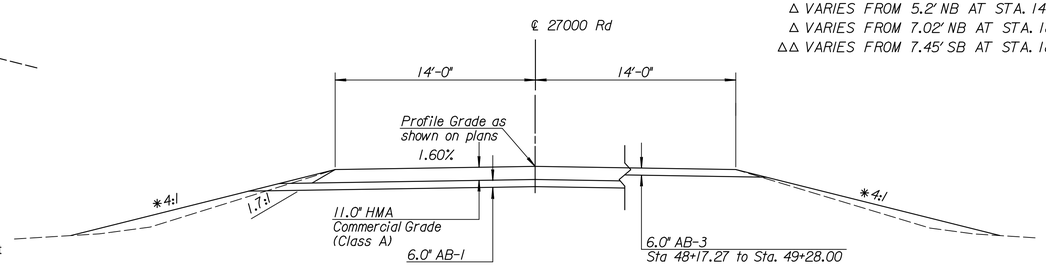
Δ VARIES FROM 5.2' NB AT STA. 149+10.00 TO 9.0' AT STA. 151+25.00
Δ VARIES FROM 7.02' NB AT STA. 183+45.00 TO 6.87' AT STA. 185+00.00
ΔΔ VARIES FROM 7.45' SB AT STA. 183+45.00 TO 7.44' AT STA. 185+00.00



EXISTING SECTION
FOR INFORMATION ONLY

The existing roadway consists of approximately 16.5" of HMA and has 10.0' composite shoulder consisting of 3.0" wide HMA and 7.0" wide aggregrate.

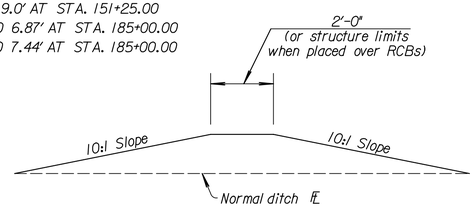
For Reference Only
The Existing US-59 roadway consists of the following:
2006 1.0" x 24' SM-9.5A
1999 0.5" x 24' Chip Seal
1993 2.0" x 24' Hot Recycle
1970 2.0" x 24' HM-3
1970 11.0" x 24" ACB-3
The existing roadway consists of approximately 16.5" of HMA and has 10.0' composite shoulders consisting of 3.0" wide HMA and 7.0" wide aggregate.



WEST & EAST 27000 RD TYPICAL SECTION

STA. 48+17.27 TO STA. 51+55.00

Alignment	Sta. P.I. Curve	Curve Radius (ft)	Design Speed	Super %	Transition - (Lin.Ft.) L	A	B	Remarks
US-59	154+62.50	1909.84	65 mph	7.6	212	140.84	71.16	See Profile Sht. 9
West 27000 Rd.	47+60.90	405.61	20 mph	N.C.				Low Speed Urban, Match Ex. See Profile Sht.12
East 27000 Rd	51+16.50	110.00	20 mph	N.C.				Low Speed Urban, Match Ex. See Profile Sht.13

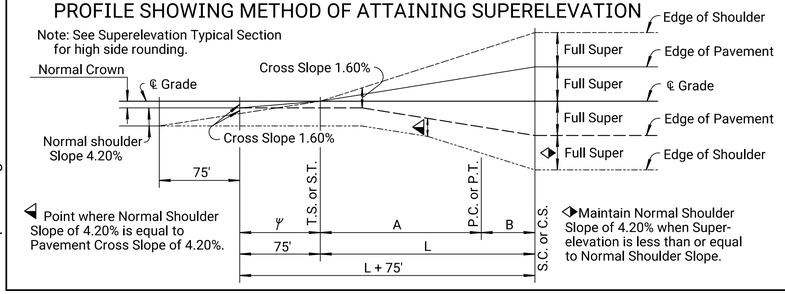


SKETCH OF DITCH PLUG

NOTE:
Intersection of all slope lines shall be softened and rounded for pleasing appearance. Ditch plugs within the appropriate clear zone shall have side slopes of 10:1 or flatter.

Ψ Transition - Introduce 4'-0" Rounding.

PROFILE SHOWING METHOD OF ATTAINING SUPERELEVATION



KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION

US-59 & 27000 RD

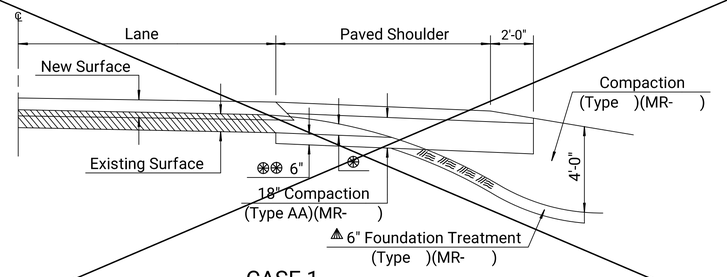
KDOT Graphics Certified 06-17-2024 Sh. No. 3

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rts-01.dgn

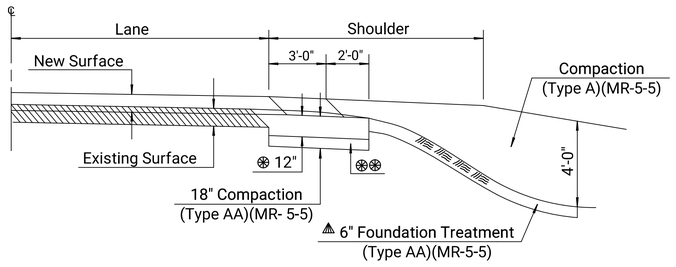
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	4	151

REHABILITATION



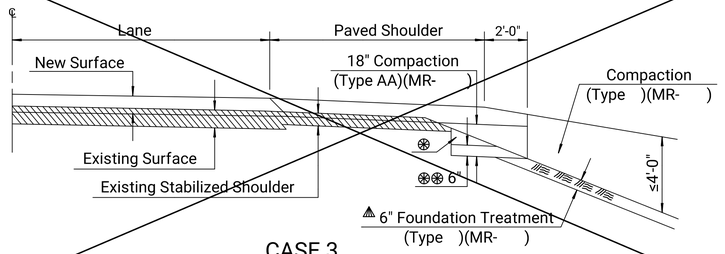
CASE 1

Overlay with Paved Shoulder



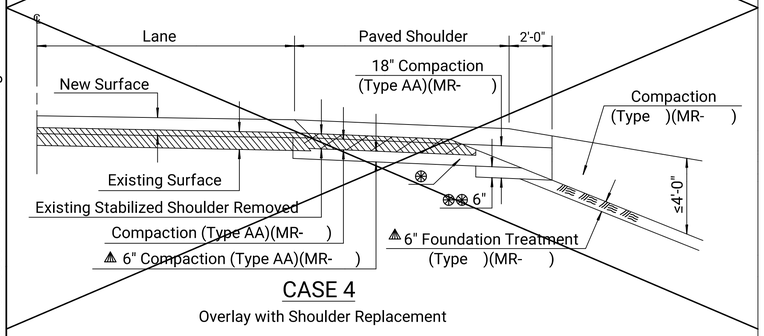
CASE 2

Overlay with Composite Shoulder



CASE 3

Overlay with Existing Paved Shoulder



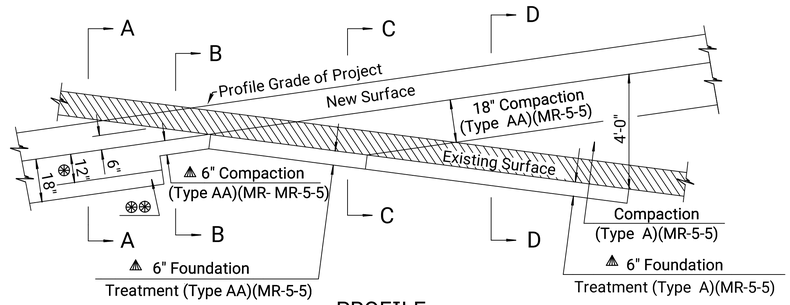
CASE 4

Overlay with Shoulder Replacement

❋ Excavation thru Cuts not Subgraded
❋❋ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.

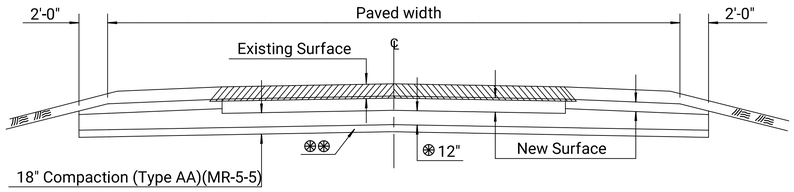
Note: These are 4 general cases. Specific compaction requirements are determined on a project-by-project basis.

RECONSTRUCTION

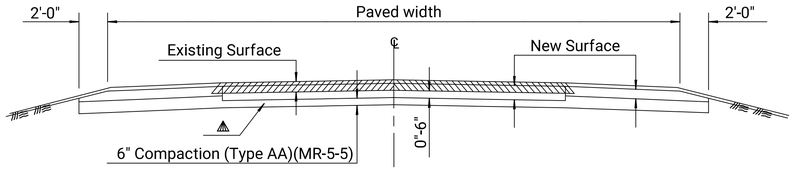


PROFILE

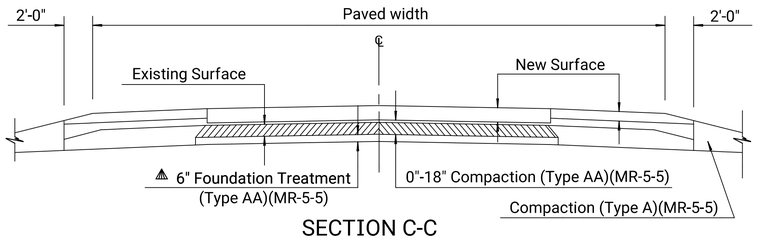
❋ Excavation thru Cuts not Subgraded
❋❋ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



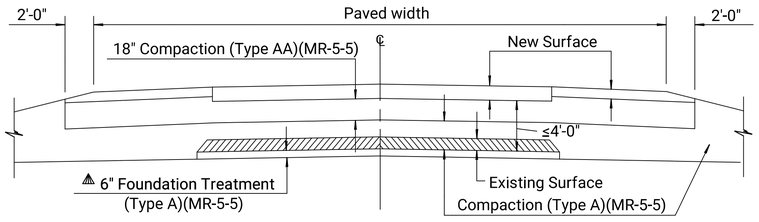
SECTION A-A



SECTION B-B

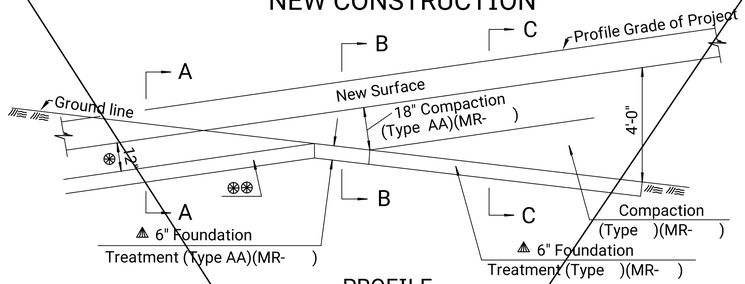


SECTION C-C



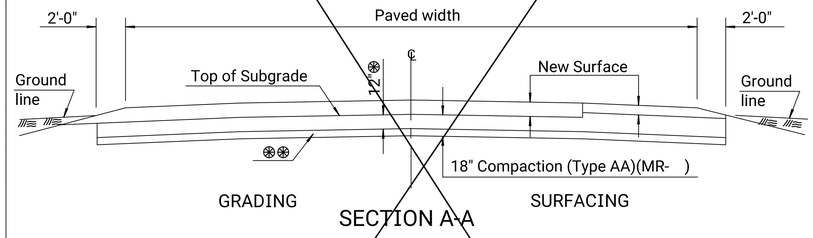
SECTION D-D

NEW CONSTRUCTION

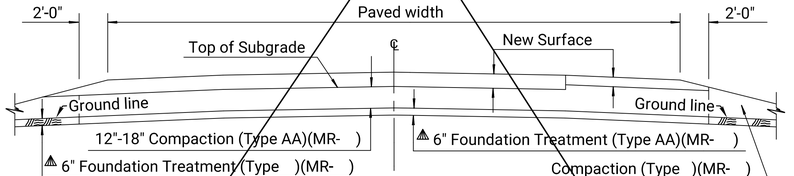


PROFILE

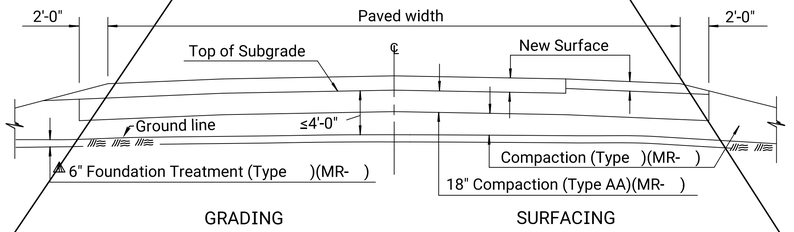
❋ Excavation thru Cuts not Subgraded
❋❋ The lower 6" of Compaction is subsidiary.
⚠ Compaction of this material shall be subsidiary.



SECTION A-A



SECTION B-B



SECTION C-C

General Note

For materials designated to be subgraded,compaction of soils, including shales, designated for backfill refer to Standard Drawing RD605A for details.

Unless otherwise noted on the Plans, compact all embankment, including side roads and entrances.

NO.	DATE	REVISIONS	BY	APP'D
05	10-17-11	Revised General Note	S.W.K.	J.O.B.
04	01-05-10	Added additional subsidiary comp.	S.W.K.	J.O.B.
03	02-16-05	Redrawn, Rev. Recon. Sec. C-C & D-D	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

FOUNDATION TREATMENT & COMPACTION OF EARTHWORK

~~RD605~~

FHWA APPROVAL	12-05-11	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 04-25-2022 Sh. No. 4

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rss605-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	5	151

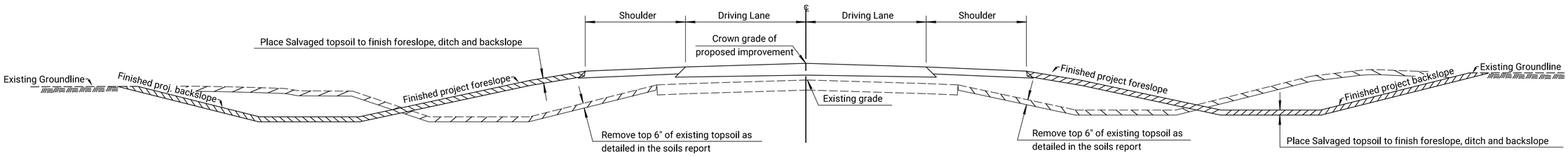
Note to Designer: Acceptable Topsoil locations on a project will be detailed in the Soils Report. The locations will be used in conjunction with the plans to measure a horizontal area in Sq. Yds of "Salvaged Topsoil" within the R/W limits.

GENERAL NOTE

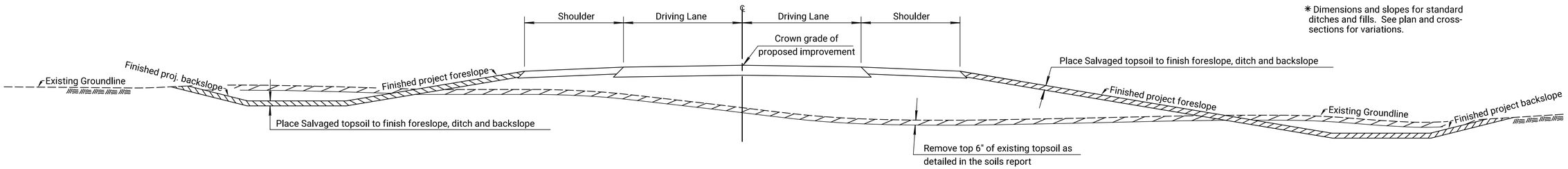
Adjust the cut and fill sections to accommodate the placement of the salvaged topsoil such that after placement the cross section will be at the final grade as shown on the plans.

Salvaging, Stockpiling and Placing Topsoil bid as "Salvaged Topsoil" in Square Yards. See KDOT Standard Specifications for details.

Soften and round the intersection of all slope lines for pleasing appearance.



RECONSTRUCTION/REHABILITATION OF EXISTING ROADWAY
(Removal and Placement of Salvaged Topsoil)



✳ Dimensions and slopes for standard ditches and fills. See plan and cross-sections for variations.

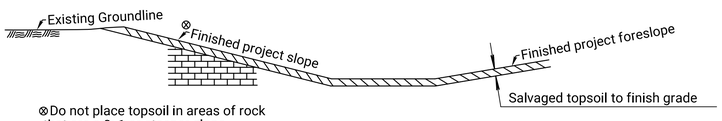
LEGEND

Topsoil to be Salvaged

Placement of Salvaged Topsoil

NEW ROADWAY ALIGNMENT
(Removal and Placement of Salvaged Topsoil)

Note: Method of showing backslope thru shallow rock or shale cuts at locations where rock protrudes a short height above the bottom of the ditch.



⊗Do not place topsoil in areas of rock that are a 3: 1 or steeper slope.

CUT SECTION

NO.	DATE	REVISIONS	BY	APP'D
01	12-16-09	Initial Release	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SALVAGED TOPSOIL

RD599A

FHWA APPROVAL		APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. S.W.K.

KDOT Graphics Certified 05-10-2022

Sh. No. 5

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss599a-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	6	151

GENERAL NOTE

THE GEOLOGICAL INFORMATION SHOWN ON THESE PLANS IS FROM STUDIES MADE IN THE FIELD AND REPRESENTS THE BEST INFORMATION AVAILABLE TO THE KANSAS DEPARTMENT OF TRANSPORTATION.

AT BORROW AREA LOCATIONS ADJACENT TO THE RIGHT OF WAY, UTILITY POLES MAY BE SET AT THE PERMANENT LOCATIONS PRIOR TO CONSTRUCTION AS APPROVED BY THE ENGINEER PROVIDED A MINIMUM VERTICAL CLEARANCE, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL SAFETY CODE, IS OBTAINED. THE CONTRACTOR WILL BE REQUIRED TO WORK AROUND THESE POLES TO COMPLETE THE WORK.

ALL BORROW TO BE OBTAINED FROM AREAS PROVIDED BY THE CONTRACTOR SHALL BE APPROVED BY THE ENGINEER, BOTH AS TO SUITABILITY OF MATERIAL AND SITE LOCATION. LOCATIONS WHICH, IN THE OPINION OF THE ENGINEER, CONTAIN UNSUITABLE MATERIAL OR WILL LEAVE AN UNSIGHTLY APPEARANCE ON THE PROJECT WILL NOT BE APPROVED.

CHANNELS SHALL BE CUT AT BOX CULVERTS (UNLESS OTHERWISE NOTED) TO FLOW LINE ELEVATIONS AND TO A WIDTH OF ONE FOOT OUTSIDE OF EACH OUTSIDE WALL AND WITH SLOPES 2 TO 1 PRIOR TO CONSTRUCTION OF THE CULVERT.

EMBANKMENT QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT SHOWN IN THE EARTHWORK QUANTITIES ARE SUBSIDIARY TO OTHER EARTHWORK ITEMS. MATERIAL FOR THE EMBANKMENT IS INCLUDED IN THE EXCAVATION QUANTITIES.

EXCAVATION REQUIRED FOR PLACING SELECT SOIL IS INCLUDED IN THE COMMON EXCAVATION QUANTITIES.

WHERE EASEMENTS ARE SHOWN ON RAILROAD RIGHT OF WAY, THE CONTRACTOR SHALL BE REQUIRED TO WORK AROUND AND NOT DISTURB THE RAILROAD COMMUNICATION OR SIGNAL POLES OR LINES.

EXCAVATION SHOWN TO BE WASTED SHALL BE WASTED ON SITES PROVIDED BY THE CONTRACTOR. THESE SITES SHALL BE APPROVED BY THE ENGINEER AS TO SUITABILITY, APPEARANCE, AND SITE LOCATION. LOCATIONS THAT, IN THE OPINION OF THE ENGINEER, WILL LEAVE AN UNSIGHTLY APPEARANCE WILL NOT BE APPROVED.

ALL TREES, HEDGE ROWS, SHELTERBELTS, AND WOODY SHRUBS NOT SHOWN TO BE REMOVED AND LOCATED BETWEEN THE CONSTRUCTION LIMITS AND THE RIGHT-OF-WAY LINE OR EASEMENT LINE SHALL BE SPARED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED. ALL TREES WITHIN THE APPROPRIATE CLEAR ZONE SHALL BE REMOVED.

AT LOCATIONS WHERE NEW ASPHALT MEETS EXISTING ASPHALT AND/OR CONCRETE, OR WHERE EXISTING ASPHALT IS TO BE REMOVED, THE EXISTING PAVEMENT IS TO BE SAW CUT TO FULL DEPTH ALONG A STRAIGHT LINE. ALL SAW CUTS SHALL BE FULL DEPTH AND SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO OTHER ITEMS IN THE CONTRACT.

ALL SOIL USED IN THE TOP 18 INCHES OF THE EMBANKMENT SHALL CONFORM TO THE FOLLOWING REQUIREMENTS: $10 \leq PI \leq 30$ AND $20 \leq LL \leq 55$. SOILS WHICH CONTAIN SUBSTANTIAL ORGANIC MATERIAL, SUCH AS THOSE CLASSIFIED AS OL OR OH ACCORDING TO THE UNIFIED SOILS CLASSIFICATION SYSTEM (ASTM D2487) SHOULD NOT BE USED TO CONSTRUCT THE EMBANKMENT OR SUBGRADE. THE ORGANIC MATERIAL MAY BE USED AS SELECT SOIL TO CAP THE SIDESLOPES OF THE EMBANKMENT.

A GROSS VMF OF 0.78 WAS USED TO COMPUTE EARTHWORK QUANTITIES FOR THIS PROJECT. THIS FACTOR INCLUDES QUANTITIES FOR INITIAL CONSOLIDATION AND SETTLEMENT.

BY	DATE
REFERENCES NOTED: B. HORNER	2022
REFERENCES CHECKED: B. BEAMER	2022

PROJECT SURVEY CONTROL

NGS OPUS was used to establish horizontal control.
NAD 1983 (2011)(EPOCH-2010) Kansas Regional Coordiante System (KRCS)

Vertical Datum: NAVD 88

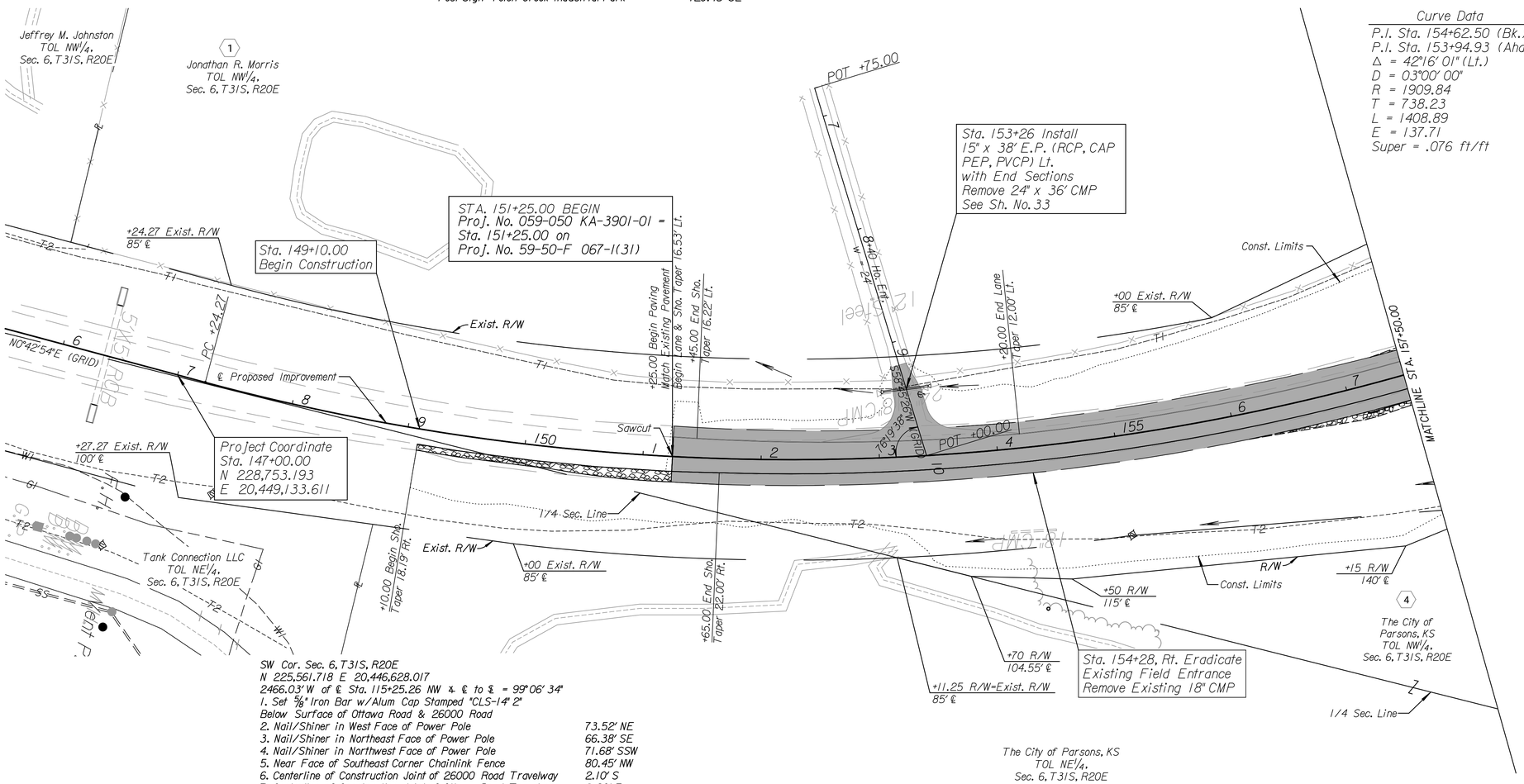
Datum Benchmark: As-Built BM at NE top of Bridge (US 160 & US 59)
KDOT Project K-5345-02 (NGVD 1929)
Elev. = 919.91' (NAVD 88 = 920.31')

P.O.T. Sta. 136+85.35
N 227,738.622 E 20,449,120.948
1. Found Mag Nail & Shiner; Replaced with 5/8" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 POT" (0.25' deep)
2. Mag Nail & Bottlecap Northwest Face Utility Pole 108.08' NE
3. Mag Nail & Bottlecap South Face Utility Pole 89.04' WNW
4. West Face of West Steel Post of Two Post Sign "Tolen Creek Industrial Park" 129.45' SE

US-59 ALIGNMENT NOTES

P.C. Sta. 147+24.27
N 228,777.461 E 20,449,133.914
1. Set 5/8" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 PC" (0.25' deep)
2. Center East Face ROW Marker 84.84' W
3. Northwest Corner Headwall, East Side US 59 93.09' SSE
4. Northeast Corner Headwall, West Side US 59 94.22' SSW

P.I. Sta. 154+28.72
N 229,515.635 E 20,449,143.128
1. Set 5/8" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 PI" (0.25' deep)
2. Mag Nail in West Face Post 2.13' SSE
3. 60D Nail in North Face 24" Diameter Elm Tree 12.82' E
4. 60D Nail Northwest Face 6" Diameter Cedar Tree 16.32' S



UTILITIES NOTE:
CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL UTILITY LINES. THE INFORMATION SHOWN IN THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE.

Utility Owners

~~W1~~ NEOSHO RURAL WATER DISTRICT 4
Troy Smith
P.O. Box 69
Galesburg, KS 66740 620-423-7833

~~W2~~ WATER - CITY OF PARSONS
Derek Clevenger
112 South 17th Street P.O. Box 1037
Parsons, KS 67357 620-421-7020

~~SS~~ SANITARY SEWER - CITY OF PARSONS
Derek Clevenger
112 South 17th Street P.O. Box 1037
Parsons, KS 67357 620-421-7020

~~E~~ EVERGY
Jennie Brown (Jennie.brown@evergy.com)
2605 North Flynn Drive
Parsons, KS 67357 620-820-8203

~~T1~~ CABLE ONE-SPARKLIGHT
2229 Broadway Avenue
Parsons, KS 67357 620-421-2510

G1 · KANSAS GAS SERVICE
Andy Frost (andrew.frost@onegas.com)
2004 Morton Avenue
Parsons, KS 67357 620-423-5231

G2 · SOUTHERN STAR GAS LINE
Michael DeGraeve (mike.Degraeve@southernstar.com)
8195 Cole Parkway
Shawnee, KS 66227 913-422-6341

~~T2~~ AT&T
Ron Maher (rx9187@att.com)
23 West 1st Street
Fort Scott, KS 620-223-9942

SW Cor. Sec. 6, T31S, R20E
N 225,561.718 E 20,446,628.017
2466.03' W of ℄ Sta. 115+25.26 NW ¼ ℄ to ℄ = 99°06' 34"
1. Set 5/8" Iron Bar w/Alum Cap Stamped "CLS-14" 2" Below Surface of Ottawa Road & 26000 Road
2. Nail/Shiner in West Face of Power Pole 73.52' NE
3. Nail/Shiner in Northeast Face of Power Pole 66.38' SE
4. Nail/Shiner in Northwest Face of Power Pole 71.68' SSW
5. Near Face of Southeast Corner Chainlink Fence 80.45' NW
6. Centerline of Construction Joint of 26000 Road Travelway 2.10' S
7. Centerline of Construction Joint of Ottawa Road Travelway 3.20' E

S ¼ Cor. Sec. 6, T31S, R20E
N 225,579.024 E 20,449,141.441
47.45' E of ℄ Sta. 115+25.26 NW ¼ ℄ to ℄ = 91°06' 34"
1. Found Mag Nail ½" Below Surface of Asphalt Pavement at US-59 & 26000 Road
2. Northwest Corner of Metal Light Pole Base Northside of Car Dealership 98.75' ESE
3. Nail/Shiner in Southeast Face of Power Pole 62.02' NE
4. Center of Existing Sanitary Sewer Manhole Lid 99.56' NNE
5. POI of Back of Curb to Car Dealership 78.54' SE
6. Centerline of Travelway for 26000 Road/Union Street

SE Cor. Sec. 6, T31S, R20E
N 225,597.664 E 20,451,755.472
1. Found ½" Rebar w/ 1" Alum Cap 6" Below Gravel at Union Road & Pratt Road
2. 60D Nail in Top Center of Corner Fence Post 45.20' NW
3. 60D Nail and Washer in Northwest Face of Power Pole 32.95' SW
4. Mag Nail and Washer in North Face Fence Corner Post 82.56' ESE
5. Nail and Washer on Top Center Fence Post 66.87' WSW
6. Mag Nail and Washer in West Face of Gate Post 84.06' SE
7. In Centerline of Travelway for Pratt Road Running North-South
8. Centerline of Travelway of Union Road 2± N

BM13 - "O" Cut SE Corner of Headwall for RCP
43.93' Lt., ℄ Sta. 146+35.12 Elev. 903.396

BM14 - 4' T-Post at Brace Post of West Right-of-Way Fence & North Side of Drive to #26074 N. Hwy 59
66.98' Lt., ℄ Sta. 153+42.43 Elev. 906.856 (Flush w/ Ground)

LEGEND
Full Depth Pavement
Aggregate Shoulders

SCALE
50' 0 50' 100'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert. 5' 0

Note: All Station & Offsets based on ℄ Proposed Improvment unless otherwise noted.

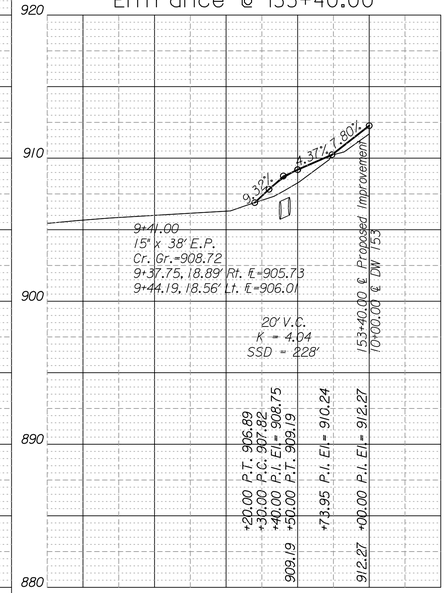
KANSAS DEPARTMENT OF TRANSPORTATION
US-59 PLAN
STA. 149+10.00 TO STA. 157+50.00

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rpl-01.dgn
Plotted : 08-23-24

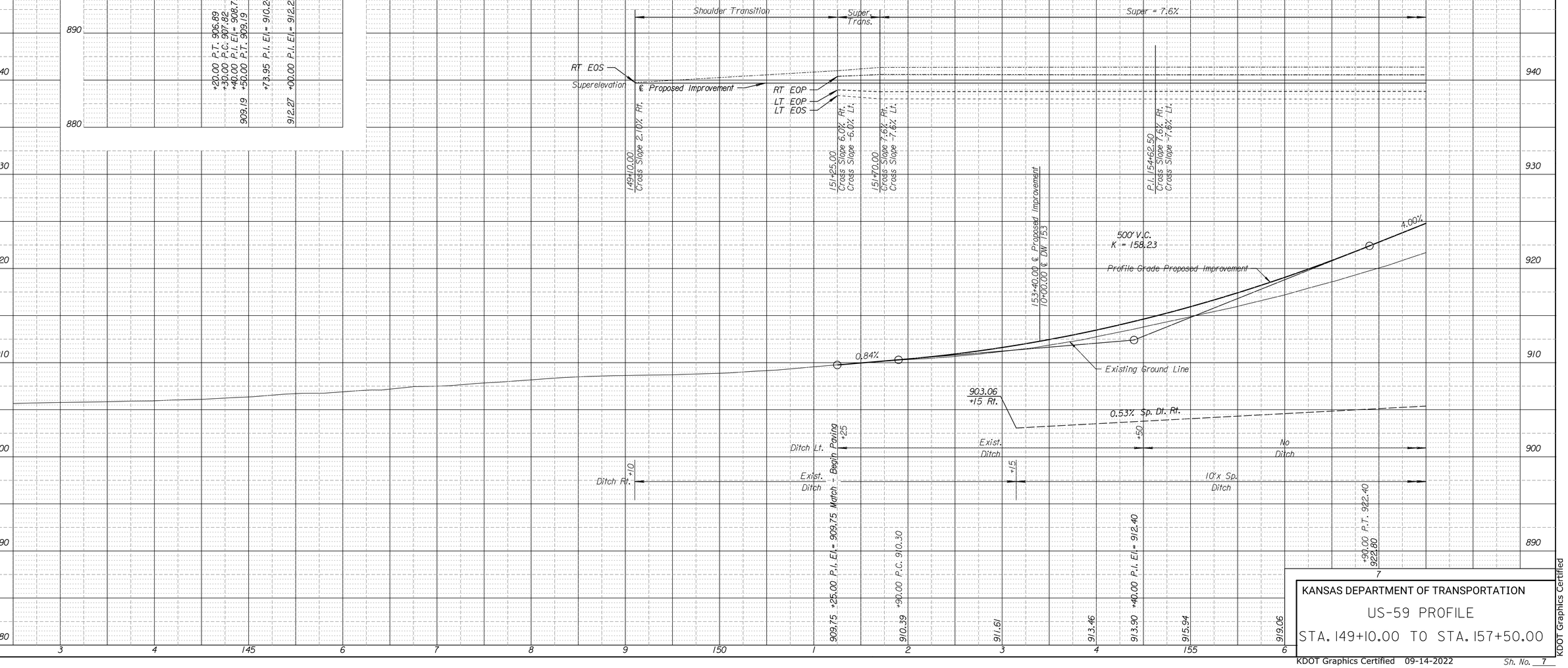
KDOT Graphics Certified 08-23-2024

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	7	151

Entrance @ 153+40.00



For Earthwork Balance Note See Sheet No. 9



KANSAS DEPARTMENT OF TRANSPORTATION

US-59 PROFILE

STA. 149+10.00 TO STA. 157+50.00

KDOT Graphics Certified 09-14-2022

Sh. No. 7

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 08-28-24
File : c:\pwworking\central01\d2186061\KA390101rpr-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	8	151

DATE	BY
2022	B. HORNER
2022	B. BEAMER

REFERENCES NOTED
REFERENCES CHECKED

US-59 ALIGNMENT NOTES

P.T. Sta. 161+33.16
N 230,068.094 E 20,448,653.460
1. Set 5/8" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 PT" (0.25' deep)
2. Mag Nail & Bottlecap in Top Guardrail Post 40.79' ESE
3. Mag Nail & Bottlecap in Top Guardrail Post 53.41' NNW
4. Mag Nail & Bottlecap in Top Guardrail Post 47.97' WNW

P.O.T. Sta. 169+00.00
N 230,641.962 E 20,448,144.816
1. Set 5/8" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 POT" (0.25' deep)
2. Mag Nail & Bottlecap in Top Guardrail Post 45.13' SSE
3. Mag Nail & Bottlecap in Top Guardrail Post 38.55' W
4. Mag Nail & Bottlecap in Top Guardrail Post 34.00' NNW

Pond

2
Union Pacific Railroad
TOL NW1/4,
Sec. 6, T31S, R20E

R.R. R/W

R.R. R/W

1
Jonathan Richard Morris
TOL NW1/4,
Sec. 6, T31S, R20E

(Future Track)

Sta. 165+33.67, Remove
Br. No. 59-50-35.29 (015)
31'-21'-46'-59'-53'-44'-31'
Reinf. Conc. Deck T-Girders,
Simple Spans (RDGS)
44'-0" Roadway, Skew 45°00'00" Lt.

3
John W. Bolander
TOL NW1/4,
Sec. 6, T31S, R20E

Sta. 168+85 to Sta. 170+64
DO NOT DISTURB
Fence

Linda F. Darkis
TOL NW1/4,
Sec. 6, T31S, R20E

+20 R/W
175' ℄

+82.29 Exist. R/W = R.R. R/W
140' ℄

+90 R/W
175' ℄

+70 R/W
155' ℄

+33.16 Exist. R/W
140' ℄

+43.13 Exist. R/W = R.R. R/W=
Temp. Esmt., 140' ℄

+00 Temp. Esmt.
140' ℄

Temp. Esmt.

+80 R/W.=
Exist. R/W, 140' ℄

+70 Temp. Esmt.
55' ℄

+52.64 Temp. Esmt.=
R.R. R/W, 55' ℄

Exist. R/W

Const. Limits

℄ Proposed Improvement

+85 R/W = Exist. R/W
140' ℄

+26.27 E.W.S.

+39.73 E.W.S.

+43.90 Perm. Esmt.=Temp.
Esmt.=R.R. R/W, 25' ℄

+78.75 Perm. Esmt.=Temp.
Esmt.=R.R. R/W, 25' ℄

Perm. Esmt.

+33.16 PT

+00.00 POT

MATCHLINE STA. 157+50.00

MATCHLINE STA. 172+50.00

N41°33'07"W (GRID)

+82.96 Perm. Esmt.=Temp.
Esmt.=R.R. R/W, 25' ℄

+00 Temp. Esmt.
55' ℄

Temp. Esmt.

+05.12 Temp. Esmt =
R.R. R/W, 55' ℄

Perm. Esmt.

+23.85 Perm. Esmt.=Temp.
Esmt.=R.R. R/W, 25' ℄

+10 R/W.=
Exist. R/W, 130' ℄

+00 R/W.=
Exist. R/W, 130' ℄

R/W

Exist. R/W

Const. Limits

+00 R/W
145' ℄

+90 Temp. Esmt.
140' ℄

+35.70 Temp. Esmt. = R.R. R/W
140' ℄

Const. Limits

Sta. 165+33.00, Const.
Br. No. 59-50-35.29 (097)
112'-186'-112'
Weathering Steel Plate Girder,
Continuous Spans (WWCC)
44'-0" Roadway, Skew 30°00'00" Lt.

+66.27 R/W = R.R. R/W
145' ℄

4
The City of
Parsons, KS
TOL NW1/4,
Sec. 6, T31S, R20E

Sec. Line

+95.18 Exist. R/W
297.03' ℄

+65.17

POT +00.22

+12.99 Exist. R/W=R.R. R/W
389.65' ℄

T2

Exist. R/W

T31S - Labette Co.
T30S - Neosho Co.

Sta. 165+92.49
DO NOT DISTURB
Exist. 3'x1' RCB

R.R. R/W

+95.33 Exist. R/W=R.R. R/W
284.92' ℄

+60.71 Exist. R/W=R.R. R/W
343.10' ℄

S1/4 Cor.
Sec. 31,
T30S, R20E

Beachner Bros., Inc.
SW1/4,
Sec. 31, T30S, R20E

LEGEND

- Full Depth Pavement
- Aggregate Shoulders
- Bridge Approach Slab

NW Cor. Sec. 6, T31S, R20E
N 230,915.964 E 20,446,662.174
1240.43' W of ℄ Sta. 172+65.17 NE ¼ ℄ to ℄ = 137° 35' 07"
1. Found 1/2" Square Bar 12" Below Gravel Surface of 27000 Road
2. Mag Nail in South Face of Easterly Wood Directional Sign Post 14.60' N
3. 60D Nail in Northwest Face of Power Pole 71.85' SE
4. 60D Nail in 8" Diameter Hackberry Tree 49.31' SSE
5. Top Steel Southern Star Gas Line Marker Post 89.25' WNW
6. +/- Centerline of Travelway for 27000 Road Running West and East
7. In Line +/- with Projected Centerline of Travelway for Ottawa Road Running South

N ¼ Cor. Sec. 6, T31S, R20E
N 230,914.526 E 20,449,128.079
1225.48' E of ℄ Sta. 172+65.17 NE ¼ ℄ to ℄ = 137° 35' 07"
1386.91' N of ℄ Tangent Ahd Sta. 154+10.95 NE ¼ ℄ to ℄ = 41° 22' 09"
1. Found 1/2" Rebar w/ Orange "Cornerstone Surveying" Cap 6" Below Gravel Surface
2. 60D Nail in Top of Fence Post 18.55' S
3. Mag Nail & Bottlecap in West Face of Power Pole 78.98' ENE
4. Mag Nail & Bottlecap in Northeast Face of Power Pole 160.00' WNW
5. Centerline of Travelway for 27000 Road 6+/-' N

NE Cor. Sec. 6, T31S, R20E
N 230,913.367 E 20,451,776.682
1. Found 1/2" Rebar 4" Below Gravel Road Intersection of
27000 Road and Pratt Road
2. Mag Nail in Brace Post 33.50' NNE
3. 60D Nail in North Gate Post 56.11' SE
4. 60D Nail in South Gate Post 58.02' SSE
5. Mag Nail and Bottlecap in Northeast Face of Power Pole 61.85' WSW
6. Centerline of Travelway of Pratt Road 5+/-' E
7. Centerline of Travelway of 27000 Road 3+/-' S
8. Southeast Corner Section 31, T30S, R20E 765.0' W

SCALE
50' 0 50' 100'
PLAN: Lat. & Long.
Note: All Station & Offsets based on ℄ Proposed Improvment unless otherwise noted.

BM15 - Top of Flat Side Right-of-Way Marker; "+" Cut in Top
139.66' Lt., ℄ Sta. 163+20.33 Elev. 910.678

BM16 - "D" Cut on Area Inlet SW Quadrant of US59 Hwy Bridge Over MKT RR
22.75' Lt., ℄ Sta. 163+63.26 Elev. 936.955

BM HCP-LB-002 - 5/8" Rebar w/ Aluminum Cap
615.21' Rt., ℄ Sta. 166+99.94 Elev. 911.832

BM20B - 4' T-Post (Flush w/ Ground) North Right-of-Way +/- & 175' West of RR Crossing and 27000 Road
273.99' Rt., ℄ Sta. 170+73.35 Elev. 910.687

BM17 - "D" Cut on Area Inlet NW Quadrant of US59 Hwy Bridge Over MKT RR
22.80' Lt., ℄ Sta. 167+04.19 Elev. 937.075

BM18 - 4' T-Post in Westerly Right-of-Way Fence Line
142.40' Lt., ℄ Sta. 166+90.98 Elev. 908.727 (Flush w/ Ground)

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 PLAN

STA. 157+50.00 TO STA. 172+50.00

KDOT Graphics Certified 12-15-2023 Sh. No. 8

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-10-25
File : c:\pwworking\central01\d2186061\KA3901101rpl-02.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	9	151

Super = 7.6%
167.37'
44.63'
45'
1.6% Shoulders Across Bridge
75'
NC
71.16'
RT E0S
RT E0P
℄ Proposed Improvement
LT E0P
LT E0S
160+62.00 Cross Slope -7.6% Rt. Cross Slope -7.6% Lt.
P.T. 161+33.16
162+29.37 Cross Slope -1.6% Rt. Cross Slope -1.6% Lt.
162+74.00 Cross Slope 0% Rt. Cross Slope -1.6% Lt.
163+19.00 Cross Slope +1.6% Rt. Cross Slope +1.6% Lt.
167+87.75 Cross Slope -1.6% Rt. Cross Slope -1.6% Lt.
168+62.75 Cross Slope -1.6% Lanes Cross Slope -4.2% Slid.

970
960
950
940
930
920
910
900
890
880

Phase 1
Phase 2
No Phase 1 Earthwork South of Bridge

† 6,123 cu. yds. Common Excavation (Assumed VMF = 0.78)
12,667 cu. yds. Common Excavation (Contractor Furnished) (Assumed VMF = 0.78)
3,004 cu. yds. Rock Excavation (As Pavement Removal) (To Be Wasted)
14,656 cu. yds. Embankment
† Includes 3,392 cu. yds. from Exist. Abutment Fill (VMF = 0.78)

† 4,824 cu. yds. Common Excavation (Assumed VMF = 0.78)
0 cu. yds. Common Excavation (Contractor Furnished) (Assumed VMF = 0.78)
2,139 cu. yds. Rock Excavation (As Pavement Removal) (To Be Wasted)
1,973 cu. yds. Embankment
† 1,371 cu. yds. to be Stockpiled for US-59 Phase 2

† 9,539 cu. yds. Common Excavation (Assumed VMF = 0.78)
7,782 cu. yds. Common Excavation (Contractor Furnished) (Assumed VMF = 0.78)
1,671 cu. yds. Rock Excavation (As Pavement Removal) (To Be Wasted)
14,230 cu. yds. Embankment
† Includes 3,392 cu. yds. from Exist. Abutment Fill (VMF = 0.78)
1,371 cu. yds. Hauled in from US-59 Phase 1

1550' V.C.
K = 194
SSD = 647'

Profile Grade Proposed Improvement
163+26.27 E.W.S
167+39.73 E.W.S
Existing Ground Line
4.00%
-4.00%
Top of Existing Rail 911.99
908.38 +10 Rt.
910.00 +70 Rt.
907.00 +15 Lt.
0.53% Sp. Dt. Rt.
-0.30% Sp. Dt. Rt.
0.30% Sp. Dt. Lt.
No Ditch
10'x Sp. Ditch
+10 Ditch Lt.
+10 Ditch Rt.
Ditch Lt. +15
Ditch Rt. +70
10'x Sp. Ditch
10'x Sp. Ditch

+85.00 P.C. 926.20
+60.00 P.I. El.= 957.20
926.79
930.46
933.61
936.24
938.36
939.96
941.04
941.61
941.80
941.66
941.19
940.21
938.72
936.70
934.17
931.13

8 9 160 1 2 3 4 165 6 7 8 9 170 1 2

KANSAS DEPARTMENT OF TRANSPORTATION
US-59 PROFILE
STA. 157+50.00 TO STA. 172+50.00

KDOT Graphics Certified 04-06-2022

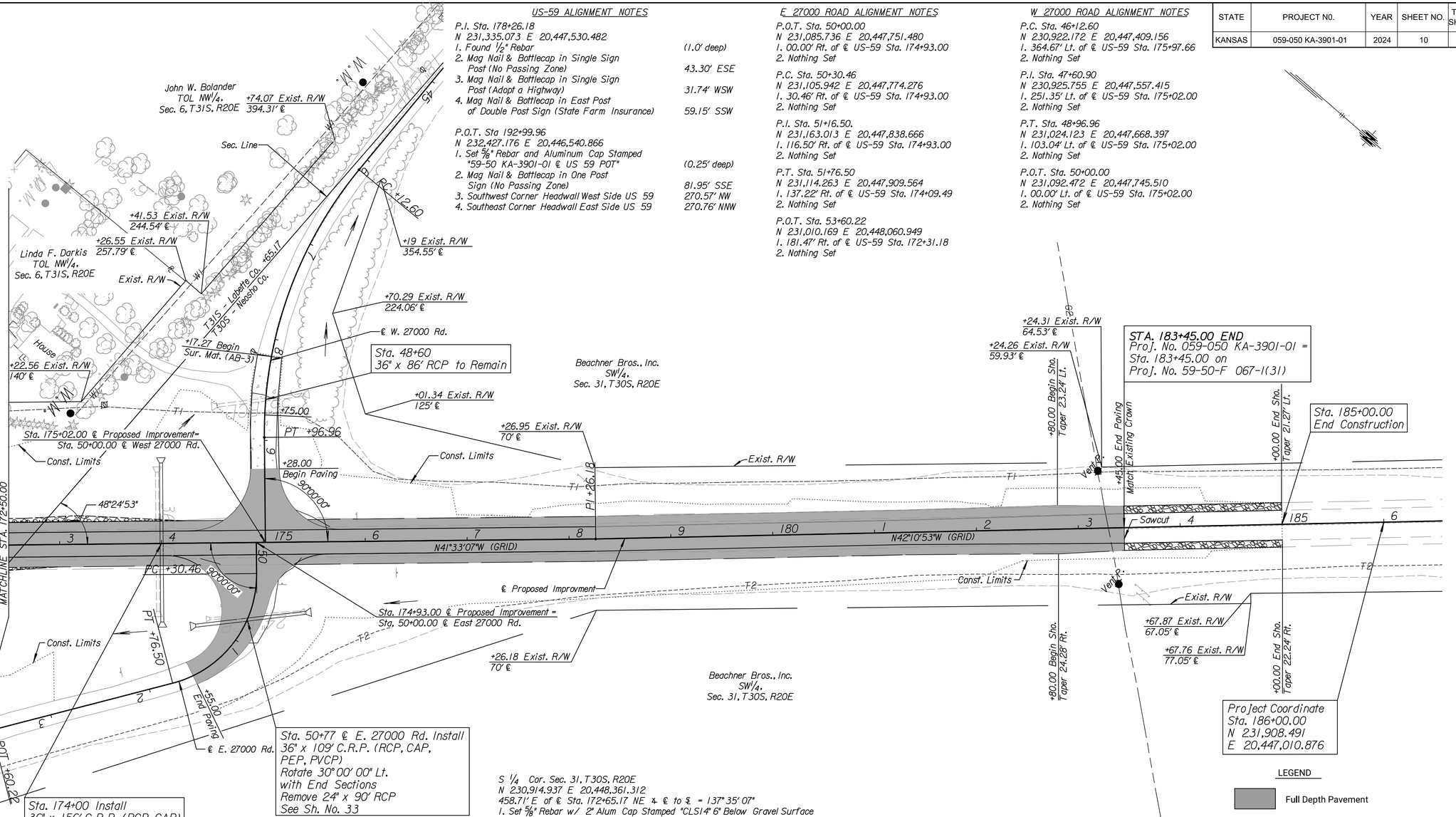
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KDOT Graphics Certified

Drawn By : BBEAMER
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Plotted :06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	10	151

REFERENCES NOTED	B. HORNER	2022
REFERENCES CHECKED	B. BEAMER	2022



Note: All Station & Offsets based on ℄ Proposed Improvment unless otherwise noted.

US-59 ALIGNMENT NOTES

P.I. Sta. 178+26.18
N 231,335.073 E 20,447,530.482
1. Found ½" Rebar (1.0' deep)
2. Mag Nail & Bottlecap in Single Sign Post (No Passing Zone) 43.30' ESE
3. Mag Nail & Bottlecap in Single Sign Post (Adopt a Highway) 31.74' WSW
4. Mag Nail & Bottlecap in East Post of Double Post Sign (State Farm Insurance) 59.15' SSW

P.O.T. Sta 192+99.96
N 232,427.176 E 20,446,540.866
1. Set ⅝" Rebar and Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 POT" (0.25' deep)
2. Mag Nail & Bottlecap in One Post Sign (No Passing Zone) 81.95' SSE
3. Southwest Corner Headwall West Side US 59 270.57' NW
4. Southeast Corner Headwall East Side US 59 270.76' NNW

E 27000 ROAD ALIGNMENT NOTES

P.O.T. Sta. 50+00.00
N 231,085.736 E 20,447,751.480
1. 00.00' Rt. of ℄ US-59 Sta. 174+93.00
2. Nothing Set

P.C. Sta. 50+30.46
N 231,105.942 E 20,447,774.276
1. 30.46' Rt. of ℄ US-59 Sta. 174+93.00
2. Nothing Set

P.I. Sta. 51+16.50.
N 231,163.013 E 20,447,838.666
1. 116.50' Rt. of ℄ US-59 Sta. 174+93.00
2. Nothing Set

P.T. Sta. 51+76.50
N 231,114.263 E 20,447,909.564
1. 137.22' Rt. of ℄ US-59 Sta. 174+09.49
2. Nothing Set

P.O.T. Sta. 53+60.22
N 231,010.169 E 20,448,060.949
1. 181.47' Rt. of ℄ US-59 Sta. 172+31.18
2. Nothing Set

W 27000 ROAD ALIGNMENT NOTES

P.C. Sta. 46+12.60
N 230,922.172 E 20,447,409.156
1. 364.67' Lt. of ℄ US-59 Sta. 175+97.66
2. Nothing Set

P.I. Sta. 47+60.90
N 230,925.755 E 20,447,557.415
1. 251.35' Lt. of ℄ US-59 Sta. 175+02.00
2. Nothing Set

P.T. Sta. 48+96.96
N 231,024.123 E 20,447,668.397
1. 103.04' Lt. of ℄ US-59 Sta. 175+02.00
2. Nothing Set

P.O.T. Sta. 50+00.00
N 231,092.472 E 20,447,745.510
1. 00.00' Lt. of ℄ US-59 Sta. 175+02.00
2. Nothing Set

S ¼ Cor. Sec. 31, T30S, R20E
N 230,914.937 E 20,448,361.312
458.71' E of ℄ Sta. 172+65.17 NE ¼ ℄ to ℄ = 137° 35' 07"
1. Set ⅝" Rebar w/ 2" Alum Cap Stamped "CLS14" 6" Below Gravel Surface of 27000 Road
2. Set Mag Nail and Bottlecap in Guard Rail Post 58.60' NE
3. Set Mag Nail and Bottlecap in Guard Rail Post 26.45' ESE
4. Set Mag Nail and Bottlecap in Stop Ahead Sign Post 157.35' WNW
5. Set Mag Nail and Bottlecap in Northwest Face of Power Pole 93.57' NE
6. Centerline of a Single Railroad Track 41.90' E
7. Centerline of Travelway for 27000 Road 7+/-' N

SW Cor. Sec. 31, T30S, R20E
N 230,912.956 E 20,445,710.943
2435.13' S of ℄ Sta. 205+42.72 SW ¼ ℄ to ℄ = 42° 04' 26"
1. Found 4"x8" Limestone w/ "+" Cut on Top, 6" Below Gravel Surface of 27000 Road
2. ¾" Rebar at the Northeast Corner of the Found Stone 0.35' NE
3. Nail and Shiner in the Southeast Face of Fence Corner Post 41.35' NW
4. Nail and Shiner in the North Face of Power Pole 40.00' SW
5. Set Nail and Bottlecap in North Face of 12" Diameter Oak Tree 68.65' SE
6. Centerline of 27000 Road 1.0+/-' S

SE Cor. Sec. 31, T30S, R20E
N 230,913.688 E 20,451,011.686
1. Found ½" Rebar 6" Below Gravel Surface at Intersection of Pratt Road and 27000 Road
2. Mag Nail in Northeast Face of Power Pole 44.15' SE
3. Set Mag Nail and Bottlecap Northeast Face of Power Pole 35.92' SW
4. Mag Nail Southwest Face of Power Pole 48.04' NE
5. Set Mag Nail and Bottlecap in the Southwest Face of Fence Post 39.00' NW
6. Centerline of Travelway of Pratt Road Running Northerly 4+/-' E
7. Centerline of Travelway for 27000 Road Running West and East 3+/-' S
8. ½" Rebar at Northeast Corner Sec6, T31S, R20E 765.00' E

BM19 – Top of Flat Side Right-of-Way Marker; "+" Cut in Top SW Quadrant of US59 Hwy and 27000 Road
139.87' Lt., ℄ Sta. 173+35.98 Elev. 911.095

BM20 – 4' T-Post North Side of Right-of-Way Line 27000 Road
40.97' Lt., ℄ Sta. 176+50.74 Elev. 912.544 (Flush w/ Ground)

BM21 – 4' T-Post Westerly Side of US-59 Hwy (Flush w/ Ground)
32.57' Lt., ℄ Sta. 181+30.99 Elev. 911.412

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 PLAN

STA. 172+50.00 TO STA. 183+45.00

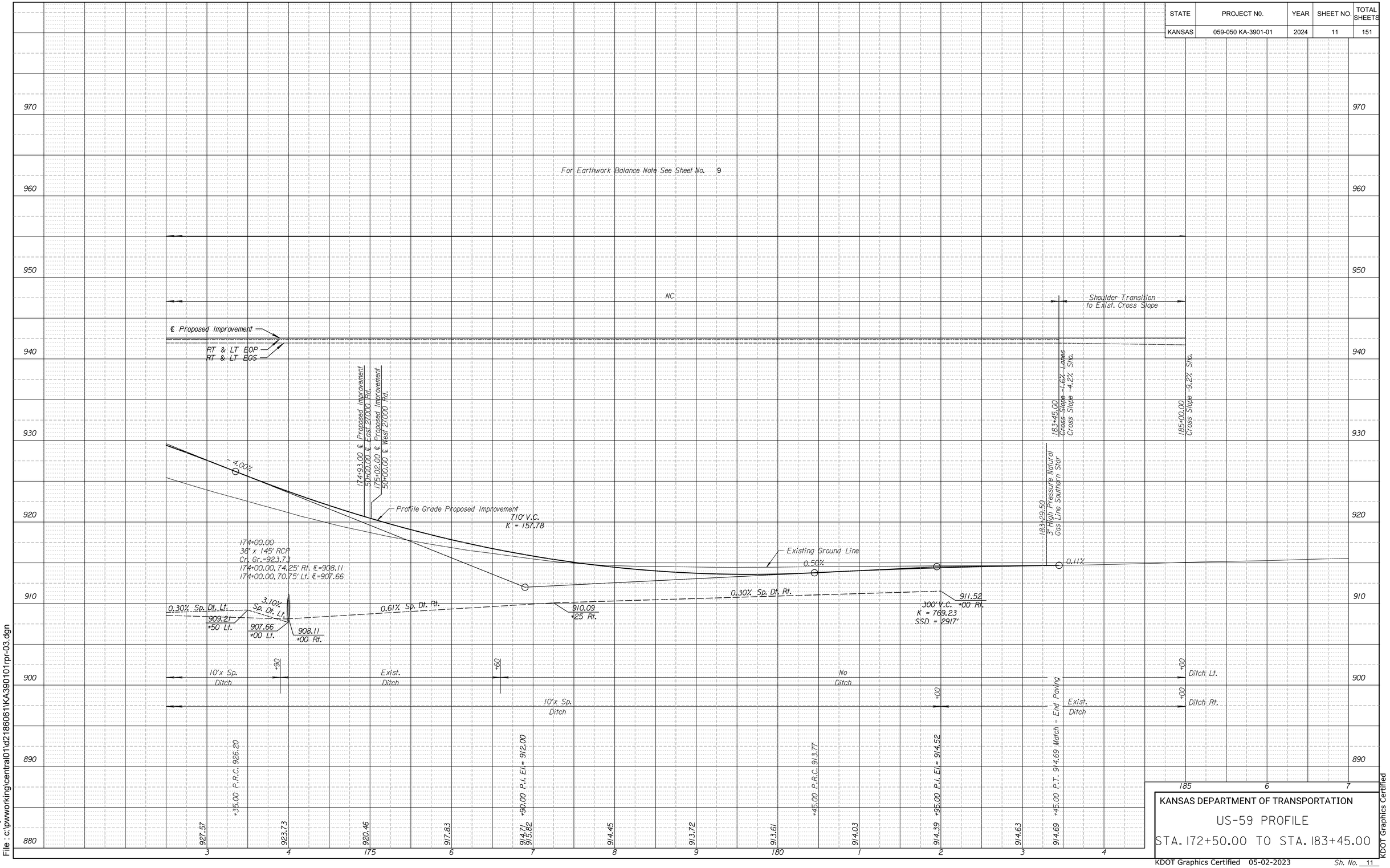
KDOT Graphics Certified $$DATE$$ Sh. No. 10

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rpl-03.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	11	151

For Earthwork Balance Note See Sheet No. 9



Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rpr-03.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 PROFILE

STA. 172+50.00 TO STA. 183+45.00

KDOT Graphics Certified 05-02-2023 Sh. No. 11

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	12	151

141 cu. yds. Common Excavation (Assumed VMF = 0.78)
16 cu. yds. Common Excavation (Contractor Furnished) (Assumed VMF = 0.78)
191 cu. yds. Rock Excavation (As Pavement Removal) (To Be Wasted)
122 cu. yds. Embankment

113'

22.0(

℄ W 10 th Road

Superelevation

RT EOP 2.63%

2.40%

1.58%

-5.84%

LT EOP

179+02.00 ℄ Proposed Improvement
50+00.00 ℄ West 27000 Rd.

48+75

P.T. 48+96.96

+88

W. 27000 Rd. Profile Grade

2.00% 1.60%

4.25% 4.10% 3.64%

50' V.C.
K = 30.48
SSD = 683'

Existing Ground Line

+75

+88

Ditch Lt.

Exist.
Ditch

907.09
+75 Rt.

1.16% Sp. Dt. Rt.
907.64
+24 Rt.

Exist. 36" x 86' RCP
Cr. Gr.=916.36
48+51.30, 36.82' Lt. Ex. ℄=906.56
48+68.65, 47.45' Rt. Ex. ℄=907.09

+75

6' x Sp.

+24

+88

Ditch Rt.

Ditch

No
Ditch

+17.27 P.I. El.= 914.54 Match Ex. – Begin Sur. Mat. (AB-3)

+75.00 P.I. El.= 916.96 Match

+10.00 P.C. 918.24

+28.00 918.84 – Begin Paving
+35.00 P.I.

917.87

919.15

+60.00 P.T. 919.65

+88.00 P.I. El.= 920.21 Match – End Paving

+100.00 P.I. El.= 920.40

920.40

910 900 890 880 930 920 970 960 950 940

2 3 4 45 6 7 8 9 50 1 2 3 4 55

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rpr-04.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

WEST 27000 ROAD PROFILE

STA. 48+17.27 TO STA. 50+00.00

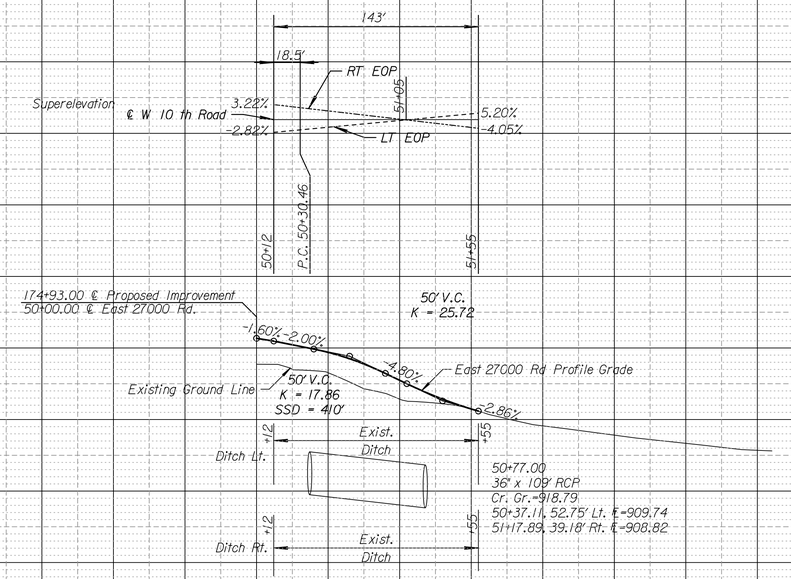
KDOT Graphics Certified 06-17-2024

Sh. No. 12

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	13	151

470 cu. yds. Common Excavation (Assumed VMF = 0.78)
907 cu. yds. Common Excavation (Contractor Furnished) (Assumed VMF = 0.78)
238 cu. yds. Rock Excavation (As Pavement Removal) (To Be Wasted)
1,073 cu. yds. Embankment



970 960 950 940 930 920 910 900 890 880

45 6 7 8 9 50 1 2 3 4 55

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rpr-05.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

EAST 27000 ROAD PROFILE

STA. 50+00.00 TO STA. 51+55.00

KDOT Graphics Certified 06-17-2024

Sh. No. 13

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	14	151

EXHIBIT

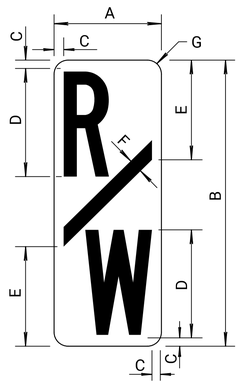
2" DIA. PRE-STAMPED ALUMINUM CAPS

KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT ONE	KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT TWO	KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT THREE
KDOT - DISTRICT 1	KDOT - DISTRICT 2	KDOT - DISTRICT 3
KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT FOUR	KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT FIVE	KS DEPT OF TRANS KA-XXXX-XX R/W DISTRICT SIX
KDOT - DISTRICT 4	KDOT - DISTRICT 5	KDOT - DISTRICT 6
K D O T KA-XXXX-XX R/W	ABC SURVEY CO KA-XXXX-XX R/W CLS 999	JOHN DOE KA-XXXX-XX R/W LS 9999
KDOT STATE SURVEY CREW BUREAU OF RIGHT-OF-WAY	SURVEY COMPANY WITH A VALID CORPORATION LICENSE	INDEPENDENT SURVEYOR OR SOLE PROPRIETOR COMPANY

NOTES:

KA-XXXX-XX is the KDOT Project number
All stampings, forgings, and impressions shall be in accordance with the standard specifications and as shown on this drawing.

KI-107

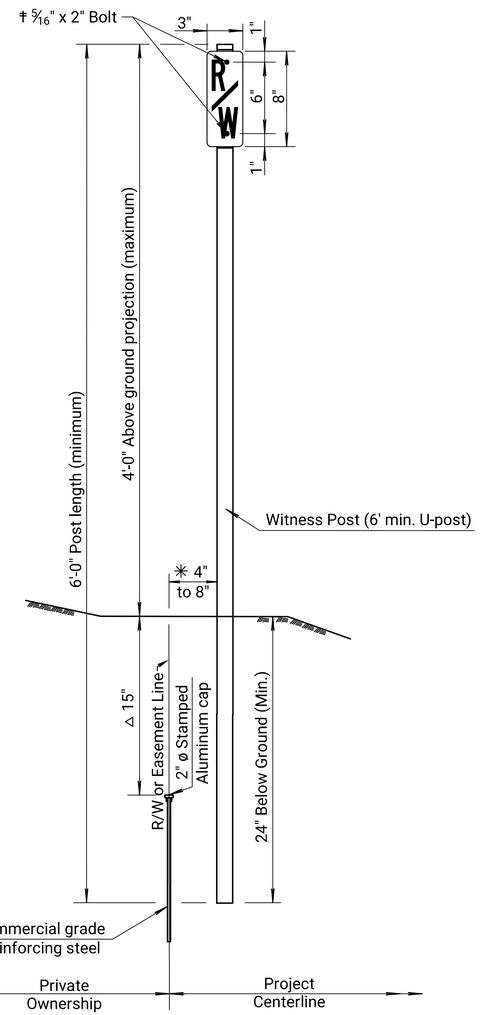


COLORS:

BACKGROUND - WHITE (REFLECTIVE)
LEGEND - BLACK (NON-REFLECTIVE)
LEGEND SERIES - 'B'

A	B	C	D	E	F	G
3"	8"	¼"	3"	2¾"	⅜"	⅜"

R/W SIGN DETAIL



PLAN VIEW

NOTES

✳ 4" (Min.) to 8" (Max.) from rebar to witness post. (USE CAUTION, DO NOT DISTURB THE REBAR WHEN SETTING A POST). The witness post shall be set radial or perpendicular to the project centerline from the rebar. The "open face" of the U-post shall face the project centerline with the sign attached to the "open face". This exhibit is a side view, except for the sign, which is shown as turned for the purpose of illustrating content only. (See Sign Detail).

‡ Drill or punch holes. Attach 2 flat washers, 1 lock washer, and 1 nut per bolt.

△ Or as directed by the Engineer.

GENERAL NOTE

The post shall be U-shaped (6' minimum length) and factory painted the color of persian red (KDOT Orange) by an electronically powder-coated oven-baked process.

All installations shall have proper identification cap for the party installing it (See Exhibit). Monument(s) shall be set in accordance with the standard specifications and as shown on this drawing.

Removal and disposal of existing concrete R/W markers shall not be paid for directly but shall be Subsidiary to other items of the contract.

In an urban area, the witness post may be omitted as directed by the Engineer.

The R/W survey monuments shall be paid for under the bid item "Right-of-Way Survey Monuments (Each)" and be included in the plan quantities. ✡The table shown on this sheet is intended for additional monuments set in the field and will be filled out by the contracted survey company.

Mount R/W survey monument signs facing the road.

✡ Additional R/W Survey Monuments set by Contractor			
Station	Offset (Lt./Rt.)	Northing	Easting

✡ Additional R/W Survey Monuments set by Contractor			
Station	Offset (Lt./Rt.)	Northing	Easting

NO.	DATE	REVISIONS	BY	APP'D
04	01-06-16	Revised Notes	T.T.R.	S.W.K.
03	05-24-13	Revised General Note	S.W.K.	J.O.B.
02	02-07-07	Removed dual cap note	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

R/W SURVEY MONUMENT INSTALLATION DETAIL SHEET

RD995

FHWA APPROVAL		03-16-16	APP'D.	Scott W. King
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-27-2022

Sh. No. 14

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss995-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	15	151

℄ W. 10th Rd.

48+17.27 ℄ 27000 Rd W
13.86′ Rt.

48+17.27 ℄ 27000 Rd W
10.12′ Lt.

48+54.00 ℄ 27000 Rd W
14.35′ Rt.

48+54.00 ℄ 27000 Rd W
11.94′ Lt.

48+75.00 ℄ 27000 Rd W
13.76′ Rt.

48+75.00 ℄ 27000 Rd W
13.06′ Lt.

PT +96.96

49+28+00 ℄ 27000 Rd W
13.82′ Rt.

49+28.00 ℄ 27000 Rd W
14.19′ Lt.

Sta. 175+02.00 ℄ Proposed Improvement
Sta. 50+00.00 ℄ 27000 Rd. W

+28.18 ℄ US-59
12.00′ Lt.

+76.19 ℄ US-59
12.00′ Lt.

60′ R

60′ R

10′-0″

10′-0″

90°00′00″

℄ Proposed Improvement

2 3 4 175 6 7 8

Shoulder

10′-0″

24′-0″

PC +30.46

+04.56 ℄ US-59
12.00′ Rt.

54′ R

60′ R

+62.92 ℄ US-59
12.00′ Rt.

10′-0″

24′-0″

Sta. 174+93.00 ℄ Proposed Improvement =
Sta. 50+00.00 ℄ 27000 Rd. E

50+54.02 ℄ 27000 Rd E
14.68′ Lt.

51+55.00 ℄ 27000 Rd E
14.78′ Rt.

120′ R

PT 476.50

51+55.00 ℄ 27000 Rd E
8.80′ Lt.

℄ 27000 Rd. E

53 POT +60.22

SCALE
20′ 0 20′ 40′
PLAN: Lat. & Long.

KANSAS DEPARTMENT OF TRANSPORTATION
INTERSECTION DETAIL
US-59 & 27000 RD.

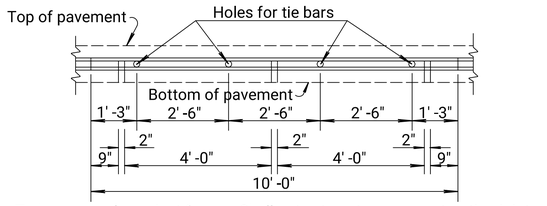
KDOT Graphics Certified 06-17-2024

Sh. No. 15

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rid-01.dgn
Plotted :06-17-24

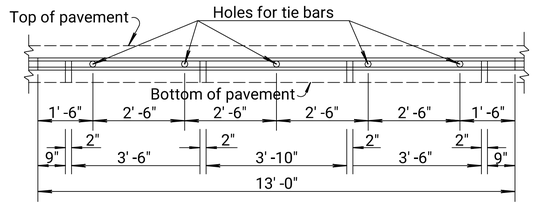
KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	16	151



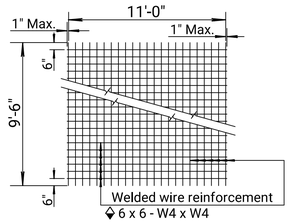
To be used only against forms. Shall not extend through contraction joints.

METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT (10'-0")



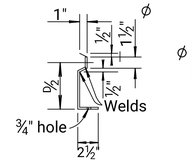
To be used only against forms. Shall not extend through contraction joints.

METAL STRIP FOR
LONGITUDINAL CONSTRUCTION JOINT (13'-0")



TYPICAL SHEET OF WELDED WIRE REINFORCEMENT
FOR SPECIAL BRIDGE APPROACH PAVEMENT

◆ Note: Epoxy coated #3 bars longitudinally @ 12" ctrs. & #3 bars transversely @ 18" ctrs. may be substituted for each layer of epoxy coated welded wire reinforcement.



SECTION OF RECESSED
FORM LEG

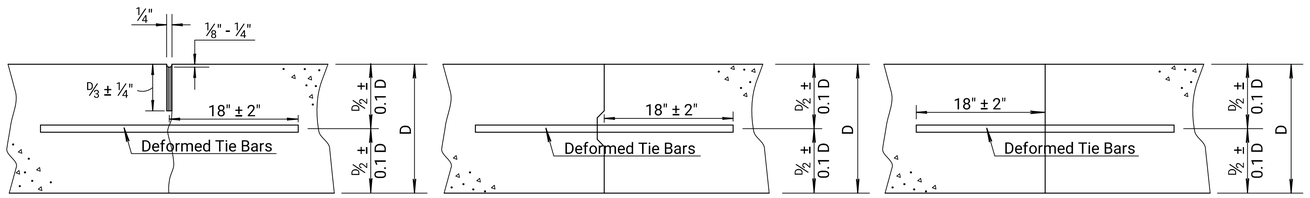
ϕ Snap-in leg or other approved designs may be used in lieu of welded leg.



DETAIL OF LAP FOR WELDED WIRE REINFORCEMENT

The lap shall extend beyond the first transverse or bag wire of each sheet.

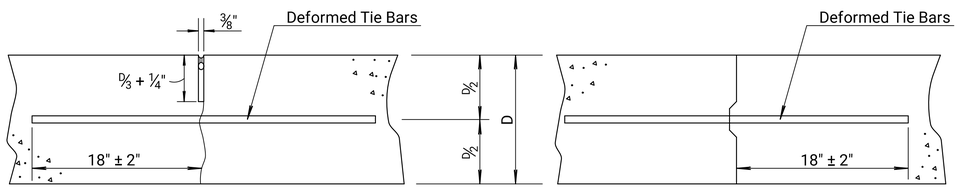
The sheet shall be wired securely at the edges and at intervals not to exceed 2'-6" for the full width of the sheet. Approximate weight of welded wire reinforcement = 58 lbs. per 100 sq. ft. Other methods for fastening the sheets of welded wire reinforcement at the laps may be used with the approval of the Engineer.



Tied Non-Keyed | Tied Keyed Construction | Tied Butt Construction

LONGITUDINAL JOINTS

Note: For longitudinal construction joints the contractor has the option of using either the keyed or butt type. Place deformed tie bars mid-depth of the shoulder.



Monolithic Pour | Construction Joint

TRANSVERSE JOINTS

Note: A construction joint is required when the concrete placement has been interrupted for a substantial length of time or at the end of a day's placement.

GENERAL NOTES

All work shall be done in conformity with the Standard Specifications applicable to the project.

The cost of all bars and joint material shown on this sheet is to be included in the bid price for Concrete Pavement.

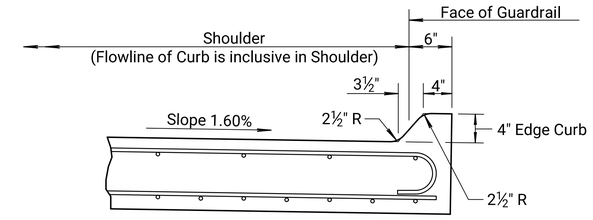
At each planned transverse joint location, a 4 to 6 inch wide strip of the pavement surface shall be protected from the texturing operation to provide a transverse textureless surface centered over the joint sawcut.

All sawed joints on this project shall be filled with sealant in accordance with Standard Specifications.

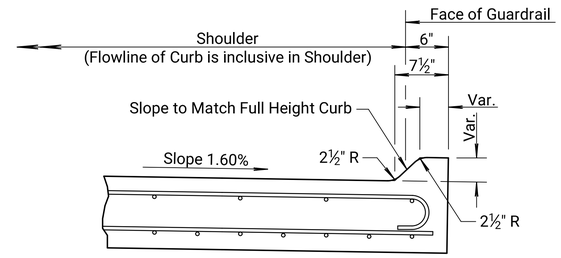
The 4 inch edge curb shall be constructed integral with the approach slab shoulder.

All materials and work required for this construction shall be subsidiary to the concrete approach slab.

Tie bars shall be evenly spaced along the length of the slab and no tie bars shall be within 12" of contraction joint.

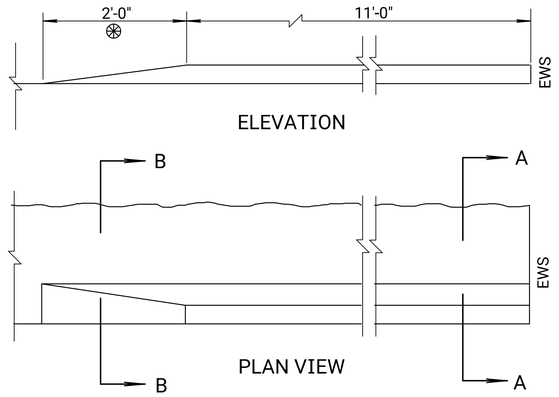


SECTION A-A



SECTION B-B

⊛ No 4" Curb transition when adjacent to Flume Inlet.



4" EDGE CURB DETAIL

NO.	DATE	REVISIONS	BY	APP'D
13	05-17-13	Revised Note, Longitudinal Joints	S.W.K.	J.O.B.
12	05-14-09	Pres. Relief Jt. to RD712/tie bar lab.	S.W.K.	J.O.B.
11	10-23-08	Revised Sec. A-A and Sec. B-B	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS DETAILS FOR CONCRETE BRIDGE APPROACH PAVEMENT

RD711

FHWA APPROVAL		10-23-13	APP'D.	James O. Brewer
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

KDOT Graphics Certified

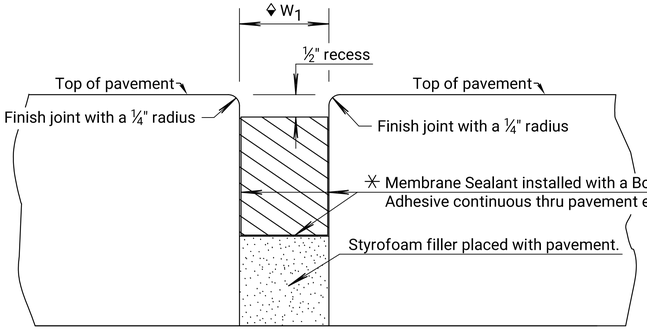
KDOT Graphics Certified 07-18-2022

Sh. No. 16

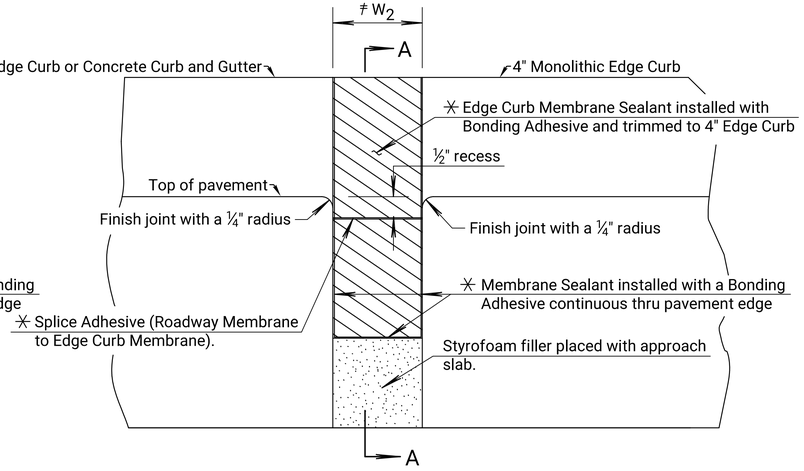
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss711-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	17	151

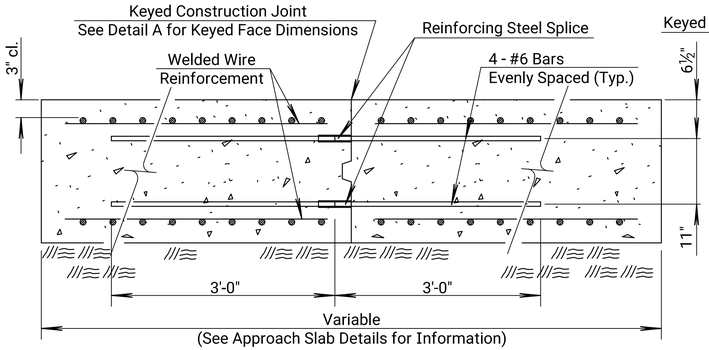
Note to Designer: For Membrane Sealant Expansion Joint on Non-skewed Bridges the maximum length of expansion is: 380' for Steel Bridges, 410' for Concrete Bridges.

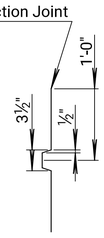


ELEVATION PRESSURE RELIEF JT.

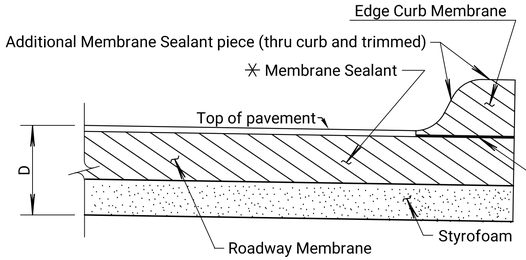


ELEVATION EXPANSION JT.





DETAIL A



SECTION A-A

(See Std. Drawing RD711 for details of 4" Edge Curb.)

GENERAL NOTES

EXPANSION/PRESSURE RELIEF JOINTS

See Concrete Bridge Approach Pavement standard drawings for location of expansion and pressure relief joints.

Form the joint opening prior to placement of the pavement approach. Remove the material used to form the joint after the pavement approach has been in place for a minimum of 6 days.

Clean and construct the joint only after the concrete in the approach slab has cured for a minimum of 7 days.

Thoroughly clean the joint by sandblasting and by high pressure air blast to remove all laitance and contaminants from the joint. When any joint is shaped by saw cutting in lieu of forming, blast the joint with water prior to sandblasting and air cleaning.

Accomplish sandblasting in two passes to clean each face of the joint (one pass for each face). Hold the nozzle 1 to 2 inches from the joint face at an angle to the joint face.

Remove any contaminants such as oil, curing compound, etc. by sandblasting to the satisfaction of the Engineer. Solvents, wire brushing, or grinding are not permitted.

Air blast the joint just prior to installing the Membrane Sealant. Equip the air compressor used to clean the joint with trap devices capable of providing moisture-free and oil-free air at a recommended pressure of 90 psi. Spot check the joint to verify any residual dust or dirt has been removed. The Engineer is required to inspect the joint immediately prior to installing the joint material.

⚹ See KDOT Standard Specifications for Membrane Sealant, Bonding Adhesive and Splice Adhesive. The width of the membrane sealant is 4 inches (nominal).

Do not allow traffic on the joint for a minimum of 3 hours unless otherwise directed by the Engineer.

Use splice materials and methods recommended by the Manufacturer.

All work and materials for the preparation, construction, and installation of the joint will be subsidiary to the concrete approach pavement.

BRIDGE APPROACH SLAB FOOTING

Pay for the Bridge Approach Slab Footing at the unit price bid per cubic yard for "Bridge Approach Slab Footing". This price will be full compensation for furnishing all materials and labor including Concrete Grade 4.0 (AE) Pavement, Reinforcing Steel (Gr. 60) (Epoxy Coated), excavation, Type "A" Compaction and materials used to prevent bonding of concrete. The Contractor may use Concrete Grade 4.0 (AE) or the mix used in the concrete pavement for the slab footing.

⧫ PRESSURE RELIEF JOINT WIDTH DETAILS (W_1)

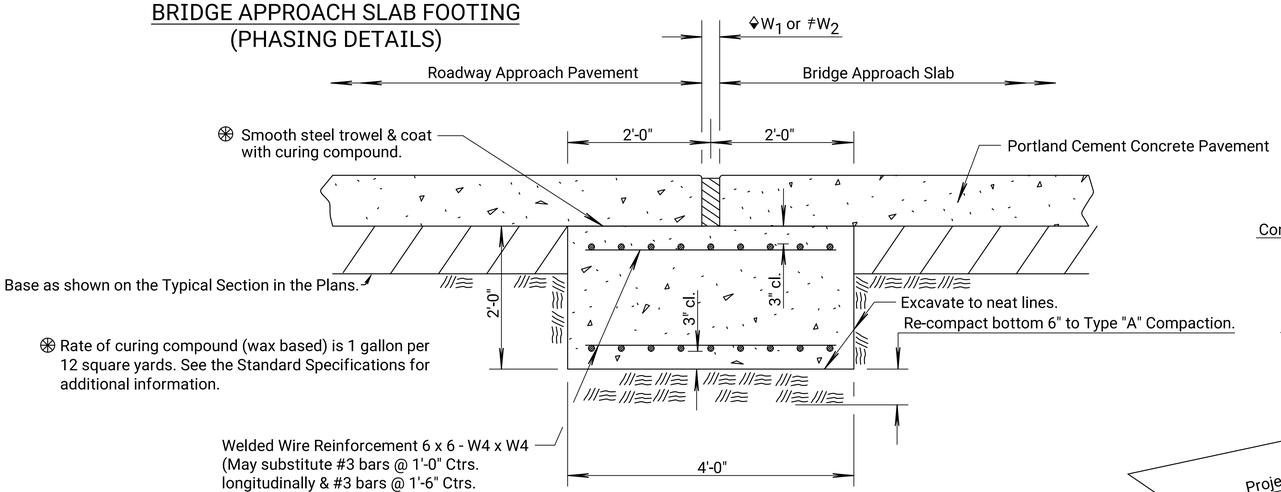
℉ Temperature (F°)	40°	50°	60°	70°	80°	90°	100°
Formed Concrete Opening Size	4.0"	3¾"	3½"	3¼"	3.0"	2¾"	2½"

℉ Average Ambient Temperature over previous 24 hours.

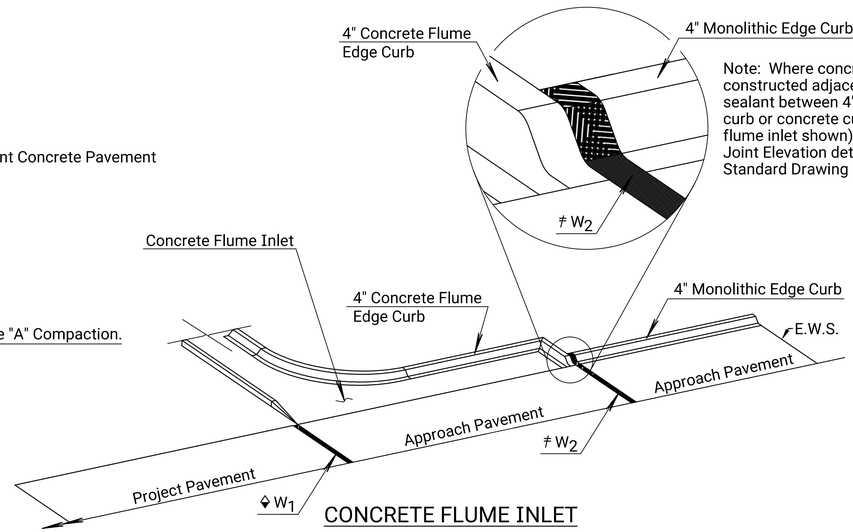
≠ EXPANSION JOINT WIDTH DETAILS (W_2)

See bridge construction layout sheet for details.

BRIDGE APPROACH SLAB FOOTING (PHASING DETAILS)



BRIDGE APPROACH SLAB FOOTING



CONCRETE FLUME INLET

(Membrane Sealant Placed Through Edge Curb Detail)

Note: Where concrete flume inlets or concrete curb and gutter are constructed adjacent to bridge approach slab pavement place membrane sealant between 4" monolithic edge curb and 4" concrete flume inlet edge curb or concrete curb and gutter as shown on this sheet (concrete flume inlet shown). See approach slab Standard Drawings, Expansion Joint Elevation detail this sheet, Standard Drawing RD628, and Standard Drawing RD635 for additional details.

LEGEND

■ Membrane Sealant

NO.	DATE	REVISIONS	BY	APP'D
10	01-22-16	Add. Det., Keyed Joint & Flume Inlet	T.T.R.	S.W.K.
09	10-16-13	Revised General Note	S.W.K.	J.O.B.
08	04-04-13	Rev. Joint Width Det. Table	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS EXPANSION/PRESSURE RELIEF JOINT/ BRIDGE APPROACH SLAB FOOTING

~~RD712~~

FHWA APPROVAL	02-01-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-18-2022

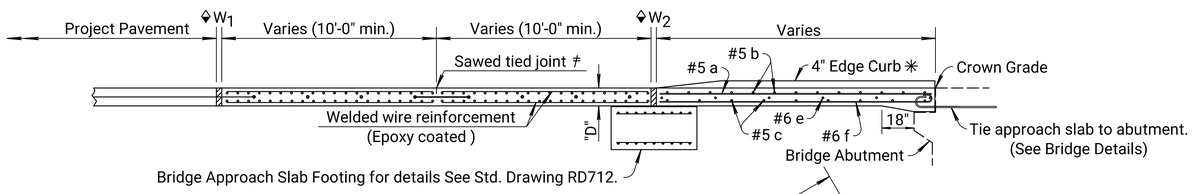
Sh. No. 17

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rss712.dgn

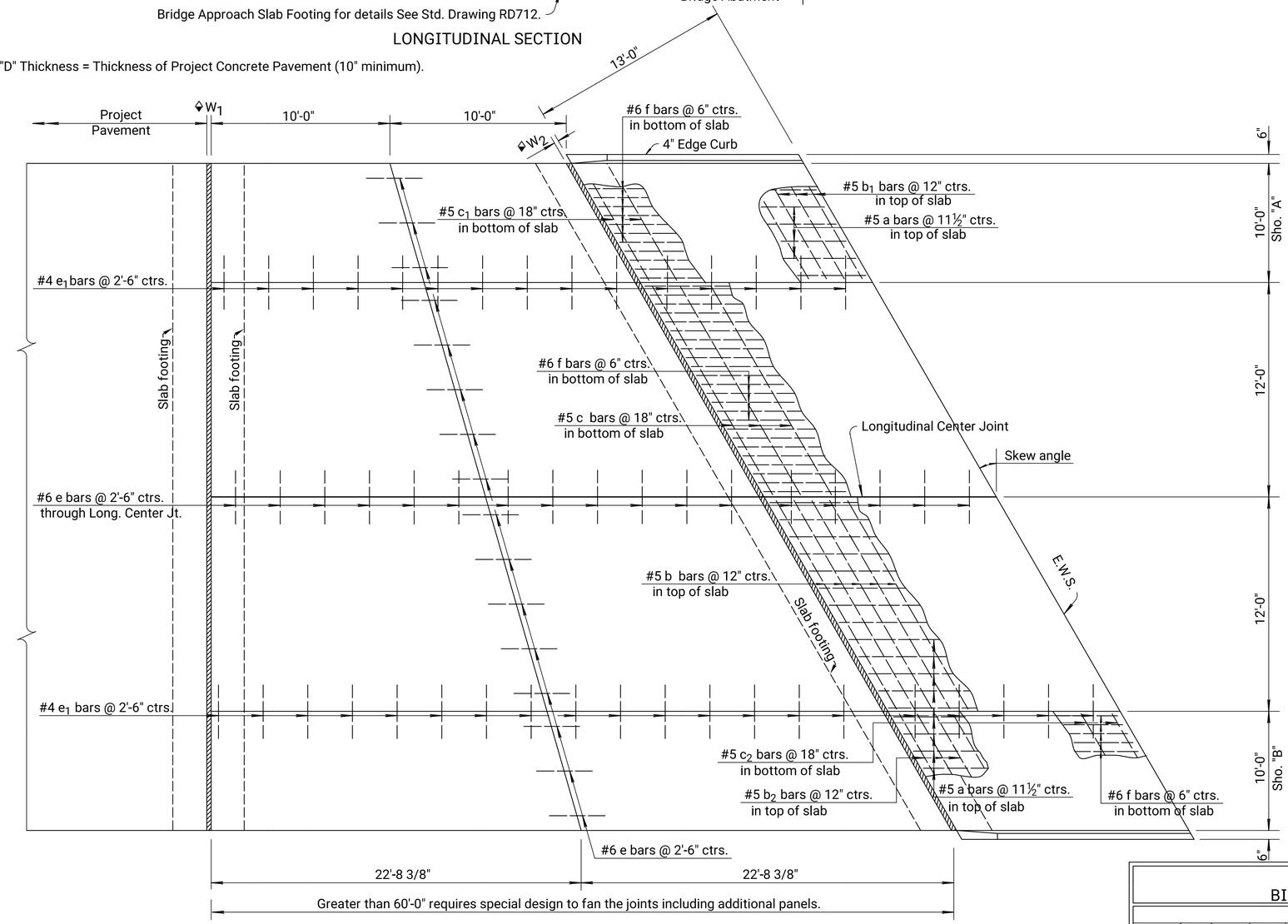
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	18	151

Note to Designer: The designer shall be responsible for designating pavement thickness and computing reinforcing steel and concrete quantities and dimensions necessary to complete this sheet.



LONGITUDINAL SECTION

"D" Thickness = Thickness of Project Concrete Pavement (10" minimum).



PLAN VIEW

(No Scale)

Note: Spacing of longitudinal reinforcing bars is normal to center line.
Spacing of transverse reinforcing bars is parallel to center line.

⊗ Measured along the Expansion/Pressure Relief Joint.

✳ For details of 4" Edge Curb, See Std. Drawing RD711.

♦ W_1 and W_2 for Expansion/Pressure Relief Joint width and details See Standard Drawing RD712.

≠ Contractor has the option of substituting a Tied Keyed Construction Joint.

GENERAL NOTE

Special Concrete Bridge Approach shall be paid for as Sq. Yds. of Concrete Pavement (11" Unif.)(AE)(Br. App.) and includes all work and materials required to construct the approach slab as shown on this sheet.

All work and materials required for installation of expansion joints and pressure relief joints shall be subsidiary to this bid item.

At the Contractor's option #4x3'-0" tie bars @ 15" centers may be substituted for the #6 e bars at 2'-6" centers.

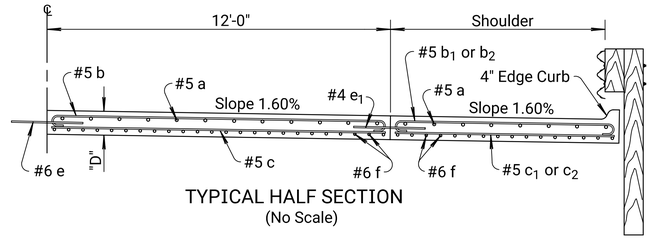
All reinforcing steel shall be epoxy coated.

See Standard Drawing RD711 for details of joints, welded wire reinforcement, and edge curb.

Clearance from the face of concrete for all reinforcing steel shall be 2 inches.

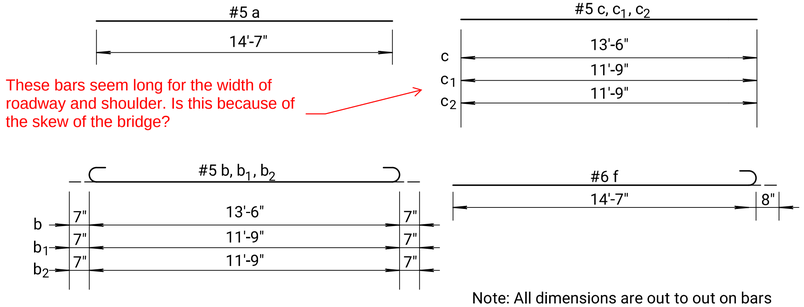
Standard reinforcing bar hooks in accordance with the latest ACI specifications shall be used throughout.

The pressure relief joint shall be omitted when the concrete bridge approach pavement abuts asphalt pavement.



TYPICAL HALF SECTION

(No Scale)



Note: All dimensions are out to out on bars unless noted otherwise.

BENDING DIAGRAMS

30 ⁰ Skew
BILL OF MATERIALS

Bar Schedule

Bar	a	b	b_1	b_2	c	c_1	c_2	e	e_1	f	
No.	48	30	15	15	20	10	10	37	38	90	
Size	#5	#5	#5	#5	#5	#5	#5	#6	#4	#6	
Length	14'-7"	14'-8"	12'-11"	12'-11"	13'-6"	11'-9"	11'-9"	3'-0"	3'-0"	15'-3"	

Reinforcing Steel (Grade 60) (Epoxy Coated)	4,430	lbs.
Concrete Pavement (11 " Unif.)(AE)(Br. App.)	234.9	Sq. Yds.
Expansion Jt. Membrane Sealant ⊗	50.8	Lin. Ft.
Pressure Relief Jt. Membrane Sealant		Lin. Ft.

Note: Quantities listed for one approach slab only. Two required per bridge.
Reinforcing steel and joint lengths shown for information only.

NO.	DATE	REVISIONS	BY	APP'D
11	04-04-13	Rev. Exp./Pr. Relief Joint Dim.	S.W.K.	J.O.B.
10	09-09-09	Revised Reinforcing Steel listing	S.W.K.	J.O.B.
09	05-14-09	Revised pressure relief jt. material	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE BRIDGE APPROACH PAVEMENT SKEWED APPROACH

~~RD714~~ 30° Skew

FHWA APPROVAL	05-21-13	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

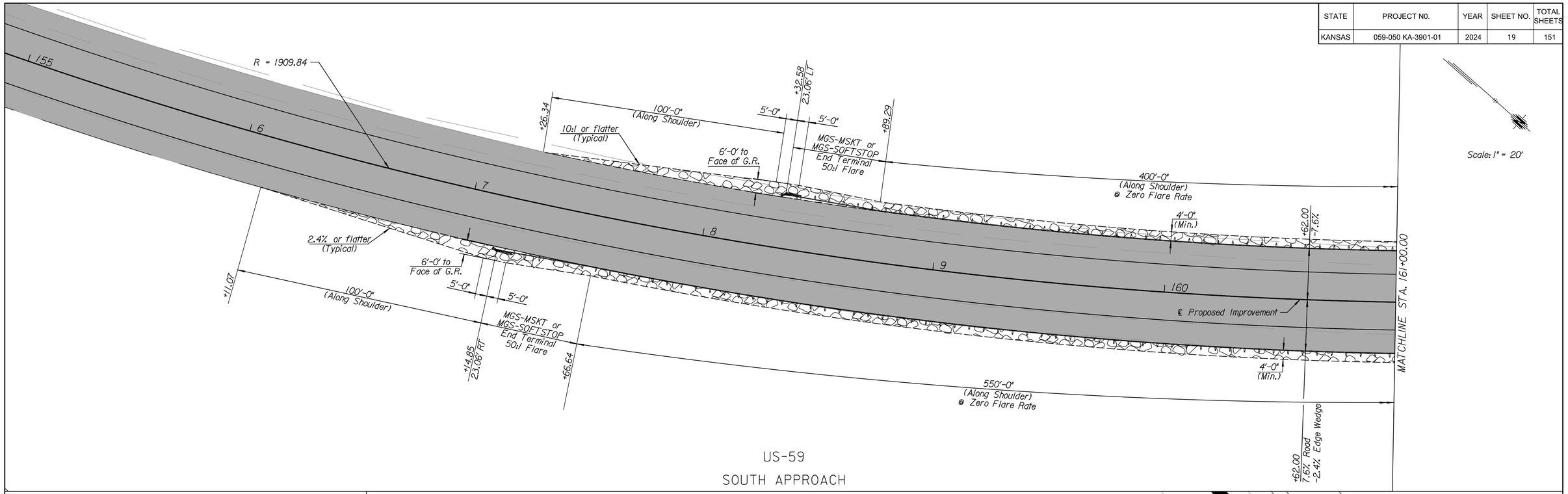
KDOT Graphics Certified

KDOT Graphics Certified 06-17-2022

Sh. No. 18

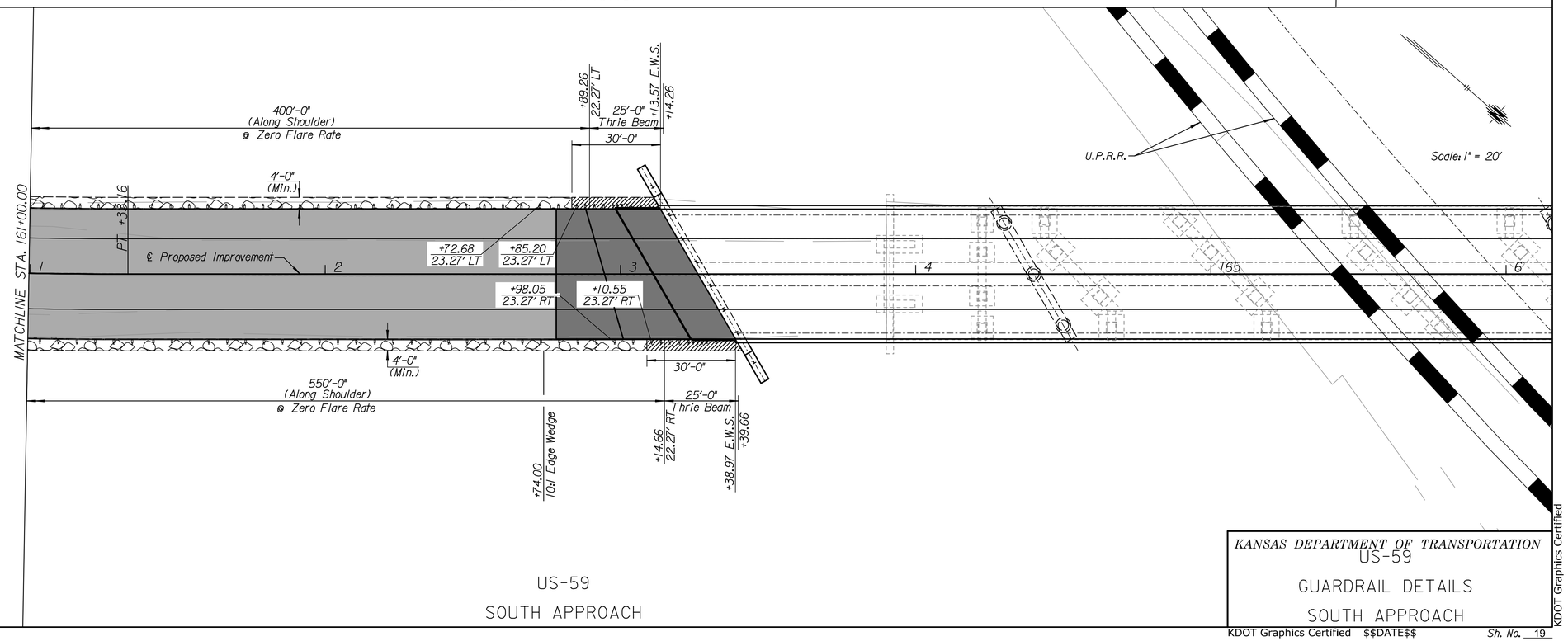
Drawn By : BBEAMER Plotted :06-17-24
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	19	151



US-59

SOUTH APPROACH



US-59

SOUTH APPROACH

LEGEND

- 4" HMA-Commercial Grade (Class A)
- Pavement Edge Wedge (Rock) (4" Min. Thickness)
- Full Depth Pavement
- Concrete Pavement (11" Uniform) (AE) (Br App)

KANSAS DEPARTMENT OF TRANSPORTATION

US-59

GUARDRAIL DETAILS

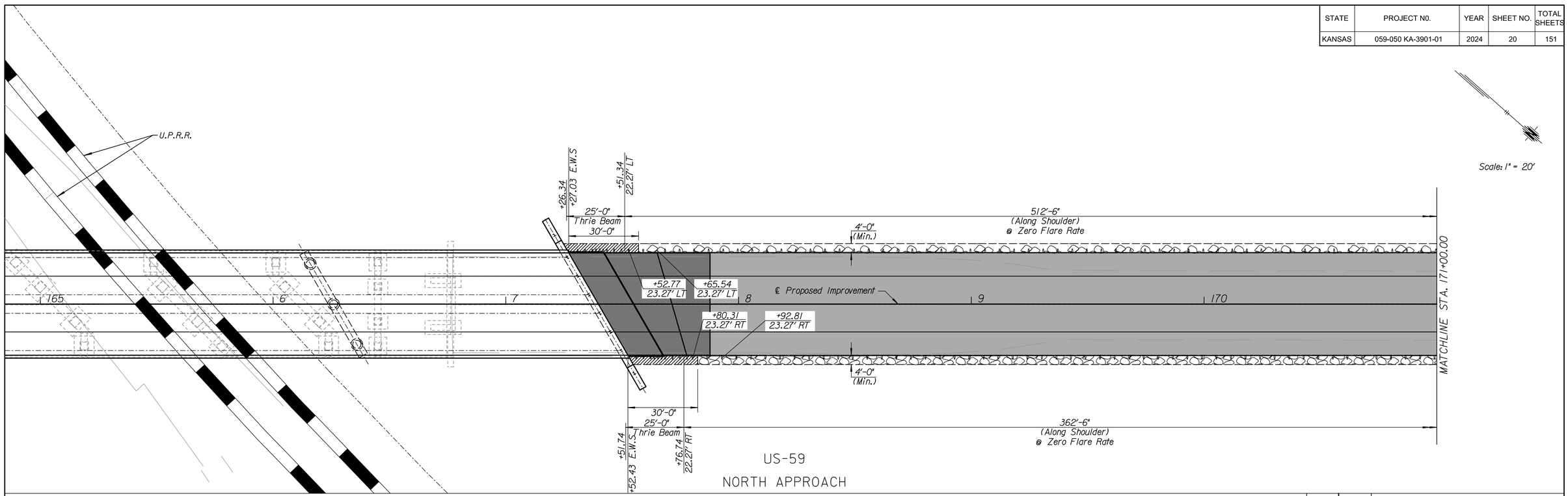
SOUTH APPROACH

KDOT Graphics Certified $$DATE$$ Sh. No. 19

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rgr-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	20	151



LEGEND

- 4" HMA-Commercial Grade (Class A)
- Pavement Edge Wedge (Rock) (4" Min. Thickness)
- Full Depth Pavement
- Concrete Pavement (11" Uniform) (AE) (Br App)

KANSAS DEPARTMENT OF TRANSPORTATION

US-59

GUARDRAIL DETAILS

NORTH APPROACH

KDOT Graphics Certified 06-17-2024 Sh. No. 20

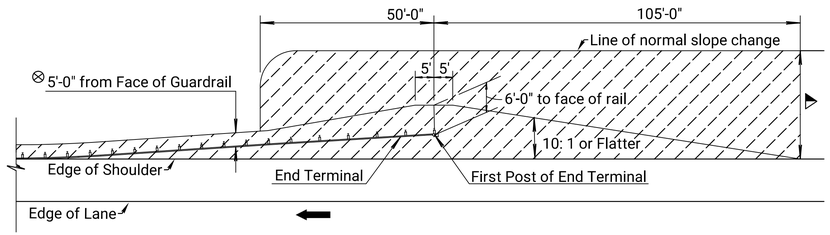
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rgr-02.dgn

KDOT Graphics Certified

Note to Designer - Design guardrail installations using guidance shown on KDOT's 'Guardrail Typical Alignments' Standard Drawings. 'Flared' guardrail installations are preferred over 'Parallel' or 'Zero Flare' installations. Where 'Flared' or 'Parallel' installations are used, the flare rate of the guardrail end terminal typically matches the flare rate of the remaining guardrail installation. For 'Zero Flare' installations, 'Parallel' guardrail end terminals should be designed using typical flare rates of 50:1 or flatter for the length of the end terminal. However, while 50:1 or flatter flare rates are typical for 'Parallel' guardrail end terminals, these end terminals may be flared as steep as 26:1 or flatter in order to offset the end terminal head as far from the edge of the through traveled lane as practicable.

GUARDRAIL CLEAR AREA

Applies to all guardrail installations unless otherwise shown in the plans.



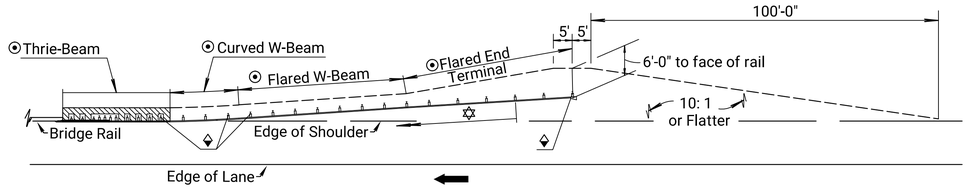
Keep Area Free of Stockpiled Material, Equipment, or Other Obstacles, Such as Temporary Signs, Regardless of Crash Worthiness. This Clear Area Extends 105 Feet in Advance of and 50 Feet behind the First Post of the Guardrail End Terminal and Then, in Order to Maintain Full Post Spacing, Continues 5 Feet behind the Face of the Guardrail through the W-Beam Portion of the Installation as Shown in the 'Guardrail Clear Area' Detail on this Sheet.

Normal Project Side Slope.

Deflection Distance for Normal Post Spacing

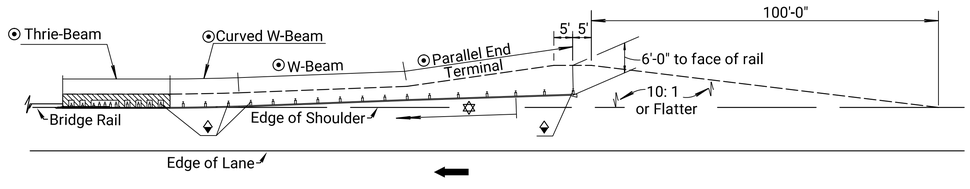
FLARED GUARDRAIL DETAIL

Applies to CGS AND MGS
(MGS Shown)



PARALLEL GUARDRAIL DETAIL

Applies to CGS AND MGS
(MGS Shown)



See Guardrail Layout Sheets for Details

On Guardrail Layout Sheets, Show Station AND Offset from the Roadway Alignment to the Face of Post at these Locations.

Length of Need (Begins at Post 3)

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	21	151

GENERAL NOTES

Install the guardrail end terminals according to the Manufacturer's Installation Manual. The Contractor will furnish a copy of the Manufacturer's Installation Manual to the Engineer prior to the start of the installation.

Use approved steel (preferred) or wood posts provided by the Manufacturer. The guardrail end terminal post type may be independent of the post type used in the remainder of the installation. However, no mixing of post types is permitted in the remaining w-beam and thrie-beam installation.

Use approved polymer (preferred) or wood blockouts provided by the Manufacturer. The guardrail end terminal blockout size and type may be independent of the blockout size and type used in the remainder of the installation. For blockout size and types for the remaining w-beam and thrie-beam portion of the installation see the details shown on KDOT's 'Guardrail Post Details' and 'Guardrail Thrie-Beam Transition Details' Standard Drawings.

Apply retroreflective sheeting to the end terminal impact head before installation.

Tighten all cable anchor assemblies as per the Manufacturer's Installation Manual.

Lap w-beam and thrie-beam guardrail splices, in the direction of permanent traffic, even where temporary traffic may be carried in the opposite direction of the final traffic configuration. Lap end terminal splices per the Manufacturer's Installation Manual in the direction of permanent traffic, even where temporary traffic may be carried in the opposite direction of the final configuration.

The minimum length of w-beam guardrail required between the thrie-beam transition and the guardrail end terminal is 12'-6" for all installations; unless otherwise stated in the Manufacturer's Installation Manual.

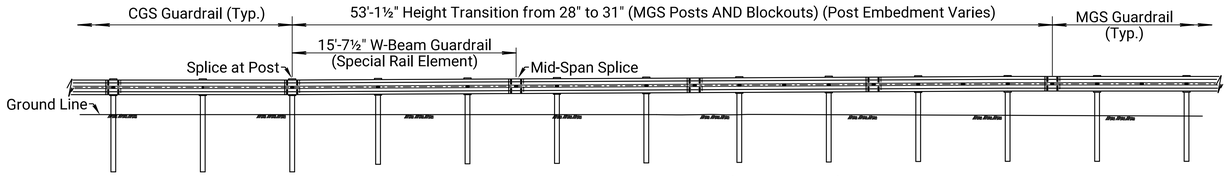
Where pavement with a thickness less than or equal to 8" is encountered during installation, use the details shown on KDOT's 'Guardrail Post Details' Standard Drawings to provide openings in the pavement for the guardrail posts. Where pavement with a thickness greater than 8" or geologic rock is encountered during installation, follow the Manufacturer's Installation Manual for guidance. Where the Manufacturer's Installation Manual does not address pavement with a thickness greater than 8" or geologic rock, contact the manufacturer for instructions or install the guardrail posts as directed by the Engineer.

All work and materials required for w-beam and thrie-bean guardrail installations are paid for under the appropriate bid items for either CGS or MGS guardrail depending on the type of installation.

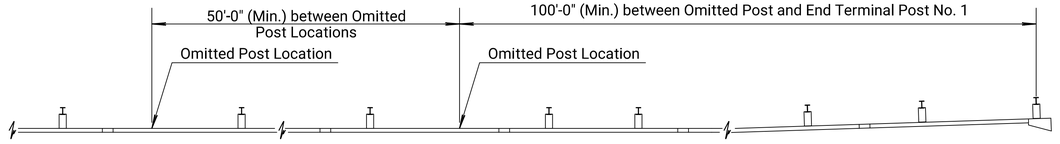
All work and materials required for guardrail end terminal installations are paid for under the bid item for the selected guardrail end terminal. See the table on this sheet for the appropriate end terminal bid item information.



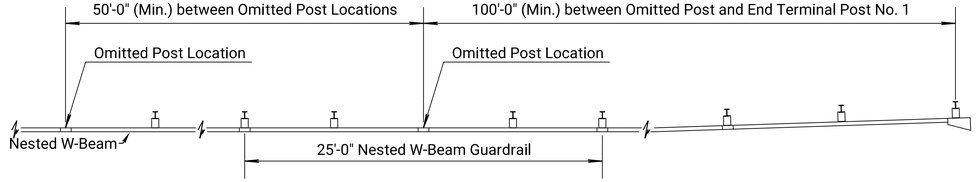
CGS TO MGS TRANSITION DETAILS (PLAN)



CGS TO MGS TRANSITION DETAILS (ELEVATION)



MGS OMITTED POST DETAIL



CGS OMITTED POST DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) END TERMINALS

END TERMINAL BID ITEM	FLARED OR PARALLEL	MOUNTING HEIGHT	CRASH TESTING CRITERIA	STEEL POST DESIGN AVAILABLE	WOOD POST DESIGN AVAILABLE	ENERGY ABSORBING	MANUFACTURER	DESIGN LENGTH	MANUFACTURER SYSTEM LENGTH
Guardrail End Terminal (MGS-FLEAT)	Flared	31"	NCHRP 350	Yes	Yes	Yes	Road Systems	40'-7½"	37'-6"
Guardrail End Terminal (MGS-SRT)	Flared	31"	NCHRP 350	Yes	Yes	No	Trinity Industries	40'-7½"	37'-6"
Guardrail End Terminal (MGS-MSKT)	Parallel	31"	MASH	Yes	No	Yes	Road Systems	46'-10½"	46'-10½"
Guardrail End Terminal (MGS-SOFTSTOP)	Parallel	31"	MASH	Yes	No	Yes	Trinity Industries	46'-10½"	50'-9½"

CONVENTIONAL GUARDRAIL SYSTEM (CGS) END TERMINALS

END TERMINAL BID ITEM	FLARED OR PARALLEL	MOUNTING HEIGHT	CRASH TESTING CRITERIA	STEEL POST DESIGN AVAILABLE	WOOD POST DESIGN AVAILABLE	ENERGY ABSORBING	MANUFACTURER	DESIGN LENGTH	MANUFACTURER SYSTEM LENGTH
Guardrail End Terminal (FLEAT)	Flared	28"	NCHRP 350	Yes	Yes	Yes	Road Systems	37'-6"	37'-6"
Guardrail End Terminal (SRT)	Flared	28"	NCHRP 350	Yes	Yes	No	Trinity Industries	37'-6"	37'-6"
Guardrail End Terminal (SKT)	Parallel	28"	NCHRP 350	Yes	Yes	Yes	Road Systems	50'-0"	50'-0"

NO.	DATE	REVISIONS	BY	APP'D
02	09-05-18	ADD. OMITTED POST AND TRANS. DETAILS	A.L.R.	T.T.R.
01	06-05-18	INITIAL RELEASE	A.L.R.	T.T.R.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL AUXILIARY DETAILS

RD606

FHWA APPROVAL	09-25-18	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

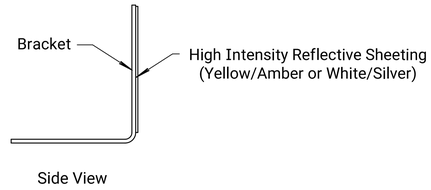
KDOT Graphics Certified 04-25-2022

Sh. No. 21

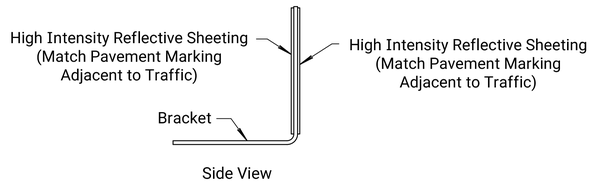
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss606-01.dgn

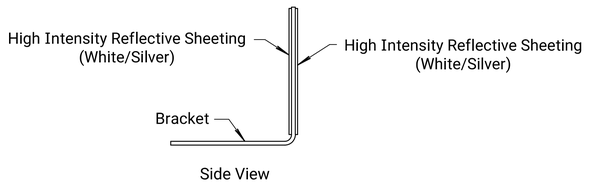
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	22	151



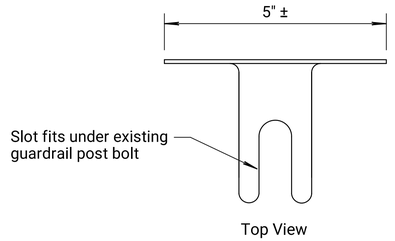
Flexible Marker
One-Way Traffic

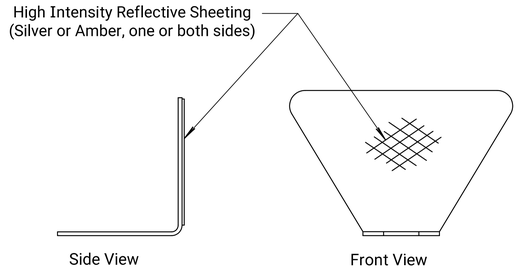


Flexible Marker
Median Locations



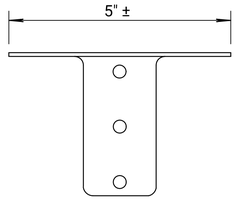
Flexible Marker
Two-Way Traffic



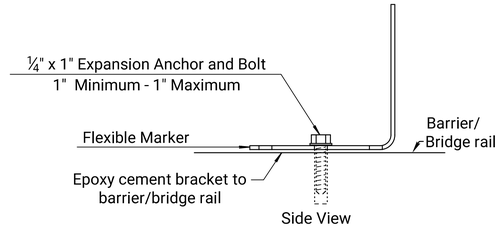


Flexible Guardrail Marker

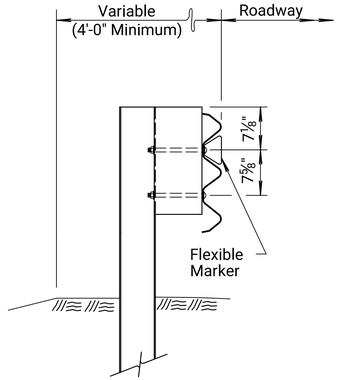
(High Impact Polycarbonate approx. .085" thick, 5¼" x 3")



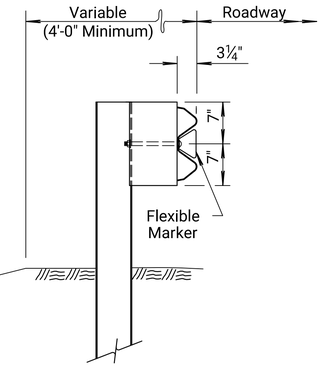
Barrier/Bridge Rail



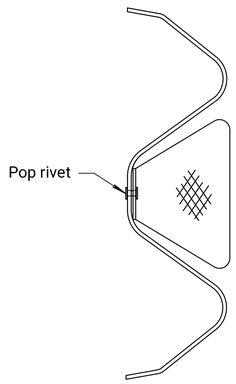
Method of Attaching Flexible
Marker to Barrier/Bridge Rail



THRIE-BEAM GUARDRAIL

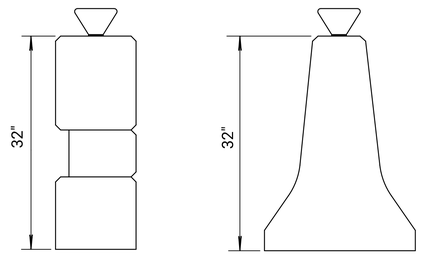


W-BEAM GUARDRAIL



Typical Mounting on W-Beam

Pop rivet attachment to Guardrail when necessary.



CORRAL RAIL | TYPE I CSB | TYPE II CSB or F-SHAPED BRIDGE RAIL | TYPE III CSB | TYPE IV CSB

TYPICAL BARRIER/BRIDGE RAIL MOUNTING DETAILS

GENERAL NOTES

Install flexible markers on a post behind the guardrail bolt head on the traffic side of guardrail installations at a spacing not to exceed 25'. No marker is installed between the head and post #5 when the guardrail is terminated with a crashworthy end terminal.

Install flexible markers on the top of bridge rails at a spacing not to exceed 50', except for long bridges (greater than 200' long), where spacing may be increased to 100'.

Install flexible markers on the top of concrete safety barrier at a spacing not to exceed 100', except for barrier along a horizontal curve or along ramps and ramp tapers, where spacing is not to exceed 50'.

Where the height of the bridge rail or concrete barrier is greater than 32", mount the flexible markers on the side of the barrier at a height of 32" as shown on this sheet.

For guardrail, bridge rail, or concrete safety barrier located on two-way roadways, use flexible markers with white/silver high intensity reflective sheeting on both sides.

For guardrail located on one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located on the outside edge of one-way or divided roadways, use flexible markers with reflective sheeting installed on the approach traffic side of the bracket only. For bridge rail or concrete safety barrier located in the median, use flexible markers with reflective sheeting installed on both sides of the bracket. Match the color of the marker (yellow/amber or white/silver) to the color of the pavement marking adjacent to the traffic lane.

Use High Impact Polycarbonate Flexible Guardrail Marker with High Intensity Reflective Sheeting or an approved equivalent, see Standard Specifications.

Use zinc or cadmium plated fasteners that comply with Standard Specifications.

Work and materials required for installation of markers on guardrail, bridge rail, or concrete safety barrier are subsidiary to other bid items in the contract.

Install flexible markers for the final (permanent) traffic configuration.

NO.	DATE	REVISIONS	BY	APP'D
09	09-11-17	Rev. Det. Markers, Rev. Gen. Note	A.L.R.	S.W.K.
08	11-15-10	Revised notes	S.W.K.	J.O.B.
07	12-21-08	AKT marker or approved equal	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

MARKER DETAILS FOR GUARDRAIL, BARRIER, AND BRIDGE RAILS

RD610

FHWA APPROVAL	03-15-18	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-11-2022

Sh. No. 22

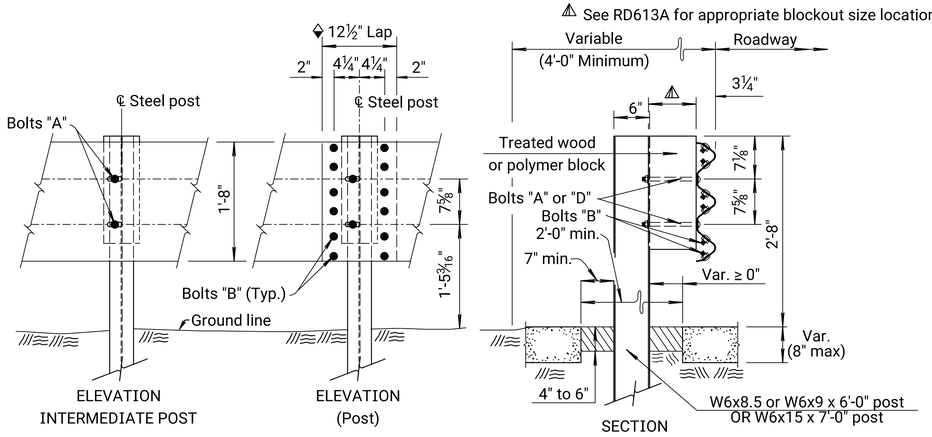
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA3901011rss610.dgn

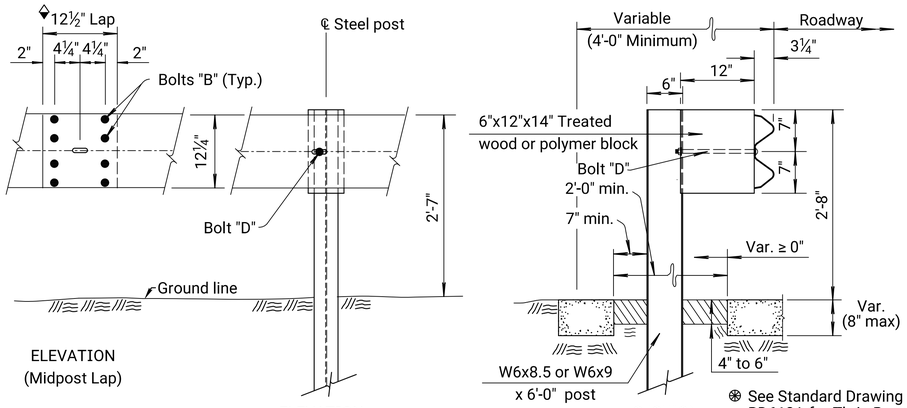
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	23	151

♦ Lap guardrail splices, including terminal connector, in the direction of traffic. Where traffic is temporarily carried in the opposite direction of final configuration, lap rail splices in the direction of permanent traffic.

⚠ See RD613A for appropriate blockout size location.



THRIE BEAM POST DETAILS/POSTS IN PAVEMENT

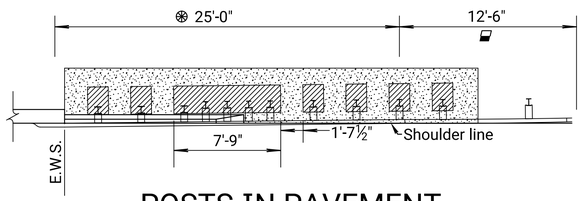


✻ See Standard Drawing RD613A for Thrie-Beam Transition Section Blockout hole pattern.

✡ Non-Metallic (Polymer) or Treated Wood Block

See Guardrail Layout Sheets for Details.

W-BEAM (MGS) POST DETAILS/POSTS IN PAVEMENT



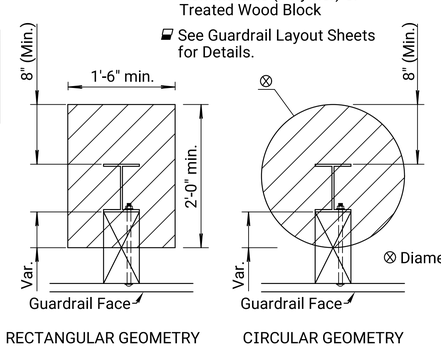
POSTS IN PAVEMENT

(Not to Scale)

▨ Slurry Grout (Low Strength)
See KDOT's Standard Specifications

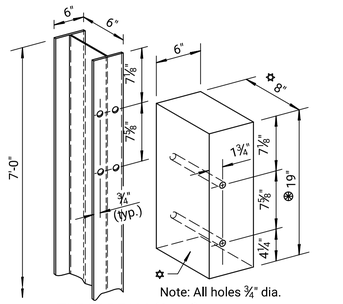
▩ Pavement (Concrete or Asphalt)

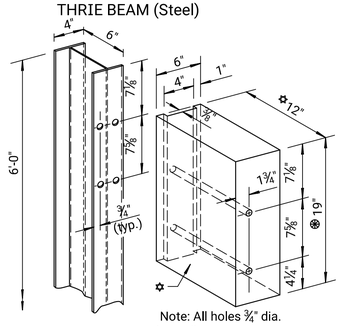
Note: Low Strength Grout must have a 28-day compressive strength of 120 psi or less. All work and materials related to posts in pavement are subsidiary to other guardrail bid items. Rectangular geometry shown in Posts in Pavement detail. Circular geometry, as shown on this sheet, may be used at the Contractor's option.

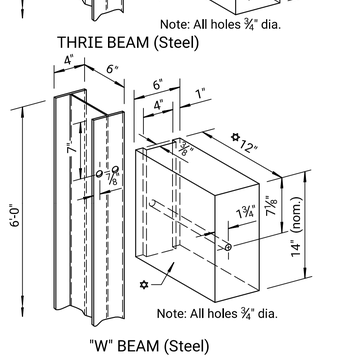


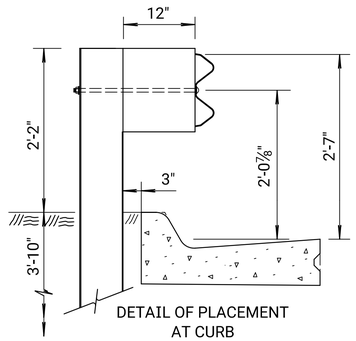
⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

PLAN
(ALTERNATE GEOMETRIES)









Note: Measure height of rail from the pavement surface at the curb/pavement joint as shown. A special design is needed when guardrail is not located as detailed. A Type II (laydown) curb & gutter is preferred when guardrail is adjacent to curb.

GENERAL NOTES (Steel Posts)

Use grade of steel for steel posts that meet the requirements of the standard specifications.

Hot dip galvanize the posts after fabrication, see standard specifications.

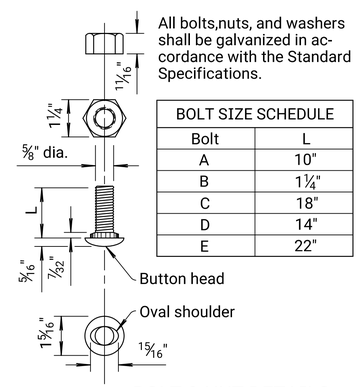
Wood blockouts may be used through the 25'-0" thrie-beam section with wood or polymer blockouts used throughout the remainder of the w-beam installation. The blockout size and material used in the guardrail end terminal may be independent from the remainder of the installation. For wood/polymer blockout requirements see standard specifications.

Use S4S rectangular blockouts for Thrie-Beam/W-Beam installation.

Set guardrail posts by digging or by driving. Use post caps to protect the post from crushing during driving operations.

Contractor must notify Engineer at the earliest time when a non-removable manmade object (footing, pipe, etc.) is encountered that prevents installation of a full length post.

All dimensions are nominal and are subject to manufacturing tolerances. Excavation including rock, shale, and other materials for erection of Guardrail is subsidiary to various bid items for which payment is made.



BOLT SIZE SCHEDULE	
Bolt	L
A	10"
B	1¼"
C	18"
D	14"
E	22"

BOLT & NUT DETAILS

NO.	DATE	REVISIONS	BY	APP'D
05	09-24-15	Separated Steel/Wood Post Details	S.W.K.	S.W.K.
04	11-08-12	Revised Detail, Posts in Pavement	S.W.K.	J.O.B.
03	08-01-12	Revised Note to Designer	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL POST (STEEL) (MGS) DETAILS

RD611A

FHWA APPROVAL	01-29-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-11-2022 Sh. No. 23

KDOT Graphics Certified

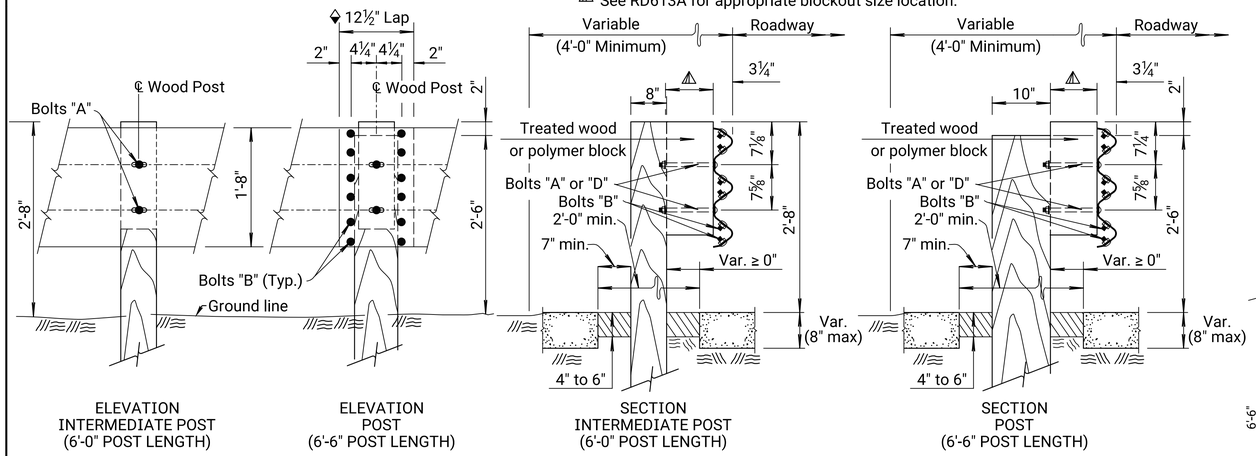
Notes to Designer: For posts installed in pavement thicker than 8" or posts installed in rock formations refer to AASHTO's Roadside Design Guide for details then revise this drawing and all supporting drawings appropriately.

Plotted :06-17-24
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rss611a-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	24	151

◈ Lap guardrail splices, including terminal connector, in the direction of traffic. Where traffic is temporarily carried in the opposite direction of final configuration, lap rail splices in the direction of permanent traffic.

⚠ See RD613A for appropriate blockout size location.



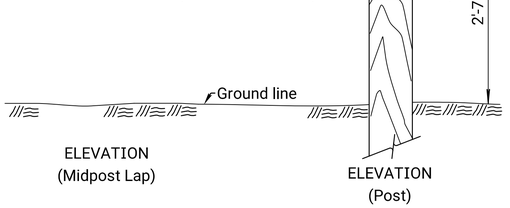
ELEVATION
INTERMEDIATE POST
(6'-0" POST LENGTH)

ELEVATION
POST
(6'-6" POST LENGTH)

SECTION
INTERMEDIATE POST
(6'-0" POST LENGTH)

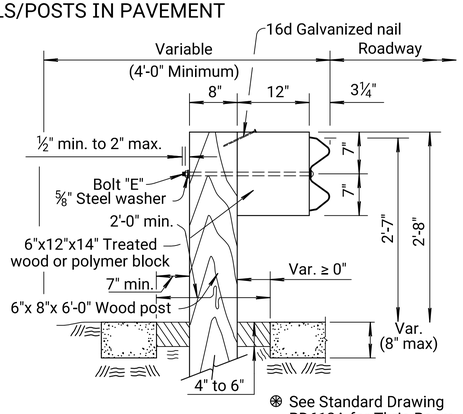
SECTION
POST
(6'-6" POST LENGTH)

THRIE BEAM POST DETAILS/POSTS IN PAVEMENT



ELEVATION
(Midpost Lap)

ELEVATION
(Post)



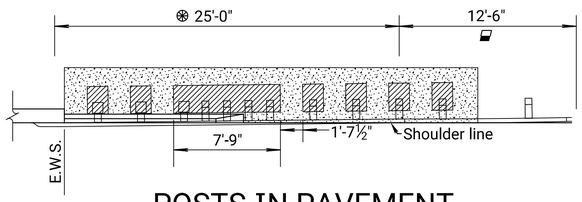
SECTION

⊛ See Standard Drawing RD613A for Thrie-Beam Transition Section Blockout hole pattern.

✡ Non-Metallic (Polymer) or Treated Wood Block

See Guardrail Layout Sheets for Details.

W-BEAM (MGS) POST DETAILS/POSTS IN PAVEMENT



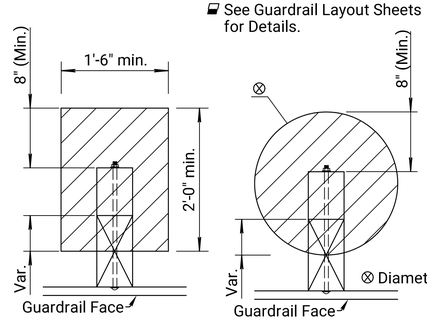
POSTS IN PAVEMENT

(Not to Scale)

▨ Slurry Grout (Low Strength)
See KDOT's Standard Specifications

▩ Pavement (Concrete or Asphalt)

Note: Low Strength Grout must have a 28-day compressive strength of 120 psi or less. All work and materials related to posts in pavement are subsidiary to other guardrail bid items. Rectangular geometry shown in Posts in Pavement detail. Circular geometry, as shown on this sheet, may be used at the Contractor's option.

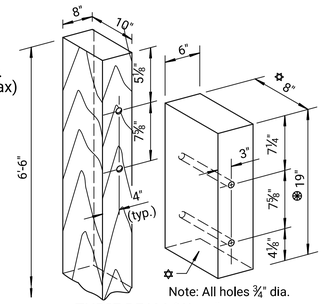


RECTANGULAR GEOMETRY

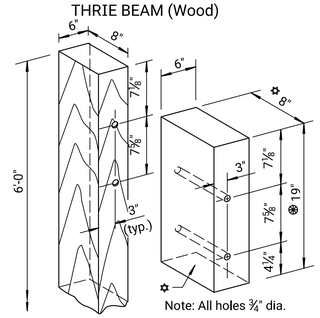
CIRCULAR GEOMETRY

⊗ Diameter may vary from 1'-6" (min.) to 2'-0".

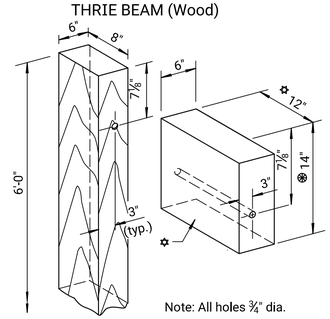
PLAN
(ALTERNATE GEOMETRIES)



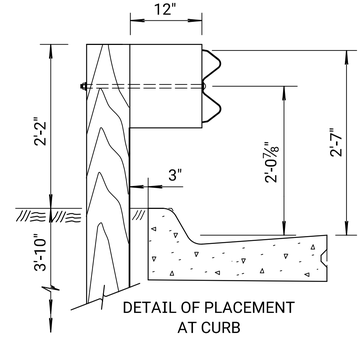
THRIE BEAM (Wood)



THRIE BEAM (Wood)

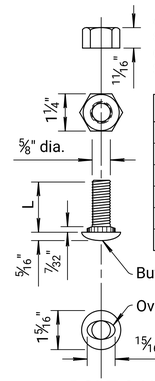


"W" BEAM (Wood)



DETAIL OF PLACEMENT
AT CURB

Note: Measure height of rail from the pavement surface at the curb/pavement joint as shown. A special design is needed when guardrail is not located as detailed. A Type II (laydown) curb & gutter is preferred when guardrail is adjacent to curb.



All bolts,nuts, and washers shall be galvanized in accordance with the Standard Specifications.

BOLT SIZE SCHEDULE	
Bolt	L
A	10"
B	1¼"
C	18"
D	14"
E	22"

BOLT & NUT DETAILS

GENERAL NOTES (Wood Posts)

Give all wood posts and wood blocks a preservative treatment, see standard specifications. Thoroughly saturate all cuts, injuries and bolt holes on wood posts and blocks with preservative. Use only one type of preservative treatment on a project.

Set guardrail posts by digging or by driving. Use post caps to protect the post from crushing during driving operations.

Wood blockouts may be used through the 25'-0" thrie-beam section with wood or polymer blockouts used throughout the remainder of the w-beam installation. The blockout size and material used in the guardrail end terminal may be independent from the remainder of the installation. For wood/polymer blockout requirements see standard specifications.

Use S4S rectangular posts/blockouts for Thrie Beam/W-Beam installation. See standard specifications for additional information.

Contractor must notify Engineer at the earliest time when a non-removable man-made object (footing, pipe, etc.) is encountered and prevents installation of a full length post.

All dimensions are nominal and are subject to manufacturing tolerances.

Excavation including rock, shale, and other materials for erection of Guardrail is subsidiary to various bid items for which payment is made.

NO.	DATE	REVISIONS	BY	APP'D
04	09-24-15	Initial Release	T.T.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

GUARDRAIL POST (WOOD) (MGS) DETAILS

RD611B

FHWA APPROVAL	01-29-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-11-2022

Sh. No. 24

KDOT Graphics Certified

Notes to Designer: For posts installed in pavement thicker than 8" or posts installed in rock formations refer to AASHTO's Roadside Design Guide for details then revise this drawing and all supporting drawings appropriately.

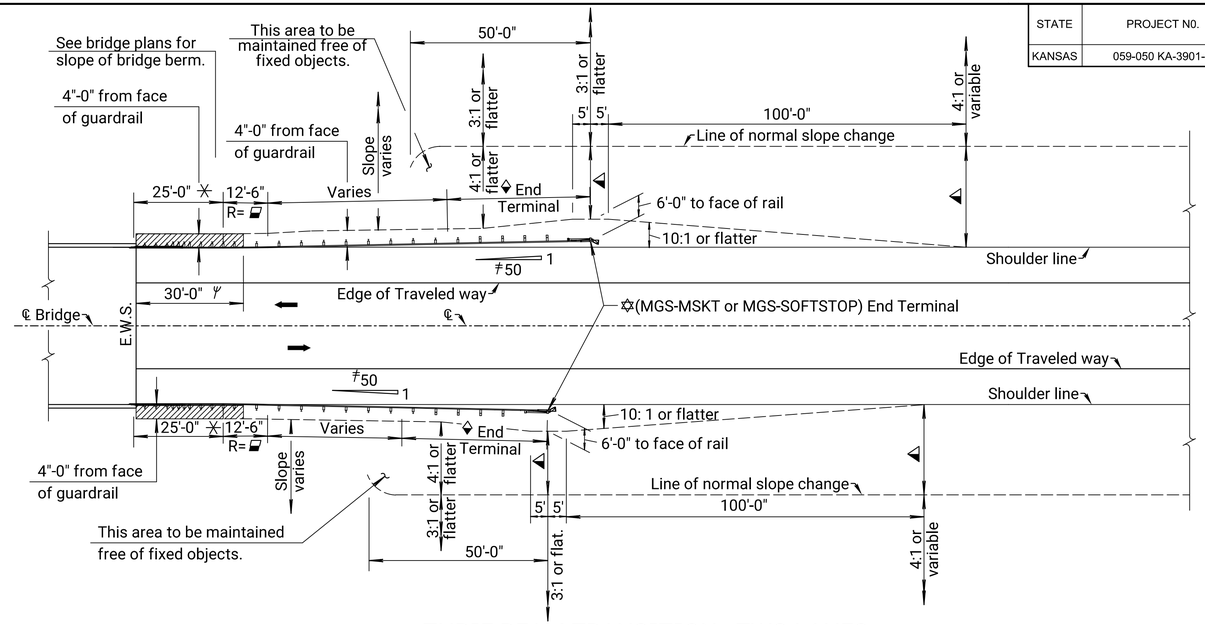
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss611b-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	25	151

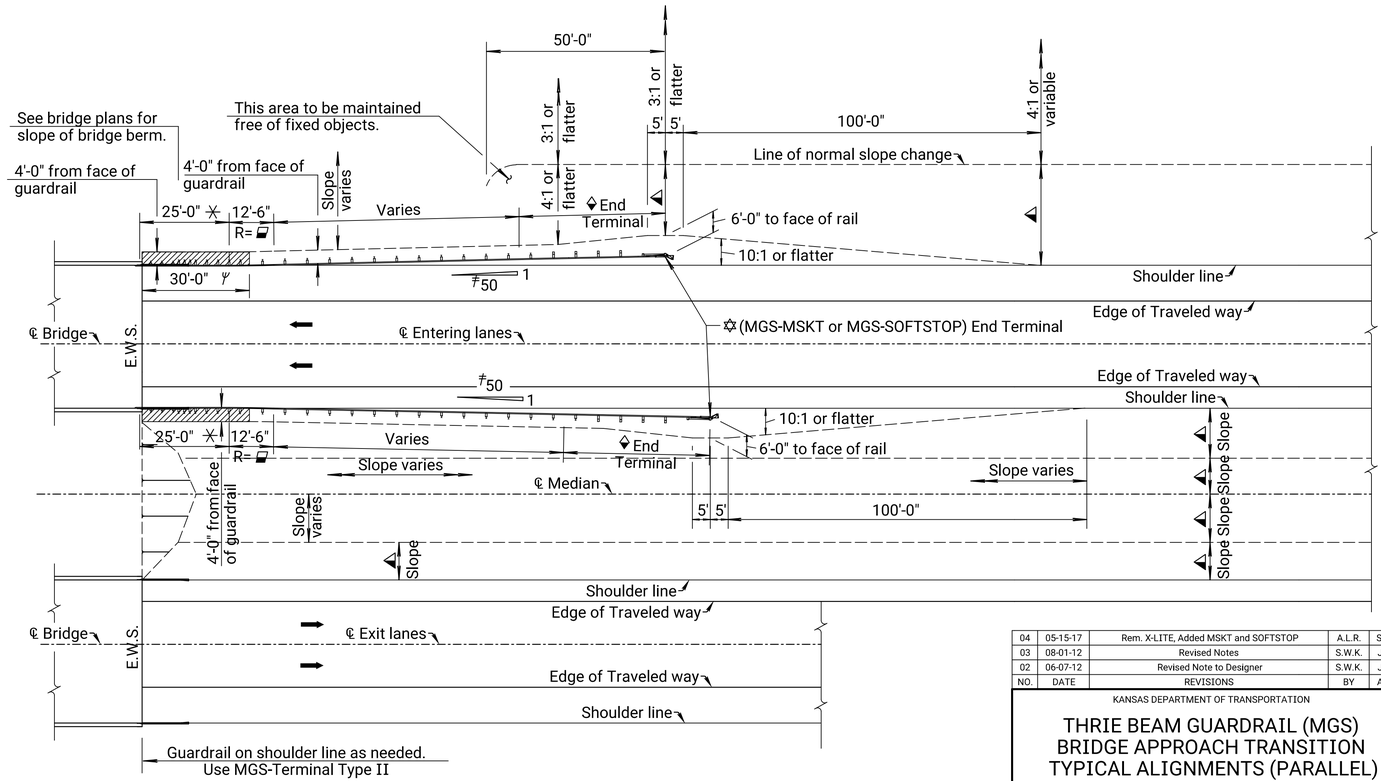
Notes to Designer: Determine the guardrail length of need using either KDOT's Length of Need Equation or a graphic design approach with an L_R distance measured from the edge of the area of concern to the P.I. of the curved guardrail section. Combine measured from the edge of the area of concern to the P.I. of the curved guardrail section. Combine material for asphalt widening in the plan quantities.

"Parallel" installations are flared at a rate of 50:1. "Zero Flare" installations follow the edge of shoulder.

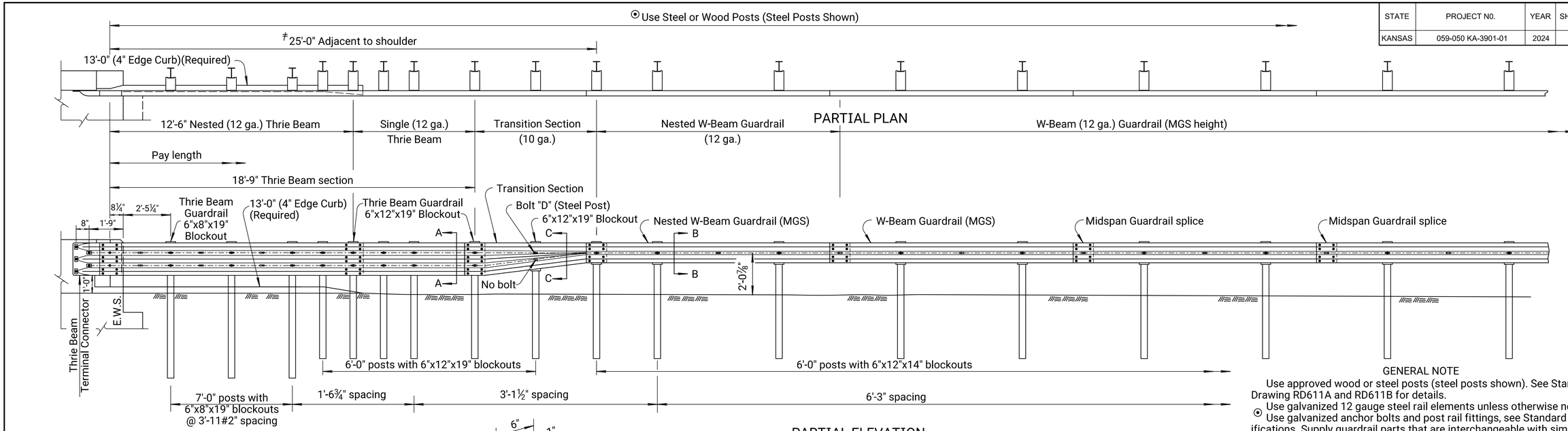
- Thrie Beam Transition. See Std. Drawing RD613A for details and general note.
- Radius= 625.08'
- Normal project side slope. See typical sections.
- See KDOT's 'Guardrail Auxiliary Details' Standard Drawing.
- 4" Asphalt material placed on 4'-0" embankment widening unless flume inlet and slope drain is constructed. See RD611A for "Post in Pavement" details.
- Terminate zero flare rate installations with a parallel guardrail end terminal. Typically parallel end terminals are flared at 50:1 over the length of the end terminal, but may be flared up to 26:1 or flatter.
- The minimum length of w-beam guardrail required between the thrie-beam transition and the guardrail end terminal is 12'-6" for all installations.

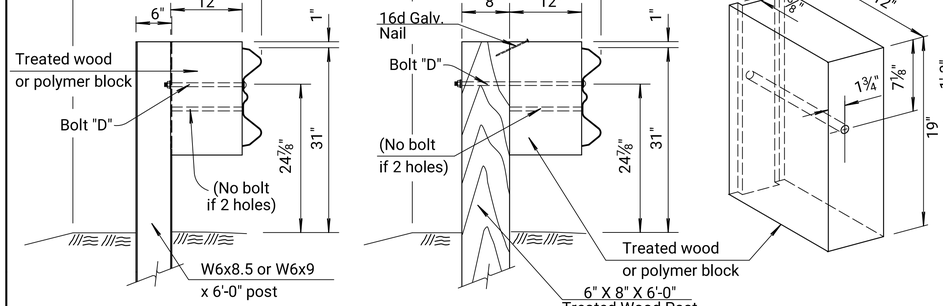


THRIE BEAM TRANSITION - TWO LANES


See bridge plans for slope of bridge berm.
This area to be maintained free of fixed objects.
50'-0"
3:1 or flatter
5'
5'
100'-0"
4:1 or variable
Line of normal slope change
4'-0" from face of guardrail
Slope varies
4:1 or flatter
End Terminal
25'-0"
12'-6" R=
Varies
6'-0" to face of rail
10:1 or flatter
1
50
30'-0"
Shoulder line
Edge of Traveled way
℄ Bridge
E.W.S.
℄ Entering lanes
(MGS-MSKT or MGS-SOFTSTOP) End Terminal
Slope varies
℄ Median
Slope
Slope varies
Slope
Slope
Slope

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	26	151

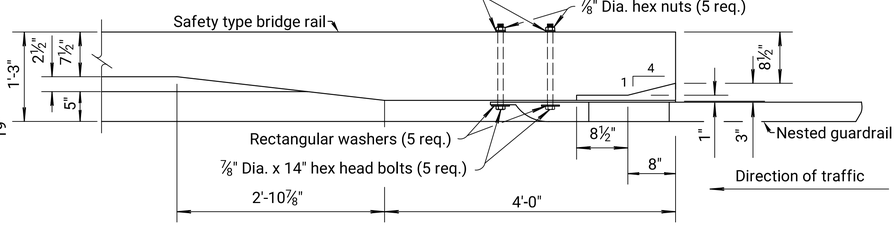




SECTION C-C
(STEEL POST)

SECTION C-C
(WOOD POST)

SECTION C-C (BLOCKOUTS)
Note: All holes ¾" dia.



PLAN VIEW
GUARDRAIL ATTACHMENT
TO SAFETY SHAPE BRIDGE RAIL

GENERAL NOTE

Use approved wood or steel posts (steel posts shown). See Standard Drawing RD611A and RD611B for details.

Use galvanized 12 gauge steel rail elements unless otherwise noted.

Use galvanized anchor bolts and post rail fittings, see Standard Specifications. Supply guardrail parts that are interchangeable with similar parts regardless of source or manufacturer.

Wood blockouts may be used through the 25'-0" thrie-beam section with wood or composite blockouts used throughout the remainder of the w-beam installation. The blockout size and material used in the guardrail end terminal may be independent from the remainder of the installation.

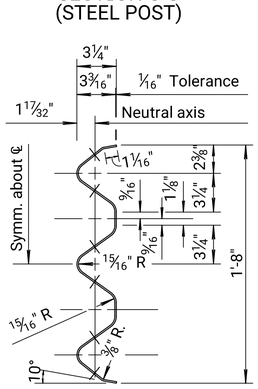
Fabricate Terminal Connector from 10 gauge steel, see Standard Specification. The connector has the same section as thrie beam guardrail. Terminal connector is Subsidiary to the bid item "Guardrail, Steel Plate (MGS)".

Shop bend curve rails when radius is less than 150'.

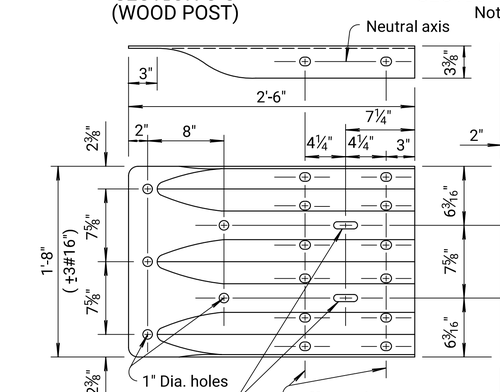
Lap guardrail splices, including terminal connector, in the direction of traffic. Where traffic is temporarily carried in the opposite direction of final configuration, lap rail splices in the direction of permanent traffic.

Bridge to guardrail transition consists of 1- 18'-9" thrie-beam with 1- 12'-6" thrie-beam section nested in back of 18'-9" section (See Layout), 1- Thrie beam to W-beam Asymmetrical transition section, use associated hardware with post sizes and location shown. For the remainder of installation use (MGS) W-beam guardrail with only one post type used within (MGS) guardrail run.

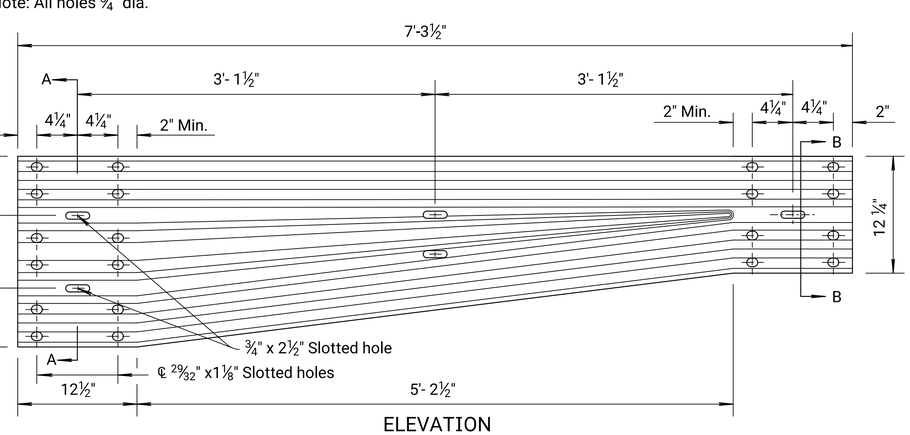
All material and work required for this construction is Subsidiary to the bid item "Guardrail, Steel Plate (MGS)".



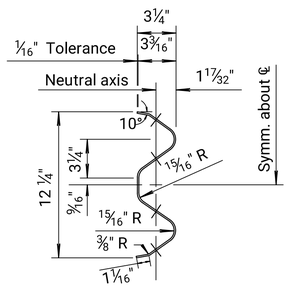
SECTION A-A
THRU RAIL ELEMENT
TYPICAL THRIE BEAM



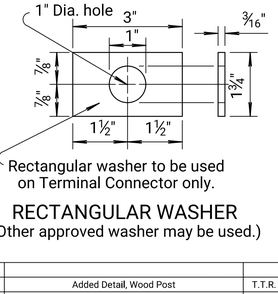
TERMINAL CONNECTOR
⊛ Optional 29⁄32" x 1¾" Slotted holes Rotated 50° (Typical) (12 req'd.)



ELEVATION
ASYMMETRICAL TRANSITION SECTION
(From Thrie Beam to W-Beam rail)



SECTION B-B
THRU RAIL ELEMENT
TYPICAL W-BEAM



RECTANGULAR WASHER
(Other approved washer may be used.)

NO.	DATE	REVISIONS	BY	APP'D
02	02-10-16	Added Detail, Wood Post	T.T.R.	S.W.K.
01	01-25-12	Revised Details, Thrie-Beam	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS OF THRIE BEAM to (MGS) GUARDRAIL TRANSITION

RD613A

FHWA APPROVAL	04-21-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

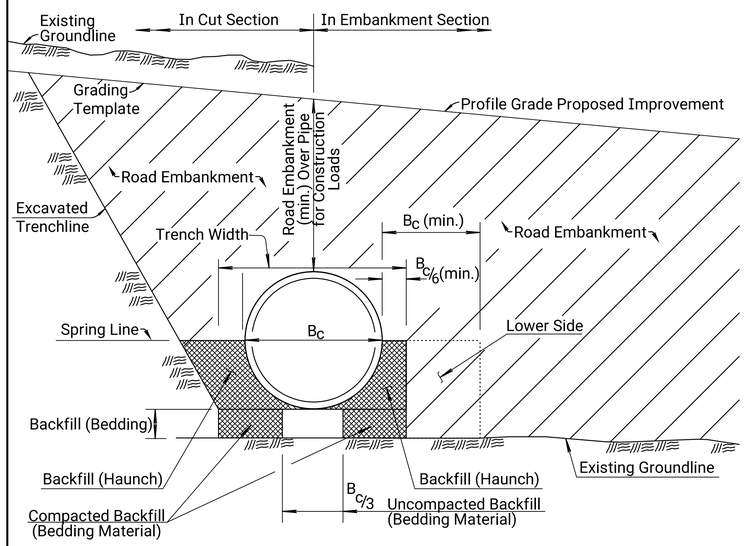
KDOT Graphics Certified 05-16-2022 Sh. No. 26

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss613a-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	27	151

Trench Constuction



REINFORCED CONCRETE PIPE

Backfill (Bedding) Thickness: When over soil, use $B_C/24"$ (min. of 4" & max of 24") of PB-2 or PB-3.
When over rock, excavate $B_C/12"$ (min. of 6") below the bottom of the pipe and replace with PB-3.

Backfill Material: See KDOT's Standard Specifications, Aggregates for Backfill in Division 1100.

Compacted Backfill Material: Use Type B compaction in the haunch areas shown above. Use Type A compaction Backfill (Bedding), unless otherwise specified in the Contract Documents.

Road Embankment: For compaction See KDOT Road Standard Drawing, Foundation Treatment & Compaction of Earthwork.

Trench Width: The minimum required trench width is the greater of:
$1.33 \times B_C$ or $B_C + 24"$

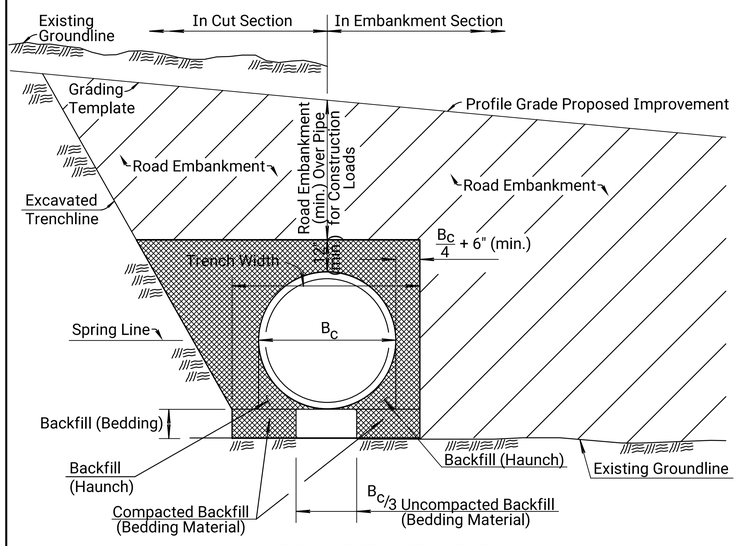
B_C: Outside Pipe Diameter

Minimum Road Embankment for Construction Loads				
Pipe Dia. (Inside Diameter)	Axle Load (Tons)			
	<25	25-37.5	37.5-55	55-75
≤ 15"	2'-0"	3'-0"	4'-6"	6'-0"
18"	2'-0"	3'-0"	4'-0"	6'-0"
21" - 24"	1'-6"	2'-6"	4'-0"	6'-0"
27"	1'-6"	2'-6"	4'-0"	5'-6"
30"	1'-0"	2'-6"	4'-0"	5'-6"
33"	1'-0"	2'-0"	4'-0"	5'-6"
36"	1'-0"	1'-6"	4'-0"	5'-6"
42"	1'-0"	1'-6"	3'-6"	5'-6"
48" - 54"	1'-0"	1'-6"	2'-6"	5'-6"
60" - 66"	1'-0"	2'-0"	2'-6"	5'-6"

Minimum Road Embankment for Construction Loads				
Pipe Dia. (Inside Diameter)	Axle Load (Tons)			
	<25	25-37.5	37.5-55	55-75
72"	1'-0"	2'-0"	3'-6"	4'-0"
66" - 84"	1'-0"	2'-0"	3'-0"	4'-0"
90"	1'-0"	2'-0"	3'-6"	4'-6"
96"	1'-0"	2'-6"	3'-6"	4'-6"
102"	0'-6"	2'-6"	3'-6"	5'-0"
108"	0'-6"	2'-0"	3'-6"	5'-0"
114"	0'-6"	2'-0"	4'-0"	5'-0"
120" - 132"	0'-6"	2'-0"	4'-0"	5'-6"
144"	1'-0"	2'-6"	4'-6"	5'-6"

Minimum Road Embankment height should be no less than the value in the provided table or the manufacturer's specification.

Trench Constuction



CORRUGATED METAL PIPE

Backfill (Bedding) Thickness: When over soil, use ½ in./ft. of fill over pipe (min. of 4" & max. of 24") of PB-2 or PB-3.
When over rock, excavate 6" below the bottom of the pipe and replace with PB-2 or PB-3.

Backfill Material: See KDOT's Standard Specifications, Aggregates for Backfill in Division 1100.

Compacted Backfill Material: See KDOT's Standard Specifications and Pipe Manufacturer's Installation Guidelines.

Compaction: Use Type B compaction in the haunch areas shown above. Use Type A compaction Backfill (Bedding), unless otherwise specified in the Contract Documents.

Road Embankment: For compaction See KDOT Road Standard Drawing, Foundation Treatment & Compaction of Earthwork

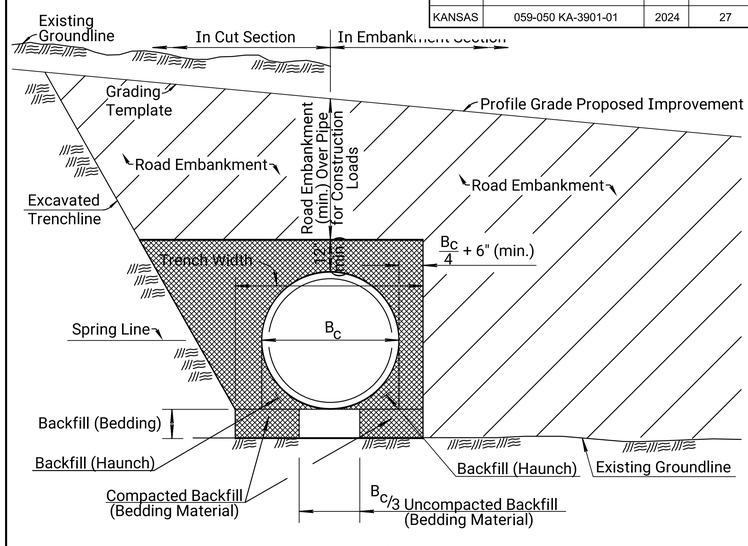
Trench Width: The minimum required trench width is the greater of:
$1.50 \times B_C + 12"$ or $B_C + 16"$

B_C: Outside Pipe Diameter

Corrugated Metal pipe: Minimum Road Embankment for Construction Loads				
Pipe Dia. (Inside Diameter)	Axle Load (Tons)			
	<25	25-37.5	37.5-55	55-75
< 42"	2'-0"	2'-6"	3'-0"	3'-0"
48" - 72"	3'-0"	3'-0"	3'-6"	4'-0"
78" - 120"	3'-0"	3'-6"	4'-0"	4'-0"
126" - 144"	3'-6"	4'-0"	4'-4"	4'-4"

Minimum Road Embankment height should be no less than the value in the provided table or the manufacturer's specification.

Trench Constuction



THERMOPLASTIC PIPE

Backfill (Bedding) Thickness: When over soil, use ½ in./ft. of fill over pipe (min. of 4" & max. of 24") of PB-2 or PB-3.
When over rock, excavate 6" below the bottom of the pipe and replace with PB-2 or PB-3.

Backfill Material: See KDOT's Standard Specifications, Aggregates for Backfill in Division 1100.

Compacted Backfill Material: Use Type B compaction.

Compaction: Hand-held or walk behind compaction equipment is permitted when compacting fill directly above the pipe only when the fill over the pipe is greater than or equal to 12". The use of ride-on compaction equipment is permitted for compacting fill directly above the pipe only when the fill over the pipe is greater than or equal to 36". A prime goal of pipe installation is to manipulate and compact embedment material under the pipe haunches, to achieve full contact of the material with the pipe bottom and fill voids under the pipe.

Road Embankment: For compaction See KDOT Road Standard Drawing, Foundation Treatment & Compaction of Earthwork.

Trench Width: The minimum required trench width is $1.50 \times B_C + 12"$
The maximum trench width is $1.575 \times B_C + 12\frac{1}{2}"$

B_C: Outside Pipe Diameter

Thermoplastic Pipe: Minimum Road Embankment for Construction Loads				
Pipe Dia. (Inside Diameter)	Axle Load (Tons)			
	<25	25-37.5	37.5-55	55-75
< 36"	2'-0"	2'-6"	3'-0"	3'-0"
42" - 48"	3'-0"	3'-0"	3'-6"	4'-0"
54" - 60"	3'-0"	3'-0"	3'-6"	4'-0"

Minimum Road Embankment height should be no less than the value in the provided table or the manufacturer's specification.

GENERAL NOTES

Do not drop, drag or otherwise handle pipe sections in a manner which may cause damage. Inspect the line and grade before and during placement of compacted backfill and uncompacted backfill materials.

For trench installations place pipe in the center of the excavated trench.

When installing pipe, place the uncompacted backfill and compacted backfill material in the bedding area to grade, install pipe to grade, place and compact the haunch area up to the spring line of the pipe and complete the backfill as specified in KDOT's Standard Specifications unless otherwise noted in the contract documents.

B_C for horizontal elliptical pipe, vertical elliptical pipe, arch pipe, and non bridge-sized concrete box structures will be measured along the horizontal axis; similar to the dimension shown for circular pipe on this sheet.

The spring line is a line along the side of the culvert where the tangent to the culvert wall is vertical. It occurs at the widest point in the culvert.

Material used for the roadway embankment may be used in lieu of compacted backfill material as approved by the Engineer.

The backfill load transmitted to the pipe is directly dependent on the trench width. Where maximum trench widths are not indicated in any of the contract documents, trench widths should be as a narrow as possible with side clearance adequate enough to ensure proper compaction of backfill material at the sides of the pipe. The trench width formulas provided can be used as a general guide.

NO.	DATE	REVISIONS	BY	APP'D
01	05-09-22	Initial Release	A.L.R.	T.T.R.

KANSAS DEPARTMENT OF TRANSPORTATION

PIPE INSTALLATION DETAILS

RD658

FHWA APPROVAL		06-08-22	APP'D.	
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

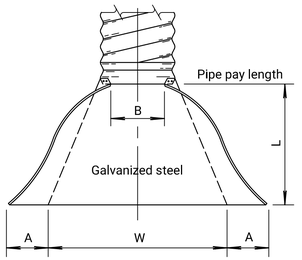
KDOT Graphics Certified 06-10-2022

Sh. No. 27

KDOT Graphics Certified

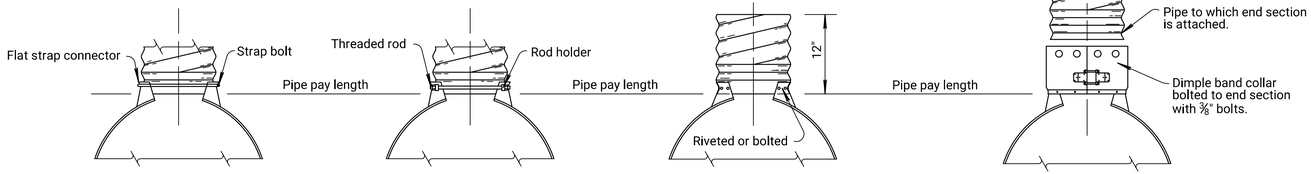
Drawn By : BBEAMER Plotted : 06-17-24
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	28	151



PLAN

(Illustrated with Type #3 Connection)



TYPE 1

Available in sizes 12" through 24" only.

TYPE 2

Available in sizes 30" and 36" Round and 17"x13" through 57"x38" Pipe-Arches.

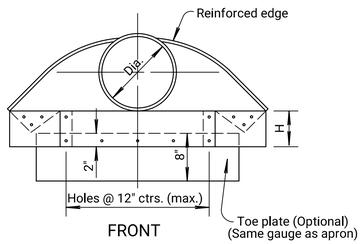
TYPE 3

Available in sizes 42" through 96" Round and 60"x46" through 81"x59" Pipe-Arches.

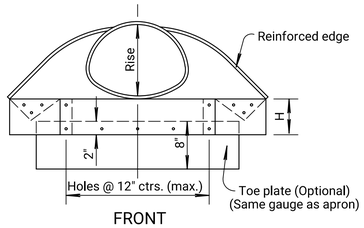
TYPE 5

Available for all Round and equivalent Pipe-Arch sizes, (Type 1 and Type 2 connections are recommended for the smaller sizes with annular ends).

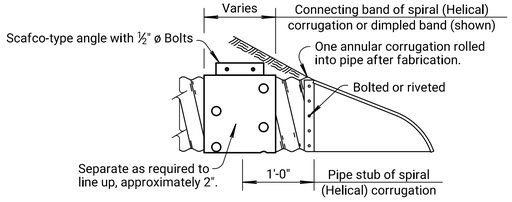
Note: Type 3 connection may be furnished instead of Type 1 or Type 2 for smaller round or arch pipe.



FRONT



FRONT



SPIRAL (HELICAL) CORRUGATION

For all sizes of round and arch culvert pipes having Spiral (Helical) corrugations, the end sections and connecting bands shall be as shown above.

Thickness CSP/ACSP	Thickness CAP	Gauge
0.064"	0.060"	16 ga.
0.079"	0.075"	14 ga.
0.109"	0.105"	12 ga.
0.138"	0.135"	10 ga.
0.168"	0.164"	8 ga.

Pipe Dia. (In.)	CS, ACS or CA Gauge	Dimensions in Inches A (min.)	B (max.)	H (min.)	L (±2")	W (min.)	Approx. Slope
12"	16	5	7	6	21	22	2½: 1
15"	16	6	8	6	26	28	2½: 1
18"	16	7	10	6	31	34	2½: 1
21"	16	8	12	6	36	40	2½: 1
24"	16	9	13	6	41	46	2½: 1
30"	14	11	16	8	51	55	2½: 1
36"	14	13	19	9	60	70	2½: 1
42"	12	15	25	10	69	82	2½: 1
48"	12	17	29	12	78	88	2¼: 1
54"	12	17	33	12	84	100	2¼: 1
60"	12/10	17	36	12	87	112	2: 1
66"	12/10	17	39	12	87	118	2: 1
72"	12/10	17	44	12	87	120	2: 1
78"	12/10	17	48	12	87	130	1½: 1
84"	12/10	17	52	12	87	136	1½: 1
90"	12/10	17	58	12	87	142	1½: 1
96"	12/10	17	58	12	87	144	1½: 1

Bid Designation Sq. Ft.	Nom. W.W. Area Sq. Ft.	Pipe Arch Span & Rise	Dimensions in Inches 2⅔" x ½" Corrugations CS, ACS or CA Gauge	A (min.)	B (max.)	H (min.)	L (±2")	W (min.)	Dimensions in Inches 3" x 1" or 5" x 1" Corr. CS, ACS or CA Gauge	A (min.)	B (max.)	H (min.)	L (±2")	W (min.)	Approx. Slope
1.0	1.1	17" x 13"	16	5	9	6	20	28							2½: 1
1.5	1.6	21" x 15"	16	6	11	6	24	34							2½: 1
2.0	2.2	24" x 18"	16	7	12	6	28	40							2½: 1
2.5	2.9	28" x 20"	16	7	16	6	32	46							2½: 1
3.0 or 4.0	4.5	35" x 24"	14	9	16	6	39	58							2½: 1
5.0 or 6.0	6.5	42" x 29"	14	11	18	7	46	73							2½: 1
7.0 or 8.5	8.9	49" x 33"	12	12	21	9	53	82							2½: 1
10.0 or 11.0	11.7	53" x 41"							12	17	26	12	63	88	2: 1
10.0 or 11.0	11.6	57" x 38"	12	16	26	12	62	88							2: 1
12.5 or 14.0	15.6	60" x 46"							12	17	36	12	70	100	2: 1
12.5 or 14.0	14.7	64" x 43"	12	17	30	12	69	100							2: 1
16.5	19.3	66" x 51"							12/10	17	36	12	70	112	1½: 1
16.5	18.1	71" x 47"	12/10	17	36	12	77	112							1½: 1
21.0	23.2	73" x 55"							12/10	17	36	12	77	124	1½: 1
21.0	21.9	77" x 52"	12/10	17	36	12	77	124							1½: 1
25.0	27.4	81" x 59"							12/10	17	44	12	77	136	1½: 1
25.0	26.0	83" x 57"	12/10	17	44	12	77	130							1½: 1
32.0	32.1	87" x 63"							12/10	17	44	12	77	136	1½: 1
36.0	37.0	95" x 67"							12/10	17	44	12	87	160	1½: 1
42.0	42.4	103" x 71"							12/10	17	44	12	87	172	1½: 1
47.0	48.0	112" x 75"							12/10	17	44	12	87	172	1½: 1

(Information listed in these tables are nominal and may vary by manufacturer.)

GENERAL NOTE for END SECTIONS

End section material shall follow KDOT Pipe Policy for geographic location. Location shall govern use of CS (Galvanized), ACS (Aluminized) or CA (Aluminum) (Type I) End Section. Pipe material and End Section material shall be the same with no mixing of types per location.

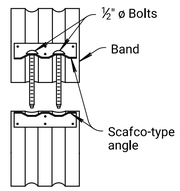
Toe plate extension, when specified, is an accessory and shall be the same gauge and metal as end section. Toe plate shall be punched to match holes in apron lip and attached with furnished 3#8" diameter nuts & bolts.

W + 10" for 12" to 30" diameter pipes inclusive.
W + 20" for 36" to 84" diameter pipes inclusive.
W + 10" for pipe-arches with a rise of 13" to 29" inclusive.
W + 20" for pipe-arches with a rise of 33" to 59" inclusive.

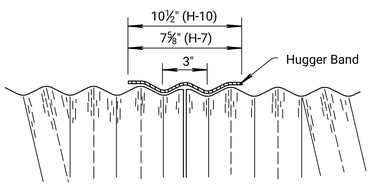
Multiple panel end sections may contain dual gauges of like metal and shall have lap seams which are tightly joined with rivets or bolts. For 60" and larger diameter round pipe end sections and 77"x52" arch pipe end sections, the reinforced edges are supplemented with stiffener angles. The angles are attached with nuts and bolts. Angle reinforcement may be required uder the center panel seams of 73"x55" and larger arch pipe end sections depending on manufacturer.

Other approved designs may be used in lieu of type shown.

Connection of end sections by welding will not be permitted.

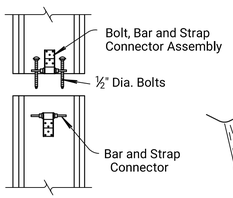


CONNECTION DETAIL
H-7 or H-10 BAND

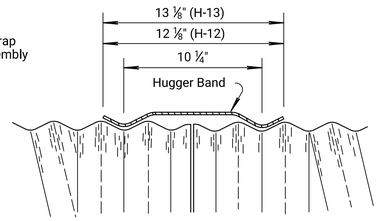


UNIVERSAL REFORMED END with
H-7 or H-10 HUGGER BAND

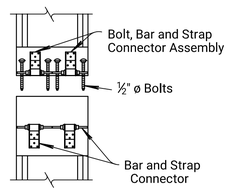
DETAILS FOR H-7 HUGGER BAND (12" thru 36")
or H-10 HUGGER BAND (12" thru 120")



CONNECTION DETAIL
SINGLE HARNESS



UNIVERSAL REFORMED END with
HUGGER BAND



CONNECTION DETAIL
DOUBLE HARNESS

DETAILS FOR H-12 or H-13 HUGGER BAND

Pipe Dia. Inches	Minimum Gauge of Round Pipe 2⅔" x ½" Corr. CSP or ACSP	3" x 1" Corr. CSP or ACSP	5" x 1" Corr. CSP or ACSP	2⅔"x ½" Corr. CAP	3" x 1" Corr. CAP
12"	14			16	
15"	14			16	
18"	14			16	
21"	14			16	
24"	14			16	
30"	14			14	
36"	14			14	16
42"	14			12	16
48"	12	14 16	14 16	12	16
54"	12	14 16	14 16	12	16
60"	10	14 16	14 16	10	16
66"	10	14 16	14 16	8	16
72"	10	14 16	14 16	8	16
78"	8	14 14	14 14		14
84"	8	14 14	14 14		12
90"		14 14	14 14		12
96"		12 12	12 12		12
102"		12 12	12 12		10
108"		12 12	12 12		10
114"		12 12	12 12		8
120"		10 10	10 10		8

Bid Designation Sq. Ft.	Pipe Dimension Span & Rise	Sq. Ft.	Equiv. Round Pipe Diameter	Minimum Gauge of Arch Pipe 2⅔"x ½" Corr. CSP or ACSP	3" x 1" Corr. CSP or ACSP	5" x 1" Corr. CSP or ACSP	2⅔"x ½" Corr. CAP	3" x 1" Corr. CAP
1.0	17" x 13"	1.1	15"	14			16	
1.5	21" x 15"	1.6	18"	14			16	
2.0	24" x 18"	2.2	21"	14			16	
2.5	28" x 20"	2.9	24"	14			14	
3.0 or 4.0	35" x 24"	4.5	30"	14			14	
5.0 or 6.0	42" x 29"	6.5	36"	14			12	
7.0 or 8.5	49" x 33"	8.9	42"	14			12	
10.0 or 11.0	53" x 41"	11.7	48"		14			
10.0 or 11.0	57" x 38"	11.6	48"	12			10	
12.5 or 14.0	60" x 46"	15.6	54"		14			14
12.5 or 14.0	64" x 43"	14.7	54"	12			10	
16.5	66" x 51"	19.3	60"		14			14
16.5	71" x 47"	18.1	60"	10			8	
21.0	73" x 55"	23.2	66"		14			14
21.0	77" x 52"	21.9	66"	8				
25.0	81" x 59"	27.4	72"		14	12		12
25.0	83" x 57"	26.0	72"	8				
32.0	87" x 63"	32.1	78"		12	12		12
36.0	95" x 67"	37.0	84"		12	12		12
42.0	103" x 71"	42.4	90"		12	12		10
47.0	112" x 75"	48.0	96"		12	12		8
54.0	117" x 79"	54.2	102"		10	10		
60.0	128" x 83"	60.5	108"		10	10		
67.0	137" x 87"	67.4	114"		10	10		
74.0	142" x 91"	74.5	120"		8	8		

GENERAL NOTE for METAL PIPE

Culvert "Type" listed may be CSP, ACSP, CAP, RCP, PVCP & PEP within guidelines of KDOT Pipe Policy for geographic location. More than one pipe "Type" may be acceptable for a design location with allowable types listed for each site.

There shall be no payment for gain in pipe length due to fit of pipe at connecting band.

When Hugger Bands are used, the H-7 Hugger Band may be used on circular pipes 36" diameter and smaller or pipe arches 42"x 29" and smaller. The H-10 Hugger Band may be used on 12" thru 120" pipe. The H-12 or H-13 Hugger Band are for pipe sizes larger than 36" diameter or 42"x29" arch pipe.

⊛ Pipe gauge listed in the tables on this sheet are minimum for E'=750 p.s.i. soil. Pipe gauge will be determined for each site based on the Design Manual Volume I- Part C Fill Height Tables and shall shall be listed in the Pipe Culvert Summary. Gauges shown on this Standard Drawing are KDOT minimum and may not be industry minimum gauge.

In geographic areas that allow CSP (24" or smaller arched or round pipe) for entrance and side road installation with less than 3,000 AADT, 16 gauge ACSP may be substituted for 14 gauge CSP.

Aluminum or aluminized pipes or end sections shall be coated with an asphaltic paint when in contact with fresh concrete in accordance with the Standard Specifications.

NO.	DATE	REVISIONS	BY	APP'D
04	09-10-09	Rev. Round and Arch tables, add. Alum.	S.W.K.	J.O.B.
03	01-20-09	Rev. Round and Arch tables, add. Alum.	S.W.K.	J.O.B.
02	04-18-08	Rev. layout, details, tables and notes	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

METAL END SECTION FOR ROUND & ARCH METAL CULVERTS (TYPE I) & PIPE GAUGE TABLES

RD660

FHWA APPROVAL	12-16-09	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-16-2022

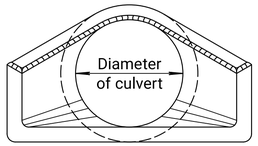
Sh. No. 28

KDOT Graphics Certified

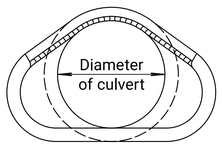
Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, CP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in ndard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section "Elements of Drainage & Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill and classes of pipe.

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss660-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
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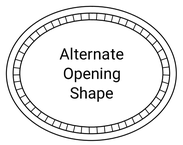


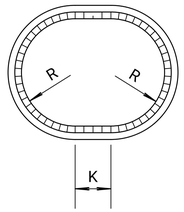
END ELEVATION (TYPE I)



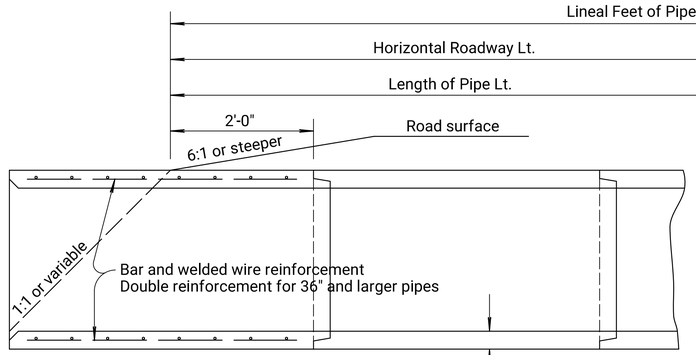
SECTION A-A

Showing rounding of inside edge of end section.

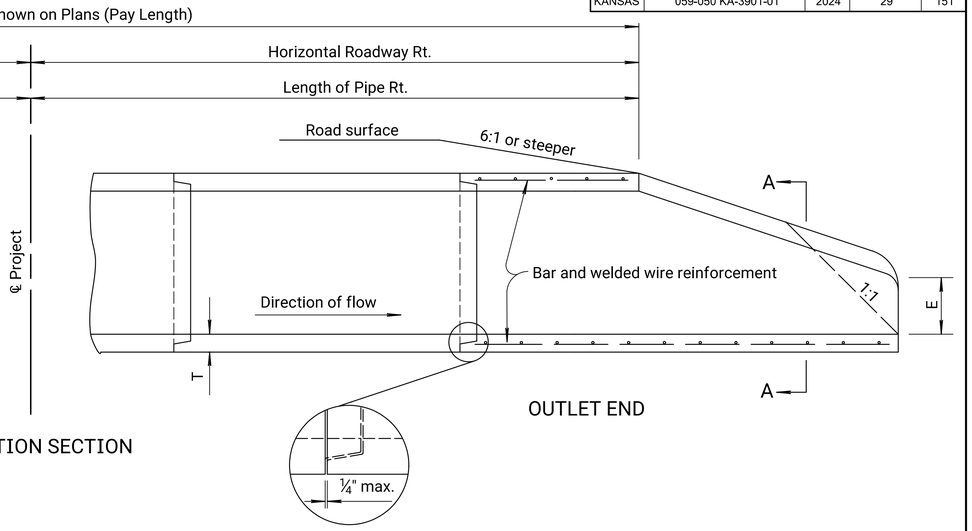




END ELEVATION
(TYPE III)



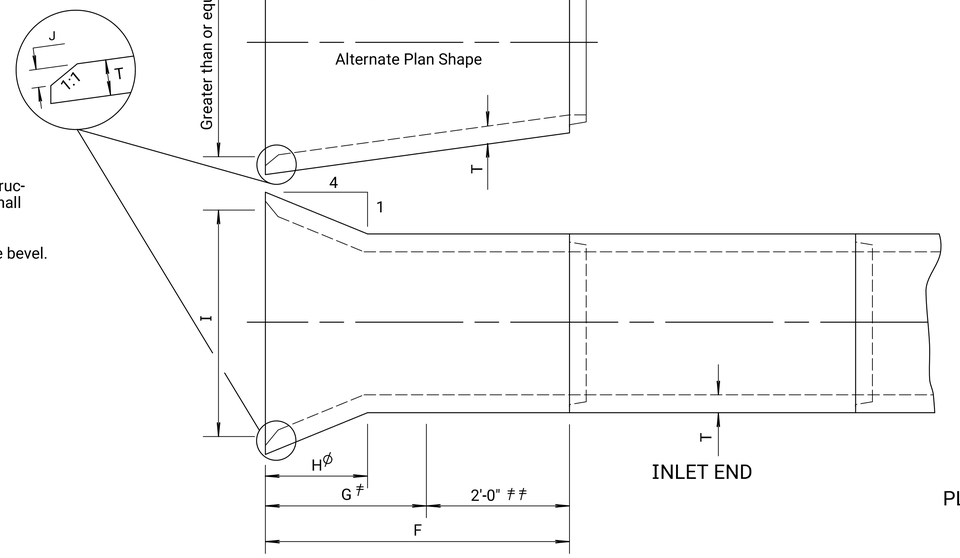
INLET END



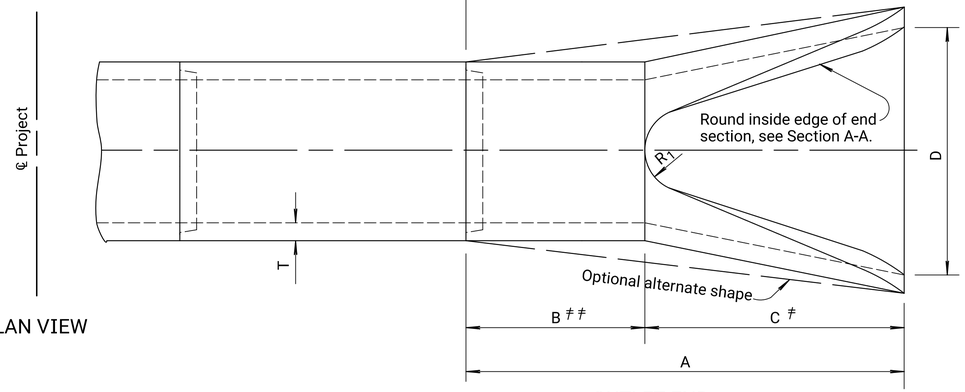
OUTLET END

ELEVATION SECTION

Note: There shall be no payment for gain in length due to joint fit tolerance.



INLET END



PLAN VIEW

OUTLET END

∅ Transition to round pipe.

≠ Paid for as separate item of End Section, except when structures shall bid as alternates. In that case End Sections shall be subsidiary to bid item. "Drainage Structure No. ".

≠≠ Included in pay length of pipe.

⚹ Minimum waterway area is calculated at the inside of the bevel.

END SECTION (TYPE I) NOMINAL DIMENSIONS

Diam.	A	B≠≠	C≠	D	E	R_I	Slope	T
12"	6'-0 ⅞"	4'-0 ⅞"	2'-0"	2'-0"	4"	9	3:1	2"
15"	6'-1"	3'-10"	2'-3"	2'-6"	6"	11	3:1	2 ¼"
18"	6'-1"	3'-10"	2'-3"	3'-0"	9"	12	3:1	2 ½"
24"	6'-1 ½"	2'-6"	3'-7 ½"	4'-0"	9 ½"	14	3:1	3"
30"	6'-1 ¾"	1'-7 ¾"	4'-6"	5'-0"	1'-0"	15	3:1	3 ½"
36"	8'-1 ¾"	2'-10¾"	5'-3"	6'-0"	1'-3"	20	3:1	4"
42"	8'-2"	2'-11"	5'-3"	6'-6"	1'-9"	22	3:1	4 ½"
48"	8'-2"	2'-2"	6'-0"	7'-0"	2'-0"	22	3:1	5"
54"	8'-2 ¼"	2'-9 ¼"	5'-5"	7'-6"	2'-3"	24	2.4:1	5 ½"
60"	8'-3"	3'-3"	5'-0"	8'-0"	2'-11"	24	21	6"
72"	8'-3"	1'-9"	6'-6"	9'-0"	3'-0"	24	1.86:1	7"
84"	9'-3 ½"	1'-9"	7'-6 ½"	10-0"	3'-0"	24	1.6:1	8"

SIDE TAPERED INLET SECTION (TYPE III)-NOMINAL DIMENSIONS

Diam.	Min. W.W.⚹ Area Sq. Ft.	F	G	H	I	J	K	R	T
24"	4.5	4'-3"	2'-3"	1'-5 ⅛"	2'-8"	1 ½"	8"	1'-0"	3"
30"	7.0	4'-9 ½"	2'-9 ½"	1'-9 ½"	3'-4"	2"	10"	1'-3"	3 ½"
36"	10.1	5'-4"	3'-4"	2'-1 ½"	4'-0"	2"	1'-0"	1'-6"	4"
42"	13.7	5'-10 ½"	3'-10 ½"	2'-5 ⅞"	4'-8"	2 ½"	1'-2"	1'-9"	4 ½"
48"	17.9	6'-5"	4'-5"	2'-10 ⅛"	5'-4"	3"	1'-4"	2'-0"	5"
54"	22.7	6'-11 ½"	4'-11 ½"	3'-2 ½"	6'-0"	3 ½"	1'-6"	2'-3"	5 ½"
60"	28.0	7'-6"	5'-6"	3'-6 ⅞"	6'-8"	4"	1'-8"	2'-6"	6"
72"	40.3	8'-7"	6'-7"	4'-3 ⅝"	8'-0"	5"	2'-0"	3'-0"	7"
84"	54.8	9'-8"	7'-8"	5'-0 ⅜"	9'-4"	6"	2'-4"	3'-6"	8"

Dimensions for alternate shapes shall be equal to or greater than those shown in the table, unless otherwise shown.

NO.	DATE	REVISIONS	BY	APP'D
02	04-18-08	Added ref. to KDOT Pipe Policy	S.W.K.	J.O.B.
01	04-05-05	Revised reinforcement callout	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

CONCRETE END SECTIONS FOR CONCRETE PIPES TYPE I & SIDE TAPERED INLET SECTION (TYPE III)

RD662

FHWA APPROVAL	06-27-08	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-16-2022

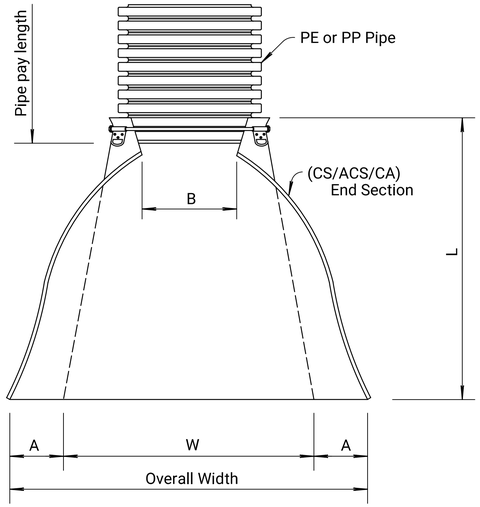
Sh. No. 29

KDOT Graphics Certified

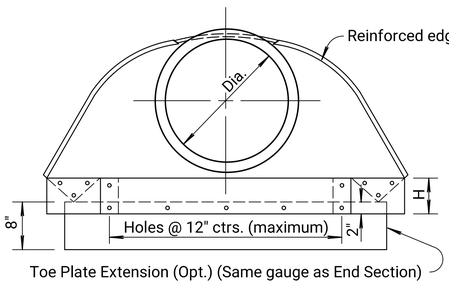
Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss662-01.dgn

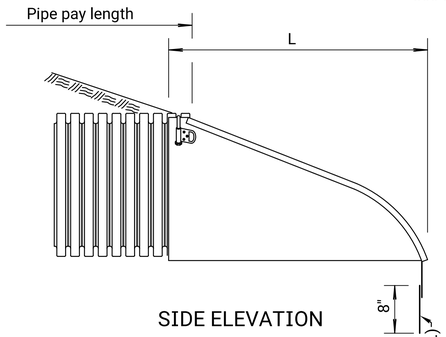
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	30	151



PLAN
(Illustrated with Type 2 Connector)

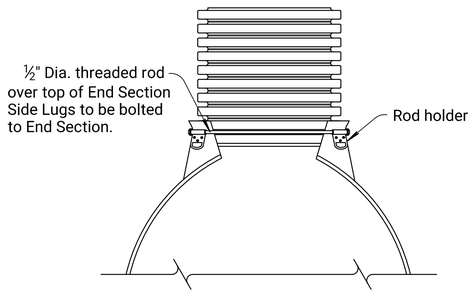


FRONT ELEVATION

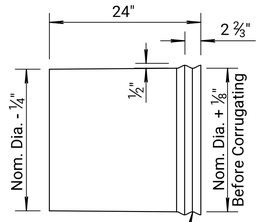


SIDE ELEVATION

⊛ Toe plate extensions where specified, to be punched to match holes in apron lip and bolted with ⅜" dia. bolts. The length of toe plate to be as follows:
W + 10" for 12" to 30" diameter pipe inclusive.
W + 20" for 36" to 60" diameter pipe inclusive.

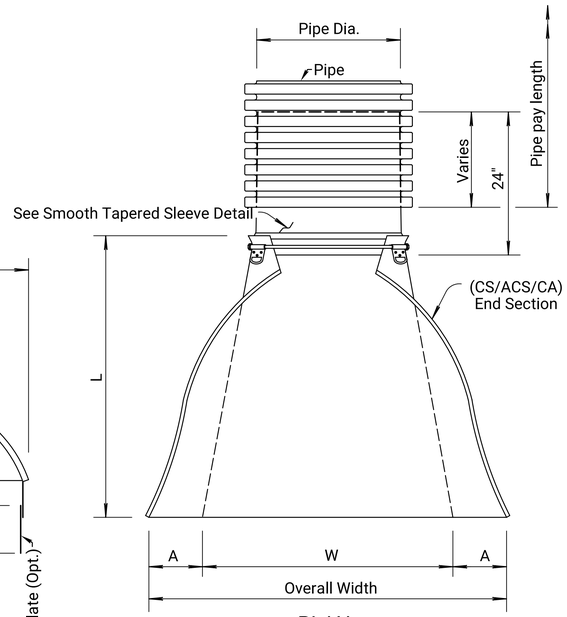


TYPE 2 CONNECTOR
(12" & Larger)

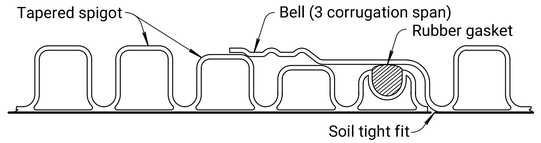


Form ½" x 2 ⅔" Corrugations in 12 ga. smooth CS (Galvanized) or ACS (Aluminized) metal, maintain inside diameter of sleeve.

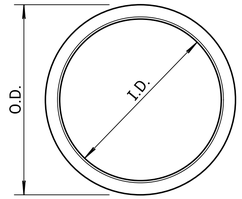
SMOOTH TAPERED SLEEVE DETAIL
(Required)



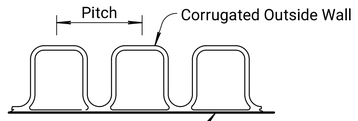
PLAN
TAPERED SLEEVE FOR ATTACHING
METAL END SECTION TO PE OR PP PIPE
(Illustrated with Type 2 Connector)



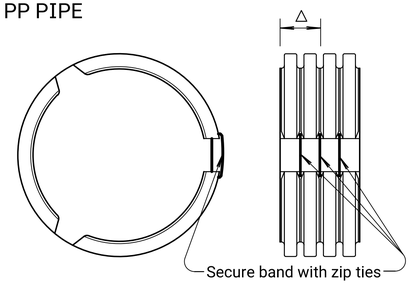
PE or PP PIPE BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT



DETAILS OF CORRUGATED
PE or PP PIPE

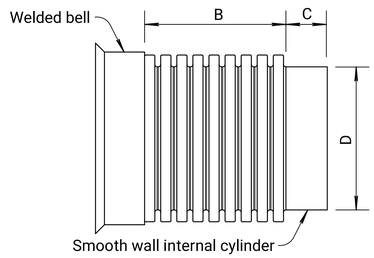


TYPICAL SECTION
CORRUGATED PE or PP PIPE



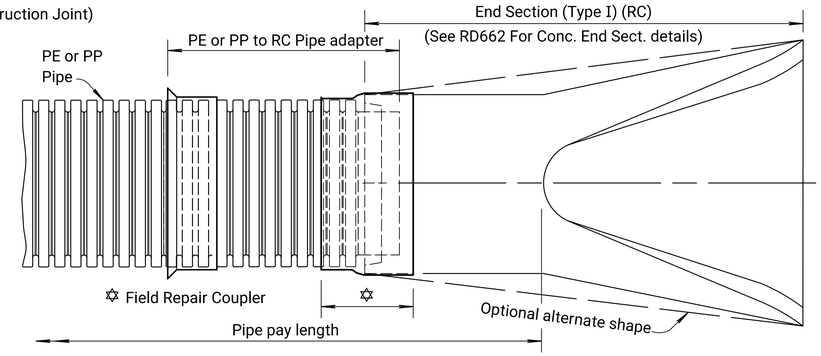
△ Two Full Corrugations (Minimum Overlap)

PE or PP PIPE SPLIT BAND COUPLER
SOIL TIGHT JOINT
This band is used for (Field Splice Construction Joint)



PE or PP to RC PIPE ADAPTER

PE or PP TO RC PIPE ADAPTER			
Pipe Dia. (In.)	B	C	D
18"	18¼"	6"	18"
24"	25"	6"	24"
30"	32 13/16"	6"	30"
36"	36¾"	6"	36"
42"	36"	6"	41¼"
48"	36¾"	6"	41¼"
60"	36"	6"	59"



PE or PP to RC PIPE ADAPTER to CONCRETE END SECTION
(This installation is for Acidic Soil Conditions)

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PE pipe (Type S) or PP pipe (Type S).

PE or PP pipe couplings shall be designed to cover at least two full corrugations on each side of a joint.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PE or PP pipe, end sections, couplings, and fittings shall conform with the Standard Specifications.

See Standard Specifications for PE or PP Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

Attachment to PE or PP pipe 12" diameter and up shall be made with Type 2 Connector.

All work and materials required for construction and installation of end section shall be included in the bid item "End Section".

(CS/ACS/CA) END SECTION FOR PE or PP PIPE							
Pipe Dia. (In.)	Min. Gauge Ends	Dimensions in Inches					Slope
		A (min.)	B (max.)	H (min.)	L (+/-2")	W (min.)	
12"	16	6	7	6	21	24	2½:1
15"	16	7	8	6	26	30	2½:1
18"	16	8	10	6	31	36	2½:1
21"	16	9	12	6	36	42	2½:1
24"	16	10	13	6	41	48	2½:1
30"	14	12	16	8	51	60	2½:1
36"	14	14	19	9	60	72	2½:1
42"	12	16	25	11	69	84	2½:1
48"	12	18	29	12	78	90	2¼:1
54"	12	18	33	12	84	102	2¼:1
60"	12/10	18	36	12	87	114	2:1

NO.	DATE	REVISIONS	BY	APP'D
03	5-9-22	Added Polypropylene pipe (PP) type	A.L.R.	S.W.K.
02	07-17-17	Changed tapered slv. requirement	A.L.R.	S.W.K.
01	02-08-08	Added ref. to KDOT pipe policy	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

METAL/CONCRETE END SECTION
(TYPE I)
for PE or PP PIPE

RD667

FHWA APPROVAL	06-08-22	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

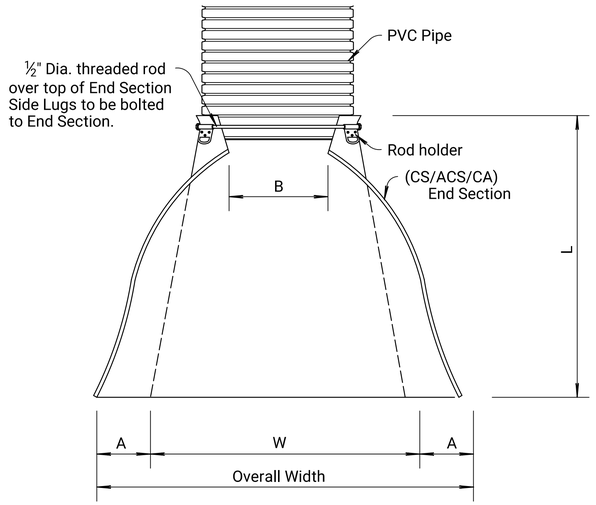
KDOT Graphics Certified 06-22-2022 Sh. No. 30

KDOT Graphics Certified

Note to Designer: [illegible]y provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, PPP, [illegible]CP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the [illegible]ications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & [illegible] for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum [illegible]classes of pipe.

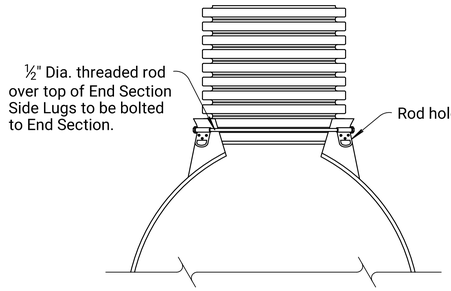
Drawn By : BBEAMER Plotted : 06-17-24
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	31	151



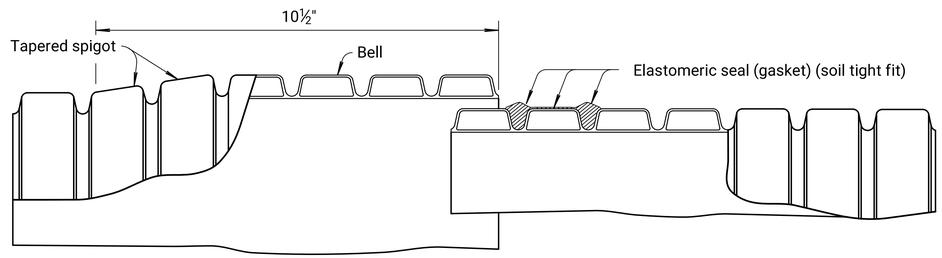
PLAN

(Illustrated with Type 2 Connector on 12" or larger)

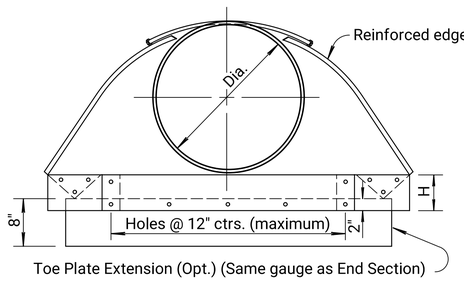


TYPE 2 CONNECTOR

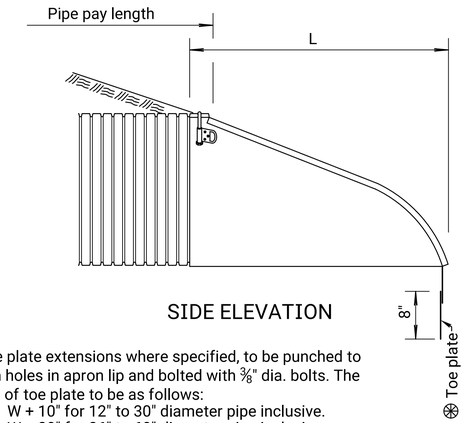
(12" & Larger)



PVC BELL & SPIGOT CONNECTION
SOIL TIGHT JOINT

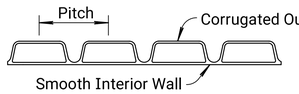


FRONT ELEVATION

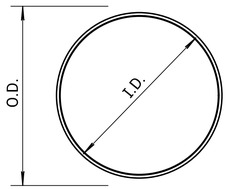


SIDE ELEVATION

⊛ Toe plate extensions where specified, to be punched to match holes in apron lip and bolted with ⅜" dia. bolts. The length of toe plate to be as follows:
W + 10" for 12" to 30" diameter pipe inclusive.
W + 20" for 36" to 60" diameter pipe inclusive.



TYPICAL SECTION
CORRUGATED PVC PIPE



DETAILS OF
CORRUGATED PVC PIPE

GENERAL NOTES

The culvert type shall meet the KDOT Pipe Policy & Standard Specifications.

The size of pipe designated on the plan shall be the nominal inside diameter of a two wall corrugated PVC pipe.

PVC pipe shall be joined with an integral bell gasket joint and Flexible Elastomeric Seals. PVC Pipe is available in lengths of 2.5' to 20'. PVC pipe can be field cut to length, cut through a corrugation valley using a hand or power saw. Gaskets are shipped loose and fitted on spigot/cut pipe end following Manufacturer's installation instructions.

No additional payment shall be made for any gain in length due to the fit of the pipe at connections.

All corrugated PVC pipe, end sections and fittings shall conform with the Standard Specifications.

See Standard Specifications for PVC Pipe bedding and backfill.

Multiple panel end sections shall have lap seams which are to be tightly joined by bolts & nuts. Corner plate and toe plate to be same gauge and material as end section. When required optional toe plate extension shall be overall width less 6" x 8" high.

The End Section attachment to PVC pipe shall be made with a Type 2 Connector for 12" or greater pipe size.

All work and materials required for construction and installation of end section shall be included in the bid item "End Section".

(CS/ACS/CA) END SECTION FOR PVC PIPE

Pipe Dia. (In.)	Min. Gauge Ends	Dimensions in Inches					Slope
		A 1" Tol.	B (max.)	H (min.)	L (+/- 2")	W (min.)	
12"	16	6	7	6	21	24	2½: 1
15"	16	7	8	6	26	30	2½: 1
18"	16	8	10	6	31	36	2½: 1
21"	16	9	12	6	36	42	2½: 1
24"	16	10	13	6	41	48	2½: 1
30"	14	12	16	8	51	60	2½: 1
36"	14	14	19	9	60	72	2½: 1

Note to Designer: KDOT Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the Standard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & Culvert Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum fill heights and classes of pipe.

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss667b-01.dgn

NO.	DATE	REVISIONS	BY	APP'D
01	02-08-08	Added ref. to KDOT Pipe Policy	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

METAL END SECTION
(TYPE I)
for PVC PIPE

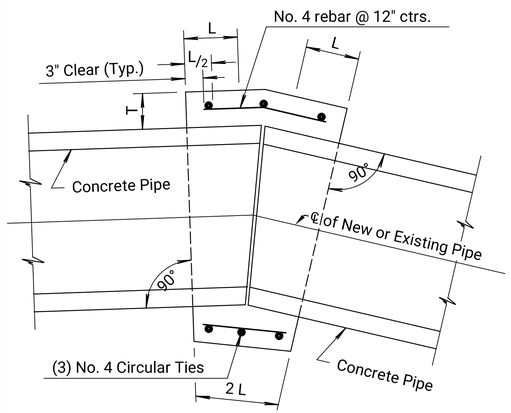
RD667B

FHWA APPROVAL	06-27-08	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-16-2022

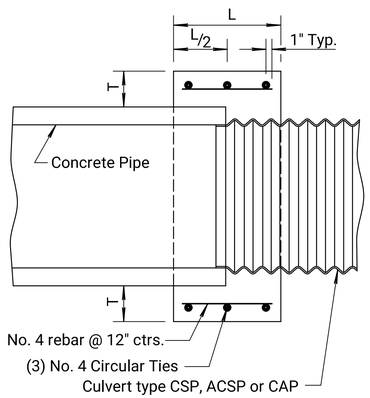
Sh. No. 31

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PIPE COLLAR AT CHANGE IN ALIGNMENT

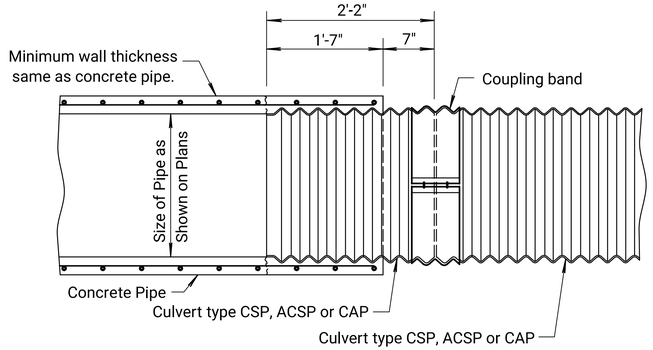
TYPE A COLLAR



PIPE COLLAR AT CHANGE IN PIPE MATERIAL

TYPE B COLLAR

CONCRETE PIPE COLLAR		
Pipe Dia.	L	T
18"	1'-0"	6"
24"	1'-0"	6"
36"	1'-6"	8"
48"	1'-6"	10"
60"	1'-9"	11"

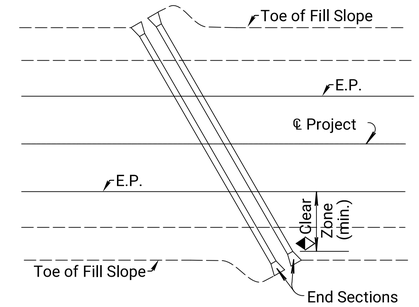


(CONCRETE PIPE CONNECTED TO CORRUGATED METAL PIPE)

TYPE C COLLAR ⚠

⚠ A section of concrete pipe (6'-0" min.) is cast 1'-7" short with the re-steel protruding. Tack weld the re-steel to the 2'-2" section of CMP and finish casting the remaining 1'-7" of RCP around the CMP. This is an approved connection provided it is fabricated as an integral part of a section of concrete pipe.

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	32	151



PLACEMENT OF ROTATED PIPES

RELATIVE TO FILL SLOPE

AND CLEAR ZONE

♦ Pipe culverts 2'-0" or less in height may terminate within the clear zone with Type I or Type III End Section. Any size pipe may terminate within the clear zone with a Type IV End Section.

General Notes:

Pipe collar shall be used to join pipes of different diameters or materials or where change in alignment or grade exceeds that allowed for ordinary joints.

All concrete shall be Concrete Grade 3.0. All reinforcing steel shall be Grade 60 and shall have a minimum of 2" of cover.

The diameter of the circular ties shall be the outside diameter of the larger pipe plus "T".

The maximum allowable distance between the ends of the pipes at any point is 2".

All labor, materials and incidentals required to construct the pipe collar Type A, B or C shall not be paid for directly but shall be subsidiary to the individual pipe bid items.

Aluminum or aluminized pipes or end sections shall be coated with an asphaltic paint when in contact with fresh concrete in accordance with the Standard Specifications.

Pipe ends shall be trimmed such that the maximum distance between pipes at any point is 2".

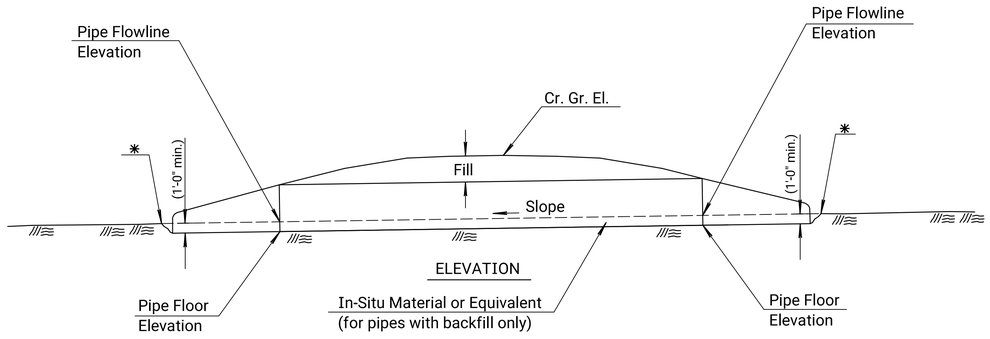
PIPE COLLARS

GENERAL NOTE

For pipes where the height or rise is greater than 4'-0" place uncompacted backfill through the pipe, including the end sections, 1'-0" (Min.). Backfill material will be reasonably free of organic material. In-situ material may be used for backfill as approved by the Engineer.

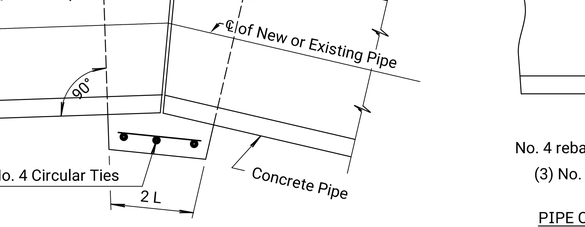
For pipes where the height or rise is less than or equal to 4'-0" install the pipe such that embedment will occur through natural sedimentation. See Pipe Embedment detail shown on this sheet.

Work and material for embedding pipes will not be paid for directly, but will be Subsidiary to the other pipe bid items in the contract.



PIPE EMBEDMENT

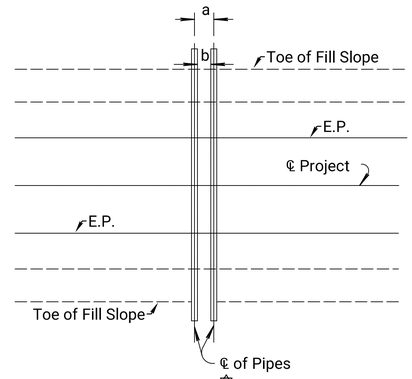
✳Natural channel or ditch flowline elevation. See profile sheets and cross sections for details.



Sketch Along ℄ CRP (CMP)

Broken-Back

SUMMARY OF BROKEN BACK PIPES											
STATION	SIZE	FLOW LINES				LENGTH			ANGLES		REMARKS
		#1	#2	#3	#4	L_1	L_2	L_3	A	B	



a = Face width of end section ✡ + 1'.

✡ Face width is equal to the following dimension shown on the end section std. drawing.

Type I Concrete = D

Type III Concrete = I

Type I CM = W+ 2A

Type III CM = G

Type IV = W+ 2A

b = Pipe diameter or span (3' min.)

Spacing shall be equal to the larger of dimensions a or b.

Spacing for three or more pipes shall be determined using a similar method.

MULTIPLE PIPE SPACING

NO.	DATE	REVISIONS	BY	APP'D
06	01-21-16	Added Details, Pipe Embedment	T.T.R.	S.W.K.
05	05-17-13	Rev. Dimension, Type B Collar	S.W.K.	J.O.B.
04	04-18-08	Added asphaltic paint note	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

MISCELLANEOUS PIPE CULVERT DETAILS

RD668

FHWA APPROVAL	03-16-16	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-02-2022 Sh. No. 32

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Drawn By : BBEAMER Plotted : 06-17-24

File : c:\pwworking\central01\d2186061\KA390101rss668-01.dgn

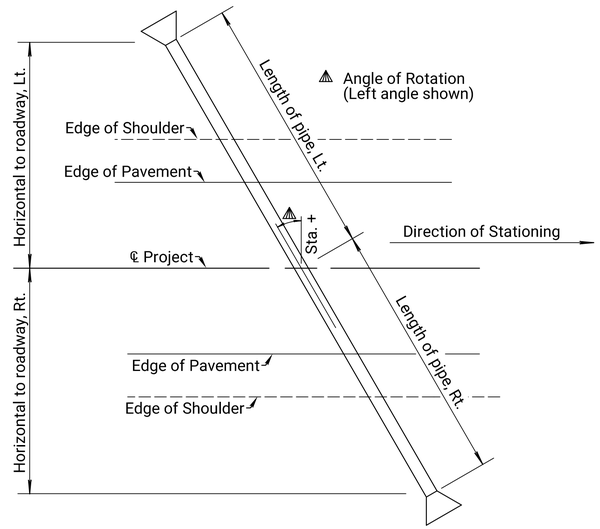
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	33	151

PIPE CULVERT SUMMARY

Station	Type	Size or Bid Designation Sq. Ft.	Crown Grade Elev.	Flow Line Lt.	Flow Line Rt.	Floor Elev. Lt.	Floor Elev. Rt.	Horizontal Roadway Lt.	Horizontal Roadway Rt.	Degree of Rotation	Length of Pipe Lt.	Length of Pipe Rt.	Lin. Ft. of Pipe	Height of Fill (max.) Ft.	Concrete Pipe AASHTO Class No.	Pipe Gauge ◔ Steel	Pipe Gauge ◔ Alum.	Pipe Corrugations ◔ Steel	Pipe Corrugations ◔ Alum.	Remarks
US-59 STA 153+26.00	EP (RCP, CAP, PEP, PVCP)	15"	908.72	906.01	905.73			18.85	18.60	10°00'00"	19.13	18.87	38	1.65	III					
US-59 STA 174+00.00	CRP (RCP, CAP)	36"	923.73	907.66	908.11			79.00	77.00	00°00'00"	79.00	77.00	156	12.02	III					
E 27000 RD STA 50+77.00	CRP (RCP, CAP, PEP, PVCP)	36"	918.79	909.74	908.82			52.75	39.18	30°00'00"	58.03	50.97	109	5.99	III					

◔ Unless otherwise noted, minimum pipe gauge & corrugations to be as shown in RD660.
See Summary of Quantities for End Section information.

✳ Only include floor elevations for embedded pipes. See RD668 for details. For structures not embedded, the floor elevations may be omitted.



PLAN
(Showing Rotation about ℄)

Type	ALLOWABLE LOCATION ⚠				
	Mainline	Side Road	Entrance	Storm Sewer Under ML	Storm Sewer Not Under ML
✡ PVCP		x	x		
PEP		x	x		
PPP					
SRPE					
CSP					
ACSP					
CAP	x	x	x	x	
RCP	x	x	x	x	

✡ When inside diameter of pipe is 36" or less.

⚠ Unless otherwise specified in the plans. Some pipe types may not be allowed at a location if the fill height exceeds the maximum allowable or is less than the minimum allowable cover.

When inside diameter of pipe is 60" or less.

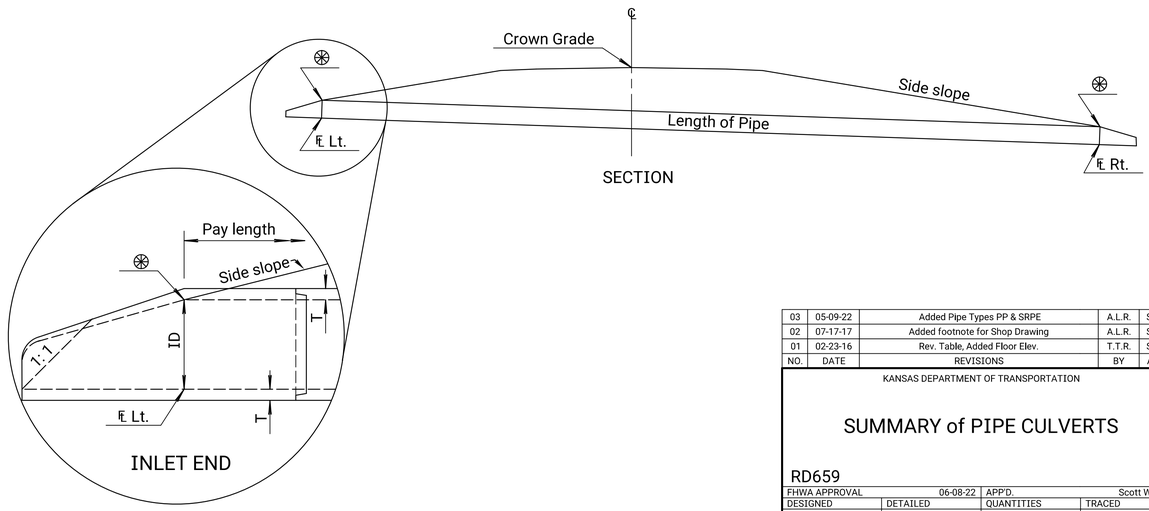
For inside diameter: ≥ 30"

Type	ALLOWABLE END SECTIONS			
	◆ CS	◆ ACS	CA	RC
PVCP			x	Ψ
PEP			x	x
PPP				
SRPE				
RCP				x
ACSP CAP CSP	Provide End Sections of the same material and coating type as the pipe.			

◆ Type IV End Sections are only made of CS or ACS.

Ψ Submit Shop Drawing of connection for review

⊛ Design side slope to intersect inside diameter of pipe outside of Clear Zone.



NO.	DATE	REVISIONS	BY	APP'D
03	05-09-22	Added Pipe Types PP & SRPE	A.L.R.	S.W.K.
02	07-17-17	Added footnote for Shop Drawing	A.L.R.	S.W.K.
01	02-23-16	Rev. Table, Added Floor Elev.	T.T.R.	S.W.K.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY of PIPE CULVERTS

RD659

FHWA APPROVAL	06-08-22	APP'D.	Scott W. King
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 06-24-2022

Sh. No. 33

KDOT Graphics Certified

Note to Designer:
Pipe Policy provides guidance in identifying the prohibited and/or restricted uses of CSP, ACSP, PEP, PVCP, PPP CAP & RCP. Provide end sections of the same type and coating as the pipe. Exceptions to this are noted in the ard Specifications. Refer to the KDOT Design Manual, Volume I (Part C), Road Section, "Elements of Drainage & t Design" for structural pipe design information which includes: corrugations, sizes, gauges, maximum/minimum ghts and classes of pipe.

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101rss659-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	34	151

SUMMARY OF QUANTITIES

Item / Location	Excavation Class III Cu. Yds.	Concrete (Grade 4.0) (AE) Cu. Yds.	Concrete (Grade 4.0) (AE) (SA) Cu. Yds.	Reinforcing Steel (Grade 60) (Epoxy Coated) Lbs.	Reinforcing Steel (Grade 60) Lbs.	Structural Steel (M270) (GR 50W T3) Lbs.	Structural Steel (A709) (GR 50W) Lbs.	Structural Steel (A709) (GR 50) Lbs.	Cased Pile Lin. Ft.	Pile (Steel) (HP12x74) Lin. Ft.	Pre-Drilled Pile Holes Lin. Ft.	Drilled Shaft (48") (Cased) Lin. Ft.	Core Hole (Investigative) Lin. Ft.	Sonic Test (Drilled Shaft) (Set Price) Ea.	Bridge Backwall Prot. System Sq. Yds.	Bridge Deck Grooving Sq. Yds.	Abutment Aggregate Drain Cu. Yds.	Slope Protection (Aggregate) Cu. Yds.	Bearing (Steel Reinf. Elastomeric) Each	Welded Stud Shear Connectors Each	Falsework Inspection Lump Sum	Fence (Chain Link) (8'-0")(Special) Lin. Ft.
Abutment No. 1	163	30.2	*	*					104	408	96				74		95	824				
Pier No. 1		51.3			11 350							137	58						6			
Pier No. 2		51.0			11 350							137	56						6			
Abutment No. 2	163	30.2	*	*					104	424	96				74		95	880				
Substr. Total	326	162.7			22 700				208	832	192	274	114		148		190	1 704	12			
Superstr. Total			696.7	189 050		829 737	65 623	1988								2 022				6 984		288
Total	326	162.7	696.7	189 050	22 700	829 737	65 623	1988	208	832 †	192	274	114	1	148	2 022	190	1 704	12	6 984	1	288

* Quantities are included in the Superstr. Total Quantity.

† Summary of Piling
Abutment No. 1 — 8 @ 51 ft.
Abutment No. 2 — 8 @ 53 ft

NOTE: Only Gr.50 steel pile HP12x74 shall be used on this project.

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

GENERAL NOTES

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

PRE-DRILLING: All steel piles at the abutments shall have a smooth steel casing installed per the plans prior to driving. All steel piles in Abutment No. 1 shall be pre-drilled to elevation 919.01. All steel piles in Abutment No. 2 shall be pre-drilled to elevation 919.61. Piles shall be set and driven to the computed bearing value shown. After driving the pre-drilled holes shall be left open and a cap plate shall be placed prior to continuing construction.

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

PILING: Drive all piling to penetrate the Hepler 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:

Abutment No. 1 87 Tons
Abutment No. 2 87 Tons

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

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

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

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

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

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

DRILLED SHAFT BACKFILL: Backfill the annular space between the temporary casing and the permanent casing with granular material as defined in the KDOT Specifications.

PIER BEAM CONSTRUCTION: Cure the columns as required by KDOT Specifications before beginning the pier beam construction (placing resteel or formwork). Do not drill and grout bolts or other devices into the columns used for falsework support unless shown on the plans. Cure the columns as required by the KDOT Specifications before placing pier beam concrete. Do not remove falsework used to support the pier beam until the pier beam concrete has cured as required by the KDOT Specifications. Do not set girders or beams on the pier beam unitl after the falsework is removed or the pier beam concrete has 0.75 f'c strength as tested.

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

ANCHOR BOLTS: Place the reinforcing bars below the bearing devices to clear the anchor bolts.

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

PREFORMED ANCHOR BOLT HOLES: Preform 4 inch diameter holes using only corrugated polyethylene tubing(Type C) at the locations shown. When temperatures are expected to go below freezing, seal the preformed holes or fill them with a propylene glycol-based antifreeze to prevent expansion damage. The holes will be free of water, antifreeze or foreign materials at the time of grouting the anchor bolts. The polyethylene tubing may remain in-place. Trim the tubing flush with the top of concrete. This work shall be subsidiary to Concrete Grade 4.0 (AE).

BEARING (STEEL REINFORCED ELASTOMERIC): Elastomeric Bearing Device shall be factory bonded to the steel sole plate by a vulcanization process. The steel sole plate and swedge anchor bolt are subsidiary to the bid item, "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

DESIGN DATA

DESIGN SPECIFICATIONS:
AASHTO Specifications, 2020 (9th Edition) and Interim Specifications. Load and Resisitance Factor Design.

DESIGN LOADING:
HL-93
Design Dead Load includes allowance of 15 psf for a future wearing surface.

UNIT STRESSES:

Concrete (Grade 4.0)	f'c = 4 ksi
Concrete (Grade 4.0) (AE)	f'c = 4 ksi
Concrete (Grade 4.0) (AE) (SA)	f'c = 4 ksi
Reinforcing Steel (Grade 60)	fy = 60 ksi
Structural Steel (AASHTO M270 Gr. 50W T3)	fy = 50 ksi
Structural Steel (ASTM A709 Gr. 50W)	fy = 50 ksi
Steel Piles	fy = 50 ksi
Structural Steel (ASTM A709 Gr. 50)	fy = 50 ksi

LRFD DESIGN PILE LOAD:

Design Loading (Tons/Pile)	Strength I	Service I	Phi
Abutment No. 1	87	63	0.50
Abutment No. 2	87	63	0.50

LRFD DESIGN DRILLED SHAFT LOAD:

Design Loading (Tons/Shaft)	Strength I	Service I	Phi	
Pier No. 1	833	611	Base:	0.45
			Skin:	0.55
Pier No. 2	833	611	Base:	0.45
			Skin:	0.55

TRAFFIC DATA US-59	
AADT (2023)	4500
AADT (2043)	6000
DHV	10%
D	45/55
T	13.5%

LFD & LRFR RATING FACTORS		
Truck \ Rating Level	Inventory	Operating
HS-20 Truck (36T)	1.611	2.691
Type HET (110T)		1.208
2002 LFD Rating, 17th Edition AASHTO		
HL-93 Loading	1.007	1.306
2018 Manual for Bridge Evaluation		

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35	General Notes
36	General Notes
37	Contour Map
38	Construction Layout
39	UPRR Track Profiles
40	Engineering Geology
41	Abutment No. 1 Details
42	Abutment No. 2 Details
43	Abutment Aggregate Drain
44	Drilled Shaft Details
45	Pier Details
46	Bearing Device Layout and Details
47	Structural Steel Framing Plan
48	Girder Elevation
49	Miscellaneous Structural Steel Details
50	Steel Erection, Fit-Up and Bolting Procedure
51	Girder Field Splice Details
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53	Dead Load Deflection & Camber Diagrams
54	Dead Load Deflection & Camber Diagrams
55	Deck Plan
56	Concrete Placing Sequence & Typical Section
57	Top of Deck Elevations
58-59	Barrier Curb Details
60	Railroad Protective Fence Details
61	Bill of Reinforcing Steel and Bending Diagrams
62	Bill of Reinforcing Steel
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63	Bridge Excavation (LRFD)
64	Union Pacific Railroad Clearance and Track Protection
65	Standard Pile Details
66	Supports and Spacers for Reinforcing Steel
67	Bridge Berm and Slope Protection Straight Wingwall Abutment

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

SUMMARY OF QUANTITIES & GENERAL NOTES
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 02-22-2024

Sheet No. 34

KDOT Graphics Certified

Plotted By: BBEAMER | Plot Location:
File: c:\pwworking\central01\d2654511\Va3901l01bbr097-01.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	35	151

GENERAL NOTES

BEARING (Steel Reinforced Elastomeric) (Method A): Bearing devices at Pier Nos. 1 and 2 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 details.

ERECTION ELEVATION CHECKS: 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 (± 1/4"). Present verification to the Engineer that the elevations at all field splice locations match the elevations (± 1/2") in the plans before any connection is fully tightened. (For steel girders that are blocked on the ground, fully tighten the bolted connections prior to erection.)

ABUTMENT AGGREGATE DRAIN: See the General Notes on the "Abutment Aggregate Drain" sheet.

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

BACKFILL COMPACTION: Compact backfill at the abutments and piers.

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.

SLOPE PROTECTION (Aggregate): Place Slope Protection (Aggregate) to the limits and thicknesses shown on the plans or as directed by the Engineer. Use D50 = 4" as described in Section 1114 placed to the limits shown on the plans. Place a 10 foot wide mat of geotextile under the rock/rubble embankment on the berm and berm slopes and centered on the drip lines of the slab.

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 Specficications. The falsework designer of record will conduct an inspection of the as-built falsework. The bid item "Falsework Inspection" is full compensation for all material, labor and equipment. See KDOT Specifications.

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

STRUCTURAL STEEL: The girder flange and web plates shall meet AASHTO M270 Gr. 50W T3 requirements. Flange splice plates shall meet AASHTO M270 Gr. 50W T3 requirements. Field splice plates ≥ 1/2" shall meet AASHTO M270 Gr. 50W T3 requirements. All other structural steel shall meet ASTM A709 Gr. 50W requirements, 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.

SHOP DETAILS: Reference blocking diagrams on the shop details to a level line running the entire length of the girder.

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

FABRICATION OF WELDED SPLICES: See Figure 6.4.1-1 "Flange and Web Welded Splice Configurations" of the Bridge Design Manual. All flange splices shall be full penetration welds.

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. For bridges with skewed reinforcing steel the contractor has the option to place the Welded Shear Stud Connectors parallel to the skew angle.

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: Girder Connections: Use 7/8" diameter heavy hex structural bolts for the main member connections. Use 15/16" diameter bolt holes. Do not ream during field erection. Accurately align all connections by driving 15/16" diameter drift pins in all corners and in 1/4 of the remaining holes in each plate. See KDOT Specifications.

Secondary Member Connections: Use 3/4" diameter heavy hex structural bolts for the secondary member connections. Use 13/16" 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 1/4" of material from one ply of the connected parts.

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.

FILLETS: Camber the steel girders for the total dead load deflection and the vertical curvature, if necessary. The ordinates shown for concrete dead load deflection represent the amount of camber that should be in the girders after they are erected and bolted but prior to placing the floor forms. After the structural steel is completely erected and the falsework bents are removed, measure the camber in the field by taking a profile of each girder. Correct any variation between the actual camber and the concrete dead load deflection shown in the plans by varying the depth of the concrete fillets over the girders so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the girder shall be 8 1/2" inches.

The theoretical amount of concrete required for the fillets is 23.5 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

ERECTION: Bring each line of girders to the correct line, grade (or relative grade) and camber, and secure in place prior to connection of the girder field splices. Provide falsework bents as necessary to maintain the correct line and elevation. Leave the falsework bents in place until all girder splice connections are completed. Submit information which clearly shows the proposed layout and use of falsework bents. The Engineer shall approve such information prior to erection of structural steel.

ERECTION PLANS: This is a Category C Structure. Submit detailed Erection Plans to the State Bridge Office (or Bureau of Local Projects) 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. The Erection Supervisor will attend the required pre-erection meeting before these operations begin as described in KDOT Specifications. No structural erection work will begin without approved erection plans.

PAINTING: The shop and field coats applied to Structural Steel shall conform to an inorganic zinc primer with a waterborne acrylic finish coat. The finish coat will be Kansas Brown, this color will match Federal Standard #20045.

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 girders, including the abutment diaphragms; the top flanges, including the shear studs; and the top flange splice plates in accordance with KDOT Specifications.

Touch-Up: Prepare and paint all bolts, nuts, studs, and other small areas of damaged paint (1 cu.yd. or less), requiring touch-up with an approved organic zinc primer.

PAINTING TOP FLANGES: (Studs applied in the shop) Apply a 3 mil primer coat of an approved inorganic zinc primer to the tops of the top flanges and to the studs.

(Studs applied in the field) Shop Work - Blast clean the tops of the top flanges to SSPC-SP10 Specifications (latest Revision).

Field Work - 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.

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

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

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

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

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

CONCRETE PLACING: Place and hand vibrate all concrete for the abutments the construction joint to the bottom of deck elevation just prior to the noral paving train operations. Do this work in a manner to avoid cold joints in either the slab or the abutment.

DECK PROTECTIVE SYSTEM: Epoxy coat all reinforcing steel in the deck slab and barrier curb.

Plotted By: BBEAMER | Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-02.dgn
Plot Date: 06-17-24

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

GENERAL NOTES
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	36	151

GENERAL NOTES

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

REMOVAL OF EXISTING STRUCTURE: Removal of existing structure is included in the bid item, "Removal of Existing Structures", Lump Sum. All materials removed from the existing structure shall become the property of the Contractor. Remove this material from the site. Remove existing bridge 3 ft. (Min.) below final grade.

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

Concrete	0%
Date of Report	Nov. 9, 2021

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

RAILROAD PROTECTION: Execute the work in such a manner and take any precautions necessary to prohibit broken concrete and other debris from falling on and damaging the rails, ties, ballast or other railroad property. As much as possible, do the work so as not to interfere with the normal use of the tracks. The Union Pacific Railroad and the Engineer shall approve the methods of protection proposed by the Contractor before any work begins.

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

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

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

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

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

UNION PACIFIC RAILROAD NOTES:

1. The proposed project shall not increase the quantity and/or characteristics of the flow in the Railroad's ditches and/or drainage structures.

2. The elevation of the existing top-of-rail profile shall be verified before beginning construction. All discrepancies shall be brought to the attention of the Railroad prior to construction.

3. The Contractor must submit a proposed method of erosion and sediment control and have the method approved by the Railroad.

4. All shoring systems that impact the Railroad's operations and/or supports the Railroad's embankment shall be designed and constructed per current Railroad Guidelines for Temporary Shoring. The method of shoring permissible is dependent upon the availability of track windows, if any.

5. All demolitions within the Railroad's right-of-way and/or demolition that may impact the Railroad's tracks or operations shall be in compliance with the Railroad's Demolition Guidelines. Demolition activities shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements. The method of demolition permissible is dependent upon the availability of track windows, if any.

6. Erection over the Railroad's right-of-way shall be designed to cause no interruption to the Railroad's operation, enabling the track(s) to remain open to traffic per the Railroad's requirements. The method of erection permissible is dependent upon the availability of track windows, if any.

7. Railroad requirements do not allow work within 50 feet of track centerline when a train passes the work site and all personnel must clear the area within 25 feet of the track centerline and secure all equipment.

8. Construction activities, including falsework/formwork, are not allowed within the "Minimum Construction Clearance Envelope" as they would otherwise disrupt Railroad operations.

9. All permanent clearances shall be verified before project closing. All discrepancies shall be brought to the attention of the Railroad.

10. Email Before You Dig. Prior to excavation, disrupting, or working on the Railroad property the contractor shall locate and protect UPRR facilities sending requests to the UPRR "Call Before You Dig" (CBUD) email. Guidance can be found at the following web address: www.up.com/CBUD.

NOTICE: All construction submittals shall be reviewed and approved by the Agency prior to the submitting to the Railroad for review and approval. Review times for construction submittals are detailed within Table 3-1 of the current UPRR Guidelines of Railroad Grade Separation Projects.

Should we provide Table 3-1 in these plans?

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2655451\Ka390101bbr097-03.dgn
Plot Date: 06-17-24

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

GENERAL NOTES
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

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STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	37	151

NW Cor. Sec. 6, T31S, R20E
N 230,915.964 E 20,446,662.174
1240.43' W of ℄ Sta. 172+65.17 NE ∡ ℄ to ℄ = 137° 35' 07"
1. Found ½" Square Bar 12" Below Gravel Surface of 27000 Road
2. Mag Nail in South Face of Easterly Wood Directional Sign Post — 14.60' N
3. 60D Nail in Northwest Face of Power Pole — 71.85' SE
4. 60D Nail in 8" Diameter Hackberry Tree — 49.31' SSE
5. Top Steel Southern Star Gas Line Marker Post — 89.25' WNW
6. +/- Centerline of Travelway for 27000 Road Running West and East
7. In Line +/- with Projected Centerline of Travelway for Ottawa Road Running South

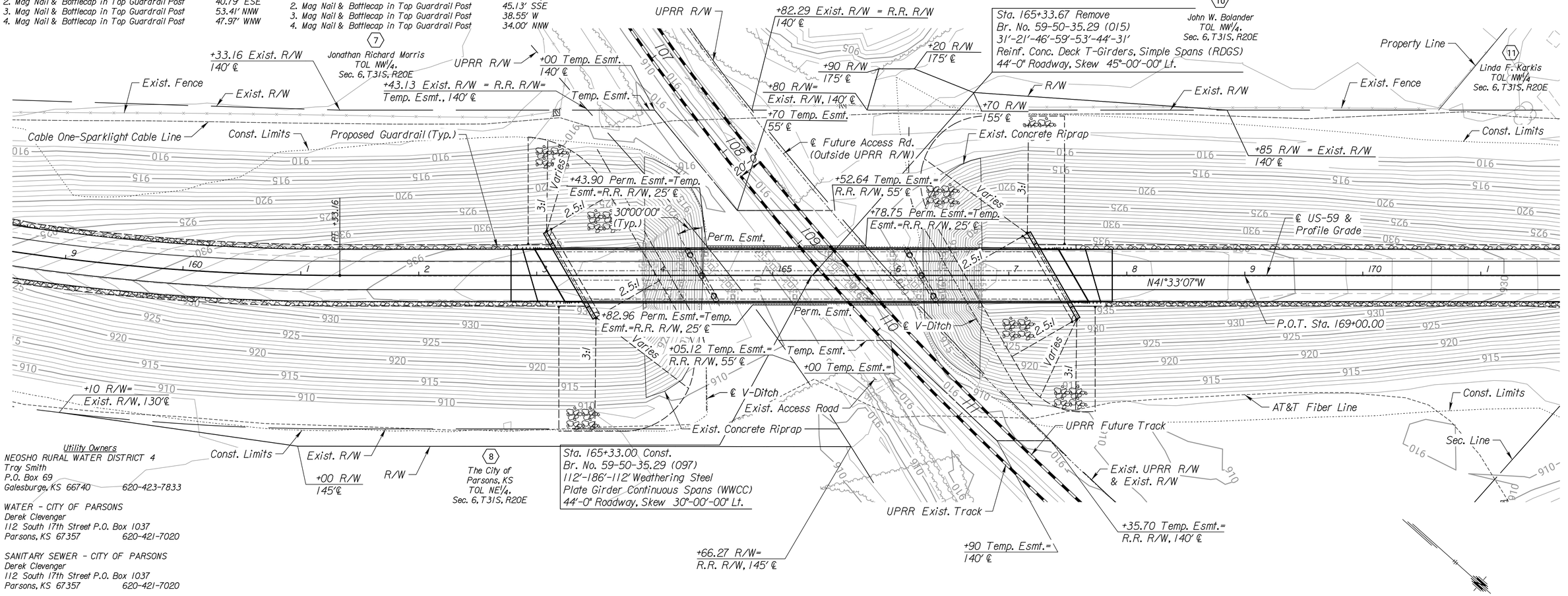
N ¼ Cor. Sec. 6, T31S, R20E
N 230,914.526 E 20,449,128.079
1225.48' E of ℄ Sta. 172+65.17 NE ∡ ℄ to ℄ = 137° 35' 07"
1386.91' N of ℄ Tangent Ahd Sta. 154+10.95 NE ∡ ℄ to ℄ = 41° 22' 09"
1. Found ½" Rebar w/ Orange "Cornerstone Surveying" Cap 6" Below Gravel Surface
2. 60D Nail in Top of Fence Post — 18.55' S
3. Mag Nail & Bottlecap in West Face of Power Pole — 78.98' ENE
4. Mag Nail & Bottlecap in Northeast Face of Power Pole — 160.00' WNW
5. Centerline of Travelway for 27000 Road — 6+/- N

NE Cor. Sec. 6, T31S, R20E
N 230,913.367 E 20,451,776.682
1. Found ½" Rebar 4" Below Gravel Road Intersection of 27000 Road and Pratt Road
2. Mag Nail in Brace Post — 33.50' NNE
3. 60D Nail in North Gate Post — 56.11' SE
4. 60D Nail in South Gate Post — 58.02' SSE
5. Mag Nail and Bottlecap in Northeast Face of Power Pole — 61.85' WSW
6. Centerline of Travelway of Pratt Road — 5+/- E
7. Centerline of Travelway of 27000 Road — 3+/- S
8. Southeast Corner Section 31, T30S, R20E — 765.0' W

US-59 ALIGNMENT NOTES

P.T. Sta. 161+33.16
N 230,068.094 E 20,448,653.460
1. Set ⅝" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 PT" — (0.25' deep)
2. Mag Nail & Bottlecap in Top Guardrail Post — 40.79' ESE
3. Mag Nail & Bottlecap in Top Guardrail Post — 53.41' NNW
4. Mag Nail & Bottlecap in Top Guardrail Post — 47.97' WNW

P.O.T. Sta. 169+00.00
N 230,641.962 E 20,448,144.816
1. Set ⅝" Rebar & Aluminum Cap Stamped "59-50 KA-3901-01 ℄ US 59 POT" — (0.25' deep)
2. Mag Nail & Bottlecap in Top Guardrail Post — 45.13' SSE
3. Mag Nail & Bottlecap in Top Guardrail Post — 38.55' W
4. Mag Nail & Bottlecap in Top Guardrail Post — 34.00' NNW



Utility Owners

NEOSHO RURAL WATER DISTRICT 4
Troy Smith
P.O. Box 69
Galesburge, KS 66740 620-423-7833

WATER - CITY OF PARSONS
Derek Clevenger
112 South 17th Street P.O. Box 1037
Parsons, KS 67357 620-421-7020

SANITARY SEWER - CITY OF PARSONS
Derek Clevenger
112 South 17th Street P.O. Box 1037
Parsons, KS 67357 620-421-7020

EVERGY
Jennie Brown (Jennie.brown@evergy.com)
2605 North Flynn Drive
Parsons, KS 67357 620-820-8203

CABLE ONE-SPARKLIGHT
2229 Broadway Avenue
Parsons, KS 67357 620-421-2510

KANSAS GAS SERVICE
Andy Frost (andrew.frost@onegas.com)
2004 Morton Avenue
Parsons, KS 67357 620-423-5231

SOUTHERN STAR GAS LINE
Michael DeGraeve (mike.Degraeve@southernstar.com)
8195 Cole Parkway
Shawnee, KS 66227 913-422-6341

AT&T
Ron Maher (rx9187@att.com)
23 West 1st Street
Fort Scott, KS 620-223-9942

US-59 Curve Data

P.I. Sta. 154+62.50 (Bk.) =
P.I. Sta. 153+94.93 (Ahd.)
Δ = 42°16'01" (Lt.)
D = 03°00'00"
R = 1909.84'
T = 738.23'
L = 1408.89'
E = 137.71'
Super = 0.076 ft/ft

Elevations shown are NAVD88 Vertical Datum.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

CONTOUR MAP
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	DGB

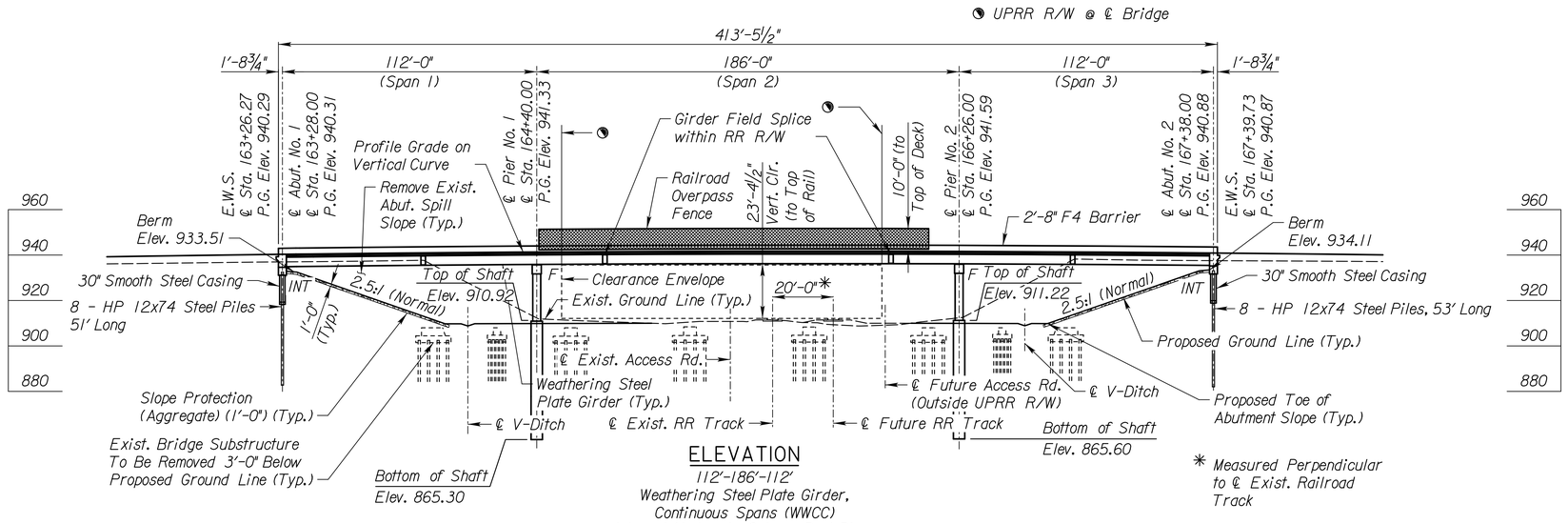
KDOT Graphics Certified 02-22-2024

Sheet No. 37

KDOT Graphics Certified

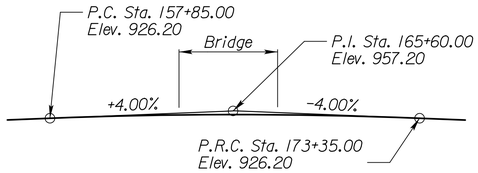
Plotted By: KKATHRIN
File: c:\pwworking\central01\d2655451\Ka390101br097-04.dgn
Plot Date: 06-13-25
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	38	151



ELEVATION

112'-186'-112' Weathering Steel Plate Girder, Continuous Spans (WWCC) Integral Abutments, Column Bent Piers 44'-0" Roadway, Skew 30°-00'-00" Lt.



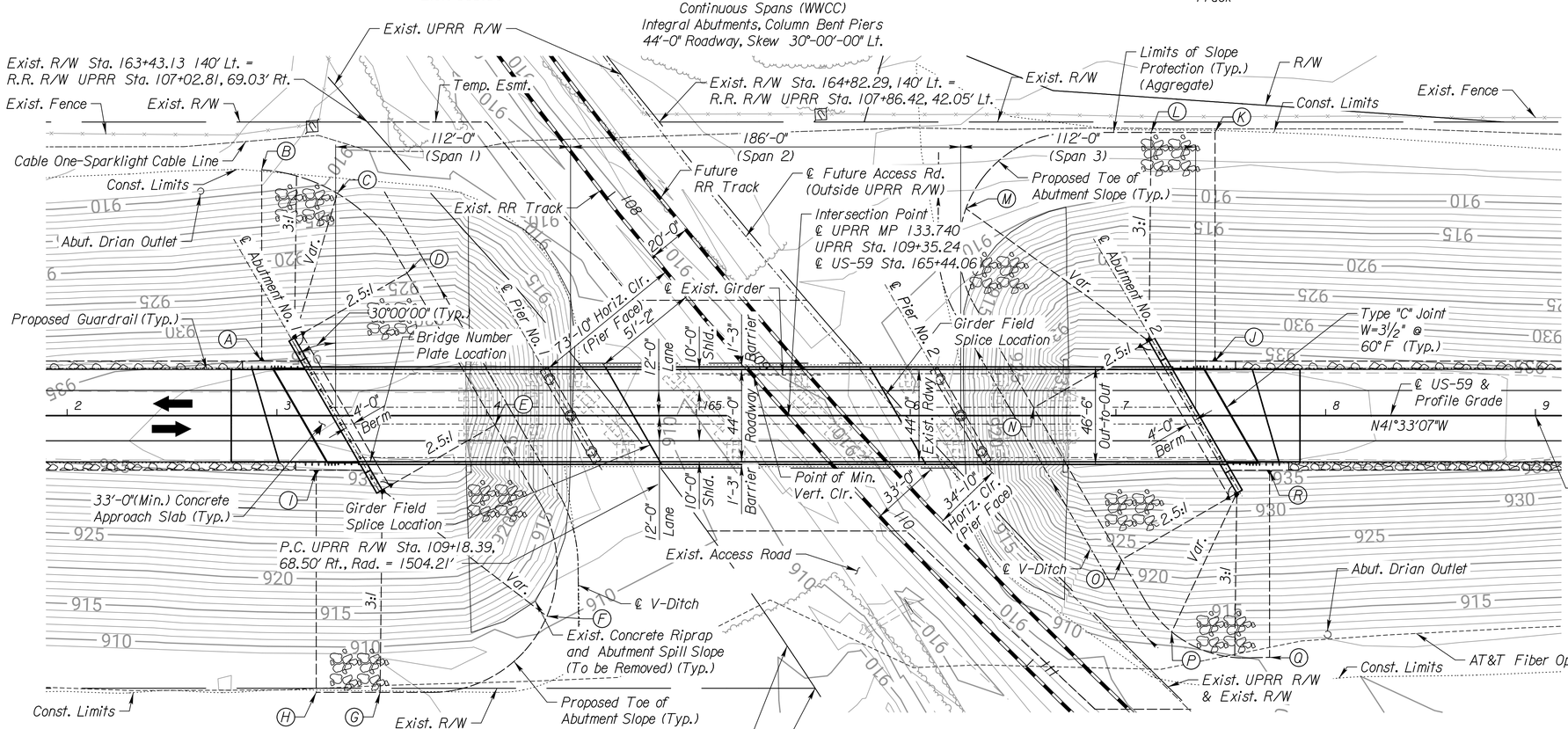
PROFILE US-59

Note:
For Superelevation transition information adjacent to the bridge, see roadway plans.

LIMIT OF SLOPE PROTECTION (AGGREGATE)		
Point	*Station*	*Offset*
A	162+92.77	26.00' Lt.
B	162+92.77	117.21' Lt.
C	163+28.81	105.93' Lt.
D	163+62.07	67.99' Lt.
E	164+03.92	4.49' Lt.
F	164+28.73	95.67' Rt.
G	163+49.22	131.95' Rt.
H	163+18.75	131.92' Rt.
I	163+18.75	26.00' Lt.
J	167+47.25	26.00' Lt.
K	167+47.25	135.01' Lt.
L	167+16.78	135.01' Lt.
M	166+28.50	98.74' Lt.
N	166+60.78	3.74' Lt.
O	167+02.63	68.74' Rt.
P	167+26.60	103.14' Rt.
Q	167+73.23	115.26' Rt.
R	167+73.23	26.00' Rt.

Temp., (F°)	30°	40°	50°	60°	70°	80°	90°
"W", (in) Δ	4"	3¾"	3⅝"	3½"	3⅜"	3¼"	3"

Δ *Average ambient temperature over previous 24 hours.*



PLAN

Scale: 1" = 30'-0"

Elevations shown are NAVD88 Vertical Datum.

BM15 - Top of Flat Side Right-of-Way Marker; "+" Cut in Top 139.66' Lt., ℄ Sta. 163+20.33 Elev. 910.678

BM16 - "D" Cut on Area Inlet SW Quadrant of US59 Hwy Bridge Over MKT RR 22.75' Lt., ℄ Sta. 163+63.26 Elev. 936.955

BM17 - "D" Cut on Area Inlet NW Quadrant of US59 Hwy Bridge Over MKT RR 22.80' Lt., ℄ Sta. 167+04.19 Elev. 937.075

BM18 - 4' T-Post in Westerly Right-of-Way Fence Line 142.40' Lt., ℄ Sta. 166+90.98 Elev. 908.727 (Flush w/ Ground)

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

CONSTRUCTION LAYOUT
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D					
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD		DBM	
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.		DGB	

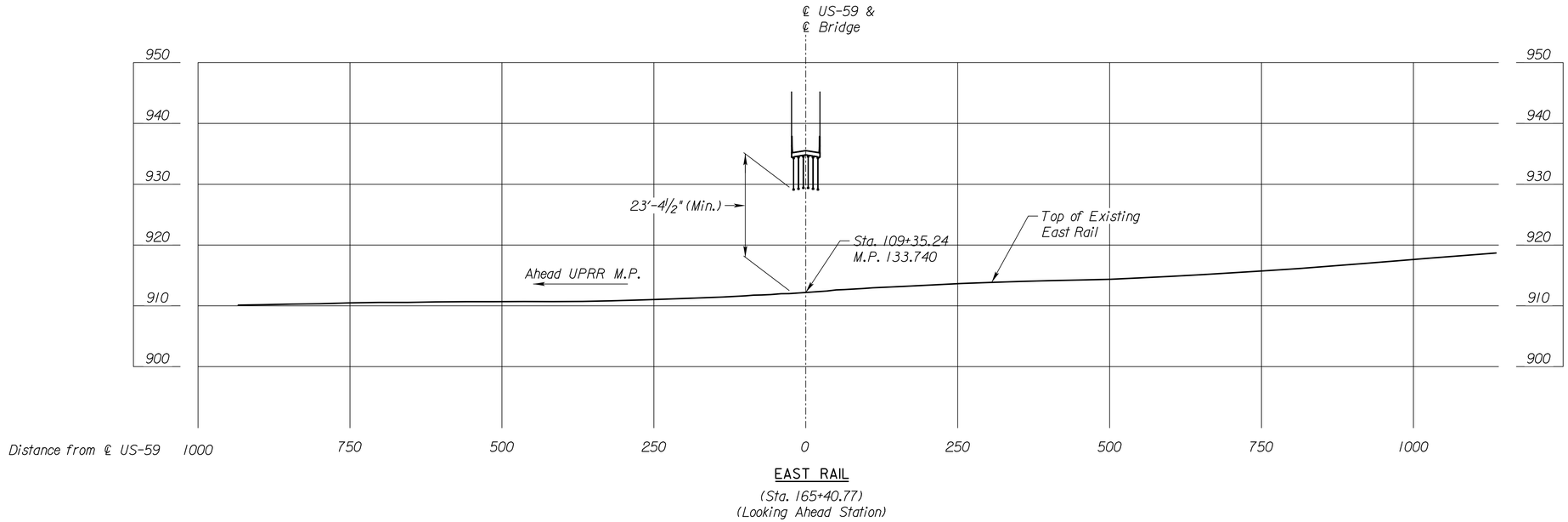
KDOT Graphics Certified 02-22-2024

Sheet No. 38

Plotted By: KKATHRIN | Plot Location:
File: c:\pwworking\central01\d2654511\kda39010lbbr097-05.dgn
Plot Date: 06-13-25

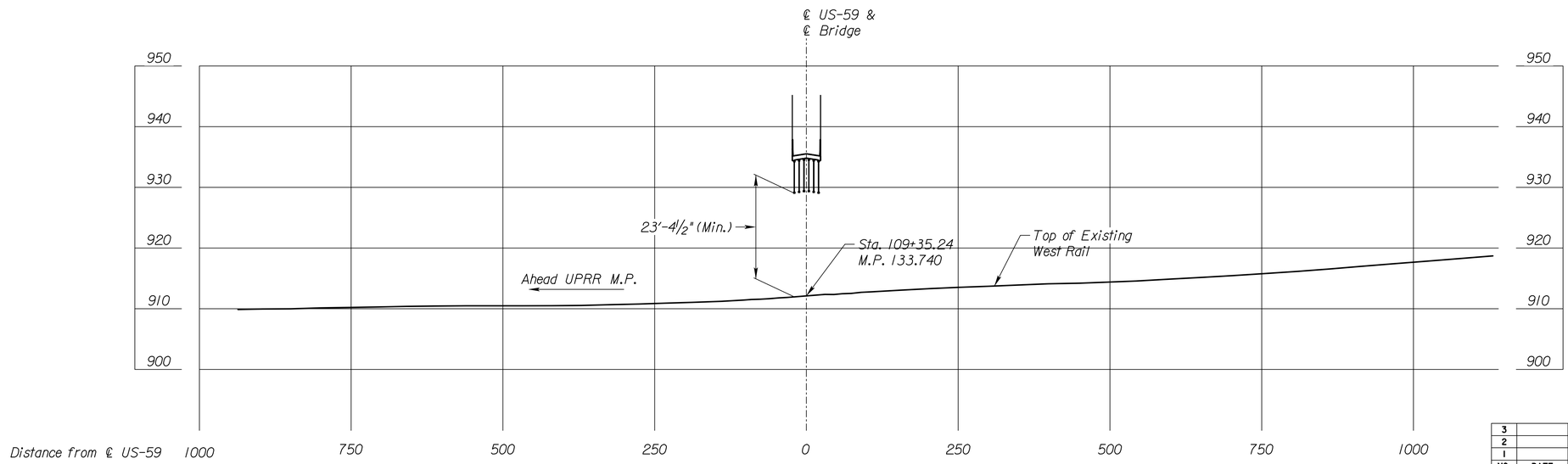
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	39	151



EAST RAIL

(Sta. 165+40.77)
(Looking Ahead Station)



WEST RAIL

(Sta. 165+47.35)
(Looking Ahead Station)

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-06.dgn
Plot Date: 06-17-24

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

UPRR TRACK PROFILES
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO. OF		SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBH
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	DGB

KDOT Graphics Certified 02-22-2024

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	40	151

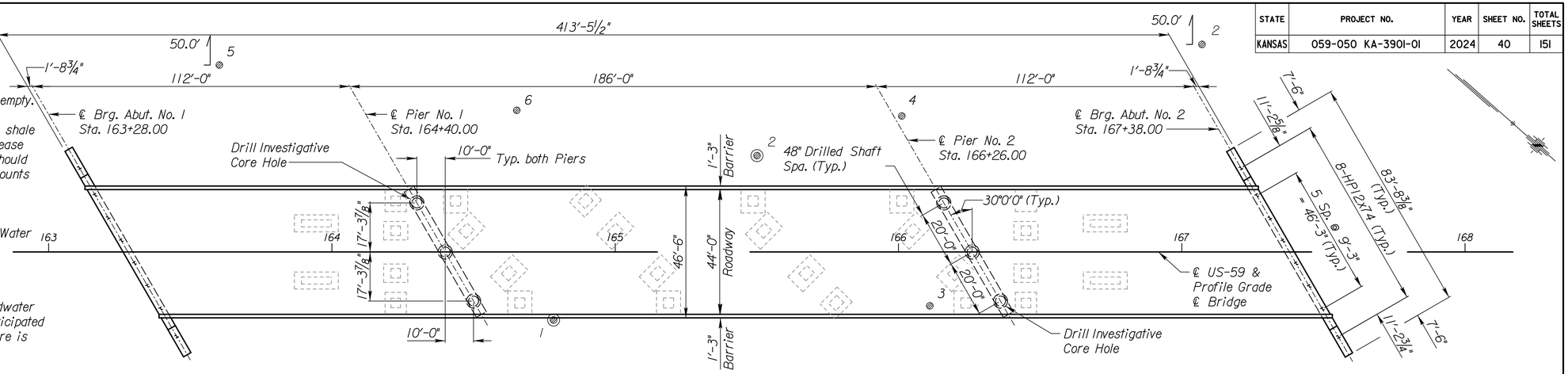
Pile Notes:
Piles at Abutment No. 1 and Abutment No. 2 shall be pre-drilled to 12 ft below abutment cap and then driven to achieve required resistance. A smooth steel casing shall be used and embedded 1 ft below the prebore elevations shown. The upper 12 ft of smooth steel casing above the prebore elevations shall remain empty.

Once the required resistance and penetration in firm shale of the Hepler Formation is achieved, driving should cease to avoid damage to the pile. Final pile tip elevations should be determined in the field based on observed blow counts and bearing formula calculations.

Drilled Shaft Notes:
Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause caving and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock a maximum of 1.5 feet, less if possible, to reduce the risk that overburden, and goundwater does not enter the rock socket. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing from the excavation.

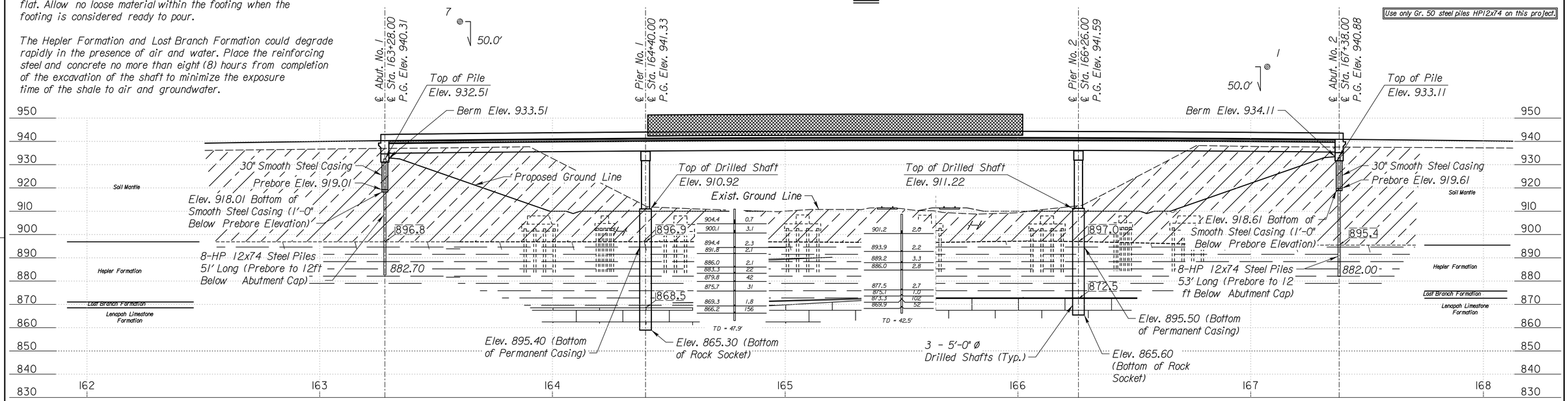
Note that the shafts have end bearing components and it is important that the bottom socket be clean and relatively flat. Allow no loose material within the footing when the footing is considered ready to pour.

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



PLAN

Use only Gr. 50 steel piles HP12x74 on this project.



STANDARD GEOLOGIC SYMBOLS

- Clay or Underclay
- Silty Clay
- Silt
- Sand
- Gravel
- Boulders
- Caliche
- Silty or Clayey Shale
- Limy Shale
- Black or Fissile Shale
- Sandy Shale
- Gypsiferous Shale
- Weathered Shale
- Sandstone
- Shaly Sandstone
- Gypsum bed
- Dolomite
- Cross-bedded Sandstone
- Limestone
- Cherty Limestone
- Shaly Limestone
- Sandy Limestone
- Bentonite
- Loess
- Mortarbed
- Coal
- Siltstone
- Chalk
- Wavy limestone
- Chalky limestone

SOUNDINGS

- Core drill
- Power auger
- Hand tools
- Cone (CPT) penetrometer
- Shelby tube
- Water level 8/2020

GEOLOGIC PROFILE

- 000.0 Elevation interpolated or from adjacent soundings
- 000.0 Actual sounding elevation

UNCONFINED COMPRESSION TEST: Elevation / Tons/sq. ft. — 000.0 | 00

STANDARD PENETRATION TEST: Elevation / Blows/ft. — 000.0 | 00

CONE (CPT) PENETROMETER TEST (Scale: N60): Graphic representation of Cone Penetration Test in N60 (0, 100, 200, 300, 400)

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

SCALE: 1"= 20' Horiz. 1"= 20' Vert.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

ENGINEERING GEOLOGY
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	DGB

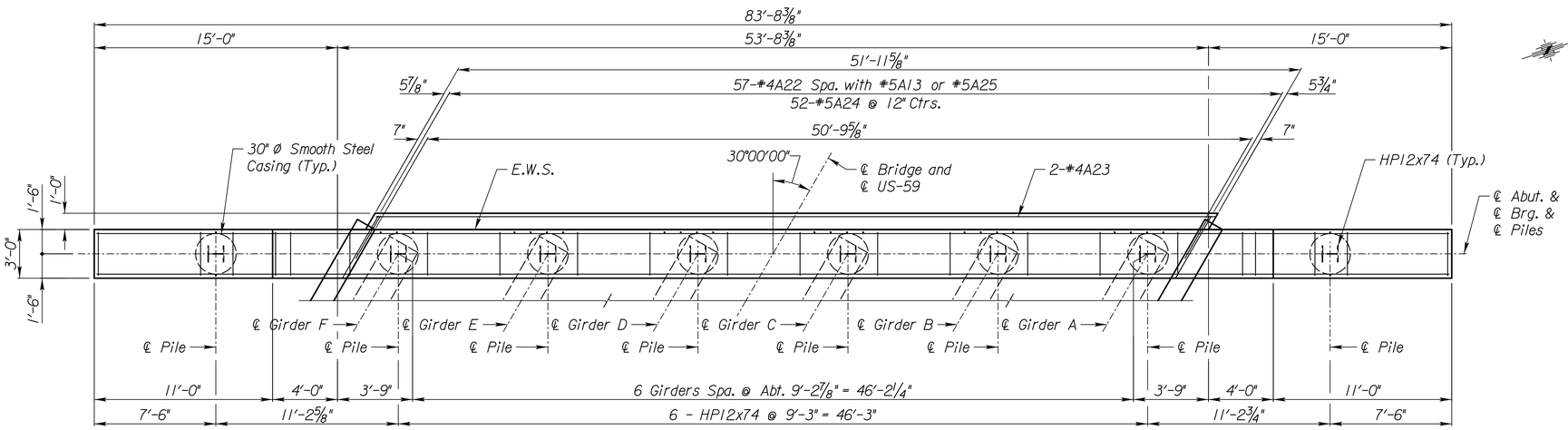
KDOT Graphics Certified 02-28-2024

Sheet No. 40

KDOT Graphics Certified

Plotted By: BBEAMER | Plot Location:
File: c:\pwwork\central01\d2654511\ka3901101bbr097-07.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	41	151



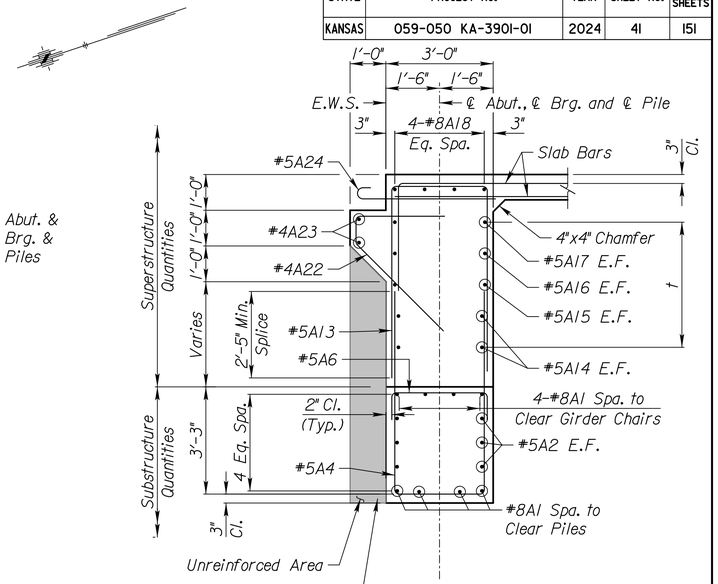
(A) 4'-11" Min. Lap, Typ. for #8 Horizontal Bars
(B) 3'-1" Min. Lap, Typ. for #5 Horizontal Bars

PLAN

ABUTMENT PILE LOADING

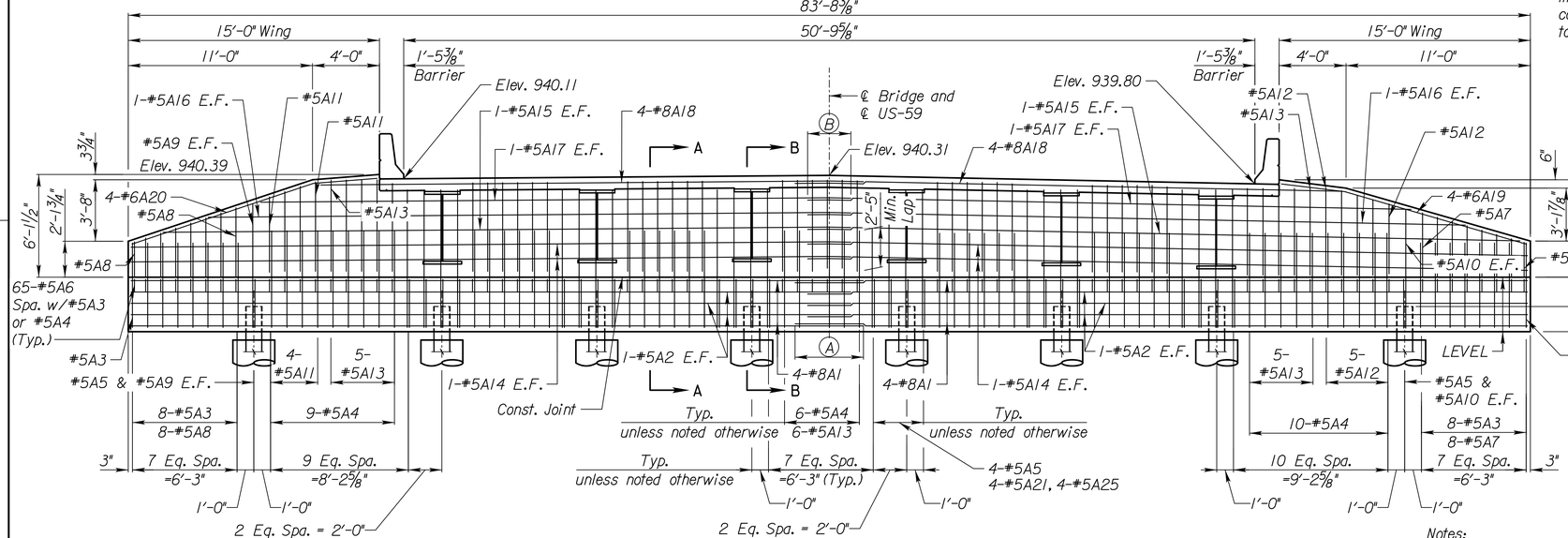
* Design	Allowable
86.3 Tons/Pile	163.5 Tons/Pile

* Design Pile Loading includes vertical backwall option.



At the Contractor's option and expense, the backwall may be formed vertically as shown. (12.7 Cu. Yds. concrete) Concrete volume is for information only, not to be included in quantity summary.

SECTION A-A

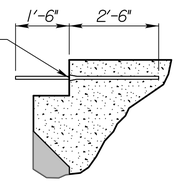


ELEVATION
(Looking Back Station)
(Normal to Cap)

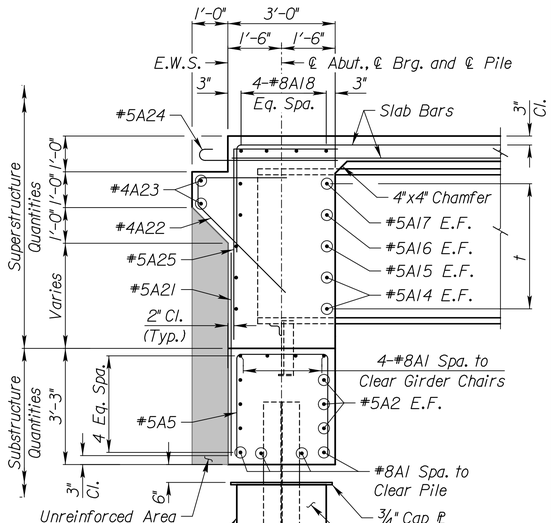
BEARING SEAT ELEVATIONS	
Girder	Elevation
A	934.76
B	934.94
C	935.13
D	935.18
E	935.11
F	935.03

Reinforcing Steel Mechanical Splice. See KDOT Specifications.

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



APPROACH SLAB TIE BAR OPTION



SECTION B-B

Notes:
All Elevations given at ℄ Abutment.
Horizontal dimensions are along ℄ Abutment.
Bend #6A18 & #6A19 bars to match slope at top of wingall.
Pile casing shall be 3/8" minimum thickness.
For Bearing Device Details, see Sheet No. 46 .
E.W.S. = End of Wearing Surface.
E.F. = Each Face.
t See Detail A on Sheet No. 49 for spacing.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

ABUTMENT NO. 1 DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

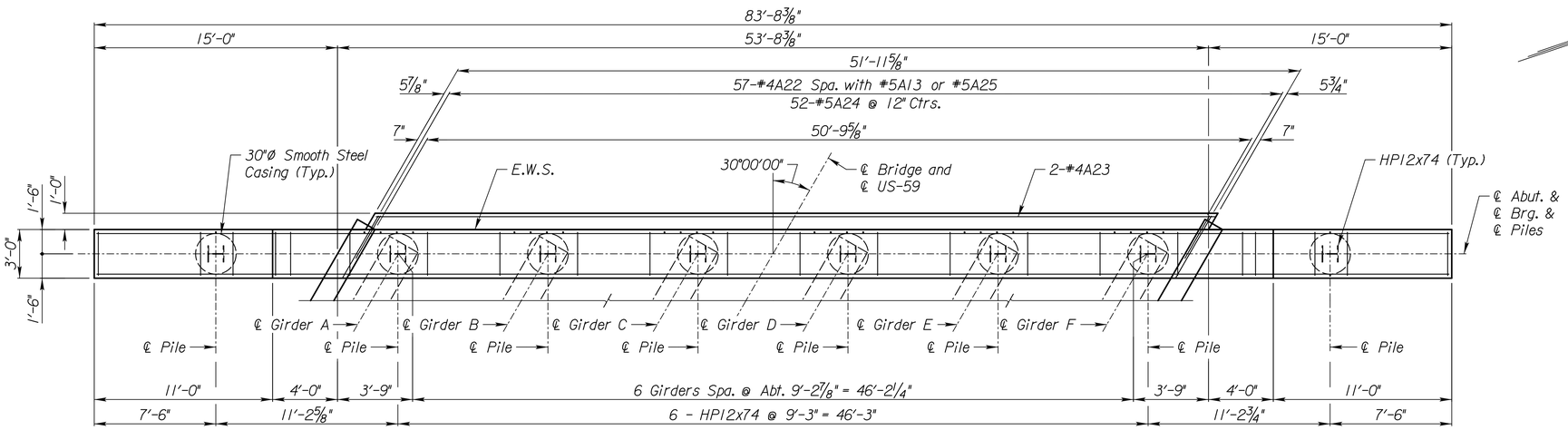
KDOT Graphics Certified 02-22-2024

Sheet No. 41

Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka390101bbr097-08.dgn
Plot Location:
Plot Date: 06-17-24

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	42	151



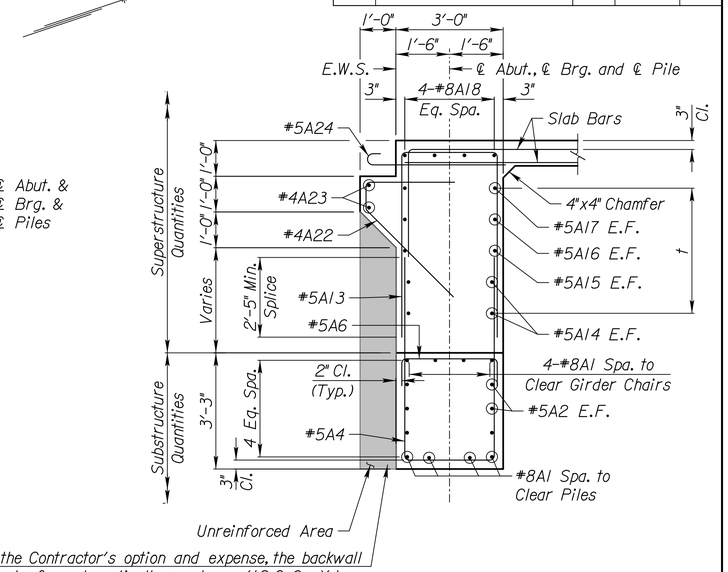
(A) 4'-11" Min. Lap, Typ. for #8 Horizontal Bars
(B) 3'-1" Min. Lap, Typ. for #5 Horizontal Bars

PLAN

ABUTMENT PILE LOADING

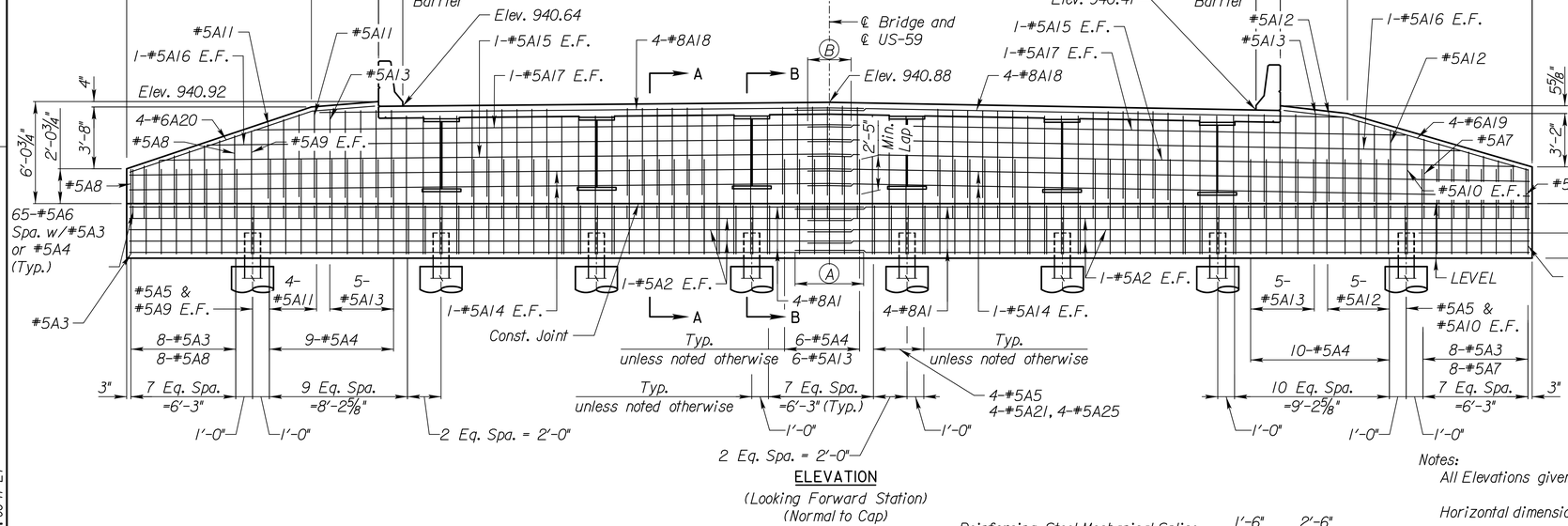
* Design	Allowable
86.3 Tons/Pile	163.5 Tons/Pile

* Design Pile Loading includes vertical backwall option.



At the Contractor's option and expense, the backwall may be formed vertically as shown. (12.6 Cu. Yds. concrete) Concrete volume is for information only, not to be included in quantity summary.

SECTION A-A

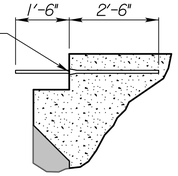


ELEVATION
(Looking Forward Station)
(Normal to Cap)

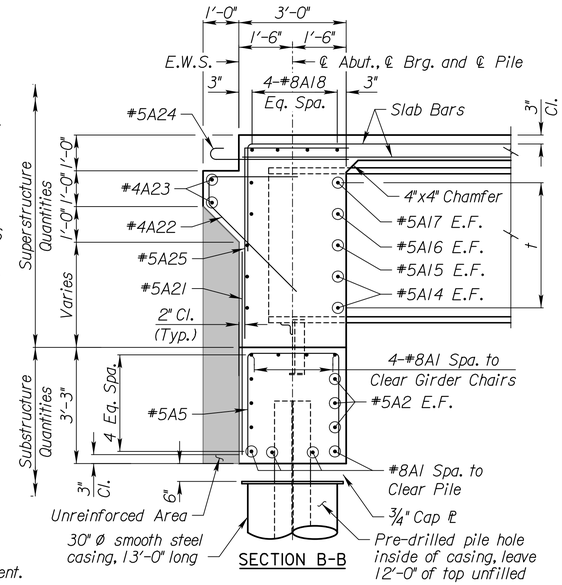
BEARING SEAT ELEVATIONS	
Girder	Elevation
A	935.57
B	935.66
C	935.75
D	935.70
E	935.53
F	935.36

Reinforcing Steel Mechanical Splice. See KDOT Specifications.

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



APPROACH SLAB TIE BAR OPTION



SECTION B-B

Notes:
All Elevations given at ℄ Abutment.
Horizontal dimensions are along ℄ Abutment.
Bend #6A18 & #6A19 bars to match slope at top of wingall.
Pile casing shall be 3/8" minimum thickness.
For Bearing Device Details, see Sheet No. 46 .
E.W.S. = End of Wearing Surface.
E.F. = Each Face.
t See Detail A on Sheet No. 49 for spacing.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

ABUTMENT NO. 2 DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

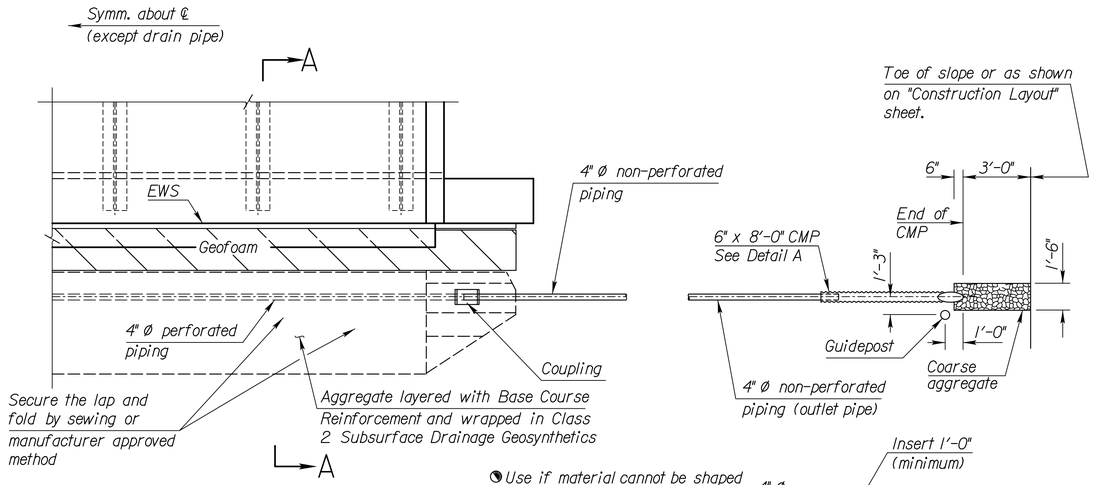
KDOT Graphics Certified 02-22-2024

Sheet No. 42

Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka390101bbr097-09.dgn
Plot Date: 06-17-24
Plot Location:

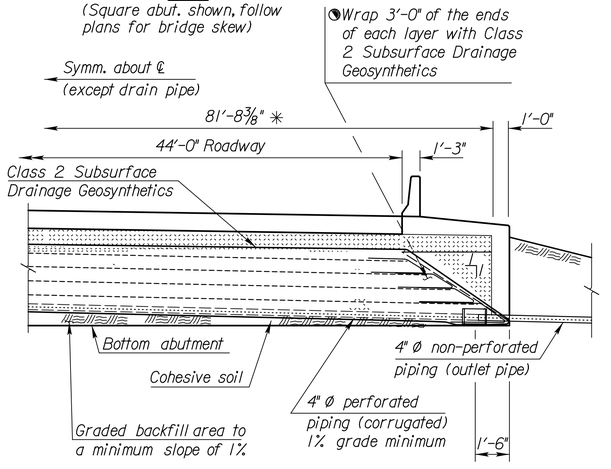
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	43	151



PLAN

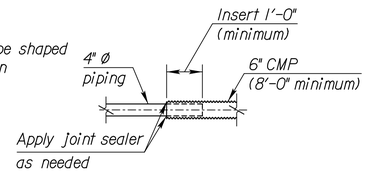
(Square abut. shown, follow plans for bridge skew)



* Limits of Bridge Backwall Protection System & Geofoam

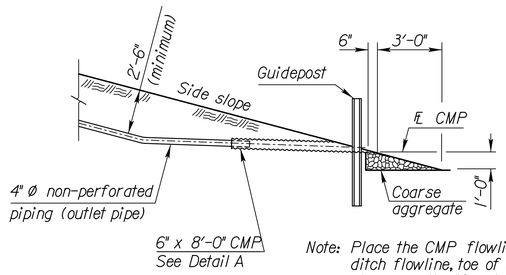
ELEVATION

Use if material cannot be shaped and compacted per plan



DETAIL A

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.

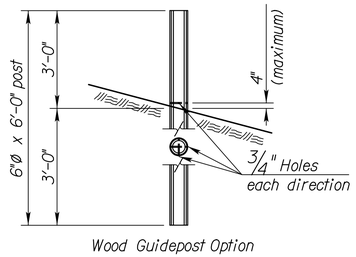


Note: Place the CMP flowline 1'-0" above ditch flowline, toe of sideslope, or as shown on the "Construction Layout" sheet. For stream crossings place outlet on downstream side of bridge.

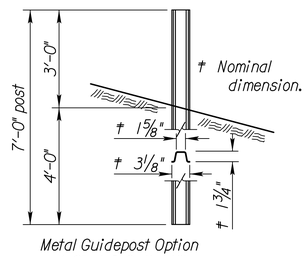
Notes:

Wood Guideposts: Apply a preservative treatment conforming to the KDOT Specifications to the posts. Use only one type of preservative treatment on a project. Apply two coats of aluminum paint to the top 18" of the posts. Apply one coat of International Orange paint to the top 12" of the posts. State forces will apply reflectorized material.

Metal Guideposts: 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.



Wood Guidepost Option
(6" Ø x 6'-0")



Metal Guidepost Option
7'-0" at 3.0 lbs/ft
flanged channel

GUIDEPOST

GENERAL NOTES

GEOSYNTHETICS: Use material that complies with KDOT Specification Section 1710 Class 2 subsurface drainage fabric. Place the Class 2 subsurface drainage fabric on graded and compacted material shaped as shown. Allow for enough material so that the top can be overlapped and the end folded to completely enclose the aggregate drain. Place the perforated drain pipe and couple to non-perforated pipe as shown. Allow the non-perforated pipe to pass through a hole carefully cut in fabric. Place aggregate within fabric to just leave the top of the pipe visible. Verify the slope of the pipe, that it is not damaged or displaced and that the couplers are firmly coupled. Continue to backfill to the elevation and shape shown.

AGGREGATE: Use aggregates that complies with KDOT Specifications for SB-1 or SB-2.

BASE COURSE REINFORCEMENT: Use "Base Course Reinforcement" that complies with KDOT Specification Division 1700 or approved material. Place this material in uniform layers without gaps or sags per the manufacturer's recommendations.

GEOFOAM: Use "Geofoam" that complies with ASTM D6817 EPS 12. Acceptance according to Type "C" certification. Bond this material to the backwall protection using materials recommended by the manufacturer.

PIPE: Place perforated pipe within the limits and use non-perforated pipe outside the limits of the Abutment Aggregate Drain.

ABUTMENT AGGREGATE DRAIN: The Bridge Contractor shall excavate to the limits shown on the Bridge Excavation Sheet. Backfill, compact & grade the cohesive soil to the limits shown. Place the bridge backwall protection, geofoam, geotextile, perforated pipe, alternating layers of aggregate and base course reinforcement as shown. Place the outlet pipe, the CMP, and the backfill. Guidepost and coarse aggregate are subsidiary to this bid item. Guidepost and coarse aggregate are not required if the CMP empties onto Slope Protection.

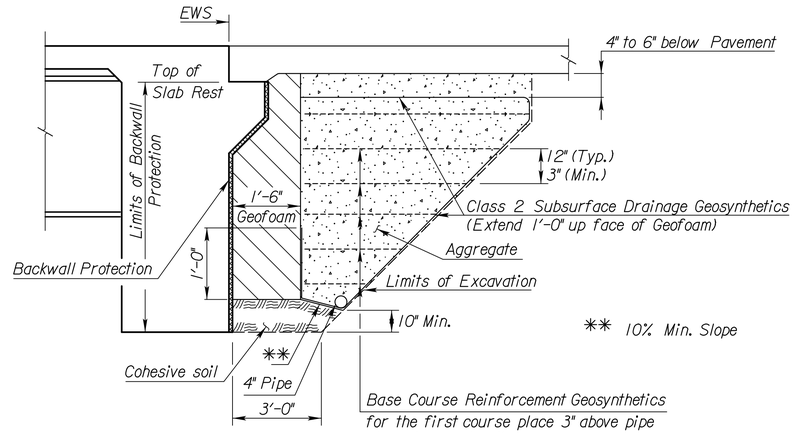
BRIDGE BACKWALL PROTECTION SYSTEM: Apply a non coal-tar Bridge Backwall Protection System to the approach side of the abutments and the wings in accordance with KDOT Specifications and the manufacturer's recommendations. Cover the abutments and wings to the limits shown on the details. Repair any damage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

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 1/4" galvanized mesh screen to prevent the entrance of rodents. Seal the joint between the outlet pipe and the end section with a joint sealer. Place Coarse aggregate at the outlet end as shown.

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



SECTION A-A
(Abutment Aggregate Drain)
Taken at ℄

SUMMARY OF QUANTITIES (2 Abutments)	
Abutment Aggregate Drain	190 Cu. Yds.
Bridge Backwall Protection System	148 Sq. Yds.
Items subsidiary to Abutment Aggregate Drain	
4" Ø Perforated Pipe	164 Lin. Ft.
4" Ø Outlet Pipe	178 Lin. Ft.
6" Ø CMP	16 Lin. Ft.
Guidepost	2 Each
Geosynthetics (Class 2 Subsurface Drainage)	344 Sq. Yds.
Geosynthetics (Base Course Reinforcement)	580 Sq. Yds.
Geofoam	56 Cu. Yds.

NO.	DATE	REVISIONS	BY	APP'D
08	05-05-23	Rem. soil cap; Geofoam bott. flat	M.L.L.	M.A.H.
07	12-11-18	Corrected std. base file name	M.L.L.	J.P.J.
06	02-04-15	Modified Per 2015 Specifications	J.P.J.	C.E.R.

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

ABUTMENT AGGREGATE DRAIN
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 02-29-2024

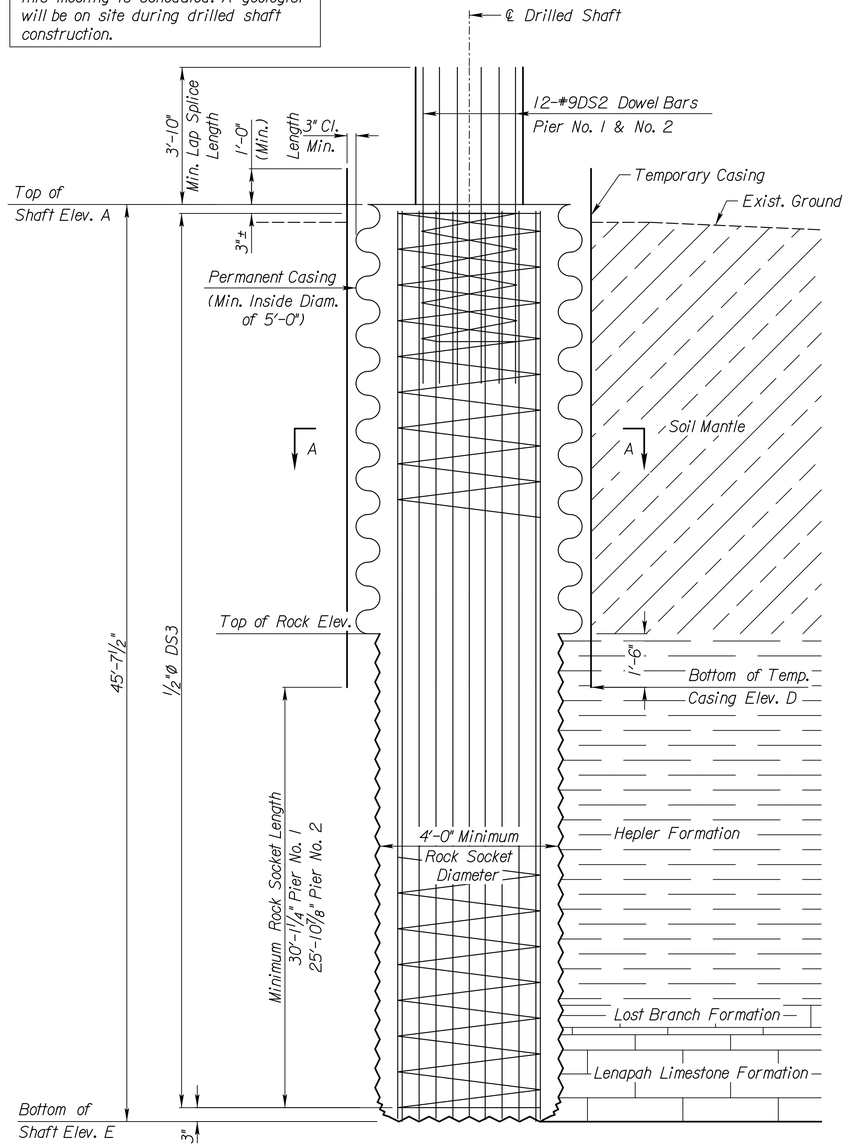
Sheet No. 43

Plotted By: BBEAMER | Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-10.dgn
Plot Date: 06-17-24

KDOT Graphics Certified

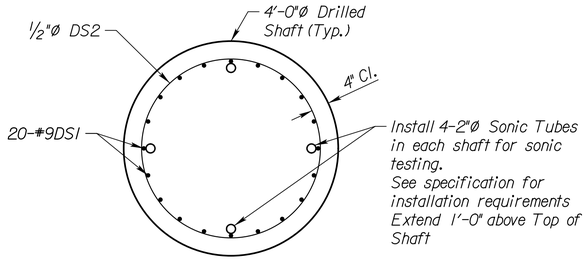
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	44	151

Note: A preconstruction meeting will be held for the drilled shafts. Contact the Chanute Regional Geology Office when this meeting is scheduled. A geologist will be on site during drilled shaft construction.

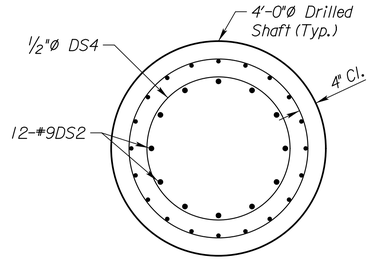


TYPICAL ELEVATION VIEW OF DRILLED SHAFT

TABLE OF ELEVATIONS		
	Pier No. 1	Pier No. 2
Top of Shaft Elev. A	910.92	911.22
Existing Ground Line Elev. B	909.85±	909.94±
Top of Rock Elev. C	896.90	897.00
Bottom of Casing Elev. D	895.40	895.50
Bottom of Shaft Elev. E	865.30	865.60



TYPICAL SECTION OF DRILLED SHAFT



TYPICAL SECTION OF DRILLED SHAFT

Notes:

Excavations for drilled shafts will need to be cased. Water movement within the mantle could cause caving and collapse of the excavation walls. Casing will be required for drilled shafts. Casing will need to be set into bedrock a maximum of 1.5 feet, less if possible, to reduce the risk that overburden, and goundwater does not enter the rock socket. A wet pour may be anticipated if groundwater is not sufficiently sealed off or if there is water flowing from the excavation.

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

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

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

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

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

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

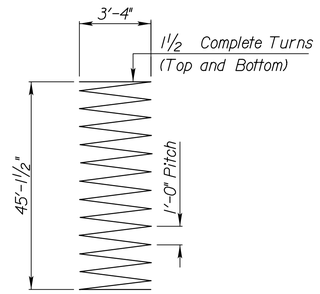
ROCK SOCKET LENGTH: Provide a minimm Rock Socket Length below the bottom of temporary casing as shown. Contact the KDOT Bridge Design Section if not able to provide the minimum Rock Socket Length.

PERMANENT CASING: See KDOT Specifications.

INVESTIGATIVE CORE HOLES: Please contact the Chanute Regional Geology Office when the schedule for the investigative core holes have been established so that a member of the staff may be on site when the work is being performed.

DRILLED SHAFT BACKFILL: Backfill the annular space between the termporary casing and the permanent casing with granular material as defined in the KDOT Specifications.

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



DS3

(½" Ø smooth or deformed bar)

Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.

Spiral Spacer Bars:

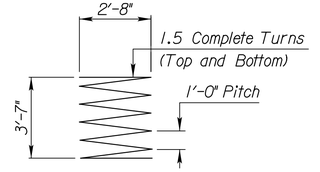
1) Minimum section modulus = 0.008 in.³
2) 4 required per spiral.

DETAIL OF DRILLED SHAFT DOWEL BARS

BILL of REINFORCING STEEL Grade 60 Non-Epoxy Total for Pier #1 thru #5 Subsidiary to Drilled Shafts Shown for Information Only

Mark	Size	Number	Length
DS1	9	120	45'-5"
DS2	9	72	7'-8"
DS3	½"Ø	6	††
DS4	½"Ø	6	††

†† See Bending Diagram



DS4

(½"Ø smooth or deformed bar)

Spiral reinforcing shall meet the requirements of ASTM A615 Grade (60 or 40) or ASTM A82.

Spiral Spacer Bars:

1) Minimum section modulus = 0.30 in.³
2) 4 required per spiral.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

DRILLED SHAFT DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	DGB

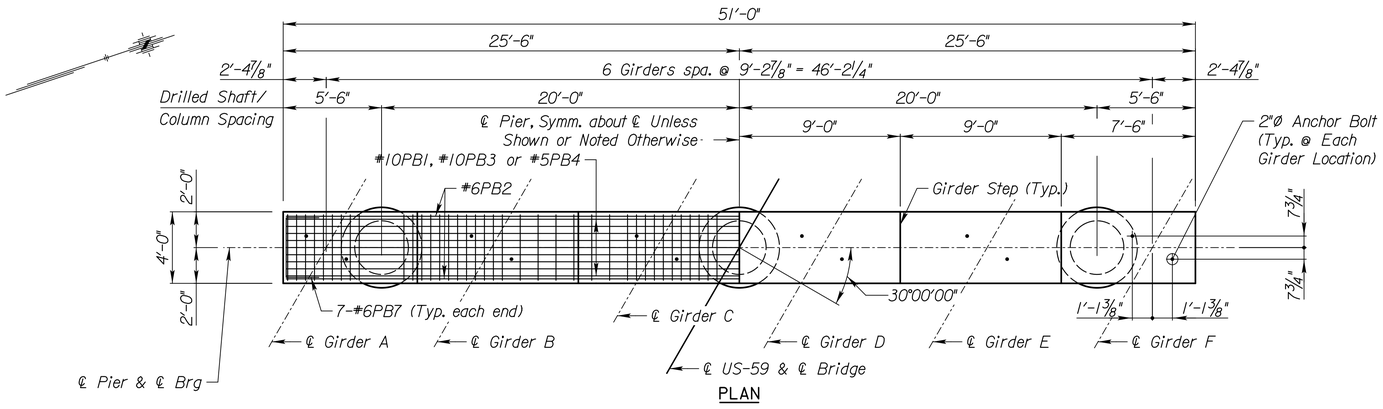
KDOT Graphics Certified 02-22-2024

Sheet No. 44

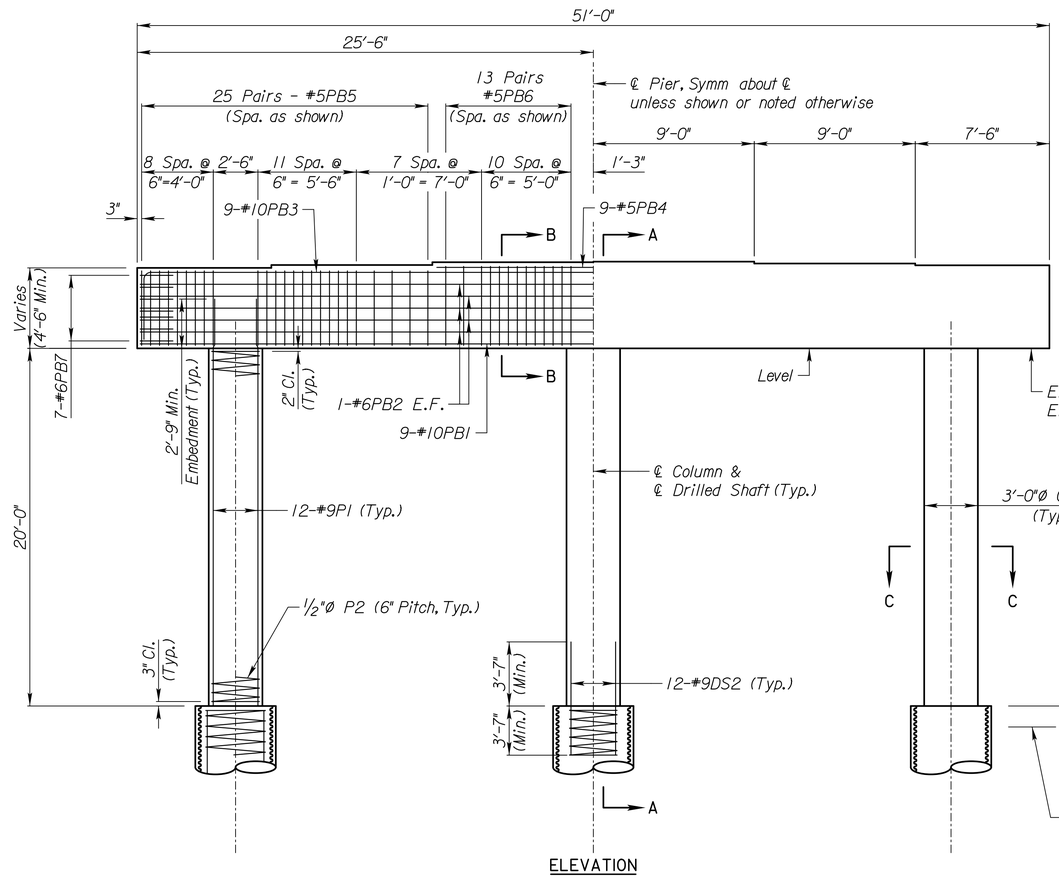
KDOT Graphics Certified

Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d2654511\ka390101\bbr097-11.dgn
Plot Date: 06-17-24

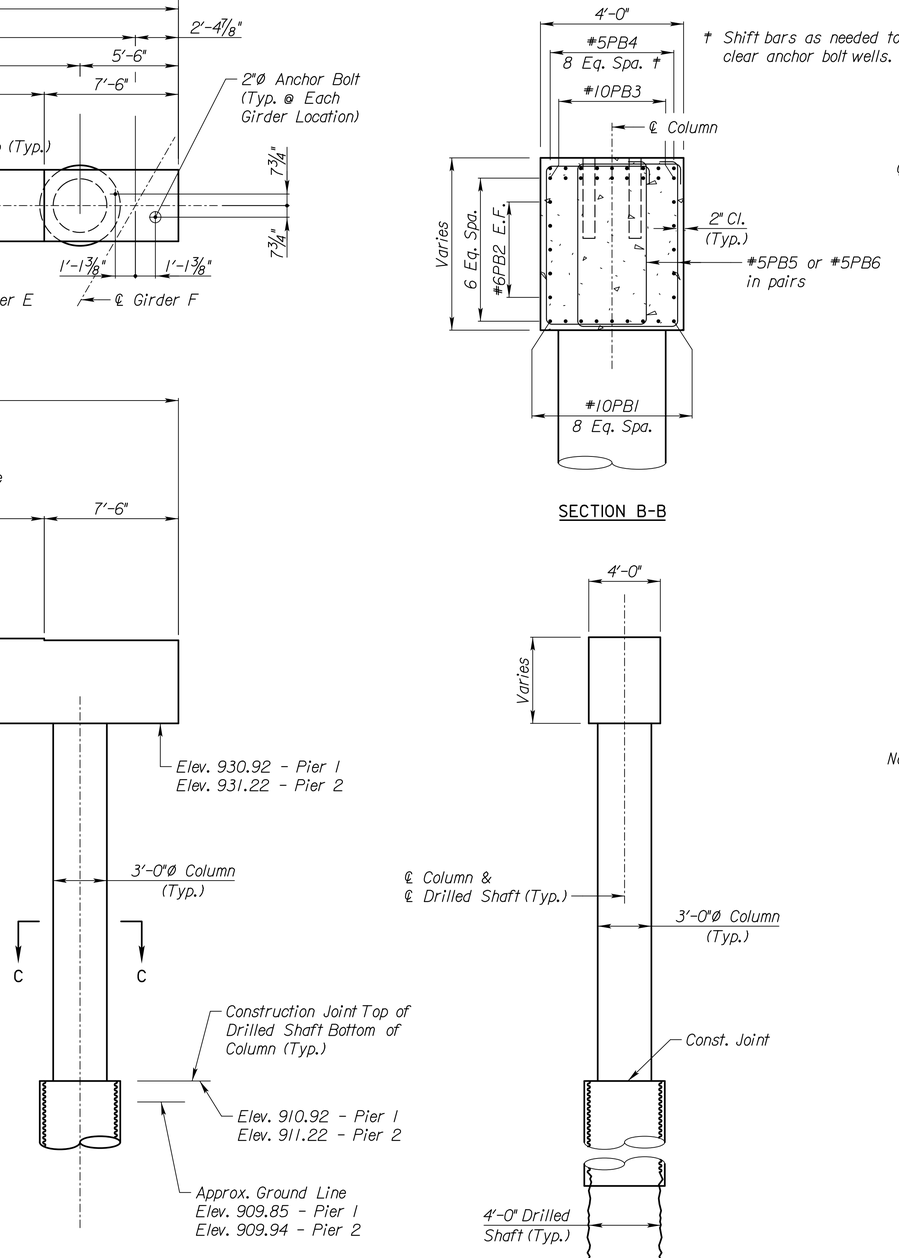
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	45	151



PLAN

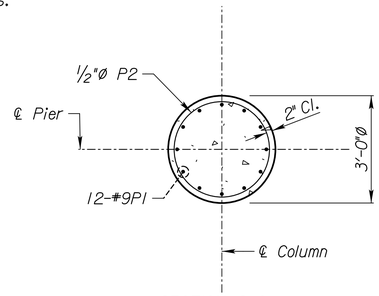


ELEVATION



† Shift bars as needed to clear anchor bolt wells.

SECTION B-B



SECTION C-C

BEARING SEAT ELEVATIONS		
Girder	Pier No. 1	Pier No. 2
A	935.42	935.79
B	935.58	935.91
C	935.74	936.02
D	935.77	936.01
E	935.67	935.86
F	935.57	935.72

SECTION A-A

Notes:

E.F. = Each face

Place reinforcing bars below the bearing devices to clear the formed anchor bolt wells. For Anchor Bolt Layout, see Sheet No. 46.

Pier Beam and Column reinforcement shall be non-coated and is included in the Substructure Quantities.

#9P3 and 1/2"Ø P6 reinforcing bars are considered column reinforcement and are included in the Substructure Quantities.

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

Reinforcing steel in the drilled shaft shall be non-coated.

Construct the drilled shafts using the cased method. Permanent casings are required.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

PIER DETAILS

US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

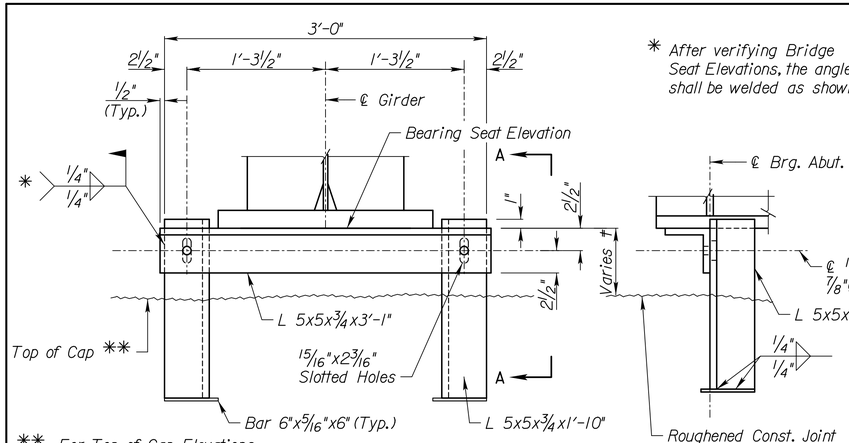
KDOT Graphics Certified 02-22-2024

Sheet No. 45

KDOT Graphics Certified

Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d2654511\ka3901001bbr097-12.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	46	151

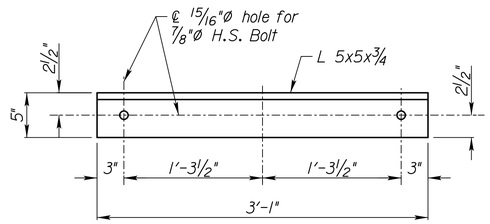


* After verifying Bridge Seat Elevations, the angles shall be welded as shown.

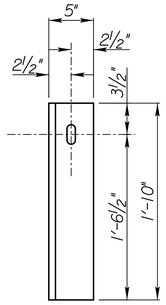
SECTION A-A

** For Top of Cap Elevations, see Sheet Nos. 41 & 45

GIRDER CHAIRS AT ABUTMENTS



ANGLE DETAIL



POST DETAIL

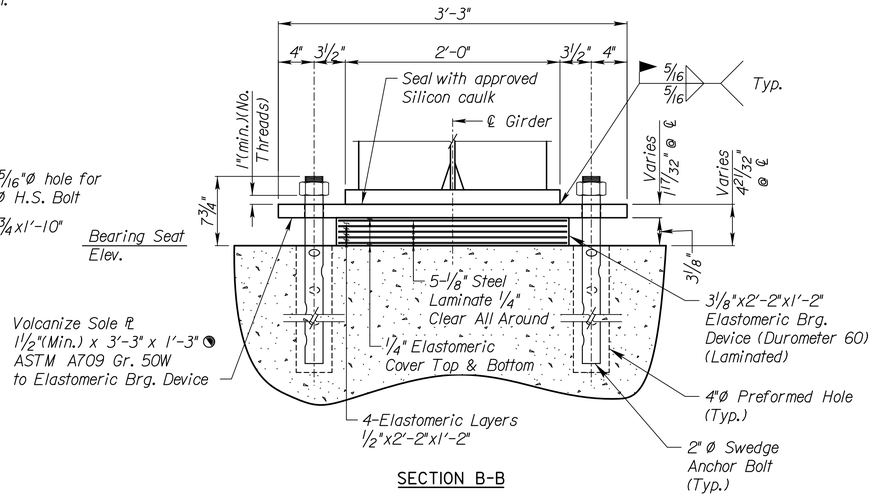
GIRDER CHAIR DETAILS AT ABUTMENTS

(12 Required, 6 per Abut.)

Note: Girder Chairs shall be paid for as ASTM A709 Gr.50 Structural Steel (Primed).

BEARING SEAT ELEVATIONS AT ABUTMENTS						
GIRDER	A	B	C	D	E	F
ABUTMENT NO. 1	934.76	934.94	935.13	935.18	935.11	935.03
ABUTMENT NO. 2	935.57	935.66	935.75	935.70	935.53	935.36
† ABUTMENT NO. 1	6"	8 1/8"	10 1/2"	11"	10 1/4"	9 1/4"
† ABUTMENT NO. 2	8 1/2"	9 5/8"	10 5/8"	10 1/8"	8"	6"

◔ Note: The sole plate shall be tappered. See "Side View of Bearing Device" for detail



SECTION B-B

BEARING DEVICE DESIGN LOADS (Kips/Bearing)

	Dead Load	Live Load (w/o Impact)
Pier 1	262	179
Pier 2	262	179

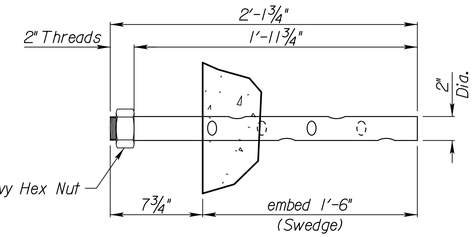
BEARING (STEEL REINFORCED ELASTOMERIC) (Method A):
Bearing devices shall be fabricated with an elastomer satisfying:
- Shore A Durometer Hardness of 60
- Low Temperature Grade 3 requirements
- Type A certification for elastomeric bearing device acceptance is required.
- Include design method and all material properties on shop details.

BEARING (STEEL REINFORCED ELASTOMERIC): Elastomeric Bearing Device shall be factory bonded to the steel sole plate by a vulcanization process. The steel sole plate and swedge anchor bolts are subsidiary to the bid item, "Bearing (Steel Reinforced Elastomeric)" and shall be furnished by the bearing device fabricator.

PREFORMED ANCHOR BOLT HOLES: Preform 4 inch diameter holes using only corrugated polyethylene tubing (Type C) at the locations shown. When temperatures are expected to go below freezing, seal the preformed holes or fill them with a propylene glycol- based antifreeze to prevent expansion damage. The holes will be free of water, antifreeze or other foreign materials at the time of grouting the anchor bolts. The polyethylene tubing may remain in- place. Trim the tubing flush with the top of the concrete. This work will be subsidiary to Concrete Grade 4.0 (AE).

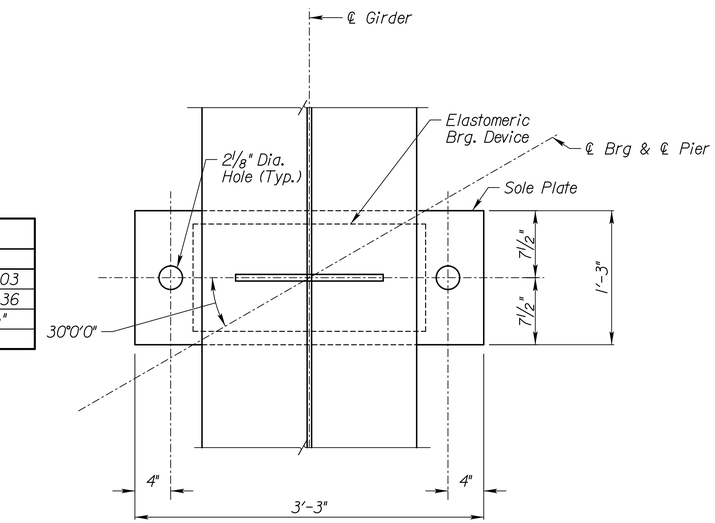
ANCHOR BOLTS: Anchor bolts will adhere to KDOT Standard Specification Division 1600 (Grade 55) with the following exception. The threads may be rolled or cut.

Place the reinforcing bars below the bearing devices to clear the anchor bolts.



SWEDGE ANCHOR BOLT

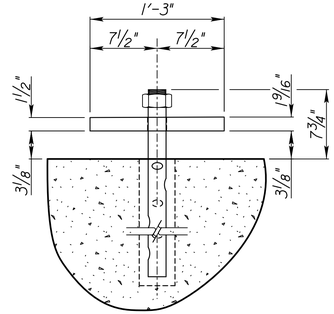
(24 Required, 12 per Pier)



PLAN OF BEARING DEVICE

ELASTOMERIC BEARING PAD AT PIERS

(12 Required, 6 per Pier)



Ahead Station → (Pier No. 1)

← Ahead Station (Pier No. 2)

SIDE VIEW OF BEARING DEVICE

(Bearing Pad Not Shown for Clarity)

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

BEARING DEVICE LAYOUT AND DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

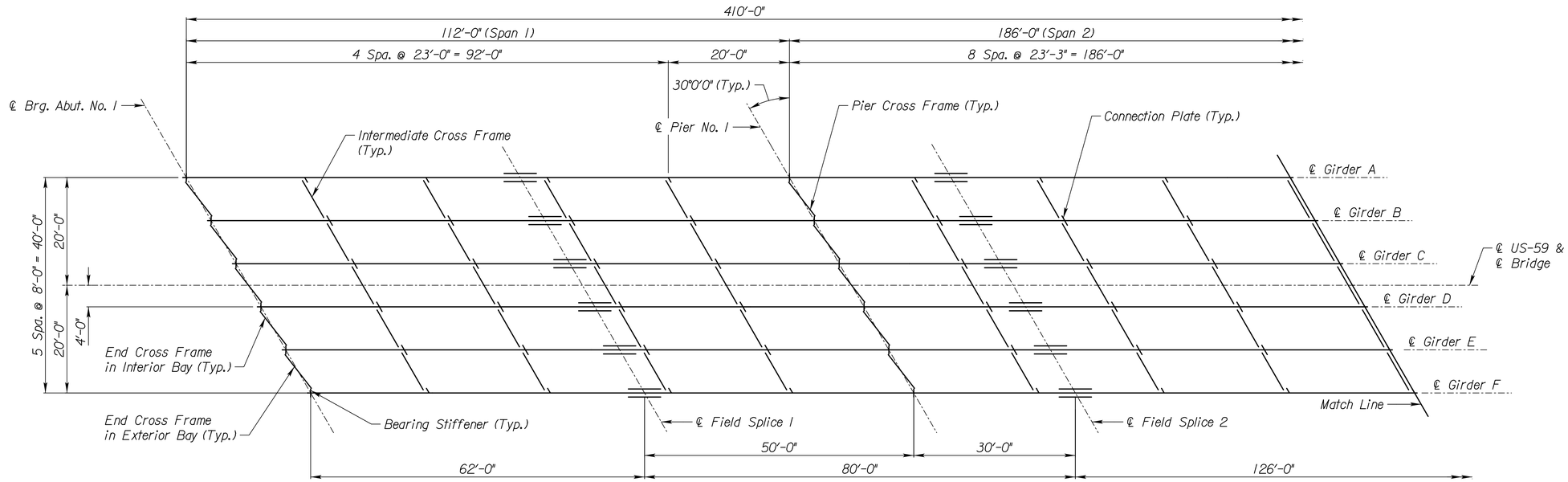
KDOT Graphics Certified 02-22-2024

Sheet No. 46

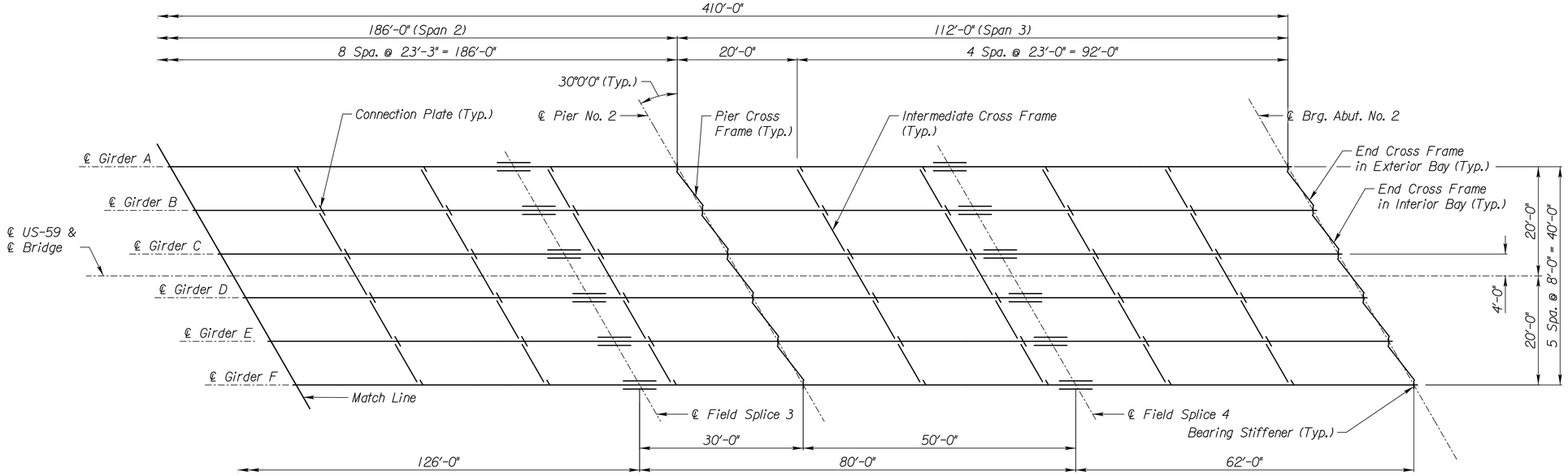
KDOT Graphics Certified

Plot Location:
Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka390101bbr097-13.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	47	151



FRAMING PLAN



FRAMING PLAN

Notes:

For Girder Elevation and Structural Steel Notes, see Sheet No. 48.

For Miscellaneous Structural Steel Details, see Sheet No. 49.

For Girder Field Splice Details, see Sheet No. 51.

For Cross Frame Details, see Sheet No. 52.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

STRUCTURAL STEEL FRAMING PLAN
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

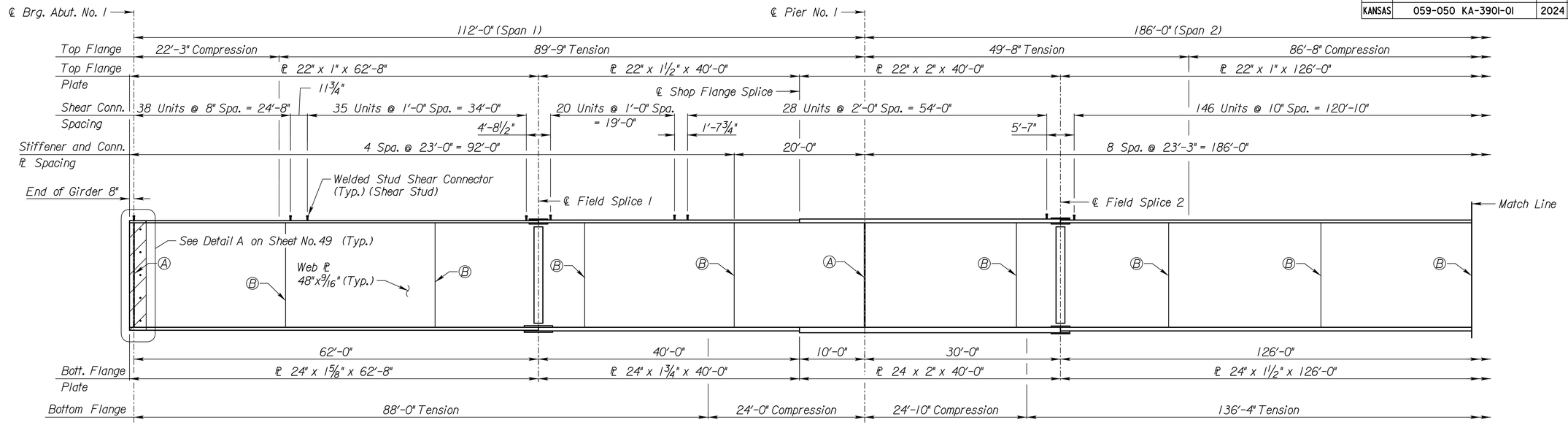
KDOT Graphics Certified 02-22-2024

Sheet No. 47

KDOT Graphics Certified

Plotted By: BBEAMER
Filer: c:\pwworking\central01\d2654511\ka390101bbr097-14.dgn
Plot Date: 06-17-24
Plot Location:

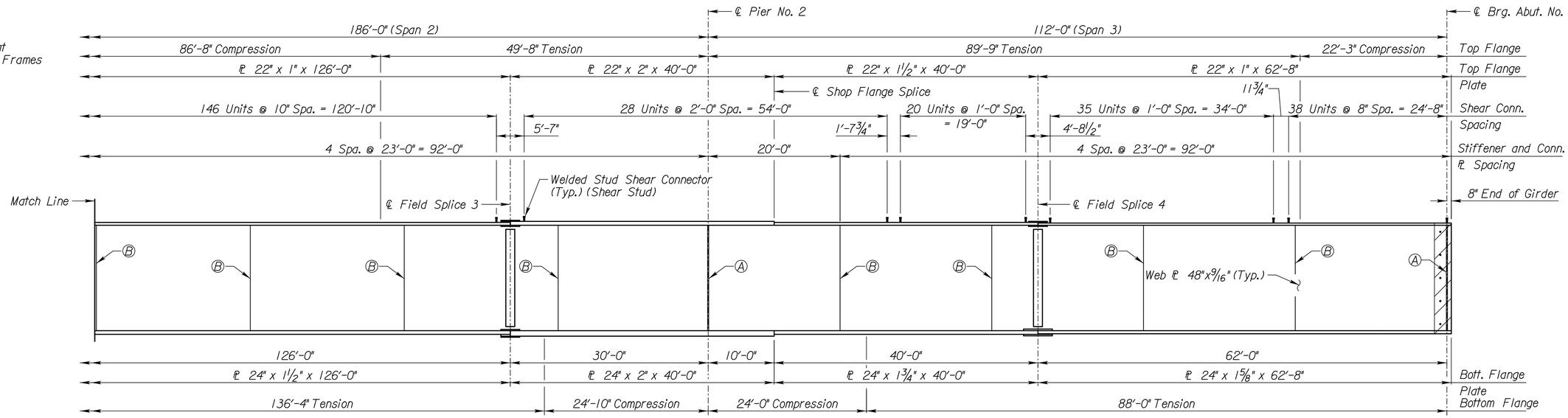
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	48	151



GIRDER ELEVATION

Ⓐ Bearing Stiffener

Ⓑ Connection Plates at Intermediate Cross Frames



GIRDER ELEVATION

Notes:
Girder dimensions are horizontal dimensions @ 60°F unless otherwise noted.

All bearing stiffeners and girder ends, except at field splices, shall be vertical after final erection. All other stiffeners and all field splices shall be normal to the top flange.

For Structural Steel Framing Plan, see Sheet No. 47.

For Miscellaneous Structural Steel Details, see Sheet No. 49.

For Girder Field Splice Details, see Sheet No. 51.

For Cross Frame Details, see Sheet No. 52.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

GIRDER ELEVATION
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	ECS

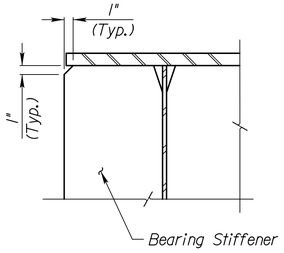
KDOT Graphics Certified 02-22-2024

Sheet No. 48

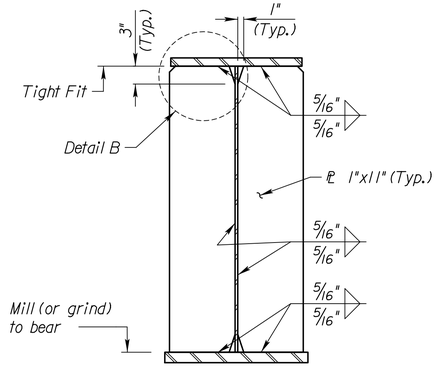
KDOT Graphics Certified

Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka390101bbr097-15.dgn
Plot Date: 06-17-24
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	49	151

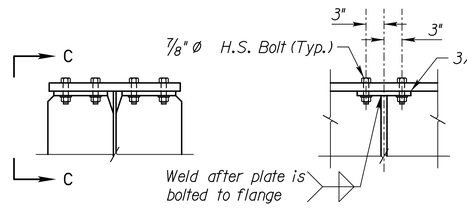


DETAIL B



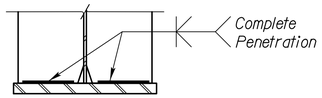
BEARING STIFFENER AT ABUTMENTS AND PIERS

(See Cross Frame Details for Bolt Hole Locations)

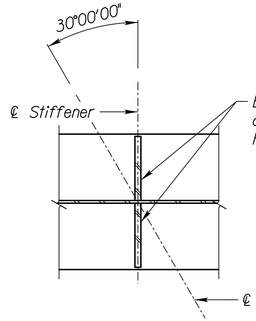


OPTIONAL BEARING STIFFENER CONNECTION AT TOP

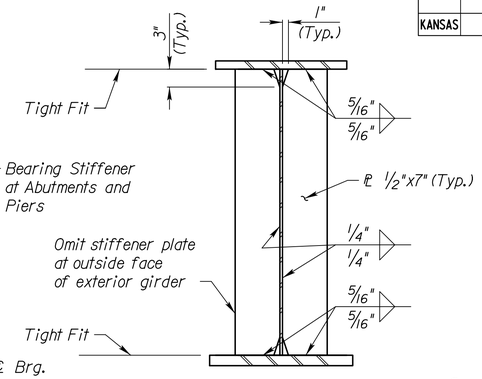
VIEW C-C



OPTIONAL BEARING STIFFENER CONNECTION AT BOTTOM

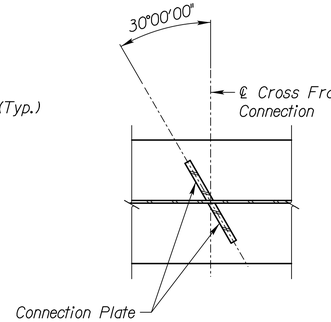


BEARING STIFFENER PLAN

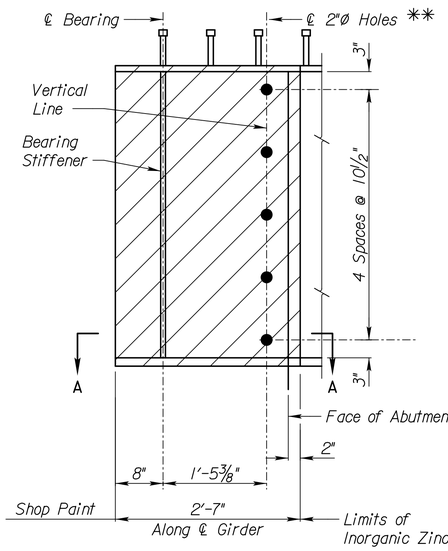


CONNECTION PLATE AT INTERMEDIATE CROSS FRAMES

(See Cross Frame Details for Bolt Hole Locations)

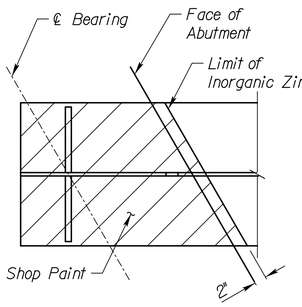


CONNECTION PLATE PLAN

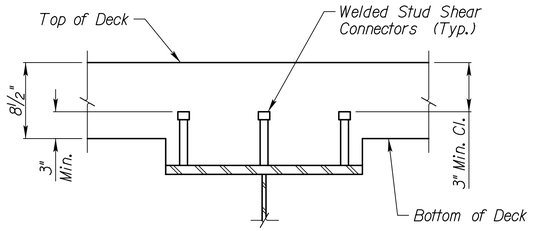


** *Place black mastic or expansion joint material around bars through girders to prevent concrete intrusion*

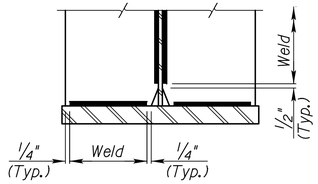
DETAIL A



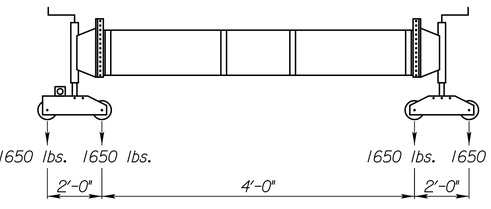
SECTION A-A



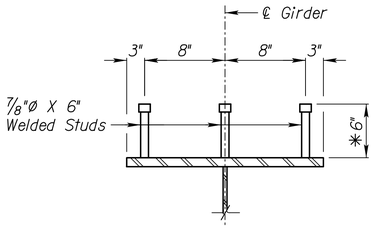
STUD PENETRATION



CONNECTION PLATE WELD DETAIL

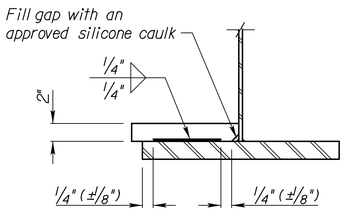


ASSUMED FINISHING MACHINE VALUES LOADING DIAGRAM

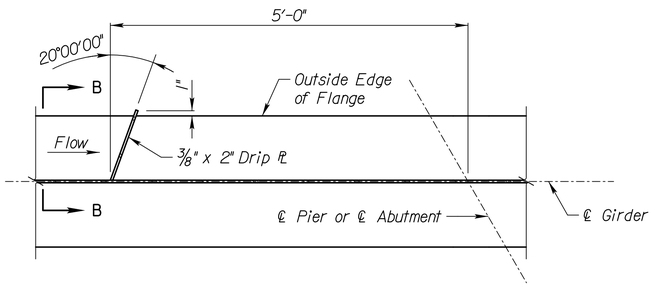


WELDED STUD SHEAR CONNECTOR DETAILS

* *Proposed length, actual lengths shall satisfy stud penetration after girder erection.*

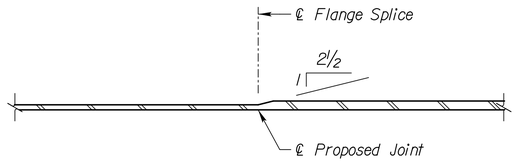


SECTION B-B



DRIP PLATE DETAIL

Only on Exterior Girders on Bottom Flange



SHOP FLANGE SPLICE TRANSITION DETAIL

Note:
The maximum allowable 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. When the actual screed loadings are greater than these assumed loads, the contractor shall submit to the Engineer design calculations for a torsional analysis of the exterior girder and bracing using the actual screed loads. The design calculations shall bear the seal of a licensed Professional Engineer.

STRUCTURAL STEEL SUMMARY

	AASHTO M270 GR. 50W T3 (Lbs.)	ASTM A709 Gr. 50W (Lbs.)	ASTM A709 Gr. 50 (Lbs.)
Girder Flanges	577,819		
Girder Webs	226,655		
Flange Splice Plates	21,476		
Web Splice Plates		3,182	
Fill Splice Plates ◔	3,787 ◔		
Bearing Stiffeners		7,187	
Connection Plates		7,146	
Cross Frames		48,096	
Drip Plates		12	
Abutment Girder Chairs			1,988
TOTAL STRUCTURAL STEEL	829,737	65,623	1,988

◔ *Fill Splice Plates specified as 11 gauge thickness shall be Gr. 50 and meet ASTM A570, ASTM 611, or ASTM A1011 requirements. These fill plates are 194 lbs. in total and are included in the 3,787 lbs. of Fill Splice Plates shown in the table. The payment for the 11 gauge Fill Splice Plates will be included in the payment for M270 Gr. 50W T3 Structural Steel.*

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

MISCELLANEOUS STRUCTURAL STEEL DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	ECS

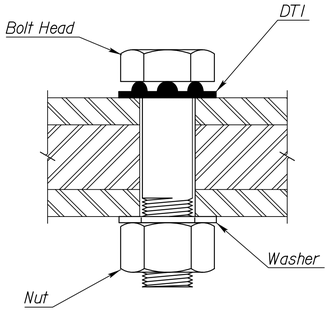
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Sheet No. 49

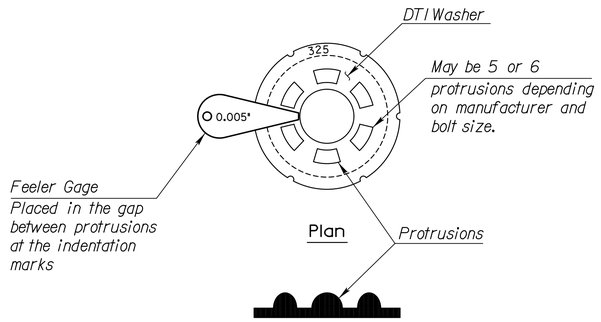
KDOT Graphics Certified

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2655451\Ka3901tbr097-16.dgn
Plot Date: 06-17-24

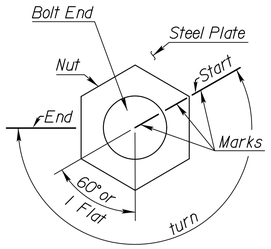
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	50	151



TYPICAL BOLT AND
DIRECT TENSION INDICATOR (DTI)

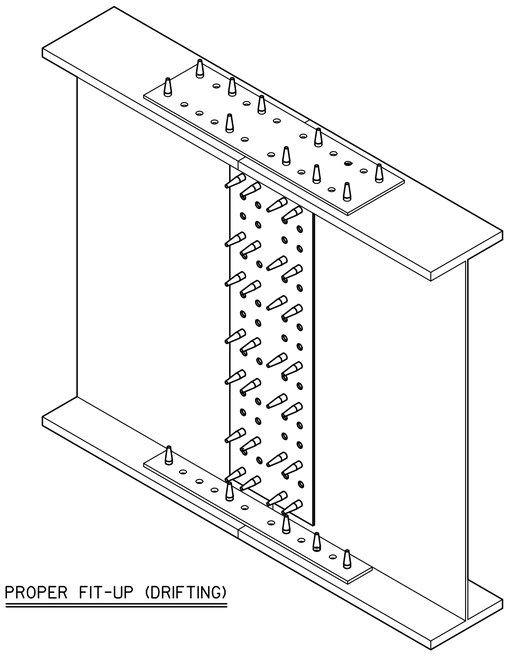


TYPICAL DIRECT TENSION INDICATOR (DTI)

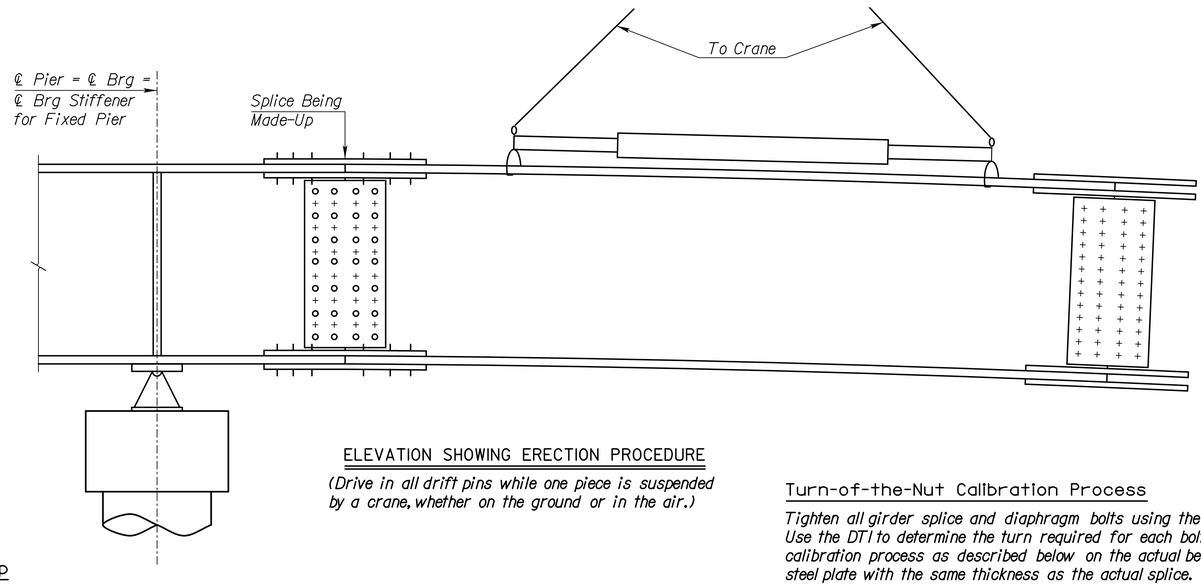


REQUIRED MARKING DETAIL

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



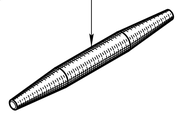
PROPER FIT-UP (DRIFTING)



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.)

Drift Pin Diameter = Hole Diameter
Hole Ø = 15/16" for girder splice.
Hole Ø = 13/16" for X-frame or diaphragm connection.



DRIFT PIN

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 ± 1/4 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 (1/2" 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 1/2 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 1/4 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
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00
STEEL ERECTION, FIT-UP
AND BOLTING PROCEDURE
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D					
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD		DBM	
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.		DGB	

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Sheet No. 50

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Plotted By: MOEHL Plot Location:
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Plot Date: 05-17-24

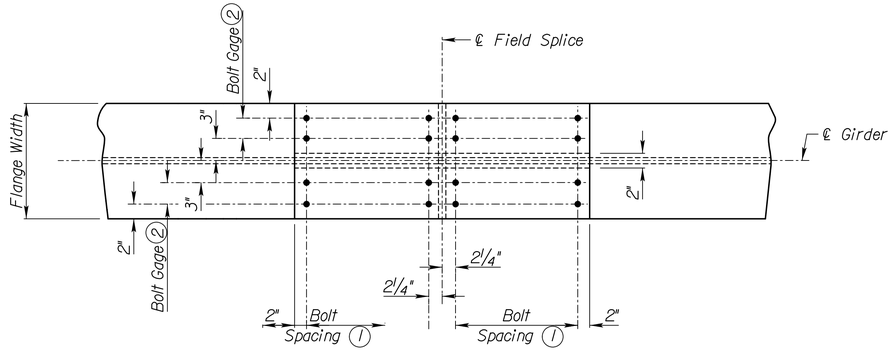
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	51	151

FIELD SPLICE SCHEDULE

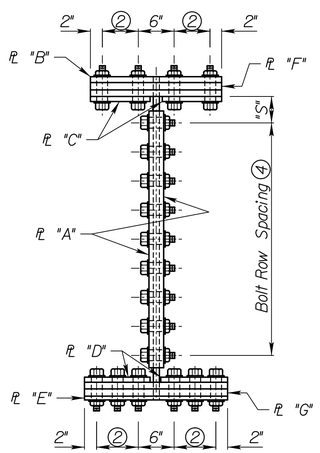
FIELD SPLICE NO.	TOP FLANGE SPLICE									WEB PLATE SPLICE				
	FLANGE WIDTH	FLANGE THICKNESS "T₁"	FLANGE THICKNESS "T₂"	PLATE "B"	PLATE "C" (2 REQUIRED)	① BOLT SPACING	② BOLT GAGE	Fill Plate "F"	BOLT INFORMATION	WEB PLATE "A" (2 REQUIRED)	③ BOLT COLUMN SPACING	④ BOLT ROW SPACING	BOLT INFORMATION	DIM. "S"
1 & 4	22	1"	1 1/2"	5/8"x1'-10"x3'-8 1/2"	5/8"x10"x3'-8 1/2"	6 @ 3" = 1'-6"	1 @ 6" = 6"	1/2"x1'-10"x1'-10"	56 - 7/8"Øx4 1/4"	3/8"x1'-2 1/2"x3'-7"	1 @ 3" = 3"	8 @ 47/8" = 3'-3"	36 - 7/8"Øx3"	4 1/2"
2 & 3	22	2"	1"	5/8"x1'-10"x4'-2 1/2"	5/8"x10"x4'-2 1/2"	7 @ 3" = 1'-9"	1 @ 6" = 6"	1"x1'-10"x2'-1"	64 - 7/8"Øx4 3/4"	3/8"x1'-2 1/2"x3'-7"	1 @ 3" = 3"	8 @ 47/8" = 3'-3"	36 - 7/8"Øx3"	4 1/2"

FIELD SPLICE SCHEDULE (Continued)

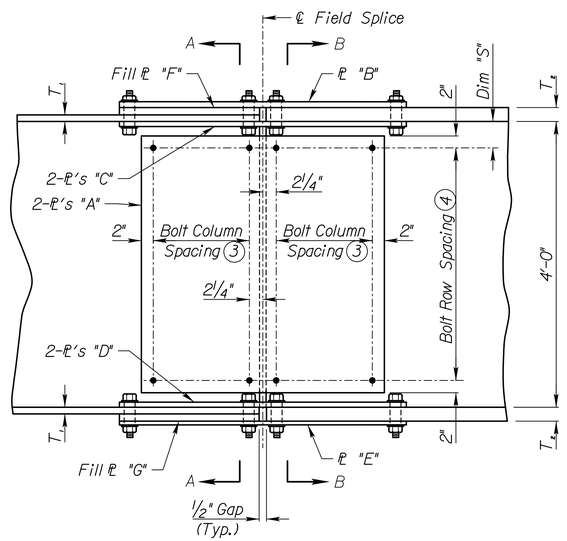
FIELD SPLICE NO.	BOTTOM FLANGE SPLICE								
	FLANGE WIDTH	FLANGE THICKNESS "T₁"	FLANGE THICKNESS "T₂"	PLATE "D" (2 REQUIRED)	PLATE "E"	① BOLT SPACING	② BOLT GAGE	Fill Plate "G"	BOLT INFORMATION
1 & 4	24"	1 5/8"	1 3/4"	1"x11"x3'-2 1/2"	1"x2'-0"x3'-2 1/2"	5 @ 3" = 1'-3"	2 @ 3 1/2" = 7"	11 ga. x1'-7"x2'-0"	72 - 7/8"Øx5 1/4"
2 & 3	24"	2"	1 1/2"	1"x11"x3'-8 1/2"	1"x2'-0"x3'-8 1/2"	6 @ 3" = 1'-6"	2 @ 3 1/2" = 7"	1/2"x1'-10"x2'-0"	84 - 7/8"Øx5 1/2"



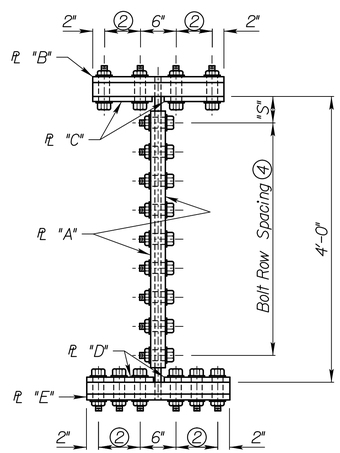
FLANGE SPLICE PLAN



SECTION A-A



FIELD SPLICE ELEVATION



SECTION B-B

Notes:
Fasteners for field splices shall be 7/8" Ø high-strength steel bolts, ASTM F3125 Grade A325 (Type 3).

Fill plates specified as 11 gauge thickness shall be blast cleaned to meet SSPC-SP10 Specifications and prime coated.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

GIRDER FIELD SPLICE DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

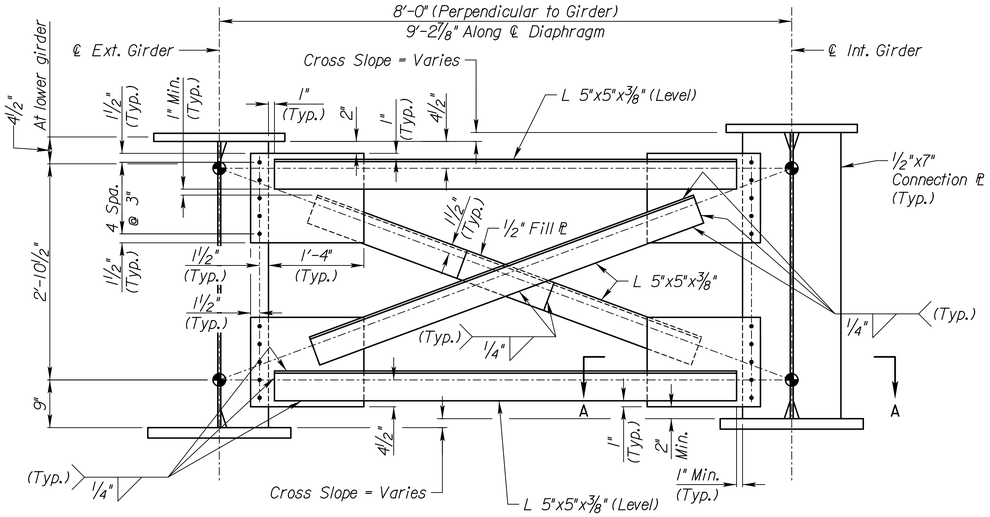
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Sheet No. 51

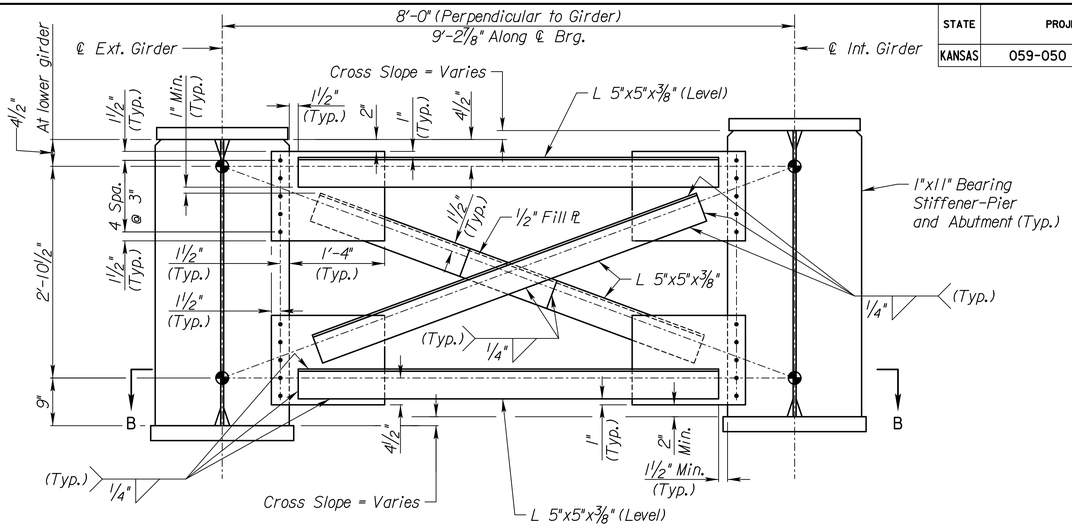
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Plotted By: BBEAMER | Plot Location:
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Plot Date: 06-17-24

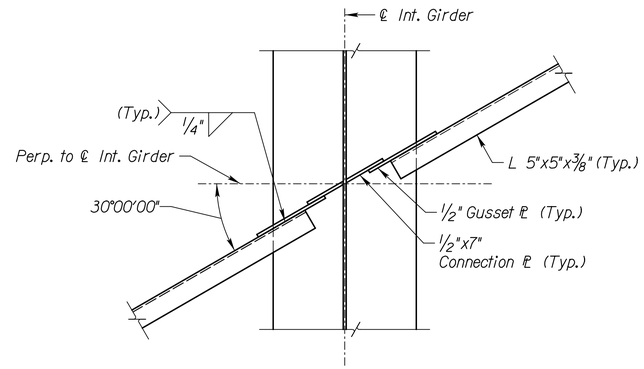
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	52	151



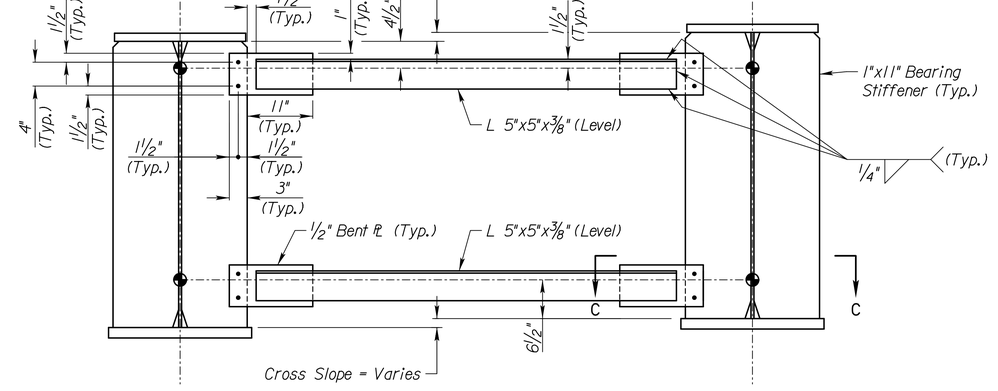
INTERMEDIATE CROSS FRAME (TYP. ALL BAYS)



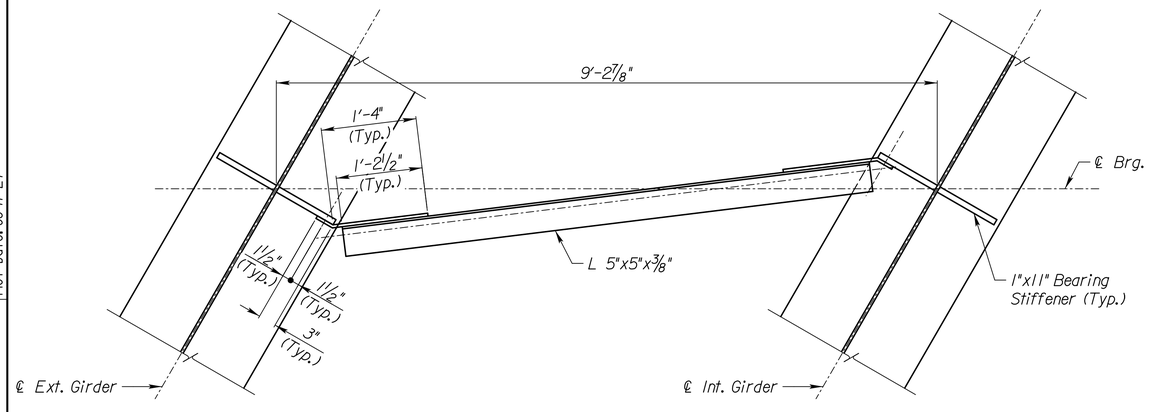
PIER CROSS FRAME (TYP. ALL BAYS) AND END CROSS FRAME IN EXTERIOR BAYS



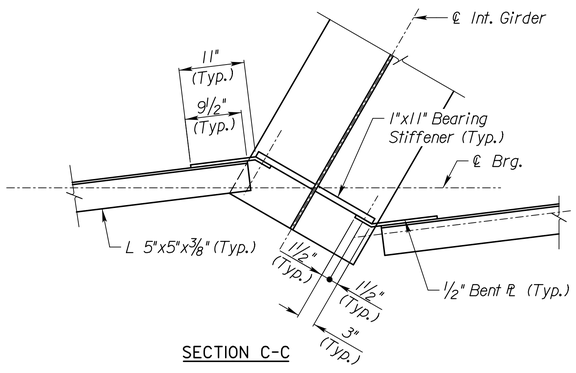
SECTION A-A



END CROSS FRAME IN INTERIOR BAYS



SECTION B-B
(Shown at ℄ Pier, Similar at ℄ Abutment)



SECTION C-C

Notes:

All bolts are 3/4"Ø A325 with threads allowed in the shear plane.

◔ - Denotes Work Point

All Gusset Plates are 1/2" thick.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

CROSS FRAME DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D				
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD		DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.		ECS

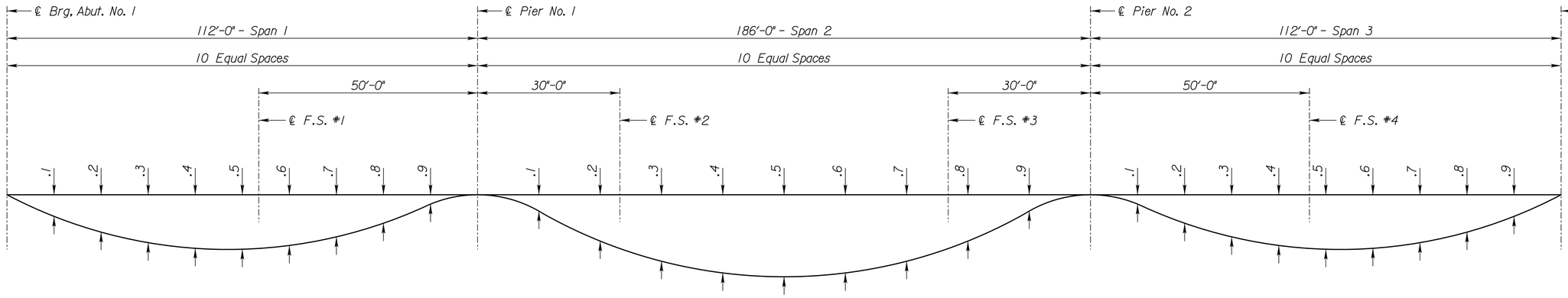
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Sheet No. 52

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Plotted By: BBEAMER | Plot Location:
File: c:\pwworking\central01\d2654511\Va3901bbr097-19.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	53	151



DEAD LOAD DEFLECTION DIAGRAM AT TENTH POINTS

GIRDER	TOTAL DEAD LOAD DEFLECTIONS (STEEL + CONCRETE, INCHES)																														
	Abut. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Abut. 2
A	0	1/4	1/2	9/16	1/2	5/16	0	- 1/4	- 7/16	- 3/8	0	1 3/8	3 1/4	5 1/8	6 7/16	6 15/16	6 7/16	5 1/8	3 3/16	1 3/8	0	- 3/8	- 3/8	- 1/4	1/16	5/16	9/16	5/8	1/2	5/16	0
B	0	5/16	1/2	5/8	9/16	5/16	1/16	- 1/4	- 7/16	- 3/8	0	1 7/16	3 3/8	5 3/8	6 3/4	7 1/4	6 3/4	5 5/16	3 3/8	1 7/16	0	- 3/8	- 7/16	- 1/4	1/16	3/8	9/16	5/8	9/16	5/16	0
C	0	5/16	1/2	5/8	9/16	5/16	1/16	- 1/4	- 7/16	- 3/8	0	1 7/16	3 3/8	5 3/8	6 3/4	7 1/4	6 3/4	5 5/16	3 3/8	1 7/16	0	- 3/8	- 7/16	- 1/4	1/16	3/8	9/16	5/8	9/16	5/16	0
D	0	5/16	1/2	5/8	9/16	5/16	1/16	- 1/4	- 7/16	- 3/8	0	1 7/16	3 3/8	5 3/8	6 3/4	7 1/4	6 3/4	5 5/16	3 3/8	1 7/16	0	- 3/8	- 7/16	- 1/4	1/16	3/8	9/16	5/8	9/16	5/16	0
E	0	5/16	1/2	5/8	9/16	5/16	1/16	- 1/4	- 7/16	- 3/8	0	1 7/16	3 3/8	5 3/8	6 3/4	7 1/4	6 3/4	5 5/16	3 3/8	1 7/16	0	- 3/8	- 7/16	- 1/4	1/16	3/8	9/16	5/8	9/16	5/16	0
F	0	1/4	1/2	9/16	1/2	5/16	0	- 1/4	- 7/16	- 3/8	0	1 3/8	3 1/4	5 1/8	6 7/16	6 15/16	6 7/16	5 1/8	3 3/16	1 3/8	0	- 3/8	- 3/8	- 1/4	1/16	5/16	9/16	5/8	1/2	5/16	0

GIRDER	VERTICAL CURVE CORRECTION (INCHES)																														
	Abut. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Abut. 2
A	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0	1	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	1	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0
B	0	3/8	5/8	13/16	15/16	15/16	15/16	13/16	5/8	3/8	0	15/16	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	15/16	0	3/8	5/8	13/16	15/16	15/16	15/16	13/16	5/8	5/16	0
C	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0	15/16	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	1	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0
D	0	5/16	5/8	13/16	15/16	15/16	15/16	13/16	5/8	5/16	0	15/16	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	15/16	0	3/8	5/8	13/16	15/16	15/16	15/16	13/16	5/8	3/8	0
E	0	3/8	5/8	13/16	15/16	15/16	15/16	13/16	5/8	3/8	0	15/16	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	15/16	0	5/16	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0
F	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0	1	1 11/16	2 1/4	2 9/16	2 11/16	2 9/16	2 1/4	1 11/16	15/16	0	3/8	5/8	13/16	15/16	1	15/16	13/16	5/8	3/8	0

FILLETS:

Camber the steel girders for the total dead load deflection and the vertical curvature, if necessary. The ordinates shown for concrete dead load deflection represent the amount of camber that should be in the girders after they are erected and bolted but prior to placing the floor forms. After the structural steel is completely erected and the falsework bents are removed, measure the camber in the field by taking a profile of each girder. Correct any variation between the actual camber and the dead load deflection shown in the plans by varying the depth of the concrete fillets over the girders so that the finished floor is constructed to the theoretical grade. The minimum depth of the slab over the girder shall be $8\frac{1}{2}$" and the minimum depth from top of deck to top of girder web shall be $11\frac{1}{2}$".

The theoretical amount of concrete required for the fillets is 23.5 C.Y. This amount of concrete is included in the Summary of Quantities. Any additional concrete required to construct the fillets will be subsidiary.

Notes:
Positive deflections are downward.
Positive camber is upward.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00
DEAD LOAD DEFLECTION AND CAMBER DIAGRAMS
US-59 OVER UPRR
Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 02-22-2024

Sheet No. 53

KDOT Graphics Certified

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-20.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	54	151

GIRDER	CAMBER (INCHES)																													
	Abut. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Abut. 2
A	0	5/8	1 1/8	1 3/8	1 7/16	1 5/16	15/16	9/16	3/16	0	0	2 5/16	4 15/16	7 3/8	9 1/16	9 5/8	9	7 3/8	4 15/16	2 5/16	0	0	1/4	9/16	1	1 5/16	1 1/2	1 7/16	1 1/8	5/8	0
B	0	5/8	1 1/8	1 7/16	1 1/2	1 5/16	15/16	9/16	3/16	0	0	2 3/8	5 1/16	7 5/8	9 5/16	9 15/16	9 5/16	7 5/8	5 1/16	2 3/8	0	0	3/16	9/16	1	1 5/16	1 1/2	1 7/16	1 3/16	5/8	0
C	0	5/8	1 1/8	1 7/16	1 1/2	1 5/16	15/16	9/16	3/16	0	0	2 3/8	5 1/16	7 5/8	9 5/16	9 15/16	9 5/16	7 9/16	5 1/16	2 3/8	0	0	3/16	9/16	1	1 5/16	1 1/2	1 7/16	1 3/16	11/16	0
D	0	5/8	1 1/8	1 7/16	1 1/2	1 5/16	15/16	9/16	3/16	- 1/16	0	2 3/8	5 1/16	7 9/16	9 5/16	9 15/16	9 5/16	7 9/16	5 1/16	2 3/8	0	0	3/16	9/16	1	1 5/16	1 1/2	1 7/16	1 3/16	11/16	0
E	0	5/8	1 1/8	1 7/16	1 1/2	1 5/16	15/16	9/16	3/16	- 1/16	0	2 3/8	5 1/16	7 9/16	9 5/16	9 15/16	9 5/16	7 9/16	5 1/16	2 3/8	0	- 1/16	3/16	9/16	1	1 5/16	1 1/2	1 7/16	1 3/16	11/16	0
F	0	5/8	1 1/8	1 3/8	1 7/16	1 5/16	15/16	9/16	3/16	0	0	2 5/16	4 15/16	7 3/8	9	9 5/8	9	7 3/8	4 15/16	2 5/16	0	0	3/16	9/16	1	1 5/16	1 7/16	1 3/8	1 1/8	5/8	0

GIRDER	CONCRETE DEAD LOAD DEFLECTIONS (COMPOSITE + NON-COMPOSITE, INCHES)																													
	Abut. 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 1	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Pier 2	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	Abut. 2
A	0	1/4	3/8	7/16	7/16	1/4	1/16	- 1/8	- 1/4	- 1/4	0	15/16	2 1/4	3 5/8	4 9/16	4 15/16	4 9/16	3 5/8	2 1/4	15/16	0	- 1/4	- 1/4	- 1/8	1/16	5/16	7/16	1/2	7/16	1/4	0
B	0	1/4	7/16	1/2	7/16	5/16	1/16	- 1/8	- 5/16	- 1/4	0	1	2 7/16	3 7/8	4 7/8	5 1/4	4 7/8	3 7/8	2 7/16	1	0	- 1/4	- 1/4	- 1/8	1/8	5/16	1/2	1/2	7/16	1/4	0
C	0	1/4	7/16	1/2	7/16	5/16	1/16	- 1/8	- 5/16	- 1/4	0	1	2 7/16	3 7/8	4 7/8	5 1/4	4 7/8	3 7/8	2 7/16	1	0	- 1/4	- 1/4	- 1/8	1/8	5/16	1/2	1/2	7/16	1/4	0
D	0	1/4	7/16	1/2	7/16	5/16	1/16	- 1/8	- 5/16	- 1/4	0	1	2 7/16	3 7/8	4 7/8	5 1/4	4 7/8	3 7/8	2 7/16	1	0	- 1/4	- 1/4	- 1/8	1/8	5/16	1/2	1/2	7/16	1/4	0
E	0	1/4	7/16	1/2	7/16	5/16	1/16	- 1/8	- 5/16	- 1/4	0	1	2 7/16	3 7/8	4 7/8	5 1/4	4 7/8	3 7/8	2 7/16	1	0	- 1/4	- 1/4	- 1/8	1/8	5/16	1/2	1/2	7/16	1/4	0
F	0	1/4	3/8	7/16	7/16	1/4	1/16	- 1/8	- 1/4	- 1/4	0	15/16	2 1/4	3 5/8	4 9/16	4 15/16	4 9/16	3 5/8	2 1/4	15/16	0	- 1/4	- 1/4	- 1/8	1/16	5/16	7/16	1/2	7/16	1/4	0

GIRDER	GIRDER FIELD SPLICE ELEVATIONS *			
	FIELD SPLICE NUMBER			
	1	2	3	4
A	939.76	940.52	940.77	940.33
B	939.93	940.68	940.90	940.44
C	940.10	940.83	941.02	940.54
D	940.14	940.85	941.01	940.51
E	940.06	940.75	940.88	940.35
F	939.96	940.63	940.73	940.19

* Elevations are at top of splice plates and include the theoretical camber before deck pour.

GIRDER	DEAD LOAD DEFLECTIONS AT FIELD SPLICE (INCHES)							
	F.S. 1		F.S. 2		F.S. 3		F.S. 4	
	CONC.	TOTAL	CONC.	TOTAL	CONC.	TOTAL	CONC.	TOTAL
A	1/8	3/16	1 3/4	2 1/2	1 3/4	2 1/2	3/16	3/16
B	3/16	3/16	1 7/8	2 5/8	1 7/8	2 5/8	3/16	3/16
C	3/16	3/16	1 7/8	2 5/8	1 7/8	2 5/8	3/16	3/16
D	3/16	3/16	1 7/8	2 5/8	1 7/8	2 5/8	3/16	3/16
E	3/16	3/16	1 7/8	2 5/8	1 7/8	2 5/8	3/16	3/16
F	1/8	3/16	1 3/4	2 1/2	1 3/4	2 1/2	3/16	3/16

Notes:
Positive deflections are downward.
Positive camber is upward.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00
DEAD LOAD DEFLECTION AND CAMBER DIAGRAMS
US-59 OVER UPRR
Proj. No. 59-50 KA-3901-01 Labette Co.

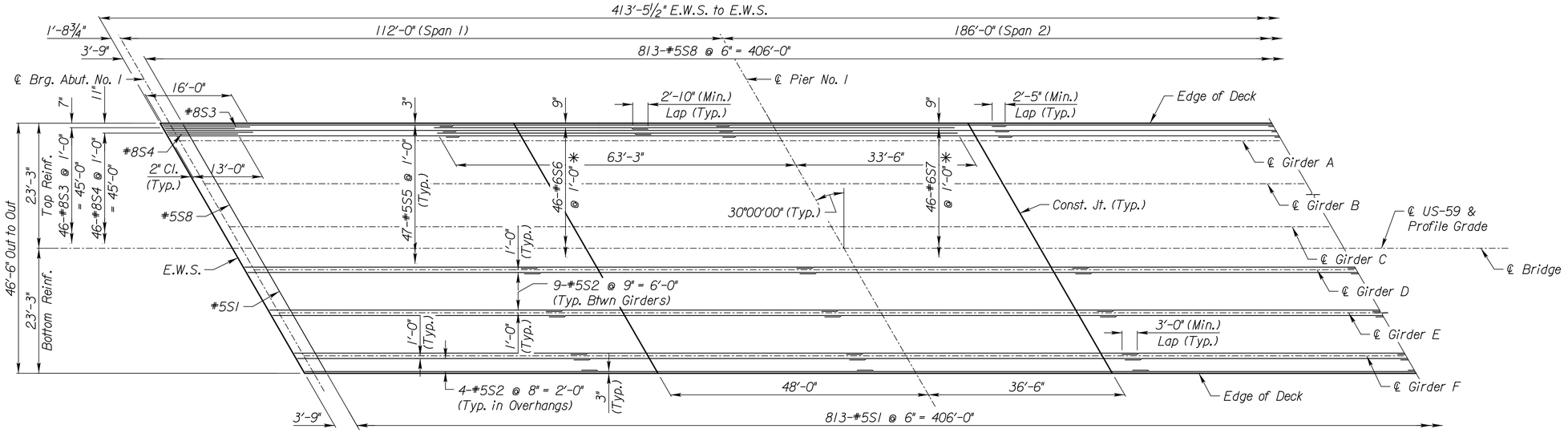
SHEET NO.	OF	SCALE		APP'D			
DESIGNED	KD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	DGB

KDOT Graphics Certified 02-22-2024

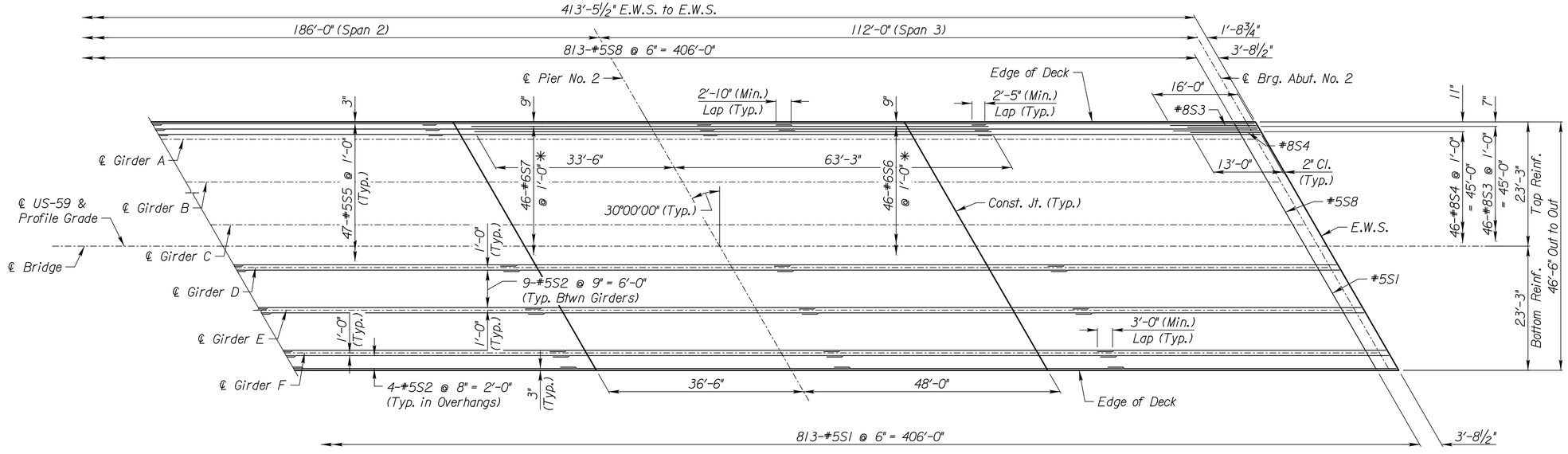
KDOT Graphics Certified

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-21.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	55	151



DECK PLAN



DECK PLAN

Notes:

* Place evenly spaced between #5S5 bars.

For construction joint details see Sheet No. 56.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

DECK PLAN
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

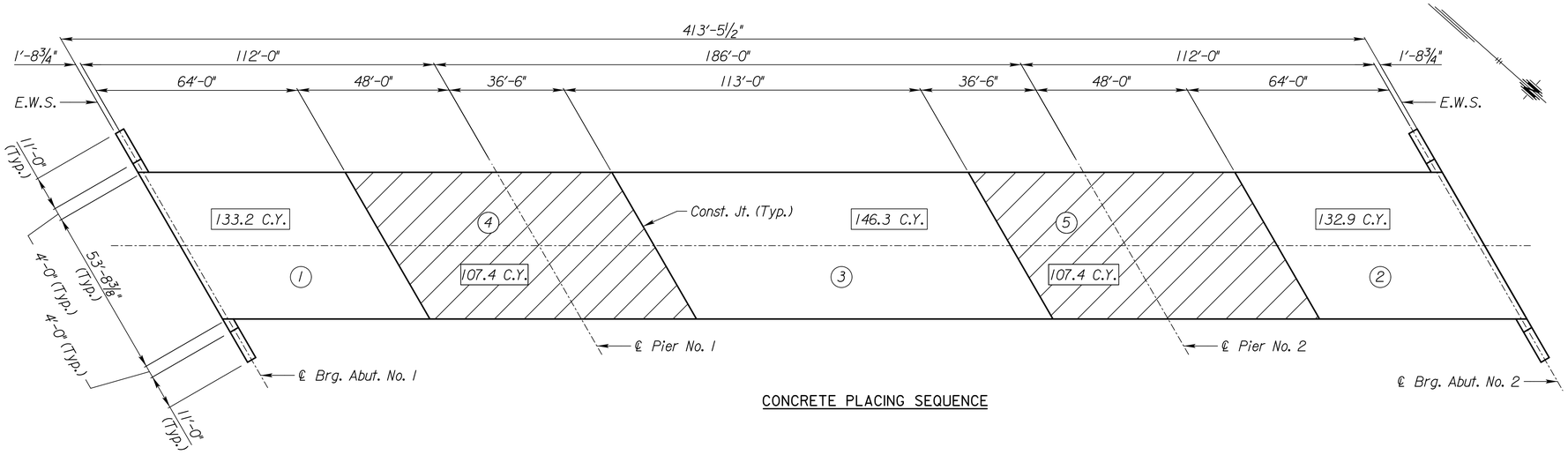
KDOT Graphics Certified 02-01-2024

Sheet No. 55

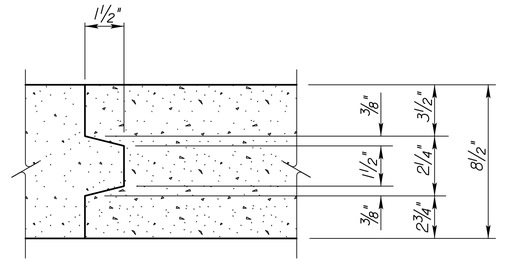
Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka390101bbr097-22.dgn
Plot Date: 06-17-24
Plot Location:

KDOT Graphics Certified

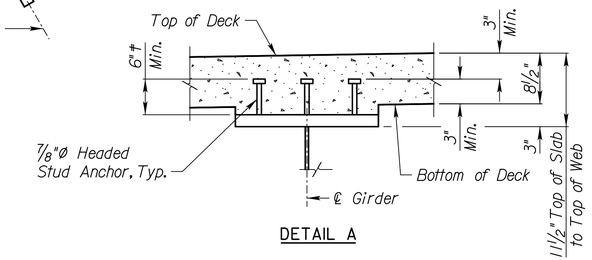
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	56	151



CONCRETE PLACING SEQUENCE

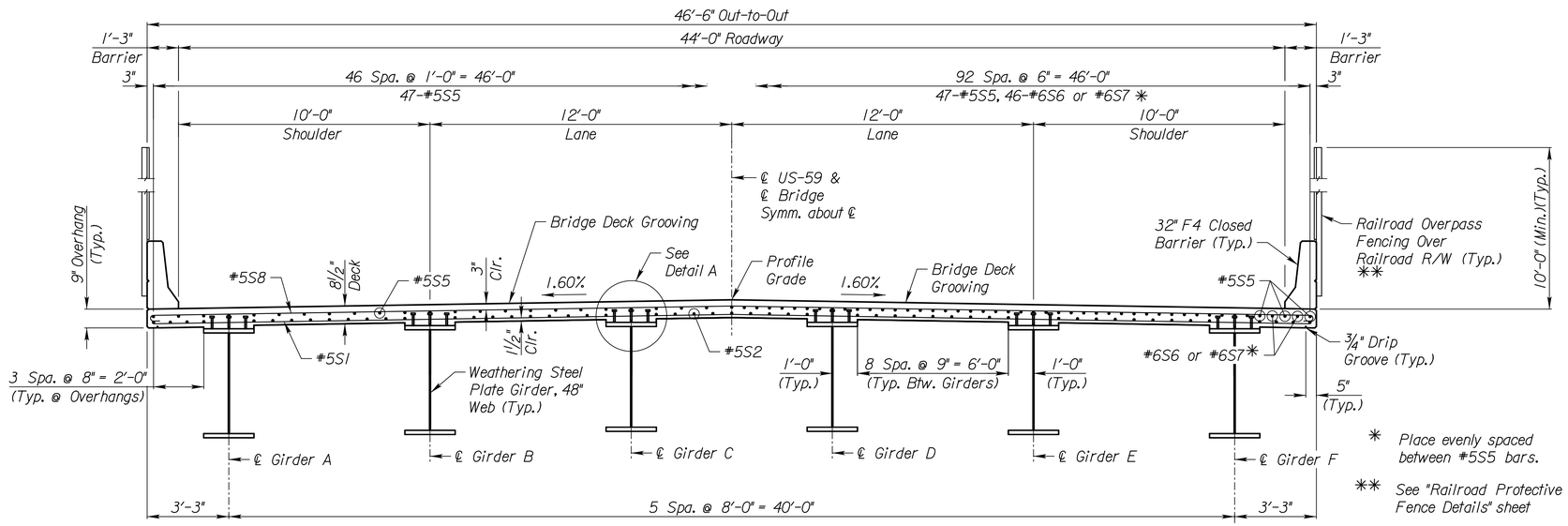


TRANSVERSE CONSTRUCTION JOINT



DETAIL A

† Proposed length, actual length shall satisfy stud penetration requirements after girder erection.



✳ Place evenly spaced between #5S5 bars.

✳✳ See "Railroad Protective Fence Details" sheet

NEAR MID SPAN NEAR PIER

TYPICAL SECTION
(Shown Perpendicular to Roadway)

Notes:

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.

The Contractor will adhere to the placing direction/sequence shown on the plans. Changes will be accepted only if the Contractors Engineer adjusts the camber diagram so the fabricator can adjust the web camber and headed stud anchor heights accordingly. This revised diagram will be approved by the design Engineer prior to deck forming. If profile grinding decreases the clearance to the top mat of reinforcement to less than 2½" a polymer overlay will be placed at no cost to the State.

The Contractor may place the F-shape Barrier Curb continuously from one end of the bridge to the other.

Place and hand vibrate all concrete for the Abutment above the construction joint 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.

CONSTRUCTION JOINTS:

Place the construction joints only at locations shown or at locations approved by the Engineer.

Note: See Sheet Nos. 53 and 54 for Dead Load Deflections and Camber Diagrams.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00
CONCRETE PLACING SEQUENCE & TYPICAL SECTION
US-59 OVER UPRR
Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 05-17-2024

Sheet No. 56

KDOT Graphics Certified

Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-23.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	57	151

FINAL TOP OF DECK ELEVATIONS

Location	Left Edge of Deck			℄ Girder																	Right Edge of Deck		
				A			B			C			D			E			F					
	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation	Station	Offset (ft)	Elevation
℄ Brg. Abut. No. 1	163+14.58	-23.25	939.77	163+16.45	-20.00	939.85	163+21.07	-12.00	940.04	163+25.69	-4.00	940.22	163+30.31	4.00	940.28	163+34.93	12.00	940.20	163+39.55	20.00	940.13	163+41.42	23.25	940.10
0.1L	163+25.78	-23.25	939.91	163+27.65	-20.00	939.99	163+32.27	-12.00	940.17	163+36.89	-4.00	940.35	163+41.51	4.00	940.40	163+46.13	12.00	940.33	163+50.75	20.00	940.25	163+52.62	23.25	940.22
0.2L	163+36.98	-23.25	940.04	163+38.85	-20.00	940.12	163+43.47	-12.00	940.30	163+48.09	-4.00	940.48	163+52.71	4.00	940.53	163+57.33	12.00	940.45	163+61.95	20.00	940.37	163+63.82	23.25	940.34
0.3L	163+48.18	-23.25	940.17	163+50.05	-20.00	940.24	163+54.67	-12.00	940.42	163+59.29	-4.00	940.60	163+63.91	4.00	940.64	163+68.53	12.00	940.56	163+73.15	20.00	940.48	163+75.02	23.25	940.45
0.4L	163+59.38	-23.25	940.29	163+61.25	-20.00	940.36	163+65.87	-12.00	940.54	163+70.49	-4.00	940.71	163+75.11	4.00	940.75	163+79.73	12.00	940.67	163+84.35	20.00	940.58	163+86.22	23.25	940.55
0.5L	163+70.58	-23.25	940.40	163+72.45	-20.00	940.47	163+77.07	-12.00	940.64	163+81.69	-4.00	940.82	163+86.31	4.00	940.86	163+90.93	12.00	940.77	163+95.55	20.00	940.68	163+97.42	23.25	940.65
Field Splice No. 1				163+78.45	-20.00	940.53	163+83.07	-12.00	940.70	163+87.69	-4.00	940.87	163+92.31	4.00	940.91	163+96.93	12.00	940.82	164+01.55	20.00	940.73			
0.6L	163+81.78	-23.25	940.51	163+83.65	-20.00	940.58	163+88.27	-12.00	940.75	163+92.89	-4.00	940.92	163+97.51	4.00	940.96	164+02.13	12.00	940.87	164+06.75	20.00	940.77	164+08.62	23.25	940.74
0.7L	163+92.98	-23.25	940.61	163+94.85	-20.00	940.68	163+99.47	-12.00	940.84	164+04.09	-4.00	941.01	164+08.71	4.00	941.05	164+13.33	12.00	940.95	164+17.95	20.00	940.86	164+19.82	23.25	940.82
0.8L	164+04.18	-23.25	940.70	164+06.05	-20.00	940.77	164+10.67	-12.00	940.93	164+15.29	-4.00	941.10	164+19.91	4.00	941.13	164+24.53	12.00	941.03	164+29.15	20.00	940.94	164+31.02	23.25	940.90
0.9L	164+15.38	-23.25	940.79	164+17.25	-20.00	940.85	164+21.87	-12.00	941.02	164+26.49	-4.00	941.18	164+31.11	4.00	941.21	164+35.73	12.00	941.11	164+40.35	20.00	941.01	164+42.22	23.25	940.97
℄ Brg. Pier No. 1	164+26.58	-23.25	940.87	164+28.45	-20.00	940.93	164+33.07	-12.00	941.09	164+37.69	-4.00	941.25	164+42.31	4.00	941.28	164+46.93	12.00	941.18	164+51.55	20.00	941.08	164+53.42	23.25	941.04
0.1L	164+45.18	-23.25	940.99	164+47.05	-20.00	941.05	164+51.67	-12.00	941.21	164+56.29	-4.00	941.36	164+60.91	4.00	941.38	164+65.53	12.00	941.28	164+70.15	20.00	941.17	164+72.02	23.25	941.13
Field Splice No. 2				164+58.45	-20.00	941.11	164+63.07	-12.00	941.27	164+67.69	-4.00	941.42	164+72.31	4.00	941.44	164+76.93	12.00	941.33	164+81.55	20.00	941.22			
0.2L	164+63.78	-23.25	941.09	164+65.65	-20.00	941.15	164+70.27	-12.00	941.30	164+74.89	-4.00	941.45	164+79.51	4.00	941.47	164+84.13	12.00	941.36	164+88.75	20.00	941.25	164+90.62	23.25	941.20
0.3L	164+82.38	-23.25	941.17	164+84.25	-20.00	941.23	164+88.87	-12.00	941.38	164+93.49	-4.00	941.52	164+98.11	4.00	941.54	165+02.73	12.00	941.42	165+07.35	20.00	941.31	165+09.22	23.25	941.26
0.4L	165+00.98	-23.25	941.24	165+02.85	-20.00	941.30	165+07.47	-12.00	941.44	165+12.09	-4.00	941.58	165+16.71	4.00	941.59	165+21.33	12.00	941.47	165+25.95	20.00	941.35	165+27.82	23.25	941.30
0.5L	165+19.58	-23.25	941.29	165+21.45	-20.00	941.34	165+26.07	-12.00	941.48	165+30.69	-4.00	941.61	165+35.31	4.00	941.62	165+39.93	12.00	941.50	165+44.55	20.00	941.37	165+46.42	23.25	941.32
0.6L	165+38.18	-23.25	941.32	165+40.05	-20.00	941.37	165+44.67	-12.00	941.50	165+49.29	-4.00	941.63	165+53.91	4.00	941.64	165+58.53	12.00	941.51	165+63.15	20.00	941.38	165+65.02	23.25	941.33
0.7L	165+56.78	-23.25	941.33	165+58.65	-20.00	941.38	165+63.27	-12.00	941.51	165+67.89	-4.00	941.63	165+72.51	4.00	941.63	165+77.13	12.00	941.50	165+81.75	20.00	941.37	165+83.62	23.25	941.31
0.8L	165+75.38	-23.25	941.32	165+77.25	-20.00	941.37	165+81.87	-12.00	941.50	165+86.49	-4.00	941.62	165+91.11	4.00	941.61	165+95.73	12.00	941.48	166+00.35	20.00	941.34	166+02.22	23.25	941.28
Field Splice No. 3				165+84.45	-20.00	941.37	165+89.07	-12.00	941.49	165+93.69	-4.00	941.61	165+98.31	4.00	941.60	166+02.93	12.00	941.46	166+07.55	20.00	941.32			
0.9L	165+93.98	-23.25	941.30	165+95.85	-20.00	941.35	166+00.47	-12.00	941.47	166+05.09	-4.00	941.58	166+09.71	4.00	941.57	166+14.33	12.00	941.43	166+18.95	20.00	941.29	166+20.82	23.25	941.23
℄ Brg. Pier No. 2	166+12.58	-23.25	941.26	166+14.45	-20.00	941.30	166+19.07	-12.00	941.42	166+23.69	-4.00	941.53	166+28.31	4.00	941.52	166+32.93	12.00	941.37	166+37.55	20.00	941.23	166+39.42	23.25	941.17
0.1L	166+23.78	-23.25	941.22	166+25.65	-20.00	941.27	166+30.27	-12.00	941.38	166+34.89	-4.00	941.49	166+39.51	4.00	941.47	166+44.13	12.00	941.33	166+48.75	20.00	941.18	166+50.62	23.25	941.12
0.2L	166+34.98	-23.25	941.18	166+36.85	-20.00	941.23	166+41.47	-12.00	941.34	166+46.09	-4.00	941.45	166+50.71	4.00	941.42	166+55.33	12.00	941.27	166+59.95	20.00	941.12	166+61.82	23.25	941.06
0.3L	166+46.18	-23.25	941.14	166+48.05	-20.00	941.18	166+52.67	-12.00	941.29	166+57.29	-4.00	941.39	166+61.91	4.00	941.37	166+66.53	12.00	941.22	166+71.15	20.00	941.06	166+73.02	23.25	941.00
0.4L	166+57.38	-23.25	941.08	166+59.25	-20.00	941.13	166+63.87	-12.00	941.23	166+68.49	-4.00	941.33	166+73.11	4.00	941.31	166+77.73	12.00	941.15	166+82.35	20.00	940.99	166+84.22	23.25	940.93
Field Splice No. 4				166+64.45	-20.00	941.10	166+69.07	-12.00	941.20	166+73.69	-4.00	941.30	166+78.31	4.00	941.28	166+82.93	12.00	941.12	166+87.55	20.00	940.96			
0.5L	166+68.58	-23.25	941.02	166+70.45	-20.00	941.07	166+75.07	-12.00	941.17	166+79.69	-4.00	941.27	166+84.31	4.00	941.24	166+88.93	12.00	941.08	166+93.55	20.00	940.92	166+95.42	23.25	940.86
0.6L	166+79.78	-23.25	940.96	166+81.65	-20.00	941.00	166+86.27	-12.00	941.10	166+90.89	-4.00	941.19	166+95.51	4.00	941.16	167+00.13	12.00	941.00	167+04.75	20.00	940.84	167+06.62	23.25	940.77
0.7L	166+90.98	-23.25	940.89	166+92.85	-20.00	940.93	166+97.47	-12.00	941.02	167+02.09	-4.00	941.12	167+06.71	4.00	941.08	167+11.33	12.00	940.92	167+15.95	20.00	940.75	167+17.82	23.25	940.69
0.8L	167+02.18	-23.25	940.81	167+04.05	-20.00	940.84	167+08.67	-12.00	940.94	167+13.29	-4.00	941.03	167+17.91	4.00	940.99	167+22.53	12.00	940.83	167+27.15	20.00	940.66	167+29.02	23.25	940.59
0.9L	167+13.38	-23.25	940.72	167+15.25	-20.00	940.76	167+19.87	-12.00	940.85	167+24.49	-4.00	940.94	167+29.11	4.00	940.90	167+33.73	12.00	940.73	167+38.35	20.00	940.56	167+40.22	23.25	940.49
℄ Brg. Abut. No. 2	167+24.58	-23.25	940.63	167+26.45	-20.00	940.67	167+31.07	-12.00	940.75	167+35.69	-4.00	940.84	167+40.31	4.00	940.80	167+44.93	12.00	940.63	167+49.55	20.00	940.45	167+51.42	23.25	940.38

Notes:
Offsets are measured perpendicular from the centerline from the ℄ US-59 looking upstation.

Negative offsets are left of the ℄ US-59 looking upstation.

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2655451\Ka390101bbr097-24.dgn
Plot Date: 06-17-24

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

TOP OF DECK ELEVATIONS
US-59 OVER UPRR

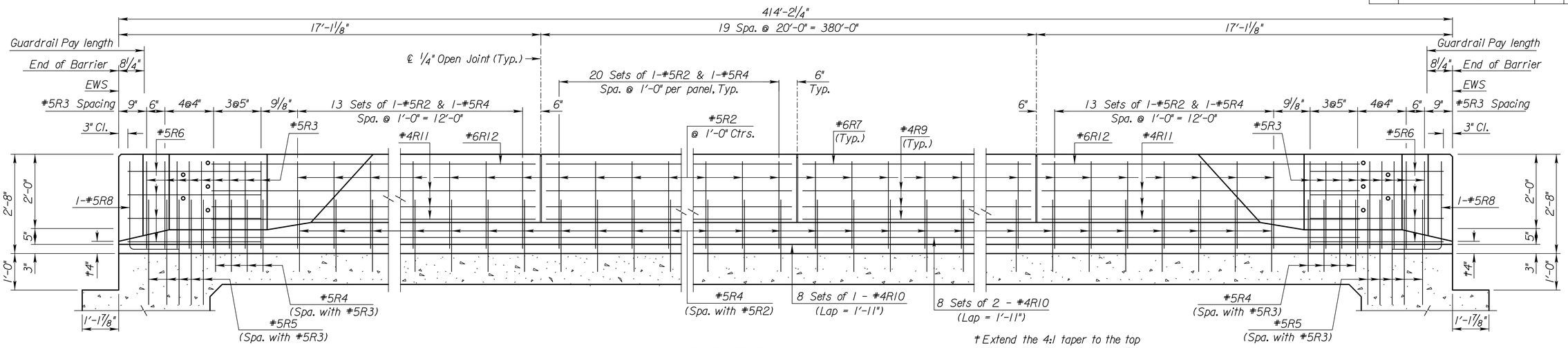
Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 02-22-2024

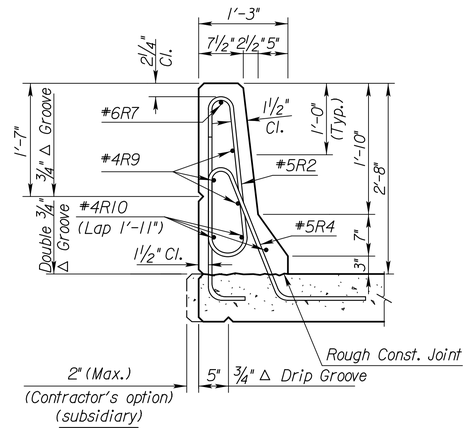
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	58	151

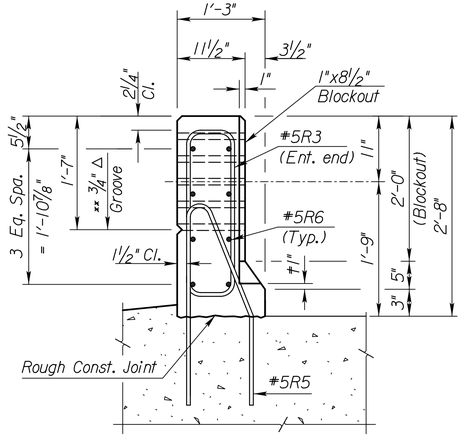


ELEVATION OF CONCRETE BARRIER

† Extend the 4:1 taper to the top of the approach slab curb.

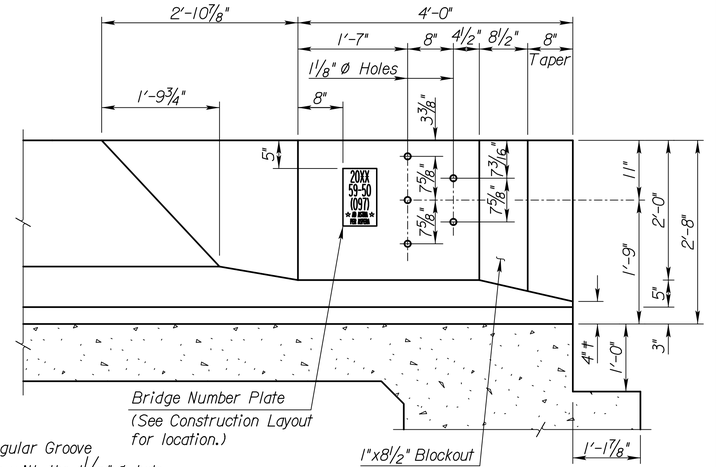


SECTION THRU BARRIER

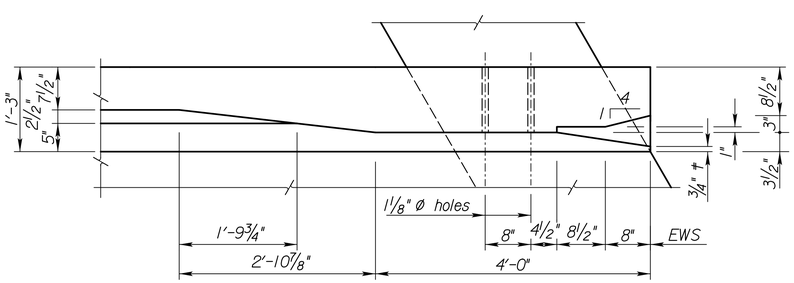


SECTION THRU BARRIER AT END BLOCKS
(At abutment)

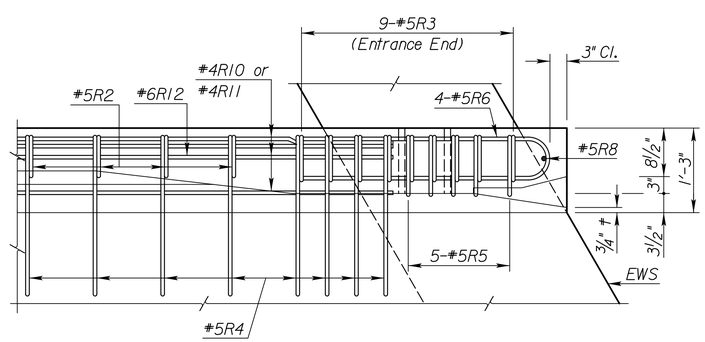
**Eliminate the ¾" Triangular Groove where it conflicts with the 1⅛" ø hole.



ELEVATION OF END BLOCK



PLAN OF END BLOCK



PLAN OF END BLOCK

Notes:
For Railroad Protective Fence connection to barrier, See Sheet No. 60.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1	05-22-07	Removed SFO	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

BARRIER CURB DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	ECS

KDOT Graphics Certified 02-22-2024

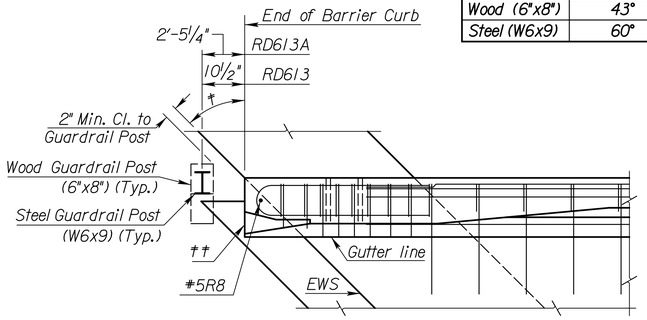
KDOT Graphics Certified

Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-25.dgn
Plot Date: 06-17-24

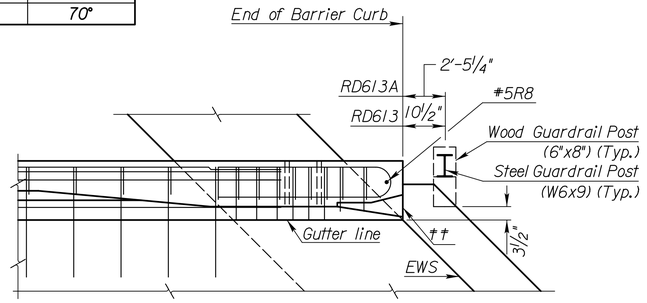
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	59	151

TYPE GUARDRAIL POST	†MAXIMUM SKEW ANGLE (2" Cl.)	
	RD6.13	RD6.13A
Wood (6"x8")	43°	65°
Steel (W6x9)	60°	70°

† Skew Angle - If angle is greater than shown, end post will have to extend further past EWS.

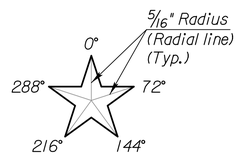


SKETCH FOR SKEWED STRUCTURE

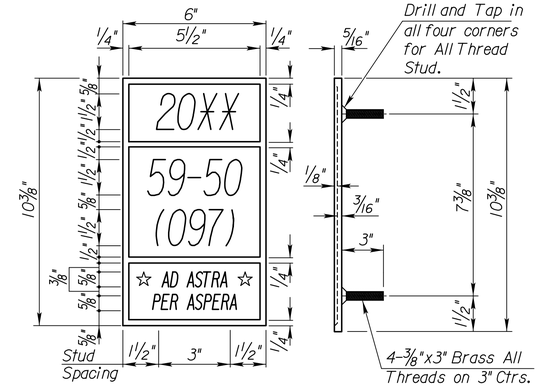


SKETCH FOR SKEWED STRUCTURE

†† Extend the 4:1 taper to the top of the approach slab.

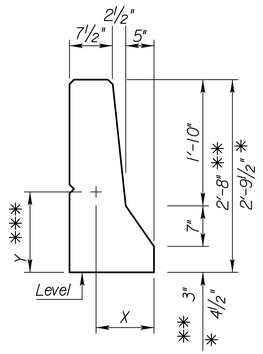


STAR GEOMETRY



XX Year Bridge is Completed.

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



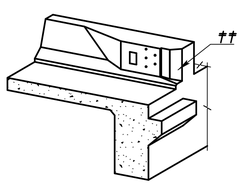
*** Eliminate the ¾" Triangular Groove where it conflicts with the 1⅛" Ø hole.

Barrier Quantities: * (W 1 ½" Silica Fume Overlay)
Area = 347.50 in² = 2.4132 ft.²
Volume/ft. = 0.0894 C.Y./ft.
Wt./ft. = 362.0 Lbs./ft.

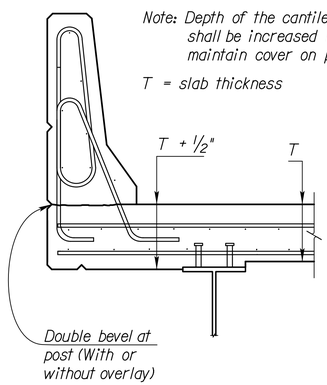
Center of Gravity:
X = 9.51"
Y = 14.57"

Barrier Quantities: ** (W/O Silica Fume Overlay)
Area = 325.0 in² = 2.2569 ft.²
Volume/ft. = 0.0836 C.Y./ft.
Wt./ft. = 338.5 Lbs./ft.

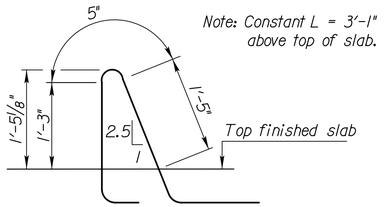
Center of Gravity:
X = 9.65"
Y = 14.02"



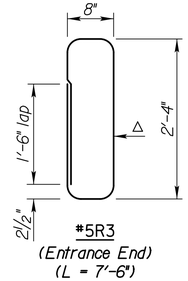
CONCRETE BARRIER



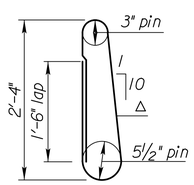
OVERHANG DETAILS



Designer's sketch for #5R4

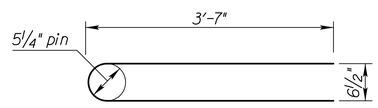


#5R3
(Entrance End)
(L = 7'-6")

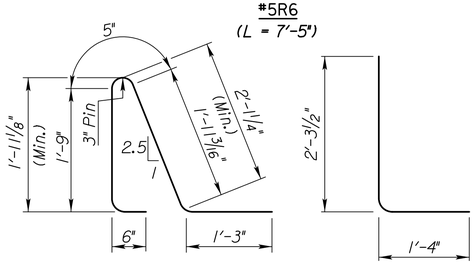


#5R2
(L = 6'-6" min)

Δ Traffic side



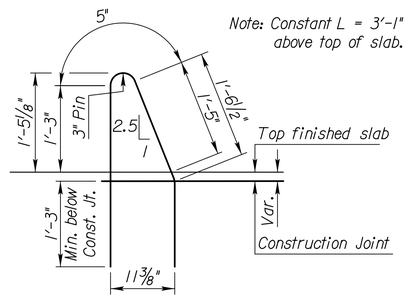
#5R6
(L = 7'-5")



#5R4
(L = 5'-10" Min.)

#5R8

BENDING DIAGRAMS



#5R5
(L = 6'-0" Min.)
(Increase 'L' if Var. > 1½")

NO.	DATE	REVISIONS	BY	APP'D
06	12-03-21	Updated guardrail post spacing	M.L.L.	M.A.H.
05	12-03-21	Changed Bridge Number Plate detail	M.L.L.	M.A.H.
04	05-21-1	Modify Sheet	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

BARRIER CURB DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	ECS

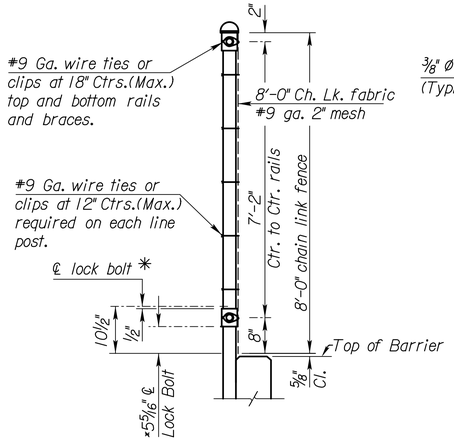
KDOT Graphics Certified 02-22-2024

Sheet No. 59

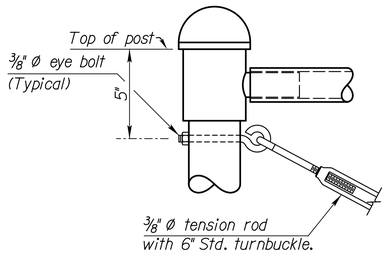
KDOT Graphics Certified

Plotted By: BBEAMER
Plot Location:
File: c:\pwworking\central01\d2654511\ka390101bbr097-26.dgn
Plot Date: 06-17-24

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	60	151



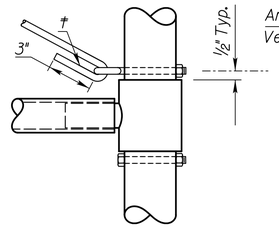
TYPICAL SECTION



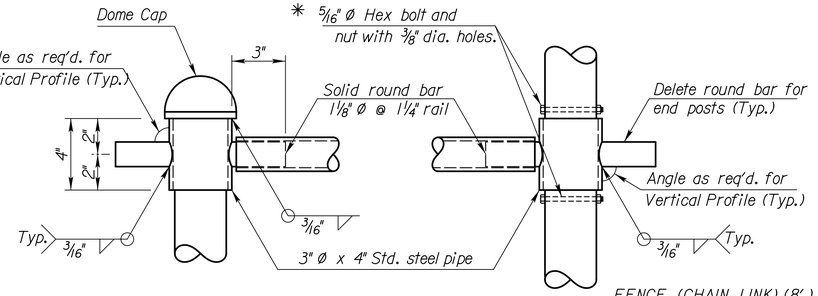
TENSION ROD DETAIL

* Note: Lock bolt shall be 5/16" Ø hex head bolt and nut. Bolt holes shall be ⅜" diameter. (Omit at pull post & end post.)

†† With the approval of the Engineer, End Panel spacing may be 6'-0" min. - 9'-6" max.



† Field bend hook on this end to fit. Shorten as required to achieve 3" tangent.



POST - RAIL CONNECTION

GENERAL NOTES

FENCE (CHAIN LINK) (8') (SPECIAL): The chain link fence on the barrier shall be bid per lineal foot as per bid item, "Fence (Chain Link) (8') Special or Special Duplex/PVC". This item shall include the furnishing of all material, fabrication of all parts, and all of the equipment and labor required to erect the fence in accordance with these plans and specifications. All parts shall be galvanized or duplex coated after fabrication and all welds shall be free of slag holes prior to galvanizing or duplex coating. Galvanization or Duplex coating shall conform to KDOT's Standard Specifications.

POST AND RAIL: The Contractor shall use extra strong pipe for the posts and for the top and bottom rail. The pipe shall conform to Section 1600 of the Standard Specifications for Road and Bridge Construction. Diameters shown for tubular steel posts and rails are nominal. Weight tolerances shall be as shown in the Specifications.

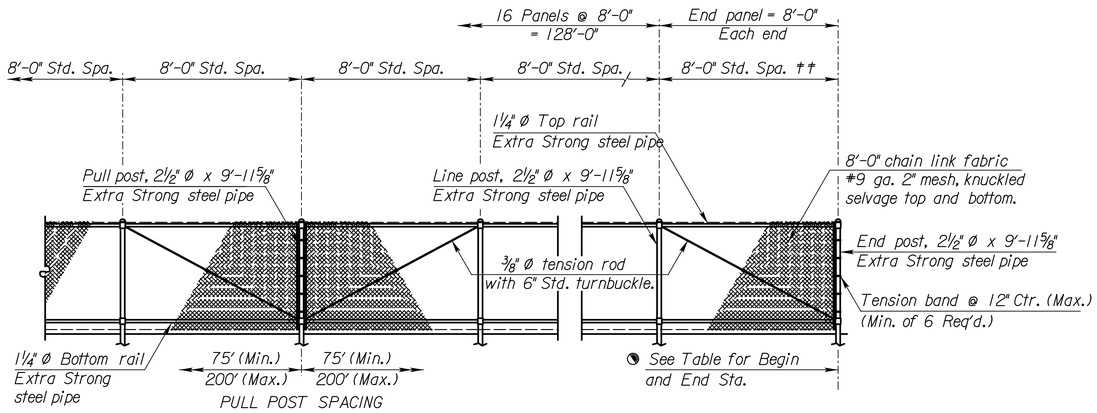
CHAIN LINK FABRIC: All chain link fabric shall be zinc coated (galvanized) or PVC coated. The chain link fabric shall be double knuckled. Intermediate pull posts are required when the fence exceeds 200 ft. Spacing of pull posts shall be 75 ft. (min.) to 200 ft. (max.) from another pull post or end post.

BOLTS: Bolts, including Anchor bolt, lockbolts, eyebolts and turnbuckle, shall be coated in accordance with the weight of coating requirements of ASTM A153 and shall conform to ASTM A307 or A36.

STRUCTURAL STEEL: Miscellaneous plates, bars, shapes including tension rod shall conform to ASTM A36.

ERECTION PROCEDURE: The details of the connections require that the post and rail installation be accomplished in a sequential manner. Following the erection of a post, the rails must be installed before an adjacent post can be erected. The installation may begin with an end post or with an interior post and extend both ways.

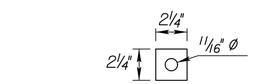
SHOP DRAWINGS: Approval of shop details and materials is required before installation begins.



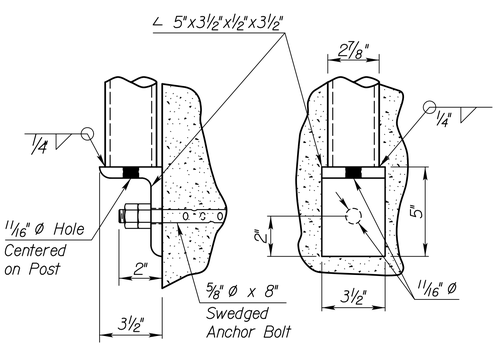
PULL POST SPACING

PART ELEVATION

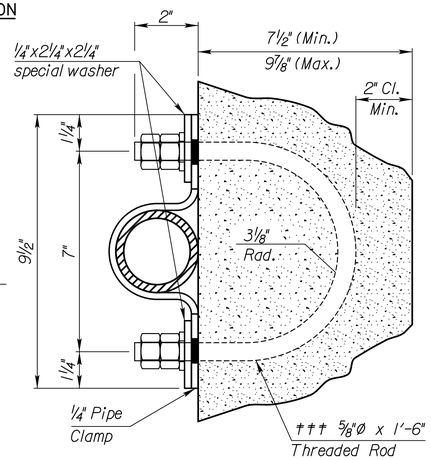
◔ LIMITS OF RAILROAD PROTECTION FENCE		
Side	Begin Sta.	End Sta.
Left Fence	164+28.00	165+72.00
Right Fence	164+71.00	166+15.00



¼"x2¼"x2¼" SPECIAL WASHER

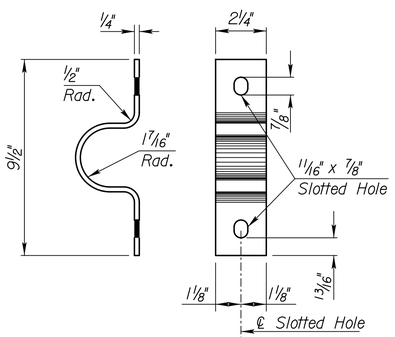


DETAIL A

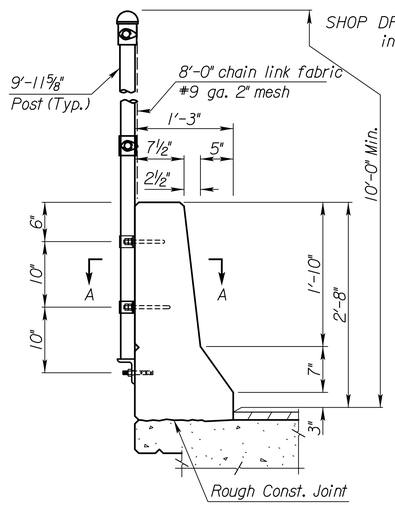


SECTION A-A

††† Double Nut with heavy hex nuts & washers. Thread minimum of 2".



PIPE CLAMP DETAILS



FENCE ATTACHMENT DETAILS

SUMMARY OF QUANTITIES	
Fence (Chain Link)(8') Special	288 Lin. Ft.
Fence (Chain Link)(8') Special Duplex/PVC	Lin. Ft.

Dead Load = 25 Lbs./Ft.
Loads applied in accordance with 2007 AASHTO Specs.

NO.	DATE	REVISIONS	BY	APP'D
3	05-02-15	Added Tension Rod Bolt	J.P.J.	C.E.R.
2	05-13-13	Added Duplex Coating	J.P.J.	T.L.F.
1	07-28-07	Fence Height	J.P.J.	K.F.H.

KANSAS DEPARTMENT OF TRANSPORTATION
Br. No. 59-50-35.29 (097) Sta. 165+33.00

RAILROAD PROTECTIVE FENCE DETAILS
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	MMD	DETAILED	DGB	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	ECS	QUAN. CK.	ECS	CADD CK.	ECS

KDOT Graphics Certified 02-22-2024

Sheet No. 60

KDOT Graphics Certified

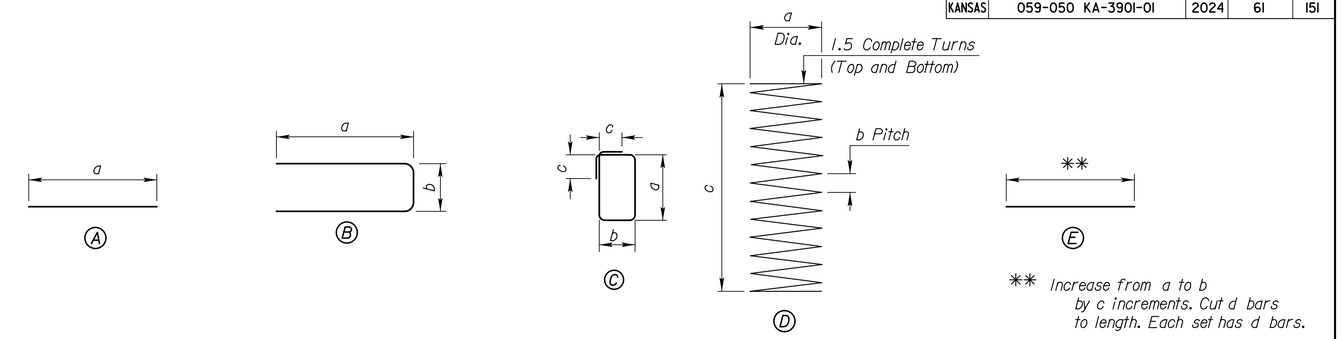
Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d0265451\Ka3901\01\br097-27.dgn
Plot Date: 06-17-24

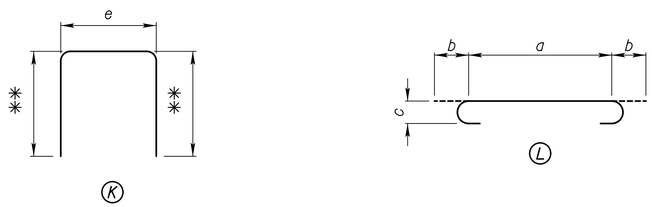
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	61	151

REINFORCING STEEL SCHEDULE (Grade 60)

Location	Epoxy	Bar Label	No. Req.	Shape	Size	Total Length	Dimensions a	b	c	d	e	f	g
Abutment No. 1	†	A1	16	A	8	44'-2"	44'-2"						
	†	A2	12	A	5	43'-3"	43'-3"						
	†	A3	16	B	5	12'-8"	5'-0"	2'-8"					
	†	A4	49	B	5	15'-0"	6'-2"	2'-8"					
	†	A5	26	B	5	8'-4"	2'-10"	2'-8"					
	†	A6	65	B	5	3'-8"	6"	2'-8"					
	†	A7	8	K	5	VARIES	1'-11 1/2"	3'-8 1/2"	3"	1	2'-8"		
	†	A8	8	K	5	VARIES	1'-11 1/2"	4'-0"	3 1/2"	1	2'-8"		
	†	A9	2	A	5	7'-5"	7'-5"						
	†	A10	2	A	5	7'-1"	7'-1"						
	†	A11	4	K	5	VARIES	4'-1 3/4"	5'-1"	3 3/4"	1	2'-8"		
	†	A12	5	K	5	VARIES	3'-10"	4'-8"	2 1/2"	1	2'-8"		
	†	A13	40	B	5	13'-0"	5'-2"	2'-8"					
	†	A14	8	A	5	43'-3"	43'-3"						
	†	A15	4	A	5	41'-2"	41'-2"						
	†	A16	4	A	5	38'-5"	38'-5"						
	†	A17	4	A	5	35'-9"	35'-9"						
	†	A18	8	A	8	33'-7"	33'-7"						
	†	A19	4	F	6	15'-1"	11'-3"	3'-10"	3'-9 1/2"	7 1/8"			
	†	A20	4	F	6	15'-3"	11'-5"	3'-10"	3'-8 5/8"	11 1/8"			
	†	A21	24	A	5	6'-1"	6'-1"						
	†	A22	57	H	4	7'-7"	8"	3'-8"	2'-3 5/8"	3'-3"			
	†	A23	2	A	4	51'-7"	51'-7"						
	†	A24	52	J	4	4'-5"	3'-0"	10"	7"	5"			
	†	A25	24	G	5	8'-0"	5'-2"	2'-10"					
Abutment No. 2	†	A1	16	A	8	44'-2"	44'-2"						
	†	A2	12	A	5	43'-3"	43'-3"						
	†	A3	16	B	5	12'-8"	5'-0"	2'-8"					
	†	A4	49	B	5	14'-10"	6'-1"	2'-8"					
	†	A5	26	B	5	8'-4"	2'-10"	2'-8"					
	†	A6	65	B	5	3'-8"	6"	2'-8"					
	†	A7	8	K	5	VARIES	1'-11 1/2"	3'-8 1/2"	3"	1	2'-8"		
	†	A8	8	K	5	VARIES	1'-10"	3'-10 1/2"	3 1/2"	1	2'-8"		
	†	A9	2	A	5	7'-4"	7'-4"						
	†	A10	2	A	5	7'-2"	7'-2"						
	†	A11	4	K	5	VARIES	4'-1 1/4"	4'-11"	3 1/4"	1	2'-8"		
	†	A12	5	K	5	VARIES	3'-10"	4'-8"	2 1/2"	1	2'-8"		
	†	A13	40	B	5	13'-0"	5'-2"	2'-8"					
	†	A14	8	A	5	43'-3"	43'-3"						
	†	A15	4	A	5	41'-1"	41'-1"						
	†	A16	4	A	5	38'-3"	38'-3"						
	†	A17	4	A	5	35'-8"	35'-8"						
	†	A18	8	A	8	33'-7"	33'-7"						
	†	A19	4	F	6	15'-1"	11'-3"	3'-10"	3'-9 3/8"	7 3/8"			
	†	A20	4	F	6	15'-3"	11'-5"	3'-10"	3'-8 5/8"	10 7/8"			
	†	A21	24	A	5	6'-1"	6'-1"						
	†	A22	57	H	4	7'-7"	8"	3'-8"	2'-3 5/8"	3'-3"			
	†	A23	2	A	4	51'-7"	51'-7"						
	†	A24	52	J	4	4'-5"	3'-0"	10"	7"	5"			
	†	A25	24	G	5	7'-11"	5'-1"	2'-10"					

†Denotes Epoxy Coated.





BENDING DIAGRAMS

(All dimensions are out to out of bars.)

Notes:

1. No allowance for bend is to be made except for standard hooks and larger bends where shown.

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

BILL OF REINFORCING STEEL AND BENDING DIAGRAMS US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

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

KDOT Graphics Certified 02-22-2024

Sheet No. 61

KDOT Graphics Certified

Plotted By: BBEAMER
File: c:\pwworking\central01\d2654511\ka3901101bbr097-28.dgn
Plot Date: 06-17-24
Plot Location:

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	62	151

REINFORCING STEEL SCHEDULE (Grade 60)

Location	Epoxy	Bar Label	No. Req.	Shape	Size	Total Length	Dimensions						
							a	b	c	d	e	f	g
Pier No. 1		PB1	9	A	10	50'-8"	50'-8"						
		PB2	10	A	6	50'-8"	50'-8"						
		PB3	9	B	10	58'-6"	3'-11"	50'-8"					
		PB4	9	A	5	17'-6"	17'-6"						
		PB5	100	C	5	15'-0"	4'-2"	2'-10"	6"				
		PB6	52	C	5	15'- 7 1/2"	4'-5 3/4"	2'-10"	6"				
		PB7	14	B	6	5'-6 3/4"	1'-0"	3'-6 3/4"					
		P1	36	A	9	22'-9"	22'-9"						
		P2	3	D	1/2"Ø	SPIRAL	2'-8"	6"	19'-7"				
Pier No. 2		PB1	9	A	10	50'-8"	50'-8"						
		PB2	10	A	6	50'-8"	50'-8"						
		PB3	9	B	10	58'-6"	3'-11"	50'-8"					
		PB4	9	A	5	17'-6"	17'-6"						
		PB5	100	C	5	15'-0"	4'-2"	2'-10"	6"				
		PB6	52	C	5	15'-7"	4'-5 1/2"	2'-10"	6"				
		PB7	14	B	6	5'-6 3/4"	1'-0"	3'-6 3/4"					
		P1	36	A	9	22'-9"	22'-9"						
		P2	3	D	1/2"Ø	SPIRAL	2'-8"	6"	19'-7"				

REINFORCING STEEL SCHEDULE (Grade 60)

Location	Epoxy	Bar Label	No. Req.	Shape	Size	Total Length	Dimensions						
							a	b	c	d	e	f	g
Deck	†	S1	813	A	5	53'-4"	53'-4"						
	†	S2	424	A	5	54'-4"	54'-4"						
	†	S3	92	G	8	19'-0"	16'-0"	3'-0"					
	†	S4	92	G	8	16'-0"	13'-0"	3'-0"					
	†	S5	376	A	5	53'-10"	53'-10"						
	†	S6	92	A	6	39'-7"	39'-7"						
	†	S7	92	A	6	60'-0"	60'-0"						
	†	S8	813	L	5	54'-6"	53'-4"	7"	5"				
Barrier Curb	†	R2	812	*	5	6'-6"							
	†	R3	36	*	5	7'-6"							
	†	R4	812	*	5	5'-10"							
	†	R5	20	*	5	6'-0"							
	†	R6	16	*	5	7'-5"							
	†	R7	38	A	6	19'-8"	19'-8"						
	†	R8	4	*	5	3'-7 1/2"							
	†	R9	114	A	4	19'-8"	19'-8"						
	†	R10	48	A	4	52'-10"	52'-10"						
	†	R11	12	A	4	14'-6"	14'-6"						
	†	R12	4	A	6	14'-6"	14'-6"						

*See Bending Diagrams on Sheet No. 59.

†Denotes Epoxy Coated.

Plotted By: BBEAMER Plot Location:
File: c:\pwworking\central01\d2655451\Ka3901bbr097-29.dgn
Plot Date: 06-17-24

NO.	DATE	REVISIONS	BY	APP'D
3				
2				
1				

KANSAS DEPARTMENT OF TRANSPORTATION

Br. No. 59-50-35.29 (097) Sta. 165+33.00

BILL OF REINFORCING STEEL
US-59 OVER UPRR

Proj. No. 59-50 KA-3901-01 Labette Co.

SHEET NO.	OF	SCALE		APP'D			
DESIGNED	ECS	DETAILED	ECS	QUANTITIES	KD	CADD	DBM
DESIGN CK.	DGB	DETAIL CK.	DGB	QUAN. CK.	ECS	CADD CK.	BGB

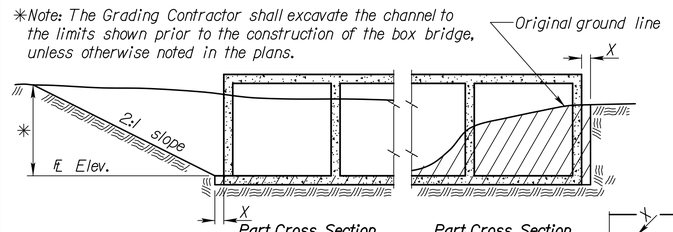
KDOT Graphics Certified 02-22-2024

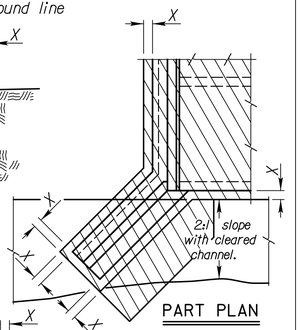
Sheet No. 62

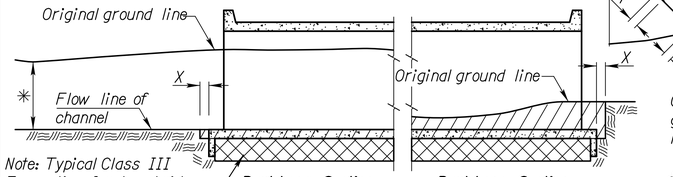
KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	59-50 KA-3901-01	2023	63	151

✳Note: The Grading Contractor shall excavate the channel to the limits shown prior to the construction of the box bridge, unless otherwise noted in the plans.

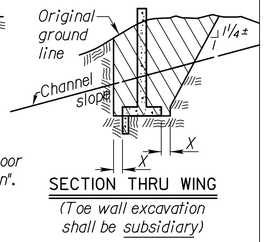






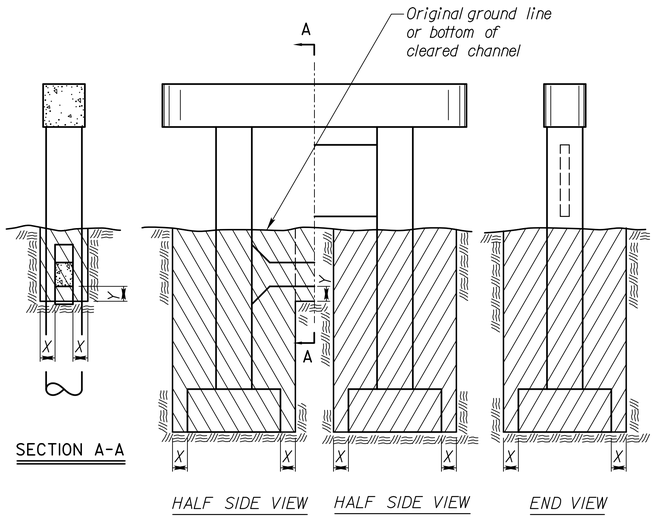
Note: Typical Class III Excavation for box bridges shall be below the "cleared" channel unless otherwise noted on the plans.

Excavation below the elevation of the bottom of the box floor and/or wingwalls is subsidiary to "Foundation Stabilization".



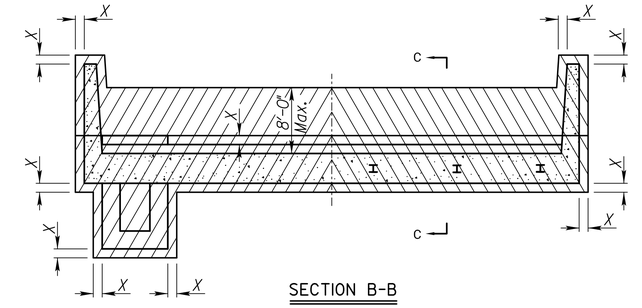
EXCAVATION DETAILS FOR REINFORCED CONCRETE BOX CULVERT

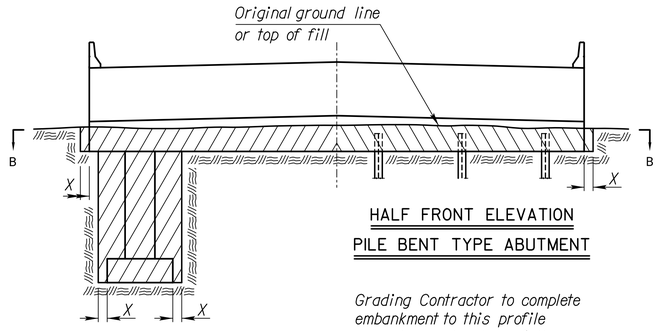
Note: Excavation for culverts less than bridge length and the additional excavation for "Embedded Structures" shall not be paid for as Class III Excavation, but shall be subsidiary to Grade 4.0 Concrete.



EXCAVATION DETAILS FOR TYPICAL PIERS

See detail when rock or shale (rock) is encountered. ⊛



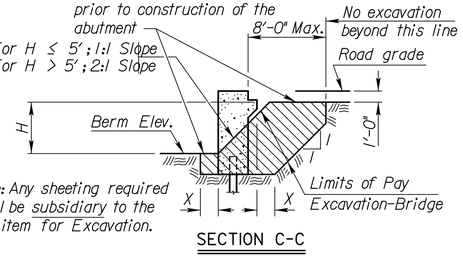


HALF FRONT ELEVATION
PEDESTAL TYPE ABUTMENT

Grading Contractor to complete embankment to this profile prior to construction of the abutment

For H ≤ 5'; 1:1 Slope
For H > 5'; 2:1 Slope

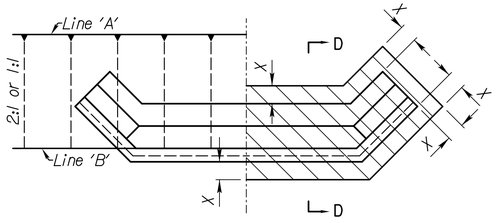
Note: Bridge Contractor shall finish the embankment and berms after the construction of the abutment and dispose of any excess material as approved by the Engineer.

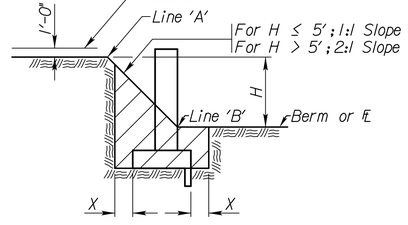


Note: Any sheeting required shall be subsidiary to the bid item for Excavation.

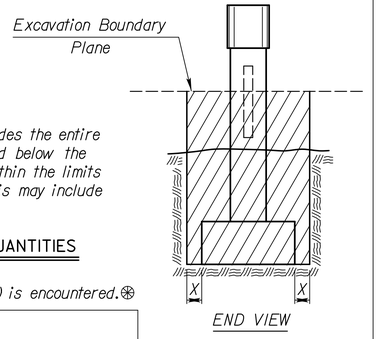
EXCAVATION DETAILS FOR TYPICAL ABUTMENTS

See detail when rock or shale (rock) is encountered. ⊛





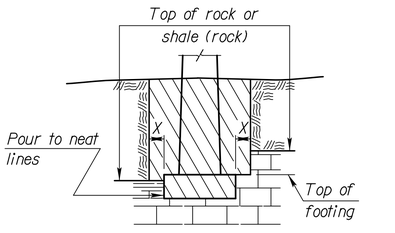
EXCAVATION DETAILS FOR ABUTMENTS WITH FLARED WINGWALLS



Note: Class II Excavation includes the entire volume of whatever nature found below the "Excavation Boundary Plane", within the limits specified for measurement. This may include water or air.

CLASS II EXCAVATION QUANTITIES

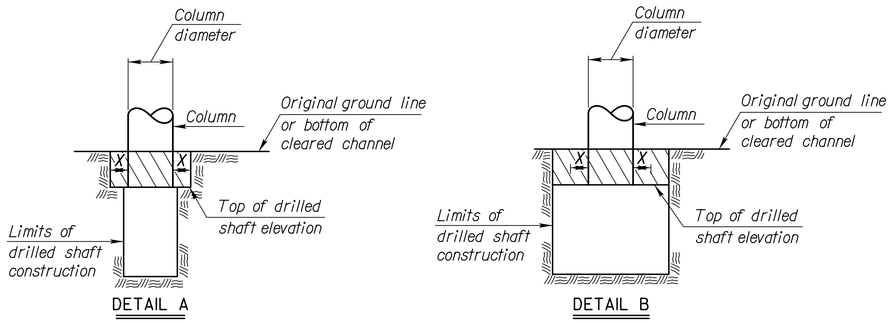
See detail when rock or shale (rock) is encountered. ⊛



⊛ EXCAVATION DETAIL FOR FOOTINGS IN ROCK OR SHALE (ROCK)

(Piers and Abutments)

Note: Excavation below top of rock, hard shale or below top of footing, whichever is lower, shall be to neat lines of the concrete construction.



DRILLED SHAFT DETAILS

Note: Whenever the limits of the drilled shaft construction are greater than the Column Diameter + 2X, the limits of Class I, II or III Excavation shall be the limits of the drilled shaft construction. (See Detail B)

Note: All bridge excavation shall be computed on the basis of the cross-hatch areas and boundary lines indicated on this sheet and the Excavation Boundary Plane on the Construction Layout.

Sides of trenches in hard or compacted soil including embankments shall be shored, sheeted, braced or otherwise supported when the trench is more than 5 feet in depth and 8 feet or more in length. In lieu of the shoring, the sides of the trench above the 5 foot level may be sloped to preclude collapse. The slope for average soils shall be 1:1. If the angle of repose of the soil is less, flatter slopes shall be required.

Dimension "X" shall be 2'-0" unless indicated otherwise on the general plans.

Dimension "Y" shall be 1'-6" unless indicated otherwise on the general plans.

NO.	DATE	REVISIONS	BY	APP'D
06	08-15-12	Embedment Excavation Subsidiary	J.P.J.	T.L.F.
05	05-15-12	Revised Wing Excavation	J.P.J.	T.L.F.
04	03-03-10	Revised Wing Excavation	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE EXCAVATION (LRFD)

BR100B

FHWA APPROVAL		04-17-10	APP'D.	Terry L. Fleck
DESIGNED	DETAILED	R.D.R.	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	L.R.R.	QUAN.CK.	TRACE CK.

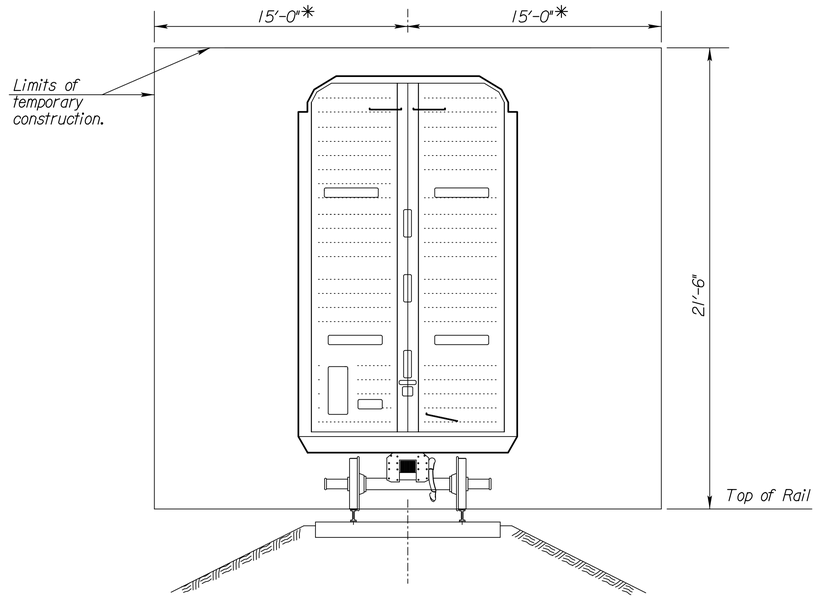
CADconform Certify This File

Sheet No. 63

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2654511\ka390101bss097-29.dgn

CADconform Certify This File

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	64	151

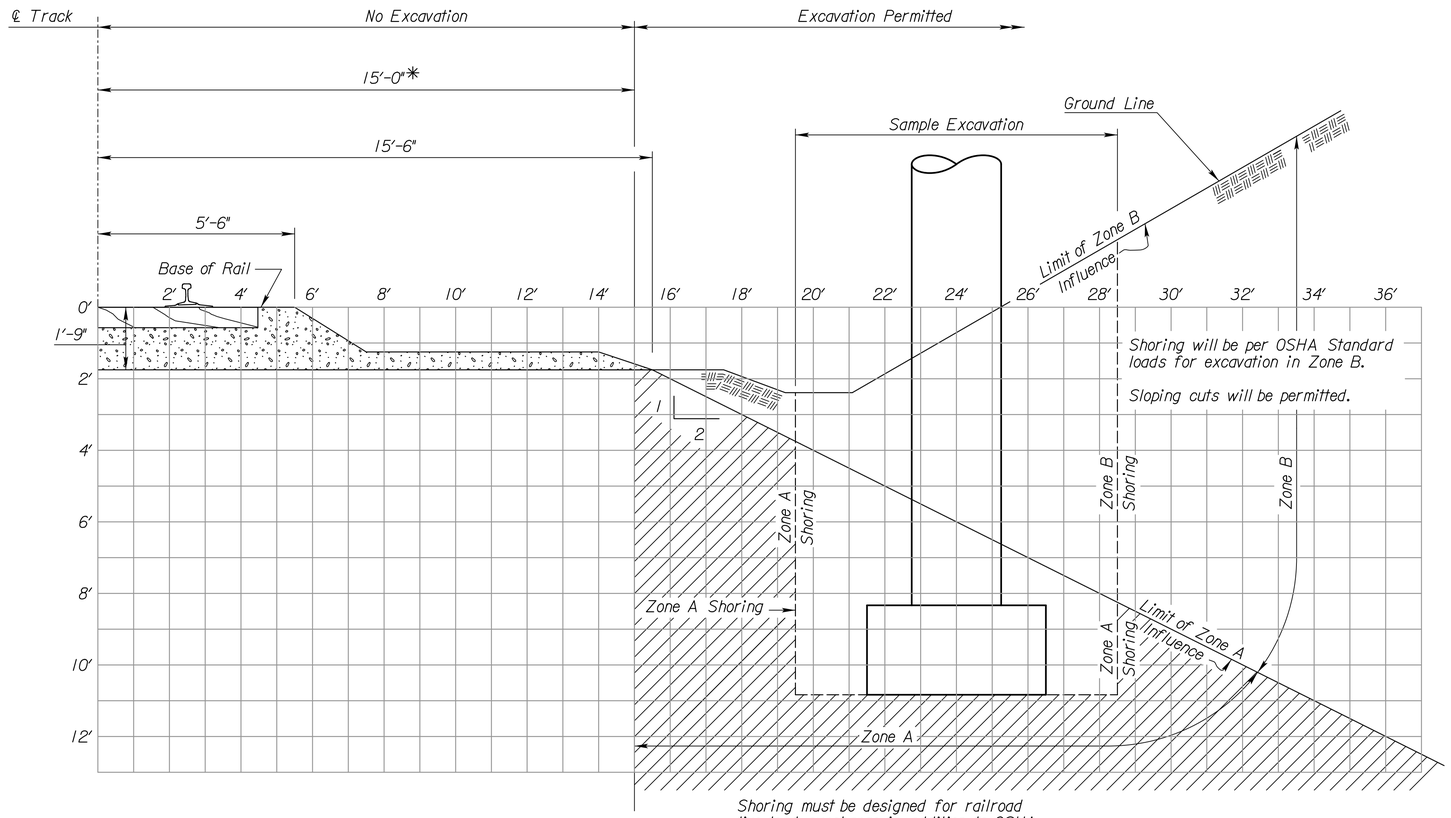


CONSTRUCTION CLEARANCE DETAILS

* For curved tracks, increase 1.5" per one degree of curvature, up to a 6" increase.

NOTE: No construction activities or other obstructions shall be placed within the limits of temporary construction.

RAILROAD PROTECTION: If removal of concrete is required through the full thickness of the deck (i.e. full depth patching, edge of slab removal, or complete deck replacement), then the Contractor shall execute the work in such a manner and take any precautions necessary to prohibit broken concrete and other debris from falling on and damaging the rails, ties, ballast or other railroad property. The Contractor shall execute a work plan that enables the track(s) to remain in service and shall cause no interruption to the Railroad's operations during construction. The Railroad Company and the Engineer shall approve the methods of protection proposed by the Contractor before any work begins.



Shoring must be designed for railroad live load surcharge in addition to OSHA Standard loads for excavation in Zone A.

Sloping cuts are not allowed.

APPLICABLE RAILROAD LIVE LOAD; COOPER E80

TRACK PROTECTION SHORING REQUIREMENTS

(All dimensions are measured perpendicular to ℄ track.)

NOTE: The location of the theoretical lines that denote the "Zones of Influence" do not necessarily correspond to the geometrics of the track. Use the applicable shoring requirements within the defined zones.

NOTE: Drilled Shafts located within the Railroad Live Load influence shall be cased.

NOTE: All dimensions are measured perpendicular to centerline of track. Prior to commencing any work, the Contractor shall submit for approval by the Railroad and the Engineer, detailed plans indicating the nature and extent of the track protection shoring proposed. The Contractor shall install the temporary shoring system per the approved plans. Design of the temporary shoring system is to comply with the Railroad's GUIDELINES FOR TEMPORARY SHORING.

All shoring, regardless of zone, shall be submitted to the Railroad if located within Railroad right-of-way or supports Railroad surcharges.

Plans and calculations must be signed and stamped by a Professional Engineer registered in the state where the work will be performed and shall be submitted in accordance with KDOT Specifications.

NO.	DATE	REVISIONS	BY	APP'D
01	02-22-21	Current Version	M.L.L.	M.A.H.

KANSAS DEPARTMENT OF TRANSPORTATION

UNION PACIFIC RAILROAD CLEARANCE AND TRACK PROTECTION

~~BR105A~~

FHWA APPROVAL		03-17-21	APP'D.		Mark A. Hurt
DESIGNED	DETAILED	E.C.M.	QUANTITIES	TRACED	
DESIGN CK.	DETAIL CK.	M.L.L.	QUAN.CK.	TRACE CK.	

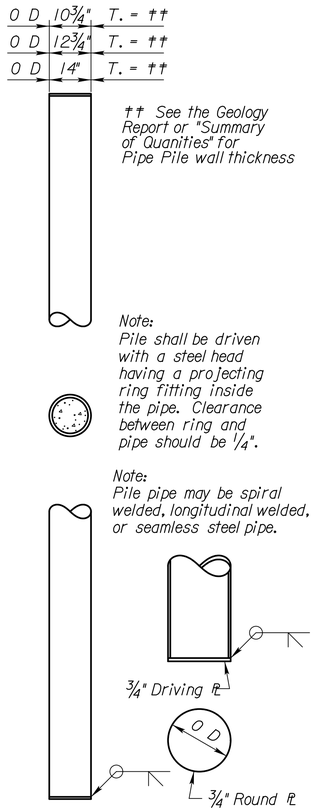
KDOT Graphics Certified 03-06-2024

Sheet No. 64

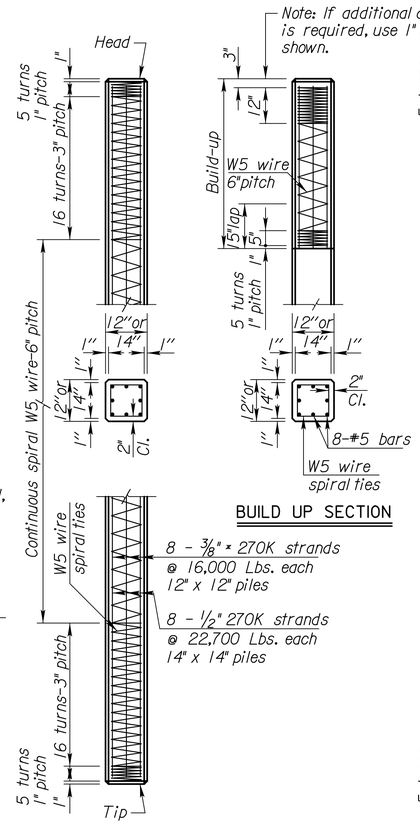
KDOT Graphics Certified

Drawn By BBEAMER Plotted :06-17-24
File c:\pwworking\central01\d2654511\ka390101bss097-31.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	65	151

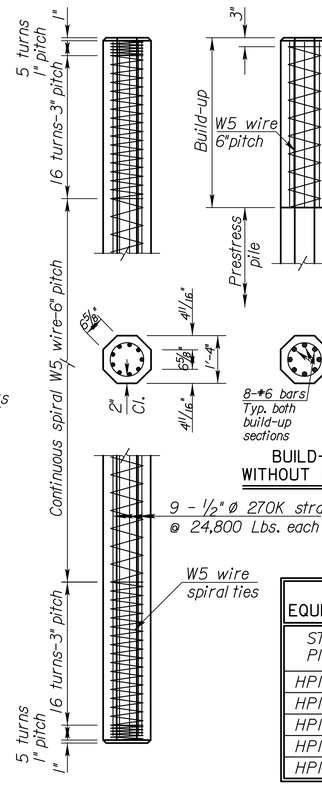


PLAIN ROUND
CAST-IN-PLACE CONCRETE PILES

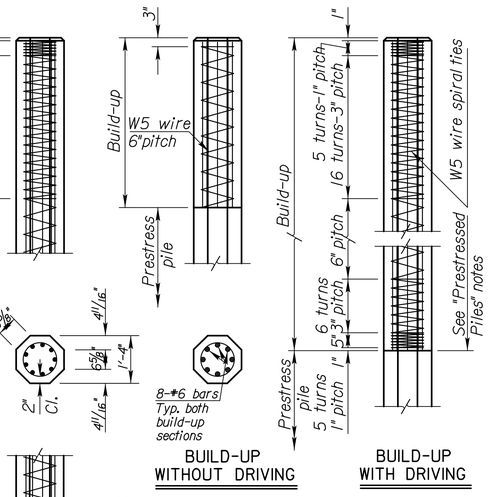


BUILD UP SECTION

12" OR 14"
PRESTRESSED
CONCRETE PILES



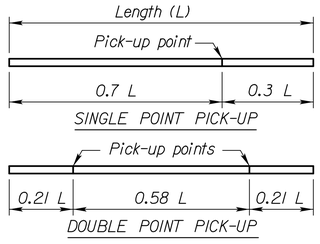
16" PRESTRESSED
CONCRETE PILES



BUILD-UP
WITHOUT DRIVING

BUILD-UP
WITH DRIVING

FOR INFORMATION ONLY EQUIVALENT POINT BEARING PILES		
STEEL PILES	CONCRETE PILES	
	Pipe	Pre-stress
HP10x42	10¾	
HP12x53	12¾	
HP14x73	14	12
HP14x102		14
HP14x117		16



PICK-UP POINTS FOR PRESTRESSED PILING

Max. length - 55' single point pick-up
Max. length - 80' double point pick-up

Note: Piles shall be marked at Pick-up points to indicate proper points for attaching handling lines.



SHELL PILE POINT

Weld Symbology Definition

Use grinder to bevel edges of splice as shown in weld symbology and drawing. In addition to bevels, produce clean, bare, and shiny surfaces at and around the splice welding location.

Lay full penetration root weld from beveled side of splice.

Back gouge root weld from side opposite of root welding application making sure to remove all foreign materials, porous steel, and inclusions from root weld. Finish welding the non beveled side of the splice.

Finish welding beveled side of the splice while removing slag, foreign materials, porous steel, and inclusions in between welding passes, use of a grinder may be needed.

Verify that enough filler metal has been correctly placed in all weld locations to obtain a flush or convex surface with no concavity produced upon completion of the final welds.

CAST STEEL PILE POINT

The pile point shall be a one-piece unit of cast steel. Weld pile points in accordance with manufacturer's recommendations to each steel pile before driving.

GENERAL NOTES

PRESTRESSED PILES: Fabricate prestressed concrete pile splices in accordance with the Manufacturer's recommendations subject to the approval of the Engineer.

Method of attachment of pile to build-up may be by any of the methods given in the notes on "Alternate Methods." If mild reinforcing steel is used for attachment, the area shall be no less than that used in the build-up.

ALTERNATE METHODS: Method of attachment of a pile to build-up may be by any of the following methods:

1. Cut off at least 2'-0" of pile and expose a minimum of 2'-0" of strands.
2. Cast 8-#6, or 8-#5 bars (equally spaced) into pile head. All bars shall extend into pile head and project from pile head a minimum of 2'-0".
3. Drill 8 holes in pile head (equally spaced) for installation of 8 grouted dowel bars of same size and length as in 2.
4. Provide cored holes for bars as in 3.

No bars or strands are to extend from head of pile or build-up into footing or pile cap unless approved by the Engineer.

TEST PILES: Drive test piles where called for on the bridge plans. The test piles located within the limits of the substructure will become a part of the bridge pile system.

DRIVING FORMULA: Driving formula shall conform to the Standard Specifications.

MEASUREMENT AND PAYMENT: Measurement and payment for all piles shall comply with the Standard Specifications.

REINFORCEMENT: Use reinforcing steel conforming to ASTM A615, Grade 60. Hoops and spirals may be either plain or deformed bars.

PRESTRESSING STEEL: Use uncoated seven-wire low relaxation prestressing strand conforming to ASTM A416, Gr. 270.

STEEL PILE: Steel pile shall conform to the requirements of the Standard Specifications.

PILE POINTS: Pile points shall conform to the dimensions shown and to requirements of the Standard Specifications.

SPECIFICATIONS: Standard Specifications for State Road and Bridge Construction as currently used by the Kansas Department of Transportation.

CONCRETE: Concrete for cast-in-place shall be f'c = 3,500 PSI. Concrete for prestressed shall be f'c = 5,000 PSI.

WELDING: All field welding shall meet the requirements of the Standard Specifications.

Use only Shielded Metal Arch Welding SMAW (stick welding) for pile splices.

Use only low hydrogen E7018, 7016, or 7015 series welding rod (electrode) for all welding applications during pile splicing.

New electrodes are to be purchased for each KDOT project. The electrodes shall arrive on the project in factory hermetically sealed containers, opened and labeled with indelible ink in front of the engineer. The label shall include the current date and the project number. If the container seal is questionable or shows signs of damage the electrode is to be dried in an oven at least one hour at a temperature of 700°F to 800°F.

Upon removal from intact hermetically sealed factory packaging or the drying oven the electrode is to be placed in a storage oven with a minimum temperature of 250°F.

When electrodes are removed from the hermetically sealed container or storage oven and exposed to the atmosphere for less than 4 hours place into the storage oven for at least 4 hours before removing for use.

If electrode is exposed to the atmosphere for 4 hours or more (or 9 hours for moisture resistant electrodes designated with an R in their labeling) then electrode can be dried in a drying oven at a temperature of 450°F to 550°F.

If the electrode is exposed to the atmosphere for 4 hours or more a second time or the rod becomes wet discard rod.

CAST-IN-PLACE SHELLS: Steel shells for cast-in-place concrete piles shall conform to the requirements of the Standard Specifications.

All piles driven without a mandrel shall be of the minimum thicknesses shown. Piles driven with a mandrel shall be of sufficient strength and thickness to withstand driving without injury and to resist harmful distortion and/or buckling due to soil pressure after the mandrel is removed.

Remove, replace or correct to the satisfaction of the Engineer improperly driven, broken or otherwise defective pipe piles. Otherwise drive an additional pile at no extra cost.

The Contractor shall maintain a light suitable for visual inspection of the pile on the job at all times prior to and during the filling of the pipe.

PAINT: All paint shall comply with the Standard Specifications, or as specified on the plans.

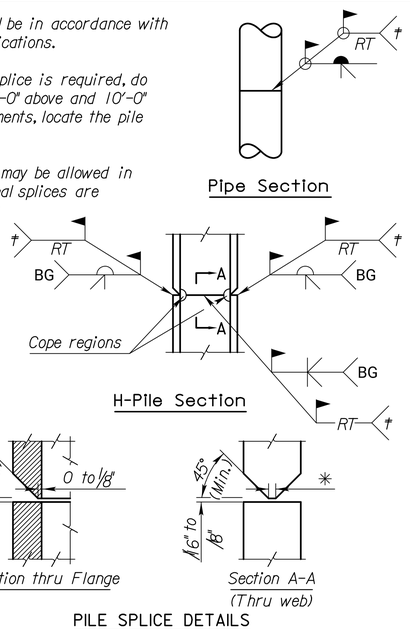
MILL TEST REPORTS: Steel piles test reports and steel shell test reports shall comply with the Standard Specifications.

SPLICES: Splices for steel piles and shell piling shall be in accordance with details shown on this sheet and the Standard Specifications.

For integral pile bent abutments and piers, if a pile splice is required, do not locate the pile splice within a region extending 2'-0" above and 10'-0" below the bottom of the concrete web wall. For abutments, locate the pile splice at least 10'-0" below top of fill.

With the approval of the Engineer, one splice per bent may be allowed in the region described above without testing. If additional splices are anticipated, based on the geology, the Contractor prior to driving, will locate the splice so that the splice will not fall within the regions described above.

† For integral pile bent abutments and piers, if a splice is located within the regions described above, then the Contractor will test the welds by Radiograph (RT) test methods. Repair and retest any welds not passing the test(s). Each weld tested will have written confirmation of results. Report these results to the Engineer. This work is not paid for directly, but is subsidiary to "Piles".



*Minimum as required by welding process.

BG = Backgouge

PILE SPLICE DETAILS

NO.	DATE	REVISIONS	BY	APP'D
04	08-16-18	Add splice web section, clarify note	M.L.L.	J.P.J.
03	09-15-15	Clarify Notes	J.P.J.	C.E.R.
02	06-18-12	Clarify f'c, rod type, use and weld	J.P.J.	T.L.F.

KANSAS DEPARTMENT OF TRANSPORTATION

STANDARD PILE DETAILS

BR110

FHWA APPROVAL		10-04-12	APP'D.	Terry L. Fleck
DESIGNED	J.P.J.	DETAILED	QUANTITIES	TRACED R.A.A.
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.

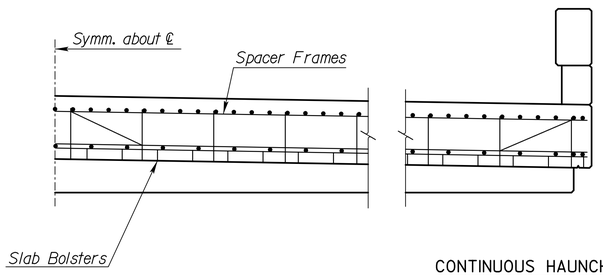
KDOT Graphics Certified 03-06-2024

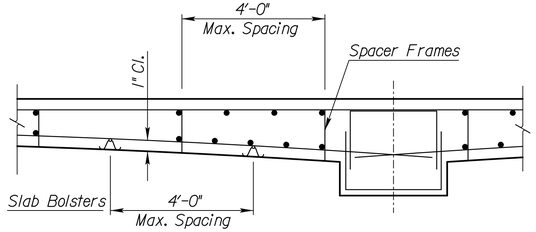
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KDOT Graphics Certified

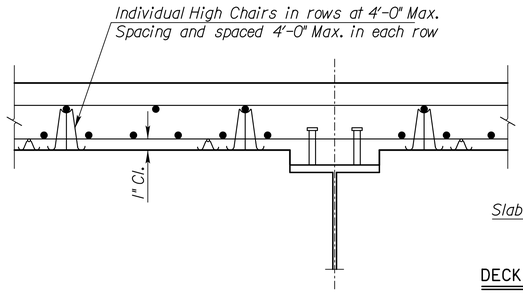
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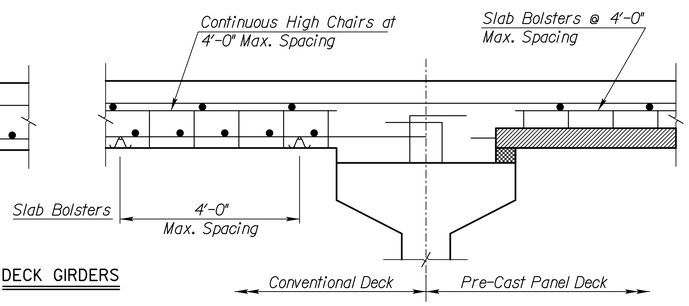
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	66	151



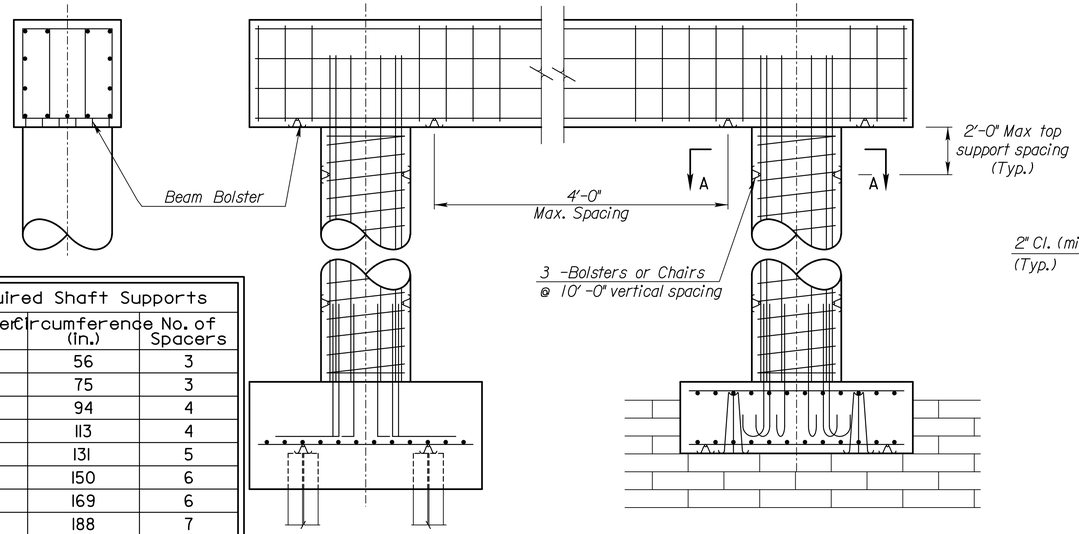


CONTINUOUS HAUNCHED SLAB



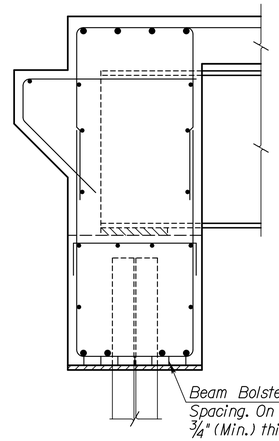


DECK GIRDERS

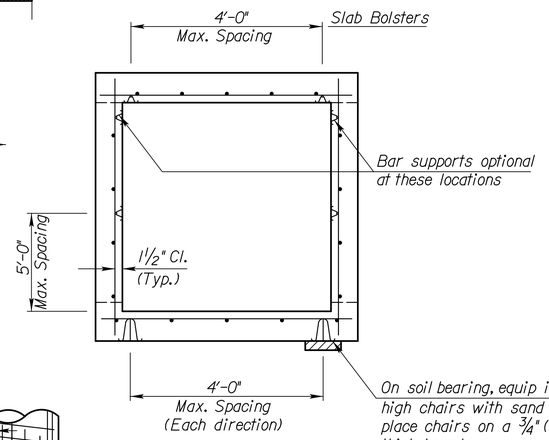


PIER

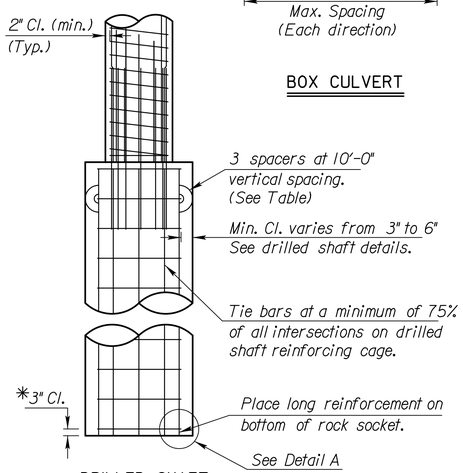
Required Shaft Supports		
Diameter (in.)	Circumference (in.)	No. of Spacers
18	56	3
24	75	3
30	94	4
36	113	4
42	131	5
48	150	6
54	169	6
60	188	7
66	207	7
72	226	8
78	244	9
84	263	9
90	282	10
96	301	11
102	320	11
108	339	12



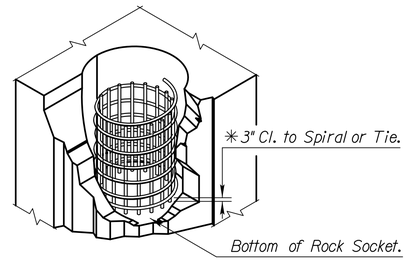
ABUTMENT



BOX CULVERT

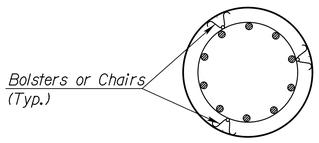


DRILLED SHAFT



DETAIL A

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



SECTION A-A

GENERAL NOTES

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

Use only the following types of bar supports:

1) Wire Bar Supports:

a) Epoxy coated reinforcing: Class 1 Protection
b) Non-epoxy coated reinforcing: Class 1, 2, or 3 Protection

2) Plastic Bar Supports

3) Supplementary bars

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

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

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

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

Use proper height supports to maintain the distance between the reinforcing and the formed surface or the top surface of deck slabs within 1/4" of that indicated on the plans.

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
05	11-10-10	Column Bar Supports Required	J.P.J.	T.L.F.
04	12-01-05	Drilled Shaft Spiral Steel Placement	J.P.J.	K.F.H.
03	08-21-00	Added Pre-Cast Panel Detail	R.A.M.	K.F.H.

KANSAS DEPARTMENT OF TRANSPORTATION

SUPPORTS AND SPACERS FOR REINFORCING STEEL

BR120

FHWA APPROVAL			11-17-10	APP'D.		Terry L. Fleck	
DESIGNED	R.A.M.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	L.R.R.	DETAIL CK.	R.A.M.	QUAN.CK.		TRACE CK.	R.A.M.

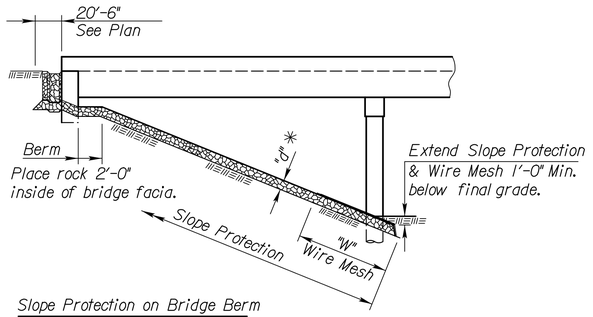
KDOT Graphics Certified 03-06-2024

Sheet No. 66

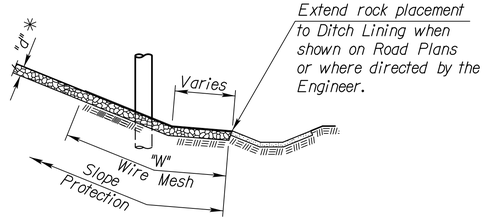
KDOT Graphics Certified

Drawn By BBEAMER Plotted 06-17-24
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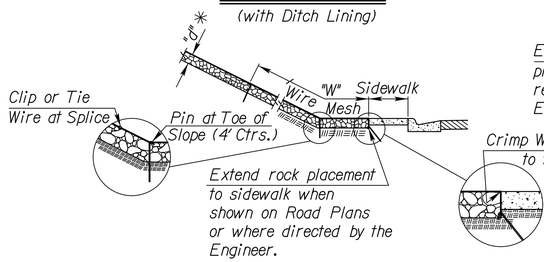
STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	67	151



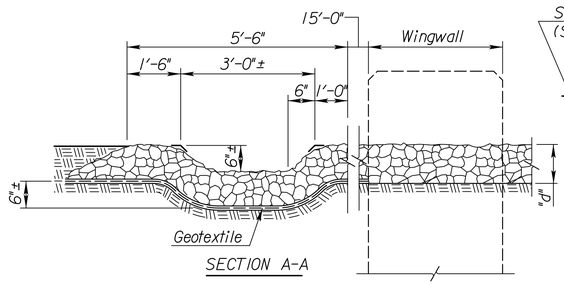
Slope Protection on Bridge Berm



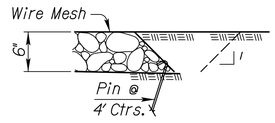
Slope Protection at Toe
(with Ditch Lining)



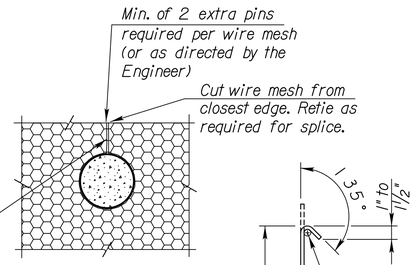
Slope Protection at Toe
(with Sidewalk)



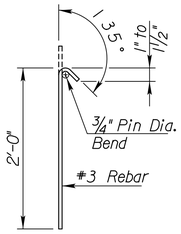
SECTION A-A



DETAIL AT EDGE OR TOE



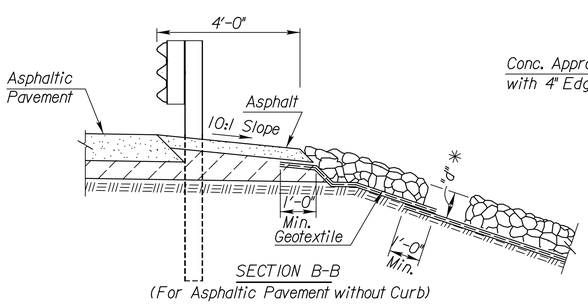
DETAIL AT COLUMNS
(Or Other Obstruction)



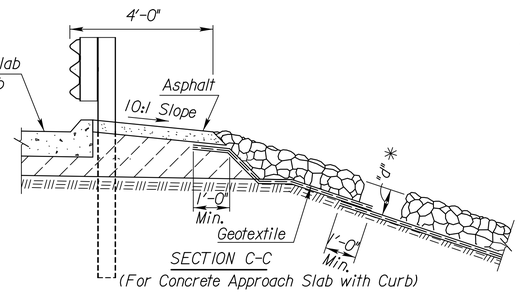
TYPICAL PIN
DETAIL

Note:
Pins shall be sharpened or geotextile shall be cut to allow penetration of stake without tearing or ripping the geotextile fabric.

*See General Notes
for minimum dimensions.

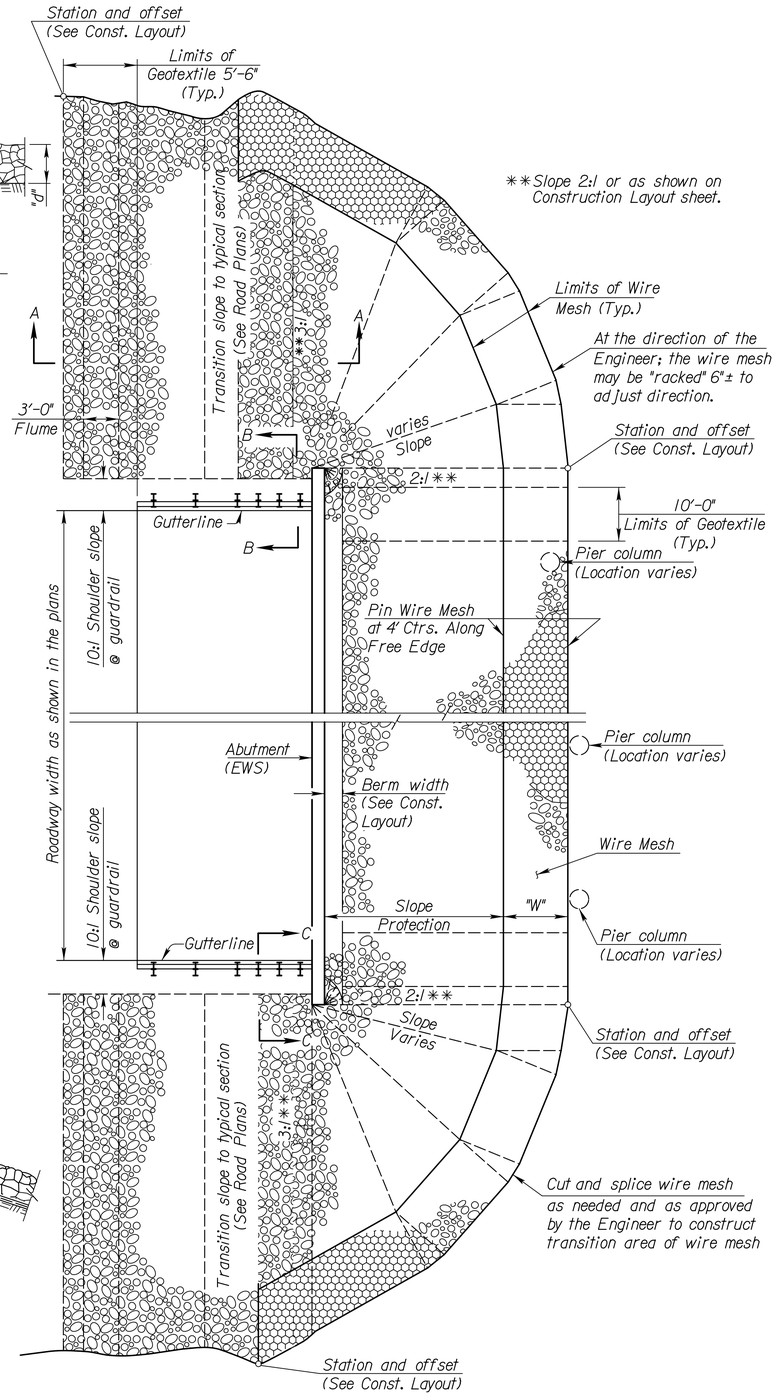


SECTION B-B
(For Asphaltic Pavement without Curb)



SECTION C-C
(For Concrete Approach Slab with Curb)

TYPICAL ELEVATIONS



BERM AND SLOPE PROTECTION PLAN
(Straight Wingwall Abutment)

GENERAL NOTES

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

QUANTITIES
† For Information Only

Bridge Number	Slope Protection (Aggregate) (1'-0") Cu. Yds.	†Geotextile Sq. Yds.	†Wire Mesh Sq. Yds.
097	1704	5111	

NO.	DATE	REVISIONS	BY	APP'D
03	12-10-10	Clarified Geotextile	J.P.J.	T.L.F.
02	07-14-04	Changed to guard "rail"	R.A.M.	K.F.H.
01	05-15-02	Clarified Bid Items	R.A.M.	K.F.H.

KANSAS DEPARTMENT OF TRANSPORTATION

BRIDGE BERM AND SLOPE PROTECTION STRAIGHT WINGWALL ABUTMENT

~~BR132A~~

FHWA APPROVAL		06-04-02	APP'D.	Kenneth F. Hurst	
DESIGNED	R.R.R.	DETAILED P.G.F.	QUANTITIES	TRACED	P.G.F.
DESIGN CK.		DETAIL CK. R.R.R.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 03-06-2024

Sheet No. 67

KDOT Graphics Certified

Drawn By BBEAMER Plotted :06-17-24
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	68	151

GUARDRAIL STEEL PLATE (MGS)

ALIGNMENT	STATION to STATION	SIDE	END TERMINAL (MGS-SOFTSTOP) (Alt. 1)	END TERMINAL (MGS-MSKT) (Alt. 2)	FLARE RATE	LENGTH (LIN. FT.)
US-59	STA 158+32.58 to STA 163+14.26	LT	1	1	Zero	425.00
US-59	STA 157+14.85 to STA 163+39.66	RT	1	1	Zero	575.00
US-59	STA 167+26.34 to STA 173+18.00	LT	1	1	Zero	537.50
US-59	STA 167+51.74 to STA 171+92.81	RT	1	1	Zero	387.50
		TOTALS	4	4		1925.00

SALVAGED TOPSOIL

ALIGNMENT	STATION to STATION	SIDE	AREA (SQ. YD.)	REMARKS
US-59	STA 149+10.00 to STA 165+33.00	RT	10,883.0	
US-59	STA 151+25.00 to STA 153+40.00	LT	529.0	
US-59	STA 153+40.00 to STA 165+33.00	LT	7,220.0	
US-59	STA 165+33.00 to STA 174+93.00	RT	6,854.0	
US-59	STA 174+93.00 to STA 185+00.00	RT	3,469.0	
US-59	STA 165+33.00 to STA 175+02.00	LT	7,436.0	
US-59	STA 175+02.00 to STA 185+00.00	LT	1,825.0	
		TOTALS	38,216.0	

RECAPITULATION OF BRIDGE QUANTITIES

BRIDGE NUMBER	STATION	SEE SHEET NO.
BR. NO. 59-50-35.29 (097)	STA 165+33.00	34

REMOVAL OF EXISTING STRUCTURES ⚹

ALIGNMENT	STATION to STATION	SIDE	STRUCTURE	REMARKS
US-59	STA 153+26.00	LT	24" x 36' CMP	
US-59	STA 158+96.07 to STA 163+89.98	LT	492' GUARDRAIL	
US-59	STA 159+01.85 to STA 163+90.07	RT	491' GUARDRAIL	
US-59	STA 165+33.67	CL	BRIDGE 59-50-35.29 (015)	
US-59	STA 166+77.41 to STA 172+06.01	LT	529' GUARDRAIL	
US-59	STA 166+77.48 to STA 172+05.32	RT	528' GUARDRAIL	
US-59	STA 174+00.00	CL	36" x 136' RCP	
E 27000 Rd	STA 50+77.00	CL	24" x 90' RCP	
US-59	STA 165+80 to STA 168+85	LT	BARB WIRE FENCE	
US-59	STA 154+28	RT	18" x 38' CMP	

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

R/W SURVEY MONUMENT

ALIGNMENT	STATION	SIDE	OFFSET	EACH
US-59	STA 153+11.25	RT	85'	1
US-59	STA 153+70.00	RT	104.55'	1
US-59	STA 154+50.00	RT	115'	1
US-59	STA 157+15.00	RT	140'	1
US-59	STA 158+00.00	RT	130'	1
US-59	STA 159+10.00	RT	130'	1
US-59	STA 161+00.00	RT	145'	1
US-59	STA 165+65.82	RT	145'	1
US-59	STA 165+80.00	LT	140'	1
US-59	STA 165+90.00	LT	175'	1
US-59	STA 166+20.00	LT	175'	1
US-59	STA 166+70.00	LT	155'	1
US-59	STA 168+85.00	LT	140'	1
		TOTAL		13

CLEANING EXISTING STRUCTURES ⚹

ALIGNMENT	STATION	SIDE	STRUCTURE	REMARKS
W 27000 Rd	STA 48+60.00	LT/RT	36" x 86' RCP	

⚹ For Information Only.

RECAPITULATION OF ROAD QUANTITIES

ITEM	QUANTITY	UNIT
CLEANING EXISTING STRUCTURES	LUMP SUM	L.S.
CONTRACTOR CONSTRUCTION STAKING	LUMP SUM	L.S.
FIELD OFFICE AND LABORATORY (TYPE A)	1	EACH
MOBILIZATION	LUMP SUM	L.S.
MOBILIZATION (DBE)	LUMP SUM	L.S.
REMOVAL OF EXISTING STRUCTURES	LUMP SUM	L.S.
MAINTENANCE AND RESTORATION OF HAUL ROADS (SET PRICE)	LUMP SUM	L.S.
CONCRETE FOR SEAL COURSE (SET PRICE)	1	CU. YD.
FOUNDATION STABILIZATION (SET PRICE)	1	CU. YD.
CLEARING AND GRUBBING	LUMP SUM	L.S.
CURING ENVIRONMENT	LUMP SUM	L.S.
COMMON EXCAVATION (RURAL SMALL)	23,520	CU. YD.
COMMON EXCAVATION (CONTRACTOR FURNISHED)	20,449	CU. YD.
ROCK EXCAVATION	7,243	CU. YD.
COMPACTION OF EARTHWORK (TYPE A)(MR-5-5)	27,800	CU. YD.
COMPACTION OF EARTHWORK (TYPE AA)(MR-5-5)	6,680	CU. YD.
WATER (GRADING)(SET PRICE)	1	M. GAL.
SALVAGED TOPSOIL	38,216	SQ. YD.
CROSS ROAD PIPE (36")	265	LIN. FT.
END SECTION (15")	2	EACH
END SECTION (36")	4	EACH
ENTRANCE PIPE (15")	38	LIN. FT.
GUARDRAIL, STEEL PLATE (MGS)	1,925.00	LIN. FT.
GUARDRAIL END TERMINAL (MGS-SOFTSTOP) (Alt. 1)	4	EACH
GUARDRAIL END TERMINAL (MGS-MSKT) (Alt. 2)	4	EACH
TEMPORARY SURFACING MATERIAL (AGGREGATE) (SET PRICE)	1	CU. YD.
MAILBOX INSTALLATION (SET PRICE)	1	EACH
RIGHT-OF-WAY SURVEY MONUMENT	13	EACH
CONCRETE PAVEMENT (11" UNIFORM) (AE) (BR APP)	470	SQ. YD.
BRIDGE APPROACH SLAB FOOTING	30	SQ. YD.
FENCE (BARBED WIRE) (TEMPORARY)	73	LIN. FT.

FOR SURFACING QUANTITIES, SEE SH. NO. 69
FOR TEMPORARY PROJECT WATER POLLUTION (SOIL EROSION) QUANTITIES, SEE SH. NO. 70 - 71
FOR SEEDING QUANTITIES, SEE SH. NO. 80
FOR SIGNING AND PAVEMENT MARKING QUANTITIES, SEE SH. NO. 91 and 101
FOR TRAFFIC CONTROL QUANTITIES, SEE SH. NO. 116

◔ Federally Non-Participating

CONCRETE BRIDGE APPROACH PAVEMENT

ALIGNMENT	STATION to STATION	WIDTH (FT)	LENGTH (FT)	CONCRETE PAVEMENT (11" UNIFORM) (AE) (BR APP) (SQ YD)	BRIDGE APP SLAB FOOTING (CU YD)	REMARKS
US-59	STA 162+78.26 to STA 163+26.27	44	33	234.9		S App. Slab
US-59	STA 167+39.73 to STA 167+87.74	44	33	234.9		N App. Slab
US-59	STA 163+11.10				15.1	S App. Slab
US-59	STA 167+54.88				15.1	N App. Slab
	.					
	TOTAL			469.8	30.2	

FENCE (BARBED WIRE) (TEMPORARY)

ALIGNMENT	STATION to STATION	SIDE	LENGTH (LIN. FT.)	REMARKS
US-59	STA 152+50 to STA 153+03	LT	32.5	
US-59	STA 153+30 to STA 153+70	LT	40.0	
		TOTALS	72.5	

See Sh. 102 For details

MAILBOX INSTALLATION ⚹

ALIGNMENT	STATION	SIDE	EACH
US-59	153+45.00	LT	1
		TOTAL	1

⚹ For Information Only.

RECAPITULATION OF RAIL QUANTITIES

ITEM	QUANTITY	UNIT
RAILROAD COORDINATION	LUMP SUM	L.S.
RAILROAD FLAGGING	LUMP SUM	L.S.

DRAINAGE STRUCTURES

ALIGNMENT	STATION	SIDE	SIZE	TYPE	Gr. 4.0 CONC. (Cu.Yds.)	REINF. STEEL (LBS.)	ENTRANCE PIPE RCP, CAP, PEP, PVCP 15"	ENTRANCE PIPE RCP, CAP, PEP, PVCP 36"	CROSS ROAD PIPE RCP, CAP 15"	CROSS ROAD PIPE RCP, CAP 36"	CROSS ROAD PIPE RCP, CAP, PEP, PVCP 36"	END SECTIONS TYPE I 15"	END SECTIONS TYPE I 36"	END SECTIONS TYPE III 15"	END SECTIONS TYPE III 36"	END SECTIONS TYPE IV 15"	END SECTIONS TYPE IV 36"	END SECTIONS TYPE IV Slope	REMARKS
US-59	STA 153+26.00	LT	15"	EP (RCP, CAP, PEP, PVCP)			38'					2							
US-59	STA 174+00.00	LT/RT	36"	CRP (RCP, CAP)						156'			2						
E 27000 Rd	STA 50+77.00	LT/RT	36"	CRP (RCP, CAP, PEP, PVCP)							109'		2						
	TOTALS						38'			156'	109'	2	4						

EARTHWORK

ALIGNMENT	STATION to STATION	COMMON EXCAVATION CU.YDS.	COMMON EXCAVATION VMF	ROCK EXCAVATION ROCK CU.YDS.	ROCK EXCAVATION ROCK VMF	ROCK EXCAVATION PAVEMENT REMOVAL ◔ CU.YDS.	ROCK EXCAVATION PAVEMENT REMOVAL ◔ VMF	CONTR. FURN. CU.YDS. ø	COMPACTION TYPE A MR-5-5 CU.YDS.	COMPACTION TYPE AA MR-5-5 CU.YDS.	NOT SUBGRADED THROUGH CUTS COMM. CU.YDS.	NOT SUBGRADED THROUGH CUTS TYPE AA CU.YDS.	⚹ EMBANKMENT (CU.YDS.) INITIAL CONSOL.	⚹ EMBANKMENT (CU.YDS.) SETTLE-MENT	⚠ PLACE. SELECT SOIL CU.YDS.	REMARKS
Phase 1																
US-59	STA 174+00.00 to STA 185+00.00	4,824	0.78			2,139	1.0		1,680	293	1,534	1,534				†
W 27000 Rd	STA 48+17.27 to STA 50+00.00	141	0.78			191	1.0		99	24						
E 27000 Rd	STA 50+00.00 to STA 53+50.00	470	0.78			238	1.0		960	114						
Phase 2																
US-59	STA 149+10.00 to STA 174+00.00	15,662	0.78			4,675	1.0	20,449	25,061	3,826	889	889				††††
	TOTALS	21,097				7,243		20,449	27,800	4,257	2,423	2,423				

◔ To be wasted
⚹ Subsidiary (see General Note)
⚠ See General note
ø Assumed VMF=0.78

† Includes an Excess 1,371 Cu. Yd. Common Excavation to be used for US-59 Phase 2

†††† Uses 1,371 Cu. Yd. of Phase 1 Common Excavation
†††† Includes 6,785 Cu. Yd. Common Excavation from Existing Bridge Abutment Fill

NO.	DATE	REVISIONS	BY	APP'D
02	01-14-08	Rem. Drainage Structure summary	S.W.K.	J.O.B.
01	01-09-91	Detailed on CADD	R.J.S.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

RD050

FHWA APPROVAL	05-28-08	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED B.N.B.
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK. S.W.K.

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Sh. No. 68

KDOT Graphics Certified

Plotted : 06-10-25
Drawn By : BBEAMER
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	69	151

GENERAL NOTE:

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

~~Over all structures, unless otherwise directed by the Engineer, where the top of the hubguard is level with or above the finished shoulder grade, the earth cover over the structure slab shall be removed and backfilled with _____material as directed by the Engineer. The removal of this material will be subsidiary.~~

~~The _____material used to backfill over the structure shall be paid for at the prices shown in the contract.~~

~~The earth shoulders shall be compacted full depth (Type MR) except, when ordered by the Engineer, the top 3" shall be left uncompacted for seeding.~~

All side roads and house entrances shall be surfaced with HMA-Comm. Grade (Class A) to the R/W line as indicated on the detail. All side roads and house entrances with existing asphalt surface shall be surfaced with HMA-Comm. Grade(Class A) at least to the R/W line or to the end of construction, as directed by the Engineer. Each mailbox turnout (ON PROJECTS WHERE STABILIZED SHOULDERS ARE NOT SPECIFIED) shall be surfaced with HMA-Comm. Grade (Class A) to the limits shown on the detail.

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

~~The thickness of side road and entrance surfacing may be increased to the same thickness as the stabilized shoulder within the approximate limits of the shoulder.~~

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

Quantities for aggregate for shoulders, AS-1, are calculated on the basis of 150 lbs. per cu. ft. Quantities for stabilized base course, AB-3, are calculated on the basis of 1 56 lbs. per cu. ft. Weight/cu. ft. includes moisture allowed by specification.

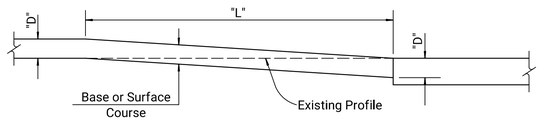
The base course shall be constructed to the plan thickness as shown.

Thicknesses indicated for all construction which is paid for on a weight or volume basis are approximate and may vary to correct for unevenness in the foundations or for other normal unevenness encountered in placement operations.

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

Asphalt Material quantities are calculated on the basis of 8.328 lbs. per gal.

Shoulder rumble strips will not be constructed as part of this project.



TYPICAL PROFILE AT GRADE CONTROL POINTS

The Contractor shall cut the subgrade in accordance with this profile at all grade control points, i.e. ; existing pavements, grade bridges and R.R. crossings, also at changes in thickness of base or surface courses. Corresponding dimensions of "D" and "L" shall be as given in the table below.

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

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

SUMMARY OF QUANTITIES

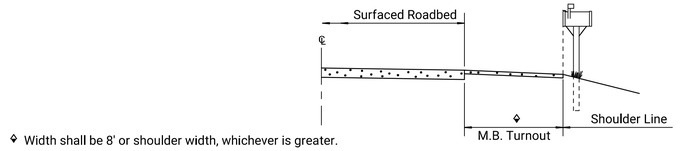
ITEM	US-59 (STA 151+25.00 to STA 163+26.27)	US-59 (STA 167+39.73 to STA 183+45.00)	DRIVEWAY	W 27000 RD	E 27000 RD	GUARDRAIL	TOTAL	UNIT
Aggregate Base (AB-1) (6")	8,042.9	11,122.6		207.2	599.0		19,971.7	SQ. YD.
Surfacing Material (AB-3)				114.9			114.9	TON
Aggregate Shoulder (AS-1) (6")	157.3	247.9					405.2	SQ. YD.
HMA-Commercial Grade (Class A) (11")	3,351.8	4,433.4		214.4	419.5		8,419.1	TON
HMA-Commercial Grade (Class A) (4")			61.1			11.6	72.7	TON
Pavement Edge Wedge (Rock)	924.5	826.4				249.9	2,000.8	TON

RATES OF APPLICATION

RATE	UNIT	ITEM
145	pcf	HMA-Commercial Grade (Class A)
156	pcf	Pavement Edge Wedge (Rock)
0.5589	pcf	Calcium Chloride
156	pcf	Surfacing Material (AB-3)

RECAPITULATION OF QUANTITIES

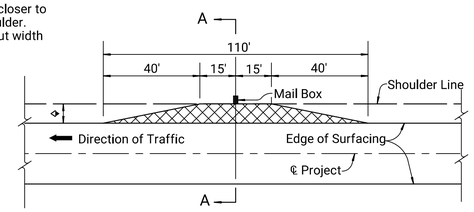
ITEM	TOTAL	UNIT
Pavement Edge Wedge (Rock)	2001	TONS
Aggregate Base (AB-1) (6")	19,972	SQ. YD.
Water (Aggregate Base) (Set Price)	1	MGAL
Surfacing Material (AB-3)	115	TONS
HMA-Commercial Grade (Class A)	8,493	TONS
Field Office and Laboratory (Type A)	1	EACH
Aggregate Shoulder (AS-1) (6")	405	SQ. YD.
Calcium Chloride	1	TON
Water (Aggregate Shoulder) (Set Price)	1	MGAL
Water (Earthwork Compaction) (Set Price)	1	MGAL



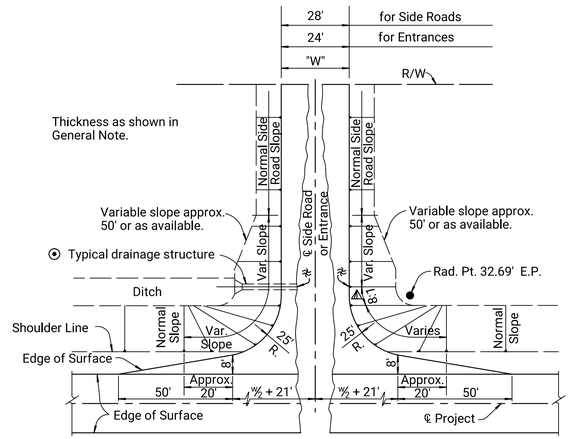
♦ Width shall be 8' or shoulder width, whichever is greater.

SECTION A-A

Note: The face of Mail Box should be no closer to the roadway than the edge of the shoulder. Align with edge of turnout when turnout width is greater than shoulder width.



DETAIL FOR SURFACING OF MAIL BOX TURNOUTS



WITH DRAINAGE STRUCTURE MOUND ENTRANCE OR SIDE ROAD

DETAIL FOR SURFACING OF SIDE ROADS & HOUSE ENTRANCES

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

⊙ Normal Slope (but not steeper than 6:1) at approximate ℄ Structure or appropriate clear zone width.

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

NO.	DATE	REVISIONS	BY	APP'D
12	01-10-07	Changed bituminous to asphalt	S.W.K.	J.O.B.
11	08-30-06	Changed tack type/rate	S.W.K.	J.O.B.
10	03-24-05	Revised compaction, tack type/rate	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES (Surfacing)

RD051

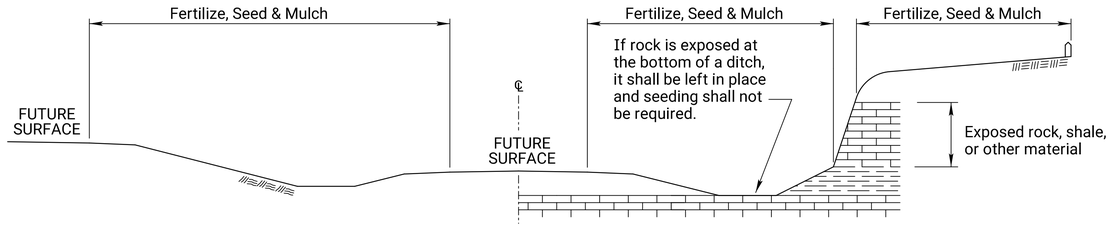
FHWA APPROVAL	09-06-06	APP'D.	James O. Brewer
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

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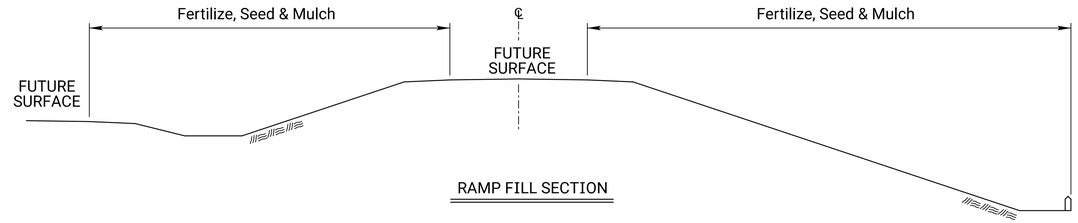
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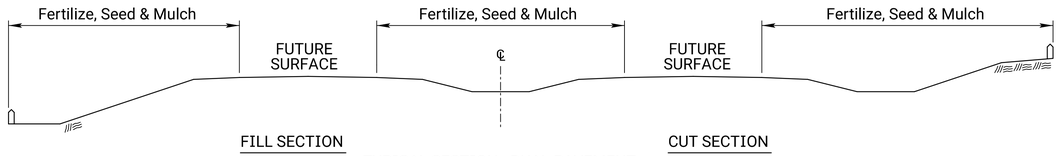
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	70	151



RAMP CUT SECTION



RAMP FILL SECTION



TYPICAL SECTION - DUAL PAVEMENT

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

* - N = Nitrogen Rate of Application
** - P_2O_5 = Phosphorous Rate of Application
*** - K_2O = Potassium Rate of Application

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

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

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

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

GENERAL NOTES

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

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

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

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

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

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

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

SUMMARY OF SEEDING / EROSION CONTROL QUANTITIES

P.L.S. RATE/ ACRE		ACRES		BID ITEM	QUANTITY	UNIT
CLT	SL/CH	CLT	SL/CH			
150		9.5		Temporary Fertilizer (15 - 30 - 15)	1,425	LB
20		9.4		Temporary Seed (Canada Wildrye)	188	LB
45		9.4		Temporary Seed (Grain Oats)	423	LB
45		9.4		Temporary Seed (Sterile Wheatgrass)	423	LB
	169.9		0.1	Soil Erosion Mix	17	LB
				Erosion Control (Class 1, Type C)	322	SQ YD
				Erosion Control (Class 2, Type Y)		SQ YD
				Sediment Removal (Set Price)	1	CU YD
				Synthetic Sediment Barrier		LF
				Temporary Berm (Set Price)	1	LF
				Temporary Ditch Check (Rock)		CU YD
				Temporary Inlet Sediment Barrier		EACH
				Temporary Sediment Basin		CU YD
				Temporary Slope Drain	500	LF
				Temporary Stream Crossing		EACH
				Biodegradable Log (9")	1,591	LF
				Biodegradable Log (12")	2,121	LF
				Biodegradable Log (20")	711	LF
				Filter Sock (12")	1,591	LF
				Filter Sock (18")	558	LF
				Silt Fence	458	LF
				SWPPP Design †	Lump Sum	LS
				SWPPP Inspection †	48	EACH
				Water Pollution Control Manager †	48	EACH
900 lbs / acre		9.4		Mulch Tacking Slurry	12,690	LB
2 tons / acre		9.4		Mulching	28.2	TON
				Water (Erosion Control) (Set Price)	1	MGAL

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

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

Regreen and Quick Guard are the approved sterile wheatgrass products.

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

**** List size of material.

The amount of mulch and mulch tacking slurry in the bid quantities is estimated.
The estimated quantity includes mulching associated with both temporary and permanent seeding operations. The total mulch and mulch tacking slurry required shall be determined in the field. The bid item for mulching and mulch tacking slurry shall be paid for according to the Standard Specifications.

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

SOIL EROSION MIX

PLS RATE	NAME	QTY (lb)
20	Canada Wildrye	2.0
20	Grain Oats	2.0
20	Sterile Wheatgrass	2.0
0.5	Blue Grama (Lovington)	0.1
4.5	Buffalograss (Treated)	0.5
45	Prennial Ryegrass	4.5
2.6	Prairie Junegrass	0.3
6.3	Side Oats Grama (El Reno)	0.6
45	Tall Fescue (Endophyte Free)	4.5
6	Western Wheat (Barton	0.6
169.9	Total (lb)	17.0

Mulch and Slurry Mulch estimated calculations are as follows:
Mulch = Acres of Seeding x 1.5 x 2 Tons/acre
Mulch Tacking Slurry = Acres of Seeding x 1.5 x 900lbs/acre

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

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

NO.	DATE	REVISIONS	BY	APP'D
03	08-03-20	Added Note	M.R.D.	M.L.
02	12-01-17	Revised Standard	M.R.D.	S.H.S.
01	06-01-17	Revised Standard	M.R.D.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL

~~LA852A~~

FHWA APPROVAL			01-26-18	APP'D.	Scott H. Shields
DESIGNED	M.R.D.	DETAILED	M.R.D.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 06-10-2025 Sh. No. 70

KDOT Graphics Certified

Drawn By: : BBEAMER Plotted :06-10-25
File : c:\pwworking\central01\d2186061\KA390101eec852a-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	71	151

EROSION CONTROL- CLASS 1, TYPE C

STATION TO STATION	SIDE	LENGTH	WIDTH	SQ YARD
152+96.11 TO 153+21.11	LT	17.00	20.00	38
153+31.52 TO 153+56.52	LT	17.00	20.00	38
173+90.00 TO 714+10.00	LT	20.00	25.00	56
173+90.00 TO 714+10.00	RT	20.00	25.00	56
10+46.38 TO 10+66.38	LT	20.00	25.00	56
11+07.66 TO 11+27.66	RT	20.00	25.00	56
48+62.50 TO 48+77.50	RT	15.00	13.00	22
TOTAL EROSION CONTROL (CLASS 1, TYPE C) =				322

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec852a-ec-01.dgn

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

EROSION CONTROL SEEDING-SODDING

LA852A-EC

FHWA APPROVAL				APP'D.	Scott H. Shields		
DESIGNED	M.R.M.	DETAILED	M.R.M.	QUANTITIES		TRACED	M.R.M.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	S.H.S.

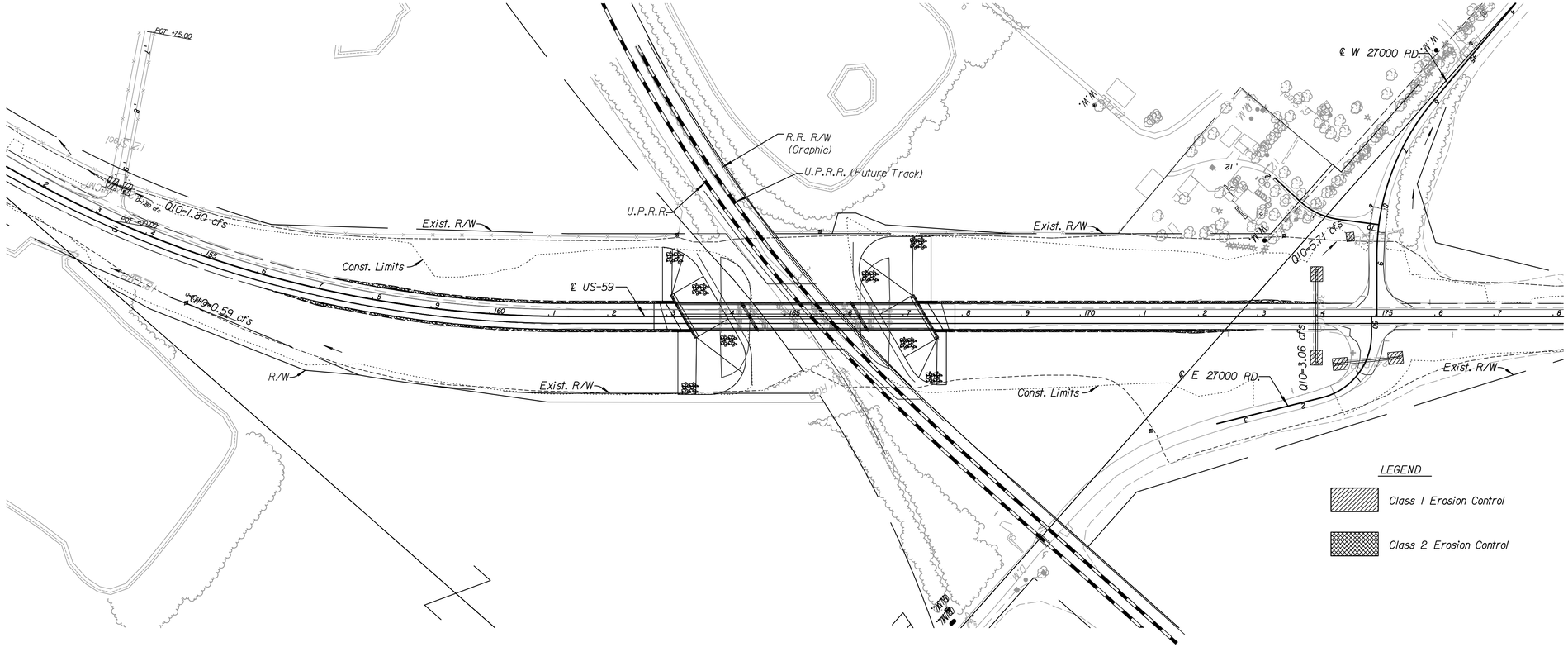
KDOT Graphics Certified 07-14-2022

Sh. No. 71

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	72	151

	BY	DATE
REFERENCES NOTED	HDR - B. HORNER	2021
REFERENCES CHECKED	HDR - B. BEAMER	2021



SCALE

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

PROFILE: Horiz. same as above

Vert. 10' 0

KANSAS DEPARTMENT OF TRANSPORTATION

PROPOSED FINAL

EROSION CONTROL PLAN

STA. 152+96.11 TO STA. 174+10.00

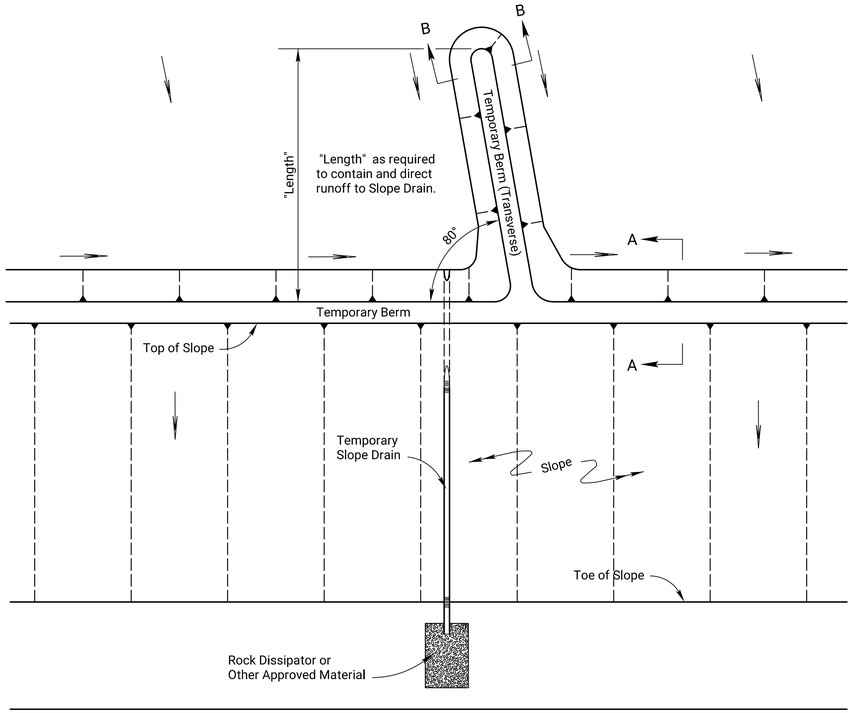
KDOT Graphics Certified 08-23-2024 Sh. No. 72

KDOT Graphics Certified

Drawn By: BBEAMER Plotted: 08-23-24

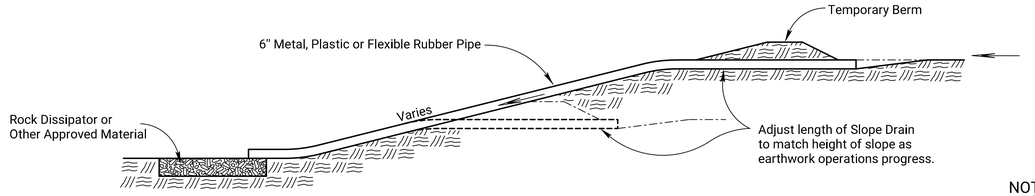
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STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	73	151



TYPICAL PLAN VIEW OF TEMPORARY BERM AND TEMPORARY SLOPE DRAIN

NO SCALE



TYPICAL PROFILE OF TEMPORARY SLOPE DRAIN

NO SCALE

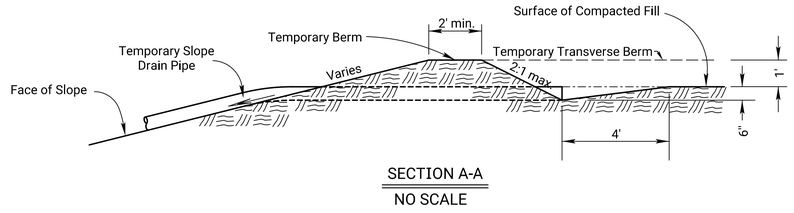
NOTES:

1) Temporary Slope Drain and Temporary Berm may be used on either project foreslopes or project backslopes.

2) Discharge of Slope Drains shall be into stabilized ditch or area, or into Sediment Basin.

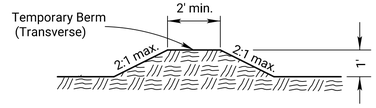
3) Pipe shall be secured in place as approved by Engineer.

4) Temporary Berms under 2,000 feet shall be bid by Set Price.



SECTION A-A

NO SCALE

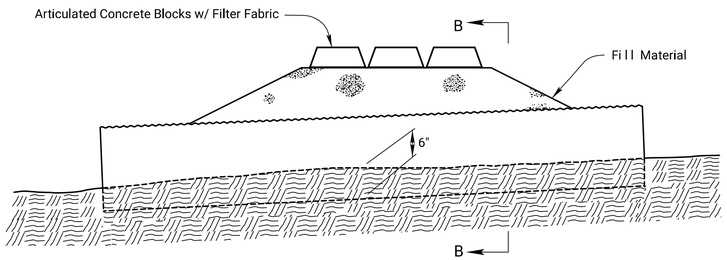


SECTION B-B

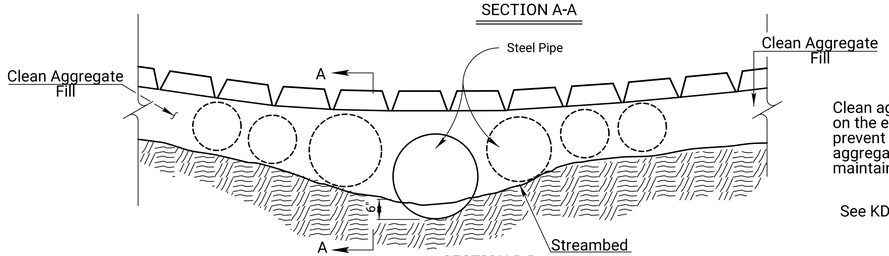
NO SCALE

TYPICAL PROFILE OF TEMPORARY BERM

NO SCALE



SECTION A-A



SECTION B-B

TEMPORARY STREAM CROSSING (ARTICULATED CONCRETE BLOCKS)

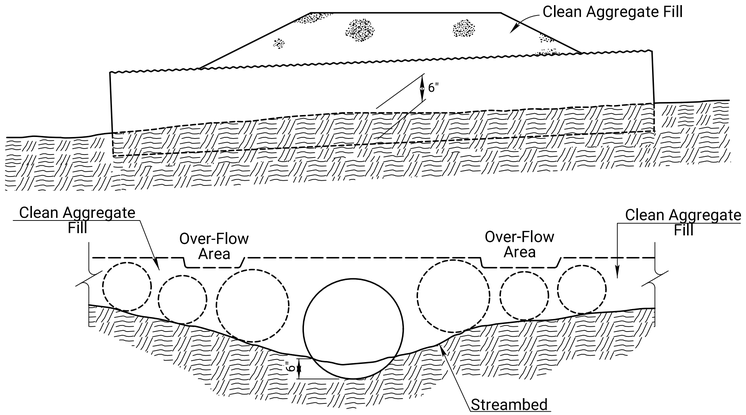
NO SCALE

Pipe size may vary.

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

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

See KDOT Specifications for more information.



SECTION B-B

TEMPORARY STREAM CROSSING (AGGREGATE)

NO SCALE

Pipe size may vary.

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

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

See KDOT Specifications for more information.

NO.	DATE	REVISIONS	BY	APP'D
03	01-21-22	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
02	08-24-21	Temp Stream Crossing - Clean Aggregate Fill Note Added	M.R.D.	M.L.
01	06-11-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL TEMPORARY SLOPE DRAIN, TEMPORARY STREAM CROSSING (AGGREGATE)

LA852B

FHWA APPROVAL		01-21-22	APP'D.	Mervin Lare
DESIGNED	DETAILED		QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.		QUAN.CK.	TRACE CK.

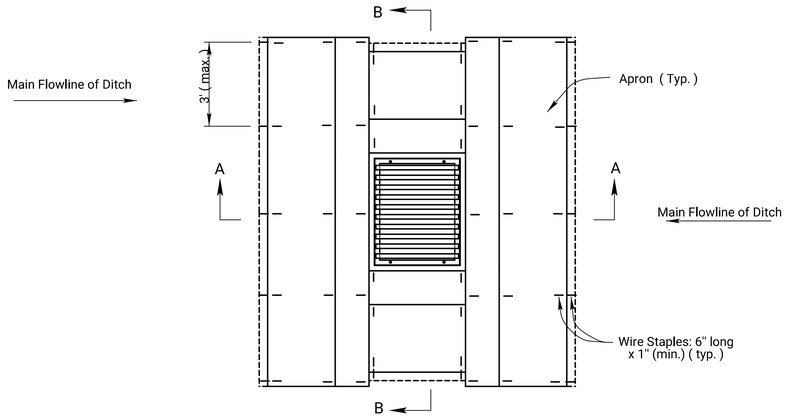
KDOT Graphics Certified 06-17-2022

Sh. No. 73

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec852b-01.dgn

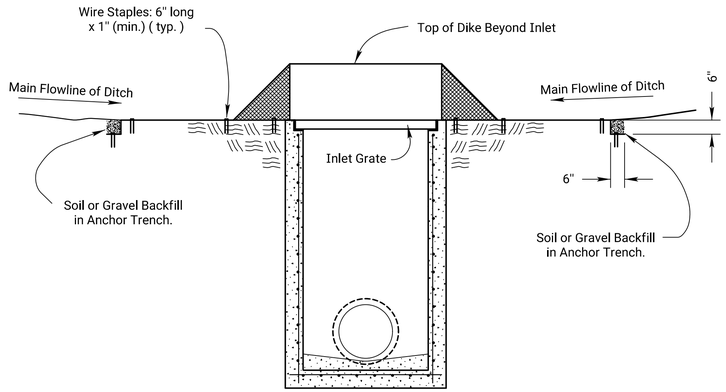
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	74	151



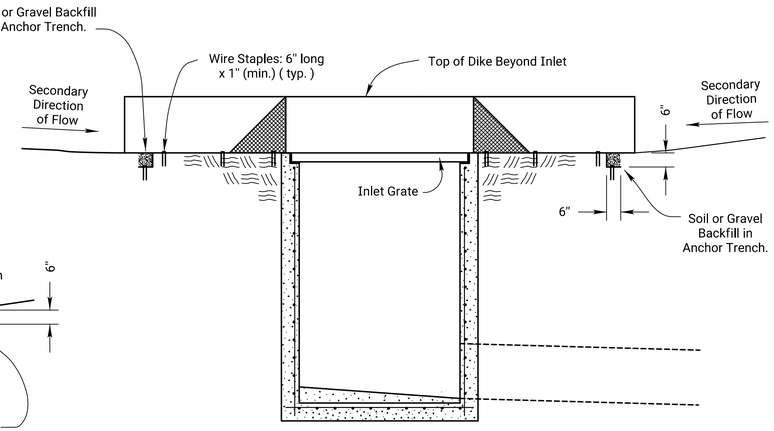
PLAN

TEMPORARY I NLET SEDI MENT BARRI ER
(TRI ANGULAR SI LT DI KE METHOD)

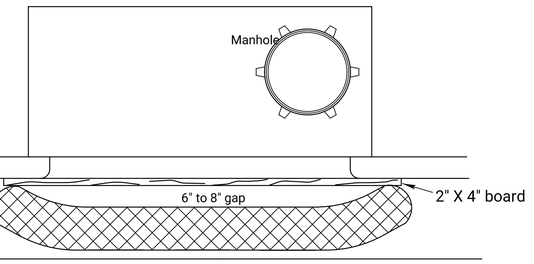
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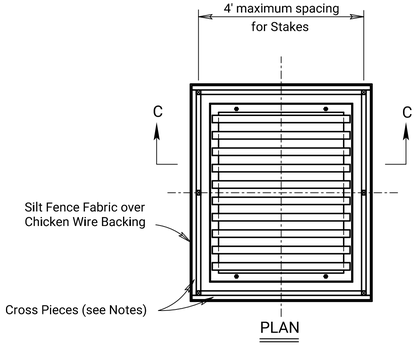
SECTION A - A



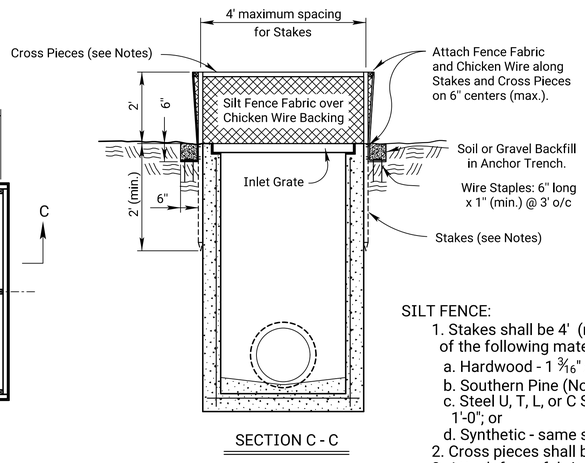
SECTION B - B



CURB INLET PROTECTION



PLAN



SECTION C - C

TEMPORARY I NLET SEDI MENT BARRI ER
(SI LT FENCE METHOD)

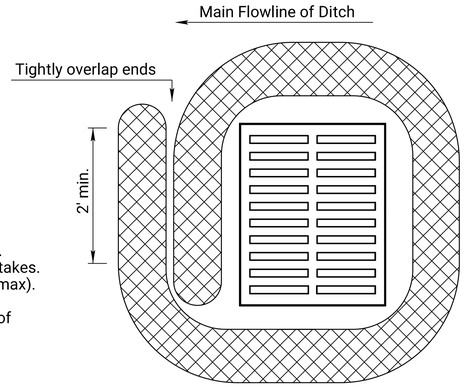
NO SCALE

SILT FENCE:

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

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

Rock = approximately 1" to 2" diameter



Drop inlet use
1'-6" TO 1'-8" diameter log

BIODEGRADABLE LOG/FILTER SOCK
DROP INLET PROTECTION

Note: 25% of log shall be keyed into ground during installation.

Stake every 4'

Material Requirements
Use 100% shredded mulch or other non-compost biodegradable material as fill for logs.
No compost or fines.
No hay or straw.
Do not use material which prohibits water infiltration.
Log Mesh: Use mesh with ¼" openings or larger. Mesh must allow water infiltration but also hold fill material in place.

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

NO.	DATE	REVISIONS	BY	APP'D
03	09-26-19	Changed Direction of Main Flowline of Ditch Arrow	M.R.D.	S.H.S.
02	03-10-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL, TEMPORARY INLET SEDIMENT BARRIER (SILT FENCE) TEMP. INLET SEDIMENT BARRIER (T.S.D.)

LA852C

FHWA APPROVAL			03-10-15	APP'D.	Scott H. Shields
DESIGNED	R.A.	DETAILED	R.A.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.	TRACE CK.

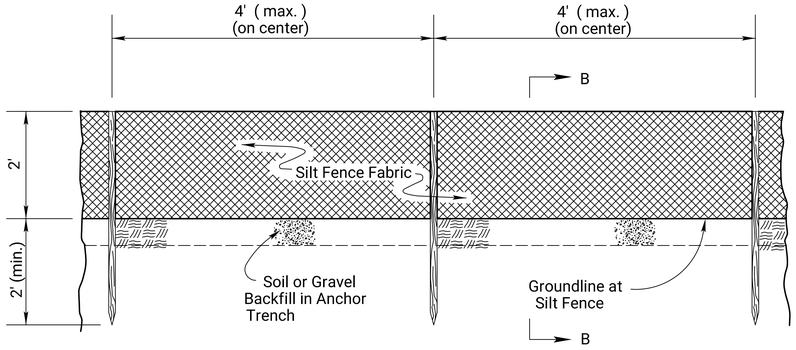
KDOT Graphics Certified 07-14-2022

Sh. No. 74

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec852c-01.dgn

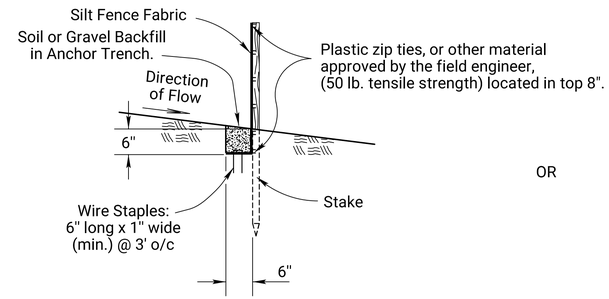
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	75	151



TYPICAL ELEVATION

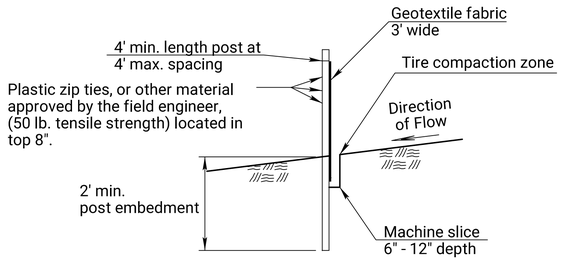
SILT FENCE BARRIER

NO SCALE

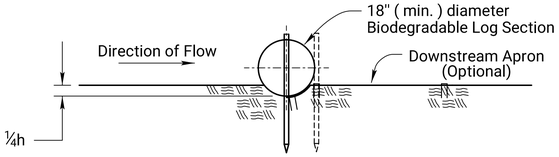


SECTION B-B

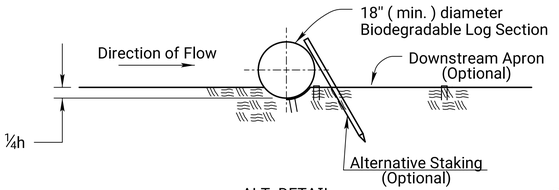
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SECTION B-B

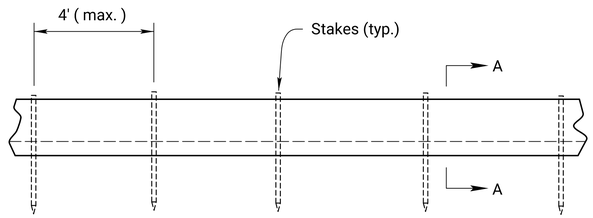


SECTION A - A



ALT. DETAIL

OPTIONAL



TYPICAL ELEVATION

BIODEGRADABLE LOG SLOPE INTERRUPTIONS

OR Filter Sock

INSTALLATION NOTES

SILT FENCE:

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

BIODEGRADABLE LOG OR FILTER SOCK

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

Biodegradable Log or Filter Sock Slope Interruptions

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

Deviations should be approved by the Field Engineer.

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

GENERAL NOTES

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

NO.	DATE	REVISIONS	BY	APP'D
03	06-28-16	Revised Standard	R.A.	S.H.S.
02	03-01-15	Revised Standard	R.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL SLOPE INTERRUPTIONS BIODEGRADABLE LOG / SILT FENCE

LA852D

FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields
DESIGNED	S.H.S.	DETAILED R.A.	QUANTITIES	TRACED
DESIGN CK.	S.H.S.	DETAIL CK.	QUAN.CK.	TRACE CK.

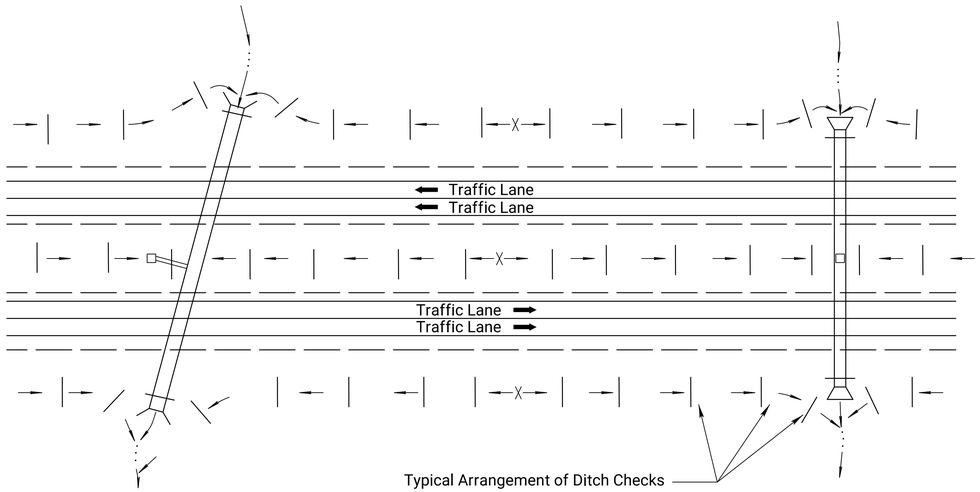
KDOT Graphics Certified 06-18-2022

Sh. No. 75

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901011eec852d-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	76	151



Typical Arrangement of Ditch Checks

TYPICAL DITCH CHECK LAYOUT PLAN

NO SCALE

20" BIOLOG CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	125
2.0	60
3.0	40
4.0	30
5.0	25
NOTE: Use this spacing for all except Rock Ditch Checks.	

18" FILTER SOCK CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
1.0	110
2.0	55
3.0	35
4.0	25
5.0	20
NOTE: Use this spacing for all except Rock Ditch Checks.	

GENERAL NOTES

1) The choice of ditch check methods is at the option of the Contractor.

2) Use only rock checks in situations where the ditch slope is 6 percent or greater.

2) Ditch checks damaged by Contractor's negligence, including improper maintenance or lack of maintenance, shall be repaired by Contractor at no extra cost to KDOT.

NO.	DATE	REVISIONS	BY	APP'D
03	08-10-16	Revised Standard	R.A.A.	S.H.S.
02	06-28-16	Revised Standard	R.A.A.	S.H.S.
01	06-01-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL DITCH CHECKS

LA852E

FHWA APPROVAL		09-14-16	APP'D.	Scott H. Shields			
DESIGNED	S.H.S.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	S.H.S.

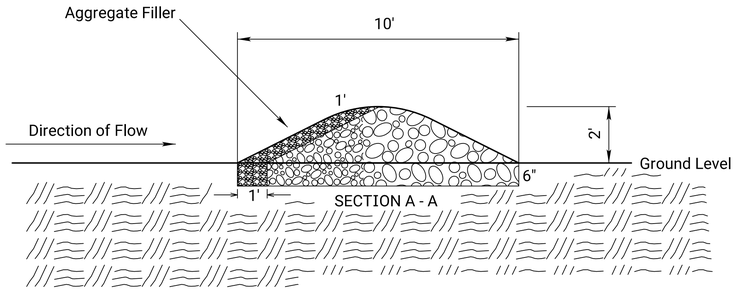
KDOT Graphics Certified 06-18-2022

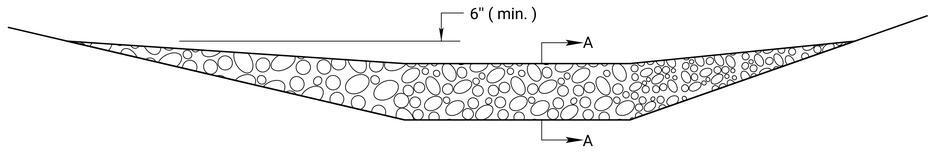
Sh. No. 76

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec852e-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	77	151





TYPICAL ELEVATION

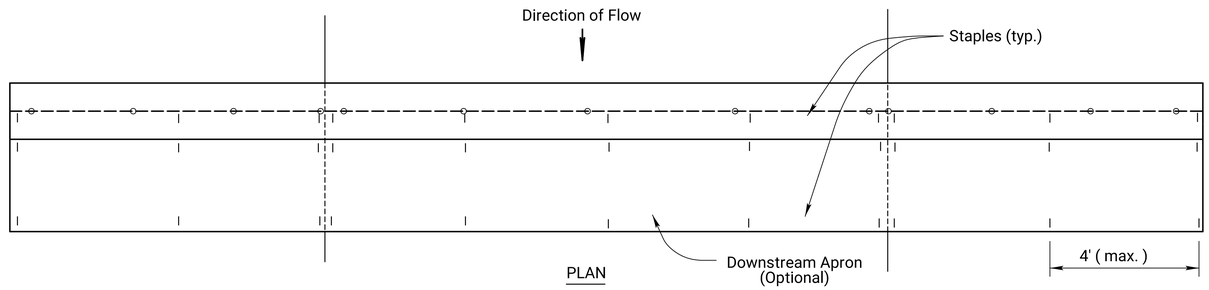
ROCK DITCH CHECK

NO SCALE

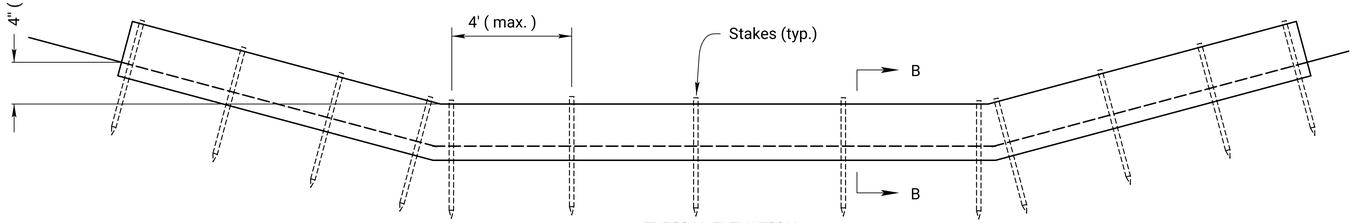
TEMPORARY ROCK DITCH CHECK SPACING	
DITCH ℄ SLOPE (%)	SPACING INTERVAL (FEET)
5.0	60
6.0	50
7.0	43
8.0	36
9.0	33
10.0	29
NOTE: Use this spacing for Rock Ditch Checks only.	

ROCK DITCH CHECK NOTES

1. Rock shall be clean aggregate, D50-6" and aggregate filler.
2. Place rock in such manner that water will flow over, not around ditch check.
3. Do not use rock ditch checks in clear zone.
4. Excavation: The ditch area shall be reshaped to fill any eroded areas. Prior to placement of the rock, the ditch shall be excavated to the dimensions of the Rock Ditch Check and to a minimum depth of 6" (150mm). After placement of the rock, backfill and compact any over-excavated soil to ditch grade. This work shall be subsidiary to the bid item Temporary Ditch Check (Rock).
5. Aggregate excavated on site may be used as an alternate to the 6" rock, if approved by the Engineer.
6. The Engineer may approve the use of larger aggregates for the downstream portion of the check when conditions warrant their use.
7. When the use of larger rock is approved, D50-6" rock will be placed between the larger aggregate and the aggregate filler.
8. Aggregate filler will be placed on the upstream face of the ditch check. Aggregate filler will comply with Filter Course Type I, Division 1114.



PLAN

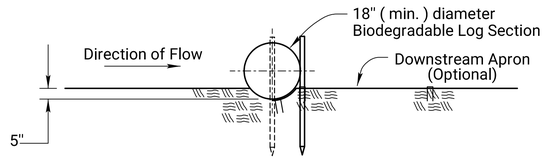


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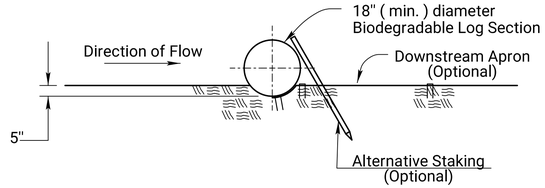
BIODEGRADABLE LOG DITCH CHECK

OR Filter Sock Ditch Check

NO SCALE



SECTION B - B



ALT. DETAIL
OPTIONAL

BIODEGRADABLE LOG DITCH CHECK NOTES

1. Use as many biodegradable log sections as necessary to ensure water does not flow around end of ditch check.
2. Overlap sections a minimum of 18".
3. Stakes shall be wood or steel according to Section 2114 of the Standard Specifications. Length of stakes shall be a minimum of 2 x the diameter of the log.
4. Use Erosion Control (Class 1) (Type C) as the downstream apron when required.
5. A downstream apron is required when directed by the Engineer. Apron material will be paid at the contract unit price.
6. Each log or sock (except compost filter socks) should be keyed into the ground at a minimum of 25% of its height. Compost filter socks should be placed on smooth prepared ground with no gaps between the sock and soil.

NO.	DATE	REVISIONS	BY	APP'D
03	11-19-20	Revised Standard	M.R.D.	M.L.
02	08-10-16	Revised Standard	R.A.A.	S.H.S.
01	10-21-15	Revised Standard	R.A.A.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL ROCK DITCH CHECKS BIODEGRADABLE LOG DITCH CHECKS

LA852G

FHWA APPROVAL			11-19-20	APP'D.		Mervin Lare	
DESIGNED	M.L.	DETAILED	D.K.	QUANTITIES	TRACED	R.A.A.	
DESIGN CK.	M.L.	DETAIL CK.	M.L.	QUAN.CK.	TRACE CK.	R.A.A.	

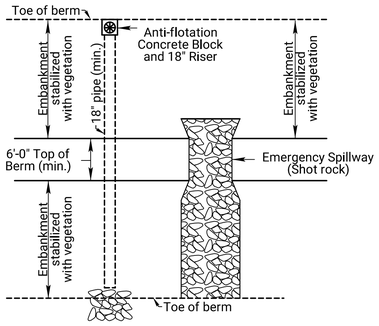
KDOT Graphics Certified 07-14-2022

Sh. No. 77

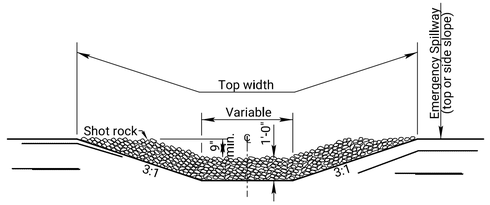
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec852g-01.dgn

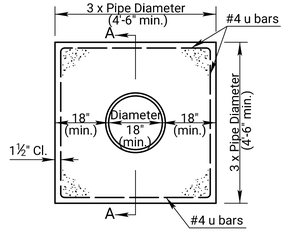
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	78	151



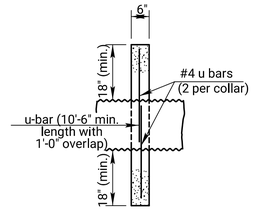
SEDIMENT STORAGE BASIN (PLAN)



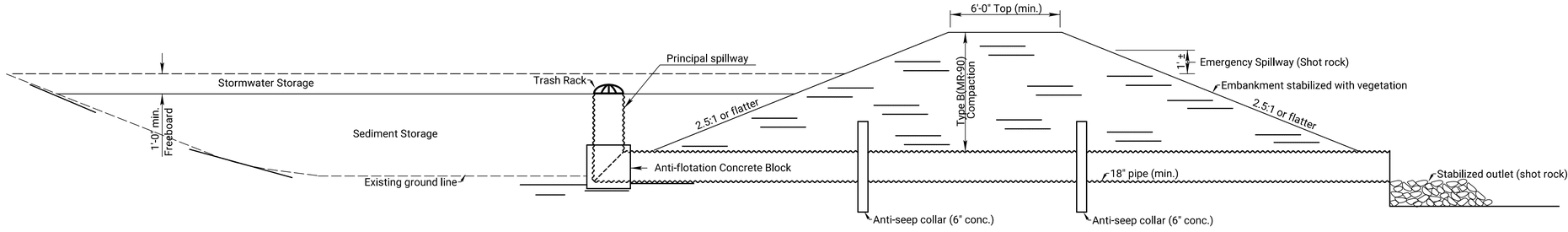
CROSS SECTION (EMERGENCY SPILLWAY)



CONCRETE ANTI-SEEP COLLAR



SECTION A-A



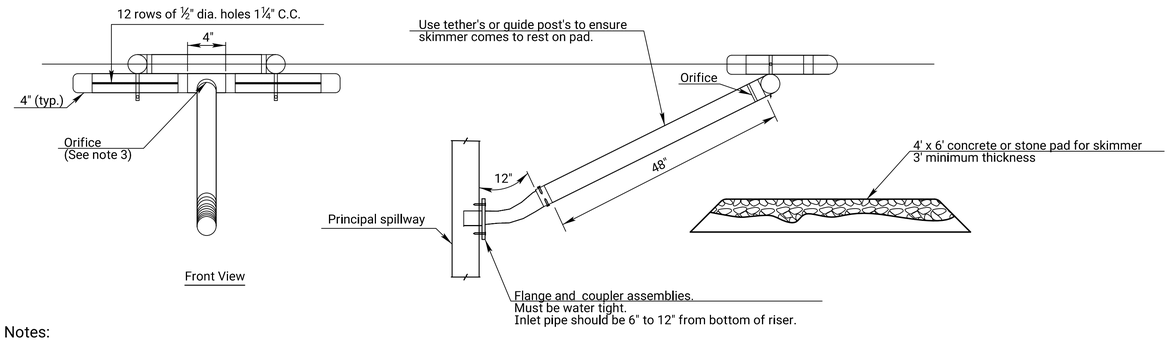
SEDIMENT STORAGE BASIN (ELEVATION)

NOTES:

1) Temporary Sediment Basins shall be constructed at locations as directed by the Engineer or as approved in the SWPPP Schedule. All work and materials necessary, including but not limited to, the fill material, compaction, drainage pipes, aggregates and all other incidentals necessary to construct the basin, shall be paid as "Temporary Sediment Basin".

2) Lengths and top dimensions shall be determined in the field by the Engineer.

3) Skimmer dewatering device required and must be used reguardless the size of the drainage area.



Notes:

1. All P.V.C. pipes are to be schedule 40.
2. HDPE flexible drain pipes is to be attached to the pond outlet structure with water-tight connections.
3. The orifice shall be sized of to provide drawdown time to 2 to 5 days and approved by the engineer.
4. Other skimmer designs maybe used that dewaters from the surface at a controlled rate. The design must be approved by the engineer.

SKIMMER DEWATERING DEVICE

SEDIMENT STORAGE BASIN LOCATIONS

STATION TO STATION	SIDE	REQUIRED STORAGE CAPACITY

NO.	DATE	REVISIONS	BY	APP'D
02	09-03-13	Added Skimmer Dewatering Device	M.R.M.	S.H.S.
01	07-17-13	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

TEMPORARY EROSION AND POLLUTION CONTROL SEDIMENT STORAGE BASIN

LA852H

FHWA APPROVAL			09-24-13	APP'D.			
DESIGNED	B.B.	DETAILED	B.B.	QUANTITIES		TRACED	B.B.
DESIGN CK.	S.H.S.	DETAIL CK.	S.H.S.	QUAN.CK.		TRACE CK.	S.H.S.

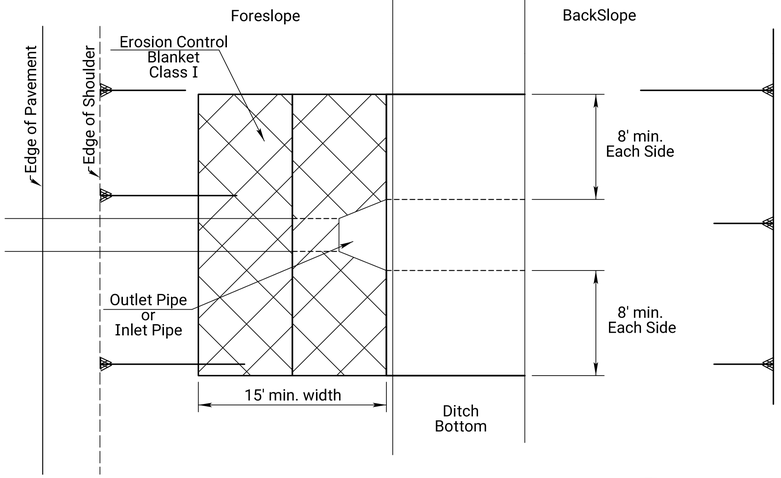
KDOT Graphics Certified 06-20-2022

Sh. No. 78

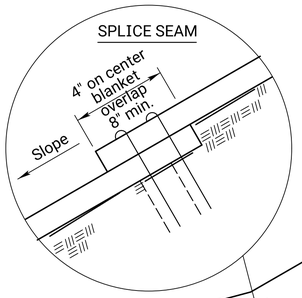
KDOT Graphics Certified

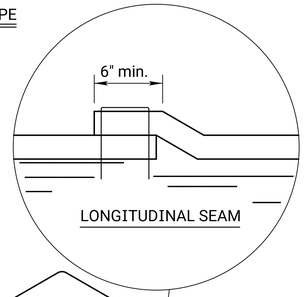
Drawn By : BBEAMER Plotted : 06-17-24
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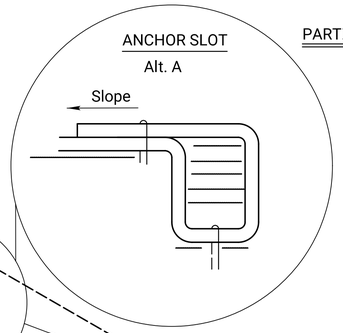
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	79	151

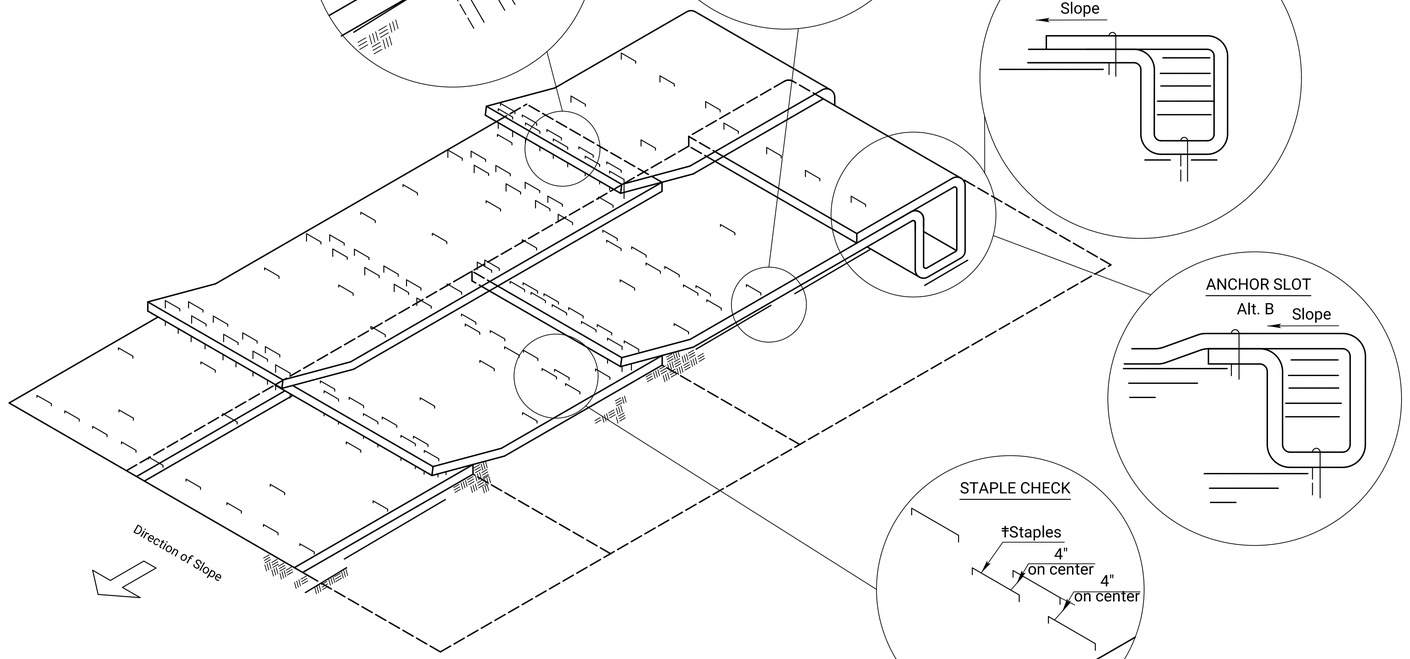


PARTIAL PLAN PIPE

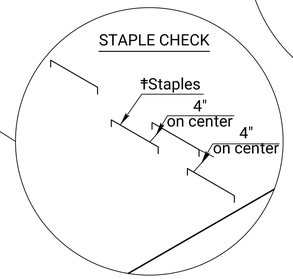


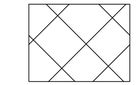




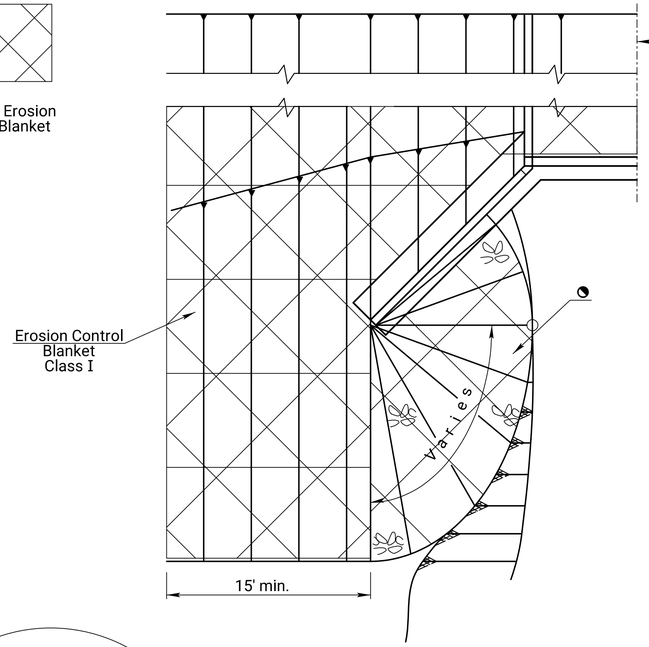


ISOMETRIC VIEW





Limits of Erosion Control Blanket



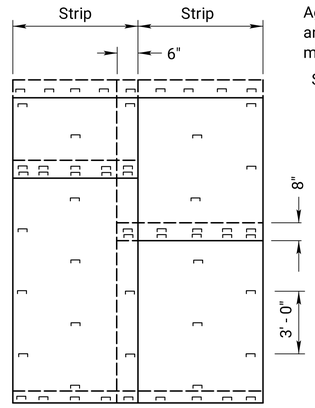
PARTIAL PLAN BOX CULVERT

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

INSTALLATION DETAILS FOR EROSION CONTROL CLASS 1

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

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



PLAN VIEW - ANCHORING DIAGRAM

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

Single post ring and shank staple is acceptable.

NO.	DATE	REVISIONS	BY	APP'D
04	03-01-15	Revised Standard	R.A.A.	S.H.S.
03	02-23-15	Revised Standard	R.A.A.	S.H.S.
02	09-15-14	Revised Standard	M.R.M.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

INSTALLATION DETAIL EROSION CONTROL CLASS 1 SLOPE PROTECTION

LA855

FHWA APPROVAL		03-10-15	APP'D.	Scott H. Shields			
DESIGNED	R.A.A.	DETAILED	R.A.A.	QUANTITIES		TRACED	R.A.A.
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	R.A.A.

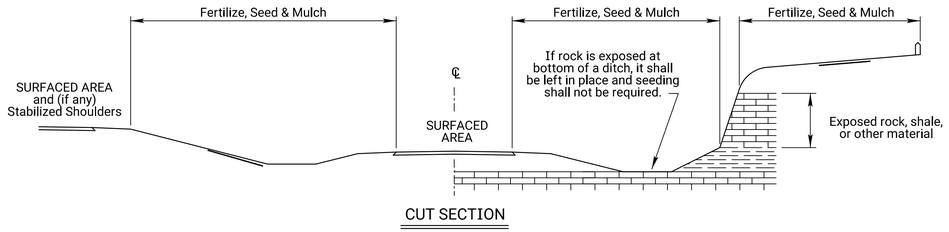
KDOT Graphics Certified 06-20-2022

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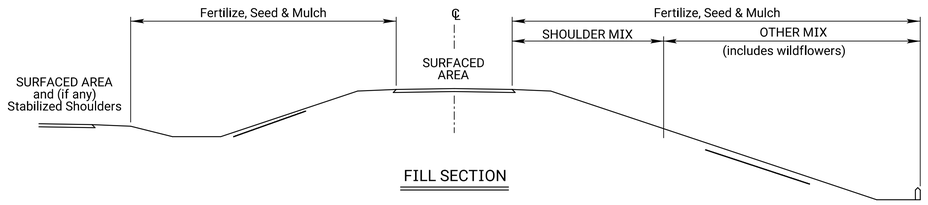
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
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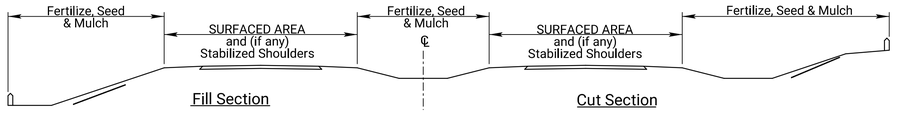
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	80	151



CUT SECTION



FILL SECTION



TYPICAL SECTION - DUAL PAVEMENT

GRASS & WILDFLOWER SEEDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES & WILDFLOWERS
February 15 thru April 20 August 15 thru September 30	November 15 thru June 1
SPECIES	SPECIES
Bluegrasses	Bermuda Grass
Brome Grasses	Big Bluestem
Canada Wildrye	Blue Grama
Fescues	Buffalo Grass
Prairie Junegrass	Indiangrass
Ryegrasses	Little Bluestem
Sterile Wheatgrass	Sand Bluestem
Tall Dropseed	Sand Dropseed
Western Wheatgrass	Sand Lovegrass
	Side Oats Grama
	Switchgrass
	Wildflower Mixes

When the area to be seeded is 1 acre or more, if Cool Season grasses are mixed with Warm Season grasses, seed the area during the Warm Season.

When the area to be seeded is less than 1 acre, seed the area any time of the year.

SODDING SEASONS

COOL SEASON GRASSES	WARM SEASON GRASSES
March 1 thru April 15 September 1 thru November 15	May 15 thru September 1
SPECIES	SPECIES
Bluegrass Sod	Buffalo Grass Sod
Fescue Sod	

If the soil is workable, the Engineer may allow placement of sod between November 15 and March 1. If sod is placed during this time, maintain the sod until 20 days after the beginning of the spring sodding season.

GENERAL NOTES

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

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

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

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

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

1¾ - 2¼ Tons per Acre = 1½" loose depth spread uniformly over acre.

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

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

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

NATIVE WILDFLOWER MIX 1

PLS RATE	NAME	QTY (lb)
0.3	Butterfly Milkweed	2.22
0.3	Common Milkweed	2.22
0.3	Black Eyed Susan	2.22
0.5	Blanket Flower	3.70
0.5	False Sunflower	3.70
0.5	Lance-Leaf Coreopsis	3.70
0.2	Maximilian Sunflower	1.48
0.1	New England Aster	0.74
0.2	Pinnate Prairie Coneflower	1.48
0.2	Plains Coreopsis	1.48
0.3	Purple Coneflower	2.22
0.3	Upright Prairie Coneflower	2.22
0.3	Dames Rocket	2.22
0.3	Lemon Mint	2.22
0.2	Pitcher Sage	1.48
0.2	Wild Bergamot	1.48
1.0	Illinois Bundleflower	7.40
0.2	Common Evening Primrose	1.48
0.1	Hoary Verbena	0.74
0.8	Purple Prairie Clover	5.92
0.3	Roundhead Lespedeza	2.22
3.0	Showy Partridge Pea	22.20
0.2	White Prairie Clover	1.48
10.3	Total (lb)	76.2

NATIVE WILDFLOWER MIX 2

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

Package and deliver the wildflower seed separately from the grass seed mix. Package and deliver the Tall Drop Seed separately from the grass seed and the wildflower mix. Place the grass seed (except Tall Drop Seed) in the large seed box and drill (cover) seed ⅛" -¼". Place the wildflower seed in a separate seed box and drill (cover) seed 1/16" maximum. Place the Tall Drop Seed in a separate (third) seed box and place the seed (using the seed drill) on the soil surface.

OPTION: Broadcast Tall Drop Seed on the soil surface.

SUMMARY OF SEEDING QUANTITIES

P.L.S. RATE/ACRE				ACRES				BID ITEM	QUANTITY	UNIT
SHLDR	OTHER			SHLDR	OTHER					
200				2				Fertilizer (13-13-13)	400	Lbs
	80				7.4			Fertilizer (15-30-15)	592	Lbs
	2				7.4			Seed (Big Bluestem (Kaw))	14.8	Lbs
0.5				2				Seed (Big Grama (Lovington))	1.0	Lbs
4.5				2				Seed (Buffalograss (Treated))	9.0	Lbs
	10				7.4			Seed (Canada Wildrye)	74.0	Lbs
	2				7.4			Seed (Indiangrass (Osage))	14.8	Lbs
	2				7.4			Seed (Little Bluestem (Aldous))	14.8	Lbs
45				2				Seed (Perennial Ryegrass)	90.0	Lbs
2.6				2				Seed (Prairie Junegrass)	5.2	Lbs
6.3	6.3			2	7.4			Seed (Side Oats Grama (El Reno))	59.2	Lbs
	10				7.4			Seed (Sterile Wheatgrass)	74.0	Lbs
	0.7				7.4			Seed (Swithgrass (Blackwell))	5.2	Lbs
	0.5				7.4			Seed (Tall Dropseed)	3.7	Lbs
45				2				Seed (Tall Fescue (Endophyte Free))	90.0	Lbs
6	4			2	7.4			Seed (Western Wheat (Barton))	41.6	Lbs
	10.3				7.4			Seed (Native Wildflower Mix 1)	76.2	Lbs
								Mulching ✳		

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

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

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

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

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

NO.	DATE	REVISIONS	BY	APP'D
02	11-25-20	Updated Seeding / Sodding Periods Charts	M.R.D.	M.L.
01	08-03-20	Revised Standard	M.R.D.	S.H.S.

KANSAS DEPARTMENT OF TRANSPORTATION

PERMANENT SEEDING SUMMARY OF SEEDING QUANTITIES

LA850

FHWA APPROVAL	05-06-19	APP'D.	Mervin Lare
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-14-2022

Sh. No. 80

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101eec850-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	81	151

SYMBOL KEY

- REMOVE SIGN
- REMOVE POST
- REMOVE FOOTING
- REMOVE SIGN & POST
- REMOVE POST & FOOTING
- REMOVE SIGN, POST, & FOOTING
- MOUNT ON WOOD POST IN CONCRETE FOOTING
- MOUNT ON WOOD POST IN SOIL
- MOUNT ON STEEL BEAM BREAKAWAY POST
- MOUNT ON STEEL U-POST
- MOUNT ON PSST POST
- MOUNT ON EXISTING POST
- MOUNT ON VERTICAL SUPPORT
- SHOULDER MOUNTED INSTALLATION
- OFFSET MOUNTED INSTALLATION
- EXISTING SIGN
- EXISTING SIGN TO BE OVERLAID
- SIGN IS NOT PART OF PROJECT
- TYPE 'A' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (RIGID) (BK-BK)
- TYPE 'B' DELINEATOR (RIGID)
- TYPE 'A' DELINEATOR (FLEXIBLE)
- TYPE 'A' DELINEATOR (FLEXIBLE) (BK-BK)
- TYPE 'B' DELINEATOR (FLEXIBLE)
- TYPE 2 OBJECT MARKER
- TYPE 3 OBJECT MARKER
- TYPE 3 OBJECT MARKER (BK-BK)

GENERAL NOTES

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

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

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

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

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

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

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

Upon completion of either the Neosho River bridge (59-67 KA-5727-01) or the Union Pacific Railroad Overpass bridge (59-50 KA-3901-01), the Contractor shall re-establish a new state route detour for the tied projects utilizing K-47 as the new east-west link connecting US-59 and US-169. All cost associated with this removal and installation of additional required signs will be paid with the contract line items.

INDEX OF SHEETS

81	SIGNING INDEX, SYMBOLS, & GENERAL NOTES
82	POST SPACING & SIGN ANGLE DETAILS
83	HEIGHT & LATERAL DISTANCE FOR ERECTION
84 - 85	POSITIONING, DESIGN, & MOUNTING FOR OBJECT MARKERS (TYPE 2 & 3)
86	PLAN SHEETS (INSTALLATIONS)
87	PLAN SHEETS (REMOVALS)
88	QUANTITIES SHEETS (INSTALLATIONS)
89	QUANTITIES SHEET (DELINEATORS & OBJECT MARKERS)
90	SUMMARY SHEET (INSTALLATIONS & REMOVALS)
91	RECAPITULATION SHEET
92	STANDARD STRUCTURAL SIGN SUPPORTS (WOOD POSTS)
93	MOUNTING OF SIGNS ON WOOD POSTS
94 - 96	DETAILS FOR FLAT SHEET SIGN BLANKS
97	KI-97 SIGN LEGEND DETAILS
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NO.	DATE	REVISIONS	BY	APP'D
2	10/01/19	Changed symbols, notes, & index	D.D.G.	E.W.N.
1	7/23/10	Changed General Notes and Spec Book Date	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGNING SYMBOL KEY
GENERAL NOTES
AND INDEX

TE402 7/1/03

FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

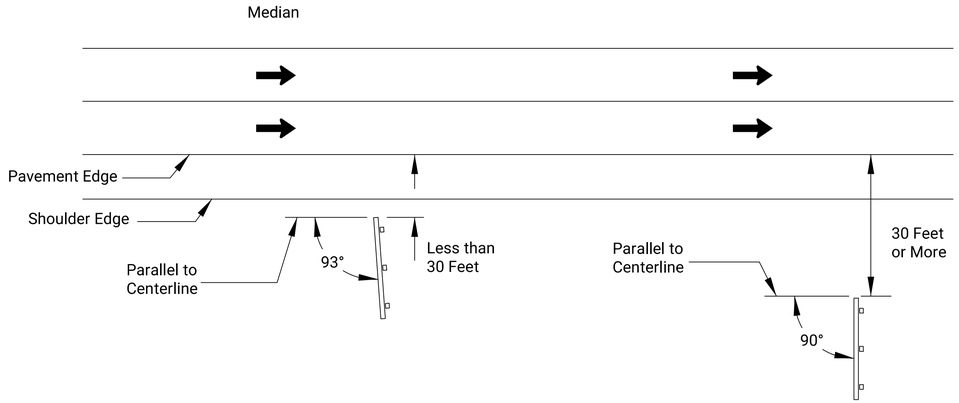
KDOT Graphics Certified 05-08-2023

Sh. No. 81

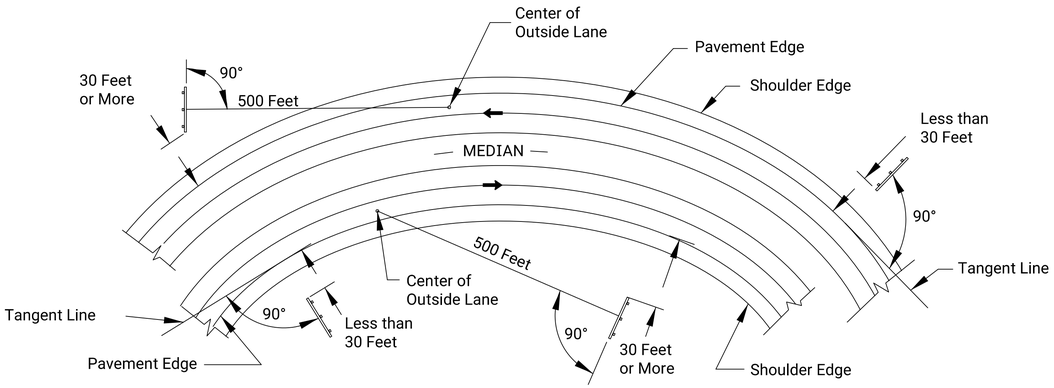
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss402-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	82	151

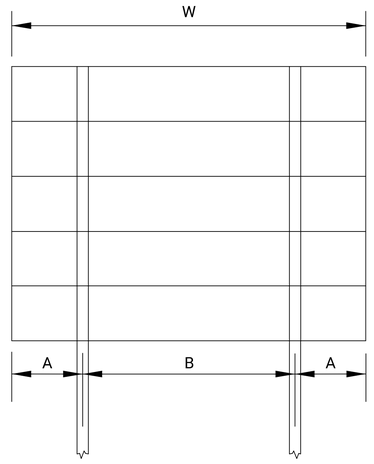


ANGLE OF SIGNS ERECTED ON STRAIGHT ROADWAY



ANGLE OF SIGNS ERECTED ON CURVED ROADWAY

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



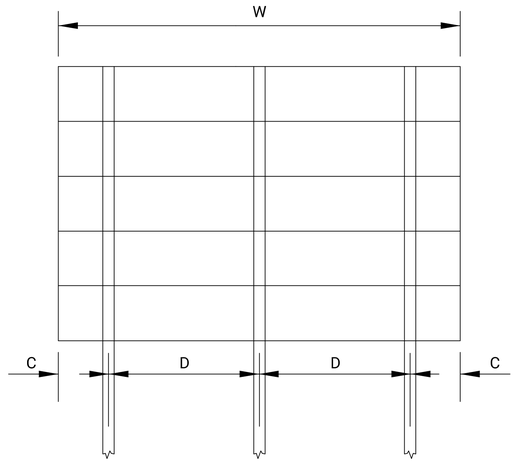
TWO POST SPACING

Wood Post		
A	B	W
6" (Min.)	⅗ W (Min.)	NA

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

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

Spacing Pattern: A+B+A
W= Sign Width
A= ⅕ W
B= ⅗ W



THREE POST SPACING

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

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

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

Spacing Pattern: C+D+D+C
W= Sign Width
C= ⅛ W
D= ⅜ W

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

POST SPACING FOR REINFORCED PANEL SIGNS

NO.	DATE	REVISIONS	BY	APP'D
1	10/01/19	Changed the post spacing tables and notes	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

POST SPACING FOR REINFORCED PANEL SIGNS AND ANGLE OF SIGNS

TE404 7/1/03

FHWA APPROVAL		10/01/2019	APP'D	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	W.S.B.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN. CK.	TRACE CK.

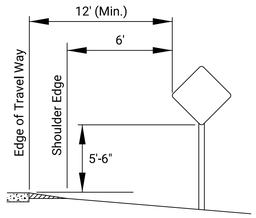
KDOT Graphics Certified 12-17-2019

Sh. No. 82

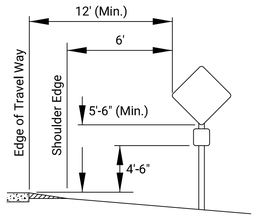
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss404-01.dgn

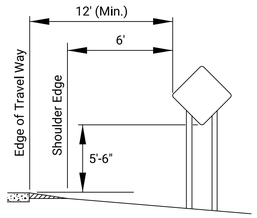
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	83	151



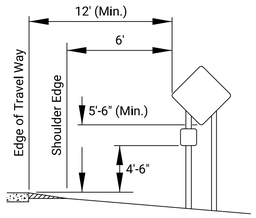
ONE POST



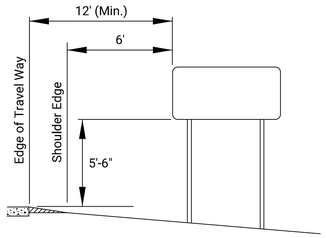
ONE POST WITH SUPPLEMENTAL SIGN



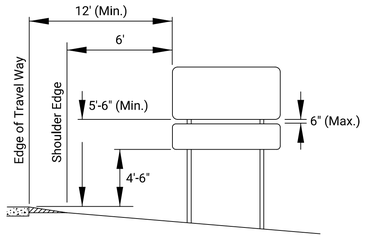
TWO POSTS



TWO POSTS WITH SUPPLEMENTAL SIGN

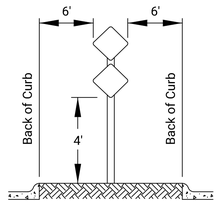


MULTIPLE POSTS

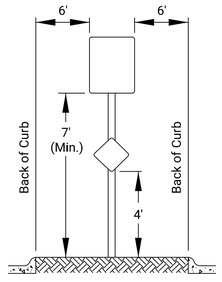


MULTIPLE POSTS WITH SUPPLEMENTAL SIGN

CONVENTIONAL HIGHWAY AND SIDE ROADS

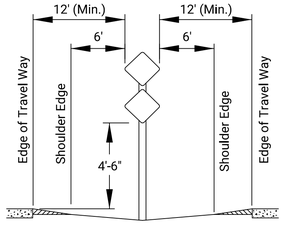


ONE OR TWO OM1-3

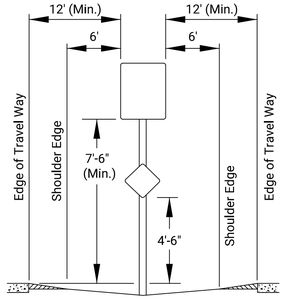


PRIMARY SIGN WITH OM1-3

RAISED



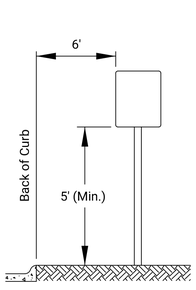
ONE OR TWO OM1-3



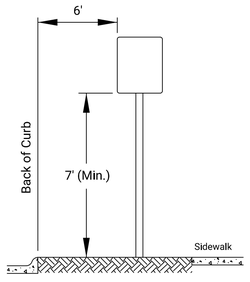
PRIMARY SIGN WITH OM1-3

DEPRESSED

MEDIANS AND ISLANDS

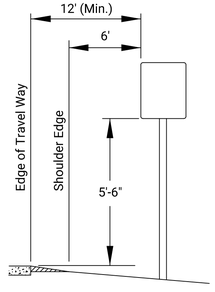


NO PARKING OR SIDEWALK



PARKING OR SIDEWALK

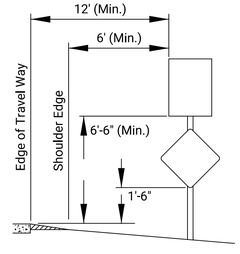
CURB



TYPICAL

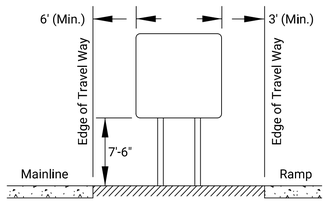
NO CURB

URBAN ROADWAYS

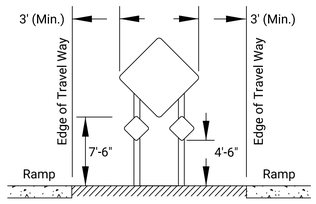


TYPICAL

ADOPT A HIGHWAY

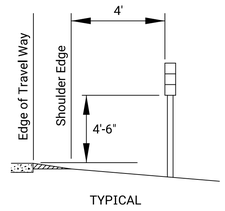


MAINLINE/RAMP



RAMP/RAMP

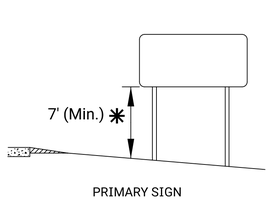
HIGHWAY GORES



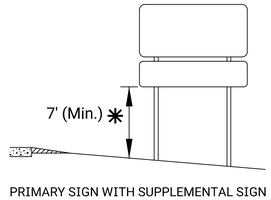
TYPICAL

Reference Marker Post: 2 Lb/Ft "U" Post

REFERENCE MARKERS



PRIMARY SIGN



PRIMARY SIGN WITH SUPPLEMENTAL SIGN

✱NOTE: Measured from the nearest point between the sign and the groundline.

GROUND CLEARANCE FOR STEEL BEAM POSTS

NOTES

The "Edge of Travel Way" is the edge line or the edge of the driving lane.

The outer edge of the sign shall not extend beyond the right of way line.

A minimum lateral clearance of 6' from pavement edge may be used where lateral offsets are limited.

In business, commercial, or residential districts where with limited lateral offsets, a minimum lateral clearance of 2' with a 7'-6" minimum mounting height may be used.

When signs are behind guard rail, the near edge of the sign shall not extend beyond the back side of the guard rail and the nearest sign post shall be a minimum of 5' from the face of the guard rail. Shoulder mounted shall not be located between 100' in advance of and 50' beyond the nose of the guard rail.

When the median or island is too narrow for the typical lateral placement, the sign may be placed a minimum of 2' from the back of the curb. In no case shall the sign edge extend beyond the back edge of the curb.

The gore sign shall be installed in the paved gore area. The edges of the gore sign shall not extend beyond the shoulder edge. The minimum distance from the centerline of the posts to the back of the paved gore area is 2'.

Signs may be moved laterally or longitudinally if it will improve visibility of the sign or other signs or if it will protect the sign more. The maximum allowable longitudinal adjustment is 100', with the exception of the reference marker which is 50'.

The minimum spacing between signs, excluding reference markers is 100'.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

MOUNTING HEIGHT & LATERAL OFFSET FOR CONVENTIONAL HIGHWAYS, SIDE ROADS, MEDIANS, ISLANDS, GORES, AND URBAN ROADWAYS

TE407 10/01/19

FHWA APPROVAL			10/01/2019	APP'D	Eric W. Nichol		
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES		TRACED	
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN. CK.		TRACE CK.	

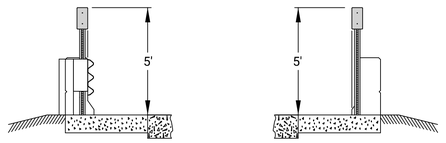
KDOT Graphics Certified 12-17-2019

Sh. No. 83

KDOT Graphics Certified

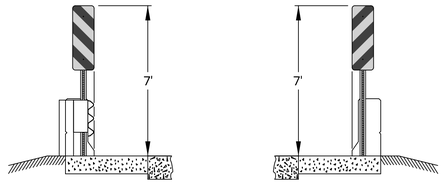
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss407-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	84	151



WITH GUARDRAIL WITHOUT GUARDRAIL

SHOULDER WIDTH 6 FEET OR GREATER (TYPE 2 OBJECT MARKER)

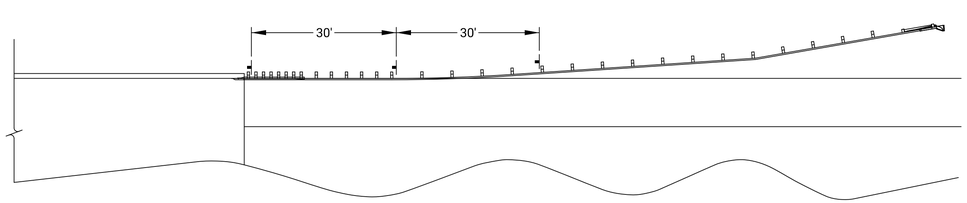


WITH GUARDRAIL WITHOUT GUARDRAIL

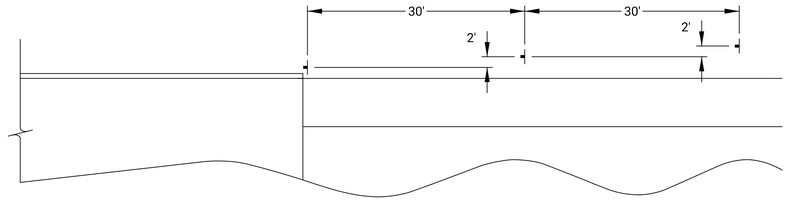
SHOULDER WIDTH LESS THAN 6 FEET (TYPE 3 OBJECT MARKER)

NOTE:
The longitudinal location of the object markers from the structure end shall be a maximum spacing of 42".

END OF STRUCTURE

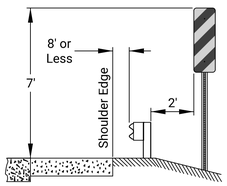


LONGITUDINAL PLACEMENT

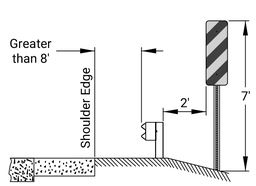


LONGITUDINAL PLACEMENT

NOTE:
The lateral offset is measured from the centerline of the object markers.

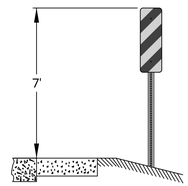


GUARDRAIL 8' OR LESS FROM SHOULDER EDGE



GUARDRAIL GREATER THAN 8' FROM SHOULDER EDGE

STRUCTURE APPROACH GUARDRAIL WITHOUT MARKERS



STRUCTURE APPROACH WITHOUT GUARDRAIL

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

DESIGN DETAILS FOR OBJECT MARKERS (TYPE 2 & 3) FOR STRUCTURES WITH PARAPETS

TE415 10-01-19

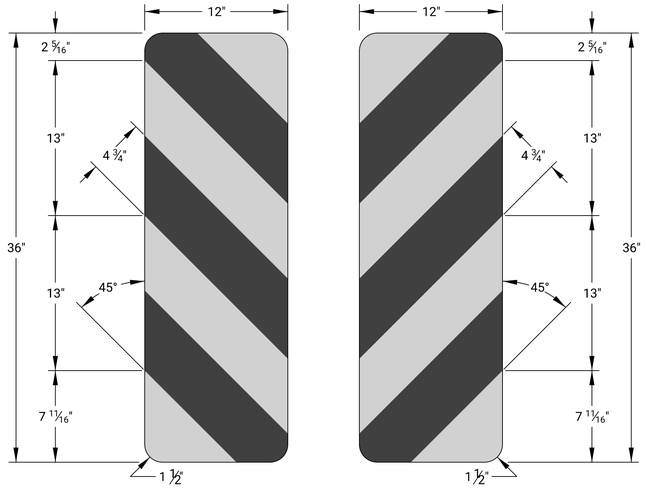
FHWA APPROVAL		10-01-19	APP'D.	Eric W. Nichol			
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES	TRACED		
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 05-25-2022 Sh. No. 84

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss415-01.dgn

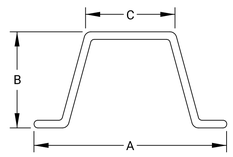
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	85	151



OM3-L

OM3-R

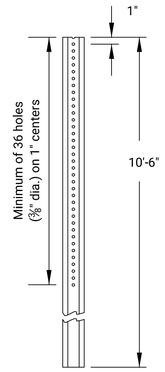
COLORS:
Yellow Background (Reflective)
Black Stripes (Non-reflective)



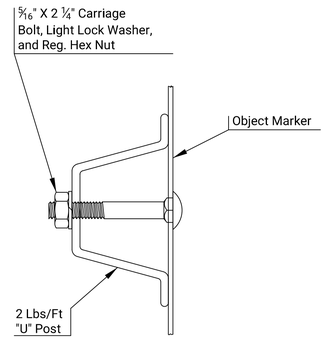
DIMENSIONS	
A	3 1/8
B	1 17/32
C	1 1/4

(Dimensions are nominal)

2 lb/ft "U" POST



PUNCHING DETAILS

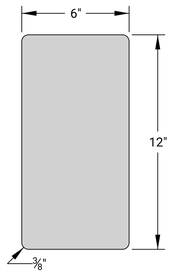


MOUNTING DETAILS

TYPE 3 OBJECT MARKER

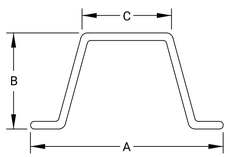
GENERAL NOTE:
See flat sheet sign blank standard sheets for the 6" x 12" and 12" x 36" sign blank details.

The object markers shall be covered with Type XI High Intensity yellow retroreflective sheeting.



OM2

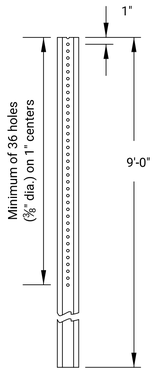
COLOR:
Yellow Background (Reflective)



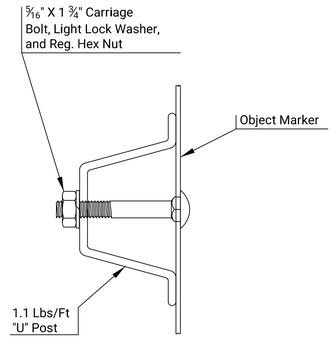
DIMENSIONS	
A	2 1/16
B	7/8
C	13/16

(Dimensions are nominal)

DELINEATOR POST
(1.1 lb/ft "U" Post)



PUNCHING DETAILS



MOUNTING DETAILS

TYPE 2 OBJECT MARKER

All dimensions are in inches unless otherwise noted.
See standard plan sheet TE590 for detailed specifications.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

DESIGN DETAILS FOR OBJECT MARKERS TYPE 2 AND TYPE 3

TE416 10-01-19

FHWA APPROVAL		10-01-19	APP'D.	Eric W. Nichol	
DESIGNED	D.D.G.	DETAILED	D.D.G.	QUANTITIES	TRACED
DESIGN CK.	E.W.N.	DETAIL CK.	E.W.N.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 07-07-2022

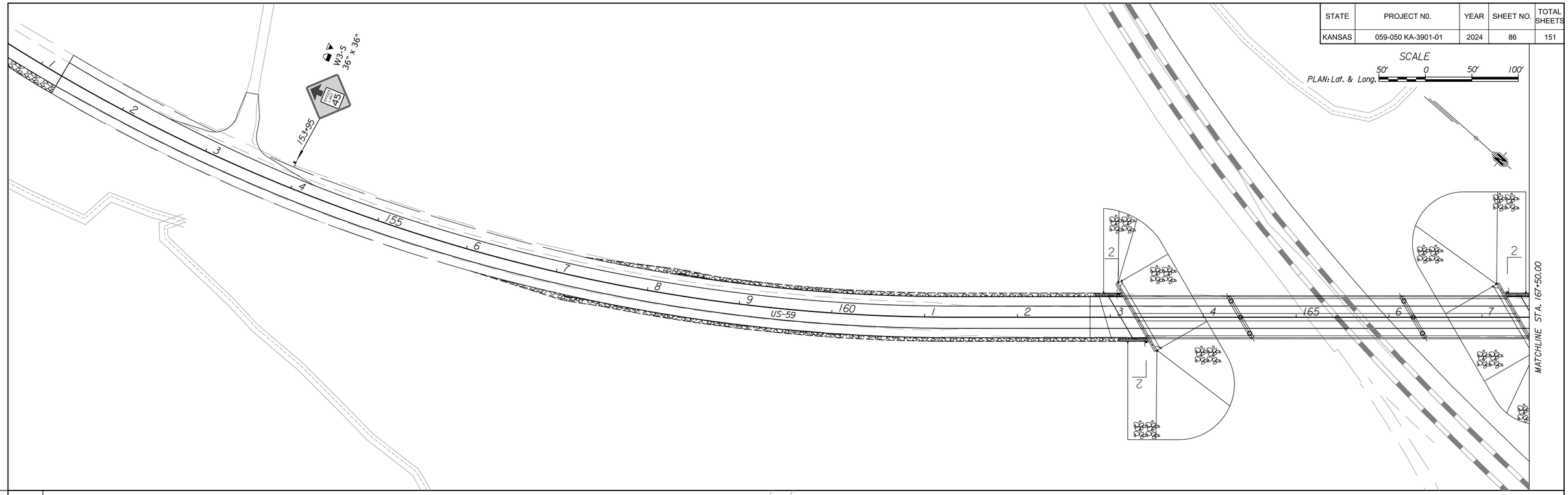
Sh. No. 85

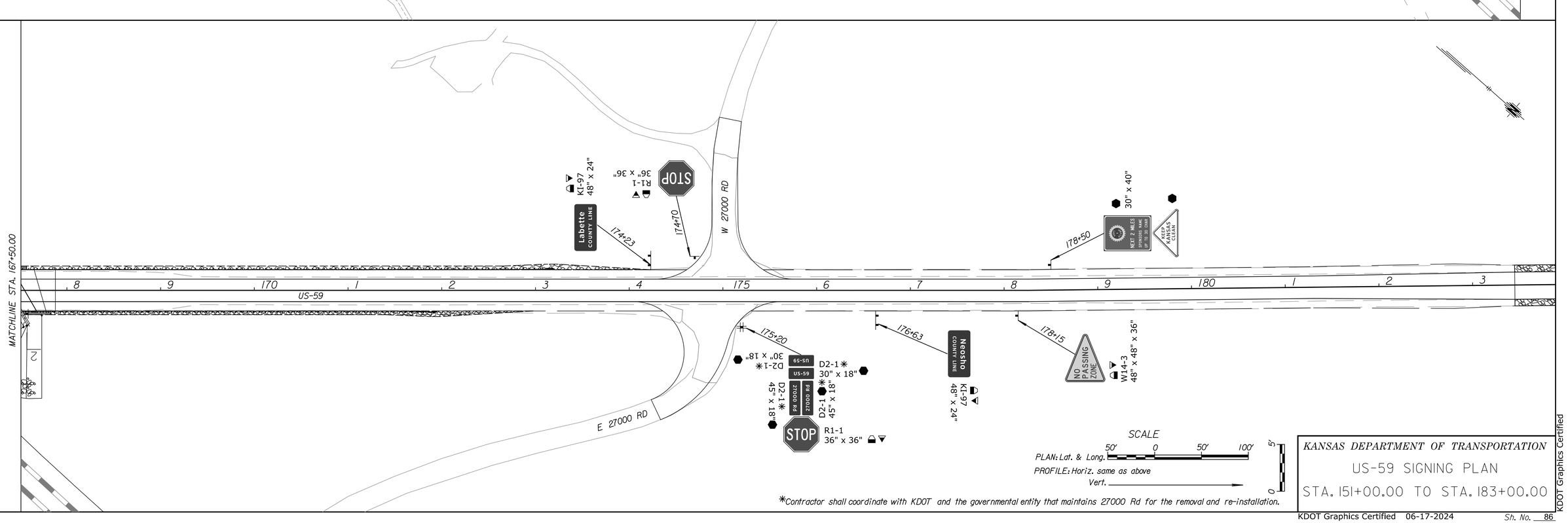
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss416-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	86	151

SCALE
PLAN: Lat. & Long. 50' 0 50' 100'





SCALE
PLAN: Lat. & Long. 50' 0 50' 100'
PROFILE: Horiz. same as above
Vert. 5' 0

*Contractor shall coordinate with KDOT and the governmental entity that maintains 27000 Rd for the removal and re-installation.

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 SIGNING PLAN

STA. 151+00.00 TO STA. 183+00.00

KDOT Graphics Certified 06-17-2024 Sh. No. 86

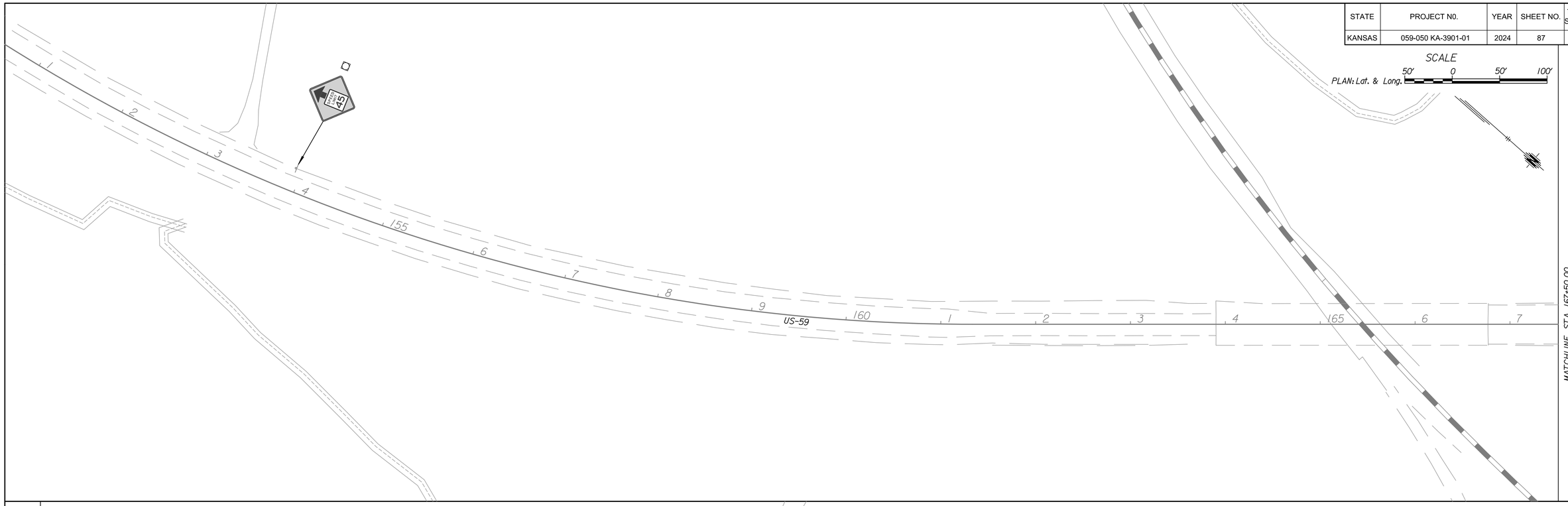
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 08-23-24
File : c:\pwworking\central01\d2186061\KA390101psl-01.dgn

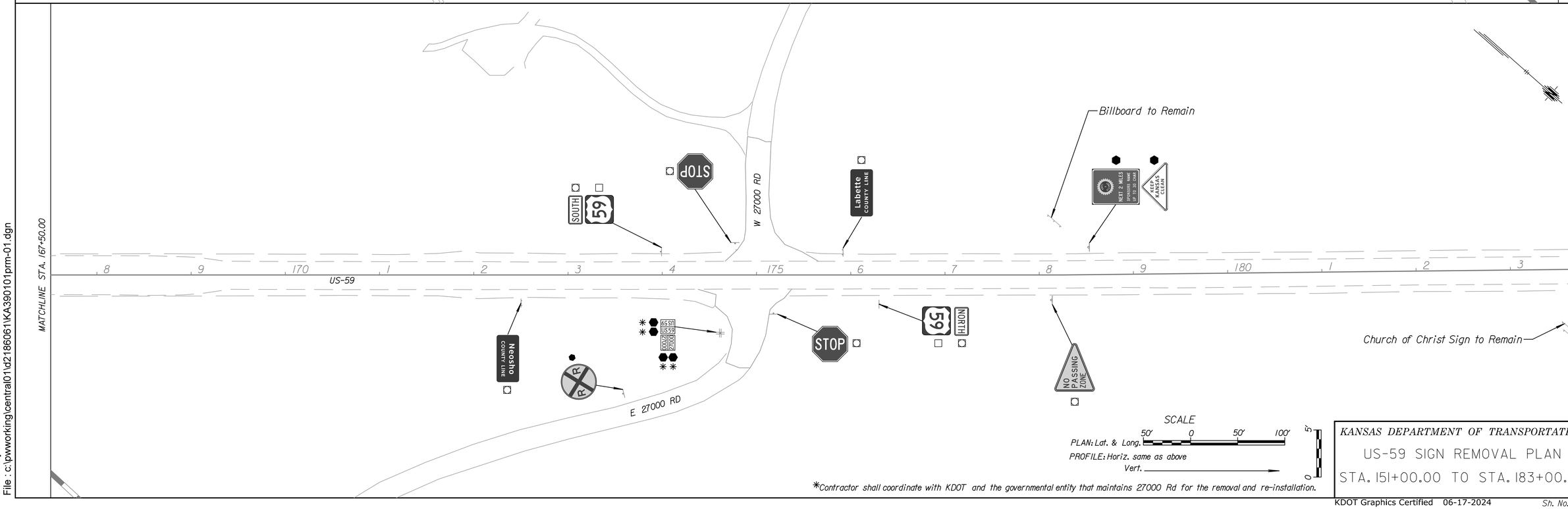
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	87	151

SCALE
50' 0 50' 100'
PLAN: Lat. & Long.

MATCHLINE STA. 167+50.00



MATCHLINE STA. 167+50.00



SCALE
50' 0 50' 100'
PLAN: Lat. & Long.
PROFILE: Horiz. same as above
Vert.

*Contractor shall coordinate with KDOT and the governmental entity that maintains 27000 Rd for the removal and re-installation.

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 SIGN REMOVAL PLAN

STA. 151+00.00 TO STA. 183+00.00

KDOT Graphics Certified 06-17-2024

Sh. No. 87

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101prm-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	88	151

QUANTITIES SHEET

SIGNS, POSTS, & FOOTINGS TO BE INSTALLED ON PROJECT

PLAN SHEET NUMBER	PLAN STATION NUMBER	CENTERLINE LOCATION / INSTALL POSITION	SIGN DESIGNATION	SIGN SIZE	SIGN LAYOUT SHEET NUMBER	TYPE OF SIGN FABRICATION			4" X 6" POSTS			3I2.25 ALUMINUM BEAM	U-POSTS		GALVANIZED STEEL BEAM POSTS						PERFORATED SQUARE STEEL TUBE (PSST) POSTS										CONCRETE FOOTINGS					SIGN STRUCTURE TYPE						VERTICAL SUPPORT MOUNT	MOUNT ABOVE GUIDE SIGN DESIGNATION
									WOOD		STEEL				W6x9		W10x12		W10x22		1 3/4"			2"			2 1/4"		2 1/2"		WOOD POST	STEEL BEAM POST										
																																A36		A572 (ALT)									
						FLAT SHEET	REINFORCED PANEL	OVERLAY	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LB PER FT	3 LB PER FT	A36	A572 (ALT)	A36	A572 (ALT)	A36	A572 (ALT)	POST	FOOTING	BRACKET	POST	FOOTING	BRACKET	POST	FOOTING	POST	FOOTING	18" DIA.	24" DIA.	30" DIA.	24" DIA.	30" DIA.	OVERHEAD	CANTILEVER	BUTTERFLY	BRIDGE MOUNT ATTACHMENT	MAST ARM	SINGLE TAPERED TUBE		
86	153+95	L/S	W3-5	36" x 36"		X			1																																
86	174+23	L/S	KI-97	48" x 24"		X			2																																
86	174+70	L/S	R1-1	36" x 36"		X			1																																
86	175+20	R/S	R1-1	36" x 36"		X			1																																
86	176+63	R/S	KI-97	48" x 24"		X			2																																
86	178+15	R/S	W14-3	48" x 48" x 36"		X			1																																

CENTERLINE LOCATION
L or LL - Left of Centerline
R or RR - Right of Centerline
C - On the Centerline

INSTALL POSITION
S - Shoulder Mount
O - Offset Mount
G - Gore Mount
M - Median Mount
OH - Overhead Mount

NOTE: See standard plan sheet TE590 for detailed specifications.

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Added Tapered Tube. Removed Couplers.	D.D.G.	E.W.N.
01	07-23-10	Added Coupler and Coupler/Footing Quantity	D.D.G.	D.B.

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.S.	QUANTITIES	TRACED D.B.
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

TE430

07-01-03

KDOT Graphics Certified 07-07-2022

Sh. No. 88

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101pss430-01.dgn
Plotted : 06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	89	151

QUANTITIES SHEET

DELINEATORS AND OBJECT MARKERS

			RIGID DELINEATORS												FLEXIBLE DELINEATORS												OBJECT MARKERS				
			TYPE 'A'								TYPE 'B'				TYPE 'A'								TYPE 'B'				TYPE 2	TYPE 3			
			WHITE		WHITE (BACK TO BACK)		YELLOW		YELLOW (BACK TO BACK)		WHITE		YELLOW		WHITE		WHITE (BACK TO BACK)		YELLOW		YELLOW (BACK TO BACK)		WHITE		YELLOW						
BEGINNING STATION	ENDING STATION	LOCATION DESCRIPTION	'U' POST	BRACKET MOUNT	'U' POST	BRACKET MOUNT	'U' POST	BRACKET MOUNT	'U' POST	BRACKET MOUNT	'U' POST	BRACKET MOUNT	'U' POST	BRACKET MOUNT	TYPE I ANCHOR	TYPE III ANCHOR	TYPE I ANCHOR	TYPE III ANCHOR	TYPE I ANCHOR	TYPE III ANCHOR	TYPE I ANCHOR	TYPE III ANCHOR	TYPE I ANCHOR	TYPE III ANCHOR	TYPE I ANCHOR	TYPE III ANCHOR	'U' POST	'U' POST	'U' POST	'U' POST	BACK TO BACK 'U' POST
163+07	163+07	US-59 Bridge NB Approach																									1				
163+37	163+37	US-59 Bridge NB Approach																									1				
167+29	167+29	US-59 Bridge SB Approach																									1				
167+59	167+59	US-59 Bridge SB Approach																									1				

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss436-01.dgn

NO.	DATE	REVISIONS	BY	APP'D
01	10-09-21	Added delineator & object marker types	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

QUANTITIES SHEET
DELINEATORS & OBJECT MARKERS

TE436 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED D.D.G.	DETAILED K.D.S.		QUANTITIES	TRACED	
DESIGN CK. S.A.B.	DETAIL CK. D.D.G.		QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 05-11-2022

Sh. No. 89

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	90	151

SUMMARY OF QUANTITIES

SIGNS

TYPE	NUMBER	SQUARE FEET
FLAT SHEET	6	42.48
REINFORCED PANEL		
OVERLAY		

DELINEATORS

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

OBJECT MARKERS

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

POSTS AND ALUMINUM BEAMS

	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
NUMBER	8															
FEET	102															

POST FOOTINGS AND BRACKETS

	CONCRETE FOOTING (DIA.)					PERFORATED SQUARE STEEL					
						TUBE FOOTING				BRACKET	
	WOOD	A36 STEEL		A572 STEEL (ALT)							
	18"	24"	30"	24"	30"	1-3/4"	2"	2-1/4"	2-1/2"	1-3/4"	2"
NUMBER											
FEET											

BASE PLATES AND STUB POSTS

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

REMOVALS

TYPE	NUMBER
SIGNS	10
POSTS	10
FOOTINGS	
SIGN STRUCTURES	

NUMBER & LENGTHS OF POSTS & ALUMINUM BEAMS (INFORMATION ONLY)

LENGTH OF POST OR BEAM	4" x 6" POST			3I2.25 ALUMINUM BEAM	"U" POST		GALVANIZED STEEL BEAM POST						PERFORATED SQUARE STEEL TUBE (PSST)			
	WOOD		STEEL				W6x9		W10x12		W10x22					
	FLAT SHEET SIGN	REINFORCED PANEL SIGN	STRUCTURAL TUBING		2 LBS/FT	3 LBS/FT	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	A36 STEEL	A572 STEEL (ALT)	1-3/4"	2"	2-1/4"	2-1/2"
2.1' - 4'																
4.1' - 6'																
6.1' - 8'																
8.1' - 10'																
10.1' - 12'																
12.1' - 14'	7															
14.1' - 16'																
16.1' - 18'	1															
18.1' - 20'																
20.1' - 22'																
22.1' - 24'																
24.1' - 26'																
26.1' - 28'																
28.1' - 30'																
30.1' - 32'																

SIGN STRUCTURES

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

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Revised Tables	D.D.G.	E.W.N.
01	07-23-10	Revised Tables	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES
FOR
INSTALLATIONS AND REMOVALS

TE439 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	K.D.S.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-25-2022

Sh. No. 90

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pw\working\central01\d2186061\KA390101pss439-01.dgn

KDOT Graphics Certified

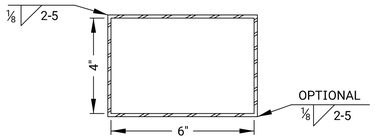
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	91	151

RECAPITULATION OF SIGNING & DELINEATION BID ITEMS

BID ITEMS	APPROXIMATE QUANTITIES		UNITS
SIGN (FLAT SHEET) (HIGH PERFORMANCE)	42.48		SQUARE FOOT
SIGN (REINFORCED PANEL) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN (OVERLAY) (HIGH PERFORMANCE)			SQUARE FOOT
SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)	102		LINEAR FOOT
SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN)			LINEAR FOOT
SIGN POST (2 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (3 LB/FT "U" STEEL)			LINEAR FOOT
SIGN POST (1-3/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/4" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (2-1/2" PERFORATED SQUARE STEEL TUBE)			LINEAR FOOT
SIGN POST (4" X 6" STRUCTURAL STEEL)			LINEAR FOOT
SIGN POST (3 I 2.25 ALUMINUM)			LINEAR FOOT
	A36	A572(ALT)	
SIGN POST (W6X9 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X12 STEEL BEAM)			LINEAR FOOT
SIGN POST (W10X22 STEEL BEAM)			LINEAR FOOT
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST STUB WITH BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST BREAKAWAY BASE PLATE (W6X9)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X12)			EACH
SIGN POST BREAKAWAY BASE PLATE (W10X22)			EACH
SIGN POST FOOTING (24" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (30" Dia. CONCRETE)(STEEL BEAM POST)			LINEAR FOOT
SIGN POST FOOTING (18" Dia. CONCRETE)(WOOD POST)			LINEAR FOOT
SIGN POST FOOTING (1-3/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/4" PERFORATED SQUARE STEEL TUBE)			EACH
SIGN POST FOOTING (2-1/2" PERFORATED SQUARE STEEL TUBE)			EACH
SIGNING OBJECT MARKER (TYPE 2)	4		EACH
SIGNING OBJECT MARKER (TYPE 3)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW RIGID, "U" POST)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE I ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE A)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(WHITE FLEXIBLE)(TYPE 3 ANCHOR)			EACH
SIGNING DELINEATOR (TYPE B)(YELLOW FLEXIBLE)(TYPE 3 ANCHOR)			EACH

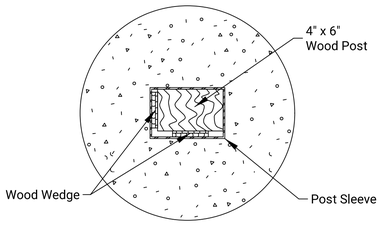
BID ITEMS	APPROXIMATE QUANTITIES	UNITS

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	92	151

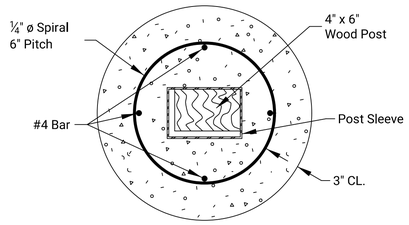


NOTE: Dimensions are to inside of post sleeve.

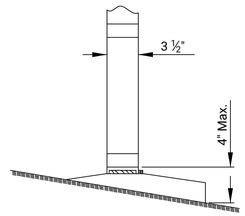
POST SLEEVE



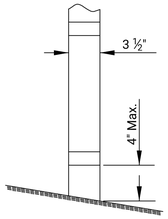
SECTION A-A



SECTION B-B



FRONT ELEVATION
CONCRETE FOOTING



FRONT ELEVATION
SOIL

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

BREAKAWAY CLEARANCE

GENERAL NOTES

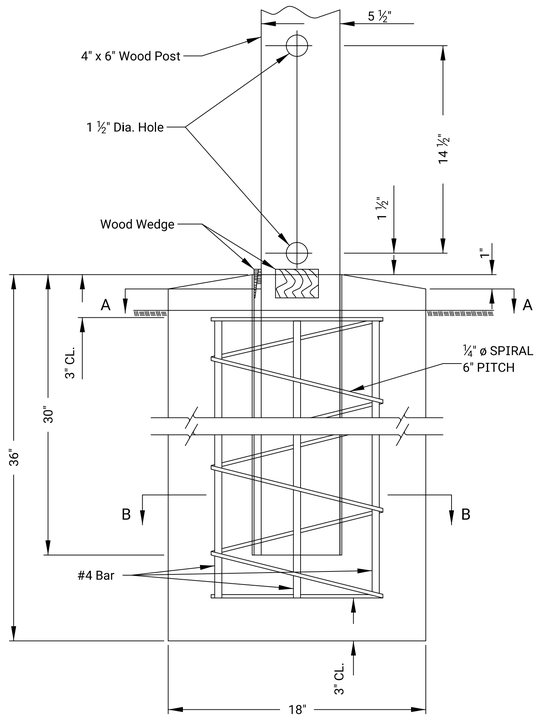
The post sleeve shall be formed from 10 gauge sheet steel to meet the requirements of ASTM A653 and zinc coated to meet the requirements of coating designation A123. If galvanized sheet steel is used, no other galvanization is required. It is permissible to close the bottom of the sleeve with a metal plate. Basis of acceptance shall be visual inspection of the finished sleeve and determination of zinc thickness by magnetic gage.

All sign mounting holes in the wood posts shall be drilled prior to treating.

Breakaway holes, field drilled sign mounting holes, and field cuts shall be treated in accordance with the preservative treatment specifications.

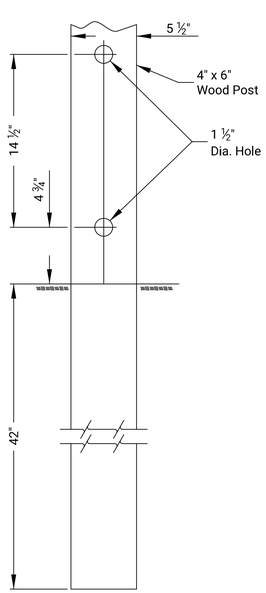
Prior to sealing the opening between the wood post and the top of the concrete footing, secure the post by placing 3" wide by 2" long wood wedges into the opening on two adjacent sides of the post. The wedges are be flush with up to a maximum of ⅜" sticking up above the top of the footing.

Commercial grade concrete may be substituted for sign support footings.



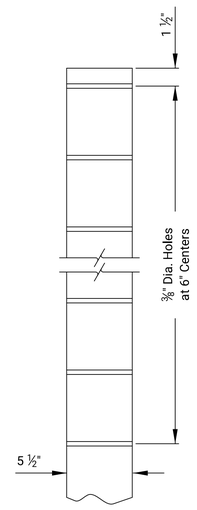
SIDE ELEVATION

WOOD POST IN CONCRETE FOOTING



SIDE ELEVATION

WOOD POST IN SOIL



SIGN POST

SIGN MOUNTING HOLES

All dimensions in inches unless otherwise noted.

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Change details and note	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR WOOD POSTS

TE460 07-01-03

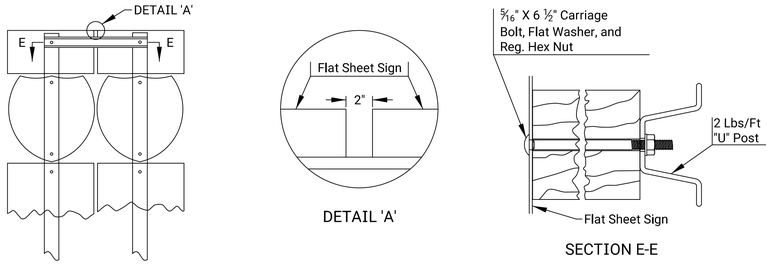
FHWA APPROVAL			10-01-19	APP'D.	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED		
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 05-26-2022 Sh. No. 92

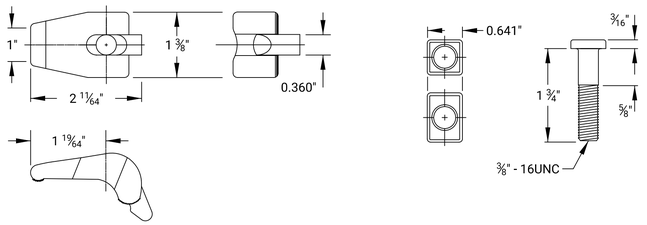
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss460-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	93	151



ROUTE MARKER ASSEMBLIES ATTACHMENT



ALUMINUM POST CLIP AND POST CLIP BOLT

NOTES:

The top of the post shall not extend above the top of the sign.

When signs are mounted back to back, the signs shall be mounted at their prescribed height. In general installations, the bottom holes of the signs should be aligned. In order to prevent having to drill holes in the signs or posts, the sign on the back should be raised and positioned such that the holes are aligned. When a sign is mounted on the back of the R1-1 (Stop) sign, that sign is to be centered vertically on the R1-1 sign. When a sign is mounted on the back of the R1-2 (Yield) sign, the top holes of the signs should be aligned.

The primary sign and supplemental sign are to be mounted at their prescribed height, but under no circumstances shall the signs overlap each other. If the primary sign cannot be mounted without overlapping, then it shall be raised above the supplemental sign.

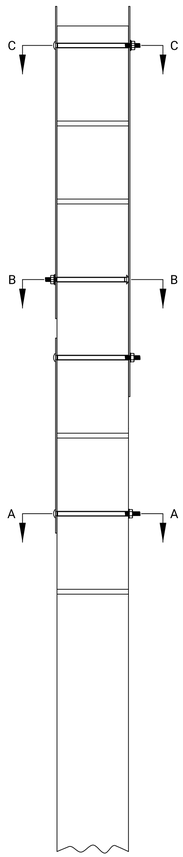
Any additional mounting holes, either through the sign or post, shall be drilled by the contractor. All holes drilled in the post shall be treated with a perservative. All holes drilled in the sign shall be free of any defects and the sheeting around the hole shall not be damaged.

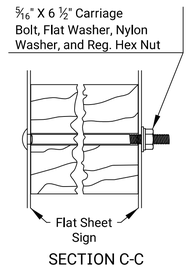
A nylon washer shall be placed against the sheeting when a nut is to be tightened against the sign face.

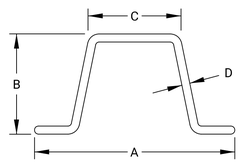
The 3 lb/ft steel "U" post used for reinforced panel sign installations is to be included in the bid item 'SIGN POST (4" x 6" WOOD) (REINFORCED PANEL SIGN)'.

When the 2 lb/ft steel "U" post is used for the route marker assemblies attachment, it shall be subsidiary to the bid item 'SIGN POST (4" x 6" WOOD) (FLAT SHEET SIGN)'.

The aluminum post clip bolt may have a rectangular head if the smaller dimension is equal to the square head dimension.



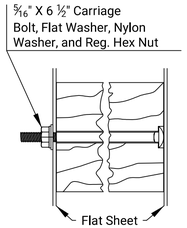


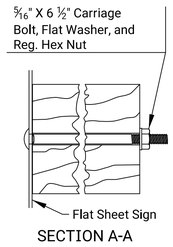


DIM.	2 LBS/FT	3 LBS/FT
A	3 1/8 "	3 1/2 "
B	1 17/32 "	1 3/4 "
C	1 1/4 "	1 5/8 "
D	1/8 "	9/64 "

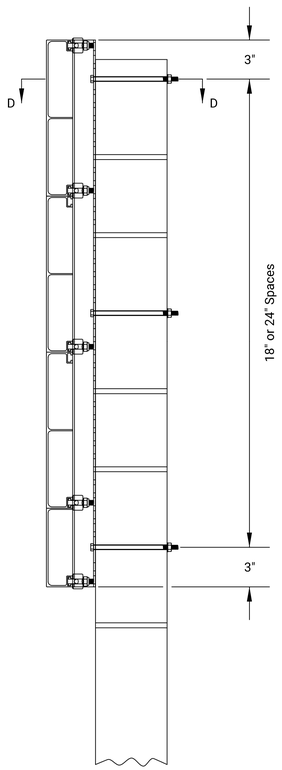
(DIMENSIONS ARE NOMINAL)

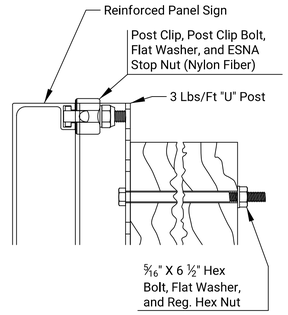
"U" POST

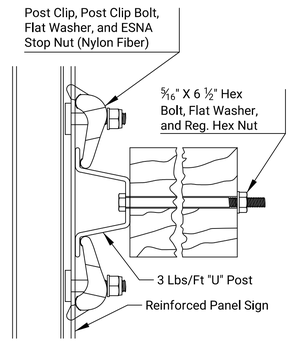




TYPICAL MOUNTING OF FLAT SHEET SIGNS







TYPICAL MOUNTING OF REINFORCED PANEL SIGNS

All dimensions are in inches

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Revised drawings and notes	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS FOR MOUNTING SIGNS ON WOOD POST FLAT SHEET AND REINFORCED PANEL

TE481 07-01-03

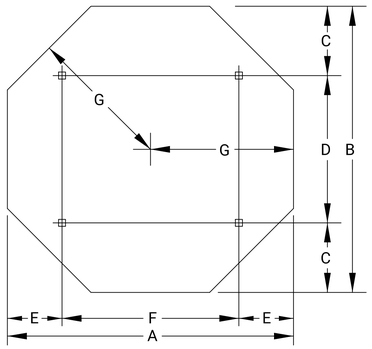
FHWA APPROVAL			10-01-19	APP'D.	Steven A. Buckley
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

KDOT Graphics Certified 05-26-2022 Sh. No. 93

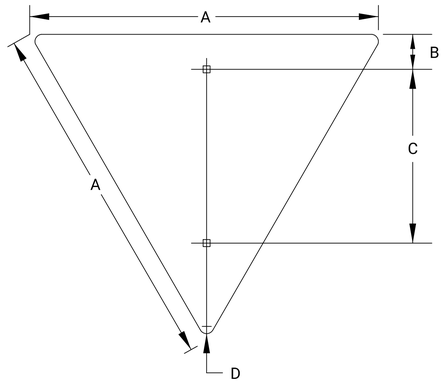
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss481-01.dgn

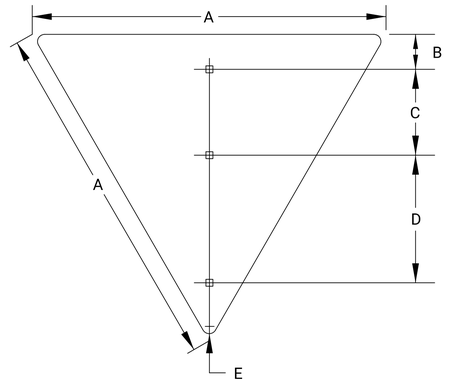
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	94	151



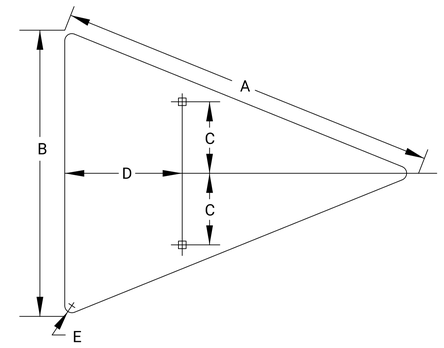
SIGN SIZE	A	B	C	D	E	F	G	T	AREA
48 X 48	48	48	12	24	9	30	24	0.100	13.25



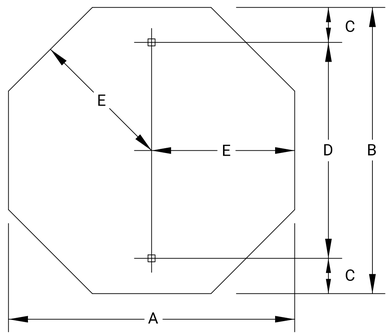
SIGN SIZE	A	B	C	D	T	AREA
36 X 36	36	3	18	2	0.080	3.90



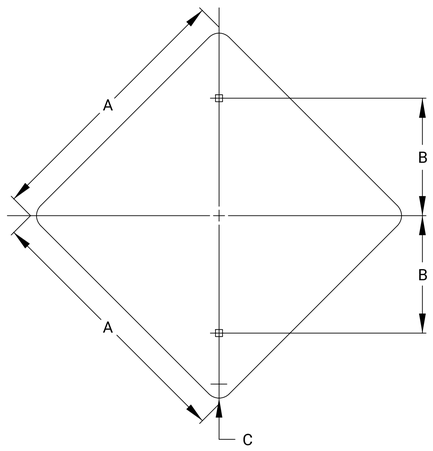
SIGN SIZE	A	B	C	D	E	T	AREA
48 X 48	48	3	12	18	3	0.080	6.93
60 X 60	60	3	18	18	4	0.100	10.83



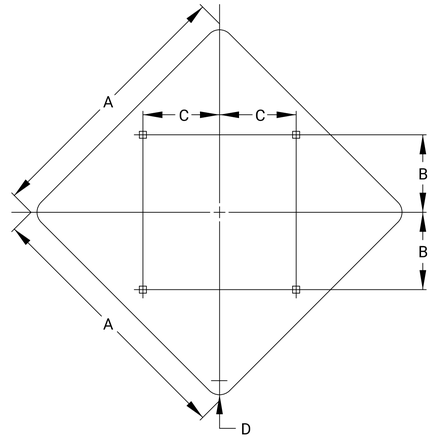
SIGN SIZE	A	B	C	D	E	T	AREA
48 X 36	48	36	9	14 ¾	2 ¼	0.125	5.56



SIGN SIZE	A	B	C	D	E	T	AREA
30 X 30	30	30	3	24	15	0.080	5.18
36 X 36	36	36	6	24	18	0.080	7.46



	SIGN SIZE	A	B	C	T	AREA
	18 X 18	18	6	1 ½	0.080	2.25
	24 X 24	24	12	1 ½	0.080	4.00
	30 X 30	30	12	1 ⅞	0.080	6.25
(1)	36 X 36	36	18	2 ¼	0.080	9.00



SIGN SIZE	A	B	C	D	T	AREA
48 X 48	48	12	15	3	0.100	16.00

NOTE:
All holes are 3/8 " square unless otherwise noted.

The dimension "t" is the thickness of the aluminum blank.

(1) Center hole is required.

All dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Update sign blank details and dimensions	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGN BLANK DETAILS FOR FLAT SHEET SIGNS

TE503 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

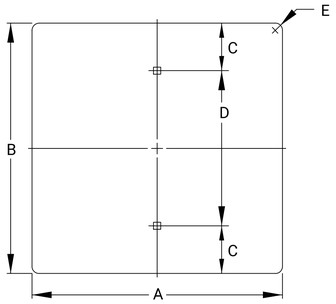
KDOT Graphics Certified 05-26-2022

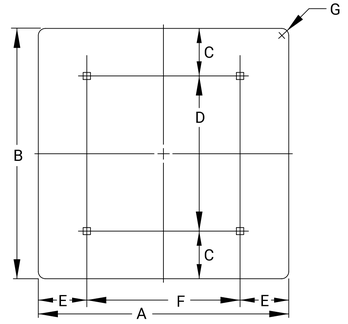
Sh. No. 94

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss503-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	95	151





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

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

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

NOTE:
All holes are 3/8" square, unless otherwise noted.

The dimension "T" is the thickness of the aluminum blank.

(1) Holes shall be 5/16" diameter.

(2) Dimension "D" requires a center hole.

(3) Additional hole 12" below top hole.

All dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Updated sign blank details and dimensions	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGN BLANK DETAILS FOR FLAT SHEET SIGNS

TE506 07-01-03

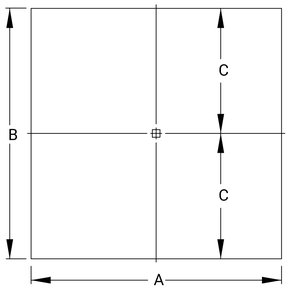
FHWA APPROVAL			10-01-19	APP'D.	Steven A. Buckley		
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED		
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.		

KDOT Graphics Certified 05-26-2022 Sh. No. 95

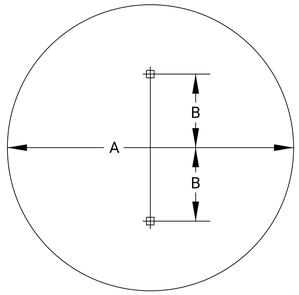
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA3901O1pss506-01.dgn

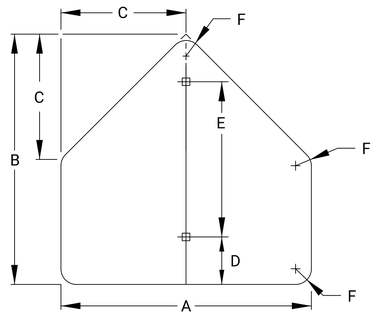
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	96	151



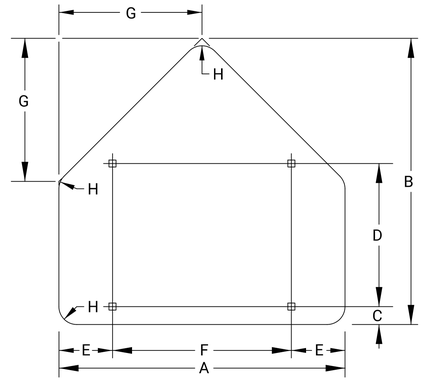
SIGN SIZE	A	B	C	T	AREA
6 X 6	6	6	3	0.063	0.25



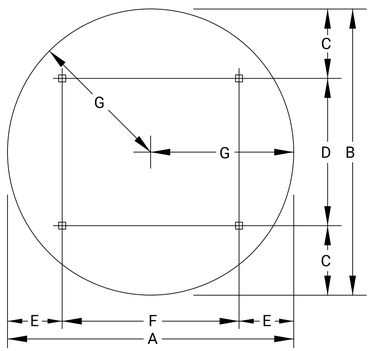
SIGN SIZE	A	B	T	AREA
36 DIA	36	12	0.080	7.07



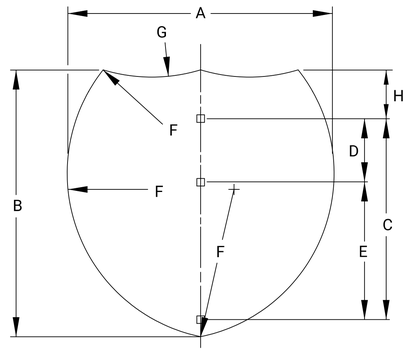
SIGN SIZE	A	B	C	D	E	F	T	AREA
30 X 30	30	30	15	3	24	1 ⅞	0.080	4.69
36 X 36	36	36	18	6	24	2 ¼	0.080	6.75



SIGN SIZE	A	B	C	D	E	F	G	H	T	AREA
48 X 48	48	48	3	24	9	30	24	3	0.100	12.00



SIGN SIZE	A	B	C	D	E	F	G	T	AREA
48 X 48	48	48	12	24	9	30	24	0.100	12.57



INDEPENDENT USE

DIMENSIONS										
SIZE	A	B	C	D	E	F	G	H	T	AREA
24 X 24	24	24	18	-	-	15	15	3	0.080	3.20
36 X 36	36	36	30	12	18	22 ½	22 ½	3	0.080	7.20
30 X 24	30	24	18	-	-	17	24	3	0.080	3.99
45 X 36	45	36	30	12	18	25 ½	36	3	0.100	8.99

NOTE:
All holes are ⅜" square, unless otherwise noted.
Dimension "T" is the thickness of the aluminum blank.

All dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
01	10-01-19	Updated sign blank details and dimensions	D.D.G.	E.W.N.

KANSAS DEPARTMENT OF TRANSPORTATION

SIGN BLANK DETAILS FOR FLAT SHEET SIGNS

TE509 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED	A.A.D.	QUANTITIES	TRACED
DESIGN CK.	S.A.B.	DETAIL CK.	D.D.G.	QUAN.CK.	TRACE CK.

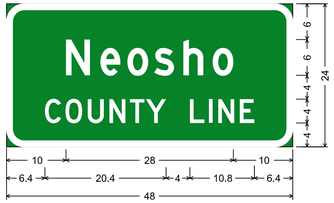
KDOT Graphics Certified 05-26-2022

Sh. No. 96

KDOT Graphics Certified

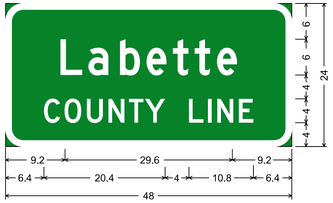
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss509-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	97	151



I97/CONVENTIONAL;
3.0" Radius, 1.0" Border, White on Green;
"Neosho", D;
"COUNTY LINE", D;
Table of distances between letter and object lefts

	N	e	o	s	h	o			
10.0	5.7	4.6	4.4	5.0	4.9	3.4	10.0		
	C	O	U	N	T	Y			
6.4	3.5	3.7	3.7	3.4	2.7				
		L	I	N	E				
	7.4	3.1	1.6	3.6	2.5	6.4			



I97/CONVENTIONAL;
3.0" Radius, 1.0" Border, White on Green;
"Labette", D;
"COUNTY LINE", D;
Table of distances between letter and object lefts

	L	a	b	e	t	t	e		
9.2	4.7	5.3	4.4	4.5	3.6	3.8	3.3	9.2	
	C	O	U	N	T	Y			
6.4	3.5	3.7	3.7	3.4	2.7				
		L	I	N	E				
	7.4	3.1	1.6	3.6	2.5	6.4			

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101csl-01.dgn

KANSAS DEPARTMENT OF TRANSPORTATION

DESIGN DETAILS FOR SIGNS

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	98	151

DETAILED SPECIFICATIONS FOR FLAT SHEET SIGNS AND OVERLAY PANELS

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

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

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

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

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

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

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

DETAILED SPECIFICATIONS FOR REINFORCED PANEL SIGNS

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

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

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

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

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

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

Spacing table dimensions are in inches.

NO.	DATE	REVISIONS	BY	APP'D
02	10-01-19	Changed notes	D.D.G.	E.W.N.
01	07-23-10	Changed Notes and Sheeting Type	D.D.G.	D.B.

KANSAS DEPARTMENT OF TRANSPORTATION

DETAILS SPECIFICATIONS FOR REINFORCED SIGN PANELS AND FLAT SHEET SIGNS

TE590 07-01-03

FHWA APPROVAL		10-01-19	APP'D.	Steven A. Buckley	
DESIGNED	D.D.G.	DETAILED K.D.S.	QUANTITIES	TRACED	
DESIGN CK.	S.A.B.	DETAIL CK. D.D.G.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 05-24-2022

Sh. No. 98

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101pss590-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	99	151

US-59 STA 151+25.00 Begin Permanent Striping 059-050 KA3901-01
Match Existing Permanent Striping 59-50-F067-1(31)
Begin 6" Solid White Edge Line (Lt. & Rt.)
Begin 4" Broken Yellow Line (Lt.)
Begin 4" Solid Yellow Line (Rt.)

6" Solid White Edge Line

4" Solid Yellow Line (Rt.)

4" Broken Yellow Line (Lt.)

4" Solid Double Yellow Line

161+75.00
End 4" Broken Yellow Line (Lt.)
End 4" Solid Yellow Line (Rt.)
Begin 4" Solid Double Yellow Line

SCALE
PLAN: Lat. & Long. 50' 0 50' 100'

MATCHLINE STA. 167+50.00

MATCHLINE STA. 167+50.00

4" Solid Double Yellow Line
6" Solid White Edge Line

169+00.00
End 4" Solid Double Yellow Line
Begin 4" Solid Yellow Line (Lt.)
Begin 4" Broken Yellow Line (Rt.)

4" Solid Yellow Line (Lt.)
4" Broken Yellow Line (Rt.)

174+10.00
End 6" Solid White Edge Line (Rt.)

174+30.00
End 6" Solid White Edge Line (Lt.)
End 4" Solid Yellow Line (Lt.)
End 4" Broken Yellow Line (Rt.)

175+70.00
Begin 6" Solid White Edge Line (Lt.)

4" Solid Yellow Line (Lt.)
4" Broken Yellow Line (Rt.)

178+15.00
End 4" Solid Yellow Line (Lt.)

175+60.00
Begin 4" Solid Yellow Line (Lt.)
Begin 4" Broken Yellow Line (Rt.)
Begin 6" Solid White Edge Line (Rt.)

6" Solid White Edge Line

4" Broken Yellow Line

US-59 STA 183+45.00 End Permanent Striping 059-050 KA3901-01
Match Existing Permanent Striping 59-50-F067-1(31)
End 6" Solid White Edge Line (Lt. & Rt.)
End 4" Broken Yellow Line

SCALE
PLAN: Lat. & Long. 50' 0 50' 100'

KANSAS DEPARTMENT OF TRANSPORTATION

US-59 PAVEMENT MARKING PLAN
STA. 151+25.00 TO STA. 183+45.00

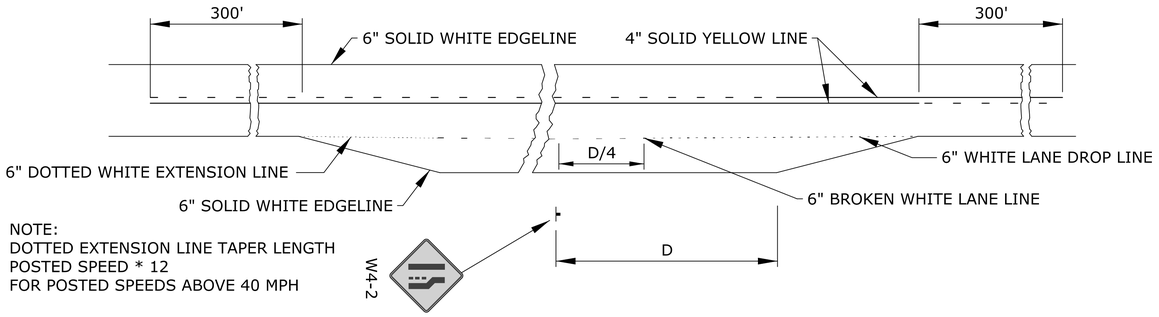
KDOT Graphics Certified 12-21-2023

Sh. No. 99

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901010 1mpl-01.dgn
Plotted : 08-23-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	100	151

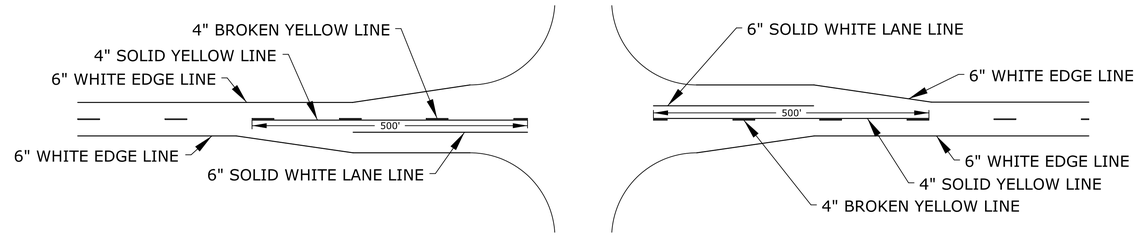


NOTE:
DOTTED EXTENSION LINE TAPER LENGTH
POSTED SPEED * 12
FOR POSTED SPEEDS ABOVE 40 MPH

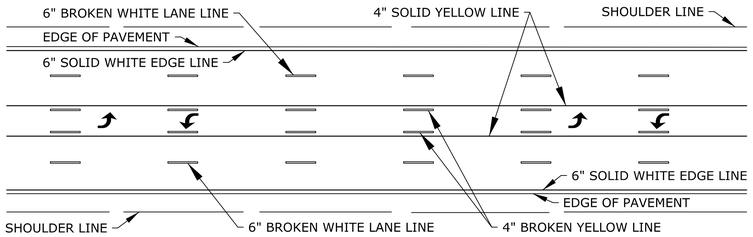
TYPICAL MARKING FOR AUXILIARY PASSING LANE

NOTE:
ALL PAVEMENT MARKINGS SHALL BE BROKEN AT CROSS ROADS.

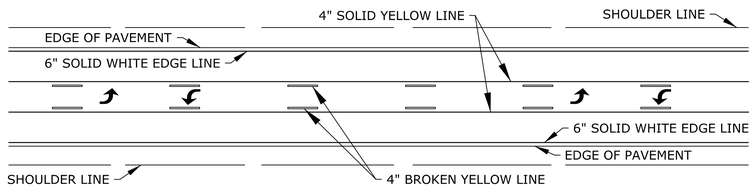
FOR HIGHWAY JUNCTIONS THE NO PASSING ZONE WILL EXTEND 1000' FROM INTERSECTION.



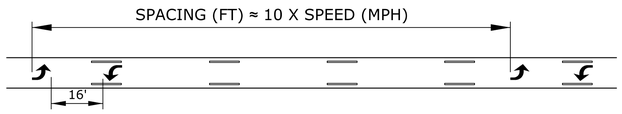
TYPICAL ROAD JUNCTION MARKINGS WITH BYPASS LANES



TWO-WAY LEFT TURN DETAIL FOR FIVE LANE ROADWAY

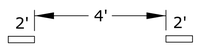


TWO-WAY LEFT TURN DETAIL FOR THREE LANE ROADWAY

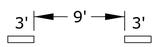


TWO-WAY LEFT TURN ARROW SPACING DETAIL

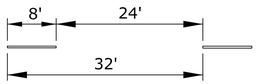
NOTE:
IF ARROWS ARE USED SPACE THE ARROWS AS SHOWN IN THE SPACING DETAIL.



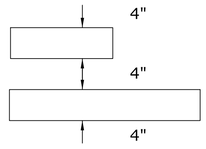
TYPICAL SPACING FOR DOTTED EXTENSION LINES, UNLESS OTHERWISE NOTED ON PLANS.



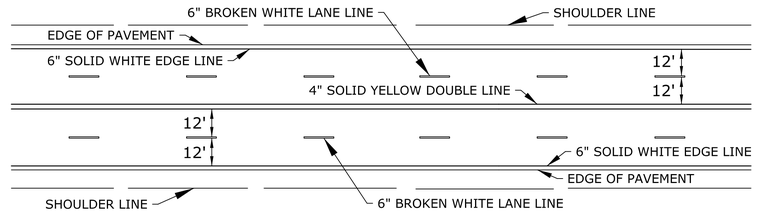
TYPICAL SPACING FOR LANE DROP. UNLESS OTHERWISE NOTED ON PLANS.



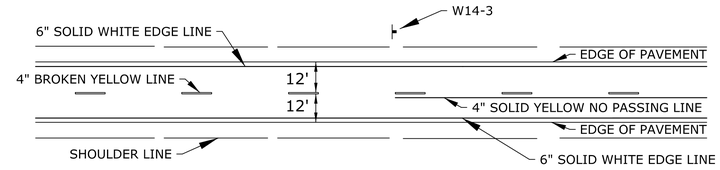
TYPICAL SPACING FOR BROKEN LINES UNLESS OTHERWISE NOTED ON PLANS



TYPICAL SPACING FOR NO PASSING LINES UNLESS OTHERWISE NOTED ON PLANS



TYPICAL MARKINGS FOR FOUR LANE ROADWAY



TYPICAL TWO LANE MARKINGS

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

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

NO.	DATE	REVISIONS	BY	APP'D
3	5/25/12	Added Dotted Extension and Lane Drop Lines	B.A.H.	B.D.G.
2	9/20/05	Removed Aux. Passing Lane Dotted Ext. Line	J.F.F.	B.D.G.
1	7/26/05	New FHWA Approval Date	J.F.F.	B.D.G.

KANSAS DEPARTMENT OF TRANSPORTATION

TYPICAL PAVEMENT MARKING DETAILS FOR UNDIVIDED ROADWAYS

TE308

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

KDOT Graphics Certified 07-17-2018

Sh. No. 100

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101mss308-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	101	151

SUMMARY OF PAVEMENT MARKINGS

LOCATION	4" Solid WHITE Edge Line	6" Solid WHITE Edge Line	6" Broken WHITE Lane Line	6" Broken WHITE Lane Line (PCP)	6" Dotted WHITE Extension Line	6" Broken WHITE Lane Drop Line	6" Solid WHITE Lane Line	8" Broken WHITE Lane Drop Line	8" Solid WHITE Gore Line	8" Dotted WHITE Extension Line	12" Solid WHITE Diagonal Line	12" Solid WHITE Chevron Line	12" Solid WHITE Type I Crosswalk Line	24" Solid WHITE Type II Crosswalk Line	24" Solid WHITE Stop Line	4" Solid YELLOW Edge Line	4" Solid YELLOW Double Line	4" Solid YELLOW Line	4" Broken YELLOW Line	6" Solid YELLOW Edge Line	12" Solid YELLOW Diagonal Line
MAINLINE US-59																					
STA. 151+25.00 to STA. 183+45.00		6,150															725	1,835	2,365		
TOTALS		6,150															1,450	1,835	592		

RECAPITULATION OF QUANTITIES

ITEMS	TOTAL	UNITS
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(4")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(6")	6,150	FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(8")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(WHITE)(12")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(4")	3,877	FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(6")		FT
PAVEMENT MARKING (MULTI-COMPONENT)(YELLOW)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (THERMOPLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(4")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(6")		FT
PAVEMENT MARKING (THERMOPLASTIC)(YELLOW)(12")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(4")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(6")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(8")		FT
PAVEMENT MARKING (EPOXY)(WHITE)(12")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(4")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(6")		FT
PAVEMENT MARKING (EPOXY)(YELLOW)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(12")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(WHITE)(24")		FT
PAVEMENT MARKING (INTERSECTION GRADE)(YELLOW)(12")		FT
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(WHITE)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(US-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(K-SHIELD)( )		EACH
PAVEMENT MARKING SYMBOL (INTERSECTION GRADE)(I-SHIELD)( )		EACH
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(6")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(8")		FT
PAVEMENT MARKING (PATTERNED COLD PLASTIC)(WHITE)(12")		FT
PAVEMENT MARKING REMOVAL		FT

SUMMARY OF WORD & SYMBOL MARKINGS

LOCATION							STOP	ONLY	X-ING	SCHOOL												
TOTALS																					

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

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

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

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

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

KANSAS DEPARTMENT OF TRANSPORTATION

SUMMARY AND RECAPITULATION OF PAVEMENT MARKING QUANTITIES

TE311

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

KDOT Graphics Certified 07-17-2018

Sh. No. 101

KDOT Graphics Certified

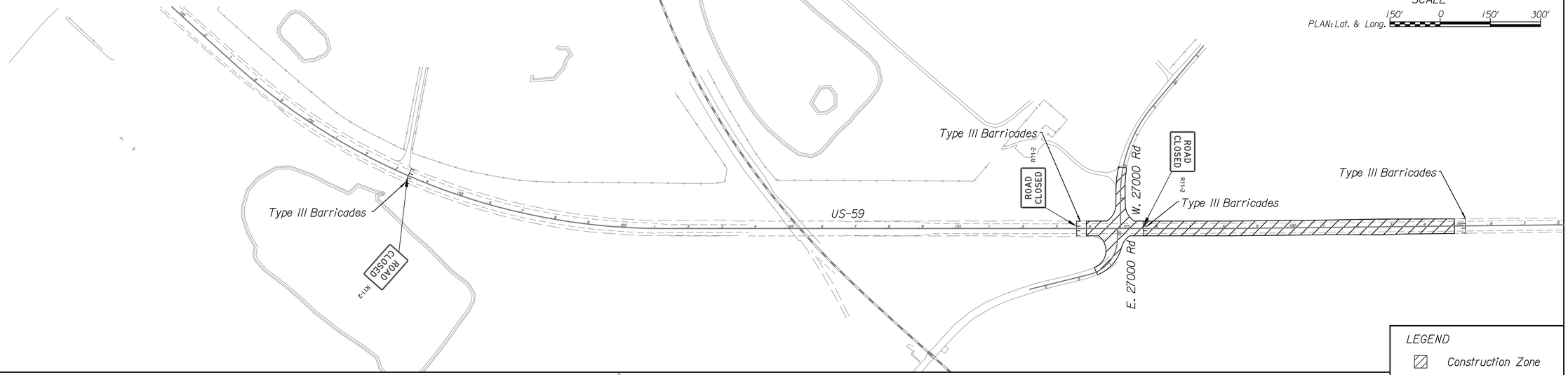
Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101mss311-01.dgn

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	102	151

Phase 1	
Construction	- Install Additional Detour and Closure Devices - Construct 27000 Rd and US-59 North of Intersection - Install Temporary Fencing for Tract 7 around Driveway
Location	- US-59 Sta. 174+00.00 to Sta. 185+00.00 - 27000 Rd Sta. 48+17.27 to Sta. 51+55.00 - Driveway Sta. 153+40.00
Traffic Control	- KDOT Std. TE704. See Detour Plans for Signing.

Note:
27000 Rd to remain open to thru movements during construction.

PHASE 1



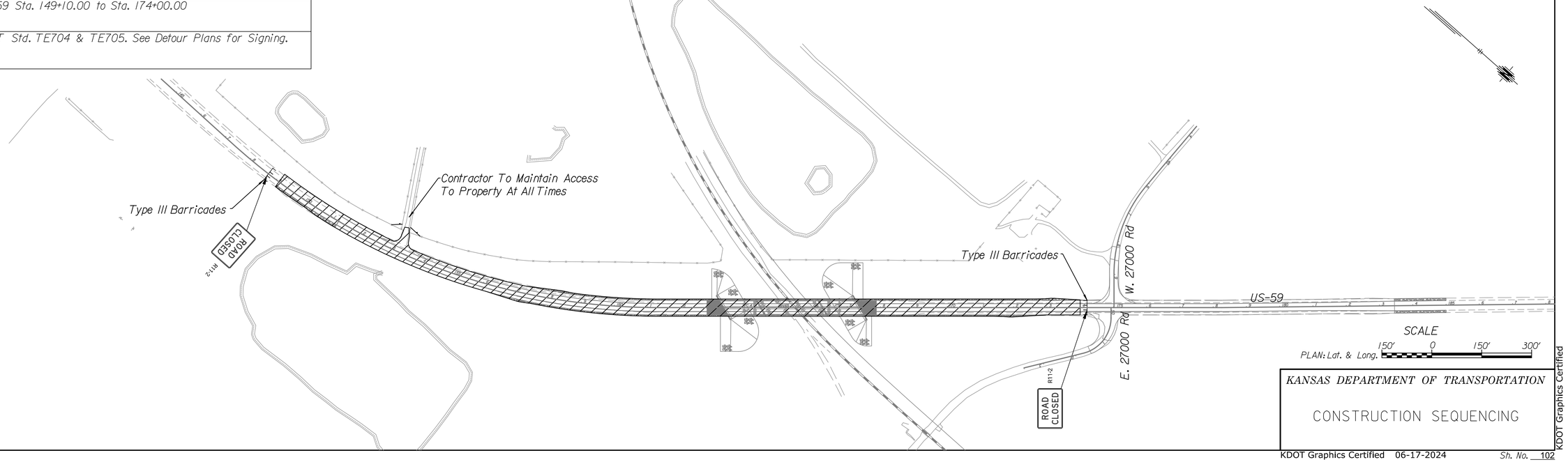
SCALE
PLAN: Lat. & Long. 150' 0 150' 300'

LEGEND
- Construction Zone
- Type III Barricades
- Temporary Fencing

Phase 2	
Construction	- Construct US-59 Bridge, Approach Slabs, and Full-Depth Pavement South of 27000 Rd Intersection - Construct Northbound and Southbound Guardrail
Location	- US-59 Sta. 149+10.00 to Sta. 174+00.00
Traffic Control	- KDOT Std. TE704 & TE705. See Detour Plans for Signing.

Note:
27000 Rd to remain open to thru movements during construction.

PHASE 2



SCALE
PLAN: Lat. & Long. 150' 0 150' 300'

KANSAS DEPARTMENT OF TRANSPORTATION

CONSTRUCTION SEQUENCING

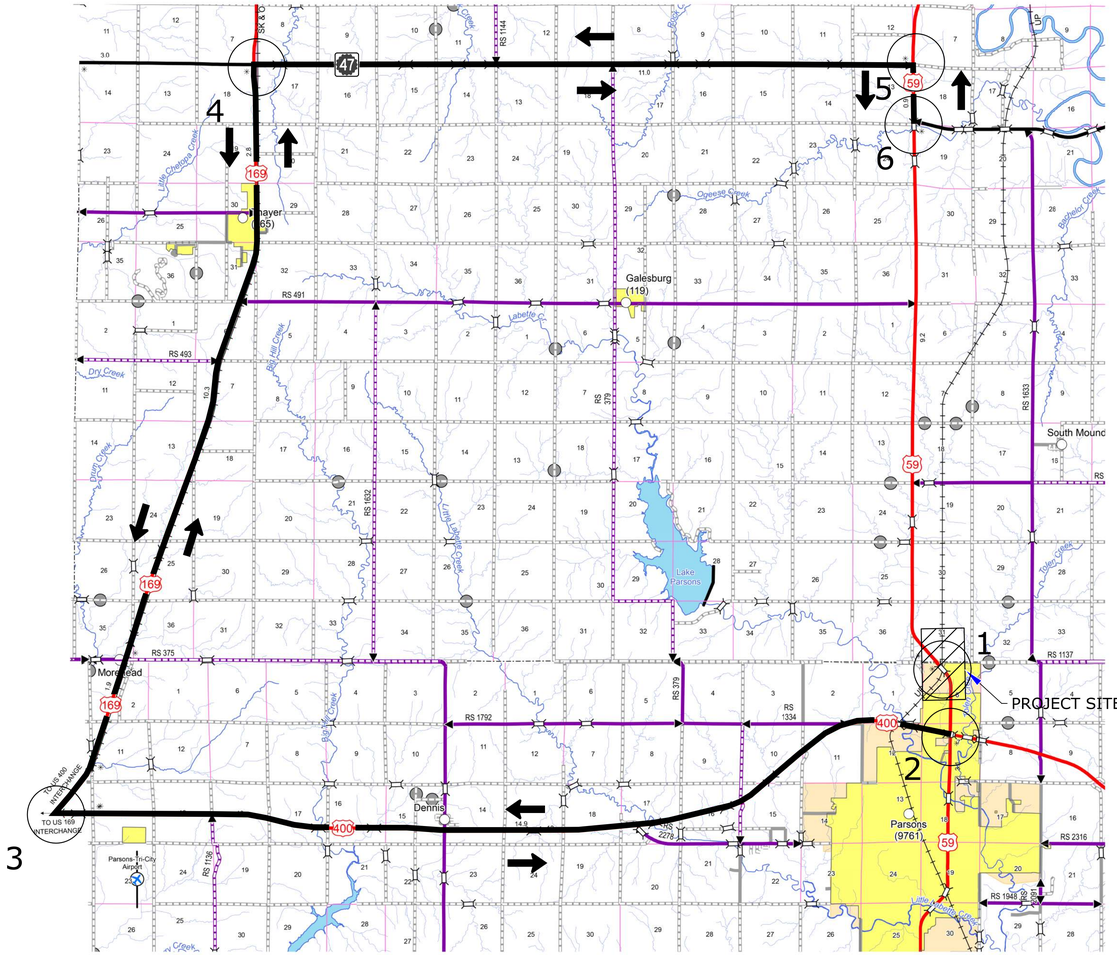
KDOT Graphics Certified 06-17-2024

Sh. No. 102

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 08-23-24
File : c:\pwworking\central01\d2186061\KA390101rcs-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	103	151



Detour Routes

US-59 Southbound Traffic from K47

To US-59 South
North on US-59 to K47
West on K47 to US-169
South on US-169 to US-400
East on US-400 to US-59

US-59 Northbound Traffic from US-400 In Parsons

To US-59 North
West on US-400 to US-169 in Parsons
North on US-169 to K47
East on K47 to US-59

Legend

- Project Site
- Detour Route
- Direction of Traffic
- Detour Plan Area

NOT TO SCALE

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

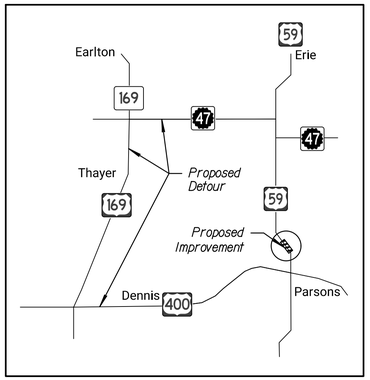
KDOT Graphics Certified 01-02-2024

Sh. No. 103

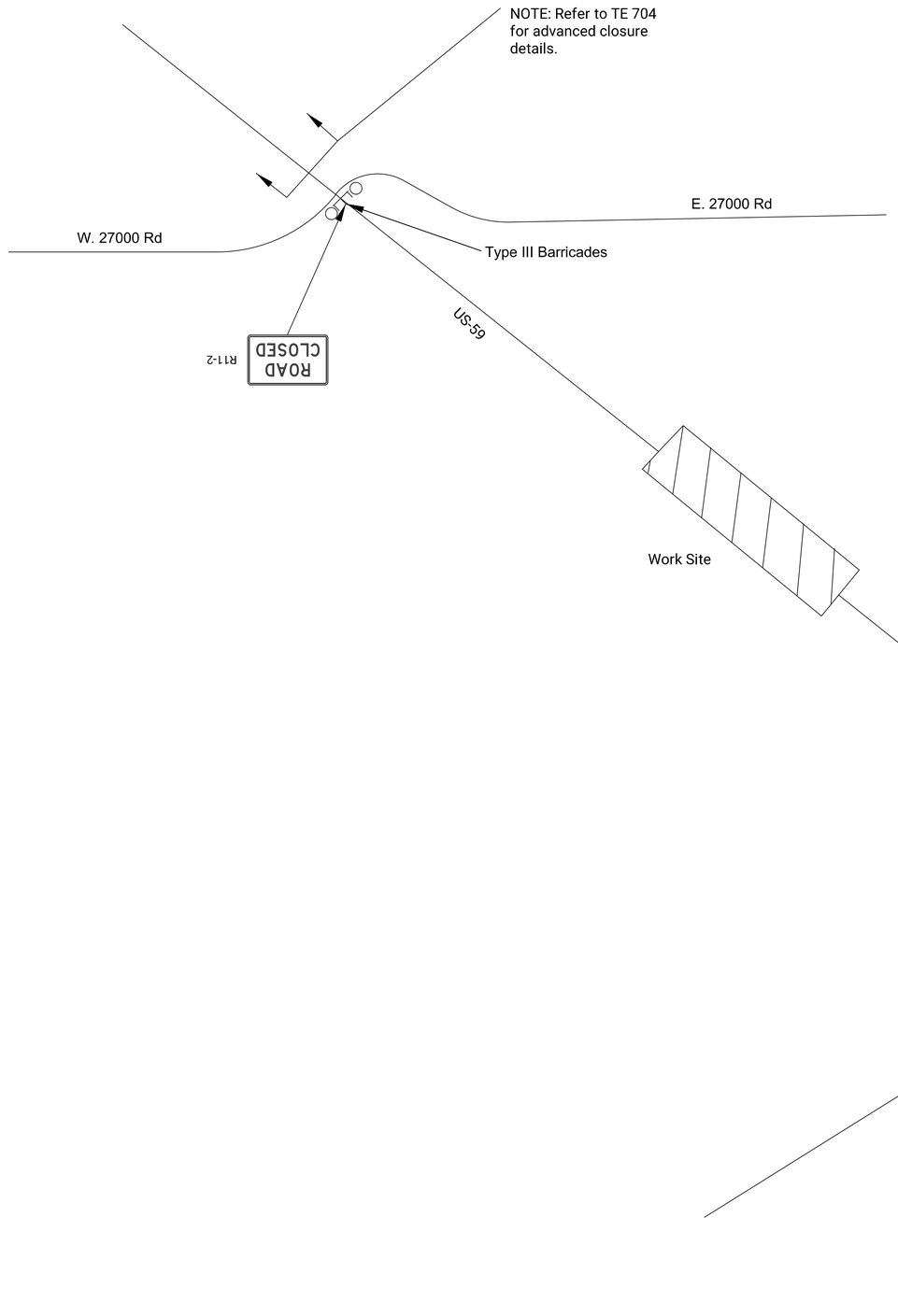
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101cdt-01.dgn
Plotted : 06-17-24

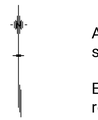
KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	104	151



NOTE: Circle on map denotes location of detour.





NOT TO SCALE

All conflicting route markers along the detour route shall be covered or removed.

Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.

NOT TO SCALE

- Type "A" Low Intensity Warning Light
- Type III Barricades
- Existing
- 47 Existing sign to be covered or removed

SHEET 1 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

WORK SITE NORTH OF PARSONS

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101cdt-02.dgn

KDOT Graphics Certified 01-04-2024

Sh. No. 104

KDOT Graphics Certified

STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	105	151

NOTE: Circle on map denotes location of detour.

NOT TO SCALE

All conflicting route markers along the detour route shall be covered or removed.

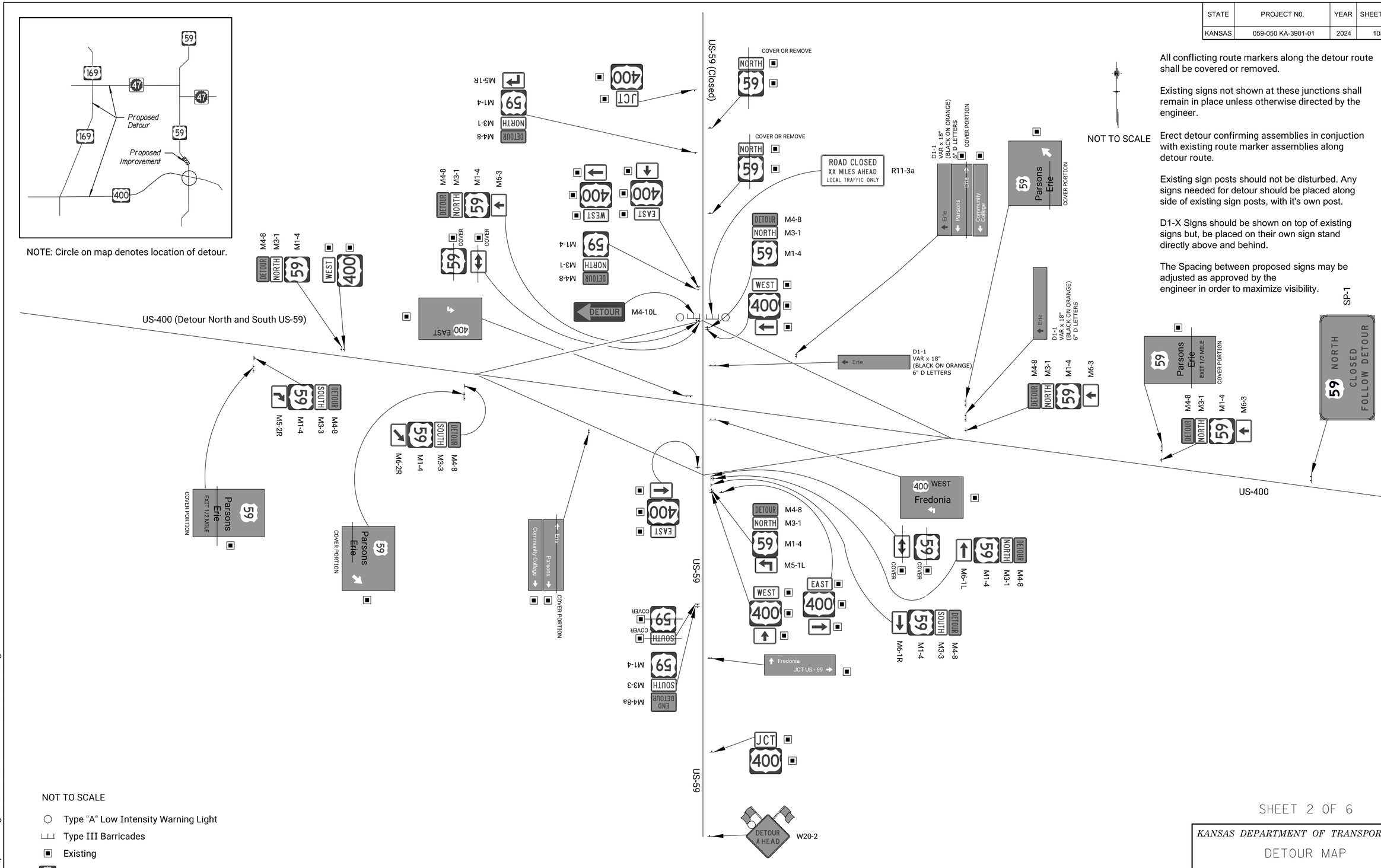
Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.



NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- ⊔⊔ Type III Barricades
- ▣ Existing
- 47 Existing sign to be covered or removed

SHEET 2 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

INTERSECTION US-59 & US-400

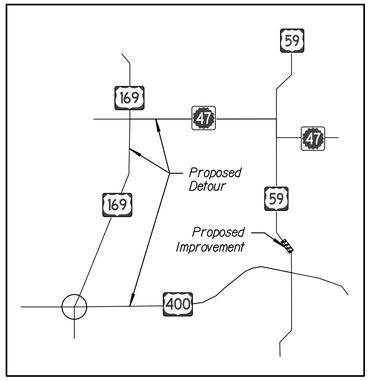
Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101cdt-03.dgn

KDOT Graphics Certified 01-04-2024

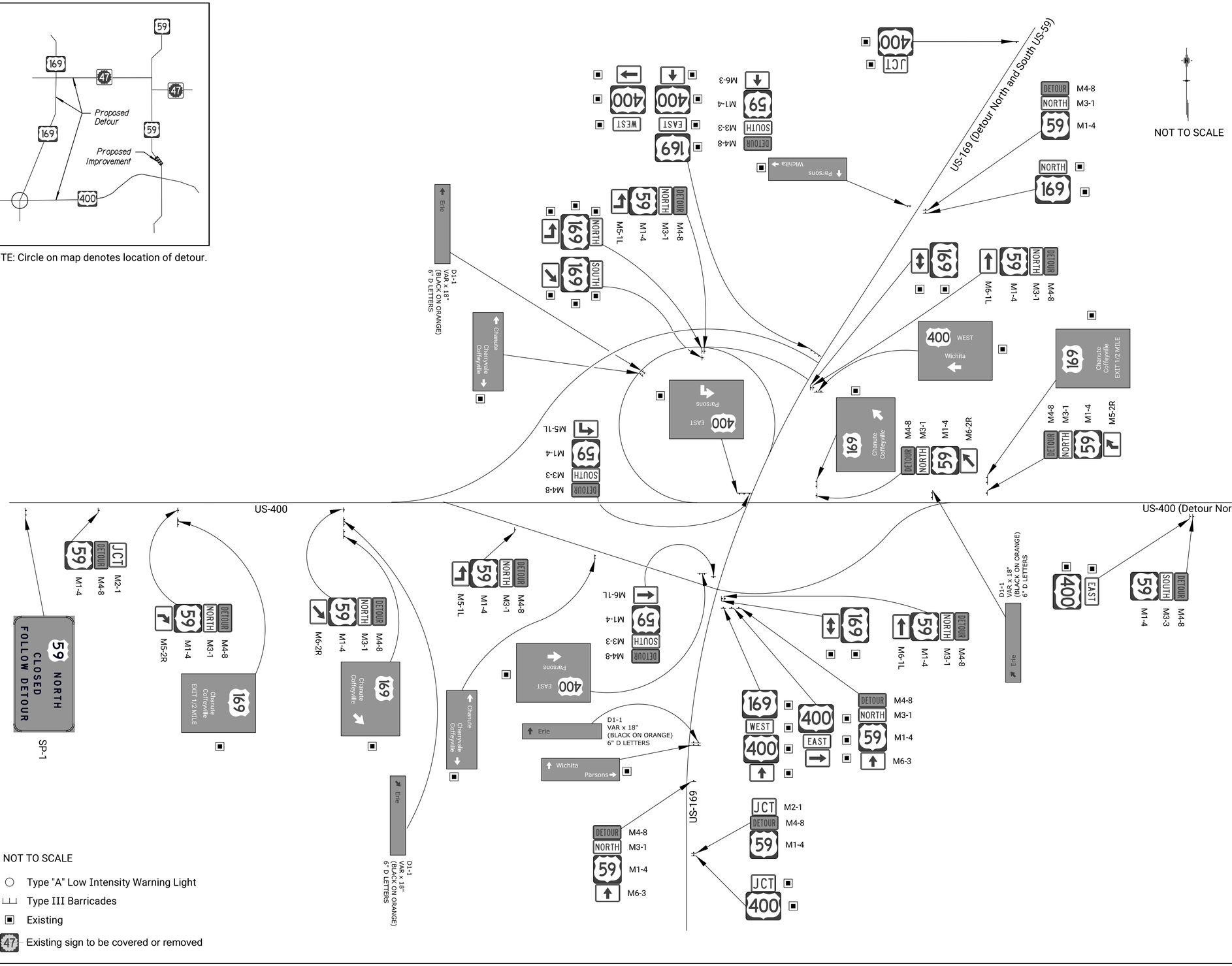
Sh. No. 105

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	106	151



NOTE: Circle on map denotes location of detour.



NOT TO SCALE

All conflicting route markers along the detour rout shall be covered or removed.

Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.

NOT TO SCALE

- Type "A" Low Intensity Warning Light
- Type III Barricades
- Existing
- 47 Existing sign to be covered or removed

SHEET 3 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

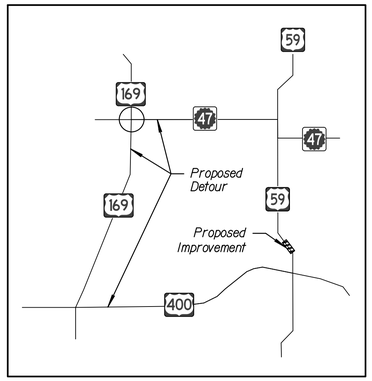
INTERSECTION US-400 & US-169

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101cdt-04.dgn

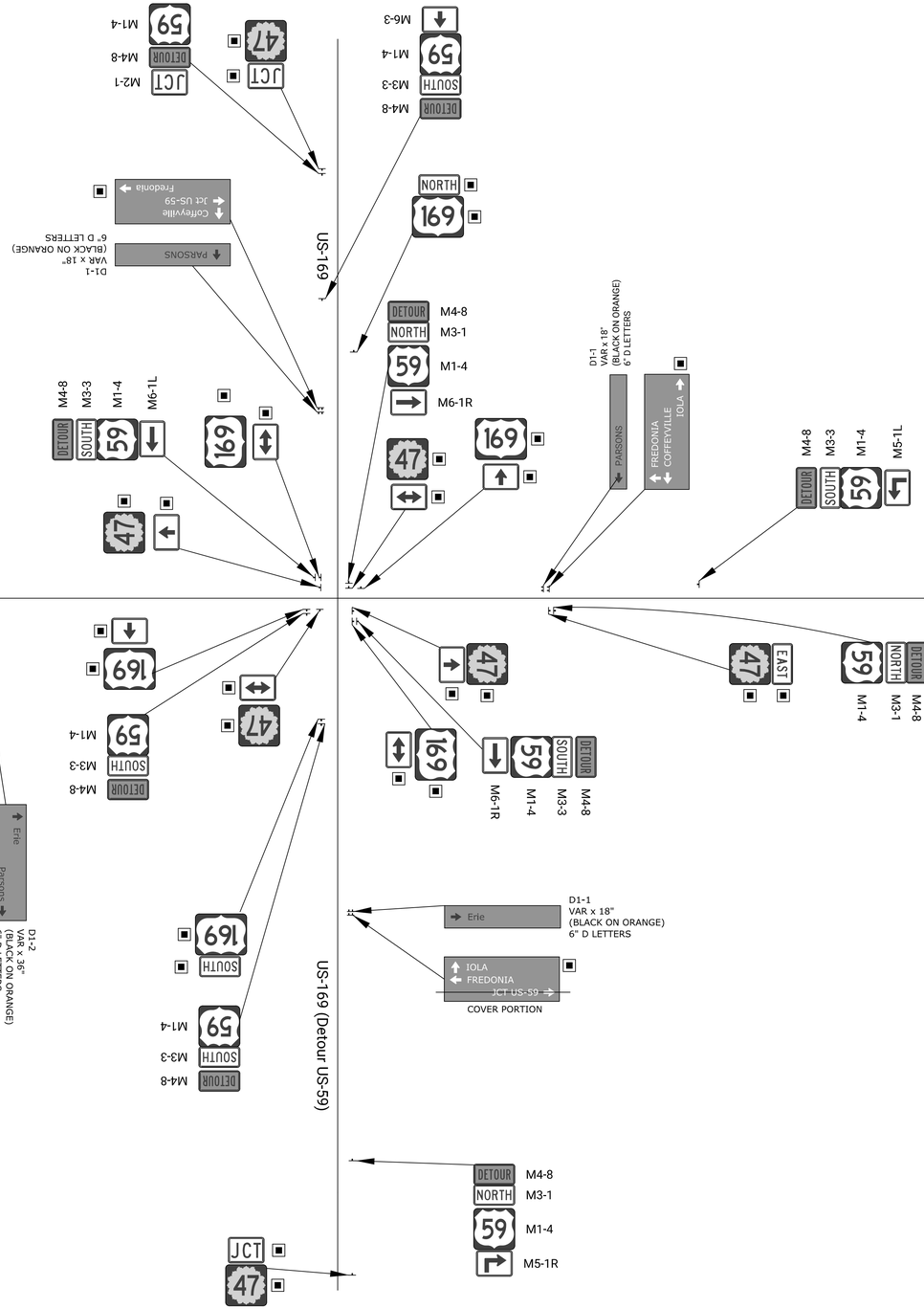
KDOT Graphics Certified 01-04-2024 *Sh. No.* 106

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	107	151



NOTE: Circle on map denotes location of detour.



NOT TO SCALE

NOT TO SCALE

All conflicting route markers along the detour route shall be covered or removed.

Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.

NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- Type III Barricades
- ▣ Existing
- 47 Existing sign to be covered or removed

SHEET 4 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

INTERSECTION K-47 & US-169

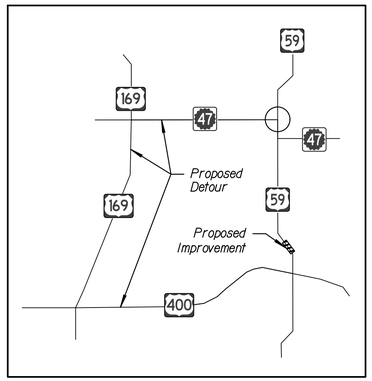
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KDOT Graphics Certified 01-04-2024

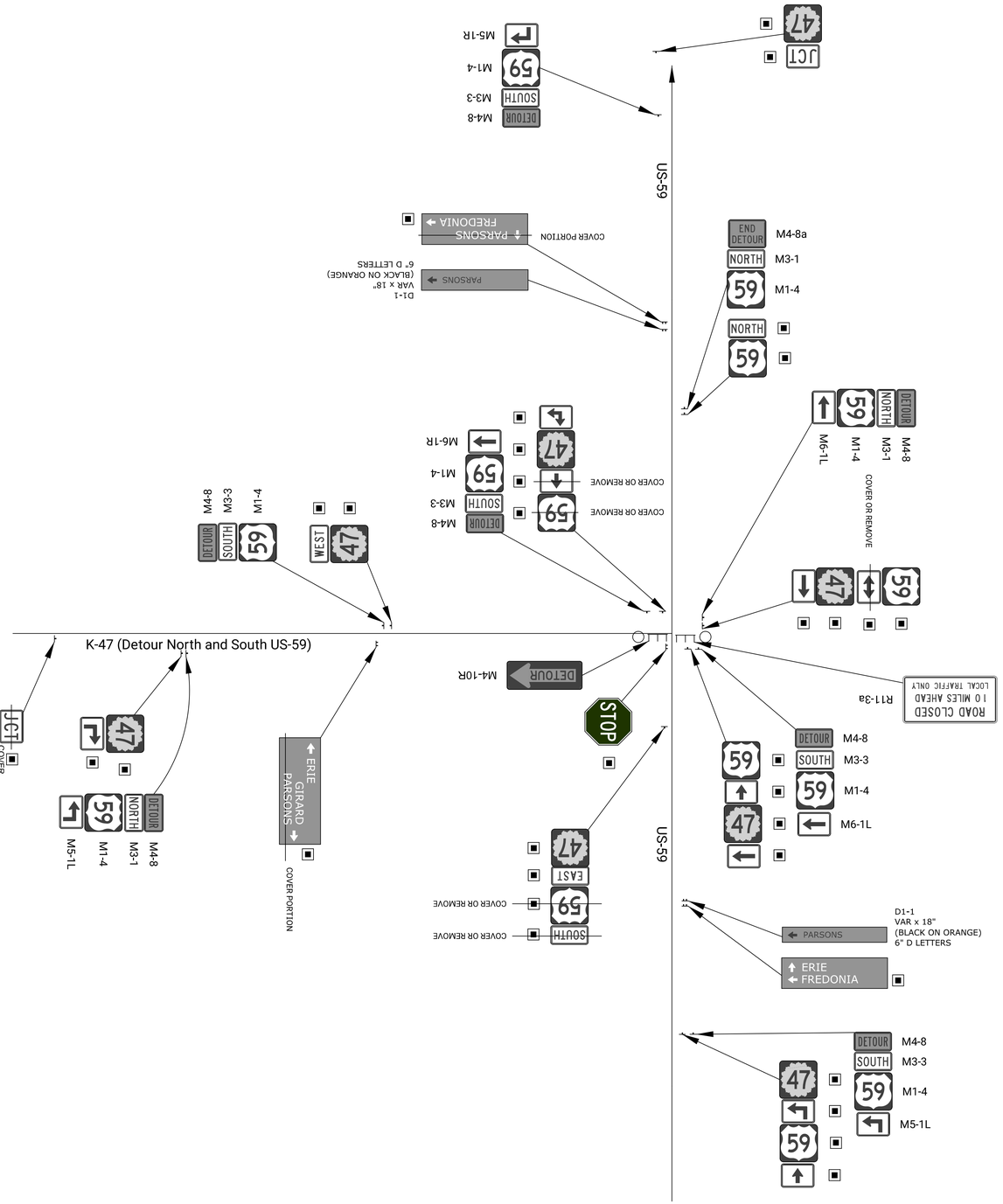
Sh. No. 107

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	108	151



NOTE: Circle on map denotes location of detour.



NOT TO SCALE

All conflicting route markers along the detour route shall be covered or removed.

Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.

NOT TO SCALE

- ○ Type "A" Low Intensity Warning Light
- Type III Barricades
- Existing
- 47 Existing sign to be covered or removed

SHEET 5 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

INTERSECTION K-47 & US-59

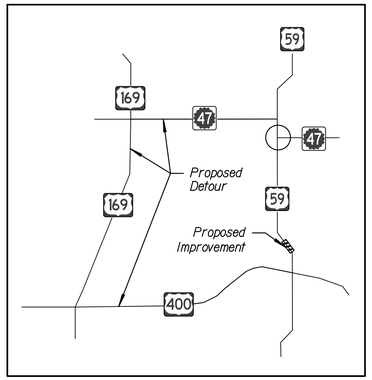
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KDOT Graphics Certified 01-04-2024

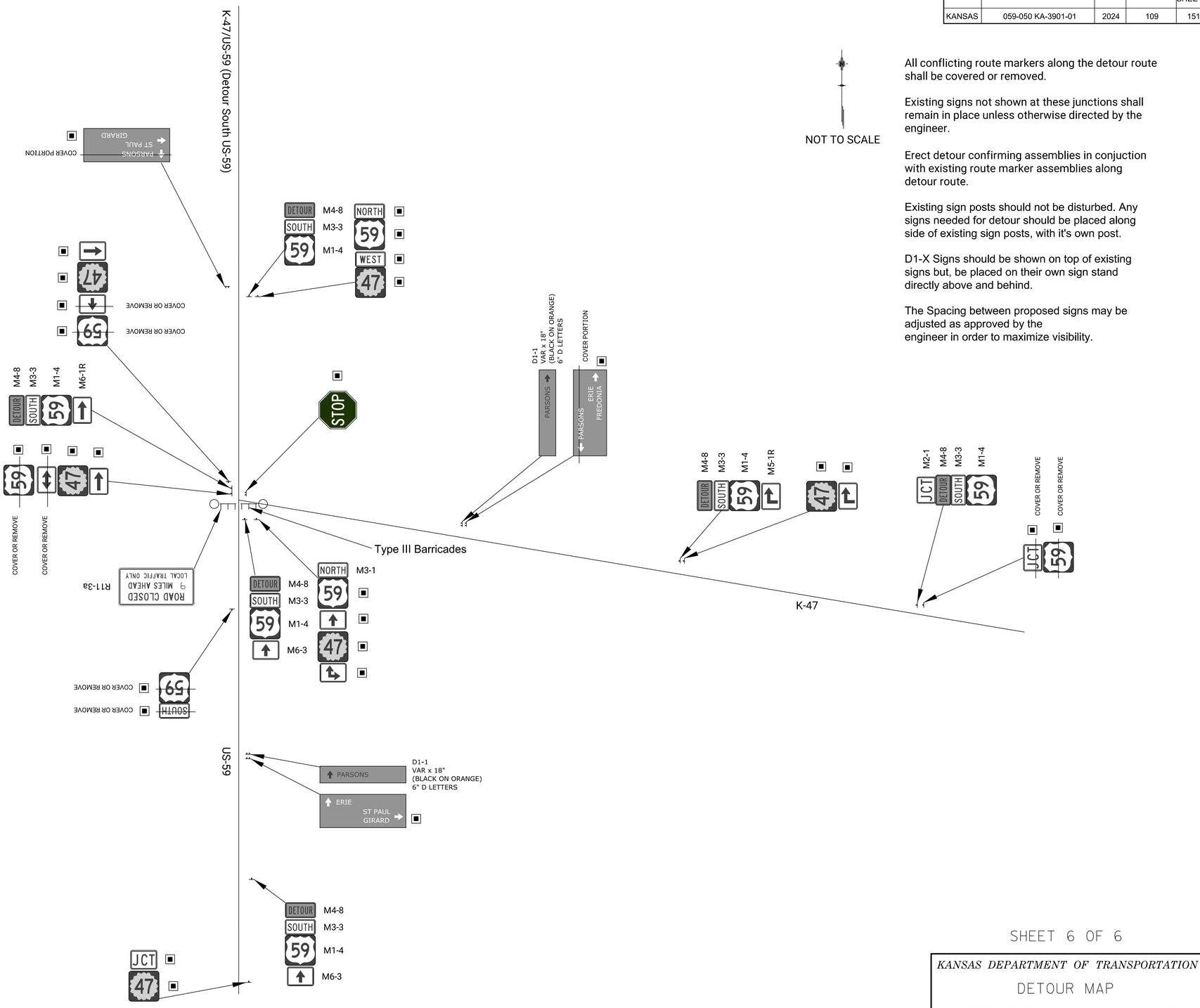
Sh. No. 108

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	109	151



NOTE: Circle on map denotes location of detour.



NOT TO SCALE

All conflicting route markers along the detour route shall be covered or removed.

Existing signs not shown at these junctions shall remain in place unless otherwise directed by the engineer.

Erect detour confirming assemblies in conjuction with existing route marker assemblies along detour route.

Existing sign posts should not be disturbed. Any signs needed for detour should be placed along side of existing sign posts, with it's own post.

D1-X Signs should be shown on top of existing signs but, be placed on their own sign stand directly above and behind.

The Spacing between proposed signs may be adjusted as approved by the engineer in order to maximize visibility.

NOT TO SCALE

- Type "A" Low Intensity Warning Light
- Type III Barricades
- Existing
- 47 Existing sign to be covered or removed

SHEET 6 OF 6

KANSAS DEPARTMENT OF TRANSPORTATION

DETOUR MAP

INTERSECTION US-59 & K-47

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101cdt-07.dgn

KDOT Graphics Certified 05-13-2024

Sh. No. 109

KDOT Graphics Certified

1) Design Speed: Those items delegated to temporary traffic control should be designed and installed using the posted/legal speed of the roadway prior to work starting.

2) Minimum Lane Width: Lane widths shall be a minimum of 11' (measured between centerlines of pavement markings) or as shown on the plans, or as directed by the engineer. A lane width less than 11' may require restricted roadway width signing.

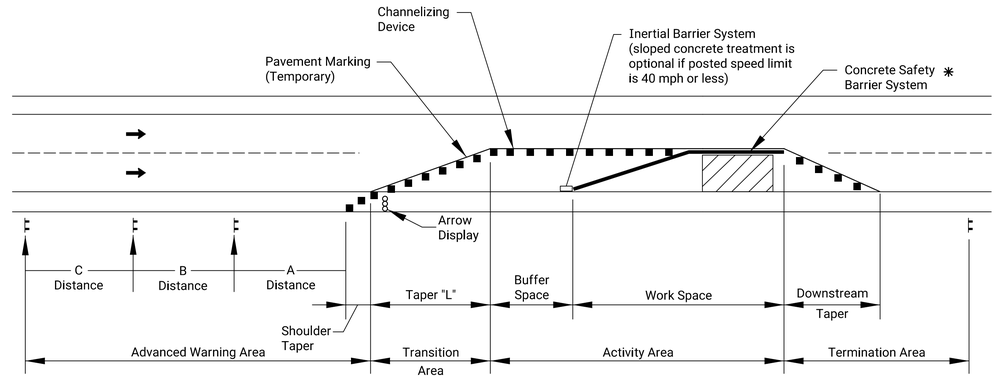
3) Consideration should be made to separate pedestrian and, if needed, bicycle movements from both work site activity and vehicular traffic. Unless a reasonable safe route that does not involve crossing the roadway can be provided, pedestrians should be appropriately directed with advance signing that encourages them to cross to the opposite side of the roadway. In urban and suburban areas with high vehicular traffic volumes, these signs should be placed at intersections (rather than midblock locations) so that pedestrians are not confronted with midblock work sites that will induce them to attempt skirting the work site or making a midblock crossing.

4) When existing pedestrian facilities are disrupted, closed, or relocated, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.

5) When the driving surface open to traffic is milled or is a temporary surface made of loose material, or when directed by the engineer a W8-15 (Grooved Pavement) or W8-7 (Loose Gravel) sign shall be used on mainline approaches. This sign should be placed a "C" distance after the W20-1 (Road Work Ahead) sign. A W8-15p motorcycle plaque shall be used to supplement the W8-15 or W8-7 signs. All signs shall be displayed as long as the condition is present.

6) Alternative temporary rumble strip options may be available. Please contact the Temporary Traffic Control Unit for more information at 785-296-1179 or 785-296-1183.

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	110	151



TYPICAL WORK ZONE COMPONENTS

✳ When concrete barrier system is used, portable channelizing devices are not needed along the tangent barrier section.

Minimum advance warning sign spacing (in feet):

SPEED (MPH) ✳	*A*	*B*	*C*
URBAN (40 MPH OR LOWER)	*100*	*100*	*100*
URBAN (45 MPH OR HIGHER)	*350*	*350*	*350*
RURAL (55 MPH OR LOWER)	*500*	*500*	*500*
RURAL (60 MPH OR HIGHER)	*750*	*750*	*750*
EXPRESSWAY/FREEWAY	*1000*	*1500*	*2640*

✳ Posted speed prior to work starting

The minimum spacing between signs shall be no less than 100', unless directed by the engineer.

The spacing between any signs may be increased beyond the minimum values in the table above as approved by the engineer in order to maximize visibility.

Taper Formulas:

L = WS for speeds of 45 MPH or more

$L = WS^2/60$ for speeds of 40 MPH or less

Where: L = Minimum length of taper in feet
S = Numericial value of posted speed prior to work starting in MPH
W = Width in offset feet

Shifting Taper=1/2 L
Shoulder Taper=1/3 L

Channelizer Placement:

(1) The spacing between devices in transition area (taper) should not exceed a distance in feet equal to 1/2 the posted speed limit in mph prior to work starting.

(2) The spacing between devices in the advanced warning area and the activity area should not exceed a distance in feet equal to two times the posted speed limit in mph prior to work starting.

(3) Channelizing devices shall be placed for optimum visibility, normally at right angles to the traffic flow.

(4) Place directional indicator barricades in series to direct traffic onto the new path. The arrow sign should not be visible to opposing traffic.

(5) Alternating diagonal orange and white striping must slope downward in the direction traffic is expected to pass.

Buffer Space

SPEED (MPH) ✳	*20*	*25*	*30*	*35*	*40*	*45*	*50*	*55*	*60*	*65*	*70*	*75*
LENGTH (ft)	*115*	*155*	*200*	*250*	*305*	*360*	*425*	*495*	*570*	*645*	*730*	*820*

✳ Posted speed prior to work starting

Neither work activity nor storage of equipment, vehicles, or material should occur in the buffer space. When a protection vehicle is placed in advance of the work space, only the space upstream of the vehicle constitutes the buffer space.

If temporary concrete safety barrier system is used to separate approaching traffic from the work space, the barrier system shall be considered part of the activity area. A full lane width should be available throughout the length of the buffer space. See typical work zone components above.

NO.	DATE	REVISIONS	BY	APP'D
02	03-13-18	W8-15p usage changed to Shall	R.W.B.	E.K.G.
01	08-18-15	Channelizer spacing info	R.W.B.	K.E.

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL GENERAL NOTES

TE700

FHWA APPROVAL			03-13-18	APP'D.		Eric Kocher	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	

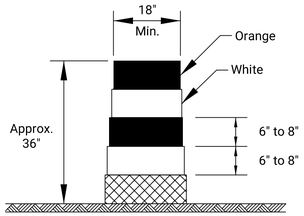
KDOT Graphics Certified 07-18-2022

Sh. No. 110

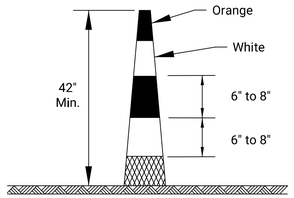
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101css700-01.dgn

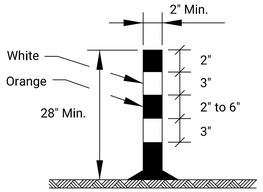
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	111	151



DRUM

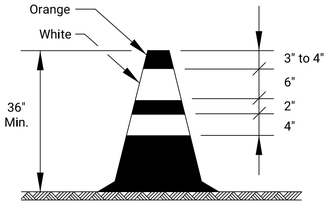


CONICAL
DELINEATOR

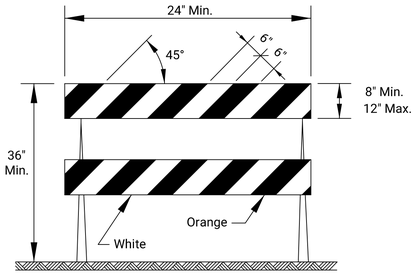


TUBULAR MARKER

Striping as shown for up to 42".

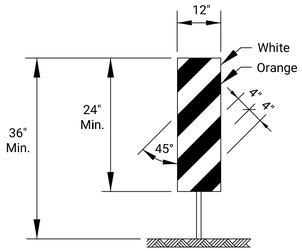


TRAFFIC CONE



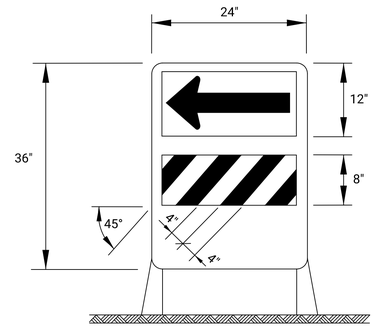
TYPE 2 BARRICADE

For rails less than 36" long, 4" wide stripes may be used. All stripes shall slope downward to the traffic side for channelization.



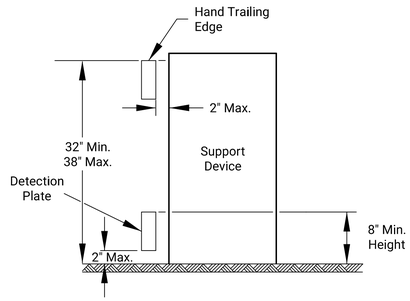
VERTICAL PANEL

The stripes shall slope downward to the traffic side for channelization.



DIRECTION INDICATOR BARRICADE

The stripes shall slope downward in the direction traffic is to pass. The direction indicator barricade shall be used in series to direct the motorist into the intended lane of travel.



PEDESTRIAN CHANNELIZER

1. Support device shall not project beyond the detection plate into the pathway.
2. Hand trailing edges and detection plates are optional for continuous walls.
3. Interconnect pedestrian channelizers to prevent displacement and to provide continuous guidance through or around work.
4. Alternate pathways shall be firm, stable, and slip resistant.
5. Treat height differentials > 1/2" in the surfaces of alternate paths with a firm, stable, and slip resistant temporary ramp having a slope of 12:1 or flatter and having a width equal to the alternate path.
6. Use alternating orange/white on interconnected devices.

Item	Location	Cross-overs	Shoofly Diversions	Tangents	Tapers	Ramps	Head to Head	Object Identifier	Lead-in Devices	Gores
Portable										
	Drums	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Conical Delineators	Yes	Yes	Yes	Yes	Yes	(1)	Yes	Yes	Yes
	Vertical Panels	(2)	(2)	(2)	(2)	(2)	(1,2)	Yes	(2)	(2)
	Direction Indicator Barricade	No	No	No	Yes	No	No	No	No	No
	Type 2 Barricade	(2)	(2)	(2)	(2)	No	No	Yes	No	No
	Traffic Cones	No	No	(4)	(4)	(4)	No	(4)	(4)	(4)
Fixed										
	Tubular Markers	(3)	(3)	(3)	No	(3)	Yes	No	Yes	Yes
	Vertical Panels	(3)	(3)	(3)	(3)	(3)	(3)	Yes	(2,3)	(2)

(1) Not allowed on centerline delineation along freeways or expressways.
(2) The stripes shall slope downward to the traffic side for channelization.
(3) May be used upon the approval of the engineer.
(4) Daytime operations only.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CHANNELIZING DEVICES

TE702

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	L.E.R.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 07-18-2022

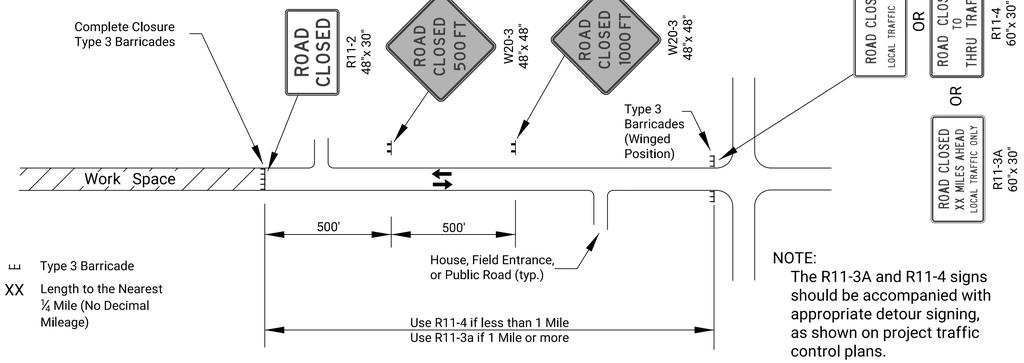
Sh. No. 111

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101css702-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	112	151

Note: Signs shown for one approach to work zone.



NOTE:
The R11-3A and R11-4 signs should be accompanied with appropriate detour signing, as shown on project traffic control plans.

FIGURE 1: TYPICAL SIGNING FOR ROAD CLOSURE (MAINLINE OR SIDE ROAD)

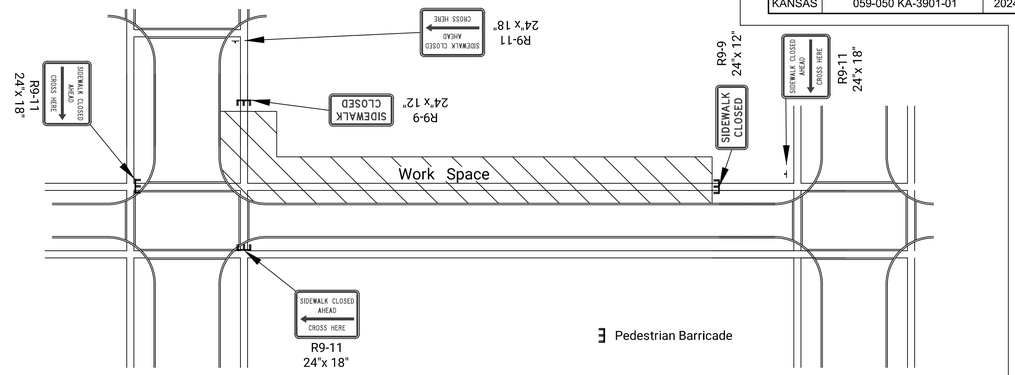


FIGURE 4: TYPICAL SIGNING FOR SIDEWALK CLOSED WITH OPPOSITE SIDEWALK AVAILABLE

Note: Sign shown for one approach to intersection (work zone).

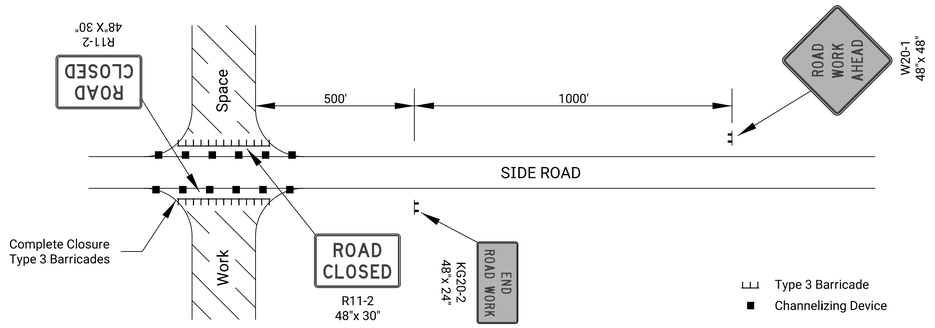


FIGURE 2: TYPICAL SIGNING FOR SIDE ROAD OPEN

Note: Signs shown for one approach to work zone.

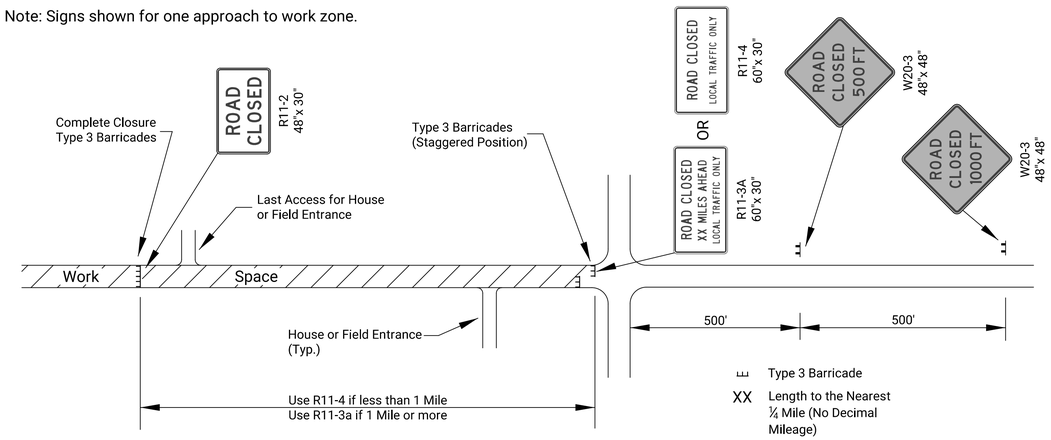
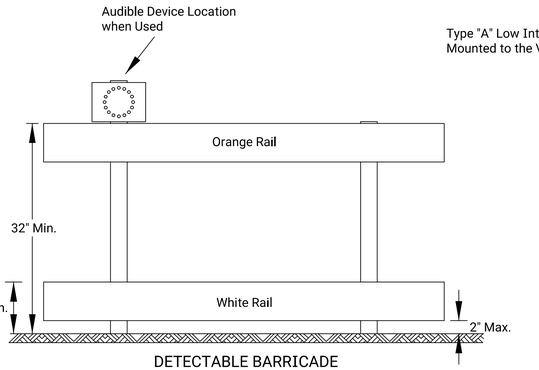
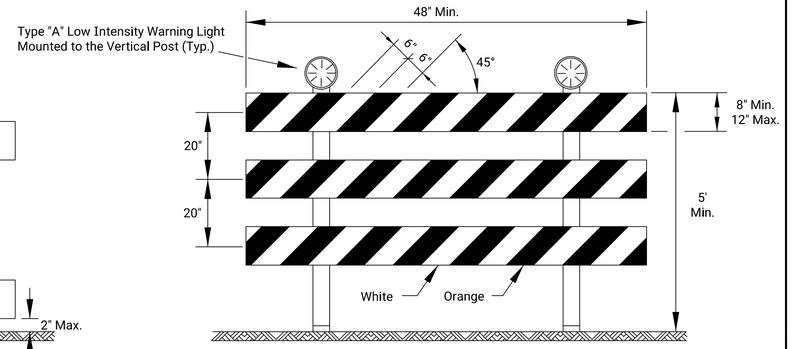


FIGURE 3: TYPICAL SIGNING FOR ROAD CLOSURE - LOCAL TRAFFIC ACCESS



DETECTABLE BARRICADE

1. Support device shall not project beyond the detection plate into the pathway.
2. Barricades shall be used to close the entire width of the pathway.
3. Do not use warning lights on pedestrian barricades.
4. Do not use warning lights on audible devices.



TYPE 3 BARRICADE WITH LIGHTS

Approved signs mounted on Type 3 barricades should not cover more than 50% of the top two rails or 33% of the total area of the three rails.

When barricades are placed end-to-end or staggered, a Type "A" low intensity warning light shall be mounted to the vertical post near each outside corner of the end barricades.

ROAD CLOSED GENERAL NOTES

As shown in Figure 1, at the point where thru traffic must detour and local traffic can proceed to the location where the roadway is completely closed, the R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) or R11-4 (ROAD CLOSED LOCAL TRAFFIC ONLY or ROAD CLOSED TO THRU TRAFFIC) sign shall be used with Type 3 barricades (winged position), placed on the shoulders of roadway.

As shown in Figure 3, when local traffic must be allowed access into the work zone, Type 3 barricades shall be longitudinally staggered to maintain the appearance of a closed roadway. A second line of end-to-end Type 3 barricades shall be placed just beyond the last access point in the work zone, to completely close the roadway.

The R11-4 (ROAD CLOSED TO THRU TRAFFIC or ROAD CLOSED LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is less than 1 mile.

The R11-3a (ROAD CLOSED # MILES AHEAD LOCAL TRAFFIC ONLY) sign shall be used when the distance to the point of complete closure of the roadway is 1 mile or greater.

The words "BRIDGE OUT" (or BRIDGE CLOSED) may be substituted for the words "ROAD CLOSED" on the R11-3a or R11-4 sign where applicable.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL CLOSURES

TE704

FHWA APPROVAL			06-01-15	APP'D.		Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 07-18-2022

Sh. No. 112

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101css704-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	113	151

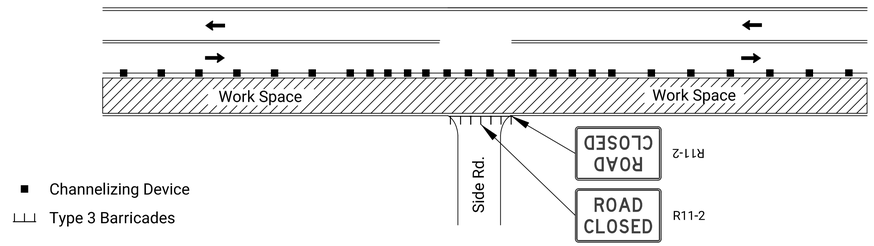


FIGURE 1: SIDE ROAD OR ENTRANCE CLOSED THROUGH WORK AREA

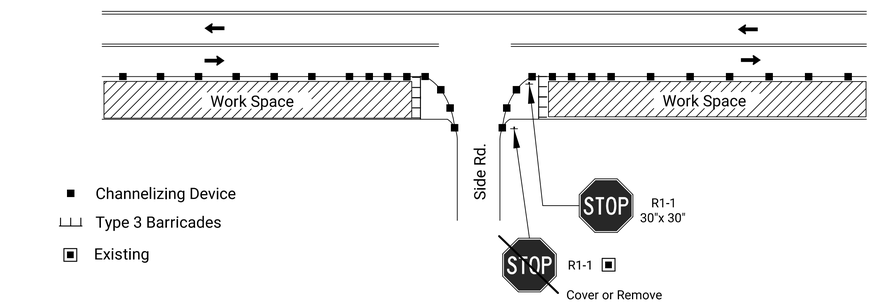


FIGURE 2: SIDE ROAD OR ENTRANCE OPEN THROUGH WORK AREA

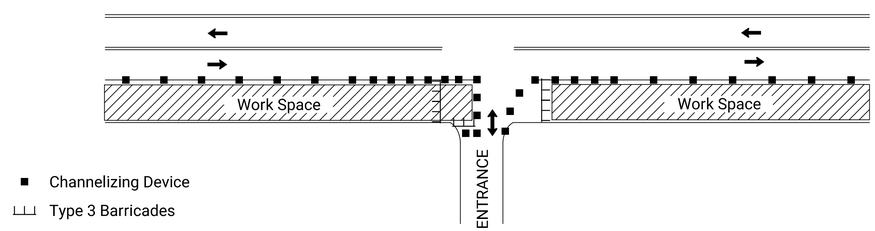


FIGURE 3: LOW VOLUME ENTRANCE CONTRUCTED HALF AT A TIME

Note: Consider large vehicles making right turns into and out of entrance
and use figure 4 as needed

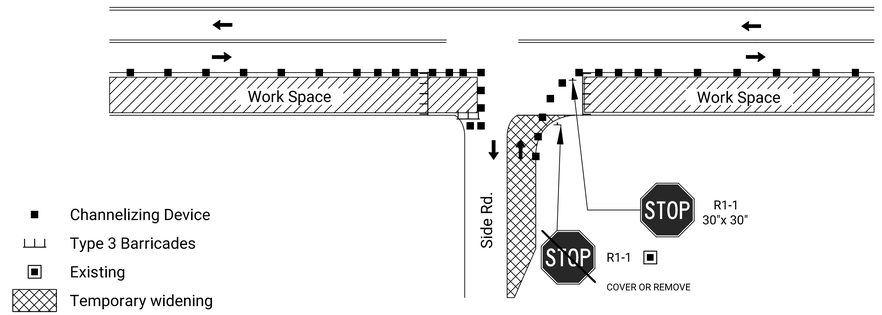


FIGURE 4: SIDE ROAD OR ENTRANCE CONSTRUCTED HALF AT A TIME:
TWO WAY TRAFFIC REQUIRED

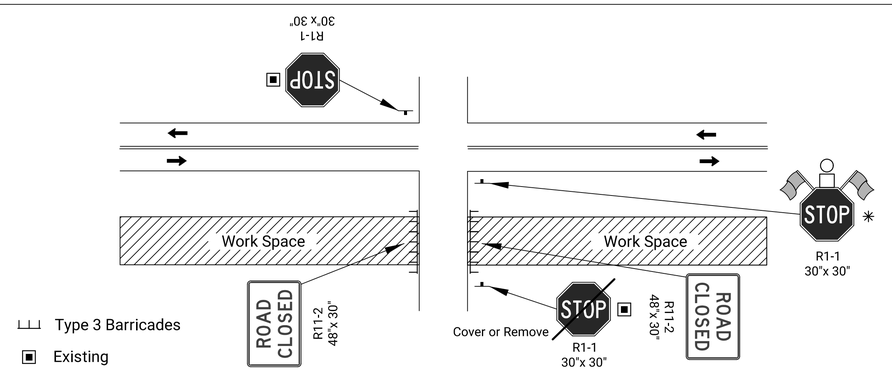


FIGURE 5: SIDE ROAD OPEN THROUGH WORK AREA ON DIVIDED ROADWAY

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
ACCESS THROUGH THE WORK AREA

TE705

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	R.W.B.	DETAILED R.W.B.	QUANTITIES	TRACED	
DESIGN CK.		DETAIL CK.	QUAN.CK.	TRACE CK.	

KDOT Graphics Certified 07-18-2022

Sh. No. 113

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101css705-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	114	151

SIGN LAYOUT INFORMATION



KG20-2

Std. Size Expwy/Freeway
6" C
48"x 24"



KG20-5

Std. Size Expwy/Freeway
6" C
48"x 24"



KM4-20

Std. Size: 3" C, 24"x 6"
Expwy/Freeway: 6" C, 48"x 12"



W7-3a

Mileage to be Determined by the Engineer.



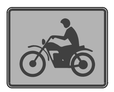
W8-15

Std. Size Expwy/Freeway
8" D
48"x 48"



W8-7

Std. Size Expwy/Freeway
8" D
48"x 48"



W8-15p

Std. Size Expwy/Freeway
30"x 24"



W8-17

Std. Size Expwy/Freeway
48"x 48"



W8-11

Std. Size Expwy/Freeway
8" D
48"x 48"



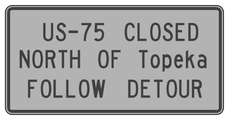
W8-17P
(Optional)

Std. Size Expwy/Freeway
30"x 24"



SP-01
(Special Sign)

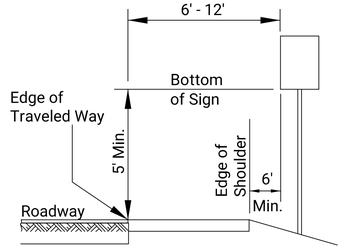
Std. Size: 6" C
Expwy/Freeway: 10" D



SP-02
(Special Sign)

Std. Size		Expwy/Freeway	
Uppercase:	6" C	Uppercase:	10" D
Lowercase:	4.5" C	Lowercase:	8" D

All city names and street names on special signs and destination signs must have upper and lower case letters.

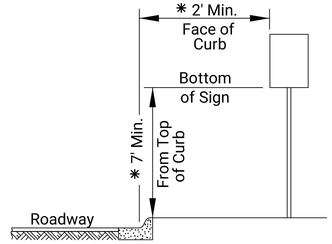


RURAL

1) Ground-mounted signs shall be mounted at a minimum height of 5' measured from the bottom of sign to the near edge of the pavement.

2) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

3) The height of the secondary sign mounted below another sign may be 4' measured from the bottom of the sign to the near edge of the pavement. Signs shall not overlap each other.



URBAN

1) Signs shall be mounted at a minimum height of 7' measured from the bottom of sign to the near edge of the pavement.

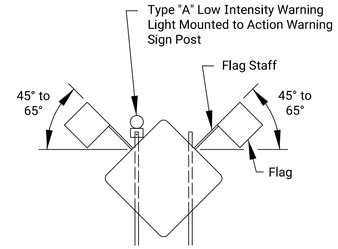
2) Neither portable nor permanent sign supports should be located on sidewalks or areas designated for pedestrian or bicycle traffic.

3) Signs mounted lower than 7' should not project more than 4" into pedestrian facilities.

4) The height from of the secondary sign mounted below another sign may be 6' measured from the bottom of sign to the near edge of the pavement. Signs shall not overlap each other.

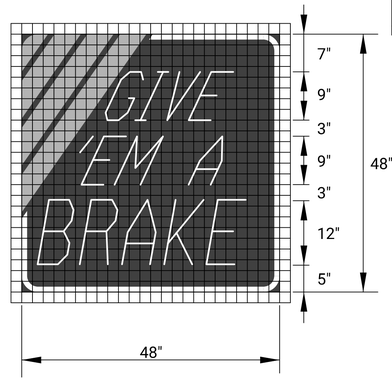
5) Large signs having an area exceeding 50 square feet installed on multiple breakaway posts shall be mounted a minimum of 7' above the ground.

* 6) Pedestrian detour signing shall be a minimum of 2' measured from the top of the pedestrian pathway to the bottom of the sign and shall not protrude into the walkway nor shall it project beyond the back of curb.



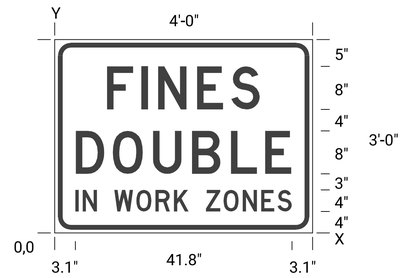
When the sign width is equal to or greater than 9', three or more wood posts may be used with a minimum of 4' between the centerline of each post. All signs less than 9' in width shall use a maximum of two wood posts.

In the case of hitting rock when driving posts
1. Shift the sign location. Do not violate minimum sign spacing.
2. With the engineer's approval, use acceptable alternative sign stands.



KI-104a

Sign Number	GIVE EM A BRAKE
Width x Height	4'-0" x 4'-0"
Border Width	1.0"
Corner Radius	4.0"
Stripe Width	3.0"
Mounting	Ground
Background	Type: Non-Reflective
	Color: Black
Legend/Border	Type: Reflective
	Color: White
Legend Font	Dutch 801 Roman SWC 25 Degree Slant
Stripes	Type: Reflective
	Color: Orange



KI-105a

Sign Number	FINES DOUBLE
Width x Height	4'-0" x 3'-0"
Border Width	0.9"
Corner Radius	3.0"
Mounting	Ground
Background	Type: Reflective
	Color: White
Legend/Border	Type: Non-Reflective
	Color: Black

Dimensions in inches — Spacings are to start of next letter

Y FONT	LETTER SPACINGS															HT LEN
23.0 D		F	I	N	E	S										8.0
	9.7	6.4	3.2	7.3	6.4	5.4	9.7									28.6
11.0 D		D	O	U	B	L	E									8.0
	3.9	6.9	7.5	7.3	7.3	6.4	4.9	3.9								40.3
4.0 D		I	N		W	O	R	K		Z	O	N	E	S		4.0
	3.1	1.6	2.7	3.2	4.3	3.8	3.6	2.8	3.2	3.4	3.8	3.6	3.2	2.7	3.1	41.8

Notes:

Typically, there are two sets of informational signs installed per project: one for each direction of traffic.

Install signs a minimum of 500' in advance of the road work ahead sign. The engineer may designate a more appropriate location if conditions dictate.

The informational signs are not to interfere with the traffic control signs for the project.

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN INFORMATION

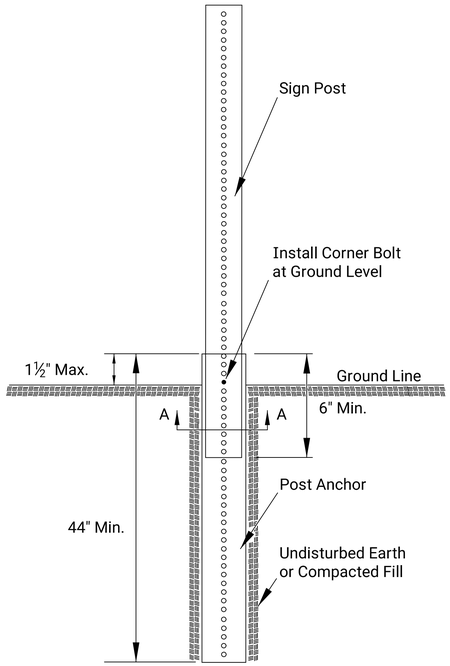
TE710

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	R.W.B.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN.CK.	TRACE CK.

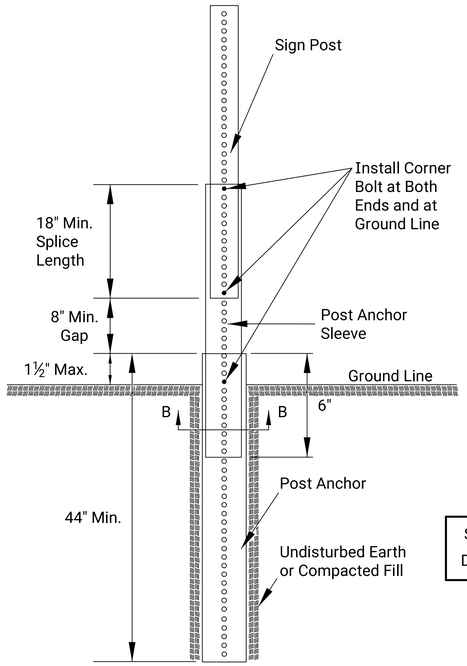
Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101css710-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	115	151

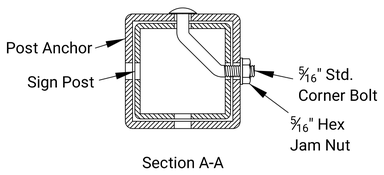
PERFORATED SQUARE STEEL TUBE (P.S.S.T.) POST SETUP



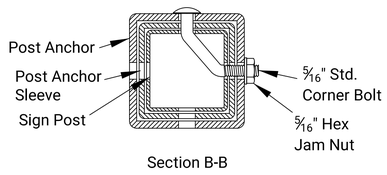
P.S.S.T. Detail



Telescoping P.S.S.T. Detail



Section A-A

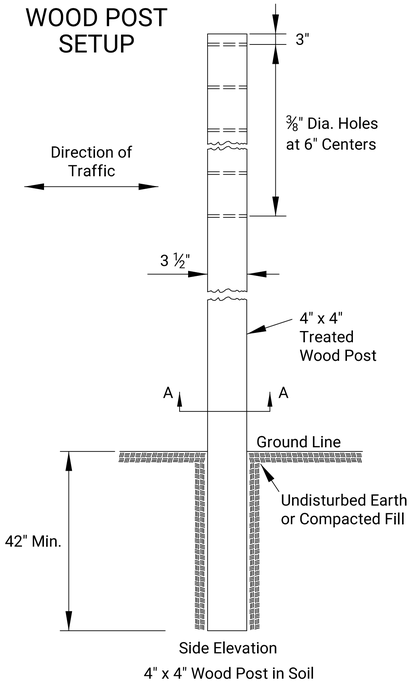


Section B-B

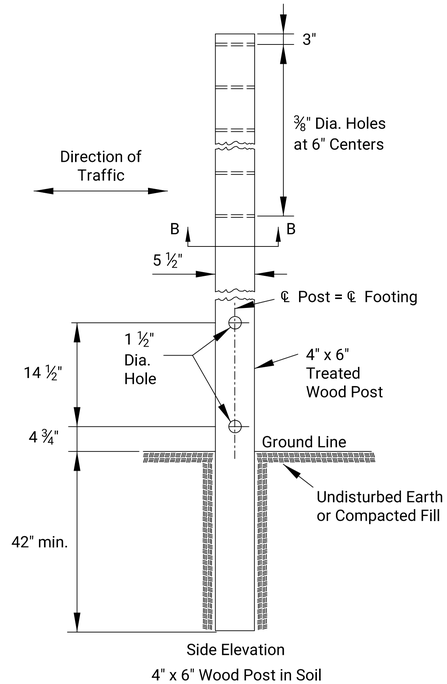
Details for 2", 2 ¼", or 2 ½" sign posts

Place bolts in the same corner along each sign post.

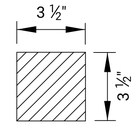
WOOD POST SETUP



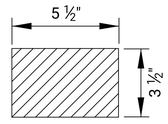
Side Elevation
4" x 4" Wood Post in Soil



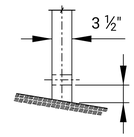
Side Elevation
4" x 6" Wood Post in Soil



Section A-A



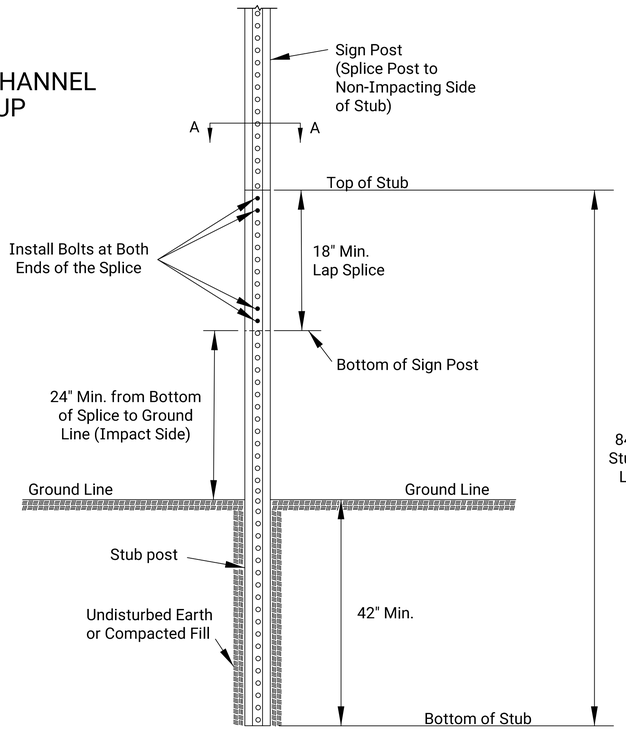
Section B-B



Front Elevation

See TE710 for Additional Details and Requirements

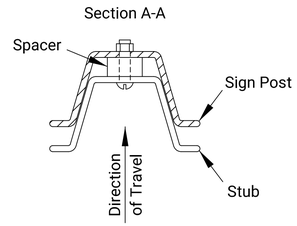
3 LB/F U-CHANNEL SETUP



Notes:

Place two bolts at both ends of the splice through the holes nearest the ends of the splice.

Use manufacturer recommended spacers over the bolts between the spliced pieces of U-Channel.



NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SIGN POSTS

TE712

FHWA APPROVAL			06-01-15	APP'D.		Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES		TRACED	
DESIGN CK.		DETAIL CK.		QUAN.CK.		TRACE CK.	

KDOT Graphics Certified 07-18-2022

Sh. No. 115

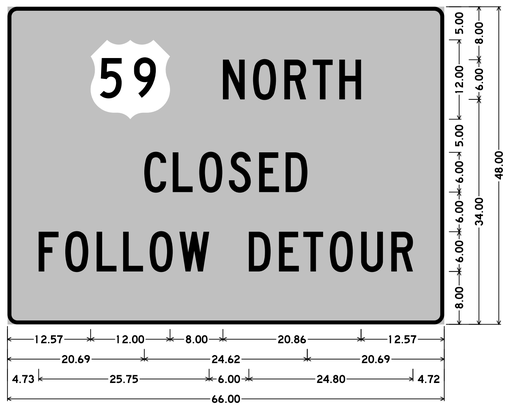
KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA390101css712-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	116	151

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH)

Work Zone Sign (Special)		
Sign No.	16.25 Sq.Ft. & Less	16.26 Sq.Ft. & Over
SP-1		2



1.50" Radius, 0.60" Border, Black on Orange;
"NORTH" White, C; "CLOSED" White, C; "FOLLOW DETOUR" White, C;
Table of letter and object lefts

59 12.57	N 32.57	O 37.11	R 41.84	T 46.14	H 50.15
C 20.69	L 24.98	O 28.99	S 33.48	E 38.02	D 42.03

F 4.73	O 8.74	L 13.47	L 17.48	O 21.50	W 25.98	D 36.48	E 41.02	T 44.70	O 48.72	U 53.45	R 57.99		

SP-1

SUMMARY OF TRAFFIC CONTROL DEVICES (EACH PER DAY)

✳ Quantity most used on the project at any one time

Work Zone Signs ✳			
Sign No.	Size - Sq.Ft.		
	0-9.25	9.26-16.25	16.26 & Over
W20-7		2	
W20-2		1	
W20-3		4	
R11-2		3	
R11-3a		3	
R11-4		2	
M1-4	96		
M2-1	5		
M3-1	47		
M3-3	49		
M4-8	97		
M4-8a	2		
M4-10L	1		
M4-10R	1		
M5-1R	5		
M5-2R	3		
M5-1L	7		
M6-1R	5		
M6-2R	3		
M6-1L	7		
M6-3	11		
D1-1	13		
D1-2	1		
Total	353	15	

Barricades ✳		Channelizing Devices ✳		
Type 3 (4' to 12')	Pedestrian	Fixed	Portable	Pedestrian
16			12	

Lighted Devices ✳	
Work Zone Warning Light (Type "A" Low Intensity)	11
Work Zone Warning Light (Red Type "B" High Intensity)	
Arrow Display	
Portable Changeable Message Sign	

Recapitulation of Quantities		
Item	Quantity	Unit
Work Zone Signs (0 to 9.25 Sq.Ft.)	105,900	Each Per Day
Work Zone Signs (9.26 to 16.25 Sq.Ft.)	4,500	Each Per Day
Work Zone Signs (16.26 Sq.Ft. & Over)		Each Per Day
Work Zone Barricades (Type 3 - 4' to 12')	4,800	Each Per Day
Work Zone Barricades (Pedestrian)		Each Per Day
Channelizer (Fixed)		Each Per Day
Channelizer (Portable)	3,600	Each Per Day
Channelizer (Pedestrian)		Each Per Day
Work Zone Warning Light (Type "A" Low Intensity)	3,300	Each Per Day
Work Zone Warning Light (Red Type "B" High Intensity)		Each Per Day
Arrow Display		Each Per Day
Portable Changeable Message Sign		Each Per Day
Pavement Marking (Temporary)		
4" Solid (Type I)		Sta./Line
4" Solid (Type II)		Sta./Line
4" Broken (8.0') (Type I)		Sta./Line
4" Broken (8.0') (Type II)		Sta./Line
4" Broken (3.0') (Type I)		Sta./Line
4" Broken (3.0') (Type II)		Sta./Line
4" Dotted Extension (Type I)		Sta./Line
4" Dotted Extension (Type II)		Sta./Line
Solid (Line Masking Tape)		Sta./Line
Broken (Line Masking Tape)		Sta./Line
Symbol (Type I)		Each
Symbol (Type II)		Each
Flexible Raised Pavement Marker (4" Broken (8.0'))		Sta./Line
Flexible Raised Pavement Marker (4" Broken (3.0'))		Sta./Line
Pavement Marking Removal		Lin. Ft.
Work Zone Sign (Special) (16.25 Sq. Ft. & Less)		Each
Work Zone Sign (Special) (16.26 Sq. Ft. & More)	2	Each
Rigid Raised Pavement Marker (Type I)		Each
Rigid Raised Pavement Marker (Type II)		Each
Traffic Signal Installation (Temporary)		Lump Sum
Traffic Control (Initial Set Up)	Lump Sum	Lump Sum
Traffic Control		Lump Sum
Flagger (Set Price)	1	Hour

NO.	DATE	REVISIONS	BY	APP'D

KANSAS DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL
SUMMARY OF DEVICES
RECAPITULATION OF QUANTITIES

~~TE795~~

FHWA APPROVAL		06-01-15	APP'D.	Kristina Ericksen	
DESIGNED	B.A.H.	DETAILED	R.W.B.	QUANTITIES	TRACED
DESIGN CK.		DETAIL CK.		QUAN.CK.	TRACE CK.

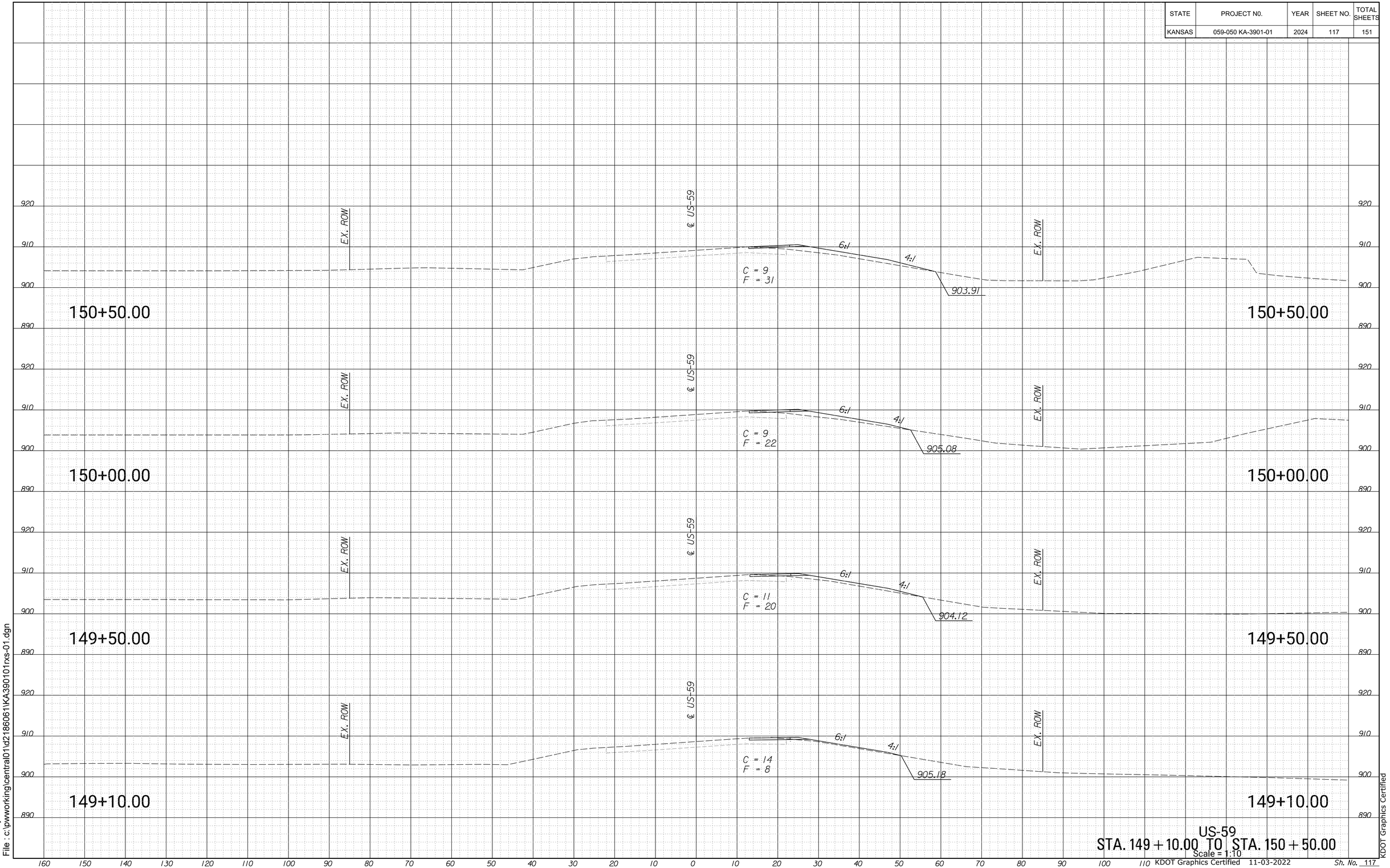
KDOT Graphics Certified 07-18-2022

Sh. No. 116

KDOT Graphics Certified

Drawn By : BBEAMER Plotted : 06-10-25
File : c:\pwworking\central01\d2186061\KA390101css795-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	117	151



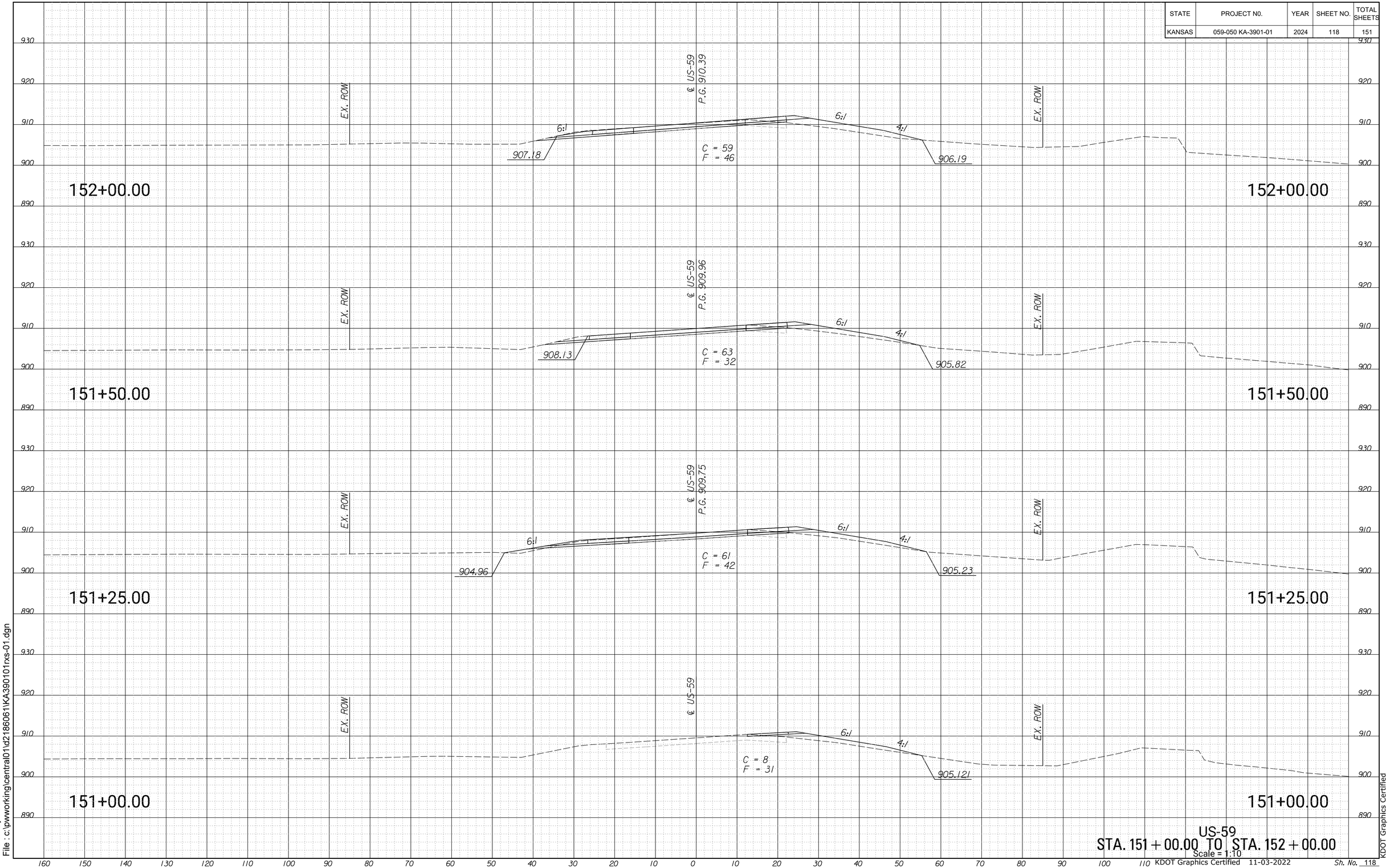
US-59
STA. 149 + 10.00 TO STA. 150 + 50.00
Scale = 1:10

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified 11-03-2022
Sh. No. 117

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	118	151



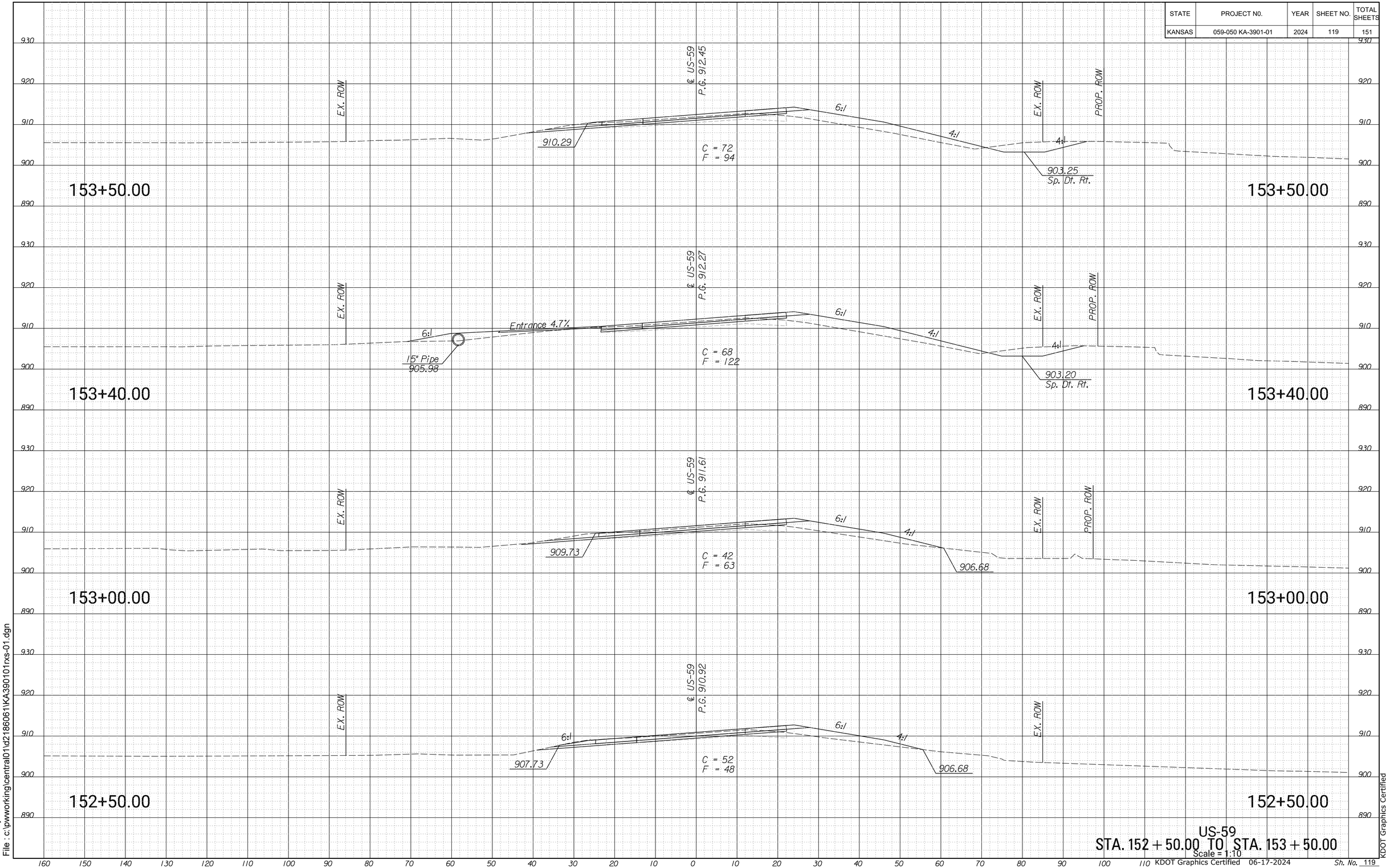
US-59
STA. 151 + 00.00 TO STA. 152 + 00.00

Scale = 1:10 KDOT Graphics Certified 11-03-2022 Sh. No. 118

Drawn By: : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	119	151



US-59
STA. 152 + 50.00 TO STA. 153 + 50.00

Scale = 1:10

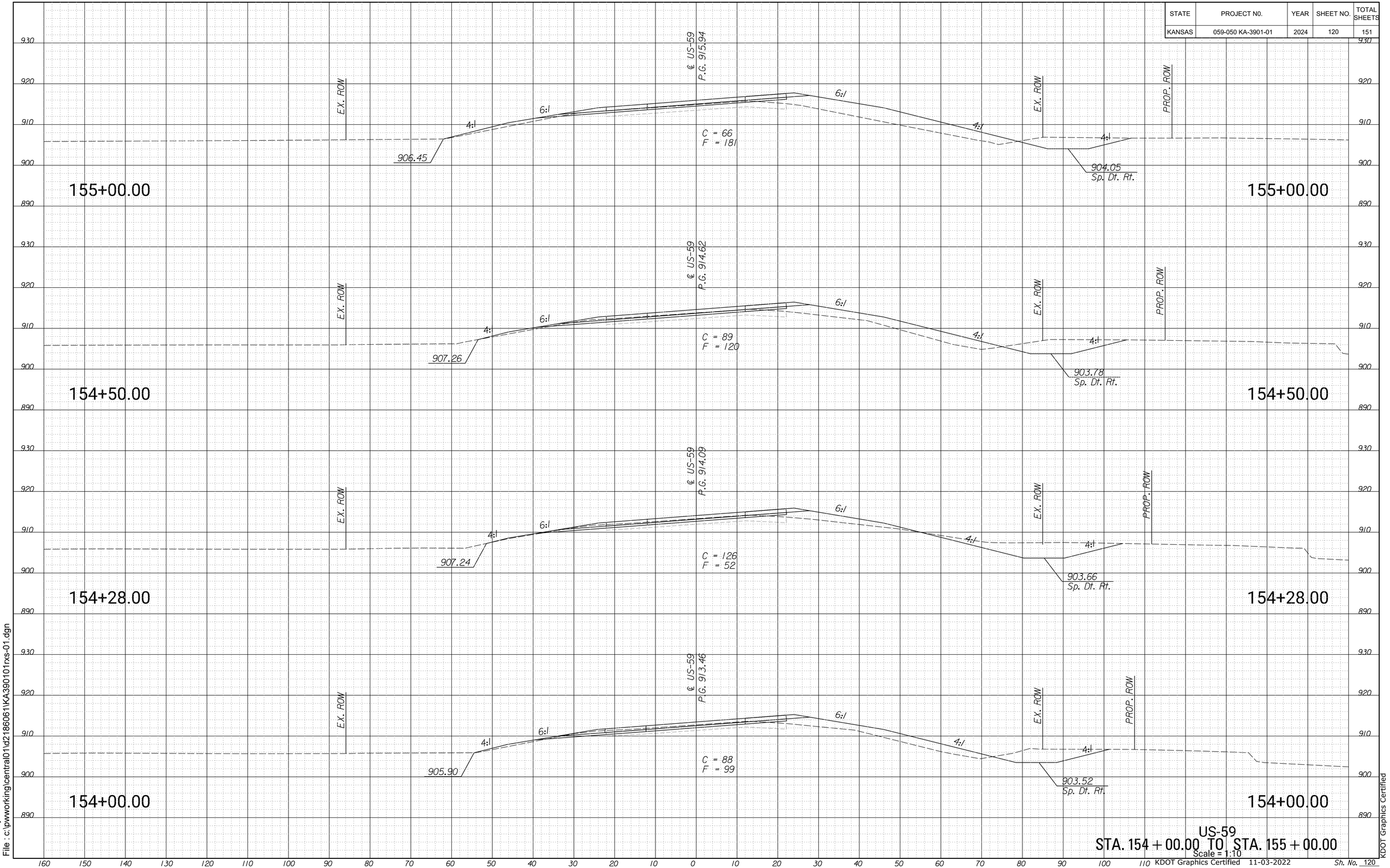
KDOT Graphics Certified 06-17-2024

Sh. No. 119

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 08-23-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	120	151



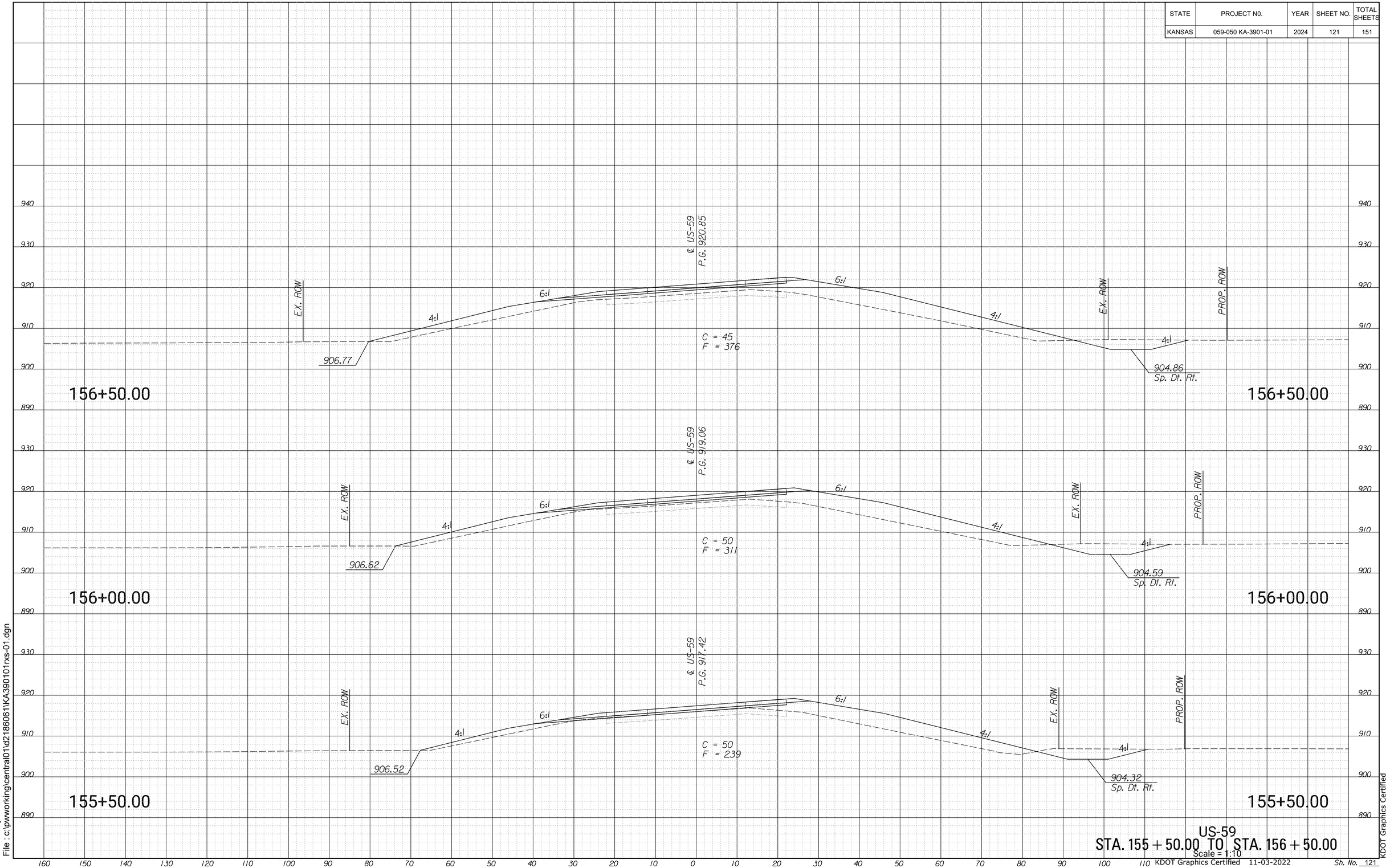
US-59
STA. 154 + 00.00 TO STA. 155 + 00.00
Scale = 1:10

KDOT Graphics Certified 11-03-2022 Sh. No. 120

Drawn By: : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	121	151



US-59
STA. 155 + 50.00 TO STA. 156 + 50.00

Scale = 1:10

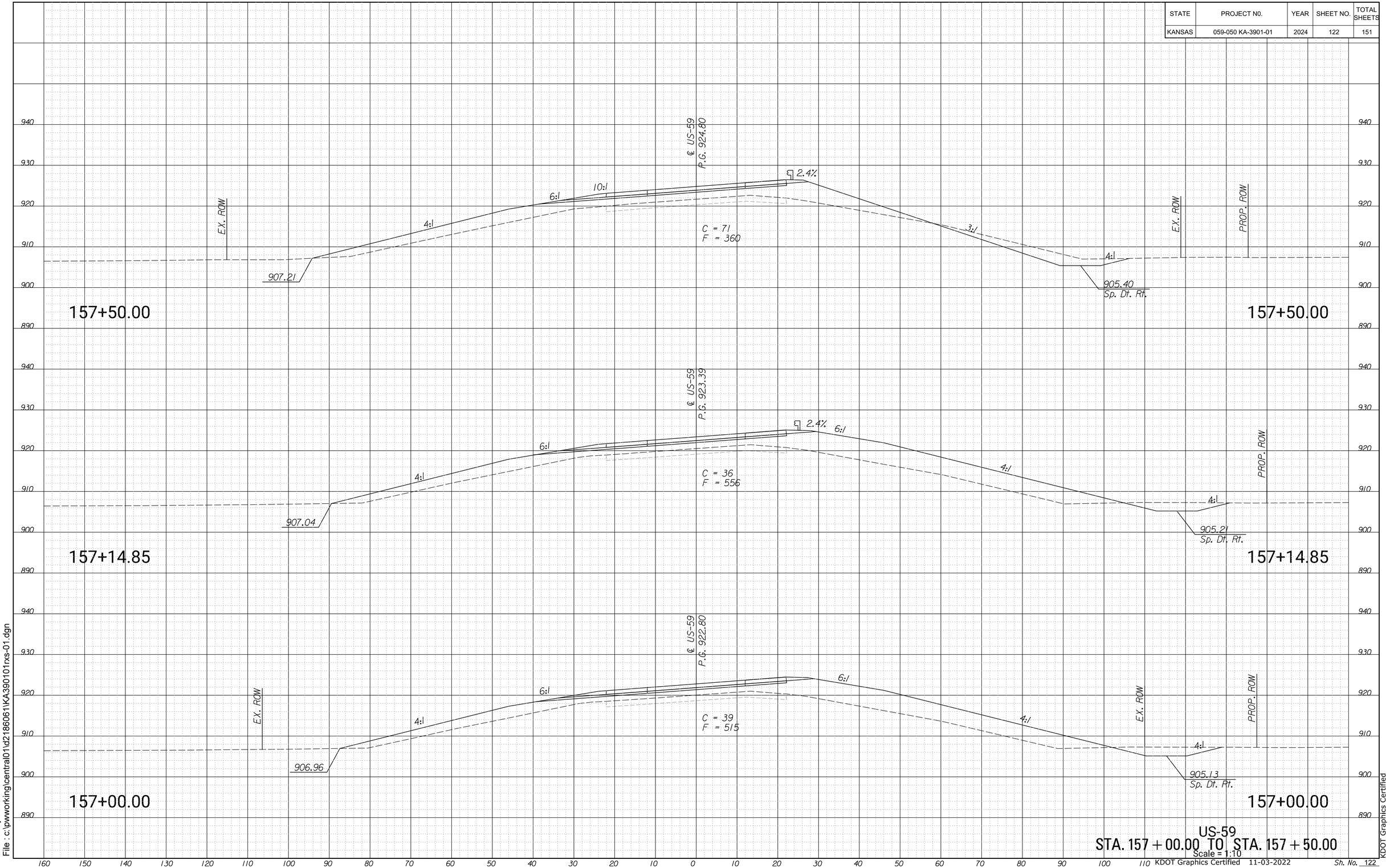
KDOT Graphics Certified 11-03-2022

Sh. No. 121

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	122	151



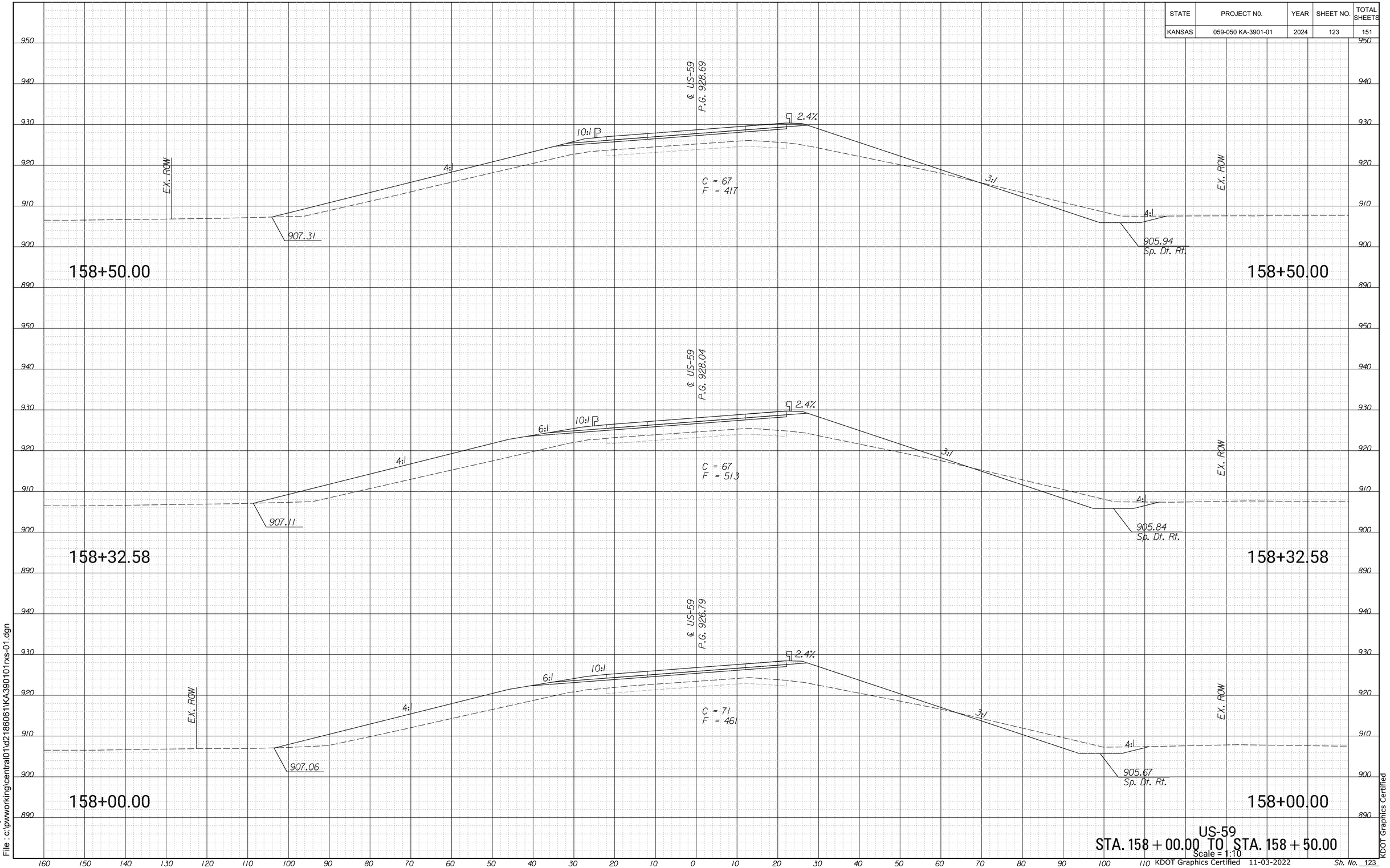
US-59
STA. 157 + 00.00 TO STA. 157 + 50.00

Scale = 1:10 KDOT Graphics Certified 11-03-2022 Sh. No. 122

Drawn By: : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	123	151



US-59
STA. 158 + 00.00 TO STA. 158 + 50.00

Scale = 1:10

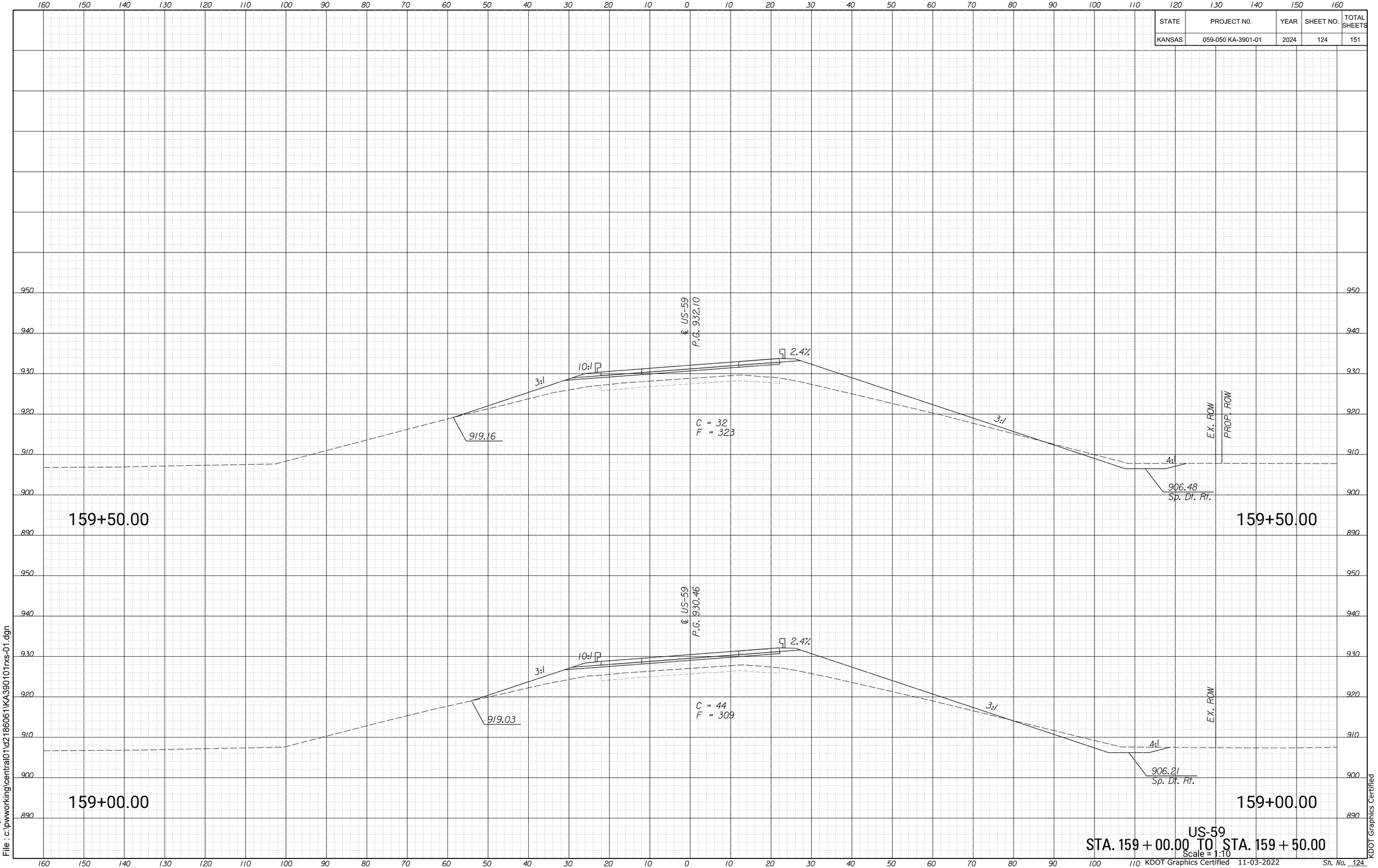
KDOT Graphics Certified 11-03-2022

Sh. No. 123

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	124	151



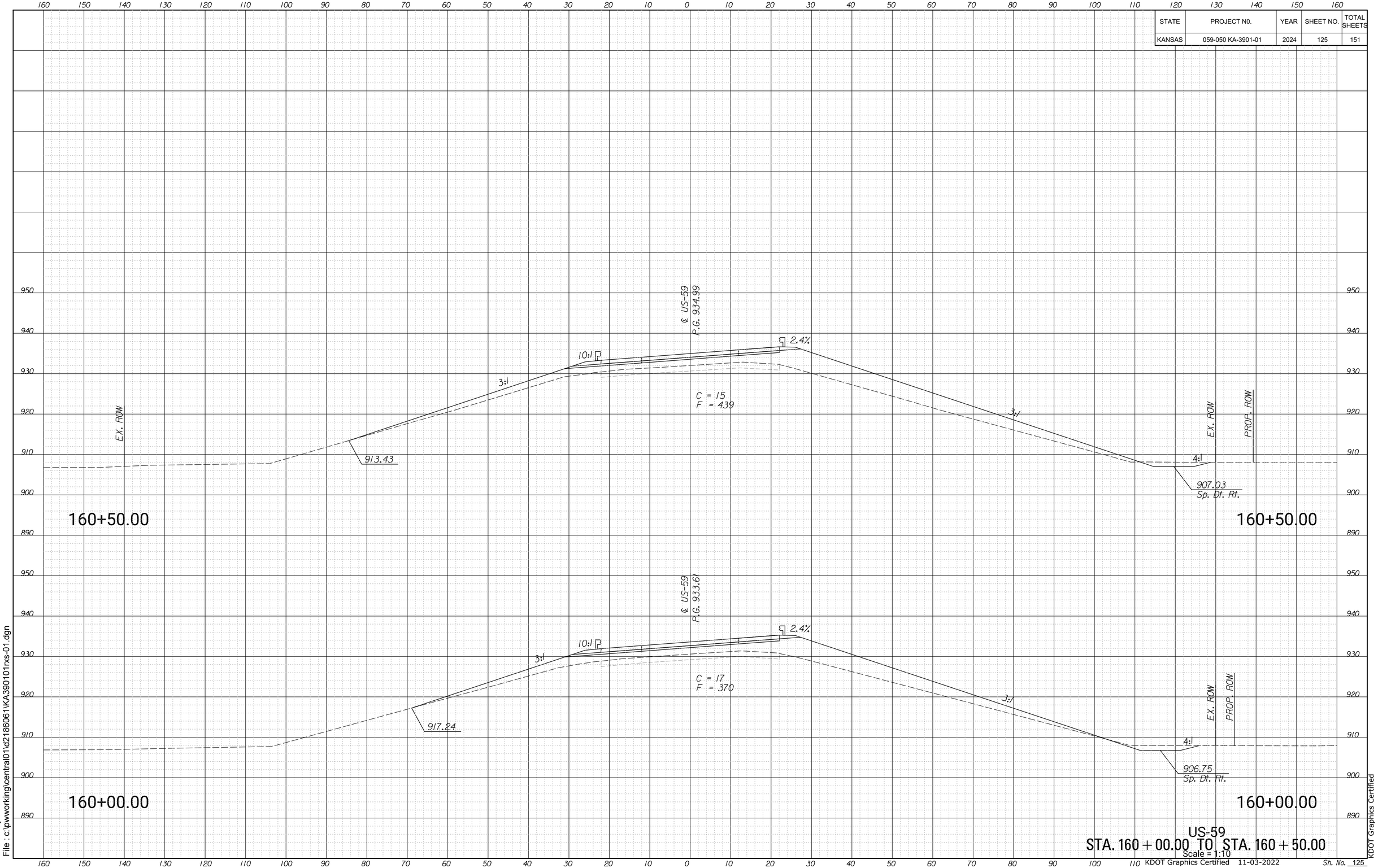
US-59
STA. 159 + 00.00 TO STA. 159 + 50.00
Scale = 1:10

KDOT Graphics Certified 11-03-2022 Sh. No. 124

Drawn By : BBEAMER Plotted : 06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	125	151



US-59
STA. 160 + 00.00 TO STA. 160 + 50.00

Scale = 1:10

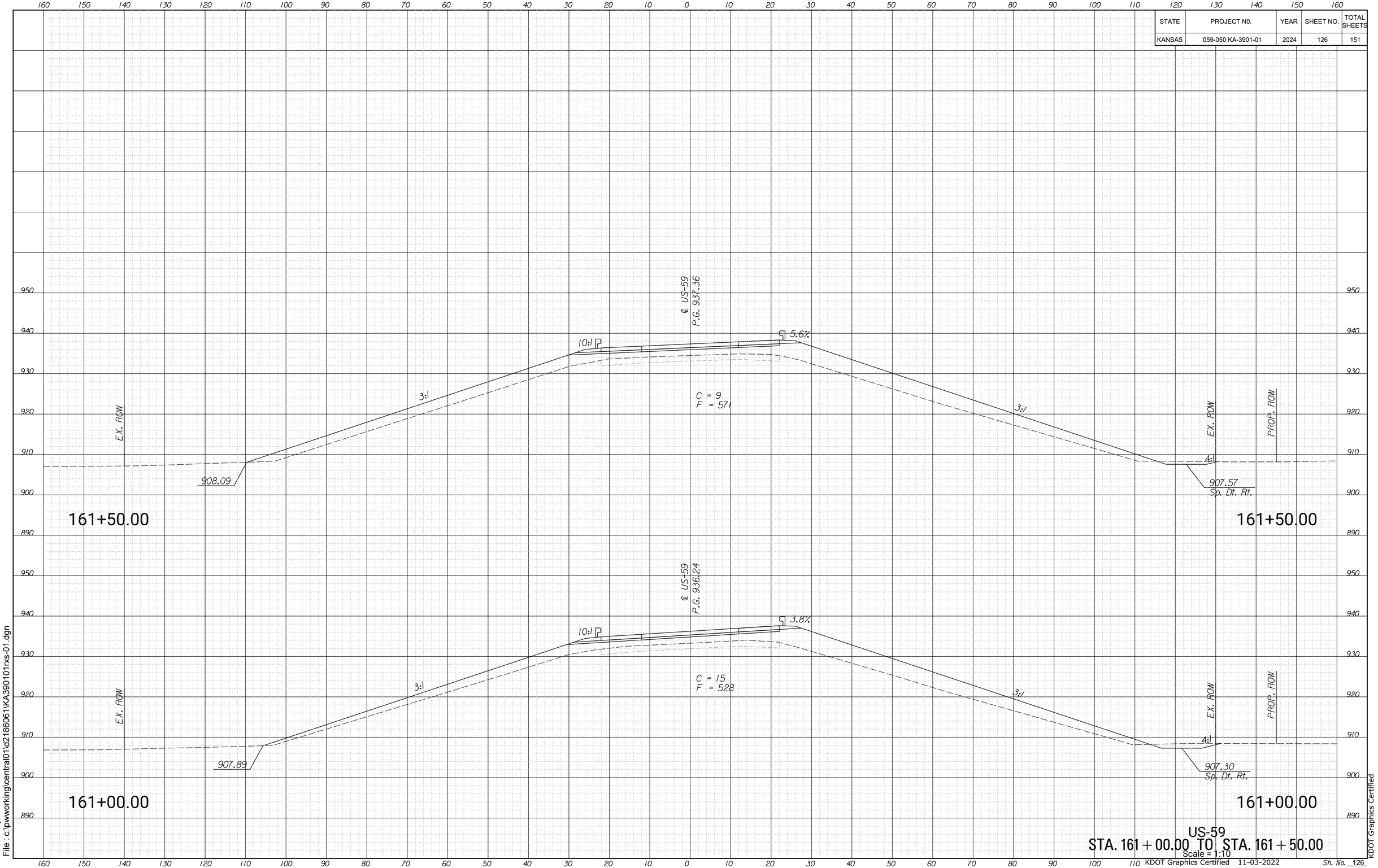
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified 11-03-2022

Sh. No. 125

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	126	151



US-59
STA. 161+00.00 TO STA. 161+50.00

Scale = 1:10

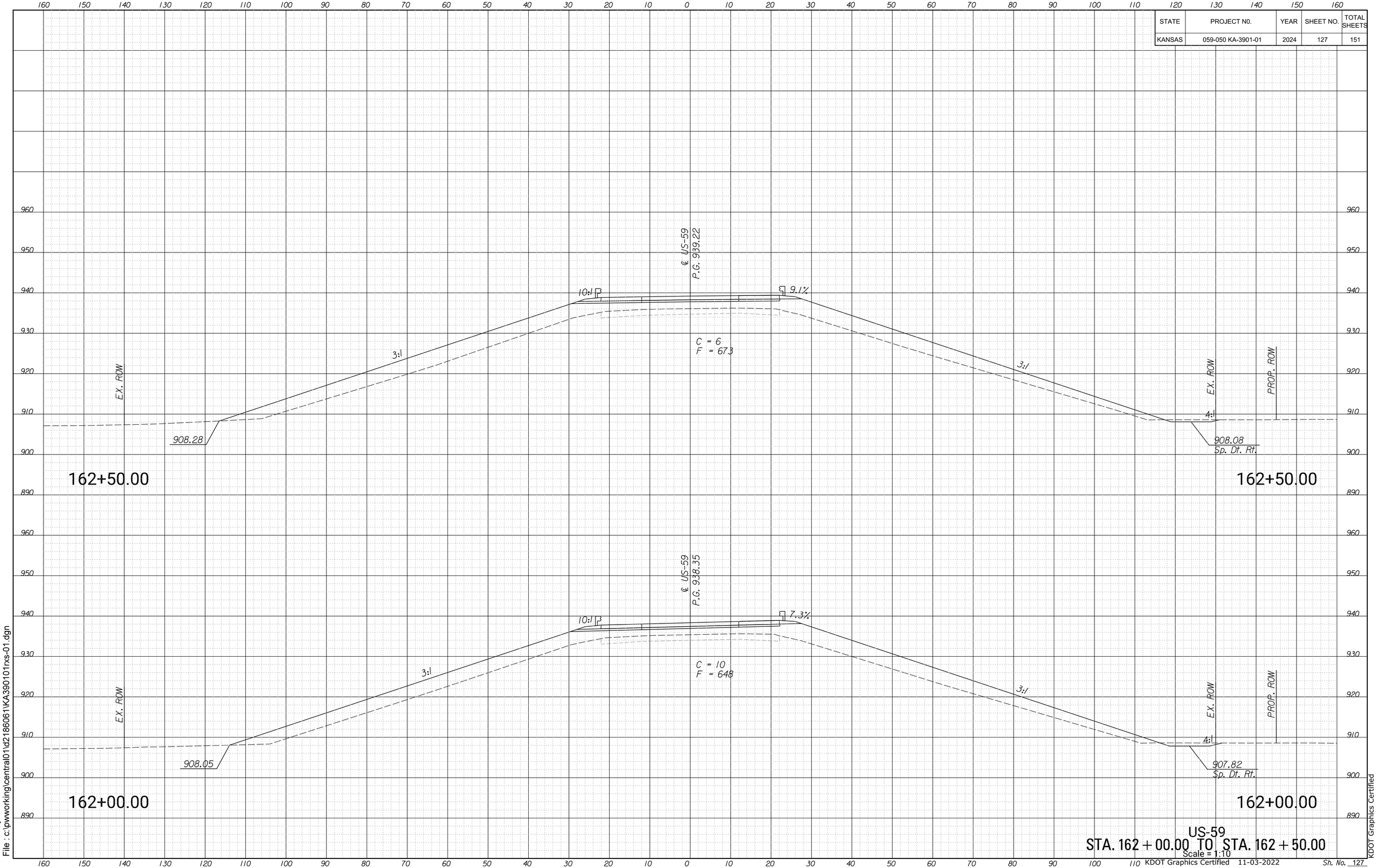
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified 11-03-2022

Sh. No. 126

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	127	151



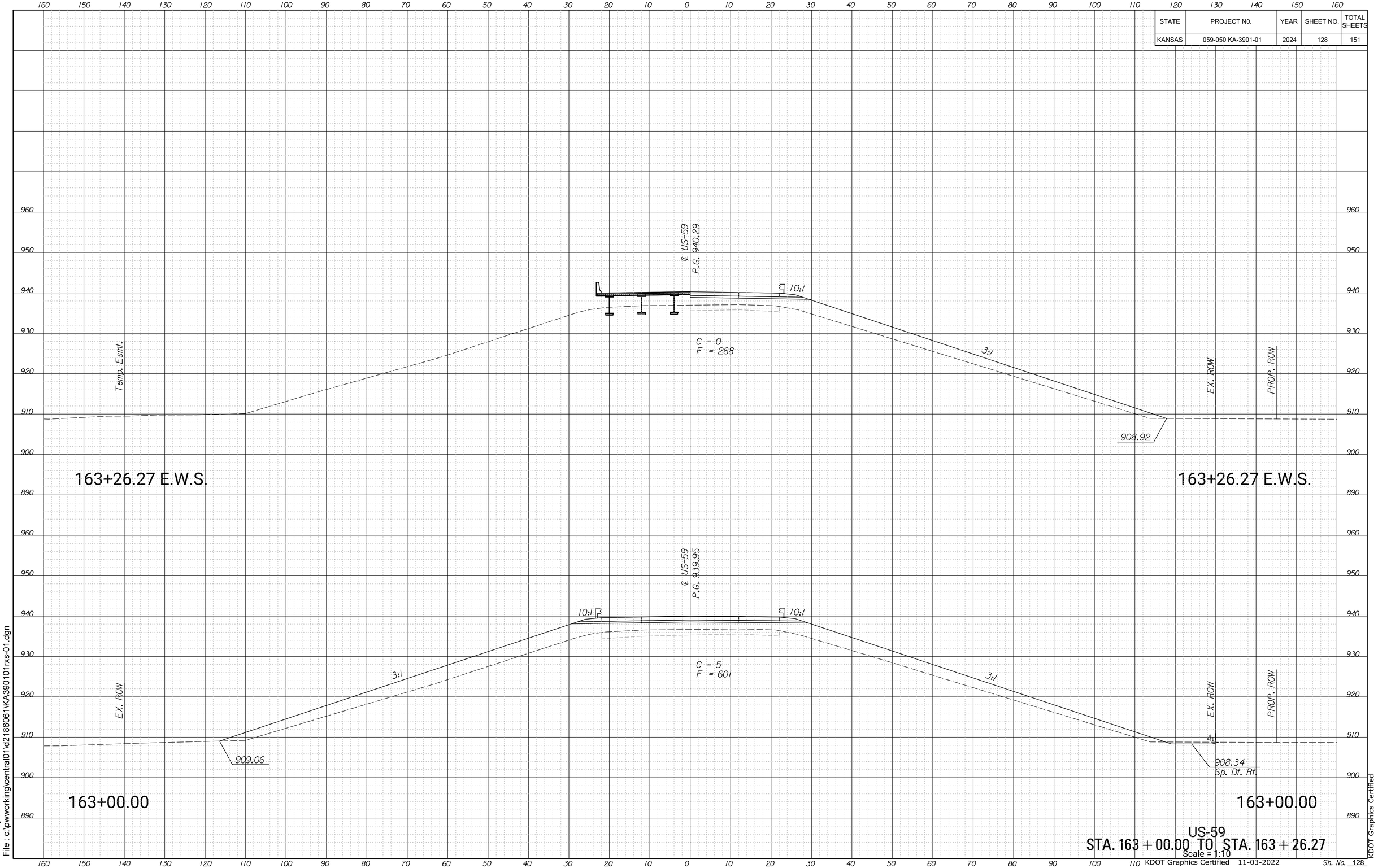
US-59
STA. 162 + 00.00 TO STA. 162 + 50.00
Scale = 1:10

KDOT Graphics Certified 11-03-2022 Sh. No. 127

KDOT Graphics Certified

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	128	151



US-59
STA. 163 + 00.00 TO STA. 163 + 26.27

Scale = 1:10

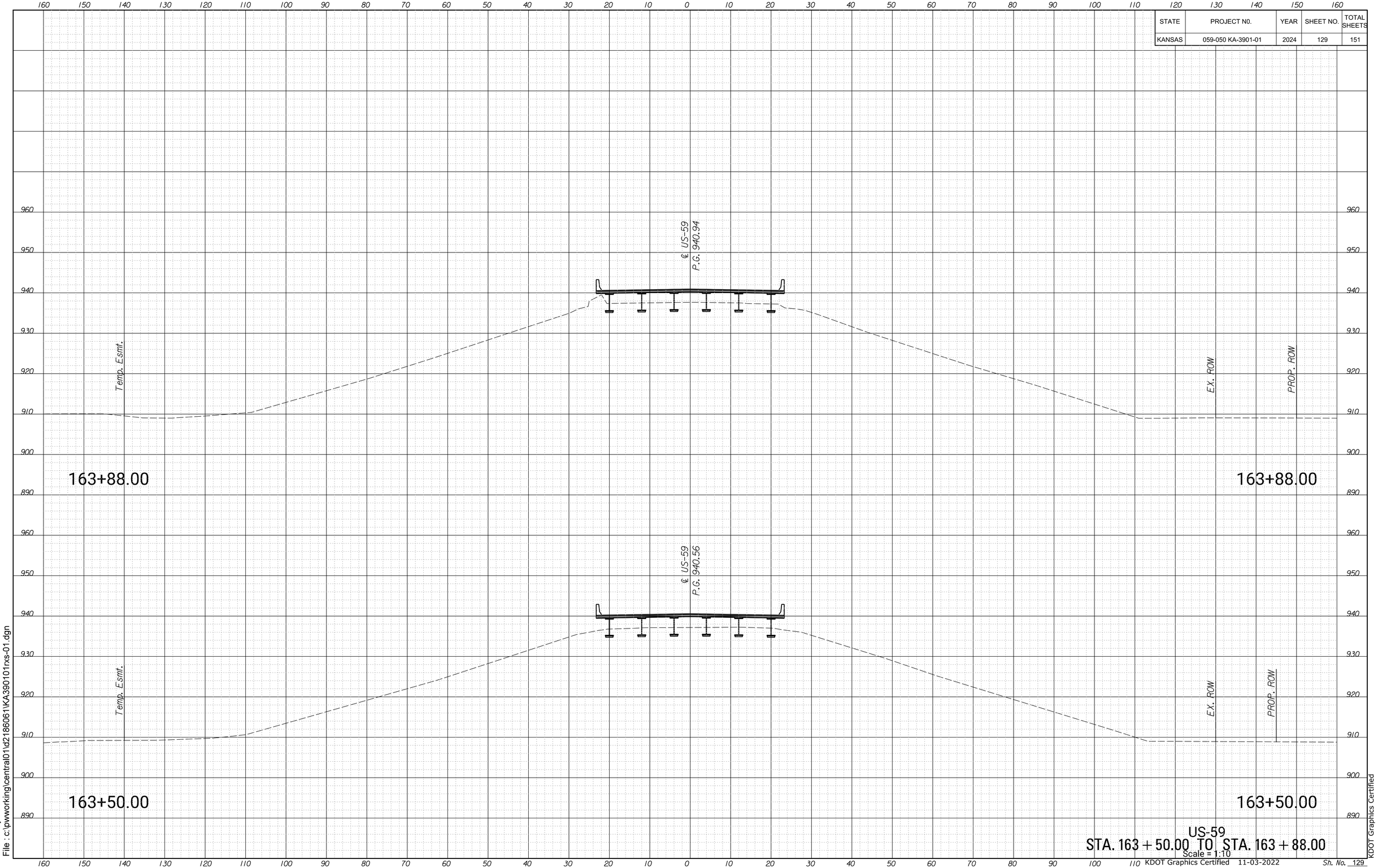
KDOT Graphics Certified 11-03-2022

Sh. No. 128

Drawn By : BBEAMER
Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	129	151



US-59
STA. 163 + 50.00 TO STA. 163 + 88.00
Scale = 1:10

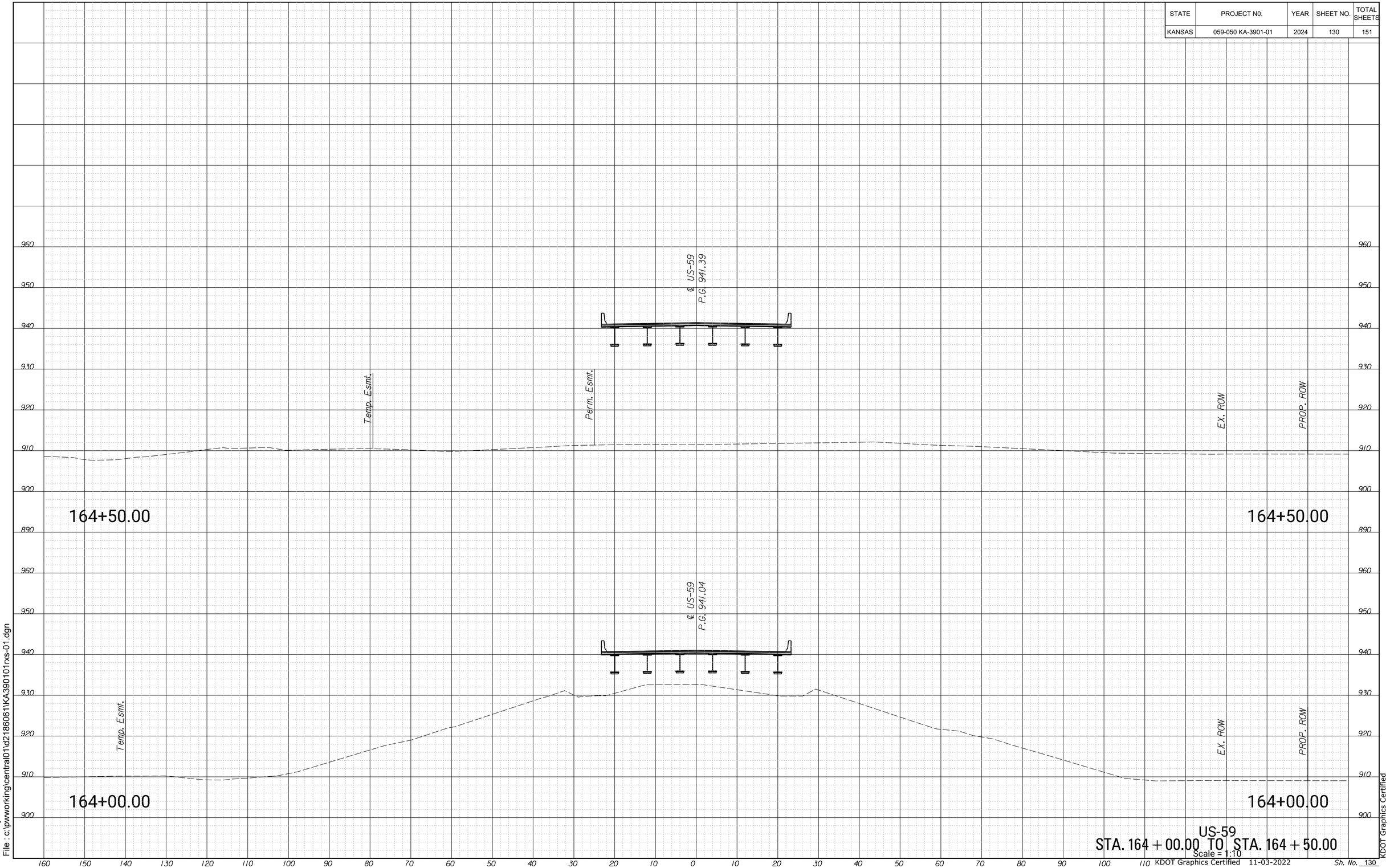
KDOT Graphics Certified 11-03-2022

Sh. No. 129

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	130	151



US-59
STA. 164 + 00.00 TO STA. 164 + 50.00

Scale = 1:10

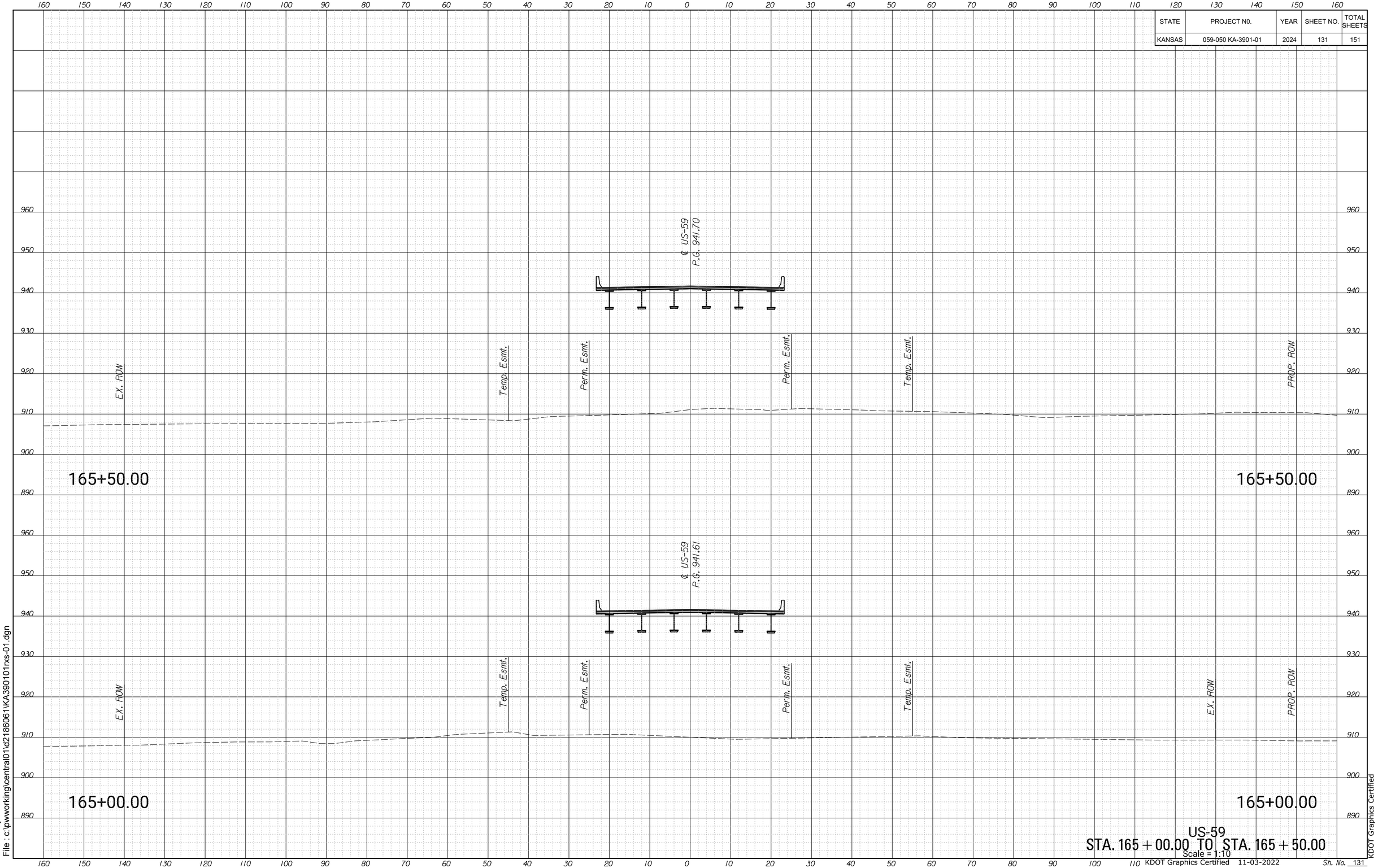
KDOT Graphics Certified 11-03-2022

Sh. No. 130

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	131	151



US-59
STA. 165 + 00.00 TO STA. 165 + 50.00
Scale = 1:10

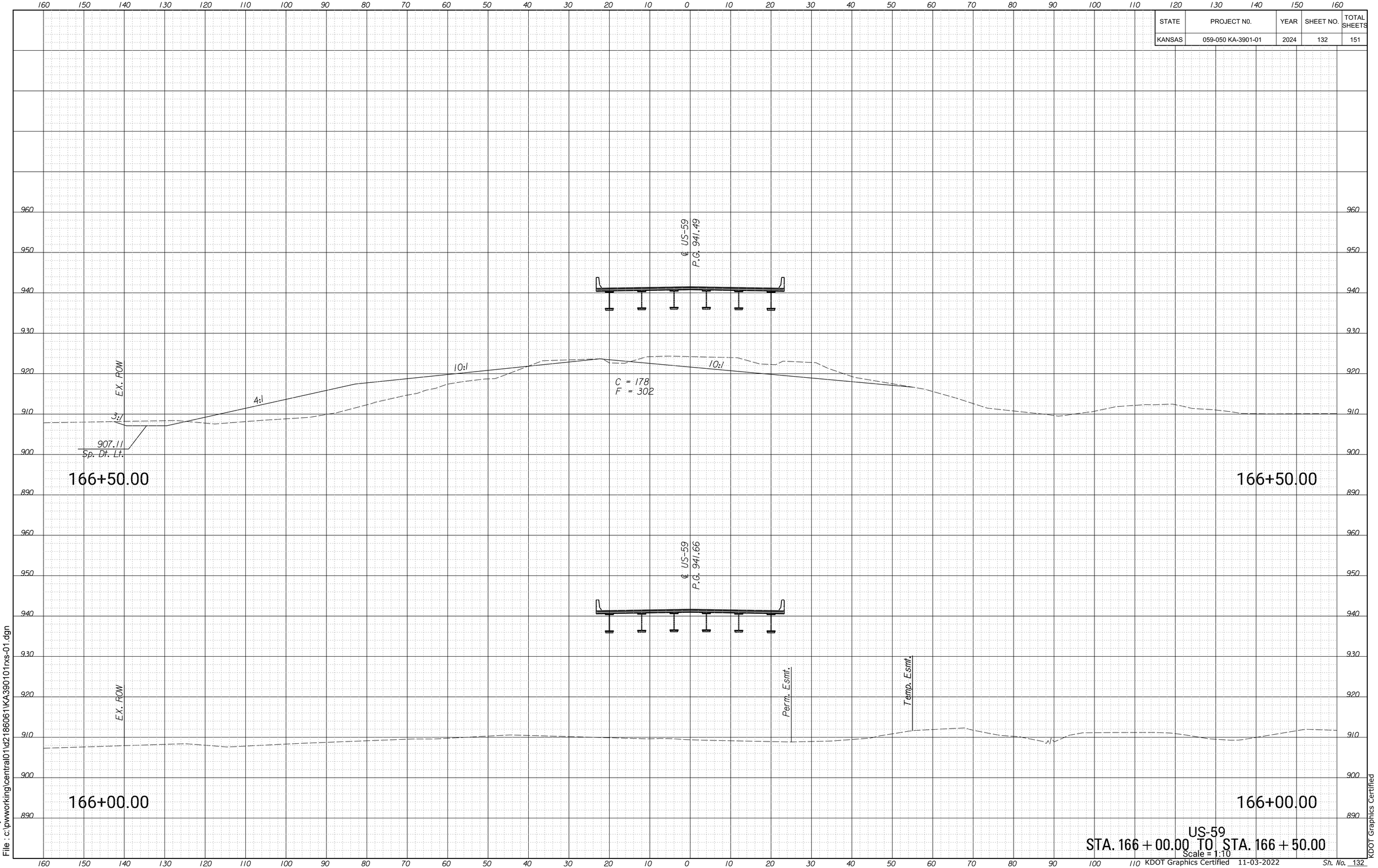
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified 11-03-2022

Sh. No. 131

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	132	151



US-59
STA. 166 + 00.00 TO STA. 166 + 50.00
Scale = 1:10

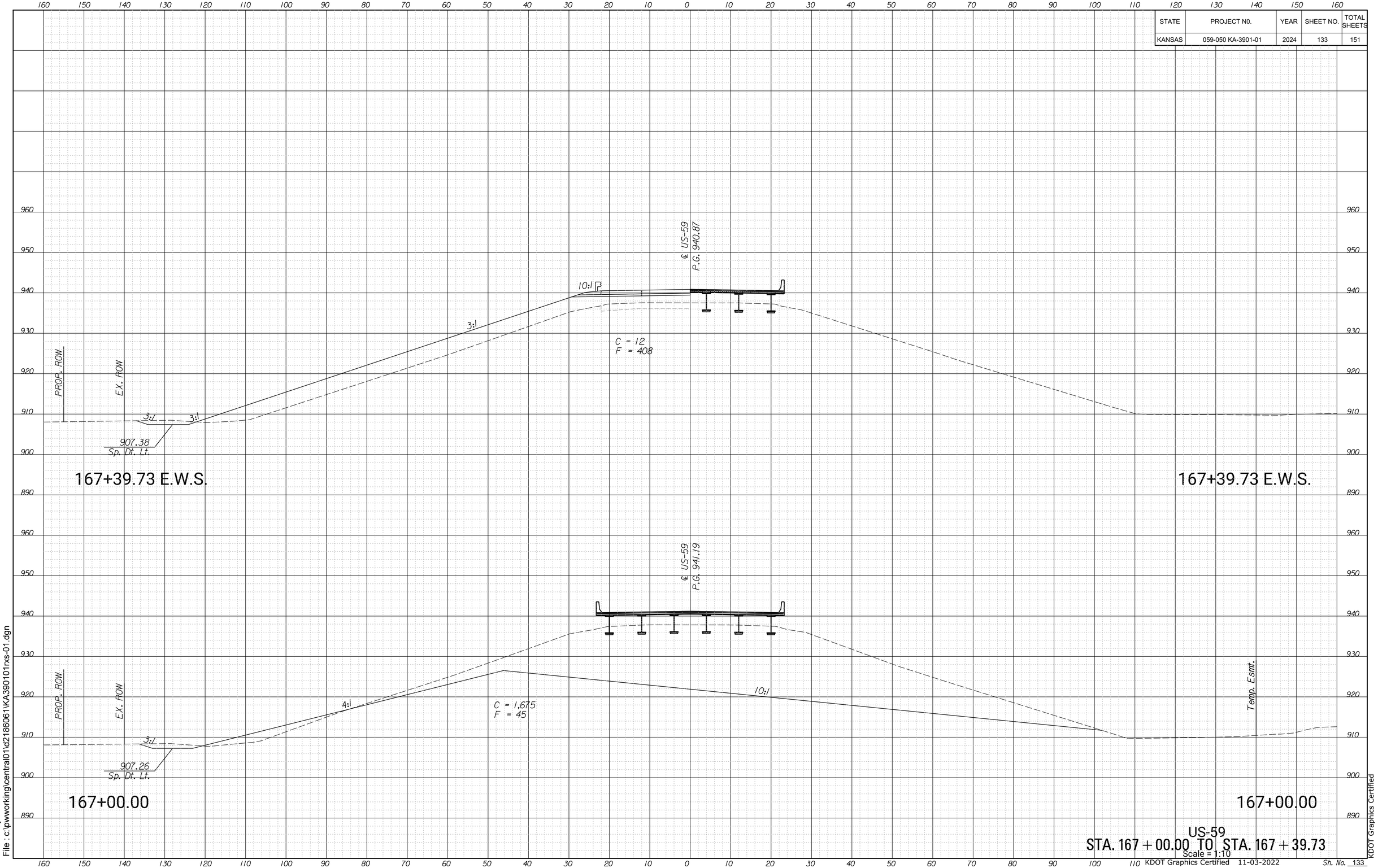
KDOT Graphics Certified 11-03-2022

Sh. No. 132

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	133	151



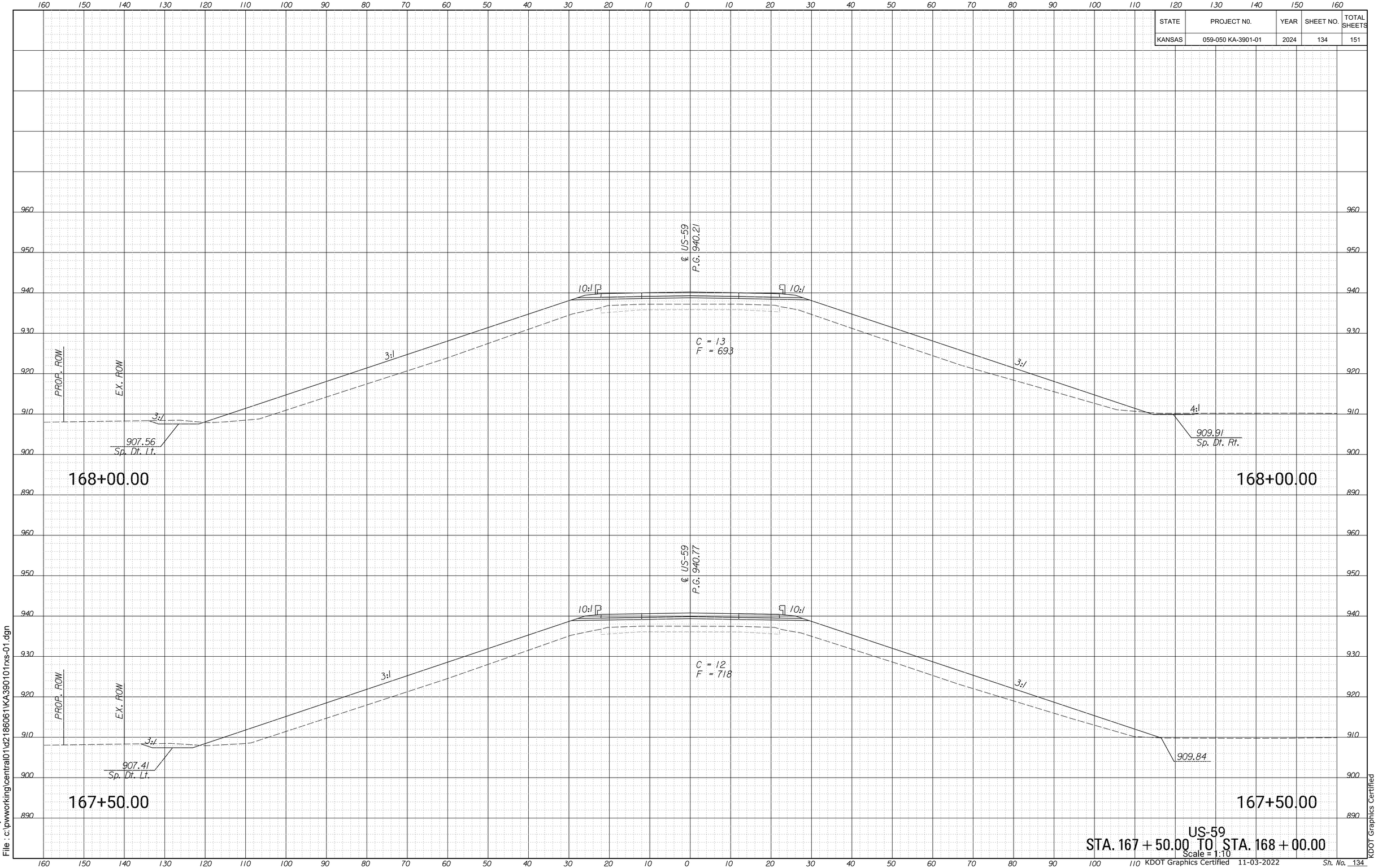
US-59
STA. 167 + 00.00 TO STA. 167 + 39.73
Scale = 1:10

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

KDOT Graphics Certified 11-03-2022 Sh. No. 133

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	134	151

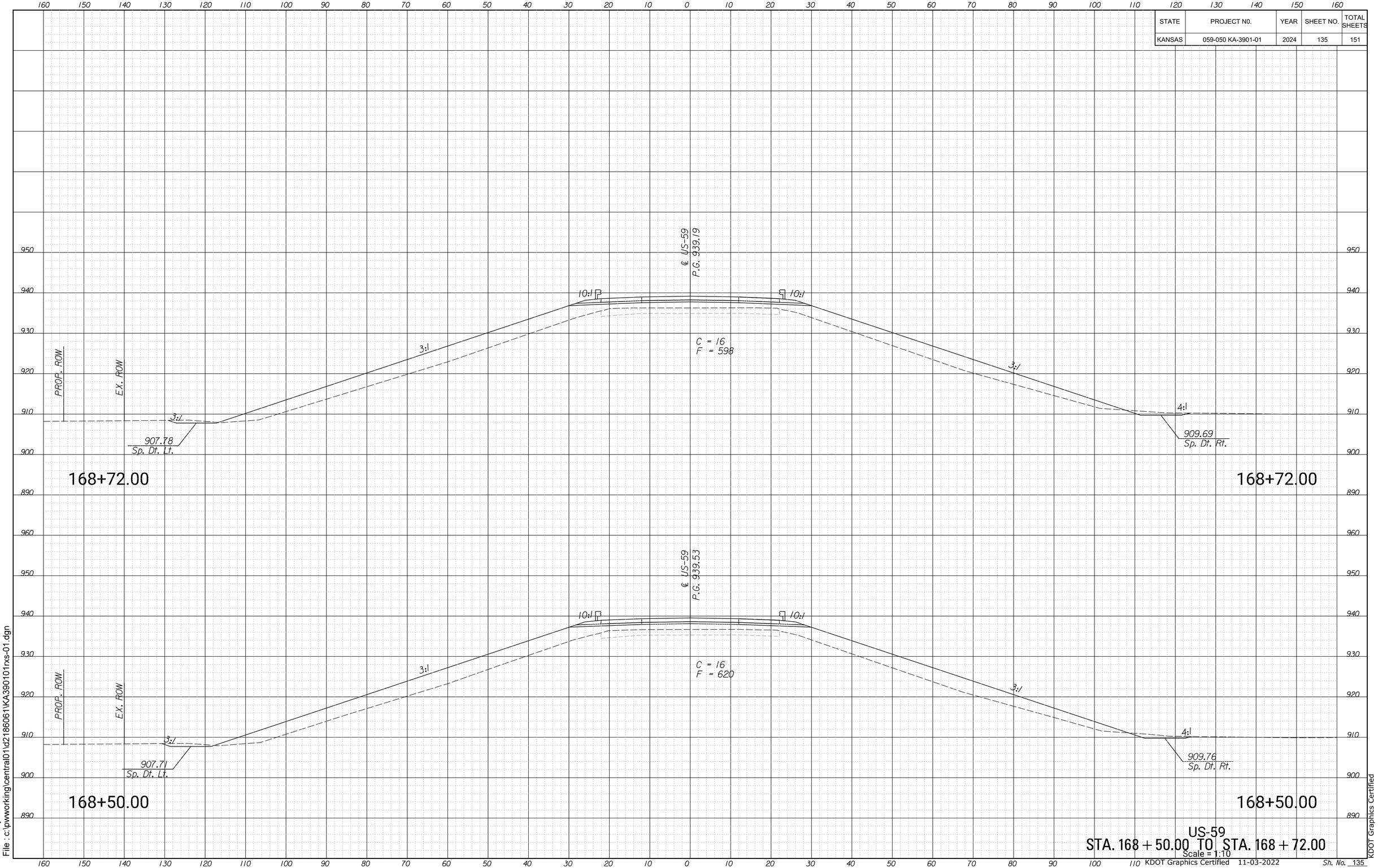


Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

KDOT Graphics Certified 11-03-2022 Sh. No. 134

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	135	151



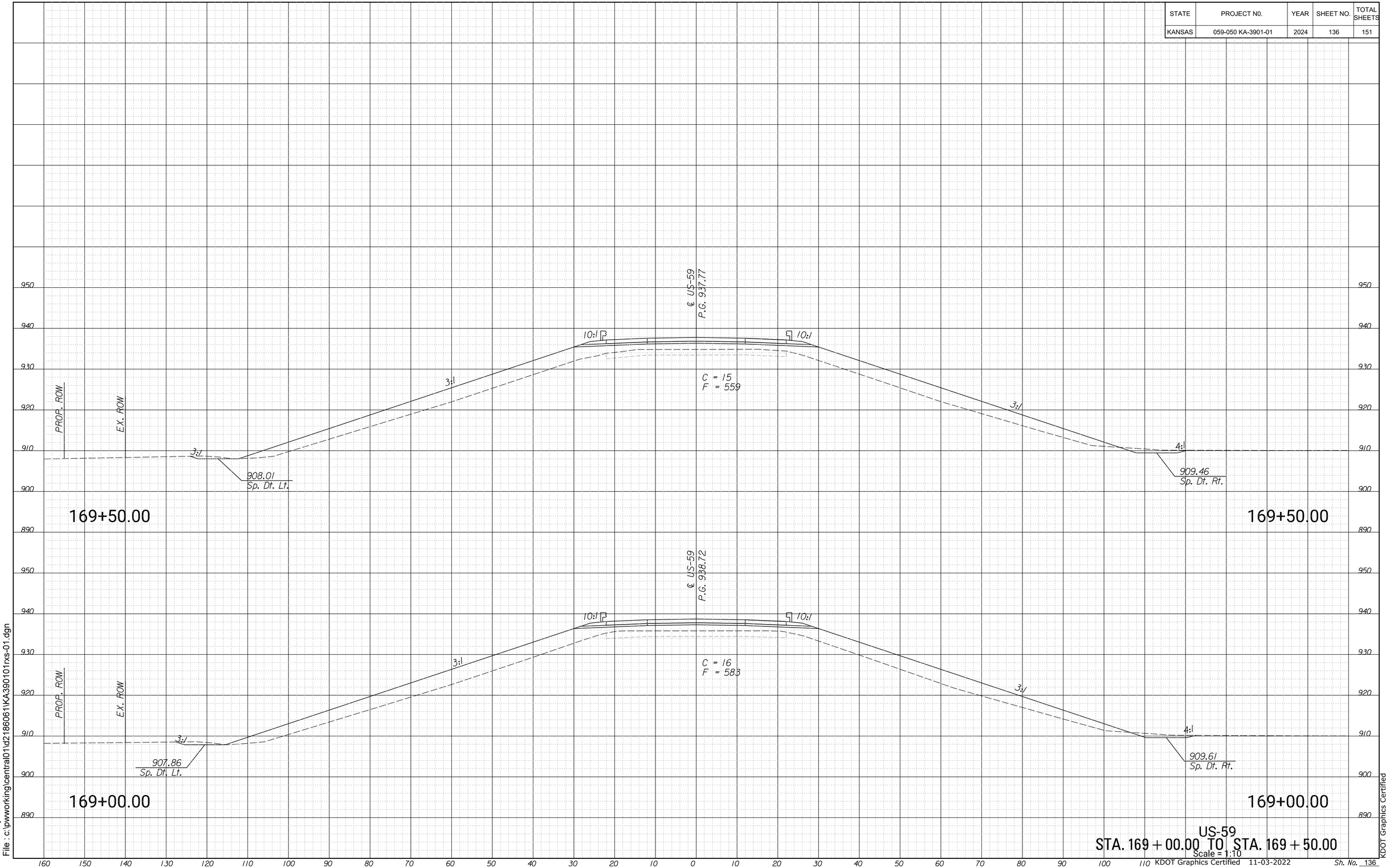
US-59
STA. 168 + 50.00 TO STA. 168 + 72.00
Scale = 1:10

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

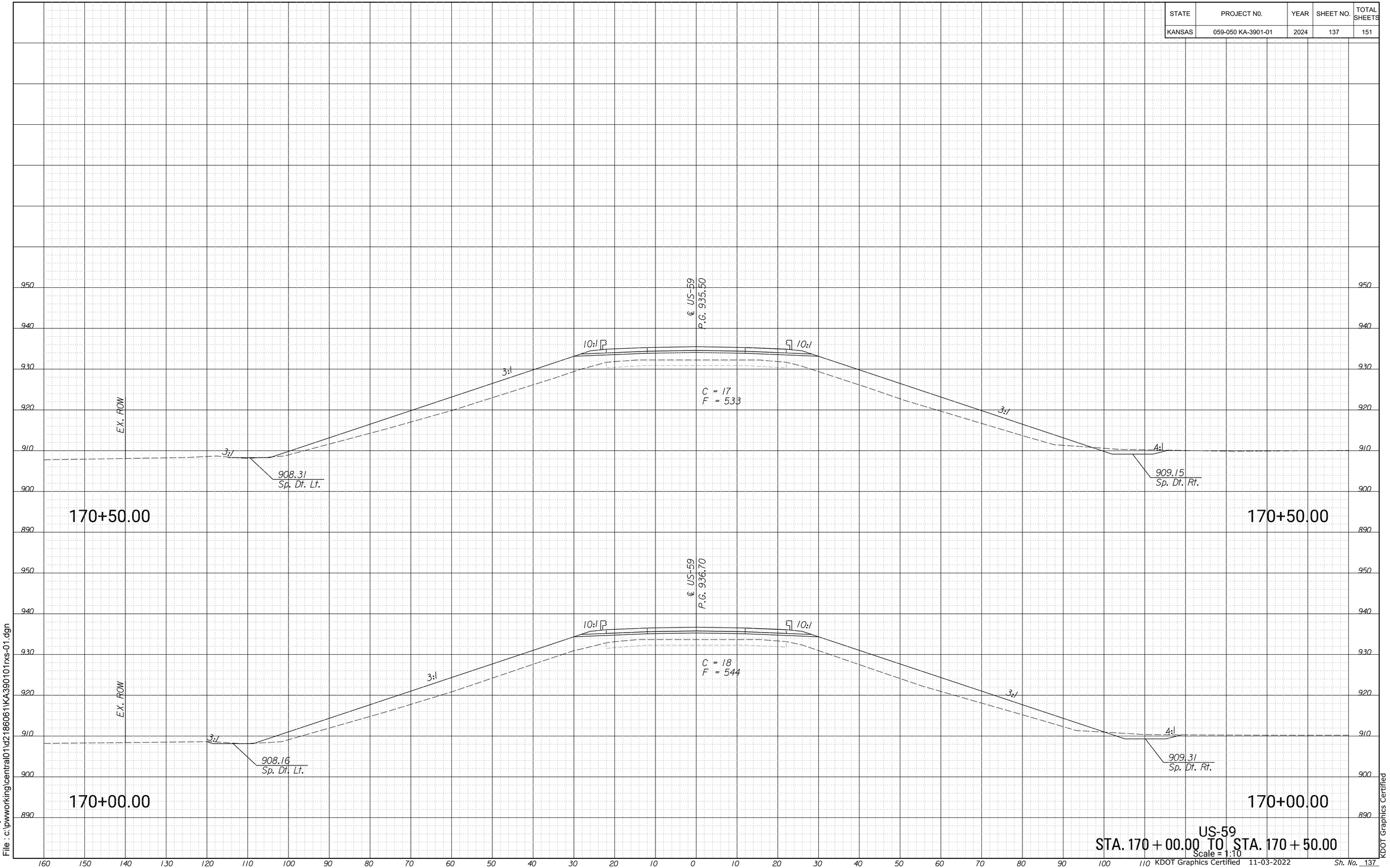
KDOT Graphics Certified 11-03-2022 Sh. No. 135

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	136	151



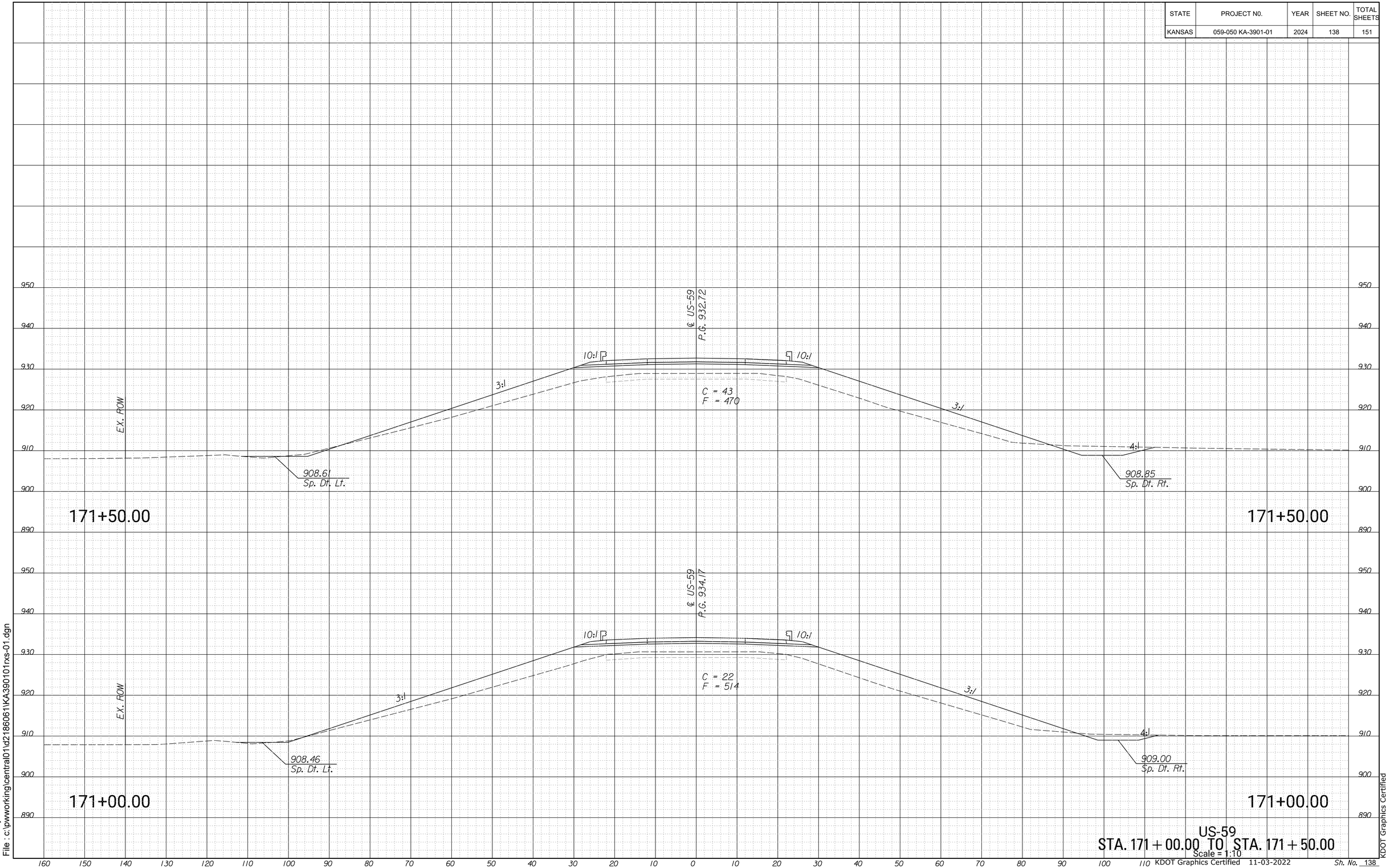
STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	137	151



Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	138	151



US-59
STA. 171+00.00 TO STA. 171+50.00
Scale = 1:10

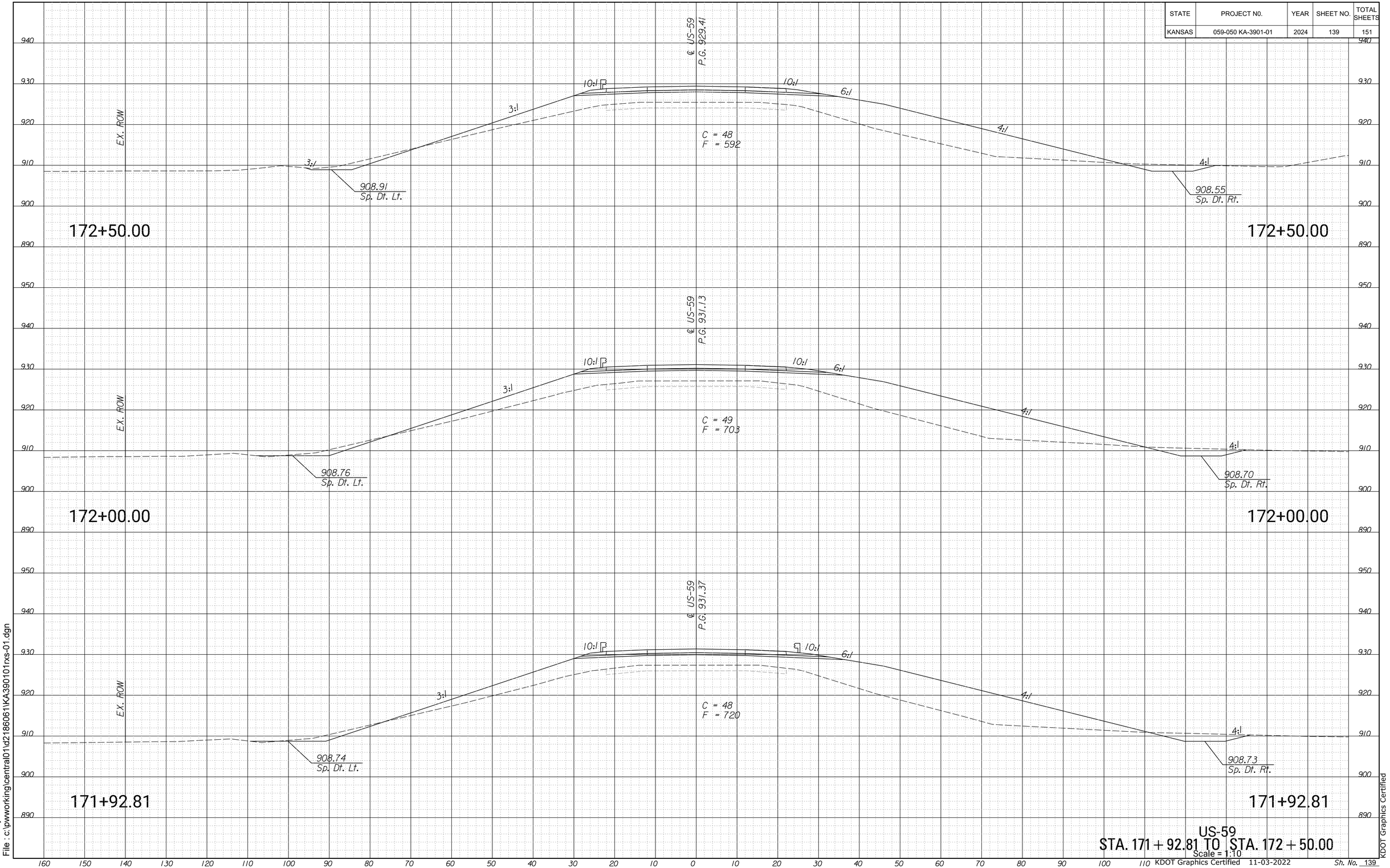
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified 11-03-2022

Sh. No. 138

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	139	151



US-59
STA. 171 + 92.81 TO STA. 172 + 50.00
Scale = 1:10

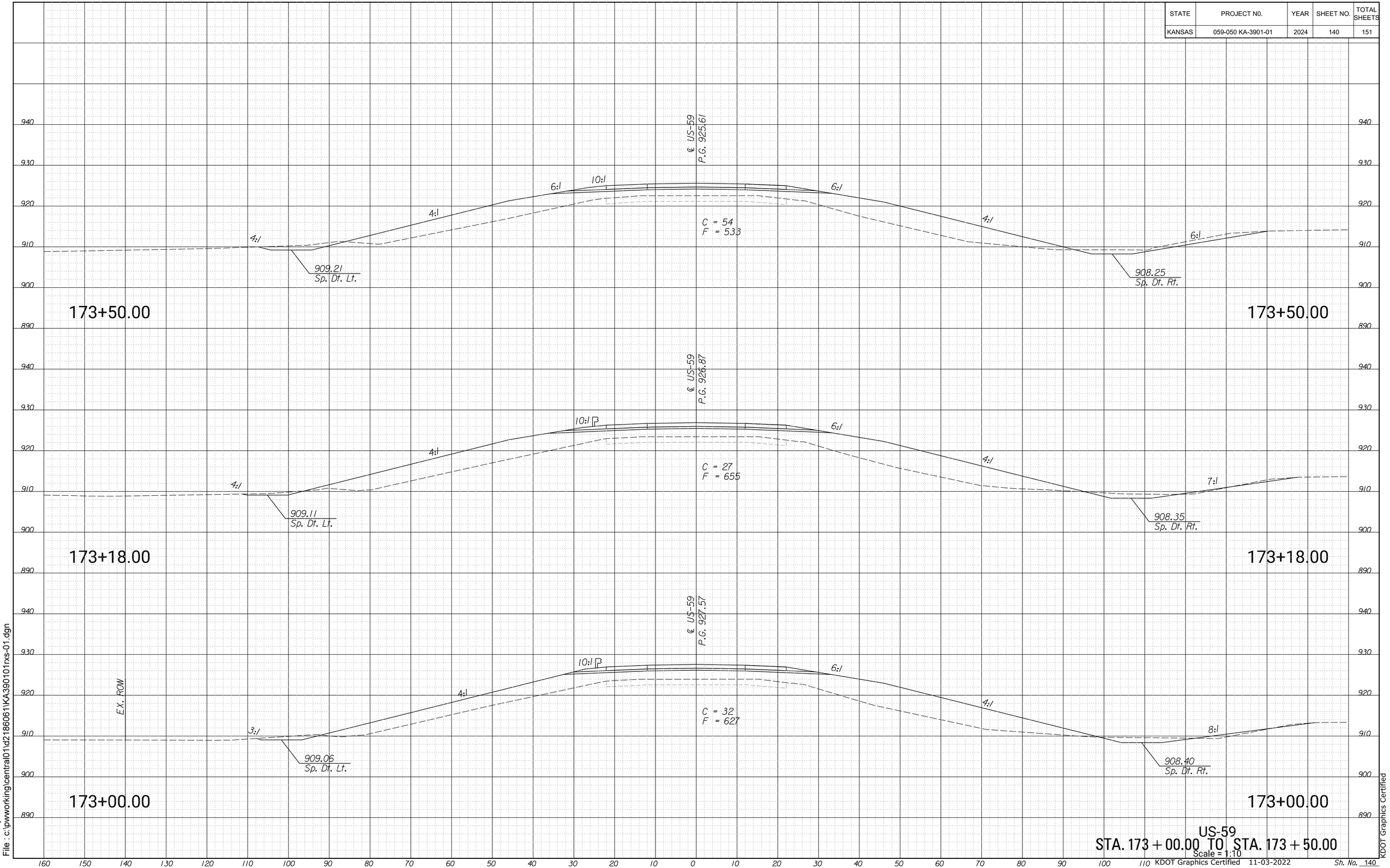
Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified 11-03-2022

KDOT Graphics Certified

Sh. No. 139

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	140	151



US-59
STA. 173 + 00.00 TO STA. 173 + 50.00

Scale = 1:10

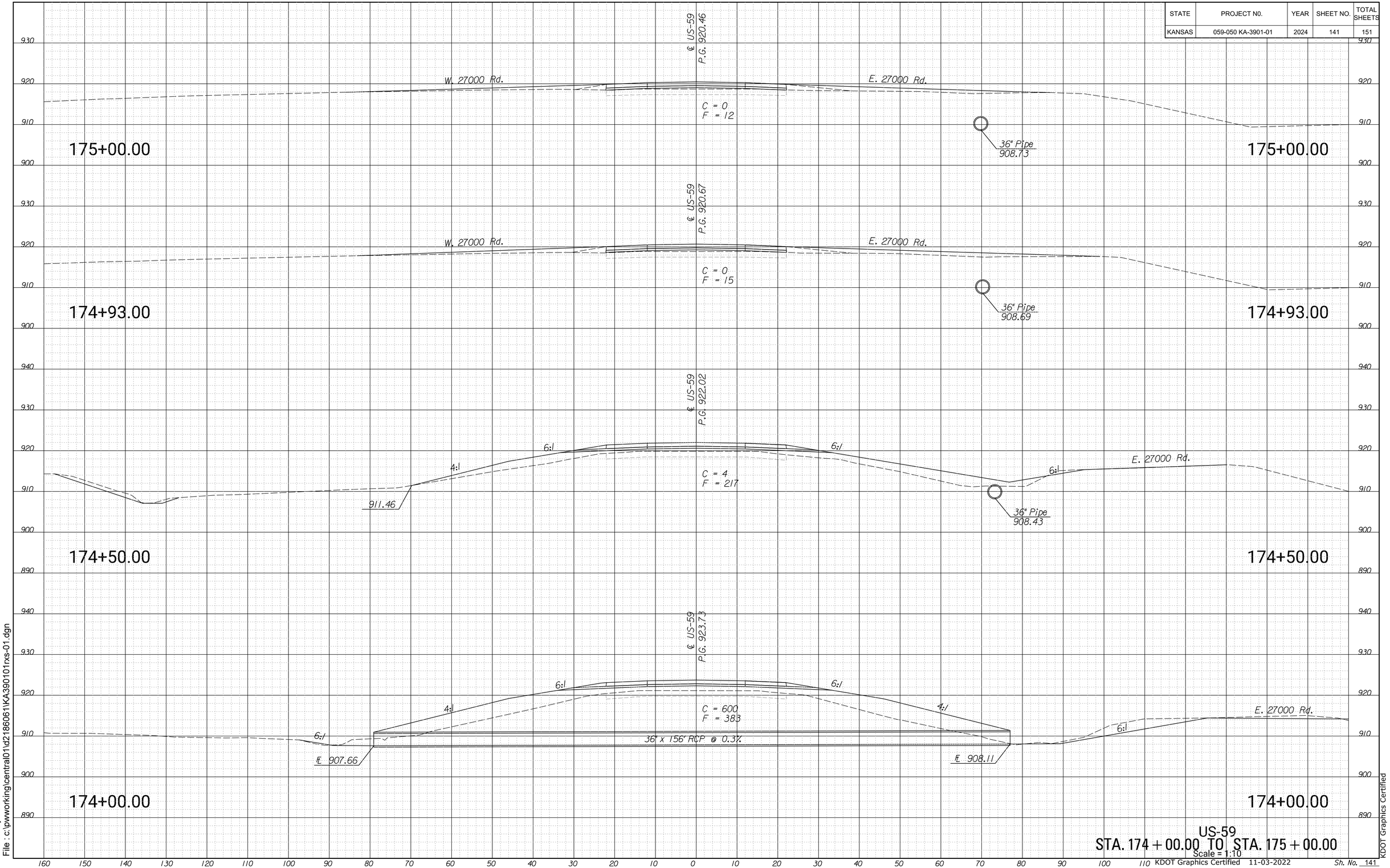
KDOT Graphics Certified 11-03-2022

Sh. No. 140

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	141	151



US-59
STA. 174 + 00.00 TO STA. 175 + 00.00

Scale = 1:10

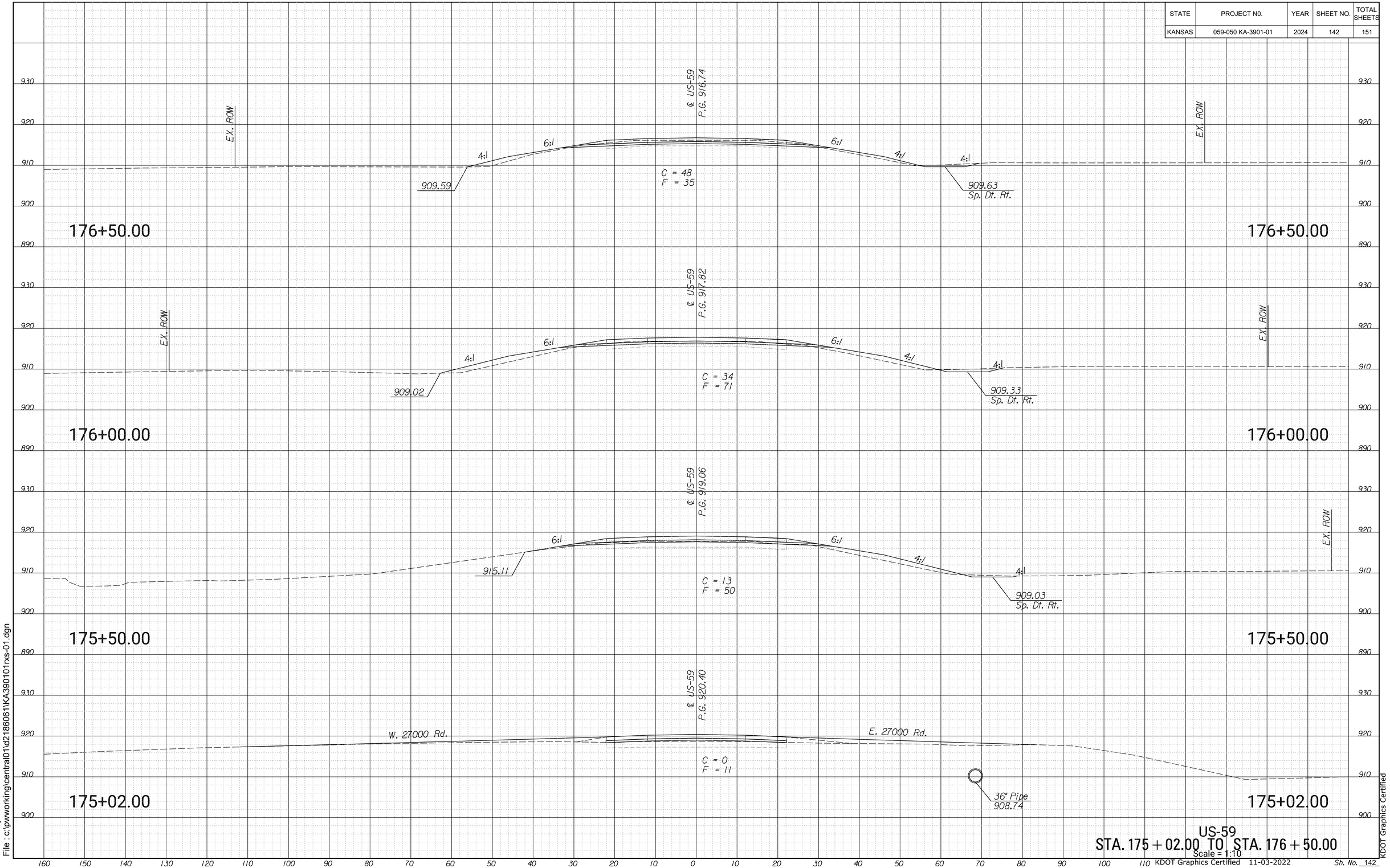
KDOT Graphics Certified 11-03-2022

Sh. No. 141

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	142	151



US-59
STA. 175 + 02.00 TO STA. 176 + 50.00

Scale = 1:10

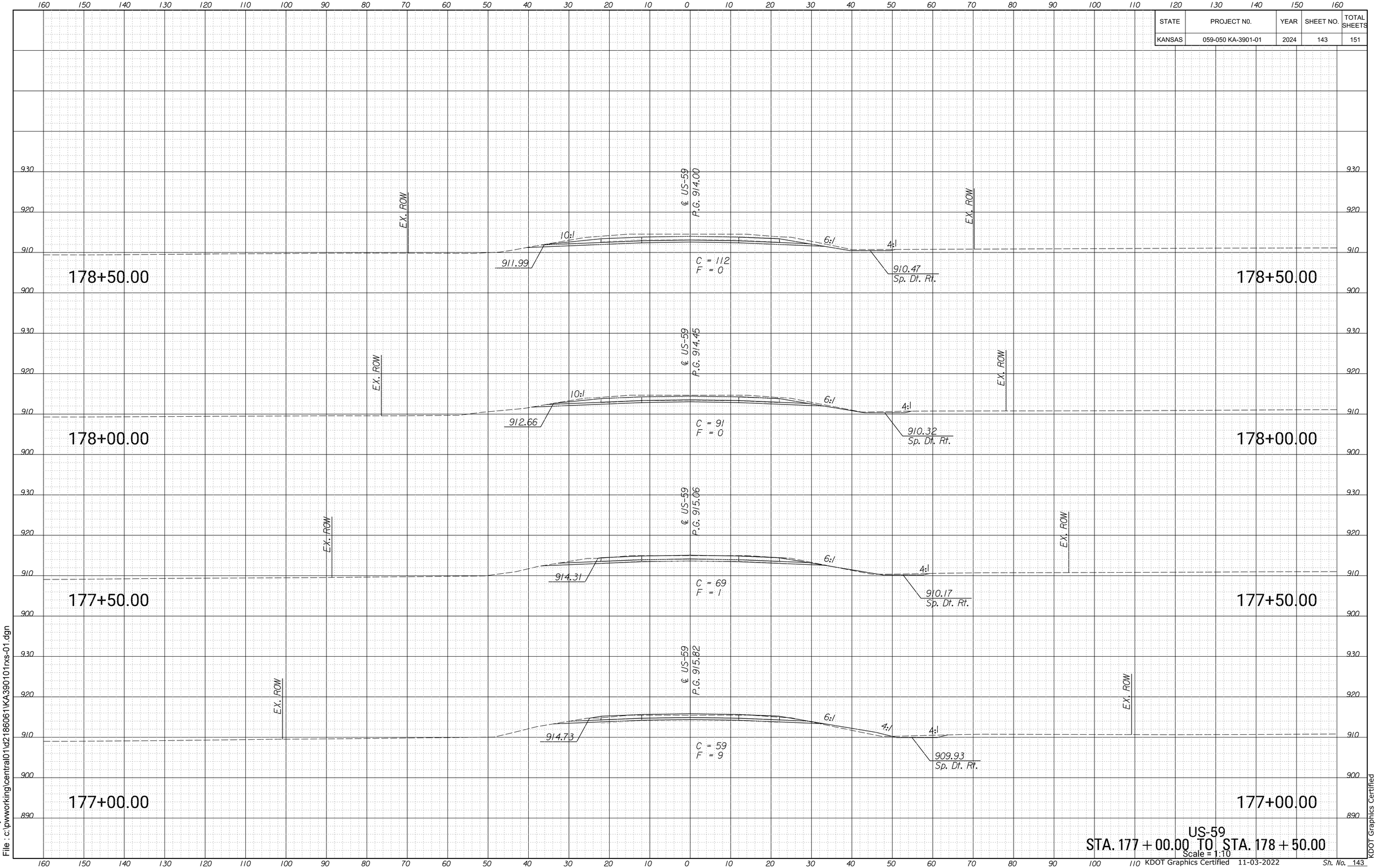
KDOT Graphics Certified 11-03-2022

Sh. No. 142

KDOT Graphics Certified

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	143	151



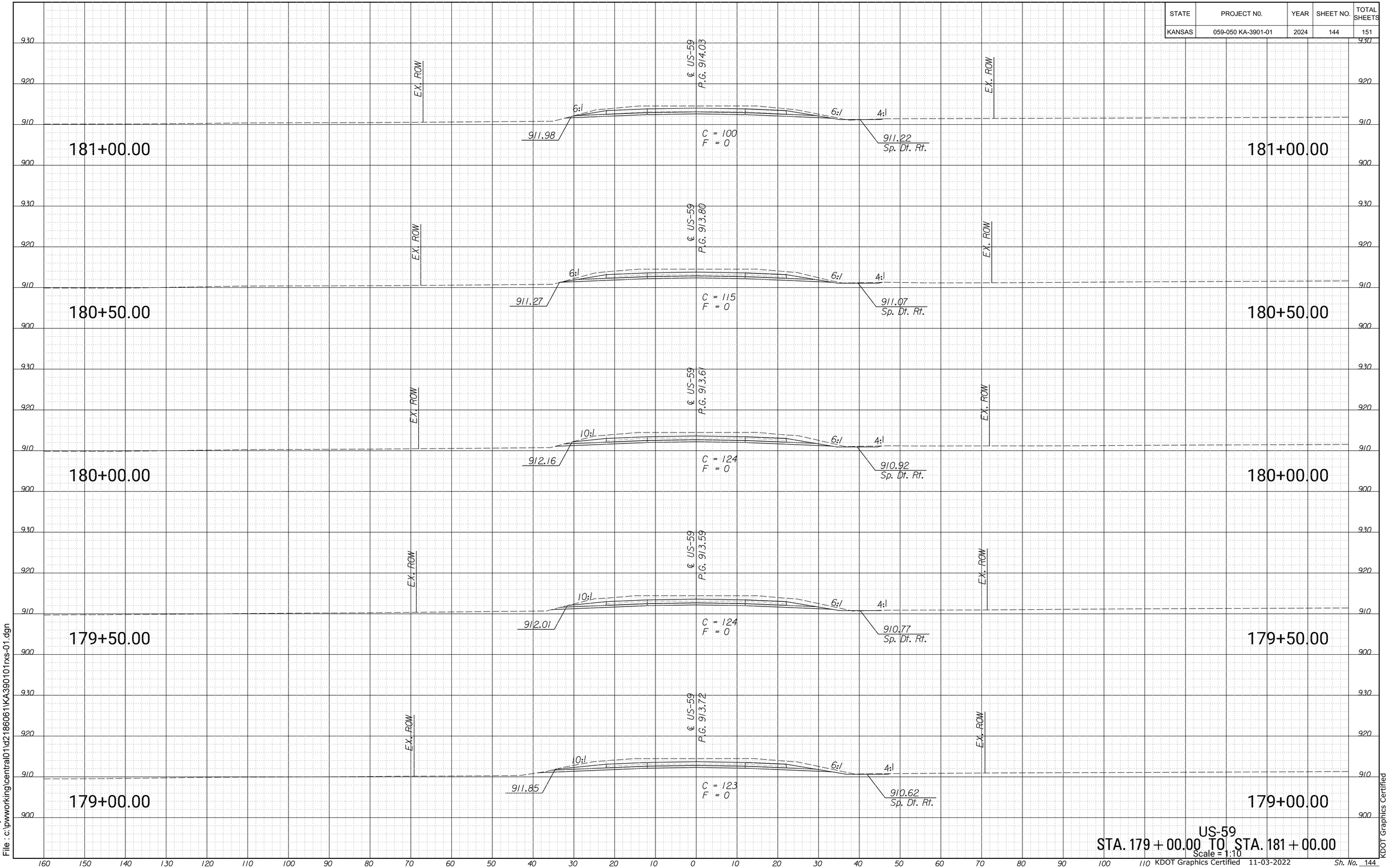
Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn

US-59
STA. 177 + 00.00 TO STA. 178 + 50.00
Scale = 1:10

KDOT Graphics Certified 11-03-2022 Sh. No. 143

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	144	151



US-59
STA. 179 + 00.00 TO STA. 181 + 00.00

Scale = 1:10

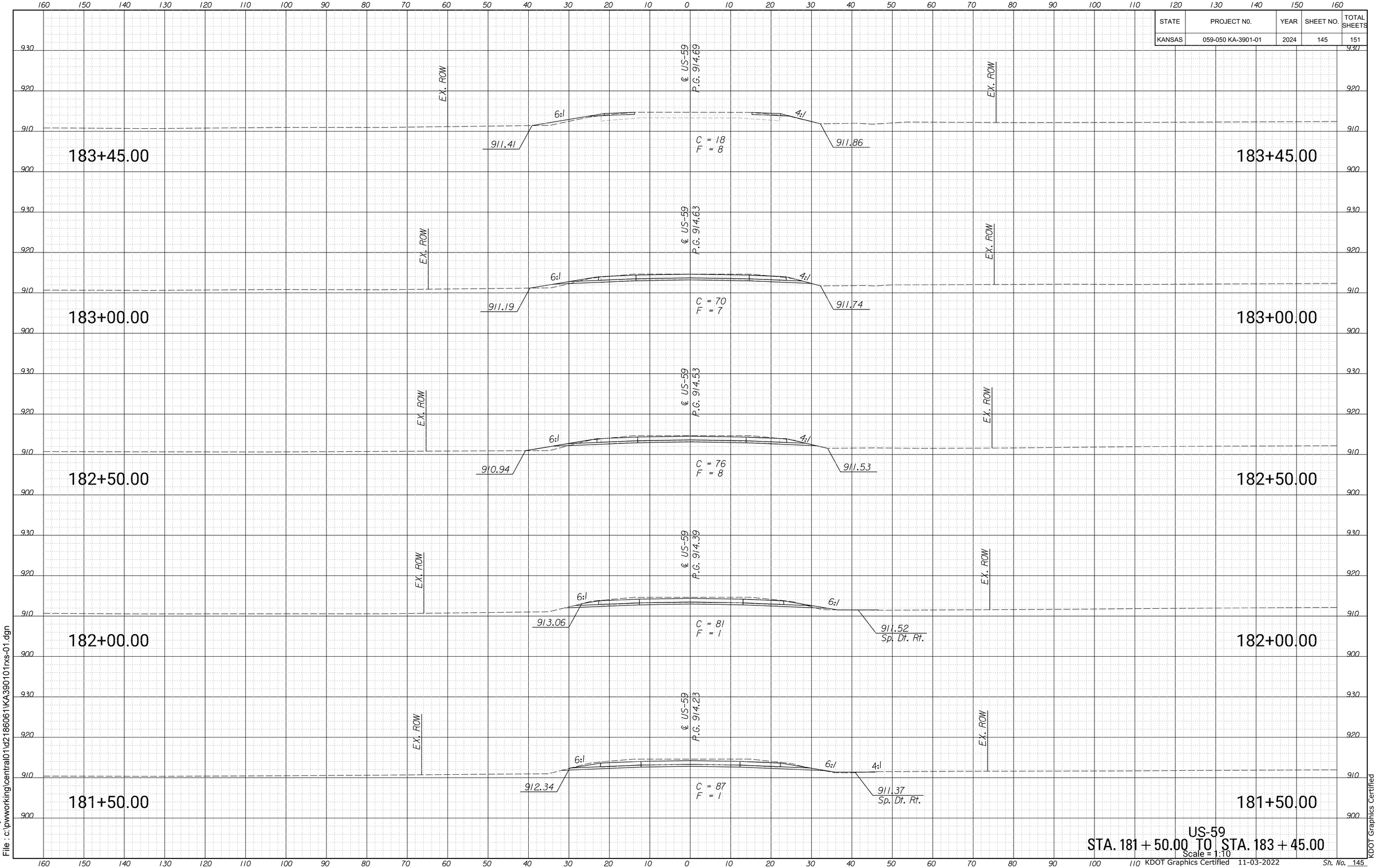
KDOT Graphics Certified 11-03-2022

Sh. No. 144

KDOT Graphics Certified

Drawn By: : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted : 06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	145	151



US-59
STA. 181 + 50.00 TO STA. 183 + 45.00

Scale = 1:10

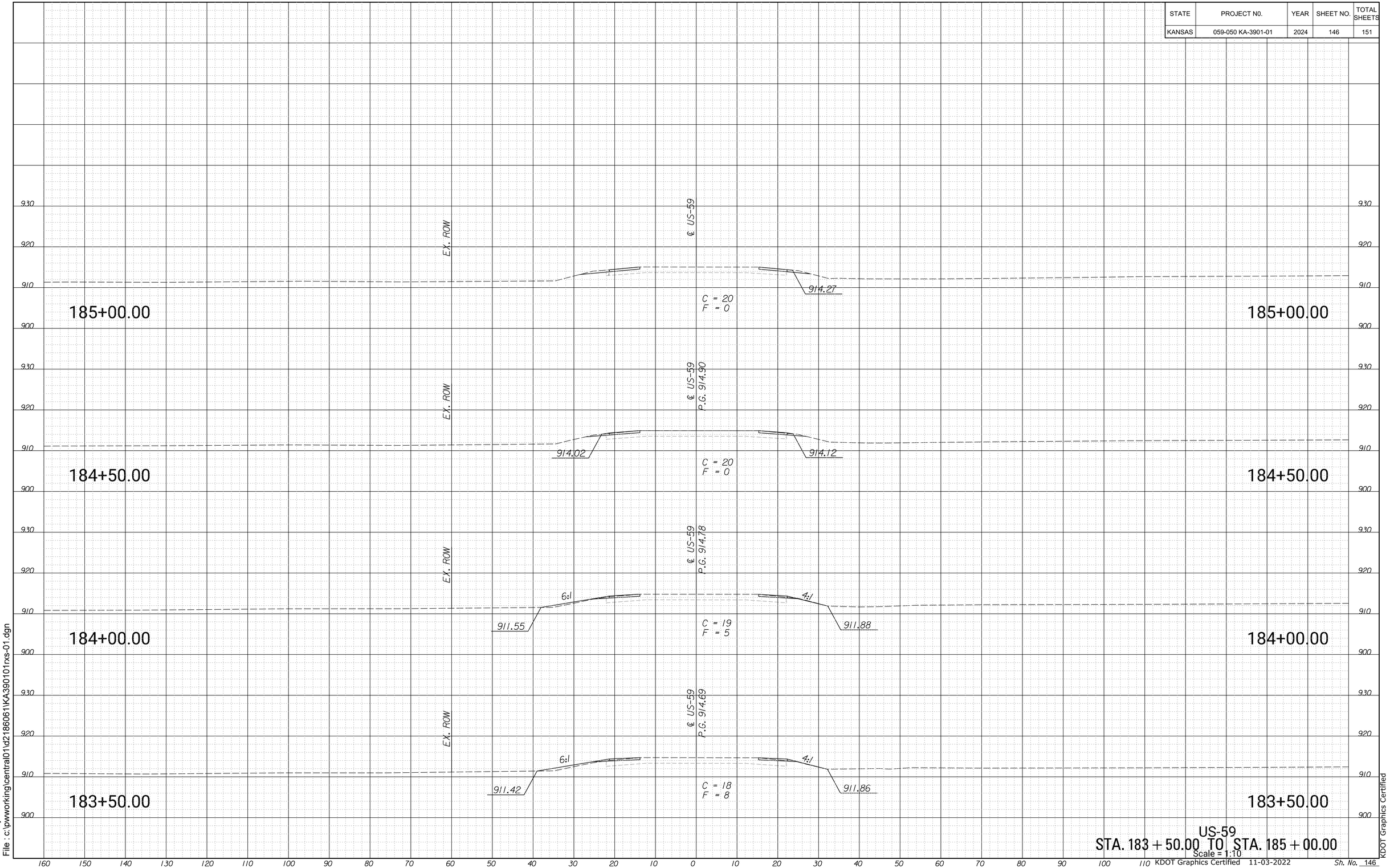
KDOT Graphics Certified 11-03-2022

Sh. No. 145

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	146	151



US-59
STA. 183 + 50.00 TO STA. 185 + 00.00

Scale = 1:10

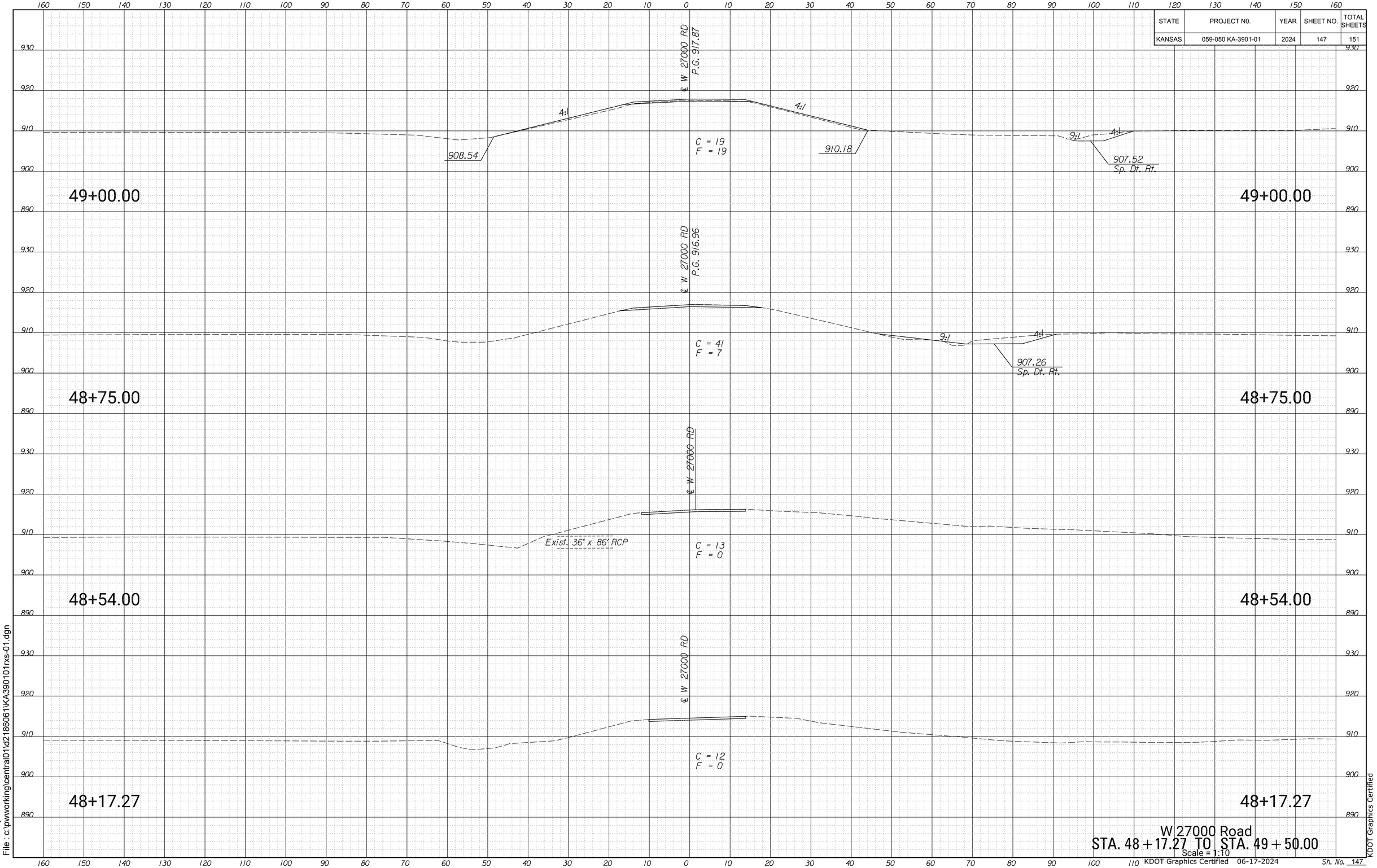
KDOT Graphics Certified 11-03-2022

Sh. No. 146

Drawn By : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	147	151



W 27000 Road
STA. 48+17.27 TO STA. 49+50.00

Scale = 1:10

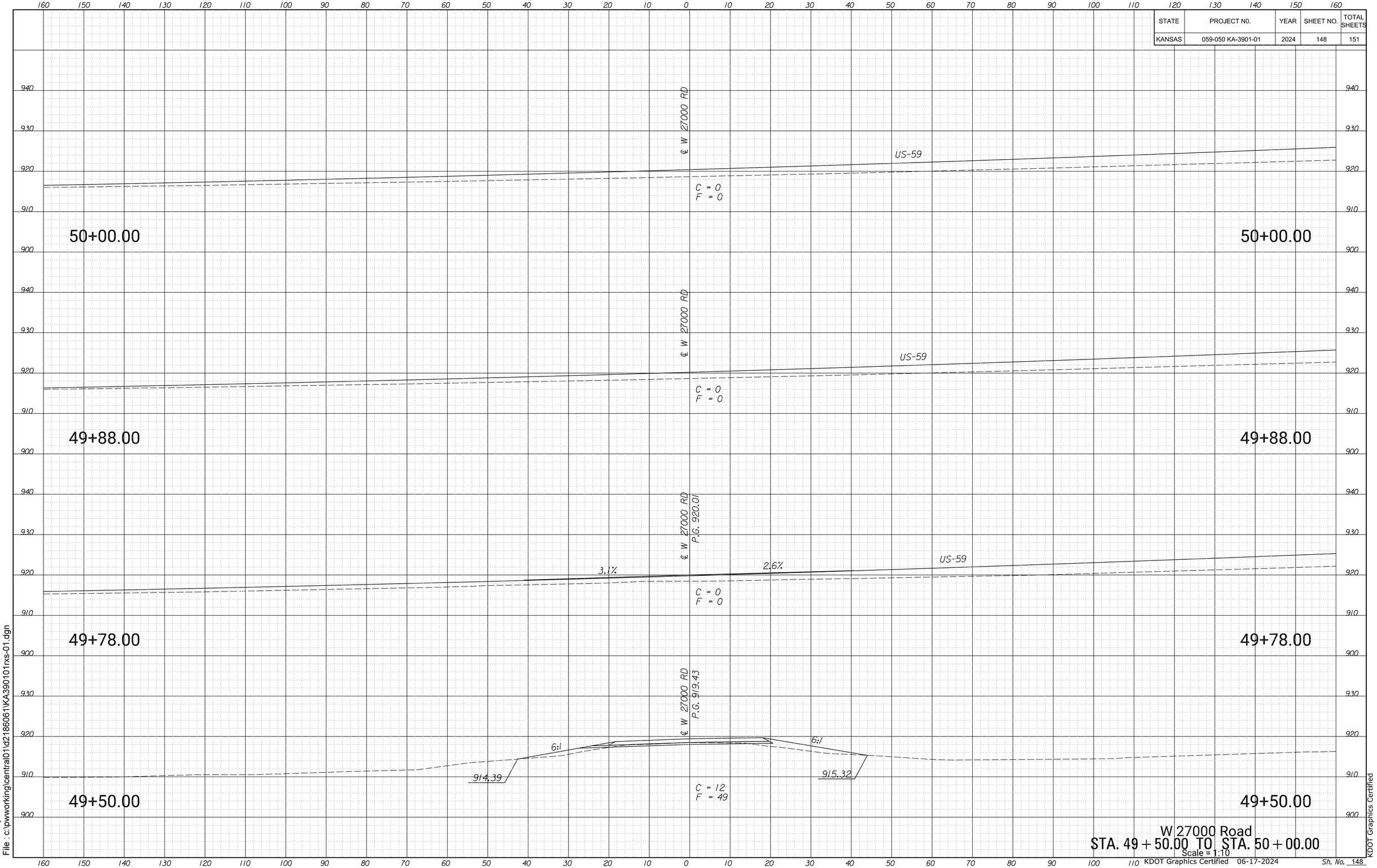
KDOT Graphics Certified 06-17-2024

Sh. No. 147

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	148	151



W 27000 Road
STA. 49 + 50.00 TO STA. 50 + 00.00

Scale = 1:10

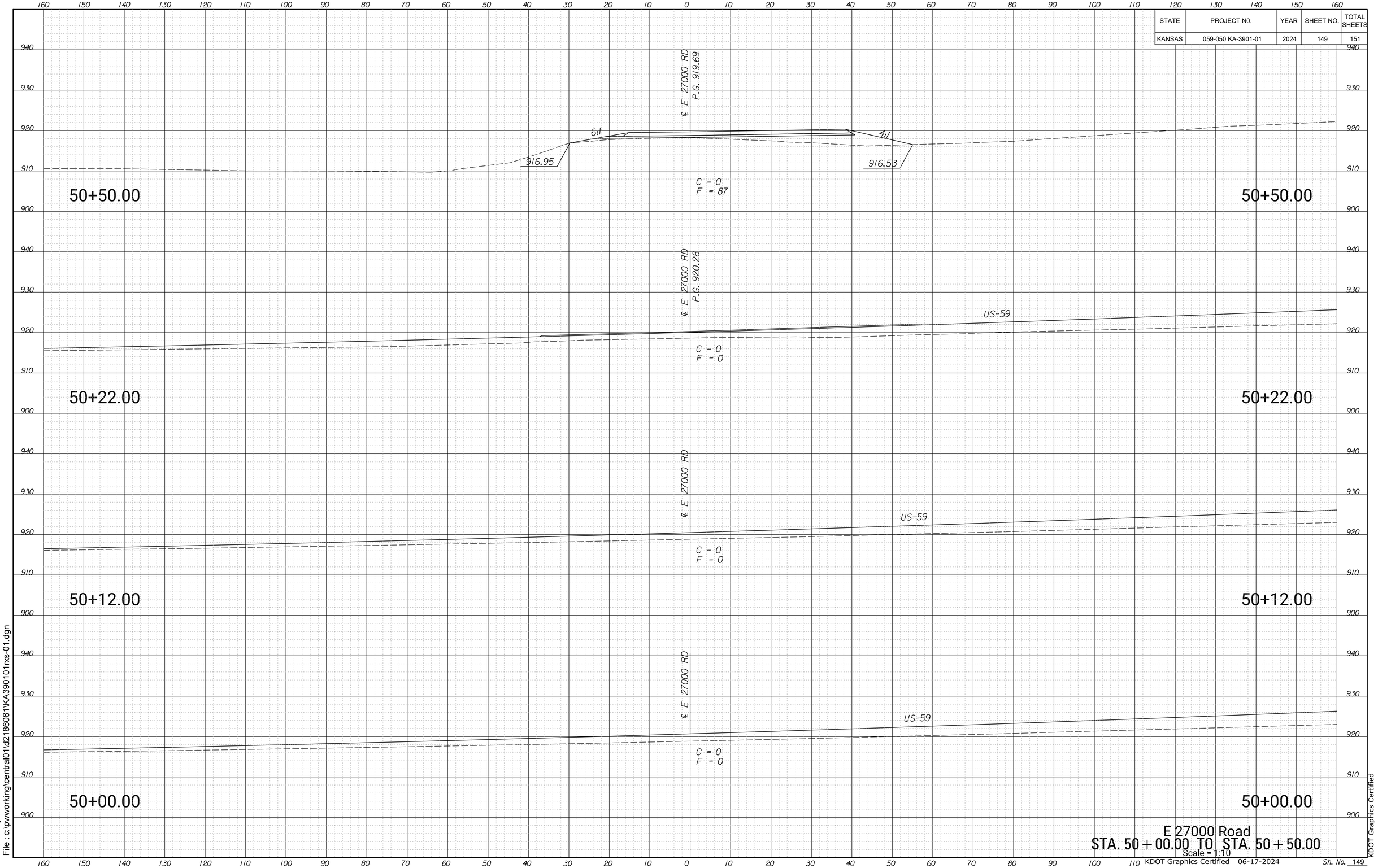
KDOT Graphics Certified 06-17-2024

Sh. No. 148

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

KDOT Graphics Certified

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	149	151



E 27000 Road
STA. 50 + 00.00 TO STA. 50 + 50.00
Scale = 1:10

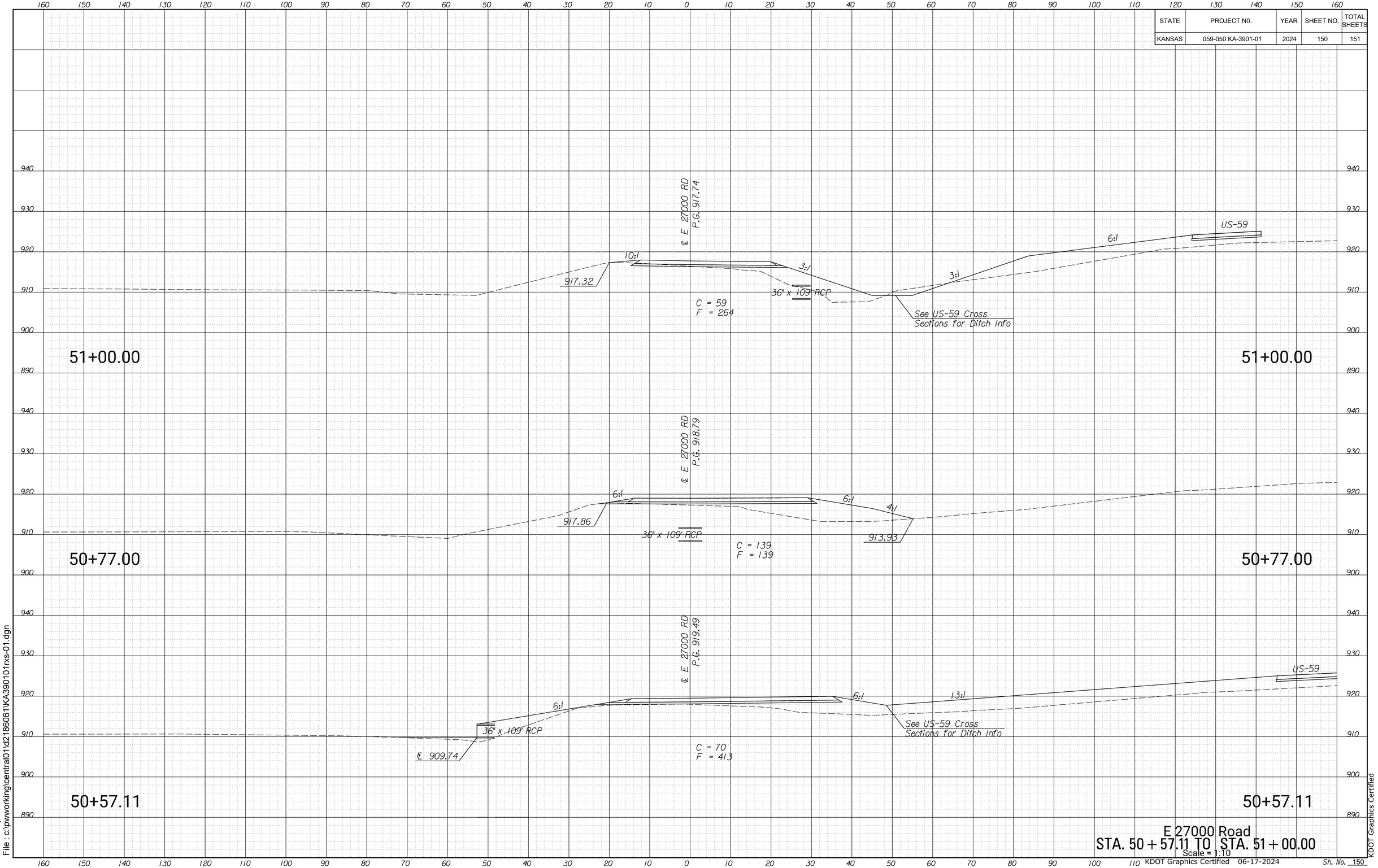
KDOT Graphics Certified 06-17-2024

Sh. No. 149

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA390101rxs-01.dgn
Plotted :06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	150	151



E 27000 Road
STA. 50 + 57.11 TO STA. 51 + 00.00

Scale = 1:10

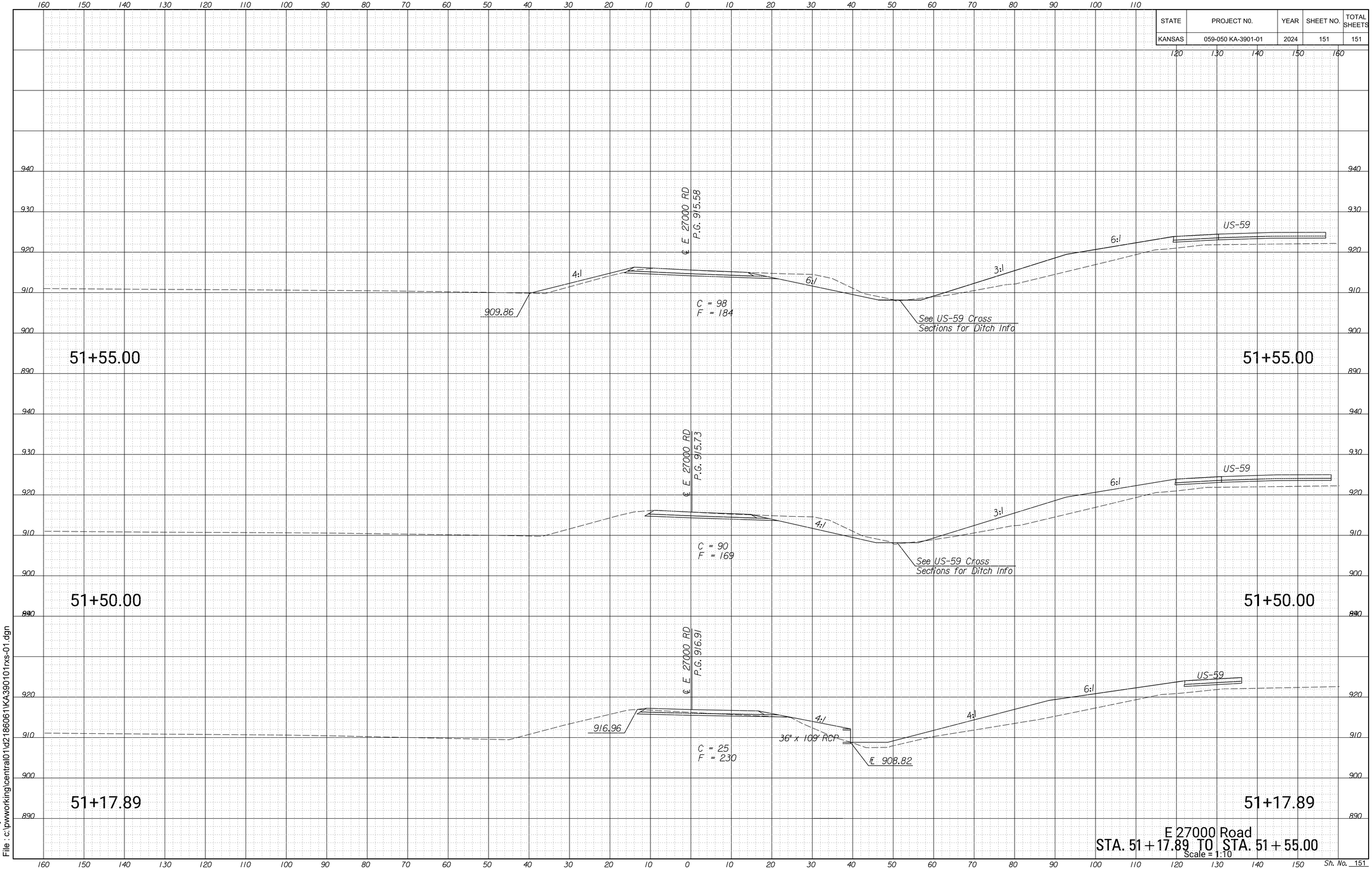
KDOT Graphics Certified 06-17-2024

Sh. No. 150

KDOT Graphics Certified

Drawn By : BBEAMER
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn
Plotted :06-17-24

STATE	PROJECT N0.	YEAR	SHEET NO.	TOTAL SHEETS
KANSAS	059-050 KA-3901-01	2024	151	151



E 27000 Road
STA. 51+17.89 TO STA. 51+55.00
Scale = 1:10

Sh. No. 151

Drawn By: : BBEAMER Plotted :06-17-24
File : c:\pwworking\central01\d2186061\KA3901101rxs-01.dgn